

# **Multi-Use Facility Feasibility Study**

## **Phase Two:**

### **Detailed Facility Requirements**

Prepared by:

Yukon Agricultural Association

**YUKON AGRICULTURAL ASSOCIATION**

*SUITE 203-302 STEELE STREET  
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## **1.0 SITE:**

There is no specific site for this building at this time. There is a general opinion that it could be situated on a parcel of land, yet to be purchased, on the North Klondike Highway. That parcel of land has been visualized for the building outlined in this portion of the report.

The lot is generally flat with open exposure in all directions. Access is envisioned to be from the South and the general orientation of the facility is envisioned to be South to North. A lane will be required all around the building, providing access to the various building functions, doors and loading/unloading facilities. As the mobile Abattoir is also docked at this facility, the area around the buildings need to be sufficiently large to allow decent turning and manoeuvring of the abattoir trailer and tow vehicle.

Site lighting for the parking lot and perimeter lighting on the building will be included in the final design package.

A Geotechnical Report has not been prepared at this time, as there is no specific site to test yet. This will become a requirement of the design development stage of the project.

At the time the geotechnical report is done, a Phase 1 Environmental Screening Report should also be completed to check for existing or a history of contaminated products being stored or used at the selected site.

## **2.0 SITE WORK/LANDSCAPING:**

- .1 **LANDSCAPING:** Landscaping for this project consists of providing concrete walkways, landings and concrete loading docks, ramps or steps at exterior doors. The building is required to have barrier free access to 50% of the building entrances and exits as well as to the parking lot. Following building construction and final grading operations, the disturbed areas of the site adjacent to the building should be seeded with a hardy low-water grass and natural wildflower seed mix.
- .2 **SITE GRADING:** Finish grades will be established at building faces to provide positive drainage away from building in all directions. As the site currently envisioned is relatively flat, this means locating the foundations of the building at an appropriate elevation to allow finish grades to suit the existing site.

### 3.0 BUILDING OVERVIEW:

The new Yukon Agricultural Association, Processing Facility, as identified in these documents, consists of the following components and uses:

- .1 In general terms the building is of wood frame construction, on a concrete foundation, utilizing locally manufactured wood floor trusses and wood roof trusses. The wood floor truss provides a crawl space for future relocation, expansion and modification of equipment and drains, while the concrete floor topping ensure that the floor structure is sealed from water damage caused by the large amounts of cleaning necessary on the floor space above.
- .2 Red Meat Processing Floor: Approximately 24'x 40' in processing floor area, with a sloped to drain concrete floor with a non-slip ceramic tile finish. Finished wall surfaces will be of stainless steel or FRP fibreglass panels to allow easy clean-up and sanitation. The ceiling height is 14' and the ceiling is to be finished with a high performance paint over moisture resistant drywall.

Hanging sides are brought from the cooler into the processing floor, where they are processed into the finished product and taken to the freezer. Shipments from the freezer leave the building from the rear, at Loading Dock #3.

Planning yet to be undertaken would include the detailed design of the processing layout, including appliance and equipment placement.

- .3 Poultry Processing Floor: Approximately 25'x 36' in area and divided between the killing room and the packaging room, plus janitorial, a small office and an offal room.

Birds are brought to the facility, live, through the loading dock, directly to the kill room. The birds are killed, drained, eviscerated and de-feathered, prior to passing through into the packaging room. Upon final packaging the product is taken directly to the freezer. Shipments from the freezer leave the building from the main entrance.

Offal and waste are placed in suitable storage containers in the Offal Room, for later disposal through a dedicated door to the loading dock.

Planning yet to be undertaken would include the detailed design of the processing layout, including appliance and equipment placement.

.4 Mobile Abattoir Dock: The Mobile Abattoir is to be stored and docked at this facility, in the enclosed and heated garage located on the rear of the processing floors. This room is generally a combined garage and wash bay for parking the abattoir trailer, but will be provided with floor drain, sand trap, interior and exterior washing facilities to allow cleaning and sanitizing the trailer for the next trip out.

When hanging sides are brought from the farm, they are off loaded through the unit's side door, by means of an overhead rail system, directly from the trailer to the cooler. Once the meat has been transferred, the trailer is then fully cleaned inside and out. As the mobile abattoir is to be cleaned prior to leaving the farm, it is not anticipated that there will be an excessive amount of waste matter to be cleaned, however it is necessary to ensure that the unit is fully cleaned, both inside and out, in a dry, warm environment prior to the next trip to a farmers yard.

.5 Ancillary Space to Processing Floors: While it is not intended for the general public, or non-approved workers to enter the processing floors, there is a need for a small administrative function, that will have public access and for a staff entrance, lunch room and wash/change room facilities. These are identified along the central core, with a individual access to the processing floors from this area.

.6 Cooler and Freezer: The cooler facility is primarily for the red meat side of the facility. This is where hanging sides will be delivered from the abattoir and where they can cool and hang for their prescribed periods prior to further processing. It is therefore necessary to provide access from the mobile abattoir dock into the cooler and then again from the cooler into the red meat processing floor, by overhead rail system.

The freezer is used jointly by both processing floors, after the product is packaged on the processing floors. It therefore requires access from both processing floors as well as access to the exterior to allow shipping out of the packaged product without entering the processing floors.

.7 Community Kitchen: Located to the left/rear of the facility, and accessed by a loading dock on the left, or the main entry hall, through a protected vestibule. This space is planned to allow community individuals or groups to prepare, can or otherwise process, locally grown fruits and vegetables.

Three storage lockers or pantries are provided within the space to allow storage of producer related items over a short period, during the processing period, which may last from a few days to a few weeks, with breaks in between. These are not intended for long term or permanent storage. Rental rates would have to be determined, based on space and services to be provided.

Kitchen planning yet to be undertaken would include the detailed design of the kitchen layout, including appliance and equipment placement.

.8 Future Development:

This space is currently un-configured and occupies the front, left portion of the facility. Options for development include:

- .1 Retail sales of processed products of the facility;
- .2 Expansion of Community Kitchen;
- .3 Provision of Food Storage Pantries for rent;
- .4 Administrative Space;
- .5 Other uses to be determined.

.9 Mechanical Room: Located at the front of the facility, this room will contain the boilers, air handling components, pumps, and valves associated with the mechanical system.

The boilers are anticipated to be along the east exterior wall, while the air handling equipment will be located along the west interior wall, stacked, to optimize overall space utilization. Fresh, intake air will come from the south exterior wall, while all exhaust air will be through the roof.

.10 Electrical Room: Located at the front of the facility, this room will contain the electrical service, meter and distribution equipment. This room will contain the service entrance and distribution head-end for all communications and security equipment as well.

#### 4.0 BUILDING AREA:

The following functional areas and room sizes have been identified in the floor plans provided as part of this schematic report:

**.1 Main Floor:**

- Red Meat Processing Floor: 962 sq.ft. (89.4 sq.m.);
- Poultry processing Floor: 1,000 sq.ft. (92.9 sq.m.)
- Processing Administrative: 225 sq.ft. (21 sq.m.);
- Lunch and Change rooms: 600 sq.ft. (55.7 sq.m.);
- Abattoir Dock: 1030 sq.ft. (95.7 sq.m.), each;
- Cooler and Freezer: 783 sq.ft. (72.7 sq.m.);
- Community Kitchen: 850 sq.ft. (78.9 sq.m.);
- Future Development: 740 sq.ft. (68.7 sq.m.);
- Mechanical and Electrical Rooms: 320 sq.ft. (29.7 sq.m.).
- Circulation, misc and wall area: 1,050 sq.ft. (97.5 sq.m.) (14%)

**Gross Main Floor Area: 7,560 sq.ft. (702.3 sq.m.)**

**Total Building Area: 7,560 sq.ft. (702.3 sq.m.)**

## 5.0 STRUCTURAL SYSTEMS

### .1 DESIGN LOAD DATA

.1 GROUND SNOW LOAD.....	46 PSF.
	(PSF. = pounds per square foot)
.2 RAIN LOAD (1/30).....	2 PSF.
.3 WIND LOAD (1/30).....	7.1 PSF
.4 SEISMIC DATA	
Z(a).....	2
Z(v).....	4
Zonal Velocity Ratio.....	0.20

.2 FLOOR LOADING - All areas..... 100 PSF live load.

### .3 FOUNDATION SYSTEM

At this time it is anticipated that the building location will be on a relatively flat piece of ground, located on the Klondike Highway, near the Burma Road intersection. A geotechnical investigation has not been undertaken, however it is anticipated that a shallow concrete foundation system would be appropriate for the existing soil conditions typical of this area. Three options exist for the foundation system, these being:

- .1 Monolithic concrete slab on grade with thickened concrete sections corresponding with roof support and other heavy load elements; or
- .2 Perimeter footing and foundation wall with a floor truss system over a crawlspace; or
- .3 Perimeter footing and foundation wall with a floor truss system over a full basement.

It is anticipated that allowable static bearing pressures of 2500 pounds per square foot will be obtainable at this site, which would translate to foundation widths in the normal range. All foundations will be sized to meet their intended loads. At this time it is intended to construct all foundation elements of reinforced concrete. Exterior insulation (2 inch Styrofoam) extending down the vertical foundation elements and out four (4) feet from the footing perimeter will be required for thermal efficiency and to limit differential foundation movement by preventing frozen soil beneath the building footprint.

### .4 FLOOR STRUCTURE

The main floor structure is recommended to be a wood floor truss with internal bearing supports as is appropriate to optimize the truss design and layout, overlain with plywood sheathing, poly moisture barrier and a 1.5" concrete floor slab.

.5 CONCRETE

All concrete will be using Type 10 (normal) Portland cement and normal density aggregates proportioned to meet the following strength requirements:

- .1 Interior concrete slab - 25 Mpa
- .2 Exterior concrete - 30 Mpa
- .3 Exterior concrete piers – 30 Mpa

Air entrainment will be 5%-6% for interior concrete and 6%-7% for exterior concrete.

.6 WALL FRAMING

All exterior support walls and interior bearing walls will be 2x6 (spruce) studs spaced at a maximum of sixteen (16) inches on center.

All exterior walls will have solid blocking at forty-eight (48) inches on center vertically and be sheathed with three-eighth (3/8) inch plywood sheathing to resist lateral loads exerted by wind and seismic forces.

.7 ROOF FRAMING

The roof structure will be composed of pre-engineered wood trusses manufactured to carry the loads intended. Overlaying these trusses will be one-half (1/2) inch plywood sheathing.

## 6.0 ARCHITECTURAL:

.1 ROOF:

The roof of the facility is proposed to be a 4 in 12 pitch common truss structure with a plywood sheathing and asphalt shingle finish. The building plan and roof system has one main gable running East to West, with smaller sub-gables to the North and South. All loading docks and entrances will be protected with additional roof elements.

The two most common and available roof finishes for a building of this type are asphalt shingles and pre-finished metal. Asphalt shingles are recommended for the finished roof material as they provide the longest term roof finish for the lowest installed cost. Asphalt shingles are also less maintenance intensive and dramatically reduce the risk of winter avalanche conditions as compared to metal roof systems.

This building has access and entrance requirements on all building faces and it is likely that vehicles and pedestrian access will be common on all building faces. Therefore it is recommended to avoid avalanche situations wherever possible.

.2 EXTERIOR ELEVATIONS:

Exterior elevation styling represent a functional and simplistic facade, very suited to the rural setting and the building's purpose. Siding and trim options include:

- .1 locally milled, horizontal wood siding, with wood facia and soffits.; or
- .2 manufactured wood siding, facia and soffits; or
- .3 manufactured fibre board (Canexel) or cement board (Hardy plank) siding, facia, trims and soffit.

Any of these three would be suitable, and approximately the same installed cost. The manufactured fibreboard and cement products are pre-finished and therefore offer a less maintenance intensive finish, but need to be imported.

It is recommended to use locally manufactured wood siding, to support the local forestry manufacturing industry.

Metal flashings will be prefinished where exposed and glvanized elsewhere. Doors are to be insulated metal with upper light sections on selected doors. Windows are modest in size and location, and are anticipated to be vinyl frame units, locally manufactured and glazed.

.3 THERMAL PROTECTION:

- .1 **FOUNDATION:** Exterior of concrete foundation elements will be thermally protected with rigid insulation. The finished thermal resistance value of the foundation wall will be RSI-1.75 (R-10). A pressure treated plywood grade plate will protect the insulation at grade.
- .2 **WALLS:** Exterior frame walls are to be thermally protected with a minimum of 6 inches (R20) fibreglass batt insulation. An air barrier membrane will be applied over the exterior face of the wall prior to application of vertical strapping and finish siding material. A vapour barrier membrane will be applied over the interior face of studs following insulation installation. A 3" metal stud wall will be constructed on the interior of all exterior walls prior to mechanical, electrical and interior finish applications. This interior strapping space will then be filled with 2.5" (R8) of batt insulation following installation of all wall related mechanical and electrical equipment. The finished thermal resistance value for this wall system is R28 (RSI 4.9).
- .3 **FLOORS:** The underside of the main floor truss to the crawlspace will not be insulated.



- .4 ROOF: All roof areas will be insulated with 12 inches of fibreglass insulation providing an R-40 (RSI 7.0) insulating value. A vapour barrier will be applied to the underside of the truss with 1 x 4 strapping applied over the vapour barrier, prior to the gypsum board application.
- .4 INTERIOR FINISHES:
  - .1 PROCESSING AREA: Gypsum board, taped and filled over the inside surfaces of all wall and ceilings. Walls overlain with either stainless steel panels or FRP fibreglass panels in all processing work areas. Ceiling of fibreglass panels. Floors of non-slip ceramic tile, with tile base.
  - .2 ABATTOIR DOCK: Moisture resistant gypsum board, taped and filled over the inside surfaces of walls and ceiling, overlain with pre-finished metal liner panels. Floor to be painted concrete.
  - .3 COMMUNITY KITCHEN: Gypsum board, taped and filled over the inside surfaces of all walls and ceilings. Manufactured cabinets and millwork as required, with stainless steel tops and backslash. All exposed wall surfaces finished with high glaze ceramic tile. Ceiling finished with high performance paint.
  - .4 OTHER AREAS: General wall finish will be gypsum board, taped, filled and painted for all interior walls. Interior partition walls to be constructed with metal studs with sound bars and batt insulation to reduce the noise transfer within the building and between rooms. Additional wall trims and finishes to be determined as the project progresses.
  - .5 DOORS: Interior doors will be paint finished metal doors with paint finished expandable metal frames. All fire rated doors will include fire rated frames and hardware. Door hardware will be a medium duty commercial grade with brushed steel finish.
  - .6 WINDOW TRIM: Interior window trim to consist of gypsum board jamb and head returns with clear finished Maple or Birch wood sills. Casing and trim, where used, is to be painted wood.

## **7.0 MECHANICAL**

- .1 Domestic Water System

Potable water will be provided via a new water well. The proposed location of the well is south of the new building in order to maximize the horizontal separation between the sanitary septic field and the water well. The well will be constructed to the latest YTG well design standards, to an anticipated depth of 500 feet with a stainless steel submersible lift pump.

A pitless adaptor unit will be installed where the service line leaves the well. The buried service line between the well and the building will be heat traced. A packaged expansion tank, located in the building, will prevent short cycling of the pump. Domestic hot water will be produced by the building boiler system. Domestic water piping will be a combination of copper and Kitec, with 25mm thick foil back insulation, where exposed.

.2 Plumbing Fixtures

Commercial grade low consumption plumbing fixtures will be located as per the architectural plans. Acceptable material: CRANE, American Standard.

Counter mounted stainless steel lavatories with infrared operated trim will be installed in the washrooms.

Packaged shower stalls will be provided in the change rooms.

Wall hung urinals will be provided in the men's washrooms.

All lavatories will be provided with anti-scald water faucets.

Stainless steel sinks and trim will be provided in the processing rooms and community kitchen.

Floor drains complete with trap seal primers and a commercial grease interceptor will be installed.

.3 Building Sanitary System

Sanitary waste will gravity flow through drainage lines installed below grade, to a septic field located north of the building. All sanitary lines will be graded to National Plumbing Code of Canada requirements.

Septic field will be designed as per the geotechnical engineer's report.

.4 Fire Protection

An automatic sprinkler system is not required by Code, but is an owner selectable option for this project.

Fire protection will include hand held dry chemical fire extinguishers located to the requirements of NFPA-10.

.5 Heating

The heating system for this facility is recommended to be an oil fired low pressure, low temperature hydronic heating plant, located in the main floor mechanical room and will including the following equipment:

- Two low pressure oil fired hot water boilers. The boilers will be sized at 50% load and will operate on a lead/lag basis;
- Double walled, stainless steel, 25mm thick insulated Class A chimneys;
- HW expansion tank;
- Packaged automatic glycol fill tank & pump system with 50/50 propylene glycol system;

- HW heating pumps operated as lead/stand-by. Total two pumps required. Acceptable material: S.A. Armstrong, Grundfos. The heating medium will be radiant in-floor, zoned to building areas, plus force flow cabinet unit heaters at high loss spaces, e.g. vestibules and abattoir bay.

.6 Ventilation

Three main air handling units (AHU) complete with an economizer section, filter section, hydronic heating coil(s) and belt driven supply air fan and return air fan will be provided. This would include dedicated units for each processing floor and the community kitchen. Ventilation for other building areas, including washrooms, offices and , staff rooms will be provided by dedicated exhaust fans and HRV ventilation units with heating coils. Heat reclaim from the exhaust systems, cooler and freezer will be incorporated in the ventilation system design to capture and use this waste heat to warm incoming fresh building air.

.7 Heating Fuel Oil

Fuel oil will be No. 02 arctic grade diesel fuel, located in an above ground, exterior 4,546 litre (1000 Imp gal) ULC listed fuel oil tank installed on a steel base on exterior concrete slab. Fuel oil will pumped through a two pipe system to the burners and back to the tank.

.8 Controls

Electro-mechanical controls will be provided and will include the following features.

1. Automatic boiler control complete with indoor/outdoor reset capability.
2. Lead heating water recirc pump auto-change over based on hours of operation. In event of lead heating water pump failure, lag pump energized and lead pump failure alarmed.
3. Radiation control by low voltage, 2 position, normal open, zone valve and locking thermostat.
4. Air handling units will be energized by local hand switch. Units are normally OFF.
5. Air handling unit heating coils will be controlled by a supply air temperature controller and three way control valve. Initial set point = 13°C summer, 17°C winter. Manual reset.
6. Force flow unit heater will be controlled by line voltage thermostat.
7. The domestic water pump will be controlled by a pressure-trol located in the mechanical room.
8. Domestic hot water tank will controlled by a packaged controller.
9. Two alarms will be provided including Low Building Temperature and low Heating Water Supply (HWS). The alarms will energize an auto-dialler (provided and programmed by others).

## 8.0 ELECTRICAL

### .1 Electrical Service

Based on the proposed building area, a fuel-fired heating system typical for the Yukon environment, mechanical ventilation, commercial cooler and freezer, equipment loads of processing equipment and no air-conditioning, a three-phase 400 A electrical service would be recommended. The specified service size will be reviewed during future design aspects of the project.

Underground conductors will run between a YECL riser pole and the building electrical room. The main utility meter would be located in the electrical room.

The electrical service will be distributed to the building by branched circuit panels located at centralized locations of major areas of the building. It is anticipated there will be four branched-circuit panels; one in each processing area, one in the community kitchen portion of the facility, plus one in the mechanical room.

A Transient Voltage Surge Suppressor (TVSS) will be specified. A TVSS will limit the effects of voltage spikes on the building electrical system and electronic equipment. The TVSS will be located at the main distribution panel.

A minimum of three duplex receptacles will be specified for each office area. One duplex receptacle will be specified directly adjacent to each data/telephone outlet. A maximum of four duplex outlets will be connected to a single 15 A circuit.

One duplex ground fault protected receptacle will be provided for each washroom. A maximum of two washroom receptacles will be connected to a single 15 A circuit.

General purpose outside receptacles will be provided on each directional face of the building (total of four receptacles). Each of these receptacles will be connected to a dedicated circuit.

Four parking stall receptacles will be specified. Each car receptacle will be connected to a dedicated circuit. Temperature controls for activating the car stall receptacles only in extreme cold conditions will not be specified.

The kitchen will be specified with receptacles and outlets as required for the appliances and cooking equipment. At this stage in design it is assumed the kitchen appliances will be residential style equipment with no commercial style deep fryers or commercial hood fans.

All other areas of the building will be provided with receptacles as required by code, as required by owner provided equipment and as required by building mechanical equipment. The client is requested to review all receptacle locations during design review stages so that the receptacle locations suit the client's specific needs. One spare conduit from the electrical room to the future addition areas at the south and north ends of the building will be specified.

For cost effectiveness and where allowed by electrical code, specified wiring will be non-metallic sheathed cable (NMS) cable. Armoured cable will be specified in any ceiling space that is as a return air plenum.

.2 Interior Lighting

Interior lighting will be energy efficient electronic ballast T8 fluorescent fixtures. Fixture selection will be based on cost effectiveness. Cool white lamps operating at 4100 K will be specified. Lighting levels will be to current Illuminating Engineering Society standards.

.1 Office Areas

Office areas will be specified with direct lighting with directive glare control to provide soft non-glare lighting (target level 40 fc) on work surfaces and video display terminals.

.2 Corridors

Corridor lighting will be specified with low levels of light (target level 40 fc multistage) to optimize energy conservation yet provide adequate light levels for access between areas, and cleaning and maintenance.

.3 Washrooms

Washroom lighting will be specified with moderate light levels (target 30 fc) to allow adequate lighting for clean-up.

.4 Processing Rooms

Processing Room lighting will be specified with rows of ceiling mounted T8 fixtures (target lighting level of 50-60 fc). Multiple lighting levels will be achieved with individual control of rows. Fixtures will be specified with wire guards or high impact lenses.

.5 Community Kitchen

The kitchen lighting will be specified with surface mounted acrylic lensed commercial fixtures. Target lighting levels will be 65 – 75 fc.

.6 Other Interior Areas

Building service and storage rooms will be provided with lighting layouts and lighting levels to suit the space. Wire-guards will be

specified for fixtures in building service areas and where required for mechanical protection.

.3 Exterior Lighting

Exterior lighting design will focus on code required light levels at all exterior exit doors and exterior stairways/ramps, as well as specifying user friendly levels of lighting for car parking areas. Exterior lighting design will consider optimizing exterior light spill onto property pathways and isolated building corners for building security, and will be designed to minimize light glare onto neighbouring properties.

Exterior lighting control will be specified for energy efficient automatic dusk-to-dawn photocell control.

Exterior lights building will consist of wall and ceiling mounted metal halide fixtures. Exterior lights will be specified with high impact lens or wire-guards.

At this stage of design lighting poles for parking areas have not been included. Lighting for parking areas and pathways will be from wall mount fixtures on the building.

.4 Emergency Lighting

Emergency lights are required for all exits and all paths to exit. Specific emergency lighting locations include egress paths to exit, exit doorways, ramps in the path of exit from the building (including all outside ramps, and in building service rooms such as the electrical/ mechanical rooms. Emergency lights will also be specified in the washrooms.

Emergency lights will be controlled by battery packs that activate the emergency lights when normal power fails. Battery packs will be sized to provide emergency lighting for a minimum of 30 minutes. Battery packs will be located at inconspicuous locations such as building service rooms so as not to interfere with architectural features.

.5 Exit Lights

Exit lights are required to identify an egress path out of the building. Exit lights are required at all exit doors, along all paths to exit and in all rooms with occupancy capacity greater than 60.

Exit lights will be specified for all exterior exit doors as where required to indicate path of exit direction. As an operational cost savings measure exit sign lamps will be energy saving LED lamps.

.6 Security System

A security system will be specified for the building. The security system will be specified with door contacts for all exterior entrance doors and motion sensors as required for monitoring major floor areas. Seven keypads will be specified; one for each main building functional area.

The security system will also be specified with a dialler to provide capacity to signal a 24-hour monitoring station or signal direct to maintenance staff. The dialler system capacity will be specified to allow for off-site monitoring of building mechanical alarms such as low building temperature in addition to security intrusion signals.

.7 Telephone and Data Wiring Systems

Telephone cabling and infrastructure will be specified to meet category 5E standards. Telephone cabling will be specified as a dedicated cable from each telephone jack to the telephone head-end in the electrical room. The telephone head-end terminations will be specified with hard-wired cross connections.

Data cabling and infrastructure will be specified to meet category 5E or higher standards. Data cabling will be specified as a dedicated cable from each data jack to the data head-end located in the administration office. The data head-end terminations will be specified with patch cable to patch cable cross connections.

The telephone service entrance equipment and owner provided telephone switch (and programming) will be located in the electrical room. The telephone service connection will be run underground from the electrical room to a utility riser pole located adjacent to the property. The telephone service entrance equipment will be specified with a dedicated plywood backboard exclusive for telephone equipment.

.8 Fire Alarm System

A fire alarm system is not required by code for the proposed building and as such has not been allowed for in schematic design. The budget cost for inclusion of a simple fire alarm system including engineered design and contractor construction would be approximately \$20,000.

## 9.0 CONSTRUCTION BUDGET

.1 Anticipated Construction Budget:

Permits and Insurance:	\$	15,000.00
Excavation, Backfill and Compaction:	\$	20,000.00
Sitework and Grading:	\$	10,000.00
Building Concrete and Structural Systems:	\$	175,000.00
Roofing and Waterproofing:	\$	30,000.00

Carpentry and Interior Finishes:	\$ 325,000.00
Siding and Exterior Finishes:	\$ 70,000.00
Plumbing, Heating, Ventilation, Well and Septic:	\$ 375,000.00
Electrical Systems:	<u>\$ 175,000.00</u>
Subtotal:	\$1,195,000.00

Parking and Access Road:	\$ 20,000.00
Clearing and Grubbing:	\$ 5,000.00
Site Clean-up/Restore/Landscape:	<u>\$ 15,000.00</u>
Subtotal:	\$1,235,000.00

Cooler/Freezer Systems:	\$ 100,000.00
Community kitchen millwork, appliances:	\$ 65,000.00
Poultry Processing Equipment:	\$ 100,000.00
Red Meat Processing Equipment:	\$ 150,000.00
Electrical Service estimate (YECL):	\$ 15,000.00
Telephone Service estimate (NWTEL):	\$ 5,000.00
Geotechnical Testing and Inspection:	<u>\$ 10,000.00</u>
Subtotal	\$1,680,000.00
Contingency (20%)	<u>\$ 336,000.00</u>
Subtotal:	\$2,016,000.00

6.0 % GST	<u>\$ 121,000.00</u>
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Anticipated Construction Budget at Schematic Design: **\$2,137,000.00**

Engineering, Design and Project Management Fees: \$ 260,000.00

## 10.0 Operating Budget

A general operation and maintenance budget, including monies being put away for planned upgrades and replacement, for a newly constructed building of “average” to “better-than-average” construction is \$5.00 per square foot annually. For this facility, rounded to 8,000 sq.ft., that would be \$40,000.00.



# **DRAWING APPENDIX**