SOUTHERN INDIANA GAS AND ELECTRIC COMPANY

d/b/a VECTREN ENERGY DELIVERY OF INDIANA, INC.

(VECTREN SOUTH)

IURC CAUSE NO. 44910

DIRECT TESTIMONY

OF

STEVEN A. HOOVER

DIRECTOR, ENGINEERING

ON

COST ESTIMATES

SPONSORING PETITIONER'S EXHIBIT NO. 6,

ATTACHMENTS SAH-1 THROUGH SAH-2

DIRECT TESTIMONY OF STEVEN A. HOOVER

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Steven A. Hoover. My address is One Vectren Square, Evansville, Indiana, 47708.

Q. By whom are you employed and in what capacity?

A. I am the Director of Engineering for Vectren Utility Holdings, Inc. ("VUHI"), the parent company of Southern Indiana Gas and Electric Company d/b/a Vectren Energy Delivery of Indiana, Inc. ("Vectren South"), Indiana Gas Company, Inc. d/b/a Vectren Energy Delivery of Indiana, Inc. ("Vectren North"), and Vectren Energy Delivery of Ohio.

Q. Please describe your educational background.

A. I received a Bachelor of Science degree in Mechanical Engineering Technology from the University of Southern Indiana in 1990.

Q. Please describe your professional experience.

A. I began my career with Vectren South in 1993 as a plant engineer. Over the years, I have held positions of increasing responsibility, including reliability engineer, performance engineer, production coordinator, and engineering manager of gas distribution engineering, southwest division. Prior to becoming director of gas and electric engineering in July 2016, I was chief engineer of gas engineering.

Q. What are your present duties?

A. I have responsibility for gas and electric engineering and technical support for the utility operations of all three VUHI utilities. My specific responsibilities include gas and electric transmission and distribution engineering, gas and electric transmission project management, gas and electric system planning, electric system asset management, and geospatial systems.

Q. Have you previously testified before the Indiana Utility Regulatory Commission ("Commission")?

A. Yes. I most recently provided testimony on behalf of Vectren South and Vectren North in Cause No. 44894 in support of the application for certificates of public convenience and necessity to provide natural gas service to various areas in the joint applicants' territory. I provided testimony on behalf of Vectren South in Cause No. 44429 TDSIC-5 and Vectren North in Cause No. 44430 TDSIC-5 in support of capital investments related to compliance and TDSIC projects. I provided testimony on behalf of Vectren North in support of the engineering evaluation and estimated costs for the Lafayette Area Gas System Reliability Improvements in Cause No. 44430 TDSIC-3 and also testified in Cause No. 44563 to describe how Vectren North planned to assume responsibility for customers formerly served by Snow & Ogden.

Q. What is the purpose of your testimony in this proceeding?

A. I will describe the methodology utilized by Vectren South to develop cost estimates for the projects that make-up our seven year transmission and distribution system improvement plan (the "TDSIC Plan"). I will also sponsor the cost estimates for individual projects.

Q. Are you sponsoring any exhibits in this proceeding?

A. Yes. I am sponsoring the following exhibits in this proceeding:

- Petitioner's Exhibit No. 6, **Attachment SAH-1:** Project Cost Estimation Level 2
- Petitioner's Exhibit No. 6, **Attachment SAH-2:** Project Cost Estimation Level 4

II. COST ESTIMATES

Q. Please describe the methodology utilized by Vectren South to develop criteria for estimates of the projects that comprise the TDSIC Plan.

A. Vectren South's methodology for developing cost estimates was a comprehensive and detailed process utilizing both internal and external subject matter experts. The first step in the cost estimation process was to identify those projects to be included in the TDSIC Plan. Projects were identified using a three pronged approach including risk modeling, subject matter expert assessment of existing equipment and systems, and subject matter expert evaluation of emerging technologies. The testimony of Vectren South's

witness Lynnae K. Wilson describes the project identification and selection process in greater detail. From this process, over 2,300 potential projects were identified. Vectren South intends to pursue 825 of these projects during the seven year plan and has developed cost estimates for an additional 556 projects that may be substituted into the TDSIC Plan. Vectren South made its initial prioritizations based on risk analysis and efficiencies in combining like work in close geographic proximity. Vectren South then developed high level preliminary estimates based on the type and quantity of work for each project – the "work scope" - and historical cost information for the work activities. The projects were tentatively grouped into each year of the program using the individual preliminary estimates and the projected annual TDSIC Plan budget. Thus, the preliminary estimates and priorities were used to develop a draft schedule for the TDSIC Plan. The Vectren South Engineering team then determined all projects in the TDSIC Plan would be estimated consistent with the recommended practices of AACE International ("AACE"), formerly Association for the Advancement of Cost Engineering International.

Q. What is the AACE and why did Vectren South use this organization's recommended practices for classifying the estimates?

A. AACE is an association dedicated to furthering the concepts for total cost management and cost engineering. The association is a recognized leader in the field of cost estimating and has published many guides and recommended practices referenced and utilized by a variety of industries to establish standardized criteria and ranges for project estimates. Vectren South understands the need to provide accurate estimates with the appropriate level of precision for the TDSIC Plan and the AACE's recommended practices establish a well-known and trusted framework to accomplish this objective. AACE specifies five estimate classes, with Class 1 estimates representing those projects that have greatest level of detail and an accuracy range of -10% to 15% and Class 5 having the least amount of detail with an expected accuracy range of -50% to 100%.

Q. What AACE cost estimate class did Vectren South utilize for the projects in the TDSIC Plan?

A. Projects planned to be completed in the first two years of the TDSIC Plan were designed to a Class 2 criteria and the remaining projects have been designed to AACE Class 4

estimate criteria. Class 2 estimates, which have accuracy ranges of -15% to +20%, balance the level of detail and confidence in design with appropriate engineering resource utilization to ensure accurate estimates and work plans are developed for projects to be executed in the next one to two years. Class 4 estimates have an accuracy ranges of -30% to +50% and are appropriate for projects to be completed beyond the two year horizon by balancing a reasonable level of work scope detail and estimate accuracy while effectively utilizing engineering resources. The following table describes the characteristics of Class 4 and Class 2 cost estimates:

	PRIMARY CHARACTERISTIC	SECONDARY CHARACTERISTIC		
ESTIMATE CLASS	MATURITY LEVEL OF PROJECT DEFINITION DELIVERABLES Expressed as % of complete definition	END USAGE Typical purpose of estimate	METHODOLOGY Typical estimating method	EXPECTED ACCURACY RANGE Typical variation in low and high ranges
Class 4	1% to 15%	Study or feasibility	Equipment factored or parametric models	L: -15% to -30% H: +20% to +50%
Class 2	30% to 75%	Control or bid/tender	Detailed unit cost with forced detailed takeoff	L: -5% to -15% H: +5% to +20%

Note: The above table has been re-produced using data from "AACE International Recommended Practice No.18R-97: COST ESTIMATE CLASSIFICATION SYSTEM - AS APPLIED IN ENGINEERING, PROCUREMENT, AND CONSTRUCTION FOR THE PROCESS INDUSTRIES, Rev. November 29,2011; http://www.aacei.org/toc/toc_18R-97.pdf"

Designing all projects to a Class 2 accuracy level is not an effective or efficient use of resources due to potential changes in work scope and fluctuating material and labor

costs that occur with the passage of time. The Class 4 estimates will be refined about a year in advance of execution and then updated in the TDSIC Plan. This level of detail is consistent with the requirements of Senate Bill 560[1] (the "TDSIC Statute") as they have been construed by the Commission in previous orders. With this criteria established, the estimates were developed with a combination of internal and external engineering resources using Vectren South's engineering systems and standards.

Q. Why did Vectren South utilize external engineering firms to assist in the development of the cost estimates?

A. Over 2,300 projects were identified for potential inclusion in the TDSIC Plan, of which 1,381 total projects were selected for detailed analysis, including design and estimation, in the seven year plan and as potential substitution projects. Vectren South's electric engineering department has enough internal resources to manage only a portion of the project load included in the TDSIC Plan. Given the volume of work necessary to conduct the appropriate cost analysis, Vectren South leveraged the expertise, experience, and different perspective of external engineering firms for the development of estimates for some distribution projects and the more complex transmission and substation projects.

Q. Which engineering firms were utilized to develop these cost estimates?

A. Black and Veatch ("B&V"), EN Engineering ("ENE") and Commonwealth Associates ("CA") were employed to develop Vectren South's cost estimates. B&V and CA were engaged to complete estimates for some transmission and substation projects. ENE provided estimating services for some distribution projects.

Q. Why did Vectren South select these firms?

A. Vectren South, through various engineering services engagements with B&V over the years, has developed a good understanding of their capabilities and quality of work. In addition, B&V recently worked with Duke and NIPSCO providing similar plan development services. B&V was engaged to supplement internal Vectren South resources in the design and estimation of transmission and substation projects. Vectren South also has worked with CA on transmission line projects. Because B&V focuses

[1] Indiana Code Chapter 8-1-39 ("TDSIC Statute").

their engineering efforts on the transmission and substation areas and does not maintain internal resources to perform design and estimating for electric distribution projects, ENE was engaged to supplement the distribution design and estimating activities related to the TDSIC Plan. ENE has been working with Vectren South for the past eight years providing various engineering services. ENE is familiar with Vectren South's system, estimating applications, standards and estimating methodology which prepared them to develop estimates for the distribution projects. These three firms supplemented Vectren South's design and estimating expertise for the TDSIC Plan development.

Q. Which projects in the TDSIC Plan were estimated in collaboration with B&V, CA and ENE resources?

A. Vectren South's engineering group collaborated with B&V, CA and ENE resources to develop estimates for projects in the following programs:

- Optical Ground Wire ("OPGW") installation
- Supervisory Control and Data Acquisition ("SCADA") Upgrades
- Transmission Line Looping
- System Protection Relay Upgrades
- 12kV Circuit Rebuilds and Looping
- 4kV Conversions
- Distribution Capacitor Replacements
- Underground Cable Replacements and Looping
- Underground Network Upgrades
- Substation Circuit Breaker Replacements
- Substation Transformer Replacements
- Transmission Line Rebuilds
- Transmission Capacitor Replacements
- East West Transmission Line
- Instrument Transformer Replacements
- Underslung Replacements

Q. Did Vectren South develop any project cost estimates without the assistance of these external firms?

A. Yes. Vectren South's transmission, substation and distribution engineering and information technology teams completed 100% of the estimating efforts for the following programs:

- Substation Battery System Replacements
- Substation Arrestor Replacements
- Substation Physical Security Upgrades
- PCB Transformer Replacements
- Distribution Automation
- Wood Pole Replacements
- Mobile Asset Data Collection
- Geomagnetic Disturbance Protection

Q. Did Vectren South incur costs in the development and support of the TDSIC Plan?

A. Yes. Vectren South will incur an estimated $3.7 million in costs with external firms, made up of plan development, engineering/cost estimation, risk model creation, and case support.

Q. How were the project cost estimates developed?

A. The process used for all project estimations considered material and labor quantities associated with the defined scopes of work and Vectren South's Engineering and Construction Standards. All estimators, whether internal Vectren South or external B&V, CA or ENE resources, used a consistent set of base cost assumptions including appropriate labor rates, material costs, and other factors such as complexity of the work and location. Supplementing these base assumptions were additional activities and data sources:

- Site visits with engineering teams to assess locational factors including accessibility and other physical constraints. Where site visits were not completed, aerial photography or geospatial data was utilized to assess locational factors;
- Costs of recently completed projects of a similar scope;
- National Electrical Contractors Association ("NECA") Manual of Labor Units;
- Material and equipment costs from Vectren South's inventory management system supplemented as needed with recent pricing from vendors that supply electric equipment to Vectren South;

- Overhead costs and labor and material loadings from Vectren South's accounting system; and
- For transmission and substation projects, labor and material data from similar projects previously estimated and/or completed by B&V was considered in the development of estimates.

The specific activities and work items necessary to complete each project were identified and documented to define the work scope. Labor rates and material costs associated with each activity were applied to the appropriate units of the activity to be completed. Labor rates were determined from historical project information and regional labor rate information provided by B&V. Material costs were estimated based on historical project information or quotes from suppliers. The cost estimates include contingency and standard overhead costs (administration, general, engineering, supervision, and material loadings).

Projects in years one and two of the TDSIC Plan were defined to the level necessary to ensure estimates were sufficiently detailed to comply with AACE Class 2 accuracy ranges. Estimates for transmission, substation and distribution projects planned for years three through seven were primarily developed using estimates for projects with similar scope from years one and two as the basis. Adjustments to the base estimates were made to incorporate significant labor or material differences identified in the years three through seven projects.

Q. Do the detailed cost estimates include an escalation to reflect inflation based on the year a project is proposed to be constructed?

A. No. Escalation cost was not included in the detailed cost estimates for discrete projects. Instead, escalation for material, labor, and services inflation is calculated in the plan summary worksheet to arrive at the anticipated overall cost of the TDSIC Plan. This eliminates the need to create a new detailed estimate for each project if its scheduled execution year is changed. Vectren South worked with B&V to determine the escalation at 2.7% per year starting in 2018.

The escalated cost for each project, based on the proposed construction year, is provided in witness Wilson's, Petitioner's Exhibit No. 2, Attachment LKW-1.

Q. What is the definition of contingency?

A. Vectren South uses the definition provided by AACE. AACE has defined contingency as an amount added to an estimate to allow for items, conditions, or events for which the state, occurrence, or effect is uncertain and that experience shows will likely result, in aggregate, in additional costs.

Q. Has Vectren South included contingencies in the cost estimates?

A. Yes. Estimates for years one and two transmission and substation projects include a 15% contingency placed on the labor and engineering. Material contingency was assigned on a sliding scale based on the overall cost of each project. Larger projects received less material contingency compared to smaller projects. This was done to prevent single, large material purchases on projects driving unnecessarily high material contingencies.

Vectren South, in consultation with B&V, determined to establish the labor, subcontract, equipment, and engineering contingency at 40% for transmission and substation projects in years three through seven of the TDSIC Plan. The higher contingency was necessary to compensate for the reduced project scope definition and engineering development of those projects in the later years of the program.

Estimates for years one and two distribution projects include a 5% contingency placed on the entire estimate to account for potential unknown labor or material factors. The lower contingency was determined to be suitable for the distribution projects because the project scopes were defined to a high level of detail. Estimates for years three through seven include a 12-18% contingency based on the type of project.

Q. How were contingencies used to improve the project estimates?

A. Appropriate levels of contingencies were added to each project cost estimate dependent upon the completeness of the work scope and detailed engineering and complexity of the project. The level of contingency applied to estimates was not the same for all projects. Projects with well-defined work scopes, complete detailed engineering, and less complexity – underground distribution cable replacement, for example – require less

contingency. Projects such as transmission line looping are larger in scope and complexity and were not engineered to the same level of detail due to their placement in years three through seven of the TDSIC Plan and therefore received a higher level of contingency.

All year one and two projects were estimated to meet AACE Class 2 accuracy ranges. However, site visits were conducted for all year one and two distribution and substation projects resulting in a lower applied contingency because project unknowns were minimized. Year one and two transmission projects used Vectren South's engineering documents along with aerial photography and geospatial data instead of site visits, due to terrain and accessibility, and larger contingencies were applied. Detailed engineering has not yet been completed on projects in years three through seven and these Class 4 estimates received a higher contingency for unknown factors that can influence project cost.

Q. Why is it important to include a contingency in a best estimate?

A. Vectren South's charge is to provide the best estimate for the TDSIC Plan. For projects that extend over multiple years, are very complex, are scheduled for later years in the TDSIC Plan, or where complete detailed engineering has not yet been completed, there are many possible risks and uncertainties that could cause project cost increases. This likelihood must be recognized in a fully transparent "best estimate" and Vectren South's contingency addresses those project uncertainties.

Q. Is it common estimating practice to include both contingency and the application of class estimate ranges?

A. Yes. A cost estimate is a prediction of the final, "most likely" cost of a project to be completed in the future. This prediction carries risk and uncertainty which the estimate ranges attempt to address by establishing potential minimum and maximum project costs based on the level of definition of the project work scope. Contingency is a necessary component of the cost estimate which is intended to address items that cannot be quantified at the current level of project definition, but will be necessary to complete the project. The contingency enhances confidence that the project final cost will be within the upper and lower limits of the estimate range.

Q. Is Vectren South submitting the project cost estimates to support its TDSIC Plan?

A. Yes, two project cost estimate examples are attached to my testimony as Petitioner's Exhibit No. 6, Attachment SAH-1 and Attachment SAH-2. The other project cost estimates have been submitted as work papers.

Q. What level of detail is included in the cost estimates?

A. Vectren South has created a cost estimate for each project included in the TDSIC Plan. The cost estimates include line item break down of the costs of each project including contract labor, material, internal labor, material and labor loadings, engineering costs, land, and contingency. For further detail refer to Petitioner's Exhibit No. 6, Attachment SAH-1 and Attachment SAH-2 which contains example project estimates. All detailed individual project estimate information is included in my work papers.

Q. What level of confidence does Vectren South have in its cost estimates?

A. Vectren South has high confidence in the accuracy and completeness of the TDSIC Plan's project cost estimates. Years one and two projects were estimated to meet AACE Class 2 estimate ranges of -15% to +20%. The remaining projects, including the potential substitution projects, were estimated to AACE Class 4 criteria with an expected variance range of -30% to +50%. With the appropriate use of contingency values to account for uncertainty in the project, the projects' actual costs can be expected to fall within these variance ranges.

Q. Provide a detailed example of an AACE Class 2 Estimate.

A. Each AACE Class 2 Project Cost Estimate consists of a Preliminary Estimate Summary sheet and a Detailed Estimate Report (labeled Design Estimate Summary Report – Project Cost Summary for Distribution projects). Attached to my testimony as Petitioner's Exhibit No. 6, Attachment SAH-1 is a sample of a Class 2 estimate. As can be seen in the example, the Preliminary Estimate Summary contains a basic description of the work, preliminary estimate details, and a total project cost summary section which provides multiple breakdowns of the construction costs including loadings, overheads, and contingency. The Detailed Estimate Report contains summary pages of the project cost roll-up, detailed lists of activities at each work station – location where construction

is being performed, detailed Bill of Materials, and a detailed estimate of labor and material costs for construction activity. Loadings and contingencies for transmission and substation projects are not included on the detailed estimate sheets. Contingencies for distribution projects are not included on the detailed estimate sheets. These cost components are only incorporated in the Preliminary Estimate Summary.

Q. Provide a detailed example of a Class 4 Estimate.

A. Each AACE Class 4 Project Cost Estimate consists of a Preliminary Estimate Summary sheet and a Detailed Estimate Report. Attached to my testimony as Petitioner's Exhibit No. 6, Attachment SAH-2 is a sample of a Class 4 estimate. As with the AACE Class 2 estimates, the AACE Class 4 Preliminary Estimate Summary for years three through seven projects contains a basic description of the work, preliminary estimate details, and a total project cost summary section. The Detailed Estimate Report sheets contain detailed lists of activities and materials. Loadings and contingencies for transmission and substation projects are not included on the detailed estimate sheets. Contingencies for distribution projects are not included on the detailed estimate sheets. These cost components are only incorporated in the Preliminary Estimate Summary. These details can be seen in the example attached to my testimony.

Q. Were any projects estimated differently?

A. Yes. Projects supporting the Substation Physical Security Upgrades program were estimated based on the Standard Vectren South bid process. Vectren South chose to select the largest site as the baseline. Responses from the bid process provided the figures that Vectren South then applied to the other sites to understand the range of total costs of the program.

The Advanced Distribution Management System and Advanced Metering Infrastructure ("AMI") Programs both went through Vectren South's standard Request for Proposal process. Details related to AMI will be discussed in the testimony of Vectren South witnesses Daniel C. Bugher and Andrew L. Trump.

Q. Did Vectren South take any additional steps to assess the accuracy and completeness of the estimates?

A. Yes. First, Vectren South engaged B&V to perform a cost estimate review of a minimum of 10% of all transmission and substation projects by an AACE Certified engineer. Second, a minimum of 10% of all distribution projects were reviewed for estimate accuracy by a Vectren South engineer different from the original estimator. Items considered in the secondary review are the cost estimating methodology and historical or other information used in the estimate as compared to the AACE requirements for Class 2 and Class 4 estimates. Information reviewed includes equipment costs, material costs, labor costs bases, and man-hour bases. The reviews found costs of equipment and materials, labor productivity assumptions, and labor rates were reasonable based on comparison against historical data, quotes for recent similar projects, and B&V labor rate studies applicable to project locations.

In addition to verifying the costs and labor hour bases used for the estimate, the methodology was reviewed for appropriateness of the stated estimate classification in accordance with the AACE. This approach is consistent with how B&V has conducted similar cost estimate reviews for other utility clients for long-range planning studies. As indicated in the AACE table earlier in this testimony, AACE Class 2 and Class 4 estimates are applicable to the Vectren South projects and the level of project definition determines the estimate class level.

Many factors can cause significant changes in material and labor costs from month to month and year to year. In today's global economy, market forces frequently impact major equipment suppliers and their costs. These market impacts to costs are then passed on to equipment suppliers with resulting routine changes to material price quotes. Similarly, contract labor costs can fluctuate significantly in the energy industry based on demand. From a labor cost standpoint, many factors can change the level of effort and cost required to complete a project. Unforeseen changes in site conditions can increase the project duration significantly for one project, when compared to a similar project elsewhere with ideal conditions. This results in the potential for a variety of labor costs depending on a variety of factors.

It is in this context that reviews were performed with consideration for the expected accuracy range identified for each AACE estimate class. No two cost estimators will

arrive at exactly the same cost estimate, even when given the same general scope description of a project. Differences can result from a variety of factors, including the following:

- Fluctuations and market forces impact material prices every day and can result in large changes to material costs
- Contract labor costs can fluctuate as demand for experienced labor changes
- The projects state of development/definition
    - This impacts the level of detailed specification an estimator has for material and equipment, as well as labor cost impacts
- Understanding of site conditions
    - Not all site conditions can be defined fully when estimating a project cost

These uncertainty factors with respect to cost estimates are important to keep in context, and thus range percentages and contingency are used to provide realistic estimate class accuracy.

Vectren South's internal review and B&V's review indicated the cost estimating process and the estimates are reasonable. The level of detail used to develop the Vectren South transmission and distribution project cost estimates is consistent with common practice within the industry.

Q. Do these estimates constitute Vectren South's best estimate of the costs for the projects in the TDSIC Plan?

A. Yes.

III. CONCLUSION

Q. Does this conclude your direct testimony?

A. Yes.

VERIFICATION

I, Steven A. Hoover, Director of Engineering for Vectren Utility Holdings, Inc., under penalty of perjury, affirm that the foregoing representations are true and correct to the best of my knowledge, information and belief.

SOUTHERN INDIANA GAS AND
ELECTRIC COMPANY D/B/A VECTREN
ENERGY DELIVERY OF INDIANA, INC.

By: _____

Steven A. Hoover
Director, Engineering

Dated: February 22, 2017

Distribution Modernization Preliminary Estimate Summary			Group ID	Cass AVE CKT	Planned Year	2018
Maximo WO Number	**Oracle Number**	**Total Project Cost**	**Maximo Short Description**			
13745088		[redacted]	E560_Elec Dist_Cass AVE CKT_4KV CONV_Cass Ave CKT CONV (Riverside Sub) Ph II			
ABM	**OC**	**City**	**TDSIC Program Category**	**Project Engineer (VEC/EN)**		
Elec System Improve - Distr TDSIC	Evansville	Evansville	4kV Conv	Chapman, Jody	Gravino, H	

Maximo Long Description of Work

This work order is phase 2 of the Cass Ave 4 kV conversion project. There are total of 3 phases to complete the Cass Ave 4 kV to 12 kV conversion. The Project will transfer the load to Riverside 12 kV. Phase 2 construction includes a circuit tie with John Street 12 kV circuit just North of the Monroe and Venice Street intersection. It consists of 50 new poles,6400' of 336AA sper,2150' of 3/0 AWAC msngr,1900' of 310AAAC,1800' of 110AAAC,300' of 310TX,1 -900A Horizontal GOAB Switch, and 35-1PH pole top transformers.

Preliminary Estimate Details

Activity Description	Units	UoM	Unit Cost	Extended Cost
Poles, Towers & Fixtures (Account 364)	[redacted]	Ea	[redacted]	[redacted]
Overhead Conductors & Devices (Account 365)	[redacted]	Lft	[redacted]	[redacted]
Underground Conductors & Devices (Account 366 & 367)		Lft	[redacted]	
Line Transformers (Account 368)	[redacted]	Ea	[redacted]	[redacted]
Services (Account 369 & 370)	[redacted]	Lft	[redacted]	[redacted]
Street Lighting & Signal systems		Ea		
Removal of Existing Facilities (Poles, OH/UG Conductor, Transformers (Account 373)	[redacted]	LS	[redacted]	[redacted]
Land		LS	[redacted]	
Permit		LS	[redacted]	
Tree Trimming		LS	[redacted]	
Traffic Control		LS	[redacted]	
Engineering		LS	[redacted]	
			Subtotal	[redacted]

Total Project Cost Summary

Cost Category		Project Cost Calculations	
Contract Labor and Overheads	[redacted]	**Subtotal**	[redacted]
Engineering	[redacted]	Contingency - Labor and Material	[redacted]
Material	[redacted]	**Subtotal + Contingency**	[redacted]
Land	[redacted]	Administrative & General Loading / Engineering, Supervision & Material Loading	[redacted]
		Tota Project Cost (Subtotal + Contingency + Loadings)	[redacted]

*Total project cost is in 2016 dollars.

Design Estimate Summary Report – Project Cost Summary

Engineer Lead: HGRAVINO | **Cost Center:** | **Print Date: 09-Dec-16 12:59 PM**

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Customer Name:
Customer Address:
Customer Phone:

Person Making Request:
Contact Phone:

General Description:
This work order is phase 2 of the Cass Ave 4 kV conversion project. There are total of 3 phases to complete the Cass Ave 4 k

CUE Numbers and Status
Maximo WO#: 13745088
Maximo CUE Number: 78162
Ver: 1 Status: ESTIMATED

Invest (Install)

Description	Account	Material	Labor	Tool	Total
ELECTRIC SERVICES	369				
OVERHEAD CONDUCTORS & DEVICES	365				
POLES, TOWERS, AND FIXTURES	364				
Invest (Install) Sub Total					
Loadings (Mtl and Labor)					
Invest (Install) Total					

Retire (Abandon & Remove)

Description	Account	Material	Labor	Tool	Total
LINE TRANSFORMERS	368				
OVERHEAD CONDUCTORS & DEVICES	365				
POLES, TOWERS, AND FIXTURES	364				
Retire (Abandon & Remove) Sub Total					
Loadings (Mtl and Labor)					
Retire (Abandon & Remove) Total					

Electric Transformers (Install)

Note Transformer material cost not in subtotal

Description	Account	Material	Labor	Tool	Total
LINE TRANSFORMERS	368				
Electric Transformers (Install) Sub Total					
Loadings (Mtl and Labor)					
Electric Transformers (Install) Total					

Electric Transformers (Remove)

Description	Account	Material	Labor	Tool	Total
LINE TRANSFORMERS	368				
Electric Transformers (Remove) Sub Total					
Loadings (Mtl and Labor)					
Electric Transformers (Remove) Total					

Design Estimate Summary Report – Project Cost Summary

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

Total Project Cost Summary

Loading Used for Calculations	
A&G (Install Only)	[redacted]
E&S (Install Only)	
Mtl Stores Loading	
Labor Loading	
Travel Time Multiplier	

Loading Rates Current as of
12/09/2016 12:54:59 PM

Install Plant / Capital	[redacted]
Transformer Labor & Tooling (If CPE)	
Overheads (A&G and E&S)	
Install: Total Capital Expenditure	
Retire (Abandon & Remove)	
Power Plant Project Cost	
Services	
Transformer Labor & Tool (If Not CPE) & Meter Labor & Tool	
Overheads for Services, Transformers, Meters (A&G and E&S)	
Services Total	
Transformers and Meters (Materials Only)	
Services Total + Meter & Transformer Material	
Total Project Cost	

Design Estimate Summary Report – Supervisor's Construction

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

Station	G- Macro CU	Macro CU	CU	Grand Macro/ Macro / CU Assembly Description	Qty	Operation	Time Rqd
1			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS	[redacted]	Install	
				WO Number: 13745088		**Station 1 Sub Total:**	**0.00**
2			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Install	
2			0108110	NEUTRAL BRKT ASSEMBLY		Remove	
2			0108110	NEUTRAL BRKT ASSEMBLY		Install	
2			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Install	
2			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
2			0306001	CROSS ARM PIN ASSY 8-10 ARM		Install	
2			0308112	8FT SINGLE ARM BRACE ASSY		Remove	
2			0311112	11FT SINGLE ARM BRACE ASSY		Install	
2			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Remove	
2			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Install	
2			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
2			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
2			0803002	LTNG ARR ASSY,LINE,3KV		Remove	
2			0809002	LTNG ARR ASSY,LINE 9KV		Install	
2			0821042	POLE GROUND ASSY,ROD		Install	
2			0925010NG	FUSE CUTOUT ASSY:100A,10T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
2			0925015NG	FUSE CUTOUT ASSY:100A,15T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Remove	
2			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	
2			1010025	TRANSFORMER, 1PH, PT, CONV, 2400-120/240V, 25KVA		Remove	
2			1030025	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 25KVA		Install	
				WO Number: 13745088		**Station 2 Sub Total:**	**0.00**
3			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Install	
3			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT		Remove	
3			0108110	NEUTRAL BRKT ASSEMBLY		Remove	
3			0306001	CROSS ARM PIN ASSY 8-10 ARM		Install	
3			0308112	8FT SINGLE ARM BRACE ASSY		Remove	
3			0311112	11FT SINGLE ARM BRACE ASSY		Install	
3			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Remove	
3			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
3			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Install	
3			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
3			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
3			0803002	LTNG ARR ASSY,LINE,3KV		Remove	
3			0809002	LTNG ARR ASSY,LINE 9KV		Install	
3			0821042	POLE GROUND ASSY,ROD		Install	
3			0925015NG	FUSE CUTOUT ASSY:100A,15T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
3			0925040NG	FUSE CUTOUT ASSY:100A,40T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Remove	
3			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	

Design Estimate Summary Report – Supervisor's Construction

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

Station	G- Macro CU	Macro CU	CU	Grand Macro/ Macro / CU Assembly Description	Qty	Operation	Time Rqd
3			1010050	TRANSFORMER, 1PH, PT, CONV, 2400-120/240V, 50KVA	[redacted]	Remove	
3			1030050	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 50KVA		Install	
				WO Number: 13745088		**Station 3 Sub Total:**	**0.00**
4			0108110	NEUTRAL BRKT ASSEMBLY	[redacted]	Remove	
4			0114712	DEADEND BRKT ASSEMBLY, SPACER		Install	
4			0306001	CROSS ARM PIN ASSY 8-10 ARM		Install	
4			0308216	8FT STD DBLARM BRACE ASSY		Remove	
4			0311218	11FT DOUBLE ARM BRACE ASSY		Install	
4			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
4			0403247	CONDUCTOR DEADEND ASSEMBLY, 336 SPC		Install	
4			0405208	PIN INSULATOR ASSY W/ TIE WIRE, DOUBLE, ALUMINUM CONDUC.		Install	
4			0405208	PIN INSULATOR ASSY W/ TIE WIRE, DOUBLE, ALUMINUM CONDUC.		Remove	
4			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
4			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
4			0809002	LTNG ARR ASSY,LINE 9KV		Install	
4			0815008	NEUTRAL DEADEND CLAMP ASSY, #6 SOL CU		Remove	
4			0816030	GRIP, PREFORMED, CONDUCTOR, 3/0 AAAC		Install	
4			0816043	GRIP, PREFORMED, CONDUCTOR, 3/0 AWAC		Install	
				WO Number: 13745088		**Station 4 Sub Total:**	**0.00**
5			0108110	NEUTRAL BRKT ASSEMBLY	[redacted]	Remove	
5			0108110	NEUTRAL BRKT ASSEMBLY		Install	
5			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Install	
5			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
5			0306001	CROSS ARM PIN ASSY 8-10 ARM		Install	
5			0308112	8FT SINGLE ARM BRACE ASSY		Remove	
5			0311112	11FT SINGLE ARM BRACE ASSY		Install	
5			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
5			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Remove	
5			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Install	
5			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
5			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
5			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	
5			0821042	POLE GROUND ASSY,ROD		Install	
				WO Number: 13745088		**Station 5 Sub Total:**	**0.00**
6			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY	[redacted]	Install	
6			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
6			0306001	CROSS ARM PIN ASSY 8-10 ARM		Install	
6			0308216	8FT STD DBLARM BRACE ASSY		Remove	
6			0310216	10FT DBL ARM BRACE ASSY		Install	
6			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
6			0403203	CONDUCTOR DEADEND ASSEMBLY, .3-.6 in, 1/0-3/0 ACSR/AAAC		Install	

Design Estimate Summary Report – Supervisor's Construction

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

Station	G- Macro CU	Macro CU	CU	Grand Macro/ Macro / CU Assembly Description	Qty	Operation	Time Rqd
6			0403208	CONDUCTOR DEADEND ASSEMBLY, #6 SOL CU	[redacted]	Remove	
6			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
6			0405208	PIN INSULATOR ASSY W/ TIE WIRE, DOUBLE, ALUMINUM CONDUC.		Install	
6			0501016	GUY STRAND ASSY 16M		Install	
6			0501016	GUY STRAND ASSY 16M		Install	
6			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
6			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
6			0815003	NEUTRAL DEADEND CLAMP ASSY, 1/0 - 3/0 ACSR/AAAC		Install	
6			0815008	NEUTRAL DEADEND CLAMP ASSY, #6 SOL CU		Remove	
6			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	
6			0821042	POLE GROUND ASSY,ROD		Install	
				WO Number: 13745088		**Station 6 Sub Total:**	**0.00**
7			0106108	POLE TOP PIN ASSY	[redacted]	Install	
7			0106108	POLE TOP PIN ASSY		Remove	
7			0108110	NEUTRAL BRKT ASSEMBLY		Remove	
7			0108110	NEUTRAL BRKT ASSEMBLY		Install	
7			0135401	POLE:WOOD,35FT LG,4,EMBEDDED EARTH ONLY		Remove	
7			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Install	
7			0306001	CROSS ARM PIN ASSY 8-10 ARM		Install	
7			0306001	CROSS ARM PIN ASSY 8-10 ARM		Remove	
7			0308112	8FT SINGLE ARM BRACE ASSY		Remove	
7			0310112	10FT SINGLE ARM BRACE ASSY		Install	
7			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Remove	
7			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
7			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Install	
7			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
7			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
7			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
7			0821042	POLE GROUND ASSY,ROD		Install	
				WO Number: 13745088		**Station 7 Sub Total:**	**0.00**
8			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Install	
8			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT		Install	
8			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT		Remove	
8			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
8			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Install	
8			0306001	CROSS ARM PIN ASSY 8-10 ARM		Install	
8			0306001	CROSS ARM PIN ASSY 8-10 ARM		Remove	
8			0308216	8FT STD DBLARM BRACE ASSY		Remove	
8			0310216	10FT DBL ARM BRACE ASSY		Install	
8			0403203	CONDUCTOR DEADEND ASSEMBLY, .3-.6 in, 1/0-3/0 ACSR/AAAC		Install	
8			0403208	CONDUCTOR DEADEND ASSEMBLY, #6 SOL CU		Remove	

Design Estimate Summary Report – Supervisor's Construction

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

Station	G- Macro CU	Macro CU	CU	Grand Macro/ Macro / CU Assembly Description	Qty	Operation	Time Rqd
8			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.	[redacted]	Remove	
8			0405208	PIN INSULATOR ASSY W/ TIE WIRE, DOUBLE, ALUMINUM CONDUC.		Install	
8			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
8			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
8			0803002	LTNG ARR ASSY,LINE,3KV		Remove	
8			0809002	LTNG ARR ASSY,LINE 9KV		Install	
8			0815003	NEUTRAL DEADEND CLAMP ASSY, 1/0 - 3/0 ACSR/AAAC		Install	
8			0815008	NEUTRAL DEADEND CLAMP ASSY, #6 SOL CU		Remove	
8			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	
8			0821042	POLE GROUND ASSY,ROD		Install	
8			0925006NG	FUSE CUTOUT ASSY:100A,6T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Remove	
8			0925010NG	FUSE CUTOUT ASSY:100A,10T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
8			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	
8			1010015	TRANSFORMER, 1PH, PT, CONV, 2400-120/240V, 15KVA		Remove	
8			1030025	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 25KVA		Install	
				WO Number: 13745088	**Station 8 Sub Total:**		**0.00**
9			0109310	EQUIPMENT MOUNT ASSY 3-PHASE	[redacted]	Install	
9			0110112	TRANSF CLUSTER MT ASSY 25-100KVA		Install	
9			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
9			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Install	
9			0306001	CROSS ARM PIN ASSY 8-10 ARM		Install	
9			0308216	8FT STD DBLARM BRACE ASSY		Remove	
9			0310216	10FT DBL ARM BRACE ASSY		Install	
9			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
9			0403203	CONDUCTOR DEADEND ASSEMBLY, .3-.6 in, 1/0-3/0 ACSR/AAAC		Install	
9			0403208	CONDUCTOR DEADEND ASSEMBLY, #6 SOL CU		Remove	
9			0405208	PIN INSULATOR ASSY W/ TIE WIRE, DOUBLE, ALUMINUM CONDUC.		Install	
9			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
9			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
9			0803002	LTNG ARR ASSY,LINE,3KV		Remove	
9			0809002	LTNG ARR ASSY,LINE 9KV		Install	
9			0809002	LTNG ARR ASSY,LINE 9KV		Install	
9			0809002	LTNG ARR ASSY,LINE 9KV		Install	
9			0815003	NEUTRAL DEADEND CLAMP ASSY, 1/0 - 3/0 ACSR/AAAC		Install	
9			0815008	NEUTRAL DEADEND CLAMP ASSY, #6 SOL CU		Remove	
9			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	
9			0821042	POLE GROUND ASSY,ROD		Install	
9			0925015NG	FUSE CUTOUT ASSY:100A,15T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
9			0925015NG	FUSE CUTOUT ASSY:100A,15T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
9			0925015NG	FUSE CUTOUT ASSY:100A,15T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	

Design Estimate Summary Report – Supervisor's Construction

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

Station	G- Macro CU	Macro CU	CU	Grand Macro/ Macro / CU Assembly Description	Qty	Operation	Time Rqd
9			0925025NG	FUSE CUTOUT ASSY:100A,25T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU	[redacted]	Remove	
9			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	
9			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	
9			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	
9			1030050	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 50KVA		Install	
9			1030050	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 50KVA		Install	
9			1030050	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 50KVA		Install	
9			1042075	TRANSFORMER, 3PH, PM, 2400/4160Y-208/120V, 75KVA.		Remove	
				WO Number: 13745088		**Station 9 Sub Total:**	**0.00**
10			0135401	POLE:WOOD,35FT LG,4,EMBEDDED EARTH ONLY	[redacted]	Remove	
10			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Install	
10			0501016	GUY STRAND ASSY 16M		Install	
10			0516201	16M GUY & ANCHOR ASSY,10IN TWIN HELIX,24IN FBGL STRAIN INS		Install	
10			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
				WO Number: 13745088		**Station 10 Sub Total:**	**0.00**
11			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Install	
11			0108110	NEUTRAL BRKT ASSEMBLY		Remove	
11			0114712	DEADEND BRKT ASSEMBLY, SPACER		Install	
11			0306001	CROSS ARM PIN ASSY 8-10 ARM		Remove	
11			0308112	8FT SINGLE ARM BRACE ASSY		Remove	
11			0403247	CONDUCTOR DEADEND ASSEMBLY, 336 SPC		Install	
11			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
11			0501016	GUY STRAND ASSY 16M		Install	
11			0532201	16M DBL GUY & ANCHOR ASSEMBLY, TRIPLE HELIX ANCHOR		Install	
11			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
11			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
11			0803002	LTNG ARR ASSY,LINE,3KV		Remove	
11			0809002	LTNG ARR ASSY,LINE 9KV		Install	
11			0816043	GRIP, PREFORMED, CONDUCTOR, 3/0 AWAC		Install	
11			0821042	POLE GROUND ASSY,ROD		Install	
11			0925006NG	FUSE CUTOUT ASSY:100A,6T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Remove	
11			0925010NG	FUSE CUTOUT ASSY:100A,10T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
11			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	
11			1010025	TRANSFORMER, 1PH, PT, CONV, 2400-120/240V, 25KVA		Remove	
11			1030025	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 25KVA		Install	
				WO Number: 13745088		**Station 11 Sub Total:**	**0.00**
12			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Install	
12			0108110	NEUTRAL BRKT ASSEMBLY		Remove	

Design Estimate Summary Report – Supervisor's Construction

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

Station	G- Macro CU	Macro CU	CU	Grand Macro/ Macro / CU Assembly Description	Qty	Operation	Time Rqd
12			0114102	MESSENGER BRKT ASSEMBLY	[redacted]	Install	
12			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
12			0145201	POLE:WOOD,45FT LG,2,EMBEDDED EARTH ONLY		Install	
12			0306001	CROSS ARM PIN ASSY 8-10 ARM		Remove	
12			0308112	8FT SINGLE ARM BRACE ASSY		Remove	
12			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
12			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
12			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
12			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
12			0803002	LTNG ARR ASSY,LINE,3KV		Remove	
12			0809002	LTNG ARR ASSY,LINE 9KV		Install	
12			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	
12			0821042	POLE GROUND ASSY,ROD		Install	
12			0925015NG	FUSE CUTOUT ASSY:100A,15T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
12			0925040NG	FUSE CUTOUT ASSY:100A,40T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Remove	
12			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	
12			1010050	TRANSFORMER, 1PH, PT, CONV, 2400-120/240V, 50KVA		Remove	
12			1030050	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 50KVA		Install	
				WO Number: 13745088		**Station 12 Sub Total:**	**0.00**
13			0114102	MESSENGER BRKT ASSEMBLY	[redacted]	Install	
13			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
13			0145201	POLE:WOOD,45FT LG,2,EMBEDDED EARTH ONLY		Install	
13			0306001	CROSS ARM PIN ASSY 8-10 ARM		Remove	
13			0308112	8FT SINGLE ARM BRACE ASSY		Remove	
13			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Remove	
13			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
13			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
13			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
13			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	
13			0821042	POLE GROUND ASSY,ROD		Install	
				WO Number: 13745088		**Station 13 Sub Total:**	**0.00**
14			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Install	
14			0114102	MESSENGER BRKT ASSEMBLY		Install	
14			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
14			0145201	POLE:WOOD,45FT LG,2,EMBEDDED EARTH ONLY		Install	
14			0306001	CROSS ARM PIN ASSY 8-10 ARM		Remove	
14			0308112	8FT SINGLE ARM BRACE ASSY		Remove	
14			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Remove	
14			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
14			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	

Design Estimate Summary Report – Supervisor's Construction

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

Station	G- Macro CU	Macro CU	CU	Grand Macro/ Macro / CU Assembly Description	Qty	Operation	Time Rqd
14			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS	[redacted]	Install	
14			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
14			0809002	LTNG ARR ASSY,LINE 9KV		Install	
14			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	
14			0821042	POLE GROUND ASSY,ROD		Install	
14			0925010NG	FUSE CUTOUT ASSY:100A,10T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
14			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	
14			1030025	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 25KVA		Install	
				WO Number: 13745088	**Station 14 Sub Total:**		**0.00**
15			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Install	
15			0108110	NEUTRAL BRKT ASSEMBLY		Install	
15			0109310	EQUIPMENT MOUNT ASSY 3-PHASE		Remove	
15			0114102	MESSENGER BRKT ASSEMBLY		Install	
15			0145201	POLE:WOOD,45FT LG,2,EMBEDDED EARTH ONLY		Install	
15			0306001	CROSS ARM PIN ASSY 8-10 ARM		Remove	
15			0308112	8FT SINGLE ARM BRACE ASSY		Remove	
15			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
15			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Remove	
15			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
15			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
15			0803002	LTNG ARR ASSY,LINE,3KV		Remove	
15			0809002	LTNG ARR ASSY,LINE 9KV		Install	
15			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	
15			0821042	POLE GROUND ASSY,ROD		Install	
15			0925010NG	FUSE CUTOUT ASSY:100A,10T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
15			0925025NG	FUSE CUTOUT ASSY:100A,25T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Remove	
15			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	
15			1030025	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 25KVA		Install	
15			1204030	CAPACITOR ASSY, FIXED BANK, 4KV, 300KVAR		Remove	
15			1204030	CAPACITOR ASSY, FIXED BANK, 4KV, 300KVAR		Remove	
15			1204030	CAPACITOR ASSY, FIXED BANK, 4KV, 300KVAR		Remove	
				WO Number: 13745088	**Station 15 Sub Total:**		**0.00**
16			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Remove	
16			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
16			0403247	CONDUCTOR DEADEND ASSEMBLY, 336 SPC		Install	
16			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
16			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
16			0803002	LTNG ARR ASSY,LINE,3KV		Remove	
16			0816043	GRIP, PREFORMED, CONDUCTOR, 3/0 AWAC		Remove	
16			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	

Design Estimate Summary Report – Supervisor's Construction

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

Station	G- Macro CU	Macro CU	CU	Grand Macro/ Macro / CU Assembly Description	Qty	Operation	Time Rqd
16			0821042	POLE GROUND ASSY,ROD	[redacted]	Install	
16			0925040NG	FUSE CUTOUT ASSY:100A,40T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Remove	
16			1010050	TRANSFORMER, 1PH, PT, CONV, 2400-120/240V, 50KVA		Remove	
				WO Number: 13745088		**Station 16 Sub Total:**	**0.00**
17			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Install	
17			0114712	DEADEND BRKT ASSEMBLY, SPACER		Install	
17			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
17			0145201	POLE:WOOD,45FT LG,2,EMBEDDED EARTH ONLY		Install	
17			0308216	8FT STD DBLARM BRACE ASSY		Remove	
17			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
17			0403208	CONDUCTOR DEADEND ASSEMBLY, #6 SOL CU		Remove	
17			0403247	CONDUCTOR DEADEND ASSEMBLY, 336 SPC		Install	
17			0501016	GUY STRAND ASSY 16M		Install	
17			0516201	16M GUY & ANCHOR ASSY,10IN TWIN HELIX,24IN FBGL STRAIN INS		Install	
17			0516701	16M HEAD GUY ASSY,24IN FBGL STRAIN INS		Install	
17			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
17			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
17			0809002	LTNG ARR ASSY,LINE 9KV		Install	
17			0815008	NEUTRAL DEADEND CLAMP ASSY, #6 SOL CU		Remove	
17			0816043	GRIP, PREFORMED, CONDUCTOR, 3/0 AWAC		Install	
17			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	
17			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Remove	
17			0821042	POLE GROUND ASSY,ROD		Install	
17			0925010NG	FUSE CUTOUT ASSY:100A,10T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
17			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	
17			1030025	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 25KVA		Install	
				WO Number: 13745088		**Station 17 Sub Total:**	**0.00**
18			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Remove	
18			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT		Install	
18			0114512	ANGLE BRACKET ASSEMBLY, 5-50 DEG, SPACER		Install	
18			0310112	10FT SINGLE ARM BRACE ASSY		Remove	
18			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
18			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Install	
18			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
18			0501016	GUY STRAND ASSY 16M		Install	
18			0516201	16M GUY & ANCHOR ASSY,10IN TWIN HELIX,24IN FBGL STRAIN INS		Install	
18			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
18			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
18			0803002	LTNG ARR ASSY,LINE,3KV		Remove	
18			0809002	LTNG ARR ASSY,LINE 9KV		Install	

Design Estimate Summary Report – Supervisor's Construction

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

Station	G- Macro CU	Macro CU	CU	Grand Macro/ Macro / CU Assembly Description	Qty	Operation	Time Rqd
18			0816043	GRIP, PREFORMED, CONDUCTOR, 3/0 AWAC	[redacted]	Install	
18			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	
18			0817035	NEUTRAL SWINGING CORNER ASSY, #2-3/0 ACSR/AAAC		Install	
18			0821042	POLE GROUND ASSY,ROD		Install	
18			0925015NG	FUSE CUTOUT ASSY:100A,15T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
18			0925040NG	FUSE CUTOUT ASSY:100A,40T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Remove	
18			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	
18			1010050	TRANSFORMER, 1PH, PT, CONV, 2400-120/240V, 50KVA		Remove	
18			1030050	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 50KVA		Install	
				WO Number: 13745088		**Station 18 Sub Total:**	**0.00**
19			0114512	ANGLE BRACKET ASSEMBLY, 5-50 DEG, SPACER	[redacted]	Install	
19			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
19			0145201	POLE:WOOD,45FT LG,2,EMBEDDED EARTH ONLY		Install	
19			0306001	CROSS ARM PIN ASSY 8-10 ARM		Remove	
19			0308216	8FT STD DBLARM BRACE ASSY		Remove	
19			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
19			0403208	CONDUCTOR DEADEND ASSEMBLY, #6 SOL CU		Remove	
19			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Install	
19			0405208	PIN INSULATOR ASSY W/ TIE WIRE, DOUBLE, ALUMINUM CONDUC.		Remove	
19			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
19			0815008	NEUTRAL DEADEND CLAMP ASSY, #6 SOL CU		Remove	
19			0816043	GRIP, PREFORMED, CONDUCTOR, 3/0 AWAC		Install	
19			0817035	NEUTRAL SWINGING CORNER ASSY, #2-3/0 ACSR/AAAC		Install	
19			0821042	POLE GROUND ASSY,ROD		Install	
				WO Number: 13745088		**Station 19 Sub Total:**	**0.00**
20			0108110	NEUTRAL BRKT ASSEMBLY	[redacted]	Remove	
20			0109310	EQUIPMENT MOUNT ASSY 3-PHASE		Remove	
20			0114102	MESSENGER BRKT ASSEMBLY		Install	
20			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
20			0145201	POLE:WOOD,45FT LG,2,EMBEDDED EARTH ONLY		Install	
20			0310112	10FT SINGLE ARM BRACE ASSY		Remove	
20			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
20			0803002	LTNG ARR ASSY,LINE,3KV		Remove	
20			0821042	POLE GROUND ASSY,ROD		Install	
20			0925025NG	FUSE CUTOUT ASSY:100A,25T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Remove	
20			1204030	CAPACITOR ASSY, FIXED BANK, 4KV, 300KVAR		Remove	
20			1204030	CAPACITOR ASSY, FIXED BANK, 4KV, 300KVAR		Remove	
20			1204030	CAPACITOR ASSY, FIXED BANK, 4KV, 300KVAR		Remove	
				WO Number: 13745088		**Station 20 Sub Total:**	**0.00**
21			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Install	

Design Estimate Summary Report – Supervisor's Construction

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

Station	G- Macro CU	Macro CU	CU	Grand Macro/ Macro / CU Assembly Description	Qty	Operation	Time Rqd
21			0108110	NEUTRAL BRKT ASSEMBLY	[redacted]	Remove	
21			0114102	MESSENGER BRKT ASSEMBLY		Install	
21			0308112	8FT SINGLE ARM BRACE ASSY		Remove	
21			0308216	8FT STD DBLARM BRACE ASSY		Remove	
21			0403203	CONDUCTOR DEADEND ASSEMBLY, .3-.6 in, 1/0-3/0 ACSR/AAAC		Install	
21			0403208	CONDUCTOR DEADEND ASSEMBLY, #6 SOL CU		Remove	
21			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
21			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
21			0699101	MATERIAL CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
21			0809002	LTNG ARR ASSY,LINE 9KV		Install	
21			0815003	NEUTRAL DEADEND CLAMP ASSY, 1/0 - 3/0 ACSR/AAAC		Install	
21			0815008	NEUTRAL DEADEND CLAMP ASSY, #6 SOL CU		Remove	
21			0821042	POLE GROUND ASSY,ROD		Install	
21			0925025NG	FUSE CUTOUT ASSY:100A,25T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
				WO Number: 13745088	**Station 21 Sub Total:**		**0.00**
22			0106108	POLE TOP PIN ASSY	[redacted]	Remove	
22			0106108	POLE TOP PIN ASSY		Install	
22			0108110	NEUTRAL BRKT ASSEMBLY		Remove	
22			0108110	NEUTRAL BRKT ASSEMBLY		Install	
22			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
22			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Remove	
22			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
22			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Install	
22			0501016	GUY STRAND ASSY 16M		Install	
22			0516201	16M GUY & ANCHOR ASSY,10IN TWIN HELIX,24IN FBGL STRAIN INS		Install	
22			0699101	MATERIAL CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
22			0821042	POLE GROUND ASSY,ROD		Install	
				WO Number: 13745088	**Station 22 Sub Total:**		**0.00**
23			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Install	
23			0106108	POLE TOP PIN ASSY		Remove	
23			0106108	POLE TOP PIN ASSY		Install	
23			0108110	NEUTRAL BRKT ASSEMBLY		Install	
23			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Remove	
23			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
23			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
23			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Install	
23			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
23			0699101	MATERIAL CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
23			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
23			0809002	LTNG ARR ASSY,LINE 9KV		Install	
23			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	

Design Estimate Summary Report – Supervisor's Construction

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

Station	G- Macro CU	Macro CU	CU	Grand Macro/ Macro / CU Assembly Description	Qty	Operation	Time Rqd
23			0821042	POLE GROUND ASSY,ROD	[redacted]	Install	
23			0925010NG	FUSE CUTOUT ASSY:100A,10T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
23			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	
23			1030025	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 25KVA		Install	
				WO Number: 13745088	**Station 23 Sub Total:**		**0.00**
24			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Install	
24			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT		Remove	
24			0106108	POLE TOP PIN ASSY		Install	
24			0106108	POLE TOP PIN ASSY		Remove	
24			0108110	NEUTRAL BRKT ASSEMBLY		Install	
24			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
24			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
24			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Install	
24			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
24			0803002	LTNG ARR ASSY,LINE,3KV		Remove	
24			0809002	LTNG ARR ASSY,LINE 9KV		Install	
24			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	
24			0821042	POLE GROUND ASSY,ROD		Install	
24			0925015NG	FUSE CUTOUT ASSY:100A,15T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
24			0925040NG	FUSE CUTOUT ASSY:100A,40T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Remove	
24			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	
24			1010050	TRANSFORMER, 1PH, PT, CONV, 2400-120/240V, 50KVA		Remove	
24			1030050	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 50KVA		Install	
				WO Number: 13745088	**Station 24 Sub Total:**		**0.00**
25			0106108	POLE TOP PIN ASSY	[redacted]	Remove	
25			0106108	POLE TOP PIN ASSY		Install	
25			0108110	NEUTRAL BRKT ASSEMBLY		Install	
25			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Remove	
25			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
25			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Install	
25			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
25			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
25			0699101	MATERIAL CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
25			0821042	POLE GROUND ASSY,ROD		Install	
				WO Number: 13745088	**Station 25 Sub Total:**		**0.00**
26			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Install	
26			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT		Remove	
26			0106108	POLE TOP PIN ASSY		Remove	
26			0106108	POLE TOP PIN ASSY		Install	
26			0108110	NEUTRAL BRKT ASSEMBLY		Install	

Design Estimate Summary Report – Supervisor's Construction

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

Station	G- Macro CU	Macro CU	CU	Grand Macro/ Macro / CU Assembly Description	Qty	Operation	Time Rqd
26			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR	[redacted]	Install	
26			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
26			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Install	
26			0699101	MATERIAL CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
26			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
26			0803002	LTNG ARR ASSY,LINE,3KV		Remove	
26			0809002	LTNG ARR ASSY,LINE 9KV		Install	
26			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	
26			0821042	POLE GROUND ASSY,ROD		Install	
26			0925010NG	FUSE CUTOUT ASSY:100A,10T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
26			0925015NG	FUSE CUTOUT ASSY:100A,15T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Remove	
26			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	
26			1010025	TRANSFORMER, 1PH, PT, CONV, 2400-120/240V, 25KVA		Remove	
26			1030025	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 25KVA		Install	
				WO Number: 13745088	**Station 26 Sub Total:**		**0.00**
27			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Remove	
27			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT		Install	
27			0106108	POLE TOP PIN ASSY		Remove	
27			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
27			0403203	CONDUCTOR DEADEND ASSEMBLY, .3-.6 in, 1/0-3/0 ACSR/AAAC		Install	
27			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
27			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
27			0699101	MATERIAL CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
27			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
27			0803002	LTNG ARR ASSY,LINE,3KV		Remove	
27			0809002	LTNG ARR ASSY,LINE 9KV		Install	
27			0815003	NEUTRAL DEADEND CLAMP ASSY, 1/0 - 3/0 ACSR/AAAC		Install	
27			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	
27			0821042	POLE GROUND ASSY,ROD		Install	
27			0925015NG	FUSE CUTOUT ASSY:100A,15T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
27			0925040NG	FUSE CUTOUT ASSY:100A,40T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Remove	
27			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	
27			1010050	TRANSFORMER, 1PH, PT, CONV, 2400-120/240V, 50KVA		Remove	
27			1030050	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 50KVA		Install	
				WO Number: 13745088	**Station 27 Sub Total:**		**0.00**
28			0135401	POLE:WOOD,35FT LG,4,EMBEDDED EARTH ONLY	[redacted]	Install	
28			0501008	GUY STRAND ASSY 8M		Install	
28			0501016	GUY STRAND ASSY 16M		Install	
28			0508601	8M SIDEWALK GUY ASSY,FIBERGLASS STRAIN INS		Install	
28			0516701	16M HEAD GUY ASSY,24IN FBGL STRAIN INS		Install	

Design Estimate Summary Report – Supervisor's Construction

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

Station	G- Macro CU	Macro CU	CU	Grand Macro/ Macro / CU Assembly Description	Qty	Operation	Time Rqd
				WO Number: 13745088	**Station 28 Sub Total:**		**0.00**
29			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR	[redacted]	Install	
29			0501016	GUY STRAND ASSY 16M		Install	
29			0516201	16M GUY & ANCHOR ASSY,10IN TWIN HELIX,24IN FBGL STRAIN INS		Install	
29			0699101	MATERIAL CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
29			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
29			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	
				WO Number: 13745088	**Station 29 Sub Total:**		**0.00**
30			0114712	DEADEND BRKT ASSEMBLY, SPACER	[redacted]	Install	
30			0145201	POLE:WOOD,45FT LG,2,EMBEDDED EARTH ONLY		Install	
30			0403247	CONDUCTOR DEADEND ASSEMBLY, 336 SPC		Install	
30			0501016	GUY STRAND ASSY 16M		Install	
30			0532201	16M DBL GUY & ANCHOR ASSEMBLY, TRIPLE HELIX ANCHOR		Install	
30			0816043	GRIP, PREFORMED, CONDUCTOR, 3/0 AWAC		Install	
30			0821042	POLE GROUND ASSY,ROD		Install	
				WO Number: 13745088	**Station 30 Sub Total:**		**0.00**
31			0109310	EQUIPMENT MOUNT ASSY 3-PHASE	[redacted]	Install	
31			0114712	DEADEND BRKT ASSEMBLY, SPACER		Install	
31			0308216	8FT STD DBLARM BRACE ASSY		Remove	
31			0403203	CONDUCTOR DEADEND ASSEMBLY, .3-.6 in, 1/0-3/0 ACSR/AAAC		Install	
31			0403208	CONDUCTOR DEADEND ASSEMBLY, #6 SOL CU		Remove	
31			0403247	CONDUCTOR DEADEND ASSEMBLY, 336 SPC		Install	
31			0501016	GUY STRAND ASSY 16M		Install	
31			0516701	16M HEAD GUY ASSY,24IN FBGL STRAIN INS		Install	
31			0532201	16M DBL GUY & ANCHOR ASSEMBLY, TRIPLE HELIX ANCHOR		Install	
31			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
31			0803002	LTNG ARR ASSY,LINE,3KV		Remove	
31			0809002	LTNG ARR ASSY,LINE 9KV		Install	
31			0815003	NEUTRAL DEADEND CLAMP ASSY, 1/0 - 3/0 ACSR/AAAC		Install	
31			0815008	NEUTRAL DEADEND CLAMP ASSY, #6 SOL CU		Remove	
31			0816043	GRIP, PREFORMED, CONDUCTOR, 3/0 AWAC		Remove	
31			0821042	POLE GROUND ASSY,ROD		Install	
31			0925025NG	FUSE CUTOUT ASSY:100A,25T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
31			0925040NG	FUSE CUTOUT ASSY:100A,40T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Remove	
31			0925065NG	FUSE CUTOUT ASSY:100A,65T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
				WO Number: 13745088	**Station 31 Sub Total:**		**0.00**
32			0109310	EQUIPMENT MOUNT ASSY 3-PHASE	[redacted]	Install	
32			0114102	MESSENGER BRKT ASSEMBLY		Install	
32			0308112	8FT SINGLE ARM BRACE ASSY		Remove	
32			0311218	11FT DOUBLE ARM BRACE ASSY		Install	
32			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	

Design Estimate Summary Report – Supervisor's Construction

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

Station	G- Macro CU	Macro CU	CU	Grand Macro/ Macro / CU Assembly Description	Qty	Operation	Time Rqd
32			0403203	CONDUCTOR DEADEND ASSEMBLY, .3-.6 in, 1/0-3/0 ACSR/AAAC	[redacted]	Install	
32			0403208	CONDUCTOR DEADEND ASSEMBLY, #6 SOL CU		Remove	
32			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
32			0809002	LTNG ARR ASSY,LINE 9KV		Install	
32			0815003	NEUTRAL DEADEND CLAMP ASSY, 1/0 - 3/0 ACSR/AAAC		Install	
32			0815008	NEUTRAL DEADEND CLAMP ASSY, #6 SOL CU		Remove	
32			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	
32			0821042	POLE GROUND ASSY,ROD		Install	
32			0925065NG	FUSE CUTOUT ASSY:100A,65T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Remove	
				WO Number: 13745088	**Station 32 Sub Total:**		**0.00**
33			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Install	
33			0114102	MESSENGER BRKT ASSEMBLY		Install	
33			0135401	POLE:WOOD,35FT LG,4,EMBEDDED EARTH ONLY		Remove	
33			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Install	
33			0306001	CROSS ARM PIN ASSY 8-10 ARM		Remove	
33			0308216	8FT STD DBLARM BRACE ASSY		Remove	
33			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Remove	
33			0403203	CONDUCTOR DEADEND ASSEMBLY, .3-.6 in, 1/0-3/0 ACSR/AAAC		Remove	
33			0405208	PIN INSULATOR ASSY W/ TIE WIRE, DOUBLE, ALUMINUM CONDUC.		Remove	
33			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
33			0809002	LTNG ARR ASSY,LINE 9KV		Install	
33			0815003	NEUTRAL DEADEND CLAMP ASSY, 1/0 - 3/0 ACSR/AAAC		Remove	
33			0821042	POLE GROUND ASSY,ROD		Install	
				WO Number: 13745088	**Station 33 Sub Total:**		**0.00**
34			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Remove	
34			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT		Install	
34			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Install	
34			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
34			0403203	CONDUCTOR DEADEND ASSEMBLY, .3-.6 in, 1/0-3/0 ACSR/AAAC		Install	
34			0403208	CONDUCTOR DEADEND ASSEMBLY, #6 SOL CU		Remove	
34			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
34			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
34			0803002	LTNG ARR ASSY,LINE,3KV		Remove	
34			0809002	LTNG ARR ASSY,LINE 9KV		Install	
34			0815003	NEUTRAL DEADEND CLAMP ASSY, 1/0 - 3/0 ACSR/AAAC		Install	
34			0815008	NEUTRAL DEADEND CLAMP ASSY, #6 SOL CU		Remove	
34			0821042	POLE GROUND ASSY,ROD		Install	
34			0925010NG	FUSE CUTOUT ASSY:100A,10T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
34			0925015NG	FUSE CUTOUT ASSY:100A,15T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Remove	
34			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	

Design Estimate Summary Report – Supervisor's Construction

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

Station	G- Macro CU	Macro CU	CU	Grand Macro/ Macro / CU Assembly Description	Qty	Operation	Time Rqd
34			1010025	TRANSFORMER, 1PH, PT, CONV, 2400-120/240V, 25KVA	[redacted]	Remove	
34			1030025	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 25KVA		Install	
				WO Number: 13745088		**Station 34 Sub Total:**	**0.00**
35			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Install	
35			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT		Remove	
35			0108110	NEUTRAL BRKT ASSEMBLY		Remove	
35			0114102	MESSENGER BRKT ASSEMBLY		Install	
35			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Install	
35			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
35			0308112	8FT SINGLE ARM BRACE ASSY		Remove	
35			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
35			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
35			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
35			0803002	LTNG ARR ASSY,LINE,3KV		Remove	
35			0809002	LTNG ARR ASSY,LINE 9KV		Install	
35			0821042	POLE GROUND ASSY,ROD		Install	
35			0925010NG	FUSE CUTOUT ASSY:100A,10T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
35			0925015NG	FUSE CUTOUT ASSY:100A,15T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Remove	
35			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	
35			1010025	TRANSFORMER, 1PH, PT, CONV, 2400-120/240V, 25KVA		Remove	
35			1030025	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 25KVA		Install	
				WO Number: 13745088		**Station 35 Sub Total:**	**0.00**
36			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Install	
36			0114102	MESSENGER BRKT ASSEMBLY		Install	
36			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
36			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Install	
36			0308112	8FT SINGLE ARM BRACE ASSY		Remove	
36			0403203	CONDUCTOR DEADEND ASSEMBLY, .3-.6 in, 1/0-3/0 ACSR/AAAC		Install	
36			0403208	CONDUCTOR DEADEND ASSEMBLY, #6 SOL CU		Remove	
36			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
36			0501008	GUY STRAND ASSY 8M		Install	
36			0508601	8M SIDEWALK GUY ASSY,FIBERGLASS STRAIN INS		Install	
36			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
36			0809002	LTNG ARR ASSY,LINE 9KV		Install	
36			0815003	NEUTRAL DEADEND CLAMP ASSY, 1/0 - 3/0 ACSR/AAAC		Install	
36			0815008	NEUTRAL DEADEND CLAMP ASSY, #6 SOL CU		Remove	
36			0821042	POLE GROUND ASSY,ROD		Install	
				WO Number: 13745088		**Station 36 Sub Total:**	**0.00**
37			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Remove	
37			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT		Install	

Design Estimate Summary Report – Supervisor's Construction

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

Station	G- Macro CU	Macro CU	CU	Grand Macro/ Macro / CU Assembly Description	Qty	Operation	Time Rqd
37			0135401	POLE:WOOD,35FT LG,4,EMBEDDED EARTH ONLY	[redacted]	Remove	
37			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Install	
37			0403203	CONDUCTOR DEADEND ASSEMBLY, .3-.6 in, 1/0-3/0 ACSR/AAAC		Install	
37			0403208	CONDUCTOR DEADEND ASSEMBLY, #6 SOL CU		Remove	
37			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
37			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
37			0803002	LTNG ARR ASSY,LINE,3KV		Remove	
37			0809002	LTNG ARR ASSY,LINE 9KV		Install	
37			0815003	NEUTRAL DEADEND CLAMP ASSY, 1/0 - 3/0 ACSR/AAAC		Install	
37			0815008	NEUTRAL DEADEND CLAMP ASSY, #6 SOL CU		Remove	
37			0821042	POLE GROUND ASSY,ROD		Install	
37			0925015NG	FUSE CUTOUT ASSY:100A,15T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
37			0925040NG	FUSE CUTOUT ASSY:100A,40T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Remove	
37			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	
37			1010050	TRANSFORMER, 1PH, PT, CONV, 2400-120/240V, 50KVA		Remove	
37			1030050	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 50KVA		Install	
				WO Number: 13745088		**Station 37 Sub Total:**	**0.00**
38			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Install	
38			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT		Remove	
38			0135401	POLE:WOOD,35FT LG,4,EMBEDDED EARTH ONLY		Remove	
38			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Install	
38			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Remove	
38			0403203	CONDUCTOR DEADEND ASSEMBLY, .3-.6 in, 1/0-3/0 ACSR/AAAC		Install	
38			0403208	CONDUCTOR DEADEND ASSEMBLY, #6 SOL CU		Remove	
38			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
38			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
38			0803002	LTNG ARR ASSY,LINE,3KV		Remove	
38			0809002	LTNG ARR ASSY,LINE 9KV		Install	
38			0815003	NEUTRAL DEADEND CLAMP ASSY, 1/0 - 3/0 ACSR/AAAC		Install	
38			0815008	NEUTRAL DEADEND CLAMP ASSY, #6 SOL CU		Remove	
38			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Remove	
38			0821042	POLE GROUND ASSY,ROD		Install	
38			0925025NG	FUSE CUTOUT ASSY:100A,25T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
38			0925040NG	FUSE CUTOUT ASSY:100A,40T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Remove	
38			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	
38			1010050	TRANSFORMER, 1PH, PT, CONV, 2400-120/240V, 50KVA		Remove	
38			1030101	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 100KVA		Install	
				WO Number: 13745088		**Station 38 Sub Total:**	**0.00**
39			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Install	
39			0114102	MESSENGER BRKT ASSEMBLY		Install	

Design Estimate Summary Report – Supervisor's Construction

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

Station	G- Macro CU	Macro CU	CU	Grand Macro/ Macro / CU Assembly Description	Qty	Operation	Time Rqd
39			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY	[redacted]	Install	
39			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
39			0306001	CROSS ARM PIN ASSY 8-10 ARM		Remove	
39			0308112	8FT SINGLE ARM BRACE ASSY		Remove	
39			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
39			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
39			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
39			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
39			0803002	LTNG ARR ASSY,LINE,3KV		Remove	
39			0809002	LTNG ARR ASSY,LINE 9KV		Install	
39			0821042	POLE GROUND ASSY,ROD		Install	
39			0925015NG	FUSE CUTOUT ASSY:100A,15T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
39			0925040NG	FUSE CUTOUT ASSY:100A,40T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Remove	
39			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	
39			1010050	TRANSFORMER, 1PH, PT, CONV, 2400-120/240V, 50KVA		Remove	
39			1030050	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 50KVA		Install	
				WO Number: 13745088	**Station 39 Sub Total:**		**0.00**
40			0106108	POLE TOP PIN ASSY	[redacted]	Remove	
40			0114712	DEADEND BRKT ASSEMBLY, SPACER		Install	
40			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Install	
40			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
40			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Remove	
40			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
40			0403247	CONDUCTOR DEADEND ASSEMBLY, 336 SPC		Install	
40			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
40			0501016	GUY STRAND ASSY 16M		Install	
40			0516201	16M GUY & ANCHOR ASSY,10IN TWIN HELIX,24IN FBGL STRAIN INS		Install	
40			0815008	NEUTRAL DEADEND CLAMP ASSY, #6 SOL CU		Remove	
40			0816043	GRIP, PREFORMED, CONDUCTOR, 3/0 AWAC		Install	
40			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Remove	
40			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	
40			0821042	POLE GROUND ASSY,ROD		Install	
				WO Number: 13745088	**Station 40 Sub Total:**		**0.00**
41			0114712	DEADEND BRKT ASSEMBLY, SPACER	[redacted]	Install	
41			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Install	
41			0403247	CONDUCTOR DEADEND ASSEMBLY, 336 SPC		Install	
41			0501016	GUY STRAND ASSY 16M		Install	
41			0516201	16M GUY & ANCHOR ASSY,10IN TWIN HELIX,24IN FBGL STRAIN INS		Install	
41			0816043	GRIP, PREFORMED, CONDUCTOR, 3/0 AWAC		Install	
41			0821042	POLE GROUND ASSY,ROD		Install	

Design Estimate Summary Report – Supervisor's Construction

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

Station	G- Macro CU	Macro CU	CU	Grand Macro/ Macro / CU Assembly Description	Qty	Operation	Time Rqd
				WO Number: 13745088		**Station 41 Sub Total:**	**0.00**
42			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Install	
42			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT		Remove	
42			0106108	POLE TOP PIN ASSY		Remove	
42			0114712	DEADEND BRKT ASSEMBLY, SPACER		Install	
42			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Install	
42			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
42			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
42			0403247	CONDUCTOR DEADEND ASSEMBLY, 336 SPC		Install	
42			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
42			0501016	GUY STRAND ASSY 16M		Install	
42			0516201	16M GUY & ANCHOR ASSY,10IN TWIN HELIX,24IN FBGL STRAIN INS		Install	
42			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
42			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
42			0803002	LTNG ARR ASSY,LINE,3KV		Remove	
42			0809002	LTNG ARR ASSY,LINE 9KV		Install	
42			0816043	GRIP, PREFORMED, CONDUCTOR, 3/0 AWAC		Install	
42			0821042	POLE GROUND ASSY,ROD		Install	
42			0925015NG	FUSE CUTOUT ASSY:100A,15T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
42			0925040NG	FUSE CUTOUT ASSY:100A,40T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Remove	
42			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	
42			1010050	TRANSFORMER, 1PH, PT, CONV, 2400-120/240V, 50KVA		Remove	
42			1030050	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 50KVA		Install	
				WO Number: 13745088		**Station 42 Sub Total:**	**0.00**
43			0114102	MESSENGER BRKT ASSEMBLY	[redacted]	Install	
43			0135401	POLE:WOOD,35FT LG,4,EMBEDDED EARTH ONLY		Remove	
43			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Install	
43			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
43			0403208	CONDUCTOR DEADEND ASSEMBLY, #6 SOL CU		Remove	
43			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
43			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
43			0815008	NEUTRAL DEADEND CLAMP ASSY, #6 SOL CU		Remove	
43			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	
43			0821042	POLE GROUND ASSY,ROD		Install	
				WO Number: 13745088		**Station 43 Sub Total:**	**0.00**
44			0109310	EQUIPMENT MOUNT ASSY 3-PHASE	[redacted]	Install	
44			0145201	POLE:WOOD,45FT LG,2,EMBEDDED EARTH ONLY		Install	
44			0310216	10FT DBL ARM BRACE ASSY		Install	
44			0310401	10FT HEAVY DUTY FIBERGLASS DEAD END CROSSARM		Install	
44			0403247	CONDUCTOR DEADEND ASSEMBLY, 336 SPC		Install	

Design Estimate Summary Report – Supervisor's Construction

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

Station	G- Macro CU	Macro CU	CU	Grand Macro/ Macro / CU Assembly Description	Qty	Operation	Time Rqd
44			0501016	GUY STRAND ASSY 16M	[redacted]	Install	
44			0532201	16M DBL GUY & ANCHOR ASSEMBLY, TRIPLE HELIX ANCHOR		Install	
44			0809002	LTNG ARR ASSY,LINE 9KV		Install	
44			0816043	GRIP, PREFORMED, CONDUCTOR, 3/0 AWAC		Install	
44			0821042	POLE GROUND ASSY,ROD		Install	
44			0821401	GOAB SWITCH GROUND ASSEMBLY		Install	
44			0936601	SWITCH:14.4KV,900A,GOAB,HORIZONTAL,LOADBREAK		Install	
				WO Number: 13745088	**Station 44 Sub Total:**		**0.00**
45			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Install	
45			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT		Remove	
45			0114102	MESSENGER BRKT ASSEMBLY		Install	
45			0114102	MESSENGER BRKT ASSEMBLY		Remove	
45			0114712	DEADEND BRKT ASSEMBLY, SPACER		Install	
45			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
45			0403203	CONDUCTOR DEADEND ASSEMBLY, .3-.6 in, 1/0-3/0 ACSR/AAAC		Install	
45			0403208	CONDUCTOR DEADEND ASSEMBLY, #6 SOL CU		Remove	
45			0403247	CONDUCTOR DEADEND ASSEMBLY, 336 SPC		Install	
45			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
45			0699101	MATERIAL CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
45			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
45			0803002	LTNG ARR ASSY,LINE,3KV		Remove	
45			0809002	LTNG ARR ASSY,LINE 9KV		Install	
45			0815003	NEUTRAL DEADEND CLAMP ASSY, 1/0 - 3/0 ACSR/AAAC		Install	
45			0815008	NEUTRAL DEADEND CLAMP ASSY, #6 SOL CU		Remove	
45			0816043	GRIP, PREFORMED, CONDUCTOR, 3/0 AWAC		Install	
45			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	
45			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Remove	
45			0821042	POLE GROUND ASSY,ROD		Install	
45			0925015NG	FUSE CUTOUT ASSY:100A,15T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
45			0925025NG	FUSE CUTOUT ASSY:100A,25T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
45			0925040NG	FUSE CUTOUT ASSY:100A,40T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Remove	
45			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	
				WO Number: 13745088	**Station 45 Sub Total:**		**0.00**
46			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Install	
46			0145101	POLE:WOOD,45FT LG,1,EMBEDDED EARTH ONLY		Install	
46			0145201	POLE:WOOD,45FT LG,2,EMBEDDED EARTH ONLY		Remove	
46			0310216	10FT DBL ARM BRACE ASSY		Install	
46			0310216	10FT DBL ARM BRACE ASSY		Remove	
46			0403203	CONDUCTOR DEADEND ASSEMBLY, .3-.6 in, 1/0-3/0 ACSR/AAAC		Install	
46			0403203	CONDUCTOR DEADEND ASSEMBLY, .3-.6 in, 1/0-3/0 ACSR/AAAC		Remove	

Design Estimate Summary Report – Supervisor's Construction

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

Station	G- Macro CU	Macro CU	CU	Grand Macro/ Macro / CU Assembly Description	Qty	Operation	Time Rqd
46			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS	[redacted]	Install	
46			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
46			0809002	LTNG ARR ASSY,LINE 9KV		Install	
46			0815003	NEUTRAL DEADEND CLAMP ASSY, 1/0 - 3/0 ACSR/AAAC		Install	
46			0815003	NEUTRAL DEADEND CLAMP ASSY, 1/0 - 3/0 ACSR/AAAC		Remove	
46			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	
46			0821042	POLE GROUND ASSY,ROD		Install	
46			0925025NG	FUSE CUTOUT ASSY:100A,25T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
46			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	
46			1010333	TRANSFORMER, 1PH, PT, CONV, 2400-120/240V, 333KVA		Remove	
46			1010333	TRANSFORMER, 1PH, PT, CONV, 2400-120/240V, 333KVA		Remove	
46			1030101	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 100KVA		Install	
				WO Number: 13745088		**Station 46 Sub Total:**	**0.00**
47			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Install	
47			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
47			0145101	POLE:WOOD,45FT LG,1,EMBEDDED EARTH ONLY		Install	
47			0310216	10FT DBL ARM BRACE ASSY		Remove	
47			0403203	CONDUCTOR DEADEND ASSEMBLY, .3-.6 in, 1/0-3/0 ACSR/AAAC		Install	
47			0403203	CONDUCTOR DEADEND ASSEMBLY, .3-.6 in, 1/0-3/0 ACSR/AAAC		Remove	
47			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
47			0809002	LTNG ARR ASSY,LINE 9KV		Install	
47			0815003	NEUTRAL DEADEND CLAMP ASSY, 1/0 - 3/0 ACSR/AAAC		Install	
47			0815003	NEUTRAL DEADEND CLAMP ASSY, 1/0 - 3/0 ACSR/AAAC		Remove	
47			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	
47			0821042	POLE GROUND ASSY,ROD		Install	
47			0925025NG	FUSE CUTOUT ASSY:100A,25T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
47			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	
47			1030101	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 100KVA		Install	
				WO Number: 13745088		**Station 47 Sub Total:**	**0.00**
48			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Install	
48			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Install	
48			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
48			0306001	CROSS ARM PIN ASSY 8-10 ARM		Remove	
48			0308112	8FT SINGLE ARM BRACE ASSY		Remove	
48			0403203	CONDUCTOR DEADEND ASSEMBLY, .3-.6 in, 1/0-3/0 ACSR/AAAC		Install	
48			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
48			0501016	GUY STRAND ASSY 16M		Install	
48			0516201	16M GUY & ANCHOR ASSY,10IN TWIN HELIX,24IN FBGL STRAIN INS		Install	
48			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
48			0803002	LTNG ARR ASSY,LINE,3KV		Remove	

Design Estimate Summary Report – Supervisor's Construction

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

Station	G- Macro CU	Macro CU	CU	Grand Macro/ Macro / CU Assembly Description	Qty	Operation	Time Rqd
48			0809002	LTNG ARR ASSY,LINE 9KV	[redacted]	Install	
48			0815003	NEUTRAL DEADEND CLAMP ASSY, 1/0 - 3/0 ACSR/AAAC		Install	
48			0821042	POLE GROUND ASSY,ROD		Install	
48			0925010NG	FUSE CUTOUT ASSY:100A,10T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
48			0925015NG	FUSE CUTOUT ASSY:100A,15T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Remove	
48			0925025NG	FUSE CUTOUT ASSY:100A,25T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Remove	
48			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	
48			1010025	TRANSFORMER, 1PH, PT, CONV, 2400-120/240V, 25KVA		Remove	
48			1030025	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 25KVA		Install	
				WO Number: 13745088	**Station 48 Sub Total:**		**0.00**
49			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY	[redacted]	Install	
49			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
49			0310112	10FT SINGLE ARM BRACE ASSY		Remove	
49			0403203	CONDUCTOR DEADEND ASSEMBLY, .3-.6 in, 1/0-3/0 ACSR/AAAC		Install	
49			0403203	CONDUCTOR DEADEND ASSEMBLY, .3-.6 in, 1/0-3/0 ACSR/AAAC		Remove	
49			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
49			0815003	NEUTRAL DEADEND CLAMP ASSY, 1/0 - 3/0 ACSR/AAAC		Install	
49			0815003	NEUTRAL DEADEND CLAMP ASSY, 1/0 - 3/0 ACSR/AAAC		Remove	
49			0821042	POLE GROUND ASSY,ROD		Install	
				WO Number: 13745088	**Station 49 Sub Total:**		**0.00**
50			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Remove	
50			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT		Install	
50			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
50			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Install	
50			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
50			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Remove	
50			0403203	CONDUCTOR DEADEND ASSEMBLY, .3-.6 in, 1/0-3/0 ACSR/AAAC		Install	
50			0403208	CONDUCTOR DEADEND ASSEMBLY, #6 SOL CU		Remove	
50			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
50			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
50			0803002	LTNG ARR ASSY,LINE,3KV		Remove	
50			0809002	LTNG ARR ASSY,LINE 9KV		Install	
50			0815003	NEUTRAL DEADEND CLAMP ASSY, 1/0 - 3/0 ACSR/AAAC		Install	
50			0815008	NEUTRAL DEADEND CLAMP ASSY, #6 SOL CU		Remove	
50			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	
50			0821042	POLE GROUND ASSY,ROD		Install	
50			0925015NG	FUSE CUTOUT ASSY:100A,15T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
50			0925040NG	FUSE CUTOUT ASSY:100A,40T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Remove	
50			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	
50			1010050	TRANSFORMER, 1PH, PT, CONV, 2400-120/240V, 50KVA		Remove	

Design Estimate Summary Report – Supervisor's Construction

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

Station	G- Macro CU	Macro CU	CU	Grand Macro/ Macro / CU Assembly Description	Qty	Operation	Time Rqd
50			1030050	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 50KVA	[redacted]	Install	
				WO Number: 13745088		**Station 50 Sub Total:**	**0.00**
51			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Install	
51			0135401	POLE:WOOD,35FT LG,4,EMBEDDED EARTH ONLY		Remove	
51			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Install	
51			0308216	8FT STD DBLARM BRACE ASSY		Remove	
51			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
51			0403203	CONDUCTOR DEADEND ASSEMBLY, .3-.6 in, 1/0-3/0 ACSR/AAAC		Install	
51			0403208	CONDUCTOR DEADEND ASSEMBLY, #6 SOL CU		Remove	
51			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
51			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
51			0809002	LTNG ARR ASSY,LINE 9KV		Install	
51			0815003	NEUTRAL DEADEND CLAMP ASSY, 1/0 - 3/0 ACSR/AAAC		Install	
51			0815008	NEUTRAL DEADEND CLAMP ASSY, #6 SOL CU		Remove	
51			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	
51			0821042	POLE GROUND ASSY,ROD		Install	
51			0925006NG	FUSE CUTOUT ASSY:100A,6T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
51			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	
51			1030015	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 15KVA		Install	
				WO Number: 13745088		**Station 51 Sub Total:**	**0.00**
52			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Install	
52			0106108	POLE TOP PIN ASSY		Install	
52			0108110	NEUTRAL BRKT ASSEMBLY		Install	
52			0108110	NEUTRAL BRKT ASSEMBLY		Remove	
52			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Install	
52			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
52			0306001	CROSS ARM PIN ASSY 8-10 ARM		Remove	
52			0308112	8FT SINGLE ARM BRACE ASSY		Remove	
52			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
52			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
52			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Install	
52			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
52			0803002	LTNG ARR ASSY,LINE,3KV		Remove	
52			0809002	LTNG ARR ASSY,LINE 9KV		Install	
52			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	
52			0821042	POLE GROUND ASSY,ROD		Install	
52			0925015NG	FUSE CUTOUT ASSY:100A,15T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
52			0925040NG	FUSE CUTOUT ASSY:100A,40T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Remove	
52			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	
52			1010050	TRANSFORMER, 1PH, PT, CONV, 2400-120/240V, 50KVA		Remove	

Design Estimate Summary Report – Supervisor's Construction

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

Station	G- Macro CU	Macro CU	CU	Grand Macro/ Macro / CU Assembly Description	Qty	Operation	Time Rqd
52			1030050	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 50KVA	[redacted]	Install	
				WO Number: 13745088		**Station 52 Sub Total:**	**0.00**
53			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Install	
53			0106108	POLE TOP PIN ASSY		Install	
53			0108110	NEUTRAL BRKT ASSEMBLY		Remove	
53			0108110	NEUTRAL BRKT ASSEMBLY		Install	
53			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
53			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Install	
53			0306001	CROSS ARM PIN ASSY 8-10 ARM		Remove	
53			0308112	8FT SINGLE ARM BRACE ASSY		Remove	
53			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
53			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Install	
53			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
53			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
53			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
53			0803002	LTNG ARR ASSY,LINE,3KV		Remove	
53			0809002	LTNG ARR ASSY,LINE 9KV		Install	
53			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	
53			0821042	POLE GROUND ASSY,ROD		Install	
53			0925006NG	FUSE CUTOUT ASSY:100A,6T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
53			0925010NG	FUSE CUTOUT ASSY:100A,10T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Remove	
53			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	
53			1010015	TRANSFORMER, 1PH, PT, CONV, 2400-120/240V, 15KVA		Remove	
53			1030015	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 15KVA		Install	
				WO Number: 13745088		**Station 53 Sub Total:**	**0.00**
54			0106108	POLE TOP PIN ASSY	[redacted]	Install	
54			0108110	NEUTRAL BRKT ASSEMBLY		Remove	
54			0108110	NEUTRAL BRKT ASSEMBLY		Install	
54			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Install	
54			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
54			0306001	CROSS ARM PIN ASSY 8-10 ARM		Remove	
54			0308112	8FT SINGLE ARM BRACE ASSY		Remove	
54			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
54			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Install	
54			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
54			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	
54			0821042	POLE GROUND ASSY,ROD		Install	
				WO Number: 13745088		**Station 54 Sub Total:**	**0.00**
55			0108110	NEUTRAL BRKT ASSEMBLY	[redacted]	Remove	
55			0145201	POLE:WOOD,45FT LG,2,EMBEDDED EARTH ONLY		Install	

Design Estimate Summary Report – Supervisor's Construction

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

Station	G- Macro CU	Macro CU	CU	Grand Macro/ Macro / CU Assembly Description	Qty	Operation	Time Rqd
55			0145201	POLE:WOOD,45FT LG,2,EMBEDDED EARTH ONLY	[redacted]	Remove	
55			0310216	10FT DBL ARM BRACE ASSY		Remove	
55			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
55			0403203	CONDUCTOR DEADEND ASSEMBLY, .3-.6 in, 1/0-3/0 ACSR/AAAC		Remove	
55			0403203	CONDUCTOR DEADEND ASSEMBLY, .3-.6 in, 1/0-3/0 ACSR/AAAC		Install	
55			0405208	PIN INSULATOR ASSY W/ TIE WIRE, DOUBLE, ALUMINUM CONDUC.		Remove	
55			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
55			0815003	NEUTRAL DEADEND CLAMP ASSY, 1/0 - 3/0 ACSR/AAAC		Install	
55			0815003	NEUTRAL DEADEND CLAMP ASSY, 1/0 - 3/0 ACSR/AAAC		Remove	
55			0821042	POLE GROUND ASSY,ROD		Install	
				WO Number: 13745088		**Station 55 Sub Total:**	**0.00**
56			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Remove	
56			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT		Install	
56			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
56			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Install	
56			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
56			0403203	CONDUCTOR DEADEND ASSEMBLY, .3-.6 in, 1/0-3/0 ACSR/AAAC		Install	
56			0403208	CONDUCTOR DEADEND ASSEMBLY, #6 SOL CU		Remove	
56			0501016	GUY STRAND ASSY 16M		Install	
56			0516201	16M GUY & ANCHOR ASSY,10IN TWIN HELIX,24IN FBGL STRAIN INS		Install	
56			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
56			0803002	LTNG ARR ASSY,LINE,3KV		Remove	
56			0809002	LTNG ARR ASSY,LINE 9KV		Install	
56			0815003	NEUTRAL DEADEND CLAMP ASSY, 1/0 - 3/0 ACSR/AAAC		Install	
56			0815008	NEUTRAL DEADEND CLAMP ASSY, #6 SOL CU		Remove	
56			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Remove	
56			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	
56			0821042	POLE GROUND ASSY,ROD		Install	
56			0925010NG	FUSE CUTOUT ASSY:100A,10T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
56			0925015NG	FUSE CUTOUT ASSY:100A,15T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Remove	
56			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	
56			1010025	TRANSFORMER, 1PH, PT, CONV, 2400-120/240V, 25KVA		Remove	
56			1030025	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 25KVA		Install	
				WO Number: 13745088		**Station 56 Sub Total:**	**0.00**
57			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY	[redacted]	Install	
57			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
57			0308216	8FT STD DBLARM BRACE ASSY		Remove	
57			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
57			0403203	CONDUCTOR DEADEND ASSEMBLY, .3-.6 in, 1/0-3/0 ACSR/AAAC		Install	
57			0403208	CONDUCTOR DEADEND ASSEMBLY, #6 SOL CU		Remove	

Design Estimate Summary Report – Supervisor's Construction

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

Station	G- Macro CU	Macro CU	CU	Grand Macro/ Macro / CU Assembly Description	Qty	Operation	Time Rqd
57			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS	[redacted]	Install	
57			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
57			0815003	NEUTRAL DEADEND CLAMP ASSY, 1/0 - 3/0 ACSR/AAAC		Install	
57			0815008	NEUTRAL DEADEND CLAMP ASSY, #6 SOL CU		Remove	
57			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	
57			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Remove	
57			0821042	POLE GROUND ASSY,ROD		Install	
				WO Number: 13745088		**Station 57 Sub Total:**	**0.00**
58			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Remove	
58			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT		Install	
58			0106108	POLE TOP PIN ASSY		Install	
58			0108110	NEUTRAL BRKT ASSEMBLY		Install	
58			0108110	NEUTRAL BRKT ASSEMBLY		Remove	
58			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
58			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Install	
58			0306001	CROSS ARM PIN ASSY 8-10 ARM		Remove	
58			0308112	8FT SINGLE ARM BRACE ASSY		Remove	
58			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
58			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Install	
58			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
58			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
58			0803002	LTNG ARR ASSY,LINE,3KV		Remove	
58			0809002	LTNG ARR ASSY,LINE 9KV		Install	
58			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	
58			0821042	POLE GROUND ASSY,ROD		Install	
58			0925015NG	FUSE CUTOUT ASSY:100A,15T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
58			0925015NG	FUSE CUTOUT ASSY:100A,15T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Remove	
58			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	
58			1010025	TRANSFORMER, 1PH, PT, CONV, 2400-120/240V, 25KVA		Remove	
58			1030050	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 50KVA		Install	
				WO Number: 13745088		**Station 58 Sub Total:**	**0.00**
59			0106108	POLE TOP PIN ASSY	[redacted]	Install	
59			0108110	NEUTRAL BRKT ASSEMBLY		Install	
59			0108110	NEUTRAL BRKT ASSEMBLY		Remove	
59			0135401	POLE:WOOD,35FT LG,4,EMBEDDED EARTH ONLY		Remove	
59			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Install	
59			0306001	CROSS ARM PIN ASSY 8-10 ARM		Remove	
59			0310216	10FT DBL ARM BRACE ASSY		Remove	
59			0403203	CONDUCTOR DEADEND ASSEMBLY, .3-.6 in, 1/0-3/0 ACSR/AAAC		Install	
59			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Install	

Design Estimate Summary Report – Supervisor's Construction

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

Station	G- Macro CU	Macro CU	CU	Grand Macro/ Macro / CU Assembly Description	Qty	Operation	Time Rqd
59			0405208	PIN INSULATOR ASSY W/ TIE WIRE, DOUBLE, ALUMINUM CONDUC.	[redacted]	Remove	
59			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
59			0815003	NEUTRAL DEADEND CLAMP ASSY, 1/0 - 3/0 ACSR/AAAC		Install	
59			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Remove	
59			0821042	POLE GROUND ASSY,ROD		Install	
				WO Number: 13745088		**Station 59 Sub Total:**	**0.00**
60			0106108	POLE TOP PIN ASSY	[redacted]	Install	
60			0108110	NEUTRAL BRKT ASSEMBLY		Remove	
60			0108110	NEUTRAL BRKT ASSEMBLY		Install	
60			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Install	
60			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
60			0306001	CROSS ARM PIN ASSY 8-10 ARM		Remove	
60			0308112	8FT SINGLE ARM BRACE ASSY		Remove	
60			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
60			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Install	
60			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
60			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
60			0821042	POLE GROUND ASSY,ROD		Install	
				WO Number: 13745088		**Station 60 Sub Total:**	**0.00**
61			0108110	NEUTRAL BRKT ASSEMBLY	[redacted]	Install	
61			0109310	EQUIPMENT MOUNT ASSY 3-PHASE		Install	
61			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
61			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Install	
61			0310216	10FT DBL ARM BRACE ASSY		Remove	
61			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
61			0403203	CONDUCTOR DEADEND ASSEMBLY, .3-.6 in, 1/0-3/0 ACSR/AAAC		Install	
61			0403208	CONDUCTOR DEADEND ASSEMBLY, #6 SOL CU		Remove	
61			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
61			0803002	LTNG ARR ASSY,LINE,3KV		Remove	
61			0809002	LTNG ARR ASSY,LINE 9KV		Install	
61			0809002	LTNG ARR ASSY,LINE 9KV		Install	
61			0815003	NEUTRAL DEADEND CLAMP ASSY, 1/0 - 3/0 ACSR/AAAC		Install	
61			0815008	NEUTRAL DEADEND CLAMP ASSY, #6 SOL CU		Remove	
61			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	
61			0821042	POLE GROUND ASSY,ROD		Install	
61			0925010NG	FUSE CUTOUT ASSY:100A,10T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
61			0925025NG	FUSE CUTOUT ASSY:100A,25T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
61			0925025NG	FUSE CUTOUT ASSY:100A,25T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
61			0925040NG	FUSE CUTOUT ASSY:100A,40T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Remove	
61			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	

Design Estimate Summary Report – Supervisor's Construction

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

Station	G- Macro CU	Macro CU	CU	Grand Macro/ Macro / CU Assembly Description	Qty	Operation	Time Rqd
61			1030025	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 25KVA	[redacted]	Install	
				WO Number: 13745088		**Station 61 Sub Total:**	**0.00**
62			0106108	POLE TOP PIN ASSY	[redacted]	Install	
62			0108110	NEUTRAL BRKT ASSEMBLY		Install	
62			0108110	NEUTRAL BRKT ASSEMBLY		Remove	
62			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Install	
62			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
62			0306001	CROSS ARM PIN ASSY 8-10 ARM		Remove	
62			0308112	8FT SINGLE ARM BRACE ASSY		Remove	
62			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
62			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Install	
62			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
62			0821042	POLE GROUND ASSY,ROD		Install	
				WO Number: 13745088		**Station 62 Sub Total:**	**0.00**
63			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Install	
63			0106108	POLE TOP PIN ASSY		Install	
63			0108110	NEUTRAL BRKT ASSEMBLY		Remove	
63			0108110	NEUTRAL BRKT ASSEMBLY		Install	
63			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
63			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Install	
63			0306001	CROSS ARM PIN ASSY 8-10 ARM		Remove	
63			0308112	8FT SINGLE ARM BRACE ASSY		Remove	
63			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
63			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
63			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Install	
63			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
63			0803002	LTNG ARR ASSY,LINE,3KV		Remove	
63			0809002	LTNG ARR ASSY,LINE 9KV		Install	
63			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	
63			0821042	POLE GROUND ASSY,ROD		Install	
63			0925015NG	FUSE CUTOUT ASSY:100A,15T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
63			0925040NG	FUSE CUTOUT ASSY:100A,40T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Remove	
63			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	
63			1010050	TRANSFORMER, 1PH, PT, CONV, 2400-120/240V, 50KVA		Remove	
63			1030050	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 50KVA		Install	
				WO Number: 13745088		**Station 63 Sub Total:**	**0.00**
64			0106108	POLE TOP PIN ASSY	[redacted]	Install	
64			0108110	NEUTRAL BRKT ASSEMBLY		Install	
64			0108110	NEUTRAL BRKT ASSEMBLY		Remove	
64			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Install	

Design Estimate Summary Report – Supervisor's Construction

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

Station	G- Macro CU	Macro CU	CU	Grand Macro/ Macro / CU Assembly Description	Qty	Operation	Time Rqd
64			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY	[redacted]	Remove	
64			0306001	CROSS ARM PIN ASSY 8-10 ARM		Remove	
64			0308112	8FT SINGLE ARM BRACE ASSY		Remove	
64			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
64			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Install	
64			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
64			0821042	POLE GROUND ASSY,ROD		Install	
				WO Number: 13745088		**Station 64 Sub Total:**	**0.00**
65			0106108	POLE TOP PIN ASSY	[redacted]	Install	
65			0108110	NEUTRAL BRKT ASSEMBLY		Remove	
65			0108110	NEUTRAL BRKT ASSEMBLY		Install	
65			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Install	
65			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
65			0306001	CROSS ARM PIN ASSY 8-10 ARM		Remove	
65			0308112	8FT SINGLE ARM BRACE ASSY		Remove	
65			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Install	
65			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
65			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
65			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
65			0821042	POLE GROUND ASSY,ROD		Install	
				WO Number: 13745088		**Station 65 Sub Total:**	**0.00**
66			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Install	
66			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT		Remove	
66			0106108	POLE TOP PIN ASSY		Install	
66			0106108	POLE TOP PIN ASSY		Remove	
66			0108110	NEUTRAL BRKT ASSEMBLY		Remove	
66			0108110	NEUTRAL BRKT ASSEMBLY		Install	
66			0306001	CROSS ARM PIN ASSY 8-10 ARM		Remove	
66			0308112	8FT SINGLE ARM BRACE ASSY		Remove	
66			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
66			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Install	
66			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
66			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
66			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
66			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
66			0803002	LTNG ARR ASSY,LINE,3KV		Remove	
66			0809002	LTNG ARR ASSY,LINE 9KV		Install	
66			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	
66			0821042	POLE GROUND ASSY,ROD		Install	
66			0925010NG	FUSE CUTOUT ASSY:100A,10T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
66			0925015NG	FUSE CUTOUT ASSY:100A,15T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Remove	

Design Estimate Summary Report – Supervisor's Construction

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

Station	G- Macro CU	Macro CU	CU	Grand Macro/ Macro / CU Assembly Description	Qty	Operation	Time Rqd
66			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)	[redacted]	Install	
66			1010025	TRANSFORMER, 1PH, PT, CONV, 2400-120/240V, 25KVA		Remove	
66			1030025	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 25KVA		Install	
				WO Number: 13745088		**Station 66 Sub Total:**	**0.00**
67			0106108	POLE TOP PIN ASSY	[redacted]	Install	
67			0108110	NEUTRAL BRKT ASSEMBLY		Install	
67			0108110	NEUTRAL BRKT ASSEMBLY		Remove	
67			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Install	
67			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
67			0306001	CROSS ARM PIN ASSY 8-10 ARM		Remove	
67			0308112	8FT SINGLE ARM BRACE ASSY		Remove	
67			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
67			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Install	
67			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
67			0821042	POLE GROUND ASSY,ROD		Install	
				WO Number: 13745088		**Station 67 Sub Total:**	**0.00**
68			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]	Remove	
68			0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT		Install	
68			0106108	POLE TOP PIN ASSY		Install	
68			0108110	NEUTRAL BRKT ASSEMBLY		Remove	
68			0108110	NEUTRAL BRKT ASSEMBLY		Install	
68			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Remove	
68			0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY		Install	
68			0306001	CROSS ARM PIN ASSY 8-10 ARM		Remove	
68			0308216	8FT STD DBLARM BRACE ASSY		Remove	
68			0401210	SECONDARY CLEVIS AND SPOOL INSULATOR		Install	
68			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Install	
68			0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.		Remove	
68			0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS		Install	
68			0701401	LABOR CONTINGENCIES - ELEC SERVICE		Install	
68			0803002	LTNG ARR ASSY,LINE,3KV		Remove	
68			0809002	LTNG ARR ASSY,LINE 9KV		Install	
68			0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE		Install	
68			0821042	POLE GROUND ASSY,ROD		Remove	
68			0925010NG	FUSE CUTOUT ASSY:100A,10T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Install	
68			0925015NG	FUSE CUTOUT ASSY:100A,15T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU		Remove	
68			1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)		Install	
68			1010025	TRANSFORMER, 1PH, PT, CONV, 2400-120/240V, 25KVA		Remove	
68			1030025	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 25KVA		Install	

Design Estimate Summary Report – Supervisor's Construction

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

Station	G- Macro CU	Macro CU	CU	Grand Macro/ Macro / CU Assembly Description	Qty	Operation	Time Rqd
				WO Number: 13745088		**Station 68 Sub Total:**	**0.00**
69			0701401	LABOR CONTINGENCIES - ELEC SERVICE	[redacted]	Install	
69			0809102	LTNG ARR ASSY,LINE,9KV,URD		Install	
				WO Number: 13745088		**Station 69 Sub Total:**	**0.00**

Design Estimate Summary Report – Bill of Materials

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

QTY Req	Description	Stock #	Unit of Measure	Qty Issued
WO Number: 13745088				
[redacted]	INSULATOR: PIN TYPE, 15 KV, 5-1/2" DIA X 5" TALL, 1 PIN HOLE, PE, USE W/ SPACER CABLE	103110	EACH	
	CLAMP: SUSPENSION, ANGLE, ALUM, WIRE RANGE .50" TO 1.25", 12000 LB MAX, 80 DEG	103112	EACH	
	CROSSARM: DEAD END, 10 FT, 4 POSITION MIN. 8,000 LB UBS/POSITION, 2-WAY DEADEND HARDWARE, DE HARDWARE AND PIN HOLE SPACING PER M.S. 03-11-500	103273	EACH	
	TRANSFORMER: POLE MOUNT, 15 KVA, DUAL VOLTAGE 2400/4160X7200/12470Y, 120/240, SINGLE PH, W/O TAPS, CONVENTIONAL	103437	EACH	
	GUARD: ANIMAL, 10", POLYMER, ELECTROSTATIC, TRANSFORMER BUSHING, RED, W/ TEETH	104060	EACH	
	WIRE: CONDUCTOR, ELECTRICAL, BARE, COPPER CLAD STL, 4 AWG, SOLID, 0.204" OD, 40% CONDUCTIVITY, 8.5 FT/LB	104174	FOOT	
	WIRE: CONDUCTOR, ELECTRICAL, BARE, COPPER CLAD STL, 4 AWG, SOLID, 0.204" OD, 40% CONDUCTIVITY, 8.5 FT/LB	104174	FOOT	
	STAPLE: FENCE. SERRATED, 2" X 3/8" X .131", GALV OR COPPERWELD	104189	EACH	
	STAPLE: FENCE. SERRATED, 2" X 3/8" X .131", GALV OR COPPERWELD	104189	EACH	
	MOLDING: GROUND WIRE, HDPE, 1" WD, 10' LG	104227	EACH	
	HOOK: GUY, 7/16" MAX WIRE SIZE, 12400 LB, ALUM ALLOY	106845	EACH	
	WIRE: CABLE, ELECTRICAL, POLE RISER, 15000 V, 1 CONDUCTOR, 4 AWG, CU, 7 STR, 150 MIL TPR INSULATION, NON-SHIELDED 4.44 FT/LB	113453	FOOT	
	EXTENSION: ANCHOR ROD, 1-1/2" SQ SHAFT X 42" LG, GALV STL, FOR TRIPLE HELIX ANCHOR	114101	EACH	
	CLAMP: END FITTING, SIDEWALK GUY, W/ CLAMP, FOR 2" PIPE, HOT DIP GALV	117885	EACH	
	WASHER: FLAT, ROUND, 9/16" ID, 1-3/8" OD, GALV	121645	EACH	
	FUSE: FUSELINK, 65 AMP, TYPE T, 23" LG	123413	EACH	
	INSULATOR: SUSPENSION, 15 KV, POLYMER, 3" DIA X 12-1/2" LG	123653	EACH	
	INSULATOR: SUSPENSION, 15 KV, POLYMER, 3" DIA X 12-1/2" LG	123653	EACH	
	WASHER: FLAT, ROUND, 11/16" ID, 1-3/4" OD, GALV	126941	EACH	
	WASHER: FLAT, ROUND, 11/16" ID, 1-3/4" OD, GALV	126941	EACH	
	WASHER: FLAT, ROUND, 11/16" ID, 1-3/4" OD, GALV	126941	EACH	
	WASHER: FLAT, ROUND, 11/16" ID, 1-3/4" OD, GALV	126941	EACH	
	BOLT: MACHINE, SQ HEAD, 3/4" DIA X 12" LG, GALV	127845	EACH	
	BOLT: MACHINE, SQ HEAD, 3/4" DIA X 12" LG, GALV	127845	EACH	
	BOLT: MACHINE, SQ HEAD, 3/4" DIA X 10" LG, GALV	148485	EACH	
	BRACE: CROSSARM, 10' & 11', 60" SPACING X 30" DROP	148653	PAIR	
	BRACE: CROSSARM, 10' & 11', 60" SPACING X 30" DROP	148653	PAIR	
	BRACE: CROSSARM, 10' & 11', 60" SPACING X 30" DROP	148653	PAIR	
	BRACE: CROSSARM, 10' & 11', 60" SPACING X 30" DROP	148653	PAIR	
	CLEVIS: SECONDARY, GALV STL	151661	EACH	
	ARRESTER: HEAVY DUTY CLASS, DISTRIBUTION, 9 KV, 7.65 KV MCOV, NON-GAPPED, GRAY OR BLACK ISOLATOR, FOR URD RISERS	151693	EACH	
	BOLT: DOUBLE ARMING, 5/8" DIA X 18" LG, GALV	155421	EACH	
	BOLT: DOUBLE ARMING, 5/8" DIA X 18" LG, GALV	155421	EACH	
	PLATE: POLE EYE, 3/4" MAX CLEVIS PIN, 21000 LB, DUCTILE IRON, HOT DIP GALV	155733	EACH	
	PLATE: POLE EYE, 3/4" MAX CLEVIS PIN, 21000 LB, DUCTILE IRON, HOT DIP GALV	155733	EACH	
	FUSE: FUSELINK, 6 AMP, TYPE T, 23" LG	158341	EACH	
	WASHER: LOCK, STAR, 1/2", GALV	158805	EACH	
	WASHER: LOCK, STAR, 1/2", GALV	158805	EACH	
	BOLT: MACHINE, SQ HEAD, 1/2" DIA X 2" LG, GALV, W/ NUT	160685	EACH	

Design Estimate Summary Report – Bill of Materials

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

QTY Req	Description	Stock #	Unit of Measure	Qty Issued
[redacted]	DEADEND: PREFORMED, GUY WIRE, 8 MM	166189	EACH	
[redacted]	STIRRUP: MESSENGER BRACKET, BOLT ON W/ 1/2" X 3" HEX HEAD BOLT, NUT, FLAT & LOCK WASHER, HOT DIP GALV, FOR MB-14	168861	EACH	
[redacted]	CLEVIS: THIMBLE, MALLEABLE IRON	170301	EACH	
[redacted]	CLEVIS: THIMBLE, MALLEABLE IRON	170301	EACH	
[redacted]	CLEVIS: THIMBLE, MALLEABLE IRON	170301	EACH	
[redacted]	TRANSFORMER: POLE MOUNT, 25 KVA, DUAL VOLTAGE 2400/4160X7200/12470Y, 120/240, SINGLE PH, W/O TAPS, CONVENTIONAL	170437	EACH	
[redacted]	POLE: POWER, WOOD, 40', CLASS 2	170525	EACH	
[redacted]	WASHER: CURVED, SQ, 11/16" ID, 2-1/4" X 2-1/4", GALV	172997	EACH	
[redacted]	RACK: CLUSTER, TRANSFORMER, MEDIUM (5 TO 100 KVA)	174629	EACH	
[redacted]	ROD: GROUND, 5/8" DIA, 10' LG, COPPERWELD	176517	EACH	
[redacted]	BOLT: MACHINE, SQ HEAD, 3/4" DIA X 14" LG, GALV	187741	EACH	
[redacted]	ARRESTER: HEAVY DUTY CLASS, DISTRIBUTION, 9 KV, 7.65 KV MCOV, BLUE ISOLATOR	189061	EACH	
[redacted]	DEADEND: PREFORMED, 3/0 AWG, 4/3 AWAC CONDUCTOR	189189	EACH	
[redacted]	GUARD: GUY, 1.75" DIA X 8' LG, W/ CLAMP, YELLOW, PLASTIC	189429	EACH	
[redacted]	GUARD: GUY, 1.75" DIA X 8' LG, W/ CLAMP, YELLOW, PLASTIC	189429	EACH	
[redacted]	GUARD: GUY, 1.75" DIA X 8' LG, W/ CLAMP, YELLOW, PLASTIC	189429	EACH	
[redacted]	FUSE: FUSELINK, 25 AMP, TYPE T, 23" LG	194645	EACH	
[redacted]	CLEVIS: THIMBLE, 10,000 LB, PRESSED STL	194669	EACH	
[redacted]	BRACKET: SPACER CABLE, ANTI-SWAY, 13" LG, PLASTIC	196373	EACH	
[redacted]	ANCHOR: POWER, SCREW, TWIN HELIX, 8", STL, W/ 3/4" DIA X 84" LG GALV STL ROD, TRIPLE EYE	301302	EACH	
[redacted]	BOLT: MACHINE, SQ HEAD, 5/8" DIA X 14" LG, GALV	313298	EACH	
[redacted]	BOLT: MACHINE, SQ HEAD, 5/8" DIA X 14" LG, GALV	313298	EACH	
[redacted]	BOLT: MACHINE, SQ HEAD, 5/8" DIA X 14" LG, GALV	313298	EACH	
[redacted]	STAPLE: MOULDING, SERRATED, 2" X 5/8" X .162", GALV OR CU COATED	315658	EACH	
[redacted]	BRACKET: SPACER CABLE, MESSENGER, HOT DIP GALV, W/MC2 CLAMP	317618	EACH	
[redacted]	CROSSARM: 11' LG X 3-3/4" X 5-3/4", FIR, HIGH LINE	318378	EACH	
[redacted]	CROSSARM: 11' LG X 3-3/4" X 5-3/4", FIR, HIGH LINE	318378	EACH	
[redacted]	BRACKET: NEUTRAL, FORGED STL, HOT-DIP GALV	322618	EACH	
[redacted]	BOLT: MACHINE, SQ HEAD, 5/8" DIA X 12" LG, GALV	324634	EACH	
[redacted]	BOLT: MACHINE, SQ HEAD, 5/8" DIA X 12" LG, GALV	324634	EACH	
[redacted]	BOLT: MACHINE, SQ HEAD, 5/8" DIA X 12" LG, GALV	324634	EACH	
[redacted]	BOLT: MACHINE, SQ HEAD, 5/8" DIA X 12" LG, GALV	324634	EACH	
[redacted]	BOLT: MACHINE, SQ HEAD, 5/8" DIA X 12" LG, GALV	324634	EACH	
[redacted]	BOLT: MACHINE, SQ HEAD, 5/8" DIA X 12" LG, GALV	324634	EACH	
[redacted]	BOLT: MACHINE, SQ HEAD, 5/8" DIA X 12" LG, GALV	324634	EACH	
[redacted]	BOLT: MACHINE, SQ HEAD, 5/8" DIA X 12" LG, GALV	324634	EACH	
[redacted]	BOLT: MACHINE, SQ HEAD, 5/8" DIA X 12" LG, GALV	324634	EACH	
[redacted]	FUSE: FUSELINK, 10 AMP, TYPE T, 23" LG	326698	EACH	
[redacted]	TRANSFORMER: POLE MOUNT, 50 KVA, DUAL VOLTAGE, 2400/4160X7200/12470Y, 120/240, SINGLE PH, W/O TAPS, CONVENTIONAL	326754	EACH	
[redacted]	PLATE: POLE, SIDEWALK GUY, FOR 2" PIPE, HOT DIP GALV	327674	EACH	
[redacted]	FUSE: FUSELINK, 15 AMP, TYPE T, 23" LG	335674	EACH	
[redacted]	BOLT: MACHINE, SQ HEAD, 5/8" DIA X 8" LG, GALV	341458	EACH	
[redacted]	BOLT: MACHINE, SQ HEAD, 5/8" DIA X 8" LG, GALV	341458	EACH	

Design Estimate Summary Report – Bill of Materials

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

QTY Req	Description	Stock #	Unit of Measure	Qty Issued
[redacted]	WIRE: TIE, BARE, ALUM, 4 AWG, SOLID	342074	FOOT	
	WIRE: TIE, BARE, ALUM, 4 AWG, SOLID	342074	FOOT	
	DEADEND: PREFORMED, 3/0 AWG TXS, ACSR MESSENGER	343706	EACH	
	DEADEND: PREFORMED, GUY WIRE, 16 M	349538	EACH	
	DEADEND: PREFORMED, GUY WIRE, 16 M	349538	EACH	
	DEADEND: PREFORMED, GUY WIRE, 16 M	349538	EACH	
	WIRE: CONDUCTOR, ELECTRICAL, BARE, AAAC, 3/0 AWG, 7 STR, OD .502", 5.4 FT/LB, CODE NAME AMHERST	350090	FOOT	
	WIRE: CABLE, ELECTRICAL, 600 V, SECONDARY, OVERHEAD, TRIPLEX, 2, 3/0 AWG, ALUM, 19 STR, XLPE, CONDUCTORS & 1, 3/0 AWG, ACSR, 6/1 STR, BARE, NEUTRAL, 1.56 FT/LB, CODE NAME MURISA	350946	FOOT	
	WIRE: CONDUCTOR, ELECTRICAL, BARE, CU, SOFT DRAWN, 4 AWG, SOLID, OD .204", 7.9 FT/LB	352210	FOOT	
	WIRE: CONDUCTOR, ELECTRICAL, BARE, CU, SOFT DRAWN, 4 AWG, SOLID, OD .204", 7.9 FT/LB	352210	FOOT	
	WIRE: CONDUCTOR, ELECTRICAL, BARE, CU, SOFT DRAWN, 4 AWG, SOLID, OD .204", 7.9 FT/LB	352210	FOOT	
	DEADEND: PREFORMED, 336 MCM, ALUM COVERED, 10/64" CONDUCTOR, PRECOATED	353114	EACH	
	WIRE: GUY, 8M, 7 STR, ALUMOWELD, 500' COIL	355506	FOOT	
	CUTOUT: FUSED, NON LOADBREAK, 100 AMP, 7.8/15 KV, SILICONE OR POLYMER	356370	EACH	
	CUTOUT: FUSED, NON LOADBREAK, 100 AMP, 7.8/15 KV, SILICONE OR POLYMER	356370	EACH	
	CUTOUT: FUSED, NON LOADBREAK, 100 AMP, 7.8/15 KV, SILICONE OR POLYMER	356370	EACH	
	CUTOUT: FUSED, NON LOADBREAK, 100 AMP, 7.8/15 KV, SILICONE OR POLYMER	356370	EACH	
	CUTOUT: FUSED, NON LOADBREAK, 100 AMP, 7.8/15 KV, SILICONE OR POLYMER	356370	EACH	
	INSULATOR: GUY STRAIN, 24" LG, FIBERGLASS, 21 M LBS	362290	EACH	
	INSULATOR: GUY STRAIN, 24" LG, FIBERGLASS, 21 M LBS	362290	EACH	
	INSULATOR: GUY STRAIN, 24" LG, FIBERGLASS, 21 M LBS	362290	EACH	
	SWITCH: DISCONNECT, LOAD INTERRUPTER, 14.4 KV, 900 AMP, GANG OPERATED, UPRIGHT MOUNT	364514	EACH	
	PIN: INSULATOR, POLE TOP, 15", 1" NYLON HEAD	370074	EACH	
	POLE: POWER, WOOD, 45', CLASS 2	370202	EACH	
	CONDUIT: RIGID, 2" X 10' LG, STL, GALV	372922	FOOT	
	INSULATOR: SPOOL, 3" DIA X 3" WD, FOR SECONDARY CLEVIS/RACK	372986	EACH	
	POLE: POWER, WOOD, 35', CLASS 4	373882	EACH	
	DEADEND: PREFORMED, 3/0 AWG, AAAC CONDUCTOR	377458	EACH	
	INSULATOR: GUY STRAIN, 24" LG, FIBERGLASS, 11 M LBS	380970	EACH	
	PIN: INSULATOR, CROSSARM, 5/8" X 5-3/4", 1" NYLON HEAD, GALV STL	387546	EACH	
	POLE: POWER, WOOD, 45', CLASS 1	388794	EACH	
	ANCHOR: POWER, SCREW, TRIPLE HELIX, 10", 12", 14", W/ 1-1/2" SQ SHAFT, GALV STL	391050	EACH	
	CONNECTOR: ELECTRICAL, GROUND, TRANSFORMER TANK, 1/2"-13 THD, CABLE RANGE 2/0 STR TO #8 SOLID	392970	EACH	
	CROSSARM: 10' LG X 3-3/4" X 4-3/4", FIR, DISTRIBUTION	394178	EACH	
	CROSSARM: 10' LG X 3-3/4" X 4-3/4", FIR, DISTRIBUTION	394178	EACH	
	BRACKET: SPACER CABLE, ANGLE, W/ MESSENGER ATTACHMENT	394394	EACH	
	CLAMP: SUSPENSION, ALUM, WIRE RANGE .30" TO .70"	394586	EACH	
	BOLT: MACHINE, SQ HEAD, 5/8" DIA X 18" LG, GALV	412481	EACH	
	TRANSFORMER: POLE MOUNT, 100 KVA, DUAL VOLTAGE 2400/4160X7200/12470Y, 120/240, SINGLE PH, W/O TAPS, CONVENTIONAL	417017	EACH	
	NUT: LOCK, 5/8", GALV	419921	EACH	
	NUT: LOCK, 5/8", GALV	419921	EACH	
	NUT: LOCK, 5/8", GALV	419921	EACH	
	NUT: LOCK, 5/8", GALV	419921	EACH	
	NUT: LOCK, 5/8", GALV	419921	EACH	

Design Estimate Summary Report – Bill of Materials

Engineer Lead: HGRAVINO	Cost Center:	Print Date: 09-Dec-16 12:59 PM

Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

QTY Req	Description	Stock #	Unit of Measure	Qty Issued
[redacted]	NUT: LOCK, 5/8", GALV	419921	EACH	
	NUT: LOCK, 5/8", GALV	419921	EACH	
	NUT: LOCK, 5/8", GALV	419921	EACH	
	NUT: LOCK, 5/8", GALV	419921	EACH	
	NUT: LOCK, 5/8", GALV	419921	EACH	
	NUT: LOCK, 5/8", GALV	419921	EACH	
	NUT: LOCK, 5/8", GALV	419921	EACH	
	ANCHOR: POWER, SCREW, TWIN HELIX, 10", STL, W/ 1" DIA X 84" LG GALV STL ROD, TRIPLE EYE, 6000 LB	426281	EACH	
	BRACKET: SPACER CABLE, DEAD END, GALV STL	429409	EACH	
	BRACKET: POLE, 18", CUT-OUT & ARRESTER FOR ARMLESS CONSTRUCTION, FIBERGLASS	432769	EACH	
	NUT: LOCK, 3/4", GALV	437105	EACH	
	NUT: LOCK, 3/4", GALV	437105	EACH	
	NUT: LOCK, 3/4", GALV	437105	EACH	
	NUT: LOCK, 3/4", GALV	437105	EACH	
	CLAMP: STRAIN, STRAIGHT LINE, .30" TO .60" CABLE, ALUM, 8000 LB CAP	439865	EACH	
	CLAMP: STRAIN, STRAIGHT LINE, .30" TO .60" CABLE, ALUM, 8000 LB CAP	439865	EACH	
	INSULATOR: PIN TYPE, 13.2 KV, 1" PIN HOLE	444153	EACH	
	INSULATOR: PIN TYPE, 13.2 KV, 1" PIN HOLE	444153	EACH	
	SPACER: 3 PH, FOR SPACER CABLE	444825	EACH	
	WASHER: FLAT, SQ, 13/16" ID, 2-1/4" X 2-1/4", 3/16" THK, GALV	446361	EACH	
	WASHER: FLAT, SQ, 13/16" ID, 2-1/4" X 2-1/4", 3/16" THK, GALV	446361	EACH	
	WIRE: TIE, COVERED, ALUM, 4 AWG, SOLID	449665	FOOT	
	TAP: COMPRESSION, CU, GROOVE-A, 4 TO 8 SOLID - GROOVE-B, 4 TO 8 SOLID	451377	EACH	
	TAP: COMPRESSION, CU, GROOVE-A, 4 TO 8 SOLID - GROOVE-B, 4 TO 8 SOLID	451377	EACH	
	TAP: COMPRESSION, CU, GROOVE-A, 4 TO 8 SOLID - GROOVE-B, 4 TO 8 SOLID	451377	EACH	
	TAP: COMPRESSION, CU, GROOVE-A, 4 TO 8 SOLID - GROOVE-B, 4 TO 8 SOLID	451377	EACH	
	SCREW: LAG, 1/2" DIA X 4" LG, TWIST DRIVE, GALV	453121	EACH	
	SCREW: LAG, 1/2" DIA X 4" LG, TWIST DRIVE, GALV	453121	EACH	
	SCREW: LAG, 1/2" DIA X 4" LG, TWIST DRIVE, GALV	453121	EACH	
	SCREW: LAG, 1/2" DIA X 4" LG, TWIST DRIVE, GALV	453121	EACH	
	SCREW: LAG, 1/2" DIA X 4" LG, TWIST DRIVE, GALV	453121	EACH	
	WIRE: CONDUCTOR, ELECTRICAL, SPACER, ALUM, 336.4 MCM COMPACT CONDUCTOR, 19 STR, 150 MIL INSULATION, OD .192", FOR USE ON 15 KV. 0.49040 lbs per ft.	453145	FOOT	
	CLAMP: GROUND ROD, 5/8"	454561	EACH	
	WIRE: GUY, 16M, 7 STR, ALUMOWELD, 250' COIL	455625	FOOT	
	SHACKLE: ANCHOR, 15000 LB LOAD, CLEVIS PIN & COTTER KEY, FORGED STL, HOT DIP GALV	455841	EACH	
	SHACKLE: ANCHOR, 15000 LB LOAD, CLEVIS PIN & COTTER KEY, FORGED STL, HOT DIP GALV	455841	EACH	
	PIN: INSULATOR, CROSSARM, 5/8" X 2-1/2", 1" NYLON HEAD, GALV STL	457177	EACH	
	NUT: LOCK, 1/2", GALV	458153	EACH	
	WASHER: CURVED, SQ, 13/16" ID, 4" X 4", GALV	464961	EACH	
	WASHER: CURVED, SQ, 13/16" ID, 4" X 4", GALV	464961	EACH	
	BRACKET: 3 PH EQUIPMENT, FIBERGLASS	467641	EACH	
	BOLT: MACHINE, SQ HEAD, 5/8" DIA X 6" LG, GALV	471689	EACH	
	BOLT: MACHINE, SQ HEAD, 5/8" DIA X 6" LG, GALV	471689	EACH	
	WASHER: FLAT, SQ, 11/16" ID, 2" X 2", 1/8 THK, GALV	471913	EACH	
	WASHER: FLAT, SQ, 11/16" ID, 2" X 2", 1/8 THK, GALV	471913	EACH	

Design Estimate Summary Report – Bill of Materials

Engineer Lead: HGRAVINO		Cost Center:		Print Date: 09-Dec-16 12:59 PM		
Maximo WO Number	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
13745088		[redacted]				

QTY Req	Description	Stock #	Unit of Measure	Qty Issued
[redacted]	WASHER: FLAT, SQ, 11/16" ID, 2" X 2", 1/8 THK, GALV	471913	EACH	
	WASHER: FLAT, SQ, 11/16" ID, 2" X 2", 1/8 THK, GALV	471913	EACH	
	WASHER: FLAT, SQ, 11/16" ID, 2" X 2", 1/8 THK, GALV	471913	EACH	
	WASHER: FLAT, SQ, 11/16" ID, 2" X 2", 1/8 THK, GALV	471913	EACH	
	WASHER: FLAT, SQ, 11/16" ID, 2" X 2", 1/8 THK, GALV	471913	EACH	
	WASHER: FLAT, SQ, 11/16" ID, 2" X 2", 1/8 THK, GALV	471913	EACH	
	WASHER: FLAT, SQ, 11/16" ID, 2" X 2", 1/8 THK, GALV	471913	EACH	
	WASHER: FLAT, SQ, 11/16" ID, 2" X 2", 1/8 THK, GALV	471913	EACH	
	WASHER: FLAT, SQ, 11/16" ID, 2" X 2", 1/8 THK, GALV	471913	EACH	
	ADAPTER: HEAD, ANCHOR ROD, TRIPLE EYE, 1-1/2" SQ SHAFT, FOR TRIPLE HELIX, GALV STL	473097	EACH	
	WIRE: ALUMOWELD, AWAC, 3/0 AWG, 4/3 STR, 2700' REEL	474865	FOOT	
	WIRE: CONDUCTOR, ELECTRICAL, BARE, AAAC, 1/0 AWG, 7 STR, OD 0.398", 8.6 FT/LB, CODE NAME, AZUSA	480073	FOOT	

Design Estimate Summary Report – Detail Cost Estimate

Engineer Lead: HGRAVINO		Cost Center:		Print Date: 09-Dec-16 12:59 PM		
Maximo WO Number 13745088	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
		[redacted]				

Electric Transformers (Install)

Account # - Description	CU	CU Desc	Qty	Operation	Material Cost	Total Hours	Labor Cost	Tooling Cost	Total Cost
368-LINE TRANSFORMERS	1005301	TRANS CONNECTION ASSY, W/ANIMAL PROTECTOR 7.2KV/DUAL VOLTAGE (10 TO 333KVA)	[redacted]						
	1030015	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 15KVA							
	1030025	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 25KVA							
	1030050	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 50KVA							
	1030101	TRANSFORMER, 1PH, PT, CONV, 2400X7200-120/240V, 100KVA							
		Sub Total Costs & Labor Hours (with travel loadings)			[redacted]				

Electric Transformers (Remove)

Account # - Description	CU	CU Desc	Qty	Operation	Material Cost	Total Hours	Labor Cost	Tooling Cost	Total Cost
368-LINE TRANSFORMERS	1010015	REMOVAL ONLY, TRANSFORMER, 1PH, PT, CONV, 2400-120/240V, 15KVA	[redacted]						
	1010025	TRANSFORMER, 1PH, PT, CONV, 2400-120/240V, 25KVA							
	1010050	TRANSFORMER, 1PH, PT, CONV, 2400-120/240V, 50KVA							
	1010333	TRANSFORMER, 1PH, PT, CONV, 2400-120/240V, 333KVA							
	1042075	TRANSFORMER, 3PH, PM, 2400/4160Y-208/120V, 75KVA.							
		Sub Total Costs & Labor Hours (with travel loadings)			[redacted]				

Invest (Install & Transfer)

Account # - Description	CU	CU Desc	Qty	Operation	Material Cost	Total Hours	Labor Cost	Tooling Cost	Total Cost
364-POLES, TOWERS, AND FIXTURES	0106108	POLE TOP PIN ASSY	[redacted]						
	0108110	NEUTRAL BRKT ASSEMBLY							
	0110112	TRANSF CLUSTER MT ASSY 25-100KVA							
	0114001	SPACER CABLE,ANTI-SWAY BRACKET							
	0114102	MESSENGER BRKT ASSEMBLY							
	0114512	ANGLE BRACKET ASSEMBLY, 5-50 DEG, SPACER							
	0114712	DEADEND BRKT ASSEMBLY, SPACER							
	0135401	POLE:WOOD,35FT LG,4,EMBEDDED EARTH ONLY							
	0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY							
	0145101	POLE:WOOD,45FT LG,1,EMBEDDED EARTH ONLY							

Design Estimate Summary Report – Detail Cost Estimate

Engineer Lead: HGRAVINO			Cost Center:		Print Date: 09-Dec-16 12:59 PM		
Maximo WO Number 13745088	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource	
	0145201	POLE:WOOD,45FT LG,2,EMBEDDED EARTH ONLY					
	0306001	CROSS ARM PIN ASSY 8-11 ARM					
	0310112	10FT SINGLE ARM BRACE ASSY					
	0310216	10FT DBL ARM BRACE ASSY					
	0310401	10FT HEAVY DUTY FIBERGLASS DEAD END CROSSARM					
	0311112	11FT SINGLE ARM BRACE ASSY					
	0311218	11FT DOUBLE ARM BRACE ASSY					
	0401210	SECONDARY CLEVIS AND SPOOL INSULATOR					
	0501008	GUY STRAND ASSY 8M					
	0501016	GUY STRAND ASSY 16M					
	0508601	8M SIDEWALK GUY ASSY,FIBERGLASS STRAIN INS					
	0516201	16M GUY & ANCHOR ASSY,10IN TWIN HELIX,24IN FBGL STRAIN INS					
	0516701	16M HEAD GUY ASSY,24IN FBGL STRAIN INS					
	0532201	16M DBL GUY & ANCHOR ASSEMBLY, TRIPLE HELIX ANCHOR					
	Sub Total Costs & Labor Hours (with travel loadings)						
365-OVERHEAD CONDUCTORS & DEVICES	0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT					
	0109310	EQUIPMENT MOUNT ASSY 3-PHASE					
	0403203	CONDUCTOR DEADEND ASSEMBLY, .3-.6 in, 1/0-3/0 ACSR/AAAC					
	0403247	CONDUCTOR DEADEND ASSEMBLY, 336 SPC					
	0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.					
	0405208	PIN INSULATOR ASSY W/ TIE WIRE, DOUBLE, ALUMINUM CONDUC.					
	0601401	LABOR CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS					
	0610211	CONDUCTOR AAAC, 1/0AWG, 7 STRAND, BARE					
	0630143	CONDUCTORS ALUM 3/0AWG, 7 STRAND, TX, XLP, 600V					
	0630211	CONDUCTOR AAAC, 3/0AWG, 7 STRAND, BARE					
	0699101	MATERIAL CONTINGENCIES - OH ELEC DIST / SECONDARY CONDUCTORS					
	0809002	LTNG ARR ASSY,LINE 9KV					
	0809102	LTNG ARR ASSY,LINE,9KV,URD					
	0815003	NEUTRAL DEADEND CLAMP ASSY, 1/0 - 3/0 ACSR/AAAC					
	0816030	GRIP, PREFORMED, CONDUCTOR, 3/0 AAAC					
	0816043	GRIP, PREFORMED, CONDUCTOR, 3/0 AWAC					
	0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE					
	0817035	NEUTRAL SWINGING CORNER ASSY, #2-3/0 ACSR/AAAC					
	0821042	POLE GROUND ASSY,ROD					
	0821401	GOAB SWITCH GROUND ASSEMBLY					

Design Estimate Summary Report – Detail Cost Estimate

Engineer Lead: HGRAVINO		Cost Center:		Print Date: 09-Dec-16 12:59 PM		
Maximo WO Number 13745088	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource

	0925006NG	FUSE CUTOUT ASSY:100A,6T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU	[redacted]
	0925010NG	FUSE CUTOUT ASSY:100A,10T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU	
	0925015NG	FUSE CUTOUT ASSY:100A,15T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU	
	0925025NG	FUSE CUTOUT ASSY:100A,25T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU	
	0925065NG	FUSE CUTOUT ASSY:100A,65T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU	
	0936601	SWITCH:14.4KV,900A,GOAB,HORIZONTAL,LOADBREAK	
	1404003	SPACER,AERIAL CABLE, THREE PHASE, 15KV	
	1430711	CONDUCTOR: 3/0,AWAC,4/3STR,MESSENGER,BARE INSULATION,NO COVER.	
	1433131	CONDUCTOR: 336.4,AA,SPACER,POLY INSULATION.	
		Sub Total Costs & Labor Hours (with travel loadings)	[redacted]
369-ELECTRIC SERVICES	0701401	LABOR CONTINGENCIES - ELEC SERVICE [redacted]	
		Sub Total Costs & Labor Hours (with travel loadings)	

Retire (Abandon & Remove)

Account # - Description	CU	CU Desc	Qty	Operation	Material Cost	Total Hours	Labor Cost	Tooling Cost	Total Cost
364-POLES, TOWERS, AND FIXTURES	0106108	POLE TOP PIN ASSY	[redacted]						
	0108110	NEUTRAL BRKT ASSEMBLY							
	0114102	MESSENGER BRKT ASSEMBLY							
	0135401	POLE:WOOD,35FT LG,4,EMBEDDED EARTH ONLY							
	0140201	POLE:WOOD,40FT LG,2,EMBEDDED EARTH ONLY							
	0145201	POLE:WOOD,45FT LG,2,EMBEDDED EARTH ONLY							
	0306001	CROSS ARM PIN ASSY 8-11 ARM							
	0308112	8FT SINGLE ARM BRACE ASSY							
	0308216	8FT STD DBLARM BRACE ASSY							
	0310112	10FT SINGLE ARM BRACE ASSY							
	0310216	10FT DBL ARM BRACE ASSY							
	0401210	SECONDARY CLEVIS AND SPOOL INSULATOR							
		Sub Total Costs & Labor Hours (with travel loadings)			[redacted]				
	0104612	INS POLE BRKT ASSY, SINGLE EQUIP BRKT	[redacted]						
	0109310	EQUIPMENT MOUNT ASSY 3-PHASE							
	0403203	CONDUCTOR DEADEND ASSEMBLY, .3-.6 in, 1/0-3/0 ACSR/AAAC							
	0403208	CONDUCTOR DEADEND ASSEMBLY, #6 SOL CU							
	0405207	PIN INSULATOR ASSY W/ TIE WIRE, SINGLE, ALUMINUM CONDUC.							

Design Estimate Summary Report – Detail Cost Estimate

Engineer Lead: HGRAVINO		Cost Center:		Print Date: 09-Dec-16 12:59 PM		
Maximo WO Number 13745088	Oracle Number	Total Project Cost	Capital Hours	Service Hours	Total Hours	Construction Resource
	0405208	PIN INSULATOR ASSY W/ TIE WIRE, DOUBLE, ALUMINUM CONDUC.				
	0606530	REMOVAL ONLY, WIRE COPPER #6AWG, SOLID, PE				
	0610510	WIRE COPPER 1/0AWG, SOLID, BARE				
	0803002	LTNG ARR ASSY,LINE,3KV				
	0815003	NEUTRAL DEADEND CLAMP ASSY, 1/0 - 3/0 ACSR/AAAC				
	0815008	NEUTRAL DEADEND CLAMP ASSY, #6 SOL CU				
	0816043	GRIP, PREFORMED, CONDUCTOR, 3/0 AWAC				
	0816130	GRIP PREFORMED, AT EYE NUT, 3/0 ALUM, SERVICE				
	0821042	POLE GROUND ASSY,ROD				
	0925006NG	FUSE CUTOUT ASSY:100A,6T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU				
	0925010NG	FUSE CUTOUT ASSY:100A,10T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU				
	0925015NG	FUSE CUTOUT ASSY:100A,15T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU				
	0925025NG	FUSE CUTOUT ASSY:100A,25T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU				
	0925040NG	FUSE CUTOUT ASSY:100A,40T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU				
	0925065NG	FUSE CUTOUT ASSY:100A,65T,1PH,14.4KV,NON-LOADBREAK, NON-GRAPHICAL CU				
	Sub Total Costs & Labor Hours (with travel loadings)					
	1204030	CAPACITOR ASSY, FIXED BANK, 4KV, 300KVAR	6	Remove		
	Sub Total Costs & Labor Hours (with travel loadings)					

Design Estimate Summary Report – Address Summary

Engineer Lead: HGRAVINO		Cost Center:		Print Date: 09-Dec-16 12:59 PM		
Maximo WO Number	**Oracle Number**	**Total Project Cost**	**Capital Hours**	**Service Hours**	**Total Hours**	**Construction Resource**
13745088		[redacted]				

Customer Name	Customer Phone	Customer Address	Short Description of Work Order	WONUM
		- - -	E560_Elec Dist_Cass AVE CKT_4KV CONV_Cass Ave CKT CONV (Riverside Sub) Ph II	13745088

Child Work Orders

Work Order	Short Description	Work Type	Work Sub Type	Status

Related Work Orders

Work Order	Short Description	Work Type	Work Sub Type	Status

Transmission Modernization Preliminary Estimate Summary			Group ID	BOONVILLE PIONEER	Planned Year	2021
Maximo WO Number	**Oracle Number**	**Total Project Cost**	**Maximo Short Description**			
13964154	TBD	[redacted]	E560_Electric Distribution Substation_BOONVILLE PIONEER_Substation Circuit Breaker Replacements_BOONVILLE PIONEER 188 - 4842773			
ABM	**OC**	**City**	**TDSIC Program Category**		**Project Engineer (VEC/BV)**	
Elec Substation - Distr TDSIC	Boonville	Boonville	Substation Circuit Breaker Replacements		Horn, Andrew	JJK

Maximo Long Description of Work

The project involves replacing 12kV circuit breake and associated foundation. The existing relaying and control is located in the breaker control panel that will be upgraded with the new breaker. This Level estimate uses BV Project S1021 / Vectren Maximo 13626331 as the basis for this estimate.

Preliminary Estimate Details

Activity Description	Units	UoM	Unit Cost	Extended Cost
Mobilization	1	Lot	[redacted]	[redacted]
Breaker Replacement	1	Lot	[redacted]	[redacted]
Test Check Out	1	Lot	[redacted]	[redacted]
Demobilization	1	Lot	[redacted]	[redacted]
Engineering/Operations/Equipment	1	Lot	[redacted]	[redacted]
			Subtotal	**$104,111**

Total Project Cost Summary

Cost Category		Project Cost Calculations	
Contract Labor and Overheads	[redacted]	**Subtotal**	[redacted]
Engineering	[redacted]	Contingency - Labor and Material	[redacted]
Materials	[redacted]	**Subtotal + Contingency**	[redacted]
Land	[redacted]	Administrative & General Loading / Engineering & Supervision Loading	[redacted]
		Total Project Cost (Subtotal + Contingency + Loadings)	[redacted]

Maximo Work Order :		13964154						Crew Rate		[redacted]		
Work Order Desc:		E560_Electric Distribution Substation_BOONVILLE PIONEER_Substation Circuit Breaker Replacements_BOONVILLE PIONEER 188 - 4842773										
BV Project ID:		S-4004										
BV Estimate Basis :		S1021										
Estimator:		JJK										
IIRIT	**QTY**	**UOM**	**CU DESCRIPTION**	**MATERIAL UNIT COST**	**MATERIAL COST**	**Material Cost w/ Tx**	**LABOR INSTALL**	**Mhr Unit**	**Subcontract**	**Total Mhrs**	**Total Cost**	
	[redacted]	lot	Mobilization	[redacted]								
		EA	Circuit breaker, Vacuum 15kV, 1200A, 20kAIC, 2 sets of 1200:5A MR CTs									
		FT	Conductor, 500 kcmil copper									
		EA	Conductor, #4/0 bare copper									
		EA	Grounding conductor fittings									
		FT	2" RGS Conduit									
		FT	2" Flexible metal conduit									
		CY	Foundation - See Substation Project Summary									
		Lot	Remove circuit breaker, associated conductors, and foundation.									
		EA	Lug, bolted, 500 kcmil, CU, 4-Hole Pad									
		EA	Transition plates									
		EA	Magnecraft/Struthers-Dunn General Purpose Octal Plug-In Relay, Class 250, 240VAC, 10A (trip ckt loss of AC, close ckt loss of AC, reclose indication)									
		EA	Magnecraft/Struthers-Dunn General Purpose Relay, 24VDC, 13A, Class 388ML (reclose cutoff, reclose cutoff reset, inst. reclosing cutoff)									
		EA	ABB Type FT-1 Test Switch, 10 potential poles (1 per M571)									
		EA	2-pole fuse block, 250V, 30A									
		EA	250V, 10A fuses									
		EA	Bitronics Type M571 IED									
		EA	Bitronics Type M570DA remote display									
		EA	ABB Type FT-1 Test Switch, 4 potential poles & 6 current poles (1 per M571)									
		FT	600V cable, two pair #20 AWG, shielded, for direct burial									

Maximo Work Order :		13964154						Crew Rate		[redacted]		
Work Order Desc:		E560_Electric Distribution Substation_BOONVILLE PIONEER_Substation Circuit Breaker Replacements_BOONVILLE PIONEER 188 - 4842773										
BV Project ID:		S-4004										
BV Estimate Basis :		S1021										
Estimator:		JJK										
IIRIT	**QTY**	**UOM**	**CU DESCRIPTION**	**MATERIAL UNIT COST**	**MATERIAL COST**	**Material Cost w/ Tx**	**LABOR INSTALL**	**Mhr Unit**	**Subcontract**	**Total Mhrs**	**Total Cost**	
	[redacted]	EA	SEL-451 Protection, Automation, & Bay Control System Relay	[redacted]								
		EA	ABB Type FT-1 Test Switch, 4 potential poles & 6 current poles									
		EA	ABB Type FT-1 Test Switch, 10 potential poles									
		lot	Test & Checkout									
		lot	Demobilization									
		Lot	Misc Material @ 5%									
			Totals									