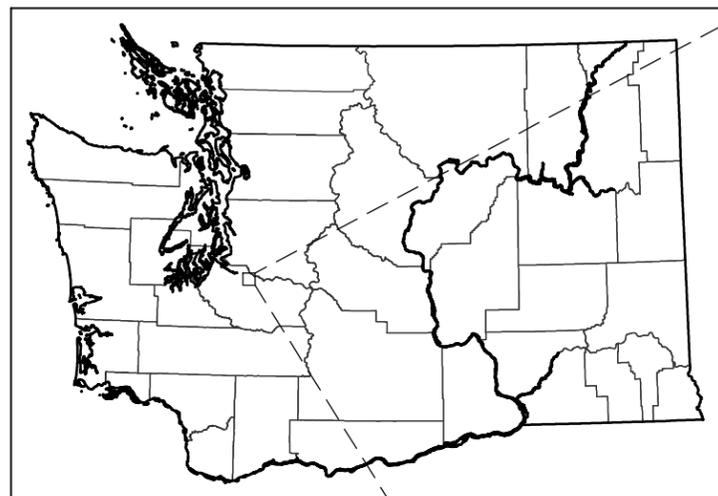
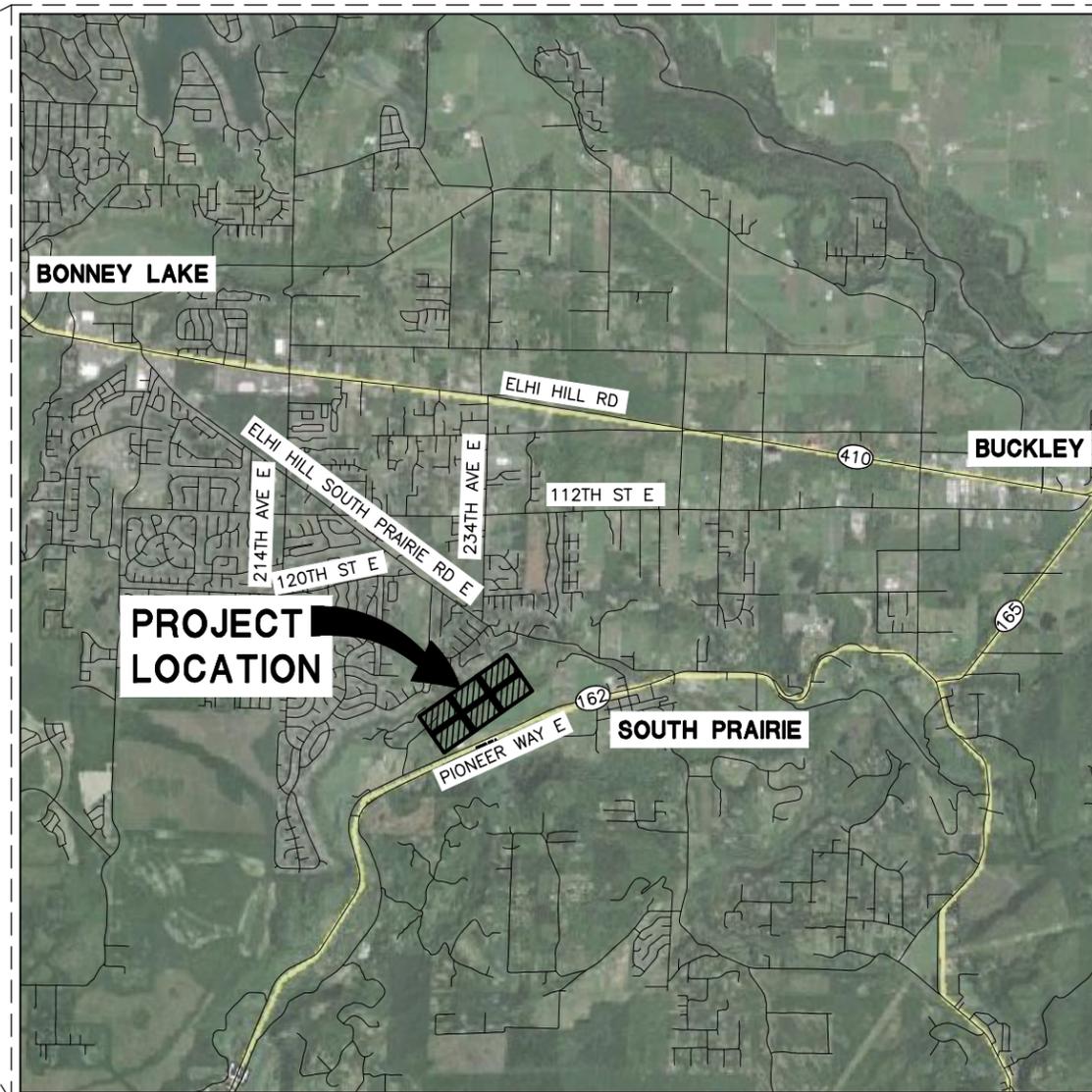


SOUTH PRAIRIE CREEK FLOODPLAIN AND OFF CHANNEL RESTORATION

SOUTH PUGET SOUND SALMON ENHANCEMENT GROUP



WASHINGTON STATE
SCALE: 1"=50 MILES



VICINITY MAP
SCALE: 1" = 3000'

DRAWING LIST	
SHEET NUMBER	SHEET TITLE
1	COVER SHEET
2	GENERAL NOTES
3	LEGEND
4	EXISTING CONDITIONS
5	TESC PLAN
6	TESC DETAILS
7	OVERALL SITE PLAN
8	SITE 1
9	SITE 2
10	SITE 3
11	SITE 4
12	SITE 5
13	SITE 6
14	PROFILE 1
15	PROFILE 2
16	CROSS SECTIONS 1
17	CROSS SECTIONS 2
18	ELJ 1 DETAILS
19	ELJ 2 DETAILS
20	ELJ 3 DETAILS
21	DETAILS 1
22	DETAILS 2
23	DETAILS 3
24	RE-VEGETATION PLANS - SITE 1
25	RE-VEGETATION PLANS - SITE 2
26	RE-VEGETATION PLANS - SITE 3
27	RE-VEGETATION PLANS - SITE 4
28	RE-VEGETATION PLANS - SITE 5
29	RE-VEGETATION PLANS - SITE 6
30	PLANT LISTS
31	PLANTING DETAILS

CONTACT INFORMATION

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NAME OR INITIALS AND DATE
DESIGNED M. HRACHOVEC
CHECKED T. ABBE
DRAWN G. MATSUMOTO
CHECKED M. HRACHOVEC

GEOGRAPHIC INFORMATION
LATITUDE 47°08'15"N
LONGITUDE 122°07'00"W
TN/SC/RG T19N/S13/R5E
DATE

**SOUTH PRAIRIE CREEK
FLOODPLAIN AND OFF
CHANNEL RESTORATION**

COVER SHEET

1
SHEET 1 OF 31

N:\PROJECTS\SOUTH PUGET SOUND SALMON ENHANCEMENT GROUP\S_S_PRAIRIE_CREEK\DESIGN\CAD_DWG_S - CURRENT\1 COVER SHEET.DWG Danielle 5/1/2013 9:26:19 AM

Aug-19-2015 90% DESIGN

GENERAL NOTES

1. THESE PLANS HAVE BEEN PREPARED FOR THE EXCLUSIVE USE OF SOUTH PUGET SOUND SALMON ENHANCEMENT GROUP, HEREAFTER REFERRED TO AS "OWNER" AND "CONTRACTOR" AND THEIR AUTHORIZED AGENTS.
2. NATURAL SYSTEMS DESIGN HEREAFTER REFERRED TO AS "ENGINEER" IS RESPONSIBLE FOR THE PREPARATION OF THESE ORIGINAL PLANS AND ASSOCIATED SPECIFICATIONS; AND WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGE, OR USE, OF THESE PLANS WHICH INCLUDES ALTERATION, DELETION, OR EDITING OF THIS DOCUMENT WITHOUT EXPLICIT WRITTEN PERMISSION FROM THE ENGINEER. ANY OTHER UNAUTHORIZED USE OF THIS DOCUMENT IS PROHIBITED.
3. MINOR MODIFICATIONS ARE EXPECTED TO SUIT JOB SITE DIMENSIONS OR CONDITIONS. SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK. THE OWNER, ENGINEER AND APPROPRIATE REGULATORY AGENCIES SHALL BE NOTIFIED OF ANY OWNER-AUTHORIZED CHANGE RESULTING IN MORE THAN A 10% DESIGN CHANGE OF PROPOSED FOOTPRINT OR THAT SIGNIFICANTLY AFFECTS THE INTENDED BENEFIT OR FUNCTION OF A PROJECT ELEMENT.
4. THE LOCATION OF ALL FEATURES SHOWN IS APPROXIMATE.
5. THE CONTRACTOR AGREES TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; AND FURTHER AGREES THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS IN ACCORDANCE WITH THE PROVISIONS OUTLINED BY THE PROJECT CONTRACT AND SPECIFICATIONS.
6. ALL IMPROVEMENTS SHALL BE ACCOMPLISHED UNDER THE APPROVAL, INSPECTION, AND TO THE SATISFACTION OF THE OWNER. IMPROVEMENT CONSTRUCTION SHALL COMPLY WITH THESE PLANS AND THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT) STANDARD PLANS FOR CONSTRUCTION OF ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION, CURRENT EDITION UNLESS NOTED OTHERWISE. ALL REFERENCES TO THE "STANDARD SPECIFICATIONS" SHALL MEAN THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION OF LOCAL STREETS AND ROADS, CURRENT EDITION. CONSTRUCTION NOT SPECIFIED ON THESE PLANS SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS. THE CONTRACTOR IS OBLIGATED TO BE FAMILIAR WITH APPLICABLE SECTIONS OF THE STANDARD SPECIFICATIONS NOT DISCUSSED IN THE GENERAL NOTES. THE CONTRACT SPECIAL PROVISIONS SHALL SUPERSEDE THOSE OF THE STANDARD SPECIFICATIONS WHERE DISCREPANCIES OCCUR.
7. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND SUBCONTRACTOR(S) TO EXAMINE THE PROJECT SITE PRIOR TO THE OPENING OF BID PROPOSALS. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED, SUCH AS THE NATURE AND LOCATION OF THE WORK; AND THE GENERAL AND LOCAL CONDITIONS, PARTICULARLY THOSE AFFECTING THE AVAILABILITY OF TRANSPORTATION, THE DISPOSAL, HANDLING, AND STORAGE OF MATERIALS, AVAILABILITY OF LABOR, WATER, ELECTRICITY, ROADS, THE UNCERTAINTIES OF WEATHER, THE CONDITIONS OF THE GROUND, SURFACE AND SUBSURFACE MATERIALS, GROUNDWATER, THE EQUIPMENT AND FACILITIES NEEDED FOR AND DURING THE PERFORMANCE OF THE WORK, AND THE COSTS THEREOF. ANY FAILURE BY THE CONTRACTOR AND SUBCONTRACTOR(S) TO ACQUAINT THEMSELVES WITH ALL THE AVAILABLE INFORMATION WILL NOT RELIEVE THE CONTRACTOR AND SUBCONTRACTOR(S) FROM RESPONSIBILITY FOR PROPERLY ESTIMATING THE DIFFICULTY AND COST OF SUCCESSFULLY PERFORMING THE WORK.
8. THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING THE CONTRACT DOCUMENTS AND FOR ALL SUBMITTALS REQUIRED TO THE OWNER FOR REVIEW AND ACCEPTANCE.

PERMIT NOTES

1. EVERY REASONABLE EFFORT SHALL BE MADE TO CONDUCT THE ACTIVITIES SHOWN IN THESE PLANS, IN A MANNER THAT MINIMIZES THE ADVERSE IMPACT ON WATER QUALITY, FISH AND WILDLIFE, AND THE NATURAL ENVIRONMENT.
2. ALL WORK WILL BE IN COMPLIANCE WITH PERMIT CONDITIONS ISSUED BY PERTINENT REGULATORY AGENCIES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAVE COPIES OF ALL PERMITS ON THE JOB SITE, UNDERSTAND AND COMPLY WITH ALL PERMIT CONDITIONS.
3. ALL WORK THAT DISTURBS THE SUBSTRATE, BANK, OR SHORE OF A WATERS OF THE STATE THAT CONTAINS FISH LIFE SHALL BE CONDUCTED ONLY DURING THE WORK PERIOD FOR THAT WATERBODY AS ALLOWED BY RELEVANT HYDRAULIC WORK PERMITS. THOSE PORTIONS OF THE PROJECT WORK THAT OCCUR OUTSIDE OR ABOVE THE ORDINARY HIGH WATER MARK (ABOVE THE USACE JURISDICTIONAL LINE) ARE NOT SUBJECT TO THE WORK PERIODS DESCRIBED ABOVE UNLESS SPECIFIED IN THE RELEVANT PERMITS.
4. ALL ACTIVITIES THAT INVOLVE WORK ADJACENT TO, OR WITHIN THE WETTED CHANNEL SHALL, AT ALL TIMES, REMAIN CONSISTENT WITH ALL APPLICABLE WATER QUALITY STANDARDS; EFFLUENT LIMITATION; AND STANDARDS OF PERFORMANCE, PROHIBITIONS, PRETREATMENT STANDARDS, AND MANAGEMENT PRACTICES ESTABLISHED PURSUANT TO THE CLEAN WATER ACT OR PURSUANT TO APPLICABLE STATE AND LOCAL LAW.

5. IF AT ANY TIME, AS A RESULT OF PROJECT ACTIVITIES, FISH ARE OBSERVED IN DISTRESS, A FISH KILL OCCURS, OR WATER QUALITY PROBLEMS DEVELOP (INCLUDING EQUIPMENT LEAKS OR SPILLS), OPERATIONS SHALL CEASE AND THE OWNER SHALL BE NOTIFIED IMMEDIATELY.
6. IF, DURING CONSTRUCTION, ARCHAEOLOGICAL REMAINS ARE ENCOUNTERED, CONSTRUCTION IN THE VICINITY SHALL BE HALTED, AND THE STATE OFFICE OF HISTORIC PRESERVATION AND THE OWNER SHALL BE NOTIFIED IMMEDIATELY.

SURVEY NOTES

1. UNLESS NOTED OTHERWISE ON THE PLANS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING SURVEY MONUMENTS AND OTHER SURVEY MARKERS DURING CONSTRUCTION.
2. THE CONTRACTOR SHALL MAINTAIN A SET OF PLANS ON THE JOB SHOWING "AS-CONSTRUCTED" CHANGES MADE TO DATE. UPON COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL SUPPLY TO OWNER A SET OF PLANS, MARKED UP TO THE SATISFACTION OF THE OWNER, REFLECTING THE AS-CONSTRUCTED MODIFICATIONS.
3. ELEVATIONS SHOWN ON THE PLANS FOR PIPE INVERTS, TOPS OF BANKS, THALWEG, GRADE CONTROLS, ETC., ARE BASED UPON THE TOPOGRAPHIC INFORMATION SHOWN ON THE PLANS. THE CONTRACTOR SHALL VERIFY ALL NECESSARY SURFACE ELEVATIONS IN THE FIELD AND NOTIFY THE OWNER OF ANY DISCREPANCIES, WHICH MIGHT AFFECT PROPER OPERATION OF THE NEW FACILITIES BEFORE BREAKING GROUND AND PRIOR TO FACILITY INSTALLATION. THE OWNER SHALL BE CONTACTED IN THE EVENT ELEVATIONS ARE INCORRECT SO THAT THE PROPER ADJUSTMENTS CAN BE MADE BY ENGINEER PRIOR TO THE INSTALLATION OF THE FACILITIES, AS SET FORTH IN THE SPECIAL PROVISIONS.
4. LIDAR FOR THIS PROJECT WAS OBTAINED THROUGH PUGET SOUND LIDAR CONSORTIUM AND IS REPRESENTATIVE OF 2010 CONDITIONS. THE TOPOGRAPHIC SURVEY WAS PERFORMED BY LARSON AND ASSOCIATES AND ARE REPRESENTATIVE OF DECEMBER 2013 CONDITIONS. THE VERTICAL DATUM IS NAVD 88 (FT). THE HORIZONTAL DATUM IS WASHINGTON STATE PLANE SOUTH (FT).

EROSION, SEDIMENT CONTROL AND WATER MANAGEMENT NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING ALL TEMPORARY EROSION CONTROL MEASURES. THE EROSION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND PERFORMANCE OF THE TEMPORARY EROSION CONTROL MEASURES THROUGHOUT THE DURATION OF THE PROJECT.
2. A SEDIMENT AND EROSION CONTROL PLAN WILL BE DEVELOPED BY THE CONTRACTOR AND SUBMITTED FOR APPROVAL BY OWNER AND/OR THE ENGINEER BEFORE ANY CONSTRUCTION MAY BEGIN. THE SEDIMENT AND EROSION CONTROL PLAN WILL IDENTIFY BEST MANAGEMENT PRACTICES TO ENSURE THAT THE TRANSPORT OF SEDIMENT TO SURFACE WATERS, DRAINAGE SYSTEMS, AND ADJACENT PROPERTIES IS MINIMIZED.
3. ACTIVITIES SHALL BE DESIGNED AND CONSTRUCTED TO AVOID AND MINIMIZE ADVERSE IMPACTS TO WATERS OF THE UNITED STATES TO THE MAXIMUM EXTENT PRACTICAL THROUGH THE USE OF PRACTICAL ALTERNATIVES. ALTERNATIVES THAT SHALL BE CONSIDERED INCLUDE THOSE THAT MINIMIZE THE NUMBER AND EXTENT OF IN-WATER WORK AND EQUIPMENT CROSSINGS OF WETTED CHANNELS.
4. AT NO TIME SHALL SEDIMENT-LADEN WATER BE DISCHARGED OR PUMPED DIRECTLY INTO THE SUBJECT RIVER, STREAM, OR WETLAND. WATER SHALL BE DISCHARGED IN ACCORDANCE WITH REQUIREMENTS SET FORTH IN THE PROJECT PERMITS AND / OR SPECIFICATIONS.
5. IF HIGH WATER LEVEL CONDITIONS THAT CAUSE SILTATION OR EROSION ARE ENCOUNTERED DURING CONSTRUCTION, WORK SHALL STOP UNTIL THE WATER LEVEL SUBSIDES.
6. PERMIT CONDITIONS CONTAIN SPECIFIC REQUIREMENTS FOR THE CONTROL OF EROSION AND TURBIDITY FROM PROJECT OPERATIONS. TURBIDITY WILL BE MONITORED ON A FREQUENT BASIS BY THE PROJECT MANAGEMENT AND INSPECTION STAFF ON-SITE. TURBIDITY AMOUNTS IN EXCESS OF THE PERMITTED CONCENTRATIONS AND/OR DURATIONS WILL CAUSE WORK TO BE STOPPED UNTIL IMPROVED PRACTICES ARE IN EFFECT AND THE PROBLEMS CONTROLLED. THE CONTRACTOR IS COMPLETELY RESPONSIBLE FOR ANY PROJECT DELAYS THAT OCCUR BY NATURE OF THIS FAILURE TO ADEQUATELY CONTAIN SEDIMENT ON-SITE.
7. CONTRACTOR SHALL LIMIT MACHINERY MOVEMENT TO CONSTRUCTION AREAS DEFINED ON SITE PLAN OR IDENTIFIED AS ACCEPTABLE BY THE ENGINEER OR OWNER.
8. ALL EXTERNAL GREASE AND OIL SHALL BE PRESSURE-WASHED OFF THE EQUIPMENT PRIOR TO TRANSPORT TO THE SITE.
9. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT NO PETROLEUM PRODUCTS, HYDRAULIC FLUID, SEDIMENTS, SEDIMENT-LADEN WATER, CHEMICALS, OR ANY OTHER TOXIC OR DELETERIOUS MATERIALS ARE ALLOWED TO ENTER OR LEACH INTO THE SUBJECT RIVER, STREAM, OR WETLAND.

10. THE CONTRACTOR SHALL HAVE AN EMERGENCY SPILL KIT ONSITE AT ALL TIMES.
11. NO TREES OR WETLAND VEGETATION SHALL BE REMOVED UNLESS THEY ARE SHOWN AND NOTED TO BE REMOVED ON THE PLANS OR AS DIRECTLY SPECIFIED ON-SITE BY THE PROJECT MANAGEMENT STAFF. ALL TREES CONFLICTING WITH GRADING SHALL BE REMOVED. NO GRADING SHALL TAKE PLACE WITHIN THE DRIP LINE OF TREES NOT TO BE REMOVED UNLESS OTHERWISE APPROVED.
12. FOLLOWING CONSTRUCTION, SITE RESTORATION WILL INCLUDE ESTABLISHING LONG-TERM EROSION PROTECTION MEASURES. THESE MEASURES WILL INCLUDE PLANTINGS, EROSION CONTROL FABRIC, SEED, AND MULCH. EQUIPMENT AND EXCESS SUPPLIES WILL BE REMOVED AND THE WORK AREA WILL BE CLEANED. MAINTENANCE ACTIVITIES FOR THE NEWLY CONSTRUCTED RESTORATION PROJECTS ARE ANTICIPATED TO OCCUR PERIODICALLY.

CONSTRUCTION NOTES

1. CONTRACT DOCUMENTS REFER TO THESE PLANS.
2. CONTRACTOR SHALL FURNISH ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO COMPLETE ALL WORK AS INDICATED IN THE CONTRACT DOCUMENTS.
3. CONSTRUCTION HOURS SHALL BE WEEKDAYS BETWEEN 7:00 A.M. AND 6:30 P.M. UNLESS PRIOR APPROVAL IS RECEIVED FROM THE OWNER.
4. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE OWNER PRIOR TO PROCEEDING WITH THE WORK.
5. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY INDICATED OTHERWISE BY THE OWNER OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
6. ALL WORK PERFORMED AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.
7. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING THE BEST SKILLS AND ATTENTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THIS CONTRACT.
8. THE CONTRACTOR SHALL MAKE ALL NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, ROADWAY, DRAINAGE WAYS, PRIVATE BRIDGE, CULVERTS, AND VEGETATION UNTIL SUCH ITEMS ARE TO BE DISTURBED OR REMOVED AS INDICATED ON THE CONTRACT DOCUMENTS.
9. THE CONTRACTOR SHALL KEEP THE JOB SITE CLEAN AND HAZARD FREE. CONTRACTOR SHALL DISPOSE OF ALL DIRT, DEBRIS, AND RUBBISH FOR THE DURATION OF THE WORK. UPON COMPLETION OF WORK, CONTRACTOR SHALL REMOVE ALL MATERIAL AND EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY.
10. NOTES AND DETAILS ON THE PLANS SHALL TAKE PRECEDENCE OVER GENERAL NOTES HEREIN.
11. DIMENSIONS CALLOUTS SHALL TAKE PRECEDENCE OVER SCALES SHOWN ON THE PLANS.
12. THE PLANS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF ALL CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURES, WORKS, AND THE PUBLIC DURING CONSTRUCTION.
13. MATERIAL SHALL NOT BE STORED OUTSIDE OF IDENTIFIED STAGING AREAS. THE CONTRACTOR SHALL USE ONLY DESIGNATED SPECIFIC SITES FOR STORAGE OF EQUIPMENT AND MATERIALS AS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SECURITY OF ALL EQUIPMENT AND MATERIALS.

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NAME OR INITIALS AND DATE	GEOGRAPHIC INFORMATION
DESIGNED M. HRACHOVEC	LATITUDE 47°08'15"N
CHECKED T. ABBE	LONGITUDE 122°07'00"W
DRAWN G. MATSUMOTO	TN/SC/RG T19N/S13/R5E
CHECKED M. HRACHOVEC	DATE

SOUTH PRAIRIE CREEK FLOODPLAIN AND OFF CHANNEL RESTORATION

COVER SHEET

2
SHEET 2 OF 31

90% DESIGN
Aug-19-2015

GENERAL LEGEND

- PROPERTY LINE
- RIGHT OF WAY LINE
- EXISTING ROAD CENTERLINE
- CL CL CONSTRUCTION LIMIT
- GL GL GRADING LIMIT
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- 5 ----- PROPOSED MAJOR CONTOUR
- 1 ----- PROPOSED MINOR CONTOUR
- > 5 <----- EXISTING FLOW
- OHWM ----- EXISTING OHWM
- OHWM ----- PROPOSED OHWM
- SD SD EXISTING STORM SEWER
- SS SS EXISTING SANITARY SEWER
- WL WL EXISTING WETLAND
- WL WL PROPOSED WETLAND
- W W W EXISTING WATER
- [Dashed Box] DEMOLITION/REMOVAL AREA
- [Dotted Line] EXISTING FENCE
- [Tree Symbol] EXISTING CONIFEROUS TREE
- [Tree Symbol] EXISTING DECIDUOUS TREE
- [Compass] CONTROL POINT LOCATION
- [Rect Box] EXISTING BRIDGE

- [Hatched Box] RACKING AND SLASH MATERIAL
- [Wood Piece] LARGE WOOD PIECE
- [Log Jam 1] ENGINEERED LOGJAM 1 (ELJ-1), SEE SHEET 18
- [Log Jam 2] ENGINEERED LOGJAM 2 UNIT (ELJ-2), SEE SHEET 19
- [Log Jam 3] ENGINEERED LOG JAM 3 (ELJ-3), SEE SHEET 26
- [Native Alluvium] NATIVE ALLUVIUM
- [Streambed Gravel] STREAMBED GRAVEL
- [Riprap] RIPRAP
- [Boulder Cluster] BOULDER CLUSTER
- [Steel Cable] STEEL CABLE
- [Access Bridge] PROPOSED ACCESS BRIDGE

RESTORATION LEGEND

- [Solid Arrow] FILL SLOPE LINE
- [Dashed Arrow] EXCAVATION SLOPE LINE

TEMPORARY EROSION CONTROL LEGEND

- [SB SB] SILT BOOM
- [BN BN] BLOCK NETS
- [SF SF] SILT FENCE
- [SW SW] STRAW WATTLE
- [Proposed Stream Bypass] PROPOSED STREAM BYPASS
- [Proposed Staging Area] PROPOSED STAGING AREA
- [Bulk Bag Cofferdam] BULK BAG COFFERDAM
- [Temporary Access Road] TEMPORARY ACCESS ROAD
- [Pump Outlet Location] PUMP OUTLET LOCATION

DETAIL AND SECTION REFERENCING

- [1] NOTE REFERENCING NUMBER
- [4/6] DETAIL REFERENCE NUMBER SHEET ON WHICH DETAIL APPEARS
- [4/2] DETAIL REFERENCE NUMBER SHEET FROM WHICH DETAIL WAS TAKEN
- (TYP) SPECIFIES THAT DETAIL IS UNIFORMLY TYPICAL THROUGHOUT PROJECT EXCEPT WHERE OTHERWISE NOTED
- (VAR) SPECIFIES THAT DETAIL WAS TAKEN FROM SEVERAL SHEETS

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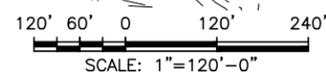
SOUTH PRAIRIE CREEK FLOODPLAIN AND OFF CHANNEL RESTORATION

LEGEND

Aug-19-2015 90% DESIGN



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Timothy B. Abbe

Michael E. Hrachovec

Puyallup Tribe of Indians

South Puget Sound Salmon Enhancement Group

Pierce Conservation District

Pierce County

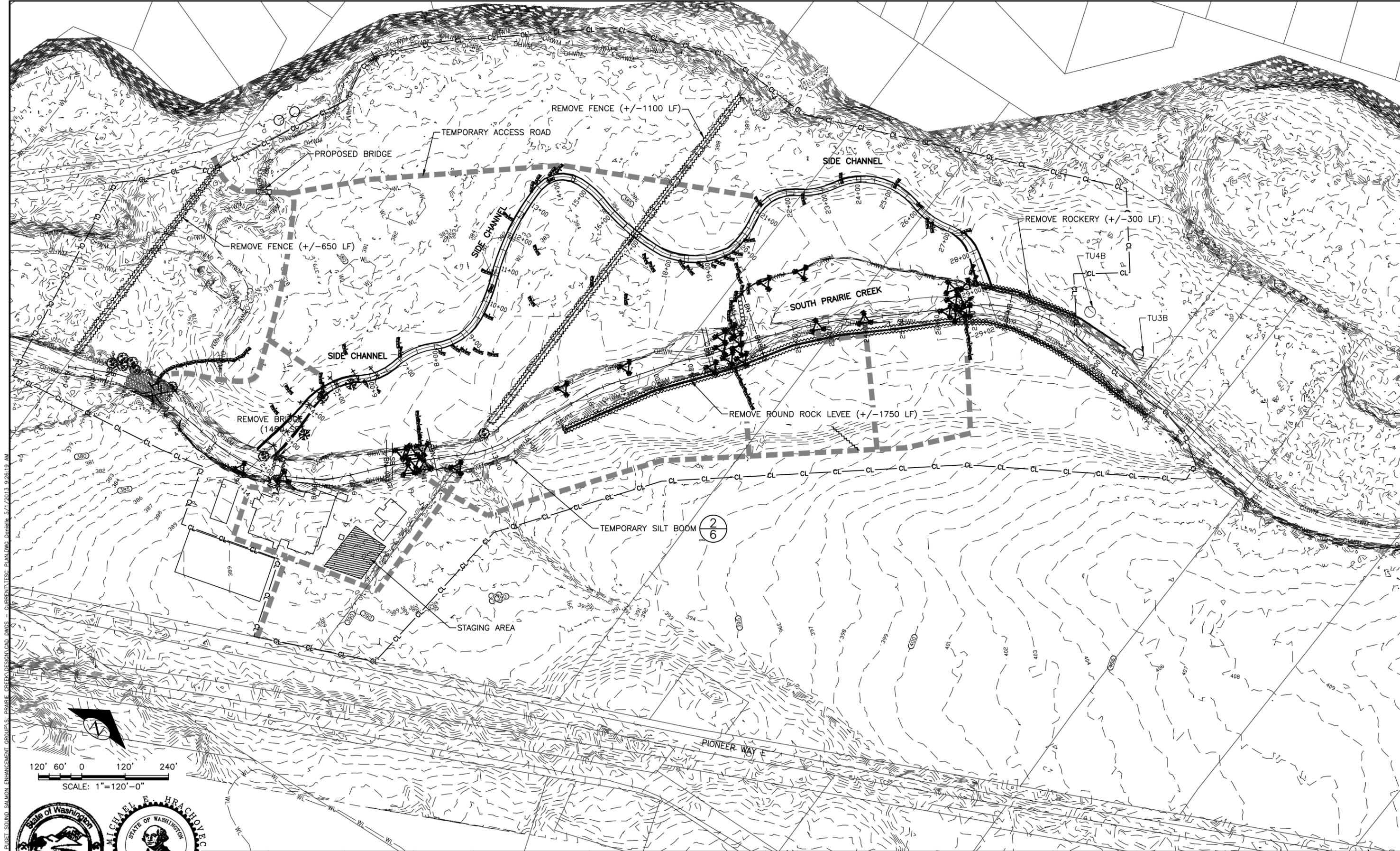
Natural Systems Design

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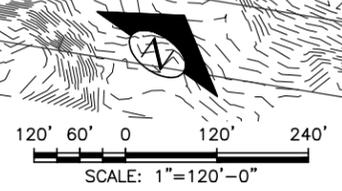
SOUTH PRAIRIE CREEK FLOODPLAIN AND OFF CHANNEL RESTORATION

EXISTING CONDITIONS

Aug-19-2015 90% DESIGN



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Timothy B. Abbe

Michael E. Hrachovec

PUYALLUP TRIBE OF INDIANS

SOUTH PUGET SOUND SALMON ENHANCEMENT GROUP

Pierce Conservation District

Pierce County

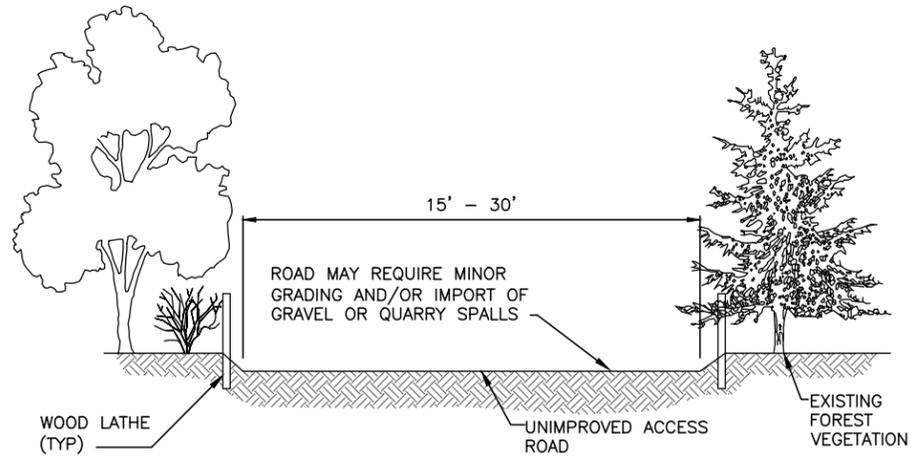
Natural Systems Design

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SOUTH PRAIRIE CREEK
 FLOODPLAIN AND OFF
 CHANNEL RESTORATION

TESC PLAN

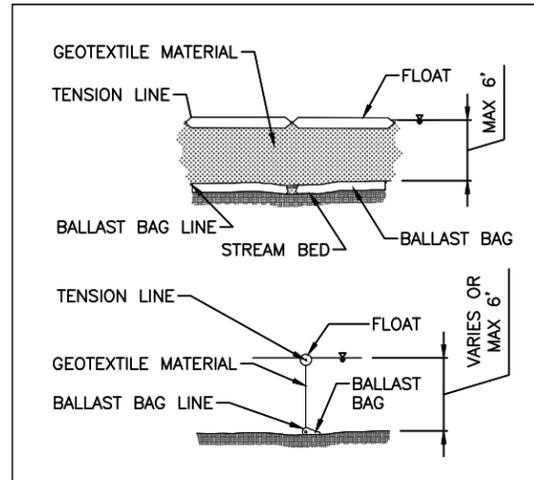
Aug-19-2015 90% DESIGN



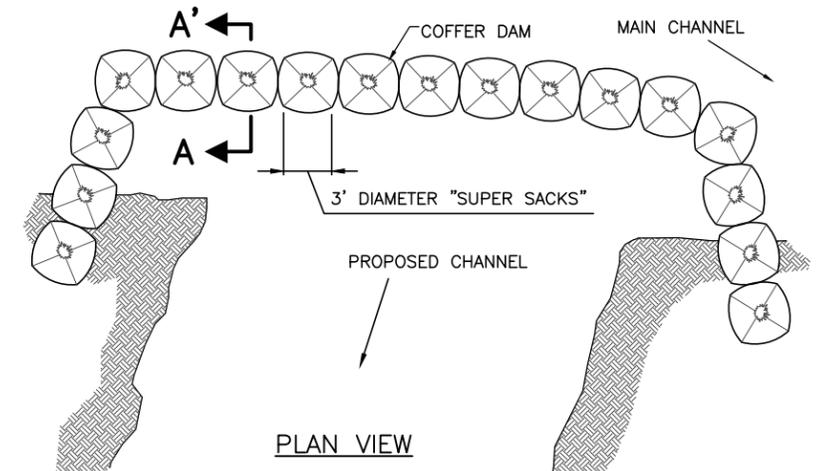
NOTES FOR TEMPORARY CLEARED ACCESS

1. CLEARED ACCESS TO BE ROUTED TO MINIMIZE VEGETATION DISTURBANCE AND FOREST CLEARING.
2. CONTRACTOR SHALL MARK CLEARING LIMITS WITH FLAGGING. CLEARING LIMITS TO BE APPROVED BY ENGINEER PRIOR TO ANY CLEARING ACTIVITIES.
3. ANY TREES GREATER THAN 18" Ø SHALL BE REMOVED W/ ROOTWADS INTACT AND STOCKPILED FOR USE IN LOGJAM CONSTRUCTION.
4. TREES AND SHRUBS WITH 6"-18" Ø SHALL BE STOCKPILED FOR USE AS RACKING MATERIAL IN LOGJAM CONSTRUCTION.
5. REMAINDER OF VEGETATION AND ORGANIC SOIL SHALL BE GRUBBED, STOCKPILED AND BROADCASTED ON ROAD ALIGNMENT FOLLOWING TERMINATION OF WORK.
6. ACCESS SHALL BE MAINTAINED BY MINOR GRADING AND IMPORTATION OF WOOD CHIPS, GRAVEL AND/OR QUARRY SPALLS.
7. CLEARED ACCESS SHALL BE SCARIFIED AND DECONSTRUCTED TO PREVENT FUTURE ACCESS AT THE TERMINATION OF WORK.
8. REVEGETATION ROAD ALIGNMENT FOLLOWING CONSTRUCTION WILL BE PERFORMED BY CONTRACTOR.
9. ALL GRAVEL OR QUARRY SPALLS PLACED SHALL BE UNDERLAIN WITH A GEOTEXTILE AND REMOVED AT TERMINATION OF WORK IF UTILIZED.

TEMPORARY CLEARED ACCESS ROAD 1
5
NOT TO SCALE

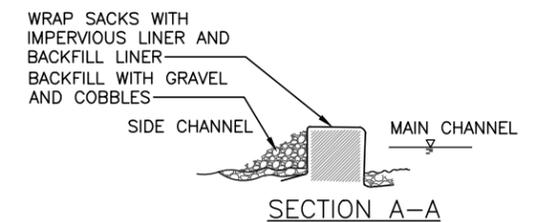


TEMPORARY SILT BOOM 2
5
NOT TO SCALE

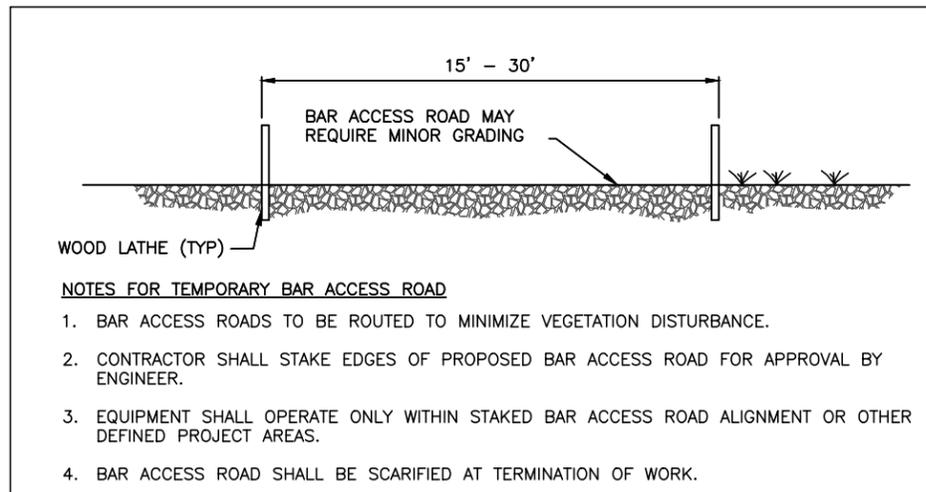


NOTES FOR "SUPER SACK" COFFER DAM DETAIL

1. WRAP "SUPER SACKS" WITH IMPERVIOUS PLASTIC LINER TO PREVENT SEEPAGE.
2. BACKFILL THE DOWNSTREAM SIDE COFFER DAM WITH NATIVE, ADJACENT ALLUVIUM.
3. USE "SUPER SACKS" AS BUTTRESSES AS REQUIRED.



COFFERDAM 4
5
NOT TO SCALE



NOTES FOR TEMPORARY BAR ACCESS ROAD

1. BAR ACCESS ROADS TO BE ROUTED TO MINIMIZE VEGETATION DISTURBANCE.
2. CONTRACTOR SHALL STAKE EDGES OF PROPOSED BAR ACCESS ROAD FOR APPROVAL BY ENGINEER.
3. EQUIPMENT SHALL OPERATE ONLY WITHIN STAKED BAR ACCESS ROAD ALIGNMENT OR OTHER DEFINED PROJECT AREAS.
4. BAR ACCESS ROAD SHALL BE SCARIFIED AT TERMINATION OF WORK.

TEMPORARY BAR ACCESS ROAD 3
5
NOT TO SCALE

N:\PROJECTS\SOUTH PUGET SOUND SALMON ENHANCEMENT GROUP\S_PRAIRIE_CREEK\DESIGN\CAD_DWG_S - CURRENT\TESC_DETAILS.DWG_Donniele 5/1/2013 9:26:19 AM



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DESIGNED M. HRACHOVEC	LATITUDE 47°08'15"N
CHECKED T. ABBE	LONGITUDE 122°07'00"W
DRAWN G. MATSUMOTO	TN/SC/RG T19N/S13/R5E
CHECKED M. HRACHOVEC	DATE

SOUTH PRAIRIE CREEK FLOODPLAIN AND OFF CHANNEL RESTORATION

TESC DETAILS

SITE 1

SEE SHEET 8

SITE 2

SEE SHEET 9

SITE 3

SEE SHEET 10

SITE 4

SEE SHEET 11

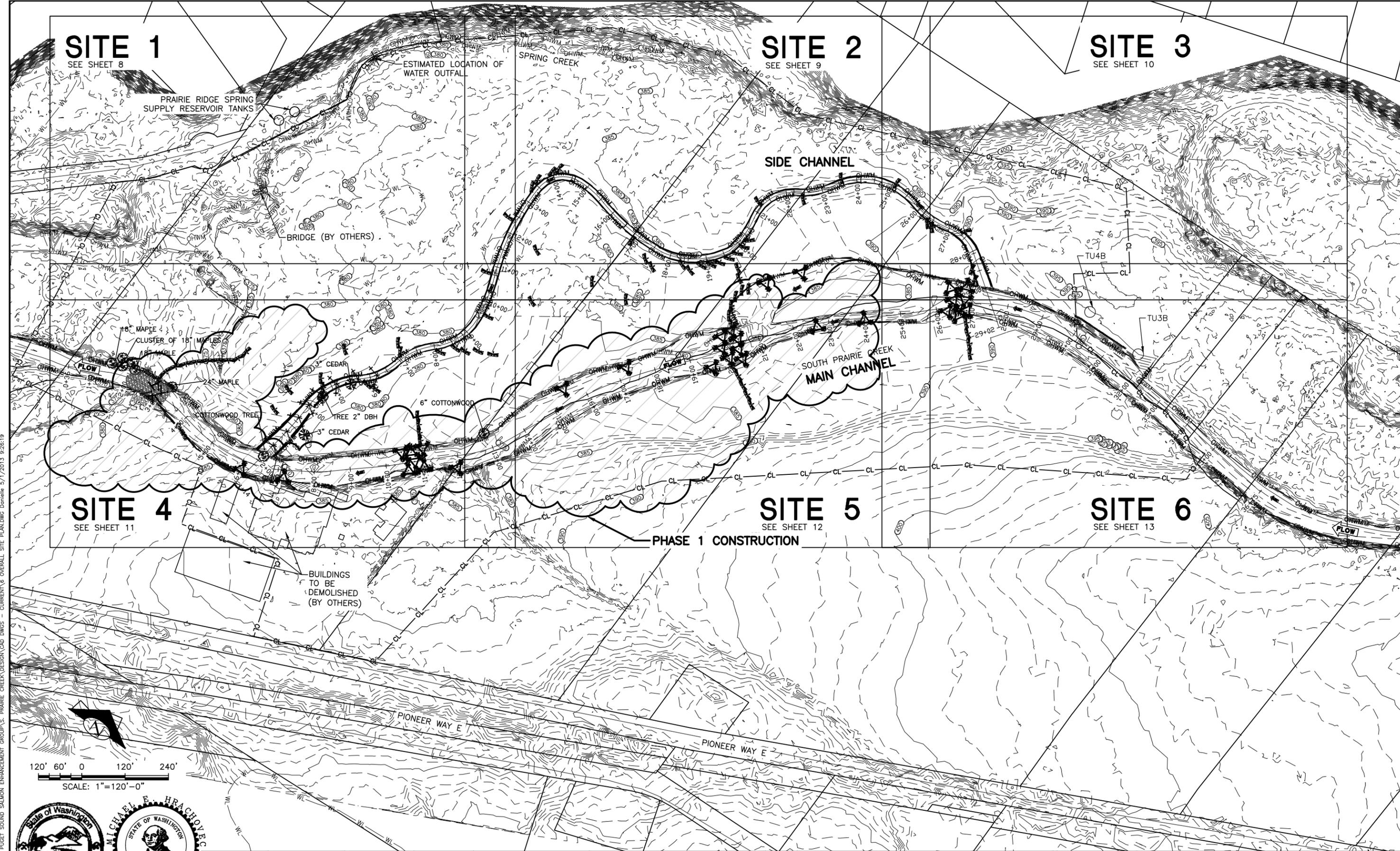
SITE 5

SEE SHEET 12

SITE 6

SEE SHEET 13

PHASE 1 CONSTRUCTION



N:\PROJECTS\SOUTH PUGET SOUND SALMON ENHANCEMENT GROUP\S. PRAIRIE CREEK\DESIGN\CAD DWGS - CURRENT\6 OVERALL SITE PLAN.DWG Date: 5/17/2013 9:26:19

State of Washington
Licensed Geologist
1181
Timothy B. Abbe

State of Washington
REGISTERED PROFESSIONAL ENGINEER
36039
MICHAEL E. HRACHOVEC

PUYALLUP TRIBE
OF INDIANS

Salmon ENHANCEMENT GROUP

Pierce Conservation District

Pierce County

Natural Systems Design

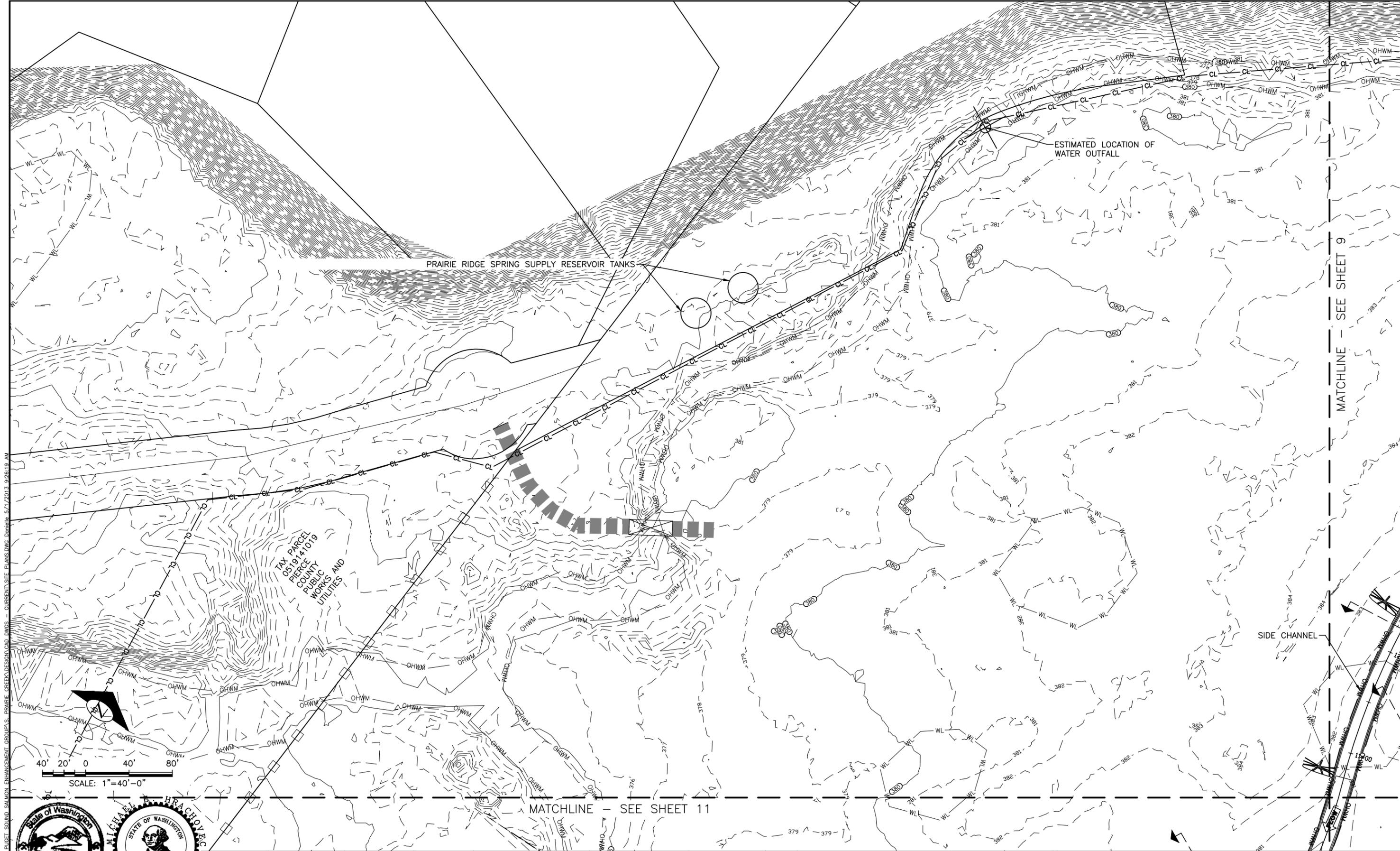
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CHECKED T. ABBE		LONGITUDE 122°07'00"W	
DRAWN G. MATSUMOTO		TN/SC/RG T19N/S13/R5E	
CHECKED M. HRACHOVEC		DATE	

**SOUTH PRAIRIE CREEK
FLOODPLAIN AND OFF
CHANNEL RESTORATION**

OVERALL SITE PLAN

7
SHEET 7 OF 31

Aug-19-2015 90% DESIGN



MATCHLINE - SEE SHEET 9

MATCHLINE - SEE SHEET 11

N:\PROJECTS\SOUTH PUGET SOUND ENHANCEMENT GROUP\S. PRAIRIE CREEK\DESIGN\CAD_DWG - CURRENT SITE PLANS.DWG - Danielle - 5/1/2013 9:26:19 AM

Aug-19-2015 90% DESIGN

State of Washington
 Licensed Geologist
 1161
 Timothy B. Abbe

State of Washington
 REGISTERED PROFESSIONAL ENGINEER
 36039
 MICHAEL B. HRACHOVEC

PUYALLUP TRIBE
 OF INDIANS

SOUTH PUGET SOUND
 SALMON ENHANCEMENT GROUP

Pierce Conservation District
 Conservation - Development - Soil Conservation

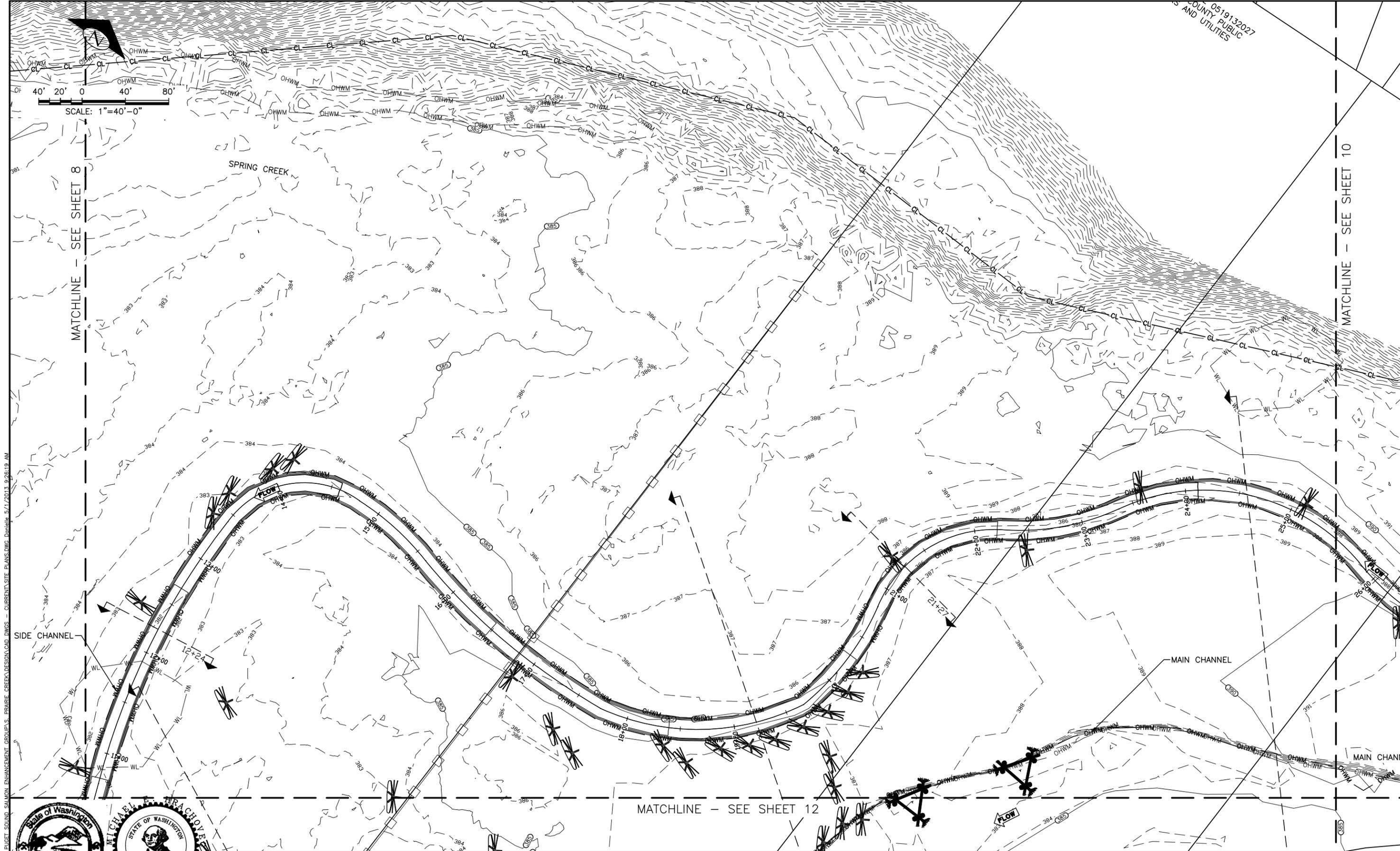
Pierce County

Natural Systems Design

NAME OR INITIALS AND DATE	DESIGNED M. HRACHOVEC
CHECKED T. ABBE	LATITUDE 47°08'15"N
DRAWN G. MATSUMOTO	LONGITUDE 122°07'00"W
CHECKED M. HRACHOVEC	TN/SC/RG T19N/S13/R5E
	DATE

**SOUTH PRAIRIE CREEK
 FLOODPLAIN AND OFF
 CHANNEL RESTORATION**

SITE 1	8
SHEET 8 OF 31	



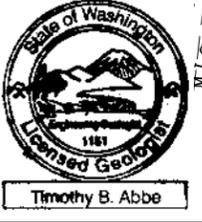
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0519132027
COUNTY PUBLIC
AND UTILITIES

MATCHLINE - SEE SHEET 8

MATCHLINE - SEE SHEET 10

MATCHLINE - SEE SHEET 12



NAME OR INITIALS AND DATE
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CHECKED T. ABBE
DRAWN G. MATSUMOTO
CHECKED M. HRACHOVEC

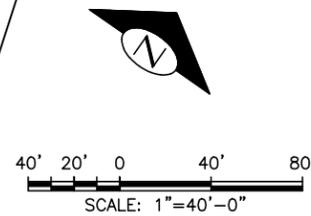
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TN/SC/RG T19N/S13/R5E
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**SOUTH PRAIRIE CREEK
FLOODPLAIN AND OFF
CHANNEL RESTORATION**

SITE 2

9
SHEET 9 OF 31

Aug-19-2015 90% DESIGN



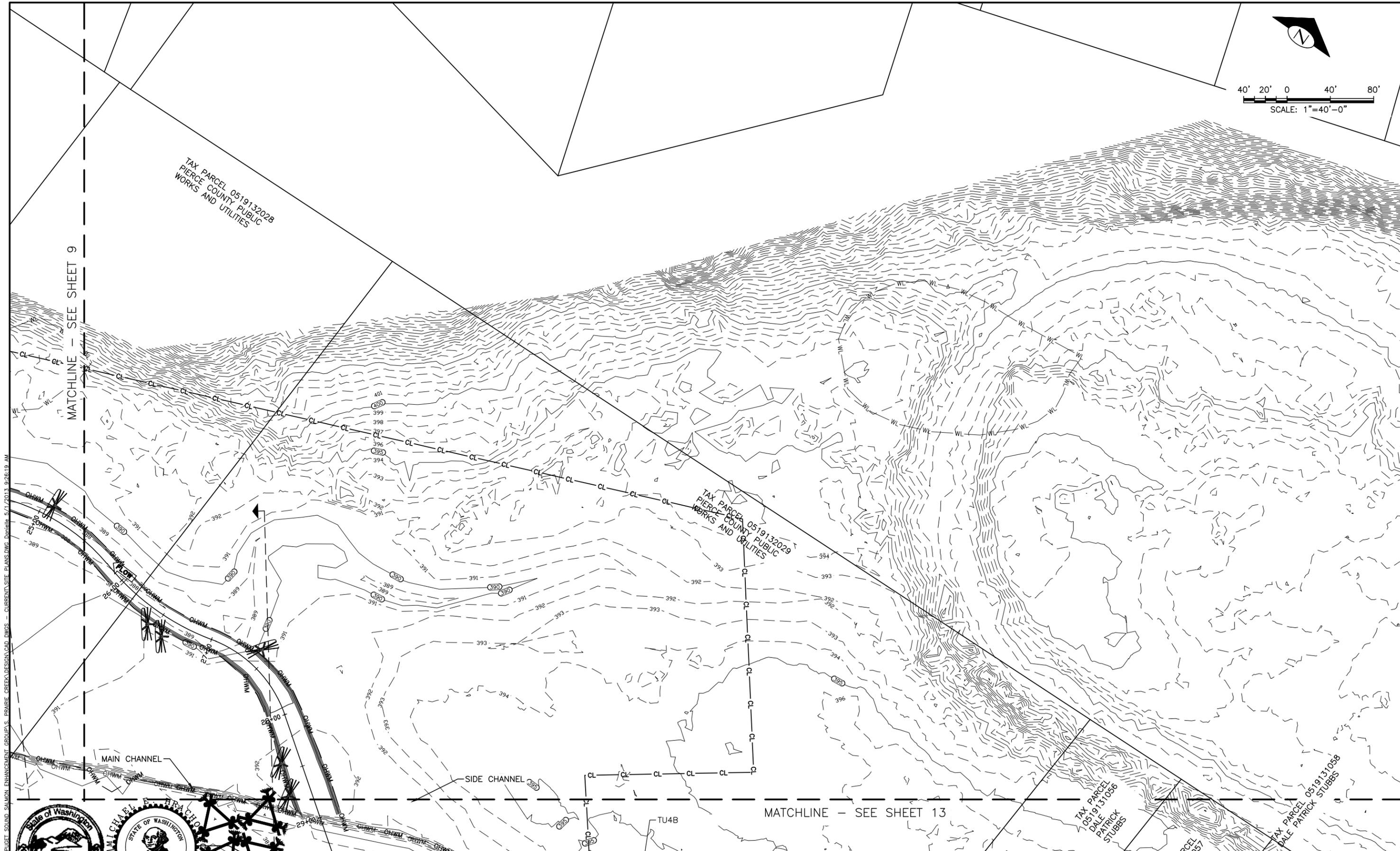
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PIERCE COUNTY PUBLIC
WORKS AND UTILITIES

MATCHLINE - SEE SHEET 9

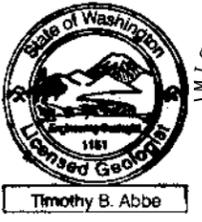
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PIERCE COUNTY PUBLIC
WORKS AND UTILITIES

TAX PARCEL
0519131056
DALE PATRICK
STUBBS

TAX PARCEL 0519131058
DALE PATRICK
STUBBS



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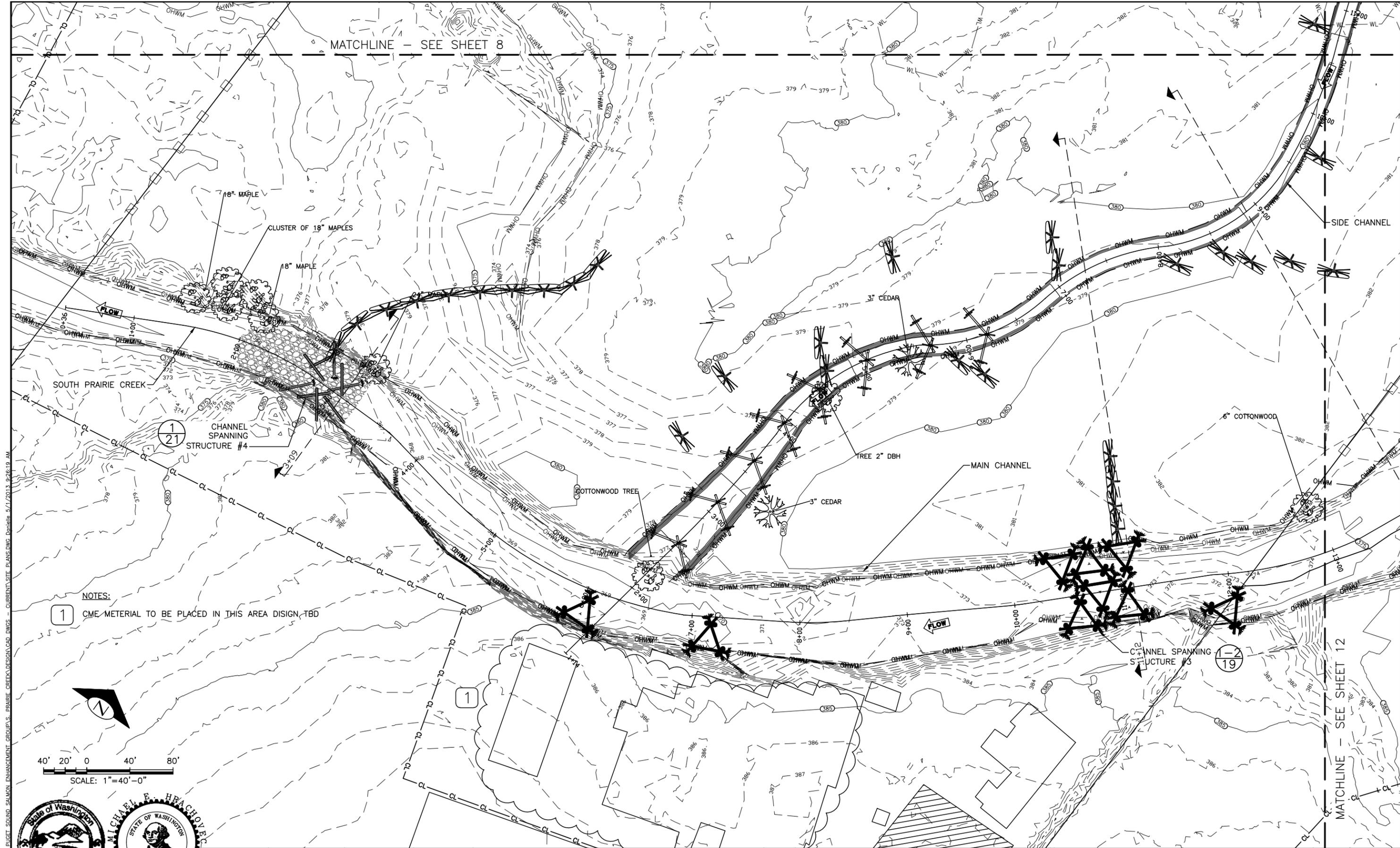
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DESIGNED M. HRACHOVEC	LATITUDE 47°08'15"N
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DRAWN G. MATSUMOTO	TN/SC/RG T19N/S13/R5E
CHECKED M. HRACHOVEC	DATE

**SOUTH PRAIRIE CREEK
FLOODPLAIN AND OFF
CHANNEL RESTORATION**

SITE 3

10
SHEET **10** OF **31**

Aug-19-2015 90% DESIGN



MATCHLINE - SEE SHEET 8

SIDE CHANNEL

18" MAPLE
CLUSTER OF 18" MAPLES
18" MAPLE

3" CEDAR

TREE 2" DBH

MAIN CHANNEL

6" COTTONWOOD

COTTONWOOD TREE

3" CEDAR

CHANNEL SPANNING STRUCTURE #3

1
21
CHANNEL SPANNING STRUCTURE #4

19

NOTES:

1 CME MATERIAL TO BE PLACED IN THIS AREA DESIGN TBD



40' 20' 0 40' 80'
SCALE: 1"=40'-0"

MATCHLINE - SEE SHEET 12



NAME OR INITIALS AND DATE DESIGNED M. HRACHOVEC	GEOGRAPHIC INFORMATION LATITUDE 47°08'15"N
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CHECKED M. HRACHOVEC	DATE

**SOUTH PRAIRIE CREEK
FLOODPLAIN AND OFF
CHANNEL RESTORATION**

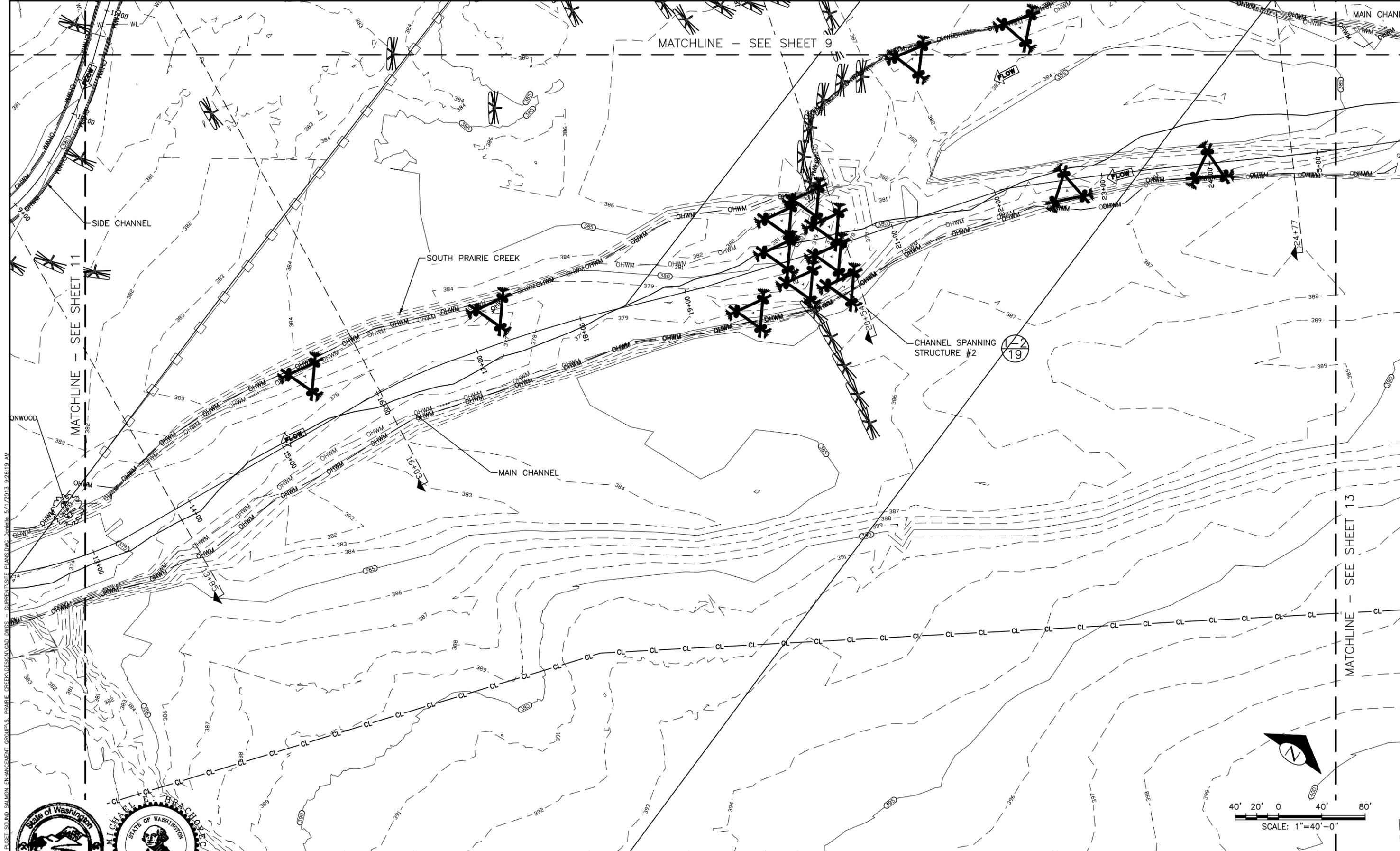
SITE 4

11

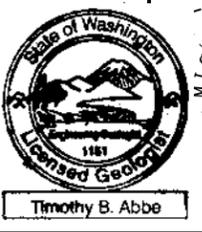
SHEET 11 OF 31

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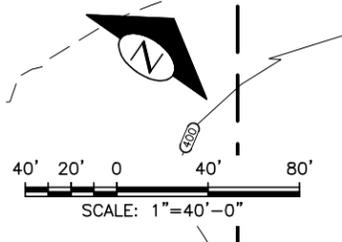


NAME OR INITIALS AND DATE DESIGNED M. HRACHOVEC	GEOGRAPHIC INFORMATION LATITUDE 47°08'15"N
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CHECKED M. HRACHOVEC	DATE

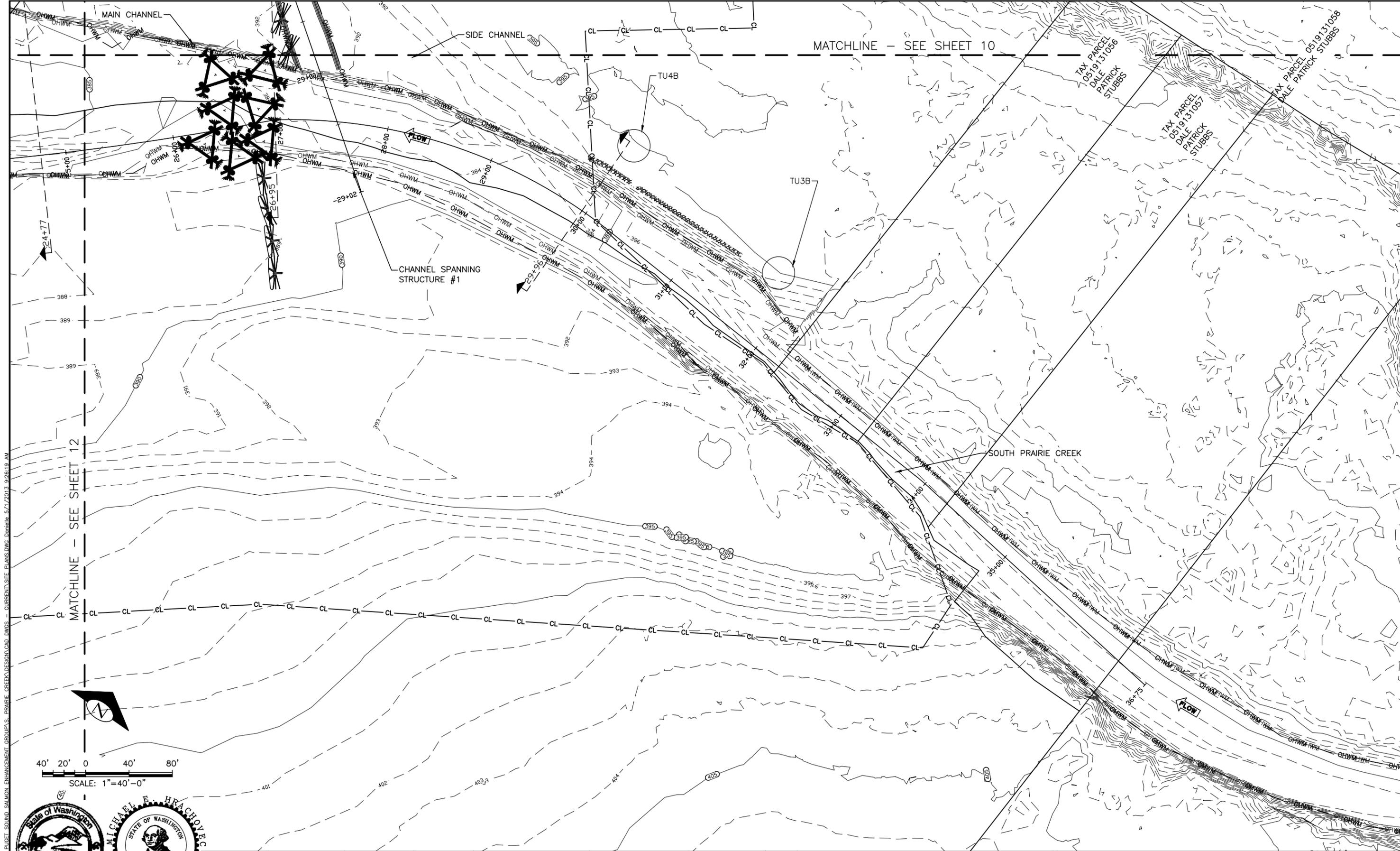
**SOUTH PRAIRIE CREEK
FLOODPLAIN AND OFF
CHANNEL RESTORATION**

SITE 5

12
SHEET **12** OF **31**



Aug-19-2015 90% DESIGN



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Aug-19-2015 90% DESIGN

MICHAEL E. HRACHOVEC
REGISTERED PROFESSIONAL ENGINEER
36039

Timothy B. Abbe
LICENSED GEOLOGIST
1161

PUYALLUP TRIBE
OF INDIANS

SALMON ENHANCEMENT GROUP

Pierce Conservation District

Pierce County

Natural Systems Design

NAME OR INITIALS AND DATE DESIGNED M. HRACHOVEC CHECKED T. ABBE DRAWN G. MATSUMOTO CHECKED M. HRACHOVEC	GEOGRAPHIC INFORMATION LATITUDE 47°08'15"N LONGITUDE 122°07'00"W TN/SC/RG T19N/S13/R5E DATE
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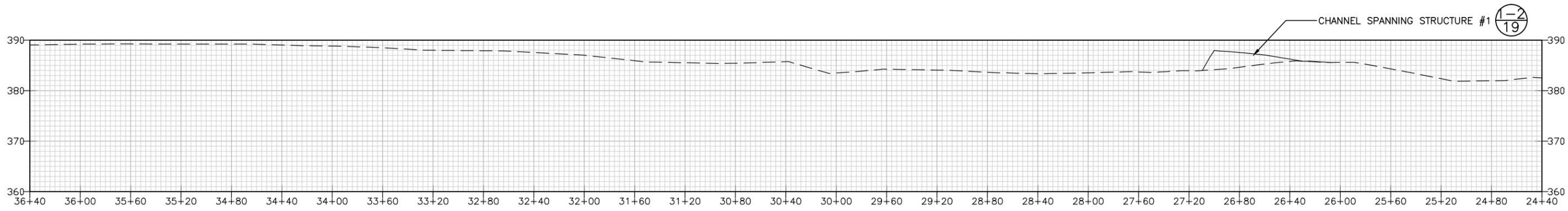
SOUTH PRAIRIE CREEK FLOODPLAIN AND OFF CHANNEL RESTORATION

SITE 6

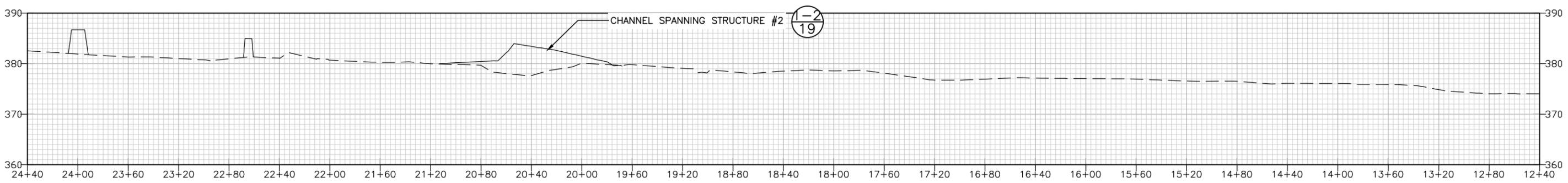
13

SHEET 13 OF 31

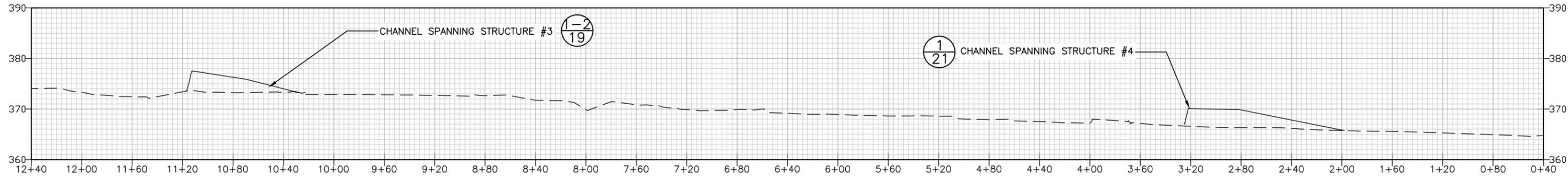
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MAIN CHANNEL PROFILE



MAIN CHANNEL PROFILE



MAIN CHANNEL PROFILE

PROFILE SCALE: H: 1" = 40' V: 1" = 10'



NAME OR INITIALS AND DATE	GEOGRAPHIC INFORMATION
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CHECKED M. HRACHOVEC	DATE

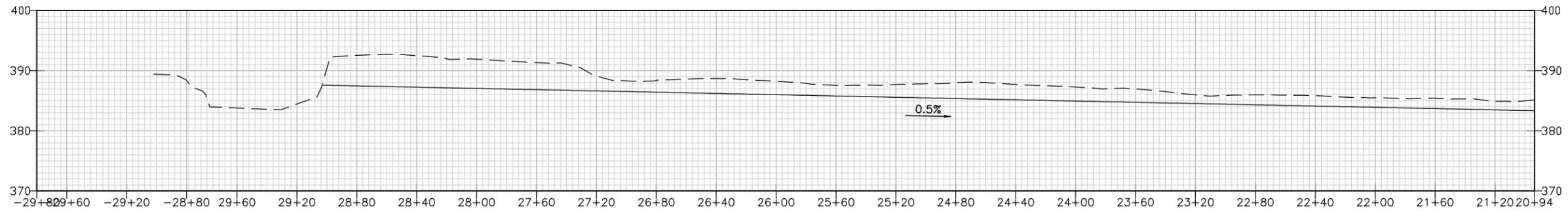
**SOUTH PRAIRIE CREEK
FLOODPLAIN AND OFF
CHANNEL RESTORATION**

PROFILE 1

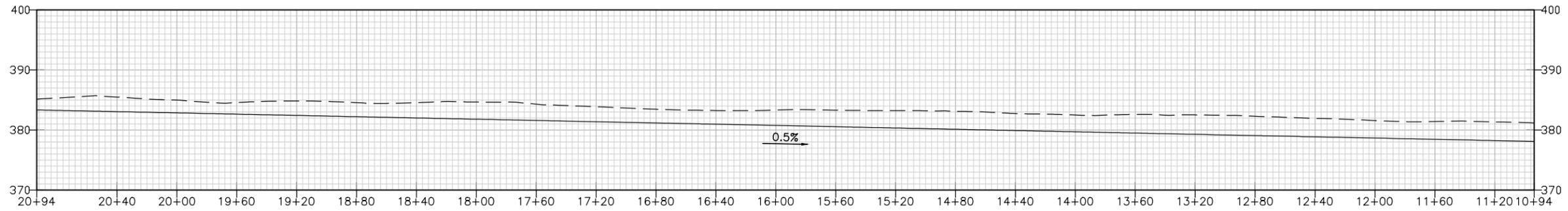
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SHEET 14 OF 31

Aug-19-2015 90% DESIGN

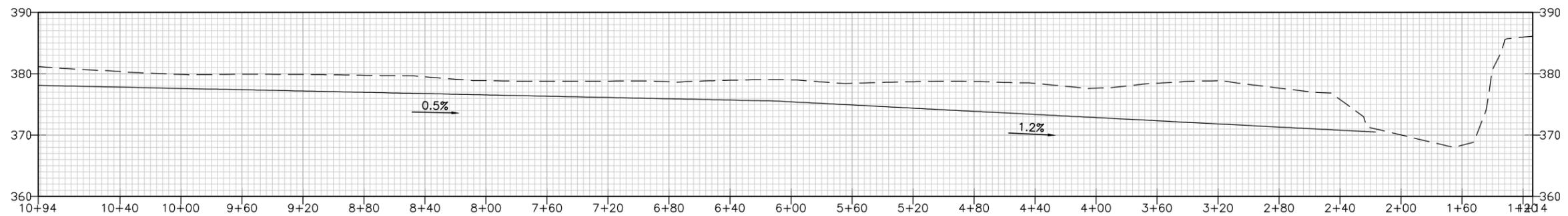
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SIDE CHANNEL PROFILE

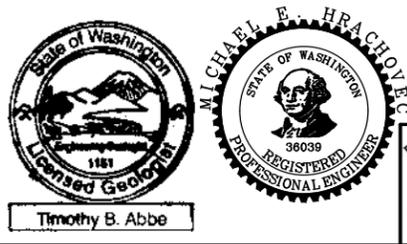


SIDE CHANNEL PROFILE



SIDE CHANNEL PROFILE

PROFILE SCALE: H: 1" = 40' V: 1" = 10'



NAME OR INITIALS AND DATE	GEOGRAPHIC INFORMATION
DESIGNED M. HRACHOVEC	LATITUDE 47°08'15"N
CHECKED T. ABBE	LONGITUDE 122°07'00"W
DRAWN G. MATSUMOTO	TN/SC/RG T19N/S13/R5E
CHECKED M. HRACHOVEC	DATE

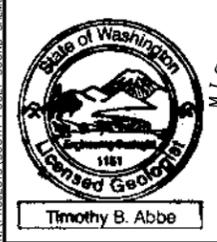
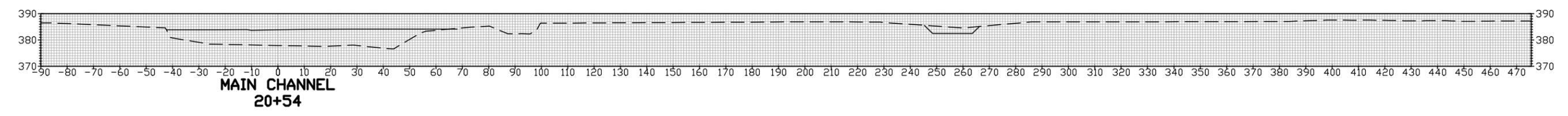
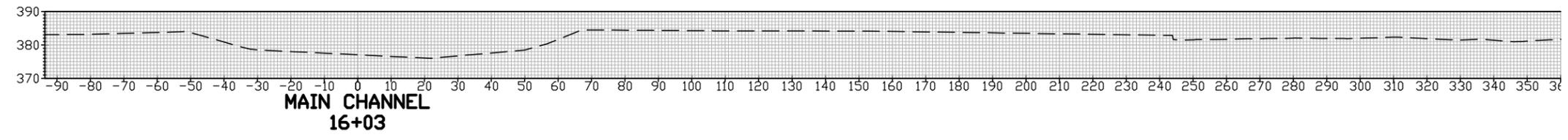
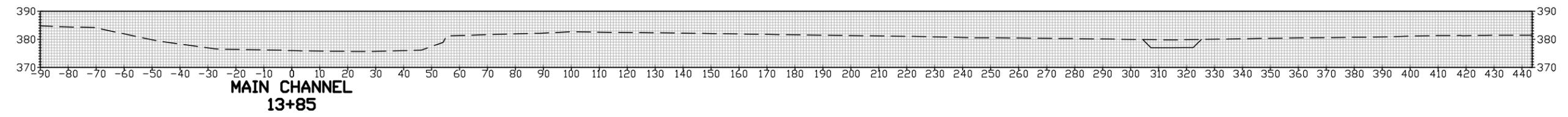
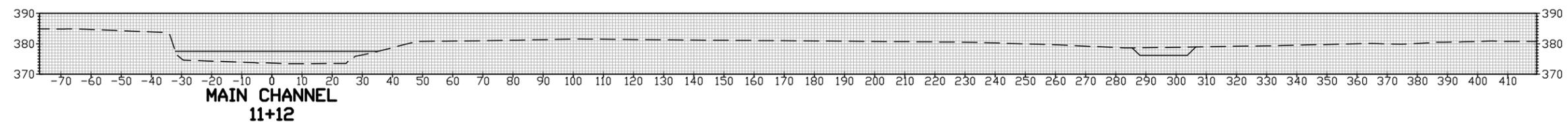
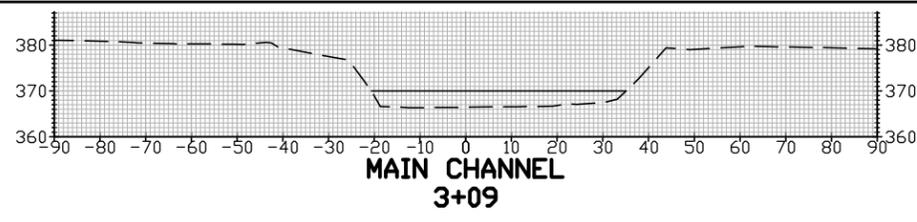
**SOUTH PRAIRIE CREEK
FLOODPLAIN AND OFF
CHANNEL RESTORATION**

PROFILE 2

15
SHEET **15** OF **31**

Aug-19-2015 90% DESIGN

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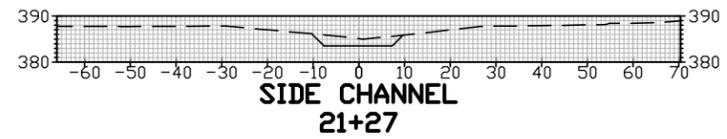
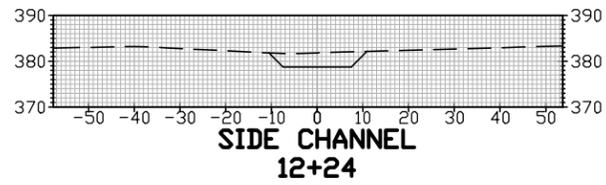
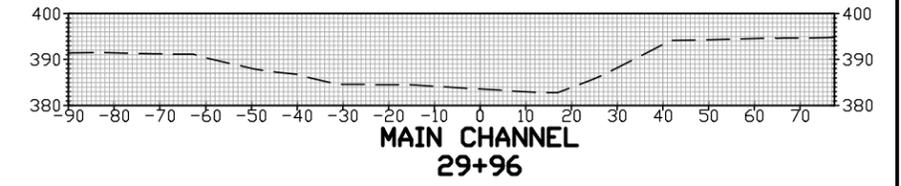
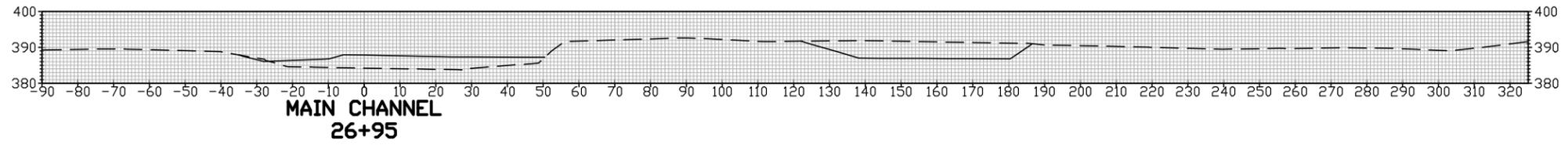
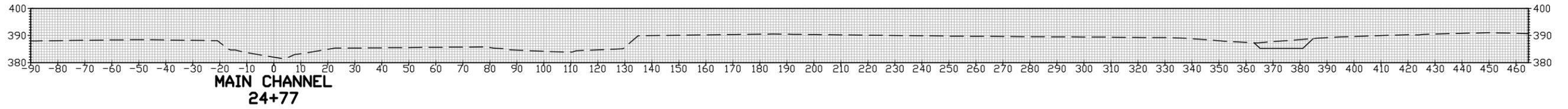


NAME OR INITIALS AND DATE	GEOGRAPHIC INFORMATION
DESIGNED M. HRACHOVEC	LATITUDE 47°08'15"N
CHECKED T. ABBE	LONGITUDE 122°07'00"W
DRAWN G. MATSUMOTO	TN/SC/RG T19N/S13/R5E
CHECKED M. HRACHOVEC	DATE

**SOUTH PRAIRIE CREEK
FLOODPLAIN AND OFF
CHANNEL RESTORATION**

CROSS SECTIONS 1

Aug-19-2015 90% DESIGN



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Timothy B. Abbe



NAME OR INITIALS AND DATE	GEOGRAPHIC INFORMATION
DESIGNED M. HRACHOVEC	LATITUDE 47°08'15"N
CHECKED T. ABBE	LONGITUDE 122°07'00"W
DRAWN G. MATSUMOTO	TN/SC/RG T19N/S13/R5E
CHECKED M. HRACHOVEC	DATE

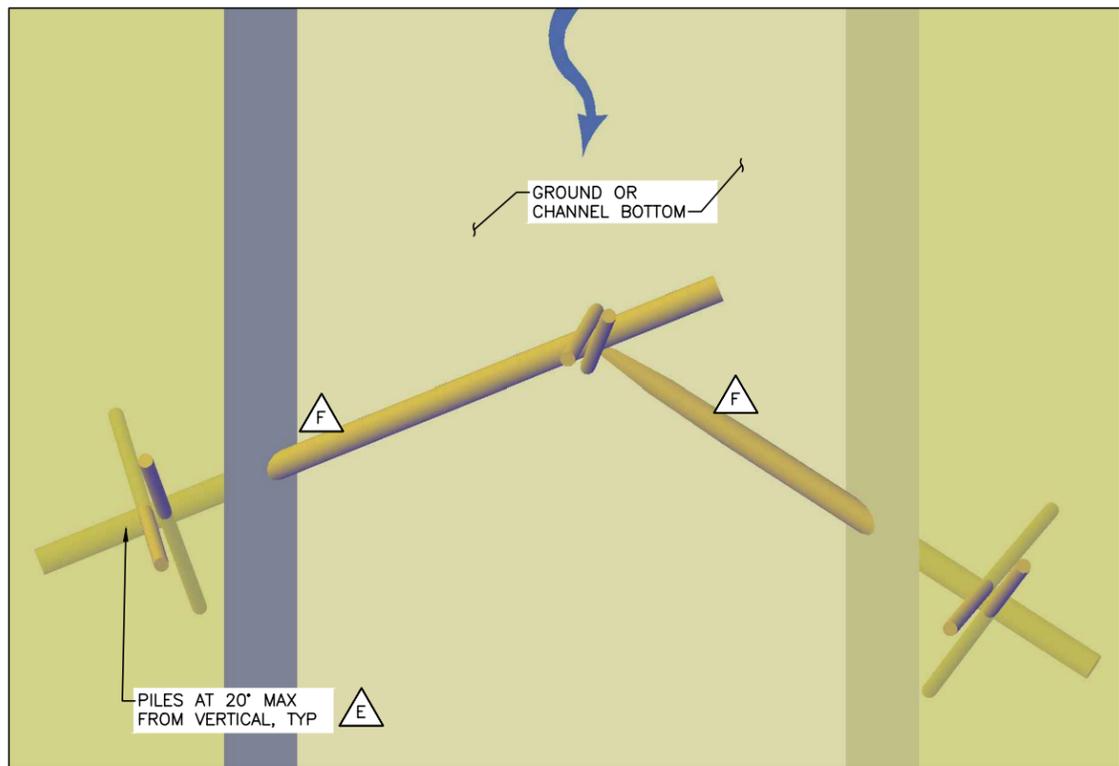
SOUTH PRAIRIE CREEK
FLOODPLAIN AND OFF
CHANNEL RESTORATION

CROSS SECTIONS 2

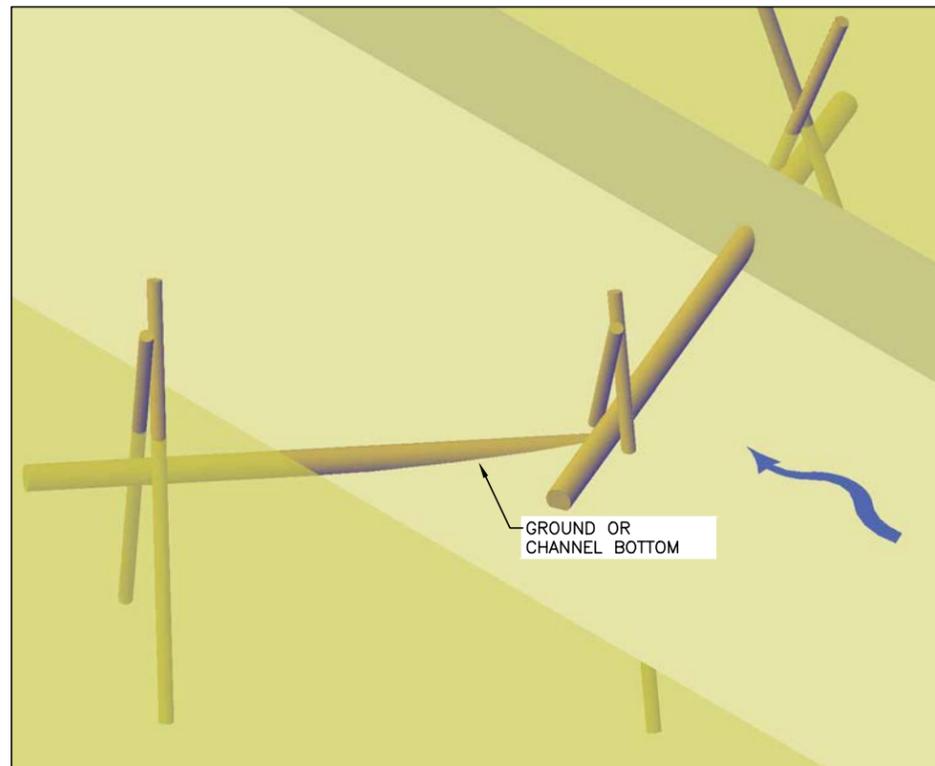
17

SHEET 17 OF 31

Aug-19-2015 90% DESIGN



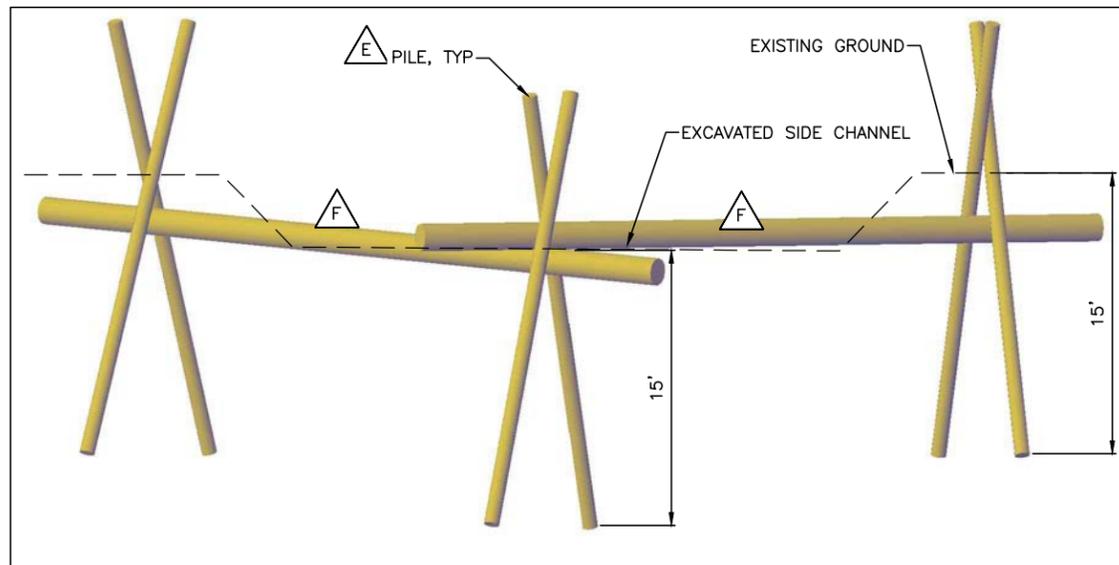
TYPE 1 ELJ PLAN
SCALE: 1" = 5'



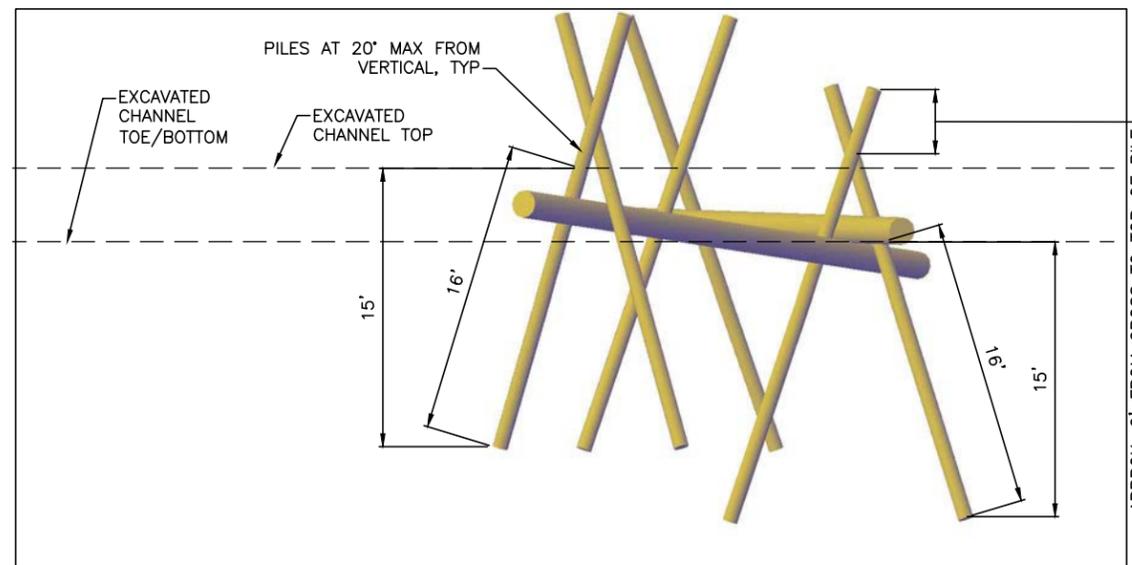
TYPE 1 ELJ PERSPECTIVE
SCALE: NOT TO SCALE

TYPE 1 ELJ LOG SCHEDULE					
LOG ID	DIA* (IN)	LENGTH (FT)	ROOTWAD (Y/N)	QUANTITY PER STRUCTURE	NOTES
△E	10	25	N	6	INSTALL AT 20 DEGREES FROM VERTICAL
△F	18	40	N	2	

* DIAMETER AT BREAST HEIGHT



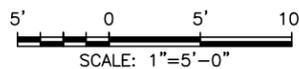
TYPE 1 ELJ PROFILE (END VIEW)
SCALE: 1" = 5'



TYPE 1 ELJ PROFILE (SIDE VIEW)
SCALE: 1" = 5'

TYPE 1 ELJ
SCALE: AS NOTED

1
-13



NAME OR INITIALS AND DATE
DESIGNED M. HRACHOVEC
CHECKED T. ABBE
DRAWN G. MATSUMOTO
CHECKED M. HRACHOVEC

GEOGRAPHIC INFORMATION
LATITUDE 47°08'15"N
LONGITUDE 122°07'00"W
TN/SC/RG T19N/S13/R5E
DATE

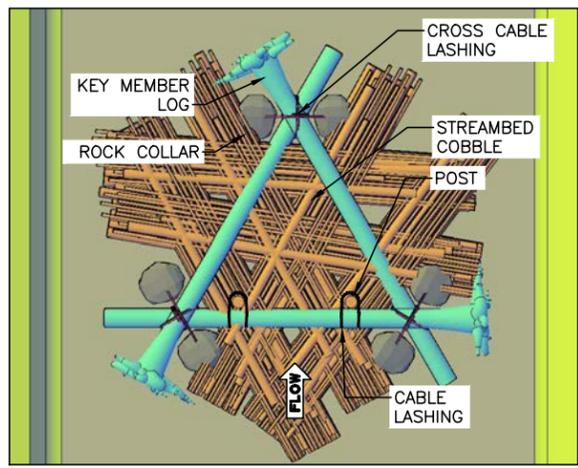
**SOUTH PRAIRIE CREEK
FLOODPLAIN AND OFF
CHANNEL RESTORATION**

ELJ 1 DETAILS

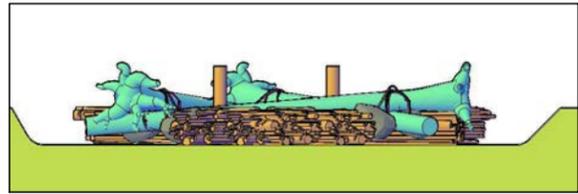
18
SHEET 18 OF 31

NA\PROJECTS\SOUTH PUGET SOUND SALMON ENHANCEMENT GROUP\3. PRAIRIE CREEK\DESIGN\CAD DWGS - CURRENT\TYPE 1 ELJ.DWG - Dendelle_5/1/2013_9:26:19_AM

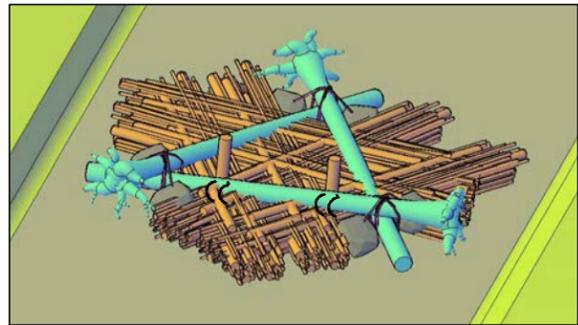
Aug-19-2015 90% DESIGN



PLAN
SCALE: 1" = 10'



PROFILE
SCALE: 1" = 10'



PERSPECTIVE
NOT TO SCALE

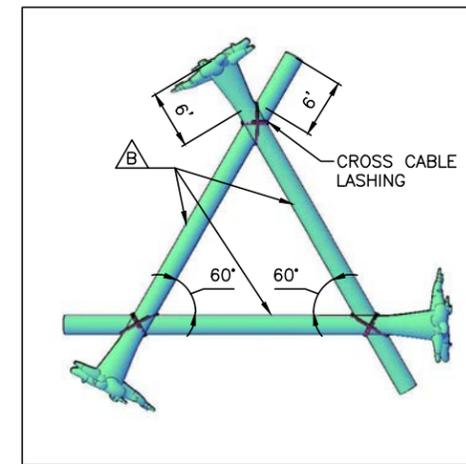
TYPE 2 ELJ UNIT 1
SCALE: AS NOTED 7-13

TYPE 2 STRUCTURE NOTES:

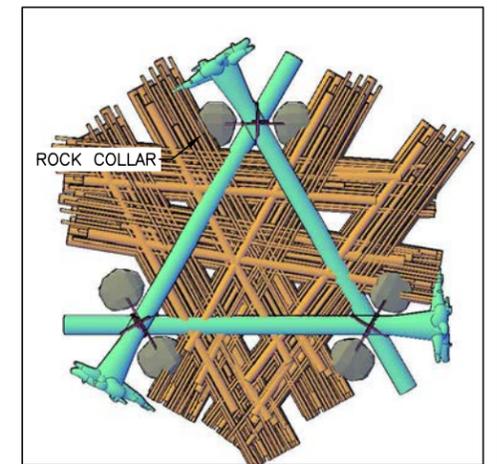
- FOR PLACEMENT AND CONFIGURATION OF TYPE 2 ELJ UNITS SEE PROPOSED PLAN SHEETS. THE TYPE 2 ELJ UNIT TURNED OVER IS THE SAME ROOTWAD CONFIGURATION AS THE TYPE 2 ELJ UNIT BUT TURNED UPSIDE DOWN.
- THE TOPS OF THE PILES ARE TO BE APPROX. 1' ABOVE ADJACENT LOG AT MOST UPSTREAM TYPE 2 UNITS AND 1'-2' ABOVE ADJACENT LOG AT DOWNSTREAM TYPE 2 UNITS. PILES ARE TO BE DRIVEN USING VIBRATORY METHODS.
- TYPE 2 UNIT TO BE ASSEMBLED IN THE DRY AND PLACED IN THE CHANNEL.
- NO IN-CHANNEL EXCAVATION SHALL OCCUR DURING THE CONSTRUCTION OF THE TYPE 2 ELJ. TYPE 2 UNITS SHALL BE PLACED DIRECTLY ON THE CHANNEL BED AND PRESSED DOWN INTO THE CHANNEL TO MINIMIZE GAPS BETWEEN THE CHANNEL AND LOG. AT NO TIME SHALL EQUIPMENT BE IN CONTACT WITH THE CHANNEL BED.
- EACH TYPE 2 UNIT SHALL BE BALLASTED WITH THREE ROCK COLLARS ON EACH CORNER.
- CLEAN STREAMBED COBBLE SHALL BE PLACED IN INTERSTITIAL SPACES IN EACH TYPE 2 UNIT. STREAMBED COBBLE TO BE UP TO 3-FT DEEP AND 5-FT UPSTREAM OF THE MOST UPSTREAM TYPE 2 UNIT TO CREATE A SMOOTH TRANSITION FROM THE EXISTING CHANNEL TO THE TOP OF LOG. STREAMBED COBBLE TO BE CLEAN AND WASHED TO MINIMIZE TURBIDITY DURING PLACEMENT.
- THE CONTRACTOR SHALL FIELD VERIFY WITH THE OWNER REPRESENTATIVE OR ENGINEER ALL STRUCTURE LOCATIONS, PILE LOCATIONS, LENGTHS, WIDTHS AND ELEVATIONS PRIOR TO EXCAVATION, ASSEMBLY AND INSTALLATION OF EACH STRUCTURE.
- LOCATIONS FOR ALL STRUCTURE PLACEMENTS WILL BE STAKED IN FIELD BY THE ENGINEER OR OWNER REPRESENTATIVE PRIOR TO START OF CONSTRUCTION.
- THE WOOD LAYER PLACEMENT IN EACH LOGJAM LAYER SHALL BE FIELD VERIFIED BY ON-SITE OWNER REPRESENTATIVE PRIOR TO PLACEMENT.
- TYPE 2 ELJ UNITS SHALL BE USED FOR CHANNEL SPANNING STRUCTURES 1-3.

STREAMBED COBBLE GRADATIONS

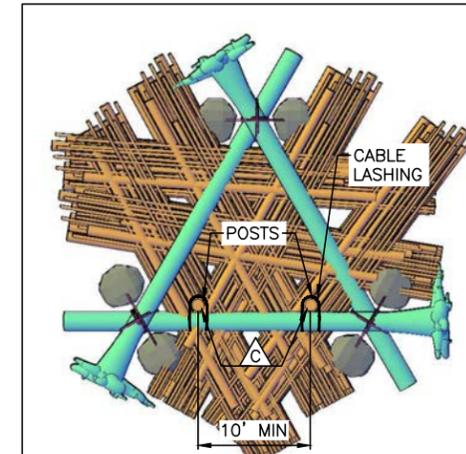
D ₁₆	3"
D ₅₀	6"
D ₈₄	10"
D ₁₀₀	14"



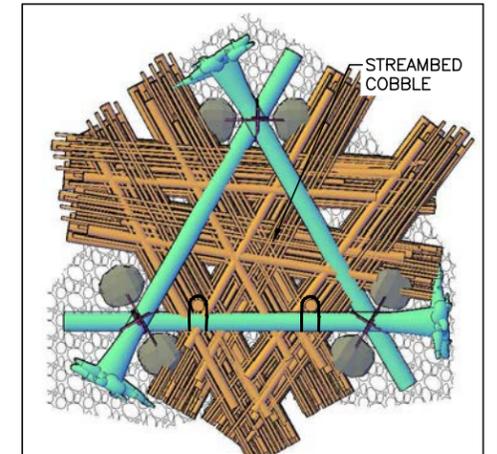
LAYER 1
PLACE 3 ROOTWADS IN TRIANGULAR SHAPE, CONNECT WITH CROSS CABLE LASHING.



LAYER 2
PLACE RACKING MATERIAL IN CHANNEL. LIFT AND PLACE TYPE 2 UNIT IN CHANNEL ON TOP OF RACKING MATERIAL USING A 3-POINT HARNESS WHICH ATTACHES TO THE CENTER OF EACH LOG. ADD ROCK COLLARS AT EACH INTERSECTION.



LAYER 3
ADD 2 POSTS. POSTS ARE TO BE PLACED AGAINST THE ROOTWAD MOST FACING TOWARD THE FLOW. CABLE LASH ROOTWAD TO POSTS.



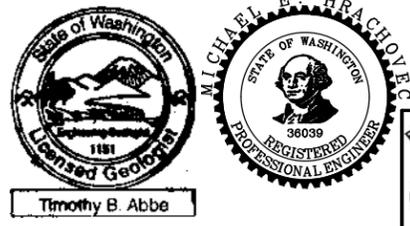
LAYER 4
FILL VOIDS WITH STREAMBED COBBLE (CHANNEL SPANNING STRUCTURE #1 ONLY).

TYPE 2 UNIT LAYERING PLANS 2
SCALE: AS NOTED 7-13

TYPE 2 ELJ LOG SCHEDULE

LOG ID	DIA* (IN)	LENGTH** (FT)	ROOTWAD (Y/N)	QUANTITY PER STRUCTURE	NOTES
⊗	24	40	Y	3	
⊙	16	20	N	2	INSTALL AT 20 DEGREES FROM VERTICAL

* DIAMETER AT BREAST HEIGHT
** TOTAL LENGTH INCLUDING ROOTWAD



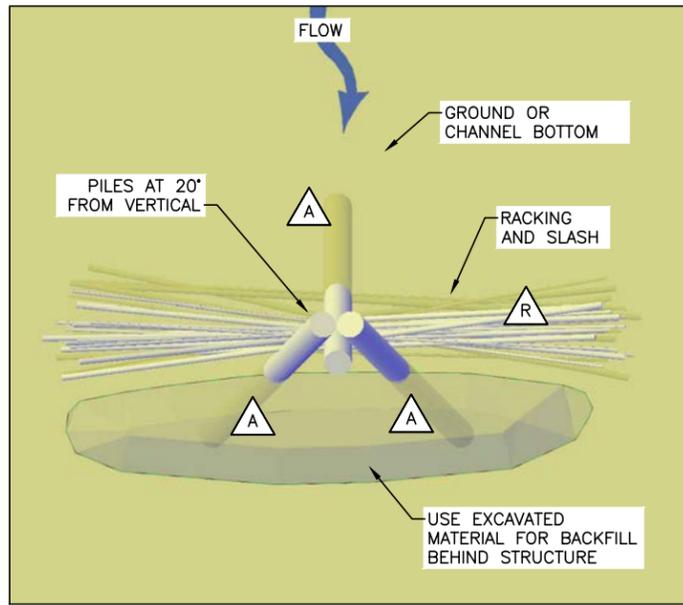
NAME OR INITIALS AND DATE	DESIGNED MH HRACHOVEC	GEOGRAPHIC INFORMATION
CHECKED RLE		LATITUDE 47°08'30"N
DRAWN GD MATSUMOTO		LONGITUDE 122°07'00"W
CHECKED RH, RLE		TN/SC/RG T28N/S19/R5EW
		DATE

SOUTH PRAIRIE CREEK FLOODPLAIN AND OFF CHANNEL RESTORATION

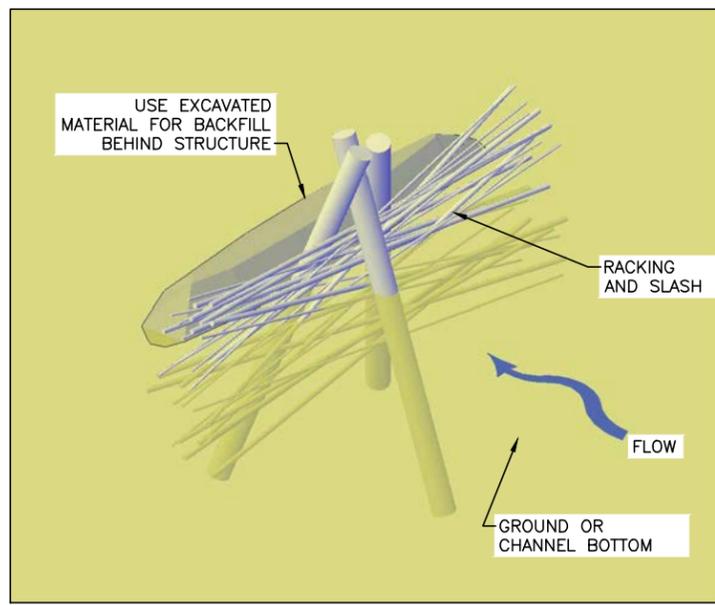
ELJ 2 DETAILS

N:\PROJECTS\SOUTH PUGET SOUND SALMON ENHANCEMENT GROUP\S. PRAIRIE CREEK\DESIGN\CAD DWGS - CURRENT\SOUTH PRAIRIE CREEK ELJ 02.DWG Danielle 5/1/2013 9:29:19 AM

Aug-19-2015 90% DESIGN



TYPE 3 ELJ PLAN
SCALE: 1" = 5'

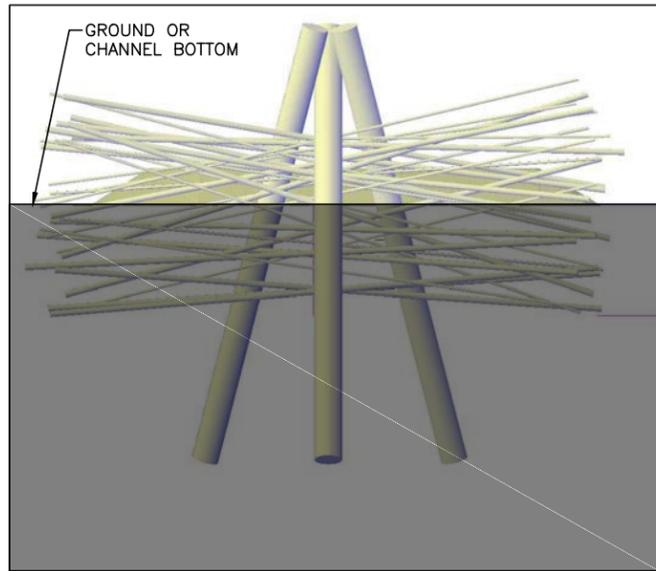


TYPE 3 ELJ PERSPECTIVE
NOT TO SCALE

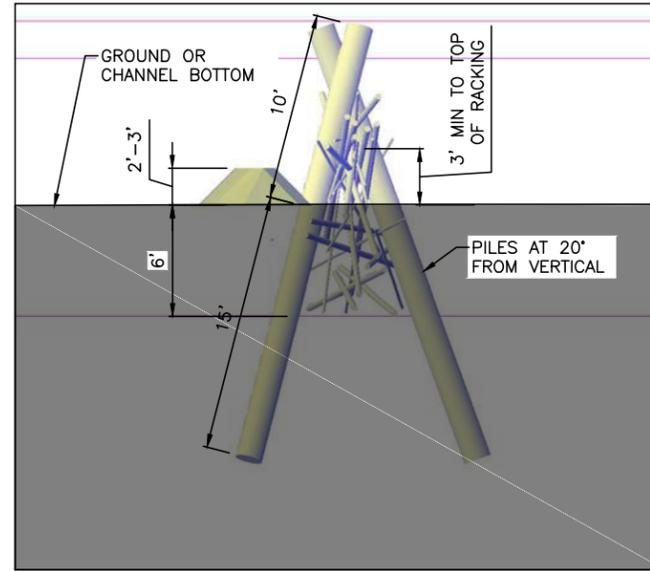
TYPE 3 ELJ LOG SCHEDULE

LOG ID	DIA* (IN)	LENGTH (FT)	ROOTWAD (Y/N)	QUANTITY PER STRUCTURE	NOTES
A	18	25	N	3	INSTALL AT 20 DEGREES FROM VERTICAL
R	4 TO 8	30	N	30	

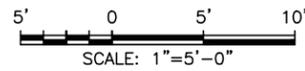
* DIAMETER AT BREAST HEIGHT



TYPE 3 ELJ PROFILE (END VIEW)
SCALE: 1" = 5'



TYPE 3 ELJ PROFILE (SIDE VIEW)
SCALE: 1" = 5'



TYPE 3 ELJ
SCALE: AS NOTED

1
7-13



NAME OR INITIALS AND DATE
 DESIGNED M. HRACHOVEC
 CHECKED T. ABBE
 DRAWN G. MATSUMOTO
 CHECKED M. HRACHOVEC

GEOGRAPHIC INFORMATION
 LATITUDE 47°08'15"N
 LONGITUDE 122°07'00"W
 TN/SC/RG T19N/S13/R5E
 DATE

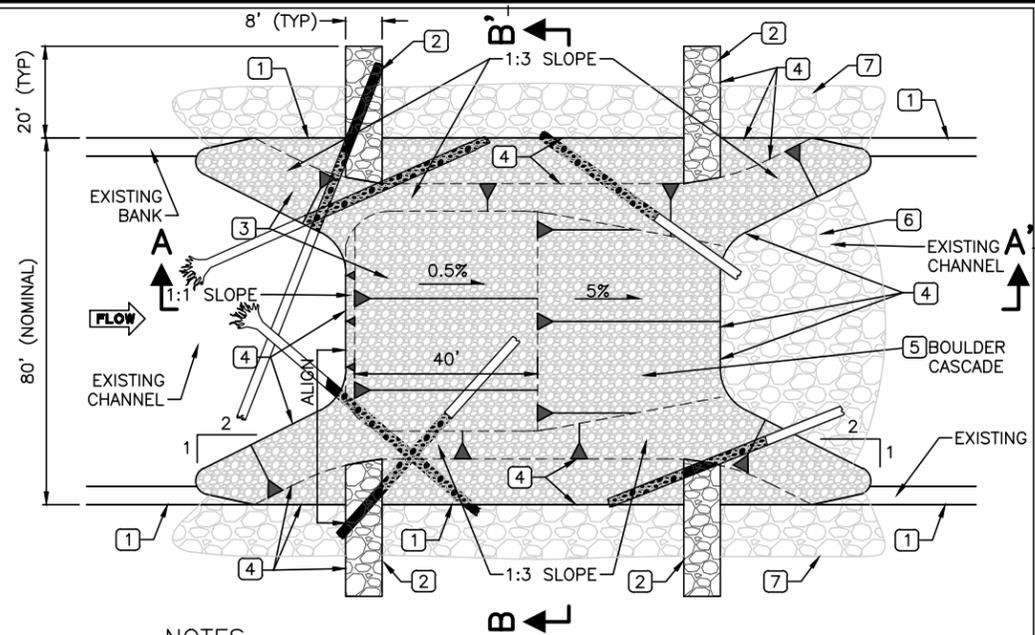
**SOUTH PRAIRIE CREEK
 FLOODPLAIN AND OFF
 CHANNEL RESTORATION**

ELJ 3 DETAILS

20
 SHEET 20 OF 31

N:\PROJECTS\SOUTH_PUGET_SOUND_SALMON_ENHANCEMENT_GROUPS\S_PRAIRIE_CREEK\DESIGN\CAD_DWG - CURRENT\TYPE 3_ELJ.DWG - Donielle - 5/1/2013 9:26:19 AM

Aug-19-2015 90% DESIGN



NOTES

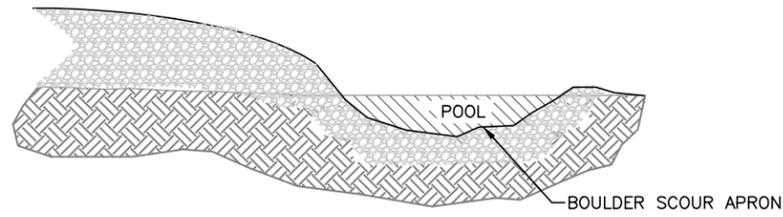
- 1 EXISTING TOP OF BANK.
- 2 CUTOFF SILL TO BE STREAMBED BOULDERS.
- 3 FILL TO BE 70/30 MIX OF 2-MAN TO 4-MAN BOULDERS SIMILAR TO NATIVE BOULDERS ONSITE LEFT BY OSCEOLA MUDFLOW AND 12" MINUS STREAMBED COBBLES SEDIMENT TO CREATE LOW PERMEABILITY CORE.
- 4 MATCH EXISTING GRADE.
- 5 BOULDER CASCADE.
- 6 PLUNGE POOL WITH BOULDER SCOUR APRON
- 7 ROCK AND WOOD RECONSTRUCTED BANK PLACED TO AVOID DRIPLINE OF EXISTING TREES.

CHANNEL SPANNING STRUCTURE PLAN VIEW

SCALE: 1" = 20'

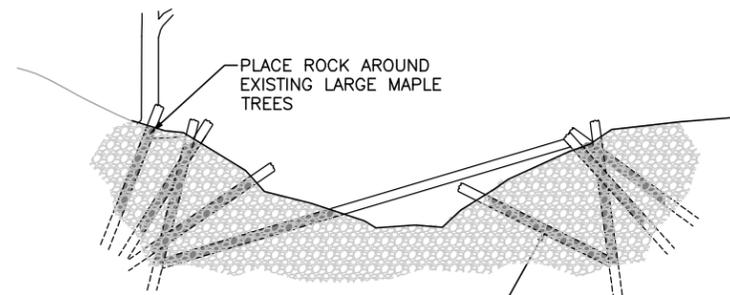


EXAMPLE OF ENGINEERED BOULDER CASCADE



CHANNEL SPANNING STRUCTURE - SECTION A-A'

SCALE: NTS



BURIED LOGS AND FINE SUBSTRATE (CLAY, SILT, SAND) IN CORE/SUBGRADE OF STRUCTURE TO REDUCE PERMEABILITY

CHANNEL SPANNING STRUCTURE - SECTION B-B'

SCALE: NTS



NATIVE BOULDERS ONSITE FROM OSCEOLA MUDFLOW (5,600 YRS AGO)



ONSITE TEMPLATE BOULDER CASCADE STATION 20+00

CHANNEL SPANNING STRUCTURE #4

1/7



NAME OR INITIALS AND DATE	GEOGRAPHIC INFORMATION
DESIGNED M. HRACHOVEC	LATITUDE 47°08'15"N
CHECKED T. ABBE	LONGITUDE 122°07'00"W
DRAWN G. MATSUMOTO	TN/SC/RG T19N/S13/R5E
CHECKED M. HRACHOVEC	DATE

SOUTH PRAIRIE CREEK FLOODPLAIN AND OFF CHANNEL RESTORATION

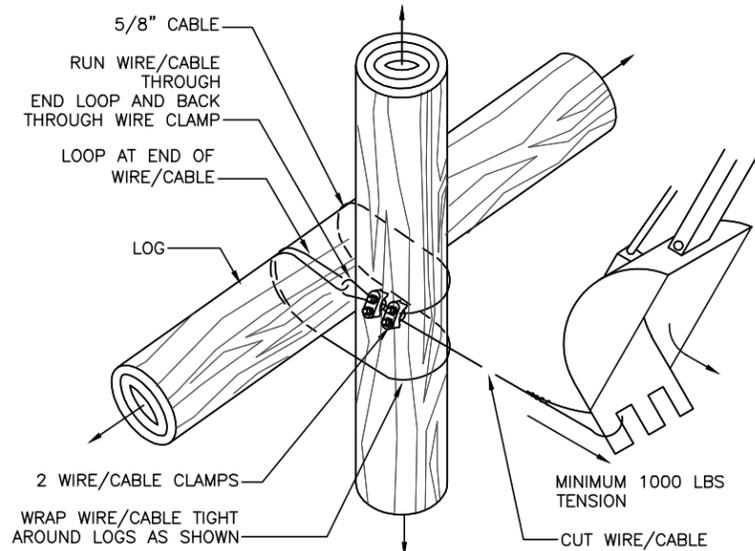
DETAILS 1

21

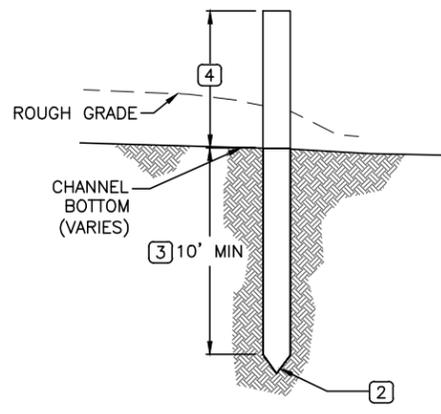
SHEET 21 OF 31

NA PROJECTS SOUTH PUGET SOUND SALMON ENHANCEMENT GROUP'S PRAIRIE CREEK DESIGN CAD DWGS - CURRENT DETAILS 1.DWG Donielle 5/1/2013 9:26:19 AM

Aug-19-2015 90% DESIGN



CABLE LASHING (1)
NOT TO SCALE

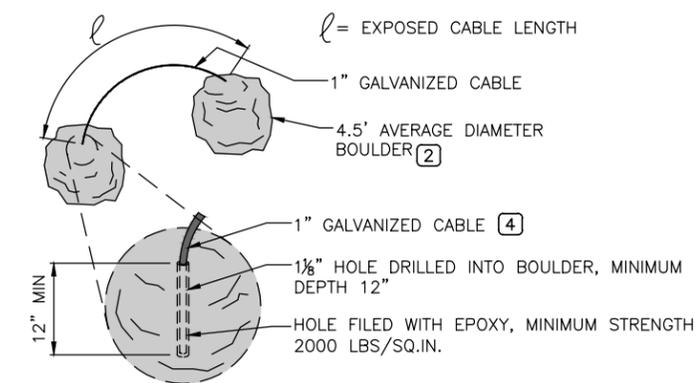


TYPE 2 PILE (2)
NOT TO SCALE

NOTES

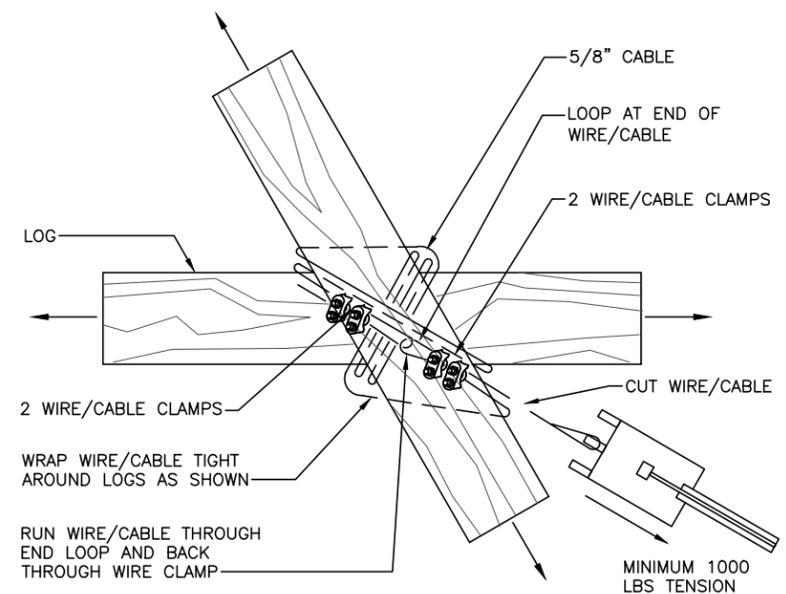
1. ALL POSTS TO BE INSTALLED USING VIBRATORY HAMMER/HOE PACK.
2. POINT ENDS OF POSTS AS NEEDED TO AID INSTALLATION.
3. MINIMUM DEPTH MAY BE ADJUSTED BASED ON RESISTANCE OF NATIVE MATERIAL AT ENGINEER'S DISCRETION.
4. FINISHED HEIGHT TO BE APPROX. 1' ABOVE ADJACENT LOG AT MOST UPSTREAM TYPE 3 UNITS AND 1'-2' ABOVE ADJACENT LOG ON DOWNSTREAM TYPE 3 UNITS.

ℓ (FT)	TOTAL LENGTH (FT)	QUANTITY PER TYPE 2 ELJ
4	6	-
6	8	3
8	10	-
12	14	-
	TOTAL	3



NOTES:

1. FOLLOWING EPOXY CURE, EACH ROCK COLLAR SHALL BE TESTED TO ENSURE PROPER BONDING.
2. ROCK DIAMETER REPRESENTS AVERAGE DIMENSION. MINIMUM ROCK DIAMETER 4-FT. MAXIMUM ROCK DIAMETER 5-FT. TOTAL WEIGHT OF ANY 1 ROCK COLLAR SHALL BE AT LEAST 8 TONS.
3. THE DRILL HOLES MUST BE THOROUGHLY CLEANED OF ALL ROCK POWDER. THE RESIN WILL NOT PROPERLY ADHERE TO THE ROCK IF THE HOLE IS INADEQUATELY CLEANED. CLEANING IS DONE BY POURING WATER INTO THE HOLE WHILE PLUNGING IT WITH A CIRCULAR NYLON BRUSH. THE HOLE IS CLEAN WHEN THE WATER PLUNGES OUT CLEAR AND FREE OF SEDIMENT.
4. THE CABLE MUST BE CUT CLEANLY SO THAT THE END CAN BE INSERTED INTO THE TIGHT FITTING ROCK HOLE.
5. THE CABLE SURFACE TO BE BONDED SHOULD BE FREE OF DIRT AND GREASE. USE NON OILED GALVANIZED CABLE.
6. THE HOLE MUST BE FILLED WITH RESIN SO THAT WHEN THE CABLE IS INSERTED, A SMALL AMOUNT OF RESIN WILL Ooze OUT OF THE TOP OF THE HOLE. ONCE THE CABLE IS INSERTED IN THE HOLE, IT SHOULD NOT BE DISTURBED UNTIL THE RESIN HAS CURED.
7. FOLLOW RESIN MANUFACTURING RECOMMENDATIONS FOR USE.
8. FOLLOWING ASSEMBLY AND TESTING OF THE FIRST TYPE 2 STRUCTURE, CABLE LENGTHS MAY BE ADJUSTED TO ENSURE CABLES ARE TAUT AND ROCK COLLARS TIGHTLY RESTRICTED LOG MEMBERS.



CROSS CABLE LASHING (3)
NOT TO SCALE

ROCK COLLAR (4)
NOT TO SCALE

N:\PROJECTS\SOUTH_PUGET_SOUND_SALMON_ENHANCEMENT_GROUPS\S_PRAIRIE_CREEK\DESIGN\CAD_DWGGS - CURRENT\DETAILS_2.DWG, Donnell, 5/1/2013, 9:26:19 AM



NAME OR INITIALS AND DATE	GEOGRAPHIC INFORMATION
DESIGNED M. HRACHOVEC	LATITUDE 47°08'15"N
CHECKED T. ABBE	LONGITUDE 122°07'00"W
DRAWN G. MATSUMOTO	TN/SC/RG T19N/S13/R5E
CHECKED M. HRACHOVEC	DATE

SOUTH PRAIRIE CREEK FLOODPLAIN AND OFF CHANNEL RESTORATION

DETAILS 2

22
SHEET 22 OF 31

Aug-19-2015 90% DESIGN

N:\PROJECTS\SOUTH PUGET SOUND SALMON ENHANCEMENT GROUP'S_SOUTH PRAIRIE CREEK\DESIGN\CAD_DWG_S - CURRENT\DETAILS_3.DWG, Donnell, 5/1/2013, 9:26:19 AM

TO BE DETERMINED



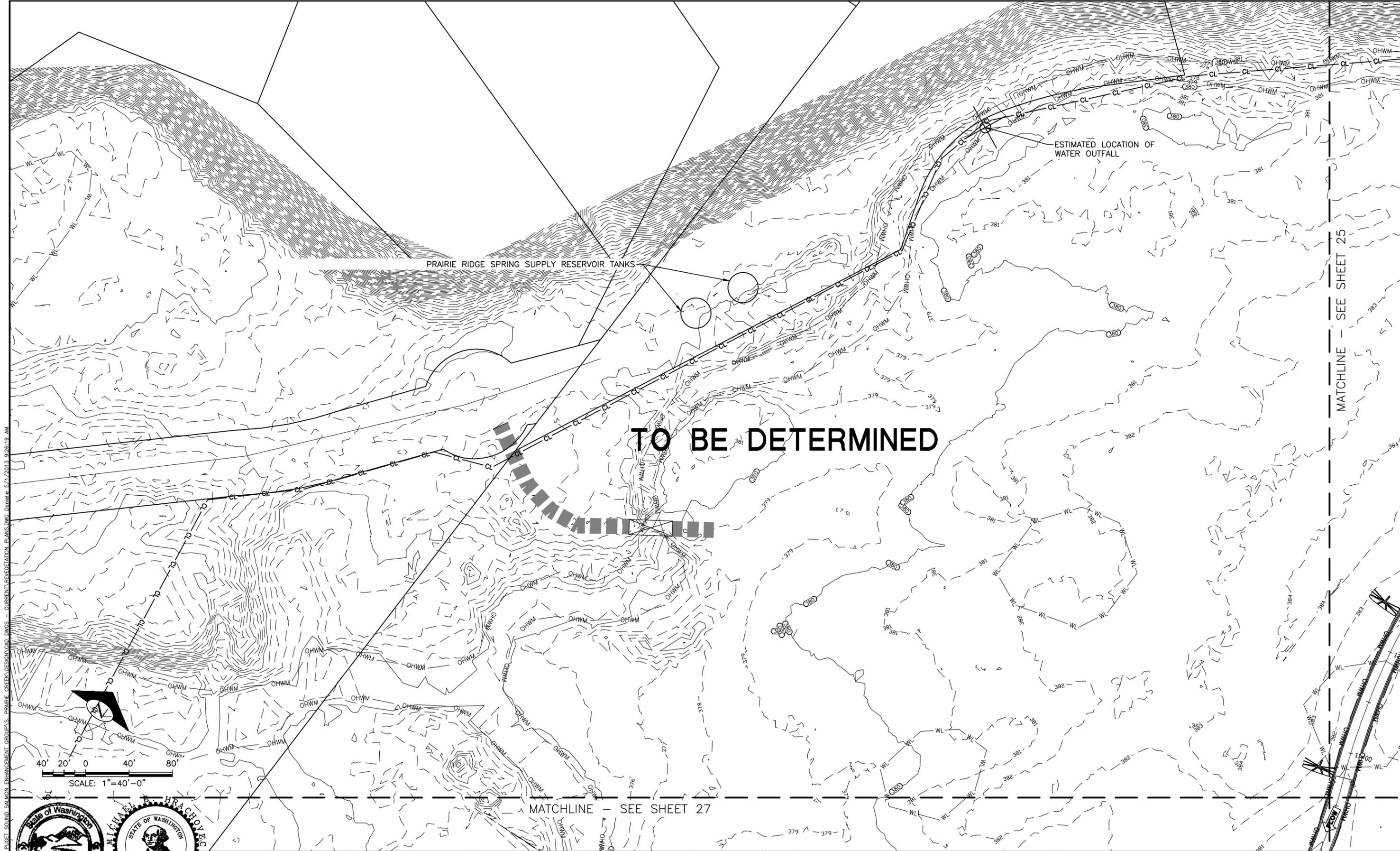
NAME OR INITIALS AND DATE	GEOGRAPHIC INFORMATION
DESIGNED M. HRACHOVEC	LATITUDE 47°08'15"N
CHECKED T. ABBE	LONGITUDE 122°07'00"W
DRAWN G. MATSUMOTO	TN/SC/RG T19N/S13/R5E
CHECKED M. HRACHOVEC	DATE -

SOUTH PRAIRIE CREEK FLOODPLAIN AND OFF CHANNEL RESTORATION

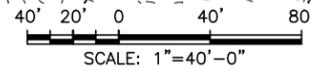
DETAILS 3

23
SHEET 23 OF 31

Aug-19-2015 9:0% DESIGN



N:\PROJECTS\SOUTH PUGET SOUND SALMON ENHANCEMENT GROUP\S. PRAIRIE CREEK\DESIGN\CAD_DWG_S - CURRENT REVEGETATION PLANS.DWG, Donielle, 5/1/2013, 9:26:19 AM



Timothy B. Abbe

Michael B. Hrachovec

PUYALLUP TRIBE OF INDIANS

SOUTH PUGET SOUND SALMON ENHANCEMENT GROUP

Pierce Conservation District

Pierce County

Natural Systems Design

NAME OR INITIALS AND DATE	DESIGNED M. HRACHOVEC
CHECKED T. ABBE	LATITUDE 47°08'15"N
DRAWN G. MATSUMOTO	LONGITUDE 122°07'00"W
CHECKED M. HRACHOVEC	TN/SC/RG T19N/S13/R5E
	DATE

SOUTH PRAIRIE CREEK FLOODPLAIN AND OFF CHANNEL RESTORATION

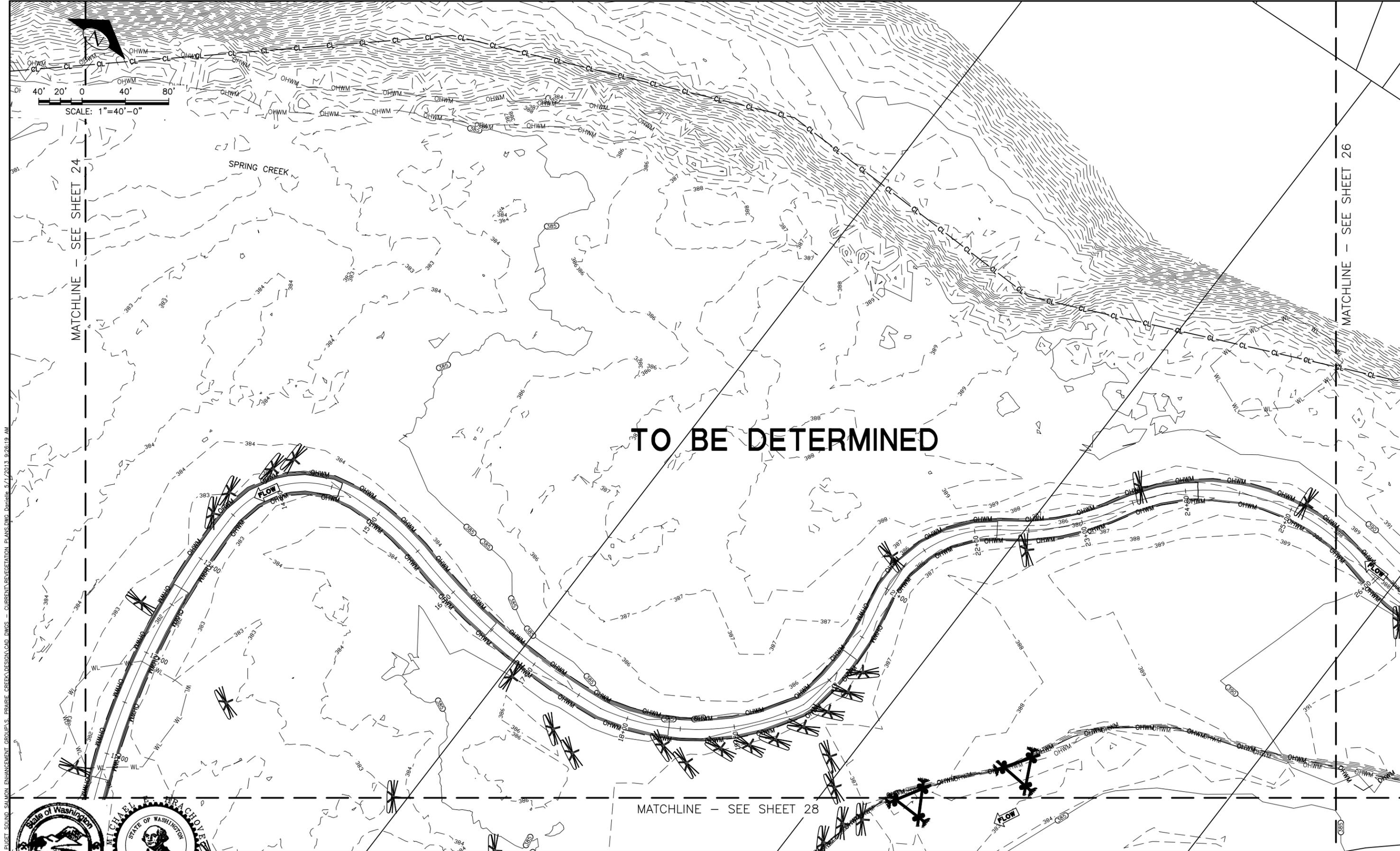
RE-VEGETATION PLANS - SITE 1

24
SHEET 24 OF 31

MATCHLINE - SEE SHEET 25

MATCHLINE - SEE SHEET 27

Aug-19-2015 90% DESIGN

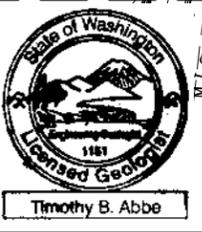


SCALE: 1"=40'-0"

TO BE DETERMINED

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Aug-19-2015 90% DESIGN



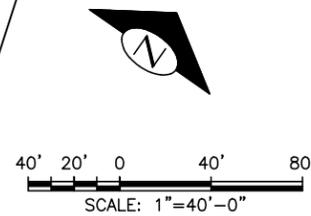
NAME OR INITIALS AND DATE
 DESIGNED M. HRACHOVEC
 CHECKED T. ABBE
 DRAWN G. MATSUMOTO
 CHECKED M. HRACHOVEC

GEOGRAPHIC INFORMATION
 LATITUDE 47°08'15"N
 LONGITUDE 122°07'00"W
 TN/SC/RG T19N/S13/R5E
 DATE

**SOUTH PRAIRIE CREEK
 FLOODPLAIN AND OFF
 CHANNEL RESTORATION**

**RE-VEGETATION PLANS -
 SITE 2**

25
 SHEET **25** OF **31**

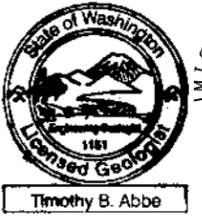


MATCHLINE - SEE SHEET 25

TO BE DETERMINED

MATCHLINE - SEE SHEET 29

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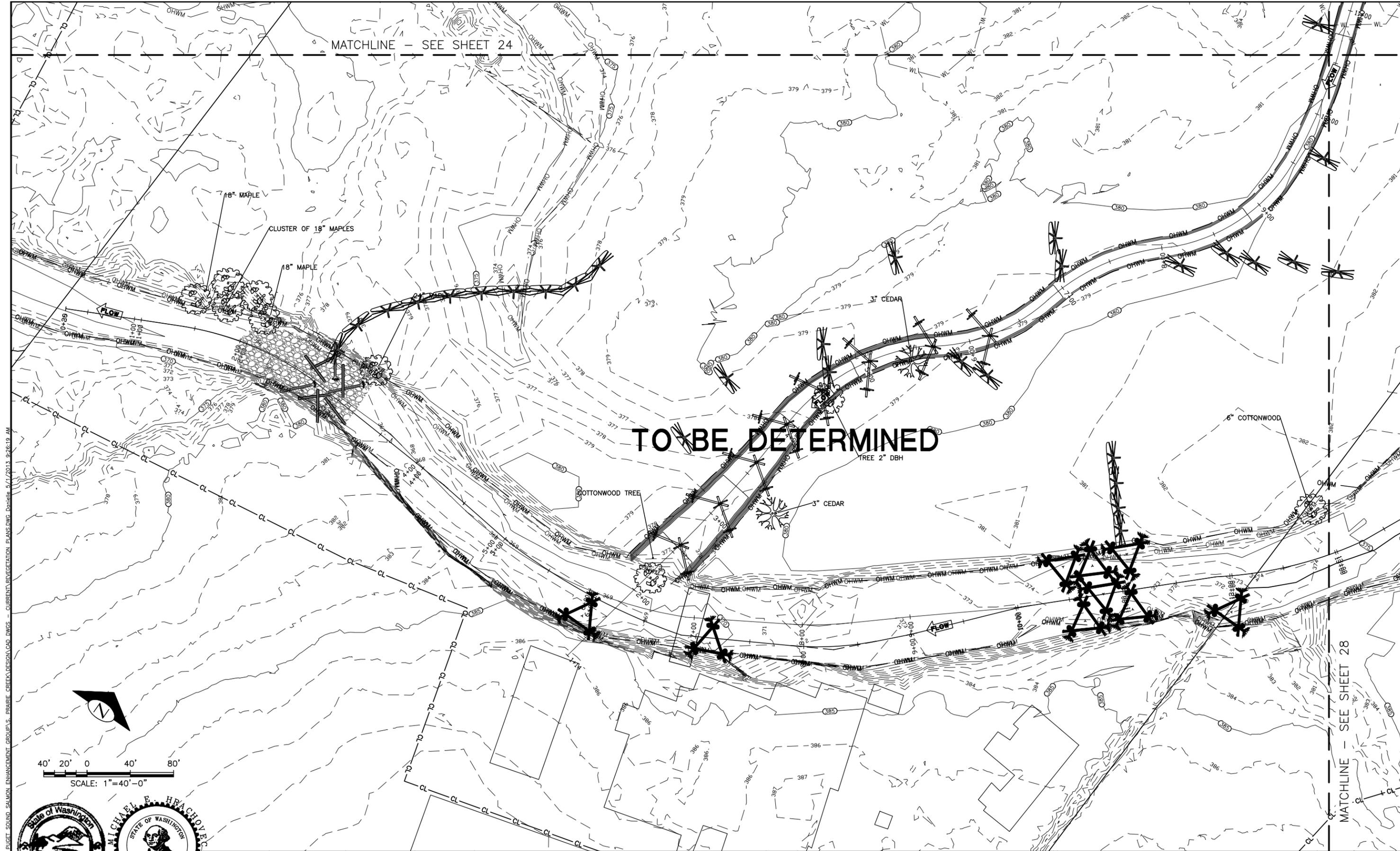
NAME OR INITIALS AND DATE	GEOGRAPHIC INFORMATION
DESIGNED M. HRACHOVEC	LATITUDE 47°08'15"N
CHECKED T. ABBE	LONGITUDE 122°07'00"W
DRAWN G. MATSUMOTO	TN/SC/RG T19N/S13/R5E
CHECKED M. HRACHOVEC	DATE

**SOUTH PRAIRIE CREEK
FLOODPLAIN AND OFF
CHANNEL RESTORATION**

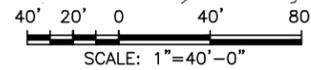
**RE-VEGETATION PLANS -
SITE 3**

26
SHEET **26** OF **31**

Aug-19-2015 90% DESIGN



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Timothy B. Abbe

Michael E. Hrachovec

PUYALLUP TRIBE OF INDIANS

Salmon ENHANCEMENT GROUP

Pierce County Conservation District

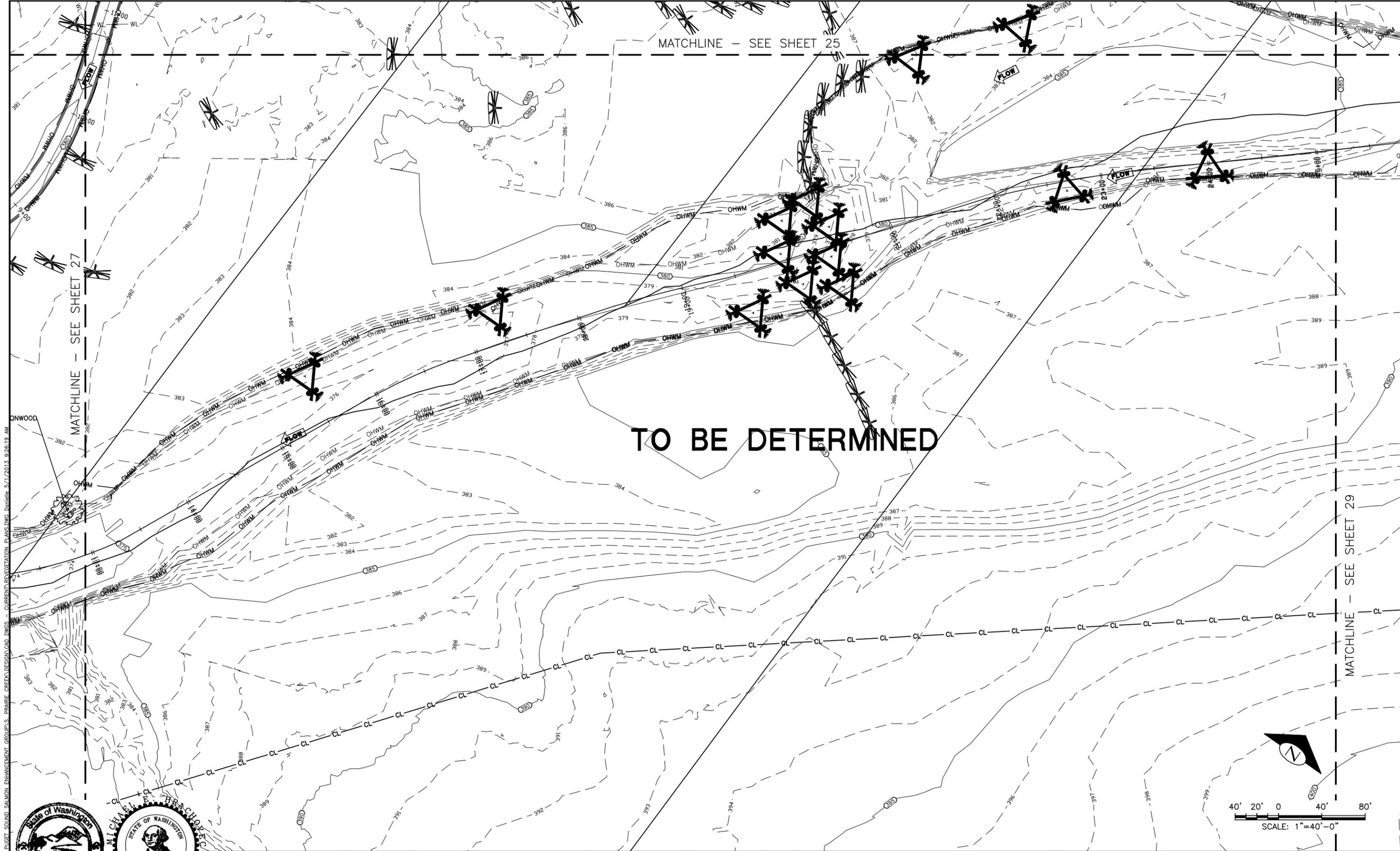
Natural Systems Design

NAME OR INITIALS AND DATE	GEOGRAPHIC INFORMATION
DESIGNED M. HRACHOVEC	LATITUDE 47°08'15"N
CHECKED T. ABBE	LONGITUDE 122°07'00"W
DRAWN G. MATSUMOTO	TN/SC/RG T19N/S13/R5E
CHECKED M. HRACHOVEC	DATE

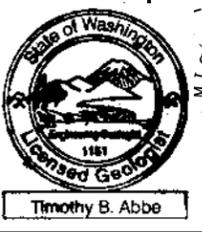
**SOUTH PRAIRIE CREEK
 FLOODPLAIN AND OFF
 CHANNEL RESTORATION**

**RE-VEGETATION PLANS
 - SITE 4**

Aug-19-2015 90% DESIGN



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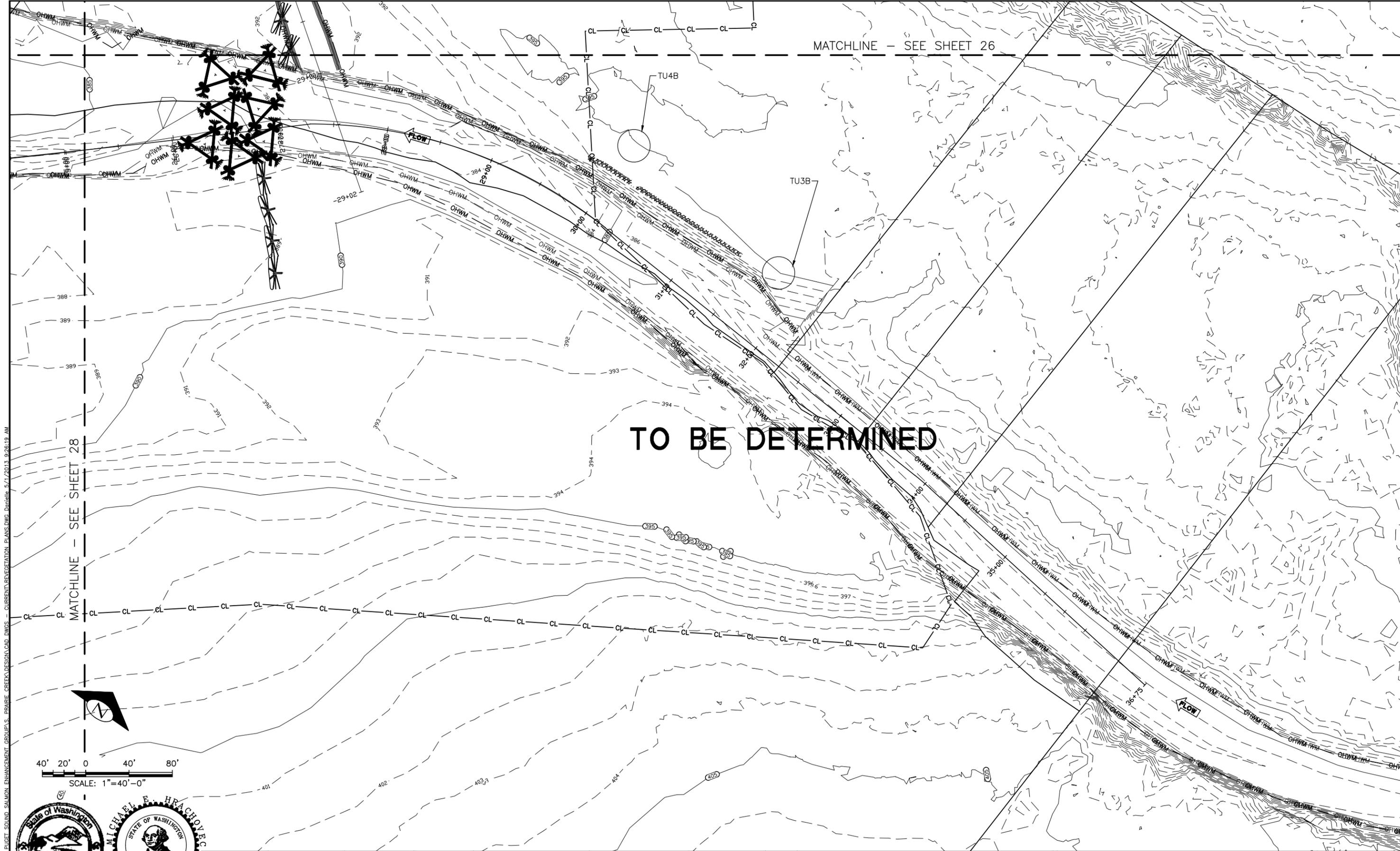


NAME OR INITIALS AND DATE	GEOGRAPHIC INFORMATION
DESIGNED M. HRACHOVEC	LATITUDE 47°08'15"N
CHECKED T. ABBE	LONGITUDE 122°07'00"W
DRAWN G. MATSUMOTO	TN/SC/RG T19N/S13/R5E
CHECKED M. HRACHOVEC	DATE

**SOUTH PRAIRIE CREEK
FLOODPLAIN AND OFF
CHANNEL RESTORATION**

**RE-VEGETATION PLANS
- SITE 5**

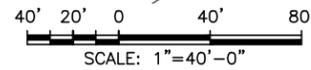
Aug-19-2015 90% DESIGN



TO BE DETERMINED

MATCHLINE - SEE SHEET 26

MATCHLINE - SEE SHEET 28



NAME OR INITIALS AND DATE	GEOGRAPHIC INFORMATION
DESIGNED M. HRACHOVEC	LATITUDE 47°08'15"N
CHECKED T. ABBE	LONGITUDE 122°07'00"W
DRAWN G. MATSUMOTO	TN/SC/RG T19N/S13/RSE
CHECKED M. HRACHOVEC	DATE

**SOUTH PRAIRIE CREEK
FLOODPLAIN AND OFF
CHANNEL RESTORATION**

**RE-VEGETATION PLANS
- SITE 6**

N:\PROJECTS\SOUTH PRAIRIE CREEK RESTORATION\GROUP 6_SOUTH PRAIRIE CREEK RESTORATION\PLANS\DWG\DESIGN\CAD_DWG_S - CURRENT VEGETATION.PLAN.DWG, Donielle, 5/1/2013, 9:26:19 AM

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Aug-19-2015

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TO BE DETERMINED



NAME OR INITIALS AND DATE	GEOGRAPHIC INFORMATION
DESIGNED M. HRACHOVEC	LATITUDE 47°08'15"N
CHECKED T. ABBE	LONGITUDE 122°07'00"W
DRAWN G. MATSUMOTO	TN/SC/RG T19N/S13/R5E
CHECKED M. HRACHOVEC	DATE -

SOUTH PRAIRIE CREEK FLOODPLAIN AND OFF CHANNEL RESTORATION

PLANT LISTS

30
SHEET 30 OF 31

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TO BE DETERMINED



NAME OR INITIALS AND DATE	GEOGRAPHIC INFORMATION
DESIGNED M. HRACHOVEC	LATITUDE 47°08'15"N
CHECKED T. ABBE	LONGITUDE 122°07'00"W
DRAWN G. MATSUMOTO	TN/SC/RG T19N/S13/R5E
CHECKED M. HRACHOVEC	DATE -

SOUTH PRAIRIE CREEK FLOODPLAIN AND OFF CHANNEL RESTORATION

PLANTING DETAILS

31
SHEET 31 OF 31

Aug-19-2015 90% DESIGN