

Michael Stachiw
DOB May 9, 1991
Troop 680
Eagle Project

Chubb Trail/Loop Trailhead Kiosk Castlewood State Park



General Information

Eagle Candidate: Michael Atkerson Stachiw, Jr.

Address: 117 Avalon Valley Lane

Telephone Number: 636-225-4979

Unit Number: Troop 680

District: New Horizons

Area Council: Greater Saint Louis Area Council

Charter Organization: Sacred Heart Valley Park Elementary School

Unit Leader's Name: Mr. Ted Yahl

Address: 814 Ivy Trace Ballwin, MO 63021

Telephone: 636-225-3559

Committee Chairman: Dr. Michael Stachiw

Address: 117 Avalon Valley Lane Fenton, MO 63026

Telephone: 636-225-4979

Project Description

I will be building a kiosk, just like the one in Figure 4, at the intersection of the Chubb Trail beginning and ending of the Chubb loop, as seen in figure 1, which is a popular intersection for bikers, hikers, and horse riders. The board will be made out of pressure treated wood and there will be a plywood back for paper to be stapled to it so that hikers can know what is going on. A mailbox will also be placed on the side so that trail maps can be placed in it.

The location as shown below on the Chubb Trail map is the intersection of the Chubb Trail and the Chubb Loop in Castlewood State Park. Using a handheld GPS device, I have determined the desired physical location to be: N 38° 32.286 W 90° 33.575. As figure 2 shows, this is next to the railroad. It will be located on Castlewood State Park Land, as shown in Figure 2. More detailed topography map in figure 3.

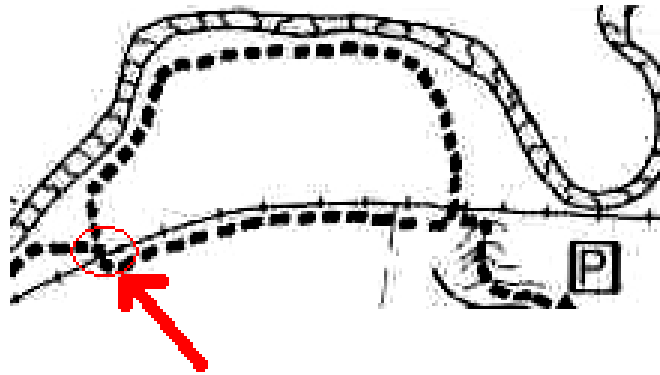


Figure 1
Chubb Loop
Trail Map



Figure 2

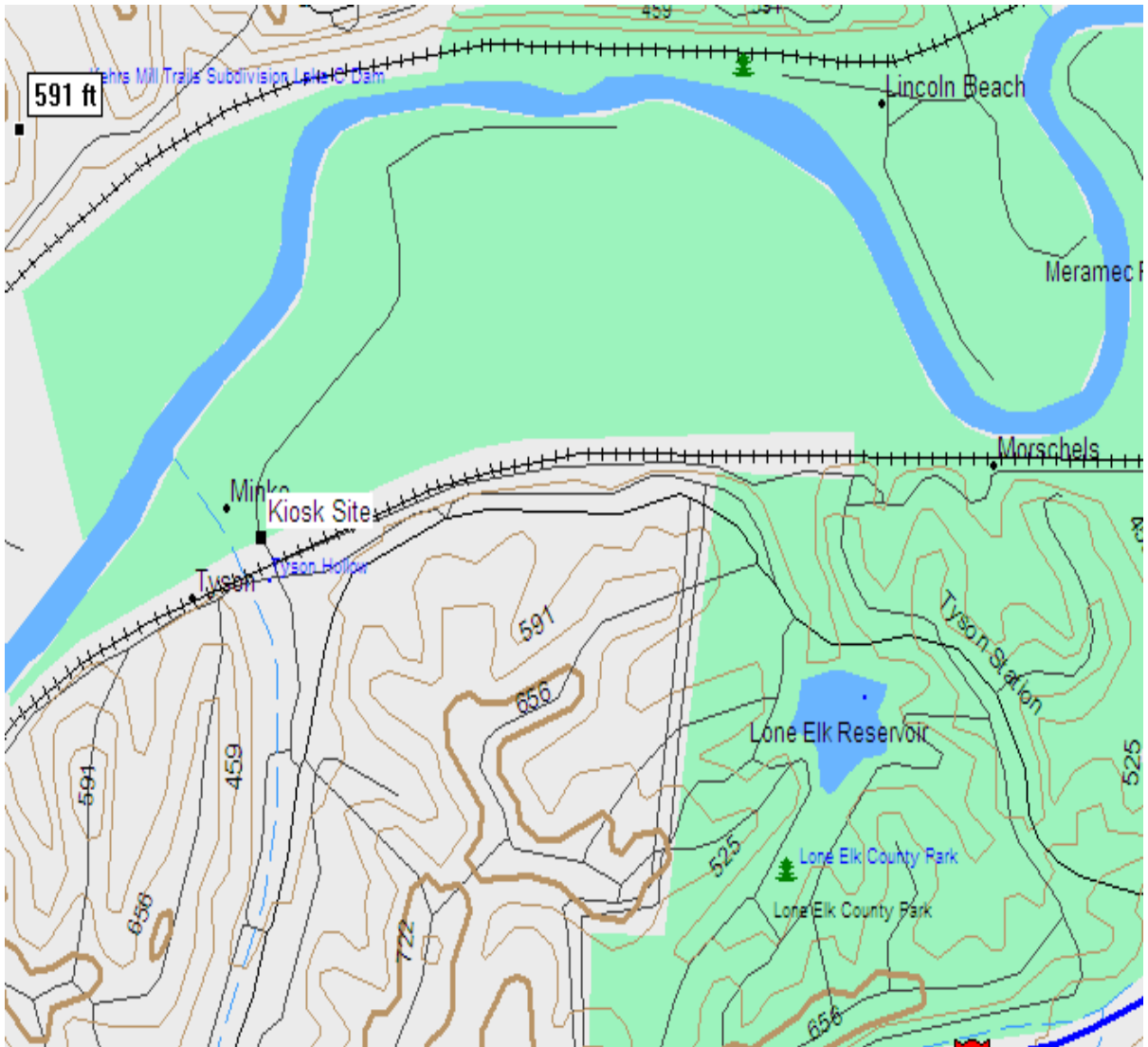


Figure 3



Figure 4

Who Will My Project Benefit

The people who use the trail will benefit from the kiosk. They can be informed as to what is going on in the area. They will know upcoming events, the trail condition, news concerning the trail, and a map of the trail. The Parks Department will also be able to post flood and weather warning to improve the safety of the trail so that hikers, bikers, and horse riders will know not to use the trail that day. The Parks Department can also post the park hours and any other essential information

Project Coordination

Coordination with Benefiting Agency

Since the kiosk will be placed on state property (Castlewood State Park) and is located behind a locked gate, which will make getting materials to the kiosk site harder. I will need to do the following:

I will write a letter to the Missouri Department of Natural Resources to get permission to do my project (Appendix 1)

I will write a letter to the Lone Elk Park Ranger asking for permission to drive on the road that makes up the first half of the trail so that I can reach the worksite and a key to the gate (Appendix 2)

Coordination with Buried Utility and Railroad Companies

Using the 1-800-Dig-Rite (344-7483) Missouri One Call System (<http://www.mo1call.com>) service which is free, I will have all pipes and wires located so that I will not harm any property belonging to a company during my service project. An example letter I will write to One Call is located in Appendix 3.

I will write the Union Pacific Railroad Company to make sure that I am not on their land when I am working on my project

A sample letter to the Union Pacific Railroad's employee I will be speaking with is located in Appendix 4.

Planning Details

Present Condition

There is an open intersection of trail where there is a piece of wood that describes which direction the loop is in and how long the loop is (figure 5). Other than that, the central location of the loop intersection has nothing that informs hikers and bikers on the present condition of the trail, upcoming events, and other useful information. Given that this intersection is at least a mile from the closet trailhead (figure 6), and a wrong turn could cause a hiker to either get lost or be required to walk an additional few miles, an information kiosk would prove beneficial. Figure 6 shows the intersection where I would place the kiosk. Figure 8 shows where people would come down from to see the kiosk. Currently other than the trail post shown in figure 7, there is no other indication of how the trail goes. A kiosk like that shown in figure 9 would reduce the chances of getting lost.



Figure 5

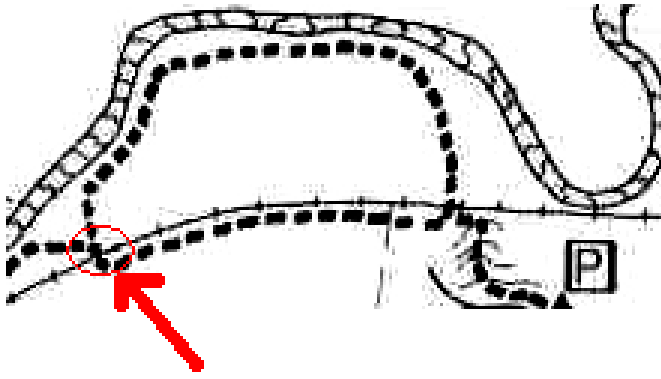


Figure 6



Figure 7



Figure 8

Kiosk Construction Details



Figure 9 – front view



Figure 10



Figure 11

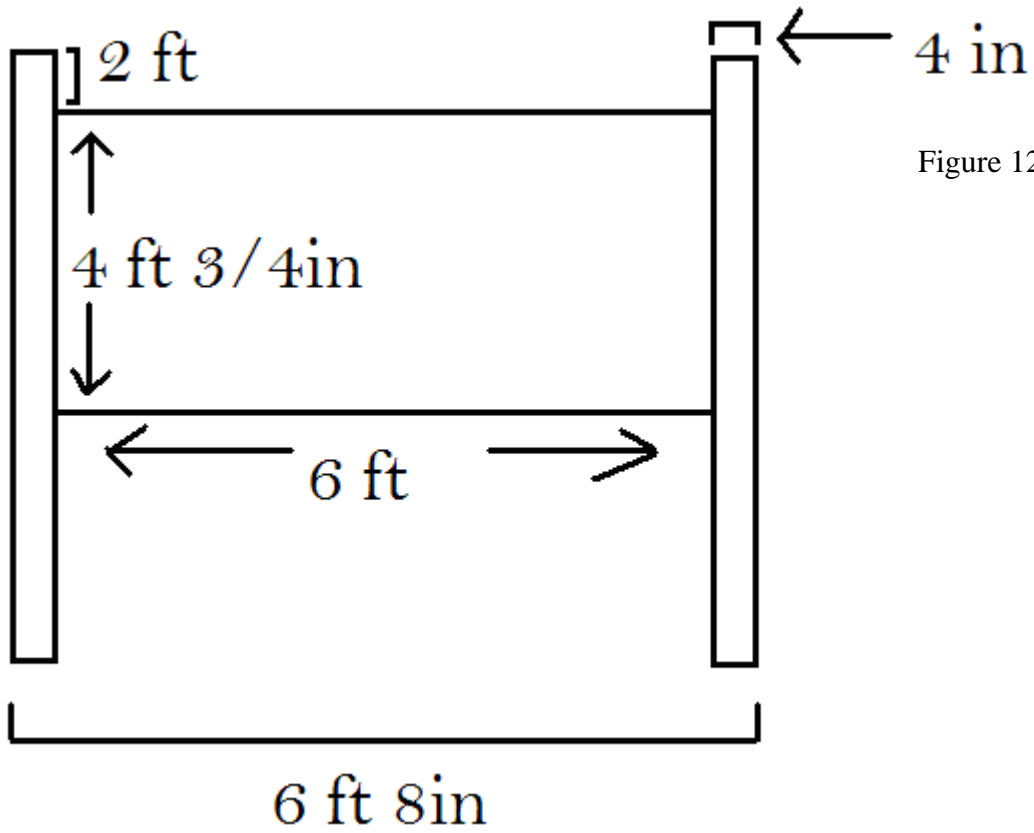


Figure 12

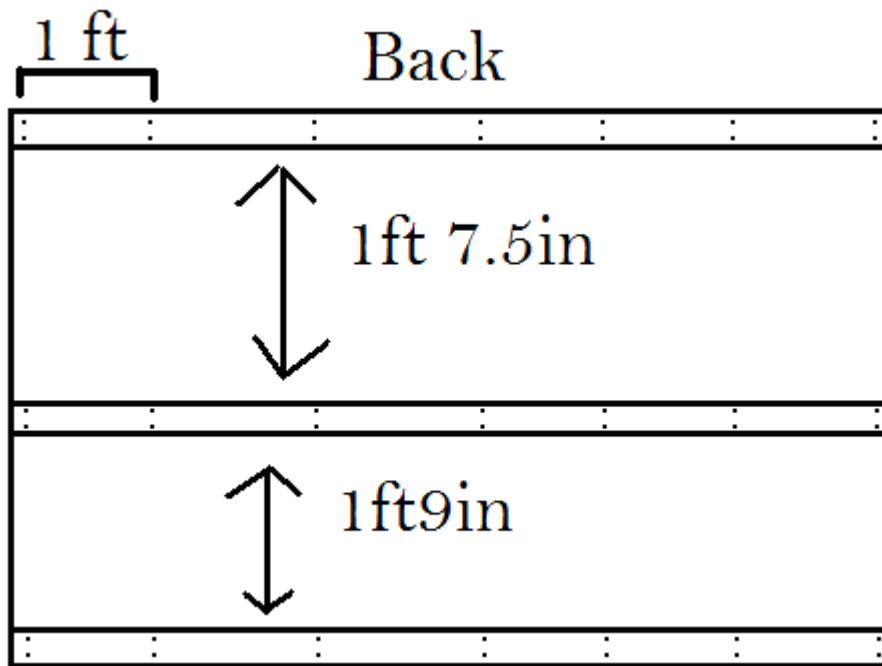


Figure 13

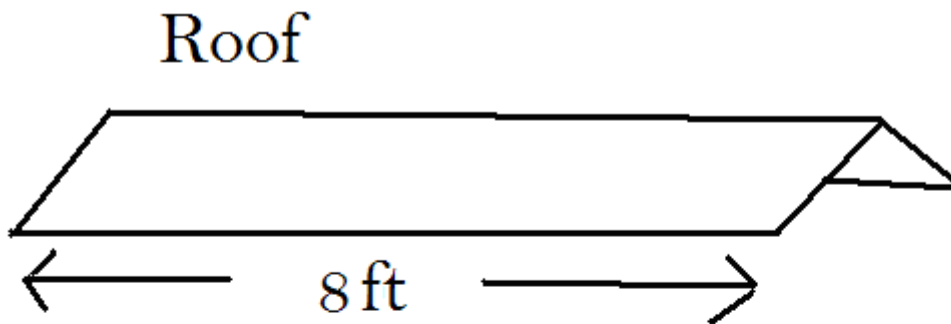


Figure 14

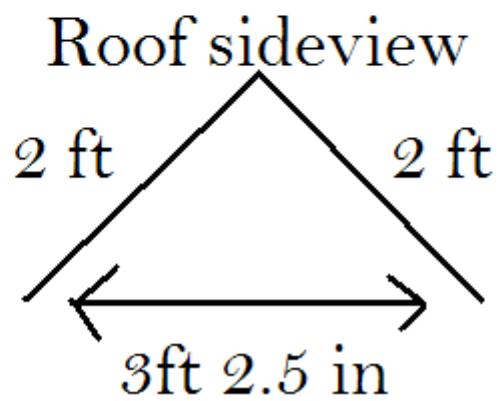


Figure 15

Roof Underside

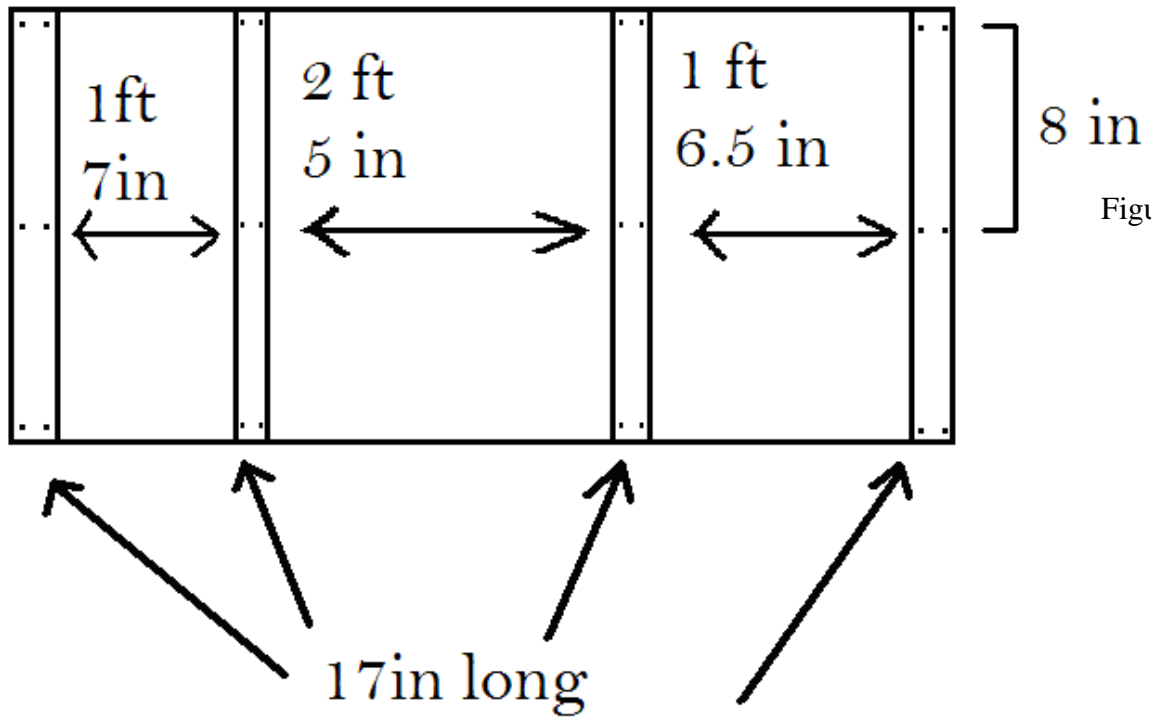


Figure 16

Vertical Post Installation Detail

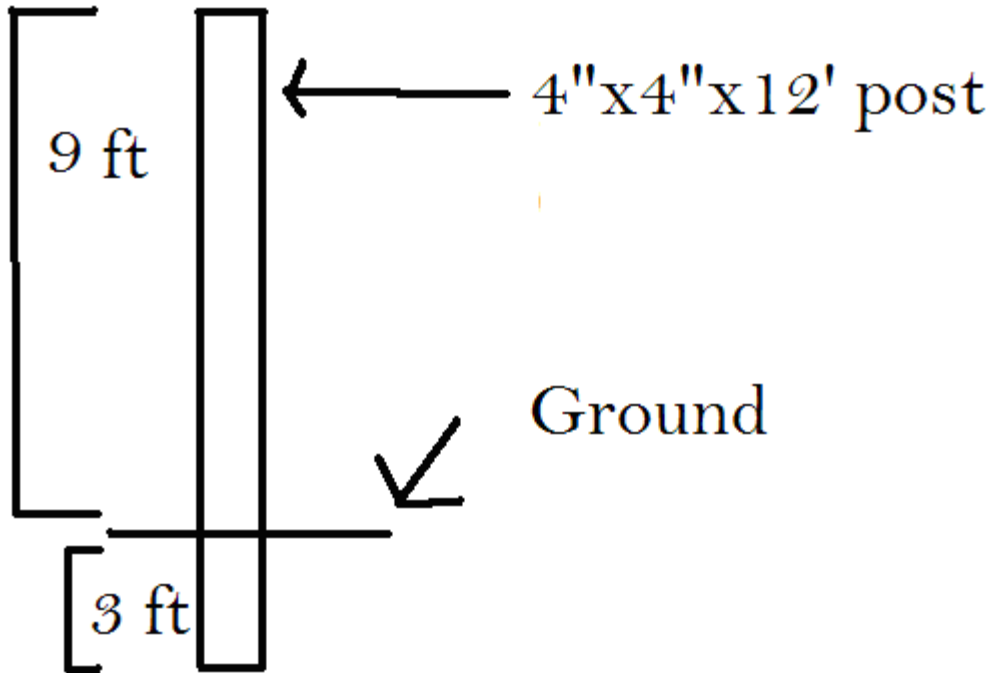
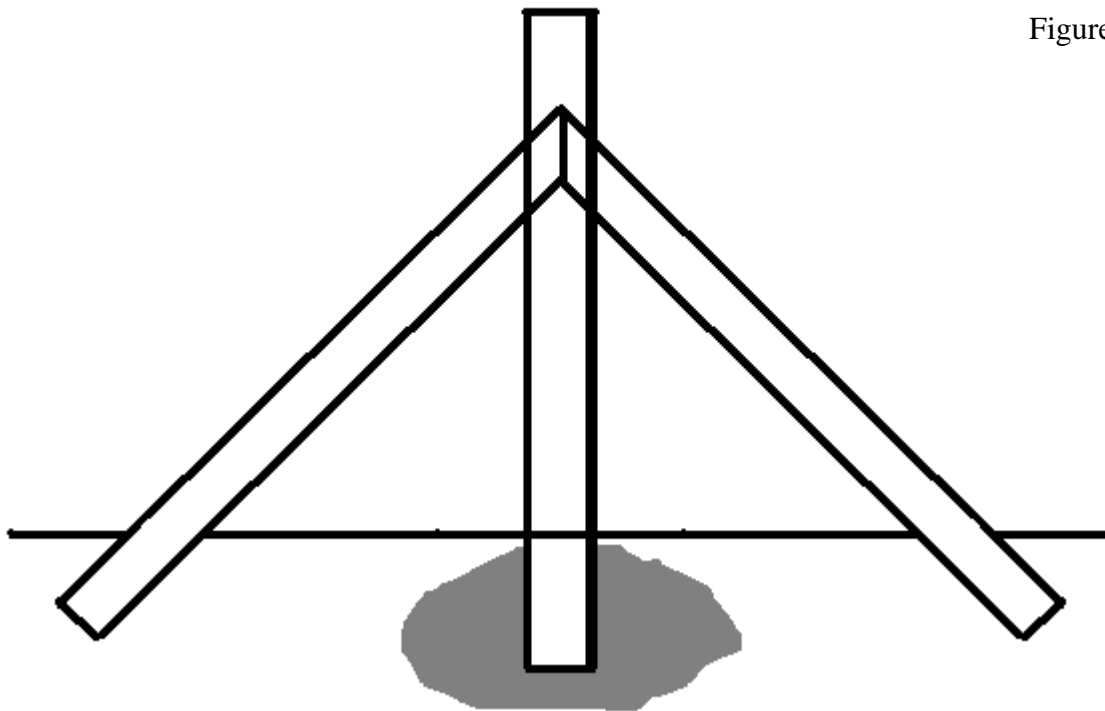


Figure 17

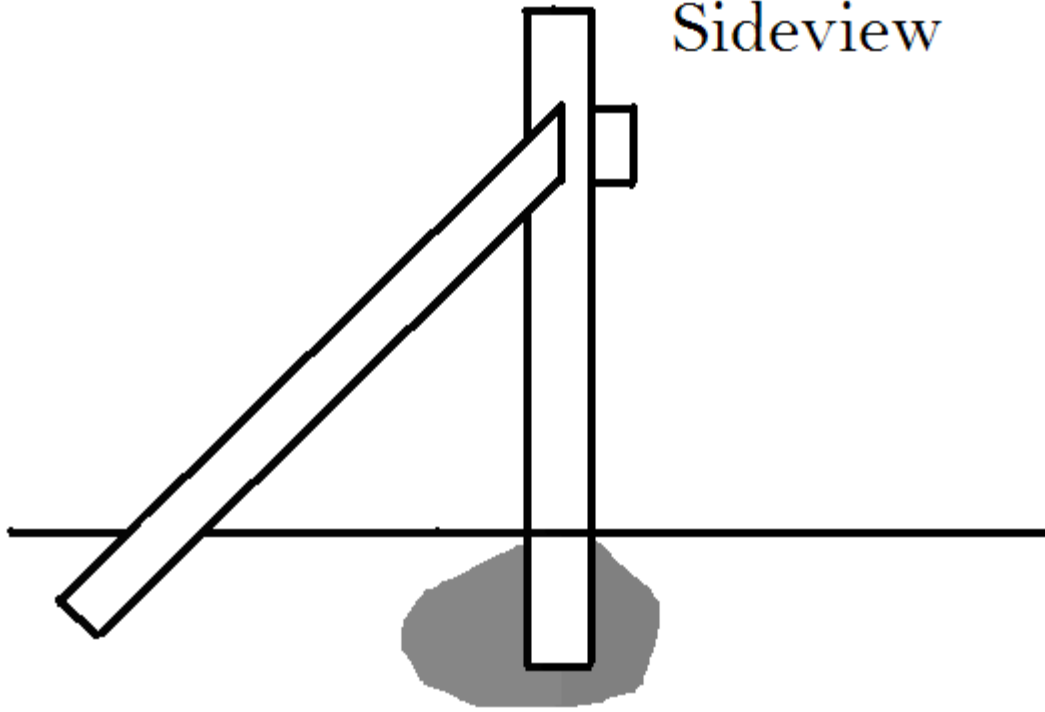
Vertical Post Temporary Frame



Vertical Post Temporary Frame

Sideview

Figure 19



Installation of Board and Other Post

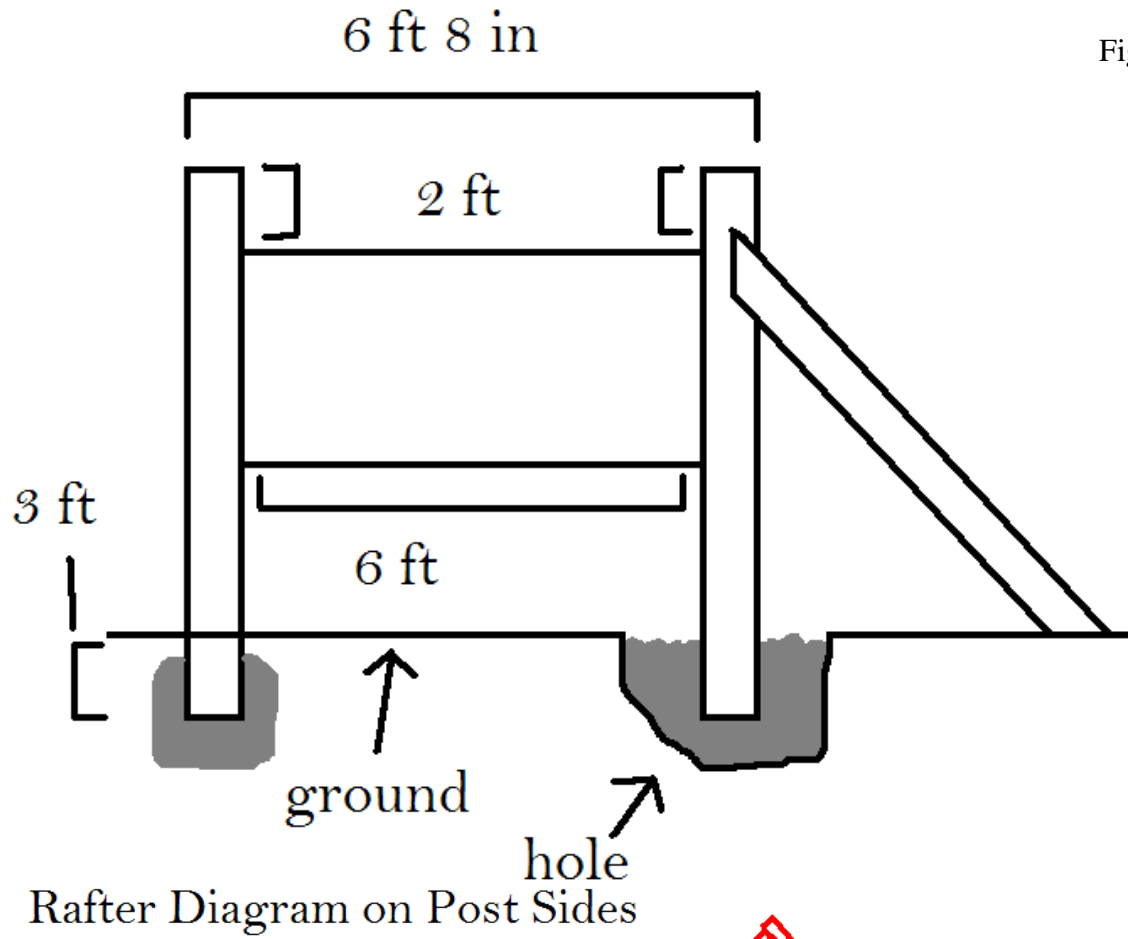


Figure 20

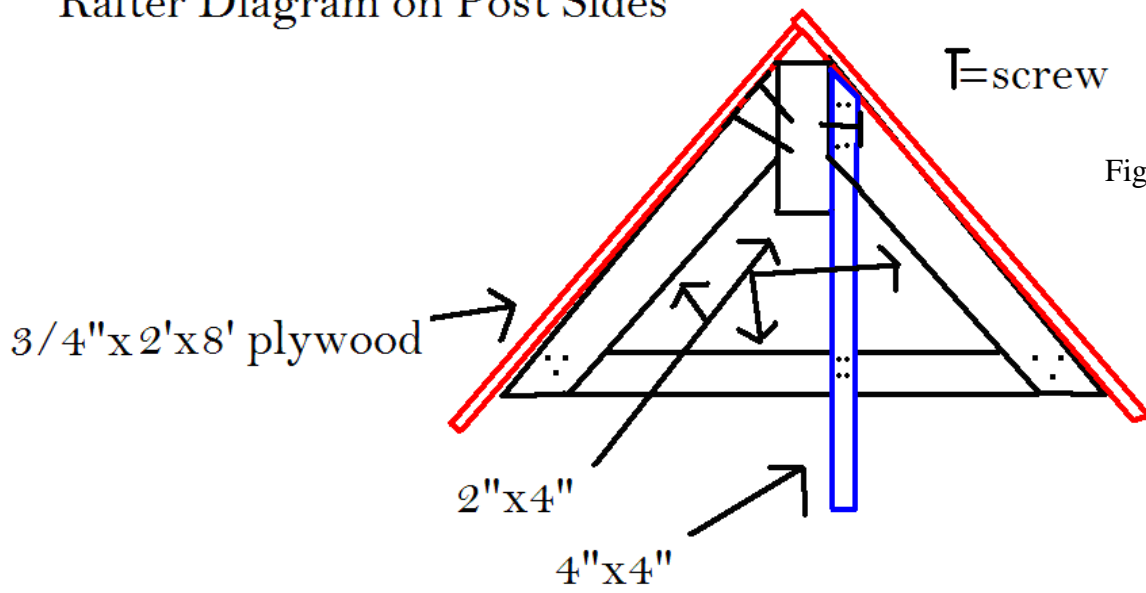


Figure 21

Rafter Diagram in Middle, Not
on Post Sides

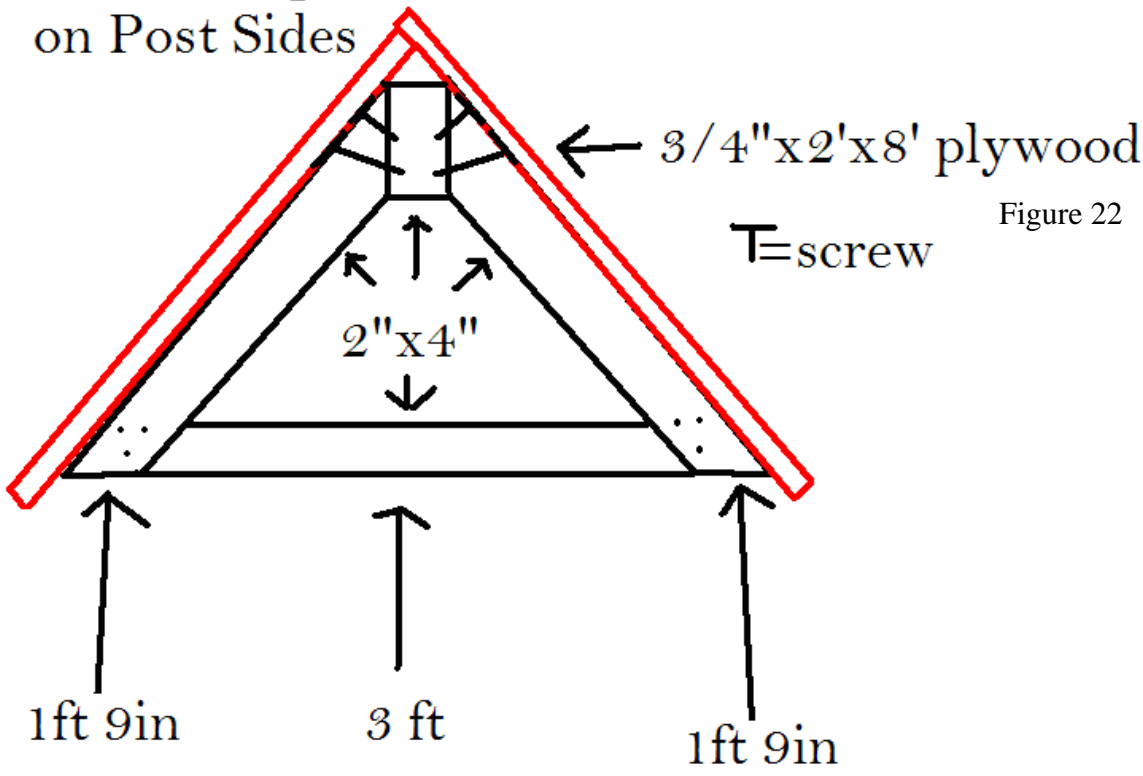


Figure 22

Materials

Quantity of Unit	Unit Description	Price per unit	Cost of units
2	¾" Treated Plywood Sheet for roof and back panel	\$32.97	\$65.94
2	4"x4"x12' pressure treated posts for vertical posts	\$11.97	\$23.94
8	2"x4"x8' pressure treated boards for horizontal posts	\$3.29	\$26.32
2	25 year asphalt shingles, 60 mph wind resistance, chapel gray color	\$13.75	\$27.50
2	Outdoor Paint, quart BEHR ultra exterior flat, color shaded spruce green	\$15.00	\$30.00
1	3½" deck screws, green coated, star head, 1 lb box	\$8.99	\$8.99
1	1¼" deck screws, green coated, star head, 1 lb box	\$8.99	\$8.99
1	7/8" galvanized roofing nails, 1 lb box for shingles	\$2.43	\$2.43
14	50 lb bags quickset concrete	\$5.97	\$83.58
		Total	\$277.69

Supplies

Description	Quantity	Source
2" Paint brushes	6	Home depot
10"x10" Plastic drop cloth	1	Dad
Large trash bags	2	Dad
Pencils	10	Dad
Sharpie marker	1	Dad
¾ brad nails	1 box	Dad
Gravel	2 buckets	Creek
Scrap 2"x4"x8' posts	4	Dad
2"x2" stales	4	Dad

Tools

Tool	Quantity	Source
Gloves	15	WYK donation
Safety glasses	15	WYK donation
Ear plugs	15	WYK donation
Jigsaw	1	Dad
½” cordless drill	2	Dad
Claw hammers	3	Dad
Hand saw	1	Dad
10” compound miter saw	1	Dad
Assorted drill bit set	1	Dad
Assorted screwdriver bit set	1	Dad
Broom	2	WYK
Dust Pan	1	WYK
Pick axe	1	Dad
Post hole digger	1	Dad
Spade shovel	2	Dad
Cell phone (emergency use only)	2	Dad
First Aid Kit	1	Troop
Cooler	1	Dad
Camera	1	Dad
Concrete mixing tub	1	Dad
4ft level	2	Dad
Tape measurers	3	Dad
Protractor	1	Dad
Metal straight edge	2	Dad
5 gallon bucket	1	Dad
Sawhorses	2	Dad
Wheelbarrow	1	Dad
Caution tape	1	Dad
30 gallon drum	1	Dad
Water level	1	Dad

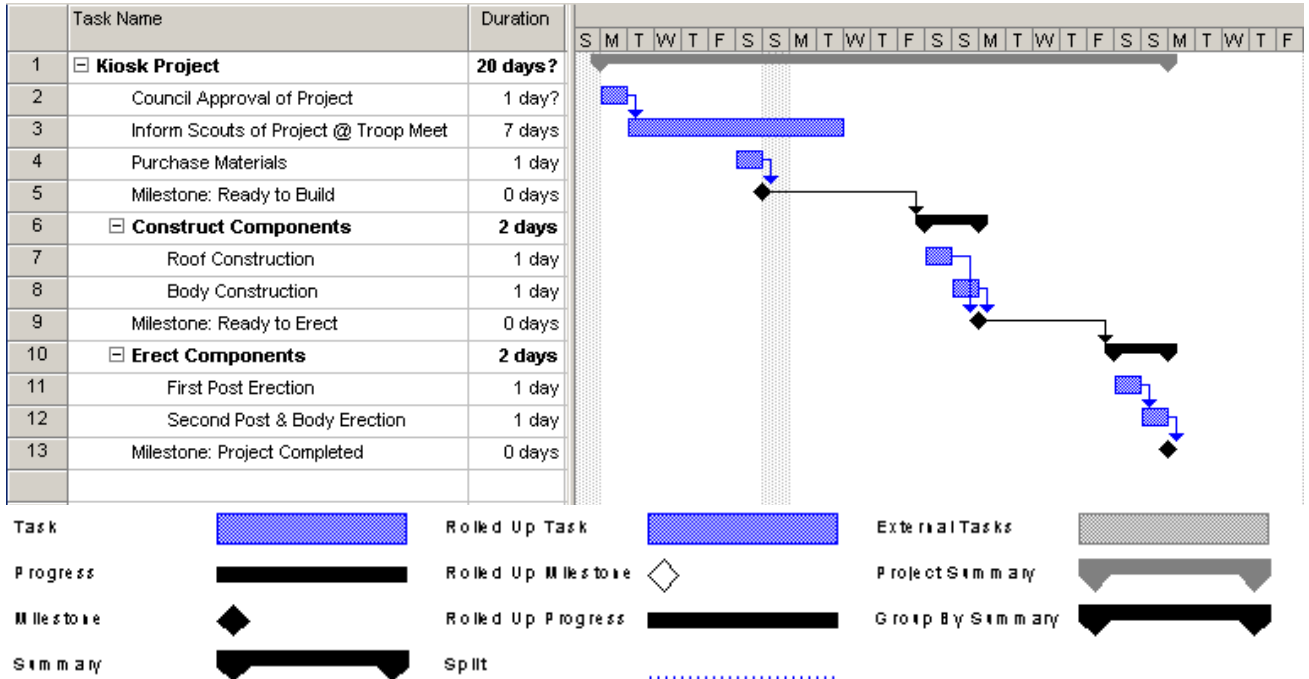
Food and Drink

I will be supplying Domino's Pizza and bottled water for the workers while they are on break from working

The Domino's Pizza will be ordered according to the schedule and the quantity of pizza will be decided based on how many workers are present, with a formula of 1 pizza per 4 workers

Water will be provided, regardless of how many workers are present, throughout the entire time of the project to prevent fatigue, dehydration, and heat exhaustion

Schedule



Time (Day 1)	Description
8:30	My dad and I meet troop at Kister House Parking lot
9:00	All volunteers meet at 10715 Kahlmeyer Drive (WYK Headquarters)
9:15	Plans are reviewed with all volunteers and safety talk about using power tools and working with pressure treated lumber. Safety glasses and work gloves are to be worn at all times. Take attendance for record of service hours
9:30	Group is split into 2 teams. Team 1 reviews how to build the roof and gets tools necessary to build the roof. Team 2 reviews how to build the body of the kiosk and gets tools necessary to build the body.
9:45	Working commences
11:45	Call to order pizza
12:15	All workers wash hands due to handling Pressure treated wood so they can eat lunch. Lunch break
1:00	Lunch break ends. Team 1 workers review how to build the roof according to plans. Team 2 workers review how to build the body according to plans.
1:15	Working commences
2:45	Painting the kiosk and posts commences
3:15	All workers begin clean up and stack wood and tools in corner of the warehouse
3:30	All workers go home. Anything uncompleted will be completed the next day, which will be a Sunday. Workers will show up at 10715 Kahlmeyer Drive at 9:00

Day 2	Description
8:00	My dad and I go to 10715 Kahlmeyer Drive and pick up one post to be installed at the kiosk site
9:00	My dad and I unlock the gate to the Chubb Trail and we drive down to the kiosk location.
9:15	We return to the gate of the Chubb Trail and wait for workers to show up so that we can drive them down to worksite in a caravan
9:30	All workers show up at worksite
9:45	Review with Team 3 workers what the plan for the day is. All workers begin to dig 2 holes, 3 feet deep, located 6 feet 4 inches apart.
11:30	Holes have been completed. Workers begin mixing concrete.
11:45	Workers put the first post in hole and fill the hole with concrete. I order pizza.
12:00	Workers set up A frame to keep the first post in place
12:15	Pizza arrives. Lunch begins.
1:00	Lunch ends. Workers set up caution tape around the board, notifying hikers and bikers not to go near the kiosk. All workers go home.
Day 3	Description
8:00	My dad and I go to 10715 Kahlmeyer Drive and we bring kiosk to the kiosk site on the Chubb Trail to be installed
9:00	My dad and I unlock the gate to the Chubb Trail and we drive down to the kiosk location.
9:15	We return to the gate of the Chubb Trail and wait for workers to show up so that we can drive them down to worksite in a caravan
9:30	All workers show up to worksite
9:45	I review with the workers the plans for the day. I also discuss safety.
10:00	Workers begin to install the second post attached to the board itself to the already erected post.
10:30	Workers begin to install roof of kiosk to the kiosk.
10:45	Begin touch up paint on the board
11:00	Project completed. Workers will clean up the worksite and pictures will be taken. I will have a park Ranger inspect the Kiosk and sign off on the completed project. I will submit all receipts for the materials to get reimbursed from the Department of Natural Resources
11:30	Install sign on kiosk reading: Michael A. Stachiw, Jr. Boy Scout Troop 680 of Valley Park, Missouri Eagle Project August XX, 2008

Systematic Instructions

Team 1 – Job Description

Make Roof

Number of volunteers needed:

2 adults

4 scouts

Tools needed:

Nails

Tape measure

Gloves

Safety glasses

Face mask

Chapel Gray Shingles

Hammers

Miter saw

¾”x2x8 plywood (precut from Lowe’s)

2x4s

4x4x12s

Protractor

Screws

Screwdriver bits

Paint

Paint brushes

Directions:

Build the roof of the project according to figures 10, 13, 14, 15, 16, 21, 22 (Figures will be made available to the workers)

Cut 4 3 ft 2 in posts out of 2x4 with 45 degree angles at both ends

Cut 8 1 foot 5 in joists out of 2x4 wood at 45 degree angles

Take the 3 foot 2 in post and using 3½” deck screws drill in three screws to the 1 foot 5 in joist first drilling pilot holes and then countersinking them before drilling the screws in

Make sure that none of the 1 foot 5 in wood from the joists overlaps over the 3 foot 2 in post (as shown in figure 22)

Make sure that the tops of the 1 foot 5 in joists are separated by exactly 2 in

You have just completed a truss

Do this 4 times

Mark on the 2x4 that is 8 ft long 4 marks

The two end marks need to be 1 foot from the ends of the 8 foot long 2x4

The two middle marks need to be 1 foot 6 inches away from the end marks

Attach using 3½” deck screws first with a pilot hole being drilled and then countersunk to the 4 trusses to the 8 foot long 2x4 at the marks, with the 2x4 filling in the 2 in gap at the top of the trusses between the joists

The 2 end trusses should be on the inside of the marks and the two middle trusses should be right on the middle marks

Take 2 ¾” pressure treated plywood planks that are 2’ x8’

Drill the plywood to the trusses using ¾” pressure treated plywood that have been pilot holed and countersunk

The plywood should not hand of the end of the 8 foot long 2”x4”

Paint the roof with spruce green paint

Let the paint dry

Attach chapel grey shingles to ¾” pressure treated plywood using 3 7/8” galvanized roofing nails per shingle

Paint 4”x4”x12’ posts with spruce green paint

Reminders:

Be sure to have a 2”x4”x8’ running across the entire length of the roof on the underside of it

Cut the 4x4x12 posts at the top at a 45 degree angle with miter saw

Screw the trusses together and then saw off the extra wood from the 2x4s that hang over the other 2x4s

The 2 pieces of plywood for the roof for a 90 degree angle

Nail on the shingles, but screw in everything else using 3½” deck screws that will go in pilot holes that are countersunk

When you are finished, paint the roof and 4”x4”x12’ posts using spruce green paint

Team 2 – Job Description

Build kiosk

Number of volunteers needed:

2 adults

4 scouts

Tools needed:

Hand saw

10' tape measure

gloves

safety glasses

Face masks

Cordless drill with star bit and 1/8in drill bit and countersink bit

Paint

Paint brushes

Directions:

Make the kiosk according to figures 10, 12, 13 (Figures will be made available to the workers)

Take the 3/4" 4x6 pressure treated plywood and attach 2 2x4s on edge on the front along the 6 foot side

Screw 6 3/2" deck screws spaced 1 foot apart horizontally starting from the backside of the plywood going towards the front on the top 2x4 on edge and the bottom 2x4 on edge with drilling pilot holes first and then countersinking them

Take the 4x6 pressure treated plywood and attach 3 pressure treated 2x4 horizontal posts that are 6 foot 8 inches long using 1 1/4" deck screws on the back with 4 inches hanging over on each side of the 3/4" pressure treated plywood first drilling pilot holes and then countersinking them

There needs to be 2 1 1/4" deck screws spaced 2 inches apart vertically and 1ft horizontally along each of the horizontal posts across the back with first drilling pilot holes and then countersinking them

The top horizontal and bottom horizontal posts on the back need to run along the edges of the 3/4" pressure treated plywood

The top of the middle horizontal post needs to be 1 foot 7.5 inches from the bottom of the top of the horizontal post on the back

Paint the plywood and 2x4s with spruce green paint

Reminders

The 2x4s on the bottom and the top of the front of the kiosk are on edge

The 2x4s on the back of the kiosk are not on edge

The 2x4s on the back of the kiosk hang over the back of the kiosk 4 inches on each side

Drill pilot holes and countersink them for the screws

When you are finished, paint the board

Team 3 – Job Description

Dig holes at kiosk site and place 1 post in

Number of workers

4 adults

6 scouts

Tools needed:

Shovels

Post hole digger

Gloves

Safety glasses

Pick axe

Tape measure

Concrete bags

Wheelbarrow to mix concrete in

30 gallon water drum for adding water to concrete

5 gallon drum

Water level

Directions:

Dig 2 holes 4 feet deep and 2 feet wide spaced 6 feet 6 inches apart with pick axe and shovels

Place 1 4x4x12 post in one of the holes

Fill the hole with the post in it with 4 inches of gravel

Make the concrete in the wheelbarrow

Put the concrete in the hole with the post in it

Make sure post is in perfectly vertical using water level

Build an A frame from wood from around my house and 3½” deck screws to make sure post does not move

Look at figures 17, 18, 19, and 20 for help (Figures will be made available to the workers)

Team 4 – Job Description

Install other post in ground, place body of kiosk to the two posts, and install roof

Volunteers needed

4 adults

6 scouts

Tools needed

Tape measure

Cordless drill with star bit and 1/8in drill bit and countersink bit

Work gloves

Safety glasses

Water level

Paint

Paint brushes

Directions

Install the body of the kiosk to the post not installed in the ground using 3½” deck screws

Put the uninstalled post in the ground with the body connected to it

Attach the body to the already installed post in the ground using 2 3½” deck screws spaced 2 inches apart horizontally (figure 20) (Figures will be made available to the workers)

Use a water level to make sure everything is perfectly vertical

Fill in the hole with 4 inches of gravel

Mix concrete in the wheelbarrow and pour it into the rest of the hole

Build an A frame from wood from around my house and 3½” deck screws to make sure post does not move during the drying process

Attach roof to the kiosk using 3½” deck screws

Do some touch up work with the spruce green paint

Reminders

At the top of the 4x4x12 posts, there needs to be a 45-degree angle

Use figures 17, 18, 19, and 20 as needed

Financial Plan

I will write the Missouri Department of Natural Resources for full funding of my project as shown in Appendix 5

If they refuse to fund my project, then I will ask Format International Incorporated, Strategic Mapping and Data Services LLC, Dains Delivery, Amerinet, WYK Sorbents, and United Van Lines for funding estimated at \$217.99

An sample “Thank You” letter is located in Appendix 6

See attached tax exempt letter, located in Appendix 7, so that my calculated taxes are not counted.

Warehouse

I will require the use of a warehouse for the initial construction of my project, so I will write a letter to Jim Dunn, owner of WYK Sorbents, so that I can use his warehouse during the first part of my project

An example letter I would send him is located in Appendix 8.

Safety

Before the start of my project I will be giving an informational talk about safety regarding the power tools and the project in general

Below is an example of my speech

There are many safety hazards that must be addressed before we begin the project. First of all, anyone working on the project must wear safety goggles, proper eye protection, and working gloves when working with any power tool. Only Scouts with Totin' Chips are allowed to work with the saw. Everyone must behave appropriately because there are many dangerous tools being used and if someone is horsing around, then there could be a serious, if not fatal, injury. If a worker is horsing around at any time of the project, they will be required to leave the worksite immediately and go home, no questions asked. Water and pizza will be provided to prevent heat exhaustion, dehydration, and fatigue. The treated lumber we will be working with contains chemicals that are harmful to humans. Everyone working with the treated lumber will be required to wear safety glasses, face masks, and gloves.

Adult Supervision

Following the standard operating procedure of the Boy Scouts of America, I will require at least 2 adult leaders present at all times during my project. Adults will be required to supervise the power tools, and every working group will require adult leaders. Adult leaders will also be driving workers to the worksite because I will not allow anyone under 18 to drive to my project.

Worksite

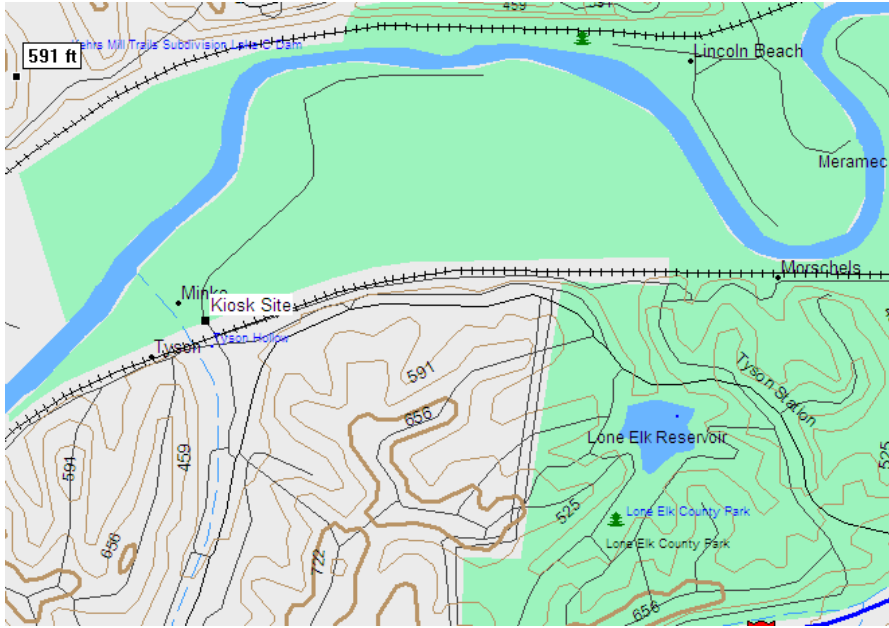


Figure 23



Figure 24

Transportation

Materials:

My father will transport the partially completed kiosk and other materials from WYK Sorbents to the intersection of the Chubb Trail and the Chubb Loop.

Workers:

A carpool will leave the Kister House lot (17 Ann Ave, Valley Park, MO) as indicated as A in figure 25 at 8:30 Saturday morning and take scouts and adult leaders to the work site as indicated by B in figure 25.

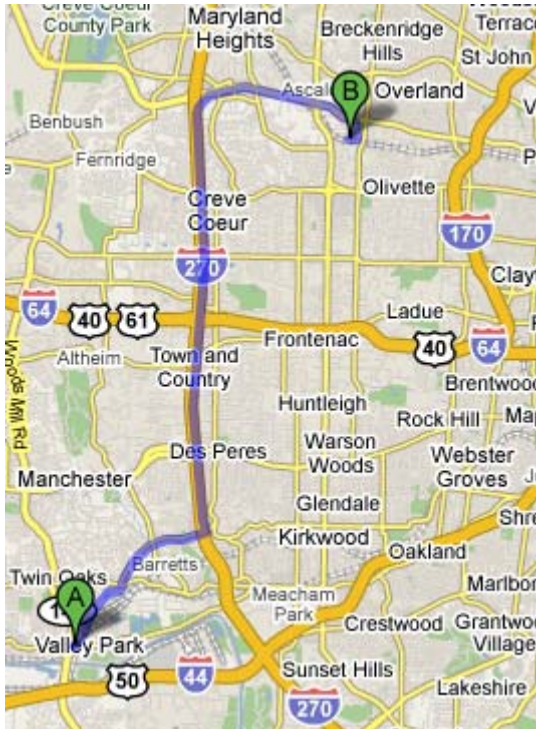


Figure 25

Written Driving Instruction

<u>1.</u> Head south on Ann Ave toward Forest Ave	52 ft
<u>2.</u> Turn left at Forest Ave	0.9 mi
<u>3.</u> Continue on Dougherty Ferry Rd	2.6 mi
<u>4.</u> Turn left to merge onto I-270 N	7.8 mi
<u>5.</u> Take exit 16A to merge onto MO-D E/Page Ave	3.2 mi
<u>6.</u> Turn right at N Warson Rd	0.3 mi
<u>7.</u> Turn right at Kahlmeyer Dr	0.2 mi

Possible Workers (Scouts)

Name	Phone Number
Matt Cooley	636-205-1275
Dustin Biondo	636-225-3947
Joey Yahl	636-255-3559
Jimmy Yahl	636-225-3559
John Yahl	636-620-4158
Matt Kuczka	636-861-9252
Nick Scarfino	636-391-1927
Ty Diersen	636-861-3858
Sam Kemp	636-343-0393
Aaron Dains	636-225-7738
Sam Green	636-391-4194
Craig Dains	636-225-7738
Jamie Biondo	636-225-3947
Patrick Siebert	636-225-4768
Kyle Lehmann	636-225-0760
Justin Efken	636-861-0346
Brendan McClew	636-225-1441
Joe Kuczka	636-677-1058
Charlie Quinlivan	314-213-1690

Possible Workers (Leaders)

Name	Phone Number
Dr. Michael Stachiw	636-225-4979
Mr. Dino Biondo	636-225-3947
Mr. Ted Yahl	636-225-3559
Mr. Joel Efken	636-861-0346
Mrs. Cyndi McClew	636-225-1441
Mr. Tom Quinlivan	314-213-1690