



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. 12-108465-LO
Project Name/Address: Newcastle Golf Club Road Embankment Stabilization
15502 Newcastle Golf Club Road
Planner: Kevin LeClair
Phone Number: 425-452-2928

Minimum Comment Period: April 12, 2012

Materials included in this Notice:

- Blue Bulletin
- Checklist
- Vicinity Map
- Plans
- Other: Topographic Slope Depiction and Rock Buttress plan

WAC 197-11-960 Environmental Checklist.

ENVIRONMENTAL CHECKLIST

Reviewed under Bellevue permit
12-108465-LO. Reviewed on
3-26-2012 by Kevin LeClair.

Purpose of checklist:

The State Environmental Policy Act (SEPA), chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decide whether an EIS is required.

Instructions for applicants:

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can.

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later.

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Use of checklist for nonproject proposals:

Complete this checklist for nonproject proposals, even though questions may be answered "does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D).

For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer," and "affected geographic area," respectively.

A. BACKGROUND

1. Name of proposed project, if applicable: **Newcastle Golf Club Road Landslide Stabilization**
2. Name of applicant: **Mark Rigos and Laura Frolich, City of Newcastle**
3. Address and phone number of applicant and contact person: **12835 Newcastle Way, Suite 200
Newcastle, WA 98056, (425) 649-4444**
4. Date checklist prepared: **March 6, 2012**
5. Agency requesting checklist: **City of Bellevue (Bellevue)**
6. Proposed timing or schedule (including phasing, if applicable): **Construction Summer 2012.**

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain. **No.**

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

Geotechnical Engineering Report on Alternatives (9/2011)

Geotechnical Engineering Report for Design on 2 Alternatives (3/2012)

Grading, TESC and /or Storm Drainage Plan (forthcoming)

Landscape Restoration Plan (forthcoming)

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain. **None are currently pending.**

10. List any government approvals or permits that will be needed for your proposal, if known.

First, FHWA – WSDOT Local Programs approval is needed for partial funding reimbursement.

Second, Bellevue City Council approval is needed to grant a permanent slope easement.

Third, a Critical Areas Land Use Permit from the City of Bellevue (Bellevue) is needed.

Fourth, a Grading Permit from Bellevue is needed.

Fifth, a Right-Of-Way Use Permit from Newcastle is needed.

Sixth, approval from King County and Bellevue Parks Departments are needed for the conversion of Parks property to a permanent slope easement.

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

There are two proposed construction alternatives being considered by the City of Newcastle to permanently stabilize a landslide affected area adjacent to Newcastle Golf Club Road. The first alternative is to construct a permanent rock buttress. In this alternative, the existing plastic and quarry spalls on the failed slope would be removed. The slope would be properly keyed-in, shaped, compacted and stabilized to allow for the permanent rock buttress. The existing temporary rock buttress was constructed in an emergency situation and is not deemed stable long-term.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

- **47 degrees 32' 20.00" N 122 degrees 08' 28.62" W**
- **SW 1/4 of NW 1/4 of S26 T24N R5E**
- **Located on north side of Newcastle Golf Club Road west of 155th Ave SE.**

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (circle one): Flat, rolling, hilly, **steep slopes**, mountainous, other

b. What is the steepest slope on the site (approximate percent slope)? **50%**

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

BeD: Beausite gravelley sandy loam 15-30% slopes

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

Yes, a landslide occurred here after a large storm event in December 2010.

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

The purpose of the fill will to be constructing a permanent rock buttress. The type of material will be properly graded rock as specified in the geotechnical engineering report. The approx. quantity of excavation will be approx. 750 cubic yards and approx. 1,500 cubic yards of fill. It is unknown how much of the excavation material can be re-used for the permanent rock buttress. More accurate quantities will be determined during completion of the construction drawings (not yet completed). Source of fill not yet determined.

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

Minimal erosion would occur because most of the loose soil already eroded during the landslide.

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

Less than 5%

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

All necessary temporary erosion and sediment control measures will be installed.

A construction stormwater pollution prevention plan will be required per BCC 23.76. Turbidity monitoring will occur during construction.

2. Air

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

There will be construction machinery including possibly a crane, large track hoe and dump trucks. Emissions would be typical of a small project lasting approx. 45 days.

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 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.

Coal Creek is located 600 – 1,000 feet north of the project site. Coal Creek flows into Lake Washington approx. five miles west of the site.

- 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.

- 3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected.

Indicate the source of fill material.

None

- 4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

No

- 5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

No

- 6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

No

b. Ground:

- 1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.

No

- 2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

None

c. Water runoff (including stormwater):

- 1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow?

Will this water flow into other waters? If so, describe.

Stormwater will continue to be conveyed through the site in a tightline system. This stormwater will discharge slightly downstream of the existing discharge. The new outfall will be located just upstream of the non-erodible sandstone drainage segment.

Turbidity monitoring will be required during construction per BCC 23.76.

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

No

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

The side slope will be replanted with vegetation to decrease the likelihood of future landslides and provide hillside permanent stability.

4. Plants

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

X _____ deciduous tree: **alder, maple**, aspen, other

X _____ evergreen tree: **fir, cedar**, pine, other

- X _____ shrubs
- _____ grass
- _____ pasture
- _____ crop or grain
- _____ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
- _____ water plants: water lily, eelgrass, milfoil, other
- _____ other types of vegetation

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

Very little, the landslide removed existing vegetation. A few small trees and shrubs might be impacted along the edge of the repair zone.

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

None

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

Yes, a slope restoration plan has been designed to attempt to restore the area to the original vegetated / forested condition.

5. Animals

a. 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:
- mammals: **deer, bear**, elk, beaver, other:
- fish: bass, salmon, trout, herring, shellfish, other:

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

None known.

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

Not to our knowledge.

d. Proposed measures to preserve or enhance wildlife, if any:

None

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 needs? Describe whether it will be used for heating, manufacturing, etc.

Does not apply.

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 this proposal?

List other proposed measures to reduce or control energy impacts, if any:

None

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)?

There is some traffic noise associated with Newcastle Golf Club Road, but it will not impact the project, because the proposal does not involve dwelling units or commercial space.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

On a short term basis, there will be noise associated with construction machinery such as an excavator and compactor.

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

Construction will progress in an expedient and orderly manner.

8. Land and shoreline use

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

The current use of the site is a temporarily, but not permanently, stabilized landslide zone. The current use of adjacent properties is forested open space.

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

No

c. Describe any structures on the site.

None

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

No

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

Open space

**Zoning is R-1
Comprehensive plan designation is Single-family low-density. Park and open space is permitted as a defacto conditional use as it was legally established prior to annexation into City of Bellevue.**

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

Open space

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

Does not apply.

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

Yes, steep slopes, landslide hazard area and erosion hazard area.

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

Does not apply

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

Does not apply

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

Does not apply

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

Undergoing SEPA, Critical Area Land Use Permit (CALUP) and Grading Permit with the City of Bellevue Parks Department.

9. Housing

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

Does not apply

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

Does not apply.

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

Does not apply

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?

No structures are proposed.

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

None

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

None

11. Light and glare

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

None

b. Could light or glare from the finished project be a safety hazard or interfere with views? **No**

c. What existing off-site sources of light or glare may affect your proposal? **None**

d. Proposed measures to reduce or control light and glare impacts, if any: **Does not apply.**

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?
There is a regional hiking trail (Coal Creek Trail) several hundred feet north of the site, but the actual site is too steep for any hiking or other recreational opportunities.

b. Would the proposed project displace any existing recreational uses? If so, describe.
No

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:
None

13. Historic and cultural preservation

a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.
No

b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.
None

c. Proposed measures to reduce or control impacts, if any:
None

14. Transportation

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.
Newcastle Golf Club Road is just south of the site.

The road may need to be temporarily closed during construction, but only for brief work periods.

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?
No, but approximately one mile west of the site is a transit stop.

c. How many parking spaces would the completed project have? How many would the project eliminate?
Currently, the shoulder of a utility access road adjacent to the site has room for approx. three vehicles. No spaces will be added or removed.

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).
No new roads are required. The embankment along the north side of the Newcastle Golf Club Road corridor will be strengthened.

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.
No

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.
No vehicular trips once construction is completed.

g. Proposed measures to reduce or control transportation impacts, if any:

15. Public services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

No

b. Proposed measures to reduce or control direct impacts on public services, if any.

Does not apply

16. Utilities

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

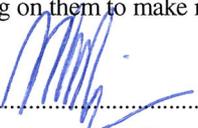
Gas, telephone and electricity are available to the site.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

No utilities are proposed for the project. Puget Sound Energy will be periodically monitoring their gas main adjacent to the site. One of the overhead power lines may need to be temporarily relocated. This would be coordinated with Puget Sound Energy as well.

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: 

Date Submitted: *3/14/2012*

REVIEWED
By Kevin LeClair at 9:32 am, Mar 26, 2012

TO BE COMPLETED BY APPLICANT

D. SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS

(do not use this sheet for project actions)

This page is not applicable, as the proposal is a project action.

EVALUATION FOR
AGENCY USE ONLY

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

Proposed measures to avoid or reduce such increases are:

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

Proposed measures to protect or conserve plants, animals, fish, or marine life are:

3. How would the proposal be likely to deplete energy or natural resources?

Proposed measures to protect or conserve energy and natural resources are:

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

Proposed measures to protect such resources or to avoid or reduce impacts are:

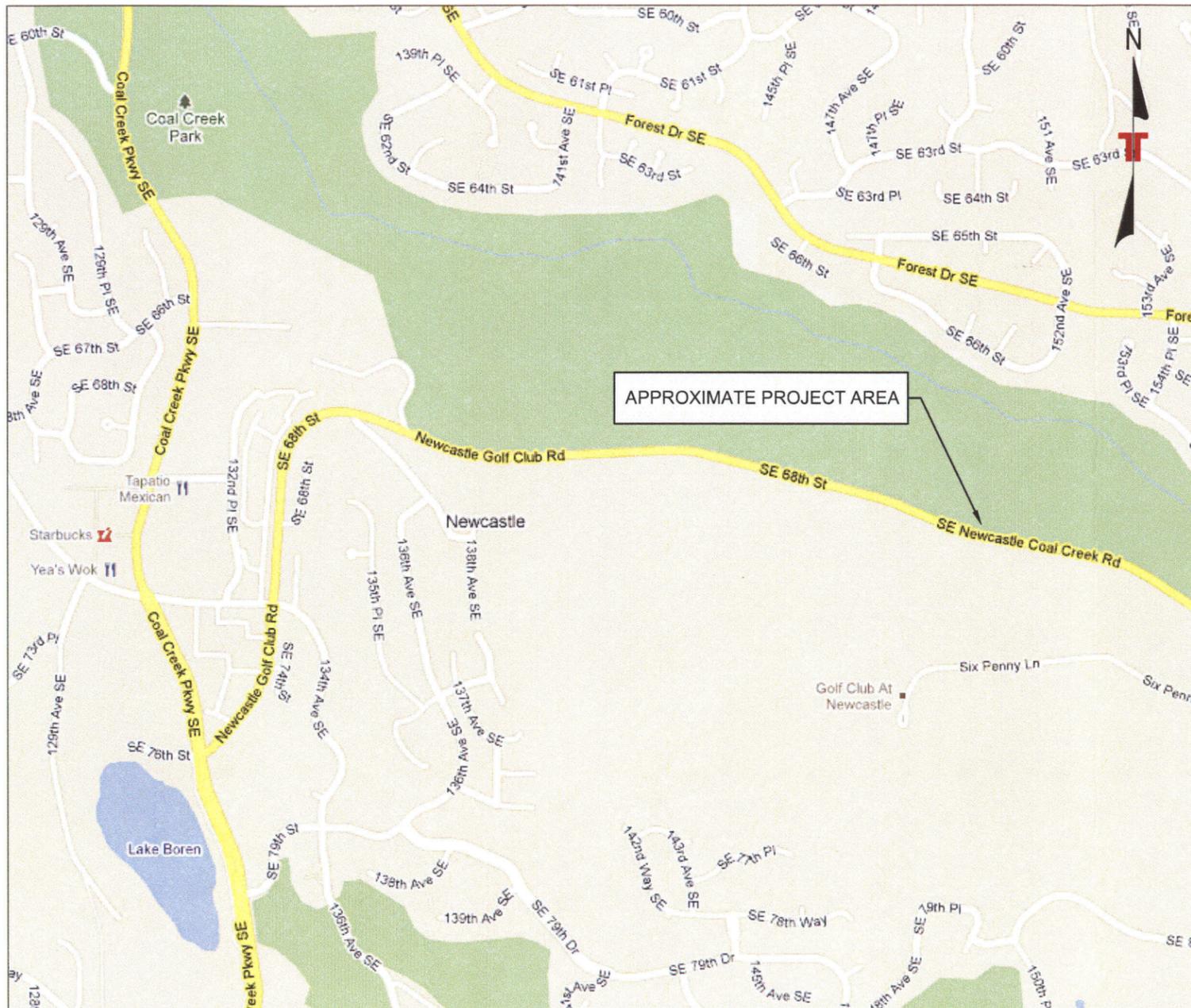
5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

Proposed measures to avoid or reduce shoreline and land use impacts are:

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

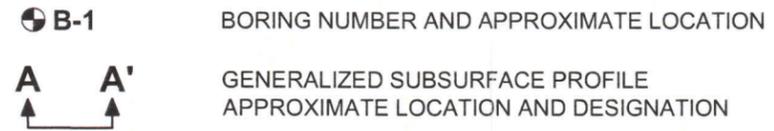
Proposed measures to reduce or respond to such demand(s) are:

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

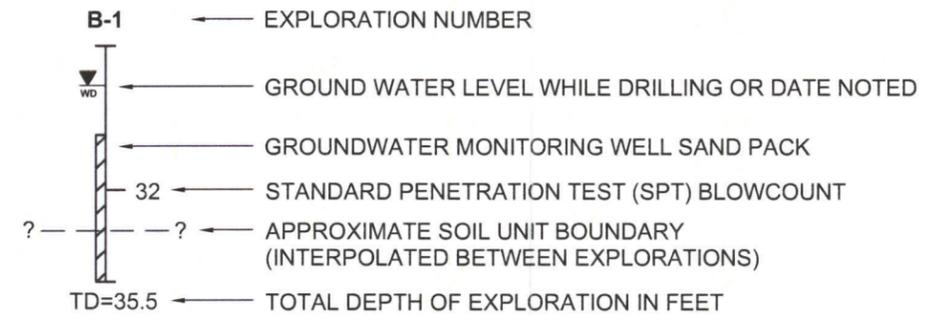


VICINITY MAP
NOT TO SCALE

BORING LOCATION DIAGRAM : EXHIBIT A-2



GENERALIZED SUBSURFACE PROFILE LEGEND : EXHIBITS A-3 AND A-4



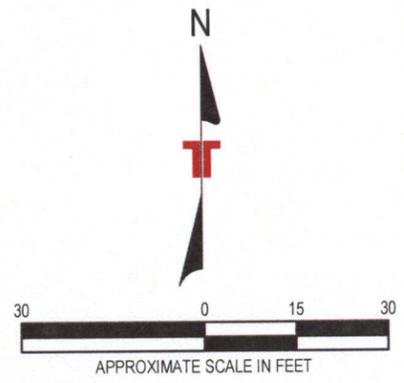
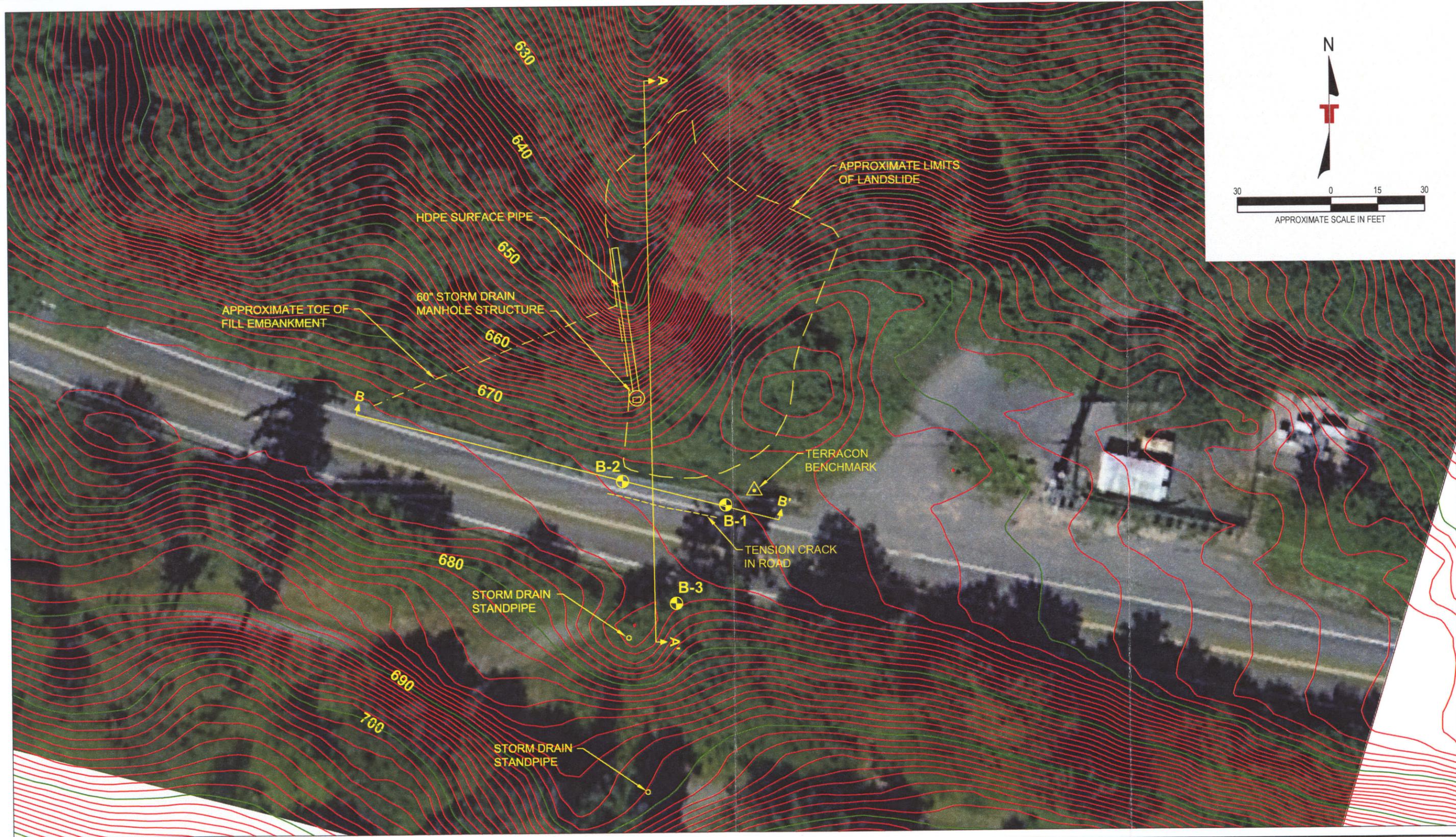
GENERAL NOTES FOR EXHIBITS A-2 THROUGH A-4

1. THE TOPOGRAPHIC BASE MAP PRESENTED ON EXHIBIT A-2 IS DERIVED FROM 6 FOOT RASTER RESOLUTION LIDAR BARE EARTH DEM DATA OBTAINED FROM THE PUGET SOUND LIDAR CONSORTIUM. THE DATA PROJECTION IS PLANE STATE COORDINATE SYSTEM. THE VERTICAL DATUM IS NAD83(HARM). THE LIDAR DATA WAS COLLECTED BY THE PUGET SOUND LIDAR CONSORTIUM BETWEEN 2000 AND 2005 AND MAY NOT REPRESENT CURRENT TOPOGRAPHIC CONDITIONS, PARTICULARLY WITHIN THE LANDSLIDE AREA.
2. THE AIR PHOTO OVERLAY PRESENTED ON EXHIBIT A-2 WAS OBTAINED FROM GOOGLE EARTH'S 2010 DATABASE.
3. THE LOCATION AND ELEVATION OF THE BORINGS AND EXISTING SITE FEATURES SUCH AS DRAINAGE STRUCTURES, ROADWAY TENSION CRACKS, AND LANDSLIDE FEATURES SHOWN ON EXHIBITS A-2 THROUGH A-4 ARE BASED ON FIELD MEASUREMENTS TAKEN WITH A TRANSIT, HAND LEVEL, FIBERGLASS TAPE MEASURE, AND LASER RANGE FINDER RELATIVE TO EXISTING SITE FEATURES VISIBLE ON THE AIR PHOTO OVERLAY, AND SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE MEASUREMENT METHODS.
4. THE SUBSURFACE CONDITIONS SHOWN ON THE GENERALIZED SUBSURFACE PROFILES ARE BASED UPON INTERPOLATION BETWEEN EXPLORATIONS AND MAY NOT REPRESENT ACTUAL SUBSURFACE CONDITIONS. SIMPLIFIED NAMES ARE SHOWN FOR SOIL DEPOSITS, BASED ON GENERALIZATIONS OF SOIL DESCRIPTIONS. SEE EXPLORATION LOGS AND REPORT TEXT FOR MORE DETAILED SOIL AND GROUNDWATER DESCRIPTIONS.

Project Mng:	DCW	Project No:	81105116
Drawn By:	JPG	Scale:	AS SHOWN
Checked By:	JPG	File No:	81105116.dwg
Approved By:	DCW	Date:	SEPTEMBER 2011

Terracon
Consulting Engineers and Scientists
21905 64th Avenue W, Ste 100 Mountlake Terrace, WA 98043
PH. (425) 771-3304 FAX. (425) 771-3549

VICINITY MAP AND LEGEND
Newcastle Golf Club Road Landslide Evaluation
Newcastle, Washington

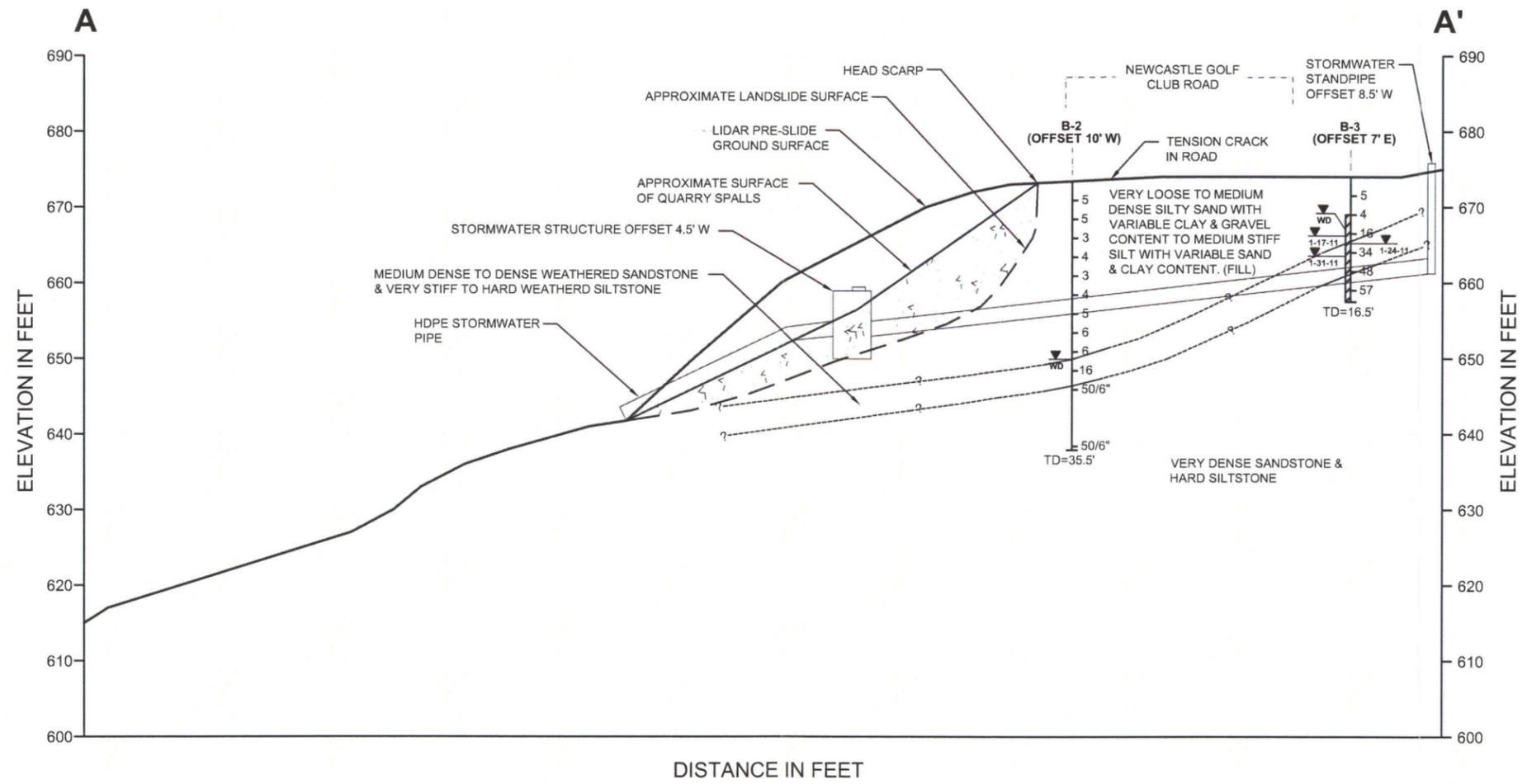


REFERENCE: TOPOGRAPHY DEVELOPED USING LIDAR BARE EARTH DEM DATA OBTAINED FROM THE PUGET SOUND LIRAR CONSORTIUM. AIR PHOTO OVERLAY OBTAINED FROM GOOGLE EARTH 2010.

Project Mng:	DCW	Project No.	81105116
Drawn By:	JPG	Scale:	AS SHOWN
Checked By:	JPG	File No.	81105116.dwg
Approved By:	DCW	Date:	SEPTEMBER 2011

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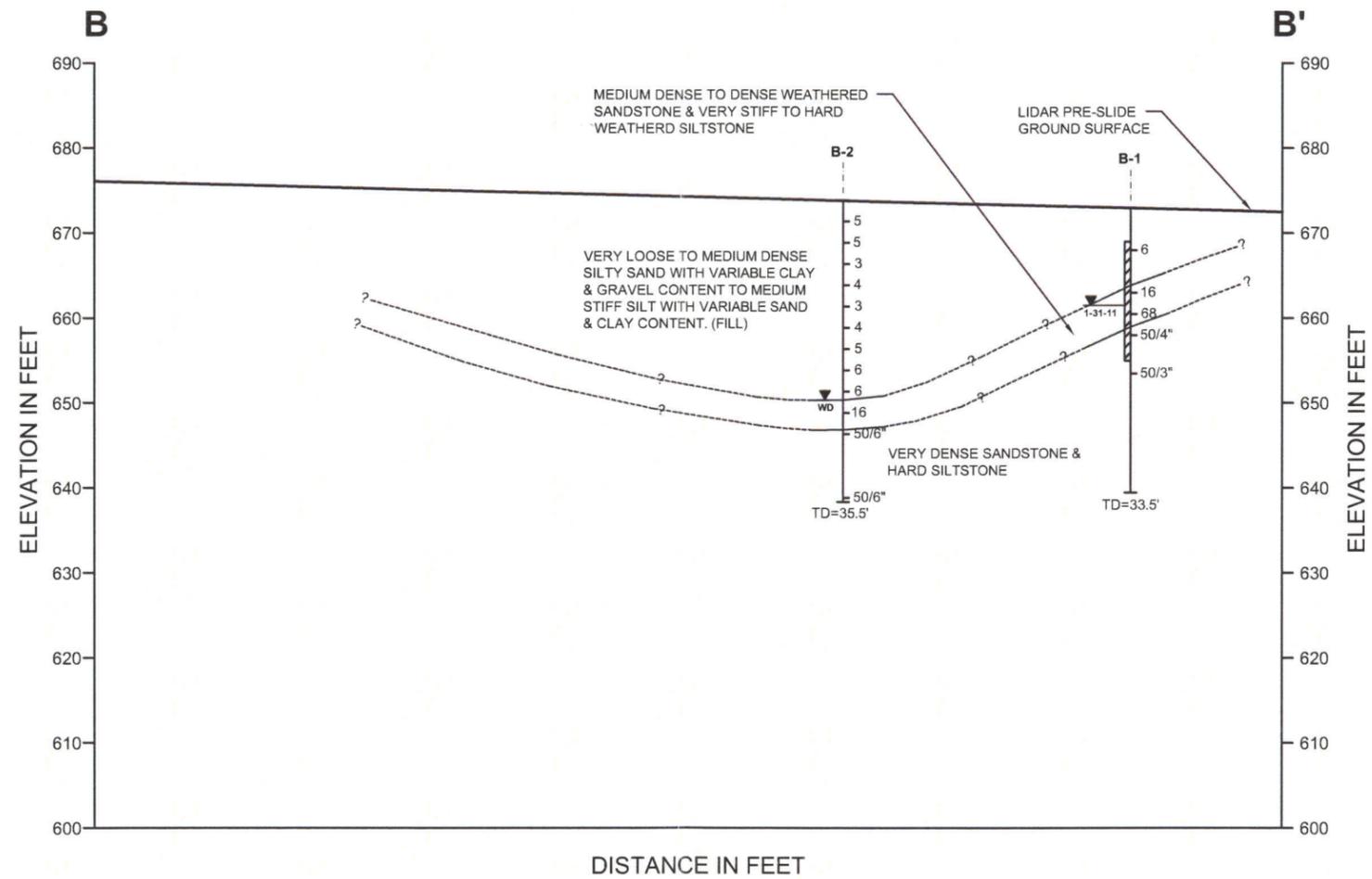
BORING LOCATION DIAGRAM
 Newcastle Golf Club Road Landslide Evaluation
 Newcastle, Washington



Project Mgr:	DCW	Project No.	81105116
Drawn By:	JPG	Scale:	AS SHOWN
Checked By:	JPG	File No.	81105116.dwg
Approved By:	DCW	Date:	SEPTEMBER 2011

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 21905 64th Avenue W., Ste 100 Mountlake Terrace, WA 98043
 PH. (425) 771-3304 FAX. (425) 771-3549

GENERALIZED SUBSURFACE PROFILE A TO A'
 Newcastle Golf Club Road Landslide Evaluation
 Newcastle, Washington



Project Mngr:	DCW	Project No:	81105116
Drawn By:	JPG	Scale:	AS SHOWN
Checked By:	JPG	File No:	81105116.dwg
Approved By:	DCW	Date:	SEPTEMBER 2011

Terracon
Consulting Engineers and Scientists

21905 64th Avenue W., Ste 100 Mountlake Terrace, WA 98043
PH. (425) 771-3304 FAX. (425) 771-3549

GENERALIZED SUBSURFACE PROFILE B TO B'
Newcastle Golf Club Road Landslide Evaluation
Newcastle, Washington

Site Plan B

Prepared By: MJR

DATED: MARCH 16, 2012

- No wetlands in stabilization Area
- No floodplain in stabilization Area
- No streams in stabilization Area
- Structure setbacks not shown due to nature of project.

EXISTING HDPE STORM WATER TIGHTLINE TO BE EXTENDED THROUGH PERMANENT BUTTRESS TO SUITABLE DISCHARGE LOCATION



STEEP SLOPE
LANDSLIDE
HAZARD
EROSION
HAZARD

EXISTING STORM WATER
STRUCTURE TO BE REMOVED

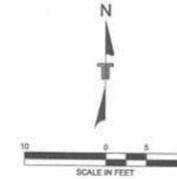
SEVERAL TREES
NEAR ROCK BUTTRESS
WILL NEED TO BE
REMOVED.

EXISTING QUARRY SPALLS PLACED FOR
TEMPORARY LANDSLIDE REPAIR

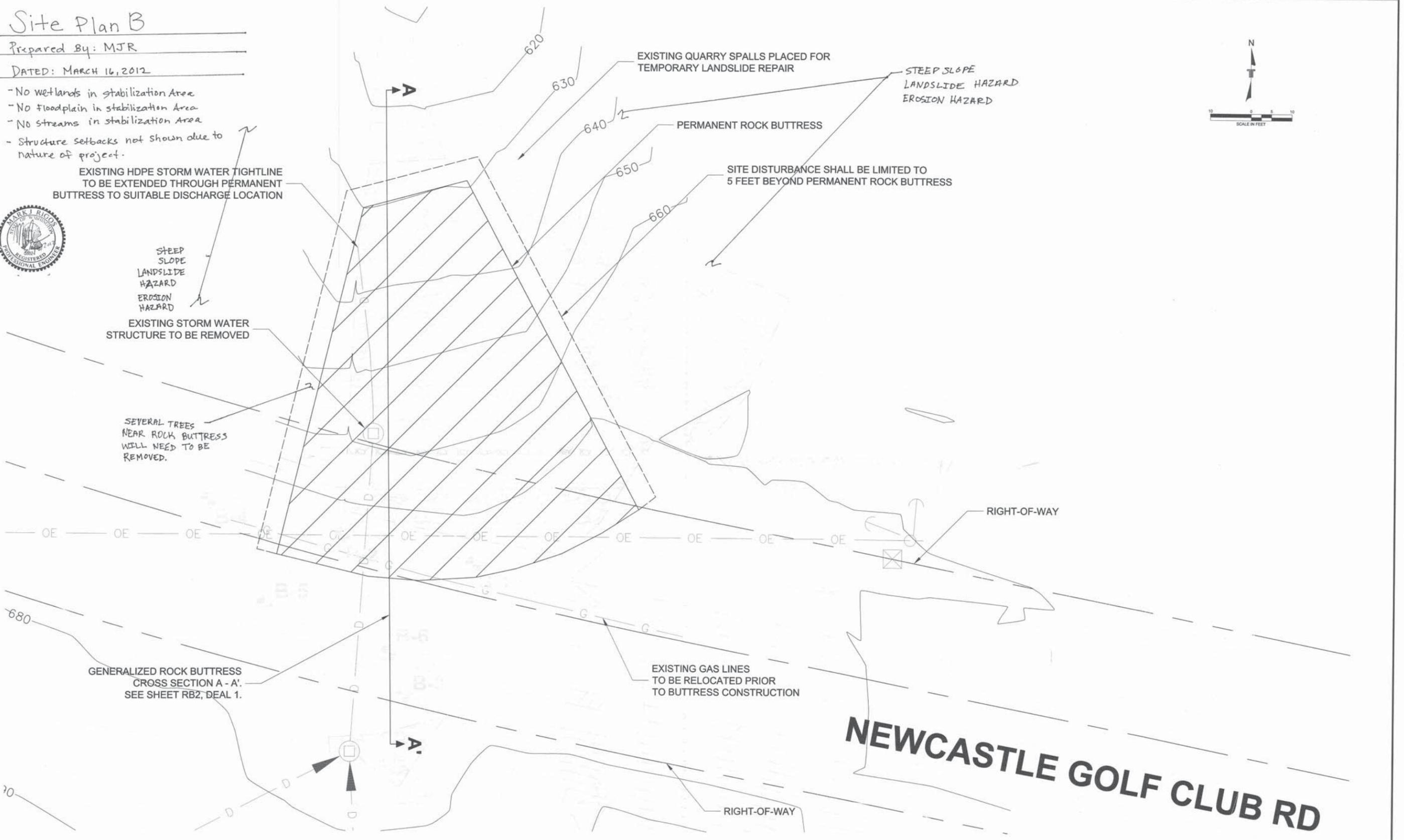
STEEP SLOPE
LANDSLIDE HAZARD
EROSION HAZARD

PERMANENT ROCK BUTTRESS

SITE DISTURBANCE SHALL BE LIMITED TO
5 FEET BEYOND PERMANENT ROCK BUTTRESS



N:\PROJECTS\2010\81105116\Working Files\Diagrams-Drawings-Figures\TCC_Rock_Buttress_Design_RB2.dwg DATE: 3/16/12 10:51:16 AM DRAWN BY: JG



GENERALIZED ROCK BUTTRESS
CROSS SECTION A - A'.
SEE SHEET RB2, DEAL 1.

EXISTING GAS LINES
TO BE RELOCATED PRIOR
TO BUTTRESS CONSTRUCTION

RIGHT-OF-WAY

NEWCASTLE GOLF CLUB RD

REV	DATE	BY	DESCRIPTION

Terracon
Consulting Engineers and Scientists

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PLAN VIEW **PRELIMINARY**

ROCK BUTTRESS
NEWCASTLE GOLF CLUB ROAD LANDSLIDE REPAIR
NEWCASTLE, WA

RB1	
DESIGNED BY:	JPG
DRAWN BY:	JPG
APPVD BY:	JEZ
SCALE:	AS SHOWN
DATE:	XX/XX/XX
JOB NO.:	81105116A
ACAD NO.:	001
SHEET NO.:	1 OF 2