

AGRICULTURE AND AGRI-FOOD CANADA

ROUND LAKE LOG HANDLING

SPECIFICATIONS

Part 1 General

1.1 WORK COVERED BY CONTRACT DOCUMENTS

.1 Work of this Contract comprises of fabrication (including coating) of a handrail system for the Round Lake Dam control structure which is located north of the municipality of Whitewood Saskatchewan. Work includes transport and off-loading of the handrail system to a staging area at the Regina Research Farm, 5000 Wascana Parkway at Regina, SK.

1.2 CODE

.1 Perform work to current codes, Construction Standards, Standards and Bylaws, including Amendments up to the Tender closing date.

1.3 DESCRIPTION OF WORK

.1 Fabrication (including coating) of handrail system for the Round Lake Dam control structure.

.2 Transportation and off-loading handrail system at a staging area at the Regina Research Farm at Regina, SK.

1.4 CONTRACT DOCUMENTS

.1 The Contract Documents, Drawings, and Specifications are intended to complement each other and to provide for and include all elements necessary for the completion of the work.

.2 Drawings are in general diagrammatic and are intended to indicate the scope and general arrangement of the work.

1.5 OWNER FURNISHED ITEMS

.1 Owner Responsibilities:

.1 Provide free access to the staging area at Regina Research Farm.

.2 Contractor Responsibilities:

.1 Designate submittals and delivery date for each product in progress schedule.

- .3 Receive and unload products at site.
- .4 Inspect deliveries jointly with Owner; record shortages and damaged or defective items.
- .5 Handle products at site, including uncrating and storage
- .6 Protect products from damage, and from exposure to elements.
- .7 Perform work in accordance with Contract Documents.
- .8 Repair or replace items damaged by Contractor or subcontractor on site (under his control).

1.6 CONTRACTOR USE OF PREMISES

- .1 Unrestricted use of site.
- .2 Repair or replace any portions of existing work which have been altered or damaged during construction operations.
- .3 At completion of operations make condition of existing work equal to or better than what existed before the new work started.

1.7 DIVISION OF TECHNICAL SPECIFICATION

- .1 The Technical Specifications are subdivided in accordance with the current 6-digit National Master Specification System.
- .2 A division may consist of the work of more than one (1) subcontractor. Responsibility for determining which subcontractor provides the labor, material, equipment, and services required to complete the work rests solely with the Contractor.
- .3 In the event of discrepancies or conflicts when interpreting the Drawings and Technical Specifications, the Technical Specifications govern.

1.8 TIME OF COMPLETION AND CONSTRUCTION WINDOWS

- .1 The Contract will commence on the date on which the Letter of Acceptance is issued.
- .2 Upon receipt of the letter of Acceptance, promptly and without undue delay, commence work at site.

1.9 HOURS OF WORK

- .1 Restricted as follows:
 - .1 Restrict work to daylight hours;
 - .2 Notify the departmental Representative of all after hours work, including Saturdays, Sundays and holidays.

1.10 CONSTRUCTION WORK SCHEDULE AND PROGRESS DOCUMENTATION

- .1 Prepare and update a construction work schedule.

1.11 MEASUREMENT AND PAYMENT

- .1 The measurement and payment shall be made following the indications of Section 01 21 00 – “Allowance”, and Section 01 27 50 – “Measurement Rules”.

1.12 CODES, BYLAWS, STANDARDS:

- .1 Perform work in accordance with the National Building Code of Canada (NBC) and other indicated codes, construction standards, and/or any other code or bylaw of local application.
- .2 Comply with applicable local bylaws, rules and regulations enforced at the location concerned.
- .3 Meet or exceed requirements of Contract Documents, specified standards, codes, and referenced documents.
- .4 In any case of conflict or discrepancy, the most stringent requirements shall apply

1.13 DOCUMENTS REQUIRED

- .1 Maintain at job site, one (1) copy of each document as follows:
 - .1 Contract Drawings;
 - .2 Contract Specifications;
 - .3 Addenda to Contract Documents (as applicable);
 - .4 Most recent version of construction work schedule;
 - .5 Health and Safety Plan and Other Safety Related Documents;
 - .6 Contractor’s Construction Work plan;
 - .7 Permits and acceptances;
 - .8 All required submittals;
 - .9 Change orders;
 - .10 Other modifications to the Contract;
 - .11 Manufacturer’s installation and application instructions (as applicable);
 - .12 One set of Record Drawings and Specifications for “as-built purposes”.

1.14 REGULATORY REQUIREMENTS

- .1 Obtain and pay for permits, certificates, licenses, and other permits required by regulatory municipal, provincial, or federal authorities to complete the work.
- .2 Provide inspection authorities with plans and information required for issue of acceptance certificates.
- .3 Furnish inspection certificates in evidence that the work installed conforms to the requirements of the authority having jurisdiction.

1.15 CONTRACTOR USE OF SITE

- .1 The Contractor is designated as Prime Contractor on the Contractor's work site and assumes all responsibilities of Prime Contractor as per relevant acts and regulations. The contractor shall be responsible for all work on the Contractor's work site.
- .2 Use of Contractor's work site:
 - .1 Exclusive and complete for execution of work;
 - .2 Assume responsibility for assigned premises for performance of the work;
 - .3 Coordinate all work activities on the Contractor's work site, including the work of other contractors engaged by the Departmental Representative.
 - .4 Provide security of Contractor's and all Subcontractor's equipment and material. Secure Contractor's work site at the end of each work day.
- .3 Perform work in accordance with Contract Documents.
- .4 Do not unreasonably encumber site with material and equipment.

1.16 EXAMINATION

- .1 Examine the site and be familiar and conversant with existing conditions likely to affect the work.
- .2 Provide photographs of surrounding properties, objects, and structures liable to be damaged or be the subject of potential subsequent claims.

1.17 EXISTING SERVICES

- .1 Complete utility locates, including Saskatchewan One Call.
- .2 Establish location and extent of service lines in area of work, including the borrow zone before starting work. Notify the Departmental Representative of findings.
- .3 Where unknown services are encountered, immediately advise the Departmental Representative and confirm findings in writing.

1.18 SETTING OUT OF WORK

- .1 Assume full responsibility for, and execute complete layout of work to locations, lines and elevation indicated.
- .2 Provide all equipment, devices, materials, and supplies needed to layout and construct the work.
- .3 Supply such devices as templates required to facilitate the Departmental Representative's inspection of the work.

1.19 SUBMITTALS

- .1 Submit the requested document plans, data and products indicated in each of the Technical Specifications sections.
- .2 Allow sufficient time for the following:
 - .1 Review of product/sample data.
 - .2 Review of re-submissions as necessary.

- .3 Ordering accepted materials and/or products.
- .3 Allow a minimum of five (5) working days for Departmental Representative review of submittals and re-submittals.

1.20 SYSTEM OF MEASUREMENT

- .1 The metric system of measurement (SI) will be employed on this Contract.

1.21 SUBMISSION OF TENDER

- .1 Submission of a tender is deemed to be confirmation of the fact that the Tenderer has analyzed the Contract Documents and inspected the site, and is fully conversant with all conditions.

Part 2 Products

2.1 NOT USED

- .1 Not used.

Part 3 Execution

3.1 NOT USED

- .1 Not used.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 General Conditions

1.2 CASH ALLOWANCES – NOT USED

.1 Perform work to current codes, Construction Standards, Standards and Bylaws, including Amendments up to the Tender closing date.

Part 2 Products

2.1 NOT USED

.1 Not used.

Part 3 Execution

3.1 NOT USED

.1 Not used.

END OF SECTION

Part 1 General

1.1 MEASUREMENT SYSTEM

- .1 This section specifies the measurement rules that will generally be used for payment purposes unless otherwise specified in the Contract Documents.
- .2 This section specifies the International System of Units (SI) in accordance with CAN/CSA-Z234.1-89 Canadian Metric Practice Guide.
- .3 When used in the Contract, the following abbreviations and symbols have the meaning assigned to them.

Abbreviation/Symbol	Meaning
µm	micrometre or micron
mm	millimetre
m	metre
mm ² or mm2	square millimetre
m ² or m2	square metre
ha	hectare
kPa	kilopascal
MPa	megapascal
m ³ or m3	cubic metre
l (or where clarity is needed L)	litre
L.S.	lump sum
g	gram
kg	kilogram
N	newton
kN	kilonewton
t	tonne
no.	number (quantity)
min	minute (time)
h	hour
d	day
wk	week
%	percent
>	greater than

≥	greater than or equal to
<	less than
≤	less than or equal to
\$	Canadian dollars
°	degree (angle)
°C	degree Celsius

1.2 METHOD OF MEASUREMENT

.1 Unless otherwise indicated in the Contract Documents:

- .1 Earthwork materials will be measured net in place after compaction, with no allowance for bulking, shrinkage, compression, foundation settlement, or waste.
- .2 Products will be measured net, with no allowance for waste.
- .3 Dimensions used in calculating quantities will be rounded to the nearest unit of dimension as follows:

Quantity	Dimension
Volume	decimetre
Area	decimetre
Length	centimetre

- .4 Contours may be based on aerial photograph interpretation and are approximate only. Actual ground elevations and location coordinates will be determined in the field during the course of the Work for measurement purposes.
- .5 Measurement and payment will not be made for work carried out beyond measurement and payment lines and limits specified in the Contract Documents.

.2 When boundaries between different items of Work are not specified in the Contract Documents, such boundaries will be established by the Departmental Representative.

.3 Mass:

- .1 Mass will be measured by weigh scale or by estimated or theoretical mass taken from reference documents, as specified.
- .2 Mass will be measured to 3 decimal places.
- .3 Prepare detailed and summary haul records for material paid by mass as work progresses and submit daily to the Departmental Representative.

.4 Length:

- .1 Length will be measured at the item centreline or mean chord.
- .2 Items to be measured by linear dimension will be measured parallel to the base or foundation upon which such items are placed.
- .3 Items to be measured by station will be measured horizontal to the base or foundation upon which such items are placed.

- .4 Centre line for pipes, ducts, culverts, and similar items will be the line equidistant between inside faces of pipe walls.
- .5 Area:
 - .1 For rectangular and regular shaped objects, area will be measured using mean length and width or radius.
 - .2 For irregular objects, area will be measured by the sum of squares, triangles, and circles, etc., as selected by the Departmental Representative.
- .6 Volume:
 - .1 Unless otherwise indicated, volume will be measured using mean length, width, and height or thickness.
 - .2 Excavation and fill volumes will be computed using survey data input to software program.
- .7 Time:
 - .1 Construction Equipment to be paid for on a time basis will be measured in hours of actual working time, and necessary travelling time, when under its own power to the nearest tenth thereof.
 - .2 Hauling equipment to be paid for on a time basis will be measured in hours of actual working time to the nearest tenth thereof.
- .8 Number of items will be measured on a per item basis.
- .9 Lump Sum Amount will not be measured for payment.
- .10 When standard manufactured items are identified by their physical characteristics, such characteristics will be considered as nominal. Unless more stringently controlled by specified tolerances, manufacturing tolerances established by the industry involved will be accepted.

1.3 MEASUREMENT COMPUTATION

- .1 Formulae and computer programs used for measurement computation will be as specified or, when not specified, as selected by the Departmental Representative.

1.4 MEASUREMENT OF WORK

- .1 Unless otherwise specified, the Departmental Representative will measure the Work for the purpose of determining payment to the Contractor.
- .2 The Departmental Representative will request the Contractor to attend with the Departmental Representative in making measurements.
- .3 If the Contractor does not attend pursuant to clause 1.4.2, measurements made or approved by the Departmental Representative will be considered to be the correct measurement for such part of the Work.
- .4 The Departmental Representative will prepare survey records and drawings for payment purposes as the Work progresses. The Departmental Representative will request the Contractor to attend, within 14 days, to examine and verify such records and drawings. If the Contractor does not attend to examine and verify such records and drawings, they will be considered to be correct.

- .5 If, after attending pursuant to clause 1.4.2 or 1.4.4, the Contractor disagrees with such measurements or records or drawings, they will nevertheless be considered correct until the Contractor notifies the Departmental Representative of the aspects in which they are considered incorrect. On receipt of such notice, the Departmental Representative will review the measurements or records or drawings and either confirm or vary them.

1.5 QUANTITIES

- .1 Unless otherwise indicated, quantities specified in Tender Form – Unit Price Table for Unit Price Work are estimated quantities and will not be considered as actual quantities of Work to be performed. Subject to the Contract terms, unit prices stated in Tender Form – Unit Price Table will be applied to actual quantities of Work performed as measured in accordance with the Contract Documents.
- .2 When it is stated that the Contractor will be paid only for the quantity specified for an item of Work, such quantity will be considered as a fixed quantity and the Contractor will be paid for the quantity specified, regardless of the actual quantity performed. If a change in the Work directed by the Departmental Representative results in a change in a fixed quantity, the quantity will be adjusted in accordance with the Contract Documents and payment will be made for the adjusted quantity.

1.6 SCALES

- .1 Unless otherwise indicated, provide weigh scales, certified by Industry Canada, for measurement purposes.
- .2 Provide scales that are accurate to within 0.5% of correct mass throughout the range of use. Spring balances will not be permitted.
- .3 Prior to use and at any time requested by the Departmental Representative, provide the services of a qualified independent person, acceptable to the Departmental Representative, for the testing and servicing of weigh scales. Perform baseline tests and record results. Service and adjust weigh scales to meet requirements of Industry Canada and the Contract Documents. Submit a final report of weigh scale tests, services, and adjustments.
- .4 Scales indicating more than true mass will not be permitted to operate and material measured subsequent to the last previous correct accuracy test will be reduced by the percentage of error in excess of 0.5%.
- .5 Scales indicating less than true mass will be adjusted and no additional payment will be made for materials previously scaled and recorded

1.7 UNIT PRICE TABLE

- .1 Unit Price Table is divided into items for purposes of measurement and payment of Work. Price each item in accordance with the methods of measurement specified in the Contract.
- .2 For each price specified in Unit Price Table include all costs and charges required to perform the Work including overhead charges and profit, and all costs of all related Work for which payment is not specified elsewhere.
- .3 Subject to the provisions of the Contract Documents, the total amount in Unit Price Table shall cover all of the Contractor's obligations under the Contract and all matters and things necessary for performance of the Work.

- .4 Payment will be made only for items specified in the Unit Price Table. Costs and charges not directly provided for in the Schedule of Prices will be deemed to be included therein.
- .5 Work or material included in any one item will not also be measured for payment under another item. No item will be paid for more than once.
- .6 Omissions or errors in any item including quantities in Unit Price Table will not invalidate the Contract nor release the Contractor from any of his obligations or liabilities under the Contract.

1.8 LUMP SUM ITEMS

- .1 Breakdown of Lump Sum Amount
 - .1 If requested, submit to the Departmental Representative a breakdown of the Lump Sum Amounts included in the Unit Price Table, within 14 days after the commencement date of the Contract.
 - .2 Provide sufficient details as may be required by the Departmental Representative to identify the principal components of the Work and to permit ready valuation of Work performed.

Part 2 Products

2.1 NOT USED

- .1 Not used.

Part 3 Execution

3.1 NOT USED

- .1 Not used.

END OF SECTION

Part 1 General

1.1 REFERENCES

- .1 Government of Canada
 - .1 Labour Code, Part 2,
 - .2 Canada Occupational Safety and Health Regulations
- .2 National Building Code of Canada (NBC)
 - .1 Part 8, Safety Measures at Construction and Demolition sites.
- .3 Province of Saskatchewan
 - Occupational Health and Safety Act, 1993, S.S. - Updated 2012

1.2 MEASUREMENT AND PAYMENT

- .1 No separate payment will be made for work related with Health and Safety requirements. Activities associated with Health and Safety requirements shall be considered incidental to the Work.

1.3 SUBMITTALS

- .1 Submit site-specific Health and Safety Plan: Within ten (10) working days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:
 - .1 Results of site specific safety hazard assessment.
 - .2 Results of safety and health risk or hazard analysis for site tasks and operation.
- .2 Submit weekly two (2) copies of Contractor's authorized representative's work site health and safety inspection reports to Departmental Representative.
- .3 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.
- .4 Submit copies of incident and accident reports.
- .5 Submit WHMIS MSDS - Material Safety Data Sheets whenever applicable.

1.4 COMPLIANCE WITH REGULATIONS

- .1 AAFC may terminate the Contract without liability to AAFC where the Contractor, in the opinion of AAFC, refuses to comply with a requirement of the Worker's Compensation Act or the Occupational Health and Safety Regulations.
- .2 It is the Contractor's responsibility to ensure that all workers are qualified, competent and certified to perform the work as required by the Worker's Compensation Act or the Occupational Health and Safety Regulations.

1.5 RESPONSIBILITY

- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.6 HEALTH AND SAFETY CO-ORDINATOR

- .1 Employ and assign to Work, competent and authorized representative as Health and Safety Coordinator. Health and Safety Coordinator must:
 - .1 Have site-related working experience specific to activities associated with earthwork or/and dam maintenance.
 - .2 Have working knowledge of occupational safety and health regulations.
 - .3 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.
 - .4 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.
 - .5 Be on site during execution of Work.

1.7 GENERAL CONDITIONS

- .1 Provide a safe working environment for workers by using appropriate safety equipment and installation such as fences, warning signs, flag operators, where required.
- .2 Ensure that non-authorized persons are not allowed to circulate in designated construction areas of the work site.
- .3 Maintain access to property for use by emergency response vehicles

1.8 PROJECT/SITE CONDITIONS

- .1 Work at site will involve contact with:
 - .1 AAFC Staff.
 - .2 Other individuals from companies engaged by AAFC to assist in various contract administration and quality assurance checks.

1.9 REGULATORY REQUIREMENTS

- .1 Comply with specified codes, acts, bylaws, standards and regulations to ensure safe operation at site.
- .2 In event of conflict between any provisions of the above authorities, the most stringent provision will apply. Should a dispute arise in determining the most stringent requirement, the Departmental Representative will advise on the course of action to be followed.

1.10 FILING OF NOTICE

- .1 File Notice of Project with Provincial authorities prior to beginning of Work.
- .2 Provide copy of notice to the Departmental Representative.

1.11 HEALTH AND SAFETY PLAN

- .1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.
- .2 Conduct a site-specific hazard assessment based on review of Contract Documents, required work, and project site. Identify any known and potential health risks and safety hazard.
- .3 Prepare and comply with a site-specific project Health and Safety Plan based on hazard assessment, including but not limited to the following:
 - .1 Primary requirements
 - .1 Contractor's safety policy.
 - .2 Identification of applicable compliance obligations.
 - .3 Definition of responsibilities for project safety/organization chart for project
 - .4 General safety rules for project.
 - .5 Job-specific safe work procedures.
 - .6 Inspection policy and procedures.
 - .7 Incident reporting and investigation policy and procedures.
 - .8 Occupational Health and Safety Committee/Representative procedures.
 - .9 Occupational Health and Safety meetings.
 - .10 Occupational Health and Safety communications and recordkeeping procedures.
 - .2 Provide summary of health risks and safety hazards resulting from analysis of hazard assessment, with respect to site tasks and operations which must be performed as part of the work.
 - .3 List hazardous materials to be brought on site as required by work.
 - .4 Indicate engineering and administrative control measures to be implemented at the site for managing identified risks and hazards.
 - .5 Identify personal protective equipment (PPE) to be used by workers.
 - .6 Identify personnel training requirements and training plan, including site orientation for new workers.
- .4 Develop the plan in collaboration with all subcontractors. Ensure that work/activities of subcontractors are included in the hazard assessment and are reflected in the plan.
- .5 Departmental Representative will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within five (5) working days after receipt of plan. Revise and update plan as appropriate and resubmit plan to Departmental Representative within five (5) working days after receipt of comments from Departmental Representative.

- .6 Departmental Representative's review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for errors or omissions in final Health and Safety Plan and for construction Health and Safety.

1.12 MEETINGS

- .1 Schedule and administer Health and Safety meeting with Departmental Representative prior to commencement of Work.

1.13 EMERGENCY PROCEDURES

- .1 On-site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergency situations
- .2 List standard operating procedures and measures to be taken in emergency situations. Include an evacuation plan and emergency contacts (i.e. names/phone numbers) of:
 - .1 Designated personnel from own company.
 - .2 Regulatory agencies applicable to work as per legislated regulations.
 - .3 Local emergency resources.
 - .4 Departmental Representative and other AAFC staff as required.
- .3 Include the following provisions in the emergency procedures:
 - .1 Notify workers and the first-aid attendant of the nature and location of the emergency.
 - .2 Evacuate all workers safely.
 - .3 Check and confirm the safe evacuation of all workers.
 - .4 Notify the fire department or other emergency responders.
 - .5 Notify adjacent workplaces or residences that may be affected if the risk extends beyond the workplace.
 - .6 Notify Departmental Representative and site staff.
- .4 Provide written rescue/evacuation procedures as required for, but not limited to:
 - .1 Earthwork along natural or man-made slopes.
 - .2 Work on, over, under and adjacent to water.
- .5 Design and mark emergency exit routes to provide quick and unimpeded exit.
- .6 Revise and update procedures, as required.

1.14 HAZARDOUS PRODUCTS

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage and disposal of hazardous materials, and regarding labeling and provision of Material Safety Data Sheets (MSDS) acceptable to the Departmental Representative and in accordance with the Canada Labour Code.

1.15 UNFORESEEN HAZARDS

- .1 Should any unforeseen or peculiar safety-related factor, hazard or condition become evident during performance of the work, immediately stop work and advise the Departmental Representative verbally and in writing.

1.16 FIRE SAFETY REQUIREMENTS

- .1 Handle, store, use and dispose of flammable and combustible materials in accordance with the National Fire Code of Canada.

1.17 POSTING OF DOCUMENTS

- .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province having jurisdiction, and in consultation with Departmental Representative.
- .2 This includes but does not limit to:
 - .1 Health and Safety plans.
 - .2 Sequence of work.
 - .3 Emergency procedures.
 - .4 Site drawing showing project layout, location of the first-aid station, evacuation route and marshalling station, and the emergency transportation provisions

1.18 CORRECTION OF NON-COMPLIANCE

- .1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by the Departmental Representative.
- .2 Provide Departmental Representative with written report of action taken to correct noncompliance of health and safety issues identified.
- .3 The Departmental Representative may stop Work if non-compliance of health and safety regulations is not corrected immediately or within posted time. The Contractor/subcontractors will be responsible for any costs arising from such a stop

1.19 WORK STOPPAGE

- .1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.

Part 2 Products

2.1 NOT USED

- .1 Not used.

Part 3 Execution

3.1 NOT USED

- .1 Not used.

END OF SECTION

Part 1 General

1.1 DESCRIPTION

- .1 This section presents Contractor requirements for quality control, including coordination with material suppliers, testing agencies, and other entities that may be employed by the Department or the Departmental Representative during completion of the work.

1.2 RELATED SECTIONS

- .1 Not used

1.3 SUBMITTALS

- .1 Not used

1.4 INSPECTION

- .1 Allow Departmental Representative access to Work.
- .2 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Departmental Representative.
- .3 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.
- .4 Departmental Representative will order part of Work to be examined if Work is suspected to be not in accordance with Contract Documents. If, upon examination such work is found not in accordance with Contract Documents, correct such Work and pay cost of examination and correction. If such Work is found in accordance with Contract Documents, Departmental Representative shall pay cost of examination and replacement.

1.5 INDEPENDENT INSPECTION AGENCIES

- .1 Independent Inspection/Testing Agencies will be engaged by Departmental Representative for purpose of inspecting and/or testing portions of Work. Cost of such services will be borne by Department.
- .2 Provide equipment required for executing inspection and testing by appointed agencies.
- .3 Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.
- .4 If defects are revealed during inspection or testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by Departmental Representative at no cost to the Department. Pay costs for re-testing and re-inspection as necessary.

1.6 ACCESS TO WORK

- .1 Allow inspection/testing agencies access to Work.
- .2 Make accessible to the Departmental Representative all construction equipment that is employed for completion of the work.

- .3 Cooperate to provide reasonable facilities for such access to the Departmental Representative.

1.7 PROCEDURES

- .1 Notify Departmental Representative in advance of requirement for tests, in order that attendance arrangements can be made.
- .2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in orderly sequence to not cause delays in Work.
- .3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.
- .4 Complete required materials testing as described in the Technical Specifications for which the work applies. Results of laboratory testing shall be reviewed by the Departmental Representative to determine compliance with the requirements of the work.

1.8 REJECTED WORK

- .1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Departmental Representative as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
- .2 Make good other Contractor's work damaged by such removals or replacements promptly.
- .3 If in opinion of Departmental Representative it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner will deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which will be determined by the Departmental Representative.

Part 2 Products

2.1 NOT USED

- .1 Not used.

Part 3 Execution

3.1 NOT USED

- .1 Not used.

END OF SECTION

Part 1 General

1.1 DESCRIPTION

- .1 This section provides general requirements for maintaining project cleanliness during completion of the work and requirements for final cleaning prior to project closeout and demobilization from the site.

1.2 MEASUREMENT AND PAYMENT PROCEDURES

- .1 No separate payment will be made for Cleaning. Include as part of the Lump Sum Amount.

1.3 REFERENCES

- .1 Not used

1.4 PROJECT CLEANLINESS

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris, including that caused by other Contractors.
- .2 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site, unless approved by Departmental Representative.
- .3 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .4 Provide on-site containers for collection of waste materials and debris.
- .5 Dispose of waste materials and debris off site at designated dumping areas.
- .6 Provide and use marked separate bins for recycling.

Part 2 Products

2.1 NOT USED

- .1 Not used.

Part 3 Execution

3.1 NOT USED

- .1 Not used.

END OF SECTION

Part 1 General

1.1 SUMMARY OF PROCESS

- .1 A Contract acceptance process will be used to facilitate the Departmental Representative's acceptance of the Work. The process can be summarized as follows:
 - .1 Substantial Performance of the Work:
 - .1 Fulfilment of prerequisites to Substantial Performance.
 - .2 Inspection for Substantial Performance.
 - .3 Issuance of a Certificate of Substantial Performance of the Work.
 - .2 Total Performance of the Work:
 - .1 Fulfilment of prerequisites to Total Performance.
 - .2 Inspection for Total Performance.
 - .3 Issuance of a Certificate of Total Performance of the Work.
 - .3 Warranty Performance of the Work:
 - .1 Fulfilment of prerequisites to Warranty Performance.
 - .2 Inspection for Warranty Performance.
 - .3 Issuance of Certificate of Warranty Performance of the Work.

1.2 SUBSTANTIAL PERFORMANCE OF PART OF THE PERMANENT WORK

- .1 When utilization of part of the Permanent Work is required and Substantial Performance of part of the Permanent Work is a condition of such utilization, the applicable requirements specified in this section will apply to the part of the Permanent Work to be utilized.

1.3 PREREQUISITES TO SUBSTANTIAL PERFORMANCE

- .1 Prior to requesting the Departmental Representative's inspection for Substantial Performance, carry out the following:
 - .1 Obtain and submit evidence of compliance with Regulatory Requirements.
 - .2 Remove from the Site surplus products, construction tools, equipment, and similar items not required for the performance of the remaining work.
 - .3 Correct all Contract Deficiencies that may affect operation of the facility.
 - .4 Review the Contract Documents and inspect the Work to confirm that prerequisites to Substantial Performance have been fulfilled and that the Work is ready for inspection for Substantial Performance.

1.4 INSPECTION FOR SUBSTANTIAL PERFORMANCE

- .1 Submit a written request to the Departmental Representative for inspection for Substantial Performance, certifying that prerequisites have been fulfilled and specifying known exceptions in the form of a list of items to be completed, corrected, or submitted.
- .2 The Departmental Representative will, within a reasonable time after receipt of the Contractor's request:

- .1 Proceed with the inspection; or
- .2 Advise the Contractor that prerequisites are not adequately fulfilled.
- .3 Results of the Departmental Representative's inspection for Substantial Performance will form the Substantial Performance Contract Deficiency List (SPC Deficiency List).

1.5 SUBSTANTIAL PERFORMANCE OF THE WORK

- .1 Following inspection, the Departmental Representative will:
 - .1 Issue a Certificate of Substantial Performance of the Work stating the effective date of Substantial Performance, with a copy of the SPC Deficiency List attached;
or
 - .2 Advise the Contractor that prerequisites to Substantial Performance are not fulfilled and repeat the inspection for Substantial Performance as necessary.
- .2 Upon issuance of a Certificate of Substantial Performance of the Work, the Departmental Representative will assume responsibility for care, custody, and control of the Work that has been completed, including responsibility for the following:
 - .1 Operation, including all systems and equipment.
 - .2 Maintenance.
 - .3 Property insurance.
 - .4 Utility costs, except for Departmental Representative's site office.

1.6 PREREQUISITES TO TOTAL PERFORMANCE

- .1 Prior to requesting the Departmental Representative's inspection for Total Performance carry out the following:
 - .1 Perform the entire Work including the following:
 - .1 Fabrication (including coating) of handrail.
 - .2 Transportation to and off-loading at staging area at the Regina Research Farm.
 - .3 Final clean-up.
 - .4 Record Documents.
 - .5 Product warranty.
 - .6 Correction of all Contract Deficiencies except those items arising from the warranty provisions of the Contract Documents.
 - .2 Review the Contract Documents and inspect the Work to confirm that prerequisites to Total Performance have been met and that the Work is ready for inspection for Total Performance.

1.7 INSPECTION FOR TOTAL PERFORMANCE

- .1 Submit a written request to the Departmental Representative for inspection for Total Performance, including a copy of the Departmental Representative's most recent SPC Deficiency List, and certify that each Contract Deficiency has been corrected or

otherwise resolved in a manner agreed to between the Departmental Representative and the Contractor. List known exceptions, if any, in the request.

- .2 The Departmental Representative will, within a reasonable time after receipt of the Contractor's request:
 - .1 Proceed with the inspection; or
 - .2 Advise the Contractor that prerequisites are not adequately fulfilled.

1.8 TOTAL PERFORMANCE OF THE WORK

- .1 Following the inspection, the Departmental Representative will:
 - .1 Issue a Certificate of Total Performance of the Work, stating the effective date of Total Performance; or
 - .2 Advise the Contractor of Contract Deficiencies that must be corrected prior to issuance of a Certificate of Total Performance of the Work.

Part 2 Products

2.1 NOT USED

- .1 Not used.

Part 3 Execution

3.1 NOT USED

- .1 Not used.

END OF SECTION

Part 1 General

1.1 SUMMARY OF PROCESS

- .1 This section provides project closeout requirements for post-construction submittals that the Contractor shall be required to submit to the Departmental Representative following completion of the work.

1.2 RELATED REQUIREMENTS

- .1 01 77 00 - Closeout Procedures.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Prepare instructions and data by personnel experienced for similar work.
- .2 Revise content of documents as required before final submittal.
- .3 Two (2) weeks prior to Total Performance of the Work, submit to the Departmental Representative two (2) final copies of all as-built drawings and other required post-construction documents

1.4 AS -BUILT DOCUMENTS

- .1 Maintain at site for the Departmental Representative one record copy of:
 - .1 Contract Drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Change Orders and other modifications to Contract.
 - .5 Reviewed shop drawings, product data, and samples.
 - .6 Field test records.
 - .7 Inspection certificates.
 - .8 Manufacturer's certificates.
- .2 Contract drawings and shop drawings: legibly mark each item to record actual construction, including:
 - .1 Field changes of dimension and detail
 - .2 Change made by change orders.
 - .3 Details not on original Contract Drawings.
 - .4 References to related shop drawings and modifications.
- .3 Contract specifications: legibly mark each item to record actual "Workmanship of Construction", including:
 - .1 Changes made by addenda and change orders.
- .4 As-built information:
 - .1 Record changes in red ink.

- .2 Mark on one (1) set of Drawings, Specifications and shop drawings at completion of project.
- .3 Before final inspection, neatly transfer notations to second set of Drawings.
- .4 Submit all sets for the Departmental Representatives.
- .5 Store record documents and samples in field office apart from documents used for construction.
 - .1 Provide files, racks, and secure storage.
- .6 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual.
 - .1 Label each document "PROJECT RECORD" in neat, large, printed letters.
- .7 Maintain record documents in clean, dry and legible condition.
 - .1 Do not use record documents for construction purposes.
- .8 Keep record documents and samples available for inspection by the Departmental Representative.

1.5 COMPLETION

- .1 Submit a written certificate that the following have been performed:
 - .1 Work has been completed and inspected for compliance with the Contract Documents.
 - .2 Defects have been corrected and deficiencies have been completed.
 - .3 Work is complete and ready for Final Inspection.

1.6 NOT USED

- .1 Not used.

Part 2 Execution

2.1 NOT USED

- .1 Not used.

END OF SECTION

Part 1 General

1.1 DESCRIPTION

- .1 The work shall consist of the supply, delivery, and installation of all metalwork specified or shown on the Drawings that is not covered under other specifications of the Contract or included in Contract Items for which payment is specified elsewhere.

1.2 REFERENCES

- .1 The following references used throughout this specification shall refer to the latest edition and any revisions thereto approved by the organization issuing that publication:
 - .1 Canadian Institute of Steel Construction (CISC) - Handbook of Steel Construction
 - .2 CAN/CSA-S16 - Limit States Design of Steel Structures
 - .3 CSA-G40.20 - General Requirements for Rolled or Welded Structural Quality Steel
 - .4 CSA-G40.21 - Structural Quality Steel
 - .5 CAN/CSA-G164-M - Hot Dip Galvanizing of Irregularly Shaped Articles
 - .6 CSA-W47.1 - Certification of Companies for Fusion Welding of Steel
 - .7 CSA-W59 - Welded Steel Construction (Metal Arc Welding)
 - .8 CSA-W59.2-M - Welded Aluminum Construction
 - .9 ASTM A53/A53M – Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc Coated, Welded and Seamless
 - .10 ASTM A108 – Standard Specification for Steel Bar, Carbon and Alloy, Cold-Finished
 - .11 ASTM A153/A153M – Standard Specification for Zinc Coating (Hot Dip) on Iron and Steel Hardware
 - .12 ASTM A307 – Standard Specification for Carbon Steel Bolts and Studs 60000 psi Tensile Strength
 - .13 ASTM A325 – Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
 - .14 ASTM A325M – Standard Specification for Structural Bolts, Steel, Heat Treated, 830 MPa Minimum Tensile Strength
 - .15 ASTM A563/A563M – Standard Specification for Carbon and Alloy Steel Nuts
 - .16 ASTM A780 – Standard Practice for Repair of Damaged and Uncoated Areas of Hot Dip Galvanized Coatings
 - .17 ASTM B6 – Standard Specification for Zinc
 - .18 ASTM B632/B632M – Standard Specification for Aluminum-Alloy Rolled Tread Plate
 - .19 ASTM B633 – Standard Specification for Electrodeposited coatings of Zinc on Iron and Steel
 - .20 ASTM F436/F436M – Standard Specification for Hardened Steel Washers

- .21 ASTM F593 – Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs
- .22 ASTM F594 – Standard Specification for Stainless Steel Nuts
- .23 ASTM F738M – Standard Specification for Stainless Steel Metric Bolts, Screws, and Studs
- .24 ASTM F836M – Standard Specification for Style 1 Stainless Steel Nuts
- .25 AWS D1.1/D1.1M – Structural Welding Code - Steel

1.3 SHOP DRAWINGS

- .1 Shop drawings and material schedules prepared under the supervision of a professional engineer shall be submitted.

1.4 FABRICATOR CERTIFICATION

- .1 The steel fabricator shall be certified in Division 1 or 2 by the Canadian Welding Bureau in accordance with CSA-W47.1 if he elects to use fusion welding processes.

1.5 TESTING AND INSPECTION

- .1 The Engineer or the Inspector shall have access at all reasonable times to those parts of the Contractor's or Subcontractor's plant(s) involved with the fabrication of the miscellaneous metalwork, and may conduct inspections and tests at any time to ensure compliance with the Contract Documents. Testing may occur at testing facilities not located at the place(s) of the fabrication, in addition to the place(s) of the fabrication. Materials requested by the Engineer or the Inspector for testing shall be provided at no cost to the Contract. Inspections and/or tests by the Engineer or the Inspector shall not relieve the Contractor of his responsibility to furnish materials and perform Work in accordance with the Contract Documents.
- .2 The Engineer may request the Contractor to furnish a report of any or all tests required in accordance with all applicable provisions of the standards referenced in this specification and any other requirements of this specification. Inspections and/or tests by the Contractor shall not relieve the Contractor of his responsibility to furnish materials and perform Work in accordance with the Contract Documents.

1.6 MATERIALS

- .1 Structural steel rolled shapes shall conform to CSA-G40.21, Grade 350 W.
- .2 Bars and plates shall conform to CSA-G40.21 Grade 300 W
- .3 Hollow structural sections shall conform to CSA-G40.21, Grade 350 W, Class C, unless stated otherwise on the Drawings or in the Special Provisions.
- .4 Bolts, hex cap screws and threaded rods shall conform to ASTM 307. Nuts and washers shall conform to ASTM 563 and ASTM F844 respectively. All bolts, hex cap screws, threaded rods, washers and nuts shall be zinc plated unless stated otherwise on the Drawings or Special Provisions.
- .5 Structural Bolts shall conform to ASTM A325/A325M unless stated otherwise on the Drawings or in the Special Provisions. Structural Bolts shall be installed complete with heavy hex nuts conforming to ASTM A563/A563M and hardened washers conforming to

ASTM F436/F436M. Structural Bolts, Heavy Hex Nuts and Hardened Washers shall be hot dipped galvanized.

- .6 Headed anchor stud material shall conform to ASTM A108. Headed anchor studs shall be proportioned in accordance with section 7 of AWS D1.1/D1.1M.
- .7 Stainless steel bolts, hex cap screws and studs shall conform to ASTM F593/F738M and stainless steel nuts shall conform to ASTM F594/F836M.
- .8 Carbon steel pipe shall conform to ASTM A53/A53M.
- .9 Zinc for galvanizing shall conform to ASTM B6.
- .10 Aluminum tread or checkered plate shall conform to ASTM B632/B632M.

1.7 EXECUTION

.1 FABRICATION

- .1 Miscellaneous metalwork shall be fabricated and erected in accordance with the Shop Drawings reviewed by the Engineer, and in accordance with CAN/CSA S16.
- .2 Fabricating tolerances for structural quality steel sections shall be in accordance CSA-G40.20 except as modified by CSA-S16.
- .3 Items for field assembly shall be properly marked and match-marked.

.2 MATERIAL STORAGE

- .1 Miscellaneous metalwork shall be stored in a manner which prevents deterioration and damage to its fabricated form.
- .2 In the event that miscellaneous metalwork is damaged, repairs must be approved by the Engineer and shall be undertaken at no additional cost to the Contract.

.3 WELDING

- .1 Welding of ferrous metals shall be undertaken in accordance with CSA-W59
- .2 Aluminum shall not be welded in the field. Aluminum shall be welded in accordance with CSA-W59.2-M.

.4 GALVANIZING AND ZINC PLATING

- .1 Galvanizing of all miscellaneous metalwork with the exception of Structural Bolts, Heavy Hex Nuts, Hardened Washers, bolts, nuts, hex cap screws, threaded rod, washers and steel pipe shall meet the requirements of CSA-G164-M. The galvanizing material shall be zinc and shall meet the requirements of ASTM B6. The minimum mass of zinc coating shall be 610 g/m².
- .2 Galvanizing of Structural Bolts, Heavy Hex Nuts and Hardened Washers shall meet the requirements of ASTM A153/A153M.
- .3 When called to be galvanized, galvanizing of bolts, nuts, hex cap screws, threaded rod and washers shall meet the requirements of ASTM A153/A153M.
- .4 Galvanizing of steel pipe shall meet the requirements of ASTM A53/A53M.
- .5 Galvanized coatings damaged by welding, cutting, rough handling during shipping or installation or otherwise shall be repaired in accordance with ASTM A780 using zinc-rich paints. The mass of zinc coating on repairs shall not be less than 760 g/m².

- .6 Zinc plating of bolts, washers, nuts, hex cap screws and threaded rods shall meet the requirements of ASTM B633.

.5 INSTALLATION

- .1 All miscellaneous metalwork shall be installed to the positions shown on the Drawings and as directed by the Engineer.
- .2 All temporary bracing required shall be provided and installed until the structure is complete.
- .3 Fits and tolerances shall be as shown on the Drawings. Where tolerances are not shown, the accuracy and degree of fit shall be such to ensure the proper and adequate functioning of all members.
- .4 All members shall be accurately aligned and shall be maintained free of twists and bends. Sharp kinks or bends in members will be rejected.
- .5 Metalwork to be embedded in concrete shall be thoroughly cleaned of all loose scale, dirt, grease and other foreign material and shall be held firmly in position while the concrete is placed.

.6 DEFECTIVE MATERIAL

- .1 Metalwork that does not meet the requirements of the Contract, is set in the wrong position, or which shifts out of position before completion of the Contract, will be considered defective material.
- .2 Defective material shall be modified or replaced as directed by the Engineer at no cost to the Contract.

1.8 MEASUREMENT

- .1 Not applicable.

1.9 PAYMENT

- .1 Payment for MISCELLANEOUS METALWORK shall be made on a lump sum basis. The lump sum shall be full compensation for fabricating, supplying, delivering, off-loading, storing, handling, welding, coating, painting and those operations incidental to the Work for which no price or prices are included in the Schedule of Prices.
- .2 When a price for MISCELLANEOUS METALWORK is not included in the Schedule of Prices, the work will not be paid for directly, but will be a subsidiary obligation of the Contractor under other Contract Items.

Part 2 Products

2.1 NOT USED

- .1 Not used.

Part 3 Execution

3.1 NOT USED

- .1 Not used.

AAFC
Round Lake Dam
Handrail Fabrication

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MISCELLANEOUS METALWORK
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END OF SECTION

Part 1 General

1.1 DESCRIPTION

- .1 The work shall consist of the supply and application of painting materials to the surfaces of miscellaneous metalwork.

1.2 REFERENCES

- .1 The following references used throughout this specification shall refer to the latest edition and any revisions thereto approved by the organization issuing that publication:
 - .1 Steel Structures Painting Council (SSPC) - Steel Structures Painting Manual, Volumes 1 and 2, "Good Painting Practice" and "Systems and Specifications," respectively.
 - .2 CGSB 1-GP-72 - Guide to the Selection of Paint Specifications on Use Basis.

1.3 METALWORK NOT TO BE PAINTED

- .1 The following metalwork shall not be painted:
 - .1 Aluminum, stainless steel, rubber, PVC, copper, bronze, brass or galvanized surfaces and name plates unless noted otherwise.
 - .2 Factory finished equipment.
 - .3 Surfaces against which concrete will be placed.
 - .4 Surfaces to be field welded and faying surfaces of bolted connections.

1.4 SHOP DRAWINGS

- .1 Material safety data sheets shall be provided to the Engineer.

1.5 TESTING

- .1 The Engineer or his designate may conduct inspections and tests at any time to ensure compliance with the Contract Documents. Testing may occur at testing facilities located at the Jobsite or at other locations. Inspections and/or tests by the Engineer or his designate shall not relieve the Contractor of his responsibility to furnish materials and perform work in accordance with the Contract Documents.

1.6 MATERIALS

- .1 Alternative painting products to those identified in the Special Provisions or on the Drawings may be used if approved by the Engineer.
- .2 Paint materials shall be delivered to and stored at the Jobsite in sealed, original containers bearing the brand, paint type and manufacturer's instructions.

1.7 EXECUTION

- .1 Painting materials shall be handled, stored, mixed and applied in accordance with the requirements of SSPC-PA1, "Shop, Field, and Maintenance Painting."
- .2 Steel surfaces to be painted shall be blast cleaned in accordance with the requirements of

- .3 SSPC-SP6, "Commercial Blast Cleaning" or SSPC-SP10, "Near-White Blast Cleaning" noted in the Special Provisions or on the Drawings.
- .4 Where coating manufacturer's requirements for surface preparation are more stringent than stipulated elsewhere in the Contract Documents, the coating manufacturer's requirements will govern.
- .5 As soon after blast cleaning as practicable, and prior to the formation of any corrosion, all blast cleaned surfaces shall be cleaned of dust and primed in accordance with the coating manufacturer's recommendations.
- .6 3.05 All finishes which are damaged prior to the completion of the Contract shall be touched up and restored in accordance with the coating manufacturer's recommendations and to the satisfaction of the Departmental Representative.

1.8 MEASUREMENT

- .1 Not applicable.

1.9 PAYMENT

- .1 Payment for PAINTING METALWORK will not be made directly but will be a subsidiary obligation of the Contractor under other Contract Items.

Part 2 Products

2.1 NOT USED

- .1 Not used.

Part 3 Execution

3.1 NOT USED

- .1 Not used.

END OF SECTION