

**COST ESTIMATE FOR CONSTRUCTION, RELOCATION, REPAIR, ETC.  
OF HUB WATER, GAS, OR SEWER LINES**

**Customer:** TVA / 1134 Swan Pond Road **Phone No.:** 717-1676

**Address:** 157 Lakeshore Drive **Account No.:**

**Person Making Request or Responsible for Damages** Mr. Ron Hutson  
**(If Other Than the Customer):**

**Date of Request or Damages:** 11/19/2011

**Nature of Request or Damages:** Disconnected GAS and WATER

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<b>TOTAL COST OF LABOR</b>	<b>\$231.85</b>
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<b>TOTAL COST OF EQUIPMENT</b>	<b>\$92.50</b>
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<b>TOTAL COST OF MATERIAL</b>	<b>\$23.53</b>
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<b>TOTAL COST OF JOB (Labor+Equipment+Material)</b>	<b>\$347.88</b>
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**Sign:** \_\_\_\_\_ **Date:** \_\_\_\_\_

THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

5720 S. UNIVERSITY AVE.

CHICAGO, ILL. 60637

TEL: 773-936-3700

FAX: 773-936-3701

WWW.PHYSICS.UCHICAGO.EDU

PHYSICS 435

LECTURE 1

1.1. THE CLASSICAL LIMIT

1.2. QUANTUM MECHANICS

1.3. THE SCHRÖDINGER EQUATION

1.4. THE HEISENBERG UNCERTAINTY PRINCIPLE

1.5. THE DIRAC EQUATION

1.6. THE PAULI EXCLUSION PRINCIPLE

1.7. THE SPIN-ORBIT INTERACTION

1.8. THE FINITE POTENTIAL WELL

1.9. THE TUNNELING EFFECT

1.10. THE QUANTUM HALL EFFECT

1.11. THE QUANTUM ZENO EFFECT

1.12. THE QUANTUM WALK

1.13. THE QUANTUM TELEPORTATION

1.14. THE QUANTUM ENTANGLEMENT

1.15. THE QUANTUM MECHANICS OF LIGHT

1.16. THE QUANTUM MECHANICS OF MATTER

1.17. THE QUANTUM MECHANICS OF TIME

1.18. THE QUANTUM MECHANICS OF SPACE

1.19. THE QUANTUM MECHANICS OF ENERGY

1.20. THE QUANTUM MECHANICS OF MASS

1.21. THE QUANTUM MECHANICS OF CHARGE

1.22. THE QUANTUM MECHANICS OF SPIN

1.23. THE QUANTUM MECHANICS OF PARITY

1.24. THE QUANTUM MECHANICS OF TIME REVERSAL

1.25. THE QUANTUM MECHANICS OF CPT

1.26. THE QUANTUM MECHANICS OF SUPERCONDUCTIVITY

1.27. THE QUANTUM MECHANICS OF SUPERFLUIDITY

1.28. THE QUANTUM MECHANICS OF BOSE-EINSTEIN CONDENSATION

1.29. THE QUANTUM MECHANICS OF FERMIONIC CONDENSATION

1.30. THE QUANTUM MECHANICS OF QUANTUM FIELD THEORY

1.31. THE QUANTUM MECHANICS OF QUANTUM GRAVITY

1.32. THE QUANTUM MECHANICS OF QUANTUM COSMOLOGY

1.33. THE QUANTUM MECHANICS OF QUANTUM INFORMATION

1.34. THE QUANTUM MECHANICS OF QUANTUM COMPUTING

1.35. THE QUANTUM MECHANICS OF QUANTUM COMMUNICATION

1.36. THE QUANTUM MECHANICS OF QUANTUM NETWORKS

1.37. THE QUANTUM MECHANICS OF QUANTUM ENTANGLEMENT

1.38. THE QUANTUM MECHANICS OF QUANTUM TELEPORTATION

## COST ESTIMATE FOR CONSTRUCTION, RELOCATION, REPAIR, ETC. OF HUB WATER, GAS, OR SEWER LINES

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Equipment:	Description	Hours	Rate	Cost
	#11 Pickup Truck		\$10.50	
	#12 Pickup Truck		\$10.50	
	#18 Dump Truck		\$17.05	
	#38 Dump Truck		\$17.05	
	#92 Dump Truck		\$17.05	
	#19 Service Truck		\$21.25	
	#22 Service Truck		\$21.25	
	#77 Service Truck		\$21.25	
	#44 Service Truck		\$21.25	
	#74 Service Truck	2	\$21.25	\$42.50
	#57 Maintenance Truck		\$21.25	
	#25 Flush Truck		\$26.25	
	#85 Kubota Tractor		\$25.00	
	#73 Brown Pick-up		\$10.50	
	#79 Fuel Service Truck		\$10.50	
	#59 Backhoe	2	\$25.00	\$50.00
	#82 Backhoe		\$25.00	
	#16 Welding Truck		\$20.00	
	#75 Jeep		\$10.50	
	#14 (4 door) Pick-up		\$10.50	
	# (Rental) Backhoe		\$25.00	
	#83 Light Plant ( Ingersol-Rand)		\$13.50	
	#91 Light Plant (Genie)		\$13.50	
	#71 Trailer Float		\$16.50	
	#70 Blue Trailer		\$10.50	
	#69 Equipment Trailer		\$16.50	
	Pipe Trailer		\$10.50	
	#63 5110 Ditch Witch Trencher		\$21.65	
	#51 Air Compressor		\$13.50	
	<b>TOTAL COST OF EQUIPMENT</b>			<b>\$92.50</b>

THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

PHYSICS 433

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**Address:** 157 Lakeshore Drive **Account No.:**

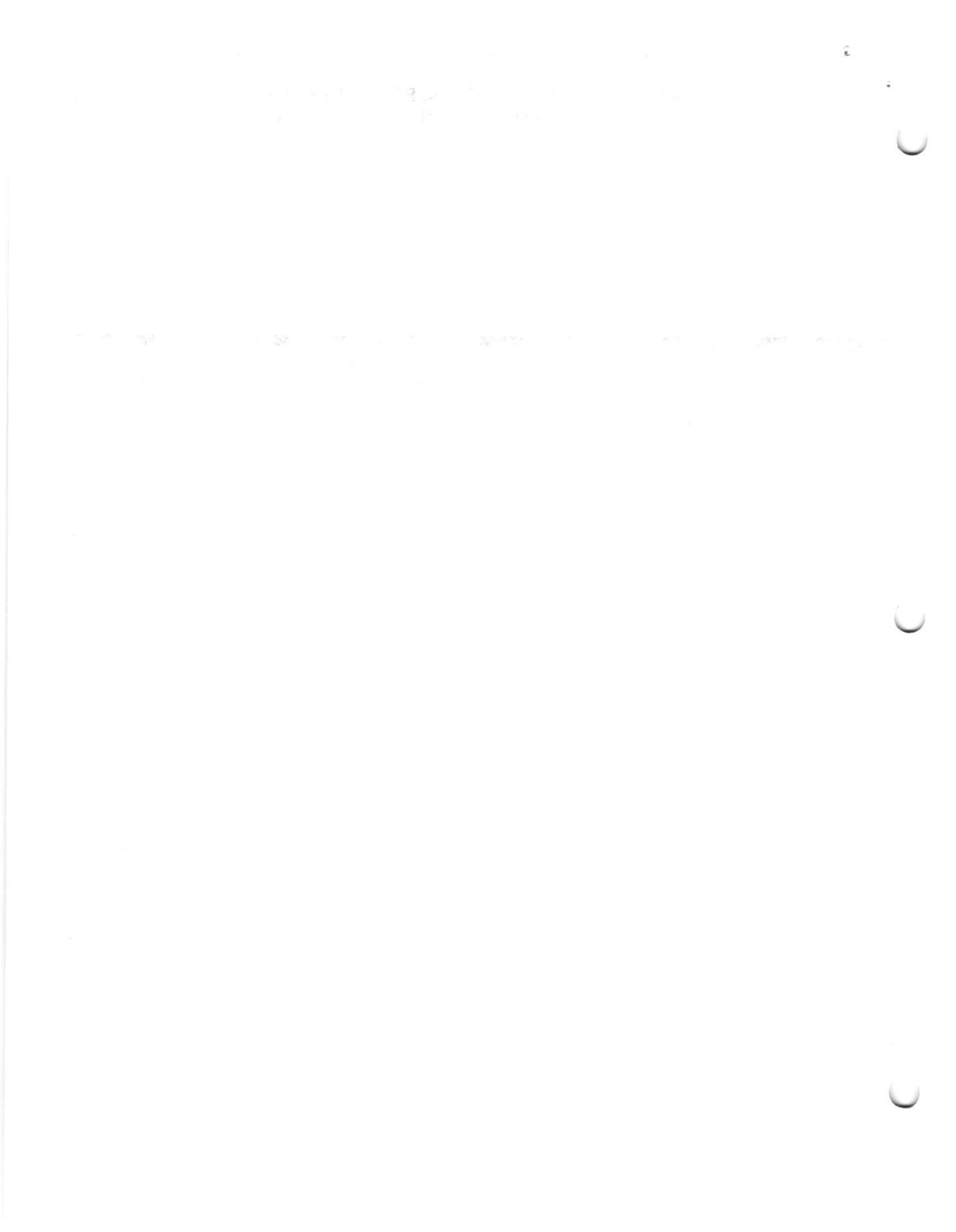
**Person Making Request or Responsible for Damages** Mr. Ron Hu  
(If Other Than the Customer):

**Date of Request or Damages:** 11/19/2011

**Nature of Request or Damages:** Disconnected GAS and WATER

<b>Material:</b>	<b>Description</b>	<b>Units (Ft., #, etc.)</b>	<b>Item Cost</b>	<b>Extended Cost</b>
Cap	1" brass cap	1	\$3.17	\$3.17
Lyco	3/4 Lyco Plug	1	\$20.36	\$20.36

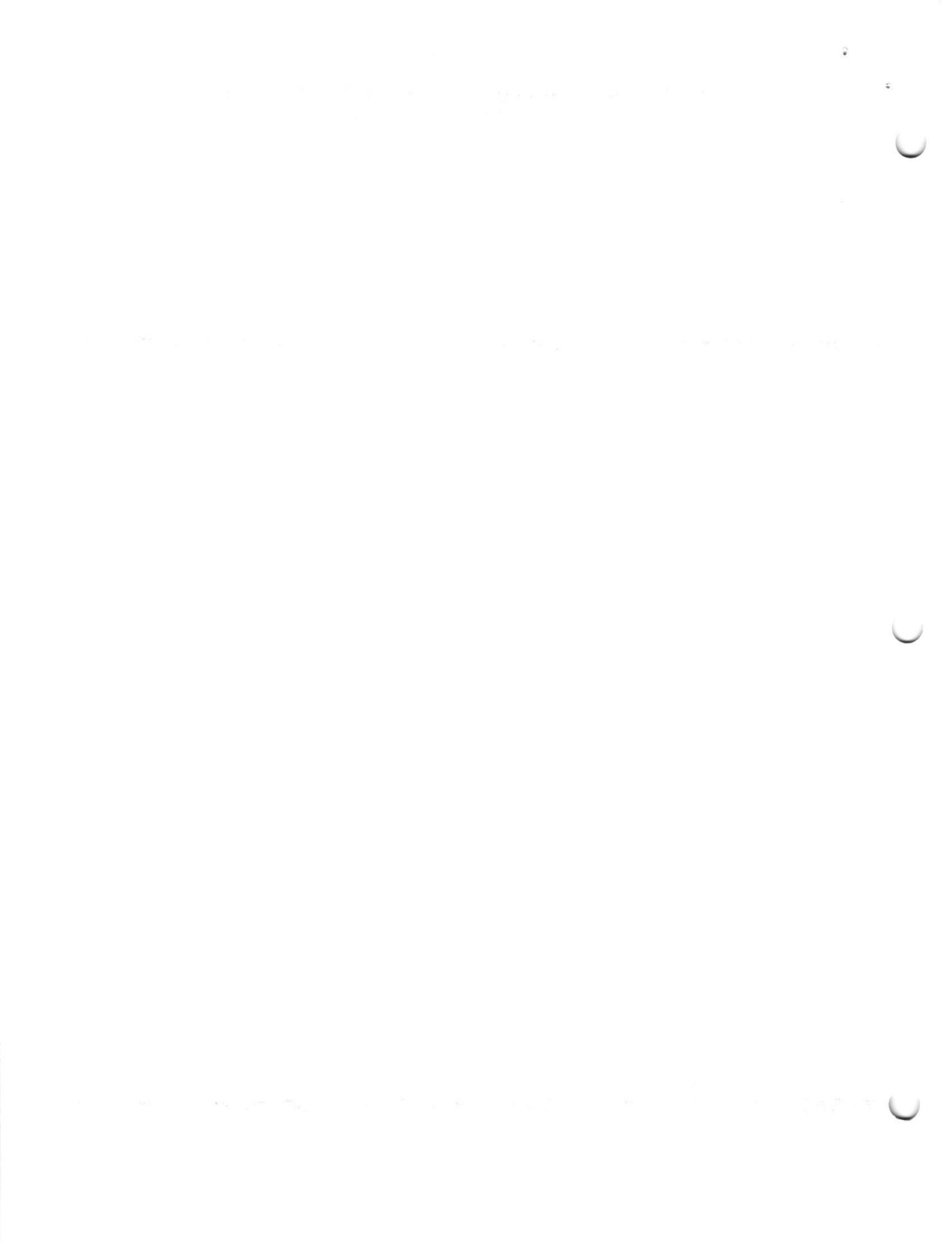
**TOTAL COST OF MATERIAL/ Labor** **\$23.53**



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Labor:	Employee	Hours	Hours	Hours	Cost
	Clark, Travis	2.0			\$49.60
	Coffey, Daniel				
	Crabtree, Tim				
	Davis, Frankie				
	Fitzhugh, Donnie	2.0			\$56.19
	Flora, Drew				
	Harmon, Kim	2.0			\$69.87
	Ledbetter, Billy				
	Melton, Brian				
	Mize, Jeff				
	Painter, Donald				
	Reed, Mike				
	Souther, Adam	2.0			\$56.19
	Taylor, Mike				
	West, Mike				
	Devaney, John				
	Poole, Buddy Jr.				
	Reeves, Ralph				
	Hendrix, Robert				
	Goddard, Darrell				
	Kerley, Jerry				
	Loggings, Wendell				
	Headden, George				
	Neeley, Jim				
	Poole, John				
	Reed, James				
	Rose, Danny				
	Manning, Luther				
<b>TOTAL COST OF LABOR</b>					<b>\$231.85</b>





Harriman Utility Board  
P.O Box 434  
Harriman, Tennessee 37748  
Gas, Water and Sewer  
Manager of G/W/S: Frankie Davis  
865-882-3242 .e 227  
Fax: 865-882-5127  
fdavis@hub-tn.com

Project: TVA Gas & Water Removal  
Location: 157 Lakeshore Dr.  
Date: 11-19-11  
By: Mike Jaylon  
Sheet # 30 of 72

Notes:

Crew: Adam, Billy, Daniel, Toby

157 Lakeshore Dr.

1.5 Hr.

1- 3/4" Lyco Plug	20.36
1- 1" Brass Cap	3.17

4- Men  
1- Backhoe  
1- Service Truck

