DEVELOPMENT SERVICES DEPARTMENT
ENVIRONMENTAL COORDINATOR
450 110th Ave NE., P.O. BOX 90012
BELLEVUE, WA 98009-9012

OPTIONAL DETERMINATION OF NON-SIGNIFICANCE (DNS) NOTICE MATERIALS

The attached materials are being sent to you pursuant to the requirements for the Optional DNS Process (WAC 197-11-355). A DNS on the attached proposal is likely. This may be the only opportunity to comment on environmental impacts of the proposal. Mitigation measures from standard codes will apply. Project review may require mitigation regardless of whether an EIS is prepared. A copy of the subsequent threshold determination for this proposal may be obtained upon request.

File No.	13-115359 LA
Project Name/Address:	Bellevue Golf Course 5500 140th Ave NE
Planner:	Matthews Jackson
Phone Number:	425-452-2729

Minimum Comment Period: **July 5, 2013; 5 p.m.**

Materials included in this Notice:

- ☒ Blue Bulletin
- ☒ Checklist
- ☒ Vicinity Map
- ☐ Plans
- ☐ Other:

BACKGROUND INFORMATION

Property Owner: CITY OF BELLEVUE, PARKS DEPARTMENT

Proponent: SAME

Contact Person: RANDY LEIFER, GOLF COURSE SUPERINTENDENT
(If different from the owner. All questions and correspondence will be directed to the individual listed.)

Address: 5500 - 140th AV. NE, BELLEVUE, WA

Phone: 425-452-2850

Proposal Title: NEW DRIVING RANGE BUILDING

Proposal Location: 5500 - 140th AV NE, BELLEVUE WA
(Street address and nearest cross street or intersection) Provide a legal description if available.
SEE ATTACHED LEGAL DESCRIPTION
Please attach an 8 ½" x 11" vicinity map that accurately locates the proposal site.

Give an accurate, brief description of the proposal's scope and nature:

1. General description: DEMOLISH EXISTING HITTING STATION BUILDING AND CONSTRUCT A NEW 2 STORY, 46 STATION DRIVING RANGE BUILDING.
2. Acreage of site: 111 AC.
3. Number of ~~dwelling units~~/buildings to be demolished: 1
4. Number of ~~dwelling units~~/buildings to be constructed: 1
5. Square footage of buildings to be demolished: APPROX 3,007 SF ONE STORY
6. Square footage of buildings to be constructed: 8,800 SF
7. Quantity of earth movement (in cubic yards): 4,394 CY
8. Proposed land use: RECREATION
9. Design features, including building height, number of stories and proposed exterior materials:
   TWO STORY, CONCRETE & METAL FRAMED HITTING STATION STRUCTURE. METAL SIDING & METAL ROOFING.
10. Other
    PROJECT REPLACES OLD HITTING STATION BUILDING LOCATED WITHIN 111 ACRE MUNICIPAL GOLF COURSE. REGRADING OF EXISTING DRIVING RANGE FIELD IS REQUIRED.

Estimated date of completion of the proposal or timing of phasing: SINGLE PHASE OF CONSTRUCTION BEGINNING JANUARY 2014, ENDING MARCH 2014.

Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

NO

List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

SOILS REPORT

Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain. List dates applied for and file numbers, if known.

NO

List any government approvals or permits that will be needed for your proposal, if known. If permits have been applied for, list application date and file numbers, if known.

Building permit, Mechanical & electrical permit

Please provide one or more of the following exhibits, if applicable to your proposal.
(Please check appropriate box(es) for exhibits submitted with your proposal):

Land Use Reclassification (rezone) Map of existing and proposed zoning

Preliminary Plat or Planned Unit Development
Preliminary plat map

Clearing & Grading Permit
Plan of existing and proposed grading
Development plans

Building Permit (or Design Review)
Site plan
Clearing & grading plan

Shoreline Management Permit
Site plan

A. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site: Flat | X | Rolling | Hilly | Steep slopes | Mountains | Other

b. What is the steepest slope on the site (approximate percent slope)?

25% (AROUND GREENS)

c. What general types of soil are found on the site (for example, clay, sand, gravel, peat, and muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.

SP - SANDY
SM - SILTY SANDS

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

NO - SEE ATTACHED SOILS REPORT

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source

1. GRADING AS REQUIRED AT DRIVING RANGE FIELD
2. EXCAVATION & FILLING AS REQ'D FOR NEW BUILDING

of fill.

NO IMPORT OF FILL REQUIRED

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

POSSIBLE DURING HEAVY RAINS, BUT NO EROSION OFF SITE.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

6%

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

BEST PRACTICE FOR EROSION CONTROL:
FENCING PER COB STDS
DEWATERING
COVERING STOCKPILES

2. AIR

a. What types of emissions to the air would result from the proposal (i.e. dust, automobile odors, and industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

EXHAUST FROM CONSTRUCTION EQUIPMENT

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

NO

c. Proposed measures to reduce or control emissions or other impacts to the air, if any:

NONE

3. WATER

a. Surface

(1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into. NONE AT PROJECT, VICINITY, BUT

- WATER COURSE AT SOUTH PROPERTY LINE ± 620' FROM PROJECT
- POND SOUTH OF PROJECT APPROX 845'
- POND NORTH OF PROJECT APPROX 1,000'

(2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If Yes, please describe and attach available plans.

NO

(2) Could waste materials enter ground or surface waters? If so, generally describe.

NA

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

INFILTRATION VIA NEW BIOSWALE / RETENTION POND ALONG 10th FAIRWAY.

4. Plants

a. Check or circle types of vegetation found on the site:

deciduous tree: alder, maple, aspen, other NONE AT PROJECT SITE BUT ARE ON PROPERTY

evergreen tree: fir, cedar, pine, other

/ shrubs

/ grass

pasture

crop or grain

/ wet soil plants: cattail, buttercup, bulrush, skunk cabbage, other NONE AT PROJECT SITE, BUT ARE ON PROPERTY

/ water plants: water lily, eelgrass, milfoil, other NONE AT PROJECT SITE, BUT ARE ON PROPERTY

other types of vegetation

b. What kind and amount of vegetation will be removed or altered?

GRASS AT PRACTICE PUTTING / CHIPPING GREEN
GRASS AT DRIVING RANGE FIELD

c. List threatened or endangered species known to be on or near the site.

UNKNOWN

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

RE-SODDING PRACTICE PUTTING GREEN &
RE-SEEDING CONTOURED DRIVING RANGE FIELD.

5. ANIMALS

a. Check or circle any birds and animals which have been observed on or near the site or are known to be on or near the site:

/ Birds: hawk, heron, eagle, songbirds, other: NONE IN VICINITY OF DRIVING RANGE, BUT HAVE BEEN SEEN ON GOLF COURSE PROPERTY.

/ Mammals: deer, bear, elk, beaver, other: POSSUM, COYOTE, SQUIRREL

Fish: bass, salmon, trout, herring, shellfish, other: NONE

b. List any threatened or endangered species known to be on or near the site.
NONE AT VICINITY OF PROJECT, BUT BALD EAGLE HAS BEEN SPOTTED ABOVE GOLF COURSE

c. Is the site part of a migration route? If so, explain.
UNKNOWN

d. Proposed measures to preserve or enhance wildlife, if any:
LIMITING CONSTRUCTION TO DAYLIGHT HOURS

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy need? Describe whether it will be used for heating, manufacturing, etc.
ELECTRIC FOR LIGHTS & HEATING.
OPTION FOR GAS HEATERS

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.
NO

c. What kinds of energy conservation features are included in the plans of the proposal? List other proposed measures to reduce or control energy impacts, if any:
COMPLIANCE WITH WASHINGTON STATE NREC

7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.
NO

(1) Describe special emergency services that might be required.
NONE

(2) Proposed measures to reduce or control environmental health hazards, if any.
NONE

b. Noise

(1) What types of noise exist in the area which may affect your project (for example, traffic, equipment, operation, other)?
NONE

(2) What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (for example, traffic, construction, operation, other)? Indicate what hours noise would come from the site.
IMPACT NOISE OF HITTING GOLF BALL
HOURS 7AM. TO 10 PM

(3) Proposed measures to reduce or control noise impacts, if any:

NONE. DRIVING RANGE HITTING STRUCTURE IS 350' TO WEST ADJACENT PROPERTY AND 850' TO SOUTH ADJACENT PROPERTY

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties?

RECREATIONAL - GOLF COURSE & DRIVING RANGE

b. Has the site been used for agriculture? If so, describe.

NO

c. Describe any structures on the site.

CLUBHOUSE
DRIVING RANGE
MAINTENANCE BUILDING
PUMP HOUSE BUILDING

d. Will any structures be demolished? If so, what?

OLD DRIVING RANGE BUILDING

e. What is the current zoning classification of the site?

R-1

f. What is the current comprehensive plan designation of the site?

P/SF-L

g. If applicable, what is the current shoreline master program designation of the site?

NA

h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.

UNKNOWN

I. Approximately how many people would reside or work in the completed project?

NONE

j. Approximately how many people would the completed project displace?

NONE

k. Proposed measures to avoid or reduce displacement impacts, if any:

NA

i. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

CONTINUED USE AS DRIVING RANGE & GOLF COURSE

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

NONE

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

NONE

c. Proposed measures to reduce or control housing impacts, if any:

NONE

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

30'-2" high; conc. retaining wall & metal panels

b. What views in the immediate vicinity would be altered or obstructed?

BUILDING WILL BE TALLER AND MAY BE MORE VISIBLE FROM SOUTH

c. Proposed measures to reduce or control aesthetic impacts, if any:

BUILDING IS DOWN BELOW SIGHTLINE FROM CLUBHOUSE

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

LIGHTING ON HITTING STATIONS ONLY - EVENING & EARLY MORNING.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

EXISTING RANGE LIGHTS ON SIDE POLES WILL NOT BE ALTERED AS A PART OF THIS PROJECT.

GEOTECHNICAL ENGINEERING STUDY
NEW DRIVING RANGE STRUCTURE
BELLEVUE GOLF COURSE
5500 – 140TH AVENUE NE
BELLEVUE, WASHINGTON

G-3450

Prepared for

Mr. Randy Leifer
Superintendent, Bellevue Golf Course
5500 – 140th Avenue NE
Bellevue, Washington 98005

May 10, 2013

GEO Group Northwest, Inc.
13240 NE 20th Street, Suite 10
Bellevue, Washington 98005
Phone: (425) 649-8757 / Fax: (425) 649-8758

May 10, 2013

G-3450

Mr. Randy Leifer
Superintendent, Bellevue Golf Course
5500 – 140th Avenue NE
Bellevue, Washington 98005

Subject: Geotechnical Engineering Study, New Driving Range Structure, Bellevue Golf Course, 5500 – 140th Avenue NE, Bellevue, Washington

Dear Mr. Leifer:

GEO Group Northwest, Inc., is pleased to issue its geotechnical engineering study report for a planned new driving range structure for the Bellevue Golf Course. This report was completed consistent with the proposed services described in our proposal to you dated April 29, 2013.

SITE DESCRIPTION

The project site is located within the City of Bellevue Golf Course facility located along the eastern side of 140th Avenue NE in northeastern Bellevue, Washington. The project site consists of an area located south of the clubhouse building and along the northern margin of the existing driving range area. The project site area has a relatively flat bench across its western and middle portion, and slopes down to a lower area at its eastern end. The principal features and topography in the site area are illustrated in Plate 1 – Site Plan.

We understand the new structure will have two-levels and be daylighted into the existing sloping topography, as generally depicted in Plates 2A and 2B – Proposed Structure Profile. The new structure will be located north of the smaller, existing structure which it will replace.

GEOLOGIC OVERVIEW

According to published geologic mapping for the area[1], surficial soils at the site consist of Quaternary-age glacial till and advance outwash deposits of the Vashon Stade of the Fraser

[1] Minard, J.P., Geologic Map of the Kirkland Quadrangle, Washington. U.S. Geological Survey Miscellaneous Field Studies Map MF-1543, 1983.

Glaciation. The glacial till deposits typically consist of very dense, unsorted mixtures of silt, sand, and gravel, with lesser cobbles that were directly overridden by the Puget Lobe glacier. The advance outwash deposits typically consist of stratified or massive sand and lesser gravelly or silty sand that was deposited in front of the advancing glacier and later overridden.

SITE INVESTIGATION

On May 6, 2013, a geologist from our firm visited the site to observe the existing surface conditions and investigate the subsurface conditions exposed in three exploratory test pit excavations (TP-1, TP-2, and TP-3). The test pits were excavated by the golf course facility staff using a backhoe. The test pits locations were distributed along the south side of the proposed location of the new driving range structure, as illustrated in Plate 1 – Site Plan. The test pits reached depths ranging between approximately 4 and 9 feet below the ground surface (bgs), and were terminated in dense soils.

We logged the conditions exposed in the test pits and collected samples of the soil units that were present for examination and for moisture content testing at our office. We evaluated the density of the soils by probing them with a 0.5"-diameter steel probing rod. Test pit logs and a soil classification explanation are provided in Attachment 1 to this report.

The soils encountered in test pit TP-1 at the lower, eastern end of the proposed structure location consisted of an upper 3-feet thick layer of loose to medium dense, red-brown sand with minor pebble gravel, underlain by dense, brown sand of similar texture. No water seepage was encountered in this test pit, which was completed to a depth of approximately 4 feet.

The soils encountered in test pits TP-2 and TP-3, located on the upper-elevation bench area west from TP-1, typically consisted of medium dense to dense, brown to gray, fine sand to silty sand with minor pebble gravel. These soils were found from near the ground surface to the bottom of test pit TP-2 at approximately 7.5 feet, and to a depth of 7.5 feet at test pit TP-3. Soils in the bottom part of test pit TP-3, from 7.5 feet to 9 feet in depth, consisted of red-brown, medium dense, wet, fine sand. Water seepage was encountered at a depth of 9 feet in test pit TP-3, but was not observed in test pit TP-2.

SITE SEISMIC DESIGN CLASSIFICATION

Per Section 1613.5 of the International Building Code, 2009 Edition, the project site can be assigned Site Class C (Very Dense Soil Profile), in our opinion.

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of our investigation, we conclude that acceptable bearing soils for the new driving range structure are anticipated to be present at elevations from 350 feet upward to approximately 2 to 3 feet below existing grade, per the topographic survey, in the upper-elevation bench area that extends westward from test pit TP-2. In the lower-elevation area at the east end of the proposed structure location, however, acceptable bearing soils were encountered at an elevation of approximately 346 feet in test pit TP-1.

Based on these findings, soils at the easternmost part of the proposed structure near test pit TP-1 likely will need to be excavated to a depth of approximately 3 to 4 feet to reach suitable soils for footing bearing. During our investigation, water seepage was not observed in these oxidized, loose to medium dense soils. However, in our opinion, there is a potential for water seepage to be encountered in this area during construction. We suggest that construction be scheduled to avoid earthwork during the wet weather season or that contingencies be provided to manage caving or flowing conditions in excavations into these soils if saturated. The over-excavation that is created should be backfilled with structural fill. Alternatively, the foundations could be extended downward to bear directly on the dense soils. In cases where water is present, clean crushed rock should be used as backfill to the top of the saturated zone.

The observation of oxidized soils and water seepage at the bottom of test pit TP-3, in the western portion of the proposed structure location, appear to be located below approximate elevation 350 to 349 feet. We anticipate that limiting excavation to a minimum elevation of 350 feet or higher will avoid reaching saturated soils. Excavations below elevation 350 may encounter saturated soils and be difficult to maintain because of caving or flowing conditions.

Our recommendations regarding these and other geotechnical aspects are presented in the following sections of this report.

Earthwork

Site Clearing and Erosion Control

The proposed building and pavement areas should be stripped and cleared of debris, topsoil, organics, and any other deleterious materials, if present. These materials should not be used as structural fill or retaining wall backfill.

Temporary erosion and sedimentation controls (TESCs) should be installed or implemented before or at the start of site clearing activities. TESCs for the project can include using silt fences, check dams, straw mulch, hay bales, and a stabilized construction entrance. The silt fences or other barrier controls should be placed along the cross-slope and down-slope boundaries of the disturbed areas to prevent sediment-laden runoff from being discharged off site. Exposed soils, including stockpiled soils, should be covered with plastic sheeting when they are not being worked.

Excavations and Slopes

Temporary excavation slopes should not be greater than the limits specified in local, state and federal government safety regulations. Temporary cuts which are greater than four feet in height can be sloped at inclinations up to 1H:1V (Horizontal: Vertical). In situations where dense, native glacial till soils are observed to be present and no water seepage is observed, temporary cuts in the these soils can be made at inclinations up to 0.5H:1V if approved by the geotechnical engineer. If adequate space is not available to maintain open cuts per the recommendations in this report, engineered support may be required to provide lateral support to such excavations. Permanent unreinforced slopes at the site should be inclined no steeper than 2H:1V.

Surface runoff should not be allowed to flow over the top of slopes into excavations. During wet weather, exposed slopes should be covered with plastic sheeting to prevent erosion and softening. We recommend that a GEO Group Northwest representative be on site during excavation of cut slopes to verify anticipated geologic conditions and to evaluate slope stability, particularly if groundwater seepage or loose soils or debris are encountered.

Subgrade Preparation

After the completion of site clearing and excavation, soils in areas to receive structural fill, concrete slabs, sidewalks, or pavements, should be prepared to a firm, unyielding condition. The prepared subgrades should be observed and approved by the geotechnical engineer. Any detected soft spots or disturbed areas should be compacted or excavated and replaced with compacted structural fill or crushed rock as directed by the geotechnical engineer. Preparation of foundation subgrades should conform to our recommendations presented above in the Building Foundations section of this report.

Structural Fill

Structural fill is typically defined as earthen material that is placed below buildings (including foundations and on-grade slab floors), sidewalks, pavements, or other structures, and provides support to those structures. Soils that meet the material specifications for structural fill as presented below in this report, or are otherwise approved by the geotechnical engineer, can be used for structural fill. Material which is stored on site for later use as structural fill should be covered with plastic sheeting to protect it from moisture if its usability is sensitive to its moisture content. Structural fill material should be placed and compacted in accordance with the recommendations provided below or as otherwise approved by the geotechnical engineer during construction.

Fill Material Specifications

All materials to be used as structural fill should not contain rocks or lumps larger than 3 inches in its greatest dimension. During wet weather, the material should be granular in character, with a fines content (passing a #200 sieve) of less than 5 percent. All material should be placed at or near its optimum moisture content. If the material is too wet to be compacted to the required degree, it will be necessary to dry the material by aeration (which may be difficult) or replace the material with an alternative suitable material, in order to be capable of achieving the required compaction. In cases where water is present in areas where structural is to be placed, clean crushed rock should be used as backfill to the top of the saturated zone.

The soils found in the test pits excavations for this study are unlikely to be usable as structural fill or as retaining wall backfill, because of the potential high groundwater conditions and need to use free-draining materials for fill. We recommend importing a free-draining material to the site to use for these purposes.

Compaction Specifications

Structural fill material should be compacted to at least 95 percent of its maximum dry density as determined by ASTM D1557 (Modified Proctor Test), unless otherwise authorized by the geotechnical engineer, and with the following exceptions. Structural fill material under pavements or slabs-on-grade should be compacted to at least 90 percent of its maximum dry density, except for the top 12 inches of the material, which should be compacted to at least 95 percent of its maximum dry density as determined by ASTM D1557. Conventional retaining wall backfill that does not support other structures should be compacted to either an unyielding,

firm condition or to at least 90 percent of its maximum dry density (Modified Proctor). We recommend that general non-structural fills be compacted to a firm condition or to at least 85 percent of their maximum dry density (Modified Proctor).

Structural fill material should be spread and compacted in lifts that are 10 inches or less in thickness in an un-compacted state. The compacted fill material should be field tested by using ASTM Designations D2922 and D3017, Nuclear Probe Method, to verify that the required degree of compaction has been achieved.

Footing Foundations

Our recommended design criteria for conventional strip and column footing foundations are as follows:

- Allowable bearing pressure, including all dead and live loads:
  - Medium dense to dense, native soil = 2,000 psf
  - Compacted structural fill = 2,000 psf

- Minimum depth to base of perimeter footing below final exterior grade = 18 inches

- Minimum depth to bottom of interior footings below top of floor slab = 12 inches

- Minimum width of wall footings = 16 inches

- Minimum lateral dimension of column footings = 24 inches

- Estimated post-construction settlement = 1/2 inch

- Estimated post-construction differential settlement across structure width = 1/2 inch

A one-third increase in the above allowable bearing pressures can be used when considering short-term transitory wind or seismic loads.

Lateral loads can be resisted by friction between the footings and the supporting subgrade or by passive earth pressure acting against the buried portions of the footings. For the latter case to be utilized, the footings need be poured "neat" against the existing undisturbed soils or be backfilled with compacted structural fill. Our recommended design parameters are as follows:

- Passive Pressure (Lateral Resistance)
  - 350 pcf equivalent fluid weight for dense native soil or compacted structural fill

- Coefficient of Friction (Friction Factor)
  - 0.35 for dense native soil or compacted structural fill

If adequate bearing soils are not present at planned footing foundation elevations, the unsuitable soils should be over-excavated until adequate bearing soils are encountered. If the soils are over-excavated to the deeper bearing soils, the over-excavated area below the foundations should be backfilled in conformance with the structural fill recommendations in this report.

Footing over-excavations that are backfilled with free-draining structural fill should extend outward from the footing edges to a distance at least equal to the depth of the over-excavation to properly transfer the building loads through the fill and to the bearing stratum.

As an alternative to use of the typical structural fill materials noted above, the size of the over-excavation can be limited to a minimum of the footing size if the backfill material consists of either 1) clean crushed rock placed in lifts of 12 to 18 inches and compacted into the trench bottom and sidewalls using a hoe-pack; or 2) cementitious controlled-density fill (CDF) or lean-mix concrete that has sufficient strength to meet the allowable bearing capacity of the underlying subgrade as provided in our recommendations below.

We recommend that excavation and grading work for preparing the subgrade for the building be monitored by the geotechnical engineer, to verify that suitable bearing soils are reached and that placement and compaction of structural fill are performed consistent with our recommendations.

Slab-on-Grade Floors

Slab-on-grade floors which are supported by the underlying soils should be constructed on a firm, unyielding subgrade. Areas of the subgrade that are loose or soft, or have been disturbed by construction activity should be either compacted to a competent condition or removed and replaced with compacted structural fill.

We recommend that the slabs be underlain with a capillary break layer to facilitate drainage of water from underneath the slabs. The layer should consist of free-draining crushed rock or gravel containing no more than five percent material finer than a No. 4 sieve, and be approximately 4 inches in thickness. We recommend that a vapor barrier (plastic membrane

layer) be placed under the slab to prevent upward transmission of moisture from the subgrade into the slab, if the effects on the slab from such transmission are considered undesirable.

Surface Drainage

Final site grades should direct surface water away from the walls or footings. During construction, water should not be allowed to stand in areas where footings, slabs, or pavements are to be constructed. We recommend that soft ground surfaces be sealed at the end of the day by compacting them, to reduce the potential for moisture infiltration into the soils.

Subsurface Drainage

We recommend that footing drains be installed for exterior footing foundations, if constructed. The drains should consist of 4"-diameter or larger, perforated, rigid PVC pipe laid next to the bottom of the footing and sufficiently sloped to generate flow toward a discharge location. The drain line should be surrounded with washed rock or other free-draining granular material. The drain rock and pipe together should be wrapped with a layer of geotextile filter fabric, such as Mirafi 140NL or similar, to prevent migration of soils into the drainage system. A schematic illustration of the footing drain features is provided in Plate 3 – Typical Footing Drain.

The footing drain lines should be tightlined to an appropriate stormwater discharge location. Roof downspout drain lines or other surface drainage lines should not be connected to the footing drainage system. The roof downspout drain lines should be tight-lined to a separate, appropriate discharge location. We recommend that sufficient cleanouts be installed at strategic locations to allow for periodic maintenance of the footing drains and the roof downspout lines.

Conventional Concrete Retaining Walls

The following recommendations regarding conventional concrete retaining walls are provided below for your use if conventional concrete retaining walls up to approximately 10 feet in height are planned.

Conventional concrete basement and retaining walls should be supported on dense, native soils or on structural fill that is placed directly on dense, native soils. The recommendations for foundation footings presented above are also applicable for wall footings.

Conventional concrete retaining walls which are free to rotate on top (unrestrained) should be designed for an active soil pressure. Permanent retaining walls that are restrained horizontally at the top (such as basement walls) are considered unyielding and should be designed for a lateral soil pressure under the at-rest condition. Soil parameters for the wall design are as follows:

Active Earth Pressure
35 pcf, equivalent fluid pressure, for level ground behind the walls

At-Rest Earth Pressure
45 pcf, equivalent fluid pressure, for level ground behind the walls

Passive Earth Pressure
350 pcf, equivalent fluid pressure, for undisturbed, native dense soil or structural fill

Base Friction
0.35 for undisturbed, native dense soil or structural fill

Surcharge loads imposed on walls due to nearby structures, traffic (including construction vehicles or equipment), upward sloping ground, or other conditions behind the walls should be added to the active and at-rest earth pressures stated above.

To prevent the buildup of hydrostatic pressure behind permanent basement or conventional retaining walls, we recommend that a vertical drain mat, such as Miradrain 6000 or similar product, be used to facilitate drainage behind the wall. The drain mat should extend from near the finished surface grade, downward to the footing drain system. Backfill against the wall should consist of clean free-draining material (no portion of the material passing a No. 200 sieve). This material should extend against the full height of the drain mat and be in contact with the drainage rock at the bottom of the wall. Backfill located further than 5 feet from the wall can consist of the sandy on-site soils. A schematic illustration of the wall backfill and drainage system is presented in Plate 3 – Retaining Wall Backfill and Drainage.

The backfill in areas adjacent to concrete retaining walls should be compacted with hand held equipment (such as a jumping jack) or a hoe-pack. We recommend that walls which are to be restrained (such as basement walls) be restrained before backfilling is performed. Heavy compacting machines (such as a vibratory roller) should not be used in proximity to retaining walls unless the walls have been designed and built to resist the surcharge load effects that are generated.

LIMITATIONS

This geotechnical report has been prepared for the specific application to this site for the exclusive use of Bellevue Golf Course and its authorized representatives or agents. Any other use of this report is solely at the user's own risk. We recommend that this report be included in its entirety in the project contract documents for reference during construction.

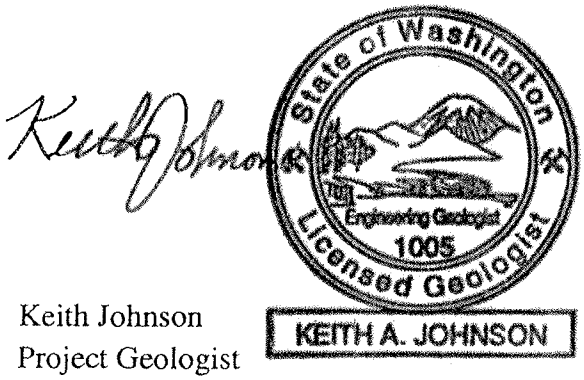
Our findings and recommendations stated herein are based on field observations, our experience with similar projects, and our professional judgment. The recommendations presented in this letter are our professional opinion derived in a manner consistent with the level of care and skill ordinarily exercised by other members of the profession currently practicing under similar conditions in this area and within the project schedule and budget constraints. No warranty is expressed or implied. In the event that soil conditions are found to differ from those discussed in this report, GEO Group Northwest should be notified and the relevant recommendations in this report should be re-evaluated.

CLOSING

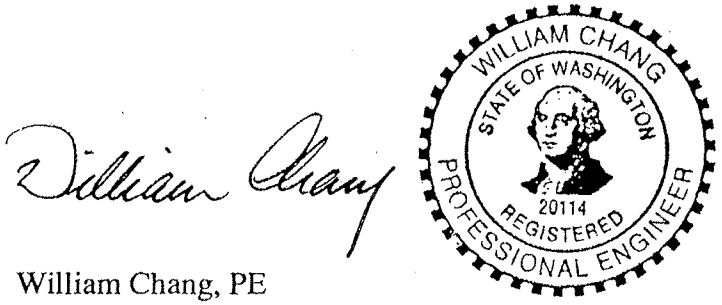
We appreciate this opportunity to provide you with geotechnical engineering services. Please feel free to call us if you have any questions.

Sincerely,

GEO Group Northwest, Inc.



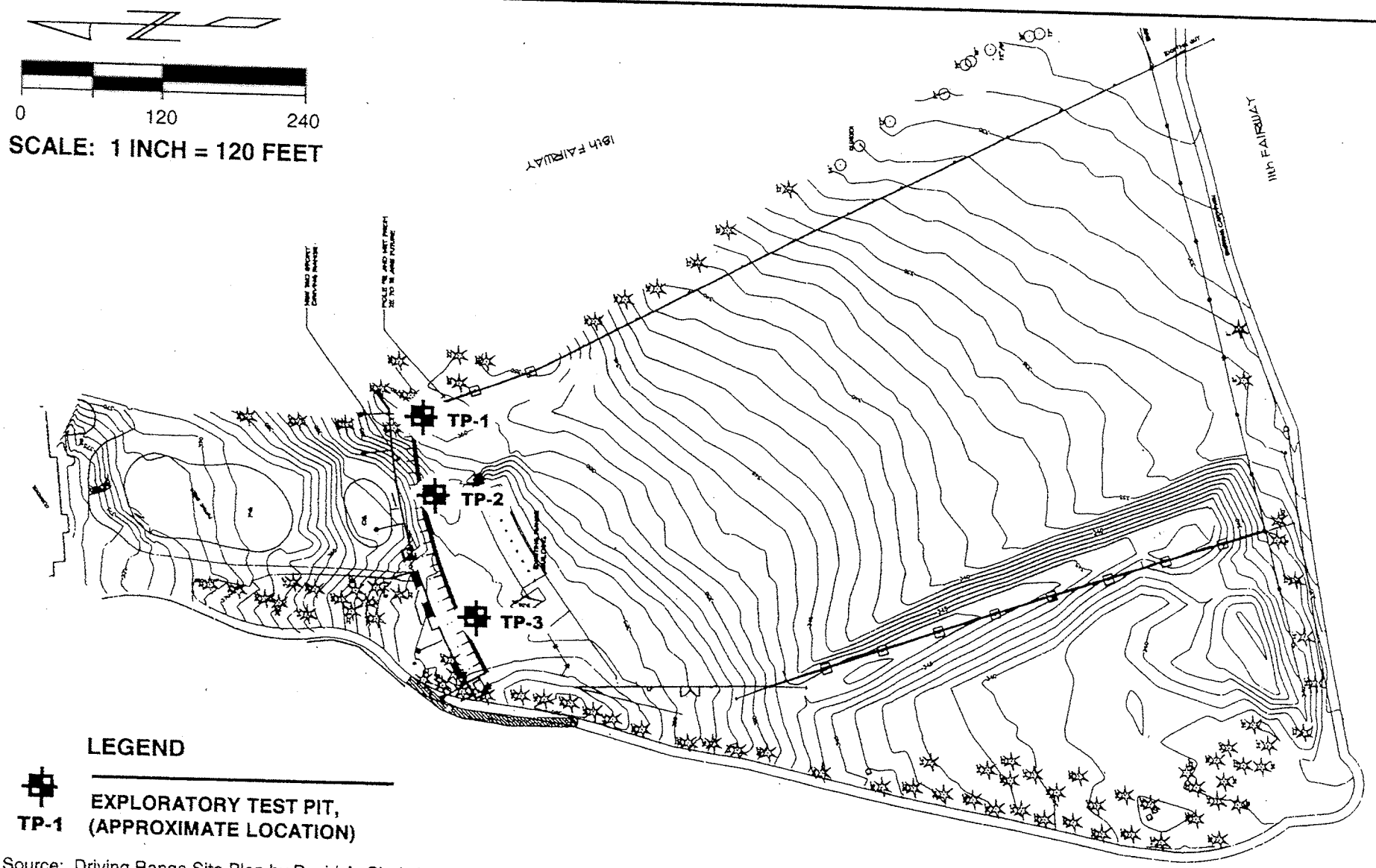
Keith Johnson
Project Geologist



William Chang, PE
Principal Engineer

Attachments:

Plate 1 – Site Plan
Plates 2A and 2B – Proposed Structure Profile
Plate 3 – Retaining Wall Backfill and Drainage
Appendix A – Test Pit Logs and Soil Classification Legend



Source: Driving Range Site Plan by David A. Clark Architects, PLLC, 9/26/2011.

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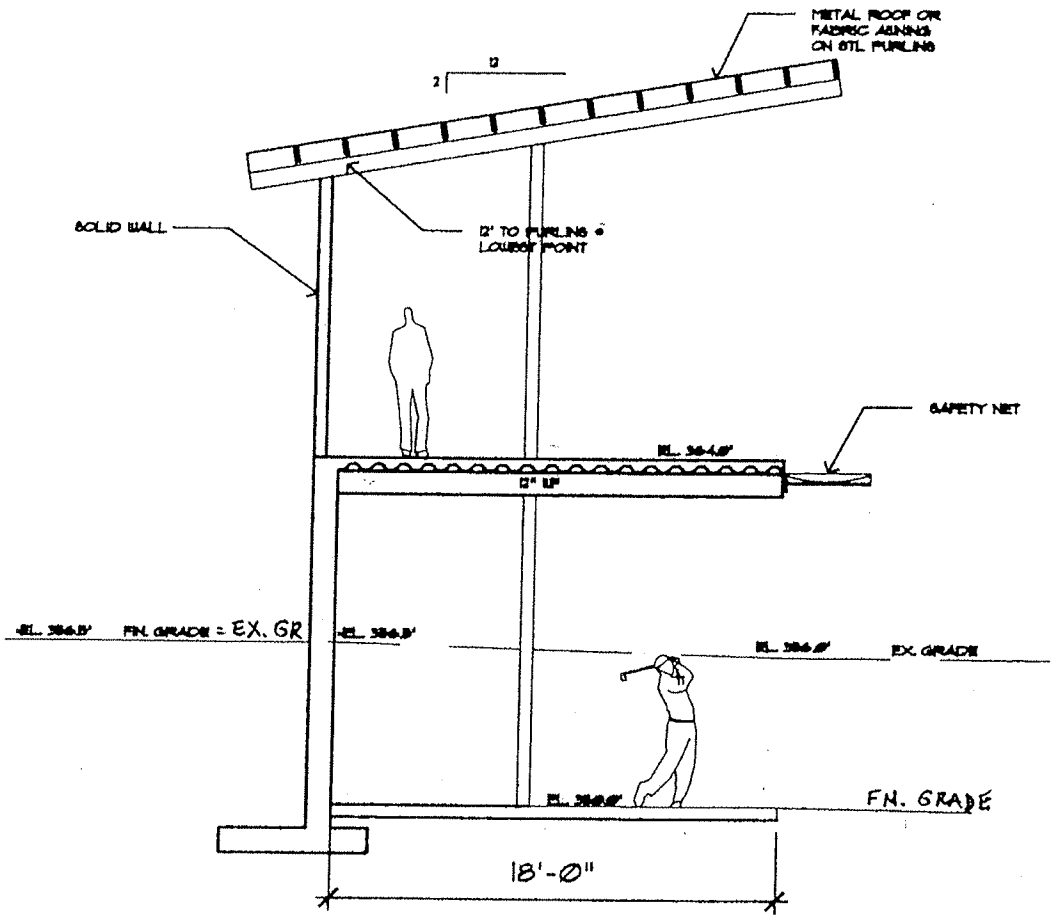
SITE PLAN

NEW DRIVING RANGE STRUCTURE
BELLEVUE GOLF COURSE
BELLEVUE, WASHINGTON

SCALE:	1" = 120'	DRAWN:	KJ	CHECKED:	WC	DATE:	5/7/2013	PROJECT NO.:	G-3450	PLATE	1



SECTION @ GRID 1-11

WEST

1/8" = 1'-0"

OPTION C 350/364'

Source: Preliminary Profiles from David A. Clark, Architects PLLC.

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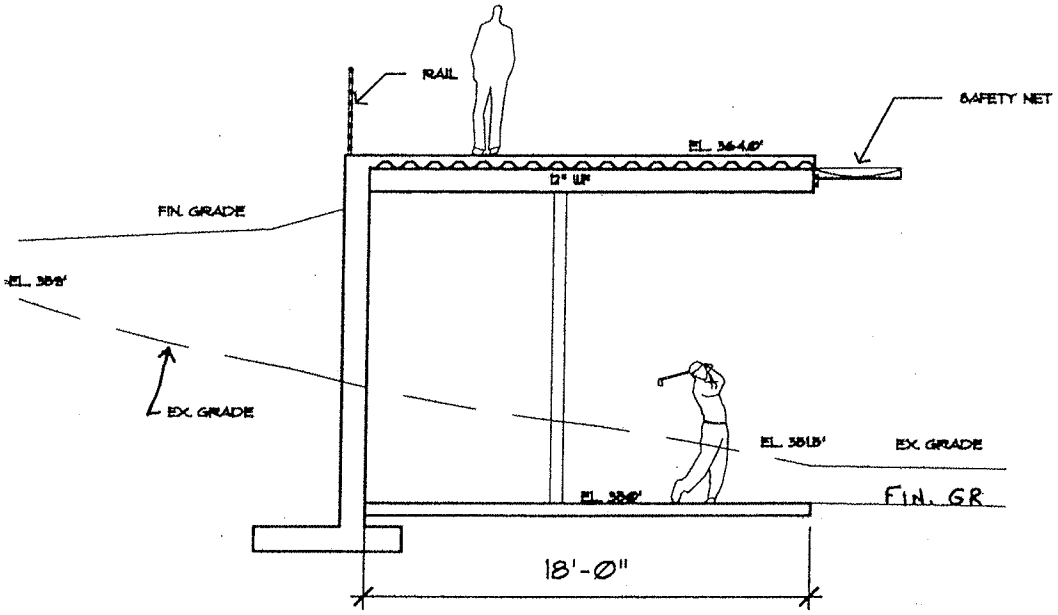
PROPOSED STRUCTURE PROFILE

NEW DRIVING RANGE STRUCTURE
BELLEVUE GOLF COURSE
BELLEVUE, WASHINGTON

SCALE: As shown	DATE: 5/10/2013	MADE: KJ	CHKD: WC	JOB NO: G-3450	PLATE 2A



SECTION @ GRID 22

1/8" = 1'-0"

EAST

Source: Preliminary Profiles from David A. Clark, Architects PLLC.

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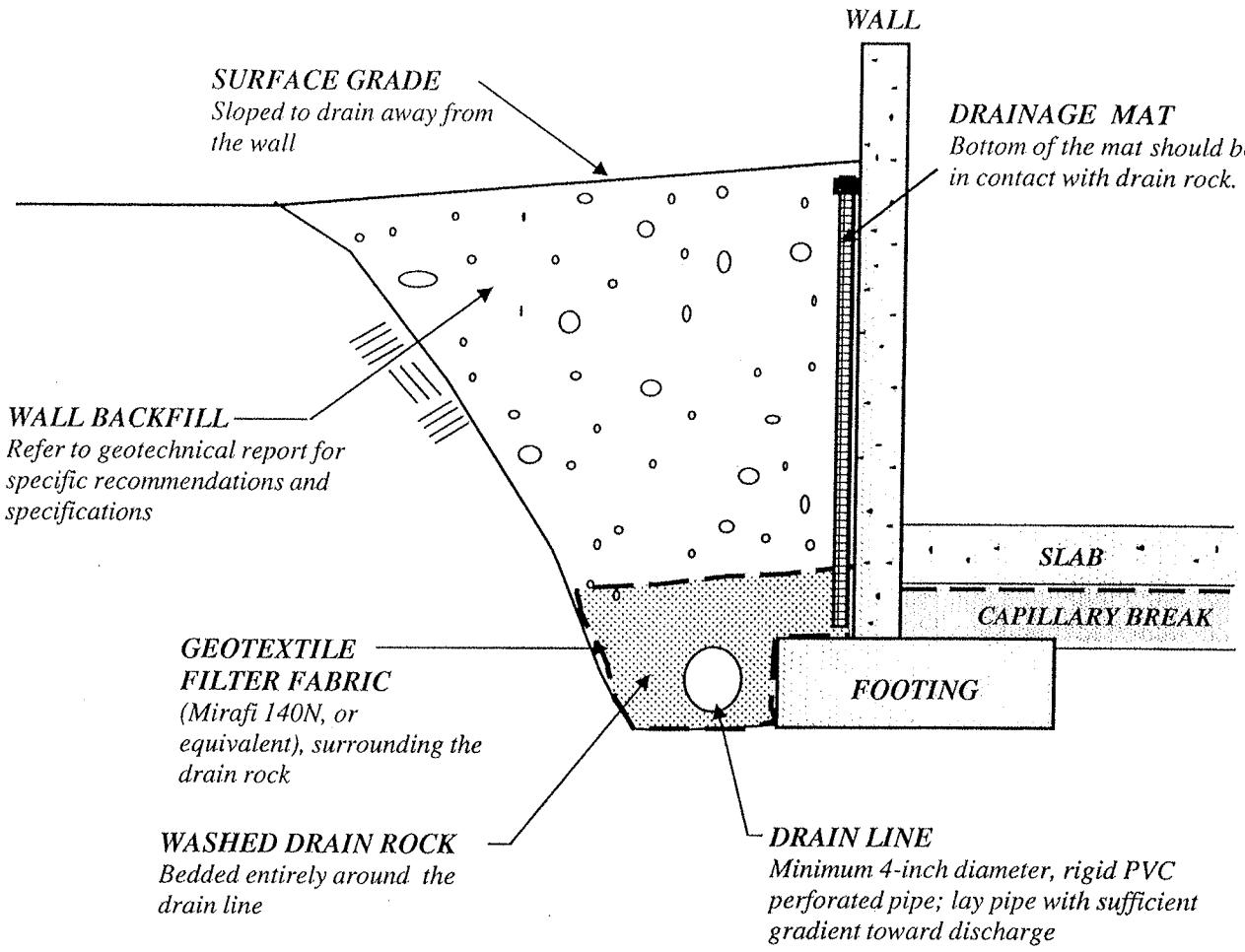
PROPOSED STRUCTURE PROFILE

NEW DRIVING RANGE STRUCTURE
BELLEVUE GOLF COURSE
BELLEVUE, WASHINGTON

SCALE: As shown	DATE: 5/10/2013	MADE: KJ	CHKD: WC	JOB NO: G-3450	PLATE 2B



NOT TO SCALE

NOTES:

1.) Do not substitute flexible corrugated plastic pipe for rigid PVC pipe.

2.) Perforated PVC pipe should be tight-jointed, laid with the perforations facing downward, and sloped toward a discharge location.

3.) The geotextile filter fabric should be wrapped around the drain rock that surrounds the pipe, not wrapped directly around the pipe.

4.) Backfill should be compacted to structural fill specifications if it will support pavements, slabs, or other structures. Refer to the geotechnical report for structural fill recommendations and specifications.

5.) Surface grade above the backfill can be covered with a layer of relatively impermeable topsoil or pavement or slab to reduce infiltration of surface water into the backfill and drainage system.

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RETAINING WALL DRAINAGE

NEW DRIVING RANGE STRUCTURE
BELLEVUE GOLF COURSE
BELLEVUE, WASHINGTON

SCALE: NONE	DATE: 5/10/13	MADE: KJ	CHKD: WC	JOB NO. G-3450	PLATE 3

APPENDIX A

G-3450

TEST PIT LOGS AND SOIL CLASSIFICATION LEGEND

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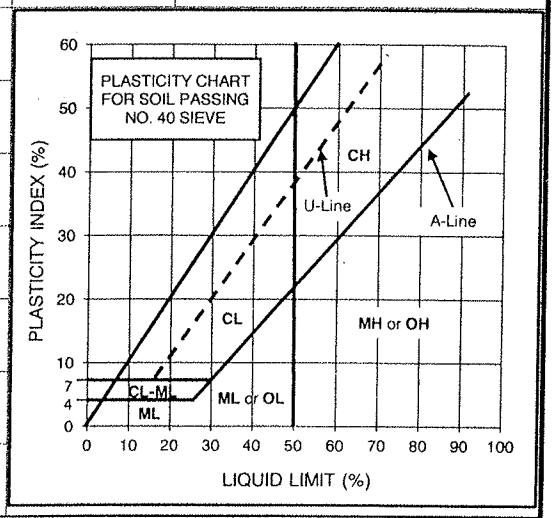
LEGEND FOR SOIL CLASSIFICATION AND PENETRATION TEST DATA

UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)

MAJOR DIVISION			GROUP SYMBOL	TYPICAL DESCRIPTION	LABORATORY CLASSIFICATION CRITERIA	
COARSE-GRAINED SOILS	GRAVELS (More Than Half Coarse Fraction is Larger Than No. 4 Sieve)	CLEAN GRAVELS (little or no fines)	GW	WELL GRADED GRAVELS, GRAVEL-SAND MIXTURE, LITTLE OR NO FINES	CONTENT OF FINES BELOW 5%	Cu = (D60 / D10) greater than 4 Cc = $(D30)^2$ / (D10 * D60) between 1 and 3
			GP	POORLY GRADED GRAVELS, AND GRAVEL-SAND MIXTURES LITTLE OR NO FINES		CLEAN GRAVELS NOT MEETING ABOVE REQUIREMENTS
		DIRTY GRAVELS (with some fines)	GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES	CONTENT OF FINES EXCEEDS 12%	GM: ATTERBERG LIMITS BELOW "A" LINE, or P.I. LESS THAN 4
			GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES		GC: ATTERBERG LIMITS ABOVE "A" LINE, or P.I. MORE THAN 7
More Than Half by Weight Larger Than No. 200 Sieve	SANDS (More Than Half Coarse Fraction is Smaller Than No. 4 Sieve)	CLEAN SANDS (little or no fines)	SW	WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES	CONTENT OF FINES BELOW 5%	Cu = (D60 / D10) greater than 6 Cc = $(D30)^2$ / (D10 * D60) between 1 and 3
			SP	POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES		CLEAN SANDS NOT MEETING ABOVE REQUIREMENTS
		DIRTY SANDS (with some fines)	SM	SILTY SANDS, SAND-SILT MIXTURES	CONTENT OF FINES EXCEEDS 12%	ATTERBERG LIMITS BELOW "A" LINE with P.I. LESS THAN 4
			SC	CLAYEY SANDS, SAND-CLAY MIXTURES		ATTERBERG LIMITS ABOVE "A" LINE with P.I. MORE THAN 7
FINE-GRAINED SOILS	SILTS (Below A-Line on Plasticity Chart, Negligible Organics)	Liquid Limit < 50%	ML	INORGANIC SILTS, ROCK FLOUR, SANDY SILTS OF SLIGHT PLASTICITY		
		Liquid Limit > 50%	MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS, FINE SANDY OR SILTY SOIL		
	CLAYS (Above A-Line on Plasticity Chart, Negligible Organics)	Liquid Limit < 50%	CL	INORGANIC CLAYS OF LOW PLASTICITY, GRAVELLY, SANDY, OR SILTY CLAYS, CLEAN CLAYS		
		Liquid Limit > 50%	CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS		
Less Than Half by Weight Larger Than No. 200 Sieve	ORGANIC SILTS & CLAYS (Below A-Line on Plasticity Chart)	Liquid Limit < 50%	OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY		
		Liquid Limit > 50%	OH	ORGANIC CLAYS OF HIGH PLASTICITY		
HIGHLY ORGANIC SOILS			Pt	PEAT AND OTHER HIGHLY ORGANIC SOILS		



SOIL PARTICLE SIZE

FRACTION	U.S. STANDARD SIEVE			
	Passing		Retained	
	Sieve	Size (mm)	Sieve	Size (mm)
SILT / CLAY	#200	0.075		
SAND				
FINE	#40	0.425	#200	0.075
MEDIUM	#10	2.00	#40	0.425
COARSE	#4	4.75	#10	2.00
GRAVEL				
FINE	0.75"	19	#4	4.75
COARSE	3"	76	0.75"	19
COBBLES	76 mm to 203 mm			
BOULDERS	> 203 mm			
ROCK FRAGMENTS	> 76 mm			
ROCK	>0.76 cubic meter in volume			

GENERAL GUIDANCE FOR ENGINEERING PROPERTIES OF SOILS, BASED ON STANDARD PENETRATION TEST (SPT) DATA

SANDY SOILS				SILTY & CLAYEY SOILS		
Blow Counts N	Relative Density, %	Friction Angle ϕ, degrees	Description	Blow Counts N	Unconfined Strength q_u, tsf	Description
0 - 4	0 - 15		Very Loose	< 2	< 0.25	Very soft
4 - 10	15 - 35	26 - 30	Loose	2 - 4	0.25 - 0.50	Soft
10 - 30	35 - 65	28 - 35	Medium Dense	4 - 8	0.50 - 1.00	Medium Stiff
30 - 50	65 - 85	35 - 42	Dense	8 - 15	1.00 - 2.00	Stiff
> 50	85 - 100	38 - 46	Very Dense	15 - 30	2.00 - 4.00	Very Stiff
				> 30	> 4.00	Hard

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PLATE A1

TEST PIT NO. TP-1

LOGGED BY WJL EXCAVATION DATE 5/6/13 GROUND ELEV. 350 feet (±)

DEPTH ft.	USCS	SOIL DESCRIPTION	Sample No.	Moisture %	COMMENTS
	SP-SM	**SAND**, red-brown, fine grained, loose to medium dense, some silt, some pebble gravel, damp	S1	12.7	- Probe 12"
					- Probe 8"
			S2	7.1	
	SP	SAND, brown, fine grained, dense at 4.2 feet, some pebble gravel, minor silt, damp	S3	7.9	- Probe 1"
5					
		Total Depth = 4.2 feet No Water Seepage			
10					

TEST PIT NO. TP-2

LOGGED BY WJL EXCAVATION DATE 5/6/13 GROUND ELEV. 355 feet (±)

DEPTH ft.	USCS	SOIL DESCRIPTION	Sample No.	Moisture %	COMMENTS
	SP	**SAND**, gray, fine grained, some gravel, dense, damp	S1	5.1	- Probe 1"
5					- Probe 1"
	SP-SM	**SAND**, light gray, fine grained, dense, some silt, some fine gravel, damp	S2	7.3	
		Total Depth = 7.5 feet No Water Seepage			
10					

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TEST PIT LOGS

PROPOSED NEW DRIVING RANGE
BELLEVUE MUNICIPAL GOLF COURSE
5500 - 140TH AVE NE,
BELLEVUE, WASHINGTON

JOB NO. G-3450 DATE 5/6/13 PLATE A2

TEST PIT NO. TP-3

LOGGED BY WJL EXCAVATION DATE 5/6/13 GROUND ELEV. 356.5 feet (±)

DEPTH ft.	USCS	SOIL DESCRIPTION	Sample No.	Moisture %	COMMENTS
	SP	**SAND**, brown and gray to 2 feet, gray below 2 feet, fine grained, dense, some gravel, damp	S1	5.3	- Probe 3"
5			S2	3.9	- Probe 2"
	SP	**SAND**, oxidized red brown, fine grained, medium dense, **moist to wet**. Moderate water seepage at 9 feet.	S3	23.3	▽ - Moderate Water Seepage
10		Total Depth = 9 feet Water Seepage at 9 feet. Water level in test pit measured at 8.9 feet b.g.s. after 15 minutes.			

TEST PIT NO. _____

LOGGED BY _____ EXCAVATION DATE _____ GROUND ELEV. _____ feet (±)

DEPTH ft.	USCS	SOIL DESCRIPTION	Sample No.	Moisture %	COMMENTS
5					
10					

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TEST PIT LOGS

PROPOSED NEW DRIVING RANGE
BELLEVUE MUNICIPAL GOLF COURSE
5500 - 140TH AVE NE,
BELLEVUE, WASHINGTON

JOB NO. G-3450	DATE 5/6/13	PLATE A3

Bellevue Driving Range – site photos

View north to the clubhouse

View south to the driving range, same viewpoint as above

Existing driving range building entrance

9 stations under cover in existing hitting station building

General location of new building north of the old building

Existing driving range field and barrier nets, looking southeast.