



2018 Industrial Motor Control

Schedule:

8:00- Orientation

8:15- Written Test Begins

9:15- Written Test Ends (All students head to shop, do not begin until instructed)

9:30- Competition Begins

11:30- Lunch(All students are required to stop working for 30 minutes, NO EXCEPTIONS!!!)

12:00- Competition Resumes

2:00- Competition Ends (No Exceptions)

3:00- All scores must be finalized and turned in.

Tools Supplied By Contestant	Items Permitted for Written Test
<ol style="list-style-type: none"> 1. Cordless Drill or impact with extra battery and assortment of bits. 2. 4' or 6' Step Ladder(some will be provided at site) 3. Diagonal pliers 4. Side cutters 5. Long-nose pliers 6. Pump pliers 7. Wire strippers 8. Knife 9. Assorted flat blade and Phillips screwdrivers 10. 8' folding rule 11. 12' (or longer) measuring tape 12. Electrician's hammer 13. Hacksaw 14. Torpedo level 15. Electrical tape and connectors 16. 1/2" EMT conduit bender 17. Multimeter 18. Calculator 19. Control Wiring Screwdrivers 	<ol style="list-style-type: none"> 1. National Electric Code 2017 Edition 2. Ugly's Book 3. Key Word Index 4. Calculator 5. Paper 6. Pencil

2018 West Virginia SkillsUSA

Industrial Motor Control

Do not begin until you are instructed to do so. Observe all safety rules at all times and proper PPE must be worn while in the shop area. Clean your work area once your project is completed or when you are instructed to do so.

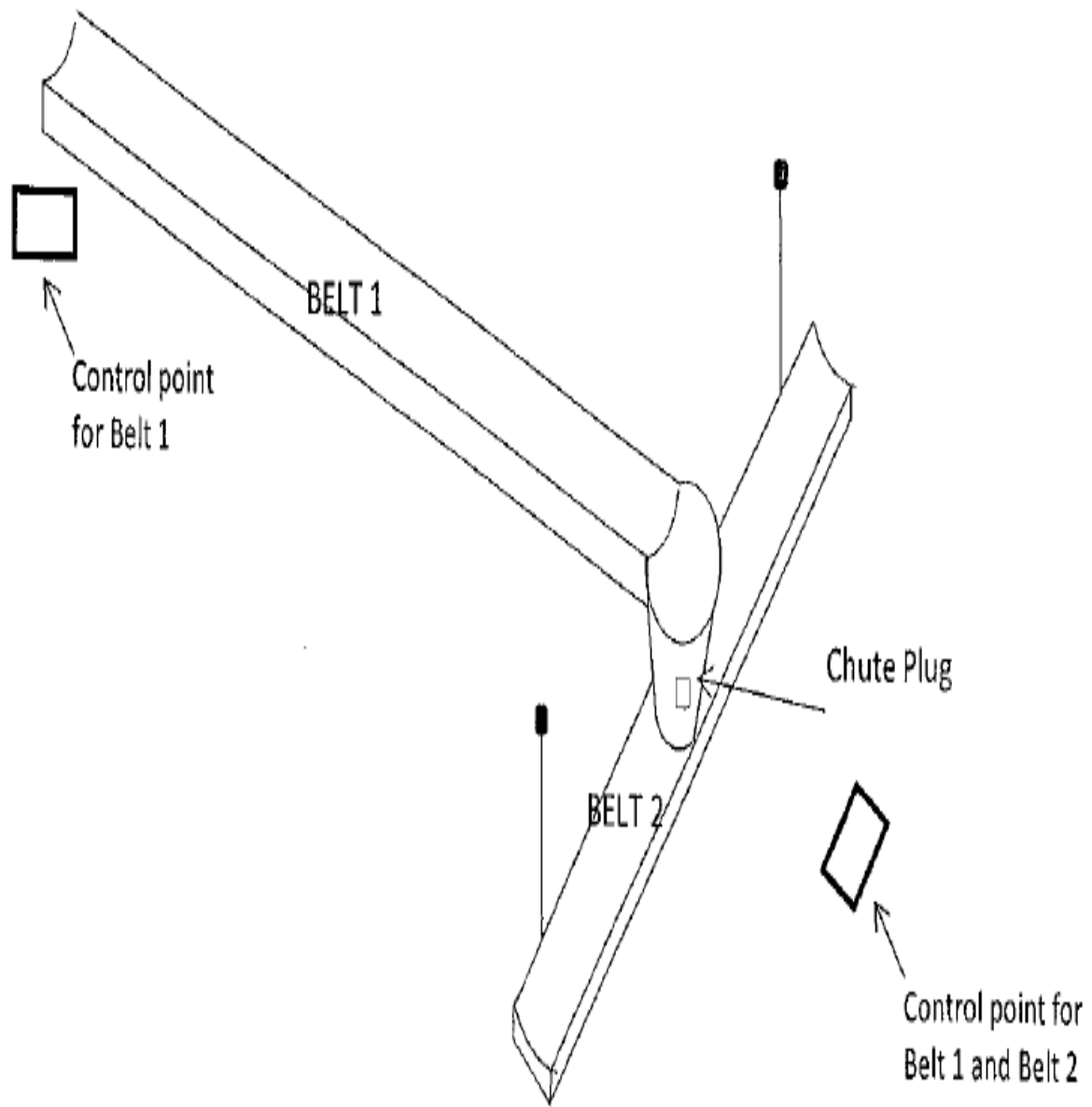
You will have Four hours to complete this entire project.

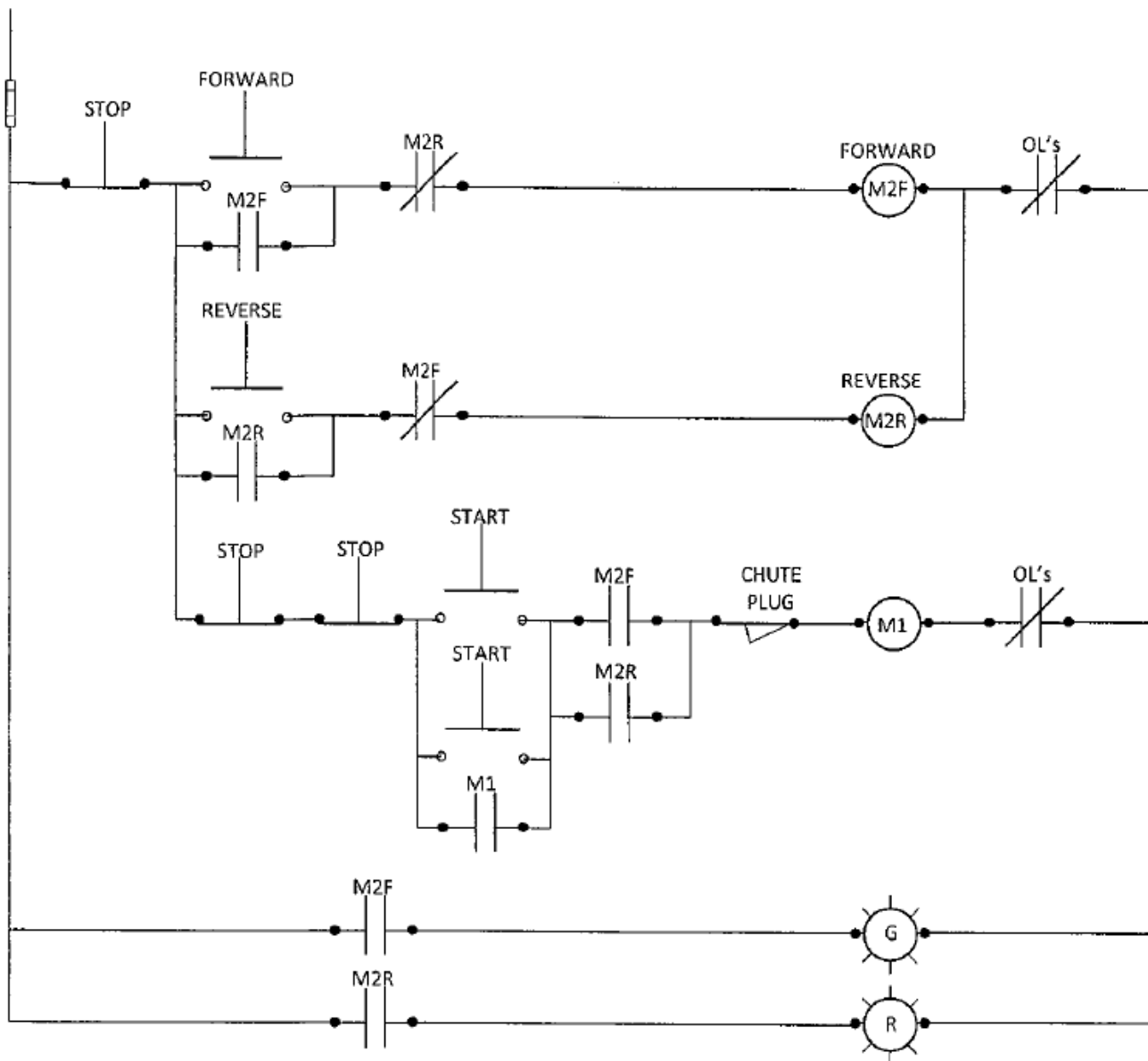
Please Read Carefully and Wire the Following

A sand and gravel company has a rock quarry and you have been hired to design and wire the power and control of the belt system. This belt system should do the following:

1. Belt 1 feeds sand or gravel on to belt 2
2. When filling orders for sand, belt 2 will run in forward
3. When filling orders for sand, the green indicating light will illuminate
4. When filling orders for gravel, belt 2 will run in reverse
5. When filling orders for gravel the red indicating light will illuminate
6. A chute plug switch will stop belt 1 if there is a backup in the chute
7. You will use a limit switch for the chute plug switch
8. Belt 1 should not run unless belt 2 is running
9. Belt 2 is required to have a forward and reverse contact interlocking
10. Indicating lights will use auxiliary contacts
11. Belt one has multiple control points
12. Belt two has only one control point

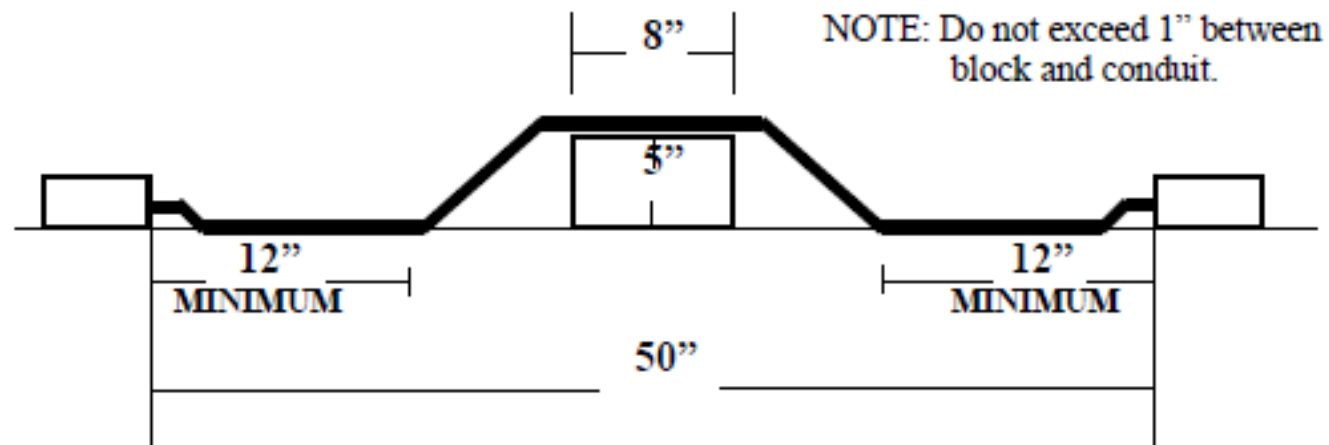
Please See Belt System Picture below for better understanding





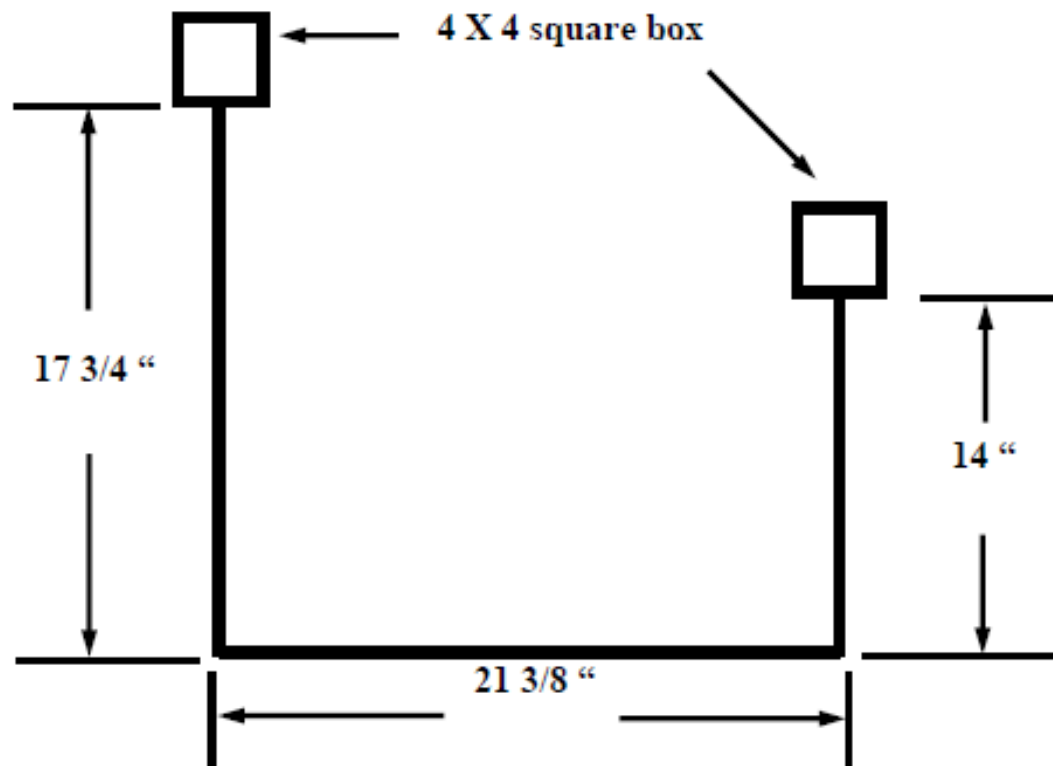
CONDUIT ASSIGNMENT


1. Make each conduit bend from the measurements shown.
2. Offsets are required at all boxes.
3. Label your conduit and place at the edge of your work station.
4. You may use a 4" square box to get the box measurements.
5. All measurements - within 1/8"



CONDUIT ASSIGNMENT

1. Make each conduit bend from the measurements shown.
2. Offsets are required at all boxes.
3. Label your conduit and place at the edge of your work station.
4. You may use a 4" square box to get the box measurements.
5. All measurements - within 1/8"



							
	Score Card						
Contest:	Industrial Motor Control	Chair:					
Division:		Contestant Numbers					
Type	Skills Area	Max					
Standard	Power	50					
Standard	Written Exam	150					
Standard	Safety	60					
Standard	Logic Diagram	75					
Standard	Conduit Bending	140					
Standard	Code	60					
Standard	Correct Operation	205					
Standard	Placement	150					
Standard	Neatness	50					
Standard	Troubleshooting	60					
Standard							
Standard							
Standard							
Penalty	Needing Wiring Diagram	-10					
Penalty	Clothing	-50					
Penalty	Resume Penalty	-10					
Total Scores:		1000					

Judges Sheet

CONDUIT

Item	Points	1	2	3	4	5	6	7	8	9
Conduit cut straight	20									
Conduit reamed	20									
Correct length	20									
Offsets at boxes	20									
Height / Block	20									
Allow 12" before Bend	20									
Overall Neatness	20									
TOTAL SCORE	140									

Conduit cut straight - 5 points each

Conduit reamed - 5 points each

Offsets at boxes - 5 points each

Allow 12" before - 5 points each

ALL MEASUREMENTS - WITHIN 1/8 OF AN INCH.

Judges Please use 5 Point Increments