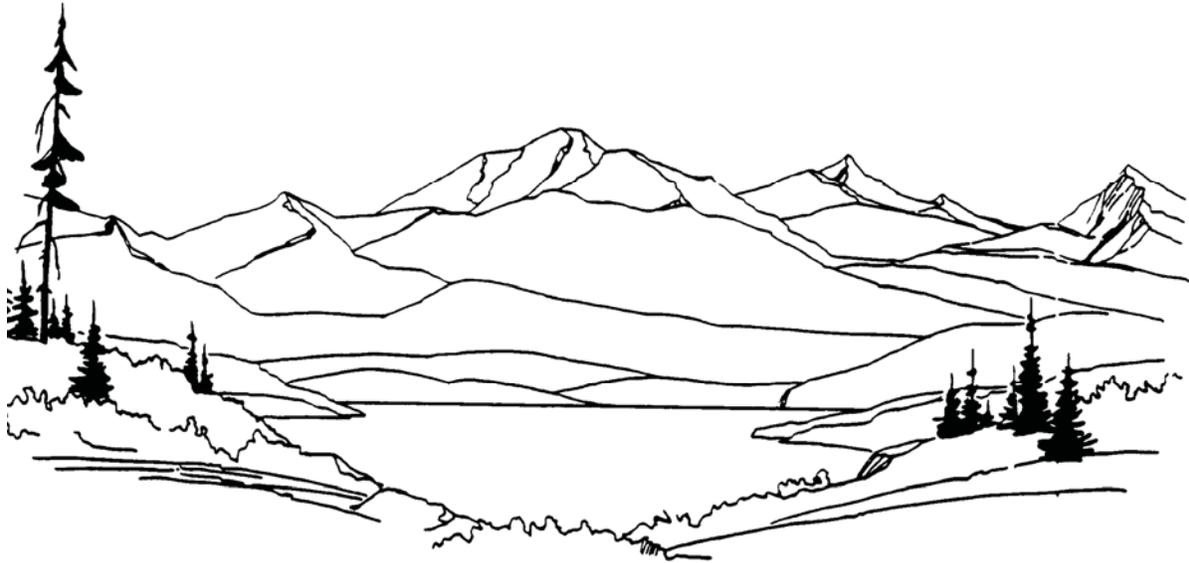


**STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES**

**DIVISION OF PARKS
AND
OUTDOOR RECREATION**



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

**DSP: VISITOR CENTER COMPLEX
PAVING
PROJECT NO. 74034-5**

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5. State Wage Rates

State wage rates can be obtained at <http://www.labor.state.ak.us/lss/pamp600.htm>. 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 August 5, 2016

DSP: VISITOR CENTER COMPLEX PAVING, PROJECT NO. 74034-5

Project Name and Number

Location of Project: MP 135.5 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:

Work under this project includes reconditioning and paving the main roadway, roundabout, interpretive center road, ranger station parking lot and main campground turnaround area.

Additive alternative 1 adds the Day-Use Parking area, Additive Alternative 2 adds the RV Campground and Additive Alternative 3 adds the Walk-In Campground. Work under the Additive alternatives will only be included if funding is available to award them.

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 OCTOBER 17, 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. 7th Ave., Suite 1380; Anchorage, AK 99501 on the 26th of AUGUST 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>Bid for Project: DSP: VISITOR CENTER COMPLEX PAVING PROJECT NO. 74034-5</p>	<p>ATTN: Design & Construction Section Division of Parks & Outdoor Recreation 550 W. 7th Ave., Suite 1380 Anchorage AK 99501</p>
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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

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

All questions concerning bidding procedures should be directed to:

Rys Miranda, P.E.
Chief, Design & Construction
550 W. 7th 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
 - 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
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 7th 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 D.
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



STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES

REQUIRED DOCUMENTS

State Funded 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 (Form 25D-14DNR or Certified Check)**
 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-10ADNR)**
2. **Payment Bond (Form 25D-12DNR)**
3. **Performance Bond (Form 25D-13DNR)**
4. **Contractor's Questionnaire (Form 25D-8DNR)**
5. **Certificate of Insurance (from carrier)**

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 PAVING, PROJECT NO. 74034-5

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 AUGUST 26, 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 135.5 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 3 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 OCTOBER 17, 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 PAVING**

Project Number: **PROJECT NO. 74034-5**

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 *****

303(3)	Reconditioning	L.S.	All Req'd	\$	\$
401(1B)	Hot Mix Asphalt, Type II; Class B	Ton	4,144	\$	\$
640(1)	Mobilization and Demobilization	Lump Sum	All Req'd	\$	\$
642(1)	Construction Surveying	L.S.	All Req'd	\$	\$
643(2)	Traffic Maintenance	L.S.	All Req'd	\$	\$
669(1)	Automated Traffic Recorder	L.S.	All Req'd	\$	\$
670(1)	Painted Traffic Markings	L.S.	All Req'd	\$	\$

BID SCHEDULE
 DSP: VISITOR CENTER COMPLEX
 PAVING
 Project No. 74034-5

Name of Bidding Firm: _____

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

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

a) TOTAL BASIC BID (BB)					\$
b) ALASKA PRODUCTS PREFERENCE					-
c) ALASKA BIDDER PREFERENCE					-
d) VETERANS PREFERENCE					-
e) ADJUSTED AMOUNT (a-b-c-d)					\$

***** ADDITIVE ALTERNATIVE 1 – DAY USE PARKING AREA *****

AA1-303(3)	Reconditioning	L.S.	All Req'd	\$	\$
AA1-401(1B)	Hot Mix Asphalt, Type II; Class B	Ton	481	\$	\$
f) TOTAL ADDITIVE ALTERNATIVE 1					\$
g) ALASKA PRODUCTS PREFERENCE					-
h) ALASKA BIDDER PREFERENCE					-
i) VETERANS PREFERENCE					-
j) TOTAL BID (a + f)					\$
k) ADJUSTED TOTAL BID (e + (f-g-h-i-j))					\$

***** ADDITIVE ALTERNATIVE 2 – RV CAMPGROUND LOOP *****

AA2-303(3)	Reconditioning	L.S.	All Req'd	\$	\$
AA2-401(1B)	Hot Mix Asphalt, Type II; Class B	Ton	633	\$	\$
l) TOTAL ADDITIVE ALTERNATIVE 2					\$
m) ALASKA PRODUCTS PREFERENCE					-
n) ALASKA BIDDER PREFERENCE					-

BID SCHEDULE
 DSP: VISITOR CENTER COMPLEX
 PAVING
 Project No. 74034-5

Name of Bidding Firm: _____

o) VETERANS PREFERENCE	-
p) TOTAL BID (l + j)	\$
q) ADJUSTED TOTAL BID (k + (l-m-n-o))	\$

***** ADDITIVE ALTERNATIVE 3 – WALK-IN CAMPGROUND *****

AA3-303(3)	Reconditioning	L.S.	All Req'd	\$	\$
AA3-401(1B)	Hot Mix Asphalt, Type II; Class B	Ton	371	\$	\$
r) TOTAL ADDITIVE ALTERNATIVE 3					\$
s) ALASKA PRODUCTS PREFERENCE					-
t) ALASKA BIDDER PREFERENCE					-
u) VETERANS PREFERENCE					-
v) TOTAL BID (p + r)					\$
w) ADJUSTED TOTAL BID (q + (r-s-t-u))					\$

No: _____ Expires _____
Alaska Business License

No: _____ Expires _____
Alaska Contractor's License

BID SCHEDULE
DSP: VISITOR CENTER COMPLEX
PAVING
Project No. 74034-5

Name of Bidding Firm: _____



STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES

CONSTRUCTION CONTRACT

DSP: VISITOR CENTER COMPLEX PAVING, PROJECT NO. 74034-5

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: **OCTOBER 17, 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 PAVING, PROJECT NO. 74034-5

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 PAVING, PROJECT NO. 74034-5

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 PAVING, PROJECT NO. 74034-5

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):

A.	B.	C.
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)

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

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

Surety C	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.

SPECIAL PROVISIONS

to the

STATE OF ALASKA

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

DSP: VISITOR CENTER COMPLEX

PAVING

PROJECT NUMBER 74034-5

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 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

(01/27/07)E33-Standard Modification

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:

- General Communications, Inc. (GCI)
 - Matanuska Electric Association (MEA)
 - Matanuska Telephone Association (MTA)
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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.

105-1.07 COOPERATION BETWEEN CONTRACTORS. Add the following:

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

Project Name:	Project No.:
DSP: Visitor Center Complex Area Trails	74034-4
DSP: Visitor Center Complex Public Use Cabins	74034-2
DSP: Visitor Center Complex Interpretive Center	2501000005

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. (8/4/16) 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

105-1.17 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

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:

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.

Notice to Proceed will not be issued prior to **September 6, 2016**

(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:

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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

Replace 401 with the following:

SECTION 401

HOT MIX ASPHALT

401-1.01 DESCRIPTION. Construct one or more courses of plant-mixed, hot mix asphalt (HMA) pavement on the areas as shown on the plans.

MATERIALS

401-2.01 COMPOSITION OF MIXTURE - JOB MIX DESIGN. Use an Alaska DOT&PF Type II, Class B approved Job Mix Design. The Job Mix Design must have been accepted within the calendar year of construction.

401-2.02 TACK COAT. Special Tack Emulsion, STE-1 conforming to Subsection 702-2.03.

401-2.03 PROCESS QUALITY CONTROL. Sample and test materials for quality control of the asphalt concrete mixture according to Subsection 106-1.03.

Submit a paving and plant control plan at the pre-paving meeting to be held a minimum of 5 working days before initial paving operations. Address the sequence of operations and joint construction. Outline steps to assure product consistency, to minimize segregation, and to prevent premature cooling of the asphalt concrete mixture. Include a proposed quality control testing frequency for gradation, asphalt cement content, and compaction.

CONSTRUCTION REQUIREMENTS

401-3.01 WEATHER LIMITATIONS. Do not place the hot mix asphalt on a wet surface, on an unstable/yielding roadbed, when the base material is frozen, or when weather conditions prevent proper handling or finishing of the mix. Do not place hot mix asphalt unless the roadway surface temperature is 40 °F or warmer.

401-3.02 EQUIPMENT, GENERAL. Use equipment in good working order and free of hot mix asphalt buildup. Make equipment available for inspection and demonstration of operation a minimum of 24 hours before placement of hot mix asphalt.

401-3.03 ASPHALT MIXING PLANT. Meet AASHTO M 156. Use an asphalt plant designed to dry aggregates, maintain accurate temperature control, and accurately proportion asphalt cement and aggregates. Calibrate the asphalt plant and furnish copies of the calibration data to the Engineer at least 4 hours before hot mix asphalt production.

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Provide a scalping screen at the asphalt plant to prevent oversize material or debris from being incorporated into the hot mix asphalt.

401-3.04 HAULING EQUIPMENT. Haul hot mix asphalt in trucks with tight, clean, smooth metal beds, thinly coated with a minimum amount of paraffin oil, lime water solution, or an approved manufactured asphalt release agent. Do not use petroleum fuel as an asphalt release agent.

During hot mix asphalt hauling activities, the hauling vehicle will have covers attached and available for use. Be prepared to demonstrate deployment of the covers when hauling material or empty. Illustrate the efficiency of deployment and how the materials are protected from the environment and the environment is protected from the materials. Cover the hot mix asphalt in the hauling vehicle(s) when directed by the Engineer.

401-3.05 ASPHALT PAVERS. Use self-propelled pavers equipped with a heated vibratory screed. Control grade and cross slope with automatic grade and slope control devices. Use an erected string line, a 30-foot minimum mobile stringline (ski) or other approved grade follower, to automatically actuate the paver screed control system. Use grade control either (a) both the high and low sides or (b) grade control on the high side and slope control on the low side.

Equip the paver with a receiving hopper having sufficient capacity for a uniform spreading operation and a distribution system to place the hot mix asphalt uniformly in front of the screed.

Use a screed assembly that produces a finished surface of the required smoothness, thickness, and texture without tearing, shoving, or displacing the hot mix asphalt.

Equip the paver with a means of preventing segregation of the coarse aggregate particles from the remainder of the hot mix asphalt when carried from the paver hopper back to the augers. Use means and methods approved by the paver manufacturer. Means and methods may consist of chains, deflector plates, or other similar devices or combination of devices. Provide a Certificate of Compliance that verifies the means and methods required to prevent segregation are being used.

401-3.06 ROLLERS. Use both steel-wheel (static or vibratory) and pneumatic-tire rollers. Avoid crushing or fracturing aggregate. Use rollers designed to compact hot mix asphalt mixtures and reverse without backlash.

Use fully skirted pneumatic-tire rollers having a minimum operating weight of 3,000 pounds per tire.

401-3.07 PREPARATION OF EXISTING SURFACE. Prepare existing surface in conformance with the Plans and Specifications. Clean existing paved surfaces of loose material.

Uniformly coat contact surfaces of curbing, gutters, sawcut pavement, cold joints, manholes, and other structures with tack coat material prior to placing the hot mix asphalt. Allow tack coat to break before placement of hot mix asphalt.

401-3.08 PREPARATION OF ASPHALT. Provide a continuous supply of asphalt cement to the asphalt mixing plant at a uniform temperature, within the allowable mixing temperature range.

401-3.09 PREPARATION OF AGGREGATES. Dry the aggregate so the moisture content of the hot mix asphalt does not exceed 0.5% (by total weight of mix), as determined by WAQTC FOP for AASHTO T 329.

Heat the aggregate for hot mix asphalt to a temperature compatible with the mix requirements specified.

Adjust the burner on the dryer to avoid damage to the aggregate and to prevent the presence of unburned fuel on the aggregate. Hot mix asphalt containing soot or fuel is considered unacceptable and is subject to the requirements of Subsection 105.-1.11.

401-3.10 MIXING. Combine the aggregate, asphalt cement, and additives in the mixer in the amounts required by the Job Mix Design. Mix to obtain 98% coated particles when tested according to AASHTO T 195.

For batch plants, put the dry aggregate in motion before addition of asphalt cement.

401-3.11 PLACING AND SPREADING. Place the hot mix asphalt upon the approved surface, spread, strike off, and adjust surface irregularities. Use asphalt pavers to distribute hot mix asphalt, including leveling courses. The maximum compacted lift thickness allowed is 3 inches.

Use hand tools to spread, rake, and lute the hot mix asphalt in areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impractical.

Do not pave against new Portland cement concrete pads or curbing until it has cured for at least 72 hours.

401-3.12 COMPACTION. Thoroughly and uniformly compact the hot mix asphalt by rolling. In areas not accessible to large rollers, compact with mechanical tampers or trench rollers.

The target value for density is 96% of the maximum specific gravity (MSG), as determined by WAQTC FOP for AASHTO T 209.

Do not leave rollers or other equipment standing on hot mix asphalt that has not cooled sufficiently to prevent indentation.

401-3.13 JOINTS. Minimize the number of joints. Ensure that all joints have the same texture and smoothness as other sections of the course.

Remove to full depth improperly formed joints resulting in surface irregularities. Replace with new material, and thoroughly compacted.

Precut all pavement removal to a neat line with a power saw or by other approved method.

Form transverse joints by cutting back on the previous run to expose the full depth of the layer. Saw cut the joint, use a removable bulkhead, or other method approved by the Engineer.

401-3.14 PATCHING DEFECTIVE AREAS. Remove any hot mix asphalt that becomes contaminated with foreign material, is segregated, flushing, bleeding, or is in any way determined to be defective. Do not skin patch. Remove defective materials for the full thickness of the course. Cut the pavement so that all edges are vertical, the sides are parallel to the direction of traffic. Coat edges with a tack coat and allow to cure. Place and compact fresh hot mix asphalt to grade and smoothness requirements.

401-4.01 METHOD OF MEASUREMENT. Section 109 and the following:

Hot Mix Asphalt.

By weighing. No deduction will be made for the weight of asphalt cement or anti-stripping additive.

Job Mix Design, asphalt cement, anti-strip additive, tack coat, and other incidentals to complete the work under this Section will not be measured separately for payment but shall be considered subsidiary to the respective hot mix asphalt pay item.

401-5.01 BASIS OF PAYMENT.

Item 401(1) Hot Mix Asphalt, Type II; Class B will be paid for by the ton in place completed and accepted. Job Mix Design, asphalt cement, anti-strip additive, tack coat, and other incidentals are subsidiary to this pay item.

Payment will be made under:

Pay Item	Pay Unit
401(1B) Hot Mix Asphalt, Type II; Class B	Ton

(05/02/11)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

SECTION 642

CONSTRUCTION SURVEYING AND MONUMENTS

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

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:

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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

Add the following Section:

SECTION 669

AUTOMATED TRAFFIC RECORDERS

669-1.01 DESCRIPTION. This work shall consist of furnishing and installing traffic count stations for the automated collection of traffic data on an intermittent or permanent basis. The Automated Traffic Recorder (ATR) station is a vehicle detection system.

System is defined as follows:

1. An Intermittent ATR station shall consist of the following:
 - a. inductive loops detectors for detecting the presence of vehicles, and
 - b. underground conduit, junction boxes, cabinet, and wiring as specified on the Plans.

669-1.02 REGULATIONS AND CODE. Materials and workmanship shall conform to the standards of the Underwriters Laboratories, Inc. and the National Electrical Safety Code and local safety code requirements, where applicable.

Electrical equipment shall conform to the standards of the National Electrical Manufacturers Association, where applicable.

669-2.01 MATERIALS. The materials provided for the work shall be new, unless otherwise stated and must meet the following requirements:

1. Wiring. Wiring shall be according to subsection 660-2.09(A), Wiring. Single wire conductors and cables shall have clear, distinctive and permanent markings on the outer surface throughout the entire length giving the manufacturer's name or trademark, the insulation type and letter designation, the conductor size, voltage rating and the number of conductors if a cable.
2. Conduit. Conduit shall be according to subsection 660-2.05, Conduit. Nylon pull cords shall be left in 2-inch conduit.
3. Junction Boxes. Junction boxes shall be according to subsection 660-2.06, Junction Boxes. Junction boxes used for ATR installations shall not contain conductors carrying a voltage over 50 volts.
4. Inductive Loops. Inductive loops shall be according to subsection 660-2.08, Conductors. Conductors used for detector inductive loops shall be UL listed as Type RHW/USE/XLP 12AWG 600V rating. Multiple pair loop lead-in cable shall consist of

18AWG stranded tinned copper wire with each twisted pair containing a 20AWG tinned copper drain wire, and aluminum shield and overall PVC or PE jacket conforming to IMSA specification 50-2.

5. Asphalt Pavement. Materials used for asphalt pavement shall conform to Section 401, Asphalt Concrete Pavement for Asphalt Concrete, Type II.
6. Traffic Volume Counters. The Contractor shall supply and install traffic volume equipment with the capability of counting traffic in all lanes. The permanent traffic volume counter(s) shall be Traffic Talley 51 as produced by Diamond Traffic Products. <http://diamondtraffic.com/product/Traffic-Tally-51>

669-3.01 CONSTRUCTION REQUIREMENTS.

1. Wiring. Wiring shall be installed according to subsection 660-2.09(A), Wiring. Unused pairs shall be terminated within splices; at cabinets unused pairs shall be terminated at to a terminal block and labeled "SPARE".
2. Conduit. Conduit shall be installed according to subsection 660-2.05, Conduit or as indicated on the Plans.
3. Junction Boxes. Junction boxes shall be installed according to subsection 660-2.06, Junction Boxes or as indicated on the Plans. Junction box shall be installed in a location where water will not infiltrate the box and freeze. Top of box shall be approximately 2" above the existing grade and located in an inconspicuous location as approved by the project engineer.
4. Inductive Loops. Inductive loops installed through existing asphalt paving shall be installed using full-lane-width cuts a minimum of 8-feet in length, with the inductive loops centered in the 8-foot cut with a minimum distance of 1-foot to the edge of the cut. Edges of the cuts shall be tack-coated during patching to ensure full adhesion. Full-width patches shall be rolled sufficiently to ensure compaction equal or better than the existing asphalt, and to prevent edge ridges or settling of the patch from 'telegraphing' through the final lift asphalt. Compaction tests shall be required at the discretion of the Engineer.

Loops installed in new asphalt paving shall be installed immediately before final paving of the particular section of road. Installation of loops after final lift paving shall not be permitted.

There shall be no transverse seams, joints or roughness within 50 feet of any inductive loops. The finished surface of the asphalt shall be tested with a straightedge 10-foot long. The surface shall not vary more than 0.25 inches from the lower edge of the straightedge in an area within 50 feet of the sensors at the ATR installations. At the discretion of the Engineer, a profilograph equipped with a chart

recorder shall be run down each wheelpath of each lane for a distance of 50 feet before and after each ATR installation.

Inductive loops shall be formed of four turns of wire, and shall be 0.5 square with \pm 1-inch tolerance. Inductive loops in a lane shall be located 16 feet from leading edge to leading edge except for the loops used in the WIM system which shall be 26 feet from leading edge to leading edge, with \pm 1-inch tolerance. Inductive loops located in adjacent lanes shall be aligned within \pm 1-inch tolerance.

Lead-in conduit from edge of pavement to the inductive loops shall be straight and perpendicular to the center line of the road.

669-3.02 ACCEPTANCE TESTING. The Contractor shall perform acceptance testing on ATR installations.

1. General Tests. ATR installations shall be tested according to subsection 660-4.01, Installation Details.
2. AVC Acceptance Tests. In addition to the General Tests, perform Acceptance Tests on the automated vehicle classification installations. Perform acceptance tests to demonstrate that the AVC system performs at or above the required accuracy.
 - a. Accuracy Requirements - The accuracy of Automated Vehicle Classifiers is such that, if good lane discipline is maintained:
 - (1) not more than plus or minus ten percent of the total vehicles in FHWA class one through class three and
 - (2) not more than plus or minus five percent of the total vehicles in FHWA class four through class thirteen are classified in the wrong bin when compared with a concurrent manual classification count.

669-3.05 DELIVERABLES.

1. Equipment List(s) and Drawings. The Contractor shall submit for review and approval, within thirty days following award of the contract, nine collated copies of a portfolio of equipment and materials that is proposed to be install. The portfolio(s) shall consist of a table of contents including each item's intended use(s), and a description that includes product name, manufacturer, model or part number.

The Department will not be liable for materials purchased, labor performed, equipment used, or delay to the work before equipment and materials have been reviewed and approved.

2. As-Built Plans and Photographs. The Contractor shall prepare four complete sets of as-built plans which will be kept current with the construction. These as-built plans

shall detail construction changes made to the plans and also include the following information on the appropriate sheets:

- a. the location and depth of the inductive loops and conduit runs, and,
- b. the station and offset of the junction boxes.

Redlines of full size construction plans will be acceptable.

Three sets of as-built plans shall be presented to the Engineer, and one set shall be affixed in a waterproof, clear plastic holder to the inside of the cabinet door at the appropriate Automated Traffic Recorder Installation.

- 3. Test Results. Written or printed copies of the final results of the tests, signed by the Contractor, shall be provided to the Engineer before acceptance of the Automated Traffic Recorder Installation. Tests will be conducted according to subsection subsection 660-3.01, General. Written (computer printout) results and copies of the electronic data files collected during performance of the WIM System acceptance test shall submitted to the Engineer before acceptance of completion of the WIM system.

669-4.01 METHOD OF MEASUREMENT. The quantity to be paid for will be the actual number of completed and accepted Automated Traffic Recorder installations as shown on the Plans or as directed by the Engineer.

669-5.01 BASIS OF PAYMENT. The contract unit bid price for the Automated Traffic Recorder installations will be full compensation for furnishing equipment, labor, and materials necessary to complete the work as specified, with the following exceptions:

- 1. Backfill materials required will be paid for under respective pay items.
- 2. Asphalt required will be paid for under Item 401(1), Asphalt Concrete Pavement.

Excavation, pedestrian gates, load centers, and as-built plans and acceptance testing required for these installations will not be paid for separately, but will be subsidiary to the Automated Traffic Recorder Installations.

Payment will be made under:

Pay Item	Pay Unit
669(1) Automated Traffic Recorder	Lump Sum

SECTION 703

AGGREGATES

703-2.03 AGGREGATE FOR BASE.

Delete Table 703-2 and substitute the following:

TABLE 703-2
AGGREGATE FOR UNTREATED BASE
 (Percent Passing By Weight)

Sieve Designation	Grading C-1	Grading D-1	Grading E-1
1 ½ inch	100	-	-
1 inch	70-100	100	100
¾ inch	60-90	70-100	70-100
⅜ inch	45-75	50-79	50-85
No. 4	30-60	35-58	35-65
No. 8	22-52	20-47	23-50
No. 30	10-33	10-26	13-31
No. 50	6-23	6-19	10-26
No. 200	0-6	0-6	8-15

Replace Subsection 703-2.04 with the following:

703-2.04 AGGREGATE FOR HOT MIX ASPHALT PAVEMENT. Process and crush aggregate that is free from clay balls, organic matter, other deleterious material, and not coated with dirt or other finely divided mineral matter. Aggregate used must consist of sound, tough, durable rock of uniform quality.

Remove all natural fines passing a No. 4 sieve before crushing aggregates for Type IV, V and R mixtures.

Coarse Aggregate. Aggregate retained on the No. 4 Sieve. Meet the following requirements:

Description	Specification	Type IIA	Type I, IIB, III	Type IV	Type V, R
LA Wear, % max	AASHTO T 96	45	45	45	45
Degradation Value, Min	ATM 313	30	30	30	30
Sodium sulfate Loss % max (5 cycles)	AASHTO T 104	9	9	9	9
Fracture, min %	WAQTC FOP for AASHTO TP 61	90, 2 face	80, 1 face	90, 2 face	98, 2 face

Flat-Elongated Pieces, max %						
	1:5	ATM 306	8	8	8	8
	1:3		20	-	-	20
Absorption, max. %	AASHTO T 85	2.0	2.0	2.0	2.0	2.0

Fine Aggregate. Aggregate passing the No. 4 sieve.

Aggregate shall meet the quality requirements of AASHTO M 29, including S1.1, Sulfate Soundness.

Aggregate for Type IV, V, and R mixes:

- do not blend back natural sand
- shall be non-plastic as determined by WAQTC FOP for AASHTO T 90
- shall have a minimum uncompacted void content (Fine Aggregate Angularity) determined by AASHTO T 304, Method A, of 45%

**TABLE 703-3
BROAD BAND GRADATIONS FOR HOT MIX ASPHALT PAVEMENT AGGREGATE
(Percent Passing by Weight)**

Sieve	Gradation					
	Type I	Type II	Type III	Type IV	Type V	Type R
1 inch	100	-	-	-	-	-
3/4 inch	80-90	100	-	-	100	100
1/2 inch	60-84	75-90	100	100	65-90	70-100
3/8 inch	48-78	60-84	80-90	80-95	55-80	50-70
No. 4	28-63	33-70	44-81	55-70	40-60	30-42
No. 8	14-55	19-56	26-70	35-50	≤ 45	20-32
No. 16	9-44	10-44	16-59	20-40	≤ 35	15-25
No. 30	6-34	7-34	9-49	15-30	≤ 25	10-20
No. 50	5-24	5-24	6-36	10-24	≤ 20	7-15
No. 100	4-16	4-16	4-22	5-15	≤ 12	5-12
No. 200	3-8	3-8	3-8	4-8	3-8	4-10

Note:

1. No tolerance is allowed beyond the Broad Band Limits of the No. 200 Sieve.
2. For Type R, the mix design gradation JMD shall provide a minimum of 8% difference of percent passing the No. 4 and the No. 8 sieve.

(10/11/10)CR7031-Special Provision

**APPENDIX A
DSP VISITOR CENTER COMPLEX
CAMPGROUND AND TRAILHEAD
PLANS**

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

DSP: VISITOR CENTER COMPLEX
 CAMPGROUND & TRAILHEAD

PROJECT NO.
 70155-1

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C6	SITE PLAN - STATION 78+00 TO 89+00	C33 PLAN AND PROFILE - STATION 67+00 TO 78+00
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C8	SITE PLAN - STATION 111+00 TO 126+81.58	C35 PLAN AND PROFILE - STATION 89+00 TO 109+00
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C11	SITE PLAN - STATION 210+00 TO 219+00	C38 PLAN AND PROFILE - STATION 200+00 TO 210+00
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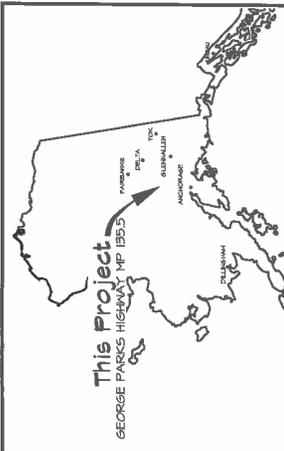


STATE OF ALASKA
 Department of Natural Resources
 Division of Parks & Outdoor Recreation

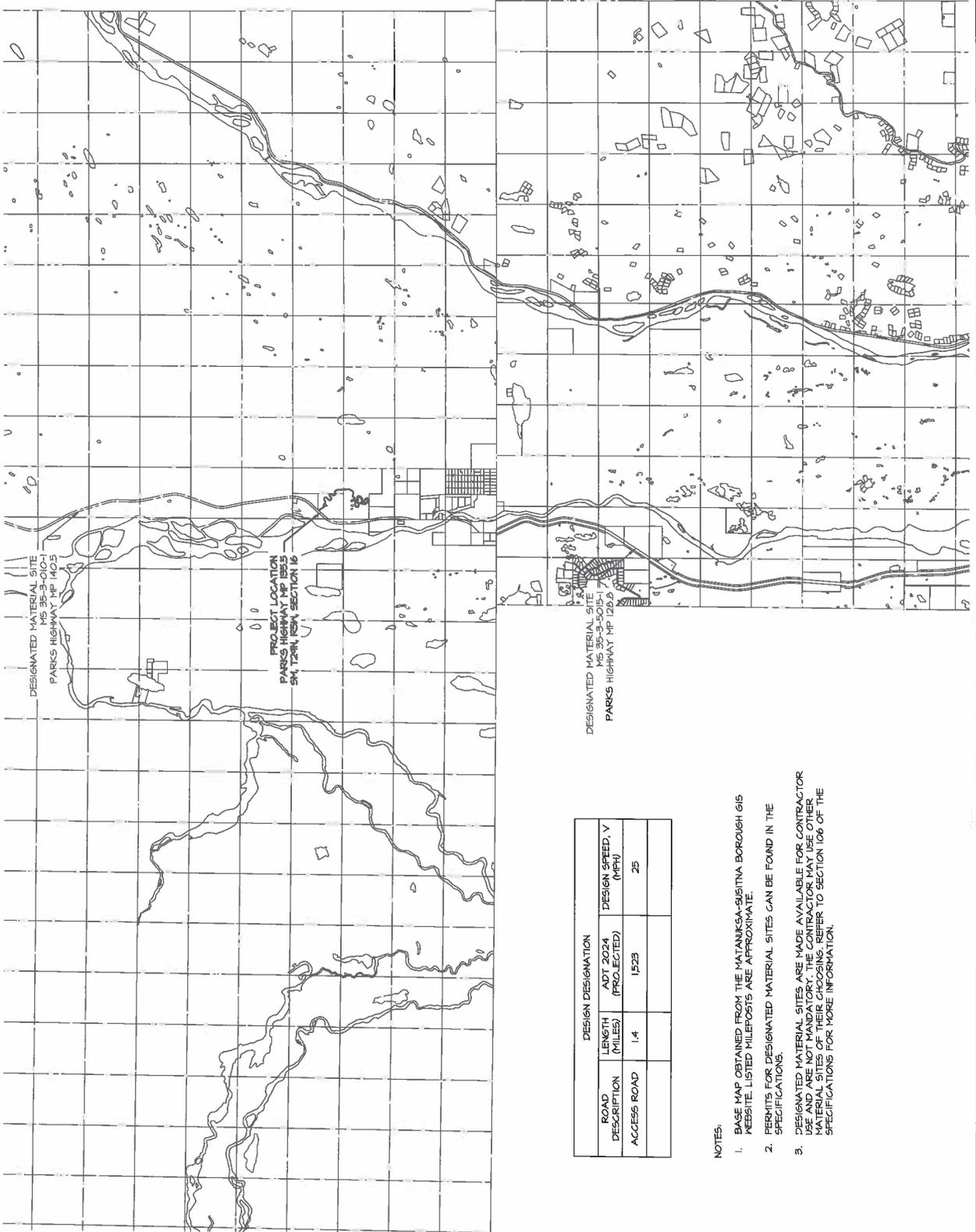
Approved: *Ben Eick*
 Ben Eick
 Director, Alaska State Parks

Date: 4-23-2013

Project Location



The following Division of Parks & Outdoor Rec. standard drawings apply to this project: C-1, E-2, S-102, S-11C, U-1A
 The following D.O.T./Highway standard drawings apply to this project: D-01, D-02, D-03, D-04, D-05, D-06, D-07, D-08, D-09, D-10, D-11, D-12, D-13, D-14, D-15, D-16, D-17, D-18, D-19, D-20, D-21, D-22, D-23, D-24, D-25, D-26, D-27, D-28, D-29, D-30, D-31, D-32, D-33, D-34, D-35, D-36, D-37, D-38, D-39, D-40, D-41, D-42, D-43, D-44, D-45, D-46, D-47, D-48, D-49, D-50, D-51, D-52, D-53, D-54, D-55, D-56, D-57, D-58, D-59, D-60, D-61, D-62, D-63, D-64, D-65, D-66, D-67, D-68, D-69, D-70, D-71, D-72, D-73, D-74, D-75, D-76, D-77, D-78, D-79, D-80, D-81, D-82, D-83, D-84, D-85, D-86, D-87, D-88, D-89, D-90, D-91, D-92, D-93, D-94, D-95, D-96, D-97, D-98, D-99, D-100, D-101, D-102, D-103, D-104, D-105, D-106, D-107, D-108, D-109, D-110, D-111, D-112, D-113, D-114, D-115, D-116, D-117, D-118, D-119, D-120, D-121, D-122, D-123, D-124, D-125, D-126, D-127, D-128, D-129, D-130, D-131, D-132, D-133, D-134, D-135, D-136, D-137, D-138, D-139, D-140, D-141, D-142, D-143, D-144, D-145, D-146, D-147, 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DESIGNATED MATERIAL SITE
 MS 35-3-010-1
 PARKS HIGHWAY MP 140.5

PROJECT LOCATION
 PARKS HIGHWAY MP 180.5
 5M, T26N, R54W, SECTION 16

DESIGNATED MATERIAL SITE
 MS 35-3-5015-1
 PARKS HIGHWAY MP 120.0

DESIGN DESIGNATION			
ROAD DESCRIPTION	LENGTH (MILES)	ADT 2024 (PROJECTED)	DESIGN SPEED, V (MPH)
ACCESS ROAD	1.4	1523	25

- NOTES:
1. BASE MAP OBTAINED FROM THE MATANUKSA-SUSITNA BOROUGH GIS WEBSITE. LISTED MILEPOSTS ARE APPROXIMATE.
 2. PERMITS FOR DESIGNATED MATERIAL SITES CAN BE FOUND IN THE SPECIFICATIONS.
 3. DESIGNATED MATERIAL SITES ARE MADE AVAILABLE FOR CONTRACTOR AND NO LIABILITY ORY. THE CONTRACTOR MAY USE OTHER MATERIALS AND METHODS REFER TO SECTION 106 OF THE SPECIFICATIONS FOR MORE INFORMATION.



ABBREVIATIONS AND SYMBOLS

DIAMETER	Ø
CENTERLINE	CL
CONCRETE	CC
BEGINNING VERTICAL CURVE ELEVATION	BVCE
BEGINNING VERTICAL CURVE STATION	BVCS
BEGINNING POINT	BP
COMMUNICATION	COMM
CORNER	CR
CORRUGATED STEEL PIPE	CSP
DEVALI STATE PARK	DSP
EAST	E
ELEVATION	ELEV.
ENDING VERTICAL CURVE ELEVATION	EVCE
ENDING VERTICAL CURVE STATION	EVCS
INVERT	INV
LAMP SIGN	L.S.
LENGTH OF VERTICAL CURVE	L.V.C.
LENGTH OF VERTICAL CURVE	L.V.C.
POUND/POUNDS	LB/LBS
MATCH EXISTING	M.E.
MILEPOST	MP
NORTH	N
NORTHEAST	NE
NORTHWEST	NW
ON CENTER	OC
PORTLAND CEMENT CONCRETE	PCC
POINT OF TANGENT	PT
PROFILE VERTICAL CURVE INTERSECTION	P.V.C.I.
REQUIRED	REQD
RIGHT OF WAY	ROW
SQUARE FOOT	SQ. FT.
STATION	STA
SOUTHWEST	SW
STORM WATER POLLUTION PREVENTION PLAN	SWPPP
TABLE YARD	TY.
TYPICAL	TYP
WEST	W

LEGEND

EXISTING	
PROPOSED	
EDGE OF AC PAVEMENT	
EDGE OF GRAVEL ROAD/PARKING	
EDGE OF VEGETATION	
WETLANDS	
RIPRAP	
UNDERGROUND COMM. LINE	
MAJOR CONTOUR LINE	
MINOR CONTOUR LINE	
CULVERT	
SIGN	
LIMITS OF CUT SLOPE	
LIMITS OF FILL SLOPE	
DITCH LINE	
ROADWAY CENTERLINE	
PROJECT LIMITS	
TEST PIT	
GUARDRAIL	
CURB AND GUTTER	
CAMPSITE NUMBER	

TABLE OF ESTIMATING FACTORS

ITEM NO.	ITEM DESCRIPTION	EST. FACTOR
2025(A)	BORROW, TYPE A	142 LB./C.F.
30(1)	AGGREGATE BASE COURSE, GRADING D-1	148 LB./C.F.
61(2)	RIPRAP, CLASS 1	110 LB./C.F.
61(2)	SEEDING	10 LBS./1000 S.F.

ESTIMATE OF QUANTITIES (CONTINUED)

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
650(2)	BARRIER ROCK	EACH	184
650(9B)	ORIENTATION KIOSK	EACH	2
650(40C)	INTERPRETIVE SIGN, TYPE C	EACH	4
650(42)	CAMPSITE MARKER	EACH	32
650(70)	PEDESTRIAN GUARDRAIL	L.F.	75
652(1)	DRILLING	LINEAR FOOT	200
652(2)	CASING	LINEAR FOOT	200
652(3)	YIELD TESTING	HOOR	4
652(4)	WELL SCREEN	L.F.	5
652(5)	DROP PIPE	L.F.	200
652(6)	PUMP ROD	L.F.	200
652(7)	WELL CONSTRUCTION	L.S.	ALL REQD
654(2)	SINGLE CONCRETE VAULTED TOILET	EACH	5

* = 1 DOUBLE ENTRANCE GATE WILL BE PLACED AT THE ENTRANCE OF MATERIAL SITE HS 35-3-5015-1 (SHOWN ON SHEET 62 AT HP 128.0)

ESTIMATE OF QUANTITIES

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
201(BA)	CLEARING AND GRUBBING	ACRE	25.18
201(6)	SELECTIVE TREE REMOVAL	EACH	75
203(3)	UNCLASSIFIED EXCAVATION	C.Y.	85250
203(5A)	BORROW, TYPE A	C.Y.	50000
30(1)	AGGREGATE BASE COURSE, GRADING D-1	TON	13000
40(1)	ASPHALT CONCRETE, TYPE II, CLASS B	TON	2555
505(6)	HELICAL PILE	EACH	22
515(1)	ROCKERY WALL, TYPE I	S.F.	250
603(1-16)	18 INCH CSP	L.F.	713
603(1-24)	24 INCH CSP	L.F.	651
603(3-16)	END SECTION FOR 18 INCH CSP	EACH	48
603(3-24)	END SECTION FOR 24 INCH CSP	EACH	26
606(1)	M-BEAM GUARDRAIL	L.F.	675
606(13)	PARALLEL GUARDRAIL TERMINAL	EACH	6
609(2)	CURB AND GUTTER	L.F.	650
61(2)	RIPRAP, CLASS 1	TON	650
615(1)	STANDARD SIGN	S.F.	28.17
616(2)	SEEDING	POUND	450
620(1)	TOPSOIL	S.Y.	50000
623(1)	SODDING	S.Y.	156538
640(1)	MOBILIZATION AND DEMOBILIZATION	L.S.	ALL REQD
641(1)	EROSION, SEDIMENT AND POLLUTION CONTROL ADMINISTRATION	L.S.	ALL REQD
641(2)	TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL	C.S.	ALL REQD
641(6)	WITHOLDING	C.S.	ALL REQD
642(1)	CONSTRUCTION SURVEYING	L.S.	ALL REQD
642(3)	THREE PERSON SURVEY PARTY	HOOR	50
642(5)	SET SECONDARY MONUMENT	EACH	17
642(10)	MONUMENT CASE	EACH	17
642(12)	FINAL TRAVERSE	L.S.	ALL REQD
643(2)	TRAFFIC MAINTENANCE	L.S.	ALL REQD
643(12a)	JERSEY BARRIER	EACH	4
647(16)	HYDRAULIC EXCAVATOR, 1 C.Y., 100 HP MINIMUM	HOOR	50
650(1)	PICNIC TABLE	EACH	40
650(4)	ROUND FIREPIT	EACH	32
650(9)	DOUBLE ENTRANCE GATE	EACH	2
650(12A)	BOARDWALK	L.S.	ALL REQD
650(17)	CONCRETE PARKING PUMPER	EACH	28





PREPARED: S.B.
 DRAWING REVISED: S.B.
 REVIEWED: PBM
 DATE: 4/10/2018
 SHEET 4

SURVEY CONTROL POINTS:

POINT	NORTHING	EASTING	DESCRIPTION
553	3139719.63	1600219.87	Aero-Metric Fl. 100 Spike
702	3135668.17	1600718.40	BLM Brass Cap Monument
1501	3135653.76	1602886.65	BLM Brass Cap Monument
1502	3143580.05	1600740.22	BLM Brass Cap Monument
1503	3143566.68	1603379.09	BLM Brass Cap Monument
1601	3142755.02	1601043.44	ROW Monument
1605	3144221.61	1602383.78	ROW Monument
1701	3142957.15	1600822.00	BLM Brass Cap Monument
1711	3138305.29	1600720.05	BLM Brass Cap Monument
1719	3140940.78	1600711.78	BLM Brass Cap Monument
1719A	3140940.93	1600720.49	BLM Brass Cap Monument
1720	3140927.36	1603360.86	BLM Brass Cap Monument
BLM	3143371.64	1601363.07	Mag Nail
PL East	3143575.60	1601624.23	1 1/2" Alcap Set This Survey
PL West	3143576.68	1601417.00	BLM Brass Cap Monument
ROW?	3144112.24	1601877.41	ROW Monument

STANDARD LEGEND:

- ✦ 3 1/4" BLM BRASS CAP ON 2 1/2" STAINLESS STEEL POST
RECOVERED THIS SURVEY
- ⊗ BLM MONUMENT OF RECORD
(NOT RECOVERED THIS SURVEY)
- △ MAG NAIL RECOVERED THIS SURVEY (w/Blue Flagging & Lath Mk'd "BOP STA. 501+17.39)
- ▲ AERO-METRIC SPIKE RECOVERED THIS SURVEY
(AERO-METRIC POINT 100)
- 6" x 6" YELLOW CONCRETE DOT&PFF ROW POST
RECOVERED THIS SURVEY
- 6" x 6" CONCRETE DOT&PFF ROW POST
RECOVERED BY OTHERS
- 5/8" x 30" REBAR w/ 1 1/2" ALUMINUM CAP
SET THIS SURVEY

[502] SURVEY CONTROL POINT
 (R) RECORD PER BLM

— SURVEYED
 - - - UNSURVEYED



SURVEY CONTROL NOTES:

HORIZONTAL CONTROL
 ALL COORDINATES ARE NAD 83 (CORS96) (EPOCH: 2003.0000), ALASKA STATE PLANE ZONE 4, BASED ON AN AERO-METRIC, ANCHORAGE LIDAR SURVEY CONDUCTED IN JUNE 2008. THE PUBLISHED STATE PLANE VALUES LISTED IN THE OPUS SOLUTION REPORT FOR AERO-METRIC'S POINT 100 (POINT 553 THIS SURVEY) IN THE "DENALI OVERLOOK LIDAR SURVEY QUALITY CONTROL SURVEY REPORT" WERE CONVERTED TO US SURVEY FEET AND HELD FOR THIS SURVEY. ALL OTHER COORDINATES WERE DETERMINED BY GPS OBSERVATIONS.

VERTICAL CONTROL
 ALL ELEVATIONS ARE NAVD 88 (COMPUTED USING GEOID06) AND ARE BASED ON AN AERO-METRIC, ANCHORAGE LIDAR SURVEY CONDUCTED IN JUNE 2008. THE PUBLISHED ORTHOMETRIC HEIGHT LISTED IN THE OPUS SOLUTION REPORT FOR AERO-METRIC'S POINT 100 (POINT 553 THIS SURVEY) IN THE "DENALI OVERLOOK LIDAR SURVEY QUALITY CONTROL SURVEY REPORT" WAS CONVERTED TO US SURVEY FEET AND HELD FOR THIS SURVEY. ALL OTHER ELEVATIONS WERE DETERMINED BY GPS OBSERVATIONS.

METRIC TO FOOT CONVERSIONS ARE BASED ON THE U.S. SURVEY FOOT (1 METER = 39.37 INCHES EXACTLY)

GENERAL NOTES:

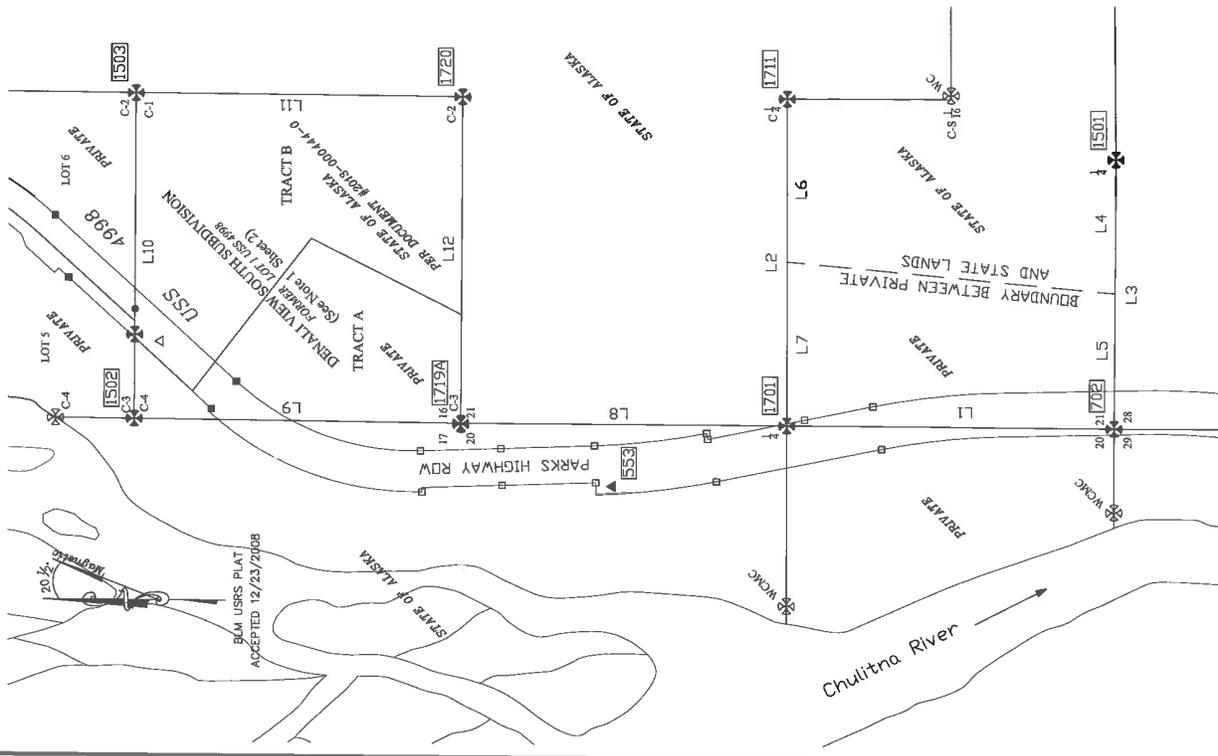
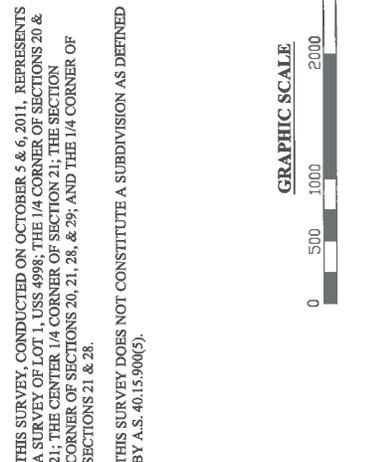
ALL MEASURED DATA ARE ALASKA STATE PLANE ZONE 4 BEARINGS AND DISTANCES. ALL RECORD "(R)" DATA IS BLM MEAN BEARINGS AND GROUND DISTANCES REDUCED TO THEIR HORIZONTAL EQUIVALENT.

ALL MONUMENTS, PROPERTY MARKERS (WITH EXCEPTION OF "PLEAST"), OR PROPERTY CORNERS AND THEIR ACCESSORIES, WHICH WILL BE DISTURBED OR BURIED SHALL BE REFERENCED AND REESTABLISHED IN THEIR ORIGINAL POSITION IN ACCORDANCE WITH A.S. 34.65.040(b).

THE 5/8" REBAR AND CAP SET AT "PLEAST" WAS SET ONLY FOR THE PURPOSE OF IDENTIFYING THE SPECIFIC LOCATION OF THE NORTH BOUNDARY OF LOT 1, USS 4998 IN THE IMMEDIATE VICINITY OF THE PROJECT AREA. IT IS NOT TO BE MISTAKEN FOR, OR USED AS A PROPERTY CORNER.

THIS SURVEY, CONDUCTED ON OCTOBER 5 & 6, 2011, REPRESENTS A SURVEY OF LOT 1, USS 4998; THE 1/4 CORNER OF SECTIONS 20 & 21; THE CENTER 1/4 CORNER OF SECTION 21; THE SECTION CORNER OF SECTIONS 20, 21, 28, & 29; AND THE 1/4 CORNER OF SECTIONS 21 & 28.

THIS SURVEY DOES NOT CONSTITUTE A SUBDIVISION AS DEFINED BY A.S. 40.15.900(5).





LINE	MEASURED		RECORD	
	BEARING	DISTANCE	BEARING	DISTANCE
L1	N00°02'09"E	2639.72'	N00°07'W	2640.00'
L2	N89°56'37"W	2639.81'	WEST	2640.00'
L3	N89°37'10"W	2168.29'	N89°49'W	2168.76'
L4	N89°37'10"W	1084.14'		
L5	N89°37'10"W	1084.15'		
L6	N89°56'37"W	1319.90'		
L7	N89°56'37"W	1319.91'		
L8	N00°00'54"E	2633.04'	N00°07'W	2640.00'
L9	N00°25'42"E	2639.19'	N00°12'E	2640.00'
L10	N89°42'55"W	2638.90'	N89°54'W	2640.00'
L11	S00°23'45"W	2639.38'	S00°12'W	2640.00'
L12	N89°23'35"W	2640.41'	N89°54'W	2640.00'

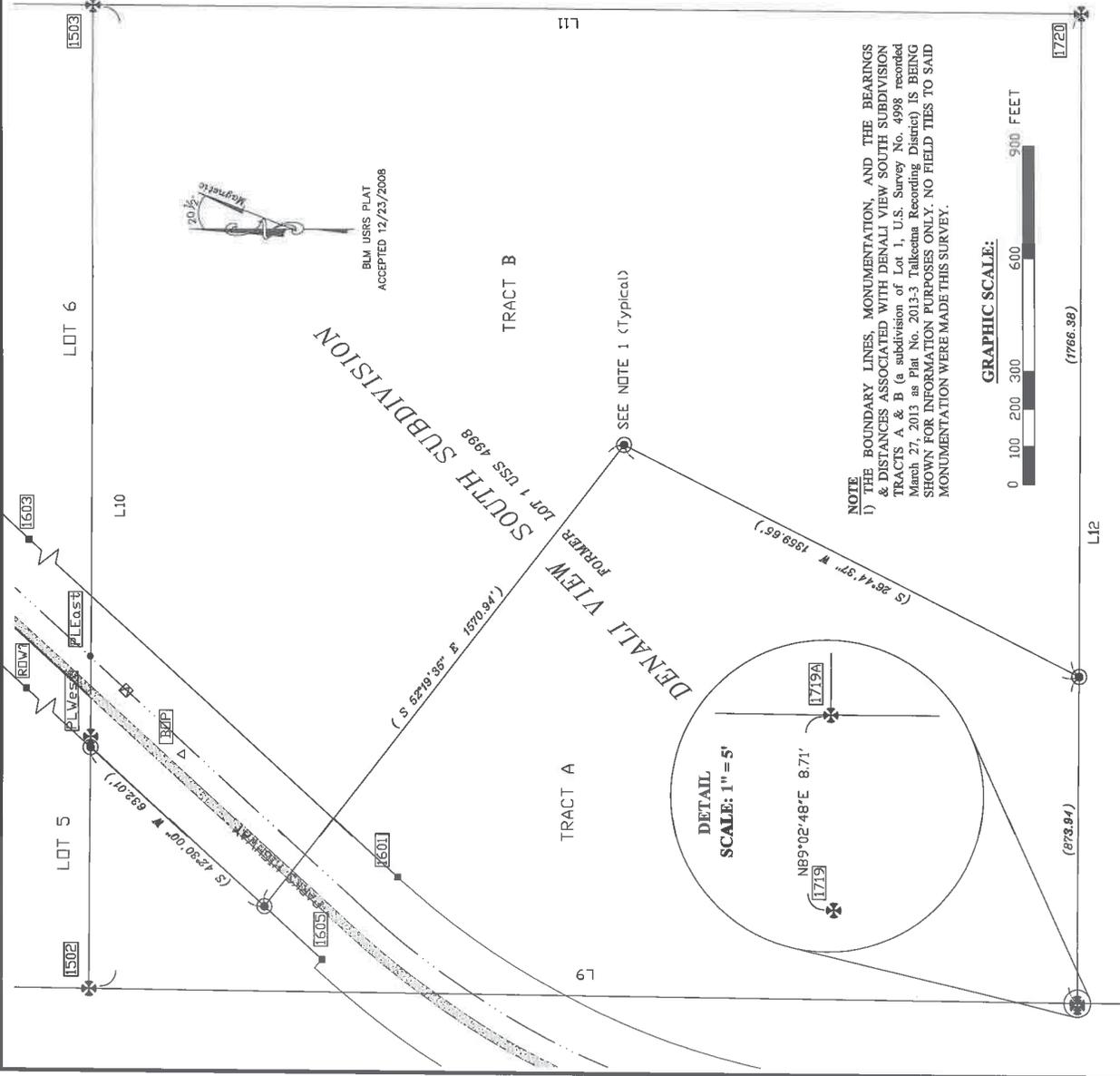
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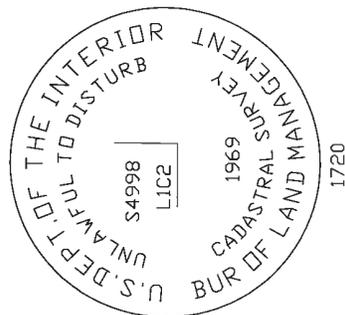
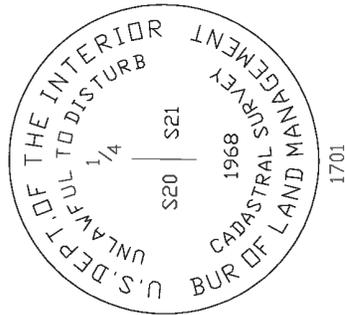
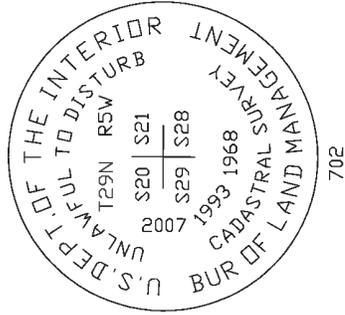
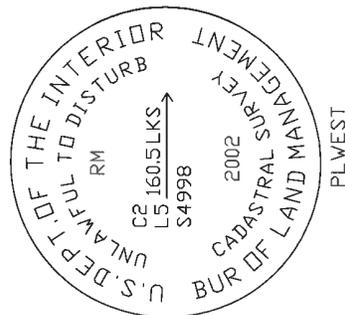
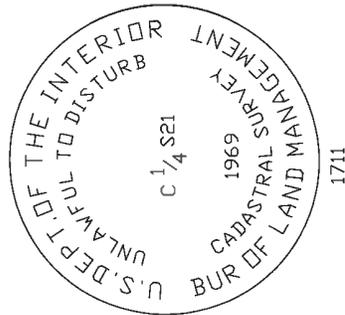
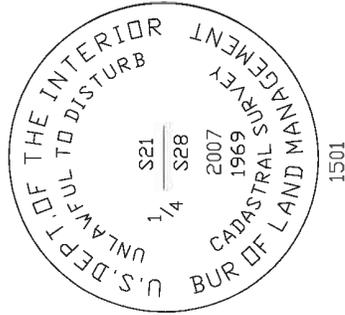
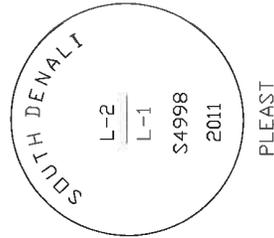
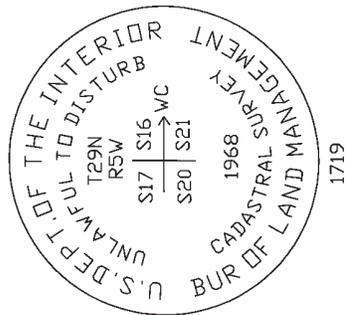
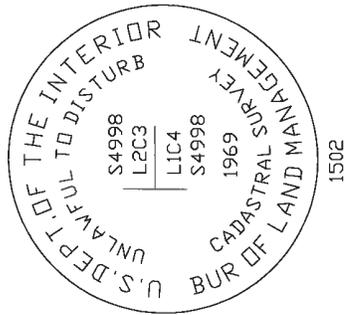
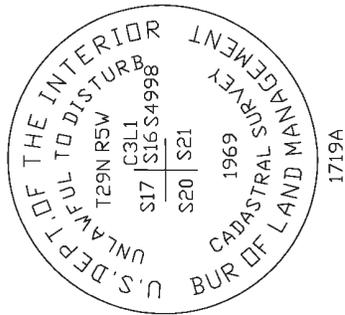
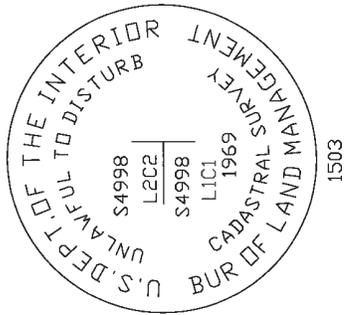
- ⊕ 3 1/4" BLM BRASS CAP ON 2 1/2" STAINLESS STEEL POST
RECOVERED THIS SURVEY
- △ MAG NAIL RECOVERED THIS SURVEY
(w/ Blue Flagging & LATH Mcd "BOP STA. 501+17.39")
- 5/8"x.30" REBAR w/ 1 1/2" ALUMINUM CAP SET THIS SURVEY
- 6"x.6" YELLOW CONCRETE DOT&PF ROW POST
RECOVERED THIS SURVEY
- ⊙ 5/8"x.30" REBAR w/ YELLOW PLASTIC CAP MARKED WITH "SLANA" & "LS-7338" (NOT RECOVERED THIS SURVEY). The location of these monuments was obtained from the plat of Denali View South Subdivision Tracts A & B (See Note 1). They are being shown for information purposes only.
- BURIED FIBER OPTICS CABLE (NOT SURVEYED THIS SURVEY)
Location obtained from As-Built Drawings "WOC to Fairbanks Fiber Construction Drawing Milepost 133 to 163 (Sheet 7 of 58)"
- ⬠ VAULT (NOT SURVEYED THIS SURVEY)
Location obtained from As-Built Drawings "WOC to Fairbanks Fiber Construction Drawing Milepost 133 to 163 (Sheet 7 of 58)"
- (R) RECORD PER BLM

(S 42°30'00" W 682.01') BEARING AND/OR DISTANCE PER PLAT 2013-3
(See Note 1 on this sheet)

1502 SURVEY CONTROL POINT

SURVEYED
UNSURVEYED



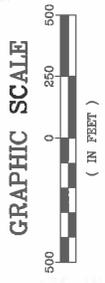
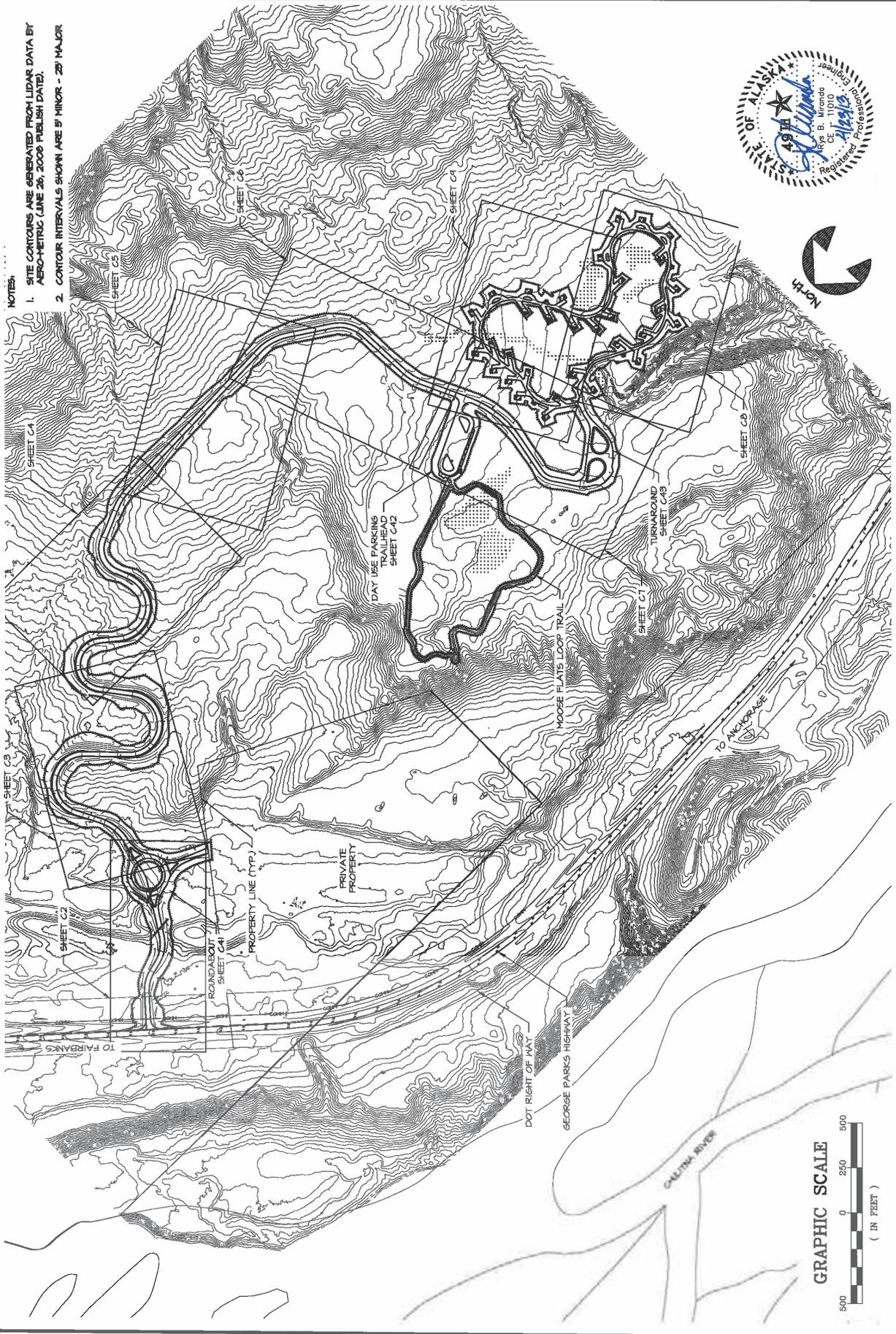


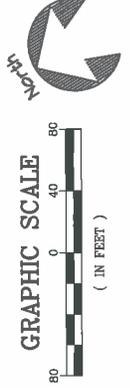


PREPARED: SJB
DRAWN: RBV/SJS
REVIEWED: RBM
DATE: 4/02/09

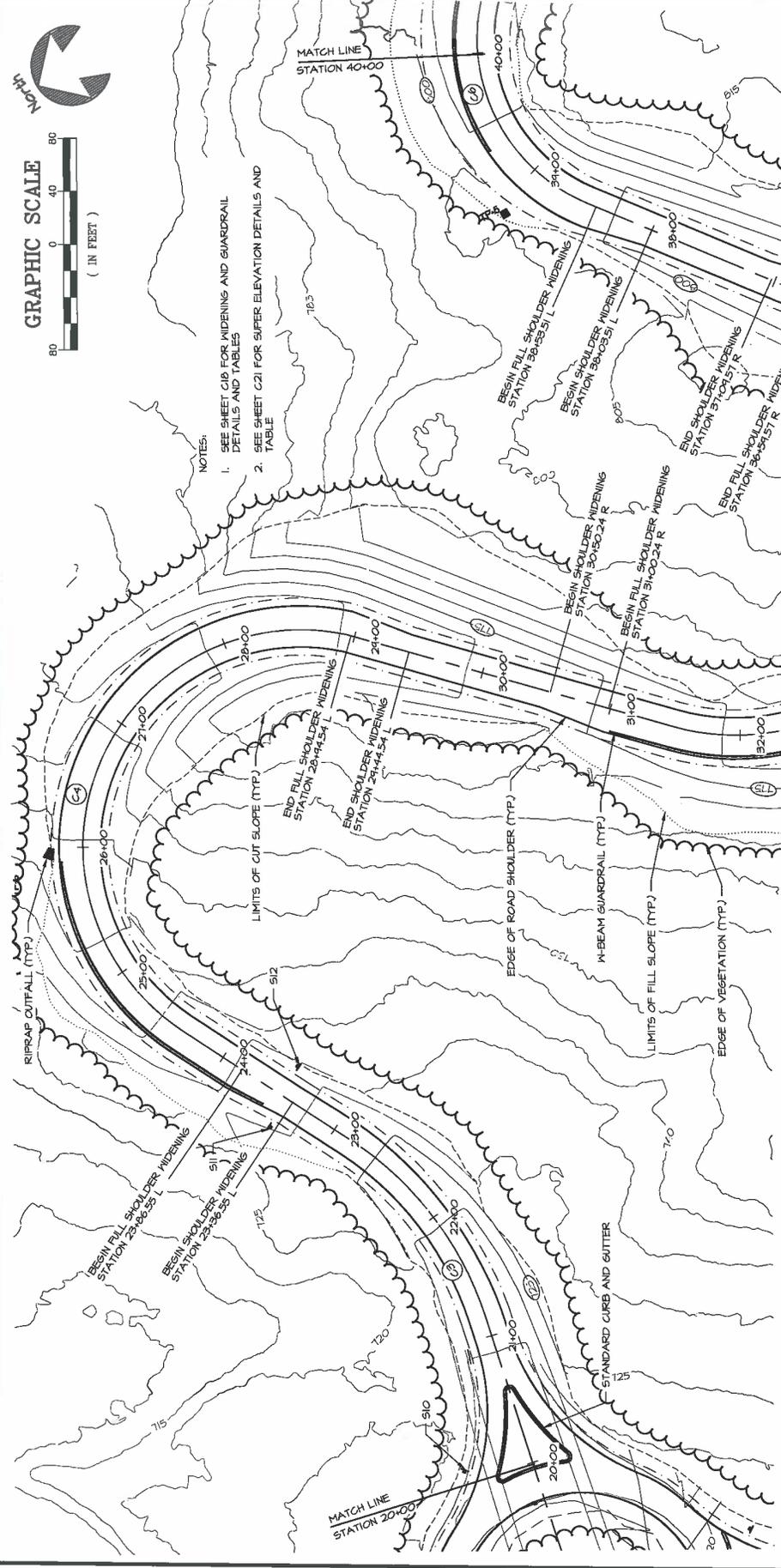
SHEET 7
61
OF 64 SHEETS

- NOTES:
1. SITE CONTOURS ARE GENERATED FROM LIDAR DATA BY AERO-METRIC (JUNE 26, 2008 PUBLISH DATE).
 2. CONTOUR INTERVALS SHOWN ARE 5' MINOR - 25' MAJOR





- NOTES:
- SEE SHEET C10 FOR WIDENING AND GUARDRAIL DETAILS AND TABLES
 - SEE SHEET C21 FOR SUPER ELEVATION DETAILS AND TABLE

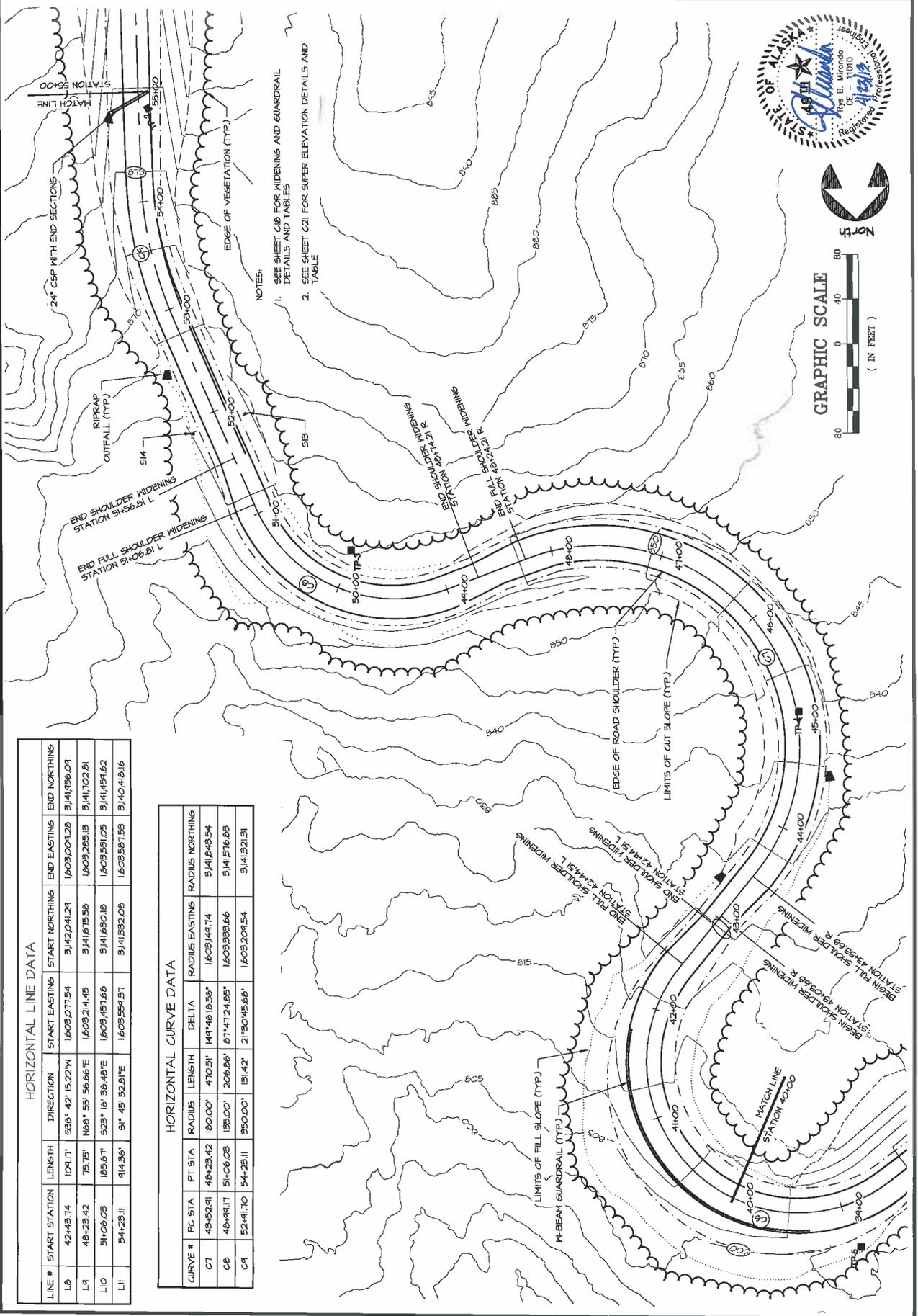


HORIZONTAL LINE DATA

LINE #	START STATION	LENGTH	DIRECTION	START EASTING	START NORTHING	END EASTING	END NORTHING
L5	22+85.65	150.12	N82° 51' 51.84"E	1602,367.80	3,142,143.05	1602,501.40	3,142,291.51
L6	28+43.71	255.64	S45° 31' 03.74"W	1602,699.46	3,142,554.46	1602,511.03	3,142,271.30
L7	36+58.74	143.44	N52° 48' 30.46"E	1602,786.04	3,142,155.81	1602,840.44	3,142,239.19

HORIZONTAL CURVE DATA

CURVE #	PC STA	PT STA	RADIUS	LENGTH	DELTA	RADIUS EASTING	RADIUS NORTHING
C3	21+85.28	22+85.65	244.89'	170.36'	34° 02' 42.31"	1602,253.74	3,142,165.53
C4	24+35.76	28+43.71	165.00'	459.01'	154° 02' 19.32"	1602,576.65	3,142,664.67
C5	31+44.47	36+58.74	170.28'	504.32'	111° 22' 48.40"	1602,636.34	3,142,259.81
C6	38+52.73	42+43.74	135.00'	391.01'	165° 56' 44.27"	1602,912.14	3,142,125.71



HORIZONTAL LINE DATA

LINE #	START STATION	LENGTH	DIRECTION	START EASTING	START NORTHING	END EASTING	END NORTHING
L8	42+43.14	104.17'	S58° 42' 15.22"N	1603.071754	3143.241424	1603.004128	3141.956404
L9	48+23.42	75.75'	N68° 55' 56.66"E	1603.214445	3141.675550	1603.285113	3141.702281
L10	51+06.03	185.67'	S23° 16' 38.48"E	1603.457168	3141.630118	1603.531105	3141.454162
L11	54+23.11	914.36'	S1° 45' 52.81"E	1603.554137	3141.332108	1603.587153	3140.418116

HORIZONTAL CURVE DATA

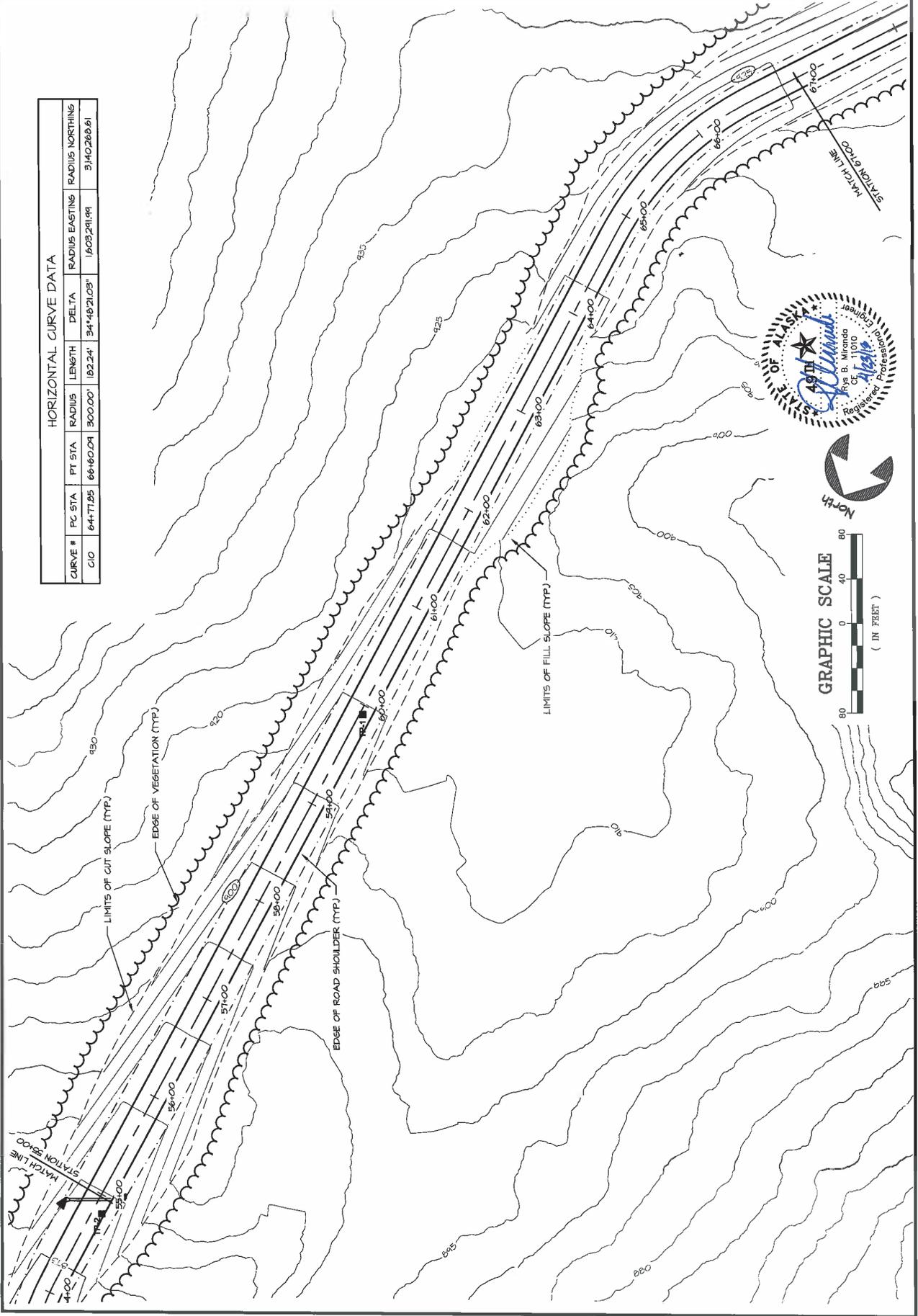
CURVE #	PC STA	PT STA	RADIUS	LENGTH	DELTA	RADIUS EASTING	RADIUS NORTHING
C7	43+52.81	49+23.42	180.00'	470.31'	141° 46' 19.56"	1603.144174	3141.843154
C8	48+49.17	51+06.03	185.00'	208.86'	87° 47' 24.85"	1603.333166	3141.576183
C9	52+11.70	54+23.11	350.00'	131.42'	21° 30' 45.68"	1603.204154	3141.321131

NOTES:
 1. SEE SHEET C18 FOR WIDENING AND GUARDRAIL DETAILS AND TABLES
 2. SEE SHEET C21 FOR SUPER ELEVATION DETAILS AND TABLE



HORIZONTAL CURVE DATA

CURVE #	PC STA	PT STA	RADIUS	LENGTH	DELTA	RADIUS EASTING	RADIUS NORTHING
C10	64+77.85	66+60.04	300.00'	82.24'	34°48'21.03"	14029.29149'	9140.26881'





PREPARED: SLS
DRAWN: RBN/SLB
REVIEWED: RBN
DATE: 4/10/2019
SHEET 12

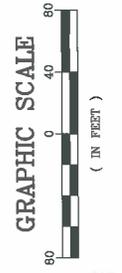
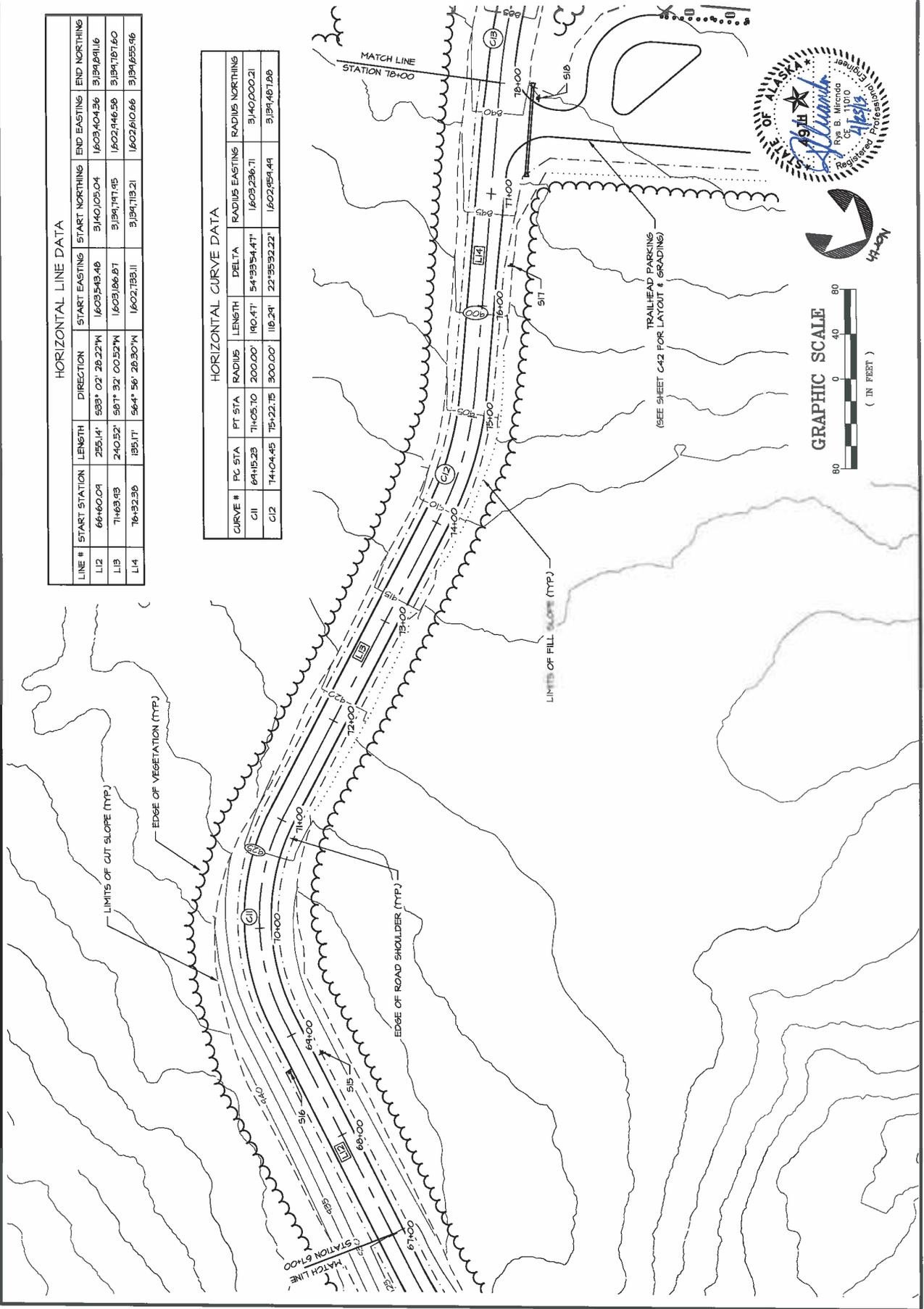
OF 64 SHEETS

HORIZONTAL LINE DATA

LINE #	START STATION	LENGTH	DIRECTION	START EASTING	START NORTHING	END EASTING	END NORTHING
L1.2	66+60.04	255.14'	S33° 02' 28.22"W	1603.543.48	3140.050.04	1603.404.36	3139.471.16
L1.3	71+63.49	240.52'	S81° 32' 00.52"W	1603.186.87	3139.171.45	1602.146.58	3139.187.60
L1.4	76+32.39	195.17'	S64° 56' 28.30"W	1602.733.11	3139.119.21	1602.610.66	3139.635.96

HORIZONTAL CURVE DATA

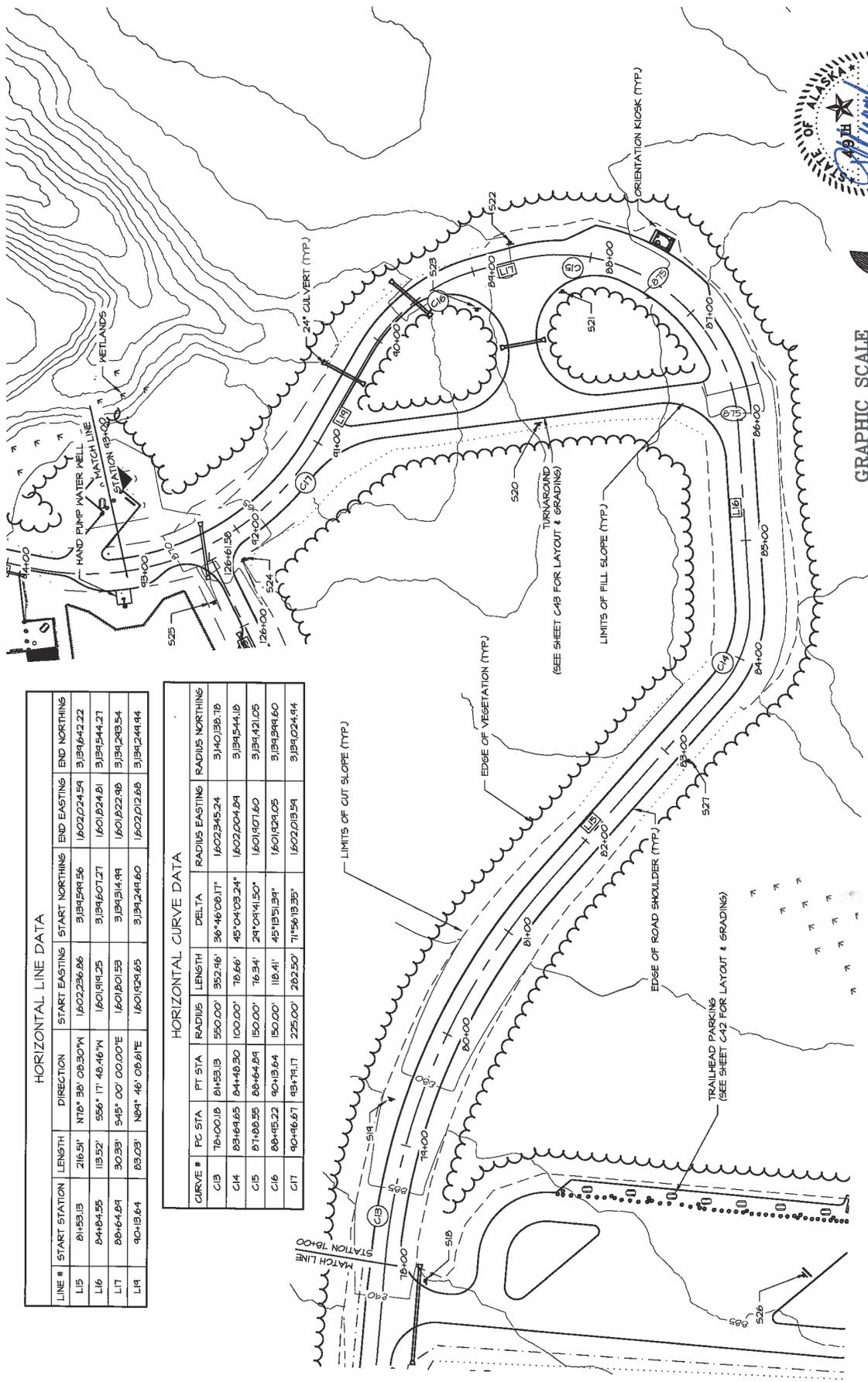
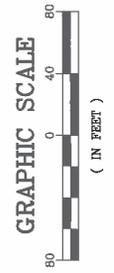
CURVE #	PC STA	PT STA	RADIUS	LENGTH	DELTA	RADIUS EASTING	RADIUS NORTHING
C11	64+15.23	71+05.10	200.00'	140.47'	54° 53' 54.47"	1603.236.71	3140.000.21
C12	74+04.45	75+22.75	300.00'	118.29'	22° 55' 52.22"	1602.459.44	3139.481.68





PREPARED: SJS
 DRAWN: REM/SJS
 REVIEWED: REM
 DATE: 4/10/2018
 SHEET 19

67
 OF 64 SHEETS



HORIZONTAL LINE DATA

LINE #	START STATION	LENGTH	DIRECTION	START EASTING	START NORTHING	END EASTING	END NORTHING
L15	81+53.13	216.51'	N78° 38' 08.30"W	1602.236.86	3184.549.56	1602.024.54	3184.642.22
L16	84+84.55	113.52'	S56° 17' 48.46"W	1601.914.25	3184.607.27	1601.824.81	3184.544.27
L17	88+64.89	30.33'	S45° 00' 00.00"E	1601.801.53	3184.314.94	1601.822.48	3184.283.54
L19	90+13.64	83.03'	N84° 46' 08.61"E	1601.824.65	3184.241.60	1602.012.68	3184.244.44

HORIZONTAL CURVE DATA

CURVE #	PC STA	PT STA	RADIUS	LENGTH	DELTA	RADIUS EASTING	RADIUS NORTHING
C13	78+00.18	81+53.13	550.00'	352.16'	36° 48' 08.11"	1602.345.24	3140.136.78
C14	83+64.85	84+48.30	100.00'	78.66'	45° 04' 03.24"	1602.004.84	3184.544.18
C15	87+88.35	88+64.89	150.00'	76.34'	24° 04' 41.50"	1601.807.60	3184.421.05
C16	88+45.22	90+13.64	150.00'	118.41'	45° 13' 13.91"	1601.824.05	3184.294.60
C17	90+46.87	88+71.17	225.00'	282.50'	71° 56' 13.35"	1602.013.54	3184.024.44

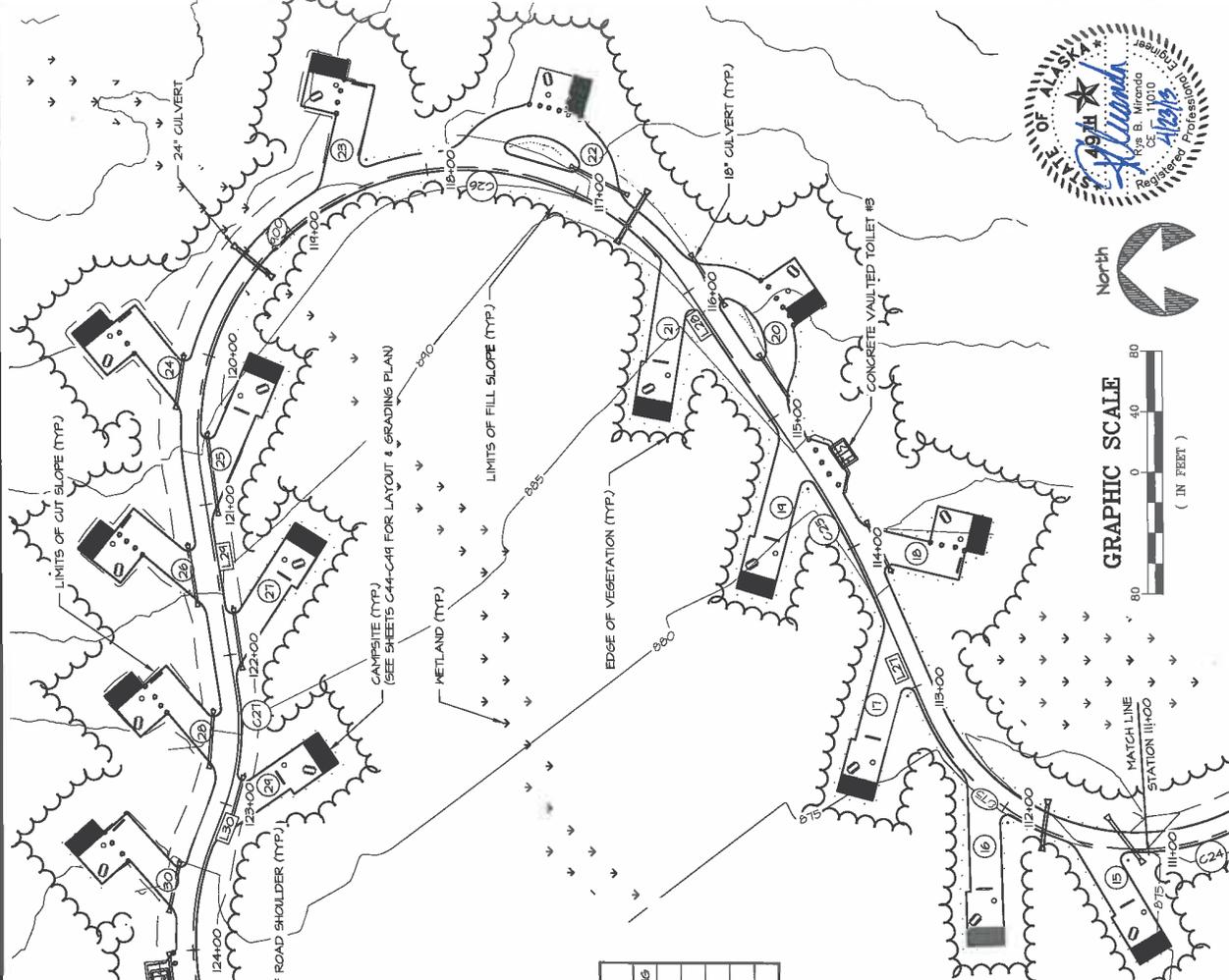
STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES

DSP: VISITOR CENTER COMPLEX
 CAMPGROUND & TRAILHEAD
 PROJECT NO. 70155-1



PREPARED: SLS
 DRAWN: RHM/SLS
 REVIEWED: RHM
 DATE: 4/10/2019
 SHEET 15

OF 64 SHEETS



HORIZONTAL LINE DATA

LINE #	START STATION	LENGTH	DIRECTION	START EASTING	START NORTHING	END EASTING	END NORTHING
L21	112+82.51	84.05	N66° 37' 30.49"E	3,189,897.83	1,602,578.05	3,189,981.88	1,602,662.10
L22	114+61.26	143.50	N56° 19' 23.00"E	3,186,976.03	1,602,716.35	3,187,119.53	1,602,859.85
L24	120+78.38	147.56	S81° 15' 21.21"W	3,189,374.20	1,602,652.71	3,189,521.76	1,602,505.15
L30	123+04.01	24.40	N68° 55' 02.02"W	3,184,360.07	1,602,407.35	3,184,384.47	1,602,382.95
L31	125+64.77	46.82	S89° 41' 59.74"W	3,184,185.80	1,602,185.80	3,184,232.62	1,602,139.00

HORIZONTAL CURVE DATA

CURVE #	PC STA	PT STA	RADIUS	LENGTH	DELTA	RADIUS EASTING	RADIUS NORTHING
C25	113+71.36	114+61.26	500.00'	84.90'	10°19'07.45"	1,602,574.66	3,189,942.12
C26	116+04.16	120+78.38	115.00'	173.62'	55°09'53.71"	1,602,671.31	3,184,201.23
C27	122+25.49	123+04.01	150.00'	79.08'	21°41'28.77"	1,602,484.07	3,184,500.03
C28	123+28.41	125+64.77	115.00'	236.35'	71°22'54.24"	1,602,344.40	3,184,205.56

SITE PLAN
 STATION
 111+00 TO 126+61.58

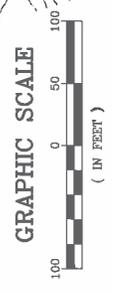
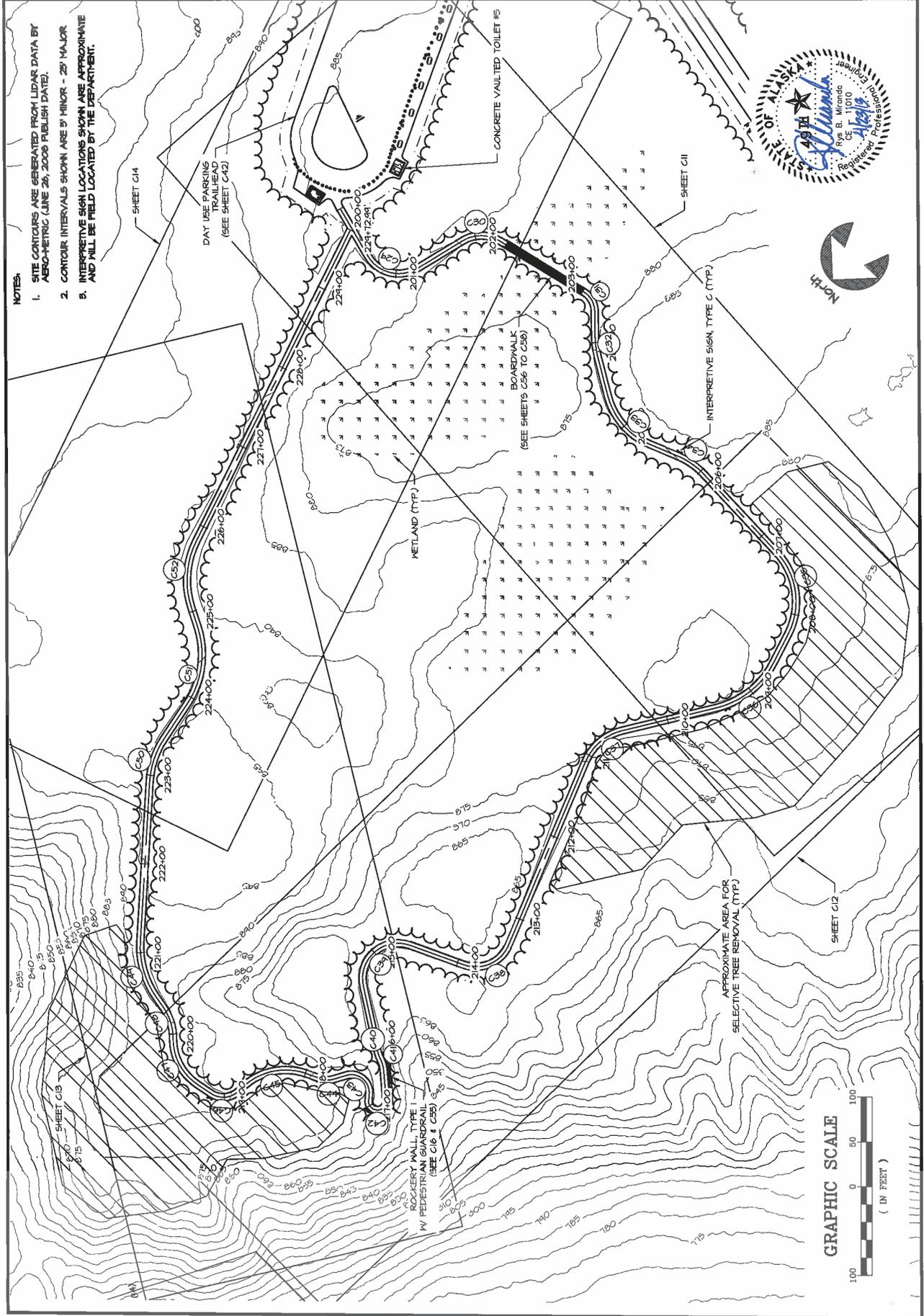


PREPARED: SLS
DRAWN: RBW/SLS
REVIEWED: RBW
DATE: 4/10/2015
SHEET 16

C10
OF 64 SHEETS

NOTES:

1. SITE CONTOURS ARE GENERATED FROM LIDAR DATA BY AERO-METRIC (JUNE 26, 2008 PUBLISH DATE).
2. CONTOUR INTERVALS SHOWN ARE 5' MINOR - 20' MAJOR
3. INTERPRETIVE SIGN LOCATIONS SHOWN ARE APPROXIMATE AND WILL BE FIELD LOCATED BY THE DEPARTMENT.



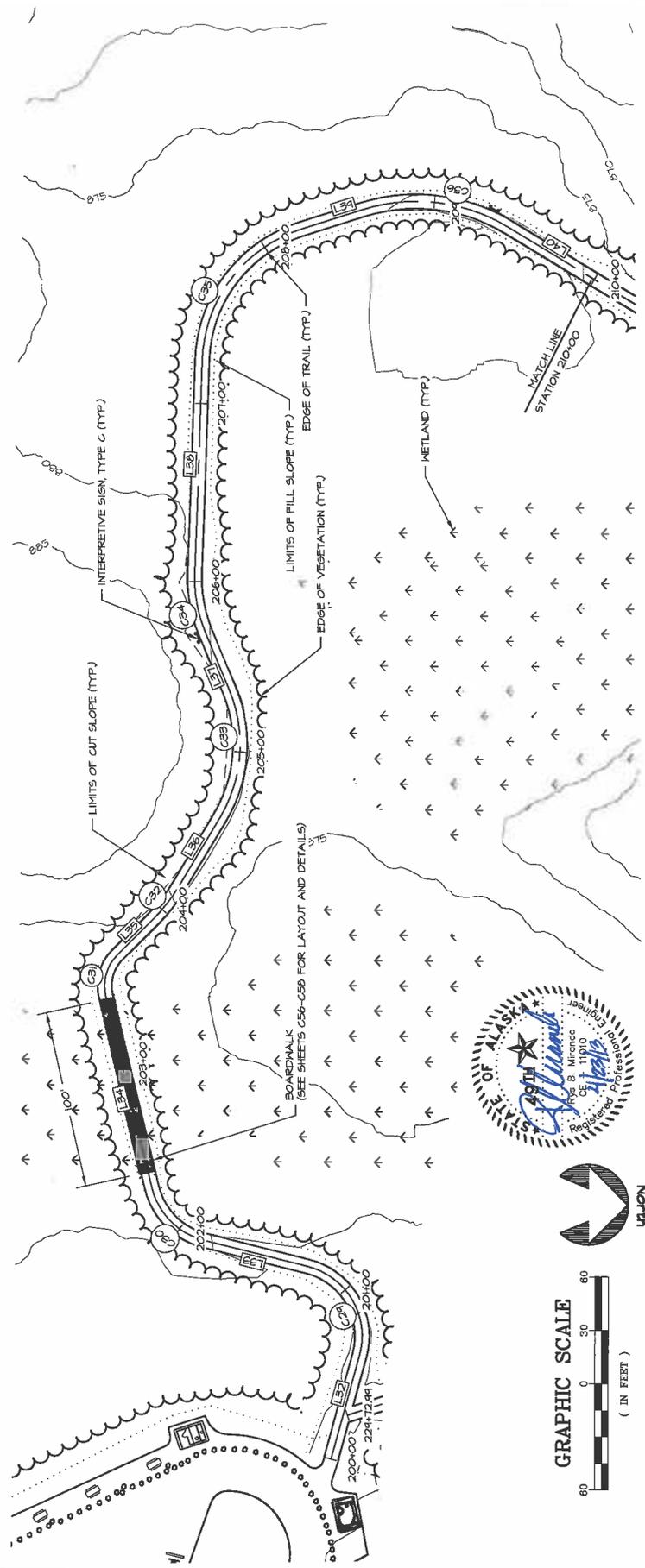


HORIZONTAL CURVE DATA

CURVE #	PC STA	PT STA	RADIUS	LENGTH	DELTA	RADIUS EASTING	RADIUS NORTHING
C29	200+61.0	201+24.90	40.00'	63.00'	41°22'47.50"	1602.284.16	3140.013.28
C30	201+84.61	202+28.51	40.00'	43.82'	62°45'54.84"	1602.182.28	3139.974.14
C31	203+38.91	203+64.35	25.00'	25.45'	58°14'11.81"	1602.088.46	3139.933.71
C32	203+92.45	204+16.98	100.00'	24.52'	14°03'03.58"	1601.980.46	3139.964.78
C33	204+61.43	205+35.71	80.00'	74.28'	53°11'54.40"	1601.952.47	3139.904.61
C34	205+10.06	205+04.41	80.00'	34.35'	24°56'04.48"	1601.954.59	3140.029.42
C35	207+24.50	208+22.34	80.00'	47.44'	69°47'04.98"	1601.794.18	3140.043.91
C36	208+59.10	209+44.24	100.00'	85.18'	48°48'26.24"	1601.741.31	3140.094.36

HORIZONTAL LINE DATA

LINE #	START STATION	LENGTH	DIRECTION	START EASTING	START NORTHING	END EASTING	END NORTHING
L32	200+00	61.0'	N74°55'27.87"W	3140.036.02	1602.294.56	1602.294.56	3140.051.91
L33	201+24.90	59.79'	S13°41'44.83"W	1602.245.30	3140.022.76	1602.281.14	3139.964.66
L34	202+28.51	110.40'	S76°27'44.67"W	1602.201.64	3139.935.25	1602.094.31	3139.904.40
L35	203+64.35	28.10'	N45°12'57.52"W	1602.070.85	3139.915.97	1602.050.90	3139.935.76
L36	204+16.98	44.45'	N84°16'01.11"W	1602.031.56	3139.920.74	1601.983.35	3139.973.46
L37	205+35.71	34.35'	S67°31'58.99"W	1601.921.90	3139.976.62	1601.840.16	3139.965.44
L38	206+04.41	120.44'	N97°51'56.53"W	1601.856.61	3139.954.48	1601.736.20	3139.963.96
L39	208+22.34	36.77'	N17°36'44.84"W	1601.663.13	3140.019.08	1601.652.00	3140.054.12
L40	209+44.24	108.34'	N81°11'36.40"E	1601.661.77	3140.131.91	1601.711.41	3140.228.84



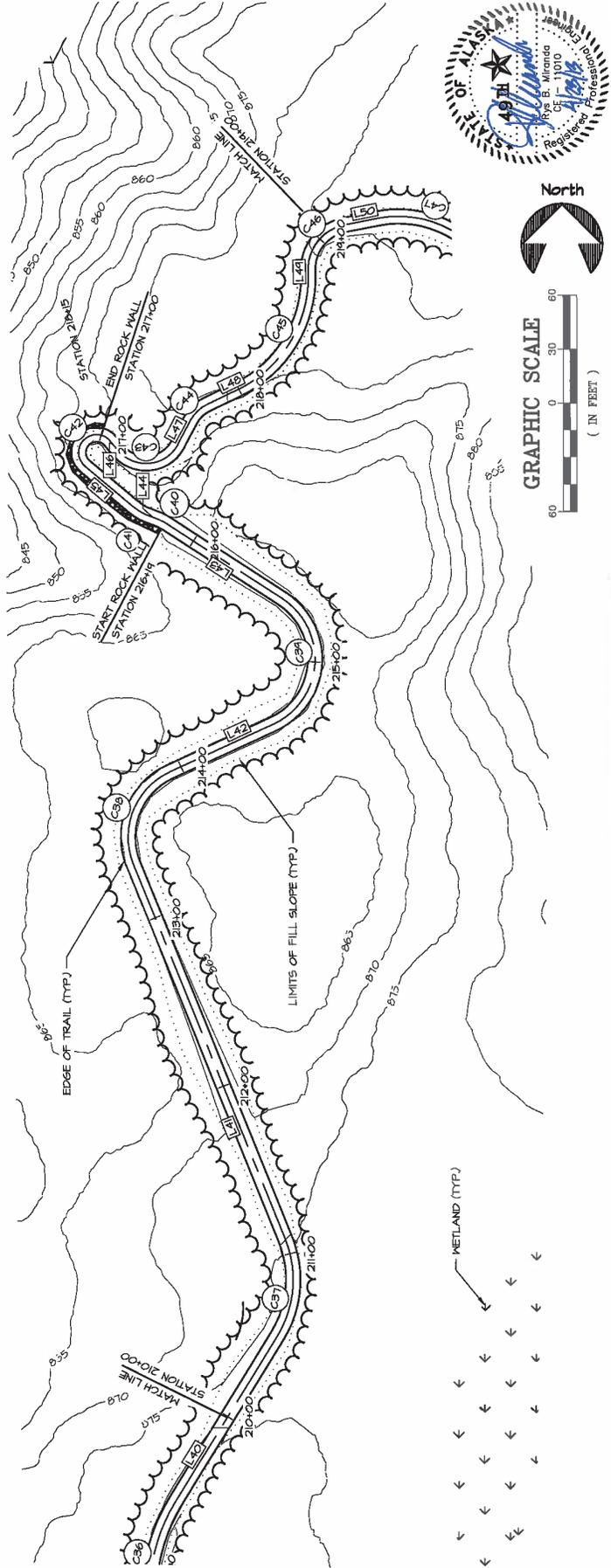


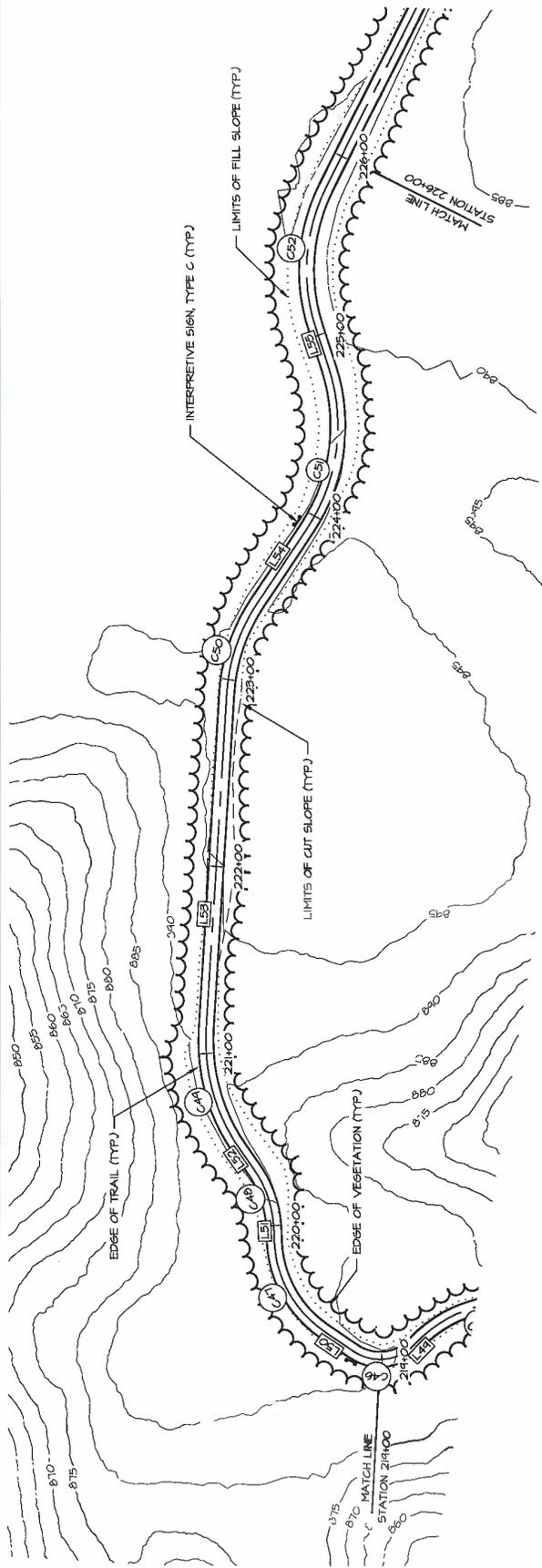
HORIZONTAL CURVE DATA

CURVE #	PC STA	PT STA	RADIUS	LENGTH	DELTA	RADIUS EASTING	RADIUS NORTHING
C37	210+52.68	211+08.56	60.00'	55.88'	59°21'56.48"	1601666.58	31402591.81
C38	215+32.52	215+43.15	40.00'	60.81'	87°06'18.78"	1601674.75	3140504.92
C39	214+56.44	215+41.64	40.00'	85.21'	122°02'58.84"	1601698.20	3140604.21
C40	214+18.47	216+22.85	20.00'	4.18'	11°58'24.01"	1601644.64	3140662.85
C41	216+21.45	216+34.65	22.09'	5.30'	13°30'38.90"	1601653.05	3140704.94
C42	216+13.22	217+04.93	10.00'	9.71'	181°42'43.60"	1601617.47	3140718.27
C43	217+11.61	217+54.66	20.16'	43.05'	122°14'49.48"	1601644.66	3140792.45
C44	217+67.65	217+80.38	20.23'	12.73'	36°03'30.03"	1601687.42	3140771.06
C45	217+48.66	218+74.52	10.56'	80.85'	65°39'21.20"	1601664.35	3140816.75
C46	218+81.03	219+16.01	25.00'	34.98'	80°04'27.15"	1601759.84	3140920.71
C47	218+34.76	219+40.88	60.00'	56.22'	59°41'11.68"	1601785.08	3140790.07

HORIZONTAL LINE DATA

LINE #	START STATION	LENGTH	DIRECTION	START EASTING	START NORTHING	END EASTING	END NORTHING
L41	211+08.56	223.76'	N22° 10' 20.08"W	1601722.15	3140282.61	1601687.10	3140484.82
L42	215+43.15	63.31'	N64° 55' 58.70"E	1601651.80	3140541.15	1601715.15	3140567.87
L43	215+41.64	76.82'	N57° 07' 00.19"W	1601719.92	3140637.80	1601655.40	3140674.51
L44	216+22.85	6.81'	N64° 25' 41.18"W	1601651.67	3140681.37	1601645.30	3140683.76
L45	216+40.35	32.87'	N50° 00' 51.30"W	1601636.14	3140684.56	1601610.45	3140710.84
L46	217+04.93	6.67'	S94° 15' 56.18"E	1601624.21	3140725.65	1601628.43	3140720.44
L47	217+54.66	12.99'	N28° 07' 44.44"E	1601663.45	3140725.14	1601684.56	3140796.60
L48	217+80.38	18.28'	N64° 11' 19.47"E	1601678.61	3140745.27	1601645.07	3140783.23
L49	218+74.52	15.2'	N1° 28' 01.75"W	1601784.88	3140818.55	1601784.84	3140820.07
L50	218+16.01	18.75'	N78° 41' 25.42"E	1601754.83	3140845.23	1601773.32	3140848.90



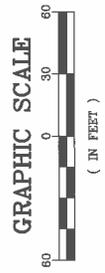


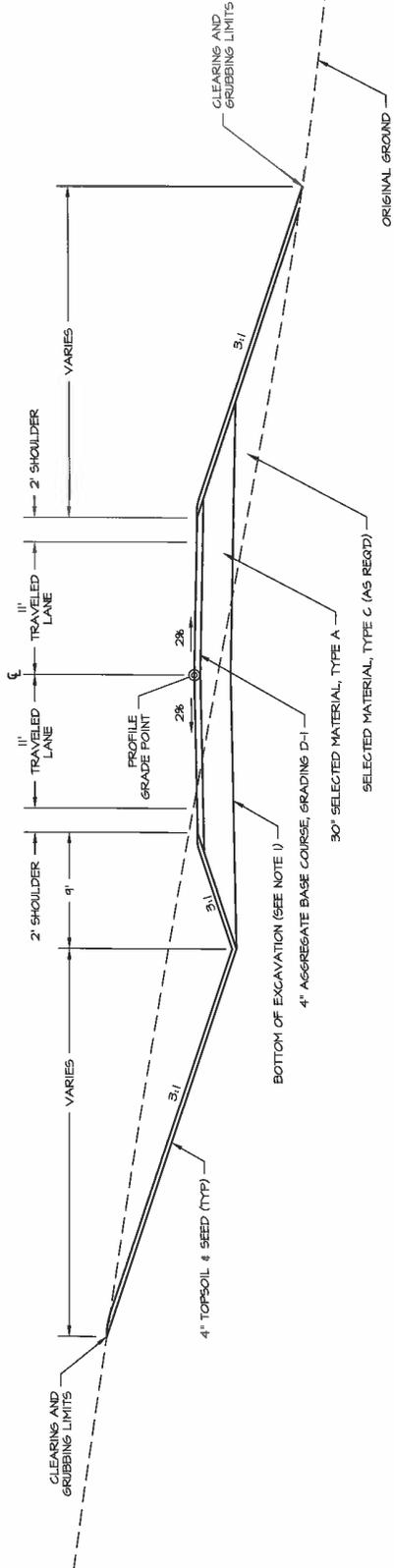
HORIZONTAL CURVE DATA

CURVE #	PC STA	PT STA	RADIUS	LENGTH	DELTA	RADIUS EASTING	RADIUS NORTHING
C40	219+48.62	220+32.65	60.00'	34.03'	32°29'54.60"	1601871.61	3140273.56
C44	220+45.35	221+2.84	100.00'	61.28'	36°53'00.06"	1601856.87	3140113.72
C50	222+42.21	223+44.84	100.00'	52.63'	30°08'11.08"	1601975.84	3140519.32
C51	223+42.04	224+81.98	100.00'	84.95'	51°32'11.32"	1602181.27	3140572.85
C52	225+03.91	225+81.54	100.00'	77.63'	44°28'47.71"	1602109.86	3140384.75

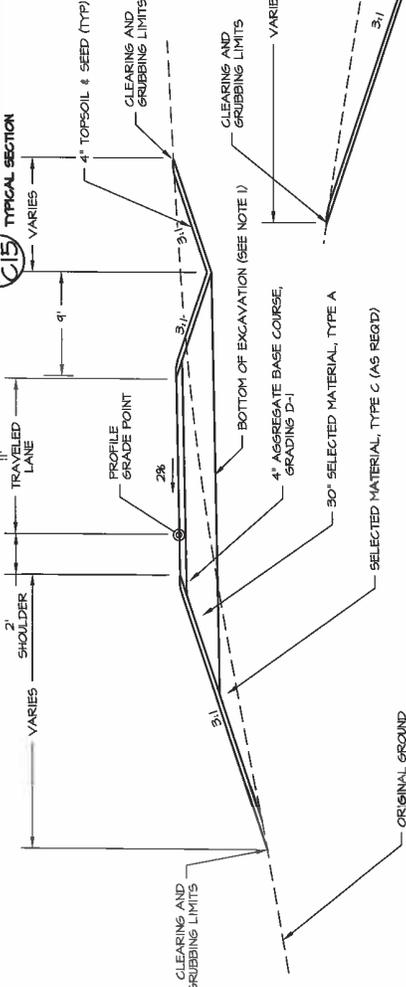
HORIZONTAL LINE DATA

LINE #	START STATION	LENGTH	DIRECTION	START EASTING	START NORTHING	END EASTING	END NORTHING
L51	219+40.48	7.64'	S41°31'16.84"E	1601825.58	3140254.34	1601831.17	3140251.24
L52	220+32.65	12.90'	S90°07'11.50"E	1601861.31	3140214.45	1601874.68	3140212.24
L53	221+2.84	174.37'	S41°34'11.44"E	1601931.66	3140790.08	1602050.70	3140645.88
L54	223+44.84	47.20'	S11°25'00.36"E	1602073.91	3140519.32	1602083.25	3140553.05
L55	224+81.98	21.92'	S62°51'11.68"E	1602185.80	3140483.78	1602156.33	3140473.82





1 TWO-LANE GRAVEL ROADWAY
TYPICAL SECTION



2 CAMPGROUND ACCESS ROAD
TYPICAL SECTION

NOTES:

1. REMOVE ALL ORGANICS, SILTS, DEBRIS, AND FROZEN MATERIAL FROM BENEATH THE STRUCTURAL EMBANKMENT.
2. ROADWAY WIDTHS WILL VARY AT RADIUS RETURNS, TRANSITIONS, TAPERS, AND SHOULDER WIDENINGS. SEE SHEET C4 FOR OUTSIDE SHOULDER WIDENING AT CURVES.



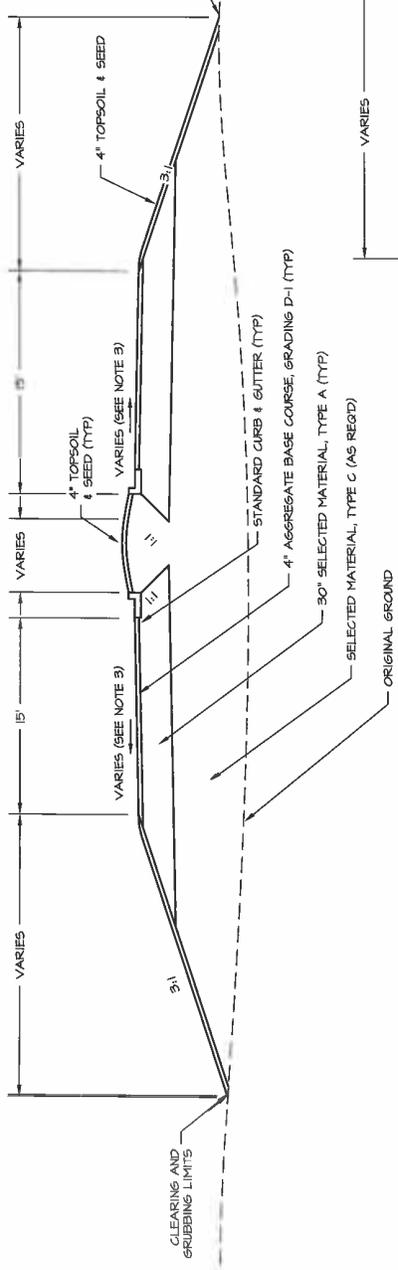
3 DRIVEWAY
TYPICAL SECTION

SELECTED MATERIAL, TYPE C (AS REQ'D)
SELECTED MATERIAL, TYPE A (AS REQ'D)

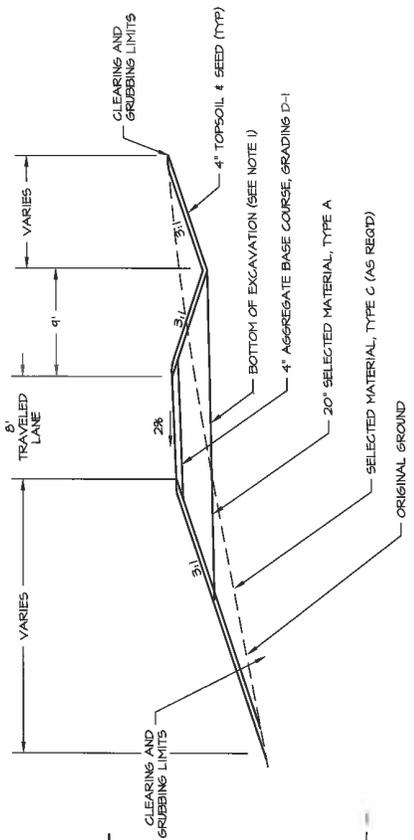


NOTES:

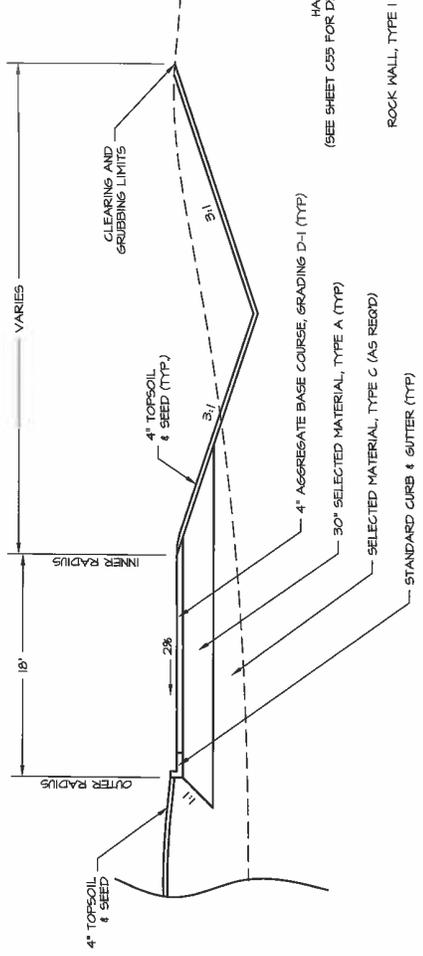
1. REMOVE ALL ORGANICS, SLITS, DEBRIS, AND FROZEN MATERIAL FROM BENEATH THE STRUCTURAL EMBANKMENT.
2. ROADWAY WIDTHS WILL VARY AT RADIUS RETURNS, TRANSITIONS, TAFERS, AND SHOULDER WIDENINGS. SEE SHEET C1 FOR OUTSIDE SHOULDER WIDENING AT CURVES.
3. CROSS-SLOPE ALONG ROUNDABOUT CHANNELIZATION WILL VARY AND SERVES AS A TRANSITIONAL ZONE FROM ROADWAY CROWN TO ROUNDABOUT CROSS-SLOPE.



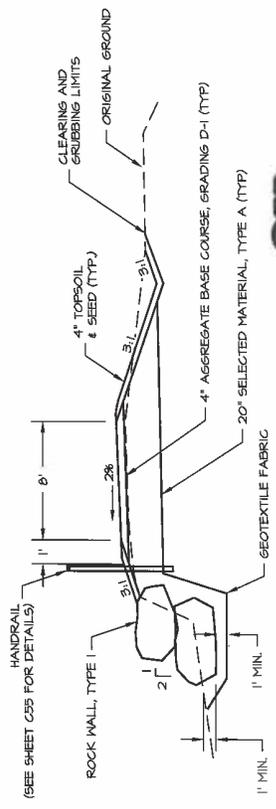
1 ROUNDABOUT CHANNELIZATION
 TYPICAL SECTION
 C16



2 TRAIL
 TYPICAL SECTION
 C16



3 ROUNDABOUT - CURBED SECTION
 TYPICAL SECTION
 C16

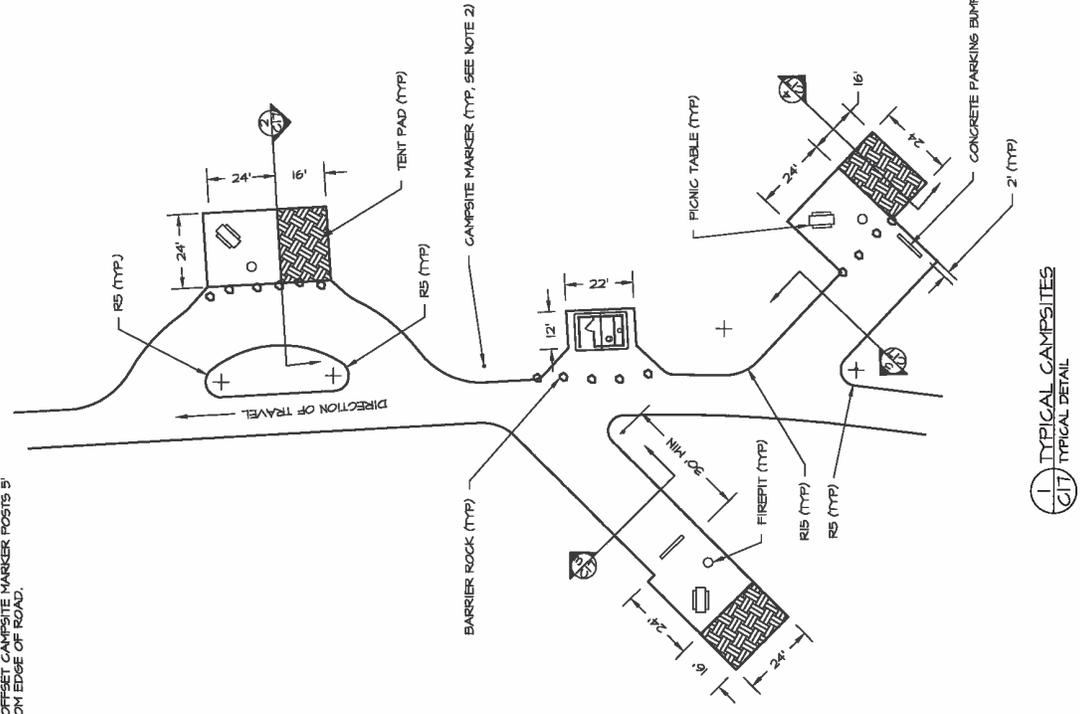
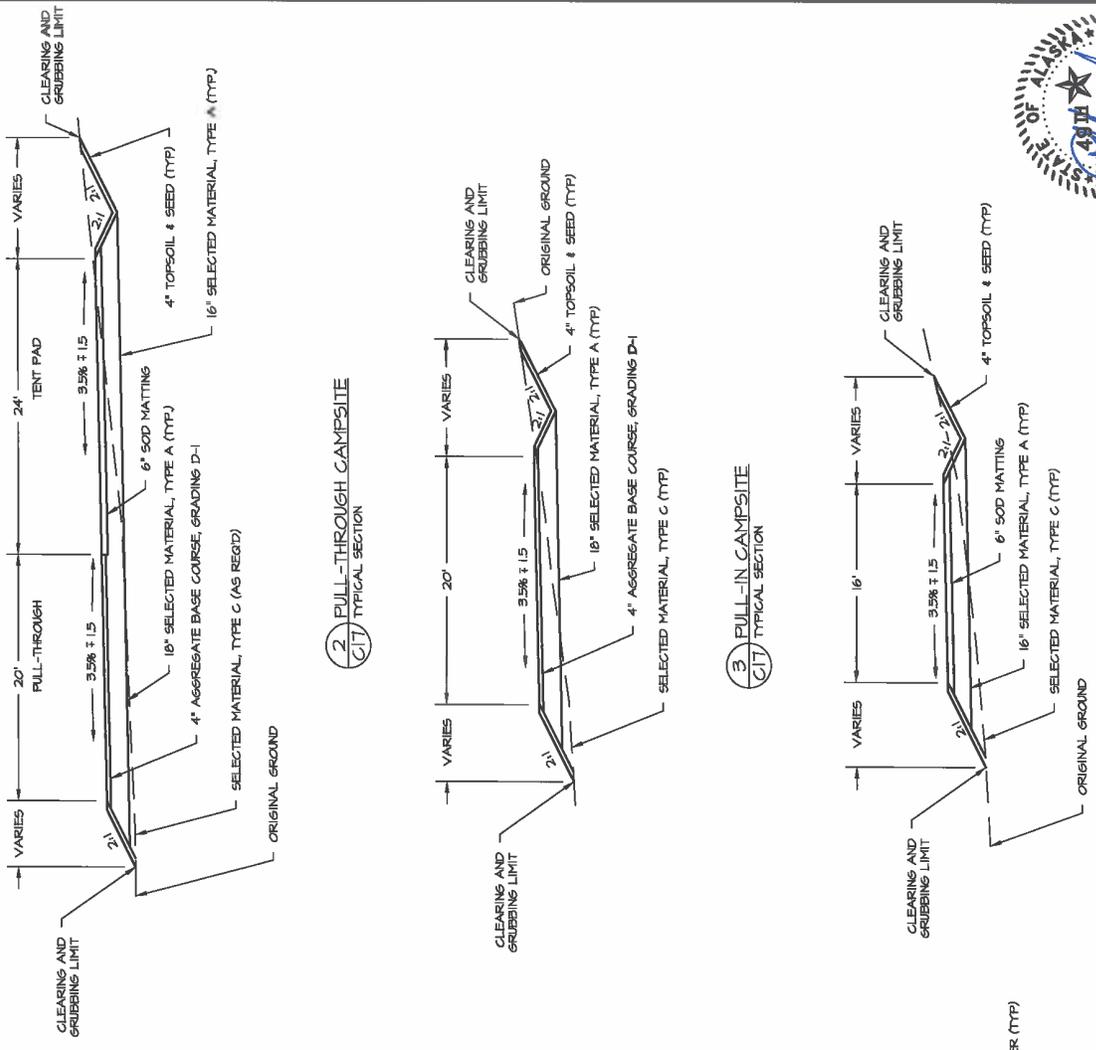


4 TRAIL
 ROCK WALL SECTION
 C16

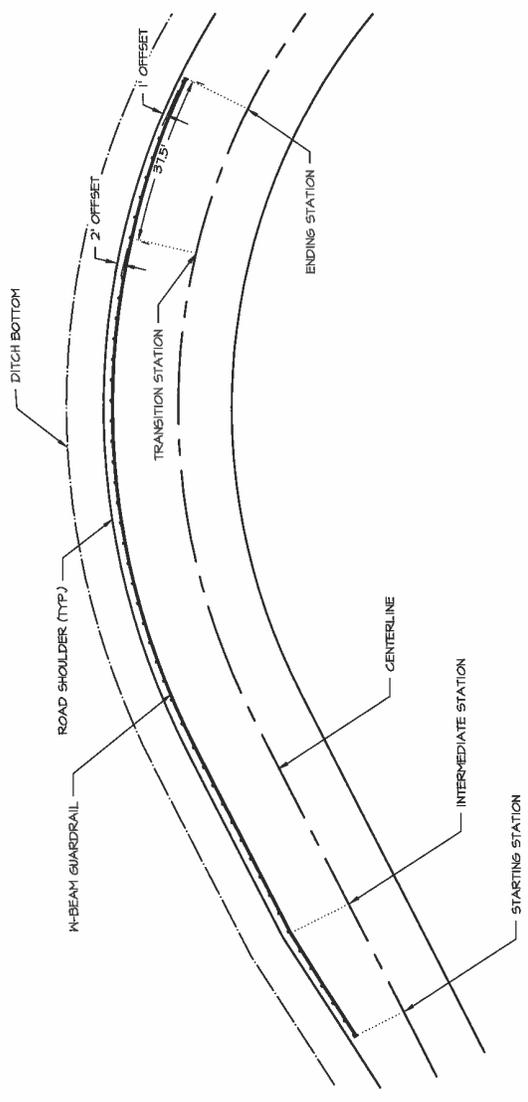




NOTES:
 1. THE ENGINEER WILL FIELD LOCATE BARRIER ROCKS, PICNIC TABLES, AND FIREPITS.
 2. OFFSET CAMPSITE MARKER POSTS 5' FROM EDGE OF ROAD.



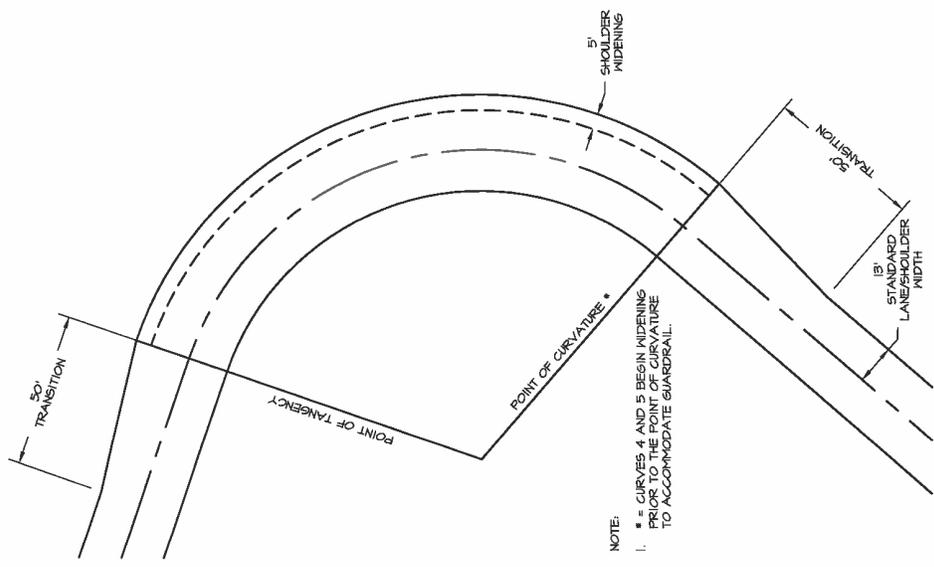
1 TYPICAL CAMPSITES
 C17 TYPICAL DETAIL



2 GUARDRAIL LAYOUT
 TYPICAL PLAN

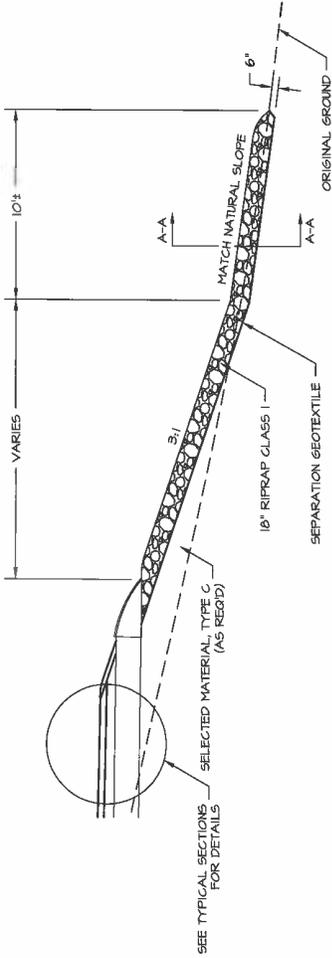
606(1) W-BEAM GUARDRAIL TABLE

CURVE	STARTING STATION	OFFSET	INTERMEDIATE STATION	OFFSET	TRANSITION STATION	OFFSET	ENDING STATION	OFFSET
4	29+56.00	13' L	29+86.00	16' L	29+92.50	16' L	29+90.00	17' L
5	31+05.00	17' R	-	-	31+42.50	16' R	32+64.00	16' R
6	34+31.00	16' R	-	-	41+41.00	16' L	41+70.500	17' L

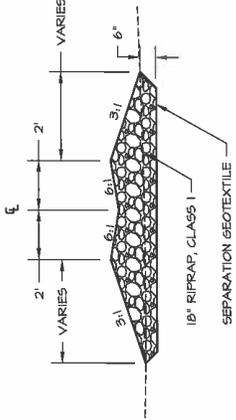


NOTE:
 1. * = CURVES 4 AND 5 BEGIN WIDENING PRIOR TO THE POINT OF CURVATURE TO ACCOMMODATE GUARDRAIL.

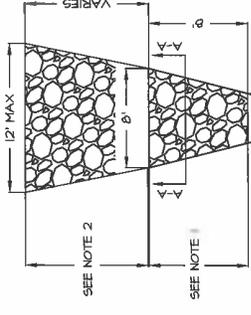
1 CURVE SHOULDER WIDENING
 TYPICAL PLAN



1 ROCK OUTFALL
 C19 TYPICAL SECTION

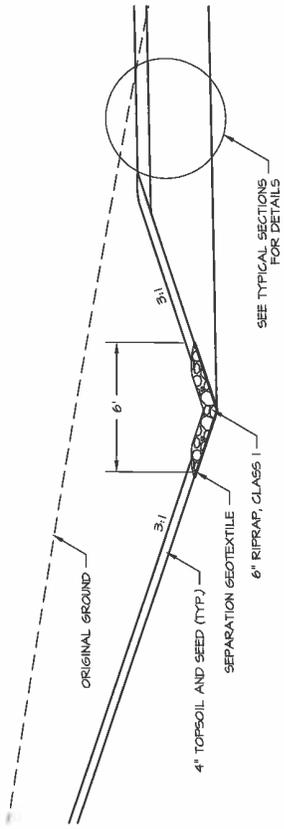


3 SECTION A-A
 C19

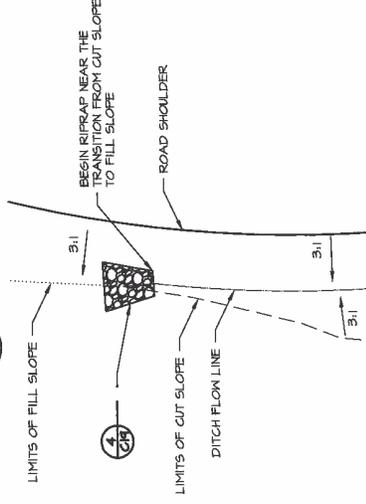


4 ROCK OUTFALL
 C19 PLAN VIEW

NOTES:
 1. IF THE SLOPE AT THE CULVERT EXIT IS FLATTER THAN 3:1, EXTEND RIPRAP 6' PAST THE CULVERT END SECTION.
 2. IF THE SLOPE AT THE CULVERT EXIT IS STEEPER THAN 3:1, THE RIPRAP AT THE END OF THE FILL SLOPE OR TO MATCH EXISTING GROUND AS SHOWN ON DETAIL 3 OF THIS SHEET



2 STEEP DITCH (ROADWAY GRADE OVER 5%)
 C19 TYPICAL SECTION

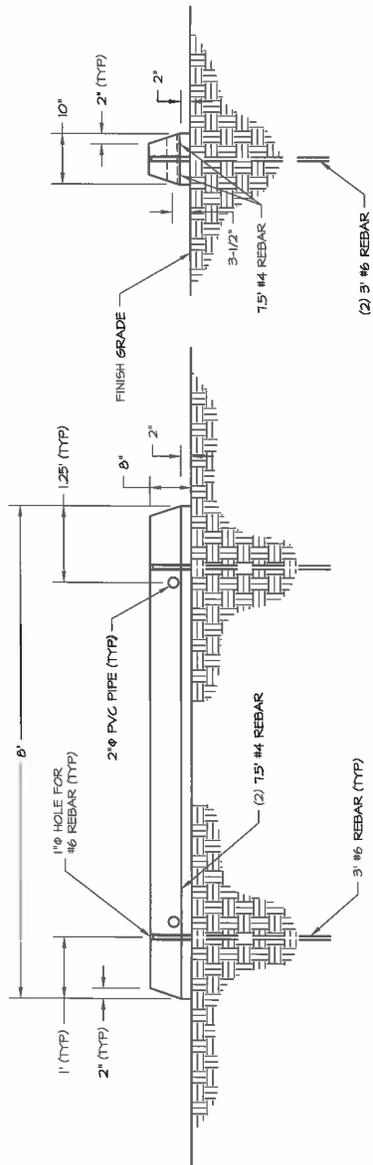


5 ROCK OUTFALL IN DITCH
 C19 PLAN VIEW

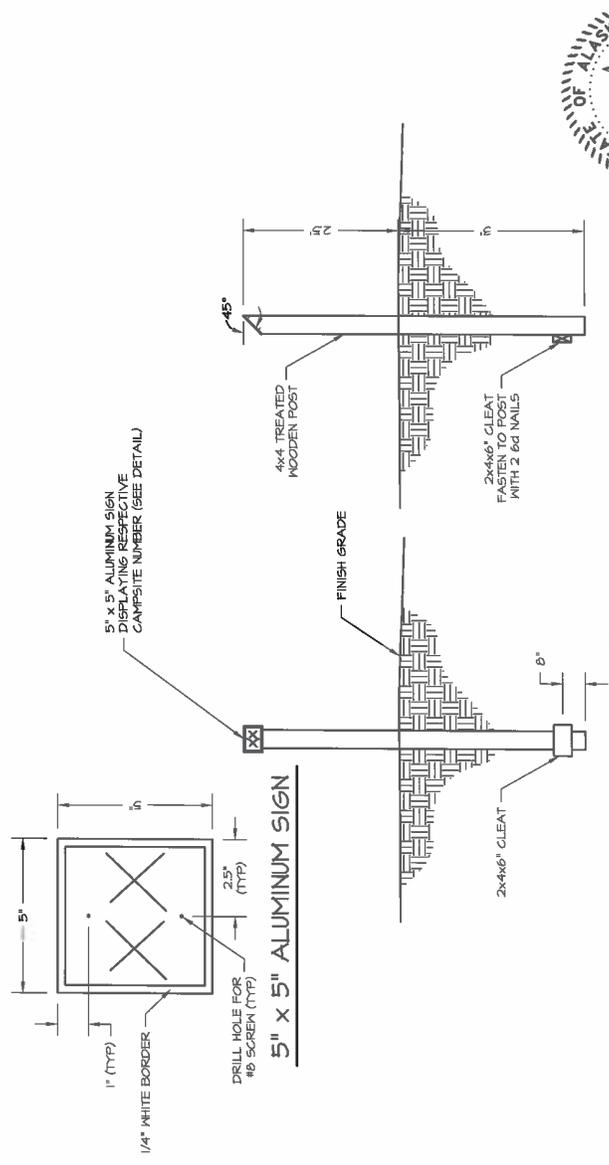


PREPARED: SLS
DRAWN: RSR/VLS
REVIEWED: RRM
DATE: 4/10/2019
SHEET 26

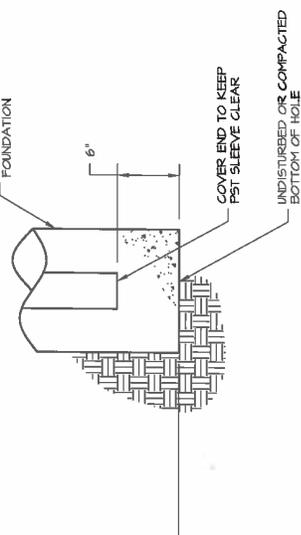
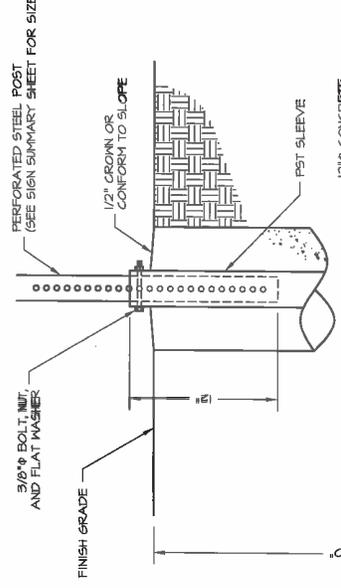
C20
OF 64 SHEETS



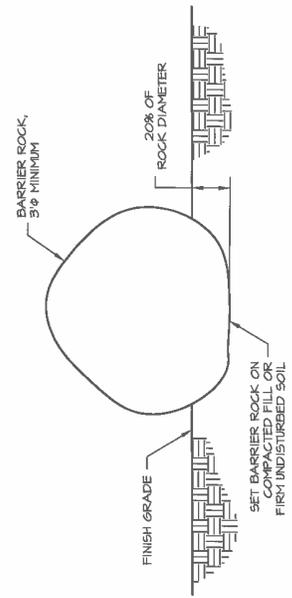
3 CONCRETE PARKING BUMPER
C20 TYPICAL DETAIL



4 CAMPSITE MARKER
C20 TYPICAL DETAIL

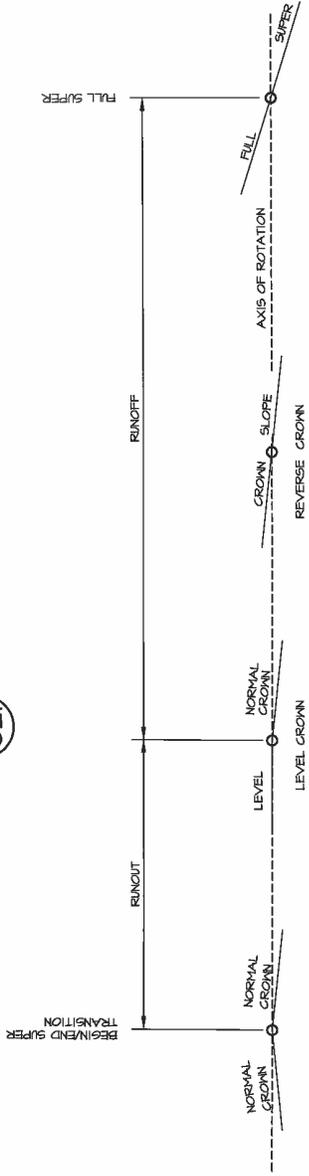
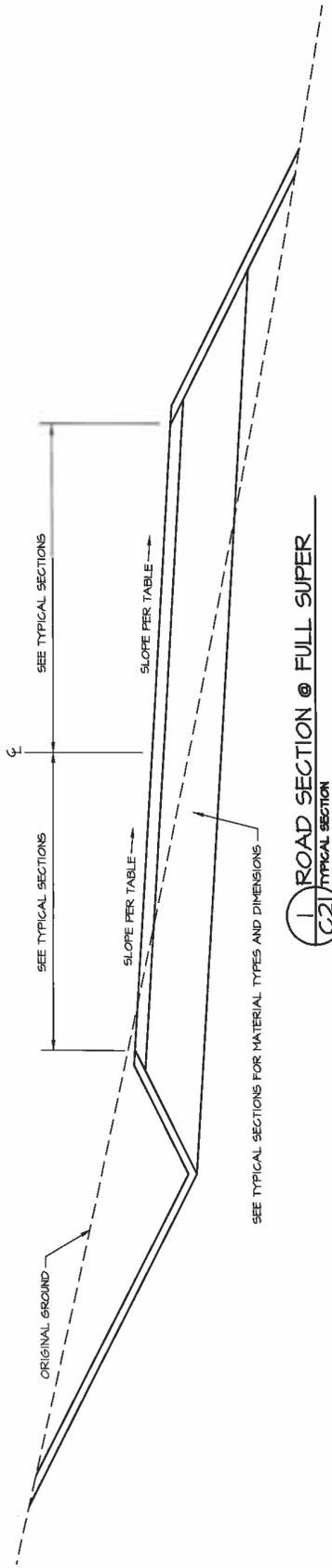


1 CONCRETE SIGN FOUNDATION
C20 TYPICAL DETAIL



2 BARRIER ROCK
C20 TYPICAL DETAIL

CAMPSITE MARKER POST NOTE:
1. FASTEN 5x5" ALUMINUM SIGN WITH 2 #6x3/4" TAMPER RESISTANT SCREWS.
2. NUMBER ON ALUMINUM SIGN SHALL MATCH CAMPSITE DESIGNATION AS SHOWN ON THE SITE PLAN.



SUPERELEVATION TABLE

CURVE	END NORMAL CROWN	RUNOUT	LEVEL CROWN	RUNOFF	REVERSE CROWN	BEGIN FULL SUPER	e (%)	END FULL SUPER	REVERSE CROWN	RUNOFF	LEVEL CROWN	RUNOUT	START NORMAL CROWN
4	23+65.66	32.22'	23+47.08	50.00'	24+30.10	24+55.88	3.6	28+75.21	24+00.99	50.00'	24+33.21	32.22'	24+65.43
5	50+79.35	32.22'	51+11.57	50.00'	51+43.79	51+64.57	3.6	56+40.24	56+166.02	50.00'	56+48.24	32.22'	57+30.46
6	59+00.18	32.00'	59+32.18	32.00'	59+64.18	59+64.18	2.0	42+33.85	42+33.85	32.00'	42+65.85	32.00'	42+47.85
7	43+00.35	32.00'	43+32.35	32.00'	43+64.35	43+64.35	2.0	49+19.54	49+13.54	32.00'	49+45.54	32.00'	49+77.54
8	49+46.62	32.00'	49+78.62	32.00'	49+10.62	49+10.62	2.0	50+46.14	50+46.14	32.00'	51+28.14	32.00'	51+60.14

- NOTES:
1. SUPER ELEVATION ROTATION IS ABOUT THE CENTERLINE.
 2. BUILD SUPER ELEVATION INTO SUBGRADE AND CARRY THROUGH SHOULDERS.
 3. WHEN SUPERELEVATION EQUALS 2%, REVERSE CROWN AND FULL SUPER WILL BE THE SAME STATION.
 4. MILDENING FOR CURVATURE DOES NOT CHANGE THE LOCATION OF THE AXIS OF ROTATION.

ITEM 615(I) STANDARD SIGN (CONTINUED)

ITEM 615(I) STANDARD SIGN

SIGN NO.	STATION / OFFSET	FACING DIRECTION	TYPE	LEGEND	SIZE (INxIN)	AREA (S.F.)	THICKNESS (IN.)	SIGN POST DATA TYPE SIZE (IN) NO.		
S11	23+50 L	NE	W2-6		30 x 30	6.25	0.125	PST 2.5 x 2.5		
				ROUNDABOUT	24 x 12	2.00	0.125			
					18 x 18	2.25	0.125			
S12	23+50 R	SW	W1-5		30 x 30	6.25	0.125	PST 2.5 x 2.5		
					18 x 18	2.25	0.125			
					24 x 30	5.00	0.125			
S13	51+80 R	NW	R2-1		30 x 30	6.25	0.125	PST 2.5 x 2.5		
					18 x 18	2.25	0.125			
					24 x 30	5.00	0.125			
S14	51+80 L	SE	W1-5		30 x 30	6.25	0.125	PST 2.5 x 2.5		
					18 x 18	2.25	0.125			
					24 x 30	5.00	0.125			
S15	68+75 R	N	R2-1		42 x 24	7.00	0.125	PST 2.5 x 2.5		
					36x36x36	3.90	0.125			
					24 x 30	5.00	0.125			
S16	68+75 L	S	R2-1		42 x 24	7.00	0.125	PST 2.5 x 2.5		
					36x36x36	3.90	0.125			
					24 x 30	5.00	0.125			
TOTALS THIS SHEET							121.95		PST 2.5 x 2.5	16

SIGN NO.	STATION / OFFSET	FACING DIRECTION	TYPE	LEGEND	SIZE (INxIN)	AREA (S.F.)	THICKNESS (IN.)	SIGN POST DATA TYPE SIZE (IN) NO.
S1	10+24 L	SE	R1-1		30 x 30	6.25	0.125	PST 2.5 x 2.5
					24 x 30	5.00	0.125	
					30 x 30	6.25	0.125	
S2	11+80 R	NW	R2-1		30 x 30	6.25	0.125	PST 2.5 x 2.5
					24 x 30	5.00	0.125	
					30 x 30	6.25	0.125	
S3	13+50 L	S	W5-1		30 x 30	6.25	0.125	PST 2.5 x 2.5
					24 x 30	5.00	0.125	
					18 x 18	2.25	0.125	
S4	15+50 R	NW	W2-6		30 x 30	6.25	0.125	PST 2.5 x 2.5
					24 x 12	2.00	0.125	
					18 x 18	2.25	0.125	
S5	17+50 R	N	R1-2		36x36x36	3.90	0.125	PST 2.5 x 2.5
					30 x 30	6.25	0.125	
					24 x 30	5.00	0.125	
S6	17+85 R	NW	R6-6A		42 x 24	7.00	0.125	PST 2.5 x 2.5
					36x36x36	3.90	0.125	
					24 x 30	5.00	0.125	
S7	18+60 R	S	R6-6A		42 x 24	7.00	0.125	PST 2.5 x 2.5
					36x36x36	3.90	0.125	
					24 x 30	5.00	0.125	
S8	19+00 R	SW	R1-2		30 x 30	6.25	0.125	PST 2.5 x 2.5
					24 x 30	5.00	0.125	
					24 x 30	5.00	0.125	
S9	20+00 L	SE	R6-6A		42 x 24	7.00	0.125	PST 2.5 x 2.5
					36x36x36	3.90	0.125	
					24 x 30	5.00	0.125	
S10	20+25 L	SE	R1-2		30 x 30	6.25	0.125	PST 2.5 x 2.5
					24 x 30	5.00	0.125	
					24 x 30	5.00	0.125	

NOTES:

- PST DENOTES PERFORATED SQUARE TUBE.
- SEE SITE PLAN FOR APPROXIMATE SIGN LOCATION. THE ENGINEER WILL FIELD LOCATE FINAL SIGN LOCATION.



ITEM 615(I) STANDARD SIGN (CONTINUED)

ITEM 615(I) STANDARD SIGN (CONTINUED)

SIGN NO.	STATION / OFFSET	FACING DIRECTION	TYPE	LEGEND	SIZE (IN/IN)	AREA (S.F.)	THICKNESS (IN.)	SIGN POST DATA TYPE	SIZE (IN)	NO.
S27	83+00 R	NE	RL-100		24 X 24	4.00	0.125	PST	2.5 X 2.5	1
		NE	CS-1	FFC AREA	24 X 12	2.00	0.125			
		NE	D7-2	SEE NOTES	155 X 36	38.75	0.125			
S28		NE	RL-100		24 X 24	4.00	0.125	P	5 Ø	2
		NE	RL-068		24 X 24	4.00	0.125			
		NE	D7-2	SEE NOTES	155 X 36	38.75	0.125			
S29		NE	RL-100		24 X 24	4.00	0.125	P	5 Ø	2
		NE	RL-068		24 X 24	4.00	0.125			
		NE	D7-2	SEE NOTES	155 X 36	38.75	0.125			
TOTALS THIS SHEET										11
TOTALS FOR PROJECT										27

SIGN NO.	STATION / OFFSET	FACING DIRECTION	TYPE	LEGEND	SIZE (IN/IN)	AREA (S.F.)	THICKNESS (IN.)	SIGN POST DATA TYPE	SIZE (IN)	NO.
S17	76+00 R	NE	RS-068		24 X 24	4.00	0.125			
		NE	D7-RA-80	P	24 X 24	4.00	0.125	PST	2.5 X 2.5	1
		NE	D9-301R (BROWN)		24 X 6	1.00	0.125			
S18	78+00 R	SE	R1-1	STOP	30 X 30	6.25	0.125	PST	2.5 X 2.5	1
		SW	RS-068		24 X 24	4.00	0.125			
		SW	D7-RA-80	P	24 X 24	4.00	0.125			
S19		SW	D9-301L (BROWN)		24 X 6	1.00	0.125	PST	2.5 X 2.5	1
		SW	R6-1L	ONE WAY	36 X 12	3.00	0.125	PST	2.5 X 2.5	1
		NE	R1-1	STOP	30 X 30	6.25	0.125	PST	2.5 X 2.5	1
S22	88+80 R	NE	R6-1L	ONE WAY	36 X 12	3.00	0.125	PST	2.5 X 2.5	1
		SW	R1-1	STOP	30 X 30	6.25	0.125	PST	2.5 X 2.5	1
		N	R1-1	STOP	30 X 30	6.25	0.125	PST	2.5 X 2.5	1
S25	126+50 L	W	R6-1R	DO NOT ENTER	36 X 12	3.00	0.125	PST	2.5 X 2.5	1
		S	R5-1	RESERVED PARKING	30 X 30	6.25	0.125	PST	2.5 X 2.5	1
		W	R7-8		12 X 18	1.50	0.125			
S26	78+00 R (SEE C7)	W	R7-BA	VAN ACCESSIBLE	12 X 6	0.50	0.125	PST	2.5 X 2.5	1

NOTES:

- PST DENOTES PERFORATED STEEL TUBE AND P DENOTES STEEL PIPE (STANDARD WEIGHT).
- SEE SITE PLAN FOR APPROXIMATE SIGN LOCATIONS. THE ENGINEER WILL FIELD LOCATE FINAL SIGN LOCATION.
- LETTER SIZES FOR D7-2 SIGNS SHALL BE AS FOLLOWS:
"KESHA KEN" AT 6 INCHES
"CAMPGROUND" AT 6 INCHES
- S28 SHALL BE LOCATED 1000 FEET NORTH OF THE PROJECT DRIVEWAY.
S29 SHALL BE LOCATED 1000 FEET SOUTH OF THE PROJECT DRIVEWAY.
THE ENGINEER SHALL APPROVE THE FINAL LOCATION.

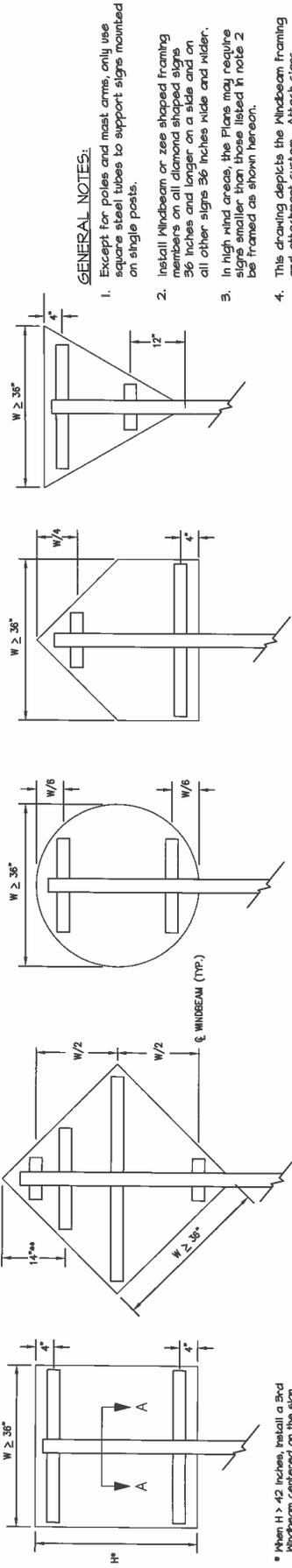


PREPARED: SLS
DRAWN: RBV/SLS
REVIEWED: RBM
DATE: 4/10/2015

SHEET 24

OF 64 SHEETS

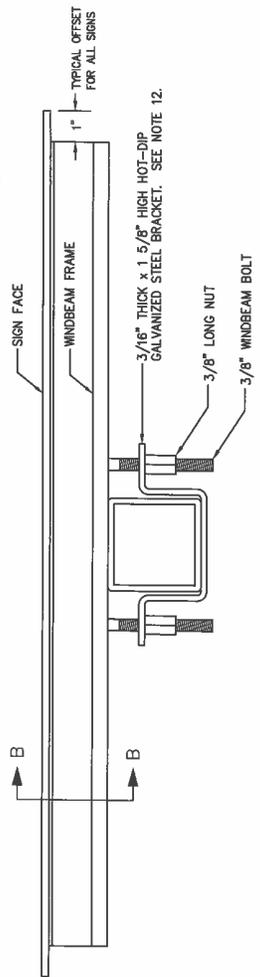




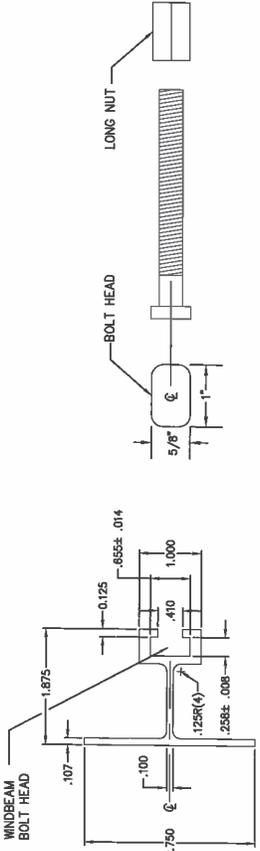
RECTANGLES AND TRAPEZOIDS

ROUNDS AND OCTAGONS

WINDBEAM LOCATIONS FOR EACH SIGN SHAPE
ELEVATION VIEW



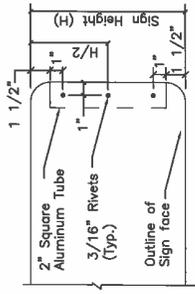
VIEW A - A TYPICAL SIGN ATTACHMENT DETAILS AT EACH WINDBEAM
PLAN VIEW



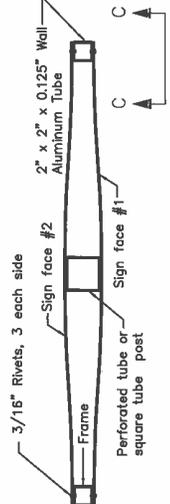
SECTION B - B WINDBEAM CROSS SECTION 3/8" WINDBEAM BOLT AND LONG NUT

GENERAL NOTES:

- Except for poles and mast arms, only use square steel tubes to support signs mounted on single posts.
- Install Mindbeam or zee shaped framing members on all diamond shaped signs 36 inches and longer on a side and on all other signs 36 inches wide and wider.
- In high wind areas, the Fligs may require signs smaller than those listed in note 2 be framed as shown hereon.
- This drawing depicts the Mindbeam framing and attachment system. Attach signs framed with zee shaped framing according to Standard Drawing 5-2010, using 1" shaped brackets and two bolts with nuts.
- The Engineer may approve other framing members, submit documents that detail the frame's cross section and strength, and method of attaching the frame to a post.
- Use framing members made from aluminum alloy 6061-T6.
- Each framing member shall be one continuous piece.
- Attach framing members to the sign panels with rivets or an Engineer approved, double sided, high strength, adhesive tape.
- With the adhesive tape, install two rivets in both ends of each framing member, and attach the framing members to the sign panels according to the tape manufacturer's written instructions, including:
 - The cleaning and handling of the sign panels and framing members.
 - The application of the adhesive tape.
- When rivets are used to attach framing members, install 2 rivets in each end and the balance on 8" maximum centers.
- Use 3/16" diameter rivets conforming to aluminum alloy 6061-T6 for cold driven rivets, or aluminum alloy 6061-T43 for hot driven rivets.
- The brackets used on even inch size tubes may also be used on tubes 1/2" smaller in size.



VIEW C - C



PLAN VIEW

D3-1 * D3-1A, D3-1D * STREET NAME SIGN FRAMING DETAIL
*THOSE WITH 6-INCH LETTERING ONLY

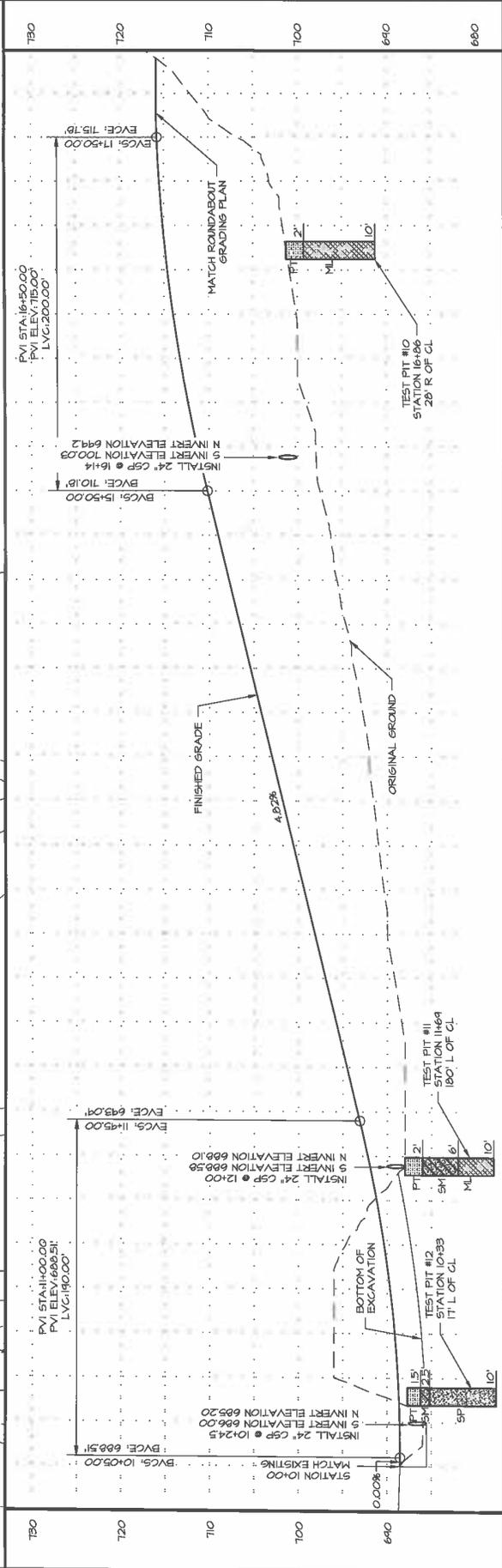
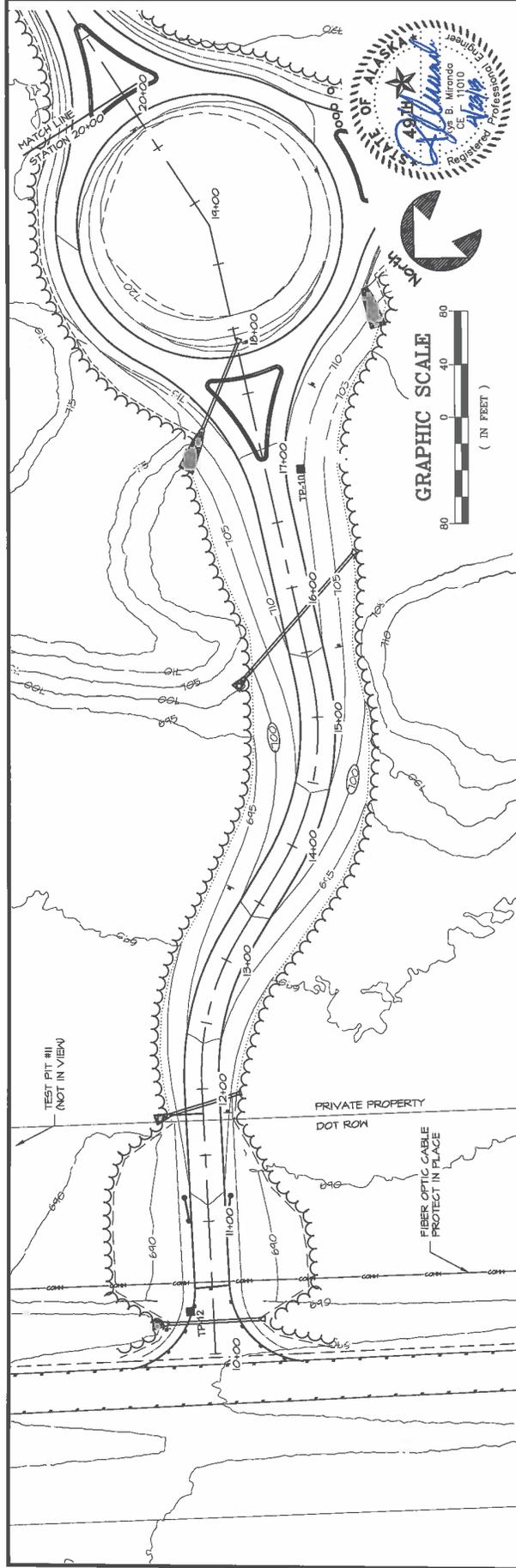
THESE DETAILS SUPERSEDE THE LIGHT SIGN FRAMING DETAILS ONLY ON STANDARD DRAWING 5-00.10 AND SUPERSEDES STANDARD DRAWING 5-01.00 IN ITS ENTIRETY.



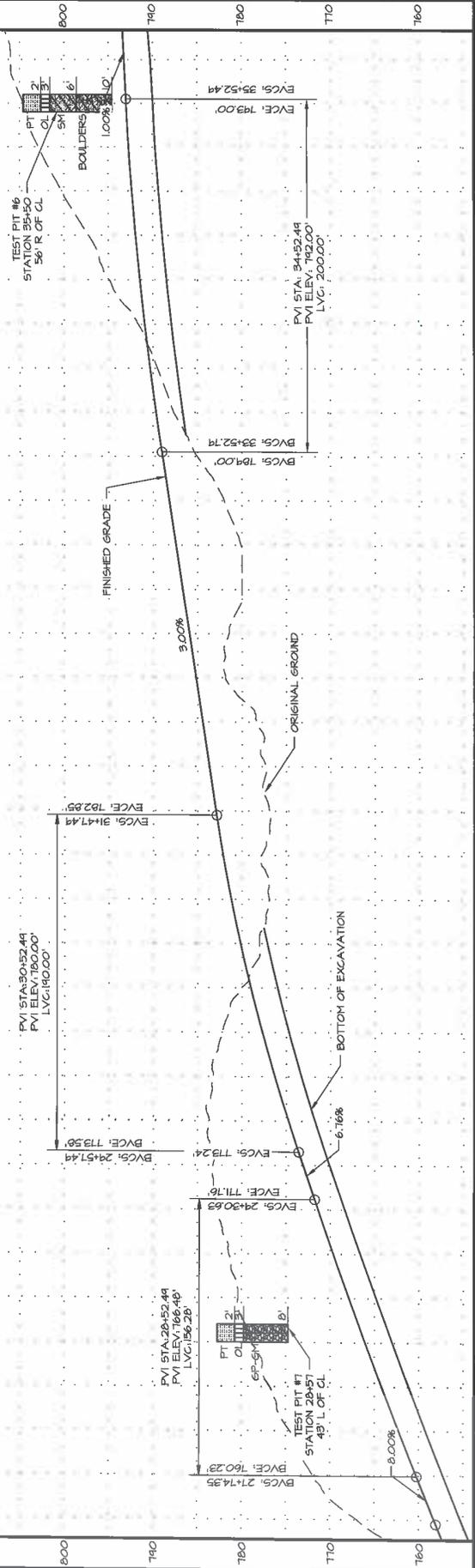
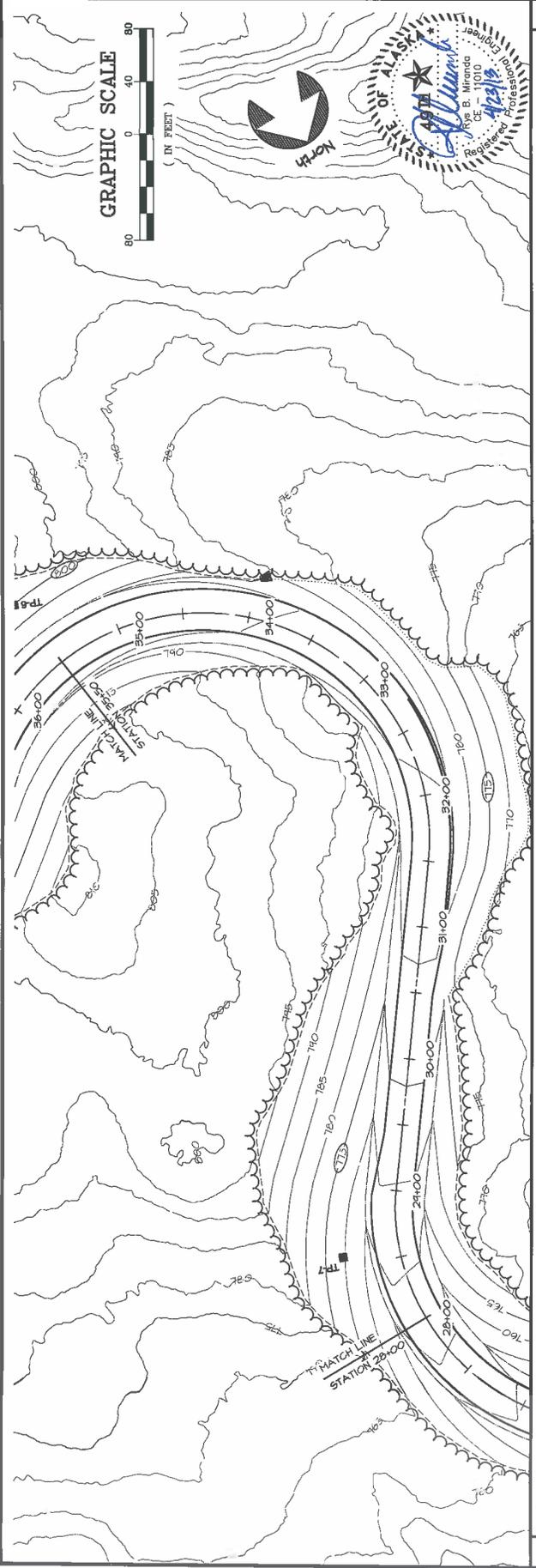


PREPARED: S.A.B.
 DRAWN: REM/SLS
 REVIEWED: REM
 DATE: 4/10/2019

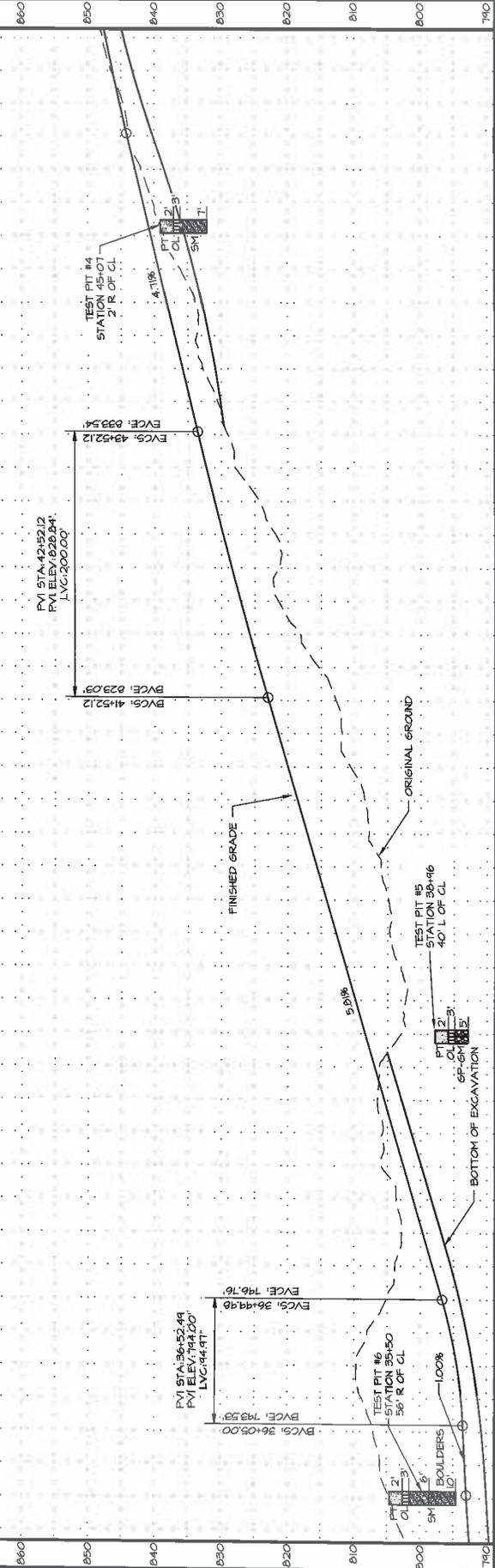
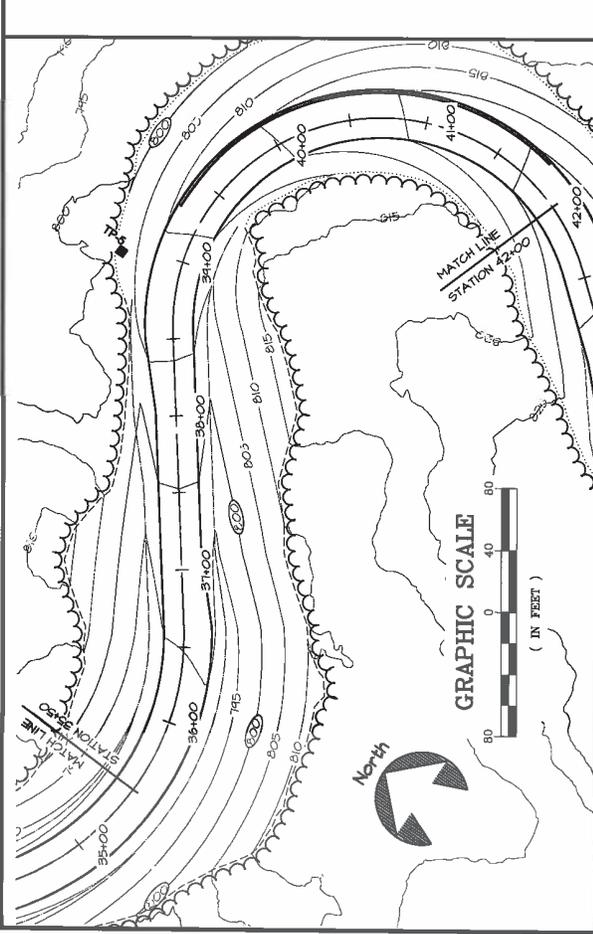
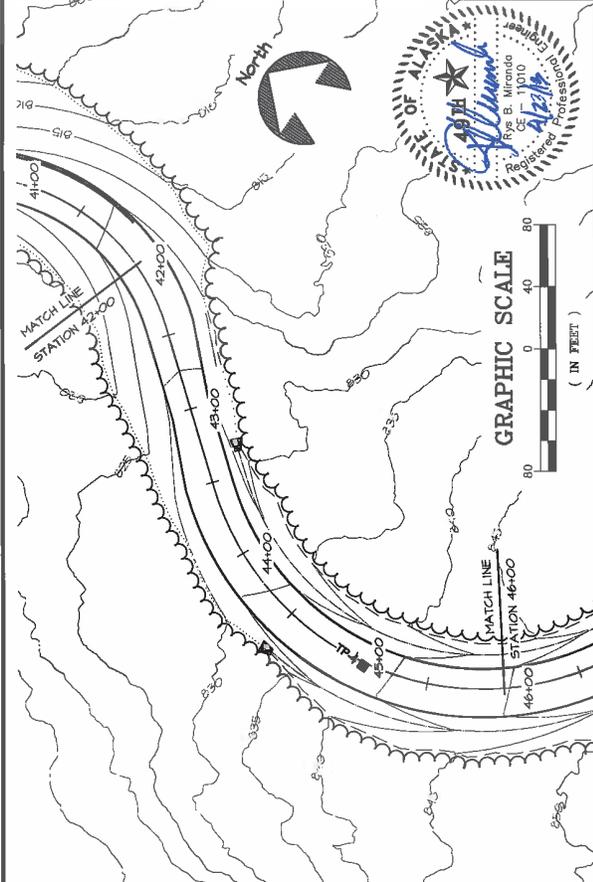
SHEET #1
 C25
 OF 64 SHEETS



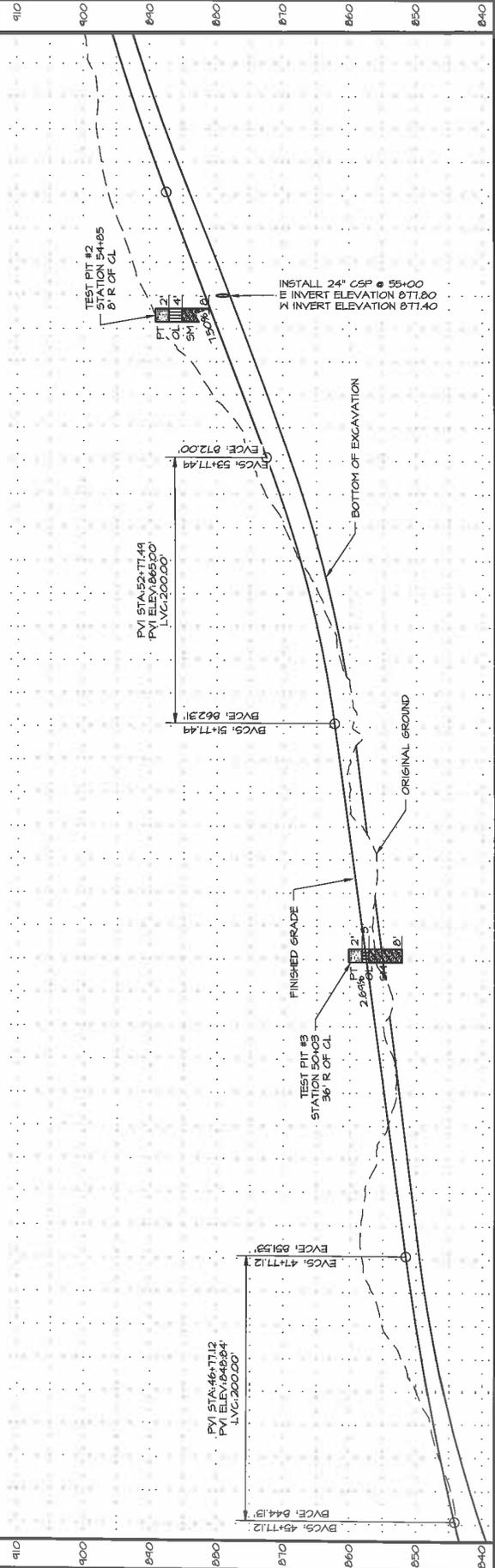
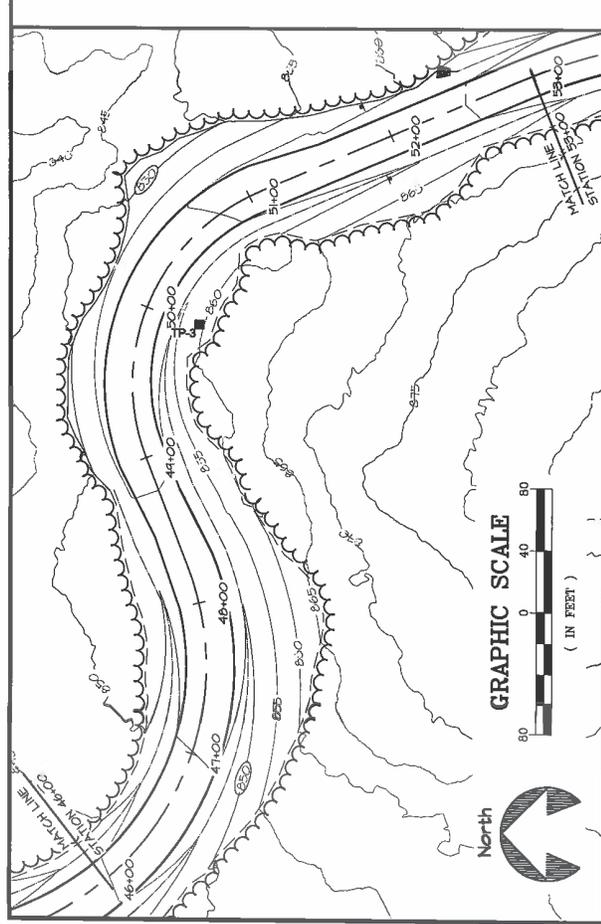
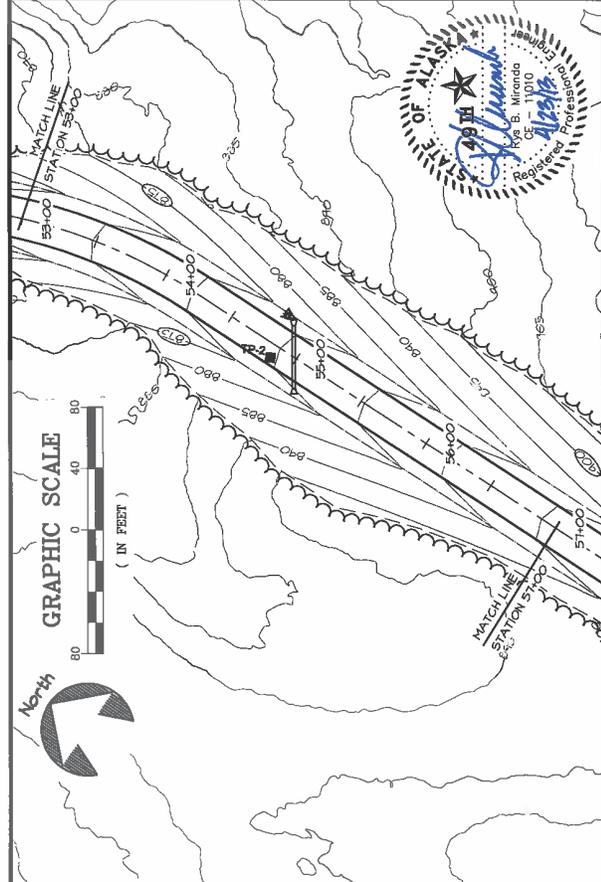
688.51	10+00	11+00	12+00	13+00	14+00	15+00	16+00	17+00	17+34	19+00
688.51	689.66	691.66	693.33	694.98	696.15	697.96	699.62	701.78	701.66	713.4



792.34	35+00
800.22	34+00
790.31	34+48
781.43	33+00
780.10	33+00
784.43	32+00
778.36	32+00
781.20	31+15
776.43	31+00
776.21	30+22
782.21	30+00
781.44	29+00
784.61	28+41
774.55	28+00



940	36+00	793.11	807.09	37+00	791.15	805.18	38+00	802.85	802.85	39+00	802.94	802.85	40+00	804.84	814.85	41+00	810.55	820.85	42+00	812.14	826.65	43+00	824.22	830.95	44+00	832.16	833.84	45+00	838.56	839.41	46+00	844.78	844.78
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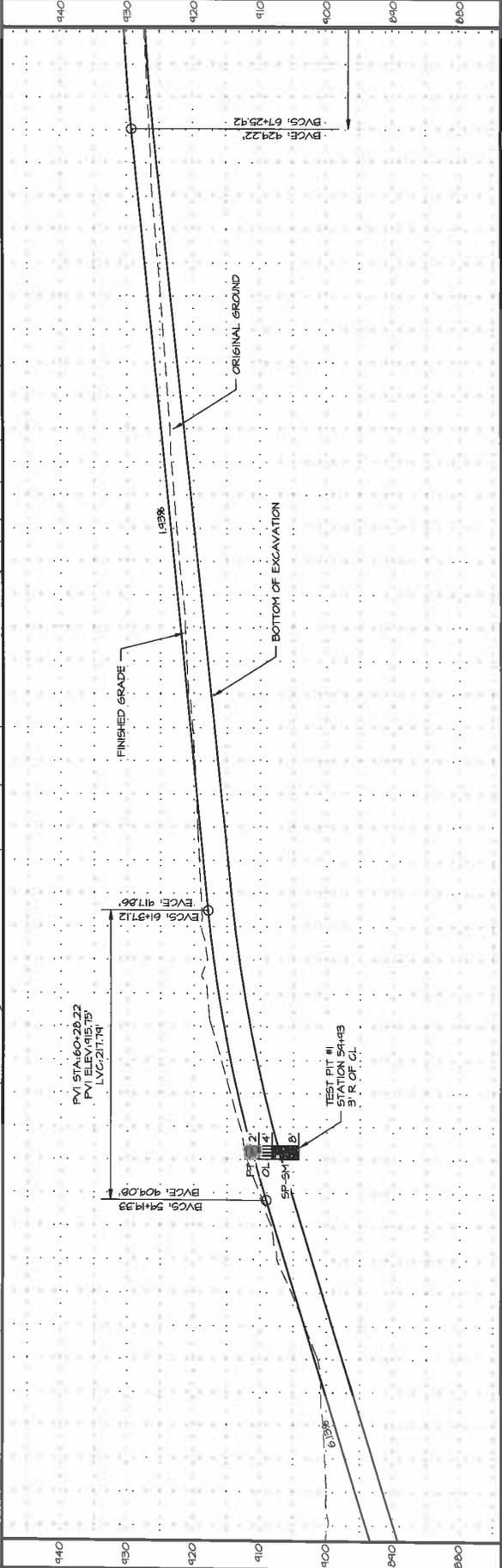
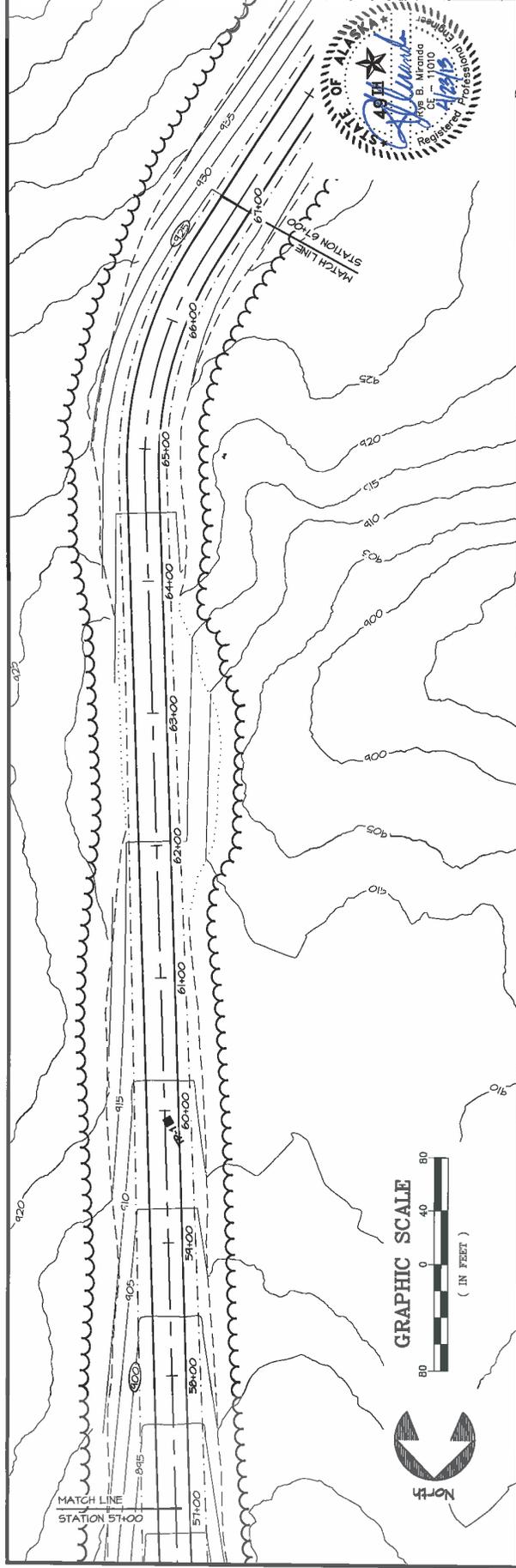


844.66	46+00	844.78	47+00	852.24	48+00	854.18	49+00	855.56	50+00	856.11	51+00	858.06	52+00	859.74	53+00	861.25	54+00	864.45	55+00	867.50	56+00	871.20	57+00
--------	-------	--------	-------	--------	-------	--------	-------	--------	-------	--------	-------	--------	-------	--------	-------	--------	-------	--------	-------	--------	-------	--------	-------



PREPARED: SJB
 DRAWING: RBW/SJS
 REVIEWED: RBW
 DATE: 4/10/2019

SHEET 36
 C30
 OF 64 SHEETS

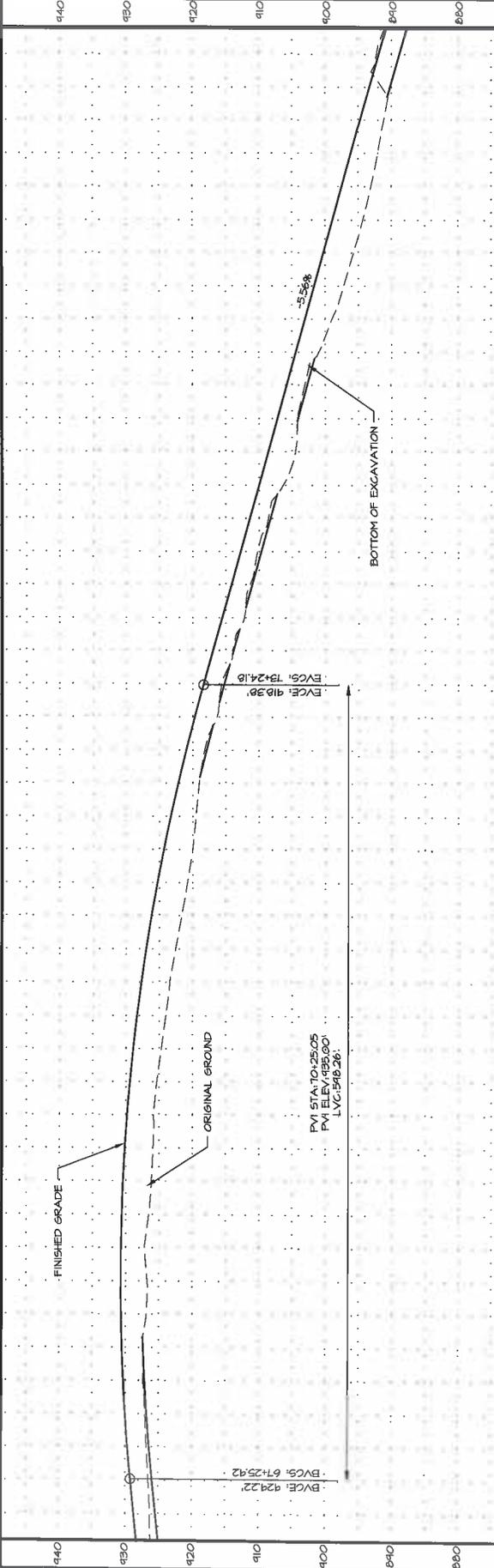
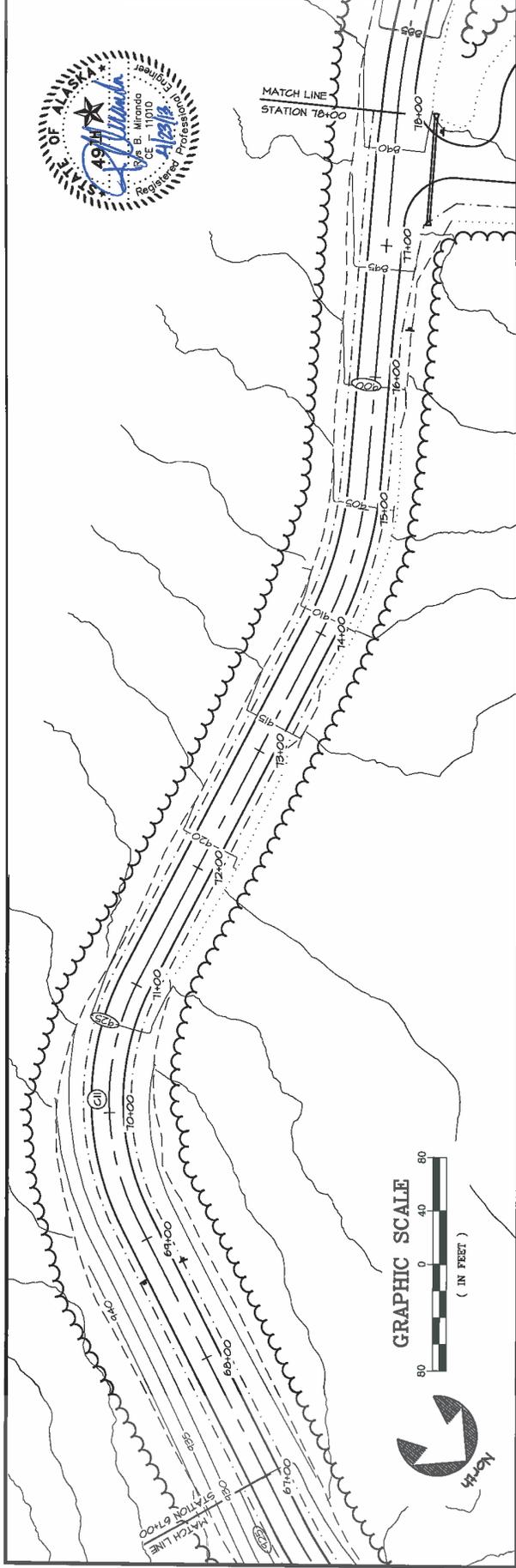


940.91	927.91	926.72	926.27	924.90	924.86	922.43	922.16	920.74	919.07	914.42	917.01	917.97	913.40	914.44	908.28	907.90	901.77	895.66	894.42	57+00
940.00	67+00	66+00	65+00	64+00	63+00	62+00	61+00	60+00	59+00	58+00	57+00	56+00	55+00	54+00	53+00	52+00	51+00	50+00	49+00	48+00



PREPARED: S.A.B.
 DRAWING: REVISED
 REVIEWED: REM
 DATE: 4/10/2015

SHEET 57
 031
 OF 64 SHEETS



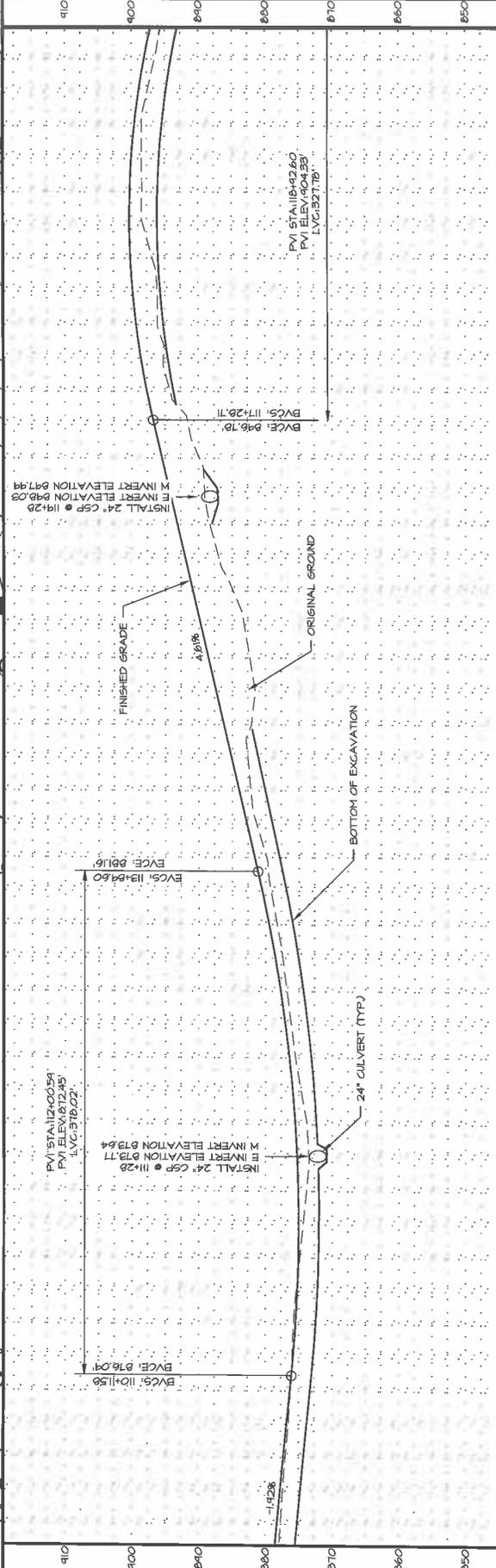
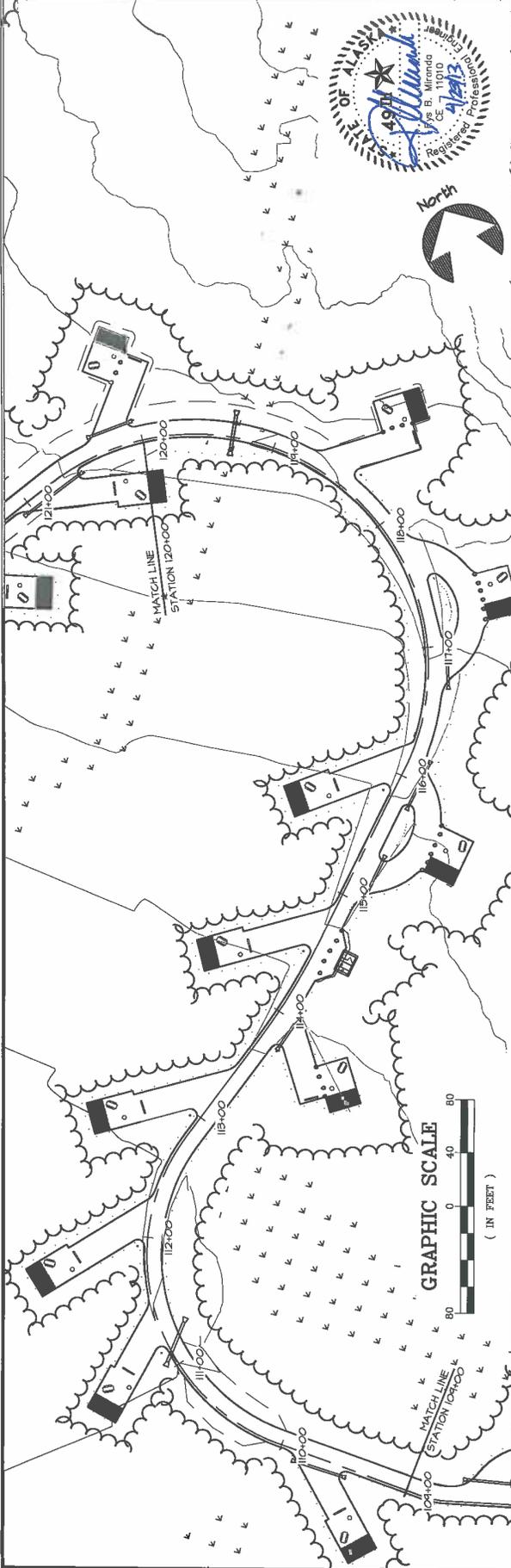
67+00	68+00	69+00	70+00	71+00	72+00	73+00	74+00	75+00	76+00	77+00	78+00
926.27	926.72	930.51	927.23	930.64	925.98	924.82	923.56	927.64	919.94	924.51	916.24
914.16	914.16	914.16	914.16	914.16	914.16	914.16	914.16	914.16	914.16	914.16	914.16
903.05	903.05	903.05	903.05	903.05	903.05	903.05	903.05	903.05	903.05	903.05	903.05
891.43	891.43	891.43	891.43	891.43	891.43	891.43	891.43	891.43	891.43	891.43	891.43





PREPARED: SJS
 DRAWN: RRM/SLB
 REVIEWED: RRM
 DATE: 4/10/09

SHEET 41
 035
 OF 64 SHEETS

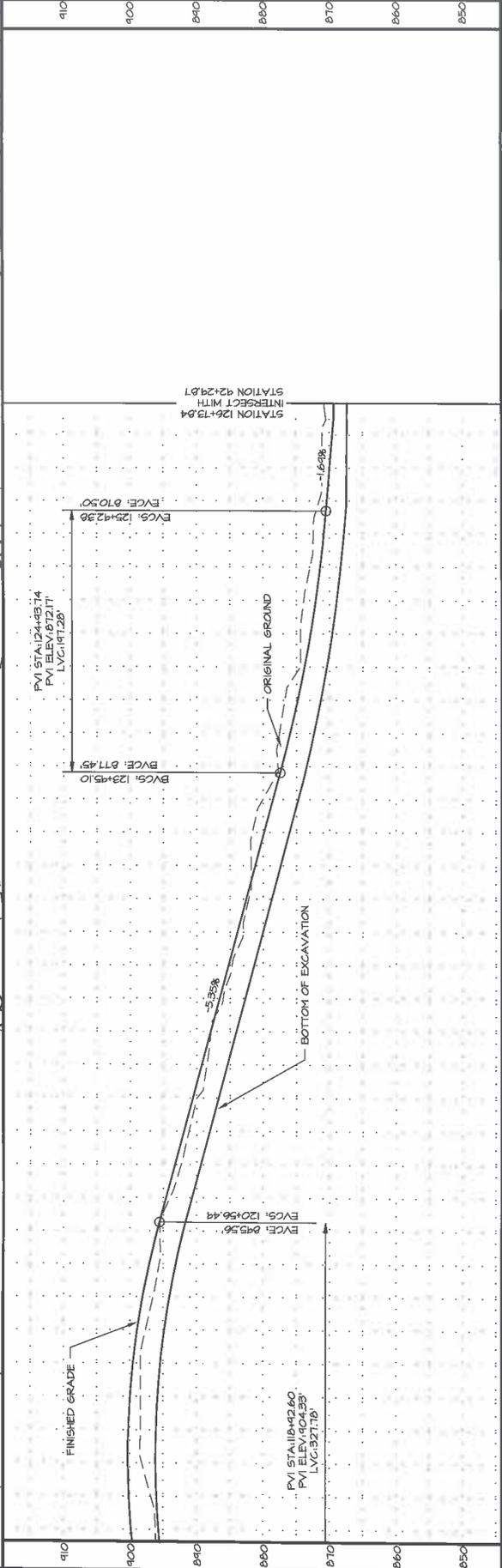
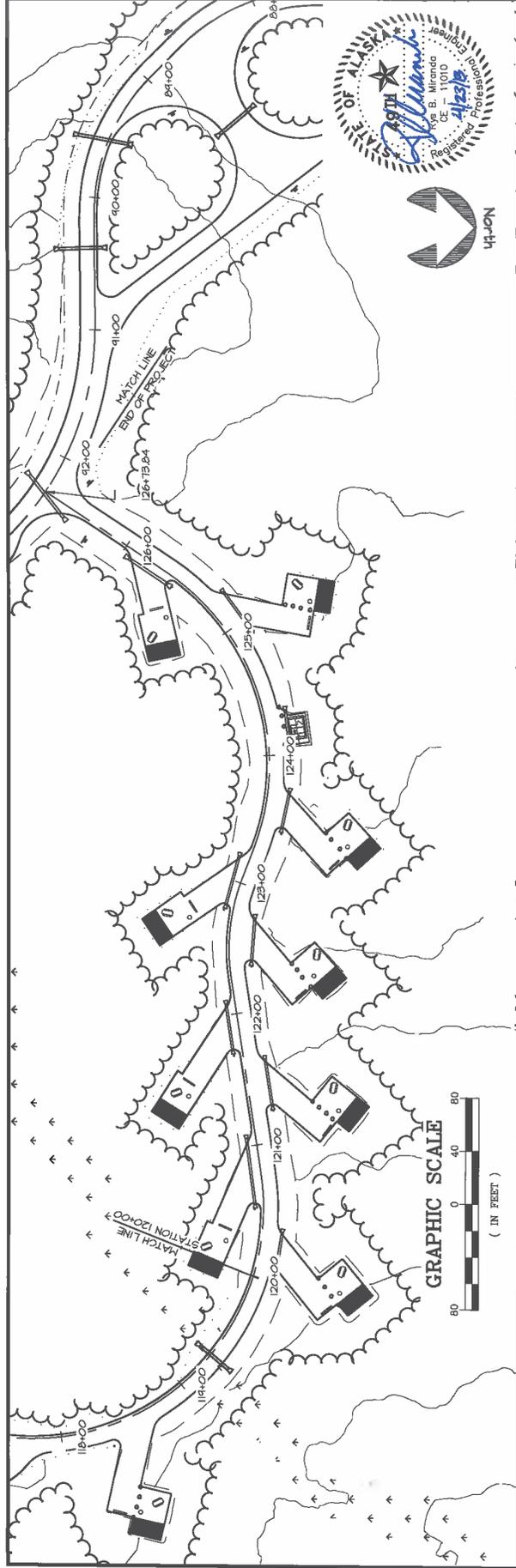


109+00	878.24
110+00	876.00
111+00	876.31
112+00	874.91
113+00	875.06
114+00	875.33
115+00	874.00
116+00	876.36
117+00	877.13
118+00	874.08
119+00	881.84
120+00	882.01
121+00	886.25
122+00	886.00
123+00	840.85
124+00	884.84
125+00	885.46
126+00	895.94
127+00	849.24
128+00	848.00
129+00	800.22
130+00	846.86



PREPARED: S.L.B.
 DRAWN: RBM/V.S.J.
 REVIEWED: RBM
 DATE: 4/10/2018

SHEET 42
 036
 OF 64 SHEETS

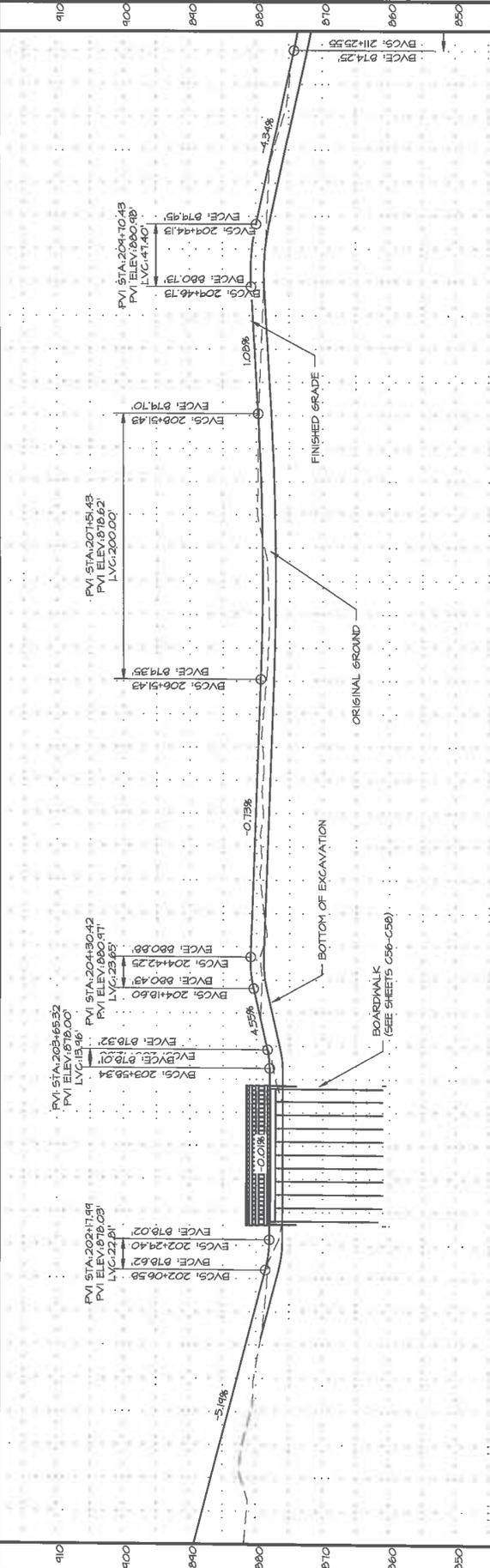
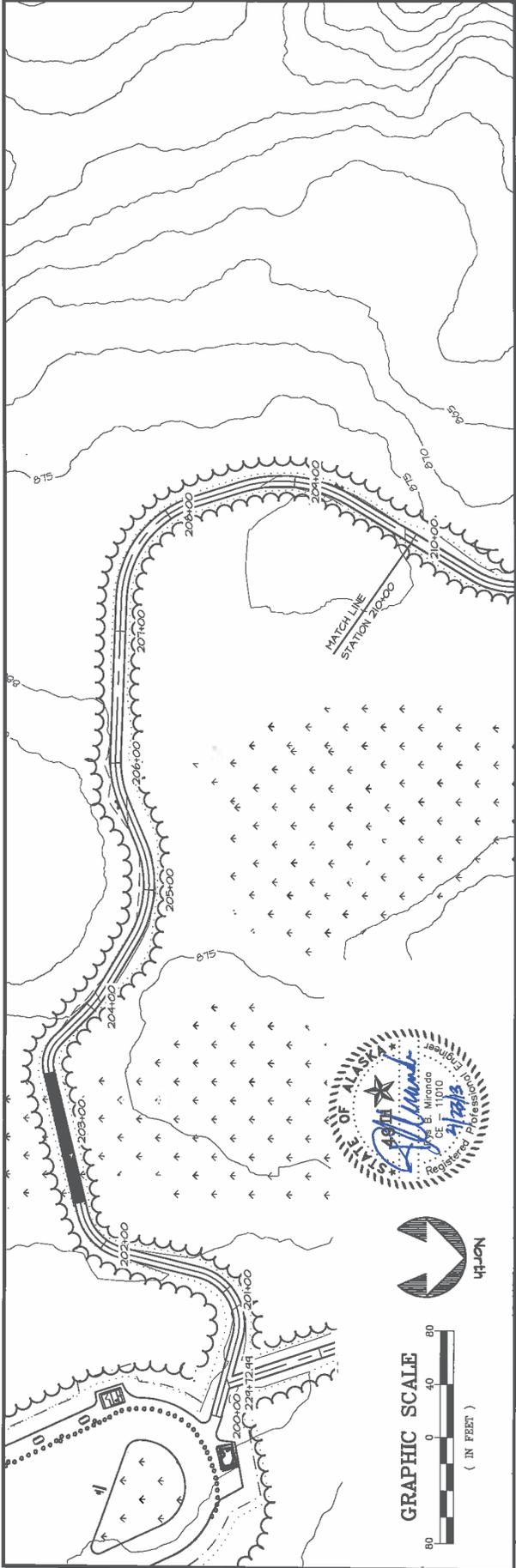


910	870	850	860	870	880	890	900	910
118+00	120+00	121+00	122+00	123+00	124+00	125+00	126+00	126+73.84
900.22	906.89	908.10	903.24	902.00	907.89	902.54	911.41	909.20



PREPARED: SJB
 DRAWING REVISED:
 REVIEWED: RHM
 DATE: 4/10/2018

SHEET 48
 C37
 OF 64 SHEETS

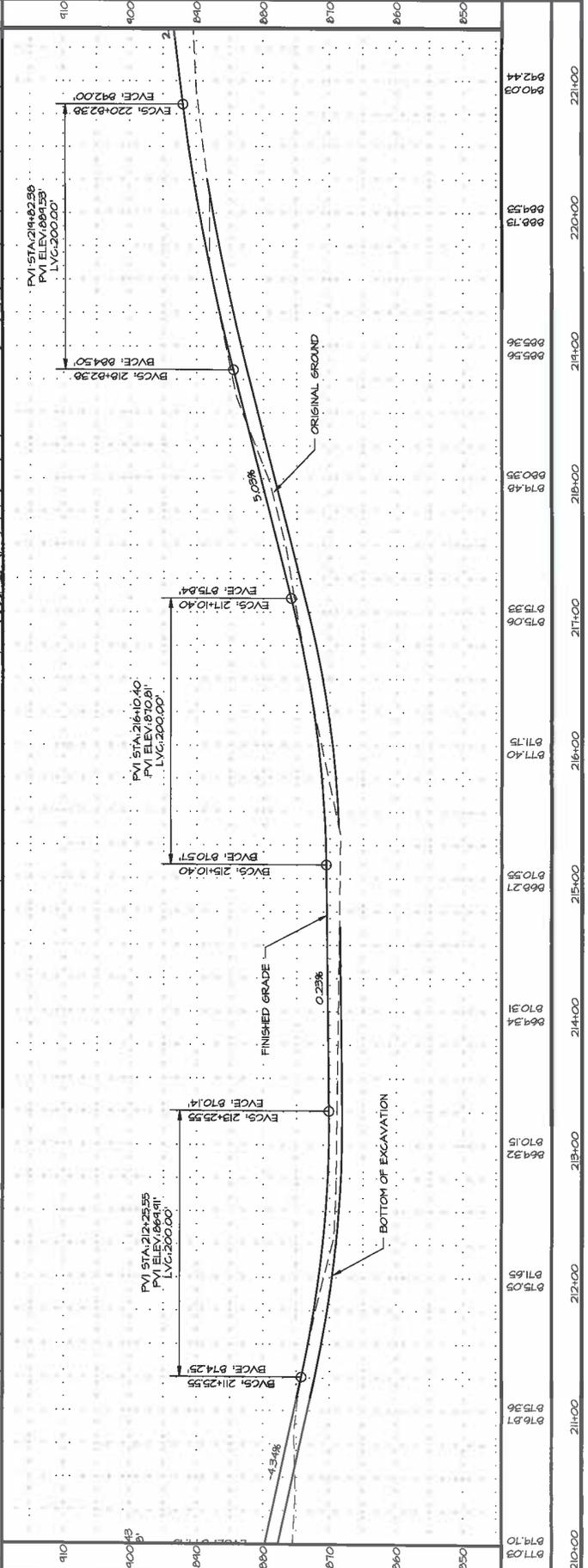
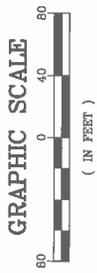
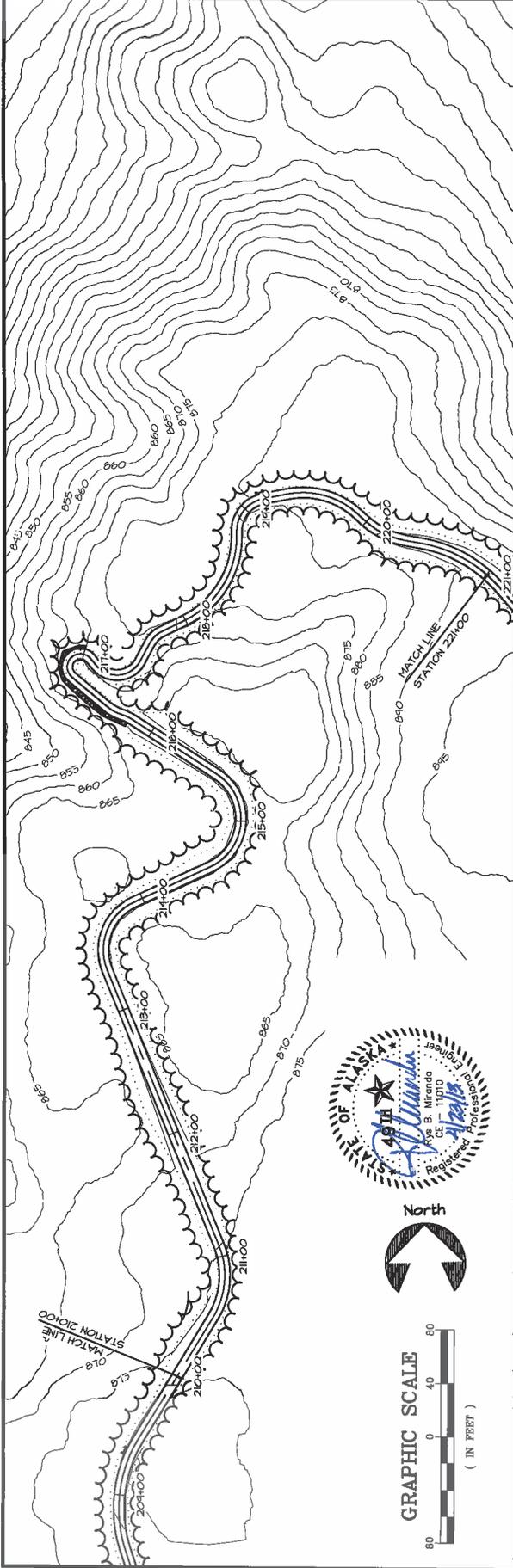


801.4	201+00
804.14	202+00
804.1	202+41
804.96	202+82
807.01	203+23
807.16	203+64
807.49	204+05
807.58	204+46
807.15	204+87
804.46	205+28
807.13	205+69
809.35	206+10
809.13	206+51
809.44	206+92
809.10	207+33
809.26	207+74
809.31	208+15
809.26	208+56
800.21	208+97
800.22	209+38
809.10	209+79
809.10	210+20
809.21	210+61
809.36	211+02
809.50	211+43
809.65	211+84
810.00	212+25



PREPARED: SLS
 DRAWN: REM/SLB
 REVIEWED: REM
 DATE: 4/10/2019

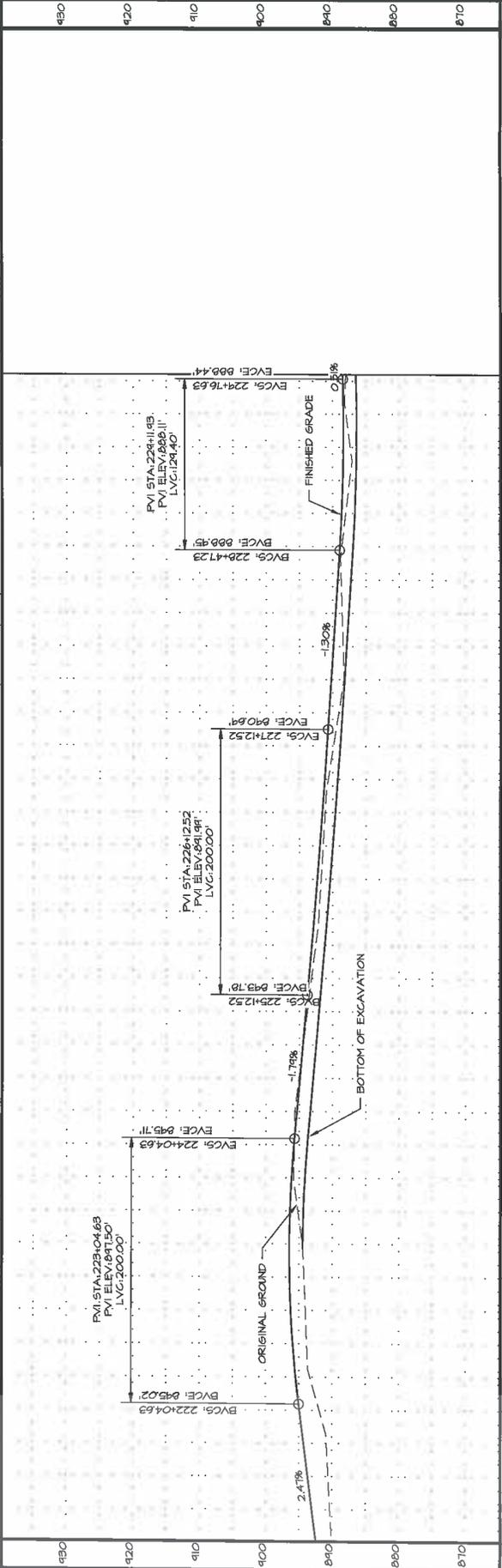
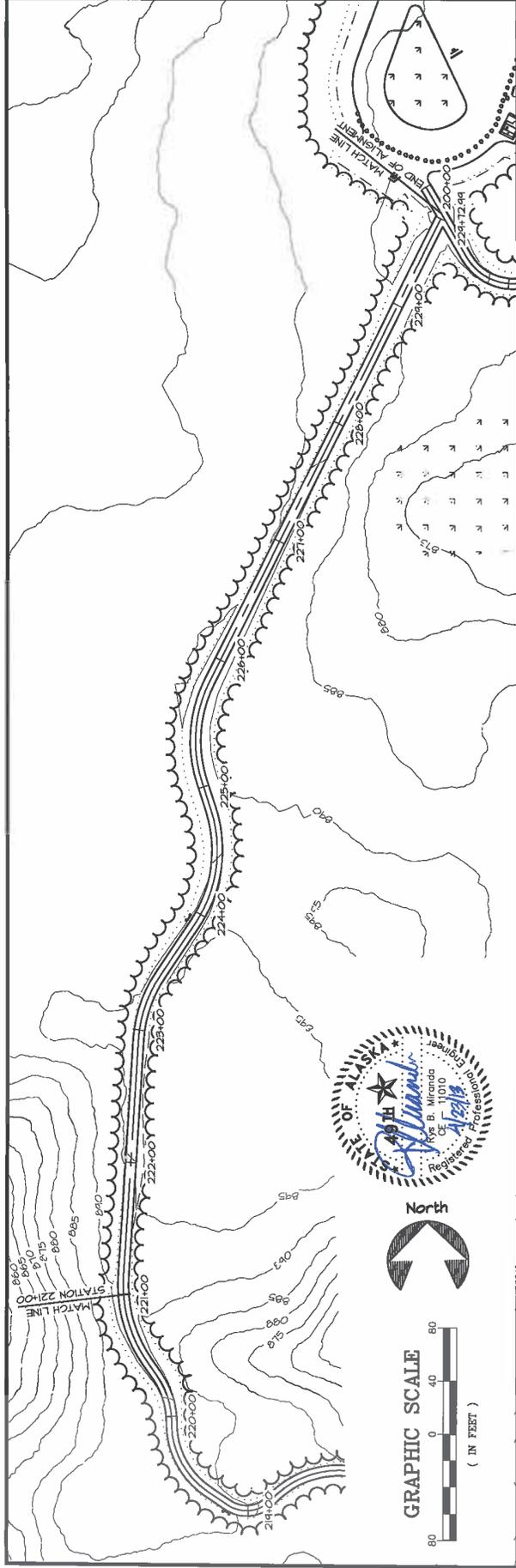
SHEET 44
 038
 OF 64 SHEETS





PREPARED: SLS
 DRAWN: REV/SLS
 REVIEWED: REM
 DATE: 4/10/2018

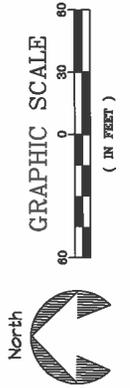
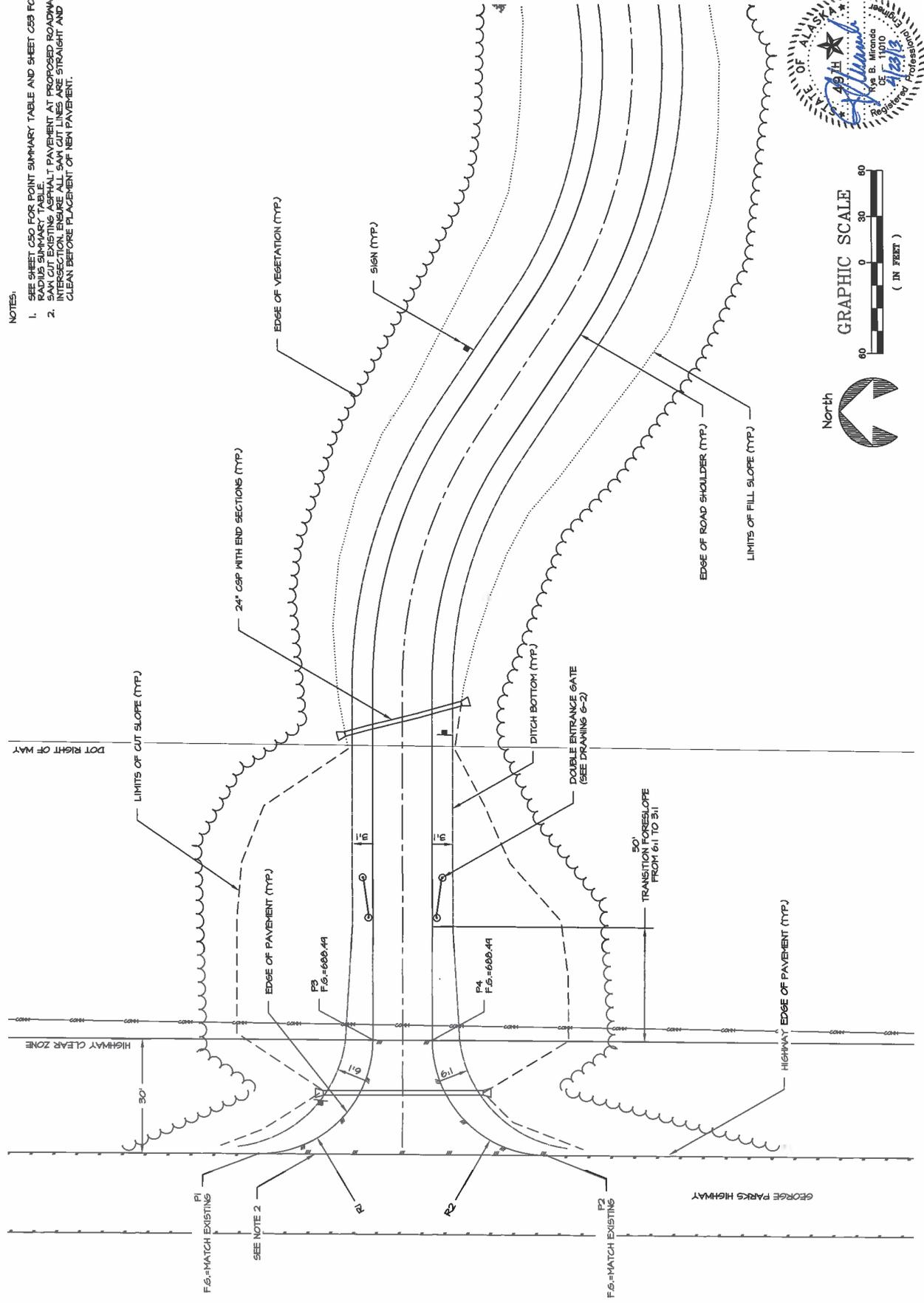
SHEET 45
 C39
 OF 64 SHEETS



940.03	221+00	942.44	222+00	942.18	222+00	944.41	223+00	946.41	223+00	945.71	224+00	943.84	225+00	944.00	225+00	942.13	226+00	942.86	227+00	940.86	228+00	942.40	229+00	944.56	230+00	946.95	231+00	948.21	232+00	948.45	233+00	948.04
--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------

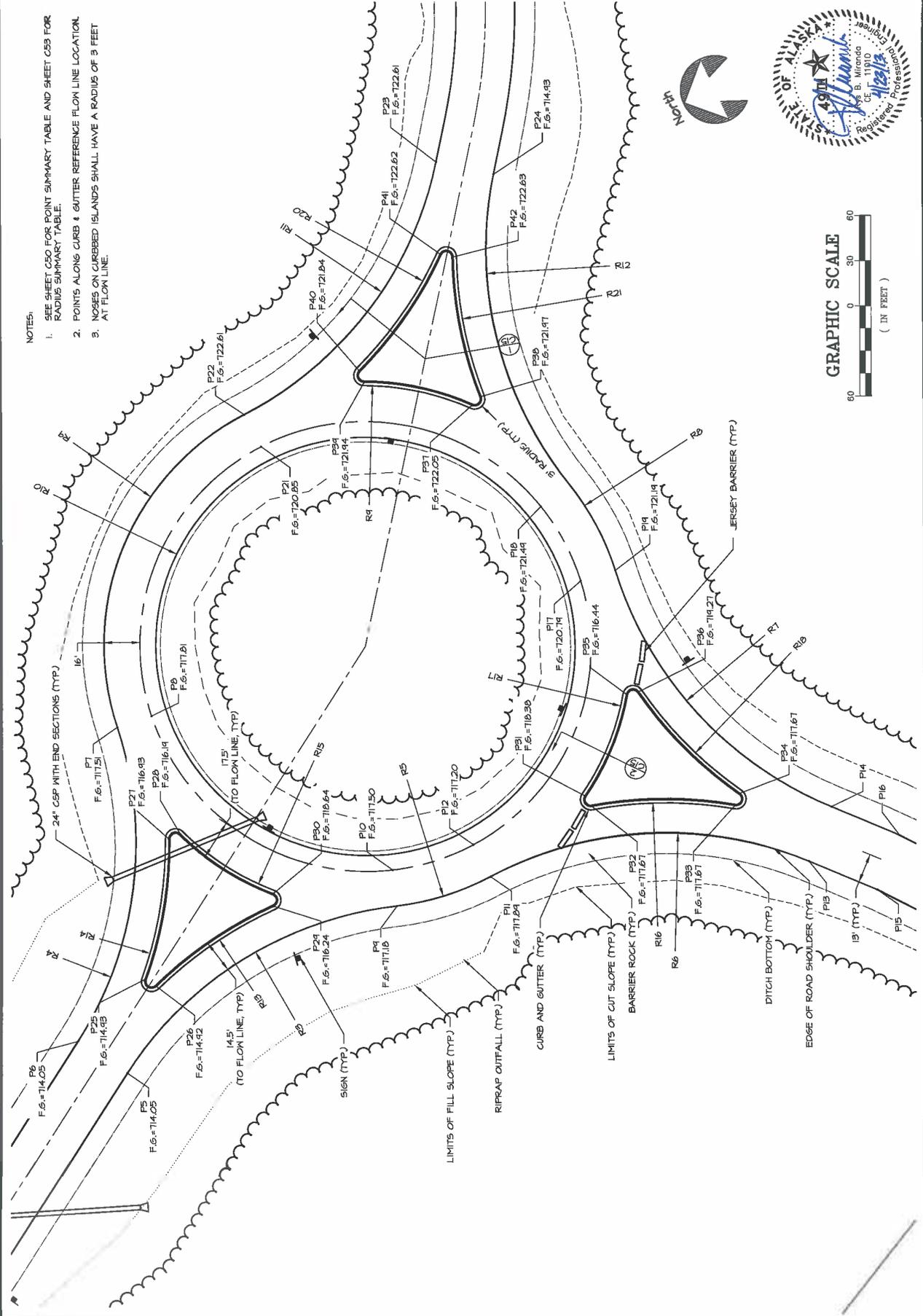


NOTES:
 1. SEE SHEET C50 FOR POINT SUMMARY TABLE AND SHEET C59 FOR RADIUS SUMMARY TABLE.
 2. ALL PAVEMENT AND SIGN PLACEMENT AT PROPOSED ROADWAY INTERSECTION. ENSURE ALL SAW CUT LINES ARE STRAIGHT AND CLEAN BEFORE PLACEMENT OF NEW PAVEMENT.



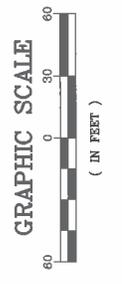
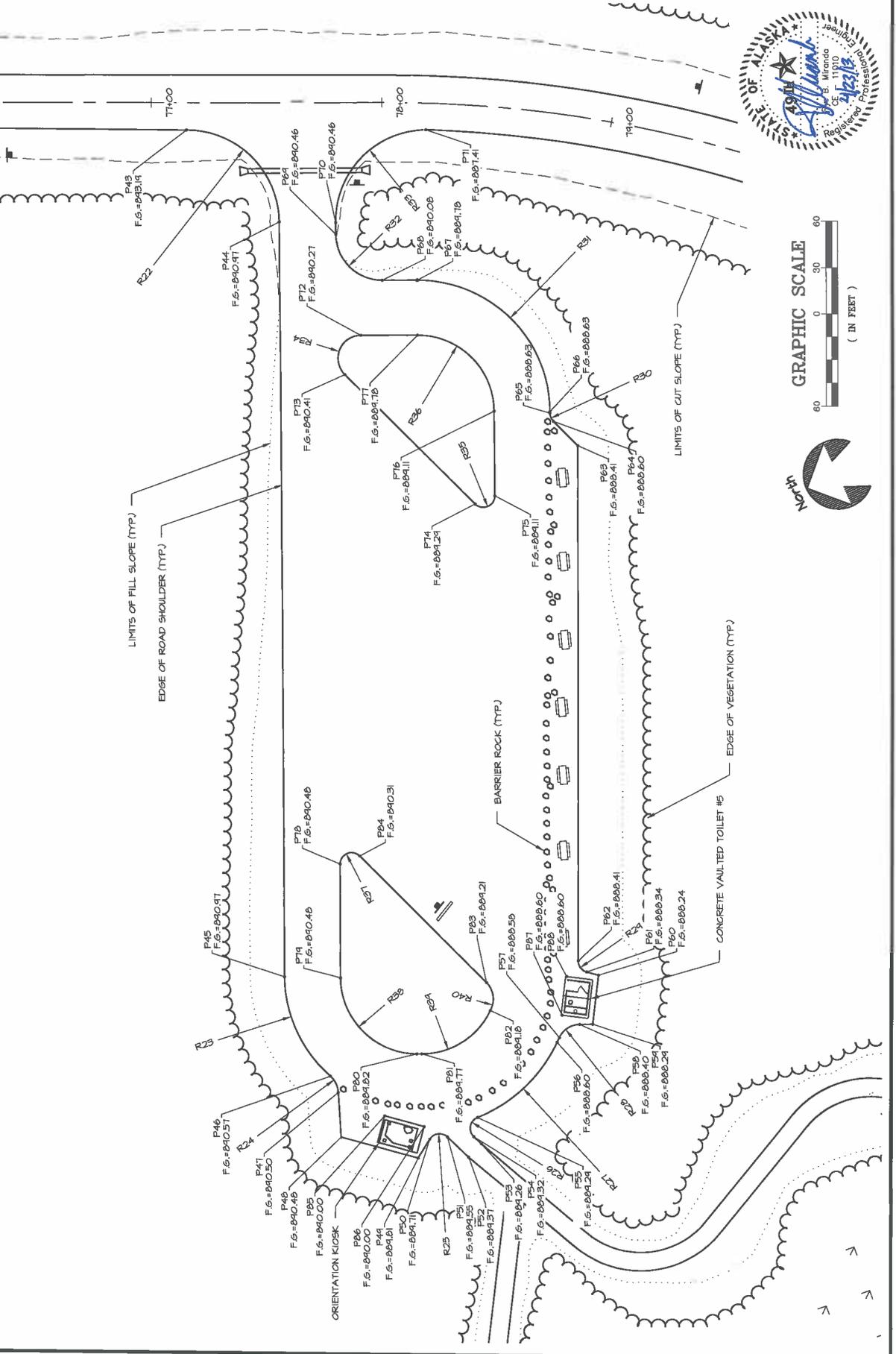


- NOTES:
1. SEE SHEET C50 FOR POINT SUMMARY TABLE AND SHEET C53 FOR RADIUS SUMMARY TABLE.
 2. POINTS ALONG CURB & GUTTER REFERENCE FLOW LINE LOCATION.
 3. NOSSES ON CURBBED ISLANDS SHALL HAVE A RADIUS OF 3 FEET AT FLOW LINE.





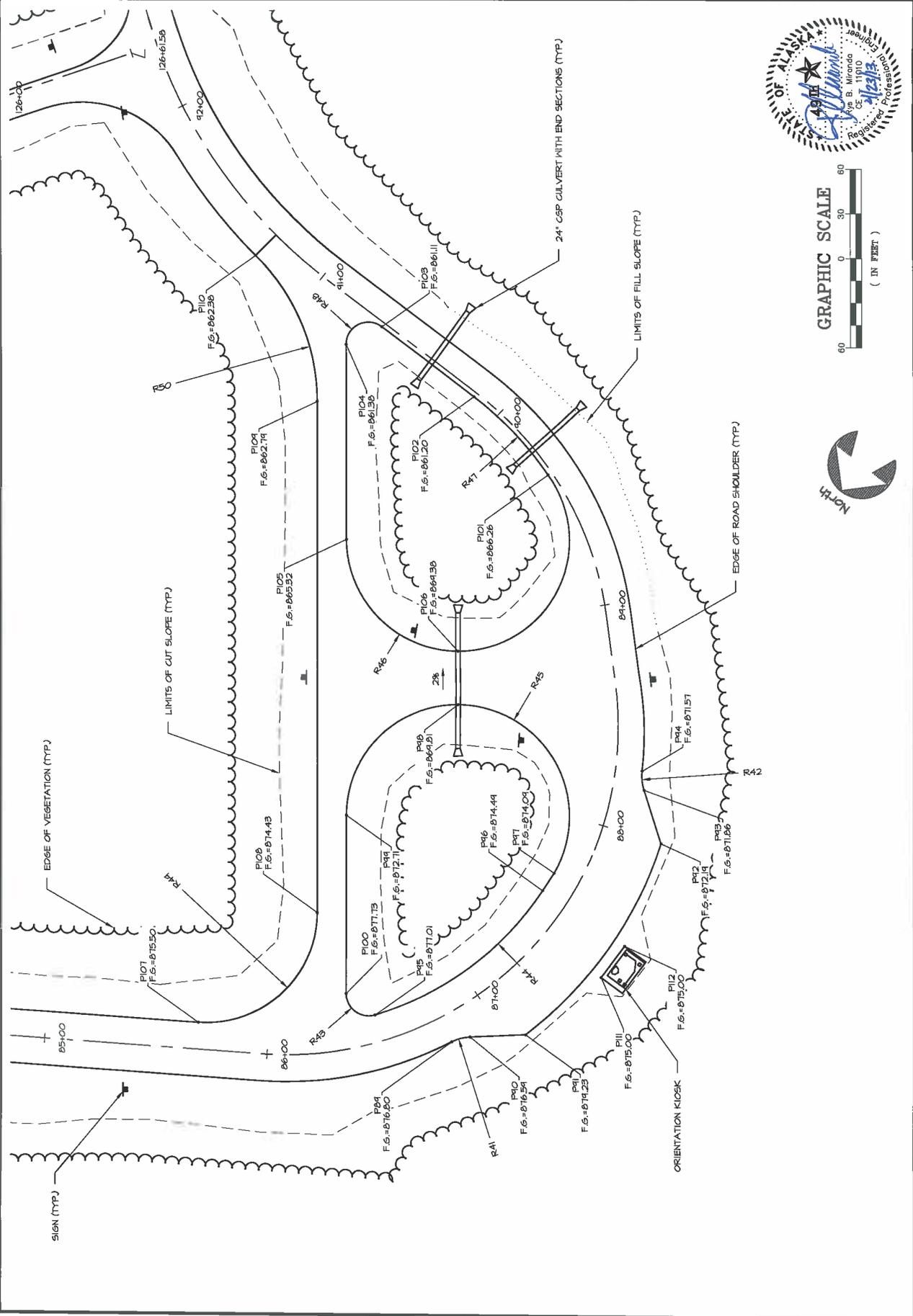
NOTES:
 1. SEE SHEET C50 FOR POINT SUMMARY TABLE AND SHEET C59 FOR
 POINT SUMMARY TABLE





PREPARED: SJB
DRAWN: RBM/VSLB
REVIEWED: RBM
DATE: 9/8/2019
SHEET 49

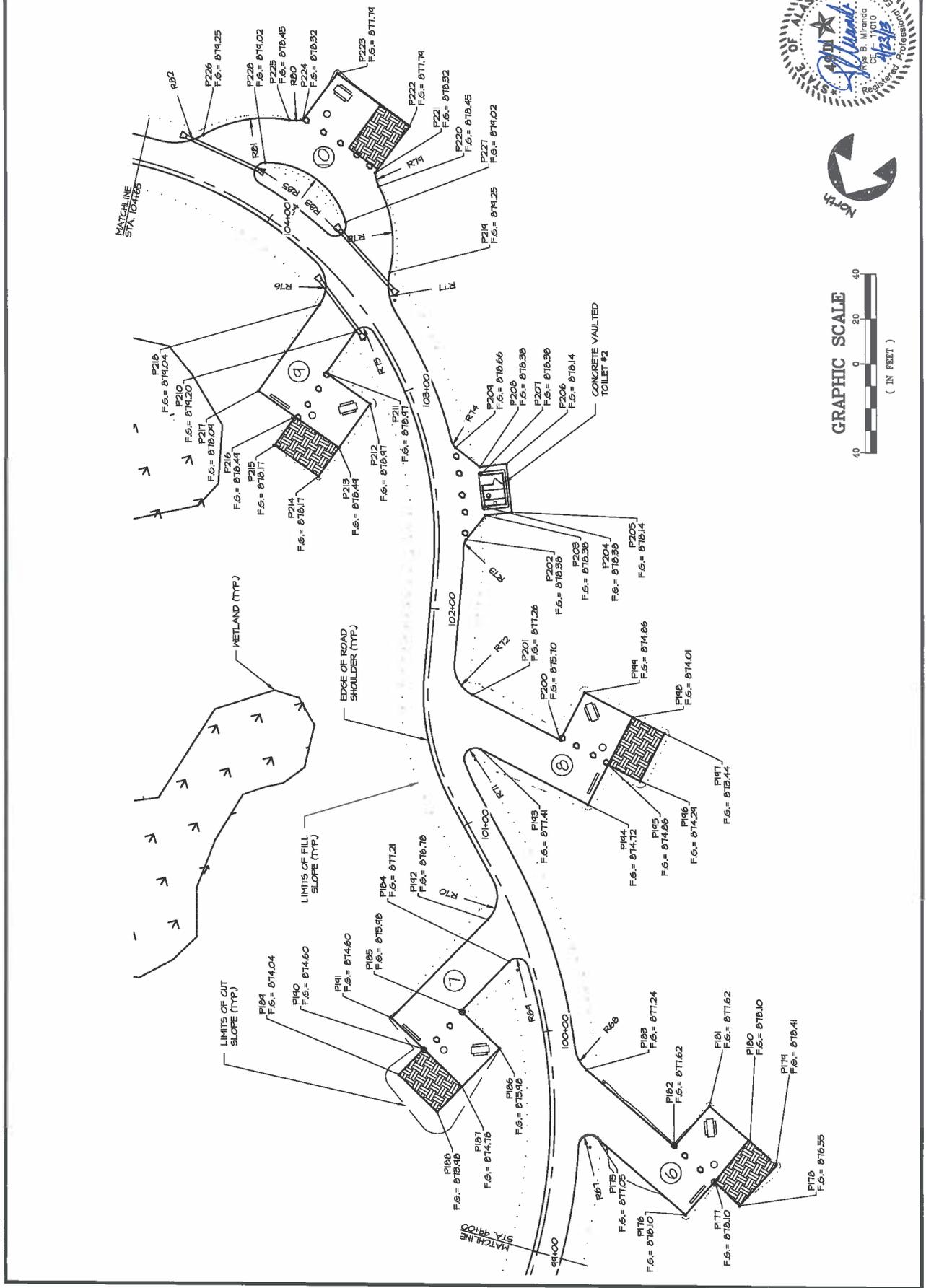
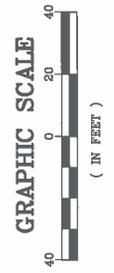
C43
OF 64 SHEETS





PREPARED: SLS
 DRAWN: KML/SLS
 REVIEWED: RSM
 DATE: 4/5/2015

SHEET
C45
 OF 64 SHEETS



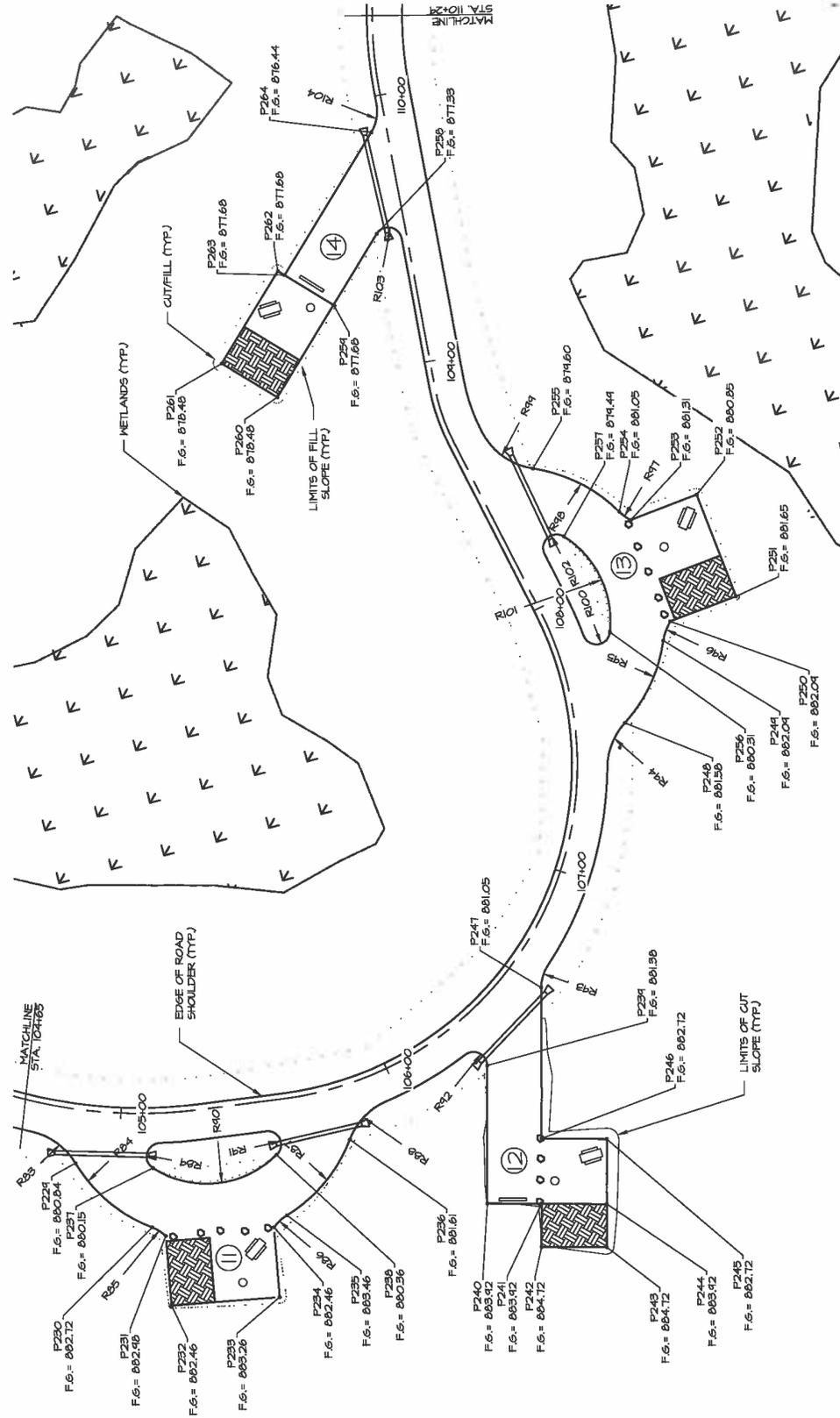


PREPARED: SJS
DRAWN: KVL/SJS
REVIEWED: RHM
DATE: 4/15/2015

SHEET

C46

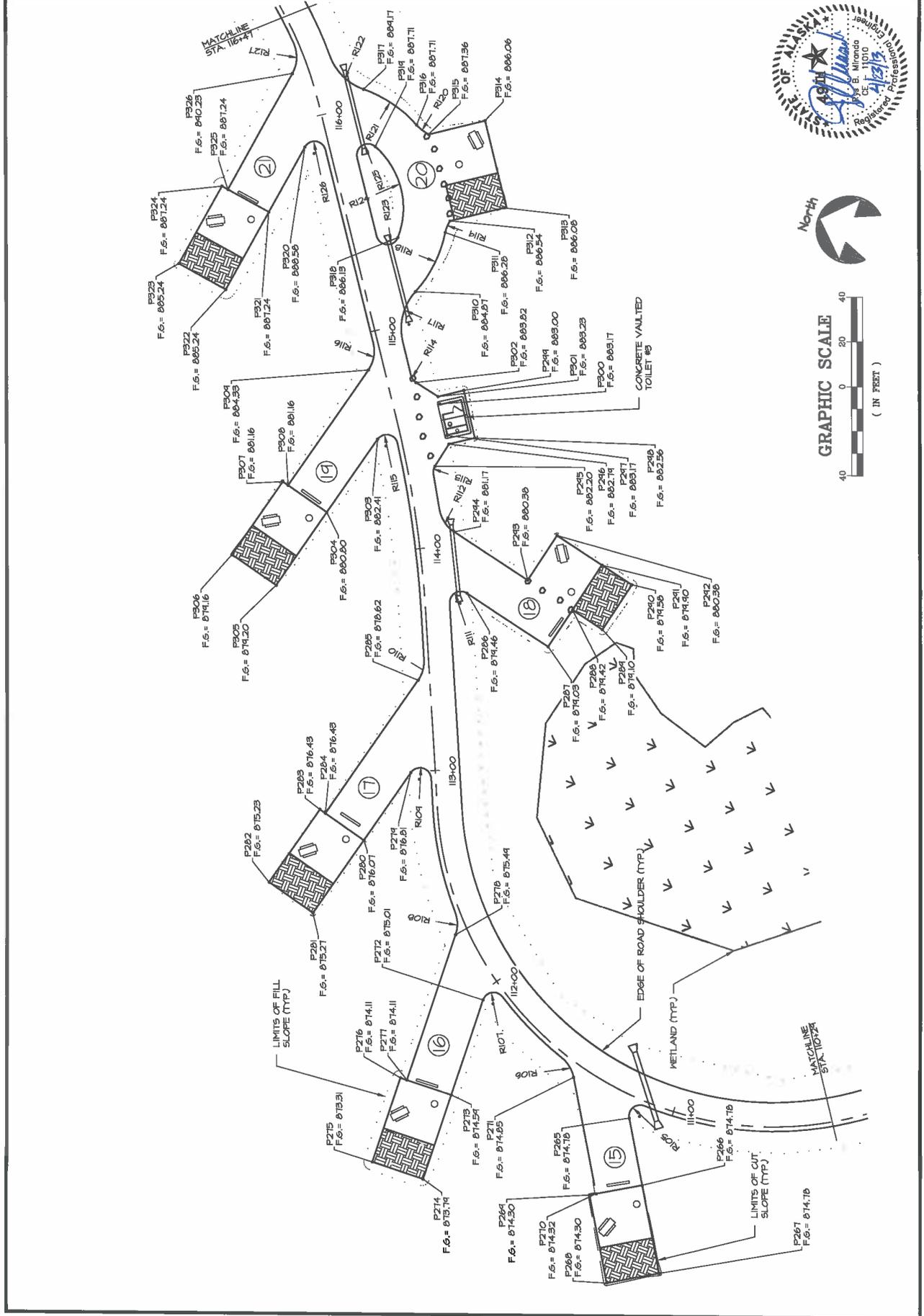
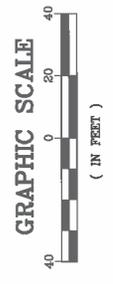
OF 64 SHEETS





PREPARED: SJS
 DRAWING: KVL/SJS
 REVIEWED: RHM
 DATE: 4/19/2019

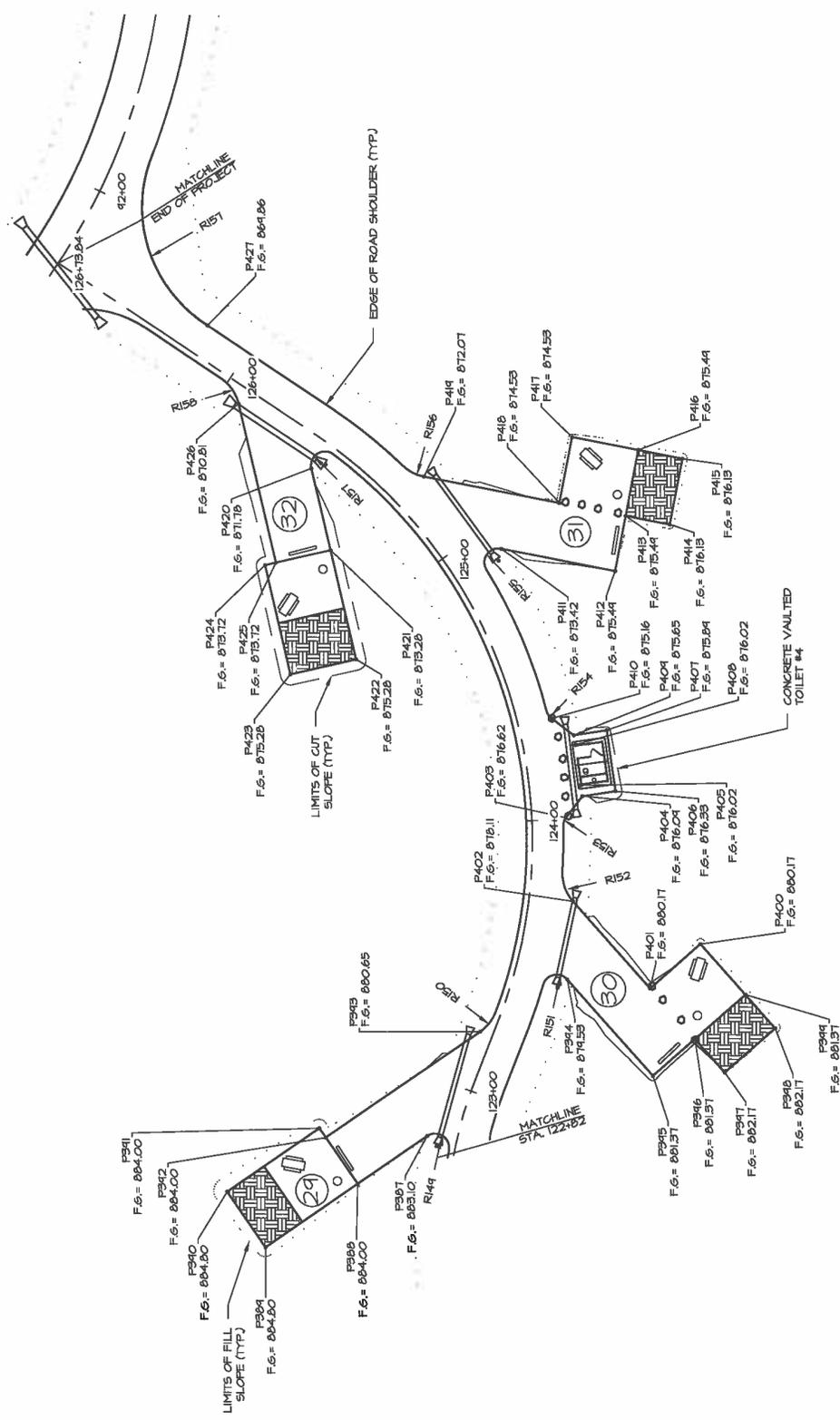
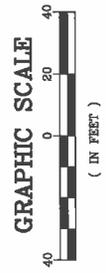
SHEET
 C47
 OF 64 SHEETS





PREPARED: SJB
 DRAWN: KVL/SLS
 REVIEWED: NRM
 DATE: 4/20/05
 SHEET

C49
 OF 64 SHEETS



COORDINATE POINT TABLE

POINT #	NORTHINGS	EASTING	ELEVATION	DESCRIPTION
P152	1602248.00	3188860.98	813.12	EDGE OF SHOULDER
P153	1602248.45	3188861.07	813.20	EDGE OF SHOULDER
P154	1602250.54	3188895.44	813.43	EDGE OF SHOULDER
P155	1602231.54	3188815.54	813.43	EDGE OF SHOULDER
P156	1602160.35	3188808.23	814.87	EDGE OF SHOULDER
P157	1602121.84	3188804.63	814.75	EDGE OF SHOULDER
P158	1602074.88	3188840.04	815.61	EDGE OF SHOULDER
P159	1602070.44	3188853.36	813.24	EDGE OF SHOULDER
P160	1602081.04	3188894.45	813.24	EDGE OF SHOULDER
P161	1602094.98	3188926.68	813.61	EDGE OF SHOULDER
P162	1602079.34	3188806.78	814.04	EDGE OF SHOULDER
P163	1602093.29	3188920.14	814.04	EDGE OF SHOULDER
P164	1602117.57	3188784.21	814.46	EDGE OF SHOULDER
P165	1602111.93	3188675.06	816.54	EDGE OF SHOULDER
P166	1602146.88	3188688.43	818.13	EDGE OF SHOULDER
P167	1602156.81	3188710.21	819.13	EDGE OF SHOULDER
P168	1602158.61	3188720.24	819.33	EDGE OF SHOULDER
P169	1602158.61	3188726.49	820.13	EDGE OF SHOULDER
P170	1602183.18	3188705.21	820.13	EDGE OF SHOULDER
P171	1602169.68	3188688.50	819.33	EDGE OF SHOULDER
P172	1602171.07	3188690.35	819.33	EDGE OF SHOULDER
P173	1602123.23	3188695.46	816.46	EDGE OF SHOULDER
P174	1602119.30	3188550.68	817.05	EDGE OF SHOULDER
P175	1602064.40	3188560.54	818.10	EDGE OF SHOULDER
P176	1602044.25	3188544.87	816.55	EDGE OF SHOULDER
P177	1602044.50	3188520.31	818.41	EDGE OF SHOULDER
P178	1602063.22	3188512.84	817.62	EDGE OF SHOULDER
P179	1602081.71	3188586.40	817.62	EDGE OF SHOULDER
P180	1602130.42	3188536.52	817.24	EDGE OF SHOULDER
P181	1602192.86	3188502.17	817.21	EDGE OF SHOULDER
P182	1602200.34	3188532.14	815.98	EDGE OF SHOULDER
P183	1602111.12	3188551.94	815.98	EDGE OF SHOULDER
P184	1602182.47	3188561.28	814.78	EDGE OF SHOULDER
P185	1602186.87	3188576.78	813.98	EDGE OF SHOULDER
P186	1602210.14	3188570.43	814.04	EDGE OF SHOULDER
P187	1602206.25	3188555.43	814.60	EDGE OF SHOULDER
P188	1602225.84	3188550.56	814.60	EDGE OF SHOULDER
P189	1602210.80	3188440.68	816.18	EDGE OF SHOULDER
P190	1602210.87	3188436.20	817.41	EDGE OF SHOULDER
P191	1602187.85	3188428.40	814.12	EDGE OF SHOULDER
P192	1602149.88	3188403.43	814.86	EDGE OF SHOULDER
P193	1602142.10	3188402.60	814.24	EDGE OF SHOULDER
P194	1602184.16	3188378.63	813.44	EDGE OF SHOULDER
P195	1602202.13	3188374.46	814.01	EDGE OF SHOULDER
P196	1602222.85	3188404.67	815.10	EDGE OF SHOULDER
P197	1602266.75	3188406.46	817.26	EDGE OF SHOULDER

COORDINATE POINT TABLE

POINT #	NORTHINGS	EASTING	ELEVATION	DESCRIPTION
P202	1602304.11	3188348.14	818.38	EDGE OF SHOULDER
P203	1602302.00	3188331.44	818.38	EDGE OF SHOULDER
P204	1602304.32	3188331.22	818.38	TOILET 2
P205	1602292.58	3188327.23	819.14	EDGE OF SHOULDER
P206	1602292.58	3188304.44	819.14	EDGE OF SHOULDER
P207	1602312.46	3188314.48	819.38	TOILET 2
P208	1602328.80	3188316.70	819.38	EDGE OF SHOULDER
P209	1602328.80	3188314.58	819.66	EDGE OF SHOULDER
P210	1602349.47	3188242.12	814.20	EDGE OF SHOULDER
P211	1602349.57	3188314.54	819.47	EDGE OF SHOULDER
P212	1602318.48	3188316.78	819.44	EDGE OF SHOULDER
P213	1602318.48	3188340.86	819.44	EDGE OF SHOULDER
P214	1602318.48	3188356.60	819.17	EDGE OF SHOULDER
P215	1602349.50	3188354.57	819.17	EDGE OF SHOULDER
P216	1602349.50	3188356.16	819.44	EDGE OF SHOULDER
P217	1602411.74	3188386.76	819.04	EDGE OF SHOULDER
P218	1602418.34	3188284.56	819.04	EDGE OF SHOULDER
P219	1602418.34	3188281.24	819.25	EDGE OF SHOULDER
P220	1602421.32	3188250.07	819.32	EDGE OF SHOULDER
P221	1602418.48	3188191.78	817.74	EDGE OF SHOULDER
P222	1602418.48	3188195.33	817.74	EDGE OF SHOULDER
P223	1602461.08	3188221.17	817.74	EDGE OF SHOULDER
P224	1602461.08	3188244.30	818.45	EDGE OF SHOULDER
P225	1602461.08	3188244.30	818.45	EDGE OF SHOULDER
P226	1602461.08	3188244.30	818.45	EDGE OF SHOULDER
P227	1602461.08	3188244.30	818.45	EDGE OF SHOULDER
P228	1602461.08	3188244.30	818.45	EDGE OF SHOULDER
P229	1602461.08	3188244.30	818.45	EDGE OF SHOULDER
P230	1602461.08	3188244.30	818.45	EDGE OF SHOULDER
P231	1602461.08	3188244.30	818.45	EDGE OF SHOULDER
P232	1602461.08	3188244.30	818.45	EDGE OF SHOULDER
P233	1602461.08	3188244.30	818.45	EDGE OF SHOULDER
P234	1602461.08	3188244.30	818.45	EDGE OF SHOULDER
P235	1602461.08	3188244.30	818.45	EDGE OF SHOULDER
P236	1602461.08	3188244.30	818.45	EDGE OF SHOULDER
P237	1602461.08	3188244.30	818.45	EDGE OF SHOULDER
P238	1602461.08	3188244.30	818.45	EDGE OF SHOULDER
P239	1602461.08	3188244.30	818.45	EDGE OF SHOULDER
P240	1602461.08	3188244.30	818.45	EDGE OF SHOULDER
P241	1602461.08	3188244.30	818.45	EDGE OF SHOULDER
P242	1602461.08	3188244.30	818.45	EDGE OF SHOULDER
P243	1602461.08	3188244.30	818.45	EDGE OF SHOULDER
P244	1602461.08	3188244.30	818.45	EDGE OF SHOULDER
P245	1602461.08	3188244.30	818.45	EDGE OF SHOULDER
P246	1602461.08	3188244.30	818.45	EDGE OF SHOULDER
P247	1602461.08	3188244.30	818.45	EDGE OF SHOULDER
P248	1602461.08	3188244.30	818.45	EDGE OF SHOULDER
P249	1602461.08	3188244.30	818.45	EDGE OF SHOULDER
P250	1602461.08	3188244.30	818.45	EDGE OF SHOULDER
P251	1602461.08	3188244.30	818.45	EDGE OF SHOULDER

COORDINATE POINT TABLE

POINT #	NORTHINGS	EASTING	ELEVATION	DESCRIPTION
P252	1602811.25	3188911.71	820.85	EDGE OF SHOULDER
P253	1602800.49	3188911.55	821.31	EDGE OF SHOULDER
P254	1602948.86	3188911.96	821.05	EDGE OF SHOULDER
P255	1602960.38	3188954.74	814.60	EDGE OF SHOULDER
P256	1602815.03	3188951.78	820.31	EDGE OF SHOULDER
P257	1602887.74	3188953.80	814.44	EDGE OF SHOULDER
P258	1602461.94	3188616.05	817.33	EDGE OF SHOULDER
P259	1602466.73	3188585.28	817.66	EDGE OF SHOULDER
P260	1602465.87	3188545.24	818.48	EDGE OF SHOULDER
P261	1602441.88	3188545.24	818.48	EDGE OF SHOULDER
P262	1602442.73	3188585.74	817.68	EDGE OF SHOULDER
P263	1602445.68	3188585.78	817.68	EDGE OF SHOULDER
P264	1602441.00	3188647.64	816.44	EDGE OF SHOULDER
P265	1602346.34	3188784.81	814.78	EDGE OF SHOULDER
P266	1602370.06	3188753.48	814.78	EDGE OF SHOULDER
P267	1602385.74	3188753.95	814.78	EDGE OF SHOULDER
P268	1602385.74	3188753.95	814.78	EDGE OF SHOULDER
P269	1602385.74	3188753.95	814.78	EDGE OF SHOULDER
P270	1602385.74	3188753.95	814.78	EDGE OF SHOULDER
P271	1602404.42	3188744.54	814.85	EDGE OF SHOULDER
P272	1602423.25	3188744.54	814.85	EDGE OF SHOULDER
P273	1602378.27	3188844.13	814.54	EDGE OF SHOULDER
P274	1602396.28	3188844.43	815.74	EDGE OF SHOULDER
P275	1602397.56	3188870.42	815.31	EDGE OF SHOULDER
P276	1602371.55	3188872.12	814.11	EDGE OF SHOULDER
P277	1602371.55	3188872.12	814.11	EDGE OF SHOULDER
P278	1602446.52	3188871.03	815.44	EDGE OF SHOULDER
P279	1602507.92	3188914.76	816.81	EDGE OF SHOULDER
P280	1602412.11	3188924.21	816.07	EDGE OF SHOULDER
P281	1602483.44	3188934.42	815.27	EDGE OF SHOULDER
P282	1602483.44	3188934.42	815.27	EDGE OF SHOULDER
P283	1602483.44	3188934.42	815.27	EDGE OF SHOULDER
P284	1602483.44	3188934.42	815.27	EDGE OF SHOULDER
P285	1602483.44	3188934.42	815.27	EDGE OF SHOULDER
P286	1602483.44	3188934.42	815.27	EDGE OF SHOULDER
P287	1602483.44	3188934.42	815.27	EDGE OF SHOULDER
P288	1602483.44	3188934.42	815.27	EDGE OF SHOULDER
P289	1602483.44	3188934.42	815.27	EDGE OF SHOULDER
P290	1602483.44	3188934.42	815.27	EDGE OF SHOULDER
P291	1602483.44	3188934.42	815.27	EDGE OF SHOULDER
P292	1602483.44	3188934.42	815.27	EDGE OF SHOULDER
P293	1602483.44	3188934.42	815.27	EDGE OF SHOULDER
P294	1602483.44	3188934.42	815.27	EDGE OF SHOULDER
P295	1602483.44	3188934.42	815.27	EDGE OF SHOULDER
P296	1602483.44	3188934.42	815.27	EDGE OF SHOULDER
P297	1602483.44	3188934.42	815.27	EDGE OF SHOULDER
P298	1602483.44	3188934.42	815.27	EDGE OF SHOULDER
P299	1602483.44	3188934.42	815.27	EDGE OF SHOULDER
P300	1602483.44	3188934.42	815.27	EDGE OF SHOULDER
P301	1602483.44	3188934.42	815.27	EDGE OF SHOULDER





COORDINATE POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
P402	1602865.94	3194945.02	819.11	EDGE OF SHOULDER
P403	1602836.16	3194942.50	816.62	EDGE OF SHOULDER
P404	1602929.37	3194949.37	816.04	EDGE OF SHOULDER
P405	1602924.44	3194941.85	816.02	TOILET 4
P406	1602926.52	3194410.15	816.35	EDGE OF SHOULDER
P407	1602930.00	3194407.04	815.81	EDGE OF SHOULDER
P408	1602930.00	3194945.82	816.02	TOILET 4
P409	1602906.54	3194945.32	815.65	EDGE OF SHOULDER
P410	1602900.63	3194947.48	815.16	EDGE OF SHOULDER
P411	1602940.07	3194941.60	819.42	EDGE OF SHOULDER
P412	1602247.91	3194410.17	815.44	EDGE OF SHOULDER
P413	1602228.27	3194419.97	815.44	EDGE OF SHOULDER
P414	1602228.27	3194424.65	816.15	EDGE OF SHOULDER
P415	1602207.75	3194434.22	816.15	EDGE OF SHOULDER
P416	1602204.12	3194418.52	815.44	EDGE OF SHOULDER
P417	1602200.16	3194944.45	814.53	EDGE OF SHOULDER
P418	1602228.12	3194940.40	814.53	EDGE OF SHOULDER
P419	1602214.40	3194942.20	812.07	EDGE OF SHOULDER
P420	1602211.51	3194940.04	811.78	EDGE OF SHOULDER
P421	1602240.78	3194940.84	819.28	EDGE OF SHOULDER
P422	1602228.17	3194941.85	815.28	EDGE OF SHOULDER
P423	1602228.17	3194244.47	815.28	EDGE OF SHOULDER
P424	1602246.20	3194285.46	815.72	EDGE OF SHOULDER
P425	1602245.24	3194281.36	815.72	EDGE OF SHOULDER
P426	1602188.49	3194276.23	810.81	EDGE OF SHOULDER
P427	1602160.61	3194265.21	804.86	EDGE OF SHOULDER

COORDINATE POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
P932	1602717.14	3194435.86	817.00	EDGE OF SHOULDER
P933	1602732.14	3194417.13	817.00	EDGE OF SHOULDER
P934	1602649.65	3194940.28	814.85	EDGE OF SHOULDER
P935	1602678.18	3194944.84	814.50	EDGE OF SHOULDER
P936	1602706.11	3194933.65	815.72	EDGE OF SHOULDER
P937	1602742.87	3194936.86	816.53	EDGE OF SHOULDER
P938	1602739.34	3194941.82	816.05	EDGE OF SHOULDER
P939	1602646.64	3194930.54	815.25	EDGE OF SHOULDER
P940	1602649.22	3194934.27	815.25	EDGE OF SHOULDER
P941	1602628.15	3194936.64	811.26	EDGE OF SHOULDER
P942	1602603.42	3194936.47	810.81	EDGE OF SHOULDER
P943	1602615.72	3194430.78	812.04	EDGE OF SHOULDER
P944	1602624.05	3194412.91	812.84	EDGE OF SHOULDER
P945	1602624.05	3194446.24	812.84	EDGE OF SHOULDER
P946	1602574.84	3194427.46	810.84	EDGE OF SHOULDER
P947	1602598.21	3194412.46	810.84	EDGE OF SHOULDER
P948	1602567.24	3194935.92	808.45	EDGE OF SHOULDER
P949	1602561.88	3194941.36	808.45	EDGE OF SHOULDER
P950	1602584.22	3194939.76	804.43	EDGE OF SHOULDER
P951	1602622.86	3194910.12	810.25	EDGE OF SHOULDER
P952	1602604.86	3194284.94	810.25	EDGE OF SHOULDER
P953	1602576.23	3194911.58	804.43	EDGE OF SHOULDER
P954	1602578.40	3194914.95	804.43	EDGE OF SHOULDER
P955	1602525.74	3194948.84	806.30	EDGE OF SHOULDER
P956	1602444.17	3194930.52	803.16	EDGE OF SHOULDER
P957	1602525.36	3194946.85	805.98	EDGE OF SHOULDER
P958	1602512.47	3194412.14	806.64	EDGE OF SHOULDER
P959	1602524.64	3194422.44	807.11	EDGE OF SHOULDER
P960	1602504.22	3194440.78	806.40	EDGE OF SHOULDER
P961	1602447.00	3194430.48	805.84	EDGE OF SHOULDER
P962	1602444.12	3194946.85	804.99	EDGE OF SHOULDER
P963	1602450.00	3194948.06	802.62	EDGE OF SHOULDER
P964	1602467.18	3194918.36	803.10	EDGE OF SHOULDER
P965	1602410.01	3194285.53	804.80	EDGE OF SHOULDER
P966	1602470.30	3194271.83	804.80	EDGE OF SHOULDER
P967	1602471.47	3194904.66	804.00	EDGE OF SHOULDER
P968	1602450.76	3194906.14	804.00	EDGE OF SHOULDER
P969	1602412.30	3194936.19	800.85	EDGE OF SHOULDER
P970	1602427.14	3194423.42	801.57	EDGE OF SHOULDER
P971	1602414.64	3194438.36	801.57	EDGE OF SHOULDER
P972	1602426.80	3194444.00	802.17	EDGE OF SHOULDER
P973	1602410.65	3194466.12	802.17	EDGE OF SHOULDER
P974	1602398.76	3194456.24	801.37	EDGE OF SHOULDER
P975	1602390.76	3194440.34	800.17	EDGE OF SHOULDER
P976	1602396.71	3194422.40	800.17	EDGE OF SHOULDER

COORDINATE POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
P902	1602619.80	3194947.57	805.82	EDGE OF SHOULDER
P903	1602648.71	3194949.85	802.41	EDGE OF SHOULDER
P904	1602604.97	3194940.10	800.80	EDGE OF SHOULDER
P905	1602566.30	3194000.30	814.20	EDGE OF SHOULDER
P906	1602572.43	3194029.51	811.16	EDGE OF SHOULDER
P907	1602611.00	3194019.30	801.16	EDGE OF SHOULDER
P908	1602610.36	3194010.52	801.16	EDGE OF SHOULDER
P909	1602611.64	3194944.33	804.33	EDGE OF SHOULDER
P910	1602712.04	3194946.41	804.87	EDGE OF SHOULDER
P911	1602714.66	3194942.86	806.28	EDGE OF SHOULDER
P912	1602714.53	3194942.82	806.54	EDGE OF SHOULDER
P913	1602716.16	3194941.76	806.08	EDGE OF SHOULDER
P914	1602715.03	3194943.07	807.36	EDGE OF SHOULDER
P915	1602780.66	3194004.73	807.11	EDGE OF SHOULDER
P916	1602782.70	3194011.27	807.11	EDGE OF SHOULDER
P917	1602781.91	3194094.25	806.15	EDGE OF SHOULDER
P918	1602782.25	3194002.08	806.15	EDGE OF SHOULDER
P919	1602787.32	3194025.46	807.12	EDGE OF SHOULDER
P920	1602786.30	3194055.06	808.58	EDGE OF SHOULDER
P921	1602723.20	3194066.70	805.24	EDGE OF SHOULDER
P922	1602687.51	3194090.40	805.24	EDGE OF SHOULDER
P923	1602727.00	3194094.07	807.12	EDGE OF SHOULDER
P924	1602726.52	3194091.08	807.12	EDGE OF SHOULDER
P925	1602785.44	3194071.62	810.28	EDGE OF SHOULDER
P926	1602844.43	3194048.41	812.41	EDGE OF SHOULDER
P927	1602874.90	3194165.57	812.41	EDGE OF SHOULDER
P928	1602885.60	3194120.60	812.35	EDGE OF SHOULDER
P929	1602910.67	3194113.70	812.35	EDGE OF SHOULDER
P930	1602921.30	3194152.36	814.13	EDGE OF SHOULDER
P931	1602946.14	3194154.24	814.04	EDGE OF SHOULDER
P932	1602844.24	3194164.34	814.04	EDGE OF SHOULDER
P933	1602885.40	3194124.85	815.64	EDGE OF SHOULDER
P934	1602871.41	3194110.05	814.71	EDGE OF SHOULDER
P935	1602861.94	3194264.64	817.74	EDGE OF SHOULDER
P936	1602908.30	3194254.04	817.74	EDGE OF SHOULDER
P937	1602912.71	3194278.53	818.54	EDGE OF SHOULDER
P938	1602928.70	3194274.88	818.54	EDGE OF SHOULDER
P939	1602948.07	3194282.21	819.74	EDGE OF SHOULDER
P940	1602918.14	3194301.92	819.74	EDGE OF SHOULDER
P941	1602965.04	3194807.22	819.74	EDGE OF SHOULDER
P942	1602894.71	3194283.83	818.54	EDGE OF SHOULDER
P943	1602845.93	3194288.81	818.54	EDGE OF SHOULDER
P944	1602731.18	3194910.64	818.20	EDGE OF SHOULDER
P945	1602763.43	3194416.52	818.20	EDGE OF SHOULDER
P946	1602750.93	3194432.12	818.20	EDGE OF SHOULDER
P947	1602763.41	3194416.52	818.20	EDGE OF SHOULDER
P948	1602748.41	3194460.86	814.00	EDGE OF SHOULDER
P949	1602735.42	3194450.86	810.20	EDGE OF SHOULDER



603(1) AND 603(3) CSP SUMMARY

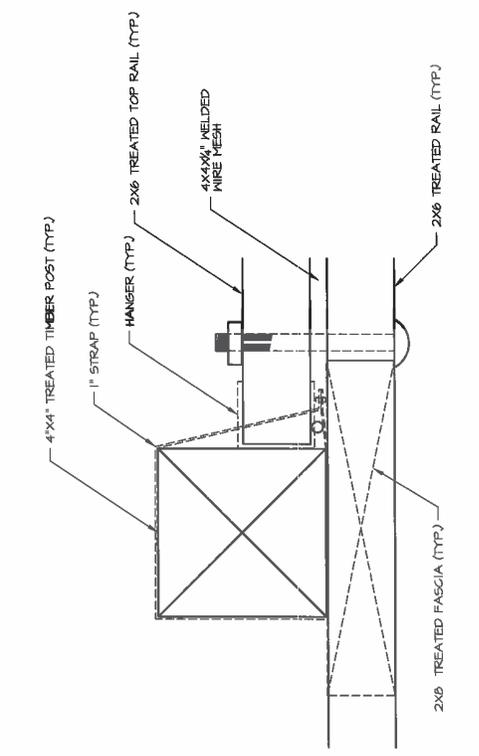
STATION AND OFFSET		STATION AND OFFSET		DIAMETER	LENGTH	END SECTIONS
FLOW IN	INVERT ELEVATION	FLOW OUT	INVERT ELEVATION			
1024 - 25' R	686.00	1024 - 25' L	685.50	24"	70'	Yes
1145 - 26' R	683.56	1141 - 25' L	683.21	24"	53'	Yes
1614 - 50' R	700.05	1541 - 44' L	694.52	24"	103'	Yes
1748 - 1' R	713.02	1740 - 34' L	712.50	24"	70'	Yes
5500 - 22' R	871.50	5446 - 22' L	871.40	24"	45'	Yes
7142 - 30' R	893.88	7141 - 30' R	890.50	24"	50'	Yes
8826 - 71' L	872.03	8913 - 65' L	864.00	24"	61'	Yes
8977 - 11' L	862.77	8979 - 27' R	862.67	24"	38'	Yes
9038 - 11' L	861.54	9035 - 27' R	860.18	24"	38'	Yes
9232 - 23' L	868.40	9232 - 19' R	867.59	24"	41'	Yes
9515 - 7' L	865.25	9507 - 8' L	864.88	18"	28'	Yes
9502 - 5' L	872.51	9502 - 23' R	865.96	24"	28'	Yes
9641 - 7' L	873.71	9642 - 6' L	873.50	18"	28'	Yes
9840 - 7' L	874.99	9831 - 6' L	874.88	18"	24'	Yes
10364 - 7' L	878.08	10333 - 7' L	877.90	18"	30'	Yes
10374 - 16' L	877.46	10341 - 16' R	877.77	18"	36'	Yes
10448 - 16' R	878.34	10415 - 16' R	878.20	18"	36'	Yes
10510 - 15' R	878.76	10478 - 17' R	878.65	18"	38'	Yes
10565 - 16' R	879.14	10525 - 16' R	879.02	18"	32'	Yes
10640 - 16' R	879.55	10628 - 16' R	879.44	18"	36'	Yes
10821 - 16' R	878.20	10855 - 17' R	877.56	18"	34'	Yes
10948 - 7' L	875.91	10908 - 8' L	875.30	18"	37'	Yes
11128 - 18' R	873.77	11146 - 6' L	873.64	24"	38'	Yes
11444 - 15' R	874.78	11378 - 15' R	873.47	18"	32'	Yes
11538 - 16' R	885.24	11543 - 16' R	883.80	18"	35'	Yes
11616 - 15' R	888.63	11581 - 15' R	887.15	18"	36'	Yes
11707 - 14' R	892.51	11672 - 15' R	891.02	18"	38'	Yes
11928 - 6' L	898.03	11928 - 15' R	897.99	24"	21'	Yes
12007 - 16' R	894.37	12035 - 15' R	893.24	18"	31'	Yes
12095 - 6' L	892.52	12106 - 7' L	890.00	18"	50'	Yes
12127 - 16' R	888.78	12143 - 16' R	886.99	18"	36'	Yes
12178 - 7' L	888.64	12208 - 7' L	884.92	18"	36'	Yes
12288 - 17' R	883.27	12276 - 17' R	881.48	18"	34'	Yes
12381 - 6' L	881.31	12319 - 8' L	879.50	18"	38'	Yes
12403 - 16' R	875.12	12431 - 16' R	873.83	18"	31'	Yes
12442 - 16' R	871.44	12524 - 17' R	870.50	18"	35'	Yes
12558 - 7' L	864.81	12548 - 7' L	864.11	18"	35'	Yes
TOTAL				1444'	74	

RADIUS POINT TABLE

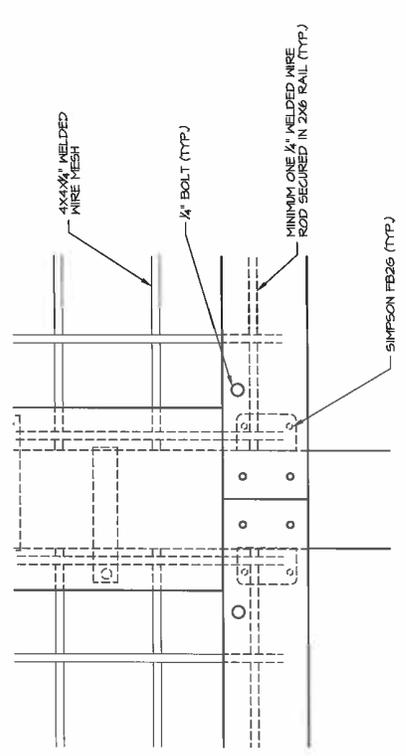
POINT #	NORTHING	EASTING	RADIUS	DESCRIPTION
R155	1602395.97	319406.23	15.00	EDGE OF SHOULDER
R156	1602394.17	319396.44	5.00	EDGE OF SHOULDER
R157	1602246.65	319390.50	5.00	EDGE OF SHOULDER
R158	1602244.98	319386.85	5.00	EDGE OF SHOULDER
R159	1602191.67	319345.05	15.00	EDGE OF SHOULDER
R160	1602210.45	319306.96	5.00	EDGE OF SHOULDER
R161	1602191.86	319326.61	15.00	EDGE OF SHOULDER
R162	1602194.01	319322.85	50.00	EDGE OF SHOULDER

STEEP DITCH LINING SUMMARY

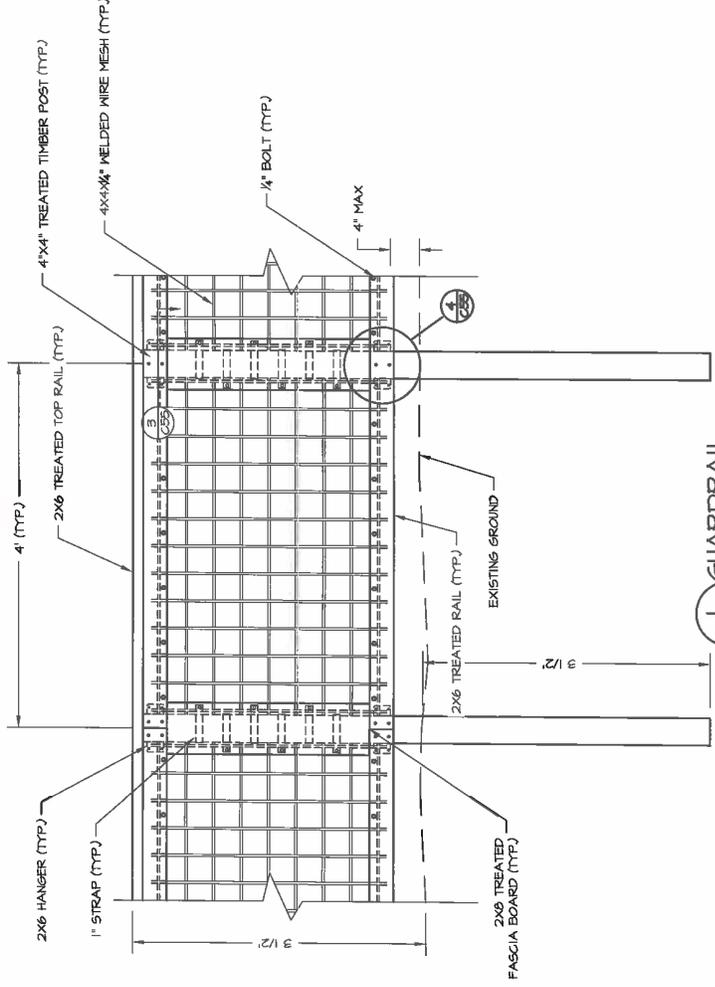
STARTING STATION	ENDING STATION	LENGTH	SIDE OF ROAD	ANTICIPATED TONNAGE
21467	22146	124'	BOTH	48.4
26475	30400	325'	BOTH	121.9
37400	38460	160'	BOTH	60
44450	46450	200'	BOTH	75
53425	54477	652'	BOTH	244.5



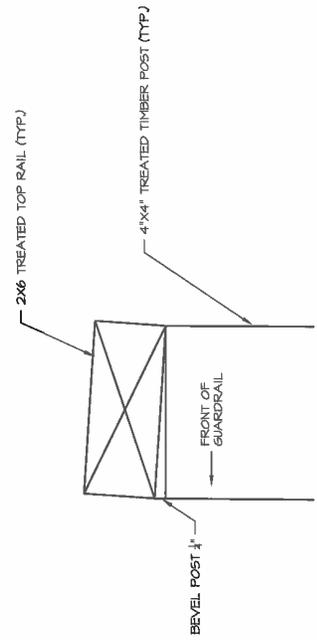
3 GUARDRAIL
 C55 CONNECTION DETAIL



4 GUARDRAIL
 C55 CONNECTION DETAIL



1 GUARDRAIL
 C55 DETAIL



2 GUARDRAIL
 C55 CONNECTION DETAIL

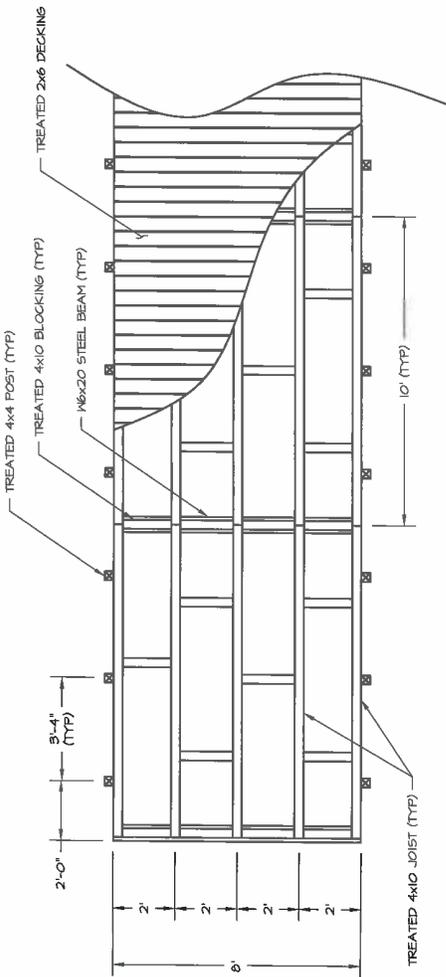


PREPARED: SLS
 DRAWN: RBW/SLB
 REVIEWED: RBW
 DATE: 9/19/19

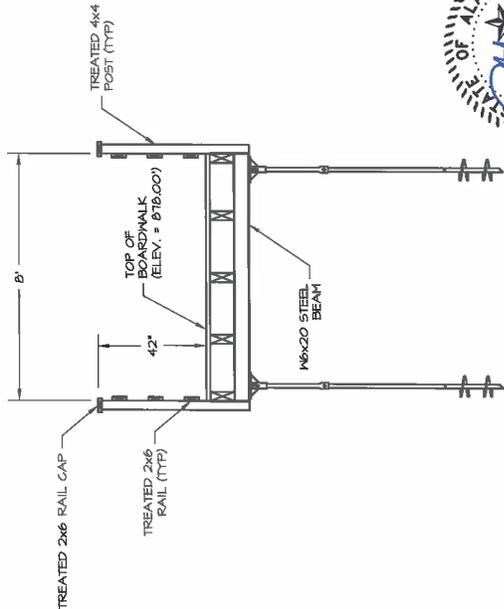
SHEET 30
 C56
 OF 64 SHEETS

BOARDWALK FOUNDATION NOTES:

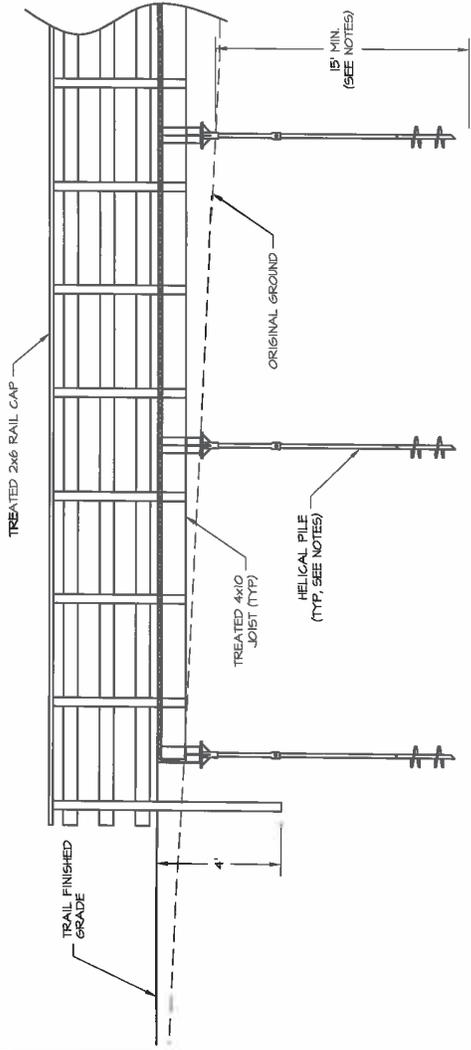
- FILE DESIGN LOADS (UNFACTORED):
 DEAD LOAD = 20 PSF (SUPERSTRUCTURE) + 100 POUNDS (PILE)
 LIVE LOAD = 60 PSF
 SNOW LOAD = 30 PSF
 ULTIMATE AXIAL (COMPRESSIVE) BEARING CAPACITY PER PILE = 15,150 LBS
 DESIGN AXIAL (COMPRESSIVE) LOAD PER PILE = 6,300 LBS
 FACTOR OF SAFETY = 2.5
- HELICAL PILE PROPERTIES:
 SHAFT STEEL SPECIFICATION:
 ASTM A576, ASTM A618 (GRADE III),
 OR ASTM A500 (GRADE B)
 1-3/4 INCHES - SQUARE TUBE
 2 SPACED AT 2 TO 3 FEET
 ASTM A36 OR ASTM A572
 1/2 INCHES - THICKNESS
 8 INCHES AND 10 INCHES
 GALVANIZED (ASTM A123)
 NUMBER OF HELICES:
 HELICES STEEL SPECIFICATION:
 ASTM A576 OR ASTM A572
 1/2 INCHES - THICKNESS
 HELICES DIAMETER:
 SURFACE TREATMENT:
 GALVANIZED (ASTM A123)
- PILES SHALL BE DRIVEN WITH AN ENGINEER APPROVED PILE DRIVER CAPABLE OF MEASURING TORQUE DURING INSTALLATION. THE PILE DRIVERS TORQUE SHALL BE MONITORED TO ALLOW FOR THE CALCULATION OF IN-PLACE BEARING CAPACITY.
- PILES SHALL BE DRIVEN TO THE MINIMUM DEPTH SPECIFIED AND ACHIEVE THE ULTIMATE AXIAL BEARING CAPACITY PER PILE INDICATED IN THESE NOTES.
- ALL WELDING SHALL CONFORM TO THE REQUIREMENTS OF THE AWS STRUCTURAL WELDING CODE, AWS D11 PUBLISHED BY THE AMERICAN WELDING SOCIETY.
- WAIT AT LEAST 72 HOURS AFTER INSTALLATION BEFORE APPLYING LOADS ON THE HELICAL PILES.
- REFER TO APPENDIX D OF THE SPECIAL PROVISIONS FOR SOILS INFORMATION USED FOR FOUNDATION DESIGN.



1 BOARDWALK
 C52 TYPICAL FRAMING PLAN



3 BOARDWALK
 C52 TYPICAL SECTION



2 BOARDWALK
 C52 TYPICAL ELEVATION





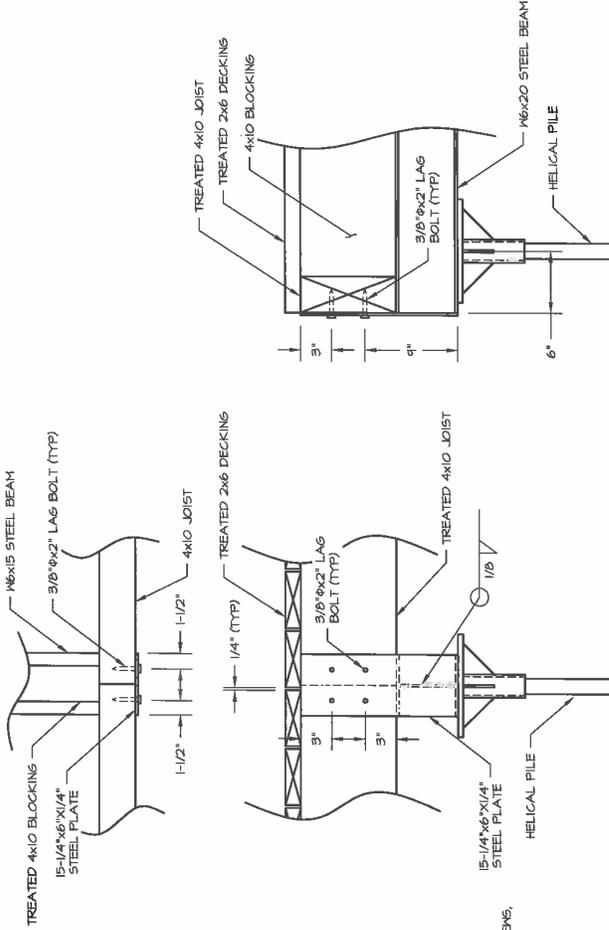
PREPARED: SJS
 DRAWN: RSM/SJS
 REVIEWED: RBM
 DATE: 3/15/13

SHEET 65

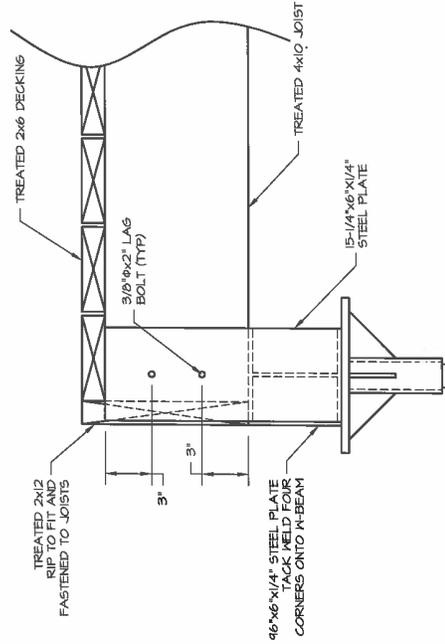
C57

OF 64 SHEETS

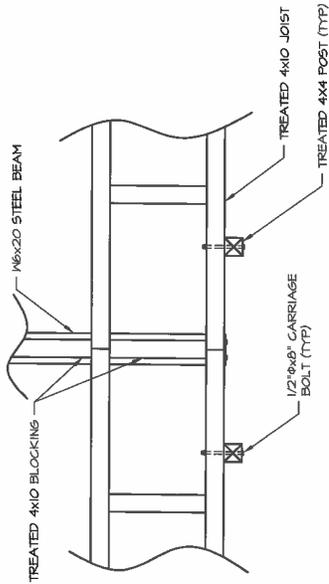
STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES



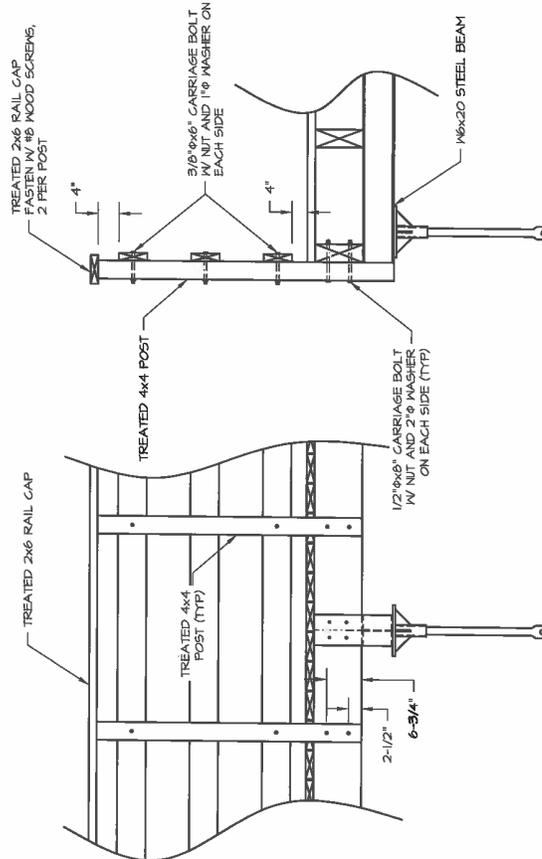
1 JOIST-BEAM CONNECTION
 TYPICAL DETAIL



2 BOARDWALK END
 TYPICAL DETAIL



3 RAIL POST CONNECTION
 TYPICAL DETAIL



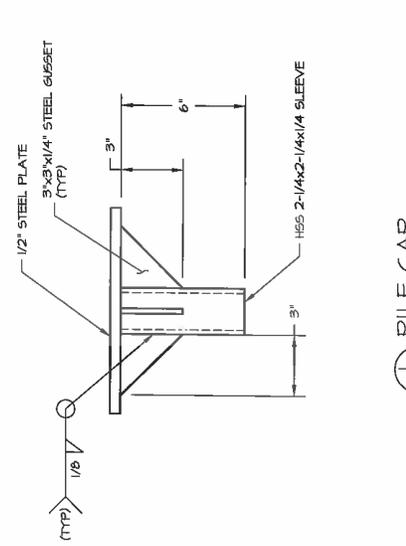
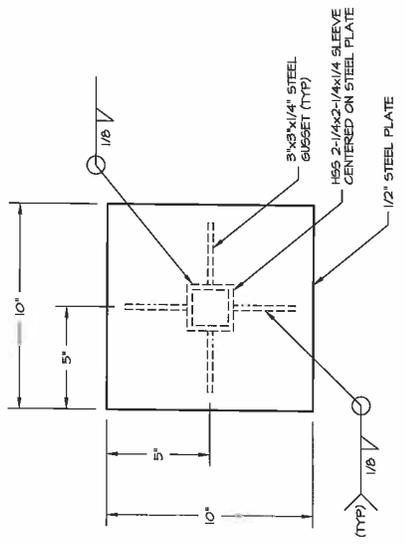
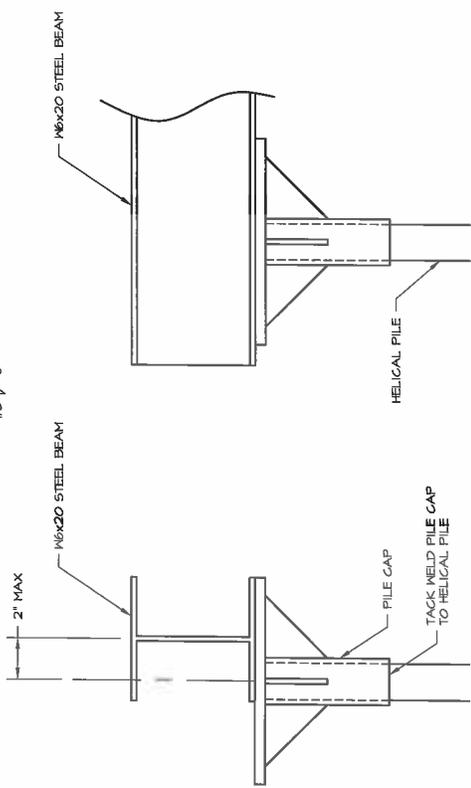
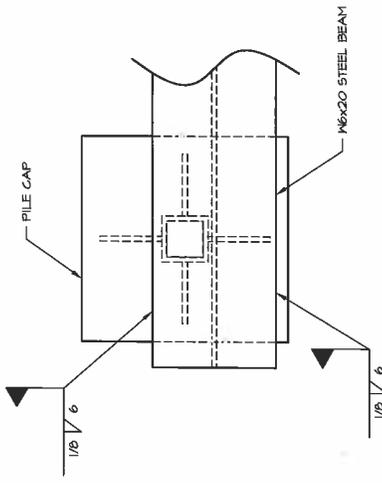
4 RAIL POST CONNECTION
 TYPICAL DETAIL



PREPARED: SJB
DRAWN: RBM/SJB
REVIEWED: RBM
DATE: 3/15/19
SHEET 64

C58
OF 64 SHEETS

PILE #	NORTHING	EASTING	TOP OF PILE CAP ELEV.
1	3139406.42	1602046.73	876.56
2	3139413.24	1602045.16	876.56
3	3139428.67	1602106.48	876.56
4	3139415.41	1602104.91	876.56
5	3139410.42	1602116.22	876.56
6	3139417.74	1602114.65	876.56
7	3139413.16	1602123.97	876.56
8	3139414.98	1602124.39	876.56
9	3139415.41	1602135.71	876.56
10	3139422.23	1602134.14	876.56
11	3139417.66	1602145.46	876.56
12	3139424.48	1602143.88	876.56
13	3139414.40	1602155.20	876.56
14	3139426.73	1602153.63	876.56
15	3139422.07	1602165.03	876.56
16	3139428.97	1602163.37	876.56
17	3139424.40	1602174.69	876.56
18	3139422.22	1602173.12	876.56
19	3139426.65	1602184.45	876.56
20	3139423.47	1602182.86	876.56
21	3139428.77	1602189.65	876.56
22	3139425.54	1602192.08	876.56



1 PILE CAP
C54 DETAIL

2 BEAM-PILE CAP CONNECTION
C54 DETAIL

NOTES:
1. THE H65 2-1/4x2-1/4x1/4 SLEEVE IS INTENDED TO FIT OVER A STANDARD 1-3/4" SQUARE SHAFT. THE CONTRACTOR SHALL CHECK WHETHER OR NOT THE ACTUAL HELICAL PILE USED WILL FIT INTO THE PILE CAP. IF THERE IS A CONFLICT BETWEEN THE HELICAL PILE SHAFT AND PILE CAP DIMENSIONS ARE DISCOVERED.

2. PILE CAP PROPERTIES:
STEEL SPECIFICATION: A57M A36
SURFACE TREATMENT: GALVANIZED (ASTM A123)



STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES

PICNIC TABLE

DESIGN & CONSTRUCTION SECTION



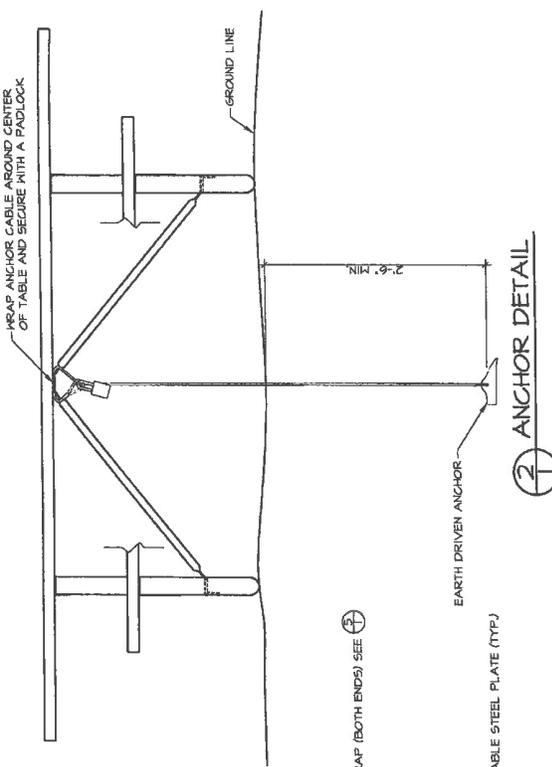
PREPARED: GLD
 DRAWN: BD FN
 REVIEWED: DH
 DATE: JAN. 85

SHEET 1

DATE APPROVED: 01 SHEETS

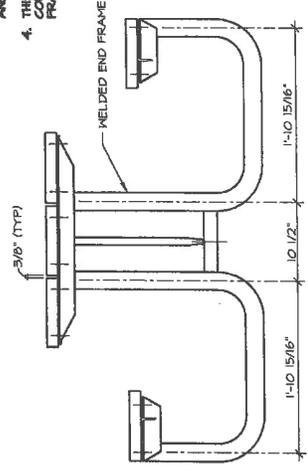


NO.	REVISION	DATE	APPROVED BY	SHEETS
20	CHANGED STATE PARKS LOGO	10/4/10	NFS	
19	CHANGED ANCHOR TO EARTH DRIVEN ANCHOR	04/10	NFS	
18	ADDED EARTH ANCHOR AS AN ANCHOR OPTION	06/04	NFS	
17	CHANGED TABLE TOP & SEAT MATERIAL	06/04	NFS	
16	ADDED STEEL REINFORCING PLATE & ANGLE IRON	06/04	NFS	
15	CHANGED TITLE BLOCK	12/07	NFS	
14	CHANGED TABLE TOP AND SEAT MATERIAL	10/08	NFS	
13	MODIFIED FRAME SIZE	07/09	NFS	
12	REPLACED STAMP	3/04	NFS	

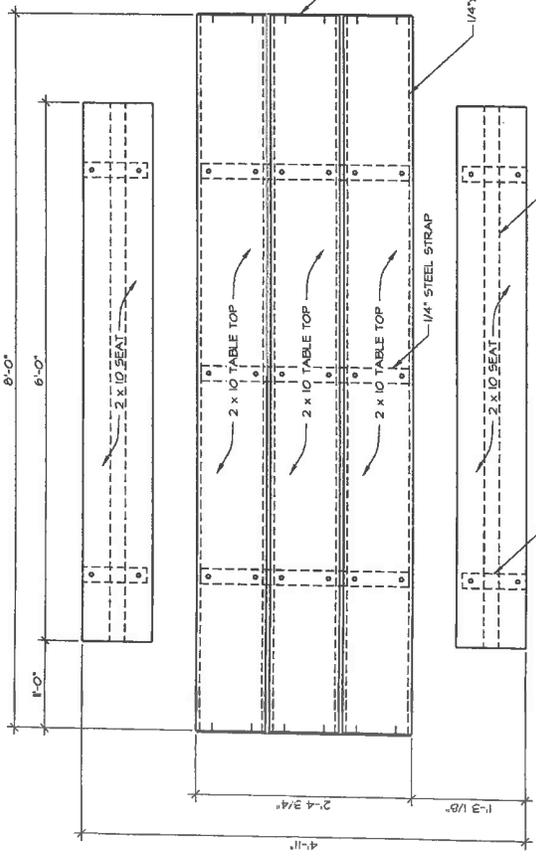


- NOTES:**
- SEATS & TOP SHALL RECYCLED PLASTIC LUMBER.
 - BOLT HOLES FOR TABLE TOP, SEATS, & STEEL PLATES TO BE SHOP DRILLED.
 - SMAGED SLEEVED SHALL BE USED TO FASTEN ANCHOR CABLE.
 - THIS DRAWING ILLUSTRATES SEAT & TABLE TOP ANCHORING SYSTEMS TO SPECIAL PROVIDERS FRAME STYLES & MODELS.

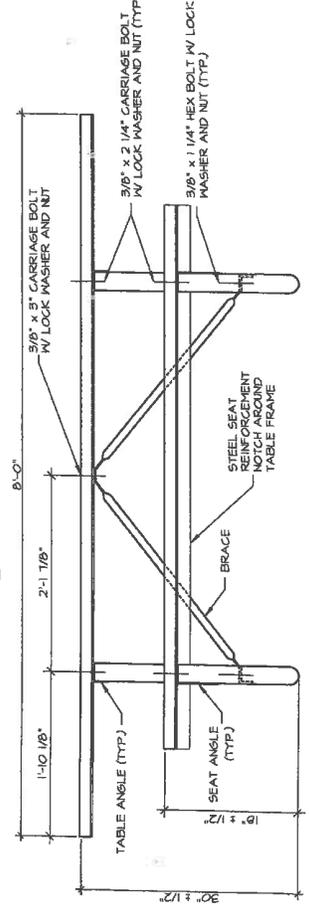
1 ANCHOR DETAIL



4 END VIEW



5 END STRAP



3 SIDE VIEW



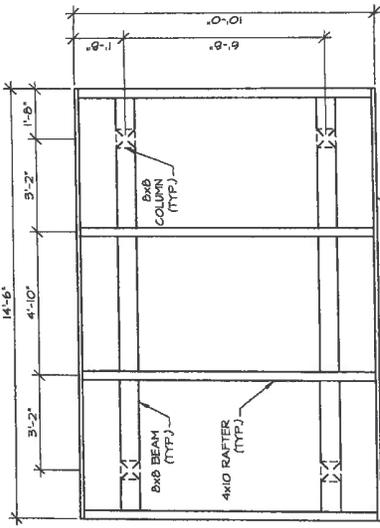
5 END STRAP



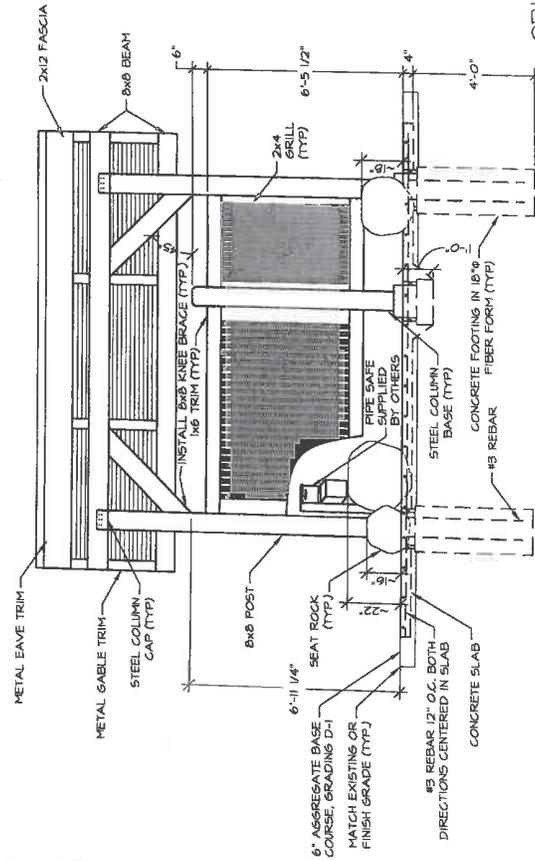
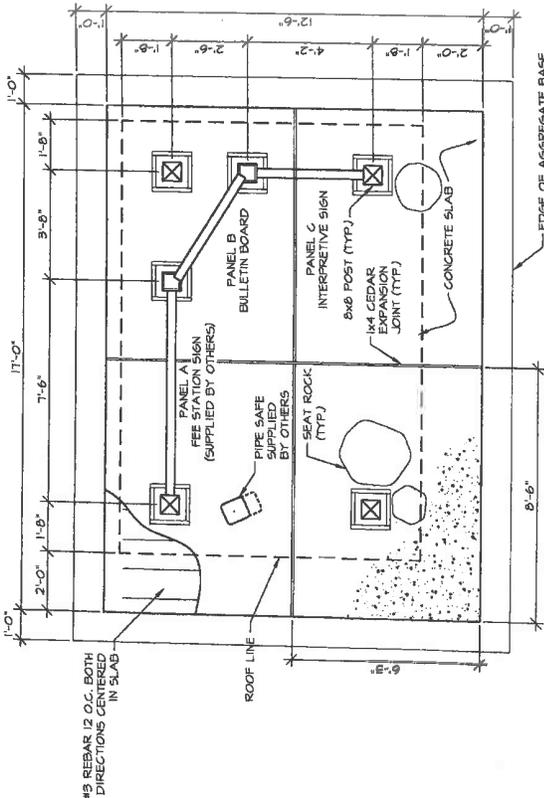
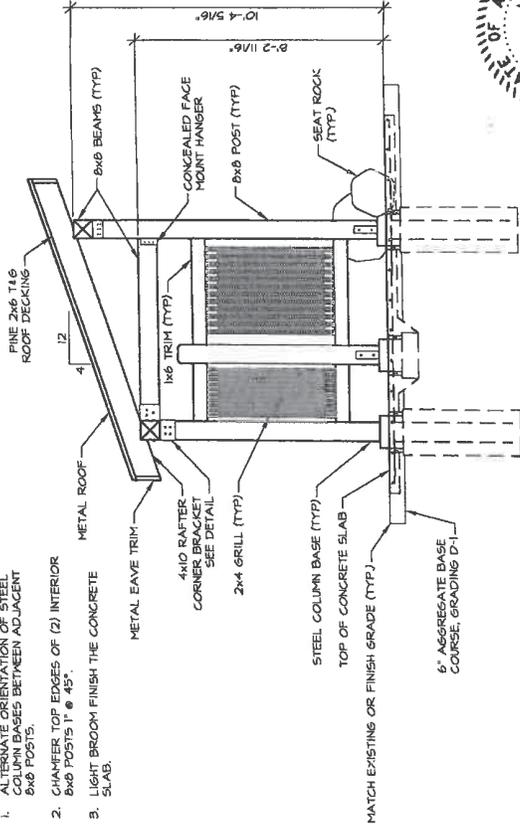
PREPARED: REM/JAG
DRAWN: REM/JAG
REVIEWED: MFS
DATE: JAN 2004

SHEET 1
5-10D
OF 8 SHEETS

STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES



- NOTES:
1. ALTERNATE ORIENTATION OF STEEL COLUMN BASES BETWEEN ADJACENT 8x8 POSTS.
2. CHAMFER TOP EDGES OF (2) INTERIOR 8x8 POSTS 1" @ 45".
3. LIGHT BROOM FINISH THE CONCRETE SLAB.



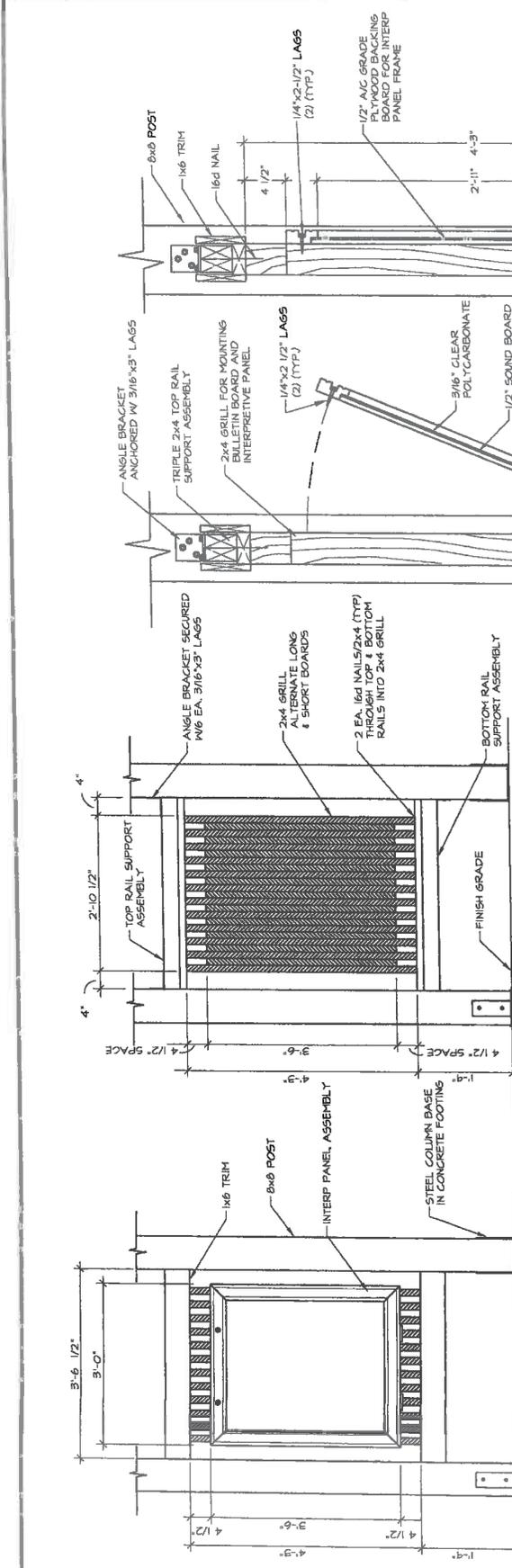
ORIENTATION KIOSK
PLAN & PROFILE

NO.	REVISION	DATE	APPROVED
4	ADDED D-1 SHOULDER	12/10	MFS
3	CHANGED CONCRETE FOOTER, ADDED NOTE 3	12/10	MFS
2	UPDATED STATE PARK LOGO	12/10	MFS
1	CHANGED TITLE BLOCK	12/07	MFS



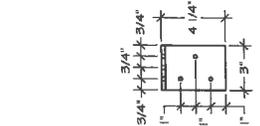
PREPARED: RBH/JAS
 DRAWN: AT/RBH/JAS
 REVIEWED: HFS
 DATE: JAN 2004

SHEET 2
 5-10D
 OF 3 SHEETS



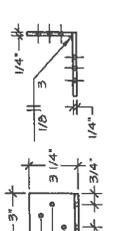
2x4 GRILL
 DETAILS - INTER PANEL &
 1/4" TRIM NOT SHOWN

2x4 GRILL W/ INTER PANEL
 DETAILS

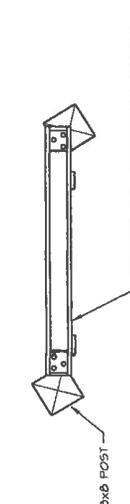


2x4 GRILL
 PLAN - PERPENDICULAR TO POSTS

2x4 GRILL
 PLAN - ANGLED TO POSTS



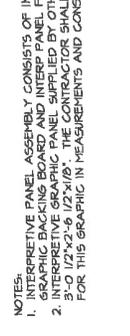
ANGLE BRACKET
 DETAILS



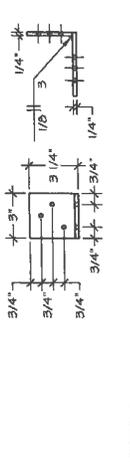
2x4 GRILL
 PLAN - ANGLED TO POSTS



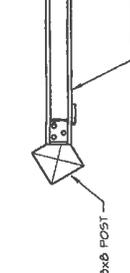
SUPPORT GRILL
 SECTION



BULLETIN BOARD
 SECTION



BULLETIN BOARD FRAME
 SECTION



BOTTOM RAIL SUPPORT ASSEMBLY
 SECTION

NOTES:
 1. INTERPRETIVE PANEL ASSEMBLY CONSIDERS OF INTERPRETIVE GRAPHIC PANEL AND INTERP PANEL FRAME.
 2. INTERPRETIVE GRAPHIC PANEL SUPPLIED BY OTHERS MEASURES 3'-0 1/2" X 2'-6 1/2" X 1/8". THE CONTRACTOR SHALL MAKE ACCOMMODATIONS FOR THIS GRAPHIC IN MEASUREMENTS AND CONSTRUCTION.

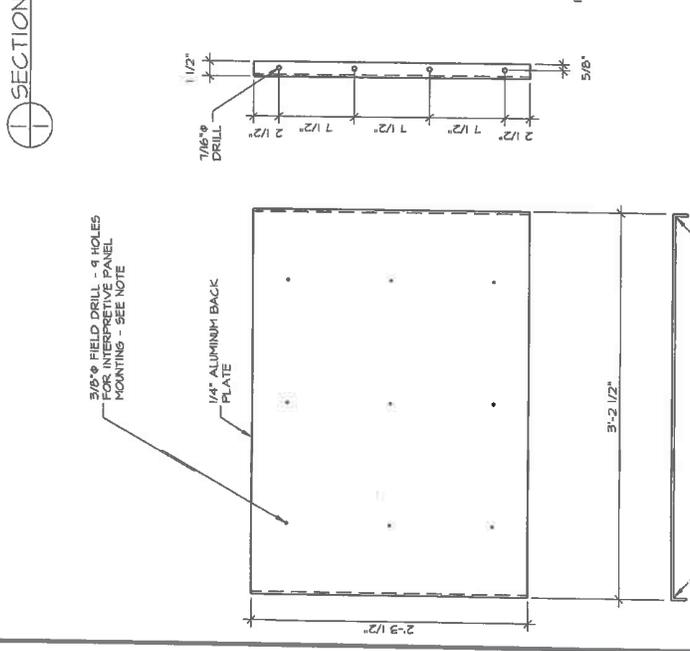
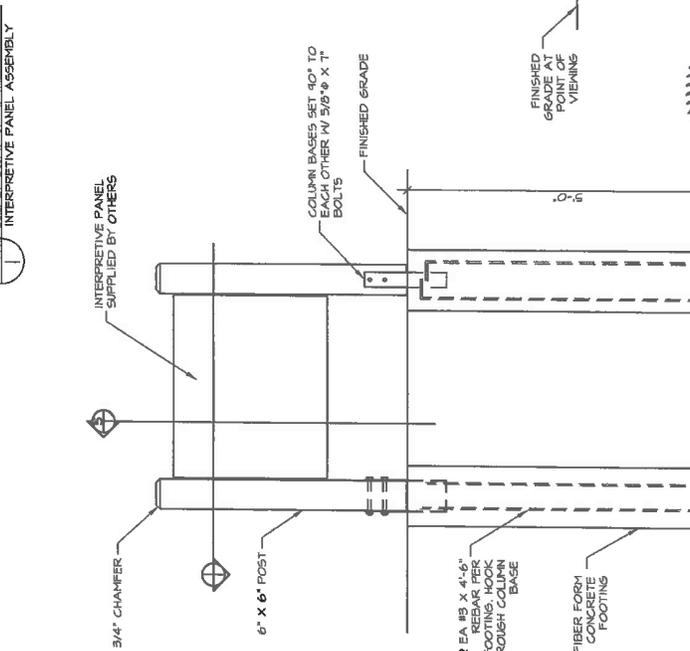
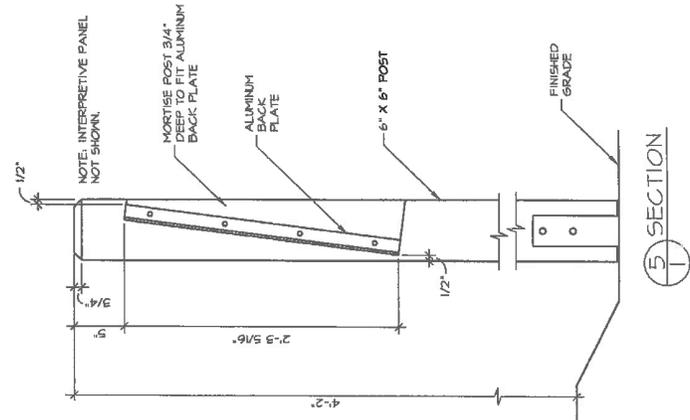
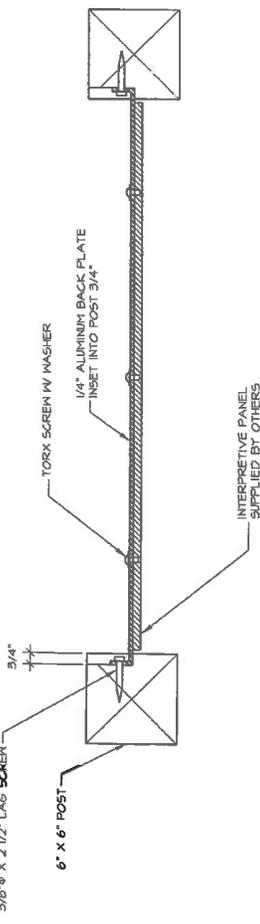
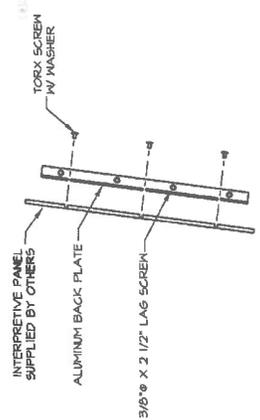


NO.	REVISION	DATE	APPROVED
3	CHANGED INTERP FRAME FASTENER SYSTEM	12/10	HFS
2	UPDATED STATE PARK LOGO	12/10	HFS
1	CHANGED TITLE BLOCK	12/07	HFS



PREPARED: DRAWN: REVIEWED: DH DATE: APRIL 98 SHEET 1
 5-110
 OF 1 SHEETS

- NOTES:
1. INTERPRETIVE PANEL SUPPLIED BY OTHERS MEASURES 1/2" X 3'-0 1/2" X 2'-6 1/2".
 2. 1/4" x 3/8" x 5/8" BUTT-NUT HEAD TORX TAPPER RESISTANT STAINLESS STEEL SCREWS WITH FINISHING WASHERS SHALL BE USED TO ATTACH THE INTERPRETIVE PANEL & THE PLYWOOD BACK PANEL TO THE ALUMINUM BACK PLATE.
 3. FIELD DRILL HOLES IN ALUMINUM BACK PLATE FOR INTERPRETIVE PANEL MOUNTING. FOR ENGINEER WILL LOCATE ALL HOLES PRIOR TO DRILLING.



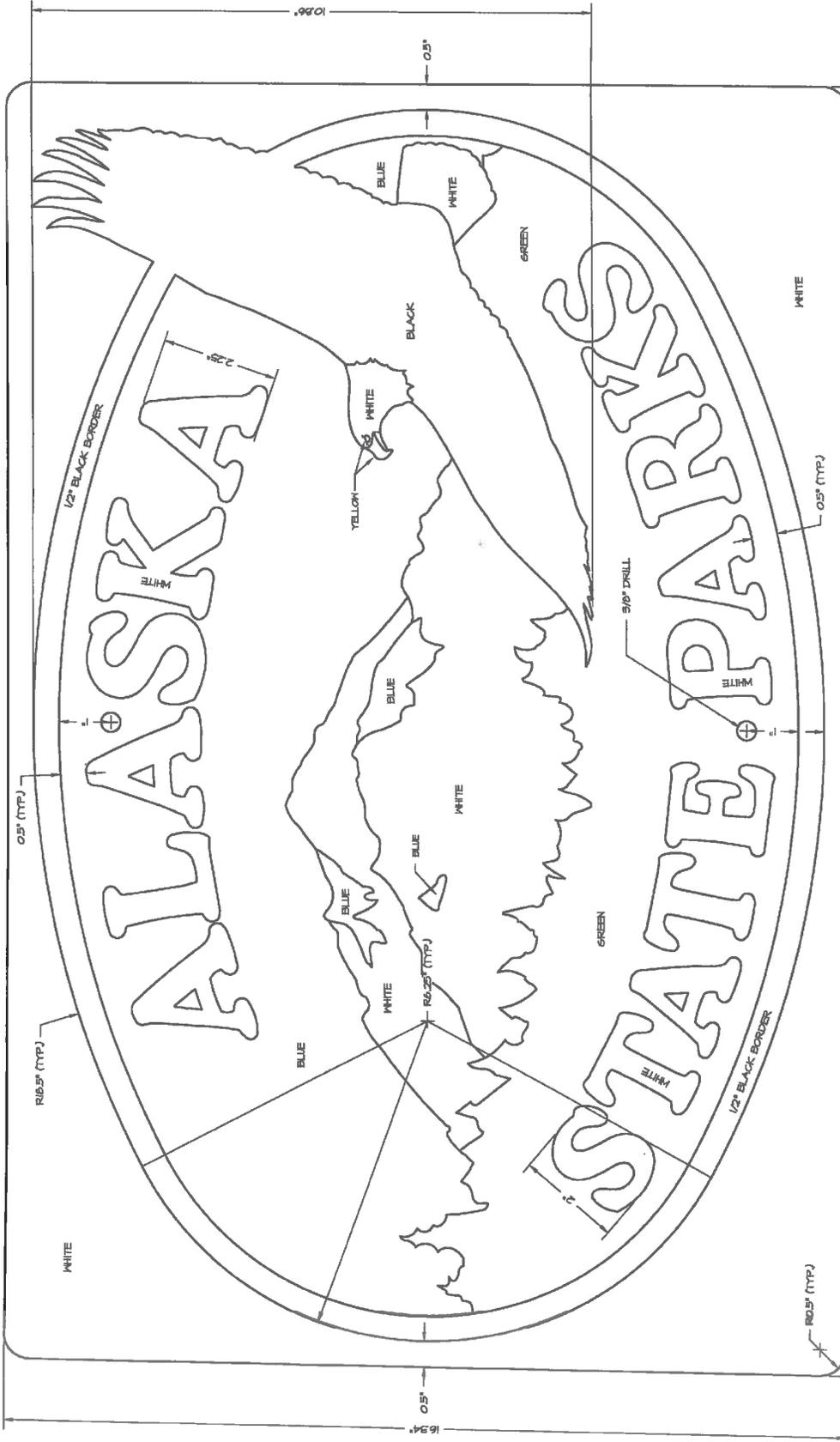
NO.	REVISION	DATE	APPROVED
1	UPDATED STATE PARK LOGO	12/07 PPS	
2	CHANGED TITLE BLOCK	12/07 PPS	
3	CHANGED LENGTH OF REBAR & SIZE OF PILL BOLT	12/04 PPS	
4	ADDED WIRE & REMOVED WATER ASBESTOS PROVISIONS	12/04 PPS	
5	REMOVED PLYWOOD BACK PANEL	12/04 PPS	
6	REPLACED STAMP	8/04 PPS	



PREPARED: LEB
DRAWN: S.S
REVIEWED: HFS
DATE: 12/0/00

SHEET 1
5-15
OF 1 SHEETS

STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES



COLOR	SCOTCHLITE 3M NUMBER
GREEN	700
BLUE	710
BLACK	705
YELLOW	714
WHITE	2290

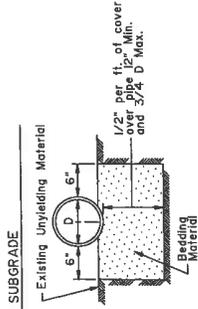
3. COLORS FOR SILK SCREENING SCOTCHLITE BY COLOR PROCESS CHART NUMBERS.

NOTES:
1. ALL LETTERS AND OBJECTS SHALL BE OUTLINED IN BLACK.
2. LETTERING SHALL BE COOPER F-1000 AND BE PLACED TO THE INSIDE OF THE BORDER, AS SHOWN.

NO.	DATE	DESCRIPTION	REVISIONS
1	06/06/02	CHANGED OVERALL SIZE	

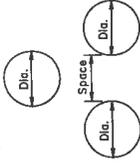
GENERAL NOTES:

1. Sidefill shall be placed and compacted with care under haunches of pipe and shall be brought up evenly and simultaneously on both sides of pipe to 1 foot above the top of the full length of the pipe.
2. Alternate installation methods may only be used when specified or approved by the Engineer.



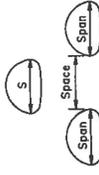
TYPE "D"
ROCK OR UNYIELDING MATERIAL

D = Nominal Pipe Diameter

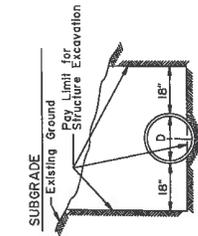


MULTIPLE INSTALLATIONS	
Dia.	Minimum Space Between Pipes
0" - 42"	24"
48" & Over	1/2 Dia. of pipe or 3', whichever is less.

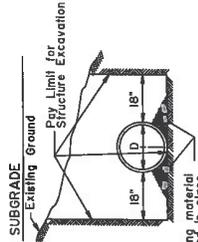
S = Nominal Pipe Arch Span



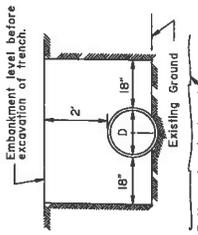
MULTIPLE INSTALLATIONS	
Dia.	Minimum Space Between Pipes
0" - 42"	24"
48" & Over	1/2 Span of pipe arch or 3', whichever is less.



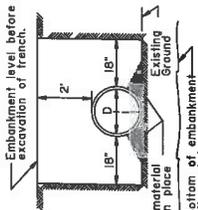
TYPE "C"



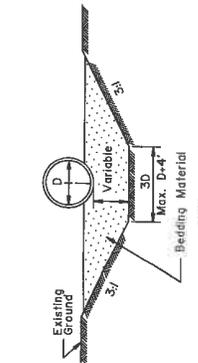
'ALTERNATE' TYPE "C"



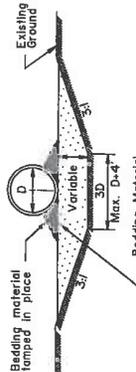
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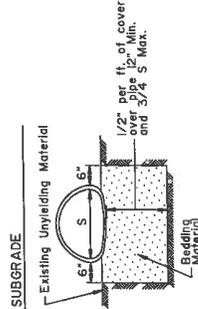
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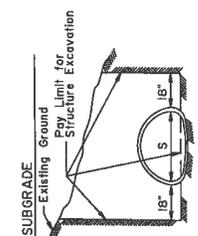
TYPE "A"
FOUNDATION STABILIZATION
To be used in unstable areas as directed by the Engineer.



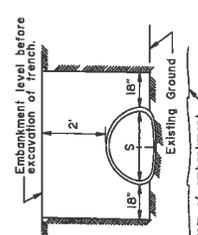
'ALTERNATE' TYPE "A"
FOUNDATION STABILIZATION
To be used in unstable areas as directed by the Engineer.



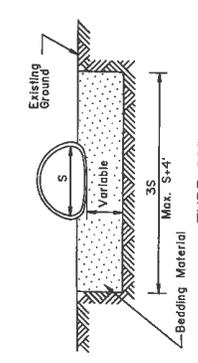
TYPE "D"
ROCK OR UNYIELDING MATERIAL



TYPE "C"



TYPE "B"



TYPE "A"
FOUNDATION STABILIZATION
To be used in unstable areas as directed by the Engineer.

CULVERT PIPE

ARCH



State of Alaska
Department of Transportation
& Public Facilities

CULVERT PIPE & ARCH
INSTALLATION DETAILS

Date

7/15/02

D-04.21

GENERAL NOTES:

All material and workmanship shall be in accordance with the State of Alaska, Standard Specifications for Highway Construction.

- The contractor shall select only pipes that meet specific height of cover criteria shown on the plans or in the special provisions.
- No more than one type of pipe may be used on any single installation or installation groupings.
- All structural plate pipes shall be placed on a pre-shaped foundation conforming to the depth of the bottom pipes with clearance assembling to the adjacent plates or clowes.
- See Standard Drawing "Culvert Pipe & Arch Installation Details" for foundation and structural backfill details.
- Minimum cover shall be measured from the top of pipe to the top of rigid pavement or to the top of flexible pavement subgrade. In all cases, the minimum cover shall not be less than 120 lbs per cubic foot and shall be that required to protect the pipe from damage or deflection.
- These tables have been developed for an H-20 live load and for compacted soil weighing 120 lbs. per cubic foot or less. If compacted soil cover exceeds 120 lbs. per cubic foot, the contractor shall use the depth of cover shown in the plans for the specified live load. If the soil cover exceeds 120 lbs per cubic foot and cover specific cover requirements are provided in the plans, the contractor shall determine the required minimum pipe cover in accordance with Section 12 of the 2000 AASHTO "LRFD Bridge Design Specifications".

Span x Rise (ft-in x ft-in)	0.000'		0.025'		0.50'		0.75'		0.900'		0.925'	
	Min. (ft)	Max. (ft)										
60	12	20	12	38	12	49	12	58	12	58	12	58
66	12	28	12	35	12	44	12	53	12	53	12	53
72	13	24	12	32	12	41	12	48	12	48	12	48
78	14	22	12	29	12	37	12	45	12	45	12	45
84	15	22	13	32	12	42	12	50	12	50	12	50
90	16	19	14	25	13	32	12	39	12	39	12	39
96	17	19	15	26	14	37	13	44	12	44	12	44
102	18	17	16	27	14	34	13	41	12	41	12	41
108	19	17	17	25	15	33	14	39	14	32	14	32
114	20	15	18	23	15	30	15	37	15	42	15	42
120	21	14	19	21	16	28	15	35	15	40	15	40
126	22	14	20	21	17	27	16	34	16	44	16	44
132	23	13	21	19	18	26	17	33	17	43	17	43
138	24	12	22	18	19	25	18	32	18	42	18	42
144	25	12	22	18	20	24	19	31	18	41	18	41
150	26	11	23	17	21	23	19	30	19	40	19	40
156	27	11	24	17	22	23	20	29	20	39	20	39
162	28	10	25	16	23	22	20	28	20	38	20	38
168	29	10	26	16	24	21	20	27	21	37	21	37
174	30	9	27	15	25	20	19	26	21	36	21	36
180	31	9	28	15	26	19	18	25	22	35	22	35
186	32	8	29	14	27	18	17	24	23	34	23	34
192	33	8	30	14	28	17	16	23	24	33	24	33
198	34	7	31	13	29	16	15	22	25	32	25	32
204	35	7	32	13	30	15	14	21	26	31	26	31
210	36	6	33	12	31	14	13	20	27	30	27	30
216	37	6	34	12	32	13	12	19	28	29	28	29
222	38	5	35	11	33	12	11	18	29	28	29	28
228	39	5	34	11	32	11	10	17	28	27	28	27
234	40	4	33	10	31	10	9	16	27	26	27	26
240	41	4	32	10	30	9	8	15	26	25	26	25
246	42	3	31	9	29	8	7	14	25	24	25	24
252	43	3	30	9	28	7	6	13	24	23	24	23
258	44	2	29	8	27	6	5	12	23	22	23	22
264	45	2	28	8	26	5	4	11	22	21	22	21
270	46	1	27	7	25	4	3	10	21	20	21	20
276	47	1	26	7	24	3	2	9	20	19	20	19
282	48	1	25	6	23	2	1	8	19	18	19	18
288	49	1	24	6	22	1	0	7	18	17	18	17
294	50	1	23	5	21	0	0	6	17	16	17	16
300	51	1	22	5	20	0	0	5	16	15	16	15
306	52	1	21	4	19	0	0	4	15	14	15	14
312	53	1	20	4	18	0	0	3	14	13	14	13
318	54	1	19	3	17	0	0	2	13	12	13	12
324	55	1	18	3	16	0	0	1	12	11	12	11
330	56	1	17	2	15	0	0	0	11	10	11	10
336	57	1	16	2	14	0	0	0	10	9	10	9
342	58	1	15	1	13	0	0	0	9	8	9	8
348	59	1	14	1	12	0	0	0	8	7	8	7
354	60	1	13	1	11	0	0	0	7	6	7	6
360	61	1	12	1	10	0	0	0	6	5	6	5
366	62	1	11	1	9	0	0	0	5	4	5	4
372	63	1	10	1	8	0	0	0	4	3	4	3
378	64	1	9	1	7	0	0	0	3	2	3	2
384	65	1	8	1	6	0	0	0	2	1	2	1
390	66	1	7	1	5	0	0	0	1	0	1	0
396	67	1	6	1	4	0	0	0	0	0	0	0
402	68	1	5	1	3	0	0	0	0	0	0	0
408	69	1	4	1	2	0	0	0	0	0	0	0
414	70	1	3	1	1	0	0	0	0	0	0	0
420	71	1	2	1	0	0	0	0	0	0	0	0
426	72	1	1	1	0	0	0	0	0	0	0	0
432	73	1	0	1	0	0	0	0	0	0	0	0
438	74	1	0	1	0	0	0	0	0	0	0	0
444	75	1	0	1	0	0	0	0	0	0	0	0
450	76	1	0	1	0	0	0	0	0	0	0	0
456	77	1	0	1	0	0	0	0	0	0	0	0
462	78	1	0	1	0	0	0	0	0	0	0	0
468	79	1	0	1	0	0	0	0	0	0	0	0
474	80	1	0	1	0	0	0	0	0	0	0	0
480	81	1	0	1	0	0	0	0	0	0	0	0
486	82	1	0	1	0	0	0	0	0	0	0	0
492	83	1	0	1	0	0	0	0	0	0	0	0
498	84	1	0	1	0	0	0	0	0	0	0	0
504	85	1	0	1	0	0	0	0	0	0	0	0
510	86	1	0	1	0	0	0	0	0	0	0	0
516	87	1	0	1	0	0	0	0	0	0	0	0
522	88	1	0	1	0	0	0	0	0	0	0	0
528	89	1	0	1	0	0	0	0	0	0	0	0
534	90	1	0	1	0	0	0	0	0	0	0	0
540	91	1	0	1	0	0	0	0	0	0	0	0
546	92	1	0	1	0	0	0	0	0	0	0	0
552	93	1	0	1	0	0	0	0	0	0	0	0
558	94	1	0	1	0	0	0	0	0	0	0	0
564	95	1	0	1	0	0	0	0	0	0	0	0
570	96	1	0	1	0	0	0	0	0	0	0	0
576	97	1	0	1	0	0	0	0	0	0	0	0
582	98	1	0	1	0	0	0	0	0	0	0	0
588	99	1	0	1	0	0	0	0	0	0	0	0
594	100	1	0	1	0	0	0	0	0	0	0	0

*Longitudinal seams use (5 1/2) 3/4" dia. bolts per foot.

Span x Rise (ft-in x ft-in)	0.075'		0.150'		0.350'		0.540'	
	Min. (ft)	Max. (ft)						
30	12	52	12	65	12	100+	12	100+
36	12	43	12	54	12	100+	12	100+
42	12	36	12	46	12	100+	12	100+
48	12	30	12	40	12	57	12	73
54	12	26	12	35	12	50	12	65
60	12	22	12	32	12	43	12	58
66	12	19	12	29	12	41	12	53
72	12	16	12	26	12	37	12	48
78	12	14	12	24	12	34	12	44
84	12	12	12	22	12	31	12	41
90	12	11	12	21	12	29	12	38
96	12	10	12	20	12	27	12	36
102	12	9	12	19	12	26	12	34
108	12	8	12	18	12	25	12	33
114	12	7	12	17	12	24	12	32
120	12	6	12	16	12	23	12	31
126	12	5	12	15	12	22	12	30
132	12	4	12	14	12	21	12	29
138	12	3	12	13	12	20	12	28
144	12	2	12	12	12	19	12	27
150	12	1	12	11	12	18	12	26
156	12	1	12	10	12	17	12	25
162	12	1	12	9	12	16	12	24
168	12	1	12	8	12	15	12	23
174	12	1	12	7	12	14	12	22
180	12	1	12	6	12	13	12	21
186	12	1	12	5	12	12	12	20
192	12	1	12	4	12	11	12	19
198	12	1	12	3	12	10	12	18
204	12	1	12	2	12	9	12	17
210	12	1	12	1	12	8	12	16
216	12	1	12	1	12	7	12	15
222	12	1	12	1	12	6	12	14
228	12	1	12	1	12	5	12	13
234	12	1	12	1	12	4	12	12
240	12	1	12	1	12	3	12	11
246	12	1	12	1	12	2	12	10
252	12	1	12	1	12	1	12	9
258	12	1	12	1	12	1	12	8
264	12	1	12	1	12	1	12	7
270	12	1	12	1	12	1	12	6
276	12	1	12	1	12	1	12	5
282	12	1	12	1	12	1	12	4
288	12	1	12	1	12	1	12	3
294	12	1	12	1	12	1	12	2
300	12	1	12	1	12	1	12	1

Maximum Cover for Type S Corrugated Polyethylene Pipe	
Size (in.)	Max. Cover (ft.)
12	30.0
15	30.0
18	30.0
24	30.0
30	30.0
36	30.0
40	20.0
48	20.0

GENERAL NOTES

- All materials and workmanship shall be in accordance with the State of Alaska Standard Specifications for Highway Construction.
- For foundation and structural backfill details see Standard Drawing "Culvert Pipe & Arch Installation Details".
- Pipe cover height is measured from top of the pipe to top of rigid pavement, or to the top of subgrade for flexible pavement. In all cases the minimum cover shall be no less than 2 ft. Where loads traverse the culvert during construction minimum cover shall be no less than 4 ft.

REVISIONS	
Date	Description
10/31/03	New Steel #.
	By LRG

Sheet 3 of 4
 State of Alaska
 Department of Transportation
 & Public Facilities

PIPE AND ARCH TABLES



Date 10/31/03

D-04.21

GENERAL NOTES

- All material and workmanship shall be in accordance with the State of Alaska, Standard Specifications for Highway Construction.
- The contractor shall select only pipes that meet specific height of cover criteria shown on the plans or in the special provisions.
- No more than one type of pipe may be used on any single installation or installation grouping.
- All structural plate pipes shall be placed on a pre-shaped foundation conforming to the depth of the bottom plates with clearance for assembling to the adjacent plates allowed.
- See Standard Drawing "Culvert Pipe & Arch Installation Details" for foundation and structural backfill details.
- Minimum cover shall be measured from the top of the pipe to the top of rigid pavement or to the top of flexible pavement subgrade in all cases. The minimum cover shall not be less than 12". Minimum cover during construction shall be that required to protect the pipe from damage or deflection.
- These tables have been developed for an H-20 live load and for compacted soil weighing 120 lbs. per cubic foot. The contractor shall use the depth of cover shown in the plans for the specific pipe. Where compacted soil cover exceeds 120 lbs. per cubic foot and no specific cover requirements are provided in the plans, the contractor shall determine the required minimum pipe cover in accordance with Section 12 of the 2000 AASHTO "LRFD Bridge Design Specifications".

Span & Rise (In. x In.)	0.075" Capacity		0.075" Capacity		0.075" Capacity	
	Min. Cover (ft.)	Max. Cover (ft.)	Min. Cover (ft.)	Max. Cover (ft.)	Min. Cover (ft.)	Max. Cover (ft.)
20 x 18	12	15				
23 x 19	12	14				
27 x 21	12	13				
30 x 23	12	13				
40 x 30	12	13				
48 x 36	12	14				
53 x 41	18	13				
60 x 46	18	20				
66 x 51	18	21				
73 x 55	18	21				
81 x 59	18	17				
86 x 63	18	17				
91 x 67	18	17				

*% x % x 76 in. or % x 1 x 86 in. Corrugations

Span (In.)	0.075" Capacity		0.075" Capacity		0.075" Capacity	
	Min. Cover (ft.)	Max. Cover (ft.)	Min. Cover (ft.)	Max. Cover (ft.)	Min. Cover (ft.)	Max. Cover (ft.)
12	24	35	24	50		
18	24	34	24	48		
24	24	29	24	36	24	63
30	24	28	24	34	24	60
36	24	24	24	24	24	54
42			24	19	24	35
48			24	17	24	30
54			24	14	24	27
60			24	12	24	24

*% x % x 76 in. or % x 1 x 86 in. Corrugations

ALUMINUM SPIRAL RIB PIPE

STEEL SPIRAL RIB PIPE

Span & Rise (In. x In.)	0.075" Capacity		0.075" Capacity		0.075" Capacity	
	Min. Cover (ft.)	Max. Cover (ft.)	Min. Cover (ft.)	Max. Cover (ft.)	Min. Cover (ft.)	Max. Cover (ft.)
20 x 18	12	15				
23 x 19	12	14				
27 x 21	12	13				
30 x 23	12	13				
40 x 30	12	13				
48 x 36	12	14				
53 x 41	18	13				
60 x 46	18	20				
66 x 51	18	21				
73 x 55	18	21				
81 x 59	18	17				
86 x 63	18	17				
91 x 67	18	17				

*% x % x 76 in. or % x 1 x 86 in. Corrugations

Span (In.)	0.075" Capacity		0.075" Capacity		0.075" Capacity	
	Min. Cover (ft.)	Max. Cover (ft.)	Min. Cover (ft.)	Max. Cover (ft.)	Min. Cover (ft.)	Max. Cover (ft.)
18	12	12	12	12	12	12
24	12	12	12	12	12	12
30	12	12	12	12	12	12
36	12	12	12	12	12	12
42	12	12	12	12	12	12
48	12	12	12	12	12	12
54	12	12	12	12	12	12
60	12	12	12	12	12	12
66	12	12	12	12	12	12
72	12	12	12	12	12	12
78	12	12	12	12	12	12
84	12	12	12	12	12	12
90	12	12	12	12	12	12
96	12	12	12	12	12	12
102	12	12	12	12	12	12
108	12	12	12	12	12	12

*% x % x 76 in. or % x 1 x 86 in. Corrugations

Date	Revisions	By
8/10/00	Pipe Tables & G. No. 1/5.	DFD
10/31/03	New Sheet 4	LRG

Sheet 4 of 4

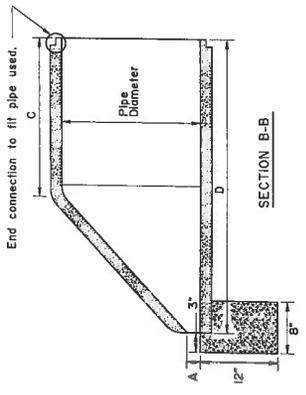
State of Alaska
Department of Transportation
& Public Facilities

PIPE AND ARCH TABLES

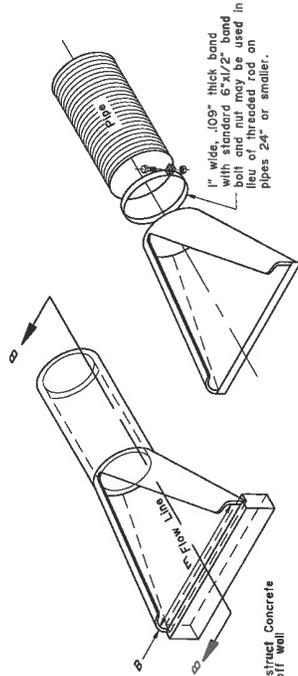


Date: 10/31/03

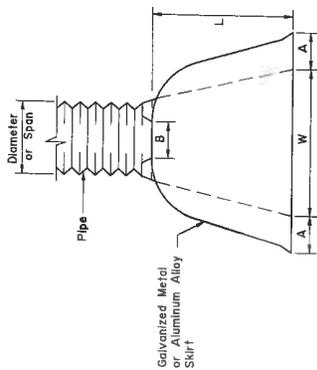
Pipe Diameter	A	B	C	D	E
12"	4"	3 1/4"	2 1/4"	4 1/2"	2 1/4"
18"	6"	5 1/4"	3 3/4"	6 3/4"	3 3/8"
24"	8"	7 1/4"	5 1/4"	9 1/4"	5 1/8"
30"	10"	9 1/4"	7 1/4"	11 3/4"	7 1/8"
36"	12"	11 1/4"	9 1/4"	14 1/4"	9 1/8"
42"	14"	13 1/4"	11 1/4"	16 3/4"	11 3/8"
48"	16"	15 1/4"	13 1/4"	19 1/4"	13 3/8"
54"	18"	17 1/4"	15 1/4"	21 3/4"	15 3/8"



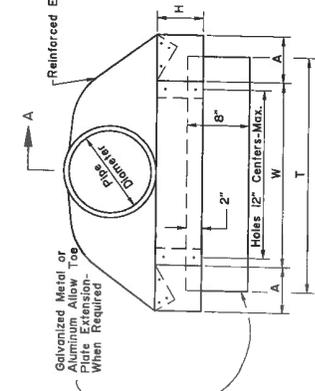
SECTION B-B



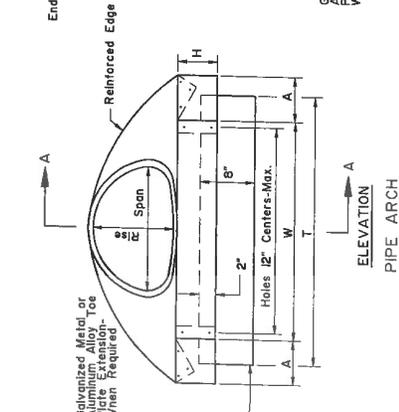
PRECAST CONCRETE END SECTION



ELEVATION ROUND PIPE



ELEVATION PIPE ARCH



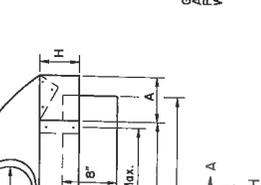
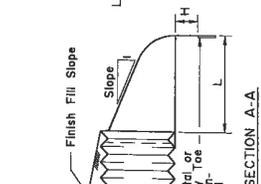
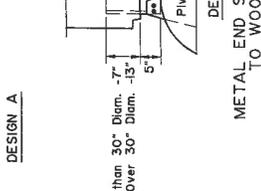
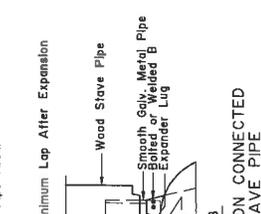
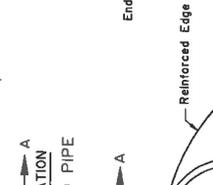
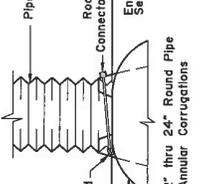
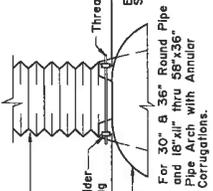
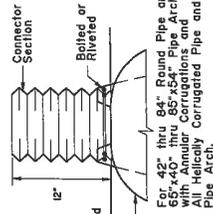
Pipe Diameter Inches	Thickness Aluminum Metal	Thk. for New Metal	Dimension Inches				W 2" Tol.	T 2" Tol.	Skirt 1 Pc. 2 1/2	Approx. Slope
			A 1" Tol.	B Max.	H 1" Tol.	L 1/2" Tol.				
12"	0.060	0.064	7"	6"	6"	21"	24"	34"	1 Pc. 2 1/2	2 1/2
15"	0.060	0.064	7"	6"	6"	26"	30"	40"	1 Pc. 2 1/2	2 1/2
18"	0.060	0.064	7"	6"	6"	31"	36"	46"	1 Pc. 2 1/2	2 1/2
21"	0.060	0.064	9"	12"	6"	36"	42"	52"	1 Pc. 2 1/2	2 1/2
24"	0.075	0.064	10"	13"	6"	41"	48"	58"	1 Pc. 2 1/2	2 1/2
30"	0.075	0.079	12"	16"	8"	51"	60"	70"	1 Pc. 2 1/2	2 1/2
36"	0.105	0.079	14"	19"	9"	60"	72"	84"	2 Pc. 2 1/2	2 1/2
42"	0.105	0.09	16"	22"	11"	69"	84"	106"	2 Pc. 2 1/2	2 1/2
48"	0.105	0.09	18"	27"	12"	78"	90"	122"	2 Pc. 2 1/2	2 1/2
54"	0.105	0.09	18"	30"	12"	84"	102"	122"	2 Pc. 2 1/2	2 1/2
60"	0.135	0.09	18"	33"	12"	87"	114"	134"	3 Pc. 2 1/2	2 1/2
66"	0.135	0.09	18"	36"	12"	87"	120"	142"	3 Pc. 2 1/2	2 1/2
72"	0.135	0.09	18"	39"	12"	87"	126"	146"	3 Pc. 2 1/2	2 1/2
78"	0.135	0.09	18"	42"	12"	87"	132"	152"	3 Pc. 2 1/2	2 1/2
84"	0.135	0.09	18"	45"	12"	87"	138"	158"	3 Pc. 2 1/2	2 1/2

PIPE ARCH

Pipe Arch Span Inches	Thick. Aluminum Metal	Thk. for New Metal	Dimension Inches				W 2" Tol.	T 2" Tol.	Skirt 1 Pc. 2 1/2	Approx. Slope
			A 1" Tol.	B Max.	H 1" Tol.	L 1/2" Tol.				
17"	0.060	0.064	7"	6"	6"	19"	30"	40"	1 Pc. 2 1/2	2 1/2
21"	0.060	0.064	7"	6"	6"	23"	36"	46"	1 Pc. 2 1/2	2 1/2
24"	0.060	0.064	7"	6"	6"	28"	42"	52"	1 Pc. 2 1/2	2 1/2
28"	0.075	0.064	9"	14"	6"	32"	48"	58"	1 Pc. 2 1/2	2 1/2
35"	0.075	0.079	10"	16"	6"	39"	60"	70"	1 Pc. 2 1/2	2 1/2
42"	0.075	0.079	12"	18"	6"	46"	72"	85"	1 Pc. 2 1/2	2 1/2
48"	0.105	0.09	13"	21"	9"	53"	85"	103"	2 Pc. 2 1/2	2 1/2
57"	0.105	0.09	15"	26"	12"	63"	102"	122"	2 Pc. 2 1/2	2 1/2
64"	0.135	0.09	15"	30"	12"	70"	114"	144"	3 Pc. 2 1/2	2 1/2
71"	0.135	0.09	15"	33"	12"	77"	126"	158"	3 Pc. 2 1/2	2 1/2
77"	0.135	0.09	15"	36"	12"	84"	140"	170"	3 Pc. 2 1/2	2 1/2
83"	0.135	0.09	15"	39"	12"	90"	156"	184"	3 Pc. 2 1/2	2 1/2

GENERAL NOTES:

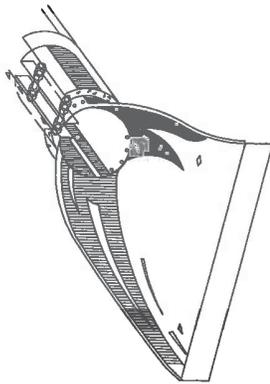
- Toe plate extensions will be furnished as provided for on the plans. When required, the toe plate extensions shall be punched with holes to match those in lip of skirt and fastened with 3/8 inch or larger galvanized nuts and bolts and washers same gage as the end section.
- Galvanized Metal or Aluminum Alloy End Sections may be used on Wood Stave and Plastic Pipe.
- All 3 piece bodies shall have center gaging slots in 10 piece bodies. Multiple panel bodies shall have lap seams which are to be tightly joined by 3/8" galvanized rivets or bolts.



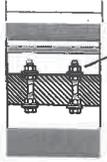
D-06.10

GENERAL NOTES

1. See general notes on sheet 1 of 3.
2. See sheet 1 of 3 for metal end section dimensions.
3. Insert bolts, washers and rivets shall be galvanized. Insert thickness is the same as the end section.
4. Use culvert inserts only at inlet.

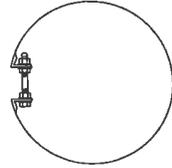


FOR CONNECTING CONCRETE PIPE OR CORRUGATED POLYETHYLENE PIPE TO METAL END SECTION.



SEE NOTE 2

5/8" GALV. BOLTS



METAL INSERTS FOR USE WITH CORRUGATED PLASTIC PIPE AND METAL END SECTIONS

Date	REVISIONS Description	By

Sheet 2 of 3

State of Alaska
Department of Transportation
& Public Facilities

CULVERT END SECTIONS



A
P
P
O
V
D

5/15/01

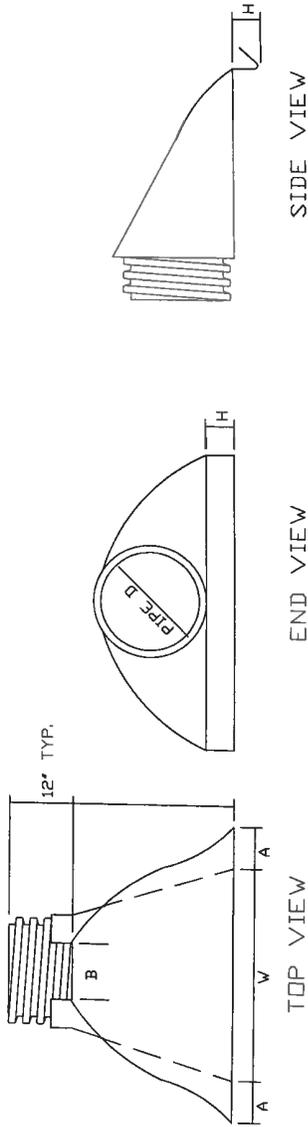
Date

D-06.10

D-06.10

GENERAL NOTES

1. Plastic flared end sections may be used with HDPE corrugated culvert pipes where noted in project plans or approved by project engineer.
2. Consult manufacturer's recommendations for proper sizing and coupling devices. Recommended fasteners may include connecting bands or chinch ties. Fittings across dimension B may include threaded rods with wing nuts or bolts and washers. Plastic welds may be recommended.
3. Align coupling to accommodate pipe corrugations.
4. Metal components e.g. bolts or washers must be galvanized.
5. Attachment of end section should preserve culvert alignment and not impair pipe function. Use end sections only on culvert inlet.
6. Toe plate extensions will be required only when designated on the plans.
7. End sections will not be used on HDPE culvert pipes larger than 36" unless indicated by project plans or approved by the Engineer.



PIPE DIAMETER	DIMENSIONS IN MILLIMETERS				
	A(1±)	B MAX	H(1±)	L(1/2±)	W(2±)
12" and 15"	6 1/2"	10"	6 1/2"	25"	29"
18"	7 1/2"	15"	6 1/2"	32"	35"
24"	7 1/2"	18"	6 1/2"	36"	45"
30"	10 1/2"	N/A	7"	53"	68"
36"	10 1/2"	N/A	7"	53"	68"

REVISIONS		Date	By
	Description		

Sheet 3 of 3
 State of Alaska
 Department of Transportation
 & Public Facilities

CULVERT END SECTIONS



Date 5/25/01

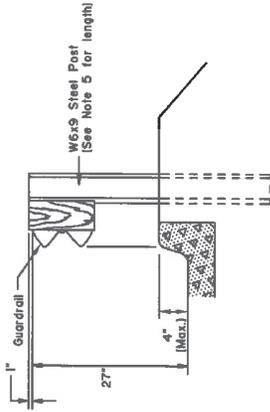
PLASTIC END SECTION FOR CORRUGATED PLASTIC PIPE

G-04.06S

SHEET 1 of 1

GENERAL NOTES:

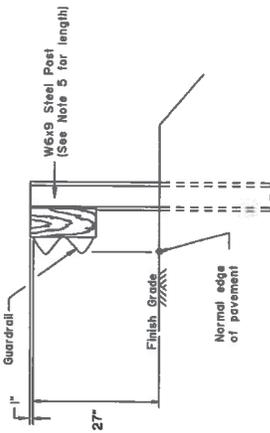
- Guardrail Reflectors shall be mounted at 50' centers beginning with the first post. Type A Reflectors shall be used unless specified otherwise on the plans. Type B Reflectors shall be used unless specified otherwise on the plans.
- All covered hardware shall comply with the AASHTO/AGC/ARTBA "A Guide to Standardized Highway Barrier Hardware", latest edition.
- See standard drawings G-00, "Standard Guardrail Hardware" for hardware details.
- Mount rail to block with bolt on approaching traffic side of block web.
- See standard drawing G-10, "Beam Guardrail Post Installation" for post lengths corresponding to different combinations of slope and behind-post embankment width.
- Typical post spacing is 6'-3" center to center.
- This barrier is acceptable under NCHRP 350, TL3.



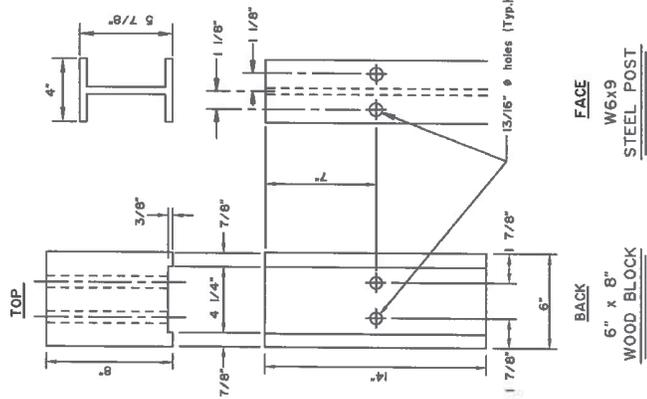
CURB DETAIL

TYPE III POST INSTALLATION

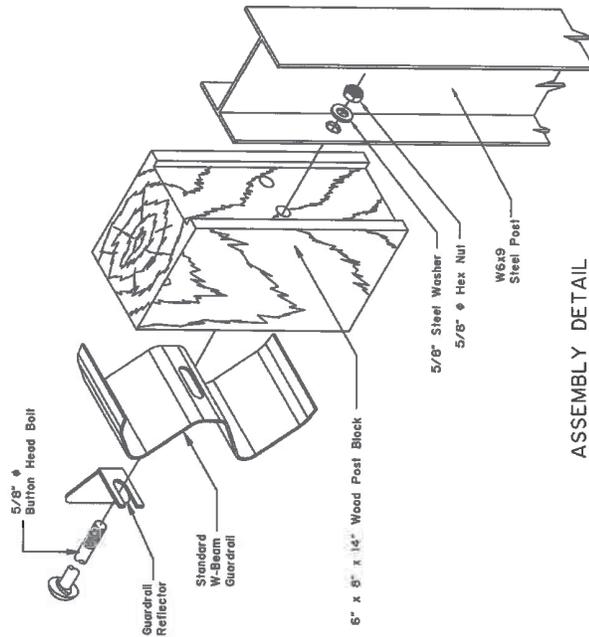
NOTE: Curb should not be installed with guardrail when the speed limit exceeds 40 mph.



TYPE I POST INSTALLATION



ASSEMBLY DETAIL



REVISIONS	
Date	Description
1/2/88	Revised per G-04.06S
1/2/88	Revised per G-04.06S
3/10/99	Modified Block Detail and post length

State of Alaska
Department of Transportation
& Public Facilities

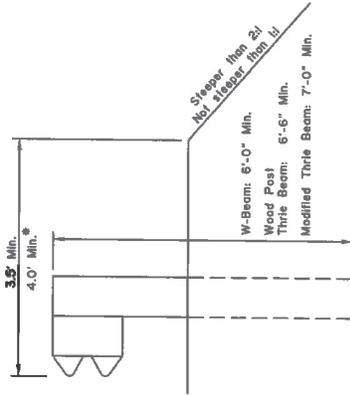
**STEEL POST
W-BEAM GUARDRAIL**

A
P
R
O
V
E
D

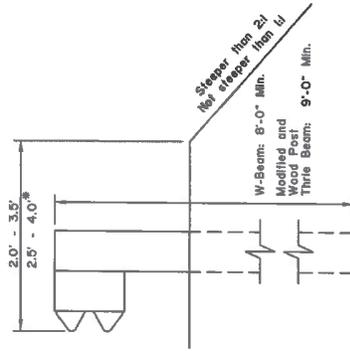
Date: 7/15/98

GENERAL NOTES:

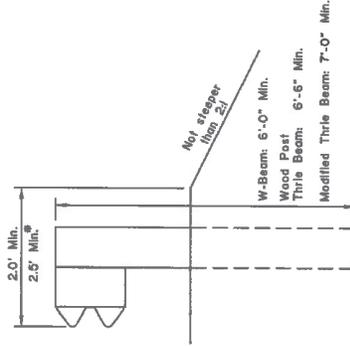
1. This drawing is to be used for post length determination only. See the plans for slopes and behind-post embankment widths.
2. To determine post length, identify the case that matches site conditions and read the length corresponding to the pertinent guardrail type.
3. These dimensions apply to both curbed and uncurbed sections.



CASE 1



CASE 2



CASE 3

* with Modified Thrie Beam

DATE	REVISIONS	BY
12/22/99	Update Case 3, and 6	NCS

State of Alaska
Department of Transportation
& Public Facilities

BEAM GUARDRAIL
POST INSTALLATION



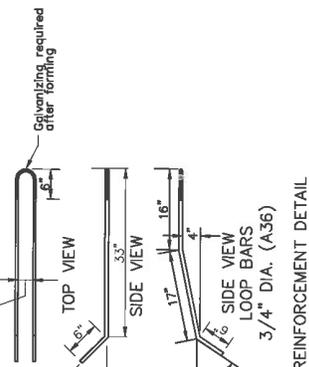
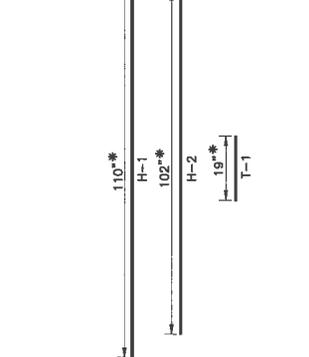
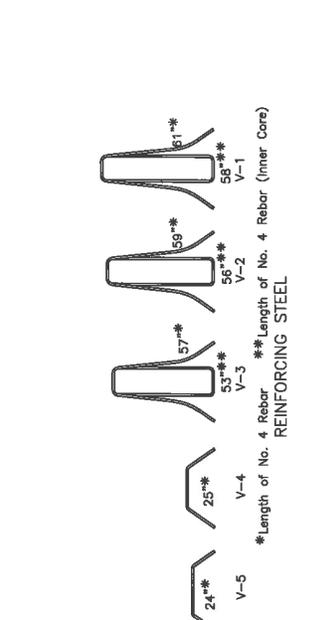
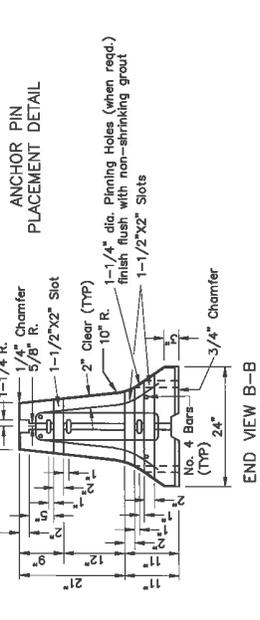
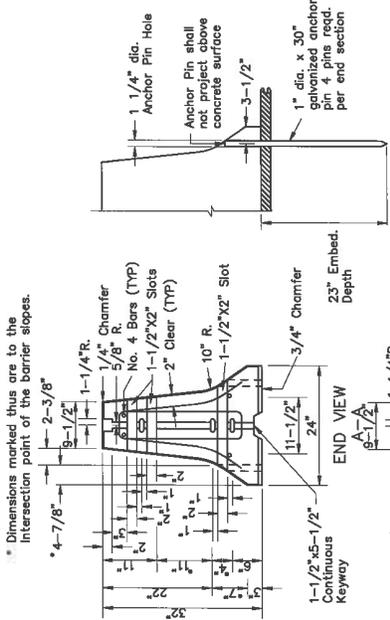
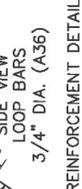
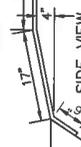
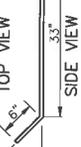
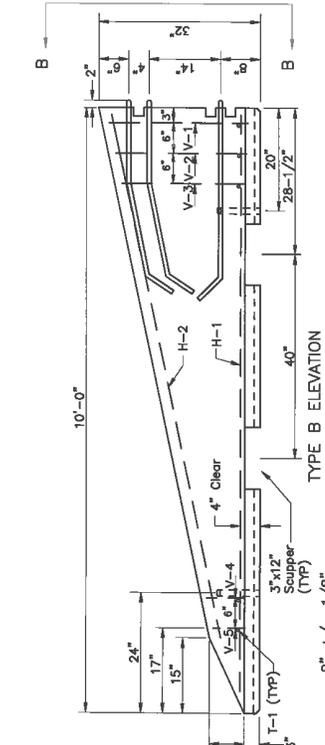
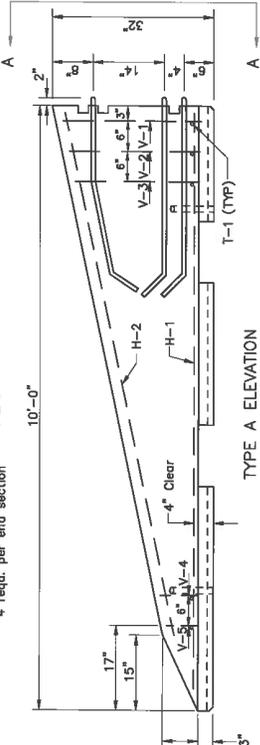
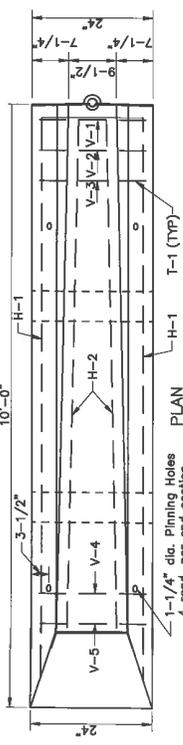
APPROVED
3/15/99

Date

G-46.11

GENERAL NOTES

- Use tapered end sections only where:
 - Barriers terminate outside the clear zone, or
 - The regulatory speed limit is 25 MPH or below, or 30 MPH if the Engineer determines NCHRP 350 or MASH compliant end treatments are unfeasible.
- Use air entrained concrete with minimum compressive strength of 3,000 p.s.i.
- Provide a minimum of two inches clear cover for reinforcing steel bars except as shown otherwise.
- Galvanize all exposed hardware in accordance with AASHTO M 232.
- Provide reinforcing steel bars conforming to AASHTO M 31-86, grade 60.
- Provide anchor pins conforming to AASHTO M 183 steel.
- Provide connecting pins conforming to AASHTO M 164-86.
- Provide four anchor pins per unit.



Date	Description	By
4/28/10	Correct dimensions	R/S

Sheet 2 of 2

State of Alaska
Department of Transportation
Public Works Division

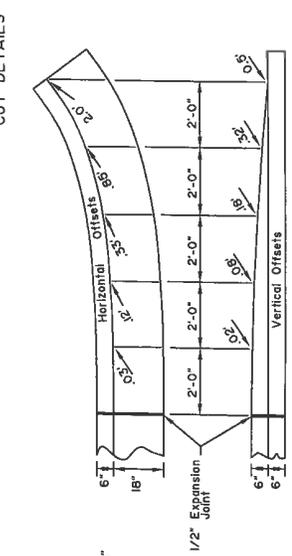
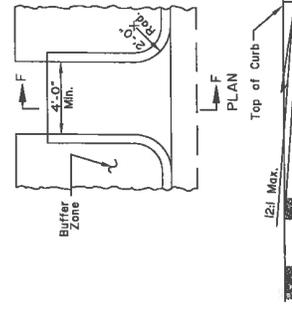
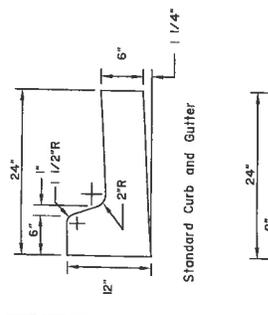
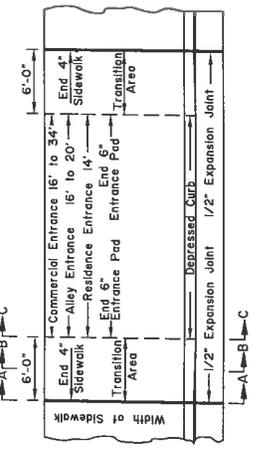
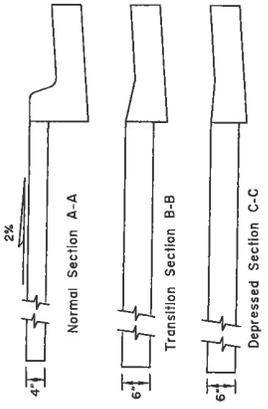
PRECAST CONCRETE
"P" SHAPE BARRIER
TAPERED END SECTION

4.9
10/10/12

5/21/12

GENERAL NOTES:

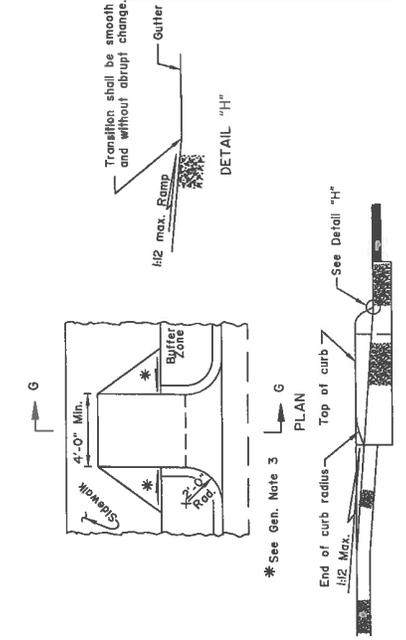
1. Type of Curb and/or Gutter shall be specified on the plans.
2. Mountable or Expressway Curbs shall be used on medians and traffic islands.
3. Ramp transition shall maintain a grade that does not exceed a 12% slope.



**SECTION F-F
RETURNED CURB RAMP
for PEDESTRIANS**

**CURB and GUTTER
TERMINATION TRANSITIONS**

**SECTION G-G
RETURNED CURB RAMP
with SIDEWALK for PEDESTRIANS**



Date	Revisions	Description	By
6/19/99	Added	Curb Ramps	Goa
4/12/98	Revised	Detail "H"	Goa
12/2/96	Gen. Note 3		Goa
12/2/99	Rev.	Expressway Ramps	KOS

State of Alaska
Department of Transportation
& Public Facilities

**CURB CUT,
CURB & GUTTER
AND CURB RAMP DETAILS**

A
P
R
O
V
E
D

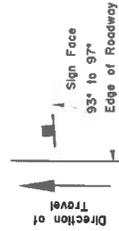
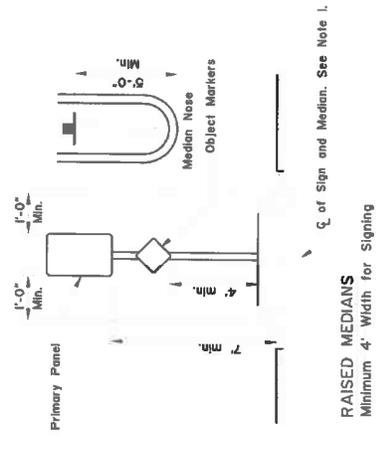
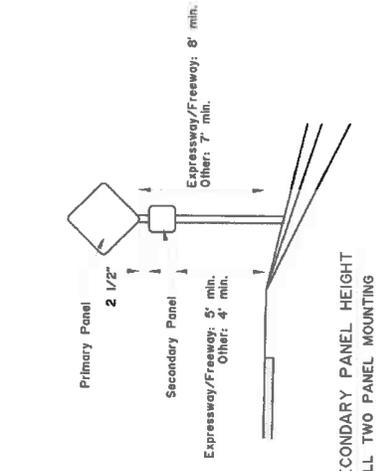
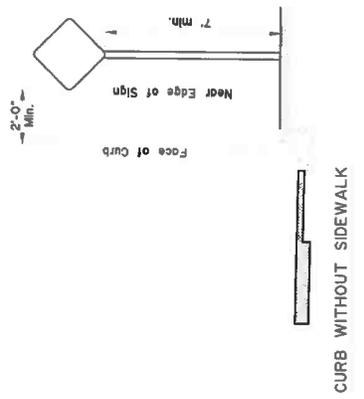
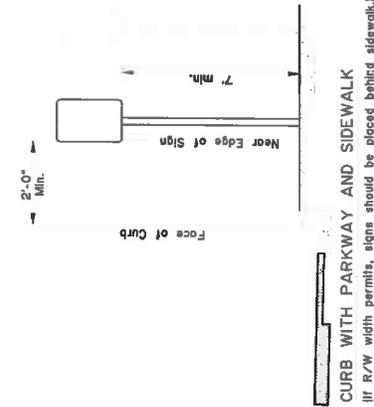
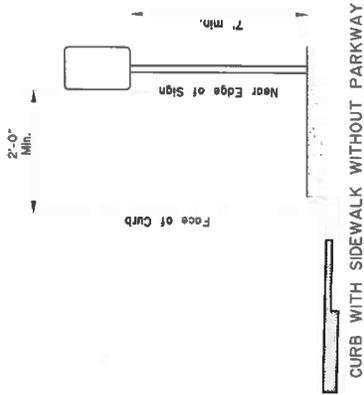
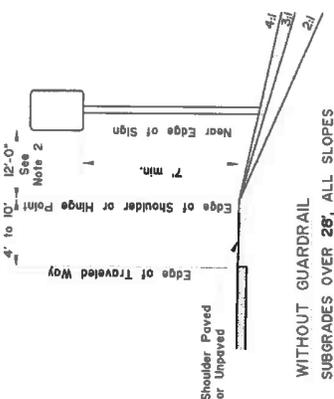
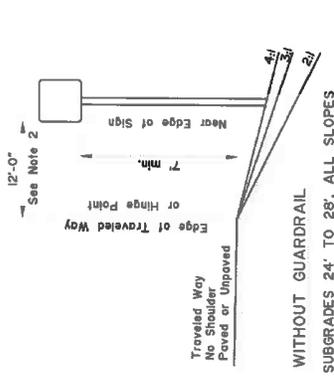
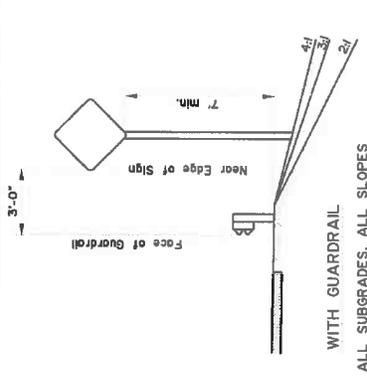
7/12/92

CURB and GUTTER DETAILS

S-05.01

GENERAL NOTES

1. Unless shown otherwise on the plans, the standard sign offset is 12'. The minimum is 6'.
2. If signs extend over sidewalks, the minimum vertical clearance is 7'-0".
3. Add 6" to mounting height on unpaved roads.
4. If signs extend over bike paths, the minimum vertical clearance is 8' 0".
5. When signs are placed 30' or more from the edge of traveled way, mount them with the bottom of the sign at least 5' above the road surface at the near edge of the road.
6. When multiple hinged sign supports are used, mount hinges at least 7' above the ground.



Date	REVISIONS Description	By

Sheet 1 of 1
State of Alaska
Department of Transportation
& Public Facilities
**POST MOUNTED SIGN
OFFSET AND HEIGHT**

APR 20 2011
NORTH JAVIER
DATE

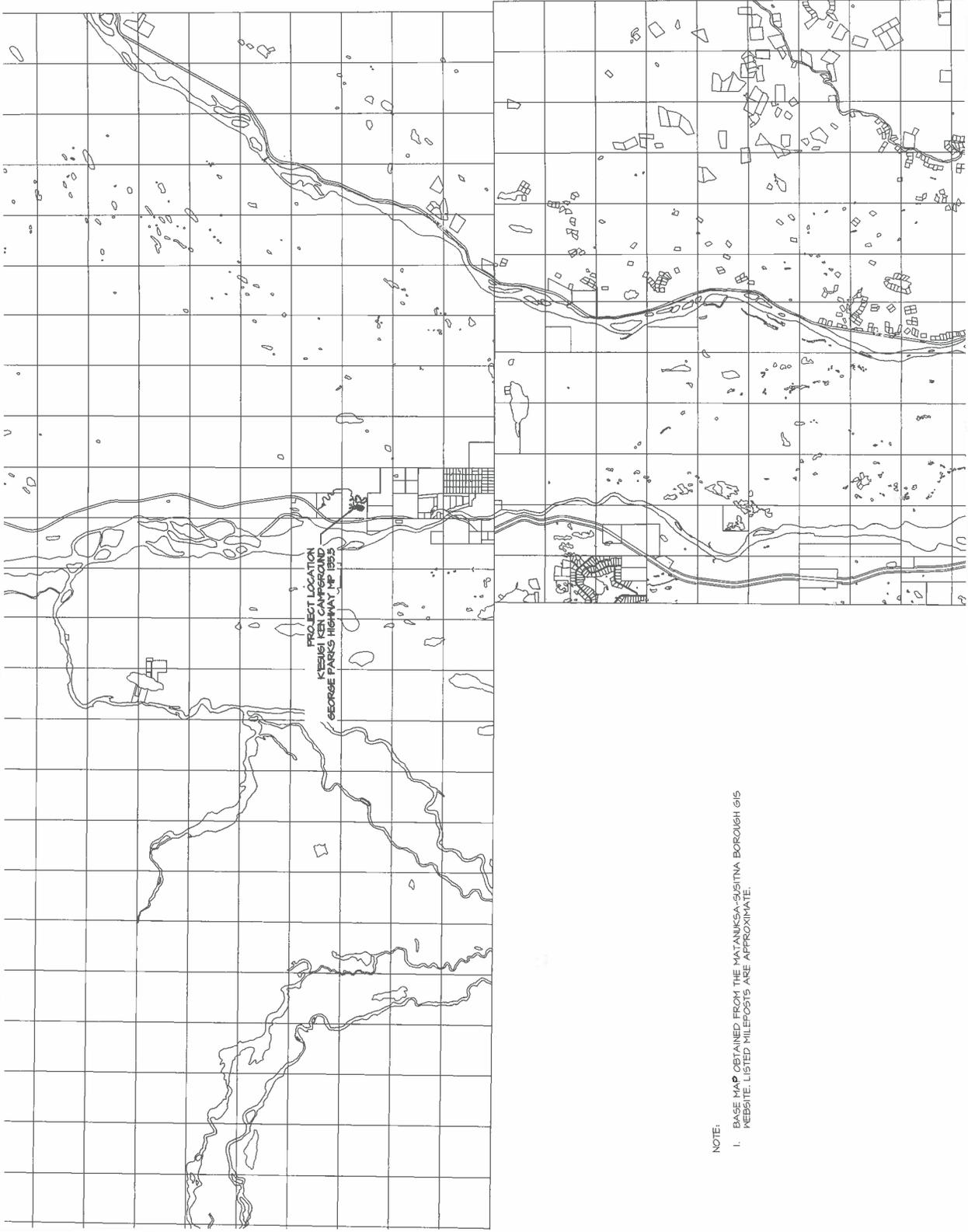
**APPENDIX B
DSP VISITOR CENTER COMPLEX
WALK-IN CAMPGROUND PLANS**



PREPARED: SJM
DRAWN: SJM
REVIEWED: LWR
DATE: 2/12/2015

SHEET
2

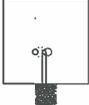
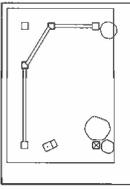
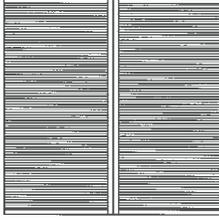
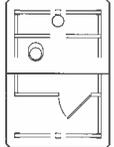
OF 21 SHEETS



PROJECT LOCATION
KESSEL POINT
GEORGE PARKS HIGHWAY MP 18.5

NOTE:
1. BASE MAP OBTAINED FROM THE MATANUKSA-SUSTINA BOROUGH GIS WEBSITE. LISTED MILEPOSTS ARE APPROXIMATE.

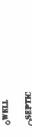
PARKS STANDARD AVENITIES

	PICNIC TABLE
	ROUND FIREPIT
	DOUBLE ENTRANCE GATE
	BULLETIN BOARD
	HAND PUMP WATER WELL & WATER TANK
	ORIENTATION KIOSK
	PICNIC SHELTER
	SINGLE CONCRETE VAULTED TOILET
	PUBLIC USE CABIN

PARKS STANDARD AVENITIES

	TRAIL SIGN, TYPE C
	CAMPSITE MARKER
	CAMPSITE NUMBER
	BEAR RESISTANT FOOD LOCKER

CIVIL

	SOD
	LIMIT OF CUT SLOPE
	LIMIT OF FILL SLOPE
	DITCH BOTTOM
	24" CSP
	12" CSP
	RIVER / CREEK / LAKE EDGE
	WELL
	SEPTIC
	SIGN
	BARRIER ROCK / SEAT ROCK
	EXISTING BUILDING
	ROADWAY EXISTING
	ROADWAY PROPOSED



PREPARED: SLM
 DRAWN: SLM
 REVIEWED: LMR
 DATE: 2/12/2015
 SHEET

3
 OF 21 SHEETS





ESTIMATE OF QUANTITIES			
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
201(BA)	CLEARING & GRUBBING	ACRE	4.75
208(B)	UNCLASSIFIED EXCAVATION	C.Y.	2600
208(BA)	BORROW, TYPE A	C.Y.	5500
208(B2)	PATHWAY LINEAR GRADING	L.F.	2775
301(1)	AGGREGATE BASE COURSE, GRADING D-1	TON	1050
603(1-12)	12 INCH CSP	L.F.	72
603(1-24)	24 INCH CSP	L.F.	944
603(3-24)	END SECTION FOR 24" CSP	EACH	18
615(1)	STANDARD SIGN	S.F.	73
618(2)	SEEDING	POUND	45
620(1)	TOPSOIL, TYPE B	S.Y.	5000
625(1)	SODDINGS	S.Y.	683
630(2)	GEOTEXTILE STABILIZATION	S.Y.	2500
640(1)	MOBILIZATION & DEMOBILIZATION	L.S.	ALL REQ'D
641(1)	EROSION, SEDIMENT, & POLLUTION CONTROL ADMINISTRATION	L.S.	ALL REQ'D
641(2)	TEMPORARY EROSION, SEDIMENT & POLLUTION CONTROL	C.S.	ALL REQ'D
641(6)	WITHOLDINGS	C.S.	ALL REQ'D
642(1)	CONSTRUCTION SURVEYING	L.S.	ALL REQ'D
642(3)	THREE PERSON SURVEY PARTY	HR	5
643(2)	TRAFFIC MAINTENANCE	L.S.	ALL REQ'D
647(1)	L&P CRAWLER DOZER, 75 HP	HR	50
650(1)	PICNIC TABLE	EACH	17
650(4)	ROUND FIREPIT	EACH	12
650(9)	DOUBLE ENTRANCE GATE	EACH	2
650(21)	BARRIER ROCK	EACH	90
650(26)	PICNIC SHELTER	L.S.	ALL REQ'D
650(36A)	BULLETIN BOARD, TYPE A	EACH	1
652(9A)	ORIENTATION KIOSK	EACH	1
650(41C)	TRAIL SIGN, TYPE C	EACH	5
650(42)	CAMPFIRE MARKER	EACH	10
650(43)	DIRECTIONAL SIGN	EACH	5
650(46)	BEAR RESISTANT FOOD LOCKER	EACH	10
652(1)	DRILLING	L.F.	200
652(2)	CASING	L.F.	200
652(3)	YIELD TESTING	HR	4
652(4)	WELL SCREEN	L.F.	5
652(5)	DROP PIPE	L.F.	200
652(6)	PUMP ROD	L.F.	200
652(7)	WELL CONSTRUCTION	L.S.	ALL REQ'D
654(2B)	SINGLE CONCRETE VAULTED TOILET	EACH	3

ABBREVIATIONS AND SYMBOLS

- Ø DIA/METER
- AC ASPHALT CONCRETE
- ALL REQ'D ALL REQUIRED
- COMM COMMUNICATION
- C.S. CONTINGENT SUM
- CSP CORRUGATED STEEL PIPE
- DSP DENALI STATE PARK
- E EAST
- ELEV. ELEVATION
- INVERT
- INVERT 50M
- L.F. LEFT
- L.S. LEFT 50M
- LB/LBS POUND/POUNDS
- M/E MATCH EXISTING
- M/POST MILLERPOST
- N NORTH
- NE NORTHEAST
- NUMBER NUMBER
- OC ON CENTER
- OHM ORDINARY HIGH WATER
- OHM ORDINARY LOW WATER
- PERFORATED PERFORATED
- PSY PERFORATED STEEL TUBE
- PVI PROFILE VERTICAL CURVE INTERSECTION
- R RIGHT
- R REQ'D REQUIRED
- SE SE
- SF SQUARE FOOT
- STA STATION
- STA STATE RECREATIONAL AREA
- SRA SLOPE RATIO
- SWPPW SWAMP WATER POLLUTION PREVENTION PLAN
- SQUARE YARD SQUARE YARD
- TYP TYPICAL
- N NEST

TABLE OF ESTIMATING FACTORS

ITEM NO.	ITEM DESCRIPTION	EST. FACTOR
202(EA)	BORROW, TYPE A	130 LBS/ I C.F.
301(1)	AGGREGATE BASE COURSE, GRADING D-1	145 LBS/ I C.F.
618(2)	SEEDING	10 LBS/1000 S.F.



SURVEY CONTROL POINTS:

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
553	3139719.63	1600219.87	657.04'	Aero-Metric Pt. 100 Spike
702	3135668.17	1600718.40	615.20'	BLM Brass Cap Monument
1501	3135653.76	1602886.65	1194.97'	BLM Brass Cap Monument
1502	3143580.05	1600740.22	572.44'	BLM Brass Cap Monument
1503	3143566.68	160379.09	713.07'	BLM Brass Cap Monument
1601	3142755.02	1601043.44	687.26'	ROW Monument
1603	3144221.61	1602383.78	613.60'	ROW Monument
1605	3142957.15	1600822.00	690.14'	ROW Monument
1701	3138307.89	1600720.05	662.65'	BLM Brass Cap Monument
1711	3138305.29	1603359.86	972.67'	BLM Brass Cap Monument
1719	3140940.78	1600711.78	726.86'	BLM Brass Cap Monument
1720	3140940.93	1600720.49	730.37'	BLM Brass Cap Monument
1721	3140927.36	1603360.86	907.58'	BLM Brass Cap Monument
1722	3143371.64	1601363.07	689.57'	Mag Nail
PLWest	3143575.60	1601624.23	683.91'	1 1/2" Alcap Set This Survey
ROW?	3143576.68	1601417.00	686.06'	BLM Brass Cap Monument
	3144112.24	1601877.41	671.06'	ROW Monument

STANDARD LEGEND:

- ✦ 3 1/4" BLM BRASS CAP ON 2 1/2" STAINLESS STEEL POST RECOVERED THIS SURVEY
- ✧ BLM MONUMENT OF RECORD (NOT RECOVERED THIS SURVEY)
- △ MAG NAIL RECOVERED THIS SURVEY (w/ Blue Flagging & Lath M&d "BOF STA. -501+17.39)
- ▲ AERO-METRIC SPIKE RECOVERED THIS SURVEY (AERO-METRIC POINT 100)
- 6" x 6" YELLOW CONCRETE DOT&PF ROW POST RECOVERED THIS SURVEY
- 6" x 6" CONCRETE DOT&PF ROW POST RECOVERED BY OTHERS
- 5/8" x 30" REBAR w/ 1 1/2" ALUMINUM CAP SET THIS SURVEY
- [502] SURVEY CONTROL POINT
- (R) RECORD PER BLM



SURVEY CONTROL NOTES:

HORIZONTAL CONTROL:
 ALL COORDINATES ARE NAD 83 (COR96) (EPOCH: 2003.0000). ALASKA STATE PLANE ZONE 4, BASED ON AN AERO-METRIC, ANCHORAGE LIDAR SURVEY CONDUCTED IN JUNE 2008. THE PUBLISHED STATE PLANE VALUES LISTED IN THE OPUS SOLUTION REPORT FOR AERO-METRICS POINT 100 (POINT 553 THIS SURVEY) IN THE "DENALI OVERLOOK LIDAR SURVEY QUALITY CONTROL SURVEY REPORT" WERE CONVERTED TO US SURVEY FEET AND HELD FOR THIS SURVEY. ALL OTHER COORDINATES WERE DETERMINED BY GPS OBSERVATIONS.

VERTICAL CONTROL:
 ALL ELEVATIONS ARE NAVD 88 (COMPUTED USING GEOID06) AND ARE BASED ON AN AERO-METRIC, ANCHORAGE LIDAR SURVEY CONDUCTED IN JUNE 2008. THE PUBLISHED ORTHOMETRIC HEIGHT LISTED IN THE OPUS SOLUTION REPORT FOR AERO-METRICS POINT 100 (POINT 553 THIS SURVEY) IN THE "DENALI OVERLOOK LIDAR SURVEY QUALITY CONTROL SURVEY REPORT" WAS CONVERTED TO US SURVEY FEET AND HELD FOR THIS SURVEY. ALL OTHER ELEVATIONS WERE DETERMINED BY GPS OBSERVATIONS.

METRIC TO FOOT CONVERSIONS ARE BASED ON THE U.S. SURVEY FOOT (1 METER = 39.37 INCHES EXACTLY)

GENERAL NOTES:

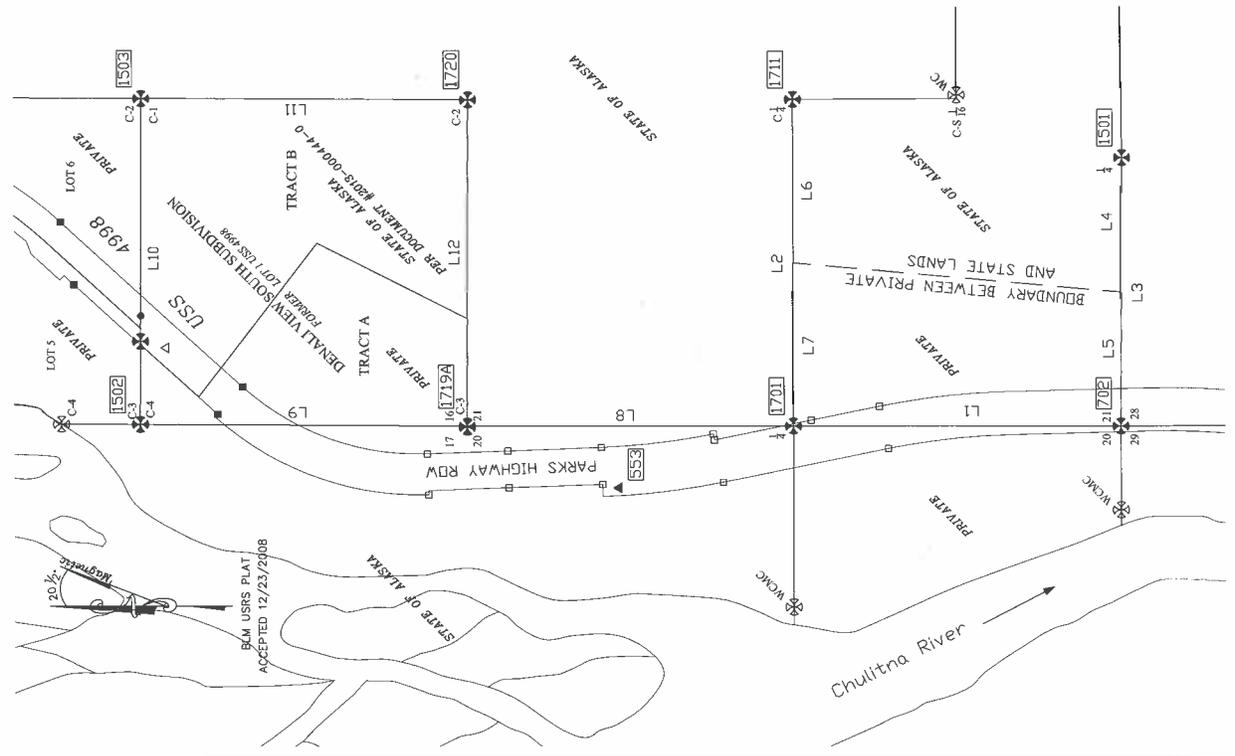
ALL MEASURED DATA ARE ALASKA STATE PLANE ZONE 4 BEARINGS AND DISTANCES. ALL RECORD "(R)" DATA IS BLM MEAN BEARINGS AND GROUND DISTANCES REDUCED TO THEIR HORIZONTAL EQUIVALENT.

ALL MONUMENTS, PROPERTY MARKERS (WITH EXCEPTION OF "PLEAST"), OR PROPERTY CORNERS AND THEIR ACCESSORIES, WHICH WILL BE DISTURBED OR BURIED SHALL BE REFERENCED AND REESTABLISHED IN THEIR ORIGINAL POSITION IN ACCORDANCE WITH A.S. 34.65.040(b).

THE 5/8" REBAR AND CAP SET AT "PLEAST" WAS SET ONLY FOR THE PURPOSE OF IDENTIFYING THE SPECIFIC LOCATION OF THE NORTH BOUNDARY OF LOT 1, USS 4998 IN THE IMMEDIATE VICINITY OF THE PROJECT AREA. IT IS NOT TO BE MISTAKEN FOR, OR USED AS A PROPERTY CORNER.

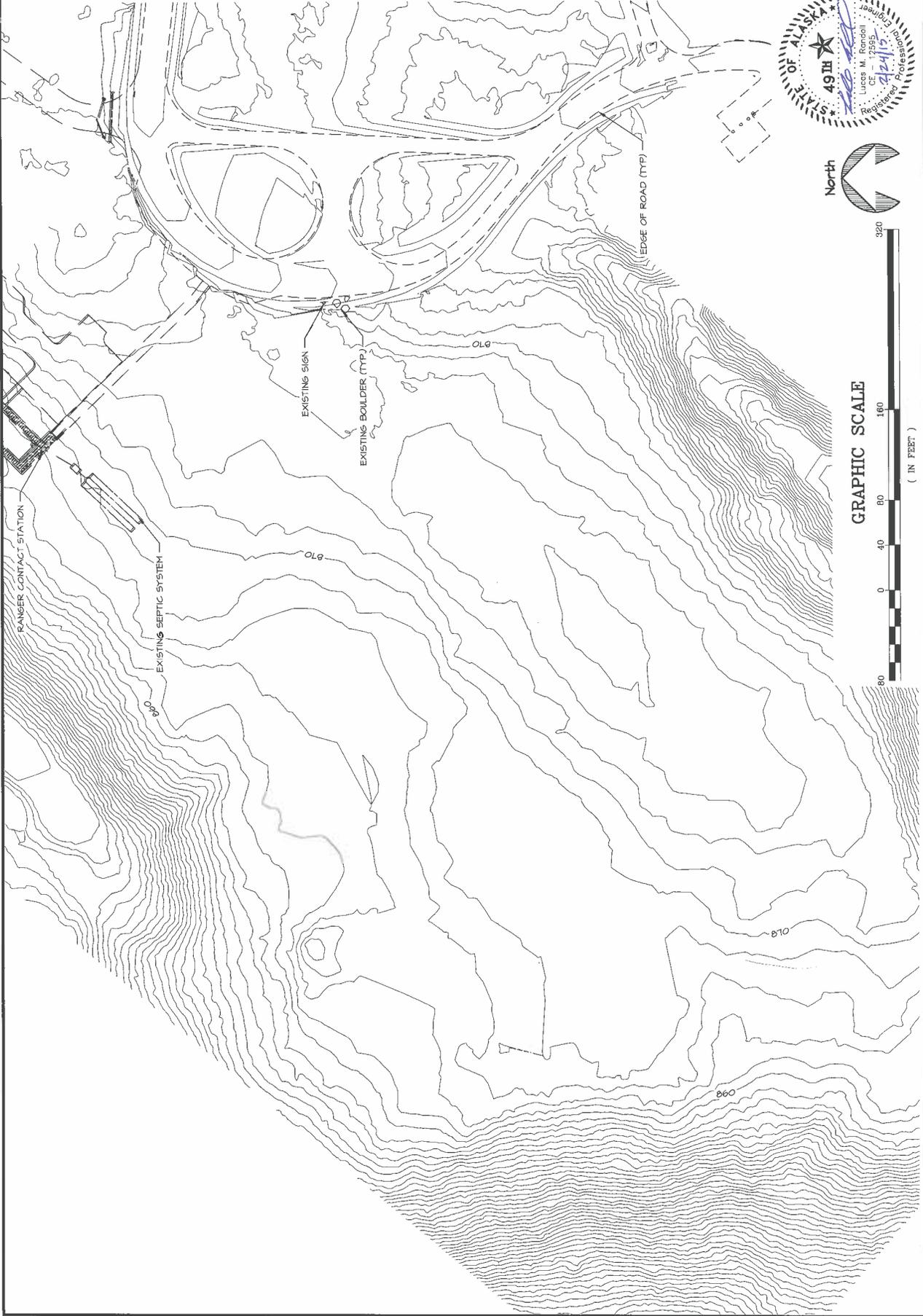
THIS SURVEY, CONDUCTED ON OCTOBER 5 & 6, 2011, REPRESENTS A SURVEY OF LOT 1, USS 4998; THE 1/4 CORNER OF SECTIONS 20 & 21; THE CENTER 1/4 CORNER OF SECTION 21; THE SECTION CORNER OF SECTIONS 20, 21, 28, & 29; AND THE 1/4 CORNER OF SECTIONS 21 & 28.

THIS SURVEY DOES NOT CONSTITUTE A SUBDIVISION AS DEFINED BY A.S. 40.15.900(5).





GRAPHIC SCALE



STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES

SITE PLAN

DSP: VISITOR CENTER COMPLEX
WALK-IN CAMPGROUND
PROJECT NO. 74034-1

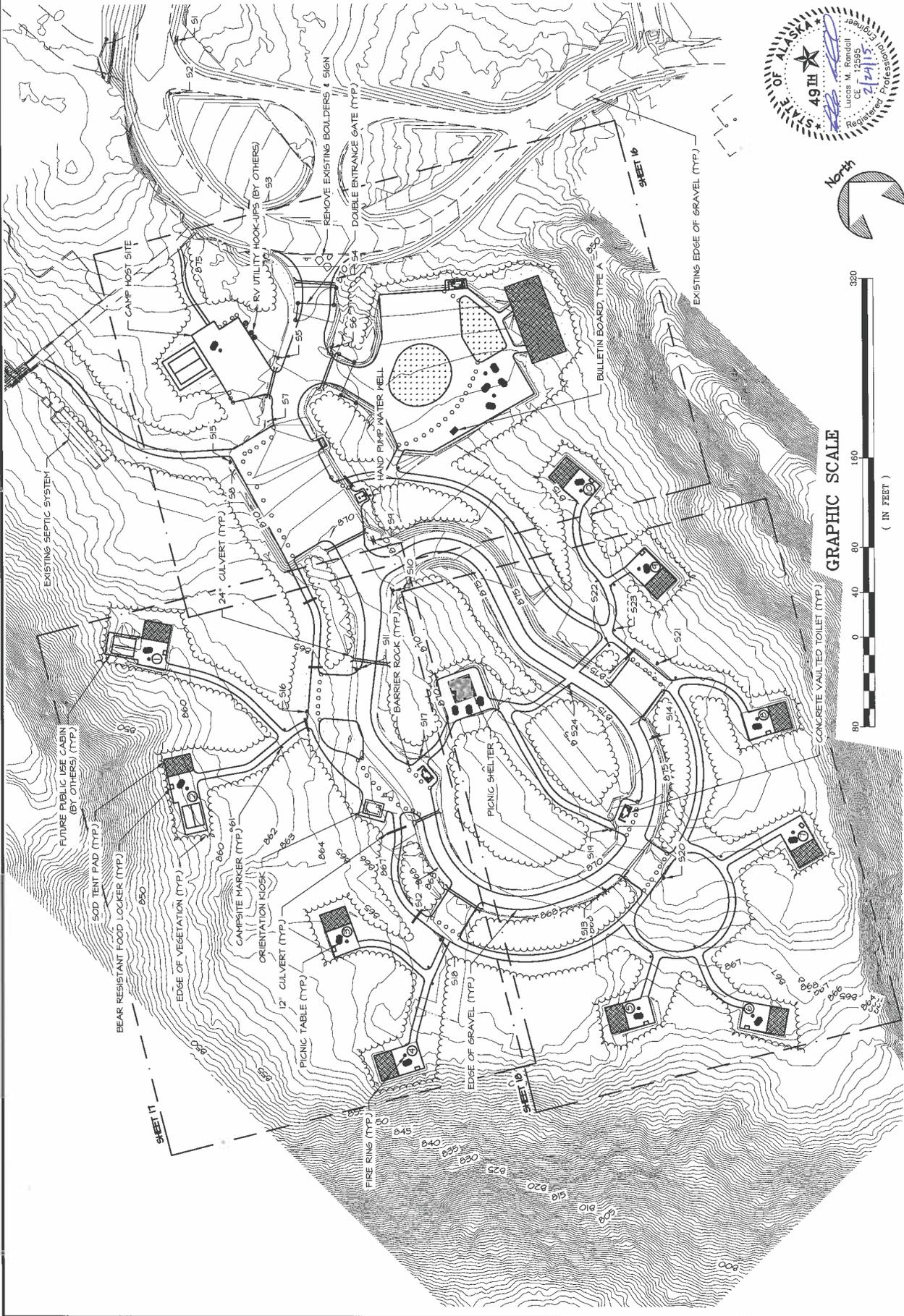


PREPARED: S.J.M
DRAWN: S.M
REVIEWED: L.H.R
DATE: 2/12/2015

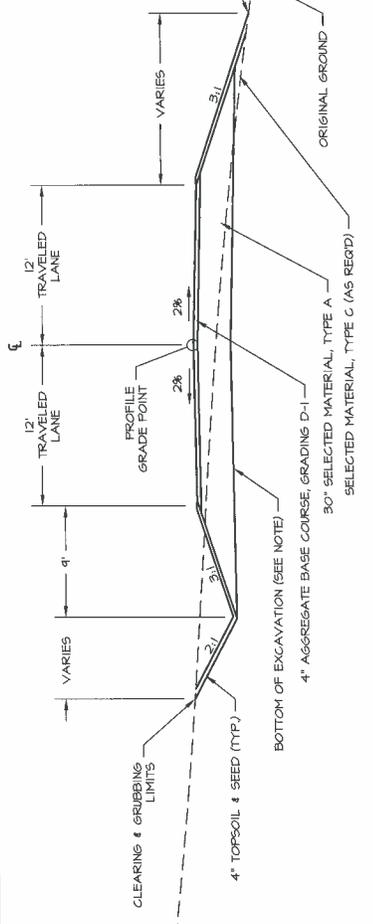
SHEET 7
OF 21 SHEETS



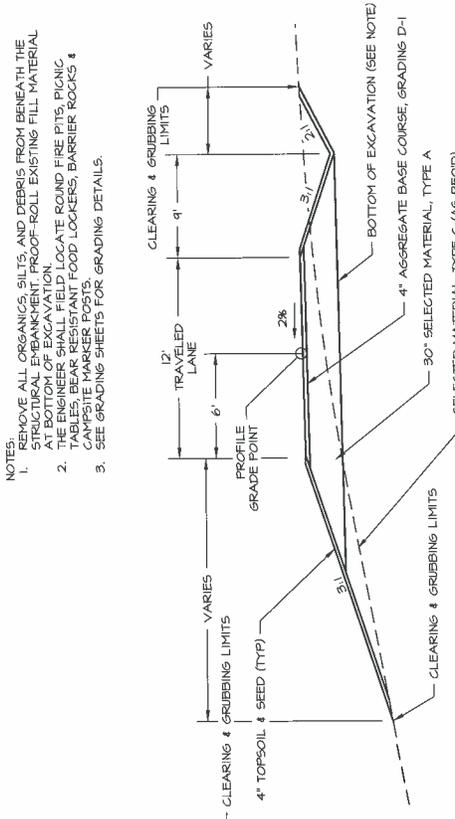
GRAPHIC SCALE



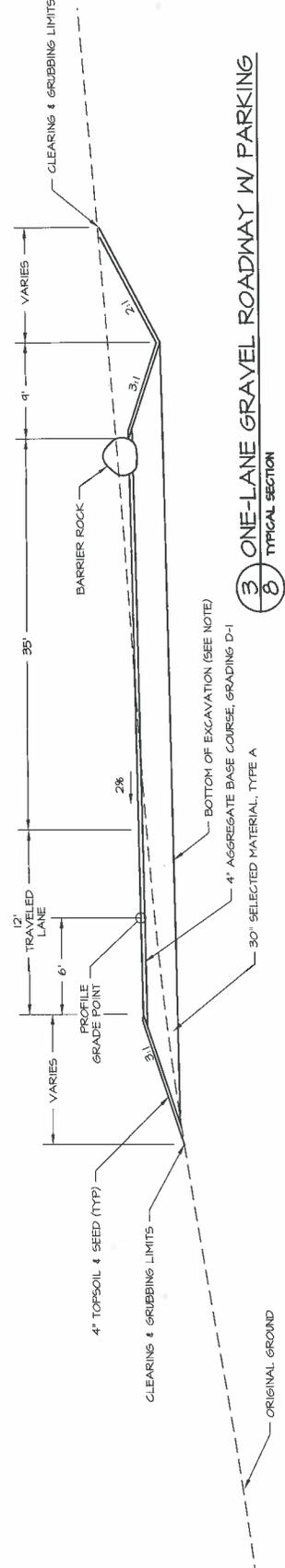
- NOTES:
1. REMOVE ALL ORGANICS, SILTS, AND DEBRIS FROM BENEATH THE STRUCTURAL EMBANKMENT. PROOF-ROLL EXISTING FILL MATERIAL AT BOTTOM OF EXCAVATION.
 2. ALL SLOPES SHALL BE PROTECTED WITH COASTE ROUND FIRE PITS, PIGNIC TABLES, BEAR RESISTANT FOOD LOCKERS, BARRIER ROCKS & CAMPSITE MARKER POSTS.
 3. SEE GRADING SHEETS FOR GRADING DETAILS.



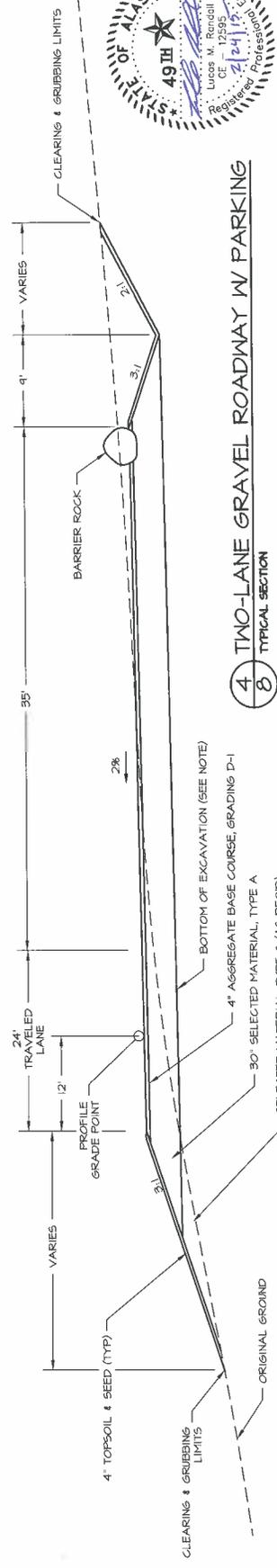
1
8 TWO-LANE GRAVEL ROADWAY
TYPICAL SECTION, STATION 300+00 TO 303+00



2
8 CAMPGROUND ACCESS ROAD
TYPICAL SECTION, STATION 503+00 TO 507+00

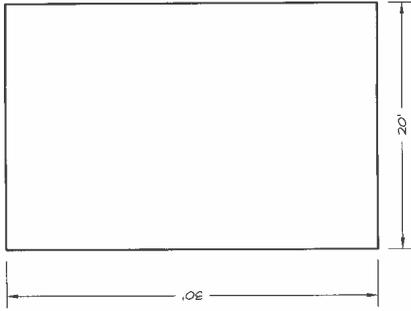


3
8 ONE-LANE GRAVEL ROADWAY W/PARKING
TYPICAL SECTION

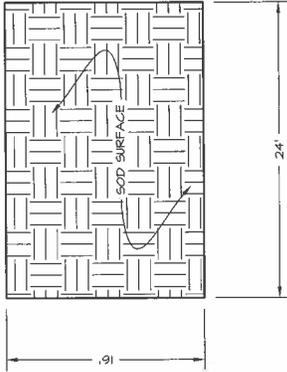


4
8 TWO-LANE GRAVEL ROADWAY W/PARKING
TYPICAL SECTION

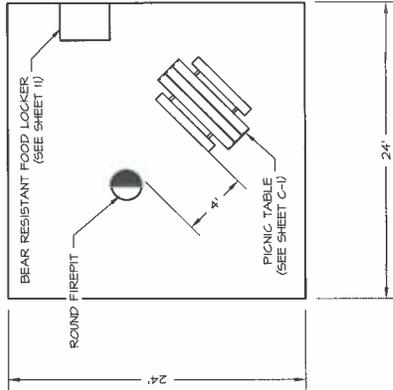




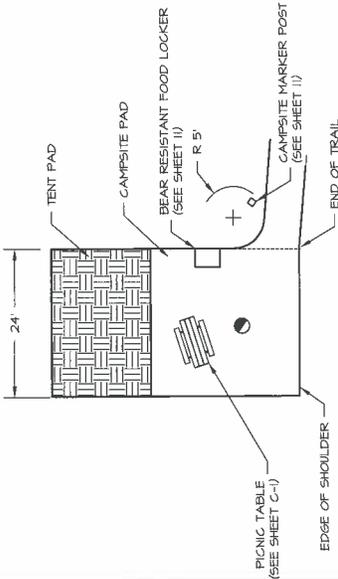
4 PUBLIC USE CABIN PAD
TYPICAL PLAN-SITES 1 & 2



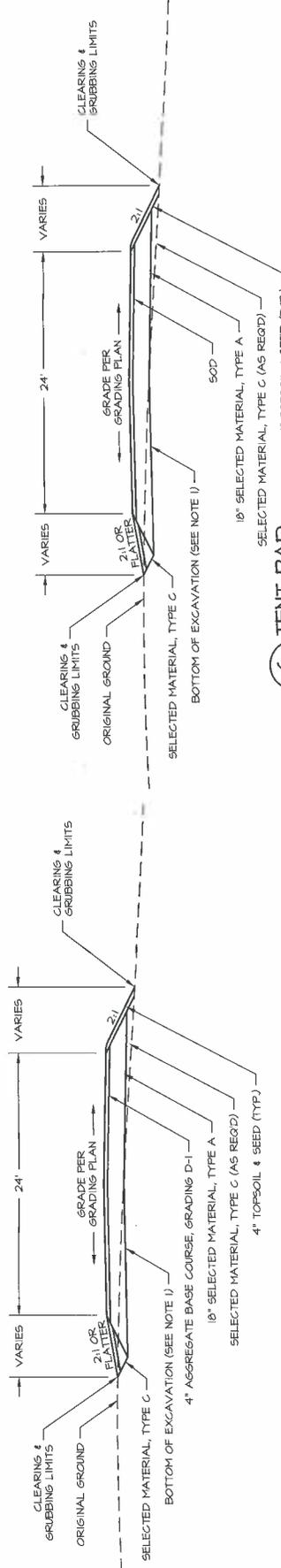
3 TENT PAD
TYPICAL PLAN



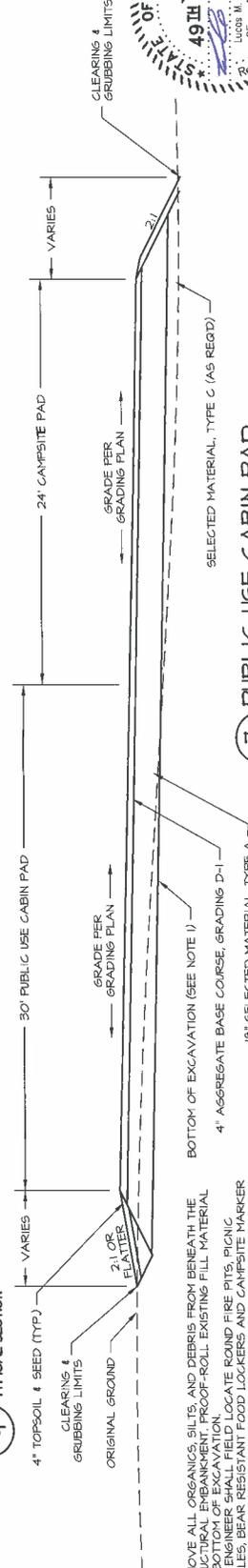
2 CAMPSITE CAMPING PAD
TYPICAL PLAN



1 CAMPSITE
TYPICAL PLAN

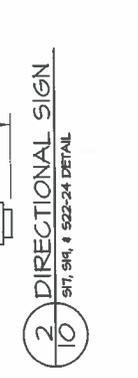
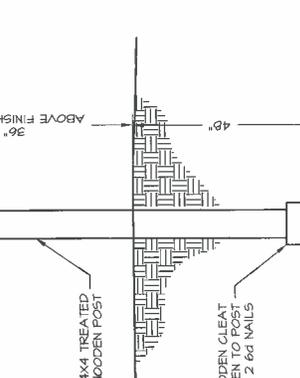
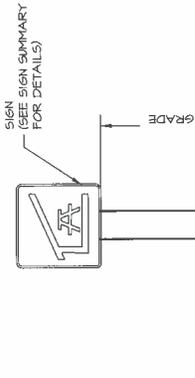
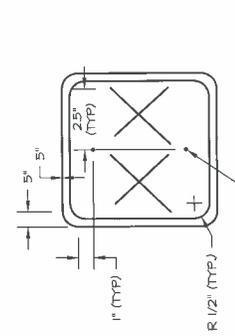


6 TENT PAD
TYPICAL SECTION



7 PUBLIC USE CABIN PAD
TYPICAL SECTION SITES 1 & 2

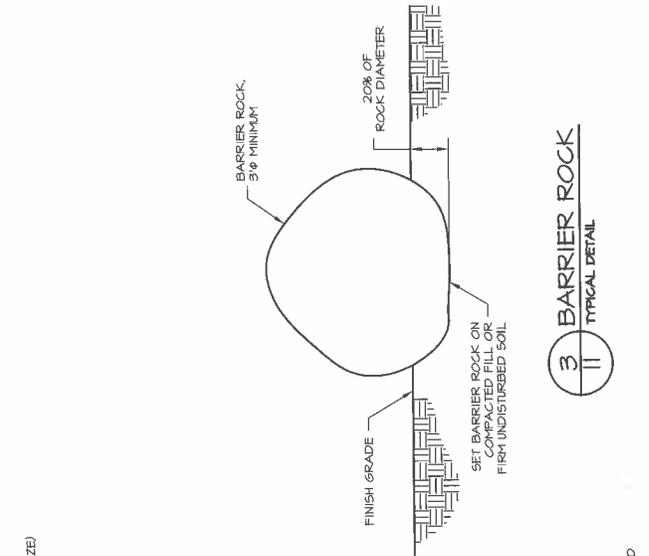
- NOTES:
- REMOVE ALL ORGANICS, SILTS, AND DEBRIS FROM BENEATH THE STRUCTURAL EMBANKMENT, PROOF-ROLL EXISTING FILL MATERIAL AT BOTTOM OF EXCAVATION.
 - TABLES, BEAR RESISTANT FOOD LOCKERS AND CAMPSITE MARKER
 - SEE GRADING SHEETS FOR GRADING DETAILS.



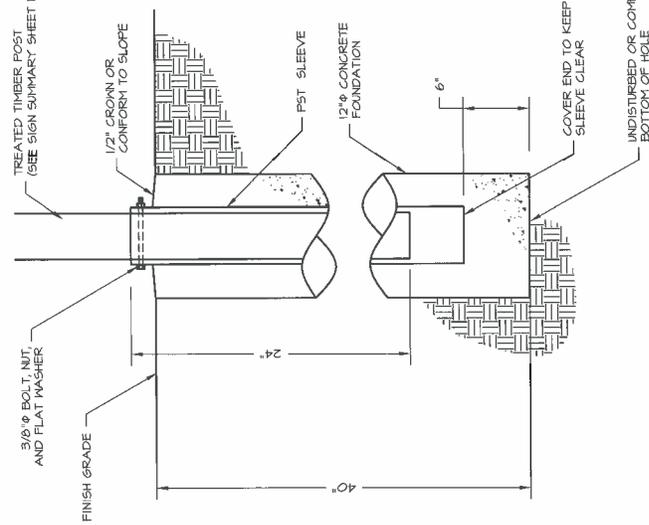
- NOTES:
1. FASTEN 5/8" ALUMINUM SIGN WITH 2 #8x3/4" TAMPER RESISTANT SCREWS.
 2. NUMBER ON THE ALUMINUM SIGN SHALL MATCH CAMPSITE DESIGNATION AS SHOWN ON THE SITE PLAN.
 3. OFFSET BACK & SIDE LAG BOLTS BY A MINIMUM OF 6" VERTICALLY.
 4. DRILL 1/2" Ø PILOT HOLES FOR ALL LAG BOLTS.

3 TRAIL SIGN, TYPE C
SIDE VIEW
SIGN (SEE SIGN SUMMARY FOR DETAILS)
5'x5" SIGN (TYP.) (SEE SIGN SUMMARY FOR DETAILS)
72"
6"x6" TREATED WOODEN POST, 3 EA.
3/4"x4" LAGS W/ WASHERS COUNTERBORED 1" 5 EQUAL LAGS PER JOINT

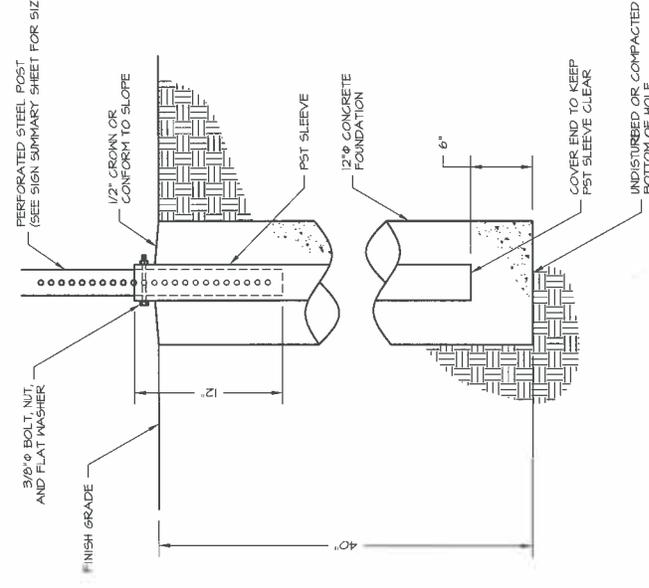
4 TRAIL SIGN, TYPE C
SIDE VIEW
SIGN (SEE SIGN SUMMARY FOR DETAILS)
60"
6"x6" TREATED WOODEN POST, 3 EA.
3/4"x4" LAGS W/ WASHERS COUNTERBORED 1" 5 EQUAL LAGS PER JOINT
FINISH GRADE
BACKFILL W/ EXCAVATED MATERIAL & COMPACT IN 8" LIFTS



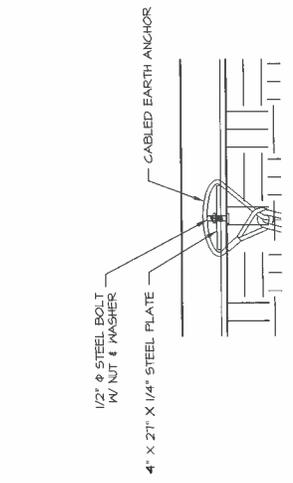
3 BARRIER ROCK
 TYPICAL DETAIL



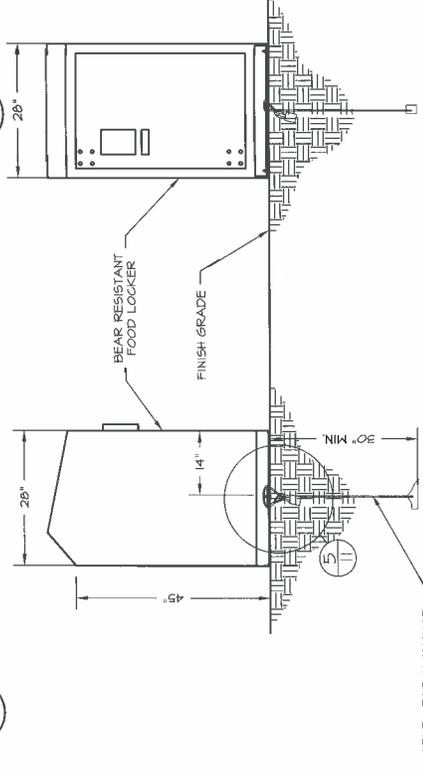
2 CONCRETE SIGN FOUNDATION
 ITEM 6150 STANDARD SIGN DETAIL



1 CONCRETE SIGN FOUNDATION
 ITEM 6150 STANDARD SIGN DETAIL

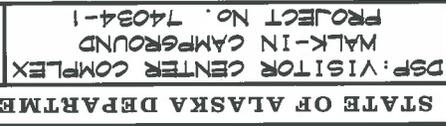


5 BEAR RESISTANT FOOD LOCKER
 CONNECTION DETAIL



4 BEAR RESISTANT FOOD LOCKER
 TYPICAL ATTACHMENT DETAIL

NOTE:
 THE BEAR RESISTANT FOOD LOCKER IS INTENDED TO BE SECURED TO SITE AFTER MARKET RETROFIT IS REQUIRED. DETAILS 4/II & 5/II SHOW ONE POSSIBLE RETROFIT. MANUFACTURER'S RECOMMENDATIONS OR ALTERNATIVE RETROFIT MAY BE SUBSTITUTED IF APPROVED BY THE DEPARTMENT.



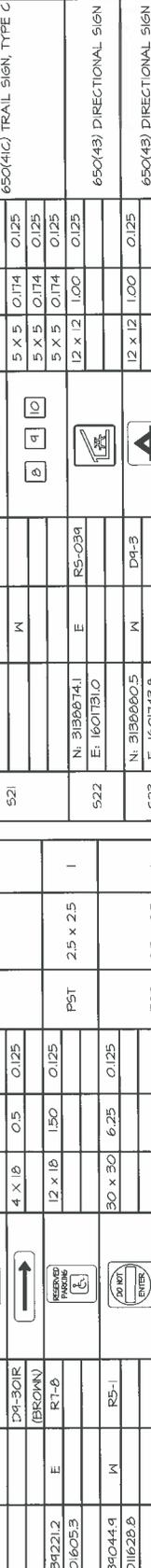
ITEM 650(41C) & 650(43) SIGN SUMMARY

SIGN NO.	NORTHING EASTING	FACING DIRECTION	TYPE	LEGEND	SIZE (IN/IN)	AREA (SF.)	THICKNESS (IN)	PAY ITEM
515	N: 31340286.9				4 x 4	0.56	0.125	650(41C) TRAIL SIGN, TYPE C
	E: 1601648.2							
516	N: 31340238.4	S	CS-2		4 x 12	0.75	0.125	
	E: 1601447.4							
517	N: 31340221.1	W	RS-034		4 x 4	0.56	0.125	650(41C) TRAIL SIGN, TYPE C
	E: 1601534.4							
518	N: 31340221.1	W	RS-034		4 x 12	1.00	0.125	650(43) DIRECTIONAL SIGN
	E: 1601534.4							
519	N: 31340221.1	E	CS-3		4 x 12	0.75	0.125	
	E: 1601534.4							
520	N: 31340221.1	E	CS-4		4 x 12	0.75	0.125	
	E: 1601534.4							
521	N: 31340221.1	E	CS-5		4 x 12	0.75	0.125	
	E: 1601534.4							
522	N: 31340221.1	E	RS-034		4 x 12	1.00	0.125	650(43) DIRECTIONAL SIGN
	E: 1601534.4							
523	N: 31340221.1	W	D4-3		12 x 12	1.00	0.125	650(43) DIRECTIONAL SIGN
	E: 1601438.6							
524	N: 31340221.1	SE	RS-034		12 x 12	1.00	0.125	650(43) DIRECTIONAL SIGN
	E: 1601678.1							

ITEM 615(I) STANDARD SIGN

SIGN NO.	NORTHING EASTING	FACING DIRECTION	TYPE	LEGEND	SIZE (IN/IN)	AREA (SF.)	THICKNESS (IN)	SIGN POST DATA
S1	N: 31340291.1	SE	RI-1		30 x 30	6.25	0.125	2.5 x 2.5
	E: 1601842.4							PST
S2	N: 6164449.1	NW	RS-1		30 x 30	6.25	0.125	2.5 x 2.5
	E: 1601805.4							PST
S3	N: 31340286.9	NW	D4-30IR (BROWN)		24 x 6	1.00	0.125	2.5 x 2.5
	E: 1601805.4							PST
S4	N: 31340277.1	SW	RI-1		18 x 18	2.25	0.125	2.5 x 2.5
	E: 1601493.2							PST
S5	N: 31340264.0	NE	CS-1		24 x 12	2.00	0.125	4 x 4
	E: 1601704.1							WOOD
S6	N: 31340286.9	E	RI-1		30 x 30	6.25	0.125	2.5 x 2.5
	E: 1601648.2							PST
S7	N: 31340230.5	E	RS-034		18 x 18	2.25	0.125	4 x 4
	E: 1601657.7							WOOD
S8	N: 31340212.2	E	D4-30IR (BROWN)		4 x 18	0.5	0.125	2.5 x 2.5
	E: 1601605.3							PST
S9	N: 3134044.9	W	RS-1		12 x 18	1.50	0.125	2.5 x 2.5
	E: 1601628.8							PST
S10	N: 31340291.1	W	RS-1		30 x 30	6.25	0.125	2.5 x 2.5
	E: 1601444.5							PST
S11	N: 3134018.6	N	D4-3		18 x 18	2.25	0.125	4 x 4
	E: 1601555.5							WOOD
S12	N: 31340286.9	N	D4-3		18 x 18	2.25	0.125	4 x 4
	E: 1601476.4							WOOD
S13	N: 31340230.5	W	D4-3		18 x 18	2.25	0.125	4 x 4
	E: 1601573.7							WOOD
S14	N: 31340286.9	S	D4-3		18 x 18	2.25	0.125	4 x 4
	E: 1601648.2							WOOD
TOTAL						78.0		PST 25 x 25 8 WOOD 4 x 4 6

NOTES:
 1. PST DENOTES PERFORATED STEEL TUBE.
 2. WOOD DENOTES TREATED TIMBER POST.
 3. SEE SITE PLAN FOR APPROXIMATE SIGN LOCATIONS. THE ENGINEER WILL FIELD LOCATE FINAL SIGN LOCATION.
 4. LETTER SIZES FOR ALL CS SIGNS SHALL BE 3 INCHES.
 5. SIGNS S1-S4 SHALL BE INSTALLED PER DOT/PTF STANDARD DRAWING 5-5.01 & THE DETAILS ON SHEET II.



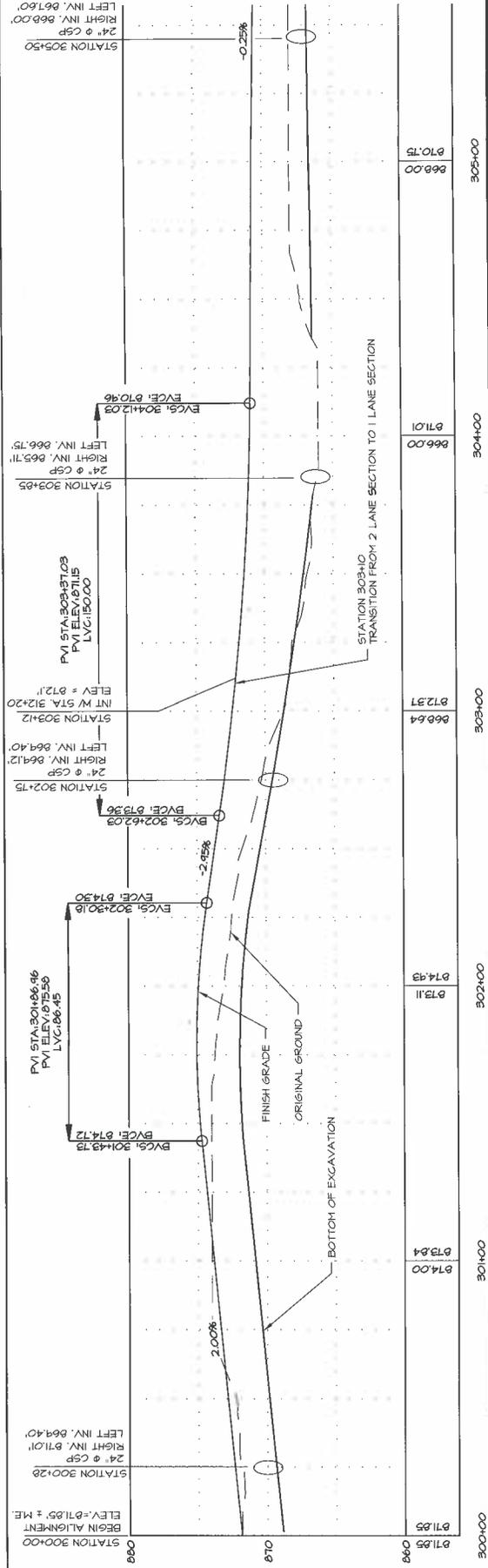
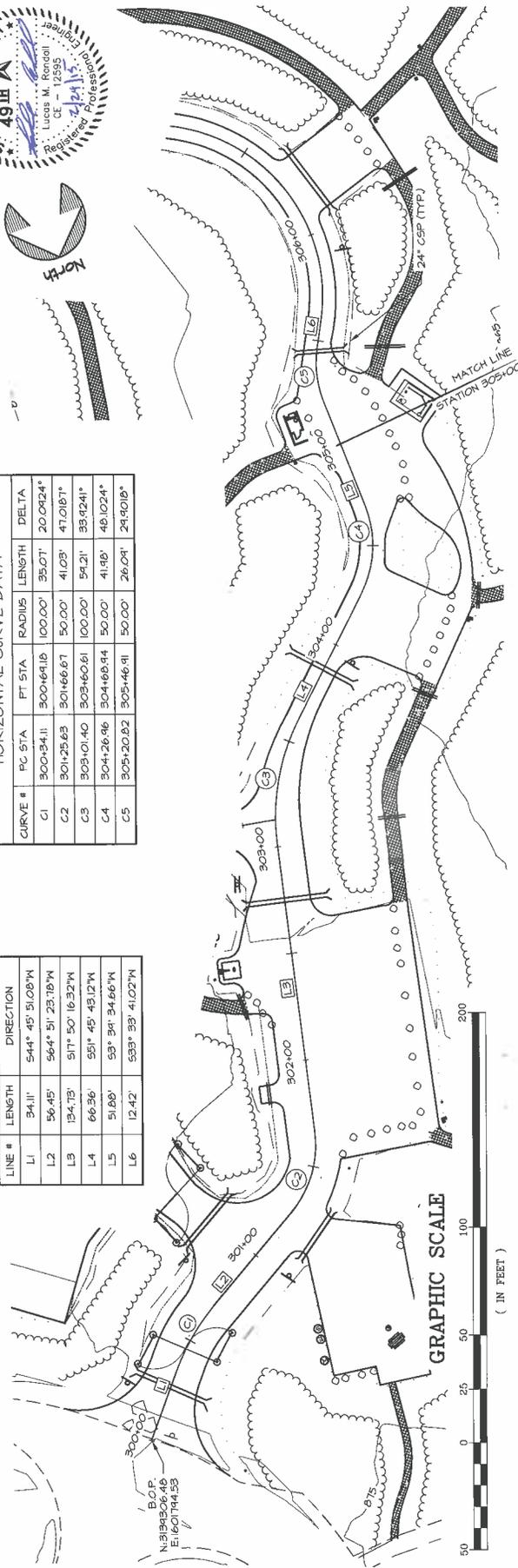


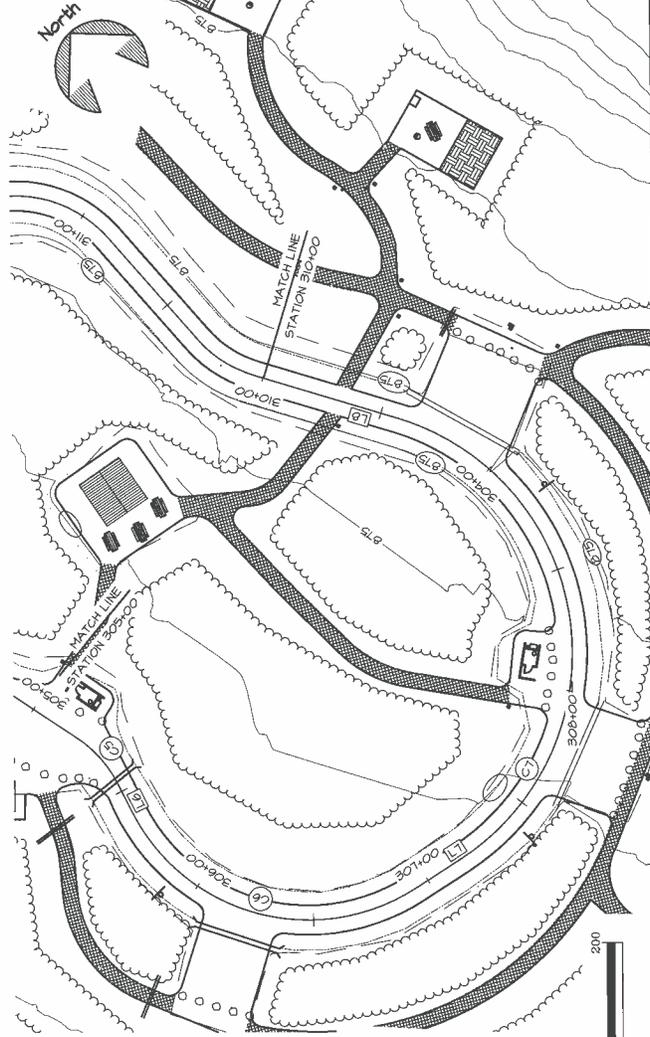
HORIZONTAL CURVE DATA

CURVE #	PC STA	PT STA	RADIUS	LENGTH	DELTA
C1	300+34.11	300+69.18	100.00'	35.07'	20.0424°
C2	301+25.63	301+66.67	50.00'	41.03'	47.0187°
C3	303+01.40	303+60.61	100.00'	54.21'	35.9241°
C4	304+26.96	304+68.94	50.00'	41.98'	48.1024°
C5	305+20.82	305+46.91	50.00'	26.04'	24.91018°

HORIZONTAL LINE DATA

LINE #	LENGTH	DIRECTION
L1	34.11'	544° 45' 51.08" N
L2	56.45'	564° 51' 23.78" N
L3	134.73'	511° 50' 16.32" N
L4	66.36'	551° 45' 43.12" N
L5	51.88'	53° 39' 34.66" N
L6	12.42'	533° 33' 41.02" N

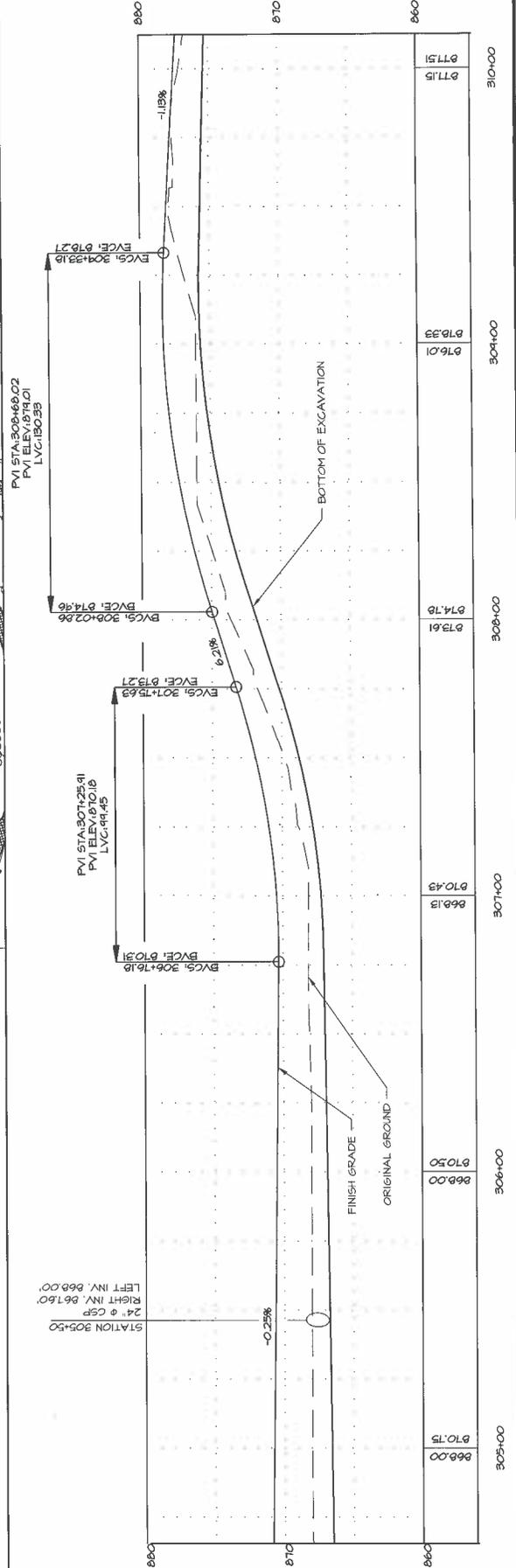




LINE #	LENGTH	DIRECTION
L6	12.42'	S33° 33' 41.02"W
L7	22.14'	S62° 46' 02.12"E
L8	60.35'	N12° 54' 54.12"W

CURVE #	PC STA	PT STA	RADIUS	LENGTH	DELTA
C5	305+20.02	305+46.91	50.00'	26.09'	29.8010°
C6	305+54.33	306+49.65	80.00'	134.50'	46.3281°
C7	307+15.97	309+43.27	100.00'	227.30'	130.2325°

GRAPHIC SCALE



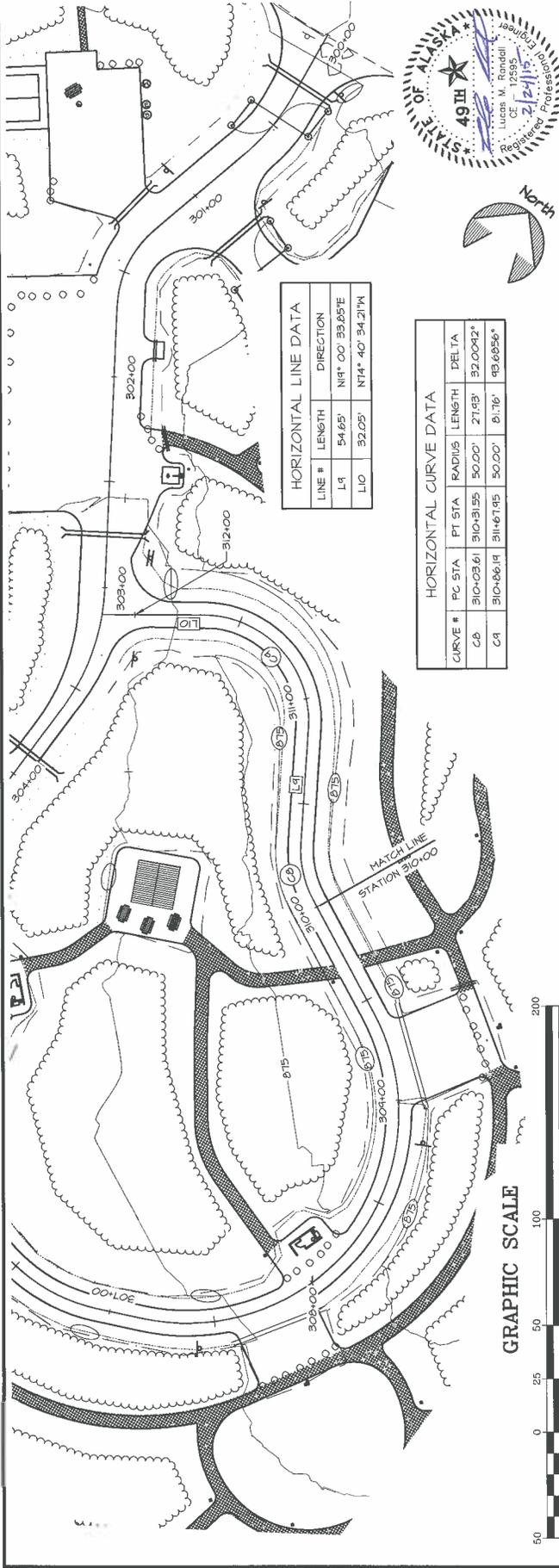


PREPARED: SJM
 DRAWN: SJM
 REVIEWED: LMR
 DATE: 2/12/2015

SHEET
 15
 OF 21 SHEETS

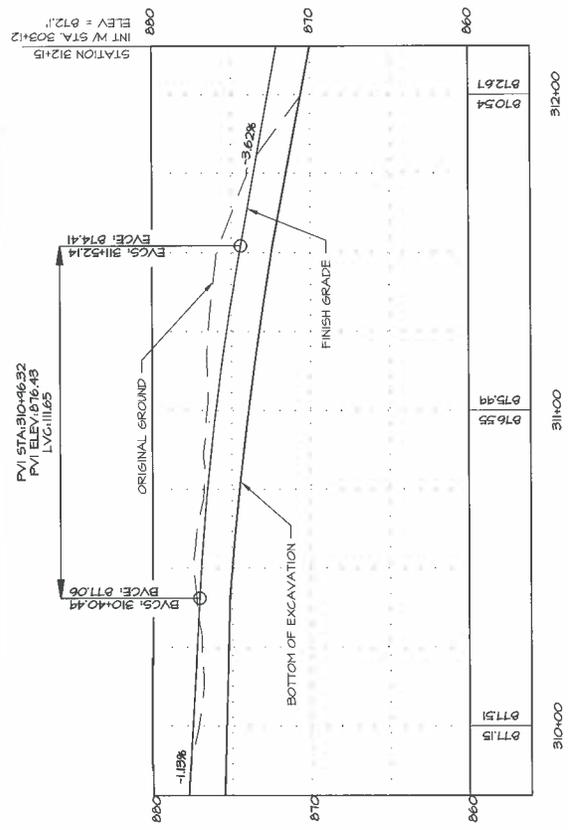
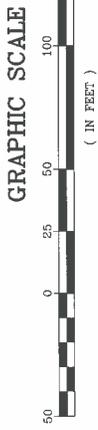
DSP: VISITOR CENTER COMPLEX
 WALK-IN CAMPGROUND
 PROJECT NO. 74034-1

PLAN & PROFILE
 310+00 TO 312+15.51



LINE #	LENGTH	DIRECTION
L1	54.65'	N1° 00' 33.65"E
L10	32.05'	N14° 40' 34.21"W

CURVE #	PC STA	PT STA	RADIUS	LENGTH	DELTA
C8	310+03.61	310+31.55	50.00'	27.93'	32.00°12'
C9	310+66.19	311+67.95	50.00'	61.76'	98.6956°



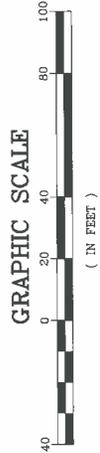
PVI STA: 310+46.52
 PVI ELEV: 876.45
 LVC: 111.625

STATION 312+15
 INT W STA: 303+12
 ELEV = 872.1'



PREPARED: SJM
DRAWN: SJM
REVIEWED: LHR
DATE: 2/22/2015
SHEET

16
OF 21 SHEETS



GRAPHIC SCALE
(IN FEET)

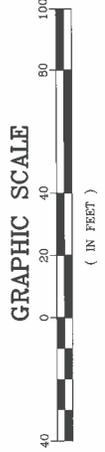


SEE SHEET 19 FOR LAYOUT DETAILS
NOTE: ALL RADII 5' UNLESS OTHERWISE MARKED

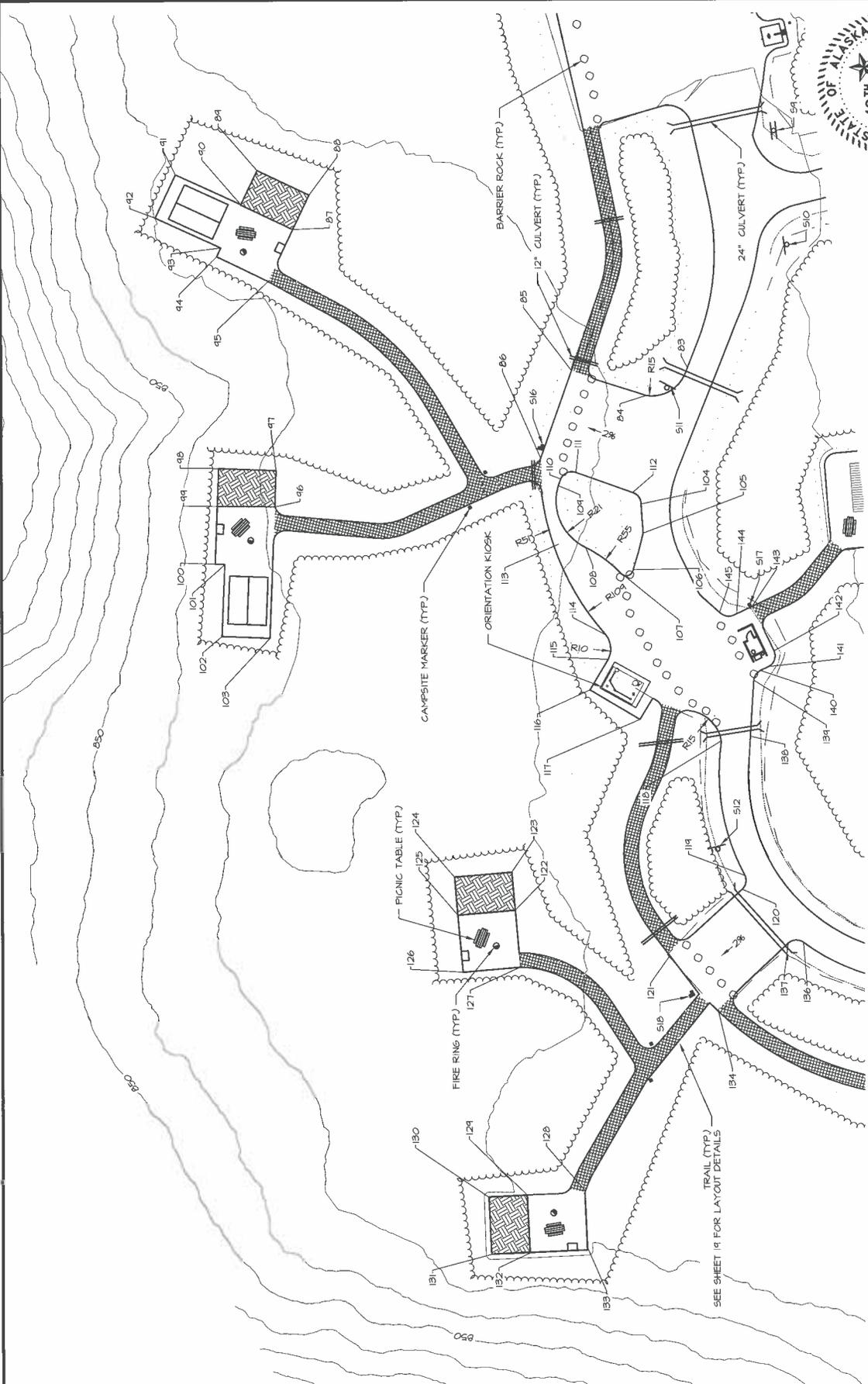


PREPARED: S.M
DRAWN: S.M
REVIEWED: L.M.R
DATE: 2/12/2015

SHEET
17
OF 21 SHEETS



GRAPHIC SCALE
(IN FEET)



NOTE: ALL RADII 5' UNLESS OTHERWISE MARKED

TRAIL (TYP)
SEE SHEET 18 FOR LAYOUT DETAILS

PICNIC TABLE (TYP)
FIRE RING (TYP)

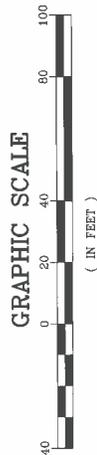
ORIENTATION KIOSK
CAMPSITE MARKER (TYP)

24" CULVERT (TYP)
12" CULVERT (TYP)
BARRIER ROCK (TYP)

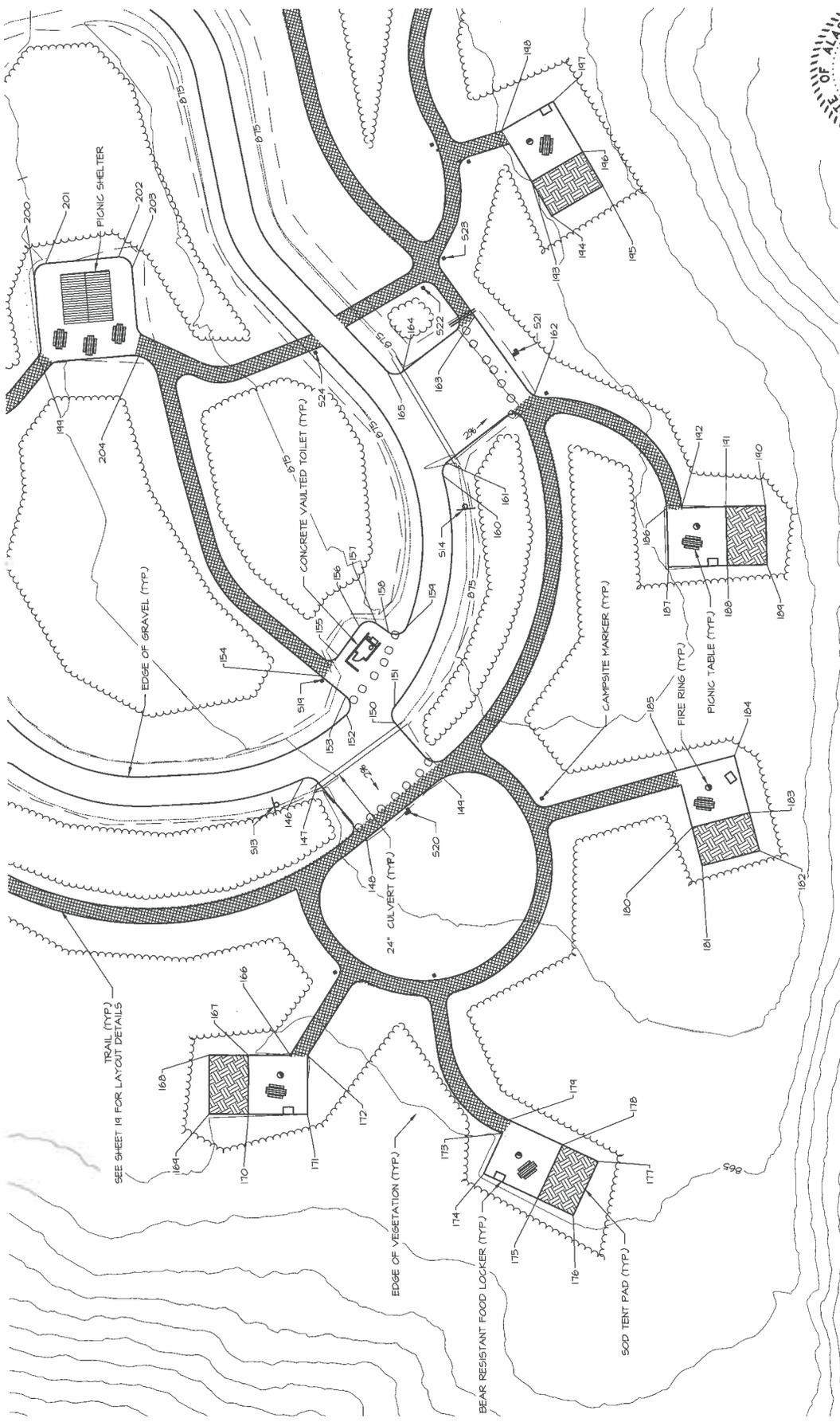


PREPARED: SJM
DRAWN: SJM
REVIEWED: LHR
DATE: 2/12/2015

SHEET
18
OF 21 SHEETS



NOTE: ALL RADII 5' UNLESS OTHERWISE MARKED



PICNIC SHELTER

CONCRETE VAULTED TOILET (TYP)

EDGE OF GRAVEL (TYP)

24" CULVERT (TYP)

TRAIL (TYP)
SEE SHEET 18 FOR LAYOUT DETAILS

EDGE OF VEGETATION (TYP)

BEAR RESISTANT FOOD LOCKER (TYP)

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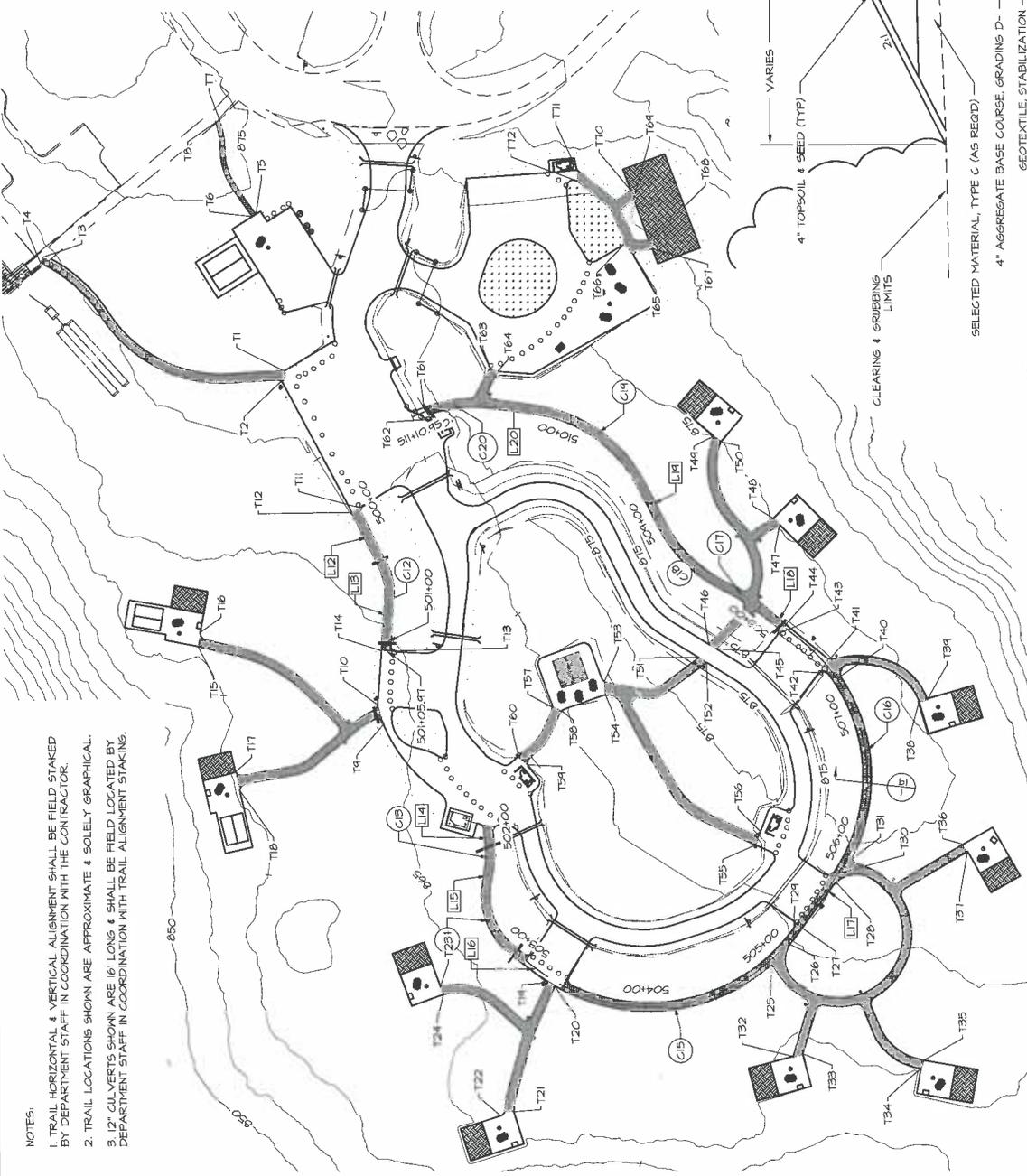
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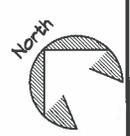
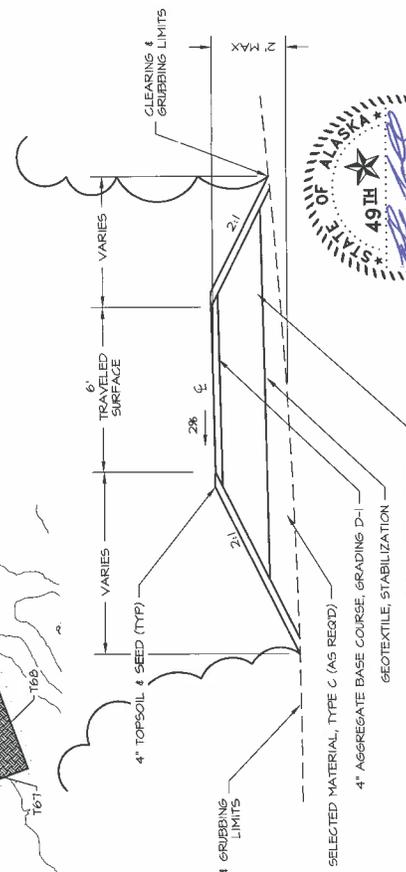


LINE #	LENGTH	DIRECTION
L12	43.13'	S16° 41' 24.28"W
L13	36.24'	S44° 10' 01.70"W
L14	15.04'	S51° 31' 21.68"W
L15	11.66'	S55° 01' 35.12"W
L16	21.69'	S7° 13' 48.76"E
L17	47.05'	N80° 56' 51.72"E
L18	31.85'	N6° 46' 05.60"W
L19	33.24'	N17° 42' 10.51"E
L20	30.44'	N87° 08' 32.54"W

CURVE #	PC STA	PT STA	RADIUS	LENGTH	DELTA
C12	500+49.13	500+64.73	50.00'	26.60'	30.4771°
C13	502+15.04	502+28.57	50.00'	13.53'	15.5037°
C14	502+40.22	502+44.55	50.00'	54.33'	62.2564°
C15	503+16.25	503+24.58	130.00'	20.833'	91.8201°
C16	505+71.63	507+63.00	125.00'	141.57'	87.1776°
C17	508+02.84	508+26.14	100.00'	23.30'	13.3474°
C18	508+26.14	508+42.15	100.00'	66.01'	37.8185°
C19	509+25.38	510+21.11	100.00'	95.72'	54.8453°
C20	510+52.04	511+08.45	100.00'	56.41'	32.6063°



- NOTES:
1. TRAIL HORIZONTAL & VERTICAL ALIGNMENT SHALL BE FIELD STAKED BY DEPARTMENT STAFF IN COORDINATION WITH THE CONTRACTOR.
 2. TRAIL LOCATIONS SHOWN ARE APPROXIMATE & SOLELY GRAPHICAL.
 3. 12" CULVERTS SHOWN ARE 6' LONG & SHALL BE FIELD LOCATED BY DEPARTMENT STAFF IN COORDINATION WITH TRAIL ALIGNMENT STAKING.



COORDINATE POINT TABLE

POINT #	NORTHING	EASTING	FG ELEVATION	DESCRIPTION
1	3184834.91	160110.51	871.34	EDGE OF GRAVEL
2	3184855.24	160169.36	873.02	EDGE OF GRAVEL
3	3184860.10	160162.14	873.03	EDGE OF GRAVEL
4	3184914.70	160170.84	873.39	EDGE OF GRAVEL
5	3184916.08	160165.32	873.39	EDGE OF GRAVEL
6	3184937.16	160167.26	873.34	EDGE OF GRAVEL
7	3184933.01	160166.34	874.59	EDGE OF GRAVEL
8	3184937.17	160166.23	874.10	EDGE OF GRAVEL
9	3184934.91	160162.94	874.10	EDGE OF GRAVEL
10	3184905.76	160162.10	874.11	EDGE OF GRAVEL
11	3184921.46	160165.82	874.11	EDGE OF GRAVEL
12	3184924.76	160164.50	873.84	EDGE OF GRAVEL
13	3184944.47	160167.17	873.54	EDGE OF GRAVEL
14	3184924.33	160167.81	873.12	EDGE OF GRAVEL
15	3184924.83	160165.91	873.12	EDGE OF GRAVEL
16	3184924.85	160161.85	872.74	EDGE OF GRAVEL
17	3184924.34	160161.93	873.74	EDGE OF GRAVEL
18	3184924.02	160159.81	868.20	EDGE OF GRAVEL
19	3184921.36	160162.72	864.42	EDGE OF GRAVEL
20	3184905.51	160161.94	864.34	EDGE OF GRAVEL
21	3184911.48	160169.61	864.21	EDGE OF GRAVEL
22	3184911.51	160169.47	872.74	EDGE OF GRAVEL
23	3184918.07	160166.58	873.45	EDGE OF GRAVEL
24	3184911.06	160164.80	874.00	EDGE OF GRAVEL
25	3184925.94	160167.20	873.97	EDGE OF GRAVEL
26	3184918.37	160167.20	874.28	EDGE OF GRAVEL
27	3184918.37	160167.20	874.00	EDGE OF GRAVEL
28	3184929.48	160167.20	874.00	EDGE OF GRAVEL
29	3184918.37	160166.61	873.90	EDGE OF GRAVEL
30	3184918.37	160166.61	871.45	EDGE OF GRAVEL
31	3184911.55	160166.81	873.00	EDGE OF DUMPSTER PAD
32	3184914.65	160167.40	872.56	EDGE OF DUMPSTER PAD
33	3184918.32	160167.16	872.87	EDGE OF DUMPSTER PAD
34	3184918.32	160169.61	873.00	EDGE OF DUMPSTER PAD
35	3184918.32	160169.61	873.00	EDGE OF DUMPSTER PAD
36	3184918.32	160169.61	873.00	EDGE OF GRAVEL
37	3184924.64	160168.00	873.00	EDGE OF GRAVEL
38	3184925.62	160169.61	873.03	EDGE OF GRAVEL
39	3184920.25	160169.61	873.37	EDGE OF GRAVEL
40	3184925.62	160169.61	873.36	EDGE OF GRAVEL
41	3184916.28	160169.61	872.44	EDGE OF GRAVEL
42	3184918.32	160169.61	873.43	EDGE OF GRAVEL
43	3184918.32	160169.61	873.86	EDGE OF GRAVEL
44	3184918.32	160169.61	873.86	EDGE OF GRAVEL
45	3184918.32	160169.61	873.86	EDGE OF GRAVEL
46	3184918.32	160169.61	873.86	EDGE OF GRAVEL
47	3184918.32	160169.61	873.86	EDGE OF GRAVEL
48	3184918.32	160169.61	873.86	EDGE OF GRAVEL
49	3184918.32	160169.61	873.86	EDGE OF GRAVEL
50	3184918.32	160169.61	873.86	EDGE OF GRAVEL

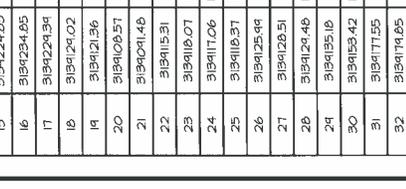
COORDINATE POINT TABLE

POINT #	NORTHING	EASTING	FG ELEVATION	DESCRIPTION
51	3184918.12	160182.12	871.75	EDGE OF TOILET PAD
52	3184920.70	160185.61	871.75	EDGE OF TOILET PAD
53	3184920.36	160185.01	871.75	EDGE OF TOILET PAD
54	3184924.24	160182.42	870.87	EDGE OF GRAVEL
55	3184924.24	160182.42	870.87	EDGE OF GRAVEL
56	3184924.24	160182.42	870.87	EDGE OF GRAVEL
57	3184924.24	160182.42	870.87	EDGE OF GRAVEL
58	3184924.24	160182.42	870.87	EDGE OF GRAVEL
59	3184924.24	160182.42	870.87	EDGE OF GRAVEL
60	3184924.24	160182.42	870.87	EDGE OF GRAVEL
61	3184924.24	160182.42	870.87	EDGE OF GRAVEL
62	3184924.24	160182.42	870.87	EDGE OF GRAVEL
63	3184924.24	160182.42	870.87	EDGE OF GRAVEL
64	3184924.24	160182.42	870.87	EDGE OF GRAVEL
65	3184924.24	160182.42	870.87	EDGE OF GRAVEL
66	3184924.24	160182.42	870.87	EDGE OF GRAVEL
67	3184924.24	160182.42	870.87	EDGE OF GRAVEL
68	3184924.24	160182.42	870.87	EDGE OF GRAVEL
69	3184924.24	160182.42	870.87	EDGE OF GRAVEL
70	3184924.24	160182.42	870.87	EDGE OF GRAVEL
71	3184924.24	160182.42	870.87	EDGE OF GRAVEL
72	3184924.24	160182.42	870.87	EDGE OF GRAVEL
73	3184924.24	160182.42	870.87	EDGE OF GRAVEL
74	3184924.24	160182.42	870.87	EDGE OF GRAVEL
75	3184924.24	160182.42	870.87	EDGE OF GRAVEL
76	3184924.24	160182.42	870.87	EDGE OF GRAVEL
77	3184924.24	160182.42	870.87	EDGE OF GRAVEL
78	3184924.24	160182.42	870.87	EDGE OF GRAVEL
79	3184924.24	160182.42	870.87	EDGE OF GRAVEL
80	3184924.24	160182.42	870.87	EDGE OF GRAVEL
81	3184924.24	160182.42	870.87	EDGE OF GRAVEL
82	3184924.24	160182.42	870.87	EDGE OF GRAVEL
83	3184924.24	160182.42	870.87	EDGE OF GRAVEL
84	3184924.24	160182.42	870.87	EDGE OF GRAVEL
85	3184924.24	160182.42	870.87	EDGE OF GRAVEL
86	3184924.24	160182.42	870.87	EDGE OF GRAVEL
87	3184924.24	160182.42	870.87	EDGE OF GRAVEL
88	3184924.24	160182.42	870.87	EDGE OF GRAVEL
89	3184924.24	160182.42	870.87	EDGE OF GRAVEL
90	3184924.24	160182.42	870.87	EDGE OF GRAVEL
91	3184924.24	160182.42	870.87	EDGE OF GRAVEL
92	3184924.24	160182.42	870.87	EDGE OF GRAVEL
93	3184924.24	160182.42	870.87	EDGE OF GRAVEL
94	3184924.24	160182.42	870.87	EDGE OF GRAVEL
95	3184924.24	160182.42	870.87	EDGE OF GRAVEL
96	3184924.24	160182.42	870.87	EDGE OF GRAVEL
97	3184924.24	160182.42	870.87	EDGE OF GRAVEL
98	3184924.24	160182.42	870.87	EDGE OF GRAVEL
99	3184924.24	160182.42	870.87	EDGE OF GRAVEL
100	3184924.24	160182.42	870.87	EDGE OF GRAVEL

COORDINATE POINT TABLE

POINT #	NORTHING	EASTING	FG ELEVATION	DESCRIPTION
101	3184946.97	160193.71	858.40	EDGE OF GRAVEL
102	3184920.162	160194.27	858.40	EDGE OF GRAVEL
103	3184920.162	160194.27	858.40	EDGE OF GRAVEL
104	3184946.172	160192.66	867.02	EDGE OF GRAVEL
105	3184946.172	160192.66	867.02	EDGE OF GRAVEL
106	3184946.172	160192.66	867.02	EDGE OF GRAVEL
107	3184946.172	160192.66	867.02	EDGE OF GRAVEL
108	3184946.172	160192.66	867.02	EDGE OF GRAVEL
109	3184946.172	160192.66	867.02	EDGE OF GRAVEL
110	3184946.172	160192.66	867.02	EDGE OF GRAVEL
111	3184946.172	160192.66	867.02	EDGE OF GRAVEL
112	3184946.172	160192.66	867.02	EDGE OF GRAVEL
113	3184946.172	160192.66	867.02	EDGE OF GRAVEL
114	3184946.172	160192.66	867.02	EDGE OF GRAVEL
115	3184946.172	160192.66	867.02	EDGE OF GRAVEL
116	3184946.172	160192.66	867.02	EDGE OF GRAVEL
117	3184946.172	160192.66	867.02	EDGE OF GRAVEL
118	3184946.172	160192.66	867.02	EDGE OF GRAVEL
119	3184946.172	160192.66	867.02	EDGE OF GRAVEL
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124	3184946.172	160192.66	867.02	EDGE OF GRAVEL
125	3184946.172	160192.66	867.02	EDGE OF GRAVEL
126	3184946.172	160192.66	867.02	EDGE OF GRAVEL
127	3184946.172	160192.66	867.02	EDGE OF GRAVEL
128	3184946.172	160192.66	867.02	EDGE OF GRAVEL
129	3184946.172	160192.66	867.02	EDGE OF GRAVEL
130	3184946.172	160192.66	867.02	EDGE OF GRAVEL
131	3184946.172	160192.66	867.02	EDGE OF GRAVEL
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134	3184946.172	160192.66	867.02	EDGE OF GRAVEL
135	3184946.172	160192.66	867.02	EDGE OF GRAVEL
136	3184946.172	160192.66	867.02	EDGE OF GRAVEL
137	3184946.172	160192.66	867.02	EDGE OF GRAVEL
138	3184946.172	160192.66	867.02	EDGE OF GRAVEL
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140	3184946.172	160192.66	867.02	EDGE OF GRAVEL
141	3184946.172	160192.66	867.02	EDGE OF GRAVEL
142	3184946.172	160192.66	867.02	EDGE OF GRAVEL
143	3184946.172	160192.66	867.02	EDGE OF GRAVEL
144	3184946.172	160192.66	867.02	EDGE OF GRAVEL
145	3184946.172	160192.66	867.02	EDGE OF GRAVEL
146	3184946.172	160192.66	867.02	EDGE OF GRAVEL
147	3184946.172	160192.66	867.02	EDGE OF GRAVEL
148	3184946.172	160192.66	867.02	EDGE OF GRAVEL
149	3184946.172	160192.66	867.02	EDGE OF GRAVEL
150	3184946.172	160192.66	867.02	EDGE OF GRAVEL
151	3184946.172	160192.66	867.02	EDGE OF GRAVEL

STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES
 DSP: VISITOR CENTER COMPLEX
 WALK-IN CAMPGROUND
 PROJECT NO. 74034-1
 POINT SUMMARY TABLE



PREPARED: S.M.
 DRAWN: S.M.
 REVIEWED: L.H.R.
 DATE: 2/12/2015
 SHEET 20
 OF 21 SHEETS





COORDINATE POINT TABLE

POINT #	NORTHING	EASTING	FG ELEVATION	DESCRIPTION
202	3189446.99	1601624.42	871.25	EDGE OF GRAVEL
203	3189440.95	1601619.44	871.00	EDGE OF GRAVEL
204	3189708.27	1601616.46	870.30	EDGE OF GRAVEL
205	3189404.21	1601485.09	866.60	EDGE OF GRAVEL

COORDINATE POINT TABLE

POINT #	NORTHING	EASTING	FG ELEVATION	DESCRIPTION
152	3189738.64	1601615.49	871.21	EDGE OF GRAVEL
153	3189746.25	1601619.91	872.48	EDGE OF TOILET PAD
154	3189759.62	1601614.03	872.48	EDGE OF TOILET PAD
155	3189761.84	1601624.51	872.48	EDGE OF TOILET PAD
156	3189767.80	1601631.93	872.48	EDGE OF TOILET PAD
157	3189765.24	1601644.52	872.48	EDGE OF TOILET PAD
158	3189754.92	1601646.95	873.24	EDGE OF GRAVEL
159	3189756.07	1601654.62	873.24	EDGE OF GRAVEL
160	3189803.84	1601698.28	874.39	EDGE OF GRAVEL
161	3189807.67	1601702.18	874.45	EDGE OF GRAVEL
162	3189819.45	1601746.64	875.67	EDGE OF GRAVEL
163	3189833.35	1601742.12	875.17	EDGE OF GRAVEL
164	3189848.58	1601703.45	874.49	EDGE OF GRAVEL
165	3189851.08	1601700.03	874.68	EDGE OF GRAVEL
166	3189831.43	1601626.07	865.14	EDGE OF GRAVEL
167	3189824.99	1601511.42	865.48	EDGE OF SOD PAD
168	3189864.06	1601497.60	865.20	EDGE OF SOD PAD
169	3189827.33	1601485.49	865.80	EDGE OF SOD PAD
170	3189819.26	1601491.31	865.48	EDGE OF SOD PAD
171	3189807.16	1601520.04	865.00	EDGE OF GRAVEL
172	3189827.89	1601532.15	865.00	EDGE OF GRAVEL
173	3189860.91	1601584.66	866.00	EDGE OF GRAVEL
174	3189890.57	1601564.94	866.00	EDGE OF GRAVEL
175	3189830.92	1601593.72	866.48	EDGE OF SOD PAD
176	3189837.82	1601592.12	866.80	EDGE OF SOD PAD
177	3189831.56	1601612.56	866.80	EDGE OF SOD PAD
178	3189844.71	1601603.37	866.48	EDGE OF SOD PAD
179	3189841.36	1601584.59	866.00	EDGE OF GRAVEL
180	3189824.67	1601718.64	874.50	EDGE OF SOD PAD
181	3189814.25	1601709.41	874.50	EDGE OF SOD PAD
182	3189807.83	1601732.53	874.50	EDGE OF SOD PAD
183	3189823.25	1601736.82	874.50	EDGE OF SOD PAD
184	3189846.37	1601743.24	874.50	EDGE OF GRAVEL
185	3189852.80	1601720.12	874.50	EDGE OF GRAVEL
186	3189746.93	1601770.06	875.50	EDGE OF GRAVEL
187	3189725.87	1601759.55	875.50	EDGE OF SOD PAD
188	3189714.35	1601774.60	875.02	EDGE OF SOD PAD
189	3189706.68	1601789.64	874.70	EDGE OF SOD PAD
190	3189727.13	1601805.16	874.10	EDGE OF SOD PAD
191	3189735.41	1601781.12	875.02	EDGE OF SOD PAD
192	3189744.05	1601775.34	875.38	EDGE OF GRAVEL
193	3189888.78	1601784.73	875.00	EDGE OF SOD PAD
194	3189872.78	1601784.73	875.00	EDGE OF SOD PAD
195	3189872.78	1601818.73	874.52	EDGE OF SOD PAD
196	3189888.78	1601818.73	874.52	EDGE OF SOD PAD
197	3189812.74	1601818.73	874.52	EDGE OF GRAVEL
198	3189812.74	1601784.73	875.00	EDGE OF GRAVEL
199	3189825.69	1601800.46	870.30	EDGE OF GRAVEL
200	3189815.30	1601845.75	871.00	EDGE OF GRAVEL
201	3189854.60	1601802.45	870.95	EDGE OF GRAVEL

603(1) AND 603(3) CSP SUMMARY

STATION AND OFFSET	STATION AND OFFSET		DIAMETER	LENGTH	END SECTIONS
	FLOW IN	FLOW OUT			
300+28 23R	871.01	300+28 28L	2'-0"	51'-0"	YES
301+5 21L	874.30	300+84 21L	2'-0"	32'-0"	YES
301+38 16R	873.76	301+11 16R	2'-0"	27'-0"	YES
302+75 16L	869.40	302+75 18R	2'-0"	36'-0"	YES
304+15 16L	866.75	304+15 18R	2'-0"	36'-0"	YES
305+50 16R	868.00	305+46 13L	2'-0"	29'-0"	YES
306+140 14R	868.20	306+05 14R	2'-0"	35'-0"	YES
308+00 13R	872.30	307+53 10R	2'-0"	47'-0"	YES
308+05 12R	874.73	309+15 10R	2'-0"	51'-0"	YES
		TOTAL		344'-0"	18

NOTE: 12" CULVERTS SHOWN ON THE PLANS ARE 16" IN LENGTH & SHALL BE LOCATED IN THE FIELD BY THE PROJECT ENGINEER.

TRAIL POINT TABLE

POINT #	NORTHING	EASTING	FG ELEVATION
T51	3189800.44	1601681.26	874.77
T52	3189813.97	1601682.76	874.77
T53	3189161.11	1601621.41	871.00
T54	3189408.88	1601615.15	870.31
T55	3189757.30	1601615.04	872.88
T56	3189761.58	1601624.07	872.58
T57	3189424.34	1601582.17	870.36
T58	3189423.22	1601584.80	870.13
T59	3189412.73	1601540.18	867.62
T60	3189421.98	1601540.04	867.95
T61	3189455.54	1601664.54	874.01
T62	3189436.21	1601667.04	873.43
T63	3189432.03	1601723.38	873.44
T64	3189426.44	1601725.41	873.84
T65	3189416.32	1601853.23	872.33
T66	3189426.46	1601853.23	871.91
T67	3189404.98	1601865.77	871.52
T68	3189415.38	1601868.08	871.24
T69	3189444.91	1601891.98	869.88
T70	3189450.41	1601864.86	869.25
T71	3189417.31	1601867.15	869.23
T72	3189482.45	1601862.36	869.54

TRAIL POINT TABLE

POINT #	NORTHING	EASTING	FG ELEVATION
T26	3189694.77	1601581.44	864.62
T27	3189692.00	1601584.02	870.82
T28	3189691.94	1601636.31	872.21
T29	3189498.96	1601544.78	870.41
T30	3189704.14	1601636.64	872.67
T31	3189701.54	1601656.52	874.00
T32	3189683.58	1601625.89	865.10
T33	3189628.19	1601532.14	864.87
T34	3189560.83	1601584.64	865.88
T35	3189562.68	1601590.13	865.49
T36	3189652.82	1601714.80	874.39
T37	3189647.00	1601718.31	874.44
T38	3189746.92	1601764.98	875.46
T39	3189748.96	1601775.86	875.28
T40	3189794.29	1601743.26	876.08
T41	3189819.51	1601746.37	875.51
T42	3189816.63	1601754.11	875.01
T43	3189852.16	1601733.74	875.00
T44	3189853.40	1601742.17	875.21
T45	3189875.84	1601644.51	874.53
T46	3189882.16	1601693.84	874.52
T47	3189806.44	1601784.64	874.98
T48	3189812.74	1601791.64	874.94
T49	3189844.28	1601801.24	875.30
T50	3189877.86	1601801.83	875.30

TRAIL POINT TABLE

POINT #	NORTHING	EASTING	FG ELEVATION
T1	3189424.84	1601817.92	879.41
T2	3189423.42	1601811.42	879.61
T3	3189415.00	1601554.12	864.04
T4	3189419.86	1601590.30	869.65
T5	3189428.67	1601683.54	874.35
T6	3189432.81	1601680.36	874.53
T7	3189444.84	1601713.40	876.07
T8	3189445.99	1601710.06	876.32
T9	3189406.28	1601468.80	863.92
T10	3189424.94	1601580.07	863.97
T11	3189427.52	1601586.66	870.82
T12	3189424.94	1601580.07	870.55
T13	3189409.41	1601524.43	864.77
T14	3189404.43	1601524.43	864.58
T15	3189403.13	1601434.17	863.62
T16	3189415.48	1601442.78	863.61
T17	3189405.39	1601394.34	860.38
T18	3189405.78	1601391.72	860.27
T19	3189751.57	1601441.55	867.24
T20	3189742.00	1601434.77	867.08
T21	3189751.57	1601441.55	867.24
T22	3189744.48	1601348.28	865.65
T23	3189845.13	1601393.54	864.95
T24	3189884.71	1601381.02	864.94
T25	3189868.54	1601562.24	868.01

TRAIL POINT TABLE

POINT #	NORTHING	EASTING	FG ELEVATION	
151	3189746.25	1601619.91	872.48	EDGE OF TOILET PAD
152	3189759.62	1601614.03	872.48	EDGE OF TOILET PAD
153	3189761.84	1601624.51	872.48	EDGE OF TOILET PAD
154	3189767.80	1601631.93	872.48	EDGE OF TOILET PAD
155	3189765.24	1601644.52	872.48	EDGE OF TOILET PAD
156	3189754.92	1601646.95	873.24	EDGE OF GRAVEL
157	3189756.07	1601654.62	873.24	EDGE OF GRAVEL
158	3189803.84	1601698.28	874.39	EDGE OF GRAVEL
159	3189807.67	1601702.18	874.45	EDGE OF GRAVEL
160	3189819.45	1601746.64	875.67	EDGE OF GRAVEL
161	3189833.35	1601742.12	875.17	EDGE OF GRAVEL
162	3189848.58	1601703.45	874.49	EDGE OF GRAVEL
163	3189851.08	1601700.03	874.68	EDGE OF GRAVEL
164	3189831.43	1601626.07	865.14	EDGE OF GRAVEL
165	3189824.99	1601511.42	865.48	EDGE OF SOD PAD
166	3189864.06	1601497.60	865.20	EDGE OF SOD PAD
167	3189827.33	1601485.49	865.80	EDGE OF SOD PAD
168	3189819.26	1601491.31	865.48	EDGE OF SOD PAD
169	3189807.16	1601520.04	865.00	EDGE OF GRAVEL
170	3189827.89	1601532.15	865.00	EDGE OF GRAVEL
171	3189860.91	1601584.66	866.00	EDGE OF GRAVEL
172	3189890.57	1601564.94	866.00	EDGE OF GRAVEL
173	3189830.92	1601593.72	866.48	EDGE OF SOD PAD
174	3189837.82	1601592.12	866.80	EDGE OF SOD PAD
175	3189831.56	1601612.56	866.80	EDGE OF SOD PAD
176	3189844.71	1601603.37	866.48	EDGE OF SOD PAD
177	3189841.36	1601584.59	866.00	EDGE OF GRAVEL
178	3189824.67	1601718.64	874.50	EDGE OF SOD PAD
179	3189814.25	1601709.41	874.50	EDGE OF SOD PAD
180	3189807.83	1601732.53	874.50	EDGE OF SOD PAD
181	3189823.25	1601736.82	874.50	EDGE OF SOD PAD
182	3189846.37	1601743.24	874.50	EDGE OF GRAVEL
183	3189852.80	1601720.12	874.50	EDGE OF GRAVEL
184	3189746.93	1601770.06	875.50	EDGE OF GRAVEL
185	3189725.87	1601759.55	875.50	EDGE OF SOD PAD
186	3189714.35	1601774.60	875.02	EDGE OF SOD PAD
187	3189706.68	1601789.64	874.70	EDGE OF SOD PAD
188	3189727.13	1601805.16	874.10	EDGE OF SOD PAD
189	3189735.41	1601781.12	875.02	EDGE OF SOD PAD
190	3189744.05	1601775.34	875.38	EDGE OF GRAVEL
191	3189888.78	1601784.73	875.00	EDGE OF SOD PAD
192	3189872.78	1601784.73	875.00	EDGE OF SOD PAD
193	3189872.78	1601818.73	874.52	EDGE OF SOD PAD
194	3189888.78	1601818.73	874.52	EDGE OF SOD PAD
195	3189812.74	1601818.73	874.52	EDGE OF GRAVEL
196	3189812.74	1601784.73	875.00	EDGE OF GRAVEL
197	3189825.69	1601800.46	870.30	EDGE OF GRAVEL
198	3189815.30	1601845.75	871.00	EDGE OF GRAVEL
199	3189854.60	1601802.45	870.95	EDGE OF GRAVEL

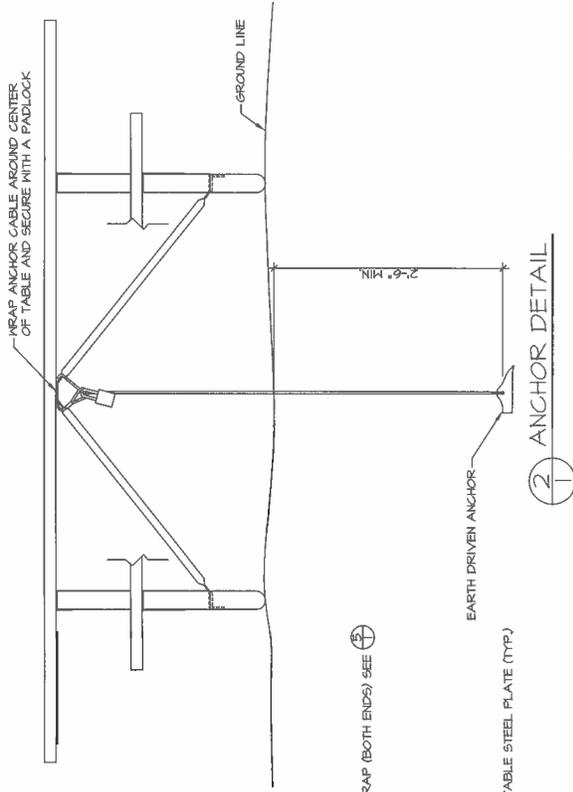
STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES



DESIGN & CONSTRUCTION SECTION

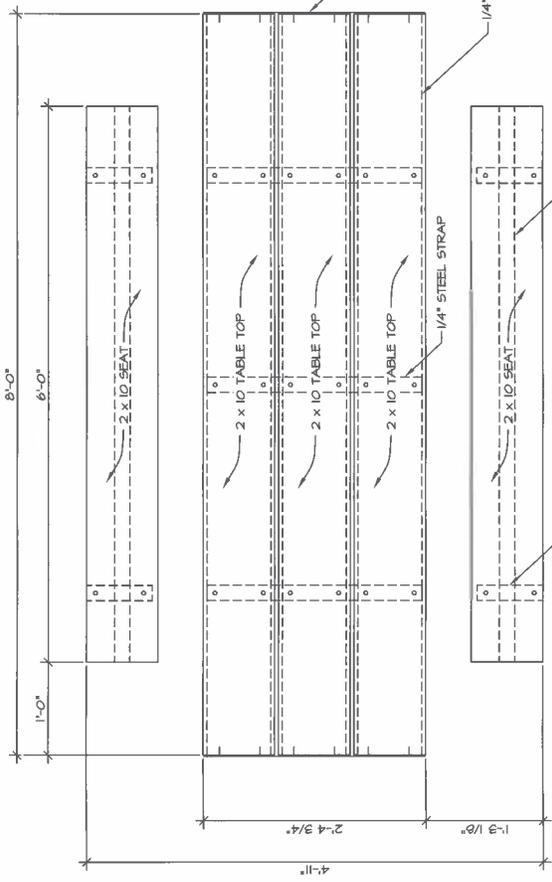
PICNIC TABLE

PREPARED: GLL
 DRAWN: BDFN
 REVIEWED: DH
 DATE: JAN. 85
 SHEET 1
 OF 1 SHEETS

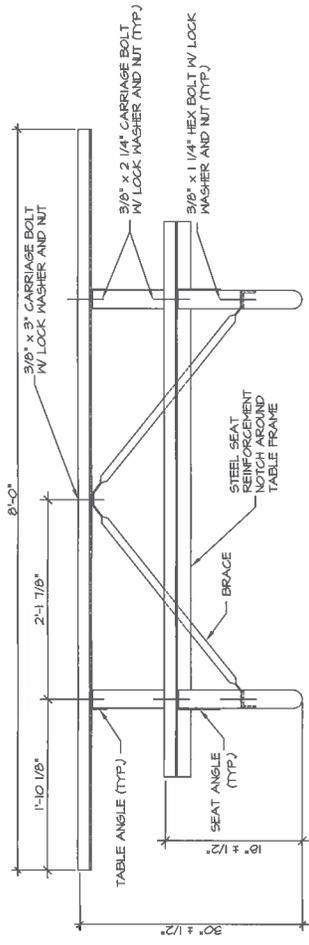


2 ANCHOR DETAIL

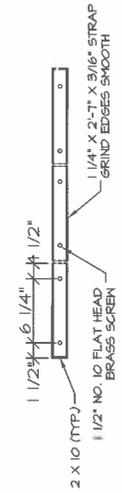
- NOTES:
1. SEATS & TOP SHALL RECYCLED PLASTIC LUMBER.
 2. BOLT HOLES FOR TABLE TOP, SEATS, & STEEL PLATES TO BE SHOP DRILLED.
 3. SWAGED SLEEVES SHALL BE USED TO FASTEN ANCHOR CABLE.
 4. THIS DRAWING ILLUSTRATES SEAT & TABLE TOP CONSTRUCTION. REFER TO SPECIAL PROVISIONS FRAME STILES & MODELS.



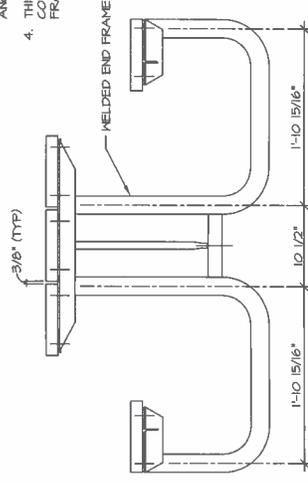
1 TOP VIEW



3 SIDE VIEW



5 END STRAP



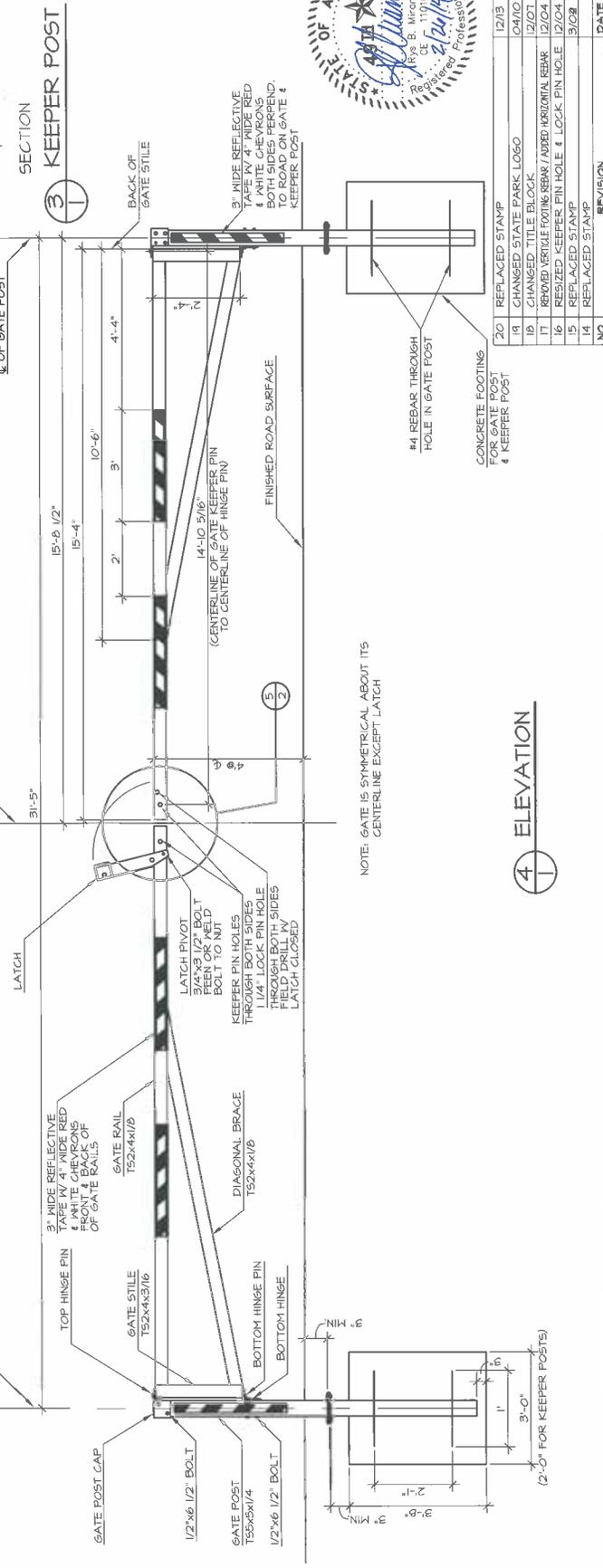
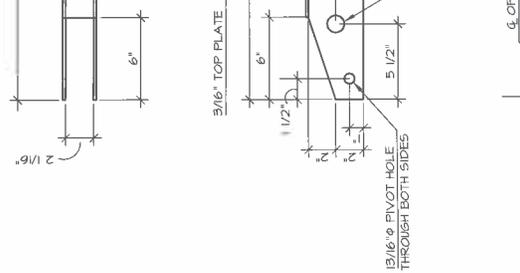
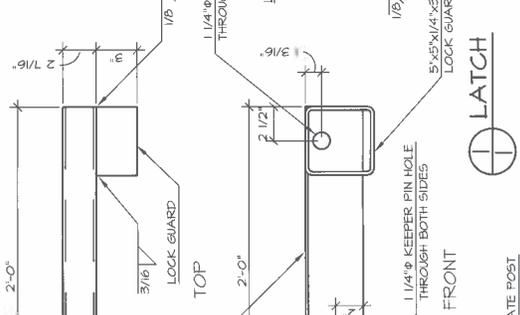
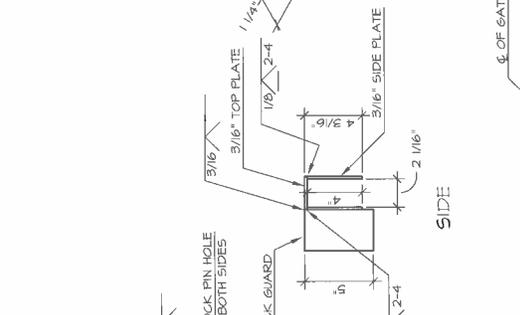
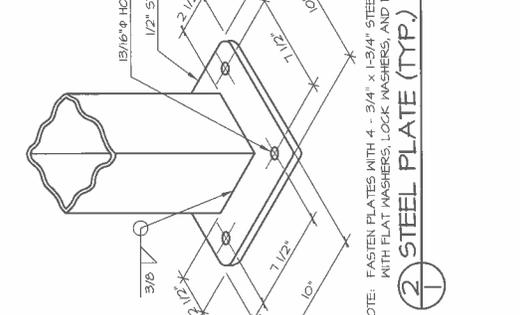
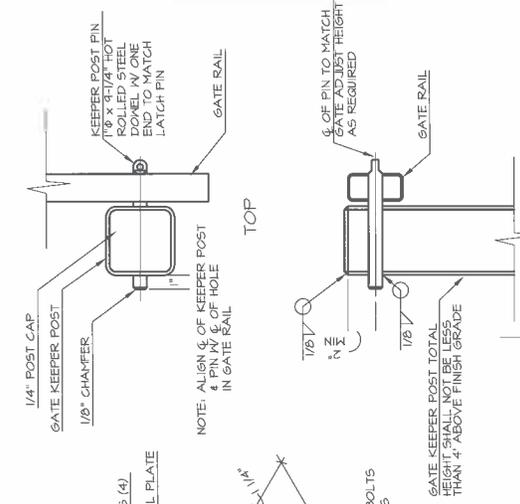
4 END VIEW

NO.	REVISION	DATE	APPROVED
21	REPLACED STAMP	12/13	RBM
20	CHANGED 'STATE PARKS' LOGO	04/10	MPS
19	CHANGED ANCHOR TO EARTH DRIVEN ANCHOR	04/10	MPS
18	ADDED EARTH ANCHOR AS AN ANCHOR OPTION	06/01	MPS
17	CHANGED TABLE TOP & SEAT MATERIAL	06/01	MPS
16	ADDED STEEL REINFORCING PLATE & ANGLE IRON	06/01	MPS
15	CHANGED TITLE BLOCK	12/01	MPS
14	CHANGED TABLE TOP AND SEAT MATERIAL	10/05	MPS
13	MODIFIED FRAME SIZE	10/05	MPS
12	REPLACED STAMP	3/04	MPS



PREPARED: DRAWN: RKC
 REVIEWED: DHT
 DATE: 10/14/95

SHEET 1
 6-2
 OF 2 SHEETS



4 ELEVATION

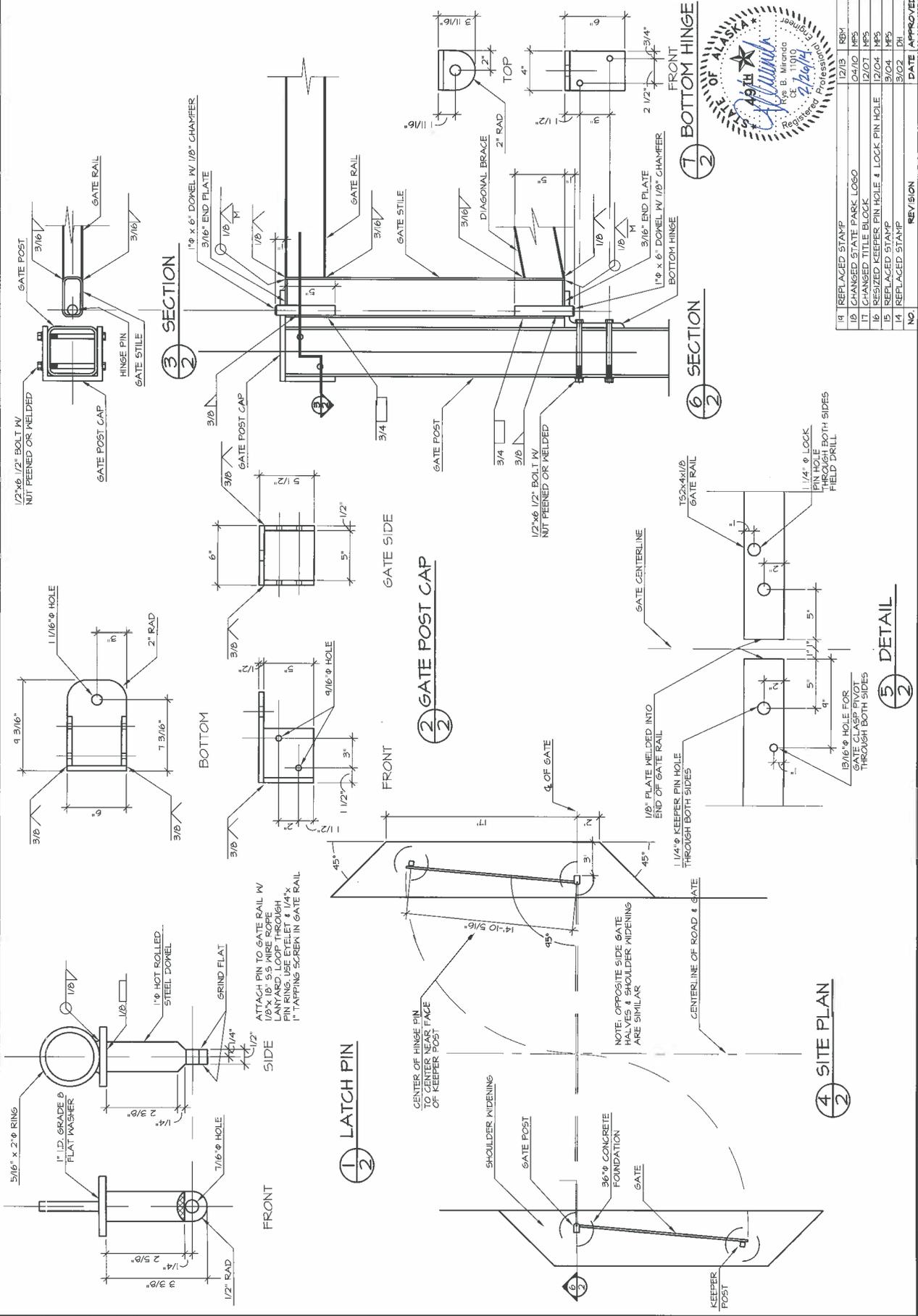
NO.	REVISION	DATE	APPROVED
20	REPLACED STAMP FOR GATE POST & KEEPER POST	12/15	RBH
19	CHANGED STATE PARK LOGO	04/10	MFS
18	CHANGED TITLE BLOCK	12/01	MFS
17	ADDED VERTICAL FOOTING REBAR / ADDED HORIZONTAL REBAR	12/04	MFS
16	RESIZED KEEPER PIN HOLE & LOCK PIN HOLE	12/04	MFS
15	REPLACED STAMP	3/09	BR5
14	REPLACED STAMP		



PREPARED: DRAWN: RK
 REVIEWED: DH TT
 DATE: 10/14/85

SHEET 2
 G-2

NO.	REVISION	DATE	APPROVED
11	REPLACED STAMP	12/13	REM
12	CHANGED STATE PARK LOGO	04/10	MFS
13	CHANGED TITLE BLOCK	12/01	MFS
14	RESIZED KEEPER PIN HOLE & LOCK PIN HOLE	12/04	MFS
15	REPLACED STAMP	3/04	MFS
16	REPLACED STAMP	3/02	DR



5
2
DETAIL

4
2
SITE PLAN

1
2
LATCH PIN

2
2
GATE POST CAP

6
2
SECTION

3
2
SECTION

1/2" x 6 1/2" BOLT W/
 NUT PEENED OR WELDED

1 1/16" Ø HOLE

3/16"

5/16" x 2" Ø RING

1" I.D. GRADE Ø
 FLAT WASHER

1/8" HOT ROLLED
 STEEL DOMEL

GRIND FLAT

ATTACH PIN TO GATE RAIL W/
 1/8" x 18" 55 MIRE ROPE
 LANYARD, LOOP THROUGH
 PIN HOLE, BE SURE TO
 TIGHTEN SCREW IN GATE RAIL

1/8" PLATE WELDED INTO
 END OF GATE RAIL
 THROUGH BOTH SIDES

1/4" & LOCK
 PIN HOLE
 THROUGH BOTH SIDES
 FIELD DRILL

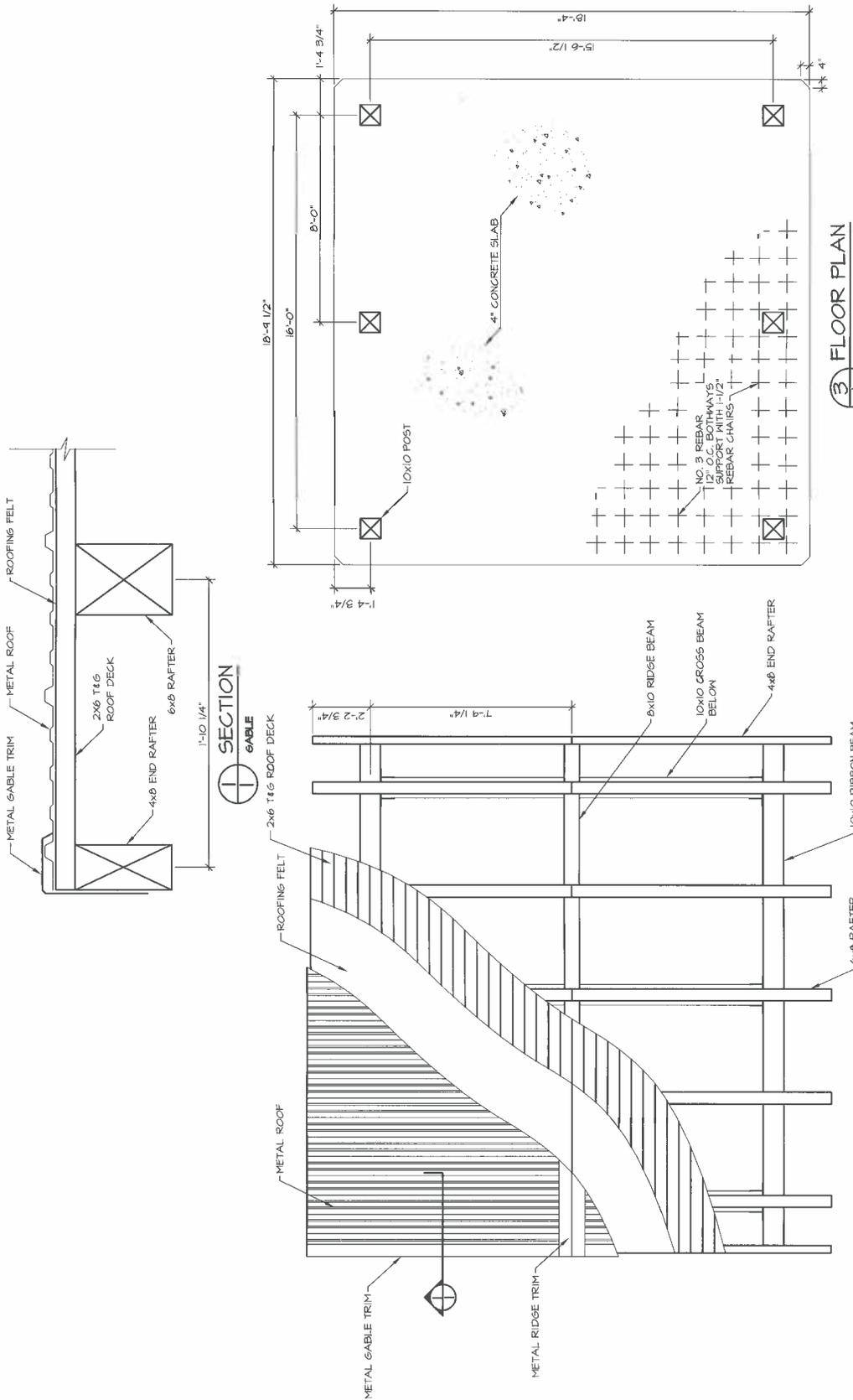
1/8" PLATE WELDED INTO
 END OF GATE RAIL
 THROUGH BOTH SIDES

1/2" x 6 1/2" BOLT W/
 NUT PEENED OR WELDED

1/8" x 6" DOMEL W/ 1/8" CHAMFER



PREPARED: MWE
 DRAWN: MWE
 REVIEWED: DH
 DATE: MAY 91
 SHEET 1
 R-1



3 FLOOR PLAN
 POST LAYOUT

2 ROOF PLAN

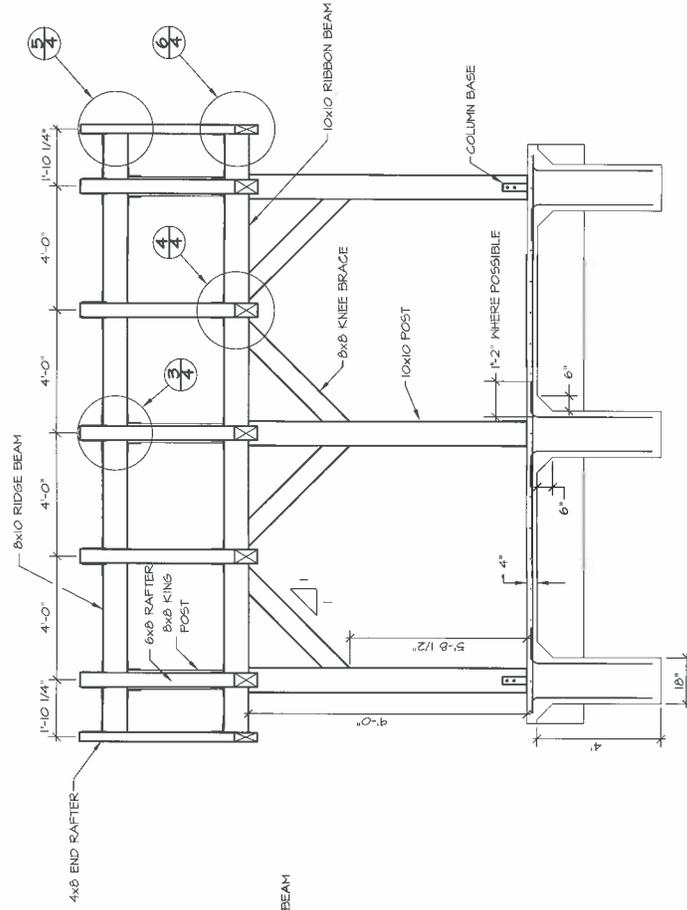


NO.	REVISION	DATE	APPROVED
11	REPLACED STAMP	12/18	RSM
10	CHANGED STATE PARK LOGO	04/10	MPS
9	CHANGED TITLE BLOCK	12/07	MPS
8	REPLACED STAMP	3/04	MPS
7	REPLACED STAMP	3/02	DH

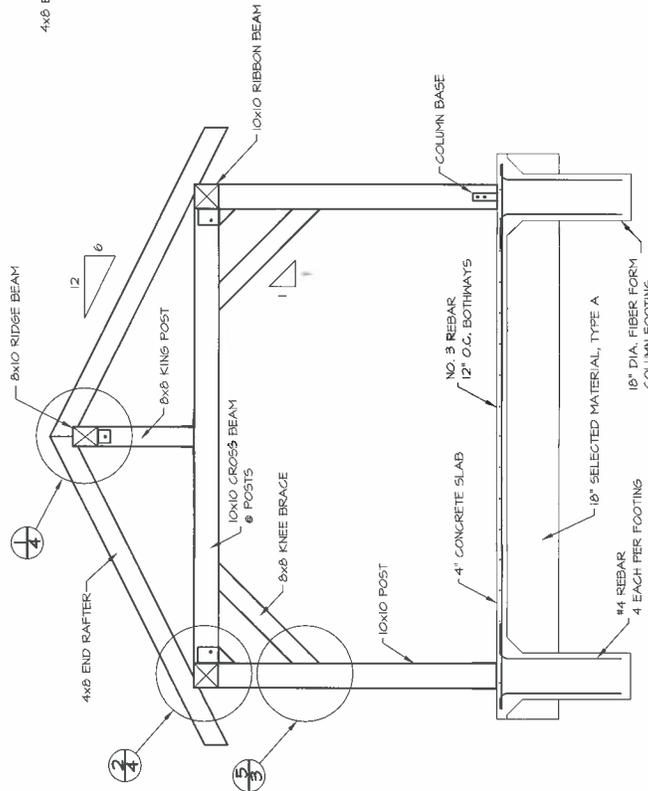


PREPARED: MFE
 DRAWN: MFE
 REVIEWED: DH
 DATE: MAY 91
 SHEET 2
 R-1

NO.	REVISION	DATE	APPROVED
11	REPLACED STAMP	12/18	REM
12	CHANGED STATE PARK LOGO	04/10	MFS
11	CHANGED TITLE BLOCK	12/01	MFS
10	REPLACED STAMP	9/04	MFS
4	REPLACED STAMP	5/02	DH
0	SHORTENED STRUCTURE BY 1'	MAR 01	DH



2 SIDE STRUCTURE

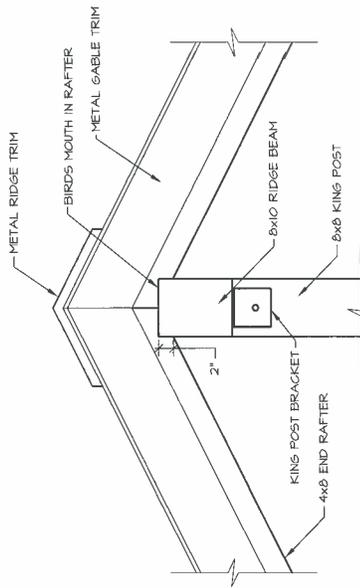


1 END STRUCTURE

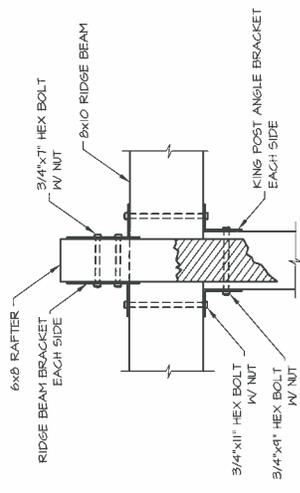




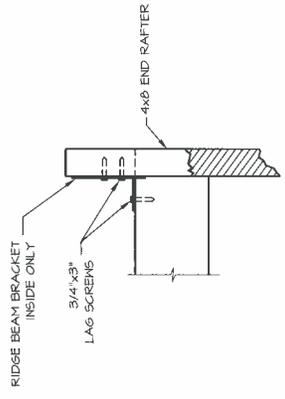
PREPARED: MFE
 DRAWN: MFE
 REVIEWED: DH
 DATE: MAY 91
 SHEET 4
 R-1
 OF 4 SHEETS



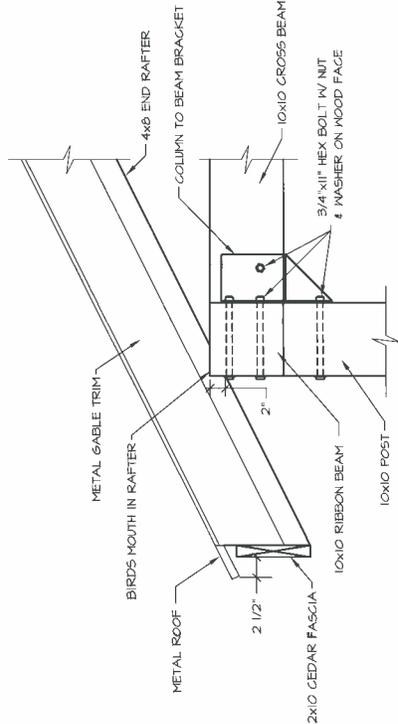
1
4
DETAIL
RIDGE WROOFING



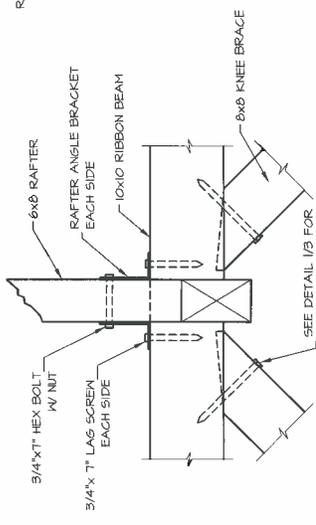
3
4
DETAIL



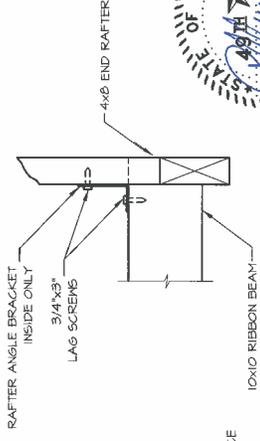
5
4
DETAIL
END RAFTER



2
4
DETAIL
EAVE WROOFING & TRIM



4
4
DETAIL



6
4
DETAIL
END RAFTER

NOTE: KING POST ANGLE BRACKET TO BE USED AT BOTTOM OF POST FOR CONNECTING TO CROSS BEAM SHALL BE ATTACHED TO CROSS BEAM WITH 3/4" X 8" LAG SCREWS

NO.	REVISION	DATE	APPROVED
6	REPLACED STAMP	12/18	RFM
5	CHANGED STATE PARK LOGO	04/10	MFS
4	CHANGED TITLE BLOCK	12/07	MFS
3	REPLACED STAMP	3/04	MFS
2	REPLACED STAMP	3/02	DH
1	ADD NOTE	DEC 91	DH



PREPARED: M.L.
DRAWN: J.F.S.
REVIEWED: DH
DATE: 11/85

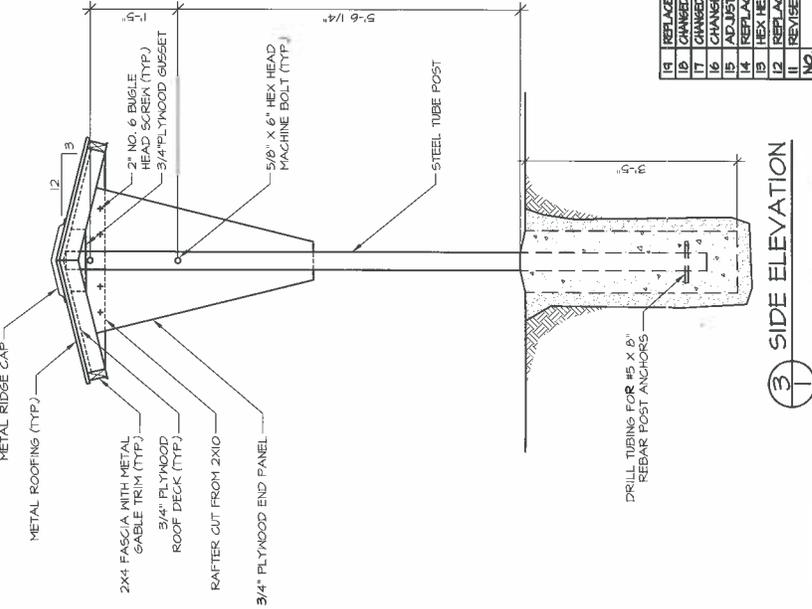
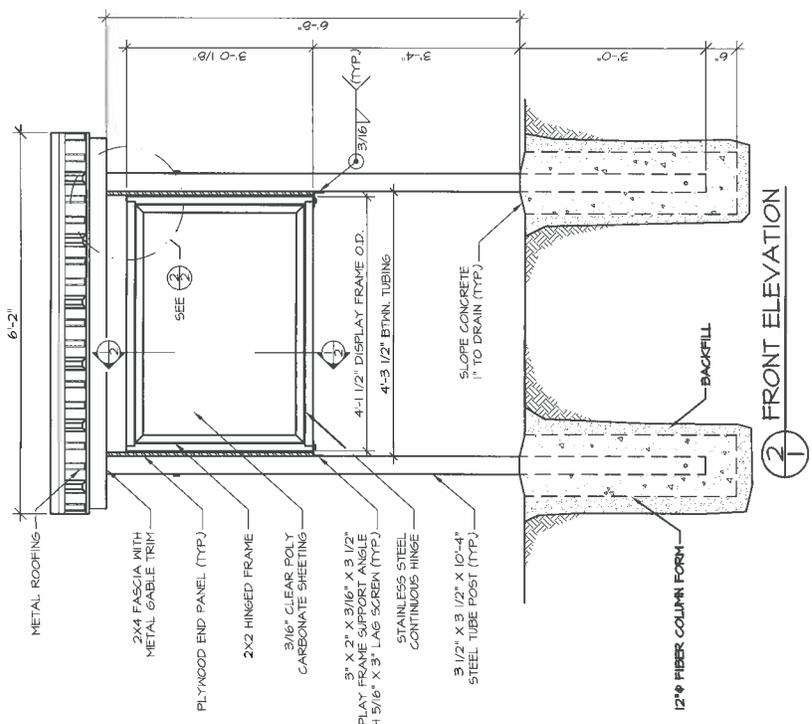
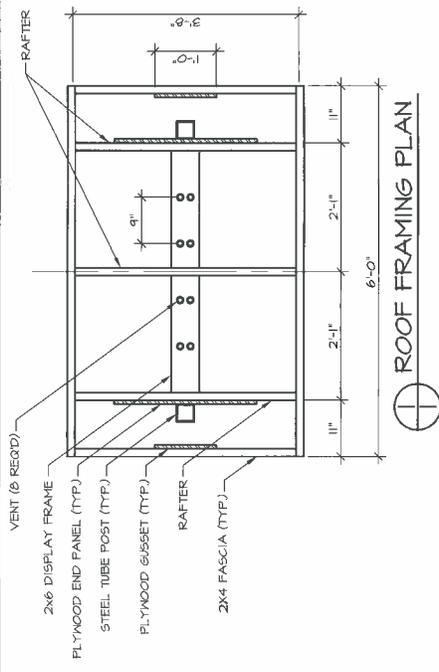
SHEET 1

5-1
OF 2 SHEETS

STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES



NO.	REVISION	DATE	APPROVED
14	REPLACED STAMP	12/78	RBM
15	CHANGED STATE PARKS LOGO	04/70	NFS
16	CHANGED ROOFING MATERIAL, RAFTER SIZE & FASCIA SIZE	12/28	NFS
17	CHANGED TITLE BLOCK	12/01	NFS
18	ADJUSTED OVERALL HEIGHT	12/04	NFS
19	REPLACED STAMP	02/04	NFS
20	HEX HEAD MACHINE BOLT SIZE CORRECTION	02/04	JC
21	REPLACED STAMP	9/02	DH
22	REVISED AND REDRAWN TO ELECTRONIC MEDIA	12/85	JAL



3 SIDE ELEVATION

2 FRONT ELEVATION



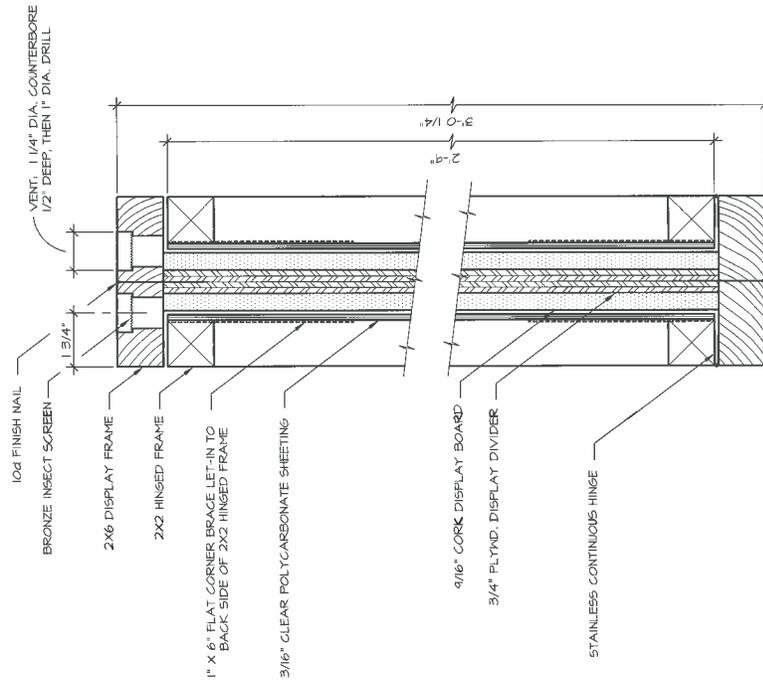
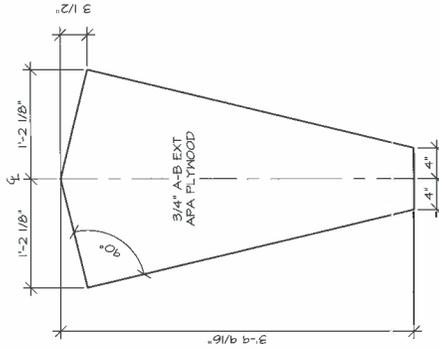
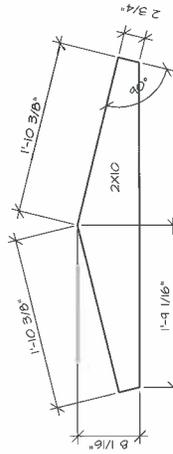
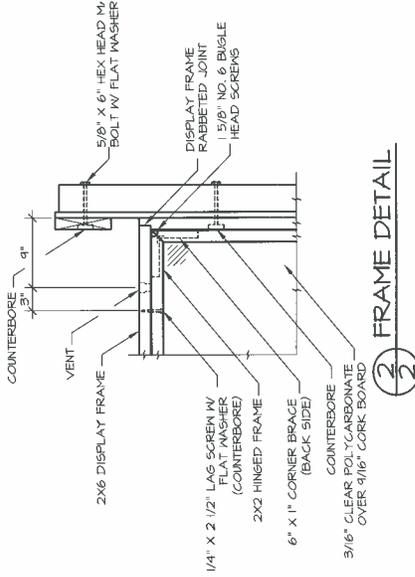
PREPARED: M.J.
DRAWN: J.F.S.
REVIEWED: DH
DATE: 11/85

SHEET 2

5-1
OF 2 SHEETS



NO.	REVISION	DATE	APPROVED
14	REFLACED STAMP	12/18	REB
13	CHANGED STATE PARK LOGO	04/10	FFS
17	CHANGED ROOFING MATERIAL, RAFTER SIZE & FASCIA SIZE	12/08	FFS
16	CHANGED TITLE BLOCK	12/07	FFS
15	HOURED PLYWOOD END PANEL PATTERN TO FIT REBUILT ASSEMBLY	12/04	FFS
14	REFLACED STAMP	09/04	FFS
13	HEX HEAD MACHINE BOLT SIZE CORRECTION	02/04	JC
12	REFLACED STAMP	01/02	DH
11	REVISED AND REDRAWN TO ELECTRONIC MEDIA	12/85	FFA

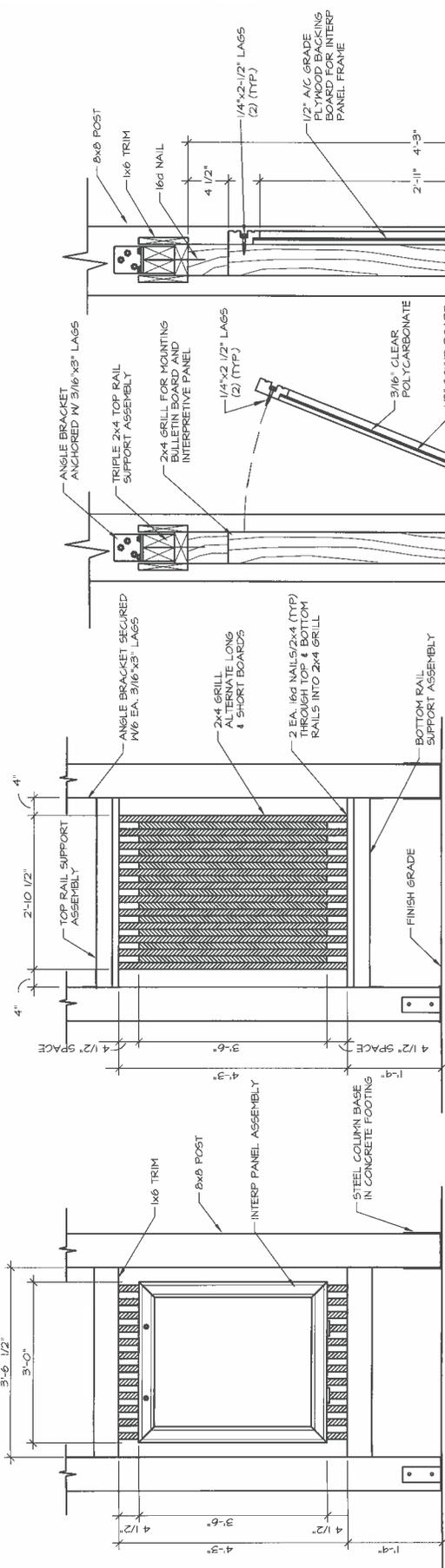




PREPARED BY: RBM/JAS
 DRAWN BY: ATB/M/JAS
 REVIEWED BY: MFS
 DATE: JAN 2004

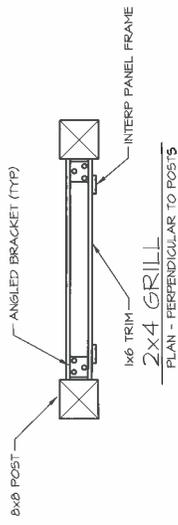
SHEET 2
 OF 3 SHEETS

STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES

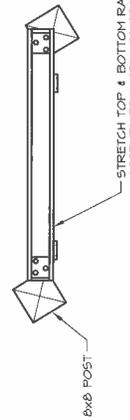


2x4 GRILL
 DETAILS - INTERP PANEL &
 1x6 TRIM NOT SHOWN

2x4 GRILL W/ INTERP PANEL
 DETAILS



NOTES:
 1. NOTCH POSTS TO FIT ANGLE BRACKETS & TOP/BOTTOM SUPPORT RAILS.
 2. DO NOT NOTCH POSTS FULL LENGTH OF 2x4 GRILL.



BULLETIN BOARD
 SECTION

SUPPORT GRILL
 SECTION

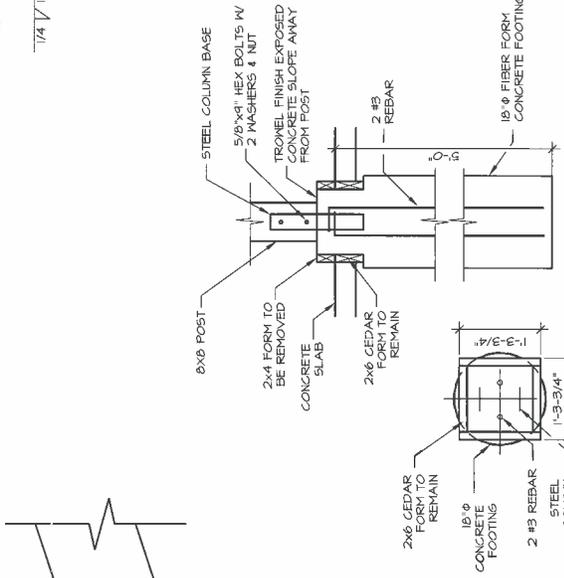
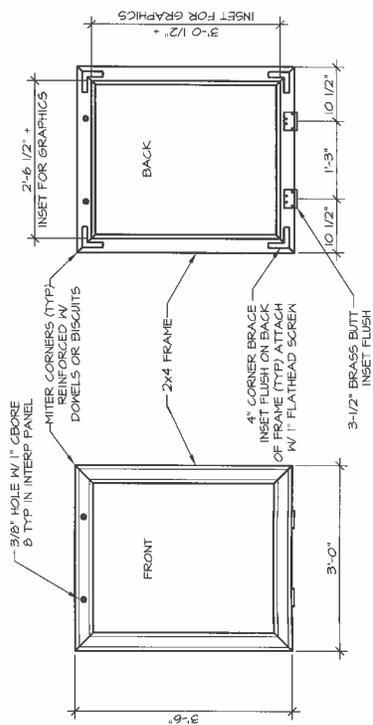
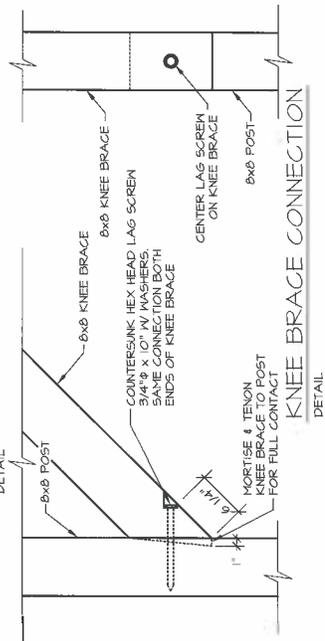
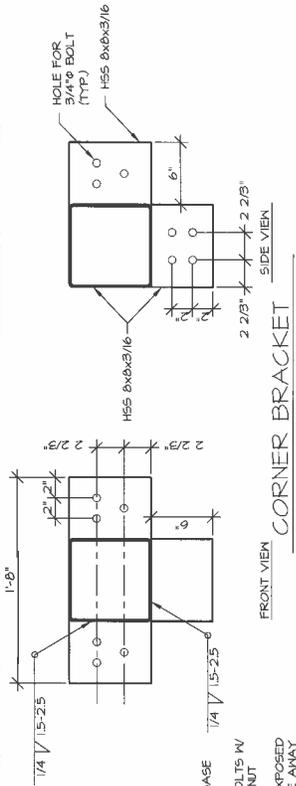
NOTES:
 1. INTERPRETIVE PANEL ASSEMBLY CONSISTS OF INTERPRETIVE GRAPHIC BACKING BOARD AND INTERP PANEL FRAME.
 2. 1/2\"/>

NO.	REVISION	DATE	APPROVED
4	REPLACED STAMP	12/19	RBM
3	CHANGED INTERP FRAME FASTENER SYSTEM	12/10	MFS
2	UPDATED STATE PARK LOGO	12/10	MFS
1	CHANGED TITLE BLOCK	12/07	MFS

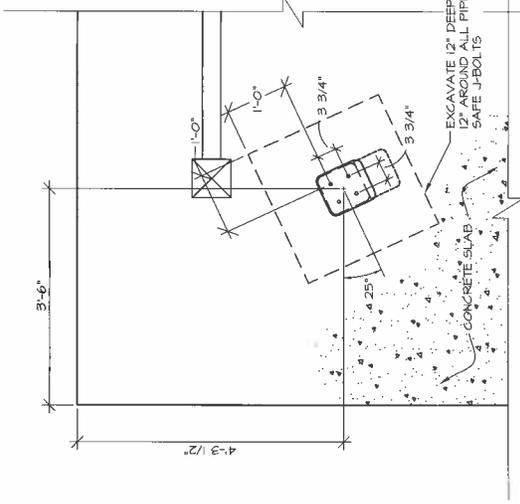


PREPARED BY: M.J.S.
 DRAWN BY: A.TREMILAS
 REVIEWED BY: MFS
 DATE: JAN 2004

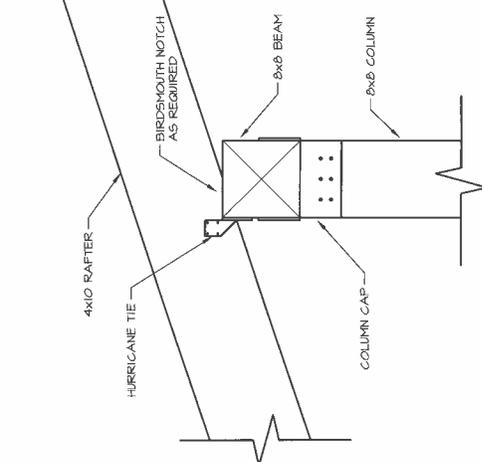
SHEET 3
 S-10D
 OF 9 SHEETS



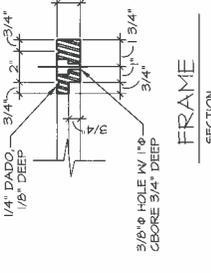
CONCRETE FOOTING DETAIL



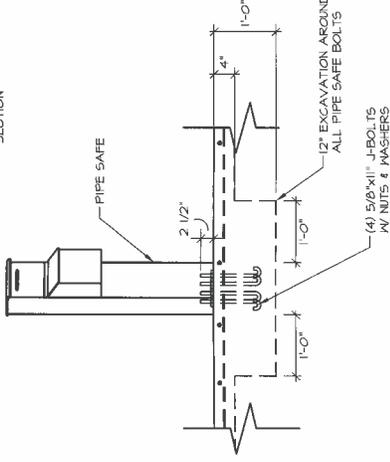
PIPE SAFE BOLT PATTERN DETAILS



BEAM/RAFTER CONNECTION
 DETAILS - 2x6 T&G DECKING & METAL ROOF NOT SHOWN



FRAME SECTION



PIPE SAFE DETAILS



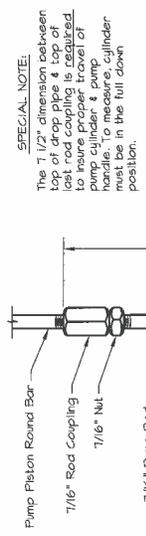
NO	REVISION	DATE	APPROVED
1	RELOCATED PIPE SAFE	8/07	MFS
2	CHANGED TITLE BLOCK	12/07	MFS
3	UPDATED STATE PARK LOGO	12/10	MFS
4	ADDED KNEE BRACE CONNECTION DETAIL	12/10	MFS
5	ADDED CONCRETE FOOTER DETAIL	12/10	MFS
6	INCREASED THE SIZE OF THE J-BOLTS	12/10	MFS
7	REPLACED STAMP	12/10	RBM



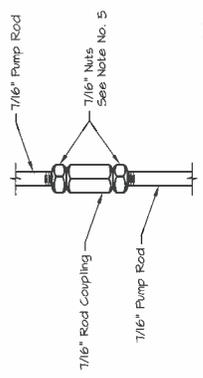
PREPARED: TY DH
 DRAWN: P. Nuech
 REVIEWED: DH
 DATE: 1-27-83

SHEET 1
 U-1A

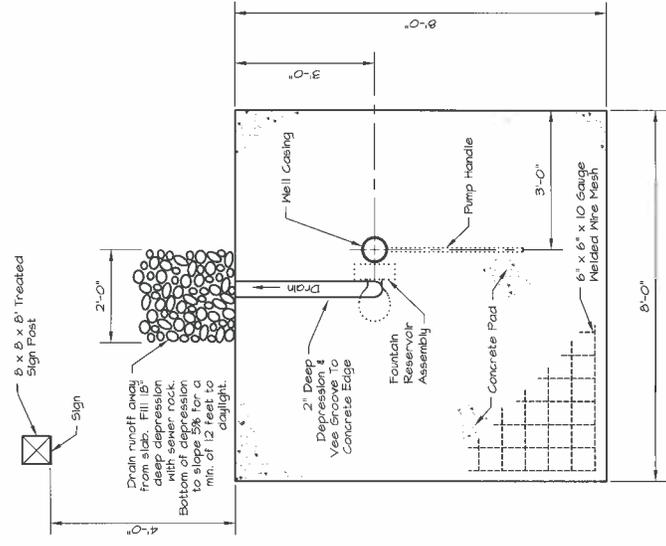
DATE APPROVED OF 1 SHEETS



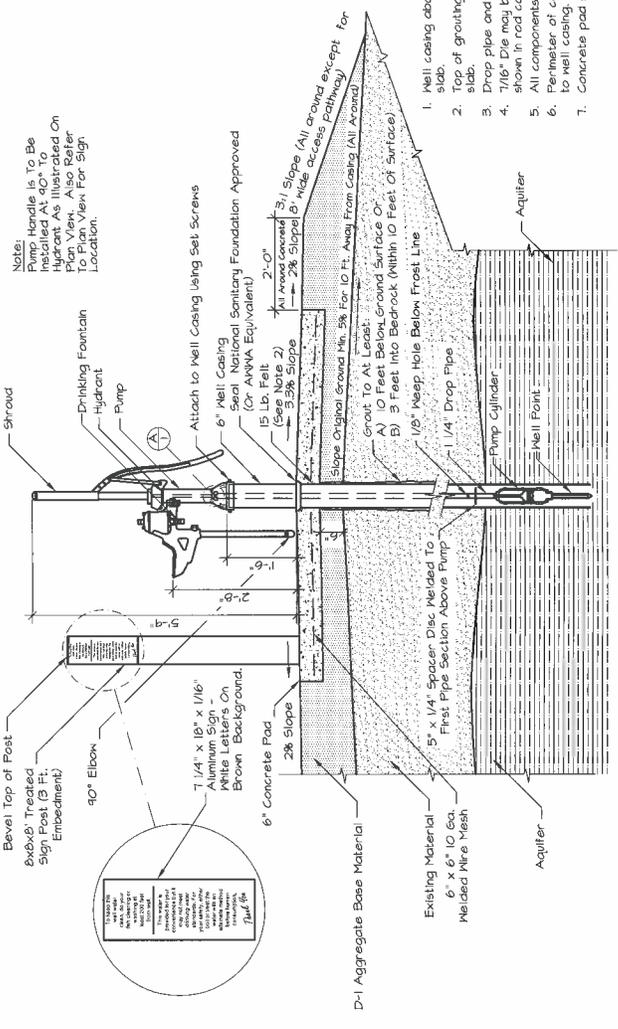
A PUMP PISTON CONNECTION



B ROD COUPLING DETAIL



Plan



Elevation

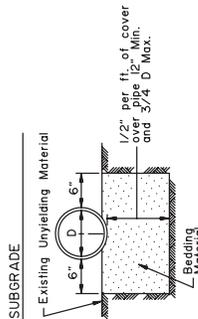
NO.	REVISION	DATE	APPROVED OF
25	REPLACED STAMP	12/18	REMY
24	MOVED WELL SIGNAL CLOSERS TO PAD	12/10	MPS
23	UPDATED STATE PARK LOGO	12/10	MPS
22	REMOVED SCALES	09/10	MPS
21	REMOVED NOTE REFERENCING SPEC 652	09/10	MPS
20	UPDATED SIGN TEXT AND SIZE	09/09	MPS
19	CHANGED TITLE BLOCK	8/07	MPS
18	REPLACED STAMP	8/04	MPS
17	Changed Sign	1/03	D. Hubbard

D-01.02

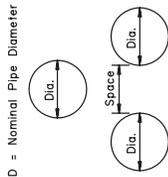
SHEET | of |

GENERAL NOTES:

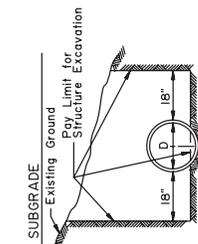
- Sidefill shall be placed and compacted with care under haunches of pipe and shall be brought up evenly and simultaneously on both sides of pipe to 1 foot above the top of the full length of the pipe.
- Alternate installation methods may only be used when specified or approved by the Engineer.



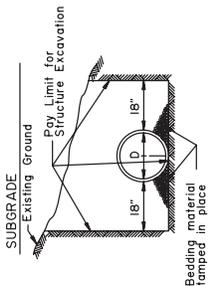
TYPE "D"
ROCK OR UNYIELDING MATERIAL



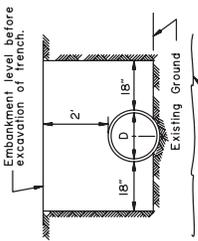
D = Nominal Pipe Diameter



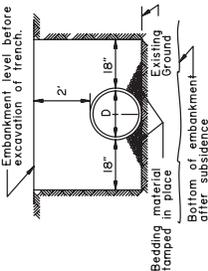
TYPE "C"



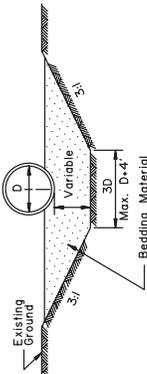
'ALTERNATE' TYPE "C"



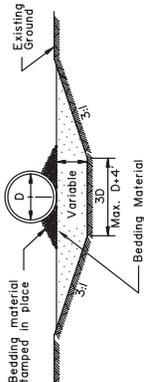
TYPE "B"



'ALTERNATE' TYPE "B"



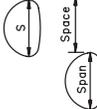
TYPE "A"
FOUNDATION STABILIZATION
To be used in unstable areas as directed by the Engineer.



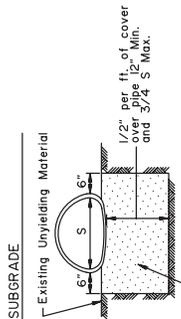
'ALTERNATE' TYPE "A"
FOUNDATION STABILIZATION
To be used in unstable areas as directed by the Engineer.

MULTIPLE INSTALLATIONS	
Minimum Space Between Pipes	24"
48" & Over	1/2 Dia. of pipe or 3', whichever is less.

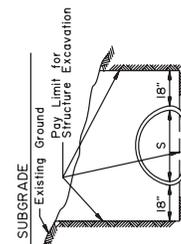
S = Nominal Pipe Arch Span



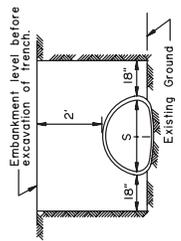
MULTIPLE INSTALLATIONS	
Minimum Space Between Pipes	24"
48" & Over	1/2 Span of pipe arch or 3', whichever is less.



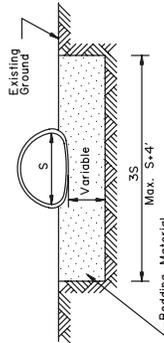
TYPE "D"
ROCK OR UNYIELDING MATERIAL



TYPE "C"



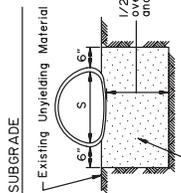
TYPE "B"



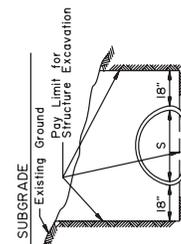
TYPE "A"
FOUNDATION STABILIZATION
To be used in unstable areas as directed by the Engineer.

ARCH

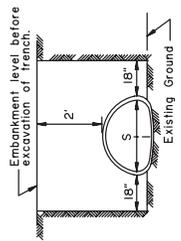
CULVERT PIPE



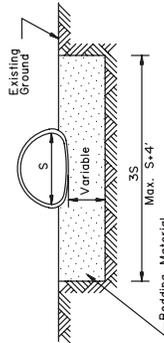
TYPE "D"
ROCK OR UNYIELDING MATERIAL



TYPE "C"



TYPE "B"



TYPE "A"
FOUNDATION STABILIZATION
To be used in unstable areas as directed by the Engineer.

ARCH



State of Alaska
Department of Transportation
& Public Facilities

CULVERT PIPE & ARCH INSTALLATION DETAILS

A
P
R
V
E
D
7/15/82

Date

D-04.21

GENERAL NOTES

All material and workmanship shall be in accordance with the State of Alaska Standard Specifications for Highway Construction.

The contractor shall select only pipes that meet specific height of cover criteria shown on the plans or in the special provisions.

No more than one type of pipe may be used on any single installation or installation grouping.

All structural plate pipes shall be placed on a pre-shaped foundation conforming to the depth of the bottom plates with clearance for assembling to the adjacent plates allowed.

See Standard Drawing "Culvert Pipe & Arch Installation Details" for foundation and structural backfill details.

Minimum cover shall be measured from the top of pipe to the top of rigid pavement or to the top of flexible pavement subgrade. In all cases, the minimum cover shall not be less than 12" Minimum cover during construction shall be provided to protect the pipe from damage or deflection.

These tables have been developed for an H-20 live load and for compacted soil weighing 120 lbs. per cubic foot or less. If compacted soil cover exceeds 120 lbs. per cubic foot, the contractor shall use the depth of cover shown in the plans for the specific pipe. Here compacted soil cover requirements are provided. Specific cover requirements are provided in the plans, the contractor shall determine the required minimum pipe cover in accordance with Section 12 of the 2000 AASHTO "LRFD Bridge Design Specifications".

Minimum & Maximum Cover For 6" x 2" Steel Structural Plate Pipe-Arch**												
GAGE	Min. (ft)	Max. (ft)										
60	12	100	12	100	12	100	12	100	12	100	12	100
62	12	100	12	100	12	100	12	100	12	100	12	100
64	12	100	12	100	12	100	12	100	12	100	12	100
66	12	100	12	100	12	100	12	100	12	100	12	100
68	12	100	12	100	12	100	12	100	12	100	12	100
70	12	100	12	100	12	100	12	100	12	100	12	100
72	12	100	12	100	12	100	12	100	12	100	12	100
74	12	100	12	100	12	100	12	100	12	100	12	100
76	12	100	12	100	12	100	12	100	12	100	12	100
78	12	100	12	100	12	100	12	100	12	100	12	100
80	12	100	12	100	12	100	12	100	12	100	12	100
82	12	100	12	100	12	100	12	100	12	100	12	100
84	12	100	12	100	12	100	12	100	12	100	12	100
86	12	100	12	100	12	100	12	100	12	100	12	100
88	12	100	12	100	12	100	12	100	12	100	12	100
90	12	100	12	100	12	100	12	100	12	100	12	100
92	12	100	12	100	12	100	12	100	12	100	12	100
94	12	100	12	100	12	100	12	100	12	100	12	100
96	12	100	12	100	12	100	12	100	12	100	12	100
98	12	100	12	100	12	100	12	100	12	100	12	100
100	12	100	12	100	12	100	12	100	12	100	12	100

Minimum & Maximum Cover For 5" x 1" Steel Pipe-Arch												
GAGE	Min. (ft)	Max. (ft)										
60	12	100	12	100	12	100	12	100	12	100	12	100
62	12	100	12	100	12	100	12	100	12	100	12	100
64	12	100	12	100	12	100	12	100	12	100	12	100
66	12	100	12	100	12	100	12	100	12	100	12	100
68	12	100	12	100	12	100	12	100	12	100	12	100
70	12	100	12	100	12	100	12	100	12	100	12	100
72	12	100	12	100	12	100	12	100	12	100	12	100
74	12	100	12	100	12	100	12	100	12	100	12	100
76	12	100	12	100	12	100	12	100	12	100	12	100
78	12	100	12	100	12	100	12	100	12	100	12	100
80	12	100	12	100	12	100	12	100	12	100	12	100
82	12	100	12	100	12	100	12	100	12	100	12	100
84	12	100	12	100	12	100	12	100	12	100	12	100
86	12	100	12	100	12	100	12	100	12	100	12	100
88	12	100	12	100	12	100	12	100	12	100	12	100
90	12	100	12	100	12	100	12	100	12	100	12	100
92	12	100	12	100	12	100	12	100	12	100	12	100
94	12	100	12	100	12	100	12	100	12	100	12	100
96	12	100	12	100	12	100	12	100	12	100	12	100
98	12	100	12	100	12	100	12	100	12	100	12	100
100	12	100	12	100	12	100	12	100	12	100	12	100

Minimum & Maximum Cover For 3" x 1" Steel Pipe-Arch												
GAGE	Min. (ft)	Max. (ft)										
60	12	100	12	100	12	100	12	100	12	100	12	100
62	12	100	12	100	12	100	12	100	12	100	12	100
64	12	100	12	100	12	100	12	100	12	100	12	100
66	12	100	12	100	12	100	12	100	12	100	12	100
68	12	100	12	100	12	100	12	100	12	100	12	100
70	12	100	12	100	12	100	12	100	12	100	12	100
72	12	100	12	100	12	100	12	100	12	100	12	100
74	12	100	12	100	12	100	12	100	12	100	12	100
76	12	100	12	100	12	100	12	100	12	100	12	100
78	12	100	12	100	12	100	12	100	12	100	12	100
80	12	100	12	100	12	100	12	100	12	100	12	100
82	12	100	12	100	12	100	12	100	12	100	12	100
84	12	100	12	100	12	100	12	100	12	100	12	100
86	12	100	12	100	12	100	12	100	12	100	12	100
88	12	100	12	100	12	100	12	100	12	100	12	100
90	12	100	12	100	12	100	12	100	12	100	12	100
92	12	100	12	100	12	100	12	100	12	100	12	100
94	12	100	12	100	12	100	12	100	12	100	12	100
96	12	100	12	100	12	100	12	100	12	100	12	100
98	12	100	12	100	12	100	12	100	12	100	12	100
100	12	100	12	100	12	100	12	100	12	100	12	100

Minimum & Maximum Cover For 2 1/2" x 1/2" Steel Pipe-Arch												
GAGE	Min. (ft)	Max. (ft)										
60	12	100	12	100	12	100	12	100	12	100	12	100
62	12	100	12	100	12	100	12	100	12	100	12	100
64	12	100	12	100	12	100	12	100	12	100	12	100
66	12	100	12	100	12	100	12	100	12	100	12	100
68	12	100	12	100	12	100	12	100	12	100	12	100
70	12	100	12	100	12	100	12	100	12	100	12	100
72	12	100	12	100	12	100	12	100	12	100	12	100
74	12	100	12	100	12	100	12	100	12	100	12	100
76	12	100	12	100	12	100	12	100	12	100	12	100
78	12	100	12	100	12	100	12	100	12	100	12	100
80	12	100	12	100	12	100	12	100	12	100	12	100
82	12	100	12	100	12	100	12	100	12	100	12	100
84	12	100	12	100	12	100	12	100	12	100	12	100
86	12	100	12	100	12	100	12	100	12	100	12	100
88	12	100	12	100	12	100	12	100	12	100	12	100
90	12	100	12	100	12	100	12	100	12	100	12	100
92	12	100	12	100	12	100	12	100	12	100	12	100
94	12	100	12	100	12	100	12	100	12	100	12	100
96	12	100	12	100	12	100	12	100	12	100	12	100
98	12	100	12	100	12	100	12	100	12	100	12	100
100	12	100	12	100	12	100	12	100	12	100	12	100

CORRUGATED CIRCULAR STEEL PIPE

CORRUGATED STEEL PIPE-ARCH

Minimum & Maximum Cover For 6" x 2" Steel Structural Plate Pipe-Arch**											
Span x Rise (ft. x in.)	Min. (ft)	Max. (ft)	Span x Rise (ft. x in.)	Min. (ft)	Max. (ft)	Span x Rise (ft. x in.)	Min. (ft)	Max. (ft)	Span x Rise (ft. x in.)	Min. (ft)	Max. (ft)
4.0 x 3.1	5	0.079	12	25	13	4.0 x 3.1	5	0.079	12	25	13
4.6 x 3.6	6	0.079	12	25	13	4.6 x 3.6	6	0.079	12	25	13
5.3 x 4.1	7	0.079	12	25	13	5.3 x 4.1	7	0.079	12	25	13
6.0 x 4.6	8	0.079	12	25	13	6.0 x 4.6	8	0.079	12	25	13
6.6 x 5.1	9	0.079	12	25	13	6.6 x 5.1	9	0.079	12	25	13
7.3 x 5.6	10	0.079	12	25	13	7.3 x 5.6	10	0.079	12	25	13
8.0 x 6.1	11	0.079	12	25	13	8.0 x 6.1	11	0.079	12	25	13
8.6 x 6.6	12	0.079	12	25	13	8.6 x 6.6	12	0.079	12	25	13
9.3 x 7.1	13	0.079	12	25	13	9.3 x 7.1	13	0.079	12	25	13
10.0 x 7.6	14	0.079	12	25	13	10.0 x 7.6	14	0.079	12	25	13
10.6 x 8.1	15	0.079	12	25	13	10.6 x 8.1	15	0.079	12</		

D-04.21

Maximum Cover for Type S Corrugated Polyethylene Pipe	
Size (in.)	Max. Cover (ft.)
12	30.0
15	30.0
18	30.0
24	30.0
30	30.0
36	30.0
40	20.0
48	20.0

GENERAL NOTES

- All materials and workmanship shall be in accordance with the State of Alaska Standard Specifications for Highway Construction.
- For foundation and structural backfill details see Standard Drawing "Culvert Pipe & Arch Installation Details."
- Pipe cover height is measured from top of the pipe to top of rigid pavement, or to the top of subgrade for flexible pavement. In all cases the minimum cover shall be no less than 2 ft. Where loads traverse the culvert during construction minimum cover shall be no less than 4 ft.

REVISIONS		
Date	Description	By
10/31/03	New Sheet 4	LPC

Sheet 3 of 4

State of Alaska
Department of Transportation
& Public Facilities

PIPE AND ARCH TABLES



Date

10/31/03

D-04.21

GENERAL NOTES

1. All material and workmanship shall be in accordance with the State of Alaska Standard Specifications for Highway Construction.

2. The contractor shall select only pipes that meet specific height of cover criteria shown on the plans or in the special provisions.

3. No more than one type of pipe may be used on any single installation or installation grouping.

4. All structural plate pipes shall be placed on a pre-shaped foundation conforming to the depth of the bottom plates with clearance for assembling to the adjacent plates allowed.

5. See Standard Drawing "Culvert Pipe & Arch Installation Details" for foundation and structural backfill details.

6. Minimum cover shall be measured from the top of pipe to the top of rigid pavement or to the top of flexible pavement subgrade. In all cases, the minimum cover shall not be less than 12". Minimum cover during construction shall be increased to protect the pipe from damage or deflection.

7. These tables have been developed for an H-20 live load and for compacted soil weighing 120 lbs. per cubic foot or less. If compacted soil cover exceeds 120 lbs. per cubic foot, the contractor shall use the depth of cover shown in the plans for the specific pipe. Where compacted soil cover exceeds 120 lbs. per cubic foot, the contractor shall use the depth of cover shown in the plans for the specific cover requirements are provided in the plans, the contractor shall determine the required minimum pipe cover in accordance with Section 12 of the 2000 AASHTO "LRFD Bridge Design Specifications".

Minimum & Maximum Cover For Aluminum Spiral Rib Pipe-Arch*				Sill Corner Bearing Capacity of 2 Tons/ s.f.			
Span x Rise (ft. x in.)	Min. Cover (ft.)		Max. Cover (ft.)		Min. Cover (ft.)	Max. Cover (ft.)	
	0.0650"	0.0750"	0.0650"	0.0750"		0.0650"	0.0750"
20 x 16	12	14	12	14	12	14	17
23 x 19	12	14	12	14	12	14	17
27 x 21	12	13	12	13	12	13	17
33 x 26	12	13	12	13	12	13	17
40 x 31	12	13	12	13	12	13	17
46 x 36	12	14	12	14	12	14	17
53 x 41	18	13	18	13	18	13	17
60 x 46	18	13	18	13	18	13	17
66 x 51	18	21	18	21	18	21	17
72 x 56	18	21	18	21	18	21	17
78 x 61	18	21	18	21	18	21	17
84 x 66	18	21	18	21	18	21	17
90 x 71	18	21	18	21	18	21	17
96 x 77	18	21	18	21	18	21	17

*% x % x 76 in. or % x 1 x 16 in. Corrugations

Minimum & Maximum Cover For Aluminum Spiral Rib Circular Pipe*				Sill Corner Bearing Capacity of 2 Tons/ s.f.				
Dia. (in.)	Min. Cover (ft.)		Max. Cover (ft.)		Min. Cover (ft.)	Max. Cover (ft.)		
	0.0650"	0.0750"	0.0650"	0.0750"		0.0650"	0.0750"	
12	24	35	24	50	12	14	17	
18	24	34	24	49	12	14	17	
24	24	25	24	36	24	63	24	82
30	24	19	24	28	24	50	24	65
36	24	15	24	24	24	41	24	54
42	24	19	24	29	24	35	24	46
48	24	17	24	24	24	30	24	40
54	24	14	24	21	24	27	24	35
60	24	12	24	18	24	24	24	30

*% x % x 76 in. or % x 1 x 16 in. Corrugations

ALUMINUM SPIRAL RIB PIPE

STEEL SPIRAL RIB PIPE

Minimum & Maximum Cover For Steel Spiral Rib Arch-Pipe*				Sill Corner Bearing Capacity of 2 Tons/ s.f.			
Span x Rise (ft. x in.)	Min. Cover (ft.)		Max. Cover (ft.)		Min. Cover (ft.)	Max. Cover (ft.)	
	0.0644"	0.0750"	0.0644"	0.0750"		0.0644"	0.0750"
20 x 16	12	14	12	14	12	14	17
23 x 19	12	14	12	14	12	14	17
27 x 21	12	13	12	13	12	13	17
33 x 26	12	13	12	13	12	13	17
40 x 31	12	13	12	13	12	13	17
46 x 36	12	14	12	14	12	14	17
53 x 41	18	13	18	13	18	13	17
60 x 46	18	13	18	13	18	13	17
66 x 51	18	21	18	21	18	21	17
72 x 56	18	21	18	21	18	21	17
78 x 61	18	21	18	21	18	21	17
84 x 66	18	21	18	21	18	21	17
90 x 71	18	21	18	21	18	21	17
96 x 77	18	21	18	21	18	21	17

*% x % x 76 in. or % x 1 x 16 in. Corrugations

Minimum & Maximum Cover For Steel and Aluminized Steel Spiral Rib Circular Pipe*				Sill Corner Bearing Capacity of 2 Tons/ s.f.			
Dia. (in.)	Min. Cover (ft.)		Max. Cover (ft.)		Min. Cover (ft.)	Max. Cover (ft.)	
	0.0644"	0.0750"	0.0644"	0.0750"		0.0644"	0.0750"
18	12	12	12	12	12	14	17
24	12	12	12	12	12	14	17
30	12	12	12	12	12	14	17
36	12	12	12	12	12	14	17
42	12	12	12	12	12	14	17
48	12	12	12	12	12	14	17
54	18	23	18	32	18	54	69
60	18	21	18	29	18	49	63
66	18	18	18	26	18	44	57
72	18	18	18	24	18	40	53
78	24	22	24	37	24	55	71
84	24	21	24	35	24	52	67
90	24	21	24	32	24	47	61
96	24	20	24	30	24	44	57
102	30	29	30	43	30	61	78
108	30	27	30	41	30	58	74

*% x % x 76 in. or % x 1 x 16 in. Corrugations

**% x % x 76 in. Corrugations Only.

REVISIONS		By
Date	Description	
8/10/00	Pipe Tables & G. Notes.	DFD
10/31/03	New Steel-A.	LRG

Sheet 4 of 4

State of Alaska
Department of Transportation
& Public Facilities

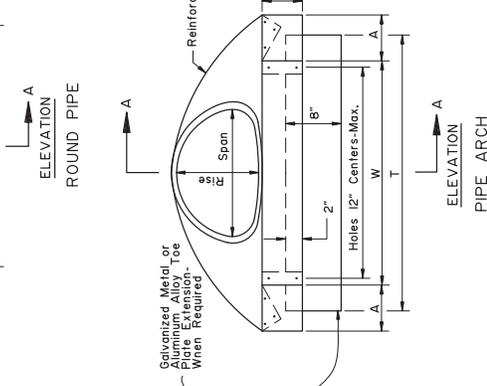
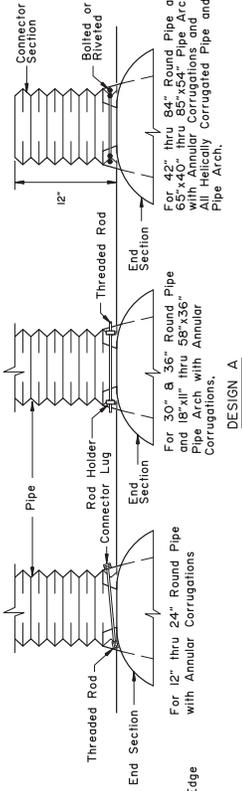
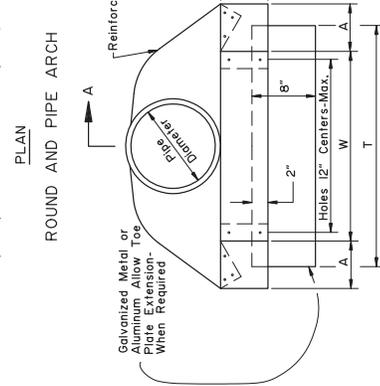
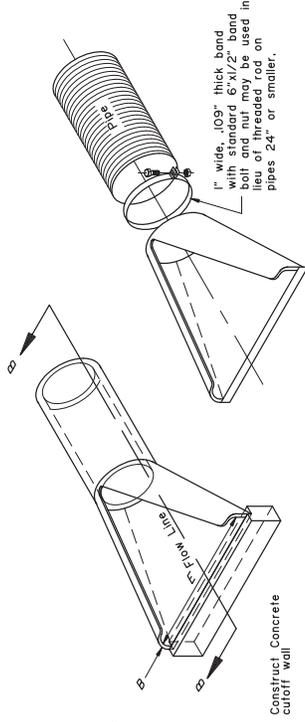
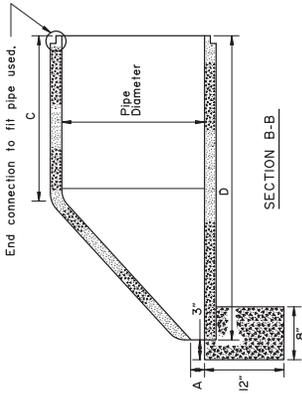
PIPE AND ARCH TABLES



Date

10/31/03

Pipe Diameter	A	B	C	D	E
12"	4"	1 3/4"	24"	46"	24"
18"	9"	2"	25"	50"	36"
24"	9 7/2"	2 1/2"	30"	72"	48"
30"	15"	3 3/8"	35"	97"	72"
42"	21"	3 3/4"	35"	98"	78"
48"	24"	4 1/4"	35"	98"	84"
54"	27"	4 5/8"	35"	99"	82"



Pipe Dim. Inches	Thickness Aluminum	Thk. for Galv. Metal	Dimension Inches				W. Tol.	2" Tol.	Skirt	Approx. Slope
			A. Tol.	B. Max.	H. Tol.	L. Tol.				
12"	0.060	0.064	6"	6"	21"	24"	34"	1 Pc.	2 1/2	
18"	0.060	0.064	6"	6"	26"	30"	40"	1 Pc.	2 1/2	
24"	0.060	0.064	6"	6"	31"	36"	46"	1 Pc.	2 1/2	
30"	0.060	0.064	6"	6"	36"	42"	52"	1 Pc.	2 1/2	
36"	0.075	0.079	12"	16"	41"	48"	58"	1 Pc.	2 1/2	
42"	0.105	0.109	14"	19"	49"	60"	72"	2 Pc.	2 1/2	
48"	0.105	0.109	18"	27"	69"	84"	106"	2 Pc.	2 1/2	
54"	0.105	0.109	18"	30"	78"	90"	112"	2 Pc.	2 1/2	
60"	0.135	0.139	18"	33"	84"	102"	122"	3 Pc.	2 1/2	
66"	0.135	0.139	18"	36"	87"	104"	124"	3 Pc.	2 1/2	
72"	0.135	0.139	18"	39"	90"	106"	126"	3 Pc.	2 1/2	
78"	0.135	0.139	18"	42"	93"	108"	128"	3 Pc.	2 1/2	
84"	0.135	0.139	18"	45"	96"	110"	130"	3 Pc.	2 1/2	

Pipe-Arch Dimension Inches	Thk. Aluminum	Thk. Galv. Metal	Dimension Inches				W. Tol.	2" Tol.	T	Skirt	Approx. Slope
			A. Tol.	B. Max.	H. Tol.	L. Tol.					
17"	0.060	0.064	7"	9"	19"	30"	40"	1 Pc.	2 1/2		
21"	0.060	0.064	7"	10"	23"	36"	46"	1 Pc.	2 1/2		
24"	0.060	0.064	8"	12"	26"	42"	52"	1 Pc.	2 1/2		
28"	0.075	0.079	9"	14"	32"	48"	58"	1 Pc.	2 1/2		
35"	0.105	0.109	12"	16"	39"	60"	70"	1 Pc.	2 1/2		
42"	0.105	0.109	12"	18"	46"	75"	85"	1 Pc.	2 1/2		
49"	0.105	0.109	13"	21"	53"	85"	103"	2 Pc.	2 1/2		
57"	0.105	0.109	18"	26"	63"	90"	114"	2 Pc.	2 1/2		
64"	0.135	0.139	18"	30"	70"	102"	130"	3 Pc.	2 1/2		
71"	0.135	0.139	18"	33"	77"	114"	144"	3 Pc.	2 1/2		
77"	0.135	0.139	18"	36"	84"	120"	158"	3 Pc.	2 1/2		
83"	0.135	0.139	18"	39"	90"	126"	170"	3 Pc.	2 1/2		

GENERAL NOTES:

1. Toe plate extensions will be required only when provided for on the plans. When required, the toe plate extensions shall be punched with holes to match those in lip of 3/8" and larger galvanized nuts and bolts shall be the same gage as the end section.
2. Galvanized Metal or Aluminum Alloy End Sections may be used on Wood Stave and Plastic Pipe.
3. All 3 piece bodies shall have 12 gage sides and IO center panels. Multiple panel bodies shall have lap seams which are to be tightly joined by 3/8" galvanized rivets or bolts.

Date	Description	By
3/1/83	Arch Dimensions	WJ/HAK
8/10/00	Note 2	DFD

Sheet 1 of 3
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& Public Facilities

CULVERT END SECTIONS

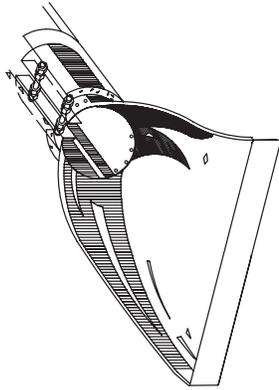


Date 7/15/82

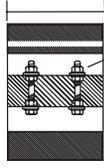
D-06.10

GENERAL NOTES

1. See general notes on sheet 1 of 3.
2. See sheet 1 of 3 for metal end section dimensions.
3. Insert bolts, washers and rivets shall be galvanized. Insert thickness is the same as the end section.
4. Use culvert inserts only at inlet.

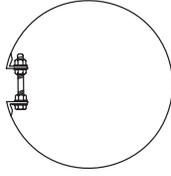


FOR CONNECTING CONCRETE PIPE OR CORRUGATED POLYETHYLENE PIPE TO METAL END SECTION.



SEE NOTE 2

5/8" GALV. BOLTS



METAL INSERTS FOR USE WITH CORRUGATED PLASTIC PIPE AND METAL END SECTIONS

Date	REVISIONS Description	By

Sheet 2 of 3

State of Alaska
Department of Transportation
& Public Facilities

CULVERT END SECTIONS



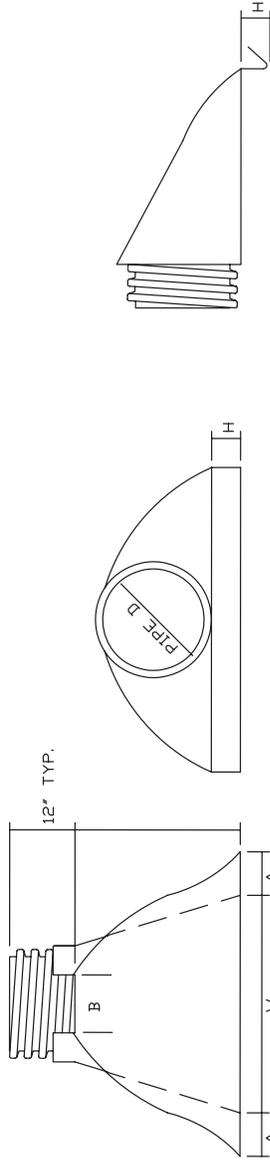
Date

D-06.10

D-06.10

GENERAL NOTES

1. Plastic flared end sections may be used with HDPE corrugated culvert pipes where noted in project plans or approved by project engineer.
2. Consult manufacturer's recommendations for proper sizing and coupling devices. Recommended fasteners may include connecting bands or cinch ties. Fittings across dimension B may include threaded rods with wing nuts or bolts and washers. Plastic welds may be recommended.
3. Align coupling to accommodate pipe corrugations.
4. Metal components e.g. bolts or washers must be galvanized.
5. Attachment of end section should preserve culvert alignment and not impair pipe function. Use end sections only on culvert inlet.
6. Toe plate extensions will be required only when designated on the plans.
7. End sections will not be used on HDPE culvert pipes larger than 36" unless indicated by project plans or approved by the Engineer.



SIDE VIEW

END VIEW

TOP VIEW

PIPE DIAMETER	DIMENSIONS IN MILLIMETERS			
	A(1"±)	B MAX	H(1"±)	L(1/2"±)
12" and 15"	6 1/2"	10"	6 1/2"	25"
18"	7 1/2"	15"	6 1/2"	32"
24"	7 1/2"	18"	6 1/2"	36"
30"	10 1/2"	N/A	7"	53"
36"	10 1/2"	N/A	7"	53"

PLASTIC END SECTION FOR CORRUGATED PLASTIC PIPE

REVISIONS	
Date	Description

Sheet 3 of 3
 State of Alaska
 Department of Transportation
 & Public Facilities

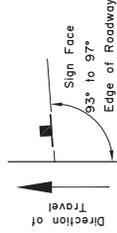
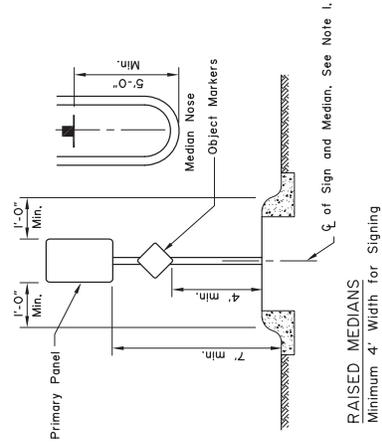
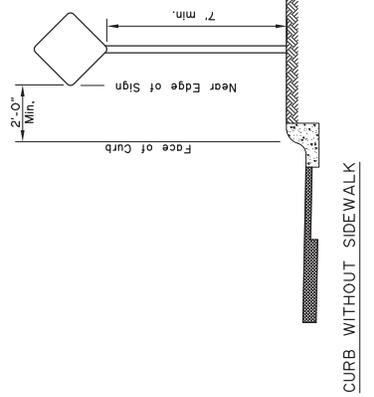
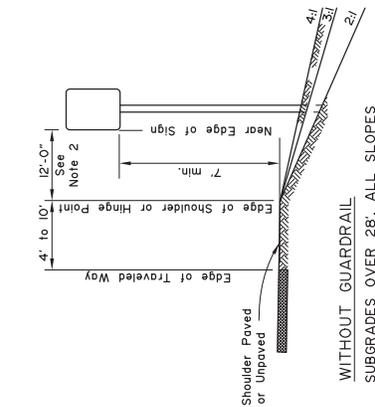
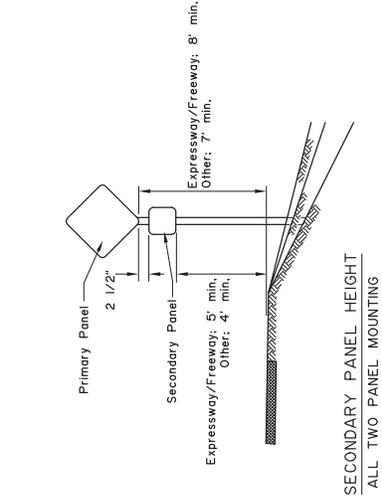
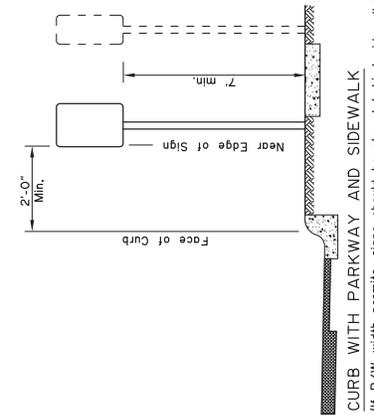
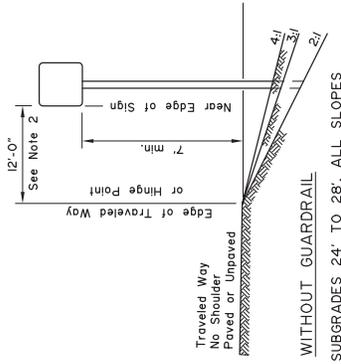
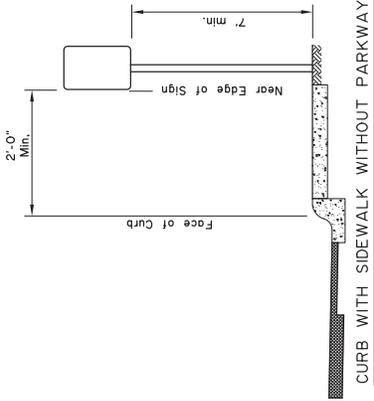
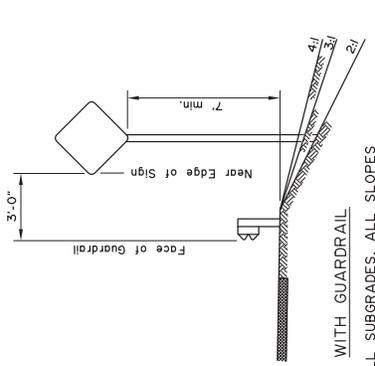
CULVERT END SECTIONS

APPROVED
 Date 5/22/10

S-05.01

GENERAL NOTES

- Unless shown otherwise on the plans, the standard sign offset is 12'. The minimum is 6'.
- If signs extend over sidewalks, the minimum vertical clearance is 7'-0".
- Add 6" to mounting height on unpaved roads.
- If signs extend over bike paths, the minimum vertical clearance is 8'-0".
- When signs are placed 30' or more from the edge of traveled way, mount them with the bottom of the sign at least 5' above the road surface at the near edge of the road.
- When multiple hinged sign supports are used, mount hinges at least 7' above the ground.



Date	Revisions	Description	By
4/23/01	Revised	Sign Heights	KJS

Sheet 1 of 1

State of Alaska
Department of Transportation
& Public Facilities

POST MOUNTED SIGN
OFFSET AND HEIGHT



Date

7/15/82

APPENDIX C

SPECIAL REPORTS

Material reports are not anticipated to be needed by the contractor. Material reports will be made available upon request.

**APPENDIX D
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	

Project Name DSP VISITOR CENTER COMPLEX PAVING
Project Number 74034-5
Project Engineer Signature

401 ASPHALT CONCRETE PAVEMENT

401-2.01								
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Mix Design

669 AUTOMATED TRAFFIC RECORDERS

669-2.01								
669-2.01								
669-2.01								
669-2.01								
669-2.01								

Wiring
 Conduit
 Junction Boxes
 Inductive Loops
 Traffic Volume Counters

670 (1) PAINTED TRAFFIC MARKINGS

670-2.01								
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Pavement Markings