

**TASK ORDER NO. 023****TASK ORDER NAME: Fiberoptic Infrastructure - Design****PROJECT CODE: SGR-403; 40-7403.68912**

This is Task Order No. 023 to the On Call Maintenance Contract entered into by and between Utah Transit Authority (UTA) and Rocky Mountain Systems Services, (Contractor) as of February 24<sup>th</sup>, 2021.

This Task Order is part of the On Call Maintenance Contract and is governed by the terms thereof.

The purpose of this Task Order is to specifically define the scope, schedule, lump sum price, and other terms applicable to the work identified herein.

UTA and Contractor hereby agree as follows:

**1.0 SCOPE OF SERVICES**

The scope of work for the Task Order #023 is hereby attached and incorporated into this Task Order.

**2.0 SCHEDULE**

The Substantial Completion Date for this Task is December 31<sup>st</sup>, 2022. The Final Acceptance Date for this Task is December 31<sup>st</sup>, 2022.

**3.0 LUMP SUM PRICE**

The price for this task order is a not to exceed \$227,663.00. Invoices will be billed on monthly basis for work completed to date.

**4.0 APPLICABILITY OF FEDERAL CLAUSES**

This Task Order does ☒ does not ☐ [Check Applicable] include federal assistance funds which requires the application of the Federal Clauses appended as Exhibit D to the On Call Maintenance Contract.

IN WITNESS WHEREOF, this Task Order has been executed by UTA and the Contractor or its appointed representative

UTAH TRANSIT AUTHORITY:

ROCKY MOUNTAIN SYSTEMS SERVICES:

By: \_\_\_\_\_  
Jay Fox, Executive Director Date  
> \$200,000

DocuSigned by:  
By: Anthony Ortolani  
1587B142E149430...

By: \_\_\_\_\_  
Mary DeLoretto, Chief Service Development Ofc. Date  
< 200,000

Date: 4/21/2022

By: \_\_\_\_\_  
Jared Scarbrough, Acting Director of Capital Const. Date  
< \$75,000

By: \_\_\_\_\_  
Jared Scarbrough, Project Manager Date  
< \$25,000

DocuSigned by:  
Mike Bell 4/21/2022  
Legal Review AA44F6... Date Procurement Review Date



April 18<sup>th</sup>, 2022

RMSS-52598-040

Mr. Jared Scarbrough  
Manager of Systems Engineering  
2264 South 900 West  
Salt Lake City, UT 84119

Reference: Utah Transit Authority – Systems On-Call Services

Subject: Fiber Optic Backbone Upgrades - Design Scope

Jared,

Rocky Mountain Systems Services (RMSS) is pleased to provide a proposal for the design of fiber optic backbone upgrades to the TRAX North/South Mainline and University Line, as well as upgrades to the overall network architecture for the TRAX Signal and Traction Power communication networks.

Our lump sum price for this proposal is **\$227,663.00**

Upgrades to the TRAX communications network are required in support of other projects that are currently underway on the TRAX alignment. Additional fibers and networking equipment are needed to establish a network path for new traction power and signaling equipment to communicate throughout the system.

In certain portions of the existing communications network there are not enough spare fibers to support this need. In other areas where there may be enough available fibers, the use of them would leave UTA with no spare fiber strands to use as backup if needed. This could have significant undesirable effects on operations if a network path for signal or traction power equipment is not available at some point in the future.

As a means to ameliorate this situation, the UTA Systems Engineering Department is in the process of replacing the existing 24-strand fiber optic backbone of the North/South Mainline and the University Line with a 144-strand cable that will provide an adequate number of fiber strands for current needs as well as for future upgrades and expansion.

The scope of work covered in this proposal is to develop the design required for the implementation of these changes as follows:

#### DESIGN

Rocky Mountain Systems Services (RMSS) will prepare and submit the following design deliverables to UTA in CAD and PDF format for ALL RINGS in the TRAX communication system:

- Systemwide network site-book with the following design information:
  - Network Topology Block Diagram that clearly articulates the following information:



- Outline the entire TRAX communications system for all SCADA, Signals, and Traction Power rings
- Which ring of the network that each location is in, and to which adjacent locations they talk to
- Which locations are equipped with network routers to establish a new ring on the network
- Redundant communication pathways
- The “network neighborhood” that permits all rings to communicate to the back-office
- This deliverable is a high-level view of the network and does not describe the allocation of individual fibers
- Fiber Layout Tables that clearly articulate the following information:
  - All locations in each ring
  - The path that the fiber optic backbone takes through each location in the network
  - Terminations in the fiber patch panels of each location
  - Fusion splices through each location
  - Spare fibers not terminated at each location
  - IP Address of the managed switch at each location
- Fiber Strand Allocations which describe:
  - Color coded allocations of each buffer tube in the fiber optic backbone cables
  - Color coded allocations of each fiber strand in each buffer tube
- IP Address List with the following information
  - IP Addresses for ALL network nodes on the TRAX SCADA, Signal, and Traction Power communications networks
  - Subnet Masks for ALL network nodes on the TRAX SCADA, Signal, and Traction Power communication networks
  - Gateway IP addresses for All network nodes on the TRAX SCADA, Signal, and Traction Power communication networks
  - VLAN designations for ALL network nodes on the TRAX SCADA, Signal, and Traction Power communication networks
- Circuit plan updates for all affected locations to articulate changes to:
  - Elevation drawings for rack mounted networking equipment
  - Modifications to the fiber tables
  - Modifications to the network patch cabling
  - Modifications to power wiring for networking equipment

#### Clarifications

1. RMSS will communicate required updates to substation plans that are currently under the control of the traction power substation rehabilitation contractor. RMSS will make updates to plans that are currently under the control of UTA
2. Please reference the attached matrix of locations for additional information and clarity on this scope of work
3. RMSS has included a high-level block diagram of the conceptual network architecture. This diagram is subject to change based on the final design developed under this task order.



4. RMSS has included a high-level fiber strand allocation diagram. The allocation of strands is subject to change based on the final design developed under this task order.
5. RMSS has included a design matrix with this proposal that outlines potential locations of routers for the signaling and traction power networks. All router locations are subject to change based on the final design developed under this task order.

#### Assumptions

1. To the extent possible, RMSS will utilize information that is currently available from on-going network audits

#### Exclusions

1. UTA's IT department is upgrading their fiber optic backbone along the same corridor. Although RMSS is procuring and installing the fiber optic cable, design of the IT network, or any changes to the IT network equipment or configuration is excluded from this scope of work. RMSS' intention is to place all fiber optic patching back in the same configuration that the current backbone is terminated.

This proposal is valid for 60 days, unless extended in writing by RMSS.

If you need any additional information, please don't hesitate to contact us.

Sincerely,

A handwritten signature in blue ink, appearing to read "Anthony Ortolani".

Anthony Ortolani  
Area Manager  
Rocky Mountain Systems Services

cc:

Marshall Wilson – RMSS  
Doug Jones – RMSS

#### Attachments:

- TRAX FO Upgrades Locations Matrix - 04-13-2022
- TRAX FO Upgrades Concept Architecture- 04-13-2022
- TRAX FO Upgrades DRAFT 144-Strand Fiber Allocation - 04-13-2022
- TRAX FO Upgrades DRAFT 24-Strand Fiber Allocation - 04-13-2022

Our pricing is in U.S. Dollars, F.O.B. Salt Lake City UT, and excludes all allowances, taxes, tariffs, licenses, and permits

**UTA - On Call****RMSS-52598-040 Fiber Optic Upgrades - DESIGN****Task Order Estimate Summary****4/18/2022**

|                             |           |                   |
|-----------------------------|-----------|-------------------|
| <b>Subcontractors</b>       | <b>\$</b> | <b>-</b>          |
| <b>Materials</b>            | <b>\$</b> | <b>-</b>          |
| <b>Administrative</b>       | <b>\$</b> | <b>61,436.00</b>  |
| <b>Design/Engineering</b>   | <b>\$</b> | <b>129,386.00</b> |
| <b>Construction/Testing</b> | <b>\$</b> | <b>-</b>          |
| <b>Travel &amp; Perdiem</b> | <b>\$</b> | <b>-</b>          |
| <b>Other Costs and Fee</b>  | <b>\$</b> | <b>36,841.00</b>  |
| <b>Total:</b>               | <b>\$</b> | <b>227,663.00</b> |

## TRAX LOCATION MATRIX - ALL LINES

4/18/2022

## DESIGN

|          | LOCATION                | STATIONING | SYSTEM          | TYPE           | SUB-TYPE       | RS400 | RING | NEW 144-STRAND FIBER | NEWWORK TOPOLOGY BLOCK DIAGRAM | FIBER LAYOUT TABLES | FIBER STRAND ALLOCATION TABLES | CIRCUIT PLAN UPDATES | IP ADDRESS UPDATE (SWITCH) | IP ADDRESS UPDATE VITAL CONTROLLER | IP ADDRESS UPDATE (OFFICE) | NEW ROUTER |
|----------|-------------------------|------------|-----------------|----------------|----------------|-------|------|----------------------|--------------------------------|---------------------|--------------------------------|----------------------|----------------------------|------------------------------------|----------------------------|------------|
| 12 Nodes | Airport B Interlocking  | 1005+52    | AIRPORT LINE    | SIGNAL         | INTERLOCKING   | YES   | 1B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | Airport A Interlocking  | 1013+06    | AIRPORT LINE    | SIGNAL         | INTERLOCKING   | YES   | 1B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | AP6-TPSS                | 1013+60    | AIRPORT LINE    | TRACTION POWER | SUBSTATION     | NO    | 1A   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | 3700 W GC               | 1022+99    | AIRPORT LINE    | SIGNAL         | GRADE CROSSING | YES   | 1B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | East Interlocking       | 1034+78    | AIRPORT LINE    | SIGNAL         | INTERLOCKING   | YES   | 1B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | AP5-TPSS                | 2043+60    | AIRPORT LINE    | TRACTION POWER | SUBSTATION     | NO    | 1A   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | W3900                   | 2065+85    | AIRPORT LINE    | SIGNAL         | CUT SECTION    | YES   | 1B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | W3400                   | 2101+72    | AIRPORT LINE    | SIGNAL         | CUT SECTION    | YES   | 1B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | W2600                   | 1136+92    | AIRPORT LINE    | SIGNAL         | CUT SECTION    | YES   | 1B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | AP4-TPSS                | 2141+xx    | AIRPORT LINE    | TRACTION POWER | SUBSTATION     | NO    | 1A   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | 2400 West GC            | 1141+90    | AIRPORT LINE    | SIGNAL         | GRADE CROSSING | YES   | 1B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | Runway Interlocking     | 2145+00    | AIRPORT LINE    | SIGNAL         | INTERLOCKING   | YES   | 1B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | AP3-TPSS                | 1166+85    | AIRPORT LINE    | TRACTION POWER | SUBSTATION     | NO    | 1A   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | AP2-TPSS                |            | AIRPORT LINE    | TRACTION POWER | SUBSTATION     | NO    | 1A   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | Freeway Interlocking    | 2275+32    | AIRPORT LINE    | SIGNAL         | INTERLOCKING   | YES   | 1B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | 600 West                | 1284+30    | AIRPORT LINE    | SIGNAL         | GRADE CROSSING | YES   | 1B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | AP1-TPSS                | 1288+48    | AIRPORT LINE    | TRACTION POWER | SUBSTATION     | NO    | 1A   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 1          |
|          | AIRPORT JUNCTION        | 23+30      | AIRPORT LINE    | SIGNAL         | JUNCTION       | YES   | 1B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 1          |
| 11 Nodes | FLHQ                    | ???        | N/S MAIN LINE   | COMMUNICATION  | COMM ROOM      | 0     | 0    | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | TPSS Intermodal         | 24+75      | N/S MAIN LINE   | TRACTION POWER | SUBSTATION     | NO    | 2A   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 1          |
|          | Intermodal PCC          | 25+20      | N/S MAIN LINE   | IT             | PCC            | 0     | 0    | YES                  | 0                              | 0                   | 0                              | 0                    | 0                          | 0                                  | 0                          | 0          |
|          | Intermodal Interlocking | 35+00      | N/S MAIN LINE   | SIGNAL         | INTERLOCKING   | YES   | 2B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 1          |
|          | Old Creektown           | 41+05      | N/S MAIN LINE   | IT             | PCC            | 0     | 0    | YES                  | 0                              | 0                   | 0                              | 0                    | 0                          | 0                                  | 0                          | 0          |
|          | Planetarium PCC         | 56+40      | N/S MAIN LINE   | IT             | PCC            | 0     | 0    | YES                  | 0                              | 0                   | 0                              | 0                    | 0                          | 0                                  | 0                          | 0          |
|          | TPSS Delta              | 59+10      | N/S MAIN LINE   | TRACTION POWER | SUBSTATION     | NO    | 2A   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | 400 W Interlocking      | 59+10      | N/S MAIN LINE   | SIGNAL         | INTERLOCKING   | YES   | 2B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | Arena Station PCC       | 835+50     | N/S MAIN LINE   | IT             | PCC            | 0     | 0    | YES                  | 0                              | 0                   | 0                              | 0                    | 0                          | 0                                  | 0                          | 0          |
|          | Delta Interlocking      | 826+00     | N/S MAIN LINE   | SIGNAL         | INTERLOCKING   | YES   | 2B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | Temple Square PCC       | 819+20     | N/S MAIN LINE   | IT             | PCC            | 0     | 0    | YES                  | 0                              | 0                   | 0                              | 0                    | 0                          | 0                                  | 0                          | 0          |
|          | City Center PCC         | 804+00     | N/S MAIN LINE   | IT             | PCC            | 0     | 0    | YES                  | 0                              | 0                   | 0                              | 0                    | 0                          | 0                                  | 0                          | 0          |
|          | 150 South Interlocking  | 799+00     | N/S MAIN LINE   | SIGNAL         | INTERLOCKING   | YES   | 2B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | Galivan Station PCC     | 787+60     | N/S MAIN LINE   | IT             | PCC            | 0     | 0    | YES                  | 0                              | 0                   | 0                              | 0                    | 0                          | 0                                  | 0                          | 0          |
|          | SRT2-TPSS 300 South     | 782+83     | N/S MAIN LINE   | TRACTION POWER | SUBSTATION     | NO    | 2A   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | Main St PCC             | 773+05     | N/S MAIN LINE   | IT             | PCC            | 0     | 0    | YES                  | 0                              | 0                   | 0                              | 0                    | 0                          | 0                                  | 0                          | 0          |
|          | Main St Interlocking    | 773+05     | N/S MAIN LINE   | SIGNAL         | INTERLOCKING   | YES   | 2B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | Main ST PCC             | 772+40     | N/S MAIN LINE   | IT             | PCC            | 0     | 0    | YES                  | 0                              | 0                   | 0                              | 0                    | 0                          | 0                                  | 0                          | 0          |
|          | Library Station         | 7+10       | UNIVERSITY LINE | IT             | PCC            | 0     | 0    | YES                  | 0                              | 0                   | 0                              | 0                    | 0                          | 0                                  | 0                          | 0          |
|          | E1 TPSS                 | 21+56      | UNIVERSITY LINE | TRACTION POWER | SUBSTATION     | NO    | 2A   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | Trolley Station         | 55+65      | UNIVERSITY LINE | IT             | PCC            | 0     | 0    | YES                  | 0                              | 0                   | 0                              | 0                    | 0                          | 0                                  | 0                          | 0          |
|          | 900 E Station           | 67+80      | UNIVERSITY LINE | IT             | PCC            | 0     | 0    | YES                  | 0                              | 0                   | 0                              | 0                    | 0                          | 0                                  | 0                          | 0          |
|          | E2 TPSS                 | 74+90      | UNIVERSITY LINE | TRACTION POWER | SUBSTATION     | NO    | 2A   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | E3 TPSS                 | 114+67     | UNIVERSITY LINE | TRACTION POWER | SUBSTATION     | NO    | 2A   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | Rice/Eccles             | 114+69?    | UNIVERSITY LINE | IT             | PCC            | 0     | 0    | YES                  | 0                              | 0                   | 0                              | 0                    | 0                          | 0                                  | 0                          | 0          |
|          | Rice Interlocking       | 114+67     | UNIVERSITY LINE | SIGNAL         | INTERLOCKING   | YES   | 2B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | N Stadium GC            | 123+25     | UNIVERSITY LINE | SIGNAL         | GRADE CROSSING | YES   | 2B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | Round About GC          | 140+50     | UNIVERSITY LINE | SIGNAL         | GRADE CROSSING | YES   | 2B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |

## TRAX LOCATION MATRIX - ALL LINES

4/18/2022

## DESIGN

|                         | LOCATION              | STATIONING | SYSTEM           | TYPE           | SUB-TYPE       | RS400 | RING | NEW 144-STRAND FIBER | NEWWORK TOPOLOGY BLOCK DIAGRAM | FIBER LAYOUT TABLES | FIBER STRAND ALLOCATION TABLES | CIRCUIT PLAN UPDATES | IP ADDRESS UPDATE (SWITCH) | IP ADDRESS UPDATE VITAL CONTROLLER | IP ADDRESS UPDATE (OFFICE) | NEW ROUTER |
|-------------------------|-----------------------|------------|------------------|----------------|----------------|-------|------|----------------------|--------------------------------|---------------------|--------------------------------|----------------------|----------------------------|------------------------------------|----------------------------|------------|
|                         | Station               | 160+21     | UNIVERSITY LINE  | IT             | PCC            | 0     | 0    | YES                  | 0                              | 0                   | 0                              | 0                    | 0                          | 0                                  | 0                          | 0          |
|                         | E4 TPSS               | 173+50     | UNIVERSITY LINE  | TRACTION POWER | SUBSTATION     | NO    | 2A   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|                         | 300 South GC          | 174+45     | UNIVERSITY LINE  | SIGNAL         | GRADE CROSSING | YES   | 2B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|                         | Mario Capecci GC      | 173+50 ?   | UNIVERSITY LINE  | SIGNAL         | GRADE CROSSING | YES   | 2B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|                         | FT Douglas Station    | 180+90     | UNIVERSITY LINE  | IT             | PCC            | 0     | 0    | YES                  | 0                              | 0                   | 0                              | 0                    | 0                          | 0                                  | 0                          | 0          |
|                         | Health Interlocking   | 198+60     | UNIVERSITY LINE  | SIGNAL         | INTERLOCKING   | YES   | 2B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|                         | E5 TPSS               | 207+15     | UNIVERSITY LINE  | TRACTION POWER | SUBSTATION     | NO    | 2A   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|                         | University Med Center | ???        | UNIVERSITY LINE  | IT             | PCC            | 0     | 0    | YES                  | 0                              | 0                   | 0                              | 0                    | 0                          | 0                                  | 0                          | 0          |
|                         |                       |            |                  |                |                |       |      |                      |                                |                     |                                |                      |                            |                                    |                            |            |
| 12 Nodes                | 700 S Interlocking    | 754+00     | N/S MAIN LINE    | SIGNAL         | INTERLOCKING   | YES   | 3B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 1          |
|                         | Future PCC            | 754+00     | N/S MAIN LINE    | IT             | PCC            | 0     | 0    | YES                  | 0                              | 0                   | 0                              | 0                    | 0                          | 0                                  | 0                          | 0          |
|                         | 900S PCC              | 726+30     | N/S MAIN LINE    | IT             | PCC            | 0     | 0    | YES                  | 0                              | 0                   | 0                              | 0                    | 0                          | 0                                  | 0                          | 0          |
|                         | SRN3-TPSS 900 South   | 714+08     | N/S MAIN LINE    | TRACTION POWER | SUBSTATION     | NO    | 3A   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 1          |
|                         | Paxton Ave GC         |            | N/S MAIN LINE    | SIGNAL         | GRADE CROSSING | NO    | 3A   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|                         | Paxton Interlocking   | 696+05     | N/S MAIN LINE    | SIGNAL         | INTERLOCKING   | YES   | 3B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|                         | Ballpark PCC          | 693+90     | N/S MAIN LINE    | IT             | PCC            | 0     | 0    | YES                  | 0                              | 0                   | 0                              | 0                    | 0                          | 0                                  | 0                          | 0          |
|                         | 1300 South GC         | 690+39     | N/S MAIN LINE    | SIGNAL         | GRADE CROSSING | YES   | 3B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|                         | Ballpark Interlocking | 683+00     | N/S MAIN LINE    | SIGNAL         | INTERLOCKING   | YES   | 3B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|                         | Ballpark Comm         | 679+64     | N/S MAIN LINE    | COMMUNICATION  | COMM CABINET   | NO    | 0    | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|                         | SRB4-TPSS Burton      | 663+00     | N/S MAIN LINE    | TRACTION POWER | SUBSTATION     | NO    | 3A   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|                         | 1700 South GC         | 660+90     | N/S MAIN LINE    | SIGNAL         | GRADE CROSSING | YES   | 3B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|                         | S1800                 | 653+14     | N/S MAIN LINE    | SIGNAL         | CUT SECTION    | NO    | 0    | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|                         | 2100 South GC         | 632+15     | N/S MAIN LINE    | SIGNAL         | GRADE CROSSING | YES   | 3B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|                         | S2100/2101            | 632+80     | N/S MAIN LINE    | SIGNAL         | CUT SECTION    | YES   | 3B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|                         | Central Point PCC     | 630+29     | N/S MAIN LINE    | IT             | PCC            | 0     | 0    | YES                  | 0                              | 0                   | 0                              | 0                    | 0                          | 0                                  | 0                          | 0          |
|                         | Union C               |            | WEST VALLEY LINE | SIGNAL         | JUNCTION       | YES   | 3B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|                         | SH1 TPSS              |            | SUGARHOUSE LINE  | TRACTION POWER | SUBSTATION     | NO    | 3A   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|                         | Gamma Interlocking    | 142+75     | SUGARHOUSE LINE  | SIGNAL         | INTERLOCKING   | YES   | 3B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|                         | Alpha A Interlocking  | 157+44     | SUGARHOUSE LINE  | SIGNAL         | INTERLOCKING   | YES   | 3B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|                         | Alpha B Interlocking  | 162+35     | SUGARHOUSE LINE  | SIGNAL         | INTERLOCKING   | YES   | 3B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|                         | SH2 TPSS              | 201+30     | SUGARHOUSE LINE  | TRACTION POWER | SUBSTATION     | NO    | 3A   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|                         | Beta Interlocking     | 201+60     | SUGARHOUSE LINE  | SIGNAL         | INTERLOCKING   | YES   | 3B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|                         |                       |            |                  |                |                |       |      |                      |                                |                     |                                |                      |                            |                                    |                            |            |
| 15 if JRSC is only One) | UNION B               | 260+05     | WEST VALLEY LINE | SIGNAL         | INTERLOCKING   | YES   | 4B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 1          |
|                         | WV1 - TPSS            | 256+00     | WEST VALLEY LINE | TRACTION POWER | SUBSTATION     | NO    | 4A   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 1          |
|                         | E601                  | 243+20     | WEST VALLEY LINE | SIGNAL         | GRADE CROSSING | YES   | 4B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|                         | WV2 - TPSS            | 219+50     | WEST VALLEY LINE | TRACTION POWER | SUBSTATION     | NO    | 4A   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|                         | W800                  | 219+00     | WEST VALLEY LINE | SIGNAL         | GRADE CROSSING | YES   | 4B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|                         | JRSC RS400            | 204+55     | WEST VALLEY LINE | SERVICE CENTER | SERVICE CENTER | YES   | 4B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|                         | JRSC RS2100G          | 204+55     | WEST VALLEY LINE | SERVICE CENTER | SERVICE CENTER | YES   | 4B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 1          |
|                         | JRSC HP Switch        | 204+55     | WEST VALLEY LINE | SERVICE CENTER | SERVICE CENTER | YES   | 4B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|                         | JRSC.5M - TPSS        | ???        | WEST VALLEY LINE | TRACTION POWER | SUBSTATION     | NO    | 4A   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|                         | JRSC3M - TPSS         | ???        | WEST VALLEY LINE | TRACTION POWER | SUBSTATION     | NO    | 4A   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|                         | ZCMI Interlocking     | 202+91     | WEST VALLEY LINE | SIGNAL         | INTERLOCKING   | YES   | 4B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|                         | 1070 WEST GC          | 188+44     | WEST VALLEY LINE | SIGNAL         | GRADE CROSSING | YES   | 4B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|                         | S2500/2501            | 172+40     | WEST VALLEY LINE | SIGNAL         | GRADE CROSSING | YES   | 4B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|                         | WV3 - TPSS            | 154+00     | WEST VALLEY LINE | TRACTION POWER | SUBSTATION     | NO    | 4A   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|                         | Chesterfield St GC    | 152+80     | WEST VALLEY LINE | SIGNAL         | GRADE CROSSING | YES   | 4B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |

## TRAX LOCATION MATRIX - ALL LINES

4/18/2022

## DESIGN

|              | LOCATION                 | STATIONING | SYSTEM           | TYPE           | SUB-TYPE       | RS400 | RING | NEW 144-STRAND FIBER | NEWWORK TOPOLOGY BLOCK DIAGRAM | FIBER LAYOUT TABLES | FIBER STRAND ALLOCATION TABLES | CIRCUIT PLAN UPDATES | IP ADDRESS UPDATE (SWITCH) | IP ADDRESS UPDATE VITAL CONTROLLER | IP ADDRESS UPDATE (OFFICE) | NEW ROUTER |
|--------------|--------------------------|------------|------------------|----------------|----------------|-------|------|----------------------|--------------------------------|---------------------|--------------------------------|----------------------|----------------------------|------------------------------------|----------------------------|------------|
| 17 Nodes (1) | X-over Interlocking      | 142+53     | WEST VALLEY LINE | SIGNAL         | INTERLOCKING   | YES   | 4B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|              | Lester St GC             | 124+05     | WEST VALLEY LINE | SIGNAL         | GRADE CROSSING | YES   | 4B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|              | Redwood Rd               | 117+66     | WEST VALLEY LINE | SIGNAL         | GRADE CROSSING | YES   | 4B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|              | Research crossover       | 108+36     | WEST VALLEY LINE | SIGNAL         | INTERLOCKING   | YES   | 4B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|              | WV4 - TPSS               | 103+42     | WEST VALLEY LINE | TRACTION POWER | SUBSTATION     | NO    | 4A   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|              | E-Center GC              | 70+28      | WEST VALLEY LINE | SIGNAL         | GRADE CROSSING | YES   | 4B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|              | Maple Way GC             | 51+50      | WEST VALLEY LINE | SIGNAL         | GRADE CROSSING | YES   | 4B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|              | WV5 - TPSS               | 48+80      | WEST VALLEY LINE | TRACTION POWER | SUBSTATION     | NO    | 4A   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|              | WV Interlocking          | 18+18      | WEST VALLEY LINE | SIGNAL         | INTERLOCKING   | YES   | 4B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|              | WV6 - TPSS               | ???        | WEST VALLEY LINE | TRACTION POWER | SUBSTATION     | NO    | 4A   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
| 15 Nodes     | UNION A                  | 270+03     | WEST VALLEY LINE | SIGNAL         | JUNCTION       | YES   | 5B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 1          |
|              | Haven Ave GC             | 615+56     | N/S MAIN LINE    | SIGNAL         | GRADE CROSSING | YES   | 5B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|              | I-80 Interlocking        | 597+26     | N/S MAIN LINE    | SIGNAL         | INTERLOCKING   | YES   | 5B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|              | SRH5-TPSS Huslers        | 591+50     | N/S MAIN LINE    | TRACTION POWER | SUBSTATION     | NO    | 5A   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 1          |
|              | S2700/2701               | 586+77     | N/S MAIN LINE    | SIGNAL         | CUT SECTION    | NO    | 0    | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|              | 2700 South GC            | 586+13     | N/S MAIN LINE    | SIGNAL         | GRADE CROSSING | YES   | 5B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|              | 2950 South GC            | 573+45     | N/S MAIN LINE    | SIGNAL         | GRADE CROSSING | YES   | 5B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|              | Gregson Ave GC           | 566+60     | N/S MAIN LINE    | SIGNAL         | GRADE CROSSING | YES   | 5B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|              | SRW6-TPSS Walton         | 551+14     | N/S MAIN LINE    | TRACTION POWER | SUBSTATION     | NO    | 5A   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|              | S3200/3201               | 551+14     | N/S MAIN LINE    | SIGNAL         | CUT SECTION    | NO    | 0    | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|              | Mill Creek PCC           | 540+51     | N/S MAIN LINE    | IT             | PCC            | 0     | 0    | YES                  | 0                              | 0                   | 0                              | 0                    | 0                          | 0                                  | 0                          | 0          |
|              | 3300 South GC            | 538+95     | N/S MAIN LINE    | SIGNAL         | GRADE CROSSING | YES   | 5B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|              | S3600/3601               | 517+76     | N/S MAIN LINE    | SIGNAL         | CUT SECTION    | NO    | 0    | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|              | Meadowbrook PCC          | 494+40     | N/S MAIN LINE    | IT             | PCC            | 0     | 0    | YES                  | 0                              | 0                   | 0                              | 0                    | 0                          | 0                                  | 0                          | 0          |
|              | 3900 South GC            | 490+59     | N/S MAIN LINE    | SIGNAL         | GRADE CROSSING | YES   | 5B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|              | SRC7-TPSS Central        | 487+00     | N/S MAIN LINE    | TRACTION POWER | SUBSTATION     | NO    | 5A   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|              | Central Interlocking     | 486+00     | N/S MAIN LINE    | SIGNAL         | INTERLOCKING   | YES   | 5B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|              | Central Ave GC           | 473+40     | N/S MAIN LINE    | SIGNAL         | GRADE CROSSING | YES   | 5B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|              | Fireclay Ave GC          | 457+75     | N/S MAIN LINE    | SIGNAL         | GRADE CROSSING | YES   | 5B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|              | Murray North PCC         | 454+41     | N/S MAIN LINE    | IT             | PCC            | 0     | 0    | YES                  | 0                              | 0                   | 0                              | 0                    | 0                          | 0                                  | 0                          | 0          |
|              | 4500 South GC            | 443+65     | N/S MAIN LINE    | SIGNAL         | GRADE CROSSING | YES   | 5B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|              | S4600/4601               | 441+18     | N/S MAIN LINE    | SIGNAL         | CUT SECTION    | NO    | 0    | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|              | 4800 South GC            | 419+00     | N/S MAIN LINE    | SIGNAL         | GRADE CROSSING | YES   | 5B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|              | SRM8-TPSS Murray         | 414+14     | N/S MAIN LINE    | TRACTION POWER | SUBSTATION     | NO    | 5A   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|              | Vine St GC               | 389+30     | N/S MAIN LINE    | SIGNAL         | GRADE CROSSING | YES   | 5B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|              | S5000/5001               | 397+30     | N/S MAIN LINE    | SIGNAL         | CUT SECTION    | YES   | 5B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|              | Murray Central PCC       | 391+38     | N/S MAIN LINE    | IT             | PCC            | 0     | 0    | YES                  | 0                              | 0                   | 0                              | 0                    | 0                          | 0                                  | 0                          | 0          |
| tes          | Ash Interlocking         | 388+81     | N/S MAIN LINE    | SIGNAL         | INTERLOCKING   | YES   | 6B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|              | Murray Interlocking      | 364+32     | N/S MAIN LINE    | SIGNAL         | INTERLOCKING   | YES   | 6B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|              | S5400/5401               | 363+50     | N/S MAIN LINE    | SIGNAL         | CUT SECTION    | NO    | 0    | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|              | SRP9-TPSS Pallas         | 362+43     | N/S MAIN LINE    | TRACTION POWER | SUBSTATION     | NO    | 6A   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|              | S5810/5811               | 335+25     | N/S MAIN LINE    | SIGNAL         | CUT SECTION    | NO    | 0    | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|              | 5813 South               | 333+75     | N/S MAIN LINE    | SIGNAL         | GRADE CROSSING | YES   | 6B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|              | 5900 South               | 328+06     | N/S MAIN LINE    | SIGNAL         | GRADE CROSSING | YES   | 6B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|              | 6100 South               | 312+00     | N/S MAIN LINE    | SIGNAL         | GRADE CROSSING | YES   | 6B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|              | Lovendahl B Interlocking | 302+80     | N/S Main Line    | SIGNAL         | JUNCTION       | YES   | 6B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |

## TRAX LOCATION MATRIX - ALL LINES

4/18/2022

## DESIGN

|          | LOCATION                 | STATIONING | SYSTEM          | TYPE           | SUB-TYPE       | RS400 | RING | NEW 144-STRAND FIBER | NEWWORK TOPOLOGY BLOCK DIAGRAM | FIBER LAYOUT TABLES | FIBER STRAND ALLOCATION TABLES | CIRCUIT PLAN UPDATES | IP ADDRESS UPDATE (SWITCH) | IP ADDRESS UPDATE VITAL CONTROLLER | IP ADDRESS UPDATE (OFFICE) | NEW ROUTER |
|----------|--------------------------|------------|-----------------|----------------|----------------|-------|------|----------------------|--------------------------------|---------------------|--------------------------------|----------------------|----------------------------|------------------------------------|----------------------------|------------|
| 15 Nodes | Lovendahl A Interlocking | 296+95     | N/S MAIN LINE   | SIGNAL         | INTERLOCKING   | YES   | 6B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 1          |
|          | Fashion Place            | 292+40     | N/S MAIN LINE   | IT             | PCC            | 0     | 0    | YES                  | 0                              | 0                   | 0                              | 0                    | 0                          | 0                                  | 0                          | 0          |
|          | Sugar Interlocking       | 284+50     | N/S MAIN LINE   | SIGNAL         | INTERLOCKING   | YES   | 6B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | ATWOOD TPSS              | 290+25     | N/S MAIN LINE   | TRACTION POWER | SUBSTATION     | NO    | 6A   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 1          |
|          | Winchester St GC         | 2615+64    | MID-JORDAN LINE | SIGNAL         | GRADE CROSSING | YES   | 6B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | Ephraim B Interlocking   | 2615+45    | MID-JORDAN LINE | SIGNAL         | INTERLOCKING   | YES   | 6B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | Ephraim A Interlocking   | 2610+55    | MID-JORDAN LINE | SIGNAL         | INTERLOCKING   | YES   | 6B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | Cottonwood St GC         | 2610+55    | MID-JORDAN LINE | SIGNAL         | GRADE CROSSING | YES   | 6B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | Tunnel Interlocking      | 1604+45    | MID-JORDAN LINE | SIGNAL         | GRADE CROSSING | YES   | 6B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | Access Interlocking      | 2596+56    | MID-JORDAN LINE | SIGNAL         | INTERLOCKING   | YES   | 6B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
| 27 Nodes | MRSC RS400               |            | MID-JORDAN LINE | SERVICE CENTER | SERVICE CENTER | YES   | 6B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | MRSC RX1500              |            | MID-JORDAN LINE | SERVICE CENTER | SERVICE CENTER | YES   | 7B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 1          |
|          | 6960 South GC            | 2573+40    | MID-JORDAN LINE | SIGNAL         | GRADE CROSSING | YES   | 7B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | Junction B Interlocking  | 2567+30    | MID-JORDAN LINE | SIGNAL         | INTERLOCKING   | YES   | 7B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | Junction A Interlocking  | 2556+48    | MID-JORDAN LINE | SIGNAL         | INTERLOCKING   | YES   | 7B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 1          |
|          | East 9th Ave GC          | 1551+33    | MID-JORDAN LINE | SIGNAL         | GRADE CROSSING | YES   | 7B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | Freight Interlocking     | 2545+46    | MID-JORDAN LINE | SIGNAL         | INTERLOCKING   | YES   | 7B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | Bingham Junction GC      | 2526+05    | MID-JORDAN LINE | SIGNAL         | GRADE CROSSING | YES   | 7B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | SRJ1 TPSS                |            | MID-JORDAN LINE | TRACTION POWER | SUBSTATION     | NO    | 7A   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 1          |
|          | E1101                    | 1512+63    | MID-JORDAN LINE | SIGNAL         | CUT SECTION    | YES   | 7B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | 1300 West GC             | 1465+45    | MID-JORDAN LINE | SIGNAL         | GRADE CROSSING | YES   | 7B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | 1500 West CS             | 1453+00    | MID-JORDAN LINE | SIGNAL         | CUT SECTION    | YES   | 7B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | SRJ2 TPSS                |            | MID-JORDAN LINE | TRACTION POWER | SUBSTATION     | NO    | 7A   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | Redwood Rd GC            | 1436+90    | MID-JORDAN LINE | SIGNAL         | GRADE CROSSING | YES   | 7B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | Quick Interlocking       | 2431+12    | MID-JORDAN LINE | SIGNAL         | INTERLOCKING   | YES   | 7B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | 2200 West GC             | 2410+93    | MID-JORDAN LINE | SIGNAL         | GRADE CROSSING | YES   | 7B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | SRJ3 TPSS                |            | MID-JORDAN LINE | TRACTION POWER | SUBSTATION     | NO    | 7A   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | 2700 West GC             | 2382+79    | MID-JORDAN LINE | SIGNAL         | GRADE CROSSING | YES   | 7B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | 3200 West GC             | 2352+87    | MID-JORDAN LINE | SIGNAL         | GRADE CROSSING | YES   | 7B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | Jordan Valley Way GC     | 1325+13    | MID-JORDAN LINE | SIGNAL         | GRADE CROSSING | YES   | 7B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | SRJ4 TPSS                |            | MID-JORDAN LINE | TRACTION POWER | SUBSTATION     | NO    | 7A   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | 3800 West CS             | 1310+25    | MID-JORDAN LINE | SIGNAL         | CUT SECTION    | YES   | 7B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | 4000 West GC             | 1294+95    | MID-JORDAN LINE | SIGNAL         | GRADE CROSSING | YES   | 7B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | North Interlocking       | 1286+50    | MID-JORDAN LINE | SIGNAL         | INTERLOCKING   | YES   | 7B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | 9000 South GC            | 1279+23    | MID-JORDAN LINE | SIGNAL         | GRADE CROSSING | YES   | 7B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | Wasatch Meadows GC       | 1255+45    | MID-JORDAN LINE | SIGNAL         | GRADE CROSSING | YES   | 7B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | SRJ5 TPSS                |            | MID-JORDAN LINE | TRACTION POWER | SUBSTATION     | NO    | 7A   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | 4800 West GC             | 1233+73    | MID-JORDAN LINE | SIGNAL         | GRADE CROSSING | YES   | 7B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | 5200 West GC             | 1201+65    | MID-JORDAN LINE | SIGNAL         | GRADE CROSSING | YES   | 7B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | 5400 West Lock House     | 1189+00    | MID-JORDAN LINE | SIGNAL         | GRADE CROSSING | YES   | 7B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | W5600                    | 1177+00    | MID-JORDAN LINE | SIGNAL         | CUT SECTION    | YES   | 7B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | E5601                    | 1164+24    | MID-JORDAN LINE | SIGNAL         | CUT SECTION    | YES   | 7B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | SRJ6 TPSS                |            | MID-JORDAN LINE | TRACTION POWER | SUBSTATION     | NO    | 7A   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | SRJ7 TPSS                |            | MID-JORDAN LINE | TRACTION POWER | SUBSTATION     | NO    | 7A   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | Kennecott Interlocking   | 2067+25    | MID-JORDAN LINE | SIGNAL         | INTERLOCKING   | YES   | 7B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | SRJ8 TPSS                |            | MID-JORDAN LINE | TRACTION POWER | SUBSTATION     | NO    | 7A   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |

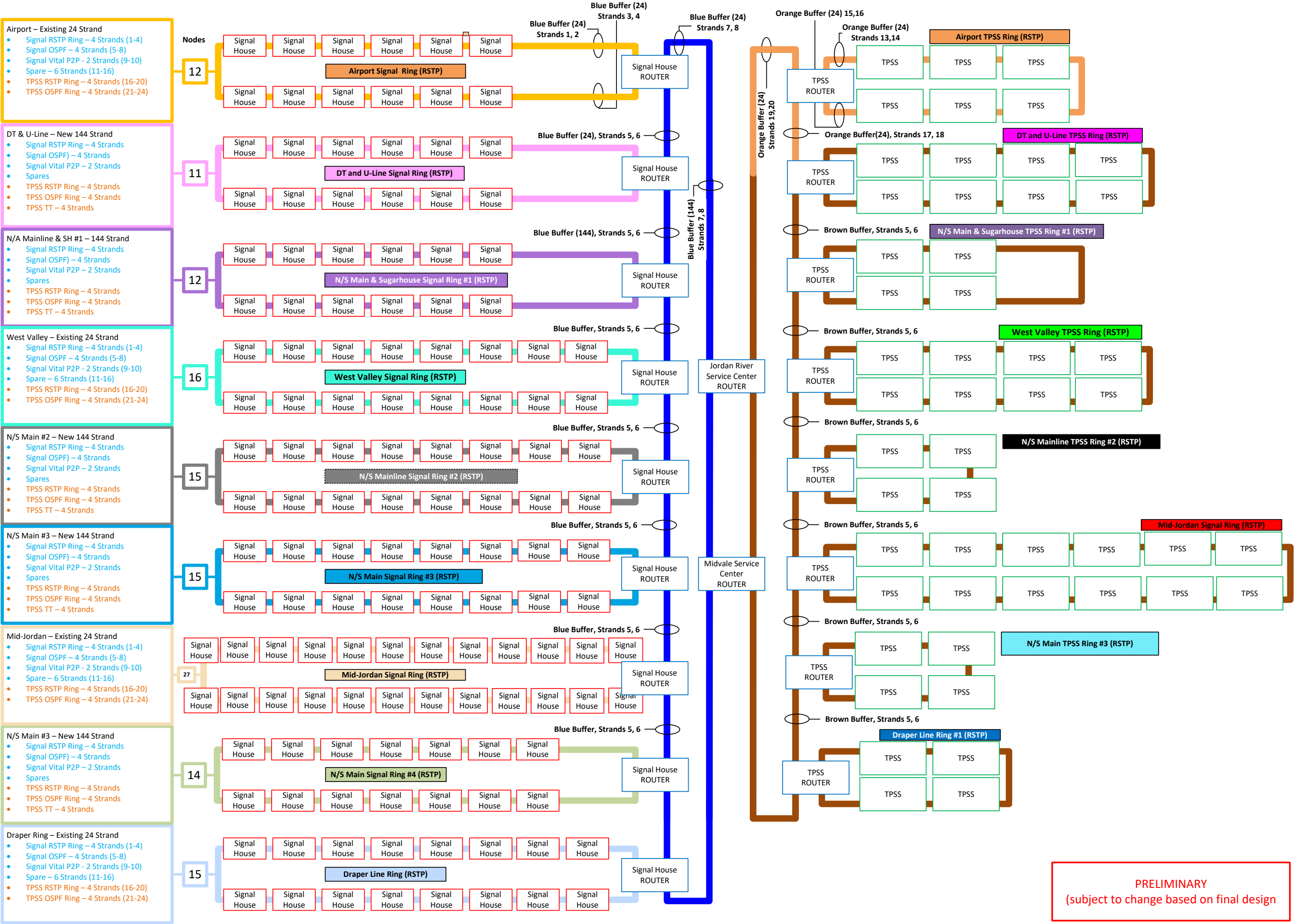
## TRAX LOCATION MATRIX - ALL LINES

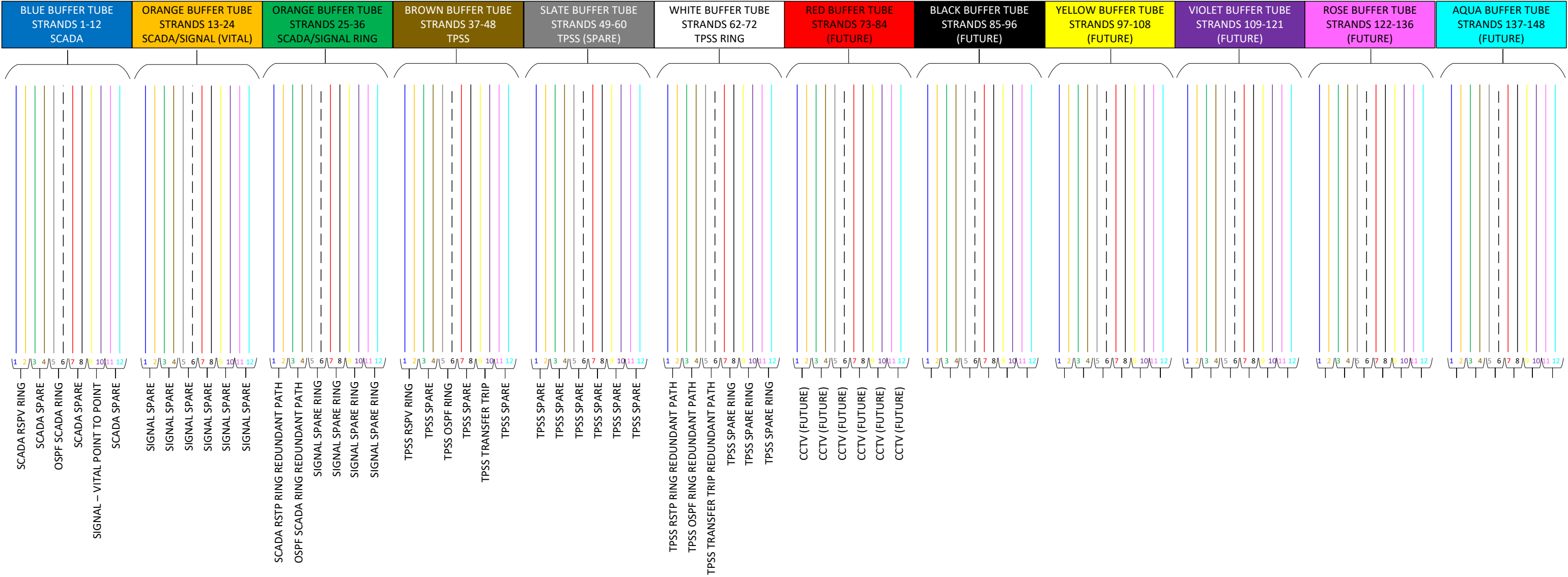
4/18/2022

## DESIGN

|          | LOCATION                  | STATIONING | SYSTEM          | TYPE           | SUB-TYPE       | RS400 | RING | NEW 144-STRAND FIBER | NEWWORK TOPOLOGY BLOCK DIAGRAM | FIBER LAYOUT TABLES | FIBER STRAND ALLOCATION TABLES | CIRCUIT PLAN UPDATES | IP ADDRESS UPDATE (SWITCH) | IP ADDRESS UPDATE VITAL CONTROLLER | IP ADDRESS UPDATE (OFFICE) | NEW ROUTER |
|----------|---------------------------|------------|-----------------|----------------|----------------|-------|------|----------------------|--------------------------------|---------------------|--------------------------------|----------------------|----------------------------|------------------------------------|----------------------------|------------|
| 14 Nodes | YRY1 TPSS                 | 1592+19    | MID-JORDAN LINE | TRACTION POWER | SUBSTATION     | NO    | 8A   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 1          |
|          | YRY3 TPSS                 |            | MID-JORDAN LINE | TRACTION POWER | SUBSTATION     | NO    | 8A   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | Valley Interlocking       | 2578+20    | MID-JORDAN LINE | SIGNAL         | INTERLOCKING   | YES   | 8B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | YRY2 TPSS                 |            | MID-JORDAN LINE | TRACTION POWER | SUBSTATION     | NO    | 8A   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | S7100/7101                | 256+65     | N/S MAIN LINE   | SIGNAL         | CUT SECTION    | NO    | 0    | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | 7200 South GC             | 246+15     | N/S MAIN LINE   | SIGNAL         | GRADE CROSSING | YES   | 8B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | Fort Union PCC            | 240+85     | N/S MAIN LINE   | IT             | PCC            | 0     | 0    | YES                  | 0                              | 0                   | 0                              | 0                    | 0                          | 0                                  | 0                          | 0          |
|          | SRS11-TPSS Sugar          | 236+59     | N/S MAIN LINE   | TRACTION POWER | SUBSTATION     | NO    | 8A   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | S7500/7501                | 227+30     | N/S MAIN LINE   | SIGNAL         | CUT SECTION    | NO    | 8A   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | 7500 South GC             | 227+28     | N/S MAIN LINE   | SIGNAL         | GRADE CROSSING | YES   | 8B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | 7720 South GC             | 209+35     | N/S MAIN LINE   | SIGNAL         | GRADE CROSSING | YES   | 8B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | Midvale Center PCC        | 205+30     | N/S MAIN LINE   | IT             | PCC            | 0     | 0    | YES                  | 0                              | 0                   | 0                              | 0                    | 0                          | 0                                  | 0                          | 0          |
|          | Cushing A Interlocking    | 198+80     | N/S MAIN LINE   | SIGNAL         | INTERLOCKING   | YES   | 8B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 1          |
|          | Cushing B Interlocking    | 190+80     | N/S MAIN LINE   | SIGNAL         | INTERLOCKING   | YES   | 8B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | 8000 South GC             | 185+61     | N/S MAIN LINE   | SIGNAL         | GRADE CROSSING | YES   | 8B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | 8120 South GC             | 175+65     | N/S MAIN LINE   | SIGNAL         | GRADE CROSSING | YES   | 8B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | SRR12-TPSS Rio Grande     | 171+20     | N/S MAIN LINE   | TRACTION POWER | SUBSTATION     | NO    | 8A   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | Pioneer B Interlocking    | 168+80     | N/S MAIN LINE   | SIGNAL         | INTERLOCKING   | YES   | 8B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | Pioneer A Interlocking    | 158+90     | N/S MAIN LINE   | SIGNAL         | INTERLOCKING   | YES   | 8B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | 8530 South GC             | 148+90     | N/S MAIN LINE   | SIGNAL         | GRADE CROSSING | YES   | 8B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | S8750/8751                | 139+00     | N/S MAIN LINE   | SIGNAL         | CUT SECTION    | NO    | 0    | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | 8720/8680 South GC        | 138+80     | N/S MAIN LINE   | SIGNAL         | GRADE CROSSING | YES   | 8B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | 8800 South GC             | 132+33     | N/S MAIN LINE   | SIGNAL         | GRADE CROSSING | YES   | 8B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | Historic Sandy PCC        | 123+25     | N/S MAIN LINE   | IT             | PCC            | 0     | 0    | YES                  | 0                              | 0                   | 0                              | 0                    | 0                          | 0                                  | 0                          | 0          |
|          | 9000 South GC             | 120+15     | N/S MAIN LINE   | SIGNAL         | GRADE CROSSING | YES   | 8B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
| 15 Nodes | Sandy Expo PCC            | 97+50      | N/S MAIN LINE   | IT             | PCC            | 0     | 0    | YES                  | 0                              | 0                   | 0                              | 0                    | 0                          | 0                                  | 0                          | 0          |
|          | SRN13-TPSS 9400 South     | 98+00      | DRAPER LINE     | TRACTION POWER | SUBSTATION     | NO    | 9A   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | S9301                     |            | DRAPER LINE     | SIGNAL         | CUT SECTION    | NO    | 0    | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | 9400 South GC             | 92+50      | DRAPER LINE     | SIGNAL         | GRADE CROSSING | YES   | 9B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | 9800 South GC             | 63+70      | DRAPER LINE     | SIGNAL         | GRADE CROSSING | NO    | 0    | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | Beetdigger Interlocking   | 63+70      | DRAPER LINE     | SIGNAL         | INTERLOCKING   | YES   | 9B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 1          |
|          | Sandy Civic Center        | ???        | N/S MAIN LINE   | IT             | PCC            | 0     | 0    | YES                  | 0                              | 0                   | 0                              | 0                    | 0                          | 0                                  | 0                          | 0          |
|          | Draper North Interlocking | 2657+70    | DRAPER LINE     | SIGNAL         | INTERLOCKING   | YES   | 9B   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 0          |
|          | SRD14-TPSS Jordan         | 1654+61    | DRAPER LINE     | TRACTION POWER | SUBSTATION     | NO    | 9A   | YES                  | 1                              | 1                   | 1                              | 1                    | 1                          | 1                                  | 1                          | 1          |
|          | Draper So. Interlocking   | 2653+37    | DRAPER LINE     | SIGNAL         | INTERLOCKING   | YES   | 9B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | Drycreek Interlocking     | 2645+20    | DRAPER LINE     | SIGNAL         | INTERLOCKING   | YES   | 9B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | 10600 South GC            | 1615+09    | DRAPER LINE     | SIGNAL         | GRADE CROSSING | YES   | 9B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | SRD15-TPSS DRP1           |            | DRAPER LINE     | TRACTION POWER | SUBSTATION     | NO    | 9A   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | 11000 South GC            | 1588+53    | DRAPER LINE     | SIGNAL         | GRADE CROSSING | YES   | 9B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | 11400 South GC            | 2563+49    | DRAPER LINE     | SIGNAL         | GRADE CROSSING | YES   | 9B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | 700 East GC               | 2524+20    | DRAPER LINE     | SIGNAL         | GRADE CROSSING | YES   | 9B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | SRD16- TPSS DRP2          |            | DRAPER LINE     | TRACTION POWER | SUBSTATION     | NO    | 9A   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | 12000 South GC            | 2512+92    | DRAPER LINE     | SIGNAL         | GRADE CROSSING | YES   | 9B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | Draper West Interlocking  | 2504+00    | DRAPER LINE     | SIGNAL         | INTERLOCKING   | YES   | 9B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | Draper East Interlocking  | 2500+26    | DRAPER LINE     | SIGNAL         | INTERLOCKING   | YES   | 9B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | Draper Parkway GC         | 1486+89    | DRAPER LINE     | SIGNAL         | GRADE CROSSING | YES   | 9B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |
|          | Draper Term Interlocking  | 1477+10    | DRAPER LINE     | SIGNAL         | INTERLOCKING   | YES   | 9B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |

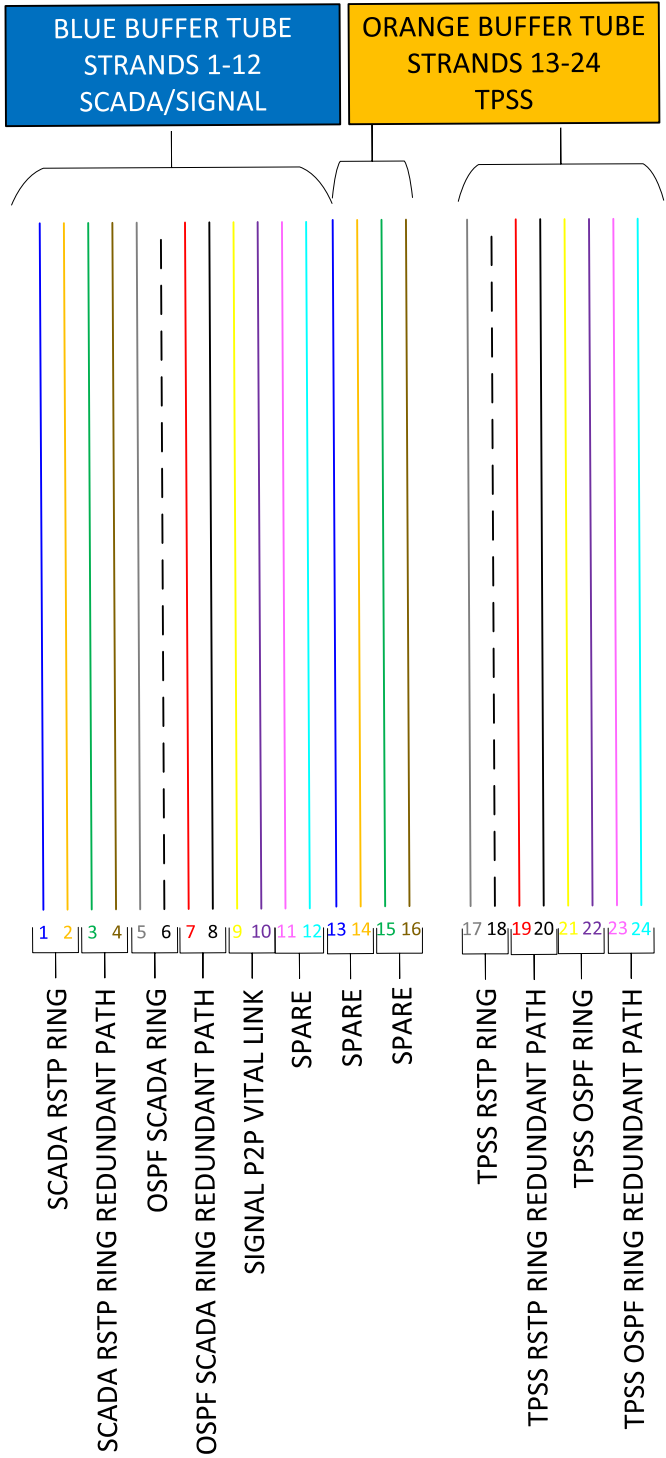
| TRAX LOCATION MATRIX - ALL LINES |            |             |                |                |       |      | 4/18/2022            |                                | DESIGN              |                                |                      |                            |                                    |                            |            |  |
|----------------------------------|------------|-------------|----------------|----------------|-------|------|----------------------|--------------------------------|---------------------|--------------------------------|----------------------|----------------------------|------------------------------------|----------------------------|------------|--|
| LOCATION                         | STATIONING | SYSTEM      | TYPE           | SUB-TYPE       | RS400 | RING | NEW 144-STRAND FIBER | NEWWORK TOPOLOGY BLOCK DIAGRAM | FIBER LAYOUT TABLES | FIBER STRAND ALLOCATION TABLES | CIRCUIT PLAN UPDATES | IP ADDRESS UPDATE (SWITCH) | IP ADDRESS UPDATE VITAL CONTROLLER | IP ADDRESS UPDATE (OFFICE) | NEW ROUTER |  |
| SRD17-TPSS DRP3                  | 1475+00    | DRAPER LINE | TRACTION POWER | SUBSTATION     | NO    | 9A   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |  |
| Pioneer Rd GC                    | 1469+27    | DRAPER LINE | SIGNAL         | GRADE CROSSING | YES   | 9B   | NO                   | 1                              | 0                   | 1                              | 0                    | 1                          | 1                                  | 1                          | 0          |  |
|                                  |            |             |                |                |       | 138  | 147                  | 203                            | 117                 | 203                            | 117                  | 203                        | 203                                | 203                        | 20         |  |



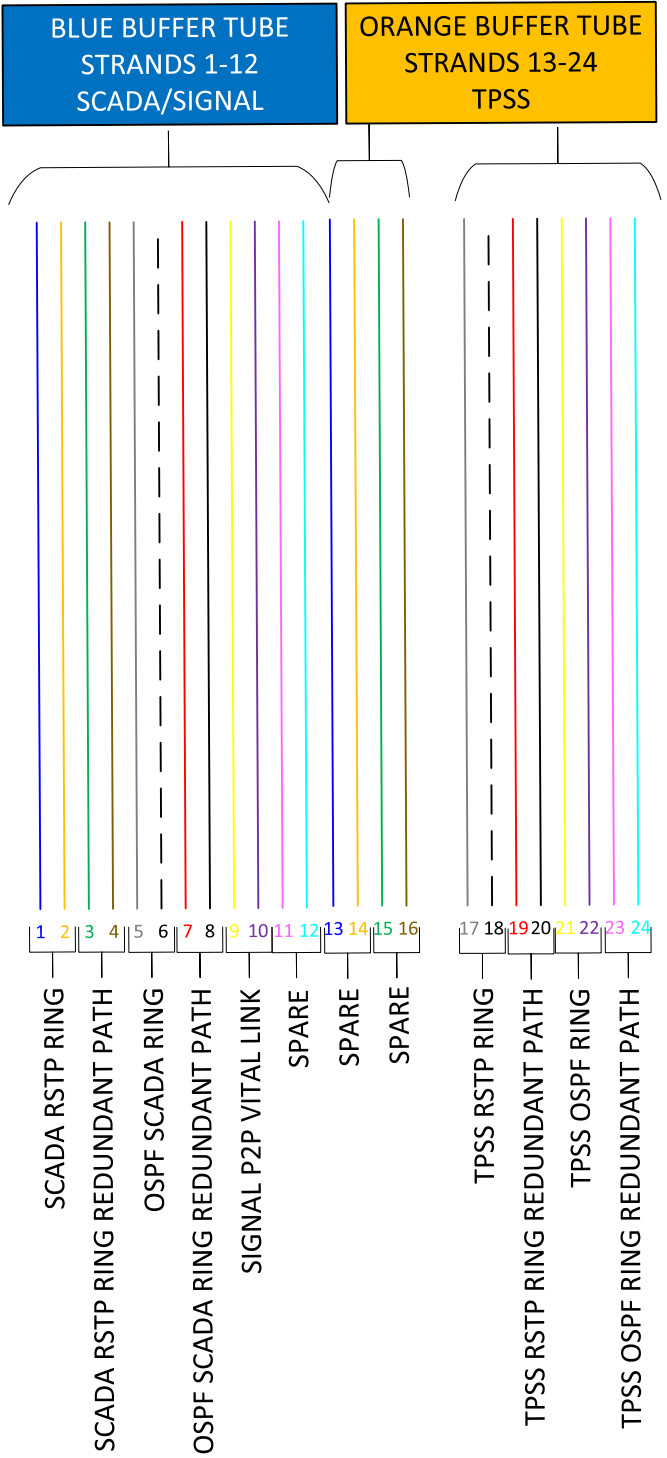


Fiber Allocation  
N/S Main and U-Line Locations  
(144 Strand)

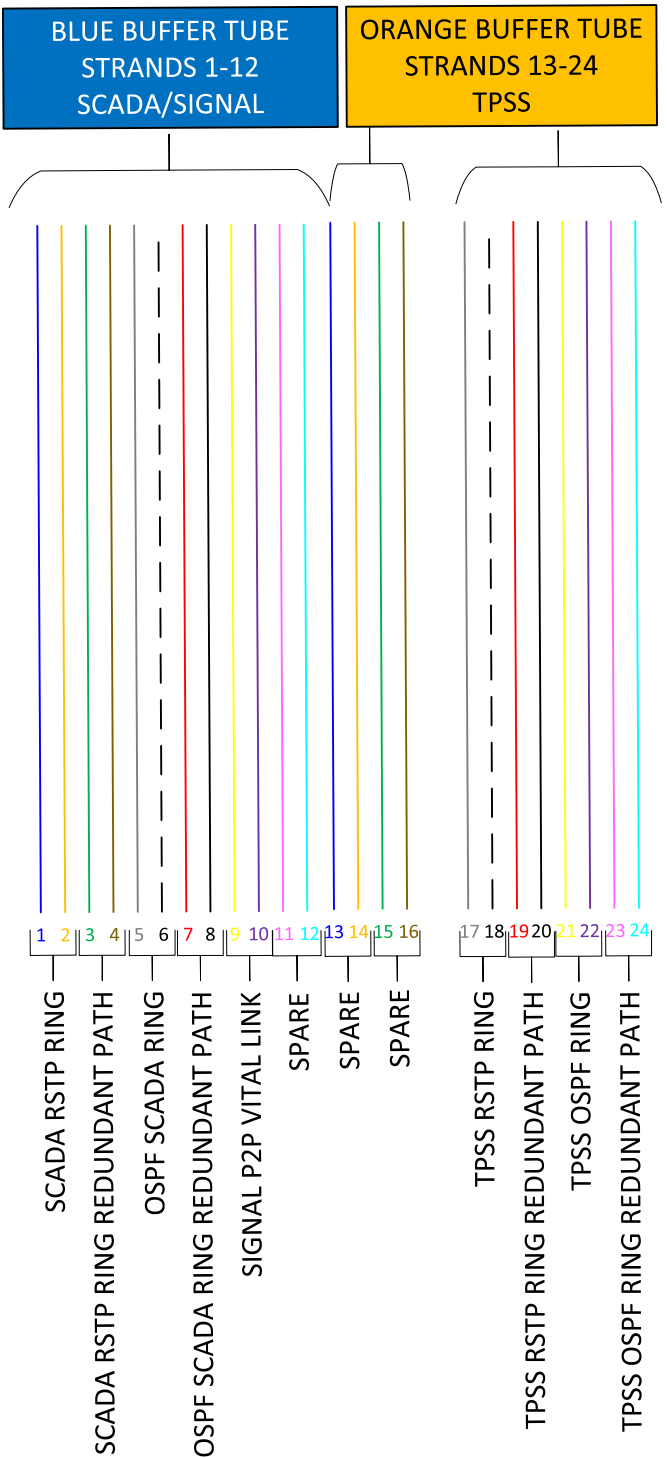
PRELIMINARY  
(subject to change based on final design)



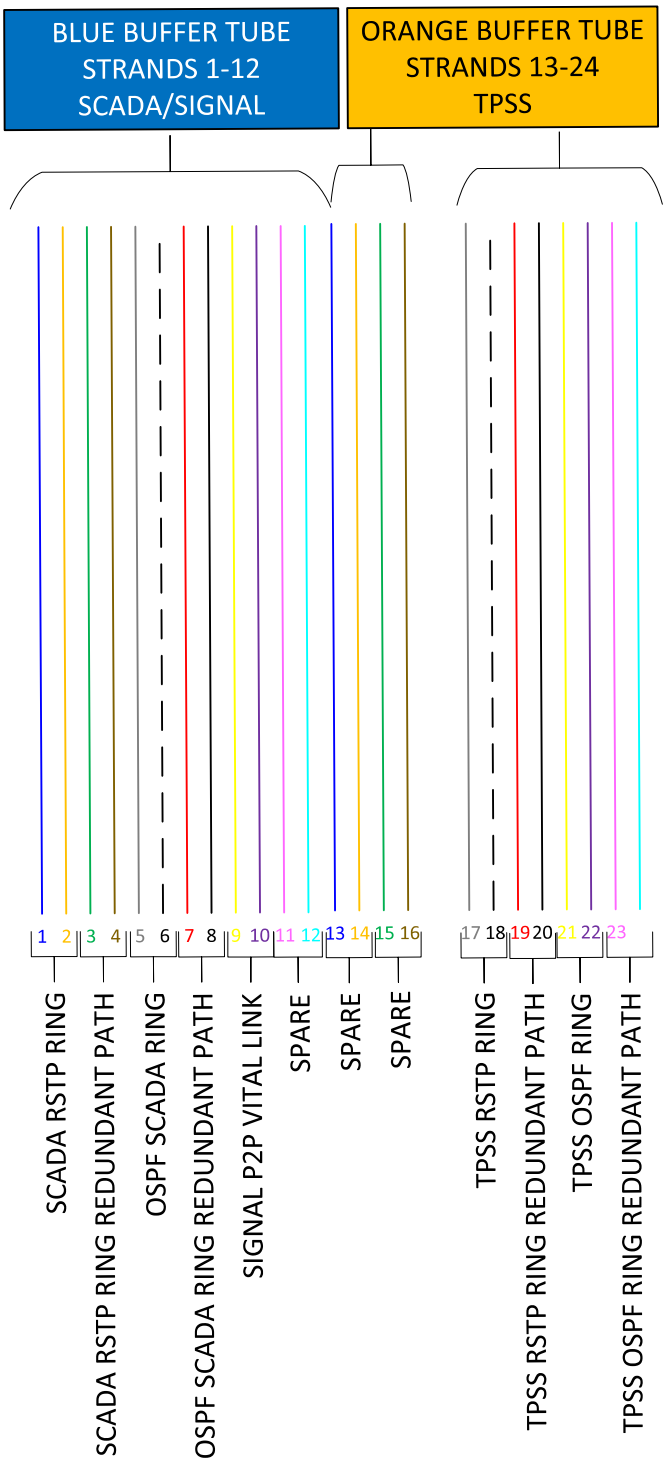
Fiber Allocation for Airport  
(24 Strand)



Fiber Allocation for West Valley  
(24 Strand)



Fiber Allocation for Mid-Jordan  
(24 Strand)



Fiber Allocation for Draper  
(24 Strand)

PRELIMINARY  
(subject to change based on final design)