



WASHINGTON STATE

Joint Aquatic Resources Permit Application (JARPA) Form^{1,2}

USE BLACK OR BLUE INK TO ENTER ANSWERS IN THE WHITE SPACES BELOW.



US Army Corps of Engineers
Seattle District

AGENCY USE ONLY

Date received: _____

Agency reference #: _____

Tax Parcel #(s): _____

Part 1–Project Identification

1. Project Name (A name for your project that you create. Examples: Smith's Dock or Seabrook Lane Development) [\[help\]](#)

Clark Avenue Riverbank Stabilization

Part 2–Applicant

The person and/or organization responsible for the project. [\[help\]](#)

2a. Name (Last, First, Middle)

Peacock, Bill

2b. Organization (If applicable)

City of Spokane Wastewater Management

2c. Mailing Address (Street or PO Box)

909 East Sprague Avenue

2d. City, State, Zip

Spokane, WA 99202

2e. Phone (1)

509 625-7902

2f. Phone (2)

()

2g. Fax

()

2h. E-mail

bpeacock @spokanecity.org

¹Additional forms may be required for the following permits:

- If your project may qualify for Department of the Army authorization through a Regional General Permit (RGP), contact the U.S. Army Corps of Engineers for application information (206) 764-3495.
- If your project might affect species listed under the Endangered Species Act, you will need to fill out a Specific Project Information Form (SPIF) or prepare a Biological Evaluation. Forms can be found at <http://www.nws.usace.army.mil/Missions/CivilWorks/Regulatory/PermitGuidebook/EndangeredSpecies.aspx>.
- Not all cities and counties accept the JARPA for their local Shoreline permits. If you need a Shoreline permit, contact the appropriate city or county government to make sure they accept the JARPA.

²To access an online JARPA form with [help] screens, go to http://www.epermitting.wa.gov/site/alias_resourcecenter/jarpa_jarpa_form/9984/jarpa_form.aspx.

For other help, contact the Governor's Office of Regulatory Assistance at 1-800-917-0043 or help@ora.wa.gov.

Part 3—Authorized Agent or Contact

Person authorized to represent the applicant about the project. (Note: Authorized agent(s) must sign 11b of this application.) [\[help\]](#)

3a. Name (Last, First, Middle)			
John Patrouch			
3b. Organization (If applicable)			
URS Corporation			
3c. Mailing Address (Street or PO Box)			
920 N Argonne, Suite 300			
3d. City, State, Zip			
Spokane Valley, WA 99212			
3e. Phone (1)	3f. Phone (2)	3g. Fax	3h. E-mail
509-944-3819	()	(509) 928-4415	john.patrouch@urs.com

Part 4—Property Owner(s)

Contact information for people or organizations owning the property(ies) where the project will occur. Consider both **upland and aquatic** ownership because the upland owners may not own the adjacent aquatic land. [\[help\]](#)

- Same as applicant. (Skip to Part 5.)
- Repair or maintenance activities on existing rights-of-way or easements. (Skip to Part 5.)
- There are multiple upland property owners. Complete the section below and fill out [JARPA Attachment A](#) for each additional property owner.
- Your project is on Department of Natural Resources (DNR)-managed aquatic lands. If you don't know, contact the DNR at (360) 902-1100 to determine aquatic land ownership. If yes, complete [JARPA Attachment E](#) to apply for the Aquatic Use Authorization.

4a. Name (Last, First, Middle)			
4b. Organization (If applicable)			
4c. Mailing Address (Street or PO Box)			
4d. City, State, Zip			
4e. Phone (1)	4f. Phone (2)	4g. Fax	4h. E-mail
()	()	()	

Part 5–Project Location(s)

Identifying information about the property or properties where the project will occur. [\[help\]](#)

- There are multiple project locations (e.g. linear projects). Complete the section below and use [JARPA Attachment B](#) for each additional project location.

5a. Indicate the type of ownership of the property. (Check all that apply.) [help]			
<input type="checkbox"/> Private <input type="checkbox"/> Federal <input checked="" type="checkbox"/> Publicly owned (state, county, city, special districts like schools, ports, etc.) <input type="checkbox"/> Tribal <input type="checkbox"/> Department of Natural Resources (DNR) – managed aquatic lands (Complete JARPA Attachment E)			
5b. Street Address (Cannot be a PO Box. If there is no address, provide other location information in 5p.) [help]			
Project is close to 2334 Clarke Avenue			
5c. City, State, Zip (If the project is not in a city or town, provide the name of the nearest city or town.) [help]			
Spokane, WA			
5d. County [help]			
Spokane			
5e. Provide the section, township, and range for the project location. [help]			
¼ Section	Section	Township	Range
SW	13	T25N	R42E
5f. Provide the latitude and longitude of the project location. [help]			
<ul style="list-style-type: none"> Example: 47.03922 N lat. / -122.89142 W long. (Use decimal degrees - NAD 83) 			
5g. List the tax parcel number(s) for the project location. [help]			
<ul style="list-style-type: none"> The local county assessor's office can provide this information. 			
25133.1716, 25133.1715			
5h. Contact information for all adjoining property owners. (If you need more space, use JARPA Attachment C.) [help]			
Name	Mailing Address		Tax Parcel # (if known)
James Sheehan	2320 W Clarke Avenue Spokane, WA 99201		25133.1713

5i. List all wetlands on or adjacent to the project location. [help]
None
5j. List all waterbodies (other than wetlands) on or adjacent to the project location. [help]
Spokane River
5k. Is any part of the project area within a 100-year floodplain? [help]
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know
5l. Briefly describe the vegetation and habitat conditions on the property. [help]
The project area includes a steep sandy eroding slope sparsely vegetated with native grasses. Above the slope is a small pine forest. A large willow is located near the waters edge on the upstream (east side of the project) and a large cottonwood soon to be removed by beavers is located at the downstream (west) side of the project. Coyote willows are also found near the waters edge with a few hawthorne trees located along the lower banks.
5m. Describe how the property is currently used. [help]
The property is vacant land and contains a sanitary sewer line and manhole in danger of being exposed and broken due to bank erosion. Sandbags were placed around the manhole in 2012 to stabilize the structure and minimize damage from erosion. The site is also used as an informal sandy beach by the neighborhood.
5n. Describe how the adjacent properties are currently used. [help]
The Clarke Avenue sewer lift station is located adjacent to the project. A single family residence is located east of the project site at the top of the bank. The remaining properties are open space (City park/conservation lands).
5o. Describe the structures (above and below ground) on the property, including their purpose(s) and current condition. [help]
A 48" sanitary manhole and 15" sanitary sewer main is located on the property. At the east side a concrete foundation for a USGS gauging station exists (currently unused).
5p. Provide driving directions from the closest highway to the project location, and attach a map. [help]

Part 6–Project Description

6a. Briefly summarize the overall project. You can provide more detail in 6b. [\[help\]](#)

The project replaces the temporary sandbag erosion controls at the manhole with a gravel revetment and extends the revetment downstream an additional 320 feet to protect the sewer line. The disturbed area will be revegetated and public access will be continued.

6b. Describe the purpose of the project and why you want or need to perform it. [\[help\]](#)

The project involves placing a 12"-24" diameter rock revetment along approximately 320 linear feet of eroded riverbank. The revetment will be keyed into the base of the slope about three feet deep and extend about 6 feet high (about 12" above the OHWM). A temporary construction road will be graded along the shoreline from the Clark Avenue Lift station to the project area to provide access for equipment and material, this access will require removal of a mature hawthorne tree. Willow and cottonwood cuttings will be planted at the base of the revetment using a stinger method that will place the cuttings near the low water elevation to promote growth. The revetment voids will be filled with soil, hydroseeded with a native grass mix and covered with coir matting. The temporary construction access will be removed, riprap placed and planted as described above.

The project is needed to stabilize the slope containing a 15" sanitary sewer line. During the 2012 high river levels it was noticed by city maintenance that the slope was eroding and a manhole was in danger of collapsing. The site was surveyed with the intention of providing a more robust solution to the sandbags stabilizing the manhole and the surveyed showed that the sewer was covered, in places, only 12"-18" deep and if additional erosion occurred is in danger of being exposed, breaking and discharging raw sewage into the river creating a public health hazard.

6c. Indicate the project category. (Check all that apply) [\[help\]](#)

- Commercial
 Residential
 Institutional
 Transportation
 Recreational
 Maintenance
 Environmental Enhancement

6d. Indicate the major elements of your project. (Check all that apply) [\[help\]](#)

<input type="checkbox"/> Aquaculture <input checked="" type="checkbox"/> Bank Stabilization <input type="checkbox"/> Boat House <input type="checkbox"/> Boat Launch <input type="checkbox"/> Boat Lift <input type="checkbox"/> Bridge <input type="checkbox"/> Bulkhead <input type="checkbox"/> Buoy <input type="checkbox"/> Channel Modification	<input type="checkbox"/> Culvert <input type="checkbox"/> Dam / Weir <input type="checkbox"/> Dike / Levee / Jetty <input type="checkbox"/> Ditch <input type="checkbox"/> Dock / Pier <input type="checkbox"/> Dredging <input type="checkbox"/> Fence <input type="checkbox"/> Ferry Terminal <input type="checkbox"/> Fishway	<input type="checkbox"/> Float <input type="checkbox"/> Floating Home <input type="checkbox"/> Geotechnical Survey <input type="checkbox"/> Land Clearing <input type="checkbox"/> Marina / Moorage <input type="checkbox"/> Mining <input type="checkbox"/> Outfall Structure <input type="checkbox"/> Piling/Dolphin <input type="checkbox"/> Raft	<input type="checkbox"/> Retaining Wall (upland) <input type="checkbox"/> Road <input type="checkbox"/> Scientific Measurement Device <input type="checkbox"/> Stairs <input type="checkbox"/> Stormwater facility <input type="checkbox"/> Swimming Pool <input type="checkbox"/> Utility Line
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Other:

6e. Describe how you plan to construct each project element checked in 6d. Include specific construction methods and equipment to be used. [\[help\]](#)

- Identify where each element will occur in relation to the nearest waterbody.
- Indicate which activities are within the 100-year floodplain.

Construction will follow the general sequencing described here.
 Construct temporary 10 foot wide, 180 foot long access road by cutting and filling to the project area.
 Excavate key trench, install rock revetment.
 Install plantings with stinger at base of slope and add soil, hydroseed, and coir mat to revetment.
 Remove temporary access road, regrade eroded slope, install revetment with no key trench, place soil in voids, hydroseed, add coir mat.
 Regrade entrance to access road to roughly existing contours, hydroseed.

6f. What are the anticipated start and end dates for project construction? (Month/Year) [\[help\]](#)

- If the project will be constructed in phases or stages, use [JARPA Attachment D](#) to list the start and end dates of each phase or stage.

Start date: 6/12 End date: 7/12 See JARPA Attachment D

6g. Fair market value of the project, including materials, labor, machine rentals, etc. [\[help\]](#)

\$75,000

6h. Will any portion of the project receive federal funding? [\[help\]](#)

- If yes, list each agency providing funds.

Yes No Don't know

Part 7–Wetlands: Impacts and Mitigation

Check here if there are wetlands or wetland buffers on or adjacent to the project area.
 (If there are none, skip to Part 8.) [\[help\]](#)

7a. Describe how the project has been designed to avoid and minimize adverse impacts to wetlands. [\[help\]](#)

Not applicable

N/A

7b. Will the project impact wetlands? [\[help\]](#)

Yes No Don't know

7c. Will the project impact wetland buffers? [\[help\]](#)

Yes No Don't know

7d. Has a wetland delineation report been prepared? [\[help\]](#)

- If Yes, submit the report, including data sheets, with the JARPA package.

Yes No

7e. Have the wetlands been rated using the Western Washington or Eastern Washington Wetland Rating System? [\[help\]](#)

- If Yes, submit the wetland rating forms and figures with the JARPA package.

Yes No Don't know

7f. Have you prepared a mitigation plan to compensate for any adverse impacts to wetlands? [\[help\]](#)

- If Yes, submit the plan with the JARPA package and answer 7g.
- If No, or Not applicable, explain below why a mitigation plan should not be required.

Yes No Not applicable

N/A

7g. Summarize what the mitigation plan is meant to accomplish, and describe how a watershed approach was used to design the plan. [\[help\]](#)

N/A

7h. Use the table below to list the type and rating of each wetland impacted, the extent and duration of the impact, and the type and amount of mitigation proposed. Or if you are submitting a mitigation plan with a similar table, you can state (below) where we can find this information in the plan. [\[help\]](#)

Activity (fill, drain, excavate, flood, etc.)	Wetland Name ¹	Wetland type and rating category ²	Impact area (sq. ft. or Acres)	Duration of impact ³	Proposed mitigation type ⁴	Wetland mitigation area (sq. ft. or acres)

¹ If no official name for the wetland exists, create a unique name (such as "Wetland 1"). The name should be consistent with other project documents, such as a wetland delineation report.

² Ecology wetland category based on current Western Washington or Eastern Washington Wetland Rating System. Provide the wetland rating forms with the JARPA package.

³ Indicate the days, months or years the wetland will be measurably impacted by the activity. Enter "permanent" if applicable.

⁴ Creation (C), Re-establishment/Rehabilitation (R), Enhancement (E), Preservation (P), Mitigation Bank/In-lieu fee (B)

Page number(s) for similar information in the mitigation plan, if available: _____

7i. For all filling activities identified in 7h, describe the source and nature of the fill material, the amount in cubic yards that will be used, and how and where it will be placed into the wetland. [\[help\]](#)

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7j. For all excavating activities identified in 7h, describe the excavation method, type and amount of material in cubic yards you will remove, and where the material will be disposed. [\[help\]](#)

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Part 8—Waterbodies (other than wetlands): Impacts and Mitigation

In Part 8, “waterbodies” refers to non-wetland waterbodies. (See Part 7 for information related to wetlands.) [\[help\]](#)

Check here if there are waterbodies on or adjacent to the project area. (If there are none, skip to Part 9.)

8a. Describe how the project is designed to avoid and minimize adverse impacts to the aquatic environment. [\[help\]](#)

Not applicable

The project stabilizes a sandy eroded slope. After construction additional cuttings of willow and cottonwood will be installed at the base and the revetment void spaces will be filled with soil and hydroseeded with native grasses. In addition, continued public access to the beach will be provided. During construction silt fences will be installed between the river and the work area.

8b. Will your project impact a waterbody or the area around a waterbody? [\[help\]](#)

Yes No

8c. Have you prepared a mitigation plan to compensate for the project's adverse impacts to non-wetland waterbodies? [\[help\]](#)

- If Yes, submit the plan with the JARPA package and answer 8d.
- If No, or Not applicable, explain below why a mitigation plan should not be required.

Yes No Not applicable

The project stabilizes an eroded bank in order to protect a sanitary sewer at risk of breaking and discharging raw sewage into the river. Prior to deciding to stabilize the bank the city considered relocating the sewer but the depth of excavation and disruption to public streets, utilities and the neighborhood was considered excessive.

8d. Summarize what the mitigation plan is meant to accomplish. Describe how a watershed approach was used to design the plan.

- If you already completed 7g you do not need to restate your answer here. [\[help\]](#)

N/A

8e. Summarize impact(s) to each waterbody in the table below. [\[help\]](#)

Activity (clear, dredge, fill, pile drive, etc.)	Waterbody name ¹	Impact location ²	Duration of impact ³	Amount of material (cubic yards) to be placed in or removed from waterbody	Area (sq. ft. or linear ft.) of waterbody directly affected
Clearing	Spokane River	Adjacent	1 month		
Excavation	Spokane River	Adjacent (20')	Permanent	75 cy	220 LF
Fill (Revetment)	Spokane River	Adjacent (20')	Permanent	200 cy	320 LF

¹ If no official name for the waterbody exists, create a unique name (such as "Stream 1") The name should be consistent with other documents provided.

² Indicate whether the impact will occur in or adjacent to the waterbody. If adjacent, provide the distance between the impact and the waterbody and indicate whether the impact will occur within the 100-year flood plain.

³ Indicate the days, months or years the waterbody will be measurably impacted by the work. Enter "permanent" if applicable.

8f. For all activities identified in 8e, describe the source and nature of the fill material, amount (in cubic yards) you will use, and how and where it will be placed into the waterbody. [\[help\]](#)

Clearing – clearing of vegetation for the access road will be needed, clearing includes removal of a mature hawthorne tree.

Excavation - A three foot deep, three foot wide, 220 foot long trench will be excavated for the revetment key will occur with a back hoe.

Fill – rock revetment to be placed along eroded slope. Rock will be fractured basalt or granite.

8g. For all excavating or dredging activities identified in 8e, describe the method for excavating or dredging, type and amount of material you will remove, and where the material will be disposed. [\[help\]](#)

N/A

Part 9--Additional Information

Any additional information you can provide helps the reviewer(s) understand your project. Complete as much of this section as you can. It is ok if you cannot answer a question.

9a. If you have already worked with any government agencies on this project, list them below. [\[help\]](#)

Agency Name	Contact Name	Phone	Most Recent Date of Contact
WDFW	Karin Divens	(509) 892-1001	2/12/13
Ecology	Mike Maher	(509) 329-3584	2/12/13
City of Spokane	Tirrell Black	(509) 625-6185	2/12/13

9b. Are any of the wetlands or waterbodies identified in Part 7 or Part 8 of this JARPA on the Washington Department of Ecology's 303(d) List? [\[help\]](#)

- If **Yes**, list the parameter(s) below.
- If you don't know, use Washington Department of Ecology's Water Quality Assessment tools at: <http://www.ecy.wa.gov/programs/wq/303d/>.

Yes No

Temperature, dissolved oxygen, lead, 2,3,7,8-TCDD

9c. What U.S. Geological Survey Hydrological Unit Code (HUC) is the project in? [\[help\]](#)

- Go to <http://cfpub.epa.gov/surf/locate/index.cfm> to help identify the HUC.

1701035

9d. What Water Resource Inventory Area Number (WRIA #) is the project in? [\[help\]](#)

- Go to <http://www.ecy.wa.gov/services/gis/maps/wria/wria.htm> to find the WRIA #.

WRIA 57

9e. Will the in-water construction work comply with the State of Washington water quality standards for turbidity? [\[help\]](#)

- Go to <http://www.ecy.wa.gov/programs/wq/swqs/criteria.html> for the standards.

Yes No Not applicable

9f. If the project is within the jurisdiction of the Shoreline Management Act, what is the local shoreline environment designation? [\[help\]](#)

- If you don't know, contact the local planning department.
- For more information, go to: http://www.ecy.wa.gov/programs/sea/sma/laws_rules/173-26/211_designations.html.

Rural Urban Natural Aquatic Conservancy Other Urban Conservancy

9g. What is the Washington Department of Natural Resources Water Type? [\[help\]](#)

- Go to http://www.dnr.wa.gov/BusinessPermits/Topics/ForestPracticesApplications/Pages/fp_watertyping.aspx for the Forest Practices Water Typing System.

Shoreline Fish Non-Fish Perennial Non-Fish Seasonal

9h. Will this project be designed to meet the Washington Department of Ecology's most current stormwater manual? [\[help\]](#)

- If No, provide the name of the manual your project is designed to meet.

Yes No

Name of manual: Spokane Regional Stormwater Manual

9i. Does the project site have known contaminated sediment? [\[help\]](#)

- If Yes, please describe below.

Yes No

9j. If you know what the property was used for in the past, describe below. [\[help\]](#)

Shoreline.

9k. Has a cultural resource (archaeological) survey been performed on the project area? [\[help\]](#)

- If Yes, attach it to your JARPA package.

Yes No

9l. Name each species listed under the federal Endangered Species Act that occurs in the vicinity of the project area or might be affected by the proposed work. [help]

None

9m. Name each species or habitat on the Washington Department of Fish and Wildlife's Priority Habitats and Species List that might be affected by the proposed work. [help]

None

Part 10–SEPA Compliance and Permits

Use the resources and checklist below to identify the permits you are applying for.

- Online Project Questionnaire at <http://apps.ecy.wa.gov/opas/>.
- Governor's Office of Regulatory Assistance at (800) 917-0043 or help@ora.wa.gov.
- For a list of addresses to send your JARPA to, click on [agency addresses for completed JARPA](#).

10a. Compliance with the State Environmental Policy Act (SEPA). (Check all that apply.) [help]

- For more information about SEPA, go to www.ecy.wa.gov/programs/sea/sepa/e-review.html.

A copy of the SEPA determination or letter of exemption is included with this application.

A SEPA determination is pending with City of Spokane (lead agency). The expected decision date is _____.

I am applying for a Fish Habitat Enhancement Exemption. (Check the box below in 10b.) [help]

This project is exempt (choose type of exemption below).

Categorical Exemption. Under what section of the SEPA administrative code (WAC) is it exempt?

Other: _____

SEPA is pre-empted by federal law.

10b. Indicate the permits you are applying for. (Check all that apply.) [\[help\]](#)

LOCAL GOVERNMENT

Local Government Shoreline permits:

- Substantial Development Conditional Use Variance
 Shoreline Exemption Type (explain): _____

Other city/county permits:

- Floodplain Development Permit Critical Areas Ordinance

STATE GOVERNMENT

Washington Department of Fish and Wildlife:

- Hydraulic Project Approval (HPA) Fish Habitat Enhancement Exemption – [Attach Exemption Form](#)

Effective July 10, 2012, you must submit a check for \$150 to Washington Department of Fish and Wildlife, unless your project qualifies for an exemption or alternative payment method below. **Do not send cash.**

Check the appropriate boxes:

- \$150 check enclosed. (Check # _____)
Attach check made payable to Washington Department of Fish and Wildlife.
- Charge to billing account under agreement with WDFW. (Agreement # _____)
- My project is exempt from the application fee. (Check appropriate exemption)
- HPA processing is conducted by applicant-funded WDFW staff.
(Agreement # _____)
 - Mineral prospecting and mining.
 - Project occurs on farm and agricultural land.
(Attach a copy of current land use classification recorded with the county auditor, or other proof of current land use.)
 - Project is a modification of an existing HPA originally applied for, prior to July 10, 2012.
(HPA # _____)

Washington Department of Natural Resources:

- Aquatic Use Authorization
Complete [JARPA Attachment E](#) and submit a check for \$25 payable to the Washington Department of Natural Resources.
Do not send cash.

Washington Department of Ecology:

- Section 401 Water Quality Certification

FEDERAL GOVERNMENT

United States Department of the Army permits (U.S. Army Corps of Engineers):

- Section 404 (discharges into waters of the U.S.) Section 10 (work in navigable waters)

United States Coast Guard permits:

- General Bridge Act Permit Private Aids to Navigation (for non-bridge projects)

Part 11—Authorizing Signatures

Signatures are required before submitting the JARPA package. The JARPA package includes the JARPA form, project plans, photos, etc. [\[help\]](#)

11a. Applicant Signature (required) [\[help\]](#)

I certify that to the best of my knowledge and belief, the information provided in this application is true, complete, and accurate. I also certify that I have the authority to carry out the proposed activities, and I agree to start work only after I have received all necessary permits.

I hereby authorize the agent named in Part 3 of this application to act on my behalf in matters related to this application. WRP (initial)

By initialing here, I state that I have the authority to grant access to the property. I also give my consent to the permitting agencies entering the property where the project is located to inspect the project site or any work related to the project. WRP (initial)

William R. Peacock Applicant Printed Name William R. Peacock Applicant Signature 4/22/2013 Date

11b. Authorized Agent Signature [\[help\]](#)

I certify that to the best of my knowledge and belief, the information provided in this application is true, complete, and accurate. I also certify that I have the authority to carry out the proposed activities and I agree to start work only after all necessary permits have been issued.

John Petrovich Authorized Agent Printed Name John P. Petrovich Authorized Agent Signature 4/11/13 Date

11c. Property Owner Signature (if not applicant). [\[help\]](#)

Not required if project is on existing rights-of-way or easements.

I consent to the permitting agencies entering the property where the project is located to inspect the project site or any work. These inspections shall occur at reasonable times and, if practical, with prior notice to the landowner.

Property Owner Printed Name Property Owner Signature Date

18 U.S.C §1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly falsifies, conceals, or covers up by any trick, scheme, or device a material fact or makes any false, fictitious, or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious, or fraudulent statement or entry, shall be fined not more than \$10,000 or imprisoned not more than 5 years or both.

If you require this document in another format, contact the Governor's Office of Regulatory Assistance (ORA) at (800) 917-0043. People with hearing loss can call 711 for Washington Relay Service. People with a speech disability can call (877) 833-6341. ORA publication number: ENV-019-09 rev. 06-12

Clark Avenue Streambank Stabilization Photos December 2012



Manhole sandbagged in 2012 due to erosion 2012.



View from manhole downstream showing sandy eroded riverbank.



Eroded Pedestrian pathway from top.



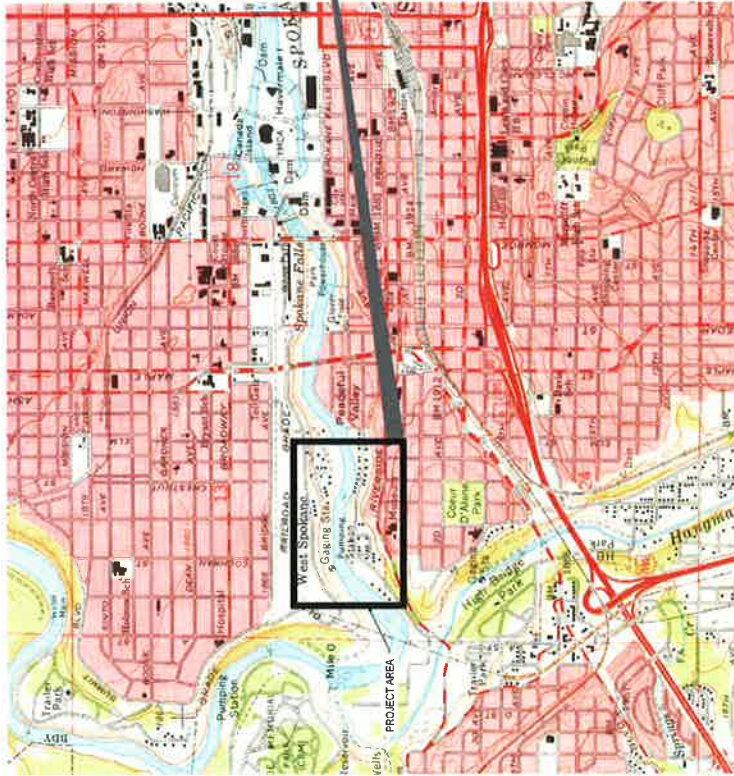
Eroded path from below.

**Clark Avenue Streambank Stabilization Photos
Showing Temporary Stabilization Efforts
to protect the manhole and sewer line
using sandbags, geoweb and wattles
April 8, 2013**



CLARK AVENUE RIVERBANK STABILIZATION CITY OF SPOKANE, WASHINGTON

SHEET TITLE	NO.
TITLE SHEET	G1.00
GENERAL NOTES	
EXISTING CONDITIONS & EROSION CONTROL PLAN	C1.00
SITE PLAN	C2.00
SECTION VIEWS	C3.00
RESTORATION PLAN	C4.00
DETAILS	C5.00



NOTE

CONTRACTOR ACCESS THROUGH CITY GATE AT THE WEST SIDE OF THE CLARK AVENUE LIFT STATION.



DESIGNED	CAS	REVISION	DATE	DESCRIPTION
DRAWN	SD			
CHECKED	JD			
APPROVED	JCP			

**CITY OF SPOKANE
WASTEWATER MANAGEMENT
DEPARTMENT**

PROJECT TITF: CLARK AVE LIFT STATION
RIVERBANK STABILIZATION
SHEET TITLE: TITLE SHEET
SCALE: AS SHOWN
DATE: APRIL 11, 2013

URS PROJECT NO: 35310177
SHEET NO: G1.00

GENERAL

- 1. THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT PLANS AND SPECIFICATIONS AND ANY RULES, REGULATIONS, STANDARDS, OR SPECIFICATIONS REFERENCED THEREIN.

CONTRACTOR REQUIREMENTS

- 1. THE CONTRACTOR'S ACCESS POINTS TO THE SITE SHALL BE AS SHOWN ON THE CONTRACT PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MOBILIZATION AND STAGING AS SHOWN ON THE CONTRACT PLANS. THESE AREAS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION UPON COMPLETION OF THE PROJECT.
- 2. THE CONTRACTOR SHALL FOLLOW ALL PERMIT REQUIREMENTS PERTAINING TO WORKING WITHIN THE ORDINARY HIGH WATER MARK (OHWM).
- 3. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE OWNER OF ANY DIFFERING SITE CONDITIONS UPON DISCOVERY.
- 4. CONTRACTOR TO HAVE A QUALIFIED PERSON(S) COMPETENT AND EXPERIENCED IN RIPARIAN RESTORATION AND NATIVE PLANT COMMUNITY RESTORATION MANAGE ALL VEGETATIVE ASPECTS OF THE PROJECT INCLUDING BUT NOT LIMITED TO: STOCKING, STORAGE, HANDLING, AND PLACEMENT. QUALIFIED PERSON(S) TO BE ON-SITE DURING INITIAL HARVESTING OF ANY NATIVE STOCK AND DURING ANY PLACEMENT OF VEGETATION.
- 5. ALL DISTURBED AREAS AND NEW BARRE SOIL AREAS DUE TO CONSTRUCTION OF THIS PROJECT SHALL BE REVEGETATED WITH APPROPRIATE NATIVE SPECIES OF GRASSES, FORBES, AND WOODY PLANT MATERIALS.
- 6. CONSTRUCTION MATERIALS, VEHICLES, AND EQUIPMENT SHALL NOT BE ALLOWED TO BE STOCKPILED OR STORED WITHIN ANY SENSITIVE AREAS AND WATERS OF THE STATE.
- 7. DISCHARGE OF PETROLEUM PRODUCTS, HYDRAULIC FLUID, OIL, OR OTHER TOXIC OR DELETERIOUS MATERIALS, LEAKING OR ENTERING INTO WATERS OF THE STATE IS PROHIBITED. ANY DISCHARGE OF THIS KIND SHALL BE REPORTED TO THE OWNER IMMEDIATELY.
- 8. CONTRACTOR'S STAGING AREA AND ACCESS TO THE WORK SHALL BE FENCED TO PREVENT PUBLIC ACCESS. FENCING SHALL BE ORANGE SAFETY FENCING FOR THE ROAD AREAS. TEMPORARY CHAIN LINK FENCING WITH A LOCKING GATE CAN BE USED AT THE STAGING AREA AT THE CONTRACTOR'S OPTION.

WORK IN AND NEAR WATERS OF THE STATE

- 1. THE CONTRACTOR SHALL COMPLY WITH THE WATER QUALITY CRITERIA SPECIFIED IN CHAPTER 175-201A WAC AND ROW 9048 WATER POLLUTION CONTROL.
- 2. THE CONTRACTOR SHALL ENSURE THAT CONSTRUCTION DEBRIS IS NOT DEPOSITED OR PLACED IN OR NEAR WATERS OF THE STATE.

DEWATERING

- 1. ALL MATERIAL EXCAVATED FROM DITCHES OR WATERWAYS SHALL BE COMPLETELY REMOVED AND DISPOSED OF AT AN UPLAND LOCATION. NO MATERIAL SHALL BE SIDE CAST INTO ADJACENT WETLANDS, SENSITIVE AREAS OR OTHER WATERS OF THE STATE.
- 2. IF MATERIAL IS PLACED ON THE UPLAND TO DEWATER, IT SHALL BE CONTAINED OR PLACED IN SUCH A WAY THAT THE RUNOFF FROM SUCH MATERIAL WILL NOT ENTER ANY WATERWAYS OR BODIES OF WATER. ANY MATERIAL STORED OR PLACED OCCURRING ADJACENT TO THE DITCH, ANY FLOW OF SLURRY WATER SHALL BE CONTROLLED TO REDUCE SUSPENDED SEDIMENT LEVELS NOT EXCEEDING STATE ESTABLISHED WATER QUALITY STANDARDS PRIOR TO DISCHARGE BACK INTO ANY ADJACENT WATERBODIES.

EROSION CONTROL

- 1. THE CONTRACTOR SHALL PERFORM PERIODIC INSPECTION AND MAINTENANCE OF ALL EROSION CONTROL STRUCTURES AND SHALL BE CONDUCTED AT A MINIMUM EVERY SEVEN (7) DAYS. ADDITIONAL INSPECTIONS SHALL BE CONDUCTED PRIOR TO AND AFTER EXPECTED RAINFALL EVENTS TO ENSURE EROSION CONTROL STRUCTURES ARE MAINTAINED AND OPERATIONAL. DAMAGED STRUCTURES SHALL BE IMMEDIATELY REPAIRED. IF IT IS DETERMINED AT THE INSPECTION THAT ADDITIONAL BMP MEASURES ARE NEEDED TO CONTROL STORMWATER AND EROSION THEY SHALL BE IMPLEMENTED IMMEDIATELY.
- 2. ALL TEMPORARY BMPS AND ACCUMULATED SEDIMENTS SHALL BE REMOVED OR STABILIZED IMMEDIATELY AFTER FINAL SITE STABILIZATION AND COMPLETION OF THE CONTRACT.
- 3. EQUIPMENT USED FOR THIS WORK MAY OPERATE BELOW THE OHWM. EQUIPMENT SHALL BE FREE OF EXTERNAL PETROLEUM BASED PRODUCTS OR ANY ACCUMULATION OF SOILS OR DEBRIS WHILE WORKING BELOW THE OHWM. EQUIPMENT SHALL BE CHECKED DAILY FOR LEAKS AND ANY NECESSARY REPAIRS SHALL BE MADE PRIOR TO COMMENCING WORK ACTIVITIES ADJACENT TO THE RIVER.
- 4. DISTURBANCE OF THE RIVER BED AND BANKS SHALL BE LIMITED TO THAT NECESSARY TO CONSTRUCT THE PROJECT. AFFECTED AREAS SHALL BE REVEGETATED WITH ASSOCIATED PFL. SHALL BE STABILIZED TO PREVENT EROSION.

SPILL REPORTING

- 1. ANY SPILL OF FUEL, OIL, HYDRAULIC FLUID, SOLVENTS, PAINT, OR OTHER TOXIC OR DELETERIOUS MATERIALS ON THE GROUND, DRAINAGE STRUCTURES, OR INTO SURFACE WATERS OF THE STATE SHALL BE REPORTED TO THE OWNER IMMEDIATELY. CONTAINMENT AND CLEAN-UP EFFORTS SHALL BEGIN IMMEDIATELY AND BE IN ACCORDANCE WITH THE SPECIFICATIONS AND PROCEDURES FOR THE PROJECT. THE AFFECTED AREA SHALL BE STOPPED UNTIL ALL CLEAN-UP OF THE SPILL IS COMPLETED. CONTAINMENT AND CLEAN-UP SHALL TAKE PRECEDENCE OVER NORMAL WORK ACTIVITIES. NORMAL WORK ACTIVITIES WITHIN THE IMMEDIATE SPILL AREA SHALL BE STOPPED UNTIL THE CONTENTS, CLEAN-UP AND DISPOSAL METHODS ARE COMPLETED AS APPROVED BY THE OWNER.

HAZARDOUS SPILL PREVENTION AND CONTROL

- 1. EQUIPMENT, CHEMICAL STORAGE TANKS AND ANY HAZARDOUS MATERIALS (FUELS, OIL, OIL DRUMS, GREASE, OR ANY TOXIC MATERIALS) USED DURING CONSTRUCTION SHALL BE SERVICED, FUELED, MAINTAINED, AND STORED ON UPLAND AREAS ONLY, WITH A MINIMUM DISTANCE OF 50 FEET FROM ANY SENSITIVE AREA. EQUIPMENT, STORAGE OF TOXIC MATERIALS, GAS AND OIL CONTAINERS, AND FUELING SERVICE AREAS SHALL BE PROVIDED WITH SPILL CONTAINMENT AS SPECIFIED BY THE SPILL PREVENTION, CONTROL, AND COUNTERMEASURES PLAN OF THE SPECIFICATIONS.
- 2. NO PETROLEUM PRODUCTS, FRESH CEMENT, LIME OR CONCRETE, CHEMICALS, OR OTHER TOXIC OR DELETERIOUS MATERIALS SHALL BE ALLOWED TO ENTER WATERS OF THE STATE.
- 3. THE DISCHARGE OF OIL, FUEL, OR CHEMICALS TO WATERS OF THE STATE, OR ONTO LAND WITH A POTENTIAL FOR ENTRY INTO STATE WATERS IS PROHIBITED.
- 4. NO EMULSIONS OR DISPENSANTS ARE TO BE USED IN WATERS OF THE STATE WITHOUT WRITTEN APPROVAL FROM THE DEPARTMENT OF ECOLOGY.
- 5. NO CLEANING SOLVENTS OR CHEMICALS UTILIZED FOR TOOL OR EQUIPMENT CLEANING MAY BE DISCHARGED TO THE GROUND OR WATERS OF THE STATE.
- 6. WASTE LIQUIDS SHALL BE STORED UNDER COVER, SUCH AS TARPPOOLS OR ROOFS.
- 7. FUEL HOSES, OIL DRUMS, OIL OR FUEL TRANSFER VALVES AND FITTINGS, ETC., SHALL BE CHECKED DAILY FOR DRIPS OR LEAKS AND SHALL BE MAINTAINED AND STORED PROPERLY TO PREVENT SPILLS INTO WATERS OF THE STATE. ALL STAGING AND STORAGE AREAS SHALL BE SECURED TO PREVENT ACCESS TO TOXIC OR HAZARDOUS MATERIALS. SHALL BE SECURED WITHIN THE DESIGNATED STAGING AREA.
- 8. THE CONTRACTOR IS RESPONSIBLE FOR CONCENTRATED WASTE MATERIALS STORED AT THE STAGING AREA. THE CONTRACTOR SHALL TRANSPORT OFF SITE FOR DISPOSAL AT A FACILITY APPROVED BY THE DEPARTMENT OF ECOLOGY OR APPROPRIATE COUNTY HEALTH DEPARTMENT. THESE MATERIALS SHALL NOT BE DISCHARGED TO A SEWER WITH APPROVAL OF THE LOCAL SEWER AUTHORITY.

URS
 870 NORTH ARGONNE RD, STE 300
 SPOKANE VALLEY, WA 99212-2722
 (509) 838-4800
 FAX (509) 826-4243



NO.	REVISION	DATE	DESCRIPTION

**CITY OF SPOKANE
 WASTEWATER MANAGEMENT
 DEPARTMENT**

PROJECT TITLE	CLARK AVE LIFT STATION RIVERBANK STABILIZATION
SHEET TITLE	PROJECT NOTES
SCALE	AS SHOWN
DATE	APRIL 11, 2013

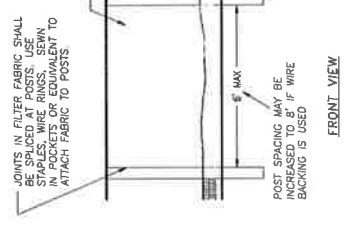
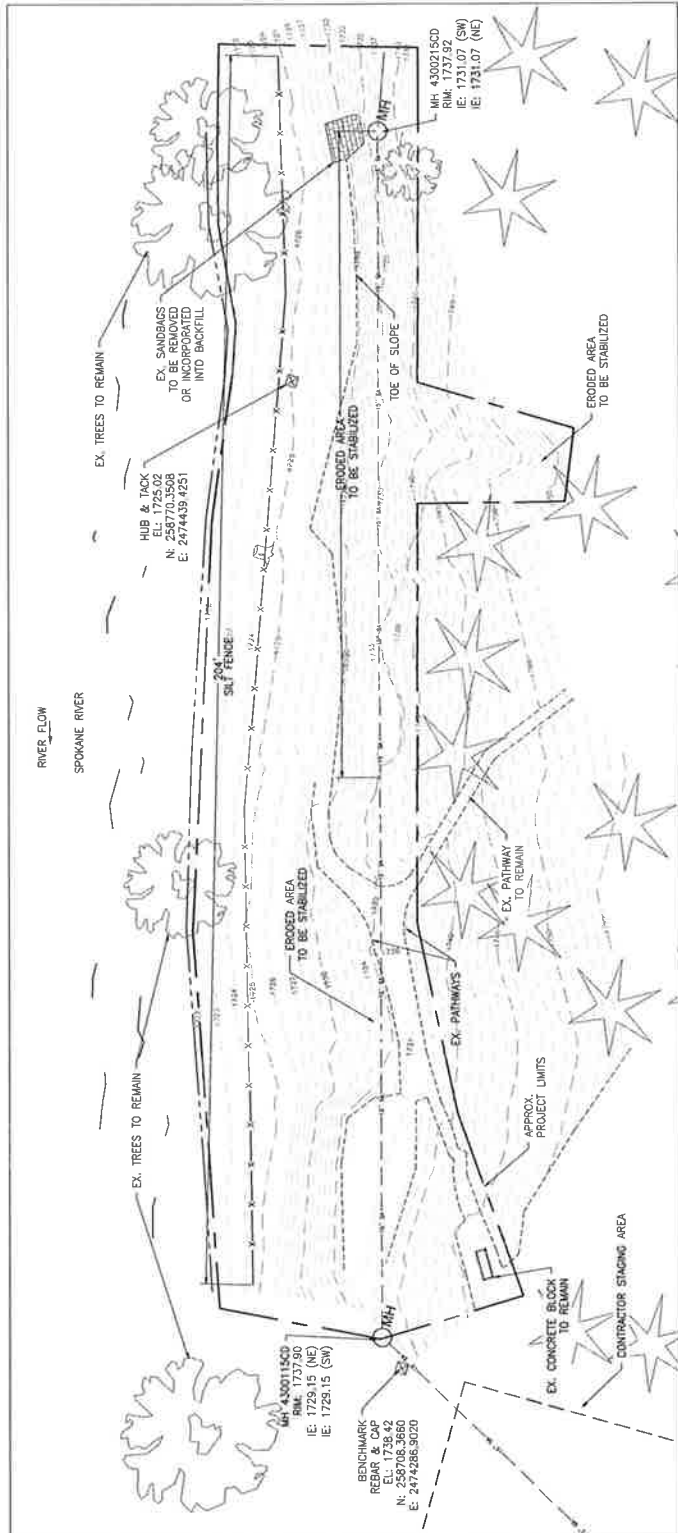
URS PROJECT NO.	36310177
SHEET NO.	G1.01

LEGEND

- EXISTING CONTOUR
- SANITARY SEWER
- MANHOLE
- EXISTING PATHWAY
- EXISTING SANDBAGS
- SURVEYED EDGE OF WATER (12/14/12)
- EXISTING BENCHMARK
- PROP SILT FENCE
- PROJECT AREA BOUNDARY
- STAGING AREA

NOTES

- PROJECT SURVEY CONDUCTED BY CITY OF SPOKANE, DEC. 14, 2012. VERTICAL DATUM NAVD83.
- CONTRACTOR STAGING AREA IS SCHEMATIC. ACTUAL LIMITS TO BE ESTABLISHED IN THE FIELD BY CONTRACTOR.
- STORAGE OF EQUIPMENT AND MATERIALS ARE ALLOWED ONLY WITHIN CONTRACTOR STAGING AREA. SEE SHEET G1.01.
- SITE ACCESS FROM CITY GATE ON W. CLARK AVE AT LIFT STAGING AREA.
- PROJECT LIMITS TO BE DETERMINED IN THE FIELD BY CONTRACTOR AND OWNER.
- THE LOCATION OF EXISTING UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE. THE SEWER LINE IS ACTIVE. CONTRACTOR IS RESPONSIBLE FOR DAMAGES TO THE SEWER LINE INCURRED DURING CONSTRUCTION AND SHALL PROMPTLY REPAIR SUCH DAMAGES TO THE OWNERS SATISFACTION.
- THE PROJECT SITE IS SANDY AND MARGINALLY STABLE.
- THE PROJECT SITE IS USED FOR PUBLIC RIVER ACCESS AND THE SITE SHALL BE LEFT IN USEABLE SHAPE AS A PUBLIC BEACH.



SILT FENCE DETAIL

NOTE: FILTER FABRIC FENCES SHALL BE INSTALLED AND IN WORKING CONDITION PRIOR TO ANY GROUND DISTURBANCE.

EROSION CONTROL NOTES

- EROSION AND SEDIMENT CONTROLS (ESC) SHALL BE INSTALLED PRIOR TO COMMENCING ANY LAND DISTURBING ACTIVITIES.
- LOCATION OF ALL ESC SHALL BE SHOWN ON THE SCHEMATIC ONLY.
- INSTALL AND MAINTAIN SILT FENCE NEAR WATERS EDGE THROUGHOUT PROJECT DURATION.
- CONTRACTOR TO RETAIN THE NATIVE TOPSOIL AND NATURAL PRACTICES. CONTRACTOR IS RESPONSIBLE TO RESTORE ALL DAMAGED AREAS CAUSED BY WORK ACTIVITIES.
- CONTRACTOR TO INSPECT SEDIMENT CONTROL BMPs WEEKLY AT A MINIMUM, DAILY DURING A STORM EVENT. SEE SHEET G1.01.
- CONTRACTOR TO OBTAIN A PERMIT FROM THE STATE AND/OR LOCAL QUALITY CONTROL AUTHORITIES WITH JURISDICTION OVER THE PROJECT AREA.
- CONTRACTOR TO REMOVE TEMPORARY ESC CONTROLS WHEN ALL DISTURBED AREAS ARE RESTORED TO ORIGINAL OR BETTER CONDITION.
- CONTRACTOR TO RESTORE CONSTRUCTION ACCESS ROUTES, ENTRANCES, AND OTHER DISTURBED AREAS EQUAL TO PRE-CONSTRUCTION CONDITIONS.

MAINTENANCE STANDARDS:

- SILT FENCES AND FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
- IF CONCENTRATED FLOWS ARE EVIDENT UPHILL OF THE FENCE, THEY MUST BE INTERCEPTED AND CONVEYED TO A SEDIMENT POND.
- CONTRACTOR TO CHECK THE UPHILL SIDE OF THE FENCE FOR SIGNS OF THE FENCE CLOGGING AND ACTING AS A BARRIER TO FLOW AND CAUSING CHANNELIZATION OF FLOWS PARALLEL TO THE FENCE. IF THIS OCCURS, CONTRACTOR TO REPLACE THE FENCE AND REMOVE THE TRAPPED SEDIMENT.
- SEDIMENT DEPOSITS SHALL EITHER BE REMOVED WHEN THE DEPOSIT REACHES THE FENCE OR THE FENCE SHALL BE REPLACED.
- IF THE FILTER FABRIC (GEOTEXTILE) HAS DEGRADED DUE TO ULTRAVIOLET BREAKDOWN, IT SHALL BE REPLACED.



NO.	REVISION	DATE	DESCRIPTION

**CITY OF SPOKANE
 WASTEWATER MANAGEMENT
 DEPARTMENT**

PROJECT TITLE	CLARK AVE LIFT STATION RIVERBANK STABILIZATION
SHEET FILE	36310177
TITLE	EXISTING CONDITIONS & EROSION CONTROL PLAN
SCALE	AS SHOWN
DATE	APRIL 11, 2013

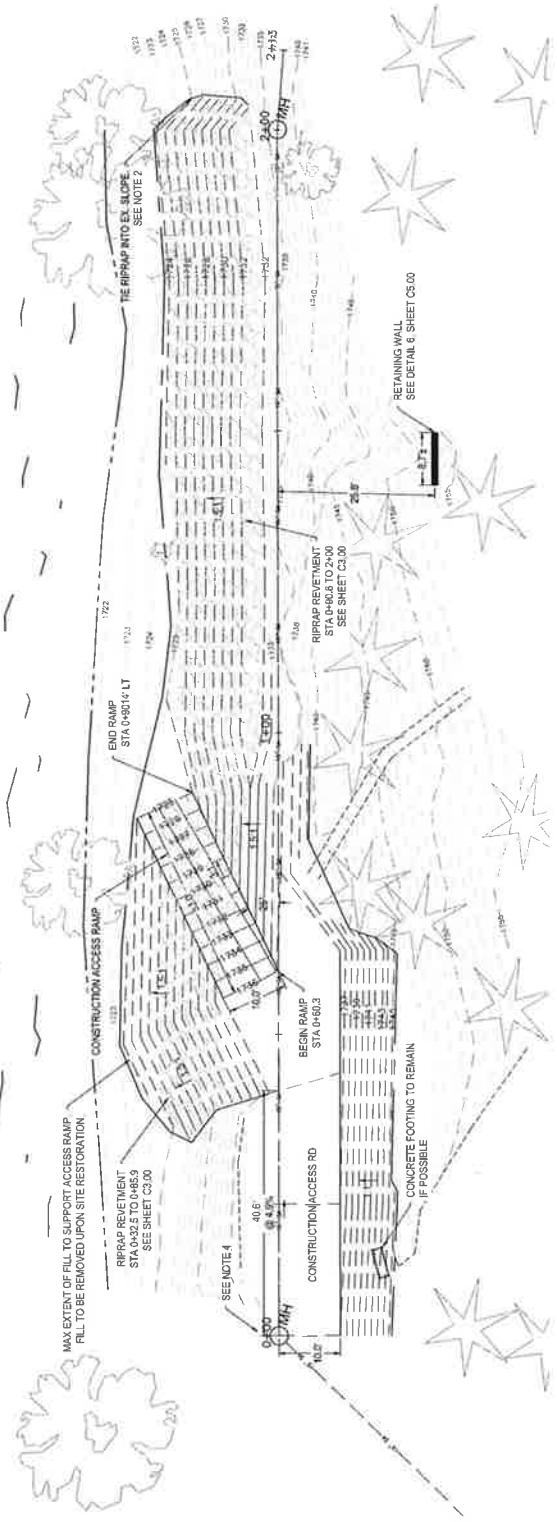
C1.00

LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- SANITARY SEWER
- MANHOLE
- SURVEYED EDGE OF WATER (12.14.12)
- PROPOSED GRADING LIMITS
- PROPOSED RIPRAP REVETMENT

NOTES

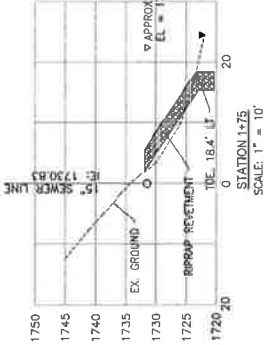
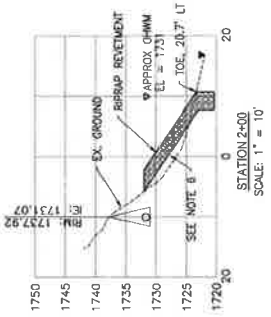
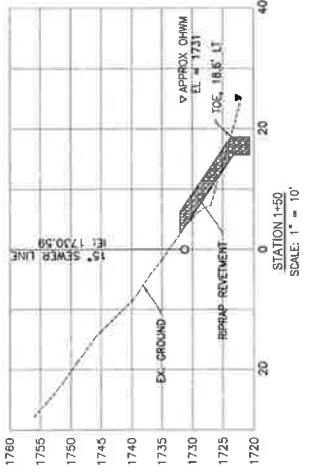
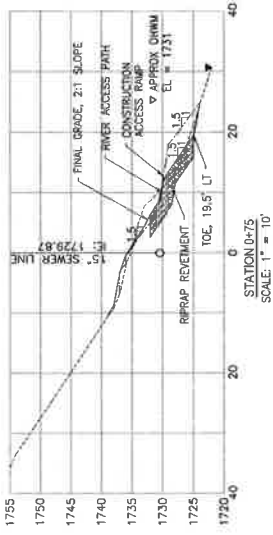
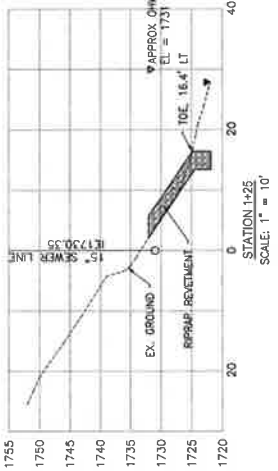
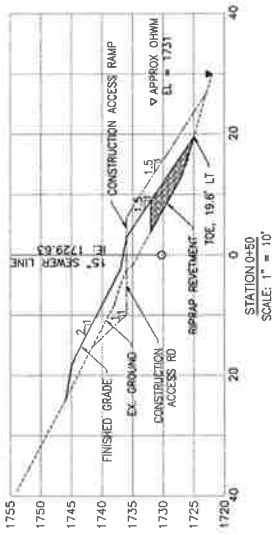
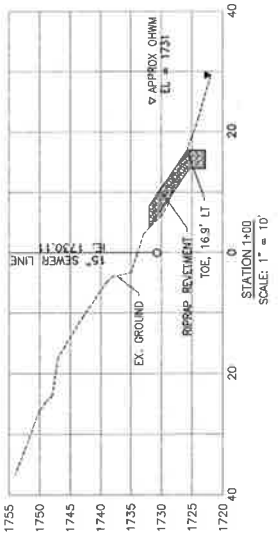
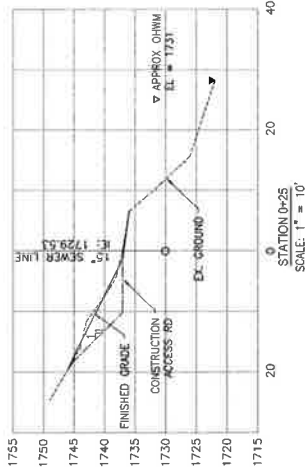
1. SEE SHEET C3.00 FOR PROJECT SECTIONS.
2. THE RIPRAP INTO EXISTING BANK AT 45° ANGLE AT APPROXIMATELY STA 2+00. KEY RIPRAP MIN 2 FT INTO SLOPE AND MAX 2 FT FROM EXISTING BANK.
3. CONTRACTOR TO REMOVE CONSTRUCTION ACCESS RAMP AND ROAD AT END OF PROJECT. SEE RESTORATION PLAN.
4. CONTRACTOR TO ADJUST CONSTRUCTION ACCESS ROAD AS NECESSARY AT STA 0+00 TO PROTECT MANHOLE FROM CONSTRUCTION.
5. CONTRACTOR TO PROTECT EX. VEGETATION TO THE MAXIMUM EXTENT PRACTICABLE DURING CONSTRUCTION.
6. CONTRACTOR TO REVEGETATE DISTURBED AREAS. SEE RESTORATION PLAN.
7. CONTRACTOR TO CONSTRUCT ALL SITE FEATURES AND GRADINGS TO THE LINES AND ELEVATIONS SHOWN ON THE PLANS. CONTRACTOR SHALL NOTIFY OWNER OF ANY DISCREPANCIES FOUND IN THE FIELD UPON DISCOVERY.



CITY OF SPOKANE WASTEWATER MANAGEMENT DEPARTMENT		PROJECT TITLE CLARK AVE LIFT STATION RIVERBANK STABILIZATION	URS PROJECT NO. 36310177																																	
		SHEET TITLE SITE PLAN	SHEET NO. C2.00																																	
		SCALE AS SHOWN	DATE APRIL 11, 2013																																	
DESIGNED CJS	DRAWN JDO	CHECKED JDO	APPROVED JCP																																	
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">REVISION NO.</th> <th style="width: 10%;">DATE</th> <th style="width: 80%;">DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>				REVISION NO.	DATE	DESCRIPTION																														
REVISION NO.	DATE	DESCRIPTION																																		
<p>URS 820 NORTH ARGONNE RD. STE. 300 SPOKANE VALLEY, WA 99212-7272 FAX: (509) 928-4415</p>																																				

LEGEND:

- EX. GROUND LINE
- - - - - EXISTING CONSTRUCTION GROUND LINE
- - - - - TEMPORARY CONSTRUCTION GROUND LINE
- - - - - APPROXIMATE OHWM
- ▽ SURVEYED EDGE OF WATER (12.14.12)



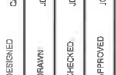
NOTES:

1. FINISHED GRADE, STA 0+00 TO STA 0+75; SEE RESTORATION PLAN, SHEET C4.00.
2. CONSTRUCTION ACCESS ROAD RESTORATION, SEE DETAIL 2, SHEET C5.00.
3. RIPRAP RETENTION, STA 0+32 TO 0+50.6, SEE DETAIL 3, SHEET C5.00.
4. RIPRAP RETENTION, STA 0+50.6 TO 0+75, SEE DETAIL 4, SHEET C5.00.
5. 15" SEWER LINE LOCATION AND ELEVATION HAVE BEEN PROVIDED FOR CONTRACTOR REFERENCE ONLY. CONTRACTOR TO PROTECT IN PLACE.
6. EXISTING SANDBAGS, STA 2+00, TO BE INCORPORATED INTO FILL OR REMOVED.


PROJECT TITLE CLARK AVE LIFT STATION RIVERBANK STABILIZATION		URS PROJECT NO. 36310177
SHEET TITLE SECTION VIEWS		SHEET NO. C3.00
SCALE AS SHOWN	DATE APRIL 11, 2013	

**CITY OF SPOKANE
WASTEWATER MANAGEMENT
DEPARTMENT**

REVISION NO.	DATE	DESCRIPTION



DESIGNED	CAS
DRAWN	JDD
CHECKED	JDD
APPROVED	JCP



URS
180 NORTH PARKWAY RD., STE. 300
SPOKANE VALLEY, WA 99212-2722
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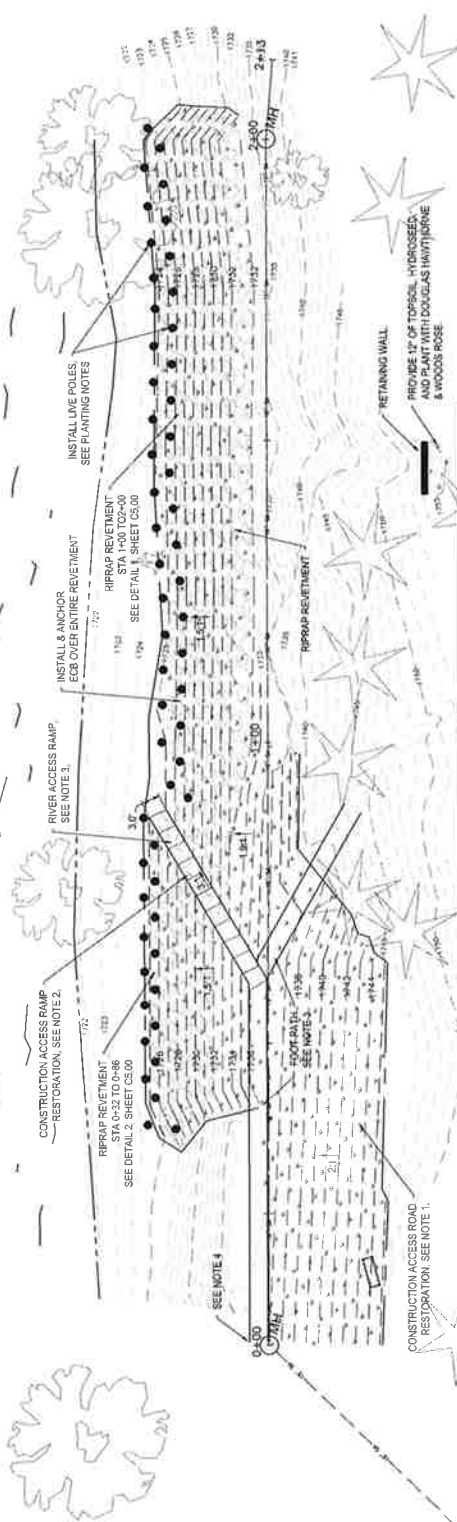
LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- SANITARY SEWER
- MAN-HOLE
- SURVEYED EDGE OF WATER
- PROPOSED GRADING LIMITS
- PROPOSED RIPRAP RETIEMENT
- PROPOSED WILLOW POLE PLANTING
- PROPOSED HYDROSEED

NOTES

1. CONTRACTOR TO RESTORE CONSTRUCTION ACCESS ROAD WITH 2:1 SLOPE, PROVIDE TOPSOIL AND PLANT ACCORDING TO DETAIL 2, SHEET CS.00.
2. CONTRACTOR TO REMOVE CONSTRUCTION ACCESS RAMP AT PROJECT END, REMOVE ACCESS ROAD FILL MATERIAL, SEE DETAIL 2, SHEET CS.00.
3. CONTRACTOR TO PROVIDE 3' WIDE FOOT PATH FOR RIVER ACCESS ALONG CONSTRUCTION ACCESS RAMP ROUTE, PROVIDE 2" TOPSOIL, 2" HYDROSEED, 2" THICK, BUCKET TAMP TO PROVIDE SAFE FOOTING.
4. CONTRACTOR TO RESTORE STAGING AREA AND SITE ACCESS ROUTE AT PROJECT END TO PRE-PROJECT CONDITIONS OR BETTER.
5. CONTRACTOR TO HYDROSEED ALL DISTURBED AREAS, SEE GRASS SEED MIX TABLE.

RIVER FLOW
SPOKANE RIVER

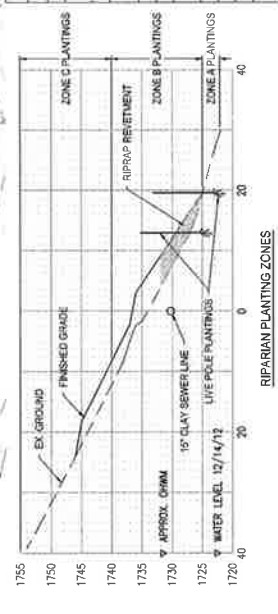


PLANTING NOTES

1. ZONE A PLANTINGS APPLY FROM THE EDGE OF WATER TO ELEV. 1725 TO 1740.
2. ZONE B PLANTINGS APPLY ABOVE ELEV. 1740.
3. A VARIETY OF SPECIES HAVE BEEN PROVIDED IN THE RIPARIAN PLANTING SCHEDULE TO BE GIVEN TO THOSE PLANTS WITH THE HIGHEST RELATIVE PERCENTAGE BY ZONE.
4. DISTURBED AREAS AND RIPRAP RETIEMENT SHALL BE HYDROSEEDED PRIOR TO INSTALLATION OF THE EROSION CONTROL BARRIERS.
5. BLACK COTTONWOODS AND OTHER SIMILAR TREES WITH WATER SEEKING ROOTS SHALL NOT BE PLANTED ABOVE THE SEWER LINE.
6. LIVE POLES TO BE INSTALLED BY METHOD OF STINGS AT TOP OF RIPRAP RETIEMENT AND UP SLOPE OF KEY TRENCH. POLES TO BE PLANTED IN TWO STAGGERED ROWS APPROXIMATELY 4' ON CENTER.
7. LIVE POLES ARE TO BE EMBEDDED SO THAT THE BASE OF THE POLE EXTENDS APPROXIMATELY 8" BELOW THE WATER TABLE AT THE TIME OF PLANTING. LIVE POLE TO BE 1/2" TO 2" IN DIAMETER.
8. LIVE POLES TO CONSIST OF ZONE A PLANTINGS & BLACK COTTONWOOD IN ZONE B.
9. LIVE POLES FROM THE ZONE A PLANTINGS ARE TO BE PLANTED WITHIN THE RIPRAP RETIEMENT AND WITHIN THE RIPRAP RETIEMENT.

PLANTING SCHEDULE

SPECIES	COMMON NAME	SHORELINE VEGETATIVE ZONE	RELATIVE PERCENT OF MIX BY ZONE
Salix lucida ssp. lasioandra	PACIFIC WILLOW	A	70
Salix prolixa	MAKENZIE WILLOW	A	30
Alnus incana ssp. tenuifolia	THIN LEAF ALDER	B	10
Betula papyrifera	PAPER BIRCH	B	15
Cornus sericea	RED-OSIER DOGWOOD	B	15
Populus balsamifera ssp. trichocarpa	BLACK COTTONWOOD	B	15
Ribes aurum	GOLDEN CURRANT	B	10
Ribes laciniare	SWAMP CURRANT	B	10
Salix scouleriana	SCULLER WILLOW	B	20
Aralia nudicaulis	SERAPENDANT	C	15
Carex douglasii	DOUGLAS HEMIPHORE	C	10
Phragmites australis	WILLOW NINEBARK	C	10
Pinus ponderosa	PONDEROSA PINE	C	10
Prunus virginiana	COMMON CHOKESBERRY	C	15
Rosa woodsii	WOODS ROSE	C	10
Symphoricarpos albus	SNOWBERRY	C	10



GRASS SEED MIX

SPECIES	COMMON NAME	PERCENT BY WEIGHT
Achnatherum hymenoides	RIWAY RICE GRASS	10
Festuca ovina	SHEEP FESCUE	20
Lupinus sericeus	SILKY LUPINE	10
Poa secunda	SHERMAN BIC BLUEGRASS	20
Pseudoroegneria spicata	BLUE BUNCH WHEATGRASS	30
Sporobolus cryptandrus	SAND DROPSSEED	10

**CITY OF SPOKANE
WASTEWATER MANAGEMENT
DEPARTMENT**

PROJECT TITLE: CLARK AVE LIFT STATION
RIVERBANK STABILIZATION

RESTORATION PLAN

DATE: APRIL 11, 2013

SCALE: AS SHOWN

AS SHOWN

URS PROJECT NO. 36310177

SHEET NO. C4.00

DESIGNED: CAS

DRAWN: JDO

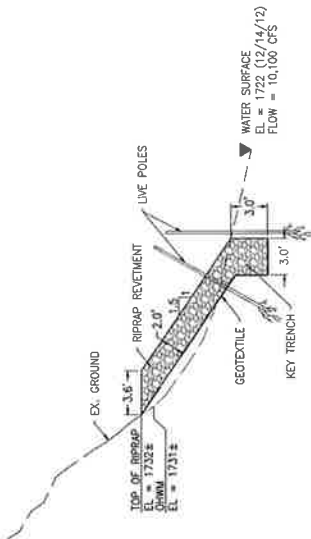
CHECKED: JDO

APPROVED: JCP

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500 NORTH ARGONNE RD. STE. 300
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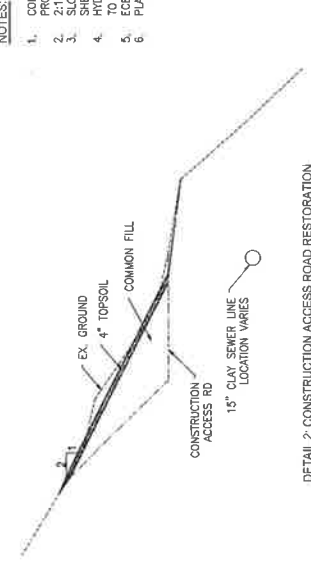
NOTES:

- SEE SECTION VIEWS FOR ELEVATION AND OFFSET OF REVISION TO BE INSTALLED ON EX. SLOPE AND WITHIN GEO TRENCH. SECURE TO SLOPE AS NECESSARY.
- ACCORDING TO MANUFACTURER'S RECOMMENDATIONS, GEOTEXTILE SHALL BE NON-WOVEN, HIGH SURVIVABILITY, DRAINAGE CLASS A.
- VISIBLE GEOTEXTILE TO BE REMOVED PRIOR TO PLANTING. RIPRAP TO BE 2" NOMINAL THICKNESS. INCREASE AS NECESSARY TO MAINTAIN 1.5:1 MAX SLOPE THROUGH EXISTING GROUND. SEE GRADATION TABLE THIS SHEET.
- RIPRAP VOIDS TO BE BACKFILLED WITH TOPSOIL AND HYDROSEED. COVER HYDROSEED WITH EROSION CONTROL BLANKET (ECB).
- INSTALL LIVE POLES THROUGH ECB.
- ECB SHALL BE PROPEX LANDLOK C2 OR EQUIVALENT. INCREASE AS NECESSARY TO MAINTAIN 1.5:1 MAX SLOPE PER MANUFACTURER'S RECOMMENDATIONS.
- PLANT ACCORDING TO RESTORATION PLAN.



DETAIL 1: RIPRAP REVETMENT & RESTORATION
STA 0+80.6 TO STA 2+10
SCALE: N.T.S.

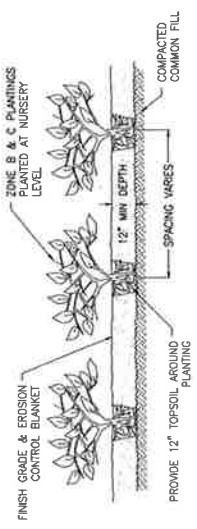
SIZE	RIPRAP GRADATION		WEIGHT	
	MIN	MAX	MIN	MAX
D100	26	29	173	197
D85	21	24	139	162
D60	17	20	116	133
D30	14	17	86	111
D15	8	16	55	108



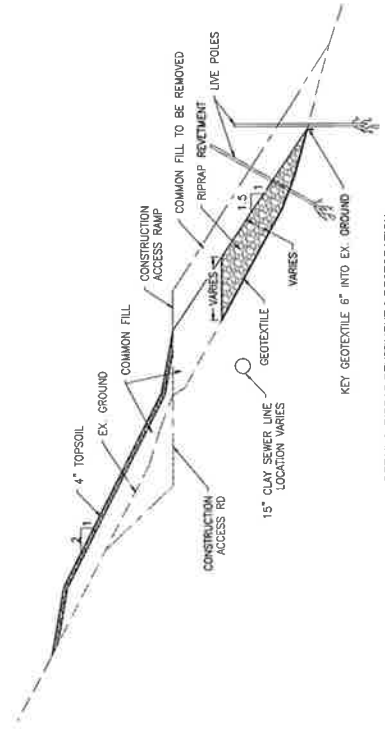
DETAIL 2: CONSTRUCTION ACCESS ROAD RESTORATION
STA 0+0 TO STA 0+32
SCALE: N.T.S.

NOTES:

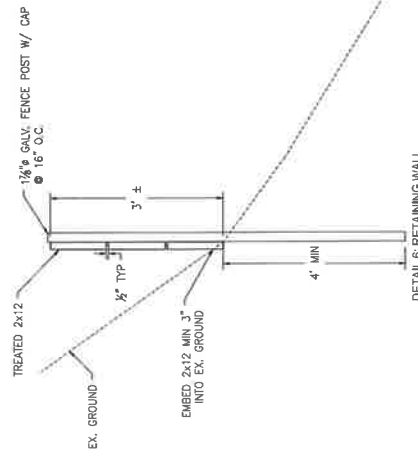
- WOODY PLANTS WILL CONSIST OF ZONE B & C PLANTINGS. SEE RIPRAP PLANTING SCHEDULE, SHEET 04010.
- WOODY PLANTS TO BE INSTALLED THROUGH ECB.
- PLANT SPACING SHALL BE IN ACCORDANCE WITH GOOD LANDSCAPING PRACTICES.



DETAIL 5: WOODY PLANT PLANTING DETAIL
SCALE: N.T.S.



DETAIL 3: RIPRAP REVETMENT & RESTORATION
STA 0+32 TO STA 0+80.6
SCALE: N.T.S.



DETAIL 4: RETAINING WALL
SCALE: N.T.S.

NOTES:

- PRESSURE TREATED LUMBER TO BE DOUG-FIR/LARCH #2 OR BETTER, OR HEALOOK #1 OR BETTER.
- FASTEN LUMBER TO GALVANIZED FENCE POST WITH APPROPRIATE GALVANIZED HARDWARE AND FASTENERS.
- BACKFILL RETAINING WALL WITH COMPACTED COMMON FILL.
- SEE RESTORATION PLAN FOR PLANTING.
- ATTACH GEOTEXTILE TO FACE OF PRESSURE TREATED LUMBER. BETWEEN LUMBER AND RETAINED FILL. EXTEND GEOTEXTILE 6" BELOW BOTTOM EDGE OF BOTTOM BOARD.
- GEOTEXTILE SHALL BE NON-WOVEN, HIGH SURVIVABILITY, DRAINAGE CLASS A.
- LOCATION OF RETAINING WALL TO BE DETERMINED IN THE FIELD BY CONTRACTOR AND OWNER.

NOTES:

- COMMON FILL TO BE COMPACTED TO 92% MODIFIED PROCTOR VALUE.
- 2:1 SLOPE TO EXTEND FROM TOP OF CUT SLOPE.
- SLOPE TO BE HYDROSEED. SEE GRASS SEED MIX.
- HYDROSEED AREA TO BE COVERED WITH ECB. SECURE TO SLOPE PER MANUFACTURER'S RECOMMENDATIONS.
- ECB SHALL BE PROPEX LANDLOK C2 OR EQUIVALENT.
- PLANT WOODY SHRUBS IN ACCORDANCE WITH DETAIL 5.

URS PROJECT NO. 36310177

SHEET NO.

C5.00

CLARK AVE LIFT STATION

RIVERBANK STABILIZATION

DETAILS

SCALE AS SHOWN

DATE APRIL 11, 2013

CITY OF SPOKANE

WASTEWATER MANAGEMENT

DEPARTMENT

REVISION: CAS

CHOWN JJD

CHECKED: JJD

APPROVED: JJP

RESIGNED: CAS

CHOWN JJD

CHECKED: JJD

APPROVED: JJP

URS

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PROJECT TITLE

SHEET TITLE

SCALE AS SHOWN

DATE APRIL 11, 2013