

Tractor Driving CDE

(rev. April 2020)

Purpose

The purpose of the Tractor Driving Career Development Event is for FFA Members to demonstrate their knowledge, skills, and proficiencies related to the safe operation, maintenance and driving skills of a tractors and skid steer loaders.

Eligibility

This event is held during the Delaware State Fair. It is open to all high school and middle school FFA chapters and FFA members in good standing. The two (2) FFA Members designated for this event must be *certified by the respective local advisor. He/She must attend a mandatory practice event in order to be eligible to compete in the event. Members that have participated in a previous regional event in this area are ineligible.

*Certified means responsible individual that holds his/her actions accountable

Event Procedures

- A. Only the (2) FFA Chapter Tractor/Equipment Operating participants that are certified by their respective local advisor and has attended the **mandatory** practice event is eligible to compete in this contest.
- B. Waivers, including Delaware FFA Waiver and The Big E waiver must be presented at check-in in order to compete. FFA Members will not be allowed to compete without waivers due to the operation of large equipment for safety reasons.
- C. Appropriate Dress: FFA T-shirt with sleeves (It must say FFA on the shirt), long pants, belt, and work shoes are **required**. It is recommended that long hair be pulled up and jewelry is taken off. Gloves are optional. Shirt should be tucked in for safety.
- D. It is recommended that you bring the following: At least two (2) pencils, Clipboard, and non-programmable calculator. All other equipment will be provided.
- E. Each contestant must complete all events.
- F. Participants will not be allowed to possess any personal electronic devices (i.e. cell phones, smart watches, air pods, etc) other than those approved by event officials. Participants who possess personal electronic devices without prior approval of the event officials will be disqualified from the event.**
- G. Excessive tractor brake steering will disqualify the contestant.
- H. Contestants will be disqualified if they are observed not following safety standards, which may endanger themselves or the public.
- I. Contestants will be disqualified if they do not wear their seat-belt while operating the equipment.
- J. Contestants will be disqualified if they do not adhere to the designated path through the course.
- K. Tractors and equipment will be provided for each event. All contestants will use the same tractor and piece of equipment provided at that event.

L All persons other than the judges, the scorers and the contestants will be barred from the contest area during the contest.

M. The Chair(s) in charge of this contest will select judges and scorers.

N. In case any situation occurs that is not covered in the rules, the decision of the judges will be final.

Event Format

- A. 1.1 High School: The contest will consist of five (4) parts, each of which will be scored separately: written test, tools/tractor parts ID, a two-wheeled manure spreader event, a four-wheeled trailer event **and** skid-loader event.
- B. 1.2 Middle School: The contest will consist of three (3) parts, each of which will be scored separately: written test, tools/tractor parts ID, and two-wheeled manure spreader event.
- B. Written Test (Middle School and High School are administered the same test):
 1. The written test will include up to fifty (50) questions centered on the skill, safe operation and operator maintenance of tractor.
 2. A total of 30 minutes will be allotted for the members to complete the test. The written test will be administered in the bleachers at the arena, so clipboards should be provided by the student's advisor.
 3. Refer to SAFE OPERATION OF AGRICULTURAL EQUIPMENT (Student Manual from HOBAR PUBLICATIONS (800) 846-7027) for possible questions or contact the CDE chairs.
 4. The test will include true-false, completion and/or multiple-choice questions.

Example: 1. T ___ F ___

Example: 2. Check the ___ in air cleaners once daily.

Example: 3. All grease fittings should be

- A. Well cited
- B. Painted periodically
- C. greased on schedule
5. Each question answered incorrectly or left unanswered will be valued at ten (10) points.

(500 points possibly added to overall score)

- C. Tools/Tractor Parts ID(Middle School and High School): 10 minutes allotted---administered outside the "ring"
 1. Each contestant will be given 10 minutes to identify mechanic tools and tractor parts from a gas or diesel tractor. Up to 30 tools and parts will be identified. They may include a torque wrench, open-end wrench, flywheel, piston, starter, etc. Contestants will choose from a bank of answers.
 2. The identification section will be administered outside of the show ring.
 3. Refer to www.snap-on.com, www.valu-bilt.com, or www.craftsman.com.
 4. Each answer missed or left unanswered will be valued at ten (10) points.

(300 points possibly added to overall score)

D. Operating Skills Events (High School):

1. The next 3 events (a two-wheeled manure spreader event, a four-wheeled trailer event *and* skid-loader event) will test the skill and ability of the contestant to operate Skid-loaders, tractors, and equipment safely.
2. Each contestant will start off with a visual inspection of Skid-loader, tractor and equipment. Judges will expect a verbal response.
3. The contestant will follow the course outlined by the judge (see attached illustrations.)
4. Each event is given a total of 10 minutes to be completed. Time starts on a signal from the judge and stops when the contestant returns to original point and engine stops.
5. The contestant will be allowed ten minutes for each event. The contestant will be notified at eight minutes that two minutes are left. If the contestant does not finish the event in ten (**10**) minutes, the judge will stop them and a **500-point** addition will be added to their score.
6. Excessive tractor brake steering will disqualify the contestant.
7. Contestants may be disqualified if they are observed not following safety standards, which may endanger themselves or the public.
8. A 30-60 hp compact diesel tractors are typically used in these events. Manufacturers may include John Deere, CASE IH, NEW Holland, Kubota, Bobcat, Gehl and other tractors/Skid-Loader.
9. The Skid loader and Loader tractor event will be held every year.
 - a. The Tractor Loader event will involve loading mulch or other similar material.
 - b. The Skid-Steer event will use pallet forks to move loaded pallets around a course. One pallet will have four (**4**), five-gallon buckets of sand, while the other has one (**1**) five-gallon bucket of water!

E. Operating Skills Event (Middle School):

1. The next event (a two-wheeled manure spreader event) this will test the skill and ability of the contestant to operate tractor, and equipment safely.
2. Each contestant will start off with a visual inspection of the tractor and equipment. Judges will expect a verbal response.
3. The contestant will follow the course outlined by the judge (see attached illustrations.)
4. This event is given a total of 10 minutes to be completed. Time starts on a signal from the judge and stops when the contestant returns to original point and engine stops.

5. The contestant will be allowed ten minutes for this event. The contestant will be notified at eight minutes that two minutes are left. If the contestant does not finish the event in ten (**10**) minutes, the judge will stop them and a **500-point** addition will be added to their score.
6. Excessive tractor brake steering will disqualify the contestant.
7. Contestants may be disqualified if they are observed not following safety standards, which may endanger themselves or the public.
8. A 30-60 hp compact diesel tractors are typically used in these events. Manufacturers may include John Deere, CASE IH, NEW Holland, Kubota, Bobcat, Gehl and other tractor.

NOTE: CONTESTANTS WILL BE STOPPED BY THE JUDGE WAVING A RED FLAG IF IT IS FELT THAT THE CONTESTANT IS NOT IN FULL CONTROL OF THE SKID-LOADER OR TRACTOR AND SAFETY OF THE OPERATOR AND JUDGES ARE JEOPARDIZED! CONTESTANTS WILL RECEIVE A 500 POINT DEDUCTION!

Scoring

The contestant with the *lowest* deductions will be the winner. In other words, low score wins. Refer to the scorecards in this section to see the possible deductions in each event.

Tiebreakers

Tie breakers will be as follows: 1) test score 2) parts I.D. score 3) four-wheeled event score 4) two-wheeled event score 5) skid loader event score.

Awards

Awards will be presented to individuals based upon their rankings at the DSF FFA Awards Breakfast. The first place High School individual will represent Delaware at Big E.

Top three (3) individuals from the Middle School and High School will be awarded a trophy sponsored by the local equipment dealers and a gold, silver and bronze pin to be placed on your official FFA jacket.

Top ten (10) individuals will be announced.

References

Possible websites for tools identification:

www.snap-on.com, www.valu-bilt.com,
www.craftsman.com,

4-H Engineering

Possible websites/key word searches for tractors parts id:

John Deere, Hooper, Inc. CASE IH, New Holland, 4-H Engineering

Website for safety instructions/review

www.bobcat.com HOSTA Training– use as resource, sample test, etc.

Contestant's number _____ Name _____
Number incorrect _____ X 10 = Score _____

Event No. II ---- Tool Identification

- _____ Open end-box combination
- _____ Adjustable wrench
- _____ Phillips head screw driver
- _____ Allen wrench
- _____ Box end wrench
- _____ Open end wrench
- _____ Feeler gauges
- _____ Metric wrench
- _____ 3/8 inch drive extension
- _____ 1/2 inch drive extension
- _____ Welders clamp pliers
- _____ 6 point socket
- _____ 12 point socket
- _____ Slip joint pliers
- _____ Pipe wrench
- _____ Torque wrench
- _____ Oil filter wrench
- _____ Vise grip pliers
- _____ Battery cable and terminal post cleaner
- _____ Scraper

7 -25 - 2012

Contestant's Number _____

Name _____

Number incorrect _____ X 10 = SCORE _____

Event No. II — Tractor Parts Identification

Parts to be identified have numbers attached to them. Select the most correct part name from this list. Write the corresponding number beside the name.

- | | |
|-------------------------------------|--------------------------------------------------|
| _____ Air Intake, Engine | _____ Oil Drain Plug, Crankcase |
| _____ Alternator | _____ Oil Filler Cap, Crankcase |
| _____ Ammeter/Indicator Light | _____ Oil Filter, Crankcase |
| _____ Axle Carrier, Rear | _____ Oil Pan, Crankcase |
| _____ Battery | _____ Oil Pressure Gauge/Indicator Light, Engine |
| _____ Bearing, Ball | _____ Oil Pump Screen |
| _____ Bearing, Crankshaft | _____ Parking Brake Control |
| _____ Bearing, Roller | _____ Piston |
| _____ Brake Pedal | _____ Piston Rings |
| _____ Camshaft | _____ Piston Wrist Pin |
| _____ Clutch Pedal | _____ P. T. O. Shield |
| _____ Clutch Plate | _____ Radiator |
| _____ Clutch Pressure Plate | _____ Radiator Cap |
| _____ Connecting Rod | _____ Seal, Grease/Oil |
| _____ Crankshaft | _____ Starter |
| _____ Diesel Fuel Tank | _____ Steering Tie Rod |
| _____ Dipstick, Crankcase Oil Level | _____ Tachometer |
| _____ Drawbar | _____ Temperature Gauge/Indicator Light |
| _____ Engine Stop Control | _____ Coolant |
| _____ Exhaust Manifold | _____ Thermostat |
| _____ Fan | _____ Throttle |
| _____ Fan Belt | _____ Throttle Rod |
| _____ Flywheel, Engine | _____ Tire Valve Stem |
| _____ Fuel Tank Cap | _____ Valve, Engine |
| _____ Fuel Filter | _____ Valve Cover, Engine |
| _____ Fuel Injector Pump | _____ Valve Cover, Gasket |
| _____ Fuel Injector | _____ Valve Push Rod |
| _____ Fuel Pump | _____ Valve Rocker Arm |
| _____ Fuel Tank | _____ Valve Spring |
| _____ Governor | _____ Warning Light, Rear |
| _____ Head Gasket, Engine | _____ Water Hose |
| _____ Hydraulic Hose | _____ Water Pump |
| _____ Hydraulic Reservoir | _____ Weight Carrier |
| _____ Hydraulic Valve Control | _____ Weights, Front |
| _____ Intake Manifold | _____ Weights, Wheel |
| _____ Muffler | |

Delaware FFA Safe Tractor/ Equipment Operating Career Development Event

**Score Sheet Two Wheeled Manure Spreader Event
(Middle School and High School)**

Contestant Name/Number: _____

Chapter: _____

BEFORE STARTING TRACTOR (verbal response)

Deductions

Check fuel and oil gauge	_____ X	10
Check brakes - depress brake pedal with engine running, tractor in gear	_____ X	10
Check tires - by sight only	_____ X	10
Check hazards - dirt, grease, tools, improper attachments, etc	_____ X	10
Check safety belts	_____ X	10
Check ROPS	_____ X	25

STARTING

Transmission not in Neutral/ Park	_____ X	25
Brakes not set	_____ X	25
Clutch not disengaged	_____ X	15

OBSTACLE COURSE

For each time tractor or manure spreader touches obstacles or lines	_____ X	50
For each time tractor or manure spreader knocks down obstacles or crosses lines	_____ X	100
For each unnecessary change of direction (forward or backward)	_____ X	50

BACKING MANURE SPREADER INTO THE ALLEY

Number of inches over three (3) inches from the back of the stall	_____ X	10
Number of inches off center in the front	_____ X	10
Number of inches off center in the rear	_____ X	10
For each time tractor or manure spreader touches obstacles or lines	_____ X	50
For each time tractor or manure spreader knocks down obstacles or crosses lines	_____ X	100
For each unnecessary change of direction (forward or backward)	_____ X	50

JUDGES OBSERVE AT ALL TIMES DURING ABOVE OPERATIONS

Improper mount/dismount	_____ X	50
Failure to use seat belt	_____ X	25
Failure to set brakes when getting off/ or put in Park	_____ X	50
Sliding or spinning tires, brake steering	_____ X	100
Rough clutch engagement	_____ X	25
Clashing of gears when shifting	_____ X	25
Stalling of the engine	_____ X	10
Excessive engine speed	_____ X	25
Excessive tractor speed	_____ X	50
Standing while tractor is moving	_____ X	100
Moving tractor with brakes on	_____ X	25
Failure to put in gear or park when getting off with engine stopped	_____ X	50
Riding the clutch	_____ X	25
Any unsafe conduct while on or around tractor	_____ X	25
Fouling equipment (touching spreader w/ tractor wheel)	_____ X	50
Rubbing hard	_____ X	75

Sub Total of Deductions _____

If the contestant does not finish within the ten-minute time period, they will be given a **500-point deduction**.

Time deduction - Convert minutes into seconds, add the remaining seconds. Divide the total seconds by 3.

To this add the subtotal for deductions to get the final score of the contestant.

TIME _____ **Deduction** _____ **+Sub Total** _____ **=TOTAL** _____

Delaware FFA Safe Tractor/ Equipment Operating Career Development Event
Score Sheet Four-Wheel Trailer Event
(High School)

Contestant Name/Number: _____ Chapter: _____

BEFORE STARTING TRACTOR (verbal response)

	<u>Deductions</u>	
Check fuel and oil gauge	_____ X	10
Check brakes - depress brake pedal with engine running, tractor in gear	_____ X	10
Check tires - by sight only	_____ X	10
Check hazards - dirt, grease, tools, improper attachments, etc	_____ X	10
Check safety belts	_____ X	10
Check ROPS	_____ X	25

STARTING

Transmission not in Neutral/ Park	_____ X	25
Brakes not set	_____ X	25
Clutch not disengaged	_____ X	15

HITCHING TRACTOR TO FOUR WHEEL WAGON (NOT SCORED IN DE)

(Hitching taken out-not done at state level)

TRAILER HANDLING

For each time tractor or trailer touches obstacles or lines	_____ X	50
For each time tractor or trailer knocks down obstacles or crosses lines	_____ X	100
For each unnecessary change of direction (forward or backward)	_____ X	50
For each time tractor fouls equipment (touching trailer tongue with tractor tire, sliding trailer wheels sideways)	_____ X	50

TRAILER PLACEMENT IN SHED

For each inch off center at the front of trailer	_____ X	10
For each inch off center at the rear of trailer	_____ X	10
For each inch off from rear of stall over (3) inches	_____ X	10

PARKING TRACTOR AT FINISH LINE

Failure to set brakes	_____ X	50
Failure to place transmission in gear or park	_____ X	50
Failure to reduce throttle	_____ X	10

JUDGES OBSERVE AT ALL TIMES DURING ABOVE OPERATIONS

Improper mount/dismount	_____ X	50
Failure to use seat belt	_____ X	25
Failure to set brakes when getting off/or put in Park	_____ X	50
Sliding or spinning tires, brake steering	_____ X	100
Rough clutch engagement	_____ X	25
Clashing of gears when shifting	_____ X	25
Stalling of the engine	_____ X	10
Excessive engine speed	_____ X	25
Excessive tractor speed	_____ X	50
Standing while tractor is moving	_____ X	100
Moving tractor with brakes on	_____ X	25
Failure to put in gear or park when getting off with engine stopped	_____ X	50
Riding the clutch	_____ X	25
Any unsafe conduct while on or around tractor	_____ X	25
Fouling equipment (touching spreader w/tractor wheel)	_____ X	50
Rubbing hard	_____ X	75

Sub Total of Deductions _____

If the contestant does not finish within the ten-minute time period, they will be given a **500-point deduction**.

Time deduction - Convert minutes into seconds, add the remaining seconds. Divide the total seconds by 3.

To this add the subtotal for deductions to get the final score of the contestant.

TIME _____ Deduction _____ +Sub Total _____ =TOTAL _____

Delaware FFA Safe Tractor/ Equipment Operating Career Development Event

**Score Sheet Skid-Steer Event
(High School)**

Contestant Name/Number: _____ Chapter: _____

BEFORE STARTING SKID LOADER (verbal response)

Deductions

Check fuel and oil gauge	_____ X	10
Check brakes - depress brake pedal with engine running, tractor in gear	_____ X	10
Check tires - by sight only	_____ X	10
Check hazards - dirt, grease, tools, improper attachments, etc	_____ X	10
Check safety belts/harness	_____ X	10

STARTING

Improper mount/dismount	_____ X	50
Seat belts or safety harness not on	_____ X	50
Throttle set too high	_____ X	25

LOADING

For touching line or obstacle (with skid-steer or forks)	_____ X	50
For crossing or knocking down obstacles	_____ X	100
For each unnecessary change of direction (forward or backwards)	_____ X	50
Traveling with forks too high	_____ X	50
Excessive speed going into pallets	_____ X	50
Moving pallets (more than four (4) inches)	_____ X	50
Improper use of forks while loading	_____ X	50

NAVIGATING COURSE

Excessive water loss from bucket (more than three (3) inches)	_____ X	50
Tipping bucket of water off pallet	_____ X	300
**** Operator must return to bucket station to get a new full bucket		
Carrying load at unsafe height	_____ X	50
Pallet #1 not squarely on pallet #2	_____ X	25
Excessive speed over obstacle	_____ X	50
Pallets not squarely on platform	_____ X	25
Unsafe speed approaching platform	_____ X	50
Excessive bucking on turns and going over obstacles	_____ X	50

PARKING SKID-LOADER AT FINISH LINE

Failure to reduce throttle	_____ X	10
Forks not completely down	_____ X	50

JUDGES OBSERVE AT ALL TIMES DURING ABOVE OPERATIONS

Failure to operate skid loader safely	_____ X	100
Excessive skid- steer speed	_____ X	50

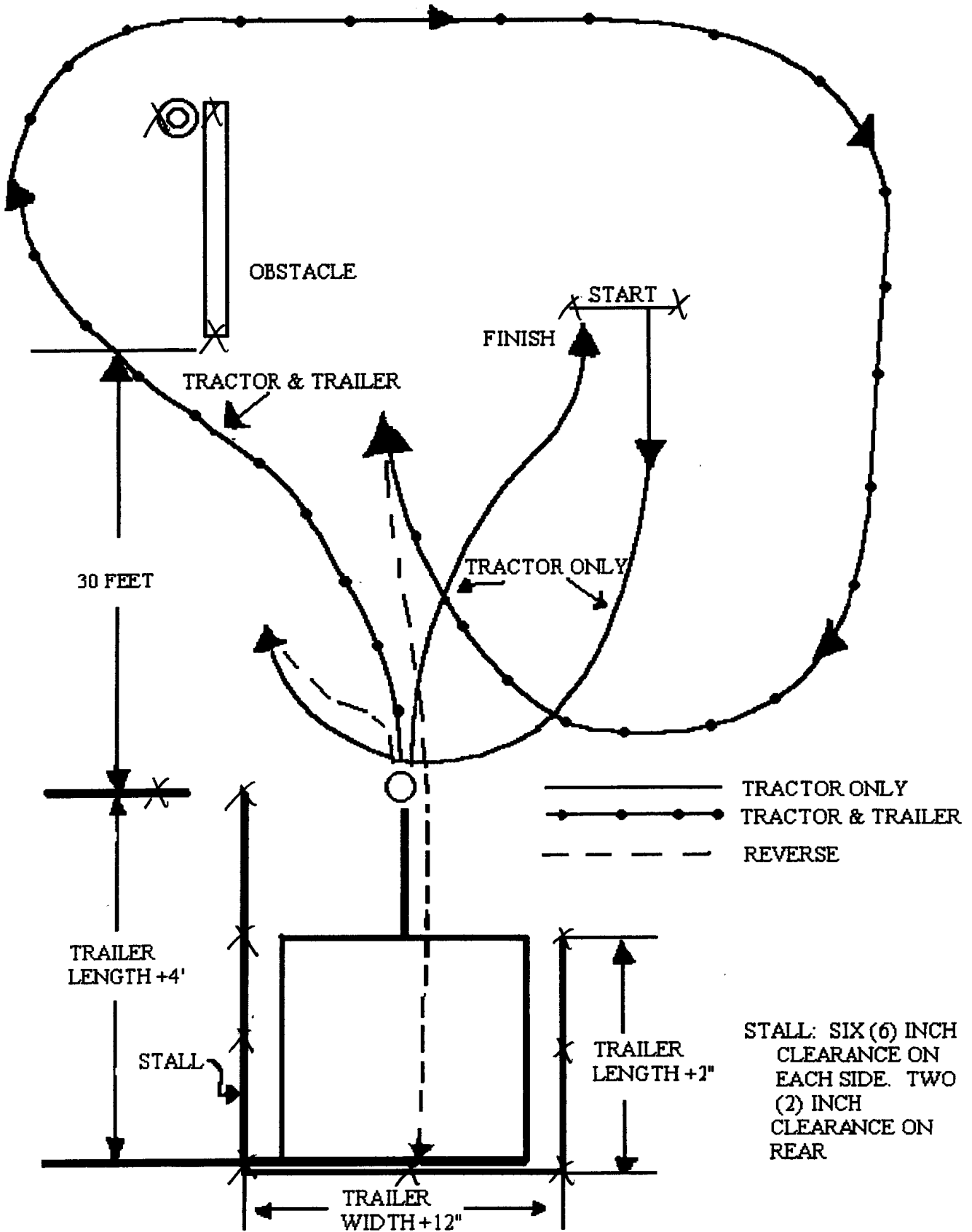
Sub Total of Deductions _____

If the contestant does not finish within the ten-minute time period, they will be given a **500-point deduction**.
Time deduction - Convert minutes into seconds, add the remaining seconds. Divide the total seconds by 3.

To this add the subtotal for deductions to get the final score of the contestant.

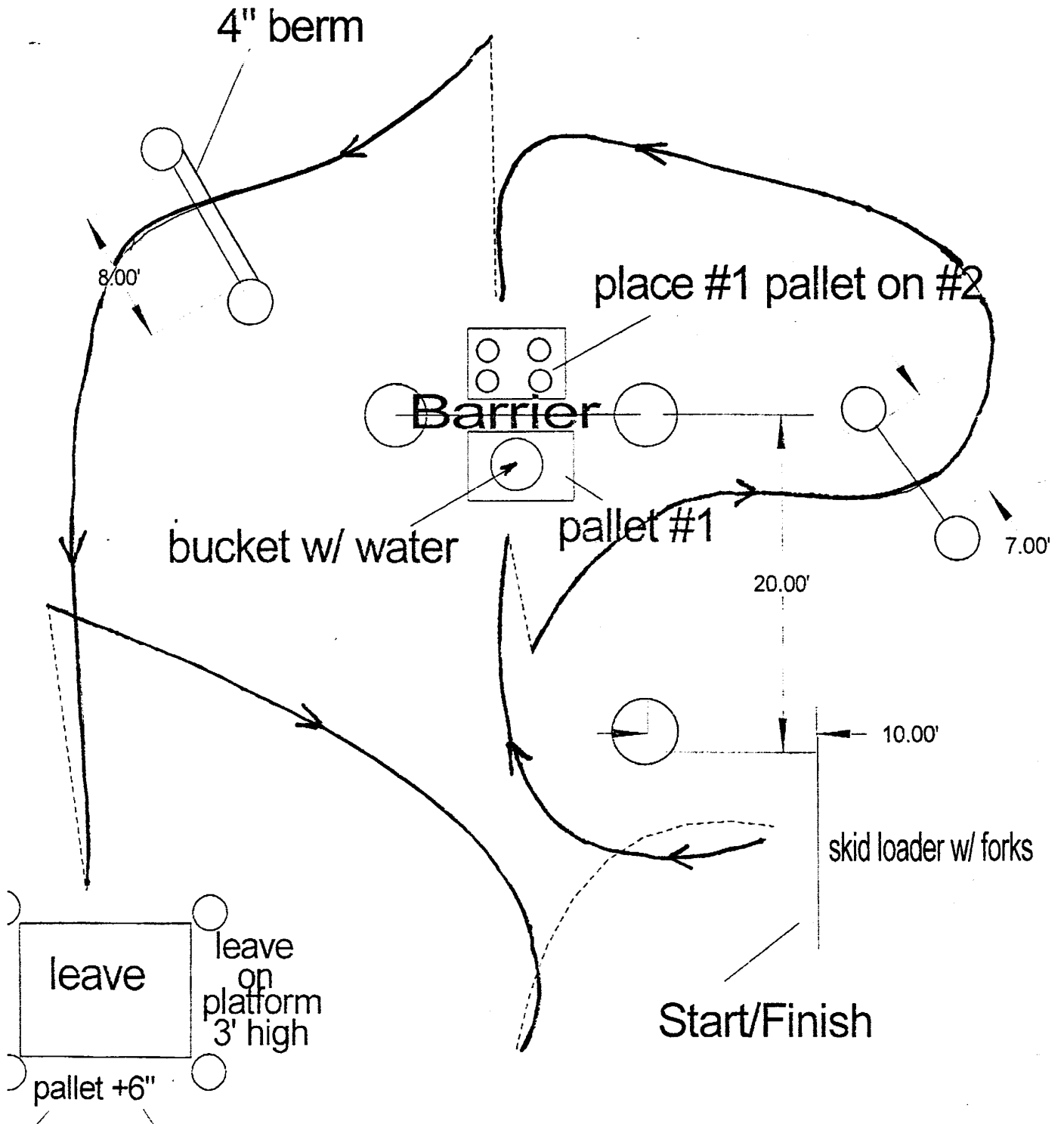
TIME _____ **Deduction** _____ **+Sub Total** _____ **=TOTAL** _____

COURSE LAYOUT - FOUR WHEEL TRAILER EVENT



SKID-STEER EVENT

Forward 
Reverse 



COURSE LAYOUT - TWO WHEEL MANURE SPREADER EVENT

