CITY OF KIRKLAND

132ND SQUARE PARK - DESIGN DOCUMENTS

January 31, 2020
30% DESIGN

DRAFT

CIVIL NARRATIVE

Site Development Overview

The City of Kirkland proposes to develop 132nd Square Park located at 13159 132nd Avenue NE in Kirkland, Washington (Parcel 282605-9073). The park parcel is 9.75 acres total with a project area of 6.9 acres. The site is bounded by NE 132 Street to the north, 132 Avenue NE to the east and residential developments to the west and south. The project is partially funded by Department of Ecology (Ecology) to provide a regional stormwater facility for roughly 43.11 acres of contributing upstream area.

Existing improvements include natural turf athletic fields, parking lot, playground, picnic shelters, restroom building and paved trails. The project proposes to redevelop the site with new synthetic athletic field, expanded parking lot, new restroom facility, new playground, new picnic shelters and revitalized trails.

Site Clearing, Demolition and Preservation

The existing parking lot and existing baseball field on the north side of the site are to be preserved. The existing soccer field, restroom, playground, and trails will be demolished. An existing picnic shelter and the reflexology area will be salvaged for relocation onsite. Existing utilities within the clearing limits shall be demolished. Existing trees will be selectively preserved per landscape plans. Stripping depth is assumed to be 8-inches in depth.

Construction Access and Temporary Sediment and Erosion Control (TESC)

Construction access will be provided from 132nd Avenue NE. Construction traffic should avoid the existing parking lot such that the existing pavement is preserved from heavy construction vehicle use. The Contractor will be required to meet the Construction Stormwater General Permit (CSGP) applied for through Ecology. The permit requires providing construction Best Management Practices (BMPs) to prevent turbid and/or pH imbalanced stormwater runoff as well as controlling other pollution sources during construction. The project will provide the following BMPs:

- Tree protection fencing and high visibility plastic fencing,
- Stabilized construction entrance, laydown and construction roads,
- Temporary sediment traps, ponds and/or portable tanks,
- Silt fencing, straw wattles, interceptor dikes or other perimeter protections,
- Catch basin inlet protections, and
- Control of construction pollutant sources.

Earthwork and Grading

The site is split by a ridge that directs surface water to the southeast and the southwest corners of the site. Topography across the site ranges in elevation from 309 at the north end to 282 at the southwest corner. Slopes across the site are typically between 1 and 10 percent. Some steeper slopes exist around the existing soccer field; these slopes range between 10 and 40 percent. Soils onsite generally consist of Vashon Recessional Outwash and Vashon Subglacial Till.

The proposed regional stormwater facility includes 20 foot deep trenches underneath an infiltration vault, which involves cut volume in addition to the improvements. The existing soccer field is sloped from north to south, whereas a synthetic field is flat. This creates a cut and fill situation at the field, where the north half is cut and the south half is fill. The park improvements on the west half of the site also includes both cut and fill, including a mound that is filled at the northwest quadrant of the site. Earthwork will typically be balanced by adjusting the elevation of the field during design to mitigate any necessity for exporting extra materials. Soils are generally native and are considered suitable depending on dry weather.

Retaining walls onsite are required around the soccer field as the size of the field has been expanded from the existing footprint, as well as slopes revised to being flat. Retaining walls are around 8.5-feet maximum around the northwest and southeast corners of the field. A 5-foot maximum wall is located around the storage shed, which is located between the two athletic fields. Retaining walls will typically be cast-in-place cement concrete walls and engineered by the project's structural engineer.

Storm Drainage

The City of Kirkland has adopted the 2016 King County Surface Water Design Manual (KCSWDM) while the Ecology funded portion of the project shall meet the 2012 Stormwater Management Manual for Western Washington Amended in 2014 (SWMMWW). Stormwater onsite will be collected by catch basins, area drains, French drains, underdrains, and swales and conveyed via PVC pipes to stormwater facilities. Post stormwater facilities, excess stormwater will discharge to the public storm system in 132nd Avenue NW.

Stormwater improvements for the contributing upstream basin, as well as contributing existing onsite improvements to remain, will meet the forested predeveloped standard to the maximum extent feasible for flow control. For runoff treatment, the full contributing upstream basin will have runoff treatment provided meeting the basic water quality treatment menu. Runoff treatment is sized offline as a flow splitter is provided upstream of the treatment facility. Onsite proposed improvements in the east basin are considered new development and are required to meet the forested predeveloped standard for flow control and basic water quality treatment.

Flow control will be provided utilizing a cast in place concrete infiltration vault. The concrete vault will have an open bottom with 20 foot deep infiltration trenches below. The vault will have a flow control riser discharging excess stormwater to the existing public storm drain within 132nd Avenue NE. Runoff treatment will be provided with StormFilter cartridges in precast concrete structures. A StormGate will be provided for splitting flows for runoff treatment with the remainder going directly to the infiltration vault.

The west half of the park improvements are exempt from flow control and runoff treatment. Runoff treatment is exempt since no pollution generating surfaces are proposed. Flow control is exempt due to less than 0.10 CFS difference between the existing and proposed improvements in the 100-year storm event. This is partially due to landscaping being improved with post-construction soil quality and depth per BMP T5.13 which provides some flow control benefit per the SWMMWW.

Water and Sewer Utilities

Northshore Utility District (NUD) is the purveyor for water and sewer. New water service and a side sewer service will be extended onsite for the new restroom building and irrigation system. Water service will include a new meter with a point of connection behind the meter for irrigation connections. See landscape narrative for irrigation systems. Side sewer service is currently estimated as predominately 8-inch pipe with manholes since the pipes will be less than 2-percent in slope. AHBL will review with the sewer district whether the restroom can be served by 6-inch pipe and cleanouts since minimal flows are expected.

Site Access and Paved Surfaces

Site access will remain from the existing parking lot off of NW 132nd Street at the northwest corner of the site. The existing access from 132nd Avenue NW between the ball fields will also remain, but be reconstructed due to disturbance during the improvements. This access is for field maintenance vehicles and pedestrian access only. A new access will be provided roughly at the midpoint of the new soccer field. This access is for field and storm drainage maintenance as well as

emergency response access for ambulances. The existing south access will remain and is typically used for pedestrian access and park maintenance vehicles. Existing pedestrian access from the west and south will be maintained.

Paving will typically be heavy asphalt paving in drive aisles with expected loads from emergency vehicles, vactor trucks and other maintenance vehicles. Paving in parking stalls will be standard asphalt paving with expected loads from passenger vehicles. Stalls meeting requirements for ADA guidelines will be provided in a vehicle grade cement concrete to ensure meeting slope requires and providing a well-draining surface. All pedestrian grade paving will be cement concrete paving.

Pavement sections have not been developed by the geotechnical engineer yet but are expected to be approximately the following:

- Standard Asphalt Section: 3-inches of Hot Mix Asphalt (HMA) over 4-inches of Crushed Surfacing Base Course (CSBC)
- Heavy Asphalt Section: 4-inches of HMA over 6-inches of (CSBC)
- Pedestrian Concrete: 4-inches of concrete over 4-inches of Crushed Surfacing Top Course (CSTC)
- Vehicular Concrete: 6-inches of concrete over 4-inches of CSTC.

Frontage Improvements

Frontage improvements are not required and will be limited to replacement of surfacing where disturbed as well as a new driveway curb cut. All surfacing within the Right-of-way (ROW) will meet the City's standard details.

LANDSCAPE ARCHITECTURE NARRATIVE

Design Narrative

The project began as a stormwater retrofit project and has evolved into the redevelopment of the entire park. Aside from the stormwater retrofit project and the synthetic turf field upgrades, major programmatic areas that emerged from the master plan process and are included in the design of the park include:

- Play hill,
- Centralized gathering area that combined the existing and two new picnic shelters with the expanded play area,
- New restroom facility,
- Added storage for playfield uses,
- Expanded parking lot (to bring the total to 80-stalls on-site), and
- An expanded and interconnected hierarchy of walking paths.

All this combined with the unprogrammed areas around the park, such as open grass lawns, a grass slope, and open areas with varying tree cover, help to create an overall connected, positive, active and diverse park experience.

Stormwater Retrofit Project And Synthetic Turf Field

This site has been chosen as the location for a stormwater retrofit project to provide runoff treatment and infiltration of stormwater from approximately 48 acres of upstream developed area. This stormwater retrofit project funded by the Department of Ecology will maximize treatment and reduce flows, while maintaining existing park uses. A regional stormwater storage/infiltration system will be located beneath the new synthetic turf playfield and will discharge controlled flows back to the existing storm system within 132nd Ave NE. A treatment system will be added to filter the stormwater from the upstream area (48-acres), the parking lot, and the synthetic turf field. The regional stormwater project will have a storage volume of 73,855 CF when completed.

The enlarged synthetic turf multi-purpose field will accommodate two little league fields or one full size soccer field. The grading of the field will be designed to balance cuts and fills and to limit the exportation of materials, thereby allowing all suitable soil to be reused on the site. Concrete retaining walls will be constructed along the south and north ends of the field to maximize the playable surface and transition to existing grades.

Lighting is added to the fields, increasing the number of hours the fields can be used and reserved. Fencing is also designed to be installed around the synthetic turf field to separate the active uses from other uses and to protect the field of play.

Currently, there are no lights in the park, which severely limits the use of the fields to daylight hours only. Proposed light fixtures will be energy efficient LED. Fixtures will also provide “full-cutoff” illumination, so no light will be directed upward or produce unwanted glare. Fixtures will be specified and strategically placed and oriented to direct light onto the field, similar for the parking areas, to minimize light spill away from these areas. Proposed quantity of poles for the field is (4), height estimated at 70’. Proposed quantity of poles for the parking area is (5), height estimated at 25’.

Play Hill

Among the most popular elements within 132nd Square Park are the hills on the west side of the fields. These hills serve many functions and act as natural play features, picnic grounds, and spectator seating for sporting events. The design not only incorporates the hills, but expands upon them to accommodate further opportunities for play, sledding, kite flying, and sports viewing.

The design incorporates one main play hill that overlooks the play and picnic areas within the central gathering area. The hill wraps around the north side of the central gathering circle, reinforcing its function as a connected element to the play area and adding to park cohesiveness through repetition in form. This hill will feature an embankment slide keeping sledding a year-round park feature.

Central Gathering Area

The proposed design includes a playground expansion that features play equipment in addition to natural play elements.

The proposed design includes the addition of two new picnic shelters, bringing the total number of picnic shelters to three, to accommodate the popularity of picnicking at the park. The existing shelter will remain in-place, and the other two shelters will be positioned to create a social and connected space between all three shelters, to accommodate larger groups or events, or simply provide an atmosphere that may be conducive to sociability. Boulders will be incorporated around the edges of the picnic shelters, to serve as informal, multi-use play and seating elements, provide a loose definition of the picnic shelter area, and connect to the reflexology circle. The picnic shelters will be at the outer edge of a central gathering circle and will have views to the playground, upper and lower play hills, and playfields.

New Restroom And Storage Facilities

The proposed design includes the construction of a new restroom facility due to the dislocation of the existing restroom that will occur as a result of the parking lot expansion. The ADA-accessible restroom will be located within easy access of the parking lot and playfields and will be available for year-round use.

The storage shed will be enlarged to suit the needs of the playfields

Parking

The existing parking is expanded to add an additional 20 spaces to accommodate most weekday evening parking demands, The design includes an additional 20 stalls (or 80 parking stalls total), as well as a drop-off/pick-up area for cars, and incorporates updates to allow for emergency vehicle access into the site. The expanded parking area includes lighting for added safety and security.

Trail System

There is currently a trail system meandering through 132nd Square Park. A variety of users frequently walk this trail system and it is a key aspect of the character of the park. The design features an ADA-accessible trail system that weaves through the vegetation, creates circulation between the playground, reflexology area, and the expanded picnic areas, and loosely replicates the forms of design elements to lend the site a cohesive, tied-together character. Where possible, existing pathways will be maintained and will tie into new pathway systems to form cohesive walking loops for connections and meandering.

Vegetation

The design supports a diverse mixture of native Pacific Northwest species that provide natural habitat for birds, pollinators and other native species, in addition to promoting a sense-of-place within the Pacific Northwest. New and existing trees are incorporated strategically as design elements to provide natural buffers against the edges of the site, as shade canopies, and as privacy screens for more secluded, passively-programmed natural areas.

LANDSCAPE ARCHITECTURE NARRATIVE

Other Elements

A labyrinth, to enhance passive use of the park, is proposed in the new design. The labyrinth is located in the southwest corner of the site, to provide opportunities for quiet reflection and meditation. The labyrinth design and relocation of the reflexology will be the basis for a Call for Artists for the 1% for Art program. An area where the art would be located should be identified in collaboration with Parks and Community Services Department staff so it fits seamlessly into the park's overall design.

There is an existing reflexology circle in the central portion of the park, between the play area and the parking area. It will be retained and carefully moved southwest of the central gathering circle to promote its use and help further activate the space. Boulders will be loosely placed around it, connecting into the picnic shelter area of the gathering circle and embedded down the side of the southern hill overlooking the playfields.

STRUCTURAL NARRATIVE

Design Codes and Standards

Codes and Standards: Structural design and construction shall be in accordance with the applicable sections of the following codes and standards as adopted and amended by the local building authority: International Building Code, 2015 Edition.

Structural Design Criteria:

Live Load Criteria:
- Roof (Min Blanket Snow): 25 psf
- Slab on Grade: 100 psf

Wind Load Criteria:
- Ultimate Wind Speed: 110 mph
- Risk Category: II
- Wind Exposure: B
- Topographic Factor: 1.0

Seismic Criteria:
- Risk Category: II
- Seismic Importance Factor: 1.0
- Ss = 1.256 S1= 0.484
- Sds = 0.837 Sd1= 0.489
- Site Class: D (assumed)
- Seismic Design Category: D
- Response Modification Coeff. (R): 1
- Seismic Response Coeff. (Cs): 0.167W - CMU Shearwalls
- 0.129W - Wood Framed Shearwalls
- 0.558W - Cantilevered Wood Posts

Soil Criteria:
Based on Geotechnical Engineering Report by: Associated Earth Sciences, Inc.
Soil Bearing Capacity: 1,500 allow 33% increase for loads from wind or seismic origin.

Project Description

The anticipated structural scope of work for this project involves the structural design of several new building structures, as well as the relocation of an existing canopy structure. It is the intention of the structural design to satisfy the force levels of the IBC 2015.

Restroom Structure

The structural system for the restroom building will consist of plywood roof sheathing spanning between solid sawn roof joists. The joists will primarily span between interior and exterior load bearing masonry walls. Additionally, wood beams will be provided at discrete locations to support the roof joists. These beams will span between wood posts or load bearing masonry walls. The wall and column elements will be supported on conventional foundations. The interior of the building will include a 4” thick non-structural concrete slab on grade.

Lateral loads will be resisted by a horizontal plywood sheathed diaphragm at the roof, and vertical special masonry shearwalls at the exterior walls, which transfer lateral loads to the building foundation.

Storage Building Structure

The structural system for this building will consist of a wood framed “pole building” or a conventionally wood framed structure. The new building will be constructed near a concrete retaining wall element. We will review options to incorporate the new building foundations into the retaining walls.

The pole building structural system will consist of plywood roof sheathing spanning between pre-engineered wood trusses. The trusses will span to exterior wood beams, which will span between regularly spaced wood columns, which will be embedded several feet into deep concrete footings. Exterior walls will include horizontal timber girts, which will span between the building columns. Lateral loads will be resisted by a horizontal plywood sheathed diaphragm at the roof, and cantilevered wood columns at the exterior perimeter, which will transfer lateral loads to the building foundation. The interior of the building will consist of a 4” thick non-structural concrete slab on grade.

The conventional wood framed building structure will consist of plywood roof sheathing spanning between pre-engineered wood trusses. The trusses will span between either exterior load bearing wood stud walls, which will bear on conventional strip footings. Lateral loads will be resisted by a horizontal plywood sheathed diaphragm at the roof, and vertical plywood sheathed shearwalls at the exterior walls, which transfer lateral loads to the building foundation. The interior of the building will consist of a 4” thick non-structural concrete slab on grade.

Relocated Canopy Structure

This building involves an existing timber framed canopy, which will be relocated on the project site. The intent is for the canopy framing to be re-used to the greatest extent practical. The structural system for the canopy consists of a cantilevered wood framed structure.

The canopy structural system consists of 1x timber decking spanning between 2x6 wood joists. The joists span to regularly spaced double 2x10 beams, which span between grouped 4x4 wood columns. The columns are embedded feet into deep concrete footings. Lateral loads are resisted by the horizontal decking diaphragm at the roof, and cantilevered wood columns at the perimeter, which transfer lateral loads to the building foundation. The interior of the canopy will consist of granite pavers or a 4” thick non-structural concrete slab on grade.

We will evaluate re-using the existing timber posts (cutting the existing posts flush with the top of the existing concrete foundations) if possible. This option will utilize a new steel bracket at the base of the existing columns to anchor the columns to new foundations. The new brackets will be embedded into new spread footings.

ARCHITECTURE NARRATIVE

The specific architectural design elements include added picnic shelters, a new restroom building, and a storage shed. Our intent is to design the restroom and shelter park elements relate to each other with a cohesive architectural within the park. They shall be part of the identity of the parks look and feel. Below is a description of each building with the related design intent.

Picnic Shelters

The one existing built element in the existing park is a wood picnic shelter. This was a design-build project created and built with the community members and the Pomegranate Center. The Pomegranate Center focuses on working directly with communities to create art and other meaningful projects. Therefore, the existing picnic shelter has a particular value and meaning to the community.

As shown in the photo above, the wood shelter is comprised of a triple set of wood posts framing two 10-foot square areas for tables. The posts then bypass wood beams with tapered ends. This then supports exposed wood rafters and a roof deck and a smooth facia wrapping all around. The roof material is unknown at this time.

The two square footprints are rotated from each other about 30 degrees, and the roof slopes towards the intersection and back (non-path) side of the structure to create a dynamic ”butterfly” shape.

The project plan is to relocate the existing structure so that it is a prominent part of the new park layout. We assume the wood posts will be cut and the base and re-secured on new foundations. The existing wood posts are directly embedded into concrete footings. In general, we would recommend that the wood be elevated and separated from the ground and concrete, for a preservation and a longer lifespan. Therefore, for cutting the bases at the ground should not pose a problem with then relocated them on a post base. There are several types of Simpson bases to consider, and this would be consistent with how we build the new shelters.

The concept for the two new picnic shelters is to make all three feel like they always were intended to be together at the location designated in the park plan. We intend to mimic the characteristic tri-post and wood beams/rafter typology. We propose to locate the 2 new shelters on either side of the relocated existing and inverse the roof shape. Since the existing roof form has a valley, having the two new roofs with ridges on either side is intended to create a visual “wave” of the three roofs radiating around plaza.

Restroom Building

The restroom building is located at the south end of the parking lot and drive aisle. It will therefore be a highly visible and recognizable park feature. We want to make sure is attractive and welcoming for park users.

The building is to have the following program elements.

- Men’s room with a toilet and urinal
- Women’s room with two toilets
- (2) Family / Non-gender restrooms, each, single stall type
- Maintenance staff room
- Drinking fountains, with bottle filler and dog fountain.

The construction of the building shall be highly durable and easy to maintain. The building is also intended to be heated, so the exterior walls, glazing, and roof will be designed to meet energy code. The walls will be CMU, furred out for insulation and a durable interior finish were required.

The roof will be a significant part of the visual identity seen upon entering the park. We propose that the roof construction to be inspired by the picnic shelters with related wood details. The roof will float over the structure with the intent providing lots of natural daylight into the restroom building. We are even considering making parts of the roof translucent to achieve this goal.

Storage Shed

The storage shed is a pre-engineered pole building, located on top of a retaining wall between the baseball and the soccer fields. There are a few locale companies that can provide this type of structure, including PermaBilt, (https://permabilt.com/our-buildings/denim-series/ and Legacy Buildings, (http://legacybuildingsllc.com/Barns.aspx)

This is a utilitarian building for housing the parks maintenance equipment, such as a Gator vehicle, turf sweeps and other equipment. We are imagining that this building shall have one or two garage doors facing north. We will coordinate with the pars staff for the specific power, lighting, water, and other requirements that will need to be stubbed into the building. We also intend to coordinate the structural slab/foundation system with the civil and structural engineer. We anticipate that it will have to be integral to the structure of the structural wall.

As budget allows, we would welcome the opportunity to augment these buildings with architectural elements to align with the other built park elements. Sitting up on the wall, between the ballfields, it will be readily visible, with little opportunity to screen it with landscaping.

ELECTRICAL NARRATIVE

Service And Power Distribution

Service will be derived from Puget Sound Energy (PSE). Connection point to be determined. There will be a new PSE pad mount transformer adjacent to the storage building. Service wiring will be installed underground in conduits. Service equipment will consist of circuit breaker type panelboard, electrical characteristic 225 amp, 208/120-volt, 3 phase 4 wire system. Trenching to connect to the PSE transformer will be required.

Equipment interrupting ratings shall be minimum 22,000 AIC.

Surge Protection Devices (SPD)

Surge Protection Devices will be provided to reduce possible damage to sensitive electronic equipment resulting from momentary excessive voltage surges. Electronic SPD equipment is to be provided at the 120/208-volt panelboard serving sensitive equipment.

Wiring Methods

Wiring systems for power and lighting are to be installed in conduit. Electrical Metallic Tubing shall be used for indoor/dry locations. Underground conduit shall be PVC schedule 40 with Galvanized Rigid Steel bends. Exposed exterior conduit shall be Galvanized Intermediate Steel.

Outlet devices and wiring junctions are to be installed in galvanized steel outlet boxes, sized for equipment and wire-fill.

Wire for power and lighting shall be type THHN/THWN, 75°C 600-volt rated, thermoplastic insulation, copper conductor, solid & stranded.

Wiring in finished areas shall be installed concealed.

Branch Circuits

Minimum size branch circuits are 20 Ampere #12 AWG wire. Wire size shall be increased as required for ampacity of loads served and when applicable, to compensate for voltage drop.

Wiring Devices

Specification grade 20-ampere switches and receptacles will be installed in the restroom and storage building. Cover plates will be stainless steel.

Exterior locations to be provided with convenience receptacles with in-use water-proof covers. Any other power requirements will be coordinated with the landscape architect.

Lighting

General lighting for the restroom and storage buildings will be LED luminaires. Field lighting and parking area lighting will also be LED. The LED lamps shall have a correlated color temperature (CCT) of 3500° Kelvin at interior building and 4000° Kelvin at exterior building. Four-foot fixtures shall be provided with dual, parallel LED linear modules with 0-10-volt drivers.

Emergency/egress and exit lighting will be via emergency drivers.

Lighting systems are to be energy efficient and comply with the 2015 Washington State Energy Code.

Lighting control in the restroom building to be automatic on/automatic off via occupancy sensors. Storage building to be manual on/manual off as automatically switching light fixtures off in this location is a safety issue due to electrical equipment with-in.

Illumination levels will be designed to comply with the recommendations of the Illuminating Engineering Society of North America. All stated illumination levels are average maintained levels, calculated at the work surface using an 80% maintenance factor.

Restrooms will be illuminated to 20 foot-candles with a combination of wall mounted and recessed downlights.

Storage building will be illuminated to 15 foot-candles with 4-foot industrial lensed LED fixtures.

Parking lot lighting will be LED fixtures with 100% cutoff to be “Dark Sky” compliant. These fixtures will be pole mounted at 20’ in height with low-level light to be environmentally friendly and minimize glare. Parking lot lighting will be diminished in intensity at 50% at a predetermined time. Foot-candle minimum light level 0.6 – 1.0 foot candle.

Field lighting will be multi-head LED fixtures utilizing precision aimed optics to focus light on the field with minimal light spill off field. These fixtures will be pole mounted at 70’ in height and shall be controlled via lighting control panel located with-in the storage building. Foot candle average light level 30.

Energy Conservation

Lighting and transformers shall be high efficiency to achieve increasing levels of energy performance above the baseline in the prerequisite standards and reduce environmental and economic impacts associated with excessive energy use.

RENDERING

Kirkland 132nd Square Park - 30% Design

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PLAYGROUND EQUIPMENT

HOME TREE
ID Sculpture

PARKOUR 4
Kompan

DOUBLE TOWER DOUBLE SLIDE
Kompan

STILTS
Kompan

WATER LILY BALANCE
Kompan

UP AND OVER
Kompan

FOREST BUG SPRINGER
Kompan

SNAIL SPRINGER
Kompan

PLAYGROUND EQUIPMENT

METAL EMBANKMENT SLIDE
Kompan

HILL CLIMBER
Kompan

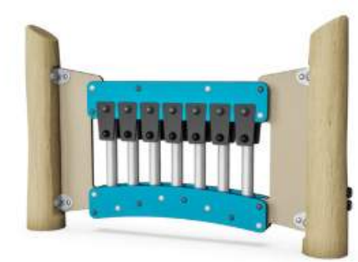
ZIPLINE
Kompan

SWINGS (2 BABY, 2 STANDARD, 1 SHELL)
Kompan

WHEELCHAIR CAROUSEL
Kompan

GAS PUMP
Kompan

PERCUSSION PANEL
Kompan



XYLOPHONE PANEL
Kompan

SHRUBS

MAHONIA REPENS
Creeping Mahonia

POLYSTICHUM MUNITUM
Western Sword Fern

RIBES SANGUINEUM 'KING EDWARD VII'
Red Flowering Currant

VACCINIUM OVATUM
Evergreen Huckleberry

PARKING LOT PLANTING

PRUNUS LAUROCERASUS 'MOUNT VERNON'
Mount Vernon Laurel

EUONYMUS ALATUS 'COLES COMPACT'
Burning Bush

GROUNDCOVER

GROUNDCOVER MIX

GAULTHERIA SHALLON
Salal

POLYSTICHUM MUNITUM
Western Sword Fern

ORNAMENTAL SHRUB MIX

AZALEA X 'HINO CRIMSON'
Hino Crimson Azalea

CORNUS SERICEA 'KELSEYI'
Kelseyi Dwarf Redtwig Dogwood

POLYSTICHUM MUNITUM
Western Sword Fern

ORNAMENTAL GROUNDCOVER MIX

EPIMEDIUM X WARLEYENSE

LIRIOPE SPICATA
Creeping Lilyturf

MAHONIA REPENS
Creeping Mahonia

FRAGARIA CHILOENSIS 'LIPSTICK'
Beach Strawberry 'Lipstick'

ARCTOSTAPHYLOS UVA-URSI
Kinnikinnik

TREES

ACER CIRCINATUM
Vine Maple

ACER TRUNCATUM 'PACIFIC SUNSET' TM
Pacific Sunset Maple

CORNUS KOUSA 'EDDIE'S WHITE WONDER'
Kousa Dogwood

METASEQUOIA GLYPTOSTROBOIDES
Dawn Redwood

PINUS CONTORTA CONTORTA
Shore Pine

THUJA PLICATA ' GREEN GIANT'
Western Red Cedar

COMBINED DISCIPLINES - TOTAL PARK ESTIMATE

Scope			Fee
Civil - Site Improvements			
Site Preparation		$	589,479.00
Erosion Control		$	112,500.00
Storm Drainage Systems		$	2,632,990.00
Paving and Surfacing / Traffic Control		$	433,800.00
Water Systems		$	20,865.00
Sanitary Sewer Systems		$	117,445.00
Traffic Control		$	13,630.00
Miscellaneous - Walls		$	336,081.00
Subtotal		$	4,256,790.00
Landscape Architecture - Site Improvements			
Planting		$	244,657.75
Irrigation		$	195,887.50
Site Amenities (Arch. Structures)		$	159,950.00
Playground		$	286,237.00
Synthetic Turf Surfacing		$	982,442.40
Fencing - Black Vinyl Coated		$	68,040.00
Subtotal		$	1,937,214.65
Architecture			
Restroom		$	492,164.00
Picnic Shelters		$	71,771.00
Storage Building		$	85,188.00
Subtotal		$	649,123.00
Electrical - Site Improvements			
Field Lights		$	303,982.00
Parking Lot Lights		$	50,000.00
Subtotal		$	353,982.00
Subtotal Site Work		**$**	**7,197,109.65**
Design & Estimating Contingency	10%	$	719,710.97
Subtotal		$	7,916,820.62
General Conditions	6%	$	475,009.24
Subtotal Construction		$	8,391,829.85
Insurance, Bond, Tax	2%	$	167,836.60
Total Probable Construction Cost		**$**	**8,559,666.45**

CIVIL ESTIMATE - PARKS CONTRIBUTION

ITEM	DESCRIPTION	NO. UNITS		UNIT PRICE	COST
SITE PREPARATION					
10.0010	Demolish Pavement and Dispose Off-Site	1500	SY	8.00	$12,000.00
	Miscellaneous Demo	1.00	LS	1,500.00	$3,500.00
10.0050	Clearing and Grubbing	3.3	AC	5,000.00	$16,500.00
10.0060	Onsite Cut to fill	5000	CY	11.00	$55,000.00
10.0100	Demolish Catch Basin, Area Drains and Manholes	1	EA	500.00	$500.00
10.0110	Strip and Dispose Topsoil (7" assumed)	3500	CY	17.00	$59,500.00
10.0120	Demolish Existing Utilities, including disposal	300	LF	7.00	$2,100.00
10.0170	Demolish Conc. Curbs	100	LF	4.00	$400.00
10.0180	Tree Removal	20	EA	600.00	$12,000.00
10.0200	Fine Grade HardScape	5409	SY	2.50	$13,522.50
10.0250	Fine Grade Landscape Areas	11396	SY	1.50	$17,094.00
				SUBTOTAL SEC. 010	**$192,116.50**
EROSION CONTROL					
20.0200	Erosion and Sediment Control Estimate	3.3	AC	15,000.00	$49,500.00
20.0300	Compliance with NPDES and Maintenance	0.5	LS	15,000.00	$7,500.00
				SUBTOTAL SEC. 30.00	**$57,000.00**
STORM DRAINAGE SYSTEMS					
30.0320	12" PVC	891	LF	40.00	$35,640.00
30.0450	Type 1 Catch basin	10	EA	1,500.00	$15,000.00
30.0460	Type II Catch basin, 48" Up to 8' Deep	2	EA	3,500.00	$7,000.00
30.0580	StormFilter 72" Manhole, 5 cartridges	1	EA	25,000.00	$25,000.00
30.0715	Flow Control Vault (Parks Improvements)	23760	CF	20.00	$475,200.00
30.0720	French Drain	97	LF	30.00	$2,910.00
					$557,840.00
PAVING & SURFACING					
40.0010	Asphalt Conc. HMA Class 1/2 (3")	57	TON	165.00	$9,405.00
40.0020	Crushed Surfacing Course (STD HMA 4")	71	TON	30.00	$2,130.00
40.0020	Crushed Surfacing Course (HVY HMA 6")	254	SY	30.00	$7,620.00
40.0020	Heavy Duty Asphalt Conc. HMA Class 1/2 (4")	179	TON	165.00	$29,535.00
40.0050	Asphalt Overlay (2")	2400	SY	12.00	$28,800.00
40.0081	Curb Ramp	1	EA	1,500.00	$1,500.00
40.0090	Cement Concrete Walk 4"	3400	SY	60.00	$204,000.00

ITEM	DESCRIPTION	NO. UNITS		UNIT PRICE	COST
40.0175	Vertical Concrete Curb	619	LF	20.00	$12,380.00
40.0180	Integral Concrete Curb	232	LF	15.00	$3,480.00
				SUBTOTAL SEC. 40.00	**$298,850.00**
TRAFFIC CONTROL					
50.0010	Traffic Control (Allowance)	0.50	LS	10,000.00	$5,000.00
50.0010	Parking Lot Striping	20	Stall	50.00	$1,000.00
50.0060	Wheel Stops	20	EA	115.00	$2,300.00
				SUBTOTAL SEC. 50.00	**$8,300.00**
WATER SYSTEMS					
80.0010	Copper Pipe 2"	415	LF	31.00	$12,865.00
80.0240	2" Domestic Water Meter	1	EA	6,000.00	$6,000.00
80.0250	Connect to Existing Water Main	1	EA	2,000.00	$2,000.00
				SUBTOTAL SEC. 80.00	**$20,865.00**
SANITARY SEWER SYSTEMS					
90.0020	PVC Sewer Line, 6"	10	LF	35.00	$350.00
90.0030	PVC Sewer Line, 8"	420	LF	45.00	$18,900.00
90.0140	SS Manhole (60")	2	EA	8,750.00	$17,500.00
90.0150	Connect to Existing Sewer	1	EA	1,500.00	$1,500.00
90.0171	Sewer Cleanouts (6" pipe)	1	EA	650.00	$650.00
90.0450	Pavement Restoration	2395	SY	31.00	$74,245.00
				SUBTOTAL SEC. 90.00	**$113,145.00**
MISCELLANEOUS					
100.0080	Mobilization (5% of Onsite Total)	1	LS	63,243.00	$63,243.00
100.0231	Walls For SHED (5.5' High)	350	SF	30.00	$10,500.00
100.0234	Survey (Three Man Crew 8 hr/day)	3	Days	2075	$6,225.00
				SUBTOTAL SEC. 100.00	**$79,968.00**
				SECTION TOTALS	**$1,319,784.50**

CIVIL ESTIMATE - ECOLOGY FUNDING

ITEM	DESCRIPTION	NO. UNITS		UNIT PRICE	COST
SITE PREPARATION					
10.0010	Demolish Pavement and Dispose Off-Site	750	SY	8.00	$6,000.00
	Miscellaneous Demo	1.00	LS	1,500.00	$1,500.00
10.0050	Clearing and Grubbing	3.6	AC	5,000.00	$18,000.00
10.0060	Onsite Cut to fill	17000	CY	11.00	$187,000.00
10.0065	Infiltration Trenches (pea gravel)	1500	CY	30.00	$45,000.00
10.0080	Infiltration Sand Layers	810	CY	30.00	$24,300.00
10.0100	Demolish Catch Basin, Area Drains and Manholes	2	EA	500.00	$1,000.00
10.0110	Strip and Dispose Topsoil (7" assumed)	3500	CY	17.00	$59,500.00
10.0120	Demolish Existing Utilities, including disposal	400	LF	7.00	$2,800.00
10.0160	Demolish Fence (Chain Link)	600	LF	4.00	$2,400.00
10.0180	Tree Removal	21	EA	600.00	$12,600.00
10.0230	Fine Grade and Proofroll Synthetic Field and	11095	SY	2.50	$27,737.50
10.0250	Fine Grade Landscape Areas	6350	SY	1.50	$9,525.00
				SUBTOTAL SEC. 010	**$397,362.50**
EROSION CONTROL					
20.0200	Erosion and Sediment Control Estimate	3.2	AC	15,000.00	$48,000.00
20.0300	Compliance with NPDES and Maintenance	0.5	LS	15,000.00	$7,500.00
				SUBTOTAL SEC. 30.00	**$55,500.00**
STORM DRAINAGE SYSTEMS					
30.0320	12" PVC	1300	LF	40.00	$52,000.00
30.0340	18" PVC	30	LF	55.00	$1,650.00
30.0450	Type 1 Catch basin	15	EA	1,500.00	$22,500.00
30.0460	Type II Catch basin, 48" Up to 8' Deep	7	EA	3,500.00	$24,500.00
30.0670	Connect to Existing Storm	3	EA	1,700.00	$5,100.00
30.0715	Flow Control Vault (Retrofit)	84480	CF	20.00	$1,689,600.00
30.0716	Stormgate	1	LS	10,700.00	$10,700.00
30.0717	Stormfilter 6x12 Vault w/ 10 cartridges (Field)	1	EA	47,900.00	$47,900.00
30.0717	StormFilter 8x18 Vault w/ 43 cartridges(Retrofit)	2	EA	105,600.00	$211,200.00
				5.00	**$2,065,150.00**
PAVING & SURFACING					
40.0010	STD Duty Asphalt Conc. HMA Class 1/2 (3")	25	TON	165.00	$4,125.00
40.0020	STD Duty Crushed Surfacing Base Course (4")	90	TON	30.00	$2,700.00
40.0020	Heavy Duty Asphalt Conc. HMA Class 1/2 (4")	135	TON	100.00	$13,500.00
40.0021	Heavy Duty Crushed Surfacing Base Course (6")	555	TON	30.00	$16,650.00
40.0081	Curb Ramp	1	EA	1,500.00	$1,500.00
40.0082	Cement Conc 5"	100	SY	100.00	$10,000.00
40.0090	Cement Concrete Walk 4"	1085	SY	60.00	$65,100.00
40.0210	Curb and Gutter	105	LF	25.00	$2,625.00
40.0176	ADA Ramp (Exluding Handrails and Walls)	125	SY	150.00	$18,750.00
				SUBTOTAL SEC. 40.00	**$134,950.00**
TRAFFIC CONTROL					
50.0010	Traffic Control (Allowance)	0.5	LS	10,000.00	$5,000.00
50.0010	Parking Lot Striping	2	Stall	50.00	$100.00
50.0060	Wheel Stops	2	EA	115.00	$230.00
				SUBTOTAL SEC. 50.00	**$5,330.00**
MISCELLANEOUS					
100.0080	Mobilization (5% of Onsite Total)	1	LS	138,748.00	$138,748.00
100.0231	Walls For ADA Ramp	250	SF	30.00	$7,500.00
100.0232	Stairs	150	LF Ns	100.00	$15,000.00
100.0234	Survey (Three Man Crew 8 hr/day)	2	Days	2075	$4,150.00
100.0236	Cast in Place Wall 12" wide, 8, 9, 10, 11 ft wall	2250	SF	40.00	$90,000.00
				SUBTOTAL SEC. 100.00	**$255,398.00**
				SECTION TOTALS	**$2,908,360.50**

LANDSCAPE ARCHITECTURE ESTIMATE

ITEM	DESCRIPTION	NO. UNITS		UNIT PRICE	COST
PLANTING					
10.0010	Deciduous Trees (2" caliper)	52	EA	450.00	$23,400.00
10.0020	Evergreen Trees (6' ht. min)	27	EA	350.00	$9,450.00
10.0030	Shrub	569	EA	15.00	$8,535.00
10.0040	Groundcover	5661	EA	4.50	$25,474.50
10.0050	Restoration Plug Mix	2704	EA	2.50	$6,760.00
10.0060	Lawn (Hydroseed)	100821.0	SF	0.25	$25,205.25
10.0070	Mulch 5" depth	758	CY	42.00	$31,836.00
10.0080	Soil Prep (6" average Depth)	2771	CY	40.00	$110,840.00
10.0090	Steel landscape edging	287	LF	11.00	$3,157.00
				SUBTOTAL SEC. 10.00	**$244,657.75**
IRRIGATION					
20.0010	Controller	1	EA	5,000.00	$5,000.00
20.0020	Irrigation for Shub, Groundcover and lawn area	149910	SF	1.25	$187,387.50
20.0030	Backflow Prevention Device	1	EA	3,500.00	$3,500.00
20.0040	Pump and Enclosure, Allowance		LS	30,000.00	$0.00
				SUBTOTAL SEC. 20.00	**$195,887.50**
SITE AMMENITIES					
30.0010	Benches for players	4	EA	2,500.00	$10,000.00
30.0020	Bleachers	4	SF	5,000.00	$20,000.00
30.0030	Park Benches	6	EA	2,500.00	$15,000.00
30.0040	Guardrails, Steel, Galvanized	300	LS	150.00	$45,000.00
30.0050	Handrails, Steel, Galvanized	300	EA	100.00	$30,000.00
30.0060	Boulders & Logs	53	SF	150.00	$7,950.00
30.0070	Drinking Fountain	1	EA	10,000.00	$10,000.00
30.0080	Reflexology, Relocation, Allowance	1	LS	10,000.00	$10,000.00
30.0090	Labryrinth, Allowance (Call for Artist)	-	EA	20,000.00	-
30.0100	Litter and Recycling Receptacles	4	SF	3,000.00	$12,000.00
				SUBTOTAL SEC. 30.00	**$159,950.00**
PLAYGROUND					
40.0010	Surfacing - synthetic turf	1	LS	109,704.00	$109,704.00
40.0020	Surfacing - Engineered Wood Fiber	1	LS	11,010.00	$11,010.00
40.0030	Play equipment, Allowance	1	LS	165,523.00	$165,523.00
				SUBTOTAL SEC. 40.00	**$286,237.00**

ITEM	DESCRIPTION	NO. UNITS		UNIT PRICE	COST
SYNTHETIC TURF SURFACING					
50.0010	Under drainage (4" perf lines, in pea gravel, 15' OC)	86404	SF	1.20	$103,684.80
50.0020	Mirafi	86404	SF	0.15	$12,960.60
50.0030	6" Base Course	86404	SF	2.00	$172,808.00
50.0040	2" Top Course	86404	SF	1.00	$86,404.00
50.0050	Wash Water System, qcv	6	EA	3,000.00	$18,000.00
50.0060	Synthetic Turf with Athletic Lines (with crumb rubber infill)	86404	SF	6.25	$540,025.00
50.0070	Fall attenuation layer	86404	SF	-	-
50.0080	6"x12" Reinforced Perimeter Curb w/ Turf Anchors	1214	LF	40.00	$48,560.00
				SUBTOTAL SEC. 50.00	**$982,442.40**
FENCING - BLACK VINYL COATED					
60.0010	Backstop - 20'-0"	164	LF	90.00	$14,760.00
60.0020	Field Fencing - 12'-0"	288	LF	50.00	$14,400.00
60.0030	Field Fencing - 6'-0"	742	LF	40.00	$29,680.00
60.0040	Gate - 6'-0", 4'-0" wide	7	EA	600.00	$4,200.00
60.0050	Gate - 6'-0", 10'-0" wide, double swing	2	EA	2,500.00	$5,000.00
				SUBTOTAL SEC. 60.00	**$68,040.00**
				SECTION TOTALS	**$1,937,214.65**

ARCHITECTURE ESTIMATE

RESTROOM BUILDING

Architectural & Structural Item Description	Qty.	Unit	$/Unit	Total
CONCRETE & BUILDING SUBGRADE	775	SF	52.83	40,945
MASONRY	775	SF	20.98	16,262
METAL FABRICATIONS	775	SF	68.64	53,196
CARPENTRY	775	SF	34.50	26,735
THERMAL & MOISTURE PROTECTION	775	SF	35.30	27,355
DOORS & WINDOWS	775	SF	40.10	31,078
FINISHES	775	SF	35.38	27,420
SPECIALTIES	775	SF	5.01	3,883
SUBTOTAL				226,874
SUBCONTRACTOR OH&P			25%	56,719
TOTAL RESTROOM BUILDING ARCHITECTURAL & STRUCTURAL WORK ITEMS				$283,593

HVAC & Plumbing Item Description	Qty.	Unit	$/Unit	Total
HVAC	775	SF	29.66	22,990
PLUMBING	775	SF	170.63	132,242
SUBTOTAL				155,232
SUBCONTRACTOR OH&P			25%	38,808
TOTAL RESTROOM BUILDING HVAC & PLUMBING WORK ITEMS				$194,040

Electrical Item Description	Qty.	Unit	$/Unit	Total
POWER & LIGHTING	775	SF	15.00	$11,625
SUBTOTAL				11,625
SUBCONTRACTOR OH&P			25%	2,906
TOTAL RESTROOM BUILDING ELECTRICAL WORK ITEMS				$14,531

RESTROOM BUILDING TOTAL SUBCONTRACTOR COST TO GENERAL CONTRACTOR **$492,164**

PICNIC SHELTERS (2 NEW & RELOCATE EXIST)

Architectural & Structural Item Description	Qty.	Unit	$/Unit	Total
CONCRETE & SUBGRADE	1000	SF	17.60	17,600
MASONRY	1000	SF	0.00	0
METAL FABRICATIONS	1000	SF	1.50	1,500
CARPENTRY	1000	SF	31.57	31,567
THERMAL & MOISTURE PROTECTION	1000	SF	4.50	4,500
DOORS & WINDOWS	1000	SF	0.00	0
FINISHES	1000	SF	2.25	2,250
SPECIALTIES	1000	SF	0.00	0
SUBTOTAL				57,417
SUBCONTRACTOR OH&P			25%	14,354
TOTAL PICNIC SHELTERS ARCHITECTURAL & STRUCTURAL WORK ITEMS				$71,771

Relocation of existing shelter is assumed to be equal cost to new construction

HVAC & Plumbing Item Description	Qty.	Unit	$/Unit	Total
NO WORK				$0

Electrical Item Description	Qty.	Unit	$/Unit	Total
NO WORK				$0

PICNIC SHELTERS TOTAL SUBCONTRACTOR COST TO GENERAL CONTRACTOR **$71,771**

STORAGE BUILDING

Architectural & Structural Item Description	Qty.	Unit	$/Unit	Total
CONCRETE & BUILDING SUBGRADE	800	SF	14.00	11,200
MASONRY	800	SF	0.00	0
METAL FABRICATIONS	800	SF	1.88	1,500
CARPENTRY	800	SF	21.60	17,280
THERMAL & MOISTURE PROTECTION	800	SF	16.21	12,970
DOORS & WINDOWS	800	SF	4.50	3,600
FINISHES	800	SF	0.00	0
SPECIALTIES	800	SF	0.00	0
SUBTOTAL				46,550
SUBCONTRACTOR OH&P			25%	11,638
TOTAL STORAGE BUILDING ARCHITECTURAL & STRUCTURAL WORK ITEMS				$58,188

HVAC & Plumbing Item Description	Qty.	Unit	$/Unit	Total
HVAC (exhaust fans & radiant point of use heat)	800	SF	15.00	12,000
NO WORK				0
SUBTOTAL				12,000
SUBCONTRACTOR OH&P			25%	3,000
TOTAL STORAGE BUILDING HVAC & PLUMBING WORK ITEMS				$15,000

Electrical Item Description	Qty.	Unit	$/Unit	Total
POWER & LIGHTING	800	SF	12.00	$9,600
SUBTOTAL				9,600
SUBCONTRACTOR OH&P			25%	2,400
TOTAL STORAGE BUILDING ELECTRICAL WORK ITEMS				$12,000

STORAGE BUILDING TOTAL SUBCONTRACTOR COST TO GENERAL CONTRACTOR **$85,188**

ELECTRICAL ESTIMATE

SPEC. SEC.	ITEM	DESCRIPTION	QUAN.	UNIT	MATERIAL		LABOR		MATERIAL+LABOR	
					UNIT	TOTAL	UNIT	TOTAL	UNIT	TOTAL
		Mobilization and Permitting	1	LS						$10,000
		Field Lighting								
		Musco Multi-head, 70 ft pole	4	EA	$40,000	$160,000	$10,000	$40,000		$200,000
		1-1/4" PVC Conduit	900	LF	$1.80	$1,620	$4.23	$3,807		$5,427
		#6 Conductors	3600	LF	$0.79	$2,844	$0.88	$3,168		$6,012
		Parking Area Lighting								
		Double Head, 20 ft pole	3	EA	$5,000.00	$15,000	$1,500.00	$4,500		$19,500
		1" PVC Conduit	250	LF	$1.52	$380	$3.72	$930		$1,310
		#10 Conductors	750	LF	$0.21	$154	$0.47	$349		$503
		Restroom Building								
		Lighting	8	EA	$400.00	$3,200.00	$150.00	$1,200.00		$4,400
		Power Receptacles	2	EA	$125.00	$250.00	$100.00	$200.00		$450
		3/4" EMT Conduit	200	LF	$1.13	$226.00	$3.58	$716.00		$942
		1" PVC Conduit	250	LF	$1.52	$380.00	$3.72	$930.00		$1,310
		#12 Conductors	1350	LF	$0.14	$186.30	$0.43	$573.75		$760
		HVAC Connections	1	LS						$2,500
		Storage Building								
		Lighting	8	EA	$400.00	$3,200.00	$150.00	$1,200.00		$4,400
		Power Receptacles	5	EA	$125.00	$625.00	$100.00	$500.00		$1,125
		3/4" Conduit	150	LF	$1.13	$169.50	$3.58	$537.00		$707
		#12 Conductors	450	LF	$0.14	$62	$0.43	$191.25		$253
		HVAC Connections	1	LS						$1,500
		Power Infrastructure								
		225 Amp Panel	1	EA	$5,000.00	$5,000	$1,000.00	$1,000.00		$6,000
		2" PVC Conduit	300	LF	$2.72	$816	$5.15	$1,545.00		$2,361
		4/0 Conductors	900	LF	$4.10	$3,690	$2.12	$1,908.00		$5,598
		PSE	1	LS						$5,000
							Subtotal:			**$280,057**
				OH/Profit Rate:		**15.00%**	**OH/Profit:**			**$42,009**
							Grand Total:			**$322,066**