



**City of Seattle
Department of Parks & Recreation**

**Planning & Programming
for
New Magnuson Park Field #12**

Prepared by:

D.A. Hogan & Associates, Inc.

with

Magnusson Klemencic Associates, Civil Engineers

Stantec, Inc. Electrical & Illumination Engineers

January 11, 2018



**MAGNUSSON
KLEMENCIC
ASSOCIATES**



Introduction

Seattle Parks & Recreation (SPR) intends to implement an additional phase of the Master Plan for the development of Magnuson Park, in the form of a new Soccer/Multipurpose Athletic Field designated Field 12¹ on the current Magnuson Park Map², situated in the Master Planned space between existing Fields 6-7 and Fields 10-11. In principal, the new Field will match the existing adjacent fields in that it will be of equal dimensions, support the same recreational and athletic program, be lighted similarly, and include a vertically draining synthetic turf playing surface. Specific Master Plan elements included will be landscape plantings in the form of a row of shade trees, pedestrian pavements, and ball control fencing.

There are opportunities for other improvements in the immediate vicinity of the Field #12 work should funds be available and/or the timing coincide appropriately, including replacement of the field synthetic turf surfacing on Fields 5, 6, and 7, and replacement of the existing Metal Halide floodlight fixtures on the same fields with LED fixtures. In light of the significant earthwork involved in the development of a new Field 12, upgrades at Fields 10 and 11 might also be a practical option. Those improvements will be identified from herein as Optional scopes of work.

This document will further describe the physical aspects of the proposed work and estimated costs, as well as a critical path of specific tasks required to fully implement the project and anticipated durations with a preliminary schedule. The information will be presented in the form of several supporting documents organized as follows;

Part 1 Field Design & General Description

- A. Existing Site Conditions
- B. Site Preparation
- C. Recreational and Amenities Program Outline
- D. Field and Amenities Construction
- E. Field Lighting System
- F. Storm Water Management Approach
- G. Field Construction described
- H. Detailed Physical description of the Finished Project

Figures (thumbnail graphics in text body):

Figure 1 Site Context, Phase 2 Tree Plantings

Figure 2 Color Schematic Plan reduced (DA Hogan)

Figure 3 Existing Ball Control Fencing (DA Hogan)

Figure 4 Preliminary Field Marking Plan³

Figure 5 Synthetic Turf close-up, Bobby Morris PF 2016⁴

Figure 6 Lighting Systems Comparison: Metal Halide vs. LED

- I. Optional Scope

Part 2 Permitting

- A. Federal
 - ACoE/JARPA
 - NPDES
- B. State
 - SEPA
 - DoE NPDES
- C. Local
 - Land Use
 - Drainage Review
 - Building/Structural Review
- D. Other
 - Electrical

Part 3 Construction Cost Estimate

- A. Summary Preliminary Construction Cost Estimate Narrative
- B. Optional Scope Estimates

Exhibits & Appendices

- 1. Magnuson Park Map (Seattle Parks, 2016)
- 2. Magnuson Park Project Vicinity Aerial Photo (©Google Maps, 2017)
- 3. Site Vicinity Photos (DA Hogan, July 2017)
- 4. Magnuson Park Phase II, Relevant Record Drawings (various, 2008)
 - C-4.13 Site Grading, Field 12 vicinity
 - C-5.15 Utility Plan, Field 9 vicinity
 - C-5.16 Utility Plan, Field 8 vicinity
 - F-1.2 Grading & Drainage, Fields 5 and 6
 - F-1.4 Grading & Drainage, Field 7
 - F-2.2 Grading & Drainage, Fields 8 and 9
- 5. Conceptual Project Drawings
 - F-1.1 Color Layout Plan (DA Hogan)
 - F-1.2 Grading & Drainage Concept (DA Hogan)
 - E.1.0 Electrical Site Plan Demolition (Stantec)
 - E.2.0 Electrical Site Plan (Stantec)
 - E-3.0 Panel Schedule (Stantec)
- 6. Basis of Design, Product Specification, Tarkett Sports FieldTurf XT-57HD PureFill
- 7. Basis of Design, MUSCO Light System Green LED
- 8. Fields 10 & 11 Alternate

Part 1 Field Design & General Description

A. Existing Site Conditions

Exhibit 2 is a 2016 aerial photograph that illustrates the site in the context of the existing developed park. Exhibit 3 includes a sequence of photos of the site as it appeared in July 2017.

As previously described, the Field 12 site is bound by four other existing fields. Generally, to the north and east are lighted synthetic turf fields 6 and 7, including their respective concrete walkways and landscape. To the west and southwest are existing grass fields 10 and 11 (see Exhibits 1 through 3). Fields 10 and 11 sit at an elevation approximately 3' - 5' below that of Fields 6 and 7 and the desired elevation of Field 12. Phase 2 filled the site to establish the grade of 6 and 7, with shallow, grassy slopes down to 10 and 11.

Exhibit 4 includes a series of relevant “as-built” Record Drawings from the 2008 Phase 2 work, which reflects the existing conditions reasonably accurately. Verify datum.

Nearby Vegetation

- There is the very strong likelihood that an existing 2,900sf wetland along the south edge of the Field 12 site will be severely impacted (filled) in the course of establishing grade and transitioning to the existing surface in an accessible manner.
- At the northwest corner of the proposed work site a row of Phase 2 shade trees ends. This row of Black Tupelo (*Nyssa sylvatica*) begins at the parking lot to the north and is Master Planned to continue to the southwest corner of the proposed Field 12.
- To the southeast is a stand of naturalized/native trees and brush, not to be disturbed.
- There are three significant shade trees that lie within the project footprint, west of Field 7. These may require assessment by a professional arborist to determine whether removal or transplant are appropriate. Presumably, the Department would prefer to transplant them in the vicinity.



Row of Black Tupelo 15' on center, Phase 2.

B. Site Preparation for Design & Construction

The Department will need to determine whether or not the area identified in Exhibit 5, Sheet F-1.1 south and slightly east of the project site is in fact a wetland or not (we recommend that this occur as soon as possible, in conjunction with new ground survey). Fairly deep geotechnical data for this area will also be required, including bearing data for deep foundations (light poles) and infiltration potential associated with stormwater management and water quality compliance. Borings should be advanced, in the vicinity of the proposed light poles, to approximately 25'-30' depth with density measurements and particle gradations taken as is typical.

The Department should assume that a small wetland fill will be required, as well as a significant fill. The local environmental conditions, consisting of natural and constructed natural areas, also suggests that both the short-term and long-term Storm Water Pollution Prevention Plan (SWPPP) will need to be implemented well in advance of the "basic" field construction. This could point to a "Phase 1 Site Preparation" scope being performed in the construction season prior to the field work. Depending on the number of Optional scope elements that the Department chooses to implement, it is likely that a) the duration required for all of the necessary construction tasks will exceed the typical "dry season" construction window in one year and b) the fills are significant enough, and the site isolated enough from its surroundings, that the deep fills required will benefit from one year's settlement or pre-loading in-place (see below).

The elevations of the adjacent Fields 6 and 7 were established for two important reasons: 1) to maintain an "at grade" relationship with the large adjacent parking lot, and 2) to generate elevation and gradient for the conveyance of storm water. While Field 12 could possibly be constructed at grade with Fields 10 and 11, the Master Planning effort envisioned this field as being in close relationship to Fields 6 and 7. To accomplish this, a significant fill will have to be conducted, preliminarily estimated to be a total 6.78' (this includes an assumed 10"-12" designed field section).

To accomplish this, it is recommended that a professional geotechnical engineering firm be engaged to oversee a "pre-load" of the fill area well in advance of the commencement of field building, typically the year prior. If feasible, a cement-amendment should be planned once the pre-load is graded-off to the designed rough subgrade. These preparatory phases of the work might be accomplished as part of the primary field work.

Suggested site preparatory work sequence:

- Survey and Flag work limit and install erosion control and site security fencing
- Survey and flag limit of any delineated wetland permitted for disturbance
- Perform any tree protection, tree removal, and transplantation required
- Clearing & Grubbing within the limit of disturbance
- Excavation and overhaul of unsuitable materials, i.e., surficial organics, wetland soils
- Identification and placement of suitable bulk, structural fill materials

- Within the permanent fill zone, sequenced fill in lifts as directed with quality control inspection and testing as recommended by the geotechnical engineer
- Placement and stabilization of over-burden as directed.
- Interim restoration, stabilization, and erosion control if this work is phased in the construction season prior to the primary work

C. Recreational and Amenities Program Outline

The Planning & Implementation of Phase 2 determined that the Recreational & Amenities Program for Field 12 would be consistent with that of Fields 5 and 6. During the Planning Phase, Field 12 was identified as a possible addition to the construction project should funds be available -they were not. The summary program is straightforward.



*Concept Plan of the location and general layout of proposed Field 12
(see Exhibit 5 Sheet F-1.1 for a larger graphic including Optional scope)*

Field Playing Surface Dimensions 255' x385' (98,175sf total)

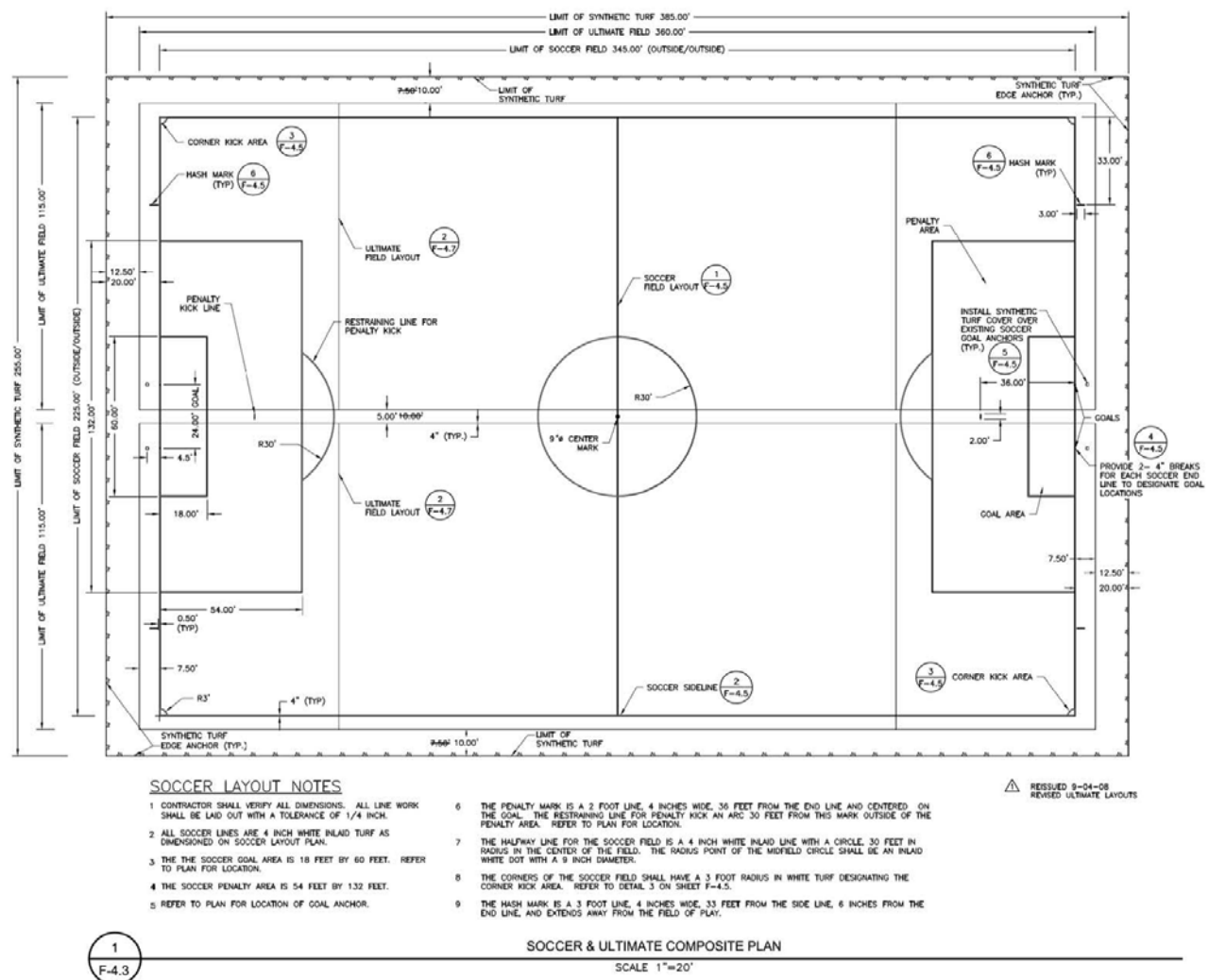
Primary Field Markings

- Soccer 225' x345' (75yds x115yds) with 15' sideline clearance, 20' goal line clearance installed as a 4" white line without interruption ("primary", "dominant", or "complete")

- Ultimate 115' x360' (provide two, side-by-side), with 5' clear of each other⁵, 10' to the field edge, and 12.5' to the ball control fence behind goal, installed as a 4" yellow line interrupted only where the soccer lines intersect ("secondary" or "incomplete" markings appear to be installed under the primary).

Secondary Markings

If the Department has an identified need at this location, additional markings can be added or, as is often the case where a secondary use is temporary or occasional, "reference" markings (4" color coded squares) can be installed as pre-measured layout points for temporary painted field markings. A good example for this site would be modified soccer where two smaller fields are oriented across the main field. In conjunction with the other two fields, the site as a whole could theoretically accommodate 6 games of U-8Rec Soccer at a time.



Phase 2 Field Marking Plan, featuring Soccer (primary) and Ultimate (secondary)

Field Surfacing

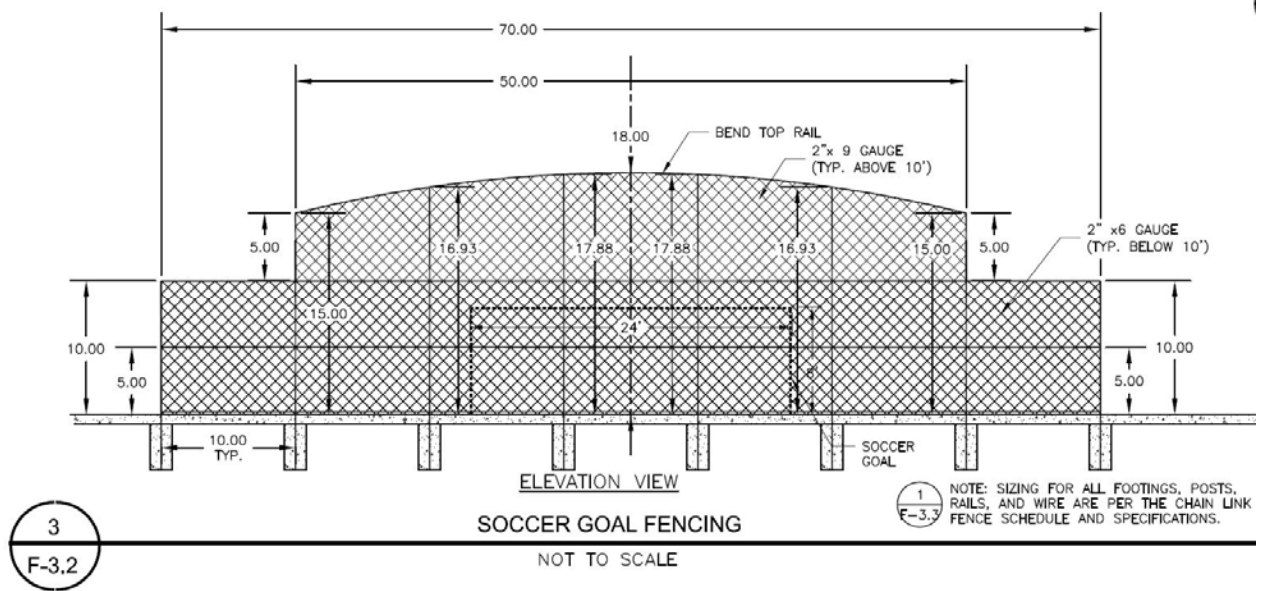
All of the fields constructed with the Phase 2 project used a 2.5" fibrillated slit-film turf product with sand and granular SBR crumb rubber infill⁶. In the roughly 10 years since that product was installed, a lot has changed in the industry and in the public perceptions of infilled synthetic turf products, specifically now as relates the infill materials. Beginning in 2016, the Department began specifying granular cork as the resilient infill material, and to insure long-term resiliency, a paved-in-place elastic layer supplemental pad system ("e-layer") below. This should be the basis of the design and budget for the Field 12 project.



Granular Cork infill material is lighter in color and weight than traditional black SBR Crumb Rubber

Fencing

- Ball Control Fencing to be per Phase 2, which is a shallow "arch" design peaking at a max. 18' height and extending for 50' centered directly behind the soccer goal, with a 10' high "wing fence" extending 10' on either side, for a total width of 70'.
- Pedestrian, "crowd control", or ball-roll control fencing will be 4' height max., generally along the sides of the field but not necessarily enclosing the field.



Ball Control Fencing installed behind each of the two existing soccer-multipurpose fields, 6 and 7.

Circulation

The 2003 Master Plan and 2007 Phase 2 plans allow for a continuation of the existing 5' and 10' concrete walkway hierarchy around the new field. Generally, 5' walkways align north-south, and 10' walkways align east-west.

Equipment & Furnishings

There are limited but important equipment and furnishings needs for this project including the following. All to be per the current acceptable Parks/Magnuson Park standard.

- Soccer Goals. Full-sized (8' x 24') portable goals with anchors and wheel kits.
- Benches, including portable player benches and possible embedded pedestrian benches.

- Litter/Recycling receptacles
- Bike rack(s)
- Field Signage (way-finding, regulatory, interpretive, and field identifier as appropriate).

Other Improvements

- Landscaping to consist of irrigated lawn (should not exceed 5:1 slope but will consist almost entirely of grade transition spaces), shade trees to extend the Phase 2 planting concept illustrated above, and bioretention plantings as appropriate for each “zone” of the bio-cell. The Department should be prepared to perform additional wetland buffer enhancements or possibly additional wetland creation as part of the wetland fill permitting process.
- Non-potable water (washwater for maintenance and cooling only). The project should add or extend an irrigation quick coupler valve system, with valve spacing adequate to reach anywhere on the field with 100’ or less hose.
- Convenience Power. At each light pole, a durable lockable weather-tight duplex outlet should be provided with adequate amperage to operate pressure washing equipment etc. The Department may choose to make this available to users for music, scoreboards, timing devices, etc.
- Pedestrian Lighting. While the field lighting will adequately light the adjacent walkways during operation, standard “egress lighting” zones should be provided on the poles that operate for 30 minutes or so after the main lighting to allow users to exit the site safely.

D. Field Lighting System

The City and Department maintain strict standards for Playfield Lighting, including illumination levels and hours of operation. The 2008 Fields 5 (rugby multi-purpose), 6 and 7 (soccer-multipurpose), and 8 and 9 (baseball-softball) all utilized aggressively shielded, aimable metal halide floodlight fixtures, typical and state-of-the-art for the time.

Over the past year, the athletic field lighting industry has made great progress in the manufacture of LED lighting fixtures that are price-competitive with Metal Halide and other options. Perhaps more importantly, this new generation of fixtures re-acquaints us with the “shoe box” and “full cut-off” concepts of older lighting systems of the 1990’s and early 2000’s, with the same reduced glare and sky glow properties as well as the added benefit of extreme spill control and energy efficiency. The photos below are before-and-after a recent project, taken from the same location with the same camera.

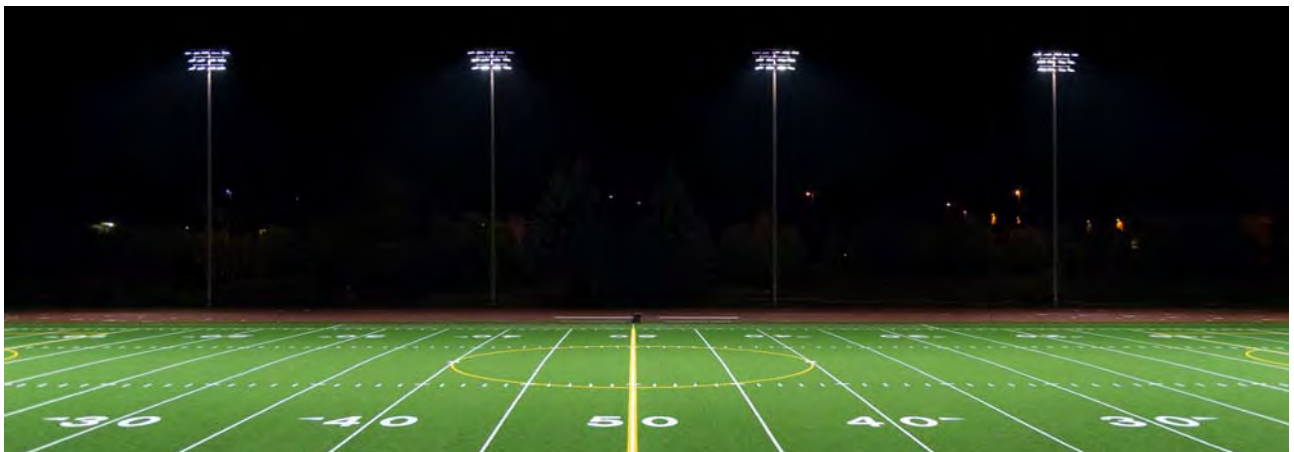
Generally, the Department should anticipate the following for Field 12;

- Current Electrical Service installed in 2008 is adequate to support the new system
- Convert the existing metal halide fixtures to LED, at Field 7 at a minimum, to allow the existing poles on the west side of Field 7 to support LED fixtures for both 7 and 12.
- Remove existing Field 7 west side poles for re-installation on new Field 12 west side (new foundations will be required). These will support the required fixtures for the west side of Field 12. Install new poles between Fields 7 and 12 sufficient to support fixtures for both fields.

- Provide a 6-pole layout (install 3 new poles on the west side of 12, see Exhibit 5, Sheet E-2.0)
- Illuminate to 30fc maintained average, 2.5:1 uniformity, IESNA Class 4.
- Produce a Light & Glare Analysis Report which quantifies to the extent practical the design effects of spill lighting into the adjacent residential buildings and natural areas, and glare effects to those areas and the adjacent View Ridge neighborhood.



Shielded, Aimable Metal Halide Floodlight System 2015



Shielded, Aimable LED Floodlight System 2017

E. Storm Water Management Approach

The project will need to be designed and constructed in accordance with the most recent version of the City of Seattle Stormwater Code. The applicable Code includes defined requirements for:

- Soil Amendment for landscaped areas: Soils will be imported and amended where landscaping will be provided. This will include all surfaces between the field and walkways and the limit of disturbance.
- Onsite Stormwater Management (OSM) for Hard Surfaces (including fields with subdrains): A series of bioretention cells with perforated pipe will be added south of the new field. The perforated pipe will connect to the existing storm drain system on site.

- Water Quality Treatment (WQT) for runoff from fields with subdrains: The bioretention cells included for OSM will fully meet the WQT requirements for the field stormwater.
- Stormwater Detention: Stormwater detention will not be required because stormwater runoff from this project will route to the site storm drain system, which drains directly to Lake Washington.

Construction stormwater runoff will need to be managed with temporary erosion and sediment control (TESC) best management practices (BMPs). BMPs will likely include interceptor swales, rock check dams, rock construction access and wheel wash, filter fabric fence and/or sediment barrier, inlet protection, slope stabilization, and a sediment trap.

Because there is more than one acre of land that will be disturbed, the Contractor will also need to prepare a SWPPP and the Seattle Department of Parks and Recreation will need to submit a Notice of Intent with the Washington State Department of Ecology (WSDOE).

If there is an existing wetland in the wooded area to be removed, adjacent to the south edge of the field, wetland mitigation and/or enhancement will likely be required adjacent to the wetlands complex within the park. Wetland mitigation and/or enhancement will require coordination with, and approval from, WSDOE.

F. Optional Scope

The Department may choose to consider additional work during the project to further improve the safety, reliability, and capacity of existing adjacent fields. The following logical scopes of work have been shown in the accompanying drawings and estimates. These are listed in order of apparent complexity, with the simplest indicated first.

- **Field 5 Turf Replacement** Replace existing synthetic turf surfacing on Field 7, including the addition of a paved-in-place elastic layer supplemental pad (“e-layer”) or approved equal. Field 5, originally programmed primarily for Rugby, may require special testing and certification through World Rugby, not typically required for Parks recreational playfields.
- **Field 7 Turf Replacement** Replace existing synthetic turf surfacing on Field 7, including the addition of a paved-in-place elastic layer supplemental pad (“e-layer”) or approved equal.
- **Field 6 Turf Replacement** Replace existing synthetic turf surfacing on Field 7, including the addition of a paved-in-place elastic layer supplemental pad (“e-layer”) or approved equal.
- **Field 5 Lighting Upgrade** Replace existing metal halide floodlight fixtures at Field 5 with LED fixtures as proposed for Fields 12 and 7. As with those fields, this replacement would significantly reduce power demand and further reduce obtrusive lighting effects such as glare and sky glow.
- **Field 6 Lighting Upgrade** Replace existing metal halide floodlight fixtures at Field 5 with LED fixtures as proposed for Fields 12 and 7. As with those fields, this replacement would significantly reduce power demand and further reduce obtrusive lighting effects such as glare and sky glow.

- **Field 11 Improvements** The included drawings illustrate a layout for an improved Field 11 that includes current standard vertically draining resilient synthetic turf surfacing configured in a manner that maintains the majority of the current recreational athletics program including as primary elements Soccer and Softball. While the field is located in an otherwise lightly “populated” area of the Park, we would recommend some degree of ball control fencing, likely in the form of a reduced-scale backstop and soccer goal backstops. Secondary program that this layout could support includes Youth Soccer (in any number of configurations depending on age and field size requirements), Tee Ball, and Ultimate (1 field). We would not recommend lighting this field due to its proximity to the residential “zone”.
- **Field 11 Improvements** The included drawings illustrate a layout for an improved Field 11 that includes current standard vertically draining resilient synthetic turf surfacing configured in a manner that maintains the majority of the current recreational athletics program including as primary elements Soccer and Softball. While the field is located in an otherwise lightly “populated” area of the Park, we would recommend some degree of ball control fencing, likely in the form of a reduced-scale backstop and soccer goal backstops. Secondary program that this layout could support includes Youth Soccer (in any number of configurations depending on age and field size requirements), Tee Ball, and Ultimate (1 field). We would not recommend lighting this field due to its proximity to the residential “zone”.

Part 2 Permitting Requirements

Codes and Regulations at the various levels of jurisdiction that the project is likely to be subject to change frequently and tend to be extremely nuanced, requiring analysis well beyond the scope of this document. Here we will identify permit requirements that have been typical for projects of the type and magnitude proposed. The Warren G. Magnuson Park site itself, with its highly complex array of uses and environmental conditions, adds many possible layers of complexity to what would be a challenging permitting exercise under any other circumstance.

A. Federal Permitting Requirements

It is likely that any Federal Permitting required for the project would be of the type administered on the State level by the Department of Ecology (DoE).

- Based on previous Phases of development in the Park, and the naturalized environment and underlying hydrology, the project may be subject to a Joint Aquatic Resources Permit Application (JARPA) 401 Water Quality Certification through the Army Corp of Engineers. This will be dependent on the results of the previously mentioned Wetland Delineation along the south edge of the proposed project site and the design solutions proposed to various project ideals including accessibility and maintainability of grading transitions (slopes). We recommend that preliminary wetland investigation occurs early to allow for a creative design response, and adequate time for permitting should the results show wetlands of a size and classification that would require this level of permitting.
- Due to size of the disturbance and volume of earth to be moved the project will be required to apply for coverage under the U.S. Environmental Protection Agency’s

National Pollutant Discharge Elimination System (EPA, NPDES). Coverage under this National Permit is held and administered by the DoE.

B. State

- **State Environmental Policy Act (SEPA)**
The Department will be required to issue a Threshold Determination in compliance with WAC Chapter 197-11, certain local codes, and the Departments own policies. The Seattle Department of Parks and Recreation has been given the authority to act as Lead Agency in these matters.
- **DoE Joint Aquatic Resources Permit Application (JARPA)**
- **DoE Hydraulic Project Approval** may be required, also depending on the size and type of wetlands found, if any, and the degree to which it or its legislated buffers are disturbed.
- **DoE NPDES** as described above

C. Local

- **Land Use Permitting**
Almost certainly required due to the installation of new lighting, Parks will be required to request exemption from SMC 23.44.012.A.1 (a 30' building height limit for the underlying Land Use Zone, in this case SF7200) in order to fully achieve the requirements of SMC 23.44.008.H (which protects adjacent residential properties from directed light and glare). The Department submits supporting information pursuant to SMC 23.76.064.B "Approval of City Facilities". This process, if successful, results in a Council Conditional Use decision, the conditions of which are often consistent with mitigation proposed as part of a SEPA Mitigated Determination of Non-Significance (MDNS) such as limiting hours of operation, or attaching specific project development requirements such as parking, access improvements, or the like.
This process is managed by the Seattle Department of Construction and Inspections (SDCI or DCI). The application materials (supporting documents) are distributed throughout the various City Departments (for example Public Utilities, Transportation, Fire, etc.) for specialized analysis and identification of very specific development code that apply. Once these requirements are satisfied, DCI introduces the project to City Council, by way of the Council's Central Staff, who then navigate the proposal through the legislative process.
This can be a lengthy process. While the code suggests 9 months, we recommend allowing a minimum of one year from the time of initially registering the project intent with DCI.
- **Drainage Review**
The development of higher-performing athletic fields, either grass or synthetic turf, have long been a challenge for pre-permit code enforcement at the time of permit application, largely because until 2015 or so they were not often recognized as a distinct type of development. This often resulted in a variety of interpretations. Currently, all underdrained sports fields are classified as pollution generating impervious surfaces. Depending on the environmental context, this means that

stormwater discharge must be very specifically managed for quantity (meaning detention of some form is likely required), quality (meaning water quality pre-treatment is probably required) or both. For Magnuson Park specifically, the environmental context dictates that we treat and release to daylight, that is, no off-site discharge or discharge to the public utility is proposed. For the most part, this is a simplifying factor at this phase of the project process.

- **Building/Structural Review**

Light poles/ foundations and fencing (over 6') will require structural analysis, building permit, and special inspection of the foundation excavation, foundation placement, and pole erection for the lighting, and likely foundation excavation inspection for the fencing.

D. Other

- **Electrical**

Contractor provided through DCI & the State Department of Labor & Industries, although there are times that purveyor review of complex electrical systems is required. We recommend submittal to Seattle City Light prior to bid to avoid delays during the construction phase.

Part 3 Construction Cost Estimate

These costs include all Contractor markups and incidental construction costs as indicated, but exclude typical "soft" costs such as Development Project Management, Professional Design & Engineering Services, Topographical Survey, Geotechnical Exploration, other Specialty Services such as Wetland Biology, Traffic, Noise Abatement, etc., Permitting and Permit Fees, and Design, Bidding, and Construction Contingencies. The Department should apply their own "Capital Projects Multiplier" as appropriate.

A. Summary Preliminary Construction Cost Estimate Narrative

Site Preparation

The project as proposed indicates some phasing would be in order, so that adequate time is allowed for the physical work. This scope represents the initially phase.

CESC, Temporary Security & Facilities, Site Management \$50,000

Preliminary Excavation Bioremediation \$50,000

Earthwork, Import Fill & Pre-Load 25,000cy \$625,000

Earthwork Outhaul Pre-Load 10,000cy \$120,000

Subtotal Estimate \$845,000

Field

Surface all-synthetic turf, fully under-drained, with perimeter manual washwater system. Limited crowd control and ball control fencing and netting systems, with perimeter concrete curb. Field illustrated on the current plan includes a marked soccer field dimension of 225'x345' (12' clear), and Ultimate markings for two fields.

Cost Range \$15.25/sf

Area Shown 98,200sf

Subtotal Estimate \$1,497,550

Lighting

3 shared poles, 6 bases, 24 LED floodlights\equipment \$200,000

Relocate existing poles on new Bases \$20,000

Install New Shared Poles\Bases \$20,000

Trenching\Wiring\Conduit\Junction Boxes \$40,000

Lighting Controller \$10,000

Subtotal Estimate \$290,000

Construction Subtotal \$2,632,550

Contractor Markup (Ins., B&O, Bond, Admin., OH&P) 20% \$526,510

Field 12 Project Construction Cost Estimate \$3,159,060

B. Optional Scope Construction Cost Estimates

Contractor Markups included.

Field 5 Turf Replacement

Replace existing worn synthetic surface with current standard materials including removal/recycle of existing, preparation of existing aggregate foundation/base, installation of 25mm paved-in-place e-layer, supply & installation of 2.5" slit-film synthetic turf surface with granular cork infill.

Cost Range \$8.75/sf

Area Shown 116,025sf

Subtotal Estimate \$1,015,250

Field 7 Turf Replacement

Replace existing worn synthetic surface with current standard materials including removal/recycle of existing, preparation of existing aggregate foundation/base, installation of 25mm paved-in-place e-layer, supply & installation of 2.5" slit-film synthetic turf surface with granular cork infill.

Cost Range \$8.75/sf

Area Shown 98,200sf

Subtotal Estimate \$859,250

Field 6 Turf Replacement

Duplicates Field 7 Replacement above.

Cost Range \$8.75/sf

Area Shown 98,200sf

Subtotal Estimate \$859,250

Field 5 Lighting System Upgrade

Salvage of Existing Floodlights \$15,000
New LED Floodlights\Brackets\Controls \$200,000
Install LED Floodlights on Existing Poles \$50,000
Lighting Controller \$10,000

Subtotal Estimate \$275,000

Field 6 Lighting System Upgrade

Salvage of Existing Floodlights \$15,000
New LED Floodlights\Brackets\Controls \$160,000
Install LED Floodlights on Existing Poles \$50,000
Lighting Controller \$10,000

Subtotal Estimate \$235,000

Field 10 Improvements

Full development. Surface all-synthetic turf, fully under-drained, with perimeter manual washwater system. Limited crowd control and ball control fencing systems, with perimeter concrete curb. Field illustrated on the current plan includes a marked soccer field dimension of 195' x330' (12' clear), and Softball markings.

Cost Range \$18.00/sf

Area Shown 82,500sf

Subtotal Estimate \$1,485,000

Field 11 Improvements

Full development. Surface all-synthetic turf, fully under-drained, with perimeter manual washwater system. Limited crowd control and ball control fencing systems, with perimeter concrete curb. Field illustrated on the current plan includes a marked soccer field dimension of 195' x330' (12' clear), and Softball markings.

Cost Range \$18.00/sf

Area Shown 82,500sf

Subtotal Estimate \$1,485,000

End Notes:

¹ Throughout the Master Planning, EIS, and construction of the early Phases of the Magnuson Park development, the fields have had various numeric designations. Permit Drawings and as-builts for the existing surrounding fields dated January 2007 show “Field #1” to the north and “Field #3” to the east. The proposed new Field was designated Field #2 in those original documents.

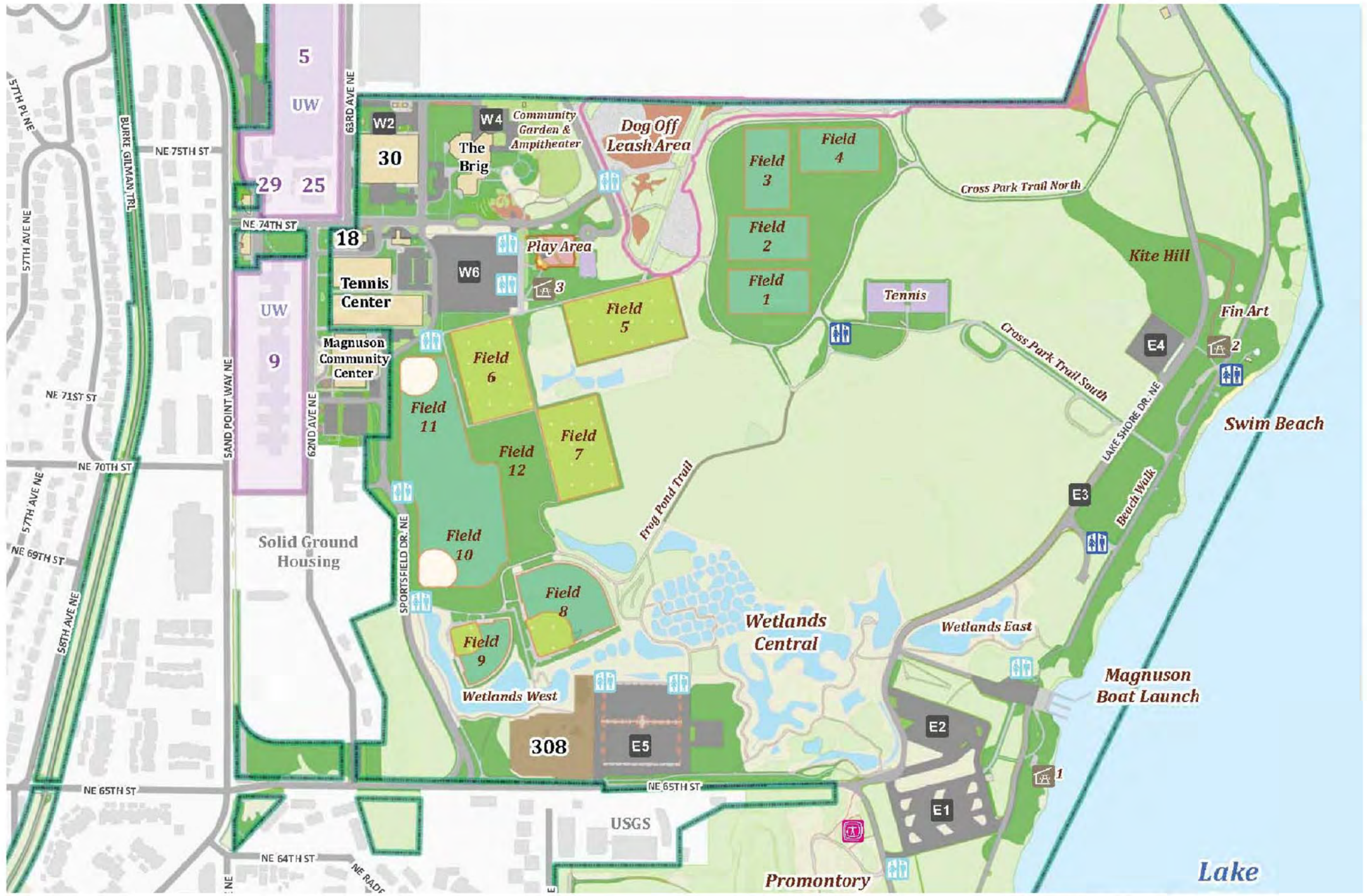
² <https://www.seattle.gov/Documents/Departments/ParksAndRecreation/Parks/Magnuson/MagnusonParkCampusMap.pdf> edited as Exhibit 1.

³ Assumed duplication of 2007 projects at Fields 6 and 7.

⁴ In 2015 SPR moved away from a standard 2.5” fiber, SBR crumb rubber infilled product in favor of a granular cork infilled product installed on a supplemental elastic pad. This would be the presumed basis-of-design for this project.

⁵ There was considerable discussion about the adequacy of this clearance, with the primary user group advocating strongly for field width over clearance. There have not been any reported injuries as a result of this layout, however this should be further verified through the Parks Recreation Information Office prior to final design.

⁶ FieldTurf “Prestige” slit-film, which is now marketed as the “XT” product line, was used throughout.



Athletic Fields portion of Warren G. Magnuson Park map ©2016 City of Seattle

REVISION	DATE
----------	------

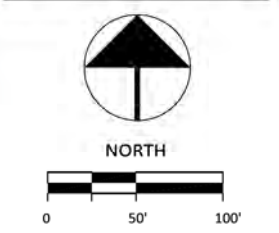
City of Seattle
Parks
& Recreation

Magnuson Park
Field 12

DA HOGAN
119 1st Avenue South, Suite 110
Seattle, Washington 98104
p. 206.285.0400
f. 206.285.0400

Stantec

**MAGNUSSON
KLEMENCIC
ASSOCIATES**
1301 Fifth Avenue, Suite 3200
Seattle, Washington 98101-2699
T: 206.292.1200 F: 206.292.1201



DATE	1-11-18
SCALE	NTS
DRAWN	CPW
CHECKED	EJG
COPYRIGHT © 2018 D.A. HOGAN & ASSOCIATES	

Campus Map

File: Exhibits.dwg Plotted by: EricG Date: 11-Jan-18 4:26:18pm



Portion of Warren G. Magnuson Park, aerial photograph ©2016 Google

REVISION	DATE

City of Seattle
Parks
& Recreation

Magnuson Park
Field 12


DA HOGAN
119 1st Avenue South, Suite 110
Seattle, Washington 98104
p: 206.285.0400
f: 206.285.0480


Stantec

**MAGNUSON
KLEMENCIC
ASSOCIATES**
Structural • Civil • Engineering
1301 Fifth Avenue, Suite 3200
Seattle, Washington 98101-2699
T: 206.292.1200 F: 206.292.1201


NORTH
0 50' 100'

DATE	1-11-18
SCALE	NTS
DRAWN	CPW
CHECKED	EJG
COPYRIGHT © 2018 D.A. HOGAN & ASSOCIATES	

Site Aerial Photo

SHEET

Exhibit 2



View north from the southwest corner of Field 6 showing the grade change from existign grade at Field 10 up to Field 6. Fields 10, 11, and 12 are currently on the same "plane" although they collectively slope at about 2% from the NW to the SE.



View to the southeast from the intersection of Fields 6 and 7 showing the existing Field 12 backstop. This is a very infrequently scheduled park amenity.



View east along the south edge of Field 6, toward Field 7, showing the grade relationship of these two existing fields. They are also on the same plane, although sloping collectively at 0.5% to the east.



Typical drainage infrastructure associated with Fields 6 and 7, this catch basin is actually a cleanout / control structure, from which the piped storm water is discharged to a created wetland.



View north along the west side of Field 7. The three shade trees at the bottom of the slope down to Field 12 (off to the left)

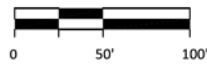


Typical Soccer Goal and Backstop configuration at Fields 6 and 7, as proposed for a new Field 12. The Soccer field markings are in white and the Ultimate field markings are in yellow.

REVISION	DATE
----------	------

City of Seattle
Parks
& Recreation

Magnuson Park
Field 12

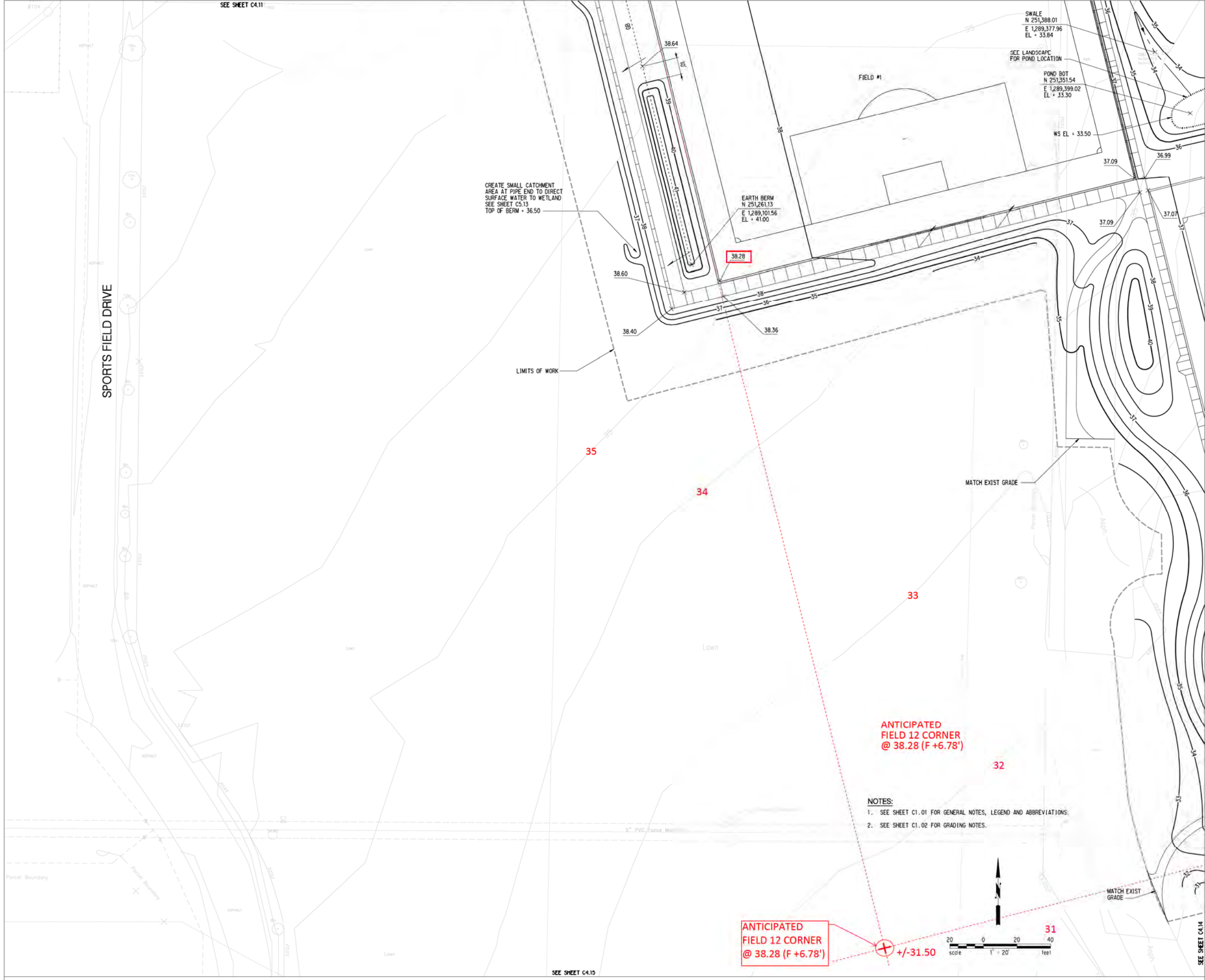


DATE	1-11-18
SCALE	NTS
DRAWN	CPW
CHECKED	EJG
COPYRIGHT © 2018 D.A. HOGAN & ASSOCIATES	

Site Photos

SHEET

Exhibit 3



>>>CAUTION<<<
CALL BEFORE YOU DIG!
NOT LESS THAN TWO OR MORE THAN TEN BUSINESS DAYS
PRIOR TO COMMENCING EXCAVATION OR DEMOLITION,
SECURE THE SERVICES OF A COMMERCIAL UNDERGROUND
UTILITIES LOCATOR SERVICE TO IDENTIFY BELOW-GROUND
IMPROVEMENTS THAT MAY NOT BE INDICATED ON THE
DRAWINGS. FOR IRRIGATION SYSTEMS, CALL SEATTLE
PARKS PLUMBING SHOP (206 684 7070)
>>800 424 5555<<

The Berger Partnership P8
Landscape Architecture
1721 8th Avenue N
Seattle, WA 98109
v 206.325.6877
f 206.323.6867
bergerpartnership.com

**MAGNUSON
KLEMENCIC
ASSOCIATES**
Structural + Civil Engineers
1301 Fifth Avenue, Suite 3200
Seattle Washington 98101-2699
T: 206 292 1200 F: 206 292 1201
www.mka.com

THESE RECORD DRAWINGS
HAVE BEEN PREPARED IN PART,
ON THE BASIS OF INFORMATION
FURNISHED BY OTHERS.

PROJECT TEAM:
• The Berger Partnership - Landscape Architects (Prime Consultant)
• Sheldon & Associates - Wetlands Consultant
• D.A. Hogan & Associates - Athletic Fields Consultant
• Magnuson Klemencic Associates - Civil Engineers
• Spiering Electrical - Electrical Consultants

NO.	REVISION - AS BUILT	DATE
3		
2		
1		

REVIEWED: PARK ENGINEER DATE

All work done in accordance with the City of Seattle Standard
Plans and Specifications in effect on the date shown above, and
supplemented by Seattle Provisions.

**NOTE ALL RED MARKUP
IS FIELD 12 SPECIFIC**

**SEATTLE PARKS
AND RECREATION**

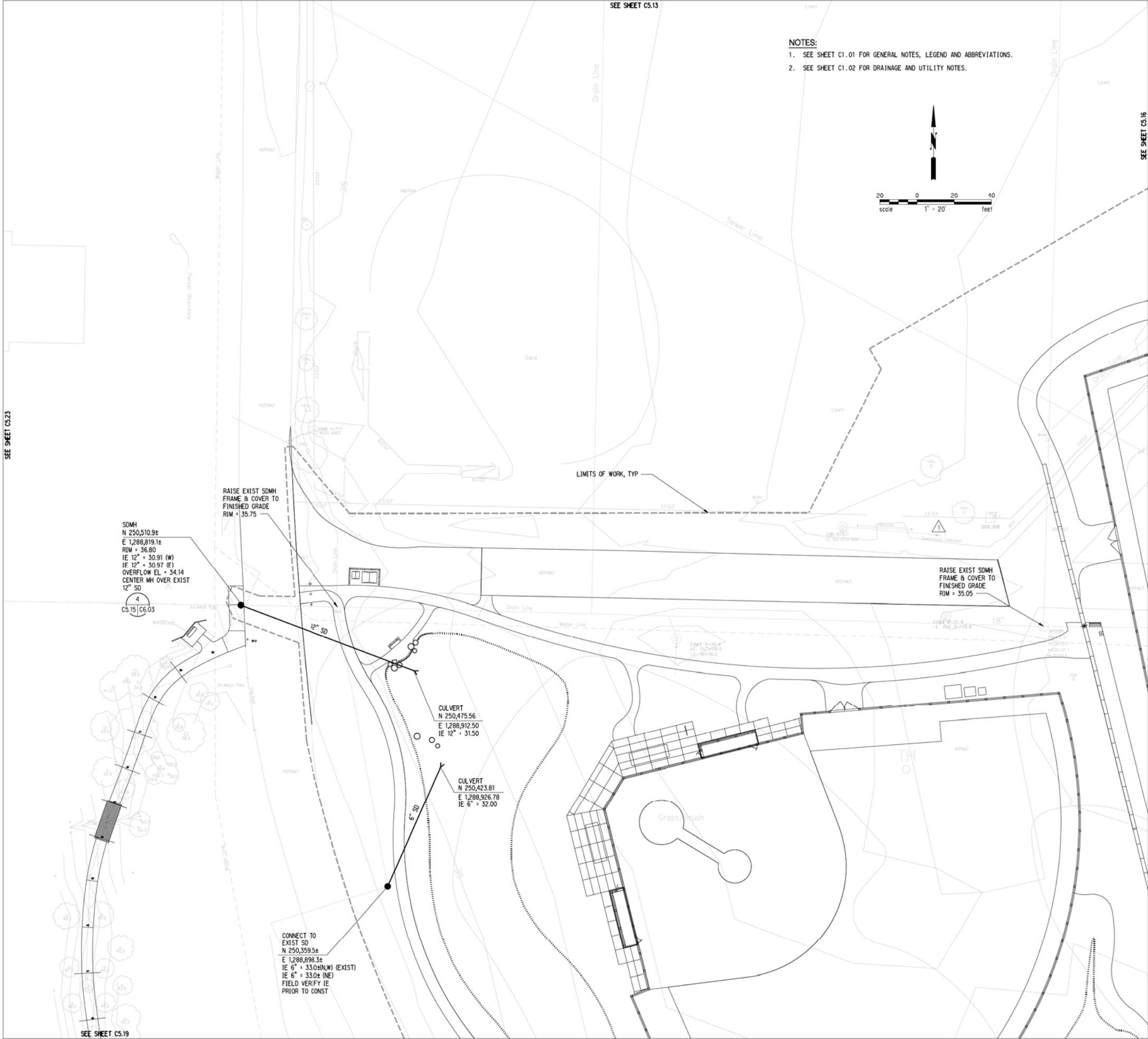
**MAGNUSON PARK
PHASE II**

RECORD DRAWINGS

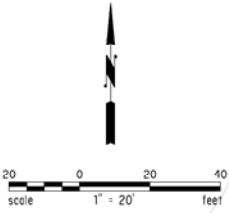
GRADING PLAN

DESIGNED	SEH, SDH	DATE	6/18/2010
DRAWN	BMR, EPB	SHEET	OF
CHECKED	DAG, SDH		
ORDINANCE NO.	SEE COVER SHEET		
CONTRACT NO.	1745		
SCALE			

C4.13



- NOTES:
1. SEE SHEET C1.01 FOR GENERAL NOTES, LEGEND AND ABBREVIATIONS.
 2. SEE SHEET C1.02 FOR DRAINAGE AND UTILITY NOTES.



>>>>CAUTION<<<<
CALL BEFORE YOU DIG!
NOT LESS THAN TWO OR MORE THAN TEN BUSINESS DAYS
PRIOR TO COMMENCING EXCAVATION OR DEMOLITION,
SECURE THE SERVICES OF A COMMERCIAL UNDERGROUND
UTILITIES LOCATOR SERVICE TO IDENTIFY BELOW-GROUND
IMPROVEMENTS THAT MAY NOT BE INCORPORATED ON THE
DRAWINGS. FOR IRRIGATION SYSTEMS, CALL SEATTLE
PARKS PLUMBING SHOP (206 684 7070)
>>800 424 5555<<

 **The Berger Partnership PS**
Landscape Architecture
1721 8th Avenue N
Seattle, WA 98109
v 206.325.6877
f 206.323.6867
bergerpartnership.com

 **MAGNUSSON
KLEMENCIC
ASSOCIATES**
Structural + Civil Engineers
1301 Fifth Avenue, Suite 3200
Seattle Washington 98101-2699
T: 206 292 1200 F: 206 292 1201
www.mka.com

THESE RECORD DRAWINGS
HAVE BEEN PREPARED IN PART,
ON THE BASIS OF INFORMATION
FURNISHED BY OTHERS.

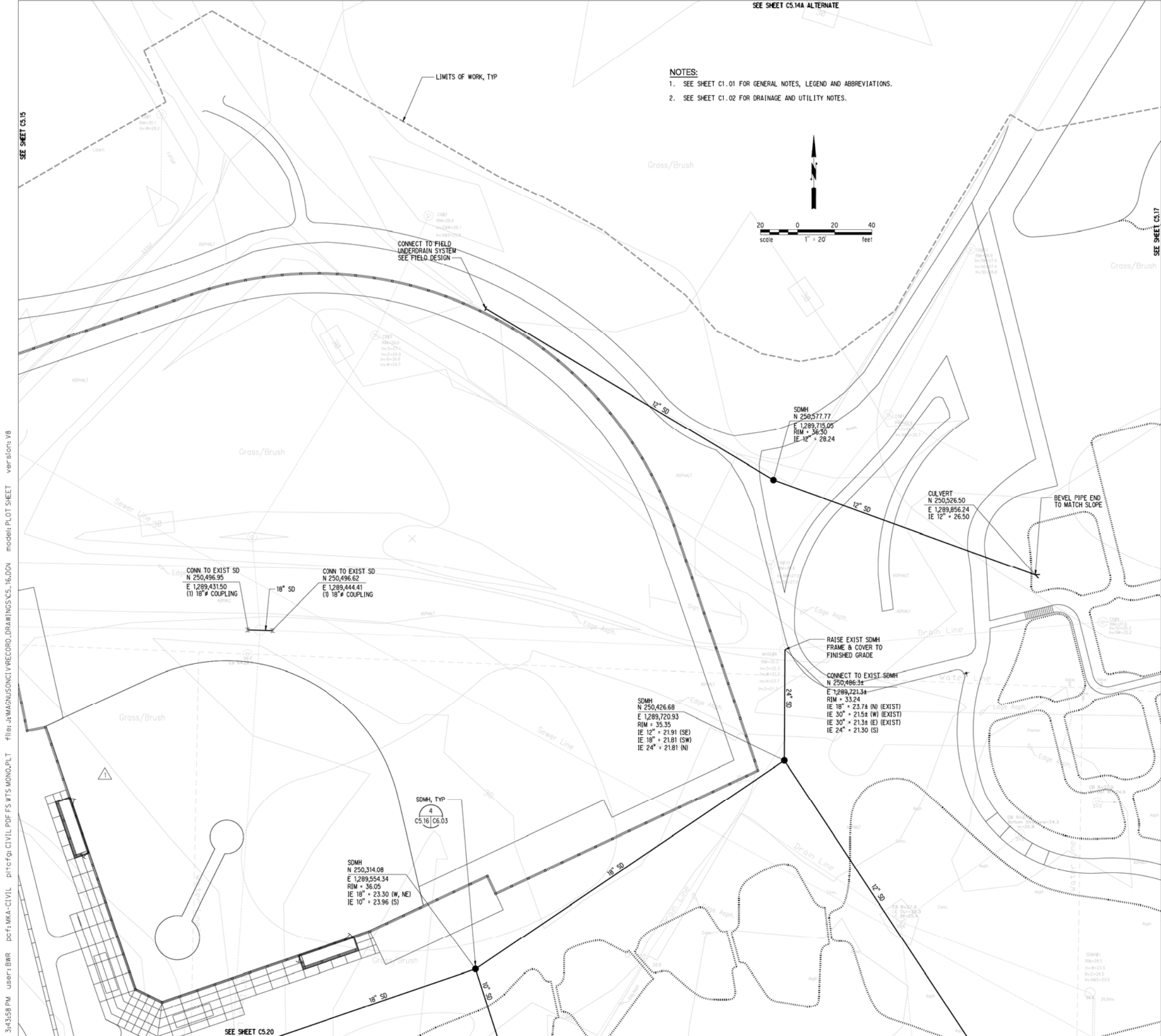
PROJECT TEAM:
• The Berger Partnership - Landscape Architects (Prime Consultant)
• Sheldon & Associates - Wetlands Consultant
• D.A. Hogan & Associates - Athletic Fields Consultant
• Magnusson Klemencic Associates - Civil Engineers
• Spiering Electrical - Electrical Consultants

3		
2		
1	WATER AND PARKING LOT DRAINAGE	7/17/08
NO.	REVISION - AS BUILT	DATE

REVIEWED: PARK ENGINEER DATE
All work done in accordance with the City of Seattle Standard
Plans and Specifications in effect on the date shown above, and
supplemented by Special Provisions.



MAGNUSON PARK PHASE II	
RECORD DRAWINGS	
STORM DRAIN AND UTILITIES PLAN	
DESIGNED <u>SEH, SDH</u>	DATE <u>6/18/2010</u>
DRAWN <u>BMR, EPD</u>	SHEET _____ OF _____
CHECKED <u>DAG, SDH</u>	
ORDINANCE NO. <u>SEE COVER SHEET</u>	
CONTRACT NO. <u>1744</u>	
SCALE _____	C5.15



>>>>CAUTION<<<<
CALL BEFORE YOU DIG!
NOT LESS THAN TWO OR MORE THAN TEN BUSINESS DAYS
PRIOR TO COMMENCING EXCAVATION OR DEMOLITION,
SECURE THE SERVICES OF A COMMERCIAL UNDERGROUND
UTILITIES LOCATOR SERVICE TO IDENTIFY BELOW-GROUND
IMPROVEMENTS THAT MAY NOT BE INDICATED ON THE
DRAWINGS. FOR IRRIGATION SYSTEMS, CALL SEATTLE
PARKS PLUMBING SHOP (206 684 7070)
>>800 424 5555<<

The Berger Partnership PS
Landscape Architecture
1721 8th Avenue N
Seattle, WA 98109
v 206.325.6877
f 206.323.6867
bergerpartnership.com

**MAGNUSSON
KLEMENCIC
ASSOCIATES**
Structural + Civil Engineers
1301 Fifth Avenue, Suite 3200
Seattle Washington 98101-2699
T: 206 292 1200 F: 206 292 1201
www.mka.com

THESE RECORD DRAWINGS
HAVE BEEN PREPARED IN PART,
ON THE BASIS OF INFORMATION
FURNISHED BY OTHERS.

PROJECT TEAM:
• The Berger Partnership - Landscape Architects (Prime Consultant)
• Sheldon & Associates - Wetlands Consultant
• D.A. Hogan & Associates - Athletic Fields Consultant
• Magnusson Klemencic Associates - Civil Engineers
• Spiering Electrical - Electrical Consultants

3		
2		
1	WATER AND PARKING LOT DRAINAGE	7/17/08
NO.	REVISION - AS BUILT	DATE

REVIEWED: _____ **DATE:** _____
PARK ENGINEER
All work done in accordance with the City of Seattle Standard
Plans and Specifications in effect on the date shown above, and
supplemented by Special Provisions.



**MAGNUSON PARK
PHASE II**
RECORD DRAWINGS
**STORM DRAIN AND
UTILITIES PLAN**

DESIGNED	SEH, SDH	DATE	6/18/2010
DRAWN	BWR, EPG		
CHECKED	DAG, SDH	SHEET	OF
ORDINANCE NO.	SEE COVER SHEET		
CONTRACT NO.	1745		
SCALE			

C5.16

**>>>>CAUTION<<<<
CALL BEFORE YOU DIG!**

NOT LESS THAN TWO OR MORE THAN TEN BUSINESS DAYS
PRIOR TO COMMENCING EXCAVATION OR DEMOLITION,
SECURE THE SERVICES OF A COMMERCIAL UNDERGROUND
UTILITIES LOCATOR SERVICE TO IDENTIFY BELOW-GROUND
IMPROVEMENTS THAT MAY NOT BE INDICATED ON THE
DRAWINGS. FOR IRRIGATION SYSTEMS, CALL SEATTLE
PARKS PLUMBING SHOP (206 684 7070)

>>800 424 5555<<

The Berger Partnership PS
Landscape Architecture
1721 8th Avenue N
Seattle, WA 98109
v 206.325.6877
f 206.323.6867
bergerpartnership.com

DA HOGAN
119 1st Avenue South, Suite 110 Phone (206) 285-0402
Seattle, Washington 98104 Fax (206) 285-0400



THESE RECORD DRAWINGS ARE REFLECTIVE
OF CONTRACTOR-PROVIDED
DOCUMENTATION OF REVISIONS. THESE
RECORD DRAWINGS ARE NOT A SURVEY.
GRADING AND SITE ELEMENT LOCATIONS
ARE APPROXIMATE REPRESENTATIONS OF
AS-BUILT CONDITIONS.

PROJECT TEAM:

• The Berger Partnership - Landscape Architects (Prime Consultant)
• Sheldahl & Associates - Wetlands Consultant (OTAK)
• D.A. Hogan & Associates - Arsitek/Fields Consultant
• Magnusson Klemencic Associates - Civil Engineers
• Spelling - Electrical Consultants

3		
2		
1		
NO.	REVISION - AS BUILT	DATE

REVIEWED: PARK ENGINEER DATE

All work done in accordance with the City of Seattle Standard
Plans and Specifications in effect on the date shown above, and
supplemented by Special Provisions.

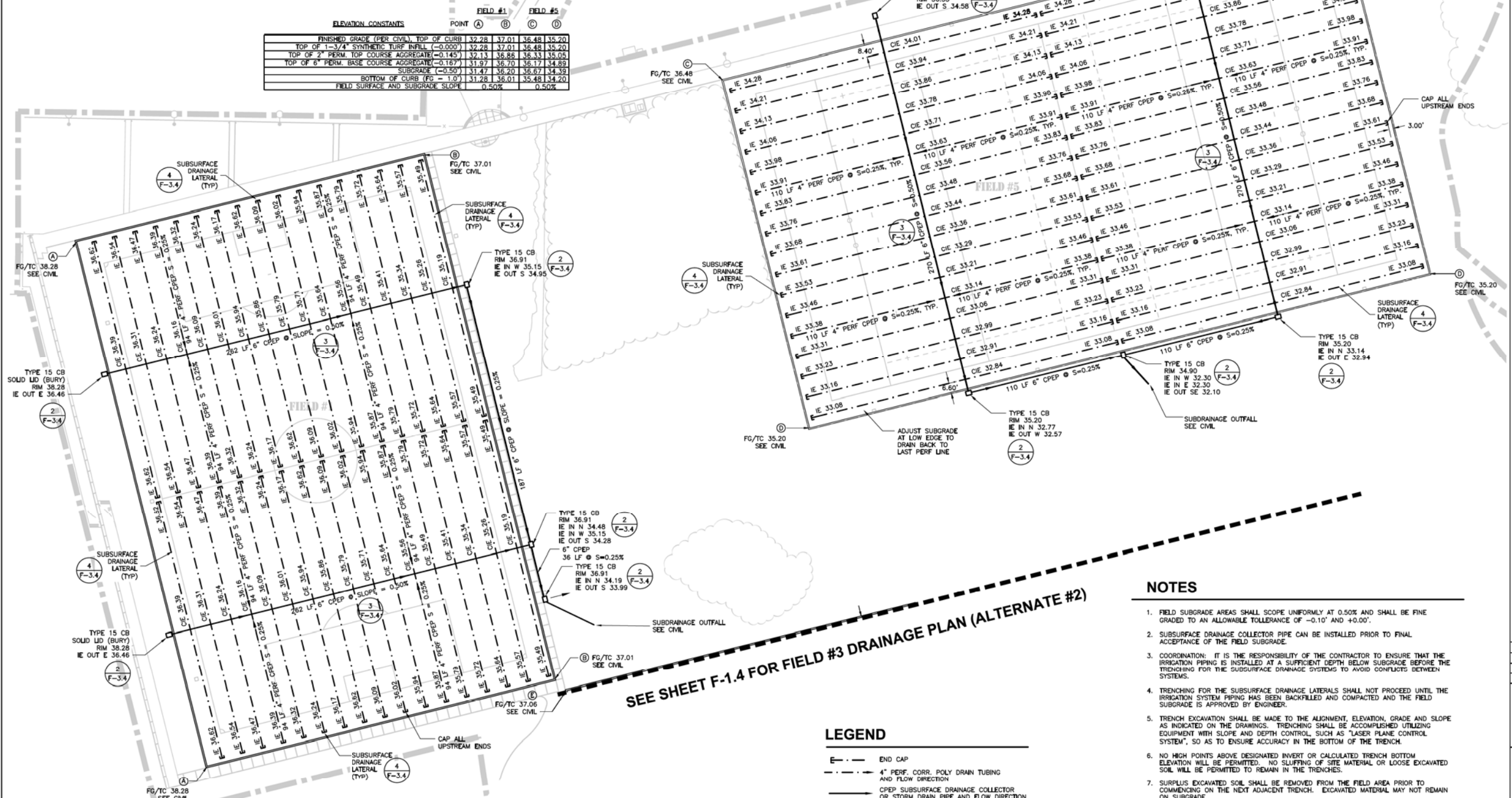


**MAGNUSON PARK
PHASE II**

RECORD DRAWINGS

**NORTH FIELDS
GRADING & DRAINAGE**

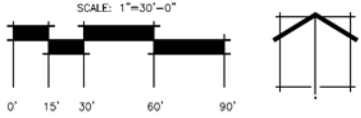
DESIGNED DA/EG	DATE 08.08.10
DRAWN EG	SHEET OF
CHECKED DA	
ORDINANCE NO. See Cover sheet	F-1.2
CONTRACT NO. 3744	
SCALE	



SEE SHEET F-1.4 FOR FIELD #3 DRAINAGE PLAN (ALTERNATE #2)

LEGEND

- END CAP
- 4\"/>
- CPEP SUBSURFACE DRAINAGE COLLECTOR OR STORM DRAIN PIPE AND FLOW DIRECTION
- COS PARKS STD. 02720.58 TYPE 15 CATCH BASIN
- COS PARKS STD. 02720.59 TYPE 241 CATCH BASIN
- COS PARKS STD. 02720.60 TYPE 242 CATCH BASIN
- SLOPE
- INVERT ELEVATION
- COLLECTOR INVERT ELEVATION



NOTES

- FIELD SUBGRADE AREAS SHALL SCOPE UNIFORMLY AT 0.50% AND SHALL BE FINE GRADED TO AN ALLOWABLE TOLERANCE OF -0.10' AND +0.00'.
- SUBSURFACE DRAINAGE COLLECTOR PIPE CAN BE INSTALLED PRIOR TO FINAL ACCEPTANCE OF THE FIELD SUBGRADE.
- COORDINATION: IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT THE IRRIGATION PIPING IS INSTALLED AT A SUFFICIENT DEPTH BELOW SUBGRADE BEFORE THE TRENCHING FOR THE SUBSURFACE DRAINAGE SYSTEMS TO AVOID CONFLICTS BETWEEN SYSTEMS.
- TRENCHING FOR THE SUBSURFACE DRAINAGE LATERALS SHALL NOT PROCEED UNTIL THE IRRIGATION SYSTEM PIPING HAS BEEN BACKFILLED AND COMPACTED AND THE FIELD SUBGRADE IS APPROVED BY ENGINEER.
- TRENCH EXCAVATION SHALL BE MADE TO THE ALIGNMENT, ELEVATION, GRADE AND SLOPE AS INDICATED ON THE DRAWINGS. TRENCHING SHALL BE ACCOMPLISHED UTILIZING EQUIPMENT WITH SLOPE AND DEPTH CONTROL, SUCH AS "LASER PLANE CONTROL SYSTEM", SO AS TO ENSURE ACCURACY IN THE BOTTOM OF THE TRENCH.
- NO HIGH POINTS ABOVE DESIGNATED INVERT OR CALCULATED TRENCH BOTTOM ELEVATION WILL BE PERMITTED. NO SLUFFING OF SITE MATERIAL OR LOOSE EXCAVATED SOIL WILL BE PERMITTED TO REMAIN IN THE TRENCHES.
- SURPLUS EXCAVATED SOIL SHALL BE REMOVED FROM THE FIELD AREA PRIOR TO COMMENCING ON THE NEXT ADJACENT TRENCH. EXCAVATED MATERIAL MAY NOT REMAIN ON SUBGRADE.
- PROVIDE A SMOOTH, EVEN SUBGRADE AFTER REMOVAL OF THE TRENCH MATERIAL SUBGRADE. LEAVE NO LOOSE MATERIAL ON THE SUBGRADE.
- EXCAVATION BELOW INVERT GRADE MUST BE ESTABLISHED TO A DEPTH SO AS TO PROVIDE FOR SPECIFIED TRACK-GRADIENT OF PEA GRAVEL BEDDING AT BOTTOM OF PIPE ELEVATION PRIOR TO LAYING THE PERFORATED PIPE.
- NO FOREIGN MATERIAL WILL BE PERMITTED INSIDE, ALONGSIDE, UNDER, OR ON TOP OF THE PERFORATED DRAIN PIPE.
- THE BACKFILL FOR ALL PERFORATED PIPE SHALL BE CLEAN WASHED PEA GRAVEL. REFER TO THE SPECIFICATIONS FOR THE GRADATION REQUIREMENTS.
- ALL TRENCHES TO HAVE BACKFILL MATERIAL "CROWNED" A MINIMUM OF 2" ABOVE SUBGRADE TO PROTECT FROM FOREIGN MATERIAL AND PROVIDE FOR EASE OF LOCATION IDENTIFICATION. CROWNS WITH FOREIGN MATERIAL CONTAMINATION SHALL BE REMOVED PRIOR TO PLACEMENT OF BASE.
- DURING PLACEMENT OF SPECIFIED TRENCH BACKFILL, PIPE MUST BE HELD IN PLACE TO PREVENT DISPLACEMENT AND PROVIDE FOR ACHIEVING SPECIFIED INVERT ELEVATION. DO NOT DAMAGE PIPE OR ALLOW PIPE TO BE DISPLACED BY PLACEMENT OF BACKFILL MATERIAL.
- CAP THE ENDS OF ALL LATERAL RUNS. ALL OPEN ENDS DURING CONSTRUCTION ARE TO BE TEMPORARILY CAPPED OR PLUGGED.
- CONNECTION OF LATERALS TO COLLECTOR DRAINS SHALL BE MADE WITH A COMBINATION REDUCING TEE AND REDUCING SADDLE TEE.
- NO TRUCKS OR EQUIPMENT WILL BE ALLOWED TO DRIVE OVER THE TOP OF THE TRENCHES EXCEPT TRACK-EQUIPPED MACHINERY UTILIZED IN SPREADING INVERTED SAND MATERIALS. BACKFILLED TRENCHES ARE TO BE STAKED AND FLAGGED 3' ABOVE GRADE AT MAXIMUM 30' SPACING FOR IDENTITY.
- COORDINATE SUBSURFACE DRAINAGE COLLECTOR LOCATION TO AVOID FENCE POST LOCATIONS.

>>>>CAUTION<<<<
CALL BEFORE YOU DIG!

NOT LESS THAN TWO OR MORE THAN TEN BUSINESS DAYS
PRIOR TO COMMENCING EXCAVATION OR DEMOLITION.
SECURE THE SERVICES OF A COMMERCIAL UNDERGROUND
UTILITIES LOCATOR SERVICE TO IDENTIFY BELOW-GROUND
IMPROVEMENTS THAT MAY NOT BE INDICATED ON THE
DRAWINGS. FOR IRRIGATION SYSTEMS, CALL SEATTLE
PARKS PLUMBING SHOP (206 684 7070)

>>800 424 5555<<



The Berger Partnership PS
Landscape Architecture
1721 8th Avenue N
Seattle, WA 98109
v 206.325.6877
f 206.323.6867
bergerpartnership.com



DA HOGAN
119 1st Avenue South, Suite 110 Phone (206) 285-0400
Seattle, Washington 98104 Fax (206) 285-0400



EXPIRES 6/7/08

THESE RECORD DRAWINGS ARE REFLECTIVE
OF CONTRACTOR-PROVIDED
DOCUMENTATION OF REVISIONS. THESE
RECORD DRAWINGS ARE NOT A SURVEY.
GRADING AND SITE ELEMENT LOCATIONS
ARE APPROXIMATE REPRESENTATIONS OF
AS-BUILT CONDITIONS.

PROJECT TEAM:

- The Berger Partnership - Landscape Architects (Prime Consultant)
- Sheldon & Associates - Wetlands Consultant (OTAK)
- D.A. Hogan & Associates - Architect/Fields Consultant
- Magnusson Klemencic Associates - Civil Engineers
- Spelling - Electrical Consultants

3		
2		
1		
NO.	REVISION - AS BUILT	DATE

REVIEWED: PARK ENGINEER DATE

All work done in accordance with the City of Seattle Standard
Plans and Specifications in effect on the date shown above, and
supplemented by Special Provisions.

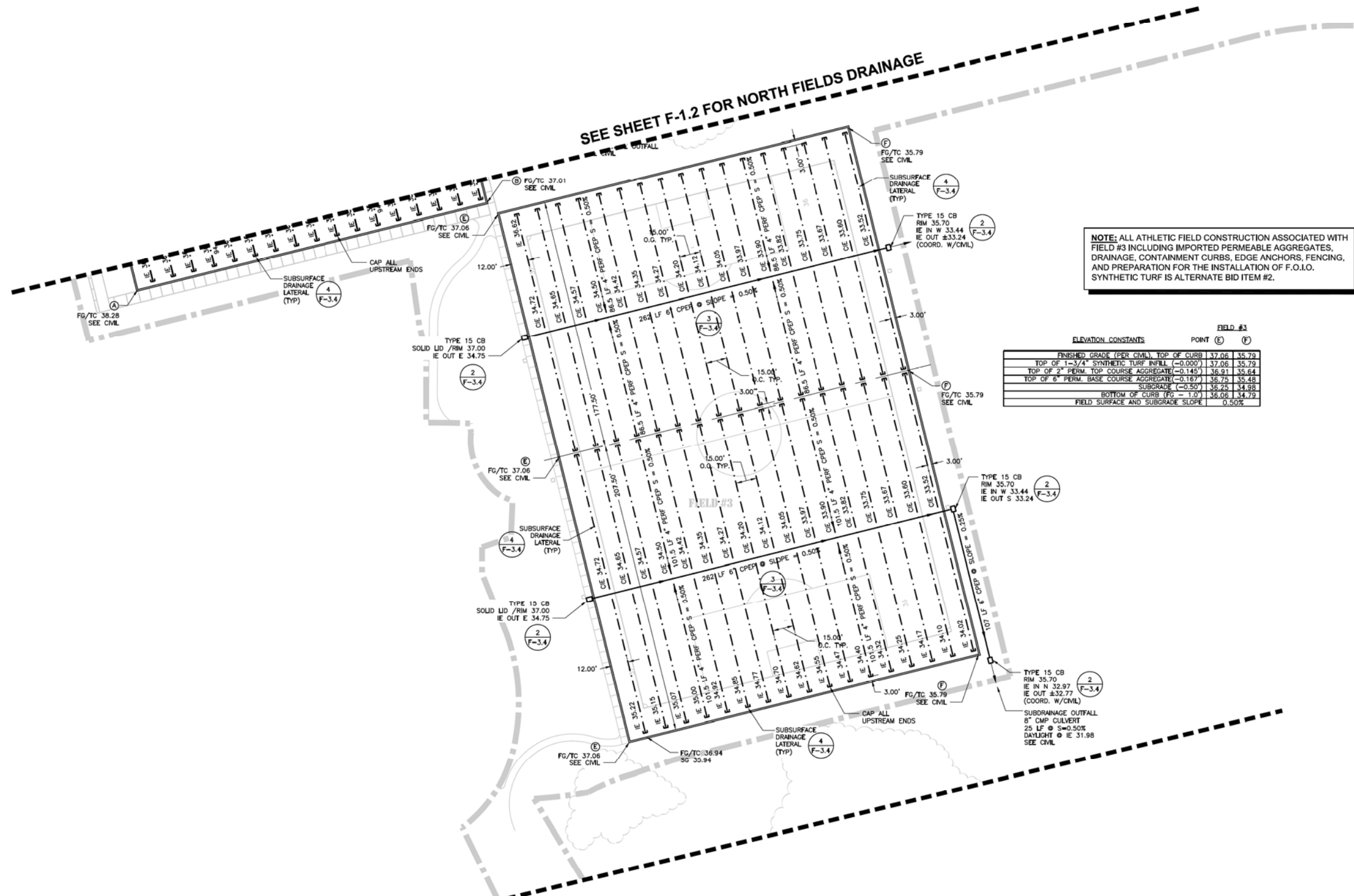


MAGNUSON PARK
PHASE II

RECORD DRAWINGS

FIELD #3 GRADING & DRAINAGE
(ALTERNATE #2)

DESIGNED	DA/EG	DATE	08.06.10
DRAWN	EG	SHEET	OF
CHECKED	DA		
ORDINANCE NO.	See Cover sheet		
CONTRACT NO.	3744		
SCALE			



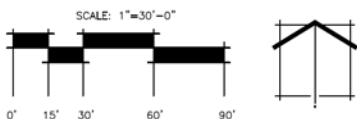
ELEVATION CONSTANTS		POINT	(E)	(F)
FINISHED GRADE (PER CIVIL), TOP OF CURB				
TOP OF 1-3/4" SYNTHETIC TURF INFILL (-0.000')				
TOP OF 2" PERM. TOP COURSE AGGREGATE (-0.145')				
TOP OF 6" PERM. BASE COURSE AGGREGATE (-0.167')				
SUBGRADE (-0.50')				
BOTTOM OF CURB (FG - 1.0')				
FIELD SURFACE AND SUBGRADE SLOPE				

NOTES

1. FIELD SUBGRADE AREAS SHALL SLOPE UNIFORMLY AT 0.50% AND SHALL BE FINE GRADED TO AN ALLOWABLE TOLERANCE OF $\pm 0.10'$ AND $\pm 0.00'$.
2. SUBSURFACE DRAINAGE COLLECTOR PIPE CAN BE INSTALLED PRIOR TO FINAL ACCEPTANCE OF THE FIELD SUBGRADE.
3. COORDINATION: IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT THE IRRIGATION PIPING IS INSTALLED AT A SUFFICIENT DEPTH BELOW SUBGRADE BEFORE THE TRENCHING FOR THE SUBSURFACE DRAINAGE SYSTEMS TO AVOID CONFLICTS BETWEEN SYSTEMS.
4. TRENCHING FOR THE SUBSURFACE DRAINAGE LATERALS SHALL NOT PROCEED UNTIL THE IRRIGATION SYSTEM PIPING HAS BEEN BACKFILLED AND COMPACTED AND THE FIELD SUBGRADE IS APPROVED BY ENGINEER.
5. TRENCH EXCAVATION SHALL BE MADE TO THE ALIGNMENT, ELEVATION, GRADE AND SLOPE AS INDICATED ON THE DRAWINGS. TRENCHING SHALL BE ACCOMPISHED UTILIZING EQUIPMENT WITH SLOPE AND DEPTH CONTROL SUCH AS "LASER PLANE CONTROL SYSTEM", SO AS TO ENSURE ACCURACY IN THE BOTTOM OF THE TRENCH.
6. NO HIGH POINTS ABOVE DESIGNATED INVERT OR CALCULATED TRENCH BOTTOM ELEVATION WILL BE PERMITTED. NO SLUFFING OF SITE MATERIAL OR LOOSE EXCAVATED SOIL WILL BE PERMITTED TO REMAIN IN THE TRENCHES.
7. SURPLUS EXCAVATED SOIL SHALL BE REMOVED FROM THE FIELD AREA PRIOR TO COMMENCING ON THE NEXT ADJACENT TRENCH. EXCAVATED MATERIAL MAY NOT REMAIN ON SUBGRADE.
8. PROVIDE A SMOOTH, EVEN SUBGRADE AFTER REMOVAL OF THE TRENCH MATERIAL. SUBGRADE. LEAVE NO LOOSE MATERIAL ON THE SUBGRADE.
9. EXCAVATION BELOW INVERT GRADE MUST BE ESTABLISHED TO A DEPTH SO AS TO PROVIDE FOR SPECIFIED PLACEMENT OF PEA GRAVEL BEDDING AT BOTTOM OF PIPE ELEVATION PRIOR TO LAYING THE PERFORATED PIPE.
10. NO FOREIGN MATERIAL WILL BE PERMITTED INSIDE, ALONGSIDE, UNDER, OR ON TOP OF THE PERFORATED DRAIN PIPE.
11. THE BACKFILL FOR ALL PERFORATED PIPE SHALL BE CLEAN WASHED PEA GRAVEL. REFER TO THE SPECIFICATIONS FOR THE GRADATION REQUIREMENTS.
12. ALL TRENCHES TO HAVE BACKFILL MATERIAL "CROWNED" A MINIMUM OF 2" ABOVE SUBGRADE TO PROTECT FROM FOREIGN MATERIAL AND PROVIDE FOR EASE OF LOCATION IDENTIFICATION. CROWNS WITH FOREIGN MATERIAL CONTAMINATION SHALL BE REMOVED PRIOR TO PLACEMENT OF BASE.
13. DURING PLACEMENT OF SPECIFIED TRENCH BACKFILL PIPE MUST BE HELD IN PLACE TO PREVENT DISPLACEMENT AND PROVIDE FOR ACHIEVING SPECIFIED INVERT ELEVATION. DO NOT DAMAGE PIPE OR ALLOW PIPE TO BE DISPLACED BY PLACEMENT OF BACKFILL MATERIAL.
14. CAP THE ENDS OF ALL LATERAL RUNS. ALL OPEN ENDS DURING CONSTRUCTION ARE TO BE TEMPORARILY CAPPED OR PLUGGED.
15. CONNECTION OF LATERALS TO COLLECTOR DRAINS SHALL BE MADE WITH A COMBINATION REDUCING TEE AND REDUCING SADDLE TEE.
16. NO TRUCKS OR EQUIPMENT WILL BE ALLOWED TO DRIVE OVER THE TOP OF THE TRENCHES EXCEPT TRACK-EQUIPPED MACHINERY UTILIZED IN SPREADING IMPORTED SAND MATERIALS. BACKFILLED TRENCHES ARE TO BE STAKED AND FLAGGED 3' ABOVE GRADE AT MAXIMUM 30' SPACING FOR IDENTITY.
17. COORDINATE SUBSURFACE DRAINAGE COLLECTOR LOCATION TO AVOID FENCE POST LOCATIONS.

LEGEND

- END CAP
- 4" PERF. CORR. POLY DRAIN TUBING AND FLOW DIRECTION
- CPEP SUBSURFACE DRAINAGE COLLECTOR OR STORM DRAIN PIPE AND FLOW DIRECTION
- COS PARKS STD. 02720.58 TYPE 15 CATCH BASIN
- COS PARKS STD. 02720.59 TYPE 241 CATCH BASIN
- COS PARKS STD. 02720.60 TYPE 242 CATCH BASIN
- SLOPE
- INVERT ELEVATION
- COLLECTOR INVERT ELEVATION



>>>>CAUTION<<<<

CALL BEFORE YOU DIG!

NOT LESS THAN TWO OR MORE THAN TEN BUSINESS DAYS
PRIOR TO COMMENCING EXCAVATION OR DEMOLITION.
SECURE THE SERVICES OF A COMMERCIAL UNDERGROUND
UTILITIES LOCATOR SERVICE TO IDENTIFY BELOW-GROUND
IMPROVEMENTS THAT MAY NOT BE INDICATED ON THE
DRAWINGS. FOR IRRIGATION SYSTEMS, CALL SEATTLE
PARKS PLUMBING SHOP (206 684 7070)

>>800 424 5555<<



The Berger Partnership PS
Landscape Architecture
1721 8th Avenue N
Seattle, WA 98109
v 206.325.6877
f 206.323.6867
bergerpartnership.com



DA HOGAN
115 1st Avenue South, Suite 110 Phone (206) 285-0400
Seattle, Washington 98104 Fax (206) 285-0480



THESE RECORD DRAWINGS ARE REFLECTIVE
OF CONTRACTOR-PROVIDED
DOCUMENTATION OF REVISIONS. THESE
RECORD DRAWINGS ARE NOT A SURVEY.
GRADING AND SITE ELEMENT LOCATIONS
ARE APPROXIMATE REPRESENTATIONS OF
AS-BUILT CONDITIONS.

PROJECT TEAM:

• The Berger Partnership - Landscape Architects (Prime Consultant)
• Sheldon & Associates - Wetlands Consultant (OTAK)
• D.A. Hogan & Associates - Aesthetic Fields Consultant
• Magnuson Klemencic Associates - Civil Engineers
• Spirling - Electrical Consultants

3		
2		
1		
NO.	REVISION - AS BUILT	DATE

REVIEWED: PARK ENGINEER DATE

All work done in accordance with the City of Seattle Standard
Plans and Specifications in effect on the date shown above, and
supplemented by Special Provisions.



MAGNUSON PARK
PHASE II

RECORD DRAWINGS

BASEBALL FIELDS
GRADING & DRAINAGE

DESIGNED	DA/EG	DATE	08.06.10
DRAWN	EG		
CHECKED	DA	SHEET	OF
ORDINANCE NO.	See Cover sheet		
CONTRACT NO.	3744		
SCALE			

F-2.2

SEE SHEET F-1.4 FOR FIELD #3 DRAINAGE

FIELD #9 SUBDRAINAGE PIPE DATA
4" PERFORATED CPEP
(9R AND 9L PIPE MIRROR ALONG THE COLLECTOR)

PIPE NUMBER	COLLECTOR	IE @	IE @	LENGTH	SLOPE	CAP IE
9R-1	9L-1	33.30	-	187 LF	0.50%	32.77
9R-2	9L-2	33.38	-	71 LF	0.50%	31.72
9R-3	9L-3	33.45	-	102 LF	0.50%	31.86
9R-4	9L-4	33.53	-	129 LF	0.50%	32.14
9R-5	9L-5	33.60	-	147 LF	0.50%	32.31
9R-6	9L-6	33.68	-	162 LF	0.50%	32.45
9R-7	9L-7	33.75	-	154 LF	0.50%	32.61
9R-8	9L-8	33.82	-	143 LF	0.50%	32.75
9R-9	9L-9	33.84	35.14	133 LF	0.50%	35.80
9R-10	9L-10	33.88	35.19	122 LF	0.50%	35.80
9R-11	9L-11	33.92	35.25	111 LF	0.50%	35.80
9R-12	9L-12	33.96	35.30	100 LF	0.50%	35.80
9R-13	9L-13	34.00	35.42	77 LF	0.50%	35.80
9R-14	9L-14	34.04	35.49	62 LF	0.50%	35.80
9R-15	9L-15	34.08	35.57	47 LF	0.50%	35.80
9R-16	9L-16	34.12	35.64	32 LF	0.50%	35.80
9R-17	9L-17	34.16	35.72	17 LF	0.50%	35.80

*NO VALUE INDICATES A CROSS-TEE CONNECTION AT THE
COLLECTOR INVERT, TYPICALLY WHERE CONNECTION IS MADE IN THE
OUTFIELD.

FIELD #6 SUBDRAINAGE PIPE DATA
4" PERFORATED CPEP

PIPE NUMBER	COLLECTOR	IE @	IE @	LENGTH	SLOPE	CAP IE
6R-1	6L-1	31.31	-	222 LF	0.75%	33.41
6R-2	6L-2	31.38	-	68 LF	0.50%	31.72
6R-3	6L-3	31.46	-	100 LF	0.50%	31.98
6R-4	6L-4	31.53	-	122 LF	0.50%	32.14
6R-5	6L-5	31.61	-	139 LF	0.50%	32.31
6R-6	6L-6	31.68	-	154 LF	0.50%	32.45
6R-7	6L-7	31.76	-	169 LF	0.50%	32.61
6R-8	6L-8	31.83	-	184 LF	0.50%	32.75
6R-9	6L-9	31.91	-	199 LF	0.50%	32.91
6R-10	6L-10	31.98	-	214 LF	0.50%	33.05
6R-11	6L-11	32.06	-	229 LF	0.50%	33.21
6R-12	6L-12	32.13	-	248 LF	0.50%	33.27
6R-13	6L-13	32.21	-	218 LF	0.50%	33.29
6R-14	6L-14	32.28	-	204 LF	0.50%	33.30
6R-15	6L-15	32.34	33.73	180 LF	0.50%	34.63
6R-16	6L-16	32.38	33.91	177 LF	0.50%	34.80
6R-17	6L-17	32.42	34.26	167 LF	0.50%	35.10
6R-18	6L-18	32.46	34.63	155 LF	0.50%	35.40
6R-19	6L-19	32.50	35.15	145 LF	0.50%	35.88
6R-20	6L-20	32.54	35.56	135 LF	0.50%	36.24
6R-21	6L-21	32.58	35.62	110 LF	0.50%	36.15
6R-22	6L-22	32.62	35.68	95 LF	0.50%	36.15
6R-23	6L-23	32.66	35.75	80 LF	0.50%	36.15
6R-24	6L-24	32.70	35.83	65 LF	0.50%	36.15
6R-25	6L-25	32.74	35.90	50 LF	0.50%	36.15
6R-26	6L-26	32.78	35.98	35 LF	0.50%	36.15
6R-27	6L-27	32.82	36.05	20 LF	0.50%	36.15

*NO VALUE INDICATES A CROSS-TEE CONNECTION AT THE
COLLECTOR INVERT, TYPICALLY WHERE CONNECTION IS MADE IN THE
OUTFIELD.

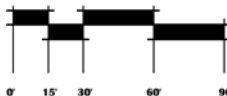
PIPE NUMBER	COLLECTOR	IE @	IE @	LENGTH	SLOPE	CAP IE
6L-1	6L-1	31.31	-	222 LF	0.75%	33.41
6L-2	6L-2	31.38	-	68 LF	0.50%	31.72
6L-3	6L-3	31.46	-	100 LF	0.50%	31.98
6L-4	6L-4	31.53	-	122 LF	0.50%	32.14
6L-5	6L-5	31.61	-	139 LF	0.50%	32.31
6L-6	6L-6	31.68	-	154 LF	0.50%	32.45
6L-7	6L-7	31.76	-	169 LF	0.50%	32.61
6L-8	6L-8	31.83	-	184 LF	0.50%	32.75
6L-9	6L-9	31.91	-	199 LF	0.50%	32.91
6L-10	6L-10	31.98	-	214 LF	0.50%	33.05
6L-11	6L-11	32.06	-	229 LF	0.50%	33.21
6L-12	6L-12	32.13	-	248 LF	0.50%	33.27
6L-13	6L-13	32.21	-	218 LF	0.50%	33.29
6L-14	6L-14	32.28	-	204 LF	0.50%	33.30
6L-15	6L-15	32.34	33.73	180 LF	0.50%	34.63
6L-16	6L-16	32.38	33.91	177 LF	0.50%	34.80
6L-17	6L-17	32.42	34.26	167 LF	0.50%	35.10
6L-18	6L-18	32.46	34.63	155 LF	0.50%	35.40
6L-19	6L-19	32.50	35.15	145 LF	0.50%	35.88
6L-20	6L-20	32.54	35.56	135 LF	0.50%	36.24
6L-21	6L-21	32.58	35.62	106 LF	0.50%	36.15
6L-22	6L-22	32.62	35.68	94 LF	0.50%	36.15
6L-23	6L-23	32.66	35.75	80 LF	0.50%	36.15
6L-24	6L-24	32.70	35.83	65 LF	0.50%	36.15
6L-25	6L-25	32.74	35.90	50 LF	0.50%	36.15
6L-26	6L-26	32.78	35.98	35 LF	0.50%	36.15
6L-27	6L-27	32.82	36.05	20 LF	0.50%	36.15

*NO VALUE INDICATES A CROSS-TEE CONNECTION AT THE
COLLECTOR INVERT, TYPICALLY WHERE CONNECTION IS MADE IN THE
OUTFIELD.

LEGEND

- END CAP
- 4" PERF. CORR. POLY DRAIN TUBING
AND FLOW DIRECTION
- CPEP SUBSURFACE DRAINAGE COLLECTOR
OR STORM DRAIN PIPE AND FLOW DIRECTION
- COS PARKS STD. 02720.58
TYPE 15 CATCH BASIN
- COS PARKS STD. 02720.59
TYPE 241 CATCH BASIN
- SLOPE
INVERT ELEVATION
COLLECTOR INVERT ELEVATION

SCALE: 1"=30'-0"



NOTES

- SUBSURFACE DRAINAGE COLLECTOR PIPE CAN BE INSTALLED PRIOR TO FINAL ACCEPTANCE
OF THE FIELD SUBGRADE.
- COORDINATION: IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT THE
IRRIGATION PIPING IS INSTALLED AT A SUFFICIENT DEPTH BELOW SUBGRADE BEFORE THE
TRENCHING FOR THE SUBSURFACE DRAINAGE SYSTEMS TO AVOID CONFLICTS BETWEEN
SYSTEMS.
- TRENCHING FOR THE SUBSURFACE DRAINAGE LATERALS SHALL NOT PROCEED UNTIL THE
IRRIGATION SYSTEM PIPING HAS BEEN BACKFILLED AND COMPACTED AND THE FIELD
SUBGRADE IS APPROVED BY ENGINEER.
- TRENCH EXCAVATION SHALL BE MADE TO THE ALIGNMENT, ELEVATION, GRADE AND SLOPE AS
INDICATED ON THE DRAWINGS. TRENCHING SHALL BE ACCOMPLISHED UTILIZING EQUIPMENT
WITH SLOPE AND DEPTH CONTROL, SUCH AS "LASER PLANE CONTROL SYSTEM", SO AS TO
ENSURE ACCURACY IN THE BOTTOM OF THE TRENCH.
- NO HIGH POINTS ABOVE DESIGNATED INVERT OR CALCULATED TRENCH BOTTOM ELEVATION
WILL BE PERMITTED. NO SLUFFING OF SITE MATERIAL OR LOOSE EXCAVATED SOIL WILL BE
PERMITTED TO REMAIN IN THE TRENCHES.
- SURPLUS EXCAVATED SOIL SHALL BE REMOVED FROM THE FIELD AREA PRIOR TO
COMMENCING ON THE NEXT ADJACENT TRENCH. EXCAVATED MATERIAL MAY NOT REMAIN ON
SUBGRADE.
- PROVIDE A SMOOTH, EVEN SUBGRADE AFTER REMOVAL OF THE TRENCH MATERIAL.
SUBGRADE. LEAVE NO LOOSE MATERIAL ON THE SUBGRADE.
- EXCAVATION BELOW INVERT GRADE MUST BE ESTABLISHED TO A DEPTH SO AS TO PROVIDE
FOR SPECIFIED PLACEMENT OF PEA GRAVEL BEDDING AT BOTTOM OF PIPE ELEVATION PRIOR
TO LAYING THE PERFORATED PIPE.
- NO FOREIGN MATERIAL WILL BE PERMITTED INSIDE, ALONGSIDE, UNDER, OR ON TOP OF THE
PERFORATED DRAIN PIPE.
- THE BACKFILL FOR ALL PERFORATED PIPE SHALL BE CLEAN WASHED PEA GRAVEL. REFER
TO THE SPECIFICATIONS FOR THE GRADATION REQUIREMENTS.
- ALL TRENCHES TO HAVE BACKFILL MATERIAL "CROWNED" A MINIMUM OF 2" ABOVE
SUBGRADE TO PROTECT FROM FOREIGN MATERIAL AND PROVIDE FOR EASE OF LOCATION
IDENTIFICATION. CROWNS WITH FOREIGN MATERIAL CONTAMINATION SHALL BE REMOVED
PRIOR TO PLACEMENT OF BASE SAND.
- DURING PLACEMENT OF SPECIFIED TRENCH BACKFILL, PIPE MUST BE HELD IN PLACE TO
PREVENT DISPLACEMENT AND PROVIDE FOR ACHIEVING SPECIFIED INVERT ELEVATION. DO
NOT DAMAGE PIPE OR ALLOW PIPE TO BE DISPLACED BY PLACEMENT OF BACKFILL
MATERIAL.
- CAP THE ENDS OF ALL LATERAL RUNS. ALL OPEN ENDS DURING CONSTRUCTION ARE TO
BE TEMPORARILY CAPPED OR PLUGGED.
- CONNECTION OF LATERALS TO COLLECTOR DRAINS SHALL BE MADE WITH A COMBINATION
REDUCING TEE AND REDUCING SADDLE TEE.
- NO TRUCKS OR EQUIPMENT WILL BE ALLOWED TO DRIVE OVER THE TOP OF THE
TRENCHES EXCEPT TRACK-EQUIPPED MACHINERY UTILIZED IN SPREADING IMPORTED SAND
MATERIALS. BACKFILLED TRENCHES ARE TO BE STAKED AND FLAGGED 3' ABOVE GRADE
AT MAXIMUM 30' SPACING FOR IDENTITY.
- COORDINATE SUBSURFACE DRAINAGE COLLECTOR LOCATION TO AVOID FENCE POST
LOCATIONS.
- GRADE BREAK; OUTFIELD SLOPES $\pm 1.5\%$ AWAY FROM THE INFIELD, INFIELD IS FLAT.
PROVIDE A CONSTANT SUBGRADE AND SURFACE SLOPE FROM GRADE BREAK TO WARNING
TRACK.

(18) PIPE SLOPE GRADE BREAK; OUTFIELD PIPE SLOPE IS 0.50%, INFIELD PIPE SLOPE IS 0.25%.
UPSTREAM LATERAL CONNECTIONS ARE BY DROP-TEE, DOWNSTREAM CONNECTIONS ARE BY
CROSS-TEE.

File: F-01 MP Soccer CURRENT 24x36.dwg Plotted by: CorneilW Date: 11-Jan-18 4:15:33pm



LAYOUT LEGEND

- LANDSCAPE LAWN
- SYNTHETIC TURF AND PERMEABLE AGGREGATE
- CONCRETE PAVING
- PROPOSED SHADE TREE
- EXISTING SIGNIFICANT TREE
- EXISTING LIGHT POLE NEW LED FIXTURES
- NEW LIGHT POLE NEW LED FIXTURES
- CHAINLINK FENCE AND CONCRETE CURB
- CHAINLINK FENCE
- CONCRETE CURBING
- LIMIT OF SYNTHETIC TURF AND CONCRETE EDGE ANCHOR
- CATCH BASIN INLET (C.B.I.) TYPE 1
- CATCH BASIN INLET (C.B.I.) TYPE 2

REVISION DATE

City of Seattle
Parks
& Recreation

Magnuson Park
Field 12



MAGNUSSON
KLEMENCIC
ASSOCIATES
Structural + Civil Engineers



NORTH
0 50' 100'
SCALE: 1" = 50'

DATE 1-11-18

SCALE 1"=50'

DRAWN CPW

CHECKED EIG

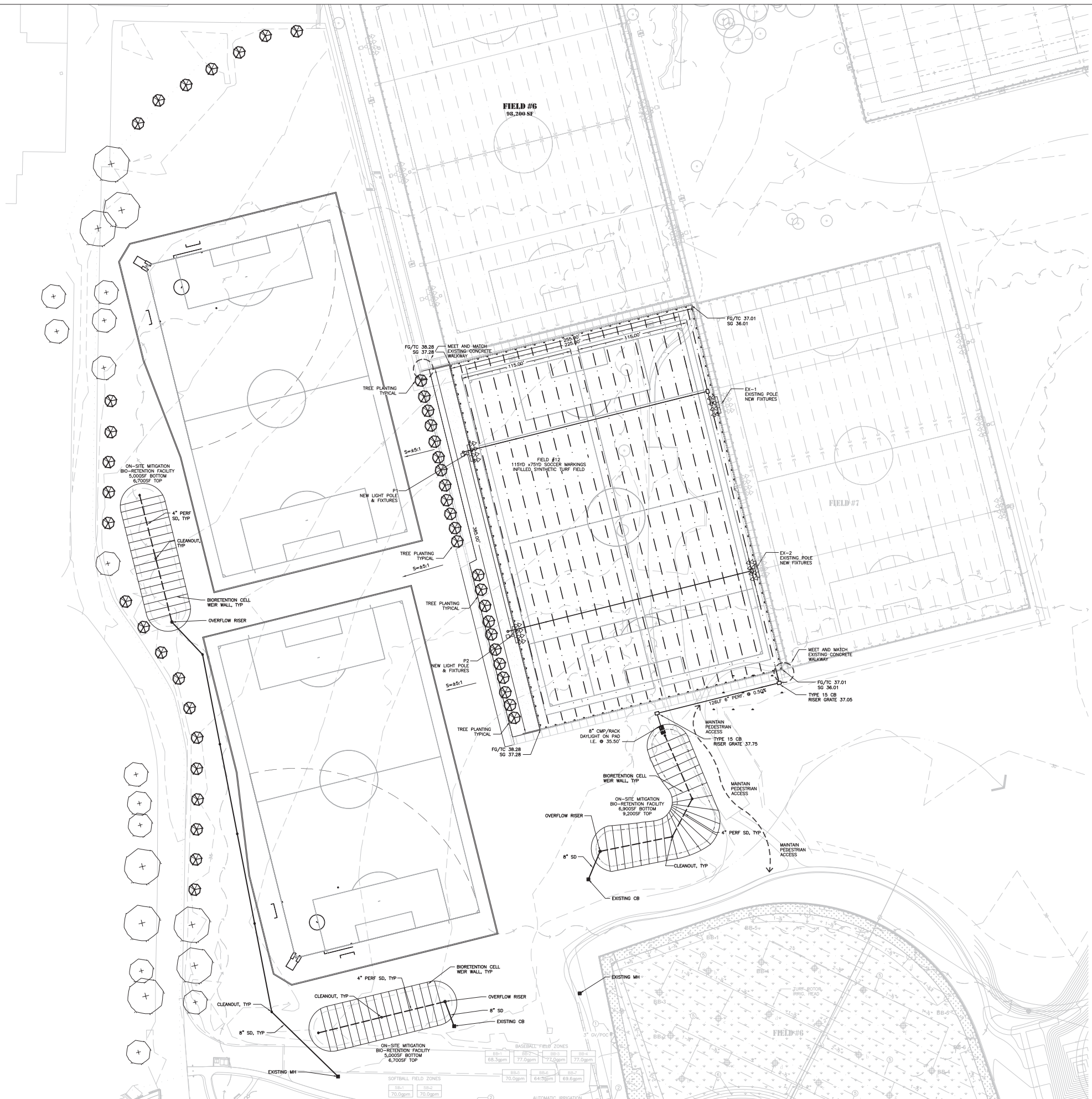
COPYRIGHT © 2018 D.A. HOGAN & ASSOCIATES

Layout Plan

SHEET

F-1.1

Fig. C-1.1 Boretention Layout Exhibiting Plotted by: CorneliaW Date: 11-Jan-18 4:08:53pm



REVISION DATE

City of Seattle
Parks
& Recreation

Magnuson Park
Field 12



MAGNUSSON
KLEMENCIC
ASSOCIATES
Structural + Civil Engineers



NORTH
0 50 100'
SCALE: 1" = 50'

DATE 1-11-18

SCALE 1"=50'

DRAWN EIG/ MJG

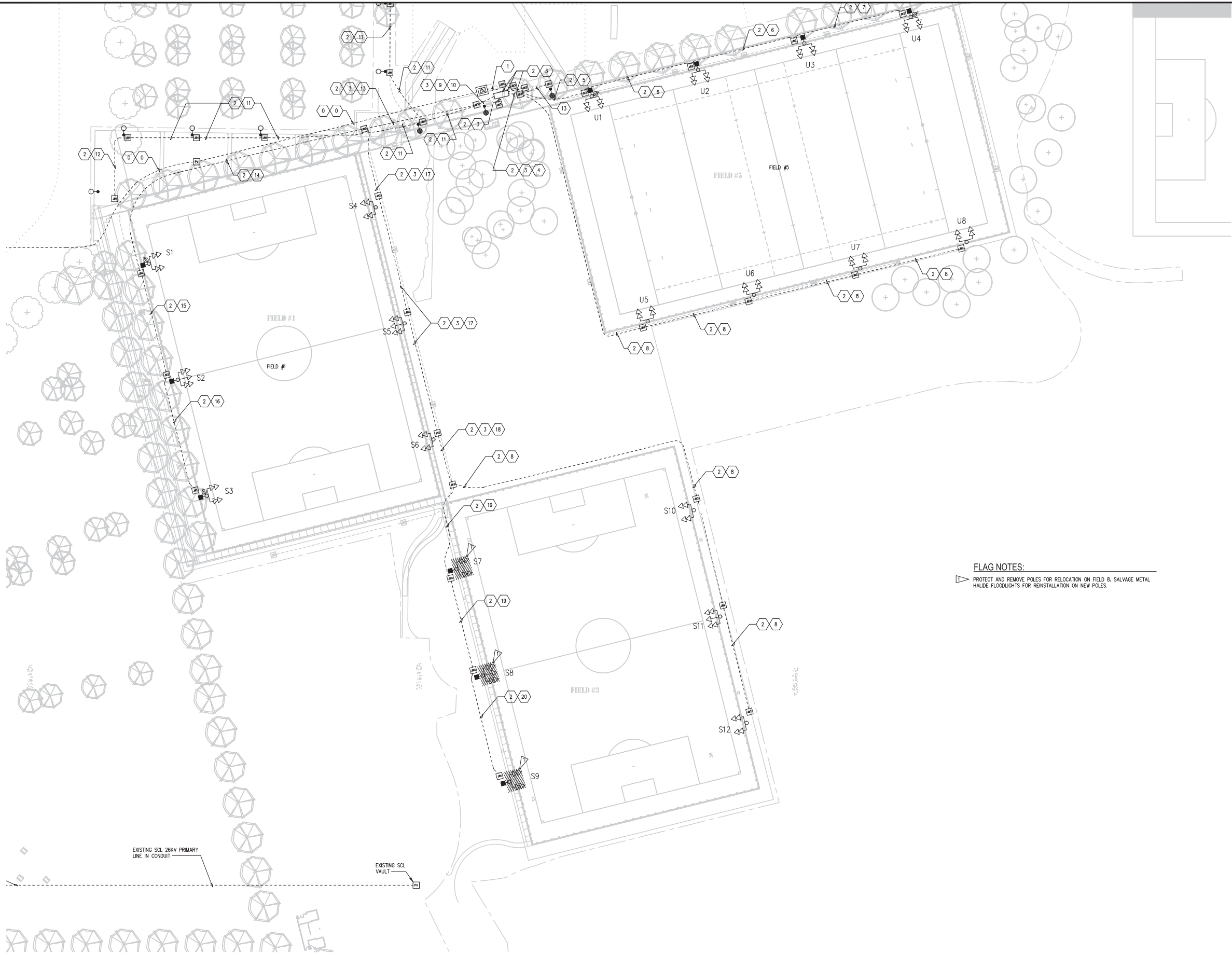
CHECKED CPW/ SDH

COPYRIGHT © 2018 D.A. HOGAN & ASSOCIATES

Grading &
Drainage Plan

SHEET

F-1.2



>>>>CAUTION - CALL 811<<<<
UTILITY NOTIFICATION CENTER
BEFORE YOU DIG!
WWW.CALLBEFOREYODIG.ORG

NOT LESS THAN 2 OR MORE THAN 10 BUSINESS DAYS PRIOR TO COMMENCING EXCAVATION OR DEMOLITION, SECURE THE SERVICES OF A COMMERCIAL UNDERGROUND UTILITIES LOCATOR SERVICE TO IDENTIFY BELOW-GROUND IMPROVEMENTS THAT MAY NOT BE INDICATED ON THE DRAWINGS. ADDITIONALLY, TO REQUEST ON-SITE UNDERGROUND UTILITY SYSTEMS LOCATES, CALL SPR INSPECTION REQUEST LINE @ (206) 684-7034. REFER TO SECTIONS 02100 & 02120 OF THE SPECIFICATIONS FOR INSTRUCTIONS ON HOW TO PROCEED.

PROJECT PRIME CONSULTANT

DA HOGAN
1101 1st Avenue South, Suite 1101
Seattle, Washington 98104
P: 206.285.0400
F: 206.285.0480

CIVIL & STORMWATER ENGINEERING

LPD
911 Western Ave
Suite 420
Seattle, WA 98104
P: 206.725.1211
F: 206.973.5344
engineering pllc www.lpdengineering.com

ELECTRICAL ENGINEERING

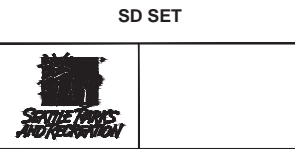
Stantec
4100 194th Street SW Suite 400
Lynnwood Washington 98036-4613
(206) 677-0555



FLAG NOTES:
▶ PROTECT AND REMOVE POLES FOR RELOCATION ON FIELD 8. SALVAGE METAL HALIDE FLOODLIGHTS FOR REINSTALLATION ON NEW POLES.

3		
2		
1		
NO.	REVISION - AS BUILT	DATE

REVIEWED: _____ DATE: _____
ENGINEER
All work done in accordance with the City of Seattle Standard Plans and Specifications in effect on the date shown above, and supplemented by Special Provisions.



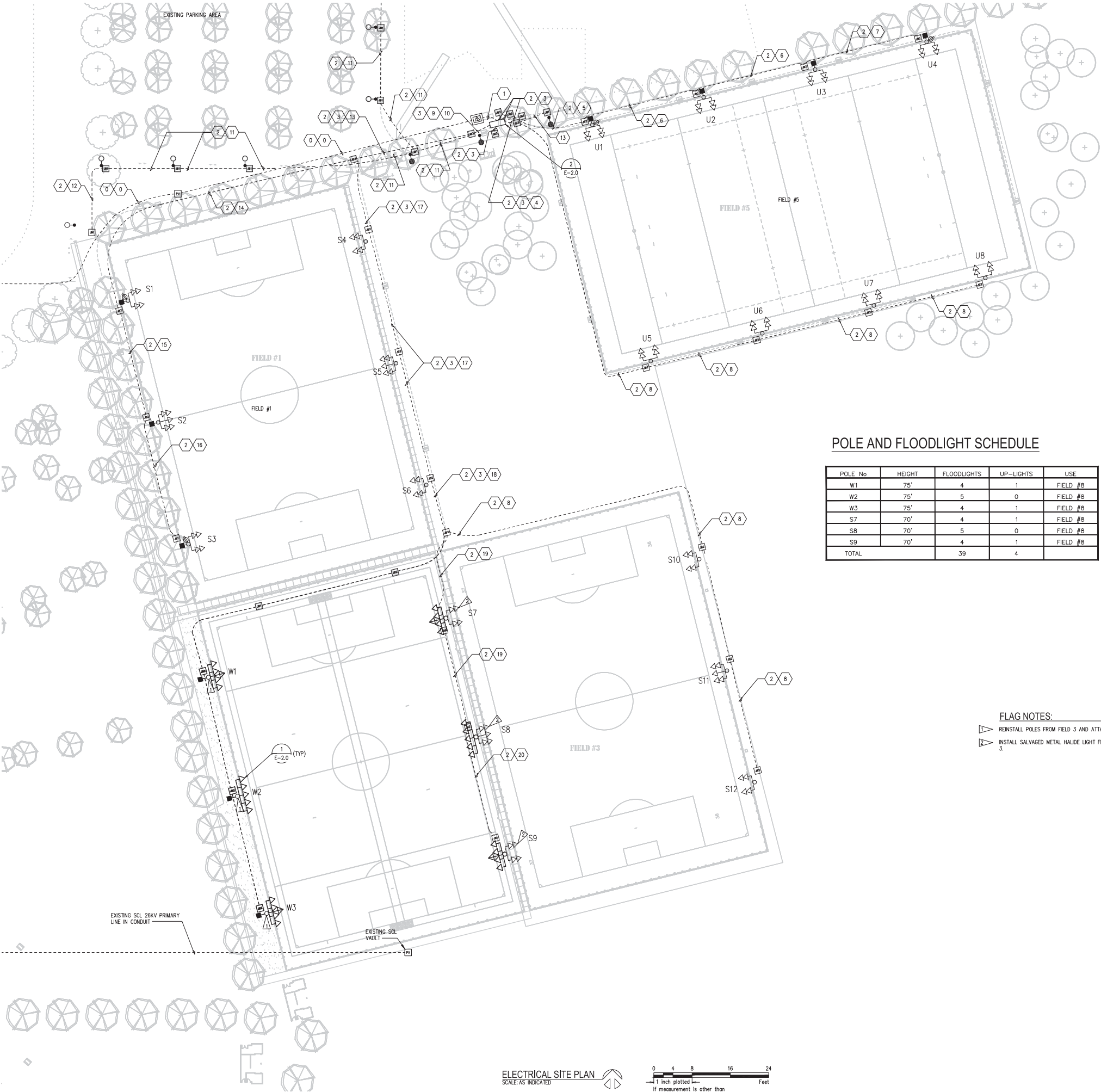
MAGNUSON PARK FIELD #12

ELECTRICAL SITE PLAN - DEMO

DESIGNED: CBF	DATE: 9-28-17
DRAWN: AAU	SHEET: X OF X
CHECKED: CBF	
ORDINANCE NO. _____	E-1.0
CONTRACT NO. _____	
SCALE: AS NOTED	



V:\2018\ACTIVE\20180329\415-BRM\110 Sep 27, 2017 3:20 PM by CSB\AUTOUT



POLE AND FLOODLIGHT SCHEDULE

POLE No.	HEIGHT	FLOODLIGHTS	UP-LIGHTS	USE
W1	75'	4	1	FIELD #8
W2	75'	5	0	FIELD #8
W3	75'	4	1	FIELD #8
S7	70'	4	1	FIELD #8
S8	70'	5	0	FIELD #8
S9	70'	4	1	FIELD #8
TOTAL		39	4	

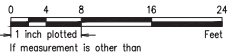
LEGEND:

- EXISTING STEEL FLOODLIGHTING POLE
- NEW STEEL FLOODLIGHTING POLE
- EXISTING SHIELDED FLOODLIGHT, 1,500 WATT METAL HALIDE, 480V
- NEW SHIELDED FLOODLIGHT, 1,150W LED, 480V
- NEW SHIELDED UP LIGHT, 1,150W LED, 480V
- EXISTING AREA LUMINAIRE, 400 WATT HPS, 480V
- NEW AREA LUMINAIRE, 100 WATT LED, 480V
- EXISTING TYPE I JUNCTION BOX, CHRISTY #FL9 WITH FL9T COVER
- EXISTING TYPE II JUNCTION BOX, CHRISTY #FL30 WITH FL30T COVER
- NEW TYPE II JUNCTION BOX, CHRISTY #FL30 WITH FL30T COVER
- EXISTING TYPE III JUNCTION BOX, CHRISTY #FL36 WITH FL36T COVER
- EXISTING PRIMARY PULLING VAULT - UTILITY VAULT #577-LA
- 2" C - NYLON PULL STRING
- 3" C - NYLON PULL STRING
- (3)#4 POLES S7,S8,S9; (3)#4 POLES S10,S11,S12; 3" C - (3)#4, POLES S1,S2,S3; (3)#4 POLES S4,S5,S6; (4)#10 RECEPTACLES; (1)#6GND
- 2" C - (3)#8 AREA LIGHTS, (3)#8 PARKING LIGHTS, (1)#10GND
- 3" C - (9)#4, (3)#5, (1)#6GND
- 2" C - (6)#6, (3)#10, (1)#8GND
- 2" C - (3)#10, 3#10, 1#10GND
- 2" C - (3)#10, 2#10, 1#10GND

FLAG NOTES:

- REINSTALL POLES FROM FIELD 3 AND ATTACH NEW LED FLOODLIGHTS.
- INSTALL SALVAGED METAL HALIDE LIGHT FIXTURES ON NEW POLES FACING FIELD 3.

ELECTRICAL SITE PLAN
SCALE: AS INDICATED



>>>>CAUTION - CALL 811 <<<<
UTILITY NOTIFICATION CENTER
BEFORE YOU DIG!
WWW.CALLBEFOREYODIG.ORG

NOT LESS THAN 2 OR MORE THAN 10 BUSINESS DAYS PRIOR TO COMMENCING EXCAVATION OR DEMOLITION, SECURE THE SERVICES OF A COMMERCIAL UNDERGROUND UTILITIES LOCATOR SERVICE TO IDENTIFY BELOW-GROUND IMPROVEMENTS THAT MAY NOT BE INDICATED ON THE DRAWINGS. ADDITIONALLY, TO REQUEST ON-SITE UNDERGROUND UTILITY SYSTEMS LOCATES, CALL SPR INSPECTION REQUEST LINE @ (206) 684-7034. REFER TO SECTIONS 02100 & 02120 OF THE SPECIFICATIONS FOR INSTRUCTIONS ON HOW TO PROCEED.

PROJECT PRIME CONSULTANT



CIVIL & STORMWATER ENGINEERING



ELECTRICAL ENGINEERING



4100 194th Street SW Suite 400
Lynnwood, Washington 98036-4613
(206) 677-0555



3		
2		
1		
NO.	REVISION - AS BUILT	DATE

REVIEWED: _____ DATE: _____
ENGINEER
All work done in accordance with the City of Seattle Standard Plans and Specifications in effect on the date shown above, and supplemented by Special Provisions.

SD SET



MAGNUSON PARK FIELD #12

ELECTRICAL SITE PLAN

DESIGNED: CBF	DATE: 9-28-17
DRAWN: AAU	SHEET: X OF X
CHECKED: CBF	
ORDINANCE NO. _____	E-2.0
CONTRACT NO. _____	
SCALE: AS NOTED	



Know what's below.
Call before you dig.



2 EXISTING SERVICE CABINET DETAIL
E-3.0 SCALE: NONE

Sparing Name		4A2		277/480V		3 PH		4W		400A		Main CB		Surface Mounted		Type: Panelboard		Panel	
Location:																30,000 AIC			
Services:																			
#	Description	Load	CB	*	A	B	C	*	Load	Description	#								
1	Lighting Field #3 - Poles S9, S10	6.4	40/3	CB	X				6.4	Lighting Field #3 - Poles S13, S14	2								
3	-----Field #3 - Poles S9, S10	6.4	-----	-----	-----	-----	-----	-----	6.4	-----Field #3 - Poles S13, S14	4								
5	-----Field #3 - Poles S9, S10	6.4	-----	-----	-----	-----	-----	-----	6.4	-----Field #3 - Poles S13, S14	6								
7	Spare Field #3 - Poles S11, S12	6.4	50/3	CB	X				6.4	Lighting Field #3 - Poles S15, S16	8								
9	-----Field #3 - Poles S11, S12	6.4	-----	-----	-----	-----	-----	-----	6.4	-----Field #3 - Poles S15, S16	10								
11	-----Field #3 - Poles S11, S12	6.4	-----	-----	-----	-----	-----	-----	6.4	-----Field #3 - Poles S15, S16	12								
13	Spare	0.0	40/3	CB	X				0.0	Spare	14								
15	-----	0.0	-----	-----	-----	-----	-----	-----	0.0	-----	16								
17	-----	0.0	-----	-----	-----	-----	-----	-----	0.0	-----	18								
19	Spare	0.0	40/3	CB	X				0.0	Spare	20								
21	-----	0.0	-----	-----	-----	-----	-----	-----	0.0	-----	22								
23	-----	0.0	-----	-----	-----	-----	-----	-----	0.0	-----	24								
25	Spare	0.0	40/3	CB	X				0.0	Spare	26								
27	-----	0.0	-----	-----	-----	-----	-----	-----	0.0	-----	28								
29	-----	0.0	-----	-----	-----	-----	-----	-----	0.0	-----	30								
31	Spare	0.0	40/3	CB	X				0.0	Spare	32								
33	-----	0.0	-----	-----	-----	-----	-----	-----	0.0	-----	34								
35	-----	0.0	-----	-----	-----	-----	-----	-----	0.0	-----	36								
37	Space	0.0	0/1		X				0.0	Space	38								
39	Space	0.0	0/1		X				0.0	Space	40								
41	Space	0.0	0/1		X				0.0	Space	42								
Rec						PH A		PH B		PH C						* Circuit Breaker Code			
Revised Ots Marked * Existing Ots Marked #		Connected KVA		25.6		25.6		25.6								G = GFCl		H = HD Rated	
B13165																S = Shunt Trip		C = HACR Rated	
File:																D = Switching Duty		# = See Note	
																A = AFCl			
Notes:																			
Load Type		Conn KVA		NEC Demand Factor		Dem. KVA		Dem. Amps		NEC Feed %		NEC Feed Amps							
Lighting		57.6		x 100%		57.6		69		x 125%		87							
Spare		19.2		92 Amps		19.2		23		100%		23							
		76.8						76.8										110	

3 EXISTING PANEL SCHEDULES
E-3.0 SCALE: NONE

1 POLE FOUNDATION CALCULATIONS TO BE PROVIDED BY CONTRACTOR.
CALCULATIONS TO BE PROVIDED BY A LICENSED STRUCTURAL ENGINEER
REGISTERED IN THE STATE OF WASHINGTON.

NOT LESS THAN 2 OR MORE THAN 10 BUSINESS DAYS PRIOR TO COMMENCING EXCAVATION OR DEMOLITION, SECURE THE SERVICES OF A COMMERCIAL UNDERGROUND UTILITIES LOCATOR SERVICE TO IDENTIFY BELOW-GROUND IMPROVEMENTS THAT MAY NOT BE INDICATED ON THE DRAWINGS. ADDITIONALLY, TO REQUEST ON-SITE UNDERGROUND UTILITY SYSTEMS LOCATES, CALL SPR INSPECTION REQUEST LINE @ (206) 684-7034. REFER TO SECTIONS 02100 & 02120 OF THE SPECIFICATIONS FOR INSTRUCTIONS ON HOW TO PROCEED.

REVIEWED: _____ DATE: _____
PARK
ENGINEER
All work done in accordance with the City of Seattle Standard Plans
and Specifications in effect on the date shown above, and
supplemented by Special Provisions.

E-3.0

Know what's below.
Call before you dig.

PRODUCT TECHNICAL SPECIFICATION

XT

Slit-Film 2.25"

Property	Value	Units	ASTM
Product Stock Code	XT-57		
Pile Yarn Type	UV-resistant polyethylene		n/a
Yarn Structure	Slit-Film		n/a
Yarn Denier	10800	Denier	D1577
Tape Thickness	130	Microns	D3218
Pile Height	2.25	inches	D5823
Pile Weight	33	oz/yd ²	D5848
Primary Backing Weight	7+	oz/yd ²	D5848
Secondary Backing Weight (Perforated)	16+	oz/yd ²	D5848
Total Carpet Weight	56	oz/yd ²	D5848
Stitch Gauge	3/4 inch centers		D5793
Tuft Bind	8+	lbs/force	D1335
Grab Tear Length	>200	lbs/force	D5034
Grab Tear Width	>200	lbs/force	D5034
Pill Burn Test	Pass		D2859
Impact Attenuation (Gmax)	<200	gmax	F1936
Water Permeability	>40	inch/hour	DIN 18-035
DOF Cork	1.7	Lbs/ft ²	
Sand	4.5	Lbs/ft ²	
Total Product Weight	920	oz/yd ²	

Variation of +/- 5% on above listed property values is within normal manufacturing tolerances

Issue Date: 11/04/16

Twin Ponds Park

Shoreline,WA

EQUIPMENT LAYOUT

INCLUDES:

- Security
- Soccer

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

EQUIPMENT LIST FOR AREAS SHOWN

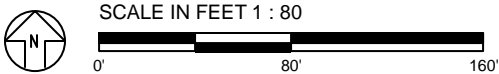
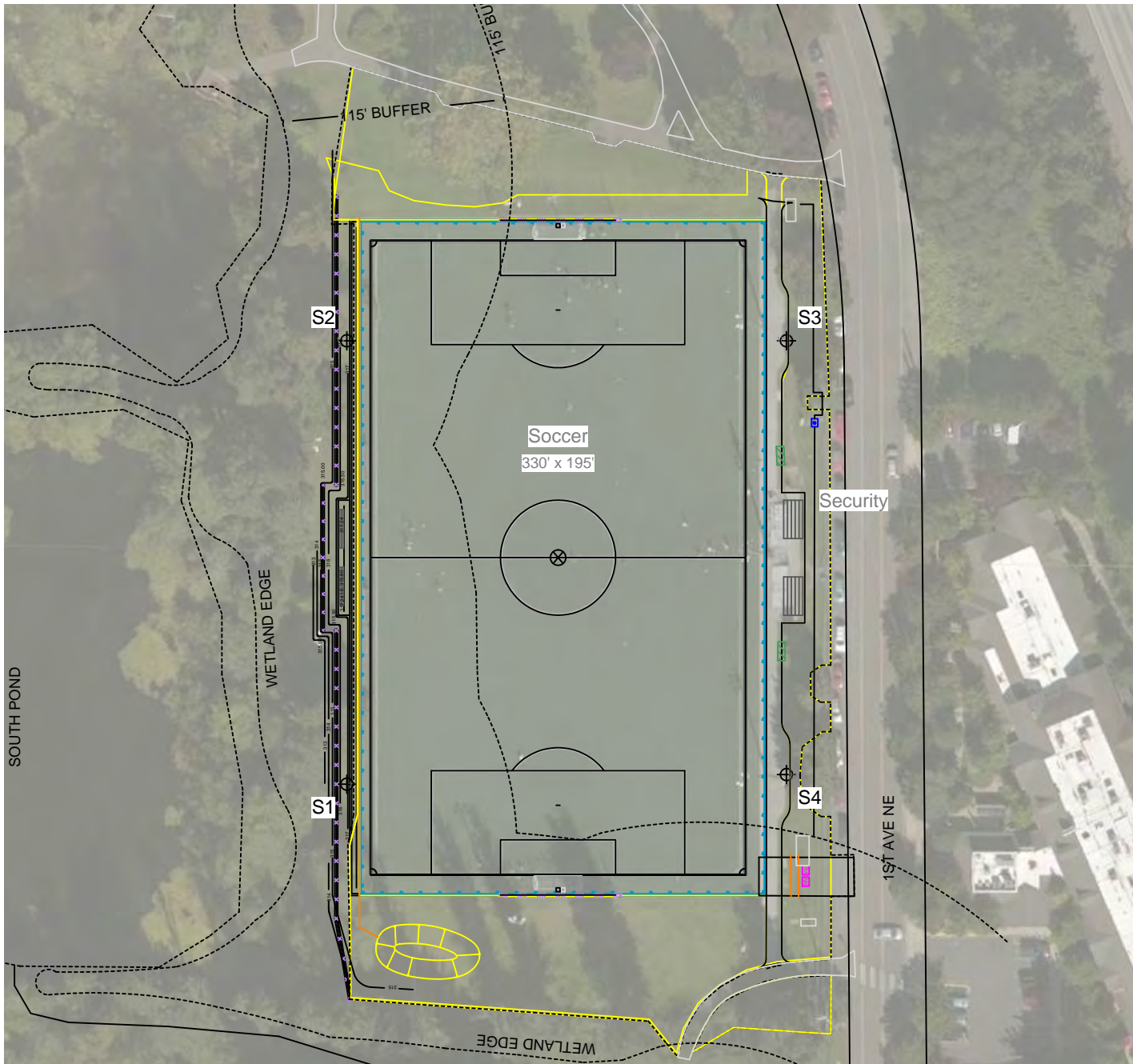
Pole				Luminaires		QTY / POLE
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	
4	S1-S4	70'	-	30' 70'	Cree OSQ TLC-LED-1150	1 6
4	TOTALS					28

SINGLE LUMINAIRE AMPERAGE DRAW CHART

Ballast Specifications (.90 min power factor)	Line Amperage Per Luminaire (max draw)						
	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
Single Phase Voltage	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
TLC-LED-1150	7.0	6.6	6.1	5.2	4.2	3.8	3.0
Cree OSQ	-	-	-	-	-	-	-



Not to be reproduced in whole or part without the written consent of Musco Sports Lighting, LLC. ©1981, 2017 Musco Sports Lighting, LLC.



Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
4	S1-S4	70'	-	30'	Cree OSQ	1	0	1
4				70'	TLC-LED-1150	6	6	0
TOTALS						28	24	4

Twin Ponds Park

Shoreline,WA

GRID SUMMARY

Name: Soccer
Size: 330' x 195'
Spacing: 30.0' x 30.0'
Height: 3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

Entire Grid	
Guaranteed Average:	30
Scan Average:	34.6
Maximum:	40
Minimum:	27
Avg / Min:	1.3
Guaranteed Max / Min:	2.5
Max / Min:	1.50
UG (adjacent pts):	1.32
CU:	0.83
No. of Points:	77

LUMINAIRE INFORMATION

Color / CRI: 5700K - 75 CRI
Luminaire Output: 121,000 lumens
No. of Luminaires: 24
Total Load: 27.6 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>51,000	>51,000	>51,000

Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

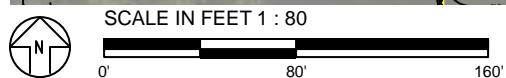
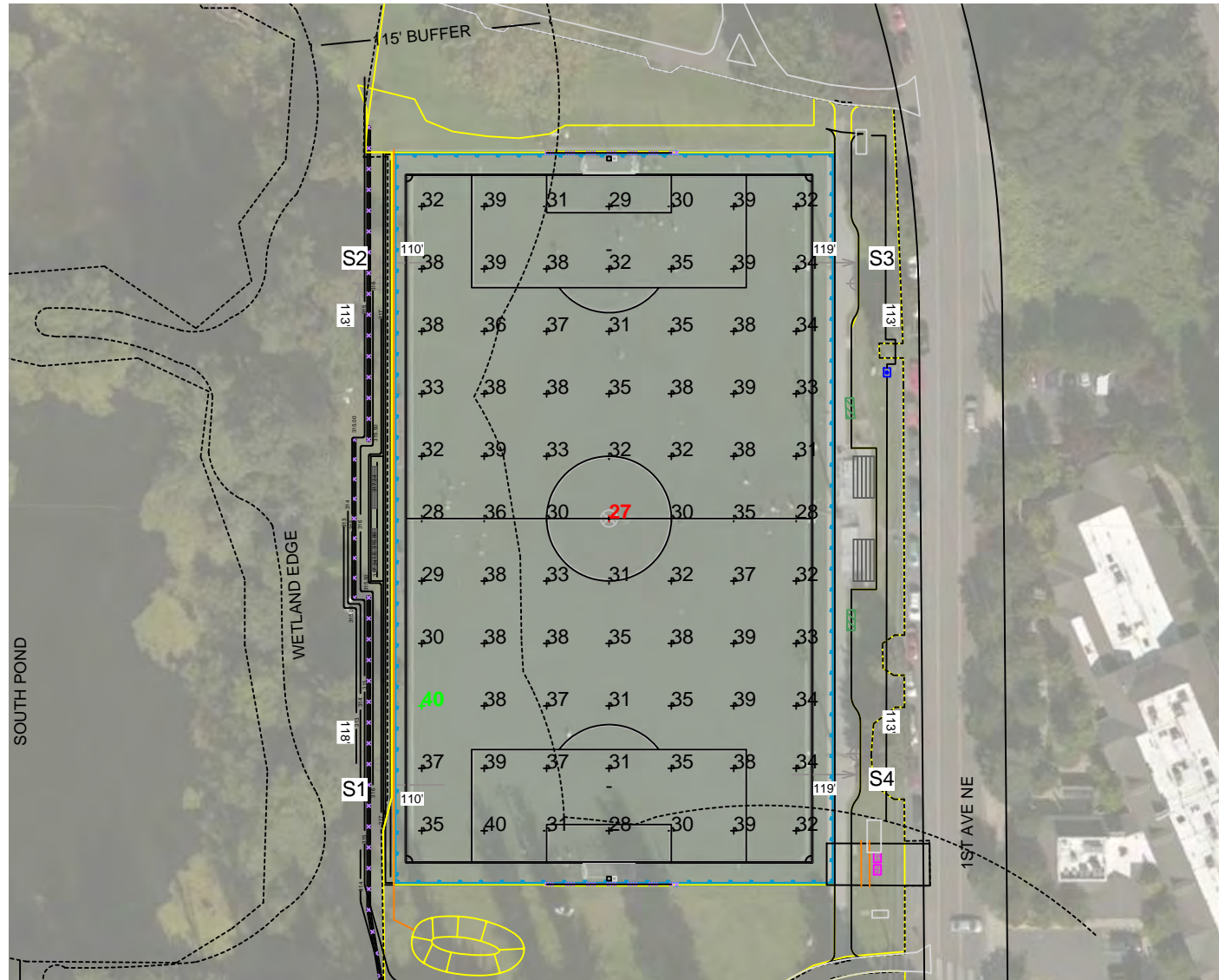
Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume \pm 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



We Make It Happen.

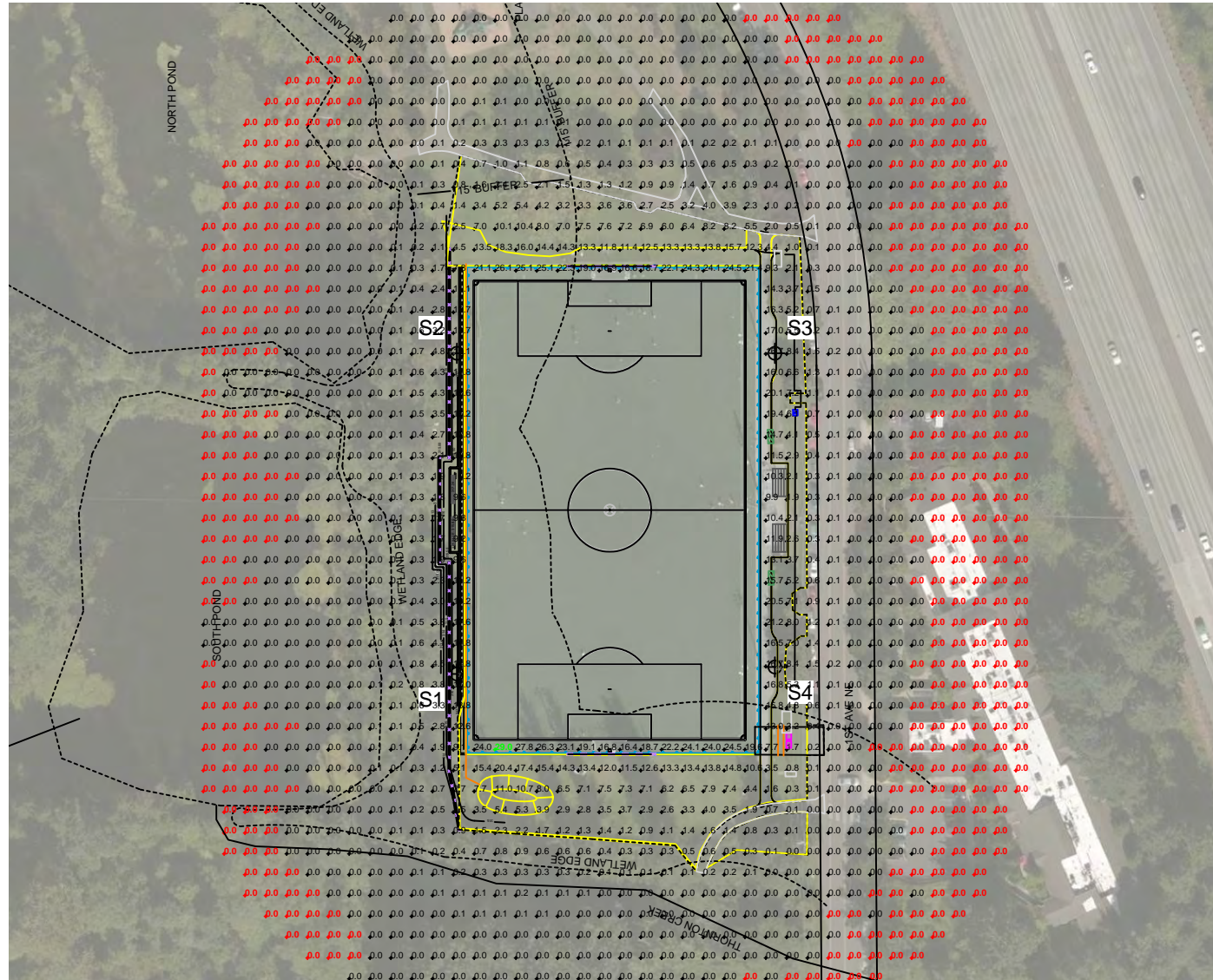
Not to be reproduced in whole or part without the written consent of Musco Sports Lighting, LLC. ©1981, 2017 Musco Sports Lighting, LLC.



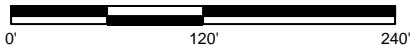
Pole location(s) \oplus dimensions are relative to 0,0 reference point(s) \otimes

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
4	S1-S4	70'	-	30'	Cree OSQ	1	0	1
				70'	TLC-LED-1150	6	6	0
4	TOTALS					28	24	4



SCALE IN FEET 1 : 120



ENGINEERED DESIGN By: Brad Vonk • File #175190-prodA • 21-Jul-17

Twin Ponds Park

Shoreline,WA

GRID SUMMARY

Name: Blanket Grid
Size: 330' x 195'
Spacing: 15.0' x 15.0'
Height: 3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

Entire Grid

Scan Average: 1.574
Maximum: 28.97
Minimum: 0.00
CU: 0.18
No. of Points: 1472

LUMINAIRE INFORMATION

Color / CRI: 5700K - 75 CRI
Luminaire Output: 121,000 lumens
No. of Luminaires: 24
Total Load: 27.6 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>51,000	>51,000	>51,000

Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume \pm 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

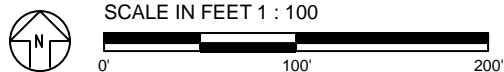
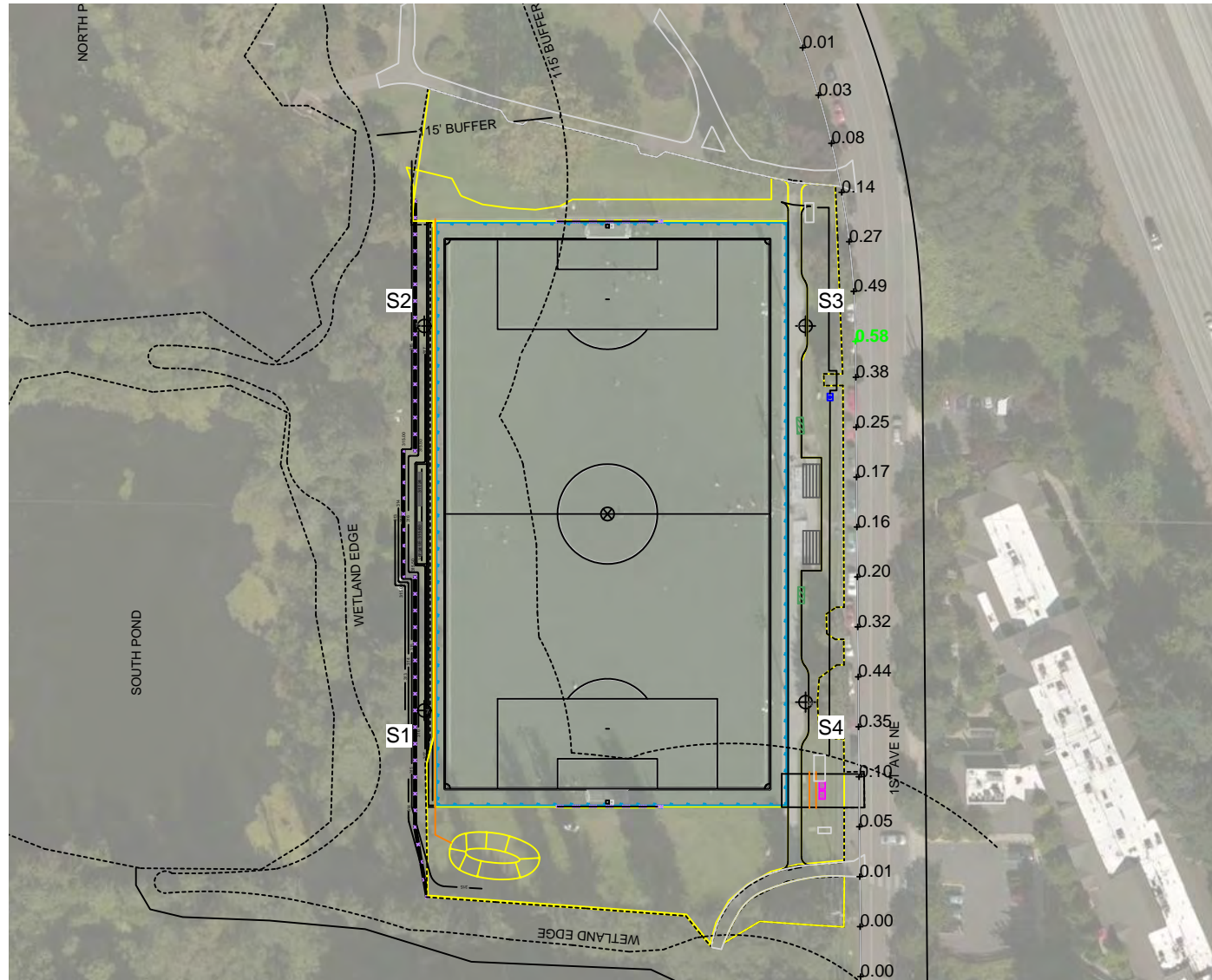


Not to be reproduced in whole or part without the written consent of Musco Sports Lighting, LLC. ©1981, 2017 Musco Sports Lighting, LLC.

ILLUMINATION SUMMARY

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
4	S1-S4	70'	-	30'	Cree OSQ	1	0	1
				70'	TLC-LED-1150	6	6	0
4	TOTALS					28	24	4



Pole location(s) Ⓢ dimensions are relative to 0,0 reference point(s) ⊗

Twin Ponds Park

Shoreline,WA

GRID SUMMARY

Name: Spill @ Nearside 1st Ave
Spacing: 30.0'
Height: 3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

Entire Grid
Scan Average: 0.092
Maximum: 0.58
Minimum: 0.00
No. of Points: 44

LUMINAIRE INFORMATION

Color / CRI: 5700K - 75 CRI
Luminaire Output: 121,000 lumens
No. of Luminaires: 24
Total Load: 27.6 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>51,000	>51,000	>51,000

Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume $\pm 3\%$ nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

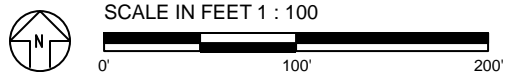
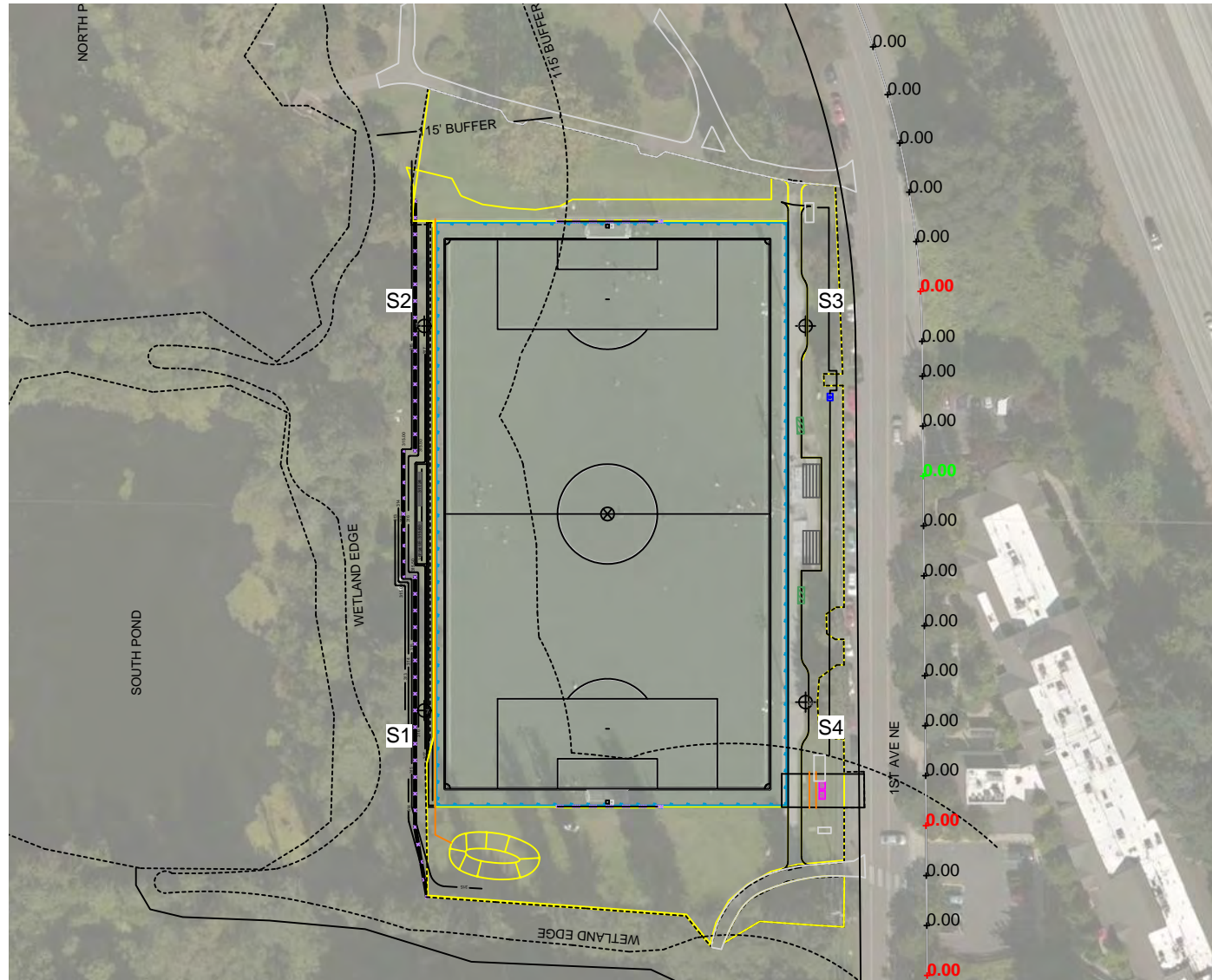


Not to be reproduced in whole or part without the written consent of Musco Sports Lighting, LLC. ©1981, 2017 Musco Sports Lighting, LLC.

ILLUMINATION SUMMARY

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
4	S1-S4	70'	-	30'	Cree OSQ	1	0	1
				70'	TLC-LED-1150	6	6	0
4	TOTALS					28	24	4



Pole location(s) Ⓢ dimensions are relative to 0,0 reference point(s) ⊗

Twin Ponds Park

Shoreline,WA

GRID SUMMARY

Name: Spill @ Farside 1st Ave
Spacing: 30.0'
Height: 3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

Entire Grid
Scan Average: 0.000
Maximum: 0.00
Minimum: 0.00
No. of Points: 44

LUMINAIRE INFORMATION

Color / CRI: 5700K - 75 CRI
Luminaire Output: 121,000 lumens
No. of Luminaires: 24
Total Load: 27.6 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>51,000	>51,000	>51,000

Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume $\pm 3\%$ nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



We Make It Happen.

Not to be reproduced in whole or part without the written consent of Musco Sports Lighting, LLC. ©1981, 2017 Musco Sports Lighting, LLC.

ILLUMINATION SUMMARY

Twin Ponds Park

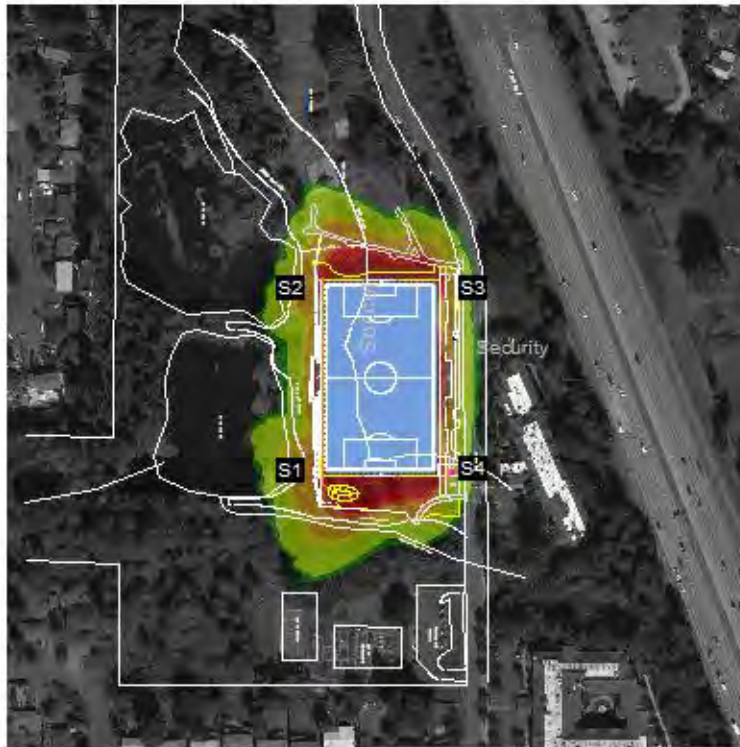
Shoreline, WA

GLARE IMPACT

Summary

Map indicates the maximum candela an observer would see when facing the brightest light source from any direction.

A well-designed lighting system controls light to provide maximum useful on-field illumination with minimal objectionable off-site glare.



Candelas:



We Make It Happen.

Fields 10 & 11

Fields 10 and 11 are currently developed as soil-based grass fields with skinned infields with chain link backstops for softball or little league baseball play. These fields are not under-drained. This alternate scope would redevelop the roughly 182,000sf of fields and both 11,000sf infields to include new irrigation, underdrainage, and sand-based growing medium within the existing footprint as illustrated on the accompanying concept plan. The “Sports Meadow” concept allows for flexible programming of the large grass outfield for multiple fields as well as large planned gatherings. Two Ultimate Fields are shown as an example and for scale. Several “modified” soccer fields for all levels of youth soccer up to U-11 can be fit in a variety of arrangements, allowing for seasonal or more frequent rotation to reduce high wear.

Field 10 & 11 Improvements

Redevelopment as a sand-based, underdrained, automatically irrigated natural grass “Sports Meadow” with redeveloped skinned infields.

Cost Range \$8.00/sf

Area Shown 182,000sf + (2) 11,000sf infields, total 204,000sf

Subtotal Estimate \$1,632,000

File: F-2.1_MP Alternate Fields.dwg Plotted by: EricG Date: 05-Feb-18 7:51:18am



REVISION	DATE

City of Seattle
Parks
& Recreation

Magnuson Park
Field 12


DA HOGAN
119 1st Avenue South, Suite 110
Seattle, Washington 98104
p. 206.285.0400
f. 206.285.0480


Stantec

**MAGNUSSON
KLEMENCIC**
ASSOCIATES
Structural + Civil Engineers


NORTH


0 50 100'
SCALE: 1" = 50'

DATE	2-5-18
SCALE	1"=50'
DRAWN	CPW
CHECKED	EIG
COPYRIGHT © 2018 D.A. HOGAN & ASSOCIATES	

Fields 10 & 11
Alternate

SHEET
F-2.1