Conditional Use Permit Application Addendum

Yellowstone Pipe Line Company - Horizontal Directional Drill
Under the Spokane River at Pipeline Mile Marker 1.3
Spokane County, Washington

April 26, 2016
Terracon Project No. 26145031

Prepared for:
Yellowstone Pipe Line Company
Billings, Montana

Prepared by:
Terracon Consultants, Inc.
Billings, Montana

Enclosures

1.0 Sewer Lines in the Project Area
2.0 SWPPP
3.0 Geotech Report
4.0 Vegetation Replacement Plan
5.0 Administrative Design Review Application (Separate Cover)
6.0 Cultural Resources

CITY OF SPOKANE
PLANNING & DEVELOPMENT
808 W. SPOKANE FALLS BLVD.
SPOKANE, WASHINGTON 99201-3329
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FAX 509.625.6013
my.spokanecity.org

February 12, 2016

Jean Ramer
Terracon Consultants
2110 Overland Avenue, Suite 124
Billings, MT 59102

Subject: #Z16-048 SCUP Corrections Required

Dear Ms. Ramer,

This letter is to inform you that the Shoreline Conditional Use Permit application for the Yellowstone Pipeline was found to be **technically incomplete,** based on a review required under Spokane Municipal Code (SMC) 17G.060.090, Determination of a Complete Application. The following comments were received from various departments and agencies that require addressing before this application could be considered technically complete and proceed to Notice of Application.

Spokane Tribe:

1. After reviewing our information concerning the projects listed above, our office has determined that this is "Adverse Effect" on this project. There are six cultural sites that may be eligibility for the National Register on this project that will need to be addressed before this project can move forward.

   At this time I would like to request an onsite meeting at your convenience of the project mentioned above.

   These cultural sites are very limited, irreplaceable and provide the historical and cultural foundations of the Spokane Tribe and includes the traditional cultural resources, ancestral and sacred sites, historic locations and burial sites that are so important to the Spokane tribe.

   Recommendation: Cultural Survey & Subsurface testing.

Engineering:

1. With the existing section of pipeline being abandoned in place after the new section is tied in, describe the proposed abandonment process (e.g., purging, cleaning, inspection, closure, etc.).
2. There is a 4-inch sanitary force main on the south side of the river and a 15-inch gravity sanitary main within the Upriver Drive right-of-way. Please show these and any other utility lines that will be crossed along with invert elevations on the plans.
3. Considering that the drill pit is in the City and located near a stormwater inlet, the City will need to review/approve the SWPPP in addition to DOE.
4. Please provide the geotechnical evaluation of the site for the proposed project.
5. Please clarify why casing or other form of double containment is not proposed for the replacement pipe.

Planning:

1. A Vegetation Replacement Plan will need to be submitted for review and approval as part of this application. Please review Spokane Municipal Code Section 17E.060.230 Vegetation Conservation, Section 17E.060.260 Vegetation Replacement Plan, additional guidance can also be found in Section 17E.020.090 Habitat Management Plans.

Design Review:

1. Please submit an application for an Administrative Design Review at your earliest convenience.
2. In order to help expedite this process you may want to have your landscape architect prepare a planting plan showing proposed native trees and vegetation in the full area of disturbance; the plans should include native plants arranged to mimic the natural vegetation patterns of the immediate surrounding area. Also please include information on irrigation, plant establishment and maintenance. Please show screening and fencing materials and avoid linear plantings around the perimeter of the protective fencing.

Washington Department of Fish and Wildlife:

1. WDFW has reviewed the Yellowstone Pipeline proposal. Given that the pipeline project will result in permanent impacts to shoreline vegetation, WDFW recommends that the City request a shoreline restoration plan with native plants in order to mitigate for these impacts. The restoration work can take place just outside of the area that must be visible for aerial inspections.

Based on Spokane Municipal Code (SMC) 17G.060.090 (C.2.) required information must be provided within 60 days from the notification by the department. You may submit a written request for additional time to the director; any time extensions shall be in writing. If the information is not received within 60 days (or as otherwise agreed to), the application and a portion of the fess shall be returned to you.

If you have any questions regarding these requirements, please contact me at (509)625-6157 or tpalmquist@spokanecity.org. This application will not be processed until the requested materials have been submitted. Please make an appointment to resubmit these materials with me. Thank you.

Sincerely,

Tami Palmquist

Tami Palmquist, AICP
Associate Planner
Planning & Development

Additional Information – Conditional Use Permit #Z16-048 – Technically Incomplete
Yellowstone Pipe Line Company – Horizontal Directional Drill Under the Spokane River Near Felts Field
April 21, 2016

Below are responses to the items requested in the letter dated February 12, 2016, signed by Tami Palmquist.

Spokane Tribe:

1. After reviewing our information concerning the projects listed above, our office has determined that this is "Adverse Effect" on this project. There are six cultural site's that may be eligibility for the National Register on this project that will need to be addressed before this project can move forward.

   At this time I would like to request an onsite meeting at you convenience of the project mention above.

   These cultural sites are very limited, irreplaceable and provide the historical and cultural foundations of the Spokane Tribe and includes the traditional cultural resources, ancestral and sacred sites, historic locations and burial sites that are so important to the Spokane tribe.

   Recommendation: Cultural Survey & Subsurface testing.

YPL's authorized agent, Terracon Consultants, Inc. met with the Tribal Historic Preservation Officer for the Spokane Tribe, Mr. Randy Abrahamson, on March 17, 2016 on the subject property. Terracon conducted shovel testing on March 31, 2016. The report of findings will be submitted to the SHPO when it is completed.

See Exhibit 6

Engineering:

1. With the existing section of pipeline being abandoned in place after the new section is tied in, describe the proposed abandonment process (e.g. purging, cleaning, inspection, closure, etc.)

In-place abandonment would involve purging and swabbing all product from the line, filling with a weak flowable sand/cement mixture and permanently weld capping the ends. Over time, without cathodic protection, the pipe will eventually degrade and the sand/cement fill will become part of the river bed. The abandoned pipe will be monitored by on-the-ground depth of cover surveys, bi-weekly aerial patrols and after a significant flood event for potential future exposures. A significant flood event is defined as runoff of the 5-year flood frequency or greater.

Pipelines abandoned and filled with a sand/cement mix act like sunken logs. There is negligible safety or environmental exposure with inert pipe. There is no safety risk to the public and other river users, as the grouted steel pipe will have negative buoyancy and will remain on the floor of the river bed. Abandoned crossings have their cathodic protection systems removed and therefore degrade over time beneath the river channel floor. Monitoring of the abandoned crossing is continued to determine any potential for future exposure. If, at any point in time, the grout filled line becomes exposed inside the river channel low water marks, YPL will remove the exposed portion of the piping as soon as practical.

2. There is a 4-inch sanitary force main on the south side of the river and a 15-inch gravity sanitary main within the Upriver Drive right-of-way. Please show these and any other utility lines that will be crossed along with the invert elevations on the plans.

See Exhibit 1.

3. Considering that the drill pit is in the City and located near a stormwater inlet, the City will need to review/approve the SWPPP in addition to the DOE.

Refer to the SWPPP in Exhibit 2.

The stormwater inlet is shown in the Google street view screenshot below. It is five feet higher in elevation than the excavation area, and on the opposite side of North Waterworks Street. Nevertheless, the stormwater inlet will be protected with a straw wattle or gravel bag sediment barrier.

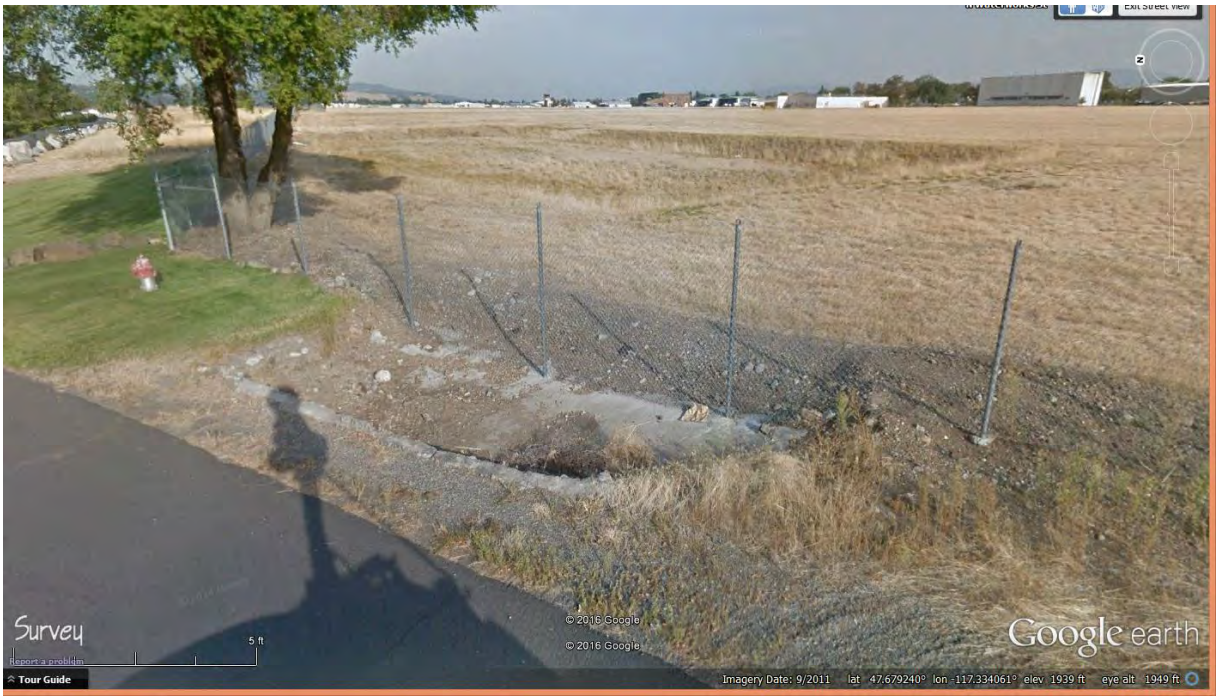

Photo by AJ Torres, Terracon. July 30, 2015

4. Please provide the geotechnical evaluation of the site for the proposed project. See Exhibit 3.

5. Please clarify why casing or other form of double containment is not proposed for the replacement pipe.

Welded steel pipelines transporting petroleum and refined petroleum products are protected from corrosion using an impressed current cathodic protection (ICCP) system. These systems consist of anodes connected to a DC power source, often a transformer-rectifier connected to AC power. For pipelines, anodes are arranged in ground-beds either distributed or in a deep vertical hole depending on several design and field condition factors including current distribution requirements and a current is induced along the pipeline to the anode beds, which serve as a sacrificial element.

Where a pipeline passes under a road or railway, it is occasionally enclosed in a protective casing. This casing is vented to the atmosphere to prevent the build-up of flammable gases or corrosive substances, and to allow the air inside the casing to be sampled to detect leaks. The *casing vent*, a pipe protruding from the ground, often doubles as a warning marker called a *casing vent marker*. These casings are typically of limited length and even so, present a corrosion problem as the

induced current may short to the casing resulting in aggressing and accelerated corrosion and pitting of the carrier pipe, and the spacing between the carrier pipe can also form a “battery cell” exacerbating corrosion potential. Casings, particularly steel casing, are avoided if at all possible and if required due to structural loading, i.e. underneath a railroad, limited in length. In fact there has been a concentrated effort by the industry to retroactively remove casings at a considerable cost to mitigate pipeline corrosion issues.

The HDD of Spokane River at this location would require an unvented steel casing over 800 feet long (a steel casing would be required as a HDPE or similar plastic pipe would not be able to withstand the installation pressures in this gravel and cobble environment). A casing for an HDD of this length would present a corrosion risk to the pipeline and consequently not appropriate at this location. The pipeline design for the carrier pipe for this HDD is of greater wall thickness than surrounding pipe and has more than adequate strength for the operating pressures of the pipeline. The carrier pipe also has a special coating system designed for horizontal directional drilling applications. These choices ensure the resulting new pipeline crossing will exceed industry construction and design standards without a casing installation.

Planning:

1. A Vegetation Replacement Plan will need to be submitted for review and approval as part of this application. Please review Spokane Municipal Code Section 17E.060.230 Vegetation Conservation, Section 17E.060.260 Vegetation Replacement Plan, additional guidance can also be found in Section 17E.020.090 Habitat Management Plans.

Mr. Mike Terrell, ASLA, has been subcontracted to prepare the Vegetation Replacement Plan.
See Exhibit 4

Design Review:

1. Please submit an application for an Administrative Design Review at your earliest convenience.

See Exhibit 5.

2. In order to help expedite this process you may want to have your landscape architect prepare a planting plan showing proposed native trees and vegetation in the full area of disturbance; the plans should include native plants arranged to mimic the natural vegetation patterns of the immediate surrounding area. Also please include information on irrigation, plant establishment and maintenance. Please show screening and fencing materials and avoid linear plantings around the perimeter of the protective fencing.

Mr. Mike Terrell, ASLA, has been subcontracted to prepare the Vegetation Replacement Plan (Exhibit 4) within all areas that will be disturbed.

Washington Department of Fish and Wildlife:

1. WDFW has reviewed the Yellowstone Pipeline proposal. Given that the pipeline project will result in permanent impacts to shoreline vegetation, WDFW recommends that the City request a shoreline restoration plan with native plants in order to mitigate for these impacts. The restoration work can take place just outside of the area that must be visible for aerial inspections.

Mr. Mike Terrell, ASLA, has been subcontracted to prepare the Vegetation Replacement Plan (Exhibit 4) which will include the shoreline planting areas.

Exhibit 1A

Drawing provided by Tony (509) 625-7900 from the City of Spokane Wastewater Utility office Feb. 15, 2016.

ALL MEASUREMENTS ARE APPROXIMATE

Approximate Proposed HDD Exit Point

Approximate Proposed HDD Route

15" Gravity Sewer

updepth 12.75

downdepth 8.4

updepth 6.11

downdepth 6.47

Proposed HDD and 15" Gravity Sewer Crossing

Sewer crossing is approximately 240' from HDD Exit point.

Interpolated sewer invert depth is 6.29' (referencing called out updepth 6.11 and downdepth 6.47)

Designed HDD depth is 66' below existing grade at sewer crossing.

Estimated clearance between the sewer and proposed HDD is ~60 feet.

Q25NW
Q25NE
Q25SW
Q25SE

Buckeye Av
Carnahan Rd
Upriver Dr
Waterworks St

Water Department
Parks
Spokane County
Spokane
Felts Field Airport

E 5018 35112.0323
E 5023 35112.0322
35112.0329
N 2806 35111.0248
E 5115 35111.0247
E 5119 35111.0246
E 5201 35111.0250
E 5008 35112.9076
35111.9024
35112.9078
35112.9015
35111.9025
E 4912 35112.9077
N 2810 35111.0001
35111.0004
E 6105 35111.0186
E 5505 35115.0102

9/30/11
3/18/14
3/19/14

Exhibit 1B

Water Department

35111.9024

Spokane County

35111.9025

Parks

Parks

35112.9015

Proposed HDD and 4" Forced Sewer Main Crossing

Approximate Proposed HDD Route

4" Forced Sewer

Approximate Proposed HDD Entry Point

E 6105
35111.0186

35111.0004

E 5505
35115.0102

Felts Field Airport

POSSIBLE WATER DEPT VALVES

Q25SW

Q25SE

ABANDONED SEWER OUTFALL

0509210CD

0509310CD

0509410CD

0509512CD

Parks

35112.0201

Spokane

ABANDONED CESSPOOLS

Waterworks St

Sewer crossing is approximately 100' from HDD Entry point.

The City of Spokane does not have sewer invert depths or elevations on file for the 4" forced sewer. Forced sewers do not rely on gravity and are typically established at a consistent depth below grade. City of Spokane will have to pull off sewer lids to determine 4" forced sewer elevation at point of crossing.

Designed HDD depth is 18' below existing grade at sewer crossing.

Assuming the 4" forced sewer is buried 4' below ground the estimated clearance between the sewer and proposed HDD is ~14 feet.

E 5311
35115.020

35111.0301

Felts Field Airport

Water Department

35115.0101

0509110CD

E 5311
35115.0202

Water Department

Q24NW

Q24NE

5411

2302

Drawing provided by Tony (509) 625-7900 from the City of Spokane Wastewater Utility office Feb. 15, 2016.

Exhibit 2

Storm Water Pollution Prevention Plan
Under Separate Cover

Exhibit 3

Geotechnical Report
Under Separate Cover

MEMO

To: Terracon	**Attention: Jean Ramer**
From: Mike Terrell, ASLA	**Date: 4/4/2016**
Project: Yellowstone Pipeline	**Project No: 16-012**
Re: Revegetation Requirements	**CC:** File

Jean,

I reviewed the city of Spokane comments and requirements for replacement of vegetation as a result of clearing and construction activities for the installation of the proposed pipeline. The following is the response to the City of Spokane letter of 2/12/16 from Tami Palmquist (Subject: #X16-048 SCUP Corrections Required).

"Planning:

1. *A Vegetation Replacement Plan will need to be submitted for review and approval as part of the application. Please review the Spokane Municipal Code Section 17E.060.230 Vegetation Conservation, Section 17E.060.260 Vegetation Replacement Plan, additional guidance can also be found in Section 17E.020.090."*

   Response: Applicant has reviewed the applicable sections of the Spokane Municipal Code as noted in the staff comments and has prepared a Vegetation Replacement Plan for the areas impacted by the project.

   Section 17E.060.230 Vegetation Conservation Requirements:
   B. There shall be no net loss of vegetative cover within the shoreline jurisdiction.

   Applicant has prepared a Vegetation Replacement Plan (L-1) to mitigate removal of existing native and non-native trees and shrubs required by construction of the project. Applicant has identified three areas where native and non-native trees and shrubs will be selectively removed and those are listed in Table 1, below.

   Area A: Area along the existing asphalt driveway (Carnahan RD) serving the apartment complex and south of Buckeye Avenue. Proposed replacement areas are identified on the plan as 'A-R'.

   Area B: Northwest side of the Spokane River where the proposed project will cross under the river. Native trees and shrubs will be selectively removed in

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(509) 922-7449
www.mt-la.com

Member American Society of Landscape Architects

a 30' strip to allow inspection of the surface over the proposed pipeline. Proposed replacement areas are identified on the plan as 'B-R'.

Area C: Southeast side of the Spokane River where the proposed project will cross under the river. Non-native trees will be selectively removed in a 30' strip to allow inspection of the surface over the proposed pipeline. Proposed replacement areas are identified on the plan as 'C-R'.

C. Removal of or alteration to any vegetation within the shoreline jurisdiction shall not be allowed unless such activity is approved by the director as part of a vegetation replacement plan.

Applicant requests director's approval for the selective removal of native and non-native trees and shrubs identified on L-1 in order to comply with requirements for aerial inspection of the surface above the pipeline.

D. Proposed removal of vegetation for a permitted use shall be reviewed pursuant to the mitigation sequencing specified in SMC 17E.060.230. Avoidance of any impact to shoreline vegetative cover is the preferred method of mitigation.

Applicant proposes to selectively remove identified native and non-native trees and shrubs in order to minimize impact to shoreline vegetative cover. Vegetative cover located directly adjacent to the Spokane River is identified on L-1 as callout #5. This shoreline vegetation is to remain.

E. Vegetation conservation provisions also apply to those shoreline uses, modifications, and developments that are exempt from the requirement to obtain a shoreline substantial development permit.

Applicant notes the requirements.

F. A tree or shrub may be removed if deemed hazardous by a certified arborist.

No trees or shrubs have been identified as hazardous by a certified arborist.

G. Normal maintenance or repair of existing utilities and facilities within an existing degraded shoreline area shall be allowed if the activity does not further alter or degrade shoreline ecological functions or vegetative cover, and there is no increased risk to life or property as a result of the proposed operation, maintenance or repair.

Applicant proposes management of the 30' clear area over the pipeline to maintain visual access to the surface for security reasons.

H. Vegetation management shall be in accordance with best management practices that are part of ongoing maintenance of structures, infrastructure, or utilities, provided that such management actions are part of a regular ongoing

maintenance. These ongoing activities shall not be subject to new or additional mitigation when they do not expand further into the critical area, are not the result of an expansion of the structure or utility, or do not directly impact endangered species or result in no net loss of shoreline ecological functions. Whenever possible, maintenance activities shall be confined to late summer and fall.

Applicant proposes a Vegetation Replacement Plan with replacement of selectively removed native and non-native trees and shrubs that will result in no net loss of shoreline ecological functions. Applicant proposes to conduct removal and replacement operations in late summer and fall.

I. When an applicant is required to submit a habitat management plan pursuant to SMC 17E.020.090, the requirements in SMC 17E.060.240 through SMC 17E.060.280 may be waived by the director or submitted as a component of the habitat management plan.

Due to the limited area of disturbance, Applicant requests a waiver of the habitat management plan and proposes the Vegetation Replacement Plan. No surface structures or disturbances are planned within the shoreline area, only selective removal of existing native and non-native trees and shrubs.

"Design Review:

1. *Please submit an application for an Administrative Design Review at your earliest convenience.*
2. *In order to help expedite this process you may want to have your landscape architect prepare a planting plan showing proposed native trees and vegetation in the full area of disturbance; the plans should include native plants arranged to mimic the natural vegetation patterns of the immediate surround area. Also please include information on irrigation, plant establishment and maintenance. Please show screening and fencing materials and avoid linear plantings around the perimeter of the protective fencing."*

"Washington Department of Fish and Wildlife:

1. *WDFW has reviewed the Yellowstone Pipeline proposal. Given that the pipeline project will result in permanent impacts to shoreline vegetation, WDFW recommends that the City request a shoreline restoration plan with native plants in order to mitigate these impacts. The restoration work can take place just outside of the area that must be visible for aerial inspections."*

TABLE 1: VEGETATION REPLACEMENT			
Methodology for replacement quantities. It is not practical to replace the existing native trees and shrubs with material that is of equal size. Applicant is proposing to install replacement material utilizing a ratio that results in approximately an equal caliper size achieved with multiple plants.			Comments
	TREE / SHRUB REMOVAL	TREE / SHRUB REPLACEMENT	As per Revegetation Requirements in SMC Section 17E.060.260 Vegetation Replacement Plan
AREA 'A' - 'A-R'	**AREA 'A'**	**AREA 'A-R'**	
SERVICEBERRY	1 X 10' TALL (APPROX)	AA: 2 X 5 GAL / 4' TALL	Replace one existing mature native shrub with two 5 gal / 4′ tall plants.
AREA 'B' - 'B-R' (SHORELINE)	**AREA 'B'**	**AREA 'B-R'**	
PONDEROSA PINE	1 X 24" CAL (APPROX)	PP: 16 X 1.5" CAL / 4' TALL	Replace one existing mature native 24″ cal tree with 16, 1.5″ (16x1.5=24) caliper / 4′ tall plants.
PONDEROSA PINE	1 X 16" CAL (APPROX)	PP: 11 X 1.5" CAL / 4' TALL	Replace one existing mature native 16″ cal tree with 11, 1.5″ (11x1.5=16.5) caliper / 4′ tall plants.
PONDEROSA PINE	2 X 14" CAL (APPROX)	PP: 18 X 1.5" CAL / 4' TALL	Replace two existing mature native 14″ cal tree with 18, 1.5″ (18x1.5=27) caliper / 4′ tall plants.
SERVICEBERRY	1 X 12' TALL (APPROX)	AA: 2 X 5 GAL / 4' TALL	Replace one existing mature native shrub with two 5 gal / 4′ tall plants.

AREA 'C' - 'C-R' (SHORELINE)	**AREA 'C'**	**AREA 'C-R'**	
BLACK LOCUST UNDER 6" CAL.	11 X 6" CAL (APPROX)	AA: 5 X 5 GAL / 4' TALL SS: 6 X 5 GAL / 4' TALL	1:1 replacement ratio to enhance shoreline function with the replacement of non-native trees with native shrub with habitat value.
BLACK LOCUST OVER 6" CAL. IN CLEARANCE AREA	1 X 12" CAL (APPROX) 5 X 8" CAL (APPROX) 6 X 8" CAL (APPROX) = 12 trees total	PP: 8 X 1.5" / 4' T AA: 15 X 5 GAL / 4' T SS: 16 X 5 GAL / 4' T 39 Replacement Trees and Shrubs	2:1 replacement 3:1 replacement 3:1 replacement Ratio to enhance shoreline function with the replacement of non-native trees with native trees and shrubs with habitat value.

TABLE 2: SHORELINE REPLACEMENT RATIO (SMC 17E.060	
TABLE 17E.060-1 SHORELINE VEGETATION REPLACEMENT RATIO*	
Vegetation Removed	**Replacement Ratios**
Native Deciduous Trees Less Than 6" Caliper	1:1 replacement ratio; Replacement tree(s) must be a minimum 2.5" caliper
Native Deciduous Trees Over 6" Caliper	2:1 replacement ratio; Replacement tree(s) must be a minimum 2.5" caliper
Native Evergreen Trees Less Than 6" Caliper	1:1 replacement ratio; Replacement trees(s) must be a minimum 4" caliper
Native Evergreen Trees Over 6" Caliper	2:1 replacement ratio; Replacement trees must be a minimum 4" caliper
Native Shrubs	1:1 replacement ratio; Replacement shrub(s) must be at a minimum 12" - 18" in diameter (at head)
Native Groundcover	1:1 replacement ratio: Replacement groundcover(s) must be at a minimum 4" in diameter (at pot)
* For example, when a ten-inch caliper native deciduous tree is removed, the applicant may propose to replace with two five-inch caliper native deciduous trees or four two and one-half inch caliper native deciduous trees. A qualified professional will determine the appropriate vegetation replacement size(s) for the project site	

CALLOUTS

1. PROPOSED PIPELINE ROUTE
2. EXISTING PIPELINE ROUTE
3. ABANDONED PIPELINE
4. 30' RIGHT-OF-WAY VEGETATION CLEARANCE AREA
5. VEGETATION TO REMAIN, PRESERVE AND PROTECT
6. TREES TO REMAIN, PRESERVE AND PROTECT
7. DISTURBED AREA SEEDING
8. PROPOSED PIPE STRINGOUT AREA, 870' LONG X 40 FEET WIDE. SEE CIVIL DRAWINGS FOR FULL EXTENT

LEGEND

- 200' SHORELINE BUFFER
- SILT FENCE/STRAW WATTLES. SEE CIVIL DRAWINGS.
- TREE SHRUB REMOVAL AREA.
- PLANTING AREA.
- AREA OF DISTURBANCE BOUNDARY. SEE CIVIL DRAWINGS.
- PIPE STRING. SEE CIVIL DRAWINGS FOR FULL EXTENT.

RESTORATION CALLOUTS

(A) PLANTING AREA 'A': SHRUB TO BE REMOVED AND REPLACED, SEE VEGETATION RESTORATION TABLE

(A-R) RESTORATION AREA 'A-R': LOCATION OF RESTORATION PLANTINGS TO REPLACE TREES AND SHRUBS REMOVED FROM AREA 'A'. SEE VEGETATION RESTORATION TABLE.

(B) PLANTING AREA 'B': TREES AND SHRUBS TO BE REMOVED AND REPLACED, SEE VEGETATION RESTORATION TABLE

(B-R) RESTORATION AREA 'B-R': LOCATION OF RESTORATION PLANTINGS TO REPLACE TREES AND SHRUBS REMOVED FROM AREA 'A'. SEE VEGETATION RESTORATION TABLE.

(C) PLANTING AREA 'C': TREES AND SHRUBS TO BE REMOVED AND REPLACED, SEE VEGETATION RESTORATION TABLE

(C-R) RESTORATION AREA 'C-R': LOCATION OF RESTORATION PLANTINGS TO REPLACE TREES AND SHRUBS REMOVED FROM AREA 'A'. SEE VEGETATION RESTORATION TABLE.

PLANT SCHEDULE

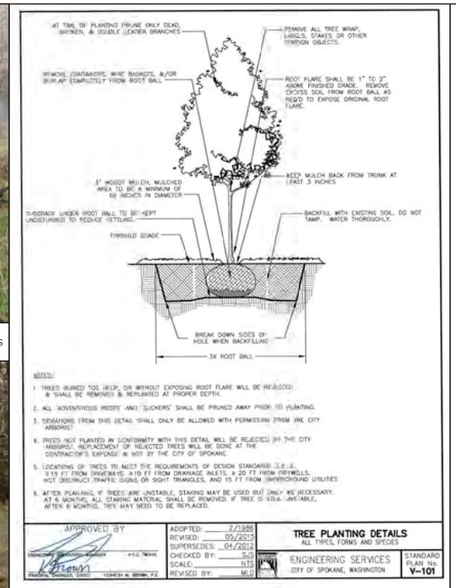
TREES	BOTANICAL NAME / COMMON NAME	SIZE
PP	Pinus ponderosa / Ponderosa Pine	1.5" Cal./4' TALL
SHRUBS	**BOTANICAL NAME / COMMON NAME**	**SIZE**
AA	Amelanchier alnifolia / Serviceberry	5 Gal. / 4' TALL
SS	Salix scouleriana / Scouler`s Willow	5 Gal. / 4' TALL

VEGETATION RESTORATION TABLE

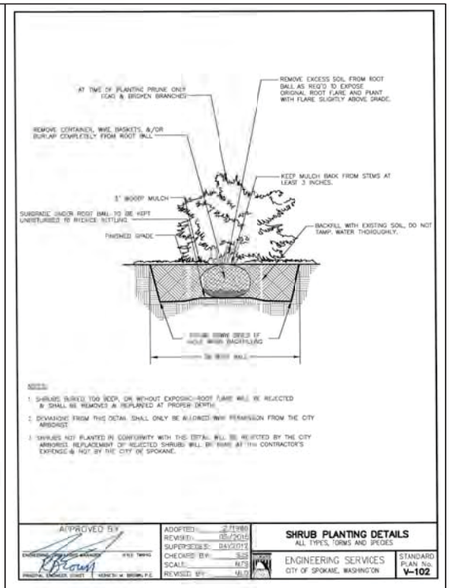
	TREE / SHRUB REMOVAL	TREE/SHRUB REPLACEMENT
AREA 'A' - 'A-R'	**AREA 'A'**	**AREA 'A-R'**
SERVICEBERRY	1 X 10' TALL (APPROX)	AA: 2 X 5 GAL / 4' TALL
AREA 'B' - 'B-R' (SHORELINE)	**AREA 'B'**	**AREA 'B-R'**
PONDEROSA PINE	1 X 24" CAL (APPROX)	PP: 16 X 1.5" CAL / 4' TALL
PONDEROSA PINE	1 X 16" CAL (APPROX)	PP: 11 X 1.5" CAL / 4' TALL
PONDEROSA PINE	2 X 14" CAL (APPROX)	PP: 18 X 1.5" CAL / 4' TALL
SERVICEBERRY	1 X 12' TALL (APPROX)	AA: 2 X 5 GAL / 4' TALL
AREA 'C' - 'C-R' (SHORELINE)	**AREA 'C'**	**AREA 'C-R'**
BLACK LOCUST UNDER 6" CAL.	11 X 6" CAL (APPROX)	AA: 5 X 5 GAL / 4' TALL SS: 6 X 5 GAL / 4' TALL
BLACK LOCUST OVER 6" CAL. IN CLEARANCE AREA	1 X 12" CAL (APPROX) 5 X 8" CAL (APPROX) 6 X 8" CAL (APPROX)	PP: 8 X 1.5" / 4' TALL AA: 15 X 5 GAL / 4' TALL SS: 16 X 5 GAL / 4' TALL

B TREE REMOVAL: AREA 'B' SCALE: NTS

C TREE REMOVAL: AREA 'C' SCALE: NTS



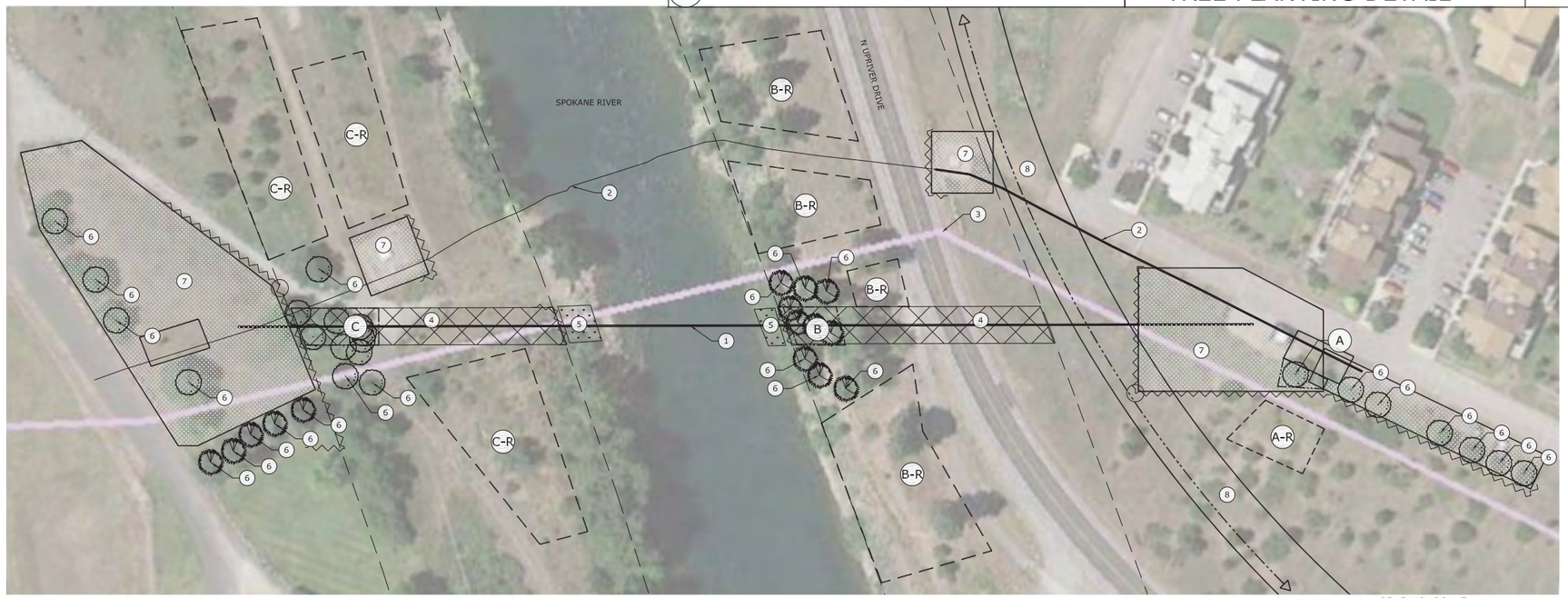
D CITY OF SPOKANE TREE PLANTING DETAIL SCALE: NTS



E CITY OF SPOKANE SHRUB PLANTING DETAIL SCALE: NTS

⚠ NOTES:
PRIOR TO STREET/PUBLIC TREE INSTALLATION, PRUNING OR REMOVAL PLEASE HAVE THE CONTRACTOR HAVE A CONTRACTED LICENSED CERTIFIED ARBORIST SUBMIT A COMPLETE PUBLIC TREE PERMIT APPLICATION AT LEAST 10 DAYS PRIOR TO WORK BEING PERFORMED FOR THIS PROJECT TO INCLUDE CERTIFIED ARBORIST INFORMATION AND START AND COMPLETION DATES. THE LANDSCAPE ARCHITECT IS RESPONSIBLE FOR ENSURING THAT THE GENERAL CONTRACTOR IS AWARE AND COMPLIANT WITH THIS REQUIREMENT.

⚠ NOTES:
PRIOR TO STREET/PUBLIC TREE INSTALLATION, PRUNING OR REMOVAL PLEASE HAVE THE CONTRACTOR HAVE A CONTRACTED LICENSED CERTIFIED ARBORIST SUBMIT A COMPLETE PUBLIC TREE PERMIT APPLICATION AT LEAST 10 DAYS PRIOR TO WORK BEING PERFORMED FOR THIS PROJECT TO INCLUDE CERTIFIED ARBORIST INFORMATION AND START AND COMPLETION DATES. THE LANDSCAPE ARCHITECT IS RESPONSIBLE FOR ENSURING THAT THE GENERAL CONTRACTOR IS AWARE AND COMPLIANT WITH THIS REQUIREMENT.



A VEGETATION REPLACEMENT PLAN

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50 ft.

PLANTING NOTES

1. TREES AND SHRUBS TO MEET REQUIREMENTS OF AMERICAN STANDARD FOR NURSERY STOCK FOR SIZE AND MATERIAL CONDITION. TREES TO BE FROM SAME LOT AND SUPPLIER.
2. TREES AND SHRUBS TO BE PLANTED 20'+/- OC TRIANGULAR SPACING. DO NOT PLANT WITHIN 20' OF EXISTING TREES OR SHRUBS.
3. TREE LOCATIONS TO BE STAKED IN THE FIELD FOR APPROVAL PRIOR TO PLANTING. NO PLANTING TO OCCUR WITHIN 15' OF ANY PIPELINE CENTERLINES.
4. INSTALL 48" COCO FIBER TREE RINGS AROUND EACH REPLACEMENT TREE AND SHRUB.
5. WATERING BAGS: TREEGATOR JR PRO OR APPROVED EQUAL. ESTABLISH MAINTENANCE SHALL BE FILLED ONCE PER WEEK OR BY SLOW RELEASE WATERING BAGS MANUFACTURERS RECOMMENDED FILL REQUIREMENTS. DATES: MARCH 15TH-OCTOBER 15TH.
6. PROPOSED PIPELINE STRING AREA-NO TREES OR SHRUBS ARE ANTICIPATED TO BE REMOVED IN THIS AREA. HYDROSEED ALL DISTURBED AREAS. EXTENT OF HYDROSEEDING TO BE IDENTIFIED IN THE FIELD.
7. HYDROSEED TO BE AS SPECIFIED IN THE STORMWATER MANAGEMENT MANUAL (SMM) FOR EASTERN WASHINGTON FOR PERMANENT SEED MIXES IN UPLAND AREAS. HYDROSEED MIX TO BE IN ACCORDANCE WITH CHAPTER 7. HYDRO-MULCH SHALL BE CERTIFIED TO BE PCB FREE BY MANUFACTURER.
8. PLANTING MAINTENANCE: PLANTINGS TO BE MONITORED AND MAINTAINED FOR ONE FULL GROWING SEASON. REPLACE DEAD OR DAMAGED PLANTS.

CONSTRUCTION NOTES

1. CALL 811 TO LOCATE UTILITIES PRIOR TO ANY EXCAVATION OR CONSTRUCTION.
2. CONTRACTOR IS RESPONSIBLE FOR VERIFYING CONDITIONS IN THE FIELD PRIOR TO CONSTRUCTION AND NOTIFYING THE OWNER AND OWNERS REPRESENTATIVES OF DISCREPANCIES.
3. PRESERVE AND PROTECT ALL IMPROVEMENTS TO REMAIN.
4. THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, TRANSPORTATION, AND SERVICES NECESSARY TO COMPLETE THE CONSTRUCTION SHOWN ON THE DRAWINGS.
5. PRESERVE AND PROTECT EXISTING HARDSCAPE TO REMAIN.

UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
CALL TWO BUSINESS DAYS BEFORE YOU DIG

Michael Terrell
Landscape Architecture, PLLC
1421 N. Meadowwood Lane
Suite 150
Liberty Lake, WA
(509) 922-7449

LANDSCAPE ARCHITECT'S SEAL
STATE OF WASHINGTON
REGISTERED LANDSCAPE ARCHITECT
MICHAEL D. TERRELL
CERTIFICATE NO. 584

YELLOWSTONE PIPELINE - SPOKANE
VEGETATION REPLACEMENT PLAN

REVISION	DATE
1	
2	
3	
4	

JOB NUMBER	16-012
DATE	4/22/16
DRAWN BY	JS
CHECKED BY	MT

DRAWING 1 OF 1

L-1

Exhibit 5

Administrative Design Review Application
Under Separate Cover

Terracon

April 15, 2016

Tami Palmquist, AICP, CFM, Associate Planner
City of Spokane
808 West Spokane Falls Boulevard
Spokane, WA 99201
509.625.6157
509.625.6013 (fax)
tpalmquist@spokanecity.org

Dear Ms. Palmquist:

This correspondence accompanies information provided by Terracon Consultants, Inc., acting on behalf of Yellowstone Pipe Line Company (YPL), who is pursuing authorization for a horizontal directional drill installation of a section of 10-inch diameter refined petroleum products pipeline under the Spokane River in the City of Spokane.

During the agency review process for the conditional use permit, the Spokane Tribe provided comments indicating concern for possible inadvertent discovery of cultural material within the proposed work areas and recommended an archaeological survey, which was completed on March 31, 2016. Terracon is in the process of preparing the survey report, which will be provided to the Spokane Tribe and the Washington SHPO.

The project site appeared to be previously disturbed by filling and grading. No prehistoric archaeological sites were found, but two historic period archaeological sites were encountered and recorded. These sites are located within the external boundaries of the project area, and Terracon will be entering into consultation with the SHPO to seek concurrence with our determination that the project will have ***No Adverse Effect*** to known archaeological sites within the project area's direct effects area of potential effect (APE).

Please feel free to contact me at 425-771-3304 or 541-413-0570 (cell) or via email: agnes.castronuevo@terracon.com, if you have questions or would like to request additional information.

Sincerely,

Agnes F Castronuevo, M.A., RPA
Archaeologist / Principal Investigator
Staff Professional / Environmental Services