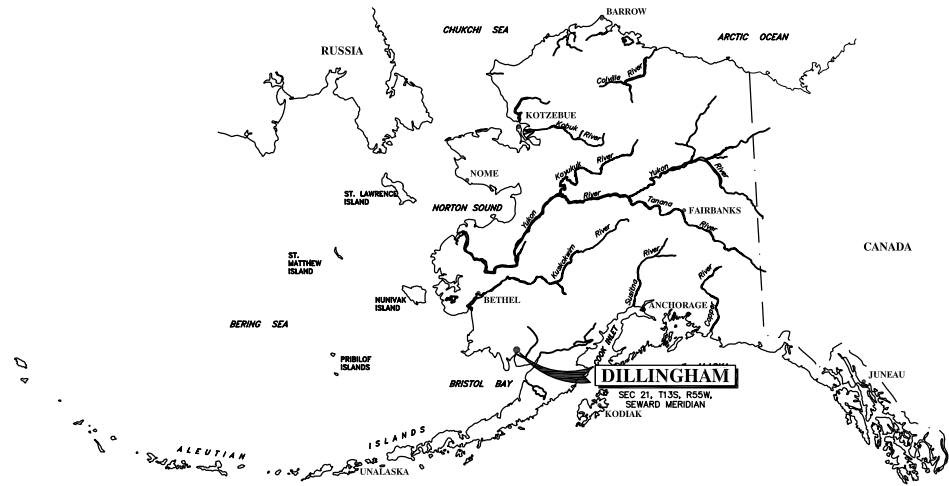


USER: Andrea FILE: X:\PROJECT FILES\077- ALASKA NATIVE TRIBAL HEALTH CONSORTIUM\077-20- DILLINGHAM HOSPITAL WTP PH1\MISCELLANEOUS\100% DRAWINGS\FINAL 2017 SUBMITTAL CAD\TWO LAGOONS CAD\100% COVER DEC 2017.DWG PLOT DATE: 11-

# KANAKANAK, ALASKA WATER TREATMENT PLANT FACILITIES UPGRADES PROJECT - PHASE I



**PROJECT LOCATION**  
SCALE: NONE



**KANAKANAK HOSPITAL CAMPUS**  
SCALE: NONE

Sheet List Table	
SHEET NUMBER	SHEET TITLE
<b>GENERAL</b>	
	COVER SHEET
G-001	GENERAL LEGEND
<b>PROCESS</b>	
P-001	PROCESS LEGEND
P-002	PIPING AND INSTRUMENTATION DIAGRAM
<b>CIVIL</b>	
C-001	SITE PLAN
C-002	YARD PIPING
C-003	TANK PLAN AND PROFILE
C-004	TANK FOUNDATION
C-005	TANK PIPING
C-006	TANK INSULATION
C-007	TANK ROOF INSULATION
C-008	TANK DETAILS
C-009	SETTLING POND PLAN AND PROFILE
C-010	WTP PIPING
C-011	FENCE DETAILS
C-012	GATE DETAILS
C-013	SETTLING POND DETAILS
C-014	DETAILS
C-015	MISC. DETAILS
<b>MECHANICAL</b>	
M-001	LEGEND AND SCHEDULES
M-002	SPECIFICATIONS
M-003	DEMOLITION PLAN
M-004	REMODEL PLAN
M-005	DETAILS
<b>ELECTRICAL</b>	
E-001	ELECTRICAL PLANS



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2522 Arctic Boulevard, Suite 200  
Anchorage, AK 99503-2516 Phone (907) 276-0521 Fax (907) 276-1751

POA-2011-445  
Sheet 1 of 10

USER: Andrea FILE: X:\PROJECT FILES\077. ALASKA NATIVE TRIBAL HEALTH CONSORTIUM\077-20. DILLINGHAM HOSPITAL WTP PH1\MISCELLANEOUS\100% DRAWINGS\FINAL 2017 SUBMITTAL CAD\100% G-001\_P-001 2017.DWG PLOT DATE: 12/27/2017 9:05:54

1

2

3

4

**SITE PLAN**

EXISTING	PROPOSED THIS PROJECT

**LINETYPES AND HATCHING**

	BEDDING MATERIAL
	CONCRETE
	EMBANKMENT FILL
	NATURAL SOIL
	NON-FROST SUSCEPTIBLE BACKFILL
	POROUS FILL
	SELECT FILL
	STRUCTURAL FILL
	TOPSOIL AND SEED
	TRENCH BEDDING
	UNCLASSIFIED FILL
	GRAVEL SURFACING
	EROSION CONTROL ROCK
	GEOTEXTILE
	AREA OF SOIL CONTAMINATION

**DRAWING REFERENCE**

AFF	ABOVE FINISHED FLOOR
BBD	BELOW BOTTOM OF DECK
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BOT	BOTTOM
CL	CENTER LINE
ELEV	ELEVATION
FFL	FINISHED FLOOR LEVEL
HGT	HEIGHT
HORZ	HORIZONTAL
INV	INVERT
IE	INVERT ELEVATION
TFA	TO FLOOR ABOVE
TFB	TO FLOOR BELOW
TOD	TOP OF DUCT
TOP	TOP OF PIPE
OC	ON CENTER
VERT	VERTICAL
WTP	WATER TREATMENT PLANT
WST	WATER STORAGE TANK
WWTF	WATER TREATMENT FACILITY
NFS	NON-FROST-SUSCEPTIBLE
NRS	NON-RISING STEM

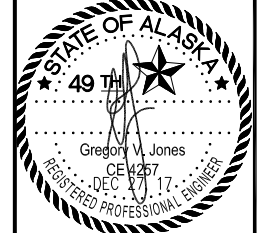
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	PHOTO REFERENCE EXAMPLE: PHOTO 3/PLAN M2.1
	SECTION/ELEVATION REFERENCE EXAMPLE: DRAWING 3/PLAN M2.1
	SHEET NOTES
	REVISION NO. X
	EQUIPMENT NOTES
	REFERENCE POINT ON SITE PLAN

- NOTES:**
- SEPARATION DISTANCES PER 18AAC72.020 SHALL BE MET.
  - IN ACCORDANCE WITH 18AAC72.040(B)(2) AND BASED ON AVAILABLE INFORMATION, THERE ARE NO KNOWN SERVICE CONNECTIONS WITH THIS PROJECT THAT DISCHARGE PETROLEUM PRODUCTS, OILS, INDUSTRIAL SOLVENTS OR OTHER SUBSTANCES DETRIMENTAL TO THE TREATMENT PROCESS OR OPERATION.
  - IN ACCORDANCE WITH 18AAC72.040(B)(1) AND BASED ON AVAILABLE INFORMATION, THERE ARE NO KNOWN SERVICE CONNECTIONS ASSOCIATED WITH THIS PROJECT THAT INCLUDE DISCHARGE FROM STORM DRAINS, GUTTER RUNOFF, OTHER NON-DOMESTIC WASTEWATER SOURCES SUCH AS CONSTRUCTION DE-WATERING OR STREET RUN-OFF.
  - ALL CONSTRUCTION SHALL BE DONE IN A SAFE MANNER, TO INDUSTRY STANDARDS, AND IN CONFORMANCE WITH APPLICABLE LOCAL, STATE, AND FEDERAL CODES AND REGULATIONS, INCLUDING THE UNIFORM PLUMBING CODE.
  - SITE RUNOFF SHALL BE CONTROLLED TO PREVENT SURFACE WATER SILTATION. SITE SHALL BE RETURNED TO PRECONSTRUCTION CONDITION OR BETTER, WITH SURFACE DRAINAGE DIRECTED AWAY FROM FACILITIES. CONSTRUCTION DEBRIS SHALL BE REMOVED FROM THE AREA AND DISPOSED OF PROPERLY.
  - SIDEWALLS OF TRENCHES AND EXCAVATIONS SHALL BE SLOPED OR SUFFICIENTLY BRACED IN CONFORMANCE WITH SECTION 05.160 OF THE STATE OF ALASKA DEPARTMENT OF LABOR STANDARDS AND THE FEDERAL OSHA EXCAVATION AND TRENCHING STANDARDS TO PROVIDE A SAFE WORKING ENVIRONMENT.

**NOTES**

- CIVIL**
- MINIMUM VERTICAL SEPARATION BETWEEN WATER LINE AND SEWER LINE AT THEIR CROSSING POINT SHALL BE 18 INCHES.
  - MINIMUM HORIZONTAL SEPARATION BETWEEN WATER LINE AND SEWER LINE SHALL BE 10 FEET.
  - MINIMUM BURY ON WATER LINES SHALL BE 8 FEET.
  - LOCATION OF ALL WELLS, SEPTIC TANKS, MANHOLES, CLEANOUTS, VALVES, ETC. SHALL BE REFERENCED TO THREE PERMANENT ABOVE GROUND STRUCTURES.
  - VERTICAL DATUM IS MEAN SEA LEVEL
  - CONSTRUCTION SHALL BE IN COMPLIANCE WITH THE 2009 EDITION OF THE INTERNATIONAL BUILDING CODE, THE 2006 NATIONAL ELECTRICAL CODE THE 2009 INTERNATIONAL MECHANICAL CODE.
  - TANK CONSTRUCTION SHALL BE IN COMPLIANCE AWWA D-103-09

**BRISTOL BAY AREA HEALTH CORPORATION**  
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**KANAKANAK, ALASKA WATER TREATMENT PLANT FACILITIES UPGRADES PROJECT - PHASE I CONSTRUCTION**

MARK	DATE	DESCRIPTION

PLAN SET: 1
DATE: 12-27-17
DRAWN BY: DHS
CHECKED BY: GVJ
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PROJ ENG: DHS
TUS ENG:
FILE: 100% G-001_P-001 2017
LAYOUT: G-001 GENLEG
SHEET TITLE

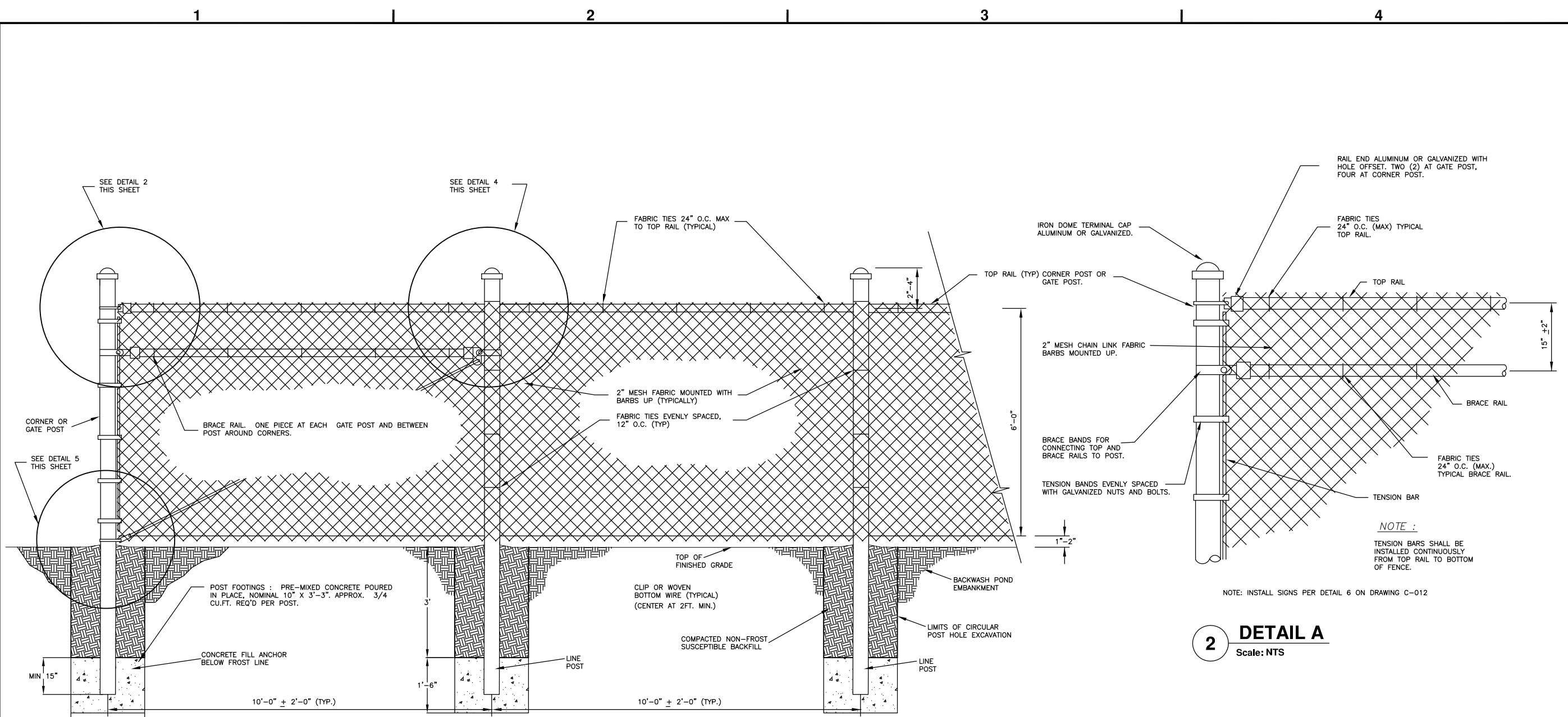
**GENERAL LEGEND**

**G-001**  
 SHEET 2 OF 25

POA-2011-445  
 Sheet 2 of 10

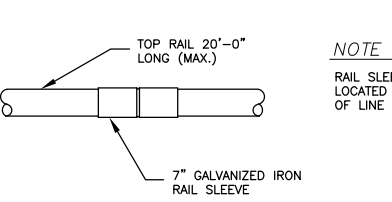


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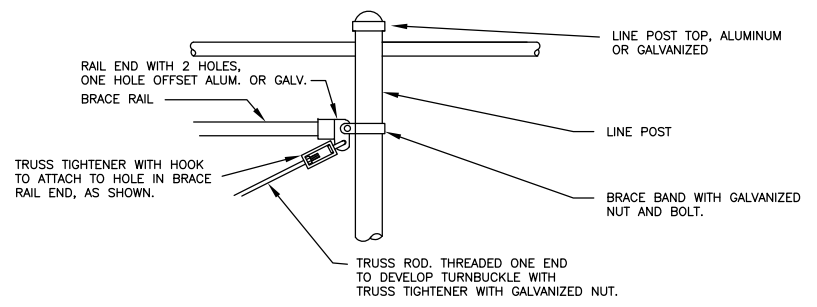


**1 CORNER AND LINE POST DETAIL**  
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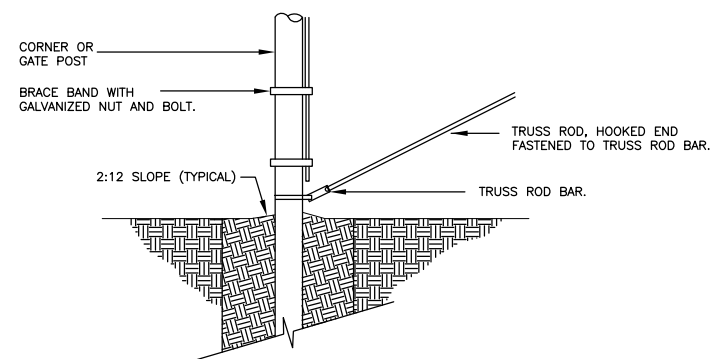
**2 DETAIL A**  
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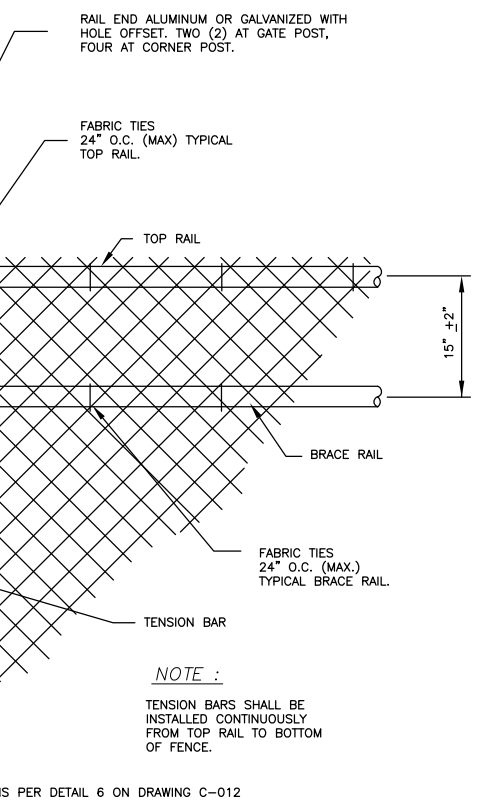
**3 TOP ROD DETAIL**  
Scale: NTS



**4 DETAIL C**  
Scale: NTS



**5 DETAIL B**  
Scale: NTS



POA-2011-445  
Sheet 3 of 10



**BRISTOL BAY AREA HEALTH CORPORATION**  
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 (907) 842-5201

**KANAKANAK, ALASKA WATER TREATMENT PLANT FACILITIES UPGRADES PROJECT - PHASE I CONSTRUCTION**

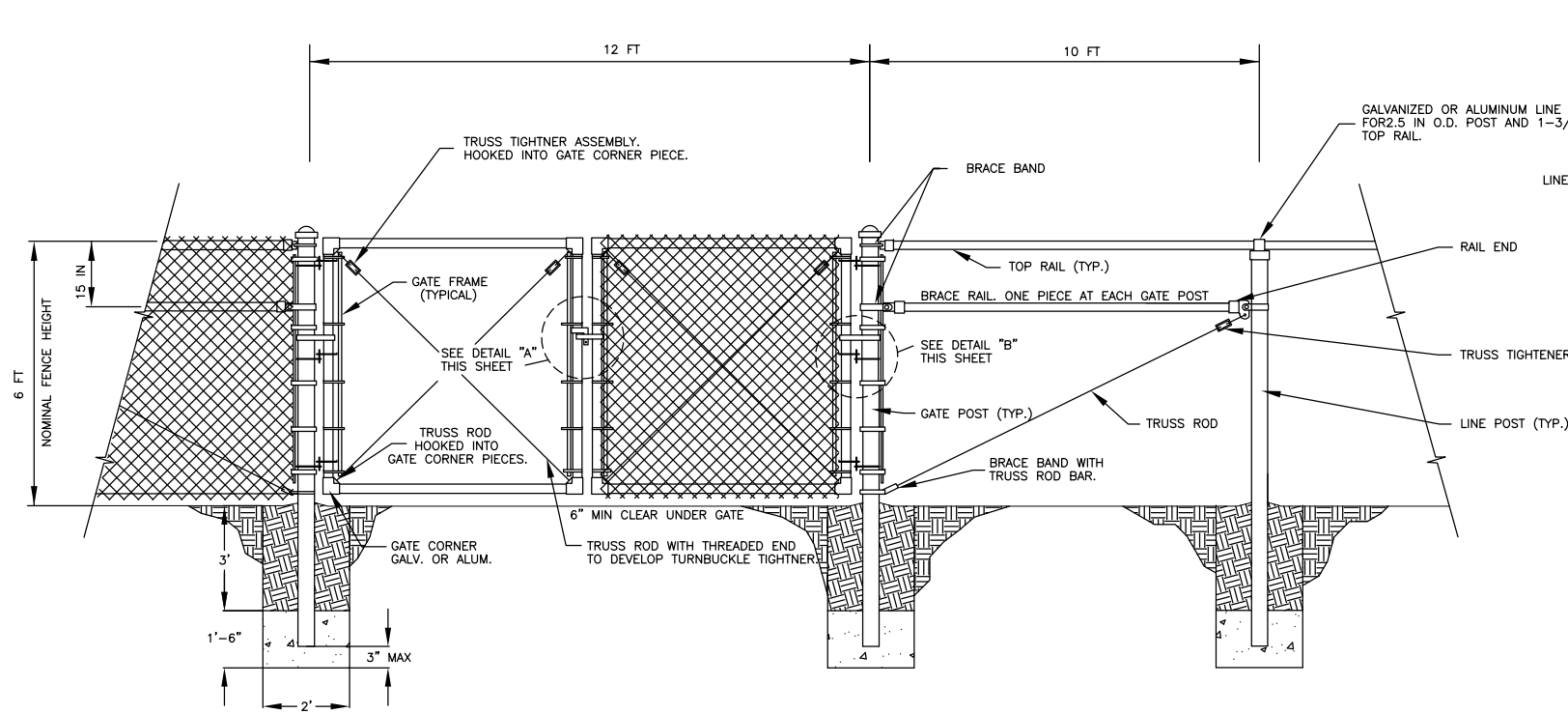
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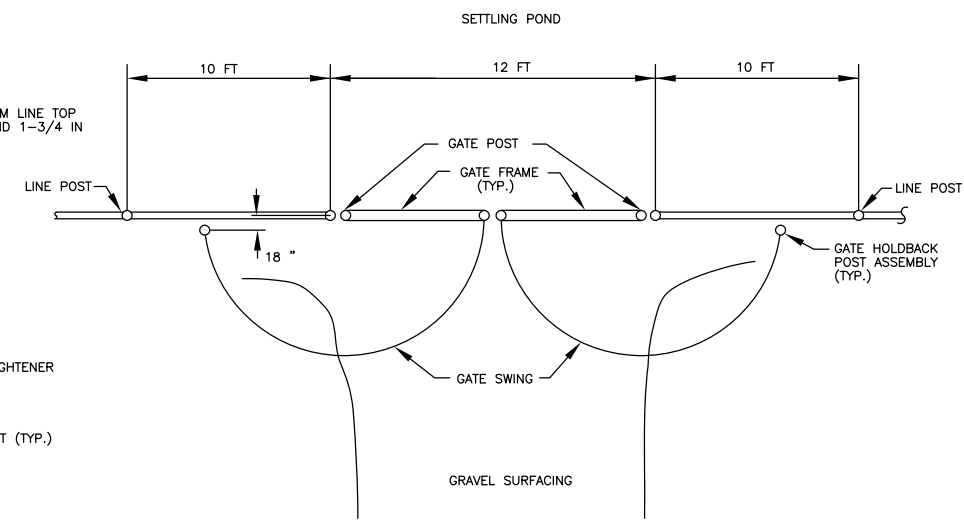
**FENCE DETAILS**

**C-011**  
 SHEET 15 OF 25

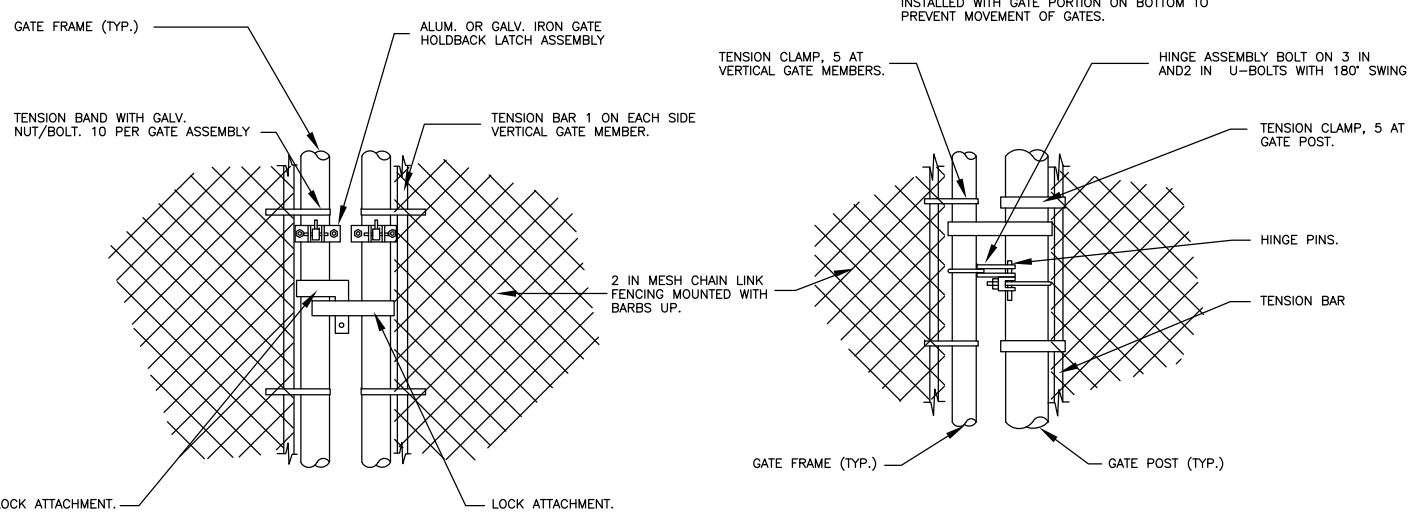
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**1 GATE INSTALLATION DETAIL**  
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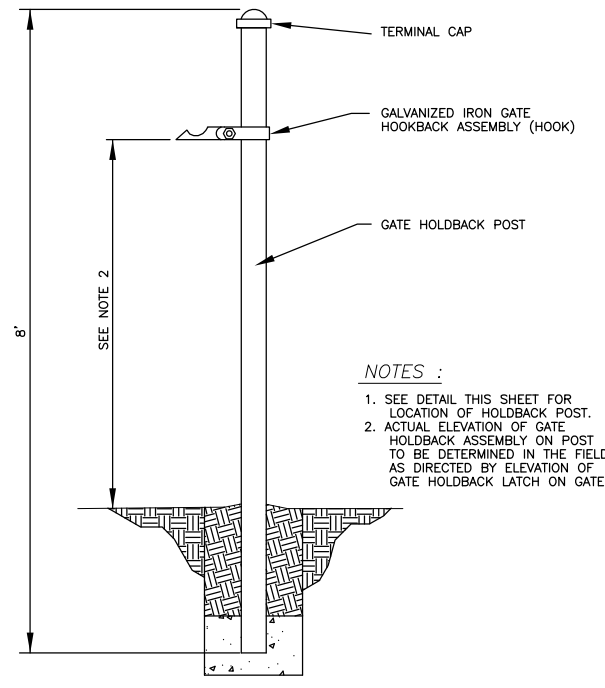
**2 POST LOCATIONS AT GATE**  
Scale: NTS



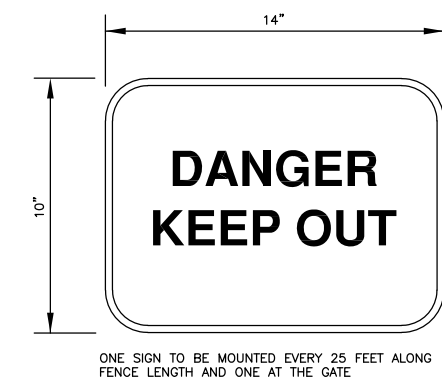
**3 DETAIL A**  
Scale: NTS

**4 DETAIL B**  
Scale: NTS

**NOTE :**  
THERE SHALL BE THREE (3) HINGES INSTALLED PER GATE. THE TOP TWO (2) SHALL BE INSTALLED WITH HINGE PINS SUPPORTING GATE. (GATE PORTION OF HINGE ON TOP.) THE LOWEST HINGE SHALL BE INSTALLED WITH GATE PORTION ON BOTTOM TO PREVENT MOVEMENT OF GATES.



**5 GATE HOLDBACK DETAILS**  
Scale: NTS



**6 FENCE SIGN DETAIL**  
Scale: NTS

**BRISTOL BAY AREA HEALTH CORPORATION**  
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**KANAKANAK, ALASKA WATER TREATMENT PLANT FACILITIES UPGRADES PROJECT - PHASE I CONSTRUCTION**

MARK	DATE	DESCRIPTION

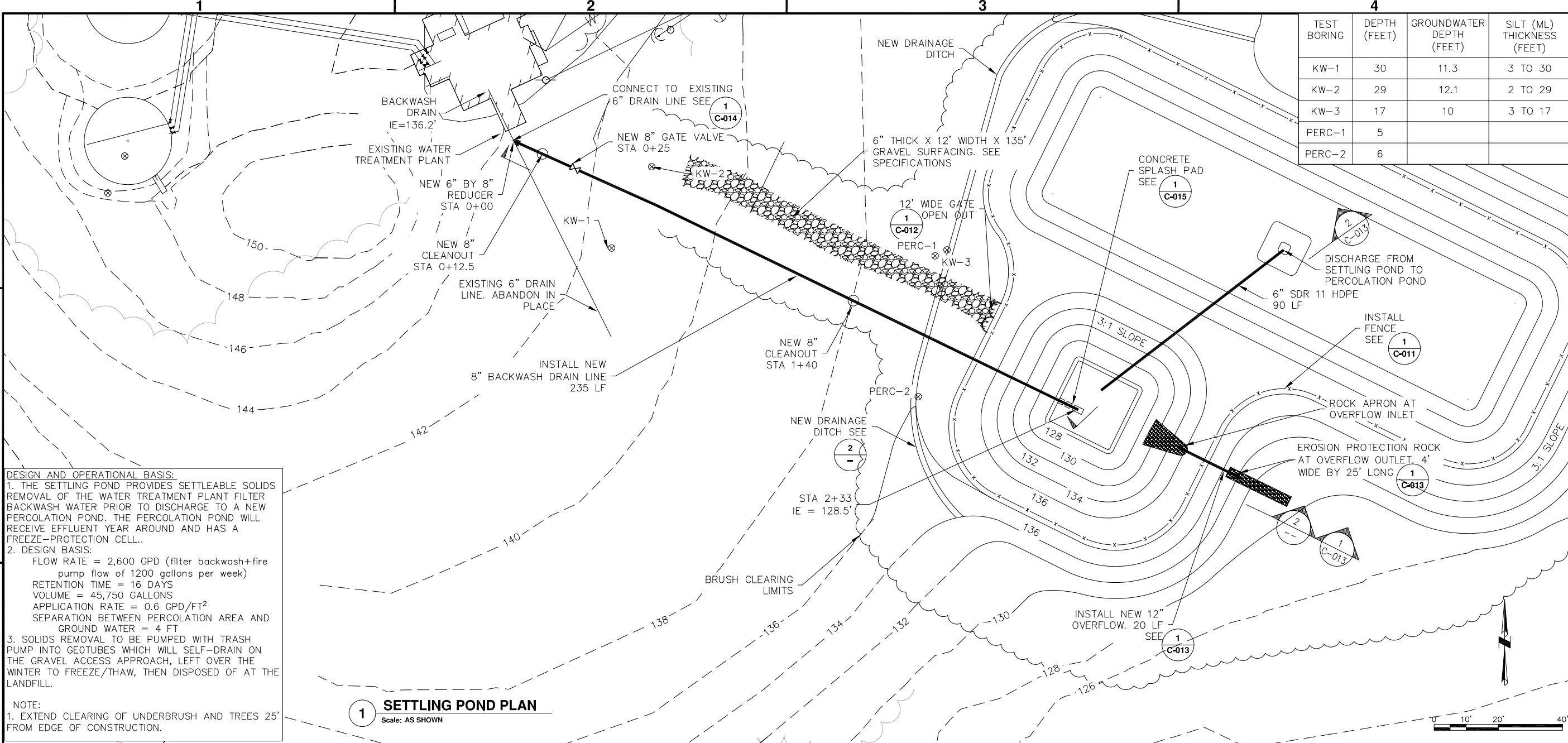
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SHEET TITLE

GATE DETAILS

**C-012**  
SHEET **16** OF **25**

POA-2011-445  
Sheet 4 of 10



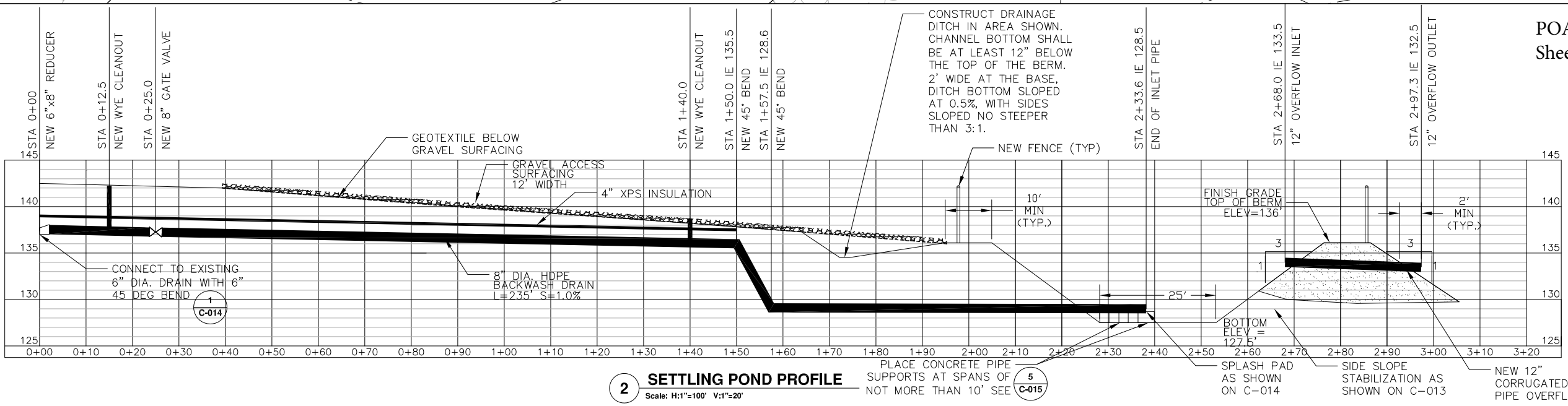


TEST BORING	DEPTH (FEET)	GROUNDWATER DEPTH (FEET)	SILT (ML) THICKNESS (FEET)
KW-1	30	11.3	3 TO 30
KW-2	29	12.1	2 TO 29
KW-3	17	10	3 TO 17
PERC-1	5		
PERC-2	6		

**DESIGN AND OPERATIONAL BASIS:**  
 1. THE SETTLING POND PROVIDES SETTLEABLE SOLIDS REMOVAL OF THE WATER TREATMENT PLANT FILTER BACKWASH WATER PRIOR TO DISCHARGE TO A NEW PERCOLATION POND. THE PERCOLATION POND WILL RECEIVE EFFLUENT YEAR AROUND AND HAS A FREEZE-PROTECTION CELL.  
 2. DESIGN BASIS:  
 FLOW RATE = 2,600 GPD (filter backwash+fire pump flow of 1200 gallons per week)  
 RETENTION TIME = 16 DAYS  
 VOLUME = 45,750 GALLONS  
 APPLICATION RATE = 0.6 GPD/FT<sup>2</sup>  
 SEPARATION BETWEEN PERCOLATION AREA AND GROUND WATER = 4 FT  
 3. SOLIDS REMOVAL TO BE PUMPED WITH TRASH PUMP INTO GEOTUBES WHICH WILL SELF-DRAIN ON THE GRAVEL ACCESS APPROACH, LEFT OVER THE WINTER TO FREEZE/THAW, THEN DISPOSED OF AT THE LANDFILL.

**NOTE:**  
 1. EXTEND CLEARING OF UNDERBRUSH AND TREES 25' FROM EDGE OF CONSTRUCTION.

**1** **SETTLING POND PLAN**  
 Scale: AS SHOWN



**2** **SETTLING POND PROFILE**  
 Scale: H:1"=100' V:1"=20'

POA-2011-445  
 Sheet 5 of 10

**BRISTOL BAY AREA HEALTH CORPORATION**  
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 DILLINGHAM, ALASKA 99576  
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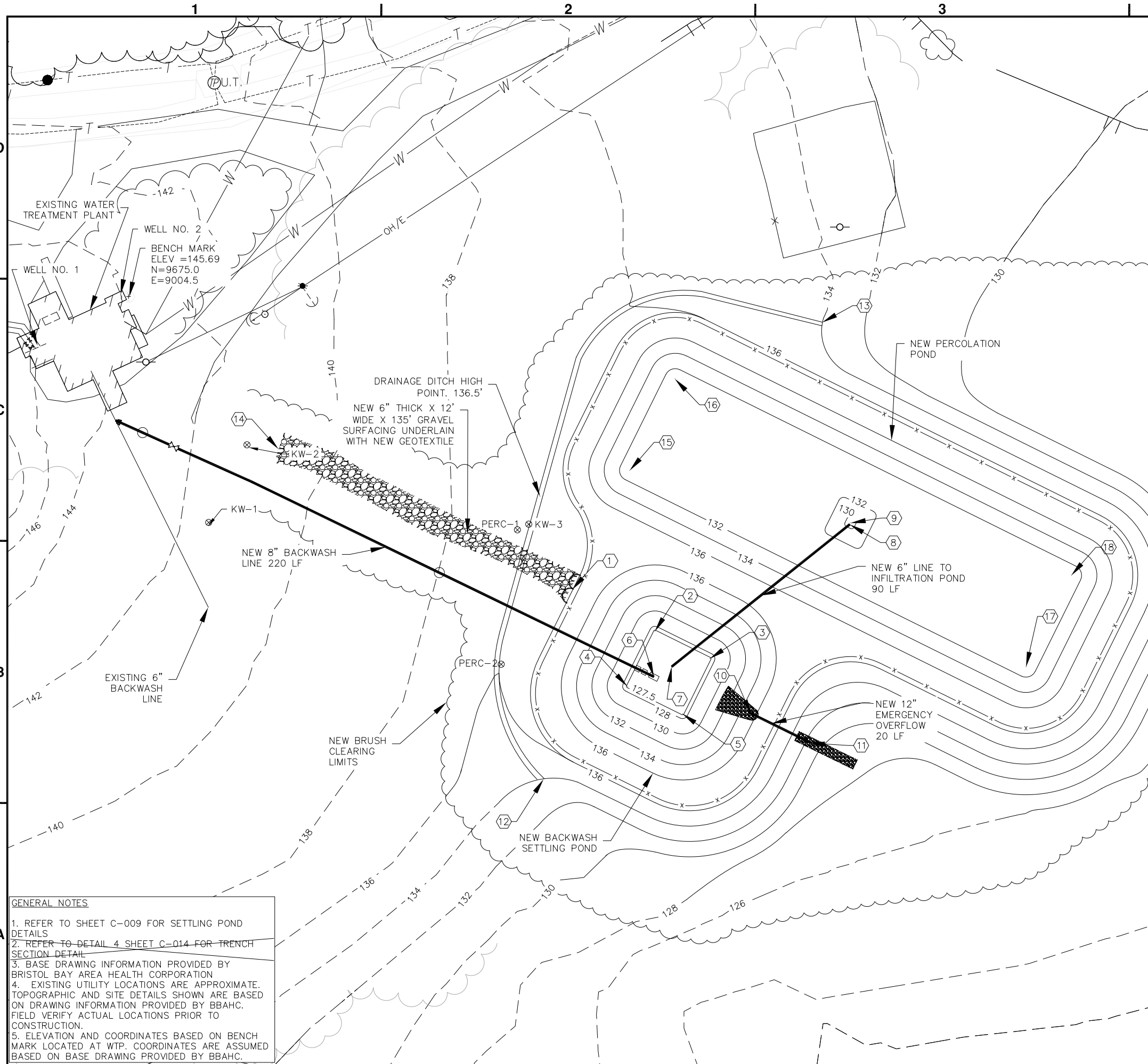
**KANAKANAK, ALASKA WATER TREATMENT PLANT FACILITIES UPGRADES PROJECT - PHASE I CONSTRUCTION**

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 TUS ENG: NA  
 FILE: 100% C001\_C009 NOV 2017  
 LAYOUT: C-009 PLAN\_PROFILE  
 SHEET TITLE

**SETTLING POND PLAN & PROFILE**

USER: Andrea FILE: X:\PROJECT FILES\077- ALASKA NATIVE TRIBAL HEALTH CONSORTIUM\077-20. DILLINGHAM HOSPITAL WTP PH1\MISCELLANEOUS\100% DRAWINGS\FINAL 2017 SUBMITTAL CAD\TWO LAGOONS CAD\100% C001\_C009 NOV 2017.DWG PLOT DAT



LOCATION	NAME	NORTHING, EASTING	DISTANCE TO BENCHMARK (FEET)
①	CENTER OF GATE	9561, 9178	208
②	CENTER OF RADIUS FOR NORTH CORNER LAGOON TOE CURVATURE	9544, 9210	237
③	CENTER OF RADIUS FOR EAST CORNER LAGOON TOE CURVATURE	9533, 9232	273
④	CENTER OF RADIUS FOR SOUTH CORNER LAGOON TOE CURVATURE	9523, 9200	243
⑤	CENTER OF RADIUS FOR WEST CORNER LAGOON TOE CURVATURE	9512, 9221	278
⑥	8" BACKWASH DRAIN - END OF PIPE	9526, 9210	254
⑦	6" SETTLING POND DISCHARGE INLET	9534, 9219	285
⑧	6" SETTLING POND DISCHARGE OUTLET	9586, 9287	321
⑨	CENTER OF FREEZE PROTECTION CELL	9586, 9287	323
⑩	12" POND OVERFLOW PIPE INLET	9512, 9248	293
⑪	12" POND OVERFLOW PIPE OUTLET	9501, 9271	319
⑫	SOUTH END OF DRAINAGE DITCH	9486, 9167	164
⑬	NORTH END OF DRAINAGE DITCH	9663, 9276	226
⑭	NORTHWEST END OF GRAVEL SURFACE	9616, 9063	84
⑮	CENTER OF RADIUS FOR WEST CORNER PERCOLATION CELL TOE CURVATURE	9607, 9200	246
⑯	CENTER OF RADIUS FOR NORTH CORNER PERCOLATION CELL TOE CURVATURE	9643, 9218	254
⑰	CENTER OF RADIUS FOR SOUTH CORNER PERCOLATION CELL TOE CURVATURE	9530, 9355	402
⑱	CENTER OF RADIUS FOR EAST CORNER PERCOLATION CELL TOE CURVATURE	9566, 9373	408

**GENERAL NOTES**

- REFER TO SHEET C-009 FOR SETTLING POND DETAILS
- REFER TO DETAIL 4 SHEET C-014 FOR TRENCH SECTION DETAIL
- BASE DRAWING INFORMATION PROVIDED BY BRISTOL BAY AREA HEALTH CORPORATION
- EXISTING UTILITY LOCATIONS ARE APPROXIMATE. TOPOGRAPHIC AND SITE DETAILS SHOWN ARE BASED ON DRAWING INFORMATION PROVIDED BY BBAHC. FIELD VERIFY ACTUAL LOCATIONS PRIOR TO CONSTRUCTION.
- ELEVATION AND COORDINATES BASED ON BENCH MARK LOCATED AT WTP. COORDINATES ARE ASSUMED BASED ON BASE DRAWING PROVIDED BY BBAHC.

**BRISTOL BAY AREA HEALTH CORPORATION**  
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**KANAKANAK, ALASKA  
 WATER TREATMENT PLANT  
 FACILITIES UPGRADES  
 PROJECT - PHASE I  
 CONSTRUCTION**

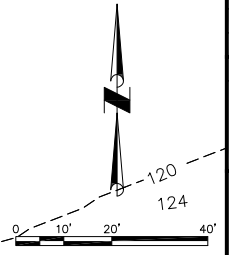
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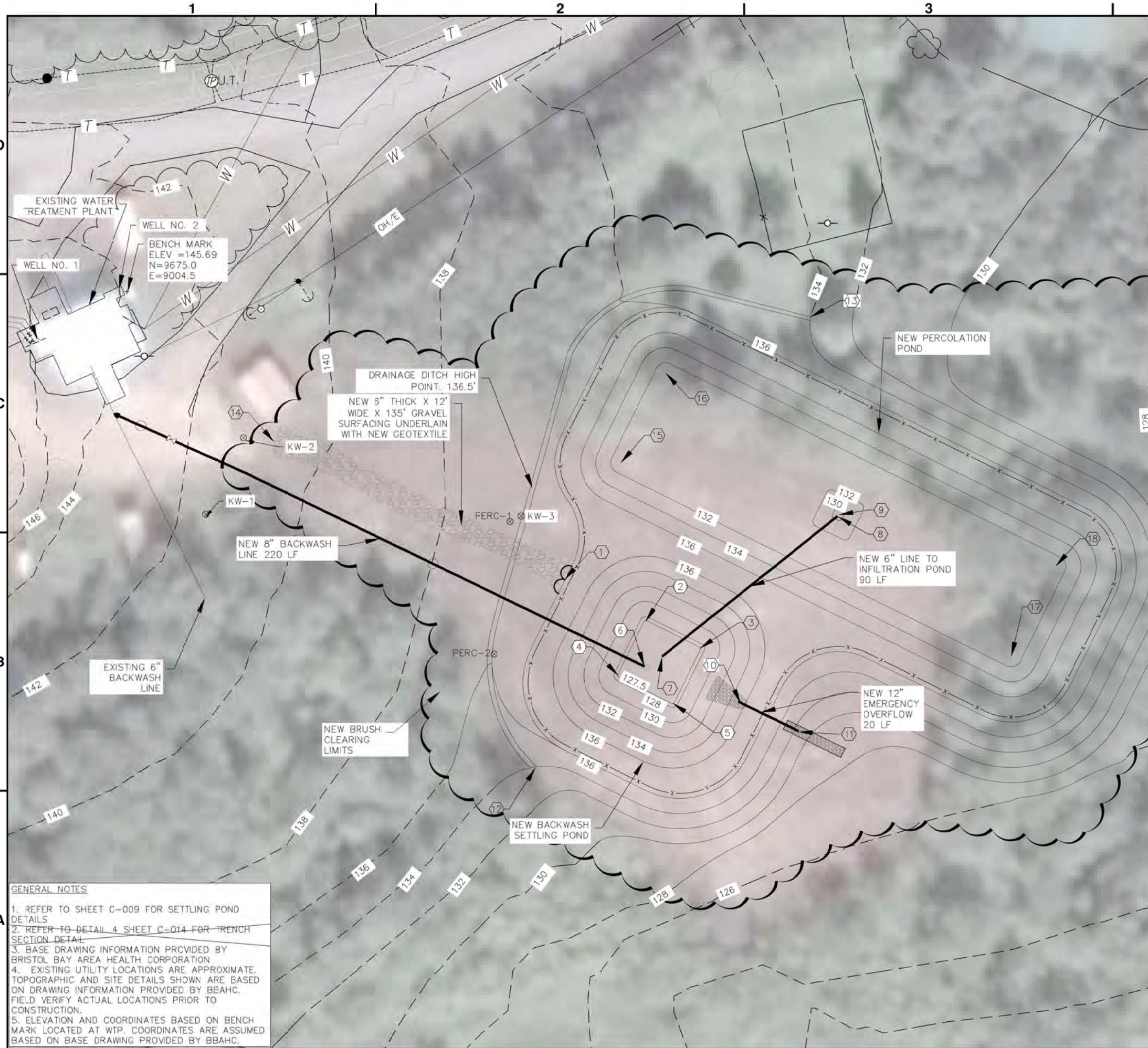
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 LAYOUT: C-001 SITE PLAN  
 SHEET TITLE

**SITE PLAN**

**POA-2011-445  
 Sheet 6 of 10**

**C-001  
 SHEET 5 OF 25**





LOCATION	NAME	NORTHING, EASTING	DISTANCE TO BENCHMARK (FEET)
①	CENTER OF GATE	9561, 9178	208
②	CENTER OF RADIUS FOR NORTH CORNER LAGOON TOE CURVATURE	9544, 9210	237
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**BRISTOL BAY AREA HEALTH CORPORATION**



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(907) 842-5201



**KANAKANAK, ALASKA WATER TREATMENT PLANT FACILITIES UPGRADES PROJECT - PHASE I CONSTRUCTION**

MARK	DATE	DESCRIPTION

PLAN SET: 1  
 DATE: 12/27/17  
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 CHECKED BY: GVJ  
 PROJ MGR: GVJ  
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 LAYOUT: C-001 SITE PLAN  
 SHEET TITLE

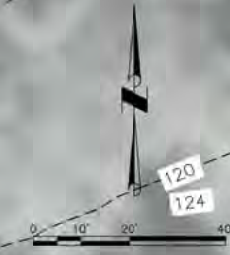
**SITE PLAN**

**C-001**

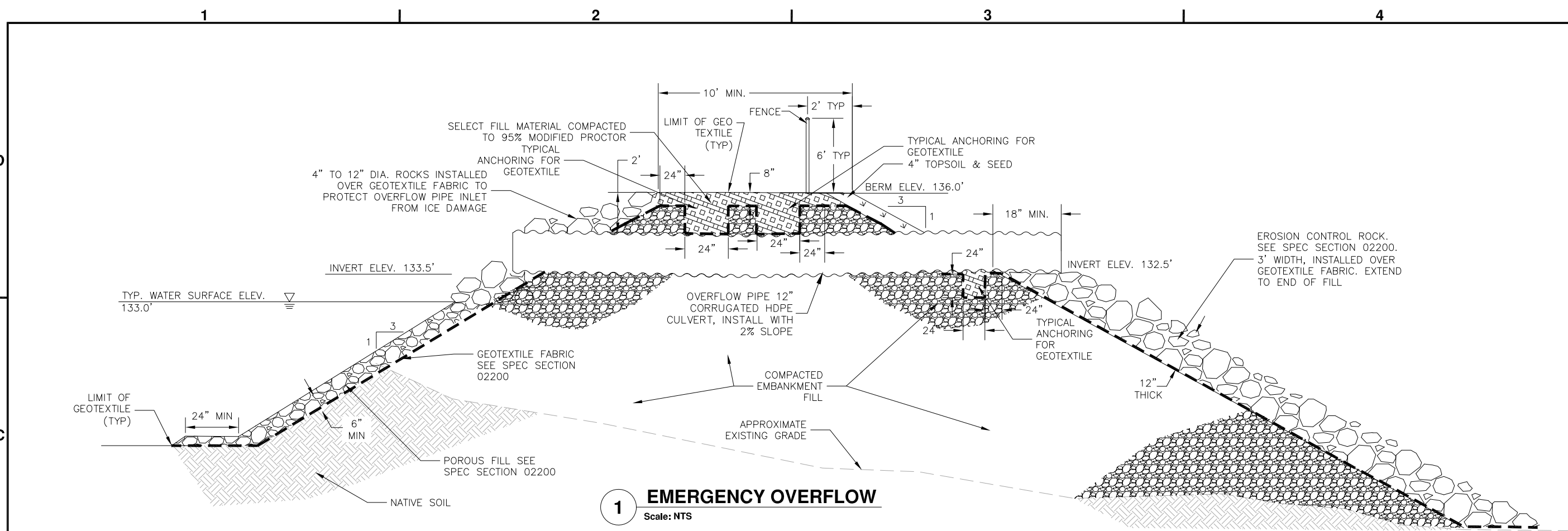
SHEET **5** OF **25**

**GENERAL NOTES**

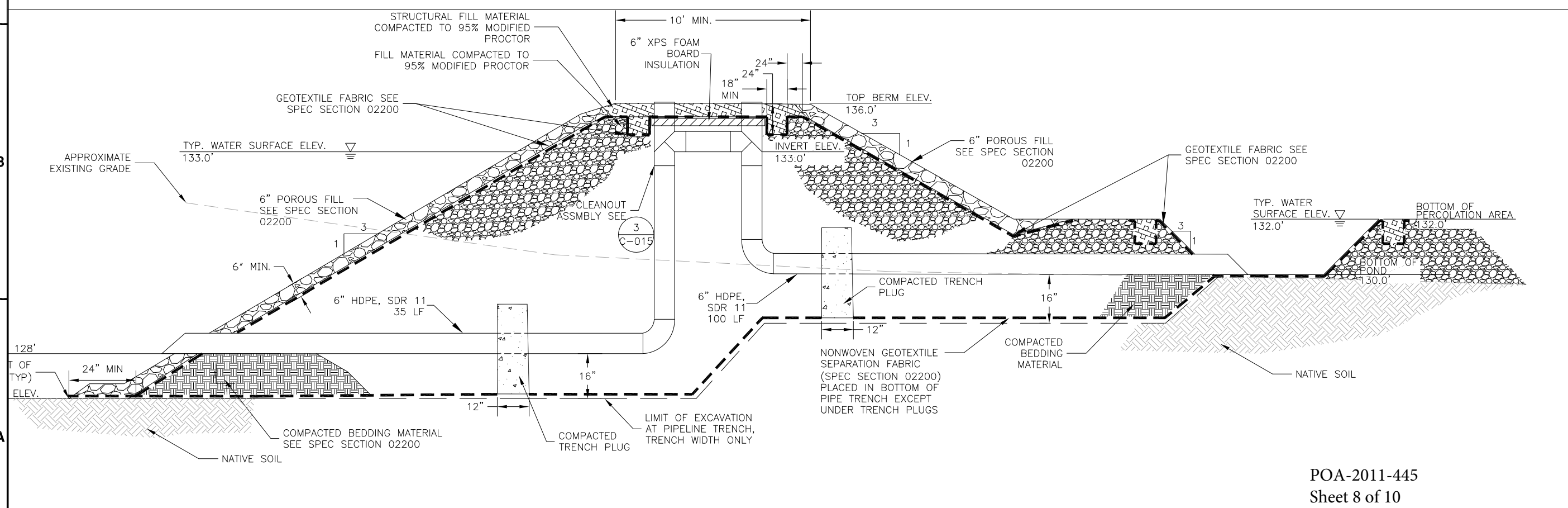
- REFER TO SHEET C-009 FOR SETTLING POND DETAILS
- REFER TO DETAIL 4 SHEET C-014 FOR TRENCH SECTION DETAIL
- BASE DRAWING INFORMATION PROVIDED BY BRISTOL BAY AREA HEALTH CORPORATION
- EXISTING UTILITY LOCATIONS ARE APPROXIMATE. TOPOGRAPHIC AND SITE DETAILS SHOWN ARE BASED ON DRAWING INFORMATION PROVIDED BY BBAHC. FIELD VERIFY ACTUAL LOCATIONS PRIOR TO CONSTRUCTION.
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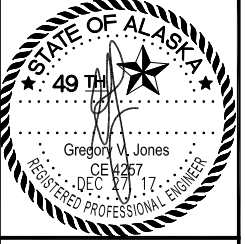


**1 EMERGENCY OVERFLOW**  
Scale: NTS



**2 SETTLING POND DISCHARGE PIPING TO PERCOLATION POND**  
Scale: NTS

**BRISTOL BAY AREA HEALTH CORPORATION**  
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**KANAKANAK, ALASKA WATER TREATMENT PLANT FACILITIES UPGRADES PROJECT - PHASE I CONSTRUCTION**

MARK	DATE	DESCRIPTION

PLAN SET: 1  
 DATE: 12/27/17  
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 CHECKED BY: GVJ  
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 PROJ ENG: GVJ  
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 FILE: 100% C-013\_C-015 NOV 2017  
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 SHEET TITLE

**SETTLING POND DETAILS**

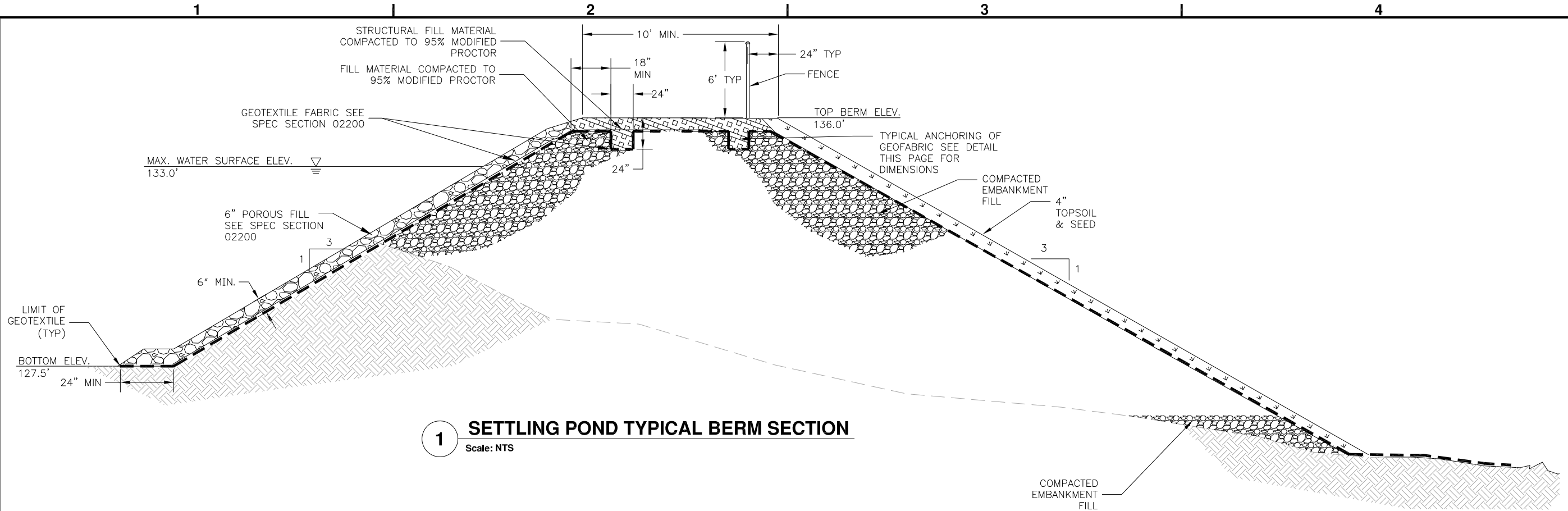
**C-013**  
 SHEET 16 OF 25

POA-2011-445  
 Sheet 8 of 10

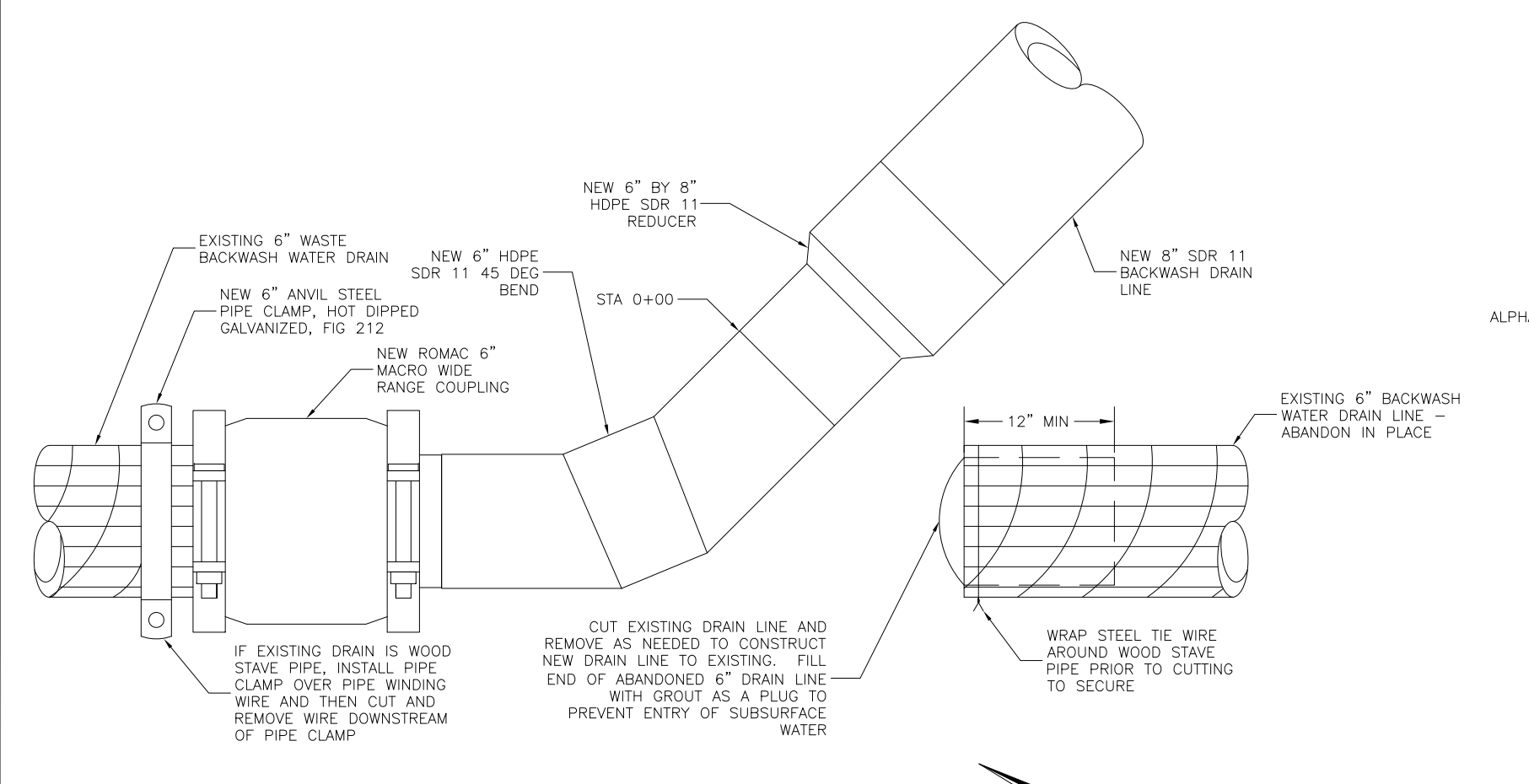




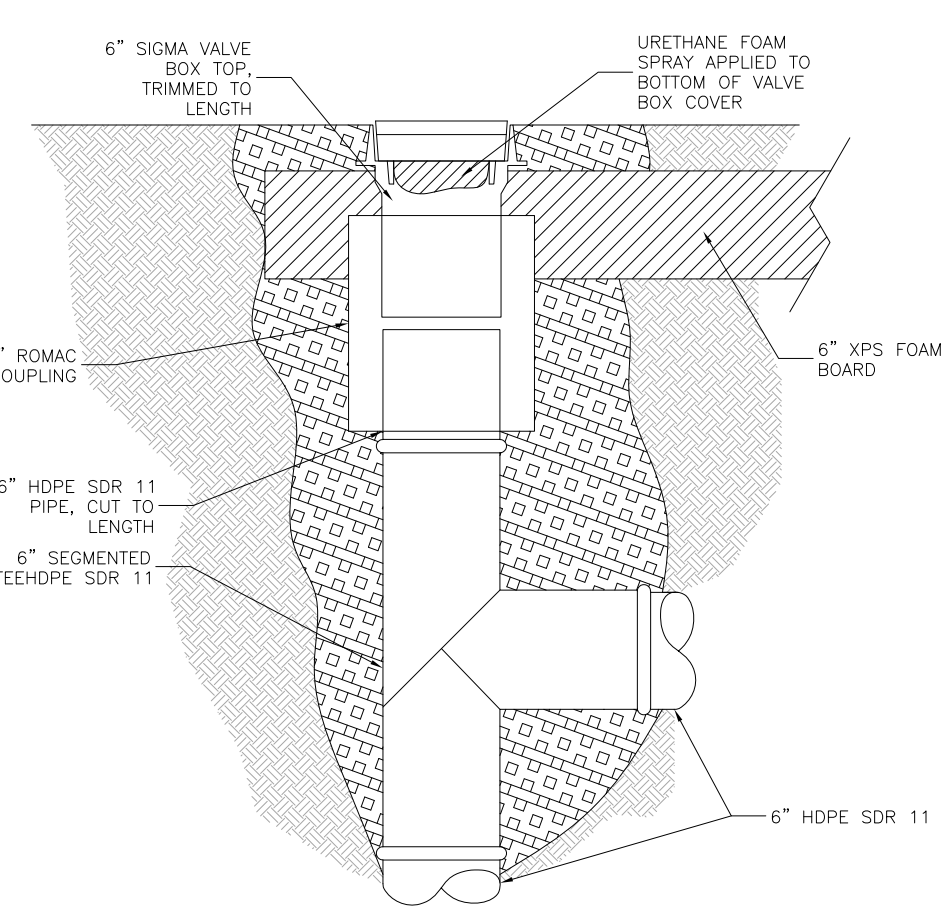
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 PLOT D:



**1 SETTLING POND TYPICAL BERM SECTION**  
 Scale: NTS


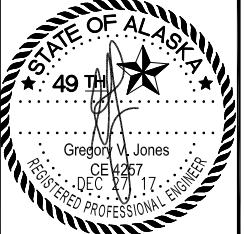


**2 WOOD STAVE PIPE TO HDPE PIPE CONNECTION**  
 Scale: NTS



**3 DISCHARGE PIPE CLEANOUT DETAIL**  
 Scale: NTS

**BRISTOL BAY AREA HEALTH CORPORATION**  
 PO BOX 130  
 DILLINGHAM, ALASKA 99576  
 (907) 842-5201

**KANAKANAK, ALASKA WATER TREATMENT PLANT FACILITIES UPGRADES PROJECT - PHASE I CONSTRUCTION**

MARK	DATE	DESCRIPTION

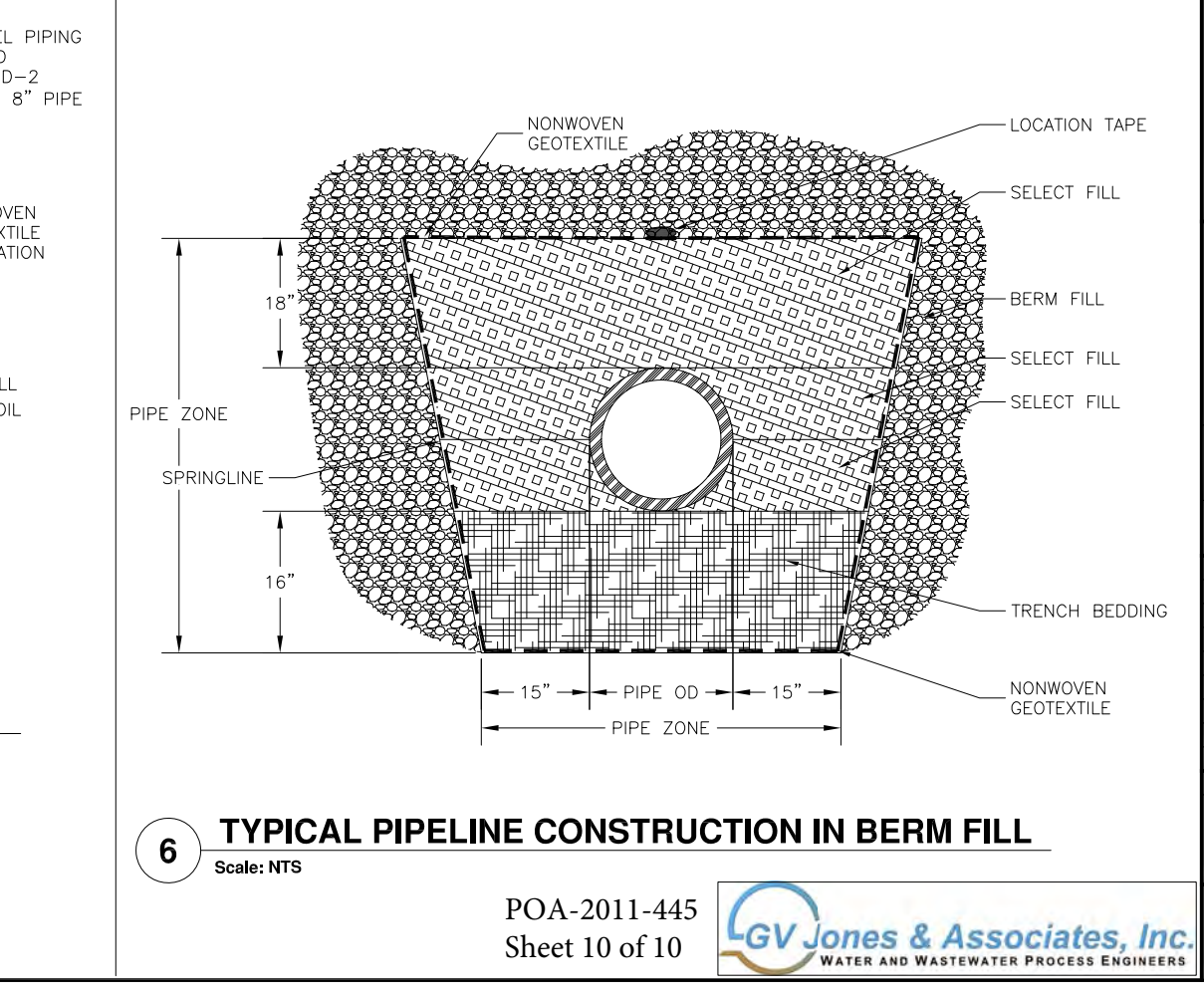
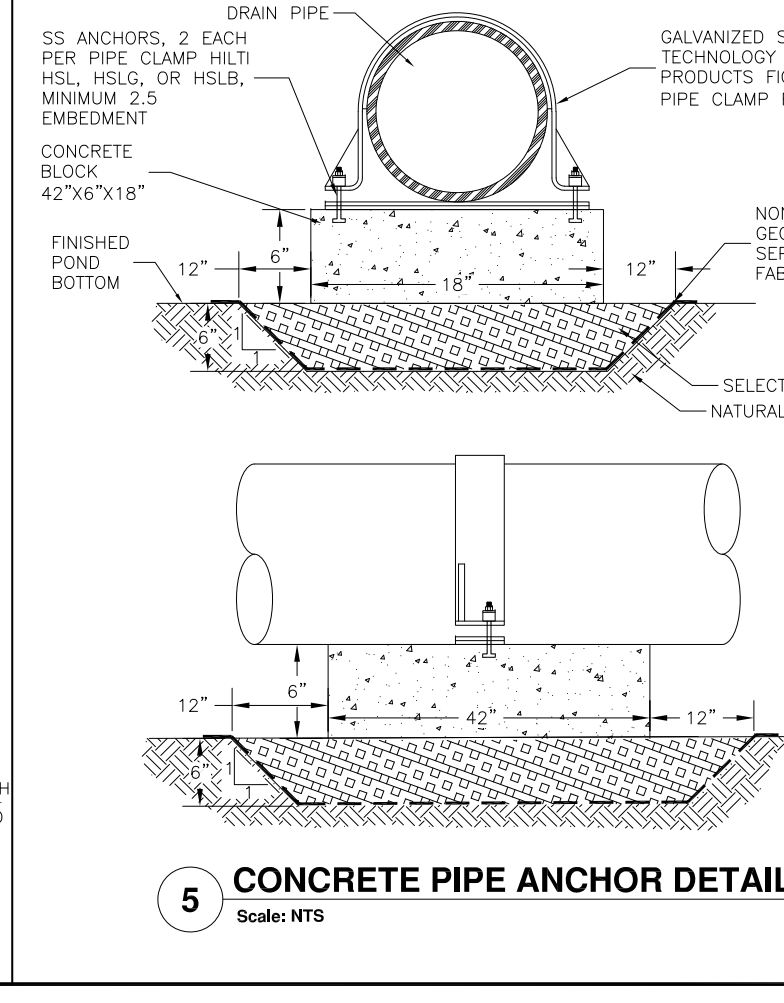
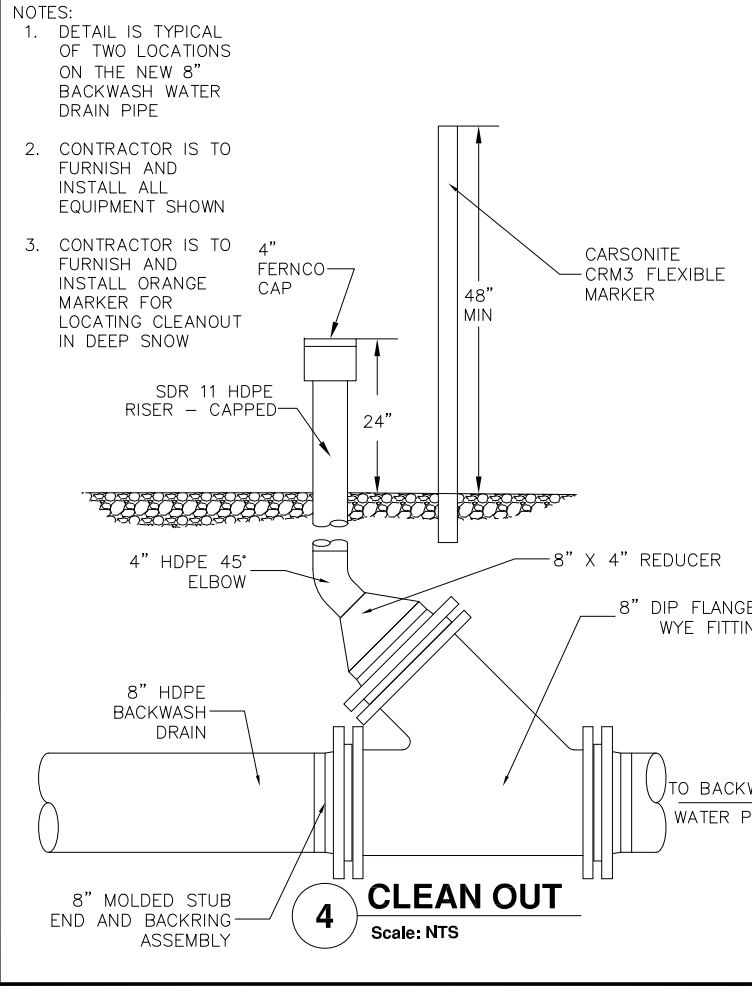
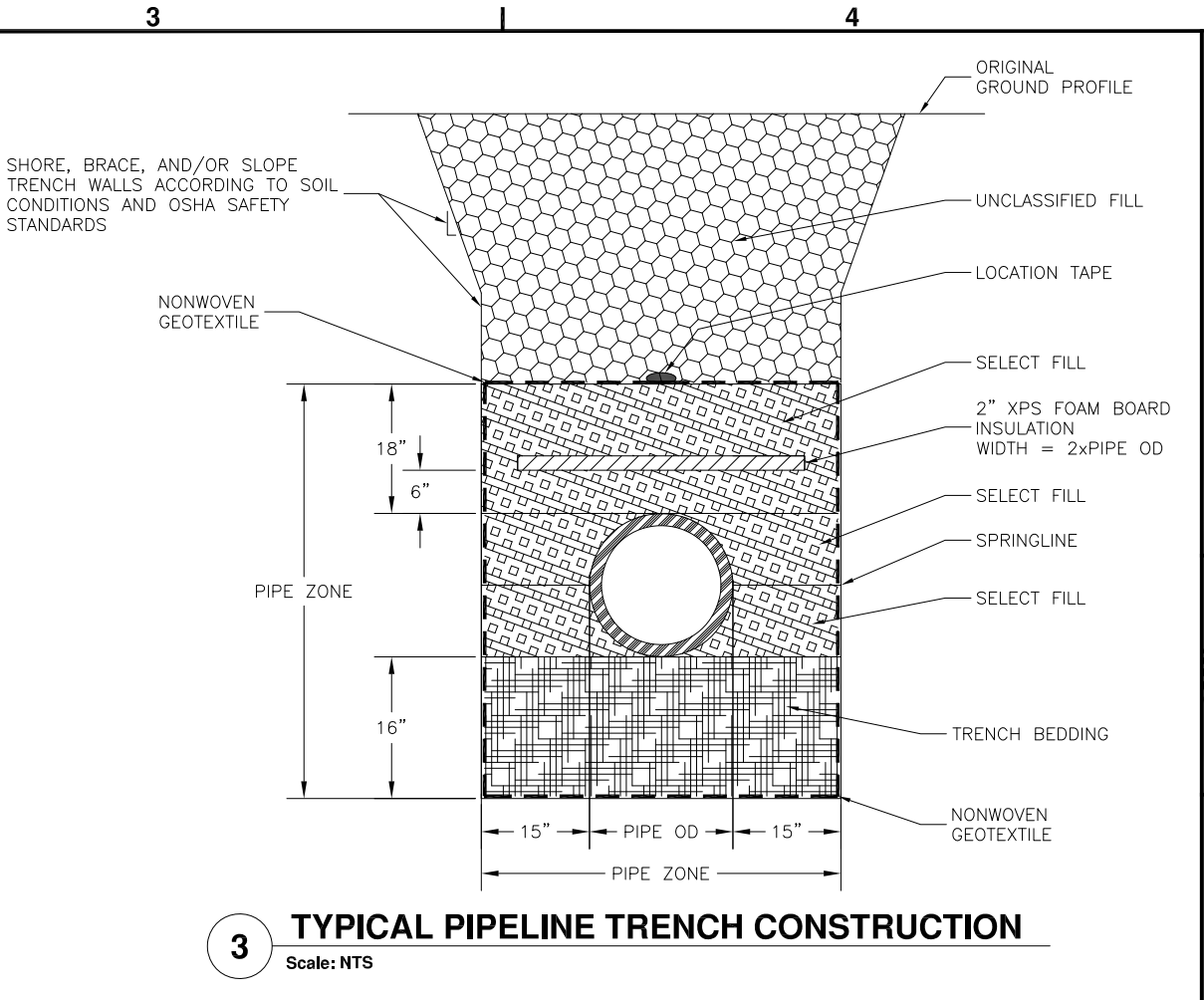
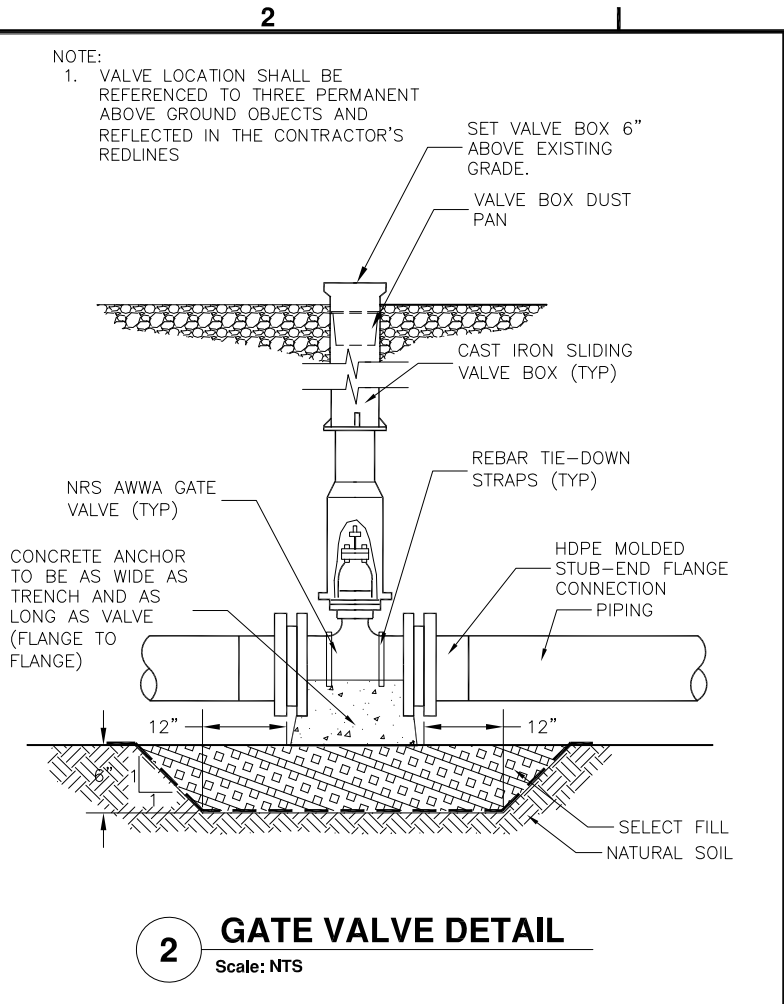
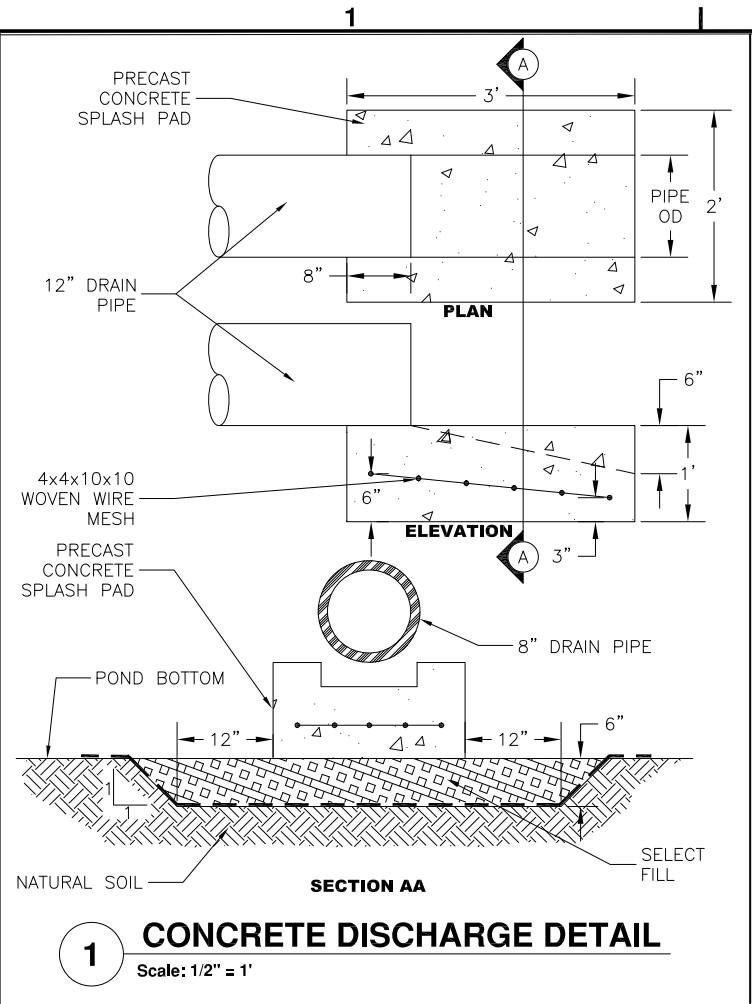
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 SHEET TITLE:

**DETAILS**

**C-014**

SHEET **17** OF **25**

USER: Andrea  
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 PLOT D



**BRISTOL BAY AREA HEALTH CORPORATION**  
PO BOX 130  
DILLINGHAM, ALASKA 99576  
(907) 842-5201

**STATE OF ALASKA**  
49th  
Gregory V. Jones  
CE 1257  
DEC 27, 2017  
REGISTERED PROFESSIONAL ENGINEER

**KANAKANAK, ALASKA WATER TREATMENT PLANT FACILITIES UPGRADES PROJECT - PHASE I CONSTRUCTION**

MARK	DATE	DESCRIPTION

PLAN SET: 1  
DATE: 12/27/17  
DRAWN BY: ANA  
CHECKED BY: GVJ  
PROJ MGR: GVJ  
PROJ ENG: GVJ  
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FILE: 100% C-013\_C-015 NOV 2017  
LAYOUT: C-014 DETAILS  
SHEET TITLE

**MISC DETAILS**

**C-015**  
SHEET 18 OF 25