Technical Specifications:
Special Provisions

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INTRODUCTION TO THE SPECIAL PROVISIONS

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The work on this project shall be accomplished in accordance with the *Standard Specifications for Road, Bridge and Municipal Construction*, 2021 edition, as issued by the Washington State Department of Transportation (WSDOT) and the American Public Works Association (APWA), Washington State Chapter (hereafter "Standard Specifications"). The Standard Specifications, as modified or supplemented by the Amendments to the Standard Specifications and these Special Provisions, all of which are made a part of the Contract Documents, shall govern all of the Work.

These Special Provisions are made up of both General Special Provisions (GSPs) from various sources, which may have project-specific fill-ins; and project-specific Special Provisions. Each Provision either supplements, modifies, or replaces the comparable Standard Specification, or is a new Provision. The deletion, amendment, alteration, or addition to any subsection or portion of the Standard Specifications is meant to pertain only to that particular portion of the section, and in no way should it be interpreted that the balance of the section does not apply.

The project-specific Special Provisions are designated by "*(******)*". The GSPs are labeled under the headers of each GSP, with the date of the GSP and its source, as follows:

(May 18, 2007 APWA GSP)
(August 7, 2006 WSDOT GSP)

Also incorporated into the Contract Documents by reference are the following documents, regulations, and/or requirements, which shall supersede any conflicting provisions of the Standard Specifications and are made a part of this contract; provided, however, that if any of the following documents, regulations and or requirements are less restrictive than Washington State Law, then the Washington State Law shall prevail.

- Manual on Uniform Traffic Control Devices for Streets and Highways, currently adopted edition, with Washington State modifications, if any
- Standard Plans for Road, Bridge, and Municipal Construction, WSDOT/APWA, current edition

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DIVISION 1

GENERAL REQUIREMENTS

DESCRIPTION OF WORK

(******)

The Quil Ceda Village Administration Building Sewer Lateral Project includes construction of approximately 60 linear feet of 4-inch-diameter gravity sewer lateral, and 280 linear feet of 6-inch-diameter gravity sewer lateral. The project also includes construction of one 6-inch-diameter sewer drop inlet, four sewer cleanouts, connection to existing sewer laterals, decommission existing underground septic tank between the Administration Building and Tulalip Data Services Building, miscellaneous gravity sewer lateral appurtenances, trench, and landscape restoration.

1-01 DEFINITIONS AND TERMS

1-01.3 Definitions

The tenth, eleventh, and twelfth paragraphs of Section 1-01.3 are deleted.

The following new terms and definitions are inserted after the twentieth paragraph of Section 1-01.3:

(******)

Dates

Bid Opening Date

The date on which the Contracting Agency publicly opens and reads the Bids.

Award Date

The date of the formal decision of the Contracting Agency to accept the most responsible and responsive Bidder for the Work.

Contract Execution Date

The date the Contracting Agency officially binds the Agency to the Contract.

Notice to Proceed Date

The date stated in the Notice to Proceed on which the Contract time begins.

Substantial Completion Date

The day the Engineer determines the Contracting Agency has full and unrestricted use and benefit of the facilities, both from the operational and safety standpoint, any remaining traffic disruptions will be rare and brief, all the initial plantings are completed, and only minor incidental work, replacement of temporary substitute facilities, plant establishment periods, or correction or repair remains for the Physical Completion of the total Contract.

Physical Completion Date

The day all of the Work is physically completed on the project. All documentation required by the Contract and required by law does not necessarily need to be furnished by the Contractor by this date.

Completion Date
The day all the Work specified in the Contract is completed and all the obligations of the Contractor under the contract are fulfilled by the Contractor. All documentation required by the Contract and required by law must be furnished by the Contractor before establishment of this date.

Final Acceptance Date
The date on which the Contracting Agency accepts the Work as complete.

The following definitions in Section 1-01.3 are replaced and revised to read:

(******)
Award
The formal decision of the Contracting Agency to accept the most responsible and responsive Bidder for the Work.

Contracting Agency
Agency of Government that is responsible for the execution and administration of the Contract. "Contracting Agency" refers to the Tulalip Tribes of Washington.

Engineer
The Contracting Agency's representative who administers the construction program for the Contracting Agency. "Engineer" shall refer to the State of Washington Department of Transportation.

Inspector
The Project Engineer's representative who inspects Contract performance in detail. "Inspector" shall refer to the State of Washington Department of Transportation's employee designated to the Project.

Laboratory
The laboratories of the Contracting Agency, or other laboratories the Contracting Agency authorizes to test Work, soils, and materials. "Laboratory" shall refer to the State of Washington Department of Transportation's Material Laboratory.

Project Engineer
The Engineer's representative who directly supervises the engineering and administration of a construction project. "Project Engineer" shall refer to the State of Washington Department of Transportation's employee designated to the Project.

Section 1-01.3 is supplemented with the following:

(******)
All references to "final contract voucher certification" shall be interpreted to mean the final payment form established by the Contracting Agency.

The venue of all causes of action arising from the advertisement, award, execution, and performance of the contract shall be specified by the Contracting Agency.

Additive
A supplemental unit of work or group of bid items, identified separately in the Bid Proposal, which may, at the discretion of the Contracting Agency, be awarded in addition to the base bid.

Alternate
One of two or more units of work or groups of bid items, identified separately in the Bid Proposal, from which the Contracting Agency may make a choice between different methods or material of construction for performing the same work.

Alternative Dispute Resolution
A method of resolving disputes other than arbitration or litigation.

Business Day
A business day is any day from Monday through Friday except holidays as listed in Section 1-08.5.

Contract Time
The period of time established by the terms and conditions of the Contract within which the Work must be physically completed.

Construction Manager
The individual or firm responsible for providing administration, management, and related services as required to coordinate the Project, coordinate the Contractors and provide other services identified in the Contract Documents. “Construction Manager” refers to the Tulalip Tribes as represented by the Tulalip Tribes’ Project Manager.

Indian / Native American
The term “Indian or Native American” shall mean any person who is a member of a federally recognized Indian tribe, and recognized as an Indian by the United States, pursuant to its trust responsibility to American Indians.

Liquidated Damages
The sum established in the Contract Documents as the predetermined measure of damages to be paid to the Tulalip Tribes of Washington due to the Contractor's failure to complete the Work, or portions thereof, within stipulated times.

NAOB or NAOB’s
Native American Owned Business that has been certified by Tulalip TERO.

Notice of Intent to Award
The notice provided to the apparently successful Bidder stating that upon satisfactory compliance with all conditions precedent for execution of the Contract Form, within the time specified, the Tulalip Tribes of Washington intends to execute a Contract Form with the Bidder.

Notice to Proceed
A notice provided by the Tulalip Tribes of Washington to the Contractor authorizing the Contractor to proceed with the Work and establishing the date for completion of the Work.

Preference / Preferred Employee / Hiring
The term “Preferred Employee” shall mean a person entitled to a preference in employment under Ordinance No. 60, who must be hired in tier preference order before a non-Indian person, whenever an opening is available.

Regulations / Ordinance
Shall mean the regulations implementing any Ordinance adopted by the Tulalip Tribal Employment Rights Commission and the Tulalip Board of Directors, which is a law within the boundaries of the reservation.

Request for Information (RFI)
A written request from the Contractor to the Tribes Representative, through the Engineer, seeking an interpretation or clarification of the Contract Documents.

Reservation
Shall mean all lands and waters within the exterior boundaries of the Tulalip Indian Reservation or within the jurisdiction of the Tulalip Tribes.

Samples
Physical examples furnished by the Contractor to illustrate materials, equipment or workmanship and establish Standards by which the Work will be judged.

Surety
A person or entity providing a Bid Guaranty or a Bond to a Bidder or a Contractor, as applicable, to indemnify the Tulalip Tribes of Washington against all direct and consequential damages suffered by failure of the Bidder to enter into the Contract, or by failure of the Contractor to perform the Contract and to pay all lawful claims of Subcontractors, Material Suppliers and laborers, as applicable.

TERO
Means the “Tulalip Tribal Employment Rights Office”.

Traffic
Both vehicular and non-vehicular traffic, such as pedestrians, bicyclists, wheelchairs, and equestrian traffic.

Tribal Court
Shall mean the tribal court of the Tulalip Tribes of Washington.

Tribal Entity
Means all subsidiary entities of the Tulalip Tribes and is intended to be as broad and encompassing as possible to ensure the Ordinance’s coverage overall employment and contract activities within the Nation’s jurisdiction and the term shall be so interpreted by the Commission and the Courts.

Tribal Preference
This is the process of hiring applicants which gives tribal members a higher preference in employment on tribally funded projects or tribal entities.

Tribal Member
The term “Tribal Member” and the term “Member” shall mean any person who is an enrolled member of the Tulalip Tribes.

Tribe
The term “Tribe” or “Tribes” shall mean the Tulalip Tribes of Washington, unless the context clearly indicates otherwise.

Tulalip TERO Code
The Tulalip “Tribal Employment Rights Office” (TERO) Code is the Tribal law which establishes the methods and procedures to give preference to Indians in hiring promotions, training and all other aspects of employment contracting and subcontracting and specifies the methods and procedures for providing preference to certified NAOB’s when contracting and subcontracting for goods or services on the Reservation.

Tulalip Tribes of Washington
The Contracting Agency, Owner or entity for whom the Project is being constructed.

Tulalip Tribes
See Tulalip Tribes of Washington.

Tulalip Tribes’ Project Manager
The Tulalip Tribes’ representative who provides management and oversight for the project.

Unit Price
An amount stated in the bid as the price per unit of measurement for materials or services described in the Contract Documents, which cost shall include overhead, profit and any other expense for the Work.

Veteran
Shall mean a person who has been honorably discharged from the active, reserve, or National Guard armed forces of the United States including Army, Navy, Marines, Air Force, and Coast Guard.

Warranty
Legally enforceable assurance of the quality and performance of materials and equipment.

Waters of the Tribes
"Waters of the Tribes" means all streams, lakes, ponds, wetlands, salt waters, watercourses, waterways, wells, springs, reservoirs, aquifers, irrigation systems, drainage systems, and all other bodies or accumulations of water, surface and underground, natural or artificial, public or private, which are contained within, flow through, or border upon:

The lands, wetlands, and tidelands within the boundaries of the Tulalip Tribes Reservation; or

All lands, wetlands or tidelands outside the exterior boundaries of the Reservation which are held in fee by the Tulalip Tribes or held in trust by the United States government for the benefit of the Tulalip Tribes or its individual members; and

All lands, wetlands, or tidelands deemed Tulalip “Indian Country” as defined in 18 U.S.C. 1151.

Work
The construction and services required by the Contract Documents, to include all labor, materials, equipment, and services performed or provided by the Contractor for the Project.

1-02 BID PROCEDURES AND CONDITIONS

1-02.2 Plans and Specifications

(June 27, 2011 APWA GSP)
Delete this section and replace it with the following:

Information as to where Bid Documents can be obtained or reviewed can be found in the Call for Bids (Advertisement for Bids) for the work.

After award of the contract, plans and specifications will be issued to the Contractor at no cost as detailed below:

To Prime Contractor	No. of Sets	Basis of Distribution
Reduced plans (11" x 17")	***3***	Furnished automatically upon award.
Contract Provisions	***3***	Furnished automatically upon award.
Large plans (e.g., 22" x 34")	***1***	Furnished only upon request.

Additional plans and Contract Provisions may be obtained by the Contractor from the source stated in the Call for Bids, at the Contractor's own expense.

1-02.4 Examination of Plans, Specifications, and Site of Work

Section 1-02.4 is supplemented with the following:

(******)
The soils information used for study and design of this project is available in Appendix A of the Contract Documents.

1-02.4(1) General

(August 15, 2016 APWA GSP Option B)

The first sentence of the last paragraph is revised to read:

Any prospective Bidder desiring an explanation or interpretation of the Bid Documents, shall request the explanation or interpretation in writing by close of business ***5*** business days preceding the bid opening to allow a written reply to reach all prospective Bidders before the submission of their Bids.

1-02.5 Proposal Forms

(******)
Section 1-02.5 is deleted in its entirety.

1-02.6 Preparation of Proposal

(******)
The first paragraph of Section 1-02.6 is revised to read:

> The Contracting Agency will accept only those Proposals properly executed on the forms it provides.

The third paragraph of Section 1-02.6 is revised to read:

> In the space provided on the Bid Proposal Form, the Bidder shall confirm that all Addenda have been received.

The fourth paragraph of Section 1-02.6 is deleted in its entirety.

1-02.7 Bid Deposit

(******)
Section 1-02.7 is deleted in its entirety.

1-02.9 Delivery of Proposal

(******)
Section 1-02.9 is deleted in its entirety.

1-02.10 Withdrawing, Revising, or Supplementing Proposal

(******)
Section 1-02.10 is deleted in its entirety.

1-02.11 Combination and Multiple Proposals

(******)
Section 1-02.11 is deleted in its entirety.

1-02.12 Public Opening of Proposals

(******)
Section 1-02.12 is deleted in its entirety.

1-02.15 Pre-Award Information
(August 14, 2013 APWA GSP)

Revise this section to read:

> Before awarding any contract, the Contracting Agency may require one or more of these items or actions of the most responsive and responsible bidder:
>
> 1. A complete statement of the origin, composition, and manufacture of any or all materials to be used,

2. Samples of these materials for quality and fitness tests,

3. A progress schedule (in a form the Contracting Agency requires) showing the order of and time required for the various phases of the work,

4. A breakdown of costs assigned to any bid item,

5. Attendance at a conference with the Engineer or representatives of the Engineer,

6. Obtain a Tulalip Tribes Business License to do business on the Tulalip Indian Reservation,

7. Obtain, and furnish a copy of, a business license to do business in the city or county where the work is located.

8. Any other information or action taken that is deemed necessary to ensure that the bidder is the lowest responsible bidder.

1-03 AWARD AND EXECUTION OF CONTRACT

1-03.1 Consideration of Bids

(******)
Section 1-03.1 is deleted in its entirety and shall adhere to the requirements of the Tulalip Tribes Agreement.

1-03.2 Award of Contract

(******)
Section 1-03.2 is deleted in its entirety and shall adhere to the requirements of the Tulalip Tribes Agreement.

1-03.3 Execution of Contract

(******)
Section 1-03.3 is deleted in its entirety and shall adhere to the requirements of the Tulalip Tribes Agreement.

1-03.4 Contract Bond

(******)
Section 1-03.4 is deleted in its entirety and shall adhere to the requirements of the Tulalip Tribes Agreement.

1-03.5 Failure to Execute Contract

(******)
Section 1-03.5 is deleted in its entirety and shall adhere to the requirements of the Tulalip Tribes Agreement.

1-03.6 Return of Bid Deposit

(******)
Section 1-03.6 is deleted in its entirety and shall adhere to the requirements of the Tulalip Tribes Agreement.

1-03.7 Judicial Review

(******)
Section 1-03.7 is deleted in its entirety and shall adhere to the requirements of the Tulalip Tribes Agreement.

1-04 SCOPE OF THE WORK

1-04.2 Coordination of Contract Documents, Plans, Special Provisions, Specifications, and Addenda

The second paragraph of Section 1-04.2 is revised as follows:

(******)
Any inconsistency in the parts of the contract shall be resolved by following this order of precedence (e.g., 1 presiding over 2, 2 over 3, 3 over 4, and so forth):

1. Tulalip Tribes Agreement.
2. Addenda.
3. Special Provisions, and APWA General Special Provisions.
4. General Provisions.
5. Contract Plans.
6. Amendments to the Standard Specifications.
7. WSDOT Standard Specifications for Road, Bridge and Municipal Construction.
8. WSDOT Standard Plans for Road, Bridge, and Municipal Construction.

1-04.4 Changes

1-04.4(1) Minor Changes

Revise the section to read:

(*******)
No bid item has been provided for Minor Change.

1-05 CONTROL OF WORK

1-05.4 Conformity With and Deviations from Plans and Stakes

(******)

Contractor Surveying – Utilities

Copies of the Contracting Agency provided primary survey control data are available for the bidder's inspection at the office of the Engineer.

The Contractor shall be responsible for setting, maintaining, and resetting all alignment stakes and grades necessary for the construction of the utilities, including sanitary sewer laterals, and all related appurtenances. Except for the survey control data to be furnished by the Contracting Agency, calculations, surveying, and measuring required for setting and maintaining the necessary lines and grades shall be the Contractor's responsibility.

The Contractor shall inform the Engineer when monuments are discovered that were not identified in the Plans and construction activity may disturb or damage the monuments. All monuments noted on the plans "DO NOT DISTURB" shall be protected throughout the length of the project or be replaced at the Contractor's expense.

Detailed survey records shall be maintained, including a description of the work performed on each shift, the methods utilized, and the control points used. The record shall be adequate to allow the survey to be reproduced. A copy of each day's record shall be provided to the Engineer within 3 working days after the end of the shift.

The meaning of words and terms used in this provision shall be as listed in *Definitions of Surveying and Associated Terms* current edition, published by the American Congress on Surveying and Mapping and the American Society of Civil Engineers.

The survey work shall include but not be limited to the following:

1. Verify the primary horizontal and vertical control furnished by the Contracting Agency, and expand into secondary control by adding stakes and hubs as well as additional survey control needed for the project. Provide descriptions of secondary control to the Contracting Agency. The description shall include coordinates and elevations of all secondary control points.

2. Establish sanitary sewer lateral alignments by placing hubs, stakes, or marks on offsets to centerline at all fittings, valves, and at points on the alignments spaced no further than 50 feet. Place hubs, stakes, or marks on offsets as necessary to adequately locate and construct meter boxes/vaults, air/vacuum relief valves, casings, and other appurtenances shown on the Plans.

3. Establish the horizontal and vertical location of all gravity sanitary sewer features, placing offset stakes to all sanitary sewer lateral at a horizontal interval not greater than 25 feet.

4. Establish the horizontal and vertical location of all sanitary sewer features, placing offset stakes to all sewer cleanouts, and all other points as necessary to adequately locate and construct the pump station.

5. Establish intermediate elevation benchmarks as needed to check work throughout the project.

6. For all other types of sanitary sewer utility construction included in this provision, provide staking and layout as necessary to adequately locate, construct, and check the specific construction activity.

The Contractor shall provide the Contracting Agency copies of any calculations and staking data when requested by the Engineer.

To facilitate the establishment of these lines and elevations, the Contracting Agency will provide the Contractor with primary survey control information consisting of descriptions of two primary control points used for the horizontal and vertical control. Primary control points will be described by reference to the project alignment and the coordinate system and elevation datum utilized by the project.

The Contractor shall ensure a surveying accuracy within the following tolerances:

	Vertical	Horizontal
Sanitary Sewer Lateral and Appurtenances	±0.10 feet	±0.10 feet

The Contracting Agency may spot check the Contractor's surveying. These spot checks will not change the requirements for normal checking by the Contractor.

When staking sewer lateral alignment and grade, the Contractor shall perform independent checks from different secondary control to ensure that the points staked are within the specified survey accuracy tolerances.

The Contractor shall calculate coordinates for the alignment. The Contracting Agency will verify these coordinates prior to issuing approval to the Contractor for commencing with the work. The Contracting Agency will require up to 7 calendar days from the date the data is received.

Contract work to be performed using Contractor-provided stakes shall not begin until the stakes are approved by the Contracting Agency. Such approval shall not relieve the Contractor of responsibility for the accuracy of the stakes.

Stakes shall be marked in accordance with Standard Plan A10.10. When stakes are needed that are not described in the Plans, those stakes shall be marked at no additional cost to the Contracting Agency as ordered by the Engineer.

1-05.7 Removal of Defective and Unauthorized Work

Supplement this section with the following:

(October 1, 2005 APWA GSP)
If the Contractor fails to remedy defective or unauthorized work within the time specified in a written notice from the Engineer, or fails to perform any part of the work required by the Contract Documents, the Engineer may correct and remedy such work as may be identified in the written notice, with Contracting Agency forces or by such other means as the Contracting Agency may deem necessary.

If the Contractor fails to comply with a written order to remedy what the Engineer determines to be an emergency situation, the Engineer may have the defective and unauthorized work corrected immediately, have the rejected work removed and replaced, or have work the Contractor refuses to perform completed by using Contracting Agency or other forces. An emergency situation is any situation when, in the opinion of the Engineer, a delay in its remedy could be potentially unsafe, or might cause serious risk of loss or damage to the public.

Direct or indirect costs incurred by the Contracting Agency attributable to correcting and remedying defective or unauthorized work, or work the Contractor failed or refused to perform, shall be paid by the Contractor. Payment will be deducted by the Engineer from monies due, or to become due, the Contractor. Such direct and indirect costs shall include in particular, but without limitation, compensation for additional professional services required, and costs for repair and replacement of work of others destroyed or damaged by correction, removal, or replacement of the Contractor's unauthorized work.

No adjustment in contract time or compensation will be allowed because of the delay in the performance of the work attributable to the exercise of the Contracting Agency's rights provided by this Section.

The rights exercised under the provisions of this section shall not diminish the Contracting Agency's right to pursue any other avenue for additional remedy or damages with respect to the Contractor's failure to perform the work as required.

1-05.11 Final Inspection

Delete this section and replace it with the following:

(October 1, 2005 APWA GSP)

1-05.11 Final Inspections and Operational Testing **New Section**

1-05.11(1) Substantial Completion Date **New Section**

When the Contractor considers the work to be substantially complete, the Contractor shall so notify the Engineer and request the Engineer establish the Substantial Completion Date. The Contractor's request shall list the specific items of work that remain to be completed in order to reach physical completion. The Engineer will schedule an inspection of the work with the Contractor to determine the status of completion. The Engineer may also establish the Substantial Completion Date unilaterally.

If, after this inspection, the Engineer concurs with the Contractor that the work is substantially complete and ready for its intended use, the Engineer, by written notice to the Contractor, will set the Substantial Completion Date. If, after this inspection the Engineer does not consider the work substantially complete and ready for its intended use, the Engineer will, by written notice, so notify the Contractor giving the reasons therefor.

Upon receipt of written notice concurring in or denying substantial completion, whichever is applicable, the Contractor shall pursue vigorously, diligently and without unauthorized interruption, the work necessary to reach Substantial and Physical Completion. The Contractor shall provide the Engineer with a revised schedule indicating when the Contractor expects to reach substantial and physical completion of the work.

The above process shall be repeated until the Engineer establishes the Substantial Completion Date and the Contractor considers the work physically complete and ready for final inspection.

1-05.11(2) Final Inspection and Physical Completion Date **New Section**

When the Contractor considers the work physically complete and ready for final inspection, the Contractor by written notice, shall request the Engineer to schedule a final inspection. The Engineer will set a date for final inspection. The Engineer and the Contractor will then make a final inspection and the Engineer will notify the Contractor in writing of all particulars in which the final inspection reveals the work incomplete or unacceptable. The Contractor shall immediately take such corrective measures as are necessary to remedy the listed deficiencies. Corrective work shall be pursued vigorously, diligently, and without interruption until physical completion of the listed deficiencies. This process will continue until the Engineer is satisfied the listed deficiencies have been corrected.

If action to correct the listed deficiencies is not initiated within 7 days after receipt of the written notice listing the deficiencies, the Engineer may, upon written notice to the Contractor, take whatever steps are necessary to correct those deficiencies pursuant to Section 1-05.7.

The Contractor will not be allowed an extension of contract time because of a delay in the performance of the work attributable to the exercise of the Engineer's right hereunder.

Upon correction of all deficiencies, the Engineer will notify the Contractor and the Contracting Agency, in writing, of the date upon which the work was considered physically complete. That date shall constitute the Physical Completion Date of the contract but shall not imply acceptance of the work or that all the obligations of the Contractor under the contract have been fulfilled.

1-05.12 Final Acceptance

Add the following new section:

1-05.12(1) One-Year Guarantee Period **New Section**
(March 8, 2013 APWA GSP)

The Contractor shall return to the project and repair or replace all defects in workmanship and material discovered within one year after Final Acceptance of the Work. The Contractor shall

start work to remedy any such defects within 7 calendar days of receiving Contracting Agency's written notice of a defect and shall complete such work within the time stated in the Contracting Agency's notice. In case of an emergency, where damage may result from delay or where loss of services may result, such corrections may be made by the Contracting Agency's own forces or another contractor, in which case the cost of corrections shall be paid by the Contractor. In the event the Contractor does not accomplish corrections within the time specified, the work will be otherwise accomplished and the cost of same shall be paid by the Contractor.

When corrections of defects are made, the Contractor shall then be responsible for correcting all defects in workmanship and materials in the corrected work for one year after acceptance of the corrections by Contracting Agency.

This guarantee is supplemental to and does not limit or affect the requirements that the Contractor's work comply with the requirements of the Contract or any other legal rights or remedies of the Contracting Agency.

Add the following new section:

(October 1, 2005 APWA GSP)

1-05.16 Water and Power **New Section**

The Contractor shall make necessary arrangements, and shall bear the costs for power and water necessary for the performance of the work, unless the contract includes power and water as a pay item.

Add the following new section:

1-05.18 Record Drawings **New Section**

(******)

The Contractor shall maintain one set of full-size plans for Record Drawings, updated with clear and accurate red-lined field revisions on a daily basis, and within 2 business days after receipt of information that a change in Work has occurred. The Contractor shall not conceal any work until the required information is recorded.

This Record Drawing set shall be used for this purpose alone, shall be kept separate from other Plan sheets, and shall be clearly marked as Record Drawings. These Record Drawings shall be kept on site at the Contractor's field office, and shall be available for review by the Contracting Agency at all times. The Contractor shall bring the Record Drawings to each progress meeting for review.

The preparation and upkeep of the Record Drawings is to be the assigned responsibility of a single, experienced, and qualified individual. The quality of the Record Drawings, in terms of accuracy, clarity, and completeness, is to be adequate to allow the Contracting Agency to modify the computer-aided drafting (CAD) Contract Drawings to produce a complete set of Record Drawings for the Contracting Agency without further investigative effort by the Contracting Agency.

The Record Drawing markups shall document all changes in the Work, both concealed and visible. Items that must be shown on the markups include but are not limited to:

- Actual dimensions, arrangement, and materials used when different than shown in the Plans.
- Changes made by Change Order or Field Order.
- Changes made by the Contractor.
- Accurate locations of storm sewer, sanitary sewer, water mains, and other water appurtenances, structures, conduits, light standards, vaults, width of roadways, sidewalks, landscaping areas, building footprints, channelization and pavement markings, etc., include pipe invert elevations, top of castings (manholes, inlets, etc.).

If the Contract calls for the Contracting Agency to do all surveying and staking, the Contracting Agency will provide the elevations at the tolerances the Contracting Agency requires for the Record Drawings.

When the Contract calls for the Contractor to do the surveying/staking, the applicable tolerance limits include, but are not limited to, the following:

	Vertical	Horizontal
As-built sanitary and storm invert and grate elevations	± 0.01 foot	± 0.10 foot
As-built monumentation	± 0.001 foot	± 0.001 foot
As-built waterlines, inverts, valves, hydrants	± 0.10 foot	± 0.10 foot
As-built ponds/swales/water features	± 0.10 foot	± 0.10 foot
As-built buildings (fin. Floor elev.)	± 0.01 foot	± 0.10 foot
As-built gas lines, power, TV, Tel, Com	± 0.10 foot	± 0.10 foot
As-built signs, signals, etc.	N/A	± 0.10 foot

Making Entries on the Record Drawings:

- Use erasable colored pencil (not ink) for all markings on the Record Drawings, conforming to the following color code:
- Additions - Red
- Deletions - Green
- Comments - Blue
- Dimensions - Graphite
- Provide the applicable reference for all entries, such as the change order number, the request for information (RFI) number, or the approved shop drawing number.
- Date all entries.
- Clearly identify all items in the entry with notes similar to those in the Contract Drawings (such as pipe symbols, centerline elevations, materials, pipe joint abbreviations, etc.).

The Contractor shall certify on the Record Drawings that said drawings are an accurate depiction of built conditions, and in conformance with the requirements detailed above. The Contractor shall submit final Record Drawings to the Contracting Agency. Contracting Agency acceptance of the Record Drawings is one of the requirements for achieving Physical Completion.

Cost of all work under this section shall be incidental to the contract and are the responsibility of the Contractor.

1-06 CONTROL OF MATERIAL

Add the following new section:

(******)

1-06.7 Shop Drawings and Submittals New Section

1-06.7(1) General

Shop drawing and submittal review by the Owner or Owner's representative will be limited to general design requirements only, and shall not relieve the Contractor from responsibility for errors or omissions or responsibility for consequences due to deviations from the Contract Documents. No changes may be made in any submittal after it has been reviewed except with written notice and approval from the Owner.

The Contractor shall review each submittal and provide approval in writing or by stamping, with a statement indicating that he has reviewed and approved the submittal, verified dimensional information, materials, catalog numbers, and similar data, confirmed that specified criteria has been met, and acknowledges that the product, method, or information will function as intended.

Shop drawing and submittal data for each item shall contain sufficient information on each item to determine if it is in compliance with the contract requirements.

The Owner will provide review services for a first and second review of each submittal item free from charge to the Contractor. The cost to provide additional reviews shall be charged to the Contractor by withholding the appropriate amounts from each progress payment.

Shop drawing and submittal items that have been installed in the work but have not been approved through the review process shall be removed, and an approved product shall be furnished, all at the Contractor's expense. Under no circumstances shall payment be made to the Contractor for materials not approved by the submittal process.

1-06.7(2) Required Information

Each submittal shall be submitted within 7 working days after contract execution to the Engineer.

Shop drawings and submittals shall be submitted electronically and shall contain the following information for all items:

1. Project Name.
2. Contractor.
3. Engineer.
4. Owner.
5. Applicable specification and drawing reference.
6. A stamp showing that the Contractor has checked the material or equipment for conformance with the contract requirements, coordination with other work on the job, and dimensional suitability.
7. A blank space for the Engineer to place a 3-inch by 4-inch review stamp.
8. Dimensions and weights.
9. Catalog information.
10. Manufacturer's specifications.
11. Special handling instructions.
12. Maintenance requirements.
13. Wiring and control diagrams.
14. List of contract exceptions.
15. Other information as required by the Engineer.
16. Installation and Operating Instructions.

1-06.7(3) Review Schedule

Shop drawings and submittals will be reviewed as promptly as possible and transmitted to the Contractor no later than 7 working days after receipt by the Engineer. The Contractor shall revise and resubmit previously rejected submittals as necessary to obtain acceptance. Delays caused by the need for resubmittal shall not be a basis for an extension of contract time or delay damages. Two sets of shop drawings or one electronic response will be returned to the Contractor after review.

1-06.7(4) Substitutions

Any product or construction method that does not meet these specifications will be considered a substitution. Substitutions must be approved prior to installation or use on this project, as specified below.

1-06.7(4)A After Contract Execution

Within 10 working days after the date of the Notice of Award of Contract, Owner will consider formal requests from Contractor for substitution of product in place of those specified. Contractor shall submit two copies of request for substitution. Data shall include the necessary change in construction methods, including a detailed description of proposed method and related drawings illustrating methods. An itemized comparison of proposed substitution with product or method shall be provided.

In making a request for substitution, Contractor represents that he has personally investigated the proposed product or method and has determined that it is equal or superior to, in all respects, the product specified. All substitutions shall be reviewed and approved by the Tribe prior to incorporation into the project. Upon review and acceptance by the Owner, Contractor shall coordinate installation of accepted substitutions into the work, making changes that may be required for work to be completed. Contractor waives all claims for additional costs related to substitutions that consequently become apparent.

1-06.7(4)B Equivalent Materials

Mention of equipment or materials by brand name and/or model number is occasionally made in order to establish a basis of quality for certain items of material, equipment, or processes. Such mention is intended to include products of other manufacturers that will meet the design standards of the product mentioned.

If the Contractor desires to use products other than those specified under this “or approved equivalent” provision, he shall obtain the approval of the Owner and the Engineer before entering an order therefore. All substitutions or products to be used under the “or approved equivalent” provision shall be reviewed and approved by the Tribe prior to incorporation into the project.

Wherever mention is made of a specific manufacturer, such mentions shall be treated as if the phrase “or approved equivalent” appears thereafter whether or not in fact it does. The terms “or equal” and/or “or approved equivalent” shall be considered synonymous.

Cost of all work under this section shall be included in the lump sum contract bid item of “Mobilization”.

1-07 LEGAL RELATIONS AND RESPONSIBILITIES TO THE PUBLIC

1-07.1 Laws to be Observed

The first three paragraphs of Section 1-07.1 are revised to read:

(******)

The Contractor shall always comply with all Federal, State, Tribal, or local laws, ordinances, and regulations that affect Work under the Contract. The Contractor shall indemnify, defend, and save harmless The Tulalip Tribes (including its Board of Directors and all other officers and employees) and the State (including the Governor, Commission, Secretary, and any agents, officers, and employees) against any claims that may arise because the Contractor (or any employee of the Contractor or Subcontractor or material person) violated a legal requirement.

The Contractor shall be responsible to immediately report to the Engineer any deviation from the contract provisions pertaining to environmental compliance, including but not limited to spills, unauthorized fill in waters of the Tribes including wetlands, unauthorized fill in waters of the State including wetlands, water quality standards, noise, air quality, etc.

The Contractor shall be responsible for the safety of all workers and shall comply with all appropriate state safety and health standards, codes, rules, and regulations, including, but not limited to, those promulgated under the Washington Industry Safety and Health Act RCW 49.17 (WISHA) and as set forth in Title 296 WAC (Department of Labor and Industries). In particular, the Contractor's attention is drawn to the requirements of WAC 296.800 which requires employers to provide a safe workplace. More specifically, WAC 296.800.11025 prohibits alcohol and narcotics from the workplace. The Contractor shall likewise be obligated to comply with all federal safety and health standards, codes, rules, and regulations that may be applicable to the Contract Work.

Section 1-07.1 is supplemented with the following:

(******)

Indian Preference and Tribal Ordinances

This project is located on the Tulalip Indian Reservation. It is the Contractor's responsibility to comply with all applicable Tribal laws, codes, ordinances, and regulations. The Contractor shall comply with them in accordance with Section 1-07.1.

Tribal Employment Rights Ordinances (TEROs), may utilize a variety of tools to encourage Indian employment. These tools may include, but are not limited to, TERO fees, Indian hiring preference, Indian-owned business subcontracting preference and/or an Indian training requirement. Other requirements may be a Tribal business license, a required compliance plan, and/or employee registration requirements. Every tribe is different and each may be willing to work cooperatively with the Contractor to develop a strategy that works for both parties. For specific details, the Contractor should contact The Tulalip Tribes' TERO Department at 6406 Marine Drive, Tulalip, Washington 98271, Office (360) 716-4747 or Facsimile (360) 716-0249. http://www.tulaliptero.com/.

The Tulalip Tribes of Washington has the sovereign authority over the lands of the Tulalip Indian Reservation and has the authority to enact and enforce its laws, ordinances, codes,

and regulations. The Contractor shall comply and cooperate with the Tribes and its representatives. The costs related to such compliance shall be borne solely by the Contractor, who is advised to contact the tribal representative listed above, prior to submitting a bid, to assess the impact of compliance on the project.

Although Indian preference can be compelled and mandated by the Contracting Agency, there is no limitation whereby voluntary Contractor or Subcontractor initiated preferences are given, if otherwise lawful. 41 CFR 60-1.5(a)7 provides as follows:

> Work on or near Indian reservations: It shall not be a violation of the equal opportunity clause for a construction or non-construction Contractor to extend a publicly announced preference in employment to Indians living on or near an Indian reservation in connection with employment opportunities on or near an Indian reservation. The use of the word near would include all that area where a person seeking employment could reasonably be expected to commute to and from in the course of a work day. Contractors or Subcontractors extending such a preference shall not, however, discriminate among Indians on the basis of religion, sex, or tribal affiliation, and the use of such a preference shall not excuse a Contractor from complying with the other requirements as contained in the August 25, 1981 Department of Labor, Office of Federal Contract Compliance Programs, Government Contractors Affirmative Actions Requirements.
>
> **TERO Participation shall be evaluated as follows**:
> Counting Tulalip Tribal Member Native American Owned Business or Native American Owned Business Participation.
>
> When a Tulalip Tribal Member NAOB or NAOB participates in a contract, only the value of the work actually performed by the Tulalip Tribal Member NAOB or NAOB will be counted towards the Tulalip Tribal Member NAOB or NAOB subcontracting requirement.
>
> 1. Count the entire amount of the portion of the contract that is performed by the Tulalip Tribal-owned or Indian-owned enterprise or organization's own forces. Include the cost of supplies and materials obtained by the Tulalip Tribal Member NAOB or NAOB for the work of the contract, including supplies purchased or equipment leased by the Tulalip Tribal Member NAOB or NAOB (except supplies and equipment the lower-tiered Tulalip Tribal Member NAOB or NAOB purchases or leases from the Prime Contractor or its affiliates, unless the Prime Contractor is also a Tulalip Tribal Member NAOB or NAOB). Work performed by a Tulalip Tribal Member NAOB or NAOB, utilizing resources of the Prime Contractor or its affiliates will not be counted toward Tulalip Tribal-owned or Indian-owned enterprise or organization goals. In very rare situations, a Tulalip Tribal Member NAOB or NAOB may utilize equipment and or personnel from a non-Tulalip Tribal Member NAOB or NAOB other than the Prime Contractor or its affiliates. Should this situation arise, the arrangement must be short-term and must have prior written approval from the Contracting Agency. The arrangement must not erode a Tulalip Tribal Member NAOB or NAOB's ability to perform a Commercially Useful Function (see discussion of CUF, below).
>
> 2. Count the entire amount of fees or commissions charged by a Tulalip Tribal Member NAOB or NAOB firm for providing a bona fide service, such as professional, technical, consultant, or managerial services, or for providing bonds or insurance.

3. When a Tulalip Tribal Member NAOB or NAOB subcontracts part of the work of its contract to another firm, the value of the subcontracted work may be counted toward the Tulalip Tribal Member NAOB or NAOB requirement only if the Tulalip Tribal Member NAOB or NAOB's lower-tier subcontractor is also a Tulalip Tribal Member NAOB or NAOB. Work that a Tulalip Tribal Member NAOB or NAOB subcontracts to a non-Tulalip Tribal Member NAOB or NAOB does not count toward the Tulalip Tribal Member NAOB or NAOB contracting requirement.

4. When a non-Tulalip Tribal Member NAOB or NAOB subcontractor further subcontracts to a lower-tier subcontractor or supplier who is a certified Tulalip Tribal-owned or Indian-owned enterprise or organization, then that portion of the work further subcontracted may be counted toward the Tulalip Tribal Member NAOB or NAOB requirement, so long as it is a distinct clearly defined portion of the work of the subcontract that the Tulalip Tribal Member NAOB or NAOB is performing in a commercially useful function with its own forces.

5. Continue to count the work subcontracted to a decertified Tulalip Tribal-owned or Indian-owned enterprise or organization after decertification, provided the prime contractor had a subcontract in force before the decertification and the prime contractor's actions did not influence the Tulalip Tribal-owned or Indian-owned enterprise's or organization's decertification.

Commercially Useful Function
Payments to a Tulalip Tribal Member NAOB or NAOB will count toward Tulalip Tribal Member NAOB or NAOB requirements only if the Tulalip Tribal Member NAOB or NAOB is performing a commercially useful function on the contract.

1. A Tulalip Tribal Member NAOB or NAOB performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the Tulalip Tribal Member NAOB or NAOB must also be responsible, with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material, installing (if applicable), and paying for the material itself. Two-party checks are not allowed.

2. A Tulalip Tribal Member NAOB or NAOB does not perform a commercially useful function if its role is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of Tulalip Tribal Member NAOB or NAOB participation.

Trucking
Use the following factors in determining whether a Tulalip Tribal Member NAOB or NAOB trucking company is performing a commercially useful function:

1. The Tulalip Tribal Member NAOB or NAOB must be responsible for the management and supervision of the entire trucking operation for which it is listed on a particular contract.

2. The Tulalip Tribal Member NAOB or NAOB must itself own and, with its own workforce, operate at least one fully licensed, insured, and operational truck used on the contract.

3. The Tulalip Tribal Member NAOB or NAOB receives credit only for the total value of the transportation services it provides on the contract using trucks it owns or leases, licenses, insures, and operates with drivers it employs.

4. For purposes of this paragraph, a lease must indicate that the Tulalip Tribal-owned or Indian-owned enterprise or organization has exclusive use of and control over the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the Tulalip Tribal Member NAOB or NAOB, so long as the lease gives the Tulalip Tribal Member NAOB or NAOB absolute priority for use of the leased truck. Leased trucks must display the name and identification number of the Tulalip Tribal Member NAOB or NAOB.

5. The Tulalip Tribal Member NAOB or NAOB may lease trucks from another Tulalip Tribal Member NAOB or NAOB and may enter an agreement with an owner-operator who is certified as a Tulalip Tribal Member NAOB or NAOB. The Tulalip Tribal Member NAOB or NAOB who leases trucks from another Tulalip Tribal Member NAOB or NAOB or employs a Tulalip Tribal Member NAOB or NAOB owner-operator receives credit for the total value of the transportation services the lessee Tulalip Tribal Member NAOB or NAOB provides on the contract.

6. The Tulalip Tribal Member NAOB or NAOB may also lease trucks from a non-Tulalip Tribal Member NAOB or NAOB and may enter an agreement with an owner-operator who is a non-Tulalip Tribal Member NAOB or NAOB. The Tulalip Tribal Member NAOB or NAOB who leases trucks from a non-Tulalip Tribal Member NAOB or NAOB or employs a non-Tulalip Tribal Member NAOB or NAOB owner-operator is entitled to credit only for the fee or commission it receives as a result of the lease arrangement. The Tulalip Tribal Member NAOB or NAOB does not receive credit for the total value of the transportation services provided by the lessee, since these services are not provided by a Tulalip Tribal Member NAOB or NAOB.

7. In any lease or owner-operator situation, as described in paragraphs 5 and 6 above, the following rules shall apply:

    - A written lease/rental agreement on all trucks leased or rented, showing the true ownership and the terms of the rental must be submitted and approved by the Contracting Agency prior to the beginning of the work. The agreement must show the lessor's name, trucks to be leased, and agreed-upon amount or method of payment (hour, ton, or per load). All lease agreements shall be for a long-term relationship, rather than for the individual project. Does not apply to owner-operator arrangements.

    - Only the vehicle (not the operator) is leased or rented. Does not apply to owner-operator arrangements.

8. In order for Tulalip Tribal Member NAOB or NAOB project requirements to be credited, Tulalip Tribal Member NAOB or NAOB trucking firms must be covered by a subcontract or a written agreement approved by the Contracting Agency prior to performing its portion of the work.

Expenditures Paid to Other Tulalip Tribal Member Native American-Owned Business or Native American-Owned Business.

Expenditures paid to other Tulalip Tribal Member Native American-Owned Business or Native American-Owned Business for materials or supplies may be counted toward Tulalip Tribal Member NAOB or NAOB requirements as provided in the following:

Manufacturer

1. Counting
   If the materials or supplies are obtained from a Tulalip Tribal Member NAOB or NAOB manufacturer, count 100 percent of the cost of the materials or supplies toward Tulalip Tribal Member NAOB or NAOB requirements.

2. Definition
   To be a manufacturer, the firm operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the contract and of the general character described by the specifications.

3. In order to receive credit as a Tulalip Tribal Member NAOB or NAOB manufacturer, the firm must have received an “on-site” review and been approved by TERO to operate as a Tulalip Tribal Member NAOB or NAOB manufacturing firm prior to bid opening. Use of a Tulalip Tribal Member NAOB or NAOB manufacturer that has not received an on-site review and approval by TERO prior to bid opening will result in the bid being declared non-responsive, unless the contribution of the manufacturer was not necessary to meet the project requirement. To schedule a review, the manufacturing firm must submit a written request to TERO and may not receive credit towards Tulalip Tribal Member NAOB or NAOB participation until the completion of the review. Once a firm’s manufacturing process has been approved in writing, it is not necessary to resubmit the firm for approval unless the manufacturing process has substantially changed. Information on approved manufacturers (per contract) may be obtained from TERO.

Regular Dealer

1. Counting
   If the materials or supplies are purchased from a Tulalip Tribal Member NAOB or NAOB regular dealer, 10 percent of the cost of the materials or supplies will count toward Tulalip Tribal Member NAOB or NAOB requirements.

2. Definition
   a) To be a regular dealer, the firm must own, operate, or maintain a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. It must also be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question.

b) A person may be a regular dealer in such bulk items as petroleum products, steel, cement, gravel, stone, or asphalt without owning, operating, or maintaining a place of business, as provided elsewhere in this specification, if the person both owns and operates distribution equipment for the products. Any supplementing of regular dealers' own distribution equipment shall be by a long-term lease agreement and not on an ad hoc or contract-by-contract basis.

c) Packagers, brokers, manufacturers' representatives, or other persons who arrange or expedite transactions are not regular dealers.

Regular dealer status is granted on a contract-by-contract basis. To obtain regular dealer status, a formal written request must be made by the interested supplier (potential regular dealer) to TERO. TERO must be in receipt of this request at least 7 calendar days prior to bid opening. Included in the request shall be a full description of the project, type of business operated by the Tulalip Tribal Member NAOB or NAOB, and the manner the Tulalip Tribal Member NAOB or NAOB will operate as a regular dealer on the specific contract. Once the request is reviewed by TERO, the Tulalip Tribal Member NAOB or NAOB supplier requesting it will be notified in writing whether regular dealer status was approved. Tulalip Tribal Member Native American Owned Business or Native American Owned Business that are approved as regular dealers for a contract (whenever possible) will be listed on the Tulalip Tribes TERO's Native American Owned Business (NAOB) registry Internet Homepage at: www.tulaliptero.com/Home/ Contractors/NAOBRegistryReport.aspx prior to the time of bid opening. In addition, bidders may request confirmation of the Tulalip Tribal Member NAOB or NAOB supplier's approval to operate as a regular dealer on a specific contract by writing the TERO Department, 6406 Marine Drive, Tulalip, WA 98271 or by phone at (360) 716-4747. Use of a supplier that has not received approval as a regular dealer prior to bid opening will result in the bid being declared nonresponsive, unless the contribution of the regular dealer was not necessary to meet the project requirement.

Materials or Supplies Purchased from a Tulalip Tribal Member NAOB or NAOB

With respect to materials or supplies purchased from a Tulalip Tribal Member NAOB or NAOB who is neither a manufacturer nor a regular dealer, the entire amount of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on a job site may be counted toward the goal. No part of the cost of the materials and supplies themselves may be applied toward Tulalip Tribal Member NAOB or NAOB requirements.

Eligibility

To be eligible for award of the contract, the bidder must properly complete and submit the List of Tulalip Tribal Member NAOB Subcontractor(s) and or Supplier(s) and the List of NAOB Subcontractor(s) and or Supplier(s) which have been made a part of the bidder's Bid Proposal Form. The above named lists contained in Section IV of the Bid Proposal Form will be used by the Contracting Agency in determining whether the bidder's bid proposal satisfies the Tulalip Tribal Member NAOB and NAOB requirements.

For each Tulalip Tribal Member NAOB and NAOB described in the Bid Proposal Form Section IV – List of Lower-Tiered Subcontractor(s) and or Supplier(s), the bidder shall state the project role and work item in which that Tulalip Tribal Member NAOB or NAOB

will participate. A general description of the work to be performed by the Tulalip Tribal Member NAOB or NAOB shall be included. If a Tulalip Tribal Member NAOB or NAOB will perform a partial item of work, the bidder shall also include a dollar amount for each partial item of work. The bidder shall also include a dollar amount for each Tulalip Tribal Member NAOB or NAOB listed in Section IV that will be applied towards meeting or exceeding the assigned Tulalip Tribal Member NAOB and NAOB contract requirements.

In the event of arithmetic errors in completing the Bid Proposal Form Section IV, the amount listed to be applied towards the requirement for each Tulalip Tribal Member NAOB and NAOB shall govern and the Tulalip Tribal Member NAOB and NAOB total shall be adjusted accordingly. The information and commitments demonstrated in the Bid Proposal Form Section IV shall become a condition of any subsequent award of a contract to that bidder and the Bid Proposal Form itself shall become a part of the subsequent contract.

The Contracting Agency shall consider as non-responsive and shall reject any bid proposal submitted that does not contain a Completed Section IV of the Bid Proposal Form or contains a List of Tulalip Tribal Member NAOB Subcontractor(s) and or Supplier(s) and or a List of NAOB Subcontractor(s) and or Supplier(s) that fails to demonstrate that the bidder will meet the Tulalip Tribal Member NAOB or NAOB contract requirements.

Procedures Between Award and Execution

After award of the contract, the successful bidder shall provide the additional information described below. A failure to comply shall result in the forfeiture of the bidder's proposal bond or deposit.

The Contracting Agency will notify the successful bidder of the award of the contract in writing and will include a request for a further breakdown of the Tulalip Tribal Member NAOB and NAOB information. After award and prior to execution of the contract, the bidder shall submit the following items:

1. Additional information for all successful Tulalip Tribal Member NAOB and NAOB as shown on the List of Tulalip Tribal Member NAOB Subcontractor(s) and or Supplier(s) and the List of NAOB Subcontractor(s) and or Supplier(s) included in Section IV of the Bid Proposal Form:
    - Correct business name, federal employee identification number (if available), and mailing address.
    - List of all bid items assigned to each successful Tulalip Tribal Member NAOB, or NAOB, including unit prices and extensions.
    - Description of partial items (if any) to be sublet to each successful Tulalip Tribal Member NAOB or NAOB specifying the distinct elements of work under each item to be performed by the Tulalip Tribal Member NAOB or NAOB and including the dollar value of the Tulalip Tribal Member NAOB or NAOB.
    - Submit evidence of certification issued by the Tulalip TERO Offices for the Tulalip Tribal Member NAOB or NAOB.

Total amounts shown for each Tulalip Tribal Member NAOB and NAOB shall not be less than the amount shown on the Bid Proposal Form Section IV. This submittal, showing the Tulalip Tribal Member NAOB and NAOB work item breakdown, when accepted by the Contracting

Agency and resulting in contract execution, shall become a part of the contract. A breakdown that does not conform to the List of Tulalip Tribal Member NAOB Subcontractor(s) and or Supplier(s) and the List of NAOB Subcontractor(s) and or Supplier(s) included in Section IV of the Bid Proposal Form or that demonstrates a lesser amount of Tulalip Tribal Member NAOB or NAOB participation than that included in the Certification will be returned for correction. The contract will not be executed by the Contracting Agency until a satisfactory breakdown has been submitted.

Procedures After Execution

Reporting

The Contractor shall submit a "Quarterly Report of Amounts Credited as Tulalip Tribal Member NAOB and NAOB Participation" (actual payments) on a quarterly basis for any calendar quarter in which Tulalip Tribal Member NAOB and NAOB work is accomplished or upon completion of the project, as appropriate. The quarterly reports are due on January 20th, April 20th, July 20th, and October 20th of each year. The dollars reported will be in accordance with the "Counting Tulalip Tribal Member Native American-Owned Business or Native American-Owned Business Participation" section of this specification.

In the event that the payments to a Tulalip Tribal Member NAOB or NAOB have been made by an entity other than the Prime Contractor (as in the case of a lower-tier subcontractor or supplier), then the Prime Contractor shall obtain the quarterly report, including the signed affidavit, from the paying entity and submit the report to the Contracting Agency.

Damages for Noncompliance

When a Contractor violates the Tulalip Tribal Member NAOB and or NAOB provisions of the contract, the Contracting Agency may incur damages. These damages consist of additional administrative costs including, but not limited to, the inspection, supervision, engineering, compliance, and legal staff time and expenses necessary for investigating, reporting, and correcting violations. Damages attributable to a Contractor's violations of the Tulalip Tribal Member NAOB and or NAOB provisions may be deducted from progress payments due to the Contractor or from retainage withheld by the Contracting Agency as allowed by the Contract documents. Before any money is withheld, the Contractor will be provided with a notice of the basis of the violations and an opportunity to respond.

The Contracting Agency's decision to recover damages for a Tulalip Tribal Member NAOB and or NAOB provision violation does not limit its ability to suspend or revoke the Contractor's pre-qualification status or seek other remedies as allowed by tribal, federal or State law. In appropriate circumstances, the Contracting Agency may also refer the Contractor to Tribal, State, or Federal authorities for additional sanctions.

1-07.2 State Taxes

Section 1-07.2, including its sub-sections, in its entirety is revised to read:

(******)

The Tulalip Tribes of Washington is a federally recognized Indian Tribal government with a constitution and bylaws approved by the United States Secretary of the Interior. See: 65 Federal Register 13298, 13301 (March 13, 2000). As a recognized tribal government, The

Tulalip Tribes of Washington and all of its governmental agencies, is a tax-exempt entity. See: 26 USC § 7871, and Washington Administrative Code Excise Tax Rule 192 (WAC 458-20-192). A majority of the project is tax exempt from all Sales and/or Use Taxes for all materials and supplies incorporated in construction of the work that become a permanent part of the Project and some B&O taxes. Upon request, a Tax Exemption form may be obtained from The Tulalip Tribes. For that portion of the project, this is not within the exterior boundaries of The Tulalip Indian Reservation certain Washington State Taxes will apply.

The work on this contract is to be performed in Indian Country for an Indian Tribe and such work is exempt from State Sales and Use Tax and upon lands whose ownership may obligate the Contractor to pay State Sales Tax and other taxes on portions of the project work as follows:

1. The provisions of WAC 458-20-192(5)(a)(ii) apply to the following listed portions of the project:

   The areas within the Tulalip Indian Reservation Boundary (all land west of Section line 8, 9.) are exempt from State Sales and Use Taxes. Certain B&O taxes are exempt also. Bidders shall consult with the State Department of Revenue regarding the potential tax liability.

2. The Contractor may be required to pay State Sales Tax and other taxes outside of the Tulalip Tribes Reservation portions of the project:

   The areas outside of the Tulalip Indian Reservation Boundary (all land east of Section line 8, 9.) may be subject to State Sales and Use Taxes. Certain B&O taxes are exempt also. Bidders shall consult with the State Department of Revenue regarding the potential tax liability.

The Washington State Department of Revenue has issued special rules on the State Sales Tax. The Contractor should contact the Washington State Department of Revenue for answers to questions in this area. The Contracting Agency will not adjust its payment if the Contractor bases a bid on a misunderstood tax liability.

The Contractor shall include all Contractor-paid taxes in the unit bid prices or other contract amounts.

The Contractor shall not collect from the Contracting Agency, retail sales tax on the full contract price. The Contracting Agency will not add this sales tax to each payment to the Contractor.

1-07.5 Environmental Regulations

Section 1-07.5 is supplemented with the following:

(September 20, 2010 WSDOT GSP Option 1)

Environmental Commitments

The following provisions summarize the requirements, in addition to those required elsewhere in the Contract, imposed upon the Contracting Agency by the various documents referenced

in the Special Provision, “PERMITS AND LICENSES”. Throughout the work, the Contractor shall comply with the following requirements:

(******)
No Contractor staging areas will be allowed within 100 feet of any waters of the State including wetlands.

Payment
All costs to comply with this special provision for the environmental commitments and requirements are incidental to the contract and are the responsibility of the Contractor.

1-07.5(1) General

The second paragraph of Section 1-07.5(1) is revised to read:

(******)
The Contractor shall be responsible to immediately report to the Engineer any deviation from the Contract provisions pertaining to environmental compliance, including but not limited to spills, unauthorized fill in waters of the Tribes including wetlands, unauthorized fill in waters of the State including wetlands, water quality standards, noise, air quality, etc.

Item 3 in the third paragraph of Section 1-07.5(1) is revised to read:

(******)
3. No equipment shall enter waters of the Tribes or waters of the State, except as may be specified in the Contract.

1-07.5(2) State Department of Fish and Wildlife

The first paragraph of Section 1-07.5(2) is revised to read:

(******)
In doing the Work located within the Tulalip Indian Reservation boundaries, the Contractor shall follow the laws, ordinances, rules and regulations of the Tulalip Tribes. Contractor shall consult with the Tulalip Tribes’ Natural Resources Department for specific requirements in completing the Work on the reservation. In doing the Work located outside the boundaries of the Tulalip Tribes Reservation, the Contractor shall:

1-07.5(3) State Department of Ecology

The first paragraph of Section 1-07.5(3) is revised to read:

(******)
In doing the Work located within the Tulalip Indian Reservation boundaries, the Contractor shall follow the laws, ordinances, rules and regulations of the Tulalip Tribes. Contractor shall consult with the Tulalip Tribes’ Natural Resources Department for specific requirements in completing the Work on the reservation. In doing the Work located outside the boundaries of the Tulalip Tribes Reservation, the Contractor shall:

Items 4 and 8 in the first paragraph of Section 1-07.5(3) are revised to read:

(******)

4. Perform Work in such a manner that all materials and substances not specifically identified in the Contract documents to be placed in the water do not enter waters of the Tribes or waters of the State, including wetlands. These include, but are not limited to, petroleum products, hydraulic fluid, fresh concrete, concrete wastewater, process wastewater, slurry materials, and waste from shaft drilling, sediments, sediment-laden water, chemicals, paint, solvents, or other toxic or deleterious materials.

8. Notify the Engineer and Ecology Department immediately should oil, chemicals, or sewage spill into waters of the Tribes or waters of the State.

1-07.5(4) Air Quality

The first paragraph of Section 1-07.5(4) is revised to read:

(******)

The Contractor shall comply with all rules of local air pollution authorities. If there are none, air-quality rules of the State Department of Ecology shall govern the Work located outside the boundaries of the Tulalip Tribes Reservation. The Contractor shall consult with the Tulalip Tribes' Natural Resources Department to ascertain the applicable laws, ordinances, rules, and regulations governing the Work on the Tulalip Indian Reservation.

1-07.7 Load Limits

Section 1-07.7 is supplemented with the following:

(March 13, 1995 WSDOT GSP Option 6)

If the sources of materials provided by the Contractor necessitates hauling over roads other than State highways, the Contractor shall, at the Contractor's expense, make all arrangements for the use of the haul routes.

1-07.11 Requirements for Nondiscrimination

1-07.11(2) Contractual Requirements

1-07.11(2)A Equal Employment Opportunity (EEO) Responsibilities

Under the heading "Title VI Responsibilities" of Section 1-07.11(2)A, items 4, 5 and 6 in the first paragraph are revised to read:

(******)

4. **Information and Reports** – The Contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by The Tulalip Tribes to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of a Contractor is in the exclusive possession of another who fails or refuses to furnish this information, the

Contractor shall so certify to The Tulalip Tribes as appropriate and shall set forth what efforts it has made to obtain the information.

5. **Sanctions for Noncompliance** – In the event of the Contractor's noncompliance with the nondiscrimination provisions of this Contract, The Tulalip Tribes shall impose such Contract sanctions as it may determine to be appropriate, including, but not limited to:

   a. Withholding of payments to the Contractor under the Contract until the Contractor complies, and/or;

   b. Cancellation, termination, or suspension of the Contract, in whole or in part.

6. **Incorporation of Provisions** – The Contractor shall include the provisions of paragraphs (1) through (5) in every subcontract, including procurement of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto. The Contractor shall take such action with respect to any Subcontractor or procurement as The Tulalip Tribes may direct as a means of enforcing such provisions including sanctions for noncompliance.

   Provided, however, that in the event a Contractor becomes involved in, or is threatened with, litigation with a Subcontractor or supplier as a result of such direction, the Contractor may request The Tulalip Tribes to enter into such litigation to protect the interest of The Tulalip Tribes.

1-07.11(10) Records and Reports

1-07.11(10)B Required Records and Retention

The first paragraph of Section 1-07.11(10)B is revised to read:

(******)
All records must be retained by the Contractor for a period of 3 years following acceptance of the Contract Work. All records shall be available at reasonable times and places for inspection by authorized representatives of The Tulalip Tribes.

1-07.12 Federal Agency Inspection

Section 1-07.12 is supplemented with the following:

(August 1, 2011 WSDOT GSP, Option 2)
Indian Preference and Tribal Ordinances
This project is located on the ***Tulalip Indian Reservation***. It is the Contractor's responsibility to contact the person and/or office listed in this special provision to determine whether any tribal laws or taxes apply. If the tribal laws and taxes do apply, the Contractor shall comply with them in accordance with Section 1-07.1. For informational purposes only, the Work on this project that falls within Tribal Lands is shown on the Summary of Quantities in Group(s)*** Utility Improvements ***.

Tribal Employment Rights Ordinances (TEROs), may utilize a variety of tools to encourage Indian employment. These tools may include, but are not limited to, TERO fees, Indian hiring

preference, Indian-owned business subcontracting preference and/or an Indian training requirement. Other requirements may be a Tribal business license, a required compliance plan and/or employee registration requirements. Every tribe is different and each may be willing to work cooperatively with the Contractor to develop a strategy that works for both parties. For specific details, the Contractor should contact ***the Tulalip Tribes***.

The state recognizes the sovereign authority of the tribe and supports the tribe's efforts to enforce its rightful and legal ordinances and expects the Contractor to comply and cooperate with the tribe. The costs related to such compliance shall be borne solely by the Contractor, who is advised to contact the tribal representative listed above, prior to submitting a bid, to assess the impact of compliance on the project.

Although Indian preference cannot be compelled or mandated by the Contracting Agency, there is no limitation whereby voluntary Contractor or Subcontractor initiated preferences are given, if otherwise lawful. 41 CFR 60-1.5(a)7 provides as follows:

> Work on or near Indian reservations --- It shall not be a violation of the equal opportunity clause for a construction or non-construction Contractor to extend a publicly announced preference in employment to Indians living on or near an Indian reservation in connection with employment opportunities on or near an Indian reservation. The use of the word near would include all that area where a person seeking employment could reasonably be expected to commute to and from in the course of a work day. Contractors or Subcontractors extending such a preference shall not, however, discriminate among Indians on the basis of religion, sex, or tribal affiliation, and the use of such a preference shall not excuse a Contractor from complying with the other requirements as contained in the August 25, 1981 Department of Labor, Office of Federal Contract Compliance Programs, Government Contractors Affirmative Actions Requirements.

1-07.14 Responsibility for Damage

Section 1-07.14 is revised to read:

(******)

The Tulalip Tribes, its Board of Directors, and all officers and employees, will not be responsible in any manner: for any loss or damage that may happen to the Work or any part; for any loss of material or damage to any of the materials or other things used or employed in the performance of Work; for injury to or death of any persons, either workers or the public; or for damage to the public for any cause which might have been prevented by the Contractor, or the workers, or anyone employed by the Contractor.

The Contractor shall be responsible for any liability imposed by law for injuries to, or the death of, any persons or damages to property resulting from any cause whatsoever during the performance of the Work, or before final acceptance.

Subject to the limitations in this section, and RCW 4.24.115, the Contractor shall indemnify, defend, and save harmless The Tulalip Tribes, its Board of Directors from all claims, suits, or actions brought for injuries to, or death of, any persons or damages resulting from construction of the Work or in consequence of any negligence or breach of Contract regarding the Work, the use of any improper materials in the Work, caused in whole or in part by any act or omission by the Contractor or the agents or employees of the Contractor during performance

or at any time before final acceptance. In addition to any remedy authorized by law, The Tulalip Tribes may retain so much of the money due the Contractor as deemed necessary by The Tulalip Tribes to ensure the defense and indemnification obligations of this section until disposition has been made of such suits or claims.

Subject to the limitations in this section and RCW 4.24.115, the Contractor shall indemnify, defend, and save harmless any county, city, or region, its officers, and employees connected with the Work, within the limits of which county, city, or region the Work is being performed, all in the same manner and to the same extent as provided above for the protection of The Tulalip Tribes, its Directors, officers, and employees. The Tulalip Tribes may retain so much of the money due the Contractor as deemed necessary by the Tulalip Tribes to ensure the defense and indemnification obligations of this section pending disposition of suits or claims for damages brought against the county, city, or district.

Pursuant to RCW 4.24.115, if such claims, suits, or actions result from the concurrent negligence of (a) the indemnitee or the indemnitee's agents or employees and (b) the Contractor or the Contractor's agent or employees, the indemnity provisions provided in the preceding paragraphs of this section shall be valid and enforceable only to the extent of the Contractor's negligence or the negligence of its agents and employees.

The Contractor shall bear sole responsibility for damage to completed portions of the project and to property located off the project caused by erosion, siltation, runoff, or other related items during the construction of the project. The Contractor shall also bear sole responsibility for any pollution of rivers, streams, ground water, or other waters that may occur as a result of construction operations.

The Contractor shall exercise all necessary precautions throughout the life of the Project to prevent pollution, erosion, siltation, and damage to property.

The Contracting Agency will forward to the Contractor all claims filed against the Tulalip Tribes according to RCW 4.92.100 that are deemed to have arisen in relation to the Contractor's Work or activities under this Contract, and, in the opinion of the Contracting Agency, are subject to the defense, indemnity, and insurance provisions of the Contract. Claims will be deemed tendered to the Contractor and insurer, who has named The Tulalip Tribes and the State as a named insured or an additional insured under the Contract's insurance provisions, once the claim has been forwarded via certified mail to the Contractor. The Contractor shall be responsible to provide a copy of the claim to the Contractor's designated insurance agent who has obtained/met the Contract's insurance provision requirements.

Within 60 calendar days following the date a claim is sent by the Contracting Agency to the Contractor, the Contractor shall notify the Claimant, The Tulalip Tribes of the following:

a. Whether the claim is allowed or is denied in whole or in part, and, if so, the specific reasons for the denial of the individual claim, and if not denied in full, when payment has been or will be made to the claimant(s) for the portion of the claim that is allowed, or

b. If resolution negotiations are continuing. In this event, status updates will be reported no longer than every 60 calendar days until the claim is resolved or a lawsuit is filed.

If the Contractor fails to provide the above notification within 60 calendar days, then the Contractor shall yield to the Contracting Agency sole and exclusive discretion to allow all or part of the claim on behalf of the Contractor, and the **Contractor shall be deemed to have WAIVED any and all defenses, objections, or other avoidances to the Contracting Agency's allowance of the claim, or the amount allowed by the Contracting Agency**, under common law, constitution, statute, or the Contract and the Contract. If all or part of a claim is allowed, the Contracting Agency will notify the Contractor via certified mail that it has allowed all or part of the claim and make appropriate payments to the claimant(s) with Tribal funds.

Payments of Tribal funds by the Contracting Agency to claimant(s) under this section will be made on behalf of the Contractor and at the expense of the Contractor, and the Contractor shall be unconditionally obligated to reimburse the Contracting Agency for the "total reimbursement amount", which is the sum of the amount paid to the claimant(s), plus all costs incurred by the Contracting Agency in evaluating the circumstances surrounding the claim, the allowance of the claim, the amount due to the claimant, and all other direct and indirect costs for the Contracting Agency's administration and payment of the claim on the Contractor's behalf. The Contracting Agency will be authorized to withhold the total reimbursement amount from amounts due the Contractor, or, if no further payments are to be made to the Contractor under the Contract, the Contractor shall directly reimburse the Contracting Agency for the amounts paid within 30 days of the date notice that the claim was allowed was sent to the Contractor. In the event reimbursement from the Contractor is not received by the Contracting Agency within 30 days, interest shall accrue on the total reimbursement amount owing at the rate of 12 percent per annum calculated at a daily rate from the date the Contractor was notified that the claim was allowed. The Contracting Agency's costs to enforce recovery of these amounts are additive to the amounts owing.

The Contractor specifically assumes all potential liability for actions brought by employees of the Contractor and, solely for the purpose of enforcing the defense and indemnification obligations set forth in Section 1-07.14, the Contractor specifically waives any immunity granted under the State industrial insurance law, Title 51 RCW. This waiver has been mutually negotiated by the parties. The Contractor shall similarly require that each Subcontractor it retains in connection with the project comply with the terms of this paragraph, waive any immunity granted under Title 51 RCW, and assume all liability for actions brought by employees of the Subcontractor.

1-07.15 Temporary Water Pollution Prevention

Section 1-07.15 is supplemented with the following:

(******)
In an effort to prevent, control, and stop water pollution and erosion within the project, thereby protecting the Work, nearby land, streams, and other bodies of water, the Contractor shall perform all Work in strict accordance with all Tribal, Federal, State, and local laws and regulations governing waters of the Tribes and waters of the State, as well as permits acquired for the project.

The Contractor shall perform all temporary water pollution/erosion control measures shown in the Plans, specified in the Special Provisions, proposed by the Contractor and approved by the Engineer, or ordered by the Engineer as Work proceeds.

1-07.15(1) Spill Prevention, Control, and Countermeasures Plan

Under the heading "SPCC Plan Element Requirements" of Section 1-07.15(1), item 2 of the first paragraph is revised to read:

(******)
Spill Reporting: List the names and telephone numbers of the Tribal, Federal, State, and local agencies the Contractor shall notify in the event of a spill.

1-07.16 Protection and Restoration of Property

1-07.16(2) Vegetation Protection and Restoration

Section 1-07.16(2) is supplemented with the following:

(August 2, 2010 WSDOT GSP Option 1)
Vegetation and soil protection zones for trees shall extend out from the trunk to a distance of 1-foot radius for each inch of trunk diameter at breast height.

Vegetation and soil protection zones for shrubs shall extend out from the stems at ground level to twice the radius of the shrub.

Vegetation and soil protection zones for herbaceous vegetation shall extend to encompass the diameter of the plant as measured from the outer edge of the plant.

1-07.17 Utilities and Similar Facilities

Section 1-07.17 is supplemented with the following:

(April 2, 2007 WSDOT GSP Option 1)
Locations and dimensions shown in the Plans for existing facilities are in accordance with available information obtained without uncovering, measuring, or other verification.

The following addresses and telephone numbers of utility companies known or suspected of having facilities within the project limits are supplied for the Contractor's convenience:

*** Snohomish County Public Utilities District (PUD)
210 E Division Street
Arlington, WA 98223
Attn: Kallen Shaughnessy-Randall
(425) 783-4370

Verizon
OSP Engineering
PO Box 1003
Everett, WA 98200
Attn: Tim Rennick
(425) 263-4034

Tulalip Technology Data Services
8825 Quil Ceda Boulevard, Suite O
Tulalip, WA 98271
Attn: Travis Hill
(360) 716-5128

Quil Ceda Village
8802 27th Avenue NE
Tulalip, WA 98271
Attn: Jereme Gobin
Cell: (425) 754-1949

Tulalip Data Services
8825 Quil Ceda Boulevard, Suite O
Tulalip, WA 98271
Attn: Kevin Jones
(360) 654-3270

Puget Sound Energy (Gas)
20000 N Creek Parkway, Bot-01H
Bothell, WA 98011
Attn: John Guay
Office: (425) 505-3768

Frontier Communications
1800 41st Street
Everett, WA 98201
Attn: Adam Diaz
Office: (425) 261-0134
Cell: (425) 614-9754 ***

1-07.23 Public Convenience and Safety

1-07.23(1) Construction Under Traffic

Section 1-07.23(1) is supplemented with the following:

(February 3, 2020 WSDOT GSP, Option 2)
Work Zone Clear Zone

The Work Zone Clear Zone (WZCZ) applies during working and nonworking hours. The WZCZ applies only to temporary roadside objects introduced by the Contractor's operations and does not apply to preexisting conditions or permanent Work. Those work operations that are actively in progress shall be in accordance with adopted and approved Traffic Control Plans, and other contract requirements.

During nonworking hours equipment or materials shall not be within the WZCZ unless they are protected by permanent guardrail or temporary concrete barrier. The use of temporary concrete barrier shall be permitted only if the Engineer approves the installation and location.

During actual hours of work, unless protected as described above, only materials absolutely necessary to construction shall be within the WZCZ and only construction vehicles absolutely necessary to construction shall be allowed within the WZCZ or allowed to stop or park on the shoulder of the roadway.

The Contractor's nonessential vehicles and employees private vehicles shall not be permitted to park within the WZCZ at any time unless protected as described above.

Deviation from the above requirements shall not occur unless the Contractor has requested the deviation in writing and the Engineer has provided written approval.

Minimum WZCZ distances are measured from the edge of traveled way and will be determined as follows:

Regulatory Posted Speed	Distance From Traveled Way (Feet)
35 mph or less	10
40 mph	15
45 to 50 mph	20
55 to 60 mph	30
65 mph or greater	35

Minimum Work Zone Clear Zone Distance

1-07.23(2) Construction and Maintenance of Detours

This section is supplemented with the following:

(******)

Pedestrian Control and Protection

When the work area encroaches upon a sidewalk, walkway, or crosswalk area, special consideration must be given to pedestrian safety. Maximum effort must be made to separate pedestrians from the work area. Protective barricades, fencing, pathways, and bridges, together with warning and guidance devices and signs, shall be utilized so that the passageway for pedestrians is safe and well defined. Whenever pedestrian walkways are provided across excavations, they shall be provided with suitable handrails. Footbridges shall be safe, strong, free of bounce and sway, have a slip resistant coating, and be free of cracks, holes, and irregularities that could cause tripping. Ramps shall be provided at the entrance and exit of all raised footbridges, again to prevent tripping. Adequate illumination and reflectorization shall be provided during hours of darkness. All walkways shall be maintained with at least 4 feet clear width.

Where walks are closed by construction, an alternate walkway shall be provided, preferably within the planting strip.

Where it is necessary to divert pedestrians into the roadway, jersey-style barricades shall be provided to separate the pedestrian walkway from the adjacent vehicular traffic lane. At no time shall pedestrians be diverted into a portion of a street used concurrently by moving vehicular traffic.

At locations where adjacent alternate walkways cannot be provided, appropriate signs shall be posted at the limits of construction and in advance of the closure at the nearest crosswalk or intersection to divert pedestrians across the street.

1-07.27 No Waiver of State's Legal Rights

Section 1-07.27 including title is revised to read:

(******)

1-07.27 No Waiver of The Tulalip Tribes' Legal Rights

The Tulalip Tribes shall not be precluded or estopped by any measurement, estimate, or certificate made either before or after the completion and acceptance of the Work and payment therefore from showing the true amount and character of the Work performed and materials furnished by the Contractor, or from showing that any such measurement, estimate, or certificate is untrue or incorrectly made, or that the Work or materials do not conform, in fact, to the Contract. The Tulalip Tribes shall not be precluded or estopped, notwithstanding any such measurement, estimate, or certificate, and payment in accordance therewith, from recovering from the Contractor and the Sureties such damages as it may sustain by reason of the Contractor's failure to comply with the terms of the Contract. Neither the acceptance by The Tulalip Tribes, nor any payment for the whole or any part of the Work, nor any extension of time, nor any possession taken by The Tulalip Tribes shall operate as a waiver of any portion of the Contract or of any power herein reserved or any right to damages herein provided, or bar recovery of any money wrongfully or erroneously paid to the Contractor. A waiver of any breach of the Contract shall not be held to be a waiver of any other or subsequent breach.

The Contractor and The Tulalip Tribes recognize that the impact of overcharges to The Tulalip Tribes by the Contractor resulting from antitrust law violations by the Contractor's suppliers or Subcontractors adversely affects The Tulalip Tribes rather than the Contractor. Therefore, the Contractor agrees to assign to The Tulalip Tribes any and all claims for such overcharges.

1-08 PROSECUTION AND PROGRESS

Add the following new sections:

(******)

1-08.0 Preliminary Matters **New Section**

(May 25, 2006 APWA GSP)

1-08.0(1) Preconstruction Conference

(October 10, 2008 APWA GSP)

Prior to the Contractor beginning the work, a preconstruction conference will be held between the Contractor, the Engineer and such other interested parties as may be invited. The purpose of the preconstruction conference will be:

1. To review the initial progress schedule;

2. To establish a working understanding among the various parties associated or affected by the work;

3. To establish and review procedures for progress payment, notifications, approvals, submittals, etc.;

4. To establish normal working hours for the work;

5. To review safety standards and traffic control; and

6. To discuss such other related items as may be pertinent to the work.

The Contractor shall prepare and submit at the preconstruction conference the following:

1. A breakdown of all lump sum items;

2. A preliminary schedule of working drawing submittals; and

3. A list of material sources for approval if applicable.

1-08.0(2) Hours of Work

(December 8, 2014 APWA GSP)

Except in the case of emergency or unless otherwise approved by the Engineer, the normal working hours for the Contract shall be any consecutive 8-hour period between 7:00 a.m. and 6:00 p.m. Monday through Friday, exclusive of a lunch break. If the Contractor desires different than the normal working hours stated above, the request must be submitted in writing prior to the preconstruction conference, subject to the provisions below. The working hours for the Contract shall be established at or prior to the preconstruction conference.

All working hours and days are also subject to local permit and ordinance conditions (such as noise ordinances).

If the Contractor wishes to deviate from the established working hours, the Contractor shall submit a written request to the Engineer for consideration. This request shall state what hours are being requested, and why. Requests shall be submitted for review no later than *** 5 days *** prior to the day(s) the Contractor is requesting to change the hours.

If the Contracting Agency approves such a deviation, such approval may be subject to certain other conditions, which will be detailed in writing. For example:

1. On non-Federal aid projects, requiring the Contractor to reimburse the Contracting Agency for the costs in excess of straight-time costs for Contracting Agency representatives who worked during such times. (The Engineer may require designated representatives to be present during the work. Representatives who may be deemed necessary by the Engineer include, but are not limited to: survey crews; personnel from the Contracting Agency's material testing lab; inspectors; and other Contracting Agency employees or third party consultants when, in the opinion of the Engineer, such work necessitates their presence.)

2. Considering the work performed on Saturdays, Sundays, and holidays as working days with regard to the contract time.

3. Considering multiple work shifts as multiple working days with respect to contract time even though the multiple shifts occur in a single 24-hour period.

4. If a 4-10 work schedule is requested and approved, the nonworking day for the week will be charged as a working day.

5. If Davis Bacon wage rates apply to this Contract, all requirements must be met and recorded properly on certified payroll

1-08.1 Subcontracting

Section 1-08.1 is revised as follows:

(******)
Prior to any subcontractor or lower tier subcontractor beginning work, the Contractor shall submit to the Engineer a certification (WSDOT Form 420-004 EF) that a written agreement between the Contractor and the subcontractor or between the subcontractor and any lower tier subcontractor has been executed.

A Subcontractor or lower tier Subcontractor will not be permitted to perform any work under the contract until the following documents have been completed and submitted to the Engineer:

1. Request to Sublet Work (Form 421-012 EF), and

2. Contractor and Subcontractor or Lower Tier Subcontractor Certification for Federal-aid Projects (Form 420-004 EF) and

3. An approved Tulalip Tribes TERO Compliance Plan for the Subcontractor.

The Contractor's records pertaining to the requirements of this Special Provision shall be open to inspection or audit by representatives of the Contracting Agency during the life of the contract and for a period of not less than three years after the date of acceptance of the contract. The Contractor shall retain these records for that period. The Contractor shall also guarantee that these records of all Subcontractors and lower tier Subcontractors shall be available and open to similar inspection or audit for the same time period.

1-08.3 Progress Schedule

Section 1-08.3 is supplemented with the following:

(******)
The Contractor shall submit a construction schedule to the Contracting Agency within 10 calendar days of award of contract. The Contracting Agency will have the right to review the schedule, and must approve the schedule prior to issuing Notice to Proceed.

The weekly schedule updates shall clearly identify the critical path items of the work.

1-08.4 Prosecution of Work

Delete this section and replace it with the following:

(July 23, 2015 APWA GSP)
1-08.4 Notice to Proceed and Prosecution of Work

Notice to Proceed will be given after the contract has been executed and the contract bond and evidence of insurance have been approved and filed by the Contracting Agency. The Contractor shall not commence with the work until the Notice to Proceed has been given by the Engineer. The Contractor shall commence construction activities on the project site within ten days of the Notice to Proceed Date, unless otherwise approved in writing. The Contractor shall diligently pursue the work to the physical completion date within the time specified in the contract. Voluntary shutdown or slowing of operations by the Contractor shall not relieve the Contractor of the responsibility to complete the work within the time(s) specified in the contract.

When shown in the Plans, the first order of work shall be the installation of high visibility fencing to delineate all areas for protection or restoration, as described in the Contract. Installation of high visibility fencing adjacent to the roadway shall occur after the placement of all necessary signs and traffic control devices in accordance with 1-10.1(2). Upon construction of the fencing, the Contractor shall request the Engineer to inspect the fence. No other work shall be performed on the site until the Contracting Agency has accepted the installation of high visibility fencing, as described in the Contract.

Section 1-08.4 is supplemented with the following:

(******)
Safety
All parties agree that they are responsible for compliance with all tribal, local, and federal laws, regulations, and standards that pertain to safety, as those laws, regulations, and standards apply to its employees. All parties recognize that the responsibility for employee safety rests

with each employer respectively. Each contractor (prime or sub) shall be responsible for the safety of its own employees. The Contracting Agency accepts no responsibility for, nor will it provide any safety consultation, monitoring, or enforcement to any contractor on the site concerning the safety of contractor's employees. Any safety equipment needed on the job, including but not limited to, PPE, shall be furnished by each contractor for its employees.

The Contracting Agency will regard safety on this project to be of the utmost importance. Under no conditions shall safety requirements be waived for the sake of cost, schedule, or convenience. SAFETY MAY BE USED AS CRITERIA FOR APPROVAL OF PAY APPLICATIONS. Unsafe conditions, lack of proper and/or untimely documentation and submittals, and lack of adherence to safety rules and requirements will not be tolerated.

Each contractor, AS A MINIMUM, shall follow all tribal, local, and federal laws regarding worker safety. This shall include all requirements of OSHA and referenced standards therein included.

The Contracting Agency may, at various times, request voluntary OSHA inspections. Each contractor shall immediately correct and respond to any violations in writing to the Contracting Agency, and to the appropriate agency.

Indiscriminate accumulations of debris, waste, or scrap in work areas will not be permitted. (Areas must be designated for storage or disposal.) All materials, tools, and equipment must be stored in an orderly manner in designated areas.

Safety Program

A. Contractor shall submit, within 10 days of Notice to Proceed, a copy of its company safety program including jobsite-specific safety plans. This program shall incorporate all lower-tier subcontractor safety information or separate policies shall be submitted for all lower-tier subcontractors used on the project. This safety policy shall conform to all OSHA requirements and shall include as follows:

B. A Hazard Communications Program, including site specific Materials Safety Data Sheets (MSDS) for all chemicals used by Contractor and its subcontractors.

    1. Provisions for continual training of all on-site employees. This shall be done by holding weekly safety toolbox talks, documented by signed attendance sheets with safety topic submitted to the Contracting Agency at each weekly project meeting.

    2. Weekly jobsite safety inspections shall be completed by each Contractor.

    3. Designation and continual training of competent persons for the project.

    4. Contractor shall provide services of a competent safety person (as defined by OSHA) for the project to inspect the project for safety hazards related to their Work. The safety person should not be one of the superintendents dedicated to this Project; however, the safety person shall be on-site whenever Work is being performed by Contractor. The safety person shall attend the Project coordination meetings.

5. Contractor, with assistance from all contractors' safety persons, shall perform a monthly total Project safety audit conducted by a company safety officer or independent consultant of the Contractor. Results of the safety audit shall be submitted to the Contracting Agency and distributed to all contractors the same day the audit is conducted by Contractor. If a contractor does not immediately address any observed or noted safety concern, Contractor's company safety officer or independent consultant shall contact the Owner, through the Contracting Agency. Contractor's company safety officer or independent consultant, with assistance from Contractor's competent safety person, shall record all accidents for the Project and report their findings to the Owner, through the Contracting Agency.

6. Provisions for enforcement of the safety policies by Site Foreman, Superintendent, and/or Project Manager.

7. Documentation that each on-site employee has been trained in general safety and has been informed of the location of the Safety Program, Haz-Com Program, and Emergency procedures on this project.

Submittals

A. Company safety programs, as described above, shall be submitted to the Contracting Agency within ten days of Notice to Proceed or Letter of Intent to Award. Additions to the program, such as documentation of training as new employees arrive at the site, shall be forwarded to the Contracting Agency. All contractor Safety Programs, and Haz-Com Programs, with MSDS Sheets, will be kept in one central location within the Contractor's office throughout the duration of the project.

B. Contractor is required to conduct and all employees are required to attend a "Tool Box"-type safety meeting once a week. These meetings may either be presided over by Contractor's foreman or another competent representative designated by Contractor. The Contracting Agency's personnel are available to participate in these safety meetings.

   Contractor will be responsible to submit WEEKLY tool box safety meeting minutes to the Contracting Agency while Contractor has employees on-site.

C. All weekly inspections will be documented by Contractor and submitted to the Owner, through the Contracting Agency. Contractor shall immediately correct all deficiencies and submit a list of corrective actions within 1 working day, or sooner if required, of safety inspection.

D. Subject-specific daily and/or weekly inspections by Contractor, including temporary electric, crane, or other work activities as required, shall be timely submitted to the Owner through the Contracting Agency.

Training

A. Contractor shall ensure that employee designated as Project Competent Person has been fully trained for this task and has the full authority to take corrective action when required.

B. Contractor shall provide continual training to Project Competent Person, Superintendent, and Foreman as required by Tribal or OSHA standards.

C. The Contracting Agency may recommend General Safety Topics to enable Contractor's supervising personnel to train employees if a Contractor requests such assistance.

1-08.5 Time for Completion

(******)

Revise the third and fourth paragraphs to read:

Contract time shall begin on the first working day following the receipt of the Notice to Proceed or the date listed in the Notice to Proceed.

Each working day shall be charged to the contract as it occurs, until the contract work is physically complete. If substantial completion has been granted and all the authorized working days have been used, charging of working days will cease. Each week the Engineer will provide the Contractor a statement that shows the number of working days: (1) charged to the contract the week before; (2) specified for the physical completion of the contract; and (3) remaining for the physical completion of the contract. The statement will also show the nonworking days and any partial or whole day the Engineer declares as unworkable. Within 10 calendar days after the date of each statement, the Contractor shall file a written protest of any alleged discrepancies in it. To be considered by the Engineer, the protest shall be in sufficient detail to enable the Engineer to ascertain the basis and amount of time disputed. By not filing such detailed protest in that period, the Contractor shall be deemed as having accepted the statement as correct. If the Contractor is approved to work 10 hours a day and 4 days a week (a 4-10 schedule) and the fifth day of the week in which a 4-10 shift is worked would ordinarily be charged as a working day then the fifth day of that week will be charged as a working day whether or not the Contractor works on that day.

Revise the sixth paragraph to read:

The Engineer will give the Contractor written notice of the completion date of the contract after all the Contractor's obligations under the contract have been performed by the Contractor. The following events must occur before the Completion Date can be established:

1. The physical work on the project must be complete; and

2. The Contractor must furnish all documentation required by the contract and required by law, to allow the Contracting Agency to process final acceptance of the contract. The following documents must be received by the Project Engineer prior to establishing a completion date:

   a. Certified Payrolls (per Section 1-07.9(5)).

   b. Material Acceptance Certification Documents.

   c. Final Contract Voucher Certification.

d. Copies of the approved “Affidavit of Prevailing Wages Paid” for the Contractor and all Subcontractors.

e. Property owner releases per Section 1-07.24.

f. An original signed and notarized Final Waiver and Release of Claim Form from the Contractor.

g. Original signed and notarized Final Waiver and Release of Claim Form for all Subcontractors and Material Suppliers regardless of tier.

h. Affidavit from the Tulalip Tribes TERO office that the TERO Fee for the Project has been paid.

Section 1-08.5 is supplemented with the following:

(******)
This project shall be physically completed within 50 working days.

If the Contractor cannot procure the materials due to material shortages, the Contractor shall provide written documentation to the Owner from the materials supplier. The Owner will place the project in suspension until the materials are delivered to the Project or available from the supplier. Upon delivery of the materials or the availability date quoted by the supplier, whichever is sooner, the Owner will start counting working days.

1-09 MEASUREMENT AND PAYMENT

1-09.9 Payments

Revise the first paragraph to read:

(******)
The basis of payment will be the actual quantities of Work performed according to the Contract and as specified for payment. For items Bid as lump sum, with a bid price of more than or equal to $20,000, the Contractor shall submit a breakdown of the lump sum price in sufficient detail for the Engineer to determine the value of the Work performed on a monthly basis. Lump sum breakdowns shall be provided to the Engineer no later than the date of the preconstruction conference.

Delete the third paragraph and replace it with the following:

(******)
Progress payments for completed work will be based upon progress estimates prepared by the Contractor. A progress estimate cutoff date will be established at the preconstruction conference.

The initial progress estimate will be made no later than 30 days after the Contractor commences the work, and successive progress estimates will be made every month thereafter until the Completion Date. Progress estimates made during progress of the work are tentative, and made only for the purpose of determining progress payment. The progress estimates are subject to change at any time prior to the calculation of the Final Payment.

The value of the progress estimate will be the following:

1. Lump Sum Items in the Bid Form – partial payment for lump sum Bid items will be a percentage of the price in the Proposal based on the Engineer's determination of the amount of Work performed, with consideration given to, but not exclusively based on, the Contractor's lump sum breakdown for that item.

2. Change Orders – entitlement for approved extra cost or completed extra work as determined by the Engineer.

Progress payments will be made in accordance with the progress estimate less:

1. Retainage per Section 1-09.9(1);

2. The amount of Progress Payments previously made; and

3. Funds withheld by the Contracting Agency for disbursement in accordance with the Contract Documents.

Progress payments for work performed shall not be evidence of acceptable performance or an admission by the Contracting Agency that any work has been satisfactorily completed. The determination of payments under the contract will be final in accordance with Section 1-05.1.

Payments will be made by warrants, issued by the Contracting Agency's fiscal officer, against the appropriate fund source for the project. Payments received on account of work performed by a subcontractor are subject to the provisions of RCW 39.04.250.

1-09.11 Disputes and Claims

Section 1-09.11 is revised to read:

(******)

Forum For Equitable Relief

The Tribal Court of the Tulalip Tribes of Washington shall have exclusive jurisdiction over any action or proceeding for any injunction or declaratory judgment concerning any agreement or performance under the Contract Documents or in connection with the Project. Any such action or proceeding arising out of or related in any way to the Contract or performance thereunder shall be brought only in the Tribal Court of the Tulalip Tribes of Washington and the Contractor irrevocably consents to such jurisdiction and venue. The Contract shall be governed by the law of the State of Washington.

Forum For Money Damages

The Tribal Court of the Tulalip Tribes of Washington shall be the exclusive jurisdiction for any action or proceeding for any injunction or declaratory judgment concerning any agreement or

performance under the Contract Documents or in connection with the Project. The Tribal Court of the Tulalip Tribes of Washington shall be the exclusive jurisdiction for any action or proceeding by the Contractor or the Contractor's Surety, if applicable, for any money damages concerning any agreement or performance under the Contract Documents or in connection with the Project.

END OF DIVISION 1

DIVISION 2

EARTHWORK

2-01 CLEARING, GRUBBING, AND ROADSIDE CLEANUP

2-01.1 Description

Section 2-01.1 shall be supplemented with the following:

(March 13, 1995 WSDOT GSP Option 1)
Clearing and grubbing on this project shall be performed within the following limits:

Clearing and grubbing limits as specified on the Plans.

(******)
Clearing and grubbing shall include the removal and disposal of all trees or vegetation within the project area or as required for installation of the improvements. Such operations shall be limited to only those items that must be removed for the project construction; vegetation and trees not affected by the construction shall not be removed or damaged.

Miscellaneous small items requiring removal have not been shown on the Plans.

2-01.2 Disposal of Usable Material and Debris

2-01.2(2) Disposal Method No. 2 – Waste Site

Section 2-01.2(2) is supplemented with the following:

(******)
No waste site has been provided for the disposal of excess material. All material removed by clearing and grubbing operations shall be disposed of by the Contractor at a legal disposal site obtained by the Contractor meeting the requirements of Section 2-03.3(7)C. All fees shall be borne by the Contractor.

2-02 REMOVAL OF STRUCTURES AND OBSTRUCTIONS

2-02.1 Description

Section 2-02.1 shall be supplemented with the following:

(******)
This work shall consist of all work defined under routine cleaning and removing or relocating items noted in this section of the Special Provisions and shown on the Plans, as well as any

other materials not noted and necessary for the construction of this project. The following specific items shall be included under “Removal of Structures and Obstructions”:

1. Removing and replacing of existing landscape features, signs, utility markers, and other miscellaneous appurtenances as shown on the Plans and as required for utility installation.

2. Removing and disposing of existing or abandoning utilities as shown on the Plans and as required for utility installation.

3. All removals and replacements required to construct the project that are not specifically paid for in the Proposal.

In general, the Contractor shall remove and replace existing items that are in conflict with the new improvements, as noted above, and/or shown on the Plans.

Specific items and materials removed by the Contractor shall remain the property of the Tulalip Tribes. These items are identified on the Plans or within these Special Provisions and shall be delivered to the Tulalip Tribes. All other materials removed shall become the property of the Contractor and shall be disposed of at a Contractor-provided waste site meeting the requirements of Section 2-03.3(7) to be obtained and paid for by the Contractor.

2-02.2 Vacant

Section 2-02.2 included title is replaced with the following new section:

(******)

2-02.2 Private Property Improvements New Section

The Contractor shall minimize disruption to Tribal property outside of the project limits.

The Contractor shall provide adequate written notice (5 full working days at a minimum) to the owner prior to the removal or relocation of private property items. Any discrepancy with the owner over the item or items to be removed or relocated and shall be brought to the immediate attention of the Engineer. All written notices shall be reviewed and approved by the Tulalip Tribes.

2-02.3 Construction Requirements

Section 2-02.3 is supplemented with the following:

(******)

Voids left by the removal of items listed above shall be filled with select native borrow or gravel borrow, and compacted to 95 percent of maximum density as specified in Section 2-03.3(14)D.

Add the following new sections:

(******)

2-02.3(4) Decommission Underground Septic Tank **New Section**

Decommission existing underground septic tank between the Administration Building and Tulalip Data Services Building. Drain and plug Laterals entering and existing the septic tank, being careful to avoid any spillage. Pump all solids or sludge, and any material which cannot be recycled shall be disposed to a legal disposal site. Carefully excavate to the top of the tank, remove pump(s), alarm and all other tank fixtures and miscellaneous materials. Remove tank lid and riser and backfill the tank with crushed rock. Place crushed rock in 12-inch lifts or less and compact each lift with 3 passes of a mechanical vibrating tamper. Place topsoil, fertilizer, mulch and sod in accordance with the provisions of Section 8-02 or other requirements in these special provisions. All removed equipment's and materials which cannot be recycled shall be disposed of by the Contractor at a legal disposal site. Cost of all work and materials under this section shall be included in the lump sum contract bid item of "Decommission Underground Septic Tank".

(******)

2-02.3(6) Pothole Existing Utility **New Section**

Locations of known possible conflicts between the planned improvements are shown on the Plans based on available records provided during the design phase of this project. Based on the actual location of utility markings, it may be necessary to uncover existing utilities and determine the exact location.

After completion of field marking of the existing utilities, the Contractor shall determine if an existing utility may be in conflict with the planned improvements. Should a conflict seem likely, the Contractor shall notify the Tulalip Tribes. If the Tulalip Tribes concur that a conflict is likely, the Contractor will be directed to expose the location of the subject utility (pothole). When potholing is required by the Tribes, the Contractor shall expose the location of the existing utility and record the size of pipe and horizontal and vertical location on the Contractor's Record Drawings. Upon receipt of this information, the Engineer will determine if a conflict exists. The Tribes will notify the Contractor within 7 full working days as to what design modifications, if any, are required to resolve the conflict.

(******)

2-02.3(7) Video Inspect Existing Sewer Lateral **New Section**

Contractor shall video inspect the existing sewer lateral pipes to document existing condition and confirm the horizontal and vertical location of existing sewer lateral pipes including but not limited to bends and wyes around the connection areas. Notify Engineer of any obstructions or conditions that may prevent construction operations and provide recommendations of corrective action.

2-04 HAUL

2-04.5 Payment

Section 2-04.5 is supplemented with the following:

(******)
All costs associated with hauling materials of any description to, from, and within the project site shall be included in the appropriate unit bid prices in the Proposal and no further compensation will be paid.

2-07 WATERING

2-07.3 Construction Requirements

Section 2-07.3 is supplemented with the following:

(******)
During construction, the Contractor shall have dedicated to the project, a suitable water truck that shall be operated as necessary to control dust. Failure to have a water truck immediately accessible to the job, and failure to use said water truck for dust control, shall be adequate reason to "shutdown" the project construction. Such shutdown is herein agreed to upon submitting a Bid for this project. Shutdowns due to the Contractor's failure to control dust shall not be considered as unworkable days.

The Contractor shall make necessary arrangements and shall bear the costs for water necessary for the performance of the work.

Water placement includes that required for dust control while excavating for the street or the installation of the utilities, for processing and compacting the subgrade, and for dust control between the time of subgrade preparation and the placing of asphalt. Dust control water shall be applied as directed by the Engineer or the Project Inspector and for such period of time as he deems necessary.

2-07.5 Payment

Section 2-07.5 is replaced with the following

(******)
No additional payment shall be made for watering. All costs incurred for this item shall be included in the other related bid items.

2-09 STRUCTURE EXCAVATION

2-09.3 Construction Requirements

Section 2-09.3 is supplemented with the following:

(******)
Shoring shall be constructed with provisions made to allow the Inspector to enter the shored trench at any time.

2-09.3(1) General Requirements

2-09.3(1)D Disposal of Excavated Material

Section 2-09.3(1)D is supplemented with the following:

(******)
All unsuitable material removed as structure excavation shall be disposed of offsite at a legal disposal site.

Add the following new section and subsections:

(******)

2-09.3(1)G Trench Dewatering **New Section**

2-09.3(1)G1 General

The Contractor shall permit, design, install, operate, and maintain dewatering systems to control groundwater beneath the site, facilitate construction, and to remove, treat, and handle groundwater. It is anticipated that utility and pipe construction will require a dewatering system with wells, well points, sump pumps or other means selected by the Contractor as part of a Groundwater Control Plan prepared and submitted under this section. The Contractor has full design/build responsibility for all investigating the subsurface conditions and selecting the means and methods of controlling groundwater on this Project.

The Contractor shall dewater utility and pipe trenches and structure excavations in accordance with the requirements of the Contract Documents. All open excavations require construction dewatering and/or depressurization. The range in permeability varies by orders of magnitude. Dewatering systems shall accommodate the extreme variation in subsurface water conditions.

The Contractor shall take all necessary measures to divert surface flows away from excavations through culverts or other means. The Contractor shall secure all necessary permits to complete the requirements of this section.

Preliminary information on subsurface water at the site is provided in a Geotechnical Data Report (GDR) found in Appendix A. This information may or may not accurately depict the actual groundwater conditions at or around the time of construction. Consistent with its design/build responsibility, Contractor, its dewatering design engineer/hydrogeologist, and/or specialist dewatering subcontractor shall independently investigate and verify the subsurface

groundwater information provided in the Geotechnical Data Report, especially with regard to the potential for moderate to high groundwater inflows with soft and/or highly permeable soils in all areas of the Project. Accordingly, the Contractor shall expect to have to dewater the full length and depth of the open cut portions of the pipeline alignment and all costs incurred by Contractor to permit, design, install, operate, and maintain dewatering systems to control groundwater beneath the site are included in the Contract Unit Price.

Because the number, depth, and location of wells, well points, pumped wells, or other means selected by the Contractor will depend on additional testing to be conducted by the Contractor, this section requires the Contractor to submit a detailed Groundwater Control Plan and operational schedule prior to commencement of installation of the dewatering system.

The term groundwater as used herein means water that is found in saturated soils, sediments, and/or rocks below the surface of the ground and which flows in response to artesian pressure, gravitational, tidal, or other forces.

The term dewatering as used herein means removal and/or lowering/depressurization of groundwater within the subsurface soil profile to levels below the bottom of an excavation or trench as specified in this section.

The term dewatering system as used herein means a system of wells, well points, sumps, pumps, or other methods selected by the Contractor to remove and/or lower the groundwater adequately to permit safe and dry working conditions, excavation stability, and maintenance of groundwater at levels below the bottom of an excavation or trench as specified in this section.

2-09.3(1)G2 Contractor Submittals

At least 10 working days prior to installation of any dewatering system, the Contractor shall submit a detailed Groundwater Control Plan and operation schedule (Groundwater Control Plan) for dewatering of excavations. The Groundwater Control Plan shall be prepared, signed, and stamped by a professional engineer or licensed hydrogeologist who will be responsible for the design of the dewatering system. Such engineer or hydrogeologist shall have a minimum of five years of experience in the design of dewatering systems and shall be currently registered in the State of Washington as a licensed hydrogeologist or professional engineer. The engineer or hydrogeologist that designs the dewatering system shall demonstrate experience in the design and implementation of construction dewatering including pumped wells, vacuum well points, and depressurization wells. A summary of the engineer's or hydrogeologist's experience shall be included in the Groundwater Control Plan. The Groundwater Control Plan shall identify how the Contractor will manage the rate of dewatering so as to prevent settlement.

The Geotechnical Data Report in Appendix A provides preliminary information regarding soil and groundwater conditions encountered during explorations. Such information may or may not accurately depict the actual subsurface conditions existing at or around the time of construction. The Groundwater Control Plan submitted by the Contractor shall be based on the Contractor's independent investigation and verification of the subsurface conditions existing at the time of construction. The Contractor shall rely on its own independent investigation and verification of the subsurface conditions at the site in developing its Groundwater Control Plan. The submitted Groundwater Control Plan shall show the number,

location, and depth of all dewatering wells, depressurization wells, well points, or other means selected by Contractor, complete with unique identifying reference numbers.

The Contractor shall be required to demonstrate performance and effectiveness of the proposed dewatering system and verify that adequate equipment, personnel, and materials are provided to dewater the excavations and to test the quantity and quality of discharge water at all locations and times.

The Groundwater Control Plan shall include the installation of observation wells and piezometers sufficient in number, location, and depth to provide monitoring information on the performance and effectiveness of the dewatering system. The Groundwater Control Plan shall show the locations and screen depths of groundwater observation wells. The Groundwater Control Plan shall include a monitoring plan that will prescribe the frequency and manner of monitoring, including both manual and automated measurement of water levels by the Contractor, and the timely and regular submittal of this data in electronic form to the Engineer.

The Contractor's Groundwater Control Plan is subject to review by the Engineer. Such review is limited to determining general conformance with the intent of this specification, but not for detailed verification of well sizes, spacing, construction, or adequacy of the planned dewatering. Engineer's review and/or lack of objection to and/or approval of the submitted Groundwater Control Plan shall not modify the requirements of the Contract or relieve the Contractor of its sole responsibility to control groundwater that may exist or may be encountered at the site.

The Contractor shall employ the services of a specialty dewatering subcontractor to provide, operate, and decommission all construction dewatering facilities. A specialty dewatering subcontractor is defined as a firm or an established separate division of a firm that has specialized exclusively in construction dewatering for more than three (3) years and includes permanent staff with at least ten (10) years of experience in construction dewatering including vacuum well points, pumped wells, and depressurization wells.

The Contractor shall provide product data that demonstrate the suitability of the materials and equipment proposed for use in the dewatering system.

The design and implementation of the Groundwater Control Plan shall prevent settlement, formation of ground "heave" and "quick" conditions or "boils" during excavation. Drilling, development, and decommissioning of wells shall comply with Chapter 173-160 WAC and shall be performed by a licensed well driller in compliance with Chapter 173-162 WAC. Copies of all Notices of Construction ("Start Cards") and Well Construction Reports shall be provided to the Engineer.

Shoring required by Section 7-08.3(1)B and the Groundwater Control Plan required herein are interdependent and shall be coordinated and submitted together.

2-09.3(1)G3 Quality Control

It shall be the sole responsibility of the Contractor to control the rate and effect of the dewatering in such a manner as to avoid settlement, subsidence, and interference with local wells, or other adverse impacts. Treated water from dewatering activities shall be released at a rate which does not cause erosion, local flooding, or other adverse downstream affects.

All Dewatering operations shall be adequate to assure the integrity of the finished Project and shall be the responsibility of the Contractor.

Where structures, facilities, or embankments exist adjacent to areas of proposed dewatering, survey reference points shall be established and observed at frequent intervals to detect any settlement which may develop. The responsibility for conducting the dewatering operation in a manner which will protect adjacent structures, facilities or embankments rests solely with the Contractor. The cost of repairing any damage to adjacent structures, facilities, embankments and restoration of said structures, facilities or embankments shall be the responsibility of the Contractor.

2-09.3(1)G4 Equipment

Dewatering, where required, may include the use of pumped wells, vacuum well points, sump pumps, temporary pipelines for water disposal, rock or gravel placement, and other means selected by the Contractor in its sole discretion.

Diversion of surface flows, where required, may include the use of culverts, sandbag cofferdams, pumps, or ditches. If pumps are used to divert water around the construction area, the pumps shall be adequately screened to protect fish and debris from pump suction.

2-09.3(1)G5 Contingency Equipment and Materials

The Contractor shall have on site, at all times, sufficient redundant pumping equipment to dewater any open sections of trench, in good working condition, with spare pumps and other equipment for emergencies including, but not limited to, power outage. The Contractor shall have on site, at all times, competent workers for the operation and repair of the pumping equipment. All equipment, piping, valves, pumps, and backup power supply shall be new or in good working condition.

2-09.3(1)G6 Execution

1. General Requirements:

   The Contractor shall permit, design, construct, operate, maintain, and remove all equipment and materials to control groundwater levels beneath and inside all excavations at elevations below pipe invert as specified in this section. The Contractor shall determine the quantity and best location for any pumped wells, vacuum well points, or other means selected to achieve necessary drawdowns and minimize logistical impacts to the Contractor's operations. The dewatering system shall also include sumps and discharge piping to collect incidental pocketed or perched groundwater not collected by the pumped wells or well point systems.

   Dewatering for structures and pipelines or otherwise shall commence as provided for in the Groundwater Control Plan or earlier if necessary to remove and/or control groundwater as required herein and shall be continuous until such times as water can be allowed to rise in accordance with the provisions of this section or other requirements.

   At all times, site grading shall promote drainage. Surface runoff shall be diverted from excavations. Water entering the excavation from surface runoff shall be collected in

shallow ditches around the perimeter of the excavation, drained to sumps, and be pumped or drained by gravity from the excavation to maintain a bottom free from standing water.

Dewatering shall at all times be conducted in such a manner as to preserve the undisturbed bearing capacity of the subgrade soils at proposed bottom of excavation.

If foundation soils are disturbed or loosened by the upward seepage of water or an uncontrolled flow of water, the affected areas shall be excavated and replaced with drain rock at no additional cost to the Owner. In addition, the Contractor shall implement vacuum well points or deep-well dewatering systems in those areas.

Unless the requirements of the Groundwater Control Plan are more stringent, groundwater shall be lowered to a point at least 2 feet below the bottom of open-cut excavation for a period of 24 hours prior to the start of excavation and shall be maintained at that elevation until completion of pipe or structure installation.

The Contractor shall maintain the water level below the bottom of excavation in all work areas where groundwater occurs during excavation construction, backfilling, and up to acceptance.

Flotation shall be prevented by the Contractor by maintaining a positive and continuous removal of water. The Contractor shall be fully responsible and liable for all damages which may result from failure to adequately keep excavations dewatered.

If vacuum well points or pumped wells are used, these items shall be spaced in accordance with the Groundwater Control Plan to provide the necessary dewatering and shall be filter packed with approximately graded sand and/or gravel and/or other means used to prevent pumping of fine sands or silts from the subsurface. A continual check by the Contractor shall be maintained to ensure that the subsurface soil is not being removed by the dewatering operation.

The Contractor shall dispose of water from the Work in a suitable manner without damage to adjacent property. Contractor shall be responsible for obtaining any permits that may be necessary to dispose of water. No water shall be drained into work built or under construction without prior consent of the Engineer. Water shall be filtered using an approved method to remove sand and fine-sized soil particles before disposal into any drainage system.

The release of controlled groundwater to its static level shall be performed in such a manner as to maintain the undisturbed state of the natural foundation soils, prevent disturbance of compacted backfill and prevent flotation or movement of structures, pipelines, and sewers.

Prior to the start of dewatering operation using vacuum well points or pumped wells, the Contractor shall contact adjacent property owners to verify the proximity of any existing shallow wells and shall continuously monitor the water surface levels within each of the shallow wells during the dewatering operations.

The dewatering system shall be designed for continuous, 24-hour operation and shall not be shut down between shifts, on holidays, or weekends, or during work stoppage, without written permission from the Engineer.

The dewatering system shall be monitored continuously while in operation.

The dewatering system shall include a means for measuring the quantity of discharge.

The quality and quantity of discharge water from the dewatering system shall be in conformance with all Federal, State, and local laws and regulations.

2. Sumps:

Open or cased sumps shall not be used as a primary dewatering method for pipeline excavations that are deeper than 1 foot below the natural water table.

A. System Modifications

If the dewatering system does not meet the above requirements as determined by the Engineer, the Contractor shall modify, add to, or install additional alternative means of groundwater control as needed, at no additional cost to the Owner. If during the course of construction, the system or a part thereof becomes inoperable, it shall be repaired or replaced at no additional cost to the Owner.

B. System Protection

Necessary precautions shall be taken, including, but not limited to, marking wells and pipes, protecting pipes at vehicular crossings, and routing vehicular traffic away from dewatering facilities to protect the dewatering system from damage and ensure continued operation.

C. Electrical Supply

The electrical service for dewatering shall be separate and dedicated solely to the operation of the dewatering system.

D. Disposal of Water

Pumped water shall be disposed of in such a manner so as not to cause damage to public or private property. Contractor shall be responsible for obtaining any permits that may be necessary to dispose of water and adhere to the requirements of those permits.

Silty water generated due to storm runoff or from trench dewatering shall be managed in one of three ways as defined below.

1) The water shall be filtered using an approved method or treated in a sediment treatment facility. This may consist of a sediment trap designed to meet the requirements of Snohomish County Code Title 24 in order to remove sand and fine-sized soil particles before disposal into any drainage system.

2) A second option shall be to truck the silty water from the project site. This water shall be delivered to an approved sediment treatment facility at another location.

3) Where the adjacent land allows, apply water by means of spray irrigation to grassed or forested land down slope of and at a distance no closer than 200 feet from the Work. However, no project flows shall be directed off-site to any adjacent lands without the written permission of the adjacent property owner(s) and the Tulalip Tribes. The water shall not be applied any closer than 200 feet from any stream, flowing ditch or other water body. Water application shall cease at the onset of any surface runoff from the application site.

If project water is applied closer than 200 feet to a water body or is discharged directly to a water body, chemical treatment or filtration shall be required, as described in, respectively, BMPs C250 and C251 of the Stormwater Management Manual for Western Washington (Washington Department of Ecology 8/2001). Chemical treatment (typically coagulation and settling) would need to meet the toxicity testing, jar test, and monitoring requirements stated in BMP C250. A basic requirement is that treated stormwater discharge may not raise the background turbidity level in any receiving stream by more than 5 NTU (or by 10 percent where the background turbidity is greater than 50 NTU). The Contractor will be required to conduct twice daily monitoring of the receiving stream both upstream and downstream of the inflow point from the project site in order to demonstrate that the background stream turbidity is not raised by more than 5 NTUs. Water released into any ditch, swale, or water course shall be at such a rate so as to avoid any downstream flooding or channel erosion.

Pumped water shall not be disposed of in a manner which causes contamination of wells in the vicinity.

Contractor shall inspect downstream portion of storm sewer piping and catch basins prior to and after discharging water into storm sewer system. Contractor shall measure total accumulated sand deposits in each catch basin. If additional sand deposit material is measured after completion of a project dewatering, then Contractor shall remove all accumulated sand deposits from the stormwater system.

E. Terminating Dewatering

The pumping equipment shall be operated just prior to complete shutdown in a manner that will allow the controlled groundwater level to rise gradually to its static level. The release of groundwater to its static level shall be performed in such a manner as to maintain the undisturbed state of the natural foundation soils, prevent disturbance of compacted backfill, and prevent flotation or movement of structures and pipelines.

After the dewatering system is deactivated, all vacuum well points, pumped wells, sumps, and drains shall be removed and the ground shall be restored to a condition better than or equal to the condition prior to installation of the dewatering system.

Contractor shall be or shall employ the services of a licensed water well contractor for well or well-point decommissioning. The construction and decommissioning of all wells used in dewatering systems and for monitoring shall comply with Washington State Department

of Ecology requirements (Chapter 173-160 WAC and Chapter 18.104 RCW). Copies of all Well Decommissioning Reports shall be provided to the Engineer.

Well decommissioning shall include at a minimum, pressure injection of a bentonite/cement grout slurry into the void spaces of the filter pack and removal of the well casings. After removing the well casings, the Contractor shall top off all holes with a bentonite/grout and gravel mixture. The Contractor shall ensure that the bentonite or grout penetrates all of the voids in the gravel pack. After decommissioning, the Contractor shall restore each decommissioned well site to match the surrounding environment (e.g., grass, landscape plantings, pavement concrete, unclassified fill, etc.).

Streambeds and ditches shall be restored with original or matching materials prior to restoring flow into the stream channel. Channel slopes disturbed by dewatering or stream diversion activities are to be stabilized and re-vegetated as shown on the plans.

All "normal trench dewatering" work associated with maintaining a trench suitable for pipeline construction will be incidental and included in the other items of work. "Normal trench dewatering" is defined as dewatering methods occurring in or directly adjacent to the trench, including trash pumps, sump pumps, or other methods in excavated areas. Normal trench dewatering does not include a dewatering system such as well points, well screens, or deep wells.

2-11 TRIMMING AND CLEANUP

2-11.1 Description

Section 2-11.1 is supplemented with the following:

(******)
During construction, and then upon completion of the work, the Contractor shall thoroughly comb and search the surrounding area and remove any construction material thrown or discarded amongst the trees, bushes, ditches, etc., such as paint cans, cartons, broken pipe, pavement pieces, paper, bottles, etc., and shall tidy up the surrounding general area to make it neat in appearance, including removal of debris that may or may not have been deposited by Contractor's operation.

Paved street surfaces shall be thoroughly cleaned (street sweeper) upon completion of work within the area, and shall require daily cleaning if dust or mud exists. Prior to job acceptance, all streets shall be cleaned.

Prior to final inspection, remove from the job site, all tools, surplus materials, equipment, scrap, debris, and waste.

2-11.5 Payment

Section 2-11.5 is supplemented with the following:

(******)
No separate payment will be made for trimming and cleanup, but instead will be incidental to and included in the lump sum item for "Removal of Structures and Obstructions".

2-12 CONSTRUCTION GEOSYNTHETIC

2-12.1 Description

Section 2-12.1 is supplemented with the following:

(******)
The Contractor shall furnish and place geotextile in accordance with the details and these Specifications. Geotextiles are required to be used with “Foundation Material”.

2-12.4 Measurement

Section 2-12.4 is supplemented with the following:

(******)
No separate measurement for payment will be made for geotextile used in conjunction with “Foundation Material”. All costs incurred for this item shall be included in the other related bid items.

END OF DIVISION 2

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DIVISION 3

AGGREGATE PRODUCTION AND ACCEPTANCE

3-01 PRODUCTION FROM QUARRY AND PIT SITES

3-01.4 Contractor Furnished Material Sources

Section 3-01.4 is supplemented with the following:

(******)
No source has been provided for any materials necessary for the construction of this Project.

The Contractor shall make arrangements to obtain the necessary materials at no expense to the Tribe, and all costs of acquiring, producing, and placing this material in the finished work shall be included in the unit contract prices for the various items involved.

3-01.6 Payment

Section 3-01.6 is supplemented with the following:

(******)
All costs of any work required under Division 3 shall be included in the unit contract prices for the various items in the Proposal.

3-02 STOCKPILING AGGREGATES

3-02.2 General Requirements

3-02.2(2) Stockpile Site Provided by the Contractor

Section 3-02.2(2) is supplemented with the following:

(******)
If the Contractor chooses to stockpile crushed surfacing materials, borrow, and backfill materials on or near the site, the Contractor shall establish and maintain separate stockpile areas for:

1. Materials that are to be measured and paid for separately.

2. Materials which are incidental to other bid items.

3-02.5 Payment

Section 3-02.5 is supplemented with the following:

(******)
All costs of any work under Section 3-02 shall be incidental to and included in the unit contract prices for the various items in the Proposal, unless designated otherwise in these Special Provisions.

END OF DIVISION 3

DIVISION 4

BASES

4-04 BALLAST AND CRUSHED SURFACING

4-04.1 Description

Section 4-04.1 is supplemented with the following:

(******)
Crushed surfacing material placed in the removal of existing utilities shall be incidental to other bid items included in the Proposal.

END OF DIVISION 4

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DIVISION 7

DRAINAGE STRUCTURES, STORM SEWERS, SANITARY SEWERS, WATER MAINS, AND CONDUITS

7-05 MANHOLES, INLETS, CATCH BASINS, AND DRYWELLS

7-05.1 Description

Section 7-05.1 is supplemented with the following:

(******)
Work shall also include furnishing and installing of 6-inch sewer drop inlet inside the existing sanitary sewer manhole at the southwest of Quil Ceda Village Administration Building and northwest of 27th Avenue NE and 88th Street NE intersection.

7-05.2 Materials

Section 7-05.2 is supplemented with the following:

(******)

Polyvinyl Chloride (PVC) pipe (4 inches and over)	9-30.2(5)A
Polyvinyl Chloride (PVC) pipe (under 4 inches)	9-30.2(5)B

All sanitary sewer structures shall be core drilled for pipe entrances, and shall use Kor-N-Seal boots to attach the pipe to the structure.

All mechanical joint fittings shall be rigidly restrained with MEGALUG as manufactured by EBAA Iron or approved equivalent. All ductile iron push on pipe joints shall be restrained with FIELD LOK gaskets or with MEGALUG Series 1700 Restraint Harness or approved equal. All PVC push-on pipe joints shall be restrained with FIELD LOK gaskets or MEGALUG Series 1500 Restraint Harness or approved equal.

The 6-inch sewer drop inlet shall be CL52 ductile iron and shall be furnished and installed as detailed in the Plans.

7-05.3 Construction Requirements

Section 7-05.3 is supplemented with the following:

(******)
All pipes entering or leaving the manhole shall be core drilled and attached to the manhole using Kor-N-Seal boot and grout on both sides. Special care shall be taken to see that the openings through which pipes enter the manhole are completely and firmly packed full of nonshrink grout to ensure watertightness.

The exterior of sewer drop inlet ductile iron pipes and fittings in the existing sanitary sewer manhole shall receive Asphalt Coating per WSDOT Standard Specification, Section 9-05.4.

7-08 GENERAL PIPE INSTALLATION REQUIREMENTS

7-08.1 Description

Section 7-08.1 is supplemented with the following:

(******)
This information shall cover the general requirements for installing sanitary sewers. The Contractor shall also follow all provisions of Section 7-18 (Side Sewers), and 1-07.23 (Public Convenience and Safety) as it applies to the specific kind of work.

7-08.2 Materials

Section 7-08.2 is supplemented with the following:

(******)
The Contractor shall use bank run gravel for trench backfill as specified in Section 9-03.19 of the Specifications for pipe installation and all other excavations completed within the driving surface and roadway shoulder.

Bedding materials shall be crushed surfacing top course (CSTC) per Section 9-03.9(3) of the Standard Specifications.

Foundation material shall meet the requirements of Ballasts per Section 9-03.9(2).

Detectable Marking Tape shall be as described in Section 9-15.18.

7-08.3 Construction Requirements

Section 7-08.3 is supplemented with the following:

(******)
Toning wire is required and shall be UL-listed, Type UF, 14-gauge copper taped to the top of the pipe to prevent movement during backfilling. The wire shall be laid loosely enough to prevent stretching and damage. The wire shall be wrapped to a convenient accessible location within each manhole, valve box, etc.

7-08.3(1) Excavation and Preparation of Trench

7-08.3(1)A Trenches

Section 7-08.3(1)A is supplemented with the following:

(******)
Where unsuitable material (Extra Excavation), as determined by the Engineer, is encountered in the trench subgrade below that elevation required for the installation of the pipe bedding, it shall be removed to the depth and limits specified by the Engineer and considered additional effort to be tracked and paid via Force Account. If the Contractor does not notify the Engineer of the unsuitable material prior to proceeding with additional Work, no additional compensation will be warranted. Material to replace unsuitable material that is removed from

the trench shall be trench foundation material specified in Section 7-08.2. Construction geotextile for soil stabilization shall be installed to completely encompass the fill material.

Actual trench width shall not exceed maximum limits as shown on the Plans. The Contractor shall use shoring to minimize trench widths as specified in 7-08.3(1)B.

Unsuitable material for extra excavation removed from the trench shall be hauled to a waste site.

All excavated material shall be loaded directly into trucks and hauled to a permitted disposal site obtained by the Contractor. Stockpiling of excavated material at the project site will not be allowed.

7-08.3(1)B Shoring

Add the following new sub-sections:

(******)

7-08.3(1)B1 General **New Section**

This section specifies requirements for excavation support systems (Shoring or Extra Excavation Class B) for excavation of trenches and open excavations greater than 4 feet in depth.

Where sheet piling, shoring, sheeting, bracing, or other supports are necessary, the items shall be furnished, placed, maintained, and except as shown or specified otherwise, removed.

The design, installation and removal of any and all excavation support are the sole responsibility of the Contractor. A Geotechnical Data Report provided in Appendix A advises that excavation support is necessary in view of the subsurface conditions at the site. In conjunction with its obligations under Section 2 09.3(1)G – Dewatering, Contractor shall conduct its own independent investigation and evaluation of the subsurface conditions at the site and shall rely on such independent investigation/verification in designing and installing the excavation support requirements. The Contract Documents do not contain any specific plans or details for excavation support as such decisions lie solely with the Contractor. The Geotechnical Data Report in Appendix A does not relieve the Contractor of its sole responsibility to investigate and verify the subsurface conditions and design, install, and remove excavation support as may be needed.

The term Excavation Support as used herein has the same meaning as the term Shoring in WAC 296-155-650.

7-08.3(1)B2 Contractor Submittals **New Section**

The Contractor is advised of the provisions for the Washington Industrial Safety and Health Act, Chapter 49.17 RCW and Chapter 296-155 WAC, Part N, Excavation, Trenching and Shoring. The Contractor's excavation support plan shall be prepared by a civil or structural

engineer licensed in the State of Washington and submitted to the Engineer for review as indicated in the paragraphs below.

1. At least 15 working days prior to installation of any excavation support system, the Contractor shall submit an excavation support control plan and operational schedule (Excavation Support Control Plan). The Excavation Support Control Plan shall be prepared, signed, and stamped by a professional engineer currently registered in the State of Washington. Such engineer shall have a minimum of 5 years of experience in the design of excavation support systems. The Excavation Support Control Plan shall show the number, location, type and depth of all excavation support means or methods selected by Contractor. The Contractor's Excavation Support Control Plan is subject to review by the Engineer. Such review is limited to determining general conformance with the intent of this Specification, but not for detailed verification of sizes, spacing, depths, construction, or adequacy. The Engineer's review and/or lack of objection to the submitted Excavation Support Control Plan shall not modify the requirements of the Contract or relieve Contractor of its sole responsibility to design, install, and remove excavation support as required herein.

2. Identify measures to control soil loss and water seepage through utility penetrations in the excavation support system.

3. The Groundwater Control Plan required by Section 2-09.3 and the Excavation Support Control Plan required herein are interdependent and shall be coordinated and submitted together.

7-08.3(1)B3 Execution **New Section**

1. General

Design, provide, and maintain shoring, sheeting, and bracing as necessary to support the sides of excavations and to prevent detrimental settlement and lateral movement of existing facilities, embankments, adjacent property, and completed Work.

2. Removal of Excavation Support

Do not begin to remove excavation support until it can be removed without damage to existing facilities, completed work, or adjacent property.

3. Trenches

Where trench excavation is deeper than 4 feet, the Contractor shall construct and maintain safety shoring systems that meet the requirements of the Washington Industrial Safety and Health Act, Chapter 49.17 RCW and Chapter 296-155 WAC, Part N, and the minimum requirements/prohibitions described in this Section.

If shallow groundwater causes excessive trench caving or accumulation of water, temporary steel shoring or equivalent means shall be installed. The installed shoring system shall meet the requirements described in the section above.

4. Utility Penetrations in Excavation Support System

Contractor shall implement measures to prevent soil loss and control water seepage through utility penetrations in the excavation support system.

7-08.3(2) Laying Pipe

7-08.3(2)B Pipe Laying – General

Section 7-08.3(2)B is supplemented with the following:

(******)
All gravity sewer main and laterals shall be installed with continuous tracer tape installed 12 to 18 inches under the final ground surface. Marking tape shall be Terra Tape "D" or approved equal for this project.

7-08.3(2)I Side Sewer Connections

Section 7-08.3(2)I is supplemented with the following:

(******)
Connections between a side sewer and a new main shall be done using a wye of the same material with approved fittings or adapters.

Add the following new section:

(******)
7-08.3(2)J Dewatering Trenches New Section

Trench dewatering shall conform to requirements of Section 2-09.3(1)G.

All "Normal Trench Dewatering" work associated with maintaining a trench suitable for pipeline construction will be incidental and included in the other items of work. "Normal Trench Dewatering" is defined as dewatering methods occurring in or directly adjacent to the trench, including trash pumps, sump pumps, or other methods in the excavated areas. "Normal Trench Dewatering" does not include a dewatering system such as well points, well screens, or deep wells as required by Section 2-09.3(1)G.

7-08.3(3) Backfilling

Section 7-08.3(3) is supplemented with the following:

(******)
Backfilling and surface restoration shall closely follow the installation of pipe, so that not more than 100 feet is left of the trench open at any time during construction without approval of the Engineer. When public safety concerns exist, the Engineer may require more stringent backfilling standards. Selected backfill material shall be placed and compacted around and under the pipe by hand tools to a height of 6 inches above the top of the pipe. The remaining backfill shall be compacted to 95 percent of the maximum density in the roadway prism and

shall be satisfactorily demonstrated to the Engineer by density tests per the WSDOT Standard Specifications for Road, Bridge, and Municipal Construction, Section 2-03.3(14)D.

Add the following new subsection:

(******)

7-08.3(3)A Vertical Clearance Between Utility Lines **New Section**

Where the vertical clearance between adjacent storm drainage lines, water lines, sanitary sewer lines, or casings is 2 to 6 inches, an ethylene vinyl acetate pad, Rubatex Laboratories R-5010-A, or an approved equal, is required. The pad shall be 3 feet by 3 feet by 2.5 inches minimum, and placed between the sanitary sewer pipe and the other utility pipe. All costs necessary to furnish and install the pad shall be considered incidental to pipe laying.

7-18 SIDE SEWERS

7-18.1 Description

Section 7-18.1 is supplemented with the following:

(******)

This work consists of connecting two septic laterals serving the Quil Ceda Village Administration Building and the Tulalip Data Services Building with one new sewer lateral to the existing Quil Ceda Village sanitary sewer system.

7-18.2 Materials

Section 7-18.2 is supplemented with the following:

(******)

Side sewers shall be PVC, ASTM D3034, DR 35 meeting the requirements of Section 9-05.12(1) of Standard Specifications.

Fittings shall be solvent-welded PVC and compatible with ASTM D3034 pipe.

7-18.3 Construction Requirements

Section 7-18.3 is supplemented with the following:

(******)

The approximate location of known sanitary sewers laterals are shown on the Contract Plans.

Sewer laterals shall be out of service for no more than 8 hours during connection, and the cut-in connection shall only be done during the weekends to ensure no one is in the building using the facilities. The Contractor shall bypass the sewage flow from the cut lateral using plugs and pumps. Notify the Tribe minimum 48 hours prior to the outage with written notification. Outages must be between 8 a.m. and 4 p.m.

The Contractor shall not backfill the restored lateral until inspected by the Engineer. Couplings shall be supported with compacted gravel or CDF to prevent settling during backfill, and furnishing and installing of all material shall be incidental to the item being installed.

Maintain adequate supplies on hand for restoration of 4-inch, and 6-inch sewer laterals, including piping and flexible couplings. The Contractor shall continue other work during the lateral work.

Tracer wire shall be insulated 12-gauge green coated wire (solid core) wrapped around the pipe and looped through the valve box or cleanout.

7-19 SEWER CLEANOUTS

7-19.1 Description

Section 7-19.1 is supplemented with the following:

(******)
This work consists of all cleanouts and related appurtenances associated with the project for the gravity sanitary sewer laterals.

7-19.2 Materials

Section 7-19.2 is supplemented with the following:

(******)
All materials for the new sewer cleanouts shall conform per Detail shown on the Plans.

7-19.3 Construction Requirements

Section 7-19.3 is supplemented with the following:

(******)
Gravity sanitary sewer cleanouts and cast iron cleanout covers shall be constructed per Detail shown on the Plans.

Tracer wire shall be insulated 12-gauge green coated wire (solid core) wrapped around the pipe and looped through the valve box or cleanout.

END OF DIVISION 7

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DIVISION 8

MISCELLANEOUS CONSTRUCTION

8-01 EROSION CONTROL AND WATER POLLUTION CONTROL

8-01.3 Construction Requirements

Section 8-01.3 is supplemented with the following:

(******)

The Contractor shall bear sole responsibility for damage to completed portions of the project and to property located off the project caused by erosion, siltation, runoff, or other related items during the construction of the project. The Contractor shall also bear sole responsibility for any pollution of rivers, streams, groundwater, or other water that may occur as a result of construction operations.

Any area not covered with established, stable vegetation where no further work is anticipated for a period of 15 days shall be immediately stabilized with the approved erosion and sedimentation control methods (e.g., seeding and mulching, straw, plastic sheet). Where seeding for temporary erosion control is required, fast germinating grasses shall be applied at an appropriate rate (e.g., perennial rye applied at approximately 80 pounds per acre).

At no time shall more than 1 foot of sediment be allowed to accumulate within a catch basin. All catch basins and conveyance lines shall be cleaned at a time designated by the Project Construction Inspector. The cleaning operation shall not flush sediment-laden water into the downstream system. The cleaning shall be conducted using an approved vacuum truck capable of jet rodding the lines. The collection and disposal of the sediment shall be the responsibility of the Contractor at no cost to the Tribe.

Erosion control materials shall be installed prior to the start of any other work on the Project.

Following completion of the project, the Contractor shall remove all erosion-control materials and dispose of them off-site. Any areas disturbed by the installation and/or removal of temporary erosion control materials shall be restored by the Contractor as directed by the Engineer at no cost to the Tribes.

8-01.3(1) General

8-01.3(1)A Submittals

Add the following new sections:

(******)

8-01.3(17) Trench Dewatering **New Section**

All “Trench Dewatering” or “Normal Trench Dewatering” work associated with maintaining an excavation or trench suitable for structure installation and pipeline construction will be included in the per linear foot price of the utility being installed. “Normal Trench Dewatering” is defined as dewatering methods occurring in or directly adjacent to the trench, including trash pumps, sump pumps, or other methods in the excavated areas. Normal trench

dewatering is not included in the dewatering system. In contrast, “Dewatering” is described in Section 2-09.3(1)G.

Discharge Location
The Contractor shall dispose of all surface water runoff and water removed by “Trench Dewatering” or “Normal Trench Dewatering” in an environmentally sound manner that will not endanger health, property, or any portion of the work under construction. The discharge locations(s) shall be identified in the Contractor’s dewatering submittal for the Engineer’s review as specified herein. Disposal of water shall be performed in such a matter as will cause no inconvenience whatsoever to the Owner, Engineer, adjacent property owners, or to others engaged in work about the site.

The Contractor shall use sediment control methods, as required, at discharge points near property lines to prevent silt and sediment from migrating off-site. Sediment control methods can include, but are not limited to, baker tank, siltation ponds, filter fences, screens, and other methods as required.

8-02 ROADSIDE RESTORATION

8-02.1 Description

Section 8-02.1 is supplemented with the following:

(******)
This item of work provides for the preparation and/or placement of materials including but not limited to topsoil, and, mulch, at the locations shown on the Plans.

8-02.3 Construction Requirements

Section 8-02.3 is supplemented with the following:

(******)
The Contractor shall have facilities, equipment, and personnel adequate for providing work and material specified including but not limited to topsoil, mulch, and furnishing and installing sod at the locations shown on the Plans.

Landscape Surface Restoration shall include removal and reinstallation of in-kind decorative pavers including but not limited to sand cushion and compacting the backfill. The Contractor shall be responsible for in-kind restoration of surface improvements for all areas outside the trench restoration. All costs for in-kind restoration shall be incidental to the Work.

8-02.3(4) Topsoil

8-02.3(4)A Topsoil Type A

Section 8-02.3(4)A is supplemented with the following:

(******)
Topsoil shall conform to the requirements of Section 9-14.2(1), Topsoil Type A.

END OF DIVISION 8

DIVISION 9

MATERIALS

9-14 EROSION CONTROL AND ROADSIDE PLANTING

9-14.2 Topsoil

9-14.2(1) Topsoil Type A

Section 9-14.2(1) is supplemented by adding the following:

(******)

Topsoil Type A shall be uniform blend of the following materials by volume: (1) 40 percent friable sandy loam soil; (2) 30 percent aggregate meeting the requirement of "Section 9-03.13, Backfill for Sand Drains"; and (3) 30 percent compost. One hundred percent of this mixture shall pass through a 1-inch sieve.

END OF DIVISION 9

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Appendix A

Geotechnical Report

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August 11, 2009

Parametrix, Inc.
5814 Graham Avenue, Suite 201
PO Box 460
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(253) 501-5275

Attention: Mr. Chris Tobin

Geotechnical Engineering Report
27th Avenue Reconstruction
27th Avenue NE: Marine Drive to 88th Street
Tulalip, Washington
Doc ID: Parametrix.27thAveNE.RG

INTRODUCTION

This report summarizes our site observations, results of our subsurface explorations, and provides geotechnical recommendations and design criteria for the proposed 27th Avenue Reconstruction project. We previously submitted a draft version of this report dated July 22, 2009. This final version of our report addresses comments from Snohomish County that were provided to us electronically on by Parametrix on July 28, 2009.

The section of 27th Avenue being improved extends from Marine Drive NE on the south to 88th Street NE (, on the north, as shown on the Vicinity Map, Figure 1. This section of road currently consists of 2 traffic lanes, paved shoulders, and intermittent shallow ditches. The middle section of the segment, from about 70th Street NE to 74th Street NE has been partially widened to include a center left turn lane, wide shoulder on the west, an open ditch, and a paved pedestrian path. This section is in front of the Tulalip campus of Marysville High School and Quil Ceda Elementary school.

Our understanding of the project is based on our discussions with yourself, a review of the plans provided, our July, 2009 site reconnaissance, and on our experience in the area. Based on our review of the conceptual plan provided to us by Parametrix, Inc, improvement plans call for widening the roadway and paved shoulders, installing a new stormwater collection and treatment ditch along the east side of the road, and a new 8-foot wide paved pedestrian path along the east side of the road. In addition, the existing 27th Avenue surface will be overlaid. To minimize impacts and limit surface water runoff, we understand that Low impact development (LID) such as porous pavement will be used for the pedestrian pathway.

SCOPE

The purpose of our services is to evaluate the surface and subsurface conditions at the site as a basis for providing geotechnical recommendations and design criteria for the project. Specifically, the scope of services for this project included the following:

1. Visit the site and conduct a geologic reconnaissance to assess the site's slope, soil and ground water conditions;

2. Reviewing available subsurface soil and groundwater information, including published USGS maps and water well logs online at the Department of Ecology;
3. Excavating a series of backhoe test pits across the site, including the proposed stormwater treatment/infiltration area;
4. Providing grain size analysis on representative soil samples; and
5. The preparation of this report.

It should be realized that the conclusions and recommendations contained in this report are based on our understanding of the currently proposed utilization of the project site, as derived from layout drawings and verbal information supplied to us. Consequently, if any changes are made to the currently proposed project, we may need to conduct additional explorations or modify our conclusions and recommendations contained herein to reflect those changes.

SITE CONDITIONS

Surface Conditions

The section of 27th Avenue NE evaluated as part of this project is situated in an area of existing rural residential development. As previously stated, the road consists of 2 lanes of traffic (one in each direction), with narrow paved shoulders and intermittent stormwater ditches. The central portion of the alignment, between about 70th Street and 74th Street has been widened to include a center left turn lane, widened west shoulder, a deeper stormwater ditch along the west shoulder, and a paved pedestrian path west of the ditch. The existing alignment, along with the location of our hand auger and test pit explorations, is shown on the attached Site Plans, Figures 2a through 2c.

The alignment is generally flat to very gently sloping down to the south. The ditches adjacent to the roadway vary in depth from about 1 to 2½ feet. Most of the residential parcels are at grade with 27th Avenue NE. We have not been provided with a site survey at this time.

The undeveloped portions of the alignment are covered with a combination of dense native understory including blackberries and other native shrubs amongst a medium-aged forest. In contrast, the developed lots are generally covered with grass lawns and pastures with scattered ornamental trees and shrubs. No evidence of erosion or slope movement was observed at the site at the time of our site visit.

Site Soils

The Natural Resources Conservation Service Soil Survey of Snohomish County maps the entire length of the 27th Avenue NE being improved as being underlain by the Ragnar fine sandy loam. The Ragnar soils consist of deep, well drained soils that are derived from glacial outwash on broad outwash plains with slopes of 0 to 8 percent. The Ragnar soils (type 57) are listed as having a slight erosion hazard, moderately rapid permeability, and slow runoff. The Ragnar soils are listed in hydrologic soils group B. A. copy of the SCS soils map for the site area is included as Figures 3a and 3b. It should be noted that we observed no evidence of surficial erosion on the site at the time of our site visits.

Geologic Conditions

Our review of the *Geologic Map of the Marysville 7.5-minute Quadrangle, Snohomish County, Washington* by Minard (1985), the site is located in an area mapped as being underlain by Vashon Recessional Sand with Minor Silt (Qgos). The outwash soils were deposited by meltwaters emanating from retreating glacial ice mass during the latest Vashon Stade of Fraser Glaciation approximately 12,000 to 15,000 years ago. As such, the outwash

sands are considered normally consolidated and have moderate strength and low compressibility characteristics. The surficial soils at the site have been weathered to a loose condition.

Subsurface Explorations

Our test pits explorations were excavated by a small track-mounted hoe operated by a licensed earthwork contractor working under contract to GeoResources. A geotechnical engineer working for GeoResources observed the excavations, logged the subsurface conditions, and obtained representative soil samples. All samples were stored in zip-loc bags and were taken to our office for further visual examination and laboratory testing. After each test pit was logged, and samples were collected, the contractor backfilled it with excavated soils and used the bucket to compact the surface.

We also reviewed explorations from several other projects within the site vicinity. These reports include:

- *Preliminary Geologic and Geotechnical Summary* prepared by GeoEngineers dated December 11, 2007, which included a description of subsurface conditions along the 27th Avenue alignment based on a review of previous reports by others;

- *Geotechnical Engineering Report, Tulalip Water Reservoir, Tulalip, Washington* prepared by AMEC Earth & Environmental, Inc. dated July 3, 2002, which included 12 borings that extend from 27th Avenue (north of 88th Street) west to the water reservoir;

- *Summary of Geotechnical Studies, Effluent Infiltration Project, Tulalip, Washington* prepared by AMEC Earth & Environmental, Inc. dated March 15, 2002 which includes a summary of numerous explorations north of the project alignment;

- *Geotechnical Engineering Evaluation, Quil Ceda Place Development, Marysville, Washington* prepared by AMEC Earth & Environmental, Inc. dated December 4, 2000, which included 15 test pits and 2 borings for the commercial development northeast of the project alignment; and

- *Washington State Department of Ecology Well Log Viewer* website which included more than 20 resources protection and water well logs for the general area along the alignment.

While some of the reviewed explorations logs are north of the project alignment, the logs generally confirm the mapped stratigraphy identified on the Soil Conservation Survey maps and the United State Geologic Survey maps. The location, elevation and depth of our hand auger and test pit explorations are summarized below in Table 1.

TABLE 1
APPROXIMATE LOCATIONS, ELEVATIONS, AND DEPTHS OF EXPLORATIONS

Exploration Number	Functional Location	Surface Elevation (feet)	Termination Depth (feet)
HA-1	SE Corner of 27th Ave. NE and 74th St. NE (~Sta. 37+50)	30	5
HA-2	NE Corner of 27th Ave. NE and 70th St. NE (~Sta. 32+00)	27	5½
TP-1	SE Corner of parcel at 6605-27th Ave (~Sta. 13+00)	22	2
TP-2	NE corner of 27th Ave. NE and Old Tulalip Rd (~Sta. 16+75)	25½	10
TP-3	SE corner of 27th Ave. NE and 70th Street (~Sta. 31+25)	28	12
TP-4	SE corner of 27th Ave. NE and72nd Street NE (~Sta. 34+25)	29	9½
TP-5	South of driveway for 7403 27th Ave. NE (~Sta. 38+50)	30	10½
TP-6	SE corner of 27th Ave. NE and 77th Street NE(~Sta. 47+00)	38	10½
TP-7	NE corner of 27th Ave. NE and Sandra Mason Rd (~ Sta. 54+00)	41	9½
TP-8	SE corner of 27th Ave. NE and 81st St. (~Sta. 62+50)	44½	11
TP-9	South of driveway for 8501 27th Ave. NE (~Sta. 75+75)	48	10
TP-10	East of 27th Ave. NE between 86th & 88th St. NE (~Sta. 80+25)	48	9½
Elevation datum: Parametrix site plan dated 7-31-09			

Our test pits were excavated by a rubber-tired backhoe operated by a licensed earthwork contractor working for GeoResources. A geologist-in-training from our firm monitored excavation of the test pits, prepared written logs of the subsurface conditions, and obtained representative soil samples. The samples were stored in zip-loc baggies and transported to our laboratory for supplemental laboratory testing. Upon completion of logging and sample collection, the earthwork contractor backfilled the test pit with the excavated soils, and compacted the surface with the bucket.

The Hand Auger Logs (Figure 5) and Test Pit Logs (Figures 6a through 6c) indicate the encountered vertical sequence of soils at each exploration location. The descriptions are based on our field classifications and supported by our subsequent laboratory examination and testing, where applicable. The encountered soils were visually classified in accordance with the Unified Soil Classification System (ASTM: D-2488) as shown on Figure 4. Where a soil contact was observed to be gradational, undulating, or dipping, our test pit logs report the average contact depth. The relative density of the encountered soils is estimated based on the resistance to the excavator, stability of the test pit sidewalls, and general excavation characteristics. The approximate depth of any sidewall caving or groundwater seepage is also noted on each test pit log.

Subsurface Conditions

Our hand auger and test pit explorations encountered fairly uniform subsurface conditions that generally confirmed the map geology. In general, our explorations encountered ½-foot to 1½-feet of topsoil or debris/root laden browns silty sand (topsoil/fill?) mantling about 1 to 7 feet of a loose to medium dense, light orange-brown to tan fine to medium sand with varying amounts of silt and roots. Underlying these surficial soils, our explorations encountered medium dense sand with minor amounts of silt. This deeper sand appeared normally consolidated, and increased in density with depth. All our test pits, except for TP-3 and TP-5, encountered the sand to the full depth explored. In test pits TP-3 and TP-5, a medium stiff to stiff massive silt was encountered at depths of 11 and 10 feet, respectively. The silt was encountered to the full depth explored in both of these test pits.

The enclosed exploration logs provide a detailed description of the soil strata encountered in our subsurface explorations, and Table 2 summarizes the approximate thicknesses, depths, and elevations of selected soil layers.

TABLE 2
APPROXIMATE THICKNESSES, DEPTHS, AND ELEVATIONS OF SOIL LAYERS ENCOUNTERED IN EXPLORATIONS

Exploration	Thickness of Topsoil (feet)	Thickness of Weathered Fine to Medium SAND (feet)	Thickness of Medium SAND (feet)	Depth of Medium Stiff to Stiff SILT (feet)	Elevation of Medium Stiff to Stiff SILT (feet)
HA-1	½	1½	2+	N/E	N/E
HA-2	½	1½	2+	N/E	N/E
TP-1	½	1½+	N/E	N/E	N/E
TP-2	1½	5½	4+	N/E	N/E
TP-3	1½	4	6½+	11	17
TP-4	1½	1	7+	N/E	N/E
TP-5	1¼	2¾	6	10	20
TP-6	¾	5¼	4½+	N/E	N/E
TP-7	1	5	6	N/E	N/E
TP-8	1	2	3	N/E	N/E
TP-9	1	7	8	N/E	N/E
TP-10	1	7	8	N/E	N/E

Elevation datum: Parametrix site plan dated 7-31-09

Grain Size Analysis

We performed grain size analysis on several representative samples of the soils encountered in our explorations. The grain size analyses provide us with a D_{10} ratio that provides us with an estimated long-term infiltration rate using a formula contained in the Stormwater Management Manual for Western Washington (Washington State Department of Ecology, 2005). The results of our grain size analyses attached at the end of this report (Figures 7a through 7f) indicate the percent of soil passing various sieves or mesh seizes. Our grain size analyses were performed in accordance with ASTM:D-422. Using the results of the grain size analysis, we interpreted the USDA soil classification for the soils to all be representative of "sand" as shown on the USDA textural triangle plot attached as Figure 8.

In addition to the sieves, we also performed a California Bearing Ratio (CBR) test on a representative sample of the near surface soils. The CBR provides us with the residulant modulus of the soil that is used in determining the pavement section. Based on the test results, when compacted to 95% of the maximum dry density, as determined by the Modified Proctor (ASTM:D-1557), the shallow fine to medium sand has a CBR value of 10. The enclosed laboratory testing sheets (Figures 8a and 8b) graphically present our test results.

TABLE 3
LABORATORY TEST RESULTS FOR NON-ORGANIC ON-SITE SOILS

Soil Type (Sample)	Moisture Content (percent)	Gravel Content (percent)	Sand Content (percent)	Silt/Clay Content (percent)	D_{10} Ratio (mm)
Shallow weathered SAND (HA-1, 1½')		0	98	2	0.1530
Shallow weathered SAND (TP-5, 2')	7.5	1	91	8	0.0965
Shallow weathered SAND (TP-7, 5')	4.9	0	94	6	0.1225
Shallow weathered SAND (TP-9, 1.5')	3.3	0	93	7	0.1120
Deeper Medium SAND (HA-2, 3½')		2	97	1	0.2210
Deeper Medium SAND (TP-5, 5')	3.5	13	86	1	0.2571

Groundwater

Groundwater seepage was only encountered in one of our test pits at the time of digging (TP-10), however, the deeper soils encountered in test pits TP-5, TP-6, and TP-9 all had elevated moisture contents. We also observed mottling and oxidation, indicative of a fluctuating or seasonal groundwater table in several of our explorations. Because our explorations were performed during an extended period of dry weather, the groundwater conditions encountered at the time of digging (July 10, 2009) likely represent seasonal low levels. We would expect high water levels during the wet winter months.

TABLE 4
APPROXIMATE DEPTH OF GROUNDWATER SEEPAGE ENCOUNTERED IN EXPLORATIONS

Exploration	Depth of Mottling/Oxidation Observed in Native Soils (feet)	Depth of Groundwater Seepage (feet)	Date Seepage Encountered
TP-2	6	N/E	N/E
TP-3	5½	N/E	N/E
TP-4	6	N/E	N/E
TP-5	8	N/E	N/E
TP-6	6	N/E	N/E
TP-7	6	N/E	N/E
TP-10	N/E	8	7/10/2009
Elevation datum: Parametrix site plan dated 7-31-09			

It should be noted that throughout the year, groundwater levels will fluctuate in response to precipitation, site utilization and development, and off-site construction activities.

CONCLUSIONS

Based on the results of our data review, site reconnaissance, subsurface explorations and our experience in the area, it is our opinion that the site is suitable for the proposed park. Based on the soils encountered in the subsurface explorations at the site and our understanding of the proposed site development, conventional earthwork and foundation support is feasible for the project. Furthermore, the use of low impact design for addressing stormwater runoff does appear feasible. Pertinent conclusions and geotechnical recommendations regarding the design and construction of the proposed development are presented below.

Site Preparation

We anticipate stripping depths along the improved section of 27th Avenue to vary between 6 and 18 inches. The strippings will include sod and topsoil, as well as debris and root laden soils. The stripped topsoil may be stockpiled and later used for erosion control and landscaping/revegetation, whereas debris laden soils should be removed from the project site.

Any soft, loose or otherwise unsuitable areas delineated during proofrolling or probing should be recompacted, if practical, or over-excavated and replaced with structural fill, based on the recommendations of our site representative. The fill placed across the site does appear to be medium dense, and likely was compacted. In our opinion, the existing fill soils will be suitable for supporting the lightly loaded structures.

Where placement of fill material is required, the stripped/exposed subgrade areas should be compacted to a firm and unyielding surface prior to placement of any fill. We recommend that a member of our staff evaluate the exposed subgrade conditions after removal of vegetation and topsoil stripping is completed and prior to placement of structural fill. The exposed subgrade soil should be proofrolled with heavy rubber-tired equipment during dry weather or probed with a 1/2-inch-diameter steel rod during wet weather conditions.

Structural Fill

All material placed as fill associated with mass grading or as utility trench backfill should be placed as structural fill. The structural fill should be placed in horizontal lifts of appropriate thickness to allow adequate and uniform compaction of each lift. Fill should be compacted to at least 95 percent of MDD (maximum dry density as determined in accordance with ASTM D-1557).

The appropriate lift thickness will depend on the fill characteristics and compaction equipment used. We recommend that the appropriate lift thickness be evaluated by our field representative during construction. We recommend that our representative be present during site grading activities to observe the work and perform field density tests.

The suitability of material for use as structural fill will depend on the gradation and moisture content of the soil. As the amount of fines (material passing US No. 200 sieve) increases, soil becomes increasingly sensitive to small changes in moisture content and adequate compaction becomes more difficult to achieve. During wet weather, we recommend use of well-graded sand and gravel with less than 5 percent (by weight) passing the US No. 200 sieve based on that fraction passing the 3/4-inch sieve. If prolonged dry weather prevails during the earthwork and foundation installation phase of construction, higher fines content (up to 10 to 12 percent) will be acceptable.

Material placed for structural fill should be free of debris, organic matter, trash and cobbles greater than 6-inches in diameter. The moisture content of the fill material should be adjusted as necessary for proper compaction.

Suitability of On-Site Materials as Fill

During dry weather construction, any nonorganic on-site soil may be considered for use as structural fill; provided it meets the criteria described above in the structural fill section and can be compacted as recommended. If the material is over-optimum moisture content when excavated, it will be necessary to aerate or dry the soil prior to placement as structural fill. We generally did not observe the site soils to be excessively moist at the time of our subsurface exploration program. However, laboratory test results indicated that many of our samples had moisture contents above optimum moisture.

The shallow surficial soils at the site generally consist of a fine to medium sand with minor amounts of silt. These soils are generally comparable to "common borrow" material and will be suitable for use as structural fill provided the moisture content is maintained within 2 percent of optimum moisture. However because of the fine grain nature of the sand, the native soils will drain slowly and could become difficult to place and compact during periods of extended wet weather.

We recommend that completed graded-areas be restricted from traffic or protected prior to wet weather conditions. The graded areas may be protected by paving, placing asphalt-treated base, a layer of free-draining material such as pit run sand and gravel or clean crushed rock material containing less than 5 percent fines, or some combination of the above.

Cut and Fill Slopes

All job site safety issues and precautions are the responsibility of the contractor providing services/work. The following cut/fill slope guidelines are provided for planning purposes only. Based on current Washington Industrial Safety and Health Act (WISHA, WAC 296-155-66401) regulations, the site soils on the site would be classified as Type C soils.

According to WISHA, for temporary excavations of less than 20 feet in depth, the side slopes in Type C soils should be laid back at a slope inclination of 1.5H:1V or flatter from the toe to the crest of the slope. It should be recognized that slopes of this nature do ravel and require occasional maintenance. All exposed slope faces should be covered with a durable reinforced plastic membrane, jute matting, or other erosion control mats during construction to prevent slope raveling and rutting during periods of precipitation. These guidelines assume that all surface loads are kept at a minimum distance of at least one half the depth of the cut away from the top of the slope and that significant seepage is not present on the slope face. Flatter cut slopes will be necessary where significant raveling or seepage occurs, or if construction materials will be stockpiled along the slope crest.

Where it is not feasible to slope the site soils back at these inclinations, a retaining structure should be considered. Where retaining structures are greater than 4-feet in height (bottom of footing to top of structure) or have slopes of greater than 15 percent above them, they should be engineered.

This information is provided solely for the benefit of the owner and other design consultants, and should not be construed to imply that GeoResources assumes responsibility for job site safety. It is understood that job site safety is the sole responsibility of the project contractor.

Pavement and Driveway Areas

We understand that asphaltic pavements will be used for the road widening, the existing roadway sections are in a generally good condition.

As previously mentioned, we collected a representative sample for the California Bearing Ratio (CBR). Based on information provided to our office the Average Daily Traffic (ADT) count is about 8000 vehicles with 2 percent being heavily loaded trucks; and 98 percent passenger vehicles.

Based on the data above we calculated a yearly Equivalent Single Axle Load (ESAL) value of about 85,515 ESAL's. A design life of 20 years along with a growth factor of 4 percent per year was utilized to calculate the lifetime ESAL value of 2,835,709 ESAL's. The CBR value (at 95 percent MDD) from the laboratory testing was 10 percent, resulting in a subgrade modulus of 15,000 psi. A reliability factor of 95 percent, standard deviation of 0.5 and Δ PSI of 1.5 were used in the AASHTO 1993 flexible pavement equation to come up with the minimum structural number for the section, 3.57.

To calculate the new pavement section thickness, layer coefficients of 0.44, 0.40 and 0.14 were used for the Hot Mix Asphalt (HMA), Asphalt Treated Base (ATB) and CSTC, respectively. The resulting section we recommend consists of a minimum thickness of 3 inches of HMA over 3 inches of ATB over 8 inches of CSTC for a structural number of 3.64. Alternative sections could be used provided they meet the minimum structural number requirement. We understand that the County has required a minimum pavement section of 4 inches of 1/2" HMA over 4 inches of 1" HMA over 6 inches of CSTC. Since the County requested pavement section exceeds our calculated pavement section we anticipate that it will be suitable for the proposed road improvements.

The following comments and recommendations are given for pavement design and construction purposes. All pavement subgrades should be proof-rolled with a loaded dump truck or heavy compactor to demonstrate the subgrade areas are firm and unyielding prior to

paving. Any areas where this proof-rolling operation reveals soft, organic, or pumping soils at the pavement subgrade should be overexcavated and replaced with a suitable structural fill material. All structural fill should be compacted according to our recommendations given in the **Structural Fill** section. Specifically, the upper 2 feet of soils underlying pavement section should be compacted to at least 95 percent of ASTM: D-1557, and all soils below 2 feet should be compacted to at least 90 percent.

For the top course, we recommend using imported, clean, crushed rock, such as "Crushed Surfacing Top Course" per WSDOT Standard Specification 9-03.9(3). For the base course (if required to bring to grade), we recommend using imported, clean, well-graded sand and gravel, such as "Ballast" or "Gravel Borrow" per WSDOT Standard Specifications 9-03.9(1) and 9-03.14, respectively.

The top and base course material should be compacted to at least 95 percent of the modified Proctor maximum dry density (based on ASTM:D-1557). Typically, the asphalt concrete should be compacted to at least 92 percent of the Rice value (ASTM:D-2041), but since porous pavement is proposed, the supplier may have a different requirement in order to achieve the desire porosity. For the subbase course and pavement course, this is best accomplished by means of frequent density testing. For the base course, methodology observations and hand probing are more appropriate than density testing because of the coarse nature of the material.

It should be realized that no asphaltic pavement is maintenance-free. The above described pavement sections represent our minimum recommendations for an average level of performance during a 20-year design life; therefore, an average level of maintenance will likely be required. Thicker asphalt, base, and subbase courses would offer better long-term performance, but would cost more initially; thinner courses would be more susceptible to "alligator" cracking and other failure modes. As such, pavement design can be considered a compromise between a high initial cost and low maintenance costs versus a low initial cost and higher maintenance costs.

Stormwater

Preliminary soil infiltration rates were determined in general accordance with the Tulalip Stormwater Management Manual and the Snohomish County Drainage Manual, both of which refer to the Stormwater Management Manual for Western Washington (SWMMWW) (Washington State Department of Ecology, 2005). This manual provides for a preliminary infiltration rate to be determined using the USDA soil textural classification system or the ASTM Gradation Testing.

Based on the results of our grain size analysis, summarized above in Table 4 and graphically shown on Figures 7a through 7f and Figure 8, the site soils are classified as sand on Figure 3.27 USDA Textural Triangle of the 2005 Department of Ecology manual. Table 3.7 of the same manual indicates that sand can have an estimated long term design rate of 2 inches per hour.

Using the ASTM method, the D_{10} grain size (diameter of which 10 percent of the soil is finer than) for the upper fine sand ranges from 0.0965mm to 0.11530mm. According to Table 3.8 of the manual, a long term design rate of 2 inches per hour can also be used. In contrast, the deeper sand had a D_{10} grain size that varied from 0.2210mm to 0.2571mm, which can utilize an estimate long term design rate of 3.5 inches per hour. Provided the bottom of the infiltration basin is at least 3 feet below existing grade, the higher long term design rate of 3.5 inches per hour may be used.

The manuals recommend that a minimum of 1 test pit exploration be advanced for every 5,000sqft of infiltration pond. As stated above, the subject alignment is approximately 7,600 feet long. Current plans call for a series of shallow infiltration "ditches" along the

roadway alignment. Based on the relatively uniform nature of soils encountered in our test pits, similar soils described in the reviewed exploration logs by others, and because all of the logs generally confirm the mapped stratigraphy, it is our professional opinion that no additional explorations should be required at this time. However, we do recommend that the soils at the proposed infiltration elevation be evaluated and confirmed at the time of construction by a representative of GeoResources.

Suspended solids could eventually clog the soil and reduce the infiltration rate of the soils. Because of the potential for clogging, the permanent infiltration facilities should not be connected to the collection system until after the earthwork is completed and erosion control measures are in place or the roadways are paved. Where it is necessary to utilize the pond area for stormwater control during earthwork and construction, we recommend that the pond bottom be left a minimum of 18 inches high. The remaining material and accumulated fines may be removed when the roadways are paved and erosion control measures are complete.

Cation Exchange

Three representative samples of the native soils were submitted to an independent testing laboratory for Cation Exchange Capacity (CEC) testing, the results of which are attached. According to the SWMMWW the infiltration receptor soils are required to meet a minimum CEC of 5 meq/100g. The enclosed lab results for the site samples show the CEC to be 70, 91 and 45 meq/100g. While all the soils test far exceed the minimum requirement for CEC it is our understanding that the "Bioretention Swale", proposed as part of the road drainage, will also include amending the upper soils, further improving the ability of the soils to provide water quality.

Retaining Walls

We understand that short retaining walls may be used along 27th Avenue. In our opinion, reinforced earth fill walls, gravity walls, or rockeries can be used for the proposed retaining walls. We offer the following comments and recommendations concerning these walls.

Reinforced Earth Fill Walls

Reinforced soil walls consist of structural fill lifts interlayered with reinforcing grids or strips and supported at the face by a reinforcing material or segmental (modular) concrete facade. Suitable options include the proprietary systems produced by Allan Block, Hilfiker, Sierra Scape, Keystone, Pisa, Stonewall, and VSL, all of which are available with decorative segmental concrete facades.

The entire area beneath the new reinforced soil zone should be stripped of all vegetation and organic soils, as per the "**Site Preparation**" section of this report. All subgrade soils should then be compacted to a firm, unyielding condition. We also recommend that the face of the existing roadway embankment be benched prior to new fill placement. Reinforced soil walls with proprietary facades (either segmental concrete or welded-wire mesh) are typically designed by the wall supplier or a specialty consultant, using design values provided by the geotechnical engineer. These design values include soil density, internal friction angle, cohesion, and allowable bearing capacities, as well as seismic acceleration. Table 5 summarizes our recommended design values for the various soils involved in the wall construction, based on our explorations and subsequent interpretations. We also recommend using a seismic acceleration of at least 0.3g for design purposes.

Based on subsurface conditions encountered in our explorations, all retaining wall will likely be founded on the near surface medium dense fine to medium sand. If at the time of

excavation, relict topsoil or soft soils are encountered, it may be necessary to overexcavate the unsuitable soils and create a bearing pad of quarry spalls or other free draining material.

Ideally, all fill soils located within the reinforced backfill and retained backfill zones would consist of clean, well-graded sand and gravel, such as "Gravel Borrow" or "Ballast" per WSDOT Standard Specifications 9-03.14(1) and 9-03.9(1), respectively. However, the excavated embankment fill soils and/or native soils could be reused as backfill if they are free of organic matter and are near optimum moisture content at the time of placement. Existing organic matter, sod, or topsoil stripped from the wall subgrade would not be suitable for this purpose under any circumstances.

All soils located within the reinforced backfill and retained backfill zones should be placed and compacted in accordance with our recommendations given in the **Structural Fill** section of this report. Specifically, we recommend that all fill be compacted to a uniform density of at least 90 percent (based on ASTM:D-1557) and that the upper 2 feet of fill located below future asphaltic pavements be compacted to at least 95 percent.

TABLE 5
RECOMMENDED DESIGN VALUES FOR REINFORCED SOIL WALLS

Soil Type	Density (pcf)	Internal Friction Angle (degrees)	Cohesion (psf)	Allowable Bearing Capacity (psf)
Reinforced Soil (imported granular fill)	120	34	0	N/A
Retained Soil (embankment fill)	120	32	0	N/A
Subgrade Soil (medium dense outwash)	125	32	0	3,500

Gravity Walls

For a gravity type retaining wall, we recommend using the Ultra Block or Kelly Block segmental concrete blocks. The Ultra Blocks consist of 2½ -foot by 2½ foot by 5 foot concrete blocks that have cruciform interlocking shear keys on the top and bottom. In contrast, Kelly-Blocks are proprietary pre-cast concrete modules that measure 2 feet by 2 feet by 4 feet that have two hollow-cores that align with subsequent blocks and allow for concrete to be poured down the entire height of the wall, locking the blocks together.

These walls should bear on firm and unyielding native soils or on structural fill soils placed over such native soils. In our opinion, the native soils underlying the proposed wall alignment will provide adequate support, although a 6-inch leveling course of crushed rock is commonly placed beneath the wall. We recommend that any localized zones of soft, yielding, or organic soils exposed in the subgrade areas be overexcavated and or replaced with compacted structural fill.

For frost and erosion protection, gravity walls should be embedded at least 18 inches below the adjacent ground surface. Given the dimensions of a Lock-Block module (2½ feet high) and our recommended embedment depth (1½ feet), a single row of blocks would provide an exposed wall height of 1 foot. Because of site grades, we anticipate that walls wouldn't be more than 5 feet tall. As such, two rows/tiers should be as tall as the wall would be.

Even at these short heights, effective drainage behind gravity walls is critical to prevent the buildup of hydrostatic pressure. Each wall should be designed with a wall drain placed behind the concrete blocks. The drain should consist of a 4-inch-diameter perforated

pipe embedded in pea gravel or washed rock. The drain should extend up the back the of the blocks to the surface.

Rockeries

Rockeries should be constructed using sound, unweathered rock from an established source that has demonstrated that it produces suitable rock. The rock shall be free of fractures, clay seams and evidence of weathering.

The rockery should be constructed on firm and unyielding native soils or properly placed structural fill. The bottom row of rocks should be embedded a minimum 1-foot below the adjacent grade. Also, the first row of rock should have full contact with the bearing soils, which may require shaping of the ground surface or slamming or dropping the rocks into place so that the soil foundation conforms to the rock face bearing on it.

The rockery face shall be battered flatter 1H to 6V (Horizontal to Vertical), but not flatter than 1H to 3V. The rocks should be placed so that there are no continuous joints either vertically or laterally. Each rock must be placed solidly on two or more rocks below it and so there is no sign of instability such as "rocking" or "tipping" of individual boulders, and should have at least three points of contact. The rocks should fit so no open spaces or voids larger than 6 inches exist. Rocks should be placed so that there is some bearing between flat rock faces, rather than sitting on points.

A drainage envelope of quarry spalls should be used behind the rockery rocks to block spaces and, where necessary, to wedge between rocks and to lock them together. This should also serve to prevent washing of backfill material through the rockery.

LIMITATIONS

We have prepared this report for use by Parametrix, Inc, the Tulalip Tribes, and other members of the design team, for use in the design of the 27th Avenue NE improvements. The data used in preparing this report and this report should be provided to prospective contractors for their bidding or estimating purposes only. Our report, conclusions and interpretations are based on data from others and limited site reconnaissance, and should not be construed as a warranty of the subsurface conditions.

If there are any changes in the loads, grades, locations, configurations or type of facilities to be constructed, the conclusions and recommendations presented in this repo rt may not be fully applicable. If such changes are made, we should be given the opportunity to review our recommendations and provide written modifications or verifications, as appropriate.

Variations in subsurface conditions are possible between the explorations and may also occur with time. A contingency for unanticipated conditions should be included in the budget and schedule. Sufficient monitoring, testing and consultation should be provided by our firm during construction to confirm that the conditions encountered are consistent with those indicated by the explorations, to provide recommendations for design changes should the conditions revealed during the work differ from those anticipated, and to evaluate whether earthwork and foundation installation activities comply with contract plans and specifications.

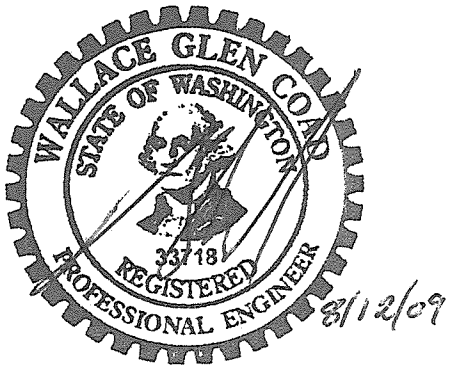
Our recommendations are not intended to direct the contractor's methods, techniques, sequences or procedures, except as specifically described in our report for consideration in design.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted practices in this area at the time this report was prepared. No warranty, express or implied, should be understood.

◆ ◆ ◆

We have appreciated the opportunity to be of continued service to you on this project. If you have any questions or require additional services, please contact us.

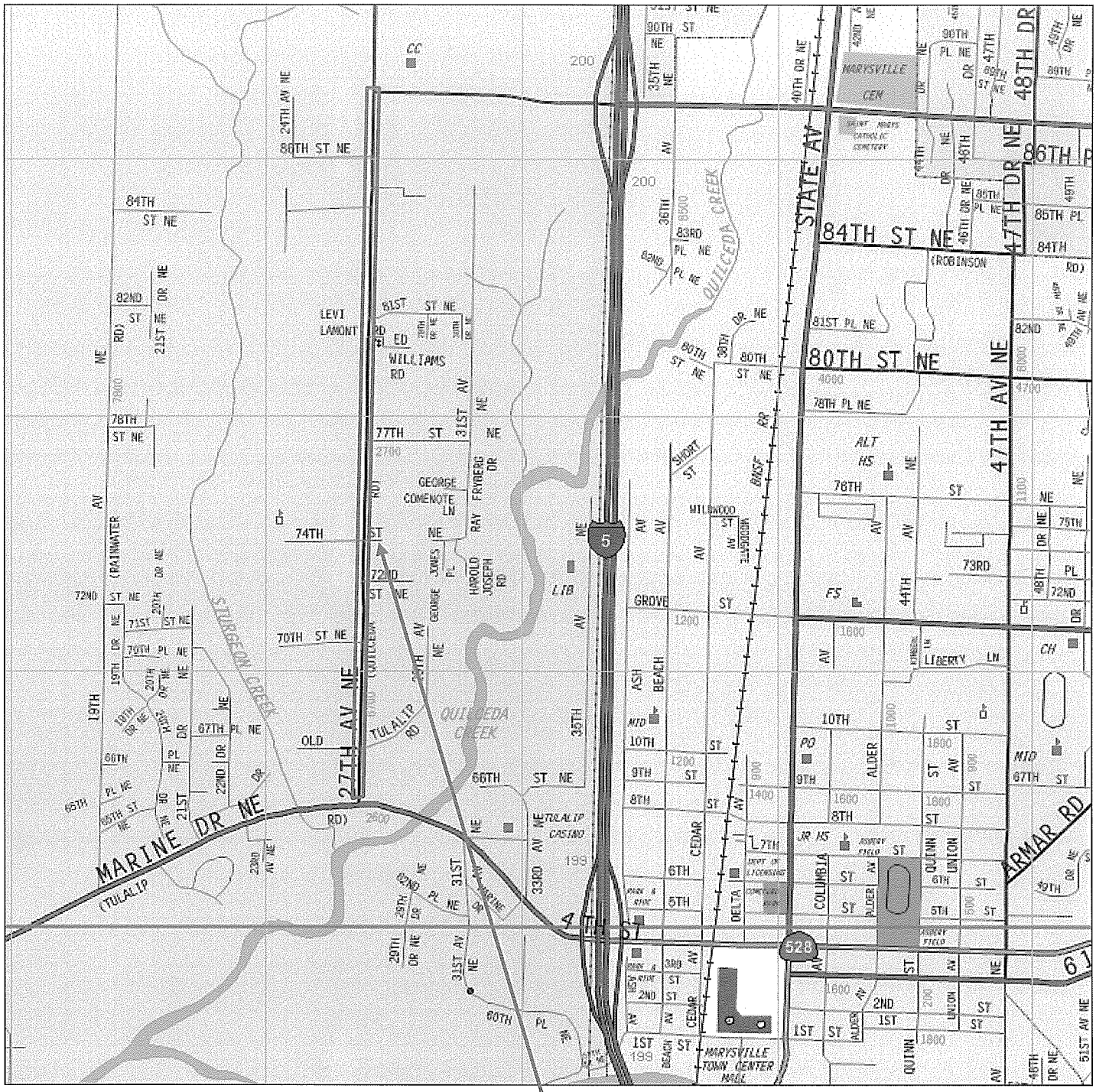
Respectfully submitted,
GeoResources, LLC



Keith S. Schembs, LEG
Principal

W. Glen Coad, PE
Principal

KSS:WGC:kss
DocID: Parametrix.27thAveNE.RG
Attachments:
Figure 1 – Site Vicinity Map
Figure 2a through 2h – Site and Exploration Plan
Figure 3a through 3b – USDA SCS Map
Figure 4 – Soil Classification System
Figure 5 – Hand Auger Logs
Figure 6a through 6d – Test Pit Logs TP-1 through TP-10
Figure 7a through 7f – Grain Size Analysis Results
Figure 8 – USDA Triangle Plot
CBR Test Results
Cation Exchange Results
Appendix A – Ecology Well Logs



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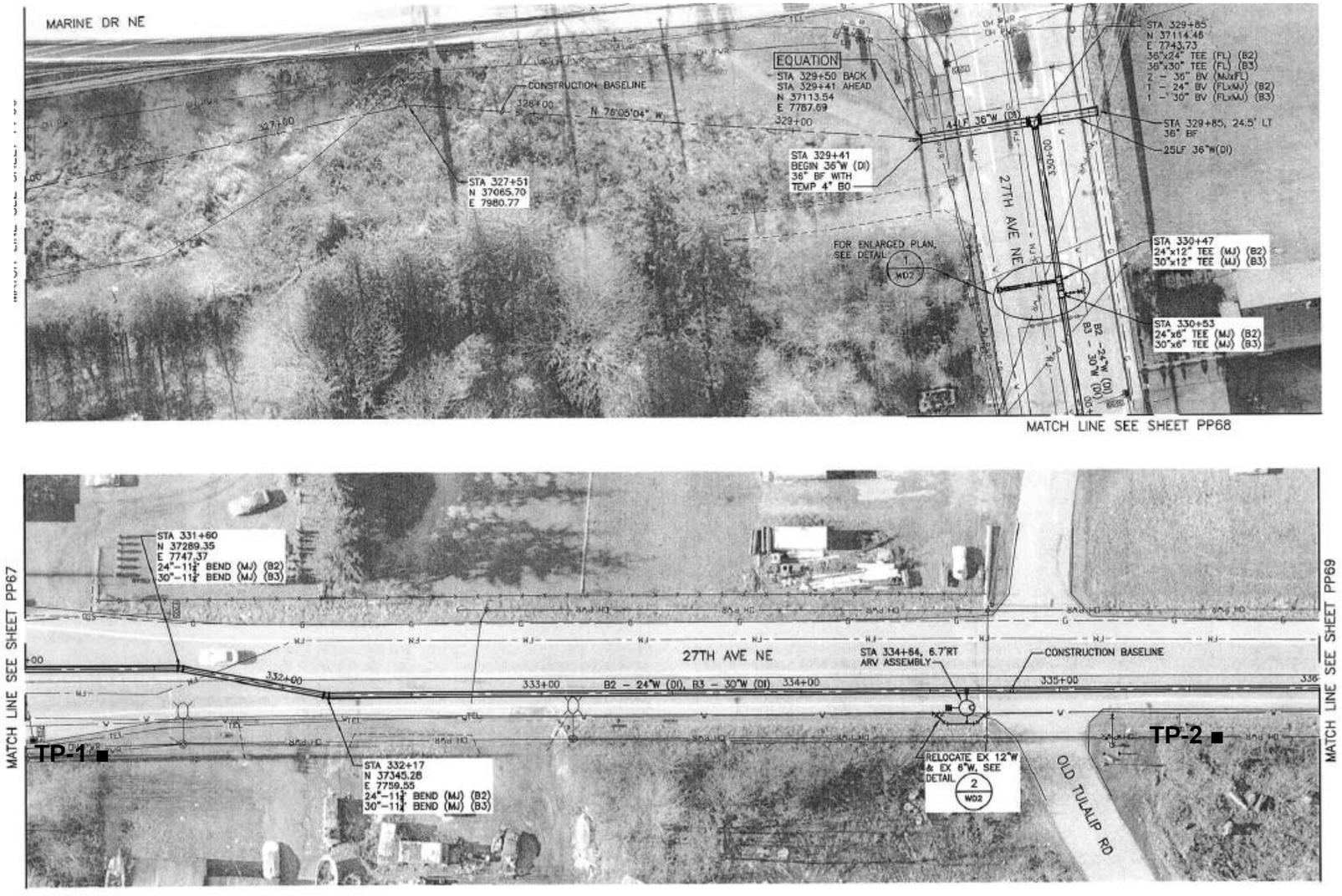
Site Vicinity Map

27th Avenue NE Reconstruction

27th Avenue NE – Marine Drive NE to 88th Street NE

Tulalip, Washington

DocID: PMX.27thAvenueNE.SVM	July 2009	Figure 1



NOT TO SCALE
(approximately 1 inch=50 feet)

APPROXIMATE LOCATION
AND NUMBER OF TEST PIT TP-1 ■

APPROXIMATE LOCATION
AND NUMBER OF HAND BORING HB-1 ●

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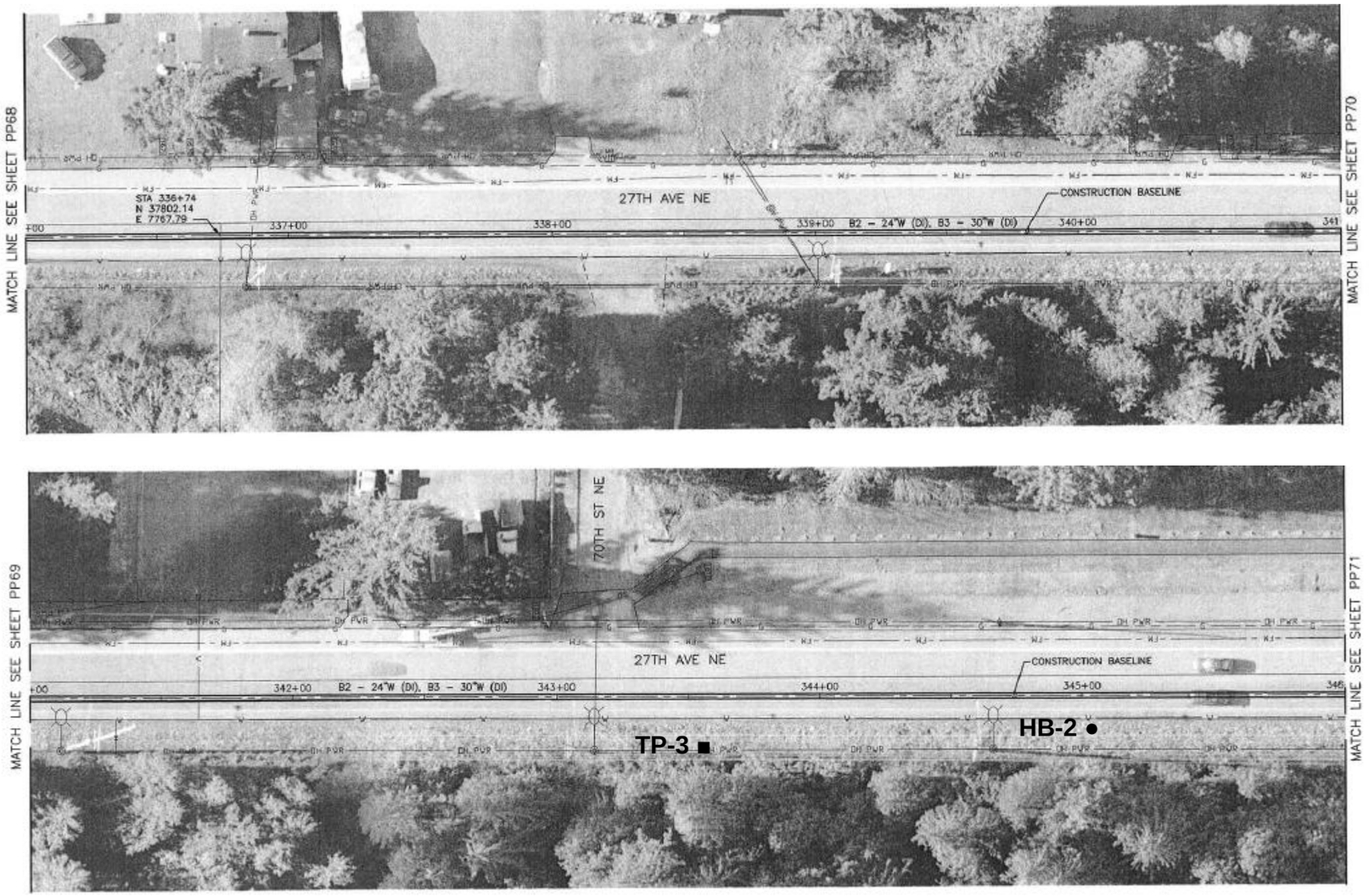
Site and Exploration Plan

27th Avenue NE Reconstruction
Sta. 330+00 to Sta. 336+00
27th Avenue NE – Marine Drive NE to 88th Street NE
Tulalip, Washington

DocID: PMX.27thAvenue.SEPa	August 2009	Figure 2a



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(approximately 1 inch=50 feet)

APPROXIMATE LOCATION
AND NUMBER OF TEST PIT TP-1 ■

APPROXIMATE LOCATION
AND NUMBER OF HAND BORING HB-1 ●

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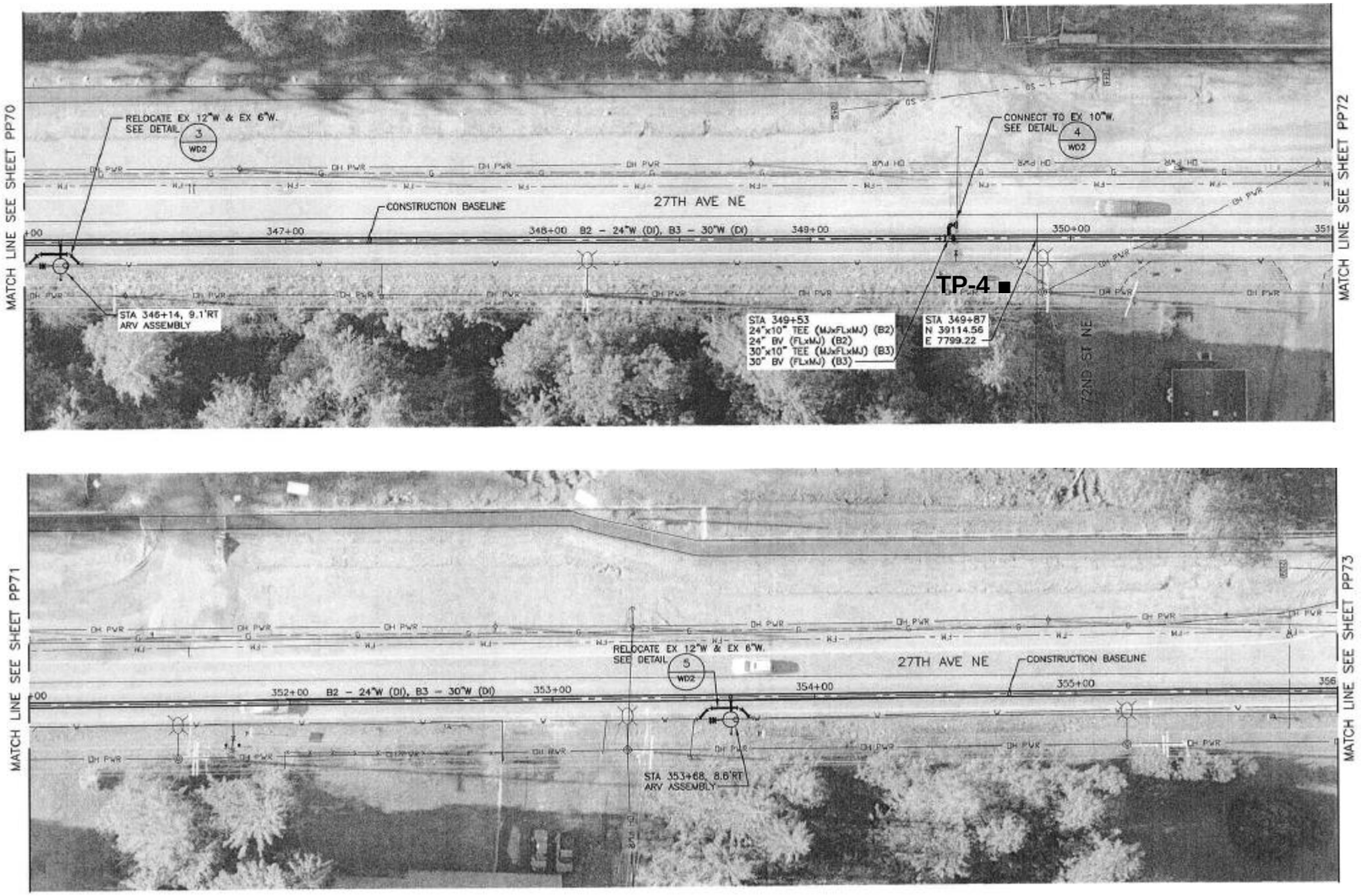
Site and Exploration Plan

27th Avenue NE Reconstruction
Sta. 336+00 to Sta. 346+00
27th Avenue NE – Marine Drive NE to 88th Street NE
Tulalip, Washington

DocID: PMX.27thAvenue.SEPa	August 2009	Figure 2b



NOT TO SCALE
(approximately 1 inch=50 feet)

APPROXIMATE LOCATION
AND NUMBER OF TEST PIT TP-1 ■

APPROXIMATE LOCATION
AND NUMBER OF HAND BORING HB-1 ●

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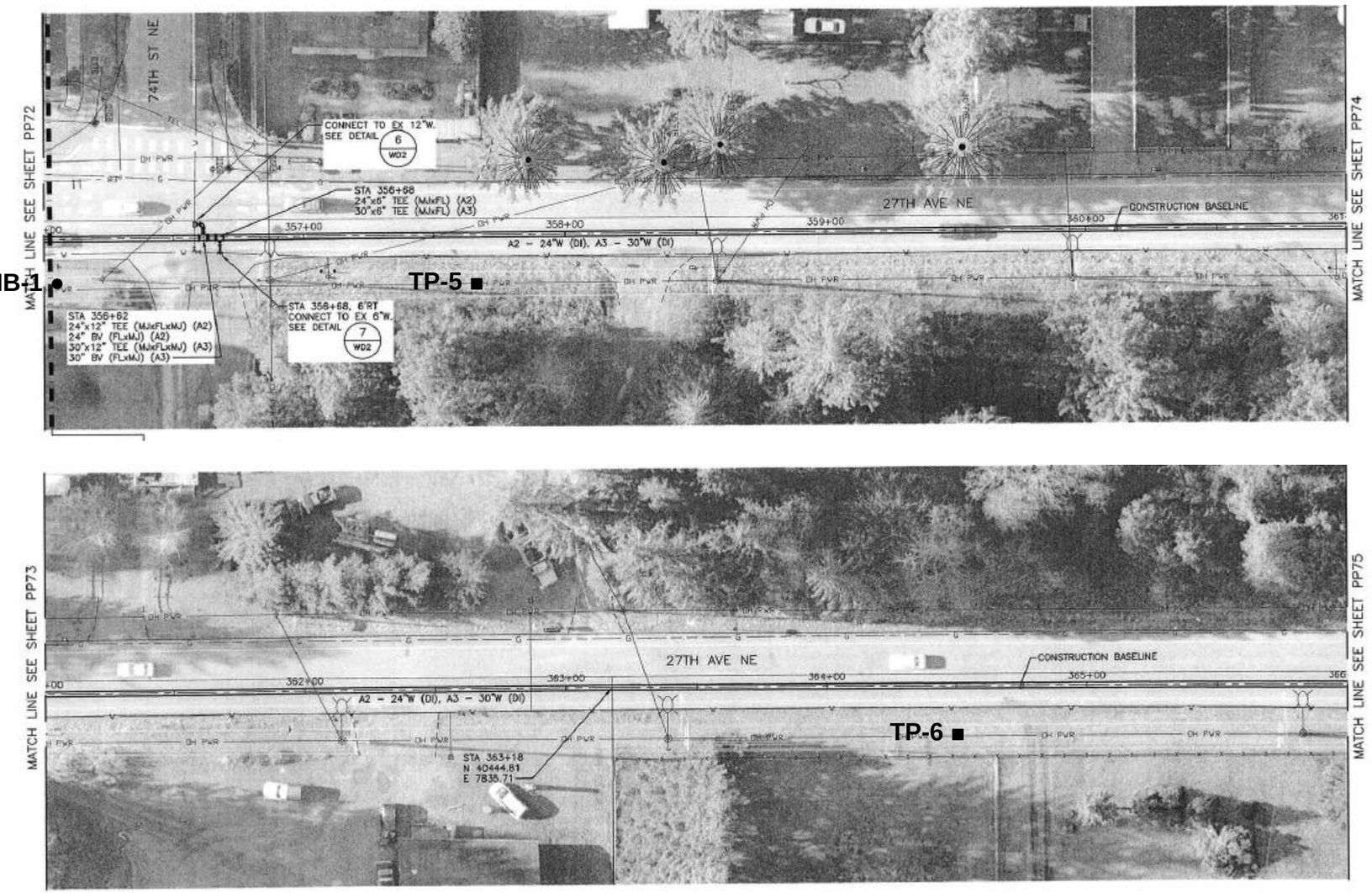
Site and Exploration Plan
27th Avenue NE Reconstruction
Sta. 346+00 to Sta. 356+00
27th Avenue NE – Marine Drive NE to 88th Street NE
Tulalip, Washington

DocID: PMX.27thAvenue.SEPc	August 2009	Figure 2c



NOT TO SCALE
(approximately 1 inch=50 feet)

APPROXIMATE LOCATION AND NUMBER OF TEST PIT TP-1 ■

APPROXIMATE LOCATION AND NUMBER OF HAND BORING HB-1 ●

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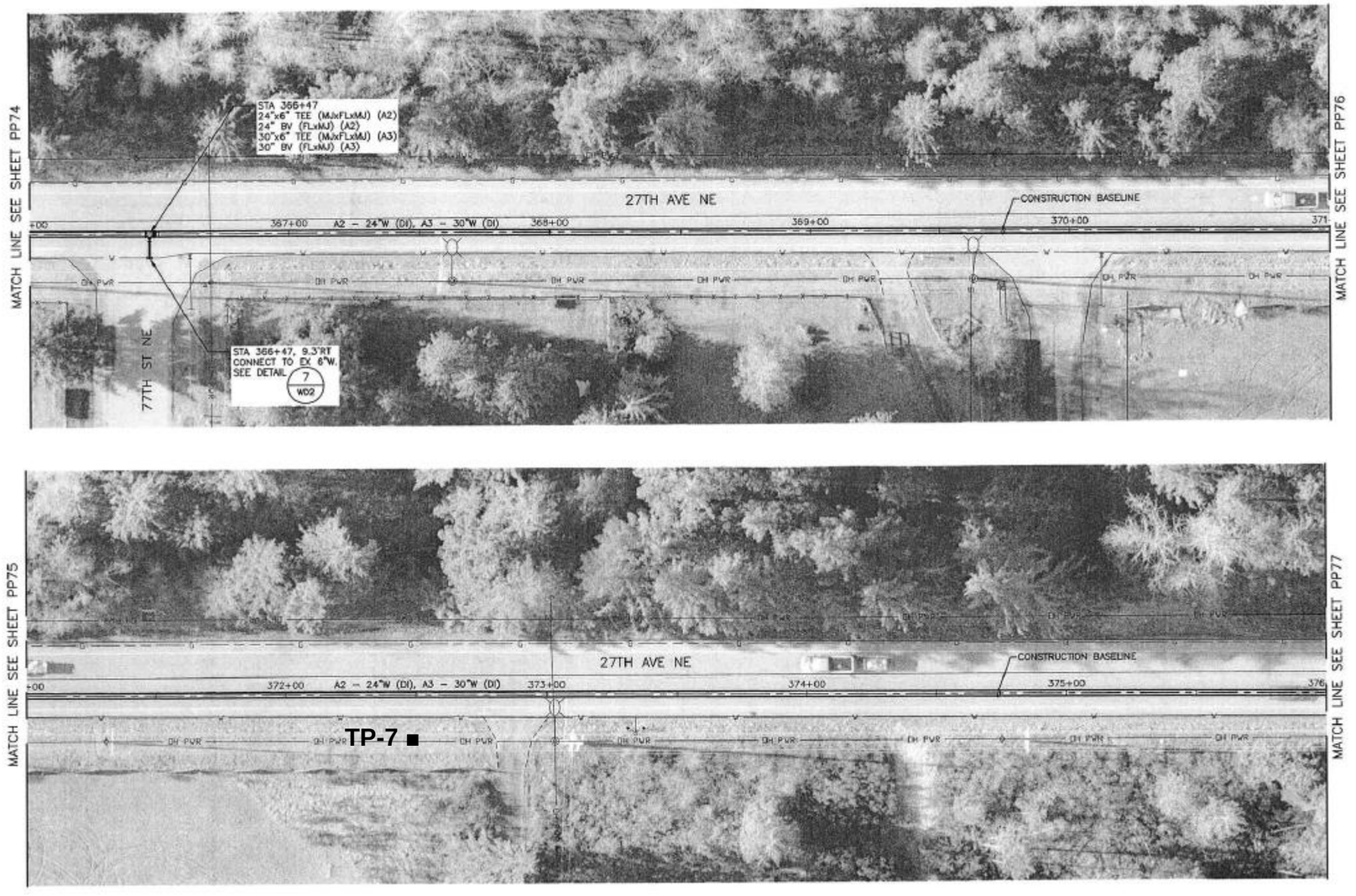
Site and Exploration Plan

27th Avenue NE Reconstruction
Sta. 356+00 to Sta. 366+00
27th Avenue NE – Marine Drive NE to 88th Street NE
Tulalip, Washington

DocID: PMX.27thAvenue.SEPd	August 2009	Figure 2d



NOT TO SCALE
(approximately 1 inch=50 feet)

APPROXIMATE LOCATION
AND NUMBER OF TEST PIT TP-1 ■

APPROXIMATE LOCATION
AND NUMBER OF HAND BORING HB-1 ●

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Site and Exploration Plan
27th Avenue NE Reconstruction
Sta. 366+00 to Sta. 376+00
27th Avenue NE – Marine Drive NE to 88th Street NE
Tulalip, Washington

DocID: PMX.27thAvenue.SEPe	August 2009	Figure 2e

NOT TO SCALE
(approximately 1 inch=50 feet)

APPROXIMATE LOCATION
AND NUMBER OF TEST PIT TP-1 ■

APPROXIMATE LOCATION
AND NUMBER OF HAND BORING HB-1 ●

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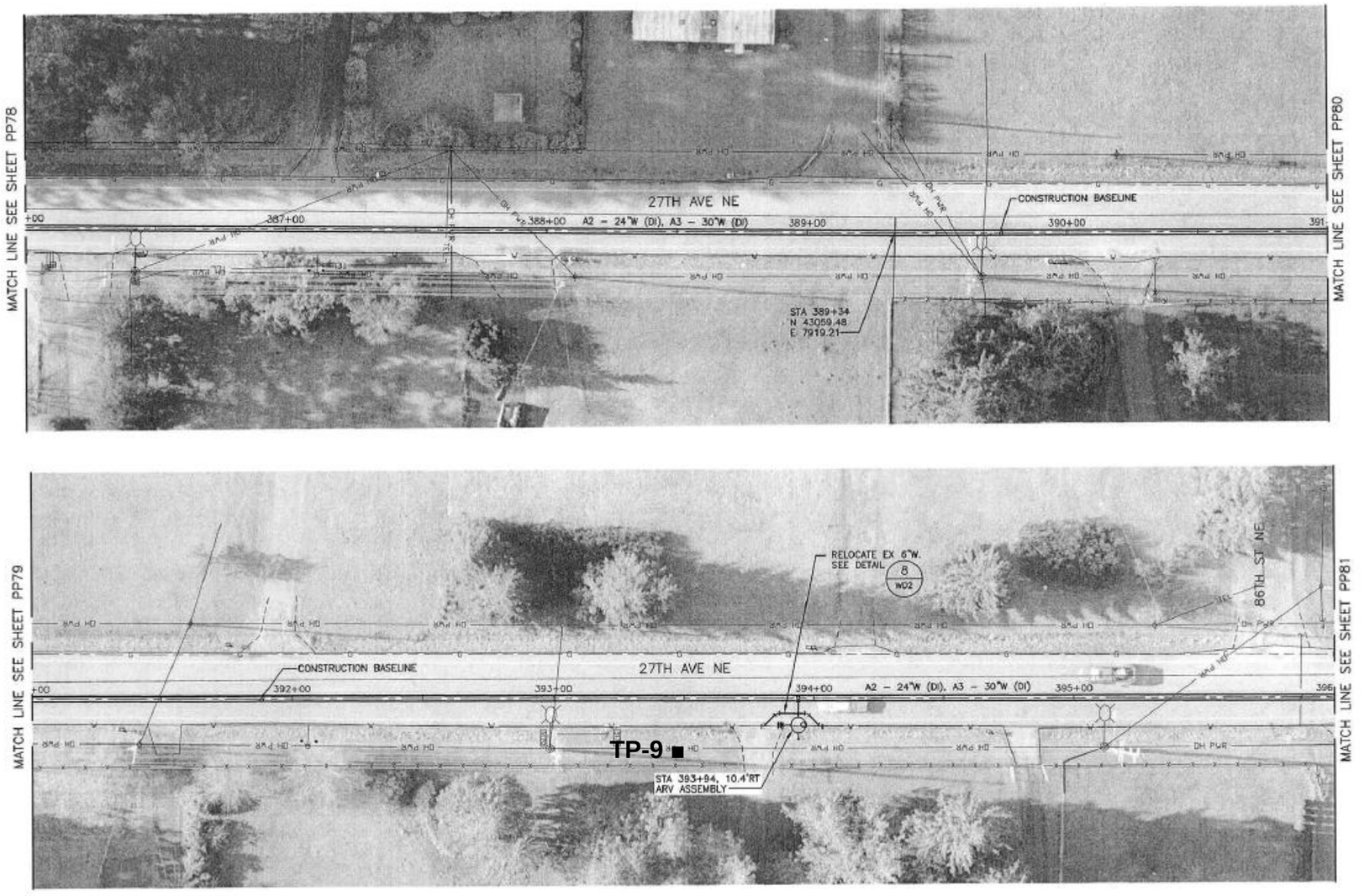
Site and Exploration Plan

27th Avenue NE Reconstruction
Sta. 376+00 to Sta. 386+00
27th Avenue NE – Marine Drive NE to 88th Street NE
Tulalip, Washington

DocID: PMX.27thAvenue.SEPf	August 2009	Figure 2f



NOT TO SCALE
(approximately 1 inch=50 feet)

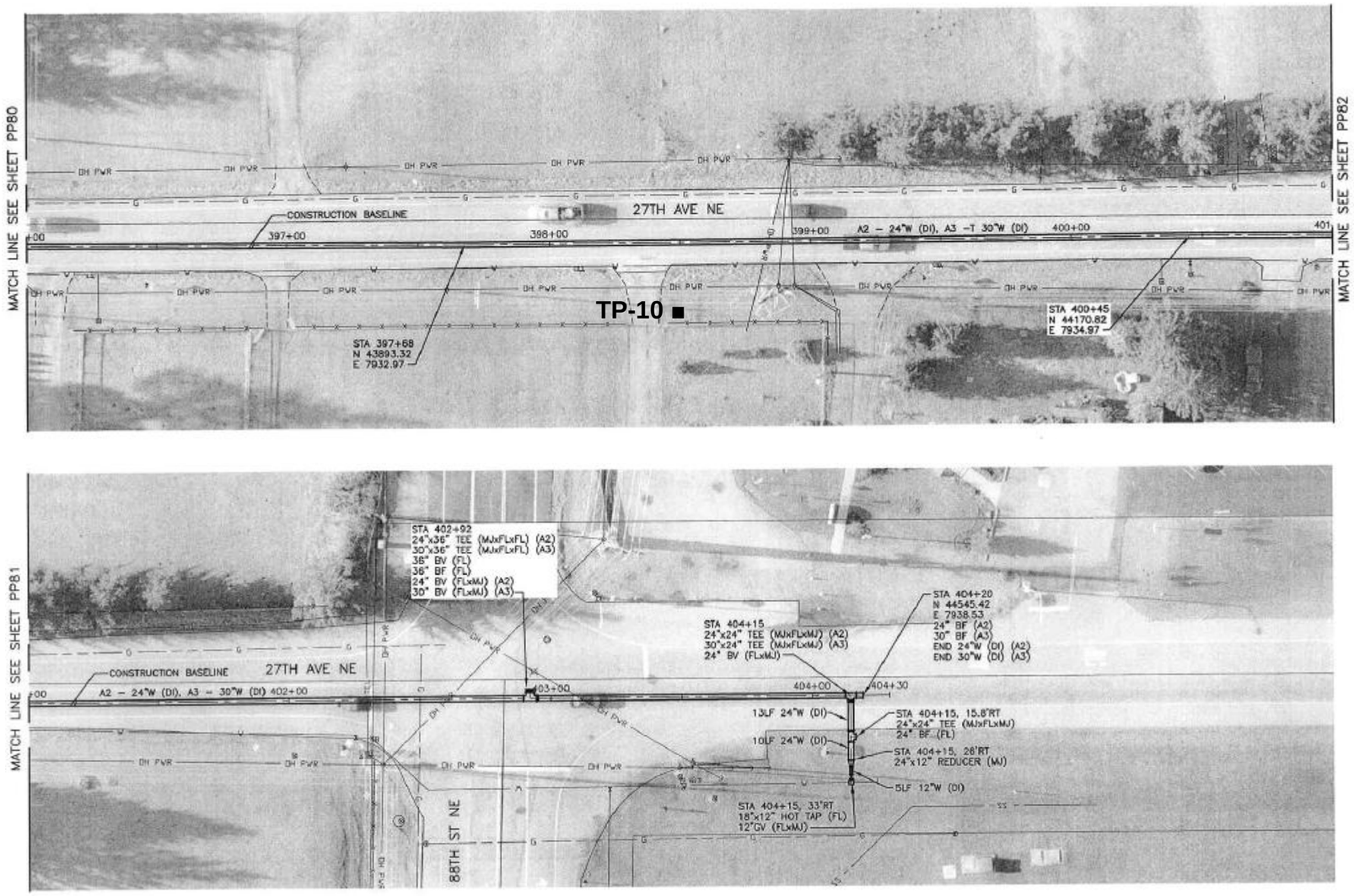
APPROXIMATE LOCATION
AND NUMBER OF TEST PIT TP-1 ■

APPROXIMATE LOCATION
AND NUMBER OF HAND BORING HB-1 ●

GeoResources, LLC
5007 Pacific Highway East, Suite 20
Fife, Washington 98424
Ph: 253-896-1011 Fax: 253-896-2633

Site and Exploration Plan
27th Avenue NE Reconstruction
Sta. 386+00 to Sta. 396+00
27th Avenue NE – Marine Drive NE to 88th Street NE
Tulalip, Washington

DocID: PMX.27thAvenue.SEPg	August 2009	Figure 2g



NOT TO SCALE
(approximately 1 inch=50 feet)

APPROXIMATE LOCATION
AND NUMBER OF TEST PIT TP-1 ■

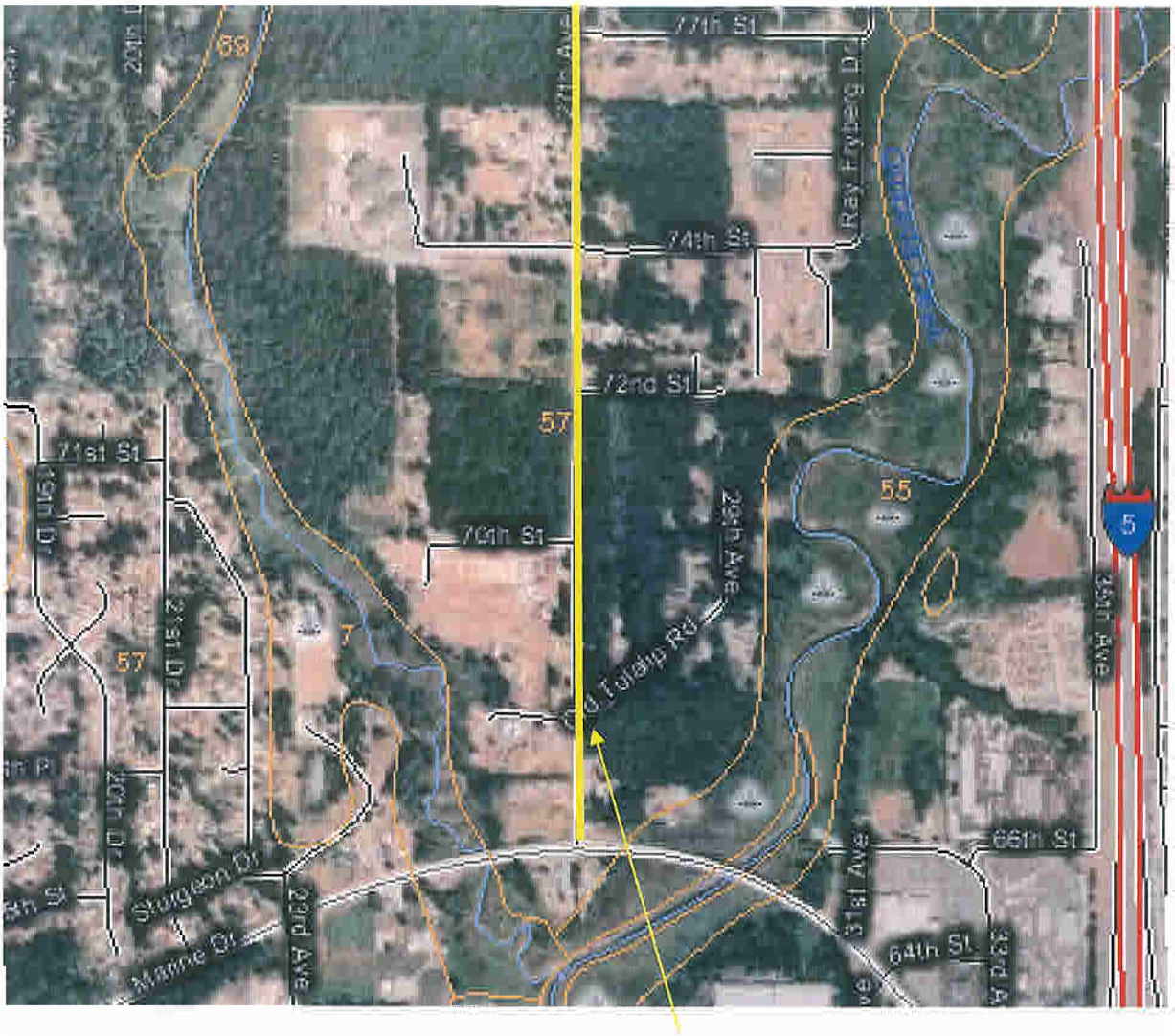
APPROXIMATE LOCATION
AND NUMBER OF HAND BORING HB-1 ●

GeoResources, LLC

5007 Pacific Highway East, Suite 20
Fife, Washington 98424
Ph: 253-896-1011 Fax: 253-896-2633

Site and Exploration Plan
27th Avenue NE Reconstruction
Sta. 396+00 to Sta. 404.30
27th Avenue NE – Marine Drive NE to 88th Street NE
Tulalip, Washington

DocID: PMX.27thAvenue.SEPh	August 2009	Figure 2h



Approximate Site Location

SCS Soil Type	SCS Soil Name	Parent Material	Slopes (in percent)	Erosion Hazard	Hydrologic Soils Group
57	Ragnar fine sandy loam	Glacial Outwash	0 – 8	Slight	B

N
W E
S

Not to Scale

GeoResources, LLC
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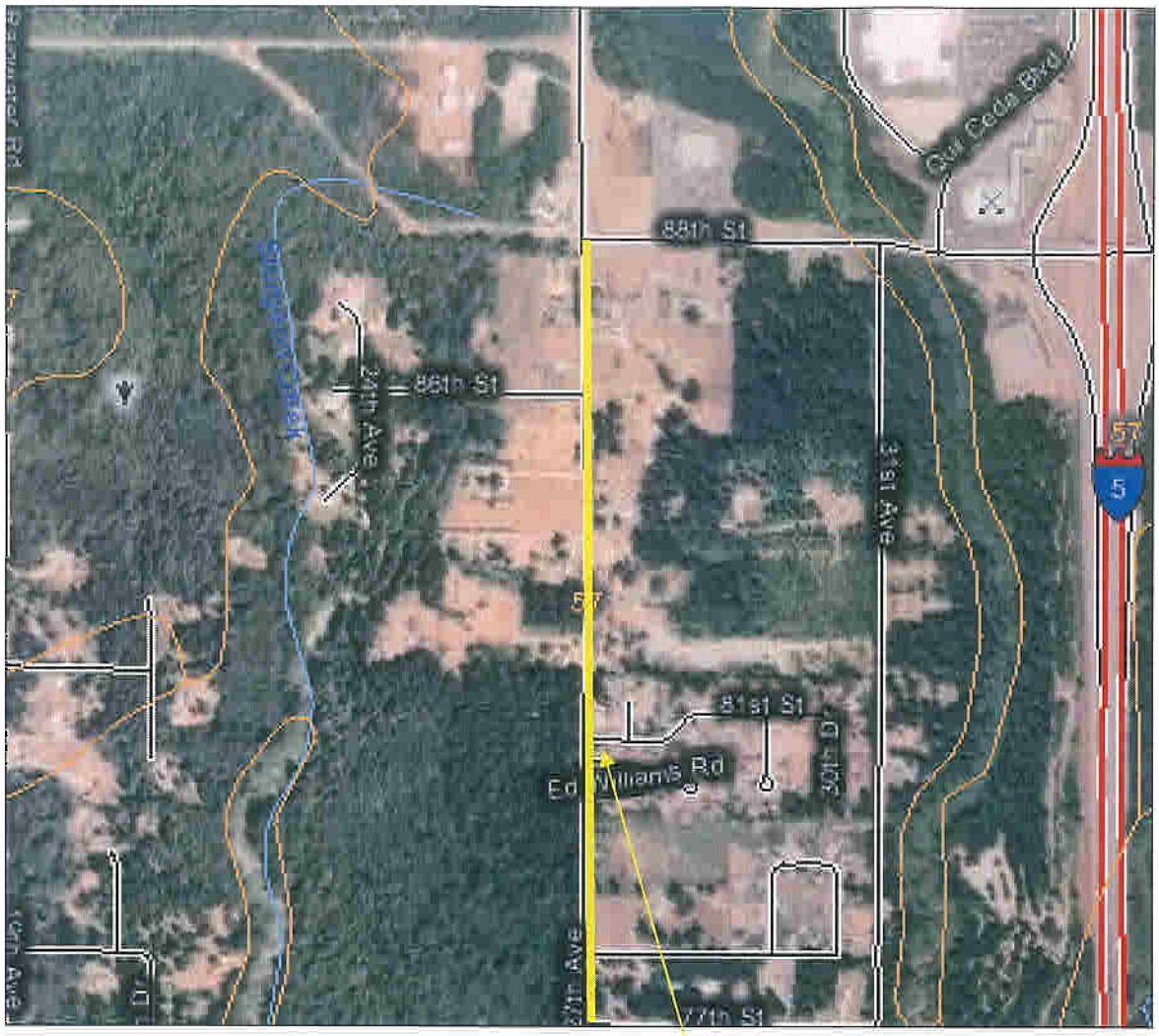
Fife, Washington 98424
Phone: 253-896-1011
Fax: 253-896-2633

NRCS Soils Map

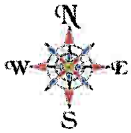
27th Avenue NE Reconstruction
27th Avenue NE – Marine Drive NE to 88th Street NE
Tulalip, Washington

DocID: PMX.27thAvenueNE.SCSa	July 2009	Figure 3a



Approximate Site Location

SCS Soil Type	SCS Soil Name	Parent Material	Slopes (in percent)	Erosion Hazard	Hydrologic Soils Group
57	Ragnar fine sandy loam	Glacial Outwash	0 – 8	Slight	B



Not to Scale

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Fax: 253-896-2633

NRCS Soils Map

27th Avenue NE Reconstruction
27th Avenue NE – Marine Drive NE to 88th Street NE
Tulalip, Washington

DocID: PMX.27thAvenueNE.SCSb	July 2009	Figure 3b

SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			GROUP SYMBOL	GROUP NAME
COARSE GRAINED SOILS More than 50% Retained on No. 200 Sieve	GRAVEL More than 50% Of Coarse Fraction Retained on No. 4 Sieve	CLEAN GRAVEL	GW	WELL-GRADED GRAVEL, FINE TO COARSE GRAVEL
			GP	POORLY-GRADED GRAVEL
		GRAVEL WITH FINES	GM	SILTY GRAVEL
			GC	CLAYEY GRAVEL
	SAND More than 50% Of Coarse Fraction Passes No. 4 Sieve	CLEAN SAND	SW	WELL-GRADED SAND, FINE TO COARSE SAND
			SP	POORLY-GRADED SAND
		SAND WITH FINES	SM	SILTY SAND
			SC	CLAYEY SAND
FINE GRAINED SOILS More than 50% Passes No. 200 Sieve	SILT AND CLAY Liquid Limit Less than 50	INORGANIC	ML	SILT
			CL	CLAY
		ORGANIC	OL	ORGANIC SILT, ORGANIC CLAY
	SILT AND CLAY Liquid Limit 50 or more	INORGANIC	MH	SILT OF HIGH PLASTICITY, ELASTIC SILT
			CH	CLAY OF HIGH PLASTICITY, FAT CLAY
		ORGANIC	OH	ORGANIC CLAY, ORGANIC SILT
HIGHLY ORGANIC SOILS			PT	PEAT

NOTES:

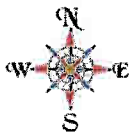
1. Field classification is based on visual examination of soil in general accordance with ASTM D2488-90.
2. Soil classification using laboratory tests is based on ASTM D2487-90.
3. Description of soil density or consistency are based on interpretation of blow count data, visual appearance of soils, and or test data.

SOIL MOISTURE MODIFIERS:

Dry- Absence of moisture, dry to the touch

Moist- Damp, but no visible water

Wet- Visible free water or saturated, usually soil is obtained from below water table



Not to Scale

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Soil Classification System
27th Avenue NE Reconstruction
27th Avenue NE – Marine Drive NE to 88th Street NE
Tulalip, Washington

Hand Auger HA-1

Location: SE Corner of 27th Avenue NE and 74th Street NE

Depth (ft)	Soil Type	Soil Description
0 - ½		Topsoil
½ - 2	SM	Light brown/tan fine to medium SAND with some silt, minor organics (loose, damp)
2 - 5	SP	Gray medium to coarse SAND (medium dense, moist)

Terminated at 5 feet below ground surface.
No caving observed.
No groundwater seepage observed.

Hand Auger HA-2

Location: SE Corner of 27th Avenue NE and 70th Street NE

Depth (ft)	Soil Type	Soil Description
0 - ½	SM	Topsoil
½ - 2	SP	Light brown/tan fine to medium SAND with some silt, minor organics (loose, damp)
2 - 5½	SP	Gray medium to coarse SAND (medium dense, moist)

Terminated at 5½ feet below ground surface.
No caving observed.
No groundwater seepage observed.

Logged by: KSS

Excavated on: July 9 , 2009

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Hand Auger Logs
27th Avenue NE Reconstruction
27th Avenue NE – Marine Drive NE to 88th Street NE
Tulalip, Washington

Test Pit TP-1

Location: SE Corner of parcel at 6605-27th Ave

Depth (ft)	Soil Type	Soil Description
0 - ½		Topsoil, sod
½ - 1	SM	Brown silty fine SAND with surficial debris, scattered roots (loose, dry to moist)
1 - 2	SP	Light brown fine SAND with silt, slightly friable (medium dense, moist)

Terminated at 2 feet below ground surface after encountering unmarked utilities.
Slight caving observed in surficial soils.
No groundwater seepage observed.

Test Pit TP-2

Location: NE corner of 27th Ave. NE and Old Tulalip Rd

Depth (ft)	Soil Type	Soil Description
0 - 1½	SM	Brown silty fine SAND with trace gravel, debris, numerous roots (loose, dry to moist)
1½ - 3	SP	Light brown fine SAND with trace gravel (loose to medium dense, dry to moist)
3 - 6	SP	Light brown to tan fine to medium SAND with occasional medium to coarse sand interbeds (medium dense, moist)
6 - 8	SP	Gradation to gray medium SAND; slight mottling/friable chunks and terminal roots at basal contact (medium dense to dense, moist)
8 - 10	SP	Gray medium to coarse SAND (medium dense to dense, moist)

Terminated at 10 feet below ground surface.
Moderate sidewall caving observed from depths of 2 to 8 feet.
No groundwater seepage observed.

Test Pit TP-3

Location: NE corner of 27th Ave NE & unmarked 70th Street NE

Depth (ft)	Soil Type	Soil Description
0 - 1½	SM	Brown silty fine SAND with trace gravel, debris, numerous roots (loose, dry to moist)
1½ - 4	SP	Light brown fine SAND with trace gravel (loose to medium dense, dry to moist)
4 - 5½	SP	Gradation to gray medium SAND (loose to medium dense, moist)
5½ - 8	SP	Gray medium SAND; faint mottling, friable (chunks break at touch) at basal contact (medium dense to dense, moist)
8 - 11	SP	Gray medium to coarse SAND, clean (medium dense to dense, moist to very moist)
11 - 12	ML	Tan mottled SILT with trace oxidized roots, fractured (stiff, very moist)

Terminated at 12 feet below ground surface.
Moderate sidewall caving observed from depths of 2 to 8 feet.
No visible groundwater seepage observed, but increased moisture content below 8 feet.

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Phone: 253-896-1011
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Test Pit Logs
27th Avenue NE Reconstruction
27th Avenue NE – Marine Drive NE to 88th Street NE
Tulalip, Washington

Test Pit TP-4

Location: SE corner of 27th Ave NE & 72nd Street NE

Depth (ft)	Soil Type	Soil Description
0 - 1½	SM	Brown silty fine SAND with scattered debris, numerous roots (loose to medium dense, dry to moist)
1½ - 2½	SP	Light brown fine SAND with trace gravel (loose to medium dense, dry to moist)
2½ - 6	SP	Gray fine to medium SAND with trace gravel (loose to medium dense, moist)
6 - 9½	SP	Gray medium SAND, clean; faint mottling/friable chunks and terminal roots at basal contact (medium dense to dense, moist)

Terminated at 9½ feet below ground surface.
Moderate sidewall caving observed from depths of 2 to 6 feet.
No groundwater seepage observed.

Test Pit TP-5

Location: South of driveway for 7403 27th Ave NE

Depth (ft)	Soil Type	Soil Description
0 - 1¼	SM	Brown silty fine SAND with trace gravel, debris, numerous roots (loose, dry to moist)
1¼ - 2½	SP	Light brown fine SAND with trace gravel (loose to medium dense, dry to moist)
2½ - 4	SP	Light brown to tan fine to medium SAND (loose to medium dense, moist)
4 - 8	SP	Gradation to gray medium SAND (medium dense to dense, moist)
8 - 8½	SP	Gray medium sand with silt, mottled, friable, increasing moisture at depth (medium dense, moist)
8 - 10	SP	Gray medium to coarse SAND, clean (medium dense to dense, moist to wet)
10 - 10½	MH/SM	Tan mottled SILT/Fine SAND(medium stiff/medium dense, wet)

Terminated at 10½ feet below ground surface.
Moderate sidewall caving observed from depths of 1 to 4 feet.
No visible groundwater seepage observed but wet soils observed below 9 feet.

Test Pit TP-6

Location: SE corner of 27th Ave NE & 77th Street NE, S of residence on corner

Depth (ft)	Soil Type	Soil Description
0 - ¼		Sod
¼ - ¾	SM	Brown silty fine SAND with trace gravel, debris, scattered roots (loose, dry to moist) (Topsoil?)
¾ - 1½	SP	Light brown fine SAND with silt trace gravel (loose to medium dense, dry to moist)
1½ - 3¼	SM	Light brown silty SAND (medium dense, moist)
3¼ - 6	SP	Light brown fine to medium SAND, increasing density at (medium dense to dense, moist)
6 - 8	GM	Gray fine to medium SAND; faint mottling, friable (chunks which break at touch) at basal contact (dense, moist)
8 - 10½	SP	Gray SAND, clean, friable (dense, moist)

Terminated at 10½ feet below ground surface.
Moderate sidewall caving observed from depths of 2 to 5 feet.
No visible groundwater seepage observed, but increased moisture content below 8 feet.

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Test Pit Logs
27th Avenue NE Reconstruction
27th Avenue NE – Marine Drive NE to 88th Street NE
Tulalip, Washington

Test Pit TP-7

Location: NE corner of 27th Ave NE & Sandra Mason Loop Road, south of driveway

Depth (ft)	Soil Type	Soil Description
0 - 1	SM	Brown silty fine SAND with scattered roots (loose to medium dense, dry to moist)
1 - 2	SP	Light brown silty SAND (medium dense, dry to moist)
2 - 6	SP	Light brown to tan fine to medium SAND gradation to gray sand at depth (loose to medium dense, dry to moist)
6 - 8	SP	Gray SAND; slight mottling/friable chunks (breaks at touch) (medium dense to dense, moist)
8 - 9½	SP	Gray medium to coarse SAND, clean (medium dense to dense, moist)

Terminated at 9½ feet below ground surface.
Moderate sidewall caving observed from depths of 2 to 6 feet.
No groundwater seepage observed.

Test Pit TP-8

Location: SE corner of 27th Ave NE & 81st Street, adjacent to park

Depth (ft)	Soil Type	Soil Description
0 - 1	SM	Sod, Brown silty fine SAND with numerous roots (loose, dry to moist) (Topsoil)
1 - 3	SP	Light brown fine SAND with trace silt, scattered roots (loose to medium dense, dry to moist)
3 - 6½	SP	Gray SAND, clean (loose to medium dense, moist)
6½ - 8	SP	Gray SAND, friable (medium dense to dense, moist)
8 - 11	SP	Gray SAND, clean (medium dense to dense, moist)

Terminated at 11 feet below ground surface.
Moderate sidewall caving observed from depths of surface to 6½ feet.
No visible groundwater seepage observed.

Test Pit TP-9

Location: South of driveway for 8501 27th Ave NE

Depth (ft)	Soil Type	Soil Description
0 - 1		Sod /Brown silty fine SAND with scattered roots (loose, dry to moist) (Topsoil?)
1 - 2½	SP	Light brown fine SAND with trace gravel (loose to medium dense, dry to moist)
2½ - 5	SM	Light brown to tan fine to medium SAND, friable, (loose to medium dense, moist)
5 - 7½	SM	Light brown to tan fine to medium SAND, friable (medium dense to dense, moist)
8 - 10	SP	Gray medium grained SAND, clean, friable (dense, moist)

Terminated at 10 feet below ground surface.
Moderate sidewall caving observed from depths of 2 to 5 feet.
No visible groundwater seepage observed, but increased moisture content from 4 to 10 feet.

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Test Pit Logs
27th Avenue NE Reconstruction
27th Avenue NE – Marine Drive NE to 88th Street NE
Tulalip, Washington

Test Pit TP-10

Location: Between 86th Street NE & 88th Street NE

Depth (ft)	Soil Type	Soil Description
0 - 1		Sod /Brown silty fine SAND with scattered roots (loose, dry to moist) (Topsoil?)
1 - 4	SP	Light brown fine SAND with trace silt (loose to medium dense, dry to moist)
4 - 8	SM	Light brown to tan fine to medium SAND, friable, roots at basal contact (medium dense to dense, moist)
8 - 9½	SP	Gray SAND (dense, wet)

Terminated at 9½ feet below ground surface.
Moderate sidewall caving observed from depths of 2 to 5 feet.
Groundwater seepage observed below 8 feet.

Logged by: RMH

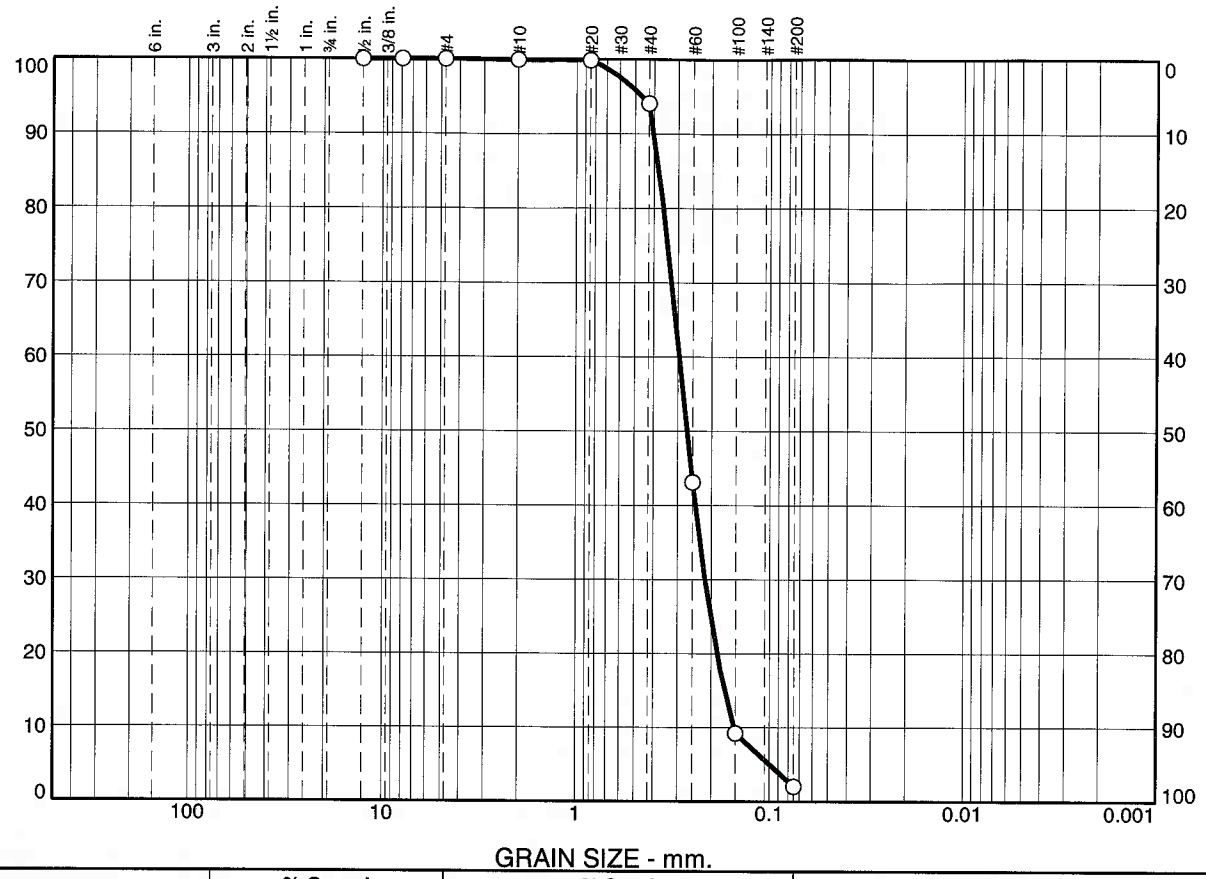
Excavated on: July 10, 2009

GeoResources, LLC
5007 Pacific Highway East, Suite 20
Fife, Washington 98424
Phone: 253-896-1011
Fax: 253-896-2633

Test Pit Logs
27th Avenue NE Reconstruction
27th Avenue NE – Marine Drive NE to 88th Street NE
Tulalip, Washington

JOB# PMX.27thAveNE.TP	August 2009	Figure 6d

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	5.9	92.0	2.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.5	100.0		
.3125	100.0		
#4	100.0		
#10	100.0		
#20	99.9		
#40	94.1		
#60	43.1		
#100	9.3		
#200	2.1		

* (no specification provided)

Material Description

Light brown/tan fine SAND w/ tr silt

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.3769 D_{60}= 0.2942 D_{50}= 0.2677
D_{30}= 0.2153 D_{15}= 0.1709 D_{10}= 0.1530
C_u= 1.92 C_c= 1.03

Classification

USCS= SP AASHTO=

Remarks

F.M.=1.31

Sample Number: HA-1 (090134.1) **Depth:** 1.5 ft
Location: 27th Avenue NE **Date:** 7/10/2009

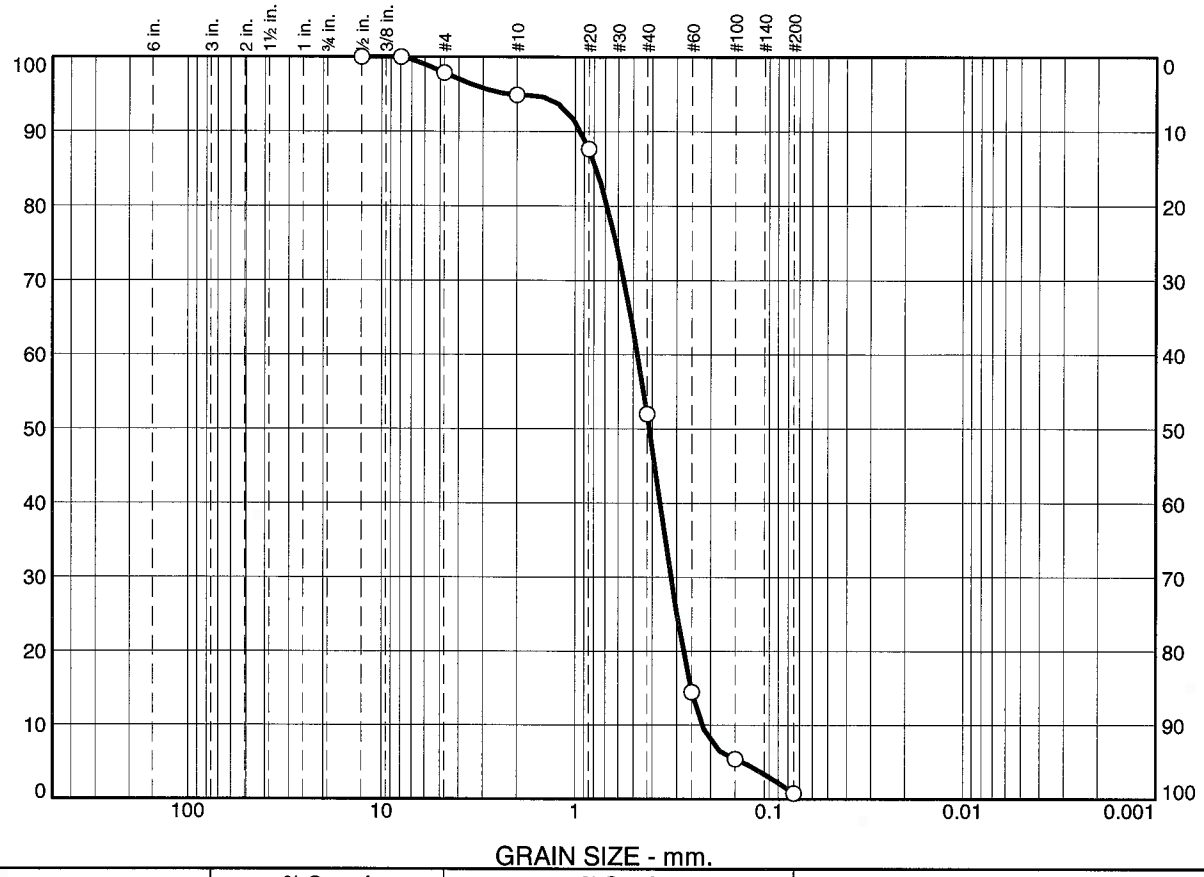
GeoResources, LLC

Fife, WA

Client: Parametrix
Project: 27th Avenue Road Widening
Project No: **Figure** 7a

Tested By: KSS **Checked By:** _____

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.1	3.0	42.9	51.2	0.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.5	100.0		
.3125	100.0		
#4	97.9		
#10	94.9		
#20	87.7		
#40	52.0		
#60	14.5		
#100	5.4		
#200	0.8		

* (no specification provided)

Material Description

Gray fine to medium SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.7794 D_{60}= 0.4759 D_{50}= 0.4139
D_{30}= 0.3201 D_{15}= 0.2527 D_{10}= 0.2210
C_u= 2.15 C_c= 0.97

Classification

USCS= SP AASHTO=

Remarks

F.M.=2.09

Sample Number: HA-2 (090134.2) **Depth:** 3.5 ft
Location: 27th Avenue NE **Date:** 7/10/2009

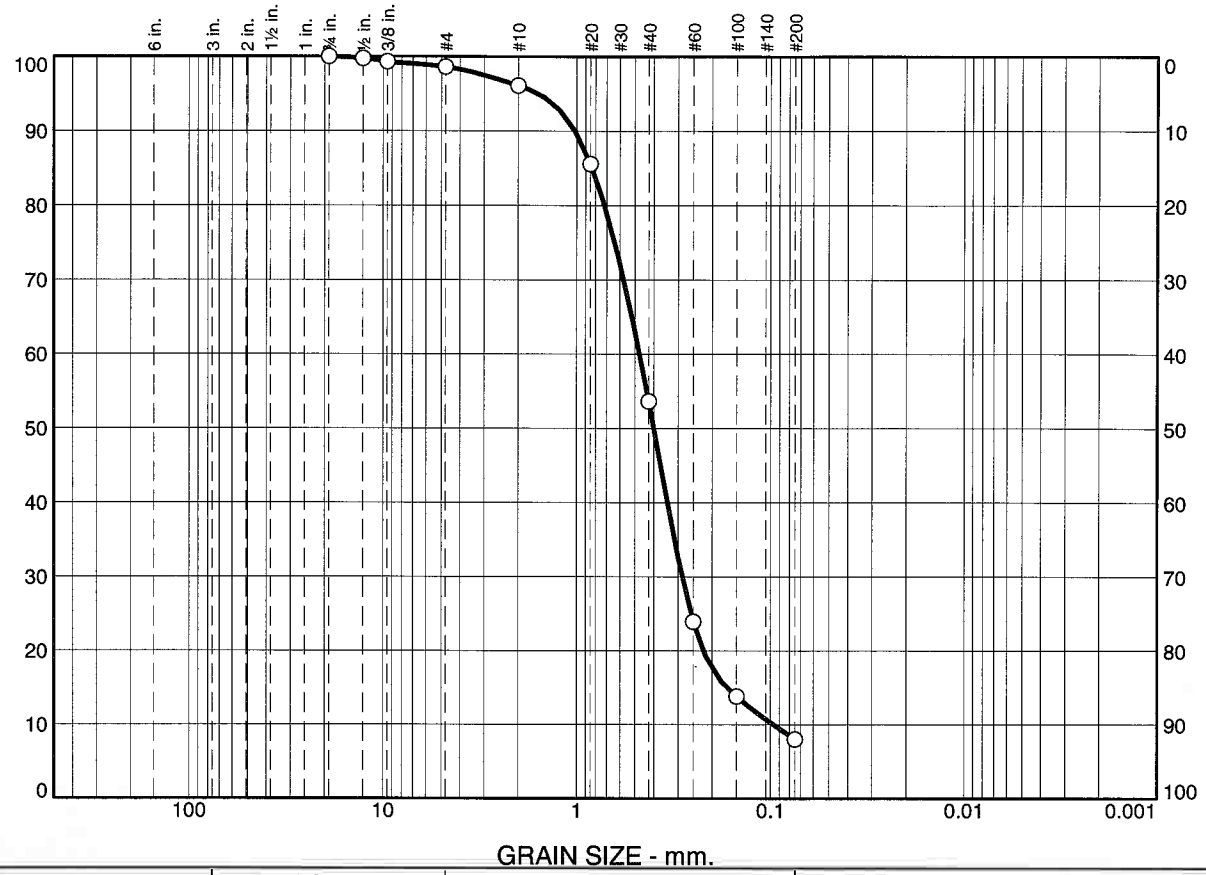
GeoResources, LLC

Fife, WA

Client: Parametrix
Project: 27th Avenue Road Widening
Project No: **Figure** 7b

Tested By: KSS **Checked By:** _____

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.4	2.5	42.4	45.7	8.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75	100.0		
.5	99.8		
0.375	99.3		
#4	98.6		
#10	96.1		
#20	85.6		
#40	53.7		
#60	23.9		
#100	13.8		
#200	8.0		

* (no specification provided)

Material Description

Lgt brown fine SAND, w/ some silt

Atterberg Limits

PL= LL= PI= NP

Coefficients

D_{85}= 0.8334 D_{60}= 0.4737 D_{50}= 0.4002
D_{30}= 0.2854 D_{15}= 0.1683 D_{10}= 0.0965
C_u= 4.91 C_c= 1.78

Classification

USCS= AASHTO=

Remarks

F.M.=1.94

Sample Number: TP-5 (090143) **Depth:** 2 ft
Location: 27th Avenue NE **Date:** 7/14/2009

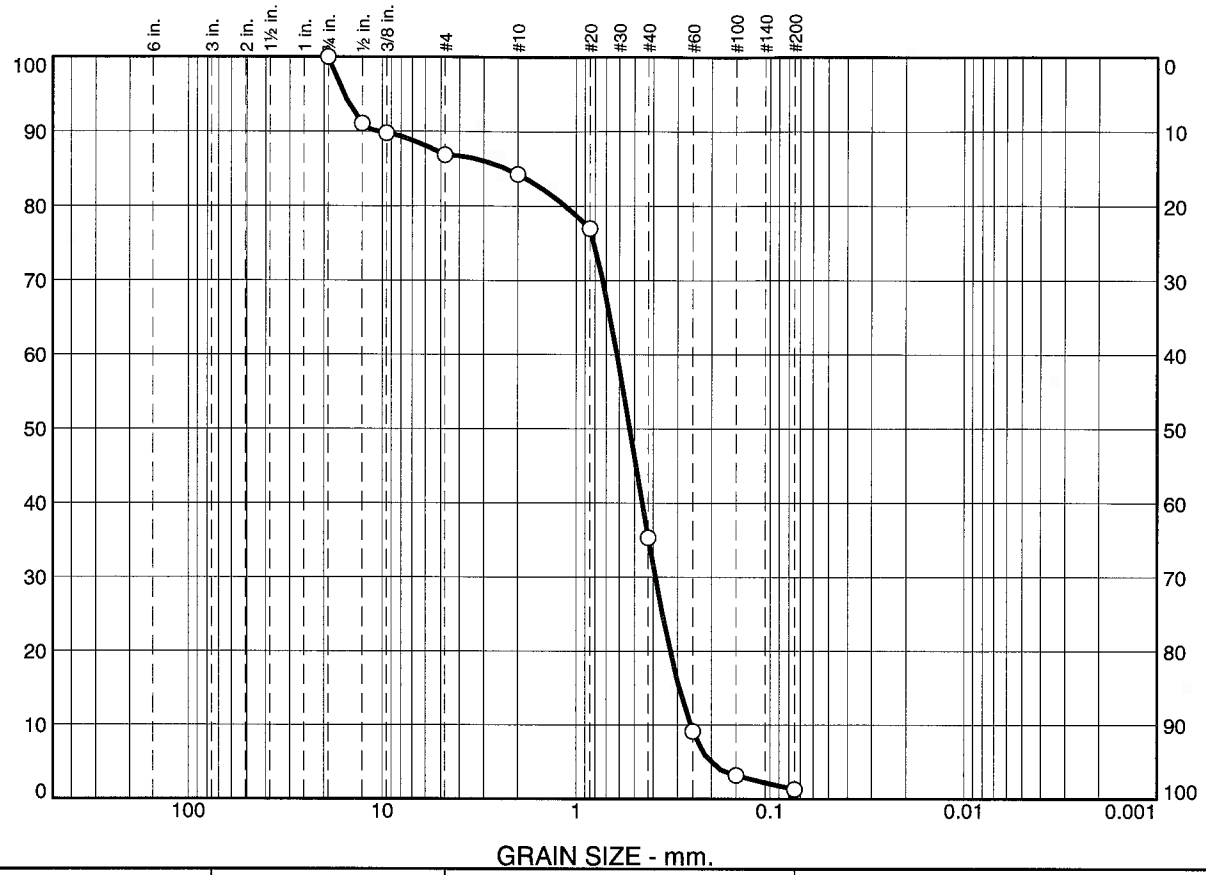
GeoResources, LLC

Fife, WA

Client: Parametrix
Project: 27th Avenue Road Widening
Project No: **Figure** 7c

Tested By: KSS **Checked By:**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	13.2	2.5	49.0	34.0	1.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75	100.0		
.5	91.1		
.375	89.8		
#4	86.8		
#10	84.3		
#20	77.0		
#40	35.3		
#60	9.2		
#100	3.2		
#200	1.3		

* (no specification provided)

Material Description

Gry SAND, w/ trace silt

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 2.2927 D_{60}= 0.6160 D_{50}= 0.5293
D_{30}= 0.3906 D_{15}= 0.2940 D_{10}= 0.2571
C_u= 2.40 C_c= 0.96

Classification

USCS= SP AASHTO=

Remarks

F.M.=2.81

Sample Number: TP-5 (090144) **Depth:** 5 ft
Location: 27th Avenue NE **Date:** 7/14/2009

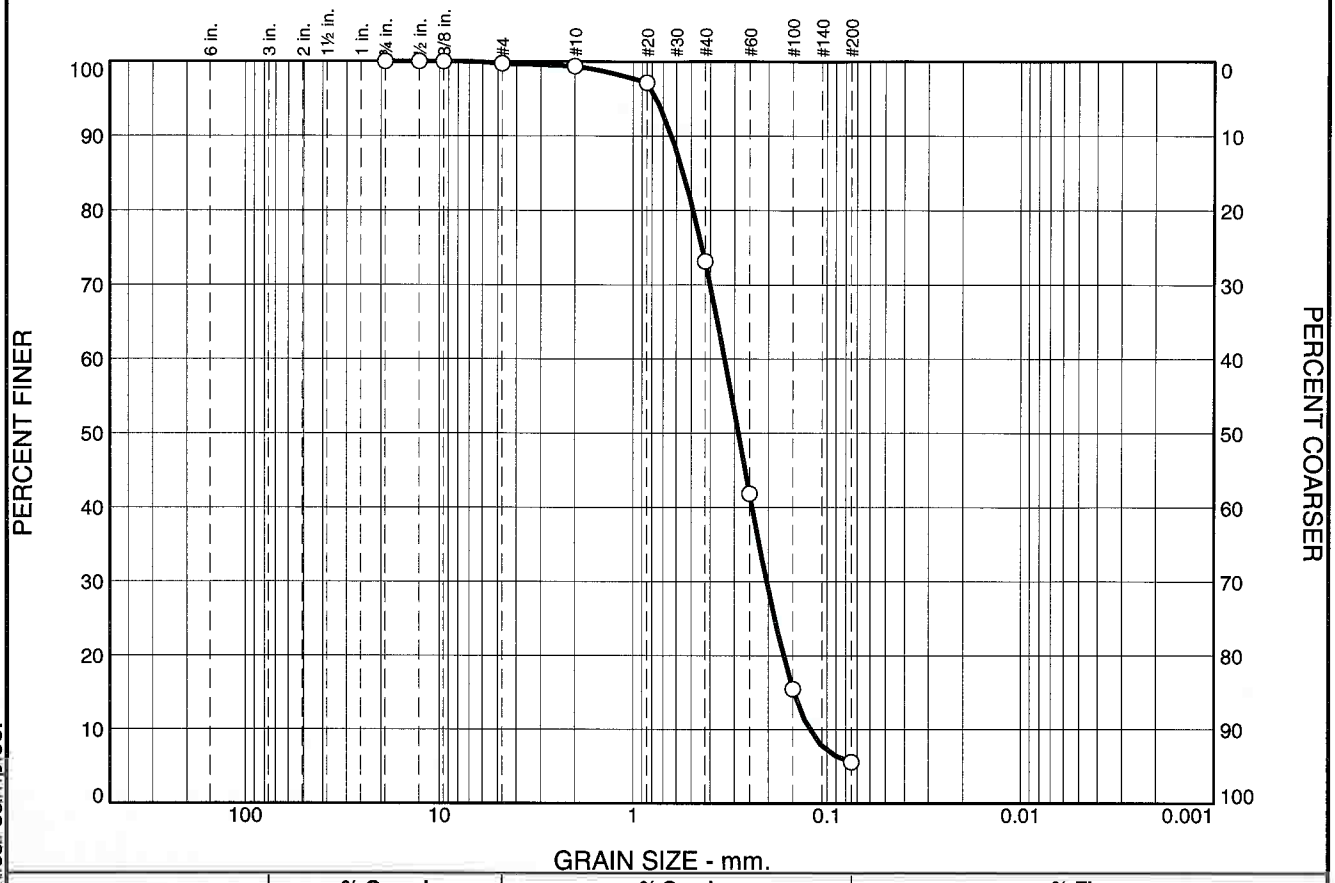
GeoResources, LLC

Fife, WA

Client: Parametrix
Project: 27th Avenue Road Widening
Project No: **Figure** 7d

Tested By: _____ **Checked By:** _____

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.4	26.2	67.5	5.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75	100.0		
.5	100.0		
.375	100.0		
#4	99.7		
#10	99.3		
#20	97.2		
#40	73.1		
#60	41.9		
#100	15.5		
#200	5.6		

* (no specification provided)

Material Description

Gry SAND, w/ some silt

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.5514 D_{60}= 0.3363 D_{50}= 0.2853
D_{30}= 0.2045 D_{15}= 0.1480 D_{10}= 0.1225
C_u= 2.75 C_c= 1.02

Classification

USCS= AASHTO=

Remarks

F.M.=1.46

Sample Number: TP-7 (090142) **Depth:** 5 ft
Location: 27th Avenue NE **Date:** 7/14/2009

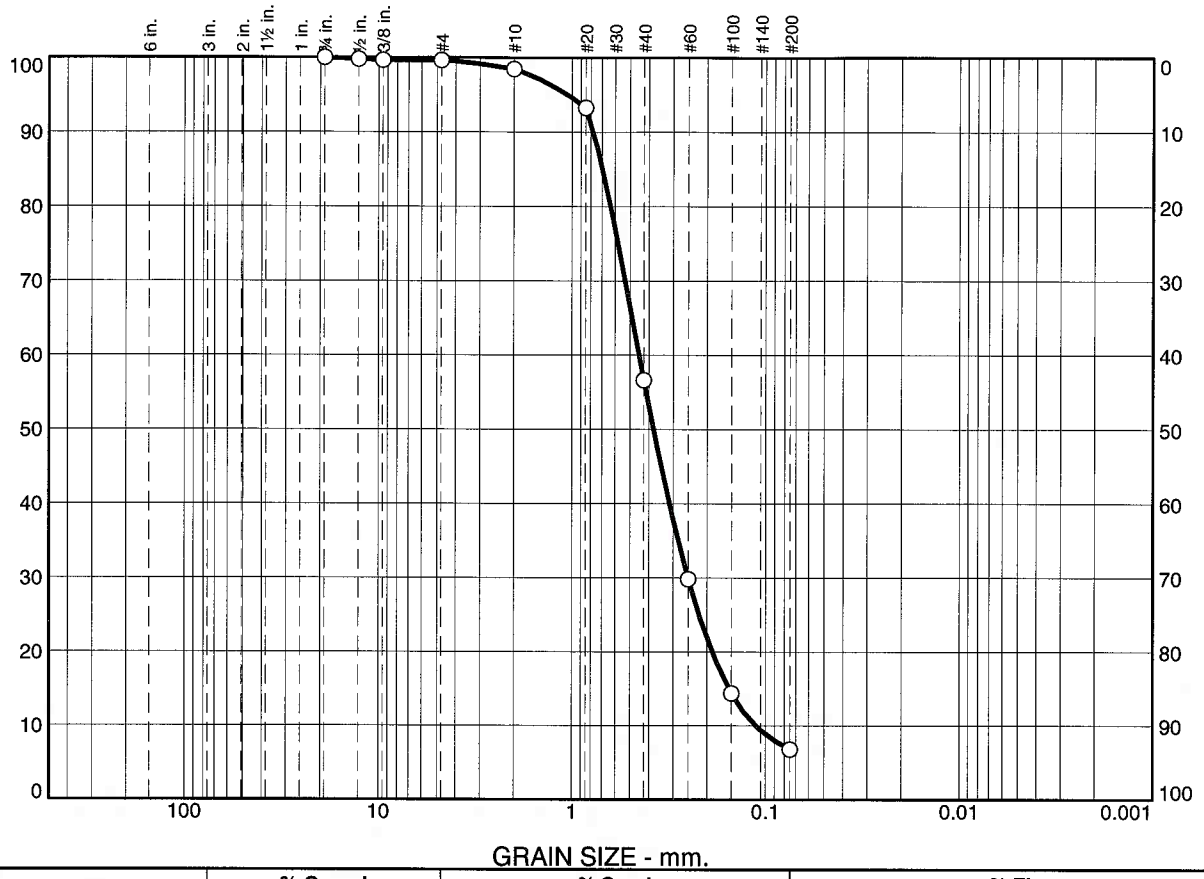
GeoResources, LLC

Fife, WA

Client: Parametrix
Project: 27th Avenue Road Widening
Project No: **Figure** 7e

Tested By: _____ **Checked By:** _____

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.4	1.1	41.9	49.8	6.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75	100.0		
.5	99.8		
.375	99.7		
#4	99.6		
#10	98.5		
#20	93.3		
#40	56.6		
#60	29.8		
#100	14.4		
#200	6.8		

* (no specification provided)

Material Description

Org brn fine to medium SAND, w/ some silt

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.6953 D_{60}= 0.4499 D_{50}= 0.3785
D_{30}= 0.2510 D_{15}= 0.1544 D_{10}= 0.1120
C_u= 4.02 C_c= 1.25

Classification

USCS= AASHTO=

Remarks

F.M.=1.77

Sample Number: TP-9 (090136) **Depth:** 1.5 ft
Location: 27th Avenue NE **Date:** 7/14/2009

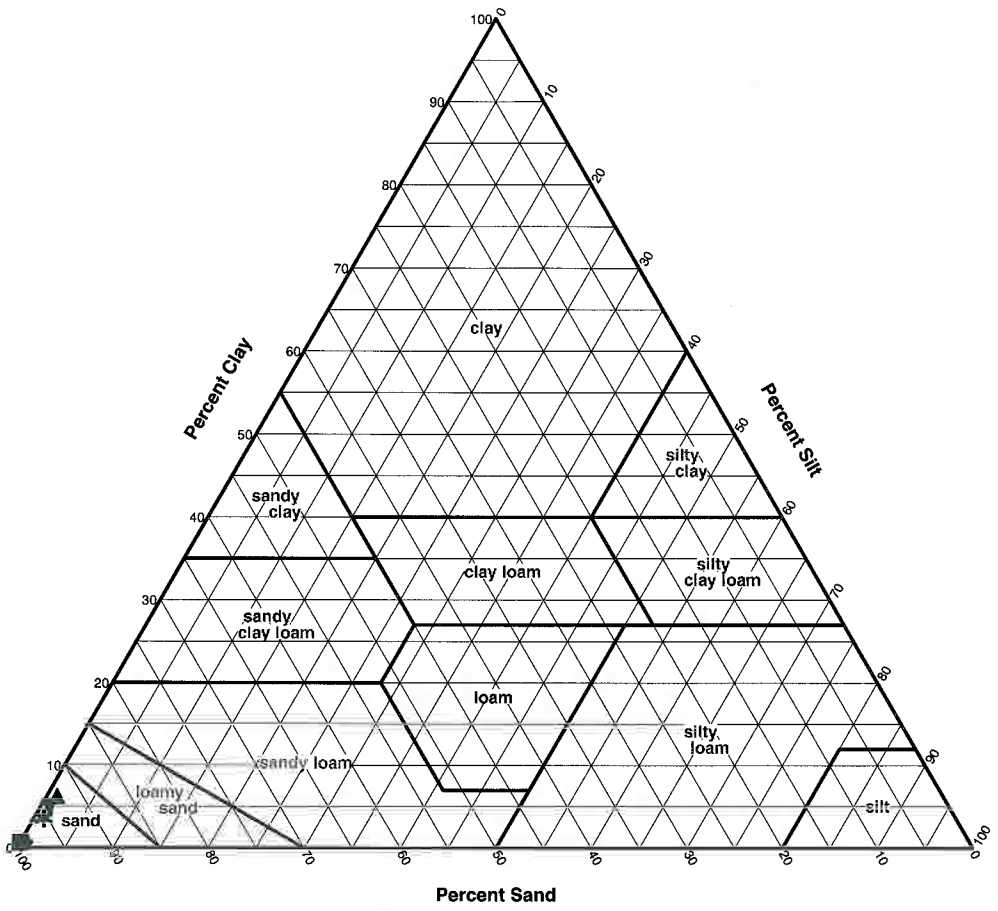
GeoResources, LLC

Fife, WA

Client: Parametrix
Project: 27th Avenue Road Widening
Project No: **Figure** 7f

Tested By: _____ **Checked By:** _____

USDA Soil Classification



SOIL DATA							
	Source	Sample No.	Depth	Percentages From Material Passing a #10 Sieve			Classification
				Sand	Silt	Clay	
●		HA-1	1.5 ft				Sand
		(090134.1)					
■		HA-2	3.5 ft	99.3	0.1	0.6	Sand
		(090134.2)					
▲		TP-5	2 ft	92.7	1.0	6.2	Sand
		(090143)					
◆		TP-5	5 ft	98.8	0.6	0.6	Sand
		(090144)					
▼		TP-9	1.5 ft	94.1	1.0	4.9	Sand
		(090136)					

GeoResources, LLC

Fife, WA

Client: Parametrix

Project: 27th Avenue Road Widening

Project No.:

Figure 8

Checked By: _____

Source: PMX 27th
Date Obtained: 7/22/2009
Sample ID: TP-2 @ 2-3'
Sample #: 388
Maximum Dry Density: 98.4 lbs/ft³

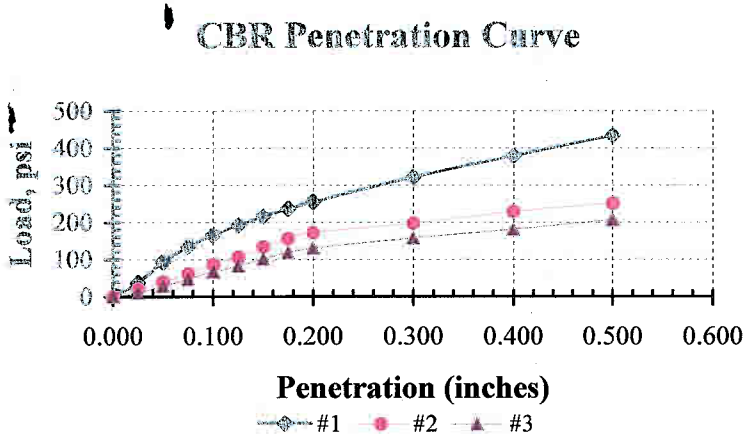
CBR Load Cell
Calibrated 02/16/09

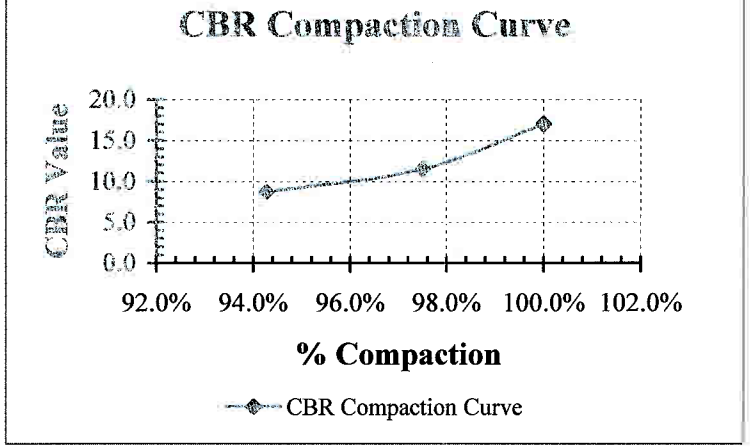
Test Standard
AASHTO T 99:
ASTM D 698:
AASHTO T 180:
ASTM D 1557: X
Method: C

Sample Prepared
Moist: X
Dry:
Manual:
Mechanical: X

Weight of Mold + Soils:	9,534.6	9,437.8	9,312.4	grams
Weight of Mold:	5,660.0	5,660.0	5,660.0	grams
Wet Weight of Soils:	3,874.6	3,777.8	3,652.4	grams
Wet Density:	113.9	111.1	107.4	lbs/ft³
% Moisture:	15.8%	15.8%	15.8%	
Dry Density:	**98.4**	**95.9**	**92.7**	lbs/ft³
% Compaction:	**100.0%**	**97.5%**	**94.3%**	
Initial Swell Reading:				
Final Swell Reading:				
% Swell:	0.00%	0.00%	0.00%	
CBR:	**17.0**	**11.5**	**8.7**	

Dial Reading	#1 Load	Depth Inches	#1 psi	CBR Value	Dial Reading	#2 Load	Depth Inches	#2 psi	CBR Value	Dial Reading	#3 Load	Depth Inches	#3 psi	CBR Value
	0	0.000	0			0	0.000	0			0	0.000	0	
	113	0.025	38			62	0.025	21			31	0.025	10	
	279	0.050	93			119	0.050	40			89	0.050	30	
	406	0.075	135			187	0.075	62			141	0.075	47	
	500	0.100	167	17		258	0.100	86	9		201	0.100	67	7
	579	0.125	193			319	0.125	106			249	0.125	83	
	649	0.150	216			401	0.150	134			304	0.150	101	
	710	0.175	237			469	0.175	156			357	0.175	119	
	766	0.200	255	17		518	0.200	173	12		393	0.200	131	9
	966	0.300	322	17		593	0.300	198	10		472	0.300	157	8
	1,138	0.400	379	16		684	0.400	228	10		544	0.400	181	8
	1,302	0.500	434	17		751	0.500	250	10		621	0.500	207	8





OK

Source: PMX 27th
Date Obtained: 7/22/2009
Sample ID: TP-8 @ 2
Sample #: 389
Maximum Dry Density: 97.6 lbs/ft³

CBR Load Cell
Calibrated 02/16/09

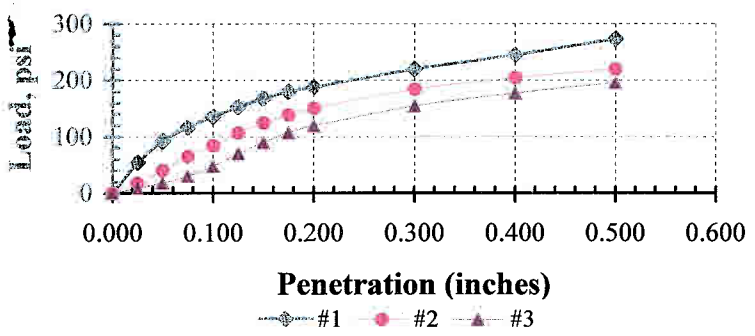
Test Standard
AASHTO T 99:
ASTM D 698:
AASHTO T 180:
ASTM D 1557: X
Method: C

Sample Prepared
Moist: X
Dry:
Manual:
Mechanical: X

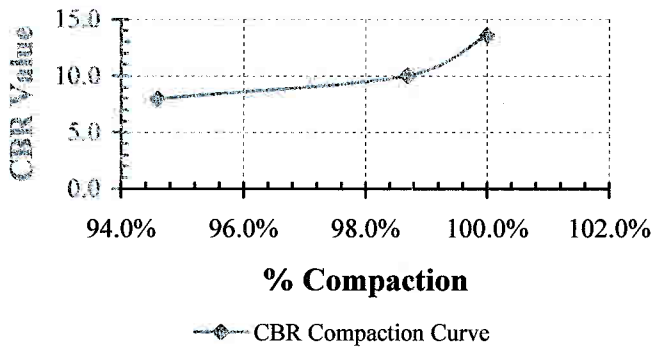
Weight of Mold + Soils:	9,421.6	9,372.7	9,218.2	grams
Weight of Mold:	5,660.0	5,660.0	5,660.0	grams
Wet Weight of Soils:	3,761.6	3,712.7	3,558.2	grams
Wet Density:	110.6	109.2	104.6	lbs/ft³
% Moisture:	13.3%	13.3%	13.3%	
Dry Density:	**97.6**	**96.3**	**92.3**	lbs/ft³
% Compaction:	**100.0%**	**98.7%**	**94.6%**	
Initial Swell Reading:				
Final Swell Reading:				
% Swell:	0.00%	0.00%	0.00%	
CBR:	**13.6**	**10.0**	**8.0**	

Dial Reading	#1 Load	Depth Inches	#1 psi	CBR Value	Dial Reading	#2 Load	Depth Inches	#2 psi	CBR Value	Dial Reading	#3 Load	Depth Inches	#3 psi	CBR Value
	0	0.000	0			0	0.000	0			0	0.000	0	
	164	0.025	55			53	0.025	18			27	0.025	9	
	277	0.050	92			121	0.050	40			54	0.050	18	
	351	0.075	117			196	0.075	65			92	0.075	31	
	408	0.100	136	14		254	0.100	85	8		143	0.100	48	5
	460	0.125	153			321	0.125	107			211	0.125	70	
	504	0.150	168			374	0.150	125			271	0.150	90	
	540	0.175	180			416	0.175	139			323	0.175	108	
	564	0.200	188	13		452	0.200	151	10		359	0.200	120	8
	660	0.300	220	12		553	0.300	184	10		464	0.300	155	8
	735	0.400	245	11		614	0.400	205	9		532	0.400	177	8
	819	0.500	273	11		659	0.500	220	8		589	0.500	196	8

CBR Penetration Curve



CBR Compaction Curve



DK

SPECTRA Laboratories

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

08/12/2009

Geo Resources, LLC
5007 Pacific Hwy. E
Suite 20
Fife, WA 98424
Attn: Renee

Project: PMX 27th
Client ID: PMX 27th TP-2 @2 1/2-3 1/2+
Sample Matrix: Soil
Date Sampled: 07/10/2009
Date Received: 07/31/2009
Spectra Project: 2009070544
Spectra Number: 2

Analyte	Result	Units	Method
Cation Exchange Capacity	91	Na, mEq/100 g	SW846 9081

SPECTRA LABORATORIES

Steve Hibbs, Laboratory Manager
a6/sgh

SPECTRA Laboratories

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

08/12/2009

Geo Resources, LLC
5007 Pacific Hwy. E
Suite 20
Fife, WA 98424
Attn: Renee

Project:	PMX 27th
Client ID:	PMX 27th TP-5 @3+
Sample Matrix:	Soil
Date Sampled:	07/10/2009
Date Received:	07/31/2009
Spectra Project:	2009070544
Spectra Number:	3

Analyte	Result	Units	Method
Cation Exchange Capacity	45	Na, mEq/100 g	SW846 9081

SPECTRA LABORATORIES

Steve Hibbs, Laboratory Manager
a6/sgh

SPECTRA Laboratories

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

08/12/2009

Geo Resources, LLC
5007 Pacific Hwy. E
Suite 20
Fife, WA 98424
Attn: Renee

Project:	PMX 27th
Client ID:	PMX 27th TP-9 @2 1/2-3
Sample Matrix:	Soil
Date Sampled:	07/10/2009
Date Received:	07/31/2009
Spectra Project:	2009070544
Spectra Number:	1

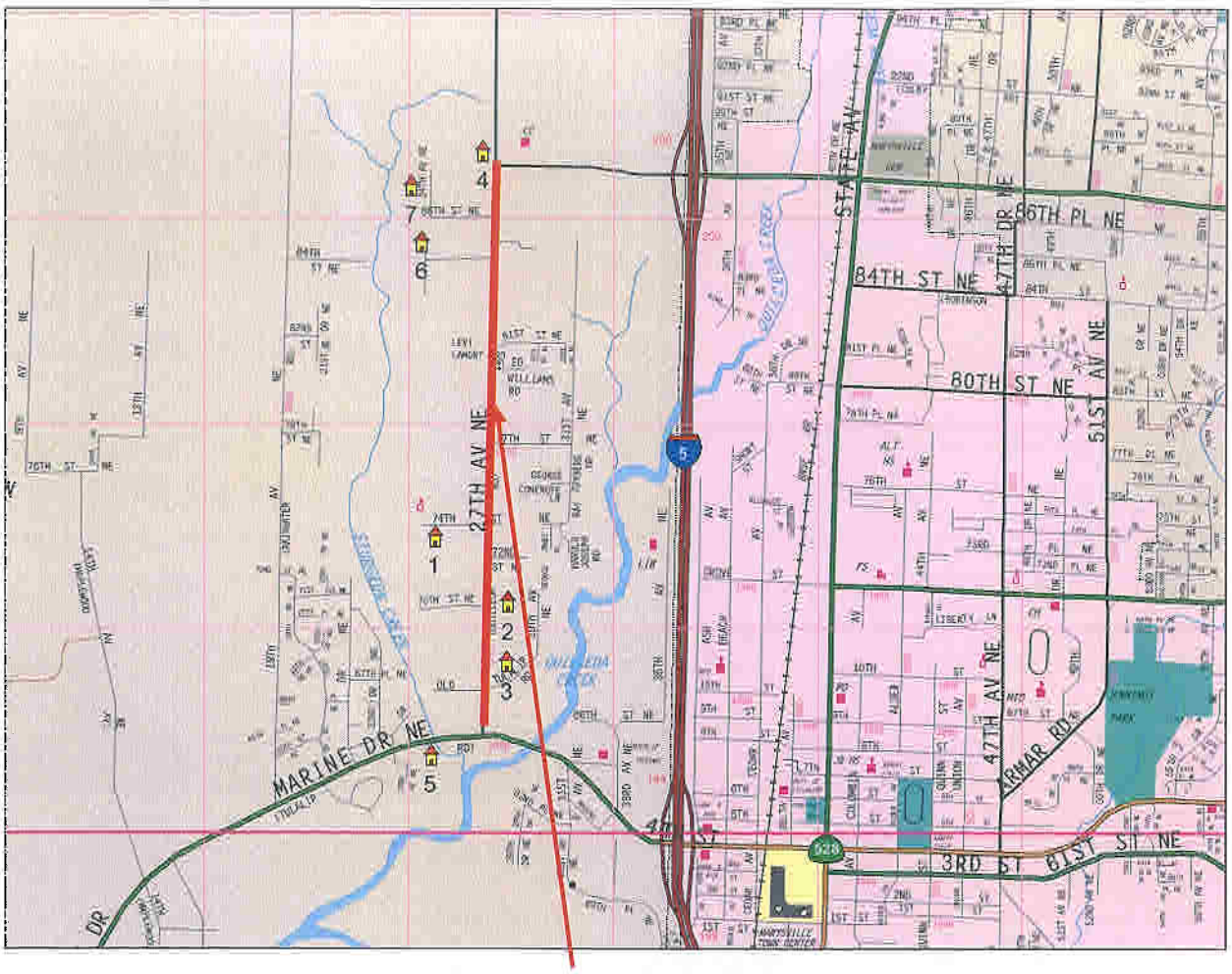
Analyte	Result	Units	Method
Cation Exchange Capacity	70	Na, mEq/100 g	SW846 9081

SPECTRA LABORATORIES

Steve Hibbs, Laboratory Manager
a6/sgh

Appendix A

Washington State Department of Ecology
Water Well Logs



Project Alignment

Point ID	Start Card	Owner	Address	Type of Log
1	R69483	Marysville School District	27th Ave & 74th St	3 Resource Protection Wells
2	30/05-29F	Gregg	6926 – 27th Ave NE	1 Water Well Report
3	30/05-29K	Dennis	2721 Old Tulalip Rd	1 Water Well Report
4	R05573	Tulalip Tribe	27th Ave & 88th St	10 Resource Protection Wells
5	R72327	Tulalip Tribe	6319 – 23rd Ave NE	5 Monitoring Well Reports
6	30/05-20C	Kelly	8510 – 24th Ave NE	2 Water Well Reports
7	30/05-20C	Kelly	2331 – 86th St NE	1 Water Well Report

N W E S

Not to Scale

GeoResources, LLC
5007 Pacific Highway East, Suite 20
Fife, Washington 98424
Phone: 253-896-1011
Fax: 253-896-2633

Department of Ecology Well Logs

27th Avenue NE Reconstruction
27th Avenue NE – Marine Drive NE to 88th Street NE
Tulalip, Washington

DocID: PMX.27thAvenueNE.WL	August 2009	Figure A1

RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT

Notice of Intent No. R 69483

Construction/Decommission

257421

[X] Construction

[ ] Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

Type of Well 30-5E-29C

[X] Resource Protection

[ ] Geotechnical Soil Boring

Property Owner **Marysville School District**

Site Address **27th Ave N.E. & 74th St. N.E.**

Consulting Firm **AES**

City **Marysville** County **Snohomish**

Unique Ecology Well ID
Tag No. **APS** 233

EWM

Location 1/4 **NE** 1/4 **NW** Sec **29** Twn **30N** R **5E** or WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Lat/Long (s,t,r still Required) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

[ ] Driller [X] Trainee Name (Print) Curtis Askew

Driller/Trainee Signature _____

Driller/Trainee License No. 2867T

Tax Parcel No. _____

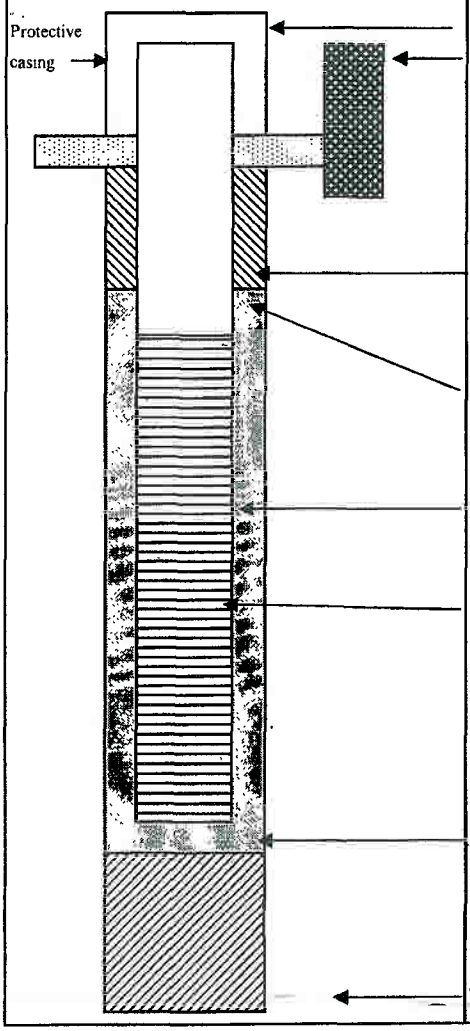
If trainee, licesned drillers' Signature and License No. 2330

Cased or Uncased Diameter 8 1/4 Static Level 14'

Work/Decommision Start Date 2/7/07

Work/Decommision End Date 2/7/07

Construction/Design



Well Data W07-074

Locking Cap
Protective Post
Concrete Surface Seal Depth 3' FT
Blank Casing (dia x dep) 10' x 2"
Material PVC
Backfill _____ FT
Type _____
Seal 5'
Material Bent Chips
Gravel Pack 12' FT
Material 2/12 Sand
Screen (dia x dep) 10' x 2"
Slot Size .010
Material PVC
Well Depth 20' FT
Backfill _____
Material _____
Total Hole Depth 20' FT

Formation Description

0 - 20 FT
Brown Sands

0 - _____ FT

0 - _____ FT

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DEPT. OF ECOLOGY

Scale 1" = _____

Page _____ of _____

ECY 050-12 (Rec=v 2/01)

RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT

Notice of Intent No. R 69483

Type of Well 30-5E-29C

Construction/Decommission

[X] Construction 257422

[ ] Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

[X] Resource Protection

[ ] Geotechnical Soil Boring

Property Owner **Marysville School District**

Site Address **27th Ave N.E. & 74th St. N.E.**

Consulting Firm **AES**

City **Marysville** County **Snohomish**

Unique Ecology Well ID
Tag No. **APS** 234

Location 1/4 **NE** 1/4 **NW** Sec **29** Twn **30N** R **5E** [EWM] or WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Lat/Long (s,t,r still Required) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

[ ] Driller [X] Trainee Name (Print) Curtis Askew

Driller/Trainee Signature _____

Driller/Trainee License No. 2867T

Tax Parcel No. _____

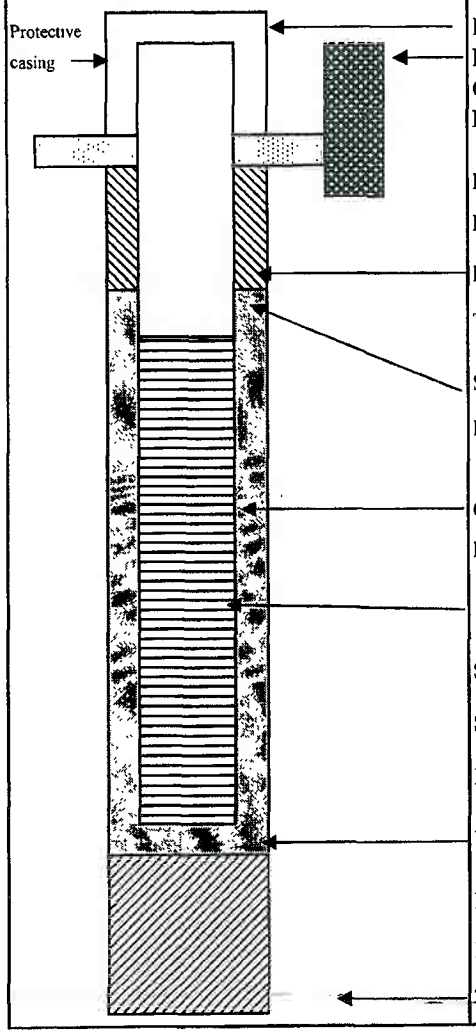
Cased or Uncased Diameter 8 1/4 Static Level 16'

Work/Decommision Start Date 2/7/07

If trainee, licesned drillers' Signature and License No. 2330

Work/Decommision End Date 2/7/07

Construction/Design



Well Data W07-074

Locking Cap
Protective Post
Concrete Surface Seal
Depth 3 FT

Blank Casing (dia x dep) 12.5 x 2"
Material PVC

Backfill _____ FT
Type _____
Seal 7.5'
Material Bent Chips

Gravel Pack 12' FT
Material 2/12 Sand

Screen (dia x dep) 10' x 2"
Slot Size .010
Material PVC

Well Depth 22.5' FT
Backfill _____
Material _____
Total Hole Depth 22.5' FT

Formation Description

0 - 22.5 FT
Brown Sands

0 - _____ FT

0 - _____ FT

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Scale 1" = _____

Page _____ of _____

ECY 050-12 (Rec=v 2/01)

RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT

Notice of Intent No. R 69483

Type of Well 30-5E-29C

Construction/Decommission

[X] Construction 25723

[X] Resource Protection

[ ] Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

[ ] Geotechnical Soil Boring

Property Owner **Marysville School District**

Site Address **27th Ave N.E. & 74th St. N.E.**

Consulting Firm **AES**

City **Marysville** County **Snohomish**

EWM

Unique Ecology Well ID
Tag No. **APS 235**

Location 1/4 **NE** 1/4 **NW** Sec **29** Twn **30N** R **5E** or WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Lat/Long (s,t,r still Required) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

Driller [X] Trainee Name (Print) Curtis Askyw

Driller/Trainee Signature _____

Driller/Trainee License No. 2867J

Tax Parcel No. _____

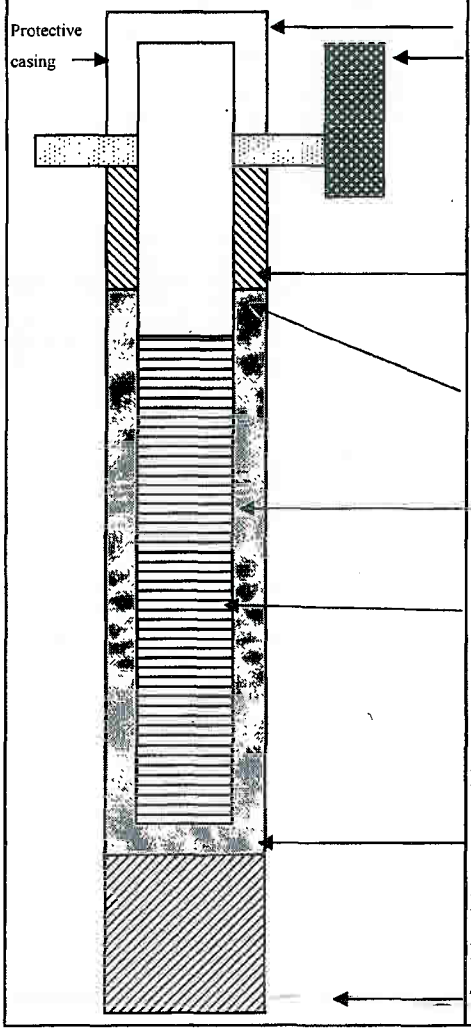
Cased or Uncased Diameter 8 1/4 Static Level 13'

Work/Decommision Start Date 2/7/07

If trainee, licesned drillers' Signature and License No. 2330

Work/Decommision End Date 2/7/07

Construction/Design



Well Data W07-074

Locking Cap		
Protective Post		
Concrete Surface Seal Depth	3'	FT
Blank Casing (dia x dep)	10' x 2"	
Material	PVC	
Backfill		FT
Type		
Seal	5'	
Material	Bead Chips	
Gravel Pack	12'	FT
Material	2/12 sand	
Screen (dia x dep)	10' x 2"	
Slot Size	.010	
Material	PVC	
Well Depth	20'	FT
Backfill		
Material		
Total Hole Depth	20'	FT

Formation Description

0 - 20' FT Brown Sands

0 - _____ FT

0 - _____ FT

RECEIVED
FEB 27 2007
DEPT. OF ECOLOGY

Scale 1" = _____ Page _____ of _____

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy 30/5E/29/F

WATER WELL REPORT
STATE OF WASHINGTON

Application No 30/05-29F
Permit No. ....

(1) OWNER: Name GEORGE G. GREGG Address 6926 -27 AVE N.E. MARYSVILLE

(2) LOCATION OF WELL: County SNOHOMISH — S.E¼ N.W¼ Sec. 29 T. 30 N. R. 5E W.M.

Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) ....
New well ☒ Method: Dug ☒ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 36 inches.
Drilled ..... ft. Depth of completed well 20½ ft.

(6) CONSTRUCTION DETAILS: Concrete
Casing installed: 36 " Diam. from 0 ft. to ..... ft.
Threaded ☐ ..... " Diam. from ..... ft. to ..... ft.
Welded ☐ ..... " Diam. from ..... ft. to 21 ft.

Perforations: Yes ☐ No ☐ Concrete/open
Type of perforator used .....
SIZE of perforations ½ in. by 2 in.
..... perforations from ..... ft. to ..... ft.
..... perforations from ..... ft. to ..... ft.
..... perforations from ..... ft. to ..... ft.

Screens: Yes ☐ No ☒
Manufacturer's Name .....
Type ..... Model No. .....
Diam. ..... Slot size ..... from ..... ft. to ..... ft.
Diam. ..... Slot size ..... from ..... ft. to ..... ft.

Gravel packed: Yes ☒ No ☐ Size of gravel: pea
Gravel placed from ..... ft. to 21 ft.

Surface seal: Yes ☐ No ☐ To what depth? 18 ft.
Material used in seal Concrete
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? ..... Depth of strata .....
Method of sealing strata off .....

(7) PUMP: Manufacturer's Name Hulls
Type: ..... Self prime H.P 3/4

(8) WATER LEVELS: Land-surface elevation above mean sea level .... 30 ft.
Static level 12 ft. below top of well Date .....
Artesian pressure — lbs. per square inch Date .....
Artesian water is controlled by — (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☐ If yes, by whom? .....
Yield: ..... gal./min. with ..... ft. drawdown after ..... hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
0	18	½	12		

Date of test .....
Bailer test 156 gal./min. with 1 ft. drawdown after ½ hrs.
Artesian flow ..... g.p.m. Date .....
Temperature of water ..... Was a chemical analysis made? Yes ☐ No ☒

(10) WELL LOG:

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
Sand fine to brown	0	20½ ft

Work started 7-1 19 74 Completed 7-2 19 74

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Pearson Well Drilling
(Person, firm, or corporation) (Type or print)

Address .....

[Signed] Glen J Zackery
(Well Driller)

License No. 0557 Date ....., 19.....

(USE ADDITIONAL SHEETS IF NECESSARY)

S. F. No. 7356—OS—(Rev. 4-71).

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Application No. 20165-29K

Permit No.

(1) OWNER: Name Bob Dennis Address 2721-Old Tulalip Rd.

(2) LOCATION OF WELL: County Snohomish NW ¼ SE ¼ Sec. 29 T. 30 N., R. 5 E W.M.

Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one)
New well ☒ Method: Dug ☒ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 36 inches.
Drilled ft. Depth of completed well 16½ ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 36" Diam. from 0 ft. to 16½ ft.
Threaded ☐ " Diam. from ft. to ft.
Welded ☐ " Diam. from ft. to ft.

Perforations: Yes ☒ No ☐
Type of perforator used Screens
SIZE of perforations ½ in. by 8 in.
8 perforations from 14½ ft. to 16½ ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes ☐ No ☐
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes ☒ No ☐ Size of gravel: pea
Gravel placed from 8 ft. to 16½ ft.

Surface seal: Yes ☐ No ☐ To what depth? ft.
Material used in seal
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name
Type: H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level 8 ft. below top of well Date 9/29/78
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☒ If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes ☐ No ☐
bailed to 15'-recovery 45 mins.
600 to 700 gals. min.

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
topsoil	0	1'
sand	1'	5'
brown clay	5'	8'
water bearing sand	8'	14'
clay	14'	16½
Surface seal to be furnished by customer		
Ed Dennis		

Work started 9/28 19 78 Completed 9/29 19 78

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Al Toria Well Digging
(Person, firm, or corporation) (Type or print)

Address 2803-128th N.E. Marysville, Wa

[Signed] Al Toria
(Well Driller)

License No. 0502 Date 9/30, 19 78

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 060-1-20

RESOURCE PROTECTION WELL REPORT

WELL TAG NO. #BN 262 START CARD NO. R05573

PROJECT NAME: Tulalip Tribe COUNTY: Snohomish 30/5/20C

WELL IDENTIFICATION NO. Monitoring LOCATION NE¼ NW¼ Sec 20 Twn 30N R 5E

DRILLING METHOD: Hollow Stem Auger STREET ADDRESS OF WELL: 27th Ave NE & 88th St. NE. Tulalip Tribe, Marysville

DRILLER: Lanny Gregory WATER LEVEL ELEVATION: n/a

FIRM: Gregory Drilling Inc. GROUND SURFACE ELEVATION: n/a

SIGNATURE: Lanny Gregory INSTALLED: 12/5/95

CONSULTING FIRM: AGRA DEVELOPED: AGRA

REPRESENTATIVE: Henry Brenneman

RECEIVED
DEC 19 1995
DEPT. OF ECOLOGY

Soil Type	Depth (in feet below ground surface)
0 – 6" Gravel-Sand	0
6" – 2' Silt	
2' – 25' Sand Brown Med-Coarse	1.5
	12.5
	15'
	25'

Stick-up Height (if applicable) _____

Monument Type 8" Monument Flush

Well Cap Type 2" ∅ Plug

Grout Type/#Sacks 3 Sks Concrete mix

Bentonite Seal/#Sacks 1 Sk Bentonite chips
2 Sks Envirofoam Grout
½ Sk Bentonite Gel

Well Casing I.D.: 2"
Type of casing Sch 40 P.V.C.
Type of connection flush thread

Filter Pack/size/#Sacks Silica 10-20 3 Sks

Well Screen I.D 2"
Type of Screen Sch 40 P.V.C.
Slot size .020

Diameter of borehole 8"

Endcap Type flush thread

Remarks:

RESOURCE PROTECTION WELL REPORT

ENTERED

WELL TAG NO. ABN 263 START CARD NO. R05573

PROJECT NAME: Tulalip Tribe COUNTY: Snohomish 30/5/20C

WELL IDENTIFICATION NO. Monitoring LOCATION: NE¼ NW¼ Sec 20 Twn 30N R 5 E

DRILLING METHOD: Hollow Stem Auger STREET ADDRESS OF WELL: 27th Ave N.E + 88th ST. N.E Tulalip Tribe, Marysville

DRILLER: Henry Gregory WATER LEVEL ELEVATION: n/A

FIRM: Gregory Drilling Inc. GROUND SURFACE ELEVATION: n/A

SIGNATURE: Henry Gregory INSTALLED: 12/5/95

CONSULTING FIRM: AGRA DEVELOPED: AGRA

REPRESENTATIVE: Henry Brennerman

RECEIVED
DEC 18 1995
DEPT. OF ECOLOGY

Soil Type	Depth (in feet below ground surface)
0 – 4" Gravel + Sand (Road Base)	0
4" – 2.5' Silt	1.5
2.5 – 25' Sand Brown med-coarse	12.5'
	15'
	25'

Stick-up Height (if applicable) _____

Monument Type 8" Monument Flush

Well Cap Type 2" J-Plug

Grout Type/#Sacks 3 Sks Concrete Mix

Bentonite Seal/#Sacks 1 sk Bentonite Chips
2 Sks Enviroplug Grout
½ sk Bentonite Gel

Well Casing I.D.: 2"
Type of casing Sch 40 P.V.C.
Type of connection flush thread

Filter Pack/size/#Sacks Silica – 10-20 3 Sks

Well Screen I.D 2"
Type of Screen Sch 40 P.V.C.
Slot size .020

Diameter of borehole 8"

Endcap Type flush thread

Remarks: _____

RESOURCE PROTECTION WELL REPORT

ENTERED

WELL TAG NO. ABN 264 START CARD NO. R05573

PROJECT NAME: Tulalip Tribe COUNTY: Snohomish 30/5/20C

WELL IDENTIFICATION NO. monitoring LOCATION: NE¼ NW¼ Sec 20 Twn 30N R 5 E

DRILLING METHOD: Hollow Stem Auger STREET ADDRESS OF WELL: 27th Ave N.E. + 88th ST. N.E. Tulalip Tribe, Marysville

DRILLER: Larry Gregory WATER LEVEL ELEVATION: n/a

FIRM: Gregory Drilling Inc GROUND SURFACE ELEVATION: n/a

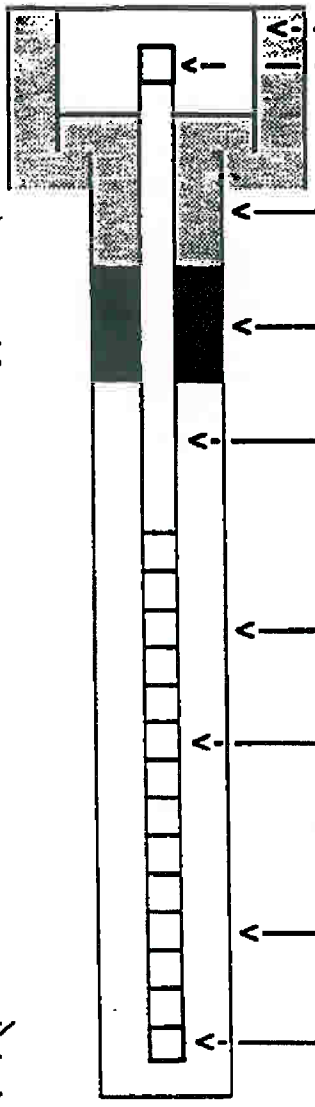
SIGNATURE: Larry Gregory INSTALLED: 12/6/95

CONSULTING FIRM: AGRA Earth & Env DEVELOPED: AGRA

REPRESENTATIVE: Henry Brennerman

RECEIVED
DEC 19 1995
DEPT. OF ECOLOGY

Soil Type	Depth (in feet below ground surface)
0 – 6" Gravel Sand (Road Base)	0
6' – 2.0 Silt	1.5
2.0 – 25' Sand Brown Med-Coarse	12'5
	15'
	25'



Stick-up Height (if applicable) _____

Monument Type 8" Monument Flush

Well Cap Type 2" J-Plug

Grout Type/#Sacks 3 sks Concrete Mix

Bentonite Seal/#Sacks 1 sk Bentonite chips
2 sks Enviroplug Grout
½ sk Bentonite Gel

Well Casing I.D.: 2"
Type of casing Sch 40 P.V.C.
Type of connection flush thread

Filter Pack/size/#Sacks Silica 10-20 4 sks

Well Screen I.D 2"
Type of Screen Sch 40 P.V.C
Slot size .020

Diameter of borehole 8"

Endcap Type flush thread

Remarks:

RESOURCE PROTECTION WELL REPORT

ENTERED

WELL TAG NO. ABN 265 START CARD NO. R05576

PROJECT NAME: Tulalip Tribe COUNTY: Snohomish 30/5/20C

WELL IDENTIFICATION NO. Monitoring LOCATION: NE¼ NW¼ Sec 20 Twn 30N R 5 E

DRILLING METHOD: Hollow Stem Auger STREET ADDRESS OF WELL: 27Th Ave N.E. +

DRILLER: Larry Gregory 88Th ST N.E. Tulalip Tribe, Marysville

FIRM: Gregory Drilling Inc WATER LEVEL ELEVATION: N/A

SIGNATURE: Larry Gregory GROUND SURFACE ELEVATION: N/A

CONSULTING FIRM: A P P A INSTALLED: 12/7/95

REPRESENTATIVE: Henry Brenneman DEVELOPED: ACLA

Soil Type	Depth (in feet below ground surface)		
0 – 6" Gravel – Sand (Road Base)	0	Stick-up Height (if applicable)	
		Monument Type	8" Monument Flush
		Well Cap Type	2" S-Plug
6' – 18' Sand Brown	1.5	Grout Type/#Sacks	3 sks Concrete mix
18' – 25' Sand Brown with occasional Gravel	12.5	Bentonite Seal/#Sacks	1 sk Bentonite Chip, 2 sks Envirokleen Grout, ½ sk Bentonite Gel
	15	Well Casing I.D.:	2"
		Type of casing	Sch 40 P.V.C.
		Type of connection	Flush Thread
		Filter Pack/size/#Sacks	Silica 10-20 5 sks
		Well Screen I.D	2"
		Type of Screen	Sch 40 P.V.C.
		Slot size	.020
		Diameter of borehole	8"
	25	Endcap Type	Flush Thread

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DEPT. OF ECOLOGY

Remarks:

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

RESOURCE PROTECTION WELL REPORT

ENTERED

WELL TAG NO. ABN 266 START CARD NO. R05576

PROJECT NAME: TuLaLip Tribe COUNTY: Snohomish 30/5/20C

WELL IDENTIFICATION NO. monitoring LOCATION: NE¼ NW¼ Sec 20 Twn 30N R 5 E

DRILLING METHOD: Hollow Stem Auger STREET ADDRESS OF WELL: 27TH AVE N.E. & 88TH ST. N.E. TuLaLip Tribe Marysville

DRILLER: Harry Gregory WATER LEVEL ELEVATION: N/A

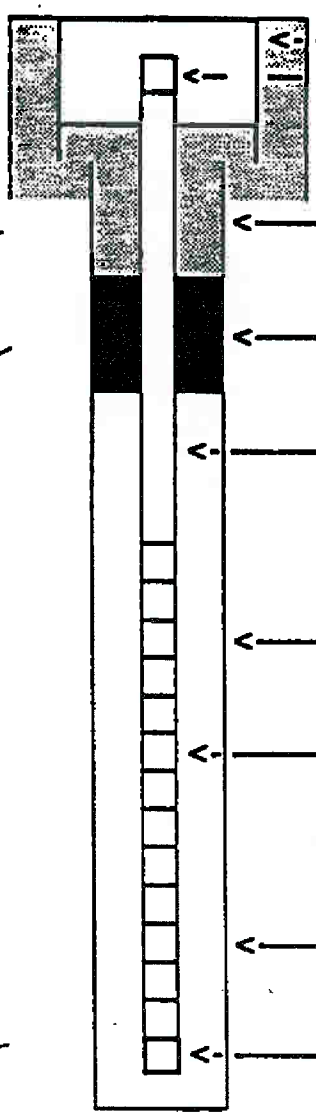
FIRM: Gregory Drilling Inc GROUND SURFACE ELEVATION: N/A

SIGNATURE: Harry Gregory INSTALLED: 12/7/95

CONSULTING FIRM: AGRA DEVELOPED: AGRA

REPRESENTATIVE: Henry Brennerman

Soil Type	Depth (in feet below ground surface)
0 – 6" Sand-Gravel (Road Base)	0
6' – 3.0' Silt	1.5
3.0' – 25' Sand Brown	12.5
	15
	25



Stick-up Height (if applicable)

Monument Type 8" Monument Flush

Well Cap Type 2" J-Plug

Grout Type/#Sacks 3 Sks Concrete mix

Bentonite Seal/#Sacks 1 Sk Bentonite chips
2 Sks Enviroplug Grout
½ Sk Bentonite Ball

Well Casing I.D.: 2"
Type of casing Sch 40 P.V.C.
Type of connection flush thread

Filter Pack/size/#Sacks Silica 10-20 3 Sks

Well Screen I.D 2"
Type of Screen Sch 40 P.V.C.
Slot size .020

Diameter of borehole 8"

Endcap Type flush thread

RECEIVED
DEC 19 1995
DEPT. OF ECOLOGY

Remarks:

RESOURCE PROTECTION WELL REPORT

ENTERED

WELL TAG NO. ABN 267 START CARD NO. R05576

PROJECT NAME: Tulalip Tribe COUNTY: Snohomish 30/5/20C

WELL IDENTIFICATION NO. Monitoring LOCATION: NE¼ NW¼ Sec 20 Twn 30N R 5 E

DRILLING METHOD: Hollow Stem Auger STREET ADDRESS OF WELL: 27th Ave N.E. + 88th St. N.E. Tulalip Tribe, Marysville

DRILLER: Larry Gregory WATER LEVEL ELEVATION: n/a

FIRM: Gregory Drilling Inc. GROUND SURFACE ELEVATION: n/a

SIGNATURE: Larry Gregory INSTALLED: 12/7/95

CONSULTING FIRM: AGRA DEVELOPED: AGRA

REPRESENTATIVE: Henry Brennerman

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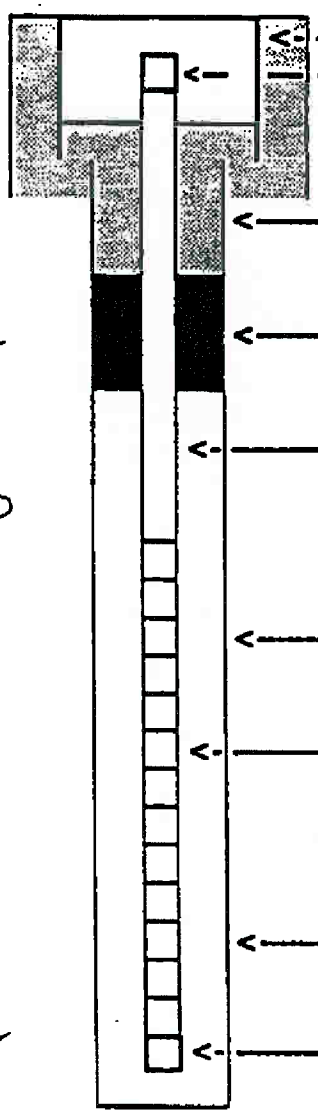
DEC 19 1995
DEPT. OF ECOLOGY

Soil Type	Depth (in feet below ground surface)
0 – 6" Sand-Gravel (Road-Base.)	0
6" – 4' Silt-sand (Fill)	1.5
	12.5
4' – 12.0 Peat	15.0
12.0 – 25' Sand Brown	25'



Stick-up Height (if applicable) _____

Monument Type 8" Monument Flush

Well Cap Type 2" J-Plug

Grout Type/#Sacks 3 Sks Concrete mix

Bentonite Seal/#Sacks 1 Sk Bentonite Clype
2 Sks Enviroplug Grout
¼ Sk Bentonite Gel

Well Casing I.D.: 2"
Type of casing SCH 40 P.V.C.
Type of connection flush thread

Filter Pack/size/#Sacks Silica 10-20 3 Sks

Well Screen I.D 2"
Type of Screen SCH 40 P.V.C.
Slot size .020

Diameter of borehole 8"

Endcap Type flush thread

Remarks:

RESOURCE PROTECTION WELL REPORT

AMENDED

WELL TAG NO. ABN 268 START CARD NO. R05576

PROJECT NAME: Tulalip Tribe COUNTY: Snohomish 3015/20C

WELL IDENTIFICATION NO. Monitoring LOCATION NE ¼ NW ¼ Sec 20 Twn 30N R 5E

DRILLING METHOD: Hollow Stem Auger STREET ADDRESS OF WELL: 27th Ave N.E + 88th St. N.E Tulalip Tribe, Marysville

DRILLER: Henry Gregory WATER LEVEL ELEVATION: n/a

FIRM: Gregory Drilling Inc. GROUND SURFACE ELEVATION: n/a

SIGNATURE: Henry Gregory INSTALLED: 12/7/95

CONSULTING FIRM: AGRA DEVELOPED: AGRA

REPRESENTATIVE: Henry Brenneman

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DEC 19 1995
DEPT. OF ECOLOGY

Soil Type	Depth (in feet below ground surface)
0 – 6" Sand-Gravel (Road-Base)	0
6" – 1.5' Sict	
1.5 – 17' Sand Brown.	1.5
	17.5
17 – 23 Sand some small Gravels	20
23 – 30 Sand Brown medium Coarse	
	30

Stick-up Height (if applicable)

Monument Type 8" monument Flush

Well Cap Type 2" J-Plug

Grout Type/#Sacks 3 s/cs Concrete mix

Bentonite Seal/#Sacks 1 sk Bentonite chips 3 sks Enviroplug Grout ½ sk. Bentonite Gel

Well Casing I.D.: 2"

Type of casing Sch 40 P.V.C.

Type of connection flush thread

Filter Pack/size/#Sacks Silica 10-20 - 6 sks

Well Screen I.D 2"

Type of Screen Sch 40 P.V.C.

Slot size .020

Diameter of borehole 8"

Endcap Type flush thread

Remarks:

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

RESOURCE PROTECTION WELL REPORT

ENTERED

30/5/80 C

START CARD NO. R05574

WELL TAG NO. ABN 271

PROJECT NAME: Tulalip Tribe

WELL IDENTIFICATION NO. Monitoring

DRILLING METHOD: Hollow Stem Auger

DRILLER: Larry Gregory

FIRM: Gregory Drilling Inc

SIGNATURE: Larry Gregory

CONSULTING FIRM: AGRA

REPRESENTATIVE: Henry Brenneman

COUNTY: Snohomish

LOCATION: NE¼ NW¼ Sec 20 Twn 30N R 5E

STREET ADDRESS OF WELL: 27th Ave N.E. & 88th ST. N.E Marysville, WA.

WATER LEVEL ELEVATION: n/a

GROUND SURFACE ELEVATION: n/a

INSTALLED: 12/14/95

DEVELOPED: AGRA

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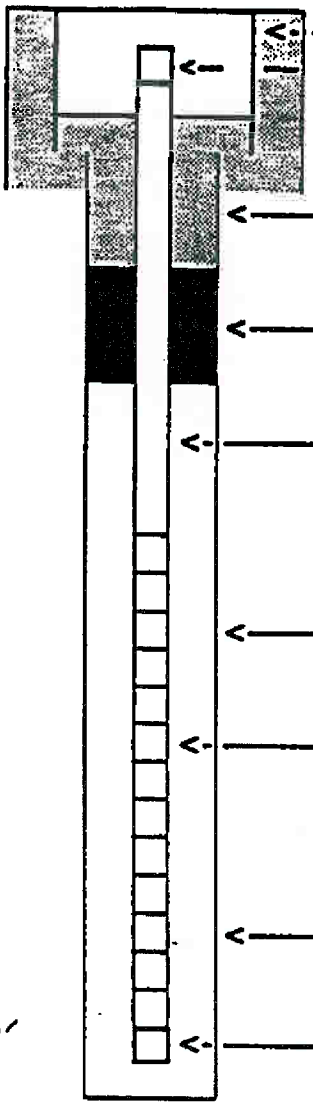
JAN 02 1996

DEPT. OF ECOLOGY

Soil Type	Depth (in feet below ground surface)
0 – 6" Sand-Gravel Road-Base	0
6" – 2.5' Sand Brown	1.5
2.5" – 25.0 SAND	3'
	5
	25'



Stick-up Height (if applicable)

Monument Type: 12" Monument Flush

Well Cap Type: 4" S-Plug

Grout Type/#Sacks: 4 sks Concrete mix.

Bentonite Seal/#Sacks: 4 sks Bentonite Chips

Well Casing I.D.: 4"

Type of casing: Sch 40 P.O.C.

Type of connection: flush thread

Filter Pack/size/#Sacks: Silica 10-20 9 sks

Well Screen I.D: 4"

Type of Screen: Sch 40 P.O.C

Slot size: .020

Diameter of borehole: 11"

Endcap Type: flush thread

Remarks:

ENTERED

RESOURCE PROTECTION WELL REPORT 30/5/206

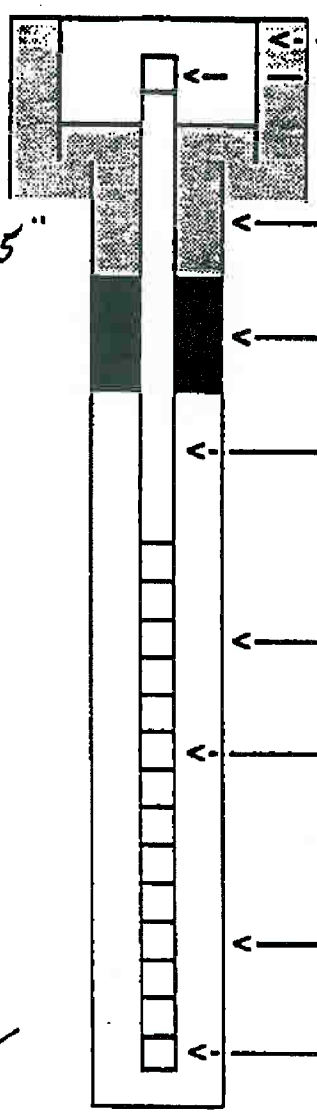
WELL TAG NO. ABN 269 START CARD NO. R05574

PROJECT NAME: Tulalip Tribe
WELL IDENTIFICATION NO. Monitoring
DRILLING METHOD: Hollow Stem Auger
DRILLER: Larry Gregory
FIRM: Gregory Drilling Inc
SIGNATURE: Larry Gregory
CONSULTING FIRM: AGRA
REPRESENTATIVE: Henry Brennerman

COUNTY: Snohomish
LOCATION: NE¼ NW¼ Sec 20 Twn 30N R 5E
STREET ADDRESS OF WELL: 27th Ave NE + 88th St NE, Marysville, Wa.
WATER LEVEL ELEVATION: n/a
GROUND SURFACE ELEVATION: n/a
INSTALLED: 12/14/95
DEVELOPED: AGRA

RECEIVED
JAN 02 1996
DEPT. OF ECOLOGY

Soil Type	Depth (in feet below ground surface)
0 — 6" Gravel - Sand Road - Base	0
6" — 2.0 Sand Brown Silty	1.5"
2.0 — 4.0 Sand - Some Gravel	3
	5
4.0 — 15.0 Sand	
	15'



Stick-up Height (if applicable) _____
Monument Type 8" Monument Flush
Well Cap Type 2" J-Plug
Grout Type/#Sacks 3 Sks Concrete mix
Bentonite Seal/#Sacks 2 Sks Bentonite chips
Well Casing I.D.: 2"
Type of casing Sch 40 P.V.C
Type of connection flush thread
Filter Pack/size/#Sacks Silica 10-20 5 Sks
Well Screen I.D 2"
Type of Screen Sch 40 P.V.C.
Slot size .020
Diameter of borehole 8"
Endcap Type flush thread

Remarks:

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

RESOURCE PROTECTION WELL REPORT 30/5/20C

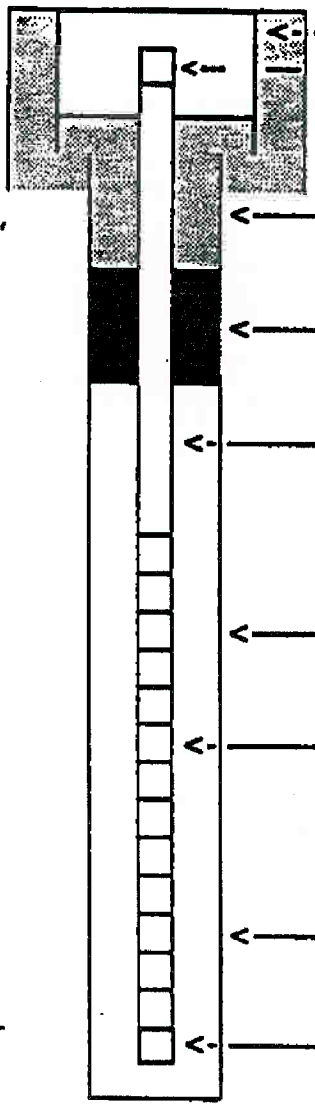
WELL TAG NO. ABN 270 (LOCATED) START CARD NO. R05574

PROJECT NAME: Tulalip Tribe
WELL IDENTIFICATION NO. Monitoring
DRILLING METHOD: Hollow Stem Auger
DRILLER: Larry Gregory
FIRM: Gregory Drilling Inc
SIGNATURE: Larry Gregory
CONSULTING FIRM: AGRA
REPRESENTATIVE: Henry Brennerman

COUNTY: Snohomish
LOCATION: NE¼ NW¼ Sec 20 Twn 30N R 5E
STREET ADDRESS OF WELL: 27th Ave N.E & 88th ST N.E. Marysville, Wa.
WATER LEVEL ELEVATION: n/a
GROUND SURFACE ELEVATION: n/a
INSTALLED: 12/14/95
DEVELOPED:

RECEIVED
JAN 02 1996
DEPT. OF ECOLOGY

Soil Type	Depth (in feet below ground surface)
0 – 6" Gravel - Sand Road-Base	0
6" – 2.5' Sand Brown	1.5'
	3
2.5 – 15.0 Sand	5
	15'



Stick-up Height (if applicable)
Monument Type: 8" Monument Flush
Well Cap Type: 2" J-Plug
Grout Type/#Sacks: 3 sks Concrete Mix
Bentonite Seal/#Sacks: 2 sks Bentonite Chips
Well Casing I.D.: 2"
Type of casing: Sch 40 P.V.C.
Type of connection: Flush Thread
Filter Pack/size/#Sacks: Silica 10-20 6 sks
Well Screen I.D: 2"
Type of Screen: Sch 40 P.V.C.
Slot size: .020
Diameter of borehole: 8"
Endcap Type: Flush Thread

Remarks:

MONITORING WELL REPORT

296620

Well ID# BAT530 30-SE-29L

Start Card # R72327

(1) OWNER/PROJECT

Name Tulalip Indian Tribe WELL NO. _____

Address 6319 "23rd Ave NE. Bldg B

City Tulalip State WA Zip 98271

(2) TYPE OF WORK

☒ New construction ☐ Alteration (Repair/Recondition)

☐ Conversion ☐ Deepening ☐ Abandonment

(3) DRILLING METHOD

☐ Rotary Air ☐ Rotary Mud ☐ Cable

☒ Hollow Stein Auger ☐ Other _____

(4) BORE HOLE CONSTRUCTION:

Special Standards ☐ Yes ☒ No Depth of Completed Well 20 ft.

Vault 0 ft. TO 1 ft.

Special Standards

Seal 1 ft. TO 9 ft.

Filter pack: 9 ft. TO 20 ft.

Water-tight cover

Surface flush vault

Locking cap

Casing diameter 2"

Material PVC

Welded ☐ Threaded ☒ Glued ☐

Well Seal:

Material Bentonite Chips

Amount _____

Grout weight _____

Borehole diameter:

10 in. from ___ ft. to ALL ft.

___ in. from ___ ft. to ___ ft.

Bentonite plug at least 3 ft. thick

Screen:

Material PVC 2"

From ___ ft. to ___

Slot size 10 in.

Filter pack:

Material Colorado sand

Size 10/20

(5) WELL TESTS:

☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Permeability _____ Yield _____ GPM

Conductivity _____ PH _____

Temperature of water _____ Did they collect artesian flow found _____ ft

Was water analysis done? ☐ Yes ☐ No

By whom? _____

Depth of strata to be analyzed. From _____ ft. to _____ ft.

Remarks: _____

Name Of Supervising Geologist/Engineer Geo Engineers

(6) LOCATION OF WELL By *legal description:*

County Snohomish Latitude _____ Longitude _____

Township 30N (N or S) Range 5E (E or W) Section 29

SW 1/4 of NE 1/4 of above section.

Street address of well location Tulalip Tribal Lands

Tax lot number of well location 300532001040O

(7) STATIC WATER LEVEL:

_____ Ft. below land surface. Date _____

Artesian Pressure _____ lb/sq. in. Date _____

(8) WATER BEARING ZONES:

Depth at which water was first found _____

From	To	Est. Flow Rate	SWL

(9) WELL LOG:

Ground Elevation _____

Material	From	To	SWL
Sand	0	20	

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APR 21 2008

DEPT. OF ECOLOGY

Date started 1/3/08 Completed 1/3/08

WELL CONSTRUCTION CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Type or Print Name Jay Graham License No 1621

Trainee Name Ian Wolfe License No 2875T

Drilling Company Holocene Drilling Inc

(Signed) _____ License No. 1621

Address 3719 78th Ave E Bldg B Fife WA 98424

Registration No. HOLOCOI044KP Date 4/15/08

MONITORING WELL REPORT

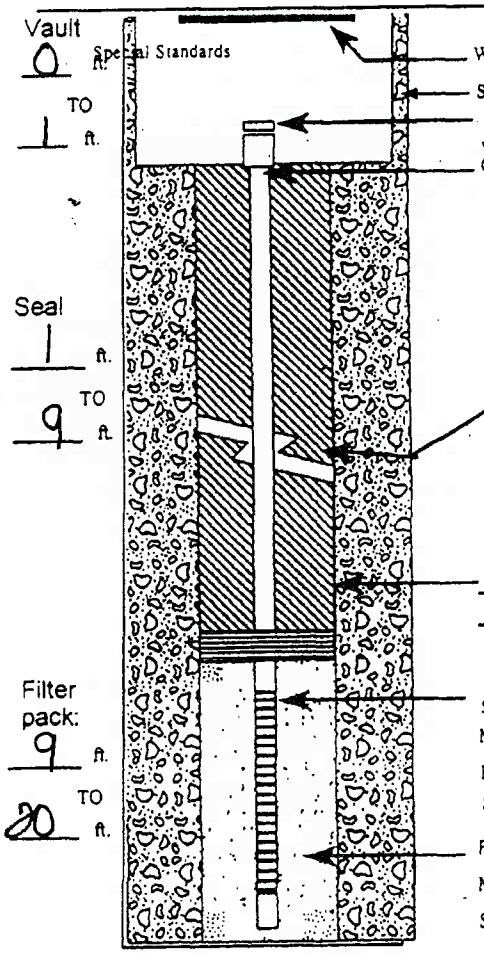
Well ID# BAT535 30-SE-29L
Start Card # R72327
296621

(1) OWNER/PROJECT
Name Tulalip Indian Tribe WELL NO.
Address 6319 23rd Ave NE Bldg B
City Tulalip State WA Zip 98271

(2) TYPE OF WORK
☒ New construction ☐ Alteration (Repair/Recondition)
☐ Conversion ☐ Deepening ☐ Abandonment

(3) DRILLING METHOD
☐ Rotary Air ☐ Rotary Mud ☐ Cable
☒ Hollow Stem Auger ☐ Other

(4) BORE HOLE CONSTRUCTION:
Special Standards ☐ Yes ☒ No Depth of Completed Well 20 ft.



Water-tight cover
Surface flush vault
Locking cap
Casing diameter 2"
Material PVC
Welded ☐ Threaded ☒ Glued ☐

Well Seal:
Material Bentonite Chips
Amount
Grout weight

Borehole diameter:
10 in. from 0 ft. to 20 ft.
___ in. from ___ ft. to ___ ft.

Bentonite plug at least 3 ft. thick

Screen:
Material PVC 2"
From ___ ft. to ___
Slot size 10 in.

Filter pack:
Material Colorado sand
Size 10/20

(5) WELL TESTS:
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian
Permeability ___ Yield ___ GPM
Conductivity ___ PH ___
Temperature of water ___ OF/C Depth artesian flow found ___ ft
Was water analysis done? ☐ Yes ☒ No
By whom? ___
Depth of strata to be analyzed: From ___ ft. to ___ ft.
Remarks: ___

Name Of Supervising Geologist/Engineer Geo Engineers

(6) LOCATION OF WELL By *legal description:*
County Snohomish Latitude ___ Longitude ___
Township 30N (N or S) Range 5E (E or W) Section 29
SW 1/4 of NE 1/4 of above section.
Street address of well location Tulalip Tribal Lands
Tax lot number of well location 300529001040O

(7) STATIC WATER LEVEL:
___ Ft. below land surface Date ___
Artesian Pressure ___ lbs/sq in Date

(8) WATER BEARING ZONES:
Depth at which water was first found ___

From	To	Est. Flow Rate	SWL

(9) WELL LOG:
Ground Elevation ___

Material	From	To	SWL
sand	0	20	

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APR 21 2008
DEPT. OF ECOLOGY

Date started 1/3/08 Completed 1/3/08

WELL CONSTRUCTION CERTIFICATION:
I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Type or Print Name Jay Graham License No 1621
Trainee Name Ian Wolfe License No 2875T
Drilling Company Holocene Drilling Inc
(Signed) ___ License No 1621
Address 3719 70th Ave E Bldg B Fife WA 98424
Registration No. HOLOCOI044KF Date 4/18/08

MONITORING WELL REPORT 296622

Well ID# BAT514 30-5E-29L
Start Card # R72327

(1) OWNER/PROJECT
Name Tulalip Indian Tribe WELL NO.
Address 6319 23rd Ave NE Bldg B
City Tulalip State WA Zip 98271

(2) TYPE OF WORK
☒ New construction ☐ Alteration (Repair/Recondition)
☐ Conversion ☐ Deepening ☐ Abandonment

(3) DRILLING METHOD
☐ Rotary Air ☐ Rotary Mud ☐ Cable
☒ Hollow Stem Auger ☐ Other

(4) BORE HOLE CONSTRUCTION:
Special Standards ☐ Yes ☒ No Depth of Completed Well 20 ft.

Vault 0 ft. TO 1 ft.
Special Standards
Water-tight cover
Surface flush vault
Locking cap
Casing diameter 2"
Material PVC
Welded ☐ Threaded ☒ Glued ☐

Seal 1 ft. TO 9 ft.
Well Seal:
Material Bentonite Chips
Amount
Grout weight

Borehole diameter:
10 in. from ___ ft. to PBTD ft
___ in. from ___ ft. to ___ ft.
Bentonite plug at least 3 ft. thick

Filter pack: 9 ft. TO 20 ft.
Screen:
Material PVC 2"
From ___ ft. to ___
Slot size 10 in.
Filter pack:
Material Colorado sand
Size 10/20

(5) WELL TESTS:
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian
Permeability ___ Yield ___ GPM
Conductivity ___ PH ___
Temperature of water ___ Depth artesian flow found ___ ft.
Was water analysis done? ☐ Yes ☐ No
By whom? ___
Depth of strata to be analyzed. From ___ ft. to ___ ft.
Remarks: ___
Name Of Supervising Geologist/Engineer Geo Engineers

(6) LOCATION OF WELL By *legal description:*
County Snohomish Latitude ___ Longitude ___
Township 30N (N or S) Range 5E (E or W) Section 29
SW 1/4 of NE 1/4 of above section.
Street address of well location Tulalip Tribal Lands
Tax lot number of well location 300529001040O

(7) STATIC WATER LEVEL:
___ Ft below land surface Date ___
Artesian Pressure ___ lb/sq. in Date

(8) WATER BEARING ZONES:
Depth at which water was first found ___

From	To	Est. Flow Rate	SWL

(9) WELL LOG:
Ground Elevation ___

Material	From	To	SWL
Sand	0	20	

RECEIVED
APR 21 2008
DEPT OF ECOLOGY

Date started 1/4/08 Completed 1/4/08

WELL CONSTRUCTION CERTIFICATION:
I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Type or Print Name Jay Graham License No 1621
Trainee Name Ian Wolfe License No 2875T
Drilling Company Holocene Drilling Inc
(Signed) ___ License No 1621
Address 3719 70th Ave E Bldg B Fife WA 98424
Registration No. HOLOCOI044KP Date 4/18/08

MONITORING WELL REPORT 296623

Well ID# BAT516 30-SE-29L
Start Card # R72327

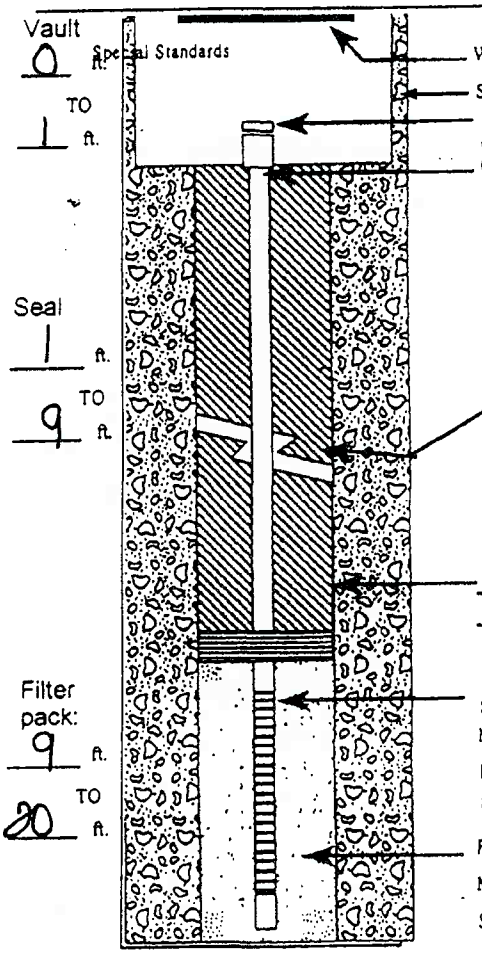
(1) OWNER/PROJECT
Name Tulalip Indian Tribe WELL NO.
Address 6319 23rd Ave NE Bldg B
City Tulalip State WA Zip 98271

(2) TYPE OF WORK
☒ New construction ☐ Alteration (Repair/Recondition)
☐ Conversion ☐ Deepening ☐ Abandonment

(3) DRILLING METHOD
☐ Rotary Air ☐ Rotary Mud ☐ Cable
☒ Hollow Stem Auger ☐ Other

(4) BORE HOLE CONSTRUCTION:
Special Standards ☐ Yes ☒ No Depth of Completed Well 20 ft.

Vault 0 ft. Special Standards
TO 1 ft.
Seal 1 ft. TO 9 ft.
Filter pack: 9 ft. TO 20 ft.



Water-tight cover
Surface flush vault
Locking cap
Casing diameter 2"
Material PVC
Welded ☐ Threaded ☒ Glued ☐
Well Seal: Material Bentonite Chips Amount
Grout weight
Borehole diameter: 16 in. from ft. to PM ft.
in. from ft. to ft.
Bentonite plug at least 3 ft. thick
Screen: Material PVC 2" From ft. to
Slot size 10 in.
Filter pack: Material Colorado sand Size 10/20

(5) WELL TESTS:
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian
Permeability Yield GPM
Conductivity PH
Temperature of water OF/C Depth artesian flow found ft
Was water analysis done? ☐ Yes ☐ No
By whom?
Depth of strata to be analyzed: From ft. to ft.
Remarks:
Name Of Supervising Geologist/Engineer Geo Engineers

(6) LOCATION OF WELL By *legal description:*
County Snohomish Latitude Longitude
Township 30N (N or S) Range 5E (E or W) Section 29
SW 1/4 of NE 1/4 of above section.
Street address of well location Tulalip Tribal Lands
Tax lot number of well location 300529001040O

(7) STATIC WATER LEVEL:
Ft. below land surface Date
Artesian Pressure lbs/sq. in Date

(8) WATER BEARING ZONES:
Depth at which water was first found

From	To	Est. Flow Rate	SWL

(9) WELL LOG:
Ground Elevation

Material	From	To	SWL
Sand	0	20	

RECEIVED
APR 21 2008
DEPT. OF ECOLOGY

Date started 1/4/08 Completed 1/4/08

WELL CONSTRUCTION CERTIFICATION:
I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief

Type or Print Name Jay Graham License No 1621
Trainee Name Ian Wolfe License No 2875T
Drilling Company Holocene Drilling Inc
(Signed) License No 1621
Address 3719 70th Ave E Bldg B Fife WA 98424
Registration No. HOLOCOI044KT Date 4/15/08

MONITORING WELL REPORT

296624

Well ID: GeoTech Soil Boring
Start Card # S339673 30 5E 29 G

(1) OWNER/PROJECT
Name: Tulalip Indian Tribe WELL NO.
Address: 6319 33rd Ave NE, Bldg B
City: Tulalip State: WA Zip: 98271

(2) TYPE OF WORK
☐ New construction ☐ Alteration (Repair/Recondition)
☐ Conversion ☐ Deepening ☒ Abandonment

(3) DRILLING METHOD
☐ Rotary Air ☒ Rotary Mud ☐ Cable
Hollow Stem Auger ☐ Other

(4) BORE HOLE CONSTRUCTION:
Special Standards: Yes ☐ No ☒ Depth of Completed Well 101.5 ft.

Vault
Special Standards
___ ft. TO ___ ft.
Water-tight cover
Surface flush vault
Locking cap
Casing diameter
Material
Welded ☐ Threaded ☐ Glued ☐

Seal
___ ft. TO ___ ft.
Well Seal:
Material Bentonite Chips
Amount
Grout weight

Borehole diameter:
___ in. from ___ ft. to ___ ft.
___ in. from ___ ft. to ___ ft.
Bentonite plug at least 3 ft. thick

Filter pack:
___ ft. TO ___ ft.
Screen:
Material
From ___ ft. to ___
Slot size ___ in.
Filter pack:
Material
Size

(5) WELL TESTS:
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian
Permeability ___ Yield ___ GPM
Conductivity ___ PH ___
Temperature of water ___ OF/C Depth artesian flow found ___ ft.
Was water analysis done? ☐ Yes ☐ No
By whom?
Depth of strata to be analyzed: From ___ ft. to ___ ft.
Remarks:
Name Of Supervising Geologist/Engineer GeoEngineers

(6) LOCATION OF WELL By legal description:
County Snohomish Latitude ___ Longitude ___
Township 30N (N or S) Range 5E (E or W) Section 29
SW 1/4 of NE 1/4 of above section
Street address of well location 27th Ave NE
Marysville WA
Tax lot number of well location 30052900102400

(7) STATIC WATER LEVEL:
___ Ft. below land surface Date ___
Artesian Pressure ___ lbs/sq. in. Date ___

(8) WATER BEARING ZONES:
Depth at which water was first found ___

From	To	Est. Flow Rate	S W L

(9) WELL LOG:
Ground Elevation ___

Material	From	To	S W L
Sand	0	101.5	

RECEIVED
APR 21 2008
DOE/TCP/SWRO

Date started 1/3/08 Completed 1/4/08

WELL CONSTRUCTION CERTIFICATION
I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Type or Print Name Jay Graham License No 1621
Trainee Name Jerrad Thompson License No 2823T
Drilling Company Holocene Drilling Inc
Signed ___ License No 1621
Address 3719 70th Ave E Bldg B Fife WA 98424
Registration No HOLOCOI044KH Date 4/15/08

File Original and First Copy with Department of Ecology
Second Copy—Owner's Copy
Third Copy—Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. [redacted]

Water Right Permit No. 32/5/20C

(1) OWNER: Name Bruce Kelly Address 8510 - 24th Ave NE Marysville

(2) LOCATION OF WELL: County Snohomish NE ¼ NW ¼ Sec 20 T. 30 N., R. 5 W.M.

(2a) STREET ADDDRESS OF WELL (or nearest address) 8510 - 24th Ave NE, Marysville

(3) PROPOSED USE: [X] Domestic [ ] Irrigation [ ] DeWater [ ] Industrial [ ] Test Well [ ] Municipal [ ] Other

(4) TYPE OF WORK: Owner's number of well (if more than one) _____
Abandoned [ ] New well [X] Deepened [ ] Reconditioned [ ] Method: Dug [ ] Cable [ ] Rotary [X] Bored [ ] Driven [ ] Jetted [ ]

(5) DIMENSIONS: Diameter of well 6 inches. Drilled 38 feet. Depth of completed well 38 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 6 " Diam. from 0 ft. to 33 ft.
Welded [X] Liner installed [ ] Threaded [ ] _____ " Diam. from _____ ft. to _____ ft.
Perforations: Yes [ ] No [X]
Type of perforator used _____
SIZE of perforations _____ in. by _____ in.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
Screens: Yes [X] No [ ]
Manufacturer's Name JOHNSON
Type STAINLESS Model No. _____
Diam. 6 Slot size .012 from 33 ft. to 38 ft.
Diam. _____ Slot size _____ from _____ ft. to _____ ft.
Gravel packed: Yes [ ] No [X] Size of gravel _____
Gravel placed from _____ ft. to _____ ft.
Surface seal: Yes [X] No [ ] To what depth? 18 ft.
Material used in seal BENTONITE
Did any strata contain unusable water? Yes [ ] No [X]
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

(7) PUMP: Manufacturer's Name _____
Type: _____ H.P. _____

(8) WATER LEVELS: Land-surface elevation above mean sea level 50 ft.
Static level 12 ft. below top of well Date 8-29-92
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes [ ] No [ ] If yes, by whom? _____
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
" " " "
" " " "
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____
Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Airtest 5.5 gal./min. with stem set at 36 ft. for 1 hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water _____ Was a chemical analysis made? Yes [ ] No [X]

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
BROWN SANDY LOAM	0	7
GRAY CLAY	7	19
GRAY CLAY/WATER BEARING	20	38

RECEIVED
SEP 24 1992
DEPT. OF ECOLOGY

Work started 8-28 , 19. Completed 8-29 , 1992

WELL CONSTRUCTOR CERTIFICATION:
I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Steven R. Staley Drilling (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)
Address P.O. Box 87, Stanwood, Wa 98292
(Signed) Steven R. Staley (WELL DRILLER) License No. 1904
Contractor's Registration No. STEVERS172PF Date 8-28, 1992

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20 (10/87) -1329

File Original and First Copy with Department of Ecology
Second Copy—Owner's Copy
Third Copy—Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. [redacted] 30/5/20C

Water Right Permit No. _____

(1) OWNER: Name Jennie Kelly Address 8510A -24th AVE NE, Marysville

(2) LOCATION OF WELL: County Snohomish NE ¼ NW ¼ Sec. 20 T. 30 N., R. 5 W.M.

(2a) STREET ADDDRESS OF WELL (or nearest address) 8510A - 24th AVE NE, Marysville

(3) PROPOSED USE: [X] Domestic [ ] Industrial [ ] Municipal [ ] Irrigation [ ] Test Well [ ] Other [ ] DeWater

(4) TYPE OF WORK: Owner's number of well (if more than one) _____

Abandoned [ ] New well [X] Method: Dug [ ] Bored [ ] Deepened [ ] Cable [ ] Driven [ ] Reconditioned [ ] Rotary [X] Jetted [ ]

(5) DIMENSIONS: Diameter of well 6 inches. Drilled 30 feet. Depth of completed well 30 ft.

(6) CONSTRUCTION DETAILS:

Casing Installed: 6 " Diam. from 0 ft. to 25 ft.
Welded [X] Liner installed [ ] Threaded [ ] " Diam. from _____ ft. to _____ ft.

Perforations: Yes [ ] No [X]
Type of perforator used _____
SIZE of perforations _____ in. by _____ in.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.

Screens: Yes [X] No [ ]
Manufacturer's Name JOHNSON
Type STAINLESS Model No. _____
Diam. 6 Slot size 012 from 25 ft. to 30 ft.
Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel packed: Yes [ ] No [X] Size of gravel _____
Gravel placed from _____ ft. to _____ ft.

Surface seal: Yes [X] No [ ] To what depth? 18 ft.
Material used in seal BENTONITE
Did any strata contain unusable water? Yes [ ] No [X]
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

(7) PUMP: Manufacturer's Name _____
Type: _____ H.P. _____

(8) WATER LEVELS: Land-surface elevation above mean sea level 50 ft.
Static level 12 ft. below top of well Date _____
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes [ ] No [ ] If yes, by whom? _____
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____
Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Airtest 5 gal./min. with stem set at 28 ft. for 1 hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water _____ Was a chemical analysis made? Yes [ ] No [ ]

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
BROWN SANDY LOAM	0	8
GRAY SAND W/ GRAVEL	8	19
GRAY SAND & GRAVEL	19	25
WATER BEARING	25	30

RECEIVED
SEP 24 1992
DEPT. OF ECOLOGY

Work started 8-28 19 Completed 8-28 19 92

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Steven R Staley Drilling (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)
Address P.O. Box 687, Stanwood Wa 98292
(Signed) Steven R. Staley (WELL DRILLER) License No. 1904
Contractor's Registration No. STEVERS 172PF Date 8-28 19 92

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1 20 (10/87) -1329

File Original and First Copy with Department of Ecology
Second Copy—Owner's Copy
Third Copy—Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. [redacted] 30/5/20C

Water Right Permit No. _____

(1) OWNER: Name DICK KELLY Address 8510 27TH AVE NE

(2) LOCATION OF WELL: County SNOHOMISH NE ¼ NW ¼ Sec. 20 T. 30 N., R. 5 W.M.

(2a) STREET ADDRESS OF WELL (or nearest address) 2331 86TH ST NE MARYSVILLE 98271

(3) PROPOSED USE: ☒ Domestic ☐ Industrial ☐ Municipal ☐ ☐ Irrigation ☐ Test Well ☐ Other ☐ ☐ DeWater

(4) TYPE OF WORK: Owner's number of well (if more than one) _____

Abandoned ☐ New well ☒ Method: Dug ☐ Bored ☐ Deepened ☐ Cable ☐ Driven ☐ Reconditioned ☐ Rotary ☒ Jetted ☐

(5) DIMENSIONS: Diameter of well 6 inches. Drilled 40 feet. Depth of completed well 38 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6 " Diam. from Ø ft. to 33 ft.

Welded ☒ Liner installed ☐ Threaded ☐ _____ " Diam. from _____ ft. to _____ ft.

_____ " Diam. from _____ ft. to _____ ft.

Perforations: Yes ☐ No ☒

Type of perforator used _____

SIZE of perforations _____ in. by _____ in.

_____ perforations from _____ ft. to _____ ft.

_____ perforations from _____ ft. to _____ ft.

_____ perforations from _____ ft. to _____ ft.

Screens: Yes ☒ No ☐

Manufacturer's Name JOHNSON

Type STAINLESS Model No. _____

Diam. 6" Slot size .014 from 33 ft. to 38 ft.

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel packed: Yes ☐ No ☒ Size of gravel _____

Gravel placed from _____ ft. to _____ ft.

Surface seal: Yes ☒ No ☐ To what depth? 18 ft.

Material used in seal BENTONITE

Did any strata contain unusable water? Yes ☐ No ☒

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

(7) PUMP: Manufacturer's Name _____

Type: _____ H.P. _____

(8) WATER LEVELS: Land-surface elevation above mean sea level 50 ft.

Static level 21 ft. below top of well Date 8-27-92

Artesian pressure _____ lbs. per square inch Date _____

Artesian water is controlled by _____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? Yes ☐ No ☐ If yes, by whom? _____

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

" " " "

" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____

Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.

Airtest 5 gal./min. with stem set at 35 ft. for 1 hrs.

Artesian flow _____ g.p.m. Date _____

Temperature of water _____ Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
BROWN SANDY LOAM	Ø	8
GRAY SAND	9	22
GRAY SAND, WATER BEARING	23	38
GRAY CLAY	39	40

RECEIVED
SEP 29 1992
DEPT. OF ECOLOGY

Work started 8-26 19. Completed 8-27 1992

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME STEVEN R. STALEY (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address P.O. Box 687 STANWOOD WA.

(Signed) Steven R Staley (WELL DRILLER) License No. 1404

Contractor's Registration No. STEVERS 172PF Date 8-27 1992

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20 (10/87) -1329