STRATHCONA COUNTY

Enclosure 5

September 2019 Design and Construction Standards – Excerpts

The following is a compilation of all open space related sections within the Design and Construction Standards and shows the current standards with the proposed deletions and proposed clauses to be moved to another section – no construction details are shown in this version. Sections have been highlighted as follows:

Sections Deleted: highlighted sections identify section proposed to be removed; and
Sections Relocated: highlighted sections identify clauses relocated to other sections.

Volume 1 Design Standards

Table of Contents

Volume 2 Construction Specifications

Table of Contents

2.2 ENGINEERING DESIGN BRIEF (IN CONJUNCTION WITH AREA STRUCTURE PLANS)

2.2.1 Three (3) copies of the Engineering Design Brief (EDB) must be submitted as part of an ASP application, and must include at minimum, the following information:

2.2.1.1 Identification of any man made features such as highways, railways, major power lines, high pressure oil/gas pipeline and wellsites which may affect developable areas.

2.2.1.2 Identification of Municipal Reserves (MR), Environmental Reserves (ER), and Conservation Easements (CE) to ensure provision of location, planning and balancing of municipal reserves requirements within the total land dedication requirements.

2.2.1.3 A staging plan and discussion regarding any interim utility servicing, stormwater management, access or intersection proposals.

2.2.1.4 Overall road layout of local roads, minor and major collector roads, intersections with arterial roads, road ROW widths, and cross-sections.

2.2.1.5 A Transportation Impact Analysis (TIA) for all developments that result in more than 100 peak hour trips. The TIA is required to detail: trip generation rates; morning and afternoon peak turning volumes at all collector/collector intersections, arterial road access points, and any other surrounding intersections/road segments that may be impacted by the development; projected daily volumes; and proposed traffic control strategy and/or traffic control modifications for the aforementioned locations that will be required to accommodate the development traffic.

2.2.1.6 Overall conceptual plans identifying general alignments of the water, sanitary and storm sewer mains, overall surface grading design and major drainage routes together with a discussion.

2.2.1.7 A Hydraulic Network Analysis (HNA) shall be completed in accordance with the design criteria found in VOL. 1 SEC. 4.3, WATER DISTRIBUTION SYSTEM. The HNA must include an analysis of the average day, maximum day, and peak hour demand scenarios, as well as a fire flow scenario. The HNA must address potential staging of the infrastructure and include an analysis of both interim and ultimate servicing conditions

2.2.1.8 A wastewater system evaluation shall be completed in accordance with the design criteria found in VOL. 1 SEC. 4.2, SANITARY SEWER SYSTEMS. The evaluation must address the available capacity in the downstream receiving systems, clearly delineate the proposed drainage basins, address potential staging of the infrastructure and include an analysis of both interim and ultimate servicing conditions.

2.2.1.9 A stormwater management analysis shall be completed in conformance with an approved master drainage plan or watershed study for the total drainage basin(s) in which the ASP is located. The analysis must examine the existing storm basin(s), identify any issues or constraints, examine pre- and post-development conditions, and recommend the location of stormwater management facilities, storage volumes and allowable discharge rates.

The proposed stormwater management scheme must include: an overall plan depicting the storage facility location, its drainage basin, and the downstream receiving stream; supporting detailed hydrology and hydraulic calculations for the facility and including an analysis of the capacity of the downstream receiving channel; preliminary facility cross-section and details of inlets and outfall control structure; description of stormwater quality improvement methods to be incorporated and erosion and sedimentation control works proposed.

If the implementation of the scheme is to be staged, the staging method should be presented. Upon acceptance by Strathcona County, this information will need to be submitted by the Developer's Consultant to Alberta Environment and Parks for Water Act approval.

2.2.1.10 A topographical map with 0.5m contour intervals is to be included.

2.2.1.11 A Noise Impact Assessment (NIA) using a noise prediction model acceptable to Strathcona County. The assessment must address and present and future noise levels, and identify measures required to adequately maintain noise to within Strathcona County's standard.

2.2.1.12 The results of a Geotechnical/Hydrogeological Investigation completed by a qualified geotechnical engineering firm. At this stage, the level of detail of this investigation should be to an extent sufficient to allow the Engineer to generally assess the site's geotechnical/hydrogeological conditions and their effect on the development and whether or not any contamination exists. The report should outline their findings and any general recommendations as well as address the following:

(i) Identify areas of high water tables.
(ii) Identify conditions that will require special design considerations.
(iii) Identify the limits of any potential site contamination and outline the process for site remediation to be completed.
(iv) Soil alkalinity (sulphate levels) and resistively test results and recommendations regarding concrete to be used and corrosion protection.
(v) Identify any previously disturbed soil locations (i.e. abandoned water/sewer trenches, borrow pits, etc.).
(vi) Identify any conditions that will have special operation and/or maintenance implications.
(vii) Top of bank setbacks adjacent to Creeks or ravines to address slope stability requirements.
(viii) Suitability of existing soils for proposed SWMF locations and any associated design constraints and/or special construction requirements (i.e. stability of side slopes, linear requirements, water seepage, etc.).

The Developer may choose to complete the detailed Geotechnical/Hydrogeological Investigation (as outlined under SUBSECTION 2.3.1.3 OF THIS SECTION) at the ASP stage.

2.2.1.13 If a Creek or major water course runs adjacent to or crosses the site, the 1:100 year floodplain must be identified along with confirmation that it is outside of any proposed development areas.

2.2.1.14 In the event that the Design & Construction Standards or Provincial requirements are amended prior to commencement of construction within the ASP, the Developer may be required to update a portion or all of the EDB in order to align with the changes, to the satisfaction of Strathcona County.

2.2.2 The Developer/Owner will arrange and negotiate any and all easements across private lands, private utility crossing agreements and other similar agreements which may be needed with land owners in the area.

Strathcona County will only become involved if a mutually agreeable solution cannot be reached through negotiation between the parties involved and the viability of an approved subdivision is jeopardized. Note: A Development Agreement must be in place before any action can be taken by Strathcona County.

2.3 ENGINEERING REQUIREMENTS FOR SUBDIVISION APPLICATION

2.3.1 The following information must be submitted as part of the subdivision application for each stage of development within an ASP:

2.3.1.1 A covering letter indicating the subject and purpose of the application, an estimated construction starting date, and tentative project schedule and completion date. Attached to the covering letter shall be a:

(i) VOL.1 SEC.8, FORMS – ACCEPTANCE OF DETAILED ENGINEERING AND LANDSCAPE DRAWINGS – APPLICATION which must be stamped and signed by a Licensed Engineer as well as by a Landscape Architect.

(ii) VOL.1 SEC.8, FORMS – EXTENSION TO A WATERWORKS, WASTEWATER OR STORM DRAINAGE SYSTEM – NOTIFICATION which must be stamped and signed by a Licensed Engineer. This application is required for submittal by Strathcona County to Alberta Environment and Parks under EPEA.

2.3.1.2 Seven (7) complete paper sets of the engineering drawings. Sets which do not contain the required drawings as outlined in VOL. 1 SEC. 3, CAD STANDARDS will not be accepted for processing.

2.3.1.3 Three (3) paper copies and one (1) PDF format of a Geotechnical/Hydrogeological Report presenting the results of a field investigation completed by a Licensed (geotechnical) Engineer. Unless completed with the EDB, the level of detail of this investigation, analysis, and report is more extensive and shall address the following:

(i) Estimate weeping tile flow rates.

(ii) Provide detailed recommendations for design and construction of roadways, pavement structure designs, deep and shallow utilities, site grading, stormwater management facilities, and buildings.

(iii) Provide recommendations for private septic systems in accordance with Provincial regulations, where applicable, based upon existing ground water table and soil conditions outlined within the report.

(iv) Include an overall plan illustrating developable and undevelopable areas.

6.1 PARK/OPEN SPACE DEVELOPMENT ACTIVITIES

Parks and open spaces may be developed or left in a natural state in both the urban and rural areas of Strathcona County. Open spaces may be neighbourhood, community and regional parks, public utility lots, municipal and environmental reserves, naturalized, conserved and reclaimed areas, wetlands and storm water management facilities, buffers, trails and walkways. These areas should be designed to maximize universal accessibility and CPTED. See SECTION 1.4 Definitions. Development requirements are listed below in the following two tables;

6.1.1 Developed Open Space

Appropriate Development Activities	Neighbourhood Parks	Community Parks	Regional	Constructed SWMF	PUL
Sizes	Minimum 0.8 ha	Minimum 4 ha	Minimum 8 ha		
Grade/Loam	Yes	Yes	Yes	Yes	Yes
Seed/Sod	Yes	Yes	Yes	Yes	Yes
Trees	Yes	Yes	Yes	Yes	Yes
Shrubs	Yes	Yes	Yes	Yes	Yes
Fence	Yes	Yes	Yes	Yes	Yes
T-bollards	Yes	Yes	Yes	Yes	Yes
Benches	Yes	Yes	Yes	Yes	Yes
Garbage Receptacles	Yes	Yes	Yes	Yes	Yes
Bike Rack	Yes	Yes	Yes	Yes	No
Picnic Tables	Yes	Yes	Yes	Yes	No
Backstop, Sideline or Outfield Fence Chain Link	N/A	Yes	Yes	N/A	N/A
Trails / Walkways	Yes	Yes	Yes	Yes	Yes
Trail Signs	Yes	Yes	Yes	Yes	Yes
Play Equipment & Age Signs	Yes	Yes	Yes	No	No
Thin Ice Signs/No Swimming	No	No	No	Yes	Yes
Park Name Sign	Yes	Yes	Yes	No	No
SWMF Sign	N/A	N/A	N/A	Yes	Yes
Basketball/ Sand Volleyball	No	If Required	If Required	No	No
Ball Diamonds	No	If Required	If Required	No	No
Soccer/Football Fields	No	If Required	If Required	No	No
Ice Rinks	No	If Required	If Required	No	No
Parking	If Required	If Required	If Required	No	No

*Parks shall include a Standard Park Name Sign as per STANDARD DRAWING 61505

6.1.2 Undeveloped Open Space

Appropriate Development Activities	MR	CE	ER	Natural Wetlands / SWMF	PUL
Grade / Loam	No	No	No		
Seed / Sod / Reclamation					As Required
Fence	If Required	No	If Required	If Required	Yes
Marker Posts	No	Yes	Yes	No	No
T-Bollards	If Required	No	If Required	If Required	If Required
Trails / Walkways	Yes	No	If Required	If Required	If Required
Trail Signs	Yes	No	If Required	If Required	If Required
Picnic Tables	Yes	No	No	If Required	If Required
Benches	Yes	No	No	If Required	If Required
Garbage Receptacles	Yes	No	No	If Required	If Required
No Motorized Use Signs	Yes	Yes	Yes	Yes	Yes
Play Equipment & Age Signs	If Required	No	No	No	No
Thin Ice Signs / No Swimming	No	No	No	Yes	Yes
Educational Signage	If Required	No	If Required	If Required	No

6.2 SITE AMENITIES

6.2.1 Playgrounds

6.2.1.1 All Developers who construct playgrounds on public lands in Strathcona County shall do so in accordance with the CSA Standards, Children's playspaces and equipment standards, in its latest version and VOL. 2 SEC. 7, CONSTRUCTION SPECIFICATION 7.801 - PLAYGROUND CONSTRUCTION.

6.2.1.2 A concept meeting with the Developer Representative prior to submission of drawings may be required. Locations, extent of playground, plans and construction to be accepted by Strathcona County.

6.2.1.3 All playground apparatus must be metal and may contain plastic components, i.e., slides, panels and roofs. Must be purchased from an approved playground manufacturer or their sales representative.

6.2.1.4 Playground equipment will be designed to accommodate separate age groups as determined by most current CSA Standards.

6.2.1.5 A retainer made of material approved by Recreation Parks and Culture with a minimum depth of 300 mm settled depth playground sand is required; see STANDARD DRAWING 61826. Alternative surfaces may be considered.

6.2.1.6 Swing sets are to be heavy duty to accommodate heavy usage as per the Children's playspaces and equipment standards, in its latest version. Alternates to be submitted IPS Standards Committee approval.

6.2.1.7 In addition to the Canadian CSA Standards, Strathcona County requires:
(i) All playground encroachment zones to be inside the retained sand area;
(ii) Deck heights to be a maximum 1.5 m. Where decks exceed 1.5 m, decks must be completely enclosed from top side of deck to underside of roof;
(iii) Posts supporting roofs must be covered by the roofline.
- The protective surfacing zone for a swing structure shall extend no less than 1.8 m from the further most part of the structure.

(iv) Maximum top rail height of swing set to be no greater than 2.4 m

6.2.1.8 All playgrounds will have signs in locations approved by the Strathcona County Representative identifying the following: Refer to STANDARD DRAWING 61508.
(i) Intended age for play structure;
(ii) A safety contact number, while under developer's maintenance; and
(iii) Once the playground is accepted by Strathcona County the sign shall be changed to state Strathcona County's contact number.

6.2.1.9 Wheelchair accessibility is preferred.

6.2.1.10 Playground sites shall be fenced along roadways to a minimum height of 1.2 m.

6.2.1.11 Playground designs to be submitted to Strathcona County as separate drawings, to scale, in metric, A1 and electronically. Two and three dimensional drawings to be supplied by manufacturer.

6.2.1.12 Quick link chain link fence or safety fence is required until playground construction has been accepted by Strathcona County. "Keep Out – Construction Area" sign to be visible at all times.

6.2.2 Sports Fields

6.2.2.1 Based on current Strathcona County inventory and user needs, administration will determine the locations, types and sizes required.

6.2.2.2 Preferred orientation for soccer fields and ball fields is a north to south direction. Site conditions may dictate an alternative.

6.2.2.3 Backstop, goal posts and player benches to be installed prior to FAC.

6.2.2.4 Sports field survey reference pins to be installed at time of construction. The sports field reference pins shall be 500 mm lengths of 15 mm diameter rebar, to a depth of 50 mm below final grade.

6.2.2.5 All sports fields to be maintained for a two year minimum.

6.2.2.6 Soccer field and post sizes to be as per the most current Canadian Soccer Association Long Term Player Development - Wellness to World Cup, and as included in the STANDARD DRAWING 61807 and 61808.

6.2.2.7 All ball fields shall be sized according to the current sport association standard, see STANDARD DRAWING 61801, 61802, 61803, 61804, and 61805.

6.2.3 Trails/Walkways

6.2.3.1 Trails in Strathcona County are defined as developed, semi-developed, undeveloped or paved shoulder/bike lane as per the Strathcona County Trails Strategy.

6.2.3.2 Trails may be asphalt, granular, mulch or natural grass pathways.

6.2.3.3 All 3 m wide asphalt, trails require signs and line painting; see STANDARD DRAWING 61501, 61502, 61503, 61504, 61401, and 61404.

6.2.3.4 Asphalt trails to be designed in accordance with the Geometric Design Guidelines (TAC) for Canadian Roads and Bikeway Traffic Control Guidelines of Canada.

6.2.3.5 Trails through remnant tree stands, surrounding wetlands and surrounding storm water management facilities may be required and shall be approved on a site by site basis.

6.2.3.6 Trails within storm water management facilities shall not be installed below the 1:25 year level. Access points below the 1:25 year level may be considered.

6.2.3.7 Furniture and garbage receptacles (rest stops) to be provided by the Developer and placed at a minimum of 0.5 km locations or as site conditions and design intent allows. STANDARD DRAWING 61409.

6.2.3.8 Root barrier installed at a minimum 600 mm depth is required where the trail is within 1.5 m proximity to planting beds and native tree stands as per STANDARD DRAWING 61402. Consideration to be given pending plant type.

6.2.3.9 All trails to be maintained until FAC.

6.2.4 Entry Features

6.2.4.1 Entry entrance feature shall be placed on public road ROWs.

6.2.4.2 A dedication of 1 m wide at the corner cut shall be identified on the drawing submission.

6.2.4.3 Entry features with power or water requirements are not permitted.

6.2.4.4 Entry feature designs shall be stamped, signed and dated by a licensed Structural Engineer in good standing with APEGA in the province of Alberta. Entry feature designs shall be incorporated into the final set of record drawings.

6.2.5 T-Bollards/Furnishings

6.2.5.1 T-bollards shall be installed on public lands to prevent unauthorized vehicular traffic use as approved by the Strathcona County Representative.

6.2.5.2 T-bollards to be built and installed in accordance with the T-bollard STANDARD DRAWING 61601,61602, 61603, 61604, 61605, and 61606. T-bollards to be closed and locked after installation with Lock 834 and key 302.

6.2.5.3 T-bollard locations will be approved by the Strathcona County Representative based on the following:
(i) One pair of t-bollards to be located at property line on back of lots in accordance with chicane STANDARD DRAWING 61602;
(ii) One pair of T-bollards to be located on back of easement (3.5 – 4 m) on front of lots;
(iii) One pair of t-bollards will be required at the end of a trail within a PUL when it intersects with another trail linkage.

6.2.5.4 Furniture adjacent to trails, shall be set back a minimum of the following or as site conditions allow:
(i) Benches: 1 m back of trail, see STANDARD DRAWING 61301, 61302, and 61303; and
(ii) Waste Receptacles: 250 mm back of trail, STANDARD DRAWING 61304.

6.2.5.5 Furniture shall meet and be installed in accordance with the VOL. 2 SEC. 7, CONSTRUCTION SPECIFICATION 7.805 - SITE FURNITURE.

6.2.5.6 Rest stops shall be provided at a minimum of 500 m locations or as site requires, see STANDARD DRAWING 61409.

6.3 FENCING

6.3.1 General

6.3.1.1 Fence to be located 150 mm inside property line on private property.

6.3.1.2 After construction is complete an FAC shall be issued providing fence has been installed in accordance with the Design and Construction Standards and is free from deficiencies. A maintenance period is not required.

6.3.1.3 In the urban area perimeter fencing is required around all sport fields, school and park sites and will be chain-link except those portions that abut private property where there is the option of using wood-screen fencing, see STANDARD DRAWING 61201, 61205, and 61208. In rural area fencing to be determined on a site by site basis specific to the sites requirements.

6.3.1.4 Maintenance equipment gates are required at controlled access points to the road system to allow maintenance equipment in the park, see STANDARD DRAWING 61209.

6.3.1.5 Back of lot gates are not permitted for lots backing onto natural areas, wetlands or storm water management facilities. Gates onto other public areas shall be reviewed on a site by site basis.

6.3.1.6 Openings in the fence must be provided adjacent to sport fields to provide pedestrian access.

6.3.1.7 Fence to be located between private and public property unless otherwise approved by the Strathcona County Representative. Appropriateness of fence in rural area determined by Planning and Development Services. Fencing heights will be a minimum of:
(i) 1.2 m chain link where urban park space is adjacent to a roadway.
(ii) 1.5 m or 1.8 m chain link or 1.8 m single board wood screen fence where private property abuts public property.
(iii) Fencing to be used in the rural area may include post and rail fence, marker posts or paige wire fence. The intent of the rural fence is to restrict access from motorized vehicles while permitting wildlife access.

Wood Fencing

6.3.1.8 Consistent 1.8 m single board wood screen fencing shall be required on all collector roadways where the lots back onto the roadway, see STANDARD DRAWING 61201, 61202, 61203, 61204, and 61212.

6.3.1.9 Flankage single board wood screen fence may be required where side yards are parallel to a collector roadway. Fence to be 1.8 m at back of lot stepped down to front property line over two sections, 0.4 m per section to a final height of 1 m.

6.3.1.10 1.8 m single board wood screen fence is required on either side of a PUL. Fence to be 1.8 m at back of lot stepped down to front property line over two sections, 0.4 m per section to a final height of 1 m.

6.3.1.11 Where determined by a noise impact assessment a 1.8 m double closed board noise attenuation screen fencing and berm is required, see STANDARD DRAWING 61202.

6.3.1.12 In the rural area, building location to be positioned to discourage use of berm and noise attenuation fence, ensuring noise attenuation requirements of Design and Construction Standards are met. Natural tree stands to be incorporated into the development to ensure noise attenuation requirements of Design and Construction Standards are met. Noise attenuation by fencing and berming shall only be considered in the rural area if all other noise attenuation options (building setbacks, tree retention) are unavailable.

Chain Link Fencing

6.3.1.13 Sideline or outfield fencing may be required on ball diamonds as determined by Strathcona County.

6.3.1.14 Chain link is preferred around park sites, sports fields and SWMF, see STANDARD DRAWING 61205.

Post and Rail Fencing

6.3.1.15 In the rural area post and rail fencing is required between private and public property to prevent access and encroachment onto adjacent properties. In heavily treed areas or environmentally sensitive areas marker posts may be considered as an alternative to delineate boundaries. See STANDARD DRAWING 61214.

Paige Wire Fencing

6.3.1.16 In the rural area paige wire fencing may be required where post and rail fencing or marker posts are not practical, but may otherwise be required and will be determined on a site-by-site basis. See STANDARD Drawing 61211.

Marker Posts

6.3.1.17 Marker posts are required to delineate boundaries of CE, and ERE. Marker posts may be required where fencing is not practical but may otherwise be required. See STANDARD DRAWING 61702. Marker Post locations to be determined on a site by site basis.

6.4 LANDSCAPING

6.4.1 General

6.4.1.1 Ensure maintenance logs are maintained and submitted with the FAC pre-inspection report. See VOL. 1 SEC. 8 – FORMS – MAINTENANCE LOG.

6.4.1.2 All mature deciduous trees along boulevards, trails and sidewalks shall be a branching height of 2.5 m. Deciduous trees shall have a 1.8 m minimum branching height at time of planting.

6.4.1.3 Deciduous trees to be a minimum caliper of 60 mm at time of planting and shall meet the Canadian Standards for Nursery Stock.

6.4.1.4 Coniferous trees shall have a minimum height of 2.5 m at time of planting and shall meet the Canadian Standards for Nursery Stock.

6.4.1.5 Shrubs shall be mass planted within beds with spacing appropriate to species as per the Canadian Standards for Nursery Stock. Minimum shrub height or spread (whichever is greater) shall be 450 mm at time of planting.

6.4.1.6 A mowing strip is required between existing vegetation, planting bed edges and all other elements, such as fencing and curbs. The mowing strip shall be a minimum of 1.8 m wide.

6.4.1.7 Native planting is encouraged using plant material native to Alberta.

6.4.1.8 No annual plantings are allowed in planting beds that will be maintained by Strathcona County after FAC.

6.4.1.9 Perennials and bulbs are allowed in planting beds that will be maintained by Strathcona County after FAC.

6.4.1.10 All Green Ash shall be seedless. Poplars, Mayday, Birch Amur Cherry, Mountain Ash and Schubert Chokecherry are not acceptable for boulevard trees.

6.4.1.11 A minimum of 75 trees per hectare is required for Municipal Reserve. Shrubs may be substituted for trees at the rate of five shrubs to one tree, as site conditions and design may dictate.

6.4.1.12 A minimum of 75 trees per hectare are required for SWMF. Areas to be calculated for the entire parcel minus the NWL.

6.4.1.13 The use of filter fabric and edging within planting beds is not allowed due to long term maintenance.

6.4.1.14 Plant material shall be selected and designed to prevent monoculture and the spread of disease.

6.4.1.15 Shredded wood mulch or similar loose materials, shall not be used in planting beds within drainage swales.

6.4.2 Roadway Tree Planting/Landscaping

6.4.2.1 Trees shall be set back a minimum distance, measured from centre of the tree trunk, from walks, roads, Infrastructure and utilities as follows:

(i) 2.0 m from Arterial road median face of curb;
(ii) 1.5 m from Collector road median face of curb;
(iii) 1.5 m from Local road median face of curb;
(iv) 2.0 m from Arterial road boulevard face of curb;
(v) 1.5 m from Collector road boulevard face of curb;
(vi) 1.5 m from Local road boulevard face of curb;
(vii) 3.5 m minimum distance from street light;
(viii) 7.5m from street corners and intersections;
(ix) 2.0m from driveways;
(x) 3.5m from yield and stop signs;
(xi) 3.5m from bus stop signs;
(xii) 2.0m from all other signs;
(xiii) 1.0m from underground power lines;
(xiv) 3.5m from all power hardware;
(xv) 1.8m from water mains, water services and water valves;
(xvi) 2.0m from sewer mains, manholes and services;
(xvii) 3.5m from fire hydrants;
(xviii) 1.5m from gas and all other services;
(xix) 1.0 from other underground utilities;
(xx) 2.0 from structures;

*Any distances shall conform to the Design and Construction Standard Drawings.

6.4.2.2 Planting distance from overhead utilities shall be as per the requirements as established by the respective utility authority. Letter of confirmation of utility restrictions to be submitted to the Strathcona County Representative for review.

6.4.2.3 No poplar or willow species are permitted within 10 m of underground water and wastewater.

6.4.2.4 Tree planting is required on boulevards where lots have a side yard or back onto a road as space and utilities permit.

6.4.2.5 Urban boulevard tree planting is required on any roadways with separate walks. Rural roadside planting is required where right of way and utilities allow.

6.4.2.6 Urban boulevards with separate walkways must be graded, topsoiled, seeded or sodded from walkway to curb. Rural roadside planting to be reflective of adjacent natural areas.

6.4.2.7 Artificial turf or synthetic turf products shall not be installed in any roadway right of way, boulevard or median.

6.4.2.8 All commercial properties must be graded, topsoiled, seeded or sodded from the private property line to the road edge.

6.4.2.9 Boulevards may be designed to include planting beds, shrubs and groundcovers with approved setbacks. Shrubs and perennials planted in boulevards, islands and roundabouts, should not exceed 500 mm in height at maturity.

6.4.2.10 Barberry, Pygmy Caragana, and Roses are not acceptable for boulevard planting beds.

6.4.2.11 The Developer is required to supply the equivalent of one tree per urban residential lot as follows: VOL. 2 SEC. 7, CONSTRUCTION SPECIFICATION 7.612, PLANTINGS for minimum sizes.

(i) Tree planting of one per lot; or

(ii) Tree planting equal to one tree per lot located in other areas of the neighborhood. This may be ornamental and/or naturalized planting; or

(iii) Funds equal to one tree per lot, directed to Strathcona County for future tree planting. Tree value to be determined by the Developer and/or the Developer Representative and Strathcona County on an annual basis and will be based upon current prices for supply and install of a 60mm caliper deciduous tree. Strathcona County will provide administration.

6.4.2.12 The total number of residential lots and corresponding trees are to be noted on the final set of construction drawings and on the as-built set of drawings.

6.4.2.13 All berms shall have maximum side slopes of 4:1, a minimum top width of 1 m and be topsoiled and sodded/seeded. Berm tops shall be centered on the property line. Fences shall be 150 mm inside property line on private property.

6.4.2.14 Plant material to have limited horizontal root growth and non-sucker-type roots to avoid encroachment into adjoining privately owned lands.

6.4.2.15 Only Elm grown in Alberta with proof of origin will be accepted.

6.4.2.16 The street lighting design and tree planting design must be coordinated to eliminate conflicts between the lighting pattern and tree canopy.

6.4.2.17 No poplar or willow species are permitted within 10 m of underground water and wastewater.

6.4.2.18 Barberry, Pygmy Caragana, and Roses are not acceptable for boulevard planting beds.

6.4.3 Medians And Cul-de-Sac Islands

6.4.3.1 Cul-de-sac islands are to be designed in accordance with the Design and Construction Standards. An island will be permitted in a cul-de-sac where the radius of the cul-de-sac bulb is greater than 14 m.

6.4.3.2 Landscape designs for medians and cul-de-sac islands shall include, where appropriate, trees, shrubs, ground covers, soil mix for planting beds, mulch and sod to the satisfaction of the Strathcona County Representative. Shrubs and perennials should not exceed 500 mm in height at maturity.

6.4.3.3 Turf within median, road and cul-de-sac islands will be allowed only at the discretion of Strathcona County.

6.4.3.4 All paving stone and paving stone header, concrete or other special hard surfaced treatment to the satisfaction of the Strathcona County Representative.

6.4.3.5 Barberry, Pygmy Caragana, and roses are not acceptable for medians and cul-de-sac planting beds.

6.4.4 Utility Corridor and Public Utility Lot (PUL)

6.4.4.1 Where possible, landscape improvements and plant materials are suggested to have increased setbacks from underground utilities.

6.4.4.2 In the event a minimum utility clearance of 1 m is not maintained from the edge of the excavation by the tree spade, the involved utility company must be contacted for approval and safety procedures, e.g., by hand digging or hydrovac.

6.4.4.3 Distance from intermediate and high-pressure pipelines as required by crossing or ground disturbance agreements with pipeline authority.

6.4.4.4 All trails/walkways to be determined at ASP and Conceptual Plan Stage Utility Corridors

6.4.4.5 Utility corridor must be graded, topsoiled, seeded, fenced and planted in accordance with this document, Design and Construction Standards and approved landscape plans.

6.4.4.6 All pipeline-crossing agreements must be in place prior to construction.

6.4.4.7 Utility corridor landscape improvements to range from low maintenance naturalization to a more formal landscape design, depending on the existing landscape character already established, or to new design intent.

6.4.4.8 The Developer Representative shall provide to the Strathcona County Representative written confirmation from the utility authority when landscaping in utility corridor is not recommended.

6.4.4.9 Utility corridors that may be landscaped are to be planted with a minimum of 75 trees per hectare. Shrub groupings may be substituted at the rate of five shrubs for one tree. Calculations based on available space for planting.

6.4.4.10 Existing trees within or abutting the utility corridor shall be conserved wherever possible.

6.4.4.11 Urban Public Utility Lots (PUL's) may provide connections between sections of Strathcona County's trail system and/or provide access to park and recreation facilities through subdivisions.

6.4.4.12 Rural PUL's may provide connections between trail systems within a subdivision or other country residential subdivisions.

6.4.4.13 Urban PUL's shall be fenced, graded and seeded or sodded. Planting are required where space and utilities allow and will be reviewed on a site by site basis.

6.4.4.14 Rural PUL's shall be fenced with paige wire to allow wildlife movement and may or may not require grading and seeding/or sodding. Use rollback material from area when possible.

6.4.4.15 PUL's 4 m wide, not designated as Heritage Parkway, to have up to 1.8 m concrete or an asphalt path a minimum of 3.0 m wide. Surface may vary from concrete, asphalt, gravel, chips or grass in the rural area. Trails to be maintained until CCC.

6.4.4.16 Where the PUL provides emergency access, in urban and rural areas the finished surface must be built to provide adequate structure and space for emergency vehicle widths and loads. Emergency accesses must have a minimum right of way of 6 m and a minimum paved carriageway of 4 m. See Design and Construction Standards for further information.

6.4.4.17 Where the PUL provides access for maintenance to SWMF, manholes or other requirements determined by the Strathcona County Representative, surfaces must be built to provide a minimum of 3 m in width, adequate structure and space for maintenance vehicles.

6.4.4.18 PUL linear slope shall not exceed 6% without approved erosion control.

6.4.4.19 Overland drainage PUL in the urban area is required to be sodded/seeded and fenced on both sides. Bioswales to be utilized where ever possible. Overland drainage PUL in the rural area to utilize bioswales and natural vegetation when possible. Fencing may be required to the satisfaction of the Strathcona County Representative.

6.4.4.20 Constructed wetland PUL's shall be landscaped as per Naturalization Design Standards and Stormwater Management Facility (SWMF) Design Standards.

6.4.4.21 Visual screening or aesthetic enhancement of utilities and structures shall be provided through landscaping with consideration of setbacks and access.

6.4.5 Naturalization

6.4.5.1 Naturalized planting areas are preferred by Strathcona County.

6.4.5.2 Collected plant materials and seed bank soils may be used upon prior approval of the Strathcona County Representative. The Developer Representative shall identify areas to be planted with collected material and indicate site where material is being taken from, prior to construction.

6.4.5.3 Areas identified for conservation, which are disturbed during construction, must be restored with plant material indigenous to the area.

6.4.5.4 To establish healthy growing natural areas it is recommended that a minimum of 25% of all plant materials to be covered by caliper stock (deciduous minimum of 50 mm or coniferous minimum 1.8), 25% mix of shrubs (2 year minimum), 50% whips and cuttings. Live staking is permitted. Densities of shrubs, whips and cuttings and live staking at the discretion of Strathcona County.

6.4.5.5 The Landscape Architect shall design an appropriate mix of native trees, shrubs, ground covers and wild flower seed mixers to rehabilitate affected areas. The landscape drawings shall identify all plant communities to be established and all other information necessary to implement the proposed landscape improvements. Site characteristics, including slope, soil and orientation, and their appropriateness to the site shall be taken into account when specifying species and size of plant materials.

6.4.5.6 The Landscape Architect shall specify all tree, shrub and ground cover sizes. To establish healthy growing environments it is recommended that 25% of all plant materials be of larger sizes. Deciduous trees shall have a minimum of 50 mm caliper whilst coniferous trees shall be a minimum 1.8 m height.

6.4.5.7 All plant materials to be nursery grown stock with the exception of native tree spade plugs.

6.4.5.8 The Landscape Architect is to identify appropriate plant installation specifications and details on landscape drawings.

6.4.5.9 Forestry stock, seedlings, deciduous tree whips, propagated and rooted cuttings are acceptable.

6.4.5.10 Where trees may be approved for removal, if possible relocate the young trees and associated native material to other areas.

6.4.5.11 Noxious weeds must be controlled during the establishment of the naturalized area. The method of control must be approved by the Strathcona County Representative prior to application.

6.4.5.12 As a guideline, native shrub bed planting shall be calculated at approximately one plant per square metre.

6.4.5.13 The guide for acceptable levels of shrub survival at FAC shall be 80% of the original planting at density of one plant per square metre.

6.4.5.14 Mowing strip of a minimum of 1.8 m is required along path/trail edges, between fences and planting beds.

6.4.5.15 Where there is a natural area conserved, developed or enhanced, or a wetland restoration, a sign outlining landscaping and no mow area is required.

6.4.6 Stormwater Management Facility (SWMF)

6.4.6.1 Construct SWMF in accordance with the most current Design and Construction Standards, this document and provincial and federal policies.

6.4.6.2 Wetlands must be part of an integrated landscape approach to water quality and quantity control, and will not be expected to provide primary treatment. Best Management practices to be used for primary treatment. Landscaping of constructed SWMF must include mass plantings and naturalized shorelines.

6.4.6.3 Landscaping of constructed SWMF must include mass plantings and naturalized shorelines mimicking natural wetlands typical of the Strathcona County region, see STANDARD DRAWING 61701. The Terrestrial Vegetation Zone (see STANDARD DRAWING 61701) must be a minimum of 5 m in width.

6.4.6.4 Natural wetlands do function within the watershed to improve water quality, and conservation or restoration of wetlands to maintain or improve water quality are acceptable practices. However, pollutants should not be intentionally diverted to wetlands for primary treatment. Wetlands must be part of an integrated landscape approach to water quality control, and cannot be expected to compensate for insufficient use of BMP's within the contributing area of the drainage basin. Utilization of existing wetlands with construction of SMF which mimic natural wetlands are preferred. Mass planted and naturalized shorelines are required.

6.4.6.5 Landscape plans for public lands of the SWMF's are required. Plant material selection to be indicative of natural wetland areas typical of the Strathcona County region. Live topsoils to be used when ever possible. In rural areas wetlands to remain in their natural state.

6.4.6.6 Erosion and sediment control plans and management plans are required. Industry standard BMP's to be approved by the Strathcona County Representative. Storm sewer inlets and outlets must have grates as per Design and Construction Standards and be landscaped to visually screen the inlets/outlets. Grates must be approved by the Strathcona County Representative.

6.4.6.7 Access to silt traps to have a minimum 3 m width and surface to be strong enough to hold maintenance vehicles.

6.4.6.8 Special features must be designed and stamped by the appropriate recognized professionals.

6.4.6.9 "No Swimming" and "Thin Ice" signs must be installed between high-water line and normal water line, see STANDARD DRAWING 61507. Signs must be maintained by the Developer until FAC of the SWMF.

6.4.6.10 Sign for SWMF showing no mow areas, natural areas, habitat, wildlife, safety and function is required, see 6.4.7 SWMF Signage. In rural areas more detail on site specific area would be required.

6.4.6.11 Shredded wood mulch shall not be installed below the 1:10 year water level.

6.4.7 SWMF Signage

6.4.7.1 The following information shall be outlined on signs located at the main entry points to the SWMF:

(i) A plan outlining features of the SWMF including trails, view decks, trash receptacles etc.
(ii) You are here locator.
(iii) Advisory message regarding environmentally sensitive public lands:
  a. Stay on designated trails to protect wildlife nesting areas;
  b. Keep dogs on leash and scoop the poop;
  c. Dispose of garbage in the receptacles provided;
  d. Keep wildlife wild. Do not approach or feed wild animals, including birds.
(iv) An explanation of the purpose and benefits of the SWMF.
(v) Educational information that is specific to the SWMF.

6.5 LANDSCAPE INSPECTION PROCESS

6.5.1 The Developer's Representative shall provide a yearly anticipated landscape construction and inspection schedule to Planning and Development Services, prior to May 31 or prior to any construction commencement.

6.5.2 Inspection Categories

Strathcona County will carry out landscape inspections as follows:

Landscape Elements	Maintenance Requirements
Soft Landscaping	
Trees, Shrubs, Perennials, Turf, Natural Areas.	Minimum 2 years from CCC
Trails	
Granular,	Minimum 2 years from CCC

Asphalt Trails.	
Site Furniture	
Benches, Picnic Tables, Trach Receptacles, Trail Signage.	FAC shall be issued once accepted by Strathcona County. A maintenance period is not required.
Fencing	
Fences, Gates, Marker Posts.	FAC shall be issued once accepted by Strathcona County. A maintenance period is not required.
Park and SWMF Signage	FAC shall be issued once accepted by Strathcona County. A maintenance period is not required.
Entry Features and Retaining Walls	FAC shall be issued once accepted by Strathcona County. A maintenance period is not required.
Bridges, Boardwalks and Lookouts	FAC shall be issued once accepted by Strathcona County. A maintenance period is not required.
Playgrounds	FAC shall be issued once accepted by Strathcona County. A maintenance period is not required.

6.5.3 Soft landscaping CCC and FAC inspections may occur from June 1 until September 30 weather permitting. Soft landscaping inspections will not be conducted after September 30. All other FAC inspections may be conducted year round, weather permitting.

6.5.4 The Developer's Representative shall submit the following to Planning and Development Services to request a CCC inspection.

(i) Written request sent by email or mail
(ii) Pre-inspection report
(iii) Reduced drawings (11x17 set)
(iv) Infrastructure summary

6.5.5 The Developer's Representative shall submit the following to Planning and Development Services to request a FAC inspection.

(i) Written request sent by email or mail
(ii) Pre-inspection report
(iii) Reduced drawings (11x17 set)
(iv) As-built drawings (CAD & PDF)
(v) Maintenance logs (link to form)

6.5.6 In order to facilitate all landscape inspections, a complete set of the required paperwork must be received prior to scheduling the landscape inspection.

6.5.7 The Developer's Representative shall provide a detailed inspection report within 3 business days following the inspection and ensure that all deficiencies have been rectified prior to re-inspection.

6.5.8 All deficiencies identified during inspections shall be repaired within 30 days following the original inspection date. If deficiencies are not corrected by the agreed date, the stage will be subject to a full re-inspection.

6.5.9 The Developer/Owner shall replace any trees, shrubs, perennials or grass which may have died or failed to achieve proper growth, as determined by the County at its discretion. The Developer shall repair any other landscape amenities such as site furniture, fencing, entry features, retaining walls, trails, bridges, boardwalks, lookouts or playgrounds which are not in accordance with the plans prior to issuance of FAC

OPEN SPACE DEVELOPMENT STANDARDS (OSDS)

Tree Planting Details

Planting Bed

Fences and Gates

Site Furniture

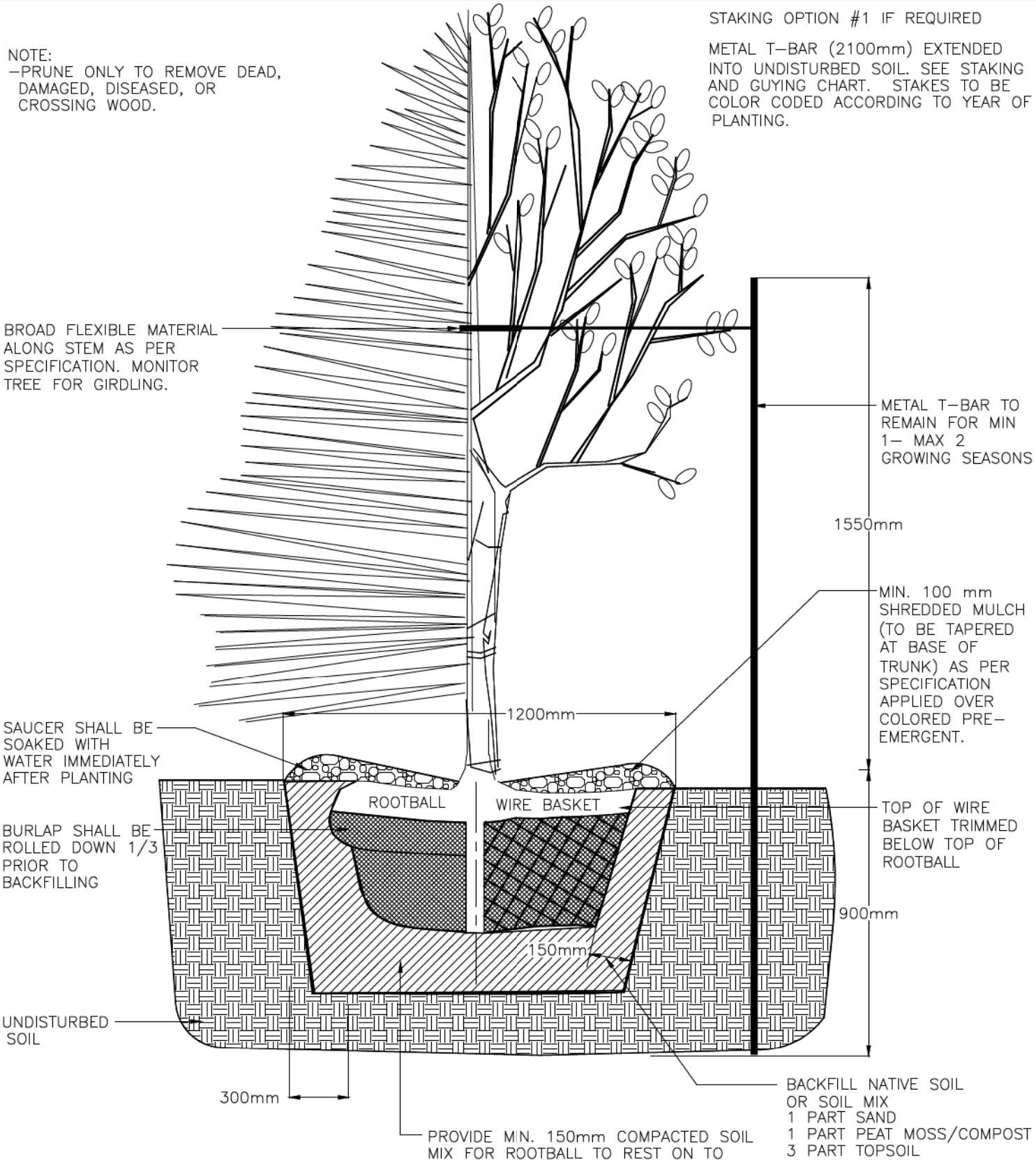
Environmental: SWMF and ER/MR Marker Posts

Sports Fields and Playgrounds

NOTE:
—PRUNE ONLY TO REMOVE DEAD, DAMAGED, DISEASED, OR CROSSING WOOD.

STAKING OPTION #1 IF REQUIRED

METAL T—BAR (2100mm) EXTENDED INTO UNDISTURBED SOIL. SEE STAKING AND GUYING CHART. STAKES TO BE COLOR CODED ACCORDING TO YEAR OF PLANTING.



REVISIONS		
Date	Details	Drawn
11/05/02	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
06/03/10	Changed mulch & t—bar notes	M. Forgues
02/06/24	Printed	A. McLenaghan
01/12/06	Notes, tree graphic, planting method	A. McLenaghan

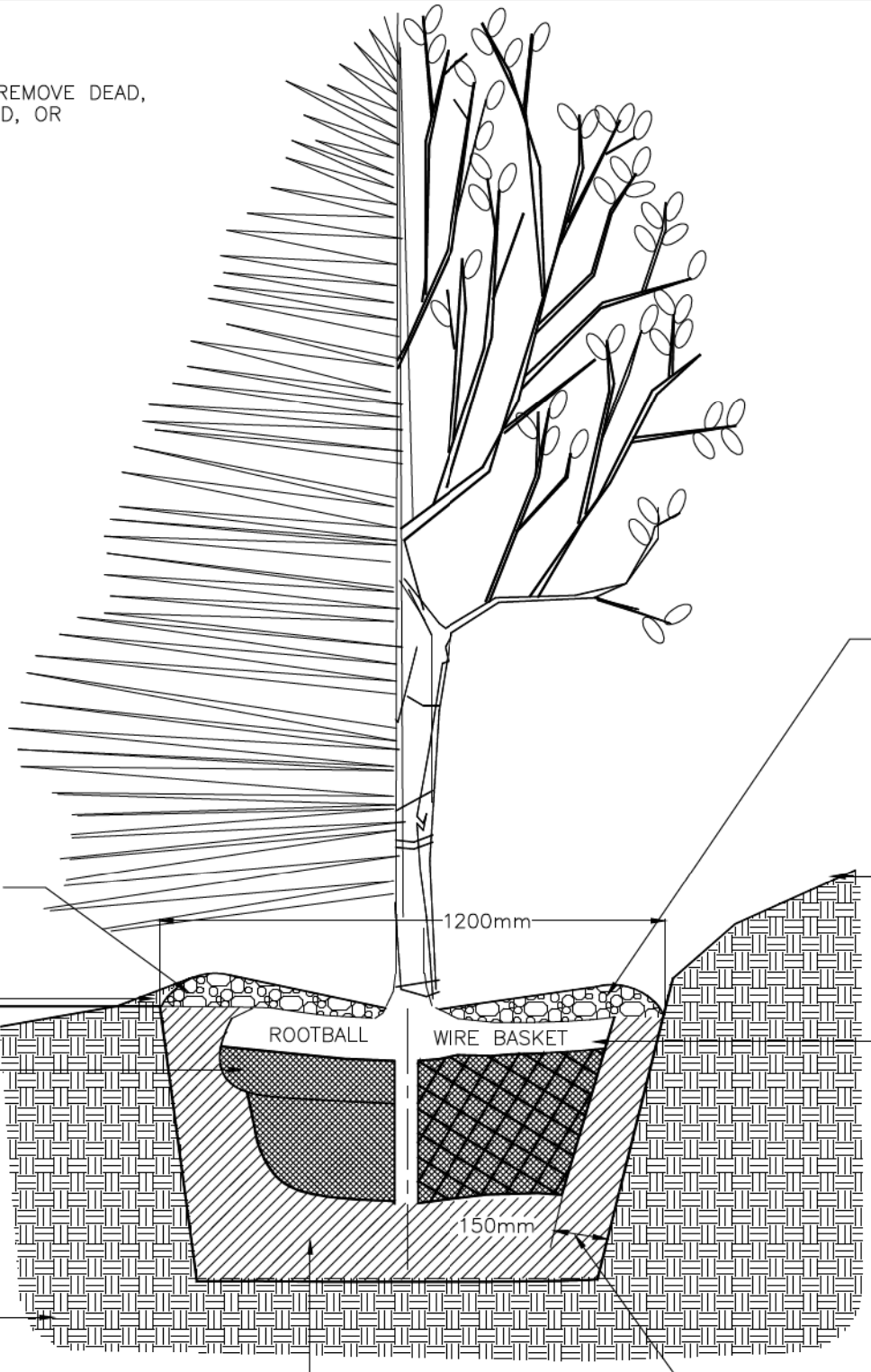
Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

CONIFEROUS/DECIDUOUS TREE PLANTING

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 03/08/94 | Scale: N.T.S. | Drawn: DAN LECKIE

DWG. NO.
61001
Planning & Development Services Department

NOTE:
—PRUNE ONLY TO REMOVE DEAD, DAMAGED, DISEASED, OR CROSSING WOOD.



REVISIONS

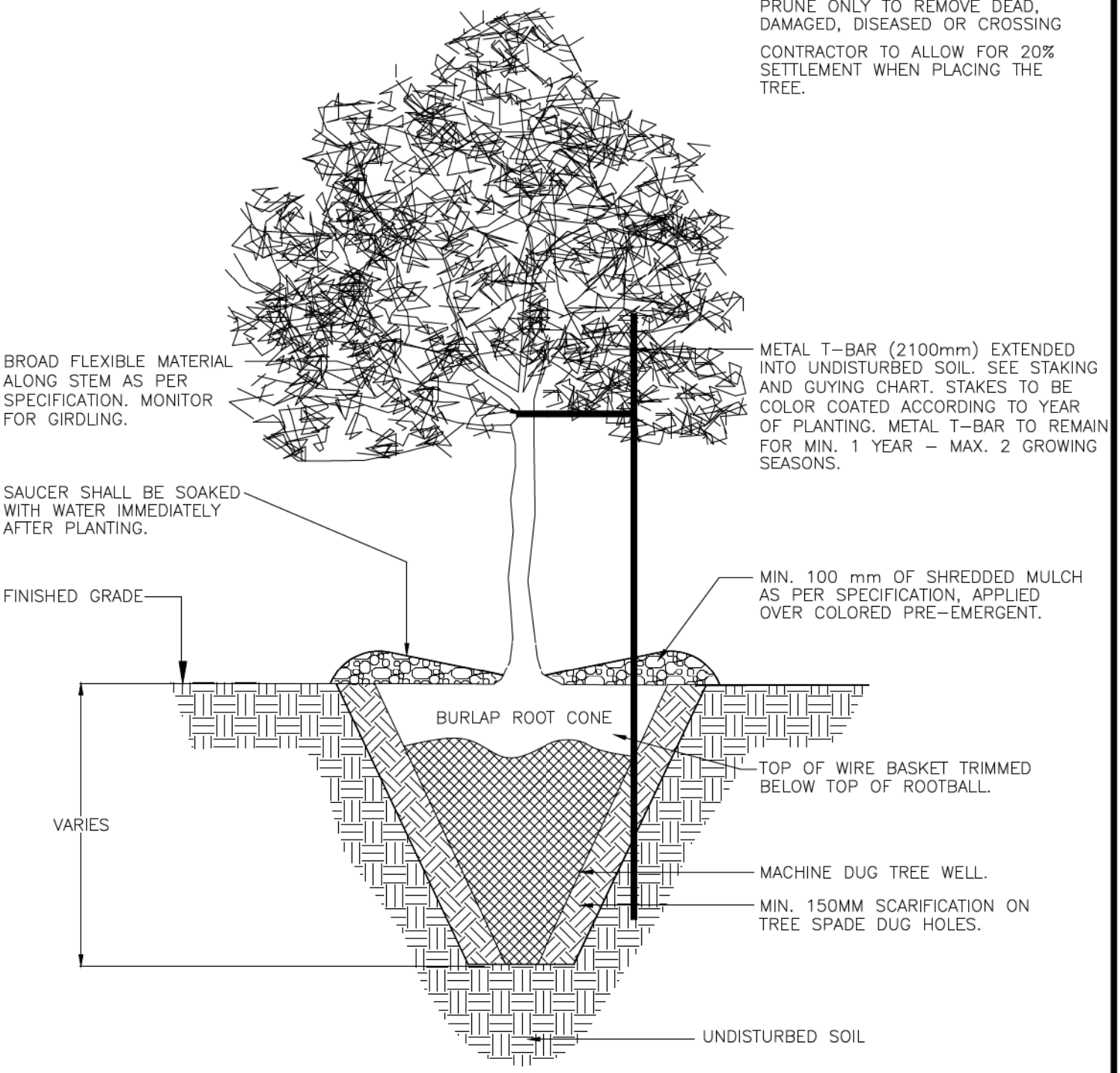
Date	Details	Drawn
YY/MM/DD	X	X
11/05/02	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
06/03/10	Dimension removed from detail	M. Forgues
02/06/24	Printed	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

TREE PLANTING ON SLOPES

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 11/12/01 Scale: N.T.S. Drawn: AMY McLENAGHAN

DWG. NO.
61002
Planning & Development Services Department



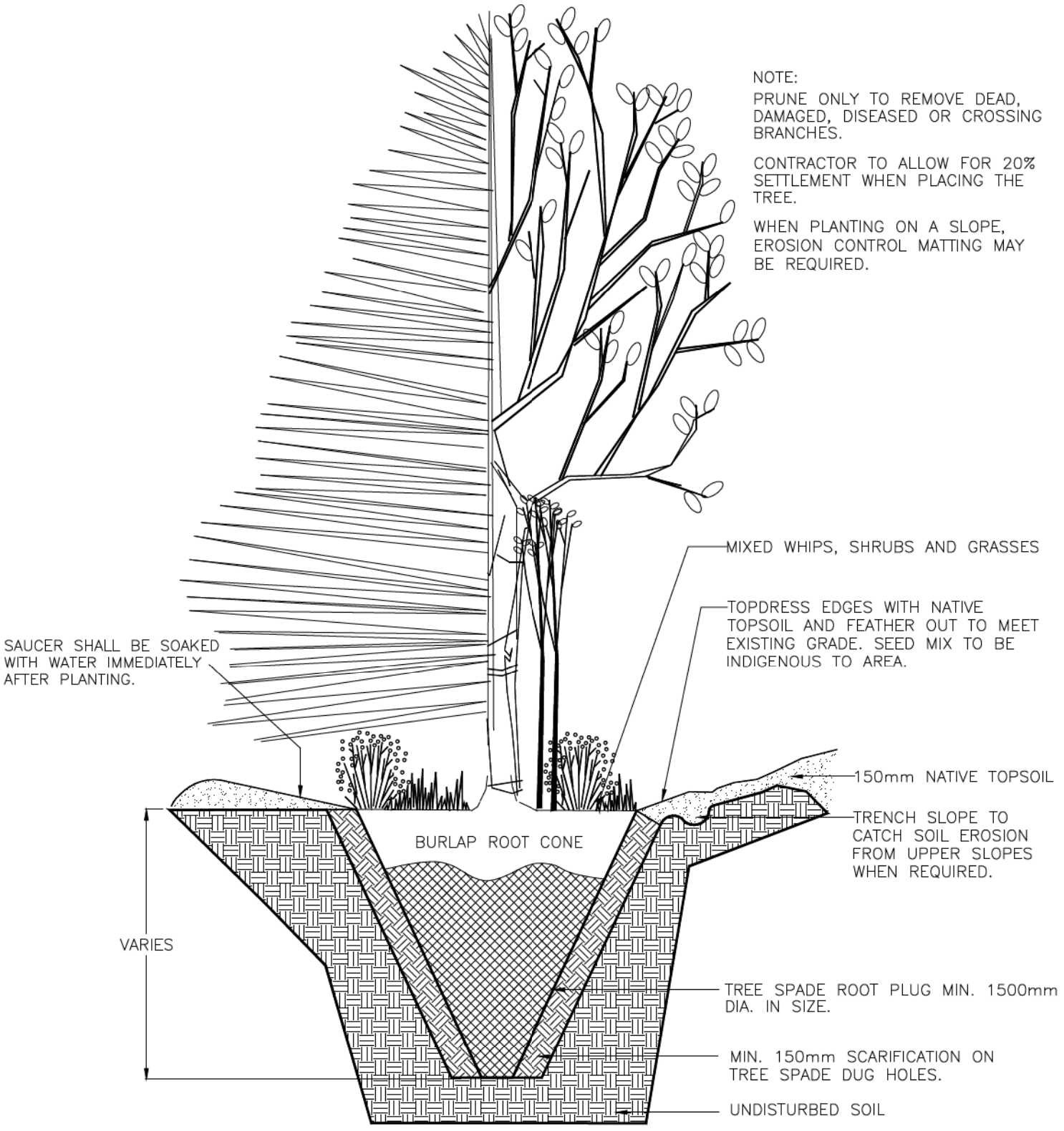
REVISIONS		
Date	Details	Drawn
11/05/02	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
06/03/10	Added scarification	M. Forgues
02/06/24	Printed	A. McLenaghan
11/12/01	Notes, tree staking, mulch	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

MACHINE DUG TREE

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 94/06/22 | Scale: N.T.S. | Drawn: DAN LECKIE

DWG. NO.
61003
Planning & Development Services Department



REVISIONS

Date	Details	Drawn
YY/MM/DD	X	X
11/05/02	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
06/03/10	Removed scarification under root plug	M. Forgues
05/03/09	DETAIL ADDED TO OSDS	L. Laing

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

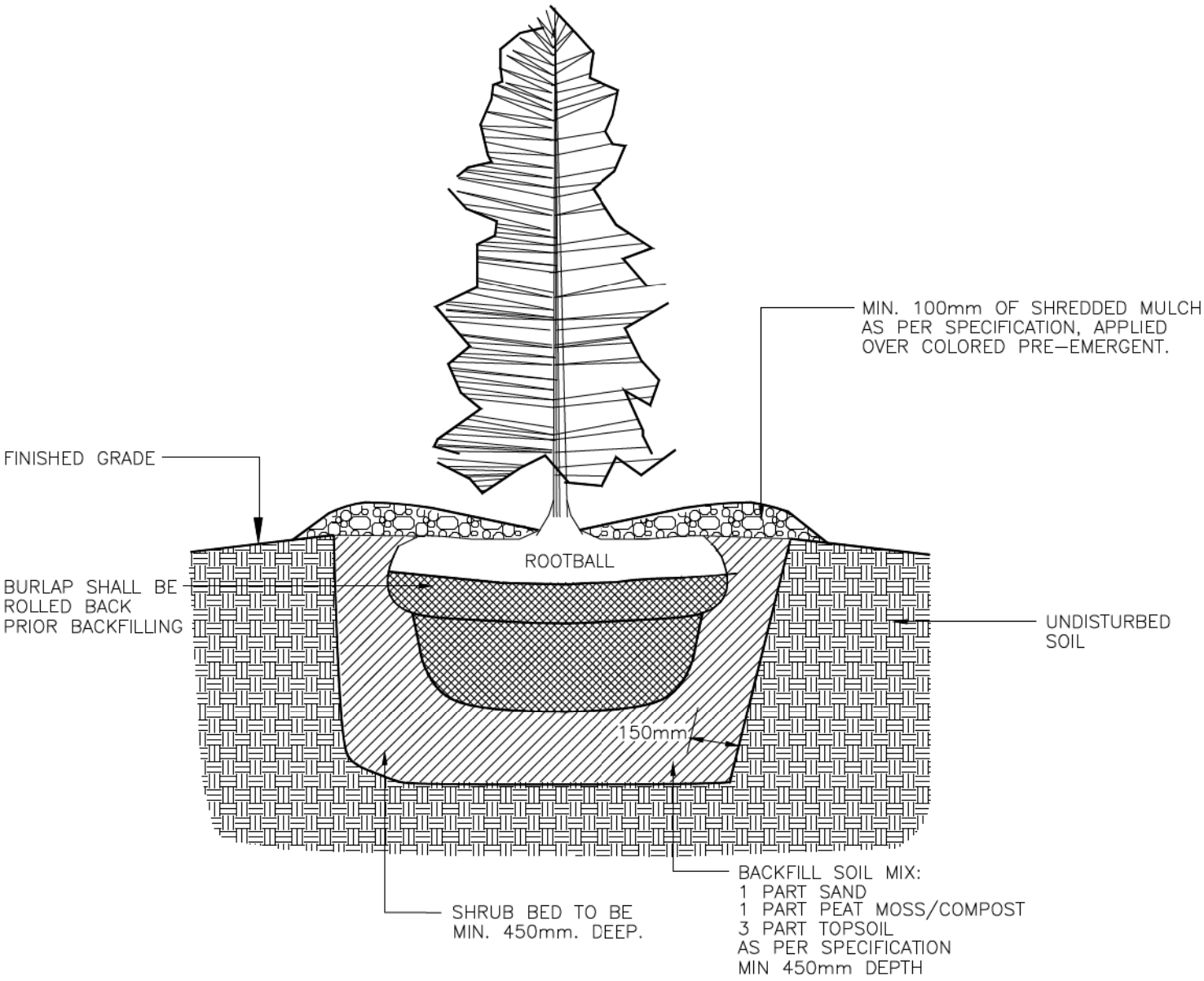
NATIVE TREE SPADE PLANTING

Approved: P. Alexander, AALA, CSLA

Checked: J.M. Talbot, MLA, CSLA

Date: 03/05/06 | Scale: N.T.S. | Drawn: AMY McLENAGHAN

DWG. NO.
61004
Planning & Development Services Department



NOTE:
–MULCH TO BE 100mm DEEP AT DRIP LINE (AT TIME OF PLANTING), TAPERING TO 0mm AT TRUNK FLARE.
–LOOSEN ROOT MASS PRIOR TO PLANTING.
–THE USE OF POLY EDGING AND FILTER FABRIC IS NOT PERMITTED.

REVISIONS

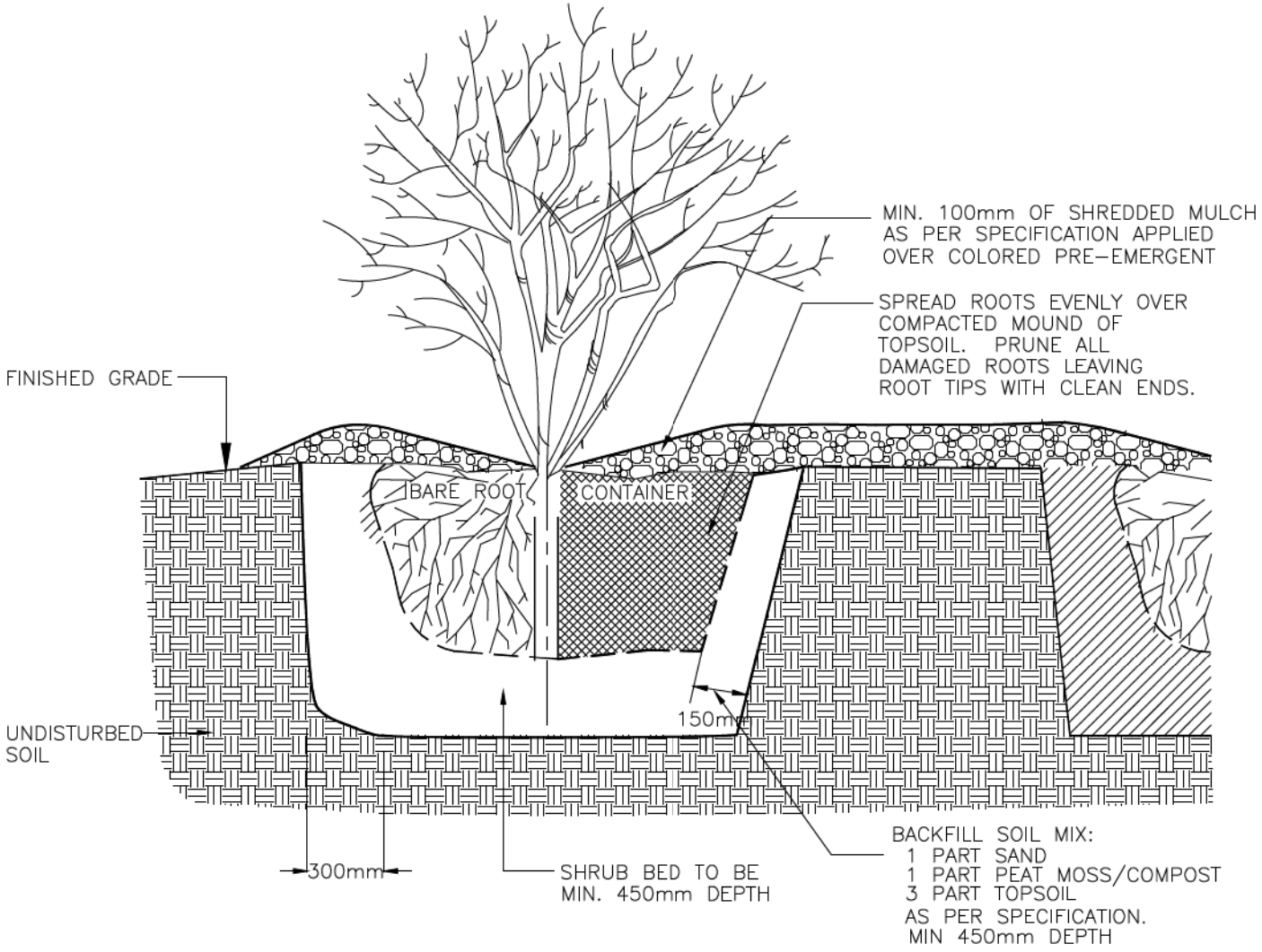
Date	Details	Drawn
11/05/02	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
06/03/10	Added to drip line note	M. Forgues
02/06/24	Printed	A. McLenaghan
11/12/01	Notes, dimensions, tree graphic	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

CONIFEROUS B&B SHRUB BED PLANTING

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 94/08/03 | Scale: N.T.S. | Drawn: DAN LECKIE

DWG. NO.
61101
Planning & Development Services Department



NOTE:
–MULCH TO BE 100mm DEEP AT DRIP LINE, TAPERING TO 0mm AT TRUNK FLARE.
–LOOSEN ROOT MASS PRIOR TO PLANTING.
–CONTAINER IS TO BE CUT CAREFULLY AWAY. SHRUB SHALL NOT BE PULLED FROM CONTAINER.
–THE USE OF POLY EDGING AND FILTER FABRIC IS NOT PERMITTED.

REVISIONS

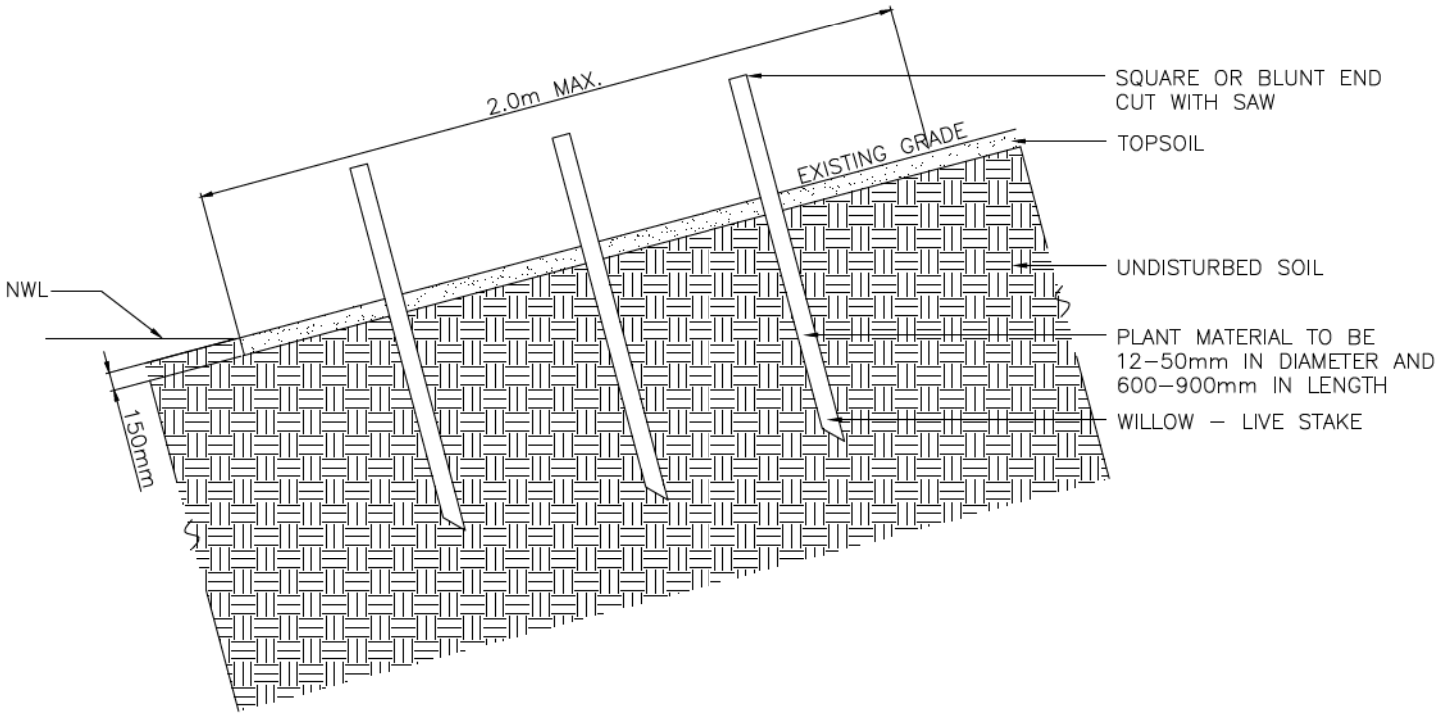
Date	Details	Drawn
YY/MM/DD	X	X
11/05/02	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
06/03/10	Added 'depth' to shrub bed note	M. Forgues
02/06/24	Printed	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

BARE ROOT/CONTAINER SHRUB PLANTING

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 01/11/22 | Scale: N.T.S. | Drawn: AMY McLENAGHAN

DWG. NO.
61102
Planning & Development Services Department



NOTES:
- ALL MATERIAL TO BE STAKED SHALL BE FRESHLY CUT ON AN ANGLE WITH A SAW ONLY.
- SIDE BRANCHES ARE TO BE REMOVED.
- BUDS ARE REQUIRED TO FACE UPWARD AFTER INSTALLATION.
- A MINIMUM OF THREE BUDS PER STAKE IS REQUIRED.
- BANK TO REMAIN INTACT
- CUTTINGS TO BE TAMPED IN WITH 80% OF THEIR LENGTH BELOW GRADE

* THIS IS ONLY AN EXAMPLE, LIVE STAKING WILL BE REVIEWED ON A SITE BY SITE BASIS.

REVISIONS

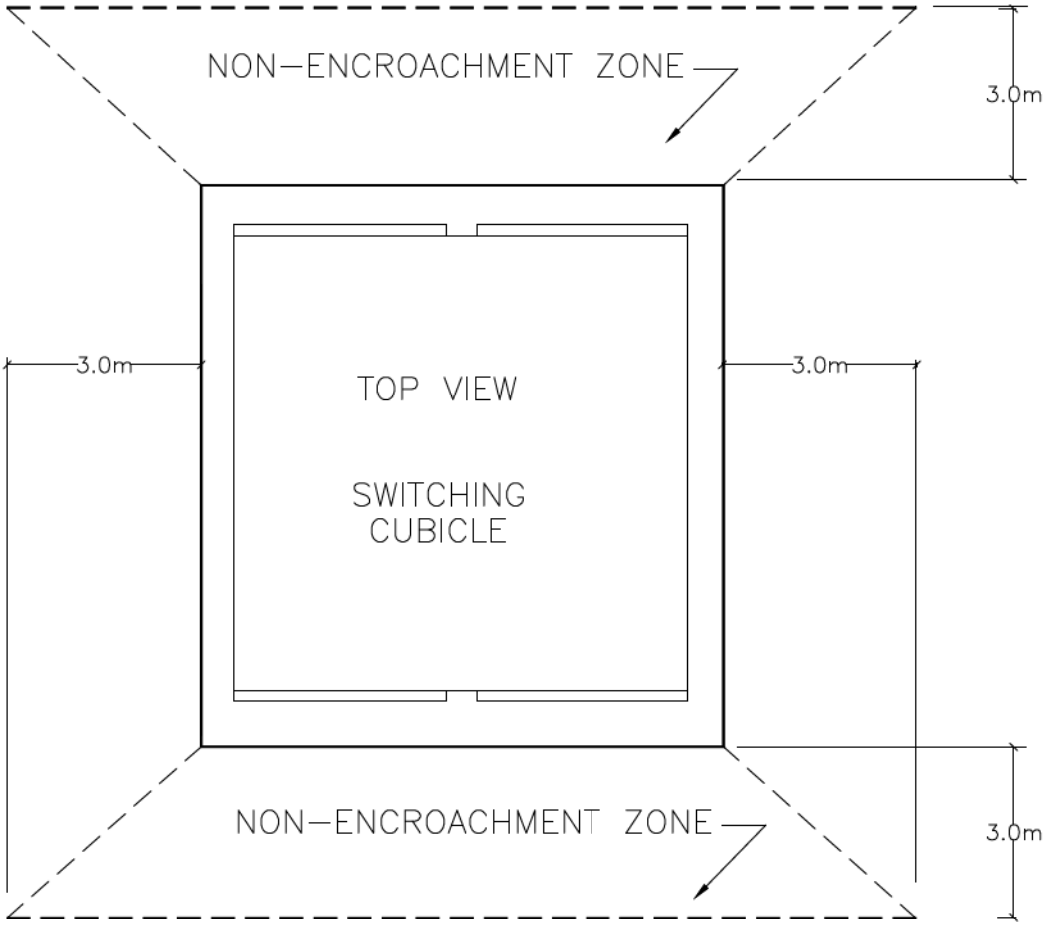
Date	Details	Drawn
YY/MM/DD	X	X
11/05/02	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
06/03/10	Added a note	M. Forgues
05/03/09	DETAIL ADDED TO OSDS	L. Laing

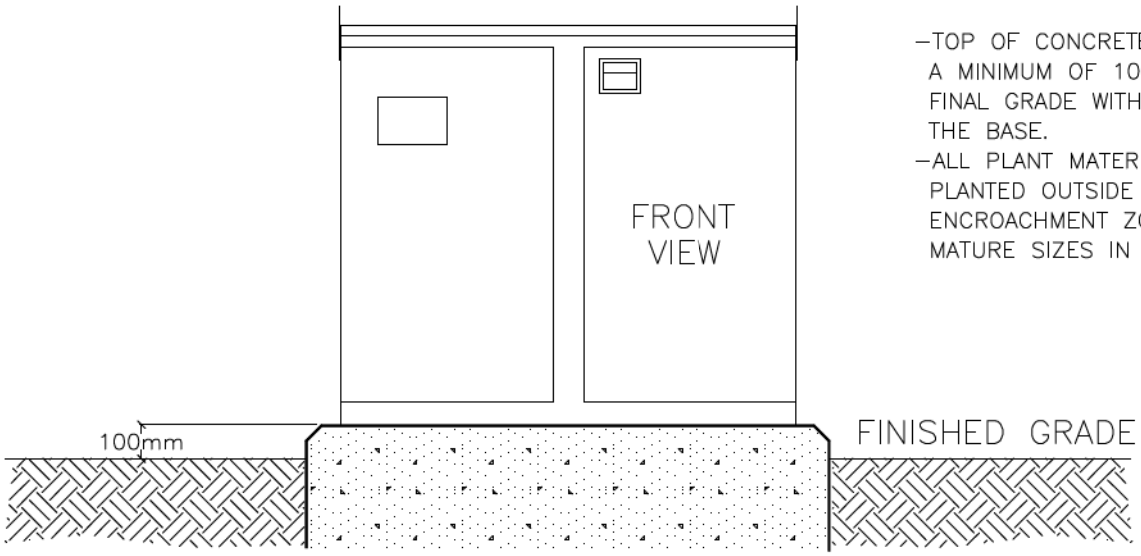
Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

LIVE STAKING

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 03/04/11 | Scale: N.T.S. | Drawn: AMY McLENAGHAN

DWG. NO.
61103
Planning & Development Services Department





NOTE:

–TOP OF CONCRETE BASE TO BE A MINIMUM OF 100mm ABOVE FINAL GRADE WITHIN 3.0m OF THE BASE.
–ALL PLANT MATERIAL TO BE PLANTED OUTSIDE OF NON–ENCROACHMENT ZONE. INCLUDE MATURE SIZES IN ASSESSMENT.

REVISIONS

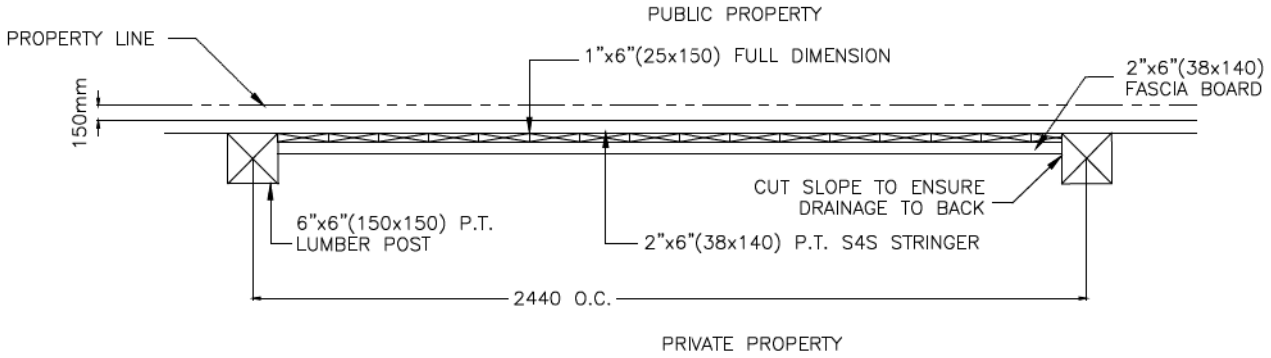
Date	Details	Drawn
YY/MM/DD	X	X
YY/MM/DD	X	X
11/05/02	REVISED DRAWING NUMBERS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
02/06/24	Printed	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

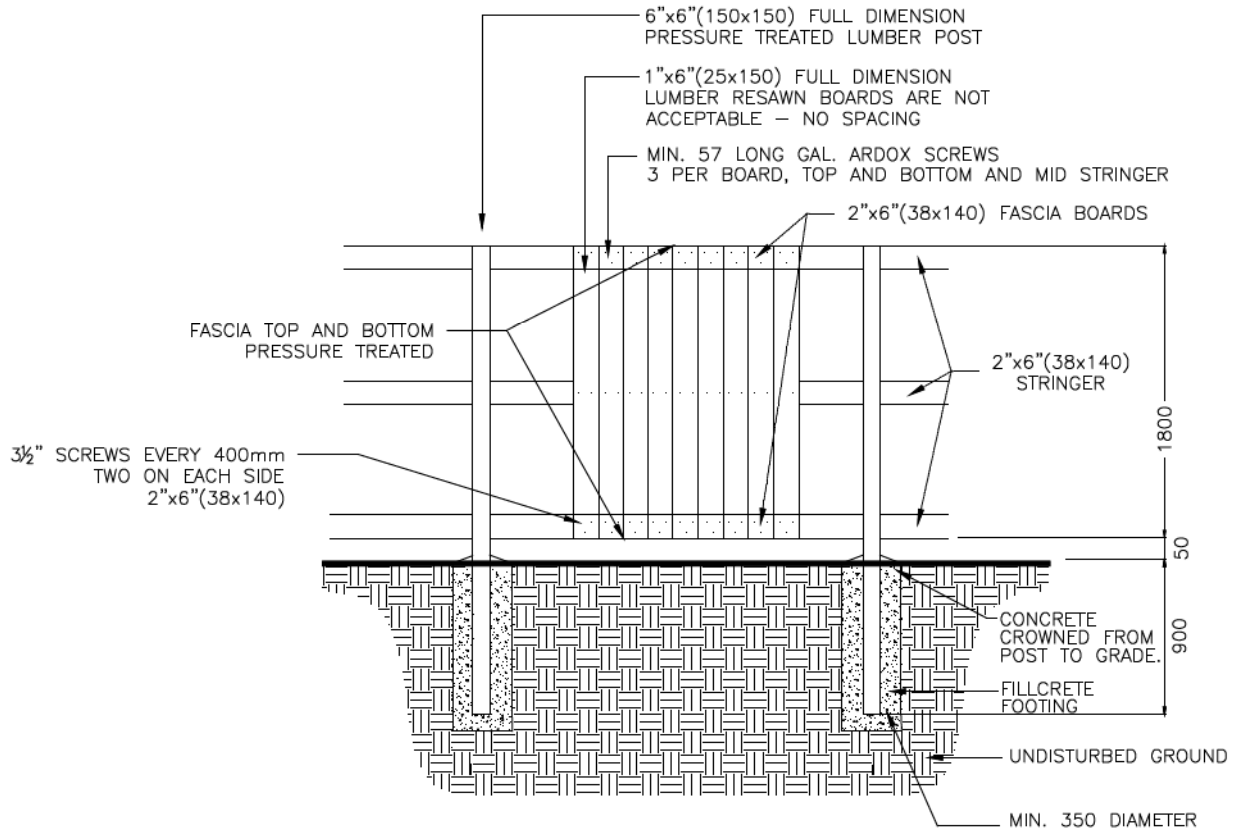
PLANTING AROUND SWITCHING CUBICLE

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 22/02/95 | Scale: N.T.S. | Drawn: DAN LECKIE

DWG. NO.
61104
Planning & Development Services Department



FENCE PLAN



FENCE SECTION

NOTE:
–POST HOLES SHOULD BE EXCAVATED TO REACH A DEPTH OF UNDISTURBED SUBGRADE.
–SMOOTH SIDE OF PICKETS TO BE FACING PUBLIC PROPERTY, STRINGERS TO BE INSIDE PRIVATE PROPERTY.
–ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.
–PRE–STAIN, TWO COATS PRIOR TO INSTALLATION, TOUCH UP AFTER CONSTRUCTION.
–150mm INSIDE PROPERTY LINE.

REVISIONS

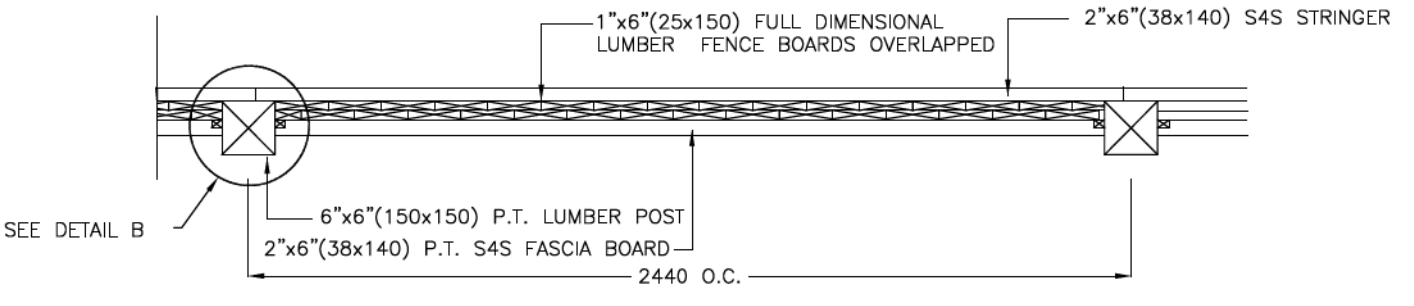
Date	Details	Drawn
12/10/22	REVISED DRAWING	J.E.
11/05/02	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
06/03/10	Changed concrete crown	M. Forgues
05/10/24	Added concrete crown note	M. Forgues

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

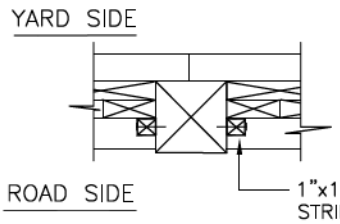
1.8m WOOD SCREEN FENCE

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 06/12/93 Scale: N.T.S. Drawn: D. BROWN

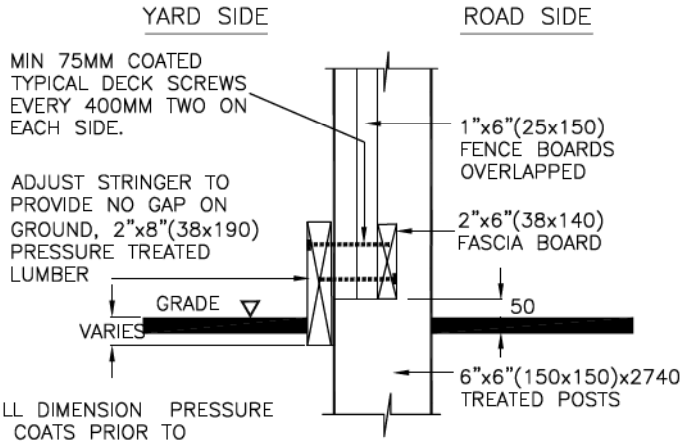
DWG. NO.
61201
Planning & Development Services Department



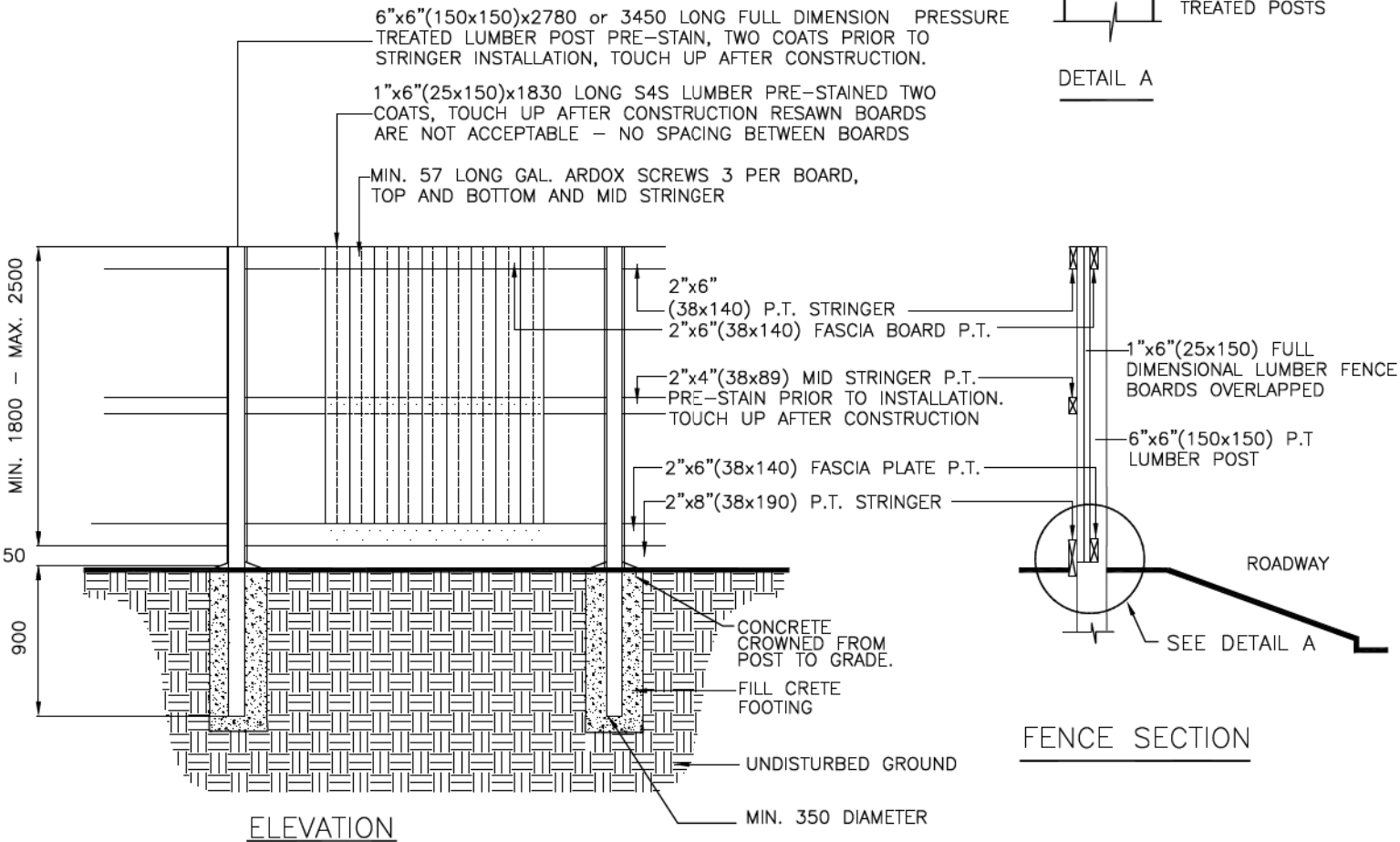
PLAN VIEW



DETAIL B



DETAIL A



ELEVATION

FENCE SECTION

NOTE:
- POST HOLES TO BE EXCAVATED TO REACH A DEPTH OF UNDISTURBED SUBGRADE.
- ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.
- PRE-STAIN, TWO COATS PRIOR TO INSTALLATION, TOUCH UP AFTER CONSTRUCTION.

REVISIONS

Date	Details	Drawn
12/10/22	REVISED DRAWING	J. E.
11/05/02	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
05/02/11	Adjusted Concrete Footings	L. Laing
02/01/23	Changed structural stringer to fascia board	A. McLenaghan

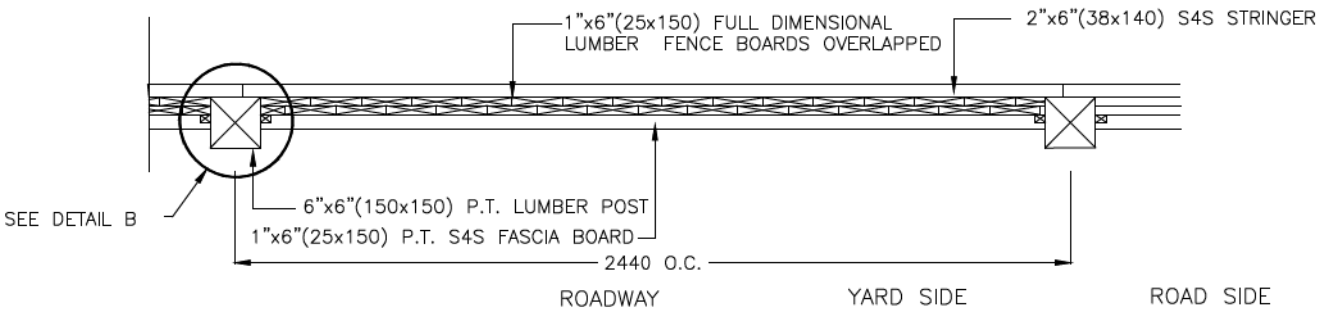
Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

NOISE ATTENUATION FENCE

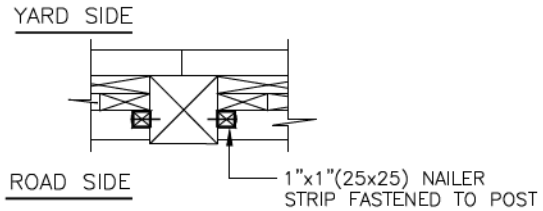
Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 17/02/95 | Scale: N.T.S. | Drawn: DAN LECKIE

DWG. NO. 61202

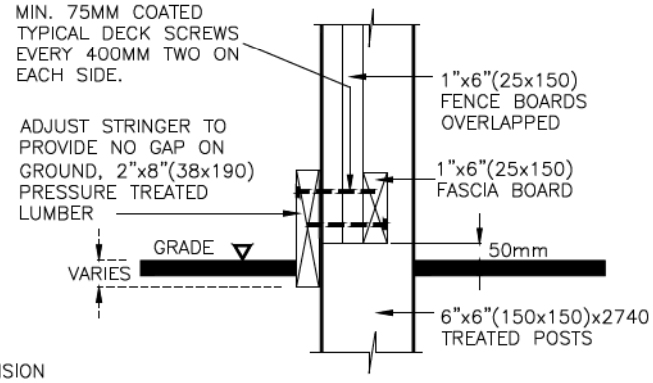
Planning & Development Services Department



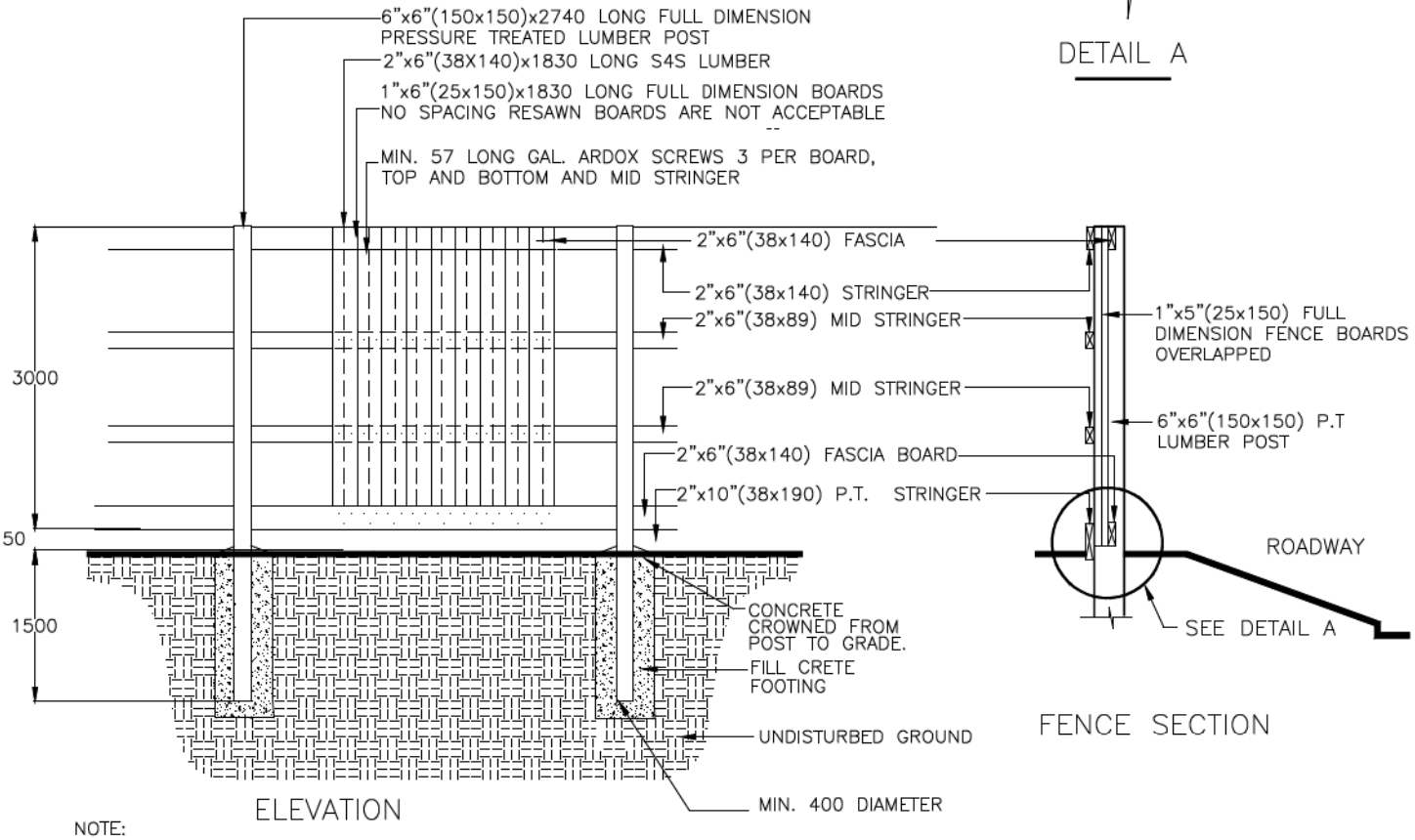
PLAN VIEW



DETAIL B



DETAIL A



ELEVATION

FENCE SECTION

NOTE:
–POST HOLES TO BE EXCAVATED TO REACH A DEPTH OF UNDISTURBED SUBGRADE.
–ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.
–PRE–STAIN, TWO COATS PRIOR TO INSULATION, TOUCH UP AFTER CONSTRUCTION.

REVISIONS

Date	Details	Drawn
12/10/23	REVISED LUMBER DIMENSIONS	J. ORR
11/05/02	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
06/03/10	Changed concrete crown	M. Forgues
05/02/11	Adjusted Concrete Footings	L. Laing

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

3.0m DOUBLE CLOSED BOARD FENCE

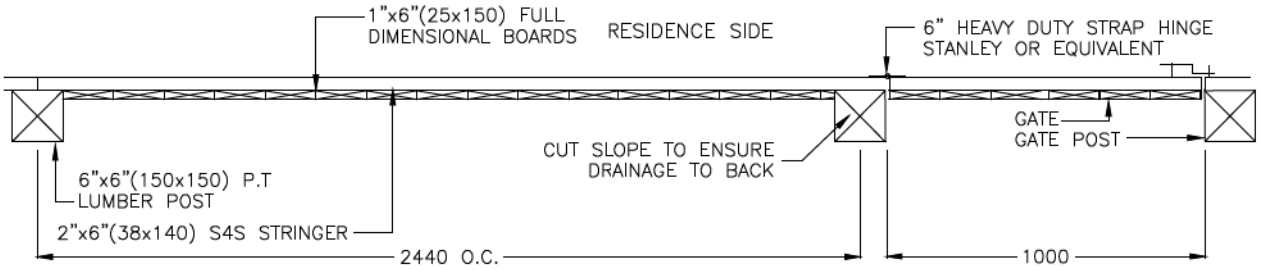
Approved: P. Alexander, AALA, CSLA

Checked: J.M. Talbot, MLA, CSLA

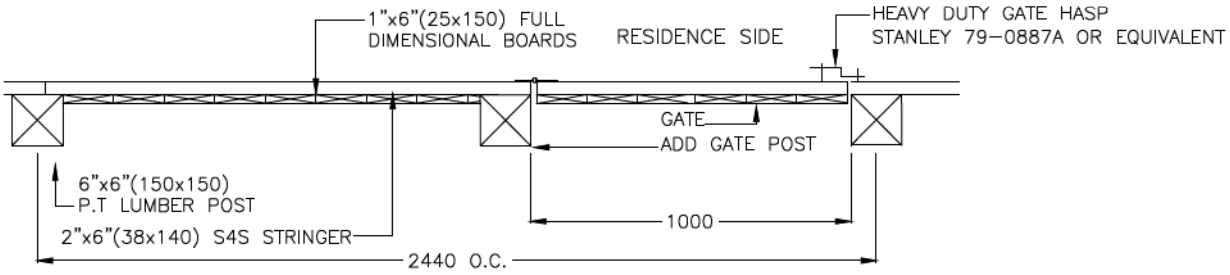
Date: 08/04/95 | Scale: N.T.S. | Drawn: DAN LECKIE

DWG. NO. 61203

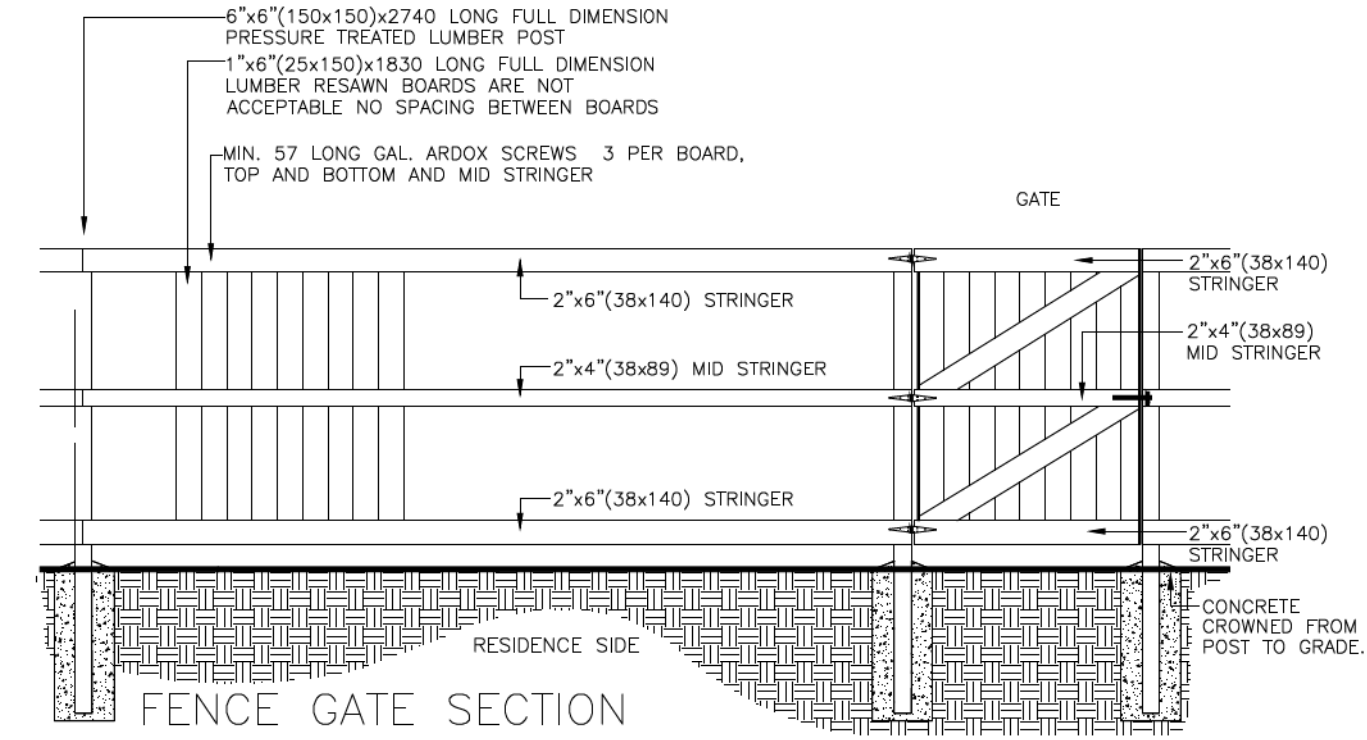
Planning & Development Services Department



NEW FENCE GATE DETAIL



EXISTING FENCE GATE DETAIL (RETRO-FIT)



FENCE GATE SECTION

NOTE:
-POST HOLES TO BE EXCAVATED TO REACH A DEPTH OF UNDISTURBED SUBGRADE
-ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED
-PRE-STAIN, TWO COATS PRIOR TO INSTALLATION, TOUCH UP AFTER CONSTRUCTION

REVISIONS		
Date	Details	Drawn
12/10/23	REVISED LUMBER DIMENSIONS	J. ORR
11/05/02	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
06/03/10	Changed concrete crown	M. Forgues
05/10/24	Added concrete crown note	M. Forgues

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

WOOD FENCE GATE DETAIL

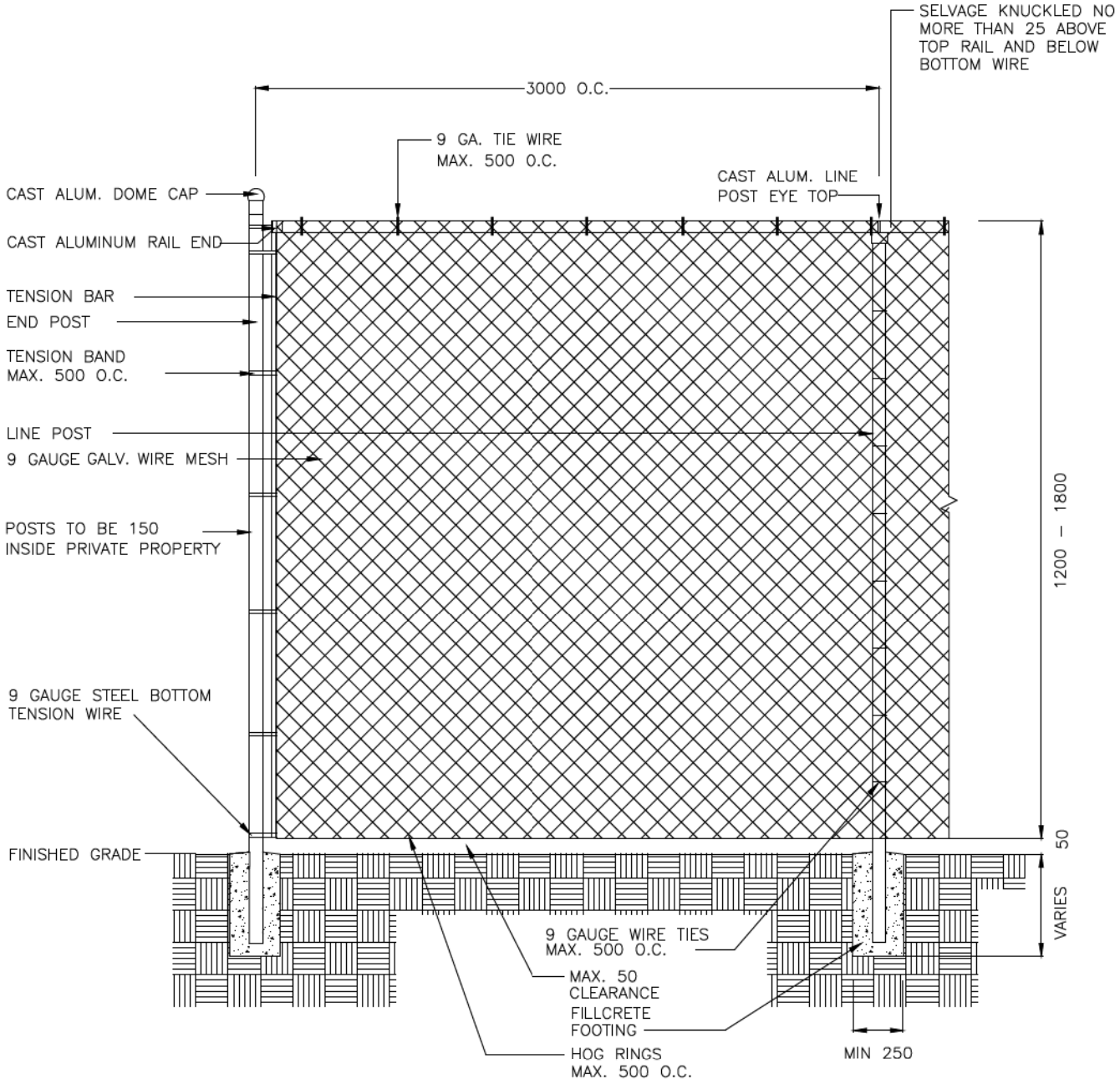
Approved: P. Alexander, AALA, CSLA

Checked: J.M. Talbot, MLA, CSLA

Date: 05/09/95 | Scale: N.T.S. | Drawn: DAN LECKIE

DWG. NO. 61204

Planning & Development Services Department



NOTE:

–REFER TO CHAIN LINK FENCING SPECIFICATION, SECTION 18 FOR FURTHER DETAILS.
–WIRE MESH TO BE NINE GUAGE BEFORE VINYL COATING.
–ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

REVISIONS

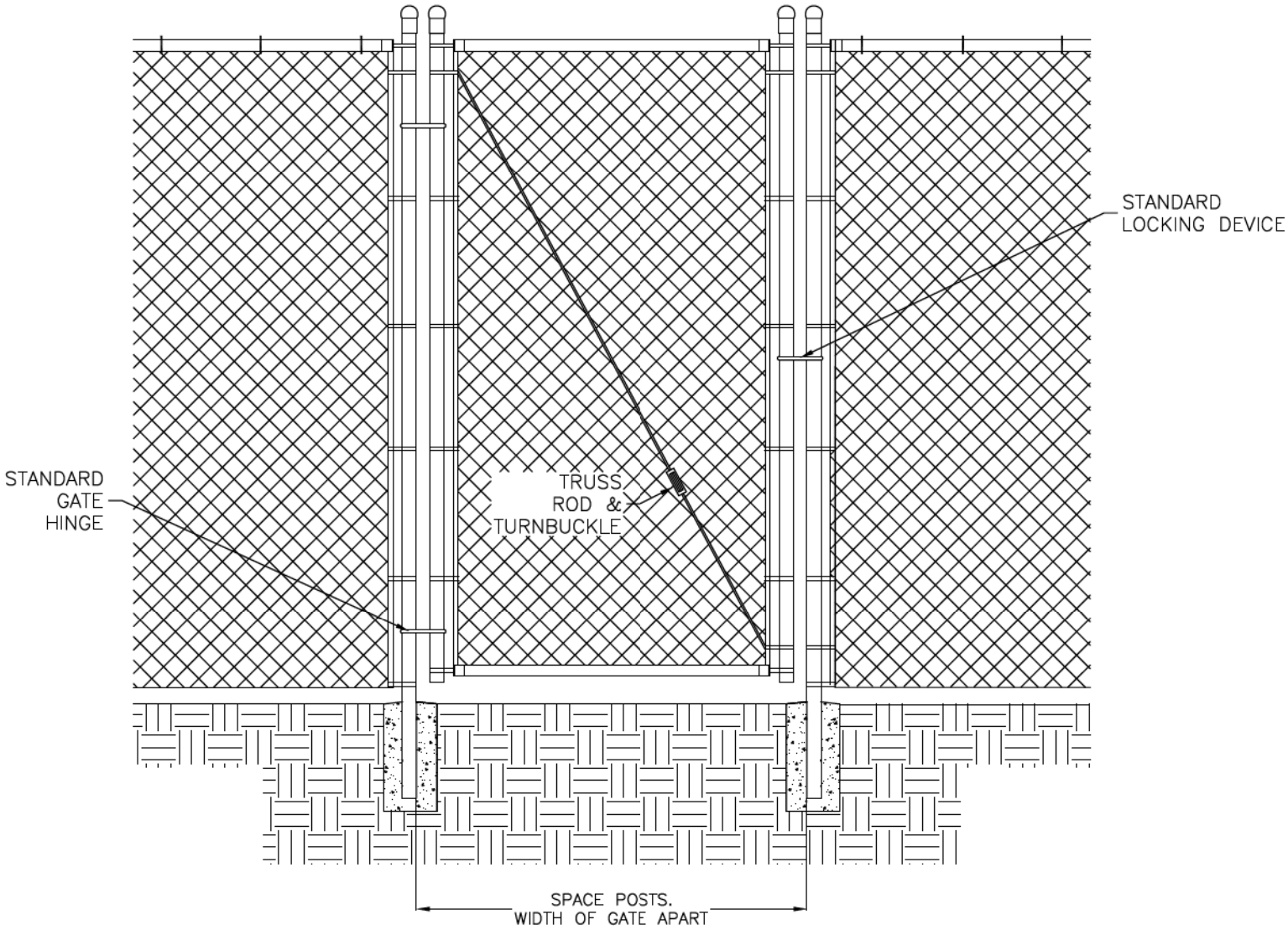
Date	Details	Drawn
11/05/02	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
05/02/11	Adjust Concrete Footings	L. Laing
02/06/24	Printed	A. McLenaghan
01/10/18	Added note for vinyl coating	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

CHAIN LINK FENCE

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 21/12/93 | Scale: N.T.S. | Drawn: D. BROWN

DWG. NO.
61205
Planning & Development Services Department



NOTE:

- REFER TO CHAIN LINK FENCING SPECIFICATION, SECTION 18 FOR FURTHER DETAILS.
- WIRE MESH TO BE NINE GUAGE BEFORE VINYL COATING.
- ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

REVISIONS		
Date	Details	Drawn
12/10/23	NEW DETAIL	J.E.

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

CHAIN LINK GATE

Approved: J.M. Talbot, MLA, CSLA

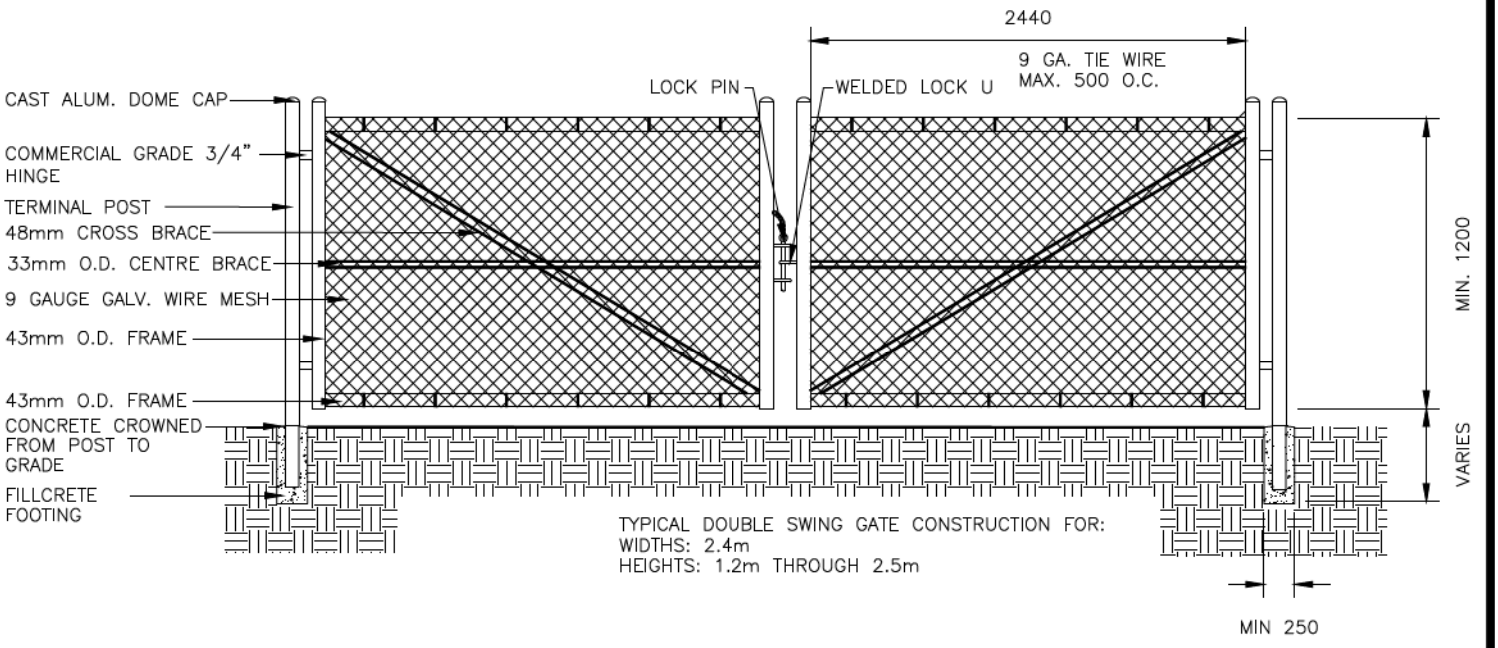
Checked: Jocelyn Thrasher–Haug, M.Sc., P.Ag., P.Biol.

Date: YY/MM/DD | Scale: N.T.S. | Drawn: DRAWN.BY

DWG. NO.

61206

Planning & Development Services Department



TYPICAL DOUBLE SWING GATE CONSTRUCTION FOR:
WIDTHS: 2.4m
HEIGHTS: 1.2m THROUGH 2.5m

NOTES:
–ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

REVISIONS

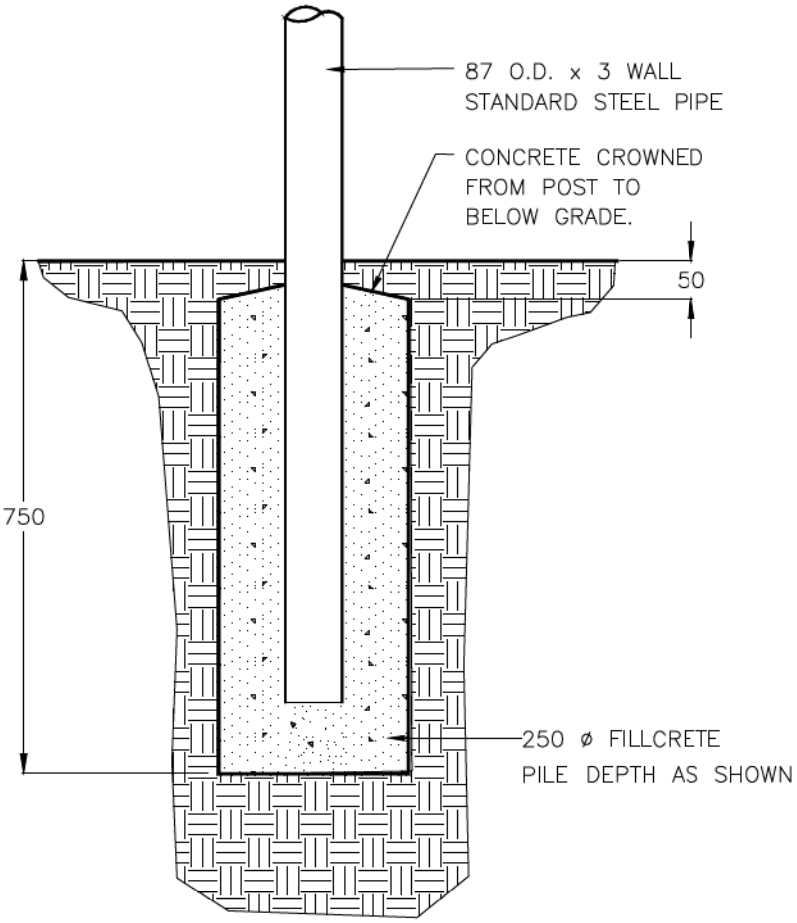
Date	Details	Drawn
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
06/03/10	Changed concrete crown	M. Forgues
05/10/24	Added concrete crown note	M. Forgues
05/02/14	Change Concrete Footings	L. Laing

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

CHAIN LINK MAINTENANCE GATE

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 01/11/28 | Scale: N.T.S. | Drawn: AMY McLENAGHAN

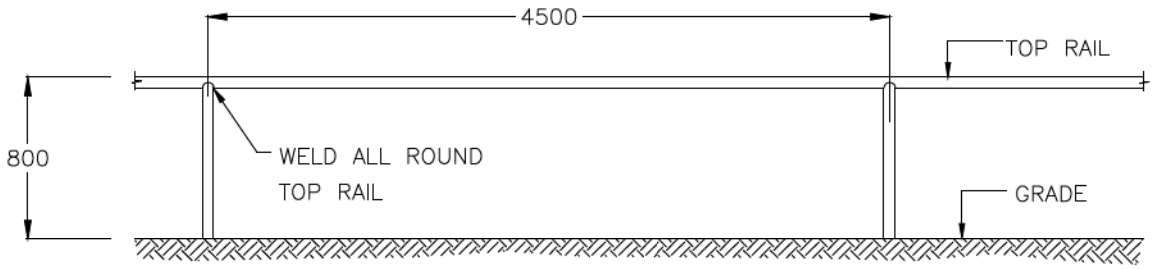
DWG. NO.
61207
Planning & Development Services Department



SECTION

NOTES:

- ALL WELDS TO BE GROUND SMOOTH
- PAINTING SHALL BE IN ACCORDANCE WITH THE C.P.C.A. (CANADIAN PAINTING CONTRACTORS ASSOCIATION) MANUAL FORMULA 12A.
- ALL EXPOSED SURFACES ABOVE GRADE SHALL BE PRIMED BEFORE PAINTING.
- ALL PAINT COLOURS TO BE APPROVED BY THE COUNTY PRIOR TO APPLICATION.



ELEVATION

NOTES:
—ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

REVISIONS		
Date	Details	Drawn
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
05/10/24	Added concrete crown note	M. Forgues
05/02/14	Change Concrete Footings	L. Laing
02/06/24	Printed	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

PIPE RAIL FENCE

Approved: P. Alexander, AALA, CSLA

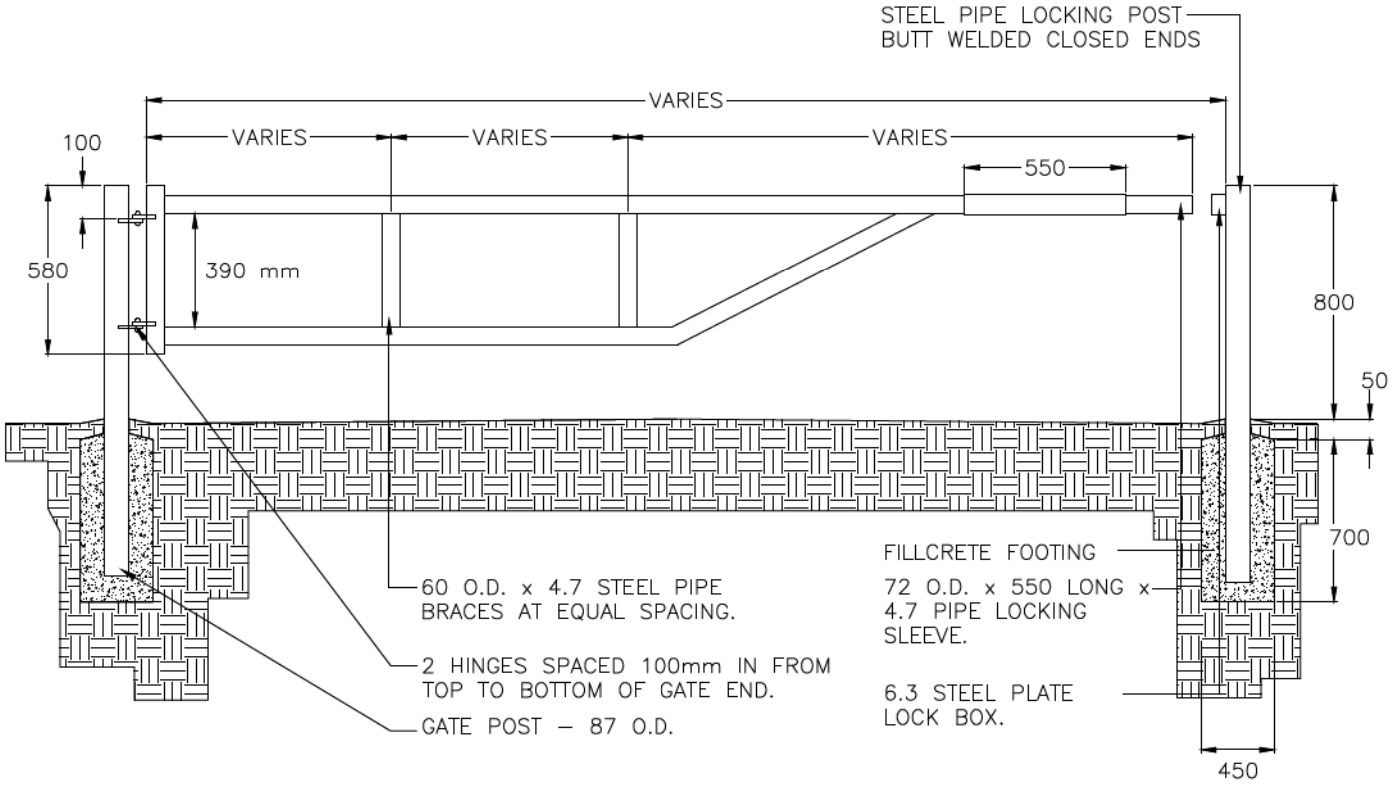
Checked: J.M. Talbot, MLA, CSLA

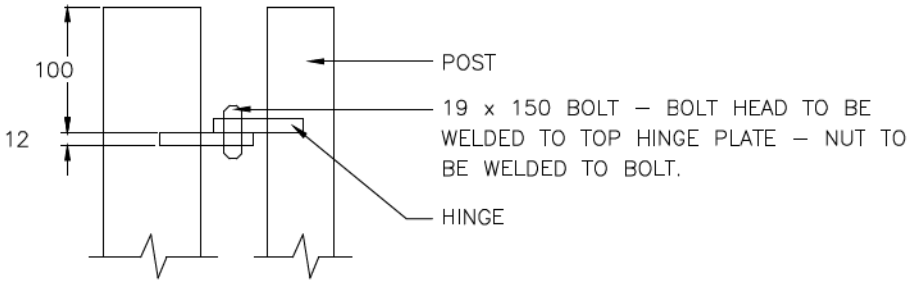
Date: 27/07/94 | Scale: N.T.S. | Drawn: DAN LECKIE

DWG. NO.

61208

Planning & Development Services Department





NOTE:
–GATE FINISH TO BE RED ALKYD SEMI–GLOSS PAINT.
–ALL WELDS TO BE GROUND SMOOTH.
–PAINTING SHALL BE IN ACCORDANCE WITH C.P.C.A.
(CANADIAN PAINTING CONTRACTORS ASSOCIATION)
–ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.

REVISIONS

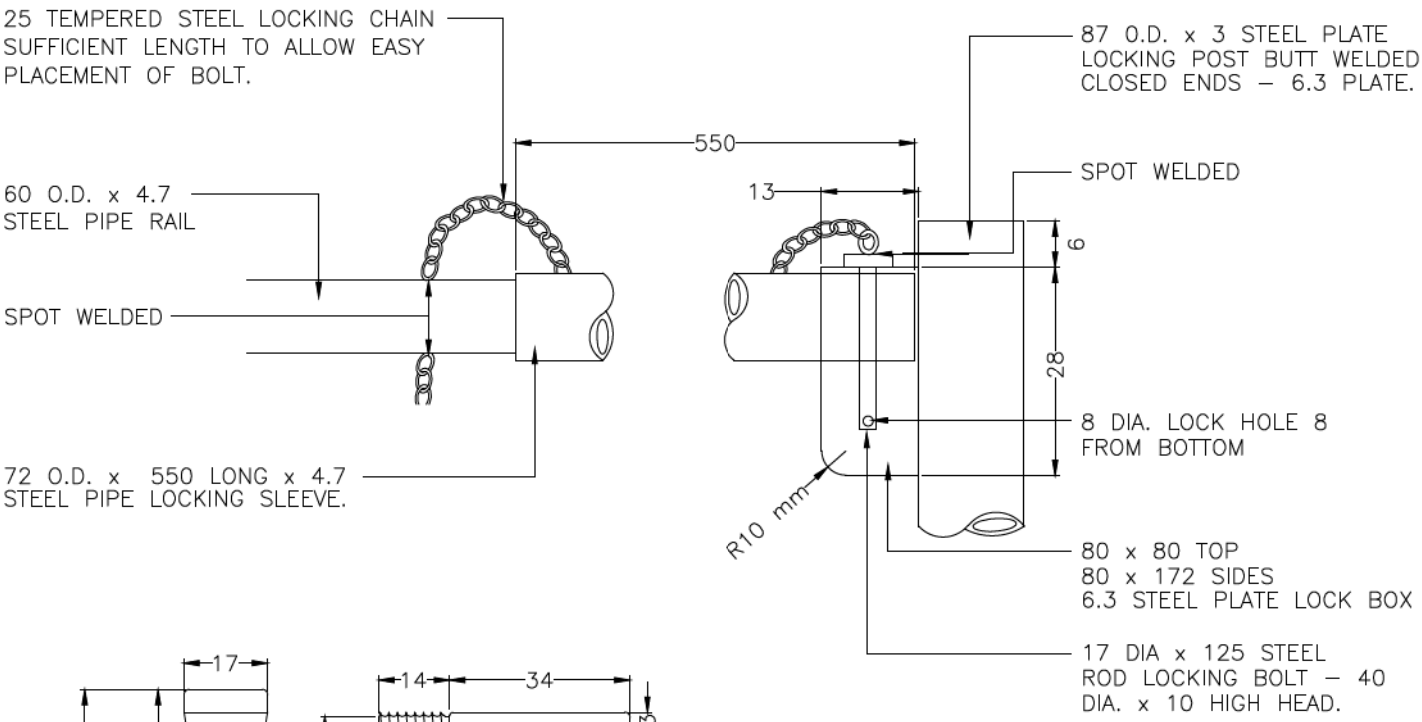
Date	Details	Drawn
YY/MM/DD	X	X
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
05/02/14	Change Concrete Footings	L. Laing
02/06/24	Printed	A. McLenaghan

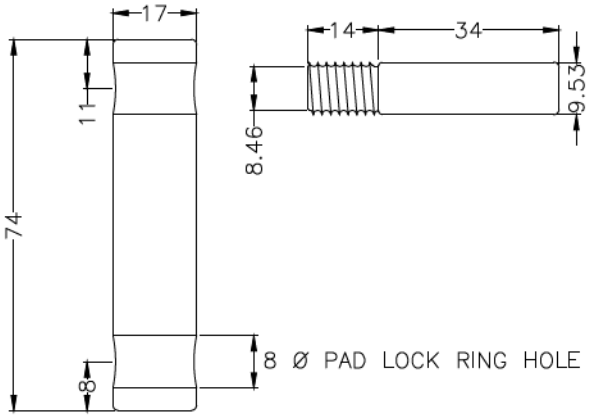
Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

STEEL PIPE GATE

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 01/11/23 | Scale: N.T.S. | Drawn: AMY McLENAGHAN

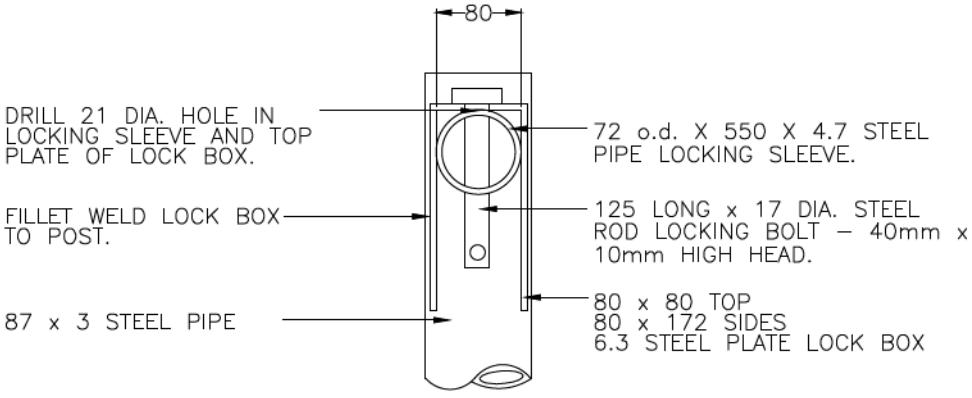
DWG. NO.
61209
Planning & Development Services Department





NOTE:
–THE FINISH SHALL BE RED ALKYD SEMI–GLOSS PAINT
–ALL DIMENSIONS ARE IN MILLIMETERS.

PIN DETAIL



NOTES:
–ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

REVISIONS		
Date	Details	Drawn
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
02/06/24	Printed	A. McLenaghan

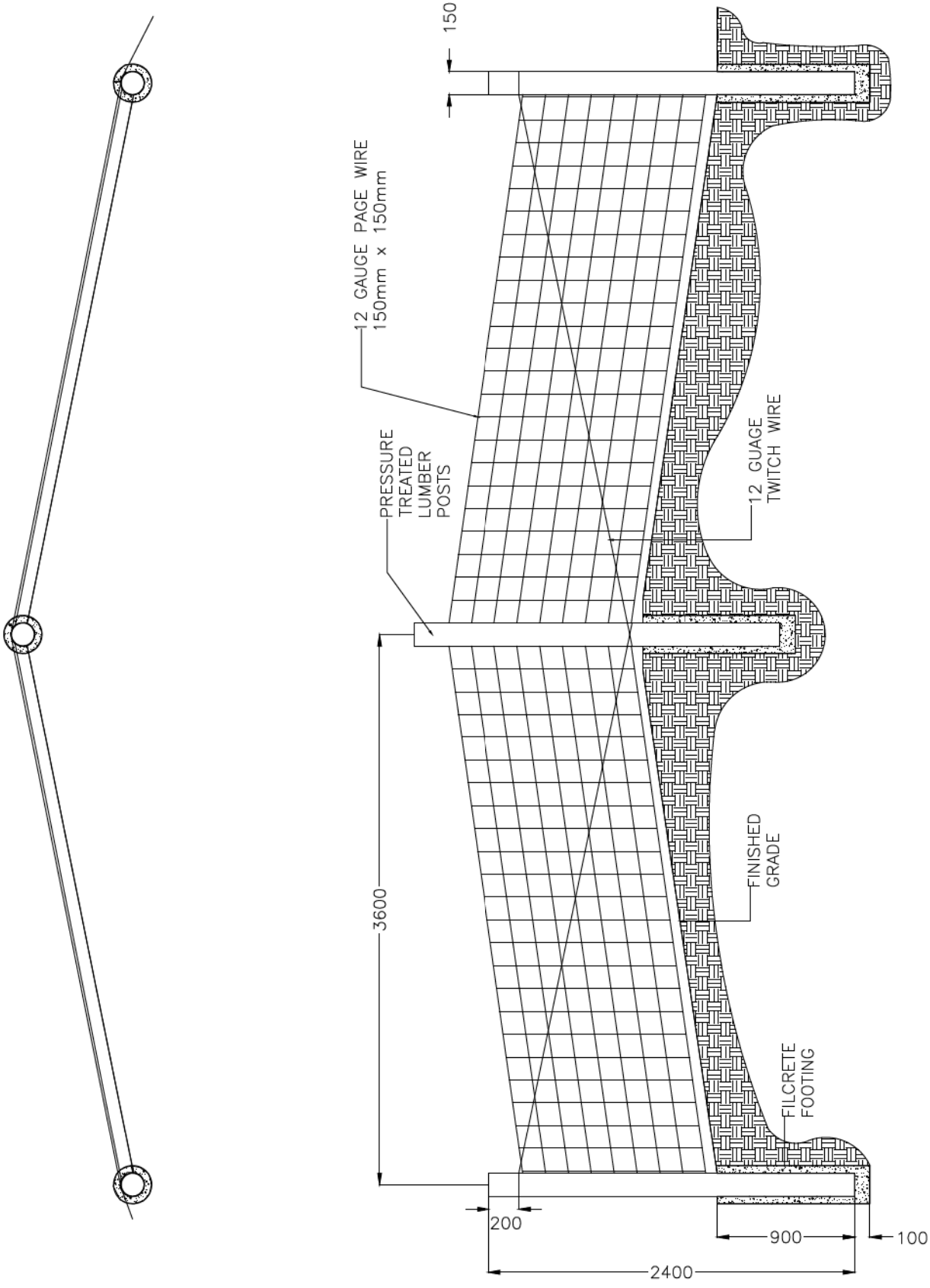
Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

STEEL PIPE GATE LOCKING SLEEVE

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 01/11/26 | Scale: N.T.S. | Drawn: AMY McLENAGHAN

DWG. NO. 61210

Planning & Development Services Department



REVISIONS		
Date	Details	Drawn
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
05/03/15	DETAIL ADDED TO OSDS	L. LAING

Strathcona County

2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

PAIGE WIRE FENCE DETAIL

Approved: P. Alexander, AALA, CSLA

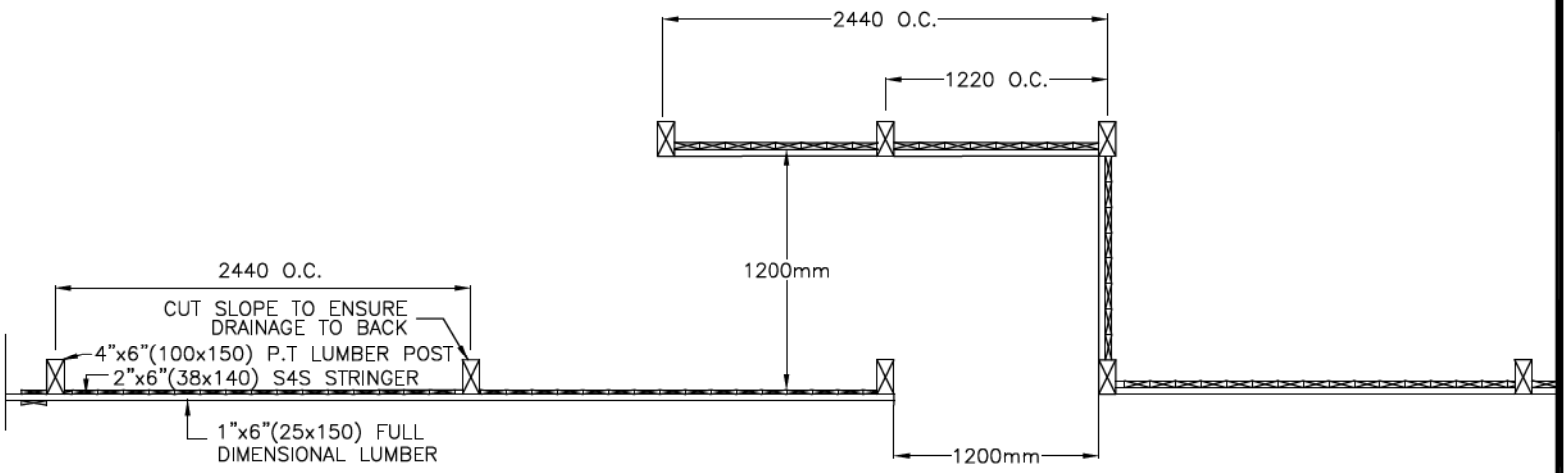
Checked: J.M. Talbot, MLA, CSLA

Date: 05/03/15 | Scale: N.T.S. | Drawn: L. LAING

DWG. NO.

61211

Planning & Development Services Department



NOTES:
—ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

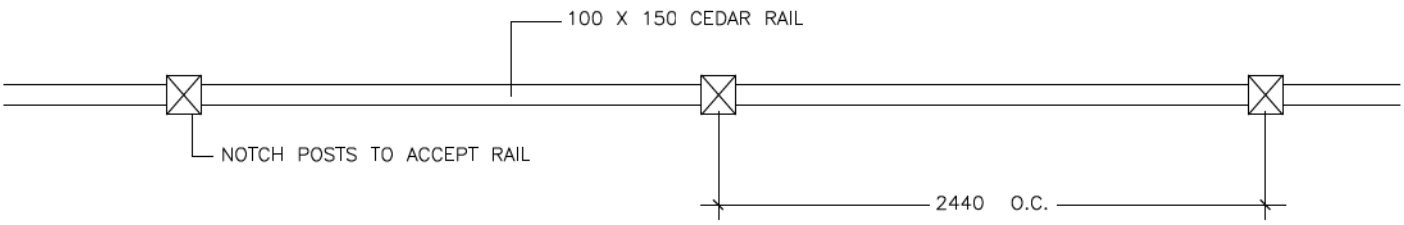
REVISIONS		
Date	Details	Drawn
12/10/23	REVISED LUMBER DIMENSIONS	J. ORR
11/05/04	REVISED DRAWING NUMBER & REVISIONS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
02/06/24	Printed	A. McLenaghan
02/01/29	Changed fence board size option	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

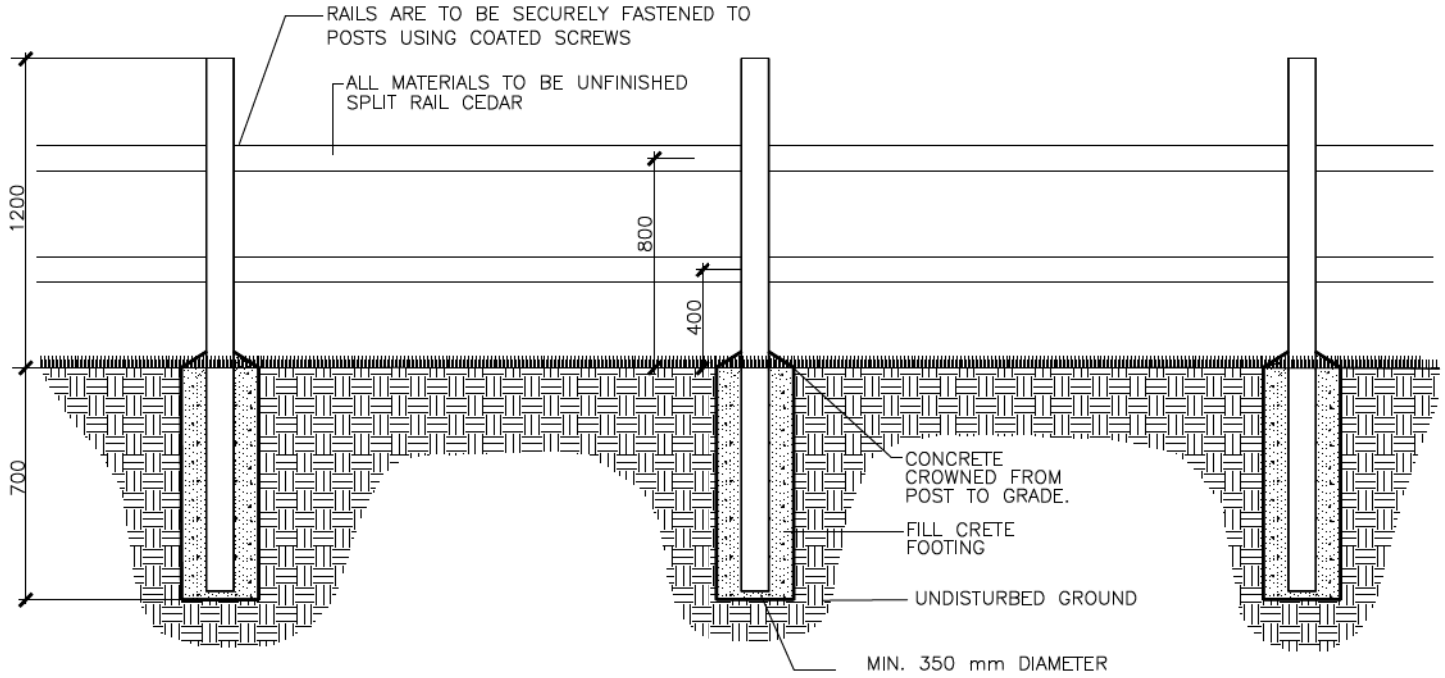
FENCE BAFFLE GATE

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 27/07/94 | Scale: N.T.S. | Drawn: D. BROWN

DWG. NO.
61212
Planning & Development Services Department



FENCE PLAN



FENCE SECTION

NOTE:
-POST HOLES SHOULD BE EXCAVATED TO REACH A DEPTH OF UNDISTURBED SUBGRADE.
-ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

REVISIONS		
Date	Details	Drawn
11/05/05	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
08/02/26	Detail Added to the OSDS	M. Forgues

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

SPLIT RAIL FENCE

Approved: P. Alexander, AALA, CSLA

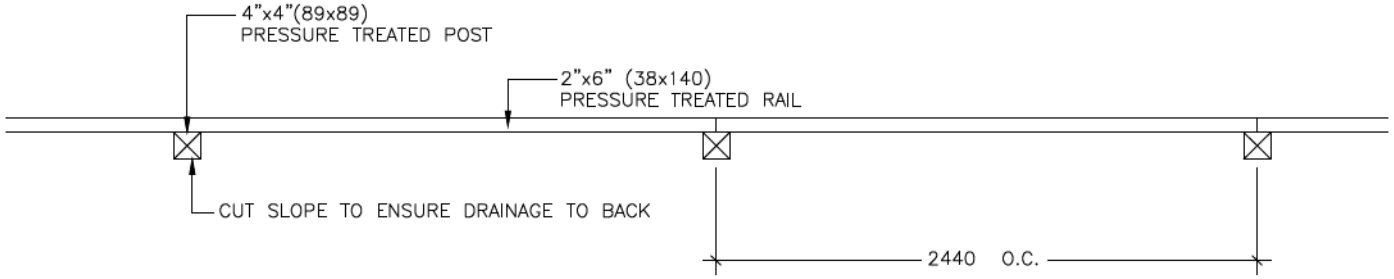
Checked: J.M. Talbot, MLA, CSLA

Date: 08/02/26 | Scale: N.T.S. | Drawn: M. FORGUES

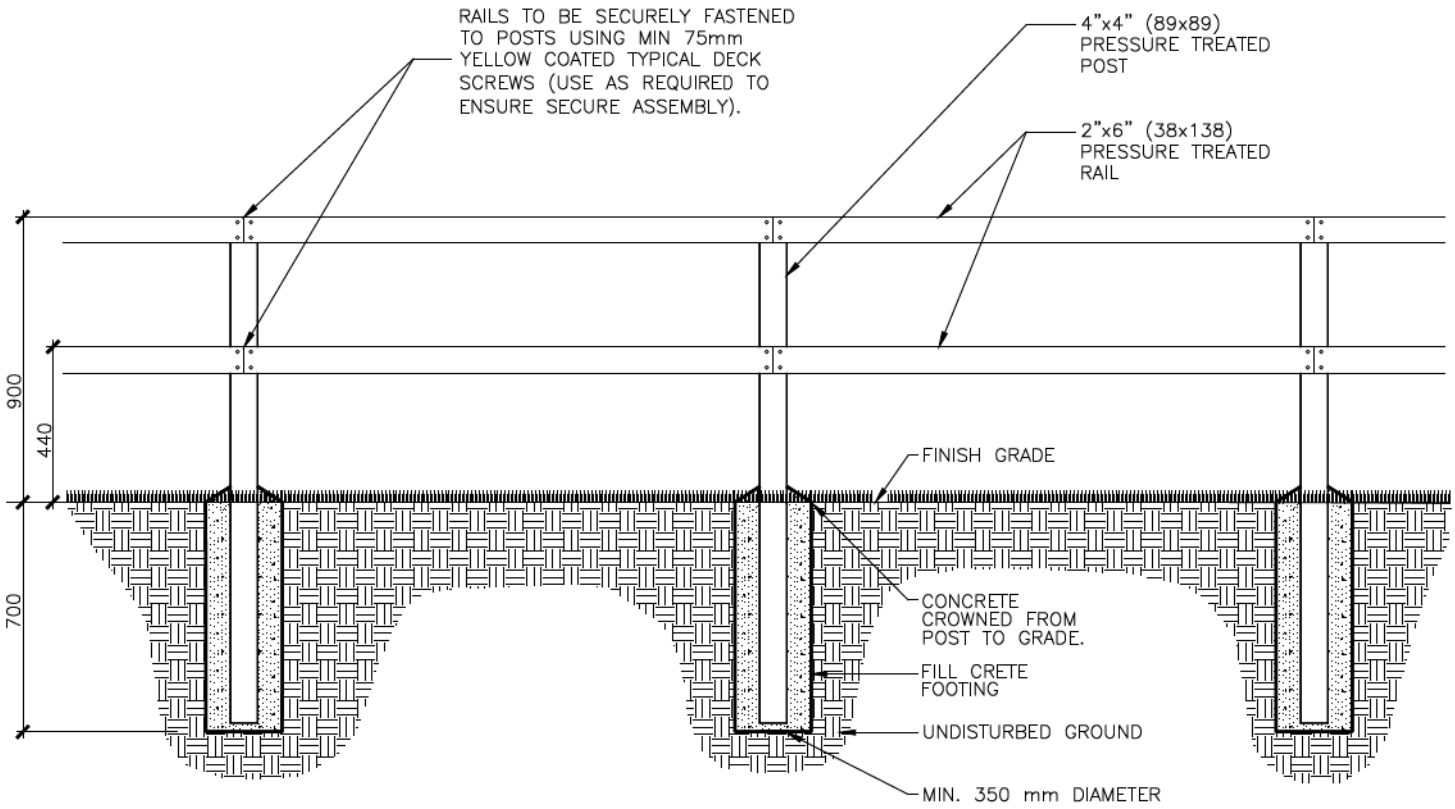
DWG. NO.

61213

Planning & Development Services Department



FENCE PLAN



FENCE SECTION

NOTE:
–ALL WOOD TO BE PRESSURE TREATED.
–ALL WOOD CUTS TO BE COATED WITH TWO COATS OF APPROVED WOOD PRESERVATIVE.
–POST HOLES SHOULD BE EXCAVATED TO REACH A DEPTH OF UNDISTURBED SUBGRADE.
–ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

REVISIONS		
Date	Details	Drawn
12/10/23	NEW STANDARD DETAIL	K. HARRIS

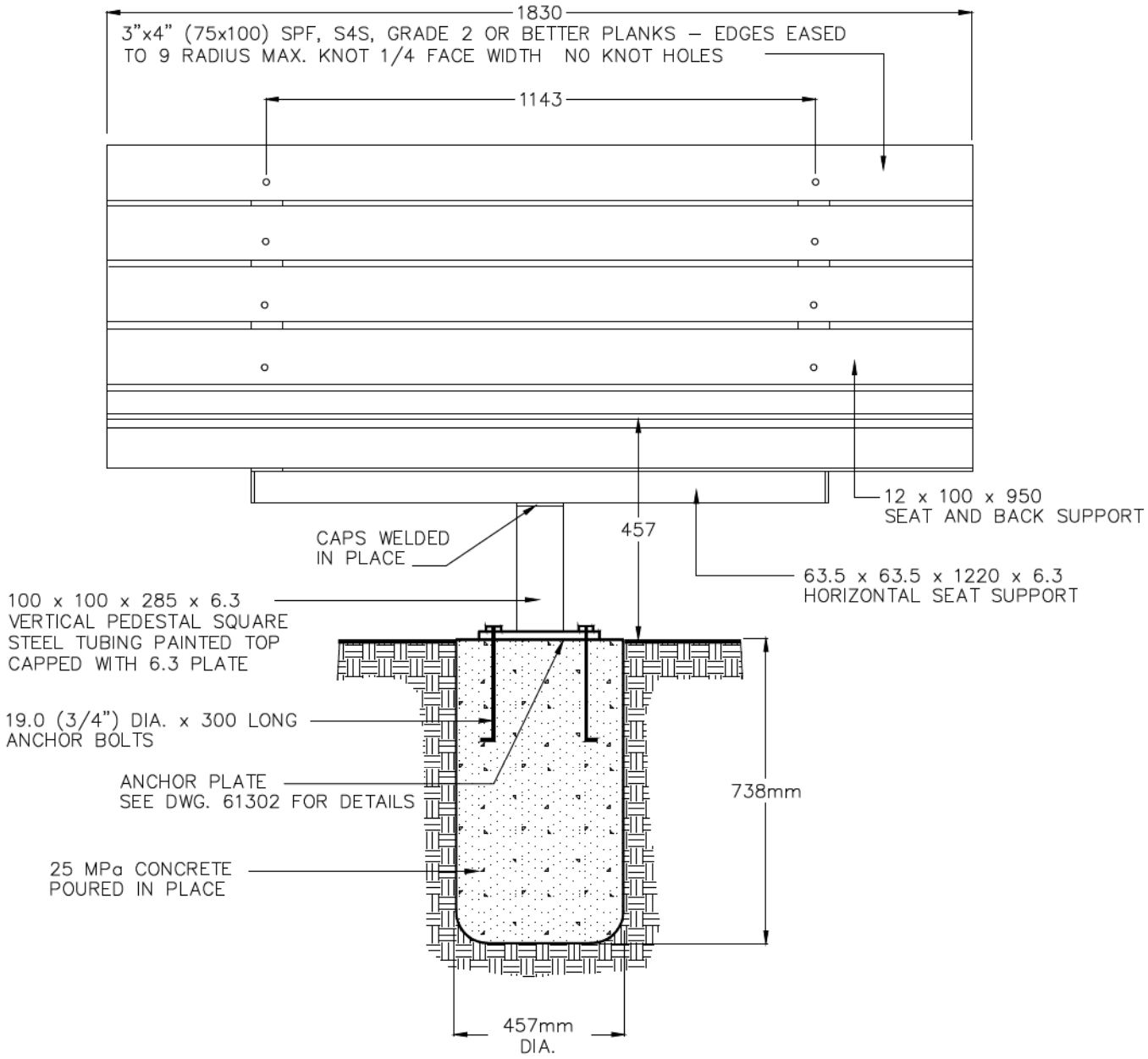
Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

POST AND RAIL FENCE

Approved: J.M. Talbot, MLA, CSLA
Checked: Jocelyn Thrasher–Haug, M.Sc., P.Ag., P.Biol.
Date: 12/10/23 | Scale: N.T.S. | Drawn: K. HARRIS

DWG. NO. 61214

Planning & Development Services Department



FRONT VIEW

GENERAL NOTES:

- FINISH ON ALL METAL FRAME COMPONENTS TO BE BLACK ALKYD SEMI
- GLOSS PAINT OR POWDER COATED
- FRAME COMPONENTS SHALL BE ELECTRICALLY WELDED
- WOOD TO BE NON-PRESSURE TREATED SPF GRADE 2 OR BETTER
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED

REVISIONS		
Date	Details	Drawn
12/10/23	REVISED LUMBER DIMENSIONS	J. ORR
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
05/02/11	Remove Pressure Treated Wood	L. Laing
02/02/20	Lumber size	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

SINGLE PEDESTAL BENCH LAYOUT

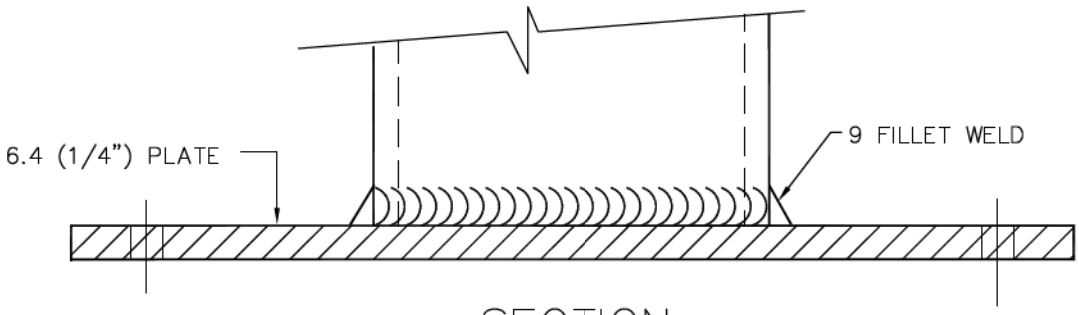
Approved: P. Alexander, AALA, CSLA

Checked: J.M. Talbot, MLA, CSLA

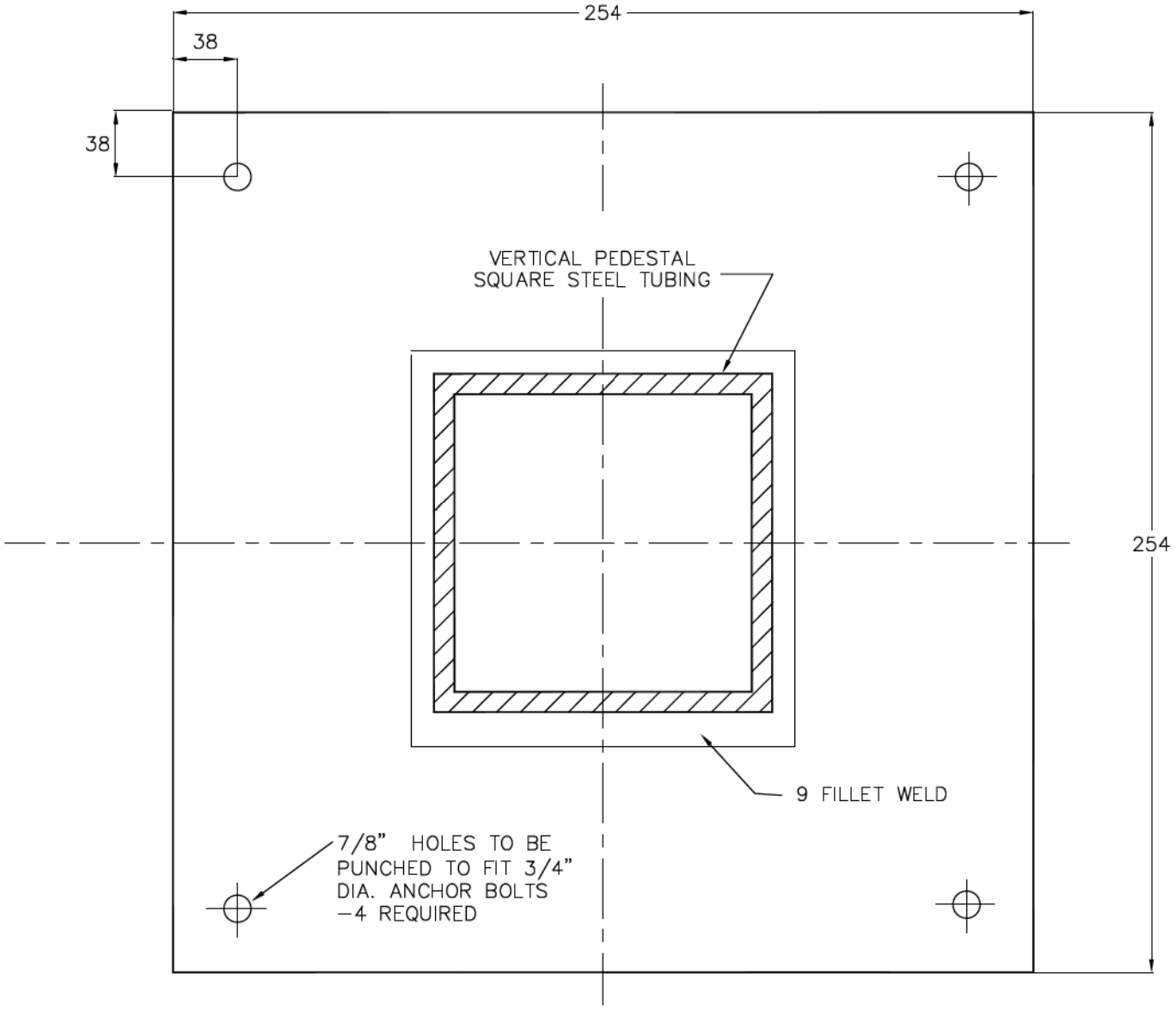
Date: 17/05/94 | Scale: N.T.S. | Drawn: DAN LECKIE

DWG. NO.
61301

Planning & Development Services Department



SECTION



PLAN VIEW – ANCHOR PLATE FOR BENCH, TABLES, T-BOLLARDS & RECEPTACLES

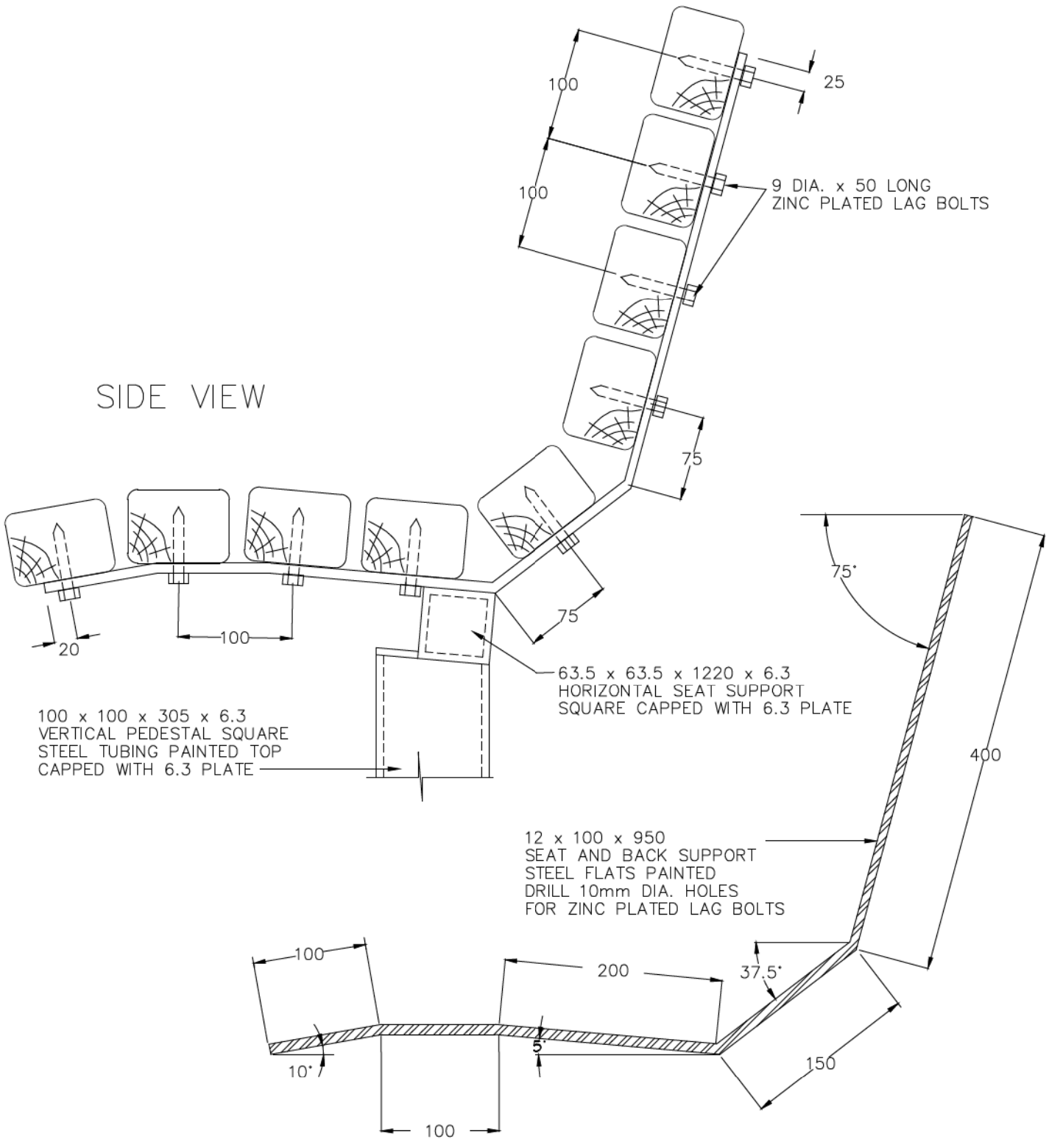
REVISIONS		
Date	Details	Drawn
12/10/23	REVISED DRAWING NUMBERS	J.E.
11/05/05	REVISED DRAWING NUMBERS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
05/02/11	Adjust size of bolts – notation	L. Laing
02/06/24	Printed	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

SINGLE PEDESTAL ANCHOR PLATE

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 09/09/94 | Scale: N.T.S. | Drawn: DAN LECKIE

DWG. NO.
61302
Planning & Development Services Department



NOTE:
—SEE DWG 61305 FOR ANCHOR PLATE DETAILS.
—ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

SUPPORT DETAIL

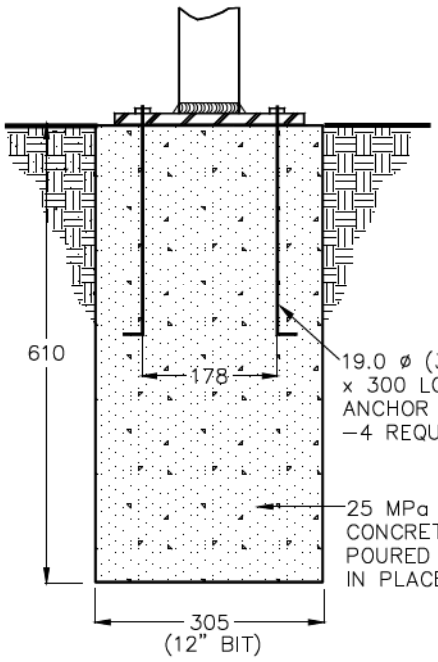
REVISIONS		
Date	Details	Drawn
12/10/23	REVISED DRAWING NUMBERS	J. ORR
11/05/05	REVISED DRAWING NUMBERS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
02/06/24	Printed	A. McLenaghan
02/02/20	Lumber size	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

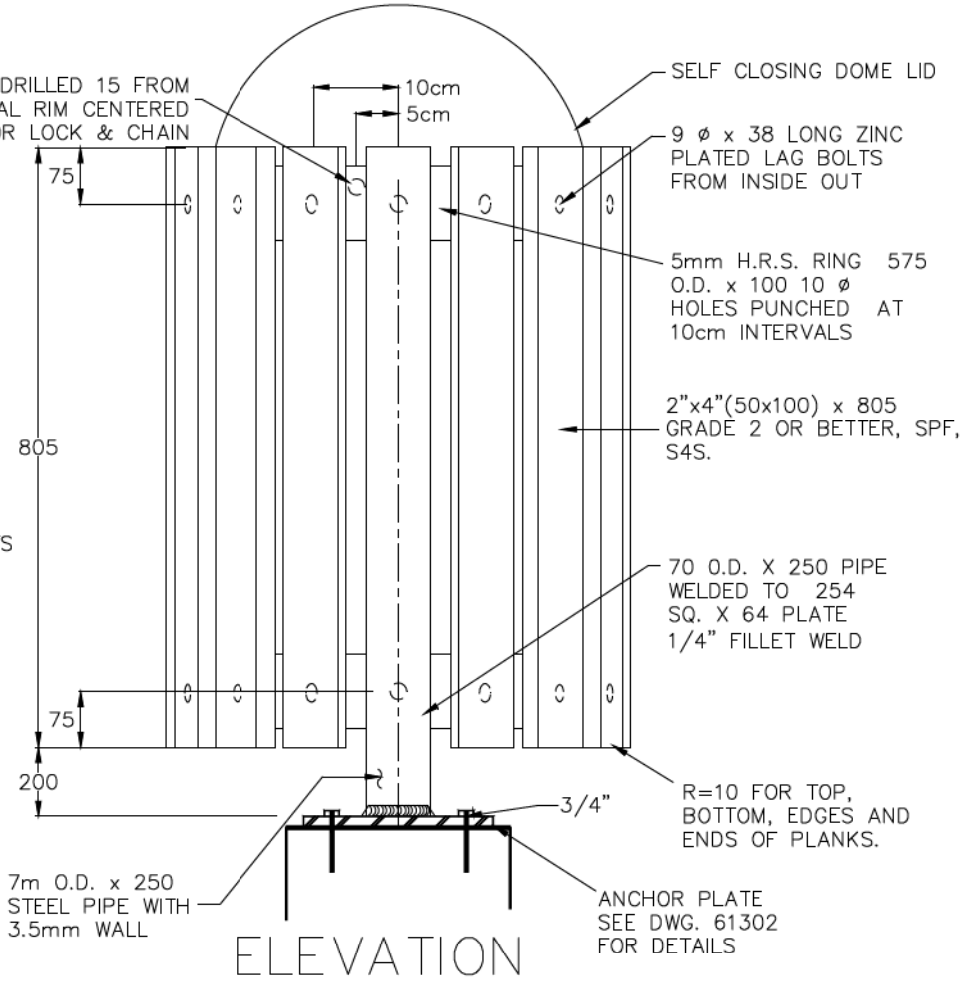
SINGLE PEDESTAL BENCH DETAIL

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 19/04/94 | Scale: N.T.S. | Drawn: DAN LECKIE

DWG. NO.
61303
Planning & Development Services Department



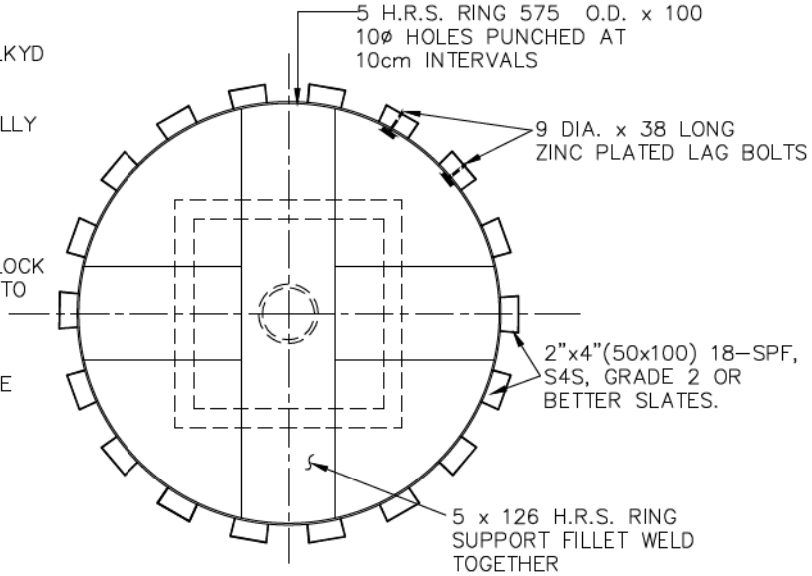
CONCRETE DETAIL



ELEVATION

NOTES:
- ALL METAL PARTS TO BE FINISHED WITH BLACK ALKYD SEMI
- GLOSS PAINT OR POWDER COATED
- RING SUPPORT AND LOWER RING TO BE ELECTRICALLY WELDED INTO ONE PIECE UNIT
- FASTENERS SHALL BE ZINC PLATED
- ALL WOOD TO BE SPF, S4S, GRADE 2 OR BETTER
- ALL WOOD TO BE NON-PRESSURE TREATED
- LOCK TO BE HARDENED TEMPERED STEEL GUARD LOCK
- CHAIN TO BE PLASTIC COATED CABLE WITH CLIPS TO ATTACH LID TO BARREL
- SELF CLOSING DOME LID AVAILABLE THROUGH RJ THOMAS MANUFACTURING
- ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED

LINER
- 25 GAL. 18 GAUGE BARREL
- BLACK SEMI-GLOSS OUTSIDE COATED INSIDE
- 3 HOLES PUNCHED IN BOTTOM FROM INSIDE OUT FOR WATER DRAINAGE.



PLAN VIEW

REVISIONS		
Date	Details	Drawn
12/10/23	REVISED LUMBER DIMENSIONS	J. ORR
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
08/02/26	Added lid, lock and chain details	M. Forgues
05/02/11	Remove Pressure Treated Wood	L. Laing

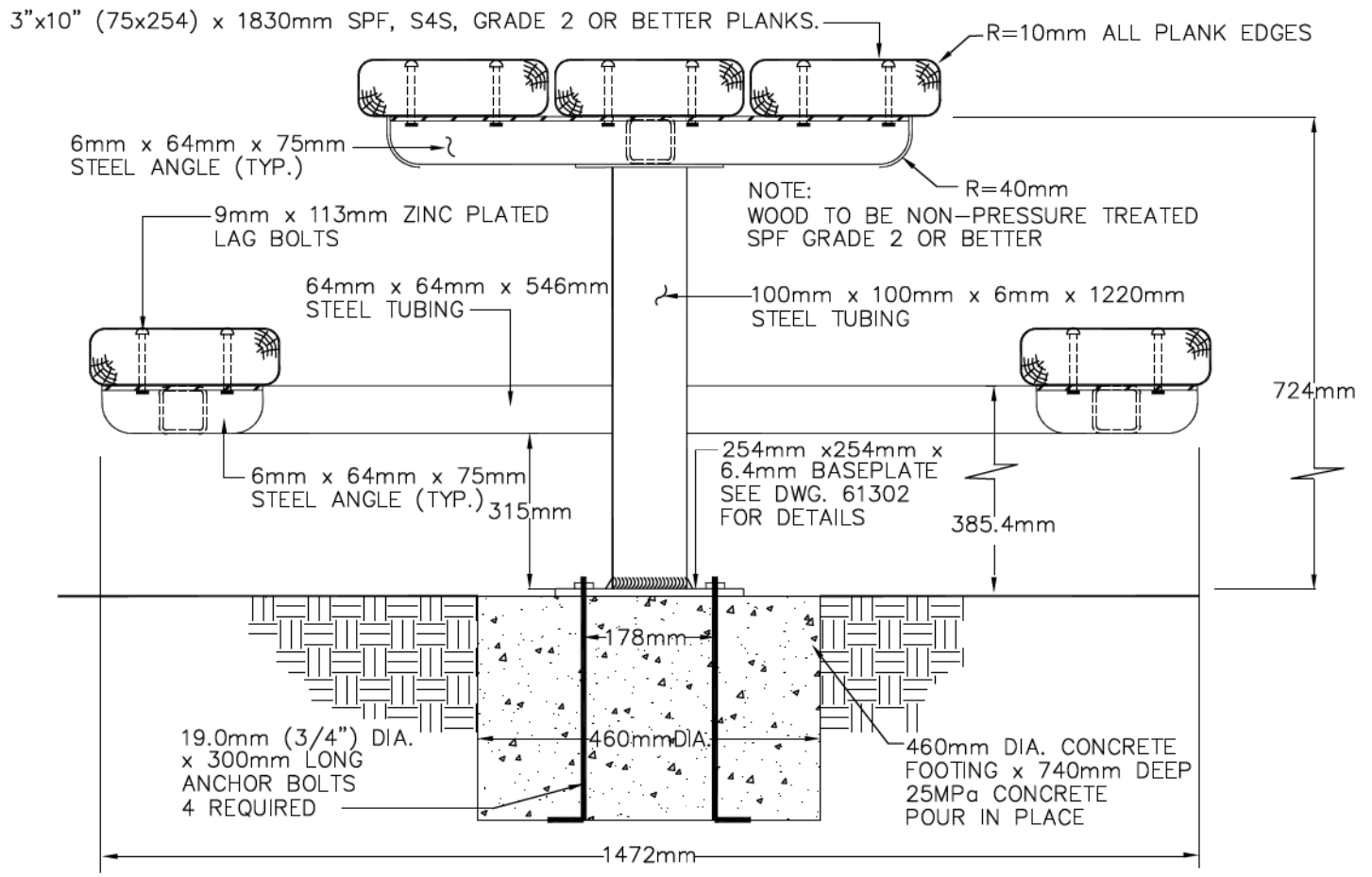
Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

TRASH RECEPTACLE DETAILS

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 06/04/94 | Scale: N.T.S. | Drawn: DAN LECKIE

DWG. NO. 61304

Planning & Development Services Department



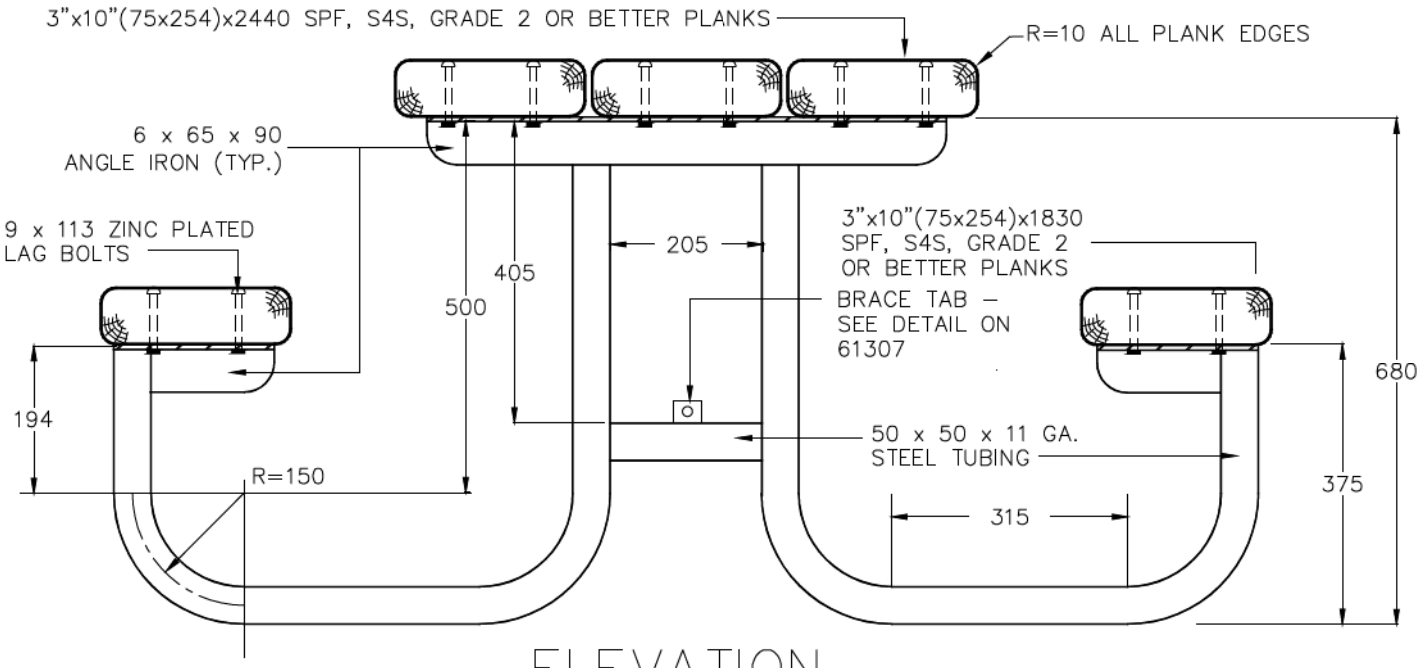
REVISIONS		
Date	Details	Drawn
12/10/23	REVISED LUMBER DIMENSIONS	J.E.
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. BUTT
05/02/11	Remove Pressure Treated Wood	L. Laing
02/02/20	15.9 dia. anchor bolts to 19mm dia.	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

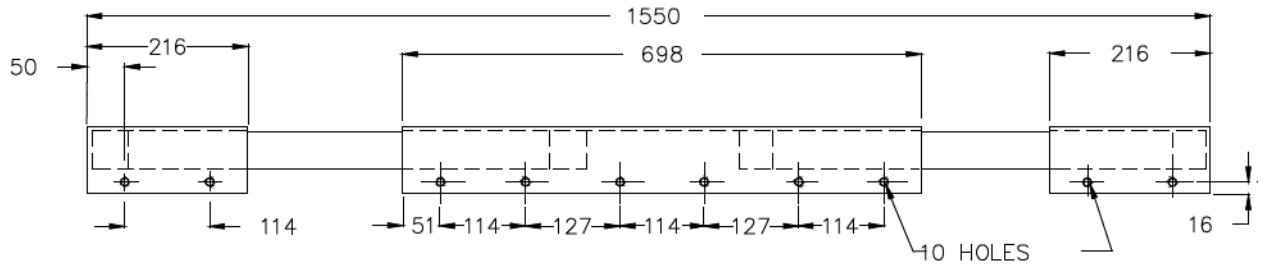
PEDESTAL MOUNTED PICNIC TABLE DETAIL

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 06/04/94 | Scale: N.T.S. | Drawn: DAN LECKIE

DWG. NO.
61305
Planning & Development Services Department



ELEVATION



PLAN VIEW – FRAME ONLY

NOTES:
–ALL METAL PARTS FINISHED WITH BLACK ALKYD SEMI–GLOSS PAINT OR POWDER COATED.
–ALL MECHANCIAL FASTENERS SHALL BE ZINC PLATED.
–ALL LUMBER TO BE SPF, S4S, GRADE 2 OR BETTER.
–WOOD TO BE NON–PRESSURE TREATED SPF GRADE 2 OR BETTER
–ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.

REVISIONS		
Date	Details	Drawn
12/10/23	REVISED LUMBER DIMENSIONS	J. ORR
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
05/02/11	Remove Pressure Treated Wood	L. Laing
06/02/24	Printed	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

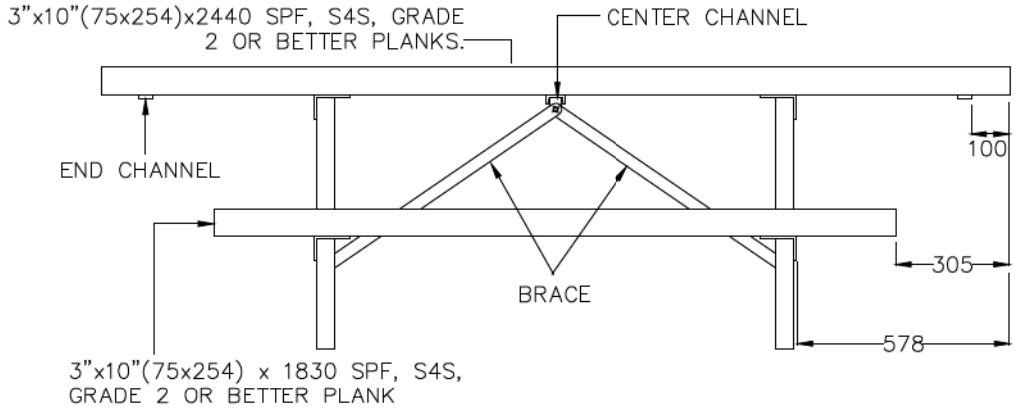
PORTABLE PICNIC TABLE PLAN/ELEVATION

Approved: P. Alexander, AALA, CSLA

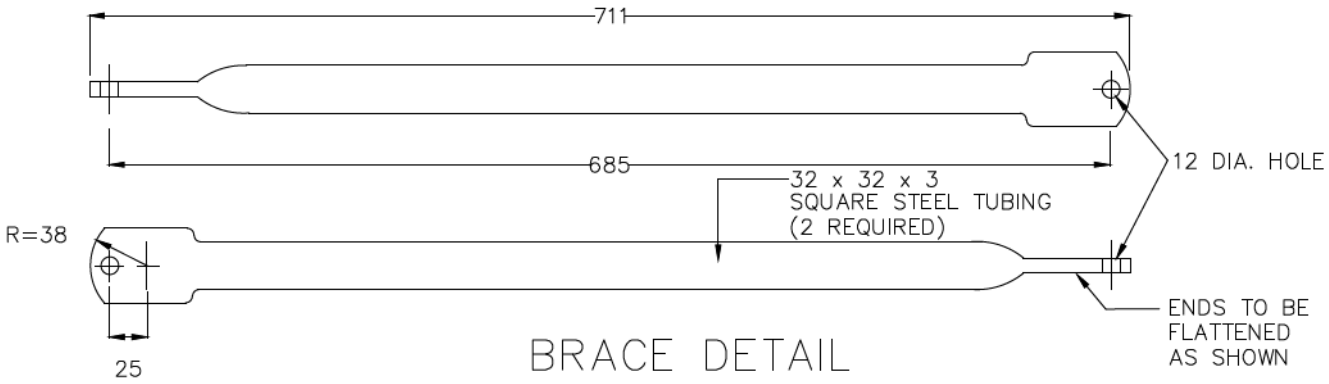
Checked: J.M. Talbot, MLA, CSLA

Date: 11/04/94 | Scale: N.T.S. | Drawn: DAN LECKIE

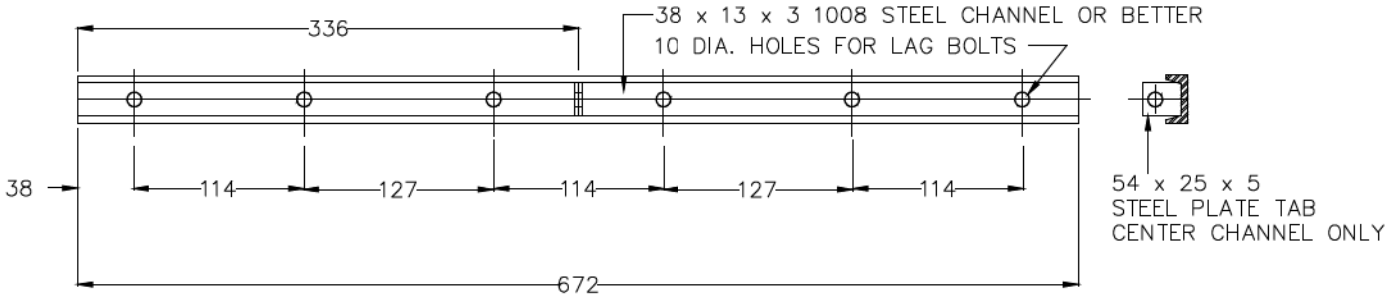
DWG. NO.
61306
Planning & Development Services Department



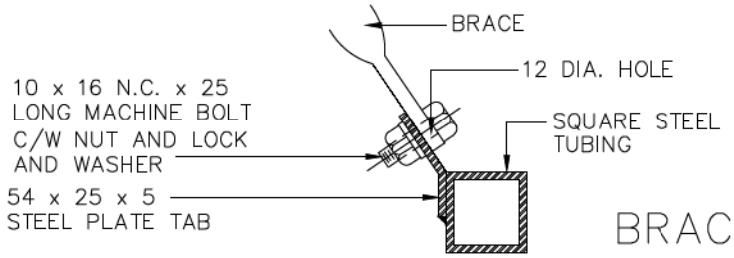
ELEVATION



BRACE DETAIL



CHANNEL DETAIL



BRACE TAB DETAIL

NOTES:
—WOOD TO BE NON—PRESSURE TREATED SPF GRADE 2 OR BETTER.
—ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

REVISIONS		
Date	Details	Drawn
12/10/23	REVISED DRAWING DIMENSIONS	J. ORR
11/05/05	REVISED DRAWING NUMBERS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
05/02/11	Remove Pressure Treated Wood	L. Laing
02/06/24	Printed	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

PORTABLE PICNIC TABLE DETAILS

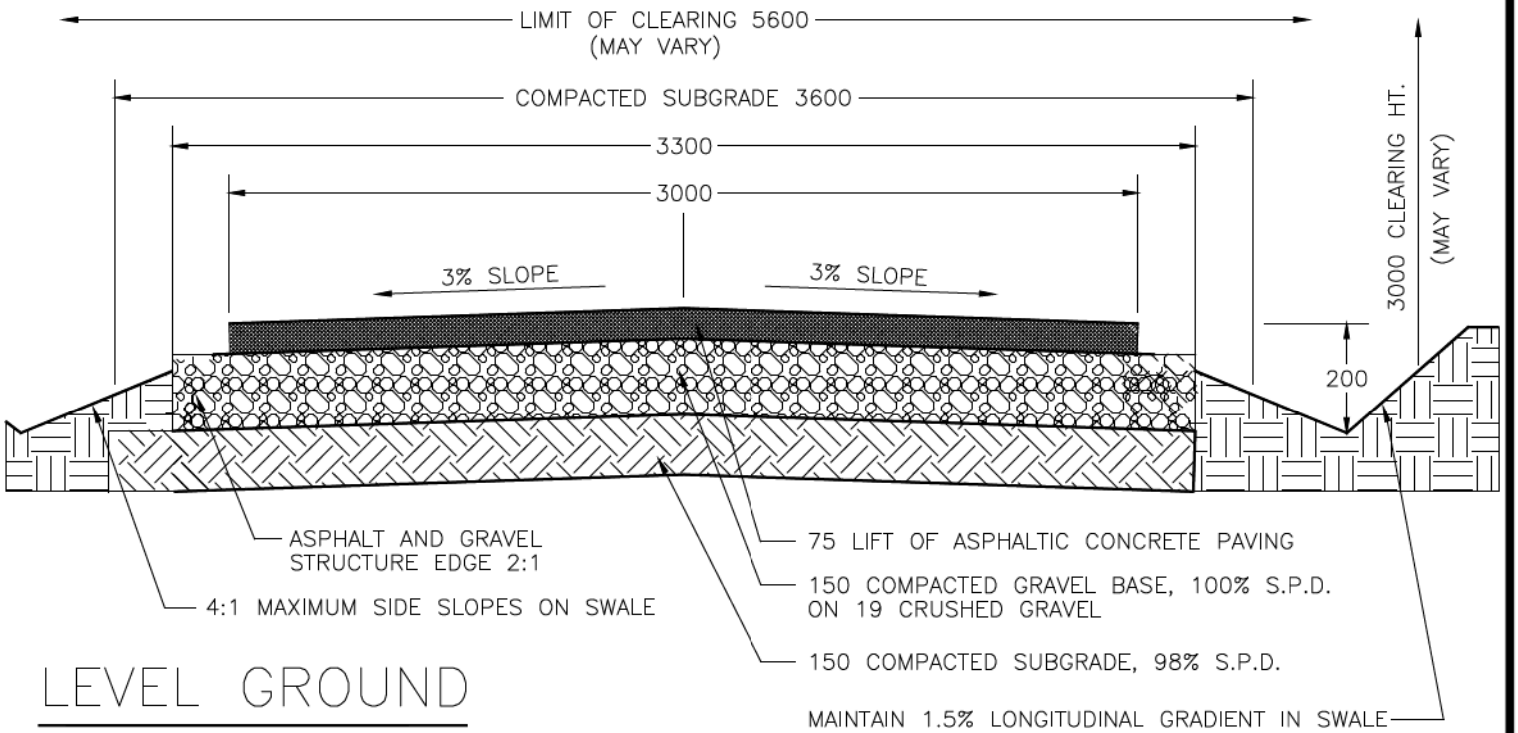
Approved: P. Alexander, AALA, CSLA

Checked: J.M. Talbot, MLA, CSLA

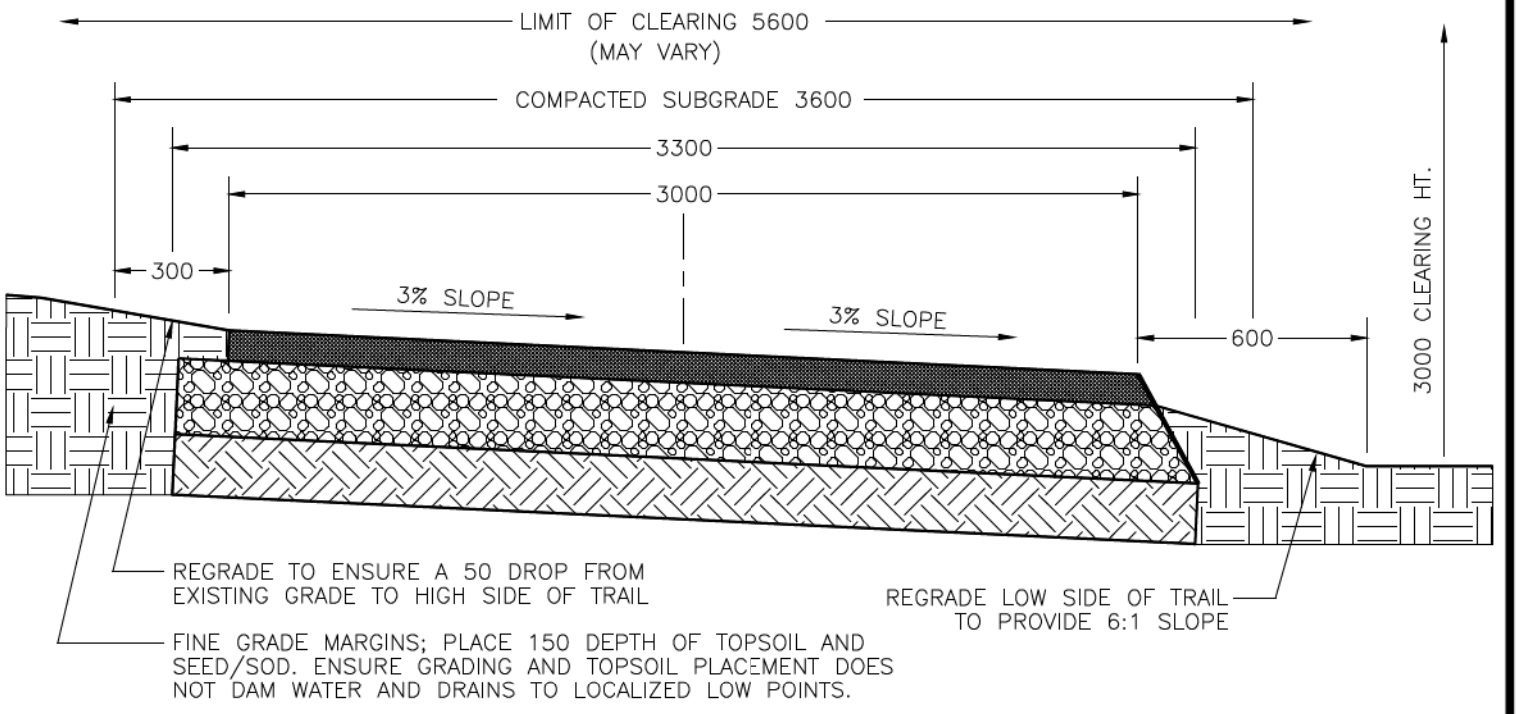
Date: 12/04/94 | Scale: N.T.S. | Drawn: DAN LECKIE

DWG. NO. 61307

Planning & Development Services Department



LEVEL GROUND



MINIMUM SIDESLOPE

NOTE: –ALL DIMENSIONS ARE IN MILLIMETRES

–ENSURE ALL JOINS WITH EXISTING VEGETATION SMOOTH AND CONTINUOUS, WHERE NECESSARY TRIM BACK ROOTS AND CLEAR DEBRIS.

REVISIONS

Date	Details	Drawn
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
08/04/02	Changed asphalt depth	M. Forgues
02/06/24	Printed	A. McLenaghan
01/01/30	3.0 m as standard	B. Wispinski

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

ASPHALT TRAIL (3.0m WIDTH)

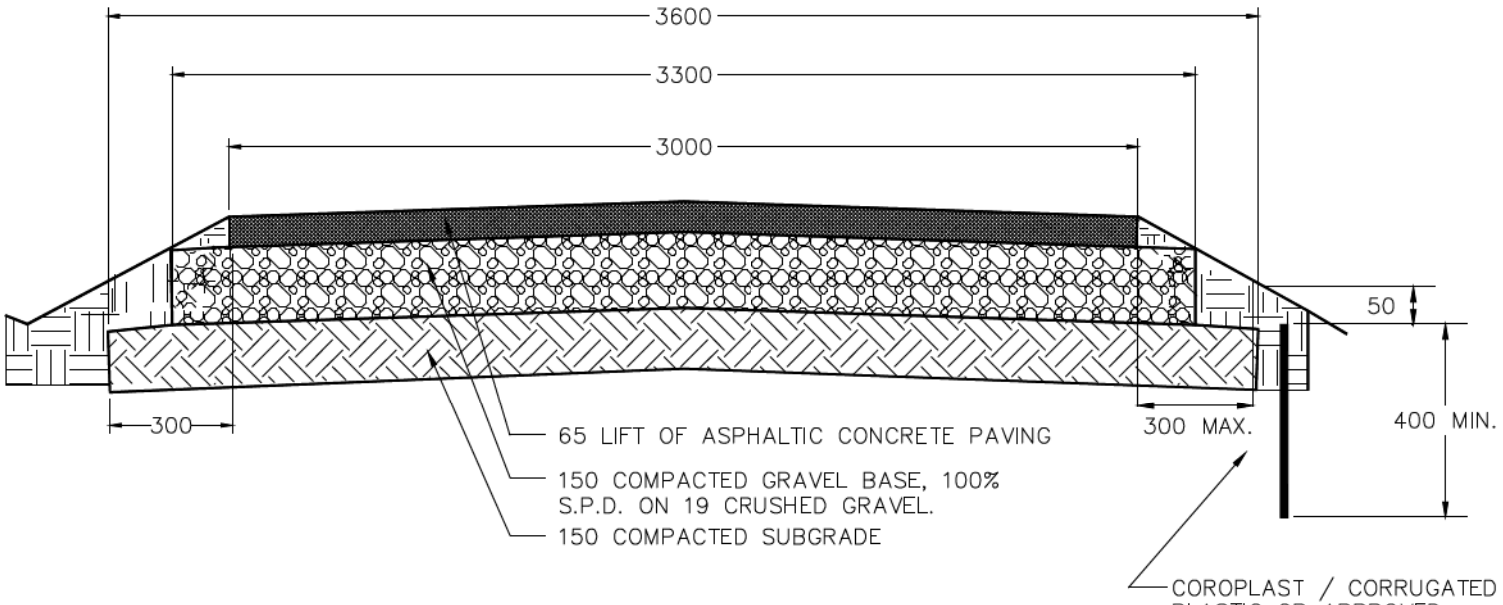
Approved: M. MacGarva, M.Eng., P.Eng.

Checked: D.L. Schilbe, P.L. (Eng)

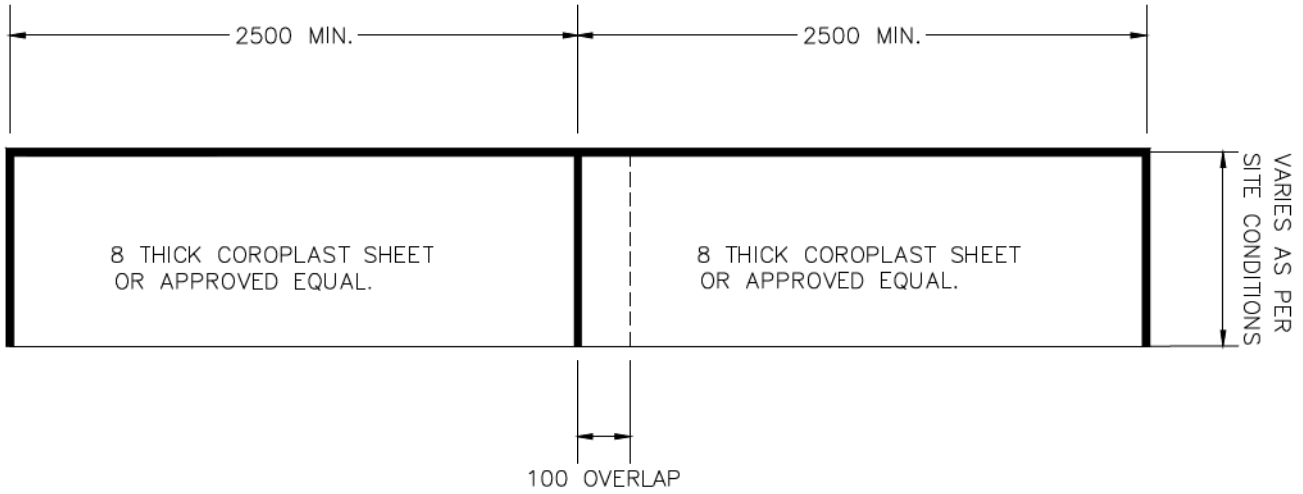
Date: 27/04/94 | Scale: N.T.S. | Drawn: B. ANDRE

DWG. NO. 61401

Capital Planning & Construction Department



TRAIL SECTION



ELEVATION

NOTE:
- SITE CONDITIONS MAY WARRANT THE USE OF GEO-GRID.
- DEPTH OF ROOT BARRIER VARIES ACCORDING TO PLANT VARIETIES AND MANUFACTURE'S RECOMENDATIONS.
- A TRENCH SHOULD BE DUG FOR THE ROOT BARRIER PRIOR TO IT BEING INSTALLED IN THE GROUND.
- ROOT BARRIER SHOULD BE BURIED 50MM BELOW FINAL GRADE.
- ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

REVISIONS

Date	Details	Drawn
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
08/02/26	Added more root barrier notes	M. Forgues
02/06/24	Printed	A. McLenaghan
01/10/09	Trail width, added note	A. McLenaghan

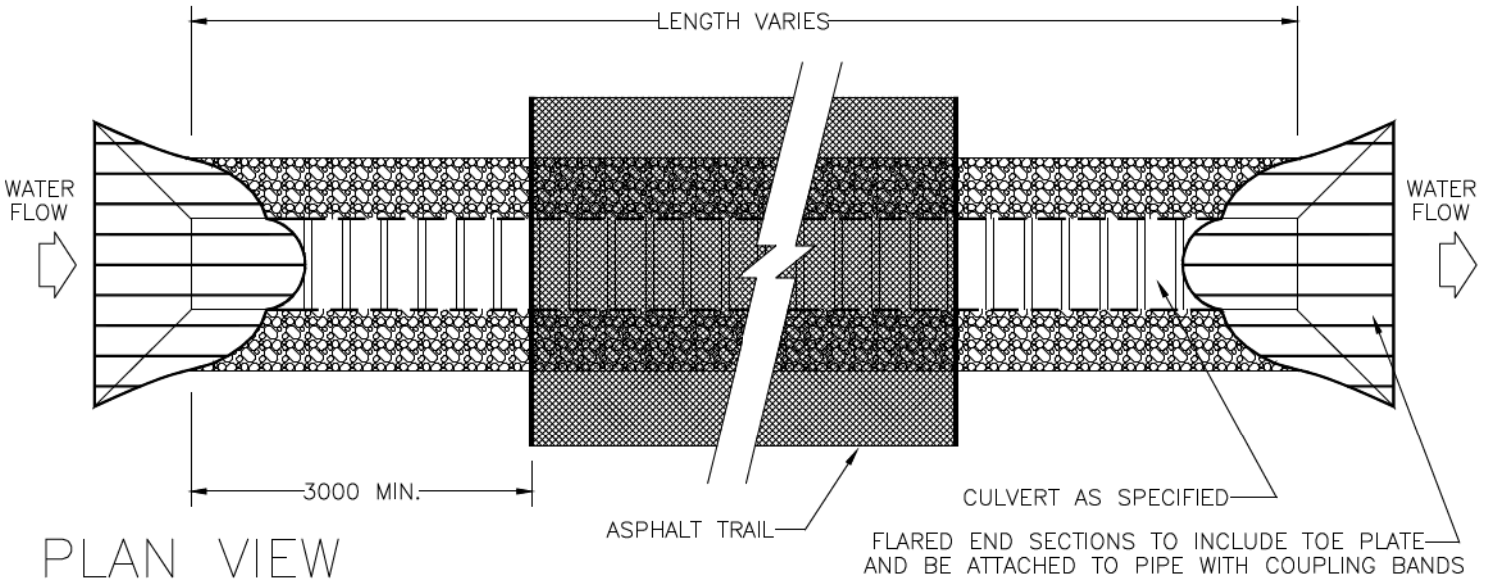
Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

ROOT BARRIER SECTION AND ELEVATION

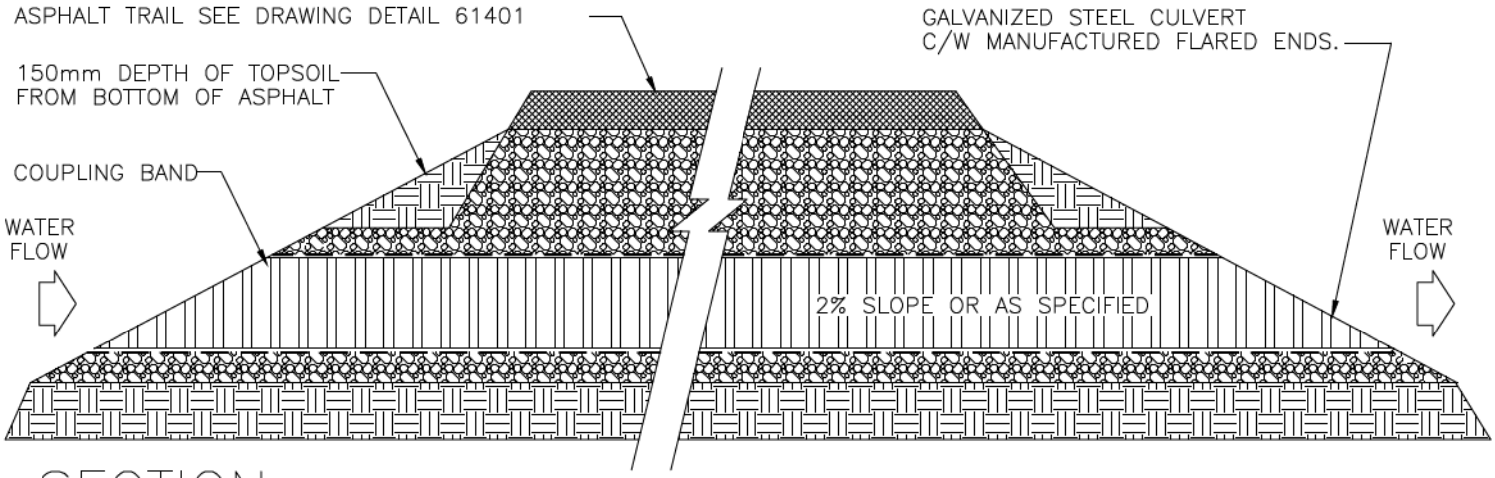
Approved: M. MacGarva, M.Eng., P.Eng.
Checked: D.L. Schilbe, P.L. (Eng)
Date: 27/04/94 | Scale: N.T.S. | Drawn: B. ANDRE

DWG. NO. 61402

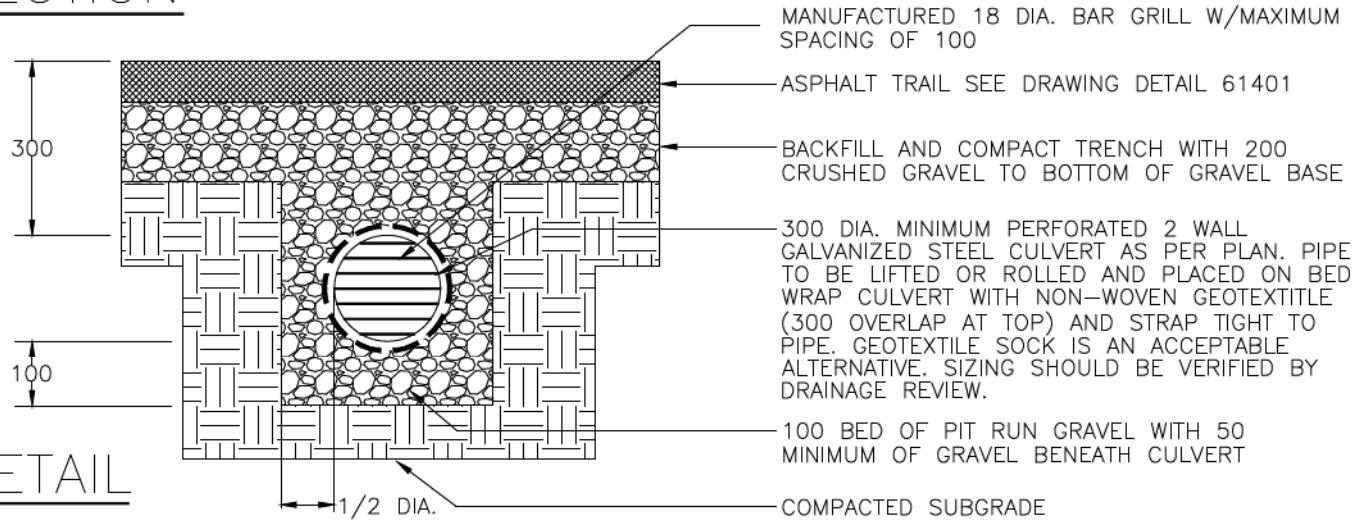
Capital Planning & Construction Department



PLAN VIEW



SECTION



DETAIL

REVISIONS

Date	Details	Drawn
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
08/04/02	Revised depth of culvert	M. Forgues
02/06/24	Printed	A. McLenaghan
94/06/24	Revised culvert comments	X

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

CORRUGATED STEEL CULVERT WITH GEOTEXTILE

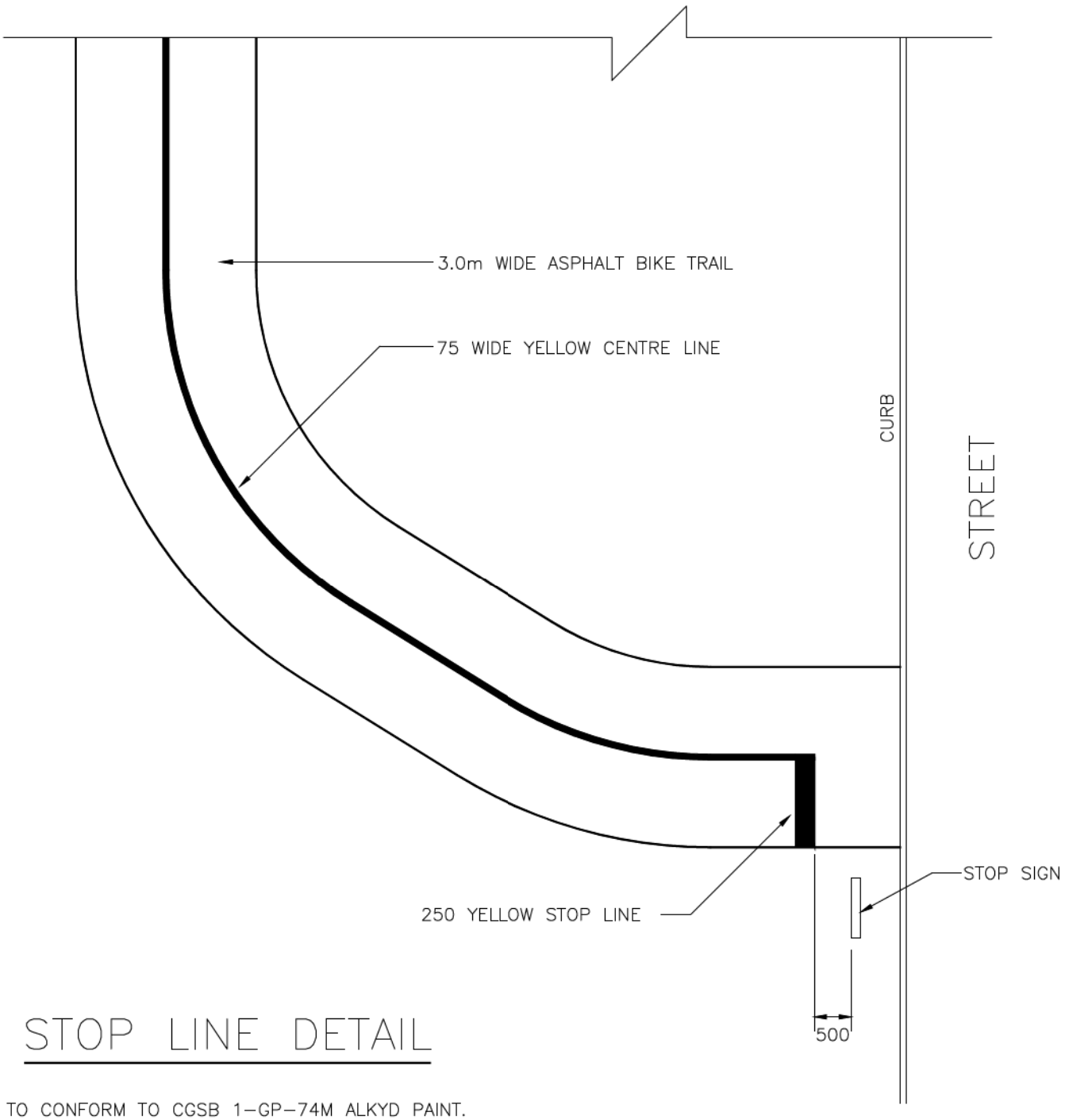
Approved: M. MacGarva, M.Eng., P.Eng.

Checked: D.L. Schilbe, P.L. (Eng)

Date: 94/06/24 | Scale: N.T.S. | Drawn: B. ANDRE

DWG. NO. 61403

Capital Planning & Construction Department



STOP LINE DETAIL

NOTES:
- PAINT TO CONFORM TO CGSB 1-GP-74M ALKYD PAINT.
- ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

REVISIONS

Date	Details	Drawn
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
02/06/24	Printed	A. McLenaghan
01/02/08	Changed trail width	B. Wispinski

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

ASPHALT TRAIL LINE PAINTING (3m)

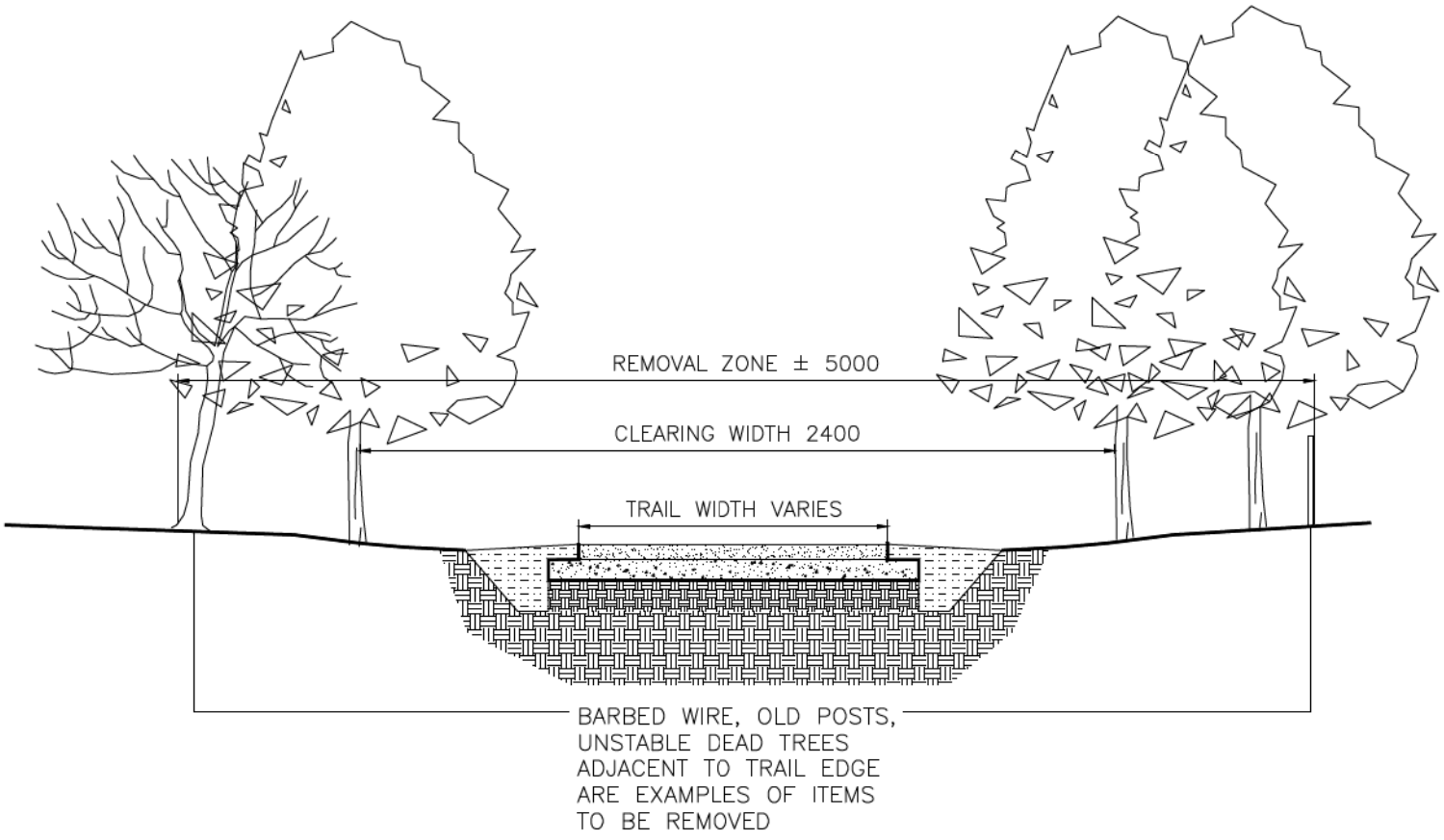
Approved: M. MacGarva, M.Eng., P.Eng.

Checked: D.L. Schilbe, P.L. (Eng)

Date: 27/04/94 | Scale: N.T.S. | Drawn: B. ANDRE

DWG. NO. 61404

Planning & Development Services Department



NOTES:
- TRAIL WIDTH TO BE MODIFIED TO ACCOMMODATE EXISTING TREES
- TRAIL WIDTH TO BE INCREASED AT INTERSECTIONS WITH CASUAL PATHS, BLIND INTERSECTIONS AND CORNERS
- CONTRACTORS RESPONSIBILITY TO REHABILITATE ALL DISTURBED AREAS ALONG TRAIL EDGE WITH TOPSOIL AND A NATURAL SEED MIXTURE
- CLEARING ZONE TO BE 2400 IN WIDTH, 3600 IN HEIGHT AT CENTER OF TRAIL.
- ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

REVISIONS

Date	Details	Drawn
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
05/03/09	DETAIL ADDED TO OSDS	L. Laing

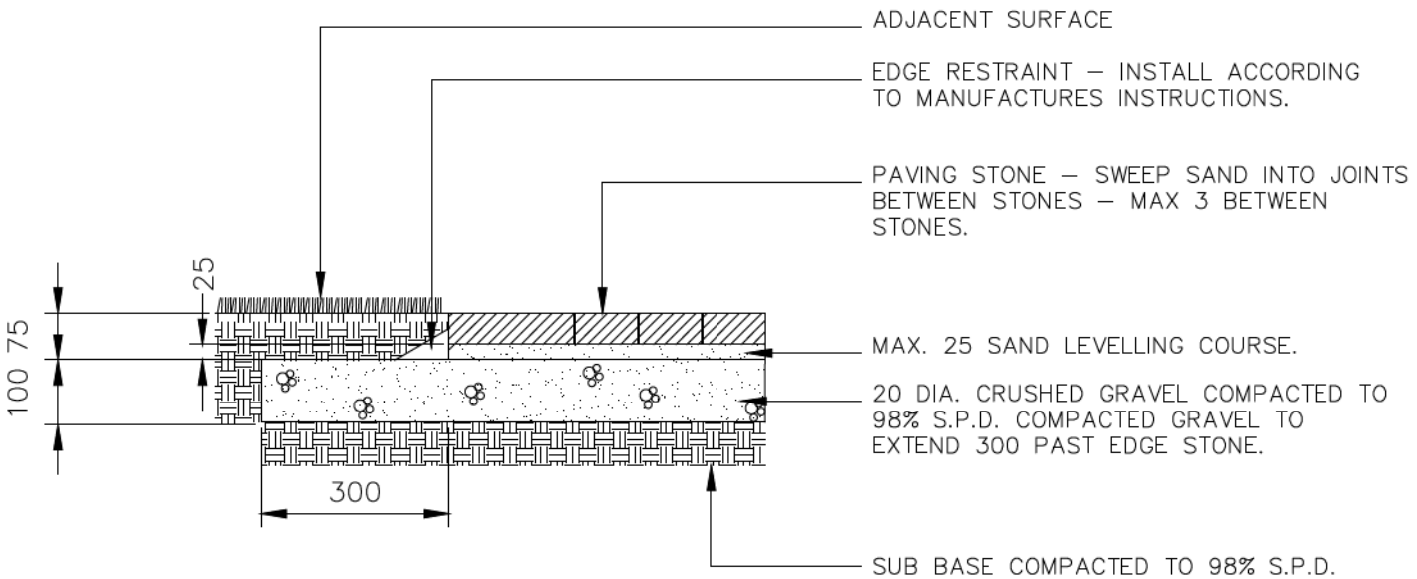
Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

REMOVAL ZONE AND CLEARING WIDTH

Approved: P. Alexander, AALA, CSLA
Checked: D.L. Schilbe, P.L. (Eng)
Date: 02/07/15 | Scale: N.T.S. | Drawn: AMY McLENAGHAN

DWG. NO. 61405

Planning & Development Services Department



NOTES:
– ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

REVISIONS

Date	Details	Drawn
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
06/03/10	Changed crushed gravel dimension	X
YY/MM/DD	DETAIL ADDED TO OSDS	L. Laing

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

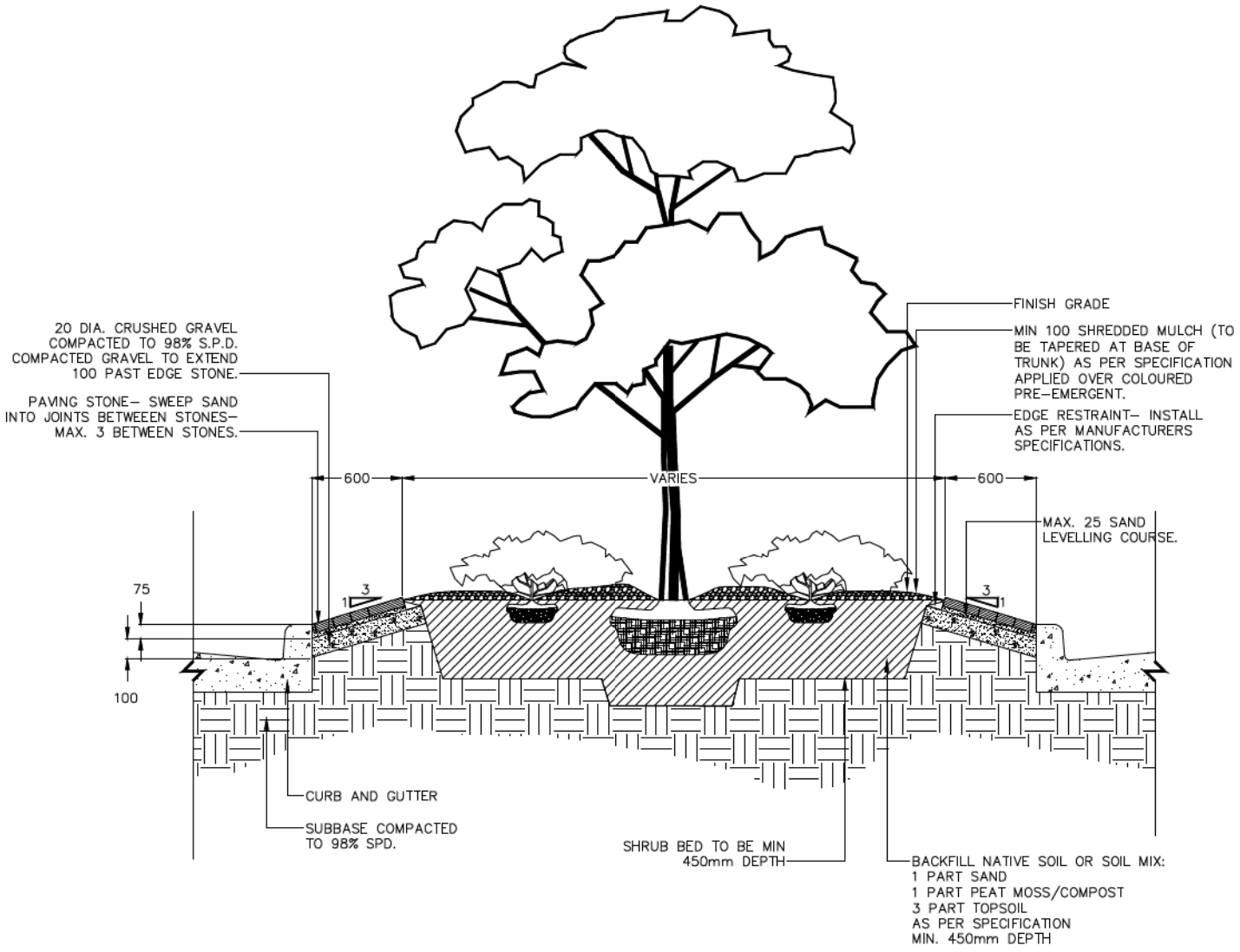
PAVING STONE

Approved: M. MacGarva, M.Eng., P.Eng.

Checked: D.L. Schilbe, P.L. (Eng)

Date: 02/07/23 | Scale: N.T.S. | Drawn: AMY McLENAGHAN

DWG. NO.
61406
Planning & Development Services Department



NOTES:
–ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

REVISIONS		
Date	Details	Drawn
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
08/01/30	Detail added to the OSDS	D. Bushore

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

PAVING STONE LANDSCAPED MEDIAN

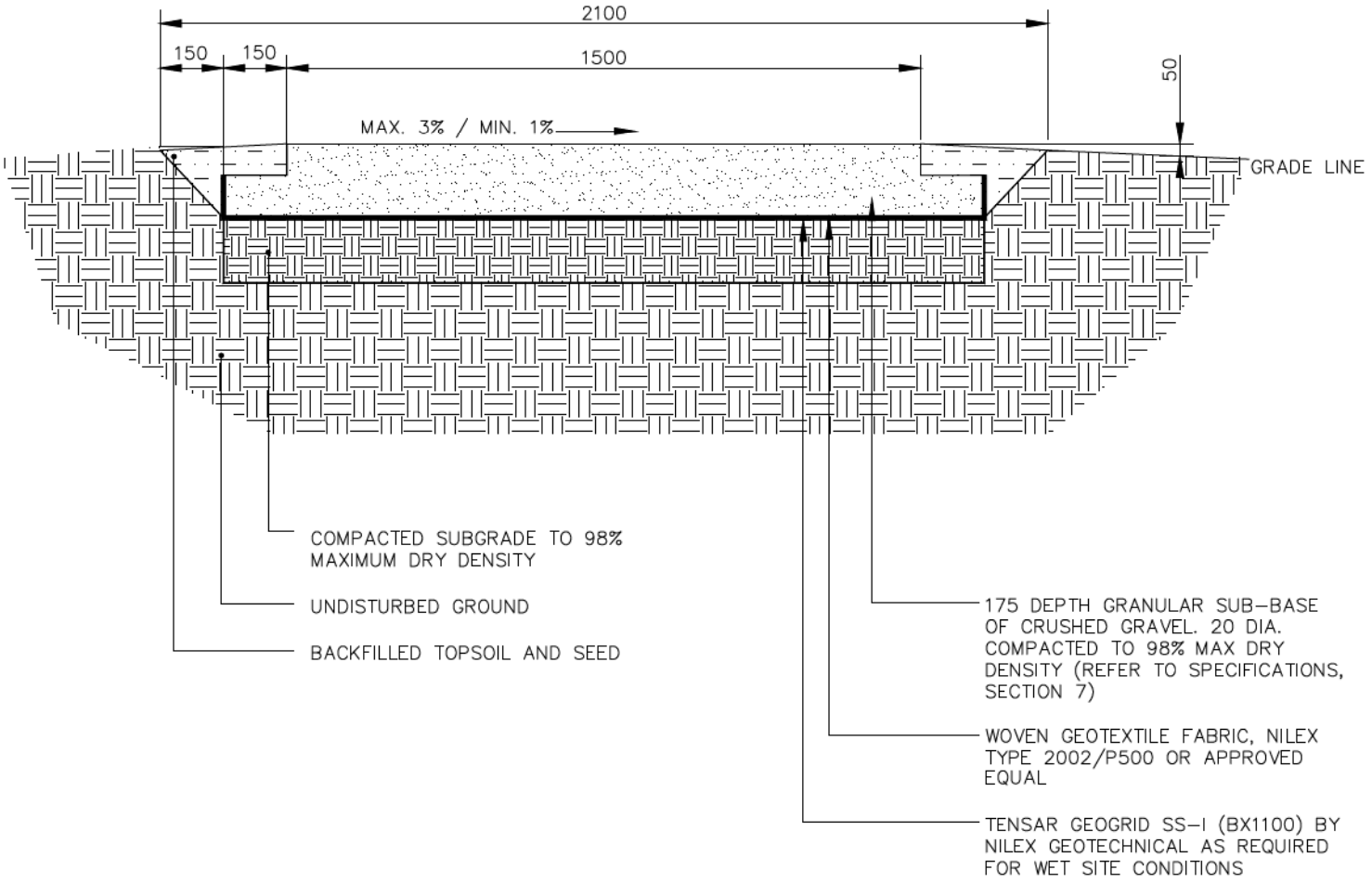
Approved: P. Alexander, AALA, CSLA

Checked: D.L. Schilbe, P.L. (Eng)

Date: 24/05/07 | Scale: N.T.S. | Drawn: DANIELLE BUSHORE

DWG. NO. 61407

Planning & Development Services Department



NOTES:
- EXCAVATION OF TOP MATERIAL TO BE DONE TO A WIDTH OF 2400.
- ALL TRAIL EXCAVATION TO MATCH EXISTING NATURAL GRADE.
- ALL DISTURBANCE ALONG TRAIL EDGE TO BE REHABILITATED.
- COMPACTION REQUIREMENTS MAY BE MODIFIED ACCORDING TO SITE CONDITIONS ENSURE SLOPE ON TRAIL TIES IN WITH EXISTING GRADES (TRAIL CROSS FALL MAX. 3% / MIN. 1%).
- TRAIL TO BE 50 ABOVE ADJACENT GRADE (FOR DRAINAGE).
- REFER TO DRAWING 61402 FOR ROOT BARRIER (FOR TREE STANDS).
- ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

REVISIONS

Date	Details	Drawn
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
06/04/13	Revised as per comments from UDI	M. Forgues
05/11/03	Revised as per M. MacGarva's comments	M. Forgues
05/10/26	Modified geogrid & added a dimension	M. Forgues

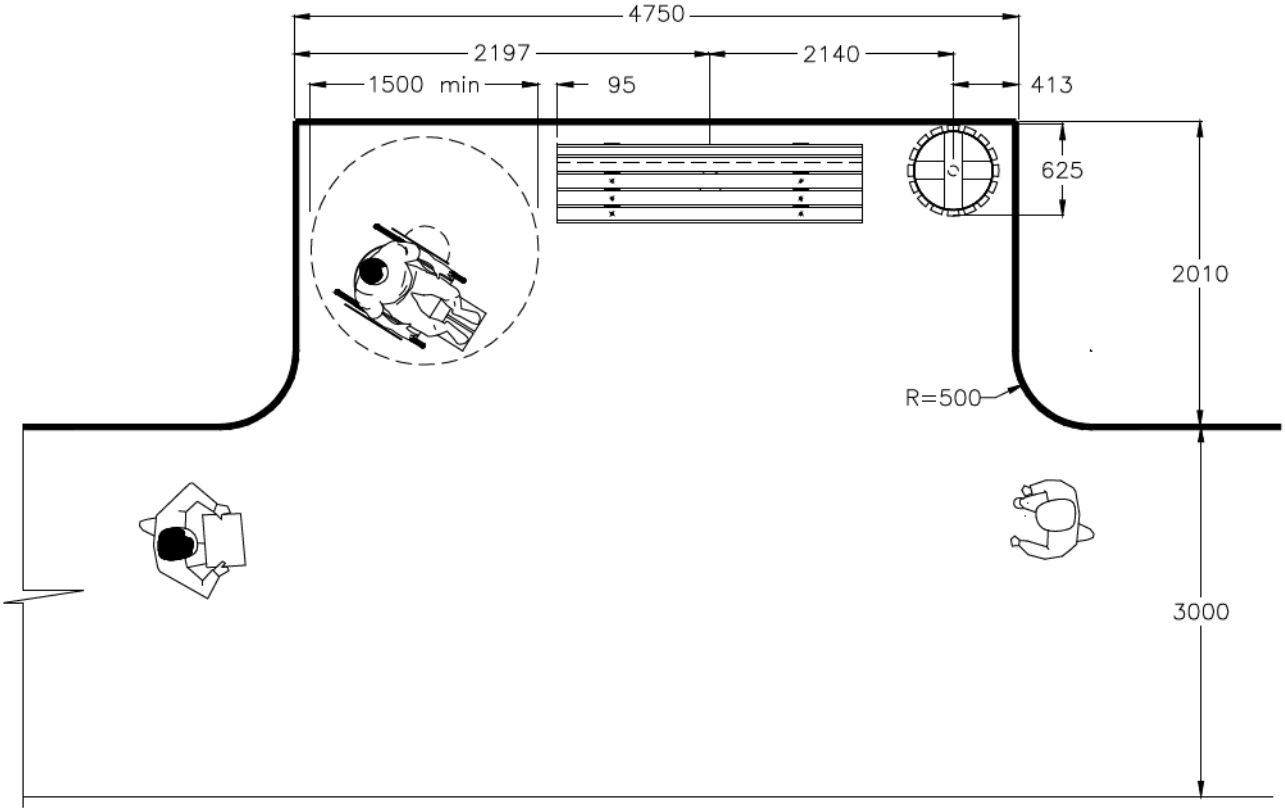
Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

GRAVEL PEDESTRIAN TRAIL

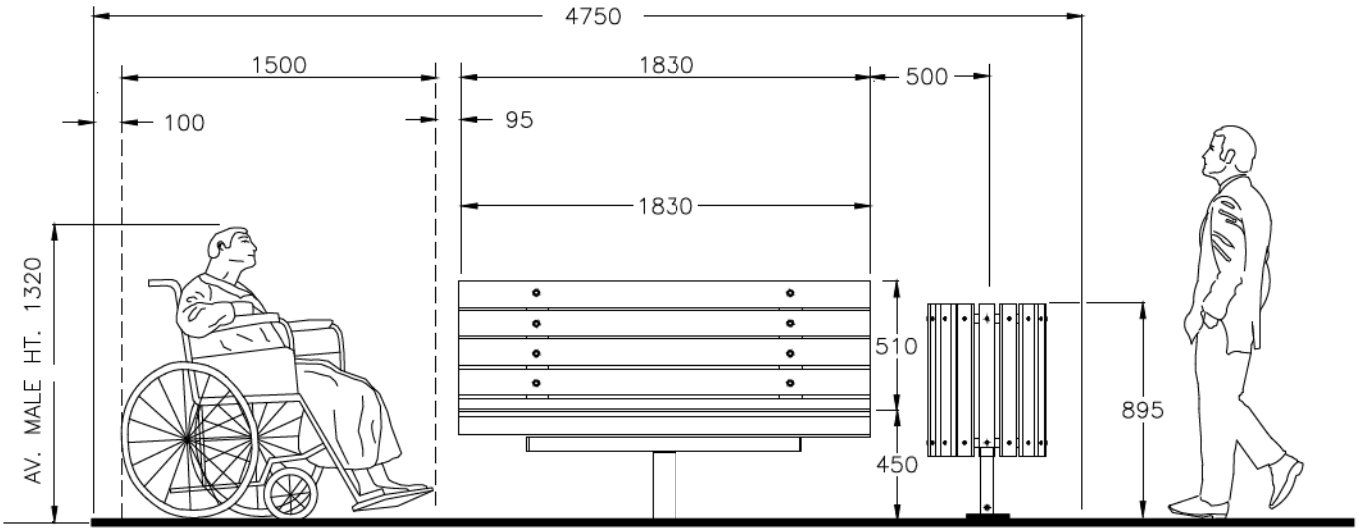
Approved: M. MacGarva, M.Eng., P.Eng.
Checked: D.L. Schilbe, P.L. (Eng)
Date: 02/07/15 | Scale: N.T.S. | Drawn: AMY McLENAGHAN

DWG. NO. 61408

Capital Planning & Construction Department



PLAN VIEW – REST AREA



PROFILE – SITE FURNISHINGS

NOTE:
–REST AREA SLOPE TO MATCH TRAIL SLOPE.
–ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

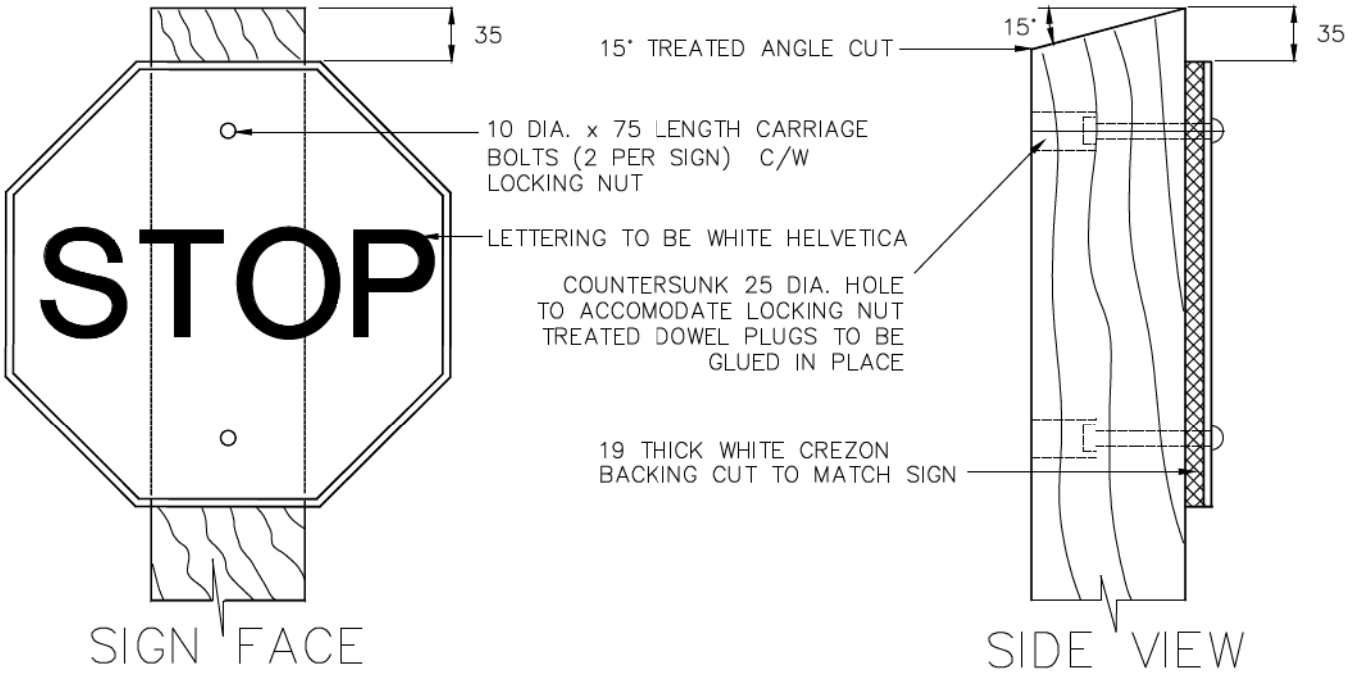
REVISIONS		
Date	Details	Drawn
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
08/04/02	Added a note about sloping	M. Forgues
06/03/10	Changed trail dimension	M. Forgues
02/06/24	Printed	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

TRAIL SIDE REST AREA–PLAN AND PROFILE

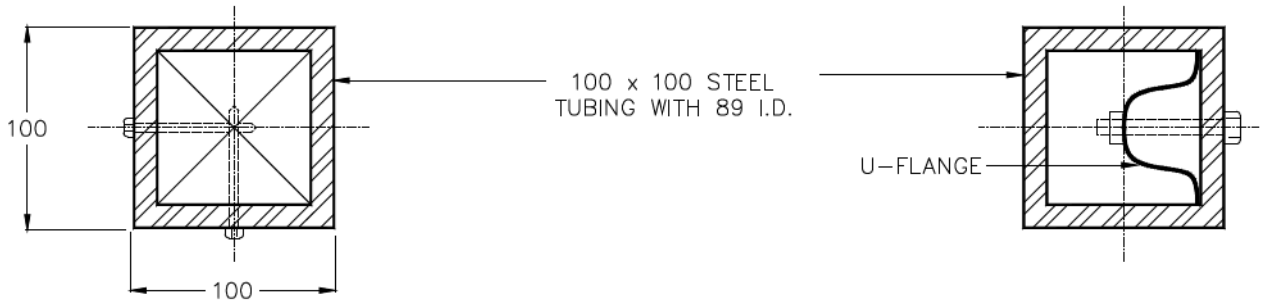
Approved: P. Alexander, AALA, CSLA
Checked: D.L. Schilbe, P.L. (Eng)
Date: 27/04/94 | Scale: N.T.S. | Drawn: DAN LECKIE

DWG. NO.
61409
Planning & Development Services Department



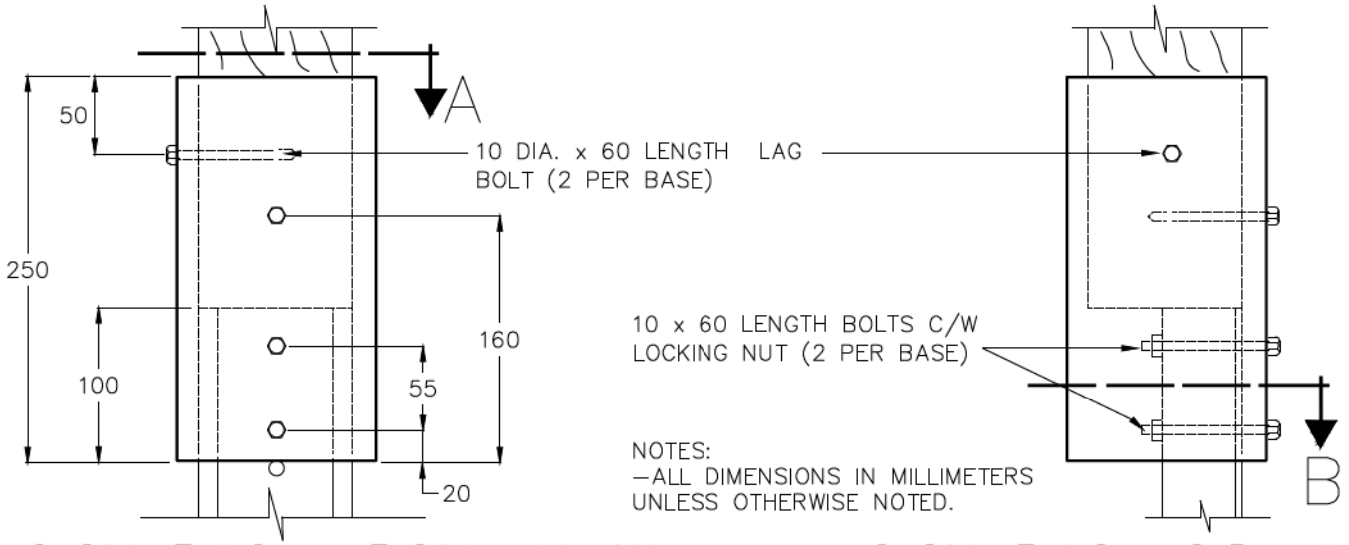
SIGN FACE

SIDE VIEW



SECTION A

SECTION B



NOTES:
-ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

SIGN BASE FRONT VIEW

SIGN BASE SIDE VIEW

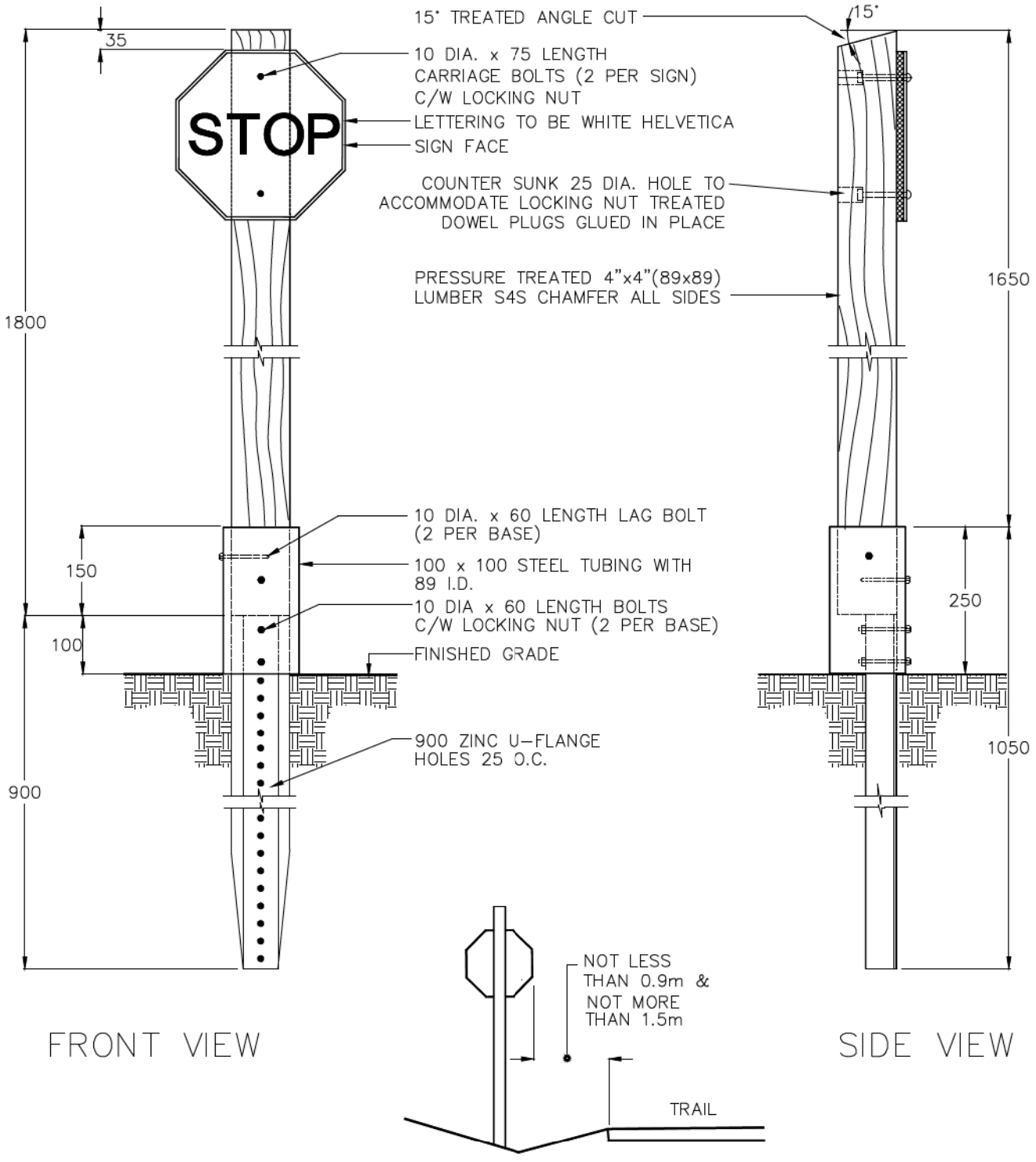
REVISIONS		
Date	Details	Drawn
12/10/23	REVISED DRAWING TITLE	J.E.
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
06/02/27	Added lettering colour & style	M. Forgues
02/06/24	Printed	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

TRAIL SIGN DETAIL

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 13/04/94 Scale: N.T.S. Drawn: DAN LECKIE

DWG. NO.
61501
Planning & Development Services Department



NOTE:
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.
- ALL HARDWARE TO BE ZINC PLATED BASE COLOR TO BE TREMCLAD BROWN

REVISIONS		
Date	Details	Drawn
12/10/23	REVISED DRAWING TITLE	J.E.
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
06/02/27	Added lettering colour & style	M. Forgues
02/06/24	Printed	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

TRAIL SIGN INSTALLATION DETAIL

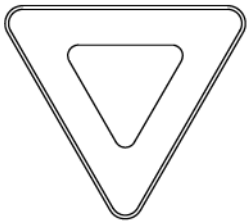
Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 14/04/94 | Scale: N.T.S. | Drawn: DAN LECKIE

DWG. NO. 61502

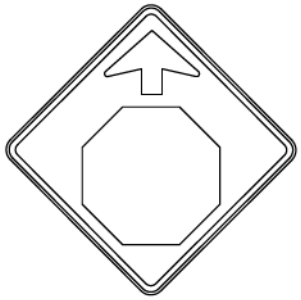
Planning & Development Services Department

T-1
300mm x 300mm
W/R - HI SIGN GRADE
ALUMINIUM - 2mm/.081
9.5mm HOLES. LARGE
CROPPED CORNERS

T-2
300mm x 300mm
B/Y - HI SIGN GRADE
ALUMINIUM - 2mm/.081
9.5mm HOLES. CENTERED,
CROPPED CORNERS



T-3
375mm x 375mm x 375mm
W/R - HI SIGN GRADE
ALUMINIUM - 2mm/.081
TRIANGLE - 9.5mm HOLES.
CENTERED - LARGE
CROPPED CORNERS

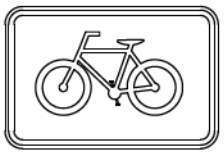


T-4
300mm x 300mm
R/B/Y - HI SIGN GRADE
ALUMINIUM - 2mm/.081
DIA. 9.5mm HOLES.
CENTERED - CROPPED

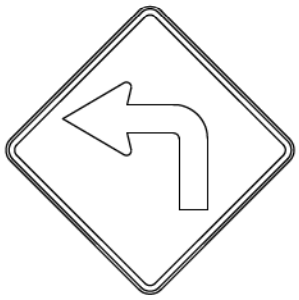
T-5
300mm x 300mm
R/B/Y - HI SIGN GRADE
ALUMINIUM - 2mm/.081
RECT - 9.5mm CENTERED
CROPPED CORNER

T-6
200mm x 300mm
G/B/W - HI SIGN GRADE
ALUMINIUM - 2mm/.081
RECT - 9.5mm CENTERED
CROPPED CORNER

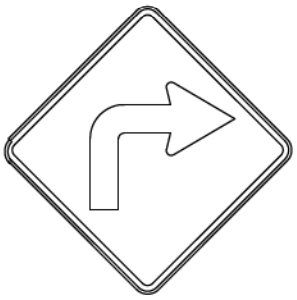
T-7
200mm x 300mm
W/BR - HI SIGN GRADE
ALUMINIUM - 2mm/.081
RECT - 9.5mm CENTERED
CROPPED CORNER



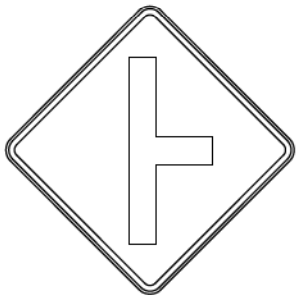
T-11
300mm x 200mm
W/BR - HI SIGN GRADE
ALUMINIUM - 2mm/.081
SQUARE - 9.5mm CENTERED
LARGE CROP



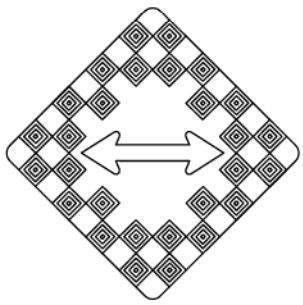
T-8L
300mm x 300mm
B/Y - HI SIGN GRADE
ALUMINIUM - 2mm/.081
DIA. 9.5mm ON CENTER,
LARGE CROP



T-8R
300mm x 300mm
B/Y - HI SIGN GRADE
ALUMINIUM - 2mm/.081
DIA. 9.5mm ON CENTER,
LARGE CROP



T-9
300mm x 300mm
B/Y - HI SIGN GRADE
ALUMINIUM - 2mm/.081
DIA. 9.5mm CENTERED,
LARGE CROP



T-10
300mm x 300mm
B/Y - HI SIGN GRADE
ALUMINIUM - 2mm/.081
DIAG - 9.5mm CENTERED,
LARGE CROP

BACKING BOARD NOTES:
-7.5mm TO MATCH SIGN SIZE
-HOLES TO MATCH
-WHITE / PRIMER - SIDES AND EDGES

REVISIONS

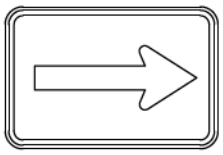
Date	Details	Drawn
12/10/22	REVISED DRAWING TITLE & TRAIL SIGN NO.s	J.E.
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
05/10/26	Added notes	M. Forgues
02/06/24	Printed	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

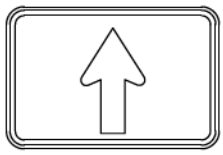
TRAIL SIGNS 1

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 31/05/95 Scale: N.T.S. Drawn: DAN LECKIE

DWG. NO.
61503
Planning & Development Services Department

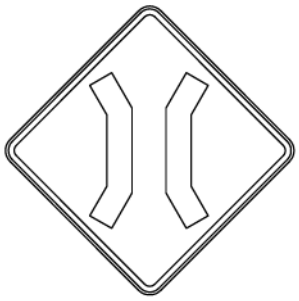


T-12
300mm x 200m
W/BR - HI SIGN GRADE
ALUMINIUM - 2mm/.081
RECT - 9.5mm CENTERED
LARGE CROP



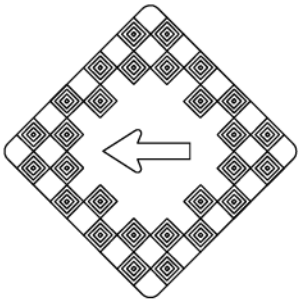
T-13
300mm x 200mm
W/BR - HI SIGN GRADE
ALUMINIUM - 2mm/.081
RECT - 9.5mm CENTERED
LARGE CROP

T-14
300mm x 300mm



T-15
300mm x 300mm

T-16
300mm x 200mm



T-17
300mm x 300mm

T-18
300mm x 300mm

BACKING BOARD NOTES:
-7.5mm TO MATCH SIGN SIZE
-HOLES TO MATCH
-WHITE / PRIMER - SIDES AND EDGES

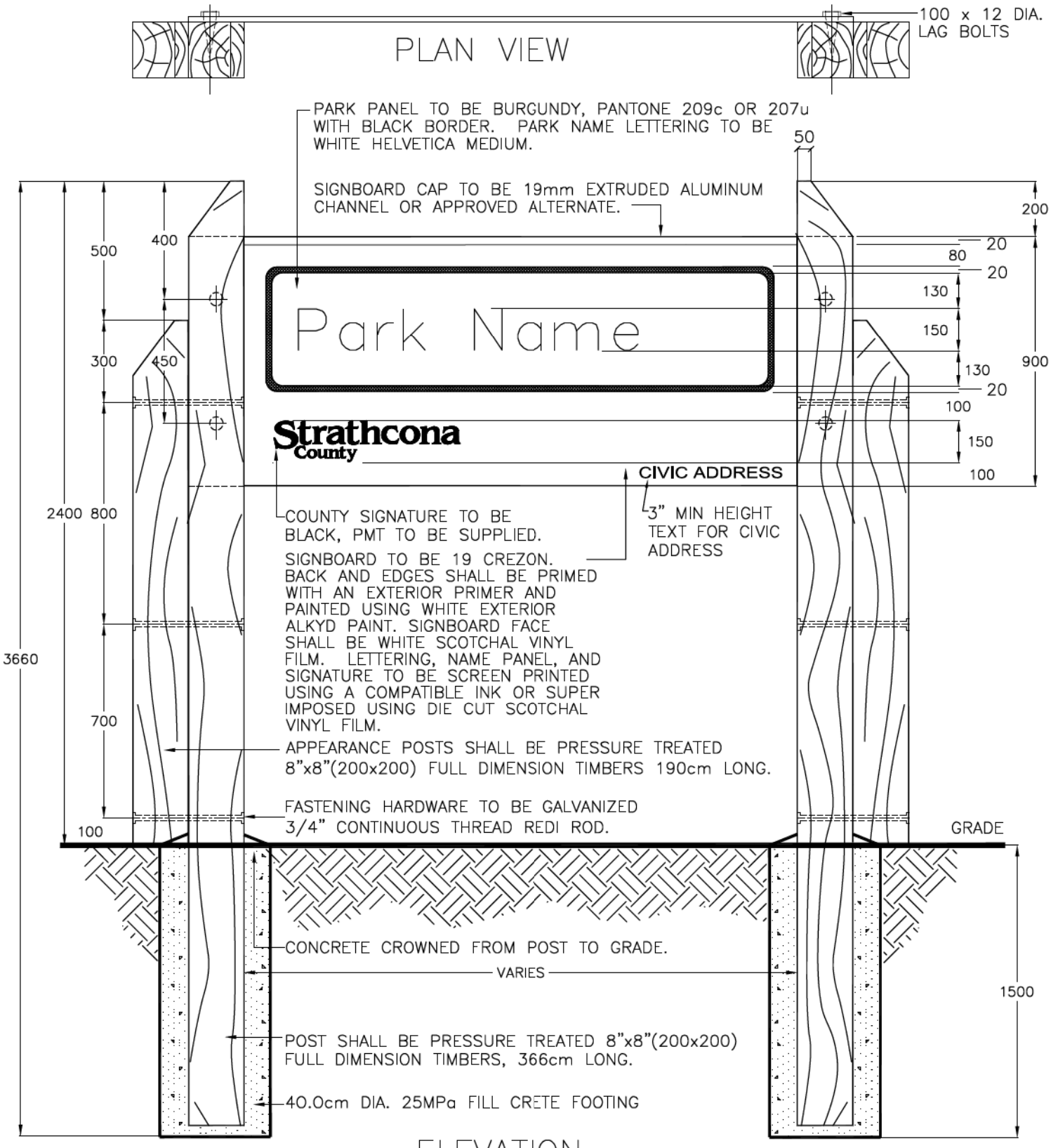
REVISIONS		
Date	Details	Drawn
12/10/22	REVISED DRAWING TITLE & TRAIL SIGN NO.s	J.E.
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
05/10/26	Added notes	M. Forgues
02/06/24	Printed	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

TRAIL SIGNS 2

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 31/05/95 | Scale: N.T.S. | Drawn: DAN LECKIE

DWG. NO.
61504
Planning & Development Services Department



ELEVATION

NOTES:
-ALL SIGNS MUST HAVE AN ANTI-GRAFFITI COATING
-ALL DIMENSIONS IN MILLIMETERSB UNLESS OTHERWISE NOTED

REVISIONS

Date	Details	Drawn
12/10/23	ADD CIVIC ADDRESS TO SIGN	J.E.
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
08/04/02	Added anti-graffiti note	M. Forgues
06/03/10	Changed concrete crown	M. Forgues

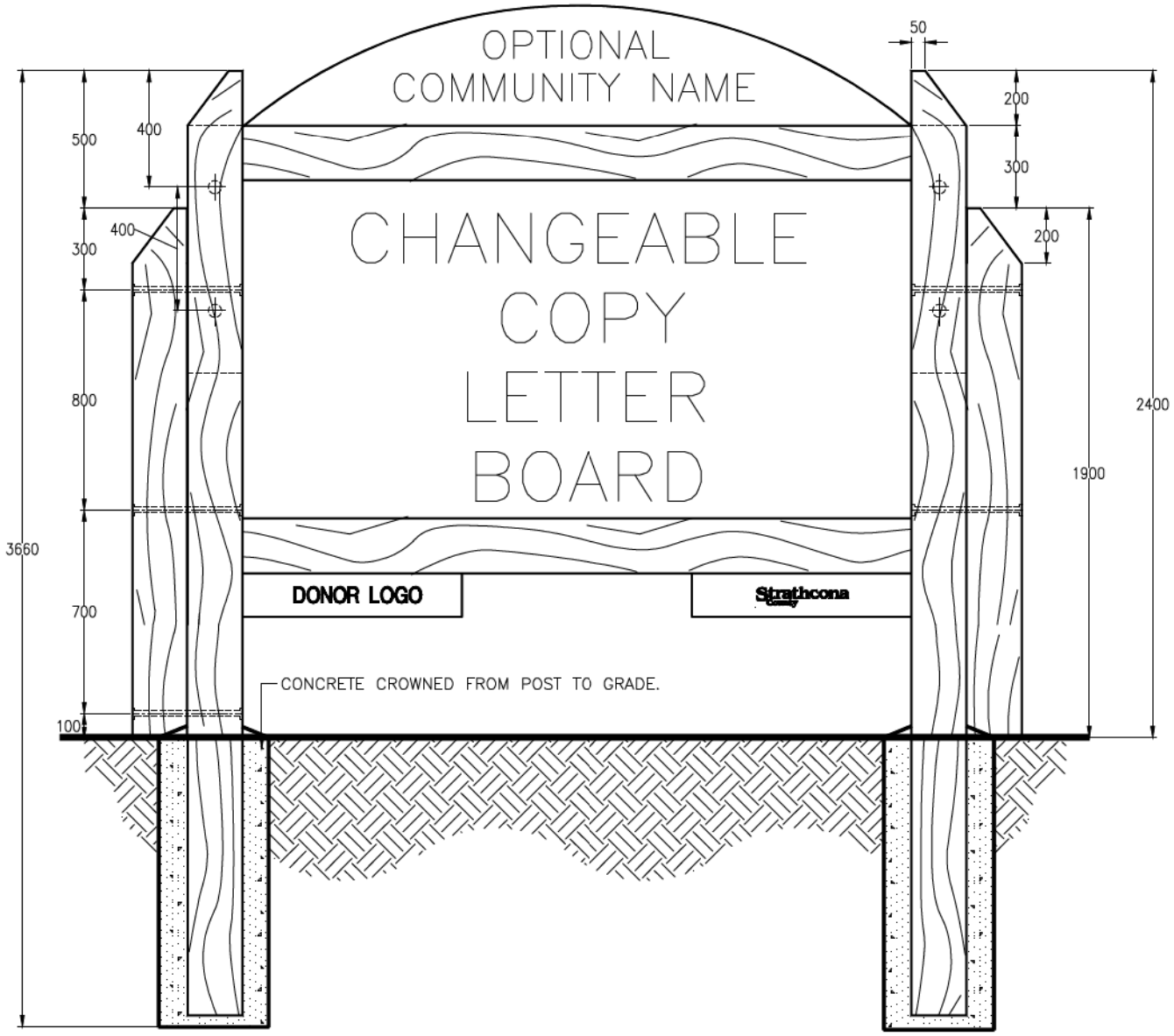
Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

STANDARD PARK NAME SIGN

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 15/09/94 | Scale: N.T.S. | Drawn: DAN LECKIE

DWG. NO. 61505

Planning & Development Services Department



NOTE:
—ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

REVISIONS

Date	Details	Drawn
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
06/03/10	Changed concrete crown	M. Forgues
05/10/24	Added concrete crown note	M. Forgues
02/06/24	Printed	A. McLenaghan

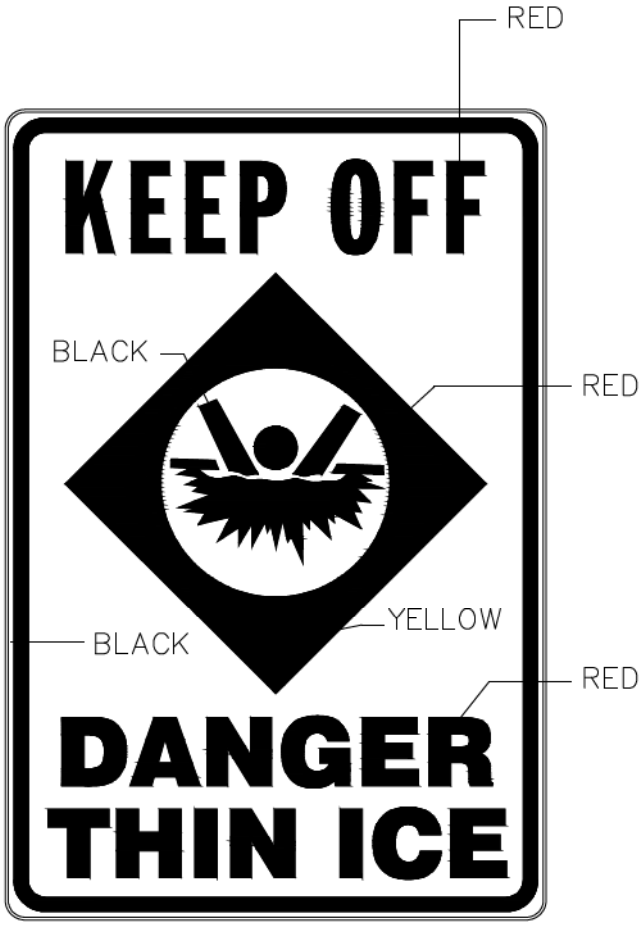
Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

COMMUNITY EVENT INFORMATION SIGN

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 97/06/11 | Scale: N.T.S. | Drawn: E. HERMAN

DWG. NO.
61506
Planning & Development Services Department

450mm x 600mm
HIGH INTENSITY



450mm x 600mm
HIGH INTENSITY

REVISIONS		
Date	Details	Drawn
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
10/01/25	Changed Thin Ice Sign Size	M. Forgues
05/02/14	Change Thin Ice Sign–Size and Graphic	L.Laing
02/06/24	Printed	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

NO SWIMMING/THIN ICE SIGNS

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 01/12/20 | Scale: N.T.S. | Drawn: AMY McLENAGHAN

DWG. NO.
61507
Planning & Development Services Department

300mm x 350mm
BLACK ON WHITE
3M HIGH INTENSITY

300mm x 350mm
BLACK ON WHITE
3M HIGH INTENSITY

REVISIONS		
Date	Details	Drawn
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
08/01/30	Adjust ages on sign	M. Forgues
05/02/11	Adjust ages on signs	L. Laing
03/04/22	Changed text, added no pets permitted	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

PLAYGROUND PLAY SAFE SIGN

Approved: P. Alexander, AALA, CSLA

Checked: J.M. Talbot, MLA, CSLA

Date: 01/12/20 | Scale: N.T.S. | Drawn: AMY McLENAGHAN

DWG. NO.
61508
Planning & Development Services Department

450mm x 600mm
HIGH INTENSITY

REVISIONS		
Date	Details	Drawn
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
05/11/07	DETAIL ADDED TO THE OSDS	M. Forgues

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

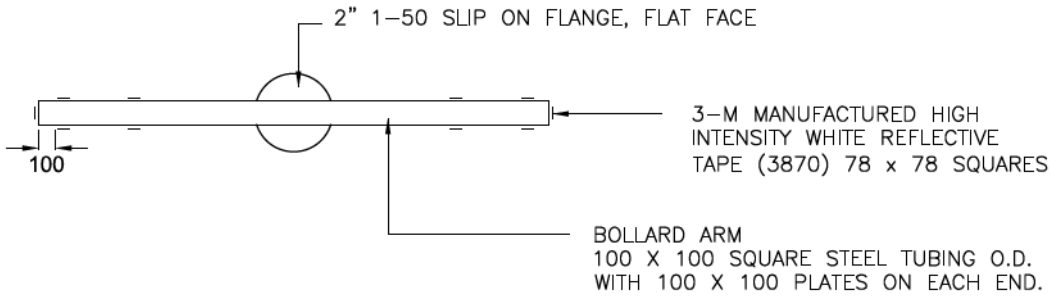
NO MOTORIZED VEHICLES SIGN

Approved: P. Alexander, AALA, CSLA

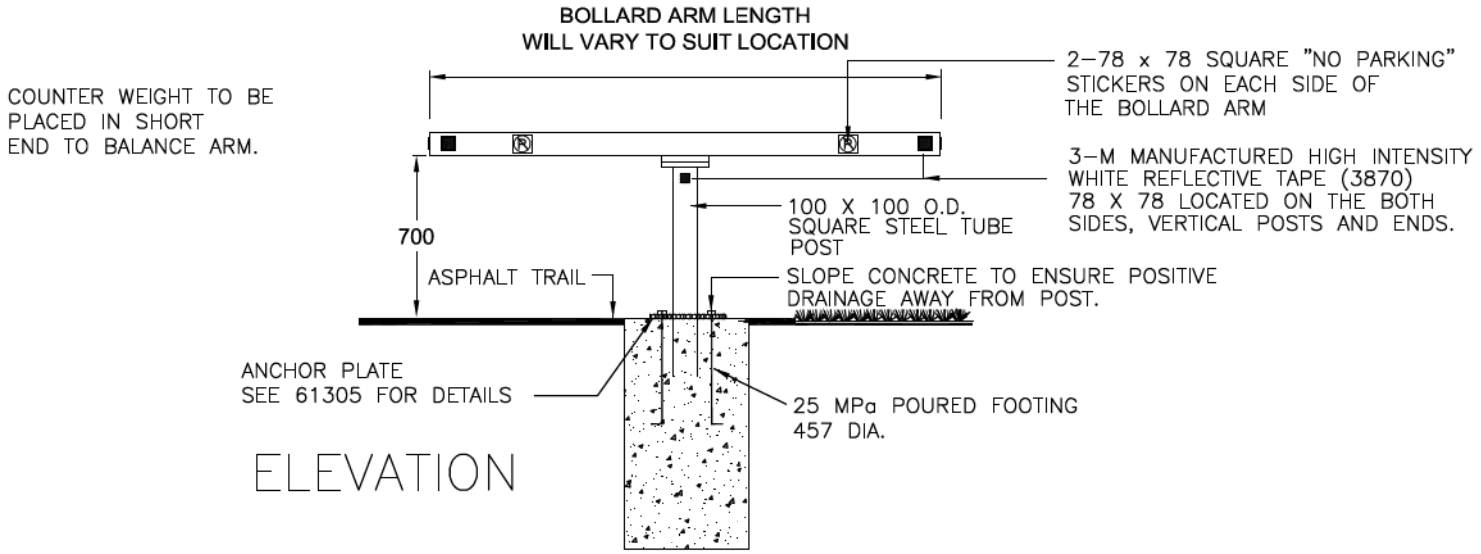
Checked: J.M. Talbot, MLA, CSLA

Date: 05/11/07 | Scale: N.T.S. | Drawn: M. FORGUES

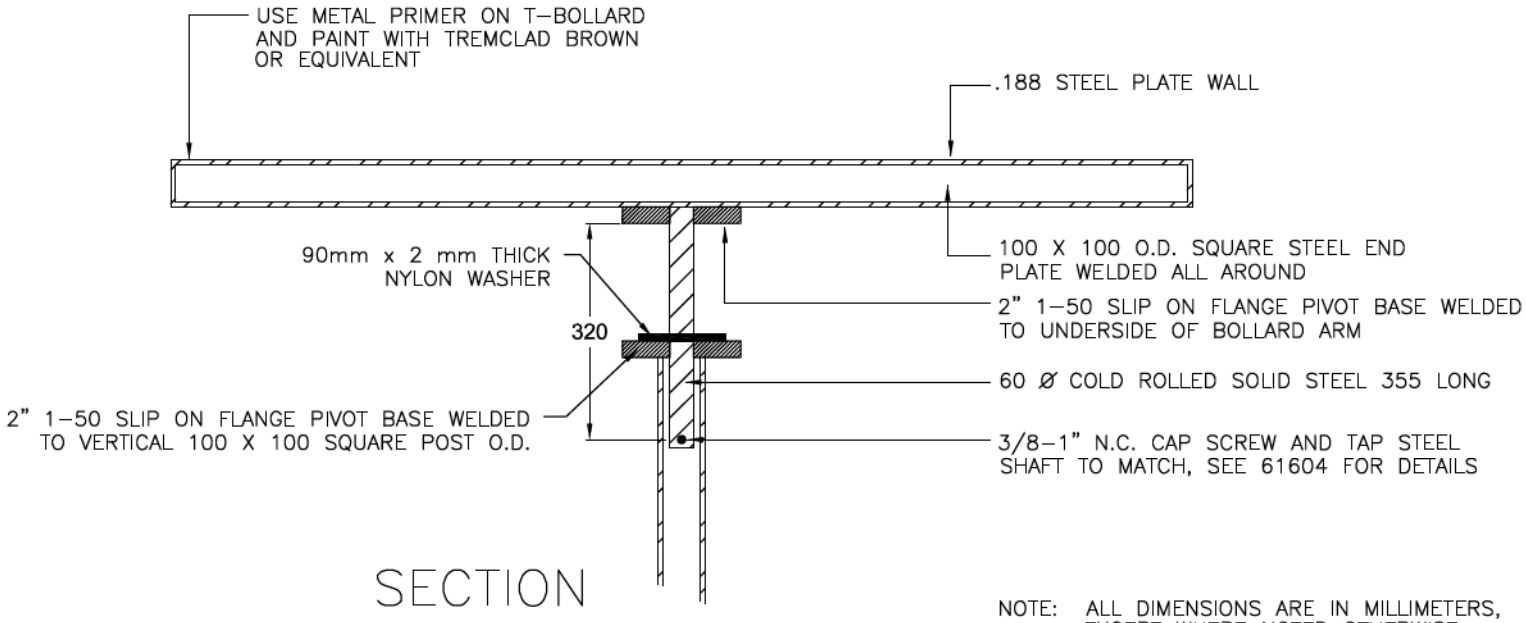
DWG. NO.
61509
Planning & Development Services Department



PLAN



ELEVATION



SECTION

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS, EXCEPT WHERE NOTED OTHERWISE.

REVISIONS		
Date	Details	Drawn
12/10/22	REVISED DRAWING	J. E.
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
08/04/02	Changed flange and sticker sizes	M. Forgues
05/02/17	Add No Parking Stickers to Plan	L. Laing

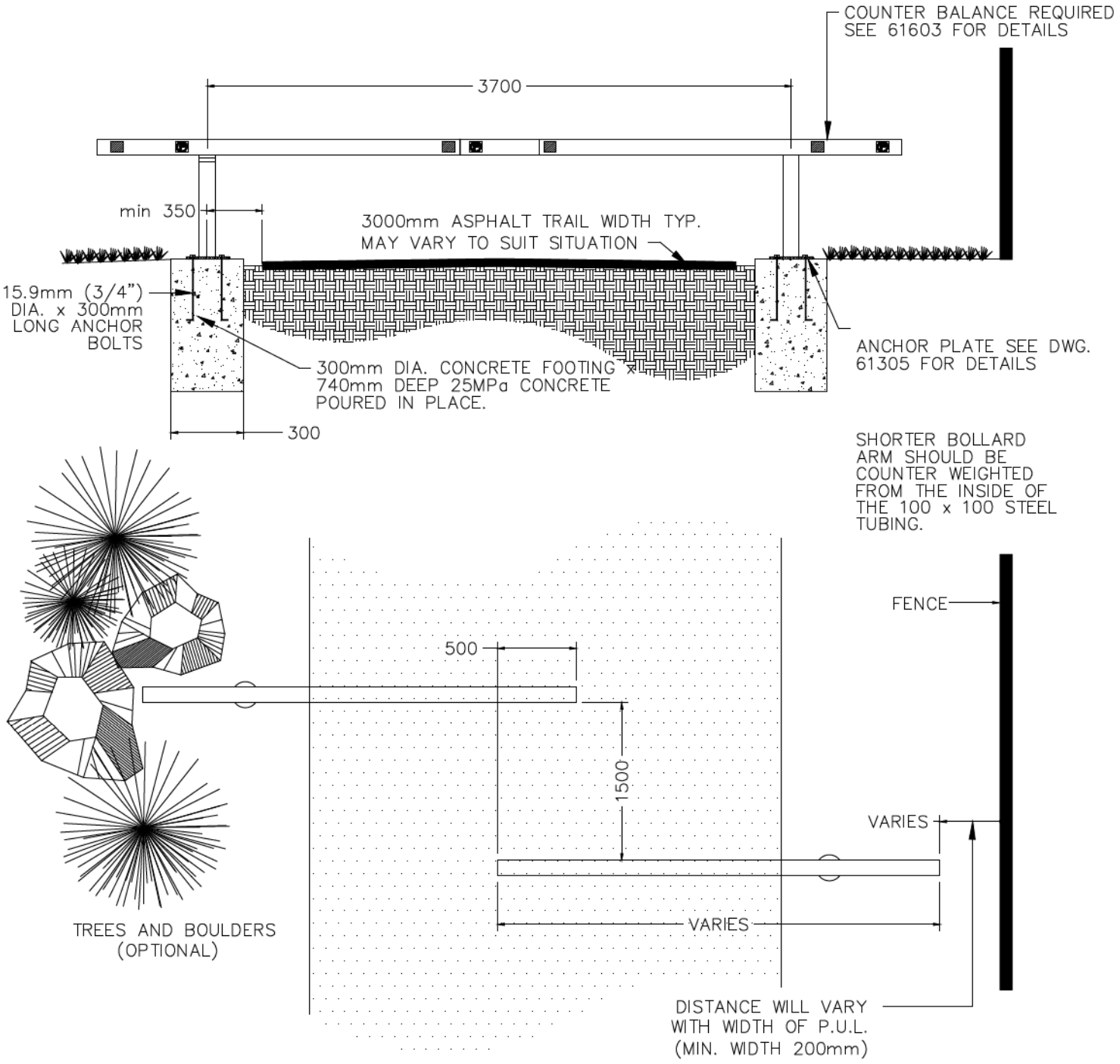
Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

T–BOLLARD SECTION AND ELEVATION

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 12/06/93 Scale: N.T.S. Drawn: D. BROWN

DWG. NO. 61601

Planning & Development Services Department



NOTE:
- ENSURE THAT BOLLARD ARMS ARE EVEN WITH EXISTING FENCE STRUCTURES.
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
- FOOTING LOCATIONS MAY VARY BASED ON TRAIL WIDTH.

REVISIONS

Date	Details	Drawn
11/05/03	REVISED DRAWING NUMBER & REVISIONS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
10/01/25	Added counter balance note	M. Forgues
06/03/10	Changed pile diameter & added note	M. Forgues
05/11/22	Added notes and dimensions	M. Forgues

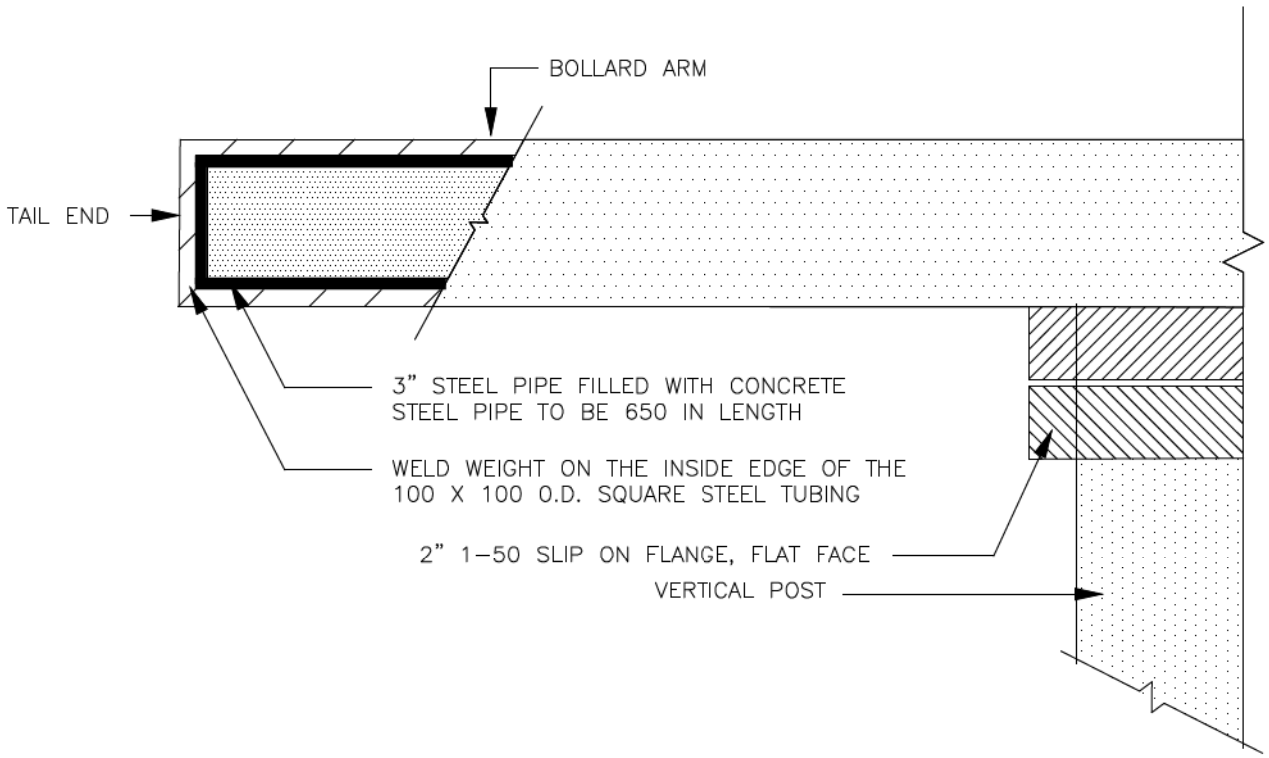
Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

CHICANE T-BOLLARD LAYOUT

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 01/11/26 | Scale: N.T.S. | Drawn: A. McLENAGHAN

DWG. NO. 61602

Planning & Development Services Department



1100 COUNTER BALANCE BOLLARD SECTION

NOTE:
-ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

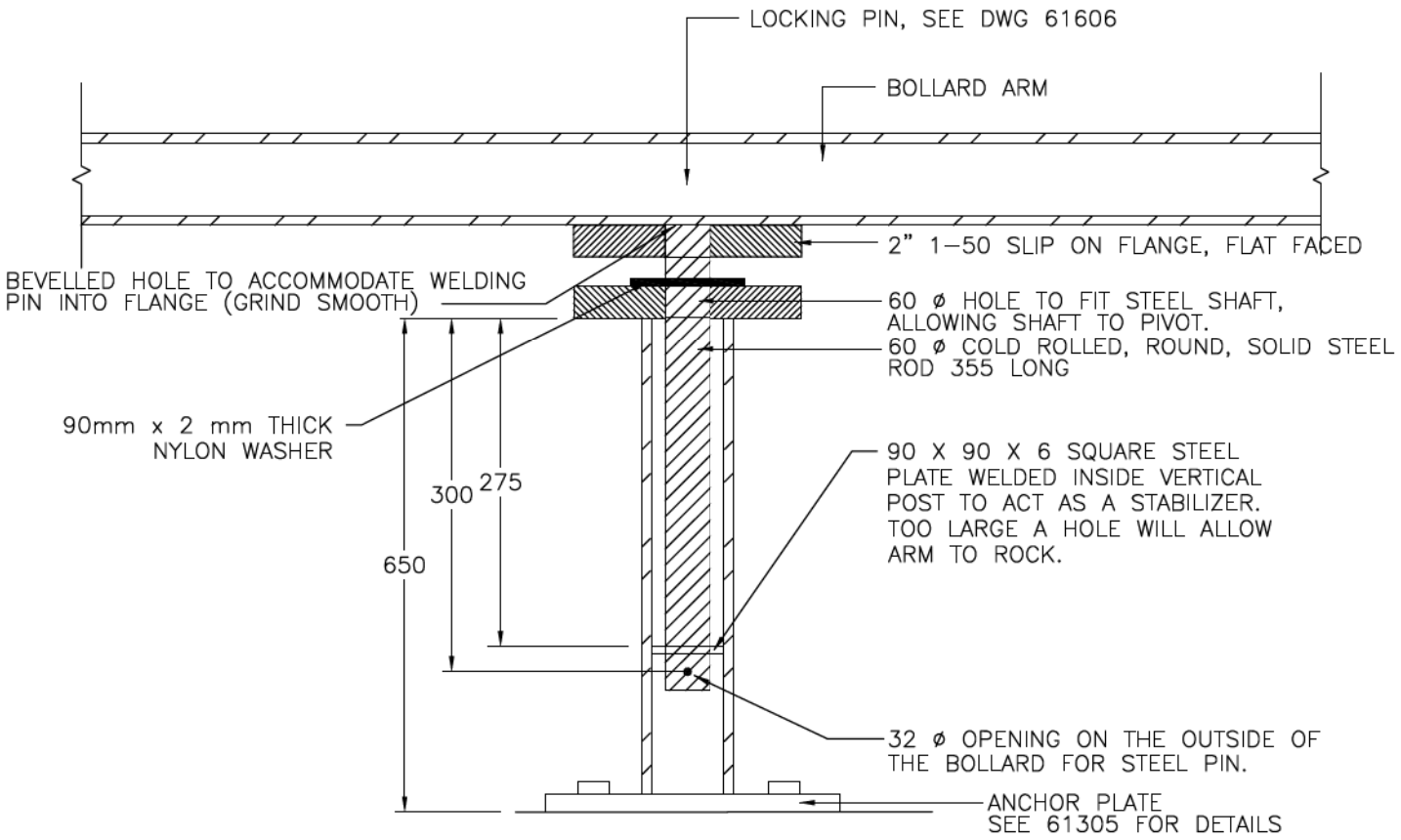
REVISIONS		
Date	Details	Drawn
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
10/01/25	Added concrete to steel pipe	M. Forgues
08/04/02	Flange size changed	M. Forgues
02/06/24	Printed	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

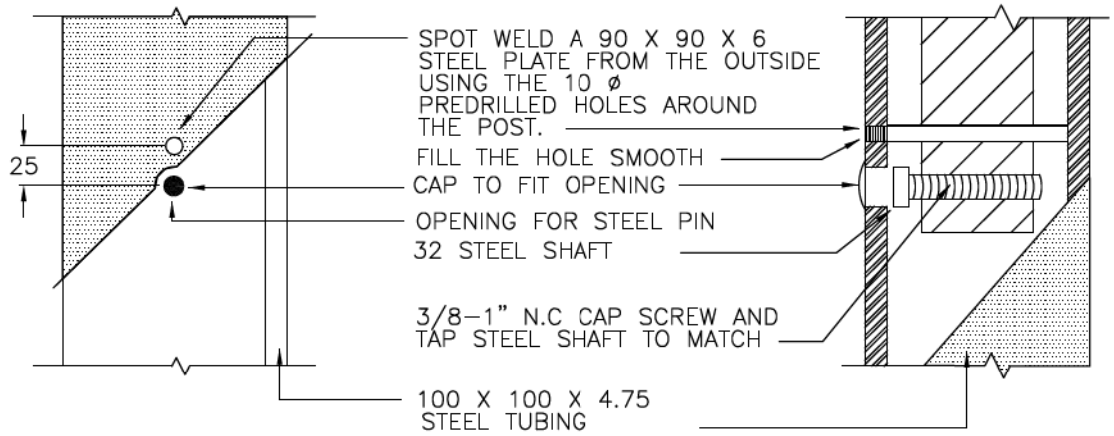
T-BOLLARD 1100mm SECTION

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 12/06/93 | Scale: N.T.S. | Drawn: D. BROWN

DWG. NO.
61603
Planning & Development Services Department



ASSEMBLY DETAIL



DETAIL

DETAIL

REVISIONS		
Date	Details	Drawn
12/10/22	REVISED DRAWING	J.E.
11/05/03	REVISED DRAWING NUMBER & REVISIONS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
10/01/25	Added notes	M. Forgues
08/04/02	Changed flange size & added dimension	M. Forgues

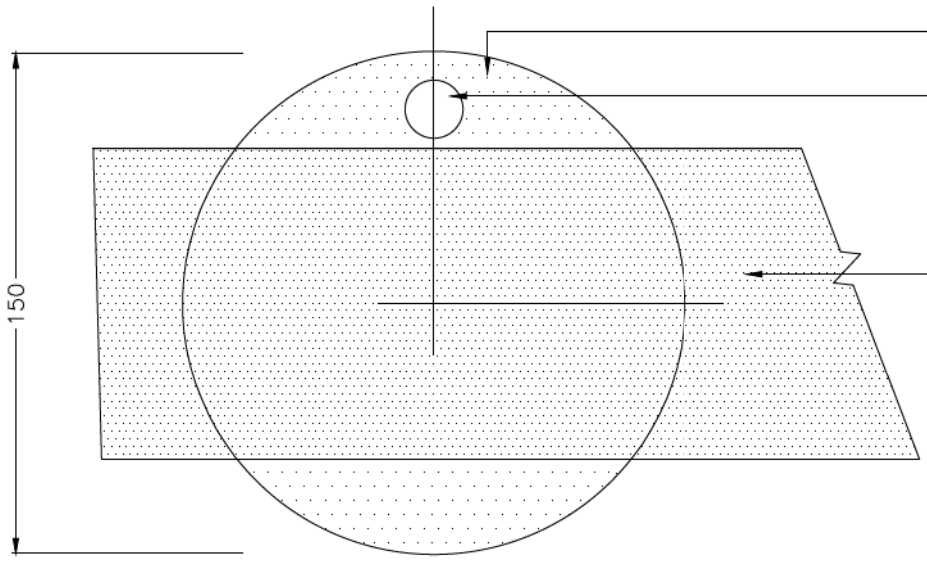
Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

T-BOLLARD ASSEMBLY DETAIL

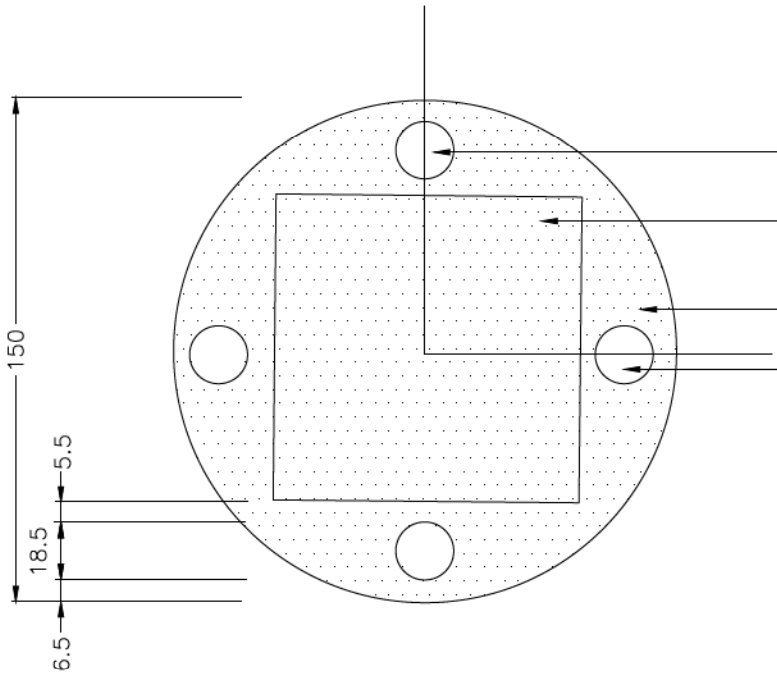
Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 12/06/93 | Scale: N.T.S. | Drawn: D. BROWN

DWG. NO. 61604

Planning & Development Services Department



TOP FLANGE



NOTE: ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS OTHERWISE NOTED.

BOTTOM FLANGE

REVISIONS

Date	Details	Drawn
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
10/01/25	Changed flange dimensions	M. Forgues
08/04/02	Changed flange size	M. Forgues
02/06/24	Printed	A. McLenaghan

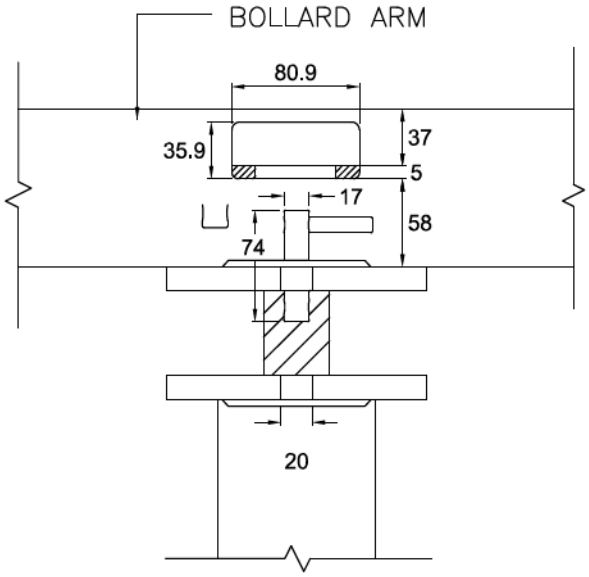
Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

T–BOLLARD FLANGE DETAIL

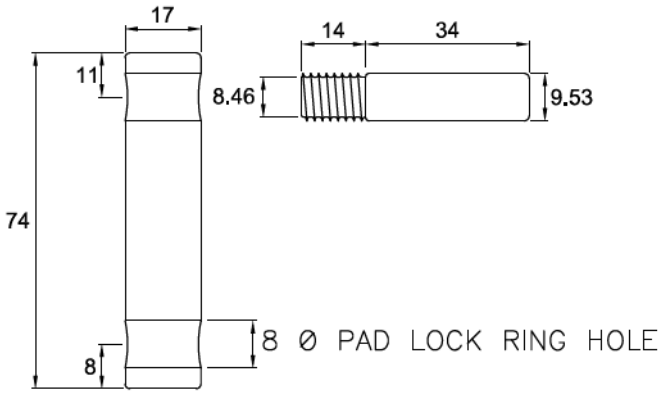
Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 12/06/93 | Scale: N.T.S. | Drawn: D. BROWN

DWG. NO.
61605
Planning & Development Services Department

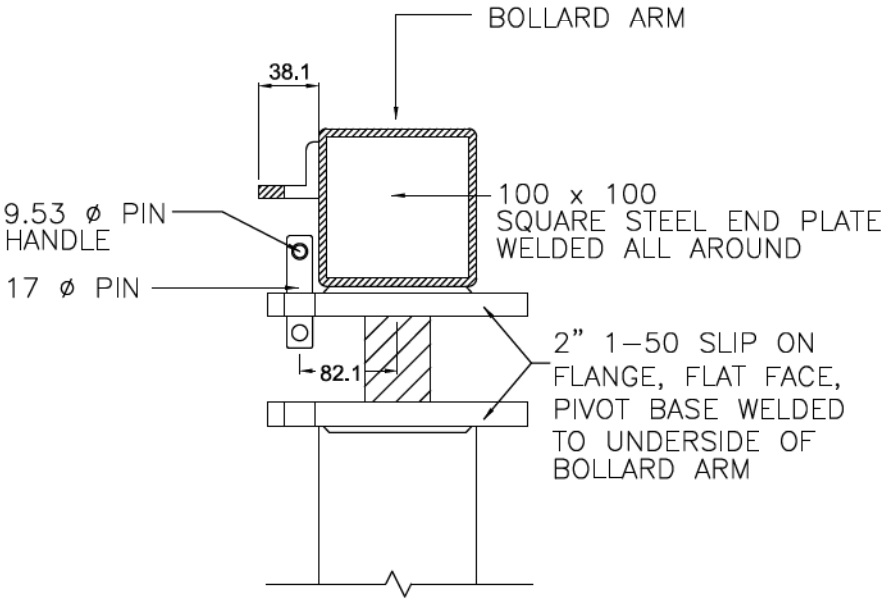
NOTE:
–ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.



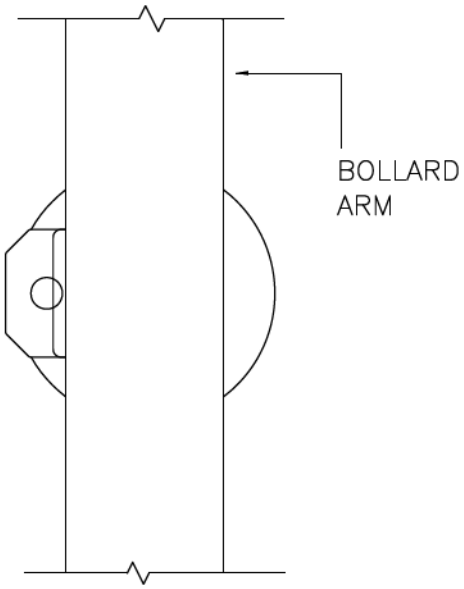
FRONT



PIN DETAIL



SIDE



TOP

REVISIONS		
Date	Details	Drawn
12/10/22	REVISED DRAWING	J.E.
11/05/03	REVISED DRAWING NUMBER & REVISIONS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
10/01/25	Changed flange size	M. Forgues
08/04/02	Changed flange size	M. Forgues

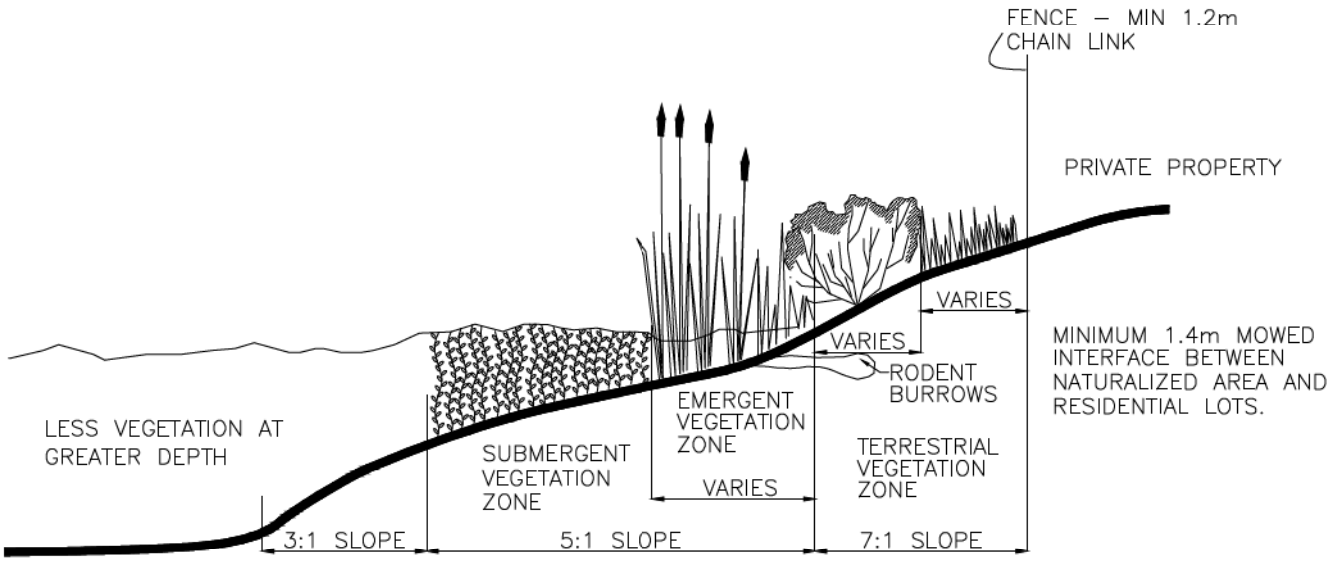
Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

T–BOLLARD LOCKING PIN DETAIL

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 09/03/01 Scale: N.T.S. Drawn: T. TARNOWSKI

DWG. NO. 61606

Planning & Development Services Department



NOTES:
- FENCE AND DENSE SHORELINE DISCOURAGES GOOSE ACCESS TO RIPARIAN AND ORNAMENTAL VEGETATION.
- SETBACK BETWEEN SHORE OF NWL AND PROPERTY LINE CONTAINS UNDERMINING OF SHORE BY MUSKRATS ON PUBLIC PROPERTY.
- VEGETATED, NATURALIZED SHORELINE RESULTS IN IMPROVED WATER QUALITY AND STABILIZES BANKS AND SHORE, DECREASING EROSION AND IMPROVING AESTHETIC QUALITY.

* THESE ARE THE THREE ZONES THAT WE ARE LOOKING FOR, WIDTHS MAY VARY ON A SITE BY SITE BASIS.

REVISIONS

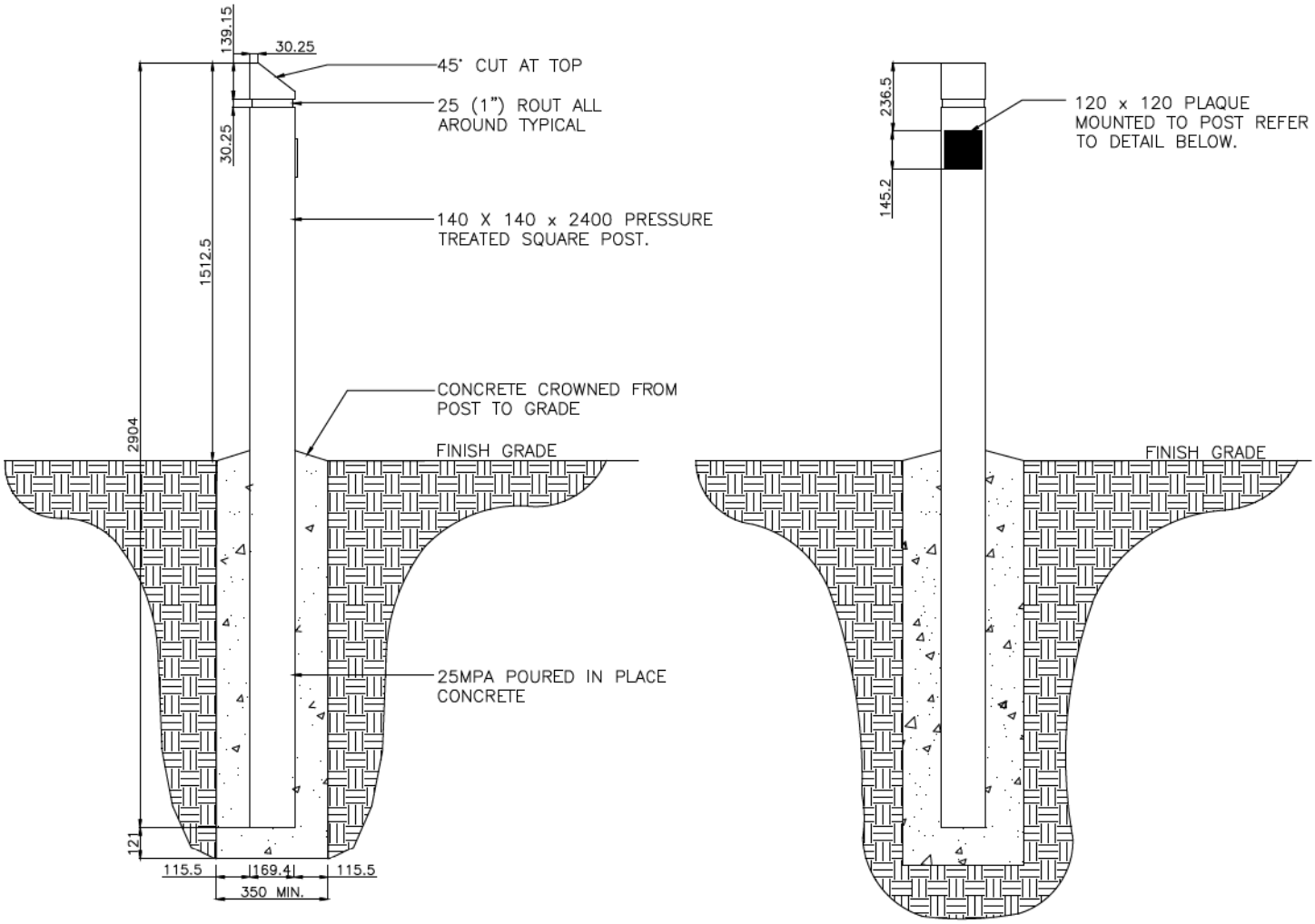
Date	Details	Approved
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
08/05/06	CHANGED MOWING NOTE	M. Forgues
10/03/06	ADDED A NOTE	M. Forgues
24/10/05	VEGETATION ZONES DIMENSIONED	M. Forgues

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

S.W.M.F. PLANTING DETAIL

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date 11/04/94 | Scale: N.T.S. | Drawn: A. McLENAGHAN

DWG. NO.
61701
Planning & Development Services Department



CONSERVATION EASEMENT MARKER POST

DETAILS

120 x 120 CAST ALUMINUM PLAQUE, c/w RAISED EDGE, LETTERS AND LOGO, c/w TWO 6 ø HOLES TO ACCEPT FASTENERS.

CONSERVATION EASEMENT MARKER POST–DETAIL

DETAILS

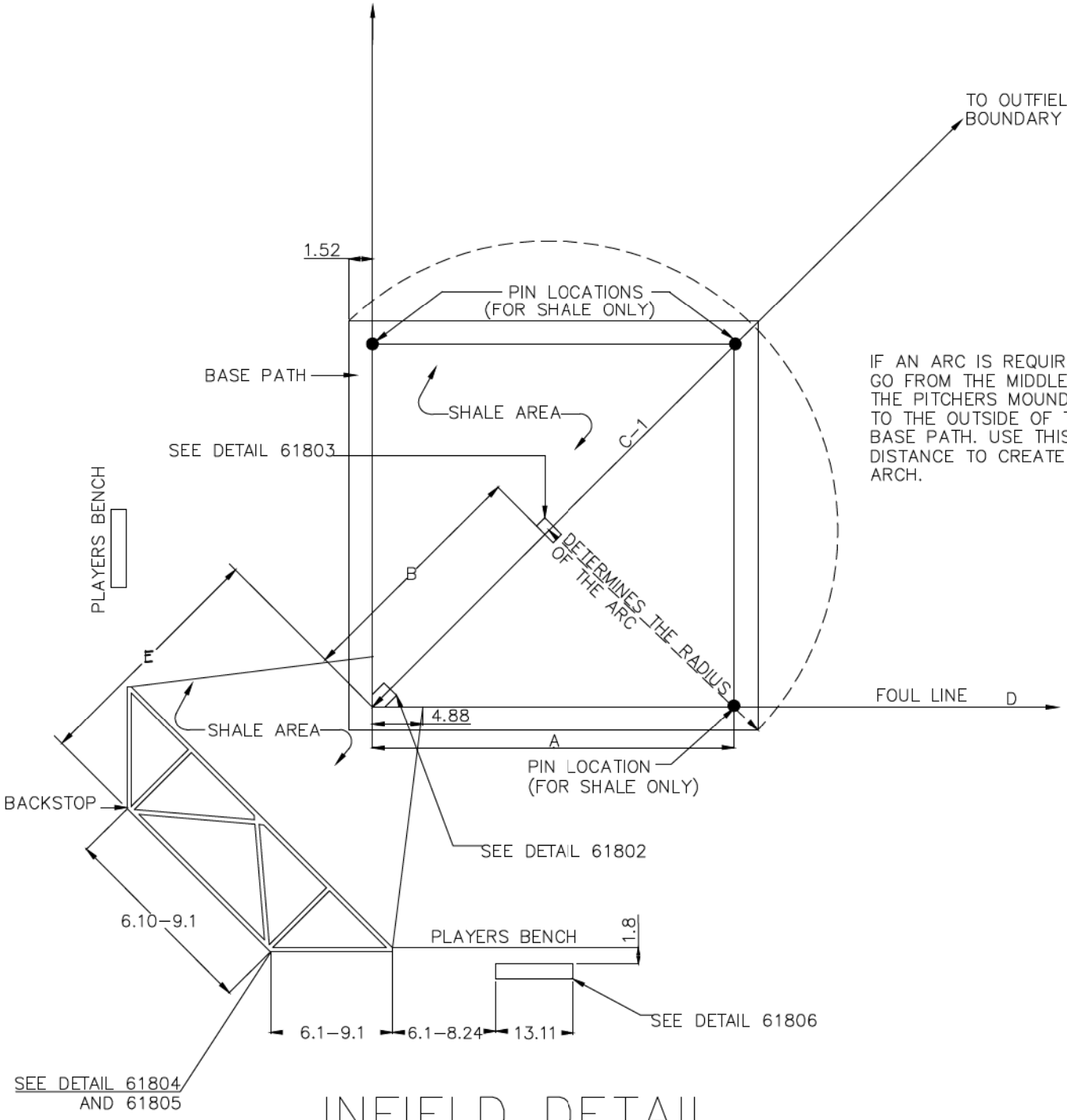
NOTE:
–ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

REVISIONS		
Date	Details	Drawn
11/05/03	REVISED DRAWING NUMBER & REVISIONS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
06/03/10	CHANGED CONCRETE CROWN	M. Forgues
05/10/24	ADDED CONCRETE CROWN NOTE	M. Forgues
05/03/14	DETAIL ADDED TO OSDS	L. Laing

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

ER/MR/Conservation Easement Marker Post

Approved: P. Alexander, AALA, CSLA			DWG. NO.
Checked: J.M. Talbot, MLA, CSLA			61702
Date: 05/03/14	Scale: N.T.S.	Drawn: L. LAING	Planning & Development Services Department



INFIELD DETAIL

NOTES:

–DIMENSIONS ARE IN METRES AND DECIMALS THEREOF.

–SEE DETAIL 61802 FOR MINIMUM AND MAXIMUM BALL DIAMOND DIMENSIONS

REVISIONS		
Date	Details	Drawn
13/04/30	ADDED DETAILS AND NOTES	A. DAM
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
05/11/02	Added shale locations	M. Forgues
02/06/24	Printed	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

BALL INFIELD DETAIL

Approved: P. Alexander, AALA, CSLA

Checked: J.M. Talbot, MLA, CSLA

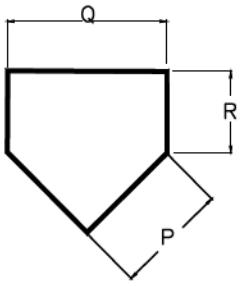
Date: 21/04/94 | Scale: N.T.S. | Drawn: DAN LECKIE

DWG. NO. 61801

Planning & Development Services Department

MINIMUM AND MAXIMUM BALL DIAMOND DIMENSIONS

DIMENSIONS		LEVEL OF PLAY	
		MINIMUM	MAXIMUM
BASE LINES	A	13.72m (45ft)	27.43m (90ft)
PITCHING DISTANCE	B	CHECK CURRANT BALL STANDARDS	CHECK CURRANT BALL STANDARDS
CENTRE FIELD BOUNDARY	C1	CHECK CURRANT BALL STANDARDS	CHECK CURRANT BALL STANDARDS
FOUL LINE BOUNDARY	D	CHECK CURRANT BALL STANDARDS	CHECK CURRANT BALL STANDARDS
BACKSTOP SETBACK	E	4.57m (15 ft)	CHECK CURRANT BALL STANDARDS
HOME PLATE	P	0.305m (12in)	
	Q	0.43m (17in)	
	R	0.22m (8.5in)	
ALL BALL FIELDS SHALL BE BUILT ACCORDING TO THE CURRENT SPORT ASSOCIATION STANDARD.			



HOME PLATE

REVISIONS		
Date	Details	Drawn
13/04/30	CHANGED COPYRIGHT YEAR	A. DAM
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
08/04/02	Chart changed	M. Forgues
05/11/03	Chart changed and one added	M. Forgues

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

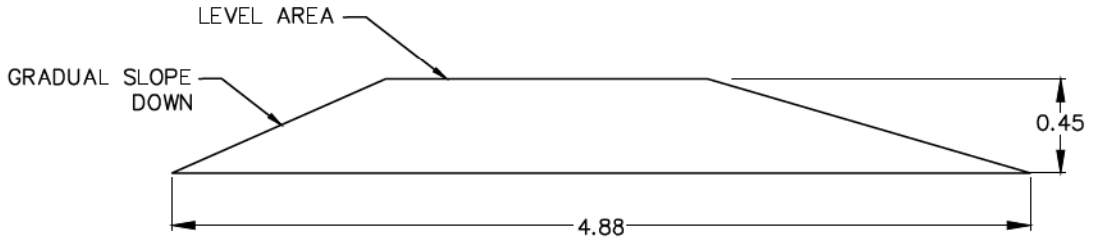
BALL DIAMOND DIMENSIONS

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 26/04/94 | Scale: N.T.S. | Drawn: DAN LECKIE

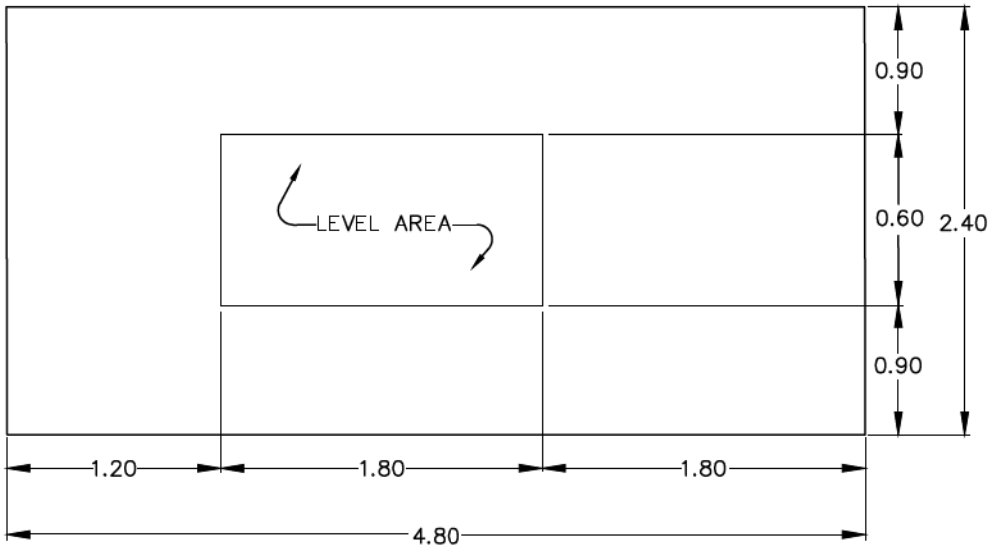
DWG. NO. 61802

Planning & Development Services Department

FOR 27.43m (90ft) DIAMONDS



ELEVATION



PLAN VIEW

NOTES:
–DIMENSIONS ARE IN METERS UNLESS OTHERWISE NOTED..

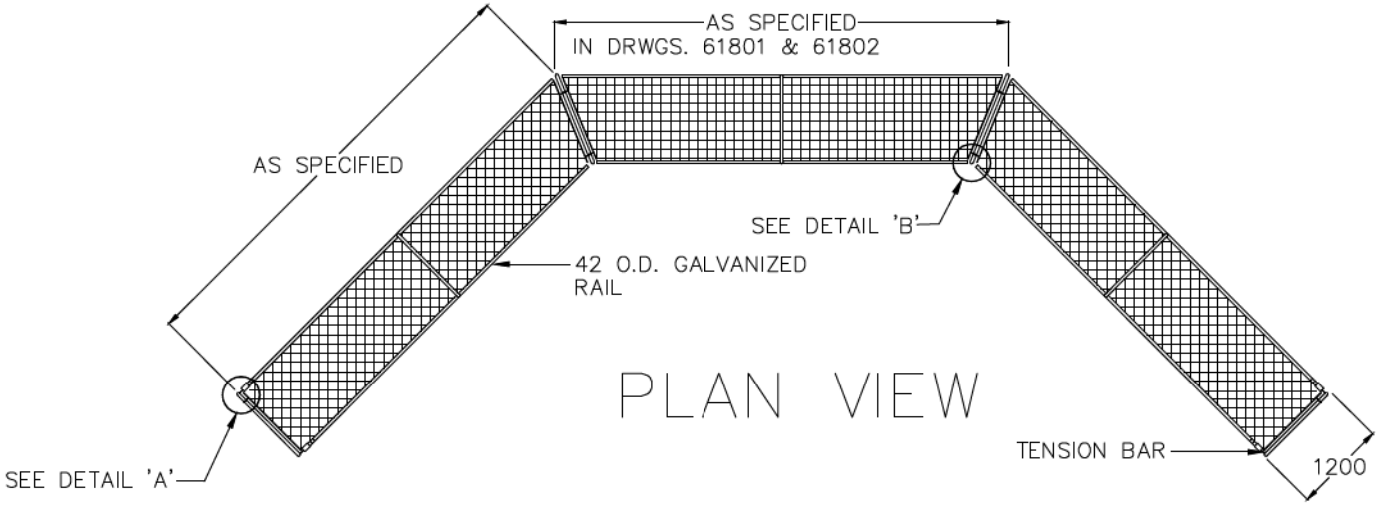
REVISIONS		
Date	Details	Drawn
13/04/30	REVISED DRAWING NUMBERS	A. DAM
11/05/06	REVISED DRAWING NUMBERS	J. ORR
10/02/09	REVISED DRAWING NUMBERS	O. Butt
06/03/10	Changed dimensions	M. Forgues
05/11/02	Added to the OSDS	M. Forgues

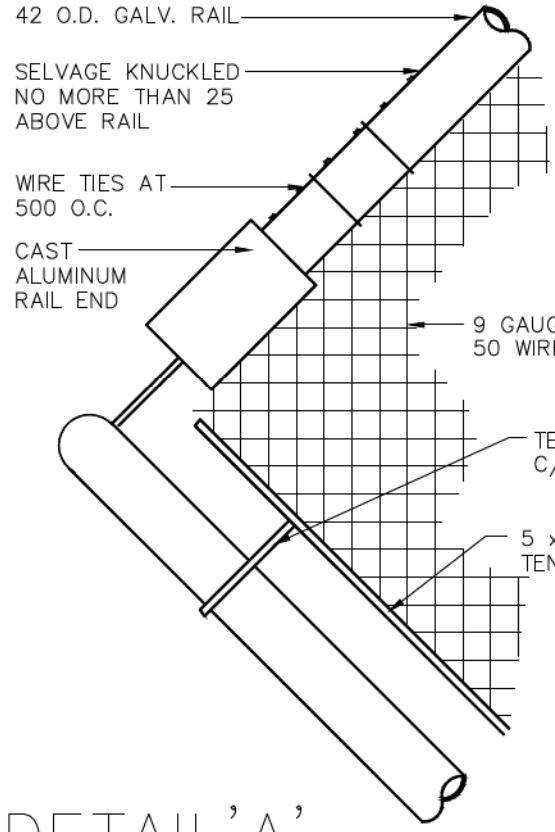
Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

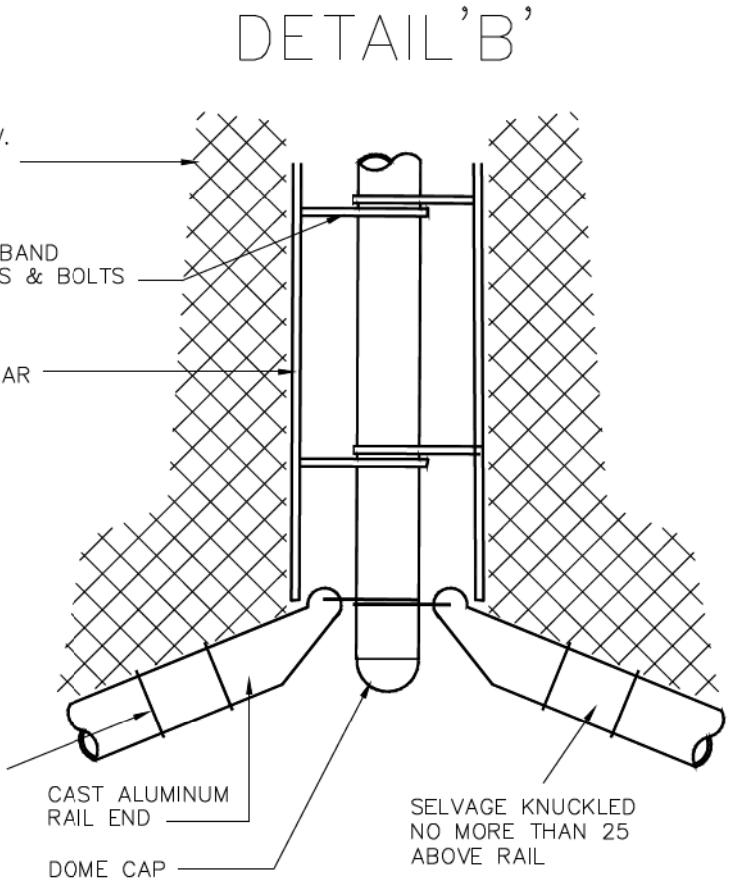
PITCHERS MOUND DETAIL

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 02/11/05 | Scale: N.T.S. | Drawn: M. FORGUES

DWG. NO.
61803
Planning & Development Services Department







REVISIONS		
Date	Details	Drawn
13/05/01	REVISED DRAWING NUMBERS	A. DAM
11/05/02	REVISED DRAWING NUMBERS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
02/06/24	Printed	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

CANOPY BACKSTOP PLAN AND DETAILS

Approved: P. Alexander, AALA, CSLA

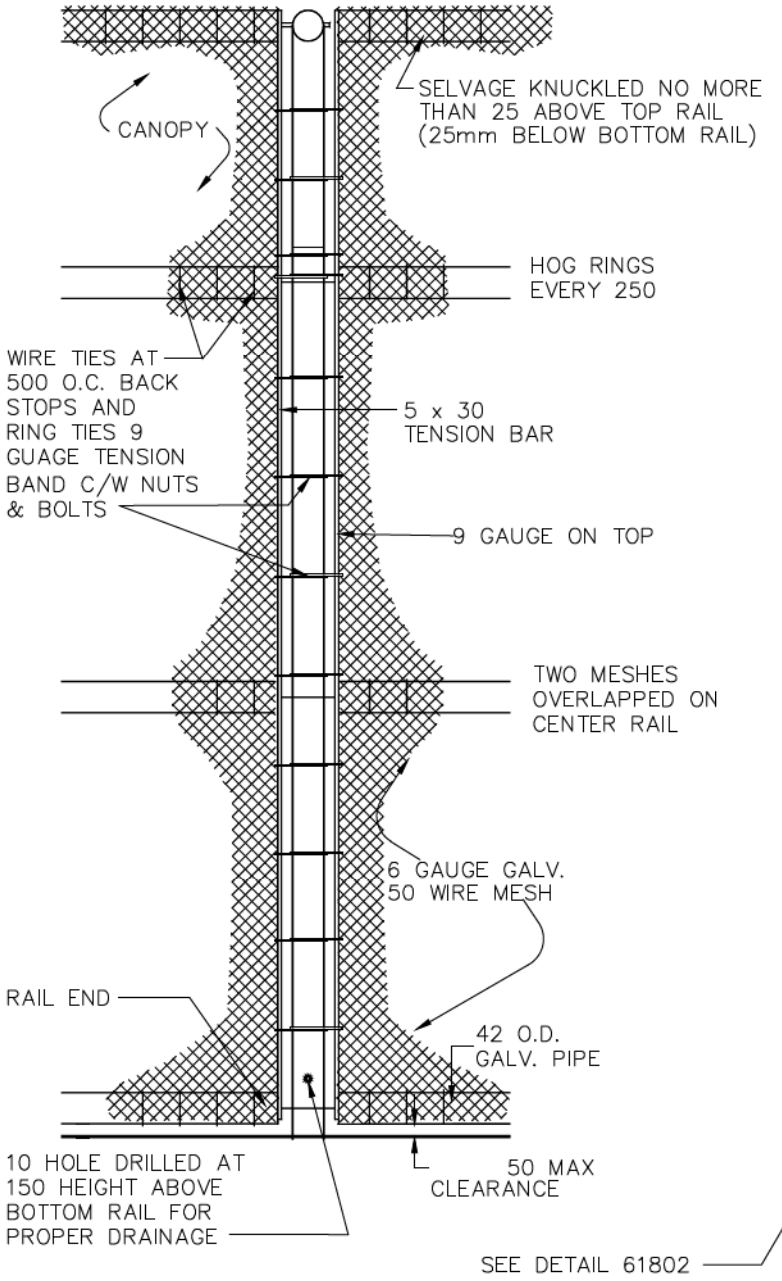
Checked: J.M. Talbot, MLA, CSLA

Date: 25/04/94 | Scale: N.T.S. | Drawn: DAN LECKIE

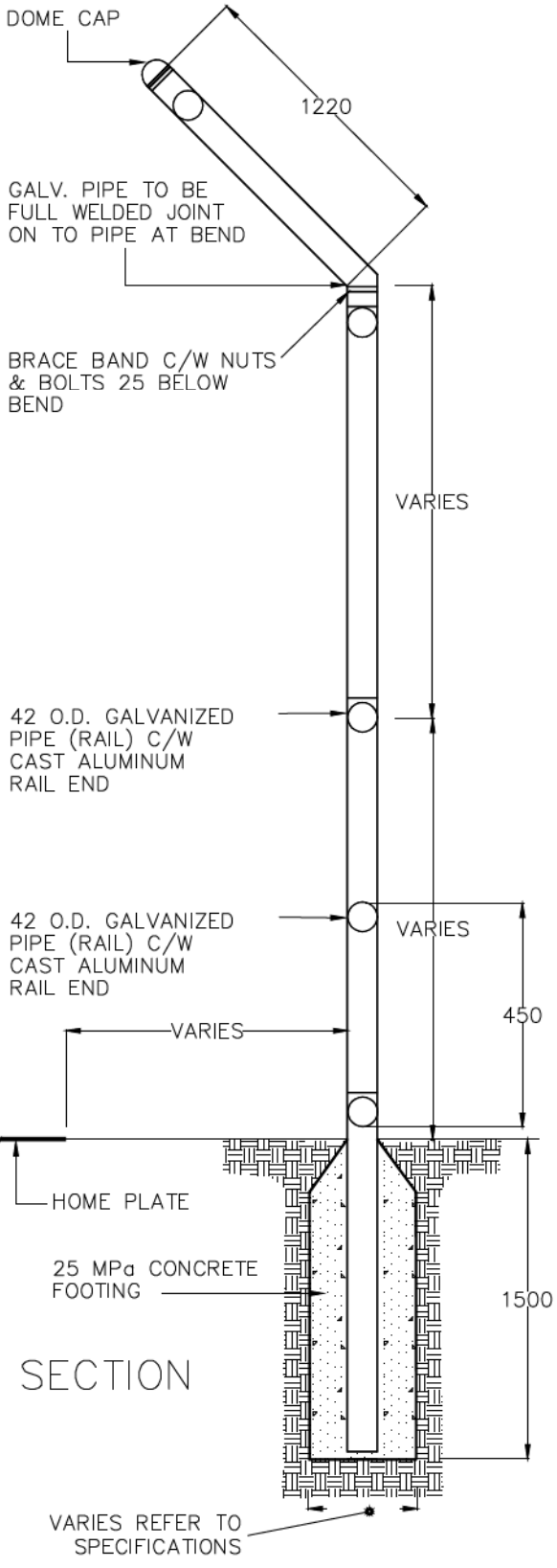
DWG. NO.

61804

Planning & Development Services Department



ELEVATION



SECTION

NOTE:
- ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.
- REFER TO SPECIFICATIONS FOR SPECIFIC DIMENSIONS.

REVISIONS		
Date	Details	Drawn
13/05/01	REVISED DRAWING NUMBERS	A. DAM
12/10/22	REVISED DRAWING	J.E.
11/05/06	REVISED DRAWING NUMBERS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
02/06/24	Printed	A. McLenaghan

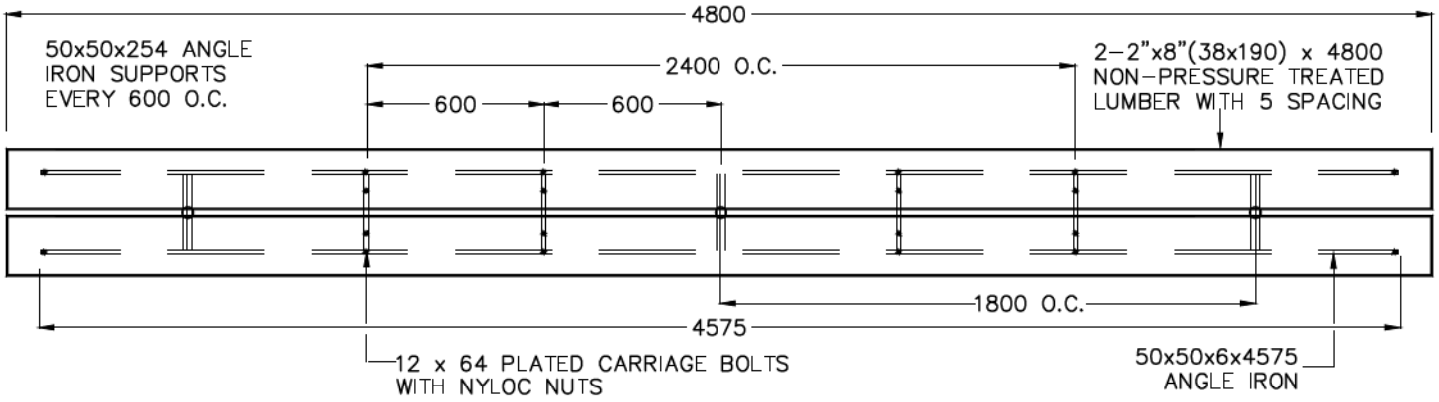
Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

CANOPY BACKSTOP SECTION/ELEVATION

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 25/04/94 | Scale: N.T.S. | Drawn: DAN LECKIE

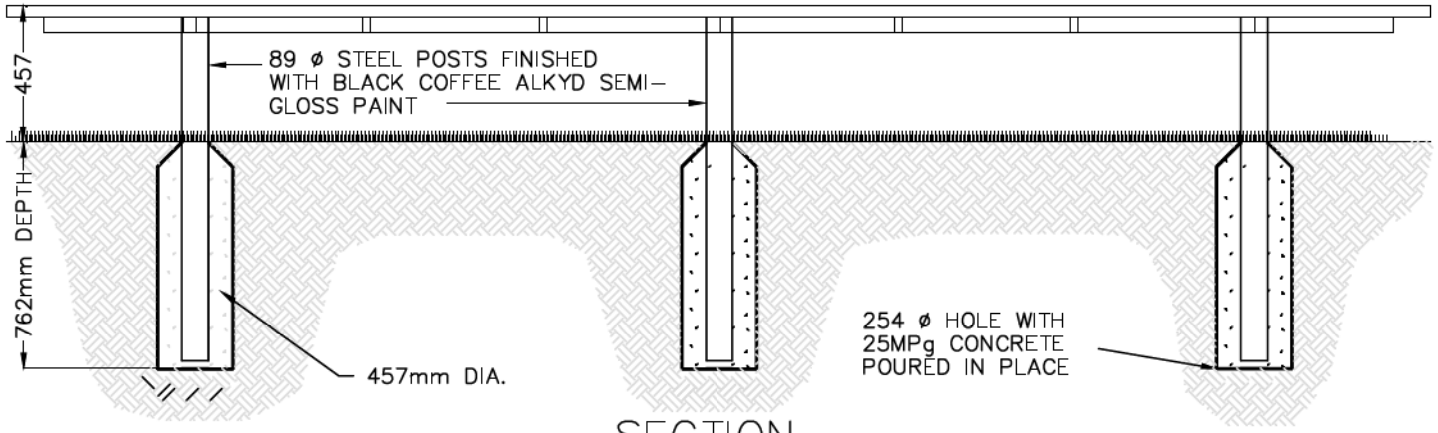
DWG. NO. 61805

Planning & Development Services Department

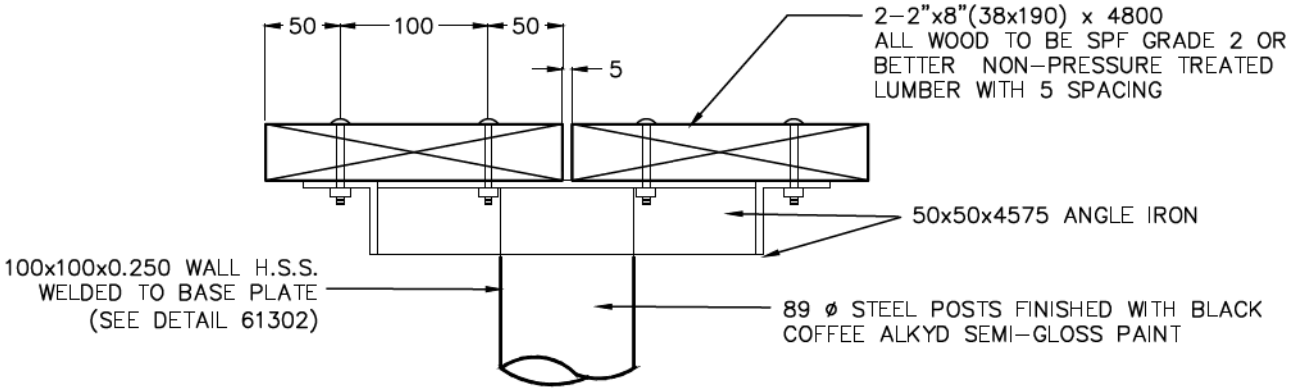


ANGLE IRON AND ANGLE IRON SUPPORTS TO BE FINISHED WITH BLACK ALKYD SEMI-GLOSS PAINT.

PLAN VIEW



SECTION



END VIEW DETAIL

NOTE:
- ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

REVISIONS		
Date	Details	Drawn
13/05/01	REVISED DRAWING NUMBERS	A. DAM
12/10/22	REVISED DRAWING	J. E.
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
05/02/11	Remove Pressure Treated Wood	L. Laing

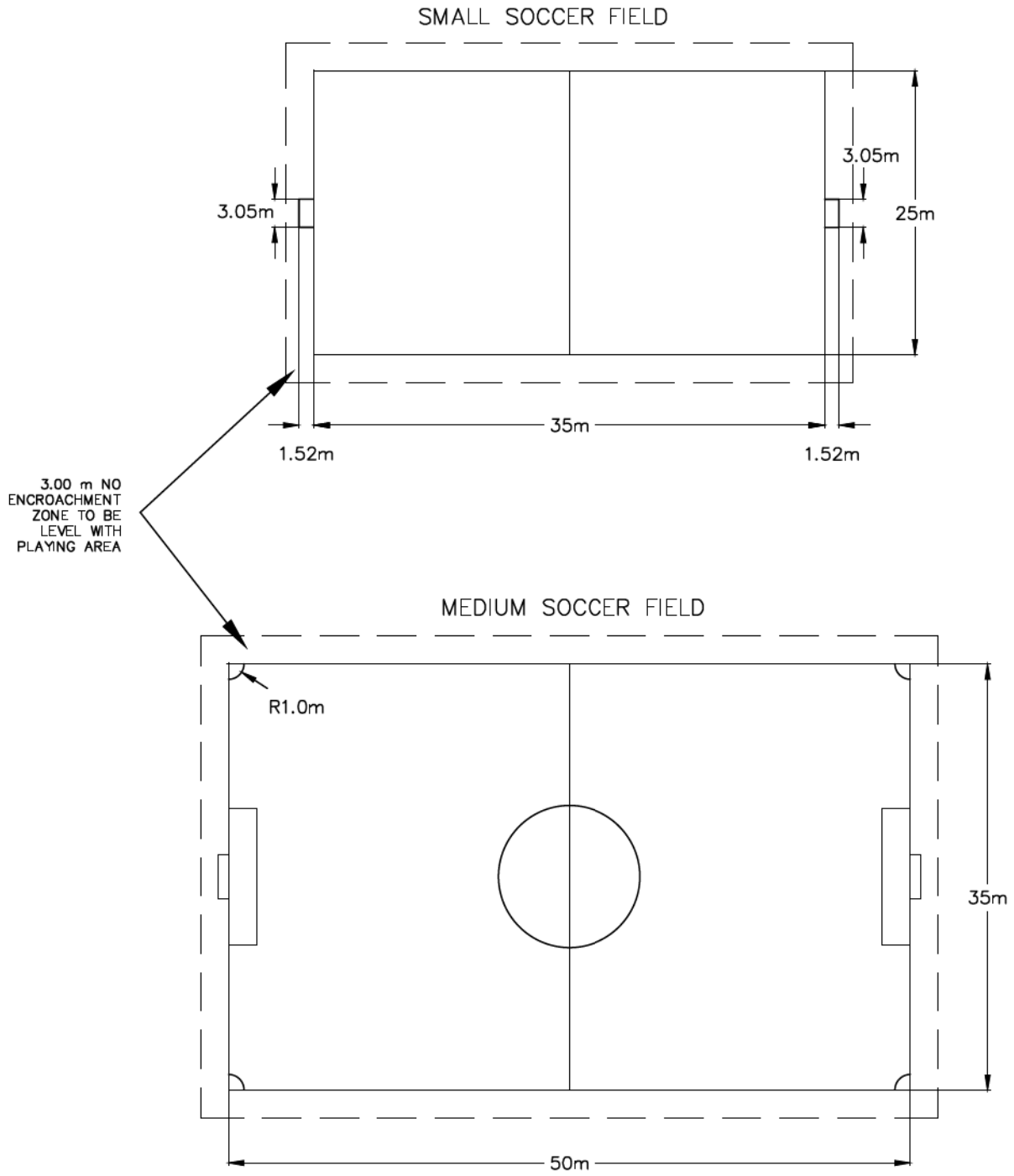
Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

PLAYER'S BENCH

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 30/07/94 | Scale: N.T.S. | Drawn: DAN LECKIE

DWG. NO. 61806

Planning & Development Services Department



NOTES:
- CORNER PINS TO BE SURVEYED AND INSTALLED ACCORDING TO SPECIFICATIONS.
- ALL DIMENSIONS IN METERS UNLESS OTHERWISE NOTED.
- SEE DETAIL 61809 FOR GOAL DIMENSIONS

REVISIONS		
Date	Details	Drawn
13/05/01	REVISED DRAWING NUMBERS & NOTES	A. DAM
12/10/23	REVISED SOCCER FIELD DIMENSIONS	J. ORR
11/05/03	REVISED DRAWING NUMBER & REVISIONS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
02/06/24	Printed	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

SOCCER FIELD DIMENSIONS 1

Approved: J.M. Talbot, MLA, CSLA

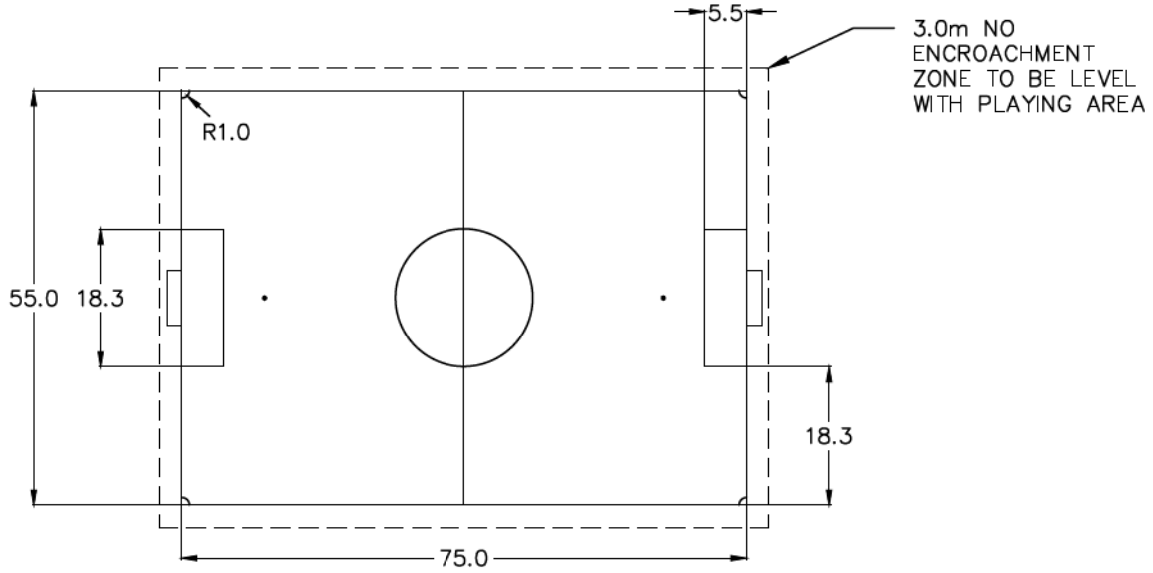
Checked: Jocelyn Thrasher–Haug, M.Sc., P.Ag., P.Biol.

Date: 24/01/95 | Scale: N.T.S. | Drawn: DAN LECKIE

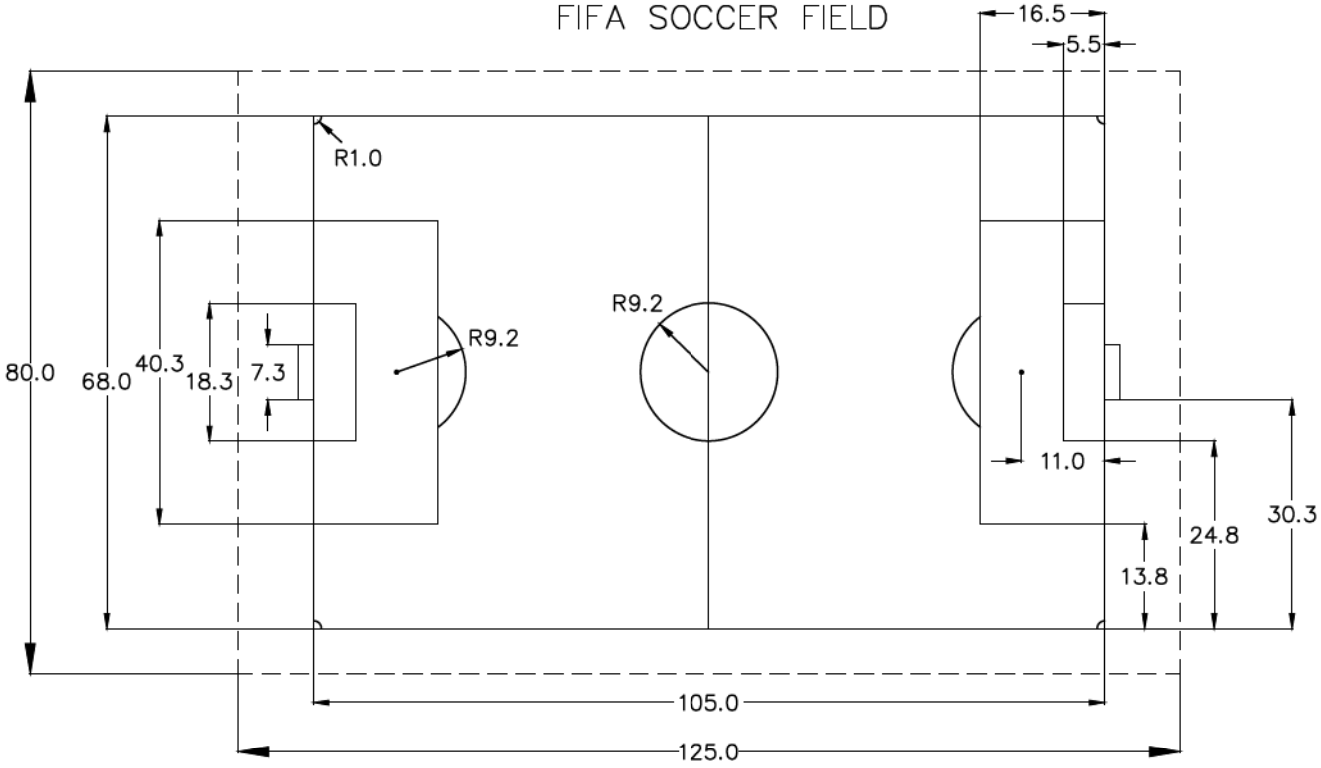
DWG. NO. 61807

Planning & Development Services Department

LARGE SOCCER FIELD



FIFA SOCCER FIELD



NOTES:
- CORNER PINS TO BE SURVEYED AND INSTALLED ACCORDING TO SPECIFICATIONS.
- ALL DIMENSIONS IN METERS UNLESS OTHERWISE NOTED.
- SEE DETAIL 61809 FOR GOAL DIMENSIONS

REVISIONS		
Date	Details	Drawn
13/05/01	REVISED DRAWING NUMBER	A. DAM
12/10/23	ADDED LARGE & FIFA FIELDS	J. ORR
11/05/03	REVISED DRAWING NUMBER & REVISIONS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
02/06/24	Printed	A. McLenaghan

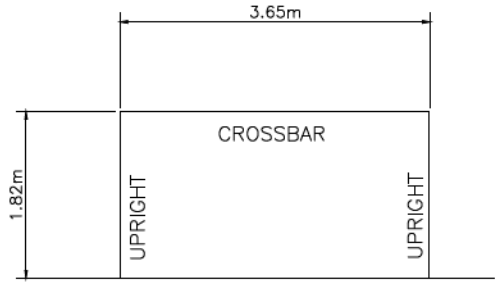
Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

SOCCER FIELD DIMENSIONS 2

Approved: J.M. Talbot, MLA, CSLA
Checked: Jocelyn Thrasher-Haug, M.Sc., P.Ag., P.Biol.
Date: 24/01/95 | Scale: N.T.S. | Drawn: DAN LECKIE

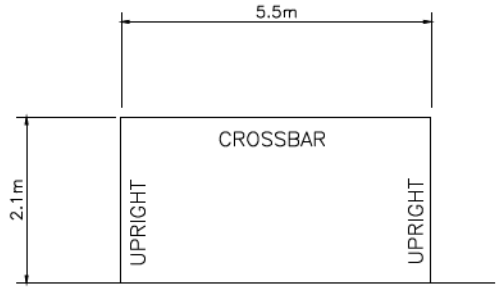
DWG. NO. 61808

Planning & Development Services Department

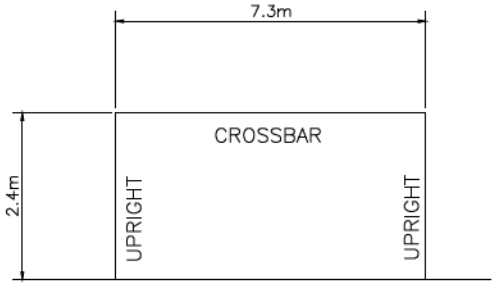


NOTE:
- PERMANENT SOCCER GOAL CONSTRUCTED OF 76 O.D. SCHEDULE 40 PIPE LEGS AND 50 X 100 RECTANGULAR TUBE CROSS MEMBER. PROTECTED WITH POLYESTER WHITE POWDER COATING.
- ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

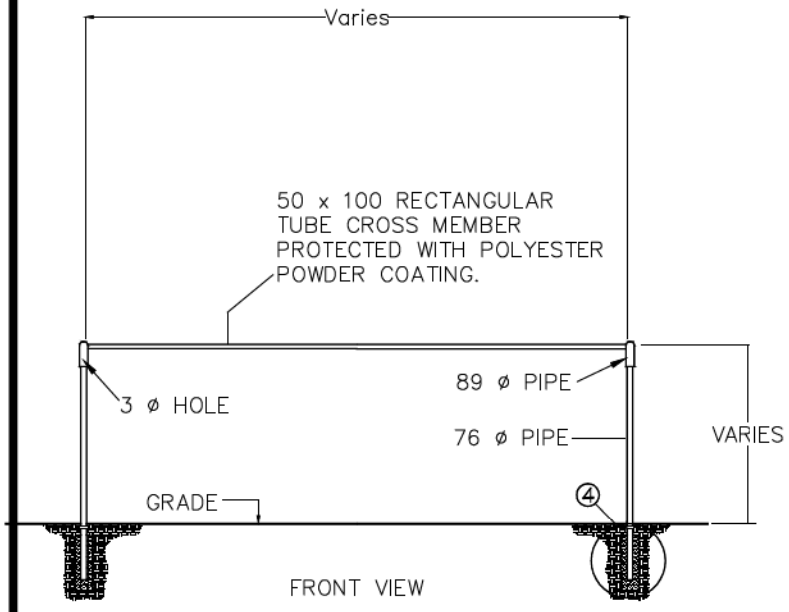
SMALL
HEIGHT: 1.82m
WIDTH: 3.65m

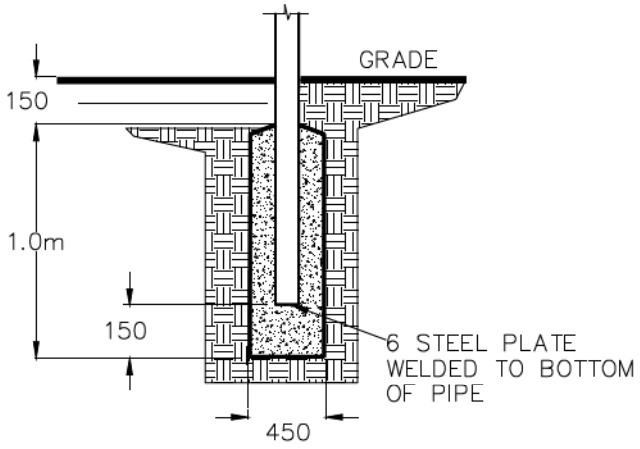


MEDIUM
HEIGHT: 2.1m
WIDTH: 5.5m



LARGE
HEIGHT: 2.4m
WIDTH: 7.3m





REVISIONS		
Date	Details	Drawn
13/05/01	REVISED DRAWING NUMBERS	A. DAM
11/05/06	REVISED DRAWING NUMBERS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
05/10/24	Small crossbar dimensions changed	M. Forgues
05/02/17	Change Concrete Footing	L. Laing

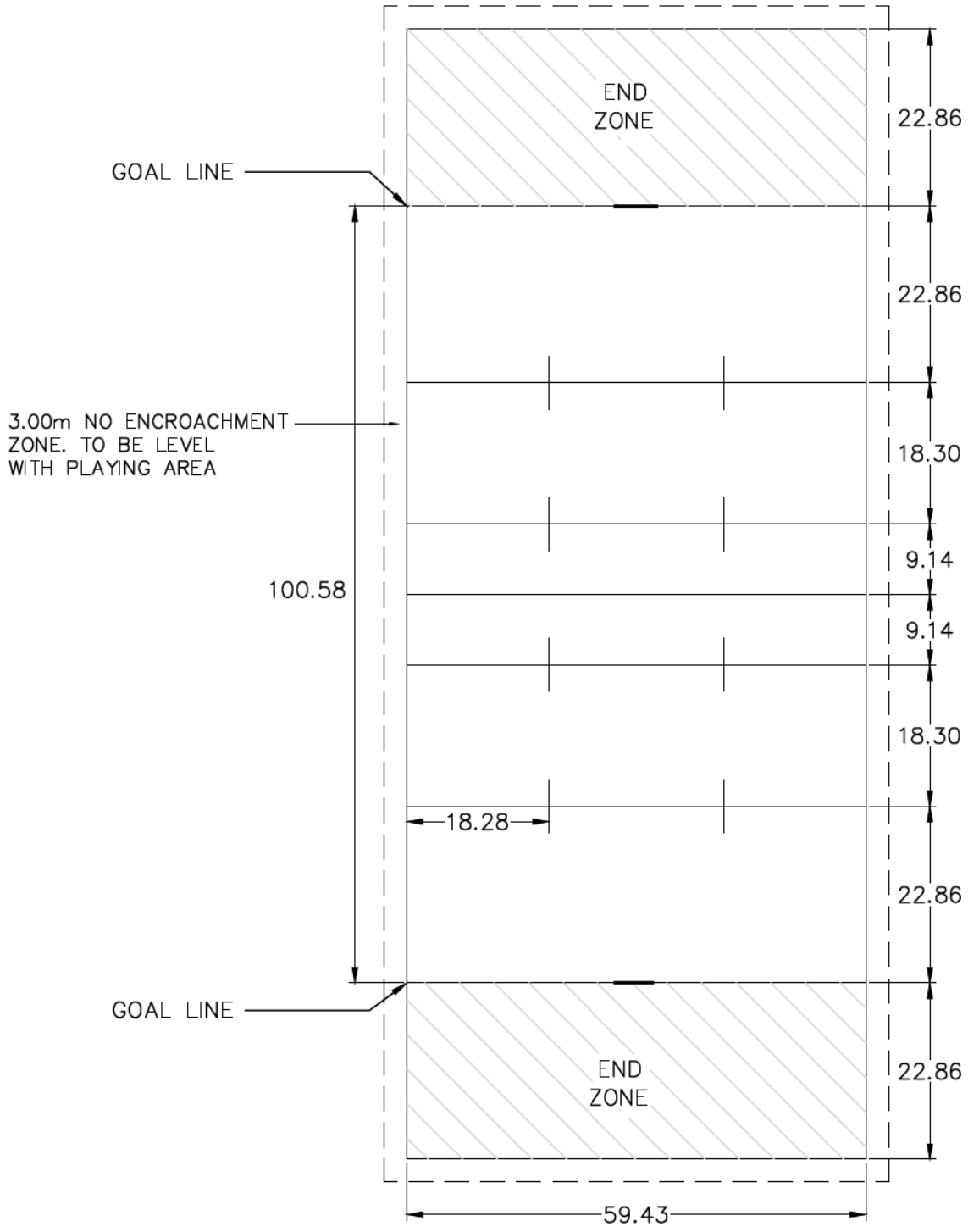
Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

PERMANENT SOCCER GOAL

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 22/01/01 | Scale: N.T.S. | Drawn: B. WISPINSKI

DWG. NO. 61809

Planning & Development Services Department



NOTE:
—ALL DIMENSIONS IN METERS UNLESS OTHERWISE NOTED.

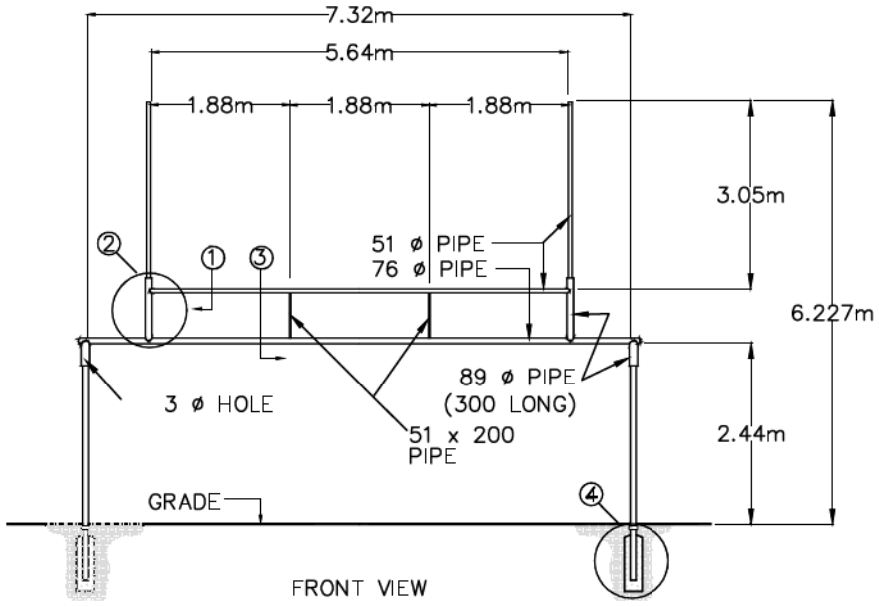
REVISIONS		
Date	Details	Drawn
13/05/03	REMOVED GOAL DIMENSIONS	A. DAM
13/05/01	REVISED DRAWING NUMBERS	A. DAM
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
02/06/24	Printed	A. McLenaghan

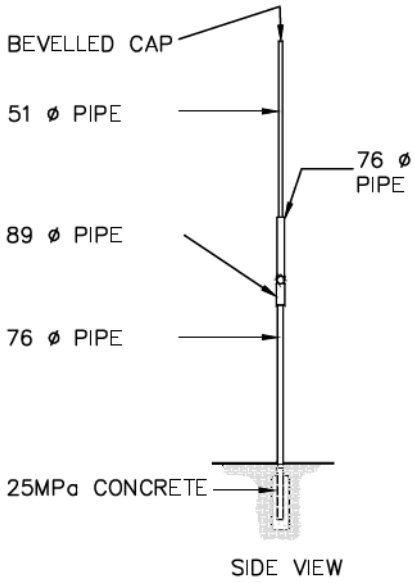
Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

FOOTBALL FIELD LAYOUT

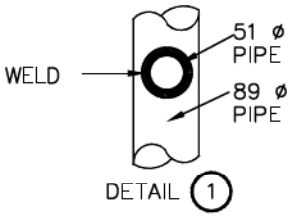
Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 01/06/01 | Scale: N.T.S. | Drawn: A. McLENAGHAN

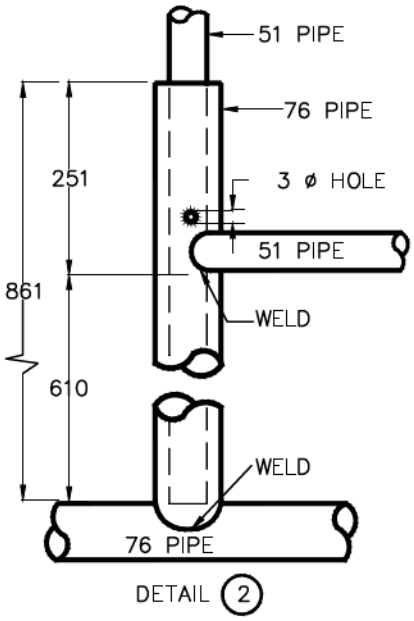
DWG. NO.
61810
Planning & Development Services Department

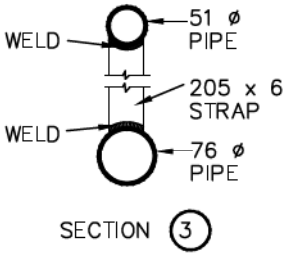


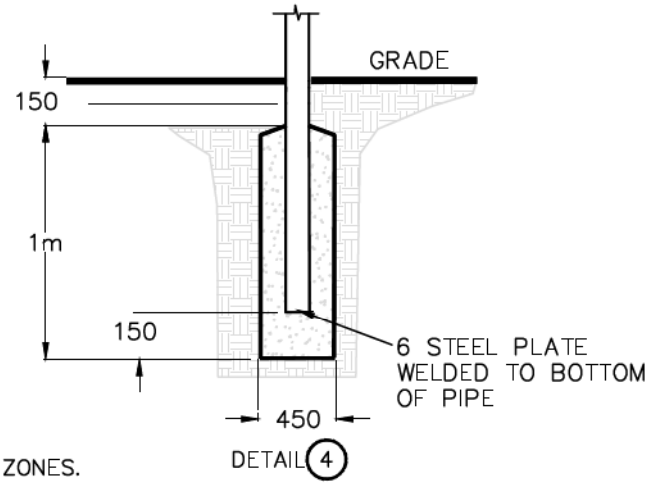


COMBINATION GOAL POSTS









NOTES:

- MATERIAL–STANDARD BLACK PIPE, SCHEDULE 40.
- DRILL SLEEVES AND PIPES PER 130mm DIA,
- BOLT DURING FABRICATION
- SLEEVES TO BE CONTOURED FOR WELDING.
- POSTS TO BE SET IN CONCRETE.
- ALL EXPOSED METAL TO BE POWDER COATED WHITE.
- TO BE USED ONLY WITH SOCCER/FOOTBALL FIELDS WITH END ZONES.

REVISIONS		
Date	Details	Drawn
13/05/01	REVISED DRAWING NUMBERS	A. DAM
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
05/02/17	Change Concrete Footing	L. Laing
02/06/24	Printed	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

COMBINATION GOAL POST DETAIL

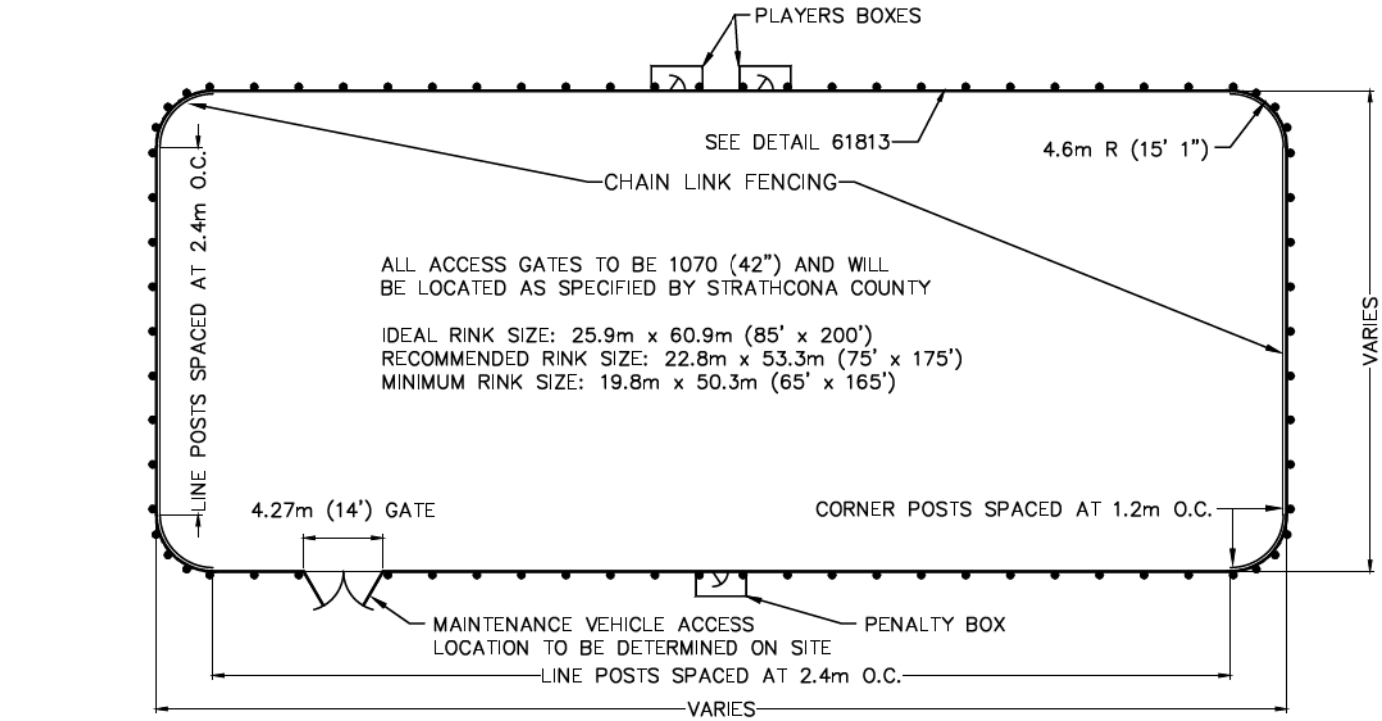
P. Alexander, AALA, CSLA

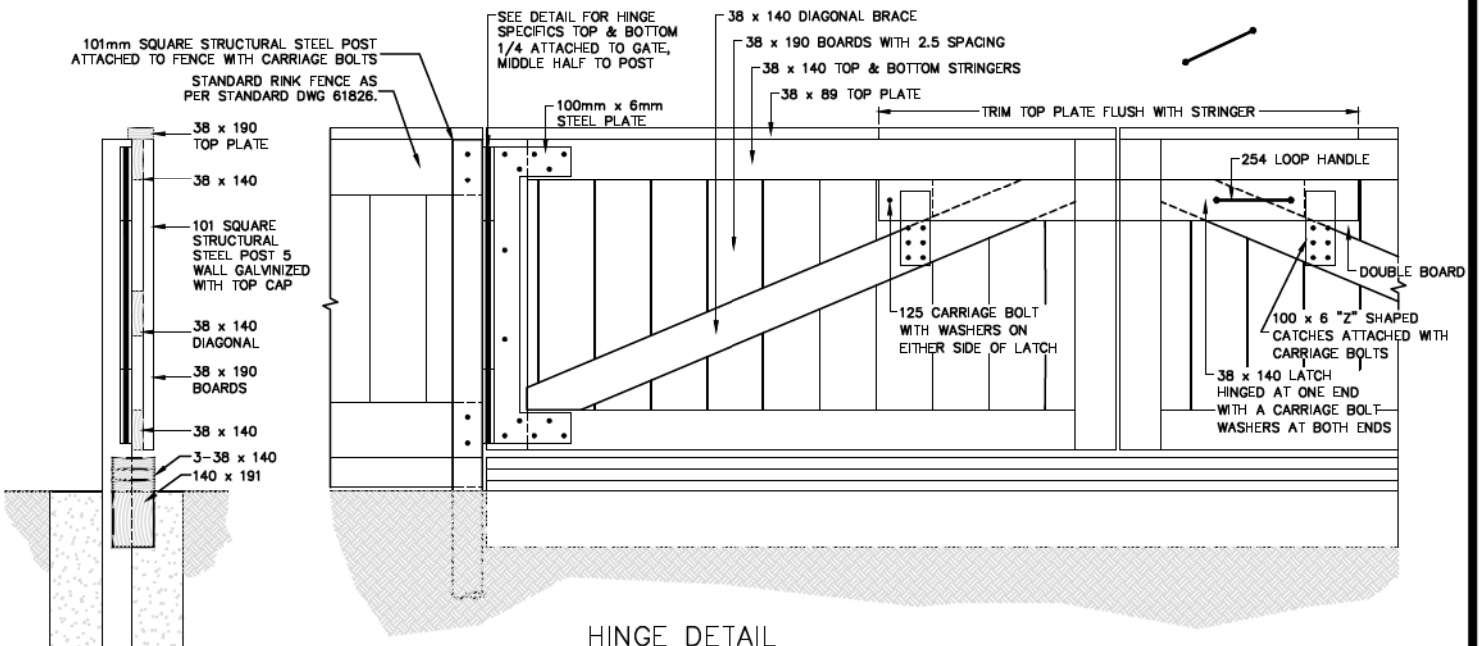
Approved: J.M. Talbot, MLA, CSLA

Date: 30/03/94 | Scale: N.T.S. | Drawn: DAN LECKIE

DWG. NO. 61811

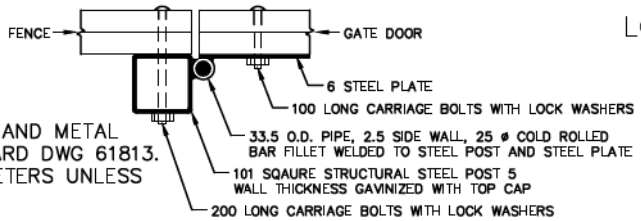
Planning & Development Services Department



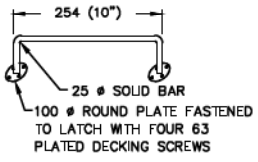


NOTES:
- PAINTING OF ALL BOARDS AND METAL SURFACES AS PER STANDARD DWG 61813.
- ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTE

HINGE DETAIL



LOOP HANDLE DETAIL



REVISIONS		
Date	Details	Drawn
13/05/01	REVISED DRAWING NUMBERS	A. DAM
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
02/06/24	Printed	A. McLenaghan
02/02/20	Stove bolt changed to carriage bolt	A. McLenaghan

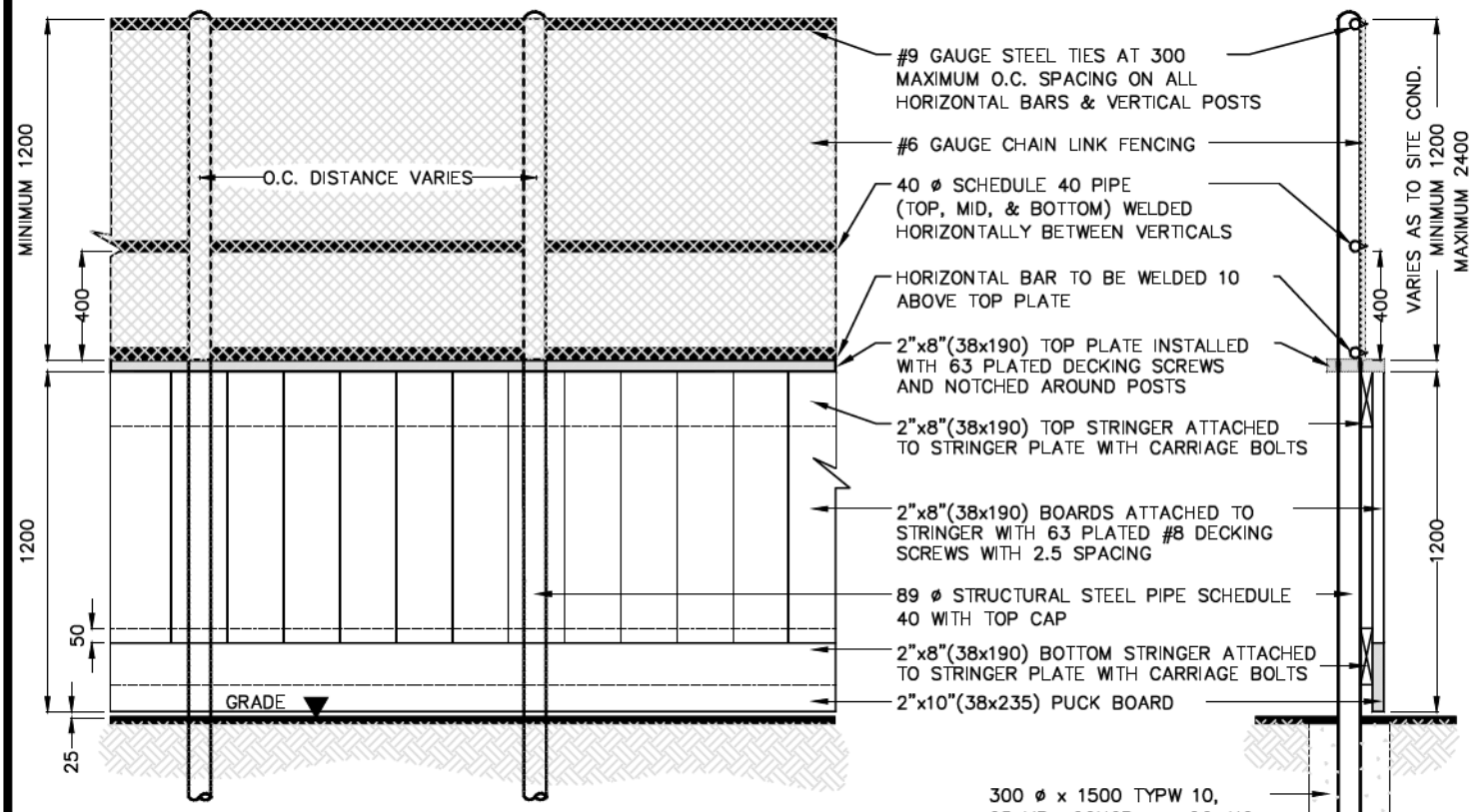
Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

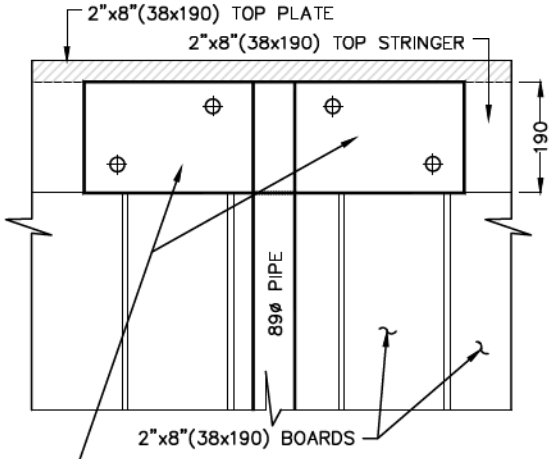
OUTDOOR RINK LAYOUT

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 31/03/94 | Scale: N.T.S. | Drawn: DAN LECKIE

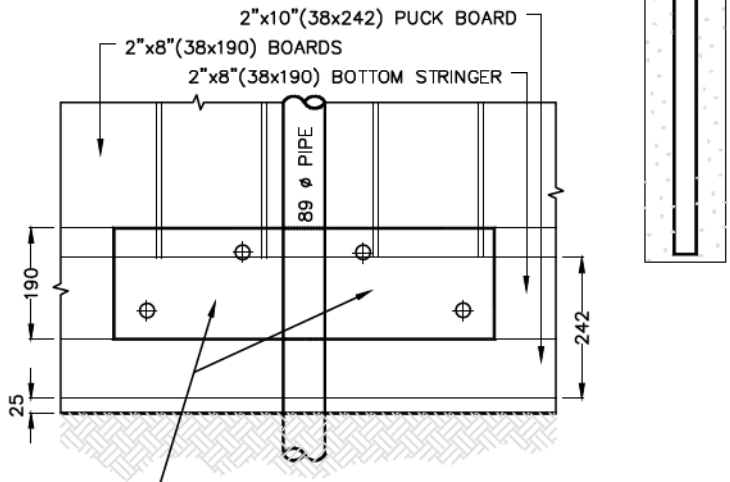
DWG. NO. 61812

Planning & Development Services Department





TOP STRINGER PLATE



BOTTOM STRINGER PLATE

NOTES:
- ALL BOARDS TO BE PAINTED WITH BEHR PINTO WHITE OR APPROVED EQUIVALENT.
- ALL WELDS TO BE PAINTED WITH ZINC OXIDE. ALL METAL SURFACES TO BE PAINTED WITH TWO COATS OF TREMCLAD FLAT WHITE FOR METAL.
- TENSION BANDS TO BE INSTALLED ON END POSTS AT 500 O.C. SPACING.
- STEEL WIRE TIES ARE TO BE USED, NOT ALUMINUM.
- DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.

REVISIONS		
Date	Details	Drawn
13/05/01	REVISED DRAWING NUMBER	A. DAM
12/10/22	REVISED DRAWING NUMBER	J.E.
11/05/06	REVISED DRAWING NUMBERS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
02/06/24	Printed	A. McLenaghan

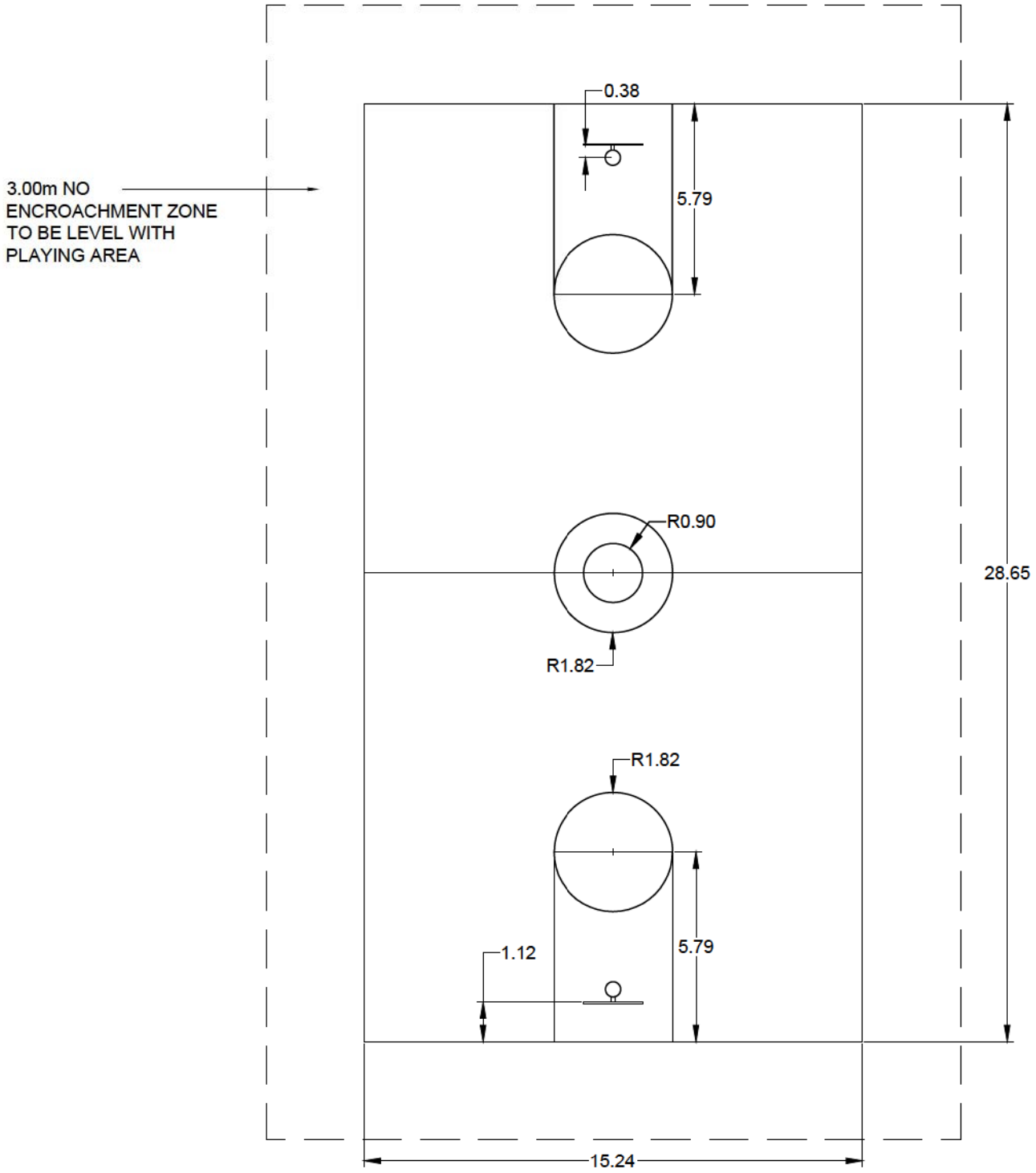
Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

OUTDOOR RINK DETAIL

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 31/03/94 | Scale: N.T.S. | Drawn: DAN LECKIE

DWG. NO. 61813

Planning & Development Services Department



NOTE:
-MEASURE TO INSIDE EDGE OF BOUNDARY LINES.
-ALL UNITS IN METERS UNLESS OTHERWISE NOTED.
-SEE DETAIL 61815 FOR OUTDOOR BASKETBALL BACKBOARD/POST

REVISIONS		
Date	Details	Drawn
13/05/01	REVISED DRAWING NUMBER & NOTE	A. DAM
12/10/22	REVISED DRAWING NUMBER	J.E.
11/05/03	REVISED DRAWING NUMBER & REVISIONS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
02/06/24	Printed	A. McLenaghan

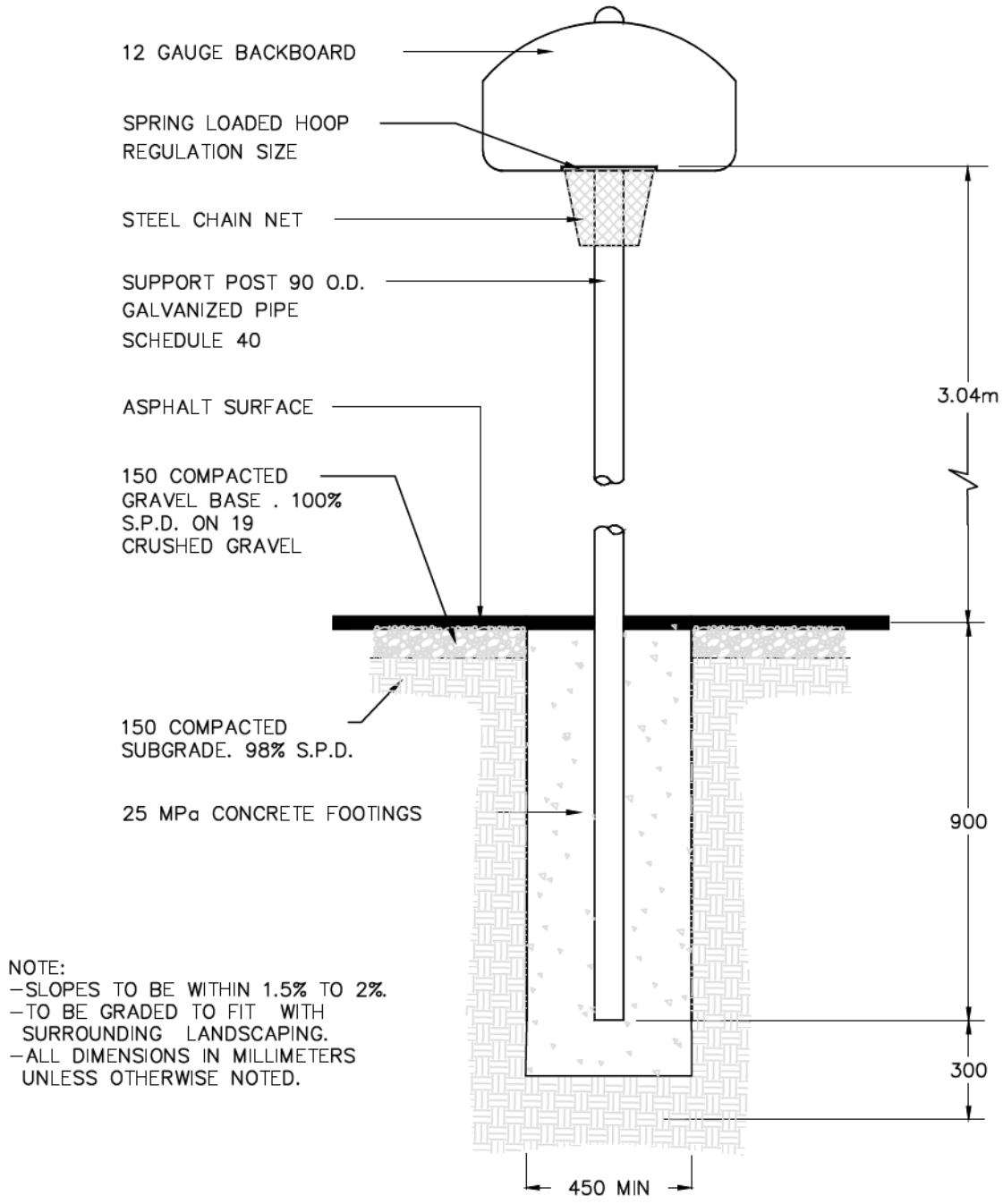
Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

BASKETBALL COURT LAYOUT

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 01/06/01 | Scale: N.T.S. | Drawn: A. McLENAGHAN

DWG. NO. 61814

Planning & Development Services Department



NOTE:
- SLOPES TO BE WITHIN 1.5% TO 2%.
- TO BE GRADED TO FIT WITH SURROUNDING LANDSCAPING.
- ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

OUTDOOR BASKETBALL COURT BACKBOARD/POST

REVISIONS		
Date	Details	Drawn
13/05/01	REVISED DRAWING NUMBERS	A. DAM
11/05/06	REVISED DRAWING NUMBERS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
05/02/17	Add Concrete to Footing	L. Laing
02/06/24	Printed	A. McLenaghan

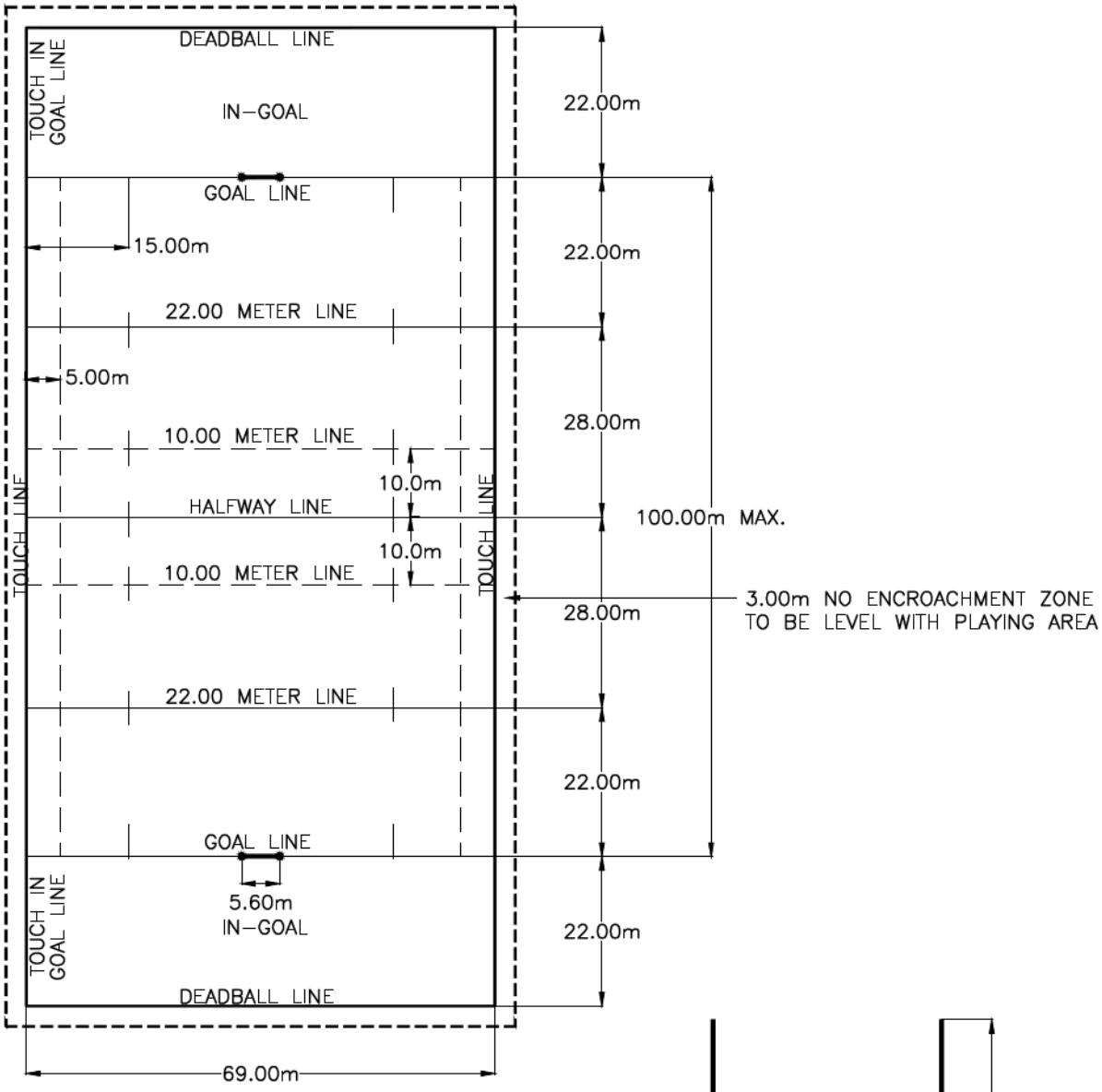
Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

OUTDOOR BASKETBALL–BACKBOARD/POST

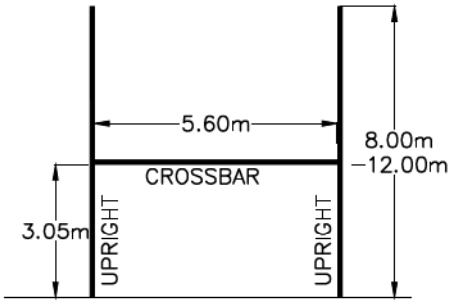
Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 29/03/94 | Scale: N.T.S. | Drawn: DAN LECKIE

DWG. NO. 61815

Planning & Development Services Department



PLAN VIEW



GOAL

NOTE:
–ALL DIMENSIONS IN METERS UNLESS OTHERWISE NOTED.

REVISIONS		
Date	Details	Drawn
13/05/01	REVISED DRAWING NUMBERS	A. DAM
11/05/06	REVISED DRAWING NUMBERS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
02/06/24	Printed	A. McLenaghan
02/02/20	Goal post heights	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

STANDARD RUGBY SPORTS FIELD

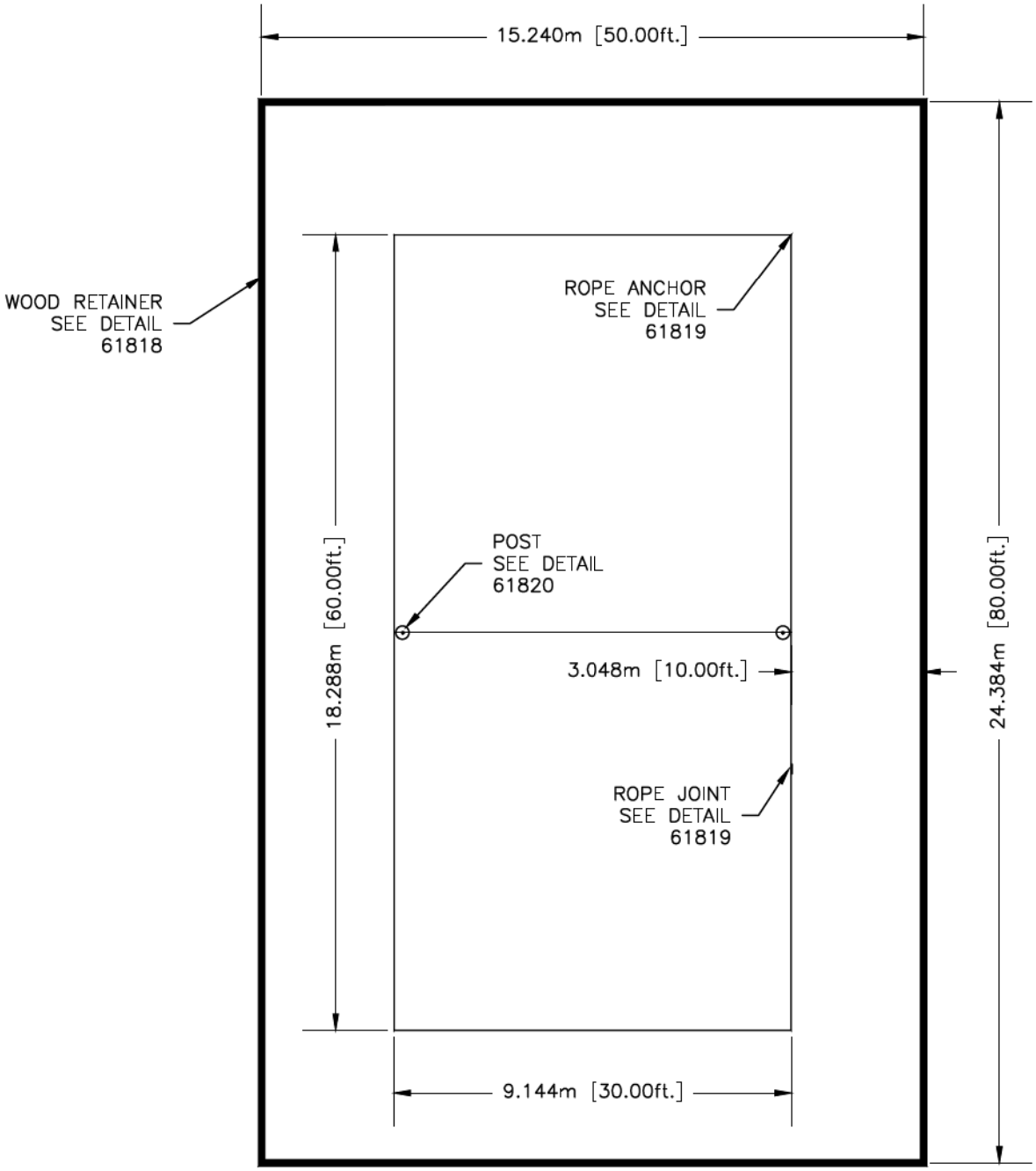
Approved: P. Alexander, AALA, CSLA

Checked: J.M. Talbot, MLA, CSLA

Date: 94/10/05 | Scale: N.T.S. | Drawn: DAN LECKIE

DWG. NO. 61816

Planning & Development Services Department



NOTES:
–SLOPE SUBGRADE TO ENSURE POSITIVE DRAINAGE.
–ALL DIMENSIONS IN METERS UNLESS OTHERWISE NOTED.

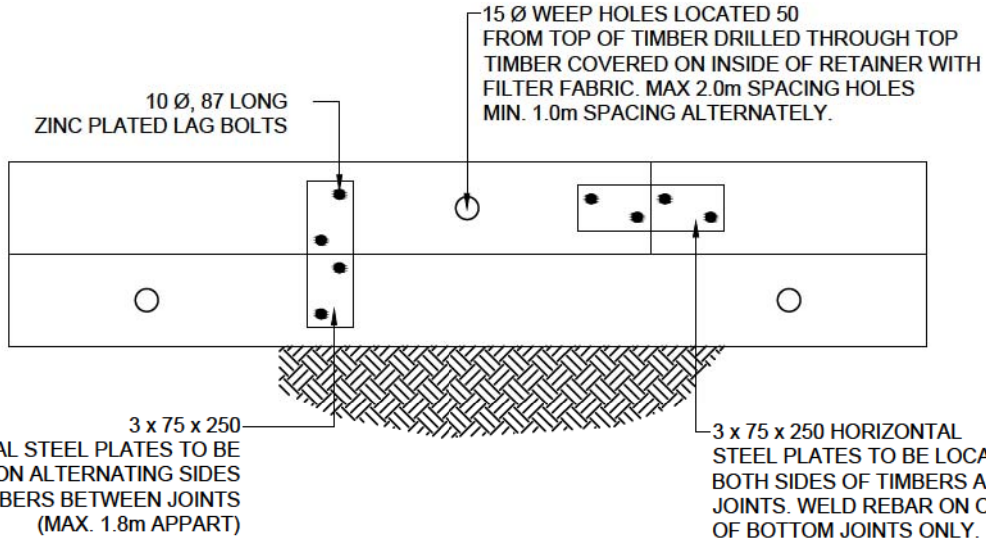
REVISIONS		
Date	Details	Drawn
13/05/01	REVISED DRAWING NUMBER	A. DAM
11/05/06	REVISED DRAWING NUMBERS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
02/06/24	Printed	A. McLenaghan

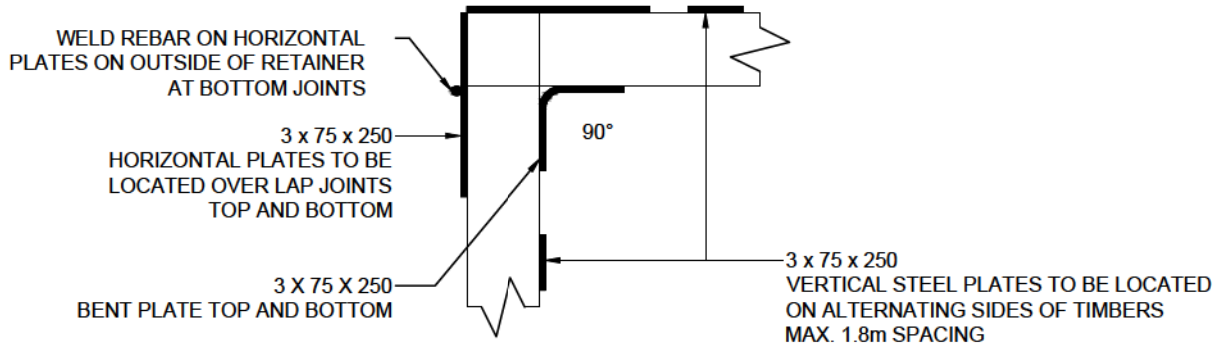
Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

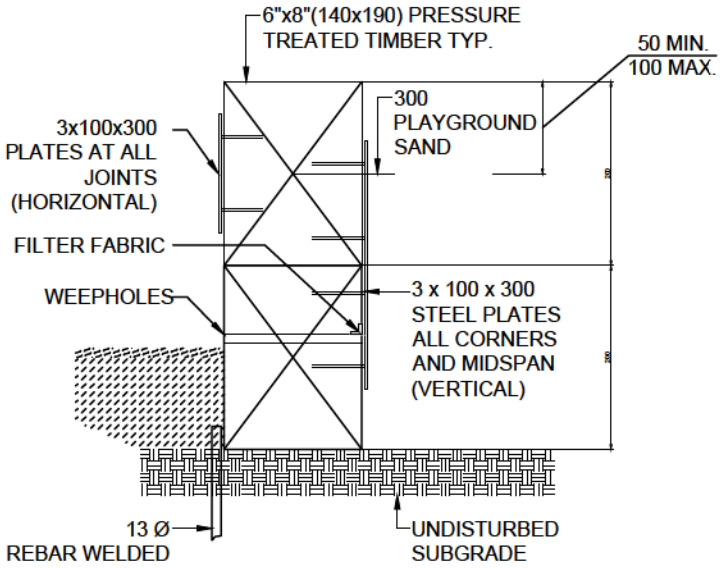
SAND VOLLEYBALL COURT LAYOUT.

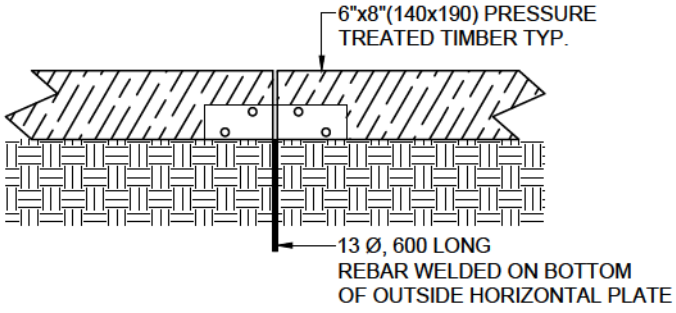
Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 98/10/27 | Scale: N.T.S. | Drawn: JEFF EDGINGTON T.T.

DWG. NO.
61817
Planning & Development Services Department









NOTES:
-ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.

REVISIONS		
Date	Details	Drawn
13/05/01	REVISED DRAING NUMBERS	A. DAM
12/10/22	REVISED DRAWING TITLE	J.E.
11/05/06	REVISED DRAWING NUMBERS	J. ORR
02/06/24	Printed	A. McLaneghan
02/01/08	Added section, weep holes, bent plate	A. McLenaghan

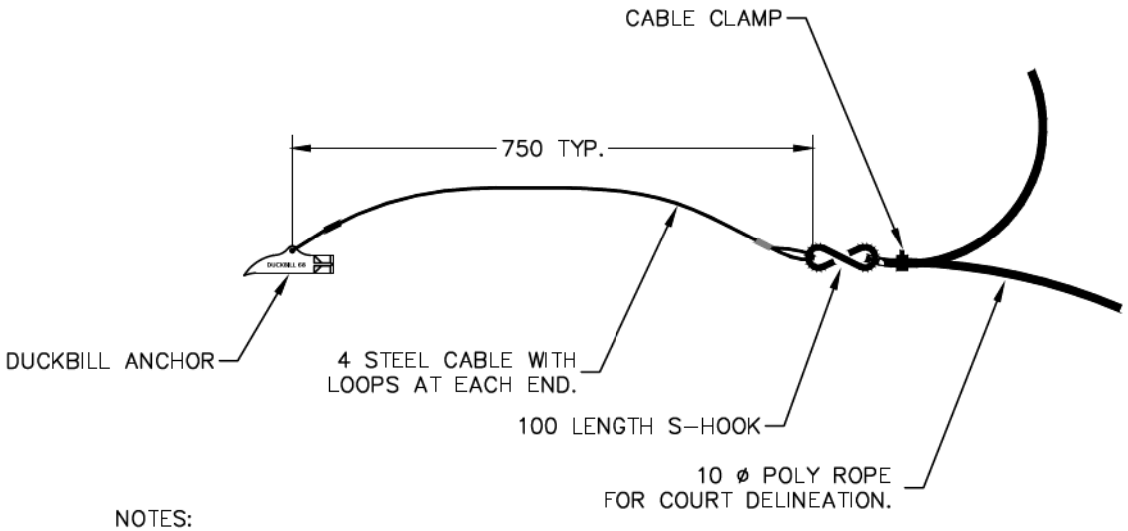
Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

DOUBLE TIMBER EDGER LAYOUT FOR VOLLEYBALL COURTS

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 98/10/27 | Scale: N.T.S. | Drawn: JEFF EDGINGTON T.T.

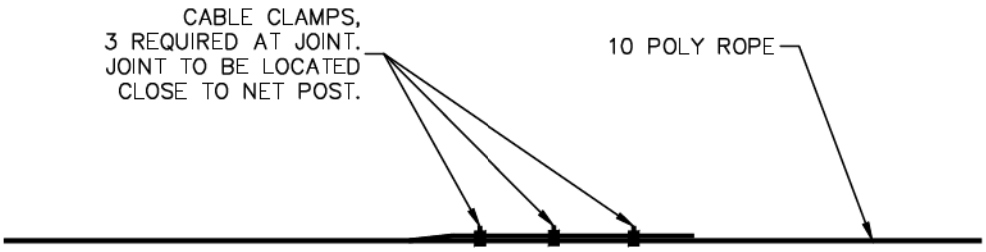
DWG. NO. 61818

Planning & Development Services Department



NOTES:
- #68 DUCKBILL ANCHOR, DRIVEN INTO GROUND TO DEPTH OF LOOP.
- ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

CORNER ANCHOR DETAIL



ROPE JOINT DETAIL

REVISIONS		
Date	Details	Drawn
13/05/01	REVISED DRAWING NUMBERS	A. DAM
11/05/06	REVISED DRAWING NUMBERS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
02/06/24	Printed	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

VOLLEYBALL COURT ROPE DETAILS

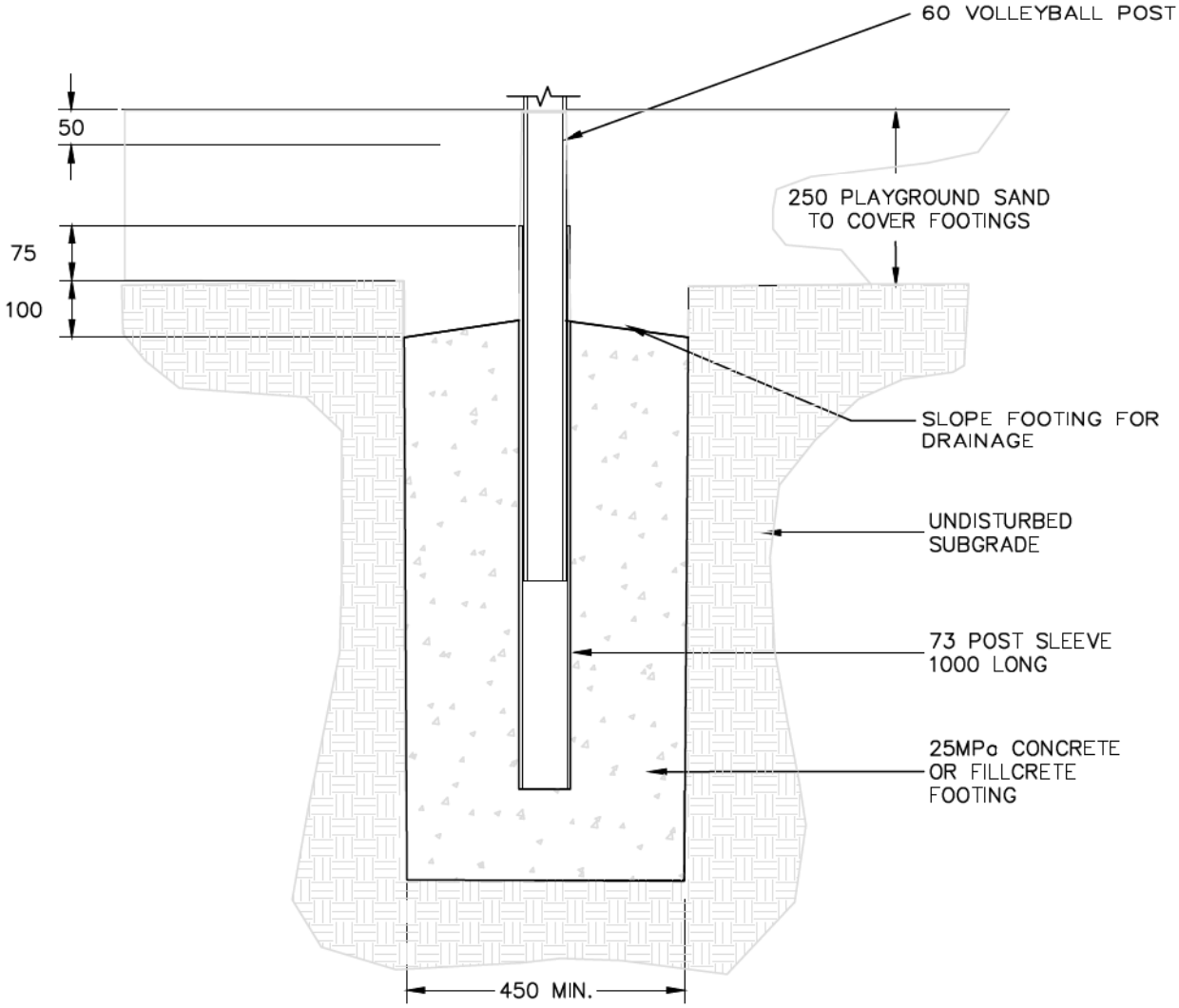
Approved: P. Alexander, AALA, CSLA

Checked: J.M. Talbot, MLA, CSLA

Date: 98/10/27 | Scale: N.T.S. | Drawn: JEFF EDGINGTON T.T.

DWG. NO. 61819

Planning & Development Services Department



NOTES:
- POSTS TO BE SUPPLIED AND INSTALLED WITH A GROUND SLEEVE.
- VOLLEYBALL POST TO BE BLUE IMP. RC392 OR APPROVED EQUAL.
- VOLLEYBALL NET TO BE BLUE IMP. RC389 OR APPROVED EQUAL.
- ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

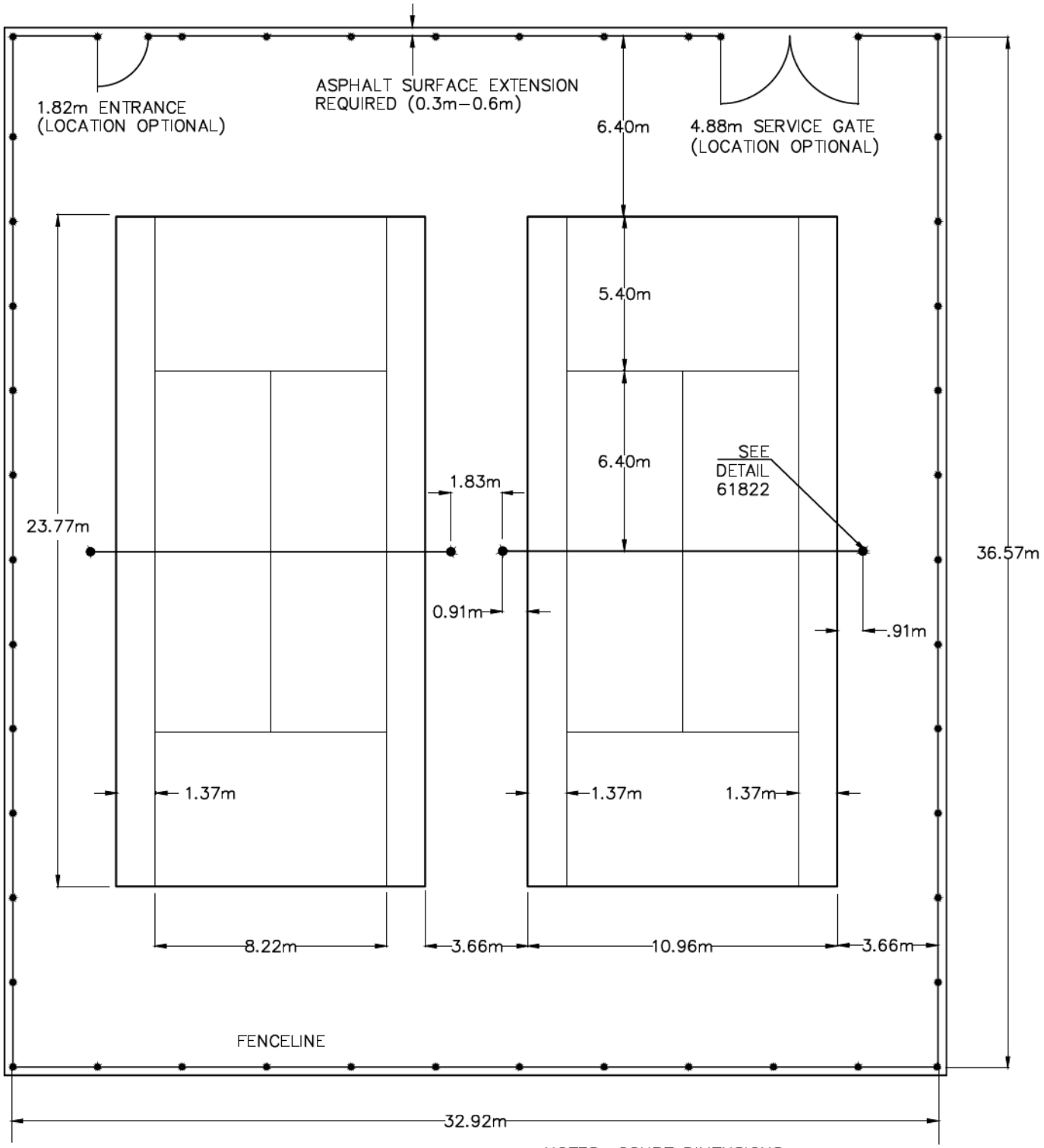
REVISIONS		
Date	Details	Drawn
13/05/01	REVISED DRAWING NUMBERS	A. DAM
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
05/02/17	Add Concrete to Footing	L. Laing
02/06/24	Printed	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

VOLLEYBALL COURT POST FOOTINGS

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 98/10/27 | Scale: N.T.S. | Drawn: JEFF EDGINGTON T.T.

DWG. NO.
61820
Planning & Development Services Department



PLAN VIEW

–SEE DETAIL 61823 FOR TENNIS COURT SLOPE DRAINAGE

–ANY LIGHTS BUILT IN CONJUNCTION WITH A TENNIS COURT MUST HAVE THEIR BASES OUTSIDE THE FENCE SURROUNDING THE COURT.

NOTES: COURT DIMENSIONS

RECOMMENDED	MINIMUM
3.66m BETWEEN SIDE OF COURT AND FENCE	2.74m
3.66m BETWEEN COURTS	2.74m
6.40m AT END OF COURT	4.87m

REVISIONS

Date	Details	Drawn
13/05/01	REVISED DRAWING NUMBER	A. DAM
11/05/06	REVISED DRAWING NUMBERS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
05/10/24	Changed extension to required	M. Forgues
02/06/24	Printed	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

TENNIS COURT LAYOUT

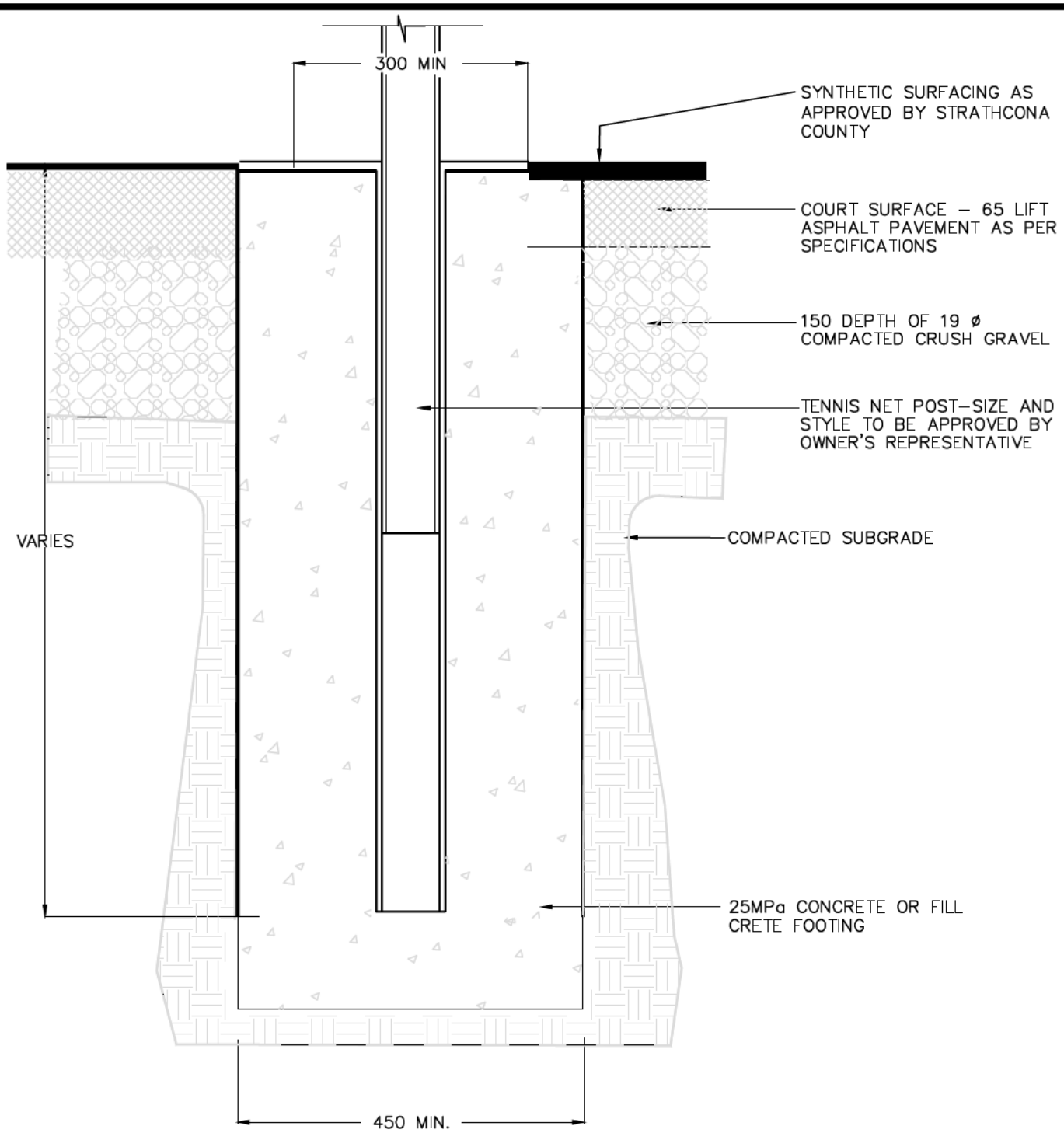
Approved: P. Alexander, AALA, CSLA

Checked: J.M. Talbot, MLA, CSLA

Date: 11/04/94 | Scale: N.T.S. | Drawn: DAN LECKIE

DWG. NO. 61821

Planning & Development Services Department



TENNIS COURT NET – POST INSTALLATION

NOTES:
-ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.
-POSTS TO BE SUPPLIED AND INSTALLED WITH A GROUND SLEEVE WITH FLANGE FLUSH WITH ASPHALT SURFACE.

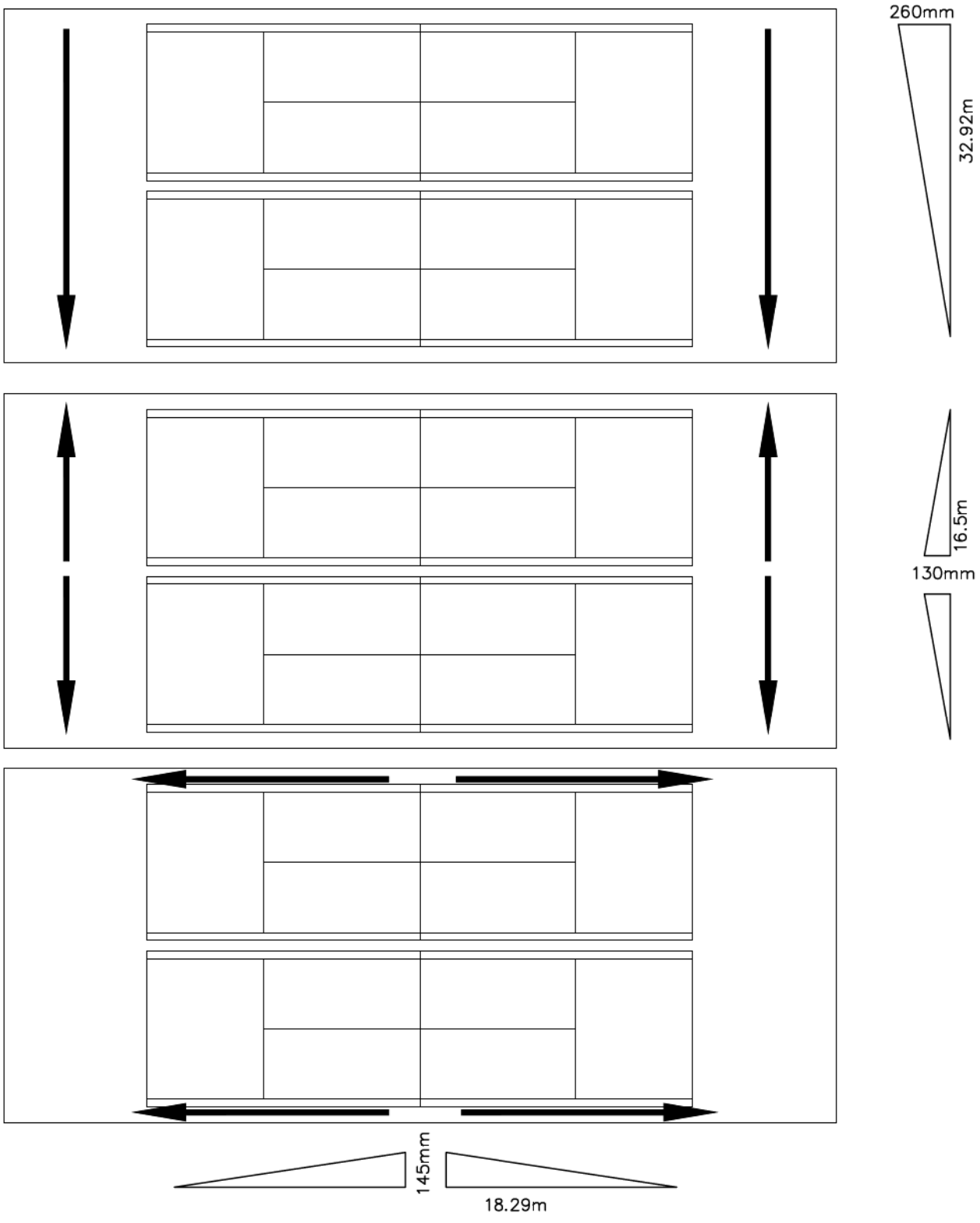
REVISIONS		
Date	Details	Drawn
13/05/01	REVISED DRAWING NUMBER	A. DAM
11/05/06	REVISED DRAWING NUMBERS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
05/02/17	Added Concrete to Footing	L. Laing
02/06/24	Printed	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

TENNIS COURT POST FOOTINGS

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 12/04/94 | Scale: N.T.S. | Drawn: DAN LECKIE

DWG. NO.
61822
Planning & Development Services Department



NOTE: THE SLOPE FOR AN ASPHALT COURT SHOULD BE 0.8% OR 25.4mm DROP FOR EVERY 3m IN LENGTH.

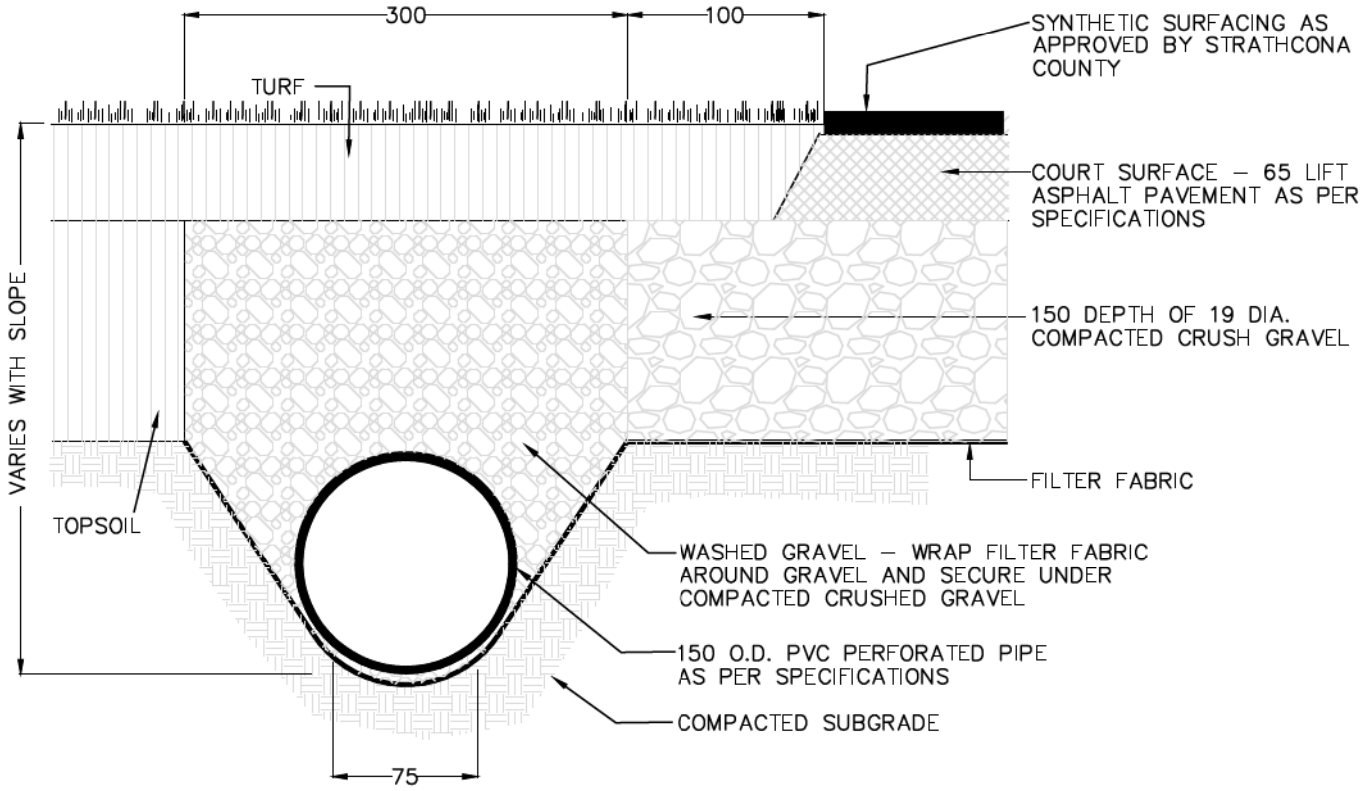
REVISIONS		
Date	Details	Drawn
13/05/01	REVISED DRAWING NUMBERS	A. DAM
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
02/06/24	Printed	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

TENNIS COURT SLOPE DRAINAGE

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 12/04/94 | Scale: N.T.S. | Drawn: DAN LECKIE

DWG. NO.
61823
Planning & Development Services Department



TENNIS COURT – SURFACE & SUB-DRAINAGE SYSTEM

REVISIONS		
Date	Details	Drawn
13/05/01	REVISED DRAWING NUMBERS	A. DAM
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
02/06/24	Printed	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

TENNIS COURT DRAINAGE

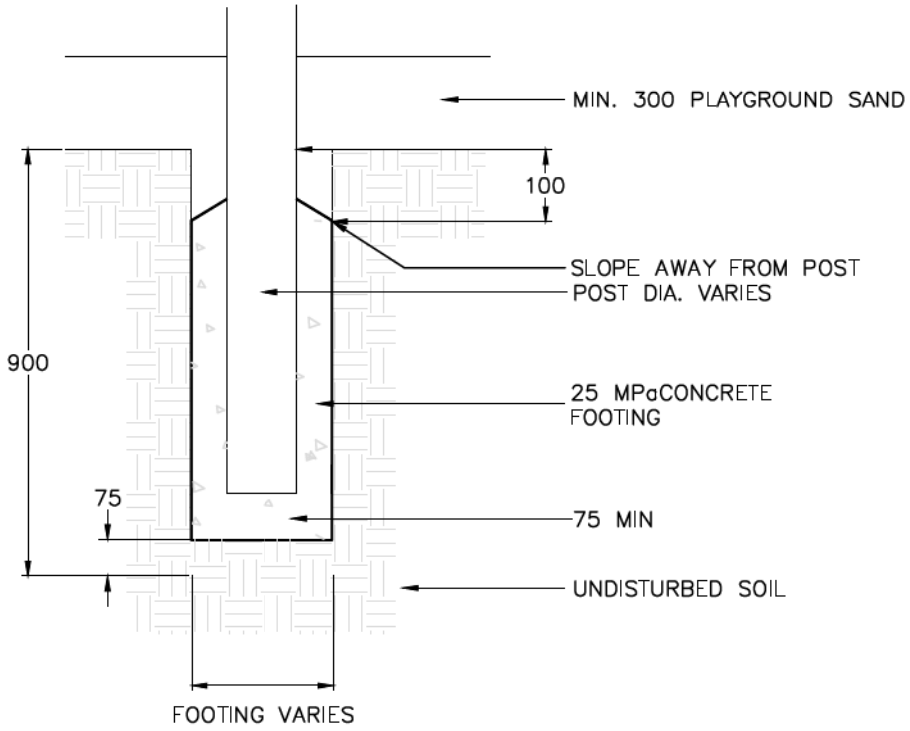
Approved: P. Alexander, AALA, CSLA

Checked: J.M. Talbot, MLA, CSLA

Date: 12/04/94 | Scale: N.T.S. | Drawn: DAN LECKIE

DWG. NO. 61824

Planning & Development Services Department



NOTES:
–POST TO BE CENTERED IN FOOTING.
–ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

REVISIONS		
Date	Details	Drawn
13/05/01	REVISED DRAING NUMBERS	A. DAM
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
05/02/15	Adjust Concrete Footing	L. Laing
02/06/24	Printed	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

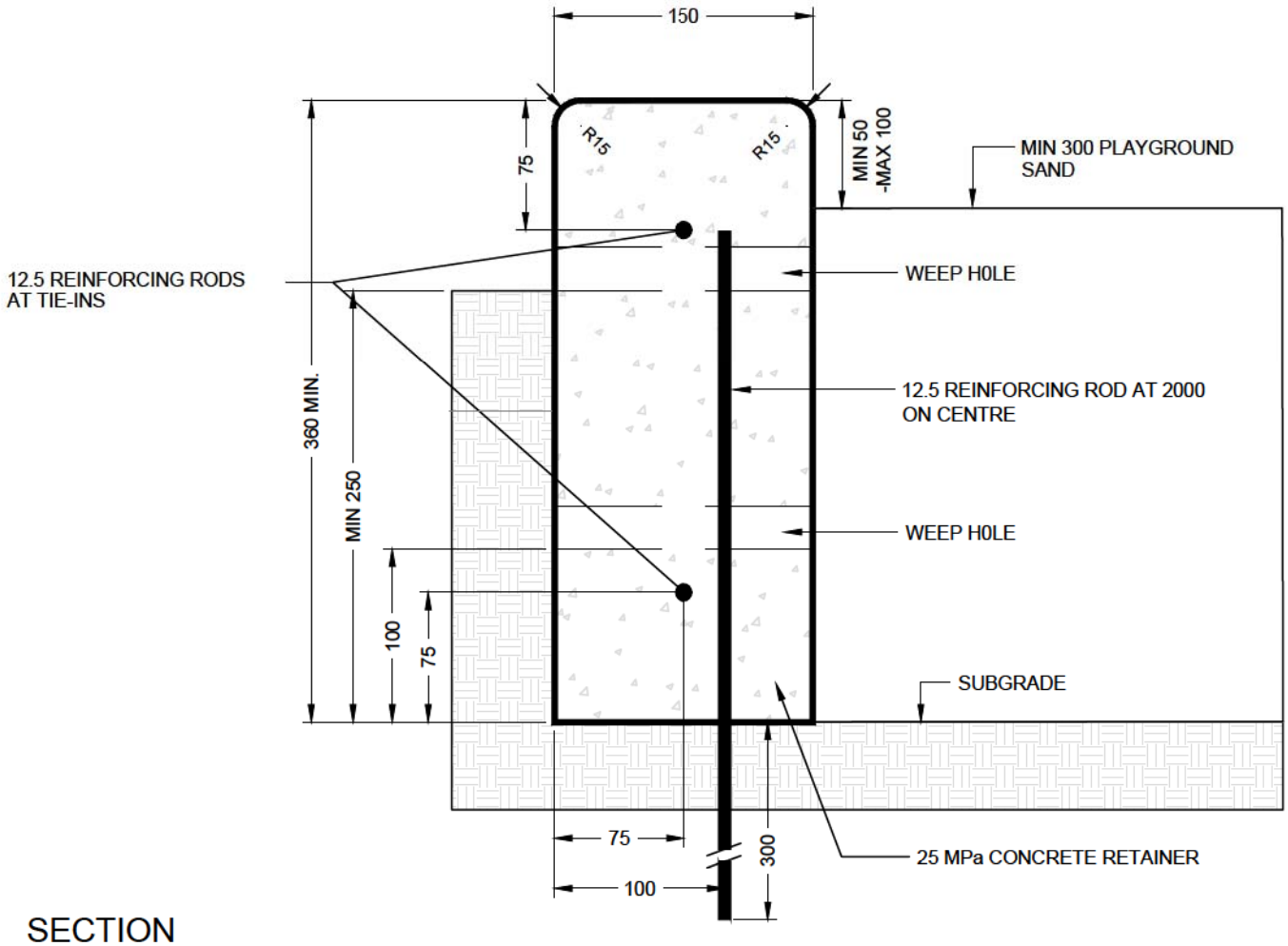
PLAYGROUND EQUIPMENT FOOTING

Approved: P. Alexander, AALA, CSLA

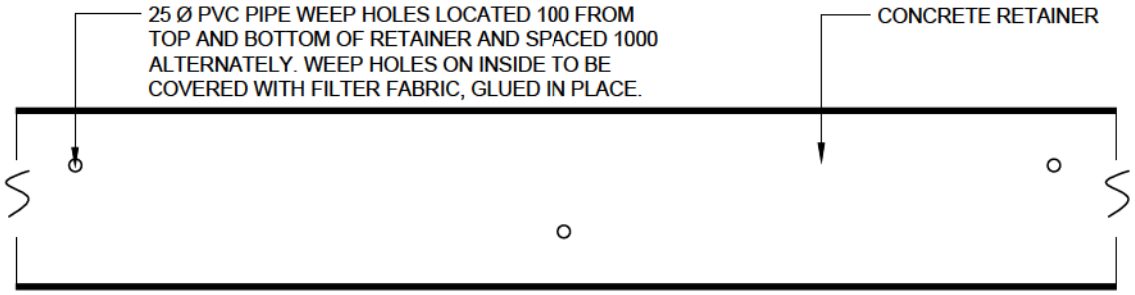
Checked: J.M. Talbot, MLA, CSLA

Date: 25/01/95 | Scale: N.T.S. | Drawn: DAN LECKIE

DWG. NO.
61825
Planning & Development Services Department



SECTION



ELEVATION

NOTE:
-ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

REVISIONS		
Date	Details	Drawn
13/05/01	REVISED DRAWING NUMBERS	A. DAM
12/10/22	REVISED DRAWING TITLE	J.E.
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
05/03/09	ADDED TO OSDS	L. Laing

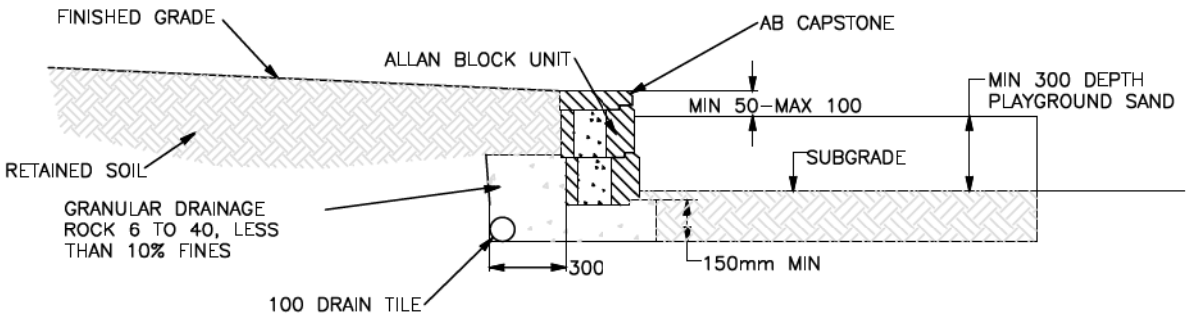
Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

PLAYGROUND CONCRETE RETAINER

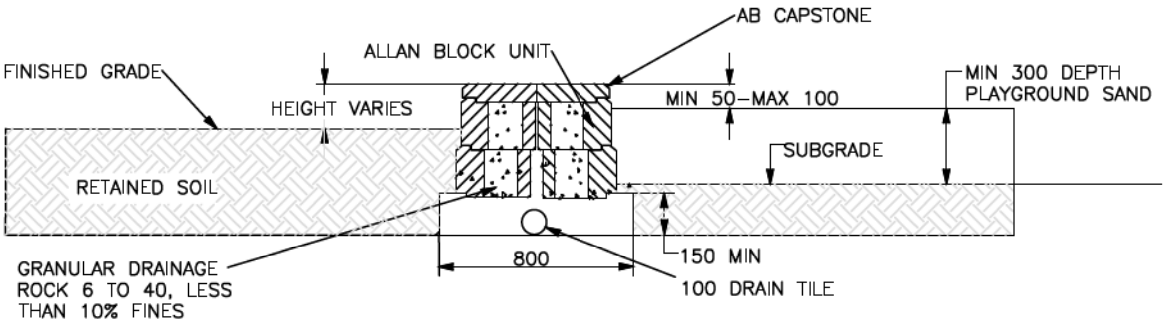
Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 03/08/13 | Scale: N.T.S. | Drawn: AMY McLENAGHAN

DWG. NO.
61826
Planning & Development Services Department

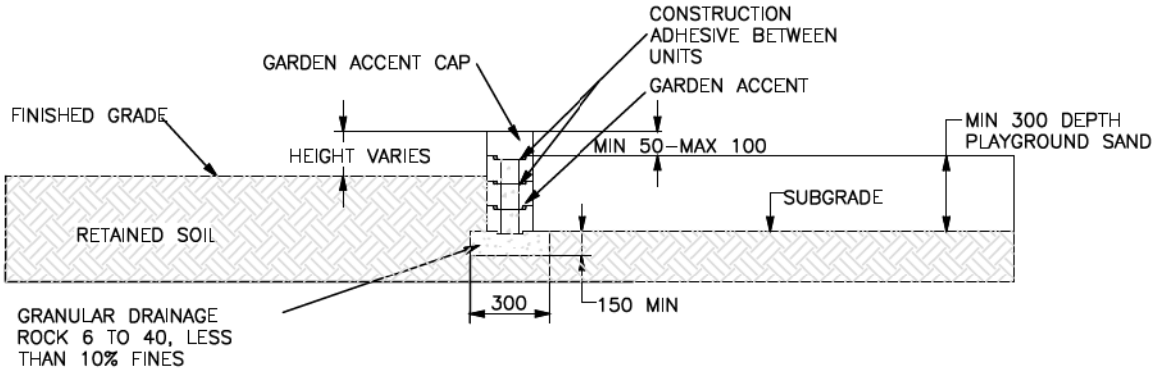
ALLAN BLOCK RETAINER
TYPICAL SECTION



ALLAN BLOCK PARAPET RETAINER
TYPICAL SECTION



ALLAN BLOCK GARDEN ACCENT
TYPICAL SECTION



NOTES:
–ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

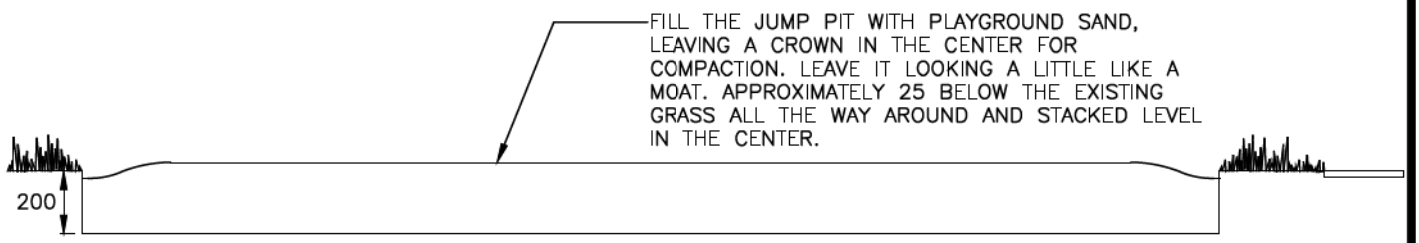
REVISIONS		
Date	Details	Drawn
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
06/03/10	CHANGED DIMENSIONS	M. Forgues
05/11/04	ADDED TO OSDS	M. Forgues

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

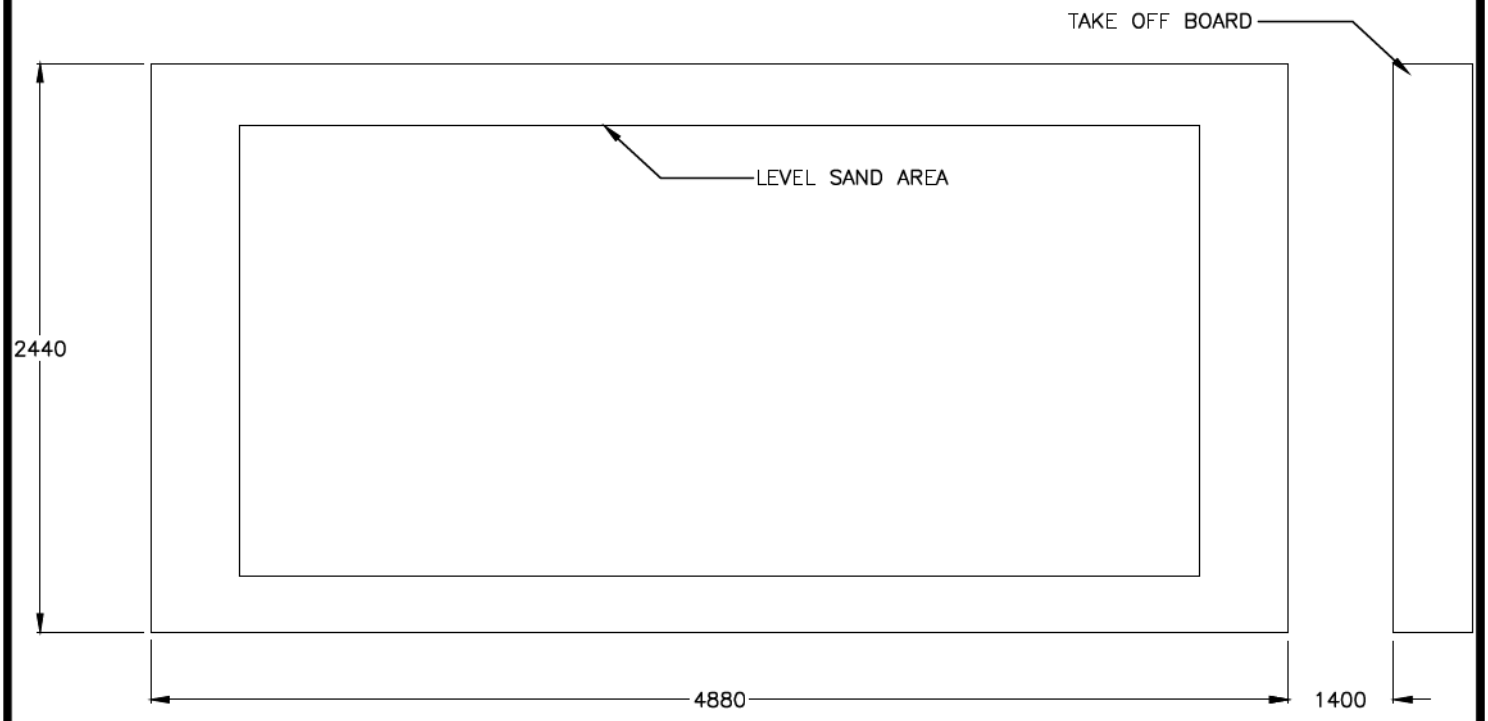
ALTERNATIVE PLAYGROUND RETAINERS

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 05/11/04 | Scale: N.T.S. | Drawn: M. FORGUES

DWG. NO.
61827
Planning & Development Services Department



SECTION
DETAILS



PLAN VIEW
DETAILS

NOTE:
–ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE NOTED.

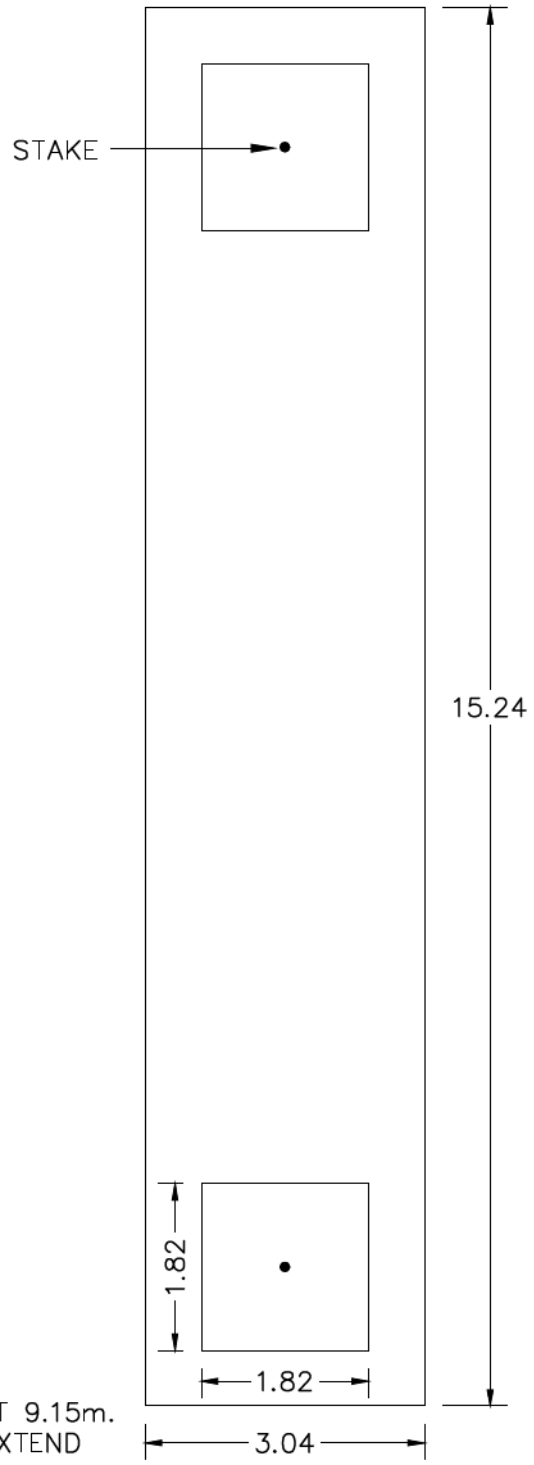
REVISIONS		
Date	Details	Drawn
13/05/01	REVISED DRAWING NUMBERS	A. DAM
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/10	REVISED DRAWING NUMBERS	O. Butt
06/03/10	CHANGED JUMP PIT DEPTH	M. Forgues
05/11/03	DETAIL ADDED TO OSDS	M. Forgues

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

JUMP PIT DETAIL

Approved: P. Alexander, AALA, CSLA
Checked: J.M. Talbot, MLA, CSLA
Date: 05/11/03 | Scale: N.T.S. | Drawn: M. FORGUES

DWG. NO.
61828
Planning & Development Services Department



NOTES:
- 12.20m BETWEEN BASE OF STAKES, LADIES COURT 9.15m.
- STAKES TO BE STEEL, 25mm IN DIAMETER AND EXTEND 350mm ABOVE GROUND.
- ALL DIMENSIONS IN METERS UNLESS OTHERWISE NOTED.

REVISIONS		
Date	Details	Drawn
13/05/01	REVISED DRAWING NUMBERS	A. DAM
11/05/03	REVISED DRAWING NUMBERS	J. ORR
11/02/09	REVISED DRAWING NUMBERS	O. Butt
02/06/24	Printed	A. McLenaghan

Strathcona County
2001 Sherwood Drive, Sherwood Park
Alberta, T8A 3W7, CANADA

HORSE SHOE PIT LAYOUT

Approved: P. Alexander, AALA, CSLA

Checked: J.M. Talbot, MLA, CSLA

Date: 01/06/01 | Scale: N.T.S. | Drawn: AMY McLENAGHAN

DWG. NO. 61829

Planning & Development Services Department

Landscape Inspection – Report

Planning and Development Services, 2001 Sherwood Drive, Sherwood Park, AB T8A 3W7 **Phone** 780-464-8010 **Fax** 780-464-8142
Email PDSEngineering@strathcona.ca

Contact Information:

Development Stage _____ Developer Name _____

Consultant Name _____ Contractor Name _____

Inspection Type _____ Inspection Date _____
(YYYY-MM-DD)

Construction Completion Certificate ☐ Final Acceptance Certificate ☐

Attendees (Name and Company)

Deficiencies

Inspection Results

☐ Approved Inspection Date _____ (YYYY-MM-DD)

☐ Not Approved Follow-Up Inspection Date _____ (YYYY-MM-DD)

Follow-Up Inspection Attendees

Follow-Up Inspection Comments

Follow-Up Inspection Results

☐ Approved Inspection Date _____ (YYYY-MM-DD)

☐ Not approved Follow-Up Inspection Date _____ (YYYY-MM-DD)

Comments

Contractors' Monthly Maintenance – Verification

STRATHCONA COUNTY
Planning and Development Services, 2001 Sherwood Drive, Sherwood Park, AB T8A 3W7 **Phone** 780-464-8010 **Fax** 780-464-8142
pdsengineering@strathcona.ca

Subdivision _____ Stage _____

Contractor _____

Improvements _____

Month _____

Maintenance ▼	Week ► / Dates ►	1		2		3		4		5	
		yes	no	yes	no	yes	no	yes	no	yes	no
Turf											
fertilize	_____	○	○	○	○	○	○	○	○	○	○
mow		○	○	○	○	○	○	○	○	○	○
water		○	○	○	○	○	○	○	○	○	○
weed	_____	○	○	○	○	○	○	○	○	○	○
Trees											
fertilize	_____	○	○	○	○	○	○	○	○	○	○
prune		○	○	○	○	○	○	○	○	○	○
water		○	○	○	○	○	○	○	○	○	○
Shrub beds											
fertilize	_____	○	○	○	○	○	○	○	○	○	○
prune		○	○	○	○	○	○	○	○	○	○
water		○	○	○	○	○	○	○	○	○	○
weed	_____	○	○	○	○	○	○	○	○	○	○

Tree replacements

Shrub replacements

Perennial replacements

Equipment and materials used

Dates and types of fertilizer/herbicide used

Biocide report included ○ yes ○ no

Comments

1.0 GENERAL

1.1. INSPECTION PROCESS REQUIREMENTS

1.1.1. Future Addition

2.0 CCC – REQUIREMENTS

2.1. GENERAL

2.1.1. The Developer's Representative or Contract Manager shall submit the following to Planning and Development Services to request a CCC inspection:

2.1.1.1. Written request sent by email or mail.

2.1.1.2. Pre-inspection reports.
(i) Construction Completion – Infrastructure Summary
(ii) Landscape Inspection – Report
(iii) Closed Circuit Television (CCTV) Inspection – Request

2.1.1.3. Reduced drawings (11x17 set).

2.2. UTILITIES

2.2.1. Sanitary

2.2.1.1. Refer to VOL. 1 SEC. 4.2, WASTEWATER COLLECTION SYSTEM, SUB-SECTION 4.2.3.8.

2.2.1.2. Refer to VOL. 2 SEC. 501, INSTALLATION OF SEWERS, SUB-SECTION 3.21.

2.2.2. Water

2.2.2.1. Refer to VOL. 1 SEC. 4.3, WATER DISTRIBUTION SYSTEM, SUB-SECTION 4.3.3.10.

2.2.2.2. Refer to VOL. 2 SEC. 501, INSTALLATION OF SEWERS, SUB-SECTION 3.21.

2.2.3. Storm

2.2.3.1. Refer to VOL. 1 SEC. 4.4, STORM WATER MANAGEMENT SYSTEM SUB-SECTION 4.4.3.8.

2.2.3.2. Refer to VOL. 2 SEC. 501, INSTALLATION OF SEWERS, SUB-SECTION 3.21.

2.3. ROADS

2.3.1. Roads

2.3.1.1. Refer to VOL. 1 SEC. 4.1, ROADS, SUB-SECTION 4.1.13.10.

2.3.1.2. Refer to VOL. 1 SEC 5.1, RURAL TRANSPORTATION, SUB-SECTION 5.1.17.

2.3.2. Pavement Markings

2.3.2.1. Refer to VOL. 2 SEC. 701, PAVEMENT MARKING – GENERAL, SUB-SECTION 3.10.

2.3.3. Traffic Signals

2.3.3.1. Future addition

2.4. LANDSCAPE

2.4.1. Soft landscaping CCC inspections may occur from June 1 until September 30 weather permitting. Soft landscaping inspections will not be conducted after September 30.

2.4.2. The Developer's Representative or Contract Manager shall provide a yearly anticipated landscape construction and inspection schedule to Planning and Development Services, prior to May 31 or prior to any construction commencement.

2.4.3. In order to facilitate all landscape inspections, a complete set of the required paperwork must be received prior to scheduling the landscape inspection.

2.4.4. The Developer's Representative or Contract Manager shall provide a detailed inspection report within 3 business days following the inspection and ensure that all deficiencies have been rectified prior to re-inspection.

2.4.5. All deficiencies identified during inspections shall be repaired within 15 business days following the original inspection date pending SUB-SECTION 2.4.1 OF THIS SECTION. If deficiencies are not corrected by the agreed date, the stage will be subject to a full re-inspection.

2.4.6. Inspection Categories

Strathcona County will carry out landscape inspections as follows:

Landscape Elements	Maintenance Requirements
Trees, shrubs, perennials, turf and natural areas.	Minimum 2 years from CCC.
Granular and asphalt trails	Minimum 2 years from CCC.

2.4.7. Seeding and Sodding

2.4.7.1. Refer to VOL. 2 SEC. 603, SEEDING AND SODDING, SUB-SECTION 4.0.

2.4.7.2. Refer to VOL. 2 SEC. 603, SEEDING AND SODDING, SUB-SECTION 5.0.

2.4.8. Playground

2.4.8.1. Refer to VOL. 2 SEC. 615, PLAYGROUND CONSTRUCTION.

2.4.9. Soccer Field

2.4.9.1. Refer to VOL. 2 SEC. 616, SOCCER FIELD DEVELOPMENT, SUB-SECTION 4.0.

2.4.9.2. Refer to VOL. 2 SEC. 616, SOCCER FIELD DEVELOPMENT, SUB-SECTION 5.0.

2.4.10. Ball Field

2.4.10.1. Refer to VOL. 2 SEC. 617, BALL FIELD DEVELOPMENT, SUB-SECTION 4.0.

2.4.10.2. Refer to VOL. 2 SEC. 617, BALL FIELD DEVELOPMENT, SUB-SECTION 5.0.

3.0 FAC – REQUIREMENTS

3.1. GENERAL

3.1.1. The Developer's Representative or Contract Manager shall submit the following to Planning and Development Services to request a FAC inspection:

3.1.1.1. Written request sent by email or mail.

3.1.1.2. Pre-inspection reports.

(i) Construction Completion – Infrastructure Summary
(ii) Landscape Inspection – Report
(iii) Closed Circuit Television (CCTV) Inspection – Request
(iv) Contractors Monthly Maintenance – Verification

3.1.1.3. Reduced drawings (11x17 set).

3.1.1.4. As-built drawings (CAD & Mylar).

3.2. UTILITIES

3.2.1. Sanitary

3.2.1.1. Refer to VOL. 1 SEC. 4.2, WASTEWATER COLLECTION SYSTEM, SUB-SECTION 4.2.3.8.

3.2.1.2. Refer to VOL. 2 SEC. 501, INSTALLATION OF SEWERS, SUB-SECTION 3.21.

3.2.2. Water

3.2.2.1. Refer to VOL. 1 SEC. 4.3, WATER DISTRIBUTION SYSTEM, SUB-SECTION 4.3.3.10.

3.2.2.2. Refer to VOL. 2 SEC. 501, INSTALLATION OF SEWERS, SUB-SECTION 3.21.

3.2.3. Storm

3.2.3.1. Refer to VOL. 1 SEC. 4.4, STORM WATER MANAGEMENT SYSTEM SUB-SECTION 4.4.3.8.

3.2.3.2. Refer to VOL. 2 SEC. 501, INSTALLATION OF SEWERS, SUB-SECTION 3.21.

3.3. ROADS

3.3.1. Roads

3.3.1.1. Refer to VOL. 1 SEC. 4.1, ROADS, SUB-SECTION 4.1.13.10.

3.3.1.2. Refer to VOL. 1 SEC 5.1, RURAL TRANSPORTATION, SUB-SECTION 5.1.17.

3.3.2. Pavement Markings

3.3.2.1. Refer to VOL. 2 SEC. 701, PAVEMENT MARKING – GENERAL, SUB-SECTION 3.10.

3.3.3. Traffic Signals

3.3.3.1. Future Addition

3.4. LANDSCAPE

3.4.1. Soft landscaping FAC inspections may occur from June 1 until September 30 weather permitting. Soft landscaping inspections will not be conducted after September 30. All other FAC inspections may be conducted year round, weather permitting.

3.4.2. The Developer's Representative or Contract Manager shall provide a yearly anticipated landscape construction and inspection schedule to Planning and Development Services, prior to May 31 or prior to any construction commencement.

3.4.3. In order to facilitate all landscape inspections, a complete set of the required paperwork must be received prior to scheduling the landscape inspection.

3.4.4. The Developer's Representative or Contract Manager shall provide a detailed inspection report within 3 business days following the inspection and ensure that all deficiencies have been rectified prior to re-inspection.

3.4.5. All deficiencies identified during inspections shall be repaired within 15 business days following the original inspection date pending SUB-SECTION 3.4.1 OF THIS SECTION. If deficiencies are not corrected by the agreed date, the stage will be subject to a full re-inspection.

3.4.6. The Developer/Owner shall replace any trees, shrubs, perennials or grass which may have died or failed to achieve proper growth, as determined by the County at its discretion. The Developer shall repair any other landscape amenities such as site furniture, fencing, entry features, retaining walls, trails, bridges, boardwalks, lookouts or playgrounds which are not in accordance with the plans prior to issuance of FAC.

3.4.7. Inspection Categories

Strathcona County will carry out landscape inspections as follows:

Landscape Elements	Maintenance Requirements
Trees, shrubs, perennials, turf and natural areas.	Minimum 2 years from CCC.
Granular and asphalt trails	Minimum 2 years from CCC.
benches, picnic tables, trash receptacles, trail signage	FAC shall be issued once accepted by Strathcona County. A maintenance period is not required.
Fences, gates and marker posts	FAC shall be issued once accepted by Strathcona County. A maintenance period is not required.
Park and SWMF Signage	FAC shall be issued once accepted by Strathcona County. A maintenance period is not required.
Entry Features and Retaining Walls	FAC shall be issued once accepted by Strathcona County. A maintenance period is not required.
Bridges, Boardwalks and Lookouts	FAC shall be issued once accepted by Strathcona County. A maintenance period is not required.
Playgrounds	FAC shall be issued once accepted by Strathcona County. A maintenance period is not required.

3.4.8. Seeding and Sodding

3.4.8.1. Refer to VOL. 2 SEC. 603, SEEDING AND SODDING, SUB-SECTION 4.0.

3.4.8.2. Refer to VOL. 2 SEC. 603, SEEDING AND SODDING, SUB-SECTION 5.0.

3.4.9. Rural Road and Reclamation Seeding

3.4.9.1. Refer to VOL. 2 SEC. 620, RURAL ROAD AND RECLAMATION SEEDING SUB-SECTION 3.6.

3.4.9.2. Refer to VOL. 2 SEC. 620, RURAL ROAD AND RECLAMATION SEEDING SUB-SECTION 3.7.

3.4.10. Plantings

3.4.10.1. Refer to VOL. 2 SEC. 604, PLANTINGS, SUB-SECTION 4.0.

3.4.10.2. Refer to VOL. 2 SEC. 604, PLANTINGS, SUB-SECTION 5.0.

3.4.10.3. Refer to VOL. 2 SEC. 604, PLANTINGS, SUB-SECTION 6.0.

3.4.11. Gravel Trails

3.4.11.1. Refer to VOL. 2 SEC. 610, GRAVEL PEDESTRIAN TRAILS, SUB-SECTION 4.0.

3.4.11.2. Refer to VOL. 2 SEC. 610, GRAVEL PEDESTRIAN TRAILS, SUB-SECTION 5.0.

3.4.12. Playground

3.4.12.1. Refer to VOL. 2 SEC. 615, PLAYGROUND CONSTRUCTION.

3.4.13. Soccer Field

3.4.13.1. Refer to VOL. 2 SEC. 616, SOCCER FIELD DEVELOPMENT, SUB-SECTION 4.0.

3.4.13.2. Refer to VOL. 2 SEC. 616, SOCCER FIELD DEVELOPMENT, SUB-SECTION 5.0.

3.4.14. Ball Field

3.4.14.1. Refer to VOL. 2 SEC. 617, BALL FIELD DEVELOPMENT, SUB-SECTION 4.0.

3.4.14.2. Refer to VOL. 2 SEC. 617, BALL FIELD DEVELOPMENT, SUB-SECTION 5.0.

3.4.15. Wetlands

3.4.15.1. Refer to VOL. 2 SEC. 605, CONSTRUCTED WETLANDS, SUB-SECTION 2.1.5.11.

3.4.15.2. Refer to VOL. 2 SEC. 605, CONSTRUCTED WETLANDS, SUB-SECTION 2.1.5.12.

3.4.15.3. Refer to VOL. 2 SEC. 605, CONSTRUCTED WETLANDS, SUB-SECTION 2.1.14.

3.4.15.4. Refer to VOL. 2 SEC. 605, CONSTRUCTED WETLANDS, SUB-SECTION 2.1.15.

3.4.16. Natural Area

3.4.16.1. Refer to VOL. 2 SEC. 807, NATURAL AREA MAINTENANCE, SUB-SECTION 3.0.

1.0 GENERAL

1.1 DESCRIPTION

1.1.1 The work covered by this specification shall consist of requirements for working and compacting the subgrade soil and conforming to lines, grades, dimensions and typical cross sections in the areas within the limits of construction or as designated by the Contract Manager/Developer Representative in accordance with these CONSTRUCTION SPECIFICATIONS and conforming to the sections shown on the approved CONSTRUCTION DRAWINGS or as directed by the Contract Manager/Developer Representative.

1.2 DEFINITIONS

1.2.1 Prepared subgrade: soil immediately below the topsoil or planting mix or other landscaping treatment.

2.0 PRODUCTS

2.1 MATERIALS

2.1.1 Use only subgrade soils as per subgrade specifications approved by the Contract Manager/ Developer Representative.

2.2 EQUIPMENT

2.2.1 Equipment: various pieces of equipment designed for and capable of, disking, scarifying, spreading, spraying water, compacting, and trimming soil to specified depth.

3.0 EXECUTION

3.1 GENERAL

3.1.1 When unsuitable material is encountered at the subgrade elevation, undercut until sufficient deleterious material is removed as directed by the Contract Manager/Developer Representative. Replace with approved material as specified. Remove rejected material from site.

3.1.2 Exclude stones larger than 100 mm from top 500 mm of design subgrade elevation.

3.1.3 Exclude all stones larger than 25 mm from surface of subgrade.

3.1.4 Subgrade elevation shall be the final grade minus surfacing material depth.

3.1.5 Shape and roll alternately to obtain a smooth even and uniformly compacted base.

3.1.6 Subgrade must be graded to eliminate ponding areas and have an optimum gradient of 2% in all directions with a variance ±0.5 %.

3.1.7 Playground subgrade must be graded to a minimum 1.5% and to a maximum 2% slope. Compaction to be 98% Standard Proctor Density at optimum moisture content.

3.1.8 Correct surface irregularities by loosening and adding or removing material until surface is within specified tolerance.

3.1.9 Blend slopes into surrounding areas to form, smooth, even transition.

3.1.10 Scarify subgrade over entire area to receive topsoil. Repeat cultivation in areas where equipment used for hauling and spreading has compacted subgrade.

3.1.11 Slope all grades away from buildings, trails, playgrounds, parking lots and sidewalks or as shown in approved CONSTRUCTION DRAWINGS.

3.1.12 Prepare subgrade surface to following grades unless otherwise specified as per site conditions:

3.1.12.1 Seeded areas: (except soccer fields): 150 mm below final design grade;

3.1.12.2 Soccer/football fields: 200 mm below final design grade;

3.1.12.3 Sodded areas: 125 mm below final design grade;

3.1.12.4 Shrub beds: 450 mm below final design as per site conditions;

3.1.12.5 Shale ball fields: 250 mm below final design grade; and

3.1.12.6 Turf ball fields: 200 mm below final design grade.

3.2 DENSITY REQUIREMENTS

3.2.1 Maximum Density: As used in this article, is the dry unit mass of sample at optimum moisture content as determined in the laboratory according to ASTM D698 Method A.

3.2.2 Required Density:

3.2.2.1 Minimum 98% of maximum density for the subgrade for playgrounds.

3.2.2.2 There will be no specified density for seeded/sodded areas, shrub beds and sport fields.

3.2.3 Testing Frequency:

3.2.3.1 The quality assurance laboratory will take a minimum of one field density test for each 1000 m^2 of compacted subgrade lift according to ASTM D1556, ASTM D2167, or ASTM D2922 for comparison with a maximum density determined according to ASTM D698 Method A.

3.2.4 Noncompliance:

3.2.4.1 If a tested density is below the required density, rework the area represented by the failed test to full depth of lift, alter the soil moisture as necessary, and re-compact to required density.

3.2.5 The Contractor shall assume the risk of uncovering and reworking the subgrade if it is covered before the Contract Manager/Developer Representative has accepted test results thereof.

3.3 PROTECTION OF FINISHED WORK

3.3.1 Do not permit vehicle traffic over the prepared subgrade.

3.3.2 If subgrade floods, drain immediately. Drainage into a municipal facility must be approved by Environmental Operations prior to operation proceeding.

3.3.3 Maintain protection of prepared subgrade until subsequent sub-base or base course is placed. Repair if damaged.

4.0 MEASUREMENT AND PAYMENT

4.1 The cost of preparing the subsoil surface will not be paid for directly, but will be considered part of the work required under topsoil placement unless a specific item for Landscaping Subgrade Preparation is included in the SCHEDULE OF QUANTITIES.

1.0 GENERAL

1.1 DESCRIPTION

1.1.1 The work covered by this specification shall consist of topsoil installation placed and compacted in the areas within the limits of construction or as designated by the Contract Manager/Developer Representative in accordance with these CONSTRUCTION SPECIFICATIONS and conforming to the sections shown on the approved CONSTRUCTION DRAWINGS or as directed by the Contract Manager/Developer Representative.

1.2 DEFINITION

1.2.1 Topsoil to be fertile agricultural soil, capable of sustaining vigorous plant growth, free of subsoil, clay, stone, lumps, noxious odor, roots other foreign matter except for native soils where seed base or roots may be used for re-establishment of natural vegetation cover and approved by Contract Manager/Developer Representative.

2.0 PRODUCTS

2.1 TOPSOIL

2.1.1 Stockpiled Topsoil On-Site or Imported Topsoil

2.1.1.1 As a minimum, topsoil shall be natural, fertile, agricultural soil, capable of sustaining plant growth, free from subsoil, slag, stones, vegetation including weeds and foreign matter.

Sand (% of dry mass)	40% (+/- 3%)
Clay (%of dry mass)	30% (+/- 3%)
Silt (%of dry mass)	30% (+/- 3%)
Organic Matter	6 – 10% by dry mass
Toxic Chemicals	None
pH Value	6.0 – 7.5
Electrical Conductivity	Maximum 1.5 mhos/cm2
Nitrate Nitrogen	10 – 20 ppm
Phosphorus	10 – 60 ppm
Potassium	80 – 250 ppm

2.1.1.2 Native on-site topsoil may be used provided it meets the above requirements or amended with approved soil amendments. Amendments to be to be approved by Contract Manager/Developer Representative. Special provisions may be considered for native areas.

(i) Topsoil used from available, approved on-site stockpiles as directed by the Contract Manager/Developer Representative, must be free of roots, branches, clay, stones larger than 25 mm, subsoil and all other debris.

(ii) Topsoil to be screened not shredded through 5 mm screen.

(iii) Soils analysis shall be performed by a soils test lab accredited by the Standards Council of Canada in the Association for Environmental Analytical Laboratories or CAEAL.

(iv) Such analysis shall be performed on samples from each topsoil source, and shall determine nitrogen, phosphorus, potash, soluble salt content, electrical conductivity, pH value and physical values of sand, clay and organic matter, conforming to the outline listed above. Recommendations for amendments to be requested from soils lab. The information to be submitted to Contract Manager/Developer Representative and amendments to the soil to be determined on a site by site basis with Strathcona County approval.

2.2 SOIL MIXES

2.2.1 Soil mix for shrub and flowerbeds must meet the topsoil specifications and be a 3-1-1 mix of topsoil, sand and peat.

2.2.2 Other composted soil mixes may be accepted. To be approved by Contract Manager/Developer Representative.

2.2.3 Top dressing for reseeding of sport fields and turfed areas during the maintenance period shall be a 2-1-1 mix of peatmoss, sand and either soil or compost. Soil mix may change to accommodate soil test results. Scarify bare areas prior to soil mix and seed application.

2.2.4 Live topsoil/pond muck refers to the substrate or organic soils, and all materials within the soil, that could lead to vegetative establishment of a replacement wetland including seeds, spores, mycorrihizae, tubers and other propagules taken from an existing designated wetland (donor) site.

2.3 FERTILIZER

2.3.1 Formulation ratio as required from soil test results. Fertilize shrub and flower beds according to soil analysis. Applied in accordance with the manufacturer's directions.

2.4 MANURE

2.4.1 Friable, loose cow manure, free of large lumps, twine and other foreign material, well aged and having a pH between 5.5 and 7.5.

2.5 PEAT MOSS

2.5.1 Decomposed plant material, fairly elastic and homogeneous, free of decomposed colloidal residue, wood, sulphur and iron. Minimum of 60% organic matter by mass; pH value between 5.5 and 7.

2.6 HORTICULTURE SAND

2.6.1 Sharp sand free of deleterious soluble salts and other contaminants likely to cause efflorescence and reduced skid resistance, and graded within the following limits:

Sieve Size (mm)	% Passing by Weight
2.5	100
1.25	85 – 100
0.8	80 – 90
0.315	30 – 60
0.16	2 – 10
0.063	1% Maximum

2.7 LIME

2.7.1 Ground agricultural limestone containing minimum 85% of total carbonates.

2.8 SULPHUR

2.8.1 Finely crushed agricultural elemental sulphur, free of impurities.

2.9 COMPOST

2.9.1 Commercially prepared compost shall be free from weed seeds. Physical contaminants such as glass, metal, plastic and rock shall be less than 0.5%. Pathogen and heavy metal levels shall satisfy the requirements for Class A compost. The carbon to nitrogen ratio shall be 40:1 or less. Organic matter content should exceed 45%. Contract Manager/Developer Representative shall approve the source of the compost.

2.10 EQUIPMENT

Cultivators: Capable of scarifying, discing or harrowing.

Rollers: Of suitable size and mass for the work.

3.0 EXECUTION

3.1 When loading topsoil from a stockpile, do not leave a vertical face at end of day's work.

3.2 Scarify subgrade prior to installing topsoil.

3.3 Broadcast soil additives on subsoil base prior to topsoil installation if required from soil test results.

3.4 Do not mix topsoil and subsoil during loading and hauling.

3.5 Install dry topsoil during dry weather over approved dry unfrozen subgrade.

3.6 Apply topsoil up to the following minimum depths after settlement:

150 mm for seeded areas;
100 mm for sodded areas;
450 mm for flower beds;
450 mm for shrub beds; and
200 mm for sport fields.

3.7 Manually spread topsoil around trees and plants to prevent damage by grading equipment.

3.8 Fine grade by floating prior to seeding or sodding to eliminate rough spots and low and soft areas ensuring positive drainage.

3.9 Bring topsoil up to within 25 mm of design finished grade on seeded and sodded areas. Fine grade again if necessary.

3.10 Leave surface smooth, uniform and sufficiently firm to prevent sink pockets when irrigated. Hand rake all areas not accessible by equipment.

3.11 Ensure interface edges between walkways, trails, sport fields, playgrounds, site furnishings, natural tree stands and all surrounding property receive required amount of topsoil for the landscape application and form a smooth even transition with positive drainage.

3.12 Cut smooth falls to catch basin and manholes, rims, and finish flush.

3.13 Do not bury refuse or foreign material of any kind on site. Excavate and remove immediately from site all soil contaminated by oil, gasoline or any other substances harmful to healthy, vigorous plant growth.

3.14 Weeds to be controlled throughout maintenance guarantee period of related work includes but not limited to dandelion, jimsonweed, quackgrass, horsetail, morning glory, rush grass, mustard, lambsquarter, chickweed, crabgrass, Canada Thistle, tansy ragwort, scentless chamomile, bermuda grass, bindweed, bent grass, perennial sorrel, brome grass, red root pigweed, buckweed, toadflax, foxtail, perennial sow thistle, leafy surge, field scabious and common tansy and all noxious and restricted weeds as identified under the Alberta Weed Control Act.

3.15 Collection of the live topsoil shall take place when the material is dormant, when mortal damage as a result of excavation will be minimized. The donor site may require de-watering depending upon the preceding weather conditions. The boundaries of the desirable live topsoil area to be excavated will be determined in the field by the Contract Manager/Developer Representative.

3.16 The removal of the live topsoil shall be carried out with a track-mounted backhoe or equivalent low pad pressure vehicle. Live topsoil shall be removed to a nominal depth to which the limit of the dark organic material and useful plant parts extend. The Contractor shall carefully control his operations to ensure maximum salvage of the material without contaminating it with clay and other unsuitable materials.

3.17 Sites to receive the live topsoil shall be scarified to a depth of 200 mm, by ripping, rototilling, or discing prior to placement of the live topsoil.

3.18 The live topsoil shall be conveyed to the site and placed in the areas indicated on the drawings or as directed by the Contract Manager/Developer Representative. Material removed from the donor site locations shall be replaced by material approved by Contract Manager/Developer Representative.

3.19 In constructed wetlands, low-load tracked equipment will be required to place the live topsoil, at depths specified on drawings or as directed by the Contract Manager/Developer Representative.

4.0 ACCEPTANCE

4.1 Topsoil will be accepted when all soils analysis reports have been submitted to Contract Manager/Developer Representative and/or Strathcona County Representative for review confirming topsoil is in accordance with the Design and Construction Standards.

5.0 MEASUREMENT AND PAYMENT

5.1 MEASUREMENT

5.1.1 Measurement to be in square meters of topsoil to specified depth, ready for seed or sod.

5.2 PAYMENT

5.2.1 Payment at the respective bid per square metre shall be full compensation for preparing the subsoil surface; supply, hauling, spreading, discing, harrowing, floating and compacting the topsoil; cleanup and disposal of all unused materials; and for all labour and use of equipment necessary to complete the work in accordance with these CONSTRUCTION SPECIFICATIONS.

1.0 GENERAL

1.1 DESCRIPTION

1.1.1 The work covered by this specification shall consist of supply and installation of seeding, sodding, fertilizing, watering, mulching and maintenance in the areas within the limits of construction or as designated by the Contract Manager/Developer Representative in accordance with these CONSTRUCTION SPECIFICATIONS and conforming to the sections shown on the approved CONSTRUCTION DRAWINGS or as directed by the Contract Manager/Developer Representative.

1.2 QUALITY

1.2.1 Weeds to be controlled throughout construction and maintenance period includes but not limited to dandelion, jimsonweed, quackgrass, horsetail, morning glory, rush grass, mustard, lambsquarter, chickweed, crabgrass, Canada thistle, tansy ragwort, scentless camomile, bermuda grass bindweed, bent grass, perennial sorrel, brome grass, red root, pigweed, buckweed, toadflax, foxtail, and perennial sow thistle and all noxious and restricted weeds as identified under the Alberta Weed Control Act.

1.3 MATERIAL DELIVERY, HANDLING AND STORAGE

1.3.1 Use all means necessary to protect material before, during and after installation. Provide adequate protection to materials, which may deteriorate if exposed to weather.

1.3.2 Fertilizer shall be packaged in waterproof bags labelled clearly, indicating net mass, analysis and manufacturer. Store on pallets and protect from weather if required by Contract Manager/Developer Representative. Forward all labels to Contract Manager/Developer Representative at time of Construction Completion.

1.3.3 Deliver and store grass seed in original packages with label indicating:

(i) analysis of seed mixture,
(ii) percentage of pure seed by weight,
(iii) year of production,
(iv) net mass,
(v) date tagged and location.

1.3.4 Store all seed in dry weatherproof place and protect from damage by heat, rodents and other causes.

1.3.5 Deliver sod to site within 24 hours of being lifted and lay sod within 36 hours of being lifted

1.3.6 Do not deliver or install small, irregular or broken pieces of sod. Do not install two or more small pieces where one large piece could be installed.

1.3.7 During wet weather allow sod to dry sufficiently to prevent tearing during lifting and handling.

1.3.8 During dry weather protect sod from drying and water sod as necessary to ensure its vitality and prevent dropping of soil in handling. Dry sod will be rejected.

2.0 PRODUCTS

2.1 GRASS SEED MIXES

2.1.1 Consult the Contract Manager/Developer Representative to determine specific requirements for grass seed mixture and seeding rate, if not specified.

2.1.2 Use only Certified Canada No. 1 varieties in accordance with the Canadian Seeds Act and Regulations and having minimum purity of 97% and germination of 75%, and be mixed to the following by weight:

2.1.2.1 General Park Mix (225 kg per hectare)

30% Creeping Red Fescue - minimum 2 varieties
25% Tall Fesuce - minimum 2 varieties
15% Kentucky Bluegrass
15% Chewings Fescue - single variety
15% Perennial Ryegrass – single variety

2.1.2.2 Boulevard Mix (225kg per hectare)

25% Sheep Fescue - single variety
25% Hard Fescue - single variety
20% Tall Fescue - minimum 2 varieties
15% Perennial Ryegrass
10% Canada Bluegrass - single variety
5 % Annual Ryegrass

2.1.2.3 Rural Road Mix (250kg per hectare)

25% Creeping Red Fescue- minimum 2 varieties
25% Tall Fescue - minimum 2 varieties
25% Northern Wheatgrass - minimum 2 varieties
25% Tickle Grass - single variety

2.1.2.4 Naturalization Mix (250kg per hectare)

25% Sheeps Fescue - single variety
25% Plains Rough Fescue – single variety
20% Creeping Red Fescue - minimum 2 varieties
10% Perennial Ryegrass - single variety
10% Red Clover - single variety
7% American Vetch – single variety
3% June Grass (Koeleria Macrantha)

2.1.2.5 Wet Meadow Mix (200kg per hectare)

25% Fowl Bluegrass - minimum 2 varieties
20% Awned Wheatgrass - single variety
20% Slender Wheatgrass – single variety
20% Hard Fescue - single variety
10% Sloughgrass - single variety
5% American Vetch – single variety

2.1.2.6 Salt Affected Wet Meadow Mix (60kg per hectare)

20% Alkali grass - single variety
20% Slender Wheatgrass – single variety
30% Bebb's Sedge - single variety
30% Sloughgrass - single variety

2.1.2.7 Special Conditions

(i) Seed mixes for special conditions or where requested by Contract Manager/Developer Representative (i.e., wetlands, naturalization, reclamation) to be developed on an as needed, site-specific basis and approved by the IPS Standards Committee.

(ii) Consult the Contract Manager/Developer Representative to determine specific requirements for grass seed mixture and seeding rate.

2.2 SOD

2.2.1 Nursery grown, Minimum 25% Hard Fescue, 25% Chewings Fescue, 25% Creeping Red Fescue, and 25% Rocky Mountain Fescue blended equally, of Certified Canada No. 1 Seed. If available locally.

2.2.2 Sod to be healthy and vigorous with a strong, fibrous root system, free of stones, burned or bare spots, disease, insect infestation, netting, and contain no more than 1% weeds and other grasses.

2.2.3 Cut in accordance with recommendations of Nursery Sod Growers Association of Alberta, approximately 0.5 m2 in area and have 13-25 mm soil thickness.

2.2.4 Sod shall be required in all areas of intensive use and grass swales, as follows:

2.2.4.1 Install sod a minimum of 4.5 m beyond playgrounds, splash parks, and hard surface sports facilities.

2.2.4.2 Install sod a minimum of 2.0 m from each side of centre line of grass swales or beyond edge of concrete swales.

2.2.4.3 Install sod a minimum of 2.0 m beyond edge of asphalt trails and concrete sidewalks.

2.3 FERTILIZER

2.3.1 Formulation ration of fertilizers used at time of seeding, sodding and as supplementary during maintenance/guarantee period to be determined from soil test results and approved by Contract Manager/Developer Representative prior to installation.

2.4 MULCH

2.4.1 Refer to SUB-SECTION 3.4 OF THIS SECTION.

2.5 TURF ESTABLISHMENT BLANKET

2.5.1 Based on approved design matting or approved equal to be used on banks of storm water management facilities, culverts and slopes and any other areas where excessive erosion may occur.

2.6 STAPLES

2.6.1 Steel wire, 25 mm wide by 200 mm deep by 3 mm diameter.

2.7 EQUIPMENT

2.7.1 "Brillion": Type or similar mechanical seeder, capable of rolling and covering the seed with 3 mm to 6 mm of soil.

2.7.2 Hydroseeder: Capable of thoroughly mixing water, seed, fertilizer, and pulverized wood fibre, and of uniformly spraying the mix at designated rate.

2.7.3 Ensure equipment is steam cleaned, free of soil and seed to prevent site contamination.

2.8 WATER

2.8.1 Potable, free of minerals and chemicals that may be detrimental to plant growth. Water shall be hauled from a local standpipe or by contacting Strathcona County Utilities for arrangement for use of fire hydrants.

3.0 EXECUTION

3.1 PREPARATION

3.1.1 Remove weeds and debris from topsoil surface already in place. As required, spray site allowing weeds to die off prior to completion of grading.

3.1.2 Loosen fine grade surface free of humps and hollows and free of deleterious and refuse material. Ensure positive drainage.

3.2 FERTILIZING

3.2.1 After cultivation, apply specified fertilizer from soil analysis in accordance with the manufacturer's direction spreading evenly with a mechanically calibrated distributor. Mix thoroughly into top 50 mm of topsoil not more than 48 hours before seeding.

3.2.2 Float surface to achieve approved design elevations.

3.2.3 Apply specified fertilizer spreading evenly with a mechanically calibrated distributor. Mix thoroughly into top 50 mm of topsoil, not more than 48 hours before seeding.

3.2.4 Float surface to achieve elevations within tolerances of 25 mm in 3 m, when measured in any direction after fertilizer has been spread cultivated.

3.3 SEEDING

3.3.1 Apply the specified seed mixture as per SUB-SECTION 2.1.2 IN THIS SECTION.

3.3.2 Seed half the amount of prescribed seed mix in one direction, seeding the other half of seed mixture in a perpendicular direction.

3.3.3 Seed when weather conditions, soil temperatures and moisture conditions are suitable. Do not seed when seedbed is covered with frost, snow or standing water.

3.3.4 Seed when wind is less than 8 km/hour.

3.3.5 Seed using Brillion or similar mechanical seeder or hydroseed as specified.

3.3.6 In small areas where use of a mechanical seeder is impractical, seed by hand.

3.3.7 After seeding, ensure seed has contact with soil. Compact topsoil with light rolling, to ensure design grades are maintained and surface is smooth and uniform.

3.3.8 Erect barricades and warning signs to protect seeded areas from traffic until grass is established, where possible.

3.4 HYDROSEEDING

3.4.1 Do all seeding when weather conditions, soil temperature and moisture conditions are suitable.

3.4.2 Use a hydroseeder to seed slopes 3 horizontal to 1 vertical or steeper. Use seed mixes approved for conditions by Contract Manager/Developer Representative.

3.4.3 Mix seed with water, mulch and fertilizer in the following suggested quantities to cover 4000m2:
(i) 640 kg of wood fibre mulch;
(ii) 80 kg of seed;

(iii) 140 kg of fertilizer; and
(iv) 6,400 litres of water.

3.4.4 Do not spray seed and mulch mixture onto trees, bike paths, roads, parking lots, interlocking paving stone, bridges, houses, fences or other surfaces not meant for seeding. Remove over-spray.

3.4.5 Hydro seeding should not be carried out in wind velocities which cause seed mix to be blown.

3.5 SEED PROTECTION ON SLOPES

3.5.1 Install in accordance with manufacturer's directions and approved drawings.

3.5.2 Erect barricades and warning signs to protect seeded areas from traffic until grass is established.

3.6 SODDING

3.6.1 Place sod during growing season. Do not place sod at freezing temperatures or over frozen soil.

3.6.2 Lay sod in rows, smooth, even and flush with adjoining surfaces and with joints staggered. Butt sections closely without overlapping or leaving gaps. Top-dress and seed sod seams where required.

3.6.3 Roll sod to remove depressions and irregularities.

3.6.4 Saturate sod with water as necessary to ensure vitality.

3.6.5 Erect barricades and warning signs to protect sodded areas from traffic until grass is established.

4.0 MAINTENANCE

4.1 SEEDING

4.1.1 Maintain all seeded areas in a healthy, vigorous, growing condition for a minimum of 2 years or until FAC including but not limited to the following:

4.1.1.1 All landscape maintenance work described in this section shall be executed by personnel under constant direction and control of a Journeyman Landscape Gardener, a Certified Landscape Technician or equivalent and in strict accordance with best horticultural practice.

4.1.1.2 During mowing and trimming operations, protect all trees, shrubs and site features from damage.

4.1.1.3 Pick up and dispose of debris accumulated on landscaped areas prior to mowing and/or trimming.

4.1.1.4 Program timing of maintenance operations to growth, weather conditions and use of site as per best horticultural practice.

4.1.1.5 Seeded areas that require mowing to be cut when grass covers 75% of the area and is less then 100 mm in height. Grass to be maintained at 65mm in second year. Areas to be mown 48 hours prior to CCC or FAC inspections.

4.1.1.6 Water when necessary to prevent seed and underlying soil from drying out.

4.1.1.7 Prior to and during establishment of turf, noxious and nuisance weeds must be controlled and restricted.

4.1.1.8 Noxious and Nuisance weeds must be controlled by pulling cutting and/or spraying.

4.1.1.9 On recommendation from the Contract Manager/Developer Representative or through weed inspections by Transportation and Agriculture Services, weed notices will be issued on soil used for landscaping when weeds are not controlled. Upon notification weeds must be cut or sprayed with 96 hours of notification, weather permitting. Use chemicals in strict accordance with manufacturer's recommendations and Provincial laws. Damage resulting from use of chemicals shall be the contractor's responsibility.

4.1.1.10 Undertake weed, insect and fungus control after the public has been notified by advertisements in local newspapers, a minimum of 2 weeks prior to any application, and treated areas shall be posted for 24 hours after application. Chemical shall be applied by or under the supervision of licensed applicators. All Federal and Provincial regulations regarding use, transportation and storage of chemicals shall be strictly adhered to.

Submit Biocide report at time of FAC inspection. Damage resulting from use of chemicals shall be the contractor's responsibility.

4.1.1.11 If seed fails to germinate within 4 growing months, cultivate and re-seed until germination takes place or additional seed. Re-seed on a regular basis all areas which show deterioration, are bare, burned out, are thin or washed out throughout maintenance period. Use top-dressing in accordance with VOL. 2 SEC. 602, TOPSOIL AND PLANTING MIX URBAN, SUB-SECTION 2.2.3.

4.1.1.12 Scarify surfaces prior to topsoil and seed application when top-dressing.

4.1.1.13 Trim turf edges neatly, by hand clipping if necessary, and remove all clipping from planting beds, tree saucers and pavement. No mow areas to follow above requirements and require mowing only for weed control or to assist with turf establishment.

4.1.1.14 Contractor shall keep a written log of all maintenance trips and submit a copy of the log once per month to the Contract Manager/Developer Representative.
Maintenance log shall contain:
(i) Work performed, and materials used;
(ii) Written confirmation of the dates for watering; and
(iii) Written confirmation of the dates and types of fertilizer.
(iv) Written confirmation of dates and types of weed control used.

4.2 SODDING

4.2.1 Maintain all sodded areas in a healthy vigorous growing condition for a minimum of two years or until FAC is issued. This shall include but not limited to the following:

4.2.1.1 All landscape maintenance work described in this section shall be executed by personnel under constant direction and control of a Journeyman Landscape Gardener, a Certified Landscape Technician or equivalent and in strict accordance with best horticultural practice.

4.2.1.2 Do each operation continuously and complete within a reasonable time period.

4.2.1.3 Store on site-equipment and materials in approved location.

4.2.1.4 On a daily basis, collect and dispose of debris and excess materials resulting from the work.

4.2.1.5 Program timing of maintenance operations to growth, weather conditions and use of site.

4.2.1.6 Mow grass regularly to maintain height at 65 mm. Ensure turf is mown 48 hours prior to CCC or FAC inspections.

4.2.1.7 Pick up and dispose of paper and refuse accumulated on landscaped areas prior to mowing.

4.2.1.8 During trimming operations, protect all trees, shrubs and site features from damage.

4.2.1.9 Trim edges of sodded areas neatly, by hand clipping, if necessary, and remove all clippings from planting bed, tree saucers and pavement.

4.2.1.10 Roll sod to remove depressions and irregularities. Correct any areas that settle.

4.2.1.11 Water when necessary to saturate sod.

4.2.1.12 Prior to and during establishment of turf, noxious weeds must be controlled and restricted by spraying and cutting prior to weed seeding.

4.2.1.13 Noxious and nuisance weeds must be controlled by cutting and/or spraying, prior to and during establishment of turf.

4.2.1.14 On recommendation from Contract Manager/Developer Representative or through weed inspections by Transportation and Agriculture Services, weed notices will be issued on soil used for landscaping when weeds are not controlled. Upon notification weeds must be cut or sprayed with 96 hours of notification weather permitting. Use chemicals in strict accordance with manufacturer's recommendations and Provincial laws. Damage resulting from use of chemicals shall be remedied at the contractor's cost.

4.2.1.15 Undertake weed, insect and fungus control after the public has been notified by advertisements in local newspapers a minimum of two weeks prior to any application, and treated areas shall be posted for 24 hours after application. Chemical shall be applied by or under the supervision of licensed applicators. All Federal and Provincial regulations regarding use, transportation and storage of chemicals shall be strictly adhered to. Damage resulting from use of chemicals shall be remedied at contractors cost.

4.2.1.16 Re-sod or top-dress as directed areas which show deterioration or which are thin, bare or burned out.

4.2.1.17 Repair all damages resulting from erosion, washouts or any other cause.

4.2.1.18 Dependent on sod condition, additional supplementary fertilizer may be required based on soil analysis.

4.2.1.19 Contractor shall keep a written log of all maintenance trips and submit a copy of the log once per month to the Contract Manager/Developer Representative. Copies will be required by Strathcona County prior to issuance of FAC. Maintenance log shall contain:

(i) Work performed, and materials used;
(ii) Written confirmation of the dates for watering; and
(iii) Written confirmation of the dates and types of fertilizer.
(iv) Biocide report

5.0 ACCEPTANCE

5.1 SEEDING

5.1.1 Acceptance

5.1.1.1 Seeded areas will be accepted when permanent grass cover has been established, the turf is free of bare and dead spots, is relatively weed free, and no soil is visible when the grass has been cut to 65 mm height on the third cutting.

Turf areas to be mown 48 hours prior to inspections, if required.

Maintenance log to be submitted prior to issuance of FAC.

Naturalization areas to be accepted when seed cover is established and is characteristic of the seed mix.

5.1.2 Guarantee

5.1.2.1 Guarantee all seeded areas for a minimum of two years from the date of CCC until FAC, to be healthy, well established turf grass with no bare or dead spots.

5.2 SOD

5.2.1 Acceptance

5.2.1.1 Sodded areas shall be accepted when all sodded areas have a healthy, even, vigorously growing stand of grass, free of disease, weeds and thin or bare spots and voids.

5.2.1.2 Turf to be mown 48 hours prior to inspections.

5.2.1.3 Maintenance log to be submitted prior to issuance of FAC.

5.2.2 Guarantee

5.2.2.1 Guarantee all sodded areas for a minimum of two years from date of CCC to FAC, to be in a healthy, vigorous growing condition, free of disease, weeds, thin or bare spots and settlement.

6.0 MEASUREMENT AND PAYMENT

6.1 MEASUREMENT

6.1.1 Measured in square metres of surface area.

6.2 PAYMENT

6.2.1 Payment shall include supply and application of fertilizer, pesticides and seed (method specified in the SCHEDULE OF QUANTITIES) or sod, and one year maintenance.

1.0 GENERAL

1.1 DESCRIPTION

1.1.1 The work covered by this specification shall consist of supply and installation of plant materials in the areas within the limits of construction or as designated by the Contract Manager/ Developer Representative in accordance with these CONSTRUCTION SPECIFICATIONS and conforming to the sections shown on the approved CONSTRUCTION DRAWINGS or as directed by the Contract Manager/Developer Representative.

1.2 QUALITY ASSURANCE

1.2.1 All plant material shall meet Horticultural Standards of Canadian Nursery Trades Association (CNTA) regarding grading, quality, and nomenclature or accept other standards where stated otherwise and approved by Contract Manager/Developer Representative.

1.2.2 Approval of nursery grown plant material at source of supply does not preclude right of the Contract Manager/Developer Representative to inspect plants upon arrival on site, during planting or after planting and reject damaged plants or those not conforming to specifications.

1.2.3 Supply nursery grown plants true to type, structurally sound, well balanced, healthy, vigorous, of normal growth habits, densely foliated when in leaf with healthy, well-developed root systems.

1.2.4 Only Elm grown in Alberta, from a Dutch Elm disease free source are acceptable. Proof of origin is required.

1.3 MATERIAL, DELIVERY, HANDLING AND STORAGE

1.3.1 Branches shall be tied with rope or twine only, in such a manner that no damage will occur to the bark or branches.

1.3.2 During transportation of plant material, the Contractor shall exercise care to prevent injury and drying out of trees. Should the roots be dried out, large branches broken, ball of earth broken/loosened or areas of bark torn, the Contract Manager/Developer Representative may reject the injured tree(s) and order them replaced at no additional cost to the owner. All plants shall be covered at all times during transportation with tarpaulin or canvas.

1.3.3 Plants must be protected at all times from sun or drying winds. If not planted immediately, plant rootballs shall be kept in the shade, well protected with soil, wet mulch or other acceptable material and kept well watered.

1.3.4 Handle plants with care to prevent injuries to trunk, branches and roots.

1.3.5 Move trees with soil balls only when wrapped tightly in burlap.

1.3.6 Protect root zone of bare root plants with wet straw, moss or other suitable material.

1.4 SUBSTITUTIONS

1.4.1 Alternatives and plant substitutions require prior approval of Contract Manager/Developer Representative and Planning and Development Services department.

1.4.2 Substitutions or use of larger plants may be approved by the Contract Manager/Developer Representative and the Planning and Development Services department. Rootballs are to be increased in proportion to size of plants as per CNTA.

Substitutions shall be of nearest similar species and size specified.

2.0 PRODUCTS

2.1 PLANT CHARACTERISTICS

2.1.1 All plants shall be true to form and growth habit typical of their species.

2.1.2 Trees shall be straight according to their natural habit of growth. Double leaders not acceptable.

2.1.3 Clump or multi-stem trees shall have 3 or more main stems originating from common base at ground line.

2.1.4 Shrubs shall have a natural form, typical of genus, species and variety, with a minimum of 4 canes.

2.1.5 Vines shall have at least 4 runners, each with minimum length of 300 mm.

2.1.6 Ground covers shall have healthy tops, size proportionate to root requirements, typical of species and variety.

2.1.7 Herbaceous plants shall have healthy crowns, size proportionate to root requirements, typical of species and variety, not less than 2 years old.

2.2 PLANT MEASUREMENT

2.2.1 Plants will be measured in units of caliper, height, or spread called for on the CONSTRUCTION DRAWINGS.

2.2.2 Caliper, measured on deciduous trees only, shall mean trunk diameter measured no less then 150 mm above ground level for trees with a caliper up to 100 mm. Trees 100 mm and larger caliper are to be measured 300 mm above the ground.

2.2.3 Coniferous height will be measured from grade at which plant originally stood at its source to top of main body of plant, not to top of long leader.

2.2.4 Spread is lateral diameter of main body of plant at its widest natural dimension, not from branch tip to branch tip.

2.2.5 Minimum deciduous tree caliper shall be 60 mm. Minimum coniferous tree height shall be 2.5 m.

2.2.6 Minimum shrub height and spread at planting shall be deciduous 450 mm height and coniferous 450 mm spread.

2.3 BARE ROOT PLANTS

2.3.1 Bare root plants must be of specified size as per CNTA. Roots must be pruned to remove damaged portions prior to installation.

2.4 CONTAINER GROWN PLANTS

2.4.1 All plants to be grown in containers for minimum of 3 months.

2.4.2 Plants to have an established root system which will "hold" soil when removed from container is required.

2.4.3 All plants shall be hardened off, dormant, and have sound buds set intact prior to planting.

2.4.4 Container size must be in proportion to plant size. Root bound plants are not acceptable.

2.5 BALLED AND BURLAPPED PLANTS

2.5.1 Trees delivered to site shall contain rootballs not exceeding sizes as outlined in the Canadian Standards for Nursery Stock:

Deciduous

Caliper (mm)	Ball Diameter (mm)
20	400
25	450
30	500
40	600
50	700
60	700
70	800
80	900
90	900
100	1000
125	1200
150	1500
175	1750
200	2000

Coniferous

Height (mm)	Ball Diameter (mm)
1000	350
1250	400
1500	500
1750	600
2000	900
2500	1000
3000	1200
3500	1400
4000	1650

2.5.2 Adjust ball size according to growth habits of plants.

2.5.3 Ball size shall be sufficiently large to contain at least 75% of fibrous root system with a ball depth not less than 50% of ball diameter.

2.5.4 Soil balls shall be secured with burlap, heavy twine and rope, or burlap, wire baskets and rope.

2.5.5 Supply single burlap on rootballs less than 500 mm in diameter; double burlap on balls from 500 mm to 600 mm in diameter; double burlap and drumlace with 6 mm rope at minimum spacing on rootballs 600 mm and larger in diameter.

2.5.6 Larger rootballs than listed above are recommended when plants have not been transplanted or root pruned for 4 or more years or when plants are dug out of season.

2.5.7 The minimum rootball size for multi-stemmed trees shall be one size larger than the sizes specified for single-stemmed trees of equivalent caliper as shown in the table in SUB-SECTION 2.5.1 OF THIS SECTION.

2.6 FERTILIZER

2.6.1 Application to be based on soil analysis.

2.6.2 Do not fertilize trees at time of planting.

2.6.3 Fertilizer dates and type to be included in maintenance log.

2.7 PLANTING MIX

2.7.1 Soil mix for back filling of shrub planting beds to be 3 parts topsoil, 1 part horticultural sand, 1 part peat moss in accordance with these CONSTRUCTION SPECIFICATIONS.

2.7.2 Topsoil may be used for plant pits.

2.8 PRE-EMERGENT (WEED GERMINATION CONTROL)

2.8.1 For tree wells and shrub beds, apply coloured granular pre-emergent at time of planting to weed free surface in accordance with manufacturer's directions.

2.9 MULCH

2.9.1 Shredded Wood Mulch: free from non-organic material, wood preservatives, diseased wood, weeds and weed seeds. For use on trails, pathways and picnic site as surface cover and on planting beds to be applied to a 100 mm depth, weed free surface, after application of pre-emergent is applied.

2.9.2 Decorative: Type and locations to be approved by Contract Manager/Developer Representative.

2.9.3 Prohibited Mulches: The following mulches are prohibited: sawdust and shavings, peatmoss, manure or raw compost, paper products, plastic, rubbers, aluminum foil, gelatinous sprays, plywood and other lumbers containing chemical adhesives or wood preservatives.

Installation

2.9.4 Do not mound mulch around base of shrubs or tree trunks.

2.9.5 During application all mulches shall be kept at least 50 mm to 75 mm away from tree trunks.

2.9.6 All mulches to be installed during active growing season. Water plants prior to applying mulch.

2.10 WATER

2.10.1 Potable, free of minerals and chemicals which may be detrimental to plant growth. Water shall be hauled from a local standpipe or by contacting Environmental Operations for arrangements for use of fire hydrants.

2.11 TREE TIES

2.11.1 Material used for tree ties should have a flat, smooth surface and be elastic to allow for slight movement for the tree. Suitable materials include rubber strips or webbing and belting.

2.12 STEEL STAKES

2.12.1 T-bar stakes, 40 mm x 40 mm x 5 mm thick x 2.1 m long, primed with one coat black zinc rich paint to CGSB1 – GP - 1816. Top 300 mm of the tree stake to be colour coded according to year planted and will be on a 4 year rotational basis as follows:

2011 - green;
2012 - blue;
2013 - white;

2014 - yellow;
2015 – green;
2016 – blue;
2017 – white;
2018 – yellow;
2019 – green; and,
2020 – blue.

3.0 EXECUTION

3.1 PLANTING

3.1.1 Install plant material when ground is frost-free.

3.1.2 The Contract Manager/Developer Representative to approve staking location of trees and planting beds prior to excavation and planting.

3.1.3 The Contract Manager/Developer Representative to verify depth of shrub bed excavation to be in accordance with these CONSTRUCTION SPECIFICATIONS prior to topsoil mix installation or planting.

3.1.4 Centre trees and shrubs at location of stakes and face to give best appearance. Plant at same depth as previously grown at source.

3.1.5 Place tree or shrub on minimum bed of 150 mm firmly tamped planting mix or topsoil. Bury no foreign material beneath planting area. Form soil in concave manner in centre of excavation for container grown, balled or burlapped trees and shrubs. Form soil in convex manner in centre of excavation for bare root plants. Spread roots of bare root plants to their approximated natural position, prune broken or damaged roots.

3.1.6 Remove all containers from containerized plant material. Remove twine or wire and fold burlap back from balled and burlapped plant material. Ensure that soil ball remains intact.

3.1.7 Fill with water, allowing soil to settle around roots or soil ball. After water has been absorbed, fill to grade with planting mix tamping firmly to remove all air pockets. Leave dish in concave manner at base of trees and shrubs. Fill with water and allow to be absorbed.

3.1.8 For individual tree planting, construct an earth saucer around the base of each tree to drip line of tree as conditions will allow.

3.1.9 Apply pre-emergent in tree pits and planting beds to weed free surface in accordance with manufacturer's directions.

3.1.10 Apply 100 mm depth of mulch in accordance with SUB-SECTION 2.9 OF THIS SECTION.

3.1.11 Remove and dispose of off-site excess excavated soil and turf stripped from planting beds and plant pits or as directed by the Contract Manager/Developer Representative.

3.1.12 Shrub setbacks shall be a minimum of 450 mm from edge of shrub bed.

3.1.13 Slope grades in planting beds to ensure positive drainage from building foundations before planting.

3.2 STAKING AND GUYING

3.2.1 Stake and guy only when necessary for the specific conditions encountered with the approval of the Contract Manager/Developer Representative. Trees that settle out of plumb due to inadequate soil compaction either under or adjacent to the rootball shall be excavated and reset. In no case shall trees that have settled out of plumb be pulled upright using guy wires.

3.2.2 Brace all trees in vertical position immediately after planting by guying or staking as follows:

Deciduous (Caliper)	Coniferous (Height)	Tree Support Method
Up to 30 mm	Up to 1.5 m	1 stake, 1 tie
30 mm – 100 mm	1.5 m – 3.0 m	2 stakes, 2 ties
100 mm – 150 mm	3.0 m – 3.5 m	3 guys, with 2 anchors
150 mm and over	3.5 m and over	4 guys, with 4 anchors

3.2.3 Space stakes around tree just outside root ball. Drive posts 450 -500 mm into ground.

3.3 PRUNING

3.3.1 Plants shall not be heavily pruned at time of planting. Pruning is only required at planting time to correct defects in the tree structure, including removal of injured branches, double leaders, waterspouts, suckers and interfering branches.

3.3.2 Prune all trees and shrubs in accordance with the most current ISA standards to preserve natural character of plant. Pruning shall be done with clean, sharp tools.

3.3.3 Make all cuts without damaging branch collar.

3.3.4 All injured tree and shrub roots shall be pruned to make clean ends before planting.

3.4 MECHANICAL TREE MOVING

3.4.1 All utility locates are the responsibility of the Contractor.

3.4.2 Excavate plant with mechanical tree spade of sufficient size to excavate required soil ball size.

3.4.3 Excavate tree pit to size not less than excavated tree's soil ball.

3.4.4 Scarify sides of tree pit to ensure root penetration after planting.

3.4.5 Plant trees, immediately upon delivery, plumb in centre of pit at same depth as previously grown. Face to give best appearance.

3.4.6 Provide warning markers and barricades around excavated pits.

3.4.7 Place excavated plugs in former tree locations when possible and remove excess plugs from site.

3.4.8 Subgrade material from the digging of tree pits by a tree spade is to be removed from the site at the Contractor's expense.

3.4.9 Saturate with water and allow soil ball to settle in pit. Fill to grade with topsoil as previously outlined. Construct 100 mm high lip around outer edge of pit.

3.4.10 Guy or stake (if required) immediately after installation as required.

3.4.11 Apply pre-emergent to weed free surface in accordance with manufacturer's directions.

3.4.12 Apply 100 mm mulch in accordance with SUB-SECTION 2.9 OF THIS SECTION.

4.0 MAINTENANCE

4.1 FERTILIZING

4.1.1 Maintenance shall include all measures necessary to establish and maintain all plant material in an acceptable, vigorous and healthy growing condition for a minimum of 2 years from the issuance of a CCC until FAC.

4.1.2 It is preferred that all landscape maintenance work described in this section shall be executed by personnel including a certified Arborist, under the constant direction and control of a "Journeyman Landscape Gardener" as defined by Alberta Manpower, and in strict accordance with specifications and best horticultural practice.

4.1.3 Program timing of maintenance operations to growth, weather conditions and use of site.

4.1.4 Do not fertilize plant material in first year after planting. Fertilizer for trees to be a slow release formula of 3-1-1 in the Spring of the second year of planting.

4.1.5 Fertilize shrubs with 20-20-20 in accordance with manufacturer's directions in the spring of the second year.

4.1.6 Fertilizer placed in holes and drilled or punched in the soil or injected into the soil in a solution under pressure.

4.1.7 The Contractor will provide written confirmation of the dates for water, fertilizer type and applications prior to the issuance of FAC.

4.1.8 Apply water after fertilizing to ensure penetration of fertilizers.

4.1.9 Contractor shall keep a written log of all maintenance trips and submit a copy of the log once per month to the Contract Manager/Developer Representative. Maintenance log shall contain:
(i) work performed, and materials used;
(ii) written confirmation of the dates for watering;
(iii) written confirmation of the dates and types of fertilizer; and,
(iv) tree and shrub year of planting and year and variety of replacement.

4.2 WATERING

4.2.1 Test moisture levels of individual plant species and provide adequate water to ensure survival.

4.2.2 Water every week for first six weeks after planting, weather dependent.

4.2.3 Water twice per month after planting until mid August.

4.2.4 Water 3 times prior to freeze up, to freeze trees and underlying soil in to prevent from drying out.

4.3 WEED CONTROL

4.3.1 Pre-emergent to be applied at time of planting to weed free shrub beds or tree wells.

4.3.2 Shallow cultivate and weed shrub beds and tree wells when required.

4.3.3 Apply herbicide in accordance with manufacturer’s direction to ensure beds and tree wells are maintained.

4.4 PEST AND DISEASE CONTROL

4.4.1 Control disease and insects using chemicals in accordance with manufacturer's directions and government regulations.

4.4.2 Public notification of insect and fungus control is required by posting signs 48 hours before and after application. Chemicals shall be applied by or under the supervision of licensed applicators. All Federal and Provincial regulations regarding use, transportation and storage of chemicals will be strictly adhered to.

4.4.3 Rodent wire protection to be used around trunk of tree when necessary.

4.5 PLANT ACCESSORIES

4.5.1 Maintain accessories in proper condition; adjust turnbuckles to keep tree guys taut and replace ties, flagging and stakes when required.

4.5.2 All tree staking to be removed at the end of one year maintenance where growing conditions allow. All tree stakes to be removed prior to FAC.

4.6 PLANT CARE

4.6.1 Straighten plants that lean or sag.

4.6.2 Adjust plant that settle or are planted too low.

4.6.3 Prune all trees and shrubs in accordance with the most current ISA standards to preserve natural character of plant.

4.6.4 Prune to remove dead, diseased, injured, broken, rubbing, and crowded limbs.

4.6.5 Prune all suckers from the base, trunk and inside crown of tree.

4.6.6 Pruning cuts should be located to leave a wound of the smallest diameter.

4.6.7 Prune to ensure that there is a central leader on coniferous trees.

4.6.8 Prune at the proper times according the plant requirements as follows:
(i) Shade trees from October 15 to April 15 except Birch and Maple;
(ii) Birch and Maple from June 15 to July 15;
(iii) Fruit trees from March 15 to April 15;
(iv) Evergreens from April 15 to May 15; and,
(v) Elm from October 1 to March 31. Haul off site and dispose of pruning by burning.

4.7 PLANT REPLACEMENTS

4.7.1 All plant material that has been replaced within 1 year of FAC inspection must be identified through colour code on tree stakes as per SUB-SECTION 2.12.1 OF THIS SECTION, and through coloured flagging on shrubs.

4.7.2 Dead trees will be replaced in a timely manner.

4.7.3 A spot of spray paint on tree replacements staking will be colour coded for year of planting and will be on a four year rotational basis as follows:

2011 - green;
2012 - blue;
2013 - white;
2014 - yellow;
2015 – green;
2016 – blue;
2017 – white;
2018 – yellow;

2019 – green; and,
2020 – blue.

5.0 ACCEPTANCE

5.1 At the time of inspection all plant material shall be in a vigorous and healthy growing condition. Tree wells and planting beds shall be neat and free of weeds and debris.

5.2 Plant material may be accepted providing plant material has been installed in accordance with the Design and Construction Standards.

5.3 Mulch to be topped up to ensure consistent 100 mm depth.

5.4 Contractor maintenance logs to be submitted on a monthly basis to the Contract Manager/ Developer Representative. Copies will be required prior to issuance of FAC.

6.0 GUARANTEE

6.1 Guarantee all plant material for a minimum of two years from the date of CCC to FAC, to be in a healthy and satisfactory growing condition.

7.0 MEASUREMENT AND PAYMENT

7.1 MEASUREMENT

7.1.1 The unit of measure for planting shall be as specified in the TENDER FORM. The quantity paid for shall be the number of units acceptably installed as counted in place.

7.2 PAYMENT

7.2.1 Payment at the respective Contract price bid per unit shall be full compensation for supplying, delivering, installing, removing debris and for all labour and use of all equipment and incidentals necessary to complete the Work in accordance with these CONSTRUCTION SPECIFICATIONS.

1.0 GENERAL

1.1 DESCRIPTION

1.1.1 The work covered by this specification shall consist of construction of wetlands for the purpose of stormwater management facilities as outlined in areas within the limits of construction or as designated by the Contract Manager/Developer Representative in accordance with these CONSTRUCTION SPECIFICATIONS and conforming to the approved CONSTRUCTION DRAWINGS or as directed by the Contract Manager/Developer Representative.

1.1.2 Unless otherwise indicated on the CONSTRUCTION DRAWINGS, the Contractor shall, at his own expense make arrangements for the provision of sites for the stockpiling of material (including live soil), borrowing of material and the disposal of unsuitable and surplus material.

2.0 EXECUTION

2.1 GENERAL

2.1.1 Constructed Wetlands

2.1.1.1 Constructed wetlands are not intended to replace all of the functions of natural wetlands but to minimize point source and non point source pollution prior to entry into streams, natural wetlands and other receiving waters.

2.1.1.2 Where mitigation or compensation for lost natural wetlands is required, further functions must be addressed as per Provincial and Federal guidelines.

2.1.1.3 The land required for the constructed wetland will be dedicated as PUL to Strathcona County and will not be granted as MR.

2.1.1.4 Generally, the area of land which would be covered by water when the water level is at the most critical design storm event level, HWL, will be designated as a “PUL”.

2.1.1.5 This designation will also apply to all ROWs for access to and protection of inlets, outlets and flow control facilities, and for maintenance access routes to the wetland.

2.1.1.6 Constructed wetlands must be graded, seeded and landscaped by the Developer to the satisfaction of Strathcona County.

2.1.1.7 Lots abutting the constructed wetland are allowed provided that there are areas around the wetland that are open for maintenance access routes to the wetland and secondary uses to the public.

2.1.1.8 A restrictive covenant will be placed upon lots abutting the constructed wetland to control lot development so as not to compromise the design requirements of the SWMF and ensure that an adequate freeboard is maintained. Where overland overflow is available, a minimum of 0.3m freeboard (as defined in the Design and Construction Standards) above HWL is acceptable; otherwise, a minimum of 0.5 m is required.

2.1.2 Suspended Solids Removal

2.1.2.1 The minimum design requirement for total suspended solids removal is 85% of particle size 75µm or greater, as recommended by Alberta Environment, April 2001.

2.1.3 Wetland Drainage Areas

2.1.3.1 A minimum drainage area of 5 ha is required to generate constant or periodic flow to the constructed wetland.

2.1.3.2 The smallest practical drainage area is considered to be 20 ha. For drainage areas between 5 ha and 20 ha in size, Strathcona County may approve the use of constructed wetlands on a site-specific basis.

2.1.3.3 To determine that a permanent pool can be maintained in a constructed wetland, hydrological studies are to be conducted using the size and characteristic of the drainage area.

2.1.3.4 Strathcona County prefers that fewer, larger wetlands be constructed rather than a series of smaller constructed wetlands.

2.1.3.5 The Developer is required to implement appropriate sediment controls during development in the drainage area to minimize sediment loading to the forebay and wetland during the construction phase of the project and during the staged construction of the SWMF.

2.1.3.6 If the wetland is for mitigation or compensation of a lost natural wetland, a forebay is required as per Alberta Environment.

2.1.4 Wetland Soil Characteristics

2.1.4.1 For wetland deep water areas, low soil permeability of 10-7 m/s is recommended to maintain a permanent pool of water and minimize exfiltration. Compacted sandy clays and silty clay loams may be suitable provided that documented geotechnical testing demonstrates low soil permeability.

2.1.4.2 Wetland vegetative zones can be constructed using soils from recently displaced wetlands, sterilized topsoil, or peat from within the drainage basin or region. A layer of 10 cm to 30 cm of soil shall be spread over the vegetation zones of the constructed wetland. Planting will be done in this soil following construction.

2.1.5 Wetland Vegetation

2.1.5.1 Plant material shall be selected to respect soil characteristics, slopes, vegetation, zonation, and design of the facility and its intended use.

2.1.5.2 Minimum of 75 trees per hectare required. This area shall be calculated as above the NWL.

2.1.5.3 Shrubs may be substituted at a rate of 5 shrubs to one tree.

2.1.5.4 Plant material appropriate to withstand flooding condition.

2.1.5.5 Landscaping may follow naturalization design of equal value, at the discretion of Strathcona County.

2.1.5.6 Constructed wetlands shall be landscaped as per VOLUME 1, SECTION 6, SUB-SECTION 6.4.5 and 6.4.6.

2.1.5.7 Vegetated buffers around the perimeter of the pond are required for erosion control and additional sediment and nutrient removal.

2.1.5.8 Minimum buffer width of 10 m of vegetation around the perimeter of the pond is required for erosion control and additional sediment and nutrient removal.

2.1.5.9 After construction and placement of soil the entire vegetation area shall be planted with a native water tolerant grass species mix to quickly establish a protective canopy and rigorous root development to stabilize the soil.

2.1.5.10 In the spring of the year following construction the entire vegetation zone shall be overseeded with legumes and other native wetland material. Also, at approximately the same time, the area above NWL shall be planted with woody species. Plants shall be selected for tolerance to flooding and oxygen-reduced environments.

2.1.5.11 One year after CCC a stable mixture of native wetland vegetation and woody species shall be established in a healthy vigorous growing condition.

2.1.5.12 Prior to FAC and two years after CCC a diverse population of wetland vegetation and water tolerant woody plants should be established.

2.1.5.13 Manipulation of water levels may be used to control plant species and maintain plant diversity.

2.1.5.14 Harvesting emergent vegetation is not recommended.

2.1.6 Upland Vegetation

2.1.6.1 Requirements for screening the constructed wetland, between NWL and HWL, from adjacent land uses and for visual aesthetics shall be agreed by the Developer and Strathcona County.

2.1.6.2 A mow strip of a minimum of 1.4 m shall extend from the public utility lot boundary towards the constructed wetland NWL. This is to act as a safety bench and weed barrier to prevent root invasion of adjacent properties by Poplar species.

2.1.6.3 A mow strip of a minimum of 1.4 m shall be required at the back of lot.

2.1.7 Wetland Water Depth

2.1.7.1 Use a variety of water depths, 0.1 m to 0.6 m with an average permanent water depth of 0.3 m, to encourage emergent vegetation.

2.1.7.2 Deep water areas, greater than 2 m, are to be limited to less than 25% of wetland surface area.

2.1.7.3 Water level fluctuation in excess of 1 m above NWL should be infrequent to prevent killing of the vegetation.

2.1.8 Wetland Surface Area

2.1.8.1 The surface area of the constructed wetland shall be a minimum of one hectare at the NWL.

2.1.9 Permanent Pool

2.1.9.1 The permanent pool at the outlet requires a depth of 2.4 m to 3.0 m. Size can be variable depending on the wetland's configuration.

2.1.9.2 Side slopes shall be a maximum of 7H: 1V along accessible areas around open and deep water areas at the permanent pool.

2.1.10 Inlet and Outlet

2.1.10.1 Inlets are to discharge to a forebay.

2.1.10.2 A variable water level control structure is required on the outlets for maintenance and water management purposes and to assist with the establishment and management of vegetation.

The control structure should be capable of maintaining water levels between 0.5 m below NWL and 0.5 m above NWL. Variable water level control should be obtained through the manipulation of stop logs or similar overflow devices.

2.1.10.3 Inlets and outlets should be located to avoid short-circuiting and maximize the flow path.

2.1.10.4 The maximum depth in the inlet and outlet areas is restricted to 3.0 m.

2.1.10.5 Inlets and outlets are to be fully submerged, with the crown of the pipe at least 1.0 m below NWL. Inlet and outlet pipe inverts are to be a minimum of 100 mm above the bottom.

2.1.10.6 Provide reinforced grassed maintenance access, with a minimum width of 4 m, to forebay and permanent pool to allow for sediment removal.

2.1.11 Grading

2.1.11.1 Slopes shall be 5H:1V or flatter to support larger areas of wetland vegetation. Terraced slopes are acceptable.

2.1.11.2 A 2 m wide shallow marsh bench around the wetlands at NWL with a 10H:1V slope and the use of terraced grading are recommended to improve public safety.

2.1.11.3 Side slopes around the accessible deep areas in sediment forebay and permanent pool areas shall be a maximum of 7H:1V.

2.1.11.4 At the discretion of Strathcona County, the side slope may be 5H:1V in areas of high density vegetation to limit access to the open water.

2.1.12 Outflow Control

2.1.12.1 The quickest drawdown time shall be 24 hours for a 1 in 2 year storm to facilitate settling. For the most critical storm event, 90% of the total active storage volume shall have a drawdown time of 96 hours.

Time After Commencing Drawdown from Full Level at HWL	Available Volume Between HWL and NWL
≥24 hours	Volume equivalent to runoff from 1 in 2 year storm
48 hours	Volume equivalent to runoff from 1 in 5 year storm
≤96 hours	90% of total storage volume above NWL

2.1.13 Floatables, Oil and Grease

2.1.13.1 To trap floatable materials, oil and grease, inlets and outlets are to be below normal water level.

2.1.14 Maintenance

2.1.14.1 The Contract Manager/Developer Representative is required to provide an operations manual (or management plan) for the maintenance of the constructed wetland.

2.1.14.2 Maintenance and warranty period shall be 2 years from CCC issuance.

2.1.14.3 Removal of accumulated sediment during construction from forebays will be required prior to issuance of the FAC.

2.1.14.4 Sediment traps are to be cleaned during the maintenance period.

2.1.14.5 Sediment removal is required when forebay and permanent pool volumes are reduced by greater than 25%.

2.1.14.6 Replacement or adjust plantings and manage nuisance species during the maintenance period.

2.1.14.7 During the maintenance period, the facility shall be inspected at least twice each year to determine vegetation distribution and the preservation of design depth. These inspection reports shall be submitted when applying for the FAC.

2.1.14.8 In future years, wetland vegetation regeneration should be possible by lowering the water level in the fall season using the control structure.

2.1.14.9 Erosion control is required throughout construction period until vegetation is well established and agreed to by Strathcona County. For sediment and erosion control practices refer to Design and Construction Standards.

2.1.14.10 Use preventative measures against weed development. Non-native species management is required. Selective cutting, hand-pulling and spot spraying may be required.

2.1.15 Monitoring

2.1.15.1 The Developer shall monitor stormwater quality. If required by Strathcona County, effluent from the permanent pool shall be sampled and tested for the following parameters: Total Suspended Solids, Total Phosphorus, NH3, Biochemical Oxygen Demand, Dissolved Oxygen and fecal coliforms each year during the maintenance period and the data provided to Strathcona County.

2.1.15.2 The Developer shall monitor wetland and upland vegetation and take any corrective action required during the maintenance period.

2.1.15.3 At the end of the maintenance period, before the issuance of the FAC, the Developer shall ensure that at least 75% of the grass cover and 30% of the non-grass emergent vegetation around the wetland's edge has established given normal seasonal conditions. A vegetation survey by a qualified professional shall be submitted to Strathcona County.

2.1.16 Public Information

2.1.16.1 The Developer is required to inform the general public by means of signage and brochures that the facility is a wetland constructed for stormwater management.

2.1.17 Recreational Uses

2.1.17.1 To accommodate recreational uses for the public, a walkway may be required in the buffer strip between NWL and HWL, at the discretion of Strathcona County.

2.1.17.2 Planting strategies should deter direct public access to the wetland so as to avoid disturbance of the wetland fauna.

2.1.17.3 Activities that involve direct contact with water or ice are not permitted unless otherwise noted by Strathcona County.

2.1.18 Access

2.1.18.1 Access is required to all inlets and outlets for maintenance, operation of water control structures, removal of debris and litter and vegetation management. Access shall be in conjunction with the potential trail system and should be sufficient width and composition to convey currently used maintenance vehicles.

2.1.19 Fencing

2.1.19.1 The Developer is required to use where possible natural solutions such as grading and planting strategies to provide safety features around the wetland, inlets and outlets.

2.1.19.2 The Developer shall provide a fence 150 mm inside adjacent private property with openings for maintenance and public access to trails only. Back of lot gates are not permitted.

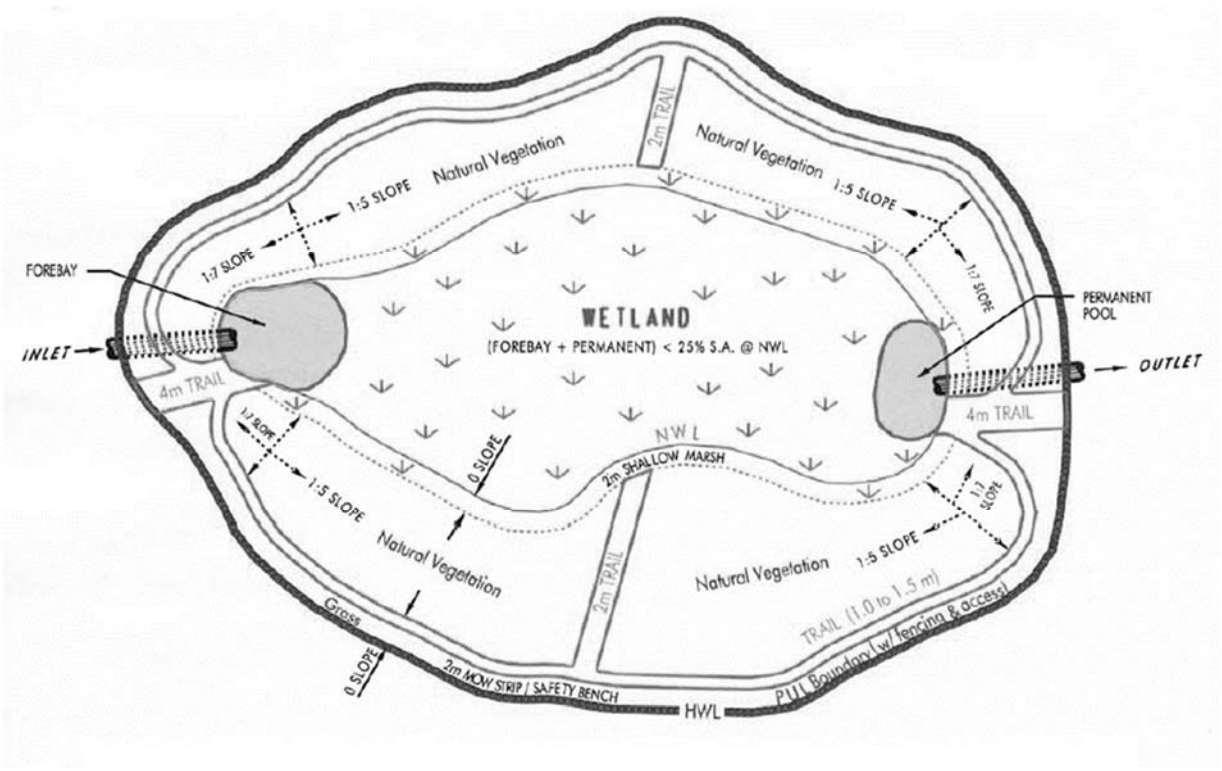
2.1.20 Wildlife

2.1.20.1 At the discretion of Strathcona County and the Developer the design may incorporate features that either encourage or discourage wildlife. Nesting islands are to be reviewed on a site by site basis.

2.1.21 Mosquito Control

2.1.21.1 The Developer shall include design features that minimize mosquitoes in a constructed wetlands facility. Features can include system design and vegetation management that would preclude stagnant backwaters and shading of the water surface, providing habitat for purple martin, swallows, baitfish, dragon flies, bats and other predators.

Schematic Diagram of Constructed Wetland



1.0 GENERAL

1.1 DESCRIPTION

1.1.1 The work covered by this specification shall consist of wood screen fencing supplied and installed within the limits of construction or as designated by the Contract Manager/Developer Representative in accordance with these CONSTRUCTION SPECIFICATIONS and conforming to the approved CONSTRUCTION DRAWINGS, most recent CSA standards and manufacturer's directions.

2.0 PRODUCTS

2.1 WOOD

2.1.1 Pressure treated timber and lumber shall be #1 construction grade Spruce, Western Pine or Douglas Fir dressed and conforming to C.S.A.

2.2 CONCRETE

2.2.1 Concrete for piles to be fillcrete as follows:

Compressive Strength at 28 days (Mpa)	Slump (mm)	Entrained Air (% by volume)	Maximum Aggregate Size (mm)	Minimum Cement (kg/m3)
Minimum – 0.15 Maximum – 0.40	100 ± 25	6.0 – 8.0	5	30

2.2.2 As a minimum, footing and post depth to be sufficient to reach undisturbed material.

2.3 FASTENERS

2.3.1 Nails, spikes, bolts and lag screws to be hot dipped galvanized in accordance with C.S.A.

3.0 EXECUTION

3.1 FENCE CONSTRUCTION

3.1.1 Posts will be rejected when the following applies or structural integrity is compromised:

(i) Cracks are 50% of the depth of the post on the face it occurs;

(ii) Cracks exceeds 25% the width of the post on the face it occurs or are wider than 12mm.; or if

(ii) Mechanical damage is evident.

3.1.2 Cracks 6 – 12 mm are to be re-stained with fence stain ensuring stain penetrates core wood.

3.1.3 Board spacing to be tight ensuring spacing between boards does not exceed 12 mm when boards are dry.

3.1.4 Fence full dimension or S4S and grade two or better.

3.1.5 All boards to be free of loose knots, bark, cracks and have straight edges.

3.1.6 Resawn lumber will be accepted for fence pickets only when deemed necessary by the Developer's Representative/Contract Manager. Resawn boards are to be a minimum 50mm with a recommended maximum of 1 resawn board per section and an allowable limit of 2 resawn boards per section of fence.

3.1.7 Posts and any wood in contact with the ground to be pressure treated.

3.1.8 Fence boards including stringers and facia to be pre-stained with 2 coats of stain.

3.1.9 Fence posts to be stained prior to installation of stringers and fence boards.

3.1.10 Touch up stain to be applied after construction to any boards where stain has been removed, i.e., nail holes, faded, see through, etc.

3.1.11 Nailer strips to be fastened to post.

3.1.12 Fascia boards on double board fence to be attached to fence boards.

3.1.13 For noise attenuation on double board fence, adjust yard side pressure treated bottom stringer to provide no gap on ground.

3.1.14 Bottom of double board fence on roadside to be 50 mm above ground.

3.1.15 Standard wood screen fence to be 50 mm above grade.

4.0 ACCEPTANCE

4.1 Wood fencing may be accepted immediately upon completion of construction providing fence has been installed in accordance with these CONSTRUCTION SPECIFICATIONS and free from deficiencies. A maintenance period is not required.

5.0 MEASUREMENT FOR PAYMENT

5.1 Measurement and payment for the supply and installation of the fence shall be made on a lineal metre basis. The unit cost shall include all materials and execution necessary and incidental to the work, including utility locations, post hole augering and fence staining and erection.

1.0 GENERAL

1.1 DESCRIPTION

1.1.1 The work covered by this specification shall consist of chain link fencing supplied and installed within the limits of construction or as designated by the Contract Manager/Developer Representative in accordance with these CONSTRUCTION SPECIFICATIONS and conforming to the approved CONSTRUCTION DRAWINGS, most recent CSA standards and manufacturer's directions.

1.2 STANDARDS

(i) Steel Pipe to ASTM A120-82
(ii) Chain Link Fabric to CAN2-138.1-96
(iii) Fence, Chain Link, Frame Work, Zinc-coated, Steel to CAN2-138.2-96
(iv) Fence, Chain Link Installation to CAN2-138.3-96

2.0 PRODUCTS

2.1 GENERAL

2.1.1 Pipe: Steel butt weld, Schedule 40, hot dip galvanized to 550-g/m^2 coating.

2.1.2 Top, Bottom and Brace Rail: Plain end, Schedule 40 hot dip galvanized to 550-g/m^2 coating.

2.1.3 Chain link fabric is to be nine gauge, galvanized or vinyl coated as specified.

2.1.4 Galvanized: Pre-galvanized steel wire to 490-g/m2, nine gauge, and 3.5 mm diameter.

2.1.5 Vinyl Coated: Pre-galvanized steel wire to 490-g/m2, nine gauge, 4.26 mm diameter after coating.

2.1.6 Posts and rails to be powder coated.

2.1.7 Concrete to be fillcrete as follows:

Compressive Strength at 28 days (Mpa)	Slump (mm)	Entrained Air (% by volume)	Maximum Aggregate Size (mm)	Minimum Cement (kg/m3)
Minimum – 0.15 Maximum – 0.40	100 ± 25	6.0 – 8.0	5	30

2.2 COMPONENTS

2.2.1 Line Posts:

(i) 48 mm O.D., 4.05 kg/m (fences 1.8 m and under)
(ii) 60 mm O.D., 5.43 kg/m (fences over 1.8 m)

2.2.2 Corner, Terminal and Straining Posts:
(i) 3 mm O.D., 8.62 kg/m (fences 1.8 m and under)
(ii) 89 mm O.D.,11.28 kg/m (fences over 1.8m)

2.2.3 Gate Posts:
(i) 73 mm O.D., 8.62 kg/m (fences 1.8 m and under, maximum leaf width 3 m)
(ii) 89 mm O.D., 11.28 kg/m (fences over 1.8 m, maximum leaf width 3 m)

2.2.4 Top and Brace Rail:
(i) 42 mm O.D., 3.38 kg/m, plain end, sleeve coupled.

2.2.5 Gate Frame:
(i) 42 mm O.D., 3.38 kg/m. Gate leaves to have horizontal and vertical intermediate brace on gate leaves 3 m wide and over.

2.2.6 Post Caps:
(i) Cast aluminum, sized to post diameter, set screw retained.

2.2.7 Line Post Eye Tops:
(i) Cast aluminum.

2.2.8 Rail Ends:
(i) Cast aluminum.

2.2.9 Fittings:
(i) Sleeves, bands, clips, tension bards, fasteners and fittings galvanized steel.

2.2.10 Fabric:
(i) 50 mm diamond mesh, interwoven nine gauge wire, top selvage knuckle end closed, bottom selvage knuckle end closed.
(ii) Coated mesh to be 9 gauge wire before coating.

2.2.11 Bottom Tension Wire:
(i) Nine-gauge steel single strand hot-dipped galvanized to 490 g/m^2.

2.2.12 Double Gate Hardware:
(i) Cane bolt centre rest, three piece drop latch and latch catch with drop bolt. Gate hinge 180° male and female. Chain hold open.

2.2.13 Single Gate Hardware:
(i) 3 piece drop latch and latch catch with drop bolt. Gate hinge 180° male and female. Chain hold open.

2.2.14 Crawl Hole:

(i) 610 mm square opening. Two part, 25 mm flat bar sandwich frame, bolted in the corners.

3.0 EXECUTION

3.1 INSTALLATION

3.1.1 Install to alignment specified, line posts, corner posts, and gateposts. Attach top and brace rails to provide rigid structure for specified high fabric and gates.

3.1.2 Maximum spacing of posts is 3 m on centre.

3.1.3 Install line, corner and terminal posts plumb, set in concrete footings as follows:

Fence Height		Concrete Depth	Hole Diameter at Top
1.2 m, 1.5 m & 1.8 m	Line Posts	760 mm	250 mm
	Gate and Corner Posts	900 mm	300 mm
2.4 m, 3.0 m & 3.6 m	Line Posts	900 mm	250 mm
	Gate and Corner Posts	1060 mm	300 mm

3.1.4 Set post to within 150 mm from bottom of concrete footing.

3.1.5 Set top of concrete footing flush with finished grade. Slope and trowel finish top to ensure water run-off.

3.1.6 Position bottom of fabric 25 mm above finished grade with bottom tension wire between posts.

3.1.7 Align top of posts to ensure that top rail varies gradually with changes in ground elevations.

3.1.8 Pass top rail through line post tops to form continuous bracing. Install 150 mm long couplings mid-span at pipe ends.

3.1.9 For fences 1.8 m and over, brace each gate and corner post back to adjacent line post with horizontal centre brace rail. Install brace rail, one bay from corner and gate posts.

3.1.10 Fasten fabric to top rail, line posts, brace rails and bottom tension wire with nine gauge wire ties at maximum 500 mm centres.

3.1.11 Attach fabric to corner and gate posts with tension bars and tension bar clips. Stretch fabric between posts at intervals of 3 m maximum.

3.1.12 Install straining posts every 90 m.

3.1.13 Install gates of sizes shown using fabric to match fence. Install two hinges per leaf and hardware specified.

3.1.14 Install centre rests set in concrete and cane bolts at centre of double gate openings.

3.1.15 Welded gate frame joints to be painted with one coat of zinc paint.

3.1.16 Cut fabric for crawl holes, selvage knuckle end closed top and bottom. Place 2 part frames around opening in fabric and bolt together.

4.0 MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

4.1.1 Chain Link Fencing

The unit of measure for chain link fencing shall be as specified in the TENDER FORM. The quantity paid for shall be the number of lineal metres acceptably installed as measured in place.

4.1.2 Gates, Crawl Holes and Corner/Terminal Posts

The unit of measure for gates, crawl holes and corner/terminal posts shall be as specified in the TENDER FORM. The quantity paid for shall be the number of units acceptably installed as counted in place.

4.2 PAYMENT

4.2.1 Payment at the respective Contract price bid per unit shall be full compensation for supplying, delivering, auguring, assembling, removing debris and for all labour and use of all equipment and incidentals necessary to complete the Work in accordance with these CONSTRUCTION SPECIFICATIONS.

5.0 ACCEPTANCE

5.1 Chain link fencing may be accepted immediately upon completion of construction providing fence has been installed in accordance with these CONSTRUCTION SPECIFICATIONS and free from deficiencies. A maintenance period is not required.

6.0 GUARANTEE

6.1 All materials to be free of structural defects.

1.0 GENERAL

1.1 DESCRIPTION

1.1.1 The work covered by this specification shall consist of paige wire fencing supplied and installed within the limits of construction or as designated by the Contract Manager/Developer Representative in accordance with these CONSTRUCTION SPECIFICATIONS and conforming to the approved CONSTRUCTION DRAWINGS, most recent CSA standards and manufacturer's directions.

2.0 PRODUCTS

2.1 WOOD

2.1.1 Pressure treated timber and lumber shall be #1 construction grade Spruce, Western Pine or Douglas Fir dressed and conforming to C.S.A.

2.2 CONCRETE

2.2.1 Concrete for piles to be fillcrete as follows:

Compressive Strength at 28 days (Mpa)	Slump (mm)	Entrained Air (% by volume)	Maximum Aggregate Size (mm)	Minimum Cement (kg/m3)
Minimum – 0.15 Maximum – 0.40	100 ± 25	6.0 – 8.0	5	30

2.2.2 As a minimum, footing and post depth to be sufficient to reach undisturbed material.

2.3 WIRE

2.3.1 12 gauge twitch wire with 150 x 150 mm spacing.

2.4 FASTENERS

2.4.1 As per manufacturer's directions.

3.0 EXECUTION

3.1 INSTALLATION

3.1.1 Fencing shall be constructed in accordance with the approved plans at the locations as designated on the CONSTRUCTION DRAWINGS and per our STANDARD DRAWING 61211.

3.1.2 All trees, brush and other obstacles which interfere with the construction of the fence shall be removed prior to commencing fence construction.

3.1.3 Allowable taper from end to end of posts shall not exceed 38 mm in diameter. Posts shall be installed with the large end down.

3.1.4 Maximum spacing of posts is 3 m on centre and post shall be set with the large end down.

3.1.5 The posts shall be set in holes to the required depth, and tamped in a plumb and firm position to the line and spacing shown on the plans or as directed by the Consultant.

3.1.6 All fence wire shall be pulled with hand stretchers, or tensioning apparatus capable of adjustment.

3.1.7 Gates shall be constructed and located on the plans or as by the Consultant.

4.0 ACCEPTANCE

4.1 Paige wire fencing may be accepted immediately upon completion of construction providing fence has been installed in accordance with these CONSTRUCTION SPECIFICATIONS and free from deficiencies. A maintenance period is not required.

1.0 GENERAL

1.1 DESCRIPTION

1.1.1 The work covered by these CONSTRUCTION SPECIFICATIONS shall consist of granular pedestrian trails placed and compacted in the areas within the limits of construction or as designated by the Contract Manager/Developer Representative in accordance with these CONSTRUCTION SPECIFICATIONS and conforming to the approved CONSTRUCTION DRAWINGS or as directed by the Contract Manager/Developer Representative.

1.2 RESTRICTION OF EQUIPMENT

1.2.1 The equipment used for construction of the gravel trail shall be restricted by the Contract Manager/Developer Representative if considered to be oversized for the work. Replace with suitable equipment as directed by the Contract Manager/Developer Representative.

2.0 PRODUCTS

2.1 MATERIALS AND GRADING

2.1.1 Aggregate for gravel sub-base and base course shall be crushed gravel and shall consist of sound, hard, durable particles and shall not contain organic, soft or other deleterious materials nor materials that break up when alternately frozen and thawed or wetted and dried. It shall be uniformly graded to comply completely with the gradations indicated in VOL. 2 SEC. 302, GRANULAR MATERIALS and shall not be subject to extreme variations from maximum to minimum of the gradation specified.

3.0 EXECUTION

3.1 GENERAL

3.1.1 Contractor will establish horizontal pathway centre line trail alignment.

3.1.2 Contractor to offset centre line stakes prior to construction and ensure that the offset stakes are protected during the construction process.

3.1.3 Pathway finish grade shall blend into existing topography. Crown or crossfall shall be incorporated in the finished pathway surface to ensure positive drainage.

3.1.4 Pathway alignment must be approved by the Contract Manager/Developer Representative prior to initiation of the work.

3.1.5 Do not pull or rip out roots of trees that are to remain. If excavation through roots is required, excavate by hand and cut roots with sharp axe. Protect existing vegetation as outlined in VOL. 2 SEC. 102, CLEARING AND GRUBBING.

3.1.6 Remove broken and dead branches that constitute a hazard to safety. Make clean smooth sloping cuts.

3.1.7 Unnecessary tree destruction will not be tolerated.

3.2 EXCAVATION

3.2.1 Excavation for trail widths includes removing topsoil and/or common material to a minimum depth of 150mm or as directed by the Contract Manager/Developer Representative.

3.2.2 Dispose of all excavated material from the site as directed by the Contract Manager/Developer Representative.

3.2.3 When transporting excavated material off-site, use trail alignment where possible.

3.2.4 Excavation is to follow existing contours and is to ensure positive drainage, as per approved CONSTRUCTION DRAWINGS.

3.2.5 Approved excavated materials may be used for trail construction on steep side slopes or low areas to provide proper grades and proper drainage. This is preferable to cutting into the slope which may initiate erosion problems.

3.3 FILL

3.3.1 Fill may be required in low areas to raise trail base, and for embankment construction. Fill will be obtained from approved excavated material, for embankment material as per VOL. 2 SEC. 201, EXCAVATION AND EMBANKMENT.

3.3.2 All fill material is subject to the approval of the Contract Manager/Developer Representative, prior to placing.

3.3.3 Place fill in layers not exceeding 150 mm. Maintain optimum moisture in the fill and compact to 98% Maximum Dry Density.

3.4 SUBGRADE PREPARATION

3.4.1 The subgrade shall be prepared according to the requirements of VOL. 2 SEC. 202, COMPACTED SUBGRADE PREPARATION unless the modification is required to accommodate site conditions, i.e., Constructed Wetlands, tree stands etc. The Contractor shall maintain the subgrade to the specified section, free from ruts, waves and undulations until sub-base material is placed. The subgrade shall be in a firm dry condition and must be approved by the Contract Manager/Developer Representative before granular material is placed. The deposition of granular material on a soft, muddy, or rutted subgrade will not be permitted.

3.4.2 Hauling over the subgrade, or sub-base course, will not be permitted when, in the opinion of the Contract Manager/Developer Representative, damage to the subgrade or sub-base course may result.

3.5 GRANULAR BASE CONSTRUCTION

3.5.1 Place and compact 12.5 mm diameter crushed gravel course on leveled subgrade and compact to 98% of Maximum Dry Density as per VOL. 2 SEC. 302, GRANULAR MATERIALS.

3.5.2 Ensure that coarse aggregate and fine aggregates are well mixed.

3.5.3 Geotextile material or tensor fabric may be required to assist with load bearing capacity of trail.

3.5.4 Root intrusion material is required on trails beside treed areas or planting beds on a site specific basis.

3.6 TRAIL EDGE RESTORATION

3.6.1 Restore areas damaged during construction to the same condition as existed previous to construction.

3.6.2 Seed damaged and/or disturbed trail edge areas with seed mixture as approved by the Contract Manager/Developer Representative and in accordance with VOL. 2 SEC. 603, SEEDING AND SODDING.

3.6.3 Topsoil will be required for landscape rehabilitation work along the trail edge as per VOL. 2 SEC. 602, TOPSOIL AND PLANTING MIX URBAN.

3.7 CLEAN-UP

3.7.1 On a daily basis, as the work proceeds, and upon completion, remove rubbish and surplus material from the site.

4.0 ACCEPTANCE

4.1 Trails will be accepted providing trails have been installed in accordance with the Design and Construction Standards, maintained for a minimum of 2 years and deficiencies have been completed.

5.0 GUARANTEE

5.1 Guarantee all trails for a minimum of 2 years from date of CCC to FAC against settlement and repair all such settlement to the satisfaction of Strathcona County.

1.0 GENERAL

1.1 DESCRIPTION

1.1.1 The work covered by this specification shall consist of supply and installation of paving stone in the areas within the limits of construction or as designated by the Contract Manager/Developer Representative in accordance with these CONSTRUCTION SPECIFICATIONS and conforming to the approved CONSTRUCTION DRAWINGS or as directed by the Contract Manager/ Developer Representative.

2.0 PRODUCTS

2.1 MATERIALS

2.1.1 Paving Stone

The paving stone shall be manufactured in conformance with ASTM C902 with a compressive strength of 55 MPa with no unit less than 50 MPa. Moisture absorption to be a maximum of 8% with no individual unit greater than 11% at time of delivery. Color shall be as specified on approved CONSTRUCTION DRAWINGS.

2.1.2 Sand Leveling Course

Sand leveling course to be as per VOL. 2 SEC. 302, GRANULAR MATERIALS.

2.1.3 Granular Base

Granular base to be 20mm dia. of crushed gravel compacted to 98% SPD. See VOL. 2 SEC. 302, GRANULAR MATERIALS.

2.1.4 Edge Restraint

Pressure treated lumber, concrete strip preformed PVC edging or other material or structure as indicated on approved CONSTRUCTION DRAWINGS.

3.0 EXECUTION

3.1 SITE PROTECTION, PREPARATION AND RESTORATION

3.1.1 Refer to VOL. 2 SEC. 101, SITE PROTECTION, PREPARATION AND RESTORATION.

3.2 SUBGRADE PREPARATION

3.2.1 See VOL. 2 SEC. 202, COMPACTED SUBGRADE PREPARATION.

3.3 GRANULAR BASE

3.3.1 The subgrade is to be approved by Contract Manager/Developer Representative before granular base is placed.

3.3.2 Place a 100 mm depth of 20 mm dia. crushed gravel on the compacted subgrade. See VOL. 2 SEC. 302, GRANULAR MATERIALS and VOL. 2 SEC. 303, GRANULAR SUB-BASE AND BASE COURSE. Do not use sand for corrective leveling.

3.4 SAND LEVELING COURSE

3.4.1 Granular base is to be approved by Contract Manager/Developer Representative before sand leveling course is placed.

3.4.2 Sand shall be in conformance with VOL. 2 SEC. 302, GRANULAR MATERIALS, SUB-SECTION 2.3.5.

3.4.3 Evenly place and screed 25 mm of compacted sand leveling course over area to be paved.

3.4.4 Once screed, the sand shall not be disturbed. If screed sand is disturbed or exposed to rain, it shall be removed or loosed, respread and rescreeded.

3.4.5 Place no more sand than what can be covered with paving stone on the same day.

3.5 EDGE RESTRAINT

3.5.1 Install according to approved CONSTRUCTION DRAWINGS.

3.6 PAVING STONE

3.6.1 Place paving on sand leveling course in pattern in accordance with approved CONSTRUCTION DRAWINGS.

3.6.2 Joint spaces to be no wider than 3 mm.

3.6.3 Gaps around the edge of the paved surface shall be filled with standard edge pieces or with stones cut to fit. Stones shall be cut to a straight even surface without chips or cracks.

3.6.4 Avoid disturbance to paving stones prior to tamping.

3.6.5 Paving stones shall be vibrated to their final level with a vibrating plate compactor.

3.6.6 Joint sand to contain a minimum of 30% of 3 mm particles, or as per manufacturer's standards.

3.6.7 Brush and vibrate joint sand to completely fill joints between stones.

3.6.8 Additional joint sand is to be swept from surface.

3.6.9 Check finished surface to ensure surface and grade tolerances are met.

3.6.10 Soil cement may be required in conditions where surface run off is prevalent.

4.0 TOLERANCE

4.1 SURFACE TOLERANCE

4.1.1 After final vibrating, the surface shall be true to grade.

5.0 CLEANUP

5.1 Do not open newly installed paving stone to pedestrian or vehicle traffic until directed by the Contract Manager/Developer Representative.

5.2 Before opening to traffic, ensure surface is clean and free from surplus material and debris.

6.0 MEASUREMENT AND PAYMENT

6.1 MEASUREMENT

The unit of measure for paving stone shall be as specified in the TENDER FORM. The quantity paid for shall be the number of square metres or as stated in the TENDER FORM, acceptably placed.

6.2 PAYMENT

6.2.1 Payment at the respective Contract price limit shall be full compensation for preparing subgrade, supplying, placing, spreading, the base course and leveling course, and placing the paving stones and for all labour and use of all equipment and incidentals necessary to complete the Work in accordance with these CONSTRUCTION SPECIFICATIONS.

1.0 GENERAL

1.1 DESCRIPTION

1.1.1 The work covered by this specification shall consist of site furniture specifications placed and installed within the limits of construction or as designated by the Contract Manager/Developer Representative in accordance with these CONSTRUCTION SPECIFICATIONS and conforming to the approved CONSTRUCTION DRAWINGS, most recent CSA standards and manufacturer's directions.

1.2 WORKMANSHIP

1.2.1 Assembly of furniture shall be performed in accordance with the manufacturer's directions and generally accepted practices for the various types of components.

1.3 DELIVERY, STORAGE AND HANDLING

1.3.1 Contractor to be responsible for inspection of the components for damage prior to turnover. Should any damaged components be found, report it immediately to the Contract Manager/Developer Representative.

1.3.2 Handle components so as to avoid shock stress and damage to painted finish.

1.3.3 Upon acceptance of components by the Contract Manager/Developer Representative, place material in safe storage.

2.0 PRODUCTS

2.1 All components for the furniture shall be supplied by the Contractor. This includes hardware for assembling the furniture.

2.1.1 All components to be natural.

2.1.2 All metal components to be pre-drilled.

2.1.3 Concrete For Piles: Normal Portland Cement, type 50, 25 Mpa, 28 day strength, 75mm slump, air entrained 4 - 6% maximum aggregate size 20mm unless otherwise specified. Fillcrete is not acceptable for this application.

2.1.4 All hardware to be plated to prevent rust.

3.0 EXECUTION

3.1 GENERAL

3.1.1 Furniture Assembly

3.1.1.1 Assemble furniture as per the CONSTRUCTION DRAWINGS and manufacturer's directions.

3.1.2 Furniture Installation

3.1.2.1 Install furniture as per details per manufacturer's specifications.

3.1.2.2 Ensure that furniture is level, plumb, straight and centered.

4.0 ACCEPTANCE

4.1 Site furniture may be accepted immediately upon completion of construction providing the furniture has been installed in accordance with these CONSTRUCTION SPECIFICATIONS and free from deficiencies. A maintenance period is not required.

1.0 GENERAL

1.1 DESCRIPTION

1.1.1 The work covered by this specification shall consist of park signs specifications supplied and installed within the limits of construction or as designated by the Contract Manager/Developer Representative in accordance with these CONSTRUCTION SPECIFICATIONS and conforming to the approved CONSTRUCTION DRAWINGS, most recent CSA standards and manufacturer's directions.

2.0 PRODUCTS

2.1 INFORMATION SIGNS

2.1.1 Double sided signboard to be ¾" high density plywood.

2.1.2 Signboards face shall be Green – Pantone 370c engineering grade film. Lettering and Strathcona County logo to be screen printed using a compatible ink or superposed using die cut engineering grade film. Alternative films will be considered provided the product has written guarantee for a minimum life expectancy of 5 years.

2.1.3 Park name to be White. Park name and civic address lettering to be Verdana.

2.1.4 Strathcona County logo to be White, PMT to be supplied as required.

2.1.5 Foundation post shall be pressure treated 200 mm x 200 mm full dimension timber, 3.66 m long. Set post in 455 mm diameter, concrete footing filled with fillcrete as follows:

Compressive Strength at 28 days (MPa)	Slump (mm)	Entrained Air (% by volume)	Maximum Aggregate Size (mm)	Minimum Cement (kg/m3)
Minimum – 0.15 Maximum – 0.40	100 ± 25	6.0 – 8.0	5	30

2.1.6 Appearance post shall be 200 mm x 200 mm full dimension timber, 1.9 m long.

2.1.7 Fastening hardware to be galvanized steel.

2.1.8 Sign board cap to be 19 mm extruded aluminum channel or approved alternate, painted white to match sign board.

2.2 PLAYGROUND SIGNS

2.2.1 Signboard shall be 19mm crezon. Back and edges shall be primed with exterior primer and painted using white exterior alkyd paint.

2.2.2 Sign shall be 300 mm x 350 mm in size.

2.2.3 Wording and lettering material to be approved by Contract Manager/Developer Representative and Planning and Development Services department.

2.2.4 For post installation, STANDARD DRAWING 61502.

2.2.5 Sign designs supplied by manufacturers that match and attach to equipment may be considered.

3.0 MAINTENANCE

3.1 GENERAL

3.1.1 All signs to be maintained free of defects for minimum of one year after issuance of CCC until FAC.

1.0 GENERAL

1.1 DESCRIPTION

1.1.1 The work covered by this specification shall consist of playground construction specifications placed and installed within the limits of construction or as designated by the Contract Manager/ Developer Representative in accordance with these CONSTRUCTION SPECIFICATIONS and conforming to the approved CONSTRUCTION DRAWINGS, most recent CSA standards and manufacturer's directions.

1.2 DEFINITION

1.2.1 No-Encroachment Zone: A no-encroachment zone is the area adjacent to the protective surfacing zone intended to allow pedestrian traffic near the play equipment in use while minimizing the risk of injury to pedestrians.

2.0 PRODUCTS

2.1 PLAYGROUND SAND

2.1.1 When tested by means of laboratory sieves, the sand shall meet with the following grading requirements and be uniformly graded between limits as specified in VOL. 2 SEC. 302, GRANULAR MATERIALS, SUB-SECTION 2.3.6.

2.1.2 Natural, course, without very fine particles and gravel.

2.1.3 Clean sand free from clay, shale and organic matter.

2.2 HARDWARE

2.2.1 10 mm diameter, 87 mm long zinc plated lag bolts.

2.2.2 3 mm x 75 mm x 250 mm vertical steel plates.

2.2.3 13 mm diameter, 600 mm long rebar.

2.3 GEO-TEXTILE FILTER FABRIC

2.3.1 Geo-Technical Products non-woven geotextile heavy duty or approved equivalent.

2.4 CONCRETE

2.4.1 Normal portland cement, Type 50, 25 Mpa. 28 day strength, 50-100 mm slump, air entrained 4-6%. Fillcrete is not acceptable for this application.

3.0 EXECUTION

3.1 GENERAL

3.1.1 All playground development must include a sub-base graded for positive drainage at a minimum of 1.5% and up to a maximum 2.0% grade.

3.1.2 Retainers are to be constructed in accordance with STANDARD DRAWING 61826 or an alternate material approved by Recreation Parks and Culture department and with the following:

3.1.3 Retainer height based on grading requirements to ensure 1.5% minimum and 2.0% maximum slope;

3.1.4 Preferred retainer height on down slope side to be no more than 2 high (400 mm) above finished grade on inside of retainer (to allow easy access and egress);

3.1.5 Entire top surface of retainer to be eased and sanded smooth, free of splinters and sharp edges and treated in accordance with CSA guidelines;

3.1.6 Weep holes required as STANDARD DRAWING 61826; and

3.1.7 All hardware used on signs, retainers and play equipment to be plated to prevent rusting as STANDARD DRAWING 61502.

3.1.8 Playground signs identifying intended age groups for play structure and safety contact number to be installed in best visible locations and accepted by Recreation Parks and Culture department as STANDARD DRAWING 61508.

3.1.9 Area designated for playground construction to remain fenced (snowfence or temporary chain link) with “Do Not Enter Signs” attached to fence. Area to remain secured from public access at all times until FAC is issued and all deficiencies identified by Recreation Parks and Culture department are rectified.

3.1.10 Bridging required over newly seeded/sodded areas. Designate access points as required.

3.1.11 Sand to be installed immediately upon approval of retainer and play equipment installation.

3.1.12 Wheelchair accessibility is preferred.

3.1.13 Inspections to be completed in accordance with the following chart.

3.1.14 All playgrounds must include a swing set; minimum 4 unit for senior structures and/or minimum of 2 unit for tot lots.

3.1.15 All slides to face north or east.

FAC Process for Playgrounds

Contract Manager/Developer Representative Responsibility	Strathcona County Responsibility
• Provide subgrade survey to Strathcona County Representative prior to installation of retainer and equipment	• Strathcona County Representatives to review.
• Submit compaction test and request inspection of subgrade. Allow 48 hours.	• Strathcona County Representatives to inspect.
• Request inspection of play equipment and retainer prior to sand installation. Footings must be exposed. Allow 48 hours.	• Strathcona County Representatives inspect.
• Submit deficiency report to Strathcona County Representative.	
• All deficiencies previously identified to be corrected immediately. Contact Strathcona County Representative upon completion of deficiencies for re-inspection. Allow 48 hours.	• Strathcona County Representatives inspect.
• After sand installation submit a pre-inspection report with reduced drawing confirming sand and equipment are installed in compliance with CSA, Design and Construction Standards and approved landscape drawings and written request for a FAC inspection. Complete deficiencies immediately. Contact Strathcona County Representative for re-inspection. Submit Compliance certificate. Allow 10 working days.	• Once deficiencies are rectified, Strathcona County Representatives to issue FAC and produce paperwork

4.0 MAINTENANCE

4.1 GENERAL

4.1.1 No maintenance required after issuance of FAC.

5.0 ACCEPTANCE

5.1 Playgrounds may be accepted providing playgrounds have been installed in accordance with VOLUME 1, SECTION 6, OPEN SPACE STANDARDS, CSA Guidelines and Manufacturers instructions and free of deficiencies.

6.0 GUARANTEE

6.1 Guarantee play equipment and retainer maybe accepted immediately upon completion of construction, providing it has been installed in accordance with the manufacturer's specifications as well as the approved set of CONSTRUCTION DRAWINGS, the development agreements and VOLUME 1, SECTION 6, OPEN SPACE STANDARDS.

1.0 GENERAL

1.1 DESCRIPTION

1.1.1 The work covered by this specification shall consist of soccer fields in the areas within the limits of construction in accordance with these CONSTRUCTION SPECIFICATIONS and approved CONSTRUCTION DRAWINGS or as directed by the Contract Manager/Developer Representative.

2.0 PRODUCTS

2.1 MATERIALS AND GRADING

2.1.1 Topsoil supply and installation as per VOL. 2 SEC. 602, TOPSOIL AND PLANTING MIX URBAN.

2.1.2 Clay fill to be inorganic fine grained sand clay soil free from roots, rocks larger than 25 mm and building debris. Excavated material is suitable if it conforms to the above and is approved by the Contract Manager/Developer Representative.

2.2 SUBGRADE

2.2.1 The subgrade shall be prepared according to the requirements of VOL. 2 SEC. 601, GENERAL LANDSCAPE SUBGRADE PREPARATION and to cross sections shown on the CONSTRUCTION DRAWINGS. The Contractor shall maintain the subgrade to the specified section, free from ruts, waves and undulations. The subgrade shall be in a firm dry condition and must be approved by the Contract Manager/Developer Representative before topsoil is placed.

2.2.2 Hauling over the subgrade will not be permitted when, in the opinion of the Contract Manager/ Developer Representative, damage to the subgrade may result.

3.0 EXECUTION

3.1 GENERAL

3.1.1 Ideal field construction to have a longitudinal slope of 0.1 to 0.2% from one end to the other depending on site drainage conditions.

3.1.2 Topsoil depth to be 200 mm after compaction.

3.1.3 Contractor/Developer Representative to provide topographical survey to Strathcona County after topsoil installation and prior to seeding or sodding.

3.1.4 Install sport field reference layout pins at time of construction, using 500 mm lengths of 15 mm diameter rebar at minimum depth of 50 mm below final grade.

3.1.5 Seed in accordance to VOL. 2 SEC. 603, SEEDING AND SODDING.

3.1.6 Guarantee and maintain soccer field in accordance with Maintenance VOL. 2 SEC. 603, SEEDING AND SODDING.

3.1.7 Any designs for underground irrigation are required on a site specific basis and will be submitted to the Planning and Development Services department for approval.

4.0 ACCEPTANCE

4.1 Seeded areas will be accepted when permanent grass cover has been established, the turf is free of bare and dead spots, is weed free, and no soil is visible when the grass has been cut to 65 mm height on the third cutting.

4.2 Sodded areas shall be accepted when all sodded areas have a healthy, even, vigorously growing stand of grass, free of disease, weeds and thin or bare spots.

4.3 Goal posts to be installed prior to issuance of FAC.

5.0 GUARANTEE

5.1 Guarantee all seeded areas for a minimum of two years from the date of CCC to FAC, to be healthy, well established turf grass with no bare or dead spots.

5.2 Guarantee all sodded areas for a minimum of two years from date of CCC to FAC, to be in a healthy, vigorous growing condition, free of disease, weeds, thin or bare spots and settlement.

5.3 Goal posts to be installed prior to issuance of FAC.

1.0 GENERAL

1.1 DESCRIPTION

1.1.1 The work covered by this CONSTRUCTION SPECIFICATION shall consist of turf and shale ball field development in the areas within the limits of construction in accordance with these CONSTRUCTION SPECIFICATIONS and approved CONSTRUCTION DRAWINGS or as directed by the Contract Manager/Developer Representative.

2.0 PRODUCTS

2.1 MATERIALS AND GRADING

2.1.1 Topsoil supply and installation as per VOL. 2 SEC. 602, TOPSOIL AND PLANTING MIX URBAN.

2.1.2 Clay fill to be inorganic fine-grained sand clay soil free from roots, rocks larger than 25 mm and building debris. Excavated material is suitable if it conforms to the above and is approved by the Contract Manager/Developer Representative.

2.1.3 Hauling over the subgrade will not be permitted when, in the opinion of the Contract Manager/Developer Representative, damage to the subgrade may result.

3.0 EXECUTION

3.1 GENERAL

3.1.1 Ideal field construction to have a longitudinal slope of no greater than 1.5% from one end to the other depending on site drainage conditions.

3.1.2 Topsoil depth to be 200 mm after compaction.

3.1.3 Hauling over the subgrade will not be permitted when, in the opinion of the Contract Manager/Developer Representative, damage to the subgrade may result.

3.1.4 Use soil mix as specified in VOL. 2 SEC. 602, TOPSOIL AND PLANTING MIX URBAN for Sports Fields. Topsoil depth to be 200 mm after compaction.

3.1.5 Ball fields subgrade and surface must be graded to eliminate ponding areas and have an optimum gradient of 2% in all directions with a variance of ±0.5 % with high point being in the middle of the field.

3.1.6 Topographic survey of ball field after shale or topsoil installation to be provided to Contract Manager/Developer Representative prior to seeding.

3.1.7 Install sport field reference layout pins at time of construction, using 500 mm lengths of 15 mm diameter bar as indicated on the CONSTRUCTION DRAWINGS at minimum depth of 50 mm below final grade.

3.1.8 Establish turf ball field in accordance with VOL. 2 SEC. 603, SEEDING AND SODDING.

3.1.9 Any designs for underground irrigation are required on a site specific basis and will be submitted to the Planning and Development Services department for approval.

3.2 SHALE INFIELD

3.2.1 Excavate infield to provide a 150 mm clay subgrade and 100 mm shale depth prepared in accordance with VOL. 2 SEC. 601, GENERAL LANDSCAPE SUBGRADE PREPARATION. See VOL. 2 SEC. 302, GRANULAR MATERIALS, SUB-SECTION 2.3.7.

3.2.2 Compact subgrade in accordance with VOL. 2 SEC. 202, COMPACTED SUBGRADE PREPARATION.

3.2.3 Compact shale in continuous horizontal lifts not exceeding 50 mm.

3.2.4 Ensure that shale field is free of contamination of subsoil or grass during construction.

3.2.5 Extend shale field 200 mm past backstop for maintenance purposes.

4.0 ACCEPTANCE

4.1 Seeded areas will be accepted when permanent grass cover has been established, the turf is free of bare and dead spots, is relatively weed free, and no soil is visible when the grass has been cut to 65 mm height on the third cutting.

4.2 Backstop to be installed prior to issuance of FAC.

5.0 GUARANTEE

5.1 Guarantee all seeded areas for a minimum of two years from the date of CCC to FAC, to be healthy, well established turf grass with no bare or dead spots.

5.2 Shale fields may be accepted immediately upon completion and installation of the backstop. No maintenance period is required.

1.0 GENERAL

1.1 DESCRIPTION

1.1.1 Fencing shall consist of supplying and erecting wire fence, chain link fence, gates and related appurtenances of the class or classes specified, in accordance with these specifications and in conformance with the dimensions, details and requirements shown on CONSTRUCTION DRAWINGS or as directed by the Contract Manager/Developer Representative.

1.2 CLASSIFICATION OF FENCE

1.2.1 Fencing will be classified according to type as follows:

Class A: 3 barbed wires with wooden posts at 5 m maximum spacing (Dwg. CB6-2.12M1)

Class B: 4 barbed wires with wooden posts at 3.75 m maximum spacing (Dwg. CB6-2.12M2)

Class C: 2 barbed wires and 813 mm paige wire with wooden posts (Dwg. CB6-2.12M3)

Class D: 2 barbed wires and 914 mm paige wire with wooden posts (Dwg. CB6-2.12M4)

Class E: 2 barbed wires and 1067 mm paige wire with wooden posts (Dwg. CB6-2.12M5)

Class F: 2134 mm paige wire with wooden posts (Dwg. CB6-2.12M7)

Class G: 4 barbed wires with wooden posts at 5 m maximum spacing (Dwg. CB6-2.12M8)

Class H: Chain Link Fence

Details of each classification are shown on the CONSTRUCTION DRAWINGS. The use of alternative Class B fencing as shown on Drawings CB6-2.12M2A and CB6-2.12M11 will be allowed only when specified or approved by the Consultant.

1.3 MATERIALS

1.3.1 The Contractor shall supply all materials for new fencing, including posts, wire, staples and gates in accordance with the particular specification.

1.3.1.1 General for Wood Posts

Posts shall be of sound quality, free from all decay, shakes, splits, multiple crooks or any other defects which would render them structurally unsuitable for the purpose intended. All posts shall comply with the minimum-maximum top diameter as specified. The top of the post shall mean the small end of the post. The ends of the posts shall be cut square and the length of individual posts shall not vary by more that plus or minus 25 mm from the length required for the applicable installation.

1.3.1.2 Split Cedar Posts

Untreated split cedar posts shall be cut from sound timber and shall have an allowable taper from end to end not exceeding 114 mm in perimeter.

1.3.1.3 Pressure Treated Wood Posts and Braces

Pressure treated wood posts and braces shall be fir or pine timber as specified. Knots that are sound, well spaced, smoothly trimmed and which do not impair the strength of the posts or braces will be permitted, providing they do not exceed 38 mm in diameter on any face. Posts shall be naturally round and shall have all bark peeled or otherwise removed. Allowable taper from end to end of posts shall not exceed 38 mm in diameter.

Braces shall be sawn square or rectangular to the standard nominal dimensions as specified.

Posts and braces shall be treated by pressure methods with 50/50 creosote-petroleum solution or a chromated copper arsenate solution. The preservative agent shall conform to the requirements of the current edition of C.S.A. Standard 080. The minimum retention of preservative in the wood, as determined by assay shall be as specified in the following table:

	Round Posts	Sawn Braces
Sample Zone for Assay (mm from surface)	0 - 19	0 - 16
Minimum Net Retention (km/m^3) Creosote-Petroleum	96	96
Chromated Copper Arsenate (CCA)	6.4	6.4

Requirements for the preservation treatment of round posts and sawn braces shall conform to the current requirements of C.S.A. Standard 080 with specific attention to 0.80.1, 080.2 and 080.5.

1.3.1.4 Metal Stays and Keeper Wire

Metal Stays

Metal stays shall be fabricated from high tensile steel sheet conforming to the requirements of the current "Standard Specification for Weight (mass) of Coating on Iron and Steel Articles with Zinc or Zinc Alloy Coatings", A.S.T.M. Designation A90, with additions as described in this CONSTRUCTION SPECIFICATION.

Metal stays shall conform to the following minimum requirements:

Length	860 mm
Yield Strength	22,727 kg
High Tensile Steel Breaking Strength	29,545 kg
Barbed Wire Slot Sized	4.75 mm x 15.90 mm

Reflective sheeting for metal stays shall meet or exceed the requirements as specified in ASTM - D4956, Performance Requirements Type III, High Intensity Retro-reflective Sheeting.

Keeper Wire

High Tensile Galvanized Keeper Wire shall conform to the requirements of the current "Standard Specification for Steel Wire, Cold-Drawn for Mechanical Springs" A.S.T.M. Designation A227, with additions as described in this CONSTRUCTION SPECIFICATION.

Keeper wire shall conform to the following minimum requirements:

Length	860 mm
Yield Strength	35,909 kg
High Tensile Steel Breaking Strength	41,818 kg

1.3.1.5 Two Strand Barbed Wire

Two strand barbed wire shall conform to the requirements of the current "Standard Specifications for Zinc-Coated (Galvanized) Steel Barbed Wire" A.S.T.M. Designation A121, (Class 1 or better) and shall consist of two strands of 2.5 mm thickness wire, twisted with four-point, 2.0 mm thickness round barbs spaced not more than 152 mm apart.

Each spool delivered to the job site shall be legibly marked showing the mass, linear measure, thickness and name or mark and address of the Manufacturer.

1.3.1.6 Single Strand Barbed Wire

Single strand barbed wire shall conform to the requirements of the current edition A.S.T.M. Designation A121, "Standard Specifications for Zinc-Coated (Galvanized) Steel Barbed Wire". The requirements regarding uniform twisting of strands will be waived.

Single strand barbed wire shall conform to the following minimum requirements:

Measure of wire per spool	402 m
Minimum mass per spool	24 kg
Wire thickness	2.64 mm
Minimum tensile breaking strength of wire	500 kg
Barb spacing	125 mm
Number of points per barb	4

The barbs shall be firmly and securely fixed in position.

1.3.1.7 Woven Wire (Paige Wire)

Woven wire shall conform to the requirements of the current "Standard Specification for Zinc-Coated (Galvanized) Iron or Steel Farm-Field and Railroad Right-of-Way Wire Fencing" A.S.T.M. Designation A116, (Class 1 or better) except that Section 5 of the A.S.T.M. Specification shall be deleted and replaced with the requirements pertaining to size and style of the woven wire mesh as hereinafter provided.

Each roll delivered to the job site shall be legibly marked showing the length, name or mark and address of the Manufacturer.

All wire of a specified class for use on a particular project shall be of identical design unless otherwise specified by the Consultant.

The woven wire mesh design shall conform with one of the following Classes as specified.

1.4 CONSTRUCTION

1.4.1 General

Fencing shall be constructed in accordance with plans, at the locations as designated on the plans and Drawing CB6-2.12.M6 or as directed by the Consultant.

All trees, brush or other obstacles which interfere with the construction of the fence shall be removed prior to commencing fence construction

Opening for gates shall be provided at locations designated by the Consultant.

The whole work of fencing shall be carried out in a substantial and workmanlike manner.

1.4.2 Wood Posts

The posts shall be set in holes to the required depth and tamped in a plumb and firm position to the line and spacing shown on the plans or as directed by the Consultant. Post holes shall be large enough to allow for proper tamping. Posts shall be set with the large end down. Backfill shall be placed in layers not exceeding 0.15 m and compacted by hand tampers, machine tampers, or other suitable equipment. Completed backfill shall be crowned slightly to permit drainage away from the posts.

Driving of posts, including methods employed drilled pilot holes, will only be permitted if the results of these methods produces a satisfactory, uniform, undamaged plumb product, with the post firmly implanted into the soil to the depth as indicated on the plans. If, in the opinion of the Consultant, the results obtained from the driving of posts, as described, are not satisfactory, then this method shall be discontinued.

Sharpening of posts will not be permitted.

Intermediate brace posts shall be erected in conformance with the maximum spacing requirements as shown on the plans, or at such additional locations as directed by the Consultant.

1.4.3 Metal Stays and Reflective Tubing

Where applicable, metal stays shall be installed to the line and spacing as shown on the plans or as directed by the Consultant. Fence wire shall be placed into the pre-punched slots of the metal stay and locked in place with a keeper wire inserted into the back of the metal stay. Reflective tubing shall be installed between the top wire and the second wire at each metal stay as indicated on the CONSTRUCTION DRAWINGS.

1.4.4 Wire

All fence wire shall be pulled tight with hand stretchers, or tensioning apparatus capable of adjustment. The use of tractors or trucks for tightening fence wire will not be permitted, unless the pull is controlled by adjustable tensioning apparatus.

1.4.5 Gates

Gates shall be constructed and located as shown on the plans or as directed by the Consultant. All gates shall be constructed and/or installed in a workmanlike manner.

1.4.6 Taking Down and Re-Erecting of Existing Fence

Where specified, existing fences shall be taken down, the materials carefully salvaged, and the fence re-erected in accordance with the class specified, to the satisfaction of the Consultant. Fencing materials damaged through the carelessness of the Contractor shall be replaced at his expense.

1.4.7 Remove and Salvage of Existing Fences

Where removal and salvage of existing fences is specified, the Contractor shall carefully take down the fence, roll the wire, and pile and place the material at locations as directed by the Consultant. Materials that are not suitable for salvage shall be disposed of at locations as directed or acceptable to the Consultant.

1.4.8 Remove and Dispose of Existing Fences

Where removal and disposal of existing fences is specified, the Contractor shall completely remove the fence and dispose of all materials at locations acceptable to the Consultant.

1.4.9 Chain Link Fence Construction

For chain link fencing the contractor shall perform minor leveling or landscaping of the ground where necessary. The fence shall be installed with a consistent elevation or slope and shall follow ground contours smoothly without any sharp changes in grade.

1.4.9.1 Post Location

Line posts shall be set not more than 3 m apart, measured parallel to the ground surface.

Corner posts shall be installed where the alignment change exceeds 20°C.

Where end or corner posts are more than 150 m apart over reasonably smooth grade, the Contractor shall set straining posts at equal intervals not exceeding 150 m on a straight continuous stretch of fence. The Contractor shall set additional straining posts at sharp changes in grade and where directed by the Consultant.

1.4.9.2 Post Setting

Post holes shall be dug or drilled to the following minimum diameters and depths that will allow at least 150 mm of footing below the bottom of the post:

Fabric Height (m)	1.5	1.8	2.1	2.4
Line post hole diameter (mm)	200	250	250	250
Line post depth (m)	0.9	0.9	0.9	0.9
Terminal Post hole diameter (mm)	300	360	360	360
Terminal Post depth (m)	1.2	1.2	1.2	1.2

The concrete footings shall be constructed by placing concrete in the post holes embedding the posts to a minimum depth below ground of 0.75 m for line posts and 1.05 m for terminal posts. The concrete shall be extended 50 mm above ground level and crowned to drain away from the post. The posts shall be braced in plumb position and true to alignment and elevation until the concrete has set. The concrete footings shall cure for a minimum of 5 days before proceeding with further work.

1.4.9.3 Top Rail

Top rails shall be supported at each line post with a line post cap so that a continuous brace is formed between terminal posts. The rails shall be joined with sleeves to allow for expansion and contraction. Connections to terminal posts shall be made securely using rail ends and brace bands.

1.4.9.4 Terminal Post Bracing

Braces shall be installed from end and gate posts to the nearest line post at midpanel and parallel to the top rail. Braces shall be installed on both sides of corner and straining posts in a similar manner.

1.4.9.5 Bottom Tension Wire

A tension wire shall be installed within the bottom 150 mm of fabric. The wire shall be stretched taut and free of sag and fastened securely to the end, corner, gate and straining posts with tension bands and turnbuckles.

1.4.9.6 Chain Link Fabric

The fabric shall be placed outside of the enclosed area or as directed by the Consultant. The bottom of the fabric shall be 50 mm above the finished ground. The fabric shall be stretched to tension as recommended by the manufacturer and fastened to the end, corner, gate and straining post with tension bands at 300 mm spacing. The fabric shall also be secured to line posts, top rails and the bottom tension wire with tie wire at 450 mm intervals. The tie wire shall have a minimum of 2 twists. The fabric shall have a smooth uniform appearance, free of sag, dent and bulge.

1.4.9.7 Damaged Surfaces

Damaged surfaces shall be cleaned with a wire brush to remove loose and cracked spelter coatings. Two coats of approved zinc pigmented paint shall be applied.

2.0 MEASUREMENT AND PAYMENT

2.1 GENERAL

The construction of fences of all classifications and the taking down and re-erecting of existing fences will be measured by the kilometre, or fraction thereof, complete in place, including the length across constructed, installed or re-erected gates.

Where fences are removed only, the existing fence will be measured by the kilometre, or fraction thereof.

Length measurement will be calculated on the basis of through highway centerline chainage for fencing parallel to the highway, and on the basis of measured length in all other cases.

2.2 SUPPLY AND INSTALL NEW FENCE

Payment will be made at the unit price bid per kilometre or fraction thereof, for "New Fence - Supply and Install" of the class specified, complete in place, and including the installation of gates. This payment will be full compensation for supplying all materials, constructing the fence and for all equipment, tools, labour, and incidentals necessary to complete the work.

2.3 TAKING DOWN AND RE-ERECTING EXISTING FENCE

Payment will be made at the unit price bid per kilometre or fraction thereof, for "Taking Down and Re-erecting Existing Fence" of the class specified. This payment will be full compensation for taking down, salvaging and re-erecting the fence, and for all equipment, tools, labour and incidentals necessary to complete the work.

2.4 REMOVE AND SALVAGE OF EXISTING FENCES

Payment will be made at the unit price bid per kilometre or fraction thereof, for "Remove and Salvage of Existing Fence". This payment will be full compensation for removing and stockpiling salvaged materials and/or disposing of unsalvageable materials; and for all equipment, tools, labour and incidentals necessary to complete the Work.

2.5 REMOVE AND DISPOSE OF EXISTING FENCES

Payment will be made at the unit price bid per kilometre or fraction thereof, for "Remove and Dispose of Existing Fence". This payment will be full compensation for removing and disposing of the fence and for all equipment, tools, labour and incidentals necessary to complete the work.

2.6 CLEARING FENCE LINE

The removal of trees, brush or other obstacles will be measured and paid for in accordance with VOL. 2 SEC. 102, CLEARING AND GRUBBING.

1.0 GENERAL

1.1 DESCRIPTION

1.1.1 The work covered by this specification shall consist of topsoil installation placed and compacted in the areas within the limits of construction or as designated by the Contract Manager/Developer Representative in accordance with these CONSTRUCTION SPECIFICATIONS and conforming to the sections shown on the approved CONSTRUCTION DRAWINGS or as directed by the Contract Manager/Developer Representative.

1.2 DEFINITION

1.2.1 Topsoil to be fertile agricultural soil, capable of sustaining vigorous plant growth, free of subsoil, clay, stone, lumps, noxious odor, roots other foreign matter except for native soils where seed base or roots may be used for re-establishment of natural vegetation cover and approved by Contract Manager/Developer Representative.

2.0 PRODUCTS

2.1 TOPSOIL

2.1.1 Stockpiled Topsoil On-Site

2.1.1.1 Topsoil used from available, approved on-site stockpiles as directed by the Contract Manager/ Developer Representative, must be free of roots, branches, clay, stones larger than 50 mm, subsoil and all other debris.

2.2 FERTILIZER

2.2.1 Formulation ratio as required from soil test results. Applied in accordance with the manufacturer's directions.

2.3 MANURE

2.3.1 Friable, loose cow manure, free of large lumps, twine and other foreign material, well aged and having a pH between 5.5 and 7.5.

2.5 PEAT MOSS

2.3.2 Decomposed plant material, fairly elastic and homogeneous, free of decomposed colloidal residue, wood, sulphur and iron. Minimum of 60% organic matter by mass; pH value between 5.5 and 7.

2.4 HORTICULTURE SAND

2.4.1 Sharp sand free of deleterious soluble salts and other contaminants likely to cause efflorescence and reduced skid resistance, and graded within the following limits:

Sieve Size (mm)	% Passing by Weight
2.5	100
1.25	85 – 100
0.8	80 – 90
0.315	30 – 60
0.16	2 – 10
0.063	1% Maximum

2.5 LIME

2.5.1 Ground agricultural limestone containing minimum 85% of total carbonates.

2.6 SULPHUR

2.6.1 Finely crushed agricultural elemental sulphur, free of impurities.

2.7 COMPOST

2.7.1 Commercially prepared compost shall be free from weed seeds. Physical contaminants such as glass, metal, plastic and rock shall be less than 0.5%. Pathogen and heavy metal levels shall satisfy the requirements for Class A compost. The carbon to nitrogen ratio shall be 40:1 or less. Organic matter content should exceed 45%. Contract Manager/Developer Representative shall approve the source of the compost.

2.8 EQUIPMENT

2.8.1 Cultivators: capable of scarifying, discing or harrowing.

2.8.2 Rollers: of suitable size and mass for the work.

3.0 EXECUTION

3.1 Unless stated otherwise in the SPECIAL PROVISIONS, for a rural road construction project, all topsoil removed from the road ROW shall be spread to a uniform depth over the disturbed areas within the road ROW.

3.2 Where Strathcona County has entered into an agreement with the landowner to allow the limits of construction to extend beyond the road ROW, the topsoil removed shall be returned to the area outside the ROW.

3.3 When loading topsoil from a stockpile, do not leave a vertical face at end of day's work.

3.4 Scarify subgrade prior to installing topsoil.

3.5 Do not mix topsoil and subsoil during loading and hauling.

3.6 Install dry topsoil during dry weather over approved dry unfrozen subgrade.

3.7 Manually spread topsoil around trees and plants to prevent damage by grading equipment.

3.8 Fine grade by floating prior to seeding or sodding to eliminate rough spots and low and soft areas ensuring positive drainage.

3.9 Bring topsoil up to within 25 mm of design finished grade on seeded and sodded areas. Fine grade again if necessary.

3.10 Leave surface smooth, uniform and sufficiently firm to prevent sink pockets when irrigated.

3.11 Do not bury refuse or foreign material of any kind on site. Excavate and remove immediately from site all soil contaminated by oil, gasoline or any other substances harmful to healthy, vigorous plant growth.

3.12 Weeds to be controlled throughout maintenance guarantee period of related work includes but not limited to dandelion, jimsonweed, quackgrass, horsetail, morning glory, rush grass, mustard, lambsquarter, chickweed, crabgrass, Canada thistle, tansy ragwort, scentless chamomile, bermuda grass, bindweed, bent grass, perennial sorrel, brome grass, red root pigweed, buckweed, toadflax, foxtail, perennial sow thistle, leafy surge, field scabious and common tansy.

3.13 When the collection of the live topsoil/pond muck is required, it shall take place when the material is dormant, when mortal damage as a result of excavation will be minimized. The donor site may require de-watering depending upon the preceding weather conditions. The boundaries of the desirable live topsoil/pond muck area to be excavated will be determined in the field by the Contract Manager/Developer Representative.

3.14 The removal of the live topsoil/pond muck shall be carried out with a track-mounted backhoe or equivalent low pad pressure vehicle. Live topsoil/pond muck shall be removed to a nominal depth of 300 mm to which the limit of the dark organic material and useful plant parts extend. The Contractor shall carefully control his operations to ensure maximum salvage of the material without contaminating it with clay, and other unsuitable materials.

3.15 Areas in the stormwater management facility to receive the live topsoil/pond muck shall be scarified to a depth of 200 mm, by ripping, rototilling, or discing prior to placement of the live topsoil/pond muck.

3.16 The live topsoil/pond muck shall be conveyed to the stormwater management and placed in the areas indicated on the CONSTRUCTION DRAWINGS or as directed by the Contract Manager/Developer Representative. Material removed from the donor site locations shall be replaced by material from the stormwater management facility site. Low-load tracked equipment will be required to place the live topsoil/pond muck, at a 300 mm depth, to the final design grades indicated on the CONSTRUCTION DRAWINGS or as directed by the Contract Manager/Developer Representative.

4.0 MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

4.1.1 Measurement to be in cubic metres of topsoil to specified depth, ready for seed or sod.

4.2 PAYMENT

4.2.1 Payment at the respective bid per square metre shall be full compensation for preparing the subsoil surface; supply, hauling, spreading, discing, harrowing, floating and compacting the topsoil; cleanup and disposal of all unused materials; and for all labour and use of equipment necessary to complete the work in accordance with these CONSTRUCTION SPECIFICATIONS.

1.0 GENERAL

1.1 DESCRIPTION

1.1.1 The work covered by this CONSTRUCTION SPECIFICATION shall consist of supply and installation of seeding, sodding, fertilizing, watering, mulching and maintenance in the areas within the limits of construction or as designated by the Contract Manager/Developer Representative in accordance with these CONSTRUCTION SPECIFICATIONS and conforming to the sections shown on the approved CONSTRUCTION DRAWINGS or as directed by the Contract Manager/Developer Representative.

1.2 QUALITY

1.2.1 Weeds to be controlled throughout construction and maintenance period includes but not limited to dandelion, jimsonweed, quackgrass, horsetail, morning glory, rush grass, mustard, lambsquarter, chickweed, crabgrass, Canada thistle, tansy ragwort, scentless camomile, bermuda grass bindweed, bent grass, perennial sorrel, brome grass, red root, pigweed, buckweed, toadflax, foxtail, and perennial sow thistle and all noxious and restricted weeds as identified under the Alberta Weed Control Act.

1.3 MATERIAL DELIVERY, HANDLING AND STORAGE

1.3.1 Use all means necessary to protect material before, during and after installation. Provide adequate protection to materials, which may deteriorate if exposed to weather.

1.3.2 Fertilizer shall be packaged in waterproof bags labelled clearly, indicating net mass, analysis and manufacturer. Store on pallets and protect from weather if required by Contract Manager/Developer Representative. Forward all labels to Contract Manager/Developer Representative at time of Construction Completion.

1.3.3 Deliver and store grass seed in original packages with label indicating:

(i) analysis of seed mixture,
(ii) percentage of pure seed by weight,
(iii) year of production,
(iv) net mass,
(v) date tagged and location,
(vi) store all seed in dry weatherproof place and protect from damage by heat, rodents and other causes.

1.3.4 Deliver sod to site within 24 hours of being lifted and lay sod within 36 hours of being lifted.

1.3.5 Do not deliver small, irregular or broken pieces of sod.

1.3.6 During wet weather allow sod to dry sufficiently to prevent tearing during lifting and handling.

1.3.7 During dry weather protect sod from drying and water sod as necessary to ensure its vitality and prevent dropping of soil in handling. Dry sod will be rejected.

2.0 PRODUCTS

2.1 GRASS SEED MIXES

2.1.1 Seed mixes listed in this document are to be used as a general guideline. Seed mixes may be amended to suit the site conditions. Consult the Contract Manager/Developer Representative to determine specific requirements for grass seed mixture and application rates.

2.1.1.1 Use only Certified Canada No. 1 varieties in accordance with the Canadian Seeds Act and Regulations and having minimum purity of 97% and germination of 75%, and be mixed to the following by weight:

2.1.1.2 See VOL. 2 SEC. 603, SEEDING AND SODDING, SUB SECTION 2.1.2.

2.1.1.3 Reclamation of Borrow Sites

(i) Hay Land Mix (35-50 kg per hectare) depending on conditions

40% Tall Fescue
30% Meadow Brome
20% Alfalfa
10% Russian Wild Rye

(ii) Pasture and Idle Land Mix (30-50kg per hectare) depending on conditions

20% Russian Wild Rye
25% Tall Fescue
15% Sainfoin
15% Slender Wheatgrass
15% Meadow Brome
10% Creeping Red Fescue

2.1.1.4 Special Conditions

Seed mixes for special conditions (ie. wetlands, naturalization) to be developed on an as need, site specific basis.

Consult the Contract Manager/Developer Representative to determine specific requirements for grass seed mixture and seeding rate.

2.2 FERTILIZER

2.2.1 Formulation ration of fertilizers used at time of seeding, sodding and as supplementary during maintenance/guarantee period to be determined from soil test results and approved by Contract Manager/Developer Representative prior to installation.

2.3 MULCH

2.3.1 Refer to SUB-SECTION 3.4 OF THIS SECTION.

2.4 TURF ESTABLISHMENT BLANKET

2.4.1 Based on approved design matting or approved equal to be used on banks of storm water management facilities, culverts and slopes and any other areas where excessive erosion may occur.

2.5 STAPLES

2.5.1 Steel wire, 25 mm wide by 200 mm deep by 3 mm diameter.

2.6 EQUIPMENT

2.6.1 "Brillion": Type or similar mechanical seeder, capable of rolling and covering the seed with 3 mm to 6 mm of soil.

2.6.2 Hydroseeder: Capable of thoroughly mixing water, seed, fertilizer, and pulverized wood fibre, and of uniformly spraying the mix at a designated rate.

2.6.3 Ensure equipment is steam cleaned, free of soil and seed to prevent site contamination.

2.7 WATER

2.7.1 Potable.

3.0 EXECUTION

3.1 PREPARATION

3.1.1 Remove weeds and debris from topsoil surface already in place. As required, spray site allowing weeds to die off prior to completion of grading.

3.1.2 Loosen final grade surface free of humps and hollows and free of deleterious and refuse material. Ensure positive drainage.

3.2 FERTILIZING

3.2.1 After cultivation, apply specified fertilizer from soil analysis in accordance with the manufacturer's direction spreading evenly with a mechanically calibrated distributor. Mix thoroughly into top 50 mm of topsoil not more than 48 hours before seeding.

3.2.2 Float surface to achieve approved design elevations.

3.2.3 Apply specified fertilizer spreading evenly with a mechanically calibrated distributor. Mix thoroughly into top 50 mm of topsoil, not more than 48 hours before seeding.

3.2.4 Float surface to achieve elevations within tolerances of 25 mm in 3 m, when measured in any direction after fertilizer has been spread cultivated.

3.3 SEEDING

3.3.1 Float surface to achieve design elevations within tolerance of 25 mm in 3 m, when measured in any direction after fertilizer has been spread and cultivated.

3.3.2 Compact topsoil with suitable rollers, leave surface smooth, uniform and sufficiently firm to prevent sink pockets.

3.3.3 Cultivate topsoil to a depth of 25 mm and apply seed.

3.3.4 Seed half the amount of prescribed seed mix in one direction, seeding the other half of seed mixture in a perpendicular direction.

3.3.5 Seed when weather conditions, soil temperatures and moisture conditions are suitable. Do not seed when seedbed is covered with frost, snow or standing water.

3.3.6 Seed when wind is less than 8 km/hr.

3.3.7 Seed using Brillion or similar mechanical seeder or hydroseed as specified.

3.3.8 In small areas where use of a mechanical seeder is impractical seed by hand.

3.3.9 After seeding, ensure seed has contact with soil, surface is smooth, uniform and sufficiently firm to prevent sink pockets.

3.3.10 Water entire area with fine spray immediately after each area has been sown. Apply enough water to ensure penetration of at least 50 mm. Avoid washing out seeds.

3.3.11 Erect barricades and warning signs to protect seeded areas from traffic until grass is established.

3.4 HYDROSEEDING

3.4.1 Do all seeding when weather conditions, soil temperature and moisture conditions are suitable.

3.4.2 Use a hydroseeder to seed slopes 3 horizontal to 1 vertical or steeper. Use seed mixes approved for conditions by Contract Manager/Developer Representative.

3.4.3 Mix seed with water, mulch and fertilizer in the following suggested quantities to cover 4000 m^2:
(i) 640 kg of wood fibre mulch;
(ii) 80 kg of seed;
(iii) 140 kg of fertilizer; and
(iv) 6,400 litres of water.

3.4.4 Do not spray seed and mulch mixture onto trees, bike paths, roads, parking lots, interlocking paving stone, bridges, houses, fences or other surfaces not meant for seeding. Remove over-spray.

3.4.5 Hydro seeding should not be carried out in wind velocities which cause seed mix to be blown.

3.5 SEED PROTECTION ON SLOPES

3.5.1 Install in accordance with manufacturer's directions and approved CONSTRUCTION DRAWINGS.

3.5.2 Erect barricades and warning signs to protect seeded areas from traffic until grass is established.

3.6 MAINTENANCE

3.6.1 Maintain all turf free of deficiencies until acceptance at date of Final Acceptance Certificate, minimum two years.

3.6.2 Nuisance weeds must be controlled by cutting and/or spraying only when necessary.

3.6.3 On recommendation from Contract Manager/Developer Representative or through weed inspections by Transportation and Agriculture Services, weed notices will be issued on soil used for landscaping when weeds are not controlled. Upon notification weeds must be cut or sprayed with 96 hours of notification, weather permitting. Use chemicals in strict accordance with manufacturer's recommendations and Provincial laws. Damage resulting from use of chemicals shall be the contractor's responsibility.

3.6.4 Undertake weed, insect and fungus control after the public has been notified by advertisements in local newspapers, a minimum of 2 weeks prior to any application, and treated areas shall be posted for 24 hours after application. Chemical shall be applied by or under the supervision of licensed applicators. All Federal and Provincial regulations regarding use, transportation and storage of chemicals shall be strictly adhered to. Submit Biocide report at time of FAC inspection. Damage resulting from use of chemicals shall be the contractor's responsibility.

3.6.5 Reseed/resod all areas which show deterioration, are bare, burned out, are thin or washed out on a regular basis throughout maintenance period.

3.7 ACCEPTANCE

3.7.1 Areas will be accepted by the Contract Manager/Developer Representative provided that:

3.7.1.1 Seeded areas are properly established after minimum 1 year from construction completion date;

3.7.1.2 Turf is free of eroded, bare or dead spots not greater than one square metre in size and provides a minimum of 80% ground cover as determined by the Contract Manger/Developer Representative;

3.7.1.3 No surface soil is visible when grass has been cut to height of 75 mm; and

3.7.1.4 The area has been cut a minimum of 1 time and within 1 week of acceptance.

4.0 MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

4.1.1 Measured in square metres of surface area.

4.2 PAYMENT

4.2.1 Payment shall include supply and application of fertilizer, weed control, cutting and seed (method specified in the SCHEDULE OF QUANTITIES) or sod, and one year maintenance.

1.0 GENERAL

1.1 DESCRIPTION

1.1.1 The work covered by this specification shall consist of maintenance of natural areas as outlined within the limits of construction or as designated by the Contract Manager/Developer Representative in accordance with these CONSTRUCTION SPECIFICATIONS and conforming to the approved CONSTRUCTION DRAWINGS or as directed by the Contract Manager/ Developer Representative.

2.0 EXECUTION

2.1 GENERAL

2.1.1 Natural Areas

2.1.1.1 The land required for the natural areas will be dedicated to Strathcona County as MR and/or ER. CE may be considered in some areas.

2.1.1.2 Natural areas adjacent to private property designated as MR may have a minimum 1.8 m width mown buffer around the perimeter for maintenance access routes. ER and naturalized PULs shall not be mown.

3.0 MAINTENANCE

3.1 ACTIVITIES REQUIRED FROM CCC UNTIL FAC

3.1.1 As part of the maintenance reporting, identify and describe existing vegetation and site conditions to determine site specific goals and indicate best management strategies:

(i) Prepare a site map.
(ii) Vegetation and wildlife inventory (Rare or Endangered).
(iii) Non-native species and management.
(iv) Biodiversity.
(v) Ecological health.
(vi) Soil.
(vii) Microclimate.

3.1.2 In existing natural areas restore any disturbed areas to original condition.

3.1.3 Where wetlands, streamcourses and/or waterbodies are part of the natural area, ensure erosion control measures are maintained until establishment of plant material and grasses.

3.1.4 Use preventative measures against weed development. Non-native species management is required. Selective cutting, hand-pulling and spot spraying may be required.

3.1.5 Remnant tree stands are to be maintained free of hazard trees by the Developer until FAC. Standing trees that are dead, partially dead or decaying that can be used as habitat may be left and some coarse woody debris can be left on the ground. Falling and pruning should attempt to maximize the length of large diameter pieces left in the tree stand. Coarse woody debris must not be continuous, and must be left as natural as possible. Hazard trees and the best practices for managing remnant tree stands are defined in Strathcona County Policy SER-009-035.

3.1.6 Tree removal to be completed in accordance with VOL. 2 SEC. 102, CLEARING AND GRUBBING.

3.1.7 Constructed Wetlands to be maintained in accordance with VOL. 2 SEC. 605, CONSTRUCTED WETLANDS.

3.1.8 Monitor ER areas to ensure function has not been impacted by Development. Where problems occur, restoration plans to be approved by Strathcona County prior to implementation.