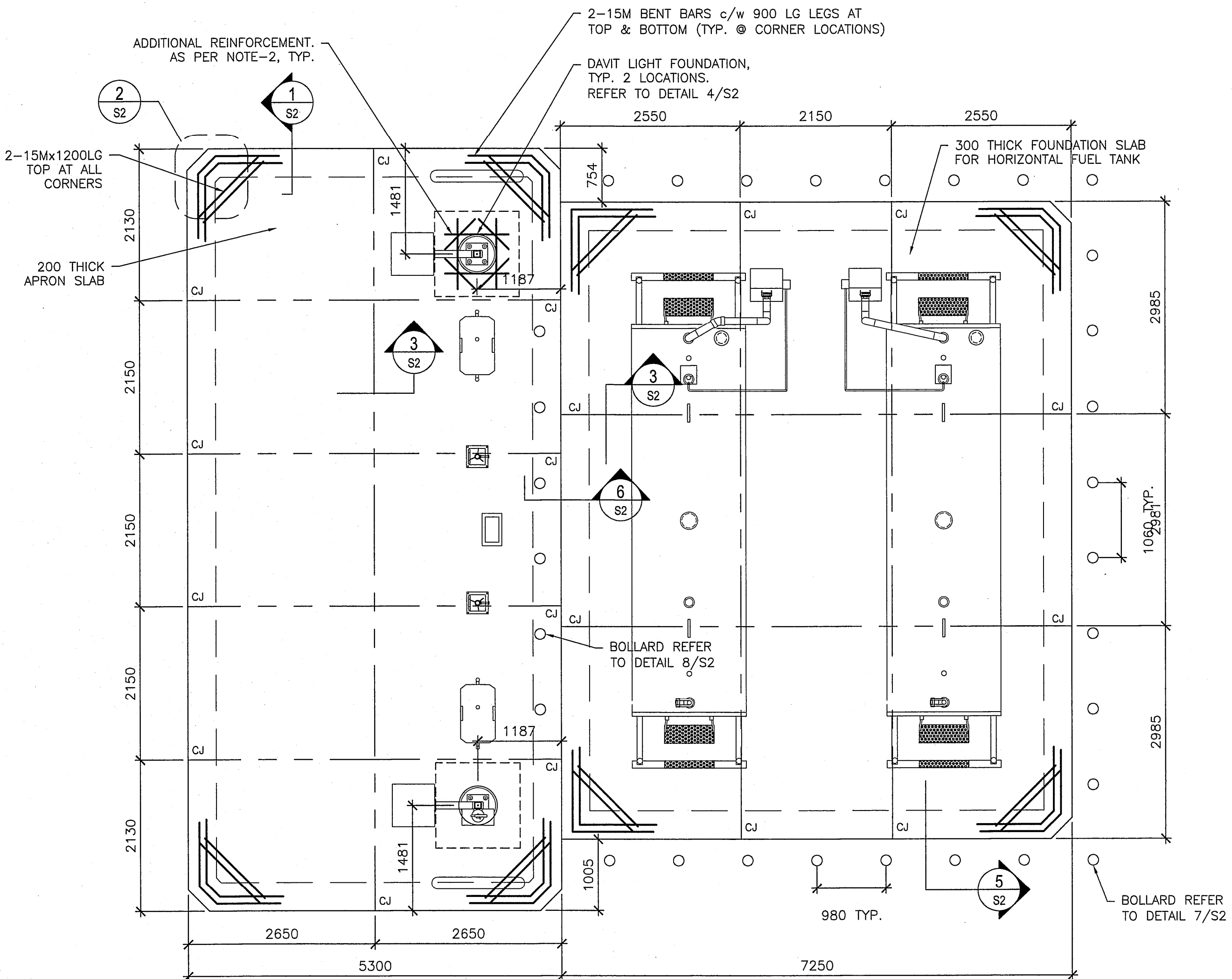


NOTES

- COORDINATE WITH CIVIL DRAWINGS FOR TOP OF ISLAND ELEVATIONS AND APRON SLAB SLOPES. CJ DENOTES CONTROL JOINT. CONTROL JOINTS TO BE 3048mm O/C MAX. TYPICAL.
- FOR OPENINGS IN THE SLAB LARGER THAN 300mm ϕ , PROVIDE ADDITIONAL 1-15M EACH SIDE WITH BOTH ENDS OF REBAR EXTENDING 300mm PAST EXTENTS OF OPENINGS, 1-15M x 1200 LONG AT EACH CORNER AND 1-15M RING.
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL CIVIL, MECHANICAL, ELECTRICAL AND STRUCTURAL DRAWINGS ON THIS PROJECT.
- GENERAL CONTRACTOR TO INSTALL ANCHOR BOLTS AT BASE OF TANK TO FOUNDATION CONCRETE AS PER TANK SHOP DRAWINGS.



GENERAL

- GENERAL NOTES ON STRUCTURAL DRAWINGS SHALL FORM PART AND BE EQUAL TO SPECIFICATIONS.
- PRIOR TO CONSTRUCTION, VERIFY DIMENSIONS ON STRUCTURAL DRAWINGS FOR CONSISTENCY WITH CIVIL/MECHANICAL DRAWINGS AND VERIFY EXISTING CONSTRUCTION AND FRAMING. REPORT INCONSISTENCIES IN DIMENSIONS AND VARIATIONS IN EXISTING CONSTRUCTION FROM WHAT IS SHOWN ON THE DRAWINGS. DO NOT SCALE DRAWINGS.
- REPORT ANY ERRORS OR DISCREPANCIES DURING CONSTRUCTION TO THE DEPARTMENTAL REPRESENTATIVE.
- ANY MODIFICATIONS OR SUBSTITUTIONS MUST BE AUTHORIZED BY THE DEPARTMENTAL REPRESENTATIVE.
- DESIGN OF STRUCTURE CONFORMS TO THE CURRENT NATIONAL BUILDING CODE, ERRATA AND REVISIONS AS WELL AS THE SASKATCHEWAN AMENDMENTS.
- DO NOT CONSTRUCT FROM THESE DRAWINGS UNLESS MARKED "ISSUED FOR CONSTRUCTION", AND ARE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF SASKATCHEWAN.
- FIELD REVIEWS ARE PERIODIC AND ARE TO CONFIRM THE STRUCTURAL PORTIONS ARE CONSTRUCTED IN GENERAL CONFORMANCE WITH THE STRUCTURAL CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR OVERALL QUALITY AND CONSTRUCTION IN ACCORDANCE WITH CONTRACT DOCUMENTS.
- CONTRACTOR TO PROVIDE CONSTRUCTION SCHEDULE TO DEPARTMENTAL REPRESENTATIVE.
- CONFIRM SCHEDULE BY NOTIFYING THE DEPARTMENTAL REPRESENTATIVE 48 HRS PRIOR TO COMMENCEMENT OF PLACING ANY CONCRETE.
- LOCATIONS AND DETAILS OF CONSTRUCTION JOINTS SHALL BE SUBMITTED TO THE DEPARTMENTAL REPRESENTATIVE FOR REVIEW.

DESIGN LOADS

- IMPORTANCE CATEGORY FOR STRUCTURE: NORMAL
- DESIGN SPECIFIED LOADS:
TANK SLAB - 100 kPa
APRON SLAB - 100 kPa OR 100 kN POINT LOAD.
- SNOW LOADS:
a. GROUND SNOW LOAD, $S_s = 1.9$ kPa (1/50 YEAR RETURN)
b. ASSOCIATED RAIN LOAD, $S_r = 0.1$ kPa (1/50 YEAR RETURN)
- WIND LOADS:
a. HOURLY WIND PRESSURE, $q = 0.38$ kPa (1/50 YEAR RETURN)
b. DESIGN WIND LOADS CALCULATED IN ACCORDANCE WITH NBCC 2010 STATIC PROCEDURE.
- SEISMIC LOADS:
 $S_a(0.2) = 0.095$
 $S_a(0.5) = 0.057$
 $S_a(1.0) = 0.026$
 $S_a(2.0) = 0.008$
 $P_G = 0.036$
- DESIGN LIVE LOADS SHALL NOT BE EXCEEDED AT ANY TIME DURING CONSTRUCTION.
- DESIGN LIVE LOADS MAY ONLY BE APPLIED TO CONCRETE AFTER IT HAS REACHED DESIGN STRENGTH.

CONCRETE

- DO CONCRETE WORK TO CSA A23.1. LATEST EDITION
- PRODUCE AND DELIVER NORMAL WEIGHT CONCRETE IN ACCORDANCE WITH CSA A23.1. TO THE FOLLOWING REQUIREMENTS:

COMPONENT	HYDRAULIC CEMENT TYPE	STRENGTH (MPa) @ DAYS	EXPOSURE CLASS	AGGREGATE SIZE (mm)	WATER/CEMENT RATIO	AIR %
FOOTINGS & PIERS,	HS	32 @ 28d	S-2	20	0.45	4-7
EXTERIOR SLAB ON GRADE	GU	35 @ 28d	C-1	20	0.40	5-8
- ADMIXTURES FOR CONCRETE:
a. AIR-ENTRAINMENT: TO ASTM C260, ASTM C494. AIR ENTRAINING ADMIXTURES TO HAVE A DURABILITY FACTOR GREATER THAN 75 WHEN TESTED TO ASTM STANDARDS C666 PROCEDURE A. SPACING FACTOR FOR ANY AIR ENTRAINING ADMIXTURE MUST BE 0.15mm OR LESS.
b. SUPERPLASTICIZERS: TO ASTM C494
- PLACE CONCRETE AND VIBRATE ALL CONCRETE WORK WITH APPROPRIATE INTERNAL VIBRATORS WITHOUT DISTURBING PLACED REINFORCING STEEL.
- CONCRETE WORKING TIME, FROM BATCHING TO PLACEMENT SHALL NOT EXCEED 1.5 HOURS.
- EPOXY GROUT TO INSTALL DOWELS INTO EXISTING CONCRETE. PREMIXED COMPOUND NON-METALLIC INGREDIENTS. MIN. STRENGTH 26MPa IN 24 HOURS.
- CONCRETE TESTING:
THE GENERAL CONTRACTOR SHALL ENSURE THAT CONCRETE TESTING BE PERFORMED BY A CSA APPROVED INDEPENDENT TESTING COMPANY. THREE CONCRETE TEST CYLINDERS AND ONE SLUMP TEST SHALL BE TAKEN FOR EVERY 50 (OR LESS) CUBIC METRES, OR EACH DAY CONCRETE IS PLACED, WHICHEVER IS GREATER. TESTING SHALL BE PERFORMED IN ACCORDANCE WITH CSA A23.2 AND THE RESULTS SHALL BE FORWARDED TO THE DEPARTMENTAL REPRESENTATIVE AND THE OWNER. TAKE ONE ADDITIONAL CONCRETE TEST CYLINDER DURING COLD WEATHER CONCRETING AND CURE ON SITE INSIDE THE HOARDING.

EXCAVATION, BACKFILL AND COMPACTION

- BEFORE COMMENCING EXCAVATION LOCATE AND ESTABLISH STATE OF USE OF EXISTING UTILITIES, STRUCTURES AND NOTIFY APPLICABLE OWNERS AND AUTHORITIES. PROTECT AND MAINTAIN SERVICES, UTILITIES AND STRUCTURES TO BE REUSED AND TO REMAIN OPERATIONAL.
- EXCAVATE FOR NEW CONSTRUCTION. BRACE EXCAVATIONS OR PROVIDE SAFE SLOPES. REMOVE TOP SOILS, ORGANIC MATTER, DEBRIS.
- PLAN AND CONTROL EXCAVATION WORK TO ENSURE BOTTOM OF EXCAVATION DOES NOT SOFTEN DUE TO EXCESS MOISTURE.
- HAVE BOTTOMS OF EXCAVATION INSPECTED AND APPROVED FOR BACKFILL OPERATION BY GEOTECHNICAL ENGINEER, PAID BY CONTRACTOR. REMOVE SOFT AND OTHER NOT ACCEPTABLE BASE MATERIAL AND BACKFILL WITH APPROVED MATERIAL.
- ARRANGE FOR COMPACTION TESTING AT SPECIFIED FREQUENCIES UNDER THE SUPERVISION OF A REGISTERED GEOTECHNICAL ENGINEER.
- PERMIT NO BACKFILL ON FROZEN GROUND.
- MAINTAIN MOISTURE CONTENT TO WITHIN PLUS OR MINUS 1 PERCENT OF THE OPTIMUM MOISTURE CONTENT AS DEFINED BY THE PROCTOR TEST, ASTM D698. PROTECT BACKFILLED GRADE, DURING AND AFTER COMPLETION OF BACKFILL OPERATION, FROM SOFTENING BY EXCESSIVE MOISTURE.

CONCRETE SLAB-ON-GRADE

PREPARE SUB-GRADE, SUB-BASE, AND BASE MATERIAL AS PER THE GEOTECHNICAL REPORT IN APPENDIX 'A' PREPARED BY P. MACHIBRODA ENGINEERING LTD. DATED APRIL 11, 2014.

- THE SUB-GRADE SHALL BE COMPACTED TO 96% STANDARD PROCTOR DENSITY.
- BASE, SUB-BASE MATERIAL & SAND MATERIAL SHALL BE FREE OF ORGANIC AND DELETERIOUS MATERIALS AND SHALL BE APPROVED BY GEOTECHNICAL ENGINEER PAID BY THE CONTRACTOR.
- DO NOT INSTALL GRANULAR MATERIAL ON FROZEN AREAS.
- THE GENERAL CONTRACTOR SHALL ENSURE THAT COMPACTION TESTS BE PERFORMED BY A C.S.A. APPROVED INDEPENDENT TESTING COMPANY DURING THE INSTALLATION OF ALL GRANULAR MATERIAL. THE RESULTS SHALL BE FORWARDED TO THE DEPARTMENTAL REPRESENTATIVE. COMPACTION TEST SHALL BE PERFORMED FOR EACH LIFT OF FILL MATERIAL BELOW SLAB ON GRADE.
- PROVIDE 15 MIL POLY MOISTURE BARRIER (WELL LAPPED) BETWEEN COMPACTED GRANULAR BASE AND CONCRETE SLAB.
- PROVIDE A FULL AND CONTINUOUS 13mm WIDE ISOLATION JOINT BETWEEN THE EDGE OF SLAB AND ALL OTHER STRUCTURAL ELEMENTS (i.e. GRADE BEAMS, FOUNDATION & RETAINING WALLS, COLUMNS, ETC.)
- REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR SERVICES INSTALLED BELOW THE SLAB. SLEEVING REQUIRED FOR SERVICES PENETRATING THE SLAB.
- INSTALL SAWCUTS AS SHOWN ON STRUCTURAL PLANS. FILL SAWCUTS WITH APPROVED BITUMINOUS COMPOUND OR CAULKING. THE LENGTH OF AN AREA BOUND BY CONTROL JOINTS SHALL NOT EXCEED APPROXIMATELY 1.5XWIDTH

COLD WEATHER CONCRETING

- THIS SECTION APPLIES WHEN THE AVERAGE DAILY (24 HOURS) TEMPERATURE IS LESS THAN +5°C AND THE MAXIMUM DURATION OF TEMPERATURE OF +10°C (AND GREATER) IS LESS THAN 12 HOURS WITHIN THE SAME 24 HOUR PERIOD.
- PROVIDE HEATING EQUIPMENT OR HEATING PLANT ON THE JOB SITE READY FOR USE WHEN CONCRETE IS BEING PLACED DURING COLD WEATHER. SUCH EQUIPMENT SHALL BE ADEQUATE FOR THE PURPOSE OF MAINTAINING THE REQUIRED TEMPERATURE DURING THE PLACEMENT AND CURING OF THE CONCRETE. THE METHODS USED FOR HEATING SHALL BE REVIEWED BY THE DEPARTMENTAL REPRESENTATIVE. EQUIPMENT THAT RELEASES CARBON MONOXIDE GAS IN THE BUILDING SHALL NOT BE ACCEPTED.
- MAINTAIN CONCRETE TEMPERATURE BETWEEN 10°C AND 30°C FROM THE TIME OF BATCHING TO THE END OF THE SPECIFIED CURING TIME, SEE NOTE 5.
- ALL SURFACES (FORMWORK, REBAR, GRADE, PREVIOUS POUR, ETC.) AGAINST WHICH NEW CONCRETE IS TO BE INSTALLED SHALL BE FREE OF ICE, SNOW, AND SHALL BE PRE-HEATED TO +10°C (MINIMUM) FOR AT LEAST 24 HOURS PRIOR TO CONCRETE PLACEMENT.
- PROVIDE ENCLOSURES, INSULATING BLANKETS, HEATERS, ETC. AS NECESSARY TO MAINTAIN MINIMUM CONCRETE TEMPERATURES DURING THE CURING PERIOD AS FOLLOWS:
- FIRST 3 DAYS AT +18°C
- NEXT 4 DAYS AT +10°C
- MAINTAIN TEMPERATURES +10°C FOR THE ADDITIONAL TIME NECESSARY TO ATTAIN 70% OF THE SPECIFIED STRENGTH.
AT NO TIME CONCRETE TEMPERATURE SHALL EXCEED +30°C.
- THE CONCRETE SHALL BE KEPT FROM ALTERNATE FREEZING AND THAWING FOR AT LEAST 14 DAYS AFTER PLACEMENT.
- AT THE END OF THE SPECIFICATION PROTECTION PERIOD, THE TEMPERATURE OF THE CONCRETE SHALL BE REDUCED GRADUALLY AT A RATE NOT EXCEEDING THAT SHOWN IN CSA-A23.1-14.
- PROVIDE ADEQUATE VENTING FOR ALL HEATERS BURNING FOSSIL FUELS TO PREVENT CARBON DIOXIDE AND CARBON MONOXIDE BUILDUP, WHICH WOULD RESULT IN HEALTH PROBLEMS AND POOR CONCRETE SURFACES.
- ACCELERATORS, OR SO-CALLED ANTI-FREEZE COMPOUNDS SHALL NOT BE PERMITTED UNLESS OTHERWISE DIRECTED IN WRITING BY THE DEPARTMENTAL REPRESENTATIVE.
- ALL PROTECTIVE COVERINGS SHALL BE KEPT CLEAR OF THE CONCRETE AND FORM SURFACES TO PERMIT FREE CIRCULATION OF AIR AND SHALL BE MAINTAINED INTACT FOR AT LEAST 24 HOURS AFTER ARTIFICIAL HEAT IS DISCONTINUED.

DO NOT SCALE DRAWINGS

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Revision/	Description/Description	Date/Date
Client/client		

PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

125-32ND STREET WEST
PRINCE ALBERT, SASKATCHEWAN

Project title/Titre du projet
**SASKATCHEWAN PENITENTIARY
15TH STREET WEST
PRINCE ALBERT, SASKATCHEWAN**

NEW FUEL TANKS AT SASKATCHEWAN PENITENTIARY

Approved by/Approuvé par
M.H.

Designed by/Concept par
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Client/client
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