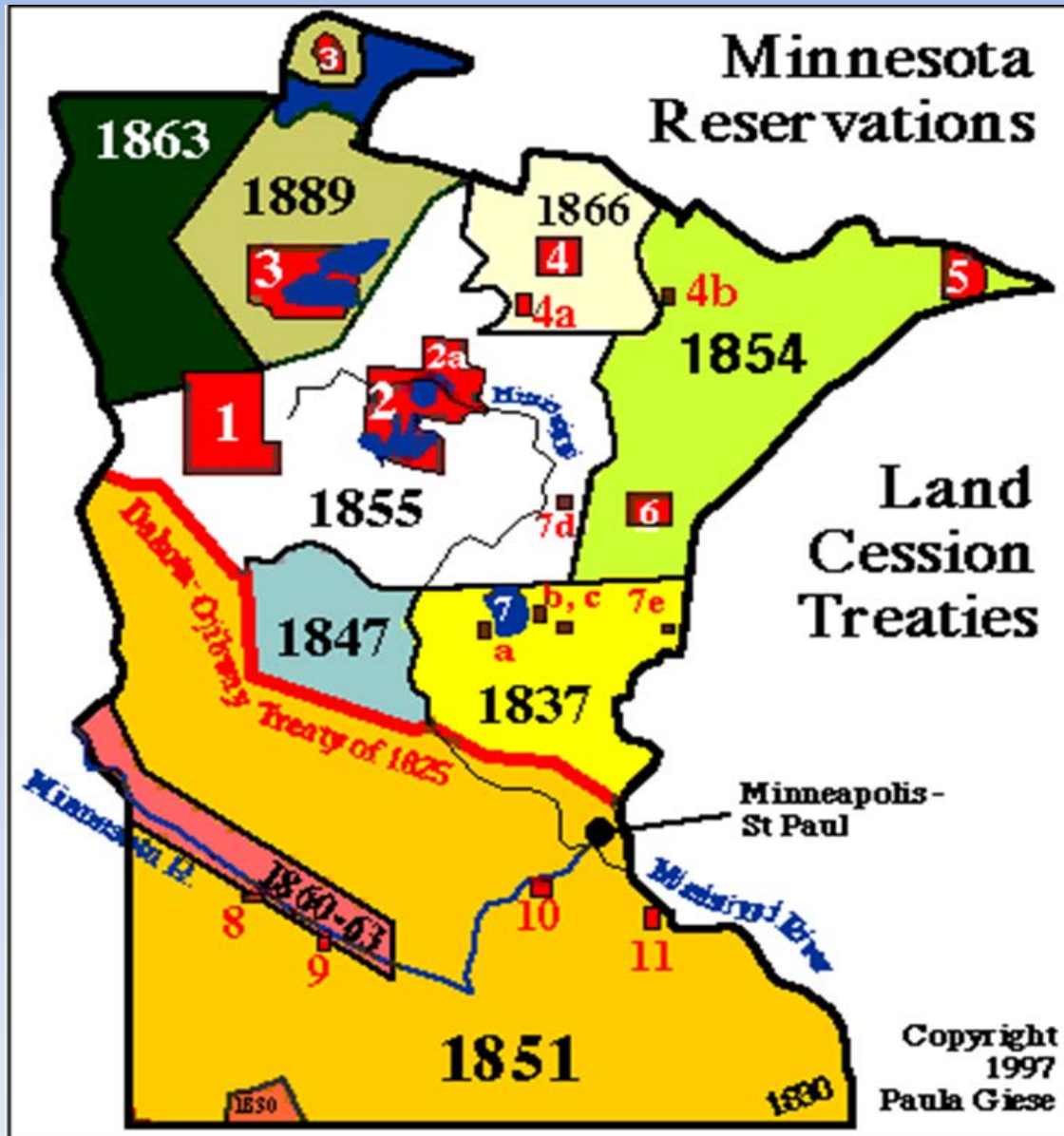


Fond du Lac Band of Lake Superior Chippewa



**Sawyer Community Center Wood Chip
Storage, Handling and District Heating**

MN Reservation Ceded Territory Map



1. White Earth
2. Leech Lake/Cass Lake
3. Red Lake
4. Bois Fort/Nett Lake
5. Grand Portage
6. Fond du Lac
7. Mille Lacs
7. Sandy Lake Band
7. DAKOTA: Little Crow
8. Upper Sioux
9. Lower Sioux
10. Shakopee
- Mdewakanton Sioux
11. Prairie Island

Fond du Lac Band Strategic Energy Vision

The Energy Vision of the Band is to maximize the efficient use of energy and develop energy resources in ways that will sustain current and future generations by addressing the economic, environmental, and social issues of energy development and use within the context of Fond du Lac Band's culture, traditions and established tribal policies for the wise use of our sun, forest, water, and wind resources.

In 2007 the Reservation Business Committee signed a Kyoto accord to reduce use of fossil fuel 20% by 2020.

A Strategic Energy Plan was drafted with energy efficiency options, energy generation options and institutional and administrative goals.

Investment grade energy audits were completed, energy saving projects chosen & fossil fuel use reduced by 40%.

A renewable energy strategy was developed, partnerships formed and projects were chosen to reduce fossil fuel use by 5%.

The Fond du Lac Band will achieve a 45% fossil fuel reduction by 2018.

Fond du Lac Band Partners:

- The Office of Indian Energy and Economic Development
- Environmental Protection Agency
- MN Dept. Agriculture
- Minnesota Power
- National Renewable Energy Laboratories
- NORESKO





Fond du Lac 1 Megawatt Solar Project 5%



Fond du Lac Forestry

Forest Management: 42,000 acres, 9 full-time staff

- Forest Health / Diversity / Cultural Resources / Economics
- Timber Sales / Tree Planting / Selective Thinning / Timber Stand Improvement / Forest Research

Land Management

- Habitat Management, Prescribed Burns, Invasive Species Control

Wildfire

- Fight wildfires, Fire Prevention Education
- Fuels Reduction Projects around Homes and Communities

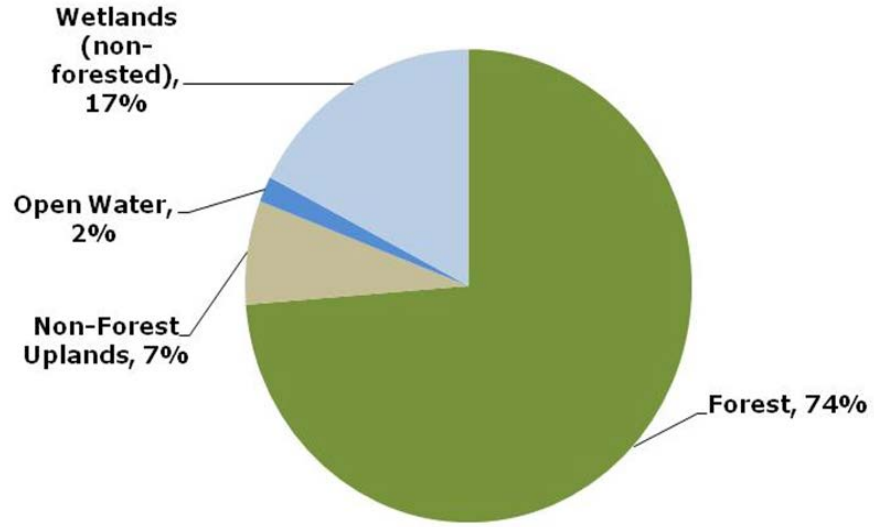
Community Service / Other

- Hazard Tree Removal, Emergency Response, Tree spading
- Assist other Resource Management programs.
- Right-of-way / Land Clearing

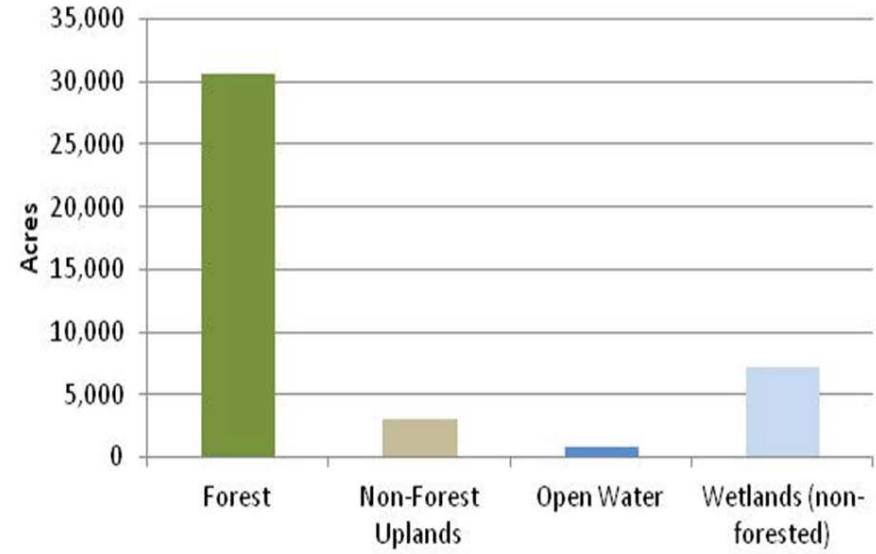
Fond du Lac Logging & Timber Harvesting Equipment



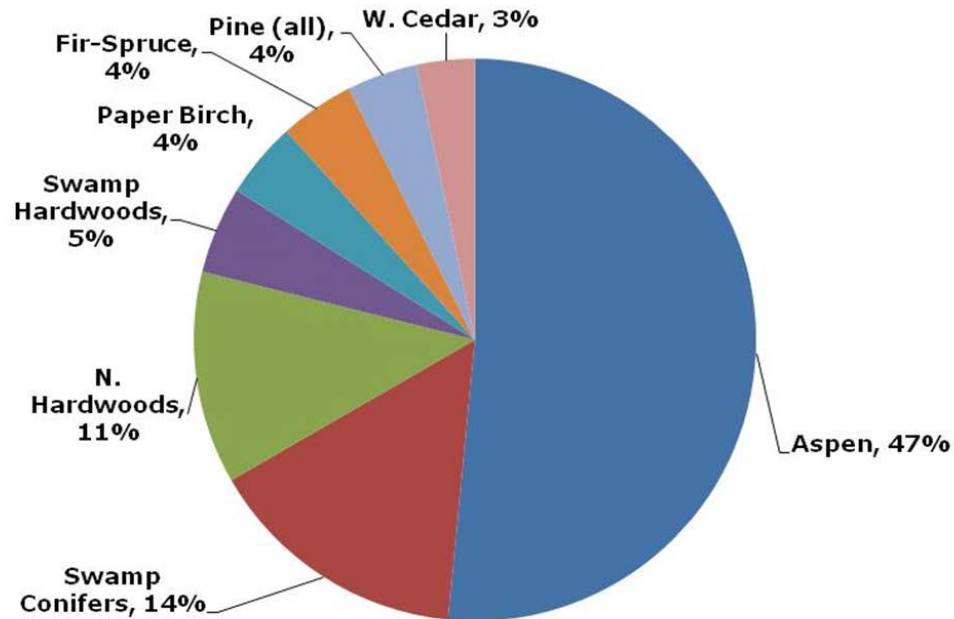
Percent of Land by Covertypes



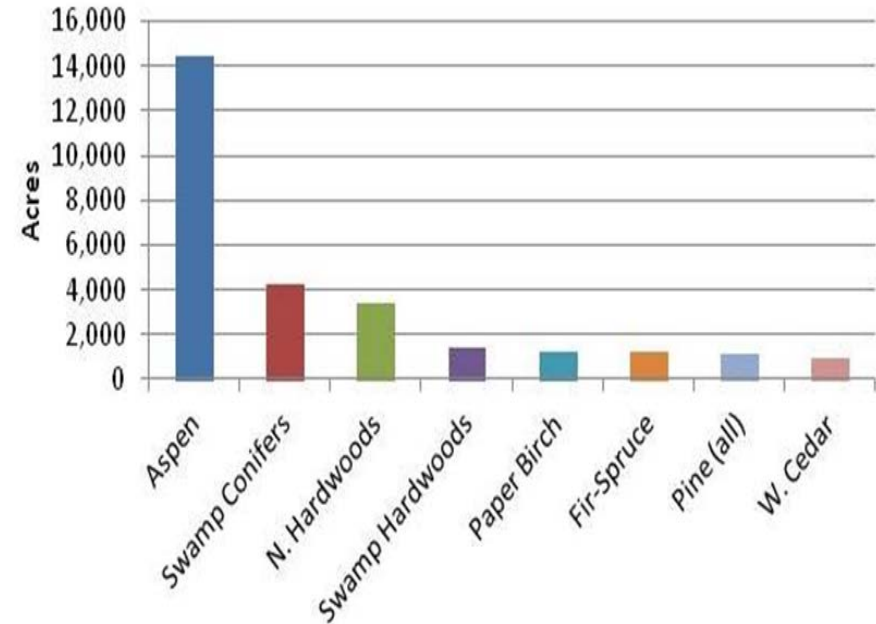
Fond du Lac Lands - Acres of each covertypes



Percent of Forests by Covertypes (2017)



Fond du Lac's Forests - Acres of each covertypes





Traditional Ecological Knowledge in Perspective

Two ways of thinking and knowing

Traditional Knowledge

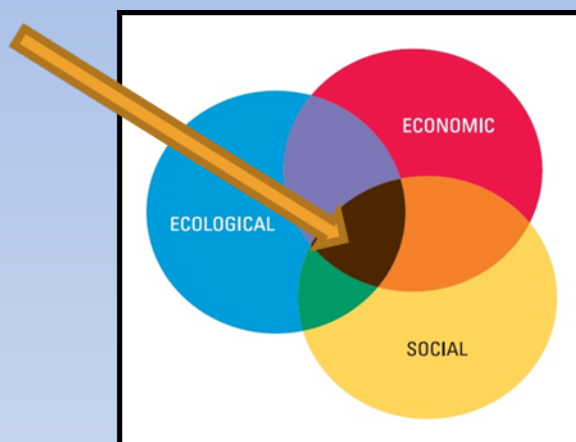
Abstract
Qualitative
Inclusive
Intuitive
Holistic
Spiritual (social values)
Co-existence
Diachronic
(long time series, place oriented)
People are part of nature (reciprocity)
Communal Knowledge
Based on insights collected by practitioners
(transferred generation to generation)

Scientific Ecological Knowledge

Concrete
Quantitative
Exclusive
Intellectual
Reductionist
Clinical (“value free”)
Control
Synchronic
(short time series, broad generalities)
People apart from nature (competition)
Individual Knowledge
Data collected by specialists/researchers
(shared by publication)

Balancing Economic, Ecological, and Social Goals

Timber sales on Fond du Lac lands strive to achieve a sustainable balance between the needs and desires of the Band, economic constraints or opportunities, and ecological concerns and opportunities.

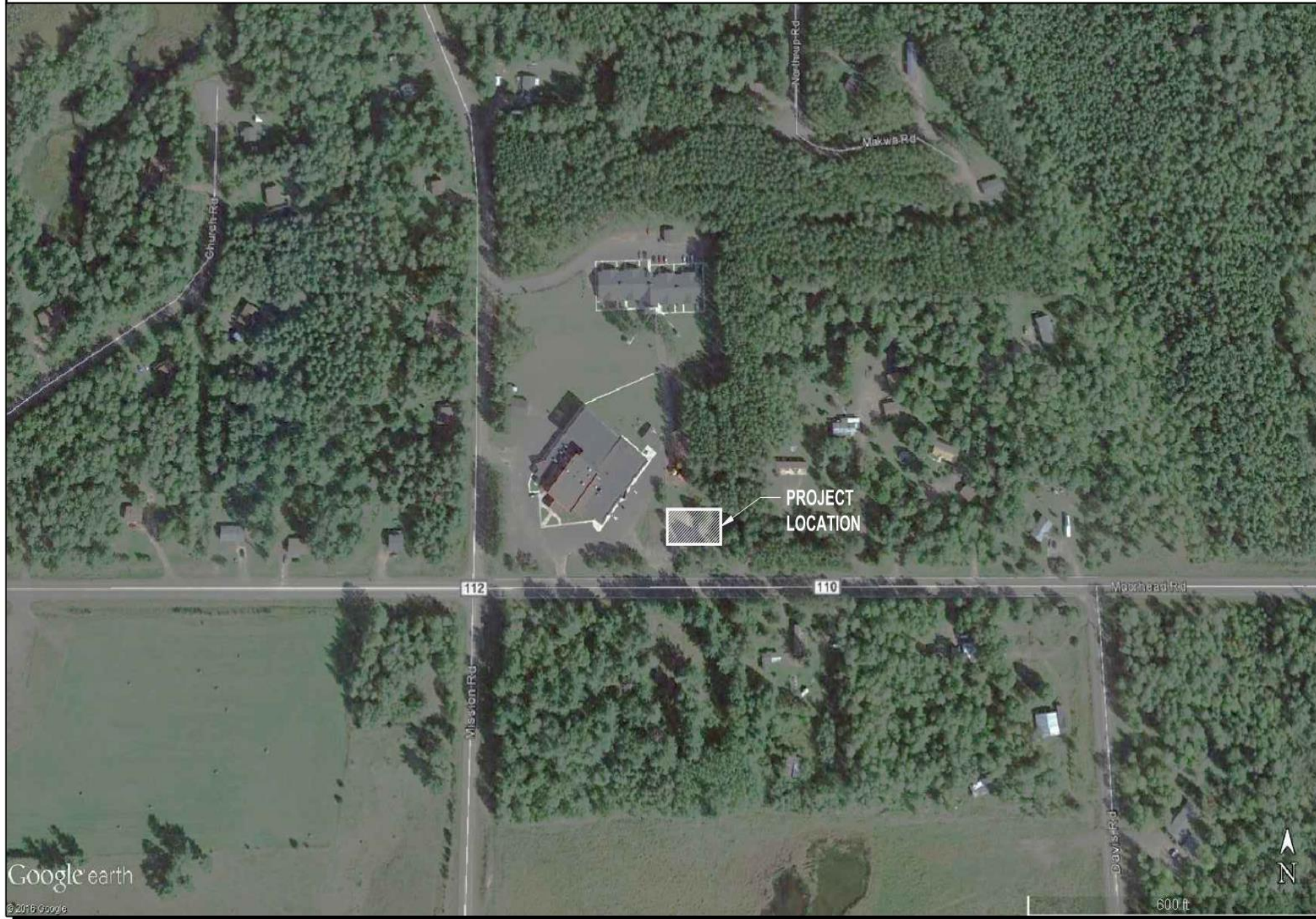


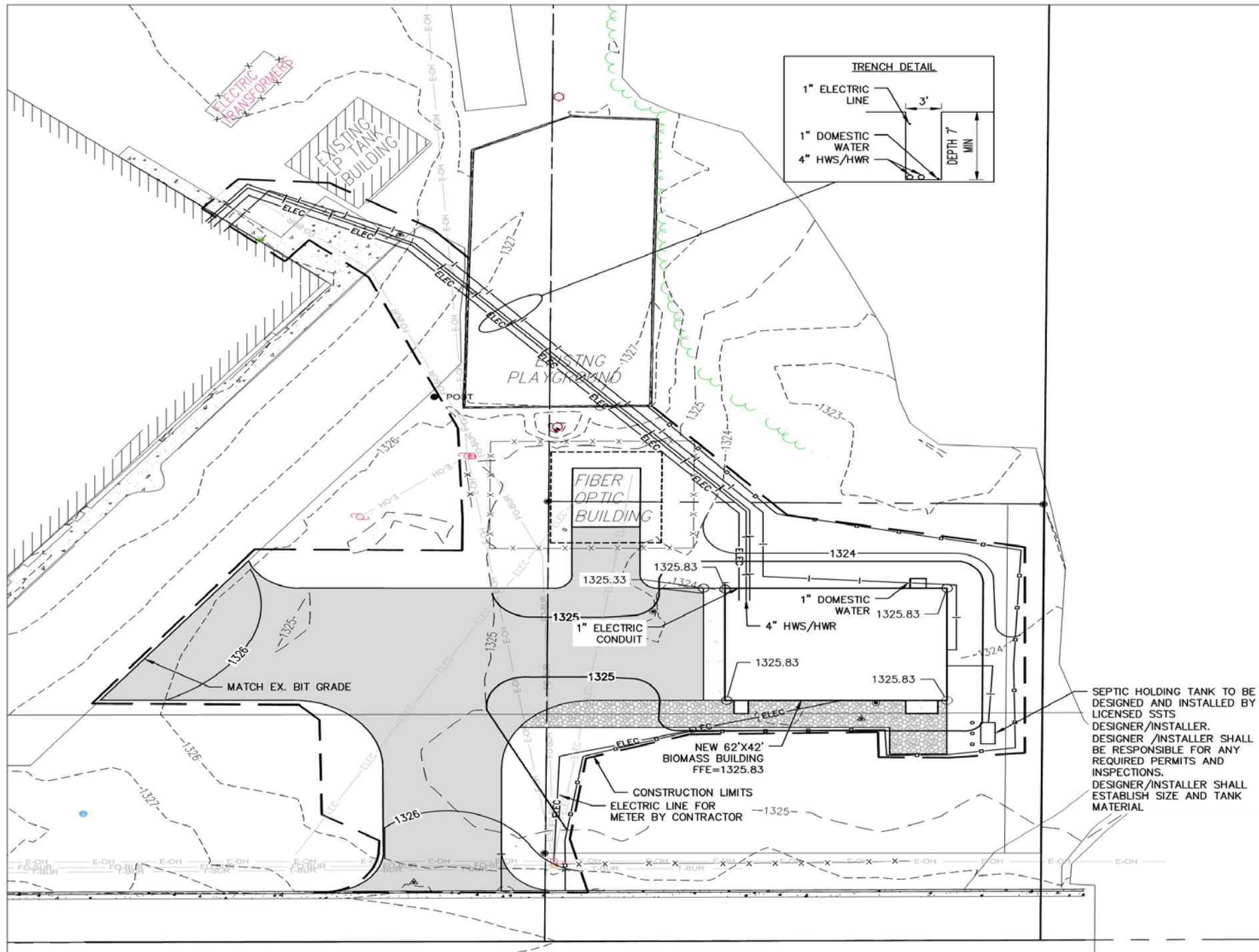
Forests are managed on the Fond du Lac Reservation to:

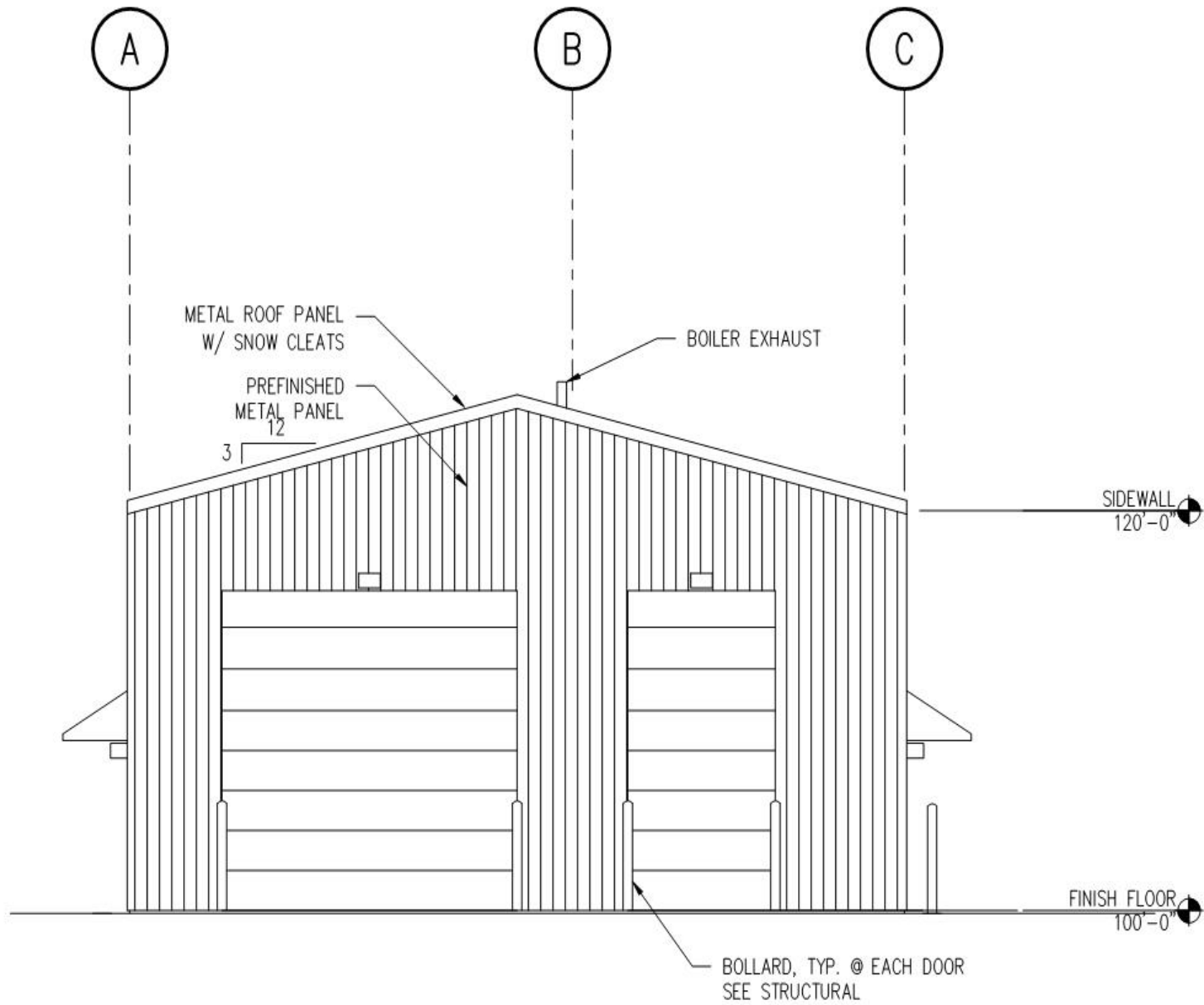
- Maintain or create biodiversity
- Improve the health and vigor of forests and associated ecosystems.
- Maintain or create wildlife habitat
- Provide economic income to land owners or tribal loggers
- Special purposes: blueberries, sugar bush stands, increasing paper birch and cedar, protecting rice lake hydrology from the effects of emerald ash borer, and more...
- Biological rotation age (as opposed to economic)
- Climate change resilience

LOCATION MAP

PROJECT ADDRESS: 3243 MOORHEAD RD, SAWYER, MN 55780



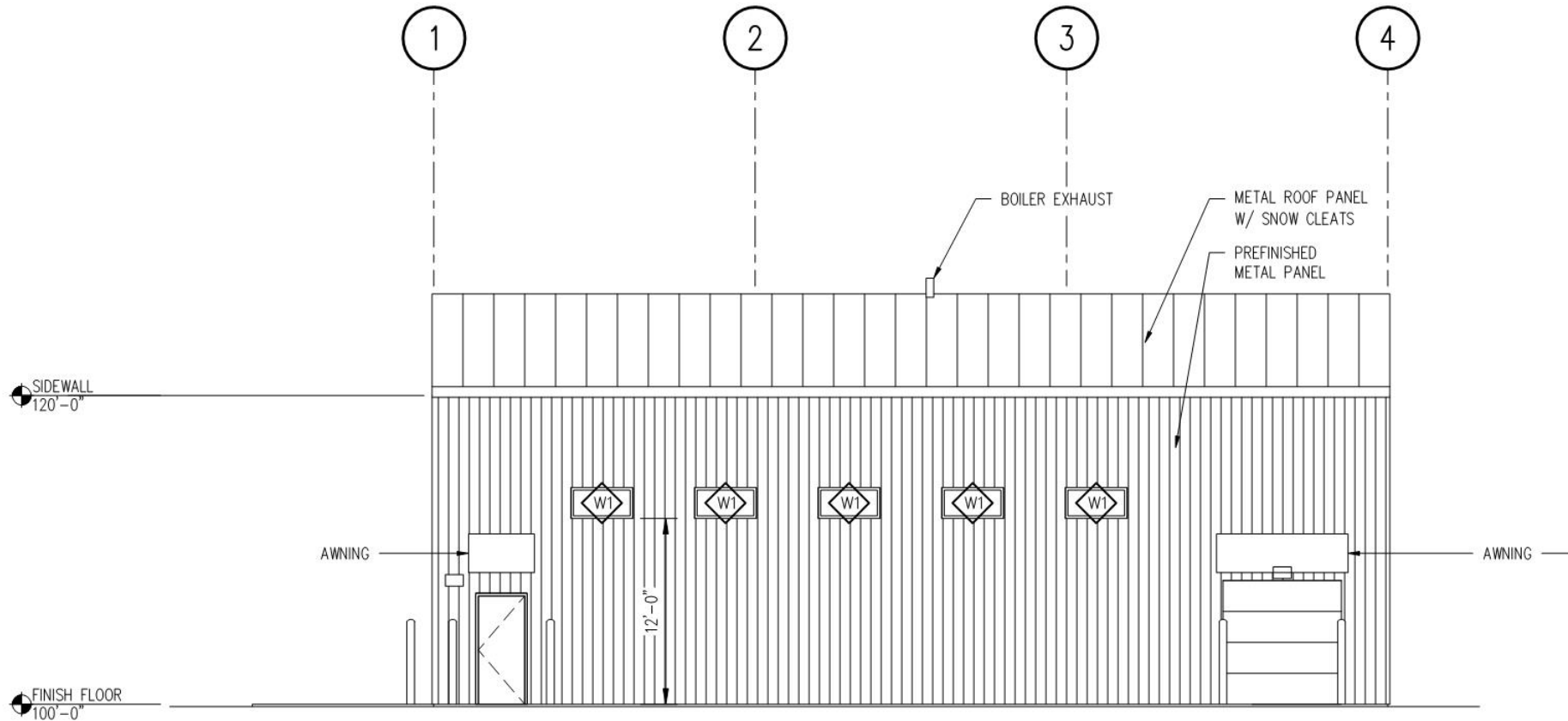




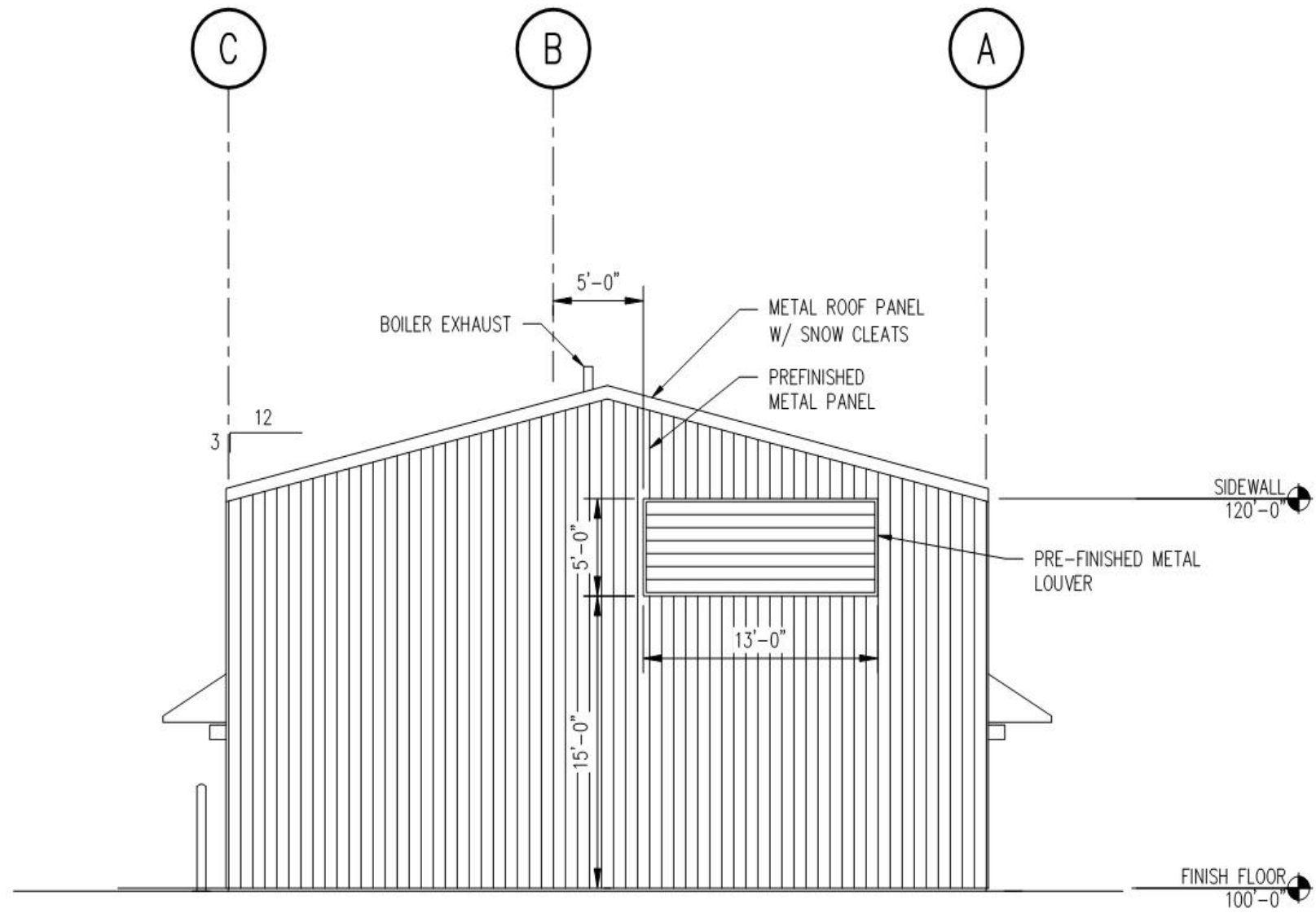
2

WEST ELEVATION

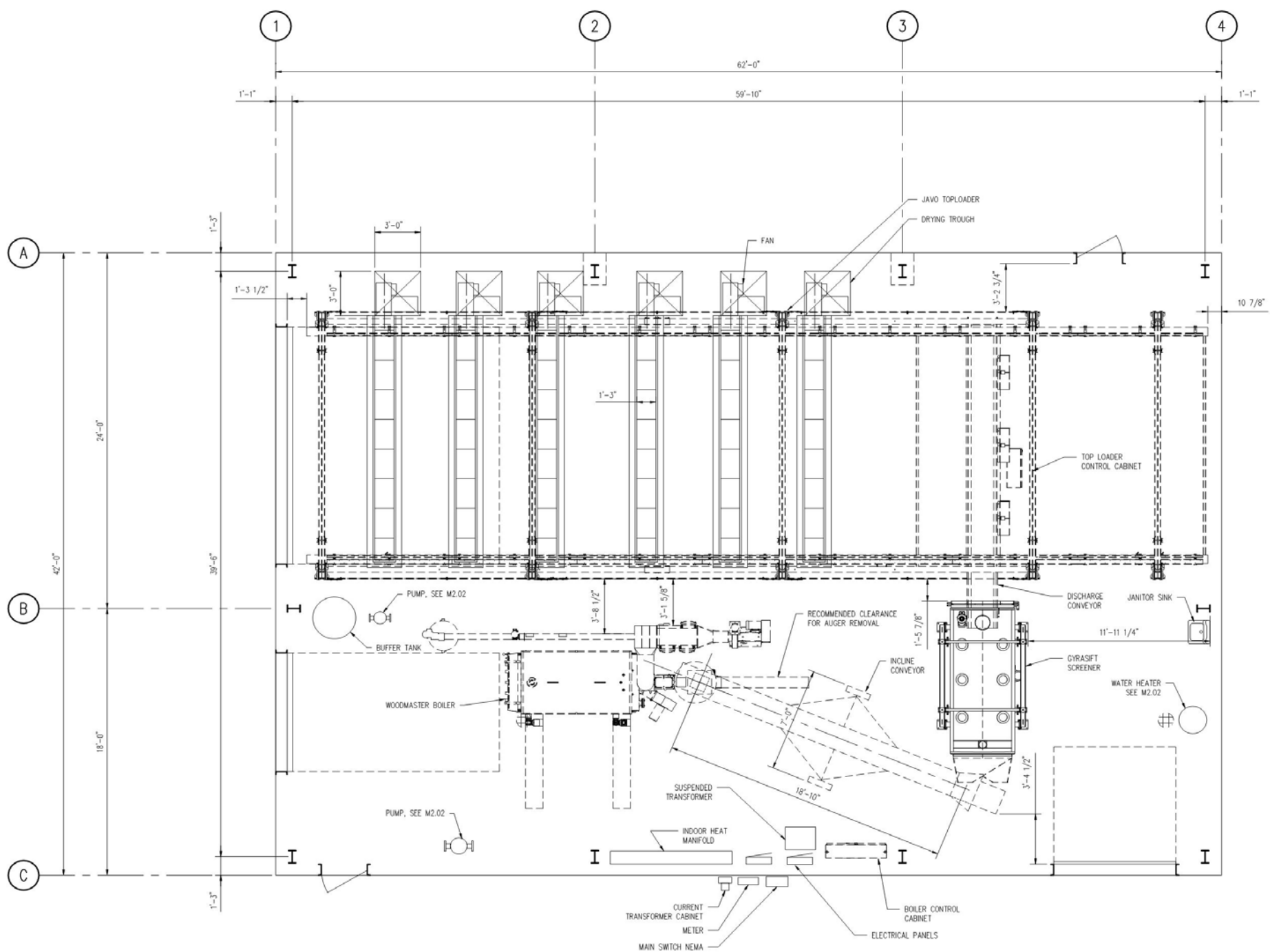
1/8" = 1'-0"



3 SOUTH ELEVATION
1/8" = 1'-0"



1 EAST ELEVATION
 1/8" = 1'-0"



Sawyer Community Center Biomass Boiler

- 1.7 MMBtu biomass boiler.
- Wood chips will replace 88% of propane use.
- Reduce propane use by 13,295 gallons a year.
- Saving approximately 85 tons of CO2 per year.



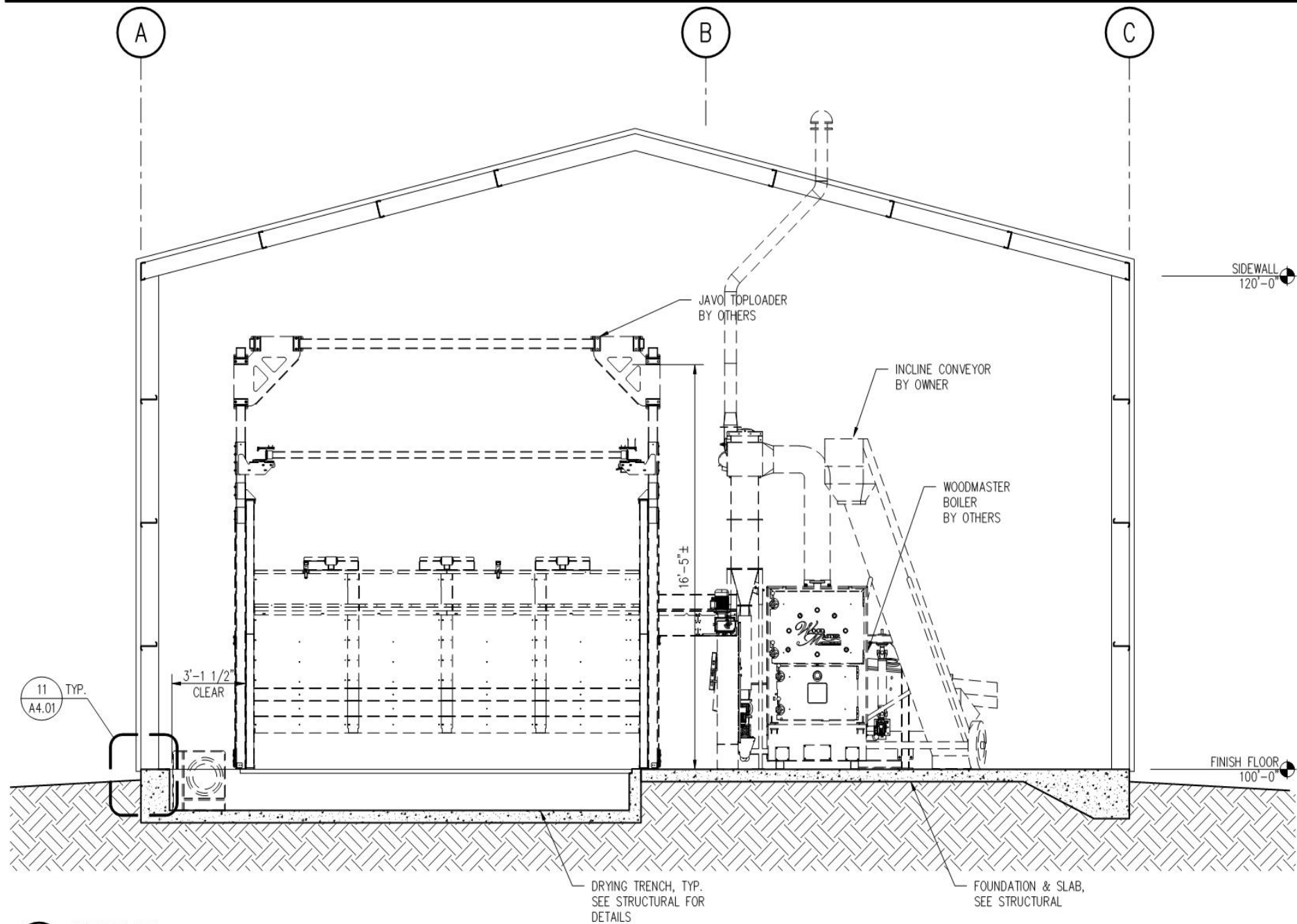
High Efficient Clean Burn with Low Emissions



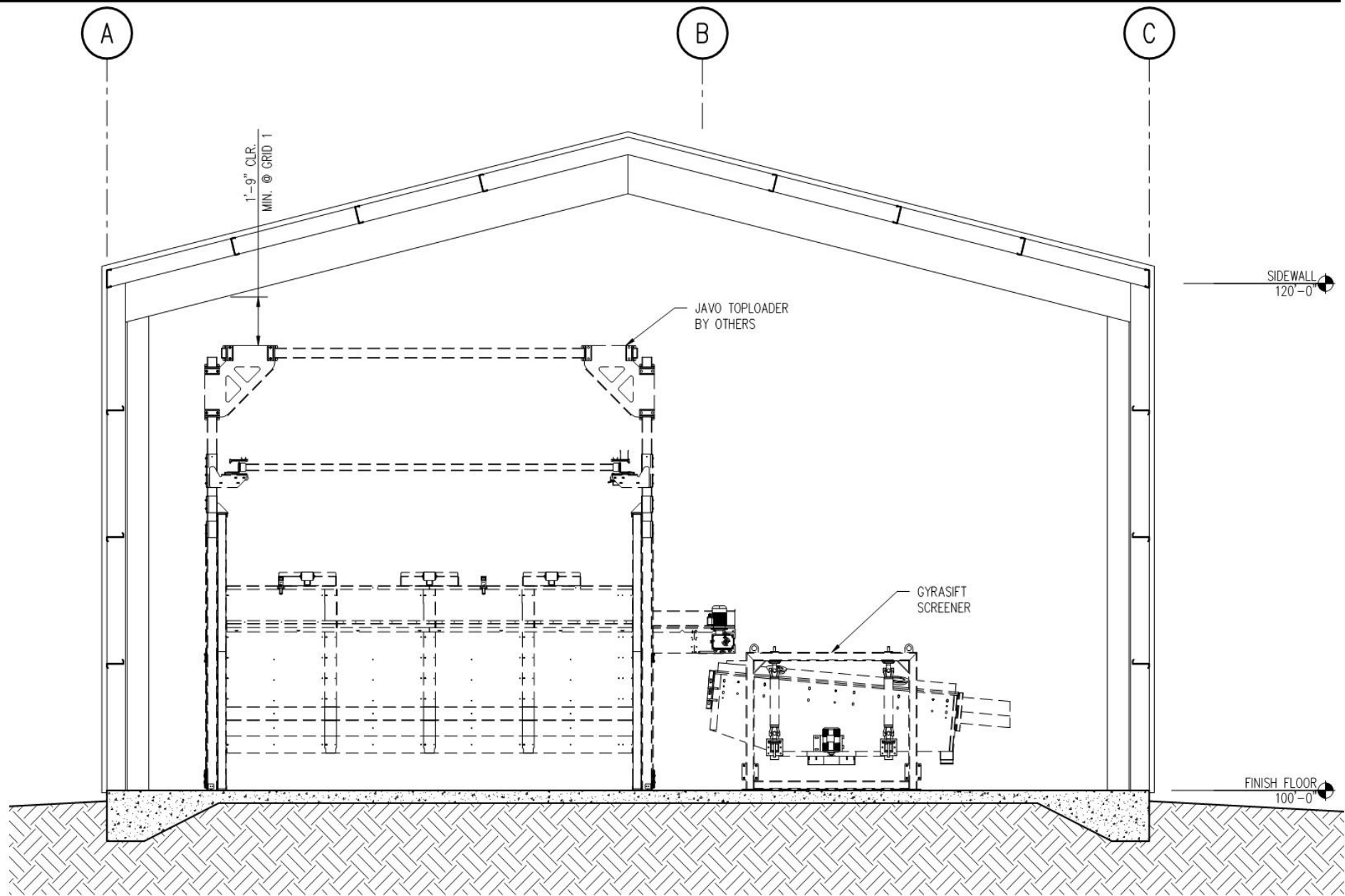
Sawyer Community Center Javo Toploader

- Javo toploader wood chip feed system.
- In-floor air drying wood chips before they are fed into the boiler.
- 132 tons of wood chips a year



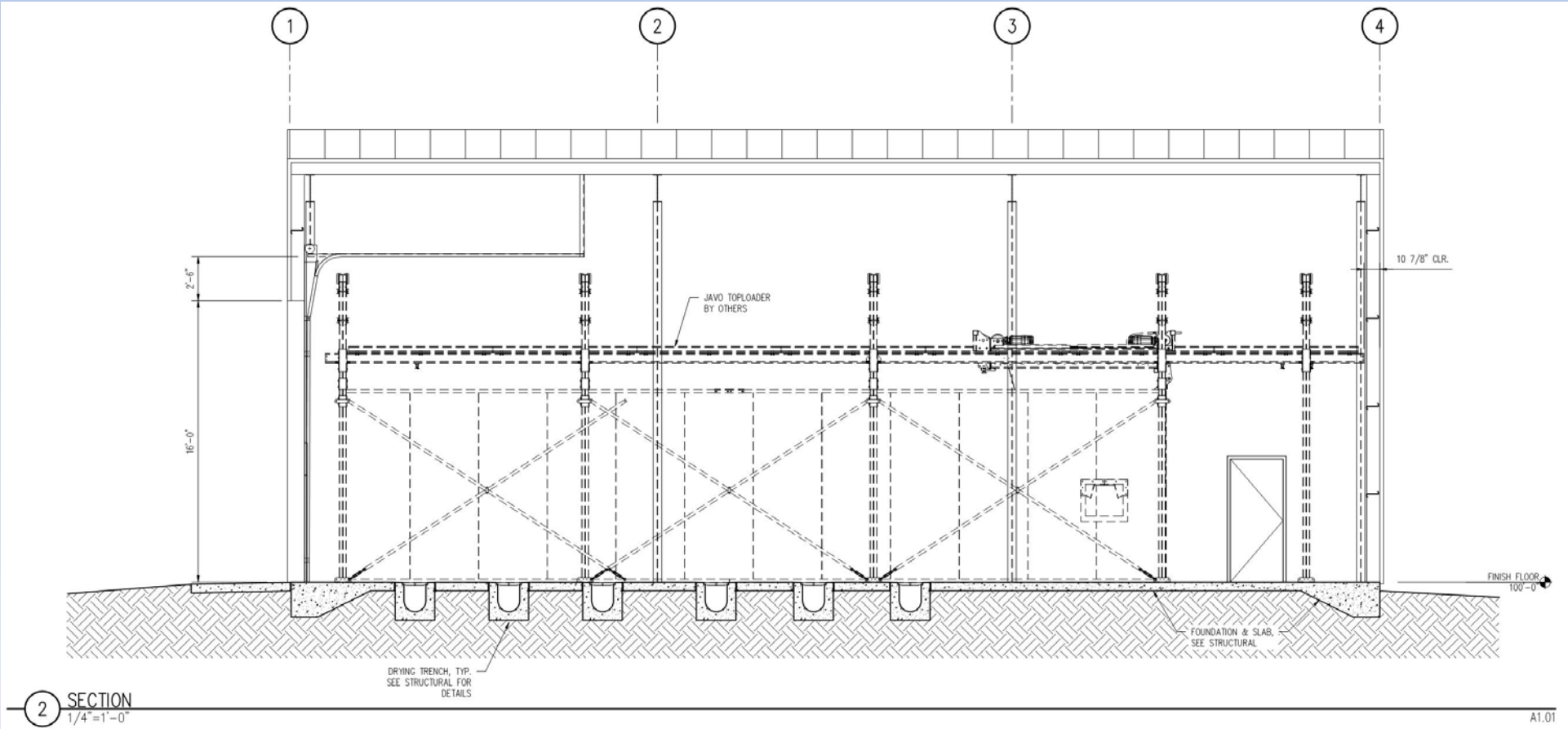


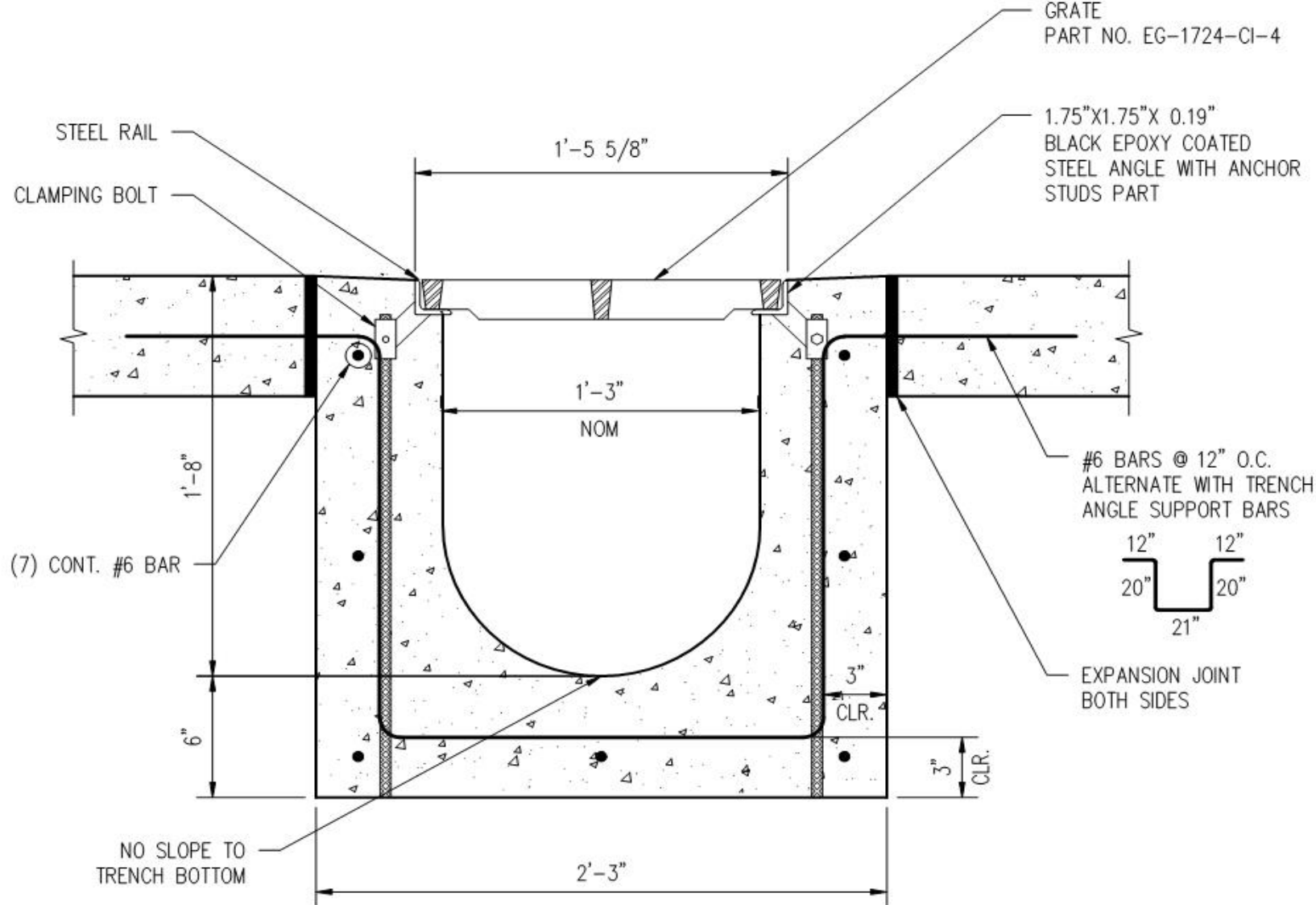
1 SECTION
1/4"=1'-0"



3 SECTION AT GRID 4
 1/4" = 1'-0"

Drying trenches for wood chips





160104SDT15

6

DRYING TRENCH

1 1/2" = 1'-0"

S1.00

NOTE: TRENCH IS MULTIDRAIN, ECONO DRAIN SERIES 10, MONOLITHIC POUR INSTALLATION.

Fond du Lac Band of Lake Superior Chippewa

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Environmental Program
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brunozagar@fdlrez.com

QUESTIONS?