

## **ADDENDUM No. 3 TO THE CONTRACT DOCUMENTS**

**Project:** City of Unalaska Lake & River Restoration Projects

**Addendum Issue Date:** December 22, 2015

**Issued for Bid Date:** November 13, 2015

**Bid Due Date:** January 6, 2016, 2:00pm (AK)

**Previous Addenda Issued:** Addendum #1-2

**Issued By:** Alexandra West  
PND Engineers, Inc.  
1506 West 36<sup>th</sup> Avenue  
Anchorage, Alaska 99503

---

### **Notice to Bidders:**

Bidders must acknowledge receipt of this addendum prior to the date set for bid opening by one of the following methods:

- (1) By acknowledging receipt of this addendum on the bid submitted.
- (2) By fax which includes a reference to the project and addendum number.

The bid documents require acknowledgment individually of all addenda to the drawings and/or specifications. This is a mandatory requirement and any bid received without acknowledgment of receipt of addenda may be classified as not being a responsive bid. If, by virtue of this addendum it is desired to modify a bid already submitted, such modification may be made by fax provided such a fax makes reference to this addendum and is received prior to the opening date specified above.

---

The contract Documents for the above project are amended as follows (all other terms and conditions remain unchanged):

### **ITEM 1**

Contract: *City of Unalaska Lake & River Restoration Projects*  
Section: *Part 3 – General Conditions: Supplementary Conditions*

Add NEPA discussion (below) into Supplemental Condition language below the “Clean Air and Water Acts” and above “Endangered Species Acts”:

**NEPA.** National Environmental Policy Act of 1969 (42 U.S.C. 4321-4347) provides a national policy that encourages "productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man . . ." Requires that every proposed Federal action be examined to determine the effects (beneficial or adverse) it will have on the human environment and that the findings be considered in decisions regarding its implementation, Each action proposed for Federal funding must include an Environmental Assessment (EA), Environmental Impact Statement (EIS), or show that the proposed activity is covered by one or more categorical exclusions.

United States Department of the Interior Departmental Manual 516 DM 8.5 Categorical Exclusions B. Resource Management (3) The construction of new, or the addition of, small structures or improvements, including structures and improvements for the restoration of wetland, riparian, in-stream, or native habitats, which result in no or only minor changes in the use of the affected local area. The following are examples of activities that may be included.

- a) The installation of fences.
- b) The construction of small water control structures.
- c) The planting of seeds or seedlings and other minor revegetation actions.
- d) The construction of small berms or dikes.
- e) The development of limited access for routine maintenance and management purposes.

**ITEM 2**

Contract: *City of Unalaska Lake & River Restoration Projects*

Section: Part 9 – Project Permits

Add attached permits to Part 9.

- Unalaska-Steward Road & Overland Drive-Non Domestic Wastewater Collection System-Conditional Approval to Construct-ADEC Plan Tracking Number 15 WW 322
- Unalaska Lake Restoration Projects Storm Water Project No. 16-WW-322-005
- Fish Habitat Permit FH 15-II-0175

**ITEM 3**

Contract: *City of Unalaska Lake & River Restoration Projects*

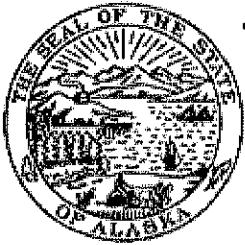
Section: Part 5 - Drawings

Replace previously issued project drawings with those attached. This includes sheet numbers 1, 4, 6-18

**END OF ADDENDUM**

Future addenda are planned and will address, though not be limited, to the following items (for information only, contents of the addenda may change without notice):

1. Nationwide Permit 43 # POA-2015-608, Iliuliuk River



THE STATE  
of **ALASKA**  
GOVERNOR BILL WALKER

**Department of Environmental Conservation**

Division of Water  
Wastewater Discharge Authorization Program  
555 Cordova Street  
Anchorage, AK 99501  
Main: (907)269-7519 Fax: (907)334-2415

December 15, 2015

Paul Kendall, P.E.  
PND Engineers, Inc.  
1506 West 36<sup>th</sup> Avenue  
Anchorage, Alaska 99503

Re: Unalaska-Steward Road & Overland Drive-Non Domestic Wastewater Collection System-Conditional Approval to Construct-ADEC Plan Tracking Number 15 WW 322

Dear Mr. Kendall,

On November 18, 2015 the Department received an engineering plan submittal for the installation of 844 lineal feet of Corrugated Polyethylene Pipe (CPEP) AASHTO M252, Type S pipe with 18 inch diameter and 24 inch diameter pipe used based on the drainage serviced. A total of 8 catch basin manhole were identified as was a 8 foot diameter ring for cleaning of the sediment that was to be 2 feet in height.

The City of Unalaska is intending to monitor the area to address any safety issues that may develop.

The Department has reviewed the engineering plans submitted for the non domestic wastewater system and per the Wastewater Regulations 18 AAC 72.600 Conditional Approval to Construct for the wastewater system is hereby issued. A "Certificate of Construction" so marked for the non domestic wastewater system is enclosed. Please use the referenced plan number in correspondence regarding this project.

**This approval is contingent upon compliance with the following conditions**

- 1) The engineer must provide a site inspection at the time the storm water lines are installed to assure they are properly placed.
- 2) If the applicant fails to construct, alter, install, or modify the system within two (2) years after the date that the department issues an approval to construct, the approval is void, and plans must be resubmitted, [along with associated fees], for department review and approval.
- 3) Deviations from approved plans which affect capacity, flow, operation, major design of units, point of discharge, materials of major system components (such as pipe, lagoon liners, etc.), or separation distances, must be approved by DEC in writing prior to their implementation.
- 4) This approval is contingent upon compliance with the conditions of Wastewater Disposal Regulations, 18 AAC 72.235, *Construction Certification*. The noted section of the

regulations requires that a "*Certification of Construction*" be completed and submitted to the Department within ninety (90) days of completion of construction. As-built plans or record drawings should indicate any changes or deviations from the approved plans to facilitate final review. A "*Certification of Construction*" form is enclosed for your use.

- 5) This approval is contingent upon your receipt of any other state, federal or local authorizations which are required for your project. You are required to obtain all other necessary authorizations before proceeding with your project.
- 6) You are advised that if this development will require placing fill in wetlands or working in a stream, river, or lake, permits from the U.S. Army Corps of Engineers and the Alaska Department of Natural Resource may be required. The previous required Coastal Projects Questionnaire could be helpful to you to identify other permits and approvals that may be required for your project.

This approval does not imply the granting of additional authorizations nor obligate any state, federal or local regulatory body to grant required authorizations.

Any person who disagrees with this decision may request an adjudicatory hearing in accordance with 18 AAC 15.195- 18 AAC 15.340 or an informal review by the Division Director in accordance with 18 AAC 15.185. **Informal review requests** must be delivered to the Division Director, 410 Willoughby Avenue, Suite 303, P.O. Box 111800, Juneau, Alaska 99801, within 15 days of receiving the decision. Guidance information on the informal review process may be found at <http://www.dec.state.ak.us/commish/Review-Guidance.htm>. **Adjudicatory hearings requests** must be delivered to the Commissioner of the Department of Environmental Conservation, 410 Willoughby Avenue, Suite 303, P.O. Box 111800, Juneau, Alaska 99801, within 30 days of the decision. If a hearing is not requested within 30 days, the right to appeal is waived.

Thank you for your cooperation. If you have any questions please do not hesitate to contact me at 269-7519.

Respectfully,



William R. Rieth, P.E.  
Environmental Engineer

Enclosures: As stated



STATE OF ALASKA  
DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
CONSTRUCTION AND OPERATION CERTIFICATE

for

DOMESTIC WASTEWATER DISPOSAL SYSTEMS  
UNALASKA - STEWARD ROAD & OVERLAND DRIVE - NON DOMESTIC  
WASTEWATER COLLECTION SYSTEM - ADEC PLAN TRACKING

A. APPROVAL TO CONSTRUCT NUMBER 15WW322

Plans for the construction or modification of 844 LF OF CPEP & 8 CATCH  
BASINS & BASIN FOR SEDIMENT domestic wastewater disposal system

located in UNALASKA, Alaska, submitted in accordance with 18 AAC 72.225,

by PND - PAUL KENDALL, P.E. have been reviewed and are

☐ approved.

☒ conditionally approved (see attached conditions).

William R. Pieth ENV. ENG. see letter this date  
BY TITLE DATE  
Dec 15, 2015

If construction has not started within two years of the approval date, this certificate is void and new plans and specifications must be submitted for review and approval before construction.

B. APPROVED CHANGE ORDERS

Change (contract order no. or descriptive reference)

Approved by

Date

C. APPROVAL TO OPERATE

The "APPROVAL TO OPERATE" section must be completed and signed by the Department before this system is made available for use.

The construction of the \_\_\_\_\_ domestic wastewater disposal system was completed on \_\_\_\_\_ (date). The system is hereby granted interim approval to operate for 90 days following the completion date.

BY

TITLE

DATE

As-built plans submitted during the interim approval period, or an inspection by the Department, has confirmed the system was constructed according to the approved plans. The system is hereby granted final approval to operate.

BY

TITLE

DATE



THE STATE  
of **ALASKA**  
GOVERNOR BILL WALKER

**Department of Environmental  
Conservation**

DIVISION OF WATER  
Wastewater Discharge Authorization Program

555 Cordova St.  
Anchorage, Alaska 99501  
Main: 907-269-6283  
Fax: 907-334-2415  
[www.dec.alaska.gov](http://www.dec.alaska.gov)

December 9, 2015

Ms. Alexandra West  
PND Engineers  
1506 West 36<sup>th</sup> Ave.  
Anchorage, AK 99503

Subject: Project Name: Unalaska Lake Restoration Projects  
Storm Water Project No.: 16-WW-322-005

Dear Ms. West:

This letter is in response to your plan received on November 18, 2015. Based on my review and in accordance with 18 AAC 72.600 Wastewater Disposal Regulations, the Department's non-objection is granted. Please keep me posted if any modifications to the subject plans are made.

This letter of non-objection does not imply the granting of additional authorizations, nor obligate any state, federal, or local government to grant any additional required authorizations.

Thank you for your coordination and cooperation with the Department. If you have any questions, please contact me.

Sincerely,

*William Ashton*  
William Ashton  
Storm Water Coordinator



THE STATE  
of **ALASKA**  
GOVERNOR BILL WALKER

## Department of Fish and Game

DIVISION OF HABITAT  
Central Region Office

333 Raspberry Road  
Anchorage, Alaska 99518-1565  
Main: 907.267.2342  
Fax: 907.267.2499

### FISH HABITAT PERMIT FH 15-II-0175

**ISSUED:** December 14, 2015  
**EXPIRES:** May 30, 2016

PND Engineers, Inc.  
Attn: Alexandra West  
1506 W 36<sup>th</sup> Avenue  
Anchorage, Alaska 99503

—representing—

City of Unalaska  
Attn: Robert Lund  
P.O. Box 610  
Unalaska, Alaska 99685

Dear Mr. Lund,

Re: Settling Pond and Weir – Iliuliuk River  
Stream No. 302-31-10500  
Sections 13 and 14, T. 73 S., R. 118 W., S. M.

Pursuant to AS 16.05.871(b), the Alaska Department of Fish and Game (ADF&G), Division of Habitat, has reviewed your proposal to construct a stormwater settling pond adjacent to the Iliuliuk River in Unalaska (see Sheet 2).

#### **Project Description**

You propose to construct a vegetated settling pond in a natural depression adjacent to the Iliuliuk River to improve stormwater drainage and reduce the downstream sedimentation of Unalaska Lake. The project will include construction of a berm with an outlet weir and a catch basin with riprap outfall protection where stormwater will enter the pond (see Sheet 2). The berm will be constructed with about 390 cubic yards of gravel and 135 cubic yards of riprap. The bottom of the berm will be lined with geotextile fabric (see Sheet 3). An erosion control mat will be placed on the top, interior side, and a portion of the exterior side of the berm, and will be seeded with a native seed mix in the spring. Riprap will be placed on the lower exterior side of the berm to

prevent erosion. The pond will allow for sediments to settle and water to naturally infiltrate the ground. Best management practices, such as silt fences, will be used to prevent sediment from leaving the project site and entering Iliuliuk River during construction.

An excavator, loader, and truck will be used for project construction. The berm will be constructed in a way that allows heavy equipment to work from the top of the berm as it is constructed to minimize impacts to the surrounding area. All construction will take place above ordinary high water; no heavy equipment will operate and no fill will be placed below ordinary high water of the Iliuliuk River. Project construction is anticipated to begin mid-January and placement of fill material will take about one week. Seeding will occur in the spring. All project activities will be completed by the end of May.

### **Anadromous Fish Act**

Iliuliuk River has been specified as being important for the spawning, rearing, or migration of anadromous fishes pursuant to AS 16.05.871(a). Iliuliuk River is known to support coho, pink, and sockeye salmon, and Dolly Varden.

In accordance with AS 16.05.871(d), project approval is hereby given subject to the project description above and the following stipulations:

1. The streambanks of Iliuliuk River shall not be altered or disturbed during project construction.
2. Any earthwork attributable to this project will be stabilized to prevent erosion or sedimentation of Iliuliuk River, both during and after the project.

You are responsible for the actions of contractors, agents, or other persons who perform work to accomplish the approved project. For any activity that significantly deviates from the approved plan, you shall notify the Division of Habitat and obtain written approval in the form of a permit amendment before beginning the activity. Any action that increases the project's overall scope or that negates, alters, or minimizes the intent or effectiveness of any stipulation contained in this permit will be deemed a significant deviation from the approved plan. The final determination as to the significance of any deviation and the need for a permit amendment is the responsibility of the Division of Habitat. Therefore, it is recommended you consult the Division of Habitat immediately when a deviation from the approved plan is being considered.

For the purpose of inspecting or monitoring compliance with any condition of this permit, you shall give an authorized representative of the state free and unobstructed access, at safe and reasonable times, to the permit site. You shall furnish whatever assistance and information as the authorized representative reasonably requires for monitoring and inspection purposes.

This letter constitutes a permit issued under the authority of AS 16.05.871 and must be retained on site during project activities. Please be advised that this determination applies only to activities regulated by the Division of Habitat; other agencies also may have jurisdiction under their respective authorities. This determination does not relieve you of your responsibility to



secure other permits; state, federal, or local. You are still required to comply with all other applicable laws.

In addition to the penalties provided by law, this permit may be terminated or revoked for failure to comply with its provisions or failure to comply with applicable statutes and regulations. The department reserves the right to require mitigation measures to correct disruption to fish and game created by the project and which was a direct result of the failure to comply with this permit or any applicable law.


You shall indemnify, save harmless, and defend the department, its agents, and its employees from any and all claims, actions, or liabilities for injuries or damages sustained by any person or property arising directly or indirectly from permitted activities or your performance under this permit. However, this provision has no effect if, and only if, the sole proximate cause of the injury is the department's negligence.

This permit decision may be appealed in accordance with the provisions of AS 44.62.330–630.

Any questions or concerns about this permit may be directed to Habitat Biologist Jeanette Alas at 267-2805 or emailed to [jeanette.alas@alaska.gov](mailto:jeanette.alas@alaska.gov).

Sincerely,

Sam Cotten, Commissioner

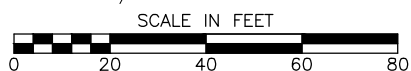
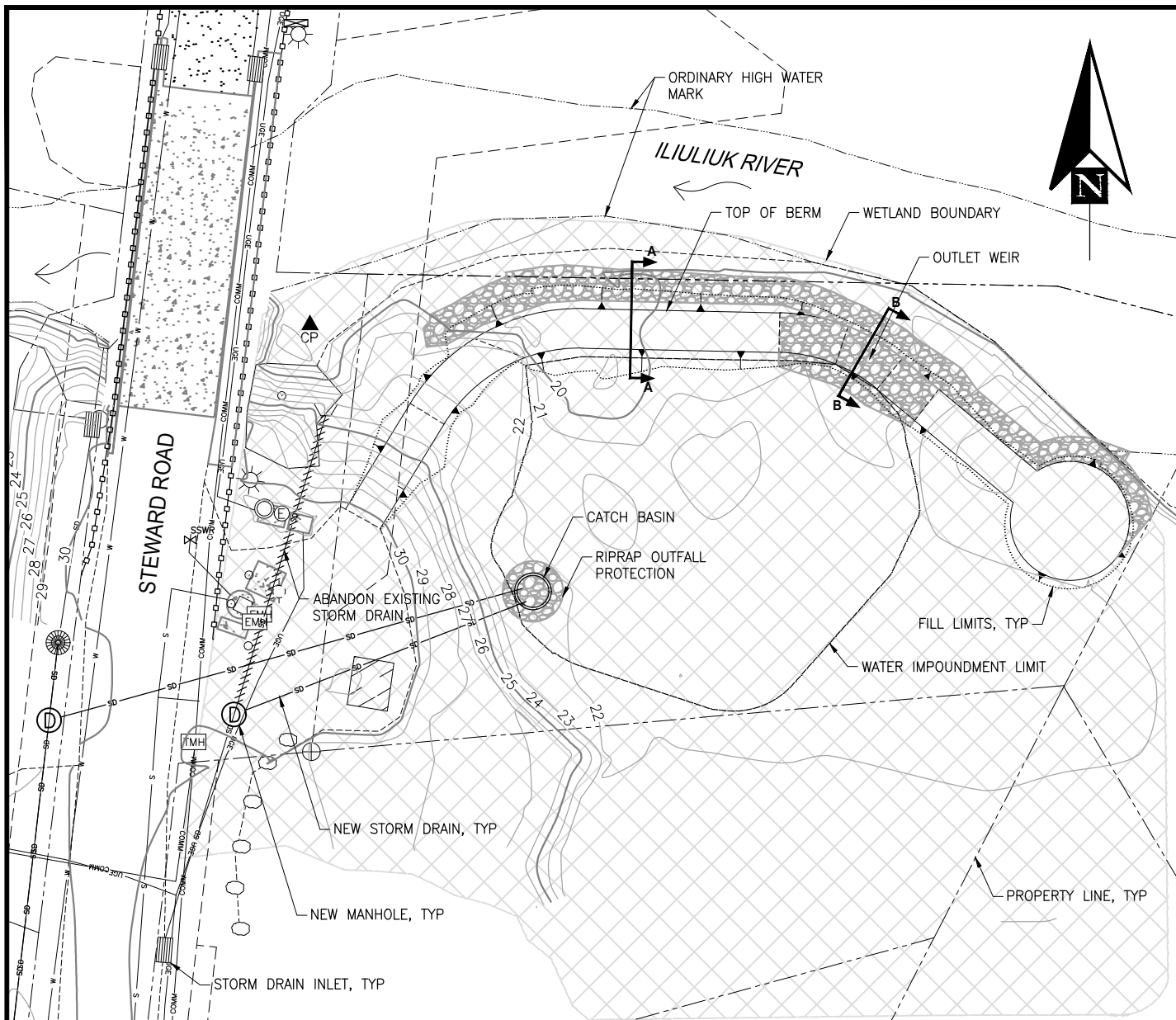


By: Michael J. Daigneault  
Regional Supervisor  
Central Region Office

Enc: Sheet 2 of 3 – Unalaska Steward Road Settling Pond Plan  
Sheet 3 of 3 – Unalaska Steward Road Settling Pond Details

Ecc: A. Ott, ADF&G  
D. Tracy, ADF&G  
S. Ayers, ADF&G  
J. McDonald, ADNRR  
J. Rypkema, ADEC  
R. Morrisett, AWT, Unalaska

M. Westphal, ADF&G  
S. Schrof, ADF&G  
M. Setering, USACE  
C. Larson, ADNRR  
R. Lund, City of Unalaska



### LEGEND



PROJECT COMPONENT	GRAVEL FILL IN WETLANDS (CY)	RIPRAP ROCK IN WETLANDS (CY)	EXCAVATION IN WETLANDS (CY)	TOTAL FOOTPRINT IN WETLANDS (ACRE)
STORM DRAIN	10	21	150	0.02
BERM	390	135	0	0.18
TOTAL PROJECT	400	156	150	0.20

PROPOSED ACTIVITY:  
CONSTRUCT A BERM AND  
ENERGY DISSIPATER FOR A  
NEW SETTLING POND

DATUM: 0.0' MLLW  
PROJECT LOCATION:  
53.861°N LAT. -166.512°W LONG.  
S13, T73S R118W  
SEWARD MERIDIAN

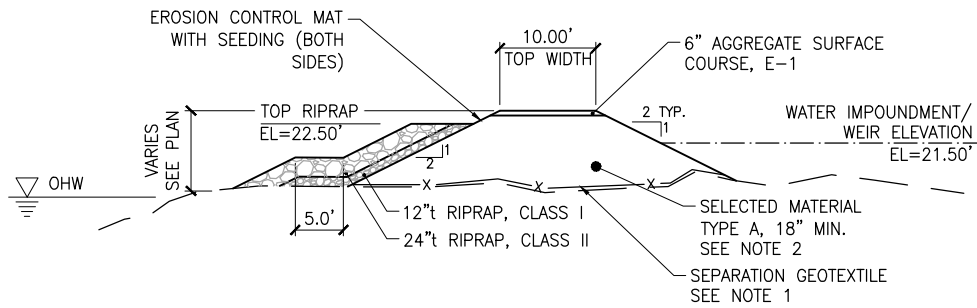
## PLAN

CITY OF UNALASKA  
DEPARTMENT OF PUBLIC WORKS/  
PUBLIC UTILITIES  
PO BOX 610  
UNALASKA, ALASKA 99685

## UNALASKA STEWARD ROAD SETTLING POND

POA-XXXX-XXXX  
AT: UNALASKA, AK

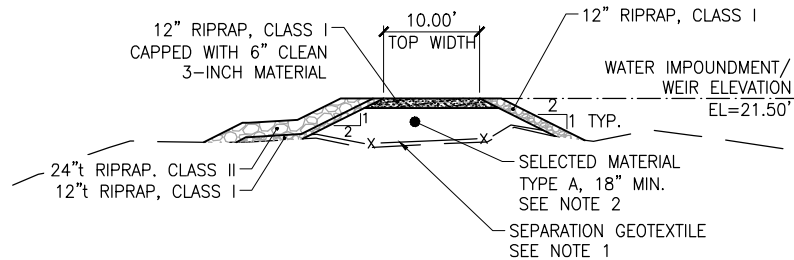
11/13/15 SHEET **2 of 3**



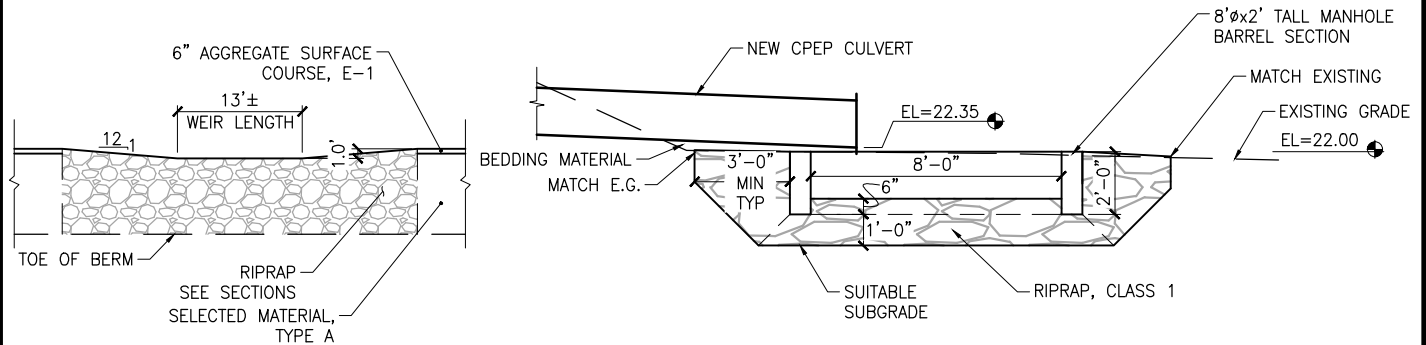
**A-A BERM SECTION**

**NOTES:**

1. EXISTING GRADE MAY BE SOFT AND SATURATED. CONTRACTOR SHALL PROVIDE ANY ADDITIONAL MEASURES REQUIRED TO CONSTRUCT THE EARTHEN BERM AT THEIR OWN COST.
2. EXCAVATE AS NECESSARY TO PROVIDE MINIMUM THICKNESS.



**B-B WEIR SECTION**



**OUTLET WEIR ELEVATION**

**STORM DRAIN DETAIL**

PROPOSED ACTIVITY:  
CONSTRUCT A BERM AND  
ENERGY DISSIPATER FOR A  
NEW SETTLING POND

DATUM: 0.0' MLLW  
PROJECT LOCATION:  
53.861°N LAT. -166.512°W LONG.  
S13, T73S R118W  
SEWARD MERIDIAN

**DETAILS**

CITY OF UNALASKA  
DEPARTMENT OF PUBLIC WORKS/  
PUBLIC UTILITIES  
PO BOX 610  
UNALASKA, ALASKA 99685

**UNALASKA  
STEWART ROAD  
SETTLING POND**

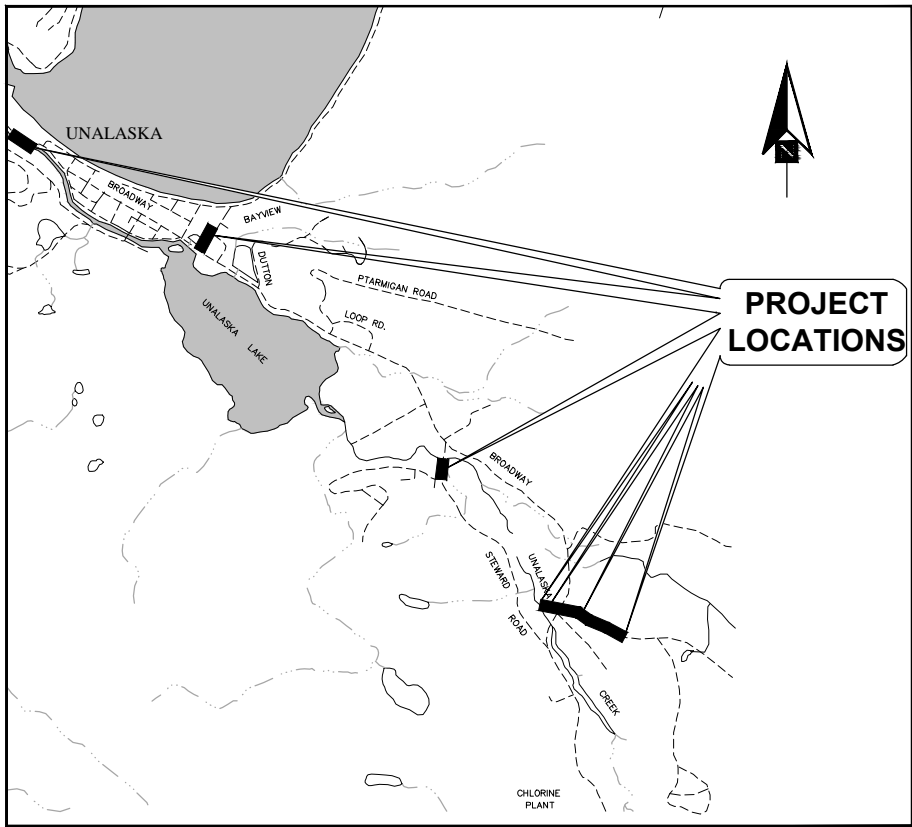
POA-XXXX-XXXX  
AT: UNALASKA, AK

11/13/15 SHEET **3 of 3**

# CITY OF UNALASKA LAKE & RIVER RESTORATION PROJECTS

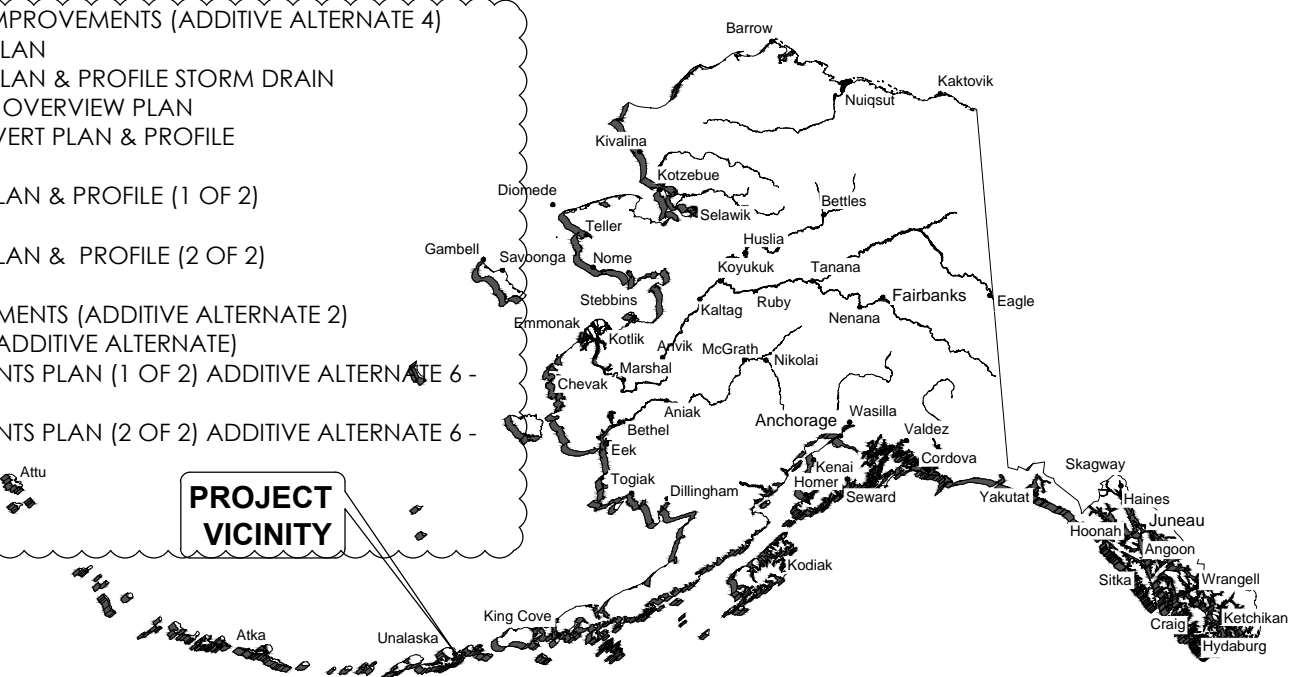


DPW PROJECT #14101  
NOVEMBER 2015  
DRAWING INDEX



PROJECT VICINITY

1	COVER SHEET & INDEX
2	LEGEND & ABBREVIATIONS
3	SURVEY CONTROL TABLES
4	GENERAL NOTES (1 OF 2)
5	GENERAL NOTES (2 OF 2)
6	ARMSTRONG COURT DRAINAGE IMPROVEMENTS (ADDITIVE ALTERNATE 4)
7	STEWART ROAD IMPROVEMENTS PLAN
8	STEWART ROAD IMPROVEMENTS PLAN & PROFILE STORM DRAIN
9	OVERLAND DRIVE IMPROVEMENTS OVERVIEW PLAN
10	OVERLAND DRIVE DIVERSION CULVERT PLAN & PROFILE (ADDITIVE ALTERNATE 5)
11	OVERLAND DRIVE STORM DRAIN PLAN & PROFILE (1 OF 2) (ADDITIVE ALTERNATE)
12	OVERLAND DRIVE STORM DRAIN PLAN & PROFILE (2 OF 2) (ADDITIVE ALTERNATE 1)
13	OVERLAND DRIVE BASIN IMPROVEMENTS (ADDITIVE ALTERNATE 2)
14	OVERLAND DRIVE OUTLET SWALE (ADDITIVE ALTERNATE)
15	LOWER ILIULIUK RIVER IMPROVEMENTS PLAN (1 OF 2) ADDITIVE ALTERNATE 6 - NOT GRANT FUNDED
16	LOWER ILIULIUK RIVER IMPROVEMENTS PLAN (2 OF 2) ADDITIVE ALTERNATE 6 - NOT GRANT FUNDED
17	DETAILS (1 OF 2)
18	DETAILS (2 OF 2)



STATE OF ALASKA

THIS PROJECT IS FUNDED WITH QUALIFIED OUTER CONTINENTAL SHELF OIL AND GAS REVENUES BY THE COASTAL IMPACT ASSISTANCE PROGRAM, FISH AND WILDLIFE SERVICE, U.S. DEPARTMENT OF THE INTERIOR.

**ADDENDUM #3**  
DECEMBER 22, 2015

PND Engineers, Inc. (PND) is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

REV	DATE	DESCRIPTION
2	12/22/15	ADDENDUM #3
0	11/13/15	ISSUED FOR BID

DATE: \_\_\_\_\_

1506 West 36th Avenue  
Anchorage, Alaska 99503  
Phone: 907.561.1011  
Fax: 907.563.4220  
www.pndengineers.com



CITY OF UNALASKA  
LAKE & RIVER RESTORATION PROJECTS

TITLE:  
COVER SHEET & INDEX

DESIGNED BY:	AEW	DATE:	11/13/15
CHECKED BY:	PK	PROJECT NO:	141100

SHEET NO:  
**1** OF 18

GENERAL NOTES

OWNER: CITY OF UNALASKA

1. SCOPE OF WORK

THIS PROJECT WILL CONSIST OF ALL WORK, MATERIALS, AND LABOR REQUIRED TO CONSTRUCT STORMWATER IMPROVEMENTS THROUGHOUT THE UNALASKA LAKE DRAINAGE AND THE LOWER ILIULIUK RIVER AS SHOWN ON THESE PLANS. MAJOR ELEMENTS INCLUDE DRAINAGE DITCHES, DETENTION PONDS, STORM DRAIN SYSTEM, AND EROSION PROTECTION. SITE PREPARATION WILL INCLUDE REMOVAL AND DISPOSAL OF THE EXISTING DRAINAGE STRUCTURES.

ALL WORK SHALL BE COMPLETED BY MAY 30<sup>TH</sup>, 2016. APRIL 30<sup>TH</sup>, 2016.

2. APPLICABLE CODES AND SPECIFICATIONS

THE INFORMATION CONTAINED IN THESE GENERAL NOTES IS IN ADDITION TO THE DETAILS AND NOTES PROVIDED ON THE INDIVIDUAL PLAN SHEETS. IN CASE OF CONFLICT BETWEEN NOTATION IN THESE GENERAL NOTES AND NOTES AND DETAILS ON INDIVIDUAL SHEETS, THE FOLLOWING PRIORITY SHALL BE FOLLOWED:

- 1. ALL PROJECT PERMIT REQUIREMENTS
- 2. NOTES ON INDIVIDUAL PLAN SHEETS
- 3. DETAILS AND CALLOUTS ON INDIVIDUAL PLAN SHEETS
- 4. THESE GENERAL NOTES
- 5. LOCAL CODES
- 6. STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES CONSTRUCTION SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

3. SURVEY INFORMATION

SEE SURVEY CONTROL TABLES SHEET 3.

4. ADOPTED STANDARDS AND SPECIFICATIONS

ANY MATERIAL OR PERFORMANCE CRITERIA NOT SPECIFIED ON THE DRAWINGS OR IN THESE NOTES SHALL CONFORM TO THE 2015 EDITION OF THE STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES CONSTRUCTION SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

5. MATERIALS AND EXCAVATION

ALL PROCUREMENT REQUIREMENTS FOR EQUIPMENT OR PRODUCTS MUST COMPLY WITH BUY-AMERICAN REQUIREMENTS IN 43 CFR PART 12, SUBPART E, BUY AMERICAN REQUIREMENTS FOR ASSISTANCE PROGRAMS.

CONTRACTOR SHALL PROVIDE CUSTOMERS 5 DAYS NOTICE PRIOR TO ANY DISRUPTIONS IN UTILITY SERVICES FOR EXCAVATION OR CONSTRUCTION.

A – SITE DEMOLITION & PREPARATION

REMOVE, DISPOSE, AND/OR RELOCATION OF ALL ITEMS IDENTIFIED TO BE REMOVED. REFUSE MATERIALS MUST BE REMOVED AND APPROPRIATELY DISPOSED OF. AGGREGATE MATERIAL TO BE DISPOSED OF SHALL BE STOCKPILED AT THE LANDFILL. ANY SALVAGED FRAME AND GRATES SHALL BE OFFERED TO THE CITY FOR CITY USE.

CLEAR AND GRUB VEGETATION WITHIN PROJECT FOOTPRINT. ORGANIC MATERIALS SHALL CAN BE EITHER REMOVED ENTIRELY OR SORTED THROUGH TO FIND RECYCLABLE MATERIALS SUITABLE FOR TOPSOIL. ALL DEBRIS AND REFUSE SHALL BE DISPOSED OF PROPERLY IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL LAWS.

B – EXCAVATION AND EMBANKMENT

WORK SHALL INCLUDE ALL EXCAVATION AND EMBANKMENT NECESSARY TO ACHIEVE GRADES SHOWN ON PLANS. NO ADDITIONAL PAYMENT SHALL BE MADE BASED ON MATERIAL ENCOUNTERED IN EXCAVATIONS. EXCAVATIONS MAY INCLUDE BEDROCK, BEDDING, COBBLES, GRADING SANDS, SILT, ORGANICS, ETC. EXCAVATED MATERIALS MAY NOT MEET SPECIFICATIONS FOR INCORPORATION INTO THE PROJECT.

EXCAVATION IS UNCLASSIFIED AND INCLUDES ALL EXCAVATION, OVER-EXCAVATION, AND CLASSIFIED FILL AND BACKFILL NECESSARY TO PERFORM THE WORK, REGARDLESS OF CHARACTER OR TYPE OF MATERIALS AND OBSTRUCTIONS OR OTHER HINDRANCES ENCOUNTERED. THE CONTRACTOR SHALL PERFORM ALL EXCAVATION OF EVERY DESCRIPTION AND WHATEVER SUBSTANCE ENCOUNTERED, INCLUDING ROCK AND DEWATERING OR DIVERSION OF WATER.

THE CONTRACTOR SHALL PROVIDE INDEPENDENT THIRD PARTY TESTING OF EMBANKMENT GRADATION AND DENSITY. AS A MINIMUM, TESTING SHALL INCLUDE THE FOLLOWING: ALL QUALITY TESTS INDICATED FOR EACH AGGREGATE INCORPORATED IN THE PROJECT, ONE GRADATION PER 10,000 CY OF SELECTED MATERIAL, ONE GRADATION PER 1,000 TONS OF CRUSHED AGGREGATE SURFACE COURSE, ONE DENSITY TEST PER 10,000 SQUARE FEET OF SURFACING. ALL SAMPLE COLLECTION AND FIELD TESTING SHALL BE COORDINATED WITH AND OBSERVED BY THE OWNERS REPRESENTATIVE. ALL TEST RESULTS FOR AGGREGATE PREPARED FOR THIS PROJECT

SHALL BE PROVIDED WITHIN 14 DAYS OF SAMPLING.

ALL SELECTED MATERIAL SHALL BE COMPACTED IN LAYERS NOT EXCEEDING 8 INCHES LOOSE THICKNESS TO NOT LESS THAN 95% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T180.

SELECTED MATERIAL TYPE A – AGGREGATE CONTAINING NO MUCK, FROZEN MATERIAL, ROOTS, SOD OR OTHER DELETERIOUS MATTER AND WITH A PLASTICITY INDEX NOT GREATER THAN 6 AS TESTED BY WAQTC FOPS FOR AASHTO T 89 AND T 90. MEET THE FOLLOWING GRADATION AS TESTED BY WAQTC FOP FOR AASHTO T 27/T 11:

SIEVE	PERCENT PASSING BY WEIGHT
8"	100%
NO. 4	20-55%
NO. 200	0-6%, DETERMINED ON THE MINUS 3-INCH PORTION OF THE SAMPLE

C – GRAVEL SURFACING AND LEVELING COURSE

ALL GRAVEL SURFACING SHALL BE COMPACTED IN LAYERS NOT EXCEEDING 8 INCHES LOOSE THICKNESS TO NOT LESS THAN 98% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T180.

GRAVEL SURFACING AND LEVELING COURSE SHALL MEET THE FOLLOWING GRADATION:

CRUSHED AGGREGATE SURFACE COURSE, E-1 – CRUSHED STONE OR CRUSHED GRAVEL, CONSISTING OF SOUND, TOUGH, DURABLE PEBBLES OR ROCK FRAGMENTS OF UNIFORM QUALITY. FREE FROM CLAY BALLS, VEGETABLE MATTER, OR OTHER DELETERIOUS MATTERS. MEET THE FOLLOWING REQUIREMENTS:

PROPERTY	VALUE	TEST
L.A. WEAR, %	50, MAX	AASHTO T96
DEGRADATION VALUE	50, MIN	ATM 313
FRACTURE %	70, MIN	WAQTC FOP FOR AASHTO TP61
LIQUID LIMIT	35, MAX	WAQTC FOP FOR AASHTO T89
PLASTIC INDEX	10, MAX	WAQTC FOP FOR AASHTO T90
SODIUM SULFATE LOSS, % (5 CYCLES)	12, MAX	AASHTO T104

MEET THE FOLLOWING GRADATION AS TESTED BY WAQTC FOP FOR AASHTO T 27/T 11:

SIEVE	PERCENT PASSING BY WEIGHT
1 IN	100%
3/4 IN	70-100%
3/8 IN	50-85%
NO. 4	35-65%
NO. 8	20-50%
NO. 50	15-30%
NO. 200	4-15%

D – BEDDING AND BACKFILL

BEDDING AND BACKFILL SHALL BE INCIDENTAL TO ASSOCIATED STRUCTURE OR PIPE. BEDDING AND BACKFILL SHALL BE SELECTED MATERIAL, TYPE A PASSING THE 3 INCH MINUS SIEVE. SUBEXCAVATE TO THE ELEVATIONS AND DEPTHS SHOWN ON PLANS PRIOR TO PLACING BEDDING. THE BEDDING AND BACKFILL SHALL BE PLACED IN UNIFORM LAYERS NOT MORE THAN 12 INCHES DEEP AND COMPACTED TO 95% MAXIMUM DENSITY AT DETERMINED BY AASHTO T180.

E – RIPRAP

MANIPULATE THE ROCK SUFFICIENTLY USING A BACKHOE, ROCK TONGS, OR OTHER SUITABLE EQUIPMENT TO SECURE A REASONABLY REGULAR SURFACE AND STABILITY.

RIPRAP SHALL MEET THE FOLLOWING REQUIREMENTS: EVENLY GRADED STONES THAT ARE HARD, ANGULAR, AND HAVE NO MORE THAN 50% WEAR AT 500 REVOLUTIONS AS DETERMINED BY AASHTO T 96. USE STONES WITH BREADTH AND THICKNESS AT LEAST ¼ OF ITS LENGTH. DO NOT USE ROUNDED BOULDERS OR COBBLES ON SLOPES STEEPER THAN 2:1.

CLASS I	0-50% WEIGHING UP TO 25 POUNDS 0-10% WEIGHING MORE THAN 50 POUNDS
CLASS II	50-100% WEIGHING 200 POUNDS OR MORE 0-15% WEIGHING UP TO 25 POUNDS 0-10% WEIGHING MORE THAN 400 POUNDS

PLACE STONES TO THE THICKNESS, HEIGHT, AND LENGTH SHOWN ON THE PLANS, OR AS STAKED, IN A WELL GRADED MASS WITH A MINIMUM OF VOIDS. FILL IN UNACCEPTABLE VOIDS WITH SMALLER STONES. PLACE RIPRAP TO ITS FULL COURSE THICKNESS IN ONE OPERATION. AVOID DISPLACING THE UNDERLYING MATERIAL. DO NOT PLACE RIPRAP IN LAYERS OR USE METHODS LIKELY TO CAUSE SEGREGATION.

F – TRENCHING

TRENCHING SHALL BE PERFORMED AS REQUIRED TO ACCOMMODATE INSTALLATION OF NEW STORM DRAIN PIPE FOLLOWING OSHA GUIDELINES.

G – TOPSOIL & SEEDING

WORK SHALL INCLUDE TOPSOIL, SEED, MULCH, FERTILIZER, AND WATERING AS NECESSARY TO ESTABLISH A PERMANENT VEGETATIVE MAT. SEEDING SHALL BE COMPLETED PRIOR TO SUBSTANTIAL COMPLETION.

TOPSOIL – FURNISH TOPSOIL THAT IS REPRESENTATIVE OF THE EXISTING NATURAL ORGANIC BLANKET OF THE PROJECT AREA. SOIL WITH A MINIMUM OF 5% ORGANIC CONTENT, AS DETERMINED BY ATM 203, MAY BE USED AS TOPSOIL. REMOVE ROOTS, STUMPS, UNNATURAL MATERIAL, AND ROCKS GREATER THAN 3 INCH IN DIAMETER.

SEEDING – SEED MIX SHALL BE 40% BOREAL RED FESCUE, 40% NORTRAN TUFTED HAIRGRASS, AND 20% GLAUCOUS TUNDRA BLUE. CONTRACTOR MAY SUBMIT ALTERNATE SEED MIXES THAT ADHERE TO THE RECOMMENDATIONS FROM "REVEGETATION MANUAL FOR ALASKA" PUBLISHED BY THE DEPARTMENT OF NATURAL RESOURCES. SEED SHALL BE APPLIED AT 1.0 LBS PER 1,000 SQUARE FEET. FERTILIZER WITH AN N-P-K OF 20-20-10 SHALL BE APPLIED AT A RATE OF 12.0 LBS PER 1,000 SQUARE FEET.

APPLY SEED WITH A BONDED FIBER MATRIX MULCH SUCH AS "FLEX TERRA" OR APPROVED EQUAL. MULCH SHALL BE APPLIED A RATE OF 70.0 LBS PER 1,000 SQUARE FEET.

PRIOR TO SEEDING, TOPSOIL SHALL BE TRACK WALKED, OR OTHERWISE PREPARED, TO PROVIDE GROOVES PERPENDICULAR TO THE DIRECTION OF THE SLOPE.

SEEDING SHALL BE DONE THROUGH HYDRO SEEDING USING A COMMERCIAL-TYPE HYDRO-SEEDER THAT HAS A BUILT-IN AGITATION SYSTEM WITH CAPACITY SUFFICIENT TO AGITATE, SUSPEND, AND HOMOGENEOUSLY MIX SLURRY. ALL HYDRO-SEED APPLICATIONS TO BE APPLIED IN A SWEEPING MOTION.

CONDUCT ALL SLURRY PREPARATIONS AT THE JOB SITE: WATER, MULCH, FERTILIZER, BINDER AND OTHER INGREDIENTS SHALL BE ADDED TO THE TANK SIMULTANEOUSLY; SEED SHALL BE ADDED LAST AND SHALL BE DISCHARGED WITHIN 2 HOURS. LOADS HELD OVER 2 HOURS SHALL BE RECHARGED WITH ½ THE SEED RATE BEFORE APPLICATION. ONCE FULLY LOADED THE COMPLETE SLURRY SHALL BE AGITATED FOR 3-5 MINUTES TO ALLOW FOR UNIFORM MIXING.

THE ENGINEER WILL PERFORM A VISUAL INSPECTION OF SEEDING TO DETERMINE FINAL STABILIZATION. THE ENGINEER WILL ACCEPT SEEDING THAT HAS BECOME A VEGETATIVE MAT WITH 70% COVER DENSITY IN THE INSPECTION AREA. RESEED AREAS THAT ARE NOT ACCEPTABLE TO THE ENGINEER.

ESTABLISHMENT PERIODS EXTEND FOR ONE COMPLETE GROWING SEASON FOLLOWING ACCEPTABLE SEEDING. EMPLOY ALL POSSIBLE MEANS TO PRESERVE THE NEW VEGETATIVE MAT IN A HEALTHY AND VIGOROUS CONDITION TO ENSURE SUCCESSFUL ESTABLISHMENT. RESEED AREAS THAT DO NOT MEET THE SPECIFICATIONS. WATERING AND RESEEDING AFTER THE FINAL INSPECTION ARE SUBSIDIARY.

THE ENGINEER MAY, BUT IS NOT REQUIRED TO, DETERMINE THE PROJECT IS COMPLETE EXCEPT FOR THE PERIOD OF ESTABLISHMENT, AND ISSUE A LETTER OF FINAL ACCEPTANCE. AFTER FINAL ACCEPTANCE, WORK OR MATERIALS DUE UNDER THIS SUBSECTION DURING ANY REMAINING PERIOD OF ESTABLISHMENT ARE CONSIDERED WARRANTY OBLIGATIONS THAT CONTINUE TO BE DUE FOLLOWING FINAL ACCEPTANCE IN ACCORDANCE WITH THE GENERAL CONDITIONS.

H – BEACH WILD RYE SPRIG PLANTING

SITE PREPARATION AND PLANTING OF SPRIGS SHALL BE DONE IN ACCORDANCE WITH PROCEDURES DESCRIBED IN BEACH WILD RYE PLANTING GUIDE FOR ALASKA BY STONEY WRIGHT, PUBLISHED 1994 AND 2010. SPRIGS WILL BE HARVESTED FROM NEARBY BEACH WILD RYE PLANTS WITHIN THE PROJECT LIMITS. LOCATIONS WILL BE IDENTIFIED IN THE FIELD. ENSURE THAT BEACH WILD RYE PLANTS FOR SPRIG DIVISION ARE HARVESTED SPORADICALLY FROM WELL-ESTABLISHED AREAS AS TO NOT CREATE A BARE AREA EXCEEDING 2' X 2'. ALL HARVESTING AND PLANTING MUST BE COMPLETED USING HAND TOOLS.

I – COIR LOGS

CHECK DAMS SHALL BE CONSTRUCTED WITH 16" DIAMETER HIGH DENSITY (9LBS/CU.FT MIN.) BIODEGRADABLE COIR LOGS SUCH AS GEI WORKS OR ENGINEER APPROVED EQUAL. COIR LOGS SHALL BE PLACED AND STAKED AS SHOWN IN THE PLANS. COIR LOGS FOR OTHER PURPOSES SHALL BE 8" DIAMETER BIODEGRADABLE COIR LOGS WITH DENSITY (7LBS/CU.FT MIN.).

J – EROSION CONTROL FABRIC

FABRIC SHALL BE CONSISTENT THICKNESS WITH THE COCONUT EVENLY DISTRIBUTED OVER THE ENTIRE AREA OF THE FABRIC BLANKET. THE BLANKET SHALL BE COVERED ON THE TOP AND BOTTOM WITH HEAVYWEIGHT POLYPROPYLENE NETTING HAVING ULTRAVIOLET ADDITIVES TO DELAY BREAKDOWN AND APPROXIMATE 0.625 x 0.625 INCH OR SMALLER MESH. THE BLANKET SHALL BE SEWN TOGETHER ON 1.50 INCH CENTERS WITH UV STABLE THREAD. FABRIC SHALL HAVE A MINIMUM LONGEVITY OF 3 YEARS SUCH AS

NORTH AMERICAN GREEN ROLLMAX C125 OR ENGINEER APPROVED EQUAL.

STAPLE EROSION CONTROL BLANKETS AT JOINTS, EDGES, AND FIELD AS RECOMMENDED BY THE MANUFACTURER. ANCHOR THE BOTTOM OF THE FABRIC BY EXCAVATING THE TOE OF SLOPE, ANCHOR TRENCH 12 IN WIDE X 12 IN DEEP MINIMUM AT LEAST 5 FEET FROM TOE OF SLOPE, OR AS RECOMMENDED BY MANUFACTURER. MAINTAIN THE EROSION CONTROL BLANKETS UNTIL ALL WORK ON THE PROJECT IS COMPLETE AND ACCEPTED.

K – STORM DRAIN PIPE

STORM DRAIN PIPE SHALL BE CORRUGATED POLYETHYLENE PIPE WITH SMOOTH INTERIOR WALLS MEETING AASHTO M252 TYPE S. STORM DRAIN PIPE TO BE INSTALLED AS SHOWN IN PLANS. FINAL INVERT LOCATIONS, ELEVATIONS, AND CULVERT LENGTH SHALL BE FIELD VERIFIED. ALL FITTINGS SHALL BE WATER TIGHT.

STORM DRAIN PIPE SHALL CONTAIN A MINIMUM OF 40% POST-CONSUMER RECYCLED MATERIAL.

L – CATCH BASIN/MANHOLES

CATCH BASINS/MANHOLES SHALL BE PRECAST CONCRETE AS SPECIFIED IN THE PLANS. INSTALL PRECAST CONCRETE CATCH BASINS AND MANHOLES CONSISTING OF A BASE, RISERS, FLAT TOP; WITH LADDER RUNGS, PIPE BOOTS, FRAME AND COVER AS SHOWN ON THE PLANS. FLEXIBLE WATERTIGHT GASKET SHALL BE USED BETWEEN CONCRETE SECTIONS.

CATCH BASINS & MANHOLES SHALL BE INSTALLED AT THE LOCATION AS SHOWN IN THE PLANS. FINAL GRATE AND INVERT ELEVATIONS FOR CATCH BASINS SHALL BE FIELD VERIFIED TO MAINTAIN ADEQUATE DRAINAGE AND MINIMUM 0.5% SLOPE FOR NEW STORM DRAIN PIPE.

ALL INVERT ELEVATIONS OF THE EXISTING DRAINAGE STRUCTURES ARE TO BE FIELD VERIFIED PRIOR TO CONSTRUCTION OR FABRICATION OF CATCH BASIN MANHOLES.

M – CULVERTS

ALL CULVERTS SHALL BE SCHEDULE 40 STEEL PIPE AS ONE PIECE. WELD PIECES IF REQUIRED. CULVERT PIPE TO BE INSTALLED AS SHOWN IN PLANS. FINAL INVERT LOCATIONS, ELEVATIONS, AND CULVERT LENGTH SHALL BE FIELD VERIFIED.

CULVERT DELINEATORS SHALL CONSIST OF RED CARSONITE ROAD MARKERS (CRM 375), OR APPROVED EQUAL. DELINEATORS SHALL BE INSTALLED IN ROAD EMBANKMENT ABOVE CULVERT.

N – DOUBLE SIDED GUARDRAIL

ALL GUARDRAIL, POSTS, BLOCKS, FASTENERS SHALL CONFORM WITH SECTION 710 OF THE STATE OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES (ADOT&PF) STANDARD SPECIFICATIONS. INSTALL GUARDRAIL AND TERMINALS AT THE LOCATIONS SHOWN ON THE PLANS. GUARDRAIL CONSTRUCTION SHALL CONFORM WITH SECTIONS 606 3.03, 3.04, AND 3.05 OF ADOT&PF STANDARD SPECIFICATIONS. GUARDRAIL POSTS SHALL BE WOOD POST LENGTH AS INDICATED IN THE PLANS. REFERENCE G-10.01 BEAM GUARDRAIL POST INSTALLATION (CASE 3). THE MAXIMUM SPACING OF GUARDRAIL POSTS SHALL BE 6'-3".

O – GEOTEXTILES

SEPARATION GEOTEXTILES SHALL BE WOVEN AND MEET AASHTO M 288 FOR SEPARATION CLASS I, EXCEPT PROVIDE A MINIMUM PERMITTIVITY OF 0.05/SEC.

SURFACE PREPARATION – PREPARE SURFACE BY REMOVAL OF STUMPS, BRUSH, BOULDERS, AND SHARP OBJECTS. FILL HOLES AND LARGE RUTS WITH MATERIAL SHOWN ON THE PLANS OR AS APPROVED.

PLACEMENT – PLACE GEOTEXTILE FABRIC AS PER MANUFACTURERS INSTRUCTIONS, AVOIDING ANY TEARS OR PUNCTURES.

JOINING – JOIN GEOTEXTILE FOR SEPARATION BY OVERLAPPING. OVERLAPPED SECTIONS MUST OVERLAP A MINIMUM OF 3 FEET. OVERLAP SUCCESSIVE GEOTEXTILE SHEETS IN THE DIRECTION OF FLOW SO THAT THE UPSTREAM SHEET IS PLACED OVER THE DOWNSTREAM SHEET AND/OR UPSLOPE OVER THE DOWNSLOPE.

O – PICNIC TABLES  
SHALL BE COMMERCIAL GRADE WHITE PRESSED SOUTHERN PINE TOPS AND SEATS, 2-3/8" O.D. HDG STEEL FRAMES AND BENCH HARDWARE. SECURE WITH 3/8" HDG CHAIN & DEADMAN ANCHOR.

ADDENDUM #3  
DECEMBER 22, 2015

PND Engineers, Inc. (PND) is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

2	12/22/15	ADDENDUM #3
1	12/11/15	ADDENDUM #2
0	11/13/15	ISSUED FOR BID
REV	DATE	DESCRIPTION

DATE:

1506 West 36th Avenue

Anchorage, Alaska 99503

Phone: 907.561.1011

Fax: 907.563.4220

www.pndengineers.com

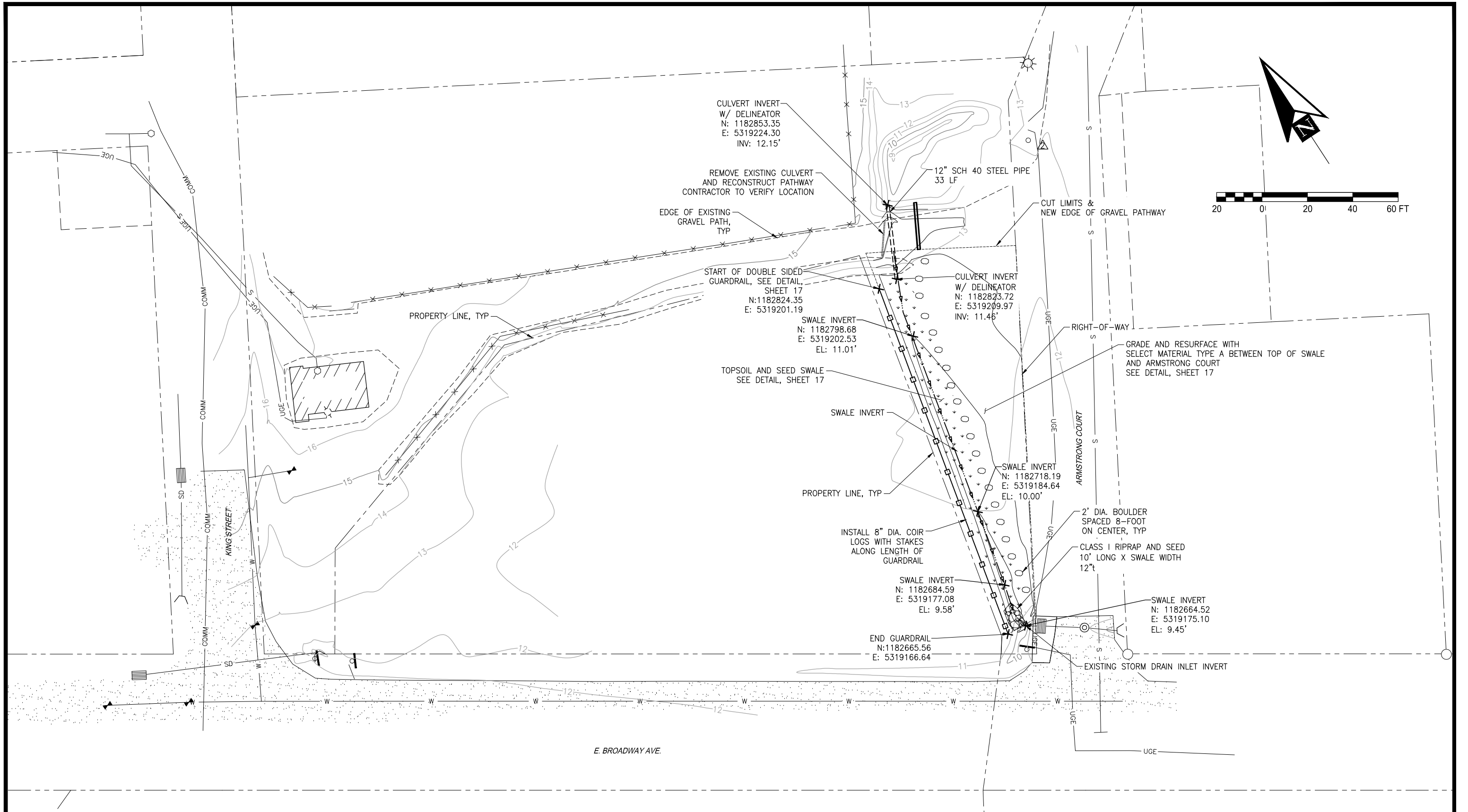
P | N | D  
ENGINEERS, INC.

CITY OF UNALASKA  
LAKE & RIVER RESTORATION PROJECTS

TITLE:  
GENERAL NOTES (1 OF 2)

DESIGNED BY:	AEW	DATE:	11/13/15
CHECKED BY:	PK	PROJECT NO:	141100

SHEET NO:  
4 OF 18



# ADDENDUM #3

DECEMBER 22, 2015

PND Engineers, Inc. (PND) is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

REV	DATE	DESCRIPTION
2	12/22/15	ADDENDUM #3
0	11/13/15	ISSUED FOR BID

DATE: \_\_\_\_\_

1506 West 36th Avenue  
Anchorage, Alaska 99503

Phone: 907.561.1011

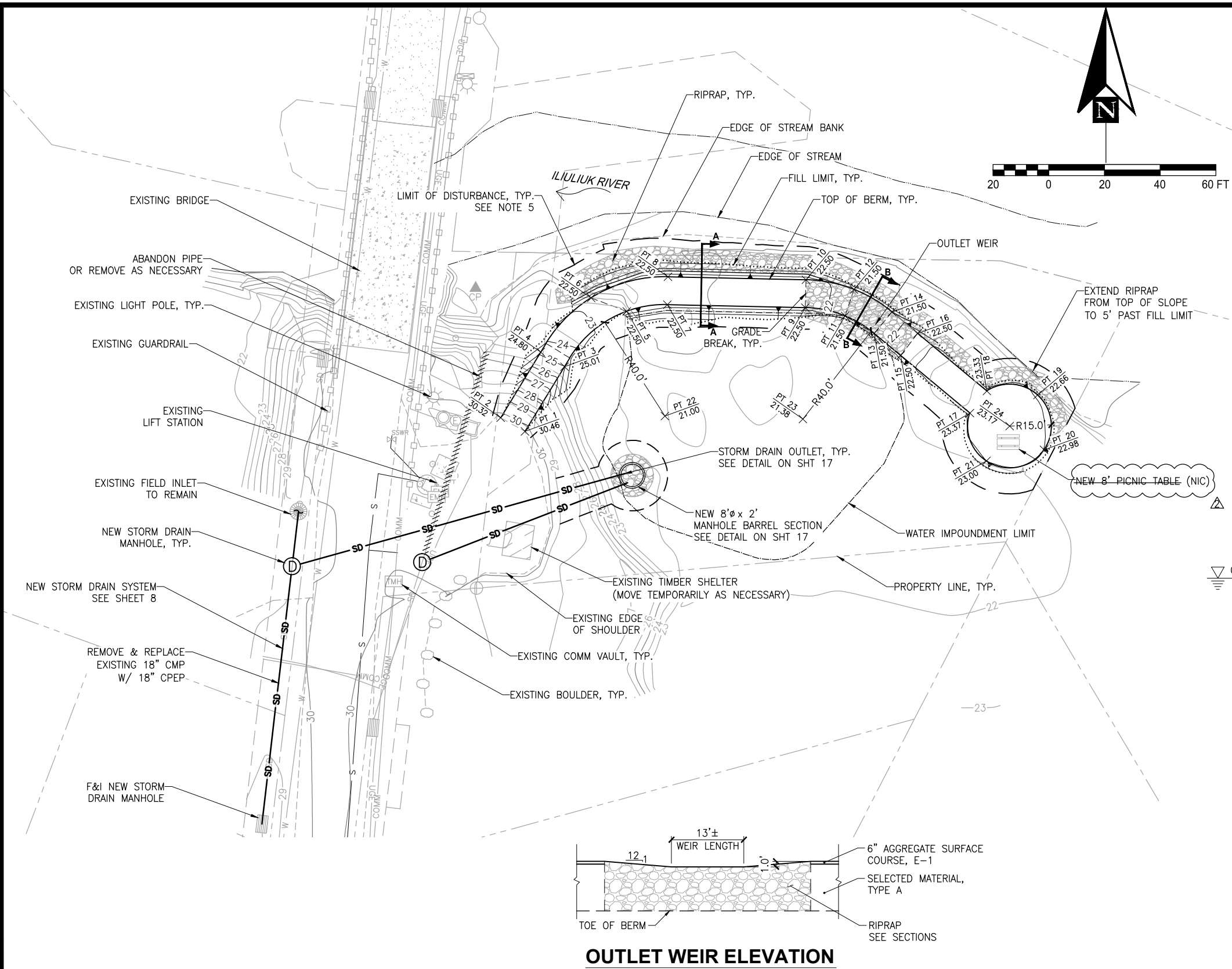
Fax: 907.563.4220

www.pndengineers.com

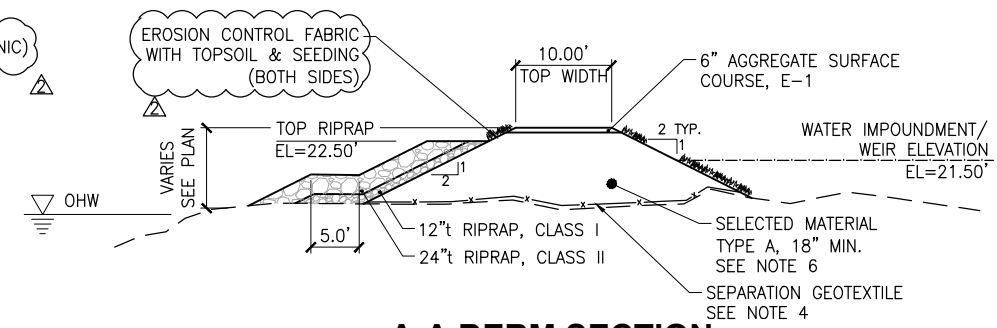
**P | N | D**  
**ENGINEERS, INC.**

PROJECT:		<b>CITY OF UNALASKA</b>	
		<b>LAKE &amp; RIVER RESTORATION PROJECTS</b>	
TITLE:		ARMSTRONG COURT DRAINAGE IMPROVEMENTS (ADDITIVE ALTERNATE 4)	
DESIGNED BY: AEW		DATE: 11/13/15	
CHECKED BY: PK		PROJECT NO: 141100	
		SHEET NO: <b>6</b> OF 18	

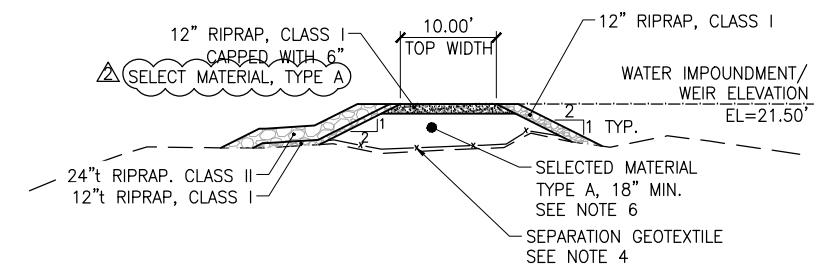




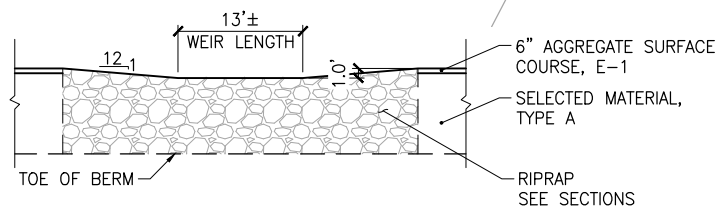
- NOTES:**
1. EXCAVATE AT NEW STORM DRAIN OUTLET AS NECESSARY TO PROVIDE ELEVATIONS SHOWN.
  2. SEED ALL DISTURBED AREAS
  3. PROPOSED CONTOURS ARE TO TOP OF SELECT MATERIAL, TYPE A AND SURFACE COURSE. RIPRAP CONTOURS NOT SHOWN.
  4. EXISTING GRADE MAY BE SOFT AND SATURATED. CONTRACTOR SHALL PROVIDE ANY ADDITIONAL MEASURES REQUIRED TO CONSTRUCT THE EARTHEN BERM AT THEIR OWN COST.
  5. LIMIT AREA OF DISTURBANCE TO WITHIN 3' OF FILL LIMITS. NO DISTURBANCE SHALL BE BELOW ORDINARY HIGH WATER MARK.
  6. EXCAVATE AS NECESSARY TO PROVIDE MINIMUM THICKNESS.
  7. SEE SHEET 8 FOR POINT LAYOUT TABLE.
  8. WHERE RIPRAP WILL BE TRAVERSED BY PEDESTRIANS, CAP WITH A 10 FOOT WIDE 6" THICK LAYER OF CLEAN 3-INCH MATERIAL.
  9. THE STREAMBANKS OF THE ILULIUK RIVER SHALL NOT BE ALTERED OR DISTURBED.
  10. ANY EARTHWORK ATTRIBUTABLE TO THIS PROJECT WILL BE STABILIZED TO PREVENT EROSION OR SEDIMENTATION OF THE ILULIUK RIVER, BOTH DURING AND AFTER THE PROJECT



**A-A BERM SECTION**



**B-B WEIR SECTION**



**OUTLET WEIR ELEVATION**

**ADDENDUM #3**  
DECEMBER 22, 2015

PND Engineers, Inc. (PND) is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

REV	DATE	DESCRIPTION
2	12/22/15	ADDENDUM #3
0	11/13/15	ISSUED FOR BID

DATE: \_\_\_\_\_

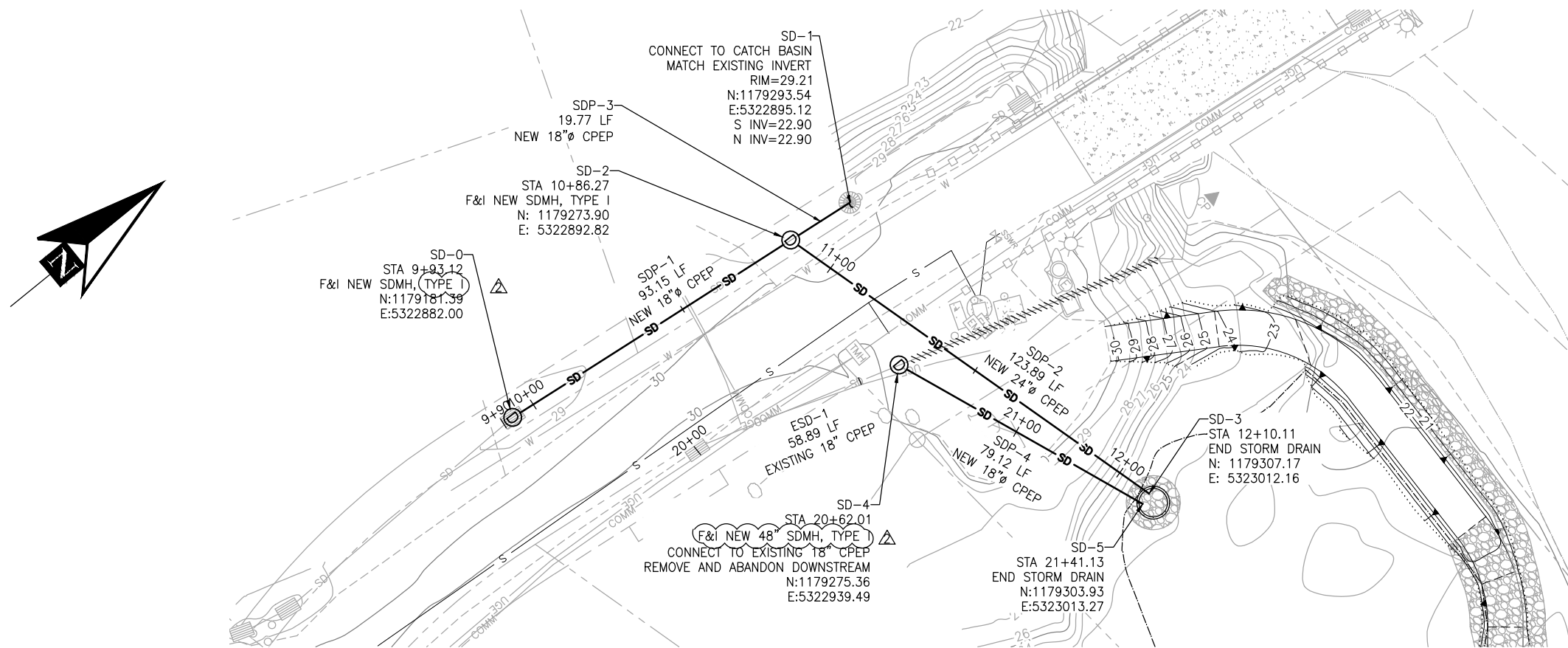
1506 West 36th Avenue  
Anchorage, Alaska 99503  
Phone: 907.561.1011  
Fax: 907.563.4220  
www.pndengineers.com



PROJECT: **CITY OF UNALASKA  
LAKE & RIVER RESTORATION PROJECTS**

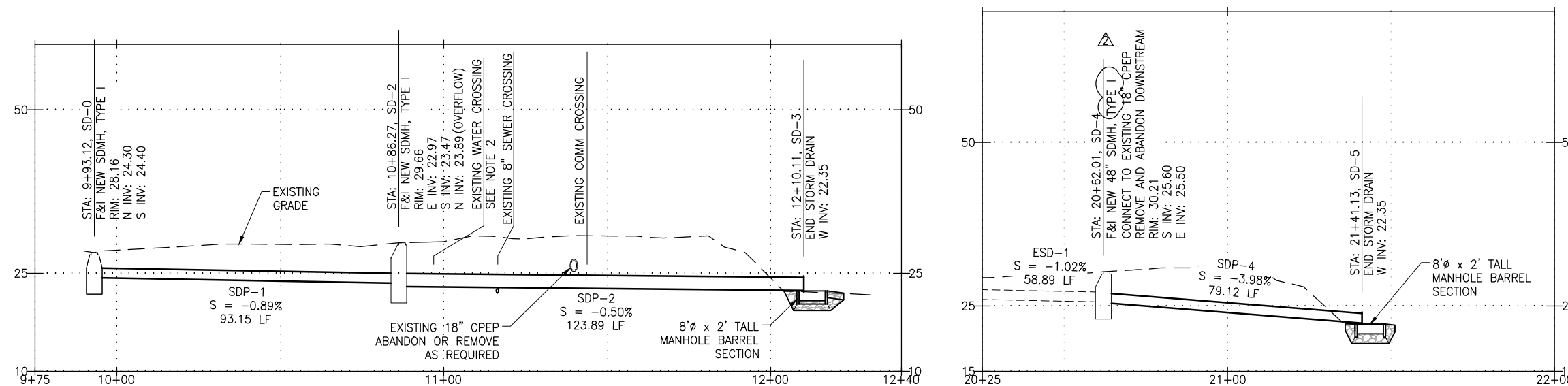
TITLE: **STEWARD ROAD  
IMPROVEMENTS PLAN**

DESIGNED BY: _____	AEW	DATE: 11/13/15	SHEET NO: <b>7</b> OF 18
CHECKED BY: _____	PK	PROJECT NO: 141100	



COORDINATE LAYOUT TABLE				
POINT NO	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	1,179,322.34	5,322,976.42	30.46	MATCH EXISTING
2	1,179,327.23	5,322,967.70	30.32	MATCH EXISTING
3	1,179,345.58	5,322,990.62	25.01	TOP OF BERM
4	1,179,350.79	5,322,982.08	24.80	TOP OF BERM
5	1,179,365.42	5,323,012.95	22.50	TOP OF BERM
6	1,179,370.26	5,323,000.18	22.50	TOP OF BERM
7	1,179,367.83	5,323,027.53	22.50	TOP OF BERM
8	1,179,377.83	5,323,027.75	22.50	TOP OF BERM
9	1,179,366.76	5,323,077.03	22.50	TOP OF BERM
10	1,179,376.75	5,323,077.28	22.50	TOP OF BERM
11	1,179,363.79	5,323,091.30	21.50	TOP OF BERM
12	1,179,373.27	5,323,094.49	21.50	TOP OF BERM
13	1,179,357.52	5,323,101.74	21.50	TOP OF BERM
14	1,179,365.20	5,323,108.14	21.50	TOP OF BERM
15	1,179,349.59	5,323,111.28	22.50	TOP OF BERM
16	1,179,357.52	5,323,117.37	22.50	TOP OF BERM
17	1,179,328.91	5,323,136.14	23.37	TOP OF BERM
18	1,179,336.84	5,323,142.24	23.33	TOP OF BERM
19	1,179,335.41	5,323,160.42	22.66	TOP OF BERM
20	1,179,315.72	5,323,162.74	22.98	MATCH EXISTING
21	1,179,311.75	5,323,142.10	23.00	MATCH EXISTING
22	1,179,327.84	5,323,026.66	21.00	CENTER
23	1,179,326.77	5,323,076.16	21.38	CENTER
24	1,179,324.25	5,323,150.40	23.17	CENTER

STORM DRAIN PLAN



NOTES:

1. SEE DETAIL ON SHEET 18 FOR TYPICAL PIPE TRENCH SECTION.
2. EXISTING WATER MAIN ELEVATIONS UNKNOWN. RELOCATE VERTICALLY AS NECESSARY PER DETAIL ON SHEET 18.

STORM DRAIN PROFILE

**ADDENDUM #3**  
DECEMBER 22, 2015

PND Engineers, Inc. (PND) is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

REV	DATE	DESCRIPTION
2	12/22/15	ADDENDUM #3
0	11/13/15	ISSUED FOR BID

DATE: \_\_\_\_\_

1506 West 36th Avenue  
Anchorage, Alaska 99503

Phone: 907.561.1011

Fax: 907.563.4220

www.pndengineers.com

**P | N | D**  
**ENGINEERS, INC.**

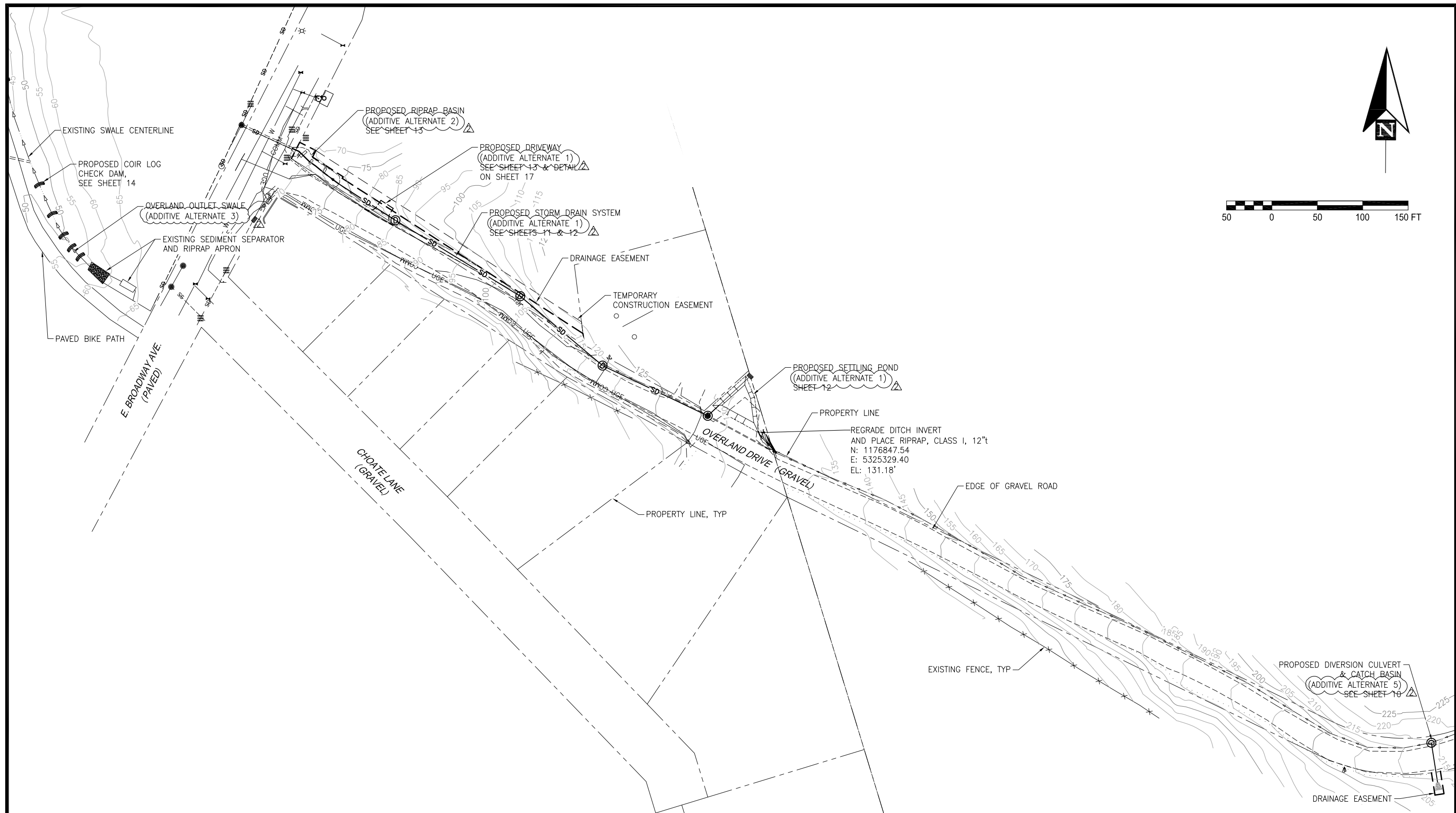
**CITY OF UNALASKA**  
**LAKE & RIVER RESTORATION PROJECTS**

**STEWART ROAD IMPROVEMENTS**  
**PLAN & PROFILE STORM DRAIN**

DESIGNED BY:	AEW	DATE:	11/13/15
CHECKED BY:	PK	PROJECT NO:	141100

SHEET NO: **8** OF 18





**ADDENDUM #3**  
DECEMBER 22, 2015

PND Engineers, Inc. (PND) is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

REV	DATE	DESCRIPTION
2	12/22/15	ADDENDUM #3
0	11/13/15	ISSUED FOR BID

DATE: \_\_\_\_\_

1506 West 36th Avenue  
Anchorage, Alaska 99503

Phone: 907.561.1011

Fax: 907.563.4220

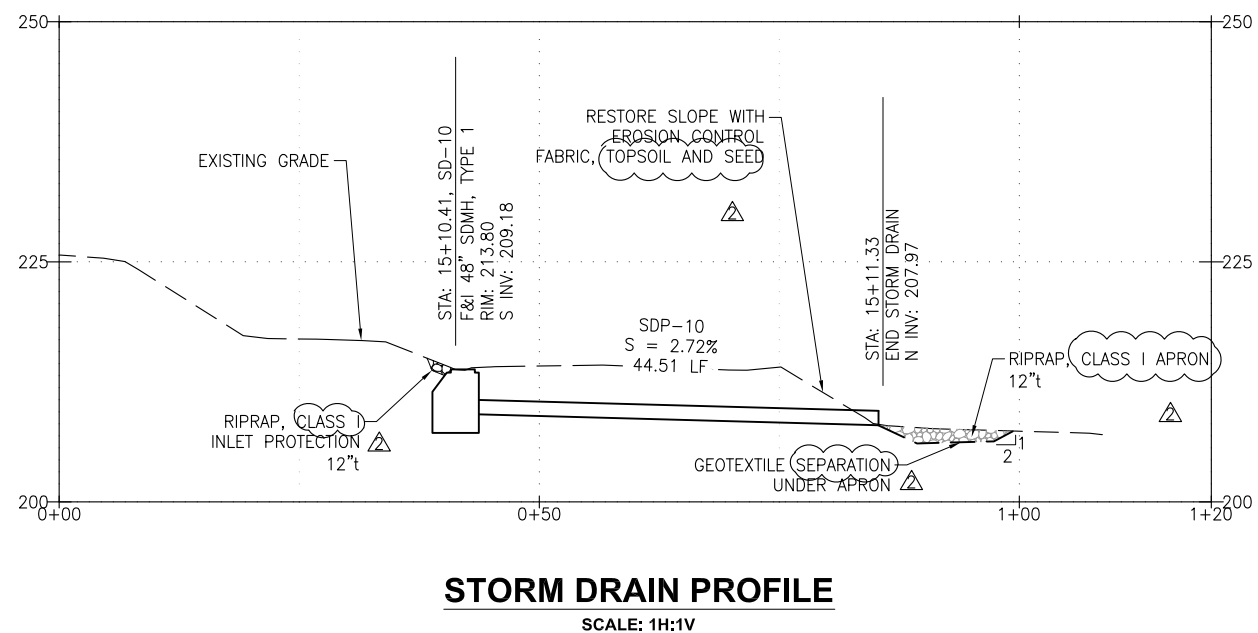
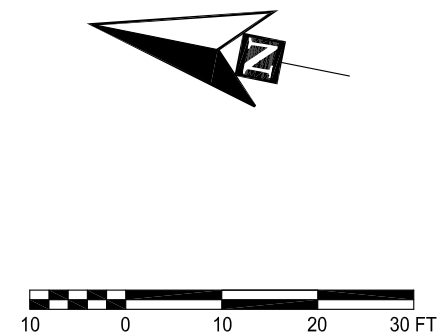
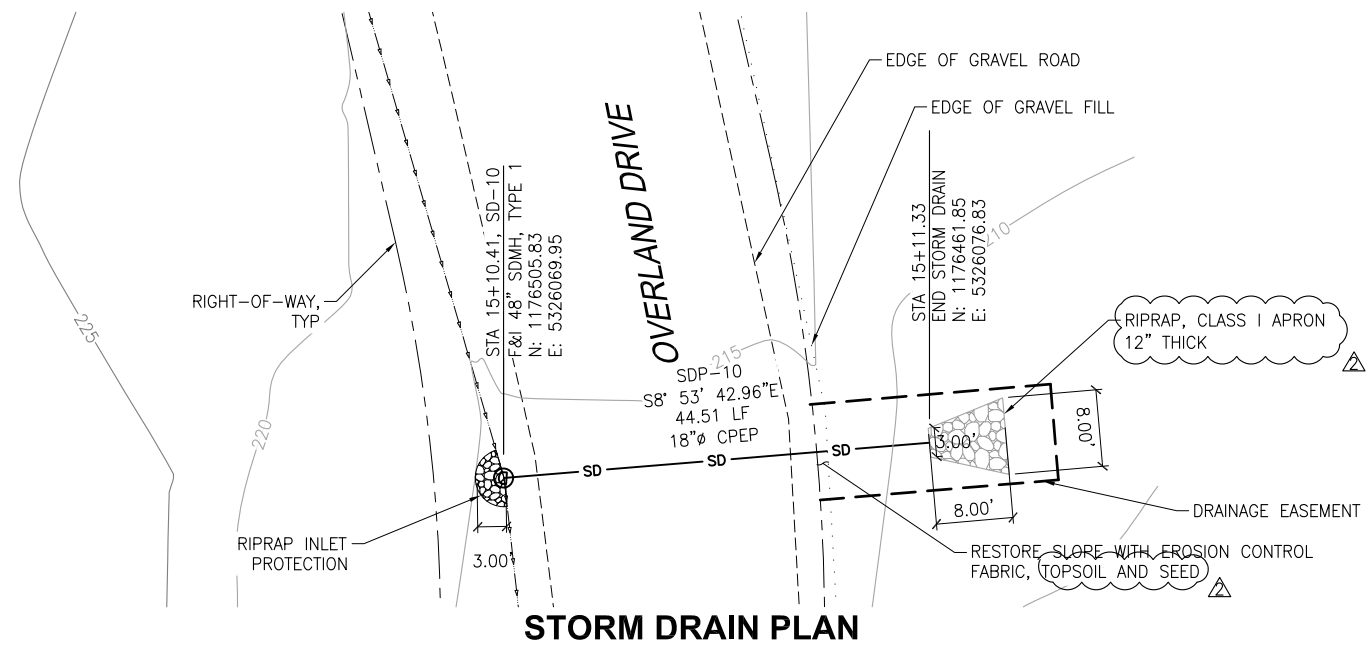
www.pndengineers.com



**CITY OF UNALASKA**  
**LAKE & RIVER RESTORATION PROJECTS**

**OVERLAND DRIVE IMPROVEMENTS**  
**OVERVIEW PLAN**

DESIGNED BY:	AEW	DATE:	11/13/15	SHEET NO:	9	OF	18
CHECKED BY:	PK	PROJECT NO:	141100				



**ADDENDUM #3**  
DECEMBER 22, 2015

PND Engineers, Inc. (PND) is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

REV	DATE	DESCRIPTION
2	12/22/15	ADDENDUM #3
0	11/13/15	ISSUED FOR BID

DATE: \_\_\_\_\_

1506 West 36th Avenue  
Anchorage, Alaska 99503

Phone: 907.561.1011

Fax: 907.563.4220

www.pndengineers.com

**P | N | D**  
ENGINEERS, INC.

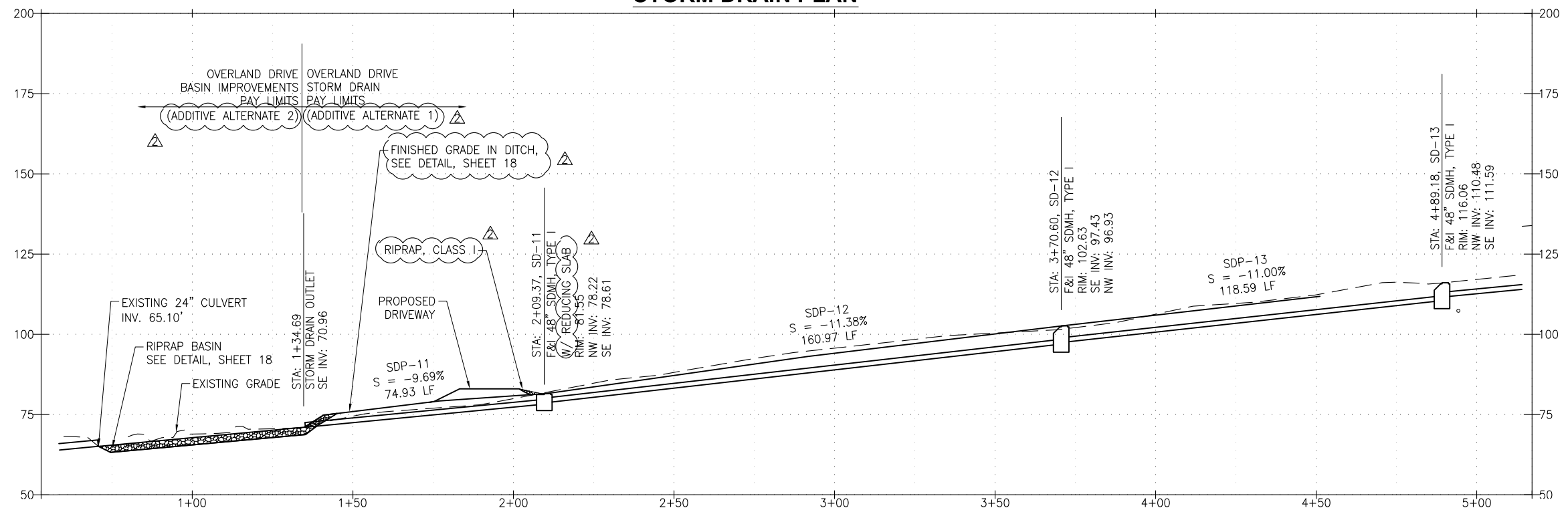
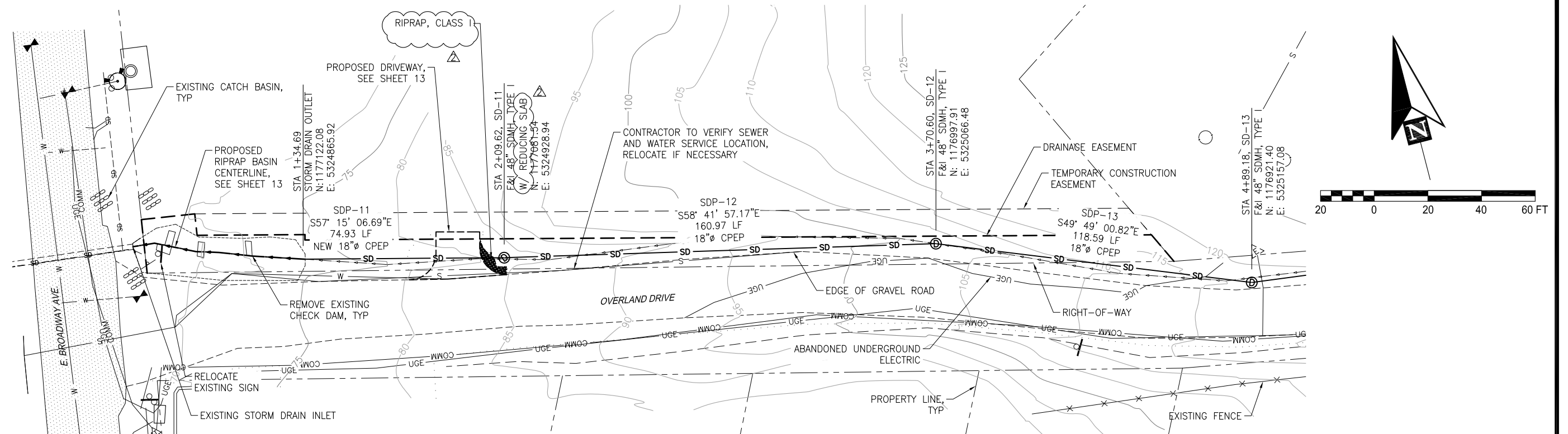
**CITY OF UNALASKA**  
**LAKE & RIVER RESTORATION PROJECTS**

**OVERLAND DRIVE DIVERSION CULVERT PLAN & PROFILE (ADDITIVE ALTERNATE 5)**

DESIGNED BY: AEW  
CHECKED BY: PK

DATE: 11/13/15  
PROJECT NO: 141100

SHEET NO:  
**10** OF 18



**STORM DRAIN PROFILE**

SCALE: 1H:1V

**ADDENDUM #3**  
DECEMBER 22, 2015

PND Engineers, Inc. (PND) is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

REV	DATE	DESCRIPTION
2	12/22/15	ADDENDUM #3
0	11/13/15	ISSUED FOR BID

DATE: \_\_\_\_\_

1506 West 36th Avenue  
Anchorage, Alaska 99503

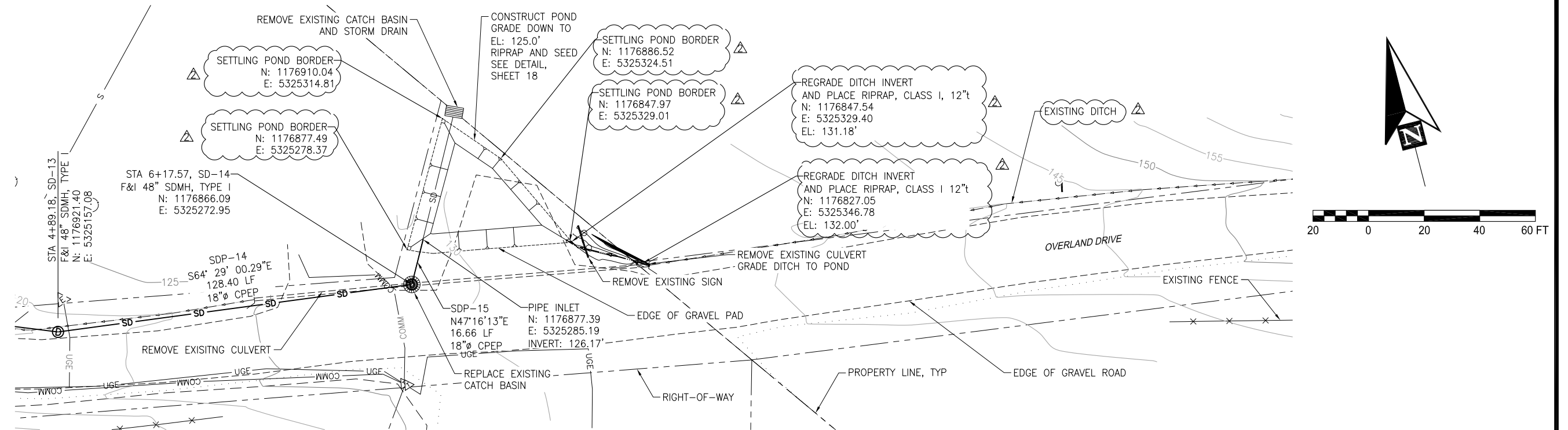
Phone: 907.561.1011

Fax: 907.563.4220

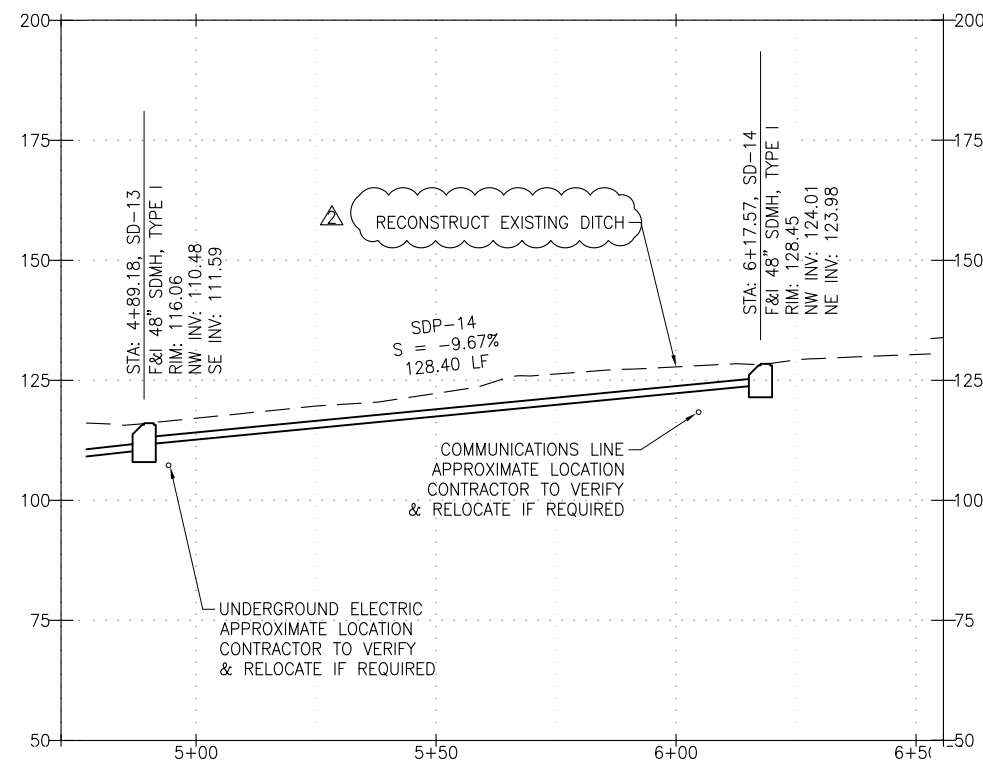
www.pndengineers.com

**PND**  
ENGINEERS, INC.

PROJECT:		CITY OF UNALASKA LAKE & RIVER RESTORATION PROJECTS	
TITLE:		OVERLAND DRIVE STORM DRAIN PLAN & PROFILE (1 OF 2) ADDITIVE ALTERNATE	
DESIGNED BY:	AEW	DATE:	11/13/15
CHECKED BY:	PK	PROJECT NO:	141100
SHEET NO:		11 OF 18	



**STORM DRAIN PLAN**



**STORM DRAIN PROFILE**

SCALE: 1H:1V

**ADDENDUM #3**  
DECEMBER 22, 2015

PND Engineers, Inc. (PND) is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

REV	DATE	DESCRIPTION
2	12/22/15	ADDENDUM #3
0	11/13/15	ISSUED FOR BID

DATE: \_\_\_\_\_

1506 West 36th Avenue  
Anchorage, Alaska 99503

Phone: 907.561.1011

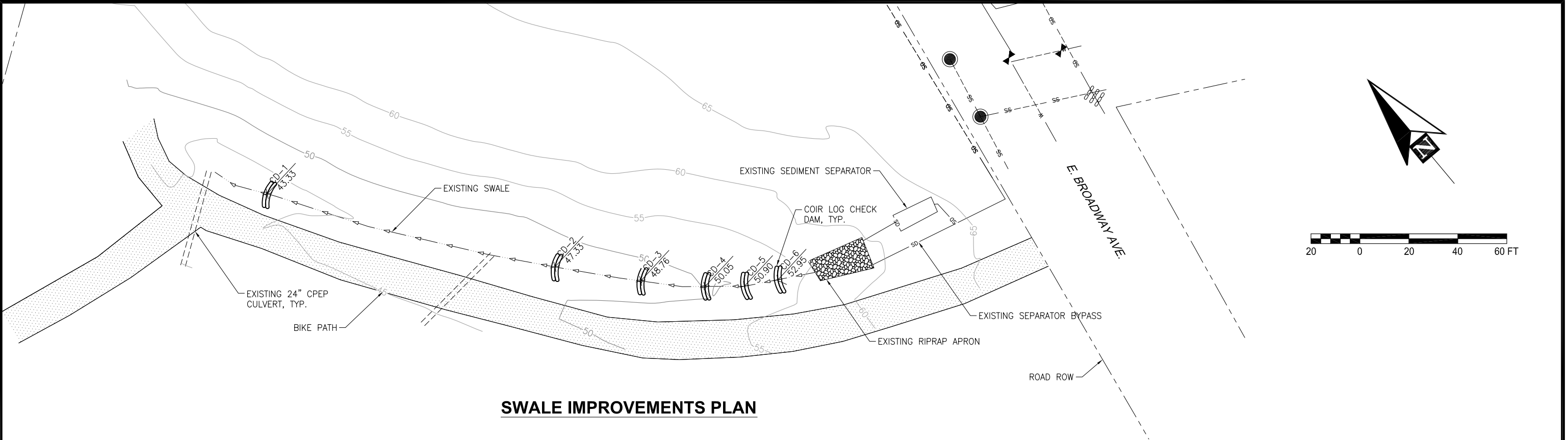
Fax: 907.563.4220

www.pndengineers.com

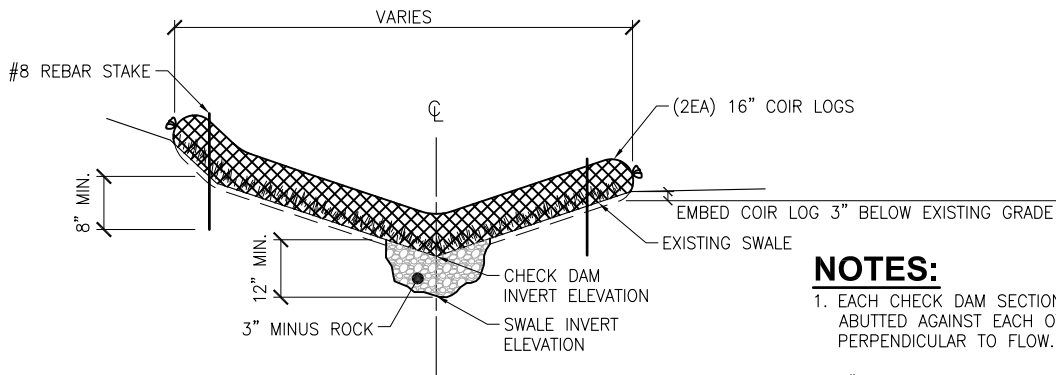
**P | N | D**  
**ENGINEERS, INC.**

PROJECT:		CITY OF UNALASKA LAKE & RIVER RESTORATION PROJECTS	
TITLE:		OVERLAND DRIVE STORM DRAIN PLAN & PROFILE (2 OF 2) ADDITIVE ALTERNATE 1	
DESIGNED BY:	AEW	DATE:	11/13/15
CHECKED BY:	PK	PROJECT NO:	141100
SHEET NO:		12 OF 18	





SWALE IMPROVEMENTS PLAN



CHECK DAM SECTION

NTS

NOTES:

1. EACH CHECK DAM SECTION SHALL CONSIST OF (2) COIR LOGS ABUTTED AGAINST EACH OTHER TO CREATE A THICKER DAM PERPENDICULAR TO FLOW.
2. 3" MINUS MATERIAL TO BE PLACED AT CENTER OF SWALE INVERT ONLY DIRECTLY UNDER EACH CHECK DAM SECTION.
3. OVERFLOW ELEVATION OF THE CHECK DAM TO BE A MINIMUM OF 6" LOWER THAN ITS EDGES.
4. EMBED DAM BOTTOM AND SIDES 3" INTO THE EXISTING SWALE.
5. SEED ALL DISTURBED AREAS.
6. WIDTH OF CHECK DAMS SHOWN ARE APPROXIMATE. CONTRACTOR TO SUPPLY 160 LF OF COIR LOGS. CONTRACTOR SHALL COORDINATE WITH ENGINEER TO DETERMINE EXACT LOCATION AND EXTENTS OF COIR LOGS.
7. HEAVY EQUIPMENT SHALL NOT BE USED ON BIKE PATH, SWALE, OR ADJACENT SLOPES. CONTRACTOR SHALL TAKE CARE TO MINIMIZE DISTURBANCE OF PROJECT SITE.

COORDINATE LAYOUT TABLE				
POINT NO	NORTHING	EASTING	DESCRIPTION	INVERT ELEVATION
1	1177236.4690	5324498.2102	CHECK DAM (CD-1)	43.33'
2	1177121.4353	5324536.5639	CHECK DAM (CD-2)	47.33'
3	1177088.8228	5324550.6490	CHECK DAM (CD-3)	48.76'
4	1177065.5073	5324562.8101	CHECK DAM (CD-4)	50.05'
5	1177052.0115	5324571.7362	CHECK DAM (CD-5)	50.90'
6	1177041.8849	5324581.3007	CHECK DAM (CD-6)	52.95'

ADDENDUM #3  
DECEMBER 22, 2015

PND Engineers, Inc. (PND) is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

REV	DATE	DESCRIPTION
2	12/22/15	ADDENDUM #3
0	11/13/15	ISSUED FOR BID

DATE: \_\_\_\_\_

1506 West 36th Avenue  
Anchorage, Alaska 99503  
Phone: 907.561.1011  
Fax: 907.563.4220  
www.pndengineers.com

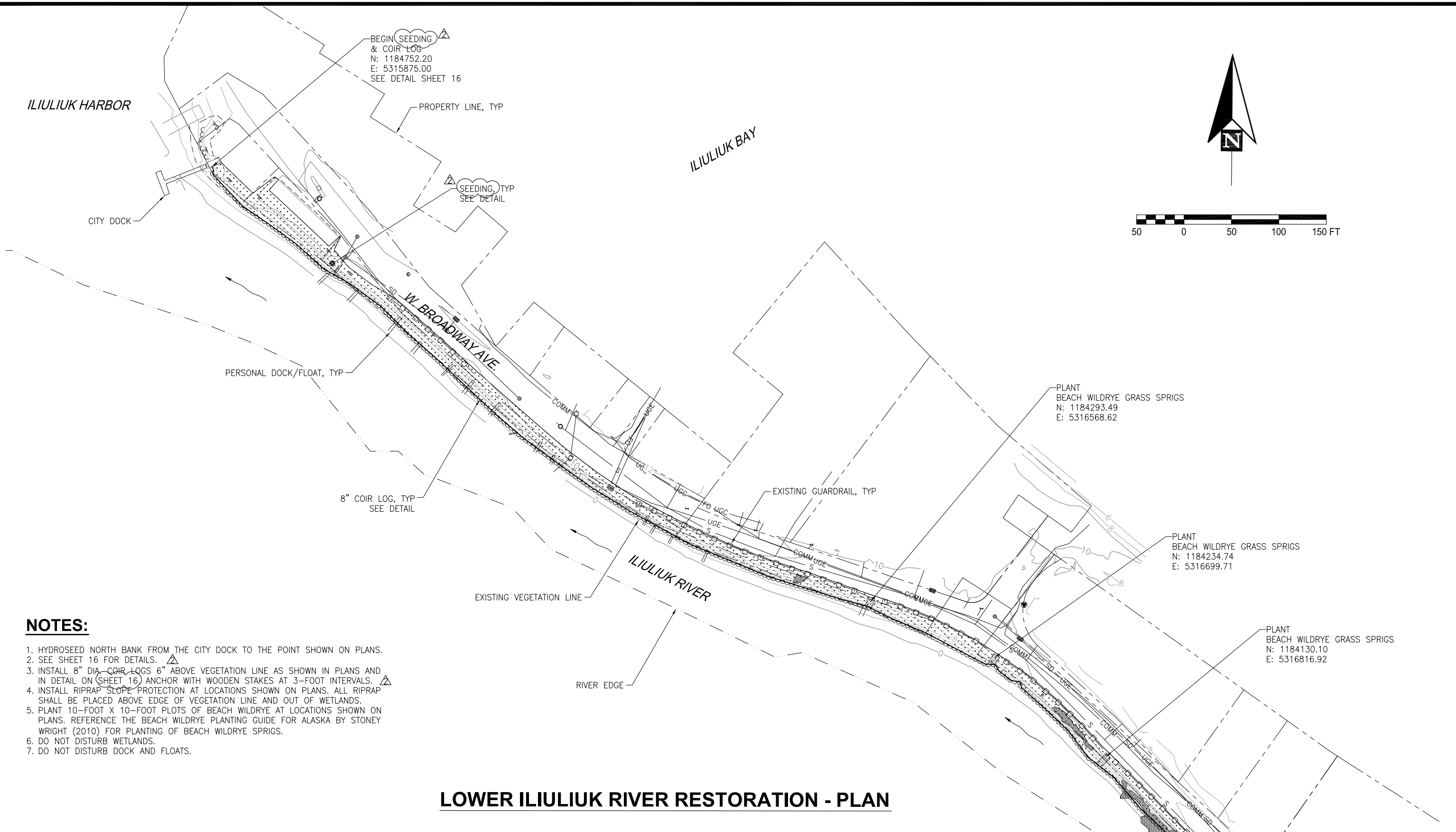
**P | N | D**  
ENGINEERS, INC.

CITY OF UNALASKA  
LAKE & RIVER RESTORATION PROJECTS

OVERLAND DRIVE OUTLET SWALE  
(ADDITIVE ALTERNATE 3)

DESIGNED BY: AEW DATE: 11/13/15  
CHECKED BY: PK PROJECT NO: 141100

SHEET NO: 14 OF 18



**NOTES:**

- 1. HYDROSEED NORTH BANK FROM THE CITY DOCK TO THE POINT SHOWN ON PLANS.
- 2. SEE SHEET 16 FOR DETAILS.
- 3. INSTALL 8" DIA. COIR LOGS 6" ABOVE VEGETATION LINE AS SHOWN IN PLANS AND IN DETAIL ON SHEET 16. ANCHOR WITH WOODEN STAKES AT 3-FOOT INTERVALS.
- 4. INSTALL RIPRAP SLOPE PROTECTION AT LOCATIONS SHOWN ON PLANS. ALL RIPRAP SHALL BE PLACED ABOVE EDGE OF VEGETATION LINE AND OUT OF WETLANDS.
- 5. PLANT 10-FOOT X 10-FOOT PLOTS OF BEACH WILDRYE AT LOCATIONS SHOWN ON PLANS. REFERENCE THE BEACH WILDRYE PLANTING GUIDE FOR ALASKA BY STONEY WRIGHT (2010) FOR PLANTING OF BEACH WILDRYE SPRIGS.
- 6. DO NOT DISTURB WETLANDS.
- 7. DO NOT DISTURB DOCK AND FLOATS.

**LOWER ILIULIUK RIVER RESTORATION - PLAN**

NOTE: THIS PORTION OF THE PROJECT IS NOT GRANT FUNDED.

**ADDENDUM #3**  
DECEMBER 22, 2015

PND Engineers, Inc. (PND) is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

REV	DATE	DESCRIPTION
2	12/22/15	ADDENDUM #3
0	11/13/15	ISSUED FOR BID

DATE: \_\_\_\_\_

1506 West 36th Avenue  
Anchorage, Alaska 99503  
Phone: 907.561.1011  
Fax: 907.563.4220  
www.pndengineers.com

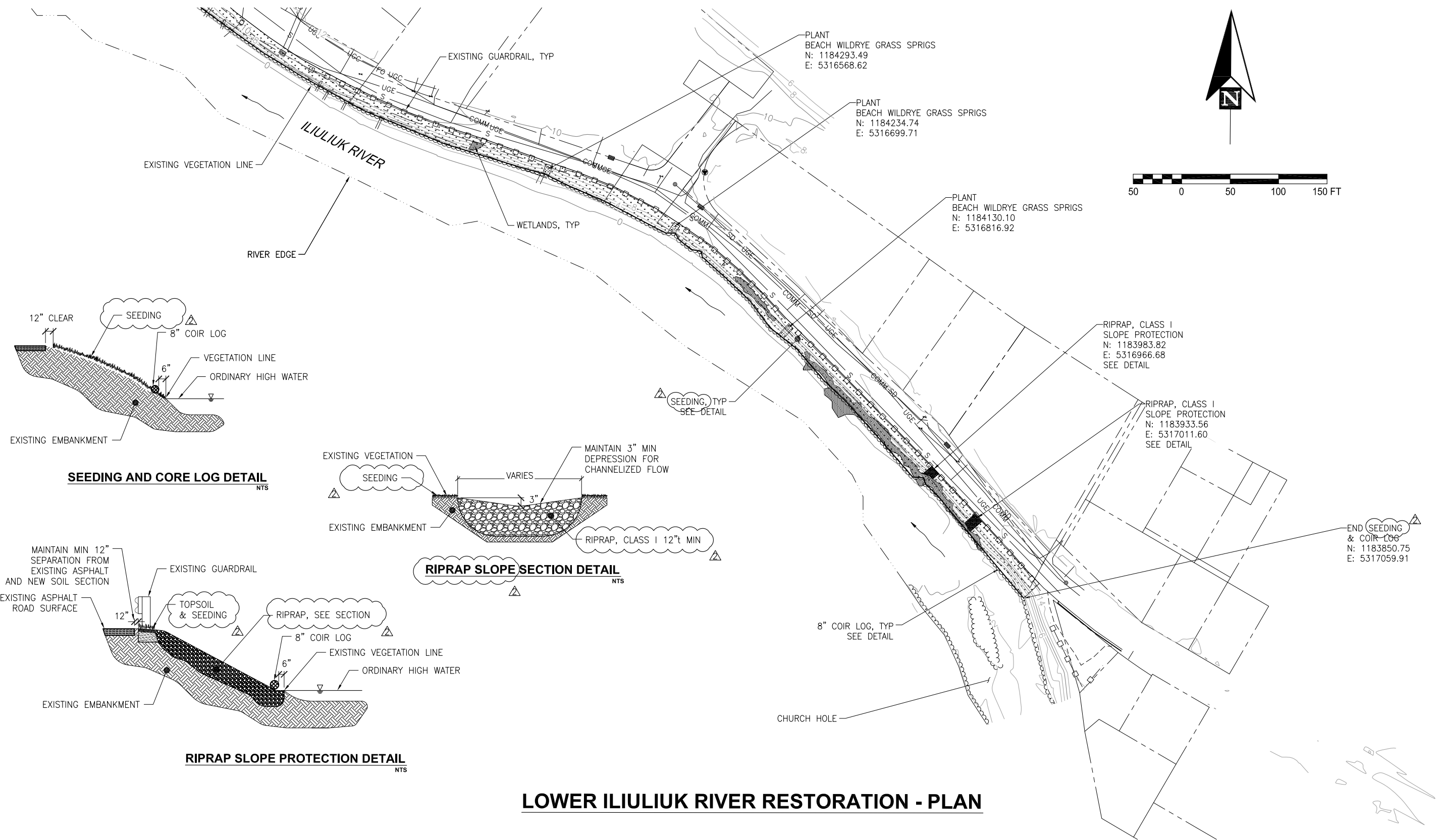
**P | N | D**  
ENGINEERS, INC.

**CITY OF UNALASKA**  
**LAKE & RIVER RESTORATION PROJECTS**

**LOWER ILIULIUK RIVER IMPROVEMENTS**  
**PLAN (1 OF 2) ADDITIVE ALTERNATE 6**

DESIGNED BY:	AEW	DATE:	11/13/15
CHECKED BY:	PK	PROJECT NO:	141100

SHEET NO: **15** OF 18



## LOWER ILIULIUK RIVER RESTORATION - PLAN

NOTE: THIS PORTION OF THE PROJECT IS NOT GRANT FUNDED.

**ADDENDUM #3**  
DECEMBER 22, 2015

PND Engineers, Inc. (PND) is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

REV	DATE	DESCRIPTION
2	12/22/15	ADDENDUM #3
0	11/13/15	ISSUED FOR BID

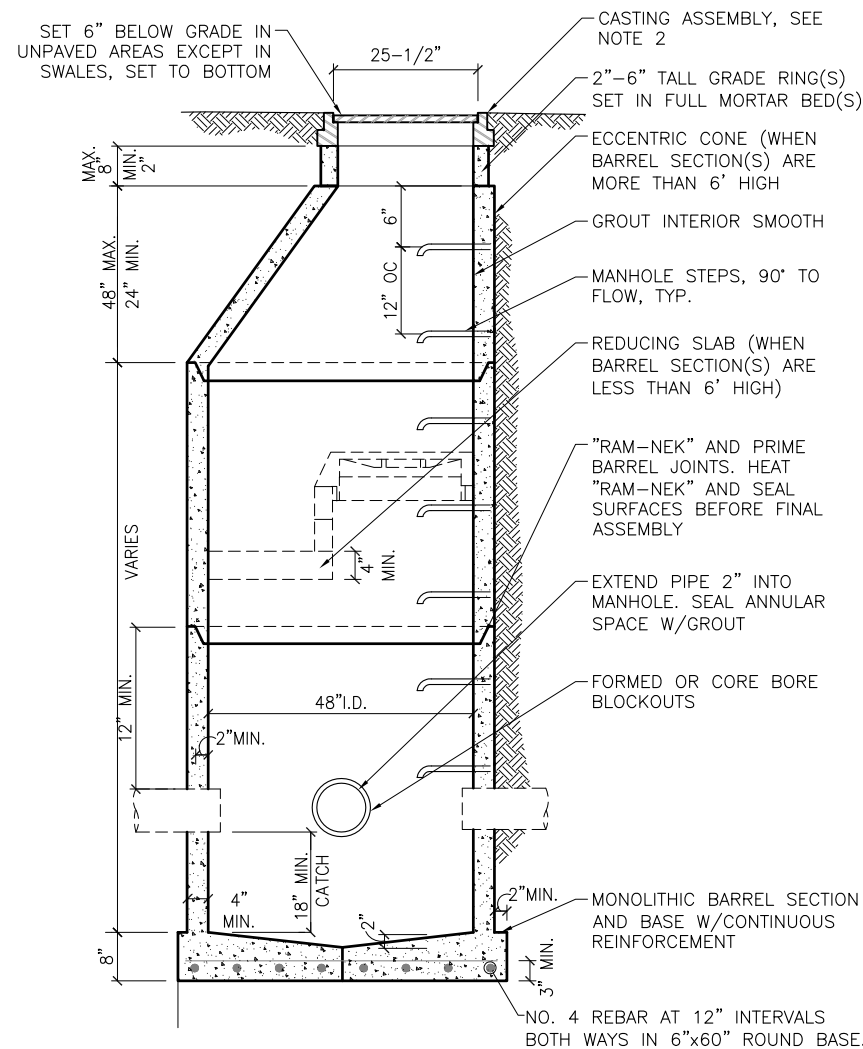
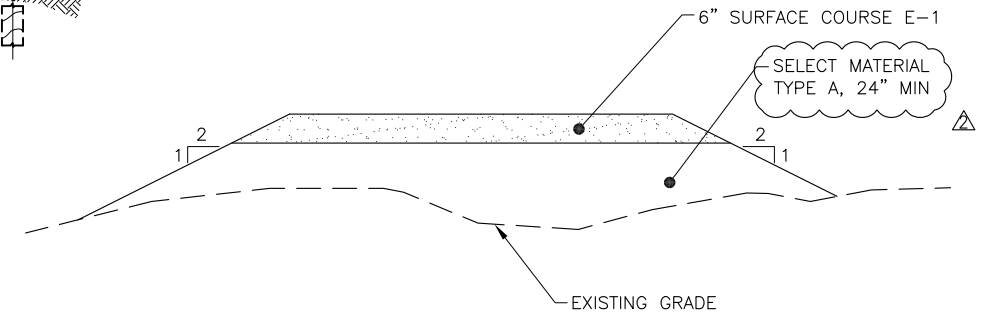
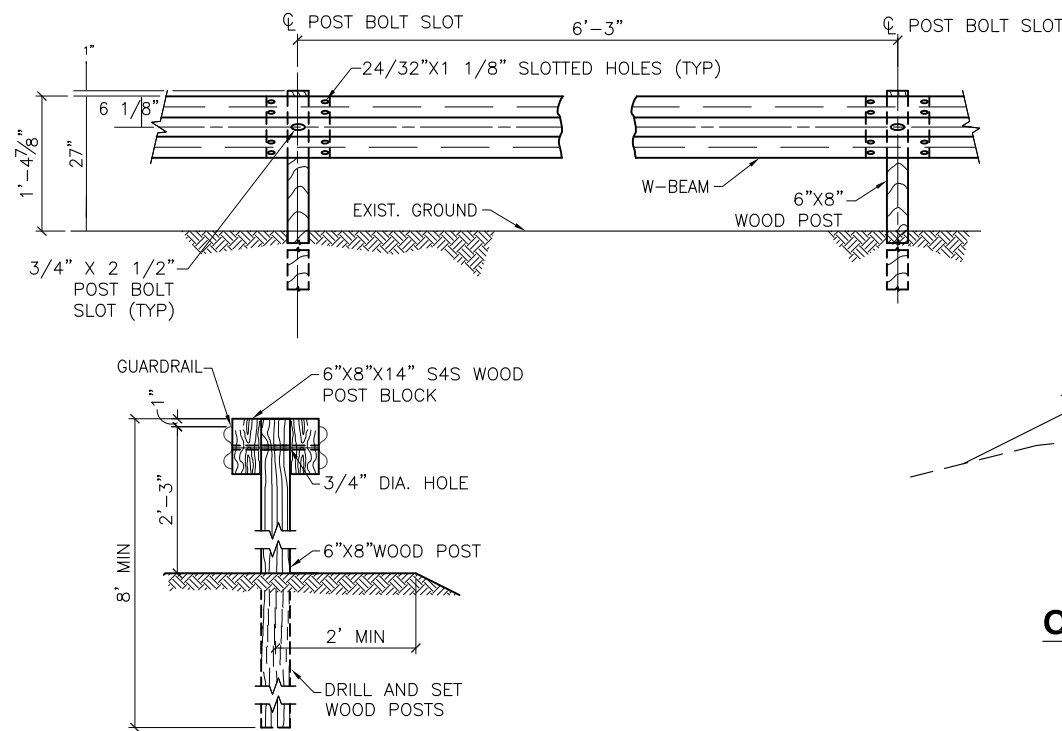
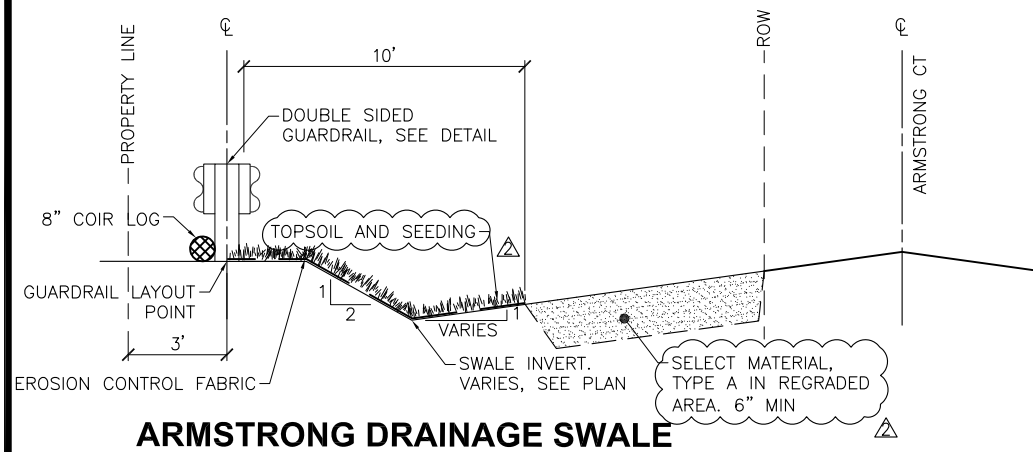
DATE: \_\_\_\_\_

1506 West 36th Avenue  
Anchorage, Alaska 99503  
Phone: 907.561.1011  
Fax: 907.563.4220  
www.pndengineers.com

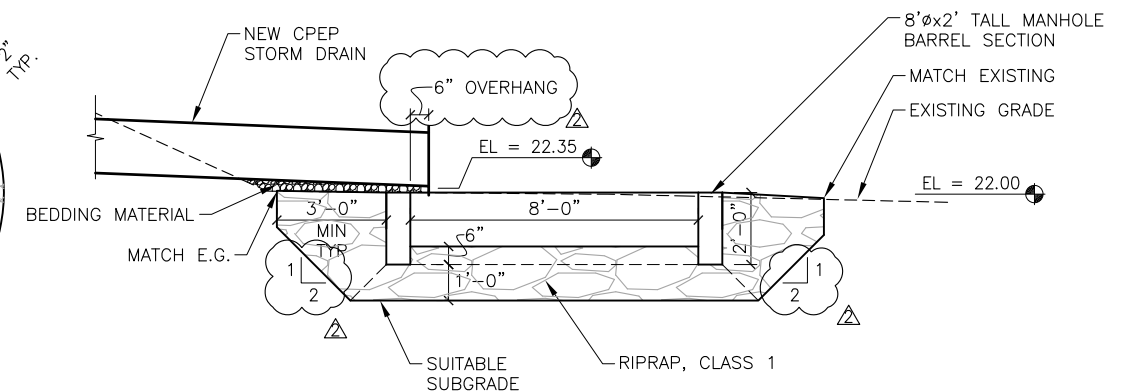
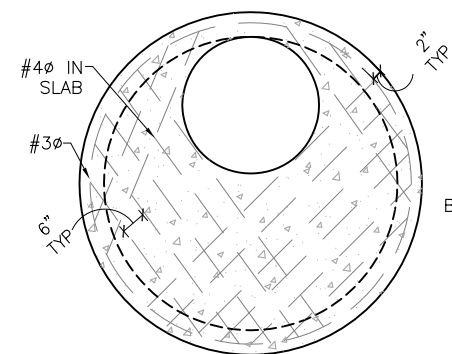
**PND**  
ENGINEERS, INC.

PROJECT:		CITY OF UNALASKA LAKE & RIVER RESTORATION PROJECTS	
TITLE:		LOWER ILIULIUK RIVER IMPROVEMENTS PLAN (2 OF 2) ADDITIVE ALTERNATE 6	
DESIGNED BY:	AEW	DATE:	11/13/15
CHECKED BY:	PK	PROJECT NO:	141100
SHEET NO:		16 OF 18	





- NOTES:**
1. REFER TO A.S.T.M. DESIGNATION C-470-69 FOR DESIGN REQUIREMENTS.
  2. FRAME AND GRATE SHALL BE EJIW PART NUMBERS 264010 AND 264030 OR ENGINEER APPROVED EQUAL.
  3. MIN. STEEL REQ'D FOR BARREL AS PER A.S.T.M. C-478-69 SHALL BE EMBEDDED IN BASE SO THAT FIRST BARREL SECTION IS CONNECTED WITH BASE.
  4. PRIMARY LEADS NOT TO EXCEED 30" CMP, PCMP, CPEP OR 27" RCP WITH INCLUDED ANGLE BETWEEN LEADS NO LESS THAN 135° OR PRIMARY LEAD NOT TO EXCEED 24" CMP, PCMP, CPEP OR 21" RCP WITH INCLUDED ANGLE LESS THAN 135°.
  5. BLOCKOUTS TO BE FORMED.
  6. RUNGS TO BE PLACED 12" ON CENTER ON UNOBSTRUCTED SIDE OF MANHOLE 18" MAX. FROM BOTTOM OF MANHOLE & 6" MAX. FROM TOP OF CONE. IF UNOBSTRUCTED SIDE NOT AVAILABLE, BOTTOM RUNG TO BE PLACED 6" OVER SMALLEST PIPE.
  7. BACKFILL AROUND MANHOLE WITH 36" THICK CLASSIFIED FILL.
  8. SET BASE ON 12" CLASSIFIED FILL.



**ADDENDUM #3**  
DECEMBER 22, 2015

PND Engineers, Inc. (PND) is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

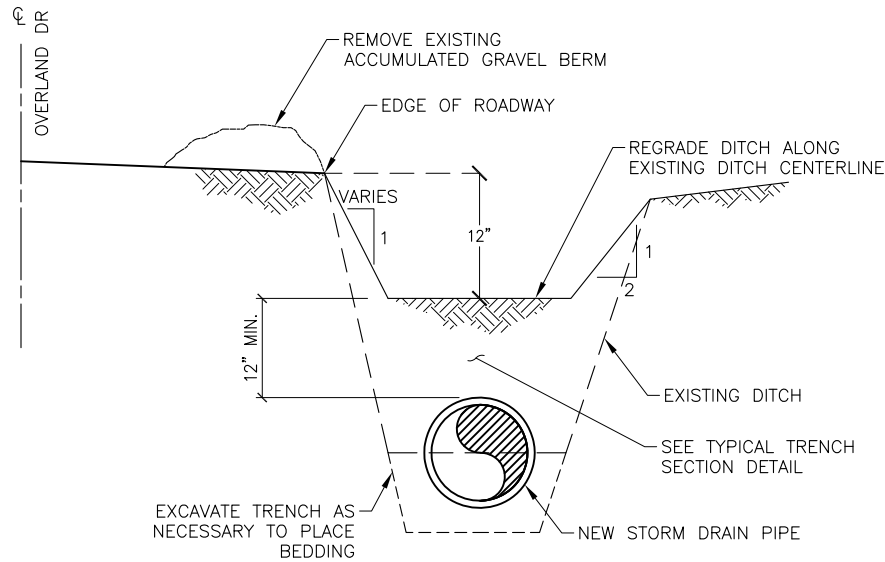
REV	DATE	DESCRIPTION
2	12/22/15	ADDENDUM #3
0	11/13/15	ISSUED FOR BID

DATE: \_\_\_\_\_

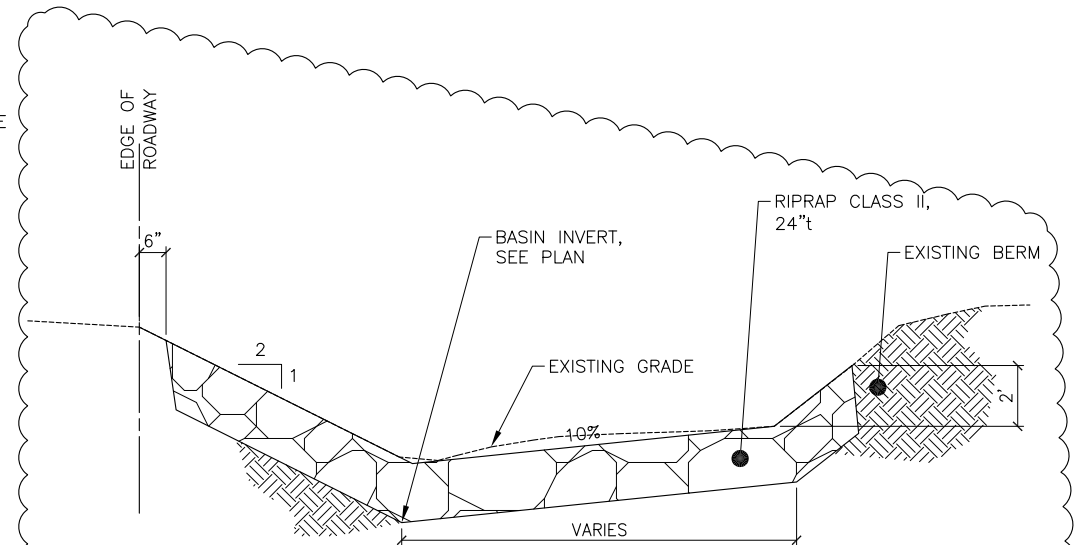
1506 West 36th Avenue  
Anchorage, Alaska 99503  
Phone: 907.561.1011  
Fax: 907.563.4220  
www.pndengineers.com

**P | N | D**  
ENGINEERS, INC.

PROJECT: <b>CITY OF UNALASKA LAKE &amp; RIVER RESTORATION PROJECTS</b>			
TITLE: <b>DETAILS (1 OF 2)</b>			
DESIGNED BY: AEW	DATE: 11/13/15	SHEET NO: <b>17</b> OF 18	
CHECKED BY: PK	PROJECT NO: 141100		

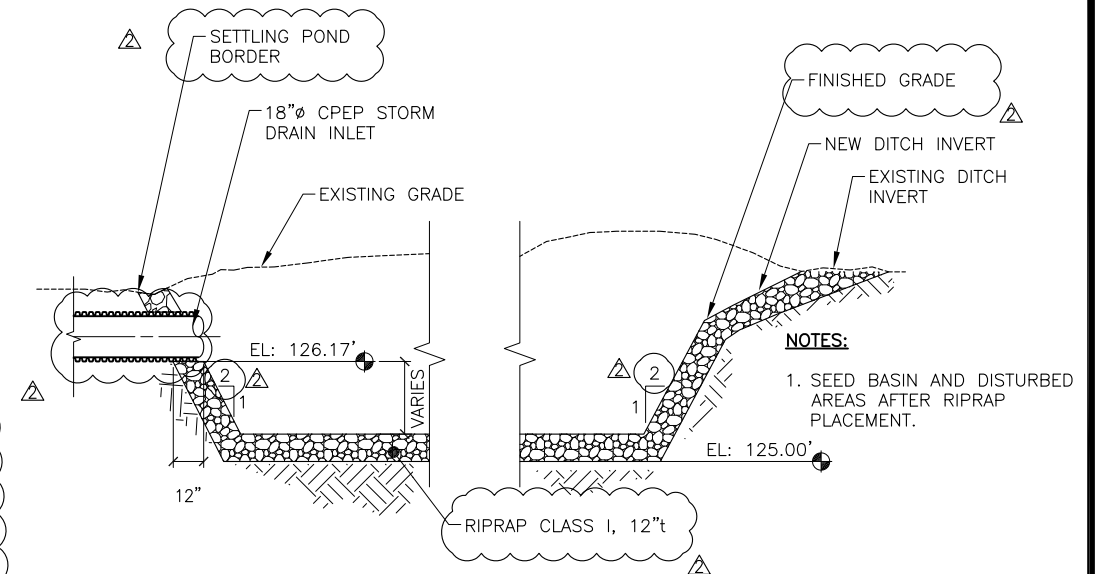


**OVERLAND DITCH DETAIL**

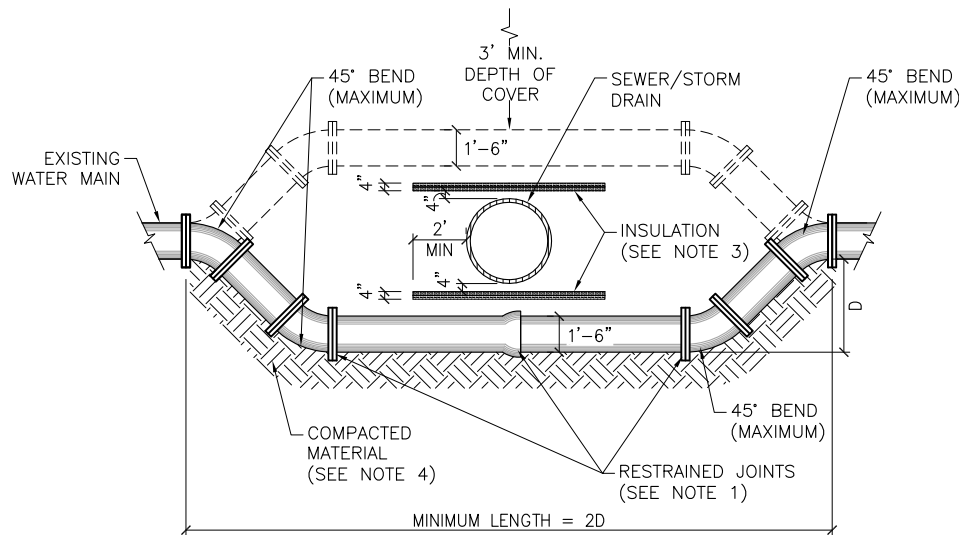


**OVERLAND BASIN IMPROVEMENTS SECTION**

- NOTES:
1. GRADE FROM ROAD DOWN TO BASIN INVERT. GRADE UP TO EXISTING BERM.
  2. DO NOT DISTURB VEGETATION ON TOP OF EXISTING BERM.
  3. STEEPER SLOPE MAY BE REQUIRED NEAR STORM DRAIN OUTLET. VERIFY IN FIELD.

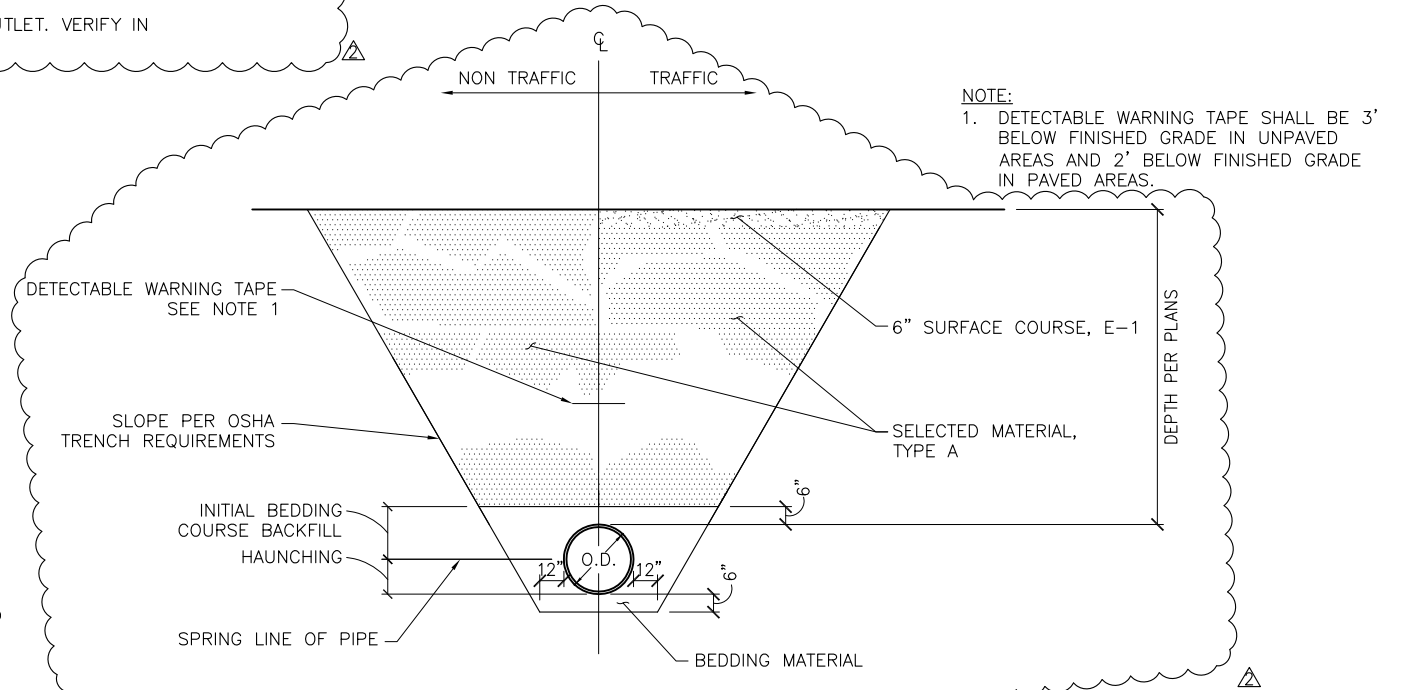


**OVERLAND SETTLING POND SECTION**



**SEWER / STORM DRAIN DETAIL**

- NOTES:
1. ALL PIPE, CLASS 52 DI AND FITTINGS SHALL BE RESTRAINED BY USE OF MEGALUG® AND/OR FIELD LOK® GASKETS OR EQUAL.
  2. RELOCATED WATER MAIN SHALL HAVE A MINIMUM SEPARATION OF THIRTY-SIX INCHES (36") BETWEEN STORM AND WATER. IF LESS THAN THIRTY-SIX INCHES (36") OF SEPARATION CANNOT BE OBTAINED THEN FOUR INCHES (4") OF INSULATION IS REQUIRED. IF EIGHTEEN INCHES (18") OF SEPARATION CANNOT BE MAINTAINED BETWEEN WATER AND SEWER OR STORM AN ADEC WAIVER IS REQUIRED.
  3. RIGID BOARD INSULATION SHALL BE HIGH DENSITY EXTRUDED POLYSTYRENE, MIN. 60 P.S.I., EQUIVALENT TO R-20 PER FOUR INCH (4") THICKNESS. INSULATION SHALL BE BE POSITIONED NO LESS THAN OR EQUAL TO FOUR INCHES (4") FROM STORM SEWER.
  4. ALL BACKFILL MATERIAL AROUND RELOCATED WATER MAIN SHALL BE NFS AND COMPACTED TO 95% MAX. DENSITY.
  5. ALL MATERIALS USED TO RELOCATE WATER LINE SHALL BE APPROVED BY THE OWNER.



**TYPICAL TRENCH SECTION  
STORM DRAIN PIPE & CULVERT**

**ADDENDUM #3**  
DECEMBER 22, 2015

PND Engineers, Inc. (PND) is not responsible for safety programs, methods or procedures of operation, or the construction of the design shown on these drawings. Where specifications are general or not called out, the specifications shall conform to standards of industry. Drawings are for use on this project only and are not intended for reuse without written approval from PND. Drawings are also not to be used in any manner that would constitute a detriment directly or indirectly to PND.

REV	DATE	DESCRIPTION
2	12/22/15	ADDENDUM #3
0	11/13/15	ISSUED FOR BID

DATE: \_\_\_\_\_

1506 West 36th Avenue  
Anchorage, Alaska 99503  
Phone: 907.561.1011  
Fax: 907.563.4220  
www.pndengineers.com

**P | N | D**  
ENGINEERS, INC.

PROJECT: <b>CITY OF UNALASKA LAKE &amp; RIVER RESTORATION PROJECTS</b>			
TITLE: <b>DETAILS (2 OF 2)</b>			
DESIGNED BY: AEW	DATE: 11/13/15	SHEET NO: <b>18</b> OF 18	
CHECKED BY: PK	PROJECT NO: 141100		