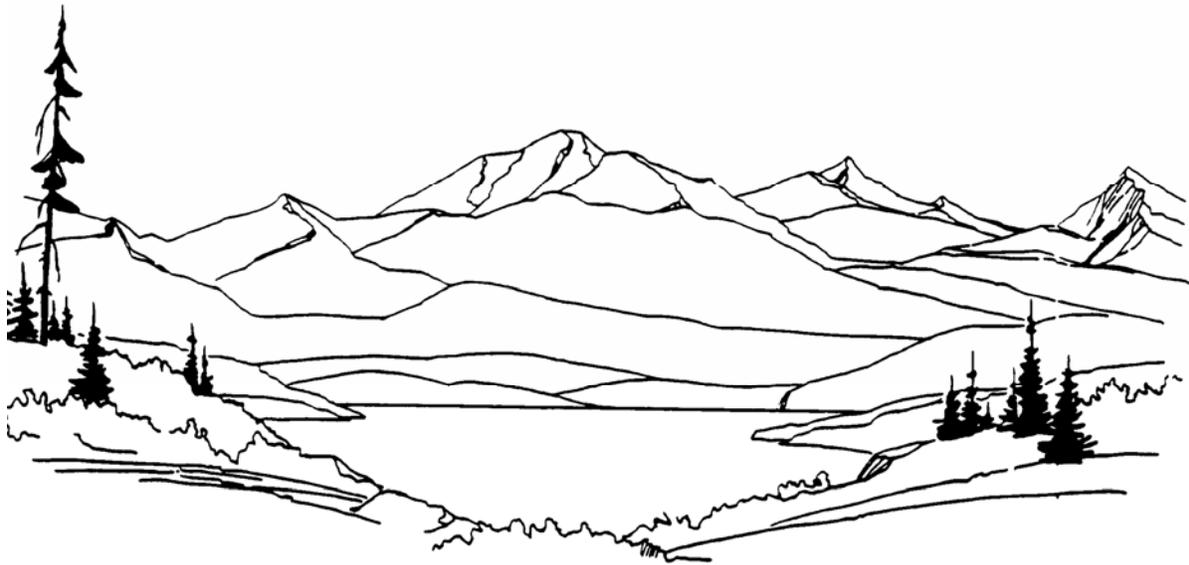


**STATE OF ALASKA  
DEPARTMENT OF NATURAL RESOURCES**

**DIVISION OF PARKS  
AND  
OUTDOOR RECREATION**



**PROPOSAL, CONTRACT, BOND  
AND SPECIAL PROVISIONS**

**DSP: VISITOR CENTER COMPLEX  
TRAIL CONSTRUCTION  
PROJECT NO. 74034-4**



# TABLE OF CONTENTS

(Federal Aid)

1. <u>Invitation</u>		
INVITATION FOR BIDS	25D-7DNR	(06/11)
SPECIAL NOTICE TO BIDDERS		
2. <u>Bid Notices</u>		
REQUIRED DOCUMENTS	25D-4DNR	(11/10)
FEDERAL EEO BID CONDITIONS	25A-301DNR	(3/12)
3. <u>Forms</u>		
SUBCONTRACTOR LIST	25D-5DNR	(10/12)
CONTRACTOR'S QUESTIONNAIRE	25D-8DNR	(11/10)
BID FORM	25D-9DNR	(06/11)
BID SCHEDULE		
CONSTRUCTION CONTRACT	25D-10ADNR	(06/11)
PAYMENT BOND	25D-12DNR	(11/10)
PERFORMANCE BOND	25D-13DNR	(11/10)
BID BOND	25D-14DNR	(11/10)
BID MODIFICATION	25D-16DNR	(11/10)
MATERIAL ORIGIN CERTIFICATE	25D-60DNR	(08/01)
EEO-1 CERTIFICATION	25A-304DNR	(08/01)
4. <u>Contract Provisions and Specifications</u>		
SPECIAL PROVISIONS		
APPENDIX A – PERMITS		
APPENDIX B – SURVEY REQUIREMENTS		
APPENDIX C – ESCP (EROSION SEDIMENT CONTROL PLAN)		
APPENDIX D – SPECIAL REPORTS		
APPENDIX E – MASTER CERTIFICATION LIST (MCL)		
5. <u>Federal Wage Rates</u>		
Federal wage rates can be obtained at <a href="http://www.wdol.gov/dba.aspx">http://www.wdol.gov/dba.aspx</a> for the State of Alaska. Use the federal wage rates that are in effect 10 days before Bid Opening. The Department will include a paper copy of the federal wage rates in the signed Contract.		
6. <u>State Wage Rates</u>		
State wage rates can be obtained at <a href="http://www.labor.state.ak.us/lss/pamp600.htm">http://www.labor.state.ak.us/lss/pamp600.htm</a> . Use the State wage rates that are in effect 10 days before Bid Opening. The Department will include a paper copy of the state wage rates in the signed Contract.		





STATE OF ALASKA  
DEPARTMENT OF NATURAL RESOURCES

**INVITATION FOR BIDS**  
for Construction Contract

Date May 20, 2016

**DSP: VISITOR CENTER COMPLEX TRAIL CONSTRUCTION, PROJECT NO. 74034-4**

**Project Name and Number**

Location of Project: MP 134.5 OF GEORGE PARKS HIGHWAY  
Contracting Officer: Rys Miranda, P.E. – Chief, Design & Construction  
Issuing Office: Design & Construction Section, Division of Parks and Outdoor Recreation  
State Funded  Federal Aid

Description of Work:

This project consists of constructing approximately 4,800 linear feet of trail construction. The work includes clearing and grubbing, excavation, installation of 1,448 square feet of concrete block walls, import of borrow and recycled asphalt material, installation of culverts, riprap and topsoil and seed.

The Engineer's Estimate is:  Less than \$100,000  Between \$1,000,000 and \$2,500,000  
 Between \$100,000 and \$250,000  Between \$2,500,000 and \$5,000,000  
 Between \$250,000 and \$500,000  Greater than \$5,000,000  
 Between \$500,000 and \$1,000,000

All work shall be completed in N/A Calendar Days, or by SEPTEMBER 15, 2016.  
Interim Completion dates, if applicable, will be shown in the Special Provisions.

**Bidders are invited to submit sealed bids, in single copy, for furnishing all labor, equipment, and materials and for performing all work for the project described above. Bids will be opened publicly at 2:00 PM local time, at 550 W. 7<sup>th</sup> Ave., Suite 1380; Anchorage, AK 99501 on the 10<sup>th</sup> of June 20 16.**

**SUBMISSION OF BIDS**

ALL BIDS INCLUDING ANY AMENDMENTS OR WITHDRAWALS MUST BE RECEIVED PRIOR TO BID OPENING. BIDS SHALL BE SUBMITTED ON THE FORMS FURNISHED AND MUST BE IN A SEALED ENVELOPE MARKED AS FOLLOWS:

<p><b>Bid for Project:</b> <b>DSP: VISITOR CENTER COMPLEX TRAIL CONSTRUCTION</b> <b>PROJECT NO. 74034-4</b></p>	<p><b>ATTN:</b> <b>Design &amp; Construction Section</b> <b>Division of Parks &amp; Outdoor Recreation</b> <b>550 W. 7<sup>th</sup> Ave., Suite 1380</b> <b>Anchorage AK 99501</b></p>
---	--

Bids, amendments or withdrawals transmitted by mail must be received at the above specified address no later than 30 minutes prior to the scheduled time of bid opening. Hand-delivered bids, amendments or withdrawals must be received at the above specified address prior to the scheduled time of bid opening. Faxed bid amendments must be addressed to the above specific address. Fax number: (907) 269-8917.

*A bid guaranty is required with each bid in the amount of 5% of the amount bid. (Alternate bid items as well as supplemental bid items appearing on the bid schedule shall be included as part of the total amount bid when determining the amount of bid guaranty required for the project.)*

The Department hereby notifies all bidders that it will affirmatively insure that in any contract entered into pursuant to this Invitation, Disadvantaged Business Enterprises (DBEs) will be afforded full opportunity to submit bids and will not be discriminated against on the grounds of race, color, national origin, or sex in consideration for an award.

## NOTICE TO BIDDERS

Bidders are hereby notified that data to assist in preparing bids is available as follows:

SEE SPECIAL NOTICE TO BIDDERS

---

Plans and Specifications may be downloaded from: <http://dnr.alaska.gov/parks/designconstruct/bidcalresults.htm>  
For additional information contact:

Kathleen Raynor  
550 W. 7th Ave., Suite 1380  
Anchorage AK 99501  
Phone: (907) 269-8731      Fax: (907) 269-8907      Email: [kathleen.raynor@alaska.gov](mailto:kathleen.raynor@alaska.gov)

---

All questions relating to design features, constructability, quantities, or other technical aspects of the project should be directed to the following. Bidders requesting assistance in viewing the project must make arrangements at least 48 hours in advance with:

Luke Randall, P.E.  
Project Manager  
Fax: (907) 269-8917      Phone: (907) 269-8734      Email: [luke.randall@alaska.gov](mailto:luke.randall@alaska.gov)

---

All questions concerning bidding procedures should be directed to:

Rys Miranda, P.E.  
Chief, Design & Construction  
550 W. 7<sup>th</sup> Ave., Suite 1340  
Anchorage AK 99501  
Phone: (907) 269-8736

---

Other Information:

Bid results are available approximately 30 minutes after each bid opening at  
<http://dnr.alaska.gov/parks/designconstruct/bidcalresults.htm>

## SPECIAL NOTICE TO BIDDERS

The Department hereby notifies bidders that information to assist in preparing bids is available.

1. Publications. These items are available upon request in the Anchorage Department of Transportation and Public Facilities Building Plans Room located at 4111 Aviation Avenue:
  - a. Standard Specifications for Highway Construction, 2015 Edition. Available online at: [http://www.dot.state.ak.us/stwddes/dcsspecs/pop\\_hwyspecs\\_english.shtml](http://www.dot.state.ak.us/stwddes/dcsspecs/pop_hwyspecs_english.shtml)
  - b. Alaska Test Methods Manual (Lab & Field), 2007 Edition. (\$25.00) Available online at: [http://www.dot.state.ak.us/stwddes/desmaterials/mat\\_waqtc/pop\\_testman.shtml](http://www.dot.state.ak.us/stwddes/desmaterials/mat_waqtc/pop_testman.shtml)
2. Other Publications. These items are available upon request from the Department of Natural Resources, Division of Parks & Outdoor Recreation, Design & Construction Section (DNR-DPOR-D&C) at 550 West 7<sup>th</sup> Avenue, Suite 1340, Anchorage, AK:
  - a. Quantity Computations.
3. Materials Certification List (MCL). The MCL provides the Engineer with the appropriate approving authority. Contractor, submit certification for each material to the Engineer. The MCL is included in Appendix E.
4. High Visibility Clothing. The Department requires all workers within the project limits to wear an outer visible surface or layer of high visibility color and retro-reflectivity. See subsection 643-3.11.
5. Prevailing Wage Requirements. The Lt. Governor certified the revised regulatory definition of "on-site" in 8 AAC 30.910 to clarify the scope of activities covered by Alaska's Little Davis Bacon Act (AS 36.05.010 - AS 36.05.110) as proposed by the Department of Labor and Workforce Development (DOLWD) proposed a. For a copy of the revised definition of 8 AAC 30.910, go to:  
<https://aws.state.ak.us/OnlinePublicNotices/Notices/Attachment.aspx?id=92888>

The Commissioner of the DOLWD has made a determination effective July 1, 2015 through June 30, 2017 requiring a 90 percent Alaska Resident hiring preference on public works contracts throughout the State. For a copy of this determination, go to:  
[http://labor.alaska.gov/lss/forms/2015-07-01-Res\\_Hire\\_Info\\_Notice.pdf](http://labor.alaska.gov/lss/forms/2015-07-01-Res_Hire_Info_Notice.pdf)
6. Section 641. ESCP has been provided by the Department in the Appendix C.





STATE OF ALASKA  
DEPARTMENT OF NATURAL RESOURCES

**REQUIRED DOCUMENTS**  
Federal-Aid Contracts

**REQUIRED FOR BID.** Bids will not be considered if the following documents are not completely filled out and submitted at the time of bidding:

1. **Bid Form (Form 25D-9DNR)**
  2. **Bid Schedule**
  3. **Bid Security**
  4. Any bid revisions must be submitted by the bidder prior to bid opening on the following form:  
**Bid Modification (Form 25D-16DNR)**
- 

**REQUIRED AFTER NOTICE OF APPARENT LOW BIDDER.** The apparent low bidder is required to complete and submit the following document within 5 working days after receipt of written notification:

1. **Subcontractor List (Form 25D-5DNR)**
- 

**REQUIRED FOR AWARD.** In order to be awarded the contract, the successful bidder must completely fill out and submit the following documents within the time specified in the intent to award letter:

1. **Construction Contract (Form 25D-10DNR)**
2. **Payment Bond (Form 25D-12DNR)**
3. **Performance Bond (Form 25D-13DNR)**
4. **Contractor's Questionnaire (25D-8DNR)**
5. **Certificate of Insurance** (from carrier)
6. **EEO-1 Certification (Form 25A-304DNR)**
7. **Material Origin Certificate (Form 25D-60DNR)**





STATE OF ALASKA  
DEPARTMENT OF NATURAL RESOURCES

## FEDERAL EEO BID CONDITIONS

### STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS FOR ALL NON-EXEMPT FEDERAL AND FEDERALLY-ASSISTED CONSTRUCTION CONTRACTS TO BE AWARDED IN THE STATE OF ALASKA

#### Authority and Guidelines.

The Alaska Department of Transportation & Public Facilities (Department), as a State Transportation Agency (STA), has authority under 23 U.S.C. 140 and its implementing regulations to conduct a compliance program addressing Equal Employment Opportunity (EEO) and Affirmative Action (AA) in employment on non-exempt federal and federally-assisted construction contracts that are awarded in the State of Alaska. The STA's authority to administer a contract compliance with Nondiscrimination, EEO and AA programs are authorized under 23 U.S.C., 49 U.S.C., Title VI of the Civil Rights Act of 1964, TEA-21 and implementing regulations. The provisions of 23 CFR 200 and 49 CFR 21 provide authority to determine, and where necessary obtain compliance with the nondiscrimination provisions of Title VI. Under the provisions of Title VI, 23 USC and related regulations, including 49 CFR 21 and 26, and 23 CFR Part 200, 230 and 633, it is the STA's responsibility to ensure compliance with and to enforce on all projects of Federal-aid contractors and subcontractors, whether a particular contract or work-site involves Federal-aid funds or not.

These citations confirm the requirement for contractors to provide, and States to obtain information that ensure non-discrimination in employment on all of Federal and federally-assisted projects, and through these provisions, provide for EEO for minorities and women in all terms and conditions of their employment at all of their facilities and on all projects.

1. Definitions. As used in these specifications:

- a. “**Covered area**” means the geographical area described in the solicitation from which this contract resulted;
- b. “**Employer identification number**” means the Federal Social Security number used on the Employer’s Quarterly Federal Tax Return, U.S. Treasury Department Form 941.
- c. “**Minority**” includes:
  - (1) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
  - (2) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture or origin, regardless of race);
  - (3) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
  - (4) American Indian or Alaska Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. Whenever the Contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and which is set forth in the solicitations from which this contract resulted.
3. The Contractor will submit in writing verification that the EEO Officer, project supervisor/foreman or other designated personnel responsible for civil rights have satisfactorily completed the Department's Civil Rights Training module, or will present assurances that training will be completed within three (3) months of the Preconstruction Conference.
4. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the DOL in the covered area, either individually or through an association, its affirmative action obligations on all work in the Plan area shall be in accordance with that Plan for those trades that have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make good faith effort to achieve an equal representation of minority and female employment under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or subcontractors in an approved Plan does not excuse any covered Contractor's or subcontractor's failure to make good faith efforts to achieve the Plan.
5. The Contractor shall implement the specific affirmative action standards provided in paragraphs 6(a) through 6(p) of these specifications.
6. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:
  - a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligations to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
  - b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.
  - c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.
  - d. Provide immediate written notification to the Civil Rights Office's Contract Compliance Officer when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.
  - e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 6(b) above.

- f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
- g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with on-site supervisory personnel such as Superintendent, general foreman, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and dispositions of the subject matter.
- h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.
- i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.
- j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's workforce.
- k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.
- l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
- m. Ensure that seniority practices, job classifications, work assignments and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.
- n. Ensure that all facilities and company activities are nonsegregated except that separate or single-used toilet, necessary changing facilities and necessary sleeping facilities shall be provided to assure privacy between the sexes.
- o. Document and maintain a record of all solicitations of offers for subcontractors from minority and female construction contractors and suppliers, including circulations of solicitations to minority and female contractor associations and other business associations.
- p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

7. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations 6(a) through 6(p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the Contractor is a member and participant, may be asserted as fulfilling any or more of its obligations under 6(a) through 6(p) of these specifications provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female work force participation, makes a good faith effort to meet its individual EEO obligations, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.
8. The Contractor is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation if a particular group is employed in a substantially disparate manner.
9. The Contractor shall not use the equal employment or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.
10. The Contractor shall not enter into any subcontract with any person or firm debarred from government contracts.
11. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in item 6(a-p) above, so as to achieve maximum results from its efforts to ensure equal employment opportunities.
12. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic apprentice, trainees, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that the existing records satisfy this requirement, Contractors shall not be required to maintain separate records.
13. Nothing herein provided shall be construed as a limitation upon the application of other laws that establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Programs).
14. The Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.
15. EEO/AA obligations are applicable to all of the Contractor's construction work (whether or not it is federal or federally-assisted) performed in the covered area. The hours on minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of equalizing minority and female employment percentages shall be a violation of the contract. Compliance with equal minority and female employment utilization will be measured against the total work hours performed.
16. The Contractor shall provide written notification to the Department, for all subcontracts documents as follows: the name, address and telephone number of subcontractors and their employer identification number; the estimated dollar amount of the subcontracts; estimated starting and completion dates of the subcontracts; and the geographical area in which the contract is to be performed.

This written notification shall be required for all construction subcontracts in excess of \$10,000 at any tier for construction work under the contract resulting from this project's solicitation.

17. As used in the Bid Notice, and in the contract resulting from this project's solicitation, the "covered area" is the State of Alaska.









2. What percent of the total value of this contract do you intend to subcontract? \_\_\_\_\_%

3. Do you propose to purchase any equipment for use on this project?

NO       YES      If YES, describe type, quantity, and approximate cost:

---

---

---

4. Do you propose to rent any equipment for this work?

NO       YES      If YES, describe type and quantity:

---

---

---

5. Is your bid based on firm offers for all material necessary for this project?

NO       YES      If NO, explain:

---

---

---

### C. EXPERIENCE

1. Have you had previous construction contracts or subcontracts with the State of Alaska?

NO       YES      If YES, explain:

---

---

---

---

2. List, as an attachment to this questionnaire, other construction projects you have completed, the dates of completion, scope of work, and total contract amount for each project completed in the past 12 months.

**I hereby certify that the above statements are true and complete.**

\_\_\_\_\_  
Name of Contractor

\_\_\_\_\_  
Name & Title of Person Signing

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date



STATE OF ALASKA  
DEPARTMENT OF NATURAL RESOURCES

**BID FORM**

for

**DSP: VISITOR CENTER COMPLEX TRAIL CONSTRUCTION, PROJECT NO. 74034-4**

Project Name and Number

by

Company Name

Company Address (Street or PO Box, City, State, Zip)

**TO THE CONTRACTING OFFICER,  
DEPARTMENT OF NATURAL RESOURCES:**

In compliance with your Invitation for Bids dated June 10, 2016, the Undersigned proposes to furnish and deliver all the materials and do all the work and labor required in the construction of the above-referenced Project, located at or near MP 134.5 OF GEORGE PARKS HIGHWAY, Alaska, according to the plans and specifications and for the amount and prices named herein as indicated on the Bid Schedule consisting of 2 sheets, which is made a part of this Bid.

The Undersigned declares that he has carefully examined the contract requirements and that he has made a personal examination of the site of the work; that he understands that the quantities, where such are specified in the Bid Schedule or on the plans for this project, are approximate only and subject to increase or decrease, and that he is willing to perform increased or decreased quantities of work at unit prices bid under the conditions set forth in the Contract Documents.

The Undersigned hereby agrees to execute the said contract and bonds within fifteen calendar days, or such further time as may be allowed in writing by the Contracting Officer, after receiving notification of the acceptance of this bid, and it is hereby mutually understood and agreed that in case the Undersigned does not, the accompanying bid guarantee shall be forfeited to the State of Alaska, Department of Natural Resources as liquidated damages, and the said Contracting officer may proceed to award the contract to others.

The Undersigned agrees to commence the work within 10 calendar days, and to complete the work within N/A calendar days, after the effective date of the Notice to Proceed, or by SEPTEMBER 15, 2016, unless extended in writing by the Contracting Officer.

The Undersigned proposes to furnish Payment Bond in the amount of 100% (of the contract) and Performance Bond in the amount of 100% (of the contract), as surety conditioned for the full, complete and faithful performance of this contract.



# BID SCHEDULE

STATE OF ALASKA – DEPARTMENT OF NATURAL RESOURCES – DIVISION OF PARKS AND OUTDOOR RECREATION

Project Name: **DSP: VISITOR CENTER COMPLEX TRAIL CONSTRUCTION**

Project Number: **PROJECT NO. 74034-4**

Before preparing this bid schedule, read carefully, Section 102 of the 2015 edition of the Standard Specifications for Highway Construction, and the following:

The Bidder shall insert, as called for, a unit price or lump sum price in figures opposite each pay item for which an estimated quantity appears in the bid schedule. A unit price or lump sum price is not to be entered or tendered for any pay item not appearing in the bid schedule. The estimated quantity of work for payment on a lump sum basis will be "All Required" (All Req'd) and as further specified in the contract.

Whenever a Contingent Sum is shown for any item in this schedule, such amount shall govern and be included in the bid total.

Conditioned or qualified bids will be considered non-responsive.

Notice: Bids will be compared on the basis of the adjusted bid amount for determination of the low bidder. Contract award will be made on the basis of the basic bid or the basic bid plus additive alternate(s) to the extent of the availability of construction funds. If the order of bidders is not affected, award may be made on any combination of alternates. If the order of bidders is affected, award may be made on any number of alternates in the order listed, or none, as may be in the best interest of the Department. Alternates are not, however, part of the basic bid.

The bidder shall insert a unit bid price for each pay item listed below. Type or print legibly.

Pay Item Number	Pay Item Description	Pay Unit	Quantity	Unit Bid Price	Amount Bid
***** BASIC BID *****					
201(3A)	Clearing and Grubbing	Acre	1.35	\$	\$
203(3)	Unclassified Excavation	C.Y.	890	\$	\$
203(5A)	Selected Material, Type A	C.Y.	2,000	\$	\$
301(5)	Recycled Asphalt Material	Ton	660	\$	\$
530(1)	Concrete Block Wall	S.F.	1,448	\$	\$
603(1-12)	12 Inch CSP	L.F.	15	\$	\$
603(1-24)	24 Inch CSP	L.F.	120	\$	\$

BID SCHEDULE  
 DSP: VISITOR CENTER COMPLEX  
 TRAIL CONSTRUCTION  
 Project No. 74034-4

Name of Bidding Firm: \_\_\_\_\_

Pay Item Number	Pay Item Description	Pay Unit	Quantity	Unit Bid Price	Amount Bid
-----------------	----------------------	----------	----------	----------------	------------

\*\*\*\*\* CONTINUE BASIC BID \*\*\*\*\*

603(3-24)	End Section for 24 CSP	Each	16	\$	\$
611(2)	Riprap, Class I	Ton	30	\$	\$
618(2)	Seeding	Pound	25	\$	\$
620(1)	Topsoil	S.Y.	2,990	\$	\$
640(1)	Mobilization and Demobilization	L.S.	All Req'd	\$ (LUMP SUM)	\$
641(1)	Erosion, Sediment, and Pollution Control Administration	L.S.	All Req'd	\$ (LUMP SUM)	\$
641(2)	Temporary Erosion, Sediment, and Pollution Control	C.S.	All Req'd	\$10,000.00	\$10,000.00
641(6)	Withholding	C.S.	All Req'd	\$0.00	\$0.00
642(1)	Construction Surveying	L.S.	All Req'd	\$ (LUMP SUM)	\$
642(3)	Three Person Survey Party	Hour	10	\$	\$
643(2)	Traffic Maintenance	L.S.	All Req'd	\$ (LUMP SUM)	\$
646(1)	CPM Scheduling	L.S.	All Req'd	\$ (LUMP SUM)	\$
647(2)	Trail Dozer, 62 HP Minimum	Hour	10	\$	\$
647(6)	Hydraulic Excavator, 110 HP Minimum	Hour	10	\$	\$
650(20)	Removable Barrier Post	Each	6	\$	\$
a) TOTAL BASIC BID (BB)					\$

No: \_\_\_\_\_ Expires \_\_\_\_\_  
Alaska Business License

No: \_\_\_\_\_ Expires \_\_\_\_\_  
Alaska Contractor's License

BID SCHEDULE  
DSP: VISITOR CENTER COMPLEX  
TRAIL CONSTRUCTION  
Project No. 74034-4

Name of Bidding Firm: \_\_\_\_\_



STATE OF ALASKA  
DEPARTMENT OF NATURAL RESOURCES

## CONSTRUCTION CONTRACT

**DSP: VISITOR CENTER COMPLEX TRAIL CONSTRUCTION, PROJECT NO. 74034-4**

Project Name and Number

This CONTRACT, between the STATE OF ALASKA, DEPARTMENT OF NATURAL RESOURCES, herein called the Department, acting by and through its Contracting Officer, and

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
Company Address (Street or PO Box, City, State, Zip)

a/an  Individual  Partnership  Joint Venture  Sole Proprietorship  Corporation incorporated under the laws of the State of \_\_\_\_\_ its successors and assigns, herein called the Contractor, is effective the date of the signature of the Contracting Officer on this document.

WITNESSETH: That the Contractor, for and in consideration of the payment or payments herein specified and agreed to by the Department, hereby covenants and agrees to furnish and deliver all the materials and to do and perform all the work and labor required in the construction of the above-referenced project at the prices bid by the Contractor for the respective estimated quantities aggregating approximately the sum of

\_\_\_\_\_ Dollars  
(\$ \_\_\_\_\_), and such other items as are mentioned in the original Bid, which Bid and prices named, together with the Contract Documents are made a part of this Contract and accepted as such.

It is distinctly understood and agreed that no claim for additional work or materials, done or furnished by the Contractor and not specifically herein provided for, will be allowed by the Department, nor shall the Contractor do any work or furnish any material not covered by this Contract, unless such work is ordered in writing by the Department. In no event shall the Department be liable for any materials furnished or used, or for any work or labor done, unless the materials, work, or labor are required by the Contract or on written order furnished by the Department. Any such work or materials which may be done or furnished by the Contractor without written order first being given shall be at the Contractor's own risk, cost, and expense and the Contractor hereby covenants and agrees to make no claim for compensation for work or materials done or furnished without such written order.

The Contractor further covenants and agrees that all materials shall be furnished and delivered and all labor shall be done and performed, in every respect, to the satisfaction of the Department, on or before: **SEPTEMBER 15, 2016** or within **N/A** calendar days. It is expressly understood and agreed that in case of the failure on the part of the Contractor, for any reason, except with the written consent of the Department, to complete the furnishing and delivery of materials and the doing and performance of the work before the aforesaid date, the Department shall have the right to deduct from any money due or which may become due the Contractor, or if no money shall be due, the Department shall have the right to recover **(SEE SECTION 108-1.07)** dollars (\$\_\_\_\_\_) per day for each calendar day elapsing between the time stipulated for the completion and the actual date of completion in accordance with the terms hereof; such deduction to be made, or sum to be recovered, not as a penalty but as liquidated damages.

The bonds given by the Contractor in the sum of \$ **(100% OF CONTRACT)** Payment Bond, and \$ **(100% OF CONTRACT)** Performance Bond, to secure the proper compliance with the terms and provisions of this Contract, are submitted herewith and made a part hereof.

IN WITNESS WHEREOF, the parties hereto have executed this Contract and hereby agree to its terms and conditions.

---

**CONTRACTOR**

---

**Company Name**

---

**Signature of Authorized Company Representative**

---

**Typed Name and Title**

---

**Date**

(Corporate Seal)

---

**STATE OF ALASKA  
DEPARTMENT OF NATURAL RESOURCES**

---

**Design & Construction Duly Authorized Representative (Signature)**

**Date**

---

**Typed Name**

---

**Signature of Contracting Officer**

**Date**

---

**Typed Name**



STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES

PAYMENT BOND

Bond No. \_\_\_\_\_

For

DSP: VISITOR CENTER COMPLEX TRAIL CONSTRUCTION, PROJECT NO. 74034-4

Project Name and Number

KNOW ALL WHO SHALL SEE THESE PRESENTS:

That \_\_\_\_\_ of \_\_\_\_\_ as Principal, and \_\_\_\_\_ of \_\_\_\_\_ as Surety, firmly bound and held unto the State of Alaska in the penal sum of \_\_\_\_\_ Dollars

(\$ \_\_\_\_\_) good and lawful money of the United States of America for the payment whereof, well and truly to be paid to the State of Alaska, we bind ourselves, our heirs, successors, executors, administrators, and assigns, jointly and severally, firmly by these presents.

WHEREAS, the said Principal has entered into a written contract with said State of Alaska, on the \_\_\_\_\_ of \_\_\_\_\_ A.D., 20\_\_\_\_, for construction of the above-referenced project, said work to be done according to the terms of said contract.

Now, THEREFORE, the conditions of the foregoing obligation are such that if the said Principal shall comply with all requirements of law and pay, as they become due, all just claims for labor performed and materials and supplies furnished upon or for the work under said contract, whether said labor be performed and said materials and supplies be furnished under the original contract, any subcontract, or any and all duly authorized modifications thereto, then these presents shall become null and void; otherwise they shall remain in full force and effect.

IN WITNESS WHEREOF, we have hereunto set our hands and seals at \_\_\_\_\_, \_\_\_\_\_ this \_\_\_\_\_ day of \_\_\_\_\_ A.D., 20\_\_\_\_.

Principal: \_\_\_\_\_
Address: \_\_\_\_\_
By: \_\_\_\_\_
Contact Name: \_\_\_\_\_
Phone: ( ) \_\_\_\_\_

Surety: \_\_\_\_\_
Address: \_\_\_\_\_
By: \_\_\_\_\_
Contact Name: \_\_\_\_\_
Phone: ( ) \_\_\_\_\_

The offered bond has been checked for adequacy under the applicable statutes and regulations:

Alaska Department of Natural Resources Authorized Representative

Date

See Instructions on Reverse

## INSTRUCTIONS

1. This form, for the protection of persons supplying labor and material, shall be used whenever a payment bond is required. There shall be no deviation from this form without approval from the Contracting Officer.
2. The full legal name, business address, phone number, and point of contact of the Principal and Surety shall be typed on the face of the form. Where more than a single surety is involved, a separate form shall be executed for each surety.
3. The penal amount of the bond, or in the case of more than one surety the amount of obligation, shall be typed in words and in figures.
4. Where individual sureties are involved, a completed Affidavit of Individual Surety shall accompany the bond. Such forms are available upon request from the Contracting Officer.
5. The bond shall be signed by authorized persons. Where such persons are signing in a representative capacity (e.g., an attorney-in-fact), but is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved, evidence of authority must be furnished.



STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES

PERFORMANCE BOND

Bond No. \_\_\_\_\_

For

DSP: VISITOR CENTER COMPLEX TRAIL CONSTRUCTION, PROJECT NO. 74034-4

Project Name and Number

KNOW ALL WHO SHALL SEE THESE PRESENTS:

That \_\_\_\_\_
of \_\_\_\_\_ as Principal,
and \_\_\_\_\_
of \_\_\_\_\_ as Surety,
firmly bound and held unto the State of Alaska in the penal sum of \_\_\_\_\_ Dollars

(\$ \_\_\_\_\_) good and lawful money of the United States of America for the payment whereof, well and truly to be paid to the State of Alaska, we bind ourselves, our heirs, successors, executors, administrators, and assigns, jointly and severally, firmly by these presents.

WHEREAS, the said Principal has entered into a written contract with said State of Alaska, on the \_\_\_\_\_ of \_\_\_\_\_ A.D., 20\_\_\_\_, for construction of the above-named project, said work to be done according to the terms of said contract.

Now, THEREFORE, the conditions of the foregoing obligation are such that if the said Principal shall well and truly perform and complete all obligations and work under said contract and if the Principal shall reimburse upon demand of the Department of Transportation and Public Facilities any sums paid him which exceed the final payment determined to be due upon completion of the project, then these presents shall become null and void; otherwise they shall remain in full force and effect.

IN WITNESS WHEREOF, we have hereunto set our hands and seals at \_\_\_\_\_ this \_\_\_\_\_ day of \_\_\_\_\_ A.D., 20\_\_\_\_.

Principal: \_\_\_\_\_

Address: \_\_\_\_\_

By: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Phone: ( ) \_\_\_\_\_

Surety: \_\_\_\_\_

Address: \_\_\_\_\_

By: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Phone: ( ) \_\_\_\_\_

The offered bond has been checked for adequacy under the applicable statutes and regulations:

Alaska Department of Natural Resources Authorized Representative

Date

See Instructions on Reverse

## INSTRUCTIONS

1. This form shall be used whenever a performance bond is required. There shall be no deviation from this form without approval from the Contracting Officer.
2. The full legal name, business address, phone number, and point of contact of the Principal and Surety shall be typed on the face of the form. Where more than a single surety is involved, a separate form shall be executed for each surety.
3. The penal amount of the bond, or in the case of more than one surety the amount of obligation, shall be typed in words and in figures.
4. Where individual sureties are involved, a completed Affidavit of Individual Surety shall accompany the bond. Such forms are available upon request from the Contracting Officer.
5. The bond shall be signed by authorized persons. Where such person is signing in a representative capacity (e.g., an attorney-in-fact), but is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved, evidence of authority must be furnished.



STATE OF ALASKA  
DEPARTMENT OF NATURAL RESOURCES

**BID BOND**

For

**DSP: VISITOR CENTER COMPLEX TRAIL CONSTRUCTION, PROJECT NO. 74034-4**

Project Name and Number

DATE BOND EXECUTED: \_\_\_\_\_

PRINCIPAL (Legal name and business address):

TYPE OF ORGANIZATION:

	[ <input type="checkbox"/> ] Individual	[ <input type="checkbox"/> ] Partnership
	[ <input type="checkbox"/> ] Joint Venture	[ <input type="checkbox"/> ] Corporation
STATE OF INCORPORATION: _____		

SURETY(IES) (Name and business address):

<b>A.</b>	<b>B.</b>	<b>C.</b>
PENAL SUM OF BOND: _____		DATE OF BID: _____

We, the PRINCIPAL and SURETY above named, are held and firmly bound to the State (State of Alaska), in the penal sum of the amount stated above, for the payment of which sum will be made, we bind ourselves and our legal representatives and successors, jointly and severally, by this instrument.

THE CONDITION OF THE FOREGOING OBLIGATION is that the Principal has submitted the accompanying bid in writing, date as shown above, on the above-referenced Project in accordance with contract documents filed in the office of the Contracting Officer, and under the Invitation for Bids therefor, and is required to furnish a bond in the amount stated above.

If the Principal's bid is accepted and he is offered the proposed contract for award, and if the Principal fails to enter into the contract, then the obligation to the State created by this bond shall be in full force and effect.

If the Principal enters into the contract, then the foregoing obligation is null and void.

**PRINCIPAL**

Signature(s)	1.	2.	3.
Name(s) & Title(s) (Typed)	1.	2.	3.

Corporate Seal

See Instructions on Reverse

**CORPORATE SURETY(IES)**

<b>Surety A</b>	Name of Corporation	State of Incorporation	Liability Limit \$
Signature(s)	1.	2.	Corporate Seal
Name(s) & Titles (Typed)	1.	2.	

<b>Surety B</b>	Name of Corporation	State of Incorporation	Liability Limit \$
Signature(s)	1.	2.	Corporate Seal
Name(s) & Titles (Typed)	1.	2.	

<b>Surety C</b>	Name of Corporation	State of Incorporation	Liability Limit \$
Signature(s)	1.	2.	Corporate Seal
Name(s) & Titles (Typed)	1.	2.	

**INSTRUCTIONS**

1. This form shall be used whenever a bid bond is submitted.
2. Insert the full legal name and business address of the Principal in the space designated. If the Principal is a partnership or joint venture, the names of all principal parties must be included (e.g., "Smith Construction, Inc. and Jones Contracting, Inc. DBA Smith/Jones Builders, a joint venture"). If the Principal is a corporation, the name of the state in which incorporated shall be inserted in the space provided.
3. Insert the full legal name and business address of the Surety in the space designated. The Surety on the bond may be any corporation or partnership authorized to do business in Alaska as an insurer under AS 21.09. Individual sureties will not be accepted.
4. The penal amount of the bond may be shown either as an amount (in words and figures) or as a percent of the contract bid price (a not-to-exceed amount may be included).
5. The scheduled bid opening date shall be entered in the space marked Date of Bid.
6. The bond shall be executed by authorized representatives of the Principal and Surety. Corporations executing the bond shall also affix their corporate seal.
7. Any person signing in a representative capacity (e.g., an attorney-in-fact) must furnish evidence of authority if that representative is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved.
8. The states of incorporation and the limits of liability of each surety shall be indicated in the spaces provided.
9. The date that bond is executed must not be later than the bid opening date.





STATE OF ALASKA  
DEPARTMENT OF NATURAL RESOURCES

**MATERIAL ORIGIN CERTIFICATE**  
Federal-Aid Highway Contracts

**DSP: VISITOR CENTER COMPLEX TRAIL CONSTRUCTION, PROJECT NO. 74034-4**  
Project Name and Number

By signing this Material Origin Certificate, the offeror certifies that all steel and iron products to be furnished under this project are manufactured in the United States and comply with Subsection 106-1.01, **Buy America Provision**, of the Contract Special Provisions, except for those items listed by the offeror below or on a separate and clearly identified attachment.<sup>1</sup>

PRODUCT <sup>2</sup>	COUNTRY OF ORIGIN	COST <sup>3</sup>

- THE FOLLOWING ITEMS ARE CONSIDERED TO BE MANUFACTURING PROCESSES<sup>4</sup>:
- a. Modifying the chemical content.
  - b. Initial rolling into plates, shapes, rods, and bars. Structural steel completed at this point.
  - c. Rolling into sheets, corrugating, and rolling into culverts, guardrail, etc.
  - d. Processing and drawing into wire, spinning wire into cable or strand, forming wire fabric, fencing, etc.
  - e. The action of coating iron or steel. Coating includes epoxy coating, galvanizing, painting, and any other coating that protects or enhances the value of the product.

\_\_\_\_\_  
**Contractor**

\_\_\_\_\_  
**Signature of Contractor's Representative**

\_\_\_\_\_  
**Date**

1. The Contractor may amend this certificate after award only by a signed statement and only up to the limit specified in the contract.  
2. Enter "NONE" on the first line if there are no exceptions.  
3. Invoice cost as delivered to the project including freight.  
4. There is a Nationwide waiver to Buy America for pig iron and processed, pelletized and reduced iron ore.





STATE OF ALASKA  
DEPARTMENT OF NATURAL RESOURCES

**EEO-1 CERTIFICATION**  
Federal-Aid Contracts

**DSP: VISITOR CENTER COMPLEX TRAIL CONSTRUCTION, PROJECT NO. 74034-4**  
Project Name and Number

This certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor [41 CFR 60-1.7 (b) (1)] and must be completed by the successful Bidder and each proposed Subcontractor participating in this contract.

**PLEASE CHECK APPROPRIATE BOXES**

The  Bidder  Proposed Subcontractor hereby CERTIFIES:

**PART A.** Bidders and proposed Subcontractors with 50 or more year-round employees and a federal contract amounting to \$50,000 or more are required to submit one federal Standard Report Form 100 during each year that the two conditions exist (50 employees and a \$50,000 federal contract).

The company named below (Part C) is exempt from the requirements of submitting the Standard Report Form 100 this year.

NO (go to PART B)  YES (go to PART C)

Instructions and blank Standard Report Form 100's may be obtained from a local U.S. Department of Labor office, or by writing to:

The Joint Reporting Committee  
P.O. Box 779  
Norfolk, Virginia 23501

Telephone number: (757) 461-1213

**PART B.** The company named below has submitted the Standard Report Form 100 this year.

NO  YES

**Note:** Bidders and proposed Subcontractors who have not filed the required Standard Report Form 100 and are not exempt from filing requirements will not be awarded this contract or subcontract until Form 100 has been filed for the current year ending June 30.

**PART C.**

\_\_\_\_\_  
Signature of Authorized Company Representative

\_\_\_\_\_  
Title

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
Company Address (Street or PO Box, City, State, Zip)

( )

\_\_\_\_\_  
Date

\_\_\_\_\_  
Phone Number



# **SPECIAL PROVISIONS**

to the

STATE OF ALASKA

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES  
2015 STANDARD SPECIFICATIONS for HIGHWAY CONSTRUCTION

**DSP: VISITOR CENTER COMPLEX**

**TRAIL CONSTRUCTION**

**PROJECT NUMBER 74034-4**



## SECTION 101

### DEFINITIONS AND TERMS

#### 101-1.03 DEFINITIONS.

**DEPARTMENT.** Replace with the following: The Alaska Department of Natural Resources, Division of Parks and Outdoor Recreation.

(01/01/01)PARKS-Special Provision

**ROADWAY.** Replace with the following: The portion of a highway or park facility including shoulders within the limits of construction.

(01/01/01)PARKS-Special Provision

## SECTION 102

### BIDDING REQUIREMENTS AND CONDITIONS

**102-1.04 EXAMINATION OF PLANS, SPECIFICATIONS, SPECIAL PROVISIONS, AND WORK SITE.** Add the following after the second paragraph: Material Reports and/or Soils Investigation Reports are found in Appendix D. (01/01/05)PARKS-Special Provision

**SECTION 105**

**CONTROL OF WORK**

**105-1.02 PLANS AND WORKING DRAWINGS.** Add the following to the first paragraph: Full size plan sheets are 11” by 17”. Plans are not available in CAD digital format.

(01/01/01)PARKS-Special Provision

**105-1.06 UTILITIES.** Add the following:

Request locates from the utilities having facilities in the area. Use the Alaska Digline, Inc. Locate Call Center for the following utilities.

**ALASKA DIGLINE, INC.**

Locate Call Centers:

Anchorage	278-3121
Statewide	(800) 478-3121

Call Centers will notify the following:  
 Matanuska Electric Association (MEA)  
 Matanuska Telephone Association (MTA)

Call the following utilities and agencies directly:

Contact the Central Region Maintenance & Operations Office at (907) 269-0760 to obtain the appropriate District Superintendent’s phone number for this project.

(5/24/07)R3-Special Provisions

**105-1.07 COOPERATION BETWEEN CONTRACTORS.** Add the following:

The following state owned projects may be under construction concurrently with this project.

<b>Project Name:</b>	<b>Project No.:</b>
DSP: Visitor Center Complex Public Use Cabins	74034-2
DSP: Visitor Center Complex Walk-in Campground	74034-1
DSP: Visitor Center Complex Curry Ridge Trail	74034-3
DSP: K’esugi Ken Interpretive Center	80064A

SPECIAL PROVISIONS  
DSP: VISITOR CENTER COMPLEX  
TRAIL CONSTRUCTION  
PROJECT NO. 74034-4

Coordinate traffic control, construction, and material hauling operations with the prime contractor of the above projects to minimize impact on the traveling public, and to minimize conflicts with the work being performed under the other contracts.

(11/03/09) CR1051-Special Provision

**105-1.13 MAINTENANCE DURING CONSTRUCTION.**

Replace the first sentence of the first paragraph with the following: The Contractor shall maintain the entire area located within the project limits from the date construction begins until the Contractor receives a letter of substantial completion.

(03/16/16) PARKS-Special Provision

**105-1.15 PROJECT COMPLETION.** In the third paragraph, first sentence, delete: "Subsection 621-3.04" and replace with: Subsection 618-3.06 and 621-3.04.

(02/02/15) PARKS-Special Provision

**105-1.16 FINAL ACCEPTANCE AND RECORD RETENTION.**

Add the follow to the first paragraph:

6. Submit a Performance Guarantee at the completion of the final estimate in accordance with Subsection 618-5.01 if a second application of fertilizer is required in accordance with Subsection 618-3.04.

(01/01/01)PARKS-Special Provision

**105-1.17 CLAIMS.** Add the following: Any appeal to the superior court under AS 36.30.685 must be filed in the third judicial district. (03/21/01)R93-Special Provision

## SECTION 106

### CONTROL OF MATERIAL

**106-1.01 SOURCE OF SUPPLY AND QUALITY REQUIREMENTS.** Add the following: Pursuant to AS 36.15.050 and AS 36.30.322, agricultural/wood products harvested in Alaska shall be used in state funded projects whenever they are priced no more than seven percent above agricultural/wood products harvested outside the state and are of a like quality as compared with agricultural/wood products harvested outside the state.

The Contractor shall maintain records which establish the type and extent of agricultural/wood products utilized. When such products are not utilized, the Contractor shall document the efforts he made towards obtaining agricultural/wood products harvested in Alaska and include in this documentation a written statement that he contacted the manufacturers and suppliers identified on the Department of Commerce and Economic Development's list of suppliers of Alaska forest products concerning the availability of agricultural/wood products harvested in Alaska and, if available, the product prices. The Contractor shall complete this documentation at a time determined by the Contracting Officer.

The Contractor's use of agricultural/wood products that fail to meet the requirements of this Subsection shall be removed and replaced in accordance with the last paragraph of Subsection 105-1.03, Conformity With Plans and Specifications.

(05/07/91)S18-Special Provision

## SECTION 107

### LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

#### 107-1.02 PERMITS, LICENSES, AND TAXES.

Add the following to the second paragraph:

3. The Department has received the following permits on the Contractor's behalf:

See Appendix "A"

(04/01/16)PARKS-Special Provision

Add the following to the fourth paragraph:

5. Provide a wetland specialist to conduct the determination and delineations of sites outside the project limits or not previously permitted, impacted by the Contractor's operations. These delineations will be subject to Corps of Engineers approval. The wetland specialist shall conduct wetlands determinations and delineations according to the Corps of Engineers 1987 Wetland Delineation Manual, and the Regional Supplement to the Corps of Engineers Wetland Delineations Manual (Alaska Region, Version 2.0, September 2007).

(03/21/11)PARKS-Special Provision

#### 107-1.11 PROTECTION AND RESTORATION OF PROPERTY AND LANDSCAPE.

Add the following: If water is required for a construction purpose from a nonmunicipal water source, obtain a Temporary Water Use Permit from the Water Resource Manager, and provide a copy to the Engineer. The Water Resource Manager is with the Department of Natural Resources in Anchorage and may be contacted at (907) 269-8645.

(02/08/10)CR7-Special Provision

Add the following: All clearing and/or grubbing activities shall take place outside of the Migratory Bird Treaty Act (MBTA) window as determined by the U.S. Fish and Wildlife Service (FWS) under the website publication for the construction year:

[http://alaska.fws.gov/fisheries/fieldoffice/anchorage/pdf/vegetation\\_clearing.pdf](http://alaska.fws.gov/fisheries/fieldoffice/anchorage/pdf/vegetation_clearing.pdf)

(06/30/98)PARKS-Special Provision

Add the following:

SPECIAL PROVISIONS  
DSP: VISITOR CENTER COMPLEX  
TRAIL CONSTRUCTION  
PROJECT NO. 74034-4

Bald Eagles are protected under the Bald Eagle Protection Act (16 U.S.C. 668-668c) which prohibits “takes” of bald eagles, their eggs, nests, or any part of the bird. The Act defines “taking” as “to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb.”

Maintain a Primary Zone of a minimum 330 ft as an undisturbed habitat buffer around nesting bald eagles. If topography or vegetation does not provide an adequate screen or separation, extend this buffer to 0.25 miles, or a sufficient distance to screen the nest from human activities. The actual distance will depend on site conditions and the individual eagle’s tolerance for human activity. Within the Secondary Zone, between 330 ft and 660 ft from eagles nest tree no obtrusive facilities or major habitat modifications shall occur. If nesting occurs in sparse stands of trees, treeless areas, or where activities would occur within line-of-site of the nest, this buffer shall extend up to 0.5 miles. No blasting, logging and other noisy, disturbing activities should occur during the nesting period (March 1 – August 31) within the primary or secondary zones.

Extremely noisy activities such as road construction or other activities that occur within the Secondary Zone shall be conducted outside the nesting period to avoid disturbance to eagles. If activities occur in proximity to a nest site, employ an individual qualified to observe and assess the impact of such activities on nesting eagles. Behavior generally associated with disturbed eagles includes alarm calls, birds flushed from their nest or perch, and aggressiveness.

If nest trees are discovered within the vicinity of the project site, the U.S. Fish and Wildlife Service must be notified immediately by calling (907) 786-3503 or (907) 271–2772, before starting construction activities, for further site evaluation.

(08/12/10)CR1071-Special Provision

## SECTION 108

### PROSECUTION AND PROGRESS

**108-1.01 SUBLETTING OF CONTRACT.** Delete paragraph one and replace with the following: The Contractor shall submit a Contractor Self Certification for Subcontractors and Lower Tier Subcontractors, Form 25D-042, before the Contractor or any subcontractor sublets, sells, transfers, assigns, or otherwise disposes of the Contract or any portion of the Contract. The Department has authority to review subcontracts and to deny permission to sublet work. The Department may penalize the Contractor for false statements or omissions made in connection with Form 25D-042.

Delete paragraph four and replace with the following:

1. The Contractor shall ensure that for all subcontracts (agreements):
  - a. The Department is furnished with one completed Contractor Self certification, Form 25D-042, for each subcontract;
  - b. The required prompt payment provisions of AS 36.90.210, as well as other items listed in Form 25D-042, are included in the subcontracts;
  - c. The subcontractors pay current prevailing rate of wages as per Subsection 107-1.04 and file certified payrolls with the Engineer and DOLWD for all work performed on the project; and
  - d. Upon receipt of a request for more information regarding subcontracts, the requested information is provided to the Department within 5 calendar days.

(05/02/11)PARKS-Special Provision

**108-1.02 NOTICE TO PROCEED.** Add the following: The Contractor may request a Limited Notice to Proceed after the Award has been made, to permit him to order long lead materials which would cause delays in project completion. However, granting is within the sole discretion of the Contracting Officer, and refusal or failure to grant a Limited Notice to Proceed shall not be a basis for claiming for delay, extension of time, or alteration of price.

(6/30/98)PARKS-Special Provision

**108-1.03 PROSECUTION AND PROGRESS.** Replace the last sentence of the first paragraph with the following: Submit the following at the Preconstruction Conference:

Replace item 1. A progress schedule. with the following:

1. A Critical Path Method (CPM) Schedule is required, in a format acceptable to the Engineer, showing the order the work will be carried out and the contemplated dates the Contractor and subcontractors will start and finish each of the salient features of the work, including scheduled periods of shutdown. Indicate anticipated periods of multiple shift work in the CPM Schedule. Revise to the proposed CPM Schedule promptly. Promptly submit a revised CPM Schedule if there are substantial changes to the schedule, or upon request of the Engineer.

(12/13/02)R261-Special Provisions

## SECTION 109

### MEASUREMENT AND PAYMENT

#### **109-1.02 MEASUREMENT OF QUANTITIES.** Add the following:

14. Hour. Measured items by the hour shall be full payment for the work described in the contract including labor, equipment, and operating costs of the equipment. Items to be measured by the hour will be recorded to the nearest quarter-hour by the Engineer. The measurement shall start when the required equipment & operator, surveyor, or survey party begins work at the specified location as directed by the Engineer. The measurement will stop when the required work is accomplished, when the equipment fails, when directed to stop work by the Engineer, or when the operator stops work. Times will be reconciled with the Contractor on a daily basis.

(02/23/15)PARKS-Special Provision

**109-1.05 COMPENSATION FOR EXTRA WORK ON TIME AND MATERIALS BASIS.** Under item 3. Equipment, subitem a. Hourly Rental Rate, add the following to the second paragraph: The rental rate area adjustment factors for this project shall be as specified on the adjustment maps for the Alaska – CENTRAL.

(04/31/05)R14-Special Provision

## SECTION 201

### CLEARING AND GRUBBING

**201-3.01 GENERAL.** Add the following: All clearing and/or grubbing activities shall abide by the Migratory Bird Treaty Act (MBTA). (09/15/08)PARKS-Special Provision

Add the following: Timber with a 5 inch diameter or larger at breast height shall be cut into 8-foot lengths, de-limbed, and stacked at locations approved by the Engineer for public removal. These locations shall be adjacent to the nearest side street or other approved site which does not create a traffic hazard due to lack of adequate parking for the public. The Department will notify the public of the availability of the timber once it has been stacked. The Contractor shall schedule the clearing and grubbing work so as to provide two weeks for the public to access those areas of the project where such timber is available prior to completion of the clearing and grubbing work in those areas. With the Engineer's approval the Contractor may dispose of the timber left by the public by chipping into mulch for use by the Contractor as a BMP for temporary erosion, sediment and pollution control.

Add the following: The Contractor shall perform the work necessary to preserve and/or restore land monuments and property corners from damage. A land monument or property corner that is disturbed shall be restored according to Section 642 at the Contractor's expense. An undisturbed area 5 foot in diameter may be left around existing monuments and property corners. A list of land monuments and property corners is shown on the Right of Way maps.

(06/10/04)R107-Special Provision

**201-3.02 CLEARING.** Add the following: Remove branches to provide 12 feet vertical clearance above road surface, shoulder to shoulder. Remove branches to provide 10 feet vertical clearance above sidewalk, deck, trail and pathway surfaces. (01/01/01)PARKS-Special Provision

**201-3.03 GRUBBING.** Add the following: The Contractor has the option to screen organic soil obtained from grubbing to meet the gradation for topsoil as specified under Section 726, or as approved by the Engineer. The screened material may be used for topsoil onsite. (05/02/11)PARKS-Special Provision

**201-3.06 DISPOSAL.** Replace paragraphs three and four with the following: Combustible material from any operations shall be disposed of by transporting to locations outside the park controlled lands. Burning will not be permitted in other areas close to the park to cause, as determined by the Engineer, a fire danger to the park resources.

Burning will not be permitted on private lands without the written approval of the property owner. The approval of the Engineer shall be required on a day to day basis

when burning is within a two mile radius of the park lands. Constant care by competent watchmen with immediate access to adequate fire fighting equipment shall be required during burning operations. Full compliance with applicable laws and ordinances will be the Contractor's responsibility.

(01/01/01)PARKS-Special Provision

Add the following Subsection:

**201-3.07 TUB GRINDING.** Material obtained from clearing and grubbing may be processed onsite into a mulch-soil mixture by means of tub grinding. Tub grinding shall be performed with tub grinding equipment capable of reducing clearing and grubbing material down to a homogenous organic material. The resulting material shall not have pieces larger than 6 inches.

The final product is an acceptable substitute for topsoil. Placing, maintaining, and repairing shall comply with Section 620.

Material from tub grinding in excess of what is required for use on the project shall be disposed of by the Contractor in accordance with Subsection 201-3.06.

(05/02/11)PARKS-Special Provision

#### **201-4.01 METHOD OF MEASUREMENT.**

Add the following: Removal of branches for vertical clearance in accordance with Subsection 201-3.02 will not be measured directly for payment but will be considered subsidiary to work in this Section. (01/01/01)PARKS-Special Provision

Add the following: The work required to cut, de-limb and stack timber for public removal and to preserve and restore land monuments and property corners will be subsidiary to Item 201(3A) Clearing and Grubbing. (06/10/04)R107USC04-Special Provision

#### **201-5.01 BASIS OF PAYMENT.**

Add the following:

Material from screening and tub grinding incorporated into the project as topsoil will be paid for as topsoil under Section 620. Screening and tub grinding operations shall be subsidiary to Section 620 items.

Material not incorporated into the project and is disposed of offsite shall be subsidiary to clearing and grubbing items.

(05/06/11)PARKS-Special Provision

## SECTION 203

### EXCAVATION AND EMBANKMENT

#### **203-3.03 EMBANKMENT CONSTRUCTION.** Add the following:

Cut and fill slopes shall be constructed to template. At the direction of the Engineer, the Contractor may be required to finish all slopes by a method of hand raking. This work shall be at no additional cost to the State. The finished slope surface parallel to the shoulder line shall not vary more than 0.10 foot when tested using a 10-foot straightedge. The finished slope surface perpendicular to the shoulder line shall not vary more than 0.10 foot for the following slope ratios and corresponding straightedge lengths: 2:1 slope and two-foot length; 3:1 slope and three-foot length; 4:1 slope and four-foot length; 5:1 slope and five-foot length; and 6:1 slope and six-foot length. (01/01/01)PARKS-Special Provision

**203-5.01 BASIS OF PAYMENT.** Add the following: The contract unit price for borrow is for furnishing the material if suitable selected material is not available in the unclassified excavation. The cost for placing and compacting the imported material is included in the contract unit price. The cost for placing and compacting selected material acquired from unclassified excavation shall be included in the contract unit price for the excavation items. Material paid for as excavation will not be paid for again as selected material. (01/01/01)PARKS-Special Provision

**SECTION 204**  
**STRUCTURE EXCAVATION FOR CONDUITS  
AND MINOR STRUCTURES**

**204-3.01 CONSTRUCTION REQUIREMENTS.** In the first sentence of paragraph four, ~~delete:~~ “bedding and”

(01/27/07)E37-Standard Modification

Add the following after the third paragraph: Excavation, bedding, backfill, and compaction for culverts outside the roadbed may be visually inspected and approved by the Engineer.

(02/06/08)R204-Special Provision

**204-5.01 BASIS OF PAYMENT.** Replace the third and fourth paragraphs with the following: When Item 204(1), Structure Excavation, does not appear in the Bid Schedule, structure excavation required to complete other items of work will not be paid for directly but will be considered as subsidiary to those items. Excavation of unsuitable material for culverts and pipe required from below a plane 12 inches below the invert elevation of conduits, or from beyond the excavations limits shown on the plans and standard drawings for structures will be considered extra work.

Any backfill material or bedding material required for conduits whose source is other than excavation will be paid for at the contract unit price for the material being used, or as extra work if no unit price has been established. Any backfill material or bedding material required for structures other than conduits will be considered as subsidiary to those items.

(11/21/08)PARKS-Special Provision

**SECTION 301**

**AGGREGATE BASE COURSE**

**301-2.01 MATERIALS.** Replace the first sentence: Recycled asphalt material (RAM) shall meet the following conditions:

1. RAM shall be crushed or processed to 100 percent by weight passing the 1.5 inch sieve and 95-100 percent by weight passing the 1 inch sieve.
2. The gradation of the extracted aggregate shall meet the following:

Sieve	Percent Passing by Weight
1 inch	100
3/4 inch	70-100
3/8 inch	42-90
No. 4	28-78
No. 16	11-54
No. 50	5-34
No. 100	3-22
No. 200	2-12

3. The asphalt content shall be 2.5 - 5.0 percent by weight of the RAM

(01/24/07)R176-Special Provision

**301-5.01 BASIS OF PAYMENT.** Add the following:

Pay Item	Pay Unit
301(5) Recycled Asphalt Material	Ton

Add the following Section:

## SECTION 530

### CONCRETE BLOCK WALL

**530-1.01 DESCRIPTION.** This work consists of furnishing and installing concrete block retaining walls in conformance with the plans.

This work shall include, but not limited to excavation as required, compaction of embankment, furnishing and installing leveling pad, furnishing and installing concrete block members, furnishing and installing geotextile separation fabric, furnishing and installing porous backfill, and furnishing and installing the 6-inch perforated drain pipe with drain rock and filter fabric.

**530-2.01 MATERIALS.** Meet the following:

Class A Concrete	Section 501
Precast and Cast in Place Concrete Panels	Section 501
Structural Steel	AASHTO M 270
Pipe and Perforated Pipe	ASTM F 405, F 606
Geotextile for Drainage	Section 729
Porous Backfill	Subsection 703-2.10

1. Structure Backfill and Foundation Fill. Meet Subsection 511-2.01
2. Concrete Block Members. Meet Subsection 511-2.01 and finish the concrete block member with a quarried rock architectural finish, as approved.

The modular blocks are required to have features designed to interlock the blocks together. The interlock feature shall be shaped and arranged in a manner that will tie the blocks together when dry stacked in all the orientations they will be placed as shown on drawings.

Full size concrete blocks shall weigh a minimum of 2,400 lbs. and shall have a consistent dimension of at least 24" x 24" x 48" long. Blocks shall be of interlocking design. Full size concrete blocks shall have a minimum of 2 round columnar or conical keyways to provide shear capacity and allow for built-in interlock.

Blocks shall be manufactured with a quarried rock architectural finish. The color of the units shall be concrete brown or approved by the Engineer.

Each Block shall be furnished with a lifting eye located in the center of the block relative to the center of mass.

## CONSTRUCTION REQUIREMENTS

**530-3.01 EXCAVATION.** Excavation shall conform to Section 205 and to the limits and construction stages shown in the plans.

**530-3.02 BASE LEVELING PAD.** Leveling pad shall be placed to the lines and grades as shown in the plans. Leveling pad shall be prepared to ensure full contact to the base surface of the concrete blocks and be compacted.

**530-3.03 CONCRETE BLOCK WALL INSTALLATION.** Before placing blocks, make sure the top and bottom surfaces of the respective blocks are clean. The blocks shall be installed in short segments in order to minimize the length of open cut into the existing hillside. First course of blocks shall be placed on the leveling pad. Alignment and level of the first course shall be checked. Not that the first course is the most important to insure acceptable installation.

**530-3.04 PIPE INSTALLATION.** Place pipe in location show on plans. Use coupling bands for 6 inch diameter pipe. Join pipe end sections securely with the appropriate coupling fittings. Pipe to be installed in lengths no greater than 100 feet. Daylight pipe to outfall in the downslope of the trail. Geotextile to be placed outside of the porous backfill. After pipe installation has been inspected, place porous backfill material to the height as shown on plans. Fill area above the porous backfill with specified material.

**530-3.05 BACKFILL PLACEMENT.** The porous backfill material shall be placed behind the wall above drain pipe system once the wall is built two blocks high and in two block lifts until maximum wall height is reached.

**530-4.01 METHOD OF MEASUREMENT.** Concrete Block Wall shall be measured by the number of square feet of vertical surface area of completed wall in place. The vertical limits for measurement are from the bottom of the bottom layer of blocks to the top of the top layer of blocks. The horizontal limits for the measurement are from the end of wall to the end of wall. Payment shall be considered full compensation for all labor, materials, and equipment to install concrete block wall, leveling pad, excavation, selected material, type A backfill, compaction, porous backfill, geotextile separation fabric, filter fabric, porous backfill, and miscellaneous items necessary to complete the work.

**530-5.01 BASIS OF PAYMENT.** The accepted quantity, determined as proved above, will be paid for at the contract price per unit of measurement for the pay item listed below.

Payment will be made under:

Pay Item	Pay Unit
530(1) Concrete Block Wall	Square Foot

(04/16/16)Special Provision

SPECIAL PROVISIONS  
DSP: VISITOR CENTER COMPLEX  
TRAIL CONSTRUCTION  
PROJECT NO. 74034-4

## SECTION 603

### CULVERTS AND STORMDRAINS

**603-1.01 DESCRIPTION.** Add the following: This work shall also consist of installing culvert marker posts.

**603-2.01 MATERIALS.** Delete the second paragraph and substitute the following:

When Item 603, Pipe, is listed in the bid schedule, furnish either Corrugated Steel Pipe (CSP). Corrugated Polyethylene Pipe is not allowed. End Sections for Metal Pipe must be of the same material as the pipe.

Add the following:

Culvert marker posts shall meet the requirements of subsection 730-2.05, Flexible Delineator Posts. The color shall be blue with no other markings. The 2.5 inch by 6 foot post shall be rectangular in cross section with reinforcing ribs capable of a minimum bending radius of 9 inches.

(08/27/03)CR42-Special Provision

#### **603-3.03 JOINING PIPE.**

2. Metal Pipe. Add the following after the 2nd sentence:

Install a gasket in all pipe joints; joints between new sections of pipe and joints between new and existing sections of pipe of similar or dissimilar materials, regardless of the type of coupling band. Except, the end section joint does not require a gasket. Use flexible watertight gaskets (ASTM D 1056 2B3) as specified in Subsection 705-2.05.

(03/24/11)CR6031-Special Provision

Add the following Subsection:

**603-3.06 CULVERT MARKER POSTS.** Culvert marker posts shall be installed on the approach side of storm drain outfalls 30 inches and smaller, field inlets not in paved parking lots, all end sections to cross culverts, or as directed by the Engineer. Forty-two inches of post shall remain above the ground after driving.

**603-4.01 METHOD OF MEASUREMENT.** Add the following: Culvert marker posts will not be measured for payment.

**603-5.01 BASIS OF PAYMENT.** Replace the first sentence with:

Coupling bands, gaskets and other items necessary for the proper joining of the sections are subsidiary.

(03/24/11)CR6031-Special Provision

Add the following: Culvert marker posts will not be paid for directly, but will be subsidiary to pipe items. (08/27/03)CR42-Special Provision

Add the following:

Payment will be under:

<b>Pay Item</b>	<b>Pay Unit</b>
603(1-12) 12 Inch CSP	Linear Foot
603(1-24) 24 Inch CSP	Linear Foot
603(3-24) End Section for 24 Inch CSP	Each

(01/01/01) PARKS-Special Provision

Replace this entire Section with the following:

## SECTION 618

### SEEDING

**618-1.01 DESCRIPTION.** This work consists of establishing a perennial stand of grass or other specified living vegetative cover in the areas indicated on the Plans and to acceptably maintain the cover for the term of the Contract.

Topsoil and seed all new or disturbed slopes and any other areas directed by the Engineer. Track soil and apply seed, mulch, fertilizer and water. Provide a living ground cover on all slopes as soon as possible.

**618-2.01 MATERIALS.** Use materials that conform to the Special Provisions and the following:

Seed	Section 724
Fertilizer	Section 725
Mulch	Subsection 727-2.01
Water	Subsection 712-2.01

### CONSTRUCTION REQUIREMENTS

**618-3.01 SOIL PREPARATION.** Clear all areas to be seeded of stones 4 inches in diameter and larger and of all weeds, plant growth, sticks, stumps, and other debris or irregularities that might interfere with the seeding operation, growth of grass, or subsequent maintenance of the grass-covered areas.

Make areas to be seeded reasonably free of ruts, holes, and humps.

Apply seed as detailed in Subsection 618-3.03 immediately after the shaping of the slopes. Cover all slopes to be seeded with topsoil in accordance with Section 620. Complete slope preparation as soon as topsoil is placed on the slopes.

(01/01/01)PARKS-Special Provision

Roughen the surface to be seeded by grooving the soil in a uniform pattern that is perpendicular to the fall of the slope. Use one or more of the following grooving methods with associated equipment before the application of seed:

1. Manual raking with landscaping rakes;
2. Mechanical track walking with track equipment; or
3. Mechanical raking with a scarifying slope board. Form one inch wide grooves spaced no more than six inches apart.

Rounding the top and bottom of slopes to facilitate tracking or raking and to create a pleasant appearance is acceptable, but disrupting drainage flow lines is not.

(01/27/07)E42-Standard Modification

Flat surfaces shall also be topsoiled and roughened by using one of the methods described above.

(01/01/01)PARKS-Special Provision

**618-3.02 SEEDING SEASONS.** Seed disturbed areas that require seeding within 14 days of the permanent cessation of ground disturbing activities in that area.

(01/27/07)E42-Standard Modification

Seed and fertilize during the local growing season. Do not seed during windy conditions or when climatic conditions or ground conditions would hinder placement or proper growth. The seeding season is from May 15 and September 1.

Written approval from the Engineer is required to seed at a different date.

**618-3.03 APPLICATION.** Apply seed, mulch and fertilizer as follows per 1000 ft<sup>2</sup>. Apply seed and mulch in one application using the hydraulic method. Apply all fertilizer with the hydraulic method.

Item	Ingredients	Application Rate (per 1000 S.F.)
Seed Mix	Red Fescue (Arctared)	0.60 lbs
	Gruening Alpine Bluegrass or Nortran Tufted Hairgrass	0.40 lbs
		Total = 1.00 lbs
Mulch		35.0 lbs
Fertilizer	20-20-10	12.0 lbs

Do not remove the required tags from the seed bags.

Use the following method unless otherwise specified:

Hydraulic Method.

- a. Furnish and place a slurry made of seed, fertilizer, water, and other components as required by the Special Provisions.

- b. Use hydraulic seeding equipment that will maintain a continuous agitation and apply a homogeneous mixture through a spray nozzle. The pump must produce enough pressure to maintain a continuous, non-fluctuating spray that will reach the extremities of the seeding area with the pump unit located on the roadbed. Provide enough hose to reach areas not practical to seed from the nozzle unit situated on the roadbed.
- c. If mulch material is required, it may be added to the water slurry in the hydraulic seeder after adding the proportionate amounts of seed and fertilizer. Add seed to the slurry mixture no more than 30 minutes before application.
- d. Mix the slurry and apply it evenly.

**618-3.04 PLANT ESTABLISHMENT AND MAINTENANCE.** Protect seed areas against traffic and erosion. Promptly repair surfaces that are gullied or otherwise damaged following seeding by re-grading, reseeding, and re-mulching as needed.

Water and maintain seeded areas until acceptance of the work. Use equipment that can water all seeded areas without damaging the seed bed.

Reseed any areas not showing evidence of satisfactory growth within 3 weeks of seeding. Erosion gullies over 4 inches deep must be filled and reseeded. Fill the entire erosion gully to surrounding grade, including the portions less than 4 inches deep.

A reapplication of fertilizer shall be applied with water between May 1 and June 30 of the year following seeding. Re-fertilization shall be applied at a rate of one-half the initial application.

(01/01/01)PARKS-Special Provision

**618-3.05 ACCEPTANCE.** During final inspection the Engineer will perform a visual inspection of seeding to determine final stabilization. During the visual inspection each station and each side of the road will be considered a separate area. The Engineer will accept seeding that has become a vegetative matt with 70% cover density in the inspection area.

Reseed areas that are not acceptable to the Engineer.

**618-3.06 PERIOD OF ESTABLISHMENT.** Establishment periods extend for one complete growing season following acceptable seeding. Employ possible means to preserve the new vegetative matt in a healthy and vigorous condition to ensure successful establishment. Reseed areas that do not meet the specifications. Watering and reseeding after the final inspection are subsidiary.

The Engineer may, but is not required to, determine the Project is complete except for the period of establishment, and issue a letter of final acceptance. After final acceptance, work or materials due under this subsection during any remaining period of

establishment are considered warranty obligations that continue to be due following final acceptance in accordance with subsection 105-1.16.

(01/27/07)E42-Standard Modification

**618-4.01 METHOD OF MEASUREMENT.**

Seeding by the acre. By the area of ground surface acceptably seeded and maintained. Seed, mulch, water, and fertilizer are subsidiary.

Seeding by the pound. Weight of seed acceptably placed and maintained. Water, mulch, and fertilizer are subsidiary.

The amounts of fertilizer, seed, mulch and water for application used in this work, including any required reseeding and re-fertilization are subsidiary to other 618 items. The work described under subsection 618-3.01 Soil Preparation is subsidiary to seeding.

Water used in maintenance of seeded areas will not be measured directly for payment but will be considered subsidiary to the seeding item.

**618-5.01 BASIS OF PAYMENT.** At the contract unit price per unit of measurement for the pay items listed below that appear on the bid schedule.

Payment will be made under:

Pay Item	Pay Unit
618(2) Seeding	Pound

The Contractor may receive final payment prior to the second application of fertilizer by submitting an approved written guarantee that the second application of fertilizer will be accomplished per specifications. A Performance Guarantee form is available from the Engineer.

(01/01/01)PARKS-Special Provision

## SECTION 620

### TOPSOIL

**620-2.01 MATERIALS.** Replace this Subsection with the following:

Provide topsoil of the class specified on the Plans. Use material that conform to the following:

Topsoil                      Section 726 or as approved by the Engineer

Topsoil shall be free of invasive material.

(4/02/16)PARKS-Special Provision

## SECTION 640

### MOBILIZATION AND DEMOBILIZATION

#### **640-1.01 DESCRIPTION.** Add the following:

6. Comply with the Alaska Department of Labor and Workforce Development (DOLWD) requirements for Worker Meals and Lodging, or Per Diem; as described in their July 25, 2005 memo WHPL #197 (A2) and the State Laborer's and Mechanic's Minimum Rates of Pay (current issue). On Federal-aid projects, PL 109-59, 119 STAT. 1233, Sec. 1409(c) also applies.

Ensure subcontractors comply with the Federal and State DOLWD requirements.

Ensure facilities meet the Alaska Administrative Code 8 AAC 61.1010 and 8 AAC 61.1040 *Occupational Safety and Health Standards*, 18 AAC 31 *Alaska Food Code*, and U.S. Code of Federal Regulations 29 CFR Section 1910.142 *Temporary Labor Camps*.

Do not consider the cost of Meals and Lodging, or Per Diem in setting wages for the worker or in meeting wage requirements under AS 23.10.065 or AS 36.05.

#### **640-4.01 METHOD OF MEASUREMENT.** Delete the numbered paragraph 3 and substitute the following:

3. The remaining balance of the amount bid for Mobilization and Demobilization will be paid after all submittals required under the Contract are received and approved.

(05/28/10)E89-Standard Modification

#### Add the following:

4. Progress payments for Worker Meals and Lodging, or Per Diem will be subsidiary to 640(1) Mobilization and Demobilization.

(09/15/07)PARKS-Special Provision

Replace Section 641 with the following:

## SECTION 641

### EROSION, SEDIMENT, AND POLLUTION CONTROL

**641-1.01 DESCRIPTION.** Provide project administration and Work relating to control of erosion, sedimentation, and discharge of pollutants, according to this section and applicable local, state, and federal requirements, including the Construction General Permit.

**641-1.02 DEFINITIONS.** These definitions apply only to Section 641.

**Alaska Certified Erosion and Sediment Control Lead (AK-CESCL).** A person who has completed training, testing, and other requirements of, and is currently certified as, an AK-CESCL from an AK-CESCL Training Program (a program developed under a Memorandum of Understanding between the ADOT&PF and others). The Department recognizes AK-CESCLs as “qualified personnel” required by the CGP. An AK-CESCL must be recertified every three years.

**Alaska Department of Environmental Conservation (ADEC).** The state agency authorized by EPA to administer the Clean Water Act’s National Pollutant Discharge Elimination System.

**Alaska Pollutant Discharge Elimination System (APDES).** A system administered by ADEC that issues and tracks permits for storm water discharges.

**Best Management Practices (BMPs).** Temporary or permanent structural and non-structural devices, schedules of activities, prohibition of practices, maintenance procedures, and other management practices to prevent or minimize the discharge of pollutants to waters of the United States. BMPs also include, but are not limited to, treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from material storage.

**Clean Water Act (CWA).** Federal Water Pollution Control Amendments of 1972, as amended (33 U.S.C. 1251 et seq.).

**Construction Activity.** Physical activity by the Contractor, Subcontractor or utility company; that may result in erosion, sedimentation, or a discharge of pollutants into storm water. Construction Activity includes soil disturbing activities (e.g. clearing, grubbing, grading, excavating); and construction materials or equipment storage or maintenance (e.g. material piles, borrow area, concrete truck chute washdown, fueling); and other industrial storm water directly related to the construction process (e.g. concrete or asphalt batch plants).

**Construction General Permit (CGP).** The permit authorizing storm water discharges from Construction Activities, issued and enforced by ADEC. It authorizes stormwater discharges provided permit conditions and water quality standards are met.

**Electronic Notice of Intent (eNOI).** The electronic Notice of Intent submitted to ADEC, to obtain coverage under the CGP.

**Electronic Notice of Termination (eNOT).** The electronic Notice of Termination submitted to ADEC, to end coverage under the CGP.

**Environmental Protection Agency (EPA).** A federal agency charged to protect human health and the environment.

**Erosion and Sediment Control Plan (ESCP).** The Department's project specific document that illustrates measures to control erosion and sediment on the project. The ESCP provides bidders with the basis for cost estimating and guidance for developing an acceptable Storm Water Pollutant Prevention Plan (SWPPP).

**Final Stabilization.** Is defined in this section as it is defined in the CGP.

**Hazardous Material Control Plan (HMCP).** The Contractor's detailed project specific plan for prevention of pollution from storage, use, transfer, containment, cleanup, and disposal of hazardous material (including, but are not limited to, petroleum products related to construction activities and equipment). The HMCP is included as an appendix to the SWPPP.

**Inspection.** An inspection required by the CGP or the SWPPP, usually performed together by the Contractor's Storm Water Lead and Department's Project Engineer.

**Multi-Sector General Permit (MSGP).** The Alaska Pollutant Discharge Elimination System General Permit for storm water discharges associated with industrial activity.

**Operator(s).** The party or co-parties associated with a regulated activity that has responsibility to obtain permit coverage under the CGP. "Operator" for the purpose of the CGP and in the context of stormwater associated with construction activity, means any party associated with a construction project that meets either of the following two criteria:

1. The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or
2. The party has day to day operational control of those activities at a project which are necessary to ensure compliance with a SWPPP for the site or other permit conditions (e.g. they are authorized to direct workers at a site to carry out activities required by the SWPPP or comply with other permit conditions).

**Pollutant.** Any substance or item meeting the definition of pollutant contained in 40 CFR § 122.2. A partial listing from this definition includes: dredged spoil, solid waste, sewage, garbage, sewage sludge, chemical wastes, biological materials, wrecked or discarded equipment, rock, sand, cellar dirt and industrial or municipal waste.

**Project Area.** The physical area provided by the Department for Construction. The Project Area includes the area of the facility under construction, project staging and equipment areas, and material and disposal sites; when those areas, routes and sites, are provided by the Department by the Contract and are directly related to the Contract.

Support Activities including material sites, material processing sites, disposal sites, haul routes, staging and equipment storage areas; that are furnished by the Contractor or a commercial operator, are not included in the Project Area.

**Records.** Any record, report, information, document, or photograph required to be created or maintained pursuant to the requirements of the CGP storm water requirements of the Clean Water Act; and applicable local, state, and federal laws and regulations regarding document preservation.

**Storm Water Discharges From Municipal Separate Storm Sewer Systems (MS4s).** A conveyance or system of conveyances including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains that discharges into waters of the United States and is owned or operated by a public agency.

**Spill Prevention, Control, and Countermeasure Plan (SPCC Plan).** The Contractor's detailed plan for petroleum spill prevention and control measures that meet the requirements of 40 CFR 112.

**Spill Response Field Representative.** The Contractor's representative with authority and responsibility for managing, implementing, and executing the HMCP and SPCC Plan.

**Storm Water Pollution Prevention Plan (SWPPP).** The Contractor's detailed project specific plan to minimize erosion and contain sediment within the Project Area, and to prevent discharge of pollutants that exceed applicable water quality standards. The SWPPP includes, but is not limited to, amendments, records of activities, inspection schedules and reports, qualifications of key personnel, and all other documentation, required by the CGP and this specification, and other applicable local, state, and federal laws and regulations.

**Storm Water Lead.** The Contractor's qualified representative who conducts Inspections and has authority to suspend work and to implement corrective actions required for CGP compliance.

**Storm Water Pollution Prevention Plan Two (SWPPP2).** The Contractor's detailed project specific plan to comply with CGP or MSGP requirements, for Contractor construction-related Support Activities outside the Project Area.

**Subcontractor Spill Response Coordinator.** The subcontractor's representative with authority and responsibility for coordinating the subcontractor's activities in compliance with the HMCP and SPCC Plan.

**Subcontractor SWPPP Coordinator.** The subcontractor's representative with authority to direct the subcontractor's work, and who is responsible for coordination with the Superintendent and Storm water lead, and for the subcontractor's compliance with the SWPPP.

**Superintendent.** The Superintendent has responsibility and authority for the overall operation of the Project and for Contractor furnished sites and facilities directly related to the Project.

**Support Activities.** See ADEC CGP definition. Further defined as construction activities in which the Department is not an operator and the activity is outside the Project Area.

**SWPPP Amendment.** A revision or document that adds to, deletes from, or modifies the SWPPP.

**SWPPP Preparer.** The Contractor's qualified representative who is responsible for developing the initial SWPPP.

**Utility Spill Response Coordinator.** The Utility's representative with authority and responsibility for coordinating the Utility's activities in compliance with the HMCP and SPCC Plan.

**Utility SWPPP Coordinator.** The Utility's representative with authority to direct the Utility's work, and who is responsible for coordination with the Superintendent and Storm Water Lead, and for the Utility's compliance with the SWPPP.

**641-1.03 PLAN AND PERMIT SUBMITTALS.** For plans listed in Subsection 108-1.03.5 (SWPPP and HMCP) use the Contractor submission and Department review deadlines identified in Subsection 641-1.03.

Partial and incomplete submittals will not be accepted for review. Any submittal that is re-submitted or revised after submission, but before the review is completed, will restart the submittal review timeline. No additional Contract time or additional compensation will be allowed due to delays caused by partial or incomplete submittals, or required re-submittals.

1. Storm Water Pollution Prevention Plan. Submit one hard copy of the SWPPP to the Project Engineer for approval. Deliver this document to the Project Engineer at least

21 days before beginning Construction Activity. Organize and bind the SWPPP and related documents for submittal according to the requirements of Subsection 641-2.01.2.

The Department will review the SWPPP submittals within 14 days after they are received. Submittals will be returned to the Contractor, and marked as either “rejected” with reasons listed or as “approved” by the Department. When the submittal is rejected, the Contractor must revise and resubmit the SWPPP. The 14 day review period will restart when the contractor submits an electronic copy and three hard copies of the revised SWPPP to the Project Engineer for approval.

Once the SWPPP is approved by the Department, submit two complete copies of the SWPPP to the Project Engineer.

2. Hazardous Material Control Plan. Submit the HMCP, as an appendix to the SWPPP, to the Project Engineer for approval. The HMCP submittal and review timeline, and signature requirements are the same as the SWPPP.
3. Spill Prevention, Control and Countermeasure Plan. When a SPCC Plan is required under Subsection 641-2.03, submit an two signed hard copies of the SPCC Plan to the Project Engineer. Deliver these documents to the Project Engineer at least 21 days before beginning Construction Activity. The Department reserves the right to review the SPCC Plan and require modifications.
4. CGP Coverage. The Contractor is responsible for permitting of Contractor and subcontractor Construction Activities related to the Project. The Contractor cannot use the SWPPP for Support Activities outside the Project Area where the Department is not an operator.

After Department approval of the SWPPP and prior to beginning Construction Activity, submit an eNOI with the required fee to ADEC for coverage under the Construction General Permit (CGP). Submit a copy of the signed eNOI and ADEC’s acknowledgement letter to the Project Engineer when the eNOI is submitted to ADEC.

Do not begin Construction Activity until the conditions listed in Subsection 641-3.01.1 are completed.

The Department will submit an eNOI to ADEC for Construction Activities inside the Project Area. The Project Engineer will provide the Contractor with a copy of the Department’s eNOI and ADEC’s acknowledgement letter, for inclusion in the SWPPP.

5. Ending CGP Coverage. Submit an eNOT to ADEC, and submit both a copy of the signed eNOT and ADEC’s acknowledgement letter to the Department, within 30 days after the Project Engineer has determined the conditions listed in Subsection 641-3.01.6 have been met.

6. ADEC SWPPP Review. When CGP, Part 2.1.3 - requires ADEC SWPPP review:
  - a. Transmit a copy of the Department-approved SWPPP to ADEC using delivery receipt confirmation;
  - b. Transmit a copy of the delivery receipt confirmation to the Project Engineer within seven days of receiving the confirmation; and
  - c. Retain a copy of delivery receipt confirmation in the SWPPP.
  
7. Local Government SWPPP Review. When local government or the CGP Part 2.1.4 requires local government review:
  - a. Transmit a copy of the Department-approved SWPPP and other information, as required, to local government, with the required fee using delivery receipt confirmation;
  - b. Transmit a copy of the delivery receipt confirmation to the Project Engineer within seven days of receiving the confirmation;
  - c. Transmit a copy of any comments by the local government to the Project Engineer within seven days of receipt;
  - d. Amend the SWPPP as necessary to address local government comments and transmit SWPPP Amendments to the Project Engineer within seven days of receipt of the comments;
  - e. Include a copy of local government SWPPP review letter in the SWPPP; and
  - f. Before ending permit coverage file a project ending notification with local government and allow them to inspect the work.
  
8. Modifying Contractor's eNOI. When required by The CGP Part 2.7, modify your eNOI to update or correct the information. Reasons for modification include change to the start or end dates, small changes in number of acres to be disturbed, change in decision to use or not use treatment chemicals, or changed location of SWPPP Records.

The Contractor must submit an eNOT and then submit a new eNOI instead of an eNOI modification when: the operator has changed, the original eNOI indicates disturbed area less than five acres and the project will disturb more than five acres, or a project over five disturbed acres grows by more than 50%.

**641-1.04 PERSONNEL QUALIFICATIONS.** The SWPPP Preparer must meet at least one of the following qualifications:

- a. Current certification as a Certified Professional in Erosion and Sediment Control (CPESC);
- b. Current certification as AK-CESCL, and at least two years experience in erosion and sediment control, as a Storm Water Lead or SWPPP writer, or equivalent. Provide documentation including project names, project timelines, and work responsibilities demonstrating the experience requirement; or
- c. Professional Engineer registered in the State of Alaska with current certification as AK-CESCL

For Projects disturbing more than 20 acres, the SWPPP Preparer must also have completed a Department approved SWPPP Preparation course.

The Superintendent must meet the following qualifications:

- a. Current certification as AK-CESCL; and
- b. Duly authorized representative, as defined in the CGP, Appendix A, Part 1.12.3

The Storm Water Lead must have current certification as AK-CESCL, and be knowledgeable in the requirements of that position as defined in the CGP, Appendix C, Qualified Person.

The Active Treatment System (ATS) operator must have current certification as AK-CESCL, and be knowledgeable in the principals and practices of treatment systems in general, and the operation of the ATS in particular. Minimum experience to be 6 months field experience or completion of an ATS manufacturer's training course.

The Department accepts people having any of the following certificates as equivalent to AK-CESCL, if the certificates are current according to the sponsoring organization's policies:

- a. CPESC, Certified Professional in Erosion and Sediment Control; or
- b. CISEC, Certified Inspector in Sediment and Erosion Control

#### **641-1.05 SIGNATURE/CERTIFICATION REQUIREMENTS AND DELEGATIONS.**

1. eNOI and eNOT. The eNOI and eNOT must be signed and certified by a responsible corporate officer according to CGP Appendix A, Part 1.12.2. Signature and certification authority for the eNOI and eNOT cannot be delegated.
2. Delegation of Signature Authority for Other SWPPP Documents and Reports. Use Form 25D-108 to delegate signature authority and certification authority to the Superintendent position, according to CGP Appendix A, Part 1.12.3, for the SWPPP, Inspection Reports and other reports required by the CGP. The Project Engineer will provide the Department's delegation Form 25D-107, which the Contractor must include in the SWPPP.
3. Subcontractor Certification. Subcontractors must certify that they have read and will abide by the CGP and the conditions of the project SWPPP.

#### **641-1.06 RESPONSIBILITY FOR STORM WATER PERMIT COVERAGE.**

1. The Department and the Contractor are jointly responsible for permitting and permit compliance within the Project Area.
2. The Contractor is responsible for permitting and permit compliance outside the Project Area for Support Activities. The Contractor has sole responsibility for

compliance with ADEC and other applicable federal, state, and local requirements, and for securing all necessary clearances, rights, and permits. Subsection 107-1.02 describes the requirement to obtain permits, and to provide permit documents to the Project Engineer.

3. An entity that owns or operates, a commercial plant (as defined in Subsection 108-1.01.3) or material source or disposal site outside the Project Area, is responsible for permitting and permit compliance. The Contractor has sole responsibility to verify that the entity has appropriate permit coverage. Subsection 107-1.02 describes the requirement to obtain permits, and to provide permit documents to the Project Engineer.
4. The Department is not responsible for permitting or permit compliance, and is not liable for fines resulting from noncompliance with permit conditions:
  - a. For areas or Support Activities outside the Project Area and
  - b. For commercial plants, commercial material sources, and commercial disposal sites.

**641-1.07 UTILITY RELOCATION COVERAGE.** A Utility company is not an Operator when utility relocation is performed concurrently with the Project, as outlined in Section 105-1.06. The Department maintains operational control over the Utility's plans and specifications for coordination with project construction elements, and the Contractor has day-to-day control over the various utility construction activities that occur in support of the Project. A Utility company is considered a subcontractor for concurrent relocation.

After the Contractor has an active NOI for the Project, a Utility Company performing advance relocation work under a separate SWPPP no longer has Operator status and files the NOT for the Utility Company's SWPPP covering only the completed utility work. Remaining utility relocation work is included in and performed under the Project SWPPP.

#### **641-2.01 STORM WATER POLLUTION PREVENTION PLAN (SWPPP) REQUIREMENTS.**

1. SWPPP Preparer and Pre-Construction Site Visit. Use a SWPPP Preparer to develop the SWPPP and associated documents, according to the requirements of the CGP. The SWPPP Preparer must put their name, qualifications (including the expiration date of any certifications), title and company name in the SWPPP.

The SWPPP Preparer must conduct a pre-construction inspection at the Project site before construction activity begins. If the SWPPP Preparer is not a Contractor employee, the SWPPP Preparer must visit the site accompanied by the Contractor. Give the Department at least seven days notice of the site visit, so that the Department may participate.

During the pre-construction inspection, the SWPPP Preparer must identify, or if a draft of the SWPPP has already been prepared verify that the SWPPP fully addresses and describes:

- a. Opportunities to phase construction activities;
- b. Appropriate BMPs and their sequencing; and
- c. Sediment controls that must be installed prior to beginning Construction Activities.

Document the SWPPP Preparer's pre-construction inspection in the SWPPP on Form 25D-106, SWPPP Pre-Construction Site Visit, including the names of attendees and the date.

2. Developing the SWPPP. Use the Department's ESCP and other Contract documents as a starting point for developing the SWPPP. The approved SWPPP replaces the ESCP.

Develop the SWPPP framework according to the ADNR SWPPP template with additional information as required. Include information required by the CGP, Part 5, and this specification.

When using the ADNR SWPPP template:

The following appendices can found on the ADNR D&C website:  
<http://dnr.alaska.gov/parks/designconstruct/swppp.htm>

- Include the following appendices:
  - Appendix A – Site Maps and Drawings
  - Appendix B – BMP Details
  - Appendix C – Project Schedule
  - Appendix D – Supporting Documentation: TMDLs, Endangered Species, Historical Properties, & Project Permits
  - Appendix E – Certifications and Delegation of Authority
  - Appendix F – Subcontractor Certifications
  - Appendix G – Permit Conditions: Copy of Signed Notice of Intent (Include both Department's and Contractor's), Confirmation of Delivery of NOI to ADEC (Include both Department's and Contractor's), Copy of Letter from ADEC Authorizing Coverage with ADEC NOI Tracking Number (Include both Department's and Contractor's), and Copy of 2016 Alaska Construction General Permit
  - Appendix H – Personnel Qualifications and Training Certificates for:
    - SWPPP Preparer
    - Storm Water Lead/Inspector
    - Contractor's ATS Operator

- Qualified personnel must be described in a list with names and dates in positions
- Appendix I – SWPPP Pre-Construction Site Visit
- Appendix J – Amendment Log
- Appendix K – Corrective Action Log
- Appendix L – Grading and Stabilization Records
- Appendix M – Hazardous Material Control Plan
- Appendix N – Training Log
- Appendix O – Rainfall Record
- Appendix P – Inspection Reports
- Appendix Q – Delayed Action Item Report
- Appendix R – Project Staff Tracking Form
- Appendix S – Monitoring Plan (If applicable) and Reports

Obtain the following forms after they have been completed by the Department and include them in the SWPPP:

- SWPPP Delegation of Signature Authority – ADNR (25D-107)
- SWPPP Certification for ADNR (25D-109)

Use the following Department forms for recording information in the SWPPP:

- SWPPP Amendment Log (25D-114)
- SWPPP Certification for Contractor (25D-111)
- SWPPP Construction Site Inspection Report (25D-100)
- SWPPP Corrective Action Log (25D-112)
- SWPPP Daily Record of Rainfall (25D-115)
- SWPPP Delegation of Signature Authority – Contractor (25D-108)
- SWPPP Grading and Stabilization Activities Log (25D-110)
- SWPPP Pre-Construction Site Visit (25D-106)
- SWPPP Project Staff Tracking (25D-127)
- SWPPP Subcontractor Certification (25D-105)
- SWPPP Training Log (25D-125)

SWPPP Forms are at: <http://dnr.alaska.gov/parks/designconstruct/swppp.htm>

Compile the SWPPP in three ring binders with tabbed and labeled dividers for each section and appendix.

### 3. SWPPP Considerations and Contents.

The SWPPP must provide erosion and sediment control measures for all Construction Activity within the Project Area. Support Activities outside the Project

Area must have permit coverage, using separate SWPPP2s, and separate Contractor Inspections.

The SWPPP must consider the activities of the Contractor and all subcontractors and utility companies performing work in the Project Area. The SWPPP must describe the roles and responsibilities of the Contractor, subcontractors, utility companies, and the Department with regard to implementation of the SWPPP. The SWPPP must identify all operators for the Project, including utility companies performing Construction Activity, and identify the areas:

- a. Over which each operator has operational control; and
- b. Where the Department and Contractor are co-operators.

For work outside the Project Area the SWPPP must identify the entity that has stormwater permit coverage, the operator, and the areas that are:

- a. Dedicated to the Project and where the Department is not an operator; and
- b. Not dedicated to the project, but used for the project.

Develop the SWPPP according to the requirements of the CGP and this specification, and account for the Contractor's construction methods and phasing.

Design temporary BMPs for a 2 year 24 hour precipitation amount. Describe BMPs in the SWPPP and in SWPPP Amendments, including source controls, sediment controls, discharge points, and all temporary and permanent stabilization measures. Describe the design, placement, installation, and maintenance of each BMP, using words and drawings as appropriate. Provide a citation to the BMP Manual or publication used as a source for the BMP, including the title of the BMP Manual or publication, the author (individual or agency), and date of publication. If no published source was used to select or design a BMP, then the SWPPP or SWPPP amendment must state that "No BMP manual or publication was used for this design."

Describe the sequence and timing of activities that disturb soils and of BMP implementation and removal. Phase earth disturbing activities to minimize unstabilized areas, and to achieve temporary or final stabilization quickly. Whenever practicable incorporate final stabilization work into excavation, embankment, and grading activities.

Identify in the SWPPP whether Inspections are conducted:

- a. Inspect once every seven (7) days; or
- b. Inspect once at least once every fourteen (14) calendar days and within twenty-four (24) hours of the end of a storm event that resulted in a discharge from the project area.

- c. Areas where the mean annual precipitation is 40 inches or greater: inspect once every seven (7) days.

The SWPPP must cite and incorporate applicable requirements of the Project permits and commitments related to historic preservation. Make additional consultations or obtain permits as necessary for Contractor specific activities which were not included in the Department's permitting and consultation.

The SWPPP is a dynamic document. Keep the SWPPP current by noting installation, modification, and removal of BMPs, and by using amendments, SWPPP amendment logs, Inspection Reports, corrective action logs, records of land disturbance and stabilization, and any other records necessary to document storm water pollution prevention activities and to satisfy the requirements of the CGP and this specification. See Subsection 641-3.03 for more information.

#### 4. Recording Personnel and Contact Information in the SWPPP.

Include in the SWPPP, Records of the AK-CESCL cards or certificates for the Storm Water Lead, and for any acting Storm Water Lead. If the Storm Water Lead is replaced permanently or temporarily, by an acting Storm Water Lead; record in the SWPPP (use Form 25D-127) the names of the replacement personnel, the date of the replacement. For temporary personnel record their beginning and ending dates.

Provide 24 hour contact information for the Storm Water Lead. The Storm Water Lead must have 24 hour contact information for all Subcontractor SWPPP Coordinators and Utility SWPPP Coordinators.

Include in the SWPPP, Records of the AK-CESCL cards or certificates of storm water inspectors, and ATS operators. Record their beginning and ending dates.

#### **641-2.02 HAZARDOUS MATERIAL CONTROL PLAN (HMCP) REQUIREMENTS.**

Prepare the HMCP for prevention of pollution from storage, use, containment, cleanup, and disposal of all hazardous material, including petroleum products related to construction activities and equipment. Include the HMCP as an appendix to the SWPPP. Compile Material Safety Data Sheets in one location and reference that location in the HMCP.

Designate a Contractor's Spill Response Field Representative with 24 hour contact information. Designate a Subcontractor Spill Response Coordinator for each subcontractor. The Superintendent and Contractor's Spill Response Field Representative must have 24 hour contact information for each Subcontractor Spill Response Coordinator and the Utility Spill Response Coordinator.

List and give the location and estimated quantities of hazardous materials (Including materials or substances listed in 40 CFR 117 and 302, and petroleum products) to be used or stored on the Project. Hazardous materials must be stored in covered storage areas. Include secondary containment for all hazardous material storage areas.

Identify the locations where fueling and maintenance activities will take place, describe the activities, and list controls to prevent the accidental spillage of petroleum products and other hazardous materials. Controls include placing absorbent pads or other suitable containment under fill ports while fueling, and under equipment during maintenance or repairs.

Use secondary containment under all stationary equipment (equipment that does not have a seat for driving) that contains petroleum products. Use secondary containment under pumps, compressors, and generators.

List the types and approximate quantities of response equipment and cleanup materials available on the Project. Include a list and location map of cleanup materials, at each different work site and readily available off site (materials sources, material processing sites, disposal sites, staging areas, etc). Spill response materials must be stored in sufficient quantity at each work location, appropriate to the hazards associated with that site.

Describe procedures for containment and cleanup of hazardous materials. Describe a plan for the prevention, containment, cleanup, and disposal of soil and water contaminated by spills. Describe a plan for dealing with contaminated soil and water encountered during construction. Clean up of spills or contaminated surfaces must be initiated immediately and completed as soon as practicable.

Describe methods of disposing of waste petroleum products and other hazardous materials generated by the Project, including routine maintenance. Identify haul methods and final disposal areas. Assure final disposal areas are permitted for hazardous material disposal.

Describe methods of complying with the requirements of AS 46.04.010-900, Oil and Hazardous Substances Pollution Control, and 18 AAC 75. Include contact information for reporting hazardous materials and petroleum product spills to the Project Engineer and reporting to federal, state and local agencies.

**641-2.03 SPILL PREVENTION, CONTROL AND COUNTERMEASURE PLAN (SPCC Plan) REQUIREMENTS.** Prepare and implement an SPCC Plan when required by 40 CFR 112; when both of the following conditions are present on the Project:

- a. Oil or petroleum products from a spill may reach navigable waters (as defined in 40 CFR 112); and
- b. Total above ground storage capacity for oil and any petroleum products is greater than 1,320 gallons (not including onboard tanks for fuel or hydraulic fluid used primarily to power the movement of a motor vehicle or ancillary onboard oil-filled operational equipment, and not including containers with a storage capacity of less than 55 gallons)

Reference the SPCC Plan in the HMCP and SWPPP.

## **641-2.04 RESPONSIBILITY AND AUTHORITY OF THE SUPERINTENDENT AND STORM WATER LEAD**

The Superintendent is responsible for the overall operation of the Project and all Contractor furnished sites and facilities directly related to the Project. The Superintendent shall sign and certify the SWPPP. The Storm Water Lead shall sign and certify the SWPPP, Inspection Reports and other reports required by the CGP, except the NOI and NOT. The Superintendent and Storm Water Lead may not delegate the task or responsibility of signing and certifying the SWPPP submitted under Subsection 641-1.03.1, Inspection Reports, and other reports required by the CGP.

The Superintendent may assign certain duties to the Storm Water Lead; those duties may include:

1. Ensuring Contractor's and subcontractor's compliance with the SWPPP and CGP;
2. Ensuring the control of erosion, sedimentation, or discharge of pollutants;
3. Directing and overseeing installation, maintenance, and removal of BMPs;
4. Performing Inspections; and
5. Updating the SWPPP including adding amendments and forms.

The Storm Water Lead has authority to work in the following positions named in the CGP, Appendix C, Qualified Person: Storm Water Lead and Storm Water Inspector. The Storm Water Lead has authority to work in all the position of ATS Operator if they meet the knowledge and experience qualifications listed in 1.04..

The Superintendent and Storm Water Lead shall be knowledgeable in the requirements of this Section 641, the SWPPP, CGP, BMPs, HMCP, SPCC Plan, environmental permits, environmental commitments, and historic preservation commitments.

The Superintendent and Storm Water Lead shall have the Contractor's complete authority and be responsible for suspending construction activities that do not conform to the SWPPP or CGP.

**641-2.05 MATERIALS.** Use materials suitable to withstand hydraulic, wind, and soil forces, and to control erosion and trap sediments according to the requirements of the CGP and the Specifications.

- Use the temporary seed mixture specified by special provision, or use annual rye grass if no temporary seed mix is specified.
- Use soil stabilization material as specified in Section 727.
- Use silt fences as specified in Section 729.
- Use straw that is certified as free of noxious weed by the United States Department of Agriculture, Natural Resources Conservation Service, Local Soil and Water Conservative District. Alaska Weed Free Forage Certification Program must be used when available. Hay may not be substituted for straw.
- Use a rain gauge.

**641-2.06 CONTRACTOR REQUIREMENTS.** The Contractor must be familiar with the requirements of the CGP because Contractor's employees will be conducting duties that relate to compliance with the CGP.

**641-3.01 CONSTRUCTION REQUIREMENTS.** Comply with the SWPPP and CGP requirements.

1. Before Construction Activity may Begin.

a. Confirm the following:

- 1) The SWPPP Preparer must visit the Project, the visit must be documented in the SWPPP, and the SWPPP must be developed (or amended) with findings from the visit;
- 2) The SWPPP must be approved by the Project Engineer;
- 3) The Contractor must be authorized to begin by the Project Engineer;
- 4) The Project eNOIs for the Department and for the Contractor, as well as any other eNOIs if there are additional operators, must be listed as Active Status on the ADEC website; and
- 5) The Department approved SWPPP must be submitted to ADEC and Local Government (when required).

b. Post notices containing the following information:

- 1) Copy of all eNOIs related to this project;
- 2) Name and 24 hour phone number of Storm Water Lead; and
- 3) Location of the SWPPP.

Post notices on the outside wall of the Contractor's project office, and near the main entrances of the construction project. Protect postings from the weather. Locate postings so the public can read them without obstructing construction activities or the traveling public (for example, at an existing pullout). Do not use retroreflective signs for the SWPPP posting. Do not locate SWPPP signs in locations where the signs may be confused with traffic control signs or devices. Update the notices if the listed information changes, for instance if the location of the SWPPP or contact person changes during the winter.

c. Install an outdoor rain gauge per manufacturer's guidance, in a accessible location on the Project.

d. Delineate the site for both land disturbing activities and areas that will be left undisturbed. Install sediment controls and other BMPs that must be placed prior to the initiation of Construction Activity.

The CGP Part 4.10.3 allows cutting of trees and brush while the ground is frozen, without disturbing the vegetative mat, prior to submitting an eNOI.

## 2. During Construction.

Make copies of the applicable portions of the SWPPP available to subcontractors and utility companies before they begin soil disturbing activities. Inform subcontractors and utility companies of amendments that affect them in a timely manner. Ensure all subcontractors who engage in soil-disturbing activities understand and comply with the SWPPP and the CGP, and have signed a SWPPP Subcontractor Certification, Form 25D-105, before they conduct the activity. Include SWPPP Subcontractor Certifications as an appendix to the SWPPP. Provide SWPPP information to utility companies. Coordinate with subcontractors and utility companies doing work in the Project Area so that BMPs, including temporary and permanent stabilization, are installed, maintained, and protected from damage.

Provide on-going training to employees and subcontractors, on control measures at the site and applicable storm water pollution prevention procedures. Training must be specific to the installation, maintenance, protection, and removal of control measures. Training must be given at a frequency that will be adequate to ensure proper implementation and protection of control measures. Document on the SWPPP Training Log, Form 25D-125, the dates and attendees to these trainings. Include the SWPPP Training Log as an appendix to the SWPPP.

Notify the Project Engineer immediately if the actions of any utility company or subcontractor do not comply with the SWPPP and the CGP.

Comply with Subsection 107-1.11 Protection and Restoration of Property and Landscape. Do not install concrete washout containment within 100 feet of wetlands and/or other water bodies.

Fuel in designated areas. Place absorbent pads or other suitable containment under fill ports while fueling, and under equipment during maintenance or repairs. Install secondary containment under all stationary equipment that contains petroleum products.

Comply with requirements of the HMCP and SPCC Plan, and all local, state and federal regulations that pertain to the handling, storage, containment, cleanup, and disposal of petroleum products or other hazardous materials.

Keep the SWPPP and HMCP current (refer to Subsection 641-2.01.3, SWPPP Considerations and Contents)

## 3. Pollutant and Hazardous Materials Reporting Requirements.

If there has been an incident of non-compliance with the CGP that may endanger health or the environment, immediately report the incident to ADEC according to the CGP, Appendix A, Part 3.0. Notify the Project Engineer immediately and to the

extent possible coordinate reports to ADEC with the Project Engineer. The report must include:

- A description of the noncompliance and its causes;
- The exact dates and times of noncompliance ;
- If not yet corrected the anticipated time the project will be brought back into compliance; and
- The corrective actions taken, or planned, to reduce, eliminate and prevent reoccurrence.

Report spills of petroleum products or other hazardous materials to the Project Engineer and other agencies as required by law. Use the HMCP and SPCC Plan (if available) for contact information to report spills to regulatory agencies. See CGP Part 4.8.

#### 4. Corrective Action and Maintenance of BMPs.

##### a. Implement corrective action:

- 1) If an incident of non-compliance with the SWPPP, or CGP is identified;
- 2) If an Inspection identifies the SWPPP or any part of the SWPPP is ineffective in preventing erosion, sedimentation or the discharge of pollutants;
- 3) If the Project Engineer determines the SWPPP or any part of the SWPPP is ineffective in preventing the erosion, sedimentation, or the discharge of pollutants;
- 4) If a required BMP was never installed, was installed incorrectly, or not in accordance with the CGP Part 4.0;
- 5) If any BMP is not operating as intended, or has not been maintained in an effective operation condition, or is unable to effectively perform the intended function;
- 6) Before sediment or debris fills a BMP to the percentage of design capacity or available storage allowed by the CGP (or manufacturer's specifications or SWPPP requirements, whichever is lower);
- 7) Whenever there is a change in conditions, design, construction, operation, or maintenance that could result in erosion, sedimentation, or the discharge of pollutants;
- 8) If a prohibited discharge as specified in CGP Part 4.6 is occurring or will occur; or
- 9) If there are accumulations and tracking of sediment or other pollutants, in or near any storm water conveyance channels, on roadways or parking lots within and adjacent to the project area, in the immediate vicinity of control measures, at discharge points or entry points into the storm sewer system, or in other areas within the project area.

##### b. Implement corrective actions so that all of the following time requirements are satisfied:

- 1) Conditions that are easily remedied (i.e. removal of tracked sediment, maintenance of control measure, or spill clean-up), initiate corrective action within 24 hours and complete as soon as possible;
- 2) Corrective action is completed before the next storm event;
- 3) Corrective action is completed in time to protect water quality; and
- 4) Corrective action is completed no later than the Complete-by-Date that was entered in an Inspection Report (see Subsection 641-3.03.2 for more information).

If a corrective action is not implemented within the time requirements of this section, document the situation in the SWPPP, notify the Project Engineer, and implement corrective action as soon as possible.

If a corrective action could affect a subcontractor, notify the subcontractor within three days of taking the corrective action.

Train subcontractors to identify conditions that require corrective action. Subcontractors are required to notify the Contractor within 24 hours of becoming aware of a condition(s) that requires corrective action.

#### 5. Stabilization.

Stabilization may be accomplished using temporary or permanent measures. Initiate stabilization of disturbed soils, erodible stockpiles, disposal sites, and of erodible aggregate layers so that all of the following conditions are satisfied:

- a. As soon as practicable;
- b. As soon as necessary to avoid erosion, sedimentation, or the discharge of pollutants; and
- c. As identified in the SWPPP.

Land may be disturbed and stabilized multiple times during a project. Coordinate work to minimize the amount of disturbed soil at any one time. Do not disturb more soil than you can stabilize with the resources available.

Temporarily stabilize from wind and water erosion portions of disturbed soils, portions of stockpiles, and portions of disposal sites, that are not in active construction. Temporary stabilization measures may require a combination of measures including but not limited to vegetative cover, mulch, stabilizing emulsions, blankets, mats, soil binders, non-erodible cover, dust palliatives, or other approved methods.

#### Temporary or Permanent Seeding.

When temporary or permanent seeding is required, provide a working hydro seeding equipment located within 100 miles of the project by road; with 1,000 gallon or more tank capacity, paddle agitation of tank, and the capability to reach the seed areas

with an uniform mixture of water, seed, mulch and tackifier. If the project is located in an isolated community the hydro-seeder must be located at the project.

Before applying temporary or permanent seeding, prepare the surface to be seeded to reduce erosion potential and to facilitate germination and growth of vegetative cover. Apply seed and maintain seeded areas. Reseed areas where growth of temporary vegetative cover is inadequate to stabilize disturbed ground.

Apply permanent seed according to Sections 618 and 724, within the time periods allowed by the CGP and the Contract, at locations where seeding is indicated on the plans and after land-disturbing activity is permanently ceased.

#### Stream By Pass.

When installing a culvert or other drainage structure where stream bypass is not used, install temporary or permanent stabilization concurrently or immediately after placing the culvert or drainage structure in a manner that complies with the SWPPP, applicable project permits and prevents discharge of pollutants.

Install temporary and permanent stabilization:

- a. At the culvert or drainage structure inlet and outlet; and
- b. In the areas upstream and downstream that may be disturbed by the process of installing the culvert, culvert end walls, culvert end sections, or drainage structure.

Before deactivating a stream bypass or stream diversion used for construction of a bridge, culvert, or drainage structure, install permanent stabilization:

- a. At the inlet and outlet of the culvert, drainage structure, or bridge;
- b. In the area upstream and downstream of the culvert, drainage structure, or bridge, that is disturbed during installation or construction of the culvert, drainage structure, or bridge; and
- c. Under the bridge.

#### 6. Ending CGP Coverage and BMP Maintenance.

The Project Engineer will determine the date that all the following conditions for ending CGP coverage have been met within the Project Area:

- a. Land disturbing activities have ceased;
- b. Final Stabilization has been achieved (including at Department furnished material sources, disposal sites, staging areas, equipment areas, etc.); and
- c. Temporary BMPs have been removed.

After the Project Engineer has determined the conditions for ending CGP coverage have been met, the Department will:

- a. Send written notice to the Contractor with the date that the conditions were met;
- b. Submit an eNOT to ADEC; and
- c. Provide a copy of the eNOT and ADEC's acknowledgement letter to the Contractor.

The Contractor is responsible for ending permit coverage within the Project Area, by submitting an eNOT to ADEC within 30 days of meeting the conditions for ending CGP coverage. The Contractor is responsible for BMP maintenance and SWPPP updates until permit coverage is ended.

If the Contractor's CGP eNOI acreage includes Support Activities where the Department is not an Operator, the Contractor may not be able to file an eNOT at the same time as the Department. In this case, the Contractor must amend the SWPPP and separate SWPPP2(s), to indicate the Department's CGP coverage has ended, and the Department is no longer an Operator within the Project Area.

The Contractor must indicate in the SWPPP the areas that have reached Final Stabilization, and the dates land disturbing activities ended and Final Stabilization was achieved. The Contractor must submit an eNOT to ADEC, and insert copies of the Department's and the Contractor's eNOTs with ADEC's acknowledgement letters in the appendix of the SWPPP.

The Contractor must submit a copy of each signed eNOT and ADEC's acknowledgement letter to the Department within 30 days of receiving them.

7. Transmit final SWPPP.

Transmit one copy of the final SWPPP, including all amendments and appendices, to the Project Engineer when the project eNOTs are filed, or within 30 days of the Department's eNOT being filed, whichever is sooner. Transmittal must be by both electronic and hard copy.

**641-3.02 SWPPP DOCUMENTS, LOCATION ON-SITE, AVAILABILITY, AND RECORD RETENTION.** The SWPPP and related documents maintained by the Contractor are the Record for demonstrating compliance with the CGP. Copies of SWPPP documents transmitted to the Project Engineer under the requirements of this specification are informational and do not relieve the Contractor's responsibility to maintain complete records as required by the CGP and this specification.

Keep the SWPPP, HMCP and SPCC Plan at the on-site project office. If there is not an on-site project office, keep the documents at a locally available location that meets CGP requirements and is approved by the Project Engineer. Records may be moved to another office for record retention after the eNOTs are filed. Records may be moved to another office during winter shutdown, but this will require updating on-site posted notices. Provide the Department with copies of all Records.

Retain Records and a copy of the SWPPP, for at least three years after the date of eNOT. If EPA or ADEC inspects the project, issues a Notice of Violation (NOV), or begins investigation for a potential NOV before the retention period expires, retain the SWPPP and all Records related to the SWPPP and CGP until at least three years after EPA and/or ADEC has determined all issues related to the investigation are settled.

The SWPPP and related documents must be made available for review and copy, to the Department and other regulatory agencies that request them. The Project, including any related off-site areas or support activities, must be made available for inspection, or sampling and monitoring, by the Department and other regulatory agencies. See CGP Parts 5.10, 6.6 and 9.4.

**641-3.03 SWPPP INSPECTIONS, AMENDMENTS, REPORTS, AND LOGS.** Perform Inspections, prepare Inspection Reports, and prepare SWPPP Amendments in compliance with the SWPPP and the CGP. Update SWPPP Corrective Action Log, SWPPP Amendment Log, SWPPP Grading and Stabilization Activities Log, and SWPPP Daily Record of Rainfall forms. For active projects update the Records daily.

1. Inspection during Construction.

Conduct Inspections according to the schedule and requirements of the SWPPP and CGP:

- a. Areas where the mean annual precipitation is 15 inches or less inspect once at least every fourteen (14) calendar days and within twenty-four (24) hours of the end of a storm event that resulted in a discharge from the project area.
- b. Areas where the mean annual precipitation is greater than 15 and less than 40 inches: inspect once every seven (7) days.
- c. Areas where the mean annual precipitation is 40 inches or greater: inspect once every seven (7) days, and twice every seven days during periods of relatively continuous precipitation or sequential storm events.

Inspections required by the CGP and SWPPP must be performed by the Contractor's Storm Water Lead. The Department's Project Engineer shall be contacted 24 hours prior to an Inspection. The Department's Project Engineer shall be present during inspections if available. If Department's Project Engineer is unavailable to attend the Inspection, the Contractor shall provide a copy of the Inspection to Project Engineer within three days of the Inspection date and pictures taken during the inspection.

2. Inspection Reports.

Use only the ADNR SWPPP Construction Site Inspection Report, Form 25D-100 to record Inspections. Changes or revisions to Form 25D-100 are not permitted; except for adding or deleting data fields that list: Location of Discharge Points and Site Specific BMPs. Complete all fields included on the Inspection Report form; do not leave any field blank.

Unless otherwise directed by the Project Engineer, insert a Complete-by-Date for each corrective action listed that is (1) a date that complies with the time requirements listed in Subsection 641-3.01.4, or (2) seven days from the date of the Inspection, whichever is sooner. Provide a copy of the completed, unsigned Inspection Report to the Project Engineer by noon of the day after inspection.

The Superintendent must review the Inspection Report. The Project Engineer may coordinate with the Superintendent to review the Inspection Report. Corrections are limited to adding missing information or correcting entries to match field notes and conditions present at the time the Inspection was performed. Deliver a copy of the signed and certified Inspection Report to the Project Engineer with three days.

The Project Engineer may recommend corrections on the Inspection Report after the Superintendent has signed and certified the Inspection Report. If the Superintendent makes corrections, the Superintendent must recertify the Inspection Report by entering a new signature and date in the white space below the original signature and date lines. Send a copy of the recertified Inspection Report to the Project Engineer on the day it is recertified.

3. Inspection before Seasonal Suspension of Work.

Conduct an Inspection before seasonal suspension of work to confirm BMPs are installed and functioning according to the requirements of the SWPPP and CGP.

4. Reduced Inspection Frequencies.

Conduct Inspections according to the inspection schedule indicated in the approved SWPPP. Any change in inspection frequency must be approved by the Project Engineer, and beginning and ending dates documented as an amendment to the SWPPP.

The Project Engineer may waive winter Inspection requirements 14 days after the freeze-up. Inspections must resume inspections 21 days before thawing conditions are expected to result in a discharge, if all the following requirements are met:

- a. Frozen conditions are anticipated to continue for more than one month; and
- b. Soil disturbing or soil stabilizing activities have been suspended.

The Project Engineer may waive requirements for updating the Grading and Stabilization Activities Log and Daily Record of Rainfall during seasonal suspension of work. If so, resume collecting and recording weather data on the Daily Record of Rainfall form one month before thawing conditions are expected to result in runoff. Resume recording land disturbance and stabilization activities on the Grading and Stabilization Activities Log when Construction Activity resumes.

5. Stabilization before Seasonal Thaw.

Construction Activities within the Project Area must be stabilized with appropriate BMPs prior to seasonal thaw. Seasonal thaw is the annual (first) recurrence of snow and ice melting after a prolonged period of freezing conditions.

6. Inspection before Project Completion.

Conduct Inspection to ensure Final Stabilization is complete throughout the Project, and temporary BMPs that are required to be removed are removed. Temporary BMPs that are biodegradable and are specifically designed and installed with the intent of remaining in place until they degrade, may remain in place after project completion.

7. Items and Areas to Inspect.

Conduct Inspections of the areas required by the CGP and SWPPP.

8. SWPPP Amendments and SWPPP Amendment Log.

The Superintendent and the Storm Water Lead are the only persons authorized to amend the SWPPP and update the SWPPP Amendment Log, Form 25D-114. The Superintendent or the Storm Water Lead must sign and date amendments to the SWPPP and updates to the SWPPP Amendment Log.

SWPPP Amendments must be approved by the Project Engineer.

Amendments must occur:

- a. Whenever there is a change in design, construction operation, or maintenance at the construction site that has or could cause erosion, sedimentation or the discharge of pollutants that has not been previously addressed in the SWPPP;
- b. If an Inspection identifies that any portion of the SWPPP is ineffective in preventing erosion, sedimentation, or the discharge of pollutants;
- c. Whenever an Inspection identifies a problem that requires additional or modified BMPs
- d. Whenever a BMP is modified during construction, or a BMP not shown in the original SWPPP is added;
- e. If the Inspection frequency is modified (note beginning and ending dates); or
- f. When there is a change in personnel who are named in the SWPPP, according to Subsection 641-2.01.4.

Do not record removal of BMPs as amendments to the SWPPP. See Subsection 641-3.03.9 for documenting removal of BMPs.

Amend the SWPPP narrative as soon as practicable after any change or modification, but in no case, later than seven days following identification of the need for an amendment. Every SWPPP Amendment must be signed and dated. Cross-reference the amendment number with the Corrective Action Log or SWPPP page number, as applicable. When a BMP is modified or added, describe the BMP according to Subsection 641-2.01.3.

Keep the SWPPP Amendment Log current. Prior to performing each scheduled Inspection, submit to the Project Engineer a copy of the pages of the Amendment Log that contain new entries since the last submittal. Include copies of any documents amending the SWPPP.

Keep the SWPPP Amendment Log as an appendix to the SWPPP.

9. Site Maps.

Document installation, routine maintenance, and removal of BMPs by making notes on the SWPPP Site Maps. Include the date and the recording person's initials by these notes. Identify areas where Construction Activities begin, areas where Construction Activities temporarily or permanently cease, and areas that are temporarily or permanently stabilized.

10. Corrective Action Log.

The Storm Water Lead is the only person authorized to make entries on the SWPPP Corrective Action Log, Form 25D-112. Document the need for corrective action within 24 hours of discovery.

Modification or replacement of a BMP, installation of a new BMP not shown in the original SWPPP, or overdue maintenance (after a sediment trap exceeds 50% of design capacity) is a corrective action and must be documented on the Corrective Action Log. Do not record removal of BMPs on the Corrective Action Log.

After each Inspection Report has been signed and certified, update the corrective action log with the date of inspection and include all proposed corrective actions noted on the Inspection Report.

After the corrective action has been accomplished, note the action taken, if a SWPPP amendment was needed, and date and initial the entry.

Keep the Corrective Action Log current and submit a copy to the Project Engineer prior to performing each scheduled SWPPP Inspection.

Keep the Corrective Action Log as an appendix to the SWPPP.

11. Grading and Stabilization Activities Log.

The Storm Water Lead is the only person authorized to date and initial entries on the SWPPP Grading and Stabilization Activities Log, Form 25D-110. Use the SWPPP Grading and Stabilization Activities Log, to record land disturbance and stabilization activities.

Keep the Grading and Stabilization Activities Log current and submit a copy to the Project Engineer prior to performing each scheduled SWPPP Inspection.

Keep the Grading and Stabilization Activities Log as an appendix to the SWPPP.

12. Daily Record of Rainfall.

Use SWPPP Daily Record of Rainfall, Form 25D-115, to record weather conditions at the Project. Update the form daily and include the initials of the person recording each day's entry. Submit a copy to the Project Engineer prior to performing each scheduled Inspection. Keep the Daily Record of Rainfall as an appendix to the SWPPP.

**641-3.04 FAILURE TO PERFORM WORK.** The Project Engineer has authority to suspend work and withhold monies, for an incident of non-compliance with the CGP or SWPPP that may endanger health or the environment. If the suspension is to protect workers, the public, or the environment from imminent harm, the Project Engineer may orally order the suspension of work. Following an oral order of suspension, the Project Engineer will promptly give written notice of suspension. In other circumstances, the Project Engineer will give the Contractor written notice of suspension before suspension of work. A notice of suspension will state the defects or reasons for a suspension, the corrective actions required to stop suspension, and the time allowed to complete corrective actions.

1. If the Contractor fails to take the corrective action within the specified time, the Project Engineer may:

- a. Suspend the work until corrective action is completed;
- b. Withhold monies due the Contractor until corrective action is completed;
- c. Assess damages or equitable adjustments against the Contract Amount; and
- d. Employ others to perform the corrective action and deduct the cost from the Contract amount.

2. Reasons for the Project Engineer to take action under this section include, but are not limited to, the Contractor's failure to:

- a. Obtain appropriate permits before Construction Activities occur;
- b. Perform SWPPP Administration;
- c. Perform timely Inspections;
- d. Update the SWPPP;
- e. Transmit updated SWPPP, Inspection Reports, and other updated SWPPP forms to the Project Engineer;

- f. Maintain effective BMPs to control erosion, sedimentation, and pollution in accordance with the SWPPP, the CGP, and applicable local, state, and federal requirements;
- g. Perform duties according to the requirements of this Section 641; or
- h. Meet requirements of the CGP, SWPPP, or other permits, laws, and regulations related to erosion, sediment, or pollution control.

No additional Contract time or additional compensation will be allowed due to delays caused by the Project Engineer's suspension of work under this subsection.

**641-4.01 METHOD OF MEASUREMENT.** Section 109.

**641-5.01 BASIS OF PAYMENT.** See Subsection 641-3.04 Failure to Perform Work, for additional work and payment requirements.

The total value of this Contract will be adjusted as specified herein. Withholding will be determined by the Department and assessed under Pay Item 641(6) SWPPP Price Adjustment, as follows:

**TABLE 641-1 BMP VALUES  
- RESERVED -**

**TABLE 641-2 EROSION, SEDIMENT AND POLLUTION CONTROL – LIQUIDATED DAMAGES  
- RESERVED -**

1. Fines and Penalties: A Price adjustment equal to any penalties and fines levied against the Department by local, state, or federal agencies for pollutant violations, including violations of the CWA and the CGP, except when due to Department negligence. An amount equal to the anticipated penalties and fines for the violation or violations, excluding any due to negligence by the Department, will be withheld until the actual cost of the penalties and fines is known. Anticipated penalties and fines will be determined by the Project Engineer. The Contractor is also responsible for the payment of penalties and fines levied against the Contractor.
2. Failure to perform Inspections: By each 24 hour period, that a required SWPPP inspection is delayed or is not signed, certified, or completed in accordance with the schedule identified in the approved SWPPP a price adjustment of \$750 will be assessed.
3. Failure to perform Corrective Action. By each 24 hour period following 24 hours after written notice by the Project Engineer, per occurrence, a price adjustment of \$750 will be assessed where the Contractor:
  - fails to complete SWPPP administrative requirements as identified in the Contract or the CGP,
  - fails to initiate work required by the SWPPP, or

- fails to initiate corrective action to respond to a deficiency noted during an inspection or by the Project Engineer.

The same deficiency remaining uncorrected will be considered an additional occurrence for each additional 24 hour period, without requiring additional written notice by the Project Engineer.

Item 641(1) Erosion, Sediment and Pollution Control Administration. At the Contract lump sum price for administration of all work under this Section. Includes, but is not limited to, SWPPP and HMCP and SPCC Plan preparation, agency fees for SWPPP reviews, Storm Water Lead (when not included as a separate Pay Item under 641(7)) SWPPP amendments, pre-construction Inspections, Inspections, monitoring, reporting, and Record keeping or copying Records related to the SWPPP and required by the CGP, and Record retention.

Work required by the HMCP and SPCC Plan including hazardous material storage, containment, removal, cleanup and disposal, are subsidiary to Pay Item 641(1) Erosion, Sediment and Pollution Control Administration.

Item 641(2) Temporary Erosion, Sediment and Pollution Control. At the contingent sum prices specified for all labor, supervision, material, equipment, and incidentals to install, maintain, remove and dispose of approved temporary erosion, sedimentation, and pollution control BMPs required to implement the SWPPP and SPCC Plan.

Item 641(6) Withholding. Withholding according to Section 641-3.04, equal to any penalties and fines levied against the Department by local, state, or federal agencies for pollutant violations, including violations of the CWA, CGP, and any other Permit, except when due to the Department's sole negligence. The Contractor is also responsible for the payment of any and all penalties and fines levied against the Department or Contractor by entities (including agencies) other than the Department.

The Department will not release performance bonds until penalties and fines, assessed according to Section 641, are paid to the Department; and all requirements, according to Subsection 103-1.05, are satisfied.

Subsidiary Items. Temporary erosion, sediment, and pollution control measures that are required outside the Project Area are subsidiary. Work required by the HMCP and SPCC Plan including hazardous material storage, containment, removal, cleanup and disposal, are subsidiary to Item 641(1) Erosion, Sediment and Pollution Control Administration.

Work under other pay items. Work that is paid for directly or indirectly under other pay items will not be measured and paid for under Section 641. This work includes but is not limited to:

- a. Dewatering;
- b. Shoring;

- c. Bailing;
- d. Permanent seeding;
- e. Installation and removal of temporary work pads;
- f. Temporary accesses;
- g. Temporary drainage pipes and structures;
- h. Diversion channels;
- i. Settling impoundment; and
- j. Filtration.

Permanent erosion, sediment and pollution control measures will be measured and paid for under other Contract items, when shown on the bid schedule.

Work at the Contractor's Expense. Temporary erosion, sediment, and pollution control measures that are required due to carelessness, negligence, or failure to install temporary or permanent controls as scheduled or ordered by the Project Engineer, or for the Contractor's convenience, are at the Contractor's expense.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
641(1) Erosion, Sediment, and Pollution Control Administration	Lump Sum
641(2) Temporary Erosion, Sediment, and Pollution Control	Contingent Sum
641(6) Withholding	Contingent Sum

(10/20/11) PARKS-Special Provision

## SECTION 642

### CONSTRUCTION SURVEYING AND MONUMENTS

**642-3.02 CROSS-SECTION SURVEYS** Add the following:

Original ground, post-grubbing, post-excavation, and aggregate cross sections shall be taken at identical stations so that no interpolation of data is needed to calculate end areas.

Where an exact placement is not shown on the plans, the Department will be responsible for field locating the structures, signs, and mounds. The Contractor shall provide the Engineer with sufficient horizontal and vertical control to enable the Engineer to field locate these facilities. The Contractor shall be responsible for all surveying required to construct the field located item.

(05/02/11)PARKS-Special Provision

**642-3.04 OFFICE ENGINEERING.** Delete third sentence and replace with:

Perform the work by, or under the responsible charge of, a person registered in the State of Alaska as a Professional Land Surveyor or a Professional Engineer.

(05/01/07)E53-Standard Modification

**642-4.01 METHOD OF MEASUREMENT.** Add the following: Clearing required for stake visibility shall not be measured. Maintenance of stakes will not be measured.

(01/01/06)PARKS-Special Provision

**ADD THE FOLLOWING IF APPLICABLE**

**642-5.01 BASIS OF PAYMENT.** Add the following:

Clearing required for stake visibility is subsidiary to Item 642(1) and no separate payment shall be made. (01/01/06)PARKS-Special Provision

Replace Section 643 with the following:

## SECTION 643

### TRAFFIC MAINTENANCE

**643-1.01 DESCRIPTION.** Protect and control traffic during the contract. Furnish, erect, maintain, replace, clean, move and remove the traffic control devices required to ensure the safety of the park users and general public. Perform all administrative responsibilities necessary to implement the work. Site will be closed except for boat ramp.

#### **643-1.02 DEFINITIONS.**

Alaska Traffic Manual (ATM). The Manual on Uniform Traffic Control Devices (MUTCD) along with Alaska Supplement.

Traffic. The movement of the park users and general public through and around the project site. Traffic may consist of vehicles, pedestrians, and bicyclists.

Traffic Control Plan (TCP). A drawing or drawings indicating the method or scheme for safely guiding and protecting traffic and workers in a traffic control zone. The TCP depicts the traffic control devices and their placement and times of use.

Traffic Control Zone. A portion of the project that affects traffic and requires traffic control to safely guide and protect traffic and workers.

**643-1.03 TRAFFIC CONTROL PLAN.** Create and implement an approved TCP before beginning work within the project limits.

The TCP includes, but is not limited to, signs, barricades, traffic cones, plastic safety fence, and all other items required to direct traffic through or around the traffic control zone according to these Specifications and the ATM. Address in the TCPs placement of traffic control devices, including location, spacing, size, mounting height and type. Include code designation, size, and legend per the ATM and Alaska Sign Design Specifications (ASDS).

Submit new or modified TCPs to the Engineer for approval. Allow 1 week for the Engineer to review any TCP or each subsequent correction. You may change an approved TCP during construction provided you allow 48 hours for review and the Engineer approves the changes.

**643-2.01 MATERIALS.** Provide traffic control devices meeting the following requirements:

1. Signs. Use signs, including sign supports, that conform to Section 615, the ATM, and ASDS.
2. Barricades and Vertical Panels. Use barricades and vertical panel supports that conform to the ATM. Use Type III Barricades at least 8 feet long. Use reflective sheeting that meet AASHTO M 268 Type II or III.
3. Warning Lights. Use Type A (low intensity flashing), Type B (high intensity flashing) or Type C (steady beam) warning lights that conform to the ATM.
4. Drums. Use plastic drums that conform to the requirements of the ATM. Use reflective sheeting that meets AASHTO M 268 Type II or III.
5. Traffic Cones and Tubular Markers. Use reflectorized traffic cones and tubular markers that conform to the requirements of the ATM. Use traffic cones and tubular markers at least 28 inches high. Use reflective sheeting that meets AASHTO M 268 Type II or III.
6. Plastic Safety Fence. Use 4 foot high construction orange fence manufactured by one of the following companies, or an approved equal:
  - a. "Safety Fence" by Jackson Safety, Inc., Manufacturing and Distribution Center, 5801 Safety Drive NE, Belmont, Michigan, 49306. Phone (800) 428-8185.
  - b. "Flexible Safety Fencing" by Carsonite Composites, LLC, 19845 U.S. Highway 76, Newberry, South Carolina, 29108. Phone (800) 648-7916.
  - c. "Reflective Fencing" by Plastic Safety Systems, Inc., 2444 Baldwin Road, Cleveland, Ohio 44104. Phone (800) 662-6338.

**643-3.01 GENERAL CONSTRUCTION REQUIREMENTS.** Keep the work, and portions of the project affected by the work, in good condition to accommodate traffic safely. Provide and maintain traffic control devices and services inside and outside the project limits, day and night, to guide traffic safely.

The campground may be closed to traffic. Campground closure is intended to complete the work in this contract. All closures must be included in the Traffic Control Plan (TCP) and coordinated through the Project Engineer. Please give the Project Engineer 2 weeks notice prior to any closures.

Immediately notify the Engineer of any traffic related accident that occurs within the project limits as soon as you, an employee, or a subcontractor becomes aware of the accident

**643-3.02 TRAFFIC CONTROL DEVICES.** Before starting construction, erect permanent and temporary traffic control devices required by the approved TCPs. Use traffic control devices only when they are needed.

Use only one type of traffic control device in a continuous line of delineating devices.

Keep signs, drums, barricades, and other devices clean at all times. Immediately replace any devices provided under this Section that are lost, stolen, destroyed, inoperable or deemed unacceptable while used on the project.

Use only traffic control devices that meet the requirements of the "Acceptable" category in the American Traffic Safety Services Association (ATSSA) "Quality Guidelines for Temporary Traffic Control Devices".

**643-3.03 AUTHORITY OF THE ENGINEER.** When existing conditions adversely affect the public's safety or convenience, the Contractor will receive an oral notice. A written notice will follow the oral notice according to Subsection 105-1.01, Authority of the Engineer. The notice will state the defects, the corrective actions required, and the time required to complete such actions. If you fail to take corrective actions within the specified time, the Engineer will immediately close down the offending operations until you correct the defects. The Engineer may require outside forces to correct unsafe conditions. The cost of work by outside forces will be deducted from any monies due under the terms of this Contract.

**643-4.01 METHOD OF MEASUREMENT.** Item 643(2) Traffic Maintenance is a lump sum item and will not be measured directly for payment. The approved schedule of values and Engineer's approval shall constitute method of measurement.

**643-5.01 BASIS OF PAYMENT.** Item 643(2) Traffic Maintenance will be paid for at the contract lump sum price. Payment shall be full compensation for all the labor, equipment, material, and incidentals necessary to complete the work under this Section.

Payment will be made under:

Pay Item	Pay Unit
643(2) Traffic Maintenance	Lump Sum

(06/18/13)PARKS-Special Provision

## SECTION 646

### CPM SCHEDULING

**646-2.01 SUBMITTAL OF SCHEDULE.** Replace this Subsection with the following: Submit a detailed initial CPM Schedule at the preconstruction conference for the Engineer's acceptance as set forth below.

The construction schedule for the entire Project shall not exceed the specified contract time. Allow the Engineer fourteen (14) days to review the initial CPM Schedule. Revise promptly. The finalized CPM Schedule must be completed and accepted before beginning work on the Project.

#### **646-3.01 REQUIREMENTS AND USE OF SCHEDULE.**

Delete item 2. 60-Day Preliminary Schedule.

Replace the first sentence of item 3. Schedule Updates. with the following: Hold job site progress meetings with the Engineer for the purpose of updating the CPM Schedule. Meet with the Engineer monthly or as deemed necessary by the Engineer.

(12/13/02)CR261-Special Provision

Add the following Section:

## SECTION 647

### EQUIPMENT RENTAL

**647-1.01 DESCRIPTION.** This item consists of furnishing construction equipment, operated, fueled and maintained, on a rental basis for use in construction of extra or unanticipated work at the direction of the Engineer. Construction equipment is defined as that equipment actually used for performing the items of work specified and shall not include support equipment such as hand tools, power tools, electric power generators, welders, small air compressors and other shop equipment needed for maintenance of the construction equipment.

The Engineer will provide direction to the Contractor's supervisory personnel only, not to the operators or laborers. In no case shall direction by the Engineer be construed as making the Department liable for the Contractor's responsibility to prosecute the work in the safest and most expeditious manner.

**647-2.01 EQUIPMENT FURNISHED.** In the performance of this work, furnish, operate, maintain, service, and repair equipment of the numbers, kinds, sizes, and capacities set forth on the Bid Schedule or as directed by the Engineer. The kinds, sizes, capacities, and other requirements set forth shall be understood to be minimum requirements. The number of pieces of equipment to be furnished and used shall be, as the Engineer considers necessary for economical and expeditious performance of the work. The equipment shall be used only at such times and places as the Engineer may direct.

Equipment shall be in first class working condition and capable of full output and production. The minimum ratings of various types of equipment shall be as manufactured and based on manufacturer's specifications. Alterations will not be considered acceptable in achieving the minimum rating. Equipment shall be replaced when, in the opinion of the Engineer, their condition is below that normal for efficient output and production.

Equipment shall be fully operated, which shall be understood to include the operators, oilers, tenders, fuel, oil, air hose, lubrication, repairs, maintenance, insurance, and incidental items and expenses.

**647-2.02 EQUIPMENT OPERATORS AND SUPERVISION PERSONNEL.** Equipment operators shall be competent and experienced and shall be capable of operating the equipment to its capacity. Personnel furnished by the Contractor shall be, and shall remain during the work hereunder, employees solely of the Contractor.

Furnish, without direct compensation, a job superintendent or Contractor's representative together with such other personnel as are needed for Union, State, or Federal requirements and in servicing, maintaining, repairing and caring for the

equipment, tools, supplies, and materials provided by the Contractor and involved in the performance of the work.

**647-3.01 CONSTRUCTION REQUIREMENTS.** The performance of the work shall be according to the instructions of the Engineer, and with recognized standards and efficient methods.

Furnish equipment, tools, labor, and materials in the kinds, number, and at times directed by the Engineer and shall begin, continue, and stop the several operations involved in the work only as directed by the Engineer.

Normally, the work is to be done when weather conditions are reasonably favorable, six days per week, Mondays through Saturdays, holidays excepted.

The Engineer will begin recording time for payment each shift when the equipment begins work on the project. The serial number and brief description of each item of equipment listing in the bid schedule and the number of hours, or fractions thereof to the nearest one quarter hour, during which equipment is actively engaged in construction of the project shall be recorded by the Engineer. Each day's activity will be recorded on a separate sheet or sheets, which shall be verified and signed by the Contractor's representative at the end of each shift, and a copy will be provided to the Contractor's representative.

**647-4.01 METHOD OF MEASUREMENT.** The number of hours of equipment operation to be paid for shall be the actual number of hours each fully operated specified unit of equipment is actually engaged in the performance of work in the designated areas according to the direction of the Engineer. The pay time will not include idle periods, time used in oiling, servicing, or repairing of equipment, or in making changeovers of parts to the equipment. Travel time to or from the work site project will not be authorized for payment.

**647-5.01 BASIS OF PAYMENT.** Payment for Item No. 647(2) Trail Dozer, 62 HP Minimum and Item No. 647(6) Hydraulic Excavator, 110 HP Minimum will be paid at the contract price for the number of hours required to complete the work according to the Engineer's direction. This shall be full compensation for furnishing, operating, maintaining, servicing and repairing the equipment, and for incidental costs related to the equipment. Furnishing and operating of equipment of heavier type, larger capacity, or higher wattage than specified will not entitle the Contractor to extra compensation.

Payment will be made under:

Pay Item	Pay Unit
647(2) Trail Dozer, 62 HP Minimum	Hour
647(6) Hydraulic Excavator, 110 HP Minimum	Hour

(08/24/05)R15-Special Provision

Add the following Section:

## SECTION 650

### PARK FACILITIES

**650-1.01 DESCRIPTION.** This work shall consist of furnishing, constructing and placing park facilities in conformance with the plans and Special Provisions.

**650-1.02 APPLICABLE ACCESSIBILITY STANDARD.** Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities.

**650-1.03 SUBMITTALS AND SUBSTITUTIONS.** Conform to Subsection 106-1.01.

### MATERIALS

**650-2.01 GENERAL.** All materials shall be new and conform to the details shown on the plans or as specified.

**650-2.02 BACKFILL.** Selected Material, Type A conforming to Subsection 703-2.07.

**650-2.03 CONCRETE.** Class A Concrete conforming to Section 501.

**650-2.04 STRUCTURAL STEEL.** Structural steel shall conform to the requirements of ASTM Specification A36 (Standard Specification for Carbon Structural Steel).

**650-2.05 GALVANIZING.** Conform to AASHTO M111/ASTM A123 (Standard Specification for Zinc [Hot-Dip Galvanized] Coatings on Iron and Steel Products), or AASHTO M232/ASTM A153 (Standard Specification for Zinc Coating[Hot-Dip] on Iron and Steel Hardware). Repair damaged galvanizing by using low melting point zinc repair rods in conformance with ASTM A780 (Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings).

**650-2.06 LUMBER.** Conform to Section 713. Wood species shall be Douglas Fir or Hem-fir unless otherwise specified.

1. Dimensional. Dimensional lumber and timbers are shown on the plans in nominal dimensions, i.e.; 2x4, indicating surfaced four sides (S4S) or planed material. Use classification for light framing shall be Construction Grade. Use classification for structural joists and planks shall be No. 2 Grade or Better. Manufacturing classification shall be Dressed (Surfaced) Lumber. Size classification shall be Nominal Size Designations of Boards, Dimension, and Timbers.
2. Rough Cut. Unless otherwise indicated, rough cut lumber and timbers are shown on the plans in actual dimensions, i.e.; 2"x4", indicating rough cut material. Use

classification shall be Structural Lumber, No. 2 Grade or Better. Manufacturing classification shall be Rough Lumber. Size classification shall be Rough Dry Sizes.

**650-2.07 TREATED LUMBER.** Wood species conforms to Subsection 650-2.06.

Treatment shall be as follows:

1. Above Ground Applications. Preservative pressure treatment shall conform to Section 714. Pressure treat with preservative Ammonical Copper Quat - Type A,B,C, or D(ACQ-A,B,C, or D) or Copper Azole – Type A (CBA-A). Minimum retention shall be 0.40 pounds per cubic foot or to refusal. Treated materials shall be uniformly brown in color and nonincised. This type of treated lumber is commonly used for residential decks for above ground applications. Incising may be used on 4x and thicker material to obtain minimum retention.
2. Ground Contact Applications. Preservative pressure treatment shall conform to Section 714. Pressure treat with preservative Ammonical Copper Quat - Type A,B,C, or D(ACQ-A,B,C, or D) or Copper Azole – Type A (CBA-A). Minimum retention shall be 0.60 pounds per cubic foot. Exposed treated materials shall be pigmented uniformly brown in color by manufacturer.

**650-2.08 FASTENERS.** Commercial quality and type of nails and screws as required to securely hold all members in place in accordance with National Design Specifications (NDS). Nails shall be hot dipped galvanized. All other fasteners shall be corrosion resistant. Fasteners in pressure treated wood shall be hot dipped galvanized. Nails and wood screws below grade in pressure treated wood shall be stainless steel.

**650-2.09 STANDARD PARK PADLOCK.** Master Lock No. 1 with 5/16 inch shackle diameter, 15/16 inch vertical clearance, 3/4 inch horizontal clearance, 1-3/4 inch case width, and keyed alike to a key number provided by the Engineer specific to the Park area. Provide two keys with each padlock.

**650-2.10 PAINT.** Unless otherwise specified, use the following paint types and colors, or approved equals:

1. Solid Oil Stain. Exterior oil/alkyd flat finish stain, color “Russet”. DF7XX as manufactured by Fuller O’Brien / Devoe Products, Sun-Proof Solid Alkyd/Oil Stain (77-1354) as manufactured by Pittsburgh Paint Company, Behr Plus 10 Solid Stain, Rural Manor II Solid Color Stain (714401x) as manufactured by Rodda Paint Co., or approved equivalent. Submit color samples of proposed substitutions for approval.
2. Metal Primer Paint. As recommended by enamel paint manufacturer.
3. Enamel Paint. Exterior alkyd base gloss enamel. Color to match solid oil stain color.

4. Above Ground Wood Preservative. Brown preservative with active ingredient of minimum 9.08 percent copper naphthenate (equivalent to minimum 1 percent metallic copper). Color to be approved by Engineer.
5. Below Ground Wood Preservative. Preservative with active ingredient of minimum 16 percent copper naphthenate (equivalent to minimum 2 percent metallic copper).
6. End Cut Preservative for Treated Wood. Brown preservative with active ingredient of minimum 10 percent copper naphthenate (equivalent to minimum 1 percent metallic copper). Color to match preservative pressure treatment color.

Paint that has been frozen or is out of date shall be replaced at no additional cost to the Department.

**650-2.11 REMOVABLE BARRIER POST.** Conform to Standard Drawing P-5, Barrier Rail, Barrier Post, and Removable Barrier Post. Posts shall be treated rough cut wood. Steel for post sleeve shall conform to subsection 650-2.04. Provide a padlock for each post.

## **CONSTRUCTION REQUIREMENTS**

**650-3.01 GENERAL.** The location shown on the drawings for park facilities placement are approximate. The Engineer will field locate park facilities at the time of construction.

**650-3.02 EXCAVATION AND BACKFILL.** Conform to the requirements of Section 204 and the details on the plans.

**650-3.03 CONCRETE.** Conform to the requirements of Section 501 and the details on the plans.

**650-3.04 STRUCTURAL STEEL.** Welding to conform to American Welding Society D1.1.

**650-3.05 WOOD.** Competent carpenters shall be employed and all framing shall be true and exact. Unless otherwise specified, nails and spikes shall be hand driven with just sufficient force to set the heads flush with the surface of wood. Power nail guns may be used if the pressure may be adjusted to drive the nail flush with the face of the lumber. All non-removable shipping, storage, weathering and erection marks on fabricated lumber shall be hidden from view in the completed work. Use of damaged lumber shall not be allowed. Store on-site lumber above the ground and protected from damage and weathering.

Holes for round drift-bolts and dowels shall be bored with a bit 1/16 inch smaller in diameter than that of the bolt or dowel used. Holes for machine and carriage bolts shall be bored with a bit of the same diameter as that of the bolt. Holes for lag screws shall be bored with a bit not larger than the body of the screw at the root of the thread.

Unless otherwise specified, USS flat washers shall be used in contact with all bolt heads and nuts that would otherwise be in contact with wood.

**650-3.06 PAINT.** Deliver in sealed containers with labels legible and intact. Remove dirt, grease, oil and other construction debris prior to painting. Ensure that surfaces to be painted are even, smooth, sound, clean, dry, and free from defects affecting proper application. Metal surfaces to receive paint shall be corrosion free. Apply per manufacturer's recommendations. Apply paint material evenly without runs, sags, or other defects. Work each coat into the material being coated at an average rate of coverage recommended by the manufacturer. Cover surfaces completely to provide uniform color and appearance. Remove all paint, stain, or other finish material where it has spilled or spattered.

1. General. Unless otherwise specified, schedule finishes as follows:

- a. Non-Treated Wood, Surfaced. Finish surfaces not scheduled to receive stain or clear oil stain with wood preservative.
- b. Non-Treated Wood, Rough Cut. Saturate below and above ground surfaces not scheduled to receive stain with wood preservative.
- c. Treated Wood, Hidden. Dado cuts, cut ends, drilled holes and field cuts in wood materials shall be brush coated to saturation with end cut preservative.
- d. Treated Wood, Exposed. Saturate cut surfaces with scheduled finish. Finish surfaces not scheduled to receive stain with wood preservative.
- e. Concrete and Masonry. Seal exposed surfaces.
- f. Metal. Prime and paint exposed metal surfaces as required. Finish is not required for fasteners that are galvanized or corrosion resistant.

2. Removable Barrier Post.

- a. Wood. Clear Oil Stain
- b. Metal. Primer and Enamel Paint

**650-3.07 REMOVABLE BARRIER POST.** Construct in accordance with Standard Drawing P-5, Barrier Rail, Barrier Post, and Removable Barrier Post. Install signs as shown on the plans. Attach signs with four #12 x 1-3/4 inch round head stainless steel one-way tapping screws, one in each corner.

**650-4.01 METHOD OF MEASUREMENT.** Park facilities with the unit measure each will be measured by the actual number of facilities completed and accepted.

Excavation and embankment for park facilities outside the limits shown on the plans will be measured for payment only if directed by the Engineer. Excavation and backfill required for items paid for under this Section will not be measured for payment.

**650-5.01 BASIS OF PAYMENT.** The accepted quantity of park facilities will be paid for at the contract unit price per unit of measurement for the type specified completed in place, and listed below excluding all clearing, grubbing, topsoil and crushed aggregate base course, which shall be paid for separately at contract unit prices.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
650(20) Removable Barrier Post	Each

(05/02/11)PARKS-Special Provision



Sandbags: Sand bags shall measure 15 inches by 30 inches. Use prayer type seams with a minimum of two rows of stitching using a Federal Stitch Type 401 Chain Stitch. Place approximately 1.0 cubic foot of Select Material, Type B, in each sandbag sack. Close the open end of the sandbag, after filling, with 2 cinch ties or as recommended by the manufacturer of the sandbag material.

**690-3.04 PLACEMENT AND INSTALLATION.** Place and install where shown and detailed in the Plans and Specifications including Section 641, and as recommended by the manufacturer, directed by the Engineer and as follows:

Temporary Seeding. Annual Ryegrass per Subsection 724-2.02, Table 724-1. Apply at a rate of 1/2 lb/1000 sq. ft., minimum, on level ground to a maximum of 1 1/2 lb/1000 sq. ft., maximum, on sloping ground and highly erodible soils. Confirm application of temporary seeding with the Engineer.

Prepare the surface to be seeded to reduce erosion potential and to facilitate germination and growth of vegetation cover. Maintain seeded areas. Refer to Section 620 for further surface/topsoil preparation requirements.

Reseed where water quality standards are being exceeded as a result of insufficient vegetative cover. Review with Engineer prior to reseeding.

Refer to Section 618 for further information.

**690-3.05 MAINTENANCE.** Maintain the integrity of the erosion, sediment and pollution control measures for the duration of the project. Inspect as required by the APDES CGP and SWPPP and correct any deficiencies immediately. Remove and dispose of temporary measures including trapped sediment contaminants off project at approved locations. Materials manufactured as biodegradable may be left in place when approved by the Engineer.

**690-4.01 METHOD OF MEASUREMENT.** Section 109 and as follows:

Fiber Rolls: By length, measured along the centerline of the fiber roll, complete in place.

Manufactured Inlet Protection Systems: By each, complete in place.

Sandbag Inlet Sediment Trap: By each, complete in place.

Silt Fence: Section 633.

Seeding: Section 618.

Stabilization: Section 619.

**690-5.01 BASIS OF PAYMENT.** Section 641.

Except:

Item 690(1) Fiber Rolls, includes materials, hardware, equipment and labor required for installation and maintenance.

**SECTION 703**  
**AGGREGATES**

Add the following Subsection:

**703-2.14 SEWER ROCK.** Durable, washed, coarse aggregate grades as follows:

Sieve	% Passing
2-1/2 in	100
1-1/2 in	90-100
1 in	20-55
3/4 in	0-15
3/8 in	0-5

(08/20/93)PARKS-Special Provision

**SECTION 724**

**SEED**

**724-2-02. MATERIALS.** Replace Table 724-1 with the following:

**TABLE 724-1  
SEED REQUIREMENTS**

<b>Species</b>	<b>Sproutable Seed*, %, Min.</b>
Arctared Red Fescue	78
Nortran Tufted Hairgrass	71
Gruening Alpine Bluegrass	72

\* Sproutable Seed is the mathematical product of Germination and Purity.

(01/27/07)R52-Special Provision

**SECTION 726**

**TOPSOIL**

**726-2.01 TOPSOIL.** Replace Item No. 1 with the following:

Reasonably free from roots, clods, hard clay, tall grass, brush, sticks, stuble or other litter, and be free-draining and non-toxic. Must be free of noxious weeds or invasive material.

Replace Item No. 3 with the following:

3. Grading Requirements:

**TABLE 726-1**

**TOPSOIL REQUIREMENTS**

REQUIREMENT	CLASS B
Sieve Designation	Percent Passing by Weight
3 in	100
1/2 in	-
No. 4	75-100
No. 16	50-95
No. 200	20-80
Organic Content*	5% - 40%
Limestone	-

\*Determined by loss on ignition of oven dried sample in accordance with ALASKA FOP for AASHTO T 267

(01/01/03)PARKS-Special Provision

**SECTION 730**  
**SIGN MATERIALS**

**730-2.04 SIGN POSTS.** Add the following item:

7. Structural Tubing and W-Shape Beams.
  - a. Structural tubing shall conform to either ASTM A500, grade B, or ASTM A501. The tubing shall be square and of the dimensions called for in the Plans with 0.2 inch thick walls. 0.4 inch diameter holes shall be drilled as required to permit mounting of the sign.
  - b. W-shape beams shall conform to ASTM A36.
  - a. Structural tubing and W shape beams shall be hot dip galvanized according to 1.b. of this subsection. Damaged and abraded tubes and beams shall be repaired according to 1.c. of this subsection.

(06/22/04)R81-Special Provision

Add the following Section:

## SECTION 744

### EROSION, SEDIMENT, AND POLLUTION CONTROL - MATERIAL

#### 744-2.01 MATERIAL.

Fiber Roll: (commonly called straw wattle)

- a. Comprised of UV-degradable plastic netting or 100 percent biodegradable material.
- b. Filled with straw, flax, rice, coconut fiber material or composted material.
- c. Staking shall be made of 100 percent biodegradable materials.

Provide the Engineer certification stating the name of the manufacturer, product name, style number, chemical composition of the fiber, netting and certification of the weed-free status from the manufacturer. Furnish a sample to the Engineer seven days before the scheduled installation.

Manufactured Inlet Protection System:

- a. Manufacturers:
  - Ultra Tech International – Ultra-DrainGuard
  - Bowhead Environmental and Safety - StreamGuard Exert II Sediment Insert
  - Enpac - Catch Basin Insert, Oil and Sediment or
- b. Approved equal.

Sand Bag Inlet Sediment Trap:

- a. Sandbag sack fabric shall be a nonwoven, needle punched design meeting the following requirements:

Grab Tensile Strength	ASTM D 4632	200 pounds (min.)
Grab Elongation	ASTM D 4632	15 – 70%
Mullen Burst Strength	ASTM D 3786	400 psi. (min.)
Trapezoidal Tear Strength	ASTM D 4533	95 lbs. (min.)
Apparent Opening Size	ASTM D 4751	No. 30 U.S. STD sieve (max)
Permittivity	ASTM D 4491	0.01 sec-1 (min.)
Ultraviolet Light Stability, Retained Strength	ASTM D 4355	90%
Puncture Strength	ASTM D 4833	120 lbs. (min.)

These requirements are for Minimum Average Roll Values (MARV) verified in accordance with ASTM D 4759.

- b. Seam Thread:
  - Similar durability to the sandbag sack fabric.
- c. Sandbag Fill Material:
  - Select Material Type B 703-2.07.
- d. Cinch Ties: Plastic ties or equivalent tie recommended by the sandbag manufacturer.

(02/23/09) CR744-Special Provision



# APPENDIX A

## PERMITS

<b>PERMIT DESCRIPTION</b>	<b>ISSUE DATE</b>	<b>EXPIRE DATE</b>
U.S. Army Corps of Engineers Nationwide Permit 42: Recreational Facilities	<b>Pending</b>	<b>Pending</b>
State Historical Preservation Office "No Historic Properties Affected" Concurrence Letter	<b>10/10/11</b>	<b>N/A</b>





U.S. Department  
of Transportation  
**Federal Highway  
Administration**

Alaska Division

September 26, 2011

Federal Highway  
Administration  
**OCT 18 2011**  
Juneau, Alaska

P.O. Box 21648  
Juneau, AK 99802-1648  
(907) 586-7418  
(907) 586-7420  
[www.fhwa.dot.gov/akdiv](http://www.fhwa.dot.gov/akdiv)

In Reply Refer To:  
SB-2009-AK-55538

Ms. Judith Bittner  
State Historic Preservation Officer  
Alaska Office of History and Archaeology  
550W 7<sup>th</sup> Avenue Suite 1310  
Anchorage, Alaska 99501-3565

**No Historic Properties Affected**

Alaska State Historic Preservation Officer

Date: 10/10/11

File No. 2130-16 FHWA

RECEIVED

SEP 29 2011

OHA

Dear Ms. Bittner:

The Alaska Department of Natural Resources Division of Parks and Outdoor Recreation Design and Construction (DNR-DPOR D&C), in cooperation with the Alaska Division of the Federal Highway Administration (FHWA), is proposing to construct a visitor contact station at mile 135.5 of the George Parks Highway. The facility is part of a larger project, the South Denali Visitor Center Complex, located in Sections 14, 15, 16, 20, & 21. Township 29 North, Range 5 West, Seward Meridian, USGS Quad Talkeetna C-1 (Sheets 1-2).

State funding would be used to construct most of the South Denali Visitor Center Complex, while Federal funding from FHWA's Scenic Byway program would be used to construct one component, the 6,000 square foot George Parks Byway South Denali Visitor Contact Station. Since Federal funding would be incorporated into the project, this finding of effect addresses the larger undertaking. Pursuant to 36 CFR 800.4(d)(1), implementing regulations of Section 106 of the National Historic Preservation Act, the FHWA finds that no historic properties would be affected by the proposed project.

The proposed South Denali Visitor Center Complex consists of an entrance road on the west side of the George Parks Highway; a transportation hub with parking areas, a campground, the George Parks Byway South Denali Visitor Contact Station, and a shuttle turn around area; a Visitor Center; an access road to the Visitor Center; and a series of trails. Within the transportation hub, the George Parks Byway Visitor Contact Station will provide visitors with recreation and heritage interpretive information, trip planning resources, and restrooms. The George Parks Byway Visitor Contact Station building will look like an Alaskan lodge and contain viewing decks, a fireplace, sitting areas, offices, and storage area.

The State of Alaska Department of Natural Resources Division of Parks and Outdoor Recreation (DPOR) has been planning to increase access for recreational opportunities in the south Denali region since the 1970s. Recently DPOR received funding to design and construct the proposed South Denali Visitor Center Complex. The National Park Service in cooperation with the Matanuska-Susitna Borough, DPOR, and State of Alaska Department of Transportation and Public Facilities completed the Final South Denali Implementation Plan and Environmental Impact Statement (EIS) in April 2006 for the South Denali Visitor Center Complex. A Record of Decision was approved June 2006 for the EIS.

The Area of Potential Effect (APE) includes the proposed entrance road, the transportation hub, the access road, trails, and the Visitor Center in Denali State Park (Sheet 2). The APE is 200 feet wide along the proposed entrance road and access road corridors, and is 100 feet wide along the proposed trail from the Parks Highway. It expands in the areas served by the transportation hub and visitor center. The APE was developed with the assistance of staff from the Alaska Office of History and Archaeology, and includes areas of potential direct and indirect effects from the proposed facilities, construction staging, and subsequent visitor use. The project is located in an undeveloped area, and except for its entrance, will not be visible from the Parks Highway. Material sites for construction have not been selected but are anticipated to be contractor furnished.

The Alaska Heritage Resources Survey (AHRS) was reviewed on July 26, 2011. There are no AHRS sites in or adjacent to the APE. The project area was surveyed by the Archaeological Survey Unit (ASU) in the Office of History and Archaeology (OHA) during the summer of 2009 and a report was completed. A copy of the report, *Cultural Resource Survey of the South Denali Visitor Center near Curry, Alaska for the Division of Parks and Outdoor Recreation*, is enclosed. No significant cultural resources were found in the APE during the survey. Two rock cairns and one isolated pit feature were observed, but evidence indicated they were less than 50 years old. ASU recommended no historic properties affected based on their findings during the survey.

Since no historic properties were identified within the APE, FHWA agrees with this recommendation and finds that there will be no historic properties affected by this project.

FHWA is also consulting with the Native Village of Cartwell, Cook Inlet Region, Inc., the Matanuska-Susitna Borough, and the National Park Service on this finding.

Please direct your concurrence or comments to me at the address above, by telephone at (907)-586-7148, or by e-mail at paul.wistrand@dot.gov.

Sincerely,



Paul Wistrand  
Scenic Byways Program Manager

Enclosures: Sheet 1. Location and Vicinity Maps  
Sheet 2. Site Plan with APE  
Office of History and Archaeology: Cultural Resources Report Coversheet  
*Cultural Resource Survey of the South Denali Visitor Center near Curry, Alaska for the Division of Parks and Outdoor Recreation*, Office of History and Archaeology, 2010

cc w/o enclosures:

Tana Stone, DNR-DPOR D&C Environmental Impact Analyst III  
Kathy Price, DOT&PF Cultural Resources Specialist

# **APPENDIX B**

## **SURVEY REQUIREMENTS**

1. Alaska Construction Surveying Requirements (US Customary Units)





**Alaska  
Department of  
Transportation  
and  
Public Facilities**

---

**Alaska  
Construction  
Surveying  
Requirements (US  
Customary Units)**



# Alaska Construction Surveying Requirements (US Customary Units)

## Table of Contents

<b>Description</b>	<b>Page</b>
1. Survey accuracy requirements	1
2. Survey frequency requirements	2
3. Typical section drawing	3
4. Survey point materials requirements	4
5. Typical alignment notes	5
6. Typical clearing notes	6
7. Typical level notes	7
8. Typical slope stake notes	8
9. Typical culvert notes	9
10. Typical culvert camber diagram	10
11. Typical blue or red tops and grade stake notes	11



# 1. Survey accuracy requirements

## Third order survey

- ✓ Use a 1/5000 horizontal closure.
- ✓ Use an angle closure of  $30\sqrt{N}$  seconds, where N equals the number of angles in the traverse.
- ✓ An Alaska-registered professional land surveyor must perform or supervise replacement of survey monuments (property, USGS, USC&GS, BLM, etc.) or establishment of monuments (including centerline).
- ✓ All monument work must comply with AS 34.65.040 and meet standards in the latest version of the Alaska Society of Professional Land Surveyors' *Standards of Practice Manual*.
- ✓ The allowable vertical error for misclosure is  $e = 0.05\sqrt{M}$  e = maximum misclosure in feet, M = length of the level circuit in miles.

**Table 1—Survey accuracy requirements (in feet)**

	Stationing	HI	Closure	Horizontal Angle	Distance To center line	Grade
Additional cross sections	1.0	0.01	0.04	**	0.1	0.1
Benches		0.01	0.02			
Blue tops***	1.0	0.01	0.04		0.1	0.02
Bridges	*	0.01	0.02			0.01
Centerline	*			*		
Clearing & Grubbing	1.0				1.0	
Culverts	1.0	0.01	0.04	**	0.1	0.1
Curb & gutter	1.0	0.01	0.02		0.1	0.02
Grade stakes	1.0				0.1	0.1
Guardrail	1.0				0.1	
Manholes, catch basins & inlets	1.0	0.01	0.02		0.1	0.02
Monuments	*			*		
Red tops***	1.0	0.01	0.02		0.1	0.05
Riprap	1.0	0.1	0.04		1.0	0.1
Signs	1.0				0.1	
Slope stakes & RP's	1.0	0.01	0.04	**	0.1	0.1
Under drains & sewer	1.0	0.01	0.02		0.1	0.02

\* Third order survey

\*\*Right angle prism or transit angles from center line

\*\*\* Use blue tops for top of base course and red tops for the bottom of base course.

# 1. Survey frequency requirements

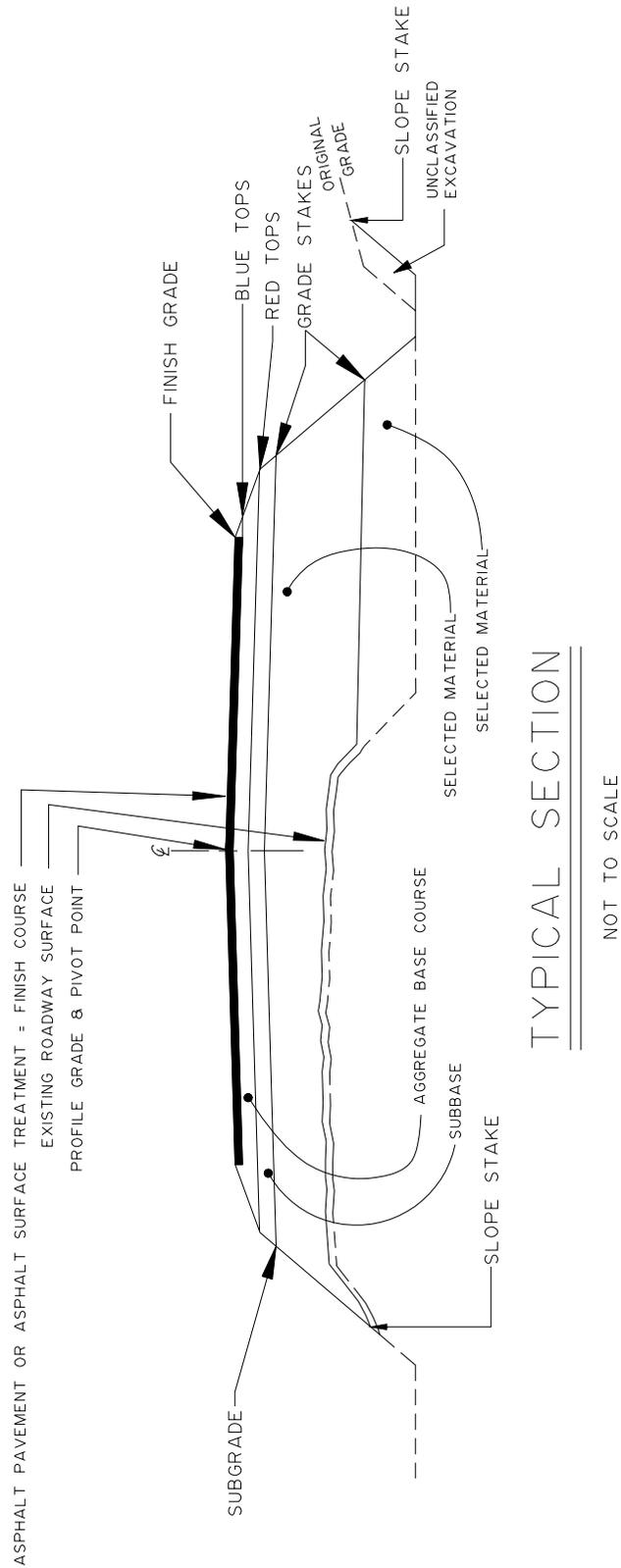
**Table 2—Survey frequency requirements (in feet)**

	Tangents	Curves	Interchange ramps	Stake each per plan	See special instructions on sample notes
Additional cross sections	*	*	*		
Bench marks					X
Blue tops	100	100**	25		X
Blue tops within 100 feet both sides of railroad track crossings and bridge approaches	25	25	25		X
Bridges				X	X
Center line	100	100**	25		
Clearing	100	100**	25		X
Culverts				X	X
Curb and gutter	25	25	25		
Grade stakes	100	100**	50		
Guardrail	25	25	25		
Manholes, catch basins & inlets				X	
Monuments				X	
Red tops	100	100**	25		X
Riprap	50	50	50		
Signs				X	
Slope stake / cross sections	100	100**	25		X
Under drains and sewers	50	25	25		

\* Establish additional cross sections and slope stakes at all breaks in topography and where structures begin and end.

\*\*Curves shall be staked on 50-foot stations if the curve is greater than six degrees.

## 2. Typical Section Drawing



### 3. Survey point materials requirements

- ✓ These are minimum requirements; larger sizes may be necessary.
- ✓ Use only stakes with planed sides.

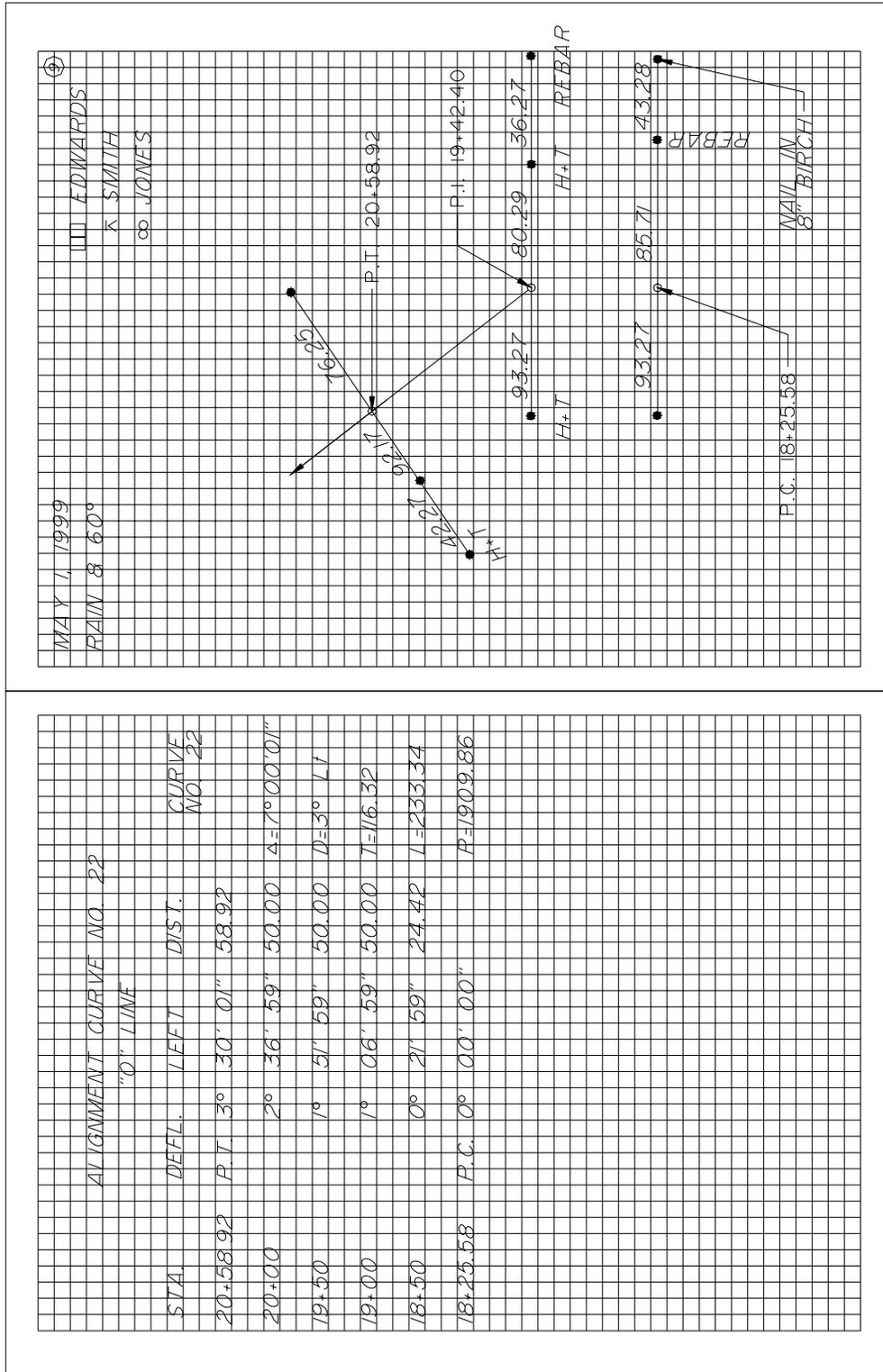
**Table 3—Survey point materials requirements**

	24" lath or whiskers	2" x 2" x 8" hub	2" x 2" x 12" hub	1" x 2" x 18" stake	1" x 2" x 24" stake	48" lath	Hub and tack	40d nail	60d nail	1/2" x 24" rebar
Benchmarks									X	
Blue tops	X	X								
Centerline P.C., P.T., P.O.T.			X	X			X *			X *
Centerline reference points			X	X			X *			X *
Centerline station				X				X		
Clearing						X				
Culvert stake			X		X	X				
Culvert stake references			X		X	X				
Curb and gutter			X		X		X			
Guardrail								X		
Major structures			X	X *	X *	X	X *			X *
Red tops	X	X								
Signs						X				
Slope stake					X	X				
Slope stake references			X		X	X				

\* Optional depending on conditions, and to be determined by the Project Engineer.

## 4. Typical alignment notes

- ✓ The Chief of Parties must prepare the alignment book before actual staking.
- ✓ Don't use swing ties for reference points.
- ✓ Use three point right angle ties, two to the right and one left, or vice versa.
- ✓ Reference P.C., P.I., P.T., and P.O.T.

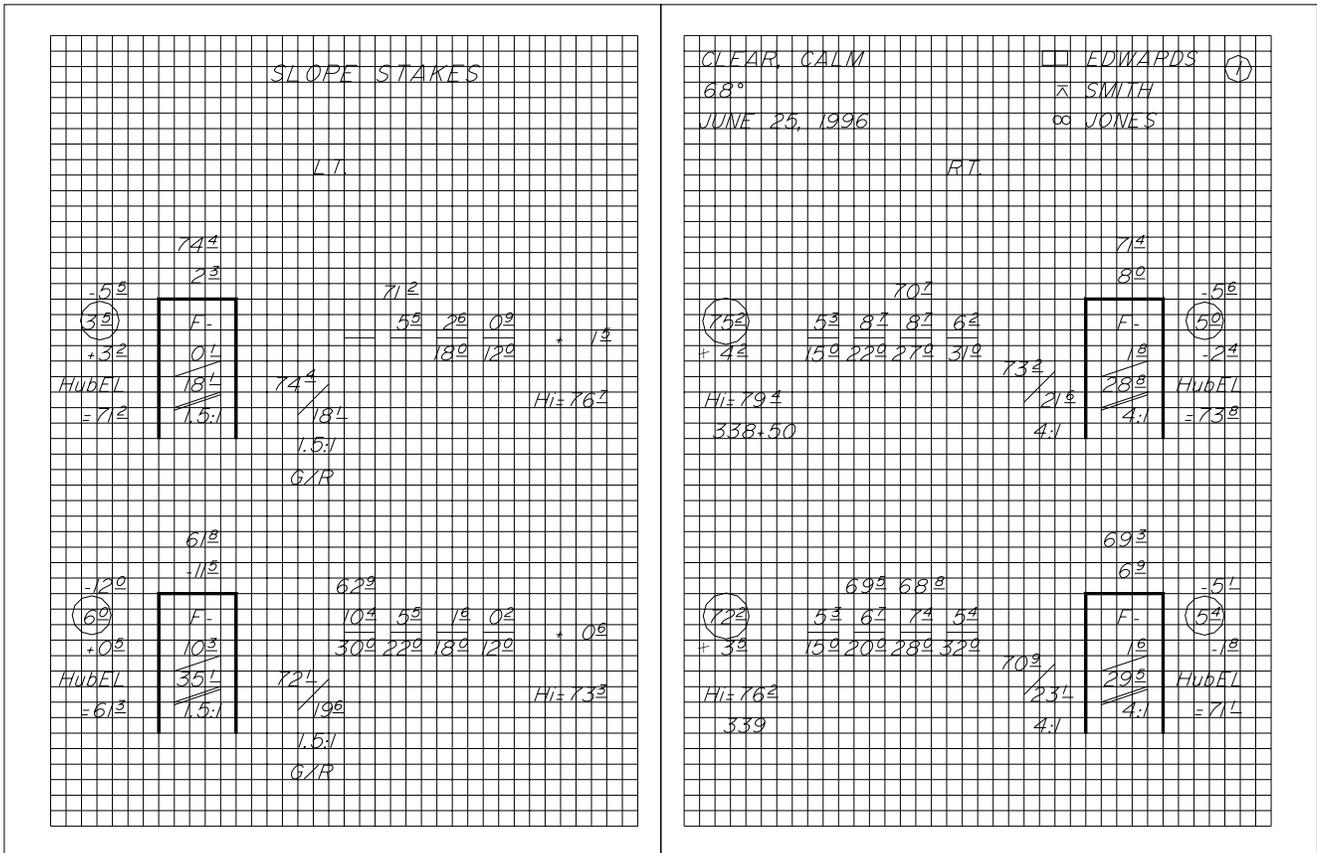






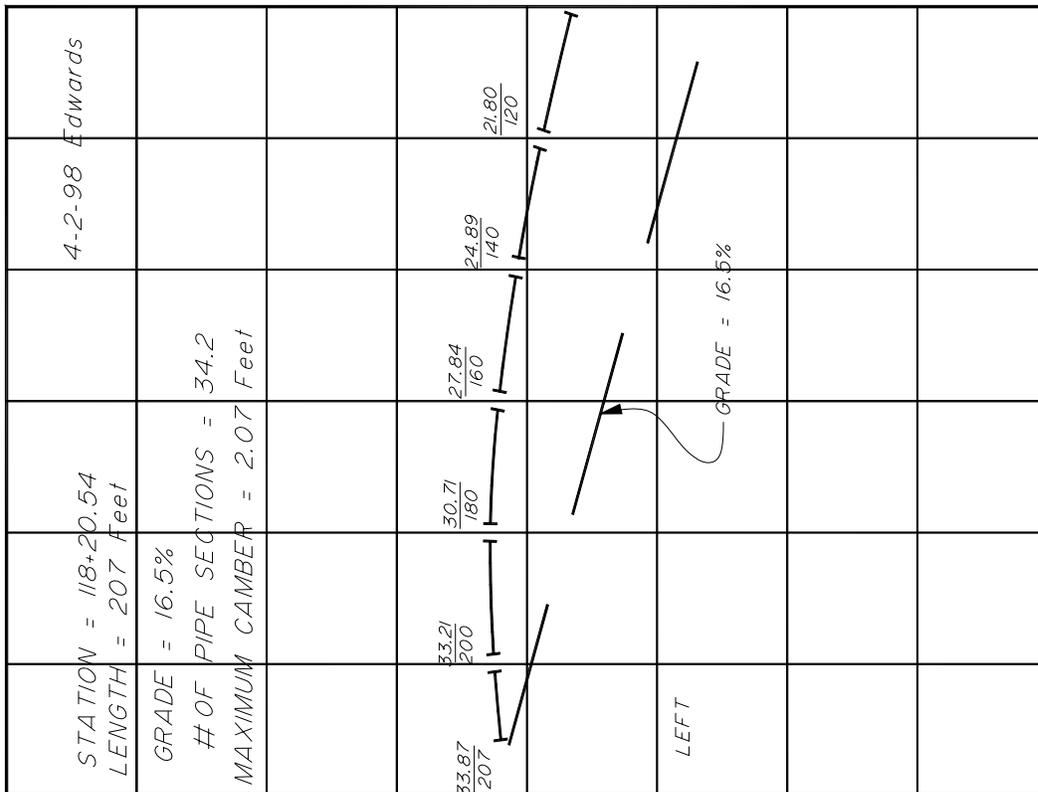
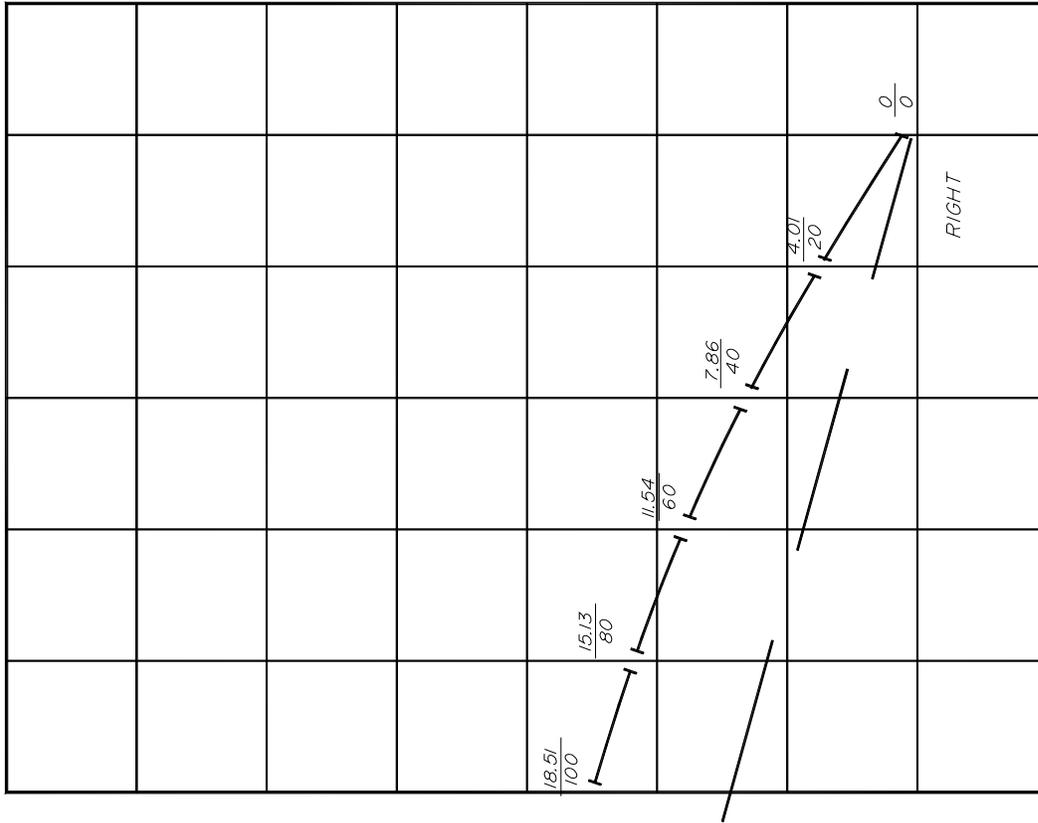
## 7. Typical slope stake notes

- ✓ Enter the station, elevations, shoulder distance or ditch distances, and slope in the slope stake book before staking begins.
- ✓ In areas where slides or overbreak are anticipated, extend the sections beyond the construction limits.
- ✓ Slope-stake each section that is cross-sectioned.
- ✓ Final re-cross sections are required where there are overbreaks, undercuts, etc. Re-cross section book and page numbers shall be noted on the original cross-section and slope staking page for the relevant stations.
- ✓ Include at least the following information on the stake: (1) where to begin the cut or fill (2) the slope ratio (3) the depth of cut or height of fill and (4) the station.
- ✓ Use a hand level only for one turn up or down from the instrument.
- ✓ Clearly note hand level turns.
- ✓ Use a reference point that is 10-20 feet beyond the slope stake.
- ✓ The reference point must show the cut or fill to the slope stake and must include the slope stake information.
- ✓ Slope stake all abrupt changes in typical sections.
- ✓ Position all laths to face centerline.



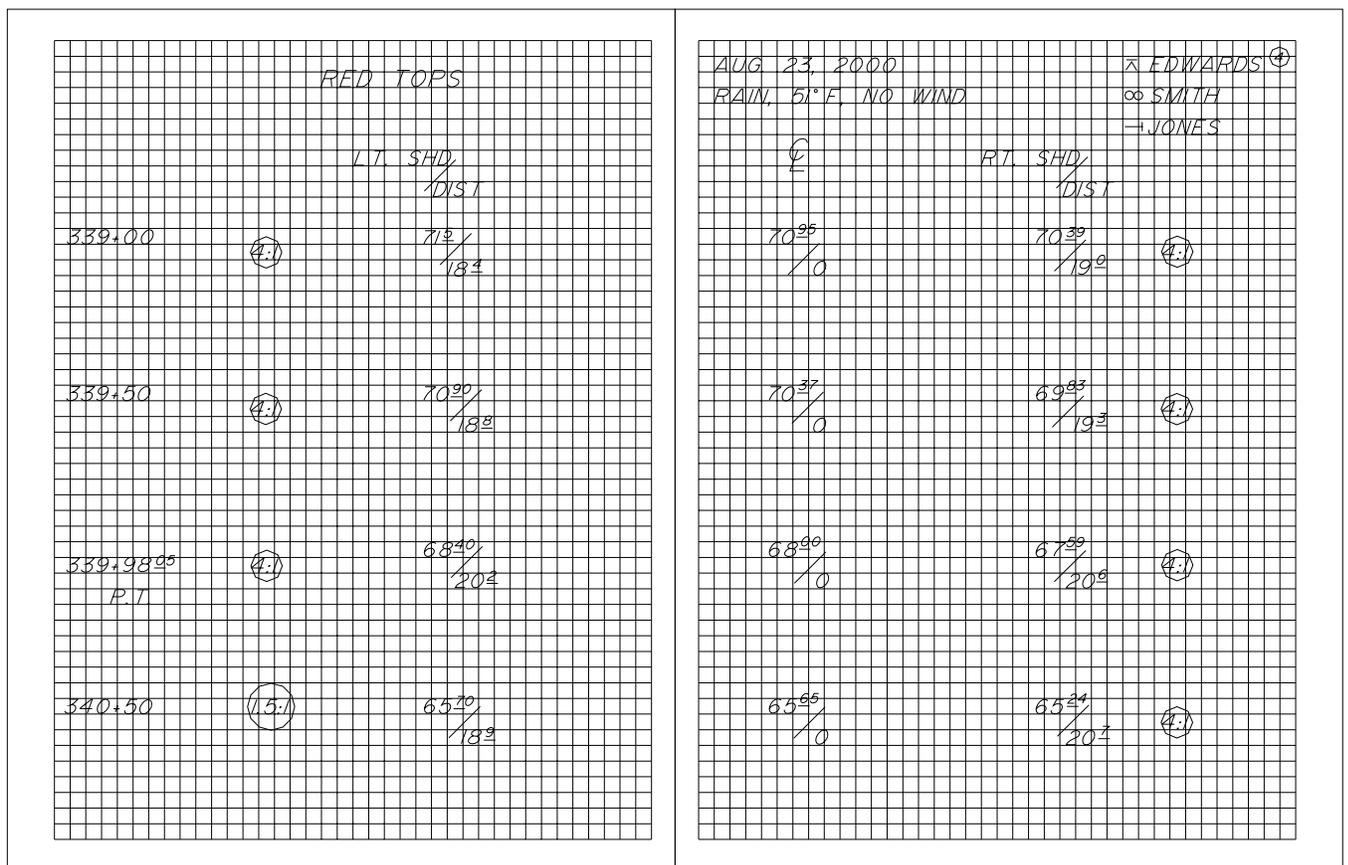


# 9. Typical culvert camber diagram



## 10. Typical blue or red tops and grade stake notes

- ✓ Place blue and red tops at each break in typical section and on centerline.
- ✓ Use blue tops for top of base course.
- ✓ Use red tops for the bottom of the base course.
- ✓ Evenly space red/blue tops at and between crown section break points with a maximum spacing of 25 feet between red/blue tops.
- ✓ Establish horizontal control from centerline references and vertical control from benchmarks.
- ✓ Place blue tops at the same interval as slope stakes.
- ✓ Stake all curve transitions.





# **APPENDIX C**

## **STORM WATER POLLUTION PROVENTION PLAN (SWPPP)**

The Alaska Department of Natural Resources (ADNR) Division of Parks and Outdoor Recreation (DPOR) Design and Construction Section (D&C) has created this Erosion and Sediment Control Plan (ESCP). This ESCP shall be amended by the Contractor to incorporate the projects material source sites, HMCP, SPCC, and any other modification the contractor determines is necessary.

The Contractor shall use the attached ESCP to meet Alaska Department of Environmental Conservation requirements for construction.



**EROSION AND SEDIMENT CONTROL PLAN (ESCP) NOTES**

1. THE ESCP IS A GENERAL PLAN FOR GUIDING THE DEVELOPMENT OF THE CONTRACTOR'S EROSION SEDIMENT CONTROL PLAN (ESCP). THE CONTRACTOR IS EXPECTED TO PROVIDE ADDITIONAL DETAILS AND BEST MANAGEMENT PRACTICES (BMPs) BASED ON THE CONTRACTOR'S ACTUAL SCHEDULE AND CONSTRUCTION METHODS, ARE REQUIRED TO COMPLY WITH THE CONSTRUCTION GENERAL PERMIT AND SECTION 641 OF THE SPECIFICATIONS.
2. SEDIMENT CONTROL MEASURES AND TEMPORARY EROSION CONTROL FEATURES SHALL BE BASED ON BMPs AS CONTAINED IN THE DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES' MANUAL "CONTRACTOR GUIDANCE FOR PREPARING AND EXECUTING STORMWATER POLLUTION PREVENTION PLANS."
3. THE CONTRACTOR SHALL IDENTIFY ALL OPERATIONAL CULVERTS AND STORMDRAINS IN THE PROJECT THAT WILL BE IMPACTED BY STORMWATER FROM PROJECT ACTIVITIES. THE CONTRACTOR SHALL PROVIDE INLET AND OUTLET PROTECTION FOR THOSE CULVERTS AND STORMDRAINS.
4. THE CONTRACTOR SHALL MINIMIZE THE AMOUNT OF DISTURBED AREA OPEN TO EROSION AT ANY ONE TIME.
5. EROSION AND SEDIMENT CONTROL BMPs SHALL BE INSTALLED WITHIN 14 DAYS IN AREAS WHERE EARTHWORK DISTURBANCE HAS TEMPORARILY OR PERMANENTLY CEASED.
6. ALL DISTURBED GROUND CAPABLE OF SUPPORTING VEGETATION SHALL BE REVEGETATED ACCORDING TO SECTION 618 FOR FINAL STABILIZATION. FINAL STABILIZED AREAS NOT REVEGETATED SHALL BE 100% COVERED BY ROCK, ASPHALT, CONCRETE, OR OTHER PERMANENT NON-ERODABLE MATERIAL.
7. TEMPORARY PERIMETER CONTROLS SHALL BE INSTALLED FOR ANY FILL PLACED WITHIN 20 FEET OF ORDINARY HIGH WATER.
8. TEMPORARY PERIMETER CONTROL BMPs SHALL BE INSTALLED BEFORE ANY UP-GRADIENT SOIL DISTURBANCE OCCURS.
9. PROVIDE PERIMETER CONTROLS IN AREAS NOT SHOWN ON THE PLANS AS NEEDED TO PREVENT SEDIMENT FROM LEAVING THE PROJECT AREA.
10. RETAIN A VEGETATIVE BUFFER STRIP IN UPLAND AREAS WHEREVER POSSIBLE. VEGETATIVE BUFFER STRIPS MAY BE USED IN LIEU OF SILT FENCE OR OTHER TEMPORARY DEVICES PROVIDED THEY ARE OF SUFFICIENT WIDTH FOR THE CATCHMENT AREA.
11. AVOID CONDITIONS WHICH PROMOTE CONCENTRATED FLOWS. INSTALL VELOCITY CONTROL BMPs WHEN CONCENTRATED FLOWS OCCUR.
12. SLOPE PROTECTION MAY INCLUDE SLOPE ROUGHENING, TACKIFYING, EROSION CONTROL BLANKETS, SEEDING, ROCK LINING, OR OTHER METHODS APPROVED BY THE PROJECT ENGINEER.
13. ALL STOCKPILES OF ERODIBLE MATERIALS SHALL HAVE PERIMETER CONTROL IN PLACE.
14. ERODIBLE MATERIALS MAY NOT BE STOCKPILED WITHIN 100 FEET OF ORDINARY HIGH WATER.

**SITE DESCRIPTIONS**

1. SITE FUNCTION: RECREATIONAL FACILITY
2. THIS PROJECT INCLUDES EARTHWORK, CONSTRUCTION OF TRAILS, AND TOPSOIL AND SEEDING. (EXCLUDING MATERIAL SITES)
3. PROJECT DISTURBED AREA = 1.55 ACRES (EXCLUDING MATERIAL SITES)
4. PERCENTAGE IMPERVIOUS AREA BEFORE CONSTRUCTION: 0%
5. RUNOFF COEFFICIENT BEFORE CONSTRUCTION: 0.2
6. PERCENT IMPERVIOUS AREA AFTER CONSTRUCTION: 0%
7. RUNOFF COEFFICIENT AFTER CONSTRUCTION: 0.3
8. MATERIAL SITES: AGGREGATE MATERIAL WILL BE OBTAINED FROM EXCAVATION AND/OR CONTRACTOR FURNISHED SITES.
9. EXISTING SOILS CONSISTS OF CONSIST OF 3-4 FEET OF A COMBINATION OF PEAT AND SILTS (PT AND ML) OVER POORLY GRADED SANDS AND GRAVELS (SP-SM AND GP-GM).

**ENVIRONMENTAL INFORMATION**

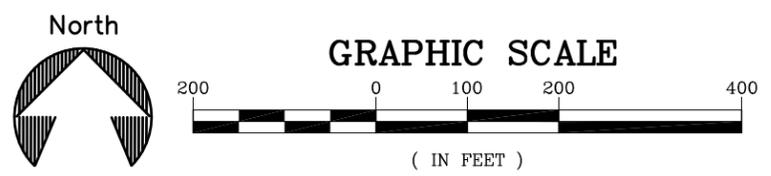
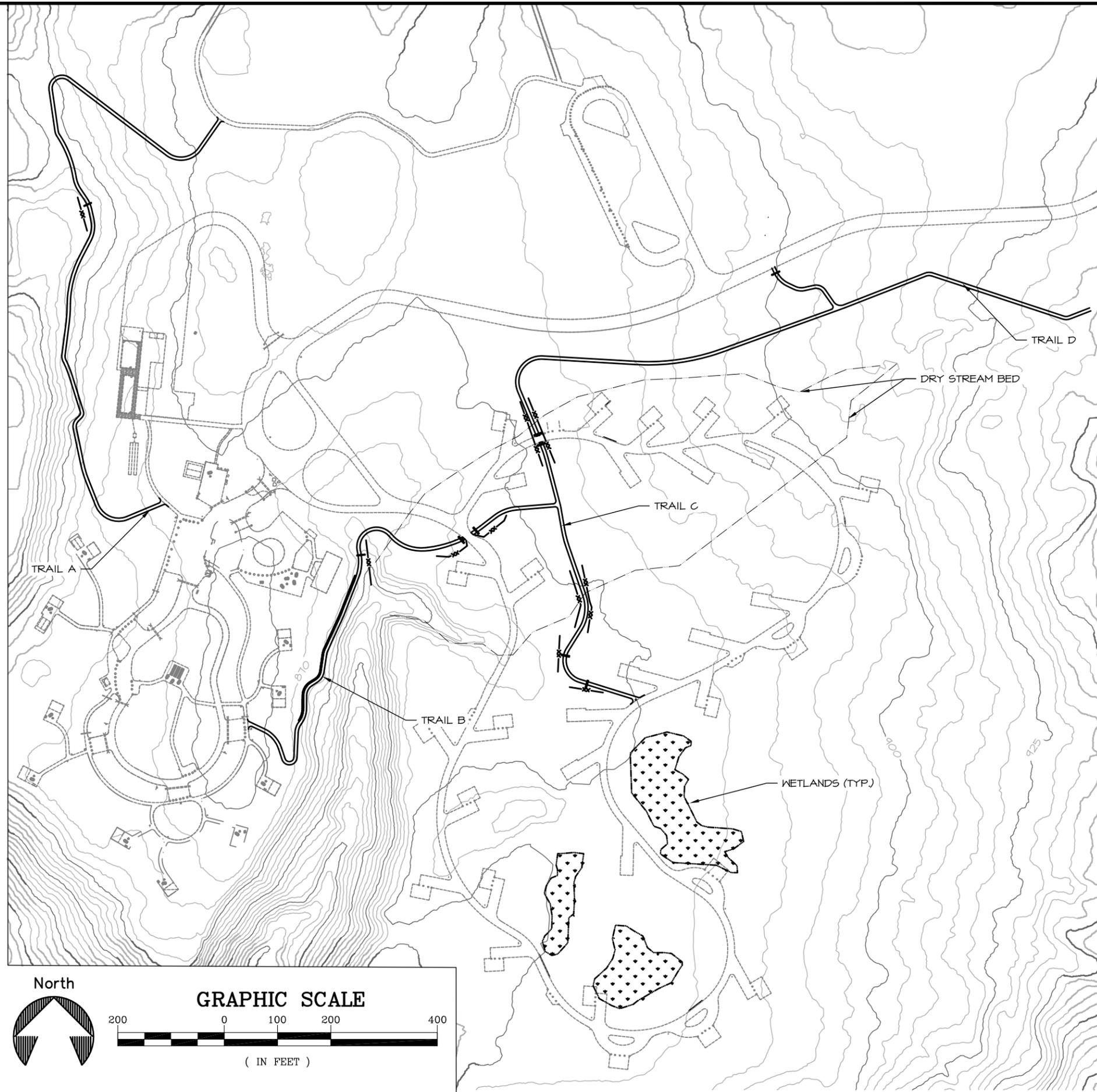
1. RECEIVING WATER BODIES: CHULITNA RIVER
2. IMPAIRED WATER BODIES: NONE
3. TOTAL MAXIMUM DAILY LOAD (TMDL) WATERS: NONE
4. THREATENED AND ENDANGERED SPECIES (ESA); NONE KNOWN
5. HISTORIC IMPACTS: KNOWN
6. MIGRATORY BIRD TREATY ACT: CLEARING & GRUBBING ACTIVITIES BETWEEN MAY 1 AND JULY 15 MAY INTERFERE WITH MIGRATORY BIRDS. REFER TO THE US FISH AND WILDLIFE SERVICE FOR DETAILS.
7. CONTACT THE PROJECT ENGINEER WITH ADDITIONAL QUESTIONS/CONCERNS REGARDING ENVIRONMENTAL MATTERS.

**ASSUMED CONSTRUCTION SEQUENCE**

1. IMPLEMENT ESCP / INSTALL BMPs
2. CLEARING & GRUBBING
3. EXCAVATION & PLACEMENT OF TYPE A MATERIAL
4. INSTALLATION OF CONCRETE BLOCK WALL
5. INSTALLATION OF CULVERT MATERIALS AND ACCESSORIES
6. PLACEMENT OF RECYCLED ASPHALT MATERIAL
7. TOPSOIL AND SEED

**ESCP LEGEND**

—x—x—x— SILTATION DEVICE BY CONTRACTOR



STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES

DSP: VISITOR CENTER COMPLEX  
TRAIL CONSTRUCTION  
PROJECT No. 74034-4

ESCP



PREPARED: RCS  
DRAWN: RCS  
REVIEWED: LMR  
DATE: MAR. 2016

SHEET  
OF 1 SHEETS



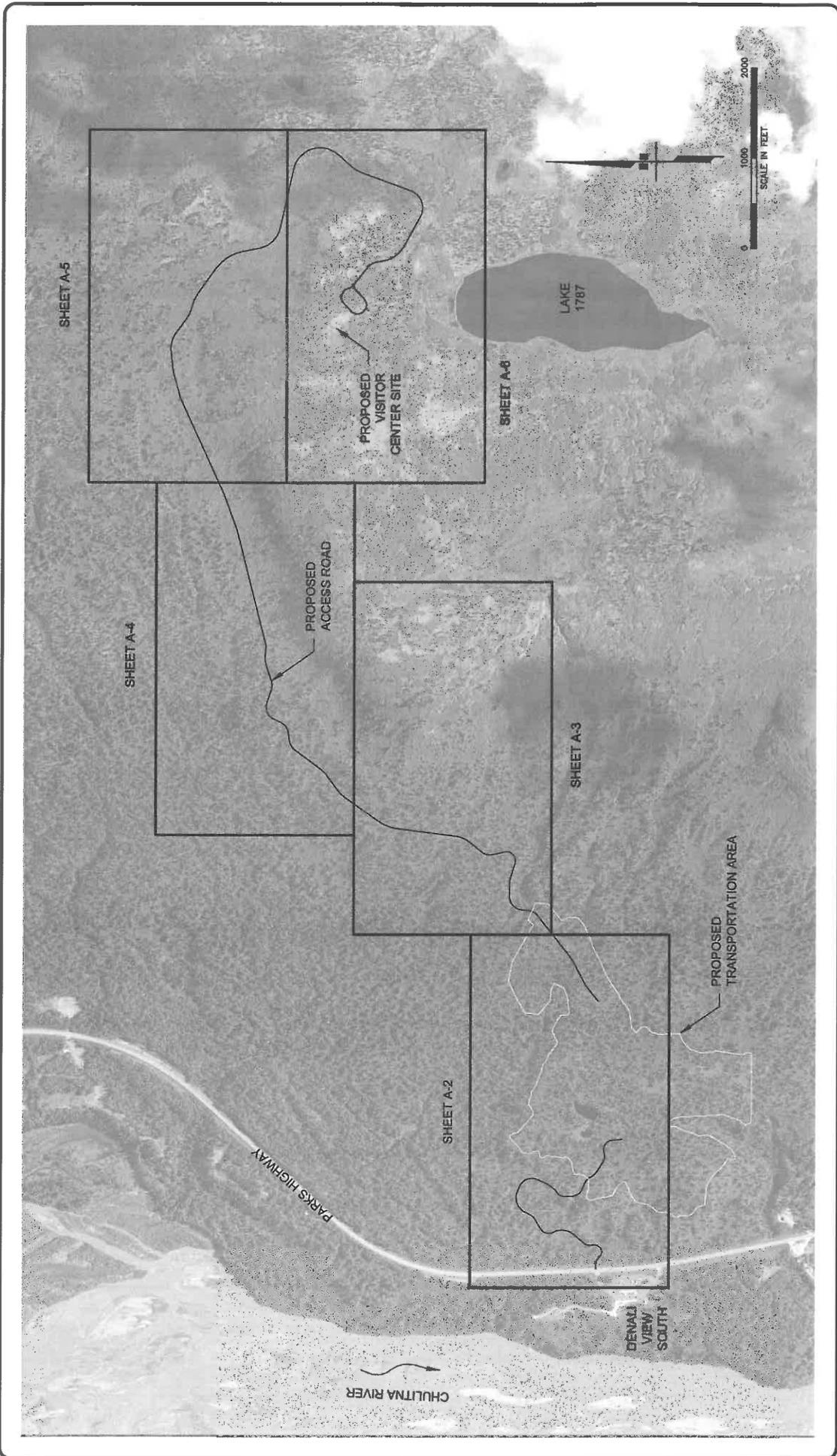
# **APPENDIX D**

## **SPECIAL REPORTS**

- 1. Excerpts from South Denali Visitor Center Complex Subsurface Exploration and Foundation Recommendations by DOWL HKM, January 2010 and Amendment 1 dated January 2012.**

Note that this report does not serve as substitution for the requirements of Subsection 102-1.04. Contractors are highly encouraged to conduct an examination of the work site as per Subsection 102-1.04 Examination of Plans, Specifications, Special Provisions, and Work Site.





DESIGNED BY: KAN  
 DRAWN BY: BBO  
 CHECKED BY: MCK

BY	DATE	REVISIONS



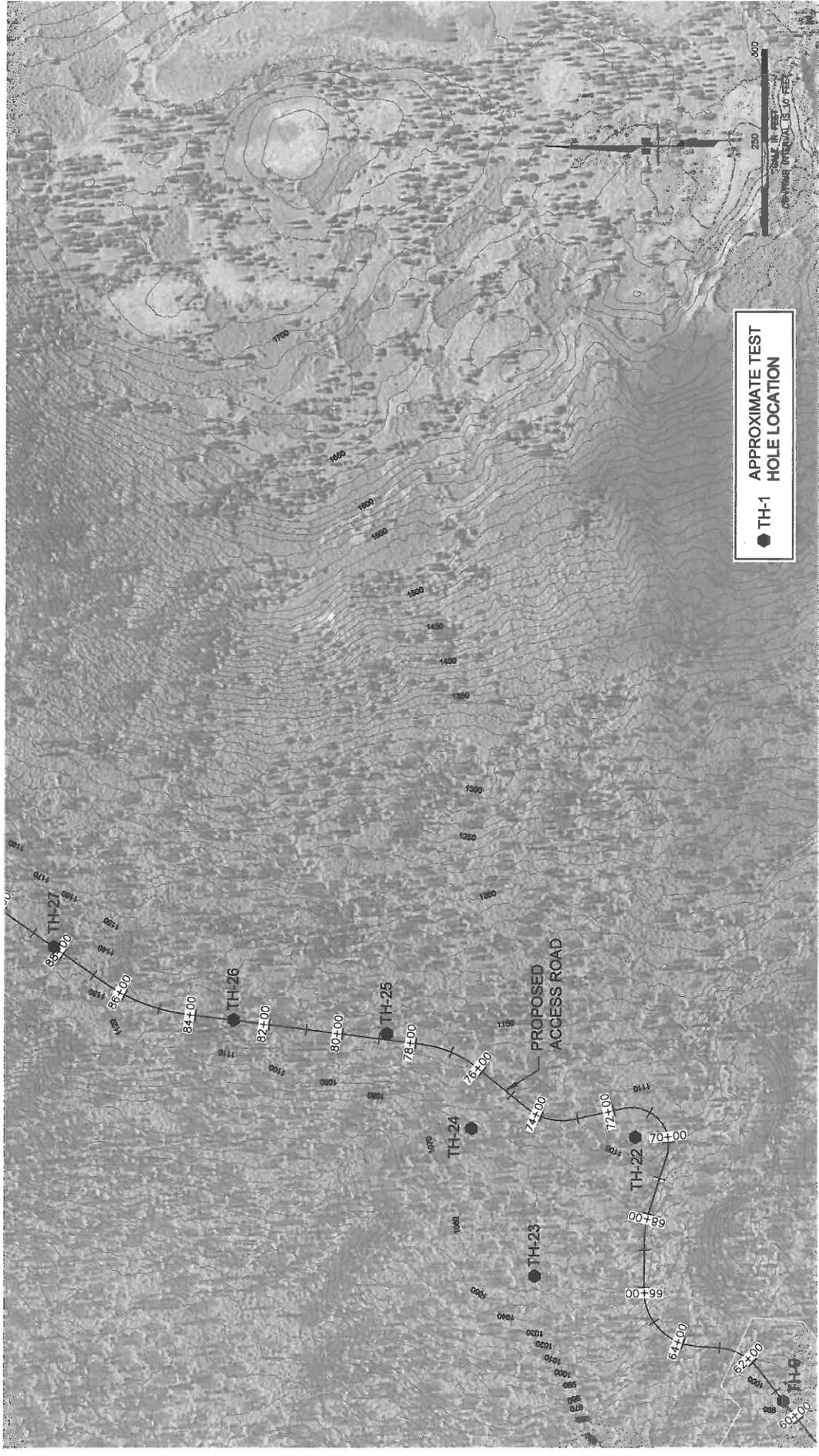
STATE OF ALASKA  
 DEPARTMENT OF NATURAL RESOURCES  
 DIVISION OF PARKS AND OUTDOOR RECREATION  
 APPROVED \_\_\_\_\_ DATE \_\_\_\_\_

PLANS DEVELOPED  
 BY DOWL HKM

SOUTH DENALI  
 VISITOR CENTER COMPLEX  
 PROJECT No 70981-1  
 KEY MAP

SHEET  
 A-1





● TH-1  
 APPROXIMATE TEST  
 HOLE LOCATION

SHEET  
 A-3

SOUTH DENALI  
 VISITOR CENTER COMPLEX  
 PROJECT No 70981-1  
 TEST HOLE LOCATION MAP

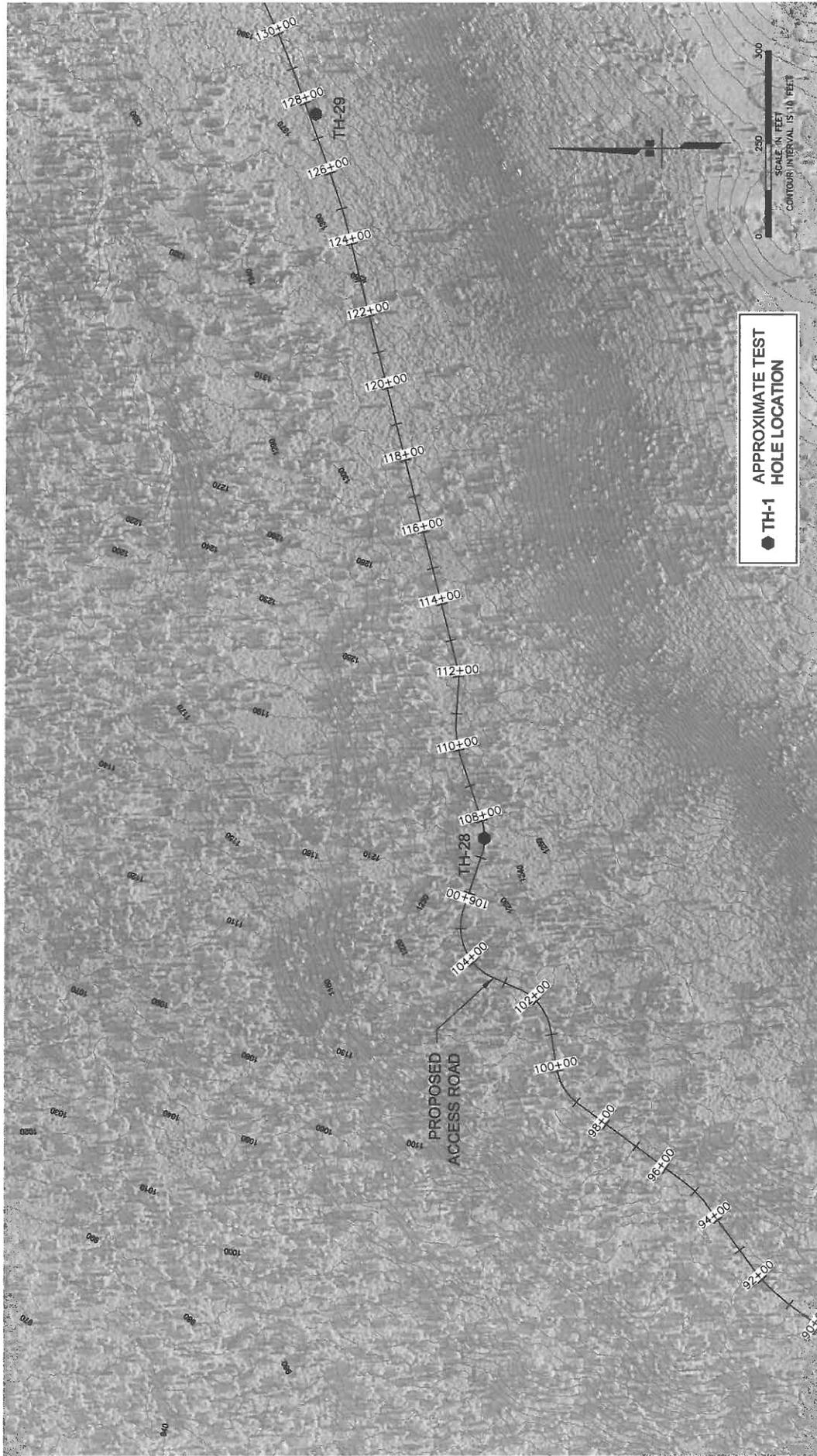
PLANS DEVELOPED  
 BY DOWL HKM

STATE OF ALASKA  
 DEPARTMENT OF NATURAL RESOURCES  
 DIVISION OF PARKS AND OUTDOOR RECREATION  
 APPROVED \_\_\_\_\_ DATE \_\_\_\_\_



BY	DATE	REVISIONS

DESIGNED BY: KAN  
 DRAWN BY: JBO  
 CHECKED BY: JEC



SHEET  
A-4

SOUTH DENALI  
VISITOR CENTER COMPLEX  
PROJECT No 70981-1  
TEST HOLE LOCATION MAP

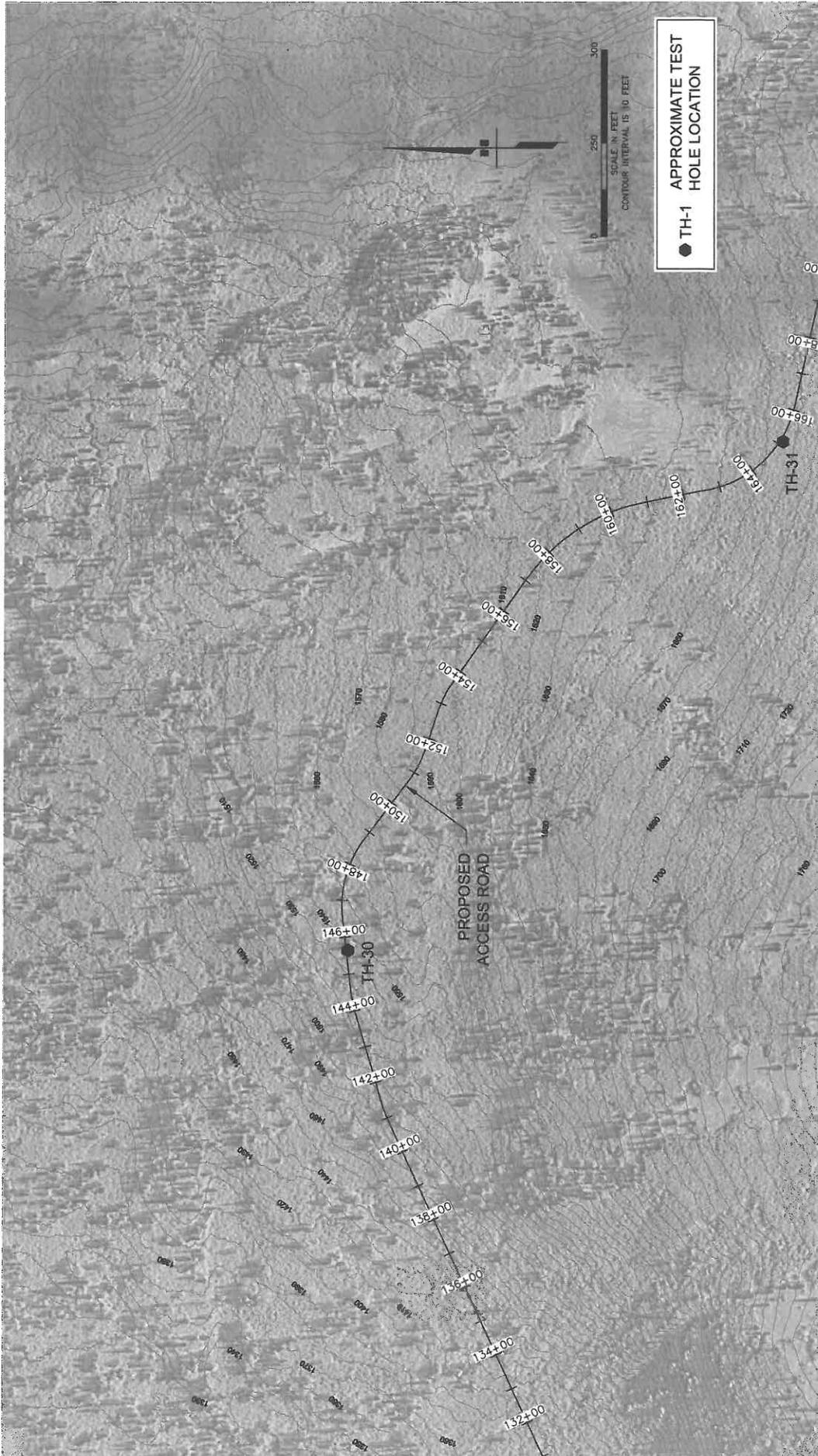
PLANS DEVELOPED  
BY DOWL HKM

STATE OF ALASKA  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF PARKS AND OUTDOOR RECREATION  
APPROVED \_\_\_\_\_ DATE \_\_\_\_\_



BY	DATE	REVISIONS

DESIGNED BY: KAN  
DRAWN BY: BEO  
CHECKED BY: MEK



● TH-1  
 APPROXIMATE TEST  
 HOLE LOCATION

SCALE IN FEET  
 0 250 300  
 CONTOUR INTERVAL IS 10 FEET

SHEET  
 A-5

SOUTH DENALI  
 VISITOR CENTER COMPLEX  
 PROJECT No 70981-1  
 TEST HOLE LOCATION MAP

PLANS DEVELOPED  
 BY DOWL HKM

STATE OF ALASKA  
 DEPARTMENT OF NATURAL RESOURCES  
 DIVISION OF PARKS AND OUTDOOR RECREATION  
 APPROVED \_\_\_\_\_ DATE \_\_\_\_\_



BY	DATE	REVISIONS

DESIGNED BY: KAN  
 DRAWN BY: BEO  
 CHECKED BY: MEK



## **APPENDIX B**

### **TEST HOLE LOGS AND TEST HOLE EXPLANATION GUIDE**



STATE OF ALASKA, DNR  
Department of Natural Resources

LOG OF TEST HOLE

HOLE # LEGEND

PROJECT NUMBER:  
PROJECT: TEST HOLE EXPLANATION  
NORTHING: 1000, EASTING: 2000

Station / Location: Hole Location, Station or Coordinates  
Offset: Offset Location if applicable  
Elevation: Elevation

Equipment Type: Drill Rig  
Drilling Method: Drilling Method  
Field Crew: Driller, Helper

Total Depth: 19.0 feet  
Date: 1/18/2005 -  
Geologist: Geologist

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data			Weather: This section is for weather notes
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)	15	15.5	
									Time	10:00	13:00	
									Date	1/1/04	1/2/04	
0								SUBSURFACE MATERIAL				
0.0								SOIL GRAPHIC AND SOIL TYPE EXPLANATION All graphics are generic representations of soil type and do not match soils as seen in-situ.			0.0	
0.5											0.5	
1.0						GP		GRAVEL (GP)			1.0	
1.5						GW		GRAVEL (GW)			1.5	
2.0						SP		SAND (SP)			2.0	
2.5						SW		SAND (SW)			2.5	
3.0						ML		SILT (ML)			3.0	
3.5						MH		SILT (MH)			3.5	
4.0						CL		CLAY (CL)			4.0	
4.5						CH		CLAY (CH)			4.5	
5.0						PT		ORGANICS AND PEAT (PT)			5.0	
5.5								Cobble or Boulder Location			5.5	
6.0								ICE Ice or Frozen Soil Interval with Classification (Nf, Vx, ice% etc.)-Nf			6.0	
6.5								BEDROCK			6.5	
7.0								TRANSITIONAL SOIL CHANGE			7.0	
8.0	SPT		1	X	5			SAMPLE DATA EXPLANATION			8.0	
8.5	SS		2	X				Standard Penetration Test Split Spoon Sample 1.4" ID x 2" OD with Uncorrected N-Value			8.5	
9.0	MC		3	X				Split Spoon Sample 2" ID x 2.5" OD			9.0	
9.5	GRAB							Split Spoon Sample 2.5" ID x 3" OD with Recovered Percentage			9.5	
10.0	AUGER							Grab Sample			10.0	
10.5	EB							Auger Cuttings Grab Sample			10.5	
11.0	CORE							Excavator Bucket Grab Sample			11.0	
11.5	ST							Rock Core			11.5	
12.0	MS							Shelby Tube thin wall 3" OD			12.0	
12.5	NR							Modified Shelby Tube (size)			12.5	
13.0	SNT							No Recovery			13.0	
13.5	FLD WT							Sample Not Tested or Retained			13.5	
14.0	UNDIST							Field Weighted Sample			14.0	
14.5	VANE							Undisturbed Sample			14.5	
15.0								Vane Shear Test and Results Report: Vane Shear (pcf/kPa)=(Undisturbed Soil), Remolded Vane Shear (pcf/kPa)=(Disturbed Soil)			15.0	
15.5								Groundwater level while drilling			15.5	
16.0								Groundwater level after drilling			16.0	
17.0	SPT	1234	1	X	5			LABORATORY RESULTS EXPLANATION			17.0	
17.5			2	X				1234 Sa=(retained between #200 - #4 sieve)%, Gr=(retained between #4 - 3" sieve)%, +3"=(retained between 3" -12" sieve)%, +12"=(>12" sieve)%, Moisture=(raw)%, Org=(organic content)%, Pl=(Plastic Index, NP=nonplastic), LL=(Liquid Limit, NV=No Value), Degradation=#, LA Abrasion=#%, Max. Dry Dens=#pcf, Opt. Moisture=#%, Sodium Sulfate Soundness (coarse)=#%, Sodium Sulfate Soundness (fine)=#%			17.5	
18.0			3	X							18.0	
18.5			4	X							18.5	
19.0							BOH	Notes:			19.0	
							19	This section is for drilling notes and additional equipment descriptions			19.0	

E USCS LOG OF TEST HOLE WITH DNR LOGO ADOT LOG.GPJ 2008DATETEMPLATE.GDT 1/15/10

CME Auto Hammer     Cathead Rope Method     140 lb. hammer with 30 in. drop     340 lb. hammer with 30 in. drop

Sheet Number 1 of 1



STATE OF ALASKA, DNR  
Department of Natural Resources

**LOG OF TEST HOLE**

**HOLE # 1**

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: 11+25  
Offset:  
Elevation: -655 feet

Equipment Type: Mobile B-24  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Dick Banzhaf with Discovery Drilling

Total Depth: 11.5 feet  
Date: 9/9/2009 - 9/9/2009  
Geologist: Callie J. Keller

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data			Weather: Overcast Forest Surface
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)	10	4.7	
									Time			
									Date	9/9/09	9/17/09	
						Symbol	∇	∇				
<b>SUBSURFACE MATERIAL</b>												
0						PT		Peat (PT) dark brown, moist to wet, fibrous	0.0	0		
1										1		
2										2		
3	SPT	1	1/9"	X				1 Moisture=301%		3		
4			1/9"	X						4		
5										5		
6	SPT	2	1	X	2			2 Moisture=283%		6		
7										7		
8										8		
9										9		
10								Groundwater encountered at 10' while drilling		9.0		
11	SPT	3	8 20 12	X	32	SM		SILTY SAND with Gravel (SM) fine gravel, nonplastic, low dry strength, gray, wet, dense, field observation indicates p200=25%, Sa=45%, Gr=30%		10.0		
								3 Moisture=14%		11		
								Notes: PVC standpipe installed to 11.5' Groundwater measured at 4.7' on 9/17/2009		11.5		

E USCS LOG OF TEST HOLE WITH DNR LOGO 60269ADOT.GPJ 2006DATA TEMPLATE.GDT 1/15/10

CME Auto Hammer  Cathead Rope Method  140 lb. hammer with 30 in. drop  340 lb. hammer with 30 in. drop

Sheet Number 1 of 1



STATE OF ALASKA, DNR  
Department of Natural Resources

**LOG OF TEST HOLE**

**HOLE # 2**

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: 18+00  
Offset: 75R  
Elevation: ~740 feet

Equipment Type: CME 45 Heli-base  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Dick Banzhaf with Discovery Drilling

Total Depth: 11.5 feet  
Date: 9/10/2009 - 9/10/2009  
Geologist: Callie J. Keller

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data			Weather: Sunny Forest Surface
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)	Time	Date	
0						PT		<b>Peat (PT)</b> dark brown, fibrous				
1						ML		<b>SILT with Sand (ML)</b> fine gravel, low plasticity, medium dry strength, tan, moist, very stiff, field observation indicates p200=85%, Sa=10%, Gr=5%				
2						SP-SM						
3	SPT	1A	2	X				<b>1 Moisture=41%</b>				
4		1	8	X				<b>SAND with Silt and Gravel (SP-SM)</b> fine gravel, poorly graded, low dry strength, brown to gray, moist, medium dense, field observation indicates p200=10%, Sa=55%, Gr=35%				
5			10	X								
6	SPT	2	10	X	26			<b>1A Moisture=11%</b>				
7			14	X				<b>2 Moisture=6%</b>				
8			12	X								
9												
10						SP		<b>SAND with Gravel (SP)</b> fine gravel, poorly graded, low dry strength, brown to gray, moist, medium dense, field observation indicates p200=5%, Sa=65%, Gr=30%				
11	SPT	3	11	X	25							
			14	X				<b>3 Moisture=5%</b>				
			11	X								
							BOH					
							11.5					

Notes:  
No groundwater observed while drilling  
PVC standpipe installed to 10.8'  
No measurable groundwater to 10.8' on 9/17/2009

E USCS LOG OF TEST HOLE WITH DNR LOGO 80263ADOT.GPJ 2008DATATEMPLATE.GDT 1/15/10

CME Auto Hammer     Cathead Rope Method     140 lb. hammer with 30 in. drop     340 lb. hammer with 30 in. drop

Sheet Number 1 of 1



STATE OF ALASKA, DNR  
Department of Natural Resources

**LOG OF TEST HOLE**

**HOLE # 3**

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: 20+50  
Offset:  
Elevation: ~725 feet

Equipment Type: CME 45 Heli-base  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Dick Banzhaf with Discovery Drilling

Total Depth: 11.5 feet  
Date: 9/10/2009 - 9/10/2009  
Geologist: Callie J. Keller

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data			Weather: Sunny Forest Surface
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)	Time	Date	
0												
0.0									SUBSURFACE MATERIAL			0.0
0.0 - 2.5									2" ORGANIC mat			0.0 - 2.5
2.5 - 5.0	SPT	1	8 18 33	X	51	GP-GM			GRAVEL with Silt and Sand (GP-GM) coarse gravel, poorly graded, low dry strength, brown, moist, very dense, field observation indicates p200=10%, Sa=40%, Gr=50% 1 Moisture=6%			2.5 - 5.0
5.0 - 6.0	SPT	2	14 14 15	X	29				gray, medium dense 2 Moisture=6%			5.0 - 6.0
6.0 - 10.0												6.0 - 10.0
10.0 - 11.5	SPT	3	11 15 11	X	26	SP-SM			SAND with Silt and Gravel (SP-SM) coarse gravel, poorly graded, low dry strength, gray, moist, medium dense, field observation indicates p200=10%, Sa=50%, Gr=40% 3 Moisture=5%			10.0 - 11.5
11.5									Notes: No groundwater observed while drilling PVC standpipe installed to 10.8' No measurable groundwater to 10.8' on 9/17/2009			11.5

E USCS LOG OF TEST HOLE WITH DNR LOGO 80263ADOT.GPJ 2008DATATEMPLATE.GDT 1/15/10

CME Auto Hammer     Cathead Rope Method     140 lb. hammer with 30 in. drop     340 lb. hammer with 30 in. drop

Sheet Number 1 of 1







STATE OF ALASKA, DNR  
Department of Natural Resources

**LOG OF TEST HOLE**

**HOLE # 6**

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: See Test Hole Location Map  
Offset:  
Elevation: ~870 feet

Equipment Type: CME 45 Heli-base  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Dick Banzhaf with Discovery Drilling

Total Depth: 10.6 feet  
Date: 9/12/2009 - 9/12/2009  
Geologist: Callie J. Keller

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data			Weather: Rain Forest Surface
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)	Time	Date	
0						PT		Peat (PT) dark brown, fibrous				
1												
2												
3	SPT	1	1 3 7	X	10	ML		SILT with Sand (ML) fine to medium grained sand, low plasticity, medium dry strength, tan, moist, stiff, field observation indicates p200=85%, Sa=15%, Gr=0%				
4								1 Moisture=71%				
5												
6	SPT	2	7 24 42	X	66	ML		SANDY SILT with Gravel (ML) coarse gravel, low plasticity, medium dry strength, gray, moist, hard, field observation indicates p200=55%, Sa=25%, Gr=20%				
7								2 Moisture=20%				
8								auger action indicates cobbles at 7'				
9												
10	SPT	3	17 20/1"	X		SP-SM		SAND with Silt and Gravel (SP-SM) coarse gravel, poorly graded, no dry strength, gray, moist, dense, field observation indicates p200=10%, Sa=60%, Gr=30%				
								3 Moisture=4%				
								Notes: No groundwater observed while drilling PVC standpipe installed to 10' No measurable groundwater to 10' on 9/17/2009				

E USCS LOG OF TEST HOLE WITH DNR LOGO 60263ADOT.GPJ 2008DATATEMPLATE.GDT 1/15/10



STATE OF ALASKA, DNR  
Department of Natural Resources

LOG OF TEST HOLE

HOLE # 7

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: See Test Hole Location Map  
Offset:  
Elevation: ~890 feet

Equipment Type: CME 45 Heli-base  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Dick Banzhaf with Discovery Drilling

Total Depth: 11.5 feet  
Date: 9/12/2009 - 9/12/2009  
Geologist: Callie J. Keller

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data		Weather: Rain	
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)	Time	Forest Surface	
0						PT			5		SUBSURFACE MATERIAL	
0.0											Peat (PT) dark brown, fibrous	
2.5	SPT	1	5 5 8	X	13	SM					SILTY SAND with Gravel (SM) coarse gravel, no to low plasticity, medium dry strength, brown, moist, loose, field observation indicates p200=25%, Sa=45%, Gr=30%	
4.0											1 Moisture=20%	
5.0											Groundwater encountered at 5' while drilling	
5.0	SPT	2	8 15 32	X	47						becoming sandier, medium dry strength, wet, dense, field observation indicates p200=20%, Sa=60%, Gr=20%	
6.0											2 Moisture=14%	
10.0	SPT	3	28 46 69	X	115	GM					SILTY GRAVEL with Sand (GM) coarse gravel, nonplastic, low dry strength, gray, wet, very dense, field observation indicates p200=15%, Sa=35%, Gr=50%	
10.8											3 Moisture=7%	
11.5											Notes: PVC standpipe installed to 10.8' No measurable groundwater to 10.8' on 9/17/2009	

E USCS LOG OF TEST HOLE WITH DNR LOGO 60263ADOT.GPJ 2008DATATEMPLATE.GDT 1/15/10

CME Auto Hammer  Cathead Rope Method  140 lb. hammer with 30 in. drop  340 lb. hammer with 30 in. drop

Sheet Number 1 of 1



STATE OF ALASKA, DNR  
Department of Natural Resources

LOG OF TEST HOLE

HOLE # 8

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: See Test Hole Location Map  
Offset:  
Elevation: ~920 feet

Equipment Type: CME 45 Heli-base  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Dick Banzhaf with Discovery Drilling

Total Depth: 11.2 feet  
Date: 9/15/2009 - 9/15/2009  
Geologist: Brian M. Mullen, E.I.

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data			Weather: 60 deg F, Sunny Forest Surface
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)			
0						PT		Peat (PT) brown, moist	9.5	8.2		
1						ML		SILT (ML) fine gravel, no to low plasticity, high dry strength, light brown, moist, trace of ORGANICS present (roots, PEAT), field observation indicates p200=90%, Sa=5%, Gr=5%				
2												
3	SPT	1	13	X		SP		1 Moisture=73%				
4		1A	54	X								
5			48	X								
6	SPT	2	31	X	87	SM		GRAVEL with Sand (SP) coarse gravel, poorly graded, low dry strength, brown, moist, very dense, trace of ORGANICS present (roots), field observation indicates p200=5%, Sa=35%, Gr=60%				
7			45	X				1A Moisture=5%				
8			42	X				SILTY SAND with Gravel (SM) fine gravel, nonplastic, low dry strength, brown, moist, very dense				
9								2 p200=27%, Sa=47%, Gr=26%, Moisture=8%, (SM)				
10								Groundwater encountered at 9.5' while drilling				
11	SPT	3	24	X		GM		SILTY GRAVEL with Sand (GM) coarse gravel, medium dry strength, brown, wet, very dense, field observation indicates p200=25%, Sa=30%, Gr=45%				
			68	X				3 Moisture=10%				
			60/2	X								
								Notes: PVC standpipe installed to 10' Groundwater measured at 8.2' on 9/17/2009				

E USCS LOG OF TEST HOLE WITH DNR LOGO 80263ADOT.GPJ 2008DATA TEMPLATE.GDT 1/15/10



STATE OF ALASKA, DNR  
Department of Natural Resources

LOG OF TEST HOLE

HOLE # 9

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: 60+40  
Offset:  
Elevation: ~995 feet

Equipment Type: CME 45 Heli-base  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Dick Banzhaf with Discovery Drilling

Total Depth: 11.5 feet  
Date: 9/15/2009 - 9/15/2009  
Geologist: Brian M. Mullen, E.I.

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data			Weather: 60 deg F, Sunny Forest Surface
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)	Time	Date	
SUBSURFACE MATERIAL												
0						PT		Peat (PT) brown				0.0
1						SP-SM		SAND with Silt and Gravel (SP-SM) fine to coarse gravel, poorly graded, low dry strength, brown, moist, very dense, field observation indicates p200=10%, Sa=45%, Gr=45% 1 Moisture=7%				1.5
2	SPT	1	16 40 49	X	89							
3						SP		becoming sandier, field observation indicates p200=10%, Sa=55%, Gr=35% 2 Moisture=6%				5.0
4	SPT	2	32 60/3"	X								
5						SP		SAND with Gravel (SP) coarse gravel, poorly graded, low dry strength, brown, moist, very dense, field observation indicates p200=5%, Sa=50%, Gr=45% 3 Moisture=5%				7.5
6	SPT	3	19 21 49	X	70							
7						SP-SM		SAND with Silt and Gravel (SP-SM) coarse gravel, poorly graded, low dry strength, brown, moist, very dense, field observation indicates p200=10%, Sa=50%, Gr=40% 4 Moisture=6%				10.0
8	SPT	4	47 93 125	X	218							
9												11.5
BOH 11.5 Notes: No groundwater observed while drilling PVC standpipe installed to 10.9' No measurable groundwater to 10.9' on 9/17/2009												

E USCS LOG OF TEST HOLE WITH DNR LOGO 80263ADOT.GPJ 2008DATATEMPLATE.GDT 1/15/10

CME Auto Hammer  
  Cathead Rope Method  
  140 lb. hammer with 30 in. drop  
  340 lb. hammer with 30 in. drop

Sheet Number 1 of 1



STATE OF ALASKA, DNR  
Department of Natural Resources

LOG OF TEST HOLE

HOLE # 10

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: 32+50  
Offset: 75L  
Elevation: ~840 feet

Equipment Type: CME 45 Heli-base  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Dick Banzhaf with Discovery Drilling

Total Depth: 30.5 feet  
Date: 9/11/2009 - 9/11/2009  
Geologist: Maria E. Kampsen, P.E.

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data			Weather: 50 deg F, Partly Cloudy Knob, Forest Surface
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)	Time	Date	
0						PT						
1						ML						
2	SPT	1	50/3			GM						
3												
4	SPT	2	23/47									
5												
6												
7	GRAB	3										
8												
9						SM						
10	SPT	4	17/30/14		44							
11												
12												
13												
14	SPT	5	14/27/24		51	GP-GM						
15												
16	GRAB	6										
17												
18												
19												
20	SPT	7	24/26/34		60							
21												
22												
23												
24												
25	SPT	8	21/51/28		79							
26												
27												
28	GRAB	9										
29												
30	SPT	10	19/26/36		62							
30.5						BOH						

E USCS LOG OF TEST HOLE WITH DNR LOGO 60263ADOT.GPJ 2006DATATEMPLATE.GDT 1/15/10

CME Auto Hammer  
  Cathead Rope Method  
  140 lb. hammer with 30 in. drop  
  340 lb. hammer with 30 in. drop

Sheet Number 1 of 1





STATE OF ALASKA, DNR  
Department of Natural Resources

**LOG OF TEST HOLE**

**HOLE # 12**

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: 58+00  
Offset:  
Elevation: ~960 feet

Equipment Type: CME 45 Heli-base  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Dick Banzhaf with Discovery Drilling

Total Depth: 10.8 feet  
Date: 9/15/2009 - 9/15/2009  
Geologist: Brian M. Mullen, E.I.

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data			Weather: 50 deg F, Sunny Forest Surface	
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)				
									Time				
									Date				
Symbol													
<b>SUBSURFACE MATERIAL</b>													
0						PT		Peat (PT) brown			0.0	0	
1						GM		<b>SILTY GRAVEL with Sand (GM)</b> coarse gravel, nonplastic, medium dry strength, brown, moist, very dense, <b>ORGANICS</b> present to ~5% by volume (roots) Moisture=21% 1 p200=17%, Sa=34%, Gr=49%, Moisture=5%, (GM) bulk sample obtained from cuttings			1.0	1	
2	SPT		60/3"									2.0	2
3	GRAB	1										4.0	4
4								<b>SAND with Silt and Gravel (SP-SM)</b> coarse gravel, low dry strength, brown, moist, very dense, field observation indicates p200=10%, Sa=45%, Gr=45% 2 Moisture=5%			5.0	5	
5	SPT	2	49 39			SP-SM						6.0	6
6			50/3"									7.0	7
7								<b>SILTY SAND with Gravel (SM)</b> coarse gravel, nonplastic, low dry strength, brown, moist, very dense, field observation indicates p200=15%, Sa=50%, Gr=35%			10.0	10	
8												9.0	9
9												10.0	10
10	SPT	3	60 65/3"			SM					10.8	10.8	
								BOH 10.75					
Notes: No groundwater observed while drilling PVC standpipe installed to 10' No measurable groundwater to 10' on 9/17/2009													

E USCS LOG OF TEST HOLE WITH DNR LOGO 80283ADOT.GPJ 2008DATATEMPLATE.GDT 1/15/10

CME Auto Hammer  
  Cathead Rope Method  
  140 lb. hammer with 30 in. drop  
  340 lb. hammer with 30 in. drop

Sheet Number 1 of 1



STATE OF ALASKA, DNR  
Department of Natural Resources

LOG OF TEST HOLE

HOLE # 13

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: See Test Hole Location Map  
Offset:  
Elevation: ~875 feet

Equipment Type: CME 45 Heli-base  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Dick Banzhaf with Discovery Drilling

Total Depth: 8.0 feet  
Date: 9/11/2009 - 9/11/2009  
Geologist: Maria E. Kampsen, P.E.

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data			Weather: Overcast	
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)			Forest Surface	
									Time				
									Date				
0						PT			SUBSURFACE MATERIAL			0.0	0
1						ML GM		Peat (PT) brown				0	
2					1 Moisture=138%			2.3	2				
3	SPT	1	3	X	SILT with Sand (ML) fine gravel, low plasticity, medium dry strength, brown, moist, hard, field observation indicates p200=85%, Sa=10%, Gr=5%			2.8	3				
4		2	11	X	2 Moisture=52%			3.2	4				
5		3	21	X	SILTY GRAVEL with Sand (GM) coarse gravel, nonplastic, no dry strength, gray, moist, very dense, field observation indicates p200=15%, Sa=30%, Gr=55%, cobbles to 6"				5				
6	SPT	4	32	X	3 Moisture=16%				6				
7			55	X	4 Moisture=7%				7				
8	GRAB	5			5 Moisture=8%				7.5				
					BOH 8				8.0				
					Notes: No groundwater observed while drilling PVC standpipe installed to 7.7' No measurable groundwater to 7.7' on 9/18/2009								

E:\USCS LOG OF TEST HOLE WITH DNR LOGO\_602883\ADOT.GPJ\_2008\DATA\TEMPLATE.GDT\_1/15/10

CME Auto Hammer  Cathead Rope Method  140 lb. hammer with 30 in. drop  340 lb. hammer with 30 in. drop

Sheet Number 1 of 1



STATE OF ALASKA, DNR  
Department of Natural Resources

LOG OF TEST HOLE

HOLE # 14

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: See Test Hole Location Map  
Offset:  
Elevation: ~925 feet

Equipment Type: CME 45 Heli-base  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Dick Banzhaf with Discovery Drilling

Total Depth: 21.5 feet  
Date: 9/13/2019 - 9/13/2009  
Geologist: Callie J. Keller

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data		Weather: Rain Forest Surface
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)		
0									16.1		
0						PT		SUBSURFACE MATERIAL			
0.0								Peat (PT) brown, moist, fibrous			
1.5						ML		SILT (ML) fine and coarse grained sand, nonplastic, tan, moist			
2.0						SM		SILTY SAND with Gravel (SM) fine gravel, nonplastic, medium dry strength, brown, moist, medium dense, field observation indicates p200=20%, Sa=60%, Gr=20% 1 Moisture=11%			
3	SPT	1	3 8 14	X	22			low dry strength, gray, very dense 2 p200=25%, Sa=46%, Gr=29%, Moisture=6%, (SM)			
4.5	SPT	2	21 42	X							
5			22/1"								
10	SPT	3	43 29 24	X	53	GM		SILTY GRAVEL with Sand (GM) coarse gravel, nonplastic, low dry strength, gray, moist, very dense 3 p200=17%, Sa=39%, Gr=44%, Moisture=7%, (SM)			
14	SPT	4	16 35 36	X	71	SM		SILTY SAND with Gravel (SM) coarse gravel, nonplastic, low dry strength, gray, moist, very dense, field observation indicates p200=25%, Sa=45%, Gr=30% 4 Moisture=7%			
16	∇										
20	SPT	5	24 40 40	X	80	SP-SM		SAND with Silt and Gravel (SP-SM) coarse gravel, poorly graded, low dry strength, gray, moist, very dense, field observation indicates p200=10%, Sa=50%, Gr=40% 5 Moisture=5%			
21.5						BOH	21.5	Notes: No groundwater observed while drilling Thermistor installed to 21.5' PVC standpipe installed to 17' Groundwater measured at 16.1' on 9/17/2009			

E USCS LOG OF TEST HOLE WITH DNR LOGO 80263ADOT.GPJ 2008DATATEMPLATE.GDT 1/15/10



STATE OF ALASKA, DNR  
Department of Natural Resources

**LOG OF TEST HOLE**

**HOLE # 14A**

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: See Test Hole Location Map  
Offset:  
Elevation: ~925 feet

Equipment Type: CME 45 Heli-base  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Dick Banzhaf with Discovery Drilling

Total Depth: 11.0 feet  
Date: 9/14/2009 - 9/14/2009  
Geologist: Brian M. Mullen, E.I.

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data			Weather: 60 deg F, Sunny Forest Surface		
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)	Time	Date		Symbol	
0						PT		Peat (PT) brown				0.0	0	
1													1	
2													2	
3						SM		SILTY SAND with Gravel (SM) coarse gravel, nonplastic, low dry strength, brown, moist, field observation indicates p200=20%, Sa=45%, Gr=35%					3.0	3
4	GRAB	1						1 Moisture=12%					4	
5						GM		SILTY GRAVEL with Sand (GM) coarse gravel, poorly graded, low dry strength, brown, moist, field observation indicates p200=15%, Sa=40%, Gr=45%					5.0	5
6								2 Moisture=6%					6	
7								bulk sample obtained from cuttings					7.0	7
8	GRAB	2											8	
9													9	
10								auger refusal - grinding on a boulder					10.0	10
11							BOH 11	Notes: No groundwater observed while drilling Auger refusal on a boulder at 11'					11.0	11

E USCS LOG OF TEST HOLE WITH DNR LOGO 80263ADOT.GPJ 2008DATATEMPLATE.GDT 1/15/10

CME Auto Hammer  
  Cathead Rope Method  
  140 lb. hammer with 30 in. drop  
  340 lb. hammer with 30 in. drop

Sheet Number 1 of 1



STATE OF ALASKA, DNR  
Department of Natural Resources

# LOG OF TEST HOLE

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

HOLE # 14B

Station / Location: See Test Hole Location Map  
Offset:  
Elevation: ~925 feet

Equipment Type: CME 45 Heli-base  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Dick Banzhaf with Discovery Drilling

Total Depth: 20.0 feet  
Date: 9/14/2009 - 9/14/2009  
Geologist: Brian M. Mullen, E.I.

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data			Weather: 60 deg F, Sunny	
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)			Forest Surface	
									Time				
									Date				
Symbol													
SUBSURFACE MATERIAL													
0						PT		Peat (PT) brown, fibrous	0.0	0			
1										1			
2										2			
3										3			
4										4			
5						GM		SILTY GRAVEL with Sand (GM) coarse gravel, nonplastic, no dry strength, brown, moist, trace of ORGANICS (roots)	5.0	5			
6								1 p200=21%, Sa=39%, Gr=40%, Moisture=9%, PI=NP, Max. Dry Dens=137pcf, Opt. Moisture=6.5%, (GM)	6	6			
7	GRAB	1						bulk sample obtained from cuttings	7.0	7			
8									8	8			
9									9	9			
10								field observation indicates p200=25%, Sa=35%, Gr=40%	10.0	10			
11								2 Moisture=7%	11.0	11			
12	GRAB	2						bulk sample obtained from cuttings	12	12			
13									13	13			
14									14	14			
15								becoming more gravelly	15.0	15			
16								3 p200=13%, Sa=38%, Gr=49%, Moisture=5%, (GM)	16.0	16			
17	GRAB	3						bulk sample obtained from cuttings	17	17			
18									18	18			
19									19	19			
20							BOH 20	Notes: No groundwater observed while drilling	20.0	20			

E:\USCS LOG OF TEST HOLE WITH DNR LOGO\_60263ADOT.GPJ\_2008DATA\TEMPLATE.GDT\_1/15/10

CME Auto Hammer  
  Cathead Rope Method  
  140 lb. hammer with 30 in. drop  
  340 lb. hammer with 30 in. drop

Sheet Number 1 of 1



STATE OF ALASKA, DNR  
Department of Natural Resources

LOG OF TEST HOLE

HOLE # 15

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: See Test Hole Location Map  
Offset:  
Elevation: ~920 feet

Equipment Type: CME 45 Heli-base  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Dick Banzhaf with Discovery Drilling

Total Depth: 21.5 feet  
Date: 9/14/2009 - 9/14/2009  
Geologist: Keri A. Nutter

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data			Weather: 55 deg F, Sunny	
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)	10	3.3	Forest Surface	
									Time				
									Date	9/14/09	9/17/09		
Symbol	▼	▼											
<b>SUBSURFACE MATERIAL</b>													
0						PT		Peat (PT) brown, fibrous	0.0	0			
1						ML		SANDY SILT (ML) fine gravel, no to low plasticity, light brown, moist, firm, ORGANICS present to ~10% by volume (rootlets), field observation indicates p200=55%, Sa=30%, Gr=5%	1.0	1			
2								1 Moisture=61%					
3	▼ SPT	1	4	5									
4		1A	5			SM		SILTY SAND with Gravel (SM) coarse gravel, nonplastic, low dry strength, light gray, moist, loose, field observation indicates p200=20%, Sa=50%, Gr=30%	3.5	3			
5								1A Moisture=22%	5.0	5			
6	SPT	2	14	24				becoming siltier, fine gravel, very dense	6.5	6			
7			20/3"					2 p200=43%, Sa=42%, Gr=15%, Moisture=11%, (SM) grinding on a boulder at 6.5'					
8													
9								Groundwater encountered at 10' while drilling	9.0	9			
10	▼					GM		SILTY GRAVEL with Sand (GM) coarse gravel, nonplastic, no dry strength, gray, moist to wet, very dense	10.0	10			
11	SPT	3	26	46				3 p200=16%, Sa=41%, Gr=43%, Moisture=11%, (GM)					
12			38		84								
13													
14													
15								becoming more gravelly, field observation indicates p200=15%, Sa=40%, Gr=45%	15.0	15			
16	SPT	4	63	61				4 Moisture=9%					
17			73		134								
18													
19													
20								5 Moisture=7%					
21	SPT	5	67	23									
			36		59								
							BOH	Notes: Thermistor installed to 20' PVC standpipe installed to 20' Groundwater measured at 3.3' on 9/17/2009	21.5	21			

E USCS LOG OF TEST HOLE WITH DNR LOGO 60263ADOT.GPJ 2008DATATEMPLATE.GDT 1/15/10

CME Auto Hammer  
  Cathead Rope Method  
  140 lb. hammer with 30 in. drop  
  340 lb. hammer with 30 in. drop

Sheet Number 1 of 1



STATE OF ALASKA, DNR  
Department of Natural Resources

LOG OF TEST HOLE

HOLE # 16

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: See Test Hole Location Map  
Offset:  
Elevation: ~885 feet

Equipment Type: CME 45 Heli-base  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Dick Banzhaf with Discovery Drilling

Total Depth: 11.5 feet  
Date: 9/17/2009 - 9/17/2009  
Geologist: Brian M. Mullen, E.I.

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data			Weather: 50 deg F, Sunny Grass Surface
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)	0.5	5.1	
									Time			
									Date	9/17/09	9/18/09	
0												
1						PT		Peat (PT) brown, fibrous				0.0
2								Groundwater encountered at 0.5' while drilling				1.0
3	SPT	1	4 9 13	X	22	SM		SILTY SAND with Gravel (SM) fine gravel, low plasticity, medium dry strength, brown, wet, medium dense, field observation indicates p200=20%, Sa=45%, Gr=35%				2.5
4								1 Moisture=10%				3
5												4
6	SPT	2	18 55 38	X	93	SP-SM		SAND with Silt and Gravel (SP-SM) coarse gravel, poorly graded, low dry strength, brown, wet, very dense, field observation indicates p200=10%, Sa=45%, Gr=45%				5.0
7								2 Moisture=13%				6
8												7
9												8
10												9
11	SPT	3	26 30 29	X	59	SM		SILTY SAND with Gravel (SM) coarse gravel, low plasticity, medium dry strength, brown, wet, very dense				10.0
								3 p200=21%, Sa=40%, Gr=39%, Moisture=11%, (SM)				11.0
								BOH 11.5				11.5
								Notes: PVC standpipe installed to 11' Groundwater measured at 5.1' on 9/18/2009				

E USCS LOG OF TEST HOLE WITH DNR LOGO 80263ADOT.GPJ 2008DATATEMPLATE.GDT 1/15/10

CME Auto Hammer  Cathead Rope Method  140 lb. hammer with 30 in. drop  340 lb. hammer with 30 in. drop

Sheet Number 1 of 1





STATE OF ALASKA, DNR  
Department of Natural Resources

**LOG OF TEST HOLE**

**HOLE # 18**

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: See Test Hole Location Map  
Offset:  
Elevation: ~905 feet

Equipment Type: CME 45 Heli-base  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Dick Banzhaf with Discovery Drilling

Total Depth: 21.5 feet  
Date: 9/16/2009 - 9/16/2009  
Geologist: Brian M. Mullen, E.I.

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data			Weather: 55 deg F, Overcast Forest Surface
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)			
									7	4.6		
									9/16/09	9/17/09		
0						PT		Peat (PT) brown, moist	0.0	0		
1						OL		ORGANIC SILT (OL) fine grained sand, nonplastic, brown, moist, field observation indicates p200=90%, Sa=10%, Gr=0%	1.0	1		
2						SM		SILTY SAND with Gravel (SM) fine to coarse gravel, nonplastic, low dry strength, brown, moist, medium dense, field observation indicates p200=35%, Sa=40%, Gr=25% 1 Moisture=15% 2 p200=44%, Sa=38%, Gr=18%, Moisture=29%, (SM) becoming siltier, high dry strength 4 p200=32%, Sa=41%, Gr=27%, Moisture=25%, (SM) 3 Moisture=10%	2.5	2		
3	SPT	1	4		18					3	3	
4	GRAB	2	14							4	4	
5										5.0	5	
6	SPT	3	66 36 33		69			6	6			
7	GRAB	4						7.0	7			
8								8	8			
9								9	9			
10	SPT	5	55 70/2"			GM		SILTY GRAVEL with Sand (GM) coarse gravel, nonplastic, low dry strength, brown, wet, very dense, field observation indicates p200=15%, Sa=25%, Gr=50% 5 Moisture=11%	10.0	10		
11								11	11			
12								12	12			
13								13	13			
14								14	14			
15	SPT	6	41 78 65/3"					15.0	15			
16								16	16			
17								17	17			
18								18	18			
19								19	19			
20	SPT	7	24 23 50		73			20.0	20			
21								21	21			
21.5						BOH		Notes: Thermistor installed to 21.5' PVC standpipe installed to 20' Groundwater measured at 4.6' on 9/17/2009	21.5	21.5		

E USCS LOG OF TEST HOLE WITH DNR LOGO 80263ADOT.GPJ 2008DATATEMPLATE.GDT 1/15/10

CME Auto Hammer     Cathead Rope Method     140 lb. hammer with 30 in. drop     340 lb. hammer with 30 in. drop

Sheet Number 1 of 1





STATE OF ALASKA, DNR  
Department of Natural Resources

LOG OF TEST HOLE

HOLE # 20

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: See Test Hole Location Map  
Offset:  
Elevation: ~920 feet

Equipment Type: CME 45 Heli-base  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Dick Banzhaf with Discovery Drilling

Total Depth: 21.0 feet  
Date: 9/16/2009 - 9/16/2009  
Geologist: Brian M. Mullen, E.I.

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data			Weather: 60 deg F, Partly cloudy Forest Surface
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)			
0						PT			8	7.1		
0.0												SUBSURFACE MATERIAL
0.0 - 2.5												Peat (PT) brown, fibrous
2.5 - 5.0	SPT GRAB	1 2	7 11 15		26	GW-GM						GRAVEL with Silt and Sand (GW-GM) coarse gravel, well graded, low dry strength, brown, moist, medium dense, field observation indicates p200=10%, Sa=40%, Gr=50% 1 Moisture=18% 2 p200=8%, Sa=32%, Gr=60%, Moisture=18%, (GW-GM) bulk sample obtained from cuttings, 2.5' to 5'
5.0 - 10.0	SPT GRAB	3 4	11 13 15		28	GP-GM						GRAVEL with Silt and Sand (GP-GM) coarse gravel, poorly graded, low dry strength, brown, moist, medium dense 3 Moisture=10% 4 p200=10%, Sa=41%, Gr=49%, Moisture=14%, (GP-GM) no dry strength, moist to wet, bulk sample obtained from cuttings, 5' to 10' Groundwater encountered at 8' while drilling
10.0 - 15.0	SPT	5	2 3 4		7	SP						SAND with Gravel (SP) fine gravel, poorly graded, no dry strength, dark gray, wet, loose, field observation indicates p200=5%, Sa=70%, Gr=25% 5 Moisture=19%
15.0 - 19.5	SPT	6	15 19 30		49	SM						SILTY SAND with Gravel (SM) fine gravel, nonplastic, low dry strength, brown, wet, dense, field observation indicates p200=15%, Sa=50%, Gr=35% 6 Moisture=12%
19.5 - 21.0	SPT	7	18 25 28		53							becoming siltier, field observation indicates p200=25%, Sa=45%, Gr=30% 7 Moisture=14%
21.0								BOH 21				Notes: Thermistor installed to 20' PVC standpipe installed to 10' Groundwater measured at 7.1' on 9/18/2009

E:\USCS LOG OF TEST HOLE WITH DNR LOGO 60263ADOT.GPJ 2008DATA\TEMPLATE.GDT 1/15/10

CME Auto Hammer     Cathead Rope Method     140 lb. hammer with 30 in. drop     340 lb. hammer with 30 in. drop

Sheet Number 1 of 1



STATE OF ALASKA, DNR  
Department of Natural Resources

LOG OF TEST HOLE

HOLE # 21

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: See Test Hole Location Map  
Offset:  
Elevation: ~865 feet

Equipment Type: CME 45 Heli-base  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Dick Banzhaf with Discovery Drilling

Total Depth: 11.2 feet  
Date: 9/17/2009 - 9/17/2009  
Geologist: Brian M. Mullen, E.I.

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data			Weather: 60 deg F, Sunny Grass Surface
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)	Time	Date	
0												
0.0						PT		Peat (PT) brown, fibrous				
1												
2												
2.5	SPT	1	5 16 28	X	44	SM		SILTY SAND with Gravel (SM) coarse gravel, nonplastic, low dry strength, brown, moist, dense 1 p200=30%, Sa=38%, Gr=32%, Moisture=15%, (SM)				
3												
4												
5												
5.0	SPT	2	28 29 33	X	62	SP-SM		SAND with Silt and Gravel (SP-SM) coarse gravel, low dry strength, brown, moist, very dense, field observation indicates p200=10%, Sa=55%, Gr=35% 2 Moisture=9%				
6												
7												
8												
9												
10												
10.0	SPT	3	35 47 50/2	X		SP		SAND with Gravel (SP) coarse gravel, low dry strength, brown, moist, very dense, field observation indicates p200=5%, Sa=55%, Gr=40% 3 Moisture=7%				
11												
11.2												

BOH 11.2  
Notes:  
No groundwater observed while drilling  
PVC standpipe installed to 11'  
No measurable groundwater to 11' on 9/18/2009

E USCS LOG OF TEST HOLE WITH DNR LOGO 80263ADOT.GPJ 2008DATATEMPLATE.GDT 1/15/10

CME Auto Hammer  Cathead Rope Method  140 lb. hammer with 30 in. drop  340 lb. hammer with 30 in. drop

Sheet Number 1 of 1



STATE OF ALASKA, DNR  
Department of Natural Resources

# LOG OF TEST HOLE

# HOLE # 22

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: 70+00  
Offset: 75L  
Elevation: ~1100 feet

Equipment Type: CME 45 Heli-base  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Darrin Vandehey with Discovery Drilling  
Total Depth: 41.5 feet  
Date: 9/13/2009 - 9/14/2009  
Geologist: Brian M. Mullen, E.I.

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data			Weather: 55 deg F, Rain Forest Surface
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)			
									22	19.9		
									9/13/09	9/17/09		
								Symbol	∇	∇		
<b>SUBSURFACE MATERIAL</b>												
0						PT		Peat (PT) brown, moist, fibrous	0.0	0		
1												
2						SP-SM		SAND with Silt and Gravel (SP-SM) fine to coarse gravel, poorly graded, no dry strength, brown, moist, very dense, field observation indicates p200=10%, Sa=50%, Gr=40%	2.0	2		
3	SPT	2	13		53			1 Moisture=6%				
4	GRAB		24					2 Moisture=24%				
5												
6	SPT	3	14		49			3 Moisture=5%	5.0	5		
7			23					4 Moisture=4%				
8	GRAB	4	26									
9												
10	SPT	5	32			SM		SILTY SAND with Gravel (SM) fine to coarse gravel, nonplastic, no dry strength, brown, moist, very dense, field observation indicates p200=15%, Sa=50%, Gr=35%	10.0	10		
11			46/5"					5 Moisture=8%	11.0	11		
12	GRAB	6						6 p200=15%, Sa=50%, Gr=35%, Moisture=9%, PI=NP, Max. Dry Dens=135pcf, Opt. Moisture=6%, (SM)				
13								bulk sample obtained from cuttings				
14												
15								7 Moisture=8%				
16	SPT	7	14		45							
17	GRAB	8	20					becoming siltier	17.0	17		
18			25					8 p200=21%, Sa=47%, Gr=32%, Moisture=9%, (SM)	18.0	18		
19								bulk sample obtained from cuttings				
20	∇											
21	SPT	9	16					becoming siltier, field observation indicates p200=20%, Sa=45%, Gr=35%	20.0	20		
22	GRAB	10	39					9 Moisture=8%	21.0	21		
23			60/3"					10 Moisture=9%	22.0	22		
24								bulk sample obtained from cuttings				
25	GRAB	11						Groundwater encountered at 22' while drilling	22.0	22		
26								11 Moisture=12%	23.0	23		
27								bulk sample obtained from cuttings	24.0	24		
28												
29												
30												
31	SPT	12	18					wet, becoming sandier, p200=15%, Sa=55%, Gr=30%	25.0	25		
32	GRAB	13	20					12 Moisture=12%	26.0	26		
33			17/5"					13 Moisture=20%				
34								bulk sample obtained from cuttings				
35												
36								14 Moisture=12%				
37	SPT	14	52		52				30.0	30		
38			28									
39			24									
40												
41								auger action indicates cobbles	32.0	32		
42												
43												
44												
45												

E:\USCS LOG OF TEST HOLE WITH DNR LOGO 80263\ADOT.GPJ 2008\DATA\TEMPLATE.GDT 1/15/10

CME Auto Hammer  
  Cathead Rope Method  
  140 lb. hammer with 30 in. drop  
  340 lb. hammer with 30 in. drop

Sheet Number 1 of 2



STATE OF ALASKA, DNR  
Department of Natural Resources

# LOG OF TEST HOLE

HOLE # 22

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: 70+00  
Offset: 75L  
Elevation: ~1100 feet

Equipment Type: CME 45 Heli-base  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Darrin Vandehey with Discovery Drilling  
Total Depth: 41.5 feet  
Date: 9/13/2009 - 9/14/2009  
Geologist: Brian M. Mullen, E.I.

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data			Weather: 55 deg F, Rain Forest Surface
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)	Time	Date	
35	SPT	15	12	X	█	55	GM		22		19.9	
36			24									
37			31									
38												
39												
40	SPT	16	12	X	█	61	GM					
41			27									
41.5			34									

**SUBSURFACE MATERIAL**

35.0-35  
36  
37  
38  
39  
40  
40.0-40  
41  
41.5

**SILTY GRAVEL with Sand (GM)** coarse gravel, nonplastic, low dry strength, brown, wet, very dense, field observation indicates p200=15%, Sa=40%, Gr=45%  
15 Moisture=12%

cobbles to 6" (~15%)  
16 Moisture=16%

Notes:  
Thermistor installed to 40'  
PVC standpipe installed to 40'  
Groundwater measured at 19.9' on 9/17/2009

E:\USCS LOG OF TEST HOLE WITH DNR LOGO 80283ADOT.GPJ 2008DATA\TEMPLATE.GDT 1/15/10

- CME Auto Hammer  
  Cathead Rope Method  
  140 lb. hammer with 30 in. drop  
  340 lb. hammer with 30 in. drop



STATE OF ALASKA, DNR  
Department of Natural Resources

# LOG OF TEST HOLE

# HOLE # 23

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: See Test Hole Location Map  
Offset:  
Elevation: ~1065 feet

Equipment Type: CME 45 Heli-base  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Darrin Vandehey with Discovery Drilling  
Total Depth: 31.0 feet  
Date: 9/15/2009 - 9/15/2009  
Geologist: Maria E. Kampsen, P.E.

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data		Weather: Cold, Clear Forest Surface
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)	Time	
0						SM			18.7		
1											
2											
3	SPT	1	4 7 10	X	17						
4											
5											
6	SPT	2	12 22 33	X	55						
7						GM					
8	GRAB	4									
9											
10											
11	SPT	3	17 27 29	X	56						
12											
13											
14											
15	SPT	5	15 50/4"	X							
16											
17											
18											
19											
20	SPT	6	40/4"	X							
21											
22	GRAB	7									
23											
24											
25	SPT	8	45 15/0"	X							
26											
27											
28											
29											
30	SPT	9	44 50	X							
31											

E:USCS LOG OF TEST HOLE WITH DNR LOGO 80263ADOT.GPJ 2008DATATEMPLATE.GDT 1/15/10



STATE OF ALASKA, DNR  
Department of Natural Resources

**LOG OF TEST HOLE**

**HOLE # 24**

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: See Test Hole Location Map  
Offset:  
Elevation: ~1095 feet

Equipment Type: CME 45 Heli-base  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Darrin Vandehey with Discovery Drilling  
Total Depth: 26.0 feet  
Date: 9/14/2009 - 9/14/2009  
Geologist: Maria E. Kampsen, P.E.

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data			Weather: Cold, Clear Forest Surface
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)	Time	Date	
0						PT		Peat (PT) brown, moist, fibrous				
1												
2	SPT	1	15 50	X		OL GM		ORGANIC SILT (OL) fine grained sand, nonplastic, brown, moist SILTY GRAVEL with Sand (GM) coarse gravel, nonplastic, low dry strength, brown, moist, very dense, field observation indicates p200=15%, Sa=40%, Gr=45%				
3								1 Moisture=10%				
4												
5	SPT	2	30 41 33	X	74	SM		SILTY SAND with Gravel (SM) fine gravel, nonplastic, low dry strength, brown, moist, very dense, field observation indicates p200=15%, Sa=50%, Gr=35%				
6								2 Moisture=10%				
7	GRAE	3						becoming more gravelly				
8								3 p200=17%, Sa=42%, Gr=41%, Moisture=7%, (SM) bulk sample obtained from cuttings				
9												
10	SPT	4	15 24 31	X	55			field observation indicates p200=15%, Sa=45%, Gr=40%				
11								4 Moisture=5%				
12	GRAE	5						5 Moisture=8%				
13								bulk sample obtained from cuttings				
14												
15	SPT	6	15 24 23	X	47	GM		SILTY GRAVEL with Sand (GM) coarse gravel, nonplastic, low dry strength, brown, moist, dense, field observation indicates p200=15%, Sa=40%, Gr=45%				
16								6 Moisture=4%				
17	GRAE	7				GP-GM		GRAVEL with Silt and Sand (GP-GM) coarse gravel, low dry strength, brown, moist, dense, field observation indicates p200=10%, Sa=35%, Gr=55%				
18								7 Moisture=6%				
19								bulk sample obtained from cuttings				
20	SPT	8	12 32	X				8 Moisture=4%				
21												
22	GRAE	9						becoming more gravelly				
23								9 p200=10%, Sa=26%, Gr=64%, Moisture=7%, PI=NP, Max. Dry Dens=148.5pcf, Opt. Moisture=4.5%, (GP-GM)				
24								bulk sample obtained from cuttings				
25	SPT	10	42	X				10 Moisture=7%				
26												
							BOH 26	Notes: No groundwater observed while drilling Thermistor installed to 26' PVC standpipe installed to 25.3' No measurable groundwater to 25.3' on 9/17/2009				

E USCS LOG OF TEST HOLE WITH DNR LOGO 80263ADOT.GPJ 2008DATATEMPLATE.GDT 1/15/10



STATE OF ALASKA, DNR  
Department of Natural Resources

LOG OF TEST HOLE

HOLE # 25

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: 79+00  
Offset:  
Elevation: ~1125 feet

Equipment Type: CME 45 Heli-base  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Darrin Vandehey with Discovery Drilling  
Total Depth: 9.7 feet  
Date: 9/17/2009 - 9/17/2009  
Geologist: Brian M. Mullen, E.I.

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data			Weather: 55 deg F, Sunny Forest Surface
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)	Time	Date	
0						PT		Peat (PT) brown, fibrous				0.0
1												1
2												2
3												3
4						ML		gravel mixed in at bottom of Peat layer				3.0
5	SPT	1	29	X				SILT with Sand (ML) fine grained sand, nonplastic, low dry strength, tan to brown, moist, very stiff, field observation indicates p200=80%, Sa=20%, Gr=0%				4.5
6		1A	15 1/2"			SP		1 Moisture=82%				5.5
7								SAND with Gravel (SP) coarse gravel, poorly graded, no dry strength, brown, moist, very dense, field observation indicates p200=5%, Sa=55%, Gr=40%				6
8								1A Moisture=8%				7
9	SPT	2	50 1/2"			GP		GRAVEL with Sand (GP) coarse gravel, poorly graded, no dry strength, gray, moist, very dense, field observation indicates p200=5%, Sa=25%, Gr=70%				9.5
9.7							BOH	2 Moisture=3%				9.7

E:\USCS LOG OF TEST HOLE WITH DNR LOGO 80263\ADOT.GPJ\_2008\DATA\TEMPLATE.GDT 1/15/10



STATE OF ALASKA, DNR  
Department of Natural Resources

LOG OF TEST HOLE

HOLE # 26

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: 83+00  
Offset:  
Elevation: ~1130 feet

Equipment Type: CME 45 Heli-base  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Darrin Vandehey with Discovery Drilling  
Total Depth: 5.0 feet  
Date: 9/17/2009 - 9/17/2009  
Geologist: Maria E. Kampsen, P.E.

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data			Weather: 55 deg F, Sunny Forest Surface
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)	Time	Date	
0						PT			SUBSURFACE MATERIAL			0.0
1									Peat (PT) brown			1
2												2
3	SPT	1	2	X		ASH			Ash (ASH)			2.5
4			2			ML			1 Moisture=52%			2.8
5	SPT		24			GM			SILT (ML) fine gravel, no to low plasticity, brown, moist to wet, very soft, field observation indicates p200=90%, Sa=5%, Gr=5%			3.5
			25/0"						SILTY GRAVEL with Sand (GM) coarse gravel, nonplastic, brown, moist, dense, cobbles present (>6"), field observation indicates p200=20%, Sa=30%, Gr=50% auger refusal on boulder			5.0
									Notes: No groundwater observed while drilling PVC standpipe installed to 5' No measurable groundwater to 5' on 9/18/2009			

E:\USCS LOG OF TEST HOLE WITH DNR LOGO 80263\ADOT.GPJ 2008\DATA\TEMPLATE.GDT 1/15/10

CME Auto Hammer 
  Cathead Rope Method 
  140 lb. hammer with 30 in. drop 
  340 lb. hammer with 30 in. drop

Sheet Number 1 of 1



STATE OF ALASKA, DNR  
Department of Natural Resources

LOG OF TEST HOLE

HOLE # 27

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: 88+50  
Offset:  
Elevation: ~1125 feet

Equipment Type: CME 45 Heli-base  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Darrin Vandehey with Discovery Drilling  
Total Depth: 10.8 feet  
Date: 9/17/2009 - 9/17/2009  
Geologist: Maria E. Kampsen, P.E.

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data			Weather: 55 deg F, Sunny Forest Surface
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)	Time	Date	
0						PT		Peat (PT) brown				
1												
2												
3	SPT	1	14	X		GW-GM		GRAVEL with Silt and Sand (GW-GM) coarse gravel, well graded, no dry strength, brown, moist, medium dense				
4			11					1 p200=10%, Sa=35%, Gr=55%, Moisture=11%, (GW-GM) cobbles (<4")				
5			17	X				becoming more gravelly, gray, dense, field observation indicates p200=10%, Sa=30%, Gr=60%				
6	SPT	2	23	X	45			2 Moisture=5%				
7			22									
8												
9												
10	SPT	3	25	X		GM		SILTY GRAVEL with Sand (GM) coarse gravel, nonplastic, no dry strength, gray, moist, very dense, field observation indicates p200=20%, Sa=25%, Gr=55%				
			50/4"					3 Moisture=10%				
								Notes: No groundwater observed while drilling PVC standpipe installed to 10.8' No measurable groundwater to 10.8' on 9/18/2009				

E USCS LOG OF TEST HOLE WITH DNR LOGO 80263ADOT.GPJ 2008DATATEMPLATE.GDT 1/15/10



STATE OF ALASKA, DNR  
Department of Natural Resources

**LOG OF TEST HOLE**

**HOLE # 28**

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: 107+50  
Offset:  
Elevation: ~1245 feet

Equipment Type: Hand Auger  
Drilling Method: 3" OD Solid Auger  
Field Crew: MEK, BRD, KAN with DOWL HKM

Total Depth: 4.5 feet  
Date: 9/13/2009 - 9/13/2009  
Geologist: Keri A. Nutter

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data			Weather: Overcast	
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)			Alder Surface	
									Time				
									Date				
									Symbol				
<b>SUBSURFACE MATERIAL</b>													
0						PT		Peat (PT) dark brown	0.0		0		
1						ASH		Ash (ASH) light gray	1.0		1		
2						ML		SILT with Sand (ML) fine grained sand, nonplastic, light brown, moist, field observation indicates p200=85%, Sa=15%, Gr=0%	1.5		1.5		
3						ML		GRAVELLY SILT with Sand (ML) fine to coarse gravel, nonplastic, light brown, moist, field observation indicates p200=65%, Sa=15%, Gr=30%	3.0		3		
4								cobbles	4.0		4		
							BOH 4.5	Notes: No groundwater observed while drilling	4.5		4.5		

E:\USCS LOG OF TEST HOLE WITH DNR LOGO 80263\ADOT.GPJ\_2008\DATA\TEMPLATE.GDT 1/15/10

CME Auto Hammer     Cathead Rope Method     140 lb. hammer with 30 in. drop     340 lb. hammer with 30 in. drop

Sheet Number 1 of 1



STATE OF ALASKA, DNR  
Department of Natural Resources

LOG OF TEST HOLE

HOLE # 29

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: 127+50  
Offset:  
Elevation: ~1390 feet

Equipment Type: Hand Auger  
Drilling Method: 3" OD Solid Auger  
Field Crew: MEK, BRD, KAN with DOWL HKM

Total Depth: 4.0 feet  
Date: 9/12/2009 - 9/12/2009  
Geologist: Keri A. Nutter

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data		Weather: Overcast Alder Surface
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)	Time	
0						PT					
1						ML					
2											
3											
4						GM					

**SUBSURFACE MATERIAL**

0.0 0  
1.0 1  
2.0 2  
3.0 3  
3.5 3.5  
4.0 4

**Peat (PT) brown**

**SILT with Sand (ML) fine sand, no to low plasticity, light brown, moist, cobbles to 4" at 3', field observation indicates p200=85%, Sa=15%, Gr=0%**

**SILTY GRAVEL with Sand (GM) coarse gravel, nonplastic, light brown, moist, field observation indicates p200=25%, Sa=35%, Gr=40%**

Notes:  
No groundwater observed while drilling

E USCS LOG OF TEST HOLE WITH DNR LOGO 80263ADOT.GPJ 2008DATATEMPLATE.GDT 1/15/10

- CME Auto Hammer
- Cathead Rope Method
- 140 lb. hammer with 30 in. drop
- 340 lb. hammer with 30 in. drop



STATE OF ALASKA, DNR  
Department of Natural Resources

**LOG OF TEST HOLE**

**HOLE # 30**

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: 145+50  
Offset:  
Elevation: ~1540 feet

Equipment Type: Hand Auger  
Drilling Method: 3" OD Solid Auger  
Field Crew: MEK, BRD, KAN with DOWL HKM

Total Depth: 3.5 feet  
Date: 9/12/2009 - 9/12/2009  
Geologist: Keri A. Nutter

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data			Weather: Overcast Alder Surface
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)	Time	Date	
0						PT			SUBSURFACE MATERIAL			
1						ASH			Peat (PT) brown, moist			0.0
2						ML			Ash (ASH)			0.5
3						GM			SANDY SILT (ML) fine grained sand, nonplastic, light brown, moist, field observation indicates p200=30%, Sa=70%, Gr=0%			0.7
3.5									SILTY GRAVEL with Sand (GM) coarse gravel, nonplastic, light brown, moist, cobbles present to 4", field observation indicates p200=35%, Sa=20%, Gr=45%			2.0
									Notes: No groundwater observed while drilling			3.5

E USCS LOG OF TEST HOLE WITH DNR LOGO 60263ADOT.GPJ 2008DATATEMPLATE.GDT 1/15/10

CME Auto Hammer     Cathead Rope Method     140 lb. hammer with 30 in. drop     340 lb. hammer with 30 in. drop

Sheet Number 1 of 1



STATE OF ALASKA, DNR  
Department of Natural Resources

**LOG OF TEST HOLE**

**HOLE # 31**

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: 165+00  
Offset:  
Elevation: ~1665 feet

Equipment Type: Hand Auger  
Drilling Method: 3" OD Solid Auger  
Field Crew: MEK, BRD, KAN with DOWL HKM

Total Depth: 4.5 feet  
Date: 9/12/2009 - 9/12/2009  
Geologist: Keri A. Nutter

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data			Weather: Overcast Alder Surface
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)	Time	Date	
0						PT			SUBSURFACE MATERIAL			0.0
1						ML			SILT with Sand (ML) fine grained sand, no to low plasticity, dark brown to light brown, moist, ORGANICS present to ~10% by volume, trace of ASH, field observation indicates p200=80%, Sa=20%, Gr=0%			1.0
2												2
3						ML			GRAVELLY SILT (ML) coarse gravel, no to low plasticity, light gray, moist, field observation indicates p200=75%, Sa=10%, Gr=15%			3.0
4												4
								BOH 4.5	Notes: No groundwater observed while drilling			4.5

E USCS LOG OF TEST HOLE WITH DNR LOGO 80263ADOT.GPJ 2008DATATEMPLATE.GDT 1/15/10

CME Auto Hammer  
  Cathead Rope Method  
  140 lb. hammer with 30 in. drop  
  340 lb. hammer with 30 in. drop

Sheet Number 1 of 1



STATE OF ALASKA, DNR  
Department of Natural Resources

LOG OF TEST HOLE

HOLE # 32

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: 180+50  
Offset:  
Elevation: ~1730 feet

Equipment Type: CME 45 Heli-base  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Darrin Vandehey with Discovery Drilling  
Total Depth: 6.9 feet  
Date: 9/17/2009 - 9/17/2009  
Geologist: Maria E. Kampsen, P.E.

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data			Weather: 55 deg F, Sunny Forest Surface
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)	Time	Date	
SUBSURFACE MATERIAL												
0						PT			Peat (PT) brown, moist	0.0	0	
1						GM		SILTY GRAVEL with Sand (GM) coarse gravel, nonplastic, gray, moist, dense, field observation indicates p200=20%, Sa=30%, Gr=50%	2.0	2		
2	SPT	1		X					5.0	5	becoming more gravelly, field observation indicates p200=20%, Sa=20%. Gr=60%	
3												
4												
5												
6	SPT	2		X								
	SPT		25/0"			BDX	BOH		Bedrock (BDX) auger refusal due to boulders or bedrock	6.9	6	
							6.9		Notes: No groundwater observed while drilling PVC standpipe installed to 6.4' No measurable groundwater to 6.4' on 9/17/2009			

E USCS LOG OF TEST HOLE WITH DNR LOGO 80263ADOT.GPJ 2008DATATEMPLATE.GDT 1/15/10

CME Auto Hammer  Cathead Rope Method  140 lb. hammer with 30 in. drop  340 lb. hammer with 30 in. drop

Sheet Number 1 of 1



STATE OF ALASKA, DNR  
Department of Natural Resources

# LOG OF TEST HOLE

HOLE # 33

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: 185+50  
Offset:  
Elevation: ~1750 feet

Equipment Type: CME 45 Heli-base  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Darrin Vandehey with Discovery Drilling  
Total Depth: 5.0 feet  
Date: 9/17/2009 - 9/17/2009  
Geologist: Maria E. Kampsen, P.E.

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data			Weather: 55 deg F, Sunny Forest Surface
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)	Time	Date	
0												
1						PT						
2	SPT	1		X		GM						
3												
4												
5	SPT		25/0"			BDX						

SUBSURFACE MATERIAL

0.0 0  
1 1  
2.0 2  
3 3  
4.5 4  
5.0 5

Peat (PT) brown, moist

SILTY GRAVEL with Sand (GM) coarse gravel, nonplastic, grayish brown, moist, dense, field observation indicates p200=20%, Sa=30%, Gr=50%

Bedrock (BDX) auger refusal due to boulders or bedrock

Notes:  
No groundwater observed while drilling  
PVC standpipe installed to 4.8'  
No measurable groundwater to 4.8' on 9/17/2009

E:\USCS LOG OF TEST HOLE WITH DNR LOGO 80263ADOT.GPJ 2006DATA\TEMPLATE.GDT 1/15/10

- CME Auto Hammer  
  Cathead Rope Method  
  140 lb. hammer with 30 in. drop  
  340 lb. hammer with 30 in. drop



STATE OF ALASKA, DNR  
Department of Natural Resources

**LOG OF TEST HOLE**

**HOLE # 34**

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: 191+00  
Offset:  
Elevation: ~1785 feet

Equipment Type: CME 45 Heli-base  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Darrin Vandehey with Discovery Drilling  
Total Depth: 2.0 feet  
Date: 9/16/2009 - 9/16/2009  
Geologist: Keri A. Nutter

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data			Weather: 60 deg F, Overcast Tundra/Spruce Forest Surface
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)	Time	Date	
0									SUBSURFACE MATERIAL			
1	GRAB SPT	1				PT SM BDX		0.0	Peat (PT) brown, moist		0.0	0
2			10/0"					0.5	SILTY SAND with Gravel (SM) coarse gravel, nonplastic, brown, moist, field observation indicates p200=40%, Sa=45%, Gr=15%		1.0	1
								2.0	Bedrock (BDX) auger refusal due to bedrock 1 Moisture=11%		2.0	2
									Notes: No groundwater observed while drilling			

E USCS LOG OF TEST HOLE WITH DNR LOGO 60263ADOT.GPJ 2008DATATEMPLATE.GDT 1/15/10

CME Auto Hammer  
  Cathead Rope Method  
  140 lb. hammer with 30 in. drop  
  340 lb. hammer with 30 in. drop

Sheet Number 1 of 1



STATE OF ALASKA, DNR  
Department of Natural Resources

**LOG OF TEST HOLE**

**HOLE # 35**

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: 197+25  
Offset:  
Elevation: ~1810 feet

Equipment Type: CME 45 Hell-base  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Darrin Vandehey with Discovery Drilling  
Total Depth: 2.5 feet  
Date: 9/16/2009 - 9/16/2009  
Geologist: Keri A. Nutter

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data			Weather: 60 deg F, Overcast Tundra/Spruce Forest Surface
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)	Time	Date	
0												
1	GRAB	1				PT SM						
2	SPT GRAB	2	20/0"									
<b>SUBSURFACE MATERIAL</b>												
0.0	Peat (PT) brown, moist, fibrous											0
0.5	SILTY SAND with Gravel (SM) fine gravel, nonplastic, dark brown to light brown, moist, ORGANICS present to ~20% by volume (roots), cobbles to 8"											1
2.0	1 p200=19%, Sa=59%, Gr=22%, Moisture=37%, PI=NP, (SM) becoming more gravelly, field observation indicates p200=15%, Sa=45%, Gr=40%											2
2.5	2 Moisture=5% auger refusal due to bedrock											
Notes: No groundwater observed while drilling												

E USCS LOG OF TEST HOLE WITH DNR LOGO 60263ADOT.GPJ 2008DATATEMPLATE.GDT 1/15/10

CME Auto Hammer  
  Cathead Rope Method  
  140 lb. hammer with 30 in. drop  
  340 lb. hammer with 30 in. drop

Sheet Number 1 of 1



STATE OF ALASKA, DNR  
Department of Natural Resources

**LOG OF TEST HOLE**

**HOLE # 36**

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: 200+75  
Offset:  
Elevation: ~1815 feet

Equipment Type: CME 45 Heli-base  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Darrin Vandehey with Discovery Drilling  
Total Depth: 11.5 feet  
Date: 9/15/2009 - 9/15/2009  
Geologist: Maria E. Kampsen, P.E.

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data		Weather: 60 deg F, Clear Tundra Surface
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)		
0											
1											
2	SPT	1	7	X	45	SM		9.5	8.5		
3			22					9/15/09	9/17/09		
4			23								
5	SPT	2	35	X	52						
6			26								
7			26								
8											
9											
10	SPT	3	16	X	65	GM		9.5			
11			30								
			35								

**SUBSURFACE MATERIAL**

ORGANIC Mat

**SILTY SAND with Gravel (SM)** coarse gravel, nonplastic, low dry strength, brown, moist, dense, field observation indicates p200=25%, Sa=45%, Gr=30%  
1 Moisture=7%

gray, very dense  
2 p200=28%, Sa=44%, Gr=28%, Moisture=8%, (SM)

Groundwater encountered at 9.5' while drilling

**SILTY GRAVEL with Sand (GM)** coarse gravel, nonplastic, no dry strength, gray and brown, wet, very dense, field observation indicates p200=25%, Sa=35%, Gr=40%  
3 Moisture=18%

Notes:  
PVC standpipe installed to 11.5'  
Groundwater measured at 8.5' on 9/17/2009

E USCS LOG OF TEST HOLE WITH DNR LOGO 80263ADOT.GPJ 2008DATATEMPLATE.GDT 1/15/10



STATE OF ALASKA, DNR  
Department of Natural Resources

**LOG OF TEST HOLE**

**HOLE # 37**

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: 208+00  
Offset:  
Elevation: ~1840 feet

Equipment Type: CME 45 Heli-base  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Darrin Vandehey with Discovery Drilling  
Total Depth: 1.2 feet  
Date: 9/15/2009 - 9/15/2009  
Geologist: Maria E. Kampsen, P.E.

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data			Weather: 60 deg F, Clear Tundra Surface
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)	Time	Date	
0						ML			SUBSURFACE MATERIAL			
1	SPT		25/0"			BDX			SILT (ML) coarse gravel, nonplastic, brown, moist, field observation indicates p200=65%, Sa=5%, Gr=30%			0.0
									Bedrock (BDX) auger refusal			1.9
									Notes: No groundwater observed while drilling			

E USCS LOG OF TEST HOLE WITH DNR LOGO 80263ADOT.GPJ 2008DATATEMPLATE.GDT 1/15/10



STATE OF ALASKA, DNR  
Department of Natural Resources

**LOG OF TEST HOLE**

**HOLE # 38**

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: See Test Hole Location Map  
Offset:  
Elevation: ~1850 feet

Equipment Type: CME 45 Heli-base  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Darrin Vandehey with Discovery Drilling  
Total Depth: 5.0 feet  
Date: 9/11/2009 - 9/11/2009  
Geologist: Brian M. Mullen, E.I.

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data			Weather: 60 deg F, Clear Tundra Surface			
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)	Time	Date		Symbol		
0						PT			SUBSURFACE MATERIAL			0.0			
1						SM			SILTY SAND with Gravel (SM) coarse gravel, nonplastic, low dry strength, brown, moist, medium dense, field observation indicates p200=25%, Sa=40%, Gr=35% 1 Moisture=14%			1.2			
2															2
3	SPT	1	4 6 5	X	11										
4												4			
5									Notes: No groundwater observed while drilling Continued on following core log			5.0			

E:\USCS LOG OF TEST HOLE WITH DNR LOGO 80263ADOT.GPJ 2008DATATEMPLATE.GDT 1/15/10







STATE OF ALASKA, DNR  
Department of Natural Resources

**LOG OF TEST HOLE**

**HOLE # 39**

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: See Test Hole Location Map  
Offset:  
Elevation: ~1840 feet

Equipment Type: CME 45 Heli-base  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Darrin Vandehey with Discovery Drilling  
Total Depth: 6.5 feet  
Date: 9/9/2009 - 9/9/2009  
Geologist: Brian M. Mullen, E.I.

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data		Weather: 60 deg F, Partly Cloudy Tundra Surface
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)	Time	
0						PT					
0.5						SM					
1											
2											
3	GRAB	1									
4											
5	SPT	3	56								
5.3		2	56			BDX					
6											
6.5											

**SUBSURFACE MATERIAL**

0.0 Peat (PT) brown, moist

0.5 SILTY SAND with Gravel (SM) fine to coarse gravel, nonplastic, low dry strength, brown, moist, field observation indicates p200=30%, Sa=50%, Gr=20%

1 Moisture=14%

5.0 becoming sandier, field observation indicates p200=25%, Sa=55%, Gr=20%

5.3 2 Moisture=9%

6.5 3 Moisture=7%

BOH 6.5

Notes:  
No groundwater observed while drilling  
Continued on following core log

E USCS LOG OF TEST HOLE WITH DNR LOGO 60263ADOT.GPJ 2006DATATEMPLATE.GDT 1/15/10

CME Auto Hammer  Cathead Rope Method  140 lb. hammer with 30 in. drop  340 lb. hammer with 30 in. drop

Sheet Number 1 of 1



# CORE LOG

W.O. 1122.60263.01 BORING NO. E 39  
 PROJECT South Denali Scenic overlook DRILLING CONTRACTOR Discovery  
 CLIENT DNR DRILLER Darren Vandehey  
 DATE 9-9-09 to 9-11-09 EQUIPMENT CME 45 Helibase  
 START 15:45 FINISH 16:33 CORE SIZE AW  
 LOGGED BY BMM4 SHEET 2 OF 2

RUN NUMBER	SAMPLE DEPTH (feet)	Feet inches CORED	Feet inches RECOVERED	% RECOVERY	#4"	RQD	BED ANGLE	DEPTH	TIME	STRATIGRAPHY	FRACTURES
5	14	2.3	2.0	87	5	22	33	15	12		
								15			
								16	13		
								17			
								18			
								17			

**LITHOLOGY**

22, Stained, 6 - 49°, stained, 6 - Mechanical breaks at various angles  
 44, mechanical, 4 - 62°, stained, 7  
 50-54, mechanical, 6 stained - 3-7, x 5 spaced @ .02 to .03 apart  
 39, mechanical, 13 Break along .005 Calcite vein (reacts to acid)  
 35, Stained, 7 additional .005 Calcite veins @ 15, 2°, 15, 4°, and 18.5°  
 55, mechanical, 3 all angled at 41°  
 52, stained, 9  
 37, mechanical, 5 - lesser Mechanical breaks at various angles  
 68, Mechanical, 8  
 41, Stained, 7 1 x 2 spaced @ .03 apart  
 Various angles, mechanical breaks, 3-7  
 63, mechanical, 7 - 15°, mechanical, 8  
 48, mechanical, 3 - 4, x 2 spaced at .02' apart  
 52-55, mechanical, 3-6 x 3 spaced at .02 - 0.5 Apart  
 48, mechanical, 7  
 54, Stained, 9  
 90, mechanical, 10  
 33, Stained, 6  
  
 - Test Boring E39 completed @ 18.7' on 9-11-09



STATE OF ALASKA, DNR  
Department of Natural Resources

**LOG OF TEST HOLE**

**HOLE # 40**

PROJECT NUMBER: 70981-1  
PROJECT: South Denali Visitor Center Complex

Station / Location: See Test Hole Location Map  
Offset:  
Elevation: ~1860 feet

Equipment Type: CME 45 Heli-base  
Drilling Method: 2.5" ID x 3.25" OD Hollow Auger  
Field Crew: Darrin Vandehey with Discovery Drilling  
Total Depth: 5.5 feet  
Date: 9/12/2009 - 9/12/2009  
Geologist: Brian M. Mullen, E.I.

Depth (Feet)	Sample Data					USCS Classification	Frozen Zone	Soil Graphic	Groundwater Data			Weather: 55 deg F, Foggy Tundra Surface
	Sample Type	Number	Blow Count	Sample Recovery	N-Value				Depth in (ft.)	Time	Date	
0						PT			SUBSURFACE MATERIAL			0.0
1									Peat (PT) brown, moist			1.0
2												2.0
3	SPT	1	3 8 16	X	24	SM			SILTY SAND with Gravel (SM) coarse gravel, nonplastic, low dry strength, brown, moist, medium dense, field observation indicates p200=20%, Sa=40%, Gr=40% 1 Moisture=12%			2.5
4												4.0
5												5.0
								BOH 5.5	Notes: No groundwater observed while drilling Continued on following core log			5.5

E USCS LOG OF TEST HOLE WITH DNR LOGO 80263ADOT.GPJ 2008DATATEMPLATE.GDT 1/15/10

CME Auto Hammer  Cathead Rope Method  140 lb. hammer with 30 in. drop  340 lb. hammer with 30 in. drop

Sheet Number 1 of 1



# CORE LOG

RUN NUMBER	SAMPLE DEPTH (feet)	Feet - INCHES - CORED	Feet - INCHES - RECOVERED	% RECOVERY	# 4"	ROD	BED ANGLE	DEPTH	TIME (minutes)	STRATIGRAPHY	FRACTURES
								14			
5	14.9	.85	.7	82	-	0	39	15	2		
6	16.75	5	4.7	94	1	20		16	11		
								17			
								18			
								19			
								20			
								21			
								22			
								23			
								24			
								25			
								26			

W.O. 1122.60263.01 BORING NO. E 40  
 PROJECT South Denali Scenic Overlook DRILLING CONTRACTOR Discovery  
 CLIENT DNR DRILLER Darren Vandehey  
 DATE 9-12-09 EQUIPMENT CME 45 Helibase  
 START 14:30 FINISH 16:39 CORE SIZE AW  
 LOGGED BY BMMu SHEET 2 OF 2

Continued from Previous Page **LITHOLOGY**

14:30; stained, 6  
 Various angles, stained to filled, 6-10, Possible gouge, Moderate to highly weathered  
 66°; mechanical, 9,  
 321-68°; stained, 10  
 87°; stained, 6.  
 50-45; various angles, stained, 8  
 68°; stained, 6, -74°; stained, 6  
 Various angles, stained, 6-10, slight weathering  
 69°; stained, 4  
 31°; clean, 5 - 63°; stained  
 49-54°; stained, 6-8, no weathering, x3 spaced .01-.03 apart  
 Various angles, stained, 3-8, highly fractured through dark slaty band  
 72°; stained, 4 - 41°; stained, 10 - 52°; stained, 10  
 82°; stained, 9 - 80°; stained, 8 - .01' calcite band w/ abundant pyrite grains  
 73°; mechanical, 5  
 57°; stained, slightly weathered - Trace pyrite  
 83°; mechanical, 5  
 49°; stained, 12, slightly weathered  
 52°; stained, 10, mechanically fractured into several fragments  
 52°; mechanical, 3  
 54-64°; mechanical, x3 spaced .02 apart, 4 JRC  
 51°; stained, 6 - trace pyrite  
 61°; stained, 6  
 61°; stained, 5  
 Various angles, stained, slightly weathered, 8 JRC  
 91°; mechanical, 4  
 72°; stained, 6-8, x3 spaced .01 apart  
 52°; mechanical, 3 - 59°; mechanical, 4 - .01' calcite band  
 50-54°; mechanical to stained, 3-4, x5 spaced .01 to .03 apart  
 85°; stained, 6, x2 spaced .2 apart  
 48-52°; stained, 3, x2 spaced .2 apart  
 76°; stained, 6,  
 86°; stained, 5  
 45-78°; mechanical, x4 spaced .01-.02 apart - 85°; mechanical, 5  
 54°; mechanical, x2 spaced .03 apart - .01' calcite band  
 57°; stained, x2 spaced .01 apart  
 39°; mechanical, 8  
 85°; mechanical, 9  
 80°; mechanical, 9  
 70-85°; mechanical + 1 stained, 8-10  
 52°; stained, 4 - 51°; mechanical, 3  
 44°; mechanical, 3 -  
 59-45°; mechanical to stained, x4 spaced .02 apart - 82°; mechanical, 8  
 - Test Boring E40 completed @ 25.75' on 9-12-09

# CORE LOG

W.O. 1122.60263.01 BORING NO. E-41  
 PROJECT South Denali Scenic Overlook DRILLING CONTRACTOR Discovery  
 CLIENT DNR DRILLER Darren Vandehey  
 DATE 9-13-09 EQUIPMENT CME 45, Helibase  
 START 12:15 FINISH 14:54 CORE SIZE AW  
 LOGGED BY BMM SHEET 1 OF 2

RUN NUMBER	SAMPLE DEPTH	Feet INCHES CORED	Feet INCHES RECOVERED	% RECOVERY	# 4"	RQD	BED ANGLE	DEPTH	TIME (minutes)	STRATIGRAPHY	FRACTURES
1	.7	2.1	1.8	86	1.2	57	23	1	8		
2	2.8	3.0	2.9	97	1.6	53	30	3	16		
3	5.8	3.1	3.0	97	1.1	35	34	6	20		
4	8.9	1.9	1.6	84	1.2	63		9	9		
5	10.8	5	4.9	98	3.4	68		11			
								12			
								13			
								14			

## LITHOLOGY

Drilling into colluvium and 0-3" thick vegetative mat  
 Colluvium is weathered consisting of silty sand  
 to highly weathered bedrock. 7' begin coring  
 Various angles, 8-15 JPC, 6.5' Core Barrel, diamond bit  
 Quartz infilling Drill unoriented 1.1" inside  
 25' Stained, 8" diameter  
 Bedrock picked at 0.9' due to  
 6.8' mechanical, 5' high consistent core recovery  
 7.5' Stained, 15" Graywacke  
 very weathered 1) Gray  
 Various angles, 4-12 JPC 2) Aphanitic  
 Some breaks mechanical 3) Meta-graywacke  
 highly, weathered, stained 4) low weathering  
 6.7' mostly mechanical along existing weakness, 12 5) 2 predominant  
 6.2' Stained, 11, moderately weathered fracture planes  
 9.4' Stained, 10, moderately weathered, 3.4' mechanical, 7  
 Various angles, 6-15 JPC, DK gray, fine grained schist, slightly weathered  
 1 x 2" Shist layer, DK gray, fine grained, slightly weathered  
 .1-1cm silty infilling  
 7.1' Stained, slightly weathered  
 3.4' Filled, 16, very weathered, Possible fault  
 4.1' Stained, 9  
 4.0' Stained, 8, slightly weathered  
 2.3' Stained, 7  
 Various angles, stained to mechanical, 6-14, no to moderate weathering  
 7.1' mechanical, 9  
 7.9' mechanical, 10 (partially stained)  
 6.8' Stained, moderately weathered  
 3.8' Stained  
 Various angles, stained to mechanical, 6-11, moderate weathering  
 Various angles Filled, 9, very weathered, Possible fault  
 3.7' Stained, 10  
 8.6' mechanical, 12,  
 7.1' Stained, 11  
 6.6' mechanical, 9  
 8.2' mechanical, 11, Concerning whole core:  
 3.1' Stained, 9 - abundant mica grains throughout  
 6.9' mechanical, 11 - Occasional pyrite grains  
 7.2' Stained, 10 - Calcite veins as noted  
 6.0' Stained, 10 - mostly iron staining in fractures  
 7.6' mechanical, 9 8.2' mechanical, 8  
 7.1' Stained, 8  
 9.0' mechanical, 8  
 Multiple Fractures, 10-69° mechanical, 8  
 8.3' Stained, 7, slightly weathered  
 8.3' Stained 6.9' orthogonal .01' Calcite vein  
 6.3' Stained 6.2' slightly weathered  
 2.4' Stained  
 3.9' Stained  
 0-5' Stained, highly weathered, Iron staining extending  
 0-45' .1 to .5 feet into rock

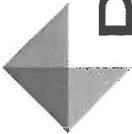






## **APPENDIX C**

### **LABORATORY TEST RESULTS**



**DOWL HKM**

**Client:** Department of Natural Resources.  
**Project:** S. Denali Visitor Center Complex  
**Work Order:** D60263

**Particle Size Distribution**

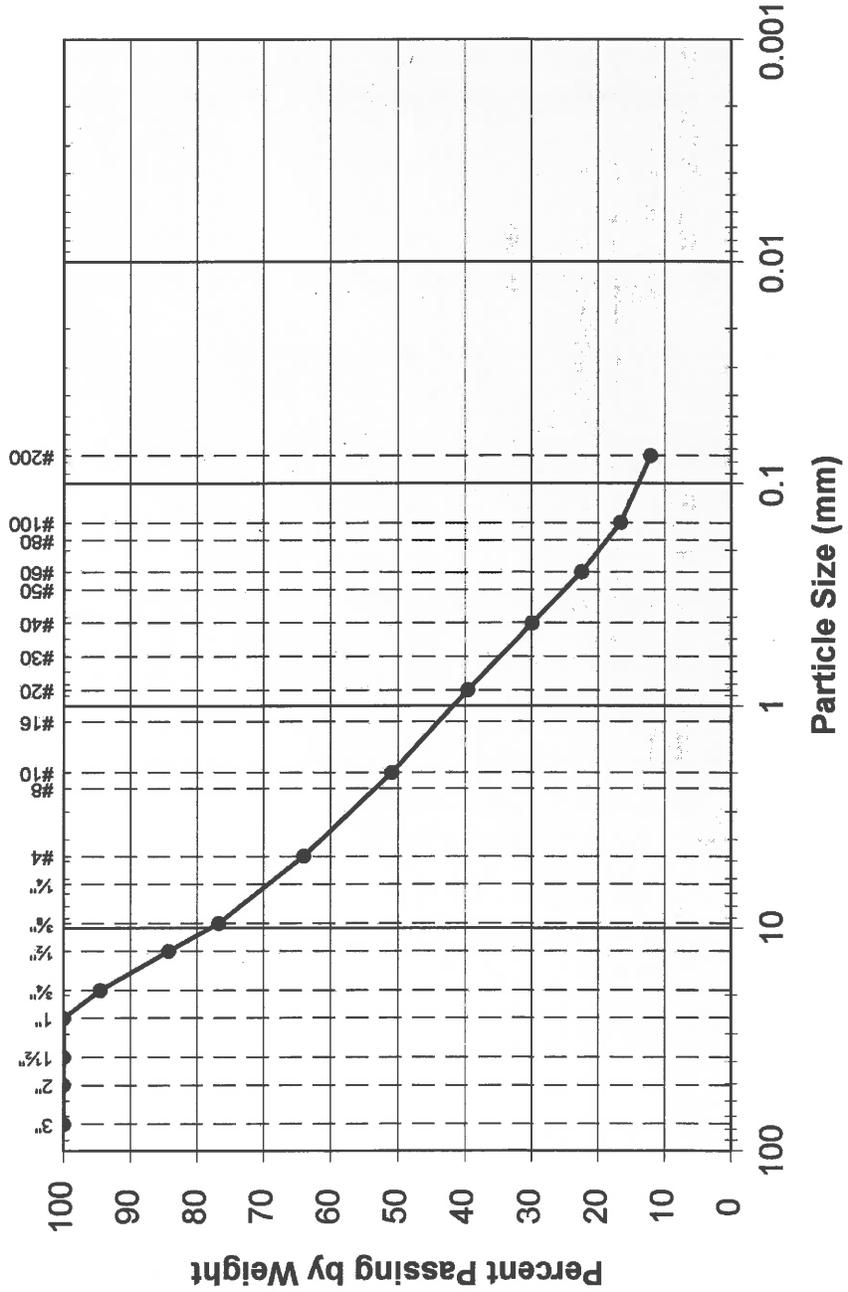
**ASTM D422**

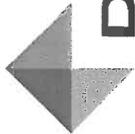
<b>Lab Number</b>	2009-1198
<b>Received</b>	9/24/2009
<b>Reported</b>	10/9/2009

**Location:** Test Hole 4  
Sample 1  
Depth 2.5'-3.9'

**Engineering Classification:** Poorly Graded Sand with Silt and Gravel, SP-SM

**Frost Classification:** Not Measured





**DOWL HKM**

**Client:** Department of Natural Resources.  
**Project:** S. Denali Visitor Center Complex  
**Work Order:** D60263

**Particle Size Distribution**

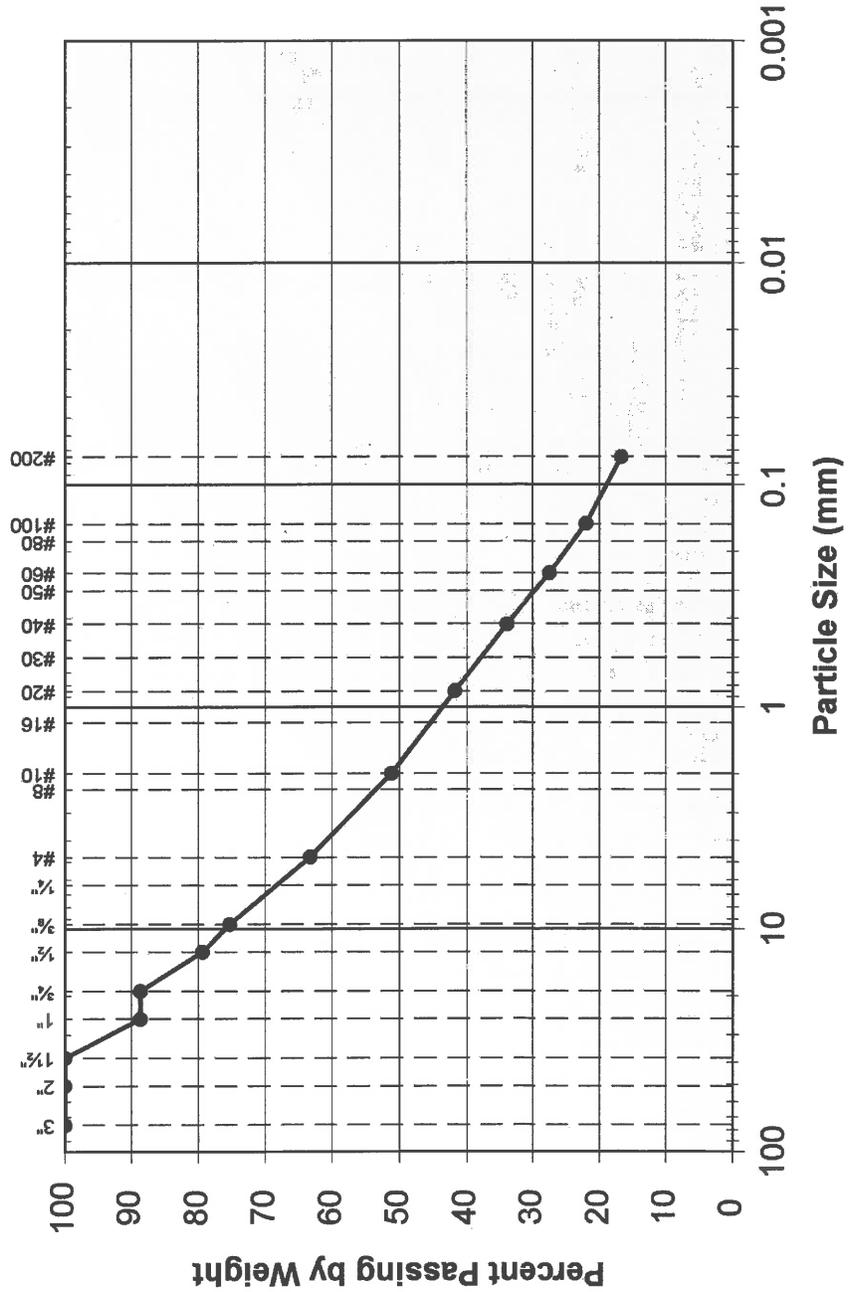
**ASTM D422**

**Location:** Test Hole 5  
Sample 2  
Depth 5'-6.5'

**Lab Number** 2009-1199  
**Received** 9/24/2009  
**Reported** 10/9/2009

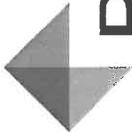
**Engineering Classification:** Silty Sand with Gravel, SM

**Frost Classification:** Not Measured



Total Weight of Coarse Fraction: 328g

Total Weight of Fine Fraction: 207.62g



**DOWL HKM**

**Client:** Department of Natural Resources.  
**Project:** S. Denali Visitor Center Complex  
**Work Order:** D60263

**Particle Size Distribution**

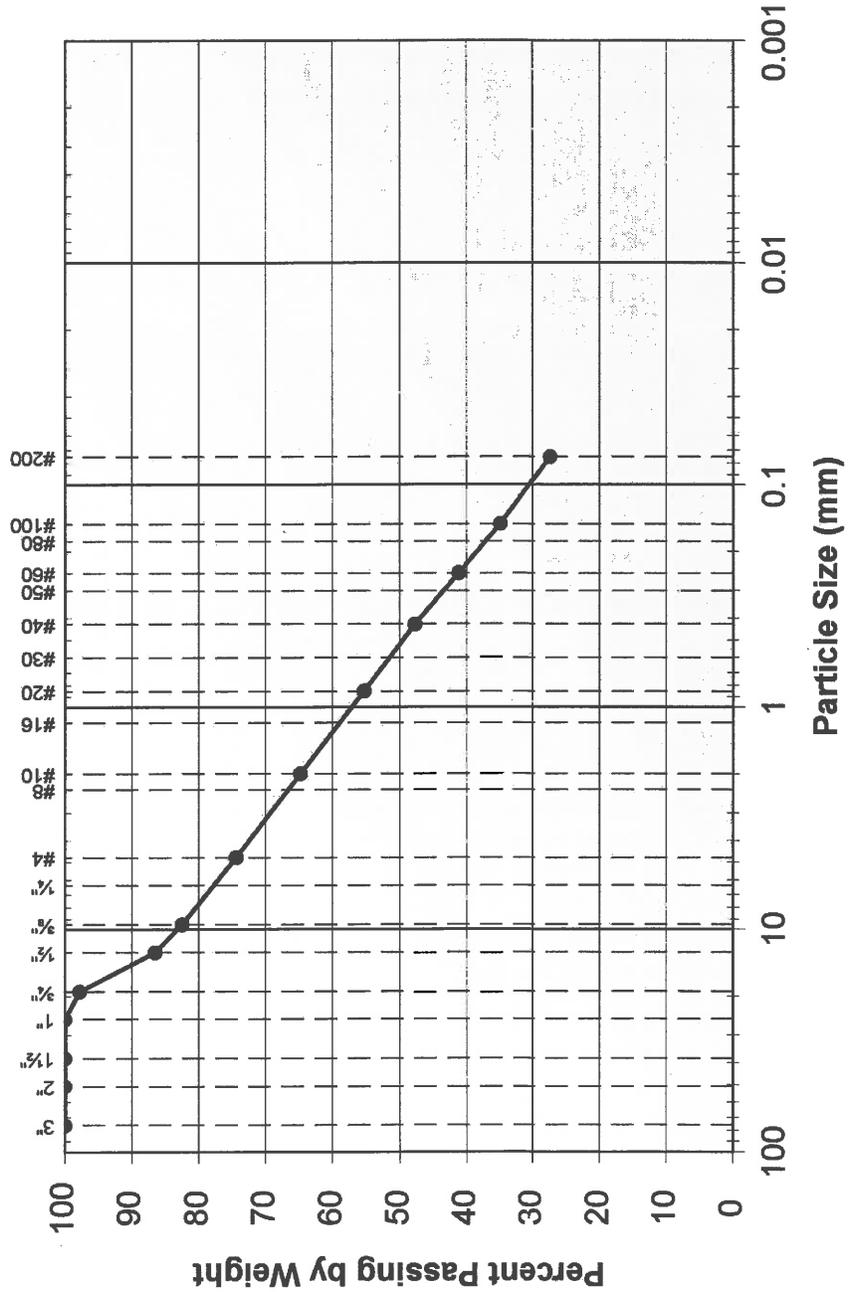
**ASTM D422**

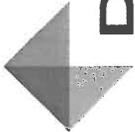
<b>Lab Number</b>	2009-1200
<b>Received</b>	9/24/2009
<b>Reported</b>	10/9/2009

**Location:** Test Hole 8  
Sample 2  
Depth 5'-6.5'

**Engineering Classification:** Silty Sand with Gravel, SM

**Frost Classification:** Not Measured





**DOWL HKM**

**Client:** Department of Natural Resources.  
**Project:** S. Denali Visitor Center Complex  
**Work Order:** D60263

**Particle Size Distribution**

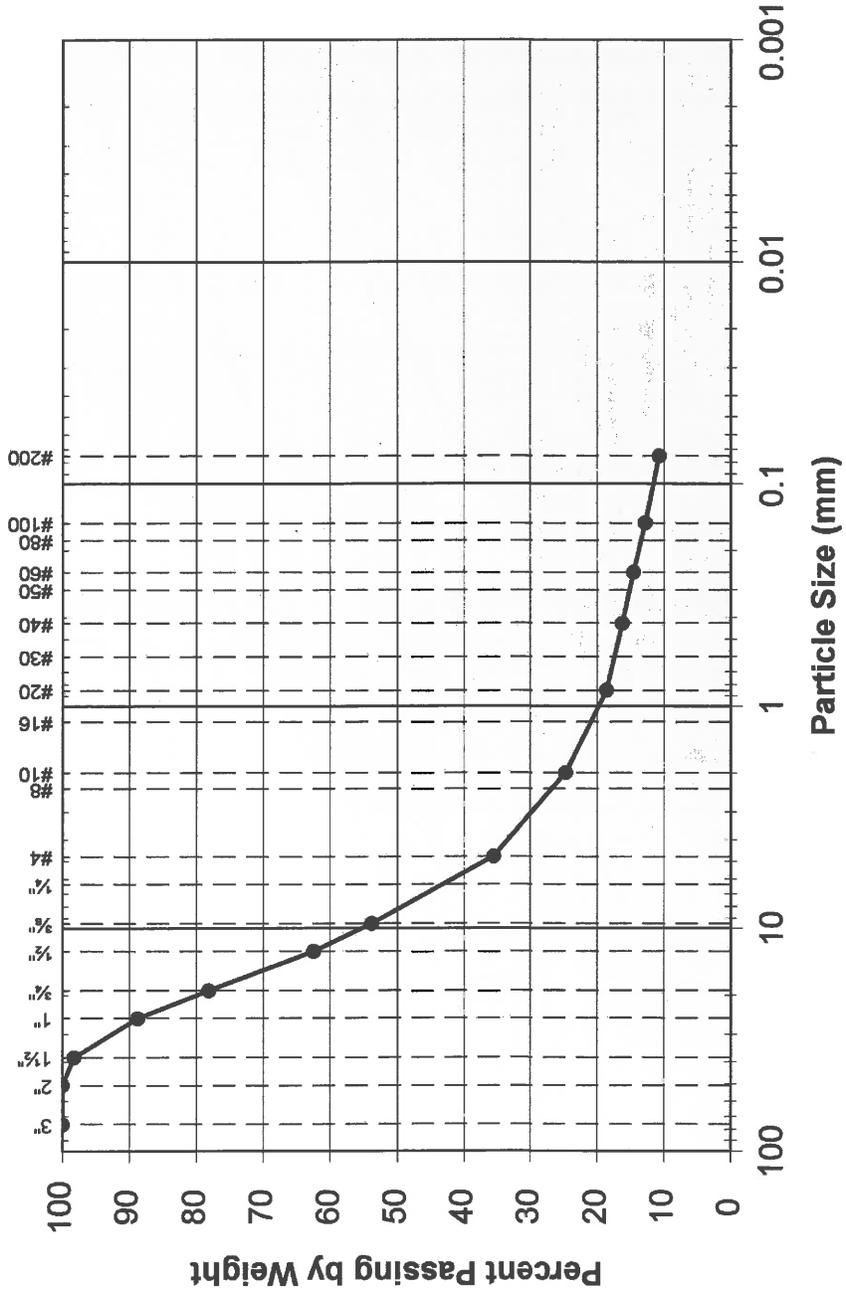
**ASTM D422**

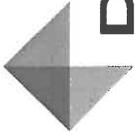
**Location:** Test Hole 10  
Sample 9  
Depth About 27'

**Lab Number** 2009-1278  
**Received** 10/9/2009  
**Reported** 10/9/2009

**Engineering Classification:** Poorly Graded Gravel with Silt and Sand, GP-GM

**Frost Classification:** Not Measured



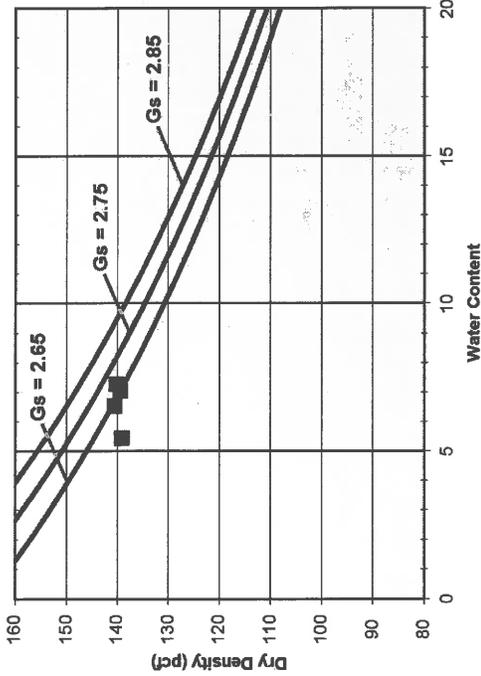


**DOWL HKM**

**Client:** Department of Natural Resources.  
**Project:** S. Denali Visitor Center Complex  
**Work Order:** D60263

**Modified Proctor**

**ASTM D1557 C**

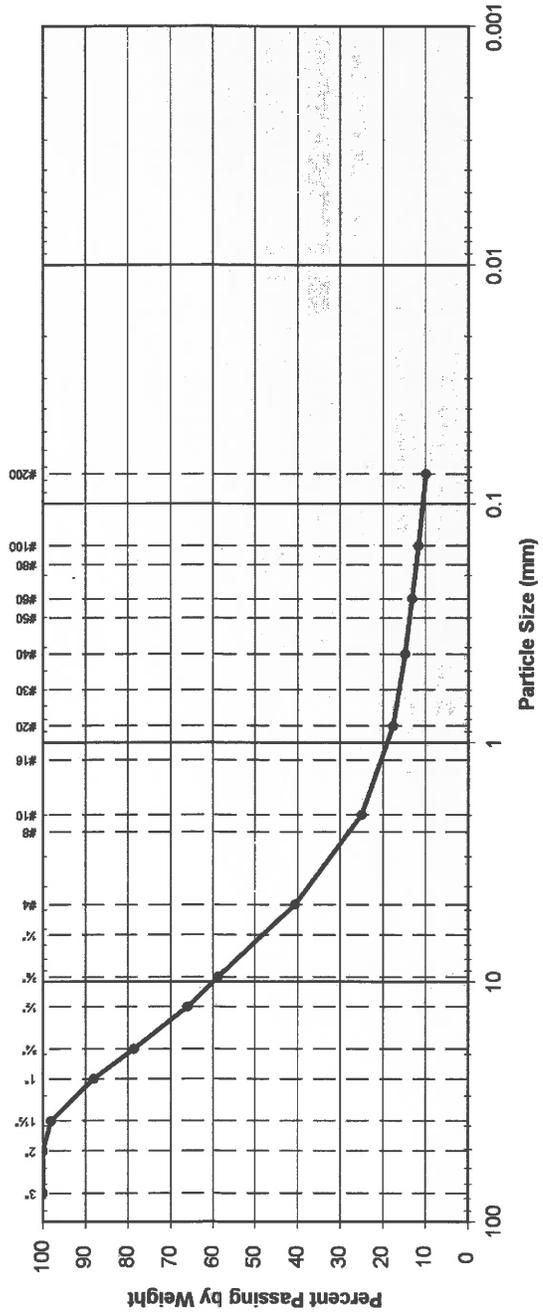


**Location:**  
 Test Hole 10  
 Sample 6  
 Depth about 16'

**Uncorrected Max Density:** 140.6 pcf  
**Uncorrected Optimum:** 6.5%  
**Corrected Max Density:** 145.5 pcf  
**Corrected Optimum:** 5%

**Moist Preparation**  
**Mechanical Compaction**

**Engineering Classification:** Poorly Graded Gravel with Silt and Sand, GP-GM  
**Frost Classification:** Not Measured



**Lab Number** 2009-1202  
**Received** 9/24/2009  
**Reported** 10/9/2009

Size	Passing	Specification
3"	100%	
2"	100%	
1½"	98%	
1"	88%	
¾"	79%	
½"	66%	
¾"	59%	
#4	41%	

**Total Weight of Coarse Fraction:** 36854g  
 #10 25%  
 #20 18%  
 #40 15%  
 #60 13%  
 #100 12%  
 #200 9.9%  
**Total Weight of Fine Fraction:** 386.1g



**DOWL HKM**

**Client:** Department of Natural Resources.  
**Project:** S. Denali Visitor Center Complex  
**Work Order:** D60263

**Particle Size Distribution**

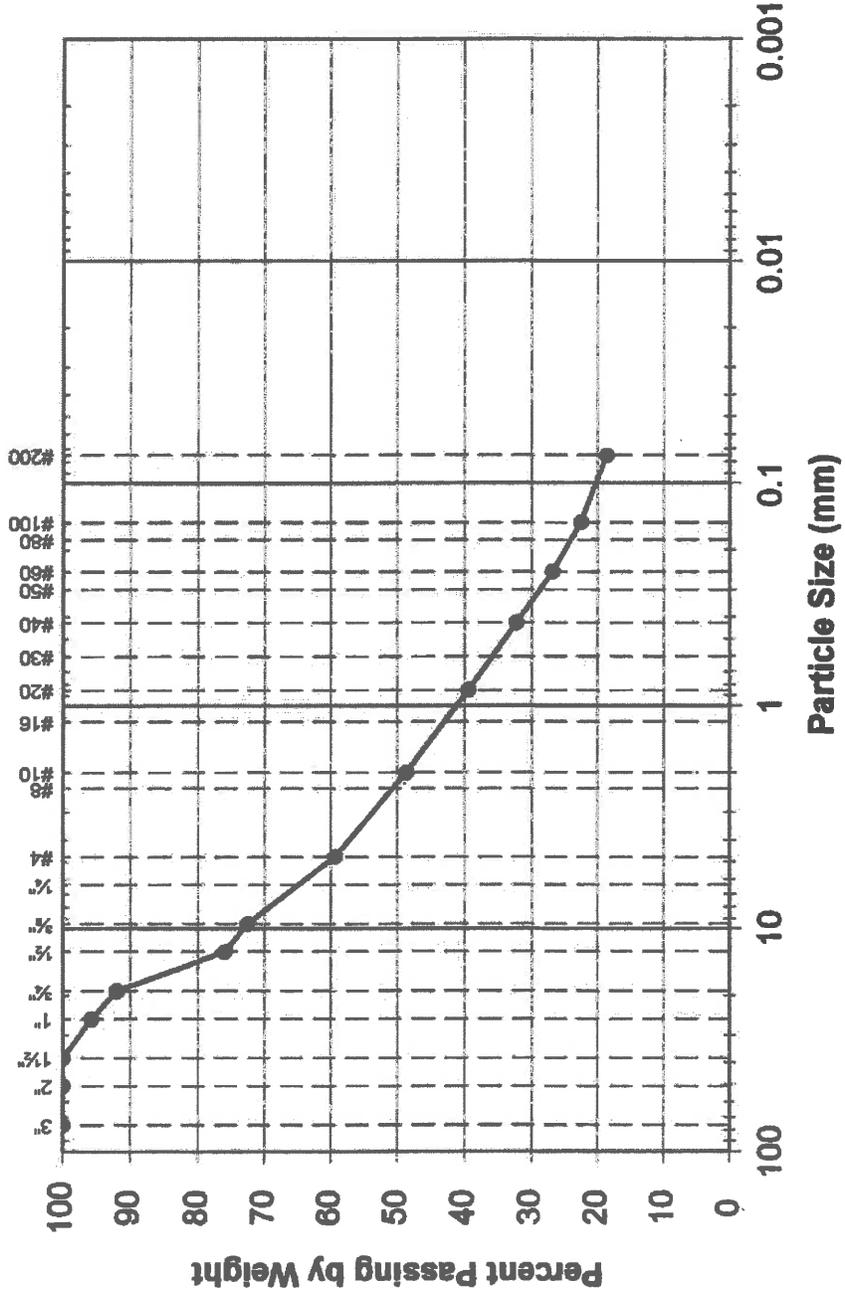
**ASTM D422**

Lab Number	2009-1203
Received	9/24/2009
Reported	1/15/2010

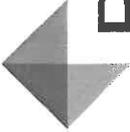
**Location:** Test Hole 11  
Sample 3  
Depth 10'-11.5'

**Engineering Classification:** Silty Gravel with Sand, GM

**Frost Classification:** Not Measured



Size	Passing	Specification
3"	100%	
2"	100%	
1½"	100%	
1"	96%	
¾"	92%	
½"	76%	
¾"	73%	
#4	59%	
Total Weight of Coarse Fraction: 475.41g		
#10	49%	
#20	39%	
#40	32%	
#60	27%	
#100	23%	
#200	18.7%	
Total Weight of Fine Fraction: 282.29g		



**DOWL HKM**

**Client:** Department of Natural Resources.  
**Project:** S. Denali Visitor Center Complex  
**Work Order:** D60263

**Particle Size Distribution**

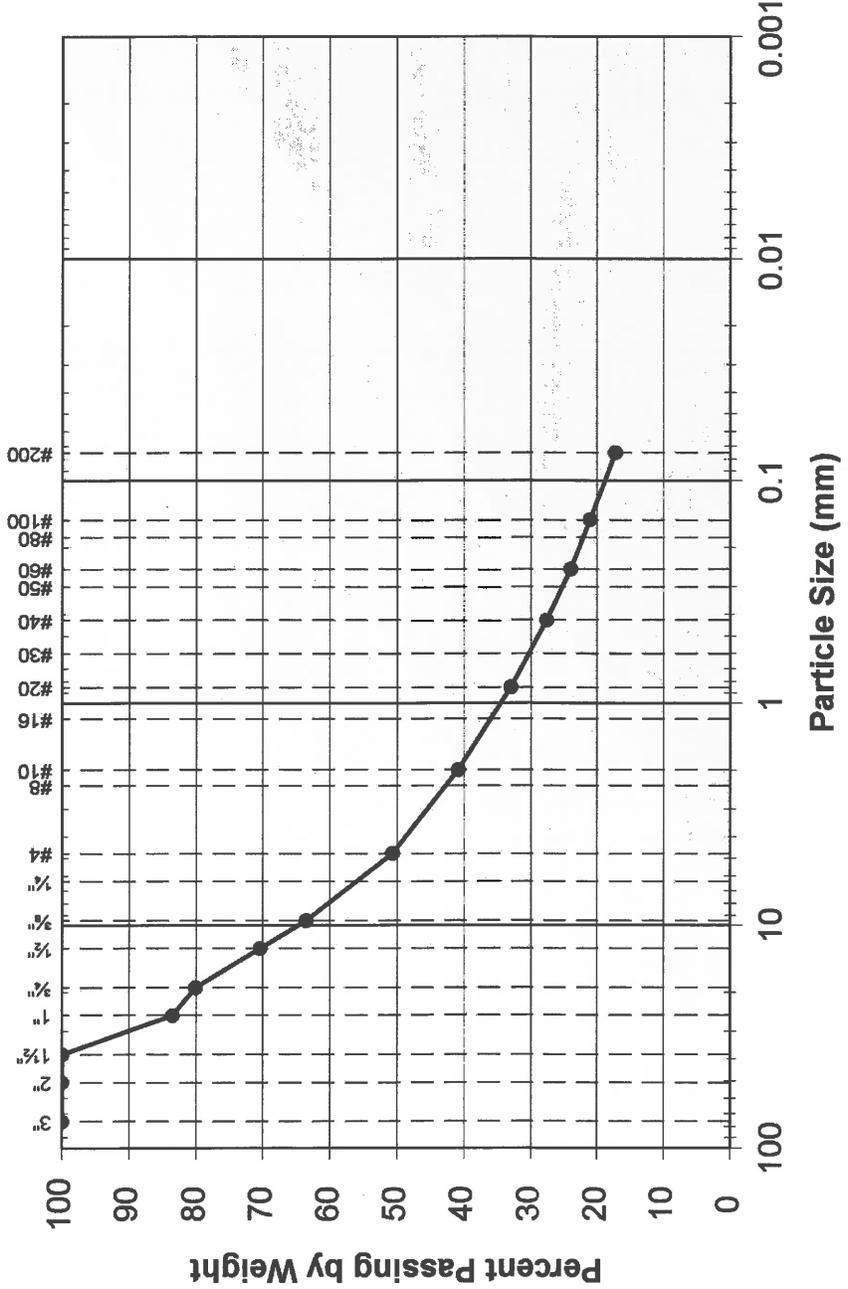
**ASTM D422**

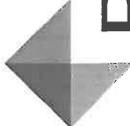
**Location:** Test Hole 12  
Sample 1  
Depth 3'-5'

**Lab Number** 2009-1204  
**Received** 9/24/2009  
**Reported** 10/9/2009

**Engineering Classification:** Silty Gravel with Sand, GM

**Frost Classification:** Not Measured





# DOWL HKM

Client: Department of Natural Resources.  
 Project: S. Denali Visitor Center Complex  
 Work Order: D60263

Location: Test Hole 14  
 Sample 2  
 Depth 4.5'-6.5'

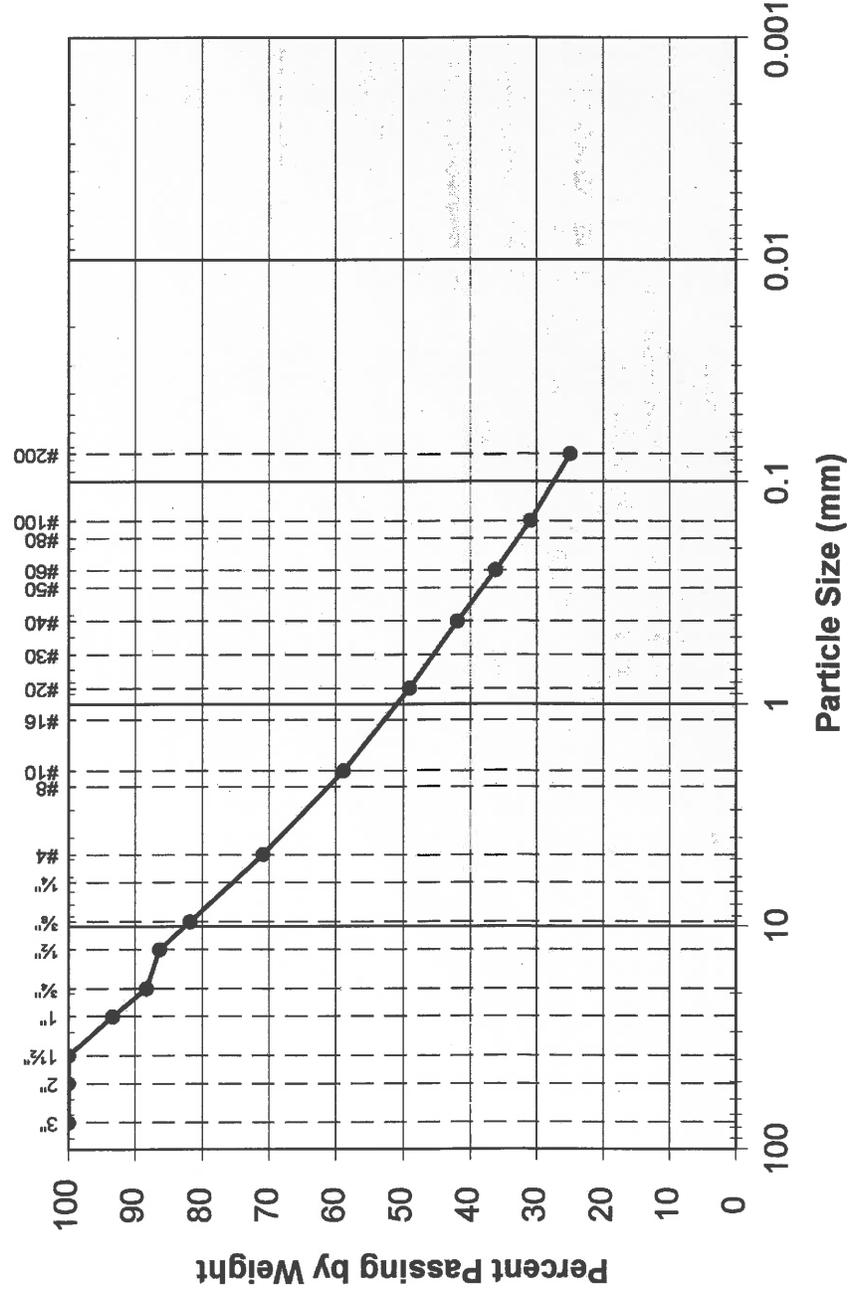
## Particle Size Distribution

**ASTM D422**

Lab Number	2009-1205
Received	9/24/2009
Reported	10/9/2009

Engineering Classification: Silty Sand with Gravel, SM

Frost Classification: Not Measured





**DOWL HKM**

**Client:** Department of Natural Resources.  
**Project:** S. Denali Visitor Center Complex  
**Work Order:** D60263

**Particle Size Distribution**

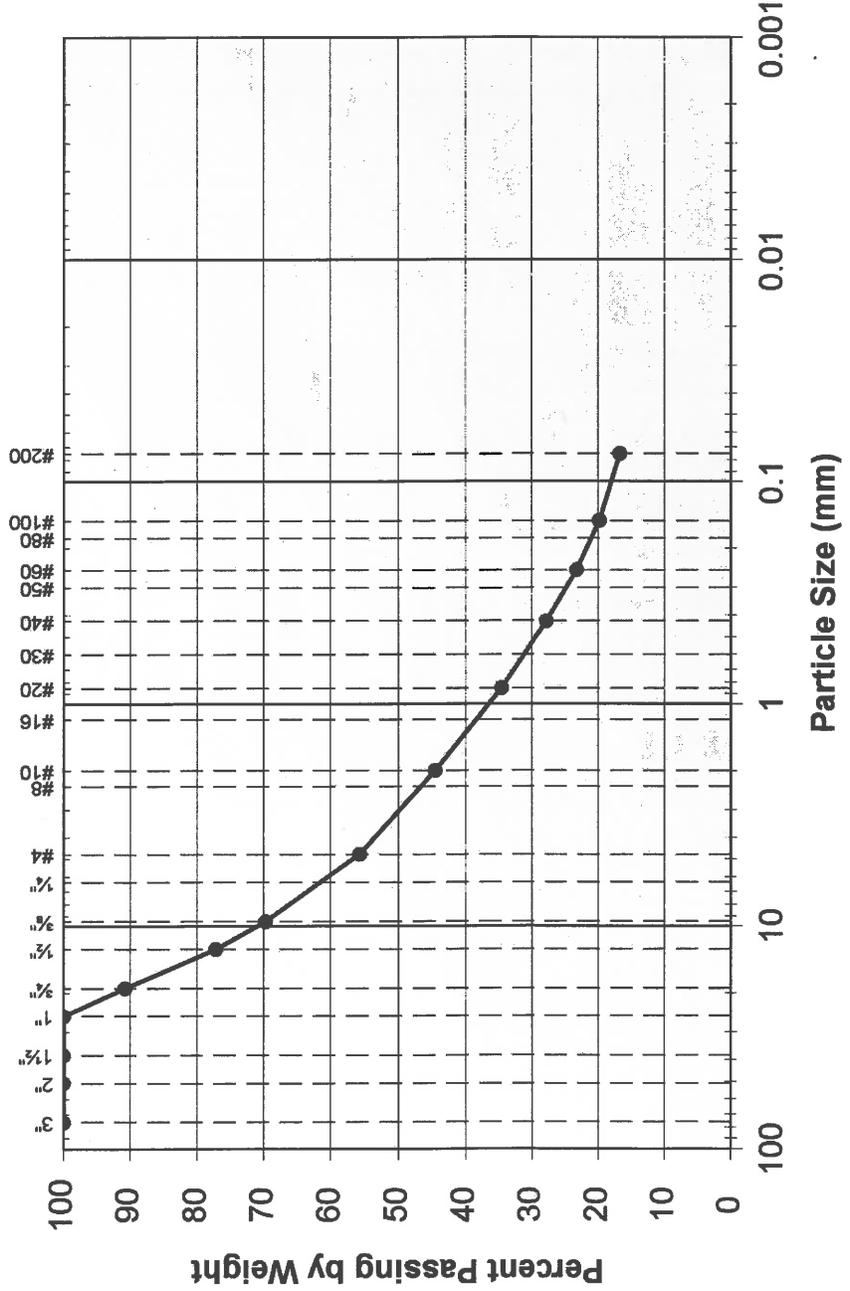
**ASTM D422**

**Location:** Test Hole 14  
Sample 3  
Depth 10'-11.5'

**Lab Number** 2009-1206  
**Received** 9/24/2009  
**Reported** 10/9/2009

**Engineering Classification:** Silty Gravel with Sand, GM

**Frost Classification:** Not Measured

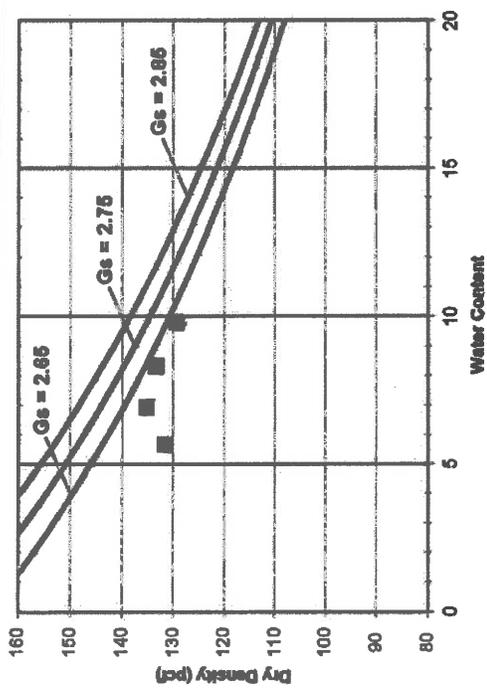




**DOWL HKM**

**Client:** Department of Natural Resources.  
**Project:** S. Denali Visitor Center Complex  
**Work Order:** D60263

**Modified Proctor**  
**ASTM D1557 C**

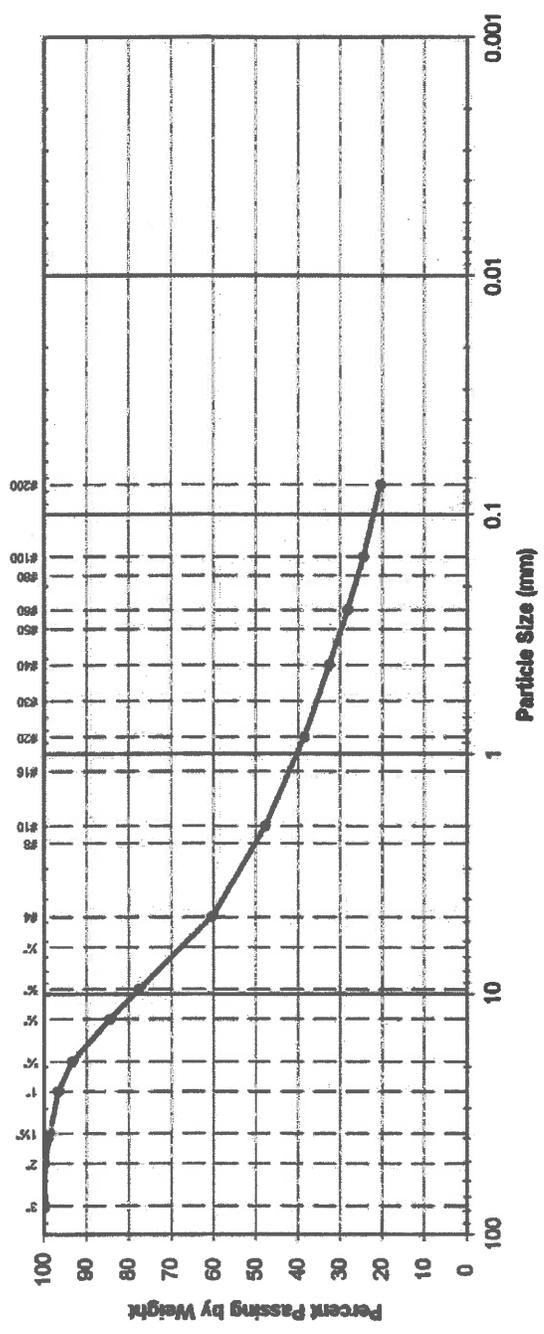


**Location:**  
 Test Hole 14B  
 Sample 1  
 Depth 5'-10'

**Uncorrected Max Density:** 135.3 pcf  
**Uncorrected Optimum:** 6.9%  
**Corrected Max Density:** 137 pcf  
**Corrected Optimum:** 6.5%

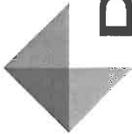
**Moist Preparation**  
**Mechanical Compaction**

**Engineering Classification:** Silty Gravel with Sand, GM  
**Frost Classification:** Not Measured



**Lab Number** 2009-1207  
**Received** 9/24/2009  
**Reported** 10/9/2009

Size	Passing	Specification
3"	100%	
2"	100%	
1½"	99%	
1"	97%	
¾"	93%	
½"	85%	
¾"	78%	
#4	60%	
<b>Total Weight of Coarse Fraction: 23578g</b>		
#10	48%	
#20	39%	
#40	33%	
#60	28%	
#100	25%	
#200	20.5%	
<b>Total Weight of Fine Fraction: 496.38g</b>		



**DOWL HKM**

**Client:** Department of Natural Resources.  
**Project:** S. Denali Visitor Center Complex  
**Work Order:** D60263

**Particle Size Distribution**

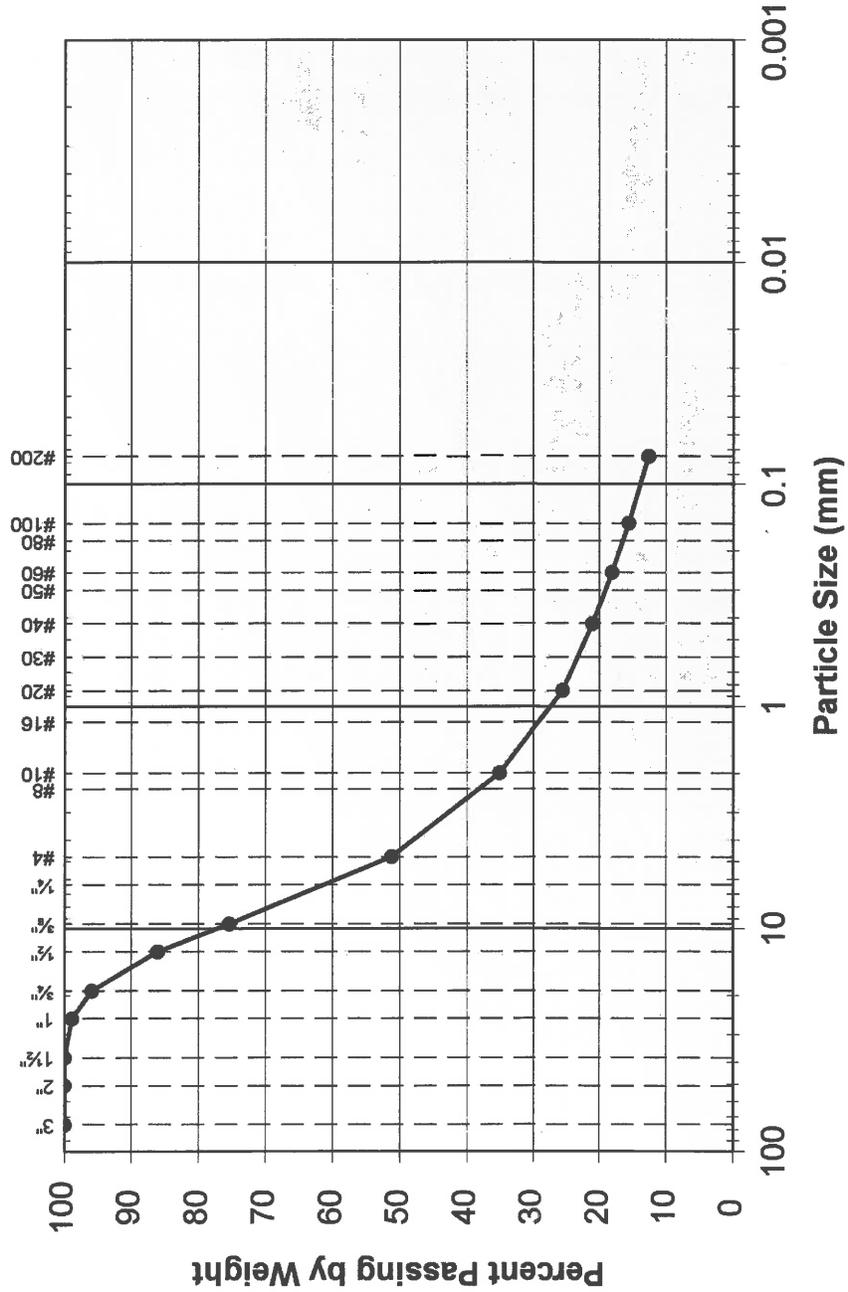
**ASTM D422**

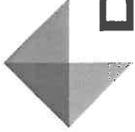
**Location:** Test Hole 14B  
Sample 3  
Depth 15'-20'

**Lab Number** 2009-1208  
**Received** 9/24/2009  
**Reported** 10/7/2009

**Engineering Classification:** Silty Gravel with Sand, GM

**Frost Classification:** Not Measured





# DOWL HKM

Client: Department of Natural Resources.  
 Project: S. Denali Visitor Center Complex  
 Work Order: D60263

## Particle Size Distribution

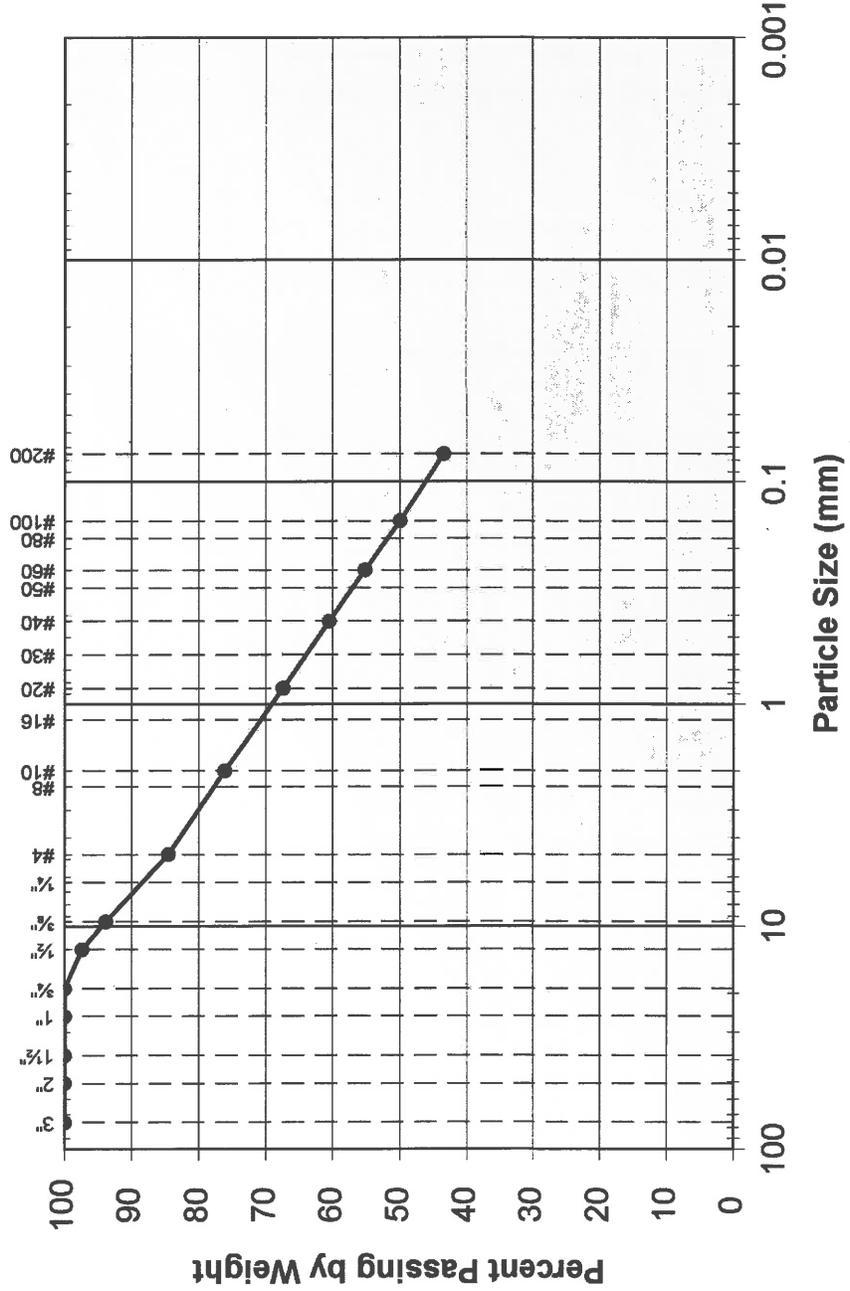
### ASTM D422

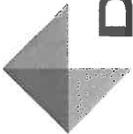
Lab Number	2009-1209
Received	9/24/2009
Reported	10/9/2009

Location: Test Hole 15  
 Sample 2  
 Depth 5'-6.25'

Engineering Classification: Silty Sand with Gravel, SM

Frost Classification: Not Measured





# DOWL HKM

Client: Department of Natural Resources.  
 Project: S. Denali Visitor Center Complex  
 Work Order: D60263

## Particle Size Distribution

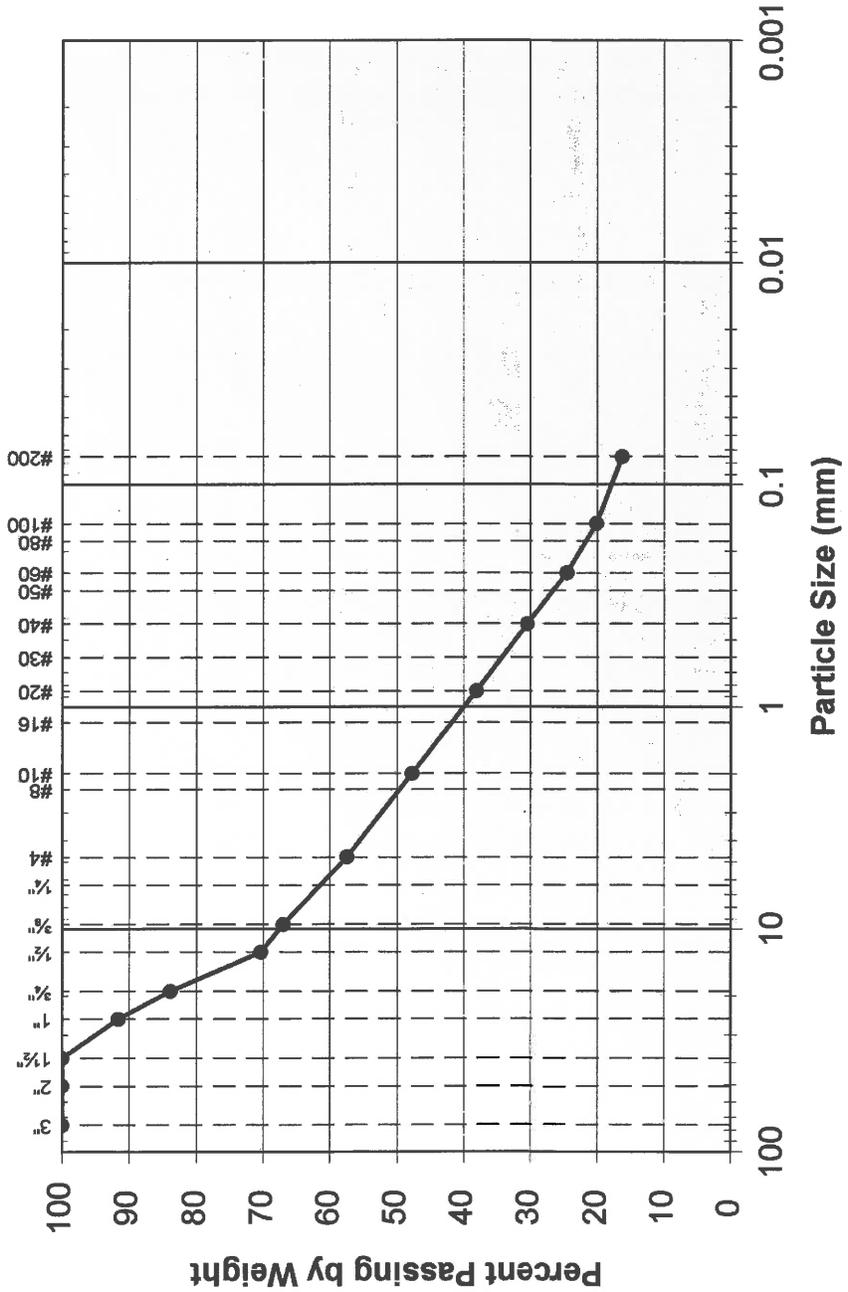
**ASTM D422**

Lab Number	2009-1210
Received	9/24/2009
Reported	10/9/2009

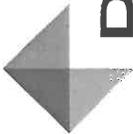
Location: Test Hole 15  
 Sample 3  
 Depth 10'-11.5'

Engineering Classification: Silty Gravel with Sand, GM

Frost Classification: Not Measured



Size	Passing	Specification
3"	100%	
2"	100%	
1 1/2"	100%	
1"	92%	
3/4"	84%	
1/2"	70%	
3/8"	67%	
#4	57%	
Total Weight of Coarse Fraction: 696.83g		
#10	48%	
#20	38%	
#40	30%	
#60	25%	
#100	20%	
#200	16.3%	
Total Weight of Fine Fraction: 400.44g		



**DOWL HKM**

**Client:** Department of Natural Resources.  
**Project:** S. Denali Visitor Center Complex  
**Work Order:** D60263

**Particle Size Distribution**

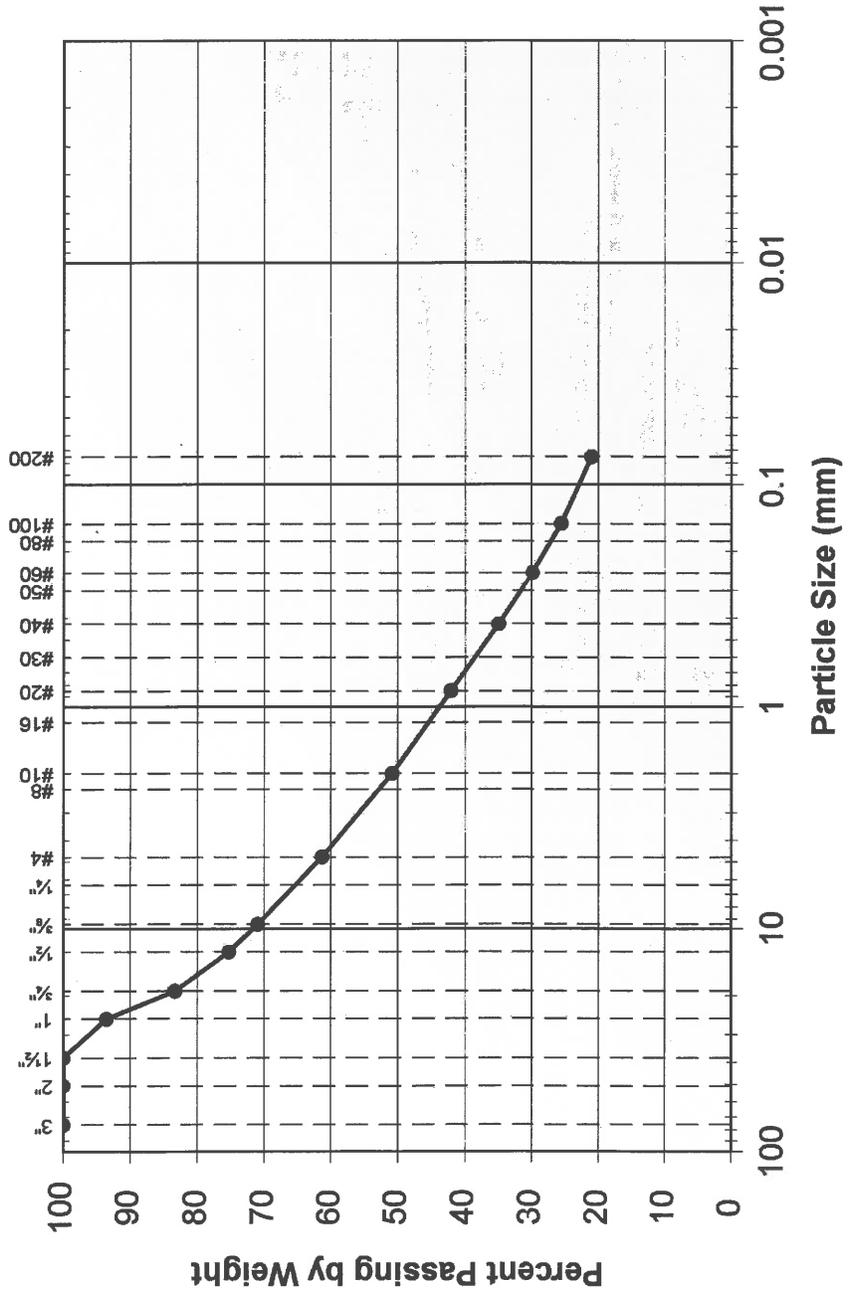
**ASTM D422**

**Location:** Test Hole 16  
 Sample 3  
 Depth 10'-11.5'

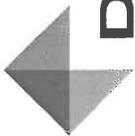
**Lab Number** 2009-1211  
**Received** 9/24/2009  
**Reported** 10/9/2009

**Engineering Classification:** Silty Sand with Gravel, SM

**Frost Classification:** Not Measured



Size	Passing	Specification
3"	100%	
2"	100%	
1 1/2"	100%	
1"	94%	
3/4"	83%	
1/2"	75%	
3/8"	71%	
#4	61%	
Total Weight of Coarse Fraction: 592.4g		
#10	51%	
#20	42%	
#40	35%	
#60	30%	
#100	26%	
#200	21%	
Total Weight of Fine Fraction: 363g		



**DOWL HKM**

**Client:** Department of Natural Resources.  
**Project:** S. Denali Visitor Center Complex  
**Work Order:** D60263

**Particle Size Distribution**

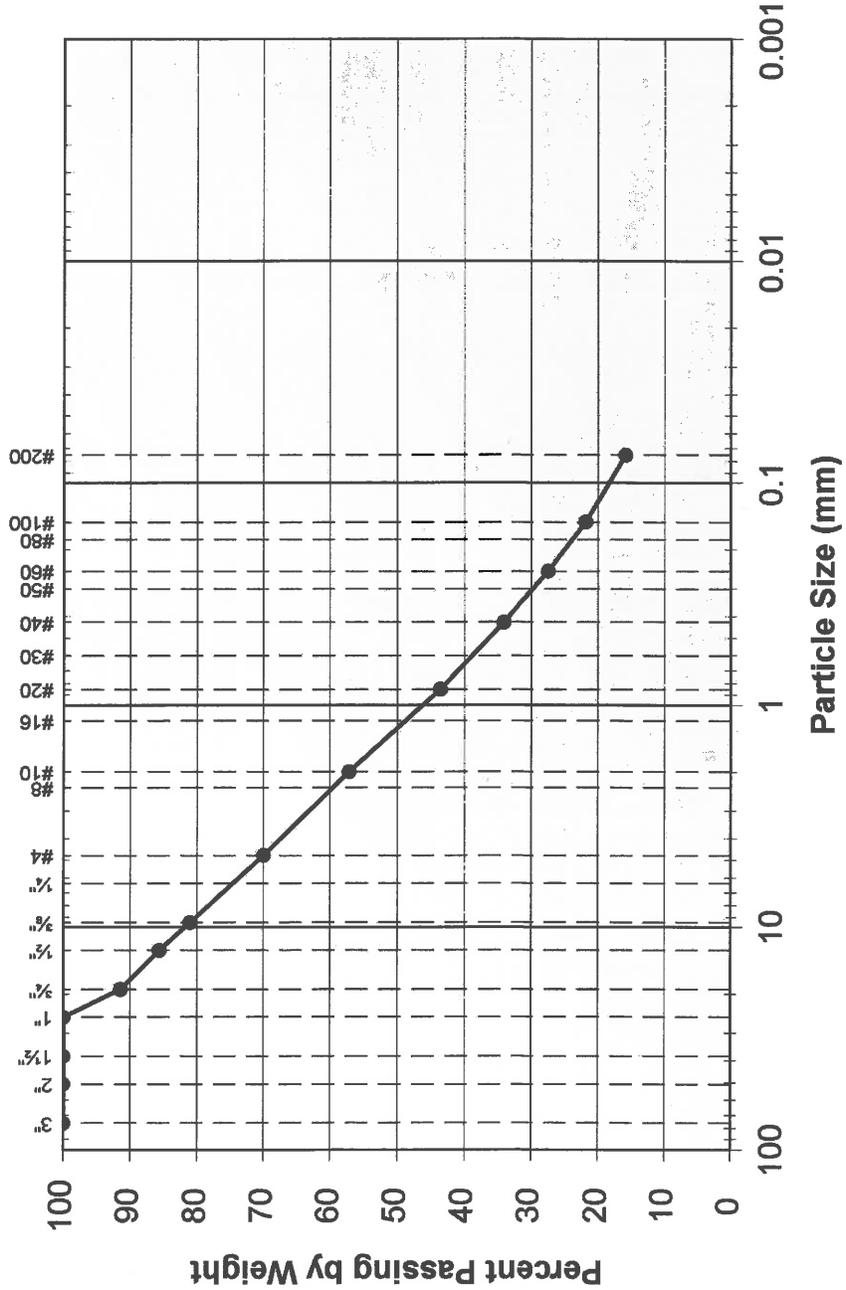
**ASTM D422**

**Location:** Test Hole 17  
Sample 2  
Depth 5'-6.5'

**Lab Number** 2009-1212  
**Received** 9/24/2009  
**Reported** 10/9/2009

**Engineering Classification:** Silty Sand with Gravel, SM

**Frost Classification:** Not Measured





**DOWL HKM**

**Client:** Department of Natural Resources.  
**Project:** S. Denali Visitor Center Complex  
**Work Order:** D60263

**Particle Size Distribution**

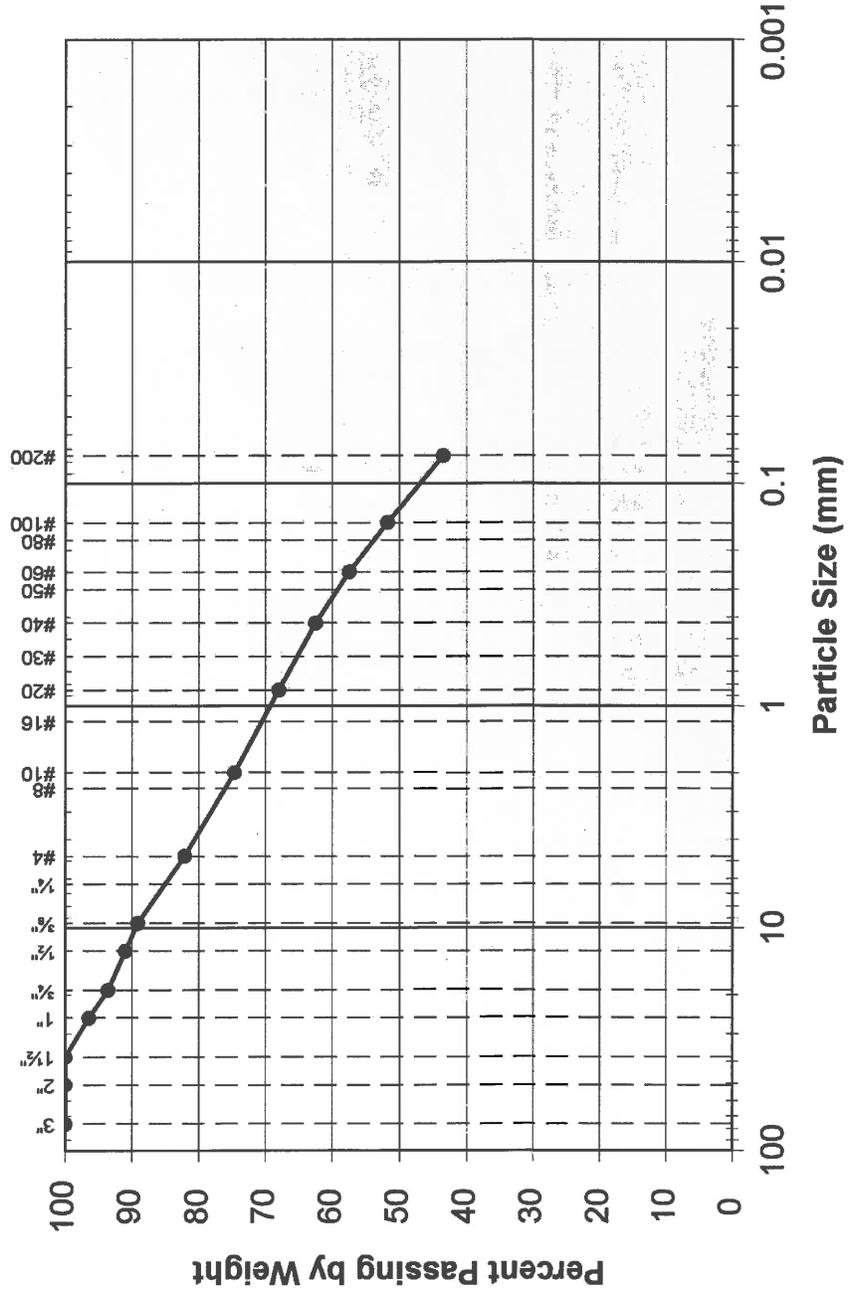
**ASTM D422**

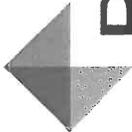
**Location:** Test Hole 18  
Sample 2  
Depth 2.75'-5'

**Lab Number** 2009-1213  
**Received** 9/24/2009  
**Reported** 10/9/2009

**Engineering Classification:** Silty Sand with Gravel, SM

**Frost Classification:** Not Measured





Client: Department of Natural Resources.  
 Project: S. Denali Visitor Center Complex  
 Work Order: D60263

# DOWL HKM

Location: Test Hole 18  
 Sample 4A  
 Depth 5'-10'

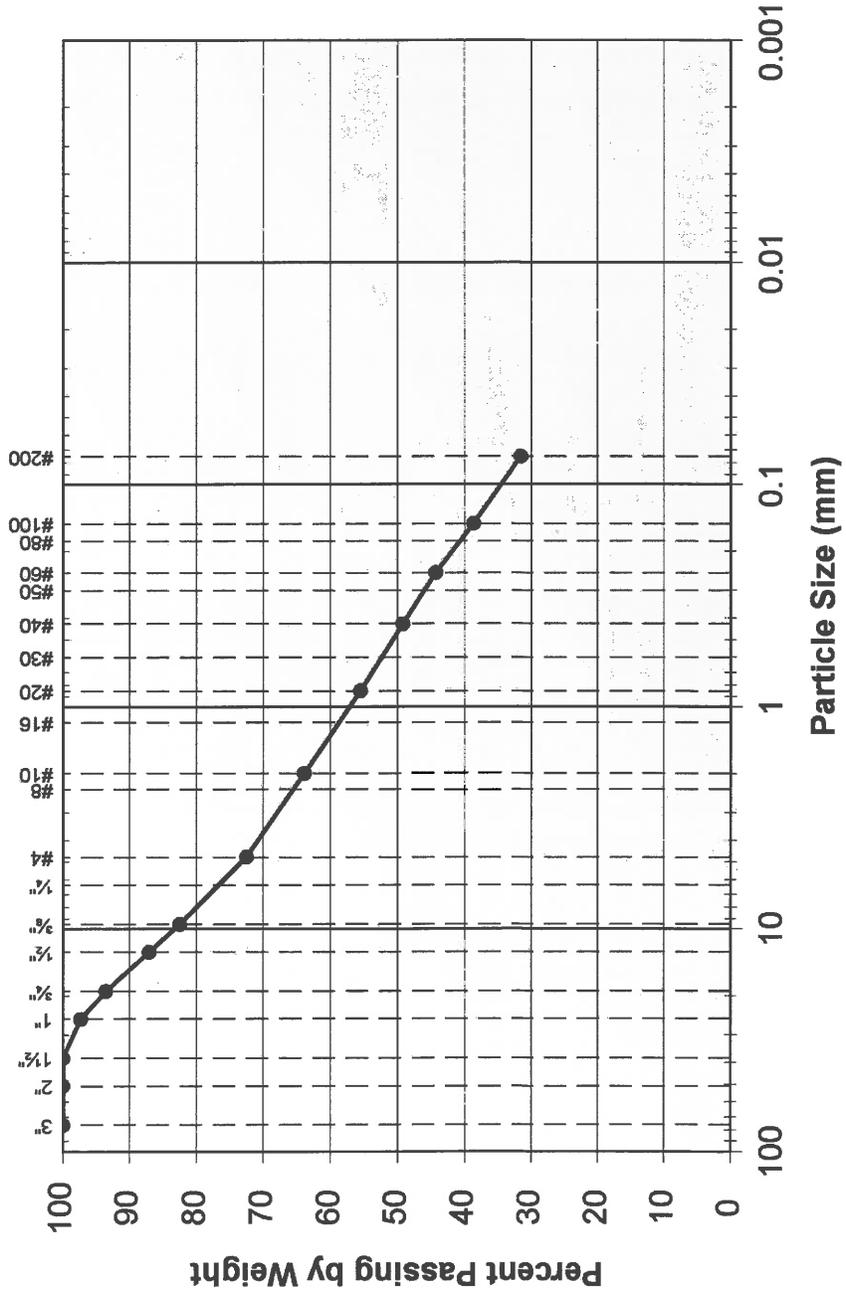
## Particle Size Distribution

**ASTM D422**

Lab Number 2009-1214  
 Received 9/24/2009  
 Reported 10/9/2009

Engineering Classification: Silty Sand with Gravel, SM

Frost Classification: Not Measured



Size	Passing	Specification
3"	100%	
2"	100%	
1 1/2"	100%	
1"	97%	
3/4"	94%	
1/2"	87%	
3/8"	82%	
#4	73%	
Total Weight of Coarse Fraction: 5572g		
#10	64%	
#20	56%	
#40	49%	
#60	44%	
#100	39%	
#200	31.5%	
Total Weight of Fine Fraction: 508.6g		



**DOWL HKM**

**Client:** Department of Natural Resources.  
**Project:** S. Denali Visitor Center Complex  
**Work Order:** D60263

**Particle Size Distribution**

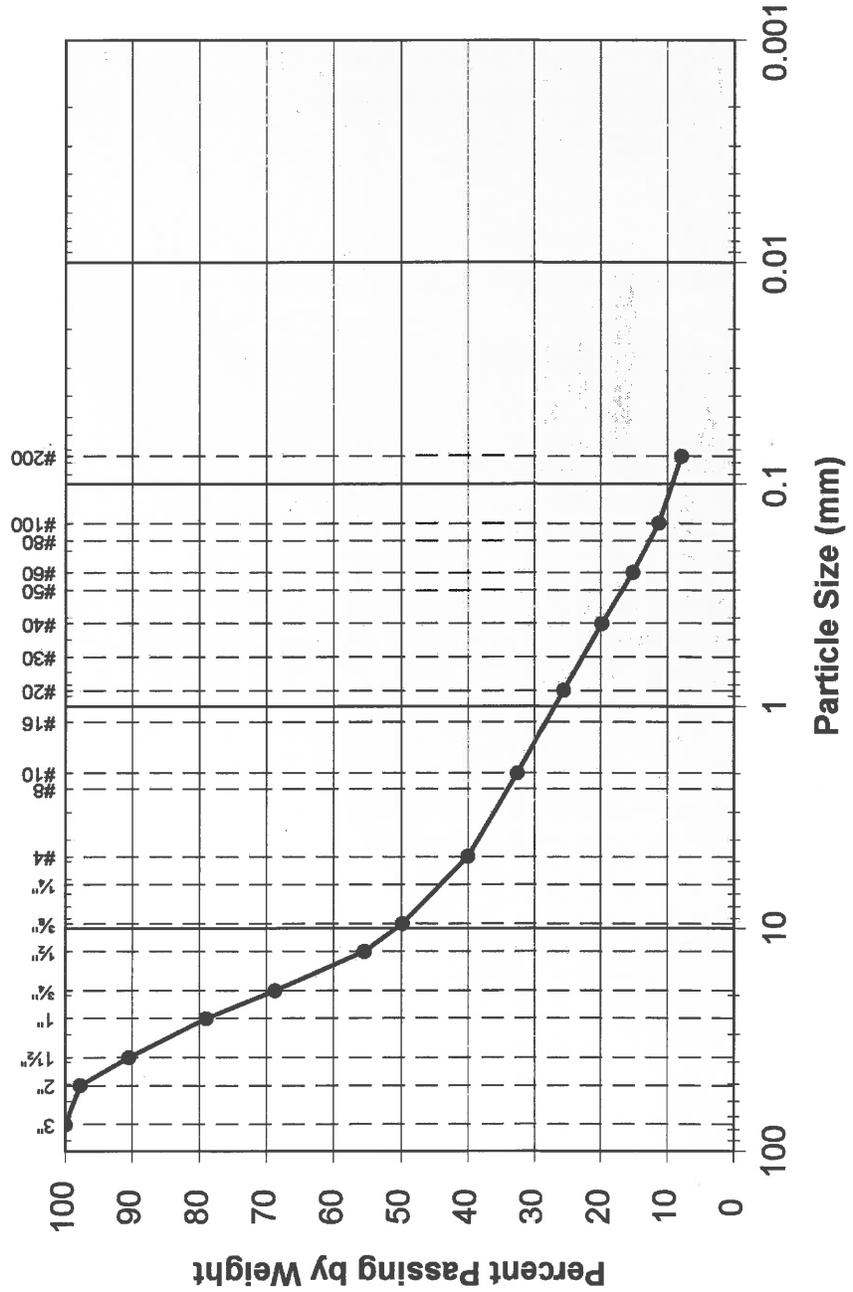
**ASTM D422**

Lab Number	2009-1216
Received	9/24/2009
Reported	1/15/2010

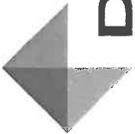
**Location:** Test Hole 20  
Sample 2  
Depth 2.5' - 5'

**Engineering Classification:** Well Graded Gravel with Silt and Sand, GW-GM

**Frost Classification:** Not Measured



Size	Passing	Specification
3"	100%	
2"	98%	
1 1/2"	90%	
1"	79%	
3/4"	69%	
1/2"	55%	
3/8"	50%	
#4	40%	
Total Weight of Coarse Fraction: 8359g		
#10	33%	
#20	26%	
#40	20%	
#60	15%	
#100	11%	
#200	7.9%	
Total Weight of Fine Fraction: 519.3g		



**DOWL HKM**

**Client:** Department of Natural Resources.  
**Project:** S. Denali Visitor Center Complex  
**Work Order:** D60263

**Particle Size Distribution**

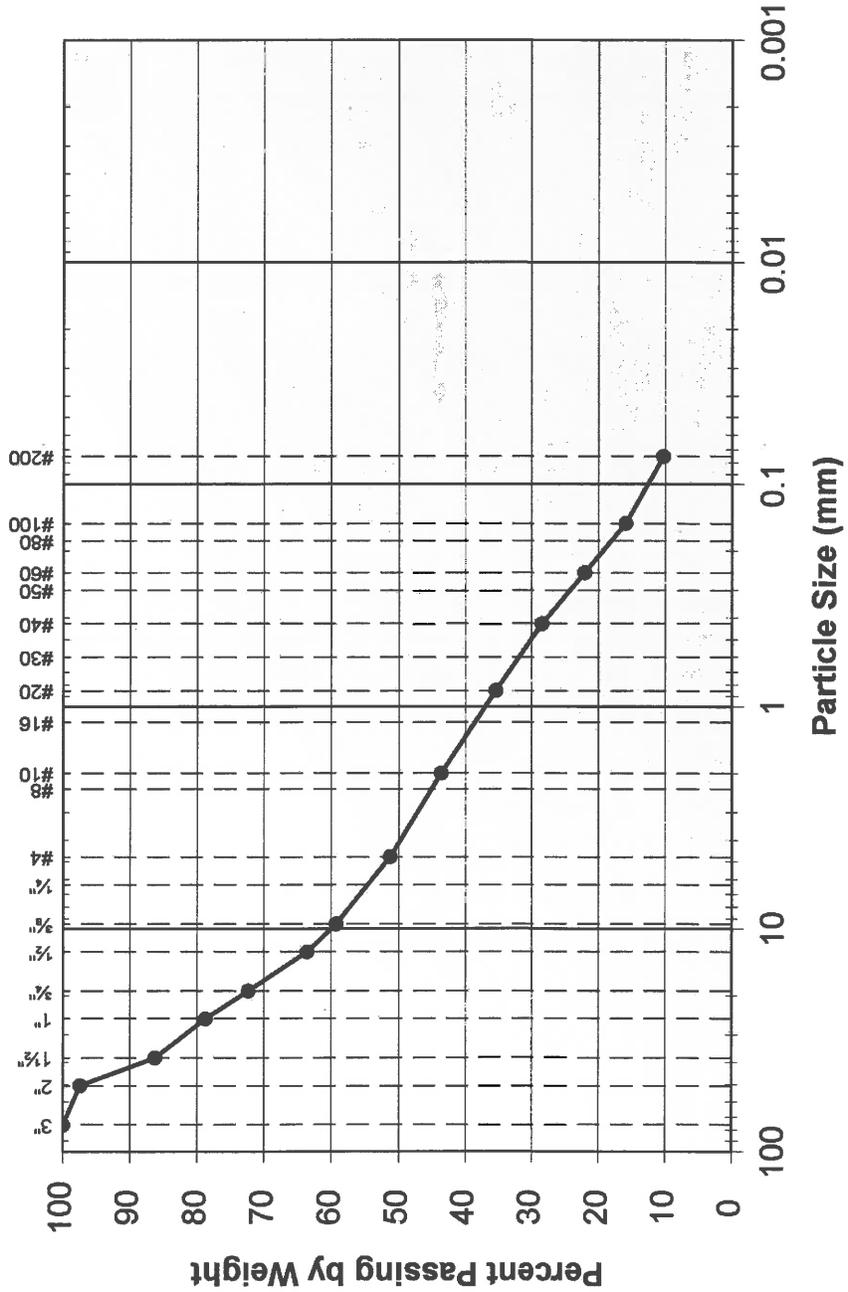
**ASTM D422**

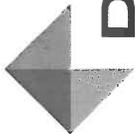
<b>Lab Number</b>	2009-1217
<b>Received</b>	9/24/2009
<b>Reported</b>	1/15/2010

**Location:** Test Hole 20  
Sample 4  
Depth 5'-10'

**Engineering Classification:** Poorly Graded Gravel with Silt and Sand, GP-GM

**Frost Classification:** Not Measured





**DOWL HKM**

**Client:** Department of Natural Resources.  
**Project:** S. Denali Visitor Center Complex  
**Work Order:** D60263

**Particle Size Distribution**

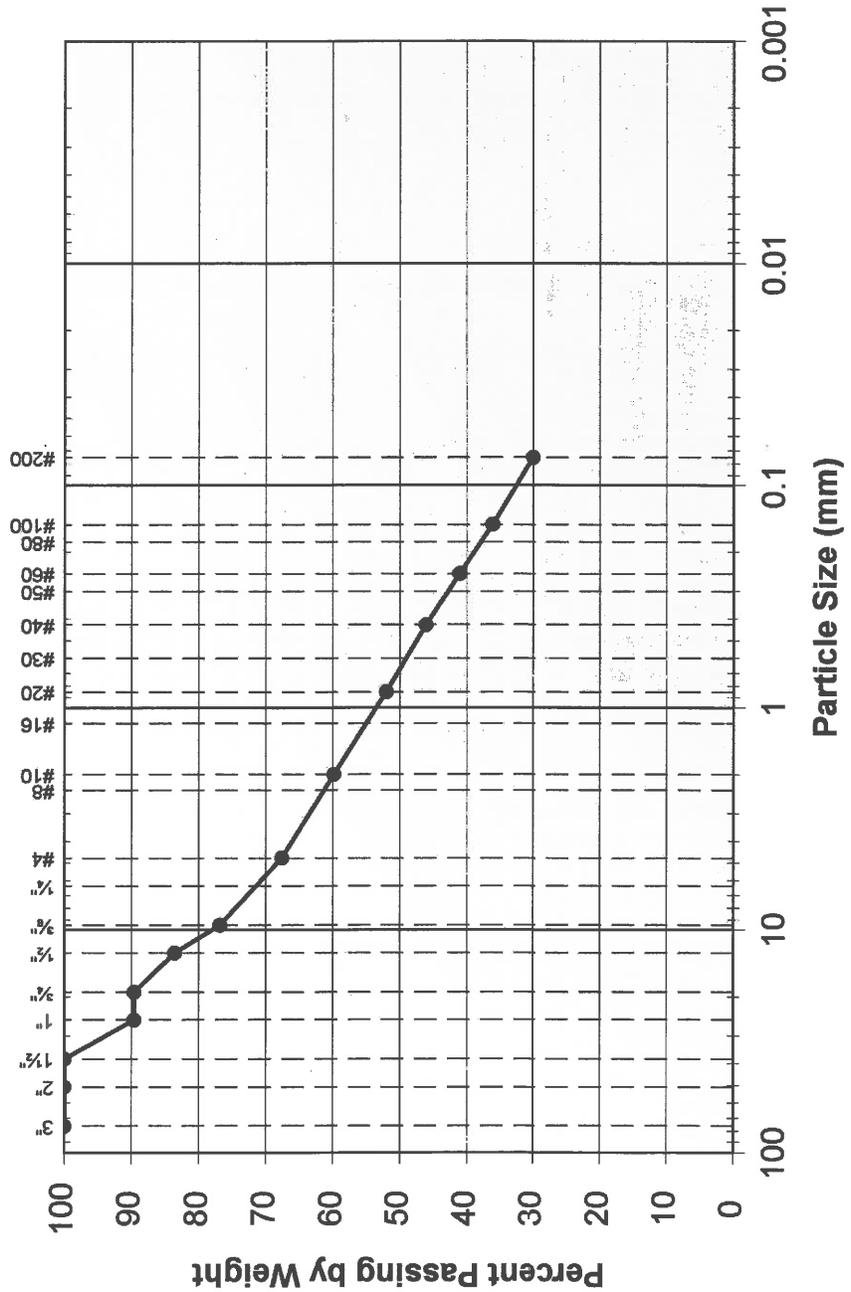
**ASTM D422**

**Location:** Test Hole 21  
Sample 1  
Depth 2.5'-4'

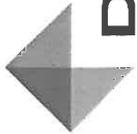
**Lab Number** 2009-1218  
**Received** 9/24/2009  
**Reported** 1/15/2010

**Engineering Classification:** Silty Sand with Gravel, SM

**Frost Classification:** Not Measured



Size	Passing	Specification
3"	100%	
2"	100%	
1½"	100%	
1"	90%	
¾"	90%	
½"	84%	
¾"	77%	
#4	68%	
Total Weight of Coarse Fraction: 396.2g		
#10	60%	
#20	52%	
#40	46%	
#60	41%	
#100	36%	
#200	30%	
Total Weight of Fine Fraction: 267.79g		

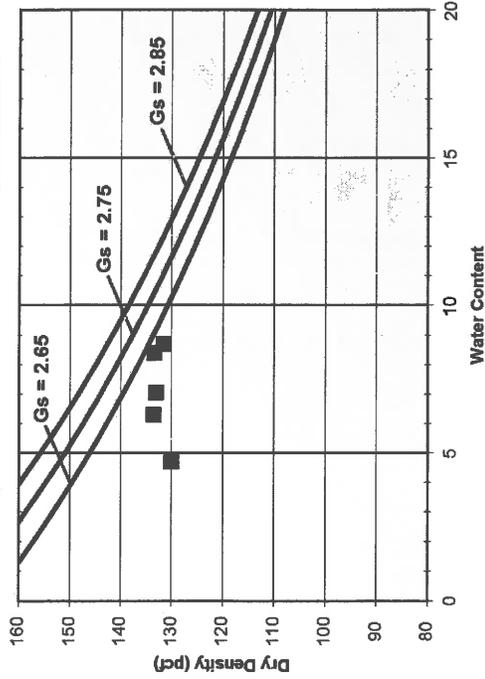


**DOWL HKM**

**Client:** Department of Natural Resources.  
**Project:** S. Denali Visitor Center Complex  
**Work Order:** D60263

**Modified Proctor**

**ASTM D1557 C**

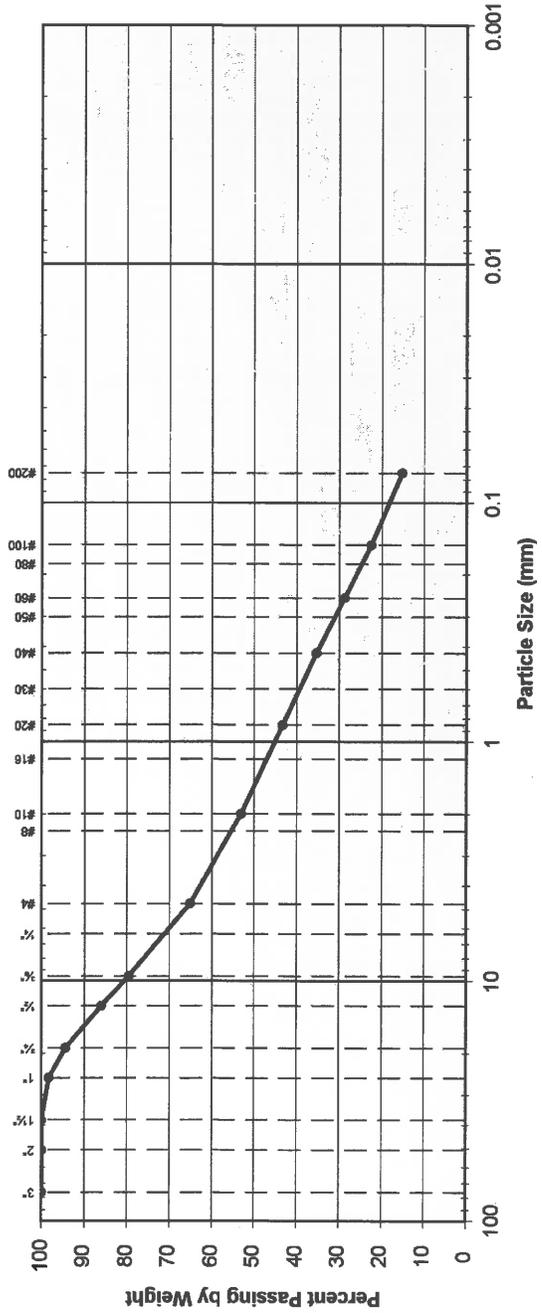


**Location:**  
 Test Hole 22  
 Sample 6  
 Depth 10'-15'

**Uncorrected Max Density:** 133.5 pcf  
**Uncorrected Optimum:** 6.3%  
**Corrected Max Density:** 135 pcf  
**Corrected Optimum:** 6%

**Moist Preparation**  
**Mechanical Compaction**

**Engineering Classification:** Silty Sand with Gravel, SM  
**Frost Classification:** Not Measured



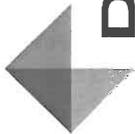
**Lab Number** 2009-1219  
**Received** 10/9/2009  
**Reported** 10/9/2009

Size	Passing	Specification
3"	100%	
2"	100%	
1½"	100%	
1"	98%	
¾"	94%	
½"	86%	
⅜"	80%	
#4	65%	

**Total Weight of Coarse Fraction: 41525g**

#10	53%
#20	43%
#40	35%
#60	29%
#100	22%
#200	15.2%

**Total Weight of Fine Fraction: 414.45g**



**DOWL HKM**

**Client:** Department of Natural Resources.  
**Project:** S. Denali Visitor Center Complex  
**Work Order:** D60263

**Particle Size Distribution**

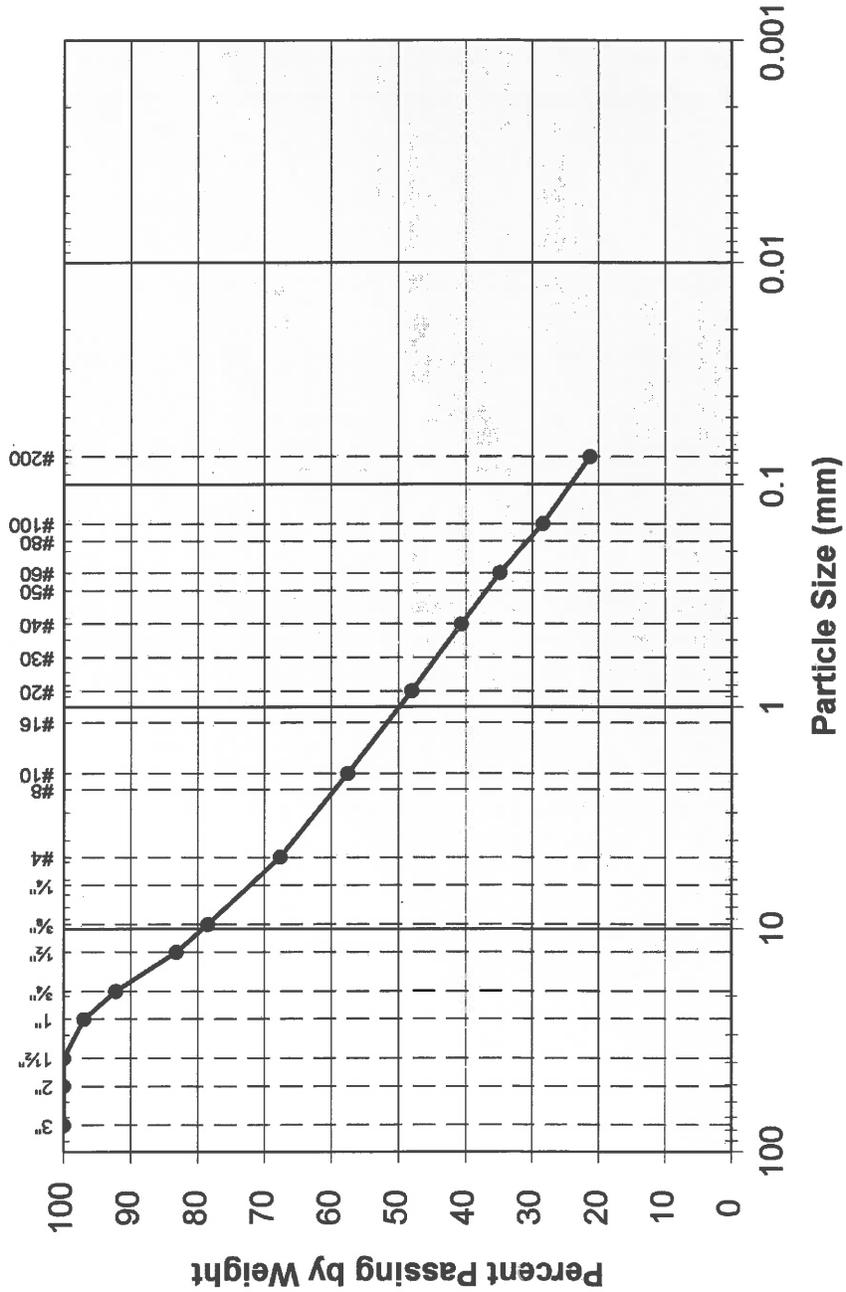
**ASTM D422**

**Location:** Test Hole 22  
Sample 8  
Depth 15'-20'

**Lab Number** 2009-1220  
**Received** 9/24/2009  
**Reported** 10/9/2009

**Engineering Classification:** Silty Sand with Gravel, SM

**Frost Classification:** Not Measured

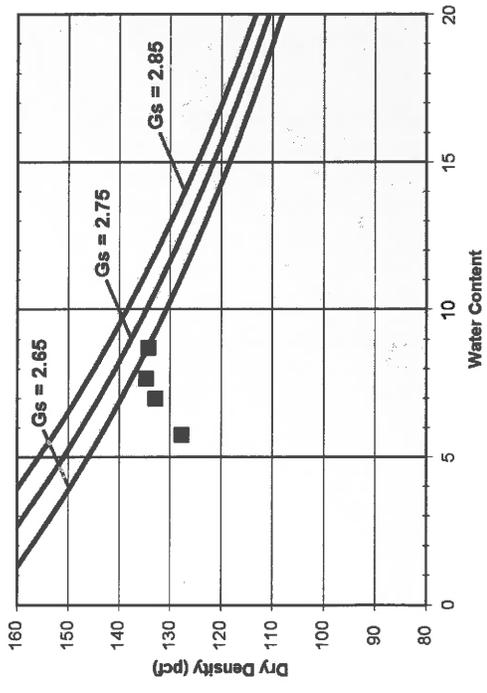




# DOWL HKM

**Client:** Department of Natural Resources.  
**Project:** S. Denali Visitor Center Complex  
**Work Order:** D60263

**Modified Proctor**  
**ASTM D1557 C**

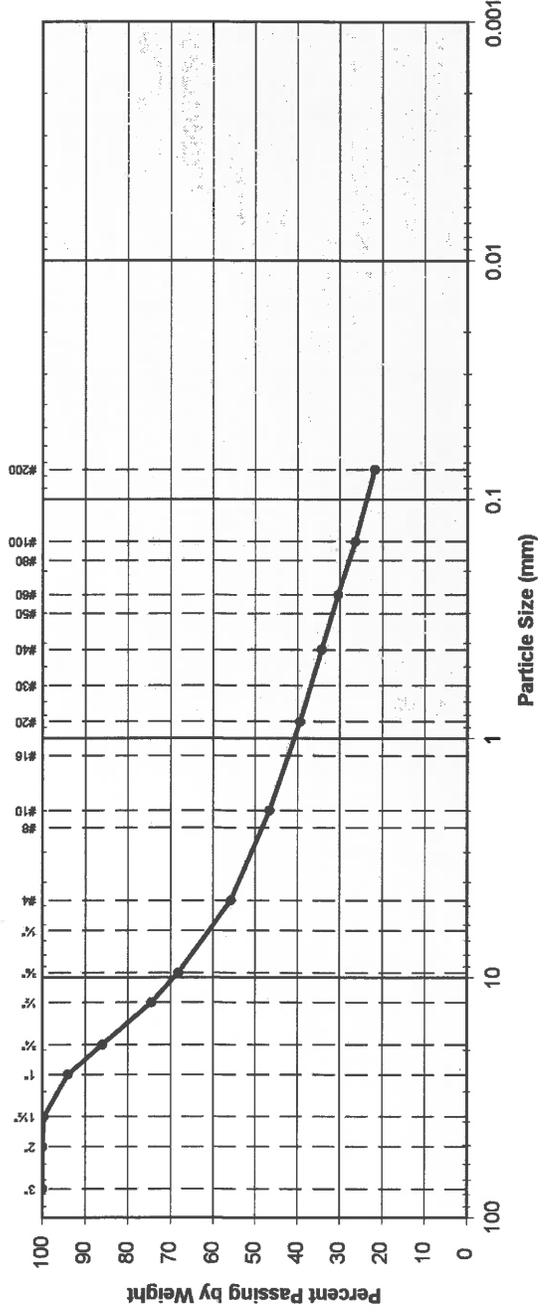


**Location:**  
 Test Hole 23  
 Sample 4  
 Depth 5'-13'

**Uncorrected Max Density:** 134.7 pcf  
**Uncorrected Optimum:** 7.7%  
**Corrected Max Density:** 138.5 pcf  
**Corrected Optimum:** 6.5%

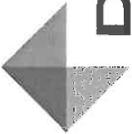
**Moist Preparation**  
**Mechanical Compaction**

**Engineering Classification:** Silty Gravel with Sand, GM  
**Frost Classification:** Not Measured



<b>Lab Number</b>	2009-1221
<b>Received</b>	9/24/2009
<b>Reported</b>	10/9/2009

Size	Passing	Specification
3"	100%	
2"	100%	
1½"	100%	
1"	94%	
¾"	86%	
½"	75%	
⅜"	68%	
#4	56%	
<b>Total Weight of Coarse Fraction: 23394g</b>		
#10	47%	
#20	39%	
#40	34%	
#60	30%	
#100	26%	
#200	21.8%	
<b>Total Weight of Fine Fraction: 413.85g</b>		



**DOWL HKM**

**Client:** Department of Natural Resources.  
**Project:** S. Denali Visitor Center Complex  
**Work Order:** D60263

**Particle Size Distribution**

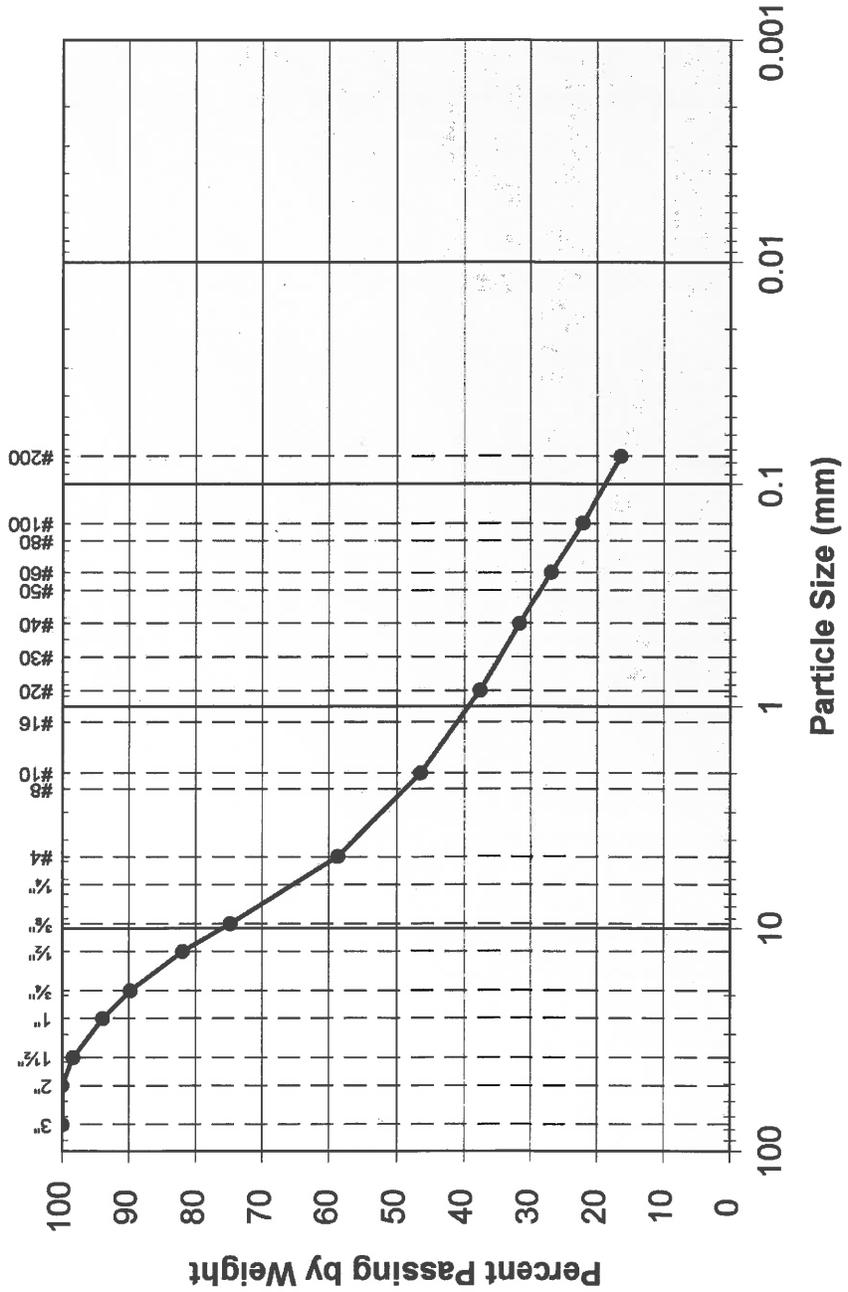
**ASTM D422**

<b>Lab Number</b>	2009-1222
<b>Received</b>	9/24/2009
<b>Reported</b>	10/9/2009

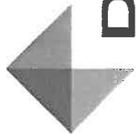
**Location:** Test Hole 24  
Sample 3  
Depth 5'-10'

**Engineering Classification:** Silty Sand with Gravel, SM

**Frost Classification:** Not Measured



Size	Passing	Specification
3"	100%	
2"	100%	
1 1/2"	98%	
1"	94%	
3/4"	90%	
1/2"	82%	
3/8"	75%	
#4	59%	
Total Weight of Coarse Fraction: 959.4g		
#10	46%	
#20	38%	
#40	32%	
#60	27%	
#100	22%	
#200	16.5%	
Total Weight of Fine Fraction: 368.8g		

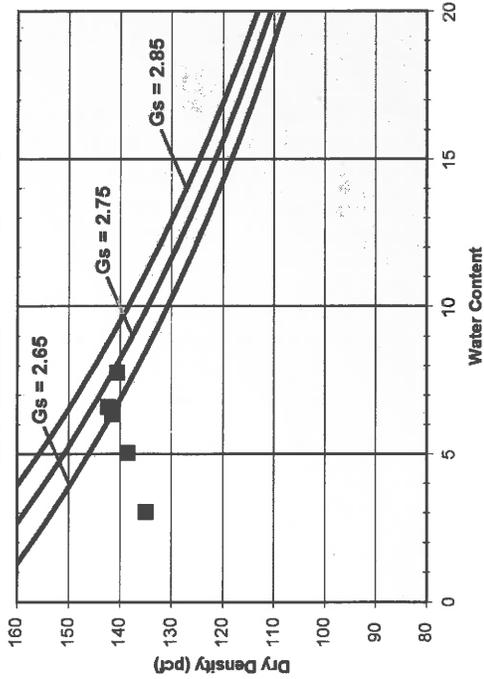


**DOWL HKM**

**Client:** Department of Natural Resources.  
**Project:** S. Denali Visitor Center Complex  
**Work Order:** D60263

**Modified Proctor**

**ASTM D1557 C**



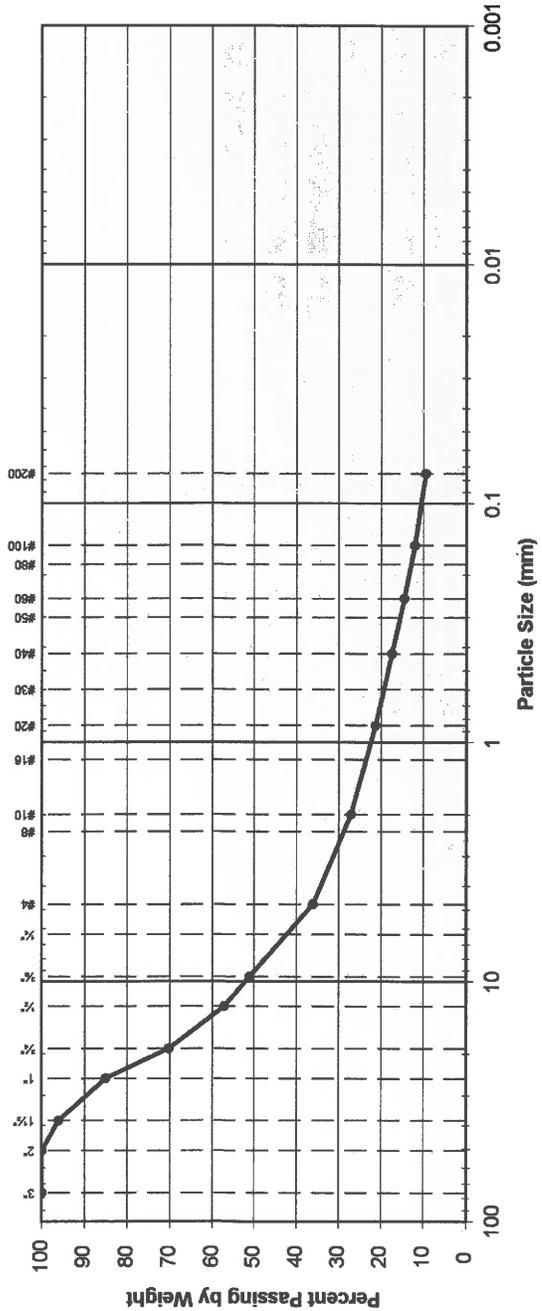
**Location:**  
Test Hole 24  
Sample 9  
Depth 20'-25'

**Uncorrected Max Density:** 142.4 pcf  
**Uncorrected Optimum:** 6.6%

**Corrected Max Density:** 148.5 pcf  
**Corrected Optimum:** 4.5%

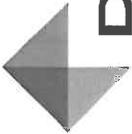
**Dry Preparation**  
Mechanical Compaction

**Engineering Classification:** Poorly Graded Gravel with Silt and Sand, GP-GM  
**Frost Classification:** Not Measured



**Lab Number** 2009-1223  
**Received** 9/24/2009  
**Reported** 10/9/2009

Size	Passing	Specification
3"	100%	
2"	100%	
1½"	96%	
1"	85%	
¾"	70%	
½"	57%	
¾"	51%	
#4	36%	
<b>Total Weight of Coarse Fraction: 16552g</b>		
#10	27%	
#20	21%	
#40	17%	
#60	15%	
#100	12%	
#200	9.5%	
<b>Total Weight of Fine Fraction: 569.45g</b>		



**DOWL HKM**

**Client:** Department of Natural Resources.  
**Project:** S. Denali Visitor Center Complex  
**Work Order:** D60263

**Particle Size Distribution**

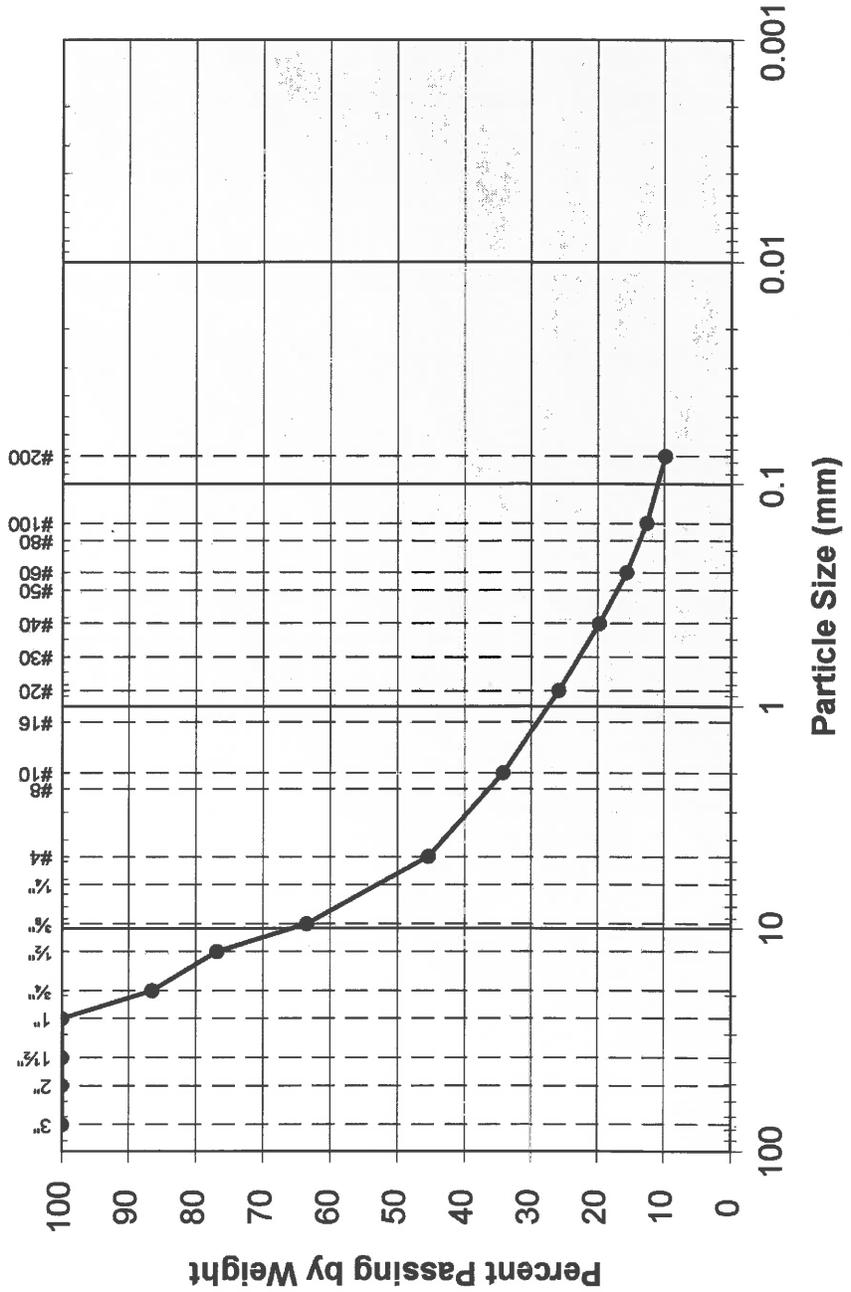
**ASTM D422**

**Location:** Test Hole 27  
Sample 1  
Depth 2'-3.5'

**Lab Number** 2009-1224  
**Received** 9/24/2009  
**Reported** 10/9/2009

**Engineering Classification:** Well Graded Gravel with Silt and Sand, GW-GM

**Frost Classification:** Not Measured





# DOWL HKM

**Client:** Department of Natural Resources.  
**Project:** S. Denali Visitor Center Complex  
**Work Order:** D60263

## Particle Size Distribution

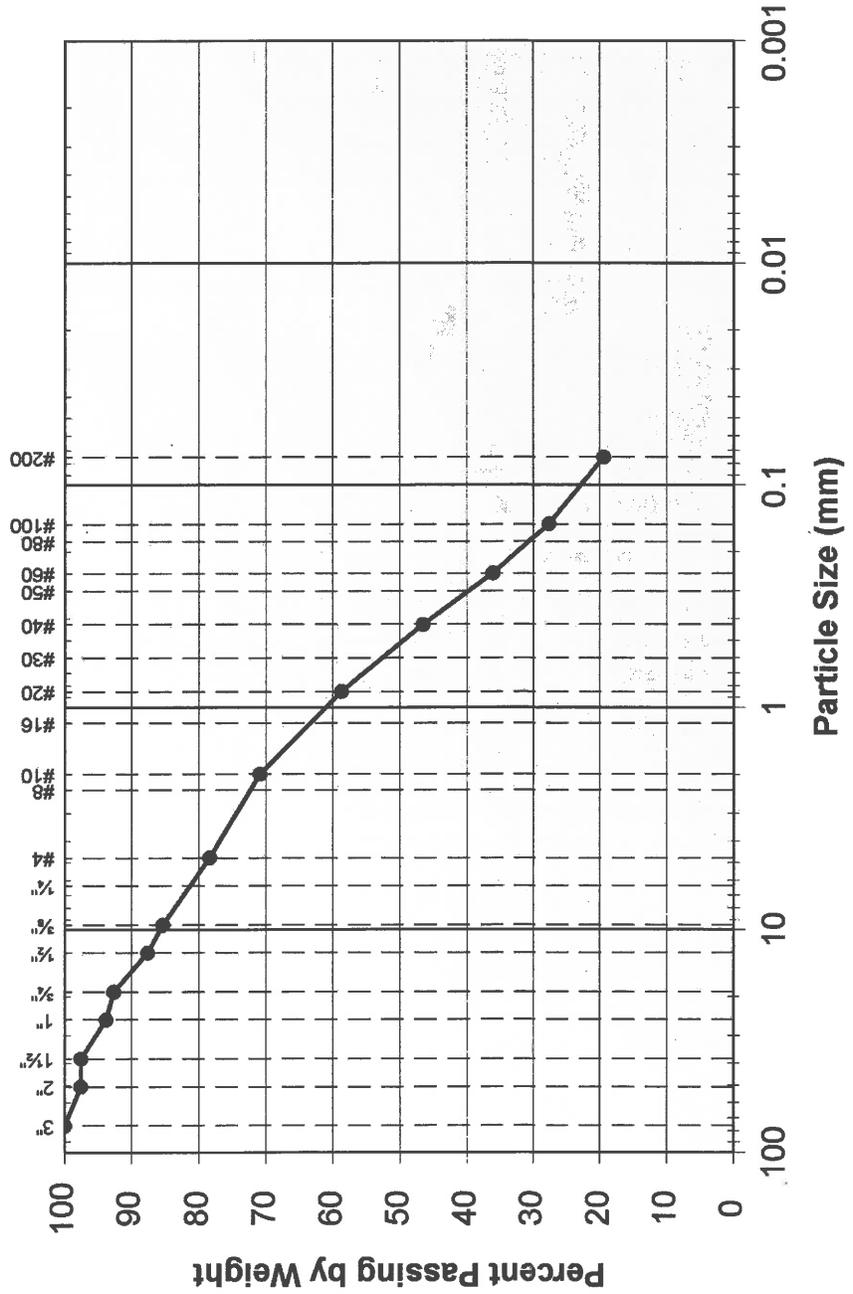
**ASTM D422**

<b>Lab Number</b>	2009-1225
<b>Received</b>	9/24/2009
<b>Reported</b>	10/9/2009

**Location:** Test Hole 35  
 Sample 1  
 Depth 0.5'-1.5'  
 PI= Nonplastic

**Engineering Classification:** Silty Sand with Gravel, SM

**Frost Classification:** Not Measured







**DOWL HKM**

**Client:** Department of Natural Resources.  
**Project:** S. Denali Visitor Center Complex  
**Work Order:** D60263

**Particle Size Distribution**

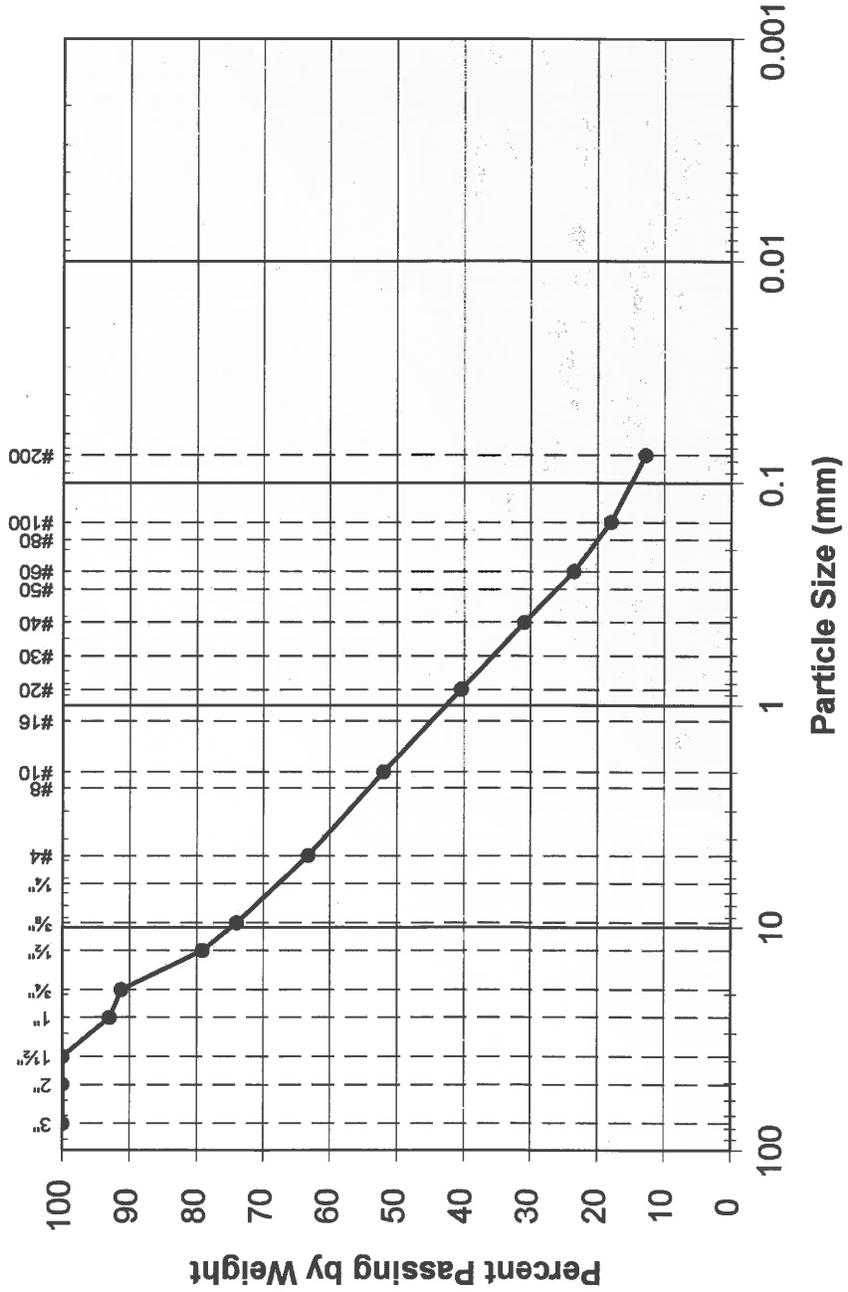
**ASTM D422**

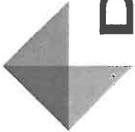
<b>Lab Number</b>	2009-1227
<b>Received</b>	9/24/2009
<b>Reported</b>	10/9/2009

**Location:** Test Hole 42  
Sample 2  
Depth 5'-6.5'

**Engineering Classification:** Silty Sand with Gravel, SM

**Frost Classification:** Not Measured





**DOWL HKM**

**Client:** Department of Natural Resources.  
**Project:** S. Denali Visitor Center Complex  
**Work Order:** D60263

**Particle Size Distribution**

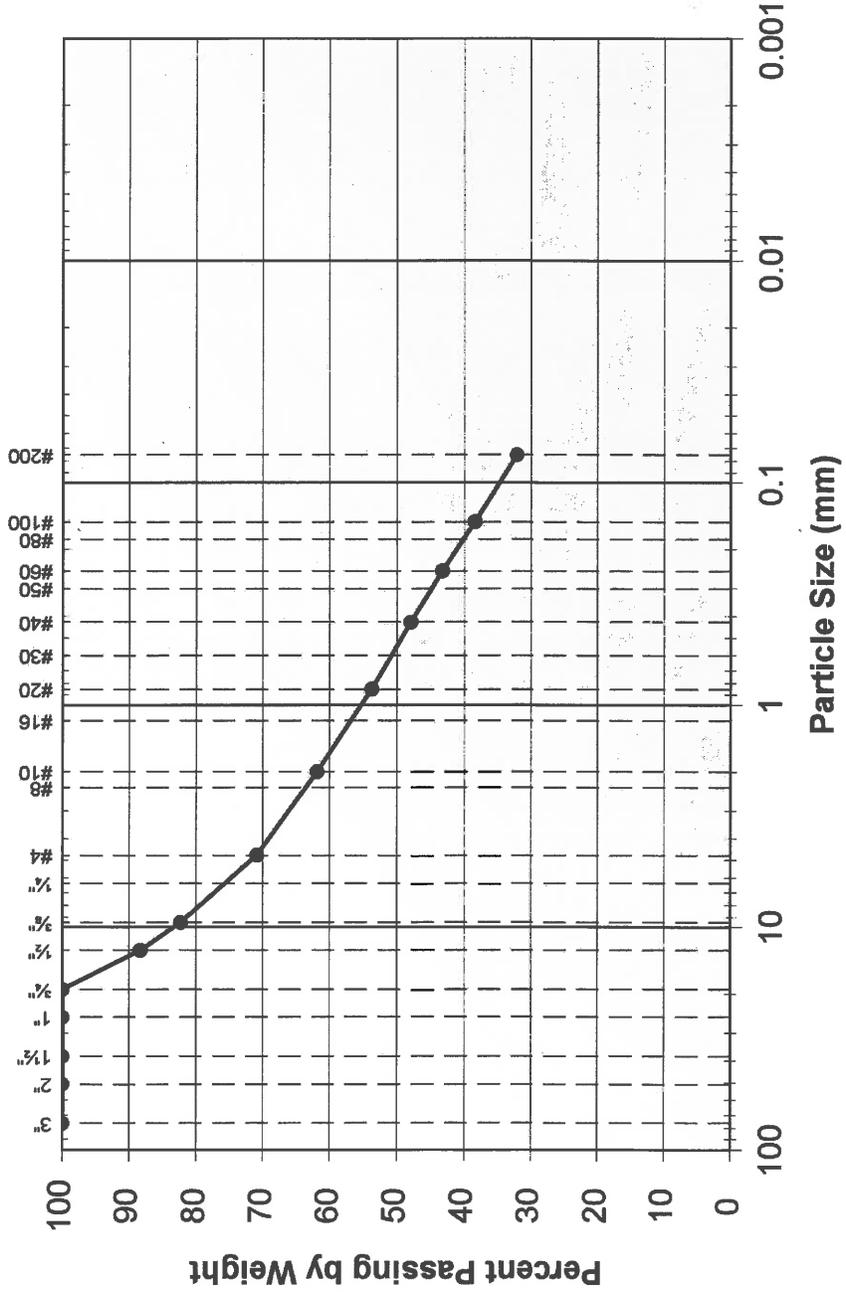
**ASTM D422**

**Location:** Test Hole 42  
Sample 3  
Depth 7.5'-9'

**Lab Number** 2009-1228  
**Received** 9/24/2009  
**Reported** 10/9/2009

**Engineering Classification:** Silty Sand with Gravel, SM

**Frost Classification:** Not Measured





**DOWL HKM**

**Client:** Department of Natural Resources.  
**Project:** S. Denali Visitor Center Complex  
**Work Order:** D60263

**Particle Size Distribution**

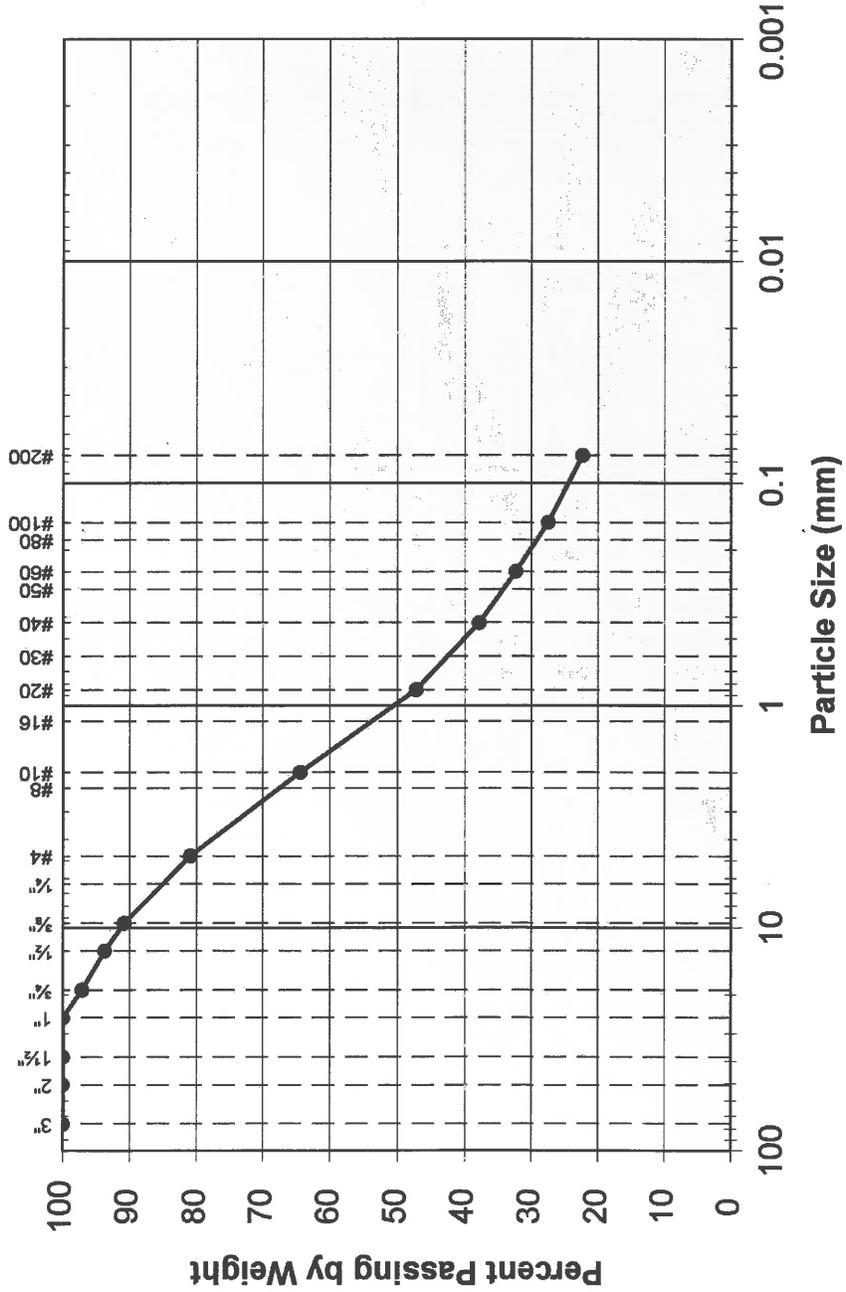
**ASTM D422**

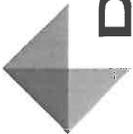
**Location:** Test Hole 43  
Sample 1  
Depth 2'-3.5'

**Lab Number** 2009-1229  
**Received** 9/24/2009  
**Reported** 10/9/2009

**Engineering Classification:** Silty Sand with Gravel, SM

**Frost Classification:** Not Measured





**DOWL HKM**

**Client:** Department of Natural Resources.  
**Project:** S. Denali Visitor Center Complex  
**Work Order:** D60263

**Particle Size Distribution**

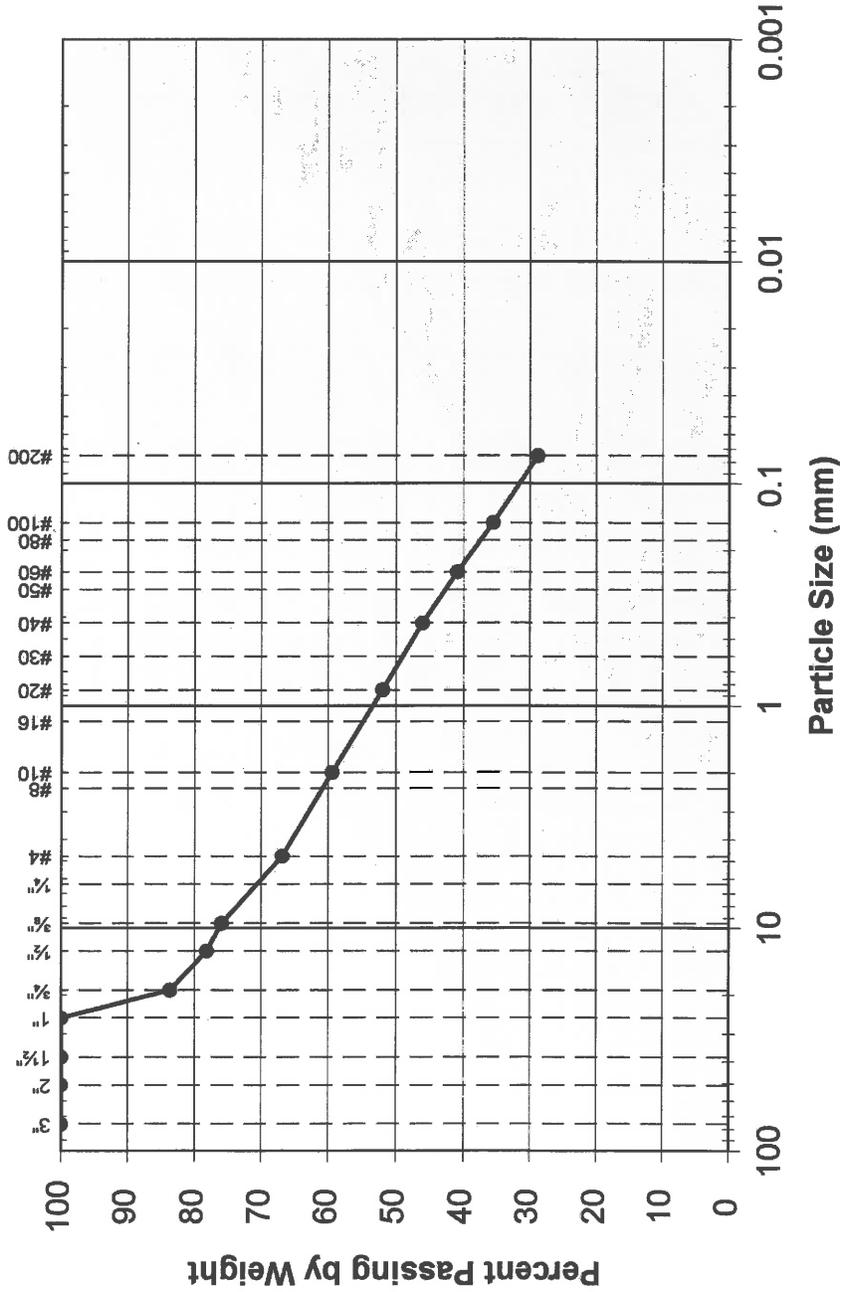
**ASTM D422**

<b>Lab Number</b>	2009-1230
<b>Received</b>	9/24/2009
<b>Reported</b>	10/9/2009

**Location:** Test Hole 43  
Sample 2  
Depth 5'-6.5'

**Engineering Classification:** Silty Sand with Gravel, SM

**Frost Classification:** Not Measured



**APPENDIX E  
MASTER MATERIAL CERTIFICATION  
LIST (MCL)**



# MATERIALS CERTIFICATION LIST

Specifications	Construction			Design			Statewide	Manufacturer/ Remarks
	Approved Products List	Project Engineer	QA/Materials Engineer	Design Engineer	Bridge Engineer	Traffic Engineer	State Materials Engineer	

<b>Project Name</b>	DSP: VISITOR CENTER COMPLEX TRAIL CONSTRUCTION
<b>Project Number</b>	74034-4
<b>Project Engineer Signature</b>	

**203(6) SELECTED MATERIAL, TYPE A**

Gradation	703-2.07							
-----------	----------	--	--	--	--	--	--	--

**301(5) RECYCLED ASPHALT MATERIAL**

Gradation	301-2.01							
-----------	----------	--	--	--	--	--	--	--

**530 CONCRETE BLOCK WALL**

Concrete	501-2.01							
Concrete Block Wall	650-2.04							
Perforated Pipe	650-2.05							
Geotextile	650-2.06							
Porous Backfill	650-2.07							

**603 CULVERTS**

12-inch Steel Pipe	603-2.01							
24-inch Steel Pipe	603-2.01							

**603 END SECTIONS**

End Sections for 24 Inch Steel Pipe	603-2.01							
-------------------------------------	----------	--	--	--	--	--	--	--

**611 RIP RAP**

Rip Rap, Class I	611-2.01							
------------------	----------	--	--	--	--	--	--	--

**618 SEEDING**

Seed Mix	618-2.01							
Fertilizer	618-2.01							
Mulch	618-2.01							

**619 SOIL STABILIZATION**

Specifications	Construction			Design			Statewide	Manufacturer/ Remarks
	Approved Products List	Project Engineer	QA/Materials Engineer	Design Engineer	Bridge Engineer	Traffic Engineer	State Materials Engineer	

Mulch	619-2.01							
Matting	619-2.01							
Staples	619-2.01							
Hydro Matting	619-2.01							

**620 TOPSOIL**

Topsoil Mix	620-2.01							
-------------	----------	--	--	--	--	--	--	--

**643 TRAFFIC CONTROL DEVICES**

Traffic Control Devices	643-2.01							
-------------------------	----------	--	--	--	--	--	--	--

**650 PARK FACILITIES - GENERAL**

Concrete	650-2.03							
Structural Steel	650-2.04							
Galvanizing	650-2.05							
Lumber	650-2.06							
Treated Lumber	650-2.07							
Flashing & Sheet Metal	650-2.08							
Fasteners	650-2.09							
Standard Park Padlock	650-2.10							
Signs	650-2.12							

Paint

Solid Oil Stain	650-2.11							
Semi-Transparent Oil Stain	650-2.11							
Clear Oil Stain	650-2.11							
Metal Primer Paint	650-2.11							
Enamel Paint	650-2.11							
Concrete Sealer	650-2.11							
End Cut Preservative	650-2.11							
Above/Below Ground Preservative	650-2.11							