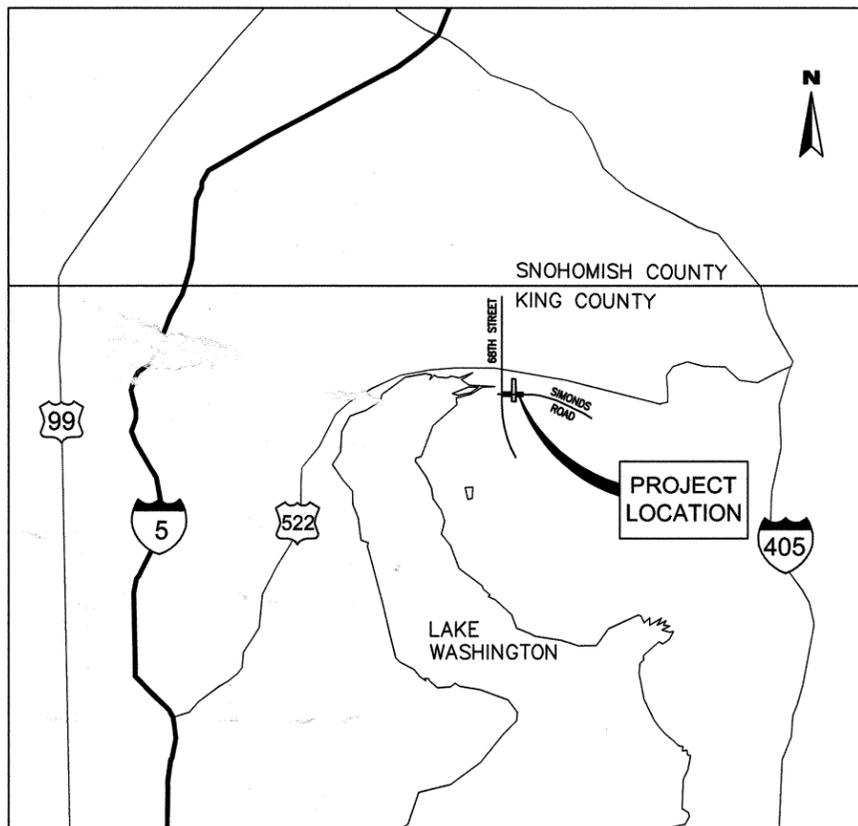




City of Kenmore

Tributary 0057 - Channel Relocation City Project No. 0158

December 4, 2013



VICINITY MAP
NOT TO SCALE

CITY OFFICIALS

DAVID BAKER		MAYOR	
BOB HENSEL	DEPUTY MAYOR	GLENN ROGERS	COUNCIL MEMBER
MILTON CURTIS	COUNCIL MEMBER	ALAN VAN NESS	COUNCIL MEMBER
LAURIE SPERRY	COUNCIL MEMBER	BRENT SMITH	COUNCIL MEMBER
ROB KARLINSEY	CITY MANAGER	KENT VAUGHAN	PROJECT MANAGER
KRIS OVERLEESE, P.E.	CITY ENGINEER	JENNIFER GORDON	PUBLIC WORKS OPERATIONS MANAGER

SHEET INDEX

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UTILITY CONTACTS

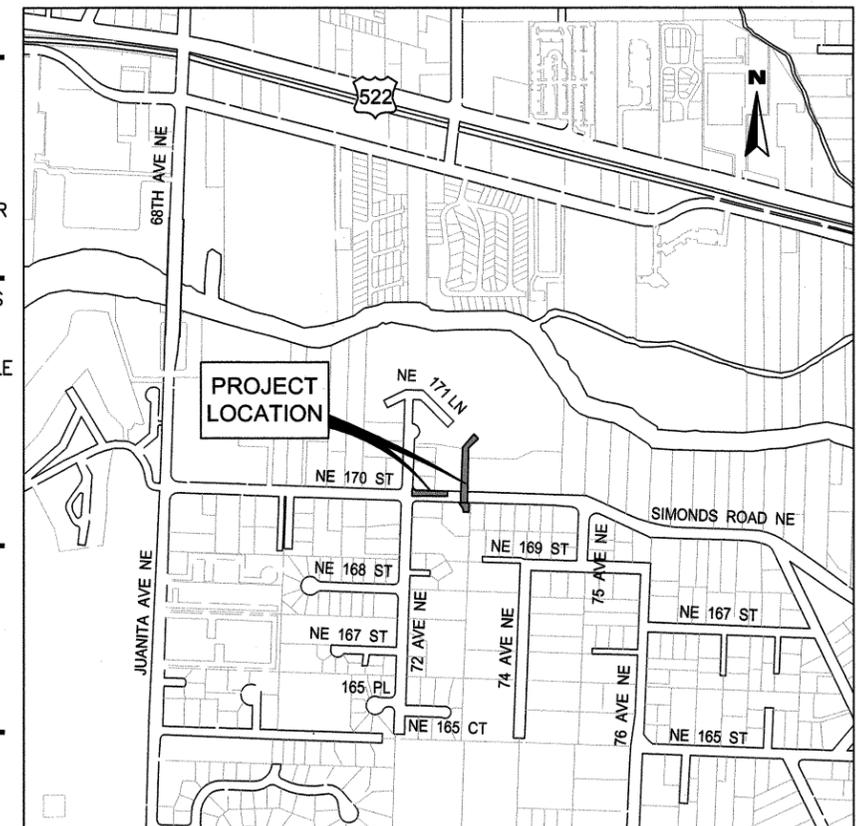
NAME	AGENCY	PHONE	EMAIL
REBECCA NICHOLAS	PUGET SOUND ENERGY	(425) 462-3727	rebecca.nicholas@pse.com
GEORGE MATOTE	NORTHSHORE UTILITY DISTRICT	(425) 398-4408	gmatote@nud.net
JEFF BURRIS	COMCAST (CABLE)	(425) 263-5353	jeff.burris@comcast.com
TIM RENNICK	FRONTIER (PHONE)	(425) 263-4023	tim.rennick@ftr.com
JOHN GUAY	PSE (NATURAL GAS)	(206) 948-4102	john.guay@pse.com

ENGINEER

GRAY & OSBORNE, INC. 701 DEXTER AVE. N, SUITE 200 SEATTLE, WA 98109
CONTACT: BARRY BAKER, P.E. (206) 284-0860

CITY OF KENMORE

CONTACT: KENT VAUGHAN, P.E. (425) 398-8900



PROJECT LOCATION

SCALE: 1"=500'

DISCLAIMER

The right-of-way, property lines, topography, and storm drainage lines shown hereon are based on available information, not on a surveyed location and are only approximate.

NE 1/4 OF SECTION 13, TOWNSHIP 26 N, RANGE 4 E
KING COUNTY, WASHINGTON STATE
LATITUDE 47.74472°N, LONGITUDE 122.23689°W

CALL BEFORE YOU DIG
1-800-424-5555

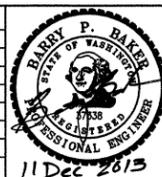
ACCEPTED BY:

Kent Vaughn
CITY OF KENMORE

01/31/2014

DATE

No.	DATE	BY	REVISION



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Drawn By: P.G.M.
Reviewed By: B.P.B.
Date: DEC 2013



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SERVICES DEPARTMENT
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Tributary 0057
Channel Realignment and
Sediment Control Project
City Project No. 0158

COVER SHEET
VICINITY MAP
AND LOCATION MAP

Sheet No.
C-1
Sheet No.
1
17
Of Total

ABBREVIATIONS

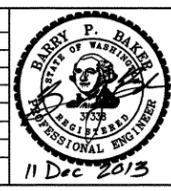
AVE	AVENUE
AC	ASBESTOS CEMENT PIPE
ALT	ALTERNATE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ASPH	ASPHALT
ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS
ASSY	ASSEMBLY
BF	BLIND FLANGE
BLDG	BUILDING
BLK	BLOCK
BO	BLOW OFF
CTR	CENTER
CB	CATCH BASIN
CI	CAST IRON
CL	CENTER LINE
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
CONC	CONCRETE
C	CONDUIT
CONN	CONNECTION
CONT	CONTINUOUS
CPEP	CORRUGATED POLYETHYLENE PIPE
CPLG	COUPLING
CY	CUBIC YARD
CONT	CONTINUED
CL	CLASS
CF	CUBIC FEET
CFS	CUBIC FEET PER SECOND
DI	DUCTILE IRON
DIA	DIAMETER
DOT	DEPARTMENT OF TRANSPORTATION
DIM	DIMENSION
DWGS	DRAWING(S)
D	DRAIN
EOA	EDGE OF ASPHALT
E	EAST
EA	EACH
EL	ELEVATION
ELEC	ELECTRICAL
EXIST	EXISTING
FIG	FIGURE
FL	FLANGE
FT	FEET
F	FORCE MAIN
GA	GAUGE
GALV	GALVANIZED
GV	GATE VALVE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
INV	INVERT
IN	INCH
L	LENGTH
LB	POUND
LF	LINEAR FEET
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
MJ	MECHANICAL JOINT
MISC	MISCELLANEOUS
N	NORTH
NO	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
PI	POINT OF INTERSECTION
PP	POWER POLE
PVI	POINT OF VERTICAL INTERSECTION
PE	PLAIN END
PERF	PERFORATED
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
QTY	QUANTITY
RET	RETAINING
R	RADIUS
RED	REDUCER
REINF	REINFORCE
REQD	REQUIRED
R/W	RIGHT-OF-WAY
SL	SLOPE
S	SOUTH
SCH	SCHEDULE
SF	SQUARE FEET
SHT	SHEET
SPECS	SPECIFICATIONS
SQ	SQUARE
STA	STATION
STD	STANDARD
TC	TOP OF CURB
TEL	TELEPHONE
THRD	THREADED
THRU	THROUGH
TYP	TYPICAL
VERT	VERTICAL
W	WEST
W/	WITH
W/O	WITHOUT

SYMBOL LEGEND

EXISTING	PROPOSED	DESCRIPTION	EXISTING	PROPOSED	DESCRIPTION
		CURB & GUTTER			REDUCER
		ASPHALT PAVEMENT			THRUST BLOCK
		GRAVEL SURFACING			TRANSITION COUPLING OR FLANGE COUPLING ADAPTER
		CONCRETE SURFACING			CAP/PLUG
		CONCRETE SIDEWALK			BLOW-OFF
		RIGHT-OF-WAY LINE			WELL
		CENTERLINE OF ROADWAY			MAIL BOX (NOTED)
		PROPERTY LINE			SIGN
		PERMANENT EASEMENT LINE			RIP RAP
		TEMPORARY EASEMENT LINE			EMBANKMENT
		INITIAL FILTER FENCE			TREE (CONIFER)
		CONSTRUCTION FENCE/PHASE 2 FILTER FENCE			TREE (DECIDUOUS)
		CONTOUR LINE			SHRUBS
		OVERHEAD UTILITY			TREE TO BE REMOVED (CONIFER)
		BURIED ELECTRICAL			TREE TO BE REMOVED (DECIDUOUS)
		BURIED TELEPHONE			SHRUBS TO BE REMOVED
		WATER MAIN (SIZE AS NOTED)			WET LANDS
		GAS MAIN			BUILDINGS
		IRRIGATION LINE			ROCK WALL
		SANITARY SEWER			ELEVATION POINT
		STORM DRAIN (SIZE AS NOTED)			MONUMENT
		SANITARY SEWER FORCE MAIN			BORING AND TEST PIT LOCATIONS
		CULVERT (SIZE & TYPE AS NOTED)			SECTION CORNER
		FENCE (TYPE AS NOTED)			1/4 CORNER
		FENCE (WITH GATE)			ANGLE POINT / CONTROL POINT
		POWER VAULT			BENCH MARK
		TELEPHONE VAULT			OWNERSHIP TIE
		TELEPHONE MANHOLE			DETAIL NUMBER
		MANHOLE OR DRYWELL (AS NOTED)			REFERENCE SHEET
		CLEANOUT			
		TYPE 1 CATCH BASIN OR CURB INLET			
		TYPE 2 CATCH BASIN			
		POLE WITH GUY WIRE			
		POWER / TELEPHONE / GUY POLE			
		LUMINAIRE			
		YARD LIGHT			
		JUNCTION BOX (AS NOTED)			
		GATE VALVE			
		BUTTERFLY VALVE			
		WATER METER			
		FIRE HYDRANT			

PROJECT SUMMARY:
 CUT = 2,000 CY
 FILL = 1,220 CY
 DISTURBED GROUND = 22,200 SF = 0.51 ACRES
 NEW IMPERVIOUS SURFACES = 0 SF

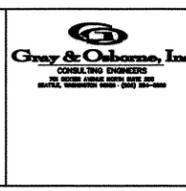
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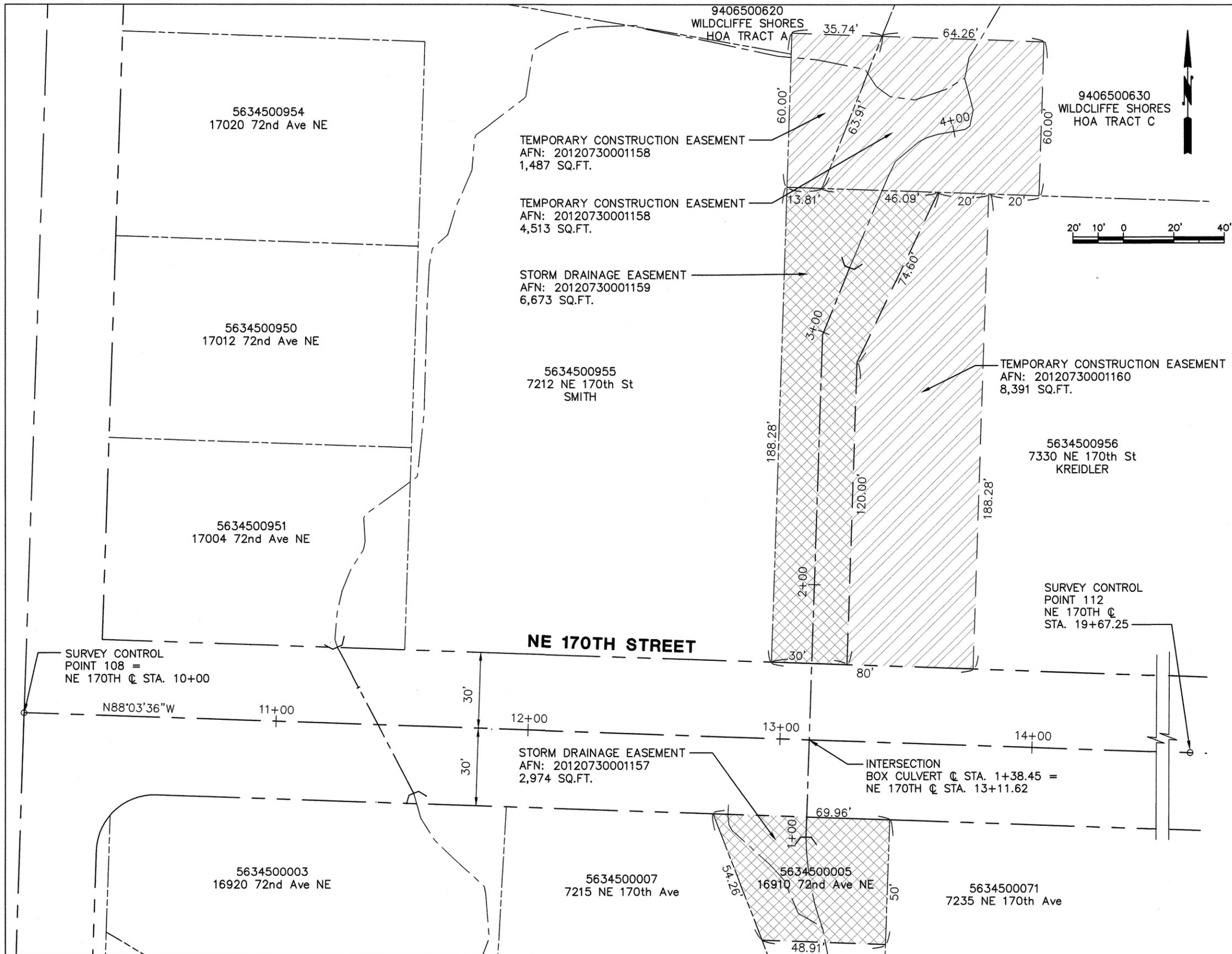


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LEGEND AND
 ABBREVIATIONS



HORIZONTAL DATUM:

NAD83(91)
WSPCS N ZONE, GRID NORTH

VERTICAL DATUM:

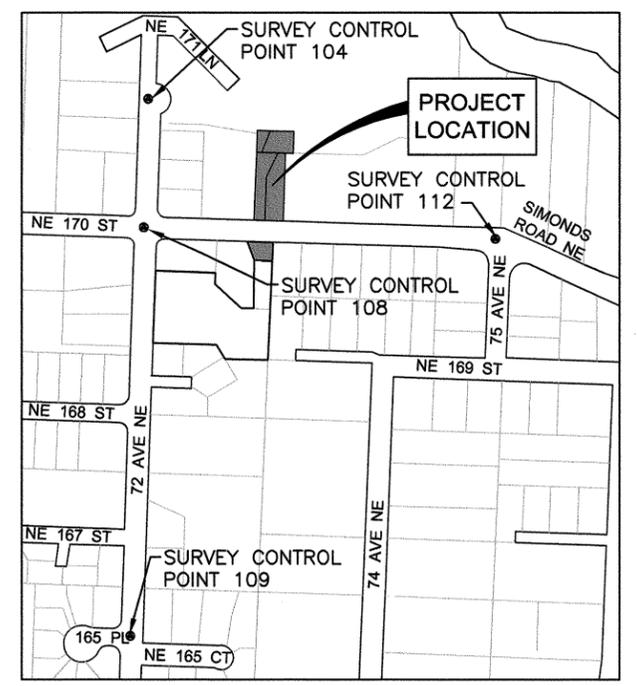
NAVD88

SURVEY CONTROL POINTS

POINT	NORTHING	EASTING	ELEV	DESCRIPTION
104	277699.03	1293270.41	32.48	CASED CONC. MON W/2" DOMED BRASSY W/"X" DOWN 0.25', C/L ENTR. SAC TO WILDCLIFFE SHORES
108	277345.73	1293258.38	41.04	CASED 2-1/4" DOMED BRASSY W/"X" DOWN 1.7', INTX 72AVE NE/NE 170ST
109	276228.32	1293221.86	79.42	CASED 1-1/2" DOMED BRASSY W/PUNCH DOWN 0.7', INTX NE 165 PL/NE 165 CT/72AVE NE
112	277313.22	1294220.27	96.36	CASED CONC. MON W/LEAD BRASS PLUG DOWN 0.85', EXT'D CL OF 75AVE NE/END 170ST

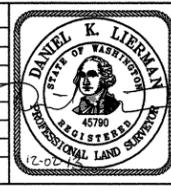
LEGEND

- PERMANENT DRAINAGE EASEMENT
- TEMPORARY DRAINAGE EASEMENT



SURVEY CONTROL POINT LOCATIONS
SCALE: 1" = 250'

No.	DATE	BY	REVISION

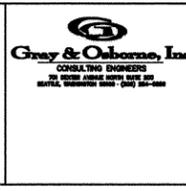


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 Vert:

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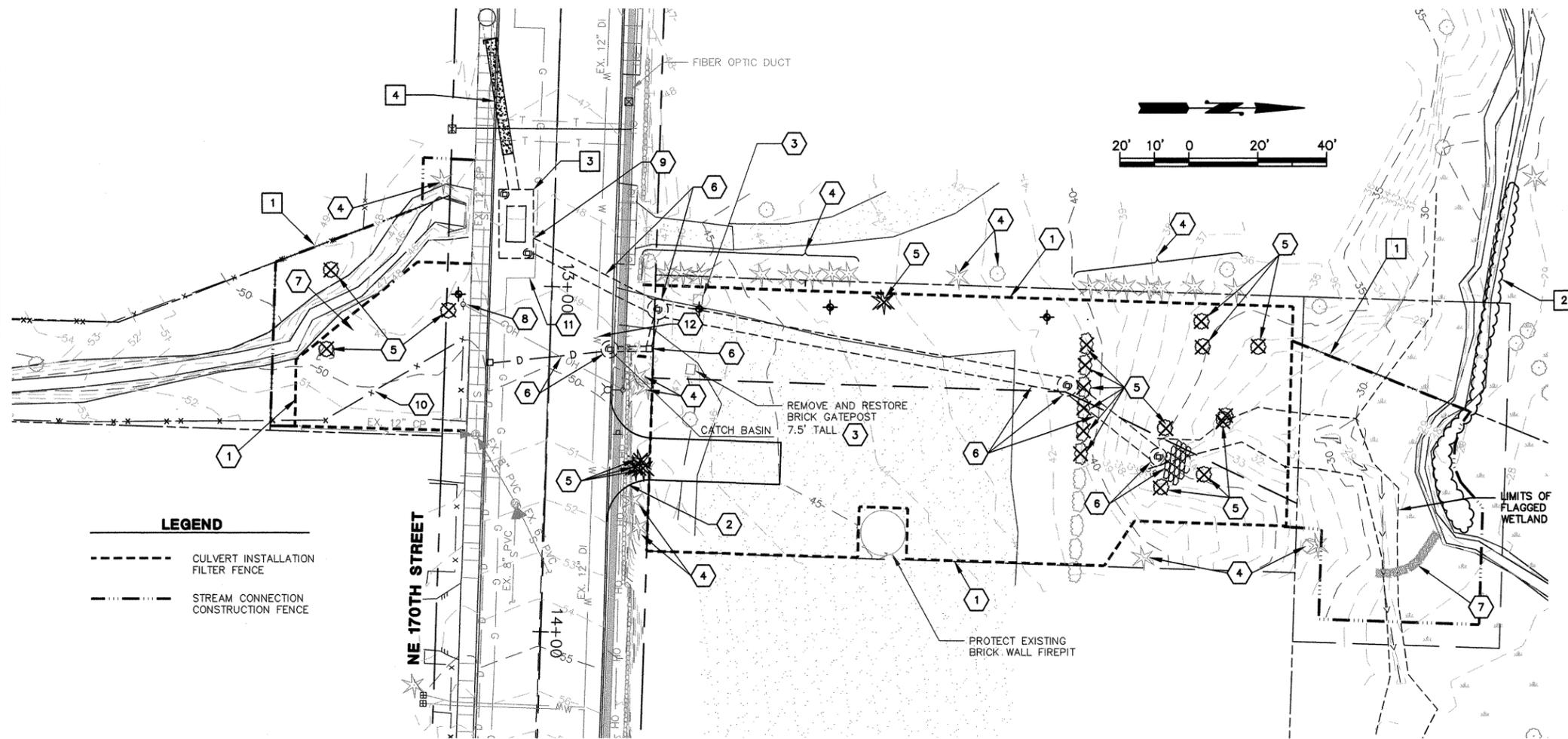
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SURVEY CONTROL PLAN

Sheet No.
C-3
 Sheet No.
 3
 17
 Of Total



DEMOLITION NOTES

THE WORK WILL BE COMPLETED IN TWO PHASES IN ACCORDANCE WITH SECTION 8 OF THE SPECIFICATIONS. THE WORK SHALL BE COMPLETED TO MINIMIZE DISRUPTION TO TRAFFIC ON NE 170TH STREET.

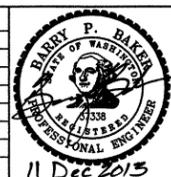
CULVERT INSTALLATION

- 1 INSTALL INITIAL FILTER FENCE TO SHOW LIMITS OF DISTURBANCE FOR CULVERT INSTALLATION. CONTRACTOR SHALL REVISE AS REQUIRED TO MEET CONSTRUCTION AND SITE REQUIREMENTS.
- 2 INSTALL CONSTRUCTION ENTRANCE. REMOVE AND RESTORE ROCK WALL FOLLOWING CONSTRUCTION. SEE SHEET C-5.
- 3 REMOVE AND RESTORE EXISTING BRICK GATEPOST.
- 4 PROTECT TREE/VEGETATION.
- 5 REMOVE TREE. CONTRACTOR SHALL STOCKPILE ALL ON-SITE EXISTING NATIVE WOODY DEBRIS AND/OR VEGETATION GREATER THAN 4" DIAMETER FOR PLACEMENT IN STREAM AND WETLAND RESTORATION AREAS AS DIRECTED BY THE ENGINEER. NON-NATIVE SPECIES AND SMALLER MATERIAL SHALL BE REMOVED AND WASTEHAULED.
- 6 REMOVE AND WASTEHAUL EXISTING CULVERTS, CATCHBASINS, AND STRUCTURES
- 7 INSTALL TEMPORARY STRAW BALE DAM AT END OF CONSTRUCTED CHANNEL PRIOR TO STREAM CONNECTION. REMOVE IMMEDIATELY PRIOR TO INTRODUCTION OF STREAM FLOW INTO NEW CHANNEL.
- 8 RELOCATE UTILITY POLE AT DIRECTION OF UTILITIES. CONTRACTOR SHALL COORDINATE WITH POWER AND COMMUNICATION UTILITIES.
- 9 CONTRACTOR SHALL PLUG THE NORTH SEDIMENT VAULT OVERFLOW PIPE AND MAINTAIN STREAM FLOW THROUGH THE CULVERT ON THE WEST SIDE OF THE SEDIMENT VAULT.
- 10 REMOVE FENCE, TO ANGLE POINT, FROM PROJECT AREA AND REALIGN FENCE ALONG PROPERTY LINE. SEE SHEET C-11 FOR NEW LOCATION.
- 11 NATURAL GAS LINE TO BE CAPPED OUTSIDE WORK ZONE BY UTILITY PROVIDER PRIOR TO CULVERT CONSTRUCTION BY PSE GAS. CONTRACTOR SHALL COORDINATE RELOCATION/RECONNECTION OF THE GAS LINE. CONTACT JOHN GUAY (206-948-4102) AT INFRA SOURCE 14 DAYS IN ADVANCE OF REQUIRED REMOVAL DATE.
- 12 CONTRACTOR SHALL REMOVE DI WATERMAIN AS REQUIRED FOR CULVERT INSTALLATION. CONTACT GEORGE MATOTE (425-398-4400x122) AT NORTHSORE UTILITY DISTRICT A MINIMUM OF 14 DAYS IN ADVANCE OF WORK. SEE SHEET C-13.

STREAM CONNECTION AND RESTORATION

- 1 FOLLOWING CULVERT INSTALLATION AND APPROVAL, INSTALL CONSTRUCTION FENCE FOR STREAM CONNECTION AND RESTORATION.
- 2 CONTRACTOR SHALL REMOVE AND WASTEHAUL EXISTING SANDBAG BERM AFTER STREAM FLOWS HAVE BEEN RELOCATED INTO THE NEW CHANNEL. NO GROUND DISTURBANCE (MECHANICAL EQUIPMENT) SHALL OCCUR OUTSIDE OF THE SHOWN CONSTRUCTION LIMITS.
- 3 FOLLOWING STREAM CONNECTION TO NEW CULVERT, CONTRACTOR SHALL REMOVE AND WASTEHAUL EXISTING SEDIMENT TRAP AND 10 FEET OF EXISTING 36" CMP CULVERT AND INSTALL DRAINAGE IMPROVEMENTS AS SHOWN ON SHEET C-10.
- 4 CONTRACTOR SHALL INSPECT 36" CMP CULVERT FOR ANY DRAINAGE CONNECTION BETWEEN EXISTING SEDIMENT TRAP AND DOWNSTREAM CATCH BASIN. CONTRACTOR SHALL INSTALL A PLUG IN 36" CMP CULVERT IMMEDIATELY UPSTREAM OF THE DOWNSTREAM CATCH BASIN UNDER SIDEWALK OR EXISTING SIDE DRAINAGE CONNECTION. CONTRACTOR SHALL FILL ALL REMAINING 36" CMP CULVERT UPSTREAM OF PLUG WITH CDF AND ABANDON IN PLACE.

No.	DATE	BY	REVISION



Scale: Noted
 Horiz: 1"=20'
 Vert: 1"=10'
 Designed By: B.P.B.
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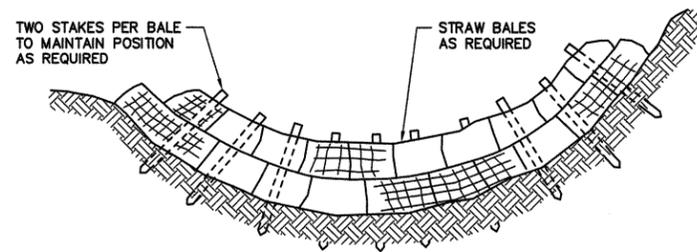
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**TESC AND
 DEMOLITION PLAN**

Sheet No.
C-4
 Sheet No.
 4
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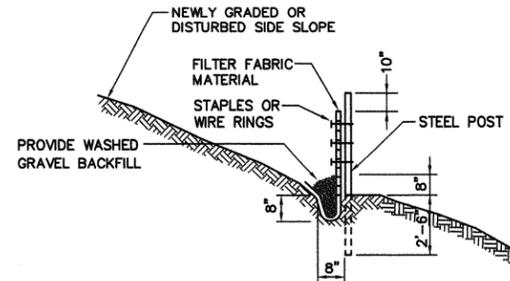
ELEVATION

NOTES:

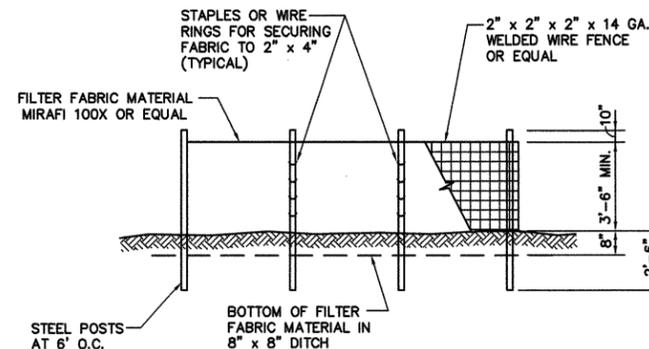
1. WHERE POSSIBLE, MAINTAIN NATURAL VEGETATION FOR SILT CONTROL.
2. TEMPORARY SILTATION AND DETENTION PONDS TO BE CONSTRUCTED BY PLACING STRAW BALES OR FILTER FABRIC FENCES ACROSS SWALES. PONDS SHALL BE CONSTRUCTED TO PROVIDE 2 CUBIC FEET OF SETTLING POND PER 50 SQUARE FEET OF CLEARED AREA TRIBUTARY TO THE POND.
3. FILTER FABRIC FENCES OR STRAW BALES TO BE LOCATED AT THE BOTTOM OR TOE OF NEWLY EXCAVATED SLOPES AS INDICATED ON THE PLANS OR DIRECTED BY THE ENGINEER.
4. CONSTRUCT ROCK CHECK DAMS IN OPEN DITCHES AS REQUIRED BY THE ENGINEER.
5. TO PROVIDE EROSION CONTROL ON STEEP AND NEWLY GRADED SLOPES, CONTRACTOR SHALL EMPLOY EROSION CONTROL BLANKET OR CLEAR PLASTIC IMMEDIATELY AFTER GRADING SLOPES AND THE APPLICATION OF SEEDING. THIS SHALL BE DONE AND IN PLACE BEFORE THE FALL RAINFALL BEGINS.
6. ALL TEMPORARY EROSION CONTROL STRUCTURES SHALL BE MAINTAINED IN SATISFACTORY CONDITION UNTIL CLEARING AND/OR CONSTRUCTION IS COMPLETED AND SURFACE RESTORATION HAS BEEN COMPLETED.

TEMPORARY STRAW BALE DAM

NOT TO SCALE



CROSS SECTION



ELEVATION

NOTES:

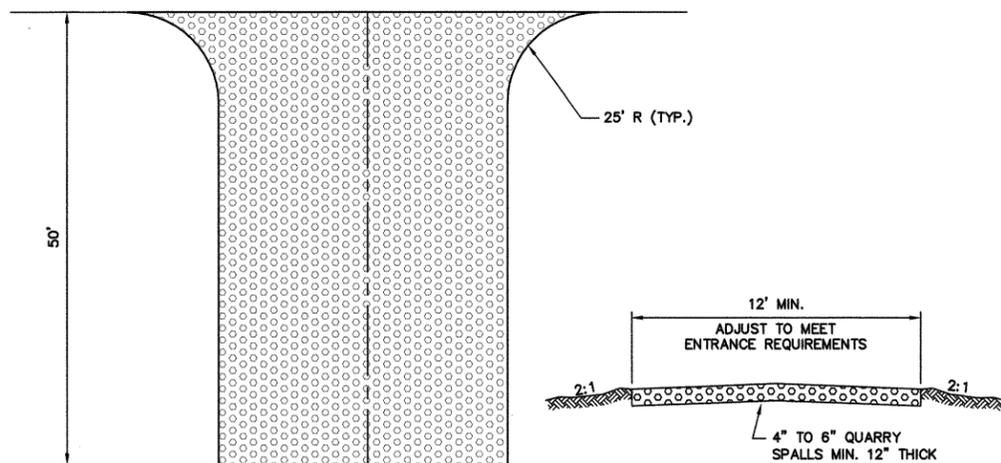
1. WHERE POSSIBLE, MAINTAIN NATURAL VEGETATION FOR EROSION CONTROL.
2. TEMPORARY CHECK DAM TO BE CONSTRUCTED BY PLACING FILTER FABRIC FENCES ACROSS SWALES UTILIZING FILTER SYSTEM PRIOR TO DISCHARGE.
3. ALL TEMPORARY EROSION CONTROL SHALL BE MAINTAINED IN A SATISFACTORY CONDITION UNTIL SUCH TIME THAT CLEARING AND/OR CONSTRUCTION IS COMPLETED AND SURFACE RESTORATION HAS BEEN COMPLETED.
4. RETURN EROSION CONTROL AREAS TO ORIGINAL GROUND CONDITIONS.

FILTER FENCE

NOT TO SCALE

STANDARD EROSION AND SEDIMENT CONTROL (ESC) PLAN NOTES

1. APPROVAL OF THIS EROSION AND SEDIMENTATION CONTROL (ESC) PLAN DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN (E.G., SIZE AND LOCATION OF ROADS, PIPES, RESTRICTORS, CHANNELS, RETENTION FACILITIES, UTILITIES, ETC.).
2. THE IMPLEMENTATION OF THESE ESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS APPROVED.
3. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED BY A CONTINUOUS LENGTH OF SURVEY TAPE (OR FENCING, IF REQUIRED) PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE CLEARING LIMITS SHALL BE PERMITTED. THE CLEARING LIMITS SHALL BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
4. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED PRIOR TO OR IN CONJUNCTION WITH ALL CLEARING AND GRADING SO AS TO ENSURE THAT THE TRANSPORT OF SEDIMENT TO SURFACE WATERS, DRAINAGE SYSTEMS, AND ADJACENT PROPERTIES IS MINIMIZED.
5. THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND MODIFIED TO ACCOUNT FOR CHANGING SITE CONDITIONS (E.G., ADDITIONAL SUMP PUMPS, RELOCATION OF DITCHES AND SILT FENCES, ETC.).
6. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED TO ENSURE CONTINUED PROPER FUNCTIONING. WRITTEN RECORDS SHALL BE KEPT OF WEEKLY REVIEWS OF THE ESC FACILITIES DURING THE WET SEASON (OCT. 1 TO APRIL 30) AND OF MONTHLY REVIEWS DURING THE DRY SEASON (MAY 1 TO SEPT. 30).
7. ANY AREAS OF EXPOSED SOILS, INCLUDING ROADWAY EMBANKMENTS, THAT WILL NOT BE DISTURBED FOR TWO DAYS DURING THE WET SEASON OR SEVEN DAYS DURING THE DRY SEASON SHALL BE IMMEDIATELY STABILIZED WITH THE APPROVED ESC METHODS (E.G., SEEDING, MULCHING, PLASTIC COVERING, ETC.).
8. ANY AREA NEEDING ESC MEASURES THAT DO NOT REQUIRE IMMEDIATE ATTENTION SHALL BE ADDRESSED WITHIN FIFTEEN (15) DAYS.
9. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN FORTY EIGHT (48) HOURS FOLLOWING A STORM EVENT.
10. AT NO TIME SHALL MORE THAN ONE (1) FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A CATCH BASIN. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT-LADEN WATER INTO THE DOWNSTREAM SYSTEM.
11. WHERE STRAW MULCH FOR TEMPORARY EROSION CONTROL IS REQUIRED, IT SHALL BE APPLIED AT A MINIMUM THICKNESS OF 3 INCHES.
12. PRIOR TO BEGINNING OF THE WET SEASON (OCT. 1), ALL DISTURBED AREAS SHALL BE REVIEWED TO IDENTIFY WHICH ONES CAN BE SEEDING IN PREPARATION FOR THE WINTER RAINS. DISTURBED AREAS SHALL BE SEEDING WITHIN ONE WEEK OF THE BEGINNING OF THE WET SEASON. A SKETCH MAP OF THOSE AREAS TO BE SEEDING AND IN THOSE AREAS TO REMAIN UNCOVERED SHALL BE SUBMITTED TO THE INSPECTOR. THE INSPECTOR CAN REQUIRE SEEDING OF ADDITIONAL AREAS IN ORDER TO PROTECT SURFACE WATERS, ADJACENT PROPERTIES, OR DRAINAGE FACILITIES.



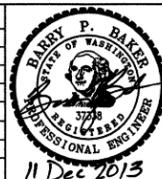
PLAN

SECTION

TEMPORARY CONSTRUCTION ENTRANCE DETAIL

NOT TO SCALE

No.	DATE	BY	REVISION



Scale: Noted
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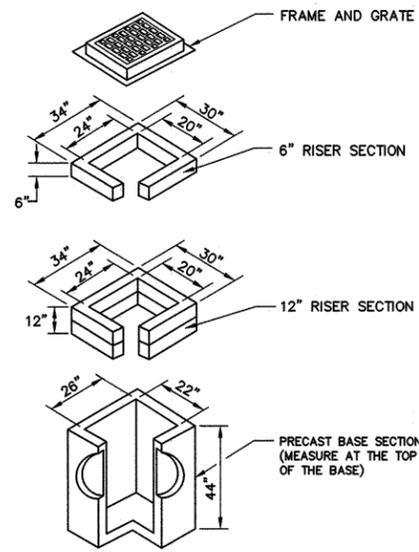
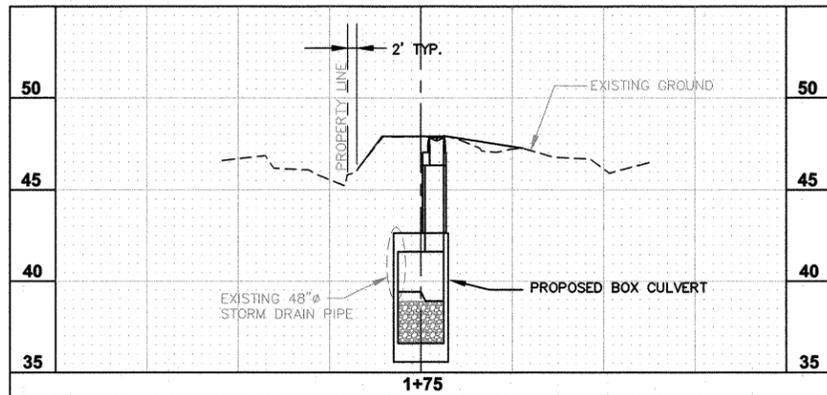
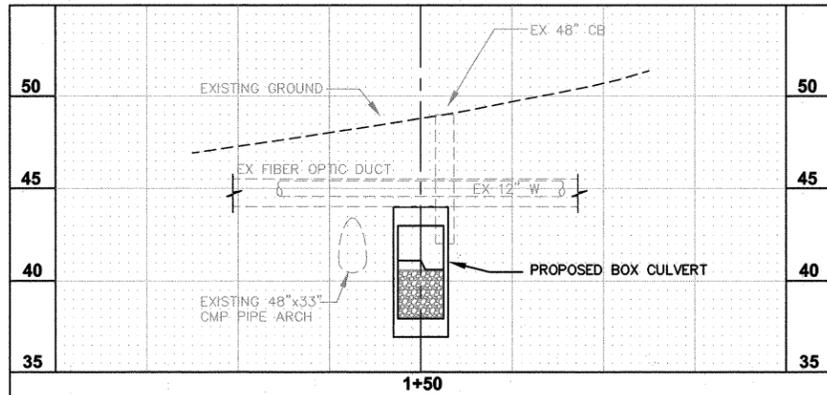
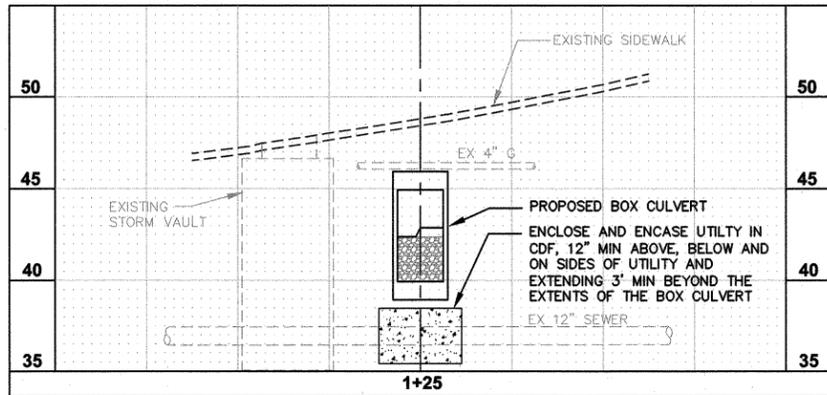
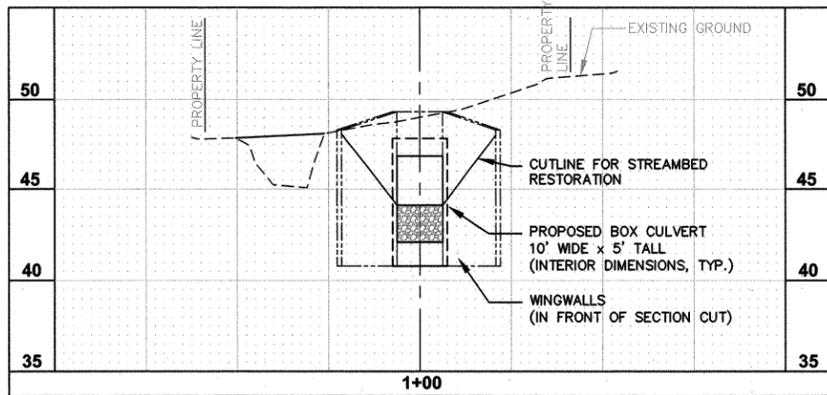


Tributary 0057
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 Sediment Control Project

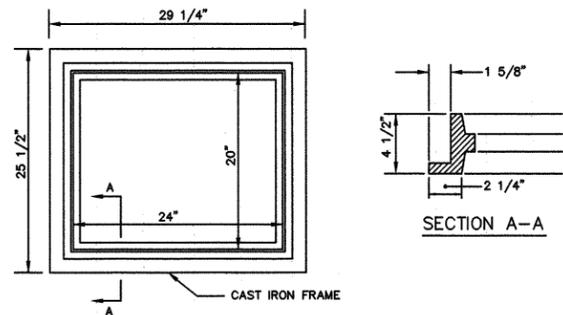
City Project No. 0158

**TESC NOTES
 AND DETAILS**

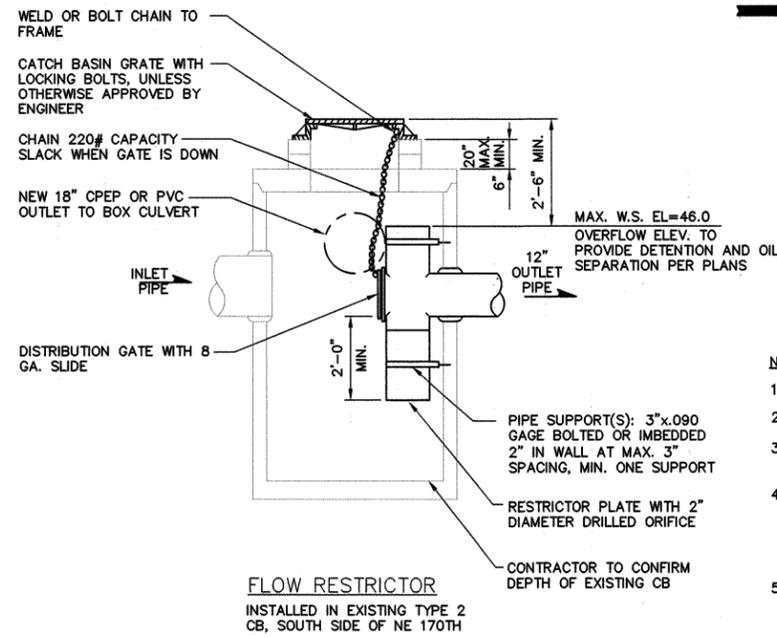
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C-5
 Sheet No.
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 17
 Of Total



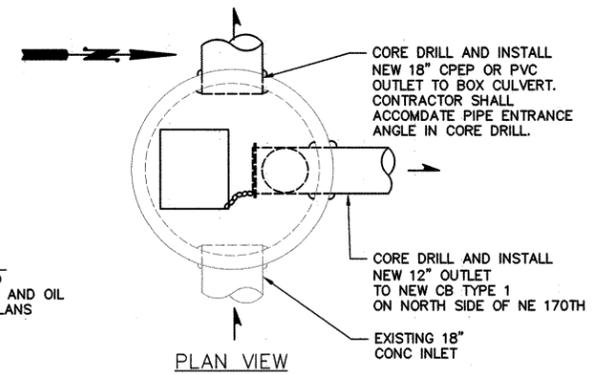
CATCH BASIN TYPE 1
NOT TO SCALE



CATCH BASIN FRAME AND GRATE
NOT TO SCALE

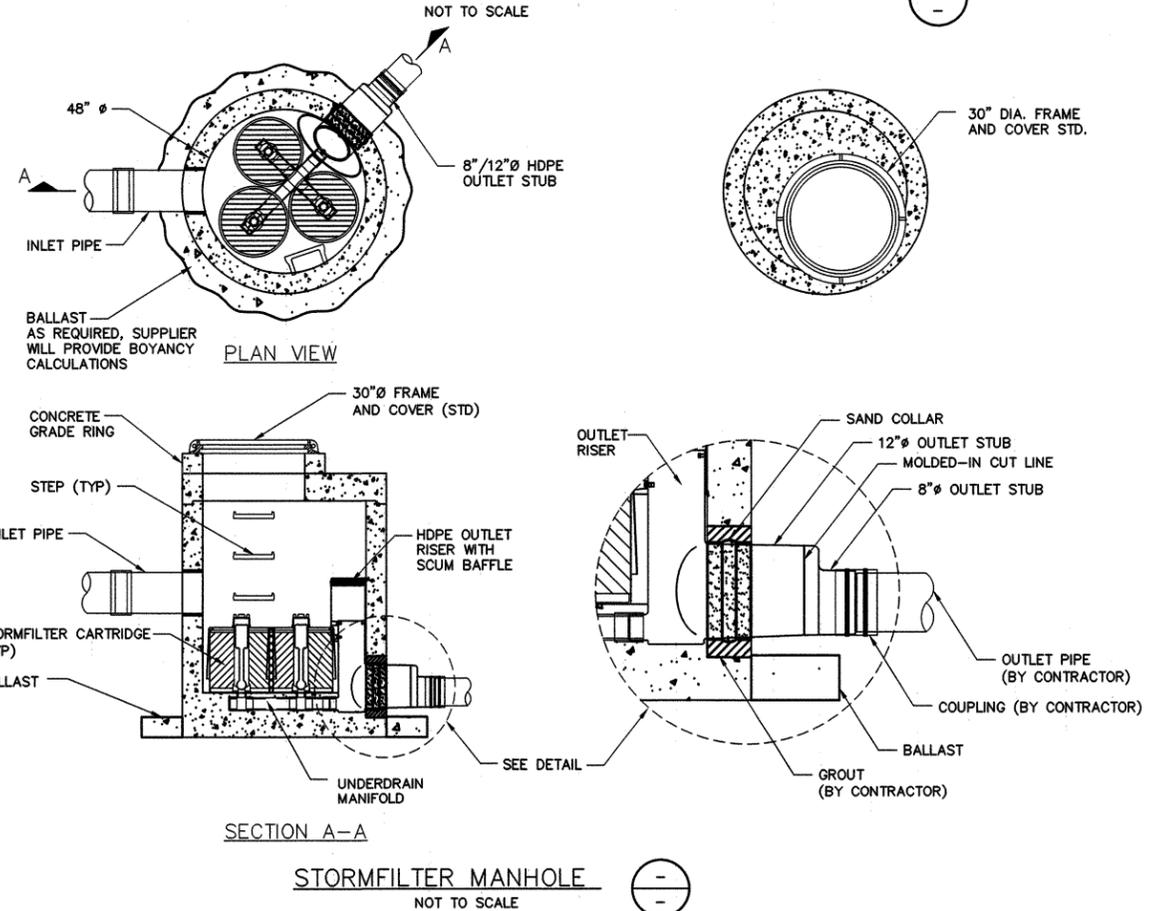


FLOW RESTRICTOR
INSTALLED IN EXISTING TYPE 2 CB, SOUTH SIDE OF NE 170TH



- NOTES:
- PIPE SIZES AND SLOPES: PER PLANS.
 - OUTLET CAPACITY: NOT LESS THAN COMBINED INLETS.
 - METAL PARTS: CORROSION RESISTANT. GALVANIZED PIPE PARTS TO HAVE ASPHALT TREATMENT 1.
 - FRAME & LADDER OR STEPS OFFSET TO ALLOW:
 - CLEANOUT GATE IS VISIBLE FROM TOP.
 - CLIMB-DOWN SPACE IS CLEAR OF RISER AND CLEANOUT GATE.
 - FRAME IS CLEAR OF CURB.
 - IF METAL OUTLET PIPE CONNECTS TO CEMENT CONCRETE PIPE: OUTLET PIPE TO HAVE SMOOTH O.D. EQUAL TO CONCRETE PIPE I.D. LESS 1/4".

FLOW RESTRICTOR INSTALLATION IN EXISTING CB TYPE 2
NOT TO SCALE



SECTION A-A

STORMFILTER MANHOLE
NOT TO SCALE

No.	DATE	BY	REVISION

Scale: Noted
 Horiz: 1"=20'
 Vert: 1"=5'
 Designed By: B.P.B.
 Drawn By: P.G.M.
 Reviewed By: B.P.B.
 Date: DEC 2013

BARRY P. BAKER
 STATE OF WASHINGTON
 PROFESSIONAL ENGINEER
 57339

11 Dec 2013



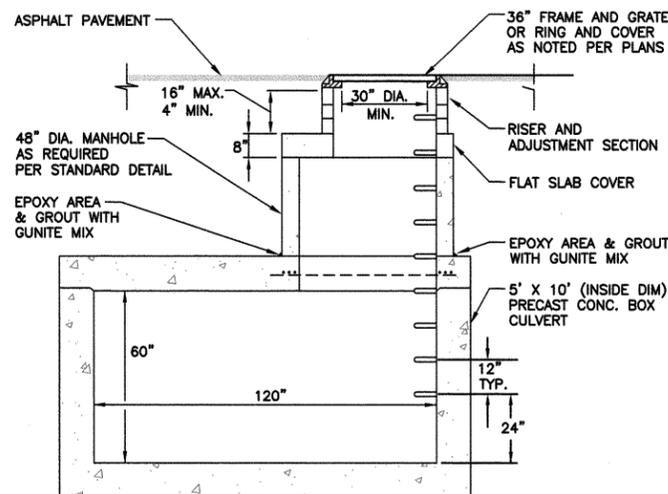
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 18120 68th Ave NE - PO Box 82607, Kenmore WA 98028
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Gray & Osborne, Inc.
 CONSULTING ENGINEERS
 20 NORTH AVENUE SUITE 200
 BOSTON, MASSACHUSETTS 02108

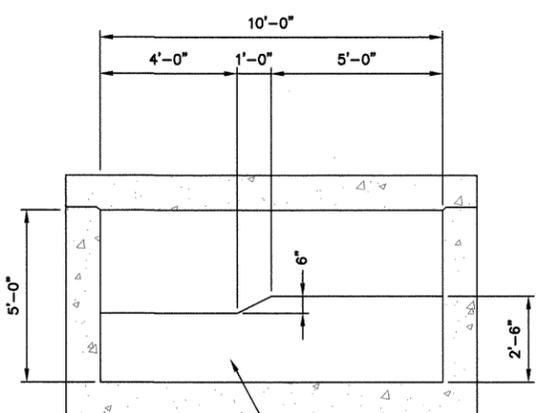
Tributary 0057
 Channel Realignment and
 Sediment Control Project
 City Project No. 0158

**CROSS SECTIONS
 AND DETAILS**

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 Of Total



SECTION

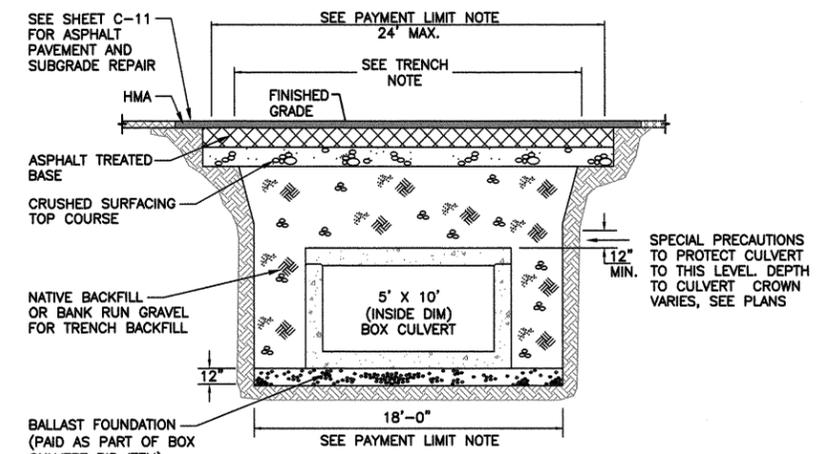


BOX CULVERT AND WEIR DETAIL

SCALE: 3/8"=1'-0"

BOX CULVERT WEIR TABLE

WEIR NUMBER	STATION	LOWER NOTCH ORIENTATION	WEIR NOTCH ELEVATION
1	107.17	RIGHT	43.56
2	114.33	LEFT	43.06
3	131.50	RIGHT	42.57
4	128.67	LEFT	42.07
5	135.83	RIGHT	41.58
6	143.00	LEFT	41.08
7	150.17	RIGHT	40.59
8	157.33	LEFT	40.09
9	164.50	RIGHT	39.60
10	171.67	LEFT	39.11
11	178.83	RIGHT	38.61
12	186.00	LEFT	38.12
13	196.67	RIGHT	37.61
14	209.33	LEFT	37.11
15	221.00	RIGHT	36.61
16	231.67	LEFT	36.11
17	244.44	RIGHT	35.61
18	256.00	LEFT	35.11
19	267.67	RIGHT	34.60
20	279.33	LEFT	34.10
21	291.00	RIGHT	33.60
22	302.67	RIGHT	33.10
23	314.33	LEFT	32.60
24	326.00	RIGHT	32.10



TRENCH NOTE:
CONTRACTOR SHALL MINIMIZE TRENCH SLOUGHING USING APPROVED TRENCH SHORING EQUIPMENT. SEE SPECIFICATIONS.

PAYMENT LIMIT NOTE
THE TRENCH SECTIONS SHOWN ON THE PLANS ARE FOR THE PAYMENT LIMITS FOR PIPE BEDDING AND SURFACE RESTORATION. PAYMENT FOR ALL PIPE BEDDING AND SURFACE RESTORATION SHALL BE FROM THE MEASUREMENT OF THE CONSTRUCTED TRENCH SECTION TO THE MAXIMUM LIMITS AS INDICATED ON THE TRENCH DETAILS OR THE EXTENT OF PAVEMENT RESTORATION SHOWN ON THE SHEET RESTORATION PLAN.

TYPICAL BOX CULVERT TRENCH SECTION

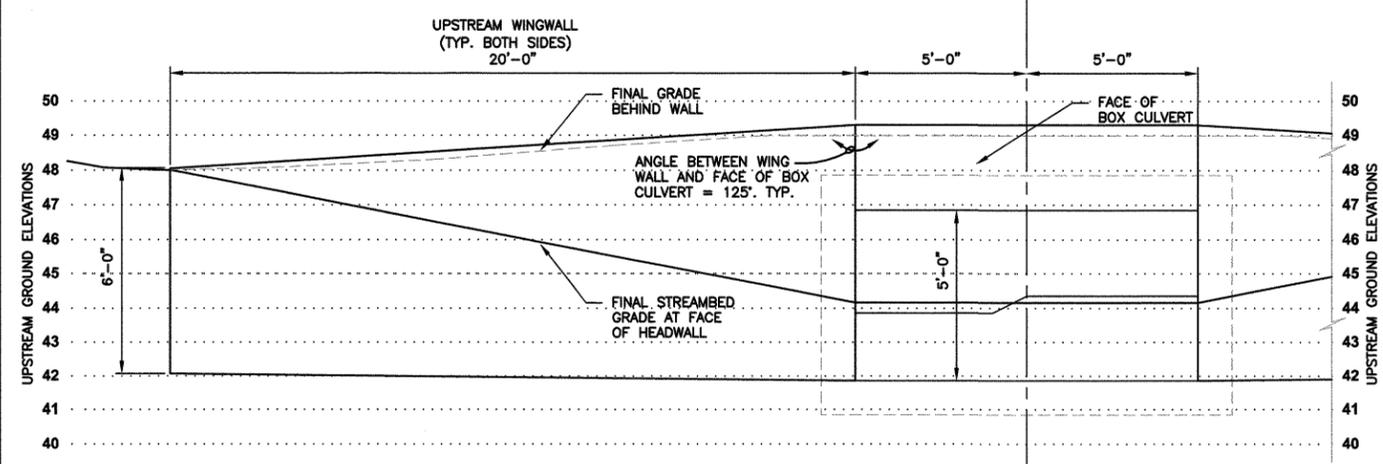
SCALE: 3/16"=1'-0"

NOTES:

- SEE STANDARD DETAIL FOR FRAME AND GRATE OR FOR RING AND COVER ASSEMBLIES.
- PREFABRICATED LADDER PER 2009 KCSWDM DETAIL. DRILL AND EPOXY ALL STEPS AND HANDHOLDS, 12" MAX SPACING.

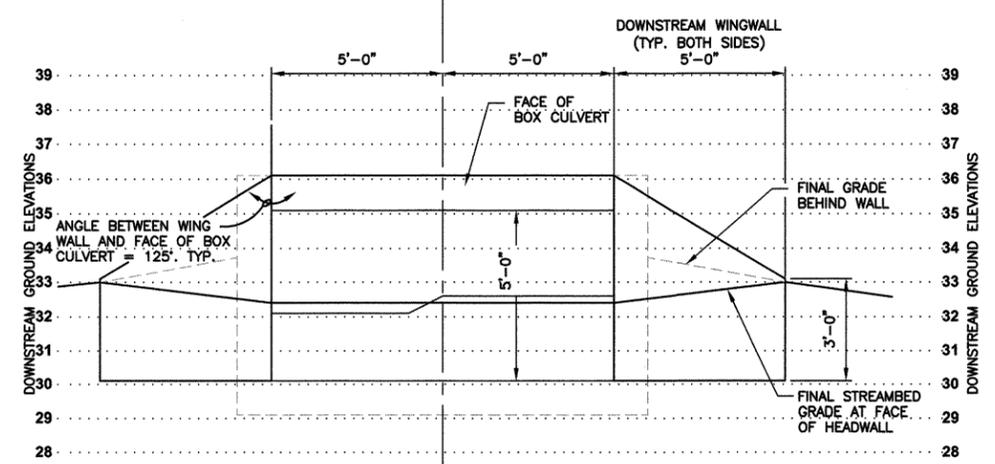
TYPICAL ACCESS RISER

SCALE: 3/8"=1'-0"



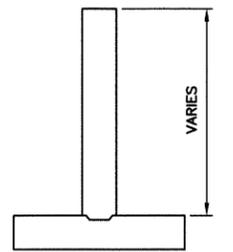
UPSTREAM WING WALL ELEVATION

SCALE: 3/8"=1'-0"



DOWNSTREAM WING WALL ELEVATION

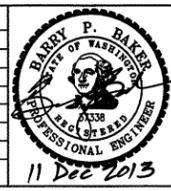
SCALE: 3/8"=1'-0"



TYPICAL WING WALL SECTION

SCALE: 3/8"=1'-0"

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Scale: Noted
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Vert: 1"=10'
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Drawn By: P.G.M.
Reviewed By: B.P.B.
Date: DEC 2013



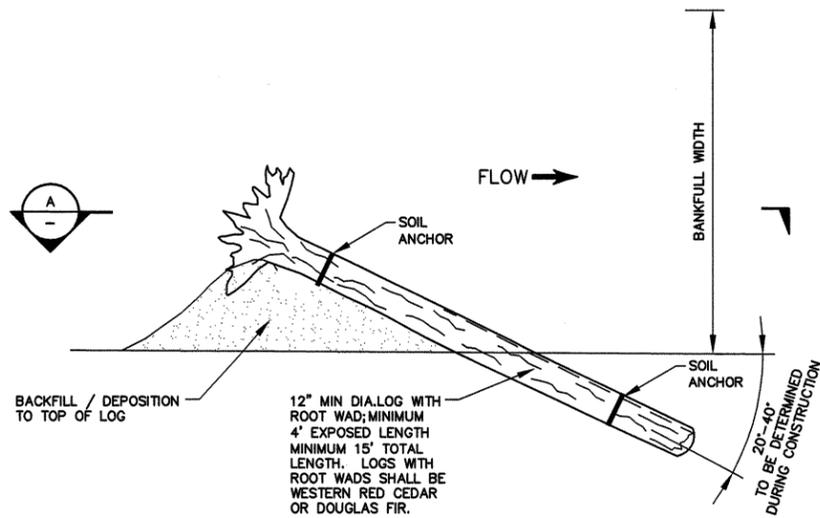
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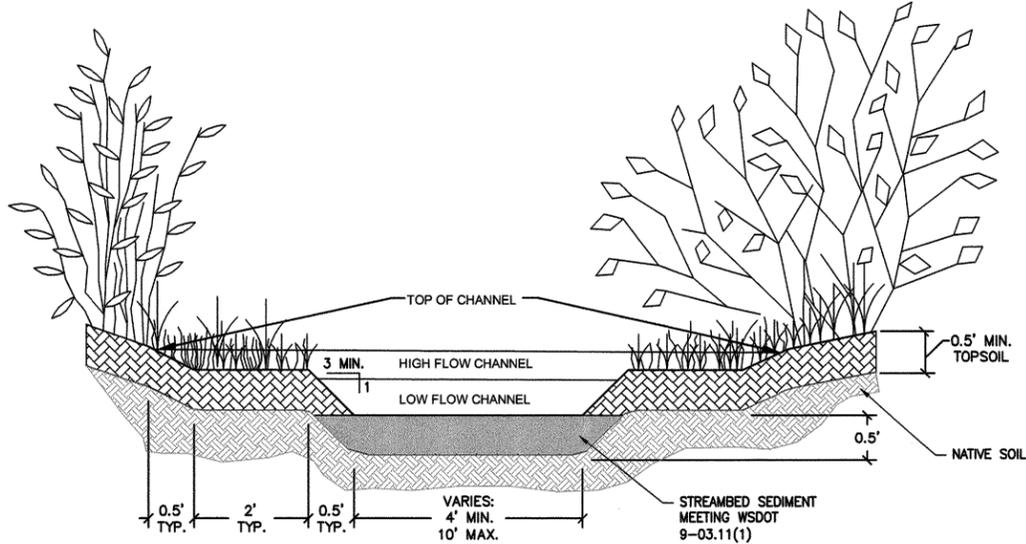
Tributary 0057
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City Project No. 0158

BOX CULVERT DETAILS

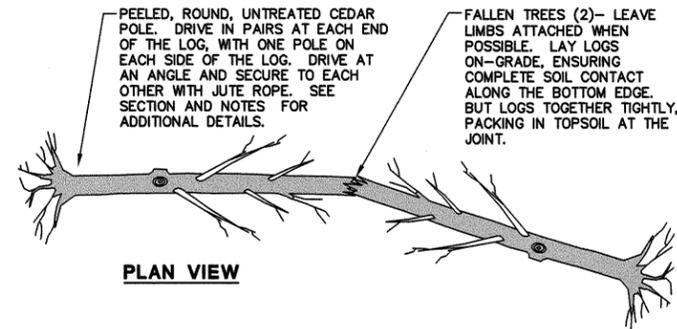
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Of Total



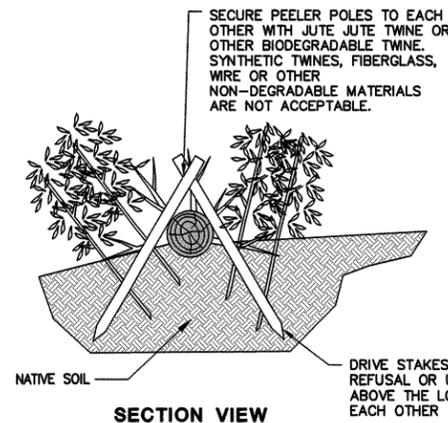
ROOTWAD LWD TYPE 1
NOT TO SCALE



STREAM AND WETLAND CHANNEL DETAIL
SCALE: 1"=1'-0"
TYP



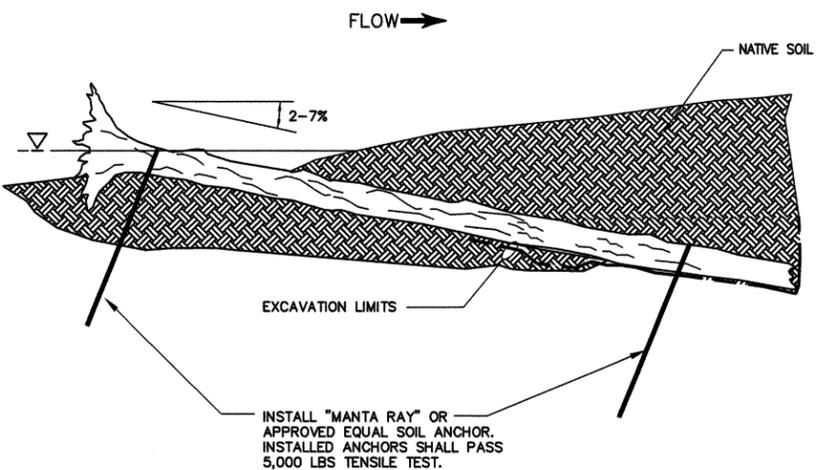
PLAN VIEW



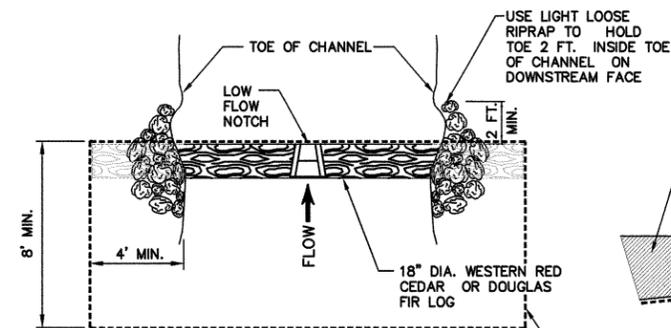
SECTION VIEW

- NOTES:**
- SEE SHEET W-2 FOR LAYOUT OF LOGS.
 - FALLEN TREES TO BE WESTERN RED CEDAR OR DOUGLAS FIR WITH ROOTS. WITH LIMBS ATTACHED WHEN POSSIBLE. MIN. 16' LENGTH AND 12" IN DIAMETER.
 - SECURE LOGS WITH PEELER POLES AS DESCRIBED IN PLAN AND SECTION. POLES SHALL BE SOUND, ROT-FREE STAKES SHALL NOT BE CRACKED OR OTHERWISE CONTAIN STRUCTURAL DEFECTS. STAKES SHALL BE AT LEAST 6- FEET LONG AND 3-INCHES - 4-INCHES IN DIAMETER WITH POINTED TIPS AND SQUARE-CUT ENDS.
 - AFTER THE LOGS HAVE BEEN SECURED, INSTALL VEGETATION CUTTINGS. SEE PLANTING PLAN FOR MORE INFORMATION

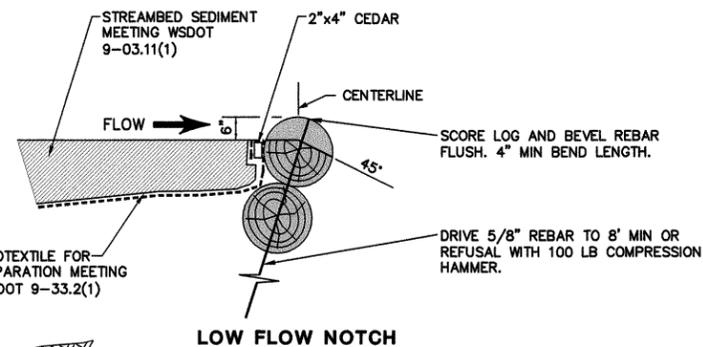
BANK DEFINING LOG DETAIL
NOT TO SCALE
TYP



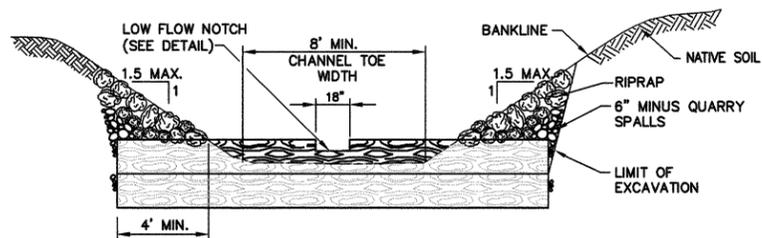
TYPICAL SECTION
NOT TO SCALE



PLAN VIEW



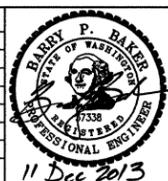
LOW FLOW NOTCH



ELEVATION VIEW

NOTCHED GRADE LOG DETAILS
NOT TO SCALE
TYP

No.	DATE	BY	REVISION



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Horiz: AS NOTED
Vert: AS NOTED
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Reviewed By: B.P.B.
Date: DEC 2013



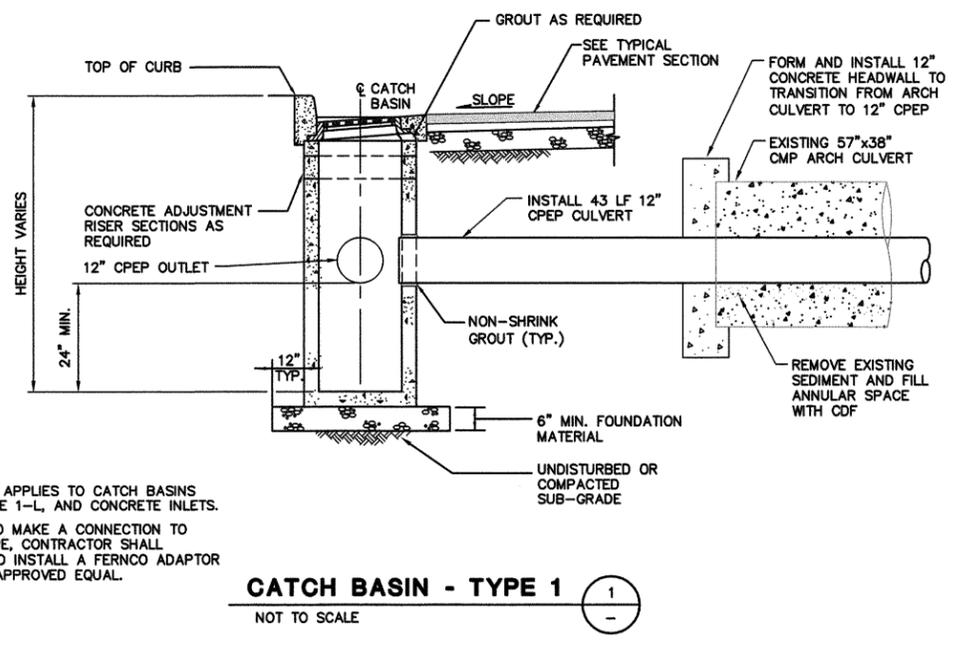
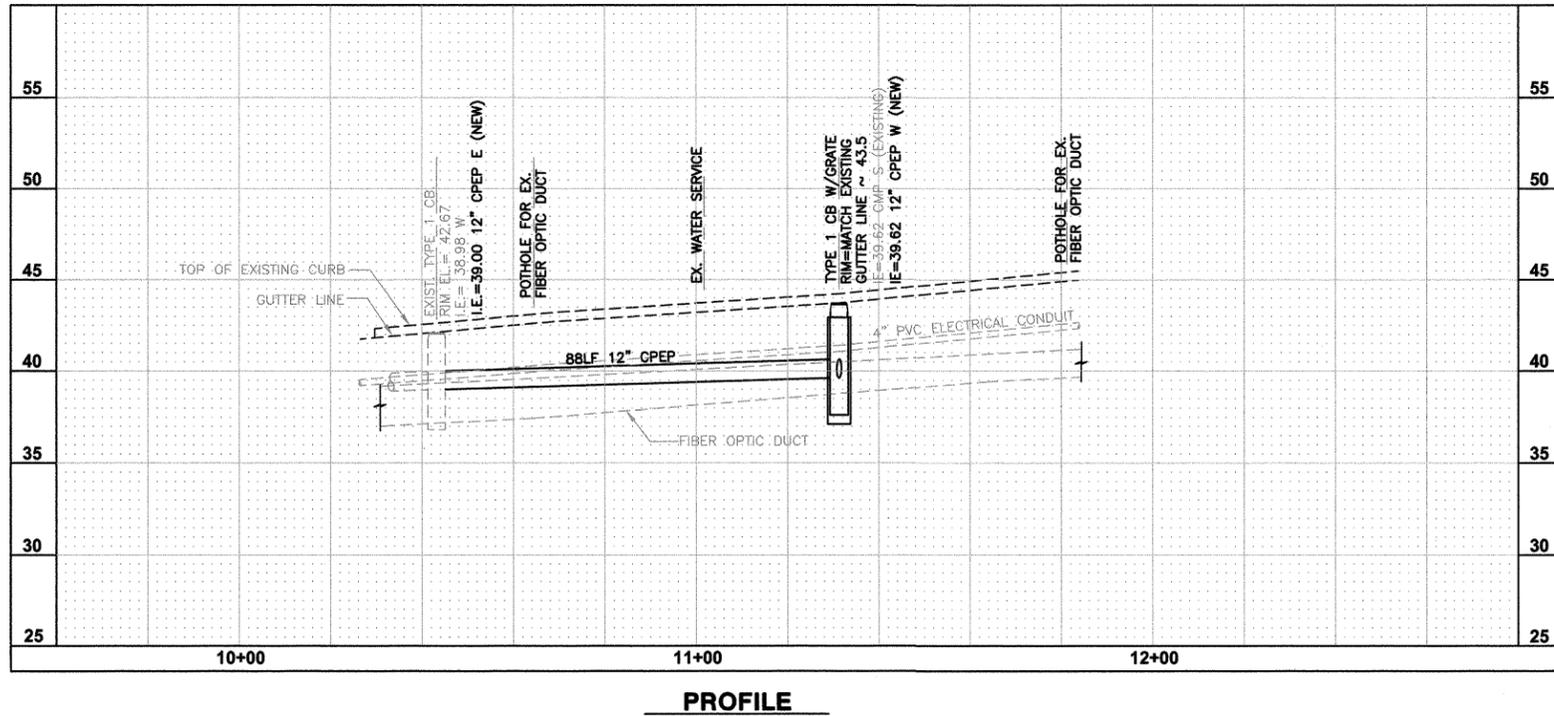
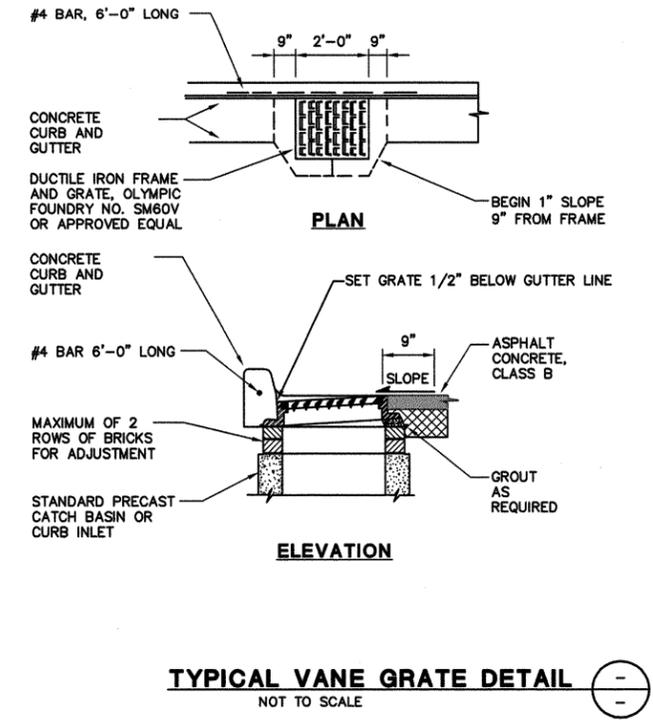
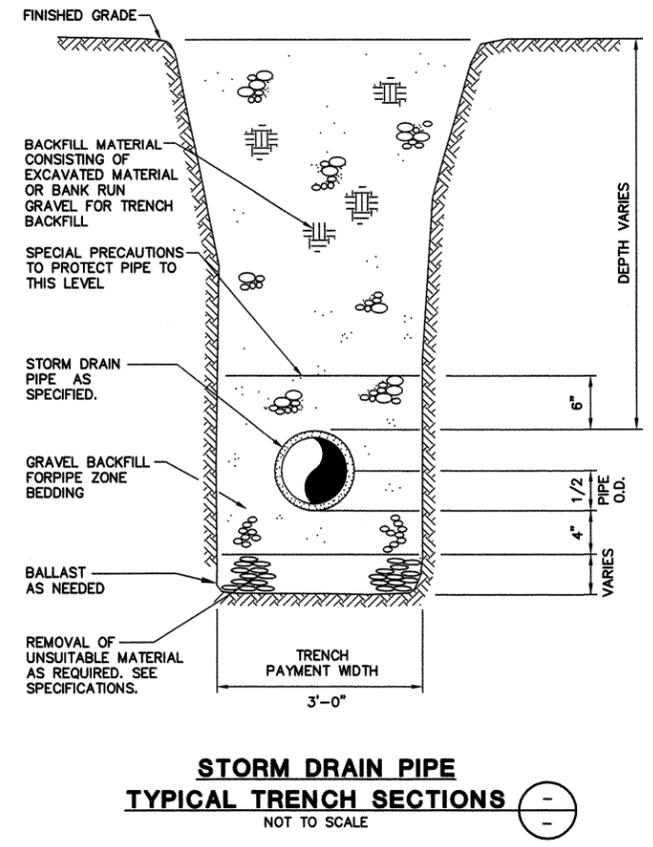
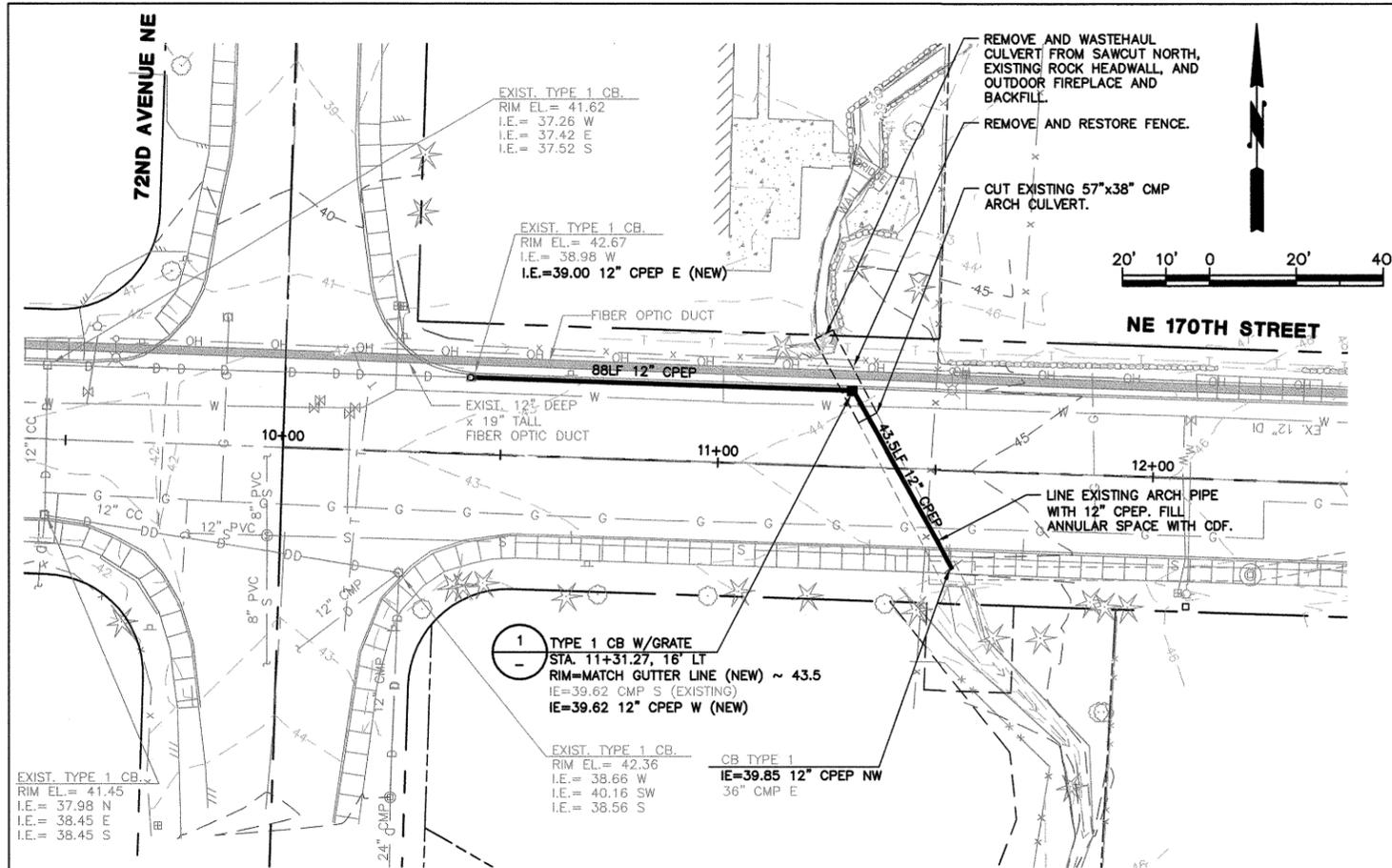
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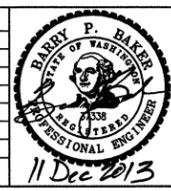
Tributary 0057
Channel Realignment and Sediment Control Project
City Project No. 0158

STREAM RELOCATION AND RESTORATION DETAILS

Sheet No. **C-9**
9
17
Of Total

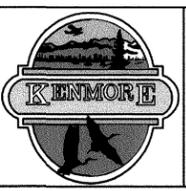


No.	DATE	BY	REVISION



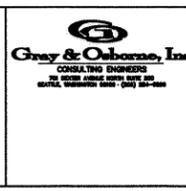
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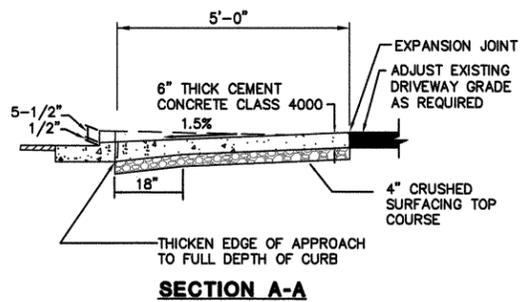
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Tributary 0057
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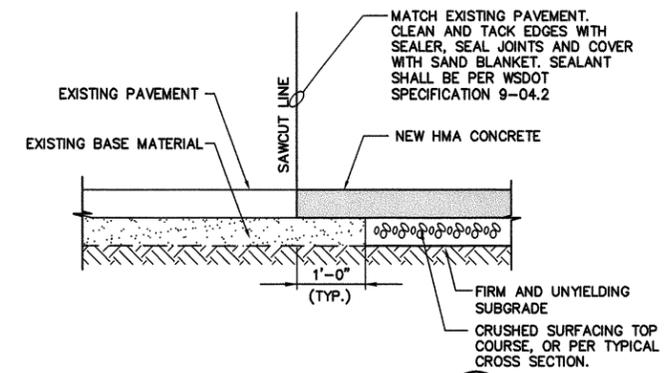
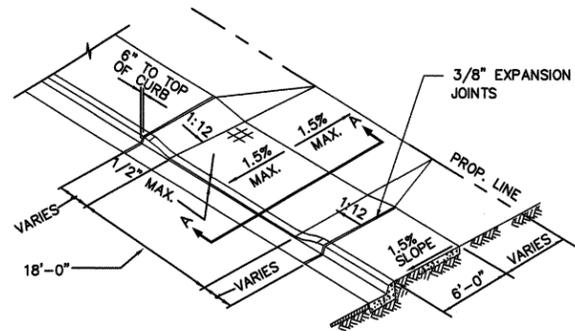
NE 170TH PLAN, PROFILE AND CULVERT DETAILS

Sheet No. **C-10**
 Sheet No. 10
 17 Of Total

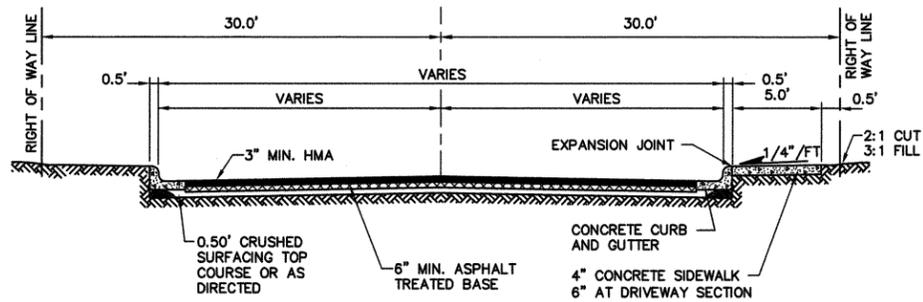


SECTION A-A

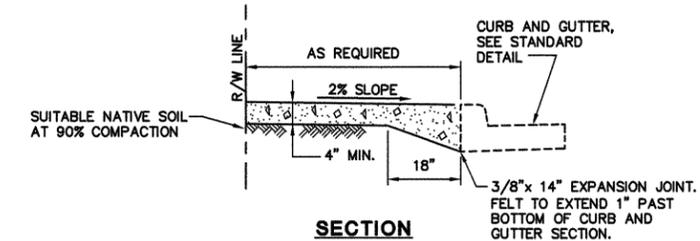
CEMENT CONCRETE ENTRANCE (1)
NOT TO SCALE



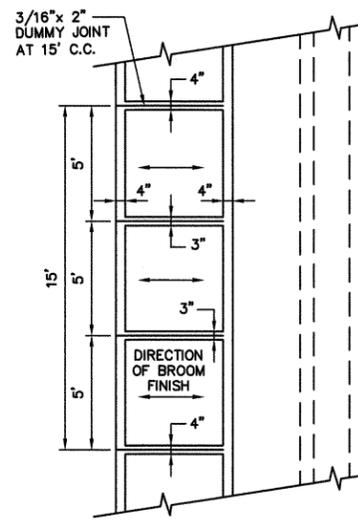
BUTT JOINT DETAIL (3)
NOT TO SCALE



TYPICAL ROADWAY SECTION (2)
NOT TO SCALE

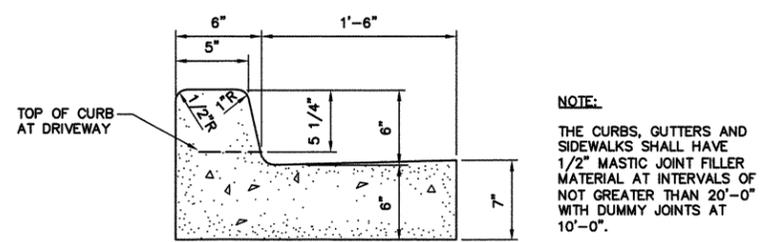


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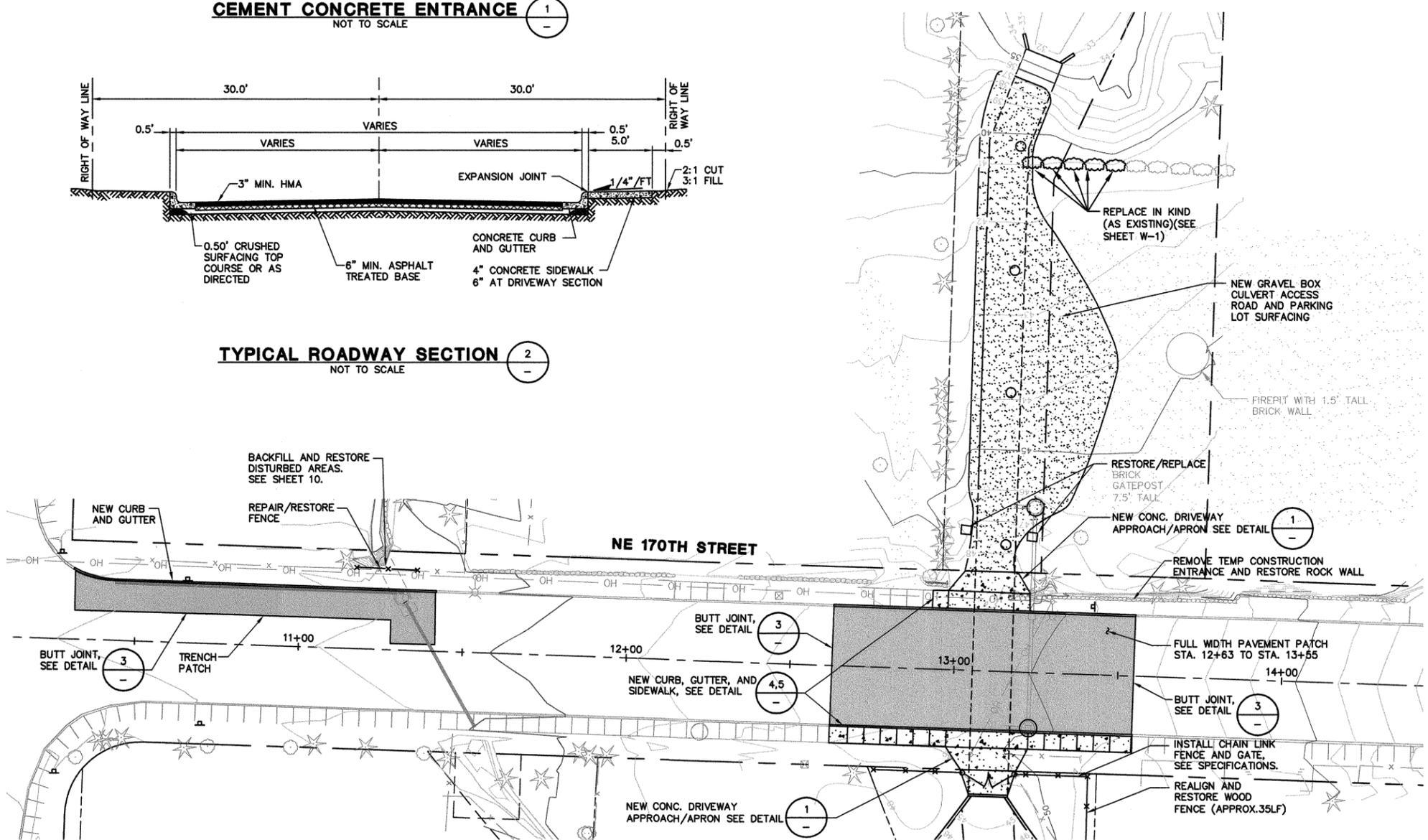


SIDEWALK WITHOUT PLANTING STRIP (4)
NOT TO SCALE

- MINIMUM SIDEWALK WIDTHS**
SINGLE FAMILY RESIDENTIAL AREAS (DETACHED DWELLINGS) 5'
- NOTES:**
1. JOINTS THRU AND DUMMY JOINTS SHALL BE AS SHOWN ABOVE. THRU JOINTS SHALL ALSO BE PLACED IN THE SIDEWALK SECTION AT DRIVE WAY AND ALLEY RETURNS. ALL JOINTS SHALL BE CLEAN AND EDGED WITH AN EDGE HAVING 1/4" RADIUS. JOINTS SHALL BE FLUSH WITH THE FINISHED SURFACE.
 2. ALL UTILITY POLES IN SIDEWALK AREAS SHALL HAVE 3/16" JOINT MATERIAL (FULL DEPTH) PLACED AROUND THEM BEFORE PLACING CONCRETE.
 3. PREMOLDED JOINT FILLER SHALL BE 3/16" x 2" ASPHALT SATURATED FELT OR PAPER.
 4. FORMS SHALL BE EITHER WOOD OR STEEL AND SHALL MEET ALL REQUIREMENTS OF THESE SPECIFICATIONS.
 5. CONCRETE SHALL BE CLASS 5\ (1\).
 6. MATCH EXISTING SIDEWALK ELEVATIONS AT EACH CONNECTION.



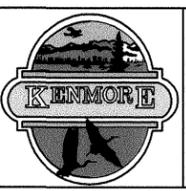
SECTION
CONCRETE CURB AND GUTTER (5)
NOT TO SCALE



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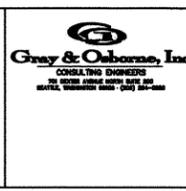
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 Reviewed By: B.P.B.
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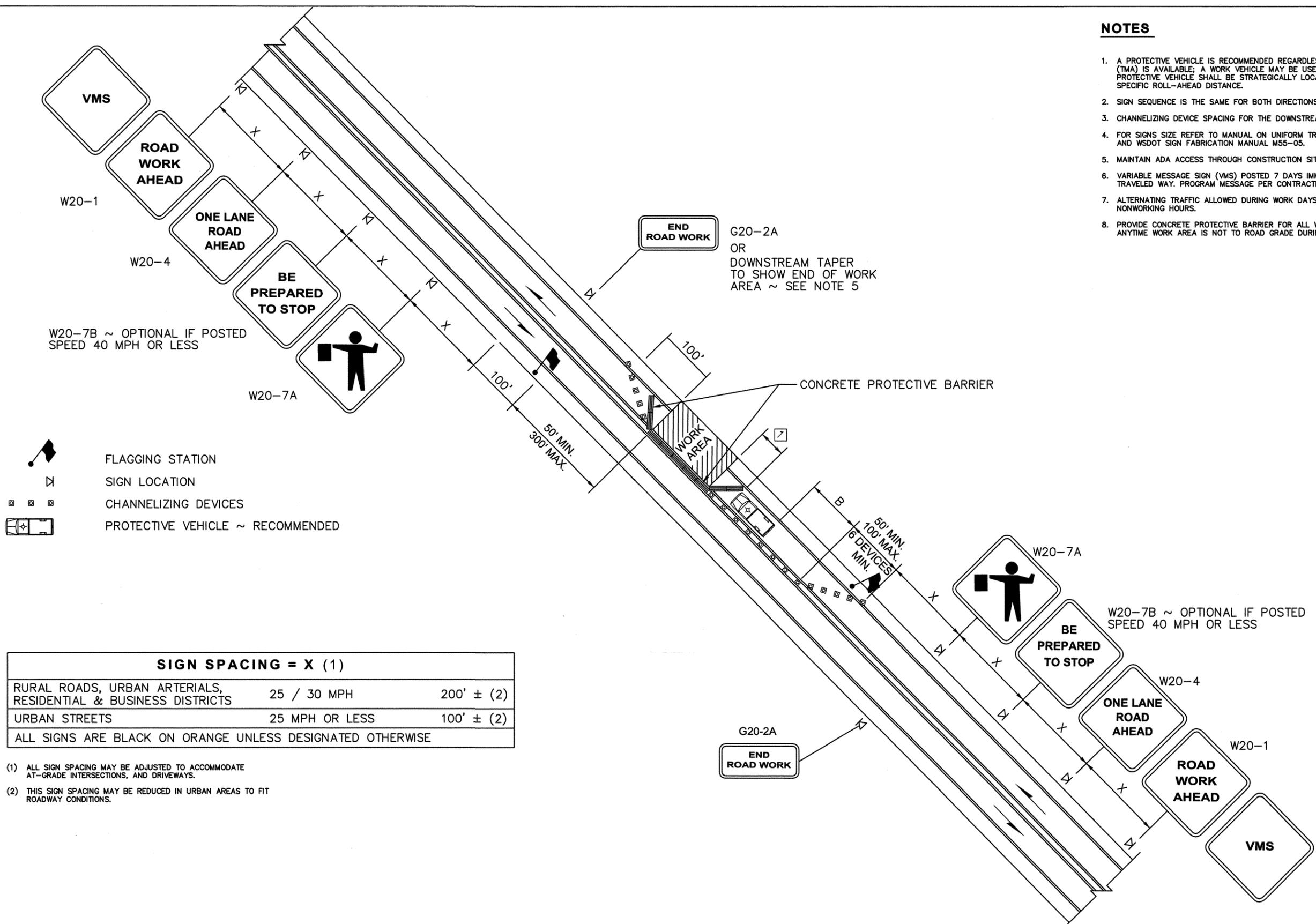
Tributary 0057
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**SURFACE RESTORATION
 PLAN**

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C-11
 Sheet No.
 11
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 Of Total

NOTES

1. A PROTECTIVE VEHICLE IS RECOMMENDED REGARDLESS IF A TRUCK MOUNTED ATTENUATOR (TMA) IS AVAILABLE; A WORK VEHICLE MAY BE USED. WHEN NO TMA IS USED, THE PROTECTIVE VEHICLE SHALL BE STRATEGICALLY LOCATED TO SHIELD WORKERS, WITH NO SPECIFIC ROLL-AHEAD DISTANCE.
2. SIGN SEQUENCE IS THE SAME FOR BOTH DIRECTIONS OF TRAVEL ON THE ROADWAY.
3. CHANNELIZING DEVICE SPACING FOR THE DOWNSTREAM TAPER OPTION SHALL BE 20' O.C.
4. FOR SIGNS SIZE REFER TO MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND WSDOT SIGN FABRICATION MANUAL M55-05.
5. MAINTAIN ADA ACCESS THROUGH CONSTRUCTION SITE. SEE SPECIFICATIONS SECTION 10-07.23
6. VARIABLE MESSAGE SIGN (VMS) POSTED 7 DAYS IMMEDIATELY PRIOR TO ANY WORK IN TRAVELED WAY. PROGRAM MESSAGE PER CONTRACTING AGENCY.
7. ALTERNATING TRAFFIC ALLOWED DURING WORK DAYS. PROVIDE TWO-WAY TRAFFIC DURING ALL NONWORKING HOURS.
8. PROVIDE CONCRETE PROTECTIVE BARRIER FOR ALL WORK AREAS DURING WORKING HOURS AND ANYTIME WORK AREA IS NOT TO ROAD GRADE DURING NONWORKING HOURS.



W20-7B ~ OPTIONAL IF POSTED SPEED 40 MPH OR LESS

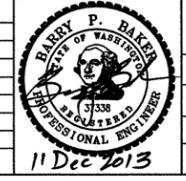
W20-7B ~ OPTIONAL IF POSTED SPEED 40 MPH OR LESS

- FLAGGING STATION
- SIGN LOCATION
- CHANNELIZING DEVICES
- PROTECTIVE VEHICLE ~ RECOMMENDED

SIGN SPACING = X (1)		
RURAL ROADS, URBAN ARTERIALS, RESIDENTIAL & BUSINESS DISTRICTS	25 / 30 MPH	200' ± (2)
URBAN STREETS	25 MPH OR LESS	100' ± (2)
ALL SIGNS ARE BLACK ON ORANGE UNLESS DESIGNATED OTHERWISE		

- (1) ALL SIGN SPACING MAY BE ADJUSTED TO ACCOMMODATE AT-GRADE INTERSECTIONS, AND DRIVEWAYS.
- (2) THIS SIGN SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

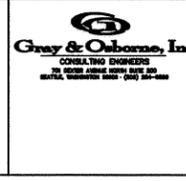
No.	DATE	BY	REVISION



Scale: Noted
 Horiz: 1"=20'
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 Designed By: B.P.B.
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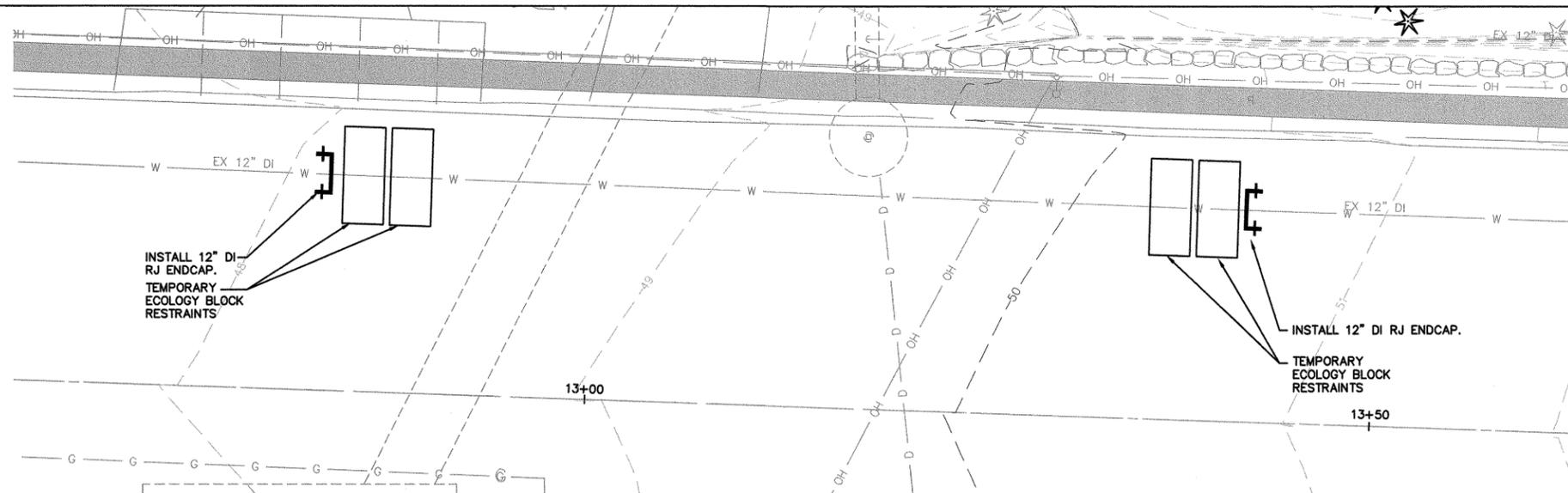
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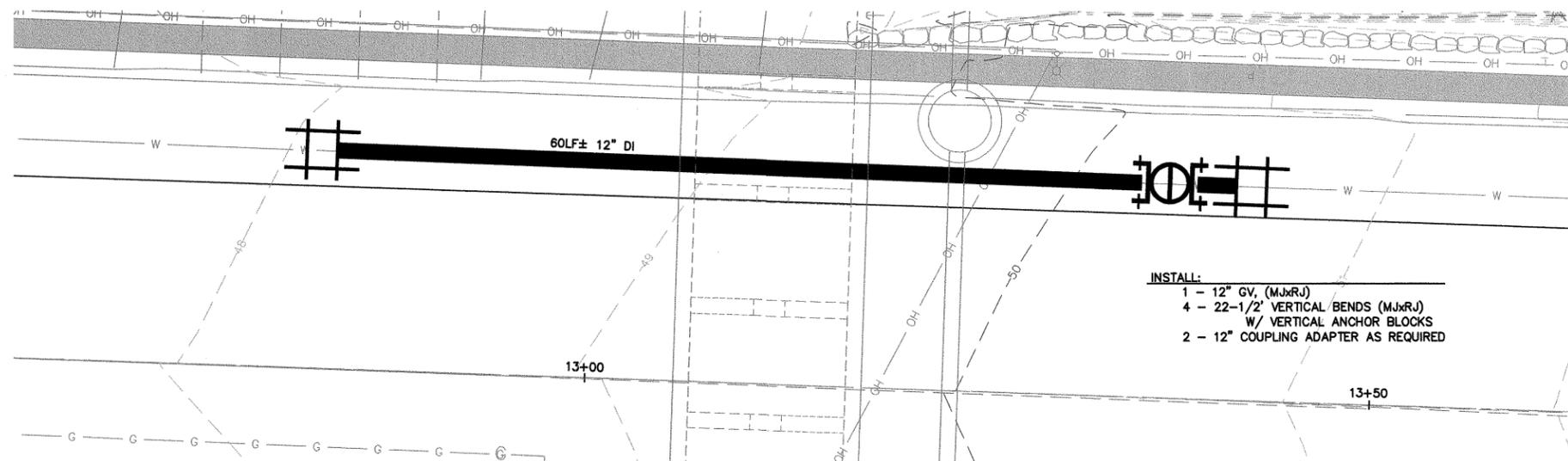
TRAFFIC CONTROL PLAN

Sheet No. **C-12**
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 Of Total



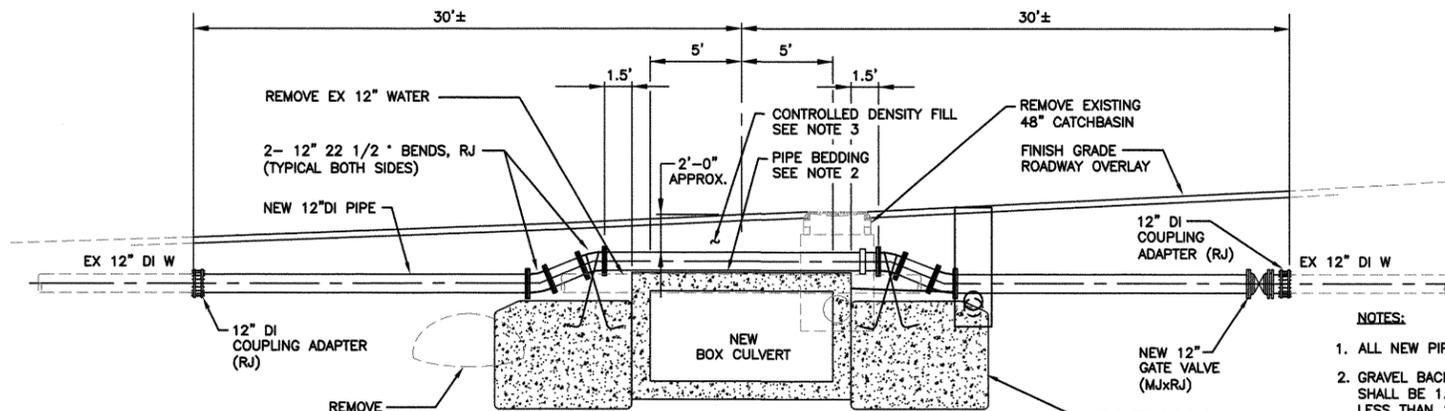
12' WATER MAIN TEMPORARY CONNECTION PLAN

SCALE 1" = 5'



12' WATER MAIN PERMANENT CONNECTION PLAN

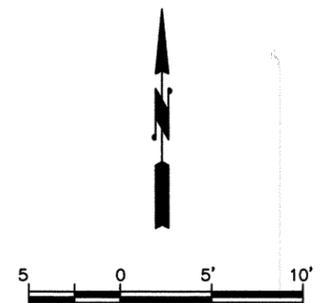
SCALE 1" = 5'



12' WATER MAIN PERMANENT PROFILE

SCALE 1" = 5'

- NOTES:**
1. ALL NEW PIPE SHALL BE 12" DIP, CL 52
 2. GRAVEL BACKFILL FOR PIPE ZONE BEDDING, SHALL BE 1.5" MIN DEPTH. IF DEPTH IS LESS THAN 1.5" USE STYROFOAM BOARD TO BED.
 3. CONTROLLED DENSITY FILL SHALL BE PER WSDOT SPEC 2.-09.3(1)E



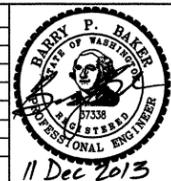
CONSTRUCTION NOTES

FOR 12-INCH WATER MAIN RELOCATION ABOVE NEW BOX CULVERT

1. EXISTING WATER MAIN LINE PRESSURE IS APPROXIMATELY 120 PSI, CONTRACTOR SHALL USE CAUTION WHEN WORKING NEAR WATER MAIN
2. CONTRACTOR SHALL POTHOLE EXISTING DI WATER MAIN AT LIMITS OF PROJECT AND PROVIDE INFORMATION TO CONTRACTING AGENCY WITHIN 24 HOURS.
3. INSTALL TEMPORARY 12-INCH DI RESTRAINED JOINT END CAP AND 12" GV, FLxMJ WITH BLIND FLANGE AND THRUST BLOCKS AT LOCATIONS SHOWN ON PLANS
4. REMOVE ISOLATED SECTION OF EXISTING 12" WATERLINE AND INSTALL NEW BOX CULVERT.
5. INSTALL NEW 12-INCH WATER LINE ABOVE BOX CULVERT, SEE DETAIL BELOW.
6. PRESSURE TEST, DISINFECT AND FLUSH NEW SECTION OF 12-INCH WATER LINE.
7. AFTER OBTAINING SATISFACTORY PURITY TESTS, CONNECT NEW 12-INCH WATER LINE TO EXISTING 12-INCH DI WATER MAIN, FITTINGS AS NOTED.

CALL 48 HOURS BEFORE YOU DIG
1-800-424-5555

No.	DATE	BY	REVISION



Scales:
Noted
Horiz: 1"=20'
Vert: 1"=10'
Designed By: B.P.B.
Drawn By: P.G.M.
Reviewed By: B.P.B.
Date: DEC 2013



City of Kenmore
ENGINEERING AND ENVIRONMENTAL
SERVICES DEPARTMENT
18120 68th Ave NE - PO Box 82607, Kenmore WA 98028
425-398-8900 - Fax: 425-481-3236



Tributary 0057
Channel Realignment and
Sediment Control Project
City Project No. 0158

**12" WATER MAIN
PLAN AND PROFILE**

Sheet No.
C-13
Sheet No.
13
17
Of Total

CONCRETE BLOCKING - HORIZONTAL

General Notes:
 1. Concrete thrust block area based upon a safe bearing load of 2000/(3000) Lbs. per Sq. Ft.
 2. Areas must be adjusted for other size pipe, pressures and soil conditions.
 3. Concrete blocking shall be cast-in-place and have minimum of 1/2 square foot contact bearing against the fitting.
 4. Block shall bear against fittings only and shall be clear of joints to permit taking up or dismantling joint.
 5. Contractor shall install blocking adequate to withstand test pressure as well as to continuously withstand operating pressure under all conditions of service.
 6. Polyethylene wrap not shown for clarity.
 7. In ruck or peat, all thrusts shall be restrained by plate or tie rods to solid foundations or by removal of ruck or peat and replacement with ballast of sufficient stability to resist thrusts.

THRUST BLOCK SPACING FOR 250 PSI PRESSURES
 Min. Bearing Area Against Undisturbed Soil - Sq. Ft.

PIPE SIZE	Ø	Ø	Ø	Ø
4"	3/2	2/1	1/0	1/0
6"	4/2	3/2	2/1	1/0
8"	5/2	4/2	3/2	2/1
10"	6/2	5/2	4/2	3/2
12"	7/2	6/2	5/2	4/2
14"	8/2	7/2	6/2	5/2
16"	9/2	8/2	7/2	6/2
18"	10/2	9/2	8/2	7/2
20"	11/2	10/2	9/2	8/2
24"	14/2	13/2	12/2	11/2

SAFE BEARING LOADS IN LBS./SQ. FT.

Soil	SAFE BEARING LOAD
Blank, peat, etc. (See note 7)	0
Soft clay	1,000
Sand	3,000
Sand and gravel	5,000
Sand and gravel cemented w/cap	10,000
Hard shale	15,000

Detail Approvals: **NORTHSHORE UTILITY DISTRICT**
 Engineer GSM
 Manager DPK
 August 2011

CONCRETE BLOCKING - VERTICAL

VERTICAL BLOCKING

PIPE SIZE	VERT. BEND	CU.FT.	Ø	Ø	Ø
4"	11-1/4°	8	2.0	3/4"	1.5"
	22-1/2°	11	2.2	3/4"	2.0"
	30°	17	2.6	3/4"	2.0"
	45°	30	3.1	3/4"	2.0"
6"	11-1/4°	11	2.2	3/4"	2.0"
	22-1/2°	25	2.9	3/4"	2.0"
	30°	41	3.5	3/4"	2.0"
	45°	68	4.1	3/4"	2.0"
8"	11-1/4°	18	2.5	3/4"	2.0"
	22-1/2°	47	3.6	3/4"	2.5"
	30°	70	4.1	3/4"	2.5"
	45°	123	5.0	3/4"	2.0"
12"	11-1/4°	32	3.2	3/4"	2.0"
	22-1/2°	88	4.5	7/8"	3.0"
	30°	132	5.1	7/8"	2.5"
	45°	232	6.1	3/4"	2.5"
16"	11-1/4°	70	4.1	7/8"	3.0"
	22-1/2°	184	5.7	1-1/8"	4.0"
	30°	275	6.5	1-1/4"	4.0"
	45°	478	7.8	1-1/8"	4.0"
20"	11-1/4°	91	4.5	7/8"	3.0"
	22-1/2°	225	6.1	1-1/4"	4.0"
	30°	330	6.9	1-3/8"	4.5"
	45°	560	8.2	1-1/4"	4.0"
24"	11-1/4°	128	5.0	1"	3.5"
	22-1/2°	320	6.8	1-3/8"	4.5"
	30°	480	7.9	1-5/8"	5.5"
	45°	820	9.4	1-3/8"	4.5"

Notes:
 1. Concrete blocking is based on 250 psi water pressure and 2500 psi concrete strength.
 2. Hardware not embedded in concrete shall be cleaned and coated with cool tar epoxy.
 3. In-line valve shall be M.L. x M.L. and be restrained with Mega-Lugs, or equal.
 4. Polyethylene wrap not shown for clarity.

Detail Approvals: **NORTHSHORE UTILITY DISTRICT**
 Engineer GSM
 Manager DPK
 August 2011

VALVE BOX & OPERATING NUT EXTENSION

Notes:
 1. Cast-iron valve box shall be Olympic Foundry part number 045.
 2. If valve box is in an unpaved area, provide 1' radius x 4" minimum depth cement or asphalt concrete paving around valve box.

Notes:
 1. Length as required to put operating nut two (2) feet from finished grade.
 2. Extensions are required when valve nut is more 4.5' below finished grade.
 3. Extensions to be a minimum of one (1) foot long.
 4. One (1) Extension per valve.

Detail Approvals: **NORTHSHORE UTILITY DISTRICT**
 Engineer GSM
 Manager DPK
 August 2011

TYPICAL TRENCH SECTION & PAYMENT LIMITS

Notes:
 1. Trench width:
 Minimum: Pipe O.D. + 12" (6" each side of pipe).
 Maximum: 40" for 15" pipe and smaller.
 (1-1/2 x I.D.) + 18" for 18" pipe and larger.
 The neat-line payment limits for trench backfill materials shall be based upon the maximum allowable trench width as shown above.
 2. Native material, if allowed for trench backfill, shall meet the requirements of select borrow per the Specifications. Trench backfill shall be compacted to a minimum of ninety-five percent (95%) of Modified Proctor in the Right-Of-Way and improved easements and to ninety percent (90%) in unimproved easement areas. See the Specifications for additional information.
 3. Native material, if allowed for rigid pipe bedding, shall be sand and gravel with no material larger than 1-1/2". See the Specifications for additional information.
 4. The neat-line limits shown will be used to calculate the maximum quantity of trench backfill and surface restoration materials allowed. Payment for bedding gravel will be considered incidental to payment made for pipe. Payment for foundation rock will be based upon the quantities used as directed by the District. See the Contract documents for additional information.

Detail Approvals: **NORTHSHORE UTILITY DISTRICT**
 Engineer GSM
 Manager DPK
 August 2011

TEMPORARY BLOW-OFF ASSEMBLY FOR NEW WATERMAIN

MATERIAL LIST

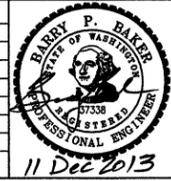
ITEM	QTY.	DESCRIPTION
1	1	TAPPED & THREADED D.I. CAP, M.L. x FIP
2	2	2" GALVANIZED PIPE, LENGTH TO FIT.
3	1	2" 90° GALVANIZED ELBOW, FIP/FIP.
4	1	2" BALL VALVE, FIP/FIP. (OPTIONAL GATE VALVE)
5	1	BROOKS #85-TR TRAFFIC BOX AND COVER, OR EQUAL

Notes:
 1. NUMBER AND LOCATION OF THE TEMPORARY BLOW-OFFS WILL BE AS SHOWN ON THE DESIGN PLANS OR AS DIRECTED BY THE DISTRICT IN THE FIELD.
 2. PROVIDE TEMPORARY BLOCKING FOR BLOW-OFFS TO RESIST TEST PRESSURES.

Detail Approvals: **NORTHSHORE UTILITY DISTRICT**
 Engineer GSM
 Manager DPK
 August 2011

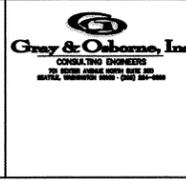
CALL 48 HOURS BEFORE YOU DIG
 1-800-424-5555

No.	DATE	BY	REVISION



Scale: Noted
 Horiz: Noted
 Vert: Noted
 Designed By: B.P.B.
 Drawn By: P.G.M.
 Reviewed By: B.P.B.
 Date: SEPT 2013

City of Kenmore
 ENGINEERING AND ENVIRONMENTAL SERVICES DEPARTMENT
 18120 68th Ave NE - PO Box 82607, Kenmore WA 98028
 425-398-8900 - Fax: 425-481-3236



Tributary 0057
 Channel Realignment and Sediment Control Project
 City Project No. 0158

12" WATER MAIN
 RELOCATION DETAILS

Sheet No. **C-14**
 Sheet No. 14
 17 Of Total

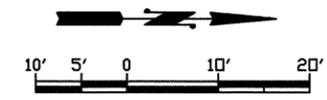
MULCH ENTIRE AREA AFTER PLANTING- SEE SHEET W-5

PLANTING SCHEDULE (FOR ALL AREAS)

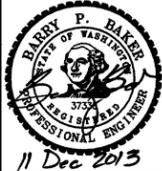
TREES	SCIENTIFIC NAME / COMMON NAME	SIZE	QTY	SPACING
AM	ACER MACROPHYLLUM / BIG-LEAF MAPLE	2 GAL.	7	ALL AS SHOWN
FL	FRAXINUS LATIFOLIA / OREGON ASH	2 GAL.	4	
PS	PICEA SITCHENSIS / SITKA SPRUCE	5 GAL.	6	
PM	PSEUDOTSUGA MENZIESII / DOUGLAS-FIR	5 GAL.	8	
TP	THUJA PUCATA / WESTERN RED CEDAR	5 GAL.	10	
SHRUBS				
cs	CORNUS SERICEA / RED TWIG DOGWOOD	1 GAL.	28	ALL AS SHOWN
cd	CRATAEGUS DOUGLASII / BLACK HAWTHORN	2 GAL.	7	
li	LONICERA INVOLUCRATA / TWNBERRY	1 GAL.	8	
hd	HOLODISCUS DISCOLOR / OCEANSPRAY	1 GAL.	26	
mf	MALUS FUSCA / WESTERN CRABAPPLE	2 GAL.	6	
m	MALUS FUSCA / WESTERN CRABAPPLE	1 GAL.	72	
oc	MAHONIA AQUIFOLIUM / TALL MAHONIA	1 GAL.	9	
pc	OEMLERIA CERASIFORMIS / OSOBBERRY	1 GAL.	29	
rs	PHYSOCARPUS CAPITATUS / PACIFIC NINEBARK	1 GAL.	23	
rn	RUBUS SPECTABILIS / SALMONBERRY	1 GAL.	44	
sa	ROSA NUTKANA / NOOTKA ROSE	1 GAL.	87	
CUTTINGS				
	SYMPHORICARPOS ALBUS / SNOWBERRY			
	SALIX HOOKERIANA / HOOKER'S WILLOW	24-42" HT., 1/2" MAX. DIAM.	335	ALL 12 INCHES ON CENTER
	SALIX SITCHENSIS / SITKA WILLOW		335	
	SALIX LASIANDRA / PACIFIC WILLOW		335	
GROUND COVER				
	ARCTOSTAPHYLOS UVA-URSI / KINNIKINICK	2-3" POTS	198	18 INCHES ON CENTER, TRIANGULARLY SPACED. SPECIES TO BE FIELD LOCATED BY RESTORATION CONSULTANT
	GAULTHERIA SHALLON / SALAL	1 GAL.	86	ALL 24 INCHES ON CENTER, TRIANGULARLY SPACED. SPECIES TO BE FIELD LOCATED BY RESTORATION CONSULTANT
	MAHONIA NERVOSA / DULL MAHONIA	1 GAL.	86	ALL 24 INCHES ON CENTER, TRIANGULARLY SPACED. SPECIES TO BE FIELD LOCATED BY RESTORATION CONSULTANT
GRASS SEED MIX				
	20% LOLOM MULTIFLORUM / ANNUAL RYEGRASS 20% LOLIUM PERENNE / PERENNIAL RYEGRASS 40% FESTUCA RUBRA / RED FESCUE 10% HIGHLAND BENTGRASS / AGROSTIS TENUIS 10% WHITE CLOVER / TRIFOLIUM REPENS			SEED AT A RATE OF 2 LBS PER 1000 SF.

REPLACE IN KIND (AS EXISTING)

AREA A



No.	DATE	BY	REVISION



Scale: Noted
 Horiz: Noted
 Vert: Noted
 Designed By: B.P.B.
 Drawn By: P.G.M.
 Reviewed By: B.P.B.
 Date: DEC 2013



City of Kenmore
 ENGINEERING AND ENVIRONMENTAL SERVICES DEPARTMENT
 18120 68th Ave NE - PO Box 82607, Kenmore WA 98028
 425-398-8900 - Fax: 425-481-3236



Tributary 0057
 Channel Realignment and Sediment Control Project
 City Project No. 0158

MITIGATION PLAN
PLANTING PLAN
 (1 OF 2)

Sheet No. W-1
 Sheet No. 15
 Of Total 17

PLANT INSTALLATION SPECIFICATIONS

NOTE: THESE SPECIFICATIONS ARE A LEGALLY BINDING CONTRACT.

GENERAL NOTES

QUALITY ASSURANCE

- PLANTS SHALL MEET OR EXCEED THE SPECIFICATIONS OF FEDERAL, STATE, AND LOCAL LAWS REQUIRING INSPECTION FOR PLANT DISEASE AND INSECT CONTROL.
- PLANTS SHALL BE HEALTHY, VIGOROUS, AND WELL-FORMED, WITH WELL DEVELOPED, FIBROUS ROOT SYSTEMS, FREE FROM DEAD BRANCHES OR ROOTS. PLANTS SHALL BE FREE FROM DAMAGE CAUSED BY TEMPERATURE EXTREMES, LACK OR EXCESS OF MOISTURE, INSECTS, DISEASE AND MECHANICAL INJURY. PLANTS IN LEAF SHALL BE WELL FOLIATED AND OF GOOD COLOR. PLANTS SHALL BE HABITUATED TO THE OUTDOOR ENVIRONMENTAL CONDITIONS INTO WHICH THEY WILL BE PLANTED (HARDENED-OFF).
- TREES WITH DAMAGED, CROOKED, MULTIPLE OR BROKEN LEADERS WILL BE REJECTED. WOODY PLANTS WITH ABRASIONS OF THE BARK OR SUN SCALD WILL BE REJECTED.
- NOMENCLATURE: PLANT NAMES SHALL CONFORM TO FLORA OF THE PACIFIC NORTHWEST BY HITCHCOCK AND CRONQUIST, UNIVERSITY OF WASHINGTON PRESS, 1973 AND/OR TO A FIELD GUIDE TO THE COMMON WETLAND PLANTS OF WESTERN WASHINGTON & NORTHWESTERN OREGON, ED. SARAH SPEAR COOKE, SEATTLE AUDUBON SOCIETY, 1997.

DEFINITIONS

- PLANTS/PLANT MATERIALS: PLANTS AND PLANT MATERIALS SHALL INCLUDE ANY LIVE PLANT MATERIAL USED ON THE PROJECT. THIS INCLUDES BUT IS NOT LIMITED TO CONTAINER GROWN, B&B OR BAREROOT PLANTS; LIVE STAKES AND FASCINES (WATTLES); TUBERS, CORMS, BULBS, ETC.; SPRIGS, PLUGS, AND LINERS.
- CONTAINER GROWN: CONTAINER GROWN PLANTS ARE THOSE WHOSE ROOTBALLS ARE ENCLOSED IN A POT OR BAG IN WHICH THAT PLANT GREW.
- LIVE STAKES: LIVE STAKES ARE CUT FROM DORMANT, HEALTHY, LIVING INDIVIDUALS OF THE SPECIFIED PLANT SPECIES AT THE SPECIFIED SIZE AND ARE TO BE PLANTED BEFORE ROOTS FORM. LIVE STAKES SHALL HAVE A STRAIGHT TOP CUT IMMEDIATELY ABOVE BUT NOT INTO A NODE. THE LOWER, ROOTING END OF THE LIVE STAKE SHALL BE CUT AT A 45-DEGREE ANGLE. LIVE STAKES ARE CUT FROM ONE TO TWO YEAR OLD WOOD AND HAVE NO BRANCHES.

SUBSTITUTIONS

- IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN SPECIFIED MATERIALS IN ADVANCE IF SPECIAL GROWING, MARKETING OR OTHER ARRANGEMENTS MUST BE MADE IN ORDER TO SUPPLY SPECIFIED MATERIALS.
- SUBSTITUTION OF PLANT MATERIALS NOT ON THE PROJECT LIST WILL NOT BE PERMITTED UNLESS AUTHORIZED IN WRITING BY THE RESTORATION CONSULTANT.
- IF PROOF IS SUBMITTED THAT ANY PLANT MATERIAL SPECIFIED IS NOT OBTAINABLE, A PROPOSAL WILL BE CONSIDERED FOR USE OF THE NEAREST EQUIVALENT SIZE OR ALTERNATIVE SPECIES, WITH CORRESPONDING ADJUSTMENT OF CONTRACT PRICE.
- SUCH PROOF WILL BE SUBSTANTIATED AND SUBMITTED IN WRITING TO THE CONSULTANT AT LEAST 30 DAYS PRIOR TO START OF WORK UNDER THIS SECTION.

INSPECTION

- PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE RESTORATION SPECIALIST FOR CONFORMANCE, EITHER AT TIME OF DELIVERY ON-SITE OR AT THE GROWER'S NURSERY. APPROVAL OF PLANT MATERIALS AT ANY TIME SHALL NOT IMPAIR THE SUBSEQUENT RIGHT OF INSPECTION AND REJECTION DURING PROGRESS OF THE WORK.
- PLANTS INSPECTED ON SITE AND REJECTED FOR NOT MEETING SPECIFICATIONS MUST BE REMOVED IMMEDIATELY FROM SITE OR RED-TAGGED AND REMOVED AS SOON AS POSSIBLE.
- THE RESTORATION SPECIALIST MAY ELECT TO INSPECT PLANT MATERIALS AT THE PLACE OF GROWTH. AFTER INSPECTION AND ACCEPTANCE, THE RESTORATION SPECIALIST MAY REQUIRE THE INSPECTED PLANTS BE LABELED AND RESERVED FOR PROJECT. SUBSTITUTION OF THESE PLANTS WITH OTHER INDIVIDUALS, EVEN OF THE SAME SPECIES AND SIZE, IS UNACCEPTABLE.

MEASUREMENT OF PLANTS

- PLANTS SHALL CONFORM TO SIZES SPECIFIED UNLESS SUBSTITUTIONS ARE MADE AS OUTLINED IN THIS CONTRACT.
- HEIGHT AND SPREAD DIMENSIONS SPECIFIED REFER TO MAIN BODY OF PLANT AND NOT BRANCH OR ROOT TIP TO TIP. PLANT DIMENSIONS SHALL BE MEASURED WHEN THEIR BRANCHES OR ROOTS ARE IN THEIR NORMAL POSITION.
- WHERE A RANGE OF SIZE IS GIVEN, NO PLANT SHALL BE LESS THAN THE MINIMUM SIZE AND AT LEAST 50% OF THE PLANTS SHALL BE AS LARGE AS THE MEDIAN OF THE SIZE RANGE. (EXAMPLE: IF THE SIZE RANGE IS 12" TO 18", AT LEAST 50% OF PLANTS MUST BE 15" TALL.)

REVIEW SETS

PROPOSED PLANT SOURCES

- WITHIN 45 DAYS AFTER AWARD OF THE CONTRACT, SUBMIT A COMPLETE LIST OF PLANT MATERIALS PROPOSED TO BE PROVIDED DEMONSTRATING CONFORMANCE WITH THE REQUIREMENTS SPECIFIED. INCLUDE THE NAMES AND ADDRESSES OF ALL GROWERS AND NURSERIES.

PRODUCT CERTIFICATES

- PLANT MATERIALS LIST - SUBMIT DOCUMENTATION TO CONSULTANT AT LEAST 30 DAYS PRIOR TO START OF WORK UNDER THIS SECTION THAT PLANT MATERIALS HAVE BEEN ORDERED. ARRANGE PROCEDURE FOR INSPECTION OF PLANT MATERIAL WITH CONSULTANT AT TIME OF SUBMISSION.
- HAVE COPIES OF VENDOR'S OR GROWER'S INVOICES OR PACKING SLIPS FOR ALL PLANTS ON SITE DURING INSTALLATION. INVOICE OR PACKING SLIP SHOULD LIST SPECIES BY SCIENTIFIC NAME, QUANTITY, AND DATE DELIVERED (AND GENETIC ORIGIN IF THAT INFORMATION WAS PREVIOUSLY REQUESTED).

DELIVERY, HANDLING, & STORAGE

NOTIFICATION: CONTRACTOR MUST NOTIFY CONSULTANT 48 HOURS OR MORE IN ADVANCE OF DELIVERIES SO THAT CONSULTANT MAY ARRANGE FOR INSPECTION.

PLANT MATERIALS

- TRANSPORTATION - DURING SHIPPING, PLANTS SHALL BE PACKED TO PROVIDE PROTECTION AGAINST CLIMATE EXTREMES, BREAKAGE AND DRYING. PROPER VENTILATION AND PREVENTION OF DAMAGE TO BARK, BRANCHES, AND ROOT SYSTEMS MUST BE ENSURED.
- SCHEDULING AND STORAGE - PLANTS SHALL BE DELIVERED AS CLOSE TO PLANTING AS POSSIBLE. PLANTS IN STORAGE MUST BE PROTECTED AGAINST ANY CONDITION THAT DETRIMENTAL TO THEIR CONTINUED HEALTH AND VIGOR.
- HANDLING - PLANT MATERIALS SHALL NOT BE HANDLED BY THE TRUNK, LIMBS, OR FOLIAGE BUT ONLY BY THE CONTAINER, BALL, BOX, OR OTHER PROTECTIVE STRUCTURE. EXCEPT BAREROOT PLANTS SHALL BE KEPT IN BUNDLES UNTIL PLANTING AND THEN HANDLED CAREFULLY BY THE TRUNK OR STEM.
- LABELS - PLANTS SHALL HAVE DURABLE, LEGIBLE LABELS STATING CORRECT SCIENTIFIC NAME AND SIZE. TEN PERCENT OF CONTAINER GROWN PLANTS IN INDIVIDUAL POTS SHALL BE LABELED. PLANTS SUPPLIED IN FLATS, RACKS, BOXES, BAGS, OR BUNDLES SHALL HAVE ONE LABEL PER GROUP.

WARRANTY

PLANT WARRANTY: PLANTS MUST BE GUARANTEED TO BE TRUE TO SCIENTIFIC NAME AND SPECIFIED SIZE, AND TO BE HEALTHY AND CAPABLE OF VIGOROUS GROWTH.

REPLACEMENT

- PLANTS NOT FOUND MEETING ALL OF THE REQUIRED CONDITIONS MUST BE REMOVED FROM SITE AND REPLACED IMMEDIATELY AT THE CONSULTANT'S DISCRETION.
- PLANTS NOT SURVIVING AFTER ONE YEAR TO BE REPLACED.

PLANT MATERIAL

GENERAL

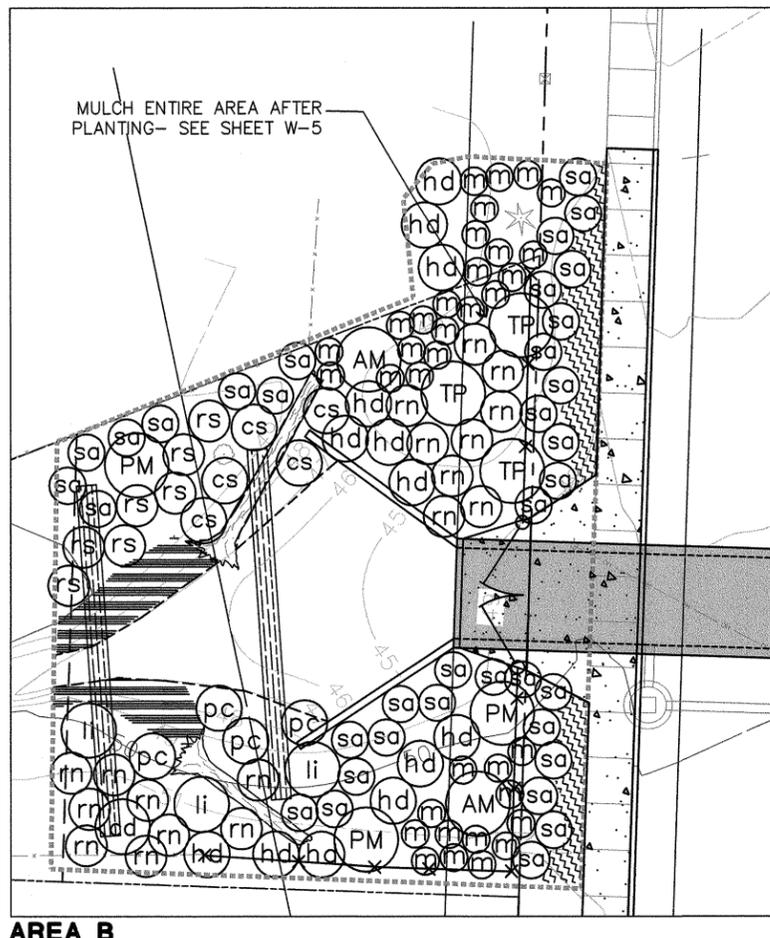
- PLANTS SHALL BE NURSERY GROWN IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICES UNDER CLIMATIC CONDITIONS SIMILAR TO OR MORE SEVERE THAN THOSE OF THE PROJECT SITE.
- PLANTS SHALL BE TRUE TO SPECIES AND VARIETY OR SUBSPECIES. NO CULTIVARS OR NAMED VARIETIES SHALL BE USED UNLESS SPECIFIED AS SUCH.

QUANTITIES

SEE PLANT LIST ON ACCOMPANYING PLANS AND PLANT SCHEDULES.

ROOT TREATMENT

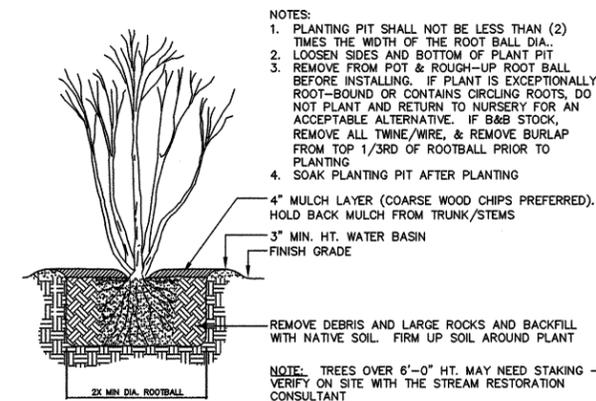
- CONTAINER GROWN PLANTS (INCLUDES PLUGS): PLANT ROOT BALLS MUST HOLD TOGETHER WHEN THE PLANT IS REMOVED FROM THE POT, EXCEPT THAT A SMALL AMOUNT OF LOOSE SOIL MAY BE ON THE TOP OF THE ROOTBALL.
- PLANTS MUST NOT BE ROOT-BOUND; THERE MUST BE NO CIRCLING ROOTS PRESENT IN ANY PLANT INSPECTED.
- ROOTBALLS THAT HAVE CRACKED OR BROKEN WHEN REMOVED FROM THE CONTAINER SHALL BE REJECTED.
- LIVE STAKES (INCLUDES FASCINES, WILLOW WATTLES). LIVE STAKES MUST BE INSTALLED BEFORE ROOTING OCCURS. PLANTS THAT ALREADY HAVE ROOTS AT THE TIME OF INSTALLATION WILL BE REJECTED.



AREA B

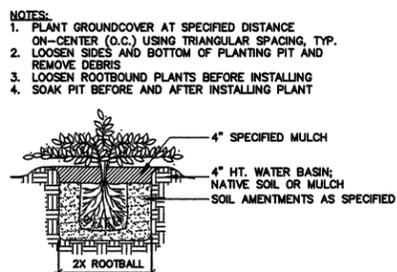
PLANT LEGEND

TREES	SCIENTIFIC NAME / COMMON NAME
AM	ACER MACROPHYLLUM / BIG-LEAF MAPLE
FL	FRAXINUS LATIFOLIA / OREGON ASH
PS	PICEA SITCHENSIS / SITKA SPRUCE
PM	PSEUDOTSUGA MENZIESII / DOUGLAS-FIR
TP	THUJA PLICATA / WESTERN RED CEDAR
SHRUBS	SCIENTIFIC NAME / COMMON NAME
CS	CORNUS SERICEA / RED TWIG DOGWOOD
LI	CRATAEGUS DOUGLASII / BLACK HAWTHORN
HD	LONICERA INVOLUCRATA / TWNBERRY
MF	HOLODISCUS DISCOLOR / OCEANSPRAY
OC	MALUS FUSCA / WESTERN CRABAPPLE
RS	MAHONIA AQUIFOLIUM / TALL MAHONIA
SA	OEMLERIA CERASIFORMIS / OSOBERY
RN	PHYSCARPUS CAPITATUS / PACIFIC NINEBA
SA	RUBUS SPECTABILIS / SALMONBERRY
SA	ROSA NUTKANA / NOOTKA ROSE
CUTTINGS	SCIENTIFIC NAME / COMMON NAME
(Symbol)	SYMPHORICARPOS ALBUS / SNOWBERRY
(Symbol)	SALIX HOOKERIANA / HOOKER'S WILLOW
(Symbol)	SALIX SITCHENSIS / SITKA WILLOW
(Symbol)	SALIX LASIANDRA / PACIFIC WILLOW
GROUNDCOVER	SCIENTIFIC NAME / COMMON NAME
(Symbol)	ARCTOSTAPHYLOS UVA-URSI / KINNIKINNICK
(Symbol)	GAULTHERIA SHALLON / SALAL
(Symbol)	MAHONIA NERVOSA / DULL MAHONIA
GRASS SEED MIX	SCIENTIFIC NAME / COMMON NAME
(Symbol)	20% LOLOUM MULTIFLORUM / ANNUAL RYEGRASS
(Symbol)	20% LOLOUM PERENNE / PERENNIAL RYEGRASS
(Symbol)	40% FESTUCA RUBRA / RED FESCUE
(Symbol)	10% HIGHLAND BENTGRASS / AGROSTIS TENN
(Symbol)	10% WHITE CLOVER / TRIFOLIUM REPENS



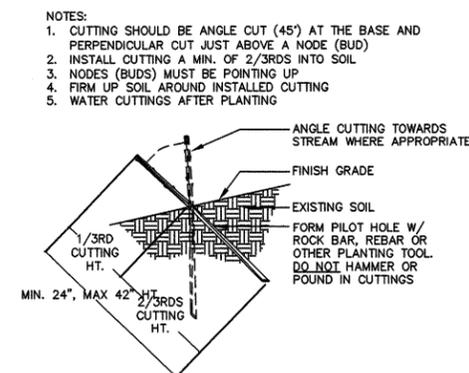
TREE/SHRUB PLANTING DETAIL A

NOT TO SCALE



GROUNDCOVER B

NOT TO SCALE



CUTTING DETAIL C

NOT TO SCALE

No.	DATE	BY	REVISION



Scale: Noted
 Horiz: Noted
 Vert: Noted
 Designed By: B.P.B.
 Drawn By: P.G.M.
 Reviewed By: B.P.B.
 Date: DEC 2013



City of Kenmore
 ENGINEERING AND ENVIRONMENTAL
 SERVICES DEPARTMENT
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Tributary 0057
 Channel Realignment and
 Sediment Control Project
 City Project No. 0158

MITIGATION PLAN
PLANTING PLAN
 (2 OF 2)

Sheet No. W-2
Sheet No. 16
17 Of Total

CONSTRUCTION SEQUENCE AND MAINTENANCE

CONSTRUCTION NOTES AND SPECIFICATIONS

NOTE: SPECIFICATIONS FOR ITEMS IN BOLD CAN BE FOUND BELOW UNDER "MATERIAL SPECIFICATIONS AND DEFINITIONS."

NOTE: THE WATERSHED COMPANY [(425) 822-5242] PERSONNEL, OR OTHER PERSONS QUALIFIED TO EVALUATE ENVIRONMENTAL RESTORATION PROJECTS, WILL MONITOR:

1. ALL SITE PREPARATION
 - A. SOIL PREPARATION/AMENDMENT.
 - B. MULCH PLACEMENT.
2. PLANT MATERIAL INSPECTION
 - A. PLANT MATERIAL DELIVERY INSPECTION.
 - B. 100% PLANT INSTALLATION INSPECTION.

GENERAL WORK SEQUENCE

NOTE: FOR SPECIFIC INSTRUCTIONS ON GRADING WORK FOR THIS PROJECT INCLUDING STREAM CHANNEL GRADING AND OLD CHANNEL ABANDONMENT (EXCEPT WHERE NOTED BELOW), SEE CIVIL DRAWINGS.

1. ALL PLANT INSTALLATION MUST TAKE PLACE DURING THE DORMANT SEASON (OCTOBER 15TH - MARCH 1ST).
2. IN ABANDONED CHANNEL AREAS THAT HAVE BEEN FILLED, THE RESTORATION SPECIALIST SHALL VERIFY SUITABLE TOPSOIL AND THAT NO AREAS WILL POND WATER PRIOR TO PLANTING. IF SUITABLE TOPSOIL IS NOT PRESENT, INCORPORATE UP TO 4 INCHES OF COMPOST INTO THE TOP 9 INCHES OF SOIL PRIOR TO PLANTING. IF PONDING IS NOTED, ADDITIONAL FILL MATERIAL MAY BE NEEDED.
3. PREPARE A PLANTING PIT FOR EACH PLANT AND INSTALL PER THE PLANTING DETAILS.
4. FOR INSTALLATION OF CUTTINGS, REFER TO THE DETAILS IN THE PLANTING PLAN. ENSURE AT LEAST 2/3RDS OF THE LENGTH OF THE CUTTING IS BELOW GROUND AND THAT CUTTINGS ARE INSTALLED RIGHT-END-UP.
5. MULCH THE ENTIRE AREA OF BOTH MITIGATION SITES WITH WOOD CHIP MULCH (116 CUBIC YARDS NEEDED), FOUR INCHES THICK. DO NOT APPLY MULCH INSIDE THE UNVEGETATED BANKS OF THE NEW CHANNEL SEGMENTS.

MATERIAL SPECIFICATIONS AND DEFINITIONS

1. RESTORATION PROFESSIONAL: WATERSHED COMPANY [(425) 822-5242] PERSONNEL, OR OTHER PERSONS QUALIFIED TO EVALUATE ENVIRONMENTAL RESTORATION PROJECTS.
2. WOOD CHIP MULCH: ARBORIST CHIPS (CHIPPED WOODY MATERIAL) APPROXIMATELY 1 TO 3 INCHES IN MAXIMUM DIMENSION (NOT SAWDUST OR COARSE HOG FUEL). THIS MATERIAL IS COMMONLY AVAILABLE IN LARGE QUANTITIES FROM ARBORISTS OR TREE-PRUNING COMPANIES. THIS MATERIAL IS SOLD AS "ANIMAL FRIENDLY HOG FUEL" AT PACIFIC TOPSOILS [(800) 884-7645]. MULCH MUST NOT CONTAIN APPRECIABLE QUANTITIES OF GARBAGE, PLASTIC, METAL, SOIL, AND DIMENSIONAL LUMBER OR CONSTRUCTION/DEMOLITION DEBRIS. QUANTITY REQUIRED: 116 CUBIC YARDS.
3. COMPOST: CEDAR GROVE COMPOST OR OTHER 100% ORGANICALLY-DERIVED EQUIVALENT COMPOST PRODUCT.

CONTINGENCIES

IF THERE IS A SIGNIFICANT PROBLEM WITH THE RESTORATION AREAS MEETING PERFORMANCE STANDARDS, A CONTINGENCY PLAN WILL BE DEVELOPED AND IMPLEMENTED. CONTINGENCY PLANS CAN INCLUDE, BUT ARE NOT LIMITED TO: SOIL AMENDMENT; ADDITIONAL PLANT INSTALLATION; AND PLANT SUBSTITUTIONS OF TYPE, SIZE, QUANTITY, AND LOCATION.

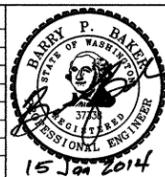
MAINTENANCE

THE SITE WILL BE MAINTAINED IN ACCORDANCE WITH THE FOLLOWING INSTRUCTIONS FOLLOWING COMPLETION OF THE CONSTRUCTION.

- 1) GENERAL WEEDING FOR ALL PLANTED AREAS:
 - A. AT LEAST TWICE YEARLY, REMOVE ALL COMPETING WEEDS AND WEED ROOTS FROM BENEATH EACH INSTALLED PLANT AND ANY DESIRABLE VOLUNTEER VEGETATION TO A DISTANCE OF 18 INCHES FROM THE MAIN PLANT STEM. WEEDING SHOULD OCCUR AT LEAST TWICE DURING THE SPRING AND SUMMER. FREQUENT WEEDING WILL RESULT IN LOWER MORTALITY, LOWER PLANT REPLACEMENT COSTS, AND INCREASED LIKELIHOOD THAT THE PLAN MEETS PERFORMANCE STANDARDS BY YEAR 5.
 - B. MORE FREQUENT WEEDING MAY BE NECESSARY DEPENDING ON WEED CONDITIONS THAT DEVELOP AFTER PLAN INSTALLATION.
 - C. DO NOT WEED THE AREA NEAR THE PLANT BASES WITH STRING TRIMMER (WEED WHACKER/WEED EATER). NATIVE PLANTS ARE EASILY DAMAGED OR KILLED, AND WEEDS EASILY RECOVER AFTER TRIMMING.
 - D. SELECTIVE APPLICATIONS OF HERBICIDE MAY BE NEEDED TO CONTROL INVASIVE WEEDS, ESPECIALLY WHEN INTERMIXED WITH NATIVE SPECIES. HERBICIDE APPLICATION, WHEN NECESSARY, SHALL BE CONDUCTED ONLY BY A STATE-LICENSED APPLICATOR.
- 3) REPLACE MULCH AS NECESSARY TO MAINTAIN A 4-INCH-THICK LAYER, RETAIN SOIL MOISTURE, AND LIMIT WEEDS.
- 4) REPLACE EACH PLANT FOUND DEAD IN THE SUMMER MONITORING VISITS DURING THE UPCOMING FALL DORMANT SEASON (OCTOBER 15 TO MARCH 1).

DUE TO THE LACK OF AVAILABLE WATER SUPPLY, AN IRRIGATION SYSTEM IS NOT PROPOSED. IRRIGATION FROM A WATER TRUCK MAY BE NEEDED IF PLANTING IS COMPLETED OTHER THAN WITHIN THE PLANT ESTABLISHMENT PERIOD (OCTOBER 15 - MARCH 1.) SUCH IRRIGATION SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND ALLOWED AT THE DISCRETION OF THE CITY OF KENMORE.

No.	DATE	BY	REVISION



Scale: Noted
 Horiz: Vert:
 Designed By: B.P.B.
 Drawn By: P.G.M.
 Reviewed By: B.P.B.
 Date: DEC 2013



City of Kenmore
ENGINEERING AND ENVIRONMENTAL SERVICES DEPARTMENT
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Tributary 0057
 Channel Realignment and Sediment Control Project
 City Project No. 0158

MITIGATION PLAN
MITIGATION PLAN
NOTES

Sheet No. W-3
 Sheet No. 17
 Of Total 17