

STRUCTURAL NOTES

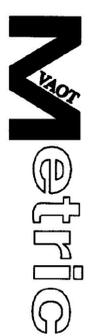
1. ALL DIMENSIONS ARE SHOWN IN MILLIMETERS UNLESS OTHERWISE NOTED.
2. SUPPLIER TO CONFIRM ALL DIMENSIONS SHOWN.
3. ALL CONCRETE SHALL CONFORM TO VAOT SPECIFICATION SECTION 501, CLASS A, UNLESS OTHERWISE NOTED.
4. SLABS TO HAVE STEEL TROWEL FINISH.
5. ALL BAR REINFORCEMENT SHALL BE GRADE 60 AND CONFORM TO VAOT SPECIFICATION SECTIONS 507, 713.01 AND 713.07 (EPOXY COATED BAR REINFORCEMENT).
6. LAP SPLICES SHALL BE 60 BAR DIAMETERS UNLESS OTHERWISE NOTED.
7. EMBEDMENT LENGTHS SHALL BE 48 BAR DIAMETERS UNLESS OTHERWISE NOTED.
8. BASE SLAB TOP MAT BARS SHALL BE SPLICED, IF REQUIRED, AT WALL INTERSECTIONS.
9. BASE SLAB BOTTOM MAT BARS SHALL BE SPLICED, IF REQUIRED, BETWEEN WALL INTERSECTIONS.
10. BASE SLAB TO BE CAST WITHOUT CONSTRUCTION JOINTS.
11. CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT BUOYANT CONDITIONS DURING CONSTRUCTION DUE TO HIGH GROUND WATER LEVEL, FAILURE OF DEWATERING SYSTEMS OR FLOODING ARE AVOIDED.
12. EPOXY GROUT: KELGROUT BY KELKEN-GOLD, INC., SOUTH PLAINFIELD, NEW JERSEY FOR #4 INTERIOR WALL DOWELS OR APPROVED EQUAL MATERIAL SPECIFICATION TO BE SUBMITTED TO ENGINEER PRIOR TO USE.
EMBEDMENT OF DOWELS SHALL BE 140 mm ±6 mm.
HOLES SHALL BE DRILLED WITH PNEUMATIC DEVICES. HOLES AFTER DRILLING SHALL BE FREE OF ALL WATER, DUST AND OTHER DEBRIS. HOLES SHALL NOT BE MADE WITH ELECTRIC DRILLING OR CORING.
DRILLED HOLES SHALL BE LOCATED A MINIMUM OF 50 mm IN ANY DIRECTION FROM PROPOSED SLAB REINFORCEMENT.
MIXING AND INSTALLATION SHALL BE AS PER MANUFACTURER'S RECOMMENDATIONS. AFTER MIXING, THE REINFORCING ROD SHALL BE PUSHED TO THE BOTTOM OF THE HOLE AND ROTATED TO ASSURE TOTAL WETTING. DOWELS SHALL BE LEFT UNDISTURBED A MINIMUM OF ONE HOUR OR UNTIL CURING IS COMPLETE.
STORAGE AND SHELF LIFE RESTRICTIONS SHALL BE AS PER MANUFACTURER.
13. WATERTIGHTNESS:
A. ALL STRUCTURES HOLDING OR CONVEYING WATER OR SEWAGE, INCLUDING BASEMENT WALLS AND FLOORS, SHALL BE MADE AND PROVED FREE FROM SEEPAGE OR LEAKAGE FROM ANY DIRECTION. ANY CRACKS OR IMPERFECTIONS WHICH MAY DEVELOP SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER IN ACCORDANCE WITH THE SPECIFICATIONS.
B. TANKS SHALL BE TESTED FOR WATERTIGHTNESS AND NECESSARY REPAIRS BY FILLING BEFORE THE INSTALLATION OF EQUIPMENT OR THE APPLICATION OF COATINGS. ALL CONCRETE (SUSPENDED SLABS, WALLS, BASE SLAB(S)) AS DEMONSTRATED BY TESTING OF CONCRETE CYLINDERS SHALL HAVE A COMPRESSIVE STRENGTH AT OR ABOVE 27,580 kPa.
C. ALL STRUCTURES HOLDING WATER OR SEWAGE SHALL BE TESTED IN ACCORDANCE WITH THE FOLLOWING:
1. ALL TANKS SHALL BE FILLED AT A RATE NOT TO EXCEED 610 mm PER DAY, UNLESS AUTHORIZED OTHERWISE BY THE ENGINEER.
2. ALL TANKS WILL BE ALLOWED A THREE (3) DAY ABSORPTION PERIOD PRIOR TO BEGINNING THE TEST.
3. AT THE BEGINNING OF THE TEST, WATER LEVEL MEASUREMENTS WILL BE TAKEN IN THE PRESENCE OF THE ENGINEER IN AT LEAST ONE (1), AND PREFERABLY TWO (2) LOCATION(S) IN EACH TANK.
4. THE TEST SHALL BE PERFORMED FOR AT LEAST 48 HOURS WITH MEASUREMENT TAKEN AT ALL POINTS ON A 24 HOUR BASIS. IF LEAKAGE PERCEIVED AT 48 HOURS IS AT LEAST 90% OF THE ALLOWABLE LEAKAGE, THE TEST SHALL CONTINUE UNTIL A 13 mm DROP IN THE WATER SURFACE AT ALL POINTS HAS BEEN ACHIEVED. ALLOWABLE LEAKAGE SHALL BE BASED ON THE ENTIRE DURATION OF THE TEST.
14. SLAB INJECTION: BASE SLABS SHOWING EVIDENCE OF CURLING OR WARPING, CREATING VOIDS BENEATH SLAB EDGES OR CORNERS, SHALL BE CORRECTED BY NON-SHRIEK GROUT INJECTION SUFFICIENT TO CREATE INTIMATE CONTACT BETWEEN BASE SLAB AND SUB-GRADE. UPPER SLAB SURFACE MAY REQUIRE GRINDING. METHOD OF INJECTION TO BE APPROVED BY ENGINEER PRIOR TO COMMENCEMENT. SLABS CURLED SUFFICIENTLY, THAT IN THE OPINION OF THE OWNER THEY ARE UNSALVAGEABLE, SHALL BE REPLACED AT NO ADDITIONAL COST TO THE OWNER.
15. CRACK INJECTION: IRRESPECTIVE OF THE RESULTS OF ANY WATERTIGHTNESS TEST, CONCRETE SURFACES SHOWING A SIGNIFICANT NUMBER OF CRACKS BETWEEN 5 MMS AND 10 MMS IN THICKNESS OR A NUMBER OF CRACKS GREATER THAN 10 MMS IN THICKNESS SHALL BE REPAIRED BY EPOXY INJECTION AS DIRECTED BY THE ENGINEER.

BASIS OF DESIGN

- BASE SLAB BUOYANCY:
FS = 1.16 WITHOUT SOIL FRICTION
FS = 1.60 WITH SOIL FRICTION
ASSUMPTIONS:
1. 100 YEAR RETURN PERIOD HIGH WATER LEVEL: 109.730 m.
2. MINIMUM FOUNDATION BACKFILL UNIT WEIGHT SHALL BE:
1,282 kg/m³ (DRY).
1,602 kg/m³ (SATURATED).
3. CONCRETE UNIT WEIGHT USED: 2,307 kg/m³
4. THE FOLLOWING CONTRIBUTORY WEIGHTS WERE NEGLECTED:
SUPERSTRUCTURE
EQUIPMENT
OTHER ANCLLARY CONSTRUCTION
SUSPENDED SLAB FLEXURE, SHEAR AND TORSION:
UNFACTORED (SERVICE) LIVE LOAD: 730 kg/m².
OCCUPIED STAIRWAY LOAD IMPOSED ON SUSPENDED SLAB (UNFACTORED DEAD AND LIVE LOAD): 320 kg MAX.
UNFACTORED (SERVICE) GENERATOR LIVE LOAD INCLUDING 150 mm THICK PLAIN CONCRETE PAD: 780 kg/m².

**RECORD
DRAWING**

SHOWN PICTORALLY
MAY NOT BE TO SCALE
THESE AS-BUILT OR RECORD DRAWINGS
HAVE BEEN PREPARED, IN PART, ON THE
BASIS OF INFORMATION COMPILED AND
FURNISHED BY OTHERS. THE ENGINEER WILL
NOT BE RESPONSIBLE FOR ANY ERRORS OR
OMISSIONS WHICH HAVE BEEN INCORPORATED
INTO THIS DOCUMENT AS A RESULT OF
INFORMATION BY OTHERS.



NO.	DATE	REVISIONS	DRWN	CHKD	802-775-2511	128 MERCHANTS ROW - P.O. BOX 176 RUTLAND, VERMONT 05702-0176 FAX 802-775-8915	WRIGHT ENGINEERING, LTD. CIVIL ENGINEERS	PROJECT NO. JM 091-1 (29) WATER & SEWER EXTENSION PROJECT TOWN OF GUILDFORD TOWN OF BRATTLEBORO	DSGN BY: KAS CHKD BY: MPY	STATE OF VERMONT AGENCY OF TRANSPORTATION SOUTHEAST VERMONT WELCOME CENTER GUILDFORD, VERMONT	DATE: 1-2-96	SHEET NO. 32 OF 55 SHEETS
5	9/30/96	NO AS-BUILT INFORMATION ADDED	DSM	KAS			TIMOTHY D. SMITH & ASSOCIATES, PC ARCHITECTS OLD RAILROAD STATION NORTH BENNINGTON, VERMONT 05257 802-442-8184					
4	12/26/96	CONTRACT PLANS	DSM	MPY								
3	11/11/96	FINAL REVIEW REVISIONS	DSM	MPY								
2	6/4/96	REVISIONS PER REVIEW COMMENTS	DSM	MPY								
1	4/8/96	REVISIONS PER REVIEW COMMENTS	DSM	MPY								