Project Title: [redacted] PILC Cable Replacement	Project Number: CD01759
Date Prepared: 10/26/2023	**Company:** Eversource CT
Organization: Distribution Engineering	**Project Category:** UG CABLE & EQUIPMNT REPLACEMNT
Project Initiator: [redacted]	**Project Type:** Specific
Initiating Organization: Distribution	**Capital Investment part of original Op Plan:** Yes
Project Manager: [redacted]	**Emergency Related Request?** No
Project Sponsor: [redacted]	**Facility Type** (check all that apply): ☐ PTF ☐ non-PTF ☒ Distribution ☐ N/A (General Plant)
Required in service date: 12/31/2023	
Total Capital Request: S2,518.1	**Authorization Type:** Full Funding

1. Executive Summary

Project CD01759 was established to replace the Paper Insulated Lead Covered (PILC) cable on the [redacted] since 1/1/2007, with the latest one occurring on 04/24/2019. This project is part of an overall strategy to address poor performing PILC cable in the underground distribution system.

1. Approved Initial Funding Authorization: $2,417K at the 6/17/2021 CT-PAC meeting.
2. Requesting Full Funding authorization: $2,518.1K or 104% of the Initial Funding authorization.
3. Project Location:
    1. Division: Western
    2. District: Waterbury AWC
    3. Town: Waterbury

The variance is due in part to increased labor and material charges. The legacy estimating units used to produce the Initial Funding estimate are about 30% lower than the estimates used today, which were updated to reflect increased labor & material costs. This was offset by the fact that the amount of cable required was less than was originally estimated. The laterals associated with the Jefferson Square switchgear were included in the original scope.

However, upon inspection, it was determined that those laterals were in fact rubber insulated cable and not PILC. This amounts to about 720' less cable than was originally estimated.

4. Project Cost Summary

Note: Dollar values are in thousands.

Capital Costs	Year 2023	Year 2024	Year 2025+	Total
Direct Capital Costs				
Internal Labor and Construction Equipment	254.2	0.0	0.0	254.2
Outside Services	346.4	0.0	0.0	346.4
Materials	463.3	0.0	0.0	463.3
Removals	292.8	0.0	0.0	292.8
Risk and Contingency	228.9	0.0	0.0	228.9
Other	23.0	0.0	0.0	23.0
Subtotal – Direct Costs	**1,608.7**	**0.0**	**0.0**	**1,608.7**
Indirect Capital Costs				
Indirect/Overheads (including benefits)	909.4	0.0	0.0	909.4
Capitalized interest or AFUDC, if any	0.0	0.0	0.0	0.0
Subtotal – Indirect Costs	**909.4**	**0.0**	**0.0**	**909.4**
Total Gross Capital Costs	**2,518.1**	**0.0**	**0.0**	**2,518.1**
Customer Contribution	**0.0**	**0.0**	**0.0**	**0.0**
Total Net Capital Project Costs	**2,518.1**	**0.0**	**0.0**	**2,518.1**

5. Technical Justification

Background, Project Need/Justification, and Project Scope

1. Background

[redacted]

The following is a list of [redacted] from 1/1/2007 to 12/31/2020:

[redacted]



2. Project Need

Project CD01759 has been established to replace the PILC cable on the [redacted]

Project CD01759 is part of the initiative to eliminate PILC underground cable due to demonstrated poor performance of this type of cable on our distribution system. PILC copper cable was used extensively in the urban underground electrical systems that were built in the early/mid 1900s. This cable is now reaching the end of its useful life, and cable failures cause feeder lockouts which can impact customer reliability and satisfaction. Beginning in 2018, Eversource - CT has established a program to proactively replace PILC cable. Targeted cable replacement is prioritized based on outage history/reliability.

3. Project Scope

This project proposes the following cable replacement:

1. [redacted]

2. Alternatives Considered

Option 1 – [redacted] This is the preferred alternative.

Option 2 – same as option one, [redacted] The cost of this alternative is now estimated to be $276.7K. Since [redacted]

Project Option Comparison

Design Criteria	Option [redacted]	
Authorization Type	Full	Partial
Capital Cost	$2,518.1K	S2,767.3K
Expense Cost	$64.6K	$70.9K
Total Cost	$2,582.7K	$2,838.2K
Total Cost / MVA Added	$982/MVA	$921/MVA
Total Cost / CM Saved	$371.98/CM	$408.80/CM
Total Cost / CI Saved	$37.7K/CI	$41.4K/CI
Preferred option	X	

3. Project Schedule

Milestone/Phase Name	Estimated Date
Partial Approval	06/17/2021
100% Detailed Engineering Completion	6/19/2023
Fully Funded	10/25/2023
Construction Start	7/1/2023
In Service Date	12/31/2023

4. Regulatory Decisions

1. N/A

2. Codes and Standards

3. N/A

4. Risk and Contingencies

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Actual cost higher than estimated due to scope changes.	2023	Medium	Included contingency costs in the funding request. Perform detailed Field Analysis and walk down in project development to avoid potential issues.
Customer Permission / Siting Council / Municipal approvals	2023	Low	Design to minimize customer impact. Project Preplanning and customer/community outreach.
Internal construction resources not available to perform the work.	2023	Medium	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
Internal engineering resources not available to perform the work.	2023	Medium	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
Materials Shortage or long lead times	2023	Low	Pre-order long lead time material; minimize the use of non-standard and non-stocked material.
Storm delays	2023	Low	If storm activity delays work, we may be forced to use external resources.

System abnormal configuration	2023	Medium	Schedule work to minimize system abnormal time. Install temporary bypasses/equipment if system will be abnormal for extended periods.
Technological risks involving integration of new technology	2023	Low	Before use of new technology ensure support of standards and manufacturer. Schedule project to accommodate for extra time or ensure new technology is not on the critical path.
Wetlands / Environmentally sensitive area	2023	Low	Use of mats and specialty equipment, only work during certain times of the year.

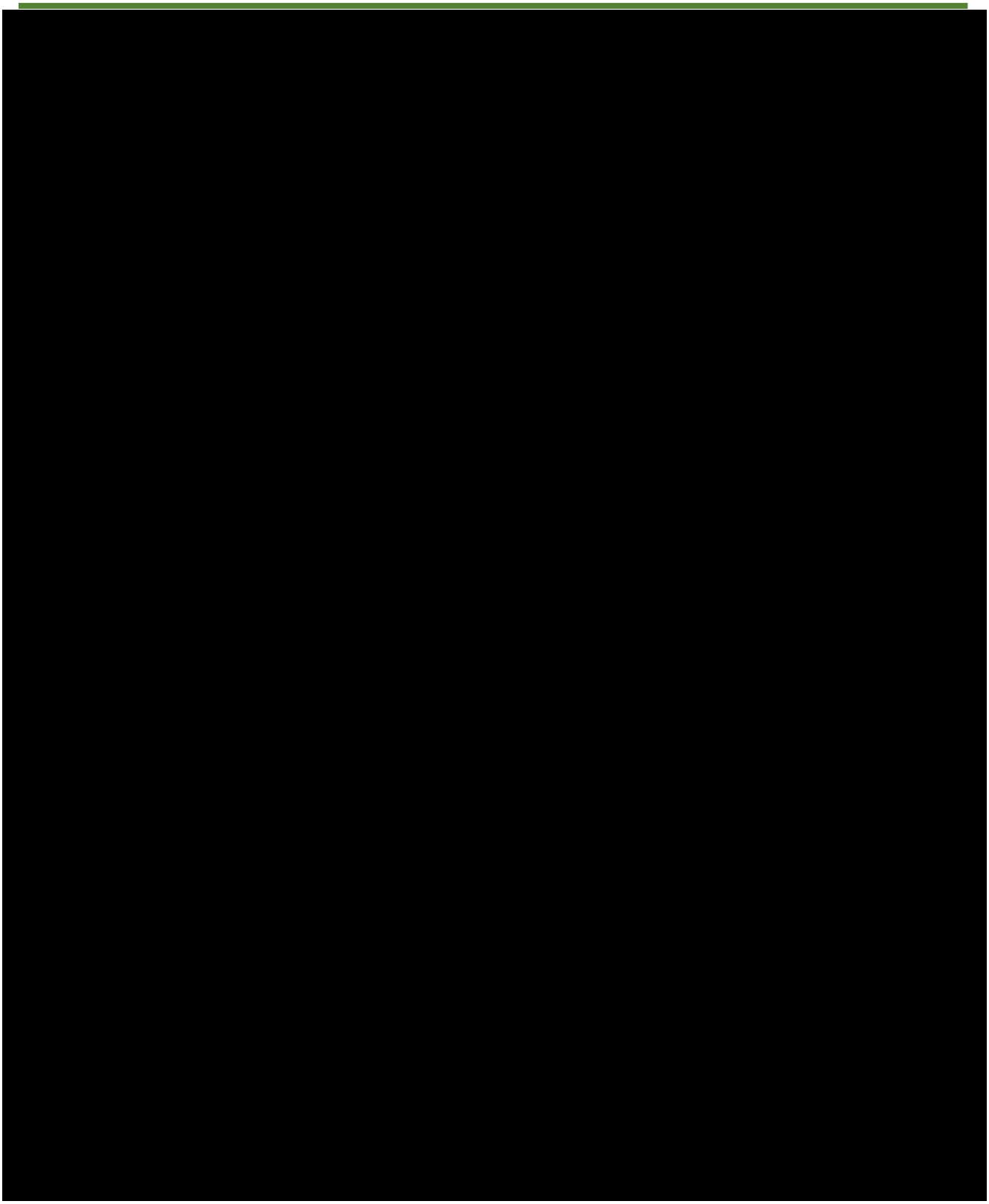
5. References

References
1. None

6. Attachments (One Line Diagrams, Images, etc.)

Attachment	Included in Submittal?
A. Geographic Map	*YES*
B. System and Station One-Lines	*N/A*
C. Load Projections	*YES*
D. Initial Funding PAF	*YES*

Attachment A - Maps





Attachment B – One-Lines

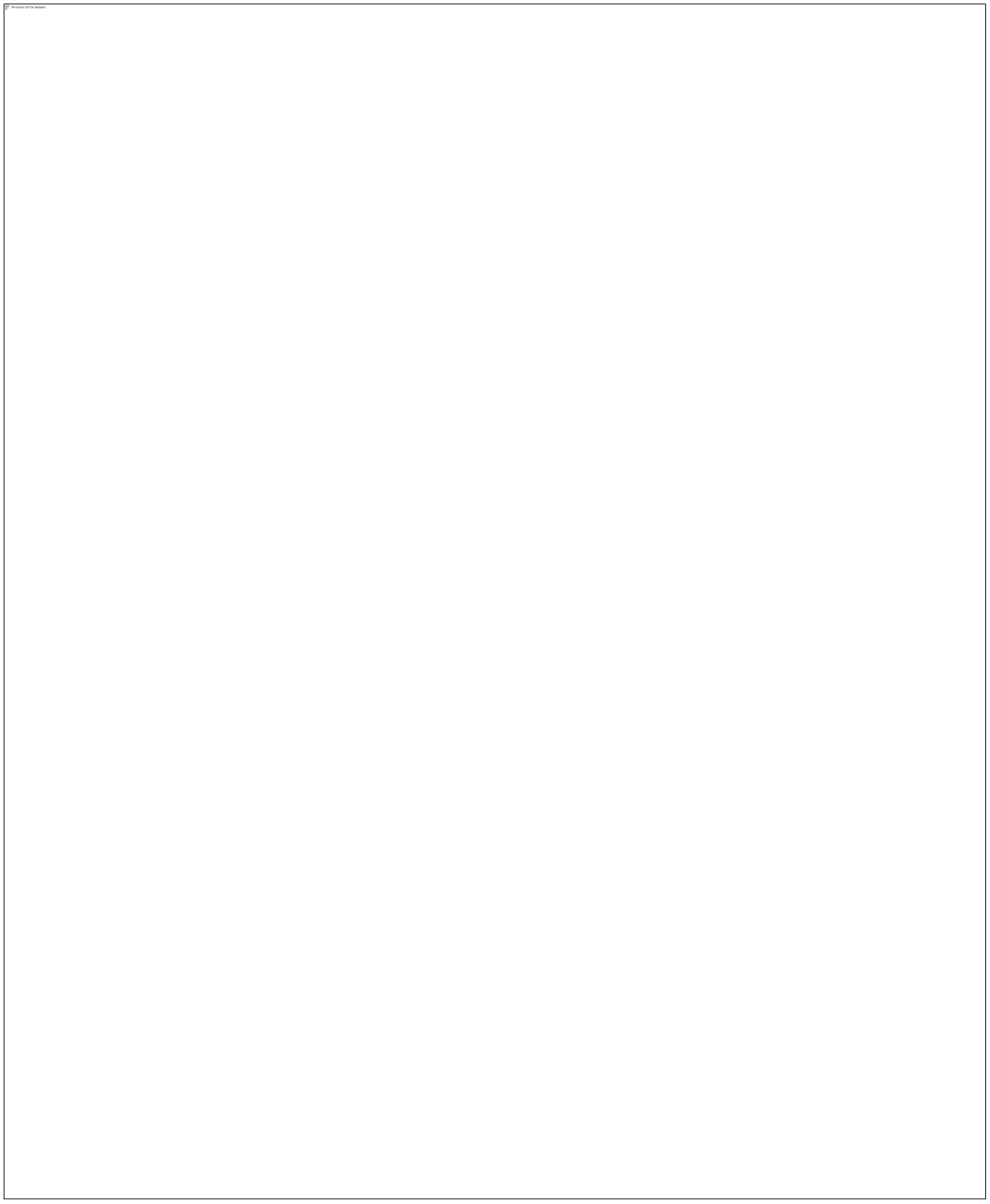
7. N/A

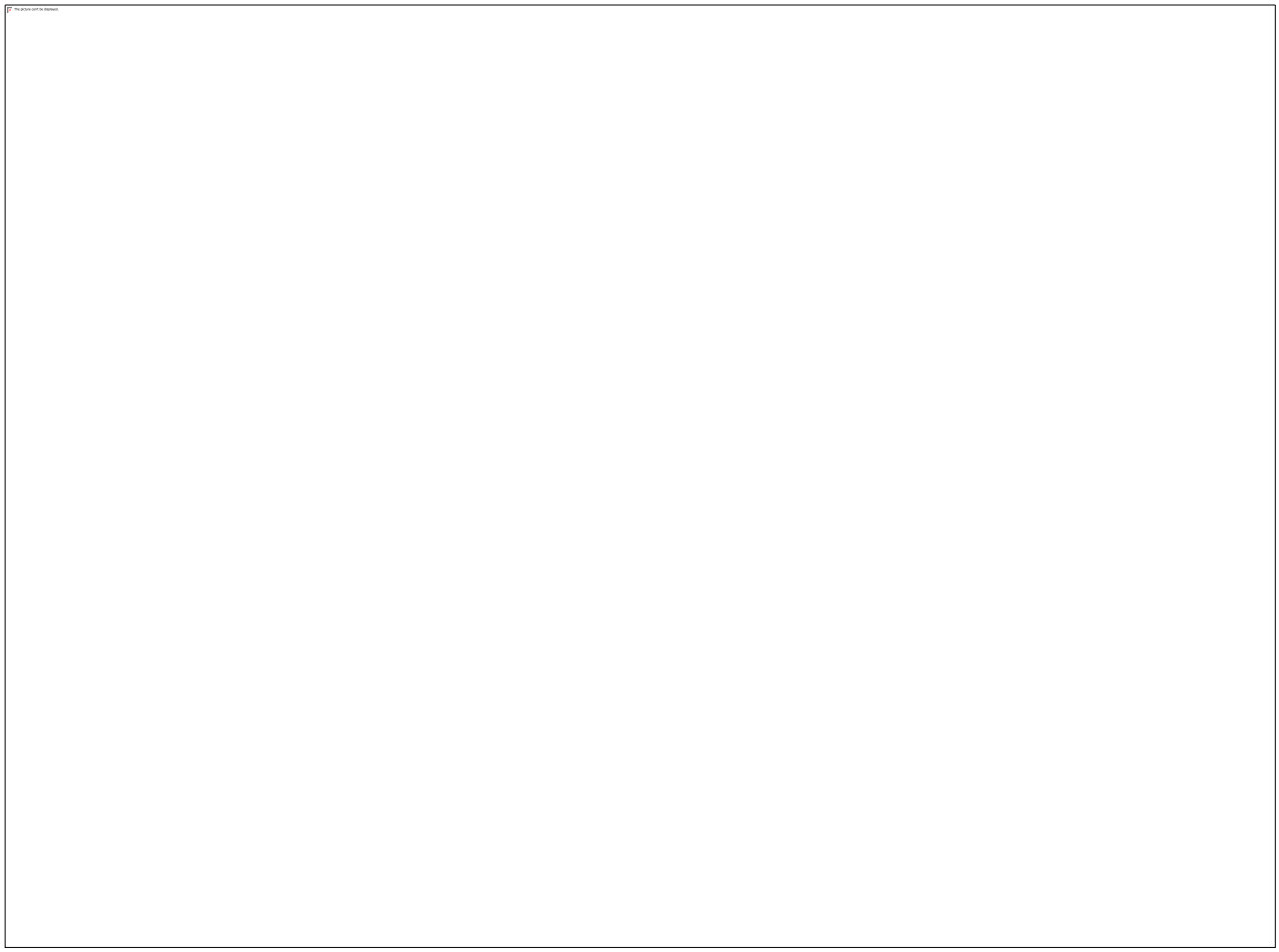
Attachment C – Load Projections

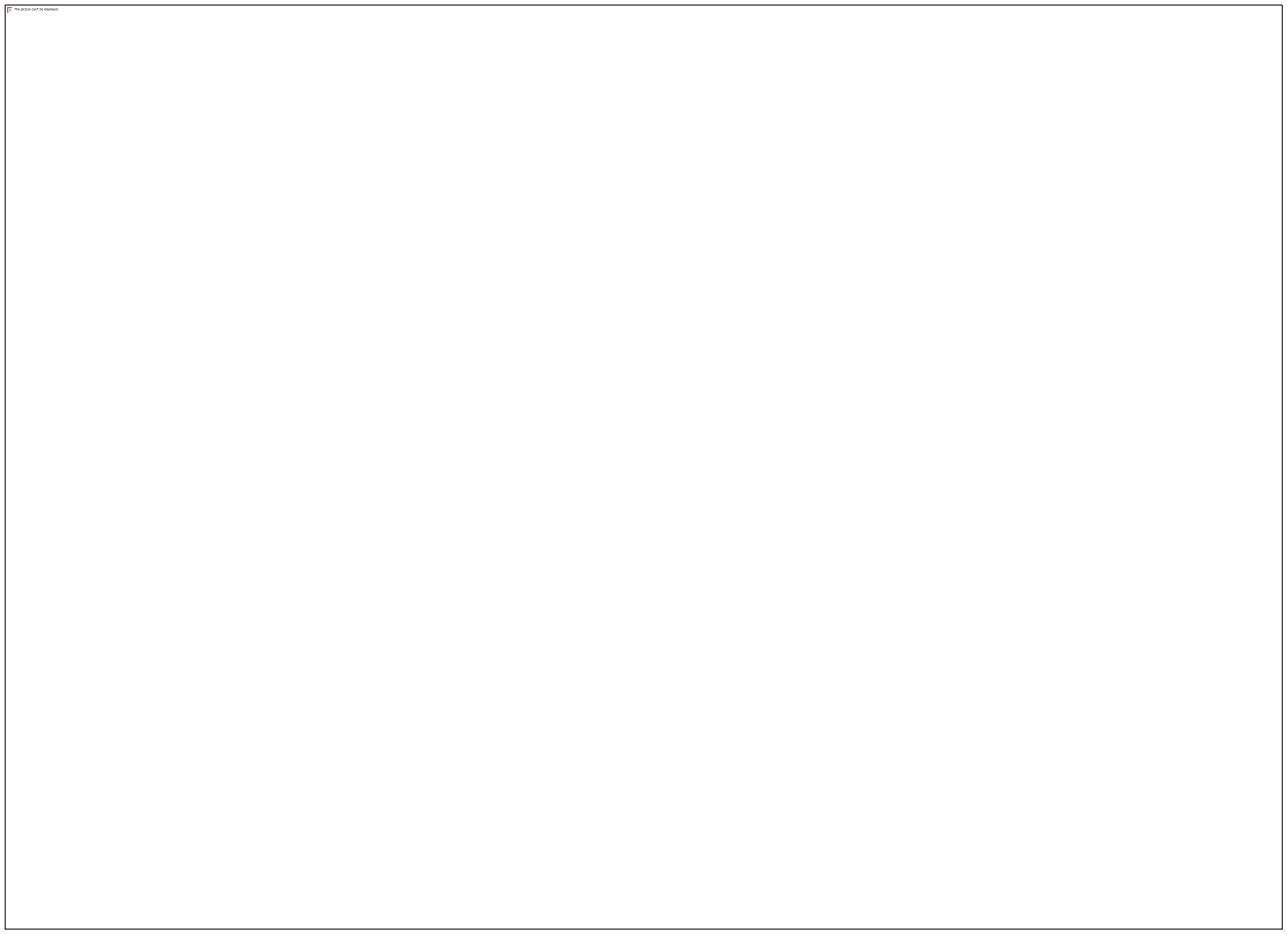


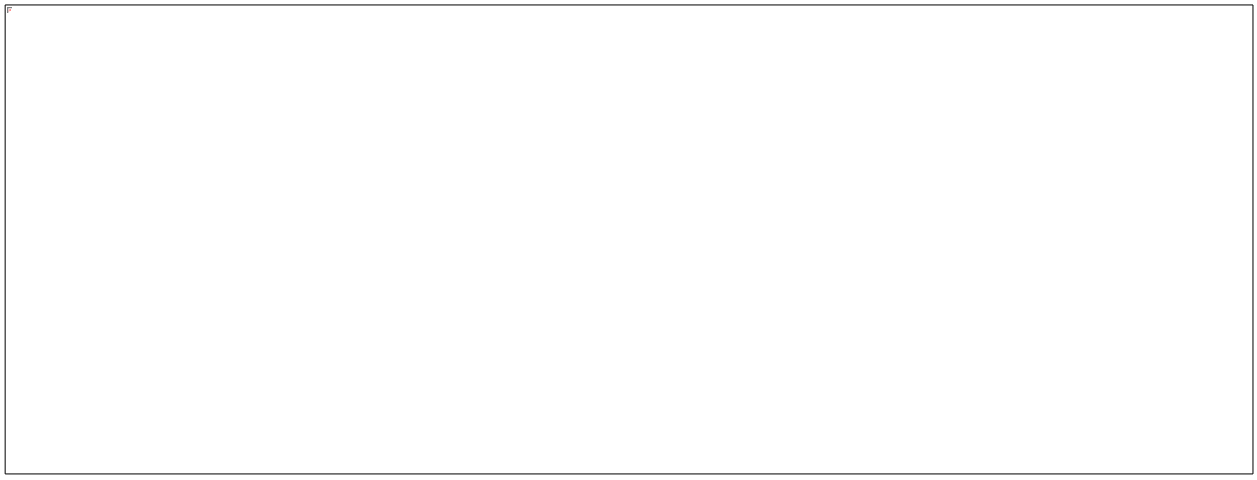
Attachment D – Initial Funding PAF

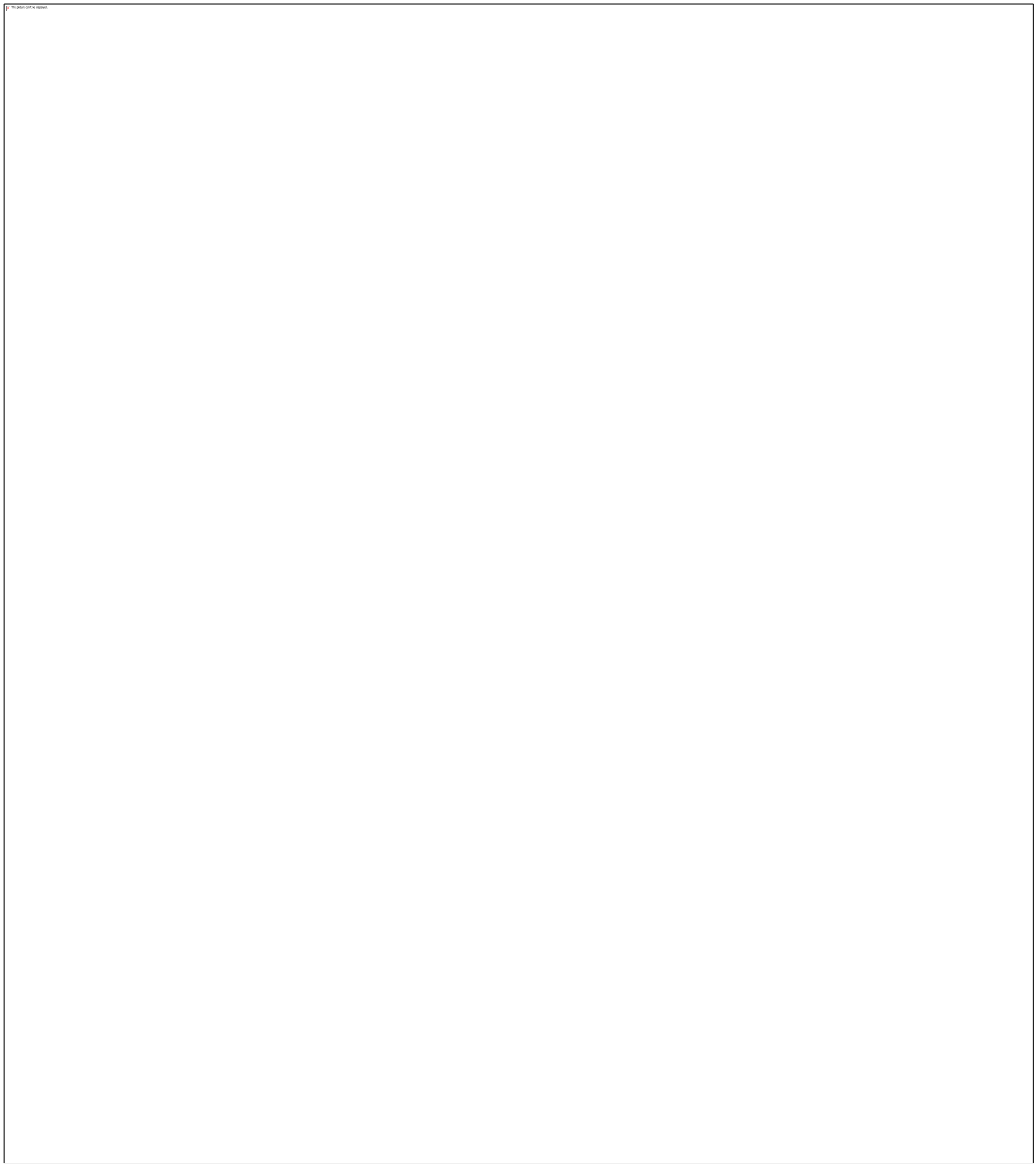


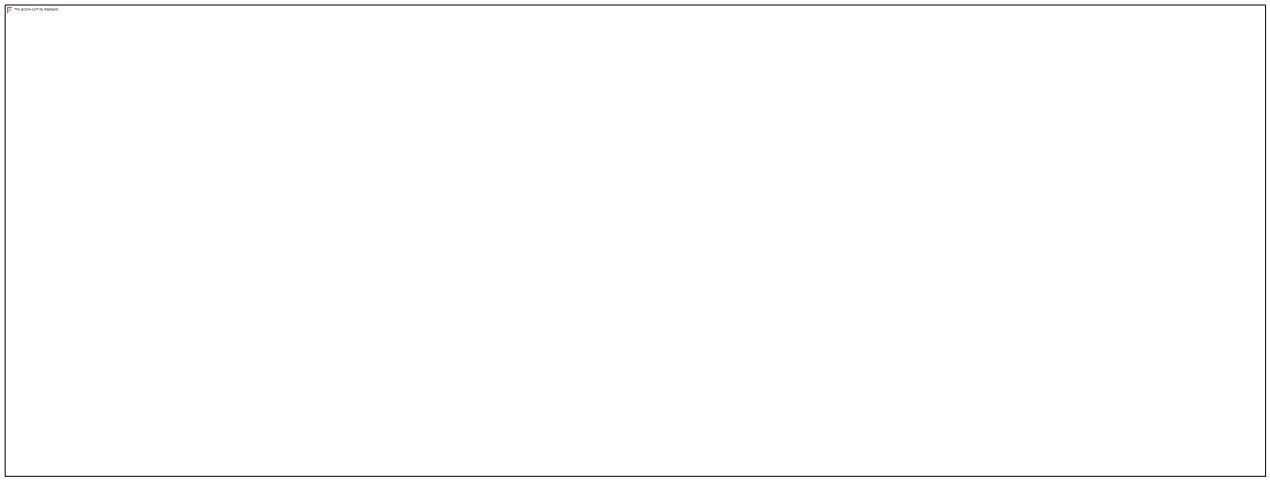








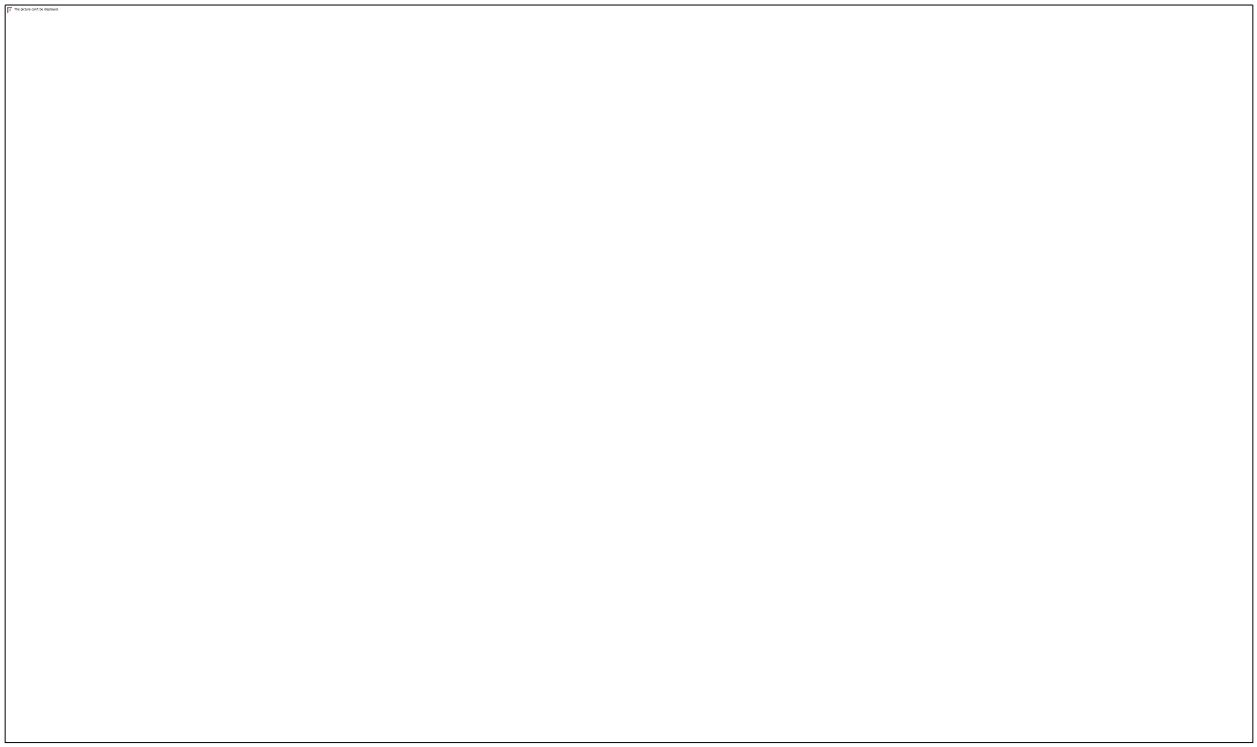


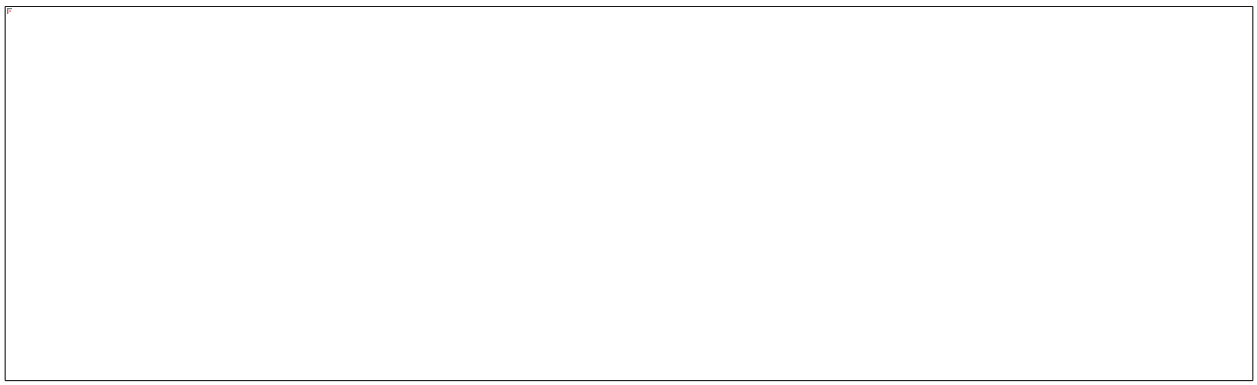




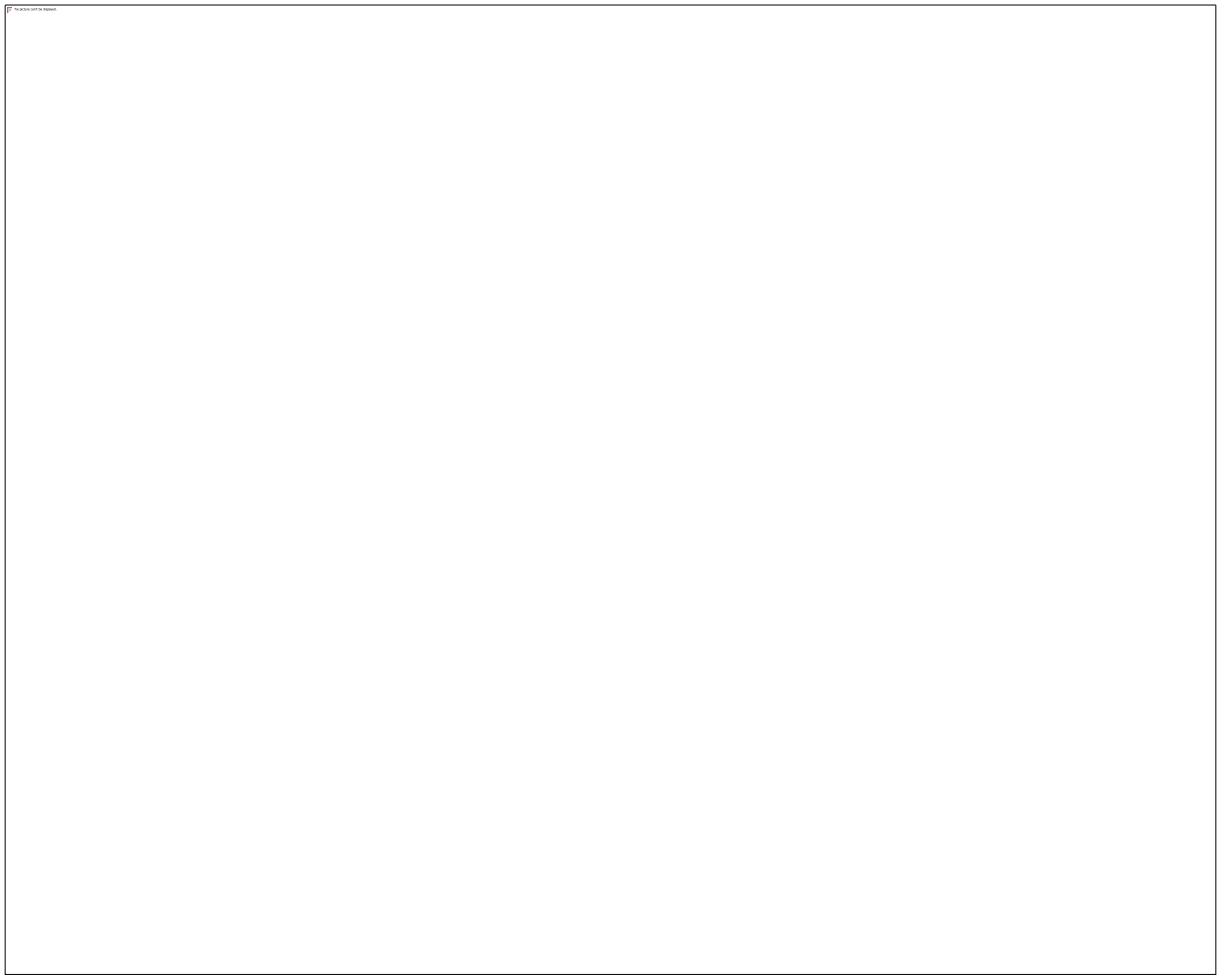
Refer to Distribution Capital Project Approval Process

JA-AM-2001-B, Rev.1









Design Alternative CD01759-02

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	28.00%
SubTotal:	$2,076,426
Contingency Amount:	$581,399
Estimate:	$2,657,826
Reimbursement:	$0
Net Amount:	**$2,657,826**
Description:	

Item Description	CU	$ / Per	Qty	Amount
UG CABLE DB/UG - 750/1000 - 3-1/C (3ph) Cu 10% for MH splices and Misc	16-UG114B	[redacted]		$96,000.00
UG CABLE DB/UG - 750/1000 - 3-1/C (3ph) Cu [redacted]	16-UG114B			$316,800.00
UG CABLE UG - Cable Removal - all cables [redacted]	16-UG117			$66,000.00
OTHER OTHER 30% adder for contract labor	16-ALL14			$479,000.00
OTHER OTHER Additional labor associated with removal of PILC cable	16-ALL14			$125,000.00
UG CABLE DB/UG - 750/1000 - 3-1/C (3ph) Cu [redacted]	16-UG114B			$29,760.00
UG CABLE UG - Cable Removal - all cables [redacted]	16-UG117			$6,200.00
UG CABLE DB/UG - 750/1000 - 3-1/C (3ph) Cu Customers on [redacted]	16-UG114B			$151,680.00
UG CABLE UG - Cable Removal - all cables Customers on [redacted]	16-UG117			$31,600.00

Design Alternative			CD01759-02
UG CABLE DB/UG - 750/1000 - 3-1/C (3ph) Cu	16-UG114B	[redacted]	$14,400.00
UG CABLE UG - Cable Removal - all cables	16-UG117		$3,000.00
OTHER OTHER MH cleaning/inspection/rod ducts	16-ALL14		$25,000.00
UG CABLE DB/UG - 750/1000 - 3-1/C (3ph) Cu	16-UG114B		$39,360.00
UG CABLE UG - Cable Removal - all cables	16-UG117		$8,200.00
SWITCHING OH/DB/UG - SWITCHING Network Network Switching	16-ALL15		$42,146.40
UG CABLE DB/UG - 750/1000 - 3-1/C (3ph) Cu	16-UG114B		$27,840.00
UG CABLE UG - Cable Removal - all cables	16-UG117		$5,800.00
UG CABLE DB/UG - 750/1000 - 3-1/C (3ph) Cu	16-UG114B		$211,200.00
UG CABLE UG - Cable Removal - all cables	16-UG117		$44,000.00
UG CABLE DB/UG - 750/1000 - 3-1/C (3ph) Cu	16-UG114B		$109,440.00
UG CABLE UG - Cable Removal - all cables	16-UG117		$22,800.00
UG CABLE DB/UG - 750/1000 - 3-1/C (3ph) Cu	16-UG114B		$67,200.00

Design Alternative			CD01759-02
UG CABLE	16-UG117	[redacted]	$14,000.00
UG - Cable Removal - all cables [redacted] (MH 369 to VLT 378)			
TRAFFIC	16-ALL18	[redacted]	$140,000.00
OH/DB/UG - Traffic Control - Police Officer Traffic control			

