



US Army Corps
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Seattle District

Notice of Preparation

Environmental and Cultural Resources Branch Public Notice Date: 29 May, 2012
P.O. Box 3755 Expiration Date: 29 June 2012
Seattle, WA 98124-3755 Reference: PM-ER-12-2
ATTN: Bobbi Jo McClain

Project Name: St. Maries Levee Rehabilitation Project, St. Maries, Idaho

Interested parties are hereby notified that the U.S. Army Corps of Engineers, Seattle District (Corps) plans to prepare, pursuant to the National Environmental Policy Act, an environmental assessment (EA) for previously completed and proposed levee repairs on the St. Joe River in the City of St Maries, Benewah County, Idaho. Repairs are intended to address damage to flood control works caused by flooding. Emergency work was completed in March 2011, and further repair is expected to be conducted in 2012.

AUTHORITY

The proposed levee repair is authorized by Public Law 84-99 (33 U.S. Code Section 701n). Corps rehabilitation and restoration work under this authority is limited to flood control works damaged or destroyed by floods. The statute authorizes rehabilitation to the condition and level of protection exhibited by the flood control work prior to the damaging event. The City of St. Maries is the local sponsor.

NEED

Three damage areas have reduced the level of protection of the St Maries levee. During the May and June 2008 flood event, seepage paths developed at Site 1 through the levee, allowing significant seepage along a 1,300 feet reach. The high river flows likely resulted in the pressurization of the Mutch Creek diversion pipe and the pump house outlet pipe. The pressure is presumed to have led to the pipe's failing. At the same time, seepage occurred along a longer reach of the levee presumably due to a lens of permeable material below the levee or potentially due to seepage along other utility pipes in the landward toe of the levee.

A high water event in late March and early April of 2012 resulted in further damage to the St. Maries Federally Authorized Levee. The damage occurred in two separate areas. Site 2 is located downstream of the I-wall. A 60-foot long tension crack developed. Typically this crack is 3 inches wide and 4 inches deep. The typical vertical displacement is 3 inches. The largest section of the crack was measured at 7.5 inches wide with a vertical displacement of 8 inches. The tension crack occurred in material that was placed during a 2011 high water event. The third damage area, Site 3, is located upstream of the floodwall and sustained a rotational slope failure during the high water. A severe rain event causing the high water saturated the slope making it more

susceptible to instability. The rotational failure is approximately 5 feet in height and approximately 20 feet wide. The depth into the slope is approximately 5 feet. During the site investigation, the PDT cited three downstream areas of undercut bank. Allowing to tie-in to strategic points, the full repair would be 160 LF.

Prior to the damage, this levee offered at least a 100-year level of protection. In the current damaged state, the levee provides protection from approximately a 5-year flood event. The purpose of the project is to repair and return the damaged levee to the level of flood protection to protect lives and property from subsequent flooding.

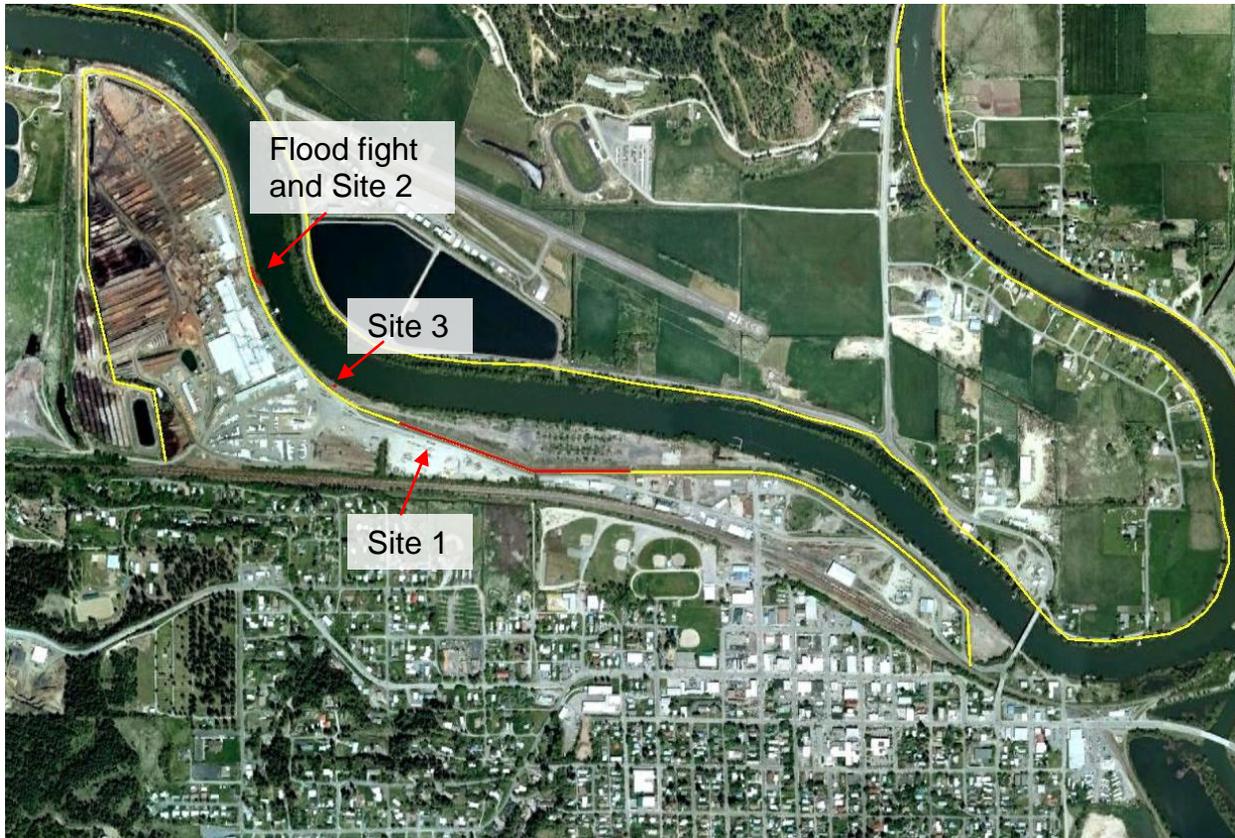


Figure 1. Overview of Project area. Levees shown in yellow, damage areas in red.

PURPOSE

The purpose of the project is to repair and restore the damaged levees to the 100-year level of flood protection as found prior to the 2008 flood event in order to protect lives and property from subsequent flooding.

COMPLETED AND PROPOSED ACTIONS

On 29 March, 2011 Benewah County requested assistance based on Northwest River Forecast Center predictions that the St. Joe River would exceed flood stage. Upon inspection, a back eddy was noted and the riverbank had lost material in a rotational slump in front of the Potlatch Mill cribwall. The rotational failure threatened the crib wall which stabilizes a ramp, parking area and the turn-around pad in the levee. A concrete

floodwall protects the levee upstream of the crib wall, but stops at the top of the ramp before the parking and turn-around pad. Further slumping threatened the levee integrity in the reach that has no floodwall. From 31 March at 2100 hours to 1 April 1800 hours work was completed. The work included placement of 2,120 cubic yards 18" minus quarry rock onto the levee adjacent to the Potlatch Mill crib wall to prevent further rotational failure. The full repair was 180 feet with a roughly 2.0:1 to 2.5:1 riverward slope.

Multiple alternatives for proposed work are being considered as follows.

a. No Action Alternative:

The No-Action Alternative would leave the levee in its current damaged state. The No-Action alternative would not meet the project goals due to the high likelihood of damage or levee failure from future flood events.

b. Repair to Pre-flood Condition Alternative:

The repair returns the levee to the designed level of protection, as provided prior to the flood damage by returning the levee to the same condition as existed prior to the damage.

c. Sheet Pile Alternative:

This alternative would drive sheet pile to approximately 40-foot depth along 1,300 feet of the levee toe. This alternative would address seepage concerns, but would not address the suspected pipe failure or levee damage related to the pipe failure. Due to the high cost of this alternative and the ability to meet project purpose and goals with other lower cost alternatives, this alternative was not chosen as the preferred plan.

d. Seepage Berm Alternative:

This alternative adds material on the landward side of the levee to provide a downward weight to counteract the high exit gradients at the levee's landward toe. Seepage berms also lengthen the seepage path, to decrease pressure head and decrease the seepage pressure in the area beyond the berm.

e. Non-Structural Alternative:

This alternative would relocate all existing structures, utilities and other infrastructure within the damage area protected by this section of levee. The costs associated with this alternative were deemed too high for the level of benefit associated with this alternative.

The current preferred alternative for the proposed work includes the Seepage berm alternative for Site 1, and the Repair to Pre-flood Condition Alternative for Sites 2 and 3. See the attached draft designs for further detail of the proposed repairs. Construction of the Site 1 repair is anticipated for September 2012 and construction of Sites 2 and 3 are proposed for the inwater work window of 2013 (July 15 - Sept 1 and Nov 1 - Feb 28).

The recommended repair alternative for Site 1 includes pipe replacements and constructing a 2-foot to 4-foot seepage berm. The berm would create an effective seepage control structure and allow for increased road width. The City of St Maries would like to increase the road width in this confined area to improve traffic flow. The seepage berm would include a non-woven filter fabric and 2 feet minimum of 2 ½-inch minus ballast. The berm would be capped with aggregate base course and finished with 4 inches of asphalt pavement. A retaining wall, approximately 100 feet in length, would be included along the southerly length of the roadway near the pump station constriction point. The project would be transitioned to the existing roadway height for approximately 100 feet at each end of the seepage berm at a reasonable roadway grade. The total length of the project would be 1500 feet to include these transition areas. Finally, the Mutch Creek culvert and the 20" pump house outlet would be replaced to correct any postulated deficiencies in the conduits. It is theorized that, when the flap gates are closed on these pipes, pressure is developed and any weak points in the pipes leak, creating pressure in the ground water and causing piping damage to the levee. The proposed repair would entail replacing approximately 150 feet of the 48-inch Mutch Creek diversion pipe with 48-inch HDPE butt welded pipe and replacing approximately 120 feet of the 20-inch pump house outlet line with 20-inch HDPE butt welded pipe. Repair of the pipe through the levee, and rerouting of traffic during construction will require a portion of the levee, up to 500 ft, to be removed and rebuilt.

The recommended repair alternative for Site 2 includes removing the overburden at this location. The tension crack occurred in material that was placed during a 2011 high water. The total length of overburden removal is approximately 145 feet and would include excavation of the material placed above the waterline. No excavation would occur below the water. The working pad would be reduced to a 12-foot wide bench and the slopes would be re-graded to a more gradual slope to meet the new catch point.

The recommended repair alternative for Site 3 includes armoring the slope with a Class II riprap. The armor would include a 1 foot filter blanket that should also improve drainage from the slope. The weight and strength of this rock armoring is intended to buttress the slope, while nullifying any potential for erosion and bank undercutting. The full repair would be 160 feet. This repair will constitute a change in substrate at this location, placing rock on what had been an earthen bank, but will maintain the pre-damaged slope and footprint. The repair will tie into existing rock at the downstream end, extending the existing armored bank through the 160 ft repair.

Final selection of the preferred alternative and finalization of the design, including any recommendations from the analyses for the National Environmental Policy Act (NEPA) or the Endangered Species Act (ESA), will occur during the NEPA process and before construction. Best management practices would be utilized to minimize project impacts.

ANTICIPATED IMPACTS

The Corp's preliminary analyses of the principal effects of the completed flood fight efforts and the proposed Repair to Pre-Flood Design Alternative are summarized below.

Wetlands: The St. Joe River is a tributary of the Coeur d'Alene River. Throughout the reach of the proposed levee repairs, the river is a low gradient channel with a wide floodplain. The flood fight included inwater work, however no wetlands were impacted. The levee is setback from the river throughout Site 1 such that the riverward levee toe is located approximately 500 feet away from the main channel of the river. The existing pump house for Mutch Creek is not expected to be impacted or changed by this project. The land surrounding the pump house includes a wetland fringe. A wetland delineation will determine the extent of impacts due to the replacement of the pipes. No wetland impacts are expected from the construction of the retaining wall and the use of the retaining wall limits the width of the seepage berm avoid any impact to the wetland. If impacts from the pipe replacement cannot be avoided, lost habitat and water quality functions will be restored through mitigation efforts.

Biological Resources. Impacts to biological resources from the completed work and the proposed work are expected to be minimal.

Bull trout (*Salvelinus confluentus*) and Canada lynx (*Lynx canadensis*), both listed as threatened under the ESA, could occur within the project vicinity. The inwater work completed for the flood fight and that proposed at Site 3 are not expected to have a significant effect on bull trout. The proposed work at Sites 1 and 2 will have no adverse affect on bull trout as there will be no in-water work. The project activities will have no effect on Canada lynx. Canada lynx are known to historically occur in the project area, but they are now typically found at higher elevations and there have been no recent sightings in the area. Two threatened plants listed under ESA, water howellia (*Howellia aquatilis*) and Spalding's catchfly (*Silene spaldingii*), are also found in Benewah County. Spalding's catchfly grows in sagebrush, scabland and ponderosa pine forests and water howellia is restricted to small pothole ponds or orphaned river oxbows. Neither of these plants would be located at the project sites. Any effects of the proposed and completed work on threatened species will be addressed in separate compliance documentation in accordance with Section 7 of the Endangered Species Act.

The levee is vegetated with forbs, grasses, and shrubs that would be or were disturbed during construction. The levee was or would be hydroseeded with native grasses at the end of the construction period to stabilize the soils. Several willows and dogwoods on the river bank were removed for the flood fight. A few trees may need to be removed on the landward side of the levee in and around the pump house in order to replace the pipes during the proposed work.

Contaminated Areas: The St. Maries Creosote Superfund Site is located riverward of Site 1. Studies done by the potentially responsible parties and the Environmental Protection Agency (EPA) found that sediments, soils and groundwater have been contaminated with creosote from the former wood-pole treating plant at that location. EPA released its revised Proposed Plan for cleaning up the site in December 2006. On July 20, 2007, EPA signed the final cleanup plan for the site, known as the Record of Decision. The Consent Decree, a legal document governing the cleanup, became

effective on February 9, 2010. Cleanup includes excavation and thermal treatment of contaminated soils and in situ treatment. The Corps will closely coordinate the repair efforts with the EPA to ensure that no work would occur in contaminated areas and no disturbance to the Superfund Site would occur.

Water Quality: During the flood fight minor turbidity increases in the St. Joe. River were noted. The quarry rock delivered to the site had a small amount of fines that washed off the rock and entered the water. Turbidity plumes were intermittent, covered a space of usually no more than 10 feet long and 1 foot wide, and dissipated within 10 minutes. During construction of the proposed work, there may be water quality impacts such as temporary and localized increase in turbidity near the inwater work and within the drainage pond adjacent to the pump house and potentially through the pipe to the St Joe River. Implementation of BMPs would ensure such impacts are temporary and localized. No long term effects to water quality are expected to occur.

Cultural Resources: Prior to repairs, a Corps archeologist will conduct a cultural resources survey of the project area to determine whether there is a potential for the proposed repairs to cause effects to historic properties. A cultural resources report will be prepared and will contain an evaluation for eligibility of the St. Maries levee and its appurtenances to the National Register Historic Places (NRHP) as the levee is over 50 years old; the effect of proposed construction on the levee system; and determine if any archaeological sites are located within the area of potential effect (APE) and determine their eligibility for the National Register, and determine the effects of the proposed rehabilitation on eligible sites. The St. Maries levee system has not been archaeologically surveyed and prehistoric and/or historic archaeological sites such as portions of early St. Maries may be present below the levee prism or in other areas that might be affected by construction-related ground disturbance. Within the lower portion of the St. Joe river basin, all natural levees tend to have prehistoric archaeological sites, and if the landform upon which the City levee is located was a natural levee, evidence of such sites may be present. Consultation with the Coeur d'Alene Tribe and the Idaho State Historic Preservation Officer is ongoing. The levee, pipe and pump house are all features of the original federal project completed in 1942. During the flood fight the Corps added 2,120 cubic yards of rock to the downstream end of the crib wall. No historic properties were affected during the flood fight.

Air Quality. Construction vehicles and heavy equipment during proposed and completed construction will temporarily and locally generate gasoline and diesel exhaust fumes, carbon dioxide (CO₂), carbon monoxide, and dust on roadways. The activity constitutes repair of an existing facility, generating an increase in direct emissions of a criteria pollutant or its precursors that is clearly *de minimis*, and is therefore exempted by 40 CFR Section 93.153(c)(2)(iv) from the conformity determination requirements. Emissions generated by the construction activity are expected to be minor, short-term, and well below the *de minimis* threshold. Unquantifiable but insignificant exacerbation of effects of CO₂ emissions on global climate change is anticipated.

Noise. Temporary increases in noise did occur during the flood fight and would occur as a result of construction activities for the proposed action. The project area is adjacent to the Potlatch Mill, a lumber manufacturing business. Wildlife in the area is likely habituated to human activity and noise. Work during the flood fight was completed through the night, however was directly adjacent to the lumber mill and approximately 1600 ft from the nearest residences. Proposed work will be done during daylight hours so that noise levels are not expected to significantly impact the neighboring community.

Traffic. Construction-related traffic would cause temporary increases to, and disruption of, local traffic, particularly along Railroad Ave which is the main access road to the nearby lumber mill. During the flood fight, impacts included increased traffic, but disruptions were short and not significant. Efforts would be made to minimize disturbances to traffic patterns during proposed construction, likely to include a temporary access route that will detour Railroad Ave. Flaggers and signs will be used to safely direct traffic through the construction site. Manholes will be installed to allow greater access to the pipes in the future without traffic disruptions.

Cumulative Effects. Council on Environmental Quality (CEQ) regulations implementing NEPA require that the cumulative impacts of a proposed action be assessed. A cumulative impact is an “impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions” (40 CFR § 1508.7). Cumulative impacts can result from individually minor but collectively significant actions taking place (40 CFR § 1508.7). CEQ’s guidance for considering cumulative effects states that NEPA documents “should compare the cumulative effects of multiple actions with appropriate national, regional, state, or community goals to determine whether the total effect is significant” (CEQ 1997).

The levee was originally built by the Corps for flood control in 1942, as authorized by the Flood Control Act of 1938. The Corps rehabilitated the upper 1,360 ft of the Mutch Creek diversion pipe in 1982. In 2003, the Corps replaced a cribwall between Sites 2 and 3, with an I-wall. The County performs annual maintenance on the levee for access and inspection. The proposed project is designed to restore the levee to its pre-flood level of protection and to limit the need for future repairs at this location, though maintenance activities would be expected to continue. Cumulative effects will be analyzed and addressed, as required, pursuant to NEPA and ESA.

COMPLIANCE WITH OTHER LAWS AND REGULATIONS

The Corps will coordinate the proposed action with the U.S. Fish and Wildlife Service concerning effects from the completed flood fight and the proposed repair activities on threatened and endangered species and their critical habitat, pursuant to Sec. 7(a)(2) of the Endangered Species Act.

The flood fight and the proposed project are not anticipated to cause violations of any standards under the Clean Air Act.

No significant impact to Tribal Treaty Rights is expected as a result of the completed or proposed activities.

Elements of the project involve discharges of fill material into waters of the United States that will be evaluated for substantive compliance with guidelines promulgated by the Environmental Protection Agency under authority of Section 404(b)(1) of the Clean Water Act (CWA). The pipe replacement will include minimal wetland impacts and the proposed repair at site 3 includes a substrate change below ordinary high water along the St Joe River. The Corps will seek Certification under CWA Section 401 from the Coeur d'Alene Tribe that the project provides a reasonable assurance of compliance with Tribal water quality standards.

EVALUATION

The Corps has made a preliminary determination that the environmental impacts of the proposal can be adequately evaluated under the National Environmental Policy Act through preparation of an environmental assessment (EA). Preparation of an EA addressing potential environmental impacts associated with the levee rehabilitation project is currently underway.

The Corps invites submission of comments on the environmental impact of the proposal. The Corps will consider all submissions received before the expiration date of this notice. The nature or scope of the proposal may be changed upon consideration of the comments received. The Corps will initiate an Environmental Impact Statement (EIS), and afford all of the appropriate public participation opportunities attendant to an EIS, if significant effects on the quality of the human environment are identified and cannot be mitigated.

Submit comments to this office, Attn: Environmental Resources Section, no later than 30 days after the posting of this notice to ensure consideration. In addition to sending comments via mail to the above address, comments may be e-mailed to Ms. Bobbi Jo McClain, Project Biologist, at bobbi.j.mcclain@usace.army.mil. Notice of Preparation can be found at the following website: <http://www.nws.usace.army.mil/ers> under "*St Maries Levee Rehabilitation*". Requests for additional information should be directed to Ms. McClain at 206-764-6968 or at the above e-mail address, or to Mr. Michael Gonia, Project Manager and Geotechnical Engineer, at 206-764-6194 or by email at michael.gonia@usace.army.mil.

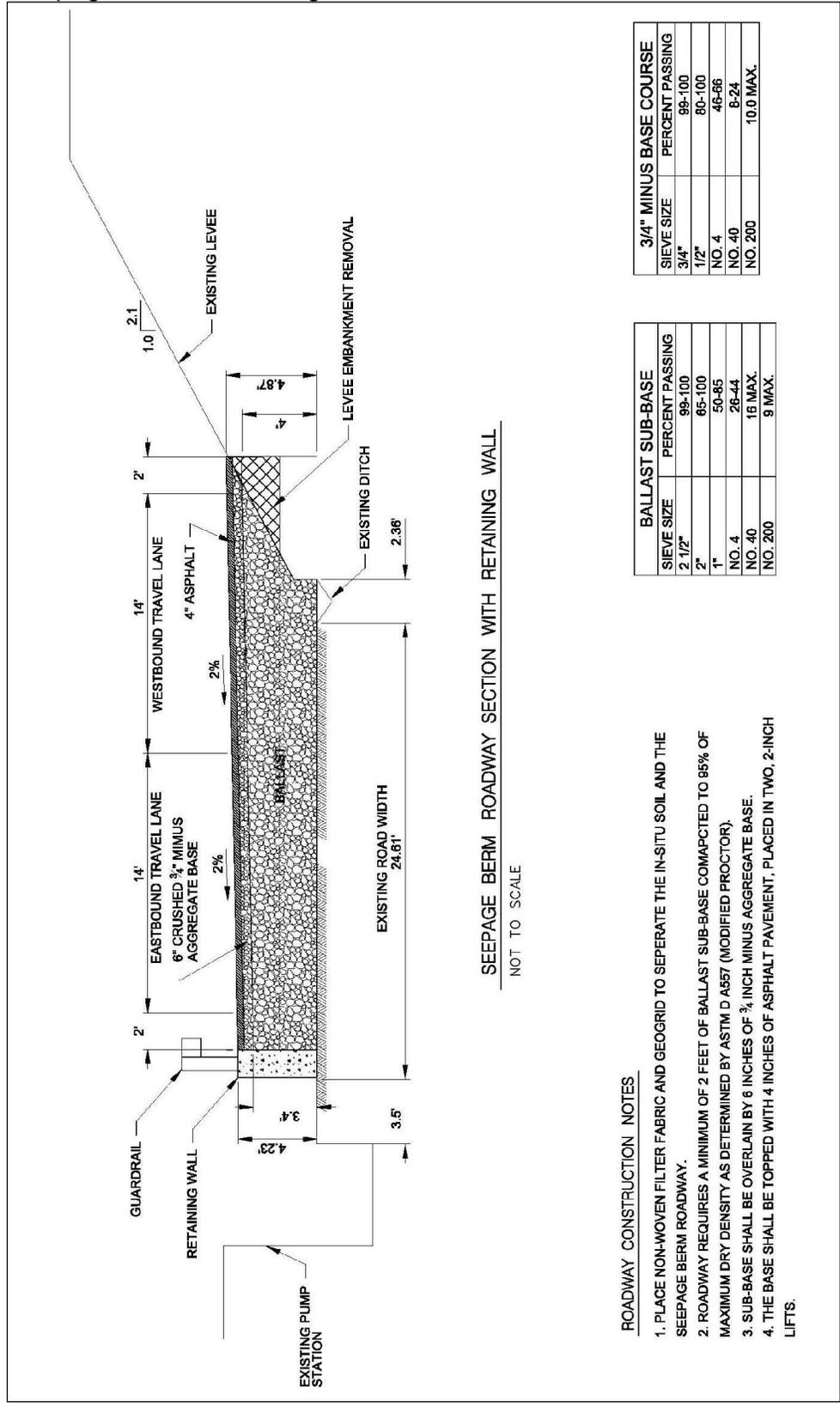
Draft Designs:
Site 1 plan view




GENERAL SITE PLAN
 Scale: 1" = 100'
 0 100 200

-  ALLOWABLE LEVEL NOTICES REMOVED & RECOMPACTED LEVEE
-  STAGING AREA
-  SEWAGE BERM
-  TEMPORARY ACCESS ROAD

Seepage berm draft design



SEEPAGE BERM ROADWAY SECTION WITH RETAINING WALL
NOT TO SCALE

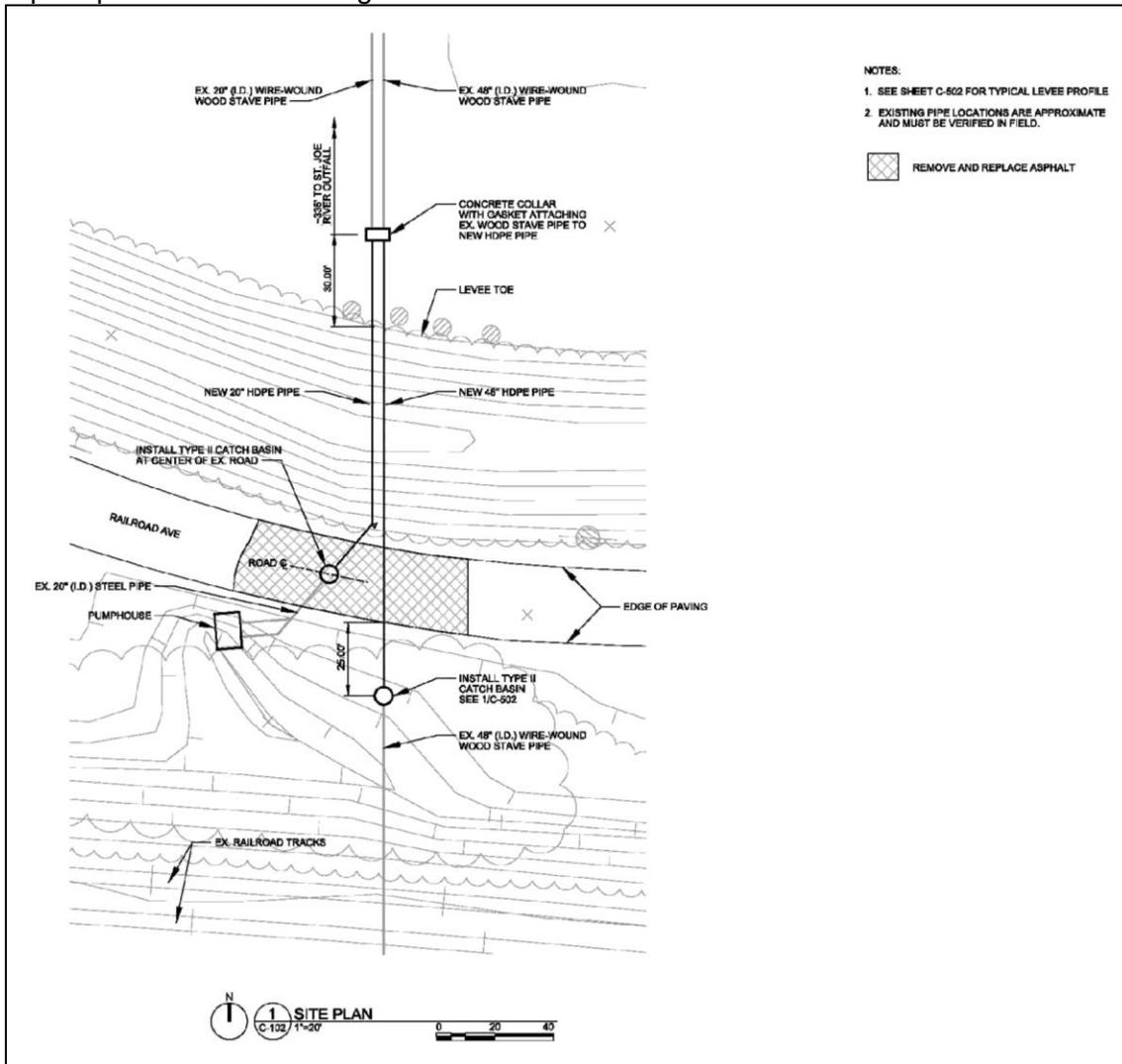
ROADWAY CONSTRUCTION NOTES

1. PLACE NON-WOVEN FILTER FABRIC AND GEOGRID TO SEPERATE THE IN-SITU SOIL AND THE SEEPAGE BERM ROADWAY.
2. ROADWAY REQUIRES A MINIMUM OF 2 FEET OF BALLAST SUB-BASE COMPACTED TO 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D A557 (MODIFIED PROCTOR).
3. SUB-BASE SHALL BE overlain BY 6 INCHES OF 3/4 INCH MINUS AGGREGATE BASE.
4. THE BASE SHALL BE TOPPED WITH 4 INCHES OF ASPHALT PAVEMENT, PLACED IN TWO, 2-INCH LIFTS.

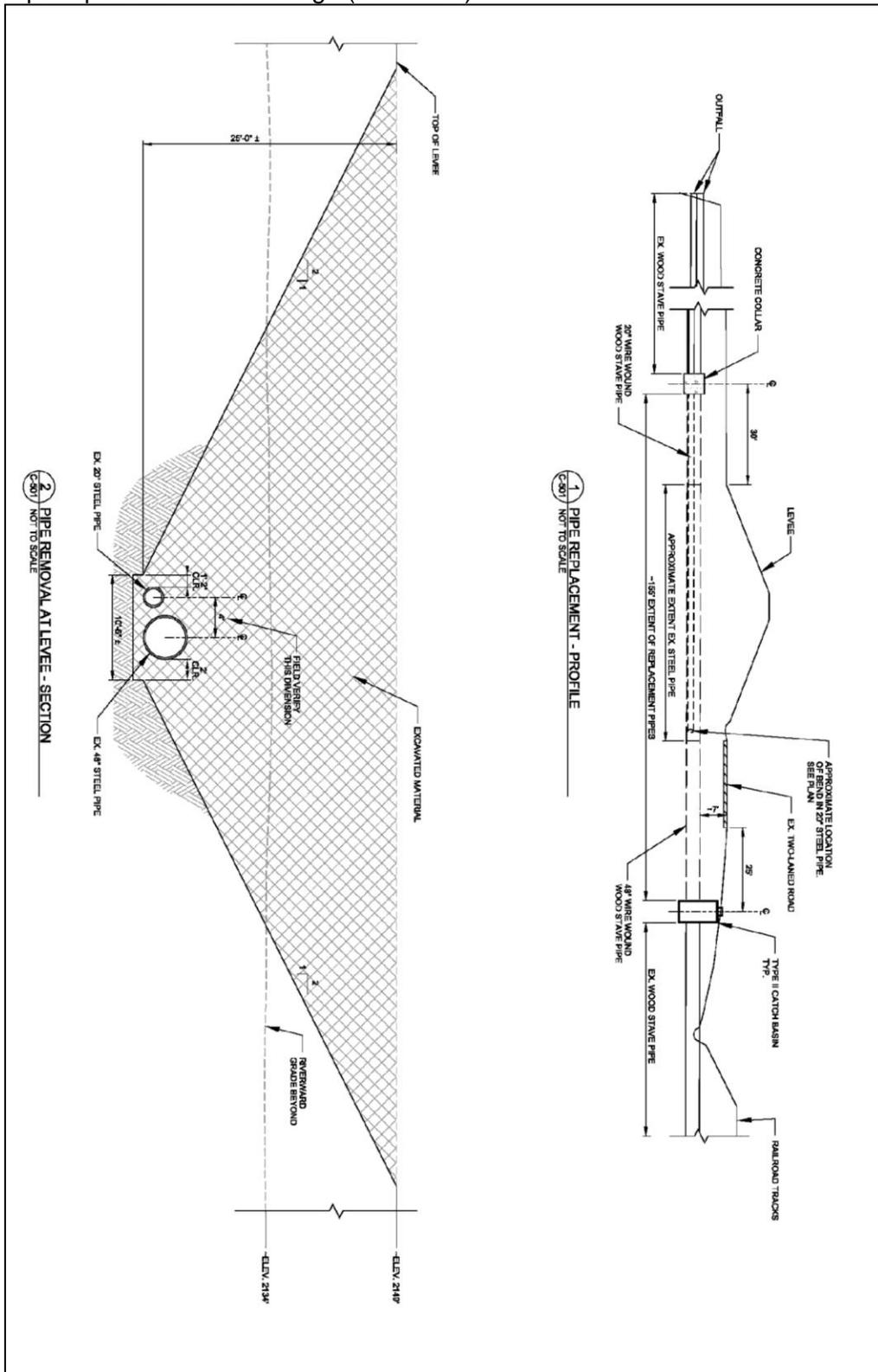
BALLAST SUB-BASE	
SIEVE SIZE	PERCENT PASSING
2 1/2"	95-100
2"	65-100
1"	50-85
NO. 4	28-44
NO. 40	15 MAX.
NO. 200	9 MAX.

3/4" MINUS BASE COURSE	
SIEVE SIZE	PERCENT PASSING
3/4"	95-100
1 1/2"	80-100
NO. 4	45-66
NO. 40	8-24
NO. 200	10.0 MAX.

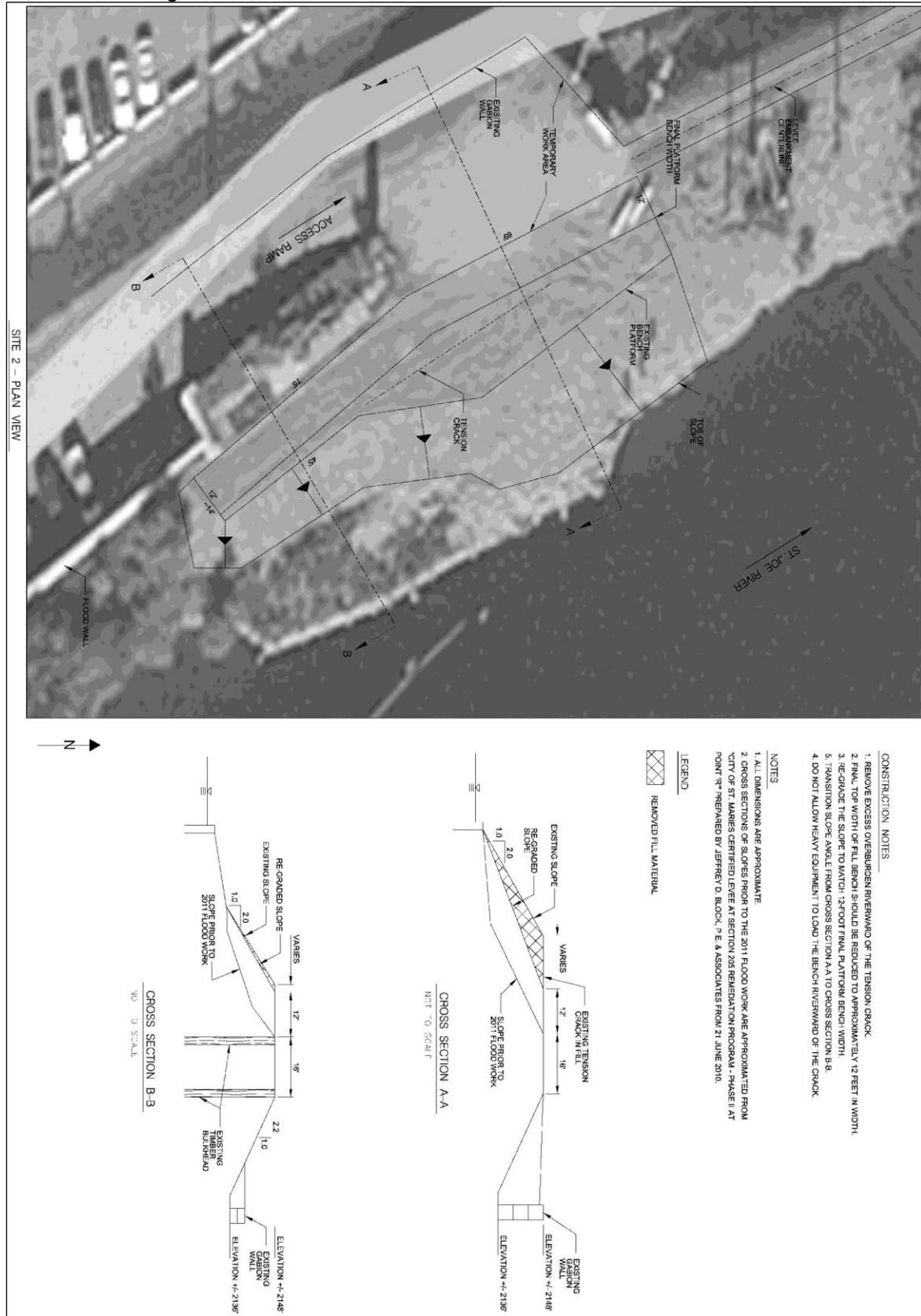
Pipe replacement draft design



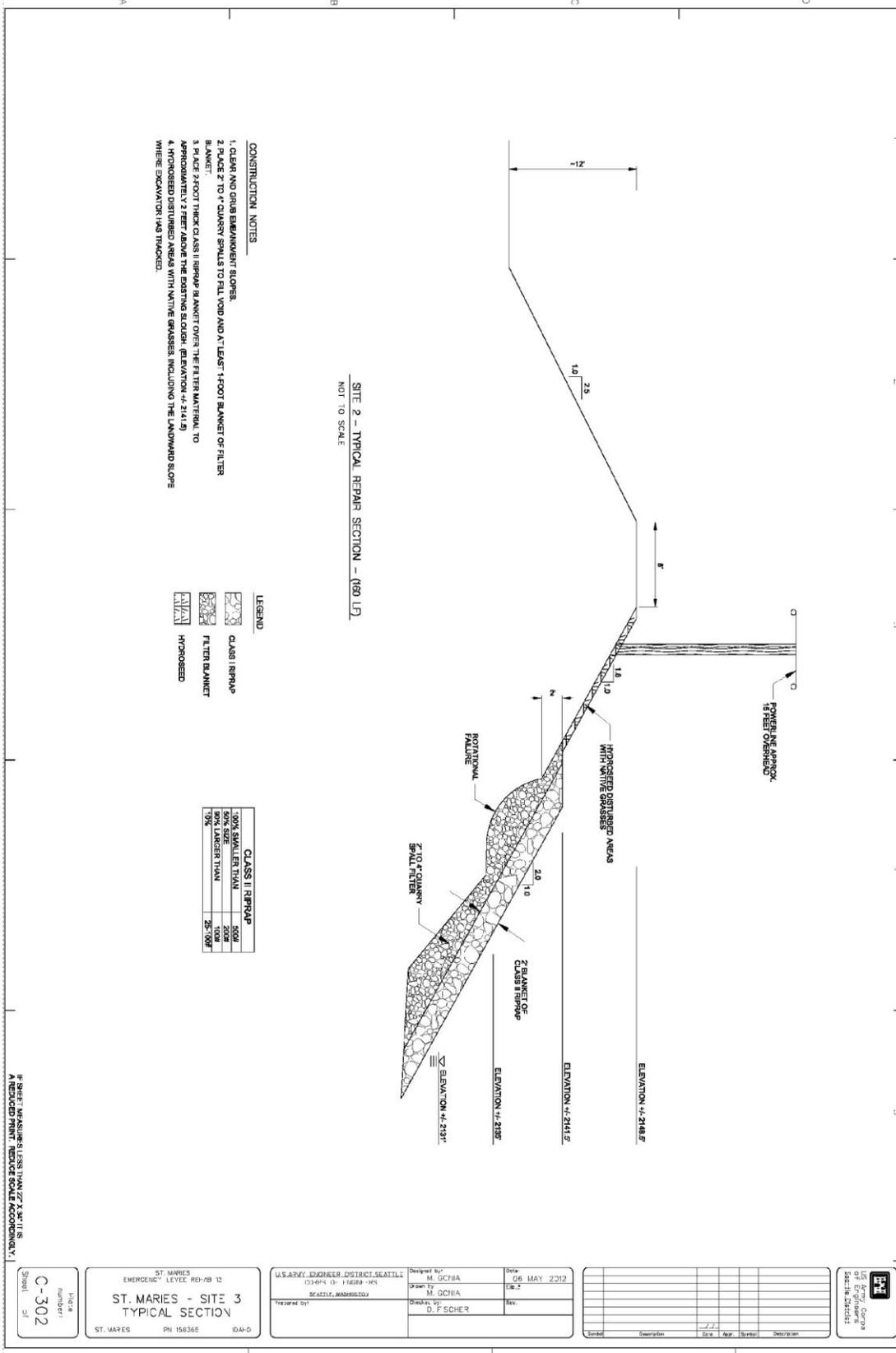
Pipe replacement draft design (continued)



Site 2 draft design



Site 3 draft design (continued)



- CONSTRUCTION NOTES**
1. CLEAR AND GRAB EXISTING SLOPE.
 2. PLACE 2 TO 4 QUARTER INCH SMALL FILTER TO FILL VOID AND AT LEAST 1 FOOT BLANKET OF FILTER ABOVE.
 3. PLACE 2 FOOT THICK CLASS II REPAIR BAND OVER THE FILTER MATERIAL TO APPROXIMATELY 2 FEET ABOVE THE EXISTING SLOPE. (ELEVATION +2141.0)
 4. NON-REPAIR DISTURBED AREAS WITH NATIVE GRASSES, INCLUDING THE LANDWARD SLOPE WHERE EXCAVATION HAS TRACKED.

LEGEND

	CLASS II REPAIR
	FILTER BLANKET
	PROPOSED

CLASS II REPAIR	50W
100% SMALLER THAN	50W
50% SIZE	100W
80% LARGER THAN	25-100W
95%	

IF SHEET MEASURES LESS THAN 27 X 36 IT IS A REDUCED PRINT. REDUCE SCALE ACCORDINGLY.

Sheet
C-302
3/

ST. MARIES
EMERGENCY LEVEE REPAIR
**ST. MARIES - SITE 3
TYPICAL SECTION**
ST. MARIES PN 15634E ID4-D

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Date: 06 MAY 2012
Rev:

Symbol	Description	Date	Appr.	Symbol	Description

U.S. Army Corps of Engineers
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