The following information supplements and/or supersedes the bid documents issued on June 04, 2021.

This Addendum forms part of the contract documents and is to be read, interpreted, and coordinated with all other parts. The cost of all contained herein is to be included in the contract sum. The following revisions supersede the information contained in the original drawings and specifications issued for the above-named project to the extent referenced and shall become part thereof. Acknowledge receipt of this Addendum by inserting its number and date on the Tender Form. Failure to do so may subject the Bidder to disqualification.

PART 1 - CHANGES TO SPECIFICATIONS

Add: **Section 32 18 16 99 Poured-in-Place Rubberized Safety Surfacing**

PART 2 – CHANGES TO DRAWINGS

Revised Landscape Drawing Set Issued

L-01 LANDSCAPE LAYOUT PLAN

.1 General revisions including:
- .1 Layout to play structures and exercise equipment
- .2 Limit of contract
- .3 Inclusion of additional TWSI and new concrete pavement at building entrance by pedestrian spine.
- .4 Change to recycle receptacles and pad.

L-02 PLANTING PLAN

.1 Changes to reflect layout changes on L-01.

L-03 basketball Courts

.1 Reflects changes to recycle receptacles locations and base.

L-04 tennis Courts

.1 Reflects changes to recycle receptacles locations and base.

.2 Reflects updated layout.

L-05 tennis Courts

.1 Reflects changes to recycle receptacles locations and base.

.2 Reflects updated layout to play structures and exercise equipment.

L-06 Bike / Fitness

.1 Reflects changes to recycle receptacle detail and base.

.2 Reflects updated layout to exercise equipment (1 additional piece and layout).

.3 Added detail for reinforced concrete pad.

L-07 Planting Details

.1 No changes.

L-08 Accessible Parking Layout and Hard Surface Details

.1 Adjusted details for play area EWF surfacing

.2 New detail for rubber safety surfacing

.3 Adjusted details for concrete sidewalk and pedestrian spine

.4 Adjusted detail for asphalt pathway and courts

ADD:

SK-L01 Play Area Layout for Rubberized Safety Surfacing.

END OF LANDSCAPE ADDENDUM

PART 1 - GENERAL

1.1 Scope of Work

.1 Work in this section includes all materials, equipment, and labour for play area preparation and for the installation of recycled rubber play safety surfaces, and as shown on the Contract drawings and in this section.

.2 Provide an optional price for this component, including all materials, equipment and labour to install a complete playground safety surround such as subsurface and granular requirements, concrete edging.

.3 Coordinate with installer of playground equipment for installation of stringers, footings and final play structure components.

1.2 Related Sections

.1 Section 01 33 00 – Submittal Procedures.

.2 Section 03 30 00.01 – Cast in Place Concrete – Short Form

.3 Section 31 00 99 12 - Earth Works for Minor Work

.4 Section 32 12 16.01 – Asphalt Pathways and Courts

1.3 References

Latest references for:

.1 Canadian General Standards Board (CGSB)
- .1 CAN/CGSB-8.1-88, Sieves, Testing, Woven Wire, Inch Series.
- .2 CAN/CGSB-8.2-88, Sieves, Testing, Woven Wire, Metric.

.2 Canadian Standards Association (CSA International)
- .1 CAN/CSA B1800-15, Thermoplastic non-pressure piping compendium.

.3 Ontario Provincial Standard Specifications
- .1 OPSS MUNI 1004, Material Specification for Aggregates – Miscellaneous
- .2 OPSS MUNI 1010, Material Specification for Aggregates – Base, Subbase, Select Subgrade and Backfill Material

.4 CAN/CSA / ASTM International
- .1 ASTM C117-13, Standard Test Method for Material Finer Than 0.075 mm (No. 200) Sieve in Mineral Aggregates by Washing.
- .2 ASTM D4318-10e1, Standard Test Method for Liquid Limit, Plastic Limit and Plasticity Index of Soils.

.3 ASTM D698-12e2, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3).
.4 CAN/CSA-Z614-14 / ASTM F1292-99, Standard Specification for Impact Attenuation of Surfacing Materials Within the Use Zone of Playground Equipment including HIC, G-MAX and fall heights.
.5 ASTM F1951, Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment.
.6 ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers – Tension
.7 ASTM D624 Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers
.8 ASTM D2859 Standard Test Method for Flammability of Finished Textile Floor Covering Materials
.9 ASTM E303 Standard Test Method for Measuring Surface Frictional
.10 ASTM F1292 Standard Specification for Impact Attenuation of Surfacing Materials within the Use Zone of Playground Equipment
.11 CAN/CGSB-8.1-88, Sieves, Testing, Woven Wire, Inch Series.
.12 CAN/CGSB-8.2-88, Sieves, Testing, Woven Wire, Metric.
.13 CAN/CSA-B1800-11, Plastic Non-pressure Pipe Compendium.
.14 CAN/CSA-B1800-15, Thermoplastic Non-pressure Pipe Compendium.
.15 ASTM C117-13, Standard Test Method for Material Finer Than 0.075 mm (No. 200) Sieve in Mineral Aggregates by Washing.
.16 ASTM D4318-10e1, Standard Test Method for Liquid Limit, Plastic Limit and Plasticity Index of Soils.
.17 ASTM D698-12e2, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3).
.18 ASTM D 3034-14 Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings

1.4 Submittals

.1 Product data: submit product data in accordance with Section 01 33 00 - Submittal Procedures.
.1 Submit manufacturer's instructions, installation, specifications, warranty, printed product literature and data sheets for all equipment and include product characteristics, performance criteria, physical size, wear course, finish and limitations.
.2 Certificate from the polyurethane supplier that the binders to be utilized are UV stable and will not detrimentally affect the elogation or functional longevity of the surface as an impact attenuating surface utilized in a playground.

.3 Certificate showing that surfacing system meets latest CSA standards for play safety surfacing including CAN/CSA-Z614.
.4 Maintenance procedures.
.5 Qualifications of crew (foreman and alternate foreman).

.2 Samples: submit samples in accordance with Section 01 33 00 - Submittal Procedures.
.1 Submit 300mm x 300mm samples in specific colour and thickness.
.2 Submit samples of possible butterfly decals / logos.

.3 Shop Drawings: submit shop drawings showing rubber surfacing courses, adhesives, binders, attachment to concrete curb.

1.5 Testing and Inspections

.1 Independent Inspection/Testing Agencies approved by the Owner's Representative, will be engaged by the Owner for the purpose of inspecting and/or testing portions of Work.
.1 Inspections/Testing to be sufficient for complete coverage of Work.
.2 Cost of such services will be borne by the Owner.
.3 If defects are revealed during inspection and/or testing, the appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by the Consultant and/or Owner's Representative at no cost to the Owner. Pay costs for retesting and reinspection

.2 Testing and Inspections (EPDM recycled rubber surfacing)
.1 Subgrade and granular subbases and bases to be inspected by a geotechnical Engineer and an Inspection Report issued to and approved by the Contract Administrator, before subsequent steps are undertaken.
.2 The Contract Administrator may require additional field and/or laboratory tests of the materials during installation to ensure that the materials are satisfactory. This shall be carried out at no extra cost to the contract.
.3 Certificates of laboratory testing as part of the qualification of the recycled rubber surfacing for play areas.
.4 Subgrade and granular bases to be inspected by a geotechnical Engineer and an Inspection Report issued to the Contract Administrator, before subsequent steps are undertaken.
.5 Notify the appropriate agency and Consultant 48 hours in advance of the requirement for tests, in order that attendance arrangements can be made.
.6 Installer to provide final testing of rubber surfacing for Gmax and HIC conformance.

1.6 Substitutions

.1 Alternative products will not be accepted without approval of the Consultant and Owner. Alternatives, with prices, must be identified within the tender bid. Alternatives to match specified in size, materials, and thickness.

1.7 Quality Assurance

.1 Installer shall have at least five (5) years proven experience in the industry and approved by product manufacturer.

.1 Provide references and examples of 2 projects completed in the last 5 years.

1.8 Coordination

.1 Layout and installation of safety surfacing to be coordinated with installation of play structures and play structure stringers / footings.

.2 Coordination to be done through the shop drawing process for installation and verified required dimensions are met.

1.9 Utility Lines

.1 Before commencing work, it is the contractor's responsibility to establish locations and extent of underground utility lines in area of excavation. Notify the Consultant and/or Owner's Representative of findings.

.2 The location of utility lines will be at the cost of the contractor by means of private underground service locating company as required. Any damage to existing utility lines will be at the cost of the contractor.

.3 Known underground and surface utility lines are indicated on drawings. No guarantee is given of completeness or accuracy.

.4 Make good and pay for damage to existing utility lines resulting from work.

.5 Indicate all located utilities lines and/or services on record drawings.

1.10 Protection.

.1 Provide adequate protection around bench markers, layout markers, survey markers and geodetic monuments.

.2 Provide protection to ensure no damage to existing facilities and equipment situated on site.

.3 Effect approved measures to minimize dust as result of this work.

1.11 Delivery, Storage and Handling

.1 Deliver, store and handle materials in accordance with manufacturer's written instructions.

.2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

.3 Storage and Handling Requirements:

.1 Store materials in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.

.2 Store and protect equipment from nicks, scratches, and blemishes.

.3 Replace defective or damaged materials with new.

.4 Stockpile fill materials designated by the Consultant and / or Owner. Stockpile granular materials in manner to prevent segregation.

.5 Protect fill materials from contamination.

.6 Do not stockpile excavated material to interfere with site operation or drainage.

1.12 Waste Management and Disposal

.1 Separate waste materials for reuse and recycling in accordance with project Waste Management Plan.

.2 Remove from site and dispose of packaging materials at appropriate recycling facilities.

.3 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard, packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.

.4 Separate for reuse and recycling and place in designated containers Steel, Metal, Plastic waste in accordance with Waste Management Plan.

.5 Fold up metal banding, flatten and place in designated area for recycling.

1.13 Payment

.1 Installation of play equipment and safety surfacing (including base and ramps, edging) to be certified prior to payment for safety surfacing and ramps, edging.

.2 If installation of play structures holds up certification, payment may proceed after approval by Consultant.

PART 2 - MATERIALS

2.1 Play Area Safety Surfacing

.1 Granular Materials.
- .1 Clear Granular Fill – 13-19mm (1/2 to 3/4") clear, clean washed, stone to OPSS MUNI 1004. (for use around subdrain).
- .2 Granular 'A' to OPSS 1010.

.2 Recycled rubber surfacing:
- .1 Poured-in-place recycled rubber surfacing specifically designed for playgrounds.
- .2 Materials and systems to meet current CPSC standards for playground surfacing and providing the following GMAX and a HIC as a minimum.
  - .1 CSA Z164020 (GMAX ≤200 and HIC ≤1000).
- .3 E.P.D.M. recycled rubber, bonded by polyurethane binder specifically formulated for outdoor playground surfacing.
  - .1 100% recycled rubber granules
  - .2 Seamless surfacing
  - .3 Slip resistant
  - .4 Vandal resistant
  - .5 5 year warranty on materials and labour.
- .4 Comprised of two courses, cushion layer and wear course with polyurethane binder.
  - .1 Cushion layer – fall heights
    - .1 Fall height of 2.4m, (8 ft) at swings and Rock n Ship.
    - .2 Fall height of 3.0m (10ft) at Junior Senior play structure.
  - .2 Wear Course.
  - .3 Polyurethane binder: UV stable and will not detrimentally affect the elogation or functional longevity of the surface as an impact attenuating surface utilized in a playground
- .5 Approved material
  - .1 'Playsafe' (poured-in-place by Fortco Limited, 416-720-1450, sandro.forte@sympatico.ca.
  - .2 'Everplay' insitu Ecerplay International Inc, 416-4120-3056, Henry@everplay.com
  - .3 Approved equivalent.
  - .4 Provide test results.
- .6 Colour
  - .1 Provide a minimum of 2 colours in pattern to be determined.
  - .2 Colour 1 (background): Terra Cotta
  - .3 Colour 2: Blue or green

.4 Accent Colour: additional contrasting colour
.5 Decals / logos: provide possibility of including butterfly logos or decals.

.3 Filter Cloth (between resilient surfacing and granular base)
.1 Nonwoven Class 1 geotextile, non-woven, filtrat'n opening size (FOS) = 115 micron.
.2 Terrafix 200R or equivalent.

.4 Sub drain
.1 100mmø flexible perforated PVC | HDPE pipe with sock and end cap.
.2 100mmø rigid PVC pipe - use 1 metre before connection to 'T' and for connection to catch basin/landscape drain.
.3 'T' Connection.
.4 Connect to catch basin refer to civil drawings.
.5 To the requirements of OPSS 1840 and 1841 and CGSD41-GP29M.

PART 3 - EXECUTION

3.1 Coordination

.1 Contractor must coordinate with the equipment installers during and after granular layer installation for onsite layout verification and prior to proceeding with installation of play area edging and safety surface for play equipment inspections.

.2 Provide date of installation to to the Contract Administrator a minimum of 2 business days prior to installation.

.3 Verify safety surface dimensions with playground supplier / installer.
.1 Notify Consultant of any discrepancies prior to proceeding.

.4 Coordinate installation of asphalt and concrete curb.

.5 Refer to Section 32 12 16.01 – Asphalt Pathways and Courts and Section 03 30 00.01 – Cast in Place Concrete – Short Form.

3.2 Layout and Excavation

.1 Subgrade, granular subbases and bases to be inspected by a geotechnical engineer and authorization given by the Contract Administrator prior to subsequent steps being undertaken.

.2 Stake out the play area perimeter and the location, and excavation of granular bae(s) for inspection by the Contract Administrator. Ensure required safety zones are maintained.
.1 Ensure safety dimensions are met beyond concrete edging.

.3 Verify all underground utilities and dimensions in the field and immediately report all discrepancies or findings to the Contract Administrator.

.4 Excavate to Section 31 00 99 12 Earth Works for Minor Work.

.5 Play area to be excavated to accommodate the minimum depth of granular bases(s).

3.3 Subgrade

.1 Fine grade sub-grade of play area eliminating uneven areas and filling low spots and sloping to ensure positive drainage to edges. Remove all debris. Sub-excavate soft and unstable areas in sub-grade and backfill with approved fill and compact.

.2 Compact finished sub-grade to 95% Standard Proctor Maximum Dry Density.

.3 Ensure subgrade preparation conforms to levels and compaction required, to allow for installation of granular base. Testing in accordance with Section 31 00 99 12 Earth Works For Minor Work.

3.4 Subdrain Installation

.1 Trench to a minimum width of 150mm and to the depth indicated on the contract drawings.

.1 To be constructed with the granular base.

.2 Excavate to the specified depth and true to line and level, to ensure a constant even slope as shown on drawings.

.3 Level and compact bottom of trench to be free of high spots and depressions. Fill over excavated area of trench with granular A and compact to 95% Standard Proctor Maximum Dry Density.

.4 Install perforated tile drains with filter sock and non-perforated rigid tile drains in the clear crushed stone drainage course as shown on the contract drawings. Depth of trench varies with a minimum 150mm depth as indicated on the drawings. Wrap trench including stone and tile drain with geotextile. Slope play area subgrade 2% to tile drains trench.

.5 Install non-perforated, rigid HDPE lead and connections to catchbasins, landscape drains or swale as shown on the Contract Drawings and with a positive slope as shown on drawings. Backfill trench with 150mm Granular ‘A’ compacted to 95% Standard Proctor Maximum Dry Density and extend throughout excavated area as shown on Contract Drawings.

.6 Lay pipe true to line and level and in accordance with manufacturer's recommendations and best trade practice and in such a manner that it is full contact with the clear stone along its entire length.

.7 Keep excavations free of water and protect against the action of surface water at all times.

3.5 Granular Layer

.1 Foundation:
- .1 250 mm compacted thickness of OPSS 1010 granular 'A' base.
- .2 compacted subbase / approved fill.
- .3 Use of additional geotextile, if required (determined after inspection by Geotechnical Engineer).

.2 Construction of granular foundations: OPSS 314.

.3 Compaction: compact each lift of granular material to 100% maximum density to ASTM D 698. Maximum lift thickness: 150 mm.

.4 Base to achieve a minimum 2% slope to provide adequate drainage.
- .1 As a water percolation rate of 60 liters/M2/hour cannot be guaranteed subdrains are to be installed as per 3.4 and details.
- .2 Install subdrains in a french drain to provide adequate water flow.

3.6 Geotextile

.1 Filter Fabric (between resilient surfacing and granular base)
- .1 Cut and fit filter fabric around playground structures footing and overlap seams by 300mm. Tack filter fabric to asphalt edge with adhesive (PL Premium or approved equal).
- .2 Install: Nonwoven filter fabric with 600mm (24") lapping on all sides.
- .3 Staple or spike filter fabric to bottom of asphalt lip.

3.7 Resilient Fall Surfacing (recycled rubber safety surface)

.1 Material to be pre-approved prior to installation.

.2 Inspection and approval by the Contract Administrator to be obtained of installation of play equipment prior to proceeding.

.3 Contractor must prepare the site to accept the resilient surfacing material.

.4 Contractor must co-ordinate the supply & delivery of the resilient surfacing material.

.5 The material must be installed in an orderly fashion ensuring the proper depth is achieved.

.6 Safety surface to be installed only when temperatures exceed 5 Degrees C. Installation during dry weather conditions is recommended.

.7 Curing period: minimum of 24-48 hours for curing period.

.8 Thickness of the cushion layer (resilient surfacing) will be determined by the current CSA Standards for playground surfacing (fall height of 2.4 and 3m (8 and 10 feet).

.1 Cushion layer to be installed in one continuous pour up to 180-200m2.If 2 pours are required, prepare seam as per manufacture's specifications.

.9 Thickness of wear course to be 12.7mm minimum.

.1 Wear course to be bonded to cushion layer.

.2 Where seams are required due to color change, size or adverse weather, a step configuration will be constructed to maintain Wear Course integrity. Prepare seam as per manufacture's specifications.

.10 Polyurethane binder shall be mixed throughout the entire thickness to form a resilient porous material and provide a 100% coating of the particles.

.11 Install cushion layer (resilient surfacing) and wear course (rubber surfacing) as per manufacture's specifications.

.12 The cushion layer shall be compatible with the wear course.

.13 Final level of surfacing to be level with concrete edger and adjacent asphalt pathway.

.14 Bevel is installed at the perimeter of the installation running from the thickness of the surface down to the base. The outside line of the bevel must be clear and follow the designed edge of the installation.

.15 The Contractor must clean the area affected, once the installation is complete.

.16 The Contractor must protect the existing elements and make good any areas affected.

.17 Do NOT stock pile resilient surfacing material in landscaped area.

.18 Contractor shall confirm safety surfacing meets or exceeds current Annex H and ASTM F1292.

3.8 Field Quality Control

.1 Inspection and testing of Playground Surfacing: carried out by Playground Inspector approved by the Contract Administrator.

.2 Contractor to amend surfacing found inadequate by inspector. Costs of tests: paid by Contractor.

.3 Inspection and testing will include both play equipment installation and play area surround installation.

.1 Inspection report to include; general site information, surfacing information (min. 3 test pits, etc.), general equipment information, hazard and compliance rating, Annex H compliance analysis, qualifications / certificates, proof of insurance. Report to be reviewed by City of Ottawa and meet standard practises.

.2 A certified playground inspector is to inspect the completed playground before the playground installer leaves the site.

.4 Contractor to co-ordinate the site work execution and completion with the installation of the play structure & inform the Owner's Representative of any changes in the schedule.

3.9 Cleaning

.1 Progress Cleaning:

.1 Leave Work area clean at end of each day.

.2 Clean up areas where EWF has been spilled outside of play areas.

.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment.

3.10 Protection After Completion

.1 Protect and maintain installation including accessories, until acceptance of project work.

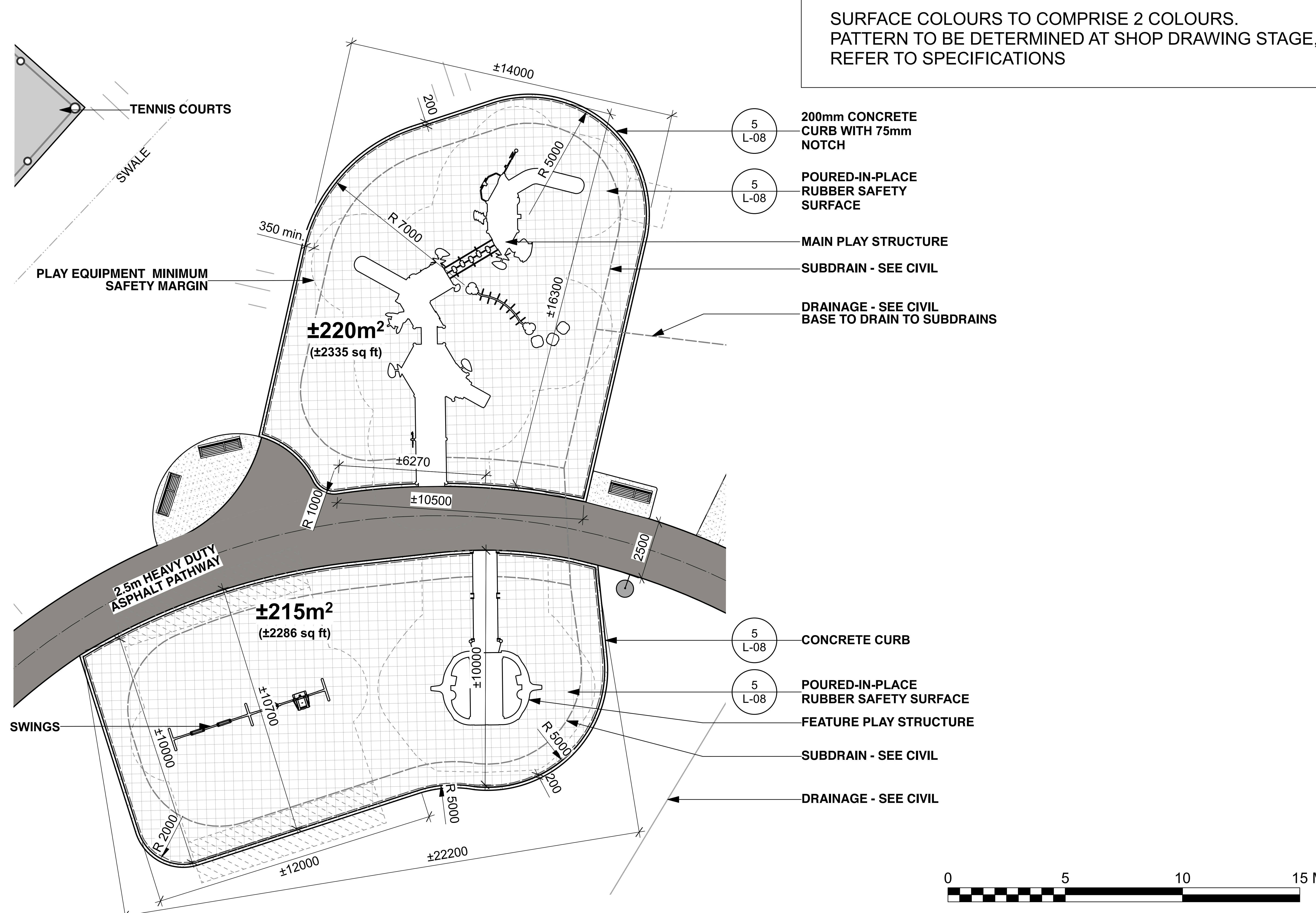
.2 Immediately remove from site, damaged materials and accessories. Replace repair, refinish or otherwise make good to approval of Consultant.

3.11 Warranty

.1 Provide warranty certificate and maintenance procedures.

END OF SECTION

SURFACE COLOURS TO COMPRISE 2 COLOURS.
PATTERN TO BE DETERMINED AT SHOP DRAWING STAGE,
REFER TO SPECIFICATIONS



drawing
PLAY AREA LAYOUT FOR RUBBERIZED SURFACE

dwg. no. **SK-L01**

project no. 20-620 / 21-1633

revision no.

drawn by T.F.

checked by M.R.

date JUN15, 2021

scale 1:150

project
RUSSELL TOWNSHIP
RECREATION COMPLEX PARK PROJECT

Municipalité de RUSSELL Township

Ruhland & Associates Ltd