

**HARBOUR DEVELOPMENT
Lark Harbour
Newfoundland and Labrador**

Environmental Registration Document

**Submitted to the Government of Newfoundland and
Labrador
Department of Environment, Climate Change and
Municipalities
Environmental Assessment Division**

Prepared For: Fisheries and Oceans Canada, Small Craft Harbours (SCH)

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1.0 NAME OF UNDERTAKING

Harbour Development, Lark Harbour, Newfoundland and Labrador (NL).

2.0 PROPONENT

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3.0 THE UNDERTAKING

3.1 Name of the Undertaking

Harbour Development - Lark Harbour, NL

3.2 Purpose/Rationale/Need for the Undertaking

The proposed undertaking represents the removal of the existing finger pier wharf and construction of a new marginal wharf, launchway, and breakwater. New floating docks and a gangway will be installed and the uplands will be infilled and graded to accommodate access to the new infrastructure. The harbour basin will also be dredged to provide safe access to the new infrastructure.

Recent fish landings and total landed values at Lark Harbour have declined in the last few years due in part to limited access to the existing infrastructure as a result of marine sediment build up

and limited space for users. This project is designed to demolish the existing wharf facility and construct a new facility that will better meet the needs of the current users. As the marine environment surrounding the project site is known to experience strong wave action and heavy ice accumulation, a breakwater will be constructed on the outer face of the new wharf infrastructure to ensure structural longevity and safe access and use of the facility. Completion of this work will ensure that fishers have safe berthing, offloading and storage facilities within the harbour.

4.0 DESCRIPTION OF THE UNDERTAKING

This project involves the removal of a finger pier wharf consisting of timber cribs with a concrete deck. The current infrastructure will be replaced with a new marginal wharf, launchway, breakwater and floating docks. The basin will also be dredged to a depth of -4.0m below LNT.

Scope of work for this project includes the following:

- Demolition of the existing wharf and disposal of the waste material at an approved location.
- Excavation of marine sediments down to bedrock where new infrastructure crib work will be placed and dredging of the harbour basin to -4.0m below LNT. All materials will be reused in the infilling component of the project.
- Development of the uplands (rock fill and granulars) including grading, paving and infilling a 1,700m² area below the high water mark. Total surface area for uplands development is 4,200m².
- Construction of a new marginal wharf complete with a reinforced concrete deck. Wharf construction consists of rock filled timber cribs seated on a rock mattress. Mattress side slopes will be protected with 1 tonne scour protection rock. Ancillary components will consist of treated timber wheelguard, untreated fenders, untreated ladders, type "A" mooring cleats and electrical systems (including power pedestals and lights).
- Construction of a concrete launchway on the west side of the property. Launchway construction will consist of pre-cast concrete panels bolted down to new treated rock filled timber cribs.
- Construction of a new rubble mounded breakwater on the east side of the property measuring approximately 145m in length from the existing shoreline to the seaward end to the toe of the slope. Breakwater construction will consist of polypropylene geogrid at the footprint, rock fill core, filter stone and 3-6 tonne armourstone. Crest elevation of the new breakwater is +4.6m with respect to low normal tide.
- Installation of two (2) 16.5m long floating docks. Docks will be anchored in place using pre-cast concrete blocks and chains. A wooden gangway will be installed to access the docks.

The proposed project is to reconstruct an already existing structure, therefore, alternative locations were not considered. The project will be phased over three (3) construction seasons to accommodate DFO funding.

4.1 Geographical Location

The Project site is located within the community of Lark Harbour approximately 47 km northwest of Corner Brook. The Lark Harbour SCH facility is located in Lark Harbour at coordinates 49° 06' 4.83" N, 58° 21' 49.00" W (Appendix A, Figure 1). The site is accessible by taking Route 450 west from Corner Brook along the south shore of the Humber Arm. It is the last village on Route 450. It sits on the north shore of Lark Harbour which flows out to the Bay of Islands. On the south side of Lark Harbour is Blow Me Down Provincial Park (Appendix A, Photo 4).

4.2 Physical Features

The DFO-SCH property is located in the community of Lark Harbour, on the southern side of the Bay of Islands, approximately 47km northwest of Corner Brook, NL. The property is currently operated by the Harbour Authority of Lark Harbour-York Harbour-Little Port and used for recreational and commercial fishing purposes. Property operations include boat storage, boat maintenance and refuelling activities, storage of miscellaneous fishing supplies, loading and unloading fishing vessels and boat mooring. A topographic map and site photo are provided in Appendix A. The existing SCH facility includes an access road and a finger pier wharf (Appendix A, Photo 2). Nearby the wharf is a private slipway and a few private sheds. There is a partially paved access road leading to the project site. Project footprint and boundaries are outlined in Appendix A, Photo 1.

The project site will be accessed using an existing paved road. Harbour development will all occur within a new footprint. Wharf replacement will mostly occur within a new footprint to accommodate realignment of the wharf and the addition of a protective breakwater. The project footprint below LNT is broken down into the following areas:

- Launchway (including shoreline protection) = 300m²
- Wharf = 950m²
- Breakwater (including out to toe) = 5,800m²
- Basin dredge = 3,150m² (assumes harbour dredge to - 4.0m below LNT)
- Infilling (below LNT) = 1,700m²

The total area below LNT effected by the undertaking (new footprint) is estimated at **11,900m²**.

Total uplands area to be infilled above the high water mark is 2,500m².

Total volume of marine sediments to be removed during basin dredge and crib seat excavation is 7,200m³.

4.2.1 Physical and Biological Environment

4.2.1.1 Physical

The project site is located in the Western Newfoundland Forest ecoregion and is situated within the Serpentine Range Subregion covering 1,451 km². This subregion includes southern Bonne

Bay, Bay of Islands coastal area and the Lewis Hills area. Landscape in this area is often barren or covered with sparse vegetation due to an abundance of serpentine rock. Soils in this subregion range from "eutric brunisols" (basic soils generally found on basic bedrocks such as limestone) in the serpentine barrens, to "humoferric podzols" (brown soils containing mostly inorganic material that occur in relatively dry sites) in the forested areas. The bedrock here is distinct from the rest of the Western Newfoundland Forest in that it has large areas of ophiolites (rocks that were once a part of the oceanic crust). Much of the plateau areas are composed of serpentine rocks that were created over 510 million years ago. The remaining underlying rocks are shales, sandstones, conglomerates, and volcanic rocks about 550 million years old.

This subregion, with its coastal location, has a very humid climate. Generally, the area has some of the most favorable growing conditions on the Island, although in places basic soils restrict what can grow. The Western Newfoundland Forest ecoregion has the highest number of frost-free days on the Island, with typically warm summers and cold winters. The nearest Environment and Climate Change Canada (ECCC) weather station (Corner Brook, 48° 57'N, 57° 57'W) shows an average of 884.5 mm of rain and 401.3 cm of snow annually. Extreme precipitation events of up to 82.8 mm and extreme snow depths of 61.0 cm have been recorded. Temperatures range from an extreme minimum of -31.7°C to an extreme maximum of 35.0°C. The daily average temperature for the Corner Brook weather station is 5.2C (ECCC, 2021).

The predominant vegetation of this subregion includes only a few serpentine hardy plants such as sandwort and alpine campion. Alpine bunchberry, alpine billberry, lapland rosebay, heath moss, thrift, moss campion, butterwort, bluebells, and deer grass grow here. Small valleys below plateaus are characterized by bottlebrush, pitcher plant and maidenhair fern. In coastal areas and protected valleys, vegetation changes to forest cover dominated by balsam fir with wood ferns and feathermoss floor covering. The immediate upland area of the project site is mostly gravel covered, gently sloped and sparsely vegetated with grass, although tree vegetation is present further inland (Appendix A, Photos 2, 3, 4, 5 & 6).

The project site is located approximately 0.65km northwest of Blow Me Down Provincial Park (Appendix A, Photo 4). This is a smaller park located on Route 450 west of Corner Brook and the Trans-Canada Highway, on a small peninsula between Lark Harbour and York Harbour at the mouth of the Bay of Islands. Here you'll find a Dryopteris-Hylocomium-Balsam Fir forest with Red Maple being common and Yellow Birch found in protected valleys. The Blow Me Down Mountains cover 200 km² and rise to a height of 750 meters at Round Hill and has a coastline measuring 2.26km². The mountains contain some of the best exposures of ophiolitic rock on earth. These are sections of the Earth's oceanic crust and upper mantle that have been uplifted and exposed, primarily by the glacier carved gulches in this area.

Common wildlife found in this ecoregion include caribou, moose, mink, snowshoe hare, lynx, black bear, red fox, beaver, muskrat and otter. Little brown bat, eastern chipmunk, masked shrew and the red squirrel also are known to find habitat in this ecoregion.

Birds found in forested areas include the bald eagle, osprey, yellow-bellied flycatcher, American robin, and tree swallow. A variety of finches, such as white-winged crossbill and pine grosbeak,

also occur in the forests, along with a number of warblers: blackpoll warbler, black-and-white warbler, ovenbird, and northern waterthrush, for example (PAA, 2008).

In shrublands, marshes, bogs, and other open areas song sparrow, mourning warbler, and Lincoln's sparrow find habitat. Aquatic birds include spotted sandpiper, black duck, red-breasted merganser, and common tern. Rock and willow ptarmigan inhabit the higher elevations that occur inland along the edge of the Long Range Mountains. A seabird colony containing more than 500 pairs of black-legged kittiwakes is located in the Bay of Islands (PAA, 2008).

Rivers and ponds in this ecoregion are occupied by arctic char, Atlantic salmon, brook trout, rainbow smelt, American eel, black-spotted stickleback, three-spine stickleback, and nine-spine stickleback. There is only one amphibian and no reptiles recorded for this subregion. The green frog, an introduced species, inhabits small quiet ponds and marshes in low numbers (PAA, 2008).

4.2.1.2 Biological

A search of the Atlantic Canada Conservation Data Centre (ACCDC) database was conducted on December 6, 2022 that produced a list of rare / unique species (i.e., plants and animals) within a 5 km buffer zone (standard ACCDC procedure) of the site of the proposed work. All species were cross-referenced with Schedule 1 of the Species at Risk Act (SARA); No species were reported within this buffer.

A search of the Government of Canada Open Maps database was conducted on December 7, 2022 that produced a list of rare/unique species (i.e., plants and animals) with distribution ranges near the site of the proposed work. All species were cross-referenced with Schedule 1 of the Species at Risk Act (SARA). Results showed the following Schedule 1 Species at Risk with distribution ranges that are within 5 km of the project site: Red Crossbill (*Loxia curvirostra* percna), Short-eared Owl (*Asio flammeus*), Mountain Holly Fern (*Polystichum scopulinum*), Olive-sided Flycatcher (*Contopus cooperi*), Red knot (*Calidris canutus rufa*), Rusty Blackbird (*Euphagus carolinus*), Bank Swallow (*Riparia riparia*) and Gypsy Cuckoo Bumble Bee (*Bombus bohemicus*).

A search of the DFO Aquatic Species at Risk database was conducted on December 7, 2022 which produced a list of aquatic species at risk and the presence of their critical habitat potentially found within a 1km buffer (standard NASAR procedure) of the site of the proposed work. Results showed that the project site is within the distribution range of the following aquatic species at risk: Fin Whale (*Balaenoptera physalus*), Blue Whale (*Balaenoptera musculus*), Spotted Wolffish (*Anarhichas minor*), Atlantic Wolffish (*Anarhichas lupus*), North Atlantic Right Whale (*Eubalaena glacialis*), Leatherback Sea Turtle (*Dermochelys coriacea*), White Shark (*Carcharodon carcharias*) and Northern Wolffish (*Anarhichas denticulatus*).

Table 4.1 Species at Risk Distribution Ranges within 5km of the Project Site

| Common Name | Scientific Name | Provincial Ranking | COSEWIC Ranking | SARA Ranking |
|-------------|-----------------|--------------------|-----------------|--------------|
|-------------|-----------------|--------------------|-----------------|--------------|

| | | | | |
|-------------------------|---------------------------------|------------------------------|-----------------|-----------------|
| Red Crossbill | <i>Loxia curvirostra percna</i> | Endangered | Endangered | Endangered |
| Short Eared Owl | <i>Asio flammeus</i> | Vulnerable | Special Concern | Special Concern |
| Mountain Holly Fern | <i>Polystichum scopulinum</i> | None | Threatened | Threatened |
| Olive-Sided Flycatcher | <i>Contopus cooperi</i> | Threatened | Special Concern | Threatened |
| Red knot | <i>Calidris canutus rufa</i> | Endangered | Special Concern | Endangered |
| Rusty Blackbird | <i>Euphagus carolinus</i> | Vulnerable (Non-breeding) | Special Concern | Special Concern |
| Bank Swallow | <i>Riparia riparia</i> | None | Threatened | Threatened |
| Gypsy Cuckoo Bumble Bee | <i>Bombus bohemicus</i> | None | Endangered | Endangered |

Table 4.2 Aquatic Species at Risk Distribution Ranges within 1km of the Project Site

| Common Name | Scientific Name | COSEWIC/SARA Ranking |
|----------------------------|--------------------------------|----------------------|
| Fin Whale | <i>Balaenoptera physalus</i> | Special Concern |
| Blue Whale | <i>Balaenoptera musculus</i> | Endangered |
| Spotted Wolffish | <i>Anarhichas minor</i> | Threatened |
| Atlantic Wolffish | <i>Anarhichas lupus</i> | Special Concern |
| North Atlantic Right Whale | <i>Eubalaena glacialis</i> | Endangered |
| Leatherback Sea Turtle | <i>Dermochelys coriacea</i> | Endangered |
| White Shark | <i>Carcharodon carcharias</i> | Endangered |
| Northern Wolffish | <i>Anarhichas denticulatus</i> | Threatened |

4.3 Construction

Commencement of this project is subject to DFO-SCH operational priorities and funding. Replacement of the wharf and construction of the breakwater is expected to require 35 months to complete. The first physical construction on site will be during site preparation and demolition which is expected to commence in the summer of 2023 pending funding and approvals.

Construction activities will include:

- Demolition, removal and reconstruction of the finger pier wharf. This will be accomplished using machine mounted equipment (e.g., pneumatic hammer). Demolished materials will be removed from the site using heavy equipment and transported to an approved waste

disposal location (e.g. regional landfill). The new wharf will be constructed in a new footprint to accommodate a new configuration (Appendix A, Photo 1). Concrete for the new finger pier wharf and associated structures will be placed on-site. Armor stone will be placed using an excavator.

- The existing gravel area adjacent to the wharf access road will be utilized for a construction lay-down area.
- Equipment and tools will be transported to the project site using local roads.
- Waste material (including treated timber waste) will be transported from the project site and disposed of at an approved waste disposal location as per guidance received from the province.

The most probable sources of potential pollutants are related to the use of equipment. Accidental spills of equipment fuel/oil, sedimentation from disturbances to shoreline areas and establishment of laydown area are also a possibility. Other sources of potential pollutants include solid waste from construction and domestic waste from work crews.

DFO-SCH had the treated wharf timber sampled and are awaiting the analytical results to provide to the NL Department Environment, Climate Change and Municipalities, Pollution Prevention Division to determine if the timber is suitable for landfill disposal. Timber samples will be analyzed for benzo(a)pyrene, m/p-cresol, total cresol, and pentachlo-rophenol using the Toxicity Characteristic Leaching Procedure (TCLP). Based on the results, the Province will provide approval and instruction for proper disposal at a designated facility.

The project will be assessed pursuant to Section 67 of the *Canadian Environmental Assessment Act* (2012) or Section 82 of the *Impact Assessment Act*. All mitigations prescribed as part of that process will be implemented during project activities. The following mitigation measures will also be utilized to minimize potential interactions with the environment:

Fish / Fish Habitat and Water

- A Request for Review for the project will be submitted to Fisheries and Oceans Canada, Fisheries Protection Program.
- Minimize duration of in-water work. Limit the duration of in-water works to only activity related to the above noted project elements so that it does not diminish the ability of fish to carry out one or more of their life processes (spawning, rearing, feeding, migrating),
- Conduct in-water undertakings and activities during periods of low tide and low wind/wave conditions.
- Rock material should not be end dumped; rather, it should be placed on station using an excavator or similar equipment.
- No temporary or permanent increase in the proposed project footprint below the high water mark.
- Operate machinery on land in stable dry areas, or from stable floating platforms.
- Plan activities near water such that materials such as paint, primers, blasting abrasives, rust solvents, degreasers, grout, or other chemicals do not enter the watercourse.
- All materials placed in or near water should be clean and free of fines, concrete or any other deleterious substance and of sufficient size to resist displacement by wave action.

- Develop a response plan that is to be implemented immediately in the event of a sediment release or spill of a deleterious substance and keep an emergency spill kit on site.
- Ensure that building material used in the watercourse has been handled and treated in a manner to prevent the release of leaching of substances into the water that may be deleterious to fish.
- Implement erosion and sediment control measures (sediment booms/curtains) for the site that minimizes risk of sedimentation of the waterbody during all phases of the project.
- If there is any run-off of concrete or associated water, it should be directed to a drainage control device such as a settling pond and appropriately managed. No concrete run-off is allowed to enter the water.
- Dispose all demolition material, especially any demolished timber and concrete, at an approved waste disposal site.
- When works are completed, shoreline and approaches should be restored to original condition.
- Be aware of AIS species in the area and take precautions with respect to any vessel traffic and gear movement between affected and unaffected areas to prevent introductions and spread (<https://www.dfo-mpo.gc.ca/species-especies/ais-eae/index-eng.html>):
 - All equipment used in water should be cleaned, drained and dried on land before and after use for the purposes of preventing the introduction or spread of aquatic invasive/non-indigenous species; and
 - Report any AIS and non-indigenous species to DFO at 1-855-862-1815 or AISEAE.XNFL@dfo-mpo.gc.ca.

Wildlife

- There is a zero tolerance policy regarding the harassment, disturbance, and feeding of wildlife whilst working on the project.
- Local speed limits should be adhered to in order to minimize negative effects to wildlife.
- Work site boundaries will be fenced off to prevent inadvertent loss or alteration of habitat outside of the project footprint and fenced to deter wildlife from entering the site, minimizing human-wildlife interactions.
- If there are large flocks of marine or migratory birds near the project during sound producing activities work may need to be paused to allow birds to resume normal activity if birds continually flush or appear agitated by the activities.
- Through site induction and toolbox sessions, project personnel will be educated on the wildlife (particularly species at risk) expected to occur in the area as outlined in the project Significance of Environmental Effects Determination (SEED) document.
- All vehicles on site, when not in use, must be locked and all windows must be closed.

Species at Risk

- All work to be conducted in accordance with the *Species at Risk Act*, which outlines that no protected species, their residence and critical habitat be moved or obstructed during the construction or operation phase of the project.
- Species listed under the *Species at Risk Act* shall not be approached throughout the construction or operation phase of the project.
- All construction materials shall be removed from the site upon project completion.
- If species at risk are reported, contractor will consult with the SCH Project Manager and determine potential impacts to species at risk as well as perform any modifications to construction activities that may be required to protect species at risk.

Birds (including MBCA) and Bird Habitat

- The contractor is responsible to ensure a spill kit is on site. Equipment within the spill kit should be adequate for the proposed project. In case of a spill, the contractor should contact Environment Canada at 1-800-563-9089.
- All construction equipment must be fitted with standard and well maintained noise suppression devices. Appropriate dust suppression methods are to be employed when required. Air filters should be used to minimize exhaust emissions.
- Vegetation removal should be avoided or kept to a minimum.
- Migratory birds, their eggs, nests and young are protected under the MBCA. All work to be conducted in accordance with the Migratory Birds Convention Act (MBCA), which outlines that no migratory bird nests or eggs will be moved or obstructed during the construction or operation phase of the project. It is recommended that vegetation clearing not take place during the breeding season until fledglings have left parental territories.
- Concentrations of seabirds, waterfowl, or shorebirds shall not be approached when anchoring equipment, accessing wharves, or ferrying supplies.
- All construction materials shall be removed from the site upon project completion.

Soil (surface and subsurface)

- Work should be scheduled to avoid periods of heavy precipitation. Erosion control structures (temporary matting, geotextile filter fabric) are to be used, as appropriate, to prevent erosion runoff or sediment laden water during the construction phase.
- Any exposed soil must be minimized by limiting the area exposed at any one time and by limiting the time that any one area is exposed. All stockpiled soil must be covered and/or dyked to prevent erosion or runoff of sediment-laden water from leaving the site. Whenever possible, exposed soil should be replanted or sodded to ensure soil stabilization.
- All wastes must be recycled where possible or otherwise disposed of appropriately.
- Fill material is to be free of contaminants and from an approved quarry site.
- Machinery must be checked for leakage of lubricants or fuel and must be in good working order. Refueling must be done at least 100 m from any waterbody. Basic petroleum spill cleanup equipment should be on site. All spills or leaks should be promptly contained, cleaned up and reported to the 24 hour environmental emergencies reporting system (1-800-563-9089).

- Containers of petroleum products or chemicals that may be required on site will be tightly sealed against corrosion and rust, and surrounded by an impermeable barrier in a dry, water-tight building or shed with an impermeable floor.
- Waste oils and used lubricating oil will be retained in a tank or closed container and disposed of by a company licensed for handling and disposing of used oil products.
- Mechanical inspections will be conducted routinely on equipment to search for leaks. Leaks will be repaired immediately.

Water and Aquatic Species and Habitat

- Reduce duration of in-water work wherever possible.
- Construction activities that involve in-water work will be conducted during periods of low flow, or at low tide, to further reduce the potential for effects on water quality.
- Erosion and sediment control measures (sediment curtains) will be implemented to minimize the risk of sedimentation to the marine environment.
- Construction material and debris are not to become waterborne. Do not dispose of any materials or waste into marine environment.
- Cement will be poured and formed away from the shoreline, to reduce the potential of runoff or an accidental release of concrete mixture to the marine environment.
- Any hazardous materials produced as a result of this project are to be transported off-site for disposal/treatment at an approved waste handling facility, pursuant to applicable provincial and federal regulations/legislation.
- All equipment to be used in or over the marine environment is to be free from leaks or coating of hydrocarbon-based fluids and/or lubricants harmful to the environment. Hoses and tanks are to be inspected on a regular basis to prevent fractures and breaks.
- On site, crews must have emergency spill clean-up equipment adequate for the activity involved, and it must be on site. Spill equipment will include, as a minimum, at least one 250 L (i.e., 55 gallon) over pack spill kit containing items to prevent a spill from spreading; absorbent booms, pillows, and mats; rubber gloves; and plastic disposal bags. All spills or leaks must be promptly contained, cleaned up, and reported to the 24-Hour Environmental Emergencies Report System (1-800-565-1633). Note that this applies to spills to the aquatic environment or anything on land over 70 liters (L).
- All materials placed in or near water should be clean and free of fines or any other deleterious substance and of sufficient size to resist displacement by wave action. Dredge material may be re-used for the laydown area provided it is placed/capped within a rock berm to avoid sedimentation.
- Rock material should not be end dumped; rather, it should be placed on station using an excavator or similar equipment.
- When works are completed, shoreline and approaches should be restored to original condition.

Vegetation

- Disturbed areas will be restored through manual re-seeding.
- Construction fencing will be placed on site to avoid any disturbance to adjacent vegetated areas outside of the project footprint.

Air Quality and Sensory Disturbance

- All construction equipment must be fitted with standard and well maintained noise suppression devices. Appropriate dust suppression methods are to be employed when required. Air filters should be used to minimize exhaust emissions.
- Construction equipment will be turned off when not in use, where practical, to minimize idling.
- Project activities must be carried out during times acceptable to local authorities and smaller, less disruptive equipment will be used where possible.

Health, Social or Economic Conditions

- Site access must be restricted to authorized personnel only.
- Project employees will be equipped with the proper Personal Protective Equipment for Project tasks, and work will comply with provincial occupational health and safety regulations.
- Develop a response plan that is to be implemented in the event of an accidental sediment release or spill of a deleterious substance and keep an emergency spill kit on site with staff trained in its use.
- On site, crews must have emergency spill clean-up equipment adequate for the activity involved, and it must be on site. Spill equipment will include, as a minimum, at least one 250 L (i.e., 55 gallon) over pack spill kit containing items to prevent a spill from spreading; absorbent booms, pillows, and mats; rubber gloves; and plastic disposal bags. All spills or leaks must be promptly contained, cleaned up, and reported to the 24-Hour Environmental Emergencies Report System (1-800-565-1633). Note that this applies to spills to the aquatic environment or anything on land over 70 litres (L).
- Weather conditions are to be assessed on a daily basis to determine the risk of extreme weather in the project area. Avoid work during periods which Environment and Climate Change Canada has issued rainfall or wave warning for the work area.
- Project personnel will receive training or be provided training material to minimize human-Polar Bear interactions and ensure awareness and safe response to Polar Bear occurrences on site.

4.4 Operation

The new facility will be utilized by local and transient fishers and recreational boaters for berthing, offloading and storage. The facility will be overseen by a DFO-SCH Area Manager and managed, operated and maintained by a local Harbour Authority (not-for profit).

Routine maintenance and repair projects will be carried out by DFO-SCH on an as-required basis over the estimated life of the new infrastructure (wharf = 35yrs., breakwater = 75yrs.).

Reasonably foreseeable pollutants occurring during the operational phase of the proposed project are limited to accidental discharges of fuel or oil and solid waste disposal. DFO-SCH's Environmental Management Plan (EMP) and site-specific Emergency Response Plans cover operational aspects of environmental management at SCH facilities and constitute the basis for the environmentally responsible management of harbour operations (i.e., fuelling, waste disposal,

activities at the property and on the water). The proposed physical works will adhere to these environmental management standards established by DFO-SCH.

Potential resource conflicts are not anticipated as a result of the operation of the proposed project.

4.5 Occupations

All construction work will be carried out by a successful contractor overseen by DFO-SCH. Contract work is expected to take 140 weeks to complete beginning September 2023 (pending funding and approvals). Approximately 16 contract employees and 3 DFO-SCH employees will be required for construction and project management of the DFO-SCH facility at Lark Harbour. The project will be operated by DFO-SCH staff with on site representation and volunteer management support from the local Harbour Authority of Lark Harbour.

The following list¹ outlines occupations which may be employed during the design and construction period:

- 1 - Project Manager – 0711 - Contractor/Construction
- 1 - Office Administrator – 1221 - Contractor/Construction
- 1 - Project Supervisor/Foreman – 7302 - Contractor/Construction
- 1 - OHS Representative – 2263 - Contractor/Construction
- 2 - Carpenters – 7271 - Contractor/Construction
- 6 - Laborers – 7611 - Contractor/Construction
- 1 - Surveyors – 2154 - Contractor/Construction
- 4 – Equipment Operator – 7521 - Contractor/Construction
- 1 - Site Inspector – 2264 - Construction
- 1 - Professional Engineer – 0211 - Entire Project
- 1 - Engineering Technologist – 2231 - Construction Design (Engineering)
- 1 - Office Administrator – 1221 - Entire Project (Engineering)

1 - This list represents only an approximation of the number and type of occupations that may be produced as a result of the proposed project. Actual occupations created as a result of the proposed project will ultimately be determined by the successful contractor which was not yet awarded at the time of this report submission. Occupations are expected to be comparable to those created for similar construction projects throughout the Province.

4.6 Project Related Documents

Project-related documents already generated by or for the proponent are as follows:

- Significance of Environmental Effects Determination (SEED) (IAA)
- Permits and Approvals listed in Section 5.0 of this document.

5.0 APPROVAL OF THE UNDERTAKING

Table 5.1 is a list of the expected permits and approvals required for this project.

Table 5.1 Expected Permits and Regulatory Authorities

| Approvals/ Permits | Regulatory Authority |
|--|--|
| NL Environmental Assessment Registration ² | NL Department of Environment, Climate Change and Municipalities, Environmental Assessment Division |
| DFO - Request for Review (RFR) ³ | DFO, Fish and Fish Habitat Protection Program |
| Permit to Alter a Body of Water ⁴ | NL Department of Environment, Climate Change and Municipalities, Water Resources Division |
| Approval under <i>Canadian Navigable Waters Act</i> ⁵ | Transport Canada, Navigation Protection Program |
| Approval to Dispose of Treated Timber Waste ⁶ | NL Department of Environment, Climate Change and Municipalities, Pollution Prevention Division |
| <i>Canadian Impact Assessment Act</i> Registration ⁷ | Impact Assessment Agency of Canada |
| Municipal Approval Letter ⁸ | Town of Lark Harbour |

Notes:

- 2 - This document; provincial permits are expected to be issued following release from further environmental assessment.
- 3 - An RFR was submitted to DFO Fish and Fish Habitat Protection Program.
- 4 - An application was submitted to the Province on February 8, 2023.
- 5 - As per the *Canadian Navigable Waters Act* (CNWA) for Works on non-scheduled waters, this project was posted to the CNWA Public Registry and in the community of Lark Harbour for a duration of 30-days.
- 6 - Timber sampling was conducted and results will be submitted to the Province for approval to dispose at an designated facility.
- 7 - This project was posted on the public *Impact Assessment Act* Registry on February 1, 2023 for a 30 day comment period.
- 8 - A letter of project approval was obtained from the town council on November 29, 2022.

6.0 ABORIGINAL CONSULTATION

PSPC and Transport Canada carried out an Indigenous Assessment on behalf of DFO-SCH at Lark Harbour SCH in accordance with DFO-SCH's Preliminary Duty to Consult Assessment Guide. This Guide is intended to provide basic information to DFO-SCH and to assist its Program Managers in making informed, prudent decisions that take into account statutory and other legal obligations, as well as policy objectives, related to Indigenous and treaty rights. The Supreme Court of Canada has held that the Crown has a duty to consult and, where appropriate, accommodate when the Crown contemplates conduct that might adversely impact potential or established Indigenous or treaty rights. While there may be other reasons to undertake consultations (e.g., good governance, policy-based, etc.), three elements are required for a legal duty to consult to arise:

1. There is contemplated or proposed Crown conduct.
2. The Crown has knowledge of potential or established Indigenous or treaty rights.

3. The potential or established Indigenous or treaty rights may be adversely impacted by the Crown.

Based on a preliminary assessment conducted by PSPC, on behalf of DFO-SCH and in conjunction with Transport Canada, the legal duty to consult does not exist in this case as; the Crown does not have knowledge of potential or established Indigenous or treaty rights in the Lark Harbour area; and there are no potential or established Indigenous or treaty rights that may be adversely impacted by the Crown in completing the Lark Harbour project.

Given the small scale, the temporal and spatial bounds and the current environmental setting of the proposed works, Indigenous Knowledge was not sought for this project.

A contractor will be awarded the work through a federal contract bidding process with no discrimination to gender, race or age.

7.0 SCHEDULE

The proposed project is expected to commence in the Fall of 2023, pending funding and approvals and construction would occur over a 35 month period. This date has been chosen in order to successfully complete the project within the allocated DFO-SCH funding window.

8.0 FUNDING

The total cost estimate for all phases of the proposed project, as provided by the proponent, is approximately **\$10.0 million** dollars (Canadian). Funds will be provided by Small Craft Harbours, Fisheries and Oceans Canada.

9.0 REFERENCES

Environment and Climate Change Canada (ECCC). 2021. Canadian Climate Normals 1981-2010. Corner Brook Climate Station, Newfoundland and Labrador. Accessed March 9, 2023. [Canadian Climate Normals 1981-2010 Station Data - Climate - Environment and Climate Change Canada \(weather.gc.ca\)](https://weather.gc.ca/CanadianClimateNormals1981-2010StationData-Climate-EnvironmentandClimateChangeCanada)

Important Bird Areas Canada (2020) Map Viewer. Accessed March 9, 2023. <http://www.ibacanada.ca/mapviewer.jsp?lang=en>

Wikipedia. Lark Harbour (2023) Accessed on March 9, 2022. [Lark Harbour - Wikipedia](#)
Parks Canada, 2023. Blow Me Down Provincial Park. Accessed February 16, 2023. [Blow Me Down Provincial Park - ParksNL](#)

Protected Areas Association of Newfoundland and Labrador, 2008. Western Newfoundland Forest – Serpentine Range Subregion. Accessed February 23, 2023. [Island 1a serpentine range -edits nov 2008.cdr \(parksnl.ca\)](#)

Wikipedia. Lark Harbour (2021) Accessed on February 6, 2023. [Lark Harbour - Wikipedia](#)

Project Registration
Harbour Redevelopment
Lark Harbour, NL

10.0 SIGNATURES

Environmental Assessment Representative

Date

APPENDIX A
Project Location Maps and Site Photos



Figure 1. Project Location

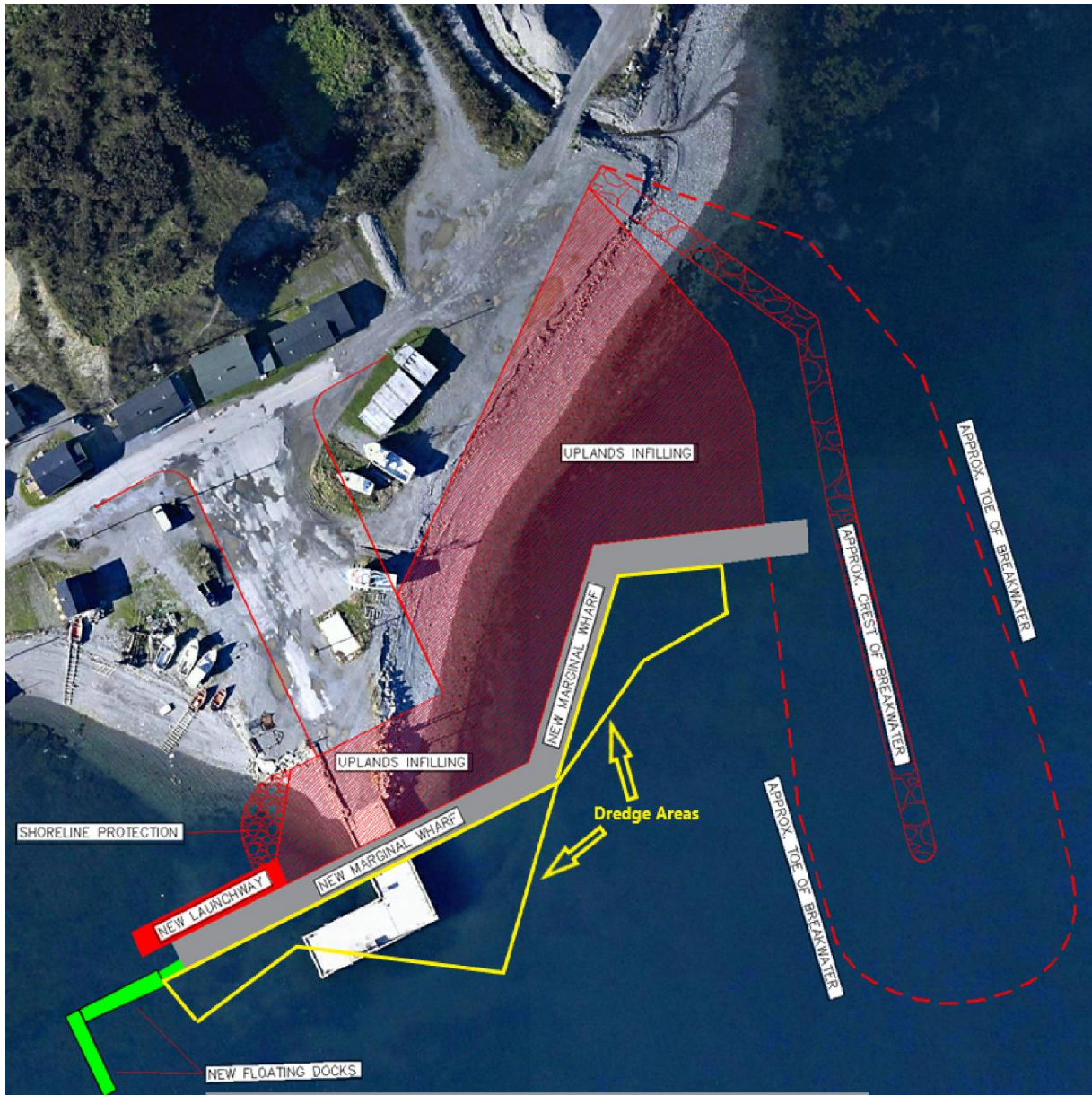


Photo 1. Project Components



Figure 2. Map of Project Access Route

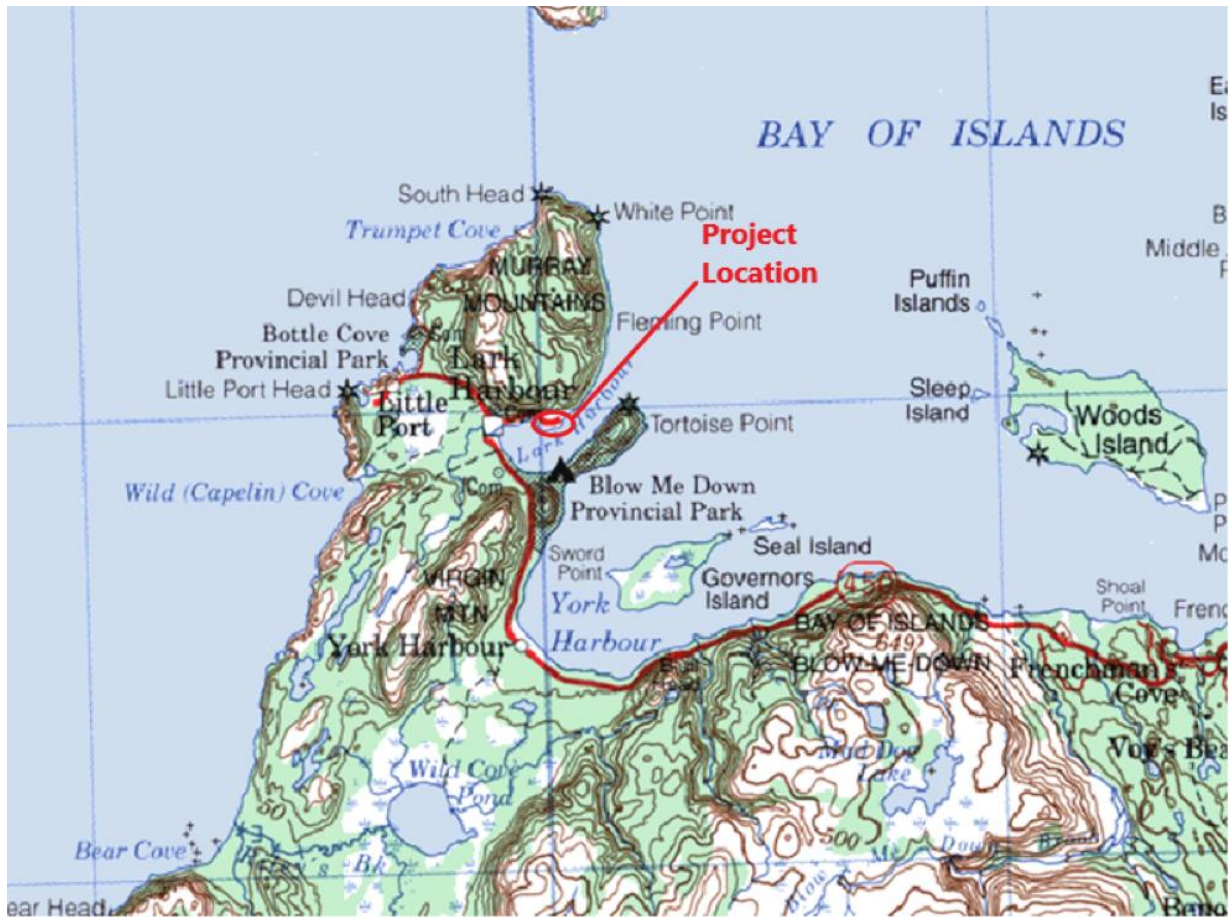


Figure 3. Topographic Map of Project Area



Photo 2. Aerial Photo of Project Site



Photo 3. Aerial Photo of Project Site



Photo 4. Aerial Photo of Project Site



Photo 5. Aerial Photo of Project Site



Photos 6. Aerial Photo of the Project Site

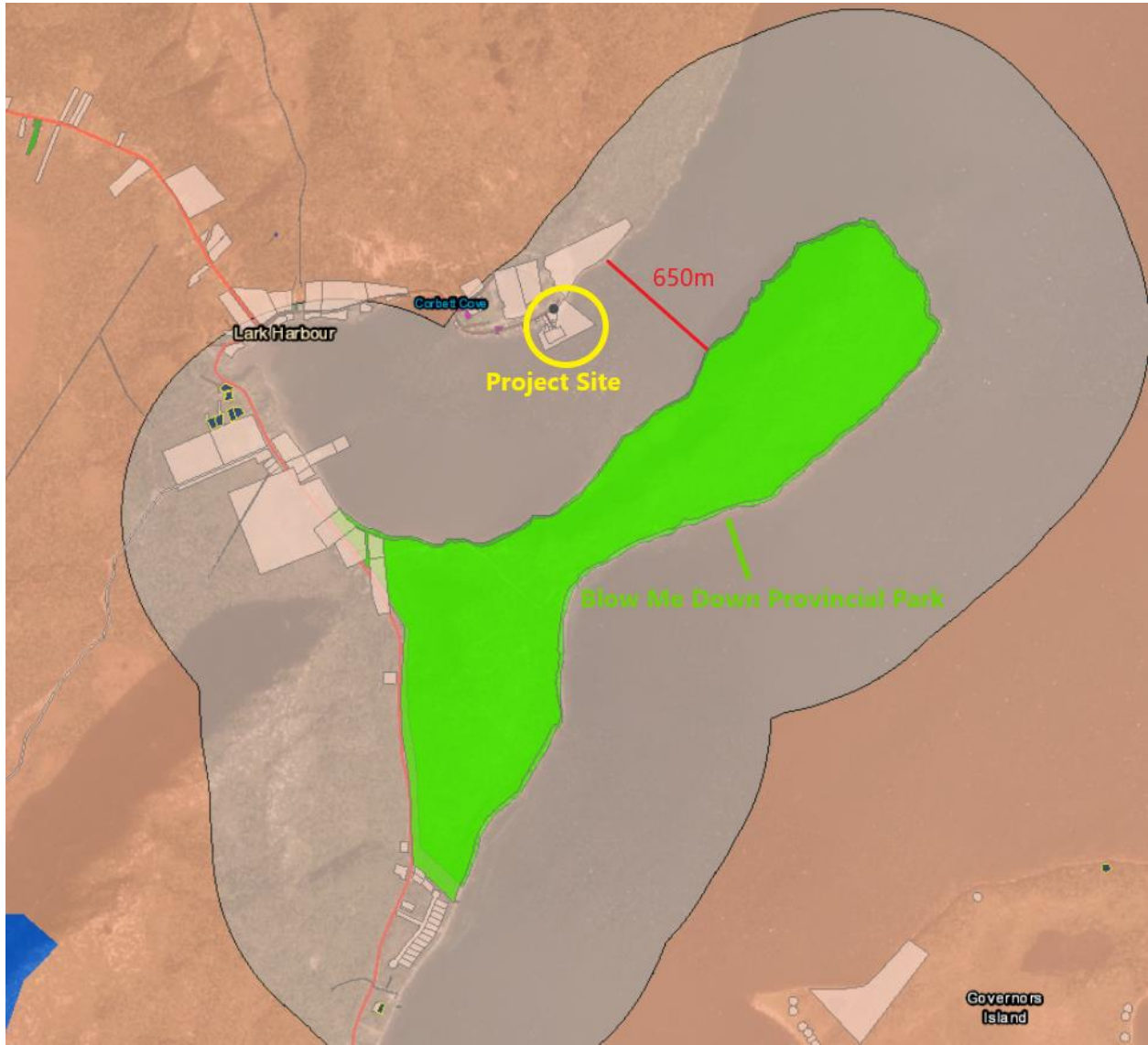
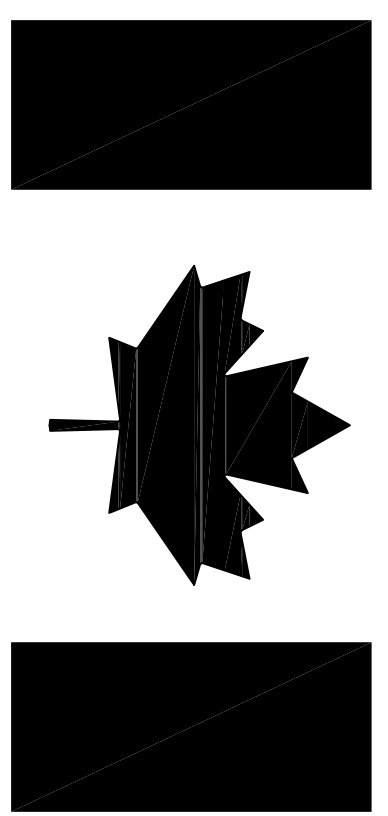


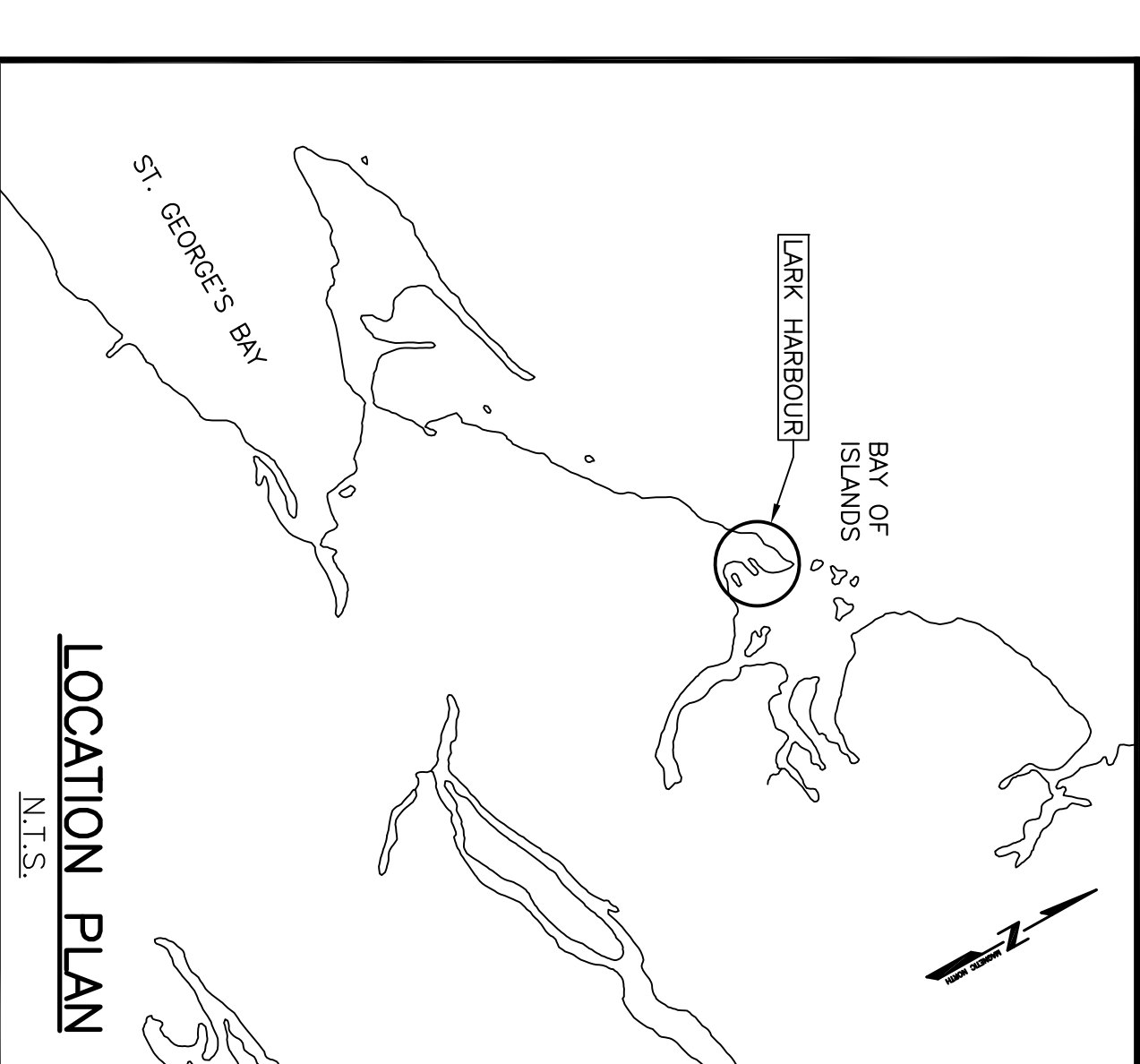
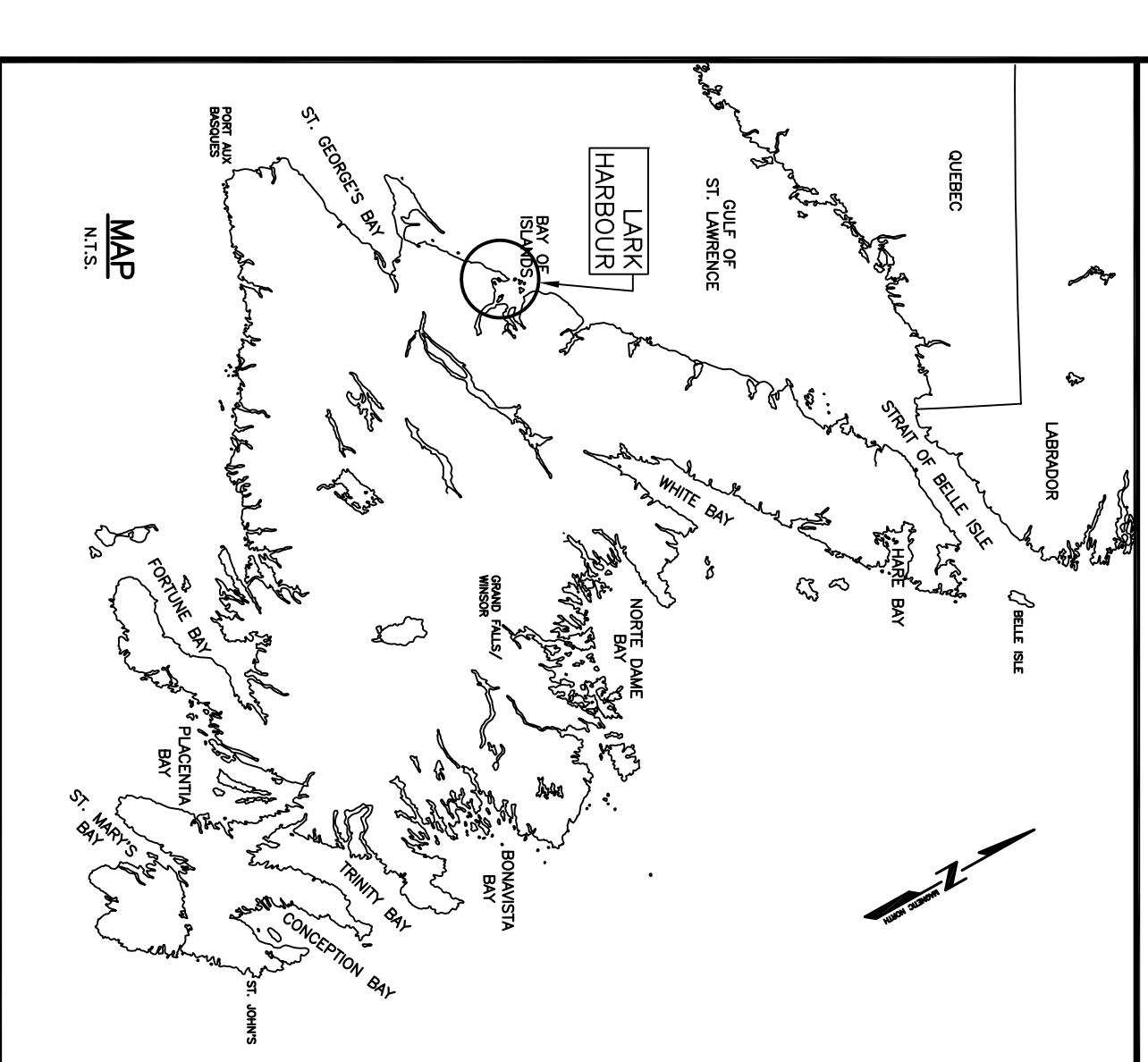
Photo 4. Location of Project near Blow Me Down Provincial Park

APPENDIX B
New Site Plan Drawings



FISHERIES AND OCEANS
CANADA

SMALL CRAFT HARBOURS



HARBOUR DEVELOPMENT LARK HARBOUR NEWFOUNDLAND AND LABRADOR

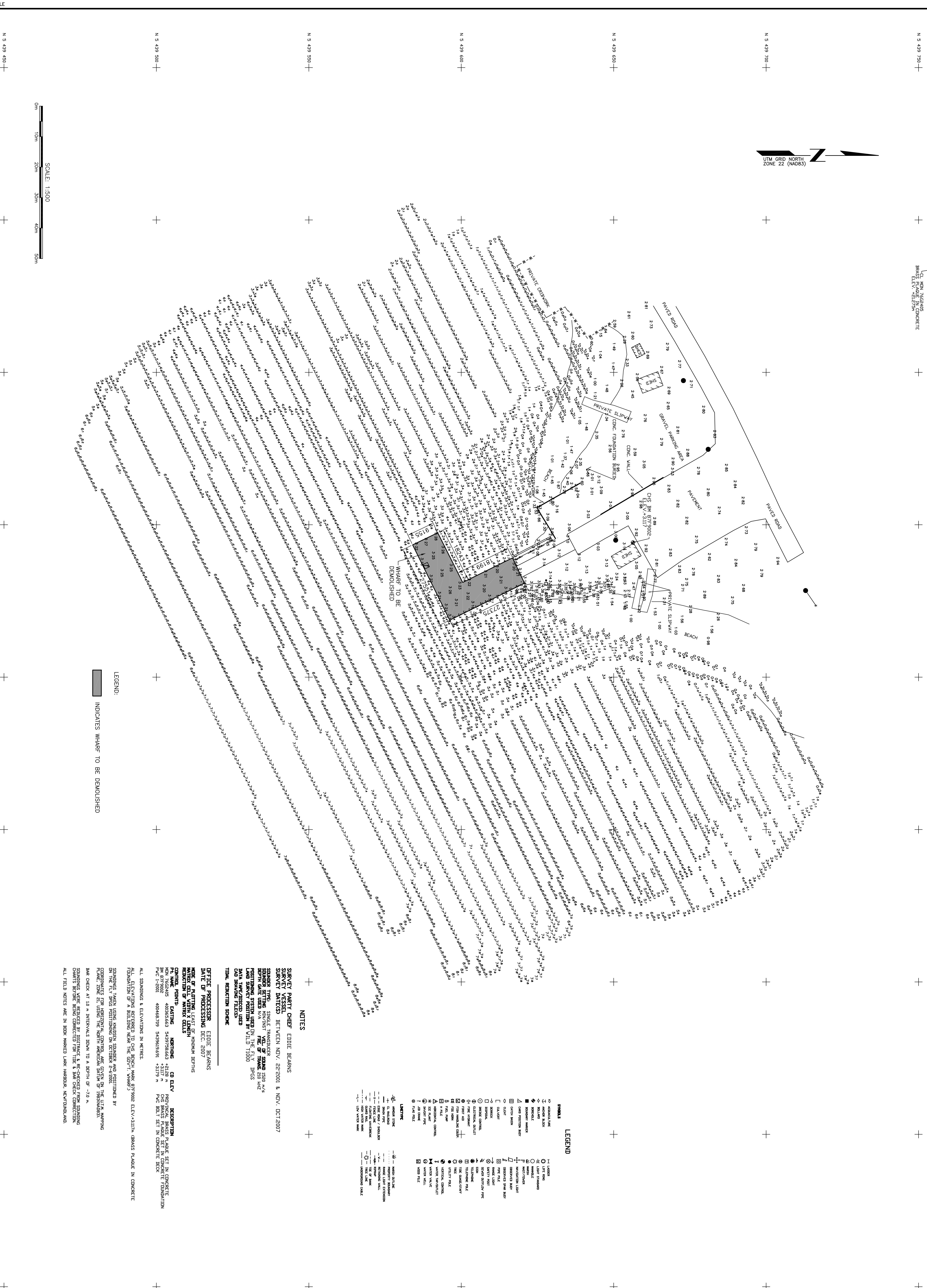
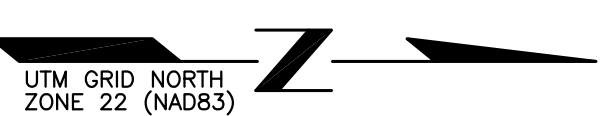
PROJECT No. XXXXXXXX
ISSUED FOR REVIEW

LIST OF DRAWINGS:

| | | | |
|----------|---------------------------------|-----------|--|
| C1 OF 18 | SOUNDING AND TOPOGRAPHIC SURVEY | C10 OF 18 | NEW BREAKWATER SECTIONS |
| C2 OF 18 | DEMOLITION PLAN | C11 OF 18 | NEW BREAKWATER SECTIONS |
| C3 OF 18 | DEMOLITION DETAILS | C12 OF 18 | NEW LAUNCHWAY PLAN AND SECTION |
| C4 OF 18 | NEW SITE PLAN | C13 OF 18 | NEW LAUNCHWAY SECTIONS AND DETAILS |
| C5 OF 18 | NEW WHARF PLAN | C14 OF 18 | ANCHORS FOR FLOATING DOCKS |
| C6 OF 18 | NEW WHARF LAYOUT | C15 OF 18 | FLOATING DOCKS PLANS, ELEVATIONS AND DETAILS |
| C7 OF 18 | NEW WHARF ELEVATIONS | C16 OF 18 | FLOATING DOCKS PLANS, ELEVATIONS AND DETAILS |
| C8 OF 18 | NEW WHARF SECTIONS | C17 OF 18 | FLOATING DOCK DETAILS |
| C9 OF 18 | NEW WHARF DETAILS | C18 OF 18 | GANGWAY DETAILS |



NOTES:
 1. ALL ELEVATIONS ARE IN METRES
 2. UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.



LEGEND

| | | | |
|---|-------------------------|---|-------------------------|
| — | ADJACENT LINE | — | ADJACENT LINE |
| ○ | ASPHALT DRIVE | — | ASPHALT DRIVE |
| ■ | BRICK WALL | — | BRICK WALL |
| ▩ | CONCRETE FUNDAMENTATION | — | CONCRETE FUNDAMENTATION |
| ▧ | GRAVEL PARKING DRIVE | — | GRAVEL PARKING DRIVE |
| ▦ | PRIVATE DRIVE | — | PRIVATE DRIVE |
| ▨ | PRIVATE SLIPWAY | — | PRIVATE SLIPWAY |
| ▫ | GRAVEL PARKING DRIVE | — | GRAVEL PARKING DRIVE |
| ▬ | CONC. FUNDAMENTATION | — | CONC. FUNDAMENTATION |
| ▭ | CONC. FUNDAMENTATION | — | CONC. FUNDAMENTATION |
| ▮ | GRAVEL PARKING DRIVE | — | GRAVEL PARKING DRIVE |
| ▯ | PRIVATE DRIVE | — | PRIVATE DRIVE |
| ▰ | PRIVATE SLIPWAY | — | PRIVATE SLIPWAY |
| ▱ | GRAVEL PARKING DRIVE | — | GRAVEL PARKING DRIVE |
| ▲ | CONC. FUNDAMENTATION | — | CONC. FUNDAMENTATION |
| △ | CONC. FUNDAMENTATION | — | CONC. FUNDAMENTATION |
| ▴ | GRAVEL PARKING DRIVE | — | GRAVEL PARKING DRIVE |
| ▵ | PRIVATE DRIVE | — | PRIVATE DRIVE |
| ▶ | PRIVATE SLIPWAY | — | PRIVATE SLIPWAY |
| ▷ | GRAVEL PARKING DRIVE | — | GRAVEL PARKING DRIVE |
| ▸ | CONC. FUNDAMENTATION | — | CONC. FUNDAMENTATION |
| ▹ | CONC. FUNDAMENTATION | — | CONC. FUNDAMENTATION |
| ► | GRAVEL PARKING DRIVE | — | GRAVEL PARKING DRIVE |
| ▻ | PRIVATE DRIVE | — | PRIVATE DRIVE |
| ▼ | PRIVATE SLIPWAY | — | PRIVATE SLIPWAY |
| ▽ | GRAVEL PARKING DRIVE | — | GRAVEL PARKING DRIVE |
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| ▿ | CONC. FUNDAMENTATION | — | CONC. FUNDAMENTATION |
| ◀ | GRAVEL PARKING DRIVE | — | GRAVEL PARKING DRIVE |
| ▶ | PRIVATE DRIVE | — | PRIVATE DRIVE |
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| ▶ | GRAVEL PARKING DRIVE | — | GRAVEL PARKING DRIVE |
| ◀ | CONC. FUNDAMENTATION | — | CONC. FUNDAMENTATION |
| ▶ | CONC. FUNDAMENTATION | — | CONC. FUNDAMENTATION |
| ◀ | GRAVEL PARKING DRIVE | — | GRAVEL PARKING DRIVE |
| ▶ | PRIVATE DRIVE | — | PRIVATE DRIVE |
| ◀ | PRIVATE SLIPWAY | — | PRIVATE SLIPWAY |
| ▶ | GRAVEL PARKING DRIVE | — | GRAVEL PARKING DRIVE |
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| ▶ | CONC. FUNDAMENTATION | — | CONC. FUNDAMENTATION |
| ◀ | GRAVEL PARKING DRIVE | — | GRAVEL PARKING DRIVE |
| ▶ | PRIVATE DRIVE | — | PRIVATE DRIVE |
| ◀ | PRIVATE SLIPWAY | — | PRIVATE SLIPWAY |
| ▶ | GRAVEL PARKING DRIVE | — | GRAVEL PARKING DRIVE |

NOTES
 SURVEY PARTY: CHIEF EDDIE BEARNS
 SURVEY METHOD: SINGLE TRANSDUCER
 SURVEY DATUM: NAVD83
 SURVEY ELEVATION: 100 M
 SURVEY SYSTEM: SINGLE TRANSDUCER
 POSITIONING SYSTEM: GPS
 DATA ACQUISITION: REAL TIME
 DATA REDUCTION: REAL TIME

LEGEND:
 ■ INDICATES WHARF TO BE DEMOLISHED

DEFACE PROPOSER: EDDIE BEARNS
DATE OF PROPOSING: DEC 2007
DATE OF APPROVAL: APR 2008
DATE OF REVIEW: NOV 2001 & NOV, OCT 2007

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 LOCATION: LARK HARBOUR, NL

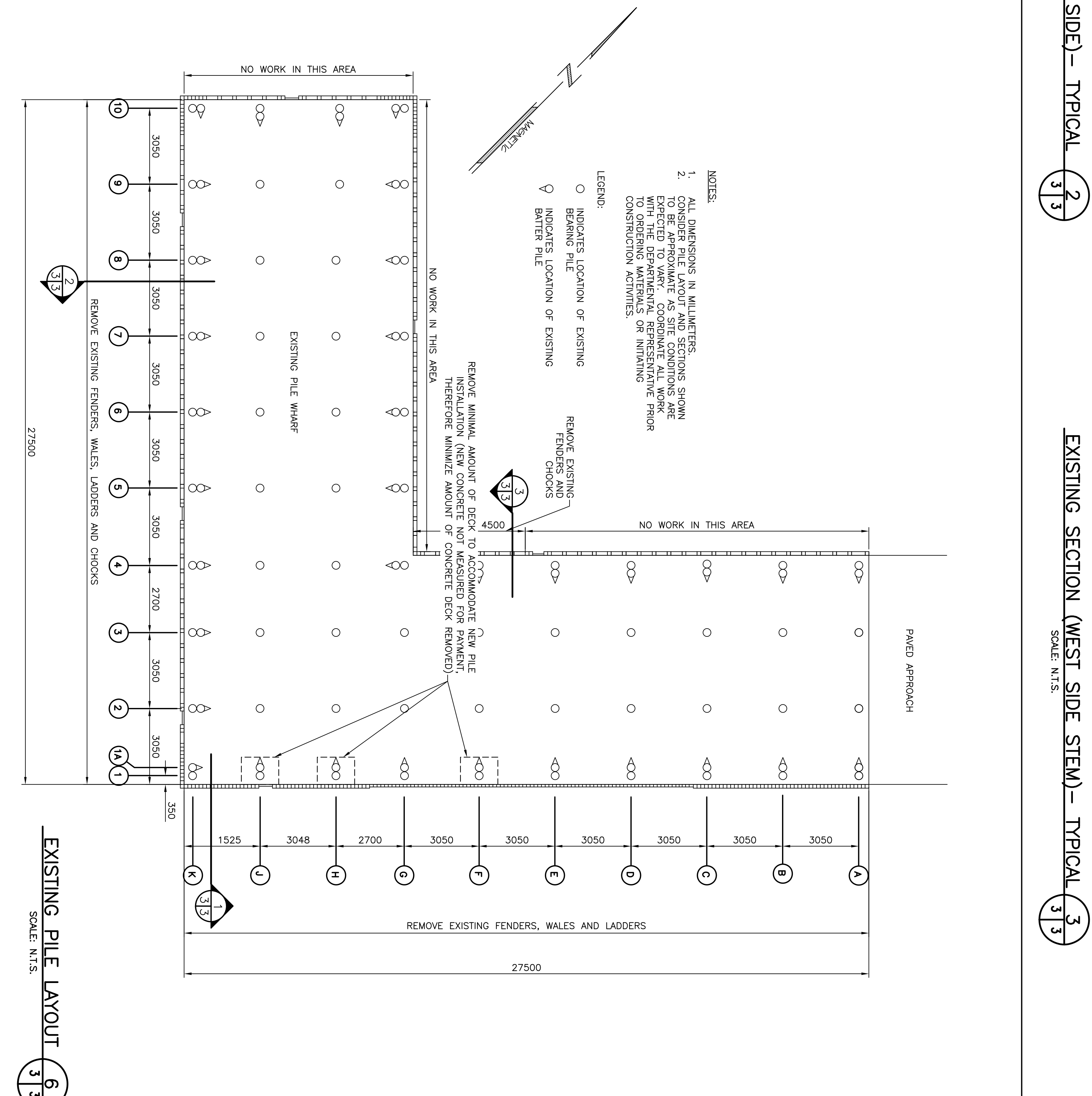
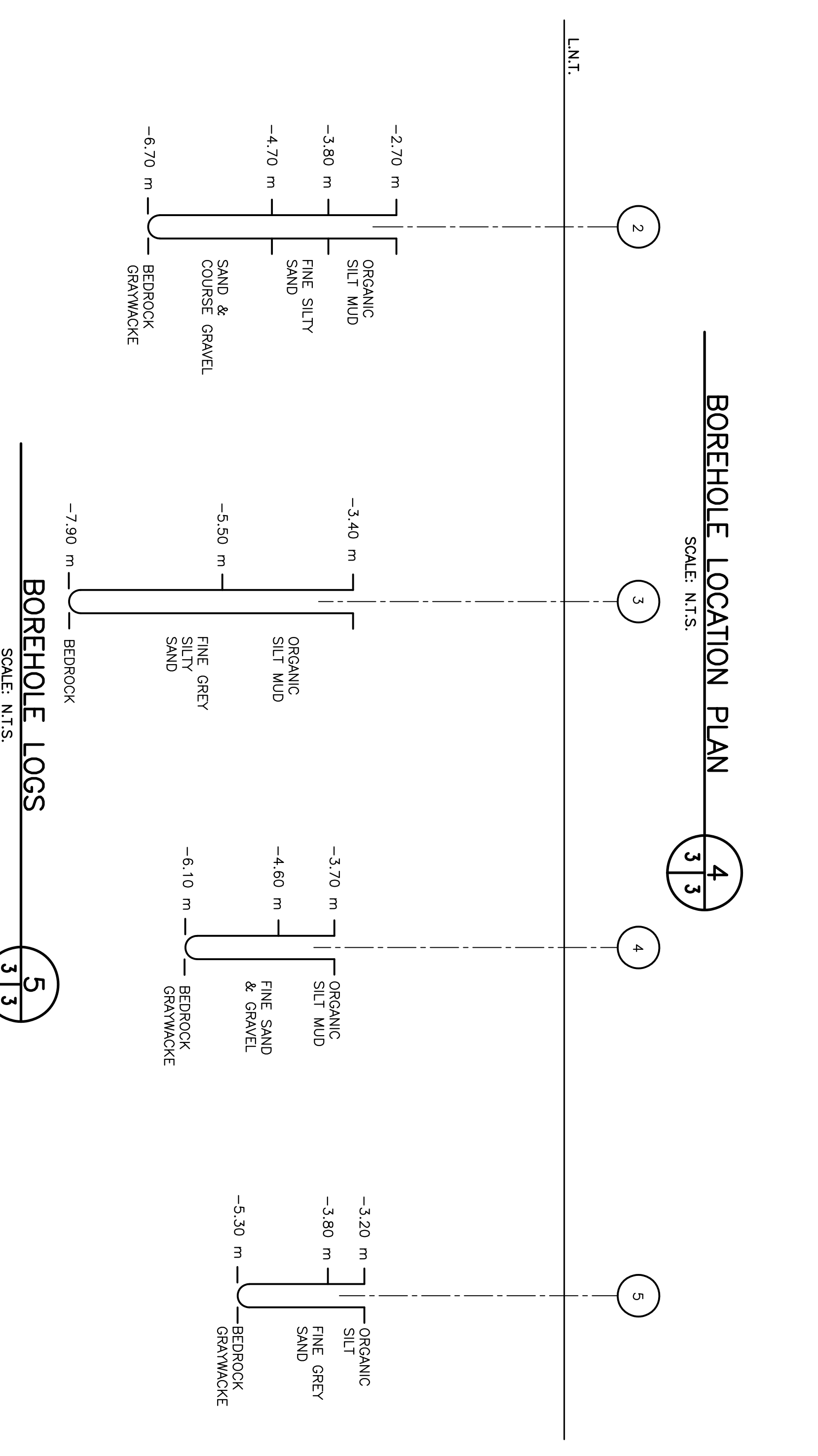
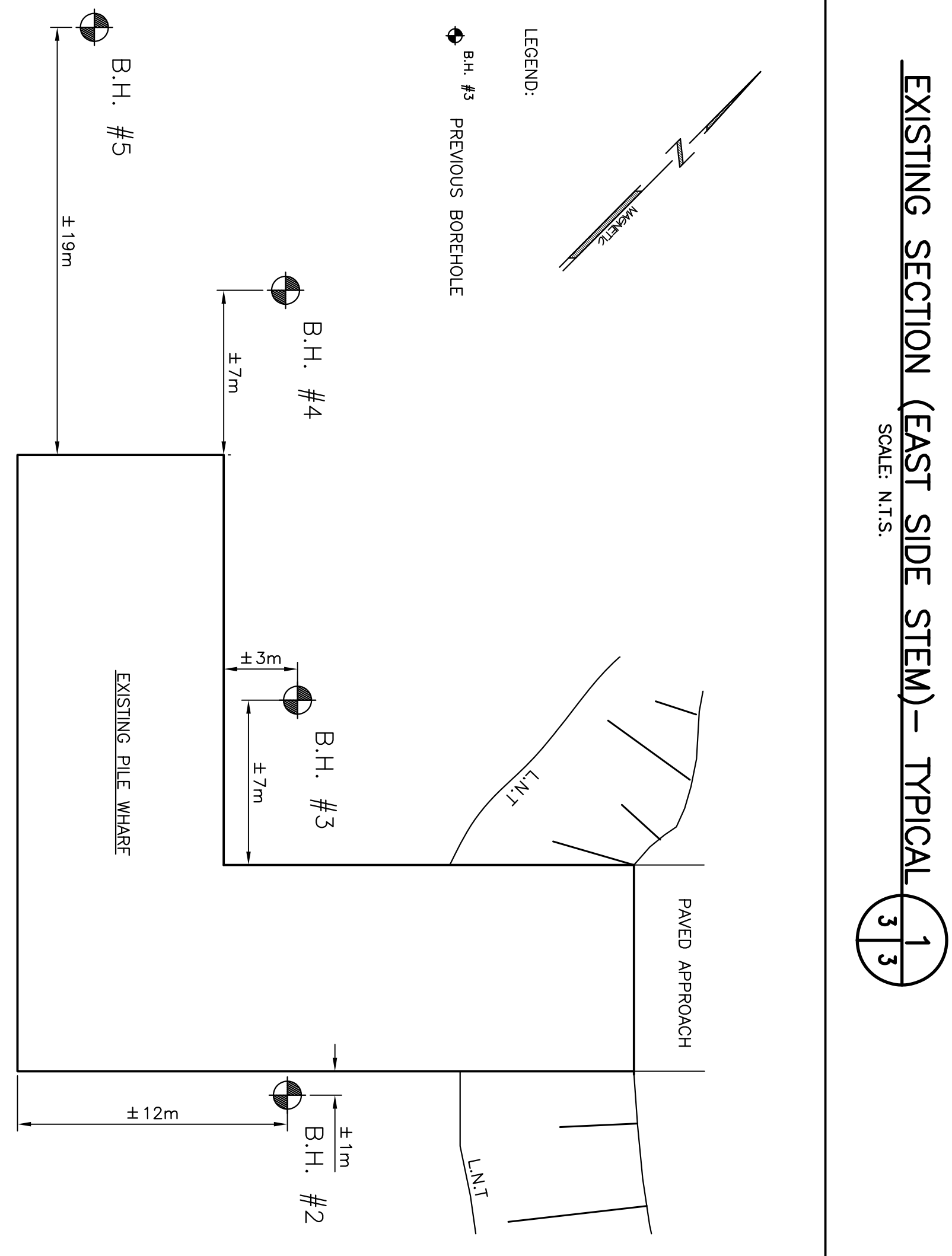
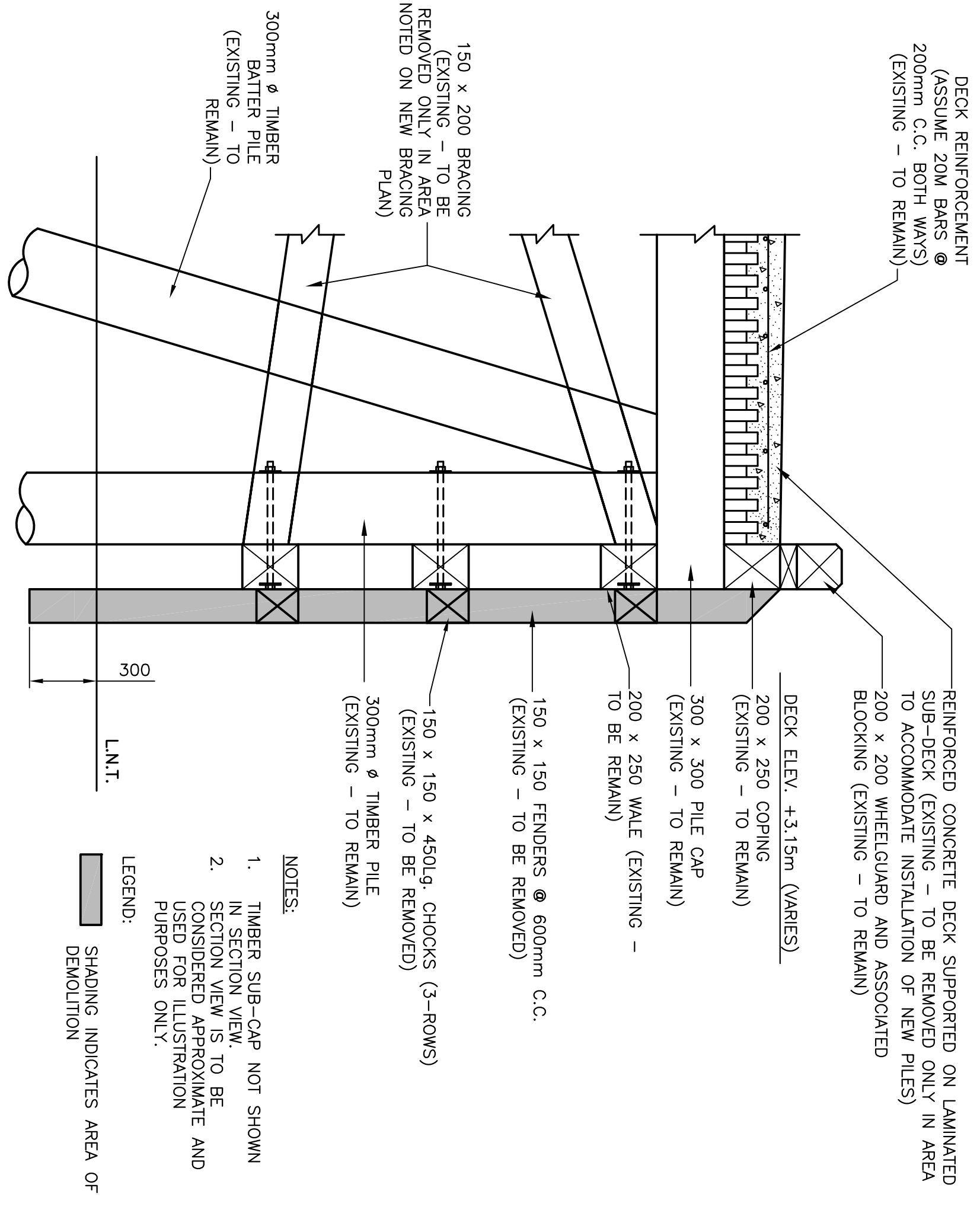
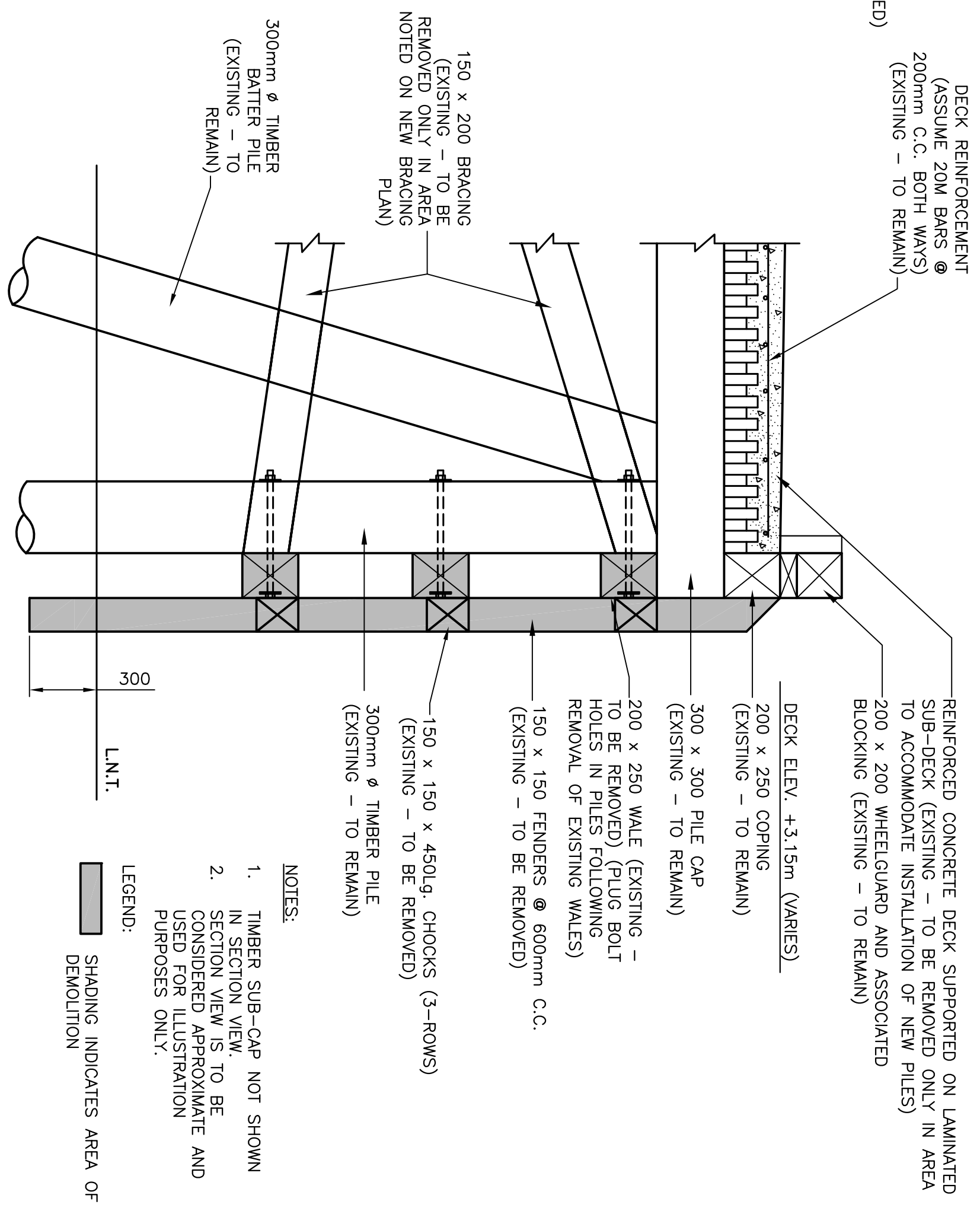
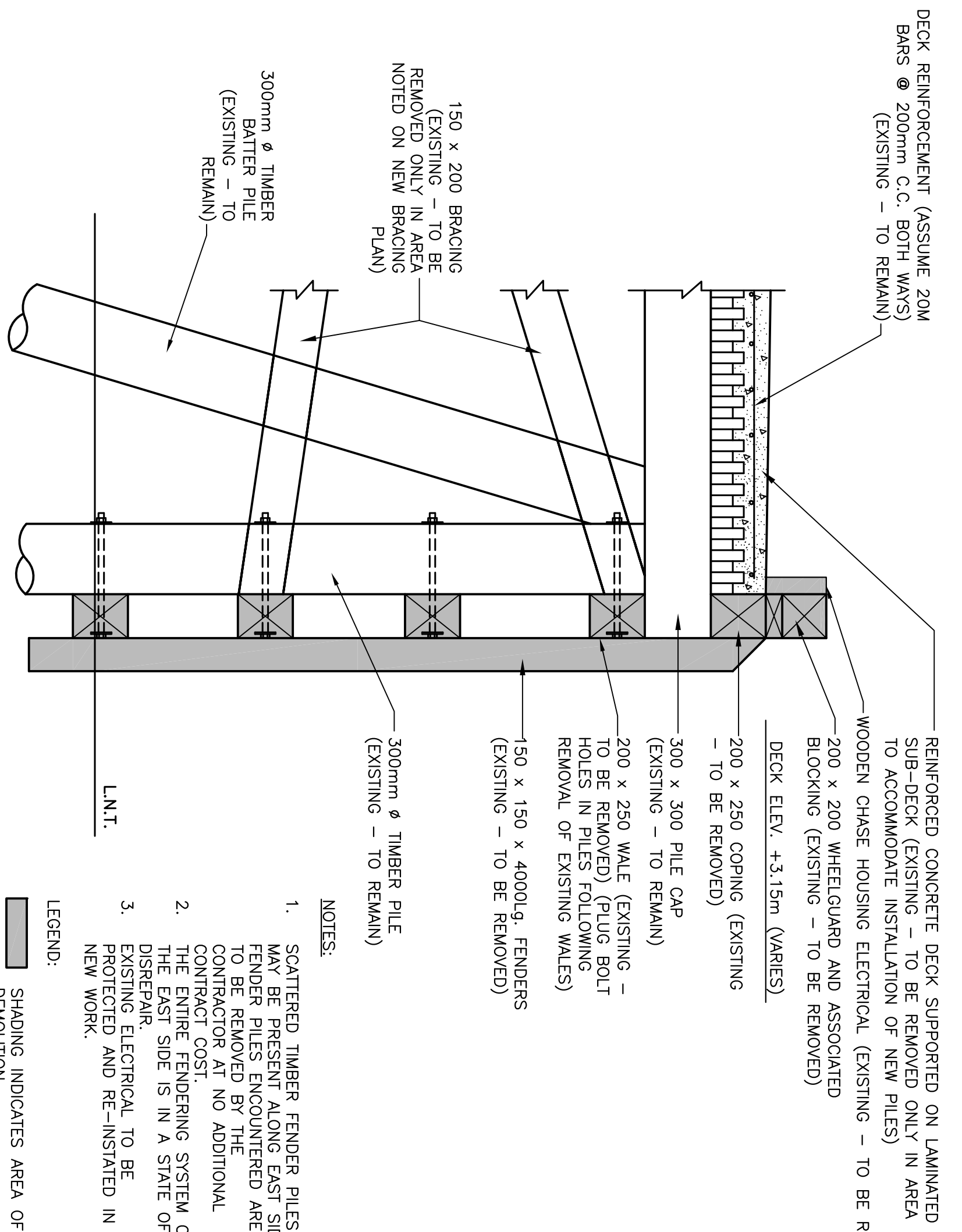
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CLIENT: LARK HARBOUR, NL

DESCRIPTION:
 DEMOLITION OF WHARF
 LOCATION: LARK HARBOUR, NL

CONTRACT NUMBER: 400864799

ALL SOUNDINGS & ELEVATIONS IN METRES.
ALL ELEVATIONS REFERRED TO THE BEACH MARK 897906E ELEV=311.7M (GRAVEL PLAYDECK IN CONCRETE FOUNDATION) OR A BENCHMARK NEAR THE QUAY, QUAY 3.
 SOUNDINGS TAKEN USING NAUTICAL SOUNDING AND DISTRIBUTED BY
 ON THE FLY GPS POSITIONS ON 05/20/2007. THE ATLAS SURVEY
 PLANES WERE USED TO DETERMINE THE POSITIONING DATA OF THE SOUNDINGS.
 BARS CHECK AT 10 M INTERVALS DOWN TO A DEPTH OF -7.0 M.
 SOUNDINGS WERE CHECKED BY AUTOMATIC A-B CHECKS FROM CONCRETE
 CHARTS BEFORE BEING CONNECTED FOR TIDE & BAR CHECK CONNECTION.
 ALL FIELD NOTES ARE IN BOOK MARKED LARK HARBOUR, NEWFOUNDLAND.

| | |
|----------------|---------------------|
| Project | HARBOUR DEVELOPMENT |
| Location | LARK HARBOUR, NL |
| Design | DEMOLITION PLAN |
| Drawn | P.H. |
| Checked | P.H. |
| Date | OCTOBER 16, 2022 |
| Scale | 1:500 |
| Project Number | XXXX |
| Drawing No. | C2 |



SMALL CRAFT HARBOURS

1. ALL ELEVATIONS ARE IN METRES UNLESS OTHERWISE NOTED.
 2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.

PROVINCE OF NEWBRUNSWICK
PERMIT HOLDER
 This Permit Allows
 ANY ENGINEERING INC.

REGISTERED PROFESSIONAL ENGINEERING
 PERMIT NO. 20222
 This Permit is valid for the year 2022.

HARBOUR DEVELOPMENT
LARK HARBOUR, NL

DEMOLITION DETAILS

| | |
|---------------|-------------------|
| approved N.T. | 10/16/22 |
| date | ISSUED FOR REVIEW |
| drawn P.H. | date |
| date | project |
| approved | |

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 Location: LARK HARBOUR, NL

no. of sheets: C3

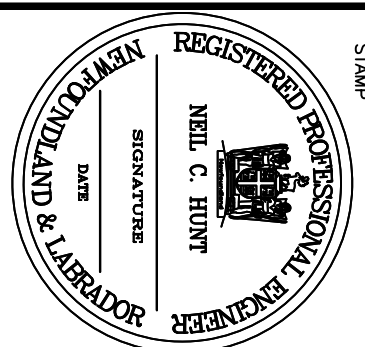
SMALL CRAFT HARBOURS



NOTES:
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UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS ARE IN MILLIMETRES
UNLESS OTHERWISE NOTED.

PROVINCE OF NEWFOUNDLAND
PERMIT HOLDER
This Permit Allows
APN ENGINEERING INC.

Registered Professional Engineering
Permit No. as Issued by APEQB, 20282
which is valid for the year 2022.

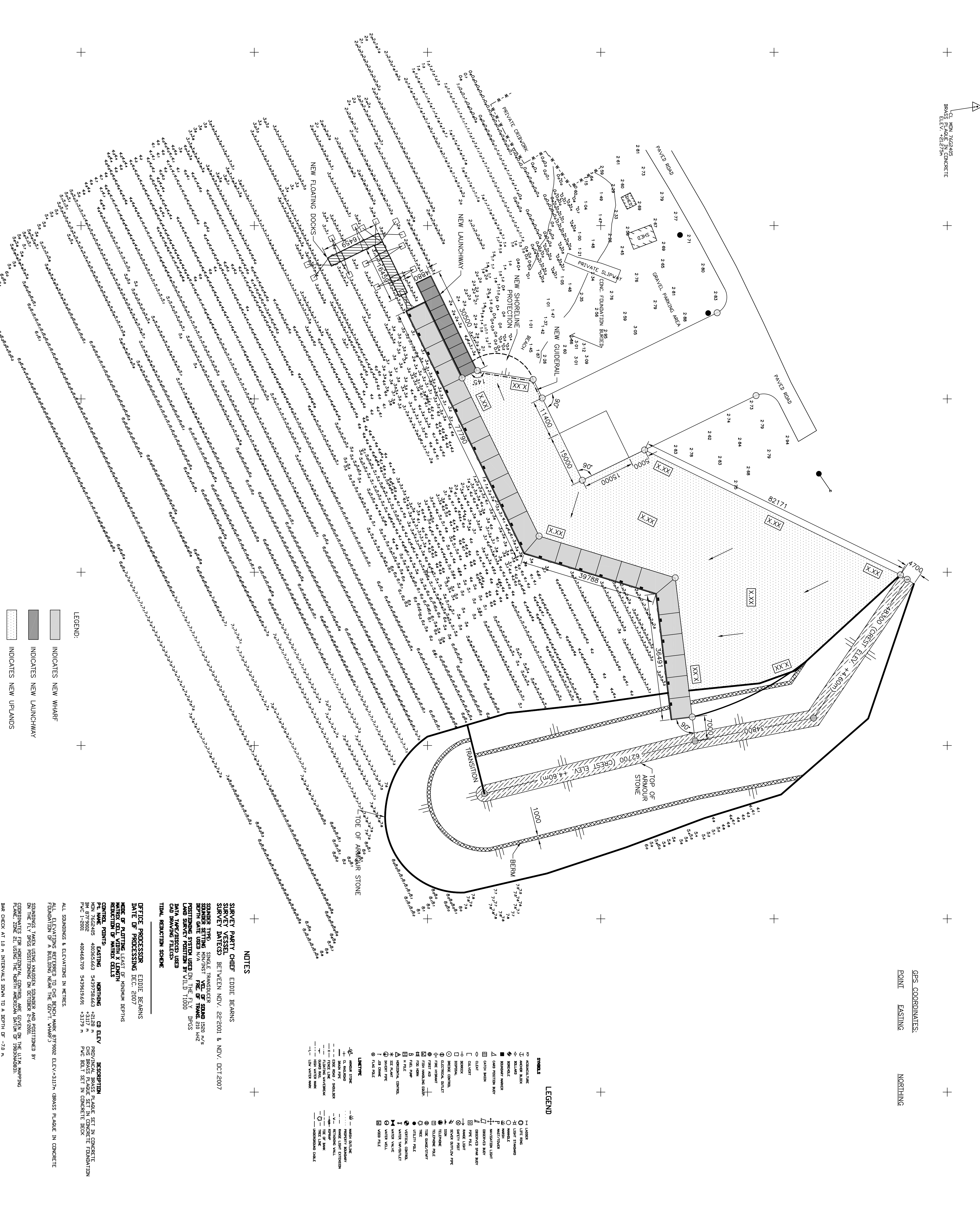
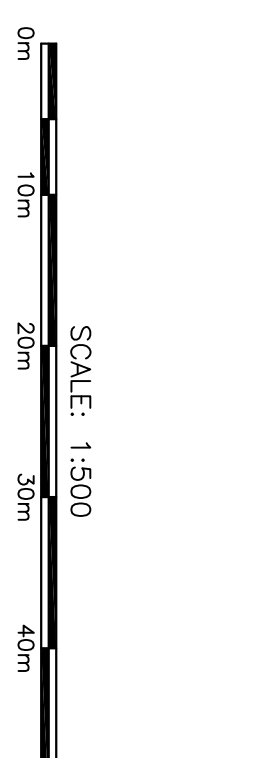
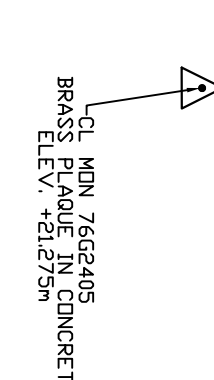


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| drawing no. | C4 |
| no. of project | XXXX |
| Project Manager | |
| no. of project | XXXX |
| Project Manager | |
| no. of revision | C4 |
| drawing no. | C4 |

| | |
|-----------------|--------------------------------------|
| design | |
| project | HARBOUR DEVELOPMENT LARK HARBOUR, NL |
| revision | 10/16/22 |
| no. of revision | A |
| drawing no. | ISSUED FOR REVIEW |

| | |
|------|------------------|
| date | OCTOBER 16, 2022 |
| date | OCTOBER 16, 2022 |
| date | OCTOBER 16, 2022 |
| date | OCTOBER 16, 2022 |
| date | OCTOBER 16, 2022 |

| | |
|-----------------|------|
| no. of revision | C4 |
| drawing no. | C4 |
| no. of project | XXXX |
| Project Manager | |
| no. of project | XXXX |
| Project Manager | |
| no. of revision | C4 |
| drawing no. | C4 |



UTM GRID NORTH ZONE 22 (NAD83)

SCALE: 1:500

10m 20m 30m 40m 50m

N 5 439 750
E 400 300

N 5 439 500
E 400 350

N 5 439 250
E 400 400

N 5 439 000
E 400 450

N 5 429 750
E 400 500

N 5 429 500
E 400 550

N 5 429 250
E 400 600

N 5 429 000
E 400 650

N 5 429 750
E 400 700

- LEGEND:
- INDICATES NEW WHARF
 - INDICATES NEW LAUNCHWAY
 - INDICATES NEW UPLANDS
 - INDICATES NEW FLOATING DOCKS AND GANWAY
 - INDICATES CREST OF BREAKWATER
 - INDICATES BERM

NOTES

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SURVEY METHOD: SINGLE TRANSIT
SURVEY DATES: BETWEEN NOV/22/2001 & NOV/07/2007
STATIONING: SINGLE TRANSIT
STATION TYPE: SINGLE TRANSIT
STATION POINT: TOP OF SAND BERM
STATION MARK: IRON PIN
POSITIONING SYSTEM USED ON THE FLY: SPIS
FLY: FLY
DATA ACQUISITION: SPIS
DATA PROCESSING: SPIS
TOTAL REDUCTION SCHEME

OFFICE PROGRESSOR: EDDIE BEARNS
DATE OF PROCESSING: DEC 2007
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MATHS PACKAGE: SURVEY
PROJECT: LARK HARBOUR, NL

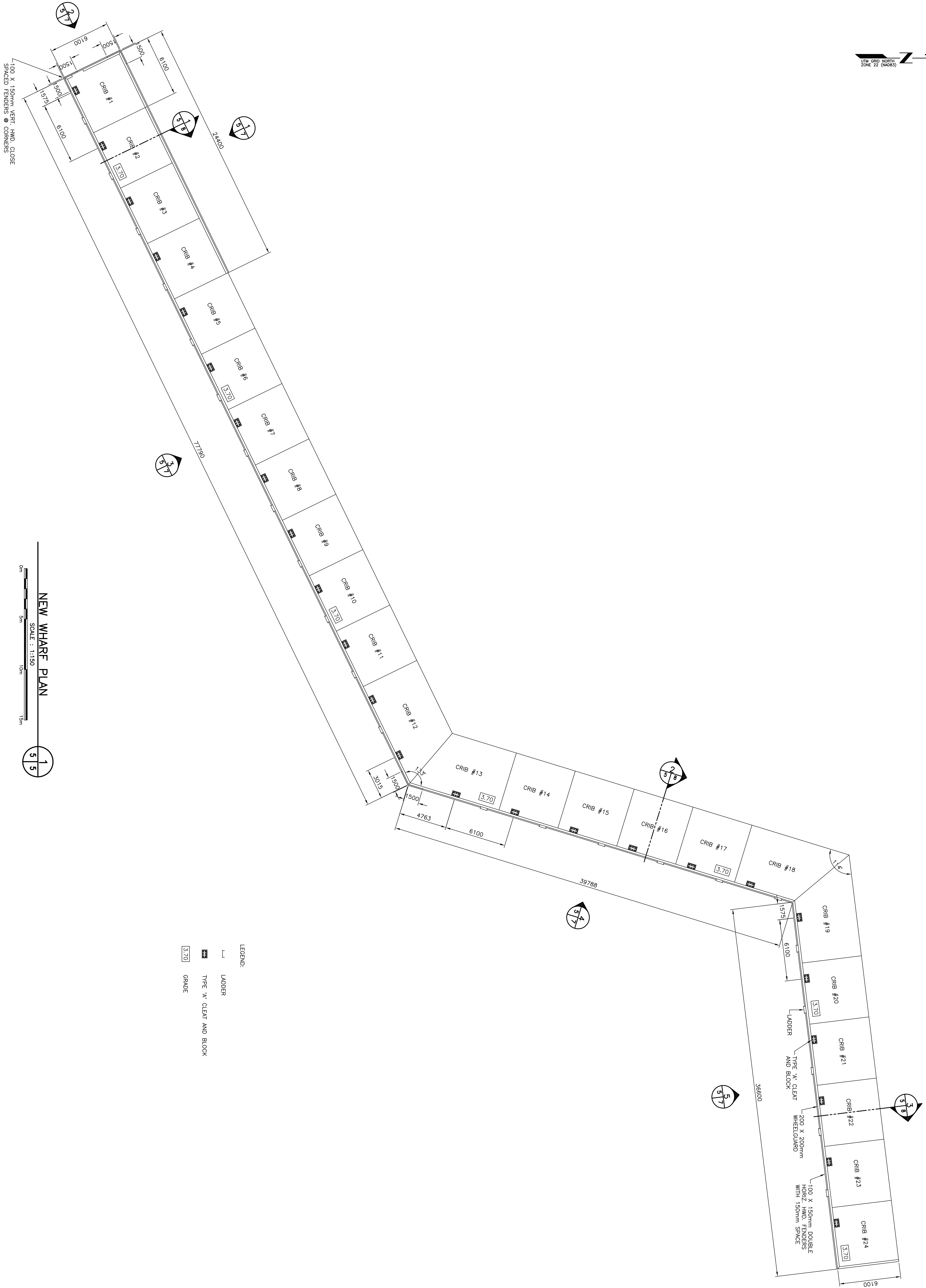
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DATE: OCTOBER 16, 2022

DATE: OCTOBER 16, 2022

DATE: OCTOBER 16, 2022

- LEGEND
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 - INDICATES NEW UPLANDS
 - INDICATES NEW FLOATING DOCKS AND GANWAY
 - INDICATES CREST OF BREAKWATER
 - INDICATES BERM



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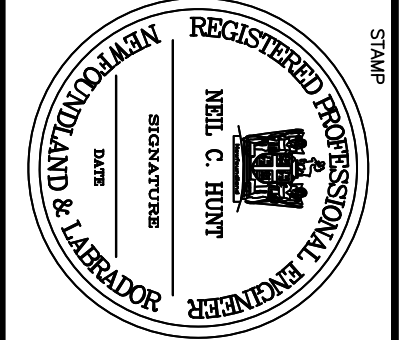
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- GRADE

NEW WHARF PLAN
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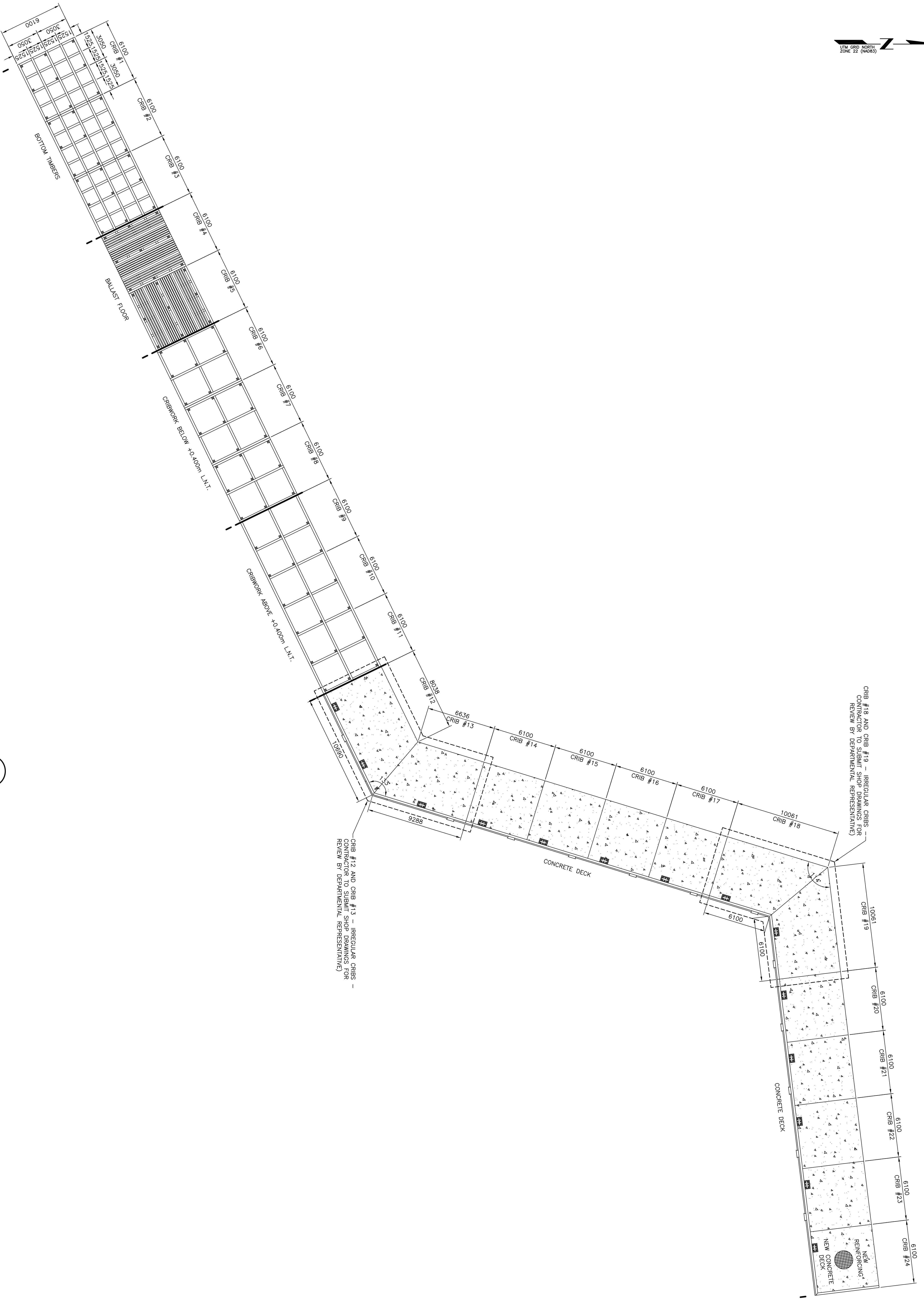


NOTES:
1. ALL ELEVATIONS ARE IN METRES
UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS ARE IN MILLIMETRES
UNLESS OTHERWISE NOTED.

PROVINCE OF NEWFOUNDLAND
PERMIT HOLDER
This Permit Allows
APN ENGINEERING INC.

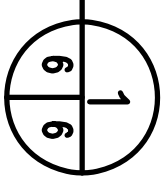


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| A | 1 | ISSUED FOR REVIEW | 10/16/22 |
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| designed N.H. | checked | date | drawn |
| designed N.H. | checked | OCTOBER 16, 2022 | drawn P.H. |
| date | drawn | date | approved |
| OCTOBER 16, 2022 | P.H. | OCTOBER 16, 2022 | XXXX |
| title | no. of sheets | no. of project | drawing no. |
| NEW WHARF PLAN | 01 | XXXX | C5 |



NEW WHARF PLAN

SCALE : 1:150



CRIB #18 AND CRIB #19 - IRREGULAR CRIBS - CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR REVIEW BY DEPARTMENTAL REPRESENTATIVE)

CRIB #12 AND CRIB #13 - IRREGULAR CRIBS - CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR REVIEW BY DEPARTMENTAL REPRESENTATIVE)

Small Craft Harbours

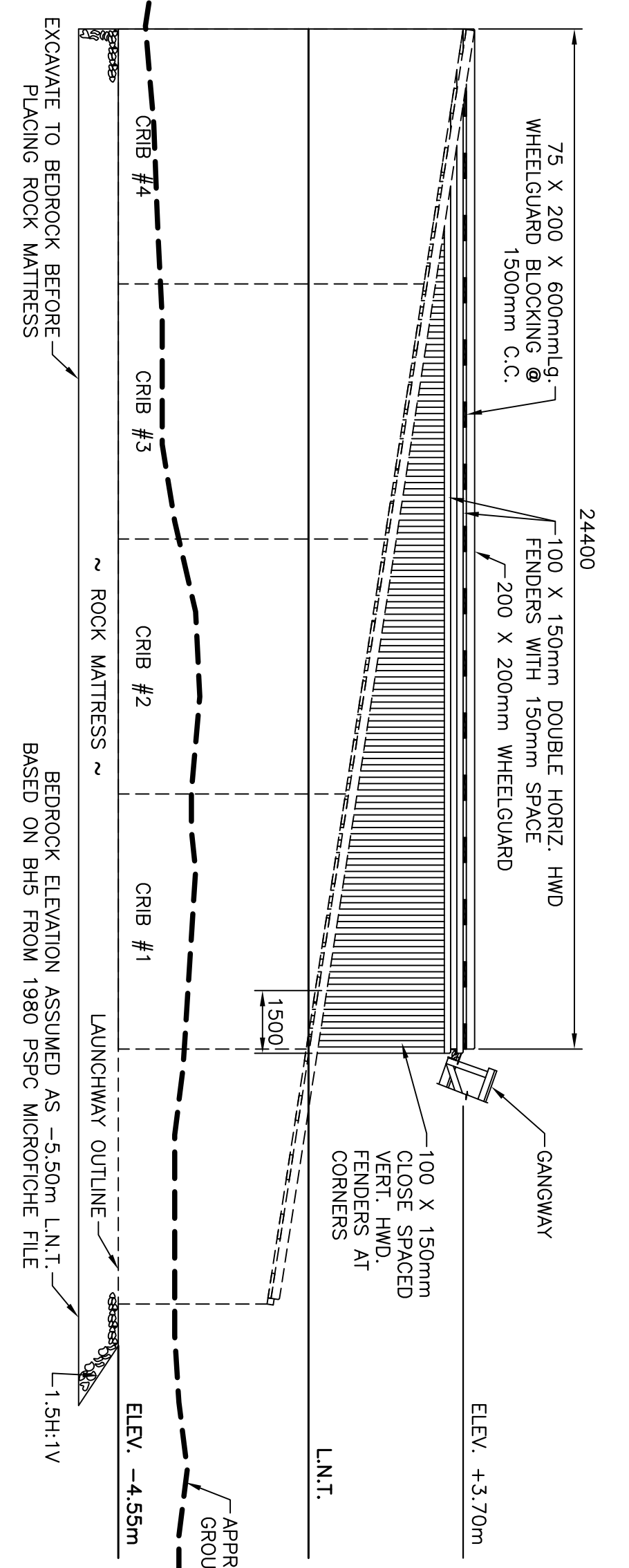
NOTES:

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2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.

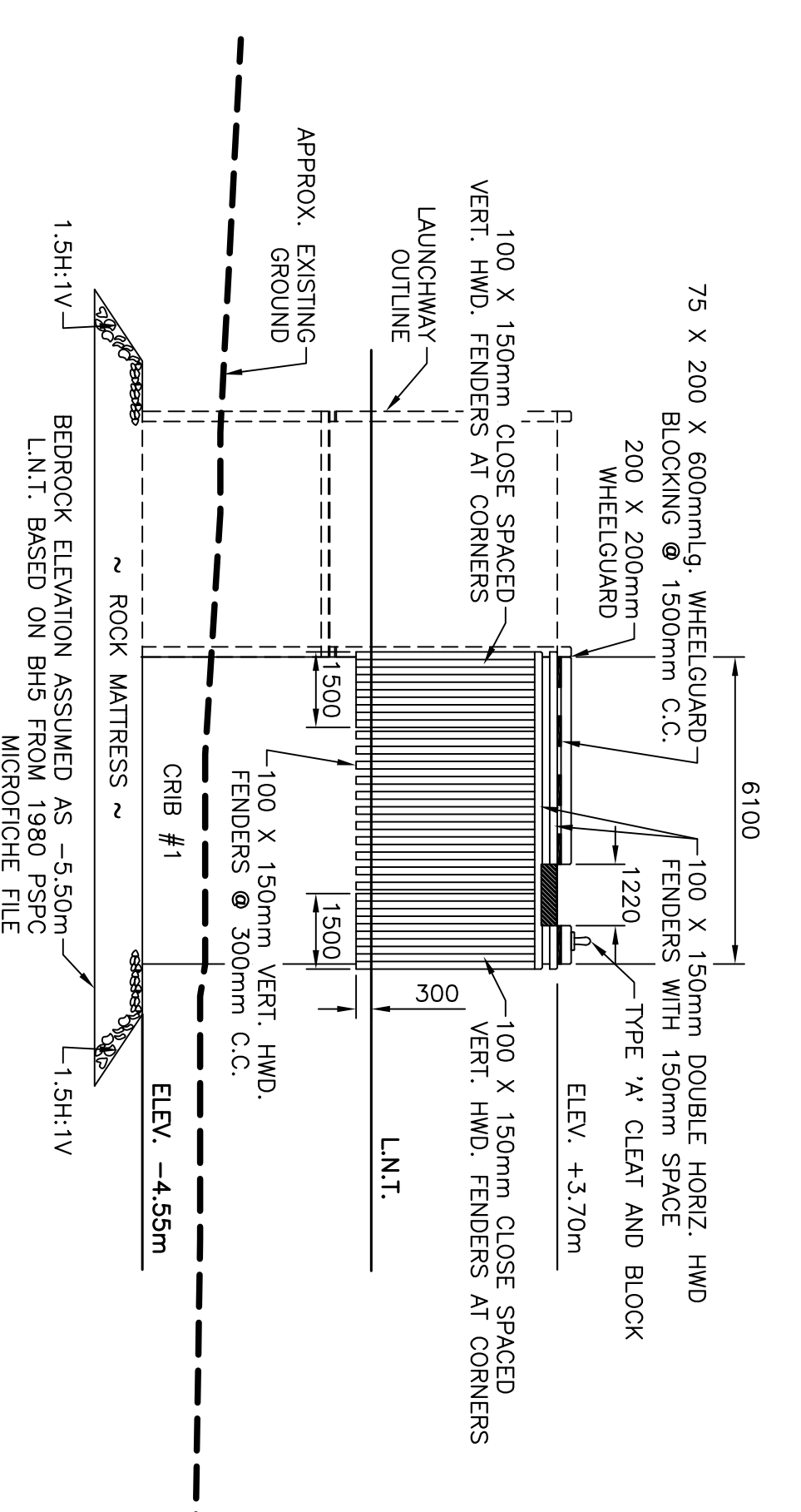
PROVINCE OF NEWFOUNDLAND
PERMIT HOLDER
This Permit Allows
APN ENGINEERING INC.

By Practice Professional Engineering
Permit No. as issued by APN, 2022E2
which is valid for the year 2022

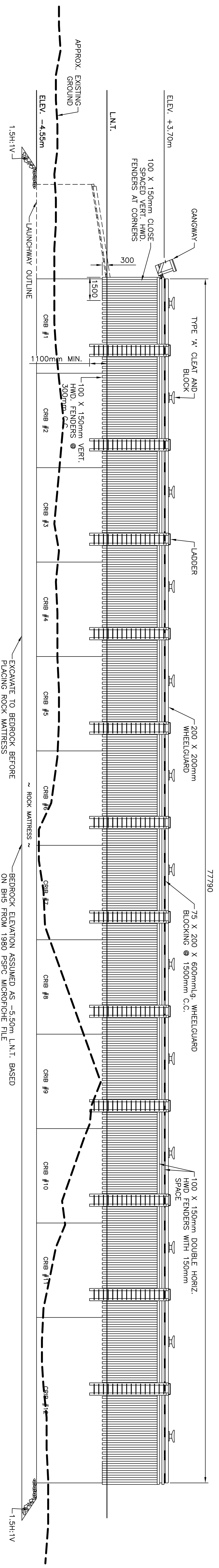
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|--|---|
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| <p>designed N.H. date SEPTEMBER 17, 2022</p> <p>drawn P.H. date SEPTEMBER 17, 2022</p> <p>approved</p> | <p>9/17/22</p> <p>no. of project XXXX</p> <p>no. of revision C6</p> |



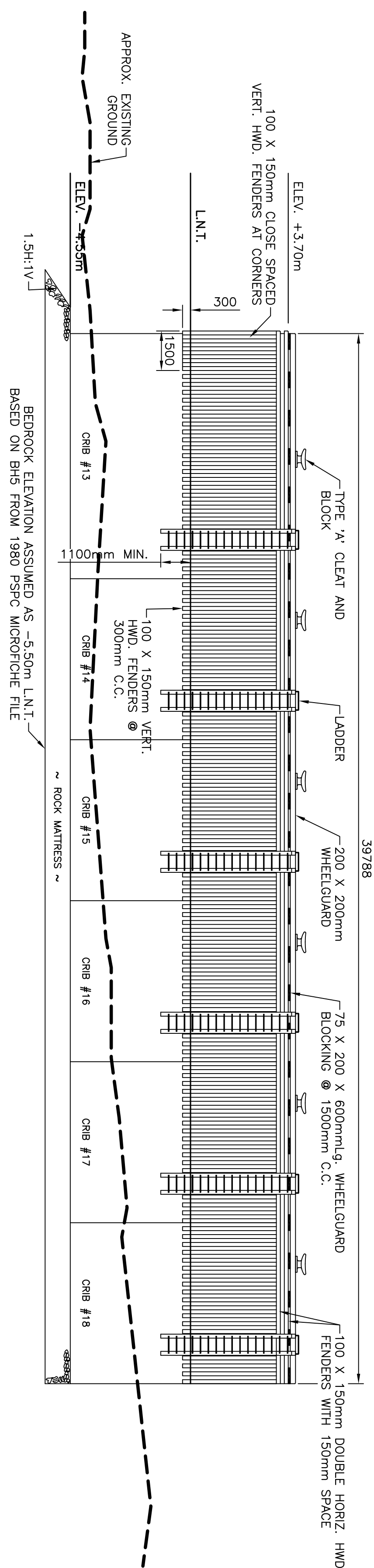
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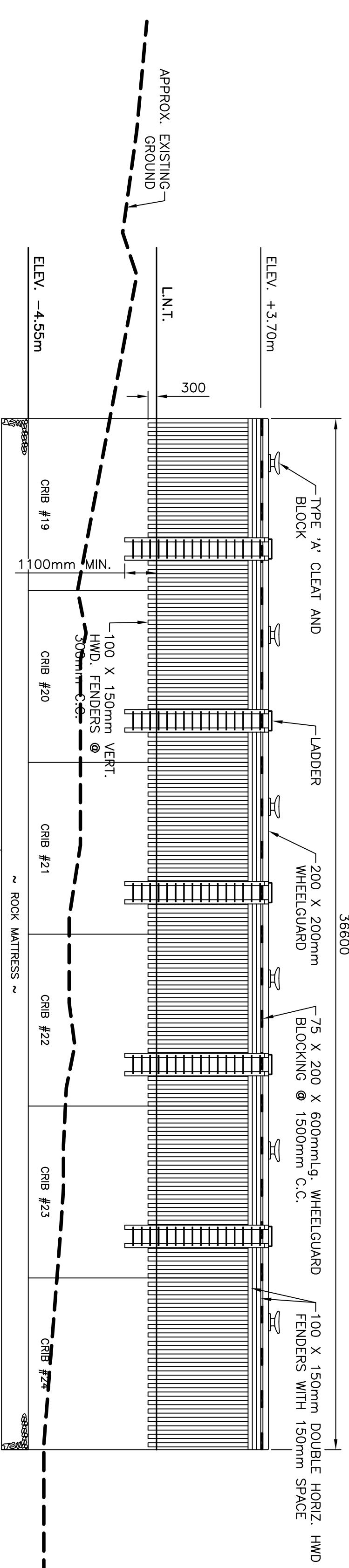
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2



ELEVATION
SCALE : 1:125
3



ELEVATION
SCALE : 1:125
4



ELEVATION
SCALE : 1:125
5

Small Craft Harbours

Department of Fisheries and Aquaculture
Nova Scotia

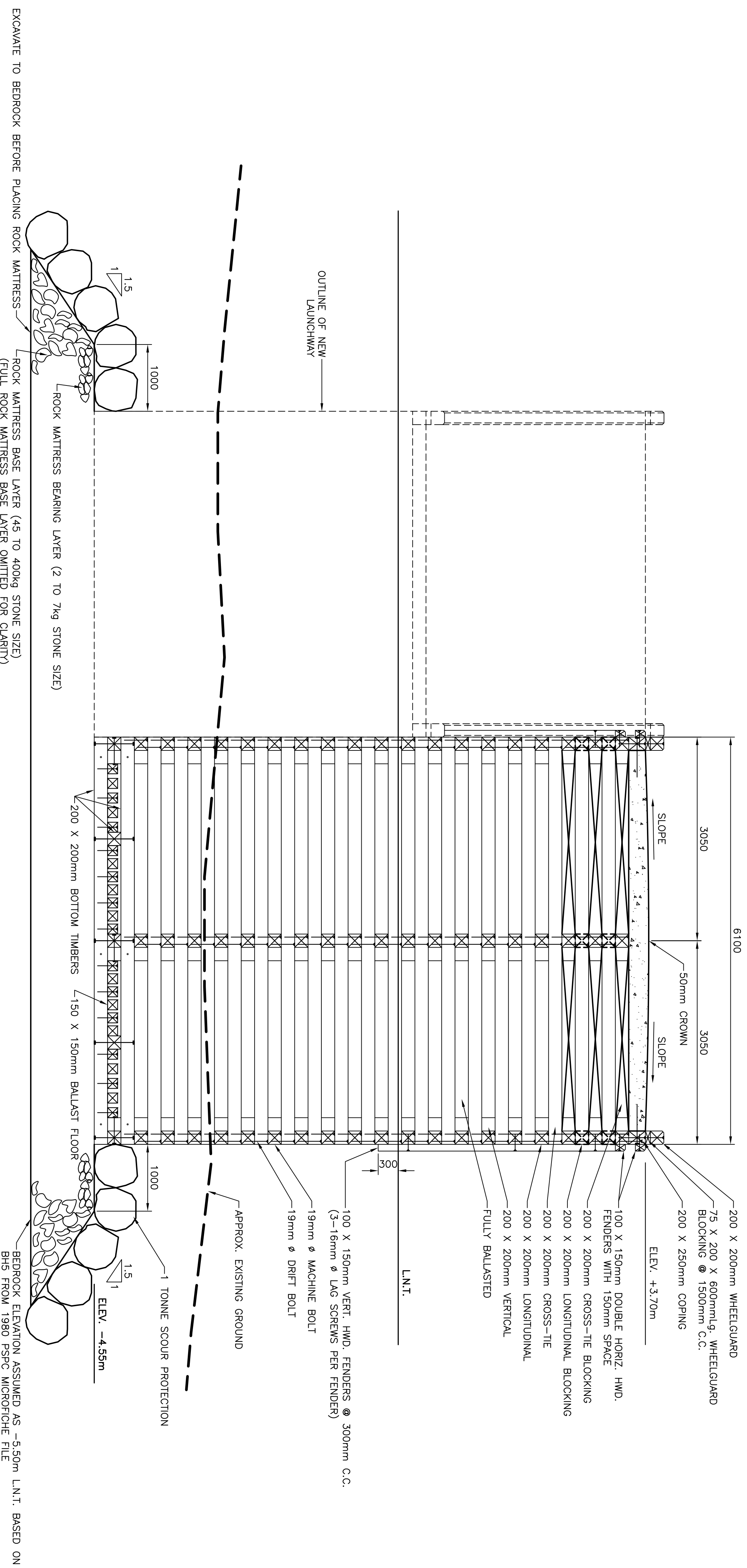
NOTES:
1. ALL ELEVATIONS ARE IN METRES
UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS ARE IN MILLIMETRES
UNLESS OTHERWISE NOTED.

PROVINCE OF NEWFOUNDLAND
PERMIT HOLDER
This Permit Allows
APN ENGINEERING INC.

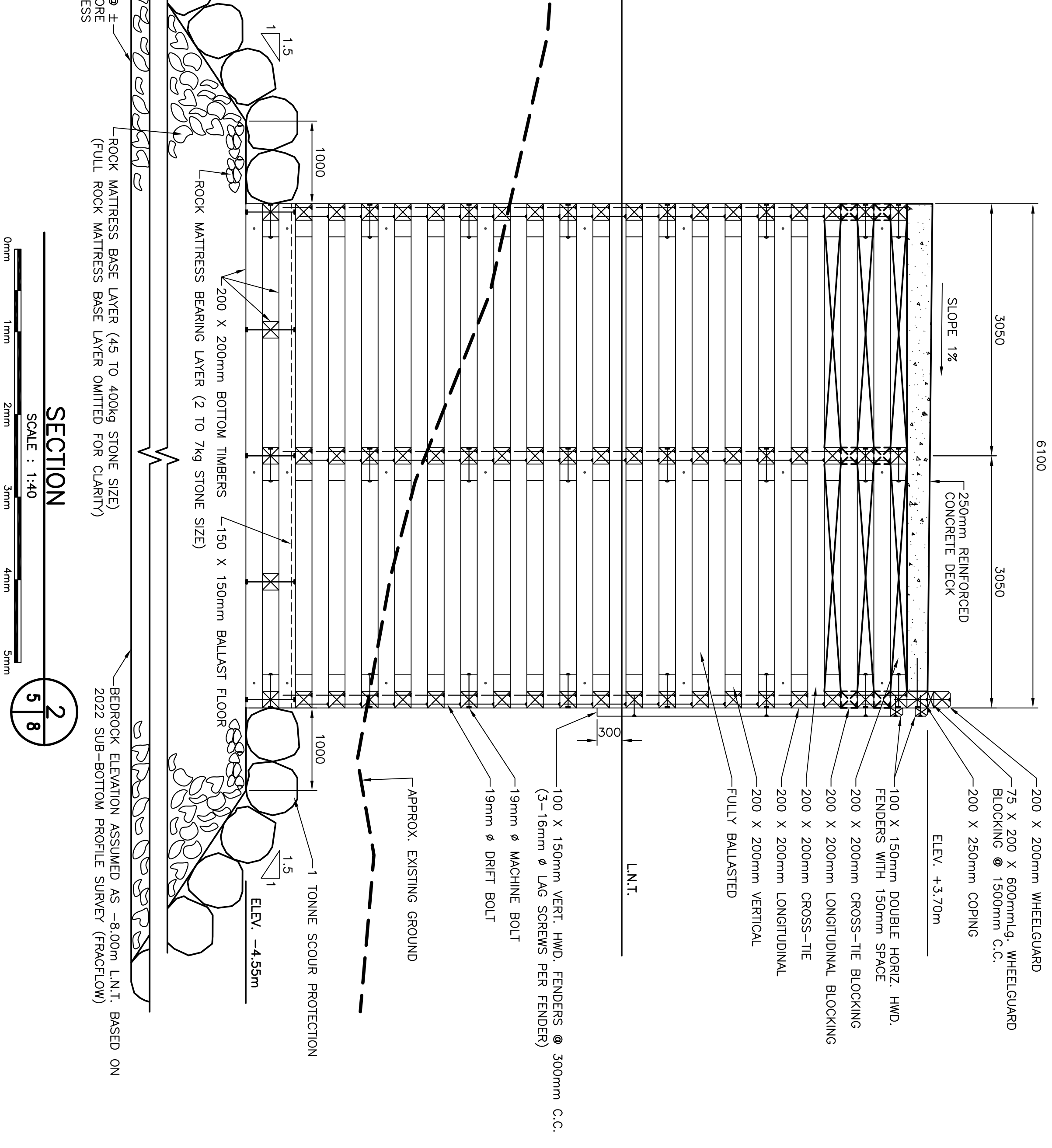
Registered Professional Engineer
in the Province of Newfoundland
Permit No. as Issued by APN, 20282
which is valid for the year 2022.

| | |
|-----------------------|---------------|
| designed N.H. | 10/16/22 |
| date OCTOBER 16, 2022 | |
| drawn P.H. | |
| date OCTOBER 16, 2022 | |
| approved | |
| Trainer | Supervisor |
| DPO Project Manager | |
| Project number | no. du projet |
| XXXX | |
| drawing no. | no. du dessin |
| C7 | |

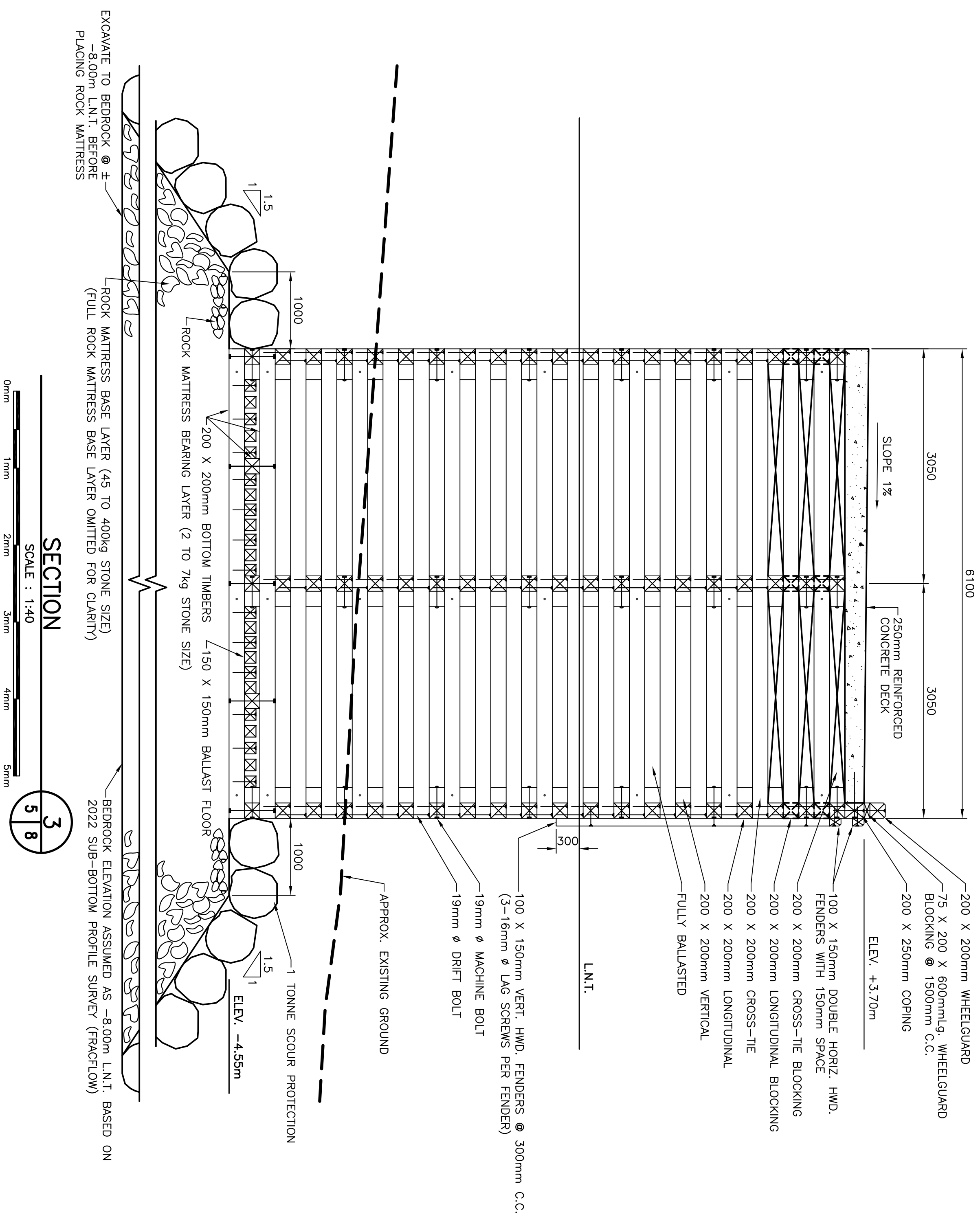
LARK HARBOUR, NL
HARBOUR DEVELOPMENT
NEW WHARF ELEVATIONS



SECTION 1
SCALE: 1:40



SECTION 2
SCALE: 1:40



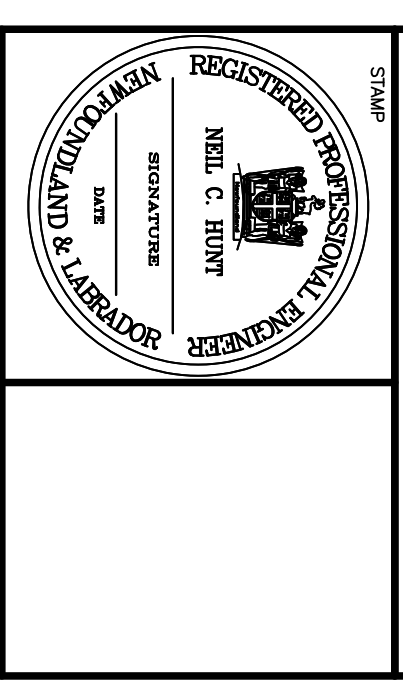
SECTION 3
SCALE: 1:40

SMALL CRAFT HARBOURS

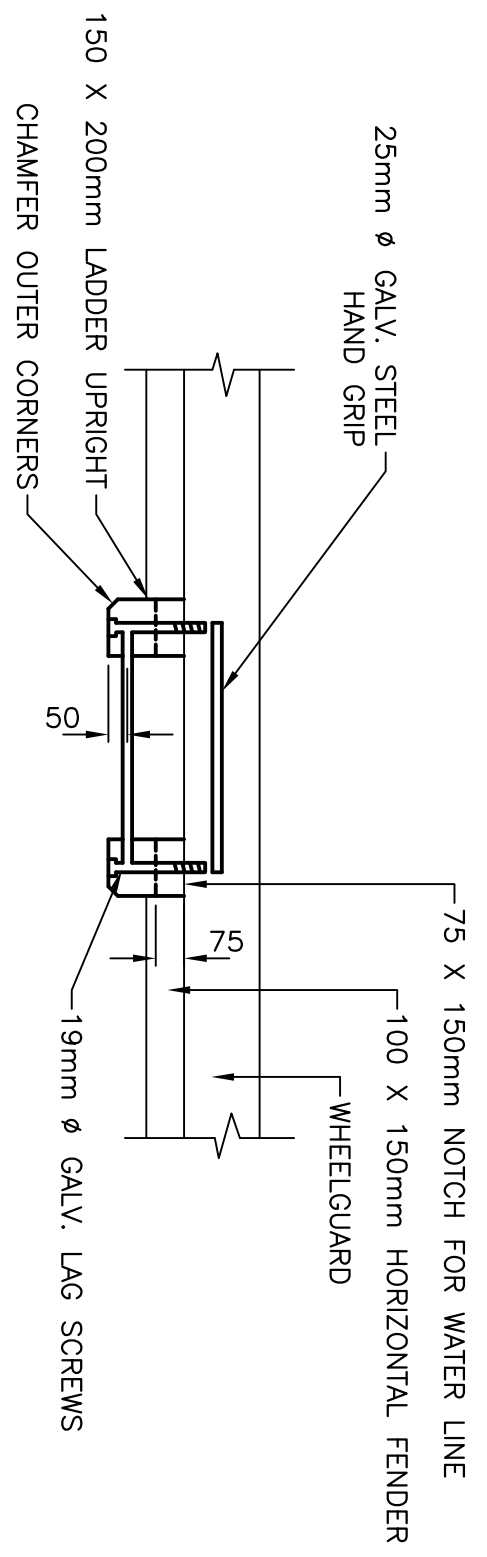


NOTES:
1. ALL ELEVATIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.

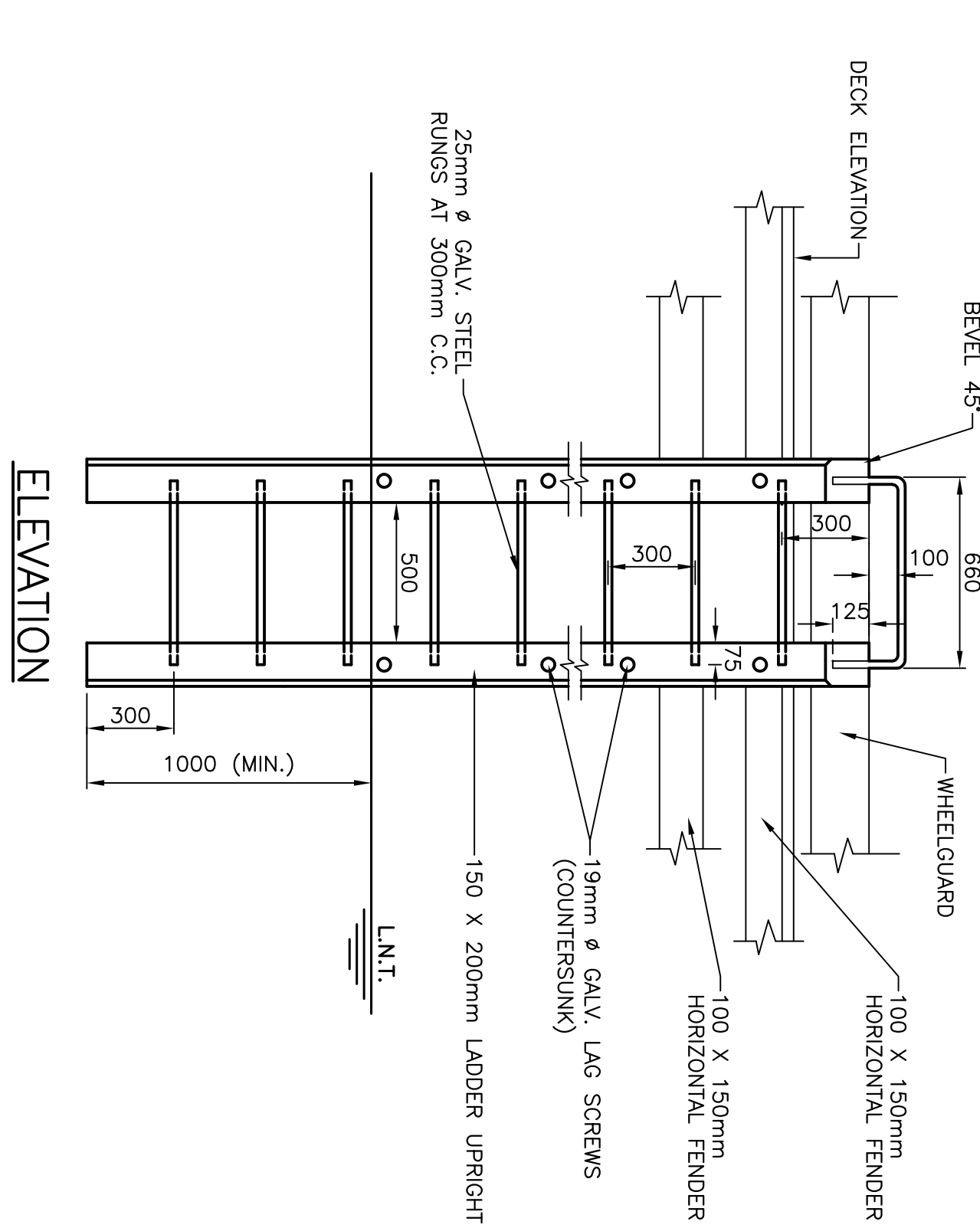
PROVINCE OF NEWFOUNDLAND
PERMIT HOLDER
This Permit Allows
APN ENGINEERING INC.



| | | | |
|-------------|---|-------------------|----------|
| revision | A | ISSUED FOR REVIEW | 10/16/22 |
| author | | | |
| checked | | | |
| project | HARBOUR DEVELOPMENT LARK HARBOUR, NL | | |
| drawing no. | NEW WHARF SECTIONS | | |
| designer | | | |
| approved | | | |
| date | designed N.H. | scale | |
| date | OCTOBER 16, 2022 | date | |
| date | drawn P.H. | date | |
| date | OCTOBER 16, 2022 | date | |
| approved | checked | approved | |
| title | no. du projet | no. du dessin | |
| XXXX | C8 | | |



PLAN

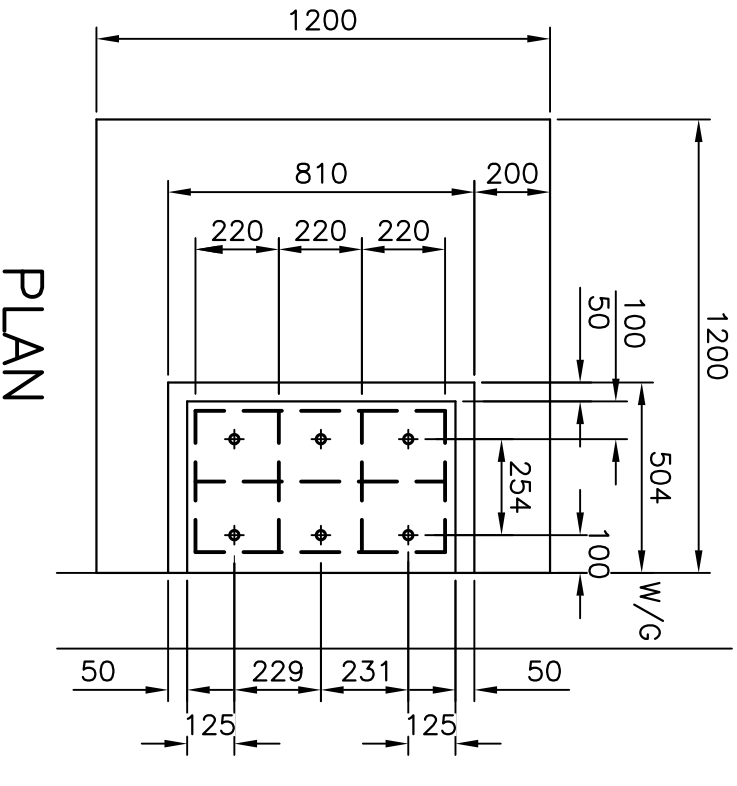


ELEVATION

LADDER DETAIL

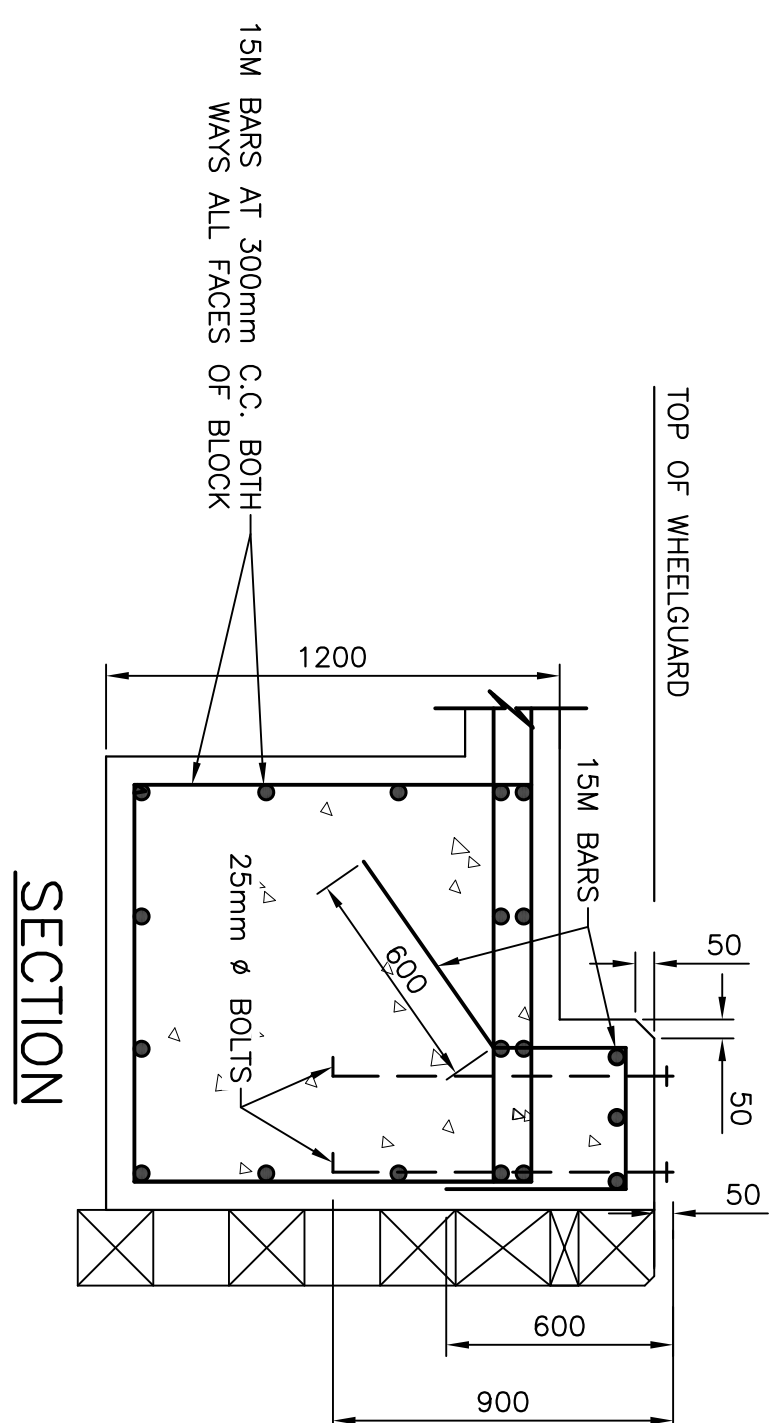
SCALE : 1:20

- NOTES:
1. REBAR ON EXTERIOR FACING OF CLARITY, PLAN VIEW NOT SHOWN FOR CLARITY.
 2. MAINMAN 75mm COVER ON REBAR.
 3. ACTION BOLD OR 25mm ϕ X 90mm (GALVANIZED) C/W 100mm LEG.
 4. CLEAR FEDESEAL TO BE POURED CONTINUOUS WITH CONCRETE DECK.



PLAN

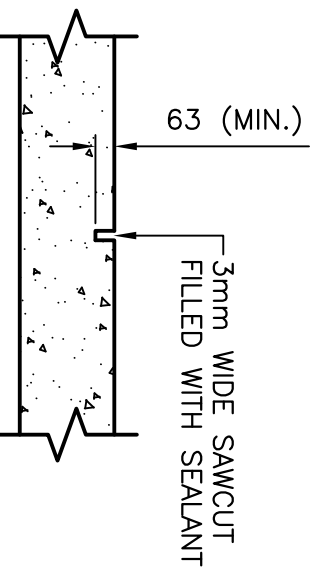
TOP OF WHEELGUARD



SECTION

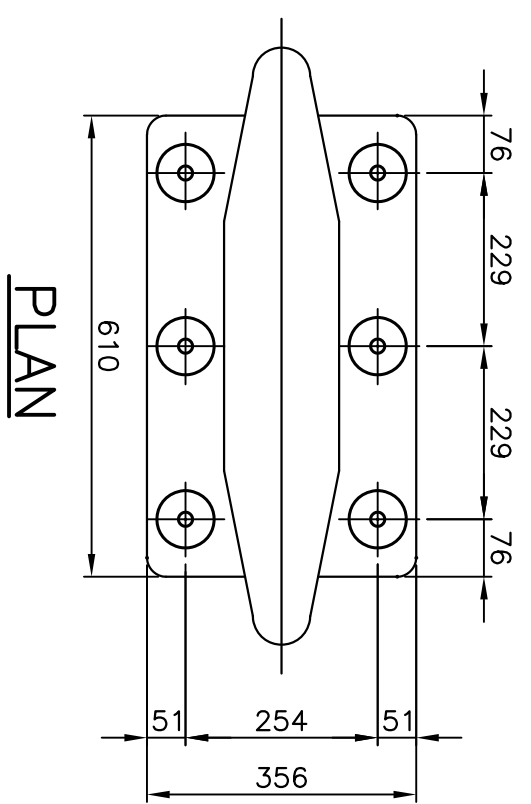
TYPE 'A' CLEAT BLOCK DETAIL

SCALE : 1:20

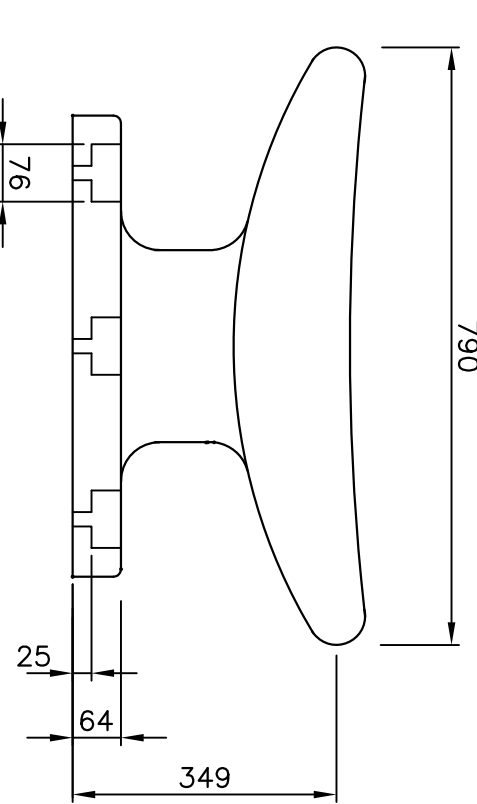


TYP. CONTROL JOINT DETAIL

SCALE : 1:20



PLAN

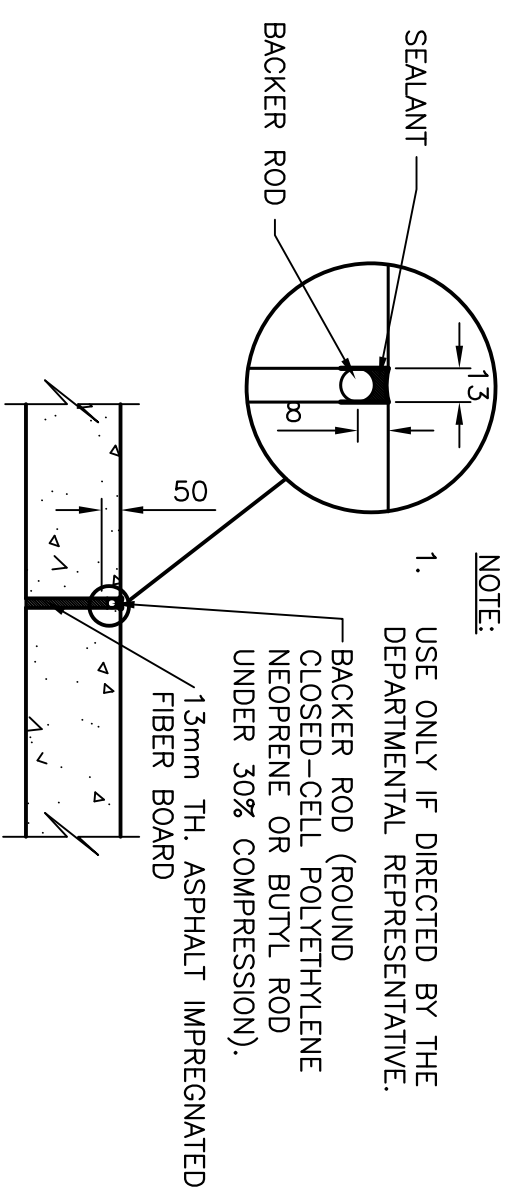


FRONT ELEV.

SIDE ELEV.

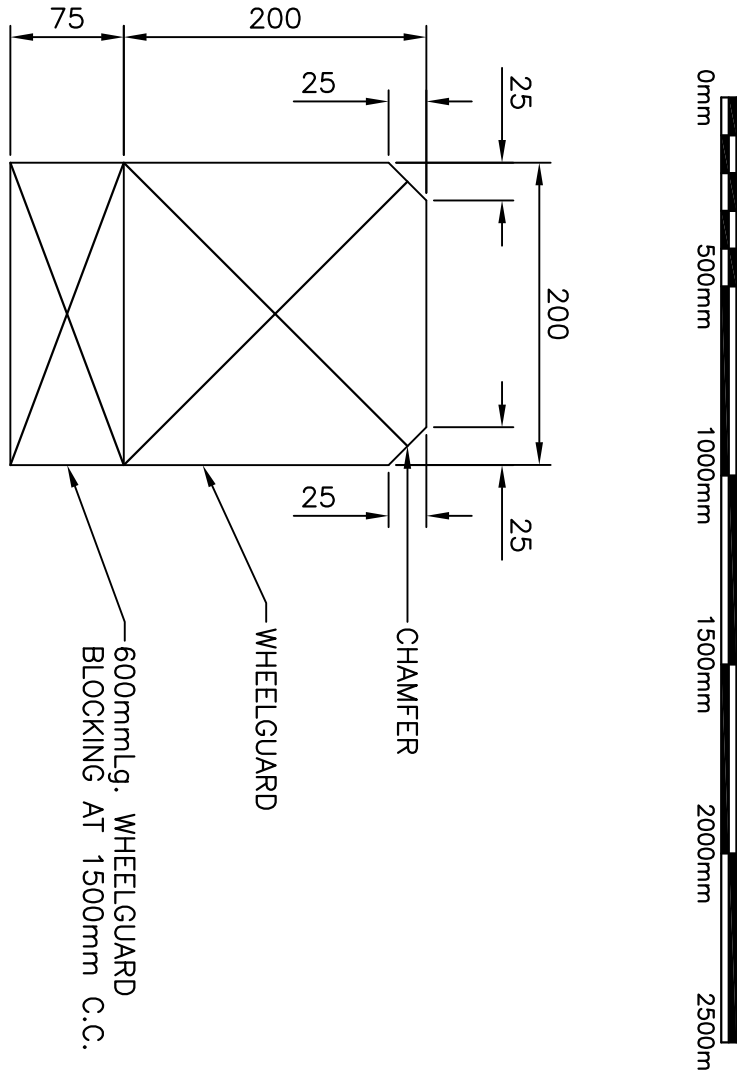
TYPE 'A' CLEAT

SCALE : 1:10



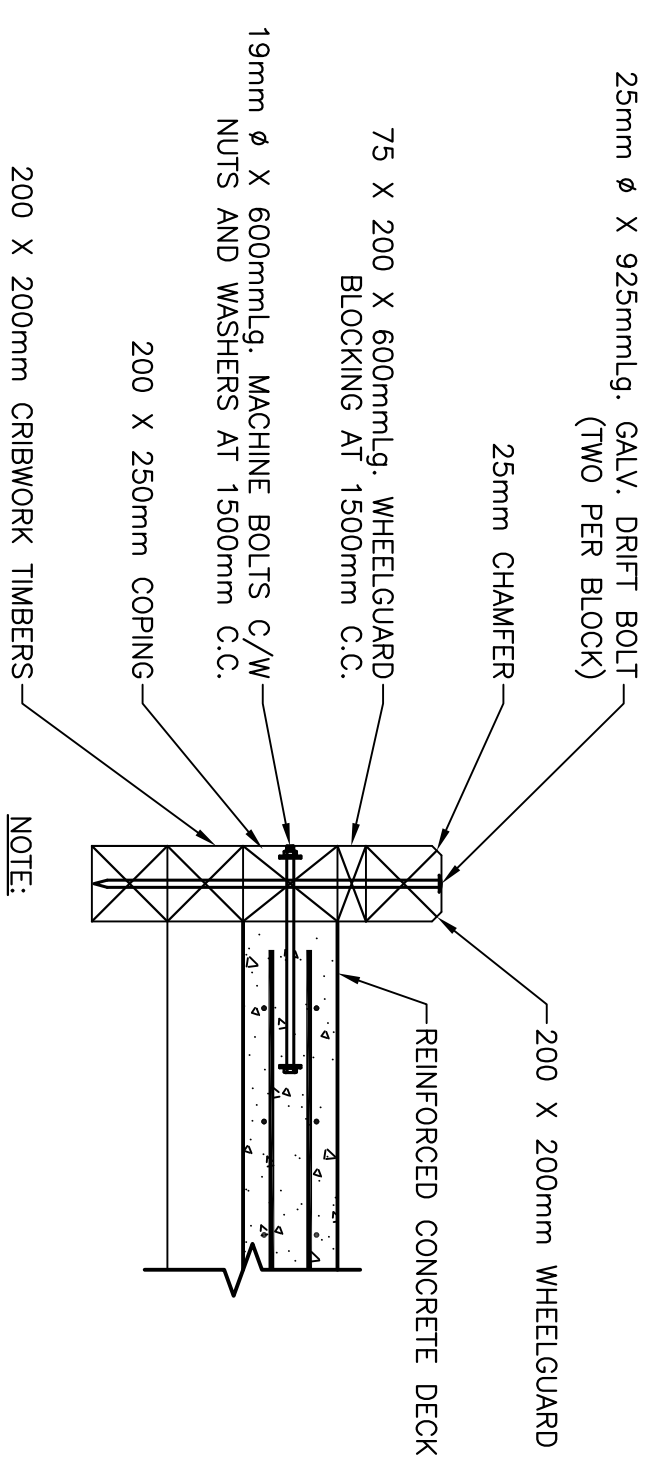
EXPANSION JOINT

SCALE : 1:20



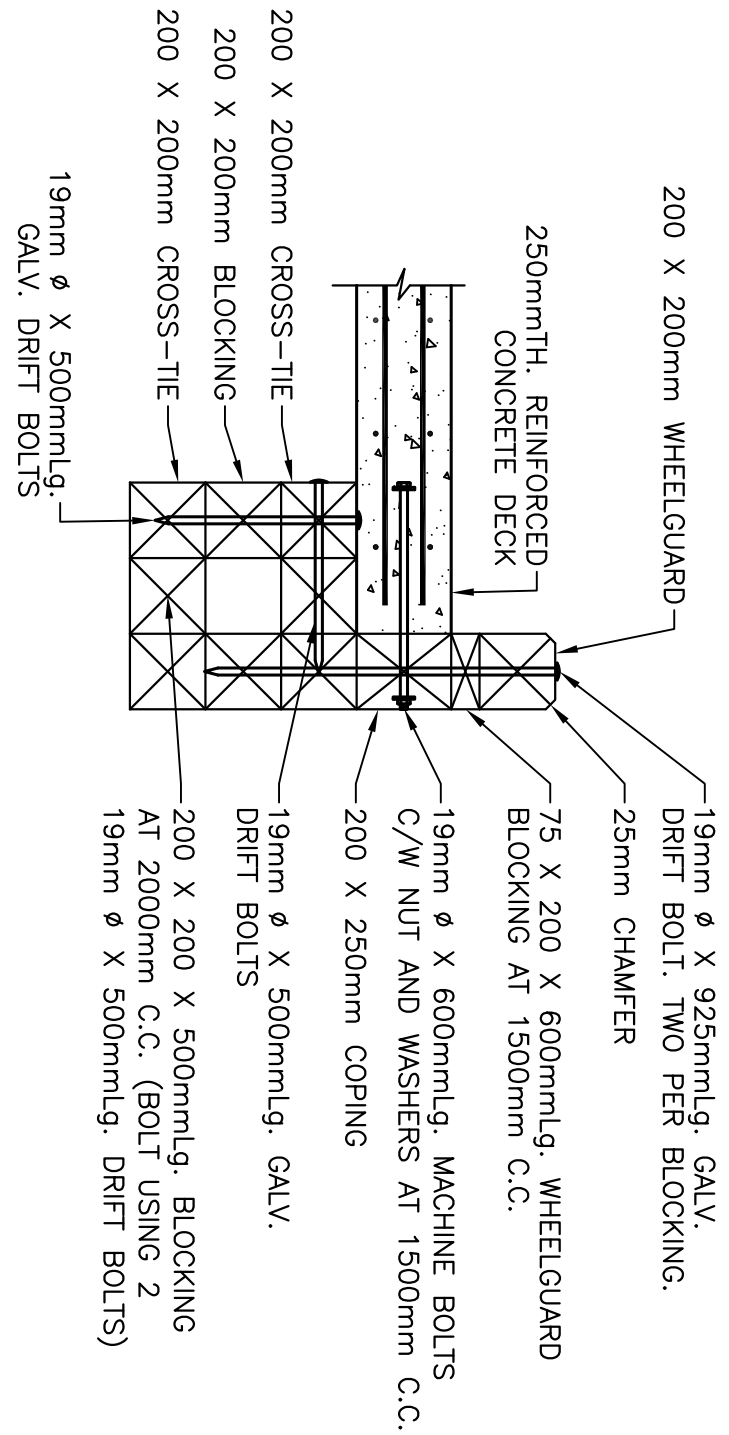
WHEELGUARD SECTION

SCALE : 1:15



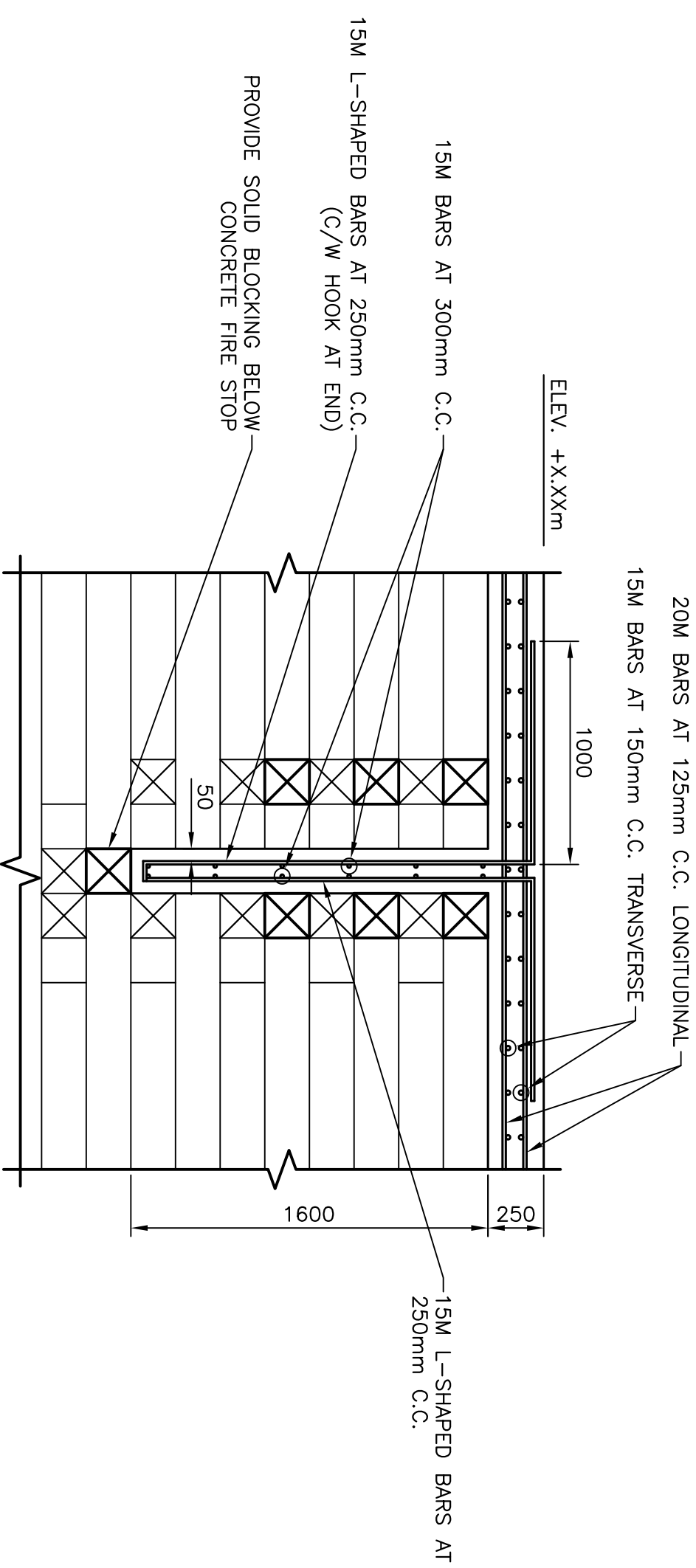
WHEELGUARD AND COPING DETAIL

SCALE : 1:20



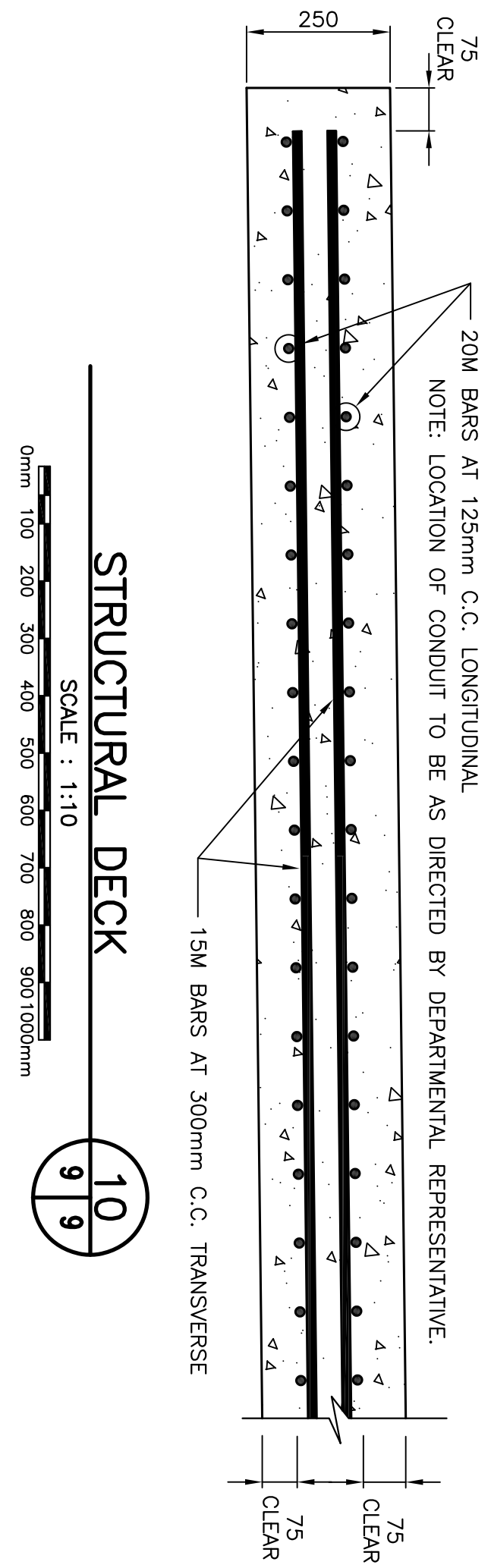
END OF CRIB BLOCKING DETAIL

SCALE : 1:20



CONCRETE FIRE STOP

SCALE : 1:25



STRUCTURAL DECK

SCALE : 1:10

Small Craft Harbours

1. ALL ELEVATIONS ARE IN METRES
2. UNLESS OTHERWISE NOTED.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.

PROVINCE OF NEWFOUNDLAND
PERMIT HOLDER
AFN ENGINEERING INC.

REGISTERED PROFESSIONAL ENGINEER
NEIL C. MILLER
PROFESSIONAL ENGINEER
NEWFOUNDLAND & LABRADOR

| | |
|-----------------------|----------|
| designed N.H. | 10/16/22 |
| date OCTOBER 16, 2022 | |
| drawn P.H. | |
| date OCTOBER 16, 2022 | |
| approved | |
| client | |
| project | |
| no. du projet | XXXX |
| no. du dessin | C9 |

HARBOUR DEVELOPMENT
LARK HARBOUR, NL

NEW WHARF DETAILS

SMALL CRAFT HARBOURS

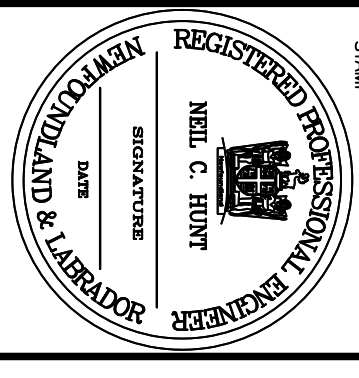


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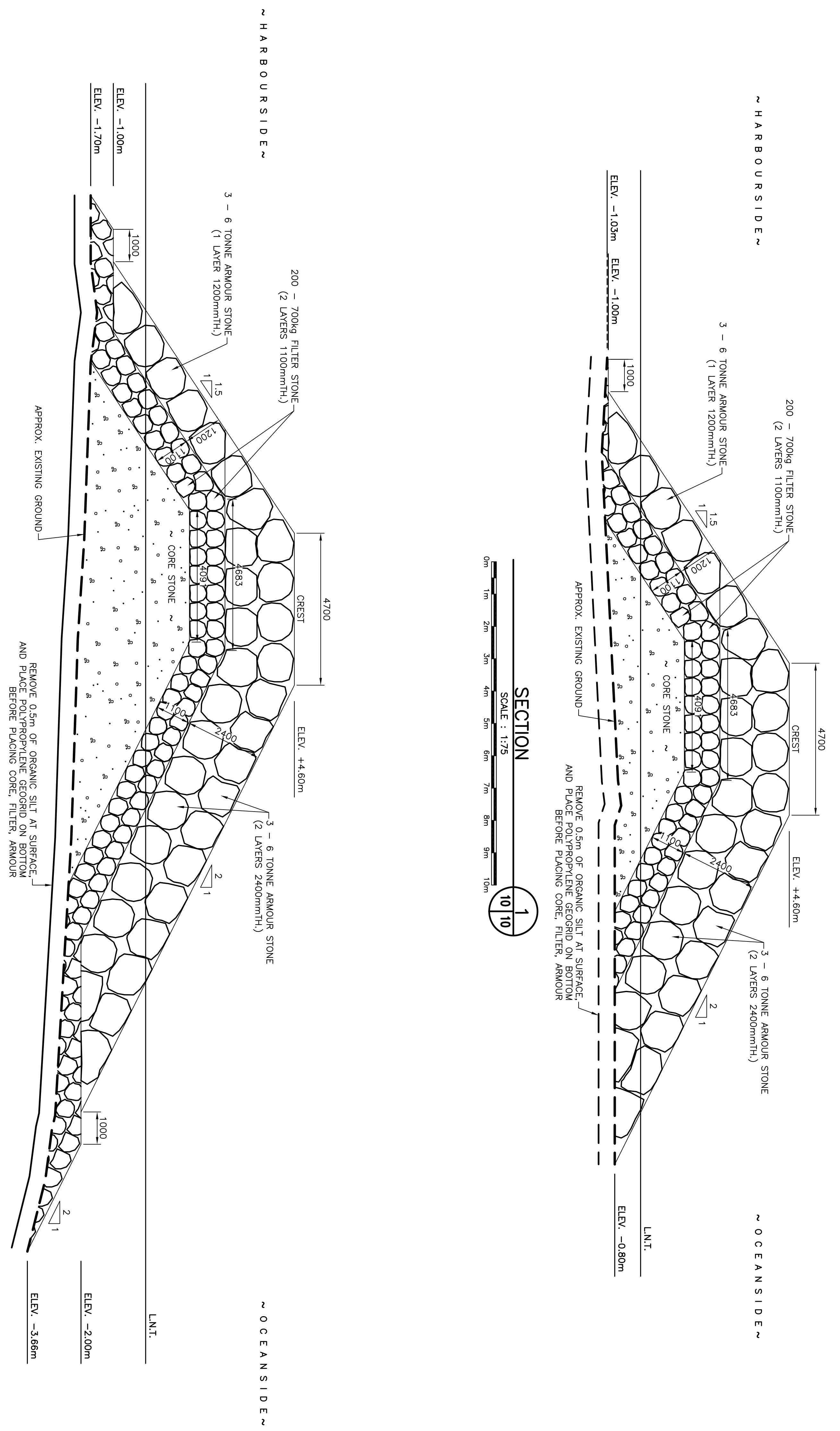
1. ALL ELEVATIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.

PROVINCE OF NEWFOUNDLAND
PERMIT HOLDER
This Permit Allows
JAN ENGINEERING INC.

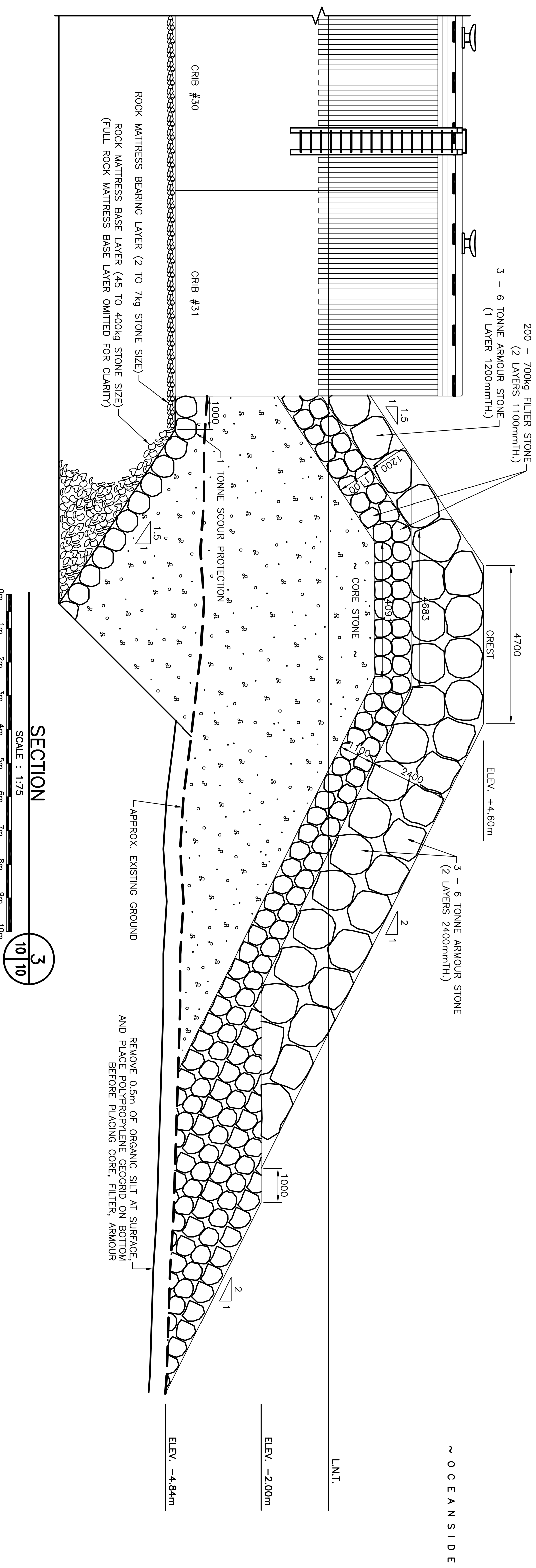
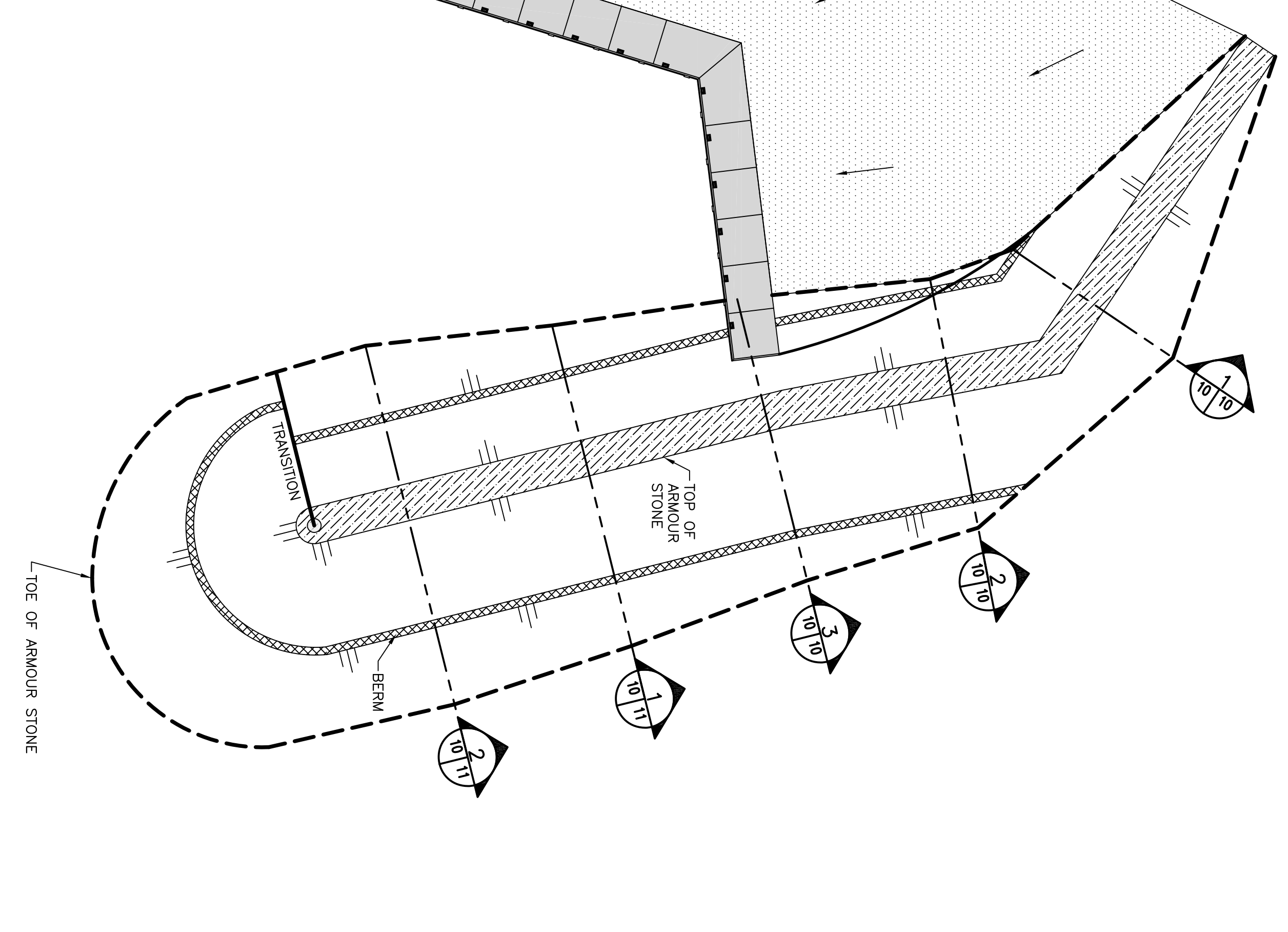
To practice Professional Engineering
Permit No. as issued by AEGISL, 2022.
Which is valid for the year 2022.



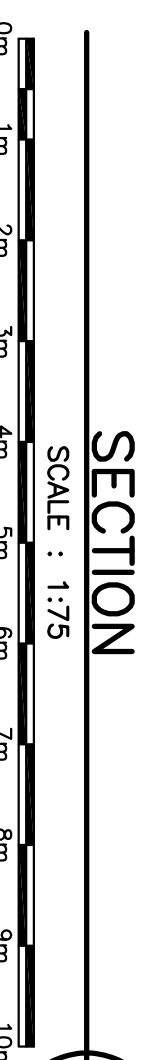
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| PROJECT | HARBOUR DEVELOPMENT LARK HARBOUR, NL | | |
| DESIGNED | N.H. | DATE | SEPTEMBER 17, 2022 |
| DRAWN | P.H. | DATE | SEPTEMBER 17, 2022 |
| APPROVED | | DATE | |
| CLIENT | NO. DU PROJET | NO. DU PROJET | XXXX |
| NO. DU DESSIN | C10 | | |

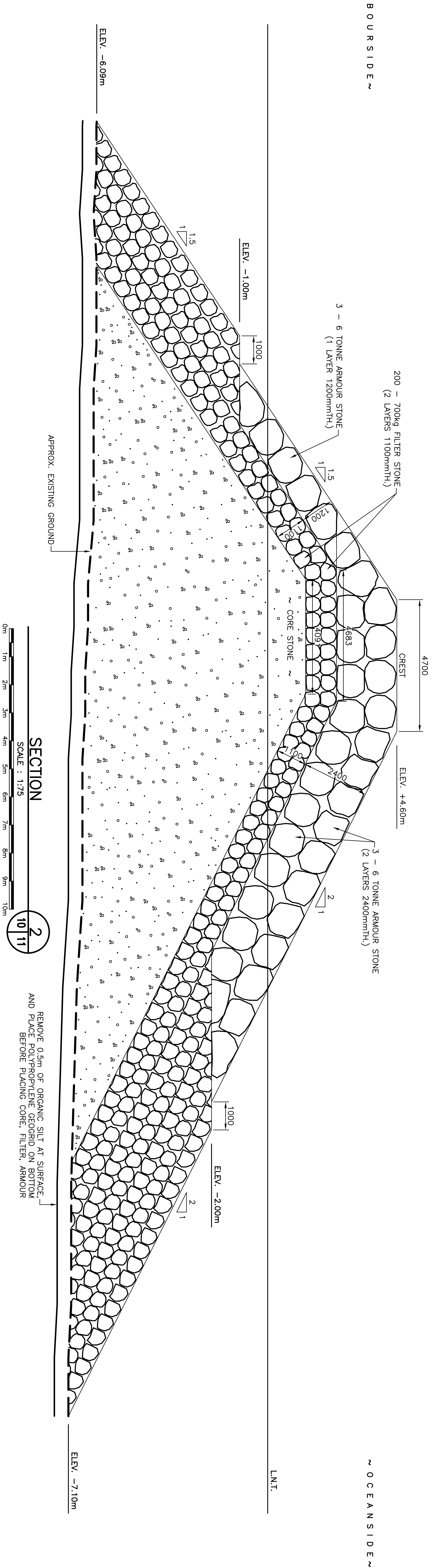
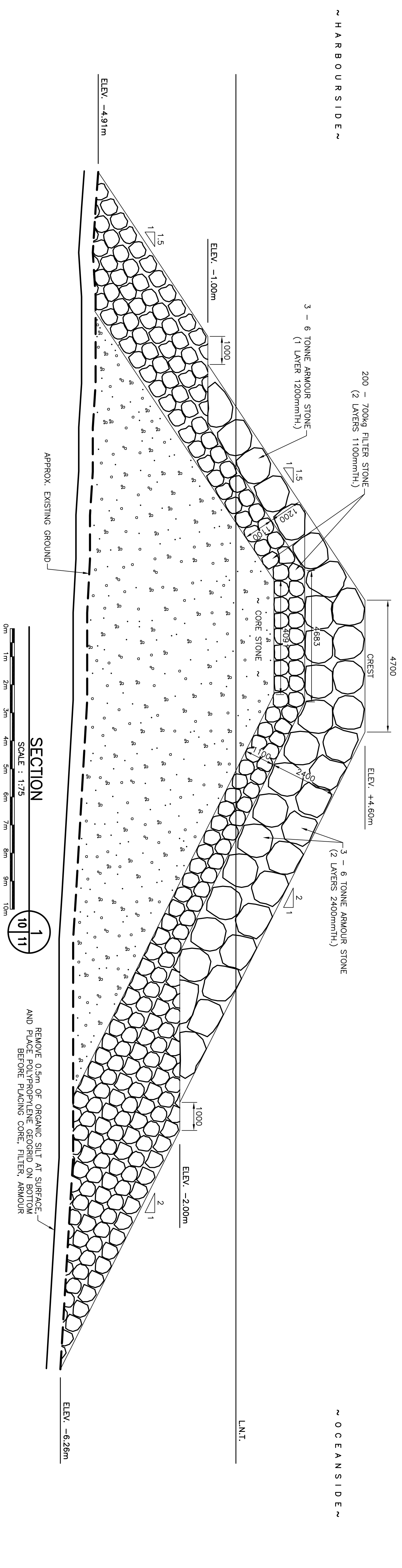


KEY PLAN - BREAKWATER
SCALE: 1:500



SECTION
SCALE: 1:75





SMALL CRAFT HARBOURS



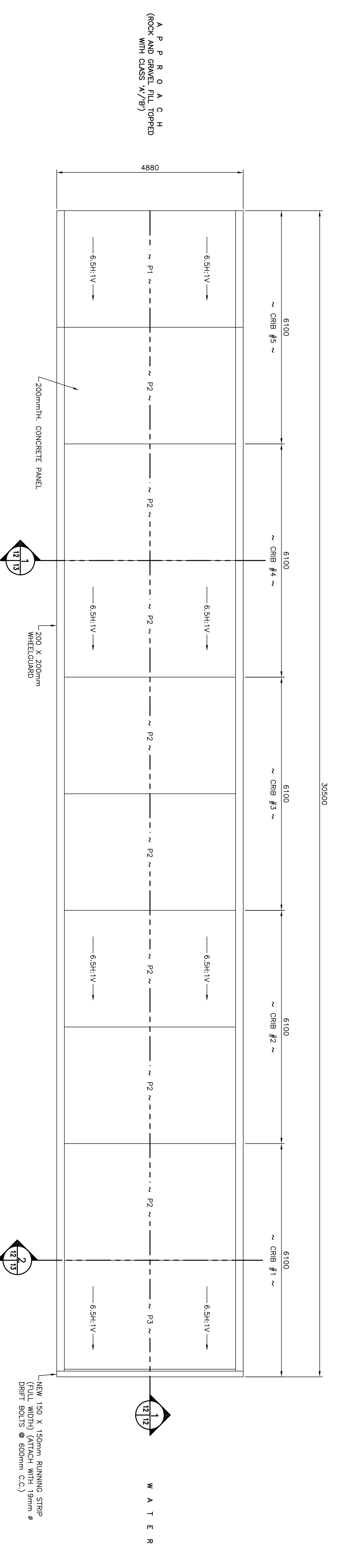
- NOTES:
1. ALL ELEVATIONS ARE IN METRES UNLESS OTHERWISE NOTED.
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PROVINCE OF NEWFOUNDLAND
PERMIT HOLDER
This Permit Allows
APN ENGINEERING INC.

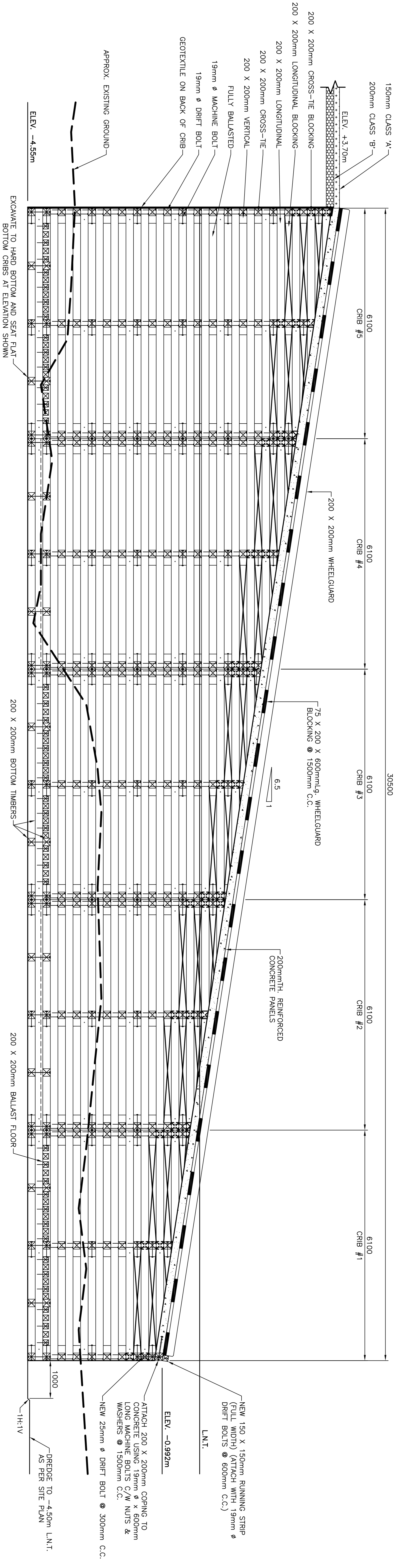
Registered Professional Engineering
Permit No. as issued by AREGONL, 20282
which is valid for the year, 2022

REGISTERED PROFESSIONAL ENGINEER
NELL C. BIRCH
PROVINCE OF NEWFOUNDLAND & LABRADOR

| | | | |
|---------------------|-------------------------|---------------|-------------------|
| revision | no. | date | description |
| A | 1 | 9/17/22 | ISSUED FOR REVIEW |
| project | HARBOUR DEVELOPMENT | | |
| project | LARK HARBOUR, NL | | |
| drawing | NEW BREAKWATER SECTIONS | | |
| designed N.H. | date | checked P.H. | drawn P.H. |
| 9/17/22 | 17, 2022 | 17, 2022 | 17, 2022 |
| approved | approved | approved | approved |
| Tender | no. of project | no. of sheets | no. of sheets |
| DBO Project Manager | XXXX | C11 | C11 |



A P P R O A C H
(ROCK AND GRAVEL FIL, TOPPED
WITH CLASS 'A/B)



Small Craft Harbours

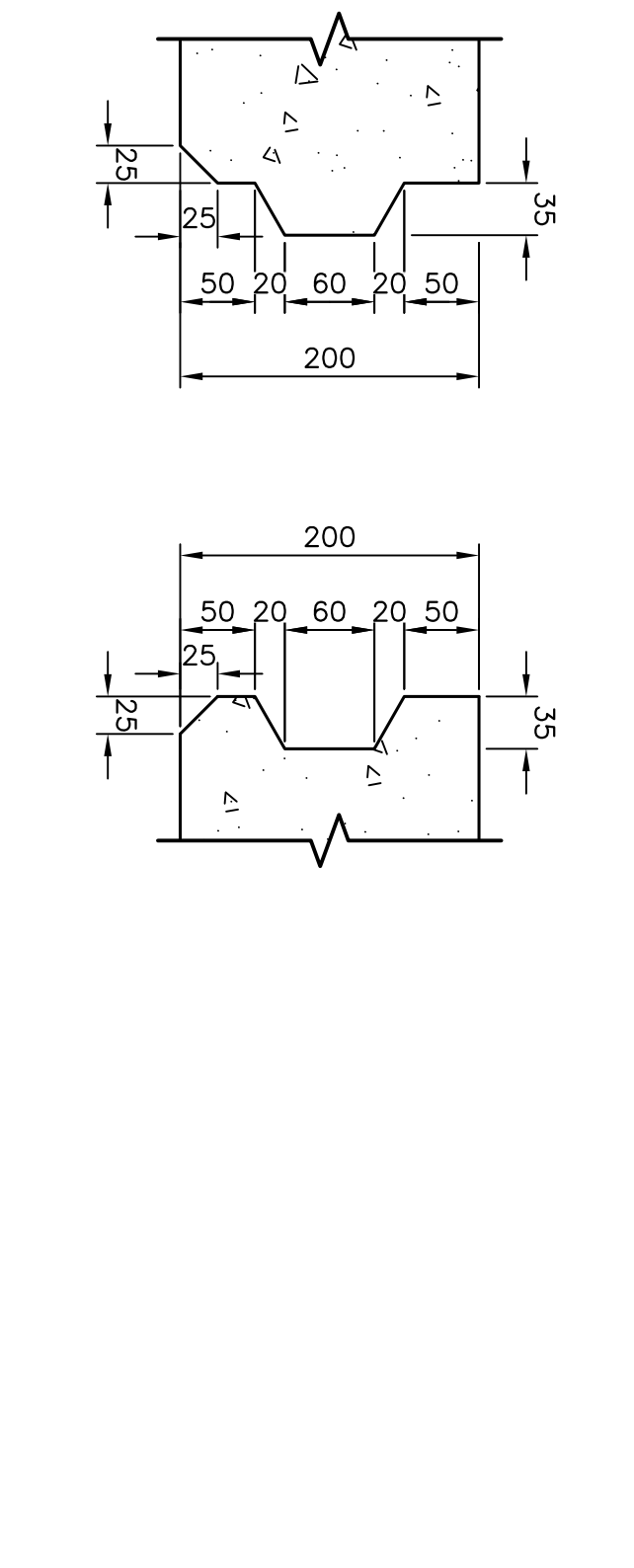
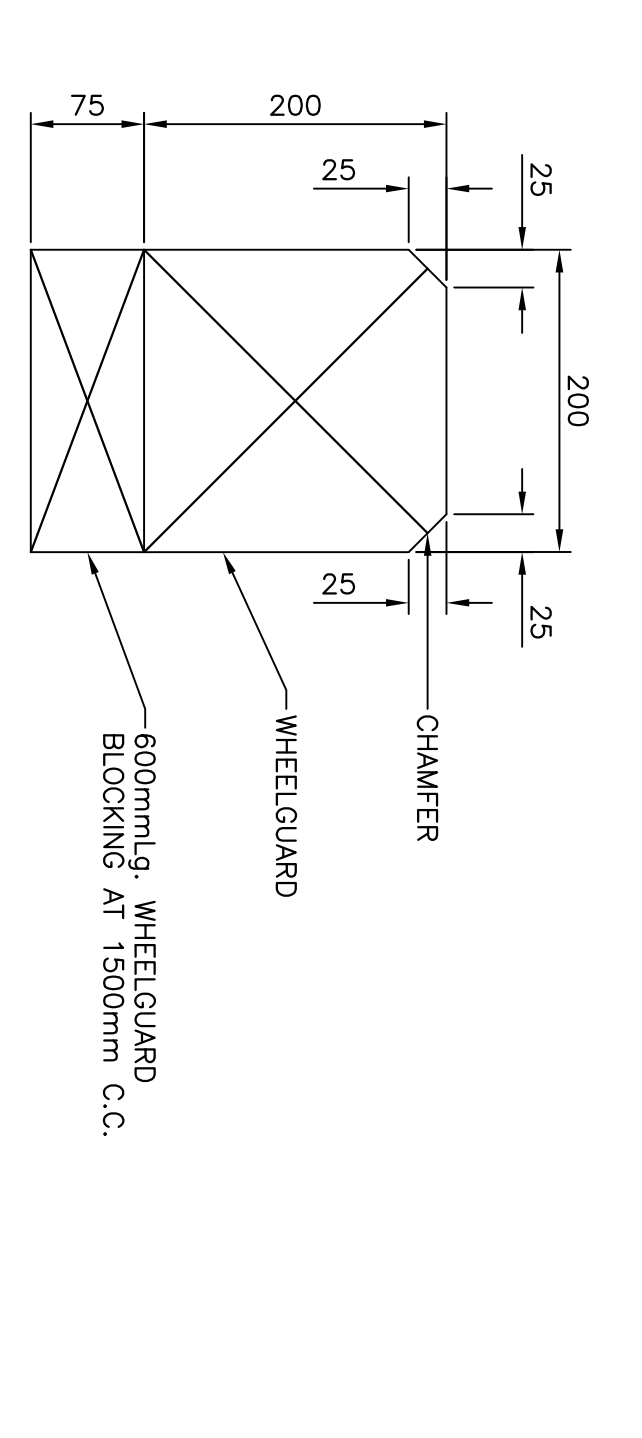
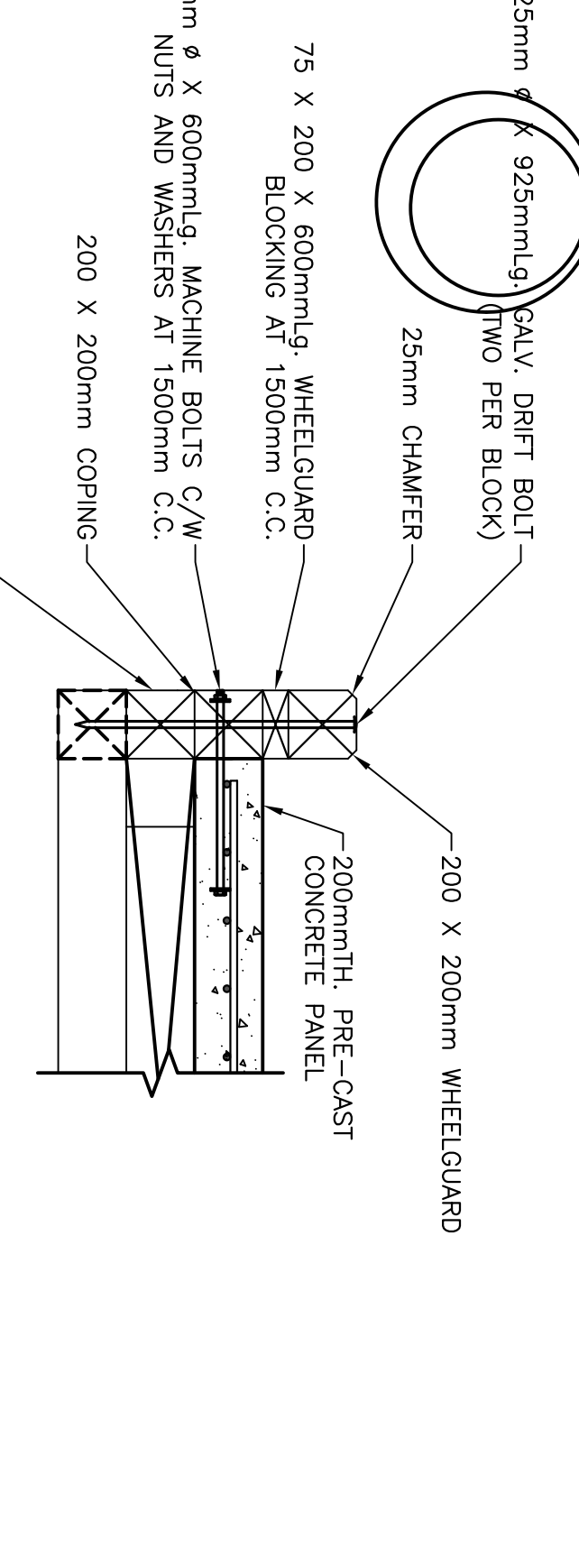
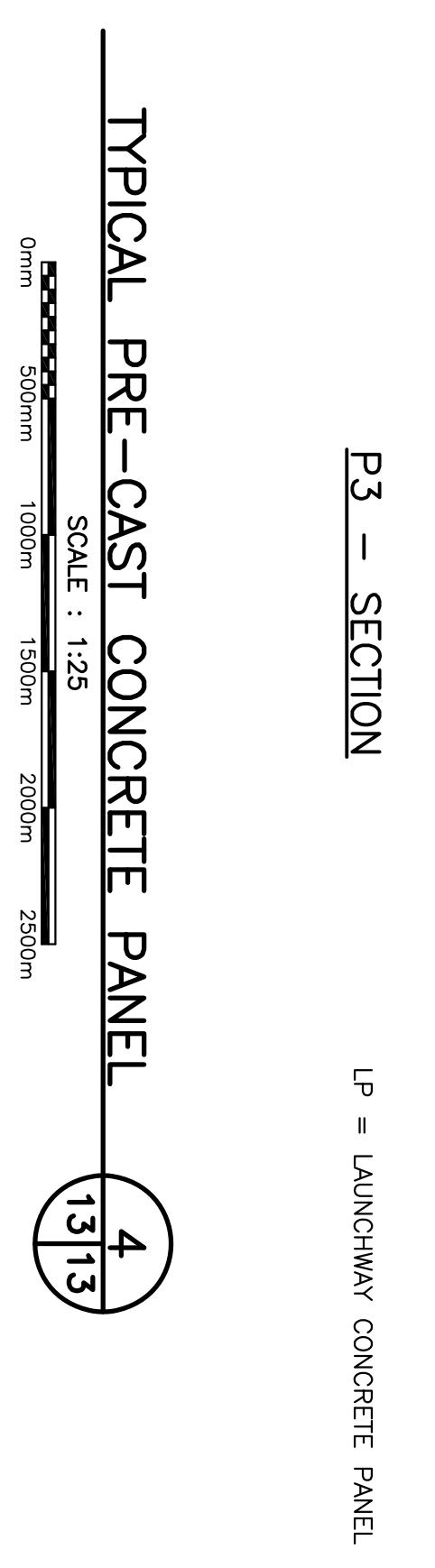
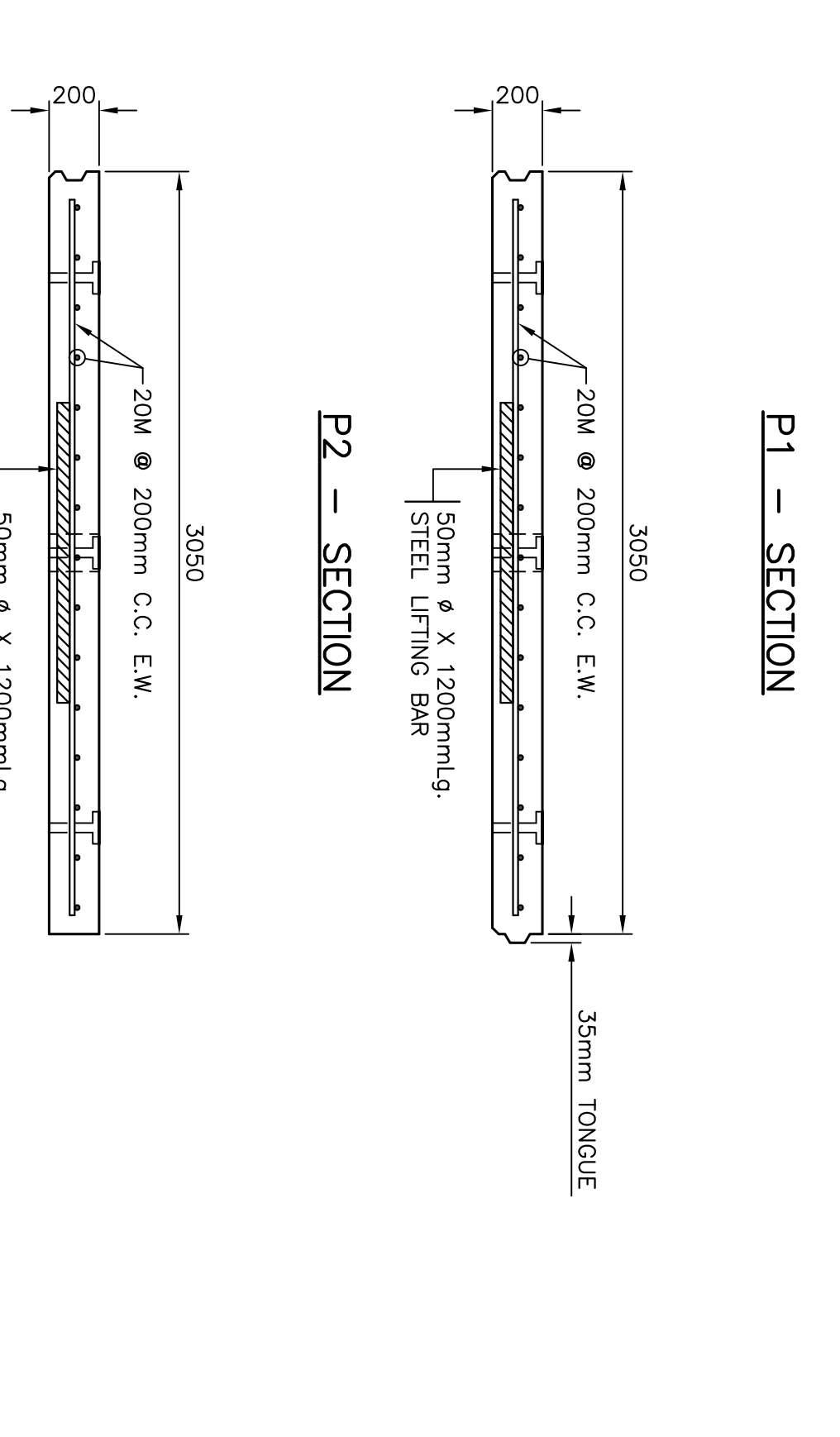
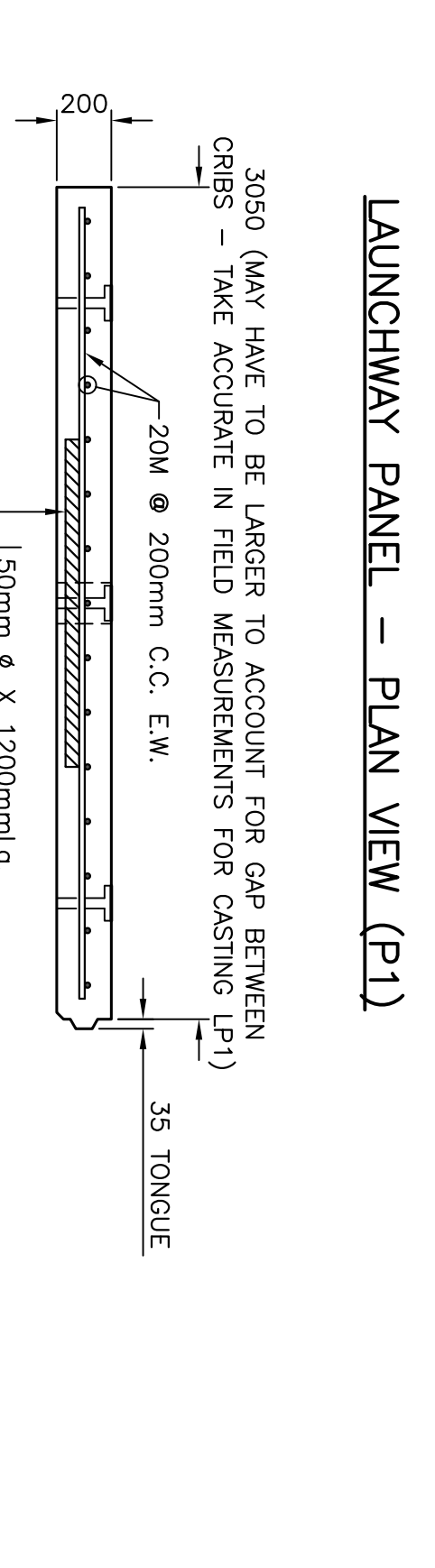
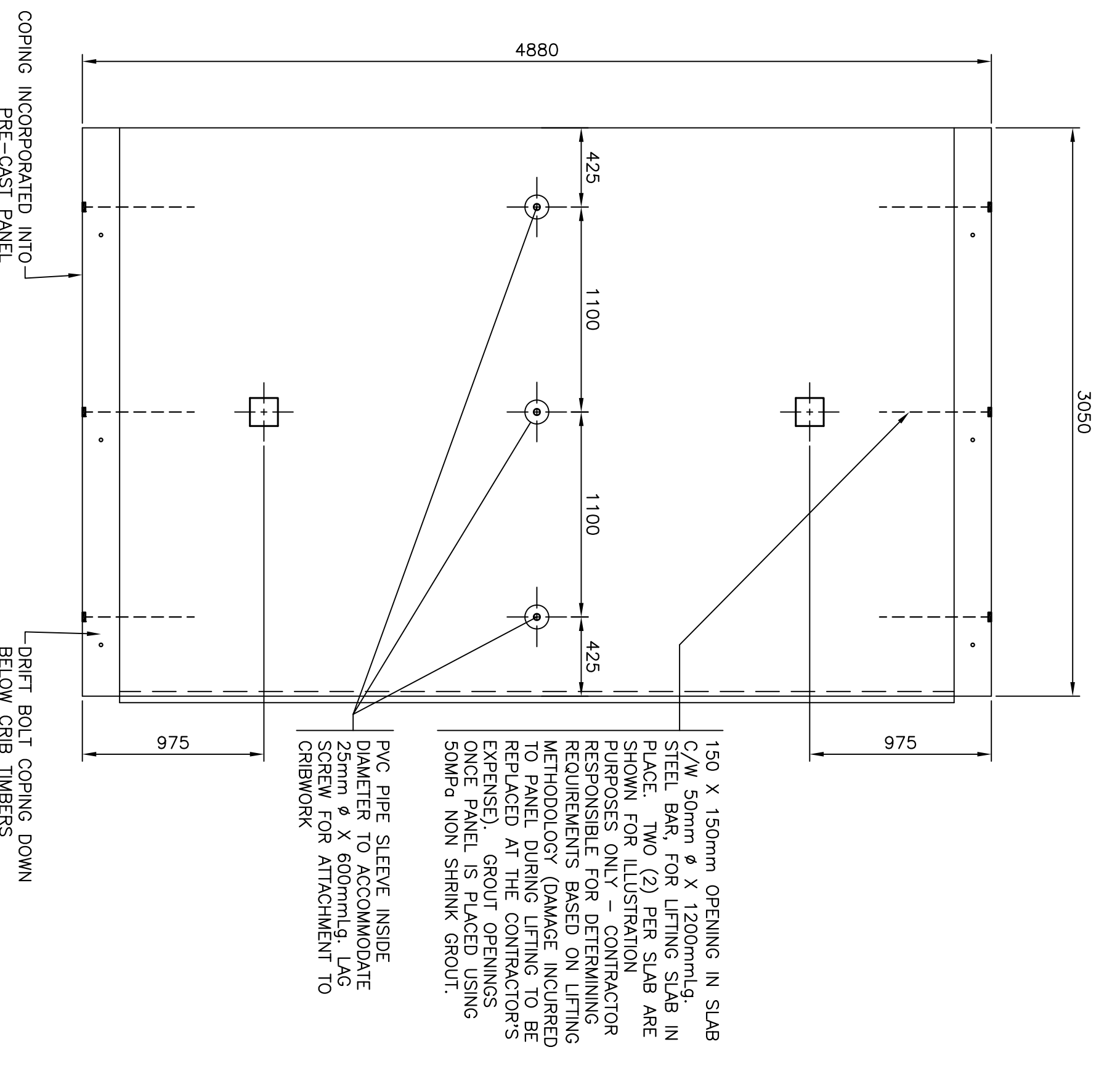
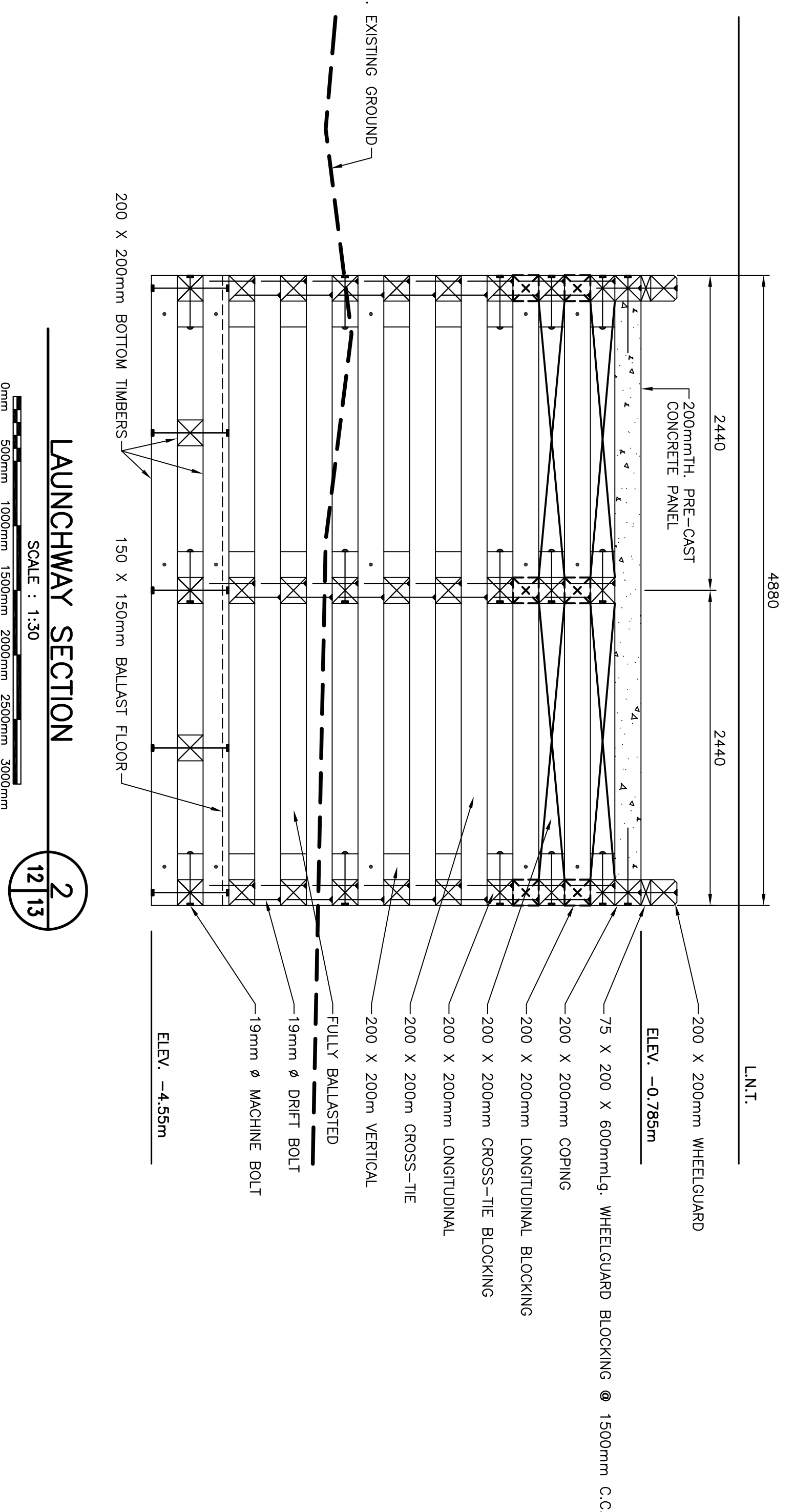
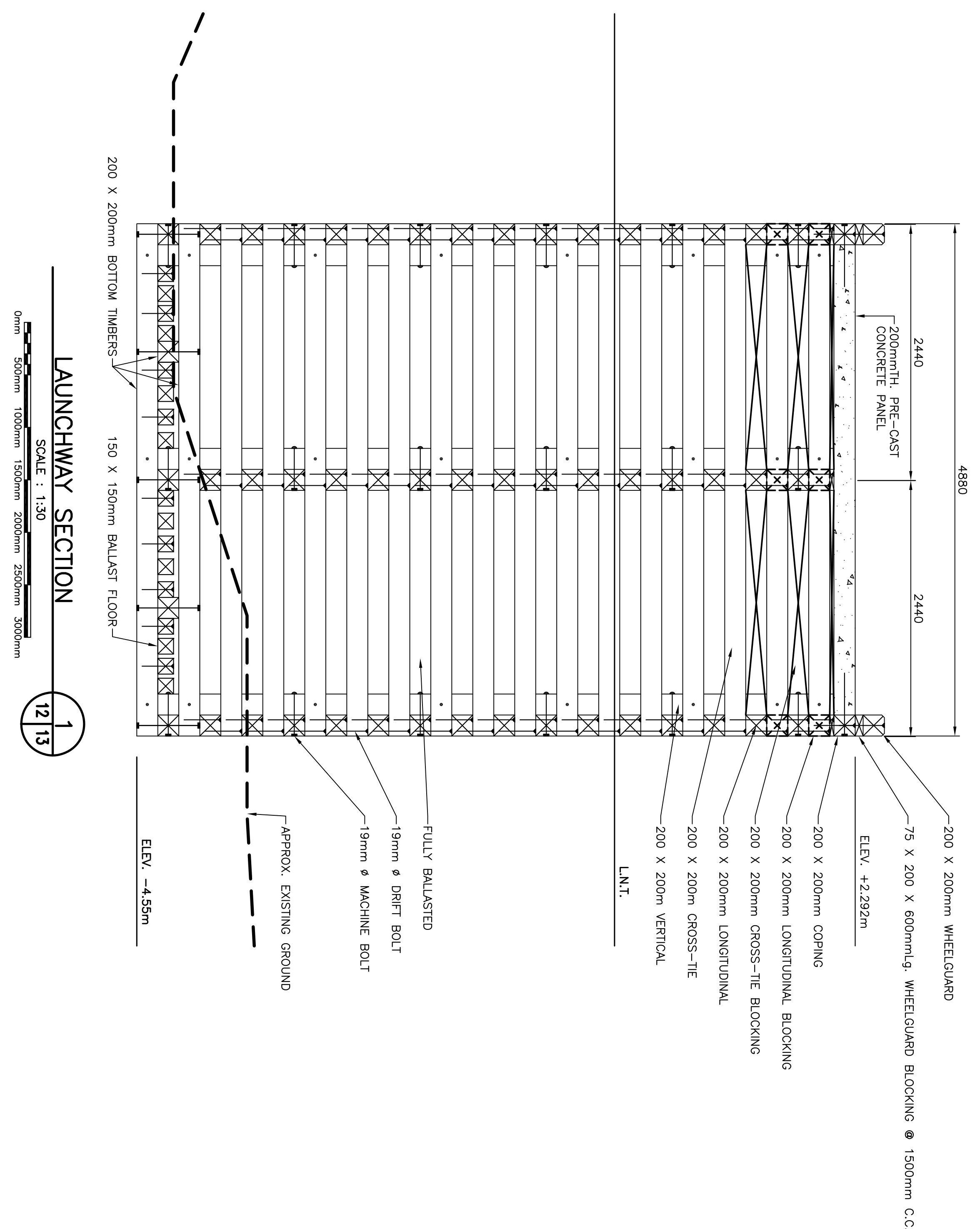
Province of Newfoundland
Permit Holder
This Permit Allows
APN ENGINEERING INC.

REGISTERED PROFESSIONAL ENGINEER
NEIL C. BIRCH
PROFESSIONAL ENGINEER
NEWFOUNDLAND & LABRADOR

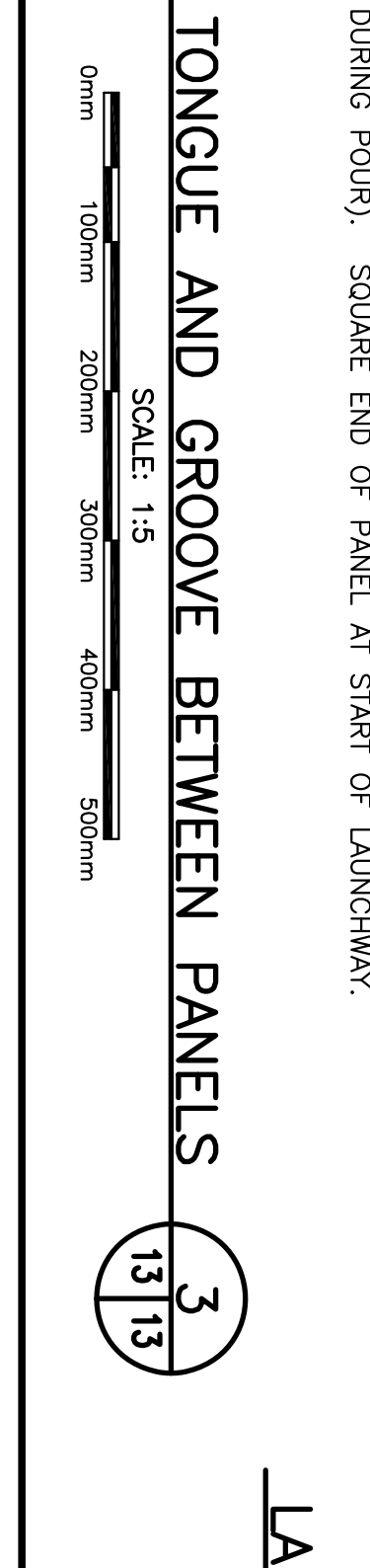
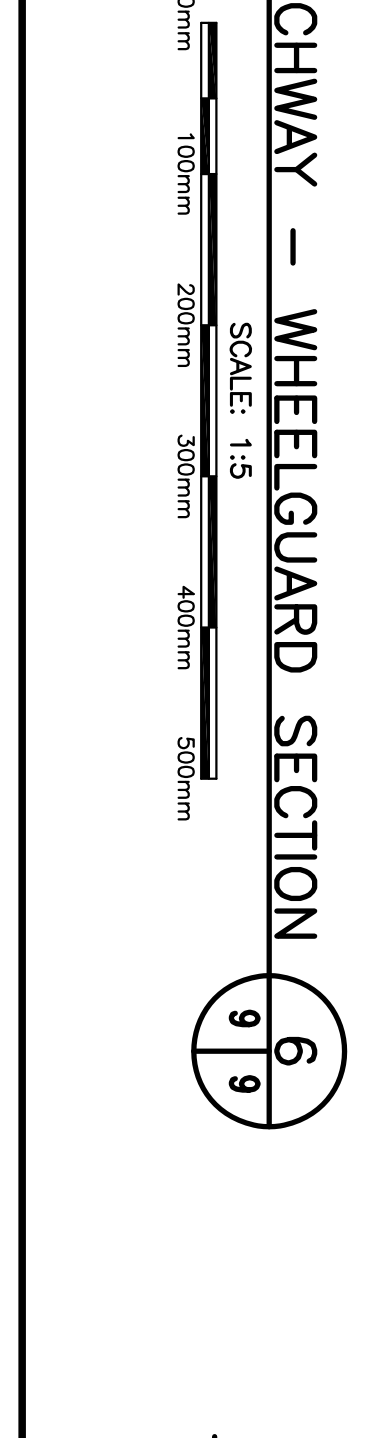
By the Province of Newfoundland
Permit No. as issued by AROBCL, 20282
which is valid for the year 2022.

NOTES:
1. ALL ELEVATIONS ARE IN METRES
UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS ARE IN MILLIMETRES
UNLESS OTHERWISE NOTED.

| | | | |
|--|--|--|--|
| <p>designed N.H. date OCTOBER 16, 2022 drawn P.H. date OCTOBER 16, 2022 approved</p> | | <p>scope destination no. du projet no. du projet</p> | |
| <p>client HARBOUR DEVELOPMENT LARK HARBOUR, NL</p> | | <p>project date date</p> | |
| <p>drawing NEW LAUNCHWAY PLAN AND SECTION</p> | | <p>no. du dessin C12</p> | |



NOTE:
1. DETAIL NOT REQUIRED AT END OF LAST SLAB OF SLIPWAY (INCORPORATE END COPING INTO LAST PANEL DURING POUR). SQUARE END OF PANEL AT START OF LAUNCHWAY.



NOTE:
1. DETAIL NOT REQUIRED AT END OF LAST SLAB OF SLIPWAY (INCORPORATE END COPING INTO LAST PANEL DURING POUR). SQUARE END OF PANEL AT START OF LAUNCHWAY.

Small Craft Harbours

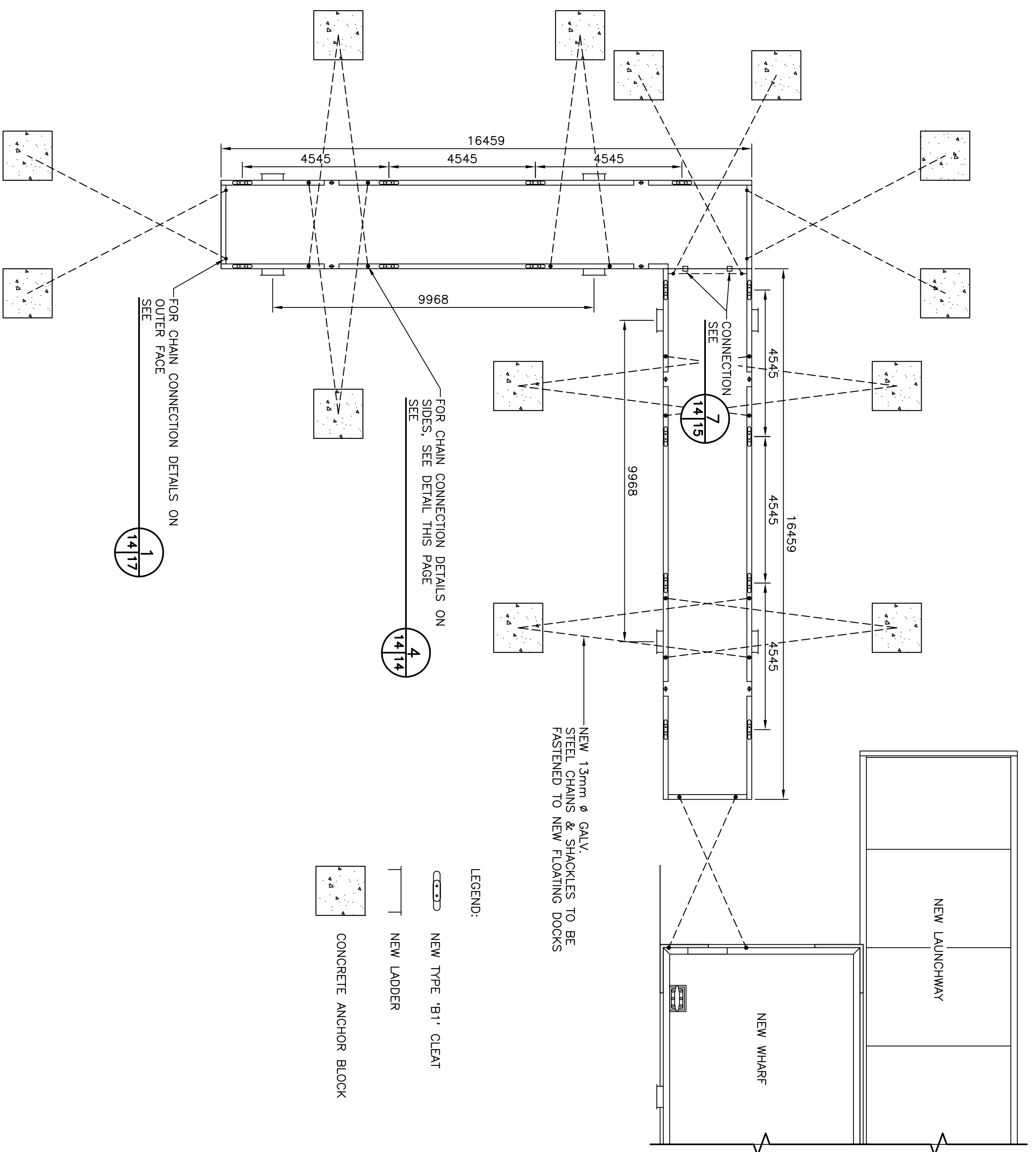
Province of Newfoundland
Permit Holder
This Permit Allows
APN ENGINEERING INC.

REGISTERED PROFESSIONAL ENGINEER
NIEL C. HIRSH
PROFESSIONAL ENGINEER
NEWFOUNDLAND & LABRADOR
1994

APN ENGINEERING INC.
2360 Main Street
St. John's, NL A1B 2X2
Canada
Tel: (709) 753-8888
Fax: (709) 753-8889
www.apn.ca

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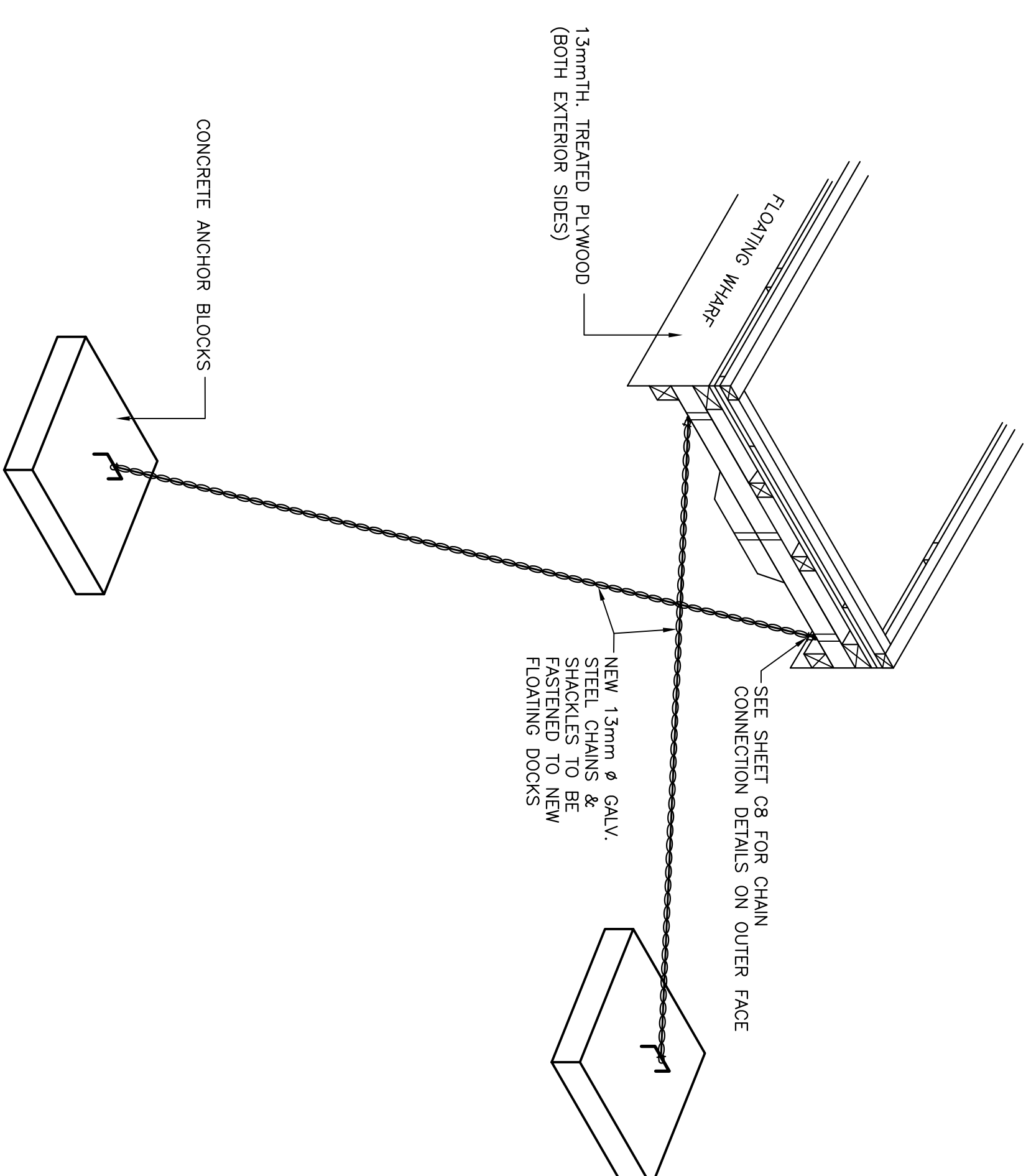
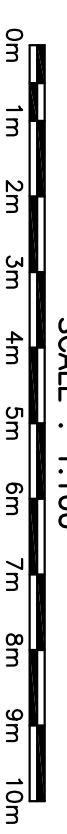
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| <p>designed N.H. date OCTOBER 16, 2022 drawn P.H. date OCTOBER 16, 2022 approved</p> | | <p>no. of project XXXX</p> <p>no. of sheets C13</p> | |
| <p>client LARK HARBOUR, NL</p> | | <p>project HARBOUR DEVELOPMENT</p> | |
| <p>revision A ISSUED FOR REVIEW 10/16/22</p> | | <p>drawing no. C13</p> | |



ANCHORS, CLEATS, LADDERS FOR DOCKS

1
1414

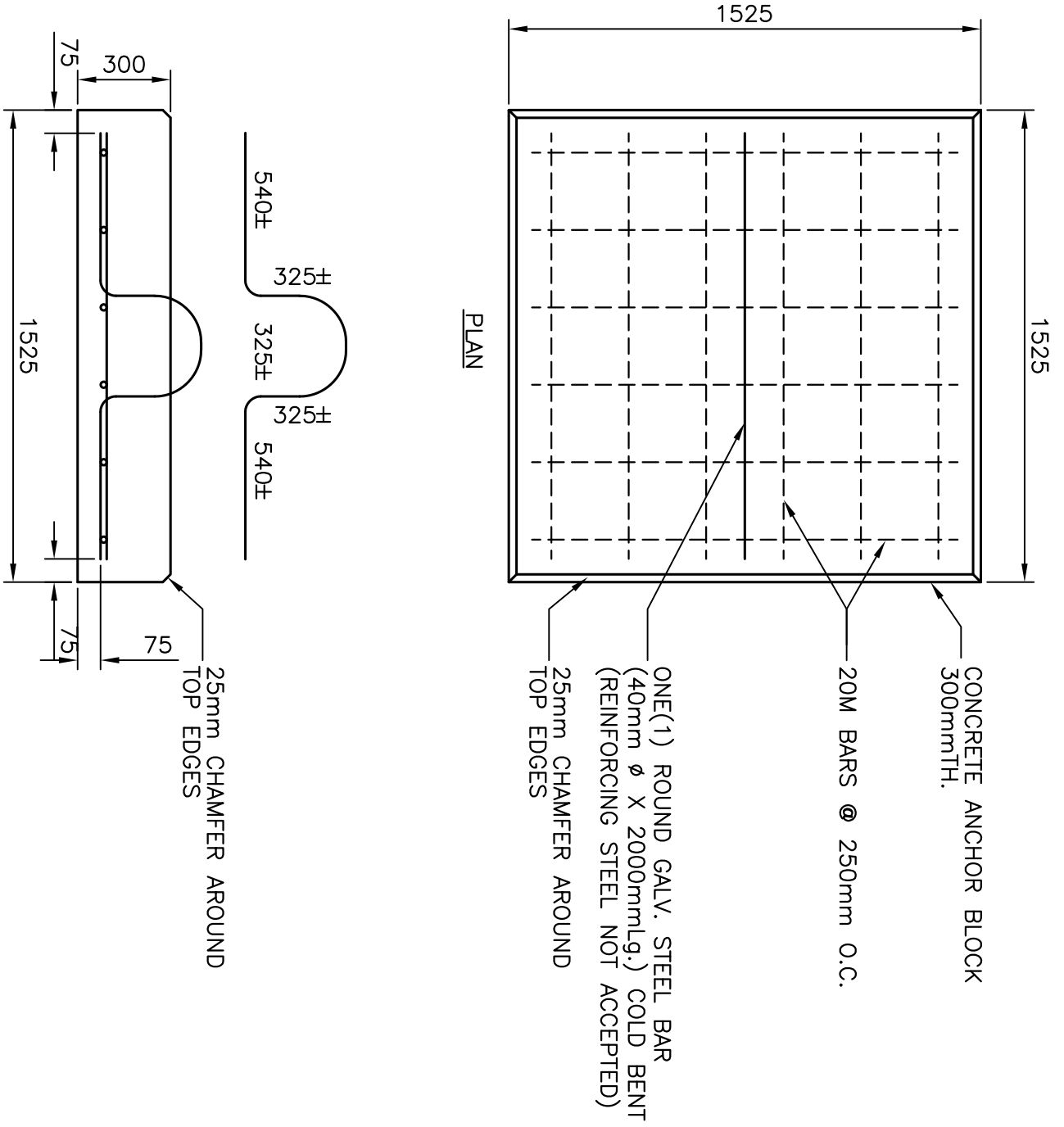
SCALE : 1:100



ANCHOR BLOCK FASTENING DETAIL

2
1414

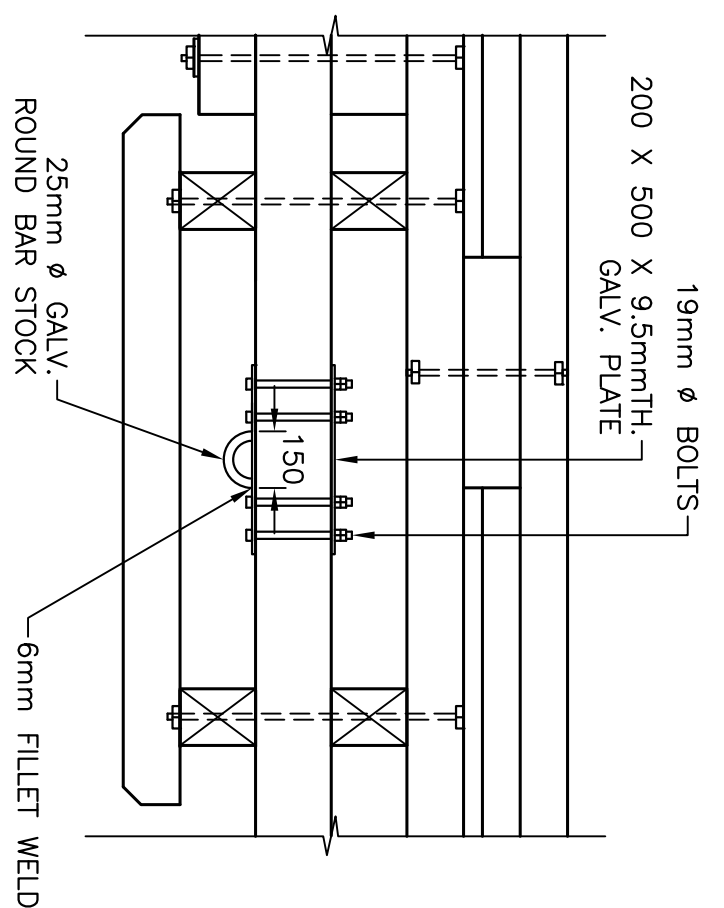
SCALE: 1:50



CONCRETE ANCHOR BLOCK

3
1414

SCALE : 1:20



CHAIN CONNECTION ON SIDES

4
1414

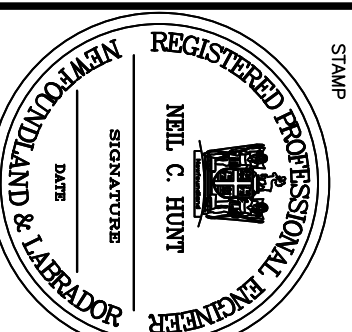
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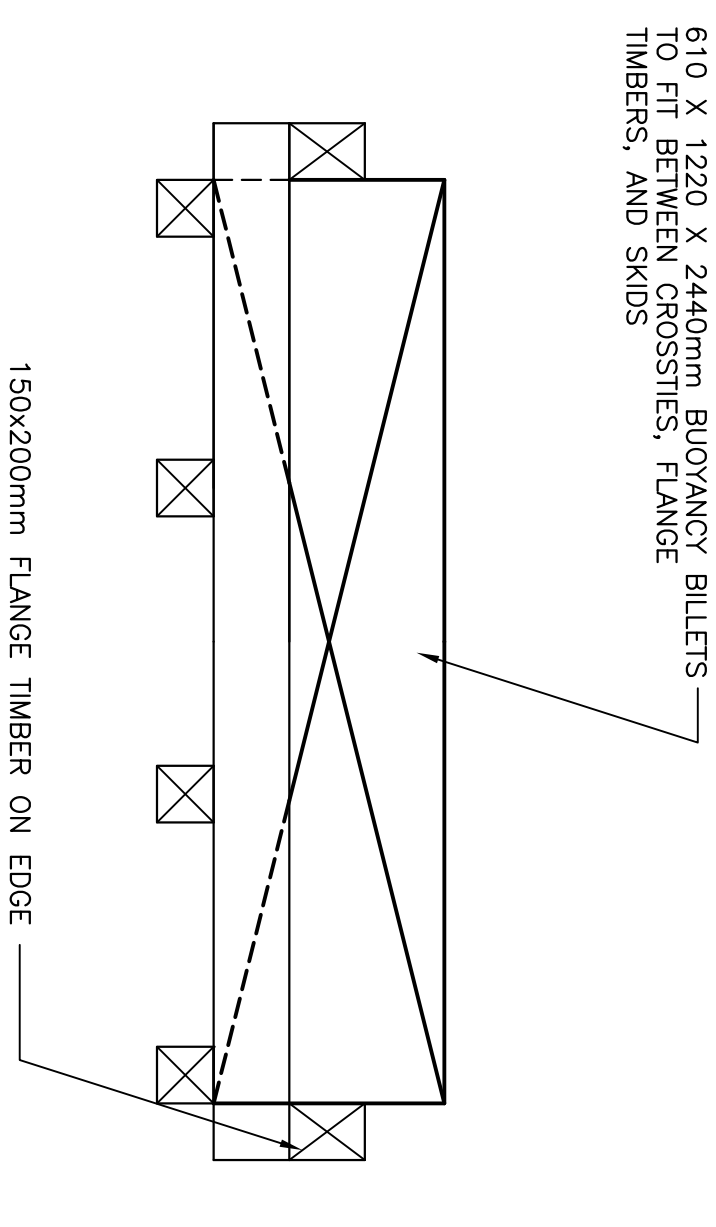
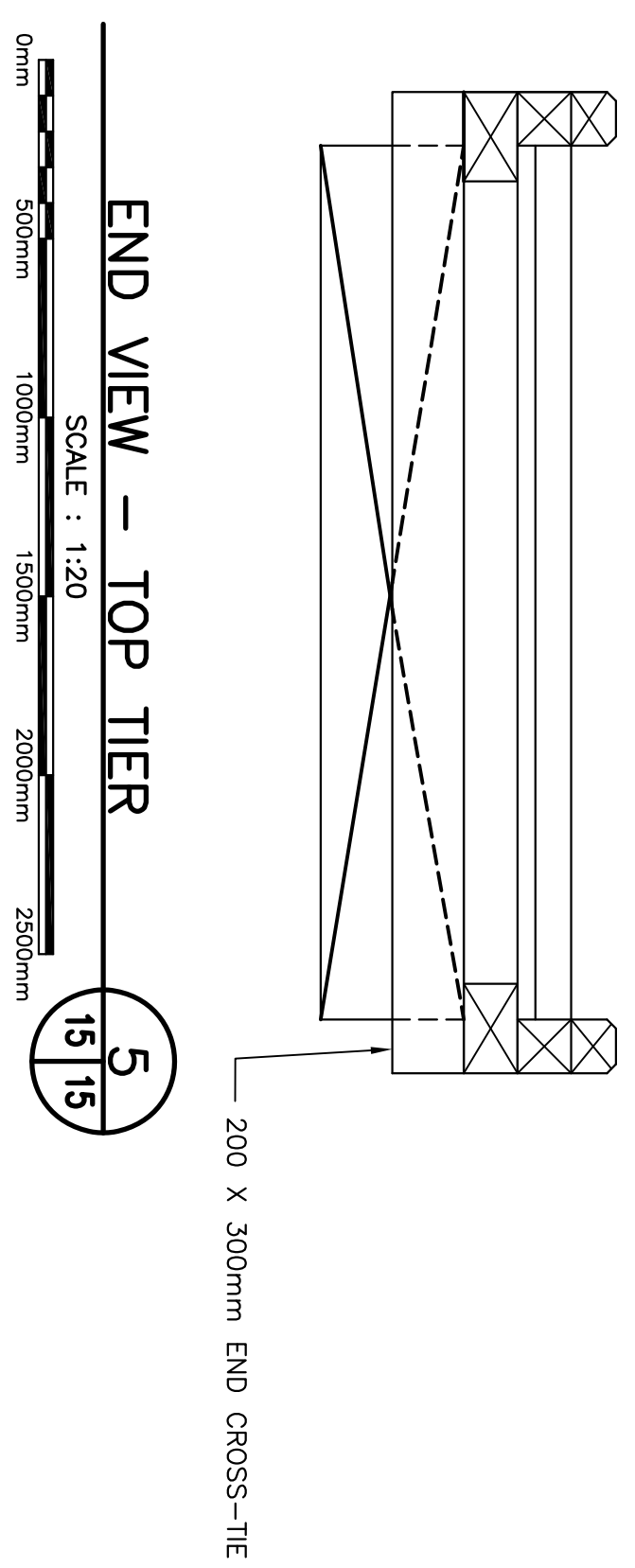
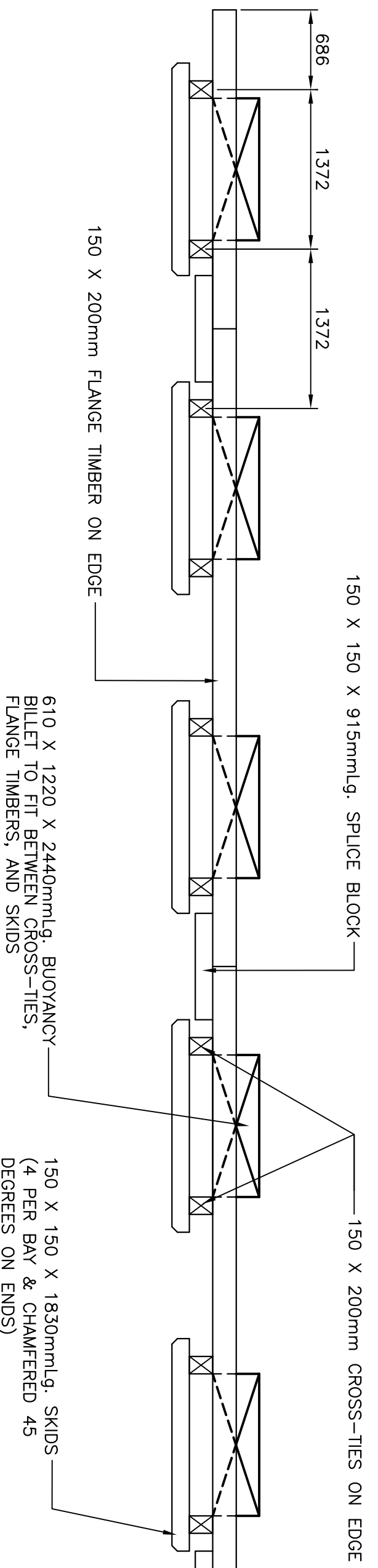
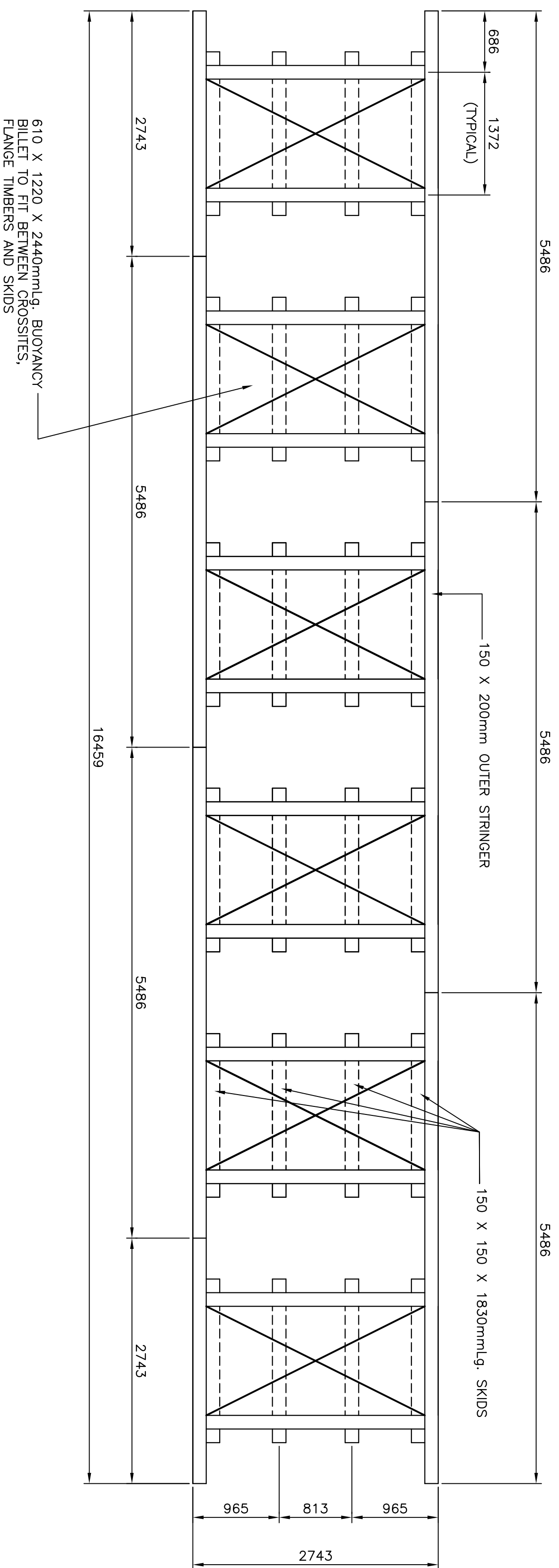
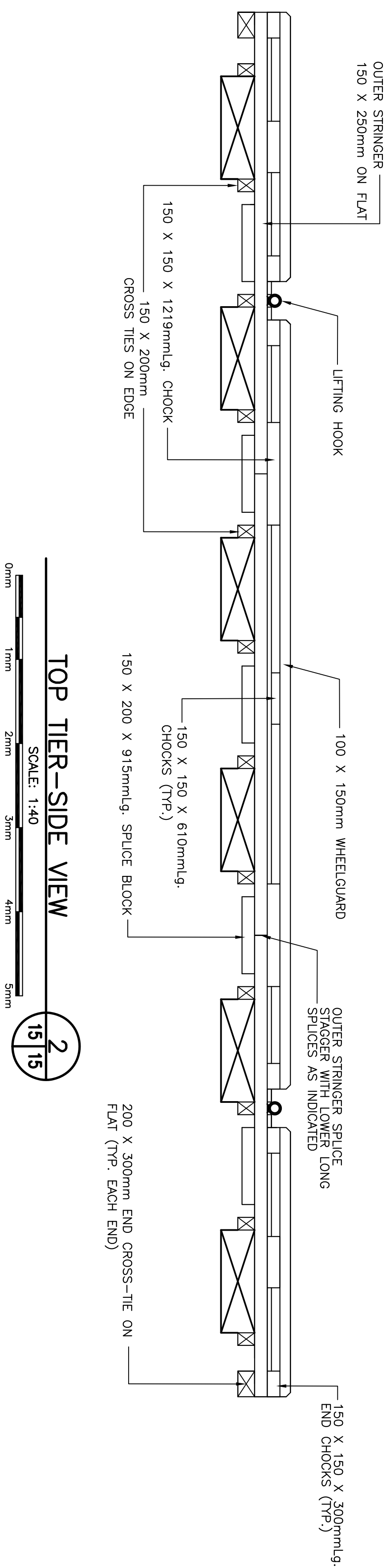
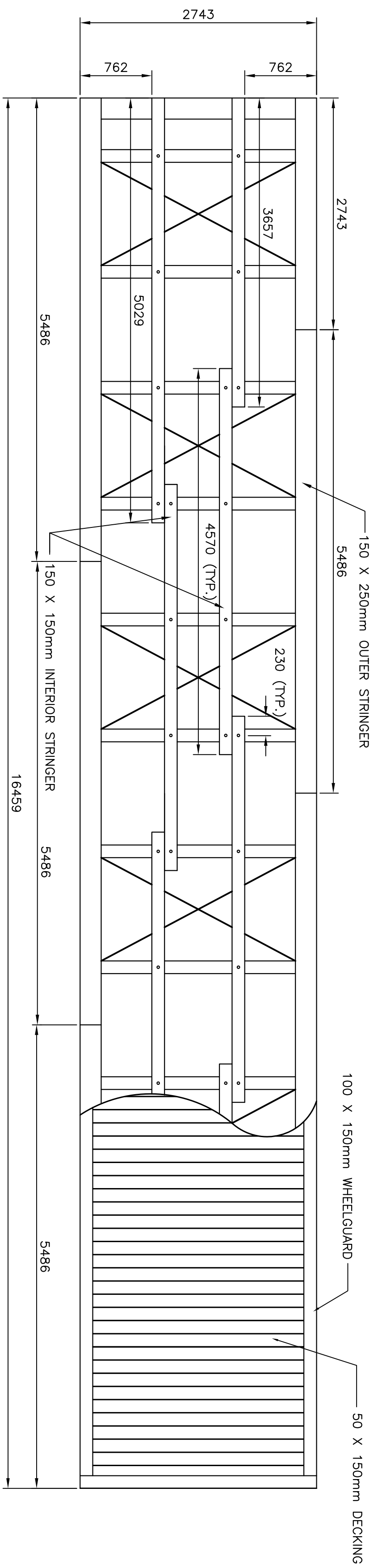
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PROVINCE OF NEWFOUNDLAND
PERMIT HOLDER
This Permit Allows
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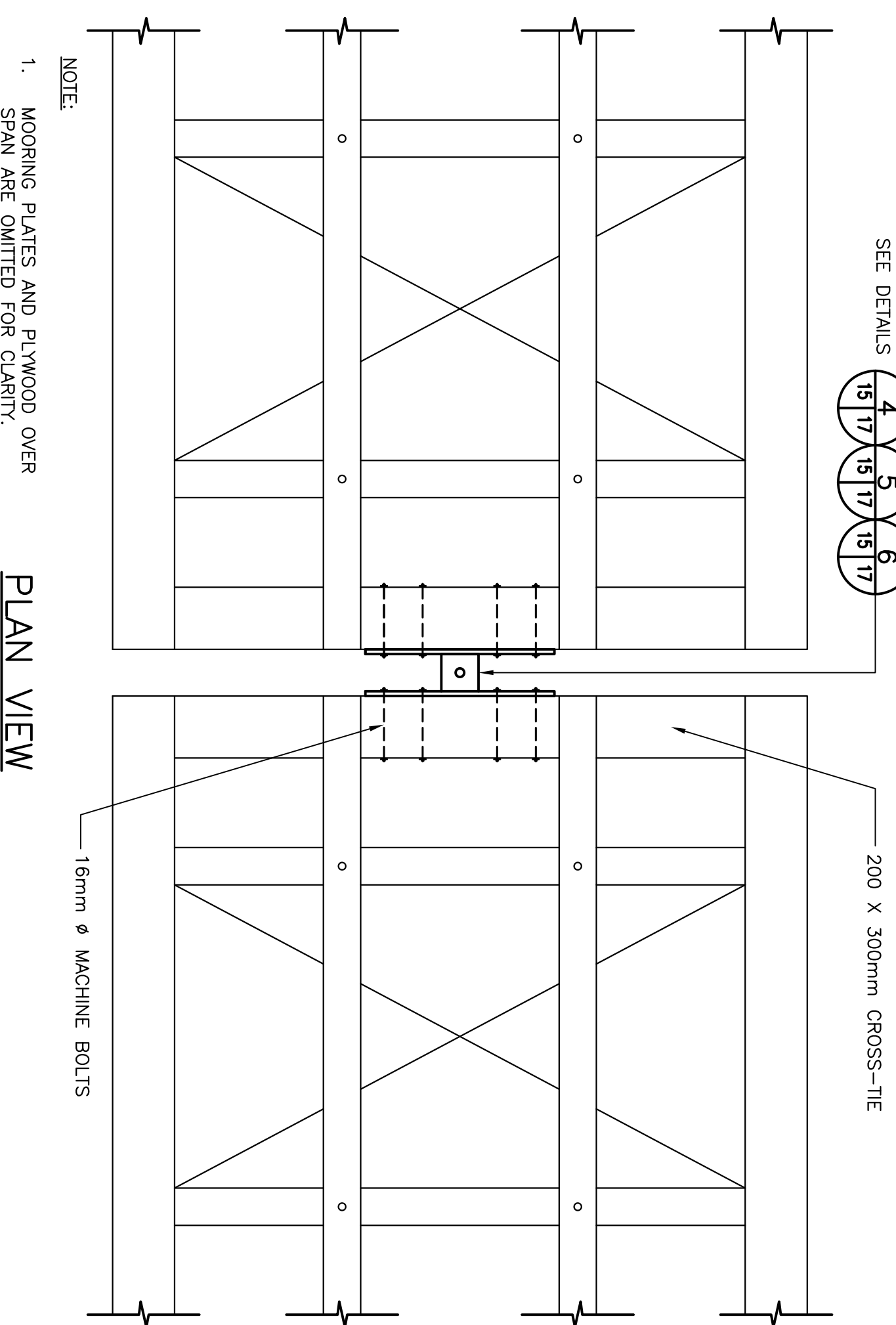
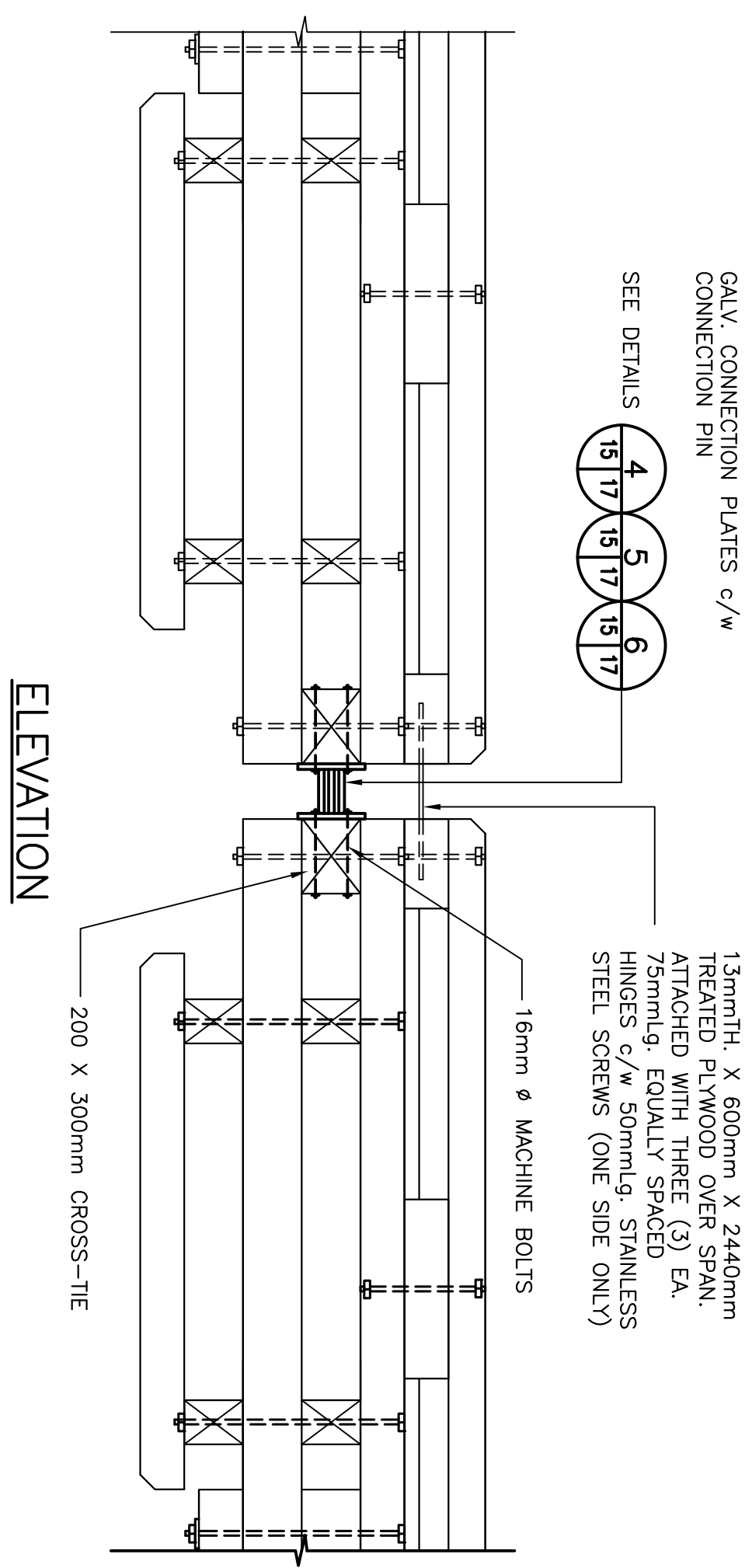
Registered Professional Engineering
Permit No. as issued by APBONL, 20282
which is valid for the year 2022



| | | | |
|-------------------|---------------------|---------------|--|
| drawing no. | C14 | no. du dessin | |
| project number | XXXX | no. du projet | |
| no. du projet | | | |
| no. du dessin | | | |
| designer | LARK HARBOUR, NL | design | |
| project | HARBOUR DEVELOPMENT | project | |
| revision | | date | |
| date | 10/16/22 | date | |
| ISSUED FOR REVIEW | | | |
| designer | P.H. | designer | |
| date | OCTOBER 16, 2022 | date | |
| approved | | approved | |
| no. du projet | | | |
| no. du dessin | | | |
| no. du dessin | | | |

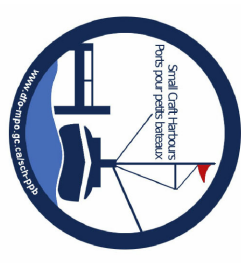


- GENERAL NOTES:**
1. ALL DIMENSIONS IN MILLIMETRES.
 2. ALL MACHINE BOLTS 16mm Ø.
 3. ALL DRIFT BOLTS 16mm.
 4. ALL BOLTS TO BE COUNTERSUNK.
 5. ALL TIMBER TO BE TREATED.
 6. ALL HARDWARE TO BE GALVANIZED.
 7. CONNECTION PLATES TO BE INSTALLED ON EACH FLOATING DOCK.
 8. MOORING PLATE TO BE INSTALLED ON EACH FLOATING DOCK AS REQUIRED AND DIRECTED BY THE DEPARTMENTAL REPRESENTATIVE.
 9. CENTER MOORING PLATE TO BE INSTALLED AT OPPOSITE END OF FLOATING DOCK CONNECTION PLATE.
 10. BUOYANCY BILLETS: 610 X 1220 X 2440mm TYPE 2 EXPANDED POLYSTYRENE C/W 90 MILS AG101 URETHANE WATERPROOFING.
 11. PAINT WHEELGUARD AND W/G BLOCKING WITH ALKYL/OIL RESIN PAINT SIMILAR TO PITTSBURGH PAINTS "SAFETY ORANGE" PRODUCT ID 7-808. PAINT TO CONFORM TO CAN/CSB-1.61-2004.
 12. ALLOW IN BID PRICE FOR CHECKERED RAMP PLATE TO BRIDGE ALL GAPS BETWEEN THE C/W CONNECTION DOCK AND THE DEPARTMENTAL REPRESENTATIVE.

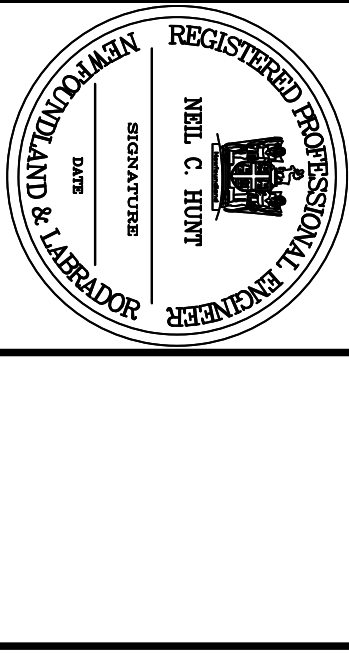
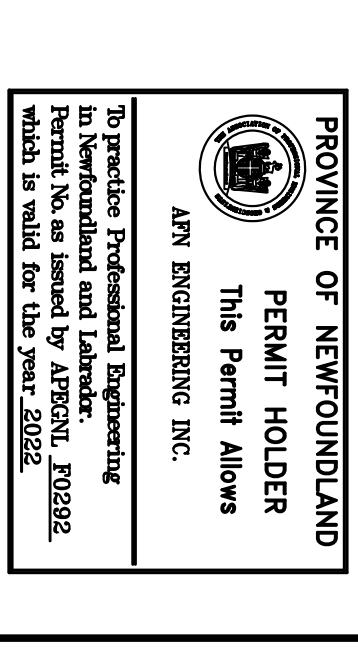


NOTE:
1. MOORING PLATES AND PLYWOOD OVER SPAN ARE OMITTED FOR CLARITY.

FLOATING DOCK CONNECTION DETAIL
SCALE: 1:15
14/15



NOTES:
1. ALL ELEVATIONS ARE IN METRES UNLESS OTHERWISE NOTED.
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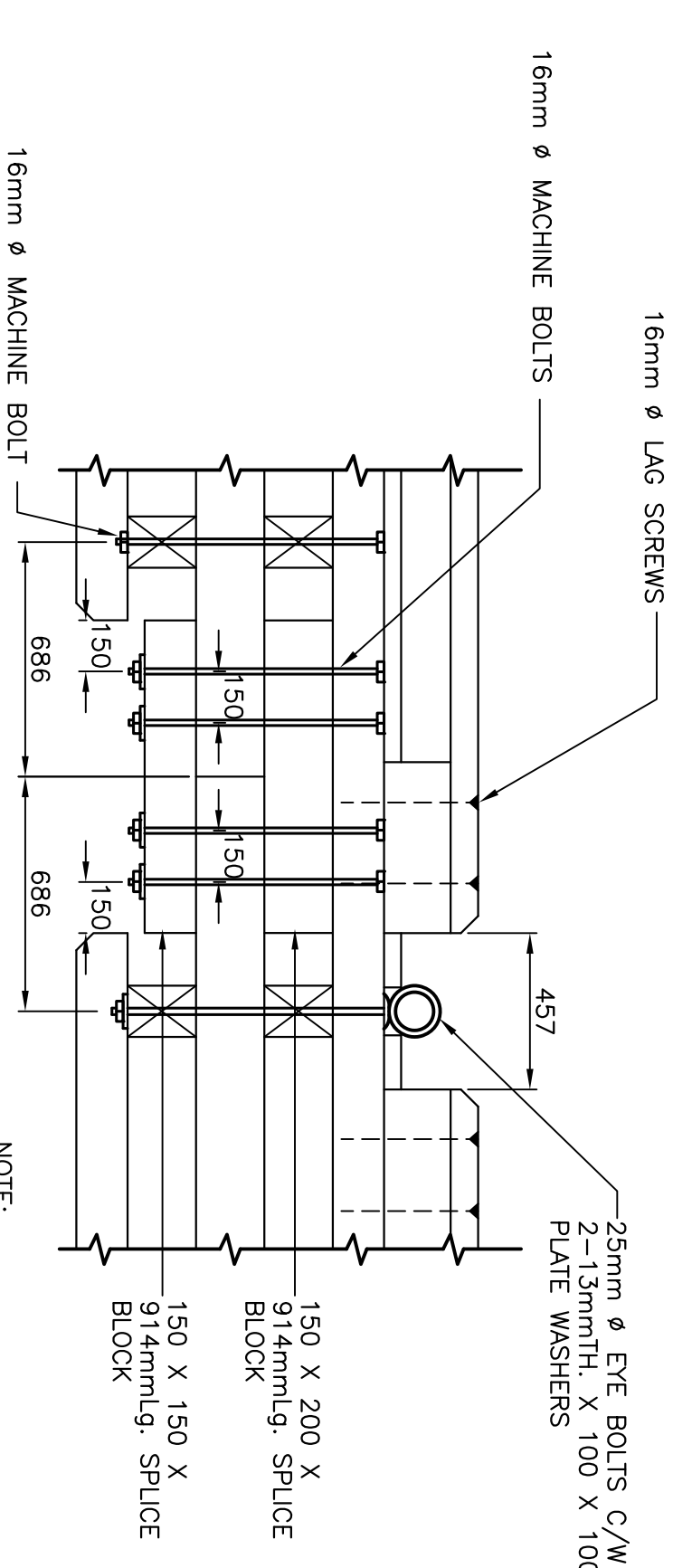


| | | | |
|-------------|------------------|---------------|---------------------|
| designer | NIL | date | OCTOBER 16, 2022 |
| drawn | P.H. | date | OCTOBER 16, 2022 |
| checked | | date | |
| approved | | date | |
| client | LARK HARBOUR, NL | project | HARBOUR DEVELOPMENT |
| drawing no. | C15 | no. of sheets | 15 |

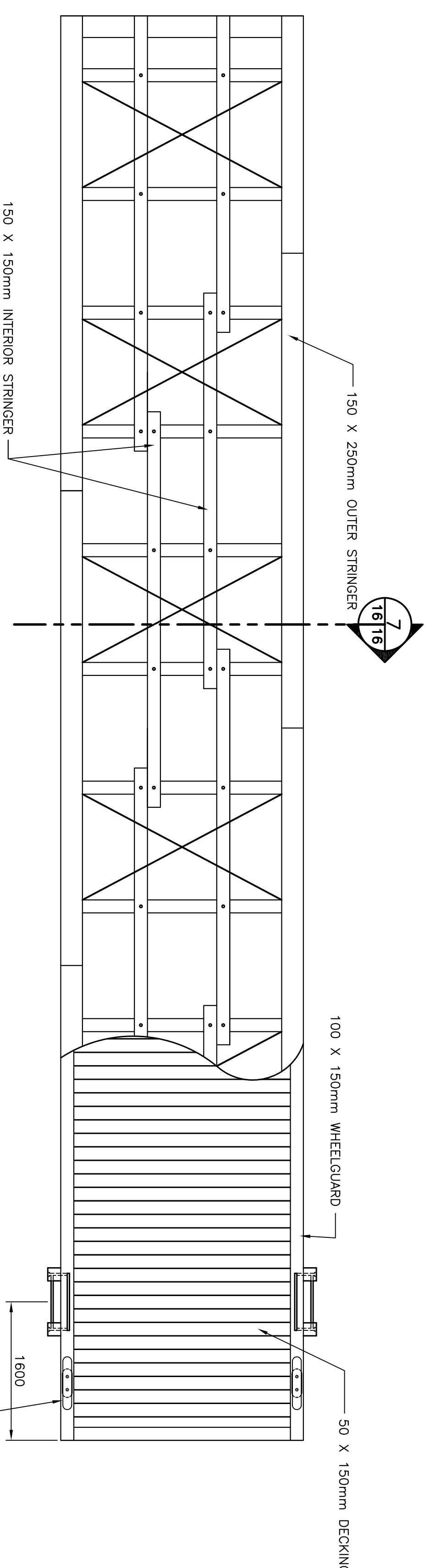


NOTES:
1. ALL ELEVATIONS ARE IN METRES UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.

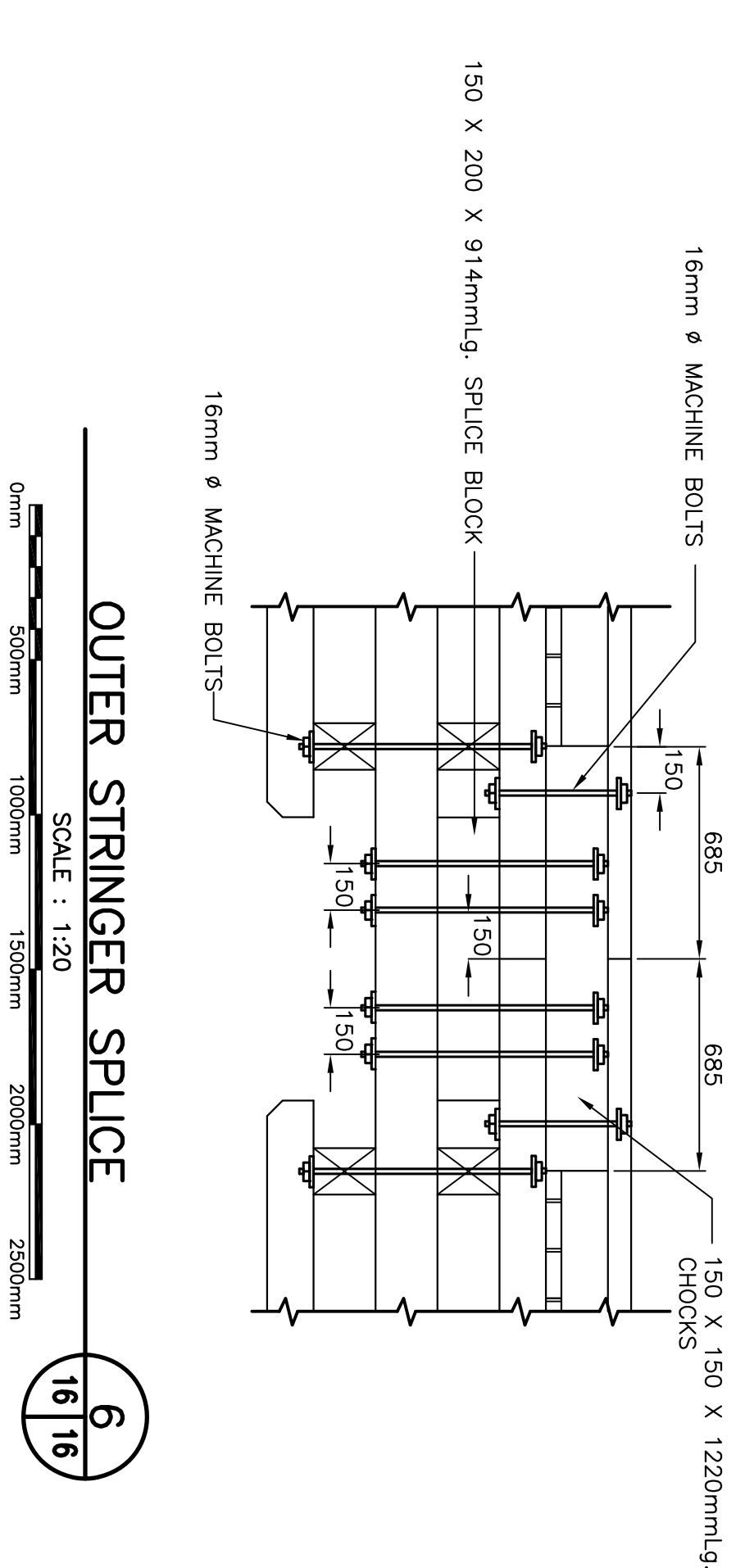
NOTE:
1. ALL EYE BOLTS SET FLUSH WITH DECK. FOUR (4) PER DOCK.



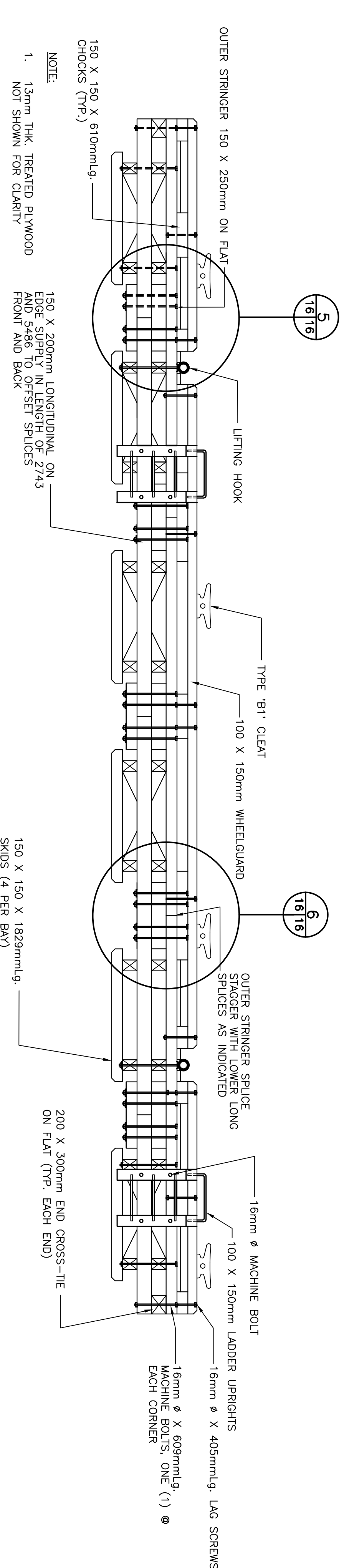
FLANGE SPICE
SCALE: 1:20
16/16



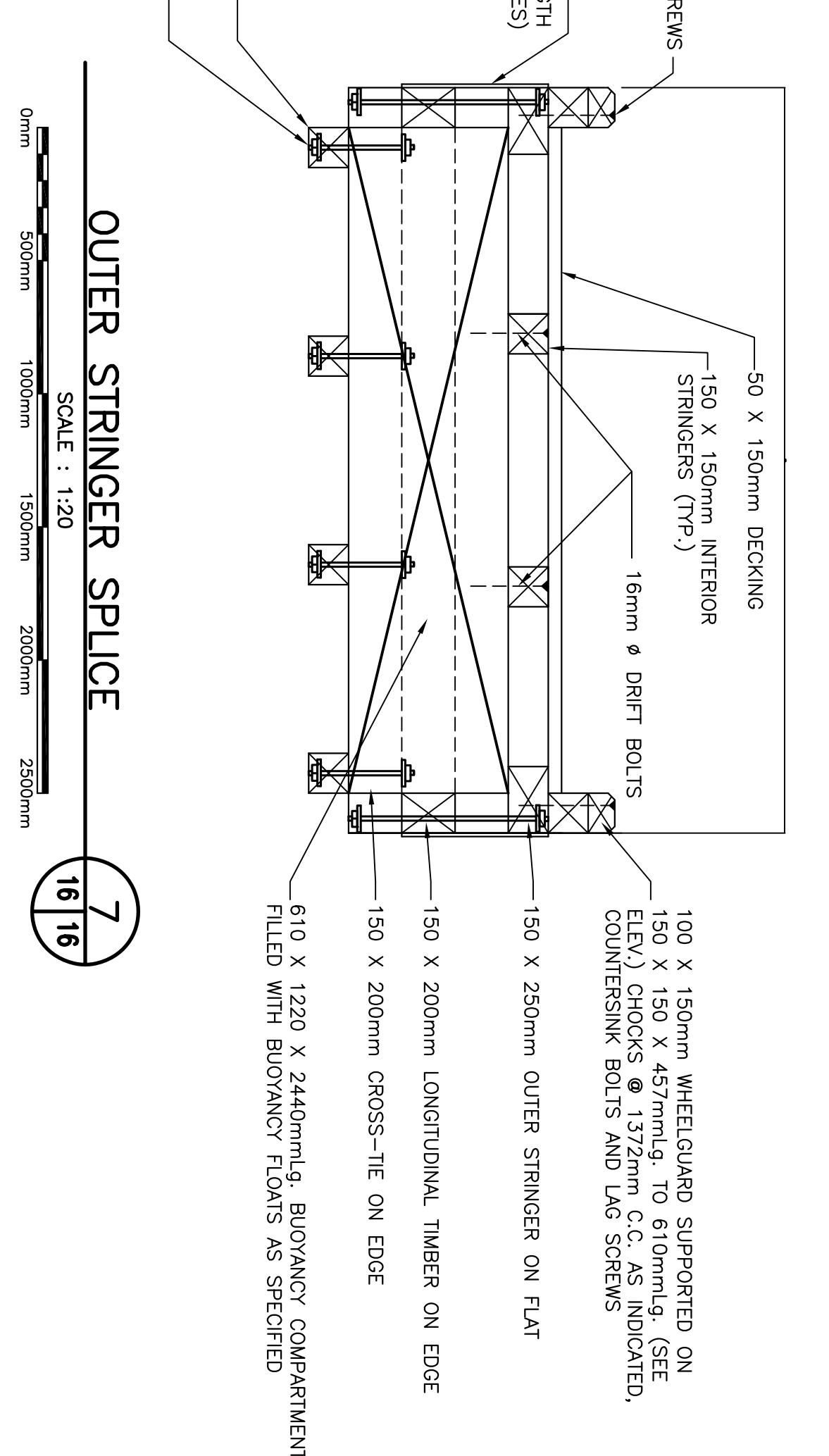
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SCALE: 1:40
16/16



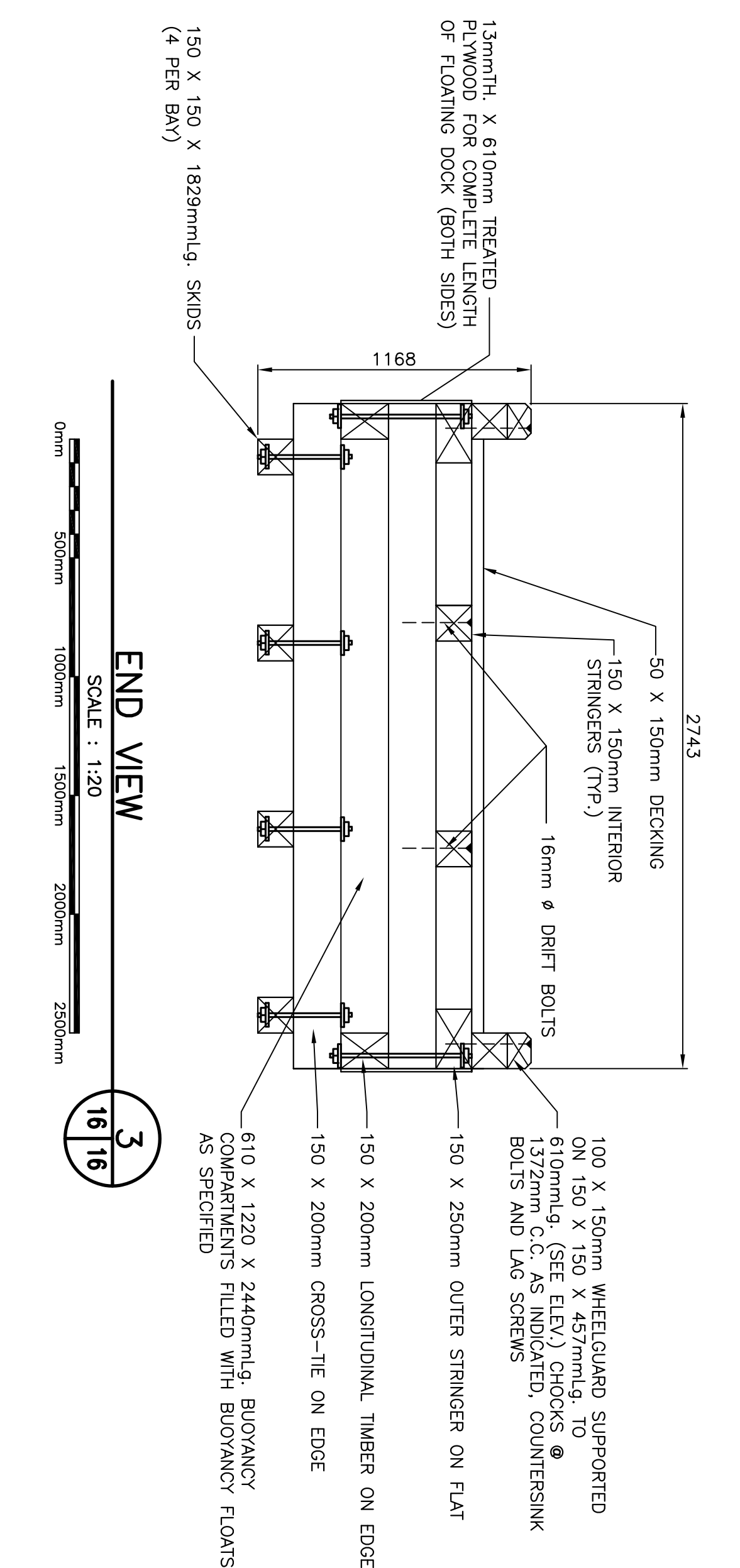
OUTER STRINGER SPICE
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16/16



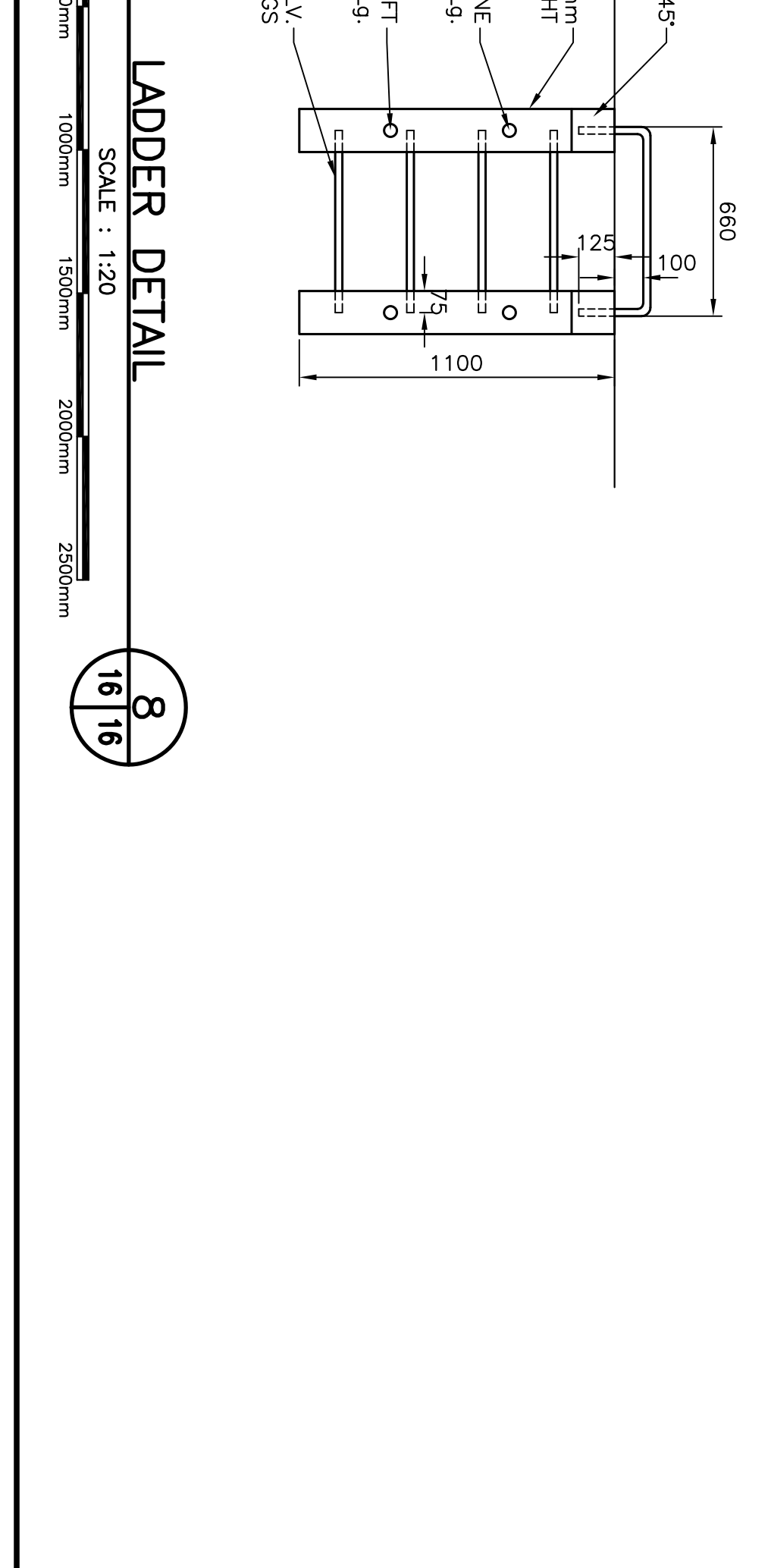
COMPLETE ASSEMBLY - PLAN VIEW
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16/16



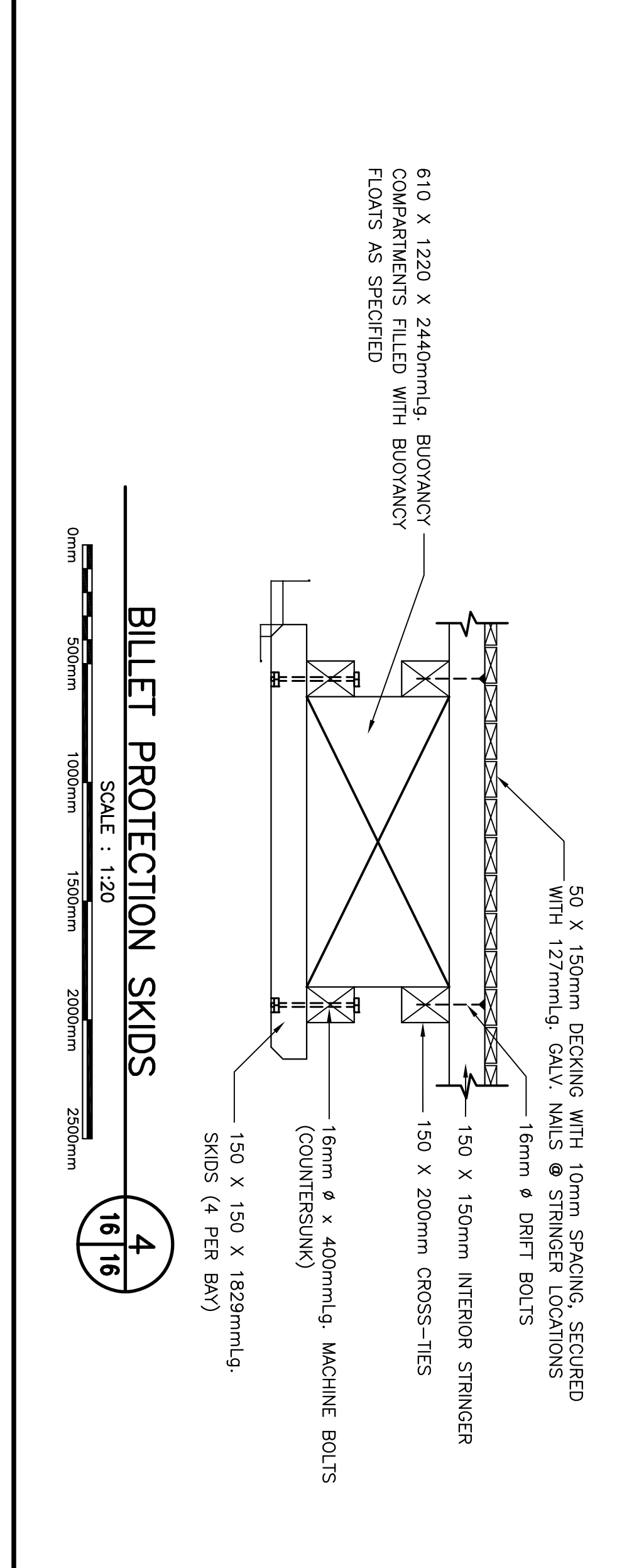
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16/16



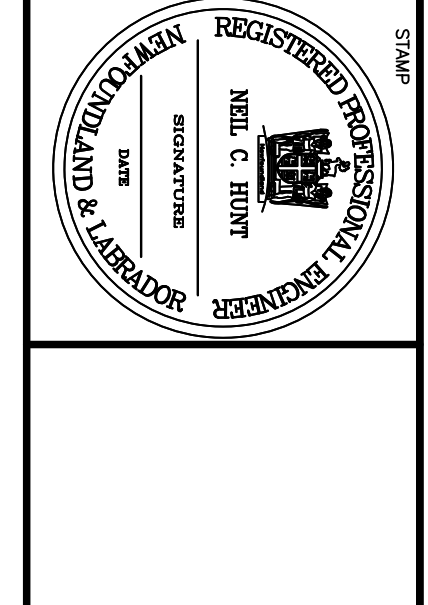
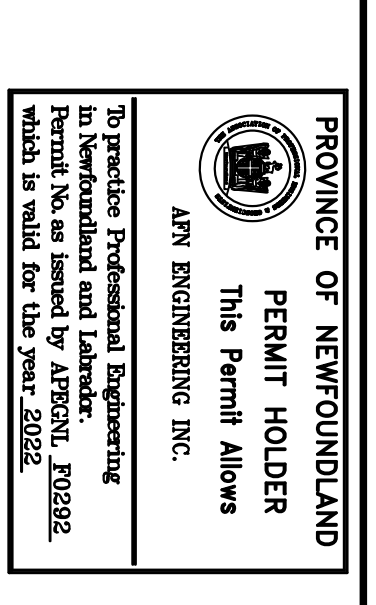
END VIEW
SCALE: 1:20
16/16



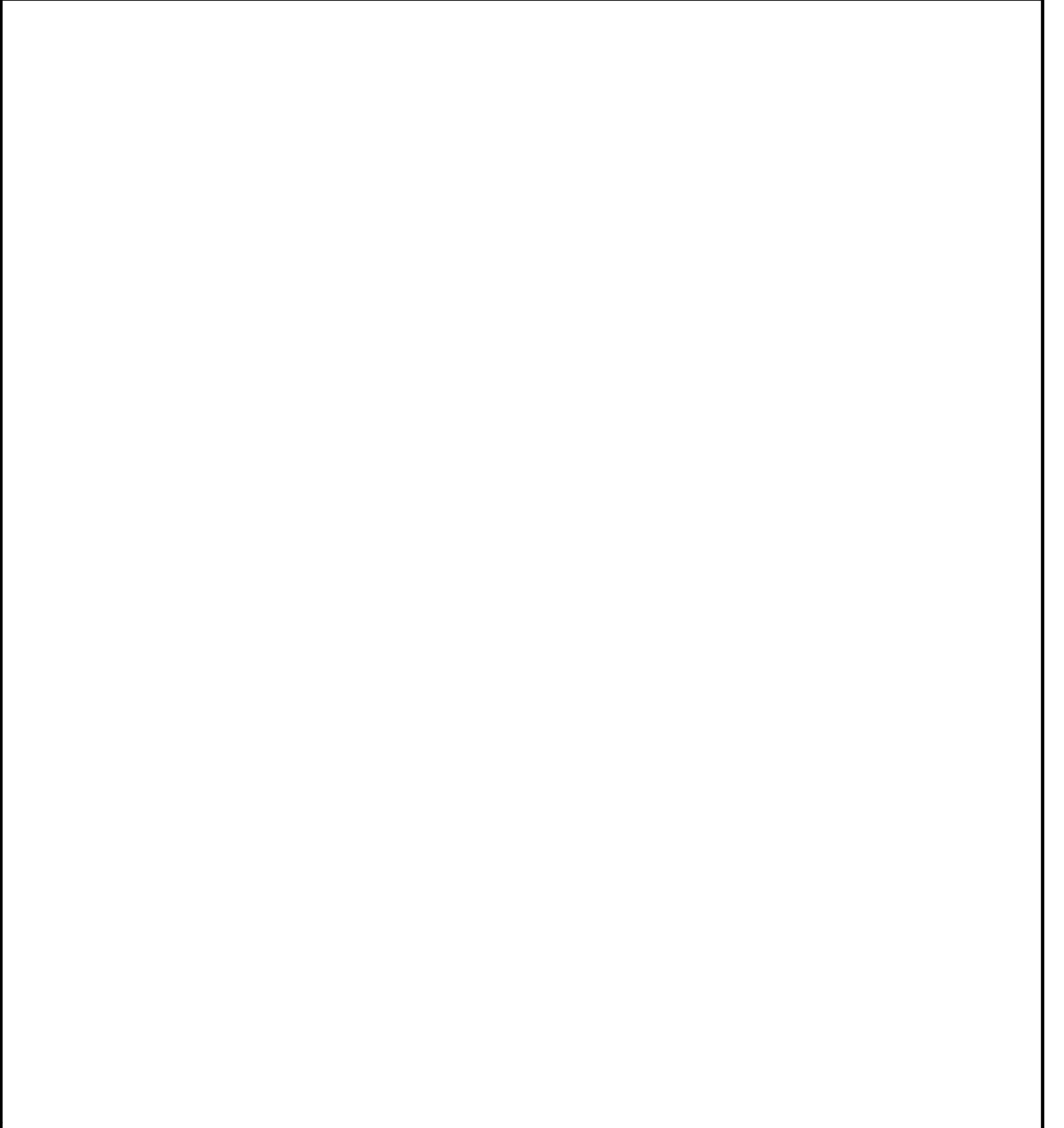
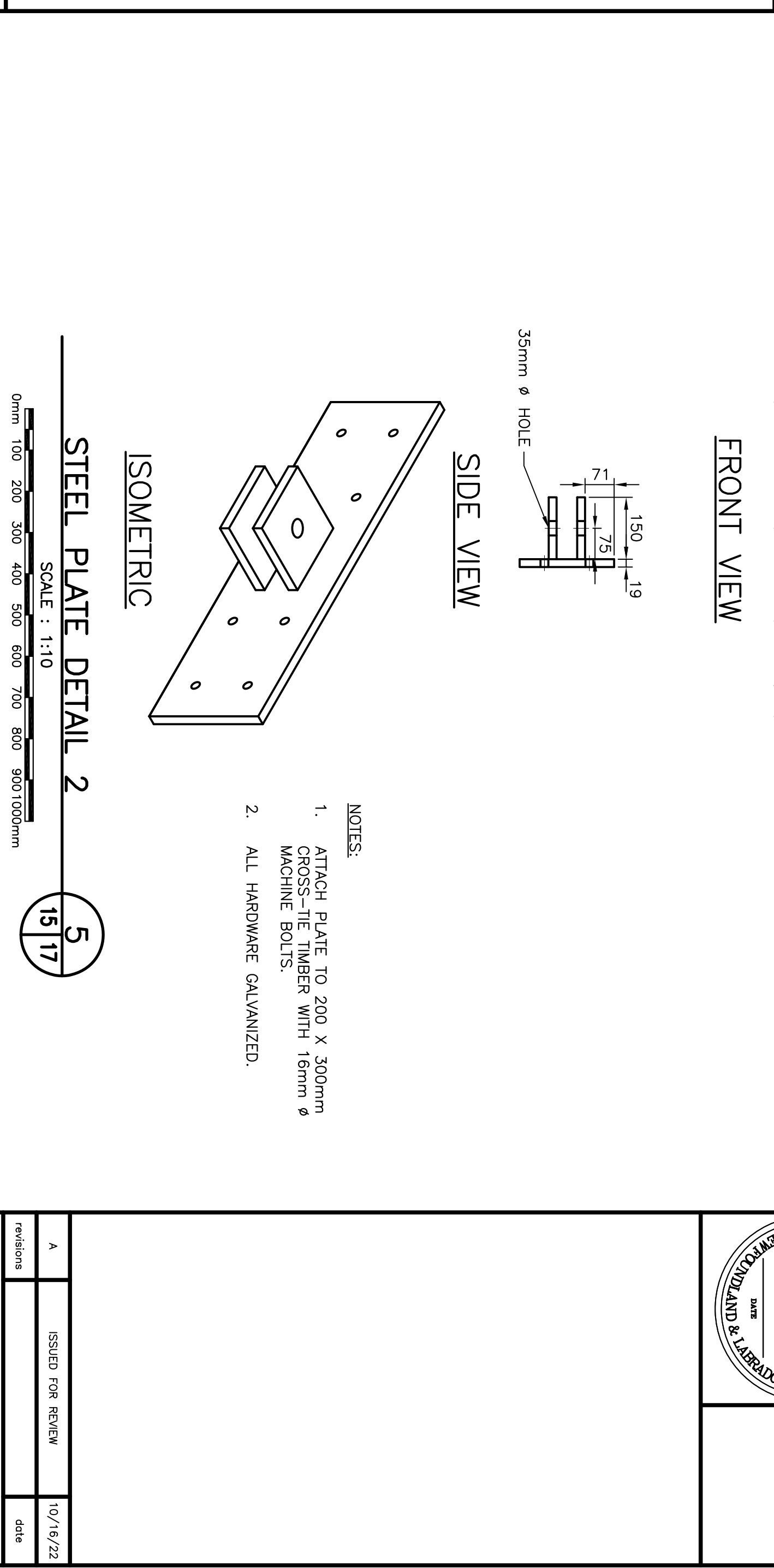
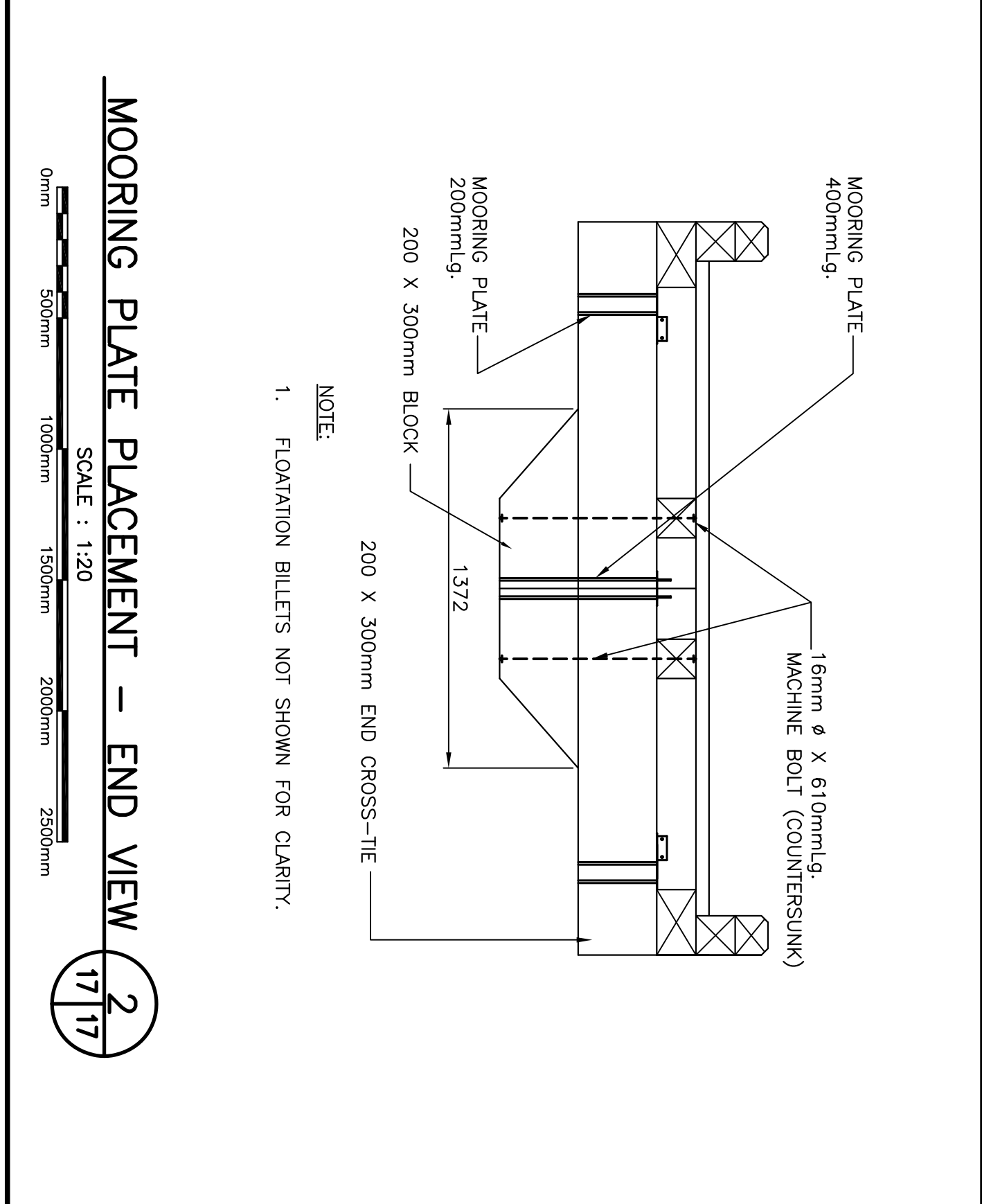
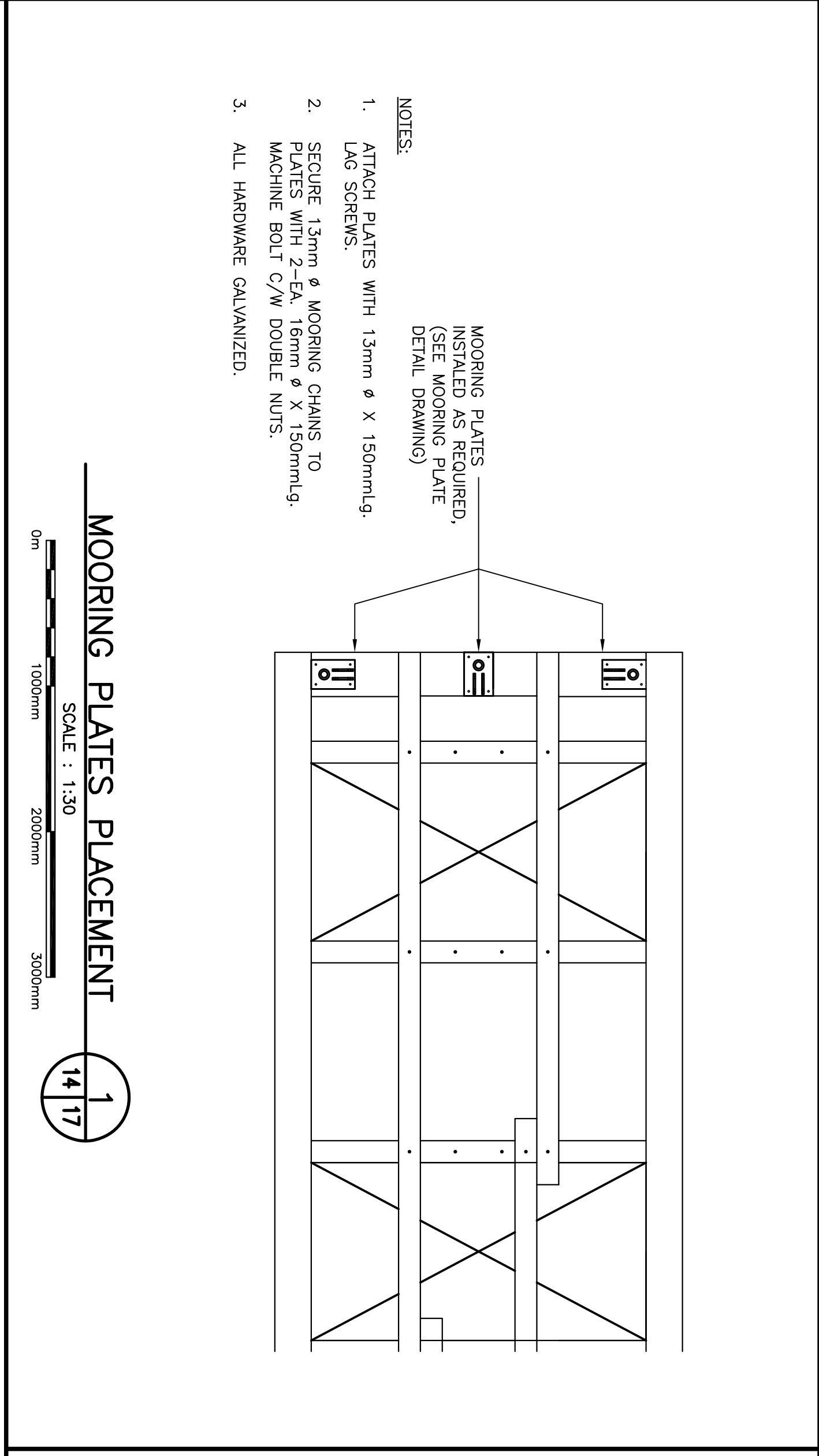
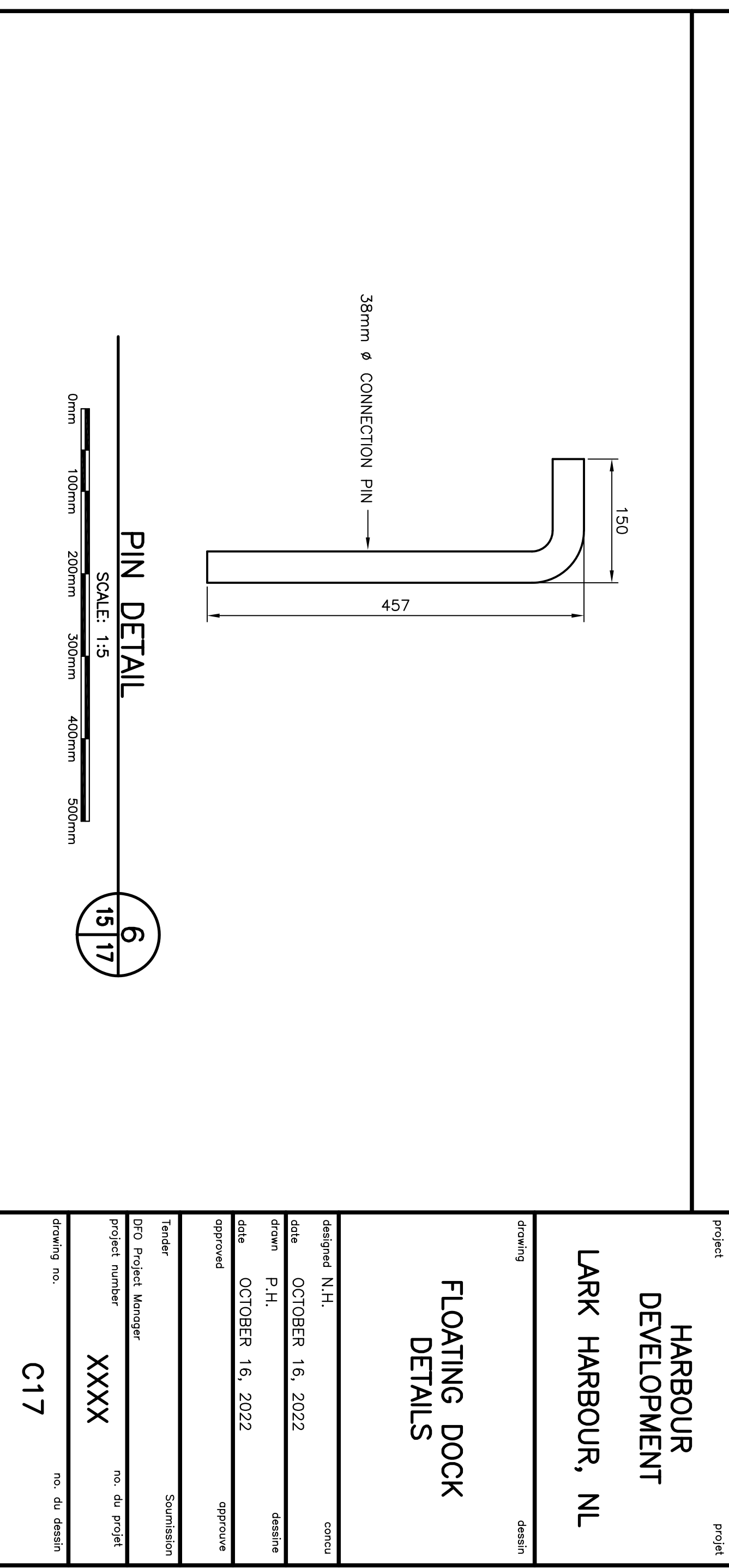
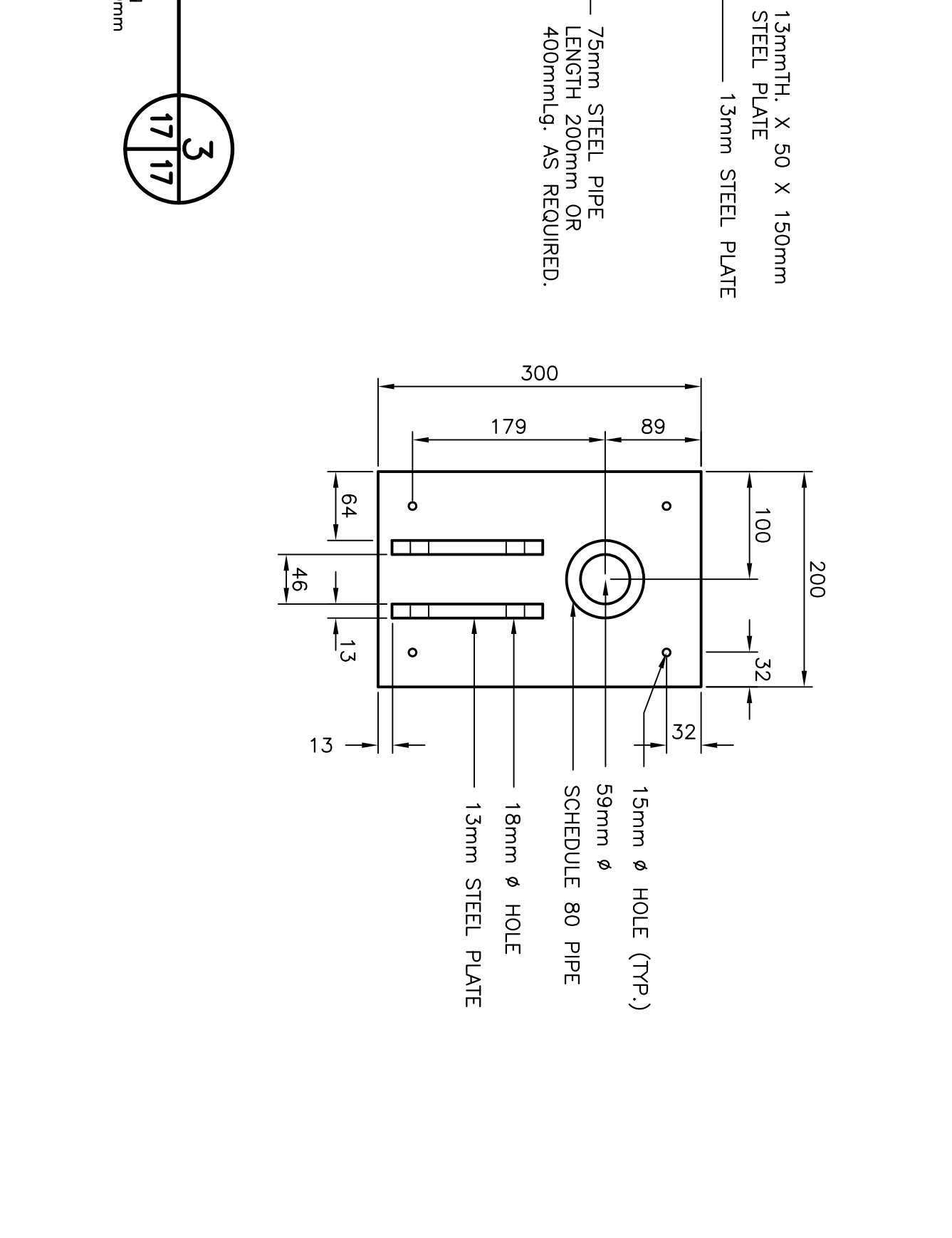
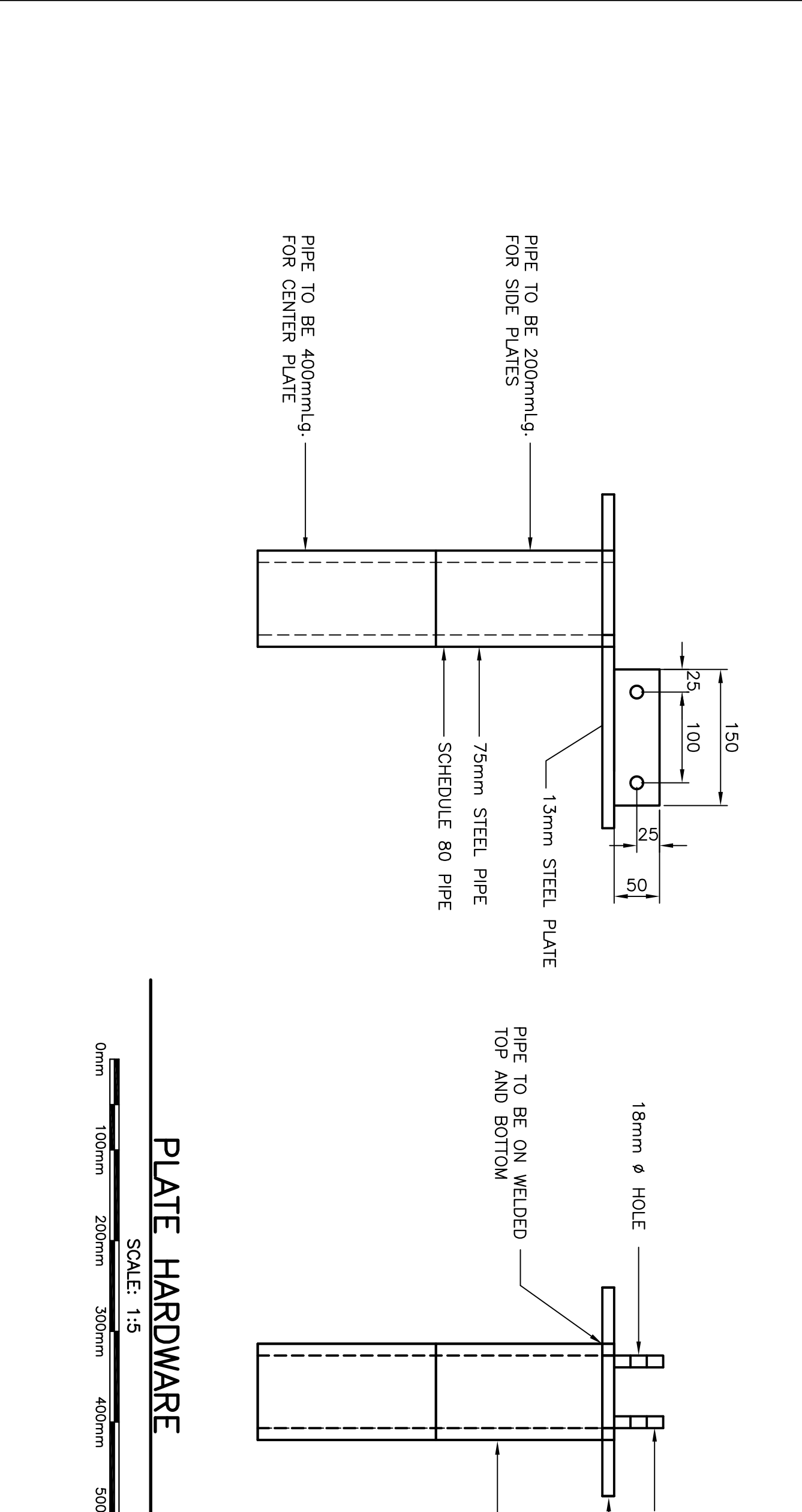
LADDER DETAIL
SCALE: 1:20
16/16



BILLET PROTECTION SKIDS
SCALE: 1:20
16/16



| | | | | |
|-----------------|--------------------------------------|-----------------------|------------|-----------------------|
| designed N.H. | checked P.H. | date OCTOBER 16, 2022 | drawn P.H. | date OCTOBER 16, 2022 |
| approved | | | | |
| Project | HARBOUR DEVELOPMENT LARK HARBOUR, NL | | | |
| Revision | ISSUED FOR REVIEW 10/16/22 | | | |
| Author | C16 | | | |
| Checker | XXXX | | | |
| Permit Holder | XXXX | | | |
| Project Manager | XXXX | | | |
| Client | XXXX | | | |
| Scale | 1:40 | | | |
| Sheet No. | C16 | | | |
| Project No. | XXXX | | | |
| Client No. | XXXX | | | |



PROVINCE OF NEWFOUNDLAND
PERMIT HOLDER
This Permit Allows
APN ENGINEERING INC.

Registered Professional Engineer
Neil C. Rind
Permit No. as issued by APNOL, 20282
which is valid for the year 2022.

SMALL CRAFT HARBOURS

NOTES:
1. ALL ELEVATIONS ARE IN METRES
UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS ARE IN MILLIMETRES
UNLESS OTHERWISE NOTED.

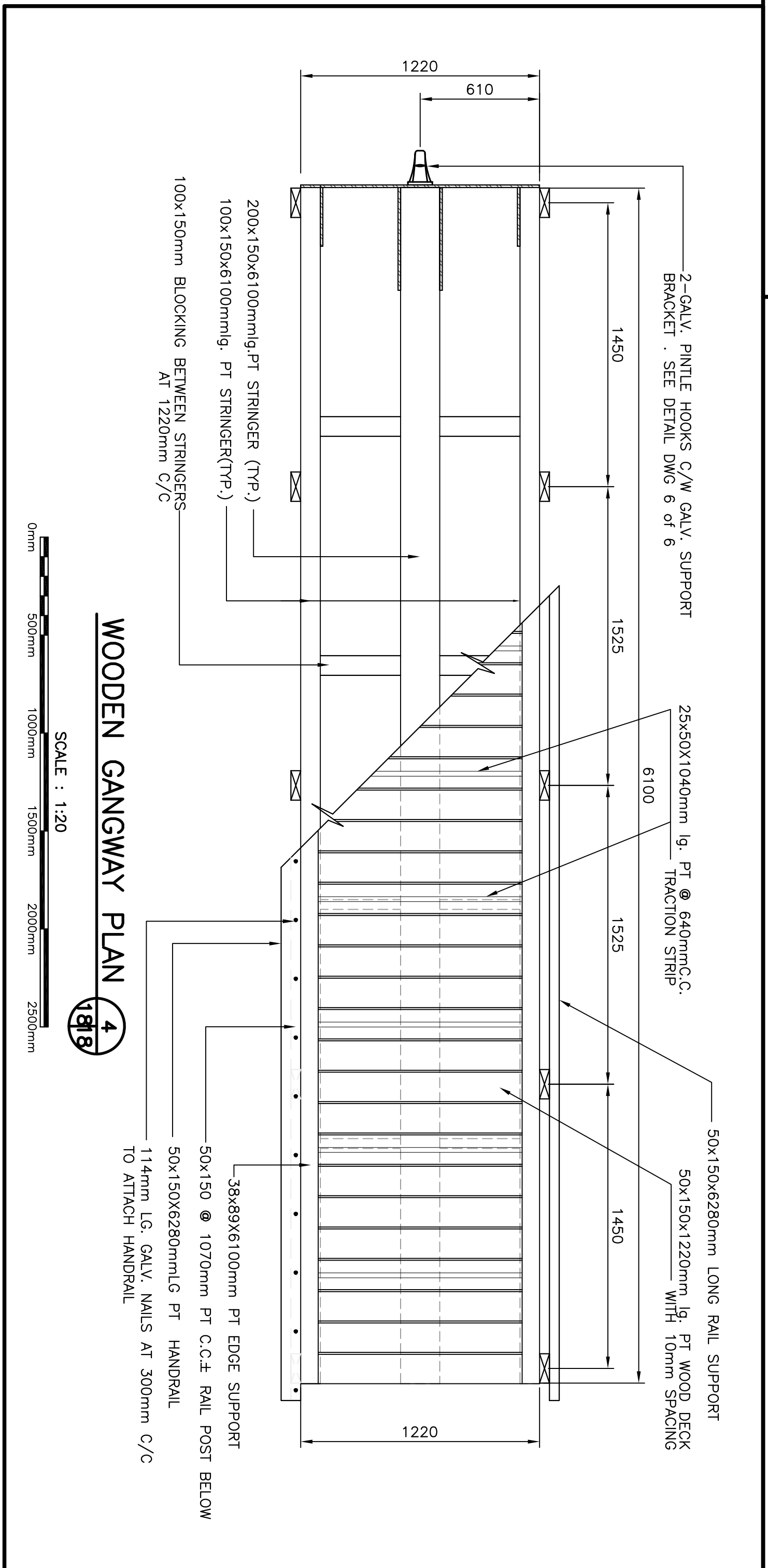
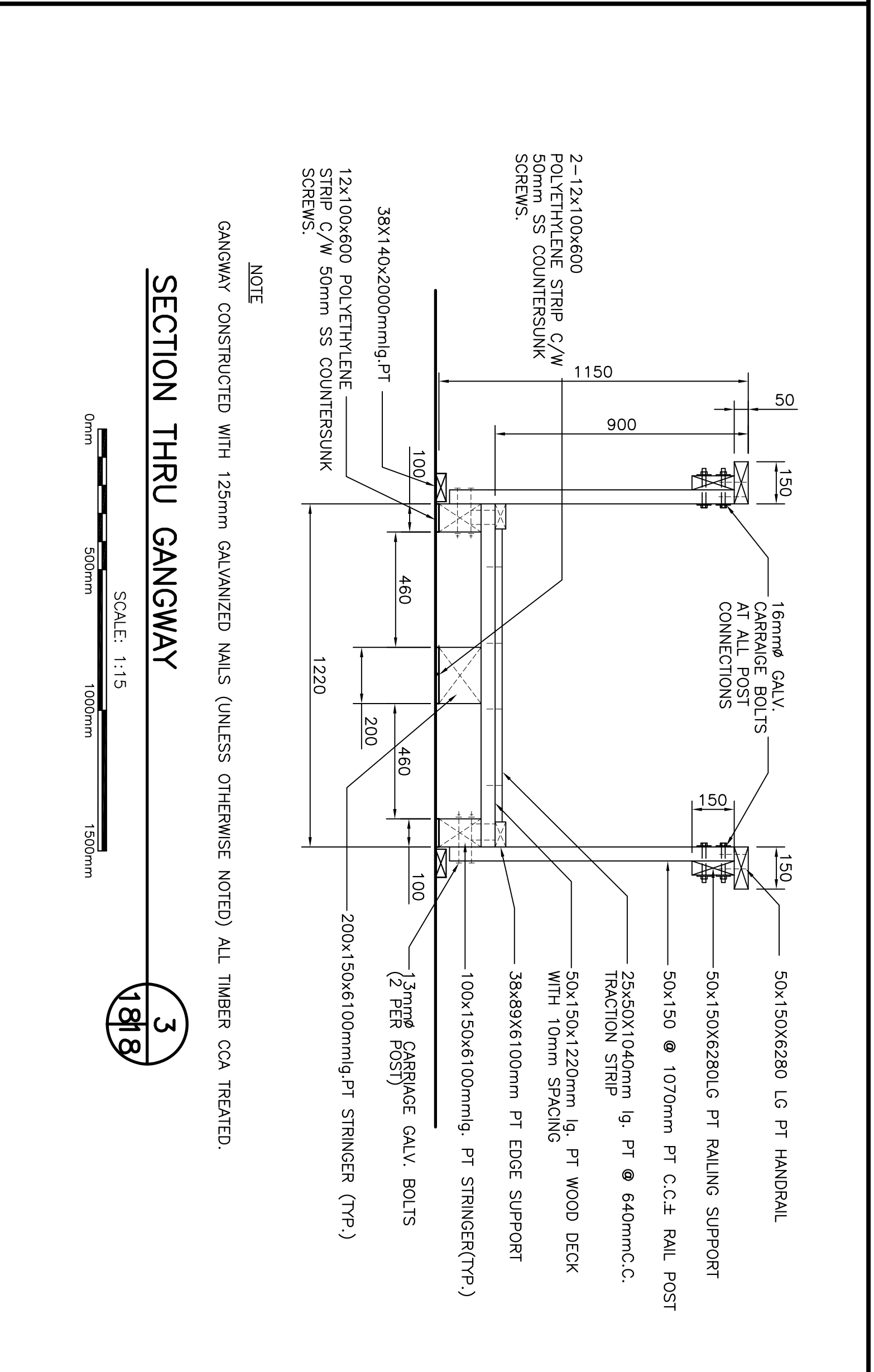
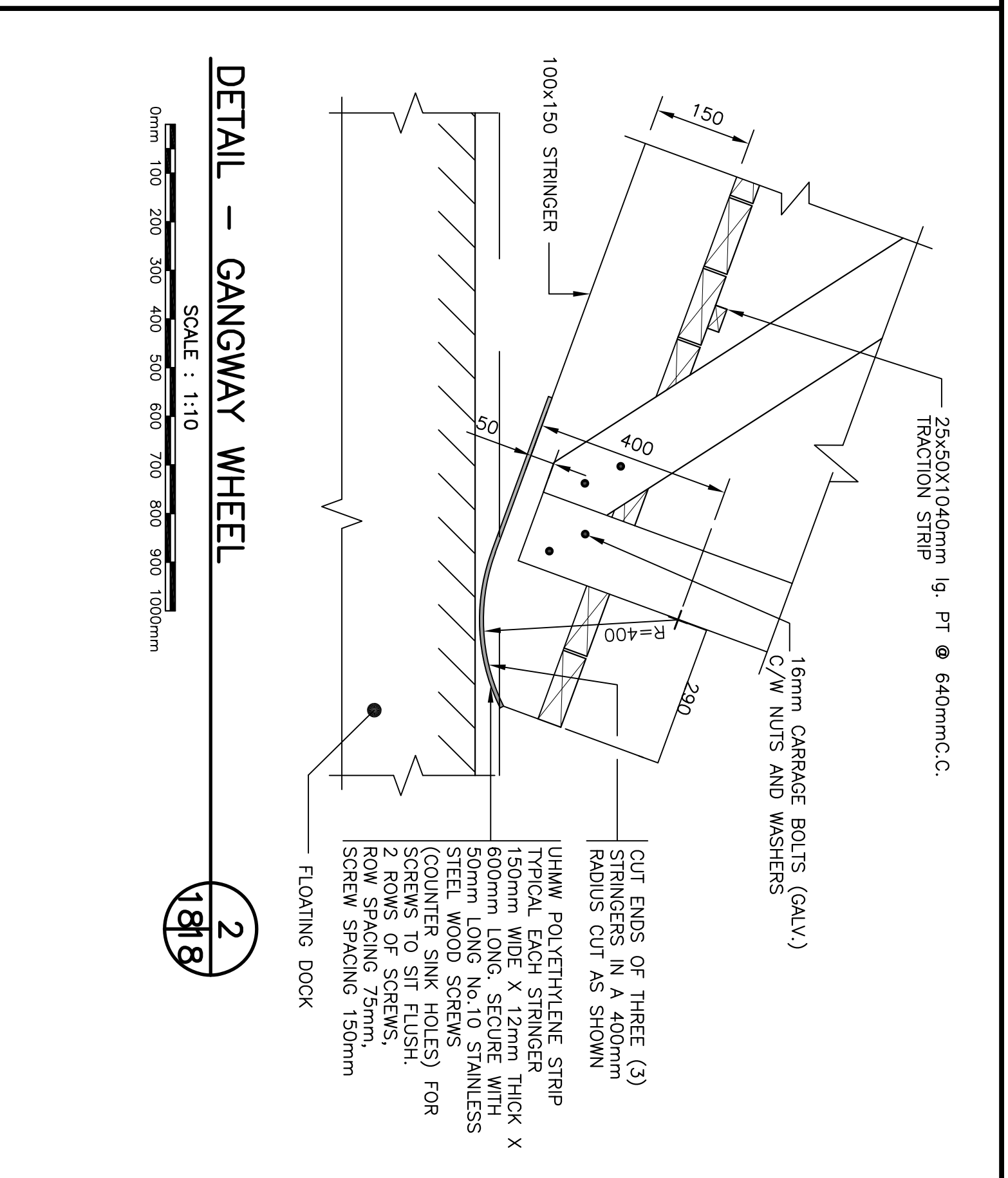
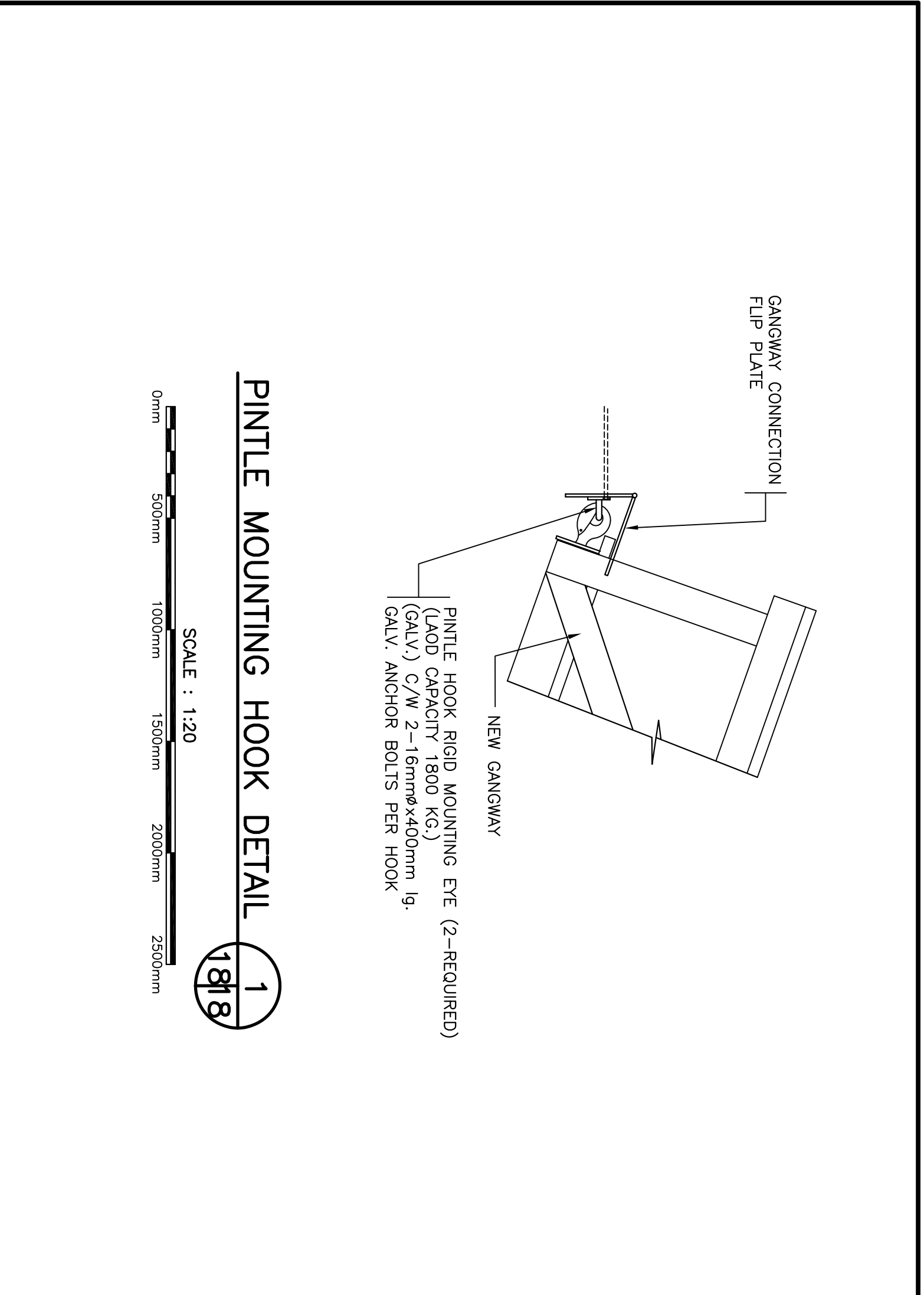
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|---|-------------------|----------|------|--------|---------|
| A | ISSUED FOR REVIEW | 10/16/22 | date | author | project |
| | | | | | |

HARBOUR DEVELOPMENT
LARK HARBOUR, NL

FLOATING DOCK DETAILS

| | |
|-----------------------|---------|
| designed N.H. | scale |
| date OCTOBER 16, 2022 | |
| drawn P.H. | designe |
| date OCTOBER 16, 2022 | |
| approved | approve |

| | |
|---------------------|---------------|
| Tender | Sponsor |
| DBO Project Manager | |
| Project number | no. du projet |
| XXXX | |
| drawing no. | no. du dessin |
| C17 | |



| <p> </p> <p>SMALL CRAFT HARBOURS</p> | | | | | | | |
|--|-------------------|----------|-------------|------|---|-------------------|----------|
| <p> NOTES: 1. ALL ELEVATIONS ARE IN METRES 2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED. </p> | | | | | | | |
| <p> PROVINCE OF NEWFOUNDLAND PERMIT HOLDER This Permit Allows APN ENGINEERING INC. Registered Professional Engineering Technicians Permit No. as issued by APNOL, 20282 which is valid for the year 2022 </p> | | | | | | | |
| <p> </p> | | | | | | | |
| <p> REVISIONS </p> <table border="1"> <tr> <th>no.</th> <th>description</th> <th>date</th> </tr> <tr> <td>A</td> <td>ISSUED FOR REVIEW</td> <td>10/16/22</td> </tr> </table> | | no. | description | date | A | ISSUED FOR REVIEW | 10/16/22 |
| no. | description | date | | | | | |
| A | ISSUED FOR REVIEW | 10/16/22 | | | | | |
| <p> PROJECT HARBOUR DEVELOPMENT LARK HARBOUR, NL </p> | | | | | | | |
| <p> DRAWING GANGWAY DETAILS </p> | | | | | | | |
| <p> designed N.H. date OCTOBER 16, 2022 drawn P.H. date OCTOBER 16, 2022 approved </p> | | | | | | | |
| <p> Tender BID Project Manager Project number no. du projet no. du devis C18 </p> | | | | | | | |