GENERAL NOTES:

1. DO NOT SCALE DRAWINGS.
2. VERIFY ALL DIMENSIONS SHOWN PRIOR TO COMMENCING CONSTRUCTION.
3. LOCATE SERVICES AND PROTECT THEM AT ALL TIMES DURING CONSTRUCTION.
4. STRUCTURAL DRAWINGS SHOW THE COMPLETED STRUCTURE AND DO NOT INDICATE COMPONENTS WHICH MAY BE NECESSARY FOR SAFETY DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR SAFETY IN AND ABOUT THE JOB SITE DURING CONSTRUCTION.
5. VERIFY ALL MECHANICAL AND ELECTRICAL OPENINGS WITH RESPECTIVE TRADES. VERIFY OPENINGS WHICH ARE REQUIRED BUT ARE NOT SHOWN ON THE DRAWINGS WITH THE CONTRACT ADMINISTRATOR.
6. IF ANY UNSOUND STRUCTURAL CONDITIONS ARE OBSERVED OR CREATED DURING CONSTRUCTION, REPORT THEM IMMEDIATELY TO THE CONTRACT ADMINISTRATOR.
7. STRUCTURAL INTEGRITY OF THE EXISTING STRUCTURES TO BE MAINTAINED DURING CONSTRUCTION.
8. EXECUTION: PERFORM WORK IN ACCORDANCE WITH THE NATIONAL BUILDING CODE 2005 AND ALL MANITOBA OCCUPATIONAL HEALTH AND SAFETY REGULATIONS.
9. THE COMPLETE WORK UNDER THESE TRADES SHALL BE GOVERNED BY THE DICTATES OF GOOD PRACTICE IN ALL DETAILS OF MATERIALS AND METHODS EVEN IF NOT MINUTELY SPECIFIED.
10. PROPERLY COORDINATE THE WORK WITH THE REQUIREMENTS OF OTHER TRADES
11. THE CONTRACTOR IS RESPONSIBLE FOR SAFETY IN AND ABOUT THE JOB SITE DURING CONSTRUCTION, AND THE DESIGN AND ERECTION OF ALL TEMPORARY AND PERMANENT STRUCTURES, FORMWORK, FALSEWORK, SHORING, ETC. REQUIRED TO COMPLETE THE PROJECT.
12. MAINTAIN THE SITE, AT LEAST ON A DAILY BASIS, FREE FROM ACCUMULATIONS OF WASTE MATERIAL AND DEBRIS.
13. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN THE FIELD.
14. CONTRACTOR SHALL LEAVE THE SITE IN THE SAME, OR BETTER, CONDITION THAN PRIOR TO ARRIVING ON SITE, AS EVALUATED BY THE CITY.
15. ALL SHOP DRAWINGS ARE TO BE SUBMITED BEARING SEAL OF A QUALIFIED PROFESSIONAL ENGINEER REGISTERED IN MANITOBA FOR REVIEW PRIOR TO FABRICATION. SHOP DRAWINGS SHALL INCLUDE:
    - REINFORCING STEEL
    - CONCRETE MIX
    - STRUCTURAL STEEL
    - PRE-ENGINEERED TRUSSES

SERVICE LOADING

DEAD LOAD ROOF	0.72 kPa
LIVE LOAD SNOW	1.72 kPa
WIND - UPLIFT ROOF	1.92 kPa
WIND - LATERAL	1.74 kPa
WIND LOAD PIPES	2.30 kPa

EARTHWORK:

1. EXCAVATE AS REQUIRED AND REMOVE FROM SITE MATERIALS NOT REQUIRED FOR BACKFILL OR GRADING.
2. COMPACT BACKFILL TO FOLLOWING STANDARD PROCTOR DENSITIES
    - .1 SUBGRADE..... 95%
    - .2 UNDER SLAB-ON-GRADE..... 98%
3. GRADE AND FILL SITE TO ELEVATIONS SHOWN.
4. FILL IN 200 mm LIFTS (LOOSE) AND COMPACT EACH LIFT TO REQUIRED DENSITY.
5. BACKFILL MATERIALS:
    - .1 AGGREGATE BASE: AS PER CITY OF WINNIPEG SPEC CW3110
    - .2 GRANULAR SUB-BASE: AS PER CITY OF WINNIPEG SPEC CW3110
    - .3 SAND: AS PER CITY OF WINNIPEG SPEC CW2030-1

REINFORCING STEEL:

1. ALL REINFORCING STEEL TO BE CSA G30.18-M 400 MPa DEFORMED BARS EXCEPT 10M TIES WHICH MAY BE 300 MPa GRADE STEEL.
2. ALL STEEL TO BE DETAILED IN ACCORDANCE WITH THE MANUAL OF STANDARD PRACTICE BY THE REINFORCING INSTITUTE OF CANADA, CSA A23.1-04 AND A23.3-04 EXCEPT AS NOTED ON DRAWINGS.
3. REINFORCING STEEL COVER TO CONFORM TO CSA A23.3-04 AND AS FOLLOWS:
    SLAB-ON-GRADE (FROM TOP) ..... 50 mm
4. ALL REINFORCING TO BE HELD IN PLACE AND TIED WITH PROPER ACCESSORIES, SUCH AS HI-CHAIRS AND SPACERS. SUPPLY AND DETAIL ALL ACCESSORIES. HI-CHAIRS TO HAVE 4 LEGS AND TO BE STAPLED OR NAILED TO THE FORMWORK.
5. ALL OPENINGS THROUGH CAST-IN-PLACE CONCRETE TO BE TRIMMED WITH 2-15 M EXTENDING A MINIMUM OF 600 mm PAST OPENING UNLESS NOTED OTHERWISE. ALL REQUIRED OPENINGS NOT SHOWN ON STRUCTURAL DRAWINGS SHALL BE APPROVED BY THE CONTRACT ADMINISTRATOR PRIOR TO CONSTRUCTION.
6. REINFORCING STEEL SHALL BE CLEANED OF ALL DIRT, GREASE AND OTHER DELETERIOUS MATERIALS PRIOR TO PLACING.
7. REINFORCING STEEL SHALL BE DEFLECTED, NOT CUT AROUND INSERTS AND OPENINGS LESS THAN 460 mm.
8. REINFORCING STEEL SHALL NOT BE WELDED OR HEATED OR FIELD BENT WITHOUT PRIOR APPROVAL OF THE CONTRACT ADMINISTRATOR.

FORMWORK:

1. ACCESSORIES SUCH AS HI-CHAIRS, SPACERS, ETC., SHALL BE SUPPORTED USING PADS OF PLYWOOD OR TEMPERED FIBREBOARD TO PREVENT PUNCTURING FORM.
2. ALL MISCELLANEOUS PADS AND CURBS TO BE REINFORCED WITH MINIMUM 10M AT 450 mm O.C. EACH WAY, TOP UNLESS NOTED OTHERWISE.

CAST-IN-PLACE CONCRETE:

1. CONCRETE WORK TO BE PERFORMED IN ACCORDANCE WITH CSA-A23.1-04 AND A23.2-04 "CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION" INCLUDING COLD WEATHER REQUIREMENTS WHEN THE MEAN TEMPERATURE FALLS BELOW +5 DEGREES CELSIUS.
2. CONCRETE MIXES SHALL BE PROPORTIONED IN ACCORDANCE WITH CSA-A23.1-04, ALTERNATIVE 1 TO GIVE THE FOLLOWING PROPERTIES:
    - EXPOSURE CLASS..... C1
    - 28 DAY STRENGTH..... 35 MPa
    - CEMENT TYPE..... TYPE 50
    - WATER TO CEMENTING MATERIAL RATIO..... 0.40
    - AIR CONTENT..... 5% TO 7%
    - CURING TYPE..... WET CURE 7 DAYS
3. PROVIDE LIGHT BROOM FINISH TO TOP OF ALL CONCRETE SLABS.
4. PROVIDE SACK RUB FINISH TO ALL EXPOSED FACES OF FORMED CONCRETE.
5. CHAMFER ALL EXPOSED EDGES 25 mm.
6. BEFORE CONCRETE IS PLACED, REVIEWED EQUIPMENT SHOP DRAWINGS SHALL BE EXAMINED FOR THE PROVISION OF OPENINGS, ANCHOR BOLTS, INSERTS, ETC.
7. AIR ENTRAINING ADMIXTURES SHALL CONFORM TO REQUIREMENTS OF CSA A266.4.
8. INSPECTION AND TESTING OF CONCRETE AND CONCRETE MATERIALS WILL BE CARRIED OUT IN ACCORDANCE WITH CAN/CSA-A23.1-04.
9. CONTRACTOR WILL PRODUCE 3 SETS OF TEST CYLINDERS USING THE ESTABLISHED CONCRETE MIXING PROCEDURES FOR TESTING PRIOR TO CONSTRUCTION.
10. CONTRACTOR SHALL TAKE ADDITIONAL TEST CYLINDERS DURING COLD WEATHER CONCRETING. CURE CYLINDERS ON JOB SITE UNDER SAME CONDITIONS AS CONCRETE WHICH THEY REPRESENT.
11. INSPECTION AND/OR TESTING BY ENGINEER WILL NOT RELIEVE THE CONTRACTOR OF HIS CONTRACTUAL RESPONSIBILITY FOR QUALITY CONTROL.
12. A STRUCTURE WILL BE CONSIDERED POTENTIALLY DEFICIENT WHEN:
    1. CONCRETE STRENGTH IS NOT AS SPECIFIED.
    2. IMPROPER CURING.
    3. INADEQUATE PROTECTION OF CONCRETE IN EXTREME WEATHER.
    4. MECHANICAL INJURY FROM FIRE, CONSTRUCTION OVERLOAD, OR PREMATURE REMOVAL OF FORMS.
    5. POOR WORKMANSHIP.
    6. FAILURE TO NOTIFY ENGINEER PRIOR TO PLACING CONCRETE.
    7. CONCRETE WHICH DIFFERS FROM REQUIRED DIMENSIONS.
13. TESTING AND QUALITY CONTROL:
    1. INDEPENDENT INSPECTION/TESTING AGENCIES WILL BE ENGAGED BY THE CONTRACTOR FOR THE PURPOSES OF INSPECTING AND/OR TESTING PORTIONS OF THE WORK. COST OF SUCH SERVICES WILL BE PAID BY THE CONTRACTOR.
    2. EMPLOYMENT OF INSPECTION/TESTING AGENCIES DOES NOT RELIEVE RESPONSIBILITY TO PERFORM THE WORK IN ACCORDANCE WITH CONTRACT DOCUMENTS.
    3. IF DEFECTS ARE REVEALED DURING INSPECTION AND/OR TESTING, APPOINTED AGENCY WILL REQUEST ADDITIONAL INSPECTION AND/OR TESTING TO ASCERTAIN FULL DEGREE OF DEFECT. CORRECT DEFECT AND IRREGULARITIES AS ADVISED BY THE CONTRACT ADMINISTRATOR AT NO COST TO THE CITY. PAY COSTS FOR RETESTING AND REINSPECTION.
    4. PROVIDE LABOUR AND FACILITIES TO OBTAIN AND HANDLE SAMPLES AND MATERIALS ON SITE. PROVIDE SUFFICIENT SPACE TO STORE AND CURE TEST SAMPLES.
    5. 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 THE CONTRACT ADMINISTRATOR AS FAILING TO CONFORM TO THE CONTRACT DOCUMENTS, REPLACE AND RE-EXECUTE IN ACCORDANCE WITH CONTRACT DOCUMENTS.
    6. IF IN OPINION OF CONTRACT ADMINISTRATOR IT IS NOT EXPEDIENT TO CORRECT DEFECTIVE WORK OR WORK NOT PERFORMED IN ACCORDANCE WITH CONTRACT DOCUMENTS, THE CITY MAY DEDUCT FROM CONTRACT PRICE DIFFERENCE IN VALUE BETWEEN WORK PERFORMED AND THAT CALLED FOR BY CONTRACT DOCUMENTS, AMOUNT OF WHICH SHALL BE DETERMINED BY CONTRACT ADMINISTRATOR.
    7. CONCRETE TESTING:
        1. TESTING FIRM WILL TAKE THREE TEST CYLINDERS FROM EACH 50m3 OF CONCRETE, OR FRACTION THEREOF, OF EACH TYPE OF CONCRETE, PLACED IN ANY ONE DAY.
        2. TESTING FIRM WILL MAKE AT LEAST ONE SLUMP TEST AND ONE ENTRAINED AIR TEST FOR EACH SET OF CYLINDERS TAKEN.
        3. RESULTS OF FIELD TESTS WILL BE REPORTED IMMEDIATELY TO THE CONTRACTOR BY THE FIELD REPRESENTATIVE OF THE TESTING FIRM. THESE RESULTS DO NOT IMPLY APPROVAL OR DISAPPROVAL OF THE WORK, BUT ARE FOR THE CONTRACTOR'S INFORMATION.
8. NON-DESTRUCTIVE METHODS FOR TESTING CONCRETE SHALL BE IN CONFORMANCE WITH CAN/CSA-A23.2-04.

ROUGH CARPENTRY:

1. ALL SAWN LUMBER TO BE #2 OR BETTER, SPF. ALL WOOD TO BE KILN DRIED.
2. ALL WALLS TO BE ADEQUATELY BRACED UNTIL FLOOR/ROOF STRUCTURE IS COMPLETED.
3. NAILING PATTERNS AND LENGTHS TO CONFORM TO REQUIREMENTS OF PART 9 OF NATIONAL BUILDING CODE OF CANADA 2005, TABLE 9.23.3.4 UNLESS NOTED OTHERWISE.
4. TOP PLATE OF ALL LOAD BEARING WALLS TO BE SPLICED USING 6 - 76mm COMMON NAILS IN EACH SIDE OF JOINT, TWO ROWS.
5. PLYWOOD SUBFLOORING SHALL BE EXTERIOR GRADE DFP OR CSP CONFORMING TO THE LATEST EDITION OF CAN3-0121 OR CAN3-0157 GLUE PLYWOOD TO JOISTS USING "LUMBER-LOK" COLD TEMPERATURE ADHESIVE AND #8 DECK SCREWS, 65 LONG AT 200mm O.C.
6. ALL OTHER PLYWOOD TO CONFORM TO THE LATEST EDITION OF CAN3-0151 "CANADIAN SOFTWOOD PLYWOOD."
7. ROOF AND WALL SHEATHING TO BE FASTENED USING 64mm COMMON NAILS AT 150mm O.C. ALONG EDGES OF SHEETS, 300mm O.C. INTERIOR OF SHEETS.
8. SUBMIT DRAWINGS BEARING SEAL OF A QUALIFIED PROFESSIONAL ENGINEER REGISTERED IN MANITOBA FOR REVIEW PRIOR TO FABRICATION. SHOP DRAWINGS SHALL INCLUDE A LAYOUT PLAN.

STRUCTURAL STEEL:

1. STRUCTURAL STEEL TO CONFORM TO CSA G40.20-04 "GENERAL REQUIREMENTS FOR AND ROLLED OR WELD QUALITY STRUCTURAL STEEL AND CSA G40.21-04, "STRUCTURAL QUALITY STEEL"
2. CHANNELS, ANGLES, AND PLATES TO BE GRADE 300 W. STEEL BEAMS 345 W. HSS MIN 350 MPA (CLASS C)
3. DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL TO CONFORM TO CAN3-S16.1-01, "LIMIT OF STATES DESIGN OF STEEL STRUCTURES."
4. ALL WELDING TO CONFORM TO CAN3-W59-03 "WELDED STEEL CONSTRUCTION." SURFACES TO BE WELDED SHALL BE CLEANED OF ALL CONTAMINANTS, PAINT, GREASE, RUST, ETC.
5. FABRICATORS SHALL BE CERTIFIED IN ACCORDANCE WITH CAN3-W47.1-03, "CERTIFICATION OF COMPANIES FOR FUSION WELDING OF STEEL STRUCTURES."
6. BOLTED CONNECTIONS; USE MINIMUM TWO A325 BOLTS CONNECTION U.N.O.
7. STEEL ABOVE GROUND SURFACE PREPARATION AND PAINTING SHALL BE IN ACCORDANCE WITH SSPC (STEEL STRUCTURE PAINTING COUNCIL) VOLUMES 1 AND 2. SURFACE PREPARATION SHALL BE SSPC-SP-2 POWER BRUSHING. STRUCTURAL STEEL TO RECEIVE ONE COAT OF 1-GP-40 ZINC CROMATE-IRON OXIDE BASED PAINT. FIELD TOUCH-UP ALL DAMAGED AND UNPAINTED AREAS, WELDS, ABRASIONS, ETC. PAINT ALL STEEL SURFACES ABOVE GROUND. THIS APPLIES TO ALL STRUCTURAL & MISCELLANEOUS STEEL AND ALL PIPES.
8. OBTAIN CONTRACT ADMINISTRATOR'S APPROVAL PRIOR TO MAKING ANY MEMBER SUBSTITUTIONS OR CONNECTION DETAIL CHANGES.

APEGM
Certificate of Authorization
Wardrop Engineering Inc.
No. 195 Expiry: April 30, 2007

NO.	DESCRIPTION	DATE	ISSUED BY
1	CLIENT REVISIONS	07.04.24	T.W.S.
0	ISSUED FOR TENDER	07.04.05	T.W.S

REVISIONS/ISSUE

CLIENT
CITY OF WINNIPEG
TRANSIT DEPARTMENT

WARDROP | Engineering Inc.

PROJECT NAME
PETROLEUM STORAGE AND HANDLING SYSTEMS REPLACEMENT

DRAWING DESCRIPTION
GENERAL NOTES

ORIGINAL DRAWING
REVISION " 0 " SEALED BY
T.W. SMEALL
07.04.05

DESIGNED BY:	DRAWN BY:	CHECKED BY:
TWS	JLP	

APPROVED BY:

SCALE:	DATE:
AS NOTED	07.02.27

DRAWING NO. 0729720100-DWG-S0001 REV. 1

A1 (594 x 841)