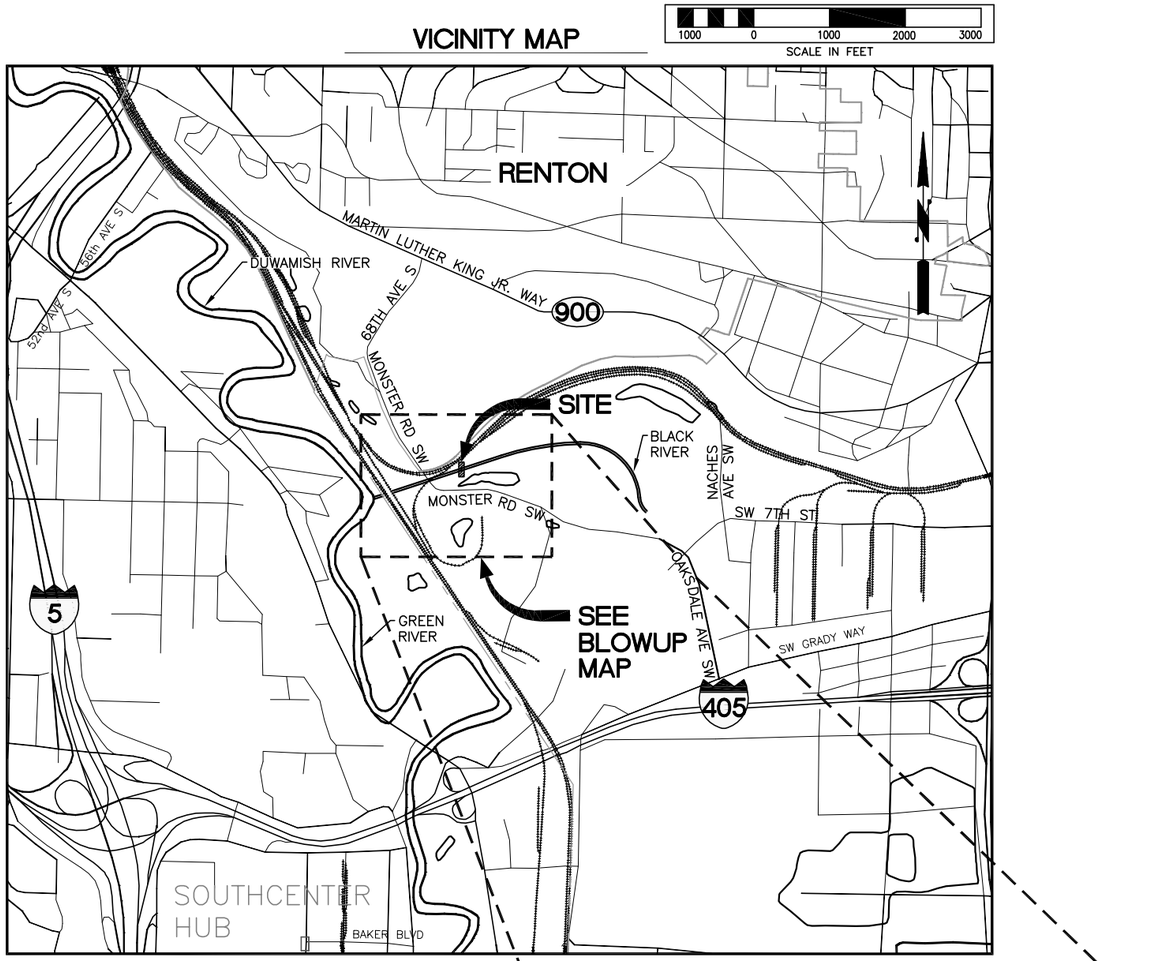
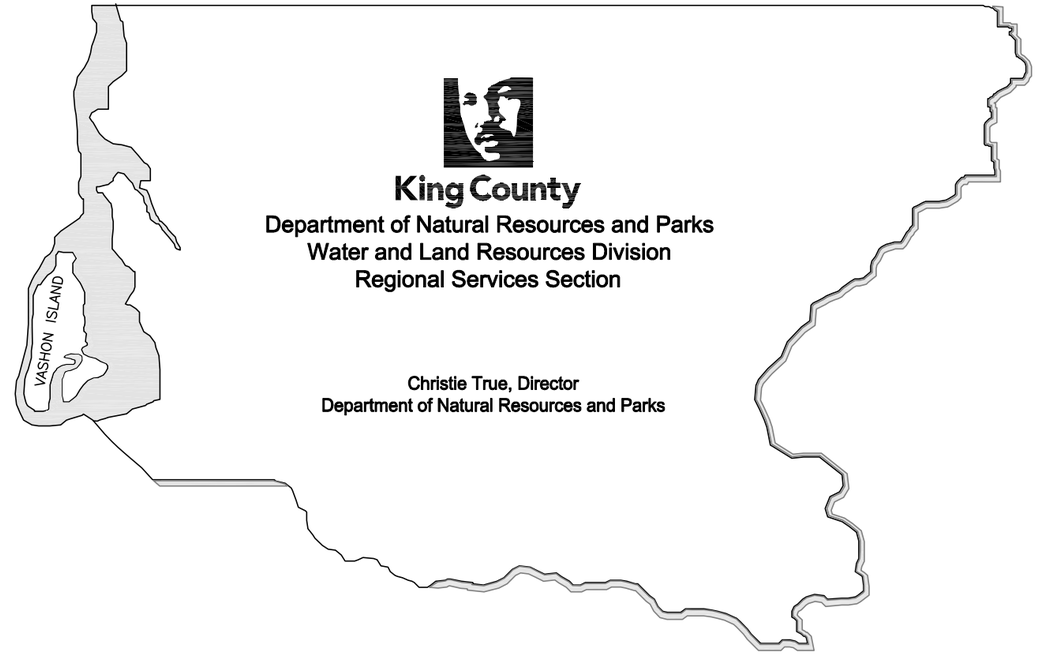
## VICINITY MAP




King County
Department of Natural Resources and Parks
Water and Land Resources Division
Regional Services Section

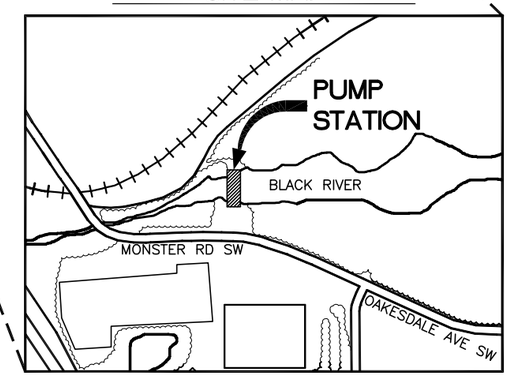
Christie True, Director
Department of Natural Resources and Parks

# BLACK RIVER PUMP STATION
## SEDIMENT REMOVAL

## INDEX

| SHEET | DESCRIPTION |
|---|---|
| G1 | TITLE SHEET |
| G2 | SITE PLAN AND SURVEY NOTES |
| CE1 | TEMPORARY EROSION AND SEDIMENT CONTROL |
| CE2 | TEMPORARY EROSION AND SEDIMENT CONTROL DETAILS |
| C1 | FOREBAY SEDIMENT REMOVAL PLAN |
| C2 | STOCKPILE, DECANT, WATER TREATMENT AND STAGING AREAS |
| C3 | STOCKPILING, DECANTING STAGING DETAILS |
| L1 | REVEGITATION AND SITE STABILIZATION |
| L2 | PLANTING SCHEDULE AND DETAILS |

## SITE MAP




SITE LOCATION

- MONSTER RD. SW. RENTON, WA.

## NOTE AND DETAIL/SECTION REFERENCING

A / 5 — DETAIL REFERENCE LETTER; DRAWING ON WHICH DETAIL IS SHOWN

1 / 5 — SECTION REFERENCE NUMBER; DRAWING ON WHICH SECTION IS SHOWN

SECTION/DETAIL 1 / 5 — SECTION/DETAIL REFERENCE NUMBER; DRAWING FROM WHICH SECTION/DETAIL WAS TAKEN
SCALE: 1"=XX'

"–" INDICATES THAT THE DETAIL/SECTION IS SHOWN ON THE SAME DRAWING

"TYP" INDICATES THAT THE DETAIL/SECTION IS UNIFORMLY TYP THROUGHOUT PROJECT EXCEPT WHERE OTHERWISE NOTED

"VAR" SPECIFIES THAT DETAIL/SECTION WAS TAKEN FROM VARIOUS DRAWINGS

DATUM
NAVD 88

**CALL 2 WORKING DAYS BEFORE YOU DIG**
**1-800-424-5555**
(UNDERGROUND UTILITY LOCATIONS ARE APPROX.)

| | | | |
|---|---|---|---|
| FIELD BOOK: | -- | -- | |
| SURVEYED: | -- | -- | |
| SURVEY BASE MAP: | -- | -- | |
| CHECKED: | -- | -- | |

| NUM. | REVISION | BY | DATE |
|---|---|---|---|

| | | |
|---|---|---|
| APPROVED: | TOM BEAN | 3/2016 |
| PROJECT MANAGER: | TOM BEAN | 3/2016 |
| DESIGNED: | ERIK PETERS | 3/2016 |
| DESIGN ENTERED: | KAY KITAMURA | 3/2016 |

PROJECT No. 1120590
CONTRACT No. C01043C16

ERIK G. PETERS — STATE OF WASHINGTON — 37496 — REGISTERED PROFESSIONAL ENGINEER

King County
Department of Natural Resources and Parks
Water and Land Resources Division
Regional Services Section
*Christie True, Director*

**BLACK RIVER PUMP STATION SEDIMENT REMOVAL**

**TITLE SHEET**

SHEET G1 OF 9 SHEETS

**2011-06**

I:\2011-06 BlackRivPumpSta_Sed Remove\Black Riv Pump Station_Sed Removal\1044885_COVER.dwg, 3/7/2016 2:28:04 PM, Bluebeam PDF10 Printer HighRes.pc3

## SURVEY NOTES:

1. DATUM:
HORIZONTAL DATUM: WASHINGTON STATE COORDINATE SYSTEM, NAD 83/91,NORTH ZONE PER GPS TIES TO WSRN.
VERTICAL DATUM: NAVD88 PER GPS TIES TO WSRN.

2. GPS CONTROL: (LOCATIONS NOT SHOWN ON MAP)
PMX #9001
FOUND 1 3/4" BRASS DISK WITH PUNCH MARK IN CASE. CENTERLINE PC MONUMENT IN MONSTER RD. EAST OF THE BLACK RIVER BRIDGE.
N 176345.687 E 1290905.012 ELEV. 25.59

PMX #9002
FOUND LEAD AND TACK IN NW. CORNERBLACK RIVER BRIDGE FOR MONSTER RD.
N 176477.487 E 1290501.985 ELEV. 34.95

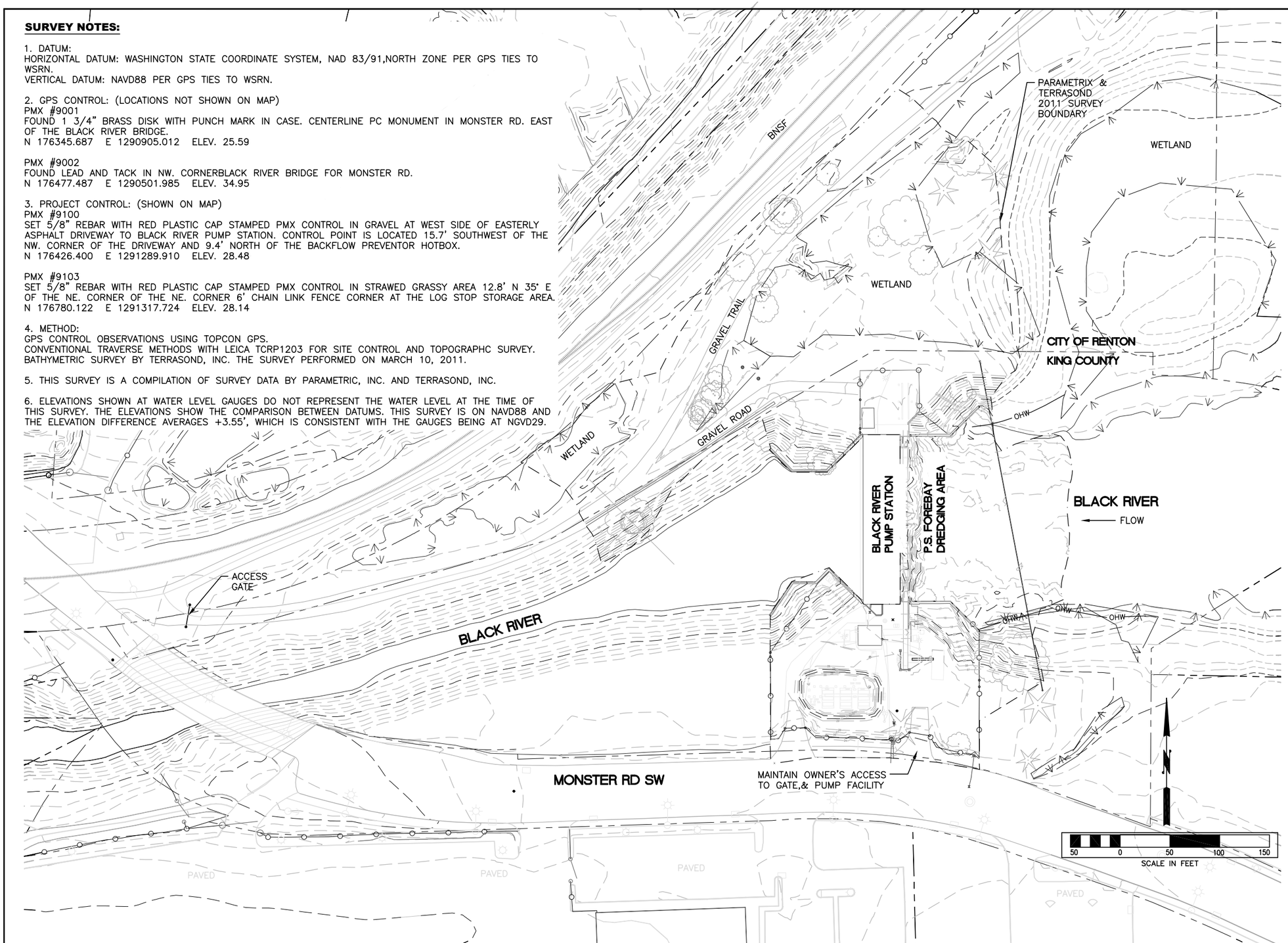
3. PROJECT CONTROL: (SHOWN ON MAP)
PMX #9100
SET 5/8" REBAR WITH RED PLASTIC CAP STAMPED PMX CONTROL IN GRAVEL AT WEST SIDE OF EASTERLY ASPHALT DRIVEWAY TO BLACK RIVER PUMP STATION. CONTROL POINT IS LOCATED 15.7' SOUTHWEST OF THE NW. CORNER OF THE DRIVEWAY AND 9.4' NORTH OF THE BACKFLOW PREVENTOR HOTBOX.
N 176426.400 E 1291289.910 ELEV. 28.48

PMX #9103
SET 5/8" REBAR WITH RED PLASTIC CAP STAMPED PMX CONTROL IN STRAWED GRASSY AREA 12.8' N 35° E OF THE NE. CORNER OF THE NE. CORNER 6' CHAIN LINK FENCE CORNER AT THE LOG STOP STORAGE AREA.
N 176780.122 E 1291317.724 ELEV. 28.14

4. METHOD:
GPS CONTROL OBSERVATIONS USING TOPCON GPS.
CONVENTIONAL TRAVERSE METHODS WITH LEICA TCRP1203 FOR SITE CONTROL AND TOPOGRAPHC SURVEY.
BATHYMETRIC SURVEY BY TERRASOND, INC. THE SURVEY PERFORMED ON MARCH 10, 2011.

5. THIS SURVEY IS A COMPILATION OF SURVEY DATA BY PARAMETRIC, INC. AND TERRASOND, INC.

6. ELEVATIONS SHOWN AT WATER LEVEL GAUGES DO NOT REPRESENT THE WATER LEVEL AT THE TIME OF THIS SURVEY. THE ELEVATIONS SHOW THE COMPARISON BETWEEN DATUMS. THIS SURVEY IS ON NAVD88 AND THE ELEVATION DIFFERENCE AVERAGES +3.55', WHICH IS CONSISTENT WITH THE GAUGES BEING AT NGVD29.




## NOTES:

1. MAINTAIN OWNER'S ACCESS TO GATES AND PUMP FACILITY.
2. REMOVE TEMPORARY ACCESS ROADS AND RESTORE SITE UPON PROJECT COMPLETION.

## SYMBOL LEGEND

- FOUND MONUMENT AS NOTED
- CATCH BASIN
- CATCH BASIN WITH SOLID LID
- MANHOLE, USE UNKNOWN
- U — VAULT, USE UNKNOWN
- LIGHT POLE
- ELECTRICAL PANEL
- P — POWER VAULT
- POWER HANDHOLE
- T — TELEPHONE HANDHOLE
- FIRE HYDRANT
- WATER VALVE
- WATER METER
- W — WATER VAULT
- GAS METER ASSEMBLY
- SOIL BORE TEST LOCATION
- CONIFER TREE, TYPE AND DIAMETER AS NOTED
- DECIDUOUS TREE, TYPE (IF KNOWN) AND DIAMETER AS NOTED
- 8' CHAIN LINK FENCE (UNLESS NOTED OTHERWISE)
- G — GAS LINE
- OHW — ORDINARY HIGH WATER LEVEL (OHW)
- P — UNDERGROUND POWER
- T — UNDERGROUND TELECOMM
- W — WATER MAIN AND SIDE SERVICE
- × 11.56 — SPOT ELEVATIONS
- 4 — EXISTING CONTOUR
- 4 — PROPOSED CONTOUR
- WETLAND DELINEATION
- CONCRETE
- CONCRETE (UNDER WATER)
- RIPRAP

**CALL 2 WORKING DAYS BEFORE YOU DIG**
**1-800-424-5555**
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Department of Natural Resources and Parks
Water and Land Resources Division
Regional Services Section
*Christie True, Director*

**BLACK RIVER PUMP STATION SEDIMENT REMOVAL**

**SITE PLAN AND SURVEY NOTES**

SHEET **G2** OF **9** SHEETS

**2011-06**

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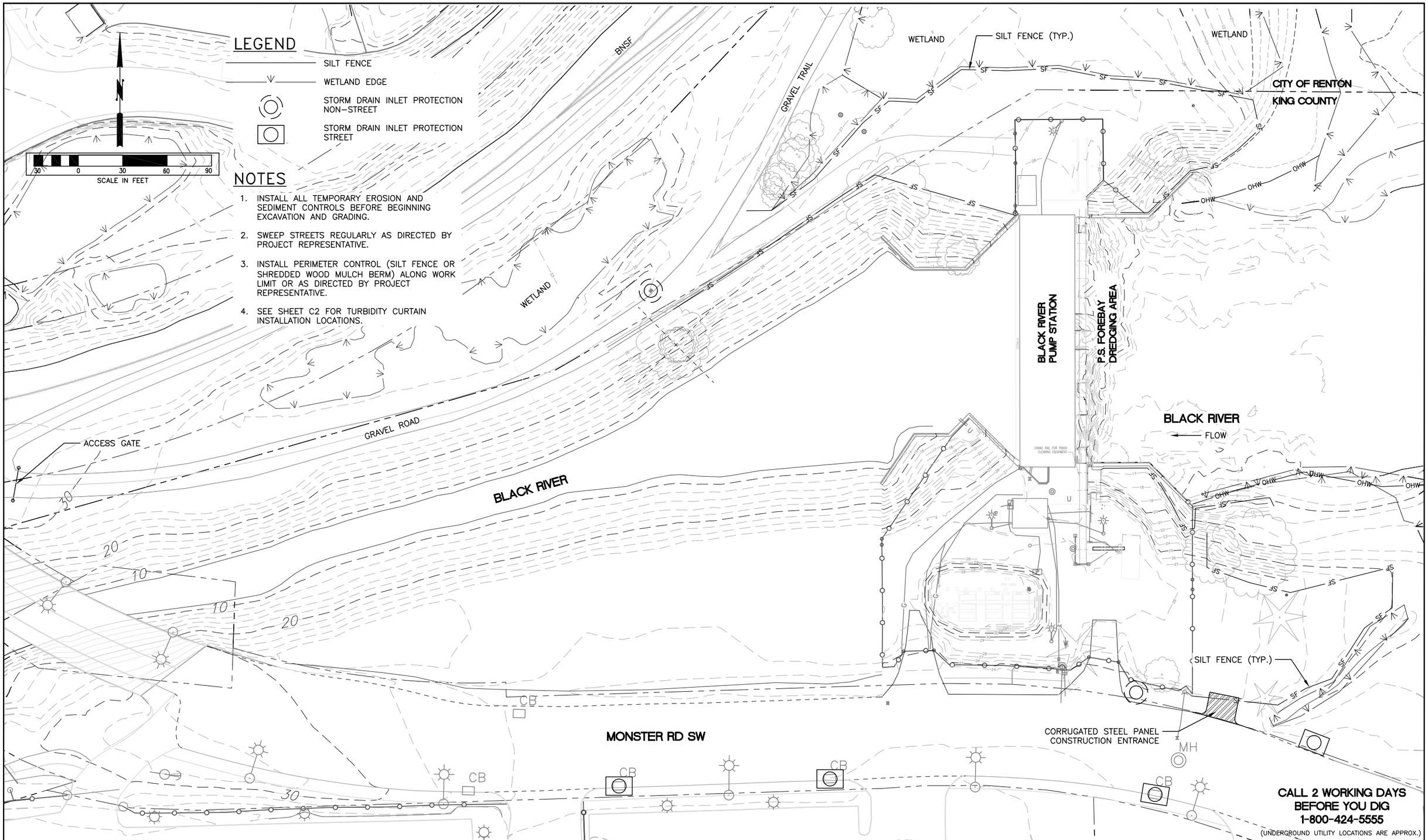


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**BLACK RIVER PUMP STATION SEDIMENT REMOVAL**

**TEMPORARY EROSION AND SEDIMENT CONTROL**

SHEET **CE1** OF **9** SHEETS

**2011-06**

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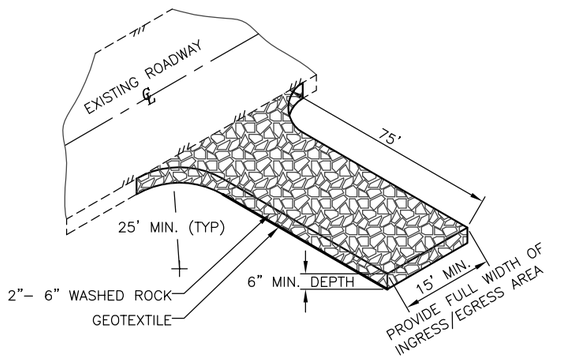
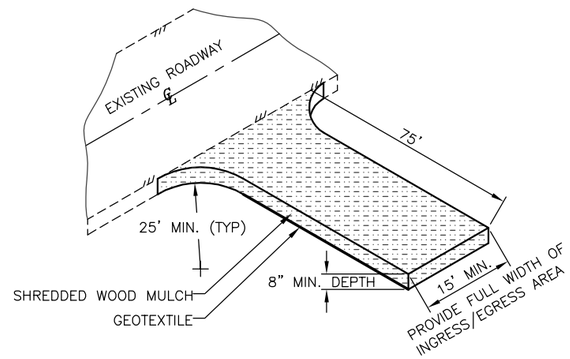


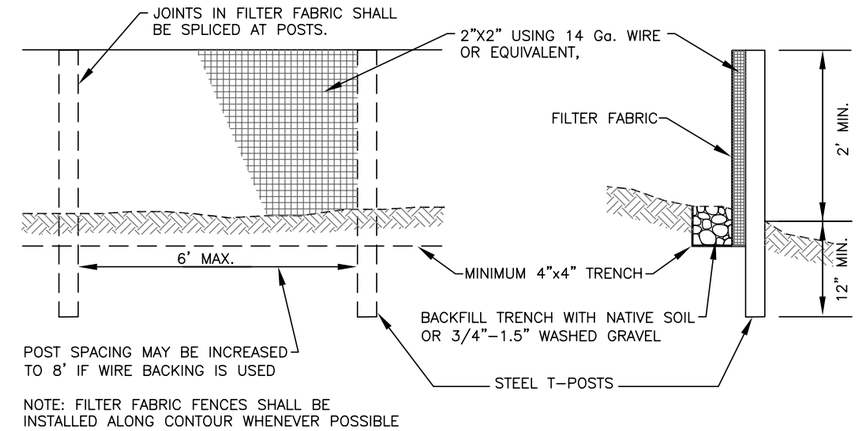

TEMPORARY ROCK CONSTRUCTION ENTRANCE (A/-)

NTS



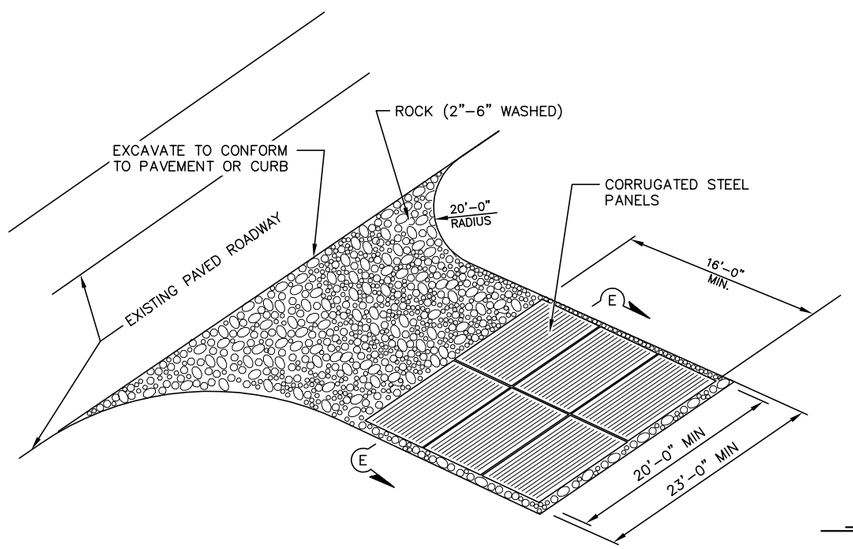

TEMPORARY SHREDDED WOOD MULCH CONSTRUCTION ENTRANCE (B/-)

NTS



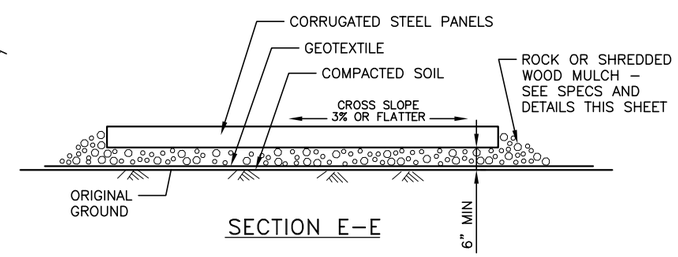

SILT FENCE AND WIRE BACKED SILT FENCE DETAIL (C/-)

NTS

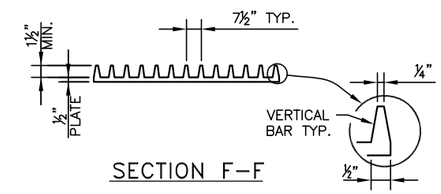



TEMPORARY CORRUGATED STEEL PANEL CONSTRUCTION ENTRANCE (D/-)

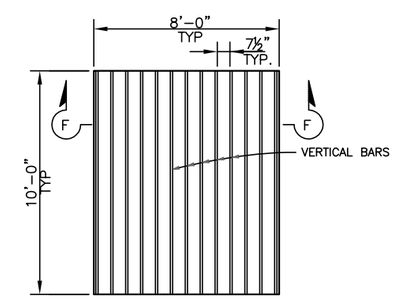
NTS




SECTION E–E




SECTION F–F




TYPICAL CORRUGATED STEEL PANEL DETAIL

**CALL 2 WORKING DAYS BEFORE YOU DIG**
**1-800-424-5555**
(UNDERGROUND UTILITY LOCATIONS ARE APPROX.)

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| PROJECT MANAGER: | TOM BEAN | 3/2016 |
| DESIGNED: | ERIK PETERS | 3/2016 |
| DESIGN ENTERED: | KAY KITAMURA | 3/2016 |

PROJECT No. 1120590
CONTRACT No. C01043C16

ERIK G. PETERS — STATE OF WASHINGTON — 37496 — REGISTERED PROFESSIONAL ENGINEER

King County
Department of Natural Resources and Parks
Water and Land Resources Division
Regional Services Section
*Christie True, Director*

**BLACK RIVER PUMP STATION SEDIMENT REMOVAL**

**TEMPORARY EROSION AND SEDIMENT CONTROL DETAILS**

SHEET **CE2** OF **9** SHEETS

**2011-06**

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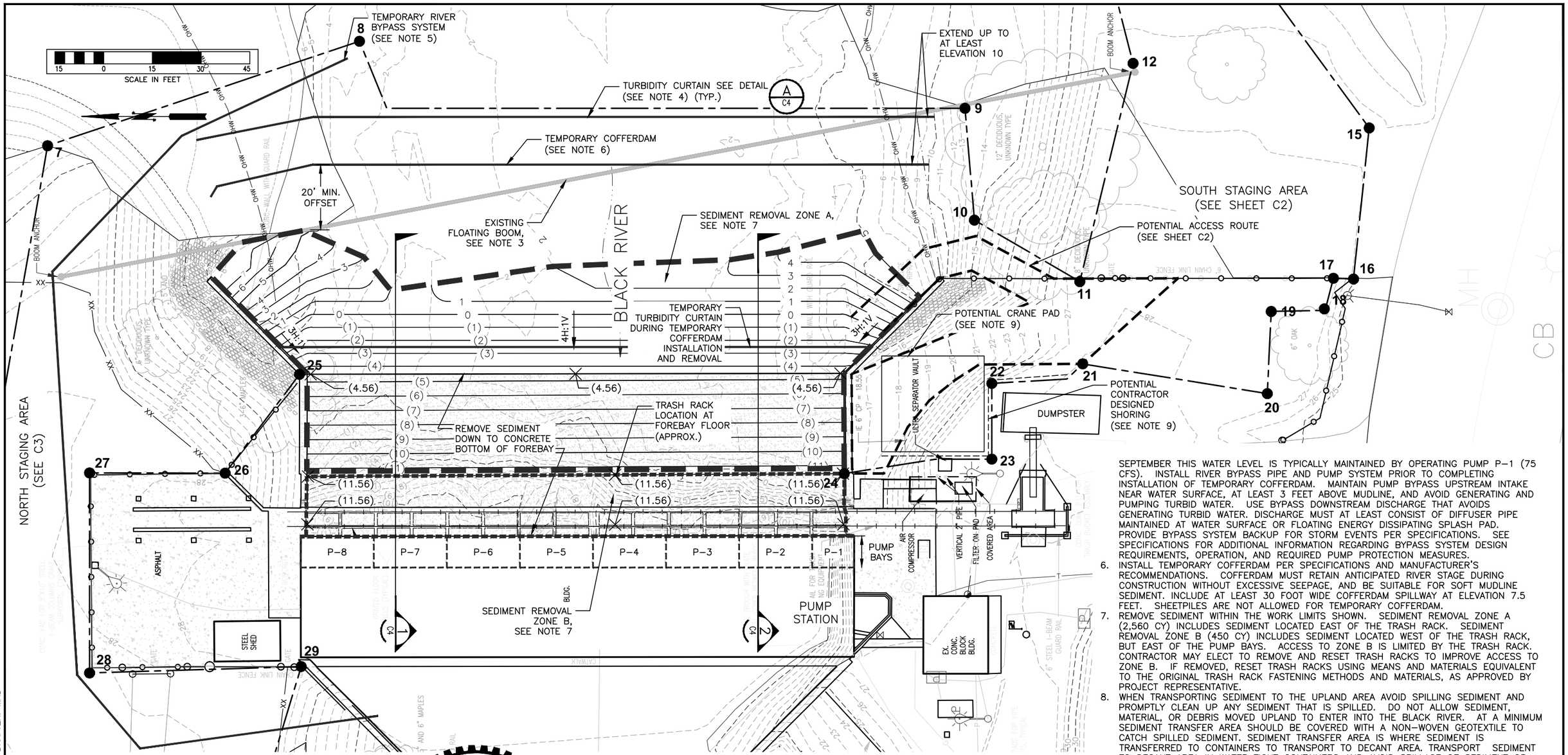


## LEGEND:

- LIMITS OF WORK
- CONTROL POINT (SEE C2)
- OHW — OHW — ORDINARY HIGH WATERLINE

## CONSTRUCTION NOTES:

1. SEE SHEET G2 FOR SURVEY NOTES
2. MAINTAIN ACCESS TO AND PROTECT PUMP STATION AND ASSOCIATED FEATURES DURING SEDIMENT REMOVAL OPERATIONS.
3. RELOCATE FLOATING BOOM AS NEEDED FOR SEDIMENT REMOVAL OPERATIONS. RETURN BOOM TO EXISTING LOCATION AT END OF WORK.
4. INSTALL APPROPRIATE TURBIDITY CONTROL MEASURES TO LIMIT THE RELEASE OF TURBID WATER AND SEDIMENT OUTSIDE OF THE SEDIMENT REMOVAL AREA TO MEET SPECIFIED WATER QUALITY REQUIREMENTS FOR THE PROJECT. AT A MINIMUM, INSTALL ONE OR MORE ROWS OF TYPE II TURBIDITY CURTAIN (SEE DETAIL A, SHEET C3) UPSTREAM OF THE SEDIMENT REMOVAL AREA, BEFORE INSTALLING TEMPORARY COFFERDAM, AND EXTEND ALL TURBIDITY CURTAINS THE FULL DEPTH OF THE WATER COLUMN.
5. MAINTAIN WATER LEVEL UPSTREAM OF THE WORK AREA BETWEEN ELEVATION +6 FEET AND +7.5 FEET DURING SEDIMENT REMOVAL OPERATIONS. BETWEEN JULY AND SEPTEMBER THIS WATER LEVEL IS TYPICALLY MAINTAINED BY OPERATING PUMP P-1 (75 CFS). INSTALL RIVER BYPASS PIPE AND PUMP SYSTEM PRIOR TO COMPLETING INSTALLATION OF TEMPORARY COFFERDAM. MAINTAIN PUMP BYPASS UPSTREAM INTAKE NEAR WATER SURFACE, AT LEAST 3 FEET ABOVE MUDLINE, AND AVOID GENERATING AND PUMPING TURBID WATER. USE BYPASS DOWNSTREAM DISCHARGE THAT AVOIDS GENERATING TURBID WATER. DISCHARGE MUST AT LEAST CONSIST OF DIFFUSER PIPE MAINTAINED AT WATER SURFACE OR FLOATING ENERGY DISSIPATING SPLASH PAD. PROVIDE BYPASS SYSTEM BACKUP FOR STORM EVENTS PER SPECIFICATIONS. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION REGARDING BYPASS SYSTEM DESIGN REQUIREMENTS, OPERATION, AND REQUIRED PUMP PROTECTION MEASURES.
6. INSTALL TEMPORARY COFFERDAM PER SPECIFICATIONS AND MANUFACTURER'S RECOMMENDATIONS. COFFERDAM MUST RETAIN ANTICIPATED RIVER STAGE DURING CONSTRUCTION WITHOUT EXCESSIVE SEEPAGE, AND BE SUITABLE FOR SOFT MUDLINE SEDIMENT. INCLUDE AT LEAST 30 FOOT WIDE COFFERDAM SPILLWAY AT ELEVATION 7.5 FEET. SHEETPILES ARE NOT ALLOWED FOR TEMPORARY COFFERDAM.
7. REMOVE SEDIMENT WITHIN THE WORK LIMITS SHOWN. SEDIMENT REMOVAL ZONE A (2,560 CY) INCLUDES SEDIMENT LOCATED EAST OF THE TRASH RACK. SEDIMENT REMOVAL ZONE B (450 CY) INCLUDES SEDIMENT LOCATED WEST OF THE TRASH RACK, BUT EAST OF THE PUMP BAYS. ACCESS TO ZONE B IS LIMITED BY THE TRASH RACK. CONTRACTOR MAY ELECT TO REMOVE AND RESET TRASH RACKS TO IMPROVE ACCESS TO ZONE B. IF REMOVED, RESET TRASH RACKS USING MEANS AND MATERIALS EQUIVALENT TO THE ORIGINAL TRASH RACK FASTENING METHODS AND MATERIALS, AS APPROVED BY PROJECT REPRESENTATIVE.
8. WHEN TRANSPORTING SEDIMENT TO THE UPLAND AREA AVOID SPILLING SEDIMENT AND PROMPTLY CLEAN UP ANY SEDIMENT THAT IS SPILLED. DO NOT ALLOW SEDIMENT, MATERIAL, OR DEBRIS MOVED UPLAND TO ENTER INTO THE BLACK RIVER. AT A MINIMUM SEDIMENT TRANSFER AREA SHOULD BE COVERED WITH A NON-WOVEN GEOTEXTILE TO CATCH SPILLED SEDIMENT. SEDIMENT TRANSFER AREA IS WHERE SEDIMENT IS TRANSFERRED TO CONTAINERS TO TRANSPORT TO DECANT AREA. TRANSPORT SEDIMENT TO DECANT AREA IN WATER TIGHT CONTAINERS AND AVOID SPILLAGE OF SEDIMENT OR WATER.
9. CONSTRUCT A TEMPORARY CRANE PAD AND ACCESS ROAD AS NEEDED FOR SEDIMENT REMOVAL OPERATIONS. CONTRACTOR MUST DESIGN SHORING SYSTEM, IF REQUIRED, ACCORDING TO SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THAT EXISTING WINGWALL HAS SUFFICIENT STRUCTURAL CAPACITY TO SUPPORT ALL EQUIPMENT THAT WILL USE THE CRANE PAD PER THE SPECIFICATIONS.
10. TRANSPORT AND DISPOSE OF SEDIMENT AT AN APPROVED LANDFILL IN ACCORDANCE WITH SPECIFICATIONS. PRIOR TO DISPOSAL, DEWATER SEDIMENT AS NEEDED IN THE UPLAND STOCKPILE AND DECANT AREA SOUTH OF THE PUMP STATION, SEE SHEET C3.
11. PLACE A SAND-GRAVEL CAP OVER THE FINAL DREDGE SURFACE IN ZONE A EAST OF THE FOREBAY CONCRETE APRON, SEE SHEET C3. THE SAND-GRAVEL CAP MAY BE ELIMINATED, AT THE DIRECTION OF THE PROJECT REPRESENTATIVE, IF THE DREDGED SURFACE HAS LOWER CONCENTRATIONS OF THE CHEMICALS OF CONCERN, INDICATED IN THE SPECIFICATIONS, THAN THE DREDGED SEDIMENT.

JOHN N. BINGHAM
STATE OF WASHINGTON
37844
REGISTERED PROFESSIONAL ENGINEER
John Bingham
3/1/16

| | | | | | | |
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| FIELD BOOK: | XX | XX-XXXX | NUM. | REVISION | BY | DATE |
| SURVEYED: | XX | XX-XXXX | | | | |
| SURVEY BASE MAP: | XX | XX-XXXX | | | | |
| CHECKED: | XX | XX-XXXX | | | | |

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| APPROVED: | | |
| PROJECT MANAGER: | T. BEAN, E. PETERS | 3/2016 |
| DESIGNED: | J. BINGHAM | 3/2016 |
| CHECKED: | G. HORVITZ | 3/2016 |
| DESIGN ENTERED: | E. LINDQUIST | 3/2016 |

PROJECT No. KC: 1120590 HC: 1789407

CONTRACT No. C01043C16

HARTCROWSER

King County
Department of Natural Resources and Parks
Water and Land Resources Division
Regional Services Section
*Christie True, Director*

**BLACK RIVER PUMP STATION SEDIMENT REMOVAL**

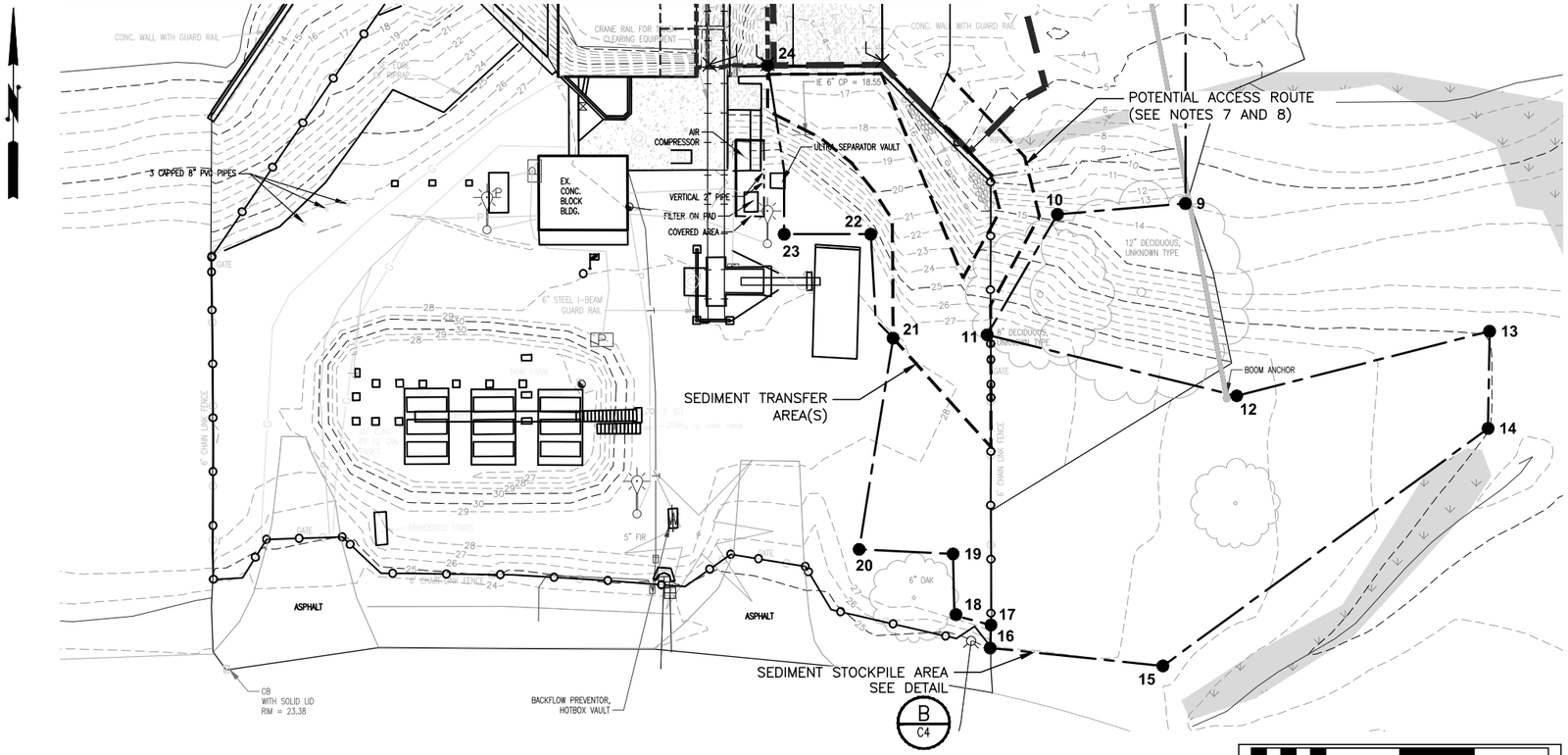
**FOREBAY SEDIMENT REMOVAL PLAN**

SHEET C1 OF 9 SHEETS

2011-06

FILE NAME: 1044885_PLAN_HC.DWG PLOT DATE: 01/20/16 DRAFTER: MAS

## STOCKPILE, DECANT, AND STAGING AREA SOUTH OF PUMP STATION



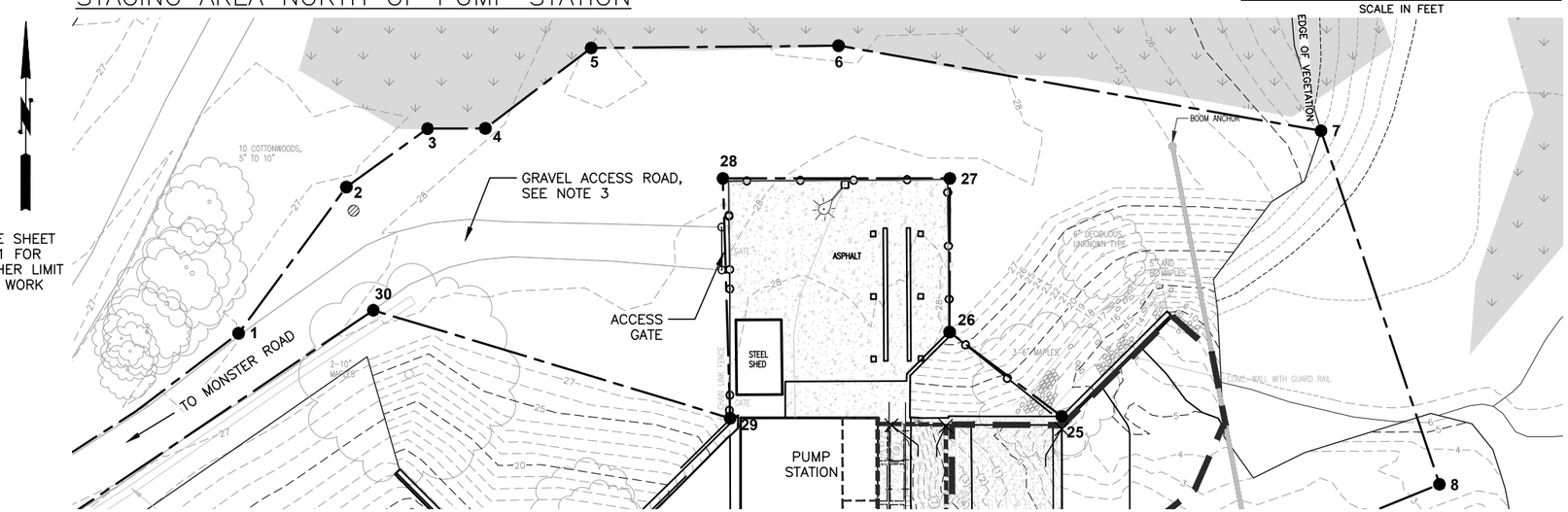

## SOUTH AREA CONSTRUCTION NOTES:

1. SEE SHEETS CE1 AND CE2 FOR EROSION CONTROL REQUIREMENTS.
2. CLEAR AND GRADE AS NEEDED TO STOCKPILE, DECANT, TREAT WATER, AND STAGE ALL EQUIPMENT, SUPPLIES AND MATERIALS WITHIN THE LIMITS OF WORK SHOWN. UPON COMPLETION OF WORK, RE-VEGETATE ALL DISTURBED GROUND, SEE SHEET L1.
3. CONSTRUCT A LINED AND COVERED SEDIMENT STOCKPILE/DECANT AREA, SEE SHEET C3. COLLECT AND TREAT ALL WATER THAT DRAINS FROM THE SEDIMENT STOCKPILE TO MEET THE SPECIFIED WATER QUALITY REQUIREMENTS PRIOR TO DISCHARGE TO THE BLACK RIVER.
4. ALLOW SUFFICIENT TIME IN THE CONSTRUCTION SCHEDULE TO SAMPLE STOCKPILED SEDIMENT AND COMPLETE LABORATORY TESTING FOR DISPOSAL FACILITY CHARACTERIZATION AND ACCEPTANCE, AS INDICATED IN THE SPECIFICATIONS.
5. REMOVE SEDIMENT/MATERIAL DROPPED, WASHED OR TRACKED BY VEHICLES OUTSIDE OF THE PROJECT WORK LIMITS.
6. UPON COMPLETION OF WORK, EXISTING GRAVEL ACCESS ROADS SHALL BE GRADED AND RESTORED TO PRE-CONSTRUCTION CONDITIONS.
7. TEMPORARILY REMOVE FENCE AND SECURE WITH TEMPORARY FENCE DURING CONSTRUCTION. REPLACE FENCE IN KIND AFTER CONSTRUCTION. BALANCE CUT AND FILL TO MINIMIZE ACCESS ROUTE EARTHWORK. USE LOW GROUND PRESSURE MATTS AS NEEDED TO ACCESS SEDIMENT REMOVAL AREA.
8. PROTECT TREE ROOTS WITHIN DRIPLINE AS NEEDED TO AVOID ROOT DAMAGE AND SOIL COMPACTION OF ROOT ZONE. USE WOVEN SEPARATION GEOTEXITLE UNDER 10 INCHES OF WOOD CHIPS COVERED WITH TIMBER MATTS AS MINIMUM PROTECTION. REMOVE ROOT PROTECTION AFTER CONSTRUCTION.

| WORK LIMIT CONTROL POINTS | | |
|---|---|---|
| CONTROL POINT | NORTHING | EASTING |
| 1 | 176,726.76 | 1,291,119.50 |
| 2 | 176,766.49 | 1,291,148.75 |
| 3 | 176,782.35 | 1,291,170.80 |
| 4 | 176,782.42 | 1,291,186.49 |
| 5 | 176,804.26 | 1,291,215.24 |
| 6 | 176,804.89 | 1,291,282.42 |
| 7 | 176,781.77 | 1,291,413.43 |
| 8 | 176,685.72 | 1,291,445.61 |
| 9 | 176,499.26 | 1,291,424.97 |
| 10 | 176,496.34 | 1,291,390.50 |
| 11 | 176,463.88 | 1,291,371.56 |
| 12 | 176,447.49 | 1,291,438.80 |
| 13 | 176,464.86 | 1,291,506.91 |
| 14 | 176,438.71 | 1,291,506.50 |
| 15 | 176,374.78 | 1,291,418.92 |

| WORK LIMIT CONTROL POINTS | | |
|---|---|---|
| CONTROL POINT | NORTHING | EASTING |
| 16 | 176,379.61 | 1,291,372.35 |
| 17 | 176,385.79 | 1,291,372.59 |
| 18 | 176,388.60 | 1,291,363.17 |
| 19 | 176,404.95 | 1,291,362.38 |
| 20 | 176,406.15 | 1,291,337.07 |
| 21 | 176,463.01 | 1,291,346.23 |
| 22 | 176,490.99 | 1,291,340.21 |
| 23 | 176,490.99 | 1,291,316.88 |
| 24 | 176,536.42 | 1,291,312.43 |
| 25 | 176,704.19 | 1,291,343.01 |
| 26 | 176,727.08 | 1,291,312.56 |
| 27 | 176,768.84 | 1,291,312.64 |
| 28 | 176,768.84 | 1,291,251.00 |
| 29 | 176,703.67 | 1,291,252.99 |
| 30 | 176,733.00 | 1,291,156.06 |

## STAGING AREA NORTH OF PUMP STATION




## NORTH AREA CONSTRUCTION NOTES:

1. AREA SOUTH OF CONSTRUCTION LIMITS/WETLAND CAN BE USED FOR STAGING, BYPASS PIPE/PUMP SYSTEM, AND CONTAINED WATER TREATMENT SYSTEM, ACCORDING TO SPECIFICATIONS.
2. SEE SHEETS CE1 AND CE2 FOR EROSION CONTROL REQUIREMENTS.
3. UPON COMPLETION OF WORK, EXISTING GRAVEL ACCESS ROADS SHALL BE GRADED AND RESTORED TO PRE-CONSTRUCTION CONDITIONS.

## LEGEND:

- LIMITS OF WORK
- WETLAND BOUNDARY
- CONTROL POINT

| | | |
|---|---|---|
| FIELD BOOK: | XX | XX-XXXX |
| SURVEYED: | XX | XX-XXXX |
| SURVEY BASE MAP: | XX | XX-XXXX |
| CHECKED: | XX | XX-XXXX |

| NUM. | REVISION | BY | DATE |
|---|---|---|---|

| | | |
|---|---|---|
| APPROVED: | | |
| PROJECT MANAGER: | T. BEAN, E. PETERS | 3/2016 |
| DESIGNED: | J. BINGHAM | 3/2016 |
| CHECKED: | G. HORVITZ | 3/2016 |
| DESIGN ENTERED: | E. LINDQUIST | 3/2016 |

PROJECT No. KC: 1120590 HC: 1789407

CONTRACT No. C01043C16

HARTCROWSER

King County
Department of Natural Resources and Parks
Water and Land Resources Division
Regional Services Section

*Christie True, Director*

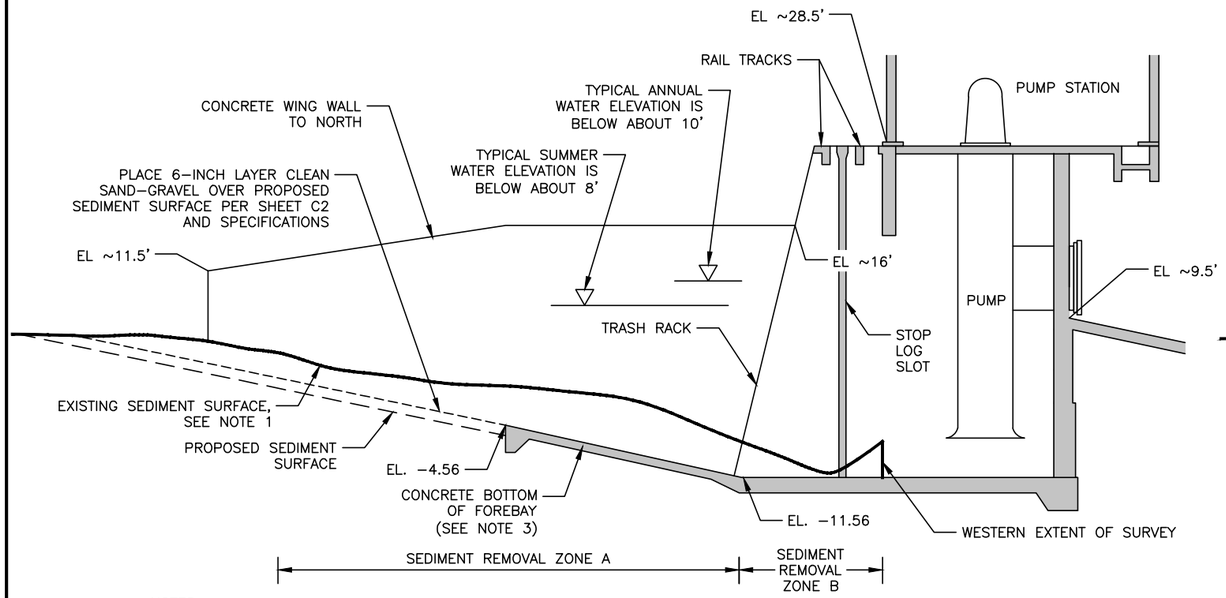
**BLACK RIVER PUMP STATION SEDIMENT REMOVAL**

**STOCKPILE, DECANT, WATER TREATMENT, AND STAGING AREAS**

SHEET C2 OF 9 SHEETS

2011-06

FILE NAME: 1044885_PLAN_HC.DWG PLOT DATE: 01/20/16 DRAFTER: MAS




NOTES:

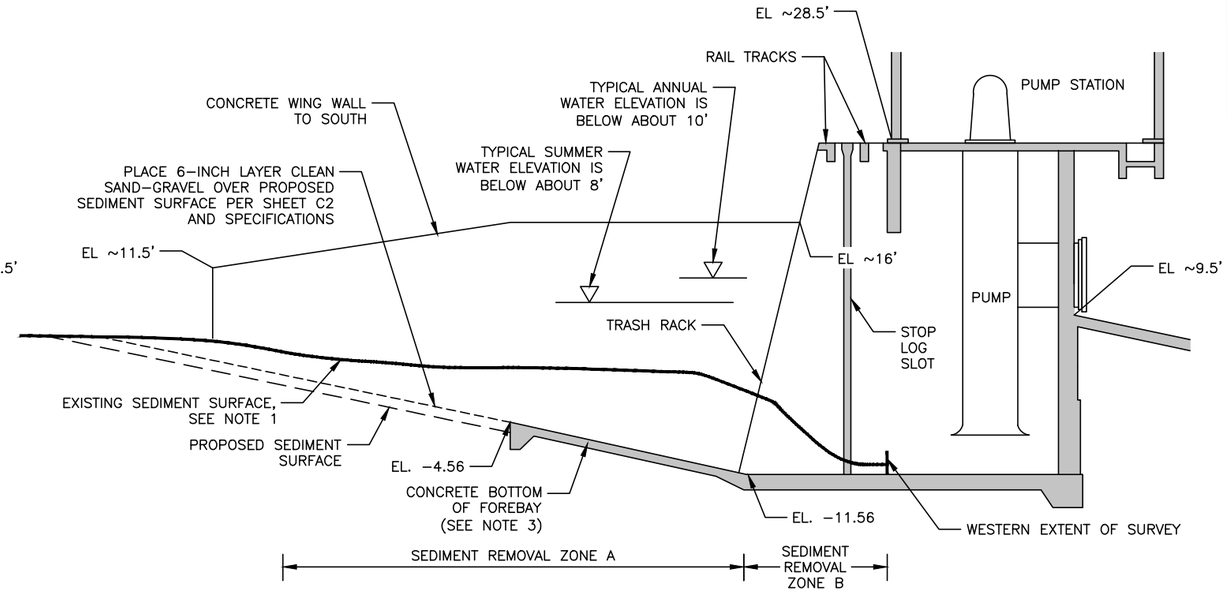
1) EXISTING SEDIMENT SURFACE IS BASED ON 2011 BATHYMETRIC SURVEY, PER THE SURVEY NOTES. SEDIMENT SURFACE WEST OF SURVEY LIMITS IS ESTIMATED BASED ON AVERAGE DEPTH OF SEDIMENT AT RAIL TRACK.

2) EXISTING AND PROPOSED SEDIMENT SURFACES AND CONCRETE APRON APPROXIMATELY TO SCALE (1"=40' FULL SIZE). STRUCTURE NOT TO SCALE. SEE ORIGINAL PUMP STATION DRAWINGS IN THE APPENDICIES/REFERENCE MATERIAL FOR ADDITIONAL INFORMATION AND DIMENSIONS.

3) SUPPORT HEAVY CONSTRUCTION EQUIPMENT WITH CRANE MATS TO PROTECT CONCRETE APRON.

## TYPICAL NORTH SEDIMENT REMOVAL SECTION (1 / C2)

NOT TO SCALE (SEE NOTE 2)




NOTES:

1) EXISTING SEDIMENT SURFACE IS BASED ON 2011 BATHYMETRIC SURVEY, PER THE SURVEY NOTES. SEDIMENT SURFACE WEST OF SURVEY LIMITS IS ESTIMATED BASED ON AVERAGE DEPTH OF SEDIMENT AT RAIL TRACK.

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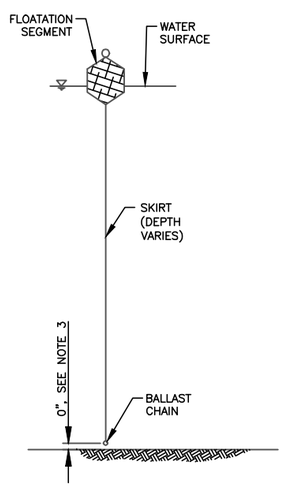
3) SUPPORT HEAVY CONSTRUCTION EQUIPMENT WITH CRANE MATS TO PROTECT CONCRETE APRON.

## TYPICAL SOUTH SEDIMENT REMOVAL SECTION (2 / C2)

NOT TO SCALE (SEE NOTE 2)




NOTES:

1) FLOATING TURBIDITY CURTAINS SHALL BE TYPE II CURTAINS, SEE SPECIFICATIONS.

2) ANCHOR TURBIDITY CURTAINS TO PREVENT DRIFT. INSTALL CURTAINS AS CLOSE TO PROJECT SITE AS POSSIBLE.

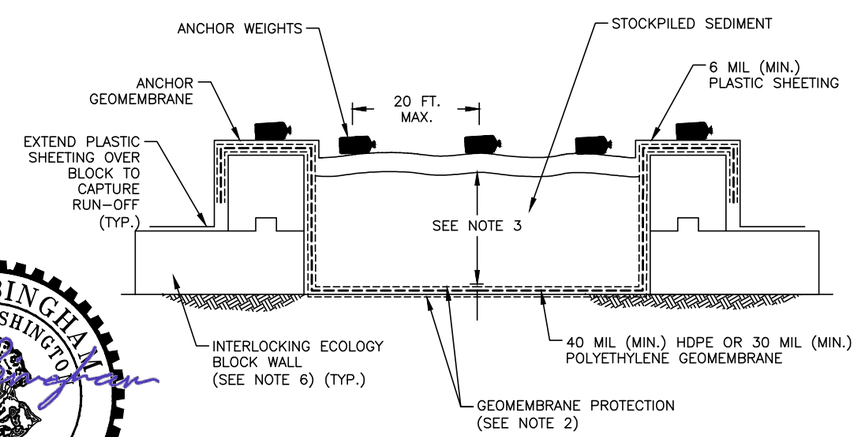
3) MAINTAIN TURBIDITY CURTAIN FULL DEPTH OF WATER COLUMN AND ADJUST HEIGHT AS NEEDED TO ACCOUNT FOR EXCAVATION OF SEDIMENT AND SO THAT SEDIMENT ACCUMULATION ON CURTAIN LAYING ON MUDLINE DOES NOT COMPROMISE PERFORMANCE OF CURTAIN.

4) UPON COMPLETION OF THE WORK, REMOVE TURBIDITY CURTAINS IN A MANNER THAT WILL MINIMIZE THE RELEASE OF TURBIDWATER AND COMPLY WITH SPECIFIED WATER QUALITY REQUIREMENTS.

## TURBIDITY CURTAIN – DETAIL (A / C2)

NOT TO SCALE

N. JOHN BINGHAM
STATE OF WASHINGTON
37844
REGISTERED PROFESSIONAL ENGINEER
John Bingham
3/1/16




## SEDIMENT STOCKPILE DETAIL (B / C3)

NOT TO SCALE

NOTES:

1) CONSTRUCT A WATERTIGHT BASIN CAPABLE OF STORING THE ANTICIPATED VOLUME OF EXCAVATED SEDIMENT.

2) INSTALL AND ANCHOR GEOMEMBRANE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. PROTECT THE BOTTOM AND TOP OF THE GEOMEMBRANE FROM DAMAGE DUE TO SUBGRADE SOIL AND EQUIPMENT TRAFFIC, RESPECTIVELY. NON-WOVEN GEOTEXTILE, PLYWOOD, OR SAND ARE EXAMPLES OF ACCEPTABLE GEOMEMBRANE PROTECFTION MATERIALS (SEE SPECIFICATIONS).

3) SLOPE STOCKPILES TO MAINTAIN STABILITY OF STOCKPILE, WORKER SAFETY, AND PREVENT DAMAGE TO ADJACENT FEATURES.

4) WEIGH DOWN PLASTIC SHEETING WITH TIRES, SANDBAGS, OR EQUIVALENT.

5) WEIGHT OR TAPE SEAMS BETWEEN PLASTIC SHEETS AND PROVIDE A MINIMUM OVERLAP OF 12 INCHES.

6) 2 FT. X 2 FT. X 6 FT. CONCRETE BLOCK SIZE REQUIRED. PLACE BOTTOM BLOCK ROW PERPENDICULAR TO TOP ROW. KEEP DECANT WATER LEVEL BELOW TOP OF BOTTOM BLOCK UNLESS WALL HYDROSTATIC PRESSURE RELIEF IS PROVIDED. CONTRACTOR MAY SUBMIT AN ALTERNATE STOCKPILE CONTAINMENT METHOD TO PROJECT REPRESENTATIVE FOR APPROVAL.

| | | |
|---|---|---|
| FIELD BOOK: | XX | XX-XXXX |
| SURVEYED: | XX | XX-XXXX |
| SURVEY BASE MAP: | XX | XX-XXXX |
| CHECKED: | XX | XX-XXXX |

| NUM. | REVISION | BY | DATE |
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|---|---|---|
| APPROVED: | | |
| PROJECT MANAGER: | T. BEAN, E. PETERS | 3/2016 |
| DESIGNED: | J. BINGHAM | 3/2016 |
| CHECKED: | G. HORVITZ | 3/2016 |
| DESIGN ENTERED: | E. LINDQUIST | 3/2016 |

PROJECT No. KC: 1120590 HC: 1789407

CONTRACT No. C01043C16

HARTCROWSER

King County
Department of Natural Resources and Parks
Water and Land Resources Division
Regional Services Section

*Christie True, Director*

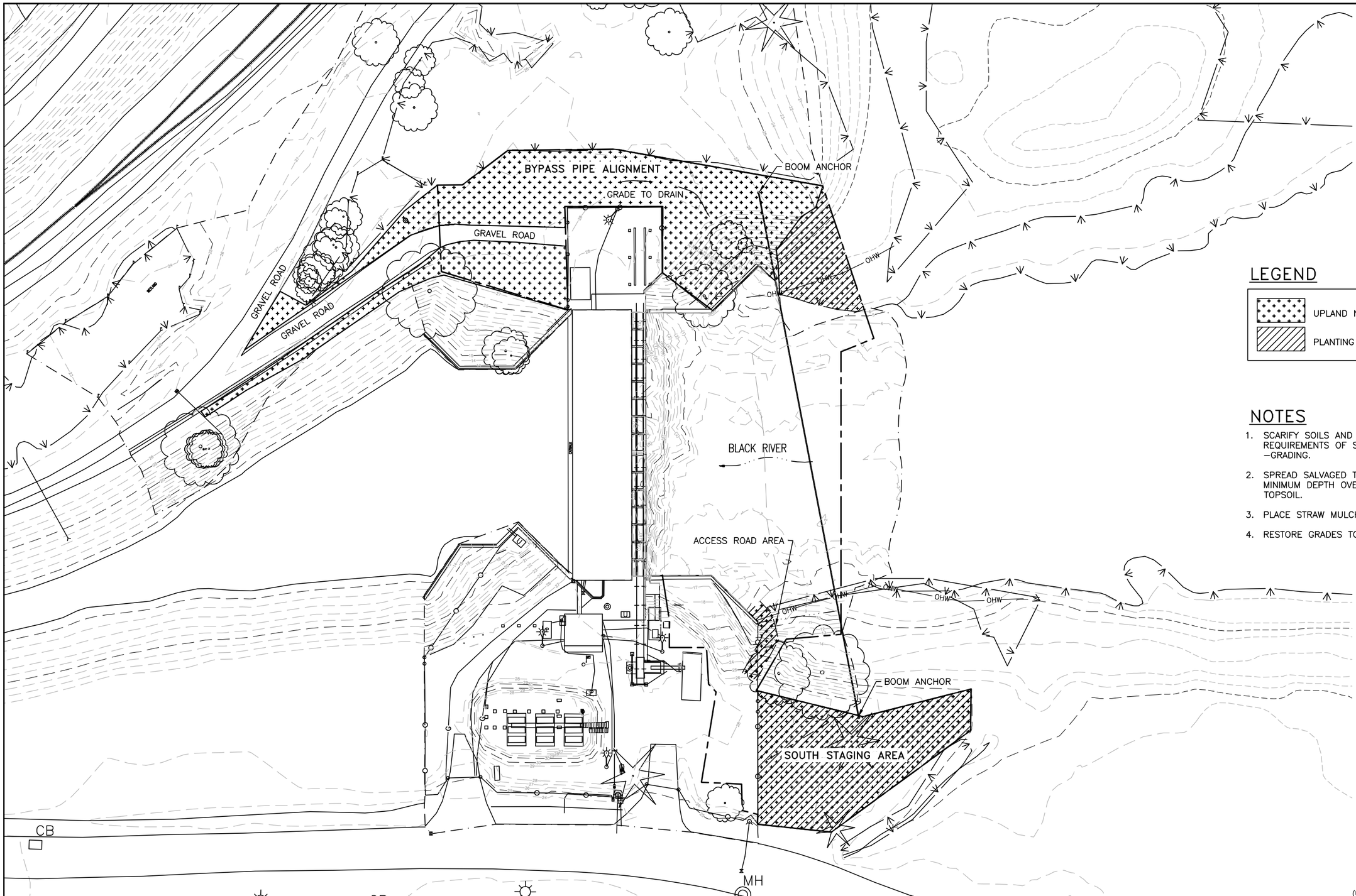
**BLACK RIVER PUMP STATION SEDIMENT REMOVAL**

**STOCKPILING, DECANTING STAGING AREA**

SHEET C3 OF 9 SHEETS

2011-06

FILE NAME: 1044885_PLAN_HC.DWG PLOT DATE: 01/20/16 DRAFTER: MAS




## LEGEND

- UPLAND NATIVE SEEDING AREA
- PLANTING AREA

## NOTES

1. SCARIFY SOILS AND GRADE SITE MEETING REQUIREMENTS OF SPEC. SECTION 31 22 00 –GRADING.
2. SPREAD SALVAGED TOPSOIL TO 6–INCH MINIMUM DEPTH OVER AREA OF STRIPPED TOPSOIL.
3. PLACE STRAW MULCH OVER SEEDED AREAS.
4. RESTORE GRADES TO DRAIN BEFORE SEEDING.

**CALL 2 WORKING DAYS BEFORE YOU DIG**
**1-800-424-5555**
(UNDERGROUND UTILITY LOCATIONS ARE APPROX.)

| | | | |
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| FIELD BOOK: | -- | -- | |
| SURVEYED: | -- | -- | |
| SURVEY BASE MAP: | -- | -- | |
| CHECKED: | -- | -- | |

| NUM. | REVISION | BY | DATE |
|---|---|---|---|
| | | | |

| | | |
|---|---|---|
| APPROVED: | TOM BEAN | 3/2016 |
| PROJECT MANAGER: | TOM BEAN | 3/2016 |
| DESIGNED: | ERIK PETERS | 3/2016 |
| DESIGN ENTERED: | KAY KITAMURA | 3/2016 |

PROJECT No. 1120590
CONTRACT No. C01043C16

ERIK G. PETERS STATE OF WASHINGTON 47496 REGISTERED PROFESSIONAL ENGINEER

King County
Department of Natural Resources and Parks
Water and Land Resources Division
Regional Services Section
*Christie True, Director*

**BLACK RIVER PUMP STATION SEDIMENT REMOVAL**

**REVEGETATION AND SITE STABILIZATION**

SHEET **L1** OF **9** SHEETS

**2011-06**

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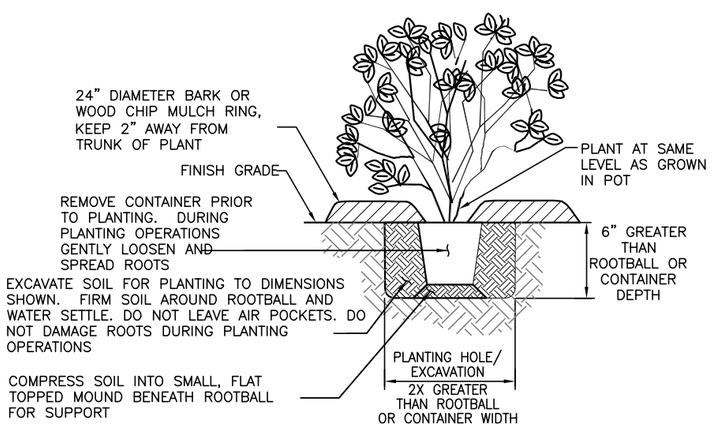
## PLANT SCHEDULE

| STRATUM | SCIENTIFIC NAME | COMMON NAME | WETLAND INDICATOR STATUS | CONTAINER CLASS * | ON CENTER (O.C.) SPACING | TOTAL PLANT QUANTITIES | PLANT ZONE QUANTITIES | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | ACCESS ROAD AREA | SOUTH STAGING AREA | BYPASS PIPE PLANTING AREA |
| TREE | *ACER MACROPHYLLUM* | BIGLEAF MAPLE | FACU | ½" CALIPER | 10' O.C. | 20 | 3 | | 17 |
| TREE | *POPULUS BALSAMIFERA* | BLACK COTTONWOOD | FAC | ½" CALIPER | 10' O.C. | 20 | 3 | | 17 |
| SHRUB | *AMELANCHIER ALNIFOLIA* | SERVICEBERRY | FACU | CL 1 | 4' O.C. | 82 | | 82 | |
| SHRUB | *CORNUS SERICEA* | RED OSIER DOGWOOD | FACW | CL 1 | 4' O.C. | 60 | 9 | | 51 |
| SHRUB | *CORYLUS CORNUTA* | BEAKED HAZELNUT | FACU | CL 1 | 4' O.C. | 82 | | 82 | |
| SHRUB | *MAHONIA AQUIFOLIUM* | TALL OREGON GRAPE | FACU | CL 1 | 4' O.C. | 82 | | 82 | |
| SHRUB | *PHYSOCARPUS CAPITATUS* | PACIFIC NINEBARK | FACW | CL 1 | 4' O.C. | 60 | 9 | | 51 |
| SHRUB | *ROSA NUTKANA* | NOOTKA ROSE | FAC | CL 1 | 4' O.C. | 142 | 9 | 82 | 51 |
| SHRUB | *RUBUS PARVIFLORUS* | THIMBLEBERRY | FACU | CL 1 | 4' O.C. | 82 | | 82 | |
| SHRUB | SALIX SITCHENSIS | SITKA WILLOW | FACW | CL 1 | 4' O.C. | 60 | 9 | | 51 |
| SHRUB | *SAMBUCUS RACEMOSA* | RED ELDERBERRY | FACU | CL 1 | 4' O.C. | 82 | | 82 | |
| SHRUB | *SYMPHORICARPOS ALBUS* | SNOWBERRY | FACU | CL 1 | 4' O.C. | 82 | | 82 | |
| GROUNDCOVER | *FRAGERIA VESCA* | WOODLAND STRAWBERRY | FACU | SP 4 | 2' O.C. | 363 | 55 | | 308 |
| GROUNDCOVER | *POLYSTICHUM MUNITUM* | SWORD FERN | FACU | SP 4 | 2' O.C. | 2097 | 55 | 1734 | 308 |
| GROUNDCOVER | *TELLIMA GRANDIFLORA* | FRINGECUP | FACU | SP 4 | 2' O.C. | 363 | 55 | | 308 |
| GROUNDCOVER | *TOLMIEA MENZIESII* | PIGGYBACK PLANT | FAC | SP 4 | 2' O.C. | 363 | 55 | | 308 |

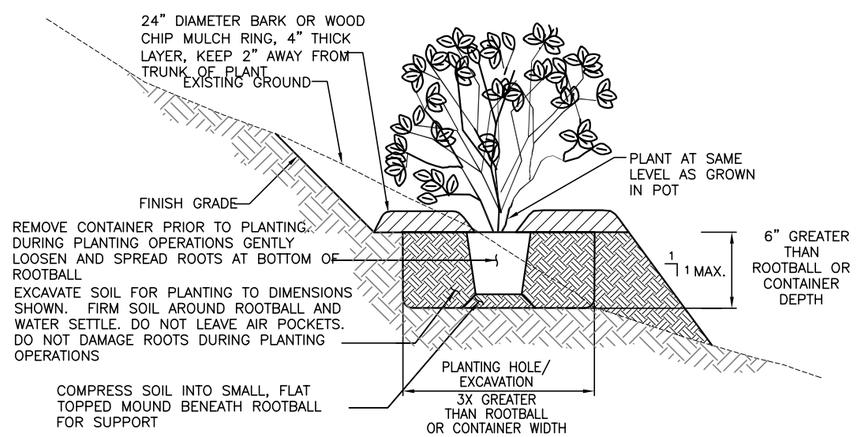
* CL 1 = 0.65 – 1.08 Gal Per ANSI 260.1
CL 2 = 1.38 – 2.05 Gal Per ANSI 260.1
SP 4 = 51–63 Cubic Inches ≈ (1 Qrt)

## NOTES:

1. REMOVE ANY NOXIOUS AND/OR NONNATIVE WEEDS FROM PLANTING ZONES PRIOR TO PLANTING.
2. THE PROJECT REPRESENTATIVE SHALL APPROVE GRADES PRIOR TO MULCH APPLICATION AND PLANT INSTALLATION.
3. PLANT SUBSTITUTIONS ARE SUBJECT TO APPROVAL BY THE PROJECT REPRESENTATIVE.
4. TAG PLANTS FOR IDENTIFICATION AND APPROVED BY THE PROJECT REPRESENTATIVE PRIOR TO INSTALLATION.
5. KEEP PLANTS SHADED UNTIL TIME OF PLANTING. DO NOT LET PLANT MATERIAL SIT IN SUN OR DRY OUT BEFORE PLANTING.
6. PLANT GROUNDCOVER AND SHRUBS IN CLUSTERS OF THREE, FIVE, AND SEVEN. EACH CLUSTER SHALL BE ONE SPECIES. EVENLY SPACE CLUSTERS THROUGHOUT PLANT ZONES. INTENT OF PLANTING IS TO APPEAR NATURAL AND INFORMAL.
7. THE PROJECT REPRESENTATIVE SHALL APPROVE PLANT LAYOUT BEFORE INSTALLATION.
8. INSTALL SHRUBS, AND GROUNDCOVER BETWEEN OCTOBER 1 AND MARCH 1 OF THE FIRST DORMANT SEASON FOLLOWING CONSTRUCTION.




CONTAINER PLANTING DETAIL




CONTAINER PLANTING ON SLOPE DETAIL

**CALL 2 WORKING DAYS BEFORE YOU DIG**
**1-800-424-5555**
(UNDERGROUND UTILITY LOCATIONS ARE APPROX.)

| | | | | | |
|---|---|---|---|---|---|
| FIELD BOOK: | -- | -- | NUM. | REVISION | BY | DATE |
| SURVEYED: | -- | -- | | | | |
| SURVEY BASE MAP: | -- | -- | | | | |
| CHECKED: | -- | -- | | | | |

| | | |
|---|---|---|
| APPROVED: | TOM BEAN | 2/2016 |
| PROJECT MANAGER: | TOM BEAN | 2/2016 |
| DESIGNED: | ERIK PETERS | 2/2016 |
| DESIGN ENTERED: | KAY KITAMURA | 2/2016 |

PROJECT No. 1120590
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Water and Land Resources Division
Regional Services Section
*Christie True, Director*

**BLACK RIVER PUMP STATION SEDIMENT REMOVAL**

**PLANTING SCHEDULE AND DETAILS**

SHEET **L2** OF **9** SHEETS

**2011-06**

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