

DIVISION 09 FINISHES

Section 09 00 00 Finishes - General

1. Information relates to Department technical requirements regarding metal support assemblies, plaster and gypsum board, tile, terrazzo, ceilings, flooring, wall finishes, acoustical treatment, paints and coatings, and the like.
2. Select materials based on the following:
 1. Non-toxic
 2. Minimized off-gassing of volatile organic compounds or other noxious products. Product tested to ASTM D7143 Standard Practice for Emission Cells for the Determination of Volatile Organic Emissions from Indoor Materials/Products.
 1. Paints and adhesives tested for VOC emissions in accordance with ASTM D2832-92 to have low VOC, and /or “Ecologo” labels meeting emission and toxicity standards published by Environment Canada and CSA, or MPI Extreme Green certification.
 2. Total concentration of airborne volatile organic compounds (TVOC) does not exceed 5.0 milligrams per cubic meter of air, and, within that concentration, no single volatile organic compound exceeds 10% of the total airborne volatile organic compounds.
 3. Maintainable and durable within its installed environment.
3. Where functional requirements indicate use of other products may be warranted, discuss and receive approval from DTIR for their use prior to incorporation into design.
4. Consider the use of products manufactured in or near Nova Scotia, manufactured from renewable resources, recycled materials, and companies which have a written, publicly available policy or commitment to operating in a sustainable manner.
5. Natural organic products are preferred to manufactured petroleum based products.
6. Consider use of contrasting colours between walls, floors, doorways, and stair treads to assist visually challenged people.
7. Consider the psychological effect of colour on people when choosing finishes and justify your choices to DTIR.
8. Installation
 1. Areas in which adhesive are used to be well ventilated.
 2. Barricade or otherwise restrict access to areas where floor placement and finishing are in progress, preventing traffic over flooring.
 3. Cover and protect finished flooring installation with materials adequate to prevent traffic damage. Maintain and replace such cover and protection as necessary until project completion.

9. Gymnasium Flooring Co-ordination
 1. Except for in-floor accessories, ensure gymnasium equipment and accessories such as backstops, lighting and ductwork, are placed before floor installation.
 2. Place in-floor accessories after floor surface installation, but before installation of game lines.
10. Mock ups are required for all finishes.
11. Project manual to specify requirement of system warranty for floor finishes, for a minimum period of four (4) years beyond the date of expiration of performance assurance.

Section 09 21 16 Gypsum Board Assemblies

1. Use water resistant board meeting requirements of ASTM C1396 where gypsum board is required in the design of wet areas including janitors rooms, washrooms, and showers and install to ASTM C840 except where specified otherwise.
2. Use metal furring runners, hangers, tie wires, inserts and anchors; galvanized when used in wet or humid areas.

Section 09 22 16 Non-Structural Metal Framing

1. When abuse resistant drywall is placed over non-load bearing wall framing, use minimum 20- gauge steel studs, or as required by structural design for loading, wall height, size and spacing.

Section 09 30 00 Tiling

1. Specify all hard tile to ANSI 137.1 Standards and in accordance with Terrazzo, Tile and Marble Association of Canada (TTMAC) specification guidelines.
2. Provide hard tile in high traffic areas such as; lobbies, areas near entry and exit doors, and main corridors.
3. Specify ceramic tile or porcelain tile in washrooms and shower rooms. Specify wall tile to extend the full height of the wall in primary and high traffic washrooms and in all shower areas. In secondary, low traffic washrooms, specify tile to cover the lower half of the wall at a minimum.
4. Where tile is incorporated in the design of washrooms and showers:
 1. Floors
 1. Specify unglazed, vitreous or impervious non-slip porcelain tile.
 2. Specify bullnosed exposed edges, cove base where project budget permits. Otherwise use cut tile.

3. Pattern as approved by DTIR.
 2. Walls
 1. Specify glazed or unglazed, vitreous or impervious porcelain or ceramic tile.
 2. Pattern as approved by DTIR.
 3. Where tile is incorporated in the design in Kitchen Floors:
 1. Specify unglazed, vitreous or impervious, non-slip quarry or porcelain tile.
 2. Specify tile that is colourfast, impervious to bacteria, odorless, pressure impact resistant, and scratch resistant.
 4. Walls
 1. Specify tile as per DTIR direction.
 5. Where tile is incorporated in the design in lobbies, vestibules, corridors or stairs:
 1. Specify unglazed, vitreous or impervious porcelain tile.
5. Workmanship
1. Install tile in accordance with details and specifications of the Terrazzo, Tile and Marble Association of Canada Installation (TTMAC) Manual.

Section 09 51 00 Acoustical Ceilings

1. Design Criteria:
 1. Maximum deflection: 1/360th of span to ASTM C 635, deflection test.
 2. Select tile to meet acoustic requirements.
2. Materials
 1. Exposed tee bar grid components: shop painted, white, die cut. Main tee with double web, rectangular bulb and 1" rolled cap on exposed face. Cross tee with rectangular bulb; web extended to form positive interlock with main tee webs; lower flange extended and offset to provide flush intersection.
3. Acoustical Ceiling Tile
 1. Type: CAN/CGSB 92.1-M89, Type 3
 2. ASTM C423-17 rated NRC 0.50
 3. ASTM E1110-06(2019) rated AC190 for open office or ASTM E1414/E1414M-16 rated CAC 35 for closed office.
 4. Size: 24" x 48" x 5/8" (610mm x 1220mm x 19mm)
 5. Fire rated as required and approved by NS Fire Marshall's office.

Section 09 53 00 Acoustical Ceiling Suspension Assemblies

1. Design Criteria
 1. Maximum deflection: 1/360th of span to ASTM C635/C635M-17, deflection test
2. Materials: Exposed tee bar grid components

1. Two direction 24" x 48" shop painted, satin sheen. white colour, unless noted otherwise. Components die cut.
 2. Main tee with double web, rectangular bulb and 1 "rolled cap on exposed face.
 3. Cross tee with rectangular bulb; web extended to form positive interlock with main tee webs; lower flange extended and offset to provide flush intersection.
3. Exposed structure is acceptable for use as a ceiling in gymnasias, storage rooms, workshops, etc., or as indicated in project specific programs. Ensure that exposed structure ceilings are coordinated with required fire separations.
 4. Use acoustic tile ceilings in meeting rooms, administrative offices and areas, and rooms dedicated to learning or lecturing or as directed by DTIR.

Section 09 64 00 Wood Flooring

1. Extended Warranties:
 1. The floor system manufacturer shall provide an extended warranty for guarantee of performance and structural integrity of the system for a period of four (4) years beyond the date of expiration of the performance assurance.
 2. The flooring contractor shall provide an extended warranty of four (4) years beyond the date of expiration of the performance assurance requirements specified in the General Conditions, against defects in installation workmanship and certify that all materials and components are as supplied by or approved by the floor system manufacturer.
2. Environmental Requirements
 1. Flooring to be installed only in area maintained at an air temperature of not less than 180C nor more than 320C for a period of at least 72 hours before installation, during installation and until finishing has been completed and has cured.
 2. Do not allow temperatures to fall below 130C
 3. Flooring to be stored and installed only in areas where the relative humidity does not exceed 55%.
 4. Flooring to be installed only after completion of masonry, drywall, and other similar work which would introduce moisture into the room's environment.
 5. Floor construction to be broom clean and free of foreign material.
 6. Floor finishing to be done only in dust-free areas.
 7. Gymnasium equipment, including backstops, lighting and ductwork, to be placed before floor installation.
 8. Ventilate areas in which adhesives are used.

3. Materials

1. Specify kiln dry flooring and ensure, at time of installation, flooring has an average moisture content of 8%, with a tolerance ranging from minimum 6% to a maximum of 10% in individual pieces.
2. For gymnasium strip flooring, specify:
3. Northern Hard Maple, strip flooring.
4. 25/32" x 1 1/2". Tongue and groove edges and matched ends.
5. Grades:
 1. No. 2 or better grade to CLA Grading Rules for Canadian Hardwood Strip Flooring, latest edition, minimum 50% No. 1 stock or,
 2. Grade 3 or better select Northern hard maple to MFMA grading Rules.
6. Maximum average moisture content of 8%.
7. No knots larger than 3mm diameter.
8. Slight imperfections in color or surface of finish wood capable of sanding out prior to application of floor finish.
9. Slight check no longer than 75mm are acceptable in stock on less than 1% of floor area.
10. No bark streaks shall be permitted.

4. For Stage strip flooring, specify

1. Leading edges:
 1. 25/32" x 1 1/2", T&G, No. 2 or better grade to CLA Grading Rules for Canadian Hardwood or, No. 3 or better grade, select Northern Hard Maple, MFMA Certified.
 2. Remainder of Stage area 25/32" thick, T&G, Clear No. 1 Grade, white pine.

5. Where Wood Parquet Flooring is incorporated into the design,

1. Specify premium mixed maple or birch, 1/2" thick, basket weave pattern, square edge slats of solid hardwood.
2. Sand with at least 3 cuts using course, medium and fine and a screen and disc final sanding providing a smooth, even surface, free of scratches. Vacuum thoroughly and clean. Apply two (2) coats of sealer. Lightly disk (steel wool). Vacuum and double tack rag. Apply lines, if required. Apply 2 finish coats.

6. Where Resilient Wood Flooring Systems are incorporated into the design,

1. Specify Vapour Retarder.
2. Specify Wood Subfloor having:
 1. 1/2" x 4' x 8' (5-ply) plywood with "air thrust" pads" 8" c. to c.
 2. Pads approximately 2" x 2" x 9/64 stapled.
 3. First plywood layer long axis of room with 1/4" expansion void.
 4. Second T&G plywood layer 0 to first, power nailed with 1" perimeter expansion voice and at perimeter obstructions.

7. Accessories and Wood Flooring Systems
 1. For Wood Flooring Systems and accessories for educational facilities, including fasteners, membranes, pads, bases, sub floor systems, refer to DC350 - Part 2, Section 2, Division 09.

8. Finish
 1. Urethane floor finish is to be provided.
 2. Game Lines
 1. Refer to DC350, Part 1, Section 2, Division 09, item 09 90 00.

9. Execution
 1. Ensure that installation is specified according to standard manufacturer's instructions for surface preparation, environmental conditions and system requirements including but not limited to the following.
 2. Ensure placement occurs only on Flooring Contractor's and Manufacturer's acceptance of building conditions.
 3. Environmental conditions have been provided as specified.
 4. Ensure other Work of the project, which in execution could interfere with or damage flooring installation, has been completed.
 5. Ensure sub-floor preparation includes removal of dirt, oil, grease, and other foreign material; ensuring no contaminants are present on sub-floor that would affect adhesive bond.
 6. Ensure defective work resulting from installation of flooring on unsatisfactory surfaces or because of adverse environmental conditions will be considered the responsibility of those performing the Work.

10. Installation
 1. Ensure vapour barrier is provided as required.
 2. Ensure sub-floor is provided as required.
 3. Ensure flooring, penetrations, accessories, and finishes are provided as required.
 4. Ensure flooring is sanded after completion of work by other trades.
 5. Ensure flooring is thoroughly vacuumed between sandings with heavy duty commercial type vacuum.
 6. Inspect work prior to start of finishing operation. When installation is satisfactory authorize start of finishing operation. Ensure finishing operation, including provision of game lines, does not commence without the Flooring Contractor's and Manufacturer's authorization to proceed.

Section 09 65 13 Resilient Base and Accessories

1. Materials
 1. Resilient Base: to ASTM F1861-16

2. Specify top set covered rubber, Minimum 4'-0" lengths x 4" high, complete with pre-molded end stops and pre-molded external corners.
2. Resilient Stair Riser
 1. Top set vinyl, 1/8" thick, full riser height, solid pattern.
3. Resilient Stair Tread: to ASTM F2169-15e1
 1. Top set vinyl, 1/8" thick x full tread width x full tread length.
4. Execution
 1. Use with resilient materials over smooth substrate.
5. Ensure stair risers and nosing are provided in one piece for full width of stair.
6. Specify use of filler to ensure tread is level, and flush with nosing and adjacent floor finishes.
7. Ensure base is provided ensuring the least number of joints, in a full bed of adhesive, applied tightly against floors and walls, straight and level to a tolerance of 1:1000
8. Where carpet is part of the design, install toeless type base prior to carpet installation.
9. Ensure reducer strips, termination bars and accessories are provided where appropriate, including:
 1. At exposed edges of resilient flooring terminations
 2. At door opening
 3. Changes in floor finish heights or materials.
10. Provide for a manufacturer's representative inspection of the installation to ensure compliance with installation requirements and product quality and that an inspection report is provided to the Minister.

Section 09 65 16 Resilient Sheet Flooring

1. Linoleum Sheet:
 1. Consider that sheet material is resistant to indentation from static load but is affected by moisture and alkali. Use only in appropriate environmental conditions.
 2. To ASTM F2034-18. Minimum 2.5mm minimum thickness, 2m (6'-6") minimum width.
 3. Design elements shall extend throughout the thickness of the wear layer.
2. Polyvinyl Chloride (PVC) sheet: to ASTM F1303 - 04(2014) or CSA A126.6-89
 1. Consider that sheet material during extreme temperature changes will cause expansion/contraction. Use only where appropriate environmental conditions exist.

3. Sheet Vinyl
 1. To ASTM F1303 - 04(2014) or CSA A126.3
 2. Homogeneous and non-directional
4. Vulcanized rubber
 1. To ASTM F1860-14e1 or ASTM F1859-14e1.
 2. Select colour from manufacturer's standard color range.
5. Execution
 1. Where resilient sheet flooring is incorporated in the design, ensure flooring
 1. Is stored, handled and applied according to manufacturer's directions.
 2. Is placed with joints parallel to building lines.
 3. Is installed with joints aligned.
 4. Terminates at center line of door where adjacent floor finish or colour is dissimilar.

Section 09 65 19 Resilient Tile Flooring

1. Where Resilient Tile Flooring is incorporated into the design,
 1. Specify 3mm thick x 305mm x 305 mm (1/8" thick, 12" x 12") tile to
 2. Use on or below grade and on suspended slabs.
 3. Consider that tile has a tendency to shrink under extreme sunlight and prolonged excessive heat or cold conditions.
 4. Vinyl Composition Tile: to ASTM F1066-04(2018) or CSA A126.1
 5. Solid vinyl tile to ASTM F1700-18a
 6. Rubber floor tile: to ASTM F1344-15
 7. Linoleum to ASTM F2034-18
2. Where resilient tile flooring is required in the design, flooring
 1. To be applied according to manufacturer's directions.
 2. To be placed with joints parallel to building lines, producing symmetrical tile pattern with border tile having a minimum of a half tile width.
 3. To be installed to a square grid pattern with joints aligned, and alternating pattern grain.
 4. Terminates at center line of door where adjacent floor finish or colour is dissimilar.

Section 09 67 00 Fluid-Applied Flooring

1. Quality Assurance
 1. Materials provided to incorporate the manufacturer's latest improvements in materials in place at the time of manufacture.
 2. Manufacturer of the resilient flooring to be a firm specializing in the manufacture of this type of flooring.

3. Installation of the flooring system to be carried out by an experienced and certified floor contractor approved by the manufacturer and that the work shall be performed in accordance with the most recent installation instructions of the manufacturer.
 4. Extended Warranty: as per Section 09 00 00
2. Material
 1. Seamless Composite Floor System, Urethane composition
 2. Free of heavy metals, including lead or mercury, which could affect human life.
 3. Type designed to chemically react with previous layers, enhancing bonding.
 4. Have a minimum thickness of 11mm, with a minimum wear layer of 2mm, unless otherwise approved by DTIR
 5. For sports floors, flooring system to be DIN tested, rated, and meet the following:
 1. Surface hardness meeting DIN ISO 7619-1 or ASTM D2240-15e1 Shore A 80
 2. Elongation at Break DIN 53571 140%
3. Execution
 1. Ensure placement occurs only on Flooring Contractor's and Manufacturer's acceptance of building conditions.
 2. Ensure appropriate environmental conditions have been provided.
 3. Ensure other Work of the project, which in execution could interfere with or damage flooring installation, has been completed.
 4. Ensure sub-floor preparation includes removal of dirt, oil, grease, and other foreign material; ensuring no contaminants are present on sub-floor that would affect the work.
 5. Ensure defective work resulting from installation of flooring on unsatisfactory surfaces or because of adverse environmental conditions will be considered the responsibility of those performing the Work.
4. Installation
 1. Ensure sub-floor is provided as required.
 2. Inspect sub-floor prior to start of placing fluid-applied membrane. When the sub-floor conditions are satisfactory authorize start of placing the membrane. Ensure membrane placement operation does not commence without the Consultant's authorization to proceed.
 3. Ensure flooring, penetrations, accessories, sealers and finishes are provided as required.
 4. Inspect work prior to start of finishing operation. When installation is satisfactory authorize start of finishing operation. Ensure finishing operation, including provision of game lines, does not commence without the Flooring Contractor's and Manufacturer's authorization to proceed.

5. Game Lines

1. Refer to DC350, Part 1, Section 2, Division 09, item 09 90 00.

Section 09 68 00 Carpeting

1. Specify branded nylon, antistatic, 26 oz minimum with no less than 12 kilotex, solution dyed, or as approved by DTIR.
2. Green Label Plus registered or products tested to ASTM D6670-18 preferred.
3. Install with manufacturer's approved adhesive.

Section 09 72 16 Vinyl-Coated Fabric Wall Coverings

1. Where vinyl-coated fabric wall covering is to be used refer to project specific statements or client requirements or obtain approval in writing from DTIR prior to specifying or installing such materials.
2. Refer to DC350, Part 2, Section 2, Division 09, or project specific statement of requirements for requirements concerning use Vinyl - Coated Fabric Wall Covering.

Section 09 80 00 Acoustical Treatment

1. General

1. Acoustical materials include as follows: loose fill, spray-on, cementitious wood fibre and cellular glass and rockwool batt insulation.
2. Where sound control in a school is a concern, as in music rooms, drama rooms, gymnasium, stages, and cafeteria; use fabric wrapped acoustic panels. Refer to DC350, Part 2, Section 2, Division 09.
3. Acoustical Insulation and Sealants
4. Where Acoustical Insulation or Barriers are incorporated into the design:
 1. Provide and detail methods to control Airborne sound transmission through partitions and ceiling assemblies by use of proper absorption and insulating media.
 2. Provide and detail silencers and separators to control vibration isolation by use of pads, mounts, springs, hangers, etc.
2. Refer to Part 1, Section 1 Acoustics. Acoustic Treatment to be selected to achieve required acoustic performance including: the minimization of noise transmission from one space to another; appropriate reverberation times with no echo's or flutter echo; uniform sound distribution, appropriate sound levels, and low background noise.

2. Materials:

1. Sound Absorptive Prefabricated Acoustical Units to CAN/CGSB 92.1. Where sound absorbing panels are a part of the design, provide panels:

1. Panels to be Class A or Class 1 laboratory tested to ASTM E84. Panels are to meet NBC or a smoke development of 50 or less, and have a flame spread rating of 25 or less. Whatever is the most restrictive.
 2. Minimum thickness of 2" (50mm) and as required to meet acoustic requirements of space.
 3. Covered with the manufacturer's standard fabric covering
 4. Acoustic panels to have a minimum core density of 7 lb/ft³, (112kg/m³) for fiberglass material.
 5. Where possibility of impact exists specify impact resistant panels, with scrim facing between fabric and insulation board.
 2. Acoustical Insulation and Sealants to meet South Coast Air Quality Management District (SCAQMD), California State Rule 1168-Adhesives and Sealant Applications- VOC levels.
 3. Select materials with high recycled content post-industrial and post-consumer content when possible.
 4. Cementitious wood fibre acoustics units shall be formaldehyde free to CAN/CBSB 92.
3. Execution
1. Installation of panels is to be complete in compliance with manufacturer's written recommendations or specifications including product technical bulletins, handling, storage, and installation instructions, and data sheets.

Section 09 90 00 Painting and Coating

1. Environmental Requirements
 1. Refer to Part 1, Section 2, Division 09, item 09 90 00 for environmental requirements.
 2. Do not apply paint finish in areas where dust is being generated
 3. Areas in which paint is applied to be well ventilated and broom clean.
 4. Apply paint when a uniform minimum 100 deg. C air temperature has been achieved in the
 5. installation area for 24 hours prior to, during and 24 hours after application.
2. References
 1. CAN/CGSB 85.100-93
 2. MPI Architectural Painting Specification Manual.
 3. Environmental Choice Program
 4. Systems and Specifications (SSPC) Manual, latest Edition and Volume, published by the Society for Protective Coatings.
3. Product submission information to include the following:
 1. Finish formula designation.

2. Product type and use.
3. Manufacturer's Product Data.
4. Colour number.
5. Manufacturer's Material Safety Data Sheets (MSDS).
6. Maximum VOC classification.
7. EcoLogo, Green Seal or MPI Extreme Green certification.
4. Quality Assurance: Standard of Acceptance for paint finishes
 1. Walls. No defects visible from a distance of 3' - 0" at 90 degrees to surface.
 2. Ceilings. No defects visible from floor at 45 degrees to surface when viewed using final lighting source.
 3. Final coat to exhibit uniformity of colour and uniformity of sheen across full surface area.
5. Paint manufacturer shall be represented by a qualified technical representative, trained as a paint inspector, with a minimum of 5 years experience, or as required by individual project specification.
 1. To ensure proper application the manufacturer's technical representative shall make a minimum of three inspections or inspect as per individual project specification. These inspections shall occur once prior to application, at least once during application and once upon completion of the application.
6. After each inspection the manufacturer's representative shall provide a written report to the representative named in the individual project specification, within 5 working days. Report to identify progress and quality of work and all site instructions given to Contractor.
7. All paint materials for each coating to be products of a single manufacturer.
8. Job Mock-up
 1. Job Mock-ups shall be required for all projects and shall be specified to meet the following criteria:
 1. Completely finish a sample room for each finishing system to test application procedures and coverage of finish materials. Do not proceed with remainder of Work, including block filling and priming, until sample surfaces are approved.
 2. Additionally, contractor may be required to prepare mock-ups where directed on surfaces that are not a part of the sample wall.
 3. Test paint materials and application equipment for electrostatically painted surfaces for compatibility prior to application.
 4. Prepare sample rooms and mock-ups under supervision of material manufacturer's representatives. Manufacturer's representatives shall be present during application of all materials for mock-ups.

5. Job mock-up is to form the standard of acceptance for colour, texture, gloss and coverage of application and must be approved by Consultant and paint manufacturer's representative prior to commencement of work on project.
6. Ensure that painting contractor is prepared to provide the Consultant with affidavits stating only specified products are used in Contract.

9. Start-up Meeting

1. Include in the Specification the requirement for a start-up meetings after Award of Contract and prior to the preparation of a sample room, to be held with the following people present:
 1. The Consultant.
 2. The applicator and his site crew.
 3. The paint manufacturer's trained paint inspector or technical representative.
2. The purpose of the meeting shall be to discuss the specifications, job conditions, and painting and coating work to be done with reference to the most recent product data sheets and application instructions. Sample rooms will be designated by the Consultant at this meeting.

10. Materials

1. CAN/CGSB 85.100-93 or MPI Approved Products.
2. Qualified products: only paint materials listed as EcoLogo Approved Products, MPI Extreme Green or Green Seal products are acceptable.
3. Paint materials for each coating system to be products of a single manufacturer.
4. Low odor products. Whenever possible, select products exhibiting low odor characteristics. If two products are otherwise equivalent, select the product with the lowest odor.
5. Products applied to mechanical systems for protection or identification shall be suitable for substrate and exposures.
6. For additional shop coat primer and finishing requirements refer also to Part 1 Section 2, Metal Fabrications 05 50 00 and Metal Stairs and Ladders 05 51 00.

11. Maintenance Materials

1. Provide maintenance and extra materials in quantities specified in individual specification sections.
2. Provide items of same manufacture and quality as items in the Work.
3. Deliver to Project site place and store.
4. Receive and catalogue all items. Submit inventory listing to Consultant. Include approved listings in Maintenance Manual specified in Section 01 78 00 - Closeout Submittals.
5. Obtain receipt for delivered products and submit prior to final payment.
6. Submit one-four litre can of each type and colour of primer and finish coating. Identify colour and paint type in relation to established colour schedule and finish formula.

7. Deliver to Owner and store where directed.

12. Execution

1. Specify the best applicable practices of CAN/CGSB 85.100-93 latest version for materials, methods and procedures.
2. Cover or mask surfaces adjacent to those receiving finishes.
3. Specify appropriate preparation of the various surfaces to receive finish.
4. Specify appropriate application methods and procedures for the various finishes.
5. Game Lines
 1. Where game lines are required in the design specify enamel paint compatible with floor finish. For colours refer to DC350, Part 2, Section 2, Division 09.
 2. Game line layouts for specific gymnasiums are available from DTIR staff. Discuss with and receive Department approval for any deviation from such approved layouts.

END