



Gregory L. Geist
Director

Board of County Commissioners
Clackamas County

Members of the Board:

Approval of an Intergovernmental Agreement between Clackamas County Service District No. 1 and the City of Happy Valley for the Happy Valley Park Stream Stabilization Project

Purpose/Outcomes	Stabilization of Mt Scott Creek within Happy Valley Park
Dollar Amount and Fiscal Impact	CCSD#1 will fund the project in the amount of \$190,835.40.
Funding Source	CCSD#1 FY2015-16 budget - no County General Funds are involved.
Duration	Effective upon approval and terminates on June 30, 2017 upon completion of construction, planting and 1-year maintenance period for plantings
Contact Person	Gail Shaloum, Environmental Policy Specialist - 503-557-4597
Contract No.	N/A

BACKGROUND:

Clackamas County Service District No. 1 (CCSD#1) identified the need for a stream stabilization project on a property owned by the City of Happy Valley in Happy Valley Park. The existing stream, Mt Scott Creek, has been impacted by changes to hydrology associated with development. To protect the channel from further degradation, contractors will stabilize it by installing large woody debris. Staff has secured the necessary permits from Department of State Lands and U.S. Army Corps of Engineers to perform the work.

As the surface water provider to Happy Valley, CCSD#1 staff regularly partners closely with City staff on projects to improve watershed health. On this project, City staff has facilitated City permitting, participated in meetings, reviewed plans and will provide an informational sign at the project site.

This issue was identified through CCSD#1's regular, periodic monitoring program. Funds are budgeted for construction in the approved FY2015-16 budget. Work will occur on property owned by the City of Happy Valley. The Happy Valley City Council approved adoption of the IGA on July 7, 2015.

RECOMMENDATION:

For these reasons, Staff recommends the Board of County Commissioners, acting as the governing body of Clackamas County Service District No.1, a county service district ("District"), and as the Local Contract Review Board, approve the Intergovernmental Agreement ("IGA") between the District and the City of Happy Valley for the Happy Valley Park Stream Stabilization Project.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'G. Geist', with a horizontal line extending to the right.

Greg Geist
Director, WES

**INTERGOVERNMENTAL AGREEMENT
BETWEEN CLACKAMAS COUNTY SERVICE DISTRICT NO. 1 and
THE CITY OF HAPPY VALLEY for the
HAPPY VALLEY PARK STREAM STABILIZATION PROJECT**

THIS INTERGOVERNMENTAL AGREEMENT (the "Agreement") is entered into and between the City of Happy Valley (hereafter called "CITY"), an instrumentality of the State of Oregon, and Clackamas County Service District No. 1 ("DISTRICT"), a county service district formed pursuant to ORS Chapter 451.

RECITALS

WHEREAS, authority is conferred upon local governments under ORS 190.010 to enter into agreements for the performance of any and all functions and activities that a party to the agreement, its officers or agencies have authority to perform;

WHEREAS, Mt. Scott Creek within Happy Valley Park is in a degraded condition and at risk of further degradation; and

WHEREAS, both parties wish to stabilize the stream to prevent damage to adjacent properties or infrastructure (both District and City owned), following plans developed by Waterways Consulting for the Happy Valley Park Stream Stabilization Project.

NOW, THEREFORE, IT IS AGREED BY THE PARTIES AS FOLLOWS:

1. **Term.** This Agreement shall be effective upon execution, and shall expire upon June 30, 2017 upon completion of construction, planting and a 1-year maintenance period for plantings.
2. **Obligation of the City of Happy Valley.**
 - A. CITY agrees to allow DISTRICT and its contractors to construct the stream stabilization project (the "PROJECT"), described in more detail in Exhibit B, on land CITY owns in the southwest corner of Happy Valley Park, known as tax lots 12E26D 02700 AND 12E26DC05600, further described in Exhibit A (the "Property").
 - B. CITY agrees to maintain the PROJECT and resulting improvements on the Property following the expiration of the contractor's one-year warrantee.
 - C. CITY agrees to provide DISTRICT with reasonable access to the Property throughout the course of the PROJECT.
3. **Obligation of the DISTRICT.**
 - A. DISTRICT agrees to manage the construction of the PROJECT on the Property.
 - B. DISTRICT agrees to manage the maintenance of plantings on the PROJECT through June 30, 2017.
 - C. DISTRICT agrees to fund the PROJECT an amount not to exceed One hundred ninety-four Thousand and 00/100 Dollars (**\$194,000.00**). Notwithstanding anything else to the contrary herein, no adjustment shall be made which obligates the DISTRICT to fund the PROJECT in excess of \$194,000.00 without prior written approval by DISTRICT.
4. **Work Plan and Scheduling of Work.**
 - A. DISTRICT will manage the PROJECT and intends to complete construction and planting of the PROJECT by June 30, 2016. CITY acknowledges that said schedule is dependent on

many conditions and may be subject to change. DISTRICT will provide prompt notice to CITY of any anticipated delays in the schedule.

- B. Nothing herein shall prevent the parties from meeting to mutually discuss the PROJECT. Each party shall use best efforts to coordinate with the other to minimize conflicts.
- C. As the project manager, only DISTRICT shall approve change orders or extend unit prices that affect PROJECT following the execution of the construction contract.

5. **Early Termination of Agreement**

- A. The DISTRICT and CITY, by mutual written agreement, may terminate this Agreement at any time.
- B. The DISTRICT may terminate this Agreement for any reason upon providing thirty (30) days notice to the CITY.
- C. Either the DISTRICT or CITY may terminate this Agreement in the event of a breach of the Agreement by the other. Prior to such termination, however, the party seeking the termination shall give the other party written notice of the breach and of the party's intent to terminate. If the breaching party has not entirely cured the breach within fifteen (15) days of deemed or actual receipt of the notice, then the party giving notice may terminate the Agreement at any time thereafter by giving written notice of termination stating the effective date of the termination.
- D. The DISTRICT may immediately and unilaterally terminate or modify the scope of this Agreement to address unexpected cost or performance issues upon the occurrence of a Force Majeure Event (defined below). For the purposes of this Agreement, a Force Majeure Event shall be a failure or delay of performance beyond the reasonable control of the DISTRICT, including but not limited to acts of God, war, terrorism, strikes or labor disputes, embargoes, government orders other than itself, or any other similar type of event. If the DISTRICT modifies the Agreement pursuant to this paragraph, CITY may choose to either continue with the Agreement as modified or terminate the Agreement immediately.

6. **Indemnification.** Within the limits of the Oregon Tort Claims Act, the DISTRICT will hold harmless CITY, its officers, representatives, agents and employees, and will defend and indemnify them for any claims or damages to property or injury to persons, or for any penalties or fines resulting in whole or part from DISTRICT's negligence in performing any obligation under this Agreement. Within the limits of the Oregon Tort Claim Act, the CITY will hold harmless DISTRICT, its officers, representatives, agents and employees, and will defend and indemnify them for any claims or damages to property or injury to persons, or for any penalties or fines resulting in whole or part from CITY's negligence in performing any obligation under this Agreement.

7. **Oregon Law and Forum.** This Agreement shall be construed according to the laws of the State of Oregon, without giving effect to the conflict of law provisions thereof.

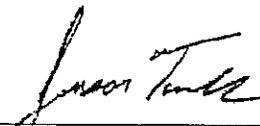
8. **Severability.** If any provision of this Agreement is found to be unconstitutional, illegal or unenforceable, this Agreement nevertheless shall remain in full force and effect and the offending provision shall be stricken. The Court or other authorized body finding such provision unconstitutional, illegal or unenforceable shall construe this Agreement without such provision to give effect to the maximum extent possible the intentions of the parties.

9. **Integration.** This Agreement contains the entire agreement between the DISTRICT and the CITY and supersedes all prior written or oral discussions or agreements.
10. **Amendments.** The DISTRICT and the CITY may amend this Agreement at any time only by written amendment executed by the DISTRICT and the CITY.
11. **Funds Available and Authorized.** Both parties certify that at the time the Agreement is written that sufficient funds are available and authorized for expenditure to finance costs of this Agreement within either party's current appropriation and limitation. Both parties understand and agree that payment of amounts under this Agreement attributable to work performed after the end of the current fiscal year is contingent on either party receiving appropriations, limitations, or other expenditure authority.
12. **Waiver.** The DISTRICT and the CITY shall not be deemed to have waived any breach of this Agreement by the other party except by an express waiver in writing. An express written waiver as to one breach shall not be deemed a waiver of any other breach not expressly identified, even though the other breach be of the same nature as that waived.

[Signature Page Follows]

IN WITNESS HEREOF, the parties have executed this Agreement by the date set forth opposite their names below.

CITY OF HAPPY VALLEY:



Jason Tuck, City Manager

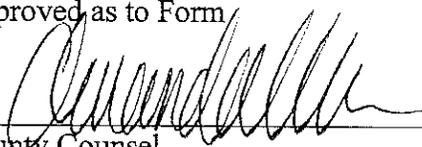
Date 7/8/2015

**CLACKAMAS COUNTY BOARD OF
COUNTY COMMISSIONERS Acting as
Governing Body of the Clackamas County
Service District No. 1 by:**

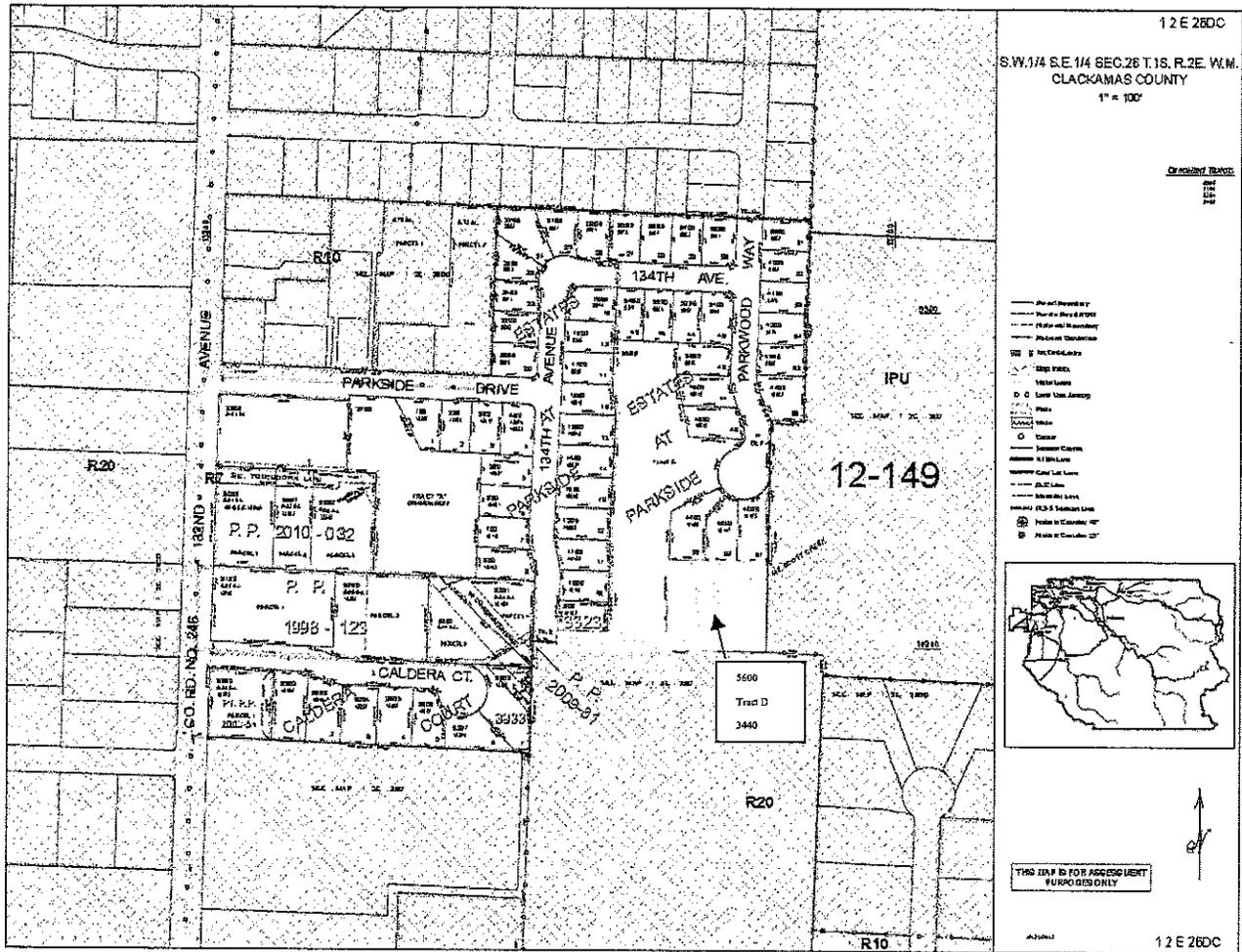
Chair

Recording Secretary

Date

Approved as to Form


County Counsel



COUNTY DEED

STATE OF OREGON)
 County of Clackamas) ss.

THIS INDENTURE, made this 11th day of June, 1969, between
 CLACKAMAS COUNTY, a body politic and corporate of the State of Oregon, party of
 the first part, and THE CITY OF HAPPY VALLEY, a municipal corporation, party of
 the second part,

WITNESSETH:

WHEREAS, title to the following described real property, situated in the
 County of Clackamas, State of Oregon, to-wit:

Southerly Part:

Part of Section 26, T. 1 S., R. 2 E., W.M. in the County of Clackamas, State
 of Oregon, more particularly described as follows:
 Beginning at a point in King Road 100 rods East of the southwest corner of
 the southeast one-quarter of said Section 26; said point being the southeast
 corner of that tract of land conveyed to Robert S. Francis, et ux, by deed
 recorded in Clackamas County Deed Book 323, page 626; thence North along
 the east line of said Francis Tract 30.0 feet to a point in the north line
 of King Road; thence continuing North along the said east line 805.0 feet
 to a point and the true point of beginning of the tract to be described
 herein thence continuing North along said east line of the Francis Tract
 852.90 feet to a point; thence West 476.5 feet to the west line of the
 said Francis tract; thence South along the west line of said Francis Tract
 367.90 feet thence West 66.0 feet; thence South 445.5 feet to an angle
 point on the west line of the said Francis Tract; thence East 114.5 feet
 to a point; thence South 39.5 feet to a point; thence East 430.0 feet to
 the true point of beginning; TOGETHER with an easement for purposes of
 ingress and egress in and to the westerly fifty feet of the following
 described real property.

Part of Section 26, T. 1 S., R. 2 E., W.M. in the County of Clackamas and
 State of Oregon, more particularly described as follows:
 Beginning at a point in King Road which is 100 rods east of the southwest
 corner of the southeast one-quarter of said Section 26, said point being
 the southeast corner of that tract of land conveyed to Robert S. Francis,
 et ux, by deed recorded in Clackamas County Deed Records, Book 323, page
 626; thence North along the east line of said Francis Tract 1687.90 feet
 to the true point of beginning; thence continuing north 952.10 feet along
 said east line of said Francis Tract to the northeast corner thereof; thence
 West 29 rods; thence South 952.10 feet; thence East 29 rods to the true
 place of beginning.

Northerly Part:

Part of Section 26, T. 1 S., R. 2 E., W.M. in Clackamas County, Oregon, more
 particularly described as follows:
 Beginning at a point in King Road which is 100 rods East of the southwest
 corner of the southeast one-quarter of said Section 26, said point being
 the southeast corner of that tract of land conveyed to Robert S. Francis,
 et ux, by deed recorded in Clackamas County Deed Records, Book 323, page 626;
 thence North along the east line of said Francis Tract, 1687.90 feet to the

true point of beginning; thence continuing North 952.10 feet along said east line of said Francis tract to the northeast corner thereof; thence West 29 rods; thence South 952.10 feet; thence East 29 rods to the true point of beginning.

is held by Clackamas County and is needed for public use, and

WHEREAS, the Board of County Commissioners of Clackamas County has deemed it for the best interest of said county to relinquish the title to said property to the City of Happy Valley, pursuant to Section 271.330, ORS.

NOW, THEREFORE, Clackamas County, party of the first part, without consideration, and by virtue of the statutes of the State of Oregon in such cases made and provided, hereby does grant, bargain sell and convey unto the City of Happy Valley, a municipal corporation, its successors and assigns forever, the real property hereinabove described, for the use by the City of Happy Valley for public park purposes, provided that said property is used for a public park. When said property is no longer so used the grantor and its heirs shall have the right to re-enter said property and all right of grantee, its successors and assigns, shall thereupon terminate.

69 - 23346

IN WITNESS WHEREOF, said party of the first part has caused this indenture to be executed in its corporate name by its Board of County Commissioners on the 27th day of October, 1969.

CLACKAMAS COUNTY, OREGON

By Fred Stefani
Chairman

By Thomas D. [Signature]
Commissioner

By [Signature]
Commissioner



[Signature]

STATE OF OREGON,
County of Clackamas.

I, George D. Pappas, County Clerk, Ex-Officio Recorder of Conveyances and Ex-Officio Clerk of the Circuit Court of the State of Oregon, for the County of Clackamas, do hereby certify that the within instrument of writing was received for and recorded in the records of

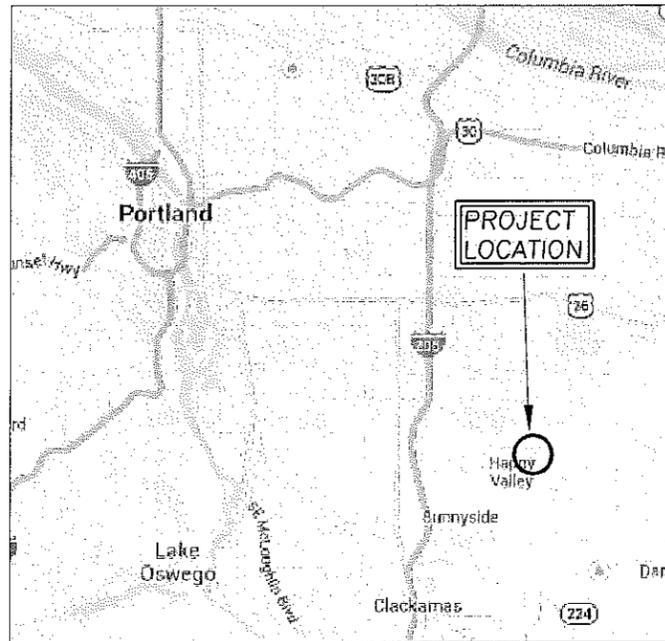
1969 NOV 6 11 10 AM
RECORDED



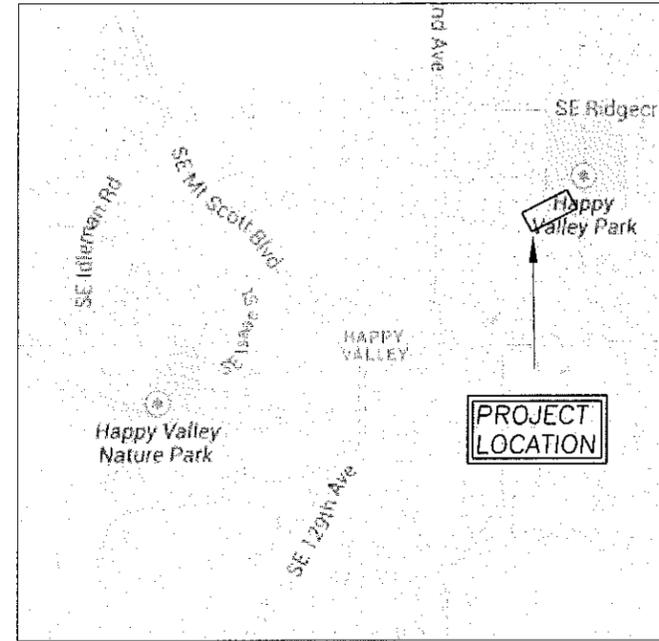
Witness my hand and seal of office this 6th day of November, 1969.
[Signature]
County Clerk
Recording Certificate

Exhibit B-Project plans and specifications

HAPPY VALLEY PARK STREAM STABILIZATION PROJECT 100% DESIGN SUBMITTAL



REGIONAL MAP
N.T.S. (GOOGLE)



VICINITY MAP
N.T.S. (GOOGLE)

SHEET INDEX

SHEET NUMBER	PAGE	SHEET TITLE
C1	1	COVER SHEET
C2	2	OVERVIEW AND ACCESS PLAN
C3	3	REPLACEMENT BRIDGE PLAN AND CREEK PROFILE
C4	4	REPLACEMENT BRIDGE PROFILE AND DETAILS
C5	5	UPPER RIFFLE PLAN AND PROFILE
C6	6	LOWER RIFFLE PLAN AND PROFILE
C7	7	RIFFLE SECTIONS
C8	8	LOG PLACEMENT PLAN
C9	9	REVEGETATION PLAN
C10	10	DETAILS
C11	11	NOTES

GENERAL NOTES

- SITE CONSTRUCTION SHALL BE LIMITED TO:
7:00AM TO 6:00PM ON WEEKDAYS, AND
8:00AM TO 5:00PM ON SATURDAYS AND SUNDAYS.

HOWEVER, SITE CLEARING, EARTH MOVING, INSTALLATION OR CONSTRUCTION OF UNDERGROUND UTILITIES, PAVING OR STREETS AND SIDEWALKS, FOUNDATION FRAMING AND POURING, AND STRUCTURAL FRAMING SHALL BE ENTIRELY PROHIBITED ON SUNDAYS.
- TOPOGRAPHIC MAPPING WAS PERFORMED BY:
WATERWAYS CONSULTING, INC.
SURVEY DATE: JANUARY 15, 2014
- ELEVATION DATUM: AN ASSUMED ELEVATION OF 200.00' WAS ESTABLISHED AT SURVEY CONTROL POINT #1 (1/2"X24", IRON ROD) SHOWN ON SHT. C2.
- BASIS OF BEARINGS: BASIS OF BEARINGS BETWEEN POINTS #1 AND #2 IS N82°22'53.35"E, AS SHOWN ON SHT. C2.
- AERIAL PHOTO SOURCE: CLACKAMAS COUNTY WATER ENVIRONMENT SERVICES; 2012 IMAGERY; OBTAINED BY WATERWAYS IN JUNE 2013.
- CONTOUR INTERVAL IS ONE FOOT. ELEVATIONS AND DISTANCES SHOWN ARE IN DECIMAL FEET.
- THIS IS NOT A BOUNDARY SURVEY. PROPERTY LINES ARE NOT SHOWN HEREON.
- ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE CURRENT EDITION OF THE OREGON DEPARTMENT OF TRANSPORTATION (ODOT) STANDARD SPECIFICATIONS (HEREAFTER REFERRED TO AS "STANDARD SPECIFICATIONS").

ABBREVIATIONS

AC	ASPHALT CONCRETE
AVE	AVERAGE
CC	CONCRETE
CY	CUBIC YARDS
DIA	DIAMETER
E	EXISTING
E.G.	EXISTING GROUND
ELEV.	ELEVATION
ESA	ENVIRONMENTALLY SENSITIVE AREAS
ESM	ENGINEERED STREAMBED MATERIAL
DI	DUCTILE IRON
FG	FINISHED GRADE
FT	FEET
INV	INVERT
N	NEW
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
O.H.W.	ORDINARY HIGH WATER
PEX	CROSS-LINKED POLYETHYLENE PIPE
R.C.	RELATIVE COMPACTION
RCP	REINFORCED CONCRETE PIPE
RSP	ROCK SLOPE PROTECTION
SD	STORM DRAIN
SS	SANITARY SEWER
SPK	SPIKE
SQ.FT.	SQUARE FOOT
T	TREE
T.B.D.	TO BE DETERMINED
TYP	TYPICAL
UNK	UNKNOWN
WSE	WATER SURFACE ELEVATION
YR	YEAR

PROJECT DESCRIPTION

THESE DRAWINGS PROVIDE 100% DESIGN LEVEL DETAILS FOR THE REPLACEMENT OF A CULVERT CROSSING WITH A BRIDGE AND STABILIZATION OF MT. SCOTT CREEK WITHIN HAPPY VALLEY PARK IN HAPPY VALLEY, OREGON. THE PROJECT EXTENTS ARE WITHIN PROPERTY CURRENTLY OWNED BY THE CITY OF HAPPY VALLEY.

WORK SHALL CONSIST OF TWO CONSTRUCTED RIFFLES, ADDITION OF LARGE WOODY DEBRIS AND REMOVAL OF AN EXISTING CULVERT WHICH WILL BE REPLACED BY A PEDESTRIAN/MAINTENANCE VEHICLE BRIDGE.

SECTION AND DETAIL CONVENTION

SECTION OR DETAIL IDENTIFICATION
(NUMBER OR LETTER)



REFERENCE SHEET FROM WHICH
DETAIL OR SECTION IS TAKEN.

REFERENCE SHEET ON WHICH
SECTION OR DETAIL IS SHOWN.

WATERWAYS
CONSULTING INC.
1020 SIV TAYLOR STREET, STE. 380
POSTLAND, OR 97205
PH: (503) 227-6979 // FAX: (503) 227-6847
WWW.WATWAYS.COM

DATE: 5/21/15
PROFESSIONAL SEAL: J. H. J. B. / J. H. J. B.
REGISTERED PROFESSIONAL ENGINEER
EXPIRES: 6/30/2015

PREPARED AT THE REQUEST OF:
**CLACKAMAS COUNTY
WATER ENVIRONMENT
SERVICES**

COVER SHEET

HAPPY VALLEY PARK
STREAM STABILIZATION
PROJECT
100% DESIGN SUBMITTAL

DESIGNED BY: J.H./J.B.
DRAWN BY: J.H./J.B.
CHECKED BY: M.W.W.
DATE: 5/21/15
JOB NO.: 13-019B

BAR IS ONE INCH ON
ORIGINAL DRAWING,
ADJUST SCALES FOR
REDUCED PLOTS
0" = 1"

C1 1 OF 11

LEGEND

- EXISTING FLOW LINE
- - - TAX LOT BOUNDARIES (APPROX.)
- - - WATER PIPE ALIGNMENT (APPROX.)
- SD- STORM SEWER PIPE ALIGNMENT (APPROX.)
- SS- SANITARY SEWER PIPE ALIGNMENT (APPROX.)
- - - TEMPORARY ACCESS ROUTE
- ⊙ STORM SEWER MANHOLE
- △² SURVEY CONTROL POINT

SEE SIGN

SE PARKWOOD WAY

PARKING LOT/STAGING AREA
(ACCESS FROM SE RIDGECREST ROAD)

CONSTRUCTION HOURS NOTICE SIGN



WATERWAYS CONSULTING INC.
1020 SW TAYLOR STREET, STE. 360
PORTLAND, OR 97205
PH: (503) 227-9579 / FAX: (888) 819-8847
WWW.WATERWAYS.COM

DATE: 5/21/15

 J. H. BELL
 JAVANCE M. BELL

PREPARED AT THE REQUEST OF:
CLACKAMAS COUNTY WATER ENVIRONMENT SERVICES

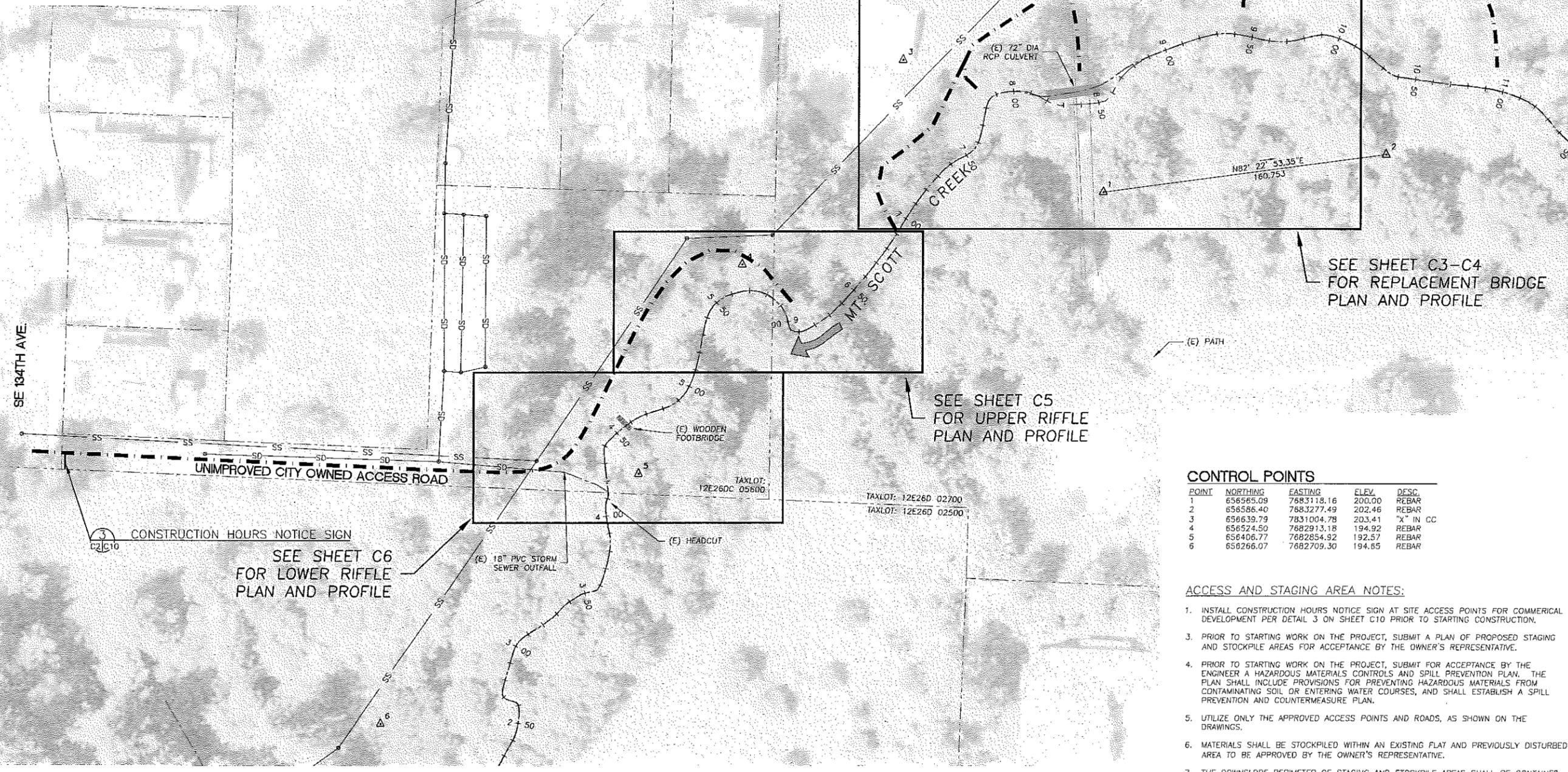
OVERVIEW AND ACCESS PLAN

HAPPY VALLEY PARK
 STREAM STABILIZATION PROJECT
 100% DESIGN SUBMITTAL

DESIGNED BY: J.H./J.B.
 DRAWN BY: J.H./J.B.
 CHECKED BY: M.W.W.
 DATE: 5/21/15
 JOB NO.: 13-0198

BAR IS ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES FOR REDUCED PLOTS

C2 OF 11



SEE SHEET C3-C4 FOR REPLACEMENT BRIDGE PLAN AND PROFILE

SEE SHEET C5 FOR UPPER RIFFLE PLAN AND PROFILE

SEE SHEET C6 FOR LOWER RIFFLE PLAN AND PROFILE

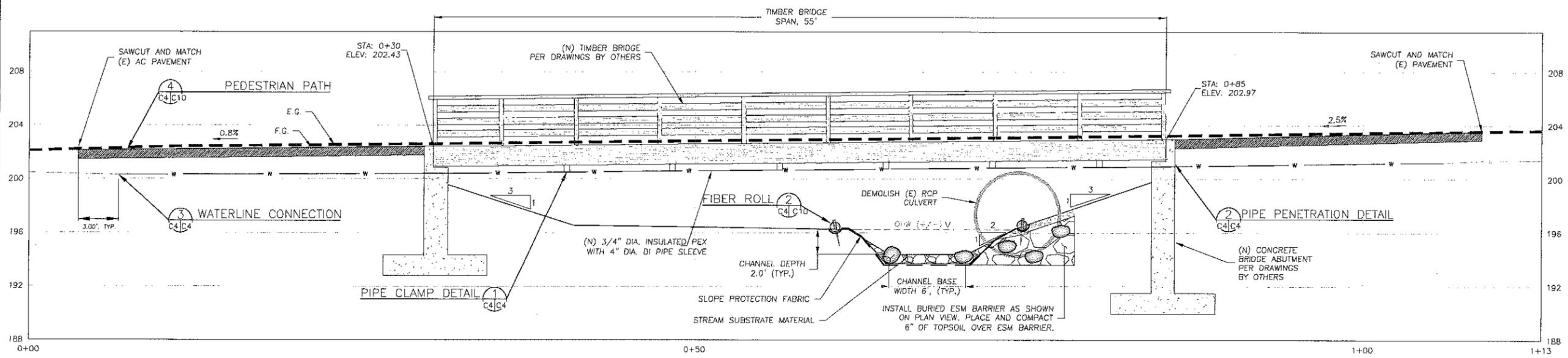
CONTROL POINTS

POINT	NORTHING	EASTING	ELEV.	DESC.
1	656565.09	7683118.16	200.00	REBAR
2	656566.40	7683277.49	202.46	REBAR
3	656639.79	7831004.78	203.41	"X" IN CC
4	656524.50	7682913.18	194.92	REBAR
5	656406.77	7682854.92	192.57	REBAR
6	656266.07	7682709.30	194.65	REBAR

ACCESS AND STAGING AREA NOTES:

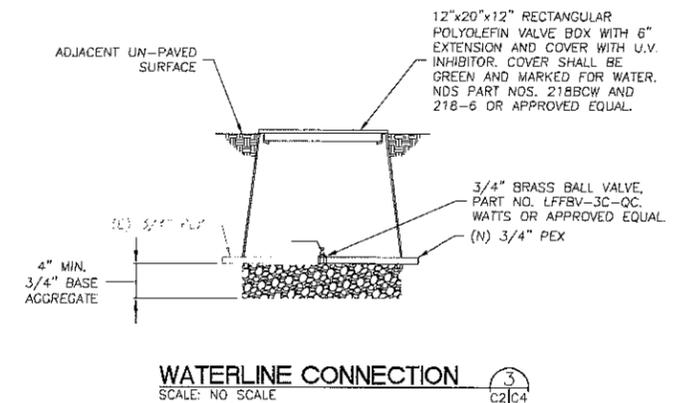
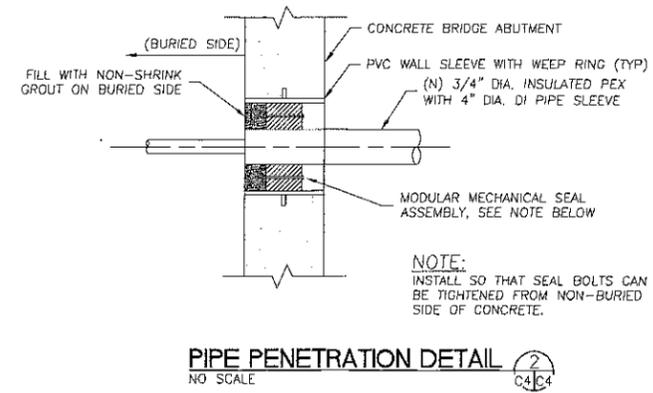
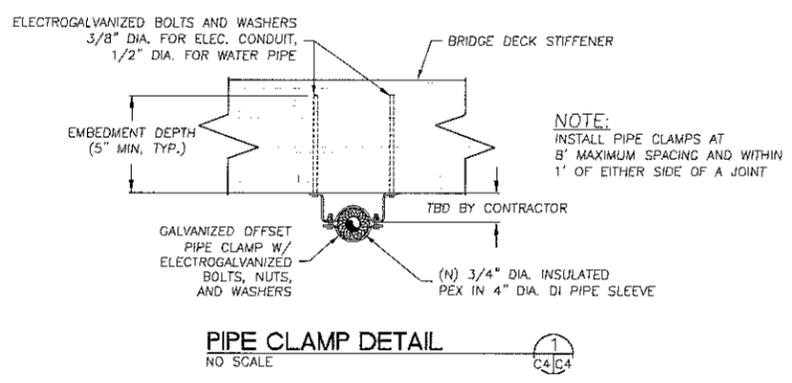
1. INSTALL CONSTRUCTION HOURS NOTICE SIGN AT SITE ACCESS POINTS FOR COMMERCIAL DEVELOPMENT PER DETAIL 3 ON SHEET C10 PRIOR TO STARTING CONSTRUCTION.
3. PRIOR TO STARTING WORK ON THE PROJECT, SUBMIT A PLAN OF PROPOSED STAGING AND STOCKPILE AREAS FOR ACCEPTANCE BY THE OWNER'S REPRESENTATIVE.
4. PRIOR TO STARTING WORK ON THE PROJECT, SUBMIT FOR ACCEPTANCE BY THE ENGINEER A HAZARDOUS MATERIALS CONTROLS AND SPILL PREVENTION PLAN. THE PLAN SHALL INCLUDE PROVISIONS FOR PREVENTING HAZARDOUS MATERIALS FROM CONTAMINATING SOIL OR ENTERING WATER COURSES, AND SHALL ESTABLISH A SPILL PREVENTION AND COUNTERMEASURE PLAN.
5. UTILIZE ONLY THE APPROVED ACCESS POINTS AND ROADS, AS SHOWN ON THE DRAWINGS.
6. MATERIALS SHALL BE STOCKPILED WITHIN AN EXISTING FLAT AND PREVIOUSLY DISTURBED AREA TO BE APPROVED BY THE OWNER'S REPRESENTATIVE.
7. THE DOWNSLOPE PERIMETER OF STAGING AND STOCKPILE AREAS SHALL BE CONTAINED WITH FIBER ROLLS.
8. ALL EQUIPMENT AND MATERIALS SHALL BE STORED, MAINTAINED AND REFUELED IN A DESIGNATED PORTION OF THE STAGING AREA. A MINIMUM OF 50 FEET AWAY FROM THE EDGE OF THE STREAM.
9. APPROVED ACCESS ROUTE SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITIONS AT CONCLUSION OF WORK, UNLESS STATED OTHERWISE IN THE DRAWINGS, TO THE SATISFACTION OF THE OWNER.

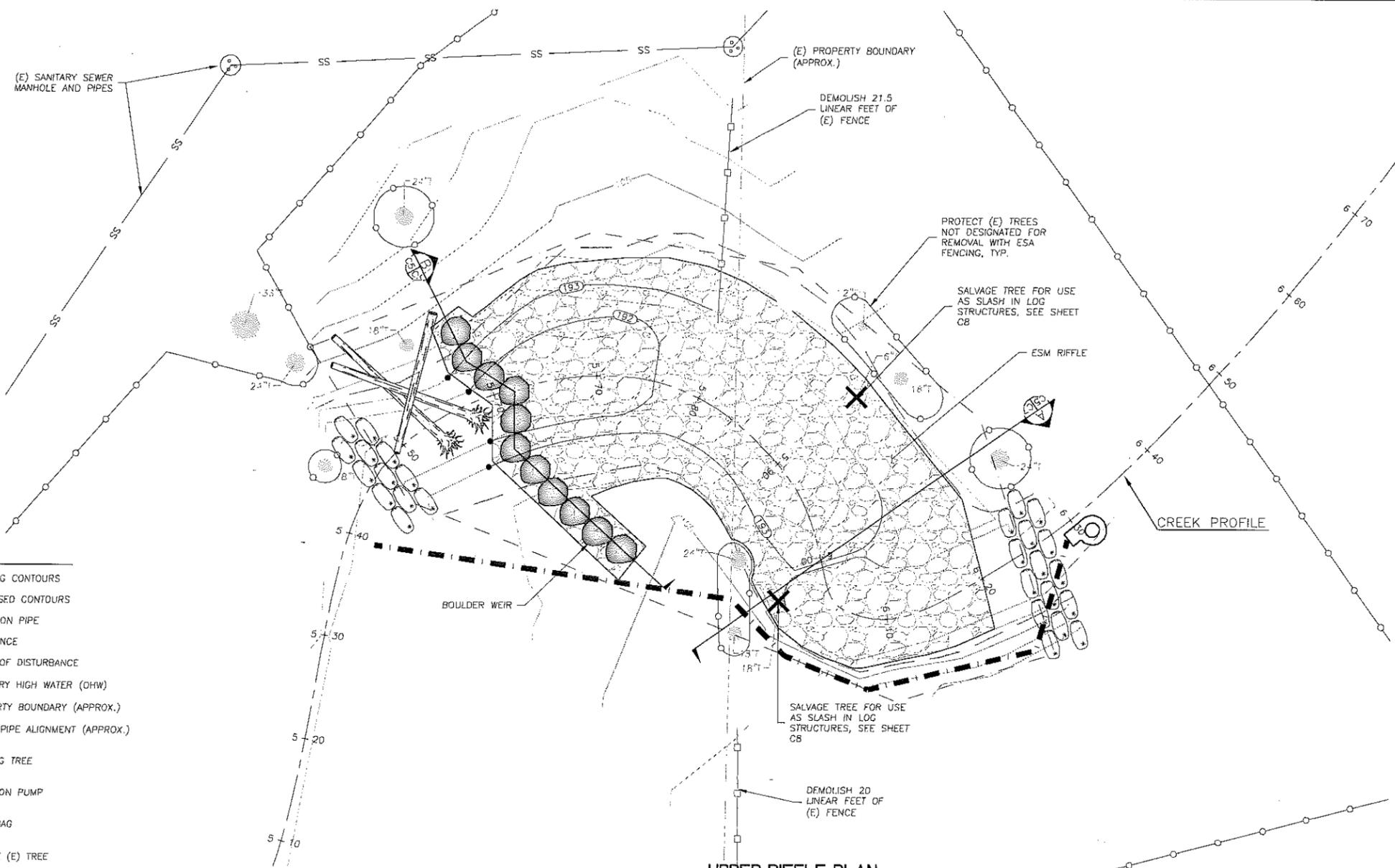
OVERVIEW AND ACCESS PLAN
 SCALE: 1" = 30'



TRAIL AND BRIDGE PROFILE
 SCALE: 1" = 4'

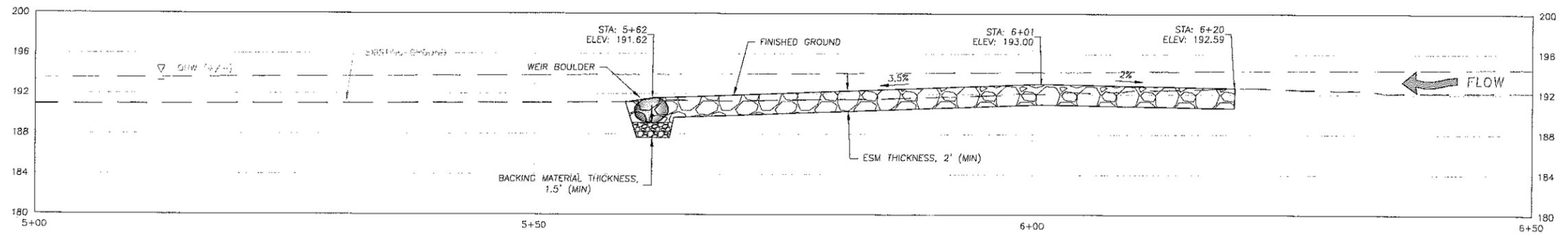
- NOTE:**
- CONTRACTOR TO PROVIDE ENGINEERING DESIGN DRAWINGS STAMPED BY A LICENSED ENGINEER IN THE STATE OF OREGON FOR THE PREFABRICATED TIMBER BRIDGE, BRIDGE ABUTMENTS AND FOOTINGS.
 - INSTALL WATER LINE CONNECTIONS AT EITHER END OF THE BRIDGE AT LOCATIONS VERIFIED BY THE OWNER'S REPRESENTATIVE.





- LEGEND**
- 5' --- EXISTING CONTOURS
 - 100 --- PROPOSED CONTOURS
 - 100 --- DIVERSION PIPE
 - ○ --- ESA FENCE
 - --- LIMITS OF DISTURBANCE
 - --- ORDINARY HIGH WATER (OHW)
 - --- PROPERTY BOUNDARY (APPROX.)
 - --- WATER PIPE ALIGNMENT (APPROX.)
 - ○ --- EXISTING TREE
 - ○ --- DIVERSION PUMP
 - ○ --- SAND BAG
 - X --- REMOVE (E) TREE
 - --- ESM BARRIER

NOTES:
 1. PROTECT EXISTING TREES THAT ARE NOT SPECIFICALLY CALLED OUT FOR REMOVAL WITH ESA FENCING TO ENCLOSE THE ENTIRE AREA UNDER THE CANOPY DROPLINE OF THE TREE. IF ESA FENCING IS NOT FEASIBLE DUE TO SPACE CONSTRAINTS, PLACE A 4 INCH THICK LAYER OF WOOD CHIP MULCH UNDER THE CANOPY DROPLINE OF THE TREE PER DIRECTION OF THE OWNER'S REPRESENTATIVE.



CREEK PROFILE AT UPPER RIFFLE
 SCALE: 1" = 6'

WATERWAYS CONSULTING INC.
 1020 SW TAYLOR STREET, STE. 380
 PORTLAND, OR 97205
 PH: (503) 227-8877
 WWW.WATERWAYS.COM

DATE: 5/21/15
 PREPARED BY: JAVICE M. BELL
 CHECKED BY: JAVICE M. BELL
 OREGON PROFESSIONAL ENGINEER
 LICENSE NO. 100000000
 EXPIRES: 6/30/2015

PREPARED AT THE REQUEST OF:
CLACKAMAS COUNTY WATER ENVIRONMENT SERVICES

UPPER RIFFLE PLAN AND PROFILE

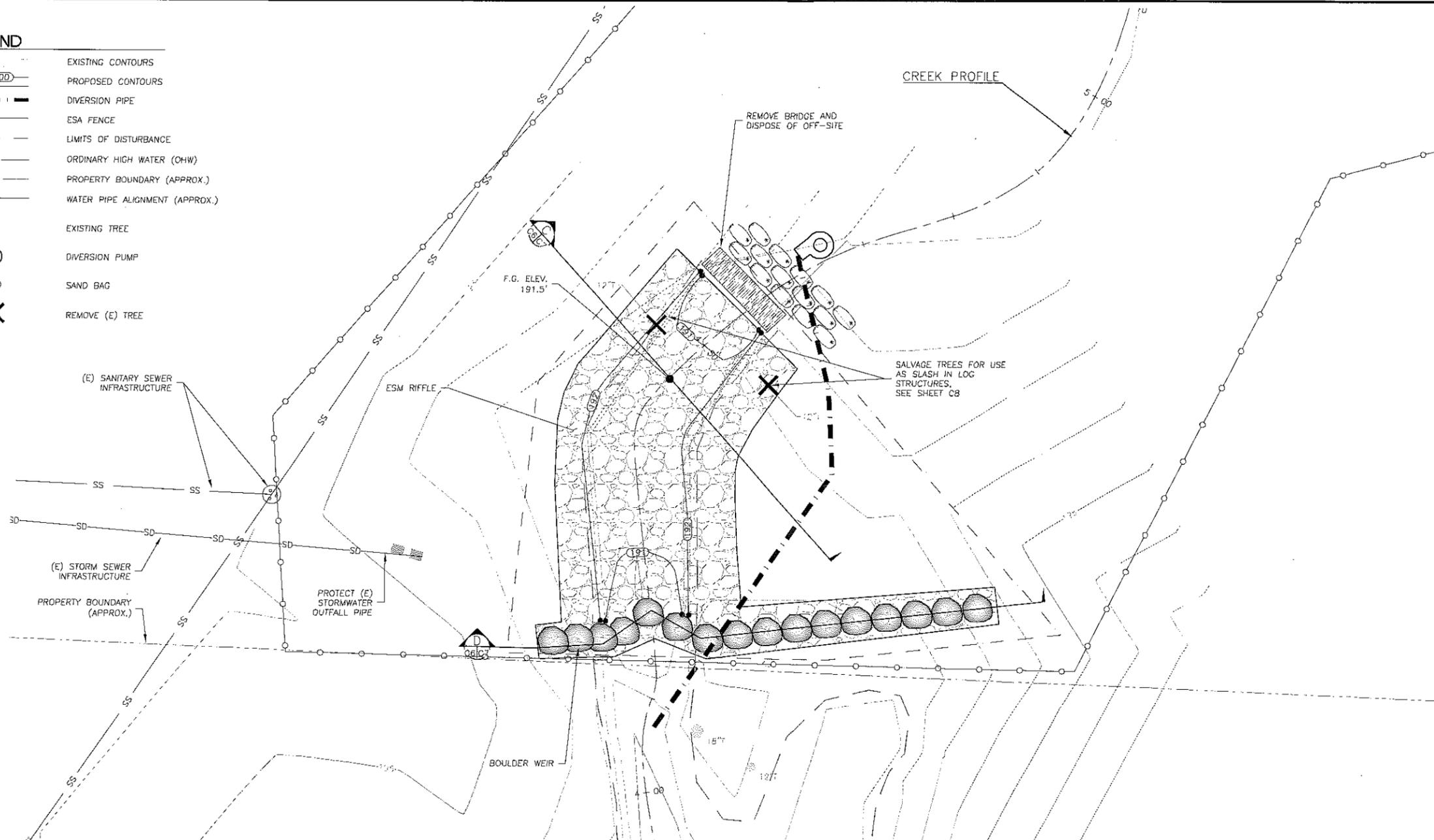
HAPPY VALLEY PARK STREAM STABILIZATION PROJECT
 100% DESIGN SUBMITTAL

DESIGNED BY: J.H./J.B.
 DRAWN BY: J.H./J.B.
 CHECKED BY: M.W.W.
 DATE: 5/21/15
 JOB NO.: 13-0198

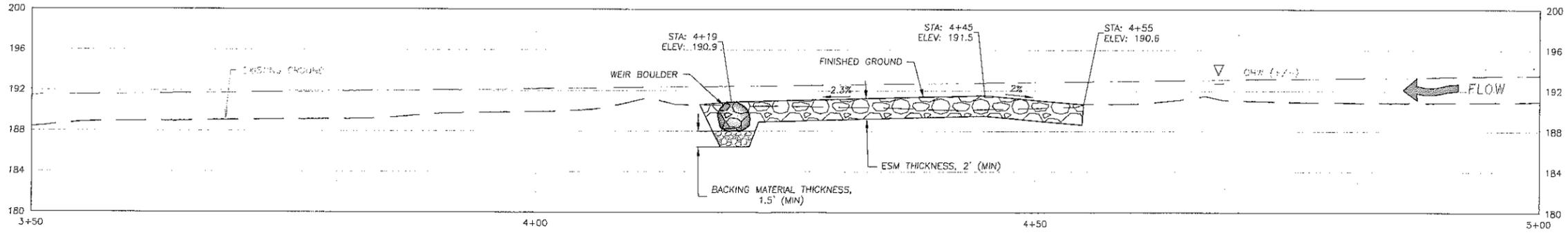
BAR IS ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES FOR REDUCED PLOTS

LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- DIVERSION PIPE
- ESA FENCE
- LIMITS OF DISTURBANCE
- ORDINARY HIGH WATER (OHW)
- PROPERTY BOUNDARY (APPROX.)
- WATER PIPE ALIGNMENT (APPROX.)
- EXISTING TREE
- DIVERSION PUMP
- SAND BAG
- REMOVE (E) TREE



LOWER RIFFLE PLAN
SCALE: 1" = 6'



CREEK PROFILE AT LOWER RIFFLE
SCALE: 1" = 6'



WATERWAYS CONSULTING INC.
1020 SW TAYLOR STREET, STE. 380
PORTLAND, OR 97205
PH: (503) 227-8979 / FAX: (866) 819-6947
WWW.WATERWAYS.COM

DATE: 5/21/15

 MAURICE M. BELL
 REGISTERED PROFESSIONAL ENGINEER
 NO. 10000
 STATE OF OREGON
 EXPIRES: 5/20/2015

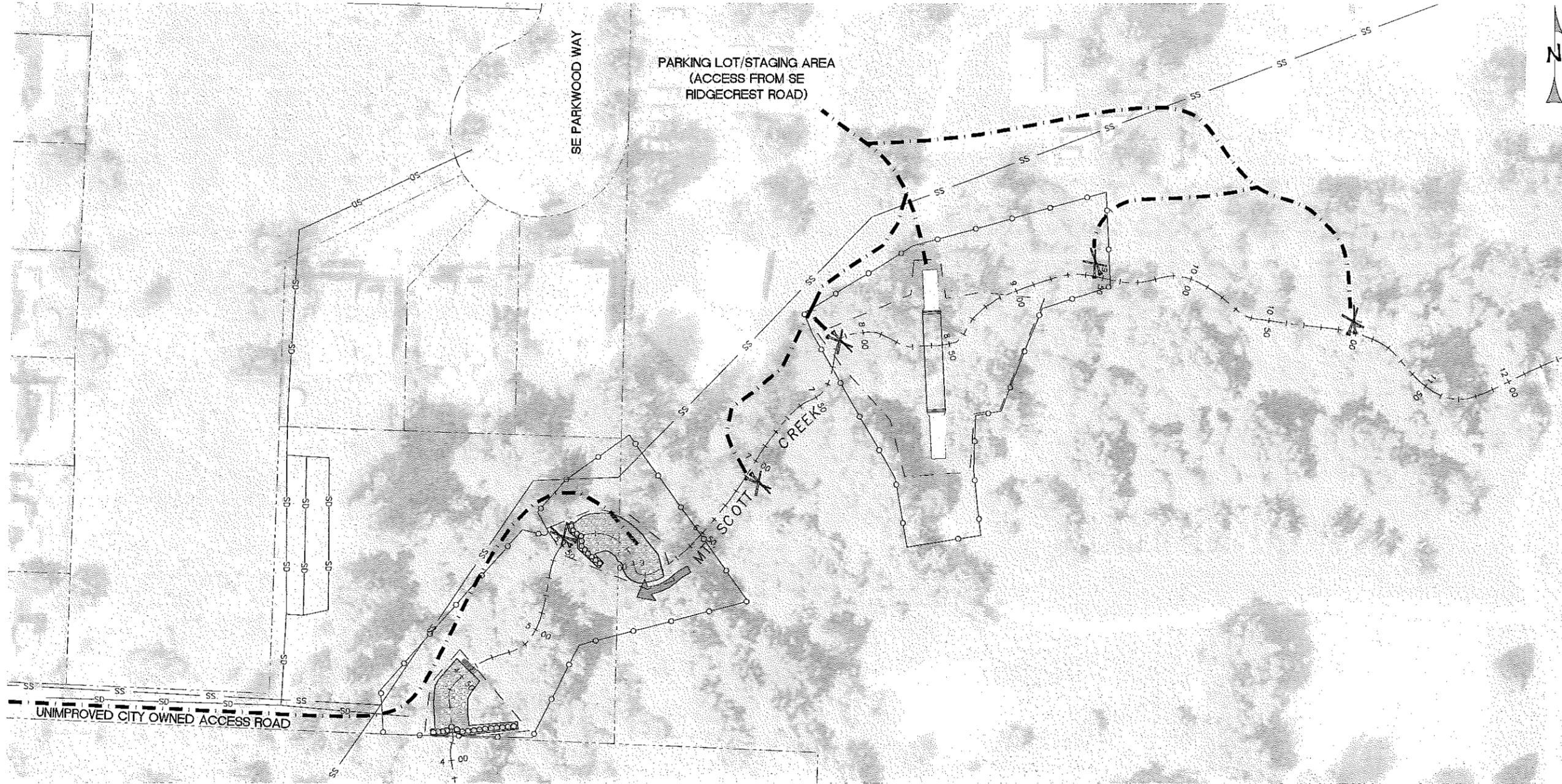
PREPARED AT THE REQUEST OF:
CLACKAMAS COUNTY WATER ENVIRONMENT SERVICES

LOWER RIFFLE PLAN AND PROFILE

HAPPY VALLEY PARK STREAM STABILIZATION PROJECT
 100% DESIGN SUBMITTAL

DESIGNED BY: J.H./J.B.
 DRAWN BY: J.H./J.B.
 CHECKED BY: M.W.W.
 DATE: 5/21/15
 JOB NO.: 13-019B

BAR IS ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES FOR REDUCED PLOTS



LOG PLACEMENT PLAN
SCALE: 1" = 30'

- LEGEND**
- TEMPORARY ACCESS ROUTE
 - LIMITS OF DISTURBANCE
 - PROPERTY BOUNDARY (APPROX.)
 - SS --- SANITARY SEWER ALIGNMENT (APPROX.)
 - X LOG PLACEMENT LOCATIONS

LOG PLACEMENT NOTES

1. **PLACEMENT LOCATIONS:** PLACE GROUPS OF THREE LOGS AT 5 LOCATIONS, AS SHOWN ON THE DRAWINGS. EACH GROUP SHALL INCLUDE 2 LOGS WITH ROOTWADS AND 1 WITHOUT ROOTWAD. ALL LOGS SHALL BE PLACED AT SURFACE LEVEL AND SHALL NOT REQUIRE GROUND DISTURBING ACTIVITIES. LOG PLACEMENT LAYOUTS ARE SHOWN CONCEPTUALLY DUE TO THE INHERENT VARIABILITY OF MATERIAL PROPERTIES. THE DESIGN REQUIRES THAT THE ENGINEER WILL OBSERVE PLACEMENT OF THE LOGS TO ENSURE THE INTENT OF THE DESIGN IS MET. OBSERVATIONS MUST INCLUDE LOG SELECTION AND PLACEMENT. ANY LOGS INSTALLED WITHOUT THE ENGINEER PRESENT ON-SITE MAY RESULT IN REJECTION OF THE WORK BY THE ENGINEER.

2. **LOGS:** ALL LOGS SHOWN ON THE DRAWINGS SHALL BE IMPORTED BY THE CONTRACTOR OR SALVAGED FROM GRADING OPERATIONS AT THE DIRECTION OF THE ENGINEER. FOR CLARITY, MOST LOGS ARE SHOWN WITHOUT BRANCHES OR ROOTWADS INTACT. IT IS PREFERABLE THAT LOGS BE SUPPLIED WITH THE MAXIMUM NUMBER OF BRANCHES AND ROOTS INTACT, TO MAXIMIZE PERFORMANCE OF THE STRUCTURES. LOG SPECIES TO BE USED INCLUDE PINE, CEDAR, DOUGLAS FIR, AND REDWOOD. MATERIALS FOR USE IN THE STRUCTURES SHALL MEET THE FOLLOWING SIZE CRITERIA:

3. **QUANTITIES:**

ITEM	DIAMETER (IN.)	LENGTH (FT.)	COUNT
LOG W/ ROOTWAD	12-24	30-35	10
LOG W/O ROOTWAD IMPORTED	12-24	25-30	5

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DATE: 5/21/15

 J. H. BELL
 ENGINEER

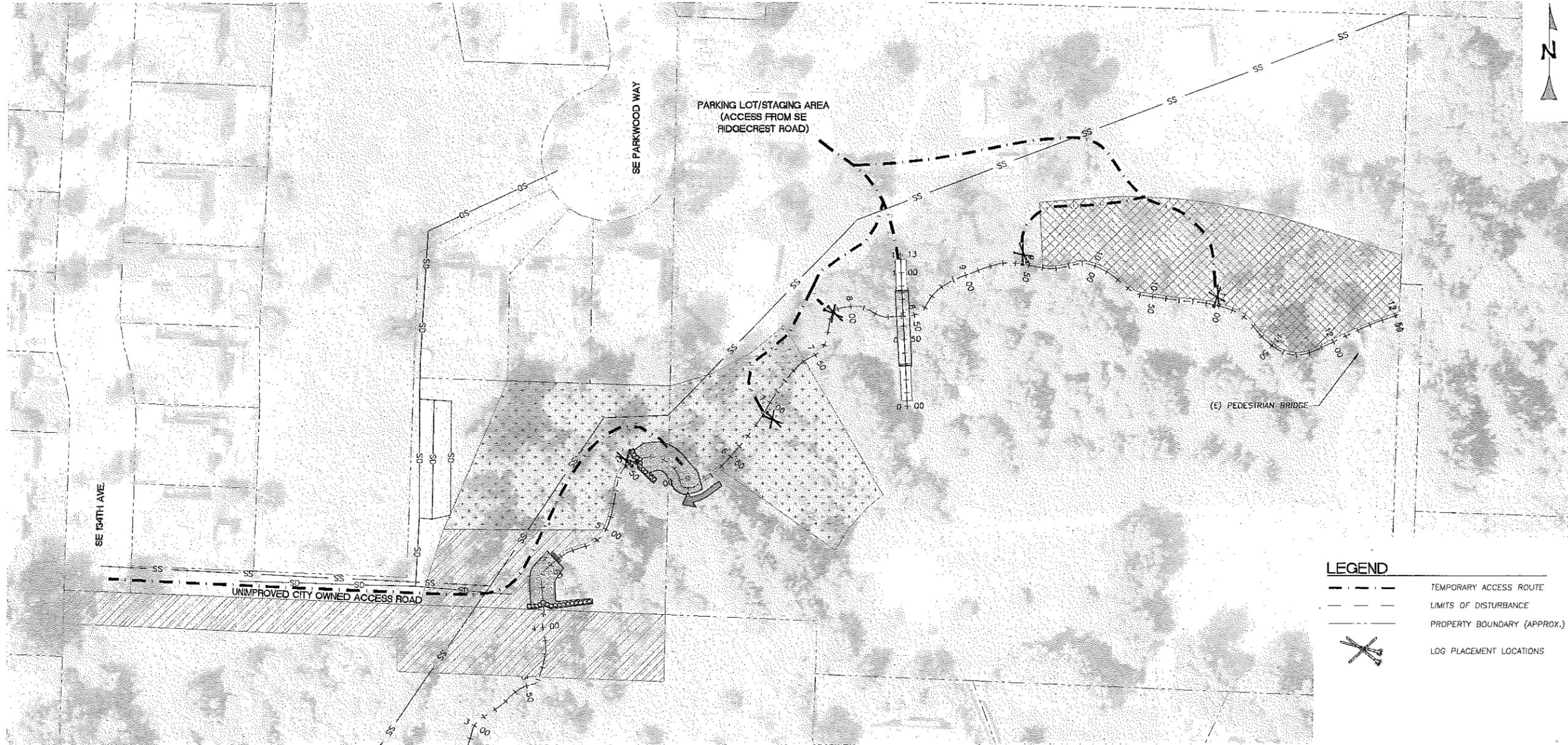
PREPARED AT THE REQUEST OF:
CLACKAMAS COUNTY WATER ENVIRONMENT SERVICES

LOG PLACEMENT PLAN

HAPPY VALLEY PARK STREAM STABILIZATION PROJECT
 100% DESIGN SUBMITTAL

DESIGNED BY: J.H./J.B.
 DRAWN BY: J.H./J.B.
 CHECKED BY: M.W.W.
 DATE: 5/21/15
 JOB NO.: 13-0199

BAR IS ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES FOR REDUCED PLOTS



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 WWW.WATERWAYS.COM

DATE: 5/21/15
 PREPARED BY: J.H./J.B.
 CHECKED BY: M.W.W.
 EXPIRES: 6/30/2015

PREPARED AT THE REQUEST OF:
CLACKAMAS COUNTY WATER ENVIRONMENT SERVICES

REVEGETATION PLAN

HAPPY VALLEY PARK
 STREAM STABILIZATION PROJECT
 100% DESIGN SUBMITTAL

DESIGNED BY: J.H./J.B.
 DRAWN BY: J.H./J.B.
 CHECKED BY: M.W.W.
 DATE: 5/21/15
 JOB NO.: 13-0198

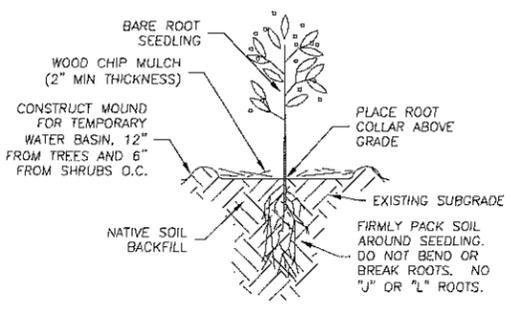
BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS

REVEGETATION PLAN
 SCALE: 1" = 40'

LEGEND
 - - - - - TEMPORARY ACCESS ROUTE
 - - - - - LIMITS OF DISTURBANCE
 - - - - - PROPERTY BOUNDARY (APPROX.)
 X X X LOG PLACEMENT LOCATIONS

NOTES:

- THE SEED MIX PRESENTED IN TABLE 3 SHALL BE APPLIED TO ALL DISTURBED AREAS AND COVERED WITH MULCH IMMEDIATELY FOLLOWING CONSTRUCTION. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR APPLICATION RATES. SEED MIX SHALL BE PRO TIME 402, NATIVE RIPARIAN MIX, AS PROVIDED BY PRO TIME LAWN SEEDS, OR APPROVED EQUAL.
- REVEGETATE ALL TEMPORARY ACCESS ROADS WITHIN PLANTING BOUNDARY AT THE CONCLUSION OF CONSTRUCTION WITH SPECIES AND PLANTING DENSITY AS LISTED IN TABLES 2 AND 3, THIS SHEET. PLANT PER DETAIL 1, THIS SHEET.
- INTER-PLANT AND WEED WITHIN THE PLANTING BOUNDARY AS LISTED IN TABLES 2 AND 3, THIS SHEET. PLANT PER DETAIL 1, THIS SHEET.
- WEEDING SHALL INCLUDE MOWING/CUTTING GRASSES AND TARGET WEEDS AND SPRAYING TARGET WEEDS WITHIN PLANTING BOUNDARY. TARGET WEEDS INCLUDE:
 HIMALAYAN BLACKBERRY (RUBUS ARMENIACUS)
 ENGLISH IVY (HEDERA HELIX)
 ENGLISH LAUREL (PRUNUS LAUROCERASUS)
 EUROPEAN HOLLY (ILEX AQUIFOLIUM)
- HERBICIDES USED IN TARGET WEED SPRAYING SHALL COMPLY WITH THE 2012 INTEGRATED PEST MANAGEMENT PLAN FOR OCSD#1 AND THE CITY OF HAPPY VALLEY. SEE APPENDIX 3 FOR PRODUCTS LIST.



BARE ROOT SEEDLING PLANTING
 SCALE: N.T.S.

TABLE 1: PLANTING LIST TABLE - TREES

SPECIES NAME	COMMON NAME	% OF PLANTING
TREES: 10' ON CENTER (BARE ROOT SEEDLING)		
MALUS FUSCUA	WESTERN CRABAPPLE	14
CASCARA PURSHIANA	CASCARA	14
ACER CIRCINATUM	VINE MAPLE	13
AMELANCHIER ALNIFOLIA	WESTERN SERVICEBERRY	13
PRUNUS EMARGINATA	BITTER CHERRY	13
SALIX SP.*	WILLOW	13
PRUNUS VIRGINIANA	CHOKECHERRY	5
TSUGA HETEROPHYLLA	WESTERN HEMLOCK	5
ABIES GRANDIS	GRAND FIR	5
THUJA PLICATA	WESTERN RED CEDAR	5

TABLE 2: PLANTING LIST TABLE - SHRUBS

SPECIES NAME	COMMON NAME	% OF PLANTING
SHRUBS: 5' ON CENTER (BARE ROOT SEEDLING)		
HOLIDISCUS DISCOLOR	OCEANSPRAY	9.1
LONICERA INVOLUCRATA	TWINBERRY	9.1
MAHONIA AQUIFOLIUM	OREGON GRAPE	9.1
OEMLERIA CERASIFORMIS	INDIAN PLUM	9.1
PHILADELPHUS LEWISII	MOCK ORANGE	9.1
ROSA PISOCARPA	SWAMP ROSE	9.1
RUBUS SPECTABILIS	SALMONBERRY	9.1
SAMBUCA RACEMOSA	RED ELDERBERRY	9.1
SYMPHORICARPUS ALBUS	SNOWBERRY	9.1
RIBES SANGUINEUM	REDFLOWERING CURRANT	9.1
CORNUS SERICEA	REDSIEER DOGWOOD	9.1

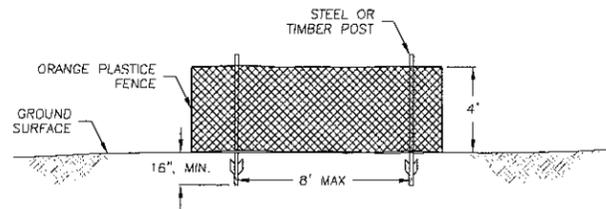
* SALIX SP. CUTTINGS TO BE SALVAGED ON-SITE.

TABLE 3: NATIVE SEED MIX TABLE

SPECIES NAME	COMMON NAME	% BY WEIGHT
ELYMUS GLAUCUS	BLUE WILD RYE	60
HORDEUM BRACHYANTHERUM	MEADOW BARLEY	30
DESCHAMPSIA CESPITOSA	TUFTED HAIR GRASS	10

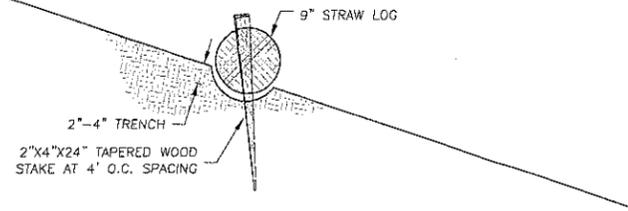
TABLE 4: INTER-PLANTING AND WEEDING TABLE

SYMBOL	DESCRIPTION
[Cross-hatched box]	INTER-PLANTING AND MINOR WEEDING AREA = 0.43 ACRES
[Box with + signs]	WEEDING AREA = 0.63 ACRES
[Diagonal hatched box]	INTER-PLANTING AND WEEDING AREA = 0.49 ACRES



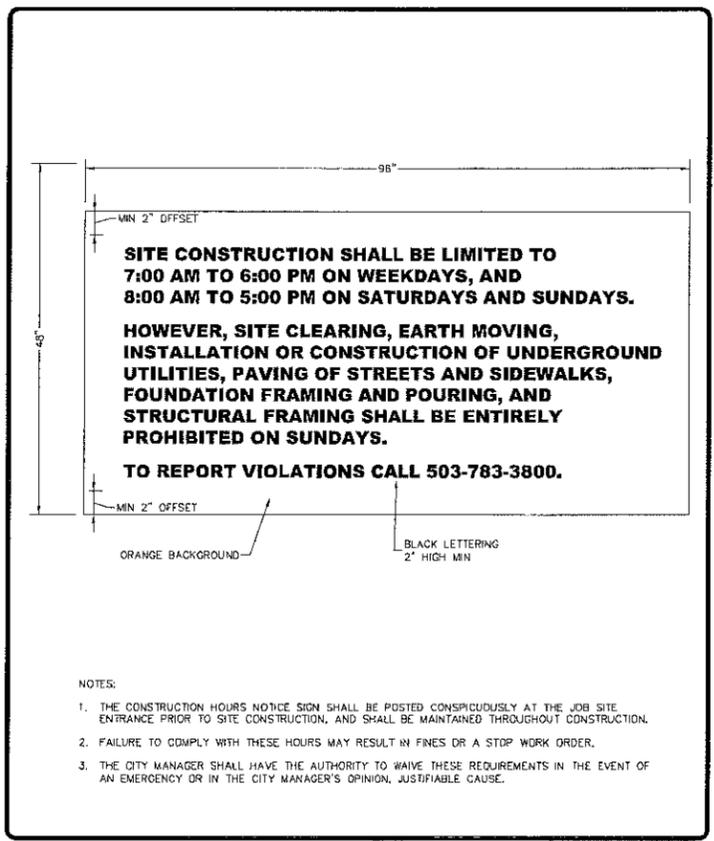
ESA FENCE DETAIL
SCALE: 1" = 4'

1
C2/C10



FIBER ROLL DETAIL
SCALE: 1" = 1'

2
C4,C5,C6/C10

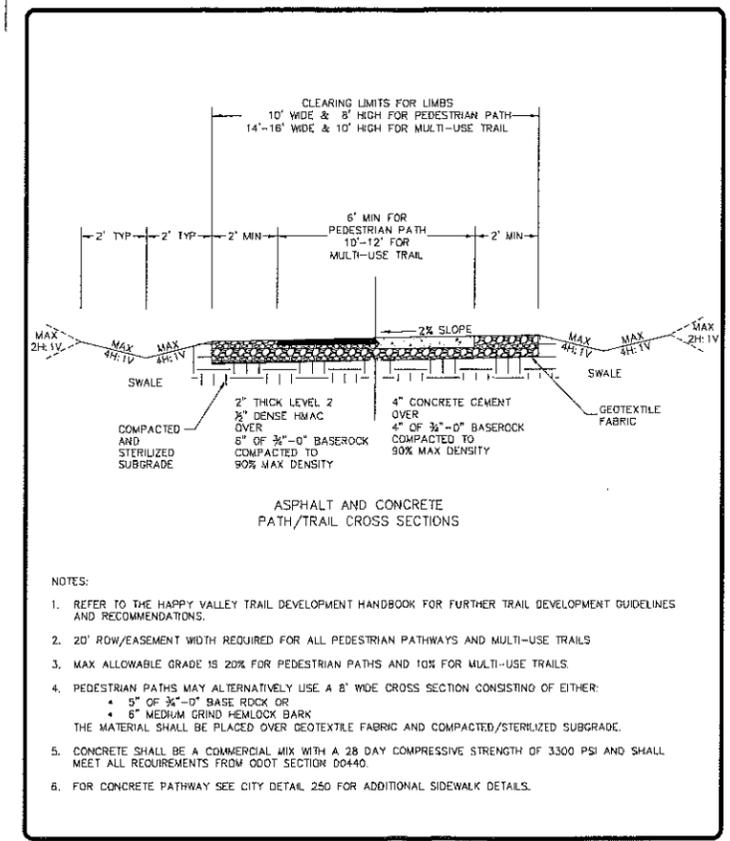


- NOTES:
1. THE CONSTRUCTION HOURS NOTICE SIGN SHALL BE POSTED CONSPICUOUSLY AT THE JOB SITE ENTRANCE PRIOR TO SITE CONSTRUCTION, AND SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
 2. FAILURE TO COMPLY WITH THESE HOURS MAY RESULT IN FINES OR A STOP WORK ORDER.
 3. THE CITY MANAGER SHALL HAVE THE AUTHORITY TO WAIVE THESE REQUIREMENTS IN THE EVENT OF AN EMERGENCY OR IN THE CITY MANAGER'S OPINION, JUSTIFIABLE CAUSE.

	ENGINEERING DEPARTMENT		CONSTRUCTION HOURS NOTICE SIGN		
	PE: CE	BY: RF	DATE: 01-15-13	DWG NO: 350	

CONSTRUCTION HOURS NOTICE SIGN
SCALE: NO SCALE

3
C2/C10



- NOTES:
1. REFER TO THE HAPPY VALLEY TRAIL DEVELOPMENT HANDBOOK FOR FURTHER TRAIL DEVELOPMENT GUIDELINES AND RECOMMENDATIONS.
 2. 20' ROW/EASEMENT WIDTH REQUIRED FOR ALL PEDESTRIAN PATHWAYS AND MULTI-USE TRAILS
 3. MAX ALLOWABLE GRADE IS 20% FOR PEDESTRIAN PATHS AND 10% FOR MULTI-USE TRAILS.
 4. PEDESTRIAN PATHS MAY ALTERNATIVELY USE A 8' WIDE CROSS SECTION CONSISTING OF EITHER:
 - 5" OF 3/4"-0" BASE ROCK OR
 - 6" MEDIUM GRIND HEMLOCK BARK
 THE MATERIAL SHALL BE PLACED OVER GEOTEXTILE FABRIC AND COMPACTED/STERILIZED SUBGRADE.
 5. CONCRETE SHALL BE A COMMERCIAL MIX WITH A 28 DAY COMPRESSIVE STRENGTH OF 3300 PSI AND SHALL MEET ALL REQUIREMENTS FROM CDOT SECTION 00440.
 6. FOR CONCRETE PATHWAY SEE CITY DETAIL 250 FOR ADDITIONAL SIDEWALK DETAILS.

	ENGINEERING DEPARTMENT		PEDESTRIAN PATH AND MULTI-USE TRAIL CROSS SECTIONS		
	PE: CE	BY: RF	DATE: 03-31-10	DWG NO: 400	

PEDESTRIAN PATH AND MULTI-USE TRAIL CROSS SECTION
SCALE: NO SCALE

4
C4/C10

- NOTES:
1. INSTALL ASPHALT PAVEMENT PER SECTION 00745, ASPHALT CONCRETE PAVEMENT OF THE STATE STANDARD SPECIFICATIONS.
 2. CONSTRUCT 8' WIDE MULTI-USE TRAIL PER DETAIL 4.



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WWW.WATWAYS.COM

DATE: 5/21/15

 JANICE M. BELL
 EXPIRES: 6/30/2015

PREPARED AT THE REQUEST OF:
CLACKAMAS COUNTY WATER ENVIRONMENT SERVICES

DETAILS

HAPPY VALLEY PARK STREAM STABILIZATION PROJECT 100% DESIGN SUBMITTAL

DESIGNED BY: J.H./J.B.
DRAWN BY: J.H./J.B.
CHECKED BY: M.W.W.
DATE: 5/21/15
JOB NO.: 13-019B

BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS
0" = 1"

C10 10 OF 11

GENERAL NOTES

- 1. THE ENGINEER SHALL BE NOTIFIED AT LEAST 48 HOURS PRIOR TO CONSTRUCTION...
2. EXISTING UNDERGROUND UTILITY LOCATIONS:
A. PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL CONTACT ALL UTILITIES COMPANIES...
B. LOCATIONS SHOWN ARE COMPILED FROM INFORMATION SUPPLIED BY THE APPROPRIATE UTILITY AGENCIES...
C. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE LOCATION AND/OR PROTECTION OF ALL EXISTING AND PROPOSED PIPING, UTILITIES, TRAFFIC SIGNAL EQUIPMENT...
D. PRIOR TO COMMENCING FABRICATION OR CONSTRUCTION, CONTRACTOR SHALL DISCOVER OR VERIFY THE ACTUAL DIMENSIONS, SIZES, MATERIALS, LOCATIONS, AND ELEVATIONS OF ALL EXISTING UTILITIES AND POTHOLE THOSE AREAS WHERE POTENTIAL CONFLICTS ARE LIKELY OR DATA IS OTHERWISE INCOMPLETE.
E. CONTRACTOR SHALL TAKE APPROPRIATE MEASURES TO PROTECT EXISTING UTILITIES DURING CONSTRUCTION OPERATIONS...
F. UPON LEARNING OF THE EXISTENCE AND/OR LOCATIONS OF ANY UNDERGROUND FACILITIES NOT SHOWN OR SHOWN INACCURATELY ON THE PLANS OR NOT PROPERLY MARKED BY THE UTILITY OWNER...
G. UTILITY RELOCATIONS REQUIRED FOR THE CONSTRUCTION OF THE PROJECT FACILITIES WILL BE PERFORMED BY THE UTILITY COMPANY, UNLESS OTHERWISE NOTED.
3. SHOULD THE CONTRACTOR DISCOVER ANY DISCREPANCIES BETWEEN THE CONDITIONS EXISTING IN THE FIELD AND THE INFORMATION SHOWN ON THESE DRAWINGS, HE SHALL NOTIFY THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.
4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO BE FULLY INFORMED OF AND TO COMPLY WITH ALL LAWS, ORDINANCES, CODES, REQUIREMENTS AND STANDARDS WHICH IN ANY MANNER AFFECT THE COURSE OF CONSTRUCTION OF THIS PROJECT...
5. ANY TESTS, INSPECTIONS, SPECIAL OR OTHERWISE, THAT ARE REQUIRED BY THE BUILDING CODES, LOCAL BUILDING DEPARTMENTS, OR THESE PLANS, SHALL BE DONE BY AN INDEPENDENT INSPECTION COMPANY...
6. PROJECT SCHEDULE: PRIOR TO COMMENCEMENT OF WORK, CONTRACTOR SHALL PROVIDE ENGINEER A DETAILED CONSTRUCTION SCHEDULE FOR APPROVAL...
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGN, PERMITTING, INSTALLATION, AND MAINTENANCE OF ANY AND ALL TRAFFIC CONTROL MEASURES DEEMED NECESSARY.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR GENERAL SAFETY DURING CONSTRUCTION...
9. CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT...
10. THE CONTRACTOR SHALL MAINTAIN A CURRENT, COMPLETE, AND ACCURATE RECORD OF ALL AS-BUILT DEVIATIONS FROM THE CONSTRUCTION AS SHOWN ON THESE DRAWINGS AND SPECIFICATIONS...
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE SITE IN A NEAT AND ORDERLY MANNER THROUGHOUT THE CONSTRUCTION PROCESS...
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AT HIS EXPENSE, ALL REQUIRED PERMITS NOT PREVIOUSLY OBTAINED BY THE OWNER...
13. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION STAKING AND LAYOUT, UNLESS OTHERWISE SPECIFIED.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION AND PRESERVATION OF ALL SURVEY MONUMENTS OR PROPERTY CORNERS...
15. TREE DIMENSIONS: TRUNK DIAMETERS SHOWN REPRESENT DIAMETER AT BREAST HEIGHT (DBH), MEASURED IN INCHES...
12" P = 12" DBH PINE
16. TREE SPECIES ARE IDENTIFIED WHEN KNOWN, HOWEVER, FINAL DETERMINATION SHOULD BE MADE BY A QUALIFIED BOTANIST...
17. TREE TRUNK DIMENSIONS MAY BE SHOWN OUT-OF-SCALE FOR PLOTTING CLARITY...

- 18. ALL STANDARD STREET MONUMENTS, LOT CORNER PIPES, AND OTHER PERMANENT MONUMENTS DISTURBED DURING THE PROCESS OF CONSTRUCTION SHALL BE REPLACED AND A RECORD OF SURVEY OR CORNER RECORD PER SECTION 8771 OF THE PROFESSIONAL LAND SURVEYORS ACT FILED BEFORE ACCEPTANCE OF THE IMPROVEMENTS
19. CONTRACTOR IS REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.
20. THE CONTRACTOR SHALL CONFORM TO THE RULES AND REGULATIONS OF THE CONSTRUCTION SAFETY ORDERS OF THE STATE DIVISION OF OCCUPATIONAL SAFETY AND HEALTH PERTAINING TO EXCAVATION AND TRENCHES.
21. AT ALL TIMES DURING CONSTRUCTION AND UNTIL FINAL COMPLETION AND ACCEPTANCE OF THE WORK, THE CONTRACTOR SHALL PREVENT THE FORMATION OF AN AIRBORNE DUST NUISANCE IN SUCH A MANNER THAT IT WILL CONTAIN DUST PARTICLES TO THE IMMEDIATE SURFACE OF THE WORK...
22. THE EVENT THAT HUMAN REMAINS AND/OR CULTURAL MATERIALS ARE FOUND, ALL PROJECT-RELATED CONSTRUCTION SHALL CEASE WITHIN A 100-FOOT RADIUS AND THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE OWNER'S REPRESENTATIVE.

EARTHWORK NOTES

- 1. ALL GRADING SHALL COMPLY WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL INVESTIGATION, AND WITH THE APPLICABLE REQUIREMENTS OF THE CITY OF HAPPY VALLEY GRADING ORDINANCE...
GEO TECHNICS LLC
7829 SE HARRISON STREET
PORTLAND, OREGON 97215
(503) 774-1619
JOB No. 14-002-1

PRIOR TO PERFORMING ANY WORK, THE CONTRACTOR SHALL BE FAMILIAR WITH THE GEOTECHNICAL INVESTIGATION. IN THE EVENT OF DISCREPANCY BETWEEN THE REPORT AND THE NOTES HEREIN, THE REPORT SHALL PREVAIL. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VISIT THE SITE AND MAKE HIS OWN INTERPRETATIONS WITH REGARD TO MATERIALS, METHODS AND EQUIPMENT NECESSARY TO PERFORM THE WORK REQUIRED FOR THIS PROJECT.

- 2. GRADING SUMMARY:
TOTAL OFF-HAUL = 316 CY

THE ABOVE QUANTITIES ARE APPROXIMATE IN-PLACE VOLUMES CALCULATED AS THE DIFFERENCE BETWEEN EXISTING GROUND AND THE PROPOSED FINISH GRADE, PREPARED FOR PERMITTING PURPOSES ONLY. EXISTING GROUND IS DEFINED BY THE TOPOGRAPHIC CONTOURS AND/OR SPOT ELEVATIONS ON THE PLAN. PROPOSED FINISH GRADE IS DEFINED AS THE DESIGN SURFACE ELEVATION OF WORK TO BE CONSTRUCTED. THE QUANTITIES HAVE NOT BEEN FACTORED TO INCLUDE ALLOWANCES FOR BULKING, CLEARING AND GRUBBING, SUBSIDENCE, SHRINKAGE, OVER EXCAVATION, AND RECOMPACTION, UNDERGROUND UTILITY AND SUBSTRUCTURE SPOILS AND CONSTRUCTION METHODS.

THE CONTRACTOR SHALL PERFORM AN INDEPENDENT EARTHWORK ESTIMATE FOR THE PURPOSE OF PREPARING BID PRICES FOR EARTHWORK. THE BID PRICE SHALL INCLUDE COSTS FOR ANY NECESSARY IMPORT AND PLACEMENT OF EARTH MATERIALS OR THE EXPORT AND PROPER DISPOSAL OF EXCESS OR UNSUITABLE EARTH MATERIALS.

- 3. PRIOR TO COMMENCING WORK, ALL AREAS TO REMAIN UNDISTURBED SHALL BE ADEQUATELY PROTECTED WITH TEMPORARY FENCING.
4. DO NOT DISTURB AREAS OUTSIDE OF THE DESIGNATED LIMITS OF DISTURBANCE, UNLESS AUTHORIZED IN WRITING BY THE ENGINEER. ALL WORK ASSOCIATED WITH RESTORATION AND REVEGETATION OF DISTURBED AREAS OUTSIDE THE DESIGNATED LIMITS OF DISTURBANCE, AS SHOWN ON THE DRAWINGS, SHALL BE BORN SOLELY BY THE CONTRACTOR.
5. ALL EXCESS SOILS SHALL BE REMOVED TO AN APPROVED DUMP SITE.
6. CLEARING AND GRUBBING, SUBGRADE PREPARATION AND EARTHWORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 00320 OF THE STANDARD SPECIFICATIONS, THESE DRAWINGS, AND THE TECHNICAL SPECIFICATIONS.
7. FINE GRADING ELEVATIONS AND SLOPES NOT SHOWN SHALL BE DETERMINED BY THE CONTRACTOR IN THE FIELD TO OBTAIN DRAINAGE IN THE DIRECTION INDICATED. ALL FINAL GRADING SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.
8. SUBGRADE UNDER ALL PAVED SURFACES SUBJECT TO VEHICULAR USE SHALL BE COMPACTED TO A MINIMUM OF 95% RELATIVE COMPACTION, IN ACCORDANCE WITH ASTM-D1557. ALL OTHER FILL TO BE COMPACTED TO A MINIMUM OF 90% MAXIMUM DENSITY AS DETERMINED BY ASTM-D1557 AND SO CERTIFIED BY TESTS AND REPORTS FROM THE CIVIL ENGINEER IN CHARGE OF THE GRADING CERTIFICATION.
9. FILL MATERIAL SHALL BE SPREAD IN LIFTS OF APPROXIMATELY 8 INCHES, MOISTENED OR DRIED TO NEAR OPTIMUM MOISTURE CONTENT AND RECOMPACTED. THE MATERIALS FOR ENGINEERED FILL SHALL BE APPROVED BY A REGISTERED CIVIL ENGINEER. ANY IMPORTED MATERIALS MUST BE APPROVED BEFORE BEING BROUGHT TO THE SITE. THE MATERIALS USED SHALL BE FREE OF ORGANIC MATTER AND OTHER DELETERIOUS MATERIALS.
10. ALL CONTACT SURFACES BETWEEN ORIGINAL GROUND AND RECOMPACTED FILL SHALL BE EITHER HORIZONTAL OR VERTICAL. ALL ORGANIC MATERIAL SHALL BE REMOVED AND THE REMAINING SURFACE SCARIFIED TO A DEPTH OF AT LEAST 12 INCHES, UNLESS DEEPER EXCAVATION IS REQUIRED BY THE ENGINEER.

DIVERSION NOTES

- 1. GENERAL
1.1. A WATER DIVERSION SYSTEM SHALL BE INSTALLED TO DEWATER THE PROJECT SITE TO FACILITATE IN-STREAM CONSTRUCTION AND TO REDUCE THE POTENTIAL IMPACTS TO WATER QUALITY DOWNSTREAM OF THE PROJECT SITE.
1.2. THE PROPOSED DIVERSION STRUCTURE SHALL CONSIST OF A SEALED SAND BAG DAM AND A PUMPED FLOW PIPELINE. NO OTHER DIVERSION METHOD SHALL BE USED WITHOUT AUTHORIZATION OF THE ENGINEER. IF ANOTHER DIVERSION METHOD IS PREFERRED BY THE CONTRACTOR, THE CONTRACTOR SHALL SUBMIT A PLAN TO THE ENGINEER FOR APPROVAL, DETAILING THE DESIRED DIVERSION METHOD.
1.3. THE CONTRACTOR SHALL CONFIRM THAT A FAVORABLE LONG TERM WEATHER FORECAST (1 WEEK MIN.) IS OBSERVED PRIOR TO PLACEMENT OF DIVERSION STRUCTURE.
1.4. PRIOR TO PLACEMENT OF DIVERSION STRUCTURE, FISH SHALL BE REMOVED FROM THE PROJECT REACH, IN ACCORDANCE WITH SECTION 2.
1.5. DIVERSION CONSTRUCTION SHALL NORMALLY BEGIN IN THE DOWNSTREAM AREA AND CONTINUE IN AN UPSTREAM DIRECTION. THE FLOW SHALL BE DIVERTED ONLY WHEN THE DIVERSION CONSTRUCTION IS COMPLETE. FOLLOWING ENGINEER'S APPROVAL OF THE COMPLETED WORK, DIVERSION SHALL BE REMOVED IMMEDIATELY, IN AN UPSTREAM DIRECTION.
2. FISH REMOVAL
2.1. FISH SHALL BE REMOVED FROM THE PROJECT SITE BY A QUALIFIED FISHERIES BIOLOGIST PROVIDED BY OWNER, LICENSED FOR SUCH ACTIVITIES BY THE NATIONAL MARINE FISHERIES SERVICE AND THE OREGON DEPARTMENT OF FISH AND WILDLIFE.
2.2. BLOCK NETS SHALL BE PROVIDED AND INSTALLED BY THE FISHERIES BIOLOGIST. BLOCK NETS SHALL BE MAINTAINED BY THE CONTRACTOR BOTH UPSTREAM AND DOWNSTREAM OF THE WORK AREA, THROUGHOUT THE PERIOD OF CONSTRUCTION. MAINTENANCE INCLUDES PERIODIC REMOVAL OF ACCUMULATED DEBRIS, AS NECESSARY TO ENSURE FUNCTION. BLOCK NETS SHALL BE REMOVED BY THE FISHERIES BIOLOGIST AFTER THE DIVERSION IS REMOVED AND THE IN CHANNEL WORK AREA IS RE-WATERED.

- 3. DIVERSION SYSTEM
3.1. THE CONTRACTOR SHALL INSTALL A TEMPORARY SEALED SANDBAG DAM TO CAPTURE AND DIVERT STREAM FLOW UPSTREAM OF THE PROJECT SITE. THE DAM AND METHOD OF SEALING SHALL BE PLACED AT AN APPROPRIATE DEPTH TO CAPTURE SUBSURFACE STREAM FLOW, AS NEEDED TO DEWATER THE STREAMBED.
3.2. THE CONTRACTOR SHALL MAINTAIN THE DIVERSION DAM DURING THE COURSE OF CONSTRUCTION WORK.
3.3. THE DIVERSION STRUCTURE SHALL BE CONSTRUCTED AS DIRECTED BY THE ENGINEER IN THE FIELD.
3.4. IN THE EVENT OF A SIGNIFICANT STORM, THE CONTRACTOR SHALL BE PREPARED TO TAKE NECESSARY MEASURES TO ENSURE SAFE PASSAGE OF STORM WATER FLOW THROUGH THE PROJECT AREA, WITHOUT DAMAGE TO EXISTING STRUCTURES, OR INTRODUCTION OF EXCESSIVE SEDIMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY EROSION CONTROL B.M.P.'S.
3.5. THE PUMP AND PIPELINE SHALL BE CAPABLE OF CONVEYING 900 GPM (2 CFS).
4. DEWATERING OF CONSTRUCTION AREAS
4.1. ANY DEWATERING ACTIVITIES WHICH MAY BE REQUIRED FOR CONSTRUCTION PURPOSES SHALL BE CONDUCTED IN A MANNER WHICH DOES NOT RESULT IN AN EXCEEDANCE OF ANY WATER QUALITY STANDARDS ESTABLISHED BY THE OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY.
4.2. DISCHARGE OF WATER FROM THE DEWATERED CONSTRUCTION SITE, EITHER BY GRAVITY OR PUMPING, SHALL BE PERFORMED IN A MANNER TO PREVENT EXCESSIVE TURBIDITY FROM ENTERING THE RECEIVING WATERWAYS AND TO PREVENT SCOUR AND EROSION OUTSIDE OF THE CONSTRUCTION SITE. PUMPED WATER SHOULD BE PRE-FILTERED WITH SAND/GRAVEL PACK AROUND SUMPS FOR SUBSURFACE FLOWS AND A SILT FENCE OR HAY BALES AROUND PUMPS FOR SURFACE FLOW. PUMPED WATER SHALL BE DISCHARGED INTO ISOLATED LOCAL DEPRESSIONS, FILTER BAGS, SETTLING (BAKER) TANKS, OR TEMPORARY SEDIMENT BASINS, AS NECESSARY TO MEET WATER QUALITY REQUIREMENTS. WHERE WATER TO BE DISCHARGED INTO THE CREEK WILL CREATE EXCESSIVE TURBIDITY, THE WATER SHALL BE ROUTED THROUGH A SEDIMENT INTERCEPTOR OR OTHER FACILITIES TO REMOVE SEDIMENT FROM WATER.
4.3. CONTRACTOR SHALL SUPPLY ALL NECESSARY PUMPS, PIPING, FILTERS, SHORING, AND OTHER TOOLS AND MATERIALS NECESSARY FOR DEWATERING.

EROSION CONTROL NOTES

- 1. EROSION CONTROL MEASURES TO BE INSPECTED AND APPROVED BY THE CITY OF HAPPY VALLEY PRIOR TO BEGINNING ANY WORK ON SITE.
2. THE EROSION CONTROL BMP'S SHOWN IN THESE DRAWINGS ARE INTENDED FOR THE SUMMER CONSTRUCTION SEASON (MAY 1ST TO SEPTEMBER 30TH). IF THE DRAINAGE FEATURES SHOWN ON THESE DRAWINGS ARE NOT COMPLETED AND DISTURBED AREAS STABILIZED BY OCTOBER 1ST, CONSULT THE ENGINEER FOR ADDITIONAL RAINY SEASON EROSION CONTROL MEASURES.
3. PRIOR TO COMMENCING WORK, AREAS TO REMAIN UNDISTURBED SHALL BE PROTECTED WITH ESA FENCING, AS SHOWN ON THE DRAWINGS. ADDITIONAL FENCING MAY BE REQUIRED AT THE DIRECTION OF THE ENGINEER.
4. CONTRACTOR SHALL UTILIZE ONLY THE APPROVED TEMPORARY ACCESS ROADS (AS SHOWN ON THE DRAWINGS) FOR TRANSPORT OF MATERIALS AND EQUIPMENT.
5. BETWEEN OCTOBER 15 AND APRIL 15, EXPOSED SOIL SHALL BE PROTECTED FROM EROSION AT ALL TIMES. DURING CONSTRUCTION, SUCH PROTECTION MAY CONSIST OF MULCHING AND/OR PLANTING OF NATIVE VEGETATION OF ADEQUATE DENSITY. BEFORE COMPLETION OF THE PROJECT, ANY EXPOSED SOIL ON DISTURBED SLOPES SHALL BE PERMANENTLY PROTECTED FROM EROSION.
6. A STANDBY CREW FOR EMERGENCY WORK SHALL BE AVAILABLE AT ALL TIMES DURING THE RAINY SEASON (OCTOBER 1 THROUGH APRIL 30). NECESSARY MATERIALS SHALL BE AVAILABLE AND STOCKPILED AT CONVENIENT LOCATIONS TO FACILITATE RAPID CONSTRUCTION OF TEMPORARY DEVICES.
7. CONSTRUCT TEMPORARY EROSION CONTROL MEASURES AS SHOWN ON THIS PLAN AND/OR AS DIRECTED BY THE ENGINEER TO CONTROL DRAINAGE WHICH HAS BEEN AFFECTED BY GRADING AND/OR TRENCHING OPERATIONS.
8. THE CONTRACTOR SHALL INCORPORATE ADEQUATE DRAINAGE PROCEDURES DURING THE CONSTRUCTION PROCESS TO ELIMINATE EXCESSIVE PONDING AND EROSION.
9. CONSTRUCT AND MAINTAIN EROSION CONTROL MEASURES TO PREVENT THE DISCHARGE OF EARTHEN MATERIALS TO THE CREEK FROM DISTURBED AREAS UNDER CONSTRUCTION AND FROM COMPLETED CONSTRUCTION AREAS.
10. INSTALL ALL PROTECTIVE DEVICES AT THE END OF EACH WORK DAY WHEN THE FIVE-DAY RAIN PROBABILITY EQUALS OR EXCEEDS 50 PERCENT AS DETERMINED FROM THE NATIONAL WEATHER SERVICE FORECAST OFFICE: WWW.SRH.NOAA.GOV.
11. THE EROSION CONTROL DEVICES ON THIS PLAN ARE A SCHEMATIC REPRESENTATION OF WHAT MAY BE REQUIRED. EROSION CONTROL DEVICES MAY BE RELOCATED, DELETED, OR ADDITIONAL ITEMS MAY BE REQUIRED DEPENDING ON THE ACTUAL SOIL CONDITIONS ENCOUNTERED, AT THE DISCRETION OF THE ENGINEER.
12. THE CONTRACTOR IS RESPONSIBLE TO KEEP IN FORCE ALL EROSION CONTROL DEVICES AND TO MODIFY THOSE DEVICES AS SITE PROGRESS DICTATES.
13. THE CONTRACTOR SHALL MONITOR THE EROSION CONTROL DEVICES DURING STORMS AND MODIFY THEM IN ORDER TO PREVENT PROGRESS OF ANY ONGOING EROSION.
14. THE CONTRACTOR IS RESPONSIBLE FOR CLEANING ANY EROSION OR DEBRIS SPILLING ONTO A PUBLIC STREET.
15. THE CONTRACTOR SHALL CONTACT THE ENGINEER IN THE EVENT THAT THE EROSION CONTROL PLAN AS DESIGNED REQUIRES ANY SUBSTANTIAL REVISIONS.
16. CONTRACTOR SHALL BE FAMILIAR WITH THE CONDITIONS OF APPROVAL OF ALL REQUIRED PROJECT PERMITS AND SHALL IMPLEMENT ALL REQUIRED BMP'S PRIOR TO COMMENCING GRADING OPERATIONS.
17. ALL DISTURBED SURFACES SHALL BE SEEDED PER TABLE 1 (THIS SHEET) AND MULCHED AT THE CONCLUSION OF CONSTRUCTION.

WATERWAYS CONSULTING INC.
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PROFESSIONAL
ENGINEER
DATE
5/21/15
OREGON
STATE BOARD OF ENGINEERING
EXPIRES: 6/30/2015
J. H. BELL
JANICE W. BELL

PREPARED AT THE REQUEST OF:
CLACKAMAS COUNTY
WATER ENVIRONMENT
SERVICES

NOTES

HAPPY VALLEY PARK
STREAM STABILIZATION
PROJECT
100% DESIGN SUBMITTAL

DESIGNED BY: J.H./J.B.
DRAWN BY: J.H./J.B.
CHECKED BY: M.W.W.
DATE: 5/21/15
JOB NO.: 13-019B

BAR IS ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES FOR REDUCED PLOTS

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