



Reindeer Project Construction Services, Savoonga **EDA Project Number 07 79 07873**

Addendum #4 **7/17/2024**

Summary of items included in this addendum:

1. (Updated) List of questions received during solicitation period and answers
 - pg. 2-4
 - Please note that the bid due date has been extended to July 24 at 5:00PM AKST.
2. Exhibit A - General Contractor responsibilities for installation of the processing modules
 - pg. 5
3. Modular Processing Unit Floorplan (For Information Only, Subject to Change)
 - pg. 6
4. (Updated) Civil Sheet C-300
 - pg. 7
5. (Updated) Landscape Sheets L-100, L-101, L-500, and L-502
 - pg. 8-11
6. (Updated) Specification Section 32 31 00
 - Pg. 12 - 20

<u>Question Number</u>	<u>Question</u>	<u>Response</u>
1	Will you be issuing a schedule for section 087100 on this project?	Yes, the door and frame schedule is on sheet A601. Sheet A-601 has been revised to include clarifications to the room finish schedule and finish schedule abbreviations. The revised A-601 sheet is included in addendum #1.
2	Okay so what I did not see to be able to quote properly is the Hardware schedule for the doors and frames and if you will not have one then I would need the general idea below:	The hardware schedule is in the spec and should address your questions. Refer to Spec section 08 71 10 paragraph 3.8.
3	The bid document asks for a subcontractor in section 004113 - 2 for masonry work however, there is no work under this scope. Therefore, what masonry work is anticipated for this project?	Masonry work is not required as part of this project. Spec Section 00 41 13 has been updated and is included as part of addendum #1.
4	For section 01 10 00 – 1.8A, where is the manufacturer delivering the prefabricated modular processing facility? Will they be delivered to Anchorage or is it the responsibility of the contractor to ship the modules from the manufacturer to Savoonga?	<p>Kometos Oy, Keskustie 24, FIN-61850 Kauhajoki, Finland</p> <p>The contractor will be responsible to receive the modules at the address above, and deliver them to the project site (Refer to the revised Bid Form / Specification Section 00 41 13, which is included in addendum #1).</p>
5	Where are the containerized incinerators going to be placed on the project location as this is not shown on the plans? Also, are the piles on which they sit going to be on a gravel pad?	It is anticipated that the incinerator will be on the same gravel pad as the modules. The site plan will be revised and published in a future addendum, prior to bid date.
6	Please provide modular connection details. (Structural, roofing and siding details)	Pending
7	Please confirm if the Water & Sewer Mains utilidor will be supplied and installed by others. See sheet C-200, detail 2	All water and sewer main utilidors shall be furnished and installed by the general contractor. C-200 has been updated to remove "by others" and is included in addendum #1.
8	On the Room Finish Schedule on A-601, please confirm that FRP panels are to be installed for the flooring in the bathroom.	Sheet A-601 has been revised to include clarifications to the room finish schedule and finish schedule abbreviations. The revised A-601 sheet is included in addendum #1.
9	Are there any liquidated damages if the project is not finished at the final completion date? And if so, how much?	The only liquidated damages required in the contract by the Economic Development Administration requirements are those referenced under the Labor Standards – Contract Work Hours and Safety Standards Act for not paying a laborer or mechanic appropriately for overtime per Section 16 of the EDA Contracting Provisions for Construction Projects.
10	Does the owner have professional liability insurance?	Yes. Kawerak does have professional liability insurance as a general matter but do not believe it will be applicable to this project.
11	Is there a gravel source for the pad?	Yes, a gravel source is available in Savoonga however equipment is not operational. Please contact Brian Rookok Jr. for additional information. (907) 984-2151
12	Is there any housing in SVA or will the GC have to bring housing to the island?	It is the contractor's responsibility to provide appropriate housing for their employees working on the project. The Native Village of Savoonga and the City of Savoonga have rooms for rent. Please reach out to the Village at tc.sva@kawerak.org and the City at 907-984-6614 for room availability and rates.
13	Are there any pumping services for porta-potties?	Unknown.
14	Access to corral site: Can a barge get there or is it a heli-ops?	The answer to this question will depend on the contractor's means and methods. It is recommended that contractors work with shipping companies to determine the best approach.
15	How did they get the existing infrastructure out to the Corral site?	Unknown.
16	What permits are required to travel outside of town proper?	A permit may be required for travel outside the city limits. More information can be provided at the preconstruction meeting.
17	Can you confirm that the storage building will be the last alternate?	Correct, Bid Alternate number 003 is "Construct Campus Storage building, foundations, complete." The bid alternates will be awarded in the order they are listed.
18	Is EDA going to be onsite and will they be involved with payments?	EDA will be on site periodically to complete their inspections, and they will be involved in review and approval of payment applications.
19	Would it be possible to provide a one-week extension to the bid date?	Yes, the bid date has been extended to July 19. Another extension is not expected. The bid due date has been extended to July 24 at 5:00PM AKST.
20	Can you post the budget?	The construction budget cannot be provided.
21	Is it possible to the Geotech report shared?	A geotech report is not available at this time.
22	Why was the base bid broken out into the four items?	The base bid items were broken out based on the owner and design team's collaborative efforts during the design phase.
23	Is there a possibility that some of the base bid items will not be awarded?	The EDA grant requires the owner to deliver a "complete" project. Items listed in the base bid are all required elements of a complete project.
24	What will they be laundering?	Washer and dryer machines will be owner-furnished / owner-installed and are not included in the contractor's scope of work.
25	How many pounds per day will they be laundering?	Washer and dryer machines will be owner-furnished / owner-installed and are not included in the contractor's scope of work.
26	Can the substantial completion date be extended from September 15, 2025 , to sometime in November of 2025?	Yes. The date of substantial completion is extended to October 31, 2025.

27	Can the final completion date be extended from October 31, 2025 , to December 31, 2025?	Yes. The date of final completion is extended to November 21, 2025.
28	On E-100 in the electrical plans, the power poles are marked AVEC. Is AVEC providing and installing the power poles and the transformer on the one power pole as well as the lines up to the transformer?	Yes, AVEC is providing and installing all electrical related service equipment up to the weather head. Please see the demarcation point between AVEC and Contractor scope of work on E-500. Also refer to AVEC Service Standards for Overhead Services Larger than 200A. See attached AVEC Co-OP Distribution Assembly Guide Drawing Service Entrance Inspection Form - CT Metering, Larger than 200A
29	Instead of a 20' container, would it be acceptable to house the incinerator in a shed instead?	Yes, a shed would be acceptable, as long as a proper and stable foundation could be built, and the finished shed is air tight. The final solution must be operable in arctic conditions and built such that the incinerator is be able to be operated safely as intended by both the herders and the incinerator manufacturer for the life of the incinerator. The shed needs to be air tight and not allow blown snow or sand inside the building.
30	On the addendum bid forms, I wanted to confirm that installation of the processing modules is on Base Bid – 4, while shipping the processing modules is on Base Bid – 5.	Confirmed
31	Correct me if I am wrong, but I do not believe we need to do anything in regard to this [addendum #1] as everything is out of [incinerator] scope and site related.	Correct, the 1st addendum didn't change the scope of work for the incinerator.
32	I have another question about the hall roof. Are the eaves for the hall roof the same as the eaves for the support building? Or are they different?	The project is removing the hall connecting the modules to the support building from the scope of the work. The wall type as shown for the support building. Wall type A will be used to infill the support building wall where the hall was removed.
33	I have a question regarding the wall assembly. On A-101 of the plans, the wall tags show the wall assembly, but they do not specify the wall thickness. Therefore, please confirm the wall thickness for each wall assembly.	All interior partition walls will be type B in either 4" or 6" stud sizes. REVISE wall tags per attached sheet A-101. Wall type "A" are all 6" nominal SIPs per A-002. DELETE wall type "C" on sheet A-002.
34	We know this question was asked during the bid meeting. But as we are working on the logistics for this project, we would like to ask for a week extension, pushing the bid deadline out to July 19.	Yes, the bid date has been extended to July 19. Another extension is not expected.
35	Sheet C-101 references "Module Access. See Note 4". Note 4 is not provided on the drawings. Please advise.	Note 4 was an erroneous reference and has been removed.
36	Sheet C-200 calls out to connect to the existing utilidor, however, there are no details of what that connection should be or what size of pipe is in the existing utilidor. Can you please provide these details?	According to record drawings provided by ANTHC for the construction of the Water Treatment Plant and piped utility system (dated April 1996), the water supply and return pipe are 6" HDPE and the sewer pipe is 6" HDPE schedule 40. Contractor to verify.
37	Is there a date when the gravel pad, pilings, water, and sewer must be complete and ready to accept the modules?	Yes, the gravel pad, pilings, water, and sewer must be complete and ready to accept the modules by August 1, 2025.
38	What are the dimensions and weights of the modules?	See responses to questions #51 and #52
39	Please clarify the General Contractor's requirements for installation of the processing modules.	See Exhibit A as part of Addendum #4
40	When are the modules required to arrive in Savoonga?	Friday, August 1, 2025
41	What is the desired fuel burn rate for the incinerator?	The maximum fuel burn rate for the incinerator shall not exceed 9 gallons per hour.
42	Please summarize the utilities that must be provided by the GC to the processing modules.	Refer to drawings and specifications.
43	Door Schedule does not say what type of materials for the doors but 08 11 10 specify them as Insulated Metal and Hollow Metal. However, the door details in A-502 shows "fiberglass" doors. Therefore, what material are the doors and frames supposed to be made of?	Doors are to be hollow steel per Section 08 11 10
44	What is the R-value they want for the sound batt insulation and thickness?	4" nominal thickness and R-13.
45	For the R-40 and R-50 Batt insulation they make a R-38 and R-49 will this work?	Yes, R-38 and R-49 are acceptable
46	1-1/2" rigid insulation I did not see it listed in the specs. Is XPS 250 board acceptable? Meets a R-7.5	Yes, 1 ½" XPS insulation is acceptable.
47	On C101B, it shows a 1000-gallon fuel tank connected to the incinerator whereas on the E-100B it shows a 500 gallon fuel tank. Is the fuel tank supposed to hold 1000 gallons or 50[0] gallons?	The fuel tank for the incinerator is 1,000 gallons.
48	Please confirm that there is no insulation in the type B wall assembly.	Provide sound batt insulation in all Type B partition walls.
49	Please confirm that the interior wall framing is 16" OC.	Yes, 16" OC typical for non-structural stud walls.
50	Please provide shop drawings for the (4) modules. If they aren't available yet, please provide direction how the modules are to be picked. We are receiving questions regarding lifting points/pick pockets, locations, etc.	Shop drawings for the modules are not available at this time. See response to question #54 regarding lifting.
51	Confirm the dimensions of each module that will be shipped from the Komets factory to Savoonga by the GC.	All four modules are the same dimensions. The dimensions of each module are as follows: 13,400mm x W. 3,200mm x H. 3,300mm (L. 43.96' x W. 10.83' x H. 10.83').

52	Confirm the weights of each module that will be shipped from the Kometos factory to Savoonga by the GC.	<p>Weight of the modules vary depending on what equipment and materials are inside. Below you can find an estimation for the weights based on other similar projects. Final weights can vary slightly, but these should be fairly close.</p> <table><tr><td>Module 1</td><td>9,000kg (19,841.6 lbs)</td></tr><tr><td>Module 2</td><td>11,000kg (24,250.9 lbs)</td></tr><tr><td>Module 3</td><td>9,800kg (21,605.3 lbs)</td></tr><tr><td>Module 4</td><td>12,200kg (26,896.4 lbs)</td></tr></table>	Module 1	9,000kg (19,841.6 lbs)	Module 2	11,000kg (24,250.9 lbs)	Module 3	9,800kg (21,605.3 lbs)	Module 4	12,200kg (26,896.4 lbs)
Module 1	9,000kg (19,841.6 lbs)									
Module 2	11,000kg (24,250.9 lbs)									
Module 3	9,800kg (21,605.3 lbs)									
Module 4	12,200kg (26,896.4 lbs)									
53	Clarify how roofing, roof framing (including other ancillary materials used to “stitch” the building together), and internal equipment / furnishings will be shipped from Kometos factory to Savoonga. Are these materials placed inside the modular units and shipped inside or will they be shipped separately (a separate conex box)? Please provide more information on this.	All accessories and equipment are packed inside the modules. Weight of those are included in the estimations above.								
54	Please explain how the modules are designed to be lifted.	The file "2410_Lifting instructions.pdf" is included as part of addendum #3 to show better how the lifting is performed.								

Reindeer Project Construction Services, Savoonga

EDA Project Number 07 79 07873

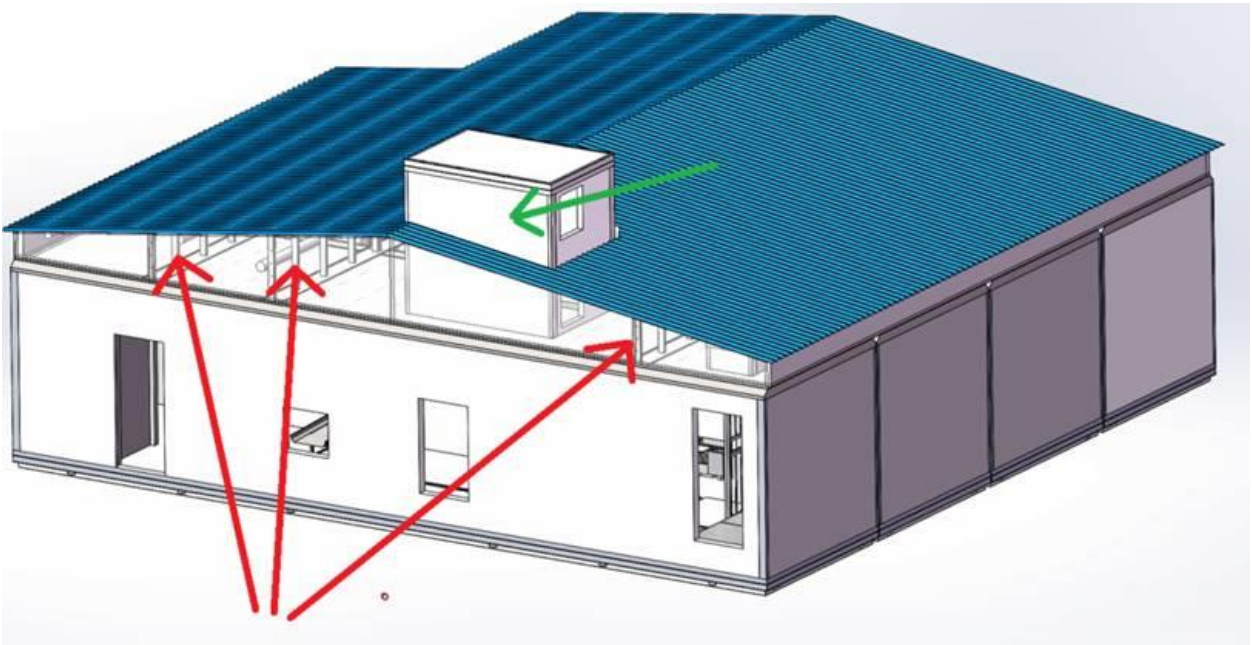
Exhibit A

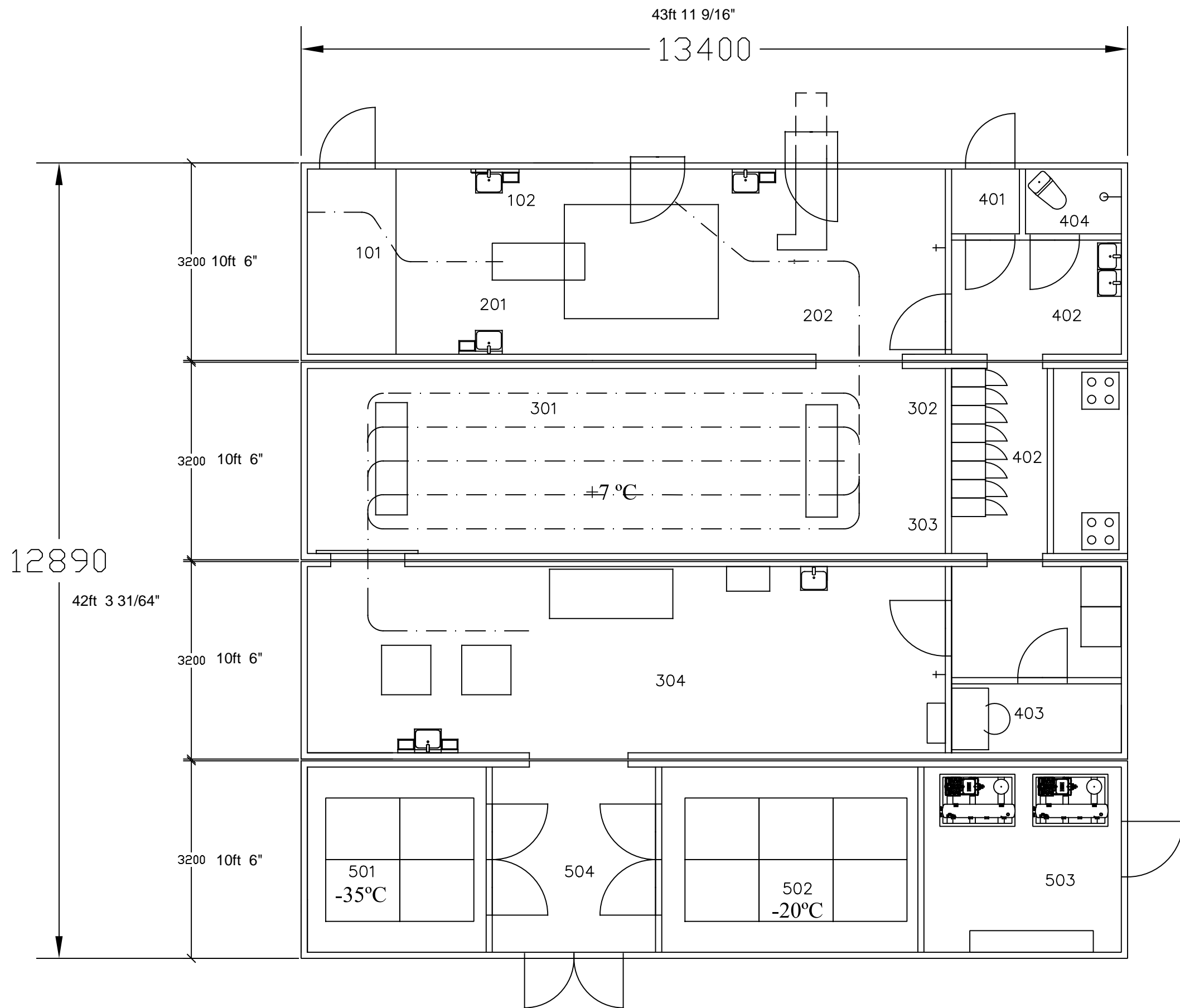
General Contractor responsibilities for installation of the processing modules

Once the modules arrive in Savoonga, the General Contractor (GC) is required to lift all modules into place on top of the GC-installed pilings. The GC must coordinate with the owner to ensure that Kometos personnel are scheduled to be on-site during the module placement. Kometos personnel will provide input to the GC on placement of the modules as they are being lifted into place. The GC is then responsible to attach the modules to the foundation per structural details. After the modules are in place and anchored to the pilings, the GC is responsible to lift the “hide pulley tower” (green arrow in image below) into place. The roof structure packages (red arrows in image below) are then lifted into place by the GC for installation by Kometos personnel. At that time, Kometos personnel will continue connecting everything inside the building and installing the roofing.

Note: The GC is responsible for mobilizing any equipment necessary to accomplish lifting of the modules, hide pulley tower, and roofing structure packages into place. This process may require a crane. Module lifting instructions were provided as part of Addendum #3.

As per the structural details, the modules are connected to the foundation (by the GC) via welding the steel frame to foundation (pile) plates. The modules are not connected to each other structurally but doorways etc are connected and sealed using stainless steel sheet metal profiles and sealants. The roof structures will be connected to each module and the roofing basically binds everything together. The connection between modules and the roofing installation described above is completed by Kometos personnel.





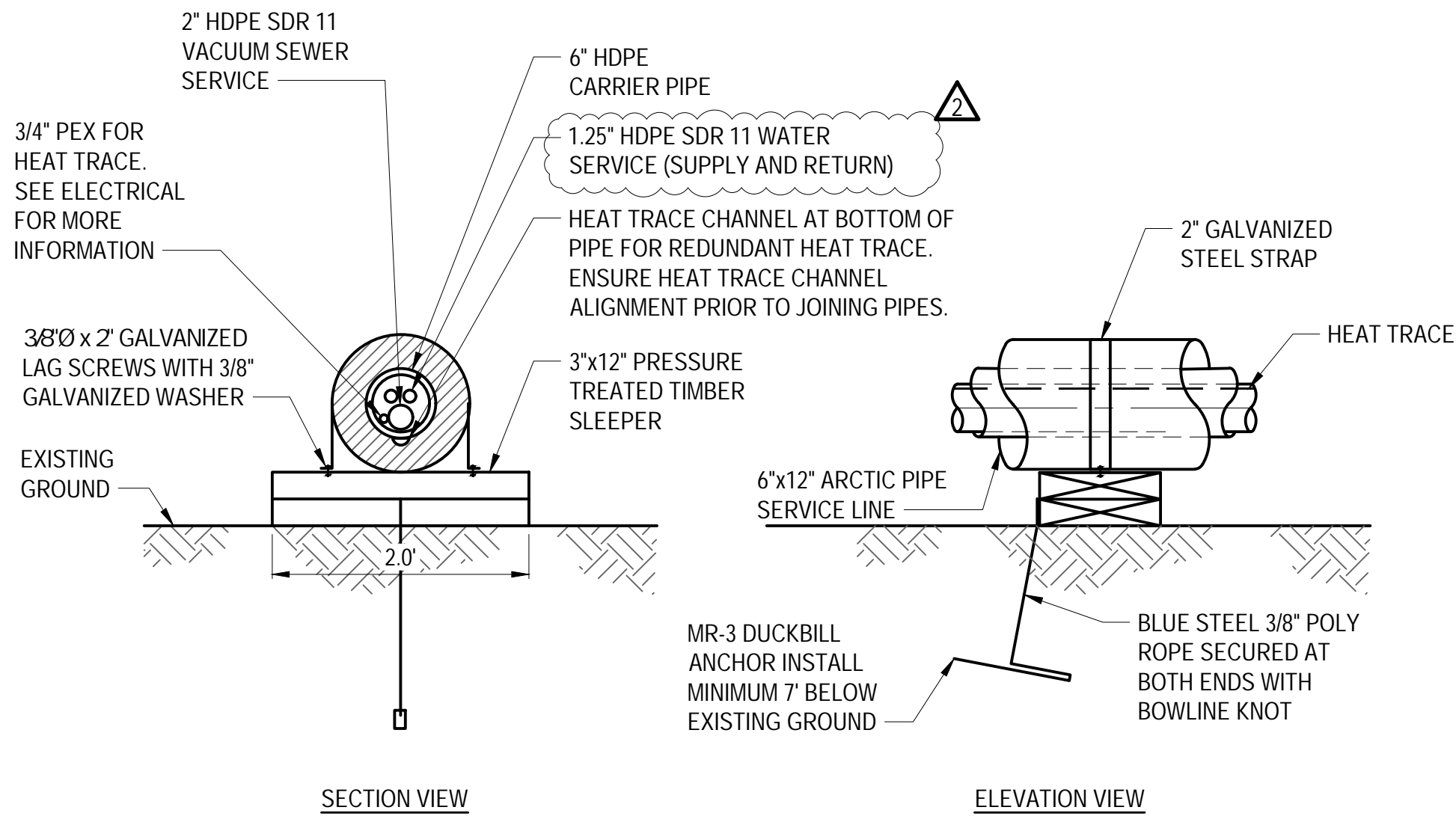
- 101 Eläinten tainnutus
Animal stunning
- 102 Verenlasku
Blood removal
- 201 Teurastamo likainen puoli
Slaughterhouse dirty side
- 202 Teurastamo puhdas puoli
Slaughterhouse clean side
- 301 Ruhojäähdytys +7 °C
Carcass cooling +7 °C
- 302 Karanteeni
Quarantine
- 303 Elinjäähdytys
Internal organ cooling
- 304 Käsittelytila
Processing mode

- 401 Eteinen
Hallway
- 402 Pukuhuone
Dressing room
- 403 Työnjohto
Office
- 404 WC
Toilet

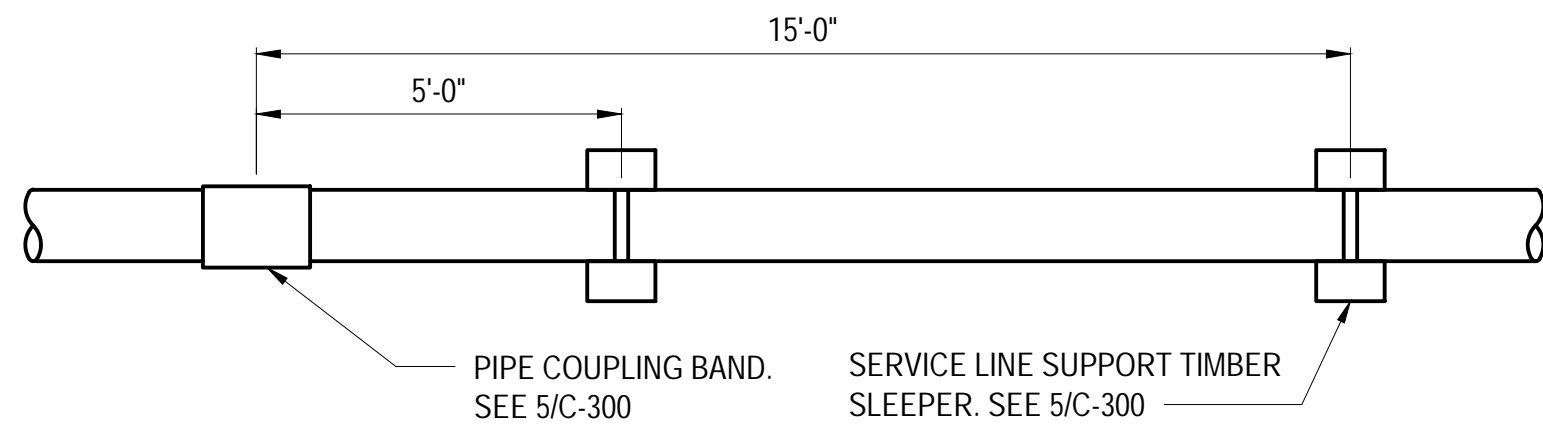
- 501 Pakastustunneli
Frozen tunnel
- 502 Pakastevarasto
Frozen storage
- 503 Tekniikatila
Technical space
- 504 Eteistila
Hallway

B	1	17.7.2024	TP	Moduuliv?it muutettu 30 mm
Muutos	Uusi	Päiväys	Piiri	Muutostoimenpide
				Technical room moved to other end

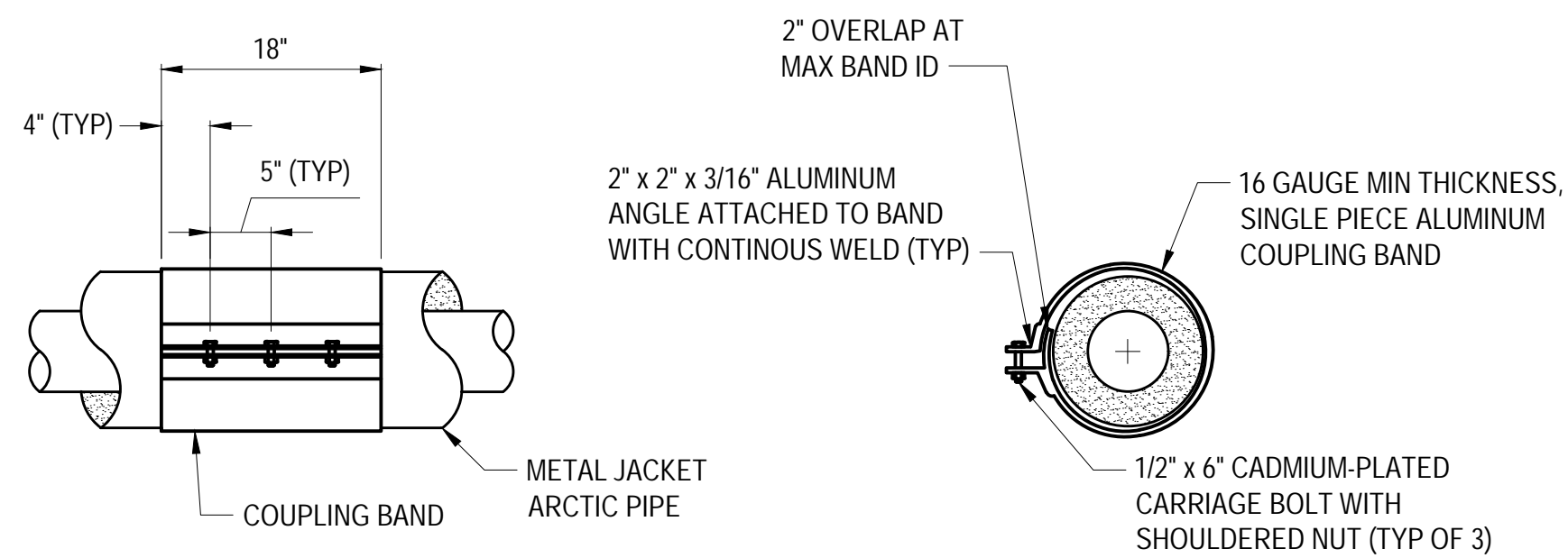
k.osa/kylä	korttel/tila	tonniti/r.n:o	Viranomaisen merkinnät	Juoks.n:o
Rakennusluonnos				
New Building				
omistaja/rakentaja				
Pääsuojat				
Rakennuskohteen nimi ja osoite			Pääsuojien sisätila	Mittakaava
TUNDRATEK T500.3				1:35
Suunnittelija	Piiri	Päiväys	Muutos päiväys	
TP	TP	20.6.2024	10.7.2024	
Pääsuojat				
www.kometos.com 2410-RAK-101				
mailbox@kometos.com Muutos				
Keskustie 23				
FIN-61801 KAUHAJOKI phone +358 (0)6 234 2200				
fax +358 (0)6 234 2225				
2410-RAK-101				



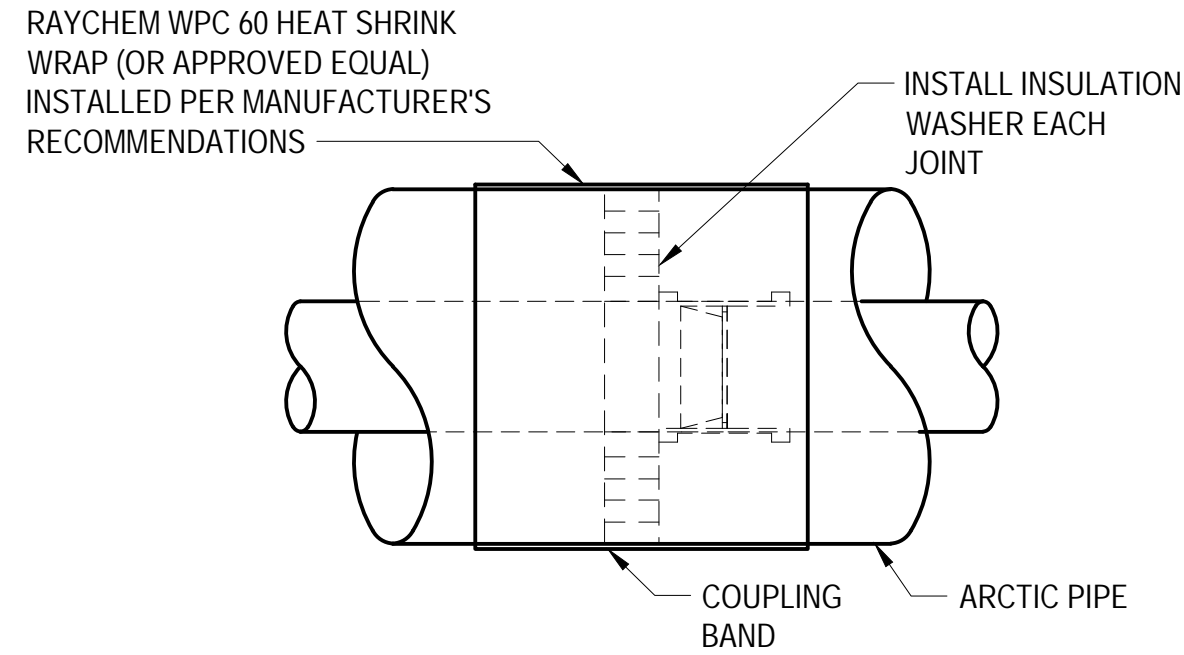
1 WATER & SEWER ARCTIC PIPE SERVICE LINE
C-300 SCALE: NTS



3 SERVICE LINE SUPPORT SPACING
C-300 SCALE: NTS

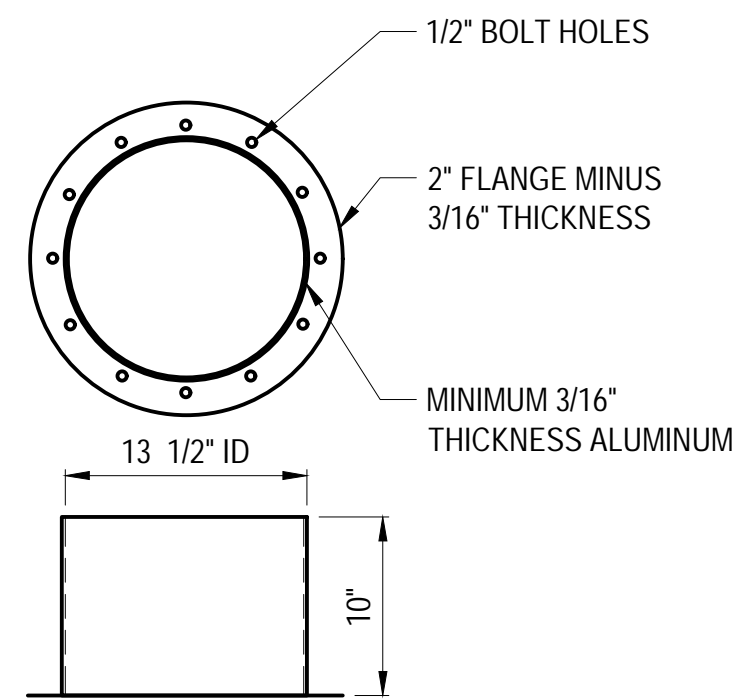


5 PIPE COUPLING BAND
C-300 SCALE: NTS



- NOTES**
- THIS DETAIL APPLIES TO ALL WATER SERVICE PIPE AND FITTING JOINTS UNLESS SPECIFIED OTHERWISE.
 - INSULATE EXPOSED PIPE PER MANUFACTURER'S RECOMMENDATIONS.
 - ENSURE HEAT TRACE CHANNEL ALIGNMENT PRIOR TO JOINING PIPES.

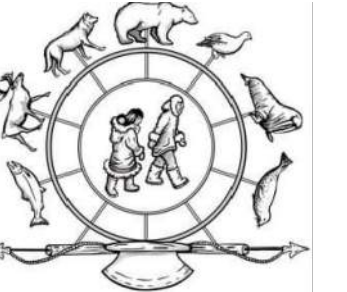
2 ARCTIC PIPE JOINT CONNECTION
C-300 SCALE: NTS



4 SERVICE BOX COLLAR
C-300 SCALE: NTS



KAWERAK



KAWERAK, INC.

SAVOONGA
REINDEER
PROCESSING
FACILITY

BID DOCUMENTS

REV	DATE	DESCRIPTION
2	07/16/2024	ADDENDUM 4
1	03/18/2024	EDA COMMENTS

PROJ. NO. 231585
DRAWN DST
CHECKED MAF
DATE 12/15/2023

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SHEET TITLE:

ARCTIC PIPE
DETAILS

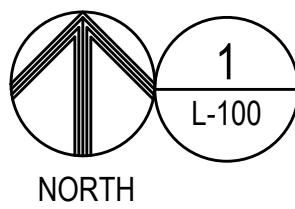
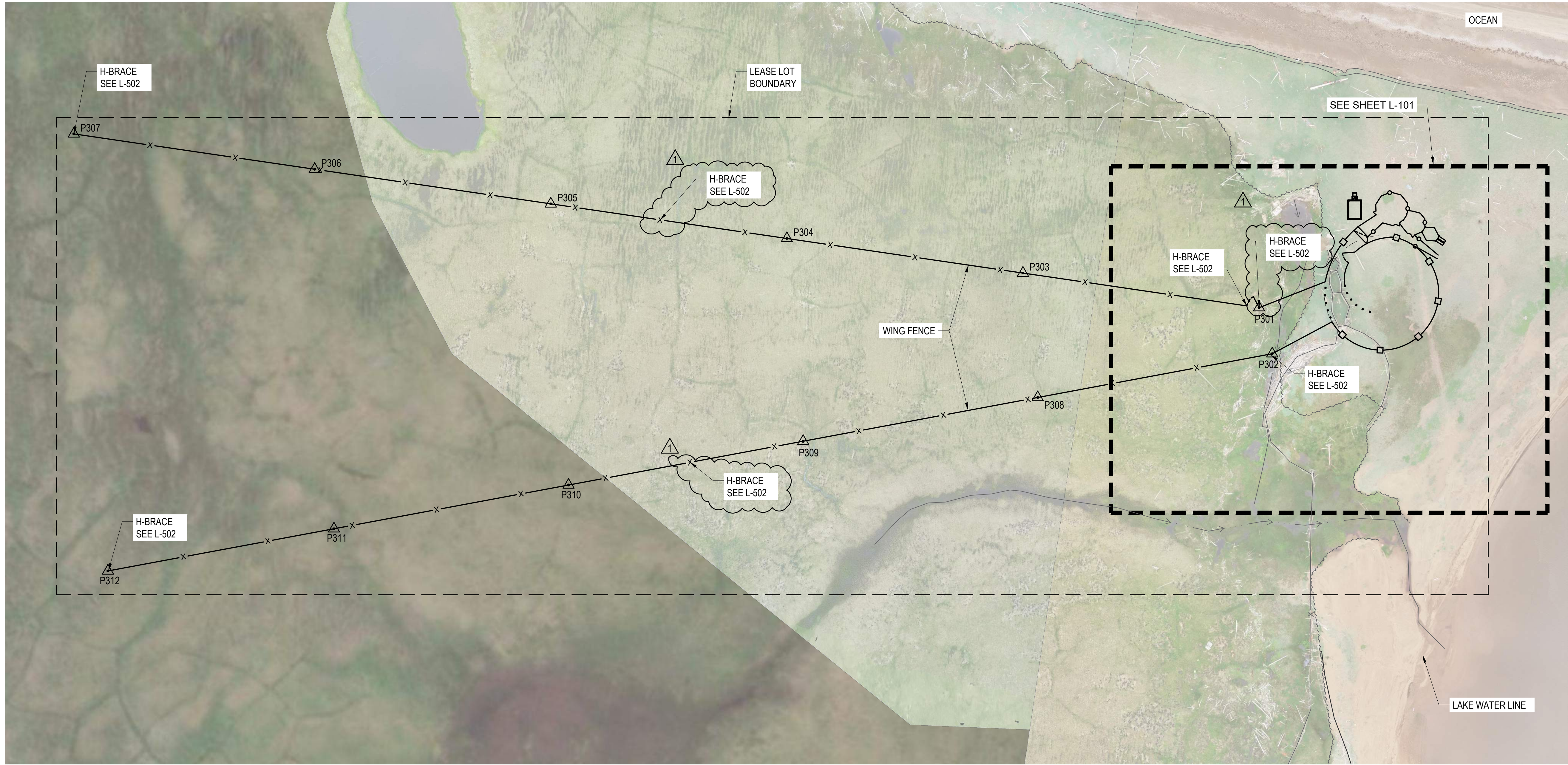
SHEET NO:

C-300

CONTROL POINT TABLE			
POINT #	NORTHING	EASTING	DESCRIPTION
P301	3449141.09	1666002.42	FENCE
P302	3449092.87	1666016.23	FENCE
P303	3449177.36	1665755.06	FENCE
P304	3449213.63	1665507.71	FENCE
P305	3449249.90	1665260.35	FENCE
P306	3449286.18	1665013.00	FENCE
P307	3449323.18	1664760.64	FENCE
P308	3449047.02	1665770.47	FENCE
P309	3449001.16	1665524.71	FENCE
P310	3448955.30	1665278.95	FENCE
P311	3448909.44	1665033.19	FENCE
P312	3448865.25	1664796.38	FENCE

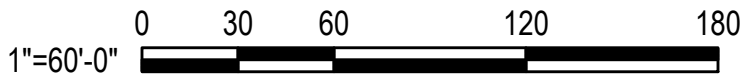
SHEET NOTES:

- CONSTRUCTION ACTIVITIES SHALL OCCUR ON SAND, NOT TUNDRA.
- THE CORRAL SUPPORT BUILDING IS UNOCCUPIED AND UNHEATED.
- CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS WITH SEED MIX TYPE A.
- SEED MIX TYPE A SHALL BE: 50% NORTAN TUFTED HAIRGRASS, 25% BOREAL RED FESCUE, 20% GRUENING ALPINE BLUE, 5% ANNUAL RYE. APPLY AT 3 LBS PER 1,000 S.F.
- PRIOR TO CONSTRUCTION, CONTRACTOR SHALL FIELD VERIFY ALL H-BRACE CONDITIONS. CONTRACTOR SHALL INSTALL ALL H-BRACING PER SHEET L-502



CORRAL SITE PLAN

SCALE: 1" = 60'-0"



800 F Street
Anchorage, AK 99501

ph 907.276.6664

www.coffman.com AECC249



KAWERAK



KAWERAK, INC.

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BID DOCUMENTS

REV	DATE	DESCRIPTION
1	7/16/2024	ADDENDUM #4

PROJ. NO. 231585

DRAWN AJW / JLD

CHECKED ERL

DATE 12/15/2023

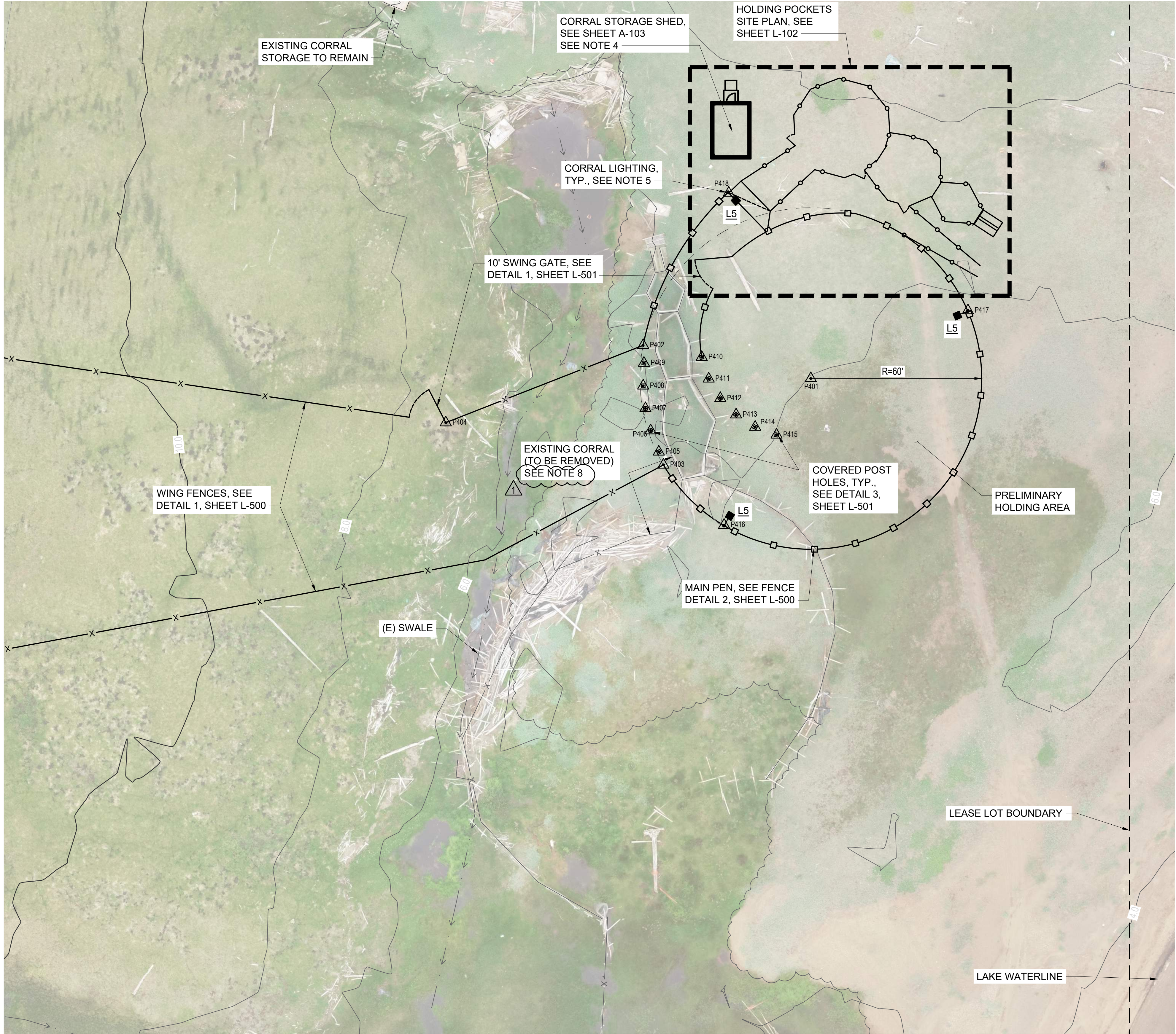
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SHEET TITLE:

CORRAL SITE
PLAN

SHEET NO:

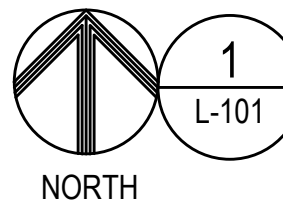
L-100



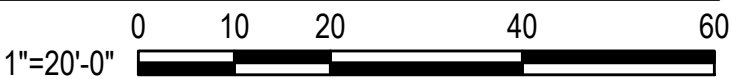
SHEET NOTES:

- CONSTRUCTION ACTIVITIES SHALL OCCUR ON SAND, NOT TUNDRA.
- THE CORRAL SUPPORT BUILDING IS UNOCCUPIED AND UNHEATED.
- EXISTING CORRAL AND CORRAL DEBRIS TO BE REMOVED AND STOCKPILED IN A LOCATION OF OWNER'S CHOOSING ON SITE.
- THE CORRAL SUPPORT BUILDING SHALL HOUSE (1) 120/240V, 1 PHASE, 3-WIRE PANELBOARD WITH GENERATOR INLET PLUG TO SUPPORT MAIN PEN CORRAL SITE LIGHTING. REFER TO ELECTRICAL FOR ADDITIONAL INFORMATION.
- COBRA HEAD STYLE LED AREA LUMINAIRES MOUNTED TO WOOD POLES AT 20' AFG. CRUEXSP SERIES WITH MOUNTING ARM FOR WOOD POLE. REFER TO ELECTRICAL LIGHT FIXTURE SCHEDULE FOR MORE INFORMATION.
- WOOD POLES FOR CORRAL LIGHTING SHALL BE 30' LONG (TREATED UTILITY) POLES WITH 10' DEPTH OF BURY.
- CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS WITH SEED MIX TYPE A. SEE SHEET C-101 NOTE 3
- ALL EXISTING CORRAL MATERIAL REMOVED FOR THE PROJECT SHALL BE ORGANIZED AND STACKED NEATLY ON THE WEST SIDE OF THE CORRAL SUPPORT BUILDING

CONTROL POINT TABLE			
POINT #	NORTHING	EASTING	DESCRIPTION
P401	3449156.60	1666130.59	CENTER OF CORRAL
P402	3449168.24	1666071.73	FENCE
P403	3449126.23	1666078.85	FENCE
P404	3449141.09	1666002.42	GATE
P405	3449130.81	1666077.22	POST
P406	3449138.28	1666074.36	POST
P407	3449146.06	1666072.53	POST
P408	3449154.01	1666071.74	POST
P409	3449162.00	1666072.02	POST
P410	3449164.07	1666092.30	POST
P411	3449156.48	1666094.74	POST
P412	3449149.62	1666098.82	POST
P413	3449143.86	1666104.36	POST
P414	3449139.51	1666111.05	POST
P415	3449136.79	1666118.55	POST
P416	3449105.09	1666100.15	LIGHT POST
P417	3449180.46	1666185.75	LIGHT POST
P418	3449221.76	1666101.78	LIGHT POST



ENLARGED CORRAL SITE PLAN
SCALE: 1" = 20'-0"



KAWERAK



SAVOONGA
REINDEER
PROCESSING
FACILITY

BID DOCUMENTS

REV	DATE	DESCRIPTION
1	7/16/2024	ADDENDUM #4

PROJ. NO. 231585
DRAWN AJW / JLD
CHECKED ERL
DATE 12/15/2023

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SHEET TITLE:

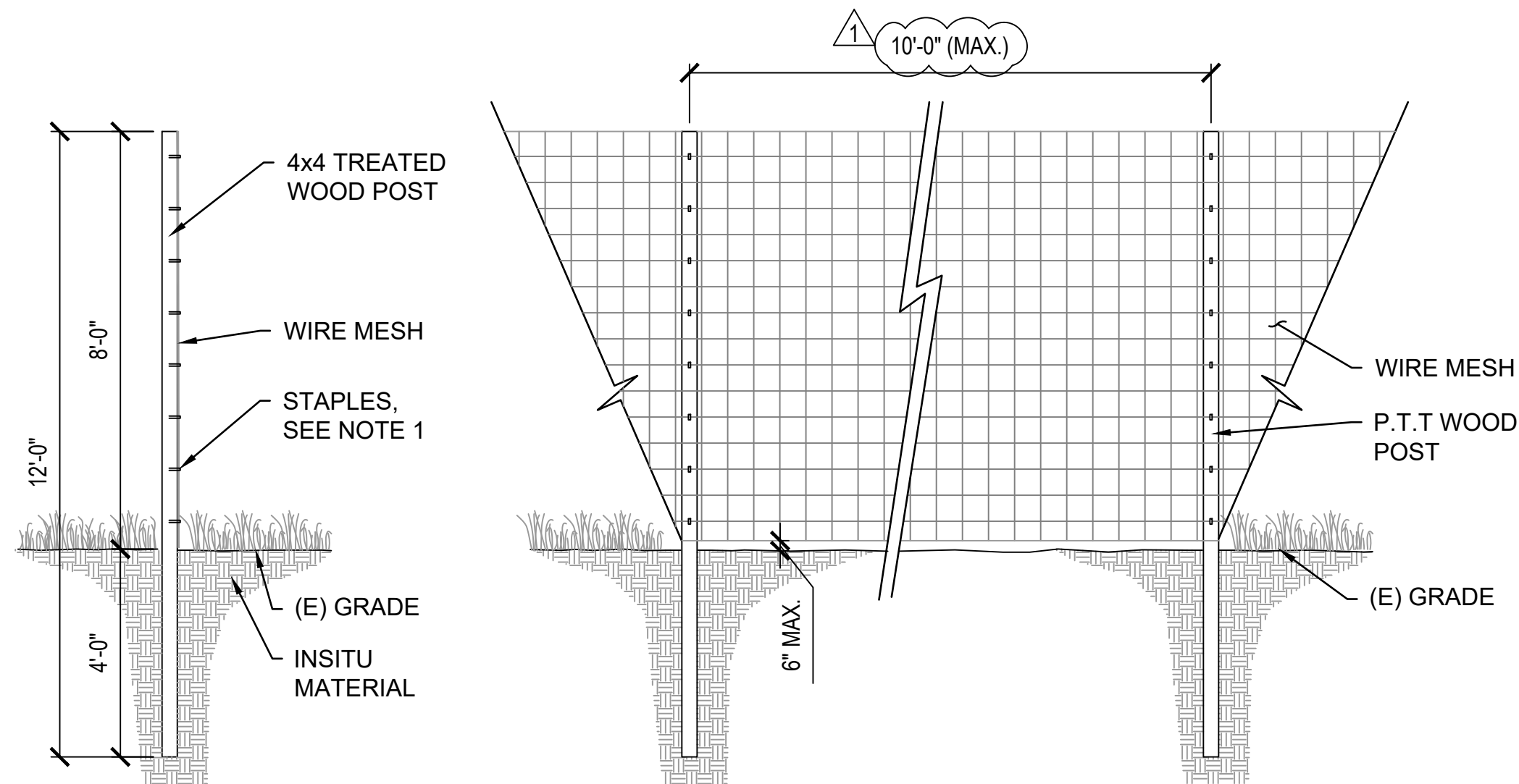
ENLARGED
CORRAL SITE
PLAN

SHEET NO:

L-101

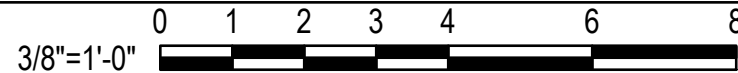
NOTES:

- ALL WOOD SHALL BE PRESSURE TREATED TIMBER / 0.60 PCF
- ATTACH WIRE MESH TO POST WITH (8) 1 1/4" GALVANIZED STAPLE, SPACED 12" MAX O.C.



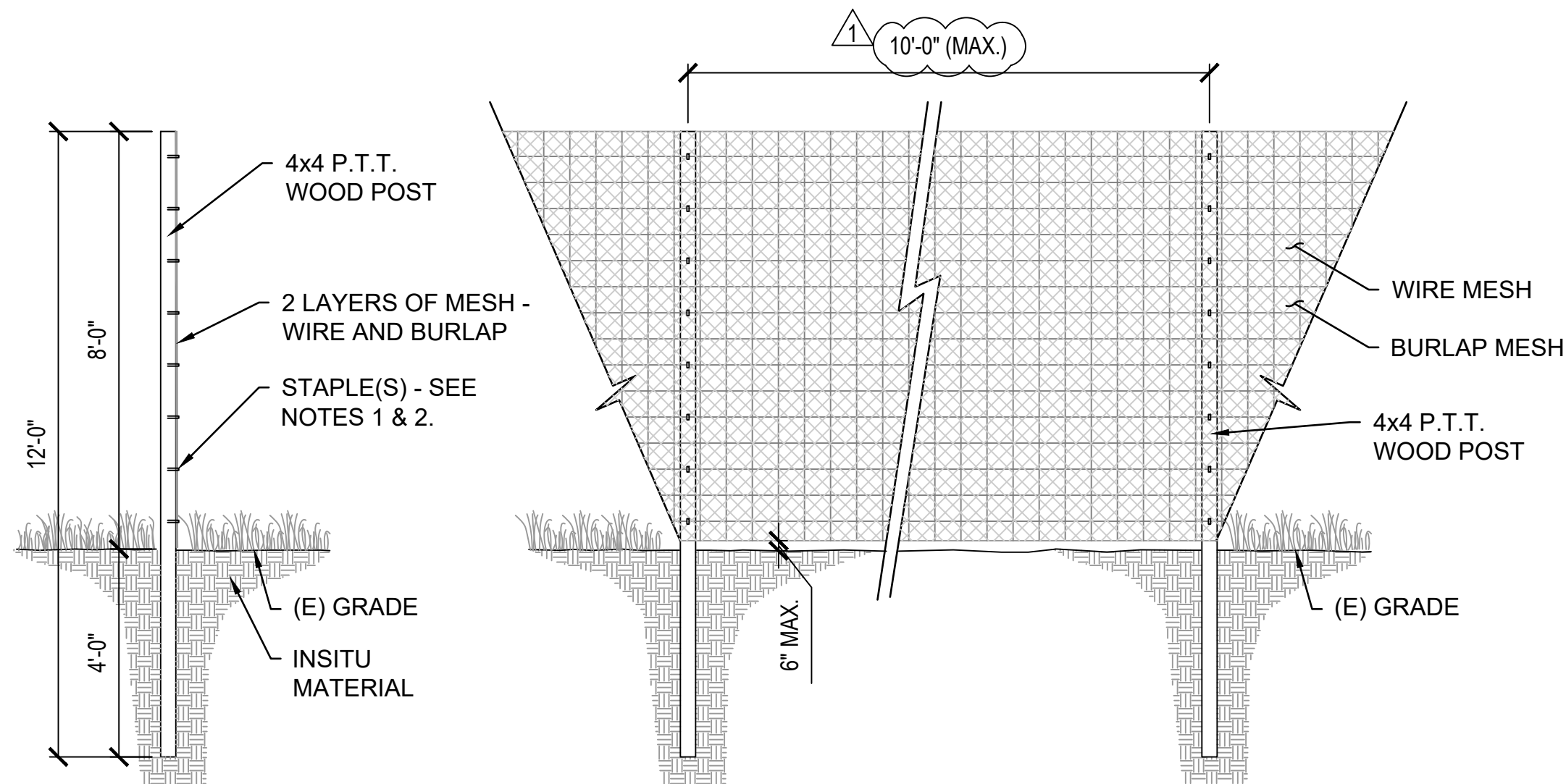
1 WING FENCE

L-500 SCALE: 3/8" = 1'-0"



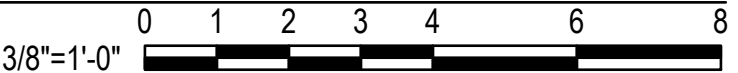
NOTES:

- ATTACH WIRE MESH TO POST WITH (8) 1 1/4" GALVANIZED STAPLE, SPACED 12" MAX O.C.
- ATTACH BURLAP MESH TO POST WITH (8) 1 1/4" GALVANIZED STAPLE, SPACED 12" MAX O.C.



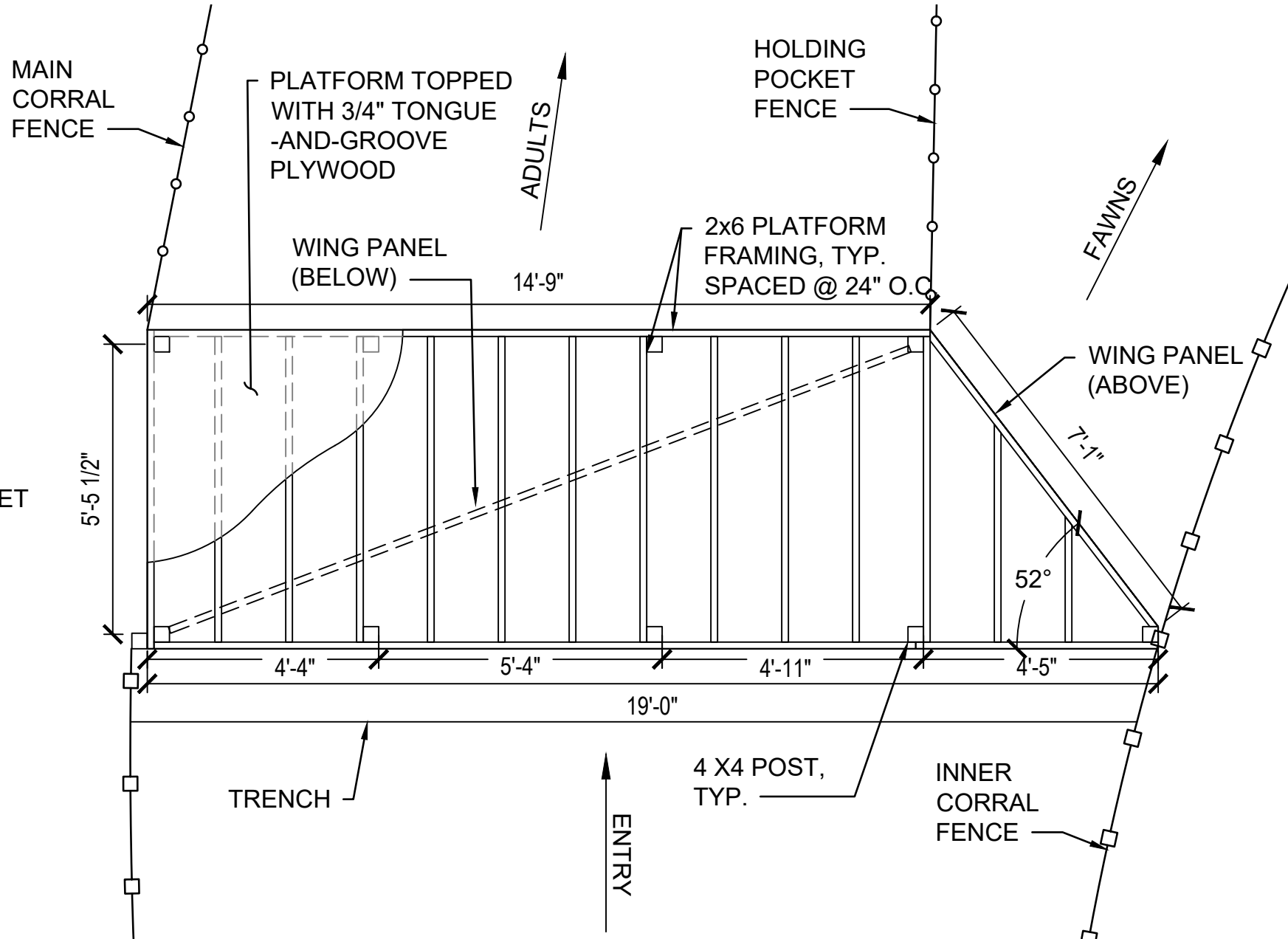
2 CORRAL FENCE

L-500 SCALE: 3/8" = 1'-0"



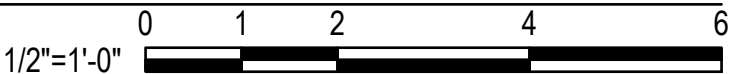
NOTES:

- ATTACH PLYWOOD TO PLATFORM FRAMING WITH 12D GALVANIZED NAILS. SPACE NAILS 12" O.C. MAX.
- ATTACH PLATFORM FRAMING TO POSTS WITH (2) 16 PENNY NAILS PER BOARD.
- ATTACH 2X6 OUTER FRAMING TO JOISTS WITH 12D GALVANIZED NAILS.



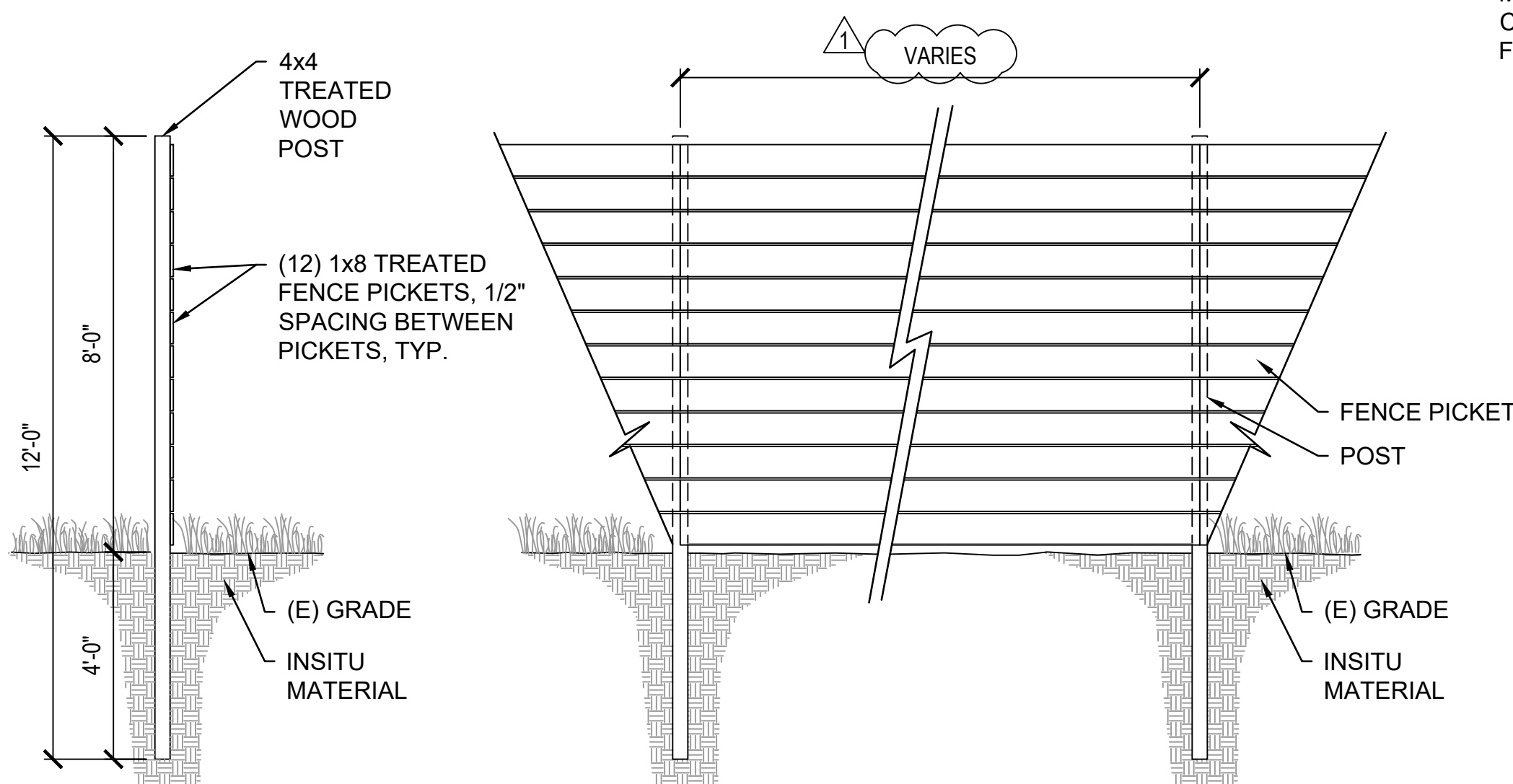
4 FAWN SEPERATOR

L-500 SCALE: 1/2" = 1'-0"



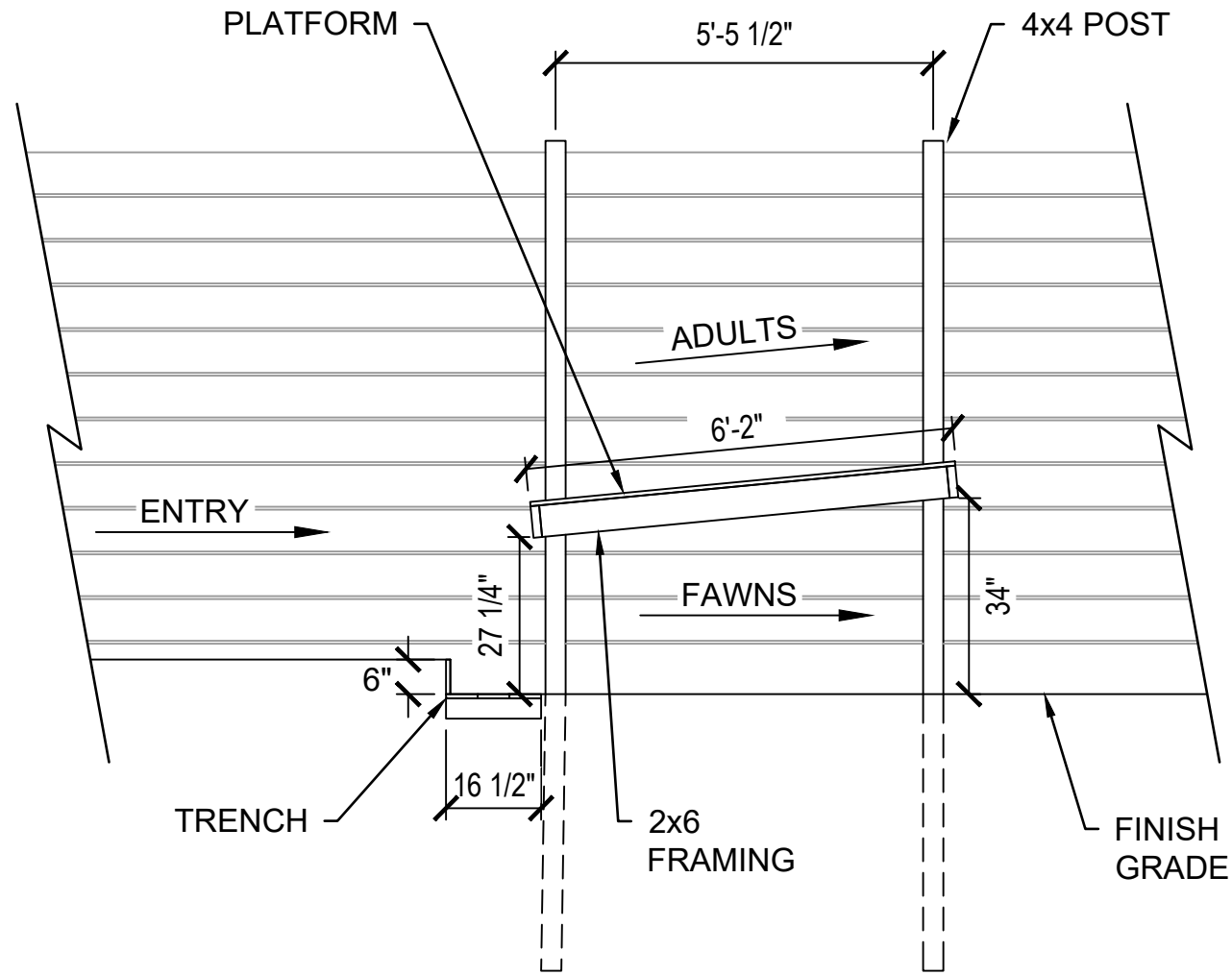
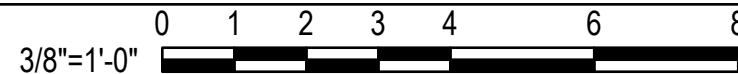
NOTES:

- ATTACH FENCE PICKETS TO POST WITH (2) 8D NAILS AT EACH POST



3 HOLDING POCKET FENCE

L-500 SCALE: 3/8" = 1'-0"



PROFILE VIEW



KAWERAK



KAWERAK, INC.

SAVOONGA
REINDEER
PROCESSING
FACILITY

BID DOCUMENTS

REV	DATE	DESCRIPTION
1	7/16/2024	ADDENDUM #4

PROJ. NO. 231585

DRAWN AJW

CHECKED ERL

DATE 12/15/2023

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SHEET TITLE:

CORRAL DETAILS

SHEET NO:

L-500

NOTES:

- ALL WOOD SHALL BE PRESSURE TREATED TIMBER (P.T.T) / 0.60 PCF
- ATTACH POST TO HORIZONTAL BRACING WITH SIMPSON STRONG TIE, STRONG DRIVE SDWH TIMBER HEX SCREW 0.275x10" WITH DOUBLE BARRIER COATING (4) PER CONNECTION. NOTCH POSTS TO RECEIVE HORIZONTAL RAILS. APPLY COPPER GREEN WOOD PRESERVATIVE (OR APPROVED EQUAL) TO ALL WOOD SURFACES EXPOSED BY FIELD CUTS.

GATE, END,
CORNER, OR
PULL POST: 6x6
P.T. WOOD POST
(TYP)

PULL DIRECTION

5'-0" MIN
10'-0" MAX

HORIZONTAL BRACE
POST: 6x6, P.T. WOOD
POST (TYP)

BRACE POST, 6x6 WOOD
POST (TYP)

3/8" TRUSS ROD
WITH TURNBUCKLE

FINISH GRADE

FENCE MESH HEIGHT

4'-0"
MIN

BRACE RAIL HEIGHT

FENCE MESH HEIGHT	POST HEIGHT	BRACE RAIL HEIGHT
8'-0"	10'-6"	4'-6"

1 SINGLE H-BRACE

L-502 SCALE: N.T.S.

NOTES:

- ALL WOOD SHALL BE PRESSURE TREATED TIMBER (P.T.T) / 0.60 PCF
- ATTACH POST TO HORIZONTAL BRACING WITH SIMPSON STRONG TIE, STRONG DRIVE SDWH TIMBER HEX SCREW 0.275x10" WITH DOUBLE BARRIER COATING (4) PER CONNECTION. NOTCH POSTS TO RECEIVE HORIZONTAL RAILS. APPLY COPPER GREEN WOOD PRESERVATIVE (OR APPROVED EQUAL) TO ALL WOOD SURFACES EXPOSED BY FIELD CUTS.

PULL DIRECTION

5'-0" MIN
10'-0" MAX

5'-0" MIN
10'-0" MAX

HORIZONTAL BRACE
POST: 6" DIA. P.T. WOOD
POST (TYP)

BRACE POST, 6" DIA P.T.
WOOD POST (TYP)

3/8" TRUSS ROD
WITH TURNBUCKLE

FINISH GRADE

FENCE MESH HEIGHT

3'-0"
MIN

BRACE RAIL HEIGHT

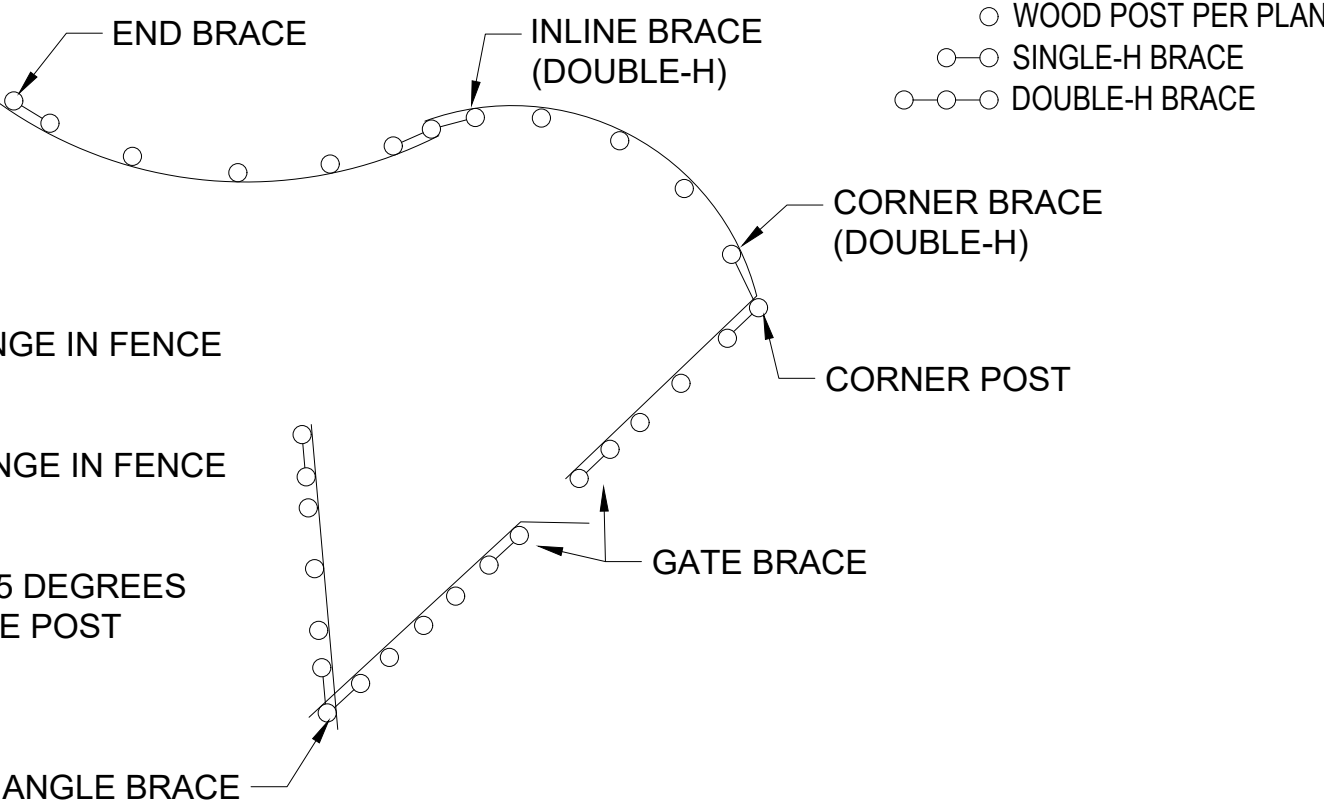
FENCE MESH HEIGHT	POST HEIGHT	BRACE RAIL HEIGHT
8'-0"	10'-6"	4'-6"

2 DOUBLE H-BRACE

L-502 SCALE: N.T.S.

NOTES:

- PROVIDE H-BRACING THROUGHOUT PROJECT AT THE BEGINNING AND ENDS OF ALL FENCE SECTIONS, HARD AND SOFT CORNERS TO MAINTAIN FENCE INTEGRITY.
- SOFT CORNER IS DEFINED AS ANY CHANGE IN FENCE ALIGNMENT BETWEEN 0-45 DEGREES.
- HARD CORNER IS DEFINED AS ANY CHANGE IN FENCE ALIGNMENT BETWEEN 45-90 DEGREES.
- A CHANGE IN DIRECTION BETWEEN 30-45 DEGREES CAN USE A MAXY POST IN LIEU OF FENCE POST



FENCE BRACE
PLACEMENT DIAGRAM

4 L-502 SCALE: N.T.S.

GATE POST,
6x6 P.T. WOOD
POST (TYP)

ATTACH MESH TO POST
PER DETAIL 1 & 2/L-500

PULL DIRECTION

GATE,
SEE DETAIL
1 & 2/L-501

H-BRACE,
SEE DETAIL
1/C3.2

3/8" TRUSS ROD WITH
TURNBUCKLE, TYP

FINISH GRADE

3 H-BRACE AT GATE

L-502 SCALE: N.T.S.



KAWERAK



KAWERAK, INC.

SAVOONGA
REINDEER
PROCESSING
FACILITY

BID DOCUMENTS

REV	DATE	DESCRIPTION
1	7/16/2024	ADDENDUM #4

PROJ. NO. 231585

DRAWN AJW / JLD

CHECKED ERL

DATE 12/15/2023

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SHEET TITLE:

H-BRACE DETAILS

SHEET NO:

L-502

SECTION 32 31 00 FENCE AND GATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Wire mesh.
 - 2. Swing gates.

1.3 ACTION SUBMITTALS

- A. Product Data: For each of the following types of products.
 - 1. Wire mesh types
 - 2. Burlap
 - 3. Posts
 - 4. Fasteners
- B. Shop Drawings: For fencing and gates.
 - 1. Include plans, elevations, sections, gate locations, post spacing, and mounting details.
- C. Manufacturer's standard warranty for"
 - 1. Each woven wire type.
 - 2. Each woven wire finish type.
- D. Samples: For each fence material and for each color specified.
 - 1. Provide Samples 12 inches in length for linear materials.
 - a. All posts and fasteners.
 - 2. Provide Samples 12 inches square for wire mesh.

3. Provide Samples 12 inches square for burlap.

1.4 INFORMATIONAL SUBMITTALS

- A. Field quality-control reports.

1.5 CLOSEOUT SUBMITTALS (NOT USED)

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Fabricator of products.
- B. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for fabrication and installation.

1. Individual mockups shall be provided for:

1

- a. Wing Fence
- b. Corral Fence
- c. Holding Pocket Fence

2. Include 300 feet length of fence complying with requirements.

- a. Must include a single H-Brace if the fence type requires any H-braces along its alignment

3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

PART 2 - PRODUCTS

2.1 FENCE MATERIALS

- A. Wing Fence

1. Woven Wire Metal Mesh: Basis-of-Design: Subject to compliance with requirements, provide Bekaert, Solidlock Pro, Game Fence fixed knot 20/96-6-12.5 or approved equal.
 - a. Knot type: fixed knot
 - b. Number of line wires: 20
 - c. Mesh height: 96 inches
 - d. Spacing of Vertical Wires: 6 inches

- e. Spacing of horizontal wires (starting with top wire as row 1):
 - 1) Row 1 to 5: 7 inches between each wire
 - 2) Row 6 to 9: 6 inches between each wire
 - 3) Row 10 to 11: 5 inches between each wire
 - 4) Row 12 to 13: 4 inches between each wire
 - 5) Row 14 to 20: 3 inches between each wire
 - f. Vertical & Horizontal Wire diameter: 12.5 gauge
 - g. Finish: Basis of design is Bekaert Bezinal a minimum 5% zinc aluminum coating with a minimum coat weight of 0.80 oz per square foot or approved equal.
 - h. Warranty: Manufacturer's standard 30 year limited warranty.
2. Posts:
- a. Line Posts: Type 1: Wood: 4 inch by 4 inch by 12 foot Pressure Treated Timber with 0.60 CCA
3. Fasteners:
- a. For attaching to mesh to wood posts: Bekaert 2" 8 ga Double Barbed Staples
 - b. Finish: Bezinal coated wire
 - c. Foundations: as indicated on drawings
 - d. Warranty: Manufacturer's standard warranty.
4. Mesh Tension
- a. Tension on the top wire shall be such that a lateral force of 20 pounds applied midway between the posts shall cause no more than six inches of displacement from a straight line between the two adjacent fastening points when pulled laterally. Tension on any interior horizontal wire shall be such that a lateral force of 20 pounds applied midway between the posts shall cause no more than six inches of displacement from a straight line between the two adjacent fastening points when pulled laterally.

B. Corral Fence

- 1. Woven Wire Metal Mesh: Basis-of-Design: Subject to compliance with requirements, provide Bekaert, Solidlock Pro, Game Fence fixed knot 20/96-6-12.5 or approved equal.
 - a. Knot type: fixed knot
 - b. Number of line wires: 20
 - c. Mesh height: 96 inches
 - d. Spacing of Vertical Wires: 6 inches
 - e. Spacing of horizontal wires (starting with top wire as row 1):

- 1) Row 1 to 5: 7 inches between each wire
 - 2) Row 6 to 9: 6 inches between each wire
 - 3) Row 10 to 11: 5 inches between each wire
 - 4) Row 12 to 13: 4 inches between each wire
 - 5) Row 14 to 20: 3 inches between each wire
- f. Vertical & Horizontal Wire diameter: 12.5 gauge
 - g. Finish: Basis of design is Baekert Bezinal a minimum 5% zinc aluminum coating with a minimum coat weight of 0.80 oz per square foot or approved equal.
 - h. Warranty: Manufacturer's standard 30 year limited warranty.
2. Fence Fabric: Burlap, provide 48" tall by 100 yard roll 100% jute fiber
 3. Posts:
 - a. Line Posts: Type 1: Wood: 4 inch by 4 inch by 12 foot Pressure Treated Timber with 0.60 CCA
 4. Fasteners:
 - a. For attaching to mesh and burlap to wood posts: Bekaert 2" 8 ga Double Barbed Staples
 - b. Finish: Bezinal coated wire
 - c. Foundations: as indicated on drawings
 - d. Warranty: Manufacturer's standard warranty.
 5. Mesh Tension
 - a. Tension on the top wire shall be such that a lateral force of 20 pounds applied midway between the posts shall cause no more than six inches of displacement from a straight line between the two adjacent fastening points when pulled laterally. Tension on any interior horizontal wire shall be such that a lateral force of 20 pounds applied midway between the posts shall cause no more than six inches of displacement from a straight line between the two adjacent fastening points when pulled laterally.

C. Holding Pocket Fence

1. Materials: Materials shall be treated wood, or wood of natural resistance to decay. All wood shall be construction grade 2 or better.
2. Wood Posts:
 - a. Line Posts: Wood posts shall conform to the details and dimensions indicated on the DRAWINGS. Wood posts shall be straight, sound, and seasoned with ends sawed off square or as indicated. All knots shall be trimmed flush with the surface. Wood posts shall be peeled and treated with preservative in accordance with AASHTO M133.

- b. All dimension timber and lumber required for fences or gates shall be sound, straight, and free from knots, splits, and shakes. It shall be of the species and grades indicated on the DRAWINGS. Posts at Swing Gate Openings: Wood: 6 inch by 8 foot Pressure Treated Timber with 0.60 CCA
- 3. Fasteners:
 - a. All fasteners used for construction shall be galvanized.
- 4. Foundations: as indicated on drawings
- 5. Warranty: Manufacturer's standard warranty.

2.2 SWING GATES

- A. Gate Configuration: as shown in drawings
- B. Gate Frame Height: as shown on drawings.
- C. Gate Opening Width: as shown on drawings
- D. Frame Corner Construction: as indicated on drawings
- E. Additional Rails: Provide as indicated, complying with requirements for corral fence rails.
- F. Infill Fence Fabric: Basis-of-Design Burlap, 100% jute fiber.
- G. Hardware: Latches permitting operation from both sides of gate, hinges, and keepers for each gate leaf more than 5 feet wide as indicated on drawings.
- H. Spring Hinges: as indicated on drawings
- I. Cane Bolts: Provide for inactive leaf of pairs of gates. Fabricated from 1/2-inch-diameter, round steel bars, hot-dip galvanized after fabrication. Finish to match gates. Provide galvanized-steel pipe strikes to receive cane bolts in closed position.
- J. Metallic-Coated-Steel Finish: class II hot dipped galvanized.

2.3 SLIDING GATES

- A. Gate Configuration: as shown in drawings.
- B. Gate Frame Height: as shown on drawings.
- C. Gate Opening Width: as shown on drawings

- D. Frame Corner Construction: as indicated on drawings.
- E. Additional Rails: Provide as indicated, complying with requirements for corral fence rails.
- F. Gate Track: as shown on drawings.
- G. Infill Fence Fabric: Burlap, 100% jute fiber.

2.4 GATE MATERIALS

- A. Gate Fabric: Basis-of-Design Burlap, 100% jute fiber.
- B. Gate frame material: pressure treated wood shall be treated in accordance with Wood Protection Association (AWPA) Use Category 4A (UC4A) for ground contact with minimum 0.60 pcf CCA. Sizes as indicated on drawings.
- C. Plates, Shapes, and Bars: ASTM A36/A36M.
- D. Metallic-Coated Steel Sheet: Galvanized-steel sheet or aluminum-zinc, alloy-coated steel sheet.
- E. Aluminum-Zinc, Alloy-Coated Steel Sheet: ASTM A792/A792M, structural quality, Grade 50 , with AZ60 coating.
- F. Iron Castings: Either gray or malleable iron unless otherwise indicated.
 - 1. Gray Iron: ASTM A48/A48M, Class 30.
 - 2. Malleable Iron: ASTM A47/A47M.
- G. Galvanizing: For components indicated to be galvanized and for which galvanized coating is unspecified, triple dipped hot-dip galvanize to comply with ASTM A123/A123M. For hardware items, hot-dip galvanize to comply with ASTM A153/A153M.

PART 3 - EXECUTION

3.1 SITE CONDITIONS

- A. The contractor should expect multiple substrate types as follows:
 - 1. Permafrost – Permanently frozen soils. Posts must be driven into the permafrost at a depth to minimize heaving.
 - 2. Savoonga is underlain by clayey silt that contains basalt boulders overlain by a layer of peat, roots, and organic material up to a foot thick.

3.2 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, fence layout, and other conditions affecting performance of the Work.
- B. Do not begin installation unless otherwise permitted by Architect.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 PREPARATION

- A. All fences to follow what is indicated on drawings.
- B. All fence posts shall be placed as indicated on drawings.

3.4 FENCE INSTALLATION

- A. General installation instructions:
 - 1. Clear and grub installation areas as needed for construction.
 - 2. The Contractor must locate the project's location starting point and end point as shown on the drawings.
 - 3. The Contractor's personnel must travel to work area with reliable four-wheel drive vehicles or water-craft following all applicable rules and regulations.
 - 4. The placement sequence shall be coordinated with the CO.
 - 5. All fences will follow what is indicated on drawings or as determined by the CO.
 - 6. No gaps or breaches are allowed in the fence during construction.
 - 7. Fence will not enter existing surface water boundaries and remain on tundra as indicated on drawings.
 - 8. Distance between posts is in accordance with the drawings.
 - 9. If unable to drive posts in tundra, post placement may be adjusted within alignment limits up to 20 degrees.
 - 10. All wrapped wire ends connecting separate wire rolls will have at least four full turns and cut flush to reduce the hazard of impalement.
 - 11. Fence staples require one staple per foot on posts
 - 12. Changes in fence alignment of 20 degrees or more will not be allowed.
 - 13. Refer to drawings for illustrations on fence assembly.
- B. 4" X 4" Treated Wood Posts
 - 1. Treated posts will be installed as indicated on the drawings from each, and additionally so that a post is placed at ALL significant high and low points along the fence line.

2. Treated posts will be oriented so that the flat side faces the area to be enclosed. Posts will be driven to a minimum depth of eighteen (48) inches; in a manner that will prevent damage to the posts and the treatment. Where posts installation encounters underground debris preventing installation, post placement may be adjusted within alignment limits up to 20 degrees and returned smoothly to indicated alignment.
3. Posts shall be installed plumb and true to line and grade. Posts which are bent, split, mushroomed, cracked, twisted or have cracked, chipped, or scratched coatings will not be used.

C. Mesh Tension

1. Tension on the top wire shall be such that a lateral force of 20 pounds applied midway between the posts shall cause no more than six inches of displacement from a straight line between the two adjacent fastening points when pulled laterally. Tension on any interior horizontal wire shall be such that a lateral force of 20 pounds applied midway between the posts shall cause no more than six inches of displacement from a straight line between the two adjacent fastening points when pulled laterally.

D. Fence Staples

1. Fence clips shall be installed as indicated on drawings. All clips will be so the ends spread internally into wood post and not cross.

E. Splices

1. Where two sections of woven wire need to be joined, crimps will not be allowed. Wires will be adjoined at posts by overlapping the terminal ends of each of the wire mesh rolls and mechanically attaching to the post. Excess wire will be cut flush to wrapped wire to reduce the hazard of impalement.

F. Wire-to-Ground Interface

1. The bottom strand of the mesh wire will be fastened to each post so that it is flush with the surface of the ground or no more than 1" above the surface of the ground at any given point along the fence line.
2. For this document, the surface of the ground is defined as the actual soil surface and not the vegetation mat. The vegetation mat and soil shall be removed manually along the fence line as required, to allow proper installation of the fence.
3. The building up of rocky areas to create "walls" along the bottom of the fence will not be acceptable.

G. Adaptations to Terrain

1. Woven wire will not be deformed to adapt to variations in ground contour. "Belly" and "Droop" are unacceptable.

- H. Install mesh according to manufacturer's written instructions.
- I. Install fences by setting posts as indicated and fastening mesh and staples to posts.
- J. Post Excavation: Drill or hand-excavate holes for posts in firm, undisturbed soil. Excavate holes to a diameter of not less than 4 times post size and a depth as indicated on drawings.
- K. Post Setting: Set posts by mechanically driving into soil at indicated spacing into firm soil.
 - 1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with mechanical devices.

3.5 GATE INSTALLATION

- A. Install gates according as indicated on drawings, level, plumb, and secure for full opening without interference. Attach hardware using tamper-resistant or concealed means. Adjust hardware for smooth operation and lubricate where necessary.

3.6 ADJUSTING

- A. Gates: Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.
- B. Lubricate hardware, and other moving parts.

END OF SECTION