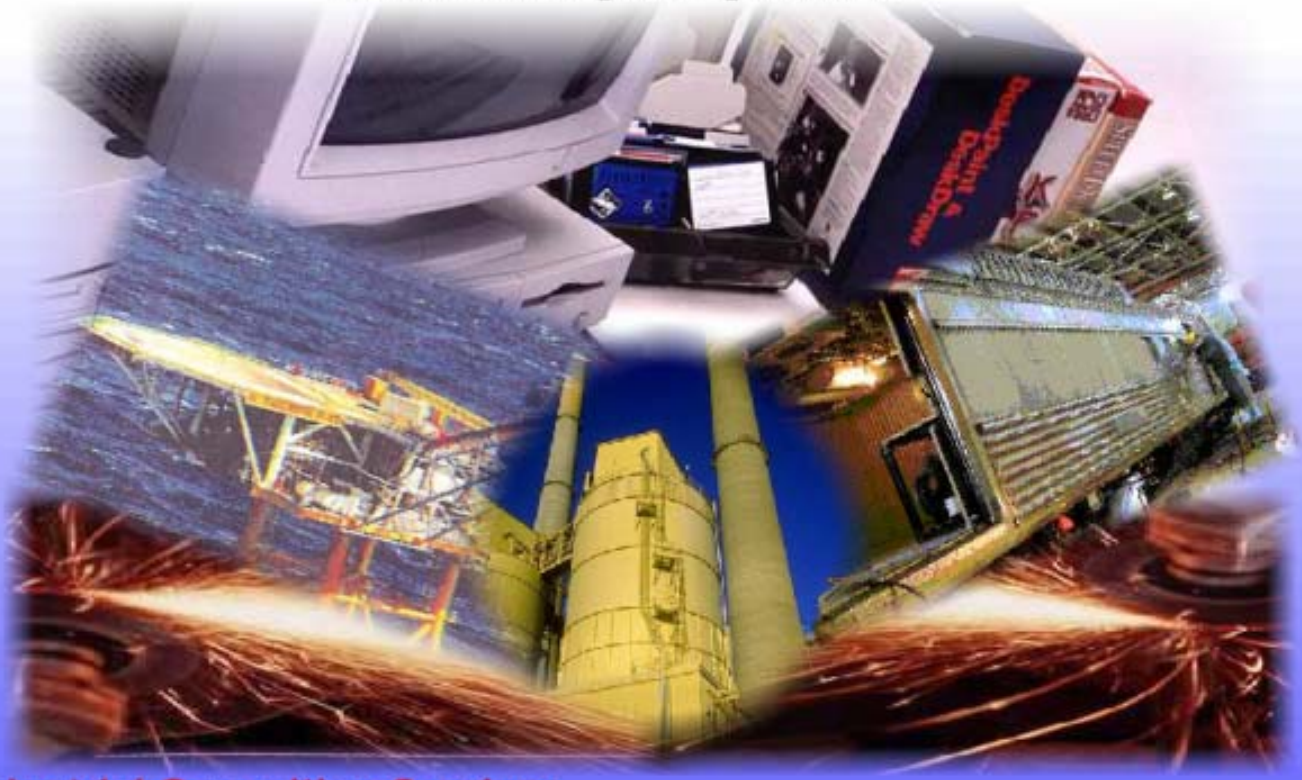
IDEAL ENGINEERING INC
INDUSTRIAL CONSULTING

Phone: 902-396-1818, Email: idealengineering@eastlink.ca,
Website: idealengineeringcanada.com



Industrial Consulting Services

Specializing In:

Design

FEA Analysis

Welding Engineering

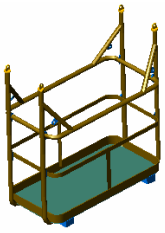
Inspection and Testing of Mobile Cranes and Lifting Devices

Project Management, Facility/Reliability Engineering

ON TARGET ON BUDGET ON SCHEDULE

Industrial Consulting Engineering Services:

Ideal Engineering Inc. is a consulting engineering firm located in Pictou County, Nova Scotia. With numerous successful years of providing professional engineering services behind us, and over 25 years of combined technical experience on our team, our goal is to provide competitive and comprehensive engineering solutions for companies that are outsourcing engineering services in the following areas;



Design: FEA Analysis using state of the art Hardware and Software including;

-Mechanical and Structural designs for modifications, repairs, or new installations for; Plant and process improvements/Lifting devices/ Piping systems/Piping supports/Conveyor systems/Access ways/ Catwalks/Ladders/Trailers/Platforms etc.

-Equipment modifications (structural, base designs, additions, repairs).

-Water and Storage Tank designs (cylindrical, rectangular, hoppers).

-Computer Aided Drafting and Design **2D and 3D using (AutoCAD)**.

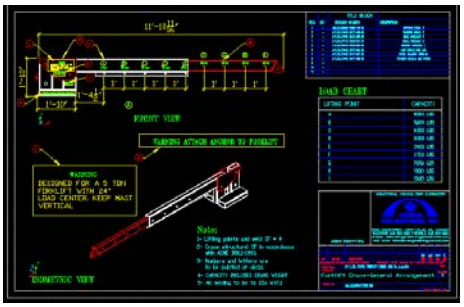
Welding Engineering:

Acting as your companies Retained Welding Engineer, Ideal Engineering Inc. will provide approved Welding Engineering Standards, Welding Procedures, Welding Data Sheets and repair procedures to the following standards.

- CSA W59, AWS D1.1, AWS D15.1, ASME VIII, and API.

Inspection and Testing:

-Complete inspections and testing of Mobile Equipment/Hoists/Lifting Devices/Man Baskets/Mobile Cranes (4 ton to 450 ton)/Machinery/
Pressure Vessels/Welded Structures.

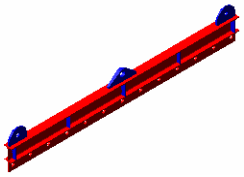


Project Management:

- Complete project management from the planning stage to the commissioning stage. Including project estimates, bill of material development, technical specification development, request for quotation, bid review, contract administration, commissioning, and technical reports.

Our Project Goal:

ON TARGET ON BUDGET ON SCHEDULE



J. Aubrey Stewart, P. Eng, Principal Engineer

P.O. Box 384 New Glasgow, Nova Scotia, B2H 5E5, 1905 Main Street Westville
Email: idealengineering@eastlink.ca
Phone: 902-396-1818, Fax: 902-695-1818, Web: www.idealengineeringcanada.com

Project and Services Summary Outline

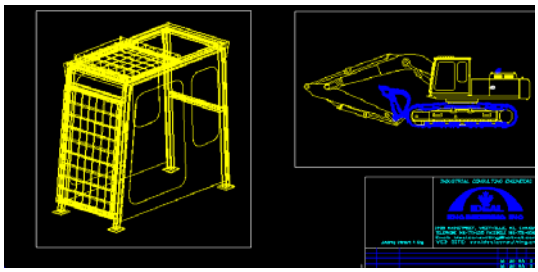
3D and 2D AutoCAD Drawing Examples

[Home Page](#)

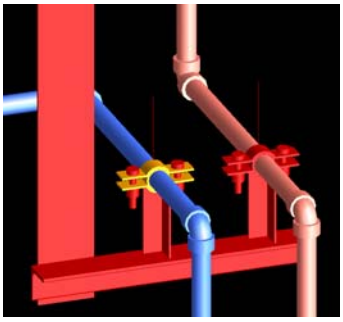
Projects and Services Completed by Ideal Engineering Inc.

1-(PEI DOF) Research, Design, Specify and Test a Wildfire Fighting System and Storage Tank for the PEI Government Forestry Division, Bombardier Muskeg.

2- (Dexter Construction) Research and verify design requirements for an excavator (FOP) falling object protection system modification meets or exceeds occupational health and safety guidelines for section 62 (overhead protection) of occupational safety general regulations.



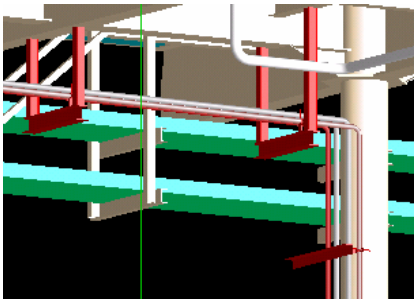
3- (C.J. Mac Lellan's Engineering) Materials handling designer/ analyst for offshore oil and gas production platforms alma and south venture, responsible for verifying material handling requirements, model equipment, specify equipment, responsible procurement engineer, interface between related disciplines, generate report and recommendations.



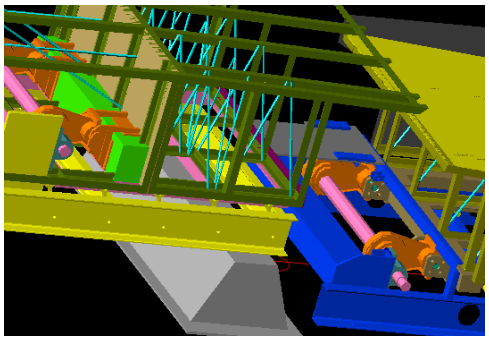
4- (A.W. Leil) Inspect and Test 450 Ton mobile cranes and recommend modifications or repairs as required pending results and/or findings in accordance with Nova Scotia Environment and Labour Occupational Safety General Regulations part 7 Hoists and Mobile Equipment Section 72, 73, 74, 75, 76, 77, 78, 79 and 80, as well as, requirements set by industry standard CSA Z150 1998, manufacturer's guidelines and sound engineering principals.

[(Back to Top)](#)

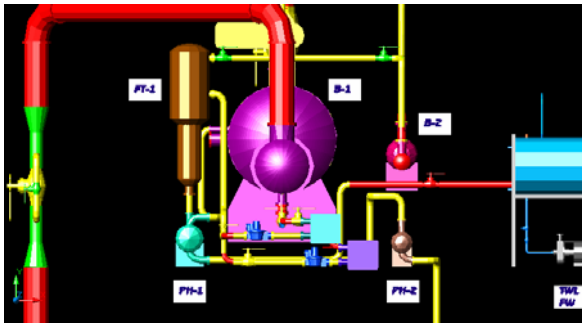
5- (C.J. Mac Lellan's Engineering) Principal engineer responsible for the design of structural supports for class 2 and class 3 piping systems on the alma ii offshore natural gas production platform and integrating with PDMS 3–D design software.



6-(Manufacturer) Machine Inspection and Repair Project: Determine extend of cracking and work with client supplied welding technicians to make repairs as necessary during a planned one day shutdown. This will include conducting a visual inspection of all welded areas, supplying weld repair procedures as required and a subsequent report highlighting findings and making necessary recommendations.



7- (NSPI)Investigate heating system skid which provides 50,000 lbs steam/hr, to resolve a steam condensate flashing problem which has been causing water hammer and thermal shock to condensate return line components since inception. This included a report of findings, history of system, recommendations for system improvements, drawings, and estimated cost of future modifications and associated engineering.



8- (Atlantic Tractors and Equipment Ltd.) Study the recent problems with their electrical equipment especially with regard to the Asphalt Plant operating in Goshen. The request was to determine what had gone wrong, what were the most probable causes and to recommend what should be done, or should be looked into further in order to minimize future downtime and potential problems.

(Back to Top)

9- (C.B. & CNS) Inspect and Load test for Stability rough terrain mobile cranes, to Department of Labour inspection standards as per Z150-98. Also, recommend modifications or repairs as required pending inspection results.
Modifications or repairs will be complete in accordance with Nova Scotia Environment and Labour Occupational Safety General Regulations Part 7 Hoists and Mobile Equipment Section 72, 73, 74, 75, 76, 77,78, 79 and 80, as well as, requirements set by industry standards, manufacturer's guidelines and sound engineering principals

10- (A. W. Leil) Inspect and Load test for Stability mobile cranes, and heavy hauling equipment to Department of Labour inspection standards as per Z150-98. Also, recommend modifications or repairs as required pending inspection results.
Modifications or repairs will be complete in accordance with Nova Scotia Environment and Labour Occupational Safety General Regulations Part 7 Hoists and Mobile Equipment Section 72, 73, 74, 75, 76, 77,78, 79 and 80, as well as, requirements set by industry standards, manufacturer's guidelines and sound engineering principals.

11- (DEXTER CONSTRUCTION) Inspect and Load test for Stability, boom trucks to Department of Labour inspection standards as per Z150-98. Also, recommend modifications or repairs as required pending inspection results.

12- (Bob White) Residential Building designs and drawings for modifications.

13- (IRSI, Moncton) Complete Welding engineering standards AWS D15.1, CSA W59.

14- (Dexter Construction) Study on generator electrical problems on asphalt plant.

15- Design anchor system for large school window.

16- (Mulgrave Machine Shop) Design an oil and gas production platform Christmas Tree weldment for a repair to an existing nozzle.

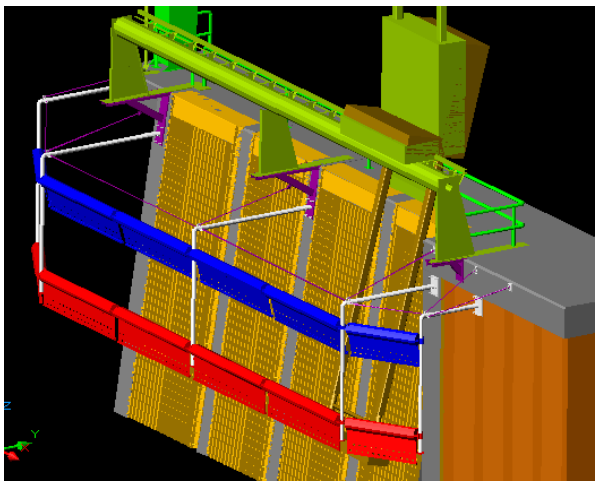
17- Design oil and gas piping system support structures.

(Back to Top)

P.O. Box 384 New Glasgow, Nova Scotia, B2H 5E5, 1905 Main Street Westville
Email: idealengineering@eastlink.ca
Phone: 902-396-1818, Fax: 902-695-1818, Web: www.idealengineeringcanada.com

[Home Page]

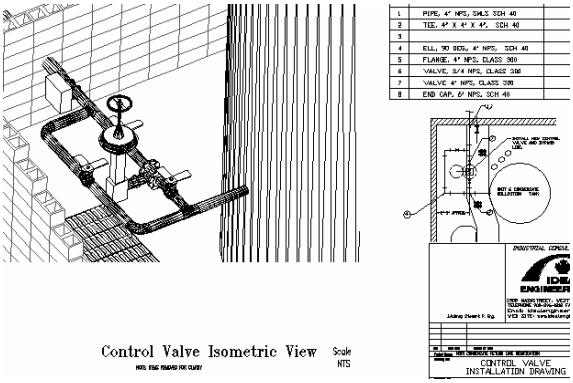
18-(NSPI Trenton Generating Station)- Design an algae curtain system to prevent algae and debris from entering and clogging up the cooling water inlet pump channel for unit #5 and Unit #6. Create 3D design proposal drawings, 2D fabrication detail drawings, as well as, a technical specifications and RFQ documents. Design must be light weight, minimize the effect on the river system and be able to change height from high tide to low tie to ensure constant efficiency 24 hours a day.



19- (IRSI, Moncton) Generator support design for a passenger rail vehicle.

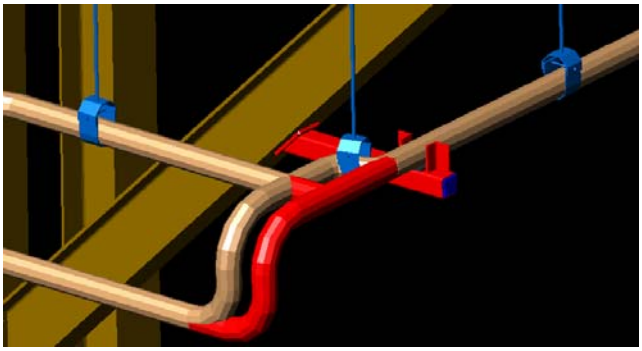
20- (Eastern Sign and Print) Design a Utility trailer (float) design c/w 12v dc to 120v light sys.

21- (NSPI Trenton Generating Station) Complete design calculations and create 3d and 2d drawings for modification to unit #6 re-boiler skid. Write technical specifications and RFQ documents as required.



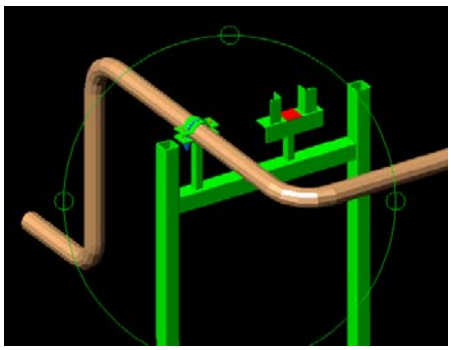
22- (IRSI, Moncton) Passenger car structural modifications for prototype.

23- (NSPI Trenton Generating Station) Complete design calculations to verify hanger sizes, number of hangers, and system expansion. Create 3D and 2D design drawings for modification to Unit #6 reserve feed water line. Write technical specifications and RFQ documents as required.



24- Design Truck roll bar and tie down system.

25- (NSPI Trenton Generating Station) Complete design calculations to verify hanger sizes, number of hangers, and system expansion. Create 3D and 2D design drawings for modification to Unit #6 condenser slurp line water line. Write technical specifications and RFQ documents as required.

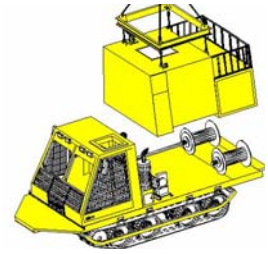
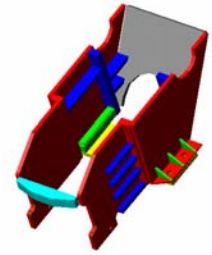


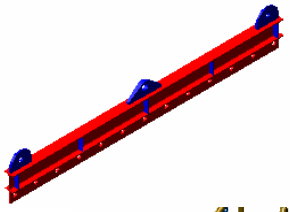
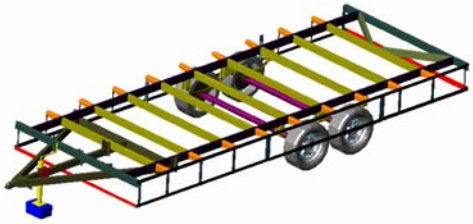
(Back to Top)

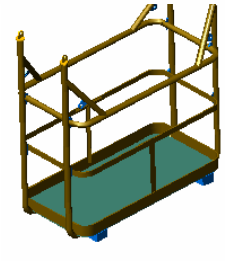
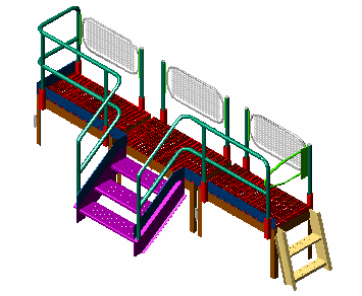
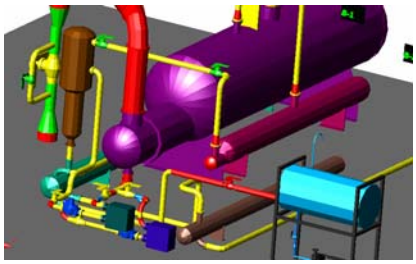
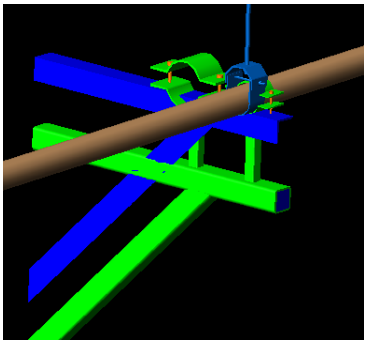
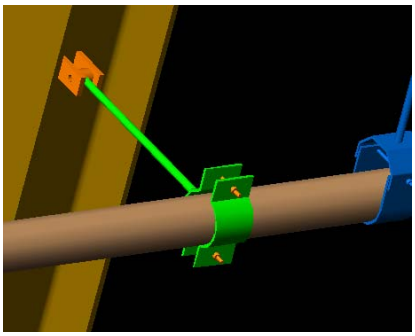
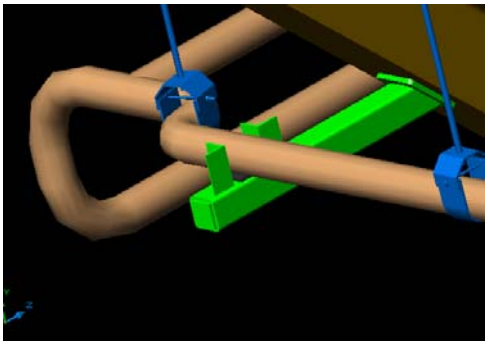
P.O. Box 384 New Glasgow, Nova Scotia, B2H 5E5, 1905 Main Street Westville
Email: idealengineering@eastlink.ca
Phone: 902-396-1818, Fax: 902-695-1818, Web: www.idealengineeringcanada.com

Home Page

2D and 3D AutoCAD Design Examples:

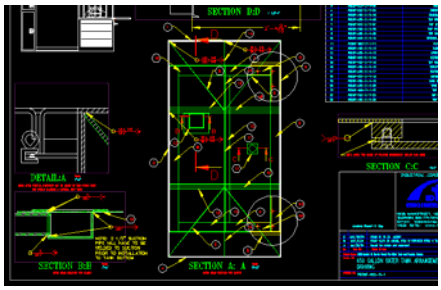







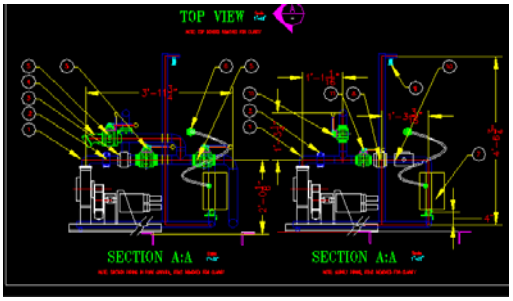
(Back to Top)

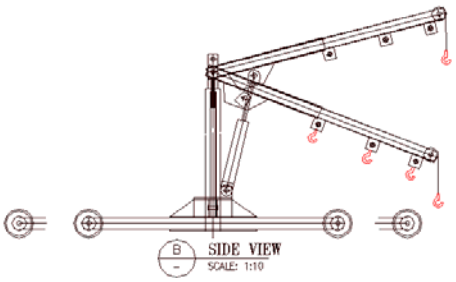
P.O. Box 384 New Glasgow, Nova Scotia, B2H 5E5, 1905 Main Street Westville
Email: idealengineering@eastlink.ca
Phone: 902-396-1818, Fax: 902-695-1818, Web: www.idealengineeringcanada.com

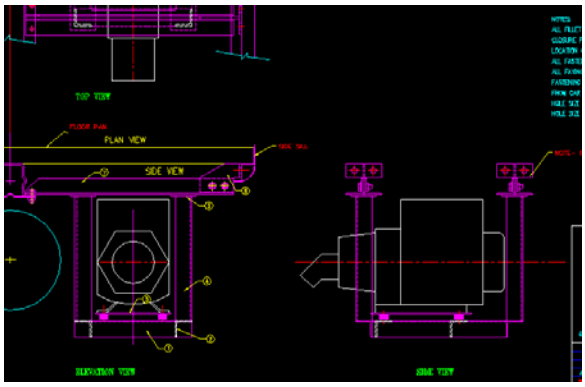
[Home Page]

Industrial Machinery and Equipment Modifications, Designs and Inspections:

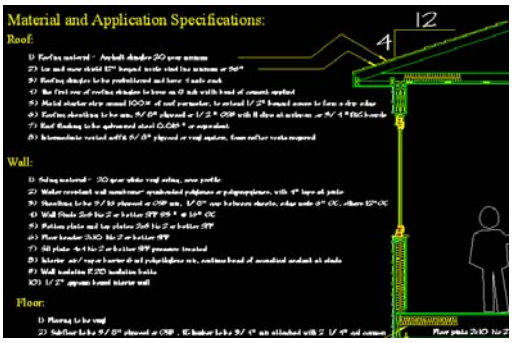


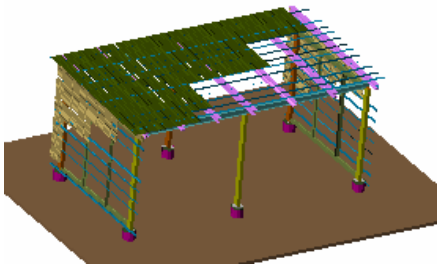


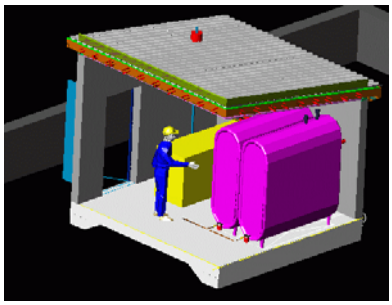


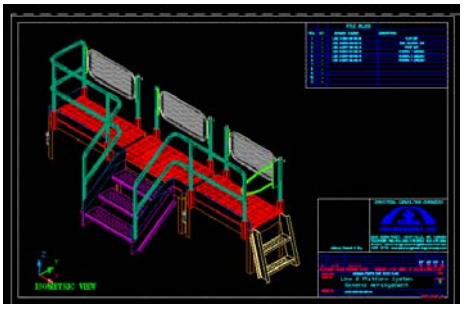


Building Modifications and Designs:





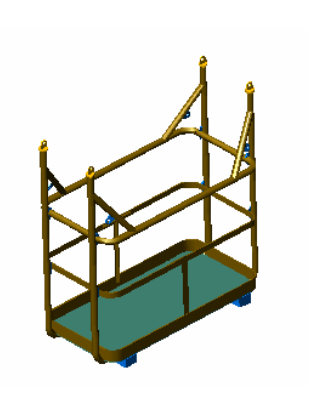


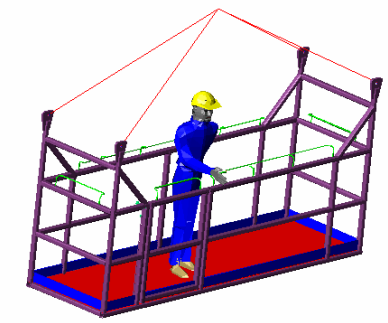
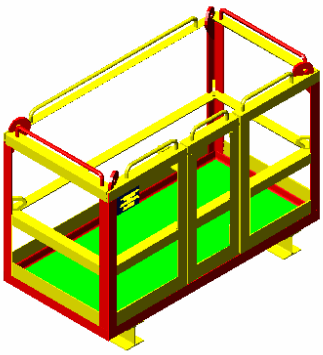
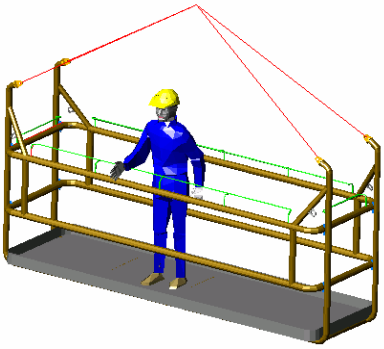


[(Back to Top)]

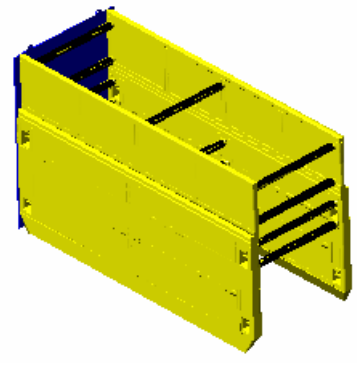
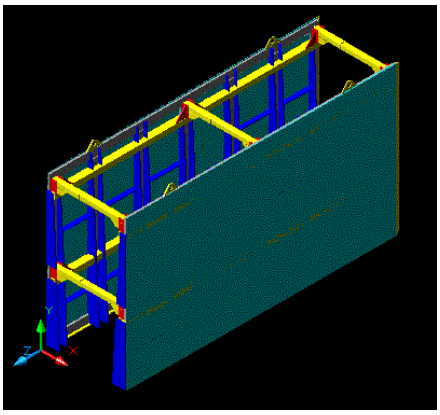
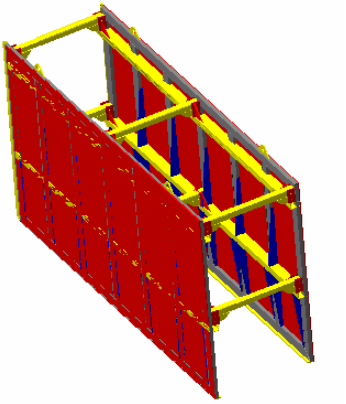
Home Page

Man Basket Designs, one and two man designs with and without doors:

Construction Trench Box Designs up to 20 feet of depth:

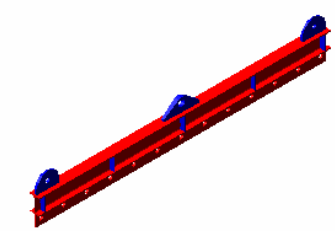
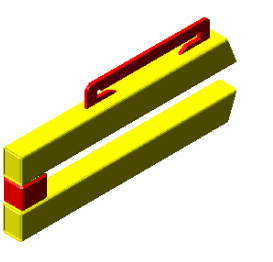




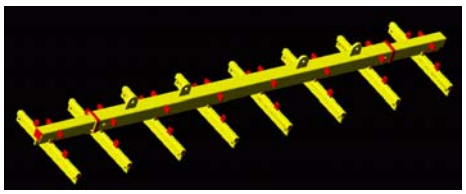
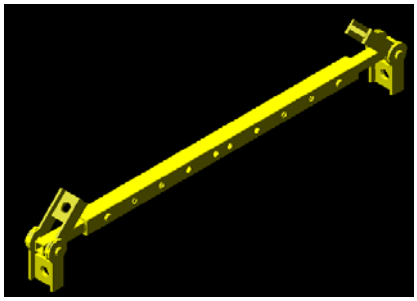
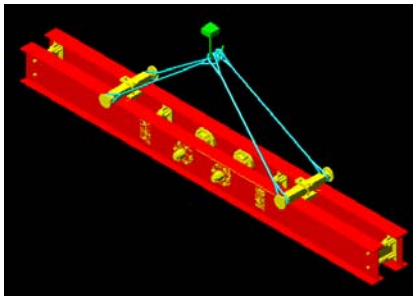
(Back to Top)

P.O. Box 384 New Glasgow, Nova Scotia, B2H 5E5, 1905 Main Street Westville
Email: idealengineering@eastlink.ca
Phone: 902-396-1818, Fax: 902-695-1818, Web: www.idealengineeringcanada.com

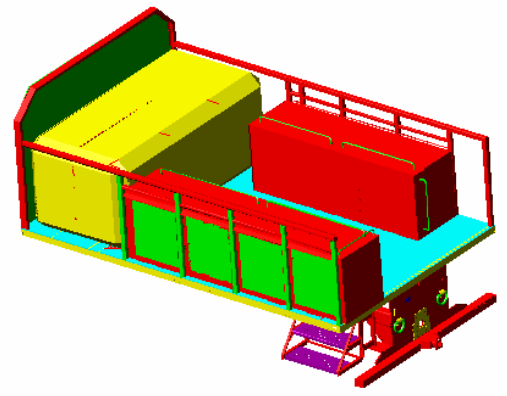
[Home Page]

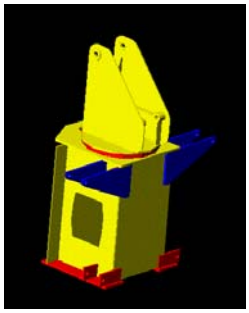
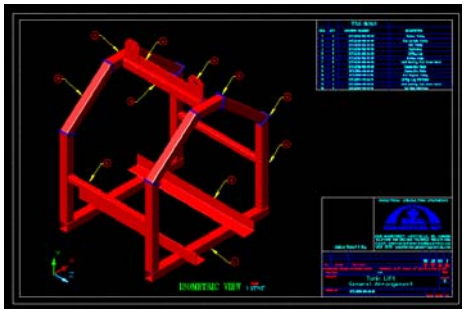
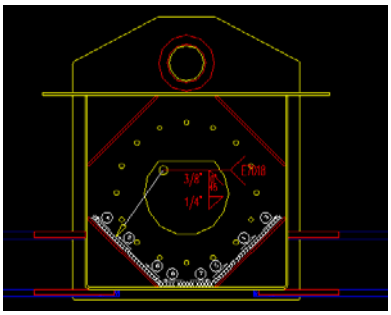
Below the Hook Lifting Device and spreader Inspections and Designs:
(4 to 75 ton capacity)

Construction Vehicle and Crane Modification Designs and Fabrication Drawings:



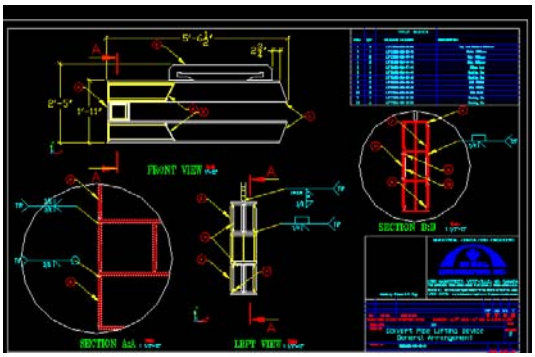




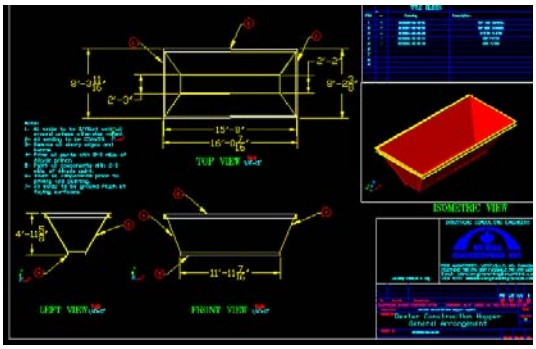
(Back to Top)

P.O. Box 384 New Glasgow, Nova Scotia, B2H 5E5, 1905 Main Street Westville
Email: idealengineering@eastlink.ca
Phone: 902-396-1818, Fax: 902-695-1818, Web: www.idealengineeringcanada.com

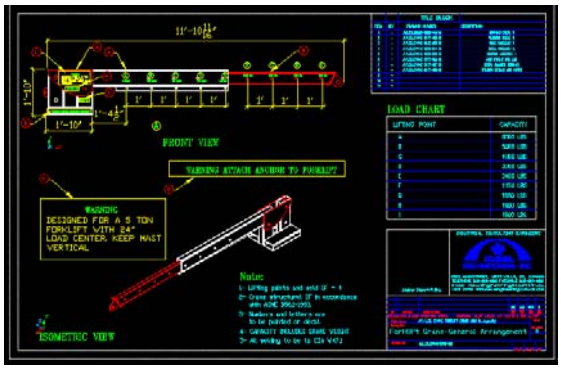
[Home Page]

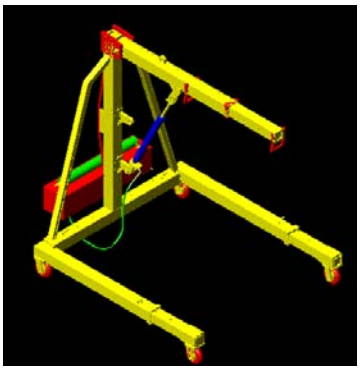
Manufacturing and Welding Details for Fabrication Shops: Conveyor systems, hoppers, piping systems, ramps, walkways, access ways, ladders, storage tanks, lifting devices, monorails, jib cranes, etc.

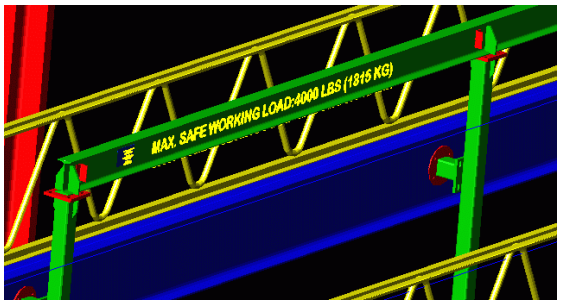


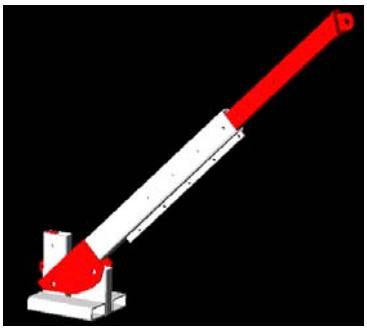


Monorail , Mobile Forklift Crane, and Shop Crane Designs and Inspections:







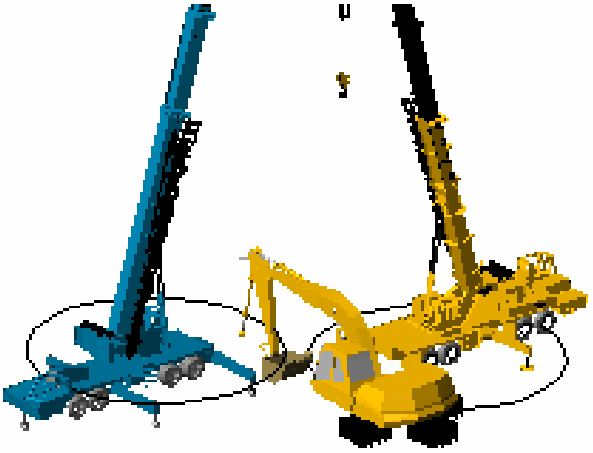


(Back to Top)

P.O. Box 384 New Glasgow, Nova Scotia, B2H 5E5, 1905 Main Street Westville
Email: idealengineering@eastlink.ca
Phone: 902-396-1818, Fax: 902-695-1818, Web: www.idealengineeringcanada.com

[Home Page]

Heavy Equipment Breakdown Lift Plans and 3D Studies.



Technical Reports, Inspections, and Modification Procedures customized to clients requirements.

picture below shows the rosebud being applied to the opposite side of a welded repair found near the opening of the pedestal top plate. The crack was gorged out and preheated prior top completing the welded repair. The large lug shown was also preheated as it was close to the weld repair which would act as a heat sink and also increase the weld joint restraint for any repairs. This would increase the possibility of cold/hot cracking of proper pre heat was not applied.

7- Backing bars and replacement gussets were brought to bright shiny metal prior to fitting and tacking into position. The backing bars were chamfered to fit the angle and tack welded to the existing gusset plates and replacement gusset plates as required. The backing bars were mild steel 4" w and 3/8" thick, 1/16" thicker than the gussets that were being replaced. The extra thickness was allowed to go toward the outside surface. Once the 100% CJP single bevel weld was complete that joined the existing gusset to the new gusset, the weld was ground flush and blended into the profiles.

8- The components were fit and tack welded into position with small tacks which were subsequently ground out and consumed by the root pass. The picture to the left shows one of the gussets fit into position and tack welded prior to the root pass being added. Note the size of the tacks. The material was pre heated prior to applying the tack welds and gusset plates to minimize the chances of having hot cracking of the tacks.

9- Each of the passes where cleaned by grinding and chipping hammer to remove weld slag prior to applying the subsequent weld layers.

10- The top plate surface was checked with a steel rule to ensure the weld was not causing distortion as this top plate area was the location for the main turret bearing. The picture shows the plate had not signs of angular distortion, it did however, have wear on the bearing surface and the raised edge was feather out. This should be reviewed to determine if it requires to be built up and re-machined prior to applying the new bearing.

P.O. Box 384 New Glasgow, Nova Scotia, B2H 5E5, 1905 Main Street Westville
Email: idealengineering@eastlink.ca
Phone: 902-396-1818, Fax: 902-695-1818, Web: www.idealengineeringcanada.com

(Back to Top)