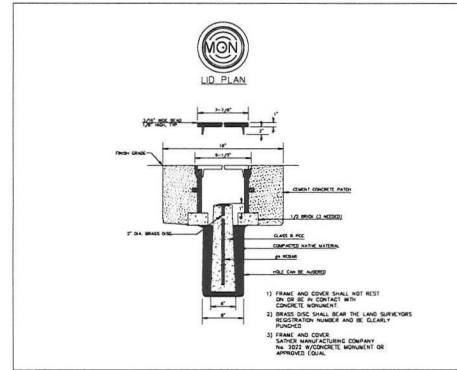




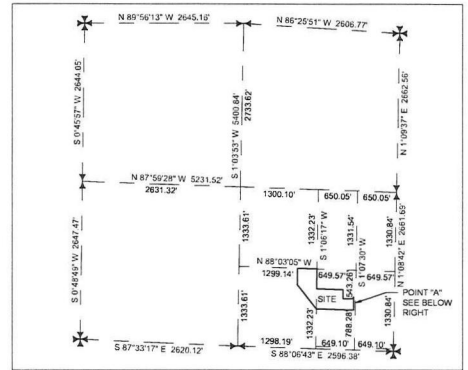


# RIVERSTONE PLAT

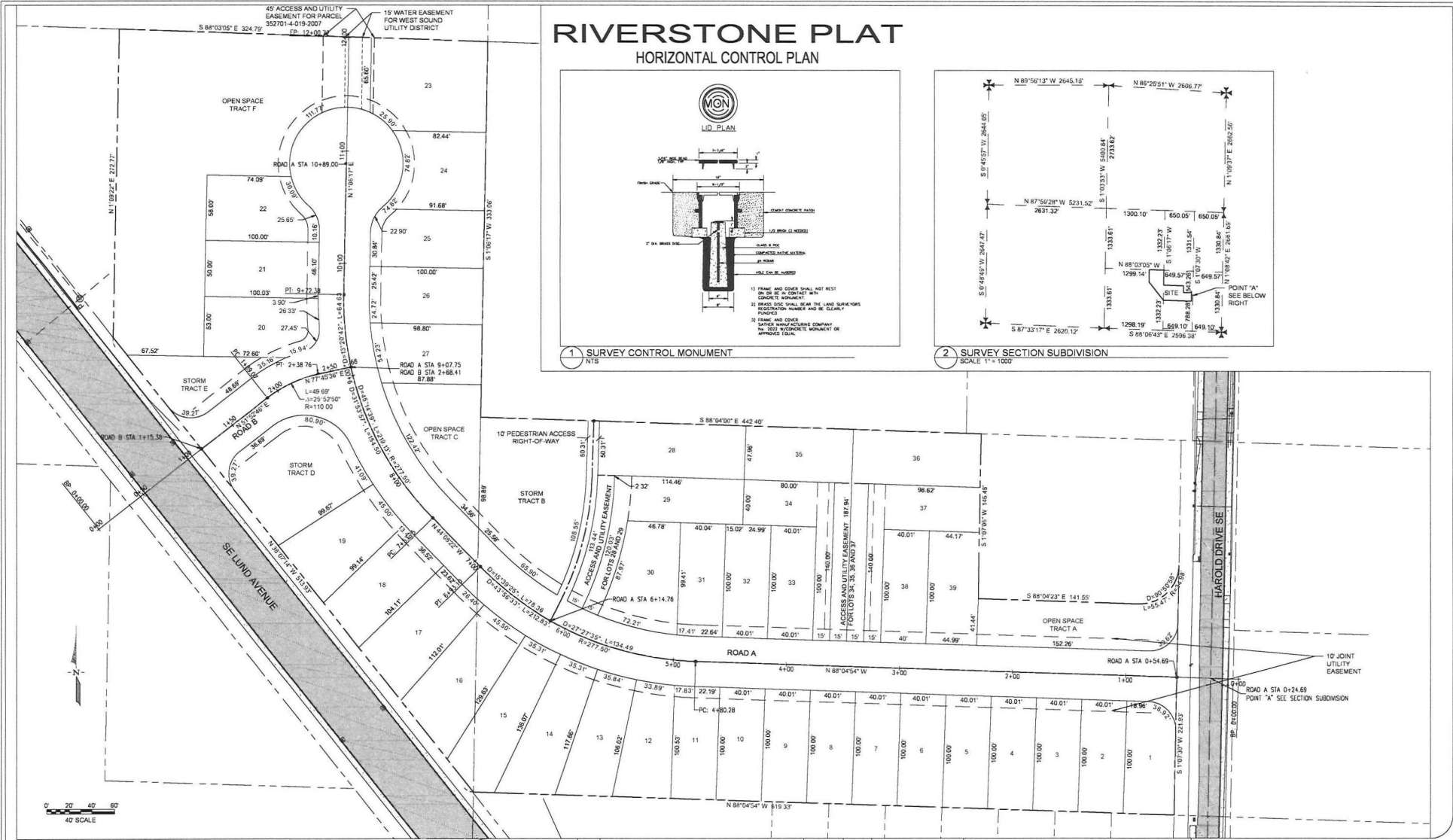
## HORIZONTAL CONTROL PLAN



1 SURVEY CONTROL MONUMENT



2 SURVEY SECTION SUBDIVISION  
SCALE 1" = 100'



DESIGNED BY	CTB
DRAWN BY	PWB
CHECKED BY	CTB
SEC	35
TWN	24N
R	1E
SCALE	1"=40'
REV.	
DESCRIPTION	
DATE	
BY	
DATE SEALED	1/20/2022



TITLE  
RIVERSTONE PLAT  
HORIZONTAL CONTROL PLAN

CLIENT  
HOUSING KITSAP  
2244 NE BUCKLIN HILL ROAD  
SILVERDALE, WA 98383  
360-935-6134

**WestSound Engineering, Inc**  
ENGINEERING, PLANNING AND SURVEYING

217 S.W. Wilkins Drive  
Phone (360) 878-3770  
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Port Orchard, WA 98366  
Fax (360) 878-0438  
http://www.wseengineering.com

JOB No. **2724**      SHEET **C2.1** OF **29** SHEETS

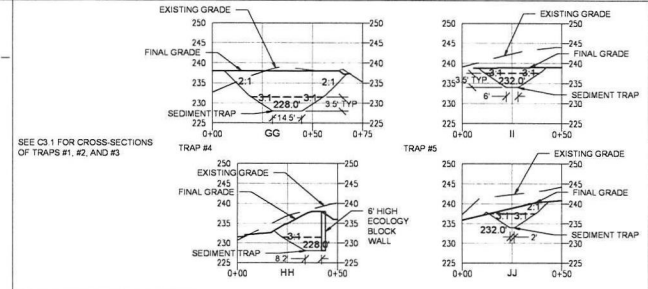
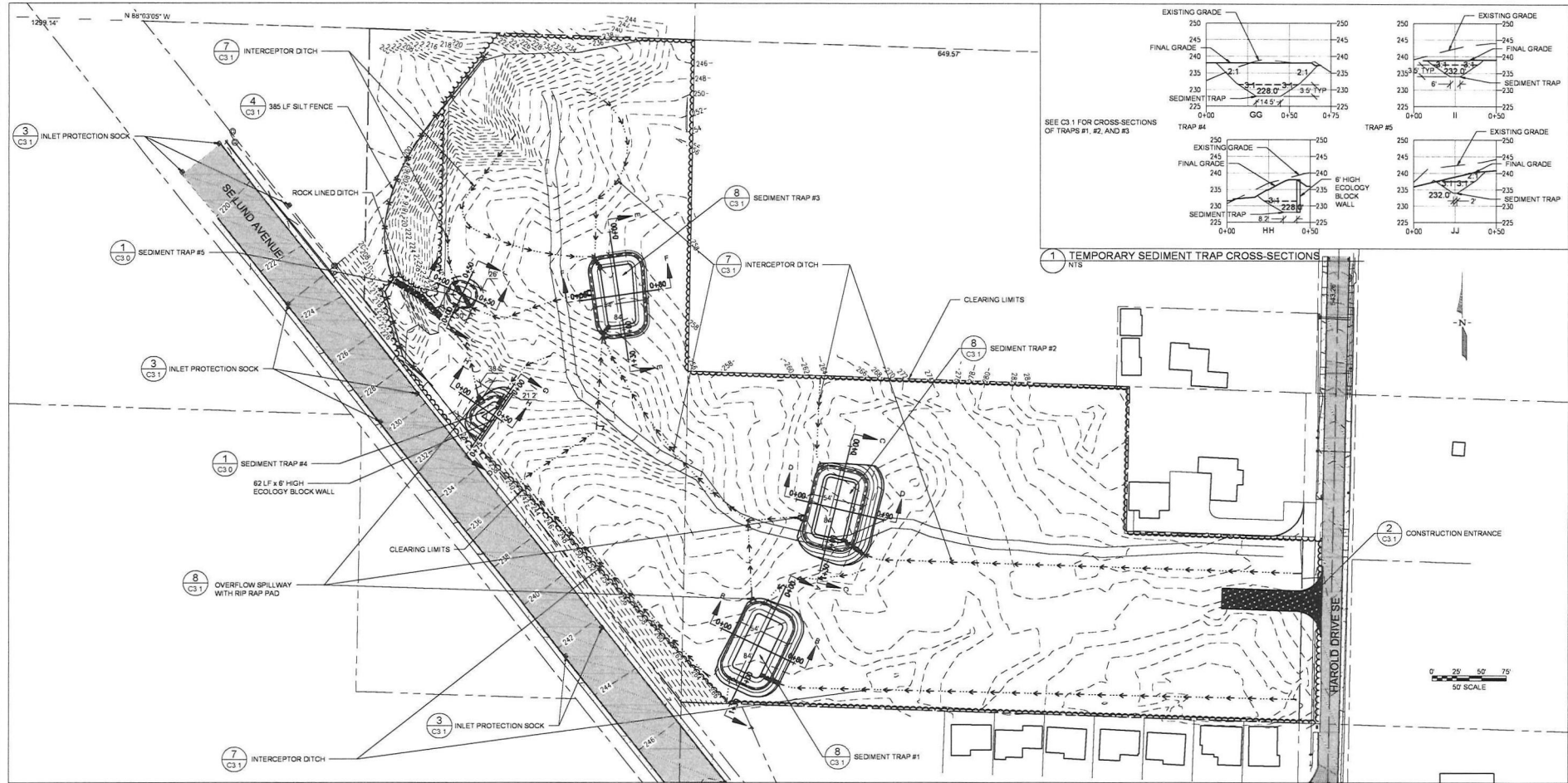
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ONE-CALL (# 1-800-424-5555)  
 BURIED UTILITIES ARE SHOWN AS INDICATED ON RECORD MAPS FURNISHED BY OTHERS AND VERIFIED WHERE POSSIBLE BY FEATURES LOCATED IN THE FIELD. WESTSOUND ENGINEERING ASSUMES NO LIABILITY FOR THE ACCURACY OF THOSE RECORDS, OR FOR THE FINAL LOCATION OF EXISTING UTILITIES IN AREAS CRITICAL TO DESIGN.

# RIVERSTONE PLAT

## SWPPP



1 TEMPORARY SEDIMENT TRAP CROSS-SECTIONS

**MONUMENT REMOVAL PERMIT PROCESS**  
 NO SURVEY MONUMENT SHALL BE REMOVED OR DESTROYED (THE PHYSICAL DISTURBANCE OR COVERING OF A MONUMENT SUCH THAT THE SURVEY POINT IS NO LONGER VISIBLE OR READILY ACCESSIBLE) BEFORE A PERMIT IS OBTAINED FROM THE DEPARTMENT OF NATURAL RESOURCES (DNR). WAC 332-120-030(2) STATES IT IS THE RESPONSIBILITY OF THOSE PERFORMING CONSTRUCTION WORK OR OTHER ACTIVITY INCLUDING ROAD AND STREET RESURFACING PROJECTS TO ADEQUATELY SEARCH THE RECORDS AND THE PHYSICAL AREA OF THE PROPOSED CONSTRUCTION WORK OR OTHER ACTIVITY FOR THE PURPOSE OF LOCATING AND REFERENCING ANY KNOWN OR EXISTING SURVEY MONUMENTS. CONSTRUCTION SHALL NOT COMMENCE UNTIL WAC OUTLINED IN CHAPTER 332-120 IS COMPLIED WITH.

DESIGNED BY	CTB				
DRAWN BY	PWF				
CHECKED BY	CTB				
SCALE	1"=50'	REV.	DESCRIPTION	DATE	BY
SEC 35 TWN 24N R 1E					
				DATE SEALED	1/20/2022



TITLE: RIVERSTONE PLAT SWPPP

CLIENT: HOUSING KITSAP  
 2244 NE BUCKLIN HILL ROAD  
 SILVERDALE, WA 98383  
 360-535-6134

**WestSound Engineering, Inc**  
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217 S.W. Wilkins Drive  
 Phone: (360) 878-3770  
 E-mail: [ws@westsoundeng.com](mailto:ws@westsoundeng.com)

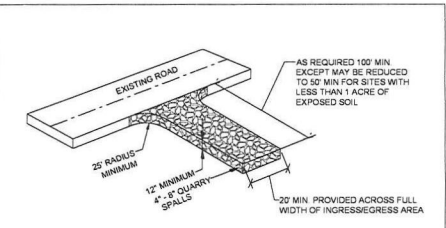
Port Orchard, Wa. 98366  
 Fax: (360) 878-0439  
<http://www.westsoundeng.com>

**TESC MAINTENANCE REQUIREMENTS**

- EROSION AND SEDIMENTATION CONTROL FACILITIES SHALL BE INSPECTED AFTER EACH RAINFALL EVENT AND DAILY DURING PROLONGED RAINFALL
- NECESSARY REPAIRS OR REPLACEMENT OF FACILITIES SHALL BE ACCOMPLISHED PROMPTLY
- SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT OR WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE-HALF THE MAXIMUM POTENTIAL DEPTH
- SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE ESC FACILITIES ARE NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED
- TEMPORARY EROSION AND SEDIMENTATION CONTROL FACILITIES SHALL BE MAINTAINED BY
 

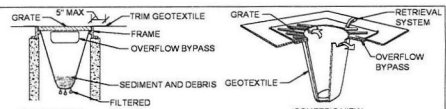
OWNER GARY ANDERSON	OWNER REP NAME GARY ANDERSON
ADDRESS 1024 SPENCER AVENUE	ADDRESS CITY STATE ZIP
CITY STATE ZIP PORT ORCHARD, WA 98367	PHONE 360-731-3739

**1 TESC MAINTENANCE REQUIREMENTS**



- NOTES**
- SEPARATION GEOTEXTILE (MARAFI 180N) SHALL BE PLACED UNDER THE SPALLS TO PREVENT FINE SEDIMENT FROM PUMPING INTO THE ROAD PAD
  - INSTALL ON FIRM COMPACTED SUBGRADE WHERE APPLICABLE
  - FRESH SPALLS AS NEEDED TO MAINTAIN ENTRANCE IN ACCORDANCE WITH THIS DETAIL
  - ANY SEDIMENT TRANSPORT OUTSIDE OF SITE AND ENTRANCE SHALL BE REMOVED AND THE AREA SWEEP FREE OF SEDIMENT
  - LOOSE SPALLS THAT ARE TRANSPORTED OR DISPLACED TO ROADWAY SHALL BE COLLECTED AND RETURNED TO THE SITE
  - NO ACCESS POINTS NOT PROVIDED WITH A CONSTRUCTION ENTRANCE SHALL BE USED DURING THE CONSTRUCTION ACTIVITY PROVIDE FENCING TO RESTRICT ACCESS IF NEEDED

**2 TEMPORARY CONSTRUCTION ENTRANCE**



- PERFORM MAINTENANCE IN ACCORDANCE WITH STANDARD SPECIFICATION 8-01.3(15)
- SIZE THE BELOW GRATE INLET DEVICE (BGID) FOR THE STORM WATER STRUCTURE IT WILL SERVICE
- THE BGID SHALL HAVE A BUILT-IN HIGH-FLOW RELIEF SYSTEM (OVERFLOW BYPASS)
- THE RETRIEVAL SYSTEM MUST ALLOW REMOVAL OF THE BOD WITHOUT SPRINGING THE COLLECTED MATERIAL

**3 INLET PROTECTION SOCK DETAIL**

- SEEDING**
- SEED MIXTURE SHALL BE 10% REDTOP, 40% ANNUAL RYE, 40% CHEWING FESCUE, AND 10% WHITE DUTCH CLOVER
  - SEED BEDS PLANTED BETWEEN MAY 1 AND OCTOBER 31 WILL REQUIRE IRRIGATION AND OTHER MAINTENANCE AS NECESSARY TO FOSTER AND PROTECT THE ROOT STRUCTURE
  - FOR SEED BEDS PLANTED BETWEEN OCTOBER 31 AND APRIL 30, ARMORING OF THE SEED BED WILL BE NECESSARY (E.G., GEOTEXTILES, JUTE MAT, CLEAR PLASTIC COVERING)
  - BEFORE SEEDING, INSTALL NEEDED SURFACE RUNOFF CONTROL MEASURES SUCH AS GRADIENT TERRACES, INTERCEPTOR DIKES, SWALES, LEVEL SPREADERS AND SEDIMENT BASINS
  - THE SEEDBED SHALL BE FIRM WITH A FAIRLY FINE SURFACE, FOLLOWING SURFACE ROUGHENING PERFORM ALL OPERATIONS ACROSS OR AT RIGHT ANGLES TO THE SLOPE
  - FERTILIZERS ARE TO BE USED ACCORDING TO SUPPLIERS RECOMMENDATIONS AMOUNTS USED SHOULD BE MINIMIZED, ESPECIALLY ADJACENT TO WATER BODIES AND WETLANDS

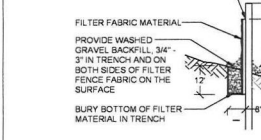
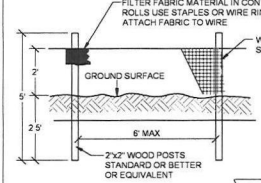
**5 SEEDING NOTES**

# RIVERSTONE PLAT

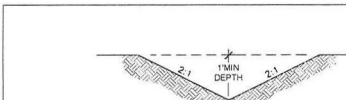
## SWPPP NOTES

**SILT FENCE NOTES:**

- FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL AND CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 8-INCH OVERLAP, AND SECURELY FASTENED AT BOTH ENDS TO POSTS
- POSTS SHALL BE SPACED A MAXIMUM OF 8 FEET APART AND DRIVEN SECURELY INTO THE GROUND (MINIMUM OF 30 INCHES)
- A TRENCH SHALL BE EXCAVATED APPROXIMATELY 8 INCHES WIDE AND 12 INCHES DEEP ALONG THE LINE OF POSTS AND UP SLOPE FROM THE BARRIER. THIS TRENCH SHALL BE BACKFILLED WITH WASHED GRAVEL
- WHEN STANDARD STRENGTH FILTER FABRIC IS USED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UP SLOPE SIDE OF THE POSTS USING HEAVY DUTY WIRE STAPLES AT LEAST 1 INCH LONG. THE WIRES OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 4 INCHES AND SHALL NOT EXTEND MORE THAN 24 INCHES ABOVE THE ORIGINAL GROUND SURFACE
- THE STANDARD STRENGTH FILTER FABRIC SHALL BE STAPLED OR WIRED TO THE FENCE, AND 20 INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 24 INCHES ABOVE THE ORIGINAL GROUND SURFACE. FILTER FABRIC SHALL NOT BE STAPLED TO EXISTING TREES
- WHEN EXTRA STRENGTH FILTER FABRIC AND CLOSER POST SPACING IS USED, THE WIRE MESH SUPPORT FENCE MAY BE ELIMINATED. IN SUCH A CASE, THE FILTER FABRIC IS STAPLED OR WIRED DIRECTLY TO THE POSTS WITH ALL OTHER PROVISIONS OF ABOVE NOTES APPLYING
- FILTER FABRIC FENCES SHALL NOT BE REMOVED BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED
- FILTER FABRIC FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY
- SILT FENCES WILL BE INSTALLED PARALLEL TO ANY SLOPE CONTOURS
- CONTRIBUTING LENGTH TO FENCE WILL NOT BE GREATER THAN 100 FEET
- DO NOT INSTALL BELOW AN OUTLET PIPE OR WEIR
- INSTALL DOWN SLOPE OF EXPOSED AREAS
- DO NOT DRIVE OVER OR FILL OVER SILT FENCES



**4 SILT FENCING DETAIL**



- SEED BOTTOM AND SIDE SLOPES WITH GRASS AS OUTLINED IN TEMPORARY AND PERMANENT HYDROSEEDING NOTES. CHANNELS HAVING A FLOWLINE SLOPE OF 9% OR GREATER SHALL BE ROCK-LINED WITH RIPRAP
- MINIMUM OF 1% SLOPE WITH POSITIVE DRAINAGE TO THE CATCH BASIN
- INSPECT AFTER EVERY MAJOR STORM EVENT AND REPAIR AS NECESSARY

**7 INTERCEPTOR DITCH**

**MULCHING**

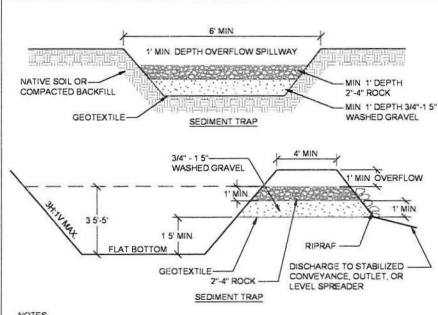
- PREPARE SOIL AS FOR SEEDING
- APPLY PER TABLE BELOW
- NETS AND MATS SHALL BE USED IN CONJUNCTION WITH MULCH ON SLOPES STEEPER THAN 2:1
- WOOD FIBER CELLULOSE BLANKETS ARE CONSIDERED PROTECTIVE MULCHES AND CAN BE USED ALONE ON ERODIBLE SOILS AND DURING ALL TIMES OF THE YEAR
- USE HAY OR STRAW WHERE MULCH EFFECT IS TO BE MAINTAINED FOR MORE THAN 3 MONTHS
- HAY AND STRAW ARE SUBJECT TO WIND BLOWING UNLESS KEPT MOIST OR TIED DOWN ANCHOR BY CRIMPING, DISING, ROLLING OR PUNCHING INTO SOIL, COVERING WITH NETTING, SPRAYING WITH A CHEMICAL OR FIBER BINDER OR BY KEEPING MOIST
- WOOD FIBER CELLULOSE (PARTLY-DIGESTED WOOD FIBERS) SHALL BE USED FOR EROSION CONTROL ON CRITICAL AREAS. THE APPLICATION RATE SHOULD BE DOUBLED APPLY WITH HYDROMULCHER. NO TIE DOWN IS REQUIRED. PACKAGED IN 100-LB BAGS. NOT RECOMMENDED FOR HIGHLY ERODIBLE SOILS IN HOT WEATHER
- GRAVEL, CRUSHED STONE OR SLAG IS TO BE USED ON SHORT SLOPES AND AROUND WOODY PLANTS AND ORNAMENTALS. USE WHERE SUBJECT TO FOOT TRAFFIC
- CORN STALKS SHREDDED INTO 4'-6' LENGTHS MAY BE USED AS GENERAL MULCH
- WOOD CHIPS MAY BE USED AS GENERAL MULCH ON SLOPES LESS THAN 9%
- BARK CHIPS/SHREDDED BARK MAY BE USED AS GENERAL MULCH ON SLOPES LESS THAN 9%. AVOID TILLING BARK OR SAWKUST INTO SOIL.

- PROCEDURES**
- MULCHES SHOULD BE USED FOLLOWING TEMPORARY OR PERMANENT SEEDING
  - MULCHING SHOULD IMMEDIATELY FOLLOW SEEDING IN AREAS WITH SLOPES STEEPER THAN 2:1
  - MULCHES SHOULD BE USED IN CLEARED AREAS THAT CANNOT BE IMMEDIATELY SEEDED
  - MULCHES SHOULD BE USED ON EXPOSED SOILS INCLUDING STOCKPILES WHICH ARE NOT FINAL GRADED WITHIN 15 DAYS UNLESS COVERED WITH PLASTIC SHEETING
  - MULCHED AREAS SHOULD BE CHECKED PERIODICALLY, ESPECIALLY FOLLOWING SEVERE STORMS. WHEN DAMAGED AREAS OF MULCH OR TIE-DOWN MATERIAL SHOULD BE REPAIRED

**MULCH MATERIALS, APPLICATION RATES, AND SPECIFIC NOTES**

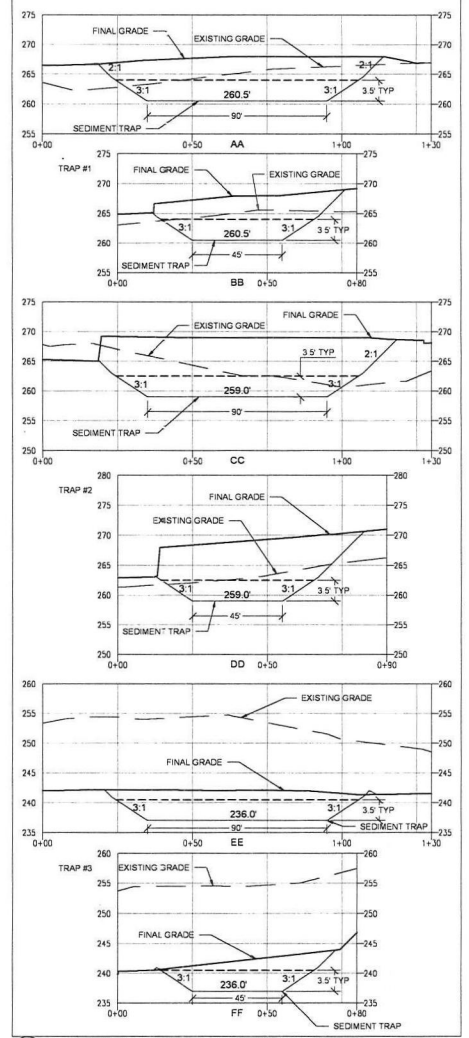
MULCH MATERIAL	QUALITY STANDARDS	APPLICATION RATE PER 1000 SF	APPLICATION RATE PER ACRE	DEPTH OF APPLICATION
GRAVEL, CRUSHED STONE OR SLAG	WASHED 3/8 TO 1-1/2" SIZE	9 CU YDS	400 CU YDS	3 INCHES
HAY OR STRAW	ARMORING FREE FROM UNDESIRABLE SEEDS AND COARSE MATERIAL	75 TO 100 LBS. 2-3 BALES	15 TO 23 TONS (90 TO 120 BALES)	LIGHTLY COVER ENTIRE SURFACE (MIN. 2")
WOOD FIBER CELLULOSE	DYED GREEN NO GROWTH INHIBITING FACTORS	25 TO 30 POUNDS	1000 TO 1500 POUNDS	2 INCHES

**6 MULCHING**



- NOTES**
- SEDIMENT SHALL BE REMOVED FROM THIS TRAP WHEN IT REACHES 1 FT IN DEPTH
  - ANY DAMAGE TO THE POND EMBANKMENT SLOPES SHALL BE REPAIRED

**8 SEDIMENT TRAP**



**8 TEMPORARY SEDIMENT TRAP CROSS-SECTIONS**

DESIGNED BY	CTB						
DRAWN BY	PWB						
CHECKED BY	CTB						
SEC	35	TWN	24N	R	1E		
SCALE		REV.		DESCRIPTION	DATE	BY	
					DATE SEALED	1/20/2022	

**TITLE** RIVERSTONE PLAT SWPPP

**CLIENT** HOUSING KITSAP  
2244 NE BUCKLIN HILL ROAD  
SILVERDALE, WA 98383  
360-635-6134

**WestSound Engineering, Inc.**  
ENGINEERING, PLANNING AND SURVEYING

217 S.W. Wilkins Drive  
Phone (360) 876-3770  
E-mail: [www@westsound.com](mailto:www@westsound.com)

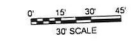
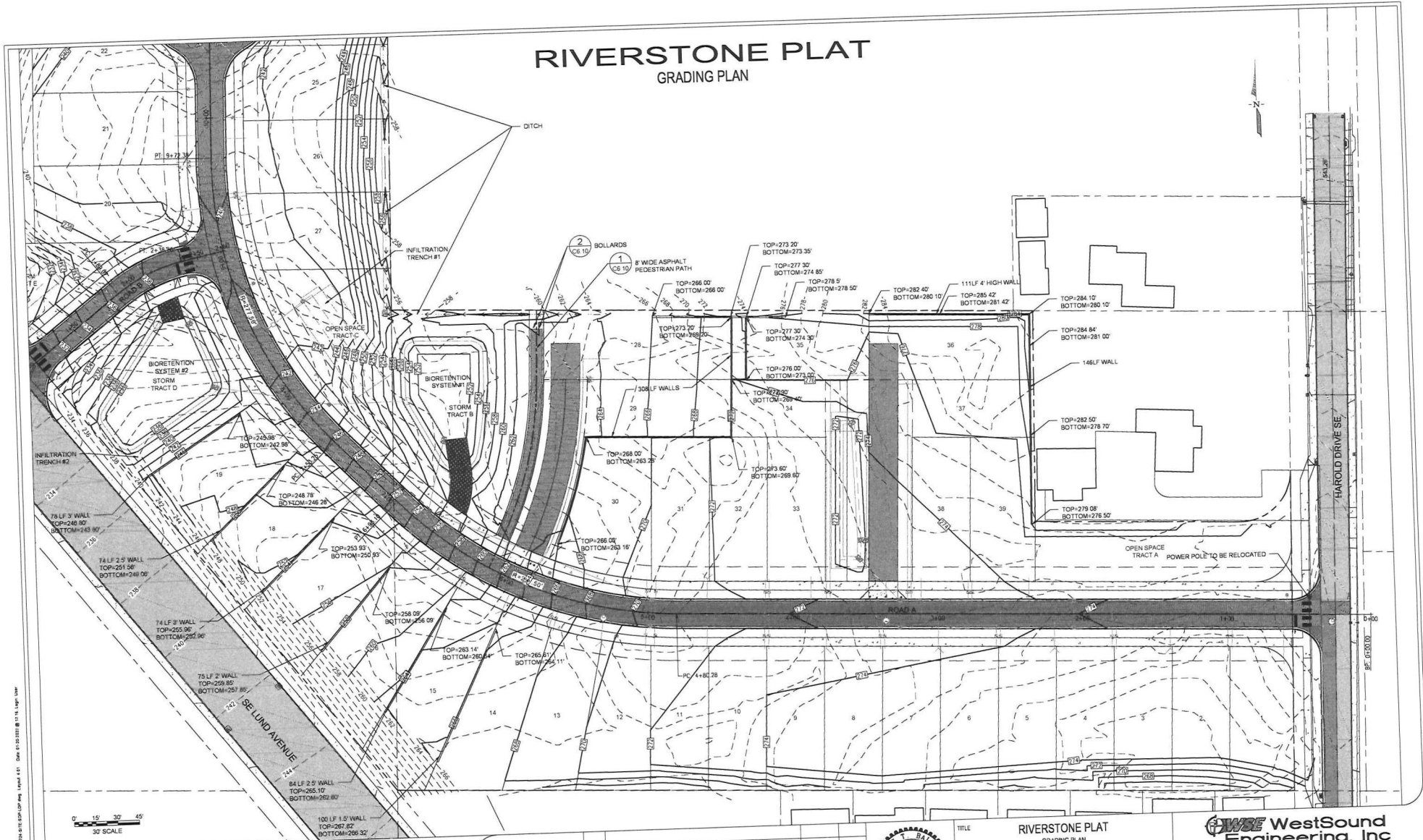
Port Orchard, WA 98366  
Fax (360) 876-0438  
<http://www.westsound.com>

JOB No. **2724** SHT **C3.1** OF **29** SHTS

DATE: 1/20/2022 11:14 AM

# RIVERSTONE PLAT

## GRADING PLAN



**MONUMENT REMOVAL PERMIT PROCESS**  
 NO SURVEY MONUMENT SHALL BE REMOVED OR DESTROYED (THE PHYSICAL DISTURBANCE OR COVERING OF A MONUMENT SUCH THAT THE SURVEY POINT IS NO LONGER VISIBLE OR READILY ACCESSIBLE) BEFORE A PERMIT IS OBTAINED FROM THE DEPARTMENT OF NATURAL RESOURCES (DNR). WAC 352-120-030(2) STATES "IT IS THE RESPONSIBILITY OF THOSE PERFORMING CONSTRUCTION WORK OR OTHER ACTIVITY (INCLUDING ROAD AND STREET RESURFACING PROJECTS) TO ADEQUATELY SEARCH THE RECORDS AND THE PHYSICAL AREA OF THE PROPOSED ANY KNOWN OR EXISTING SURVEY MONUMENTS - CONSTRUCTION SHALL NOT COMMENCE UNTIL WAC OUTLINED IN CHAPTER 352-120 IS COMPLIED WITH"

DESIGNED BY	CTB					
DRAWN BY	PWB					
CHECKED BY	CTB					
SEC.	35	TWN.	24N	R.	1E	
SCALE	1"=30'	REV.		DESCRIPTION	DATE	BY
					DATE SEALED	1/20/2022



TITLE  
**RIVERSTONE PLAT**  
 GRADING PLAN

CLIENT  
**HOUSING KITSAP**  
 2244 NE BUCKLIN HILL ROAD  
 SILVERDALE, WA 98383  
 360-535-6134

**WestSound Engineering, Inc.**  
 ENGINEERING, PLANNING AND SURVEYING

217 S.W. Wilkins Drive  
 Phone (360) 876-3770  
 E-mail: wse@wseengineering.com

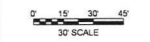
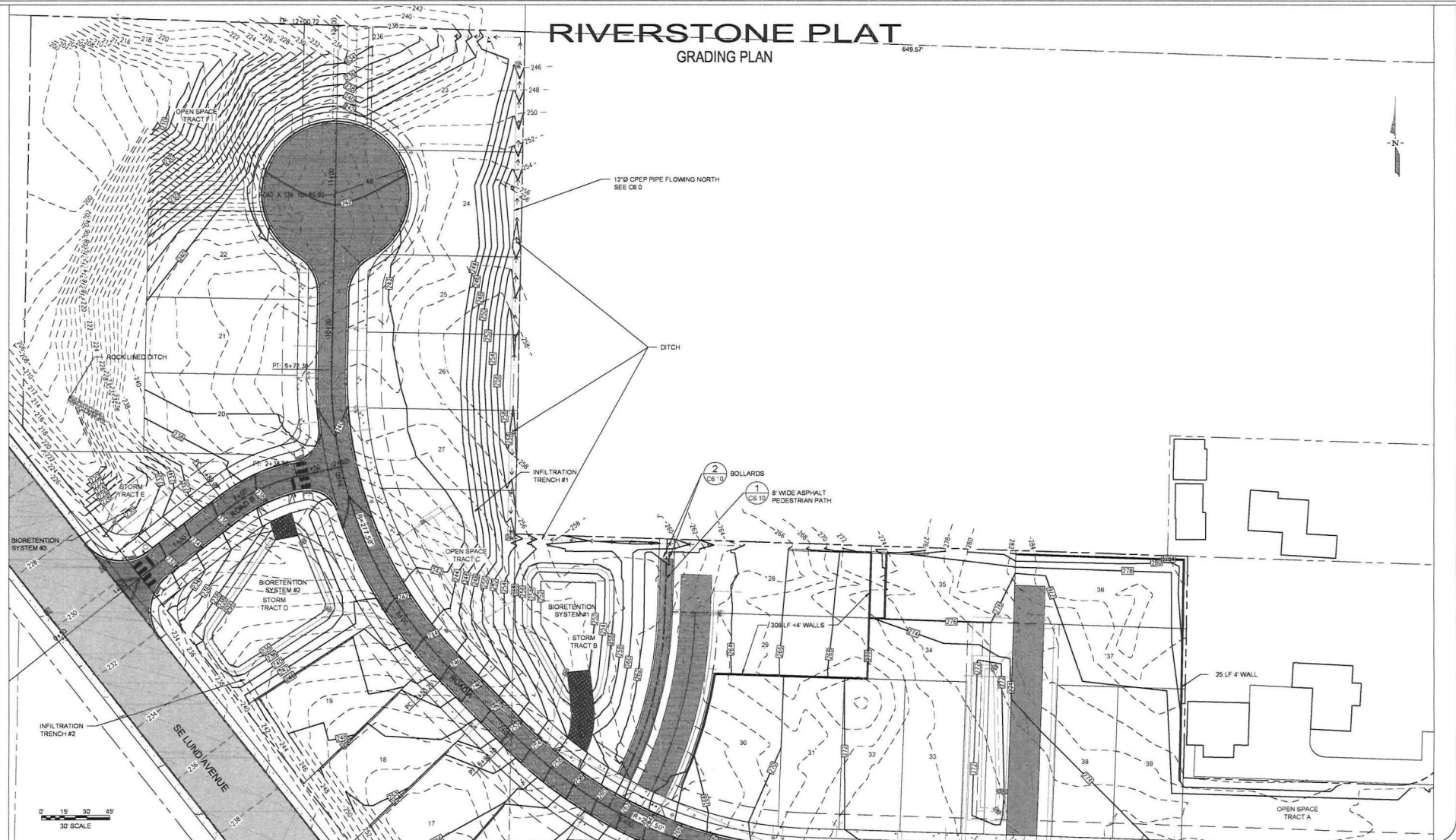
Port Orchard, Wa. 98366  
 Fax (360) 876-0439  
 http://www.wseengineering.com

JOB No. **2724** SHEET **C4.01** OF **29** SHETS

# RIVERSTONE PLAT

## GRADING PLAN

649.57'



**MONUMENT REMOVAL PERMIT PROCESS**  
 NO SURVEY MONUMENT SHALL BE REMOVED OR DESTROYED (THE PHYSICAL DISTURBANCE OR COVERING OF A MONUMENT SUCH THAT THE SURVEY POINT IS NO LONGER VISIBLE OR READILY ACCESSIBLE) BEFORE A PERMIT IS OBTAINED FROM THE DEPARTMENT OF NATURAL RESOURCES (DNR). WAC 352-120-030(2) STATES IT IS THE RESPONSIBILITY OF THOSE PERFORMING CONSTRUCTION WORK OR OTHER ACTIVITY (INCLUDING ROAD AND STREET RESURFACING PROJECTS) TO ADEQUATELY SEARCH THE RECORDS AND THE PHYSICAL AREA OF THE PROPOSED CONSTRUCTION WORK OR OTHER ACTIVITY FOR THE PURPOSE OF LOCATING AND REFERENCING ANY KNOWN OR EXISTING SURVEY MONUMENTS. CONSTRUCTION SHALL NOT COMMENCE UNTIL WAC OUTLINED IN CHAPTER 352-120 IS COMPLIED WITH.

DESIGNED BY	CTB				
DRAWN BY	PWB				
CHECKED BY	CTB				
SEC	35	TWN	24N	R	1E
SCALE	1"=30'				
REV		DESCRIPTION		DATE	BY
				1/20/2022	



**TITLE** RIVERSTONE PLAT  
GRADING PLAN

**CLIENT** HOUSING KITSAP  
2244 NE BUCKLIN HILL ROAD  
SILVERDALE, WA 98383  
360-535-6134

**WestSound Engineering, Inc.**  
 ENGINEERING, PLANNING AND SURVEYING

217 S.W. Wilkins Drive  
 Phone (360) 876-3770  
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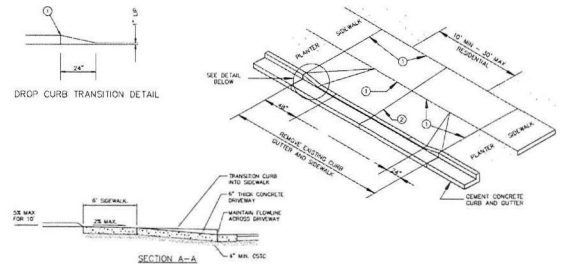
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<http://www.wseengineering.com>

JOB No. **2724** SH# **C4.02** OF **29** SHTS



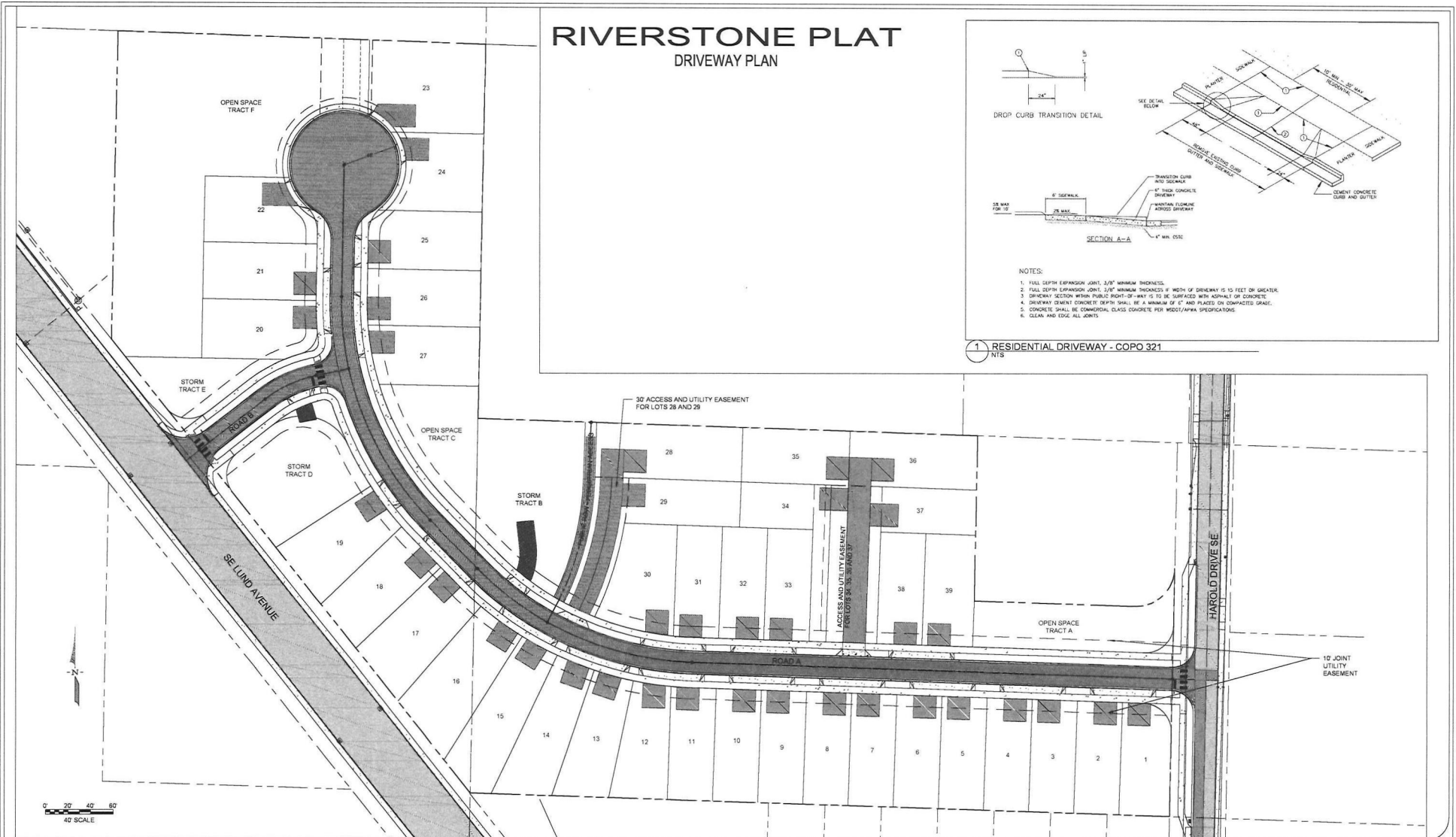
# RIVERSTONE PLAT

## DRIVEWAY PLAN

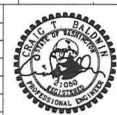


- NOTES:
1. FALL DEPTH EXPANSION JOINT, 1/2" MINIMUM THICKNESS.
  2. FALL DEPTH EXPANSION JOINT, 1/2" MINIMUM THICKNESS IF WIDTH OF DRIVEWAY IS 15 FEET OR GREATER.
  3. DRIVEWAY SECTION WHICH PUBLIC RIGHT-OF-WAY IS TO BE SURFACED WITH ASPHALT OR CONCRETE.
  4. DRIVEWAY CURB CONCRETE DEPTH SHALL BE A MINIMUM OF 4" AND PLACED ON COMPACTED GRAC.
  5. CONCRETE SHALL BE COMMERCIAL CLASS CONCRETE PER MDDT/APWA SPECIFICATIONS.
  6. CLEAN AND EDGE ALL JOINTS.

1 RESIDENTIAL DRIVEWAY - COPO 321  
NTS



DESIGNED BY	CTB				
DRAWN BY	PWB				
CHECKED BY	CTB				
SEC	35	TWN	24N	R	1E
SCALE	1"=40'				
REV.		DESCRIPTION	DATE	BY	DATE SEALED
					1/20/2022



TITLE  
**RIVERSTONE PLAT**  
DRIVEWAY PLAN

CLIENT  
**HOUSING KITSAP**  
2244 NE BUCKLIN HILL ROAD  
SILVERDALE, WA 98383  
360-935-6134

**WestSound Engineering, Inc**  
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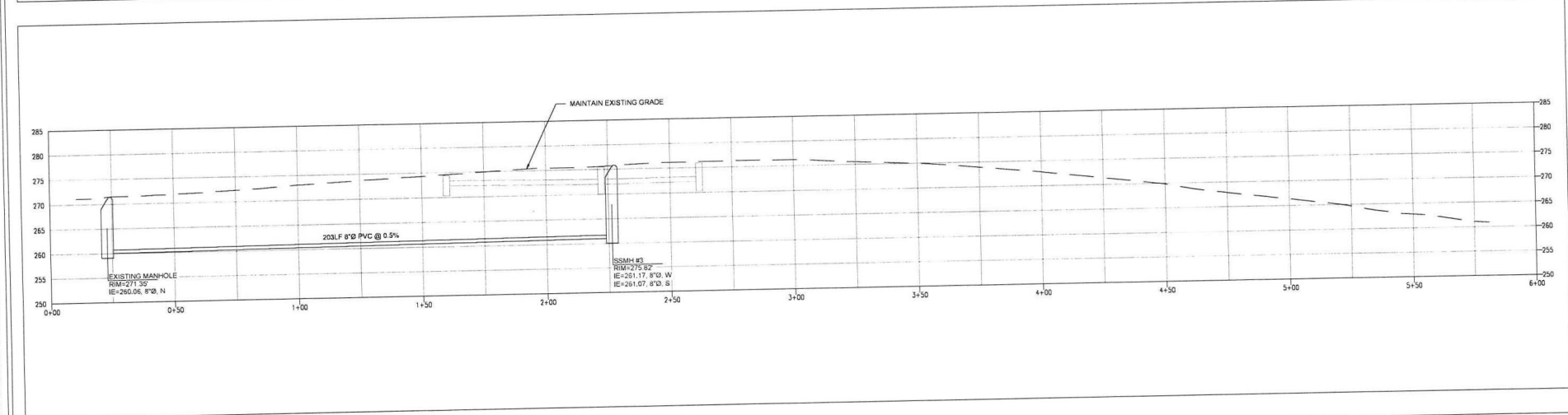
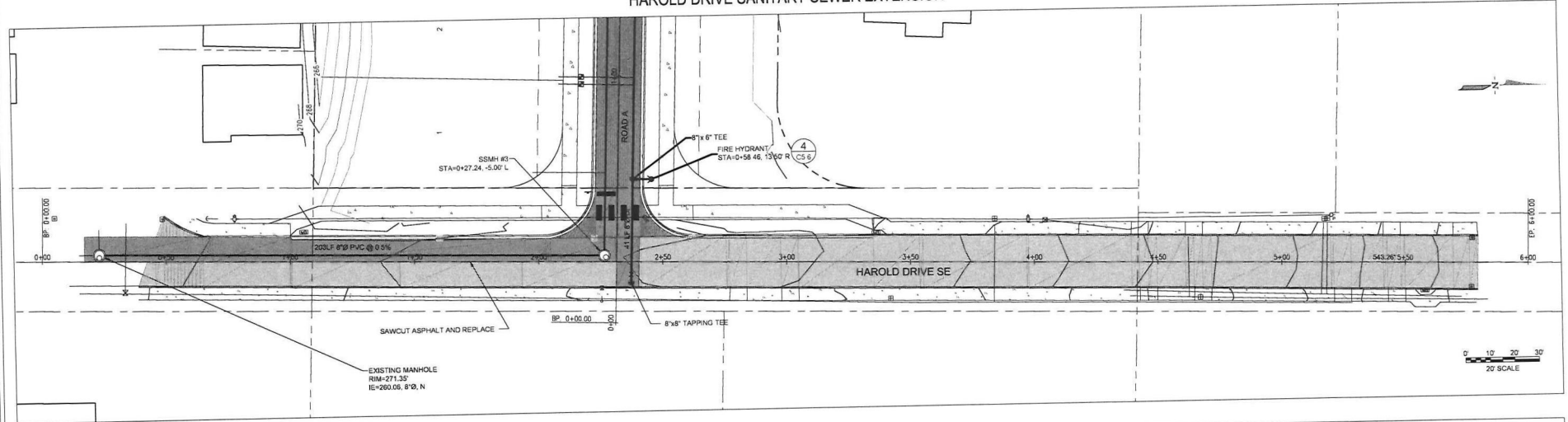
JOB No. **2724** SHT **C4.1** OF **29** SHTS

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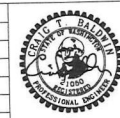
# RIVERSTONE PLAT

## HAROLD DRIVE SANITARY SEWER EXTENSION



**MONUMENT REMOVAL PERMIT PROCESS**  
 NO SURVEY MONUMENT SHALL BE REMOVED OR DESTROYED (THE PHYSICAL DISTURBANCE OR COVERING OF A MONUMENT SUCH THAT THE SURVEY POINT IS NO LONGER VISIBLE OR READILY ACCESSIBLE) BEFORE A PERMIT IS OBTAINED FROM THE DEPARTMENT OF NATURAL RESOURCES (DNR). WAC 332-120-030(2) STATES "IT IS THE RESPONSIBILITY OF THOSE PERFORMING CONSTRUCTION WORK OR OTHER ACTIVITY (INCLUDING ROAD AND STREET RESURFACING PROJECTS) TO ADEQUATELY SEARCH THE RECORDS AND THE PHYSICAL AREA OF THE PROPOSED CONSTRUCTION WORK OR OTHER ACTIVITY FOR THE PURPOSE OF LOCATING AND REFERENCING ANY KNOWN OR EXISTING SURVEY MONUMENTS." CONSTRUCTION SHALL NOT COMMENCE UNTIL WAC OUTLINED IN CHAPTER 332-120 IS COMPLIED WITH.

DESIGNED BY	CTB				
DRAWN BY	PWB				
CHECKED BY	CTB				
SEC	35	TWN	24N	R	1E
SCALE	H. 1"=20', V. 1"=10'				
REV.		DESCRIPTION	DATE	BY	DATE SEALED
					1/29/2022



**TITLE**  
 RIVERSTONE PLAT  
 HAROLD DRIVE SANITARY SEWER EXTENSION

**CLIENT**  
 HOUSING KITSAP  
 2244 NE BUCKLIN HILL ROAD  
 SILVERDALE, WA 98383  
 360-535-6134

**WestSound Engineering, Inc**  
 ENGINEERING, PLANNING AND SURVEYING

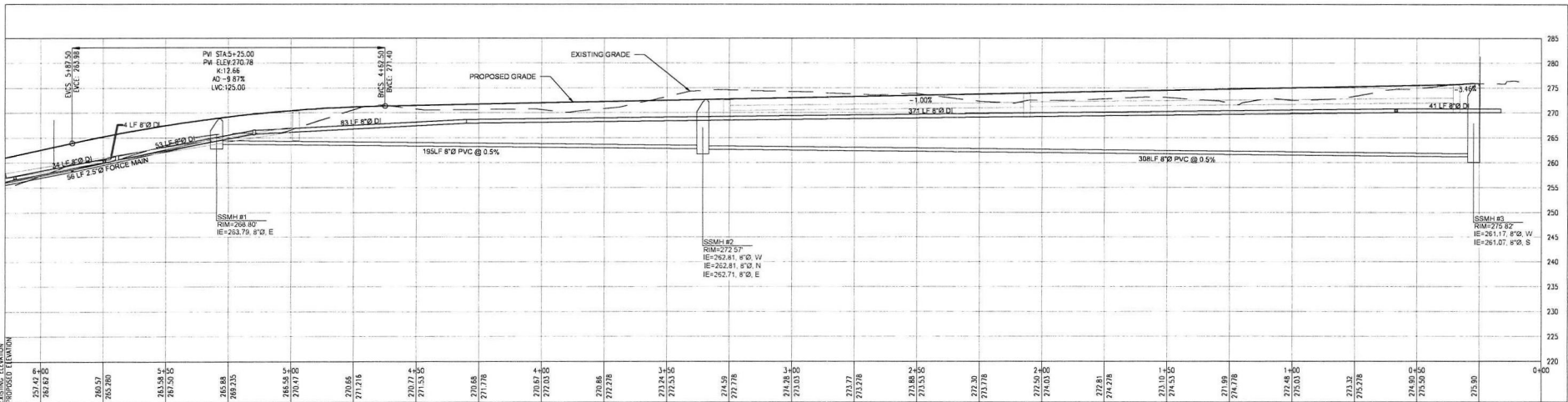
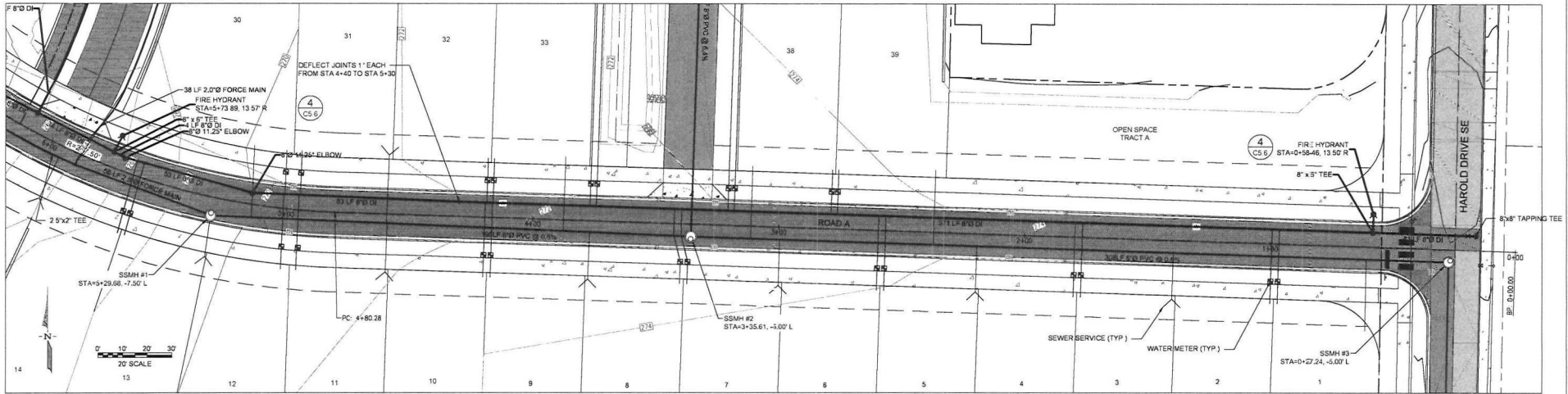
217 S.W. Wilkins Drive  
 Phone (360) 878-3770  
 E-mail: wse@wseengineering.com  
 Port Orchard, Wa. 98366  
 Fax (360) 878-0439  
 http://www.wseengineering.com

JOB No. **2724**      SHEET **C5.1** OF **29** SHEETS

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# RIVERSTONE PLAT

## ROAD A - WATER AND SANITARY SEWER PLAN AND PROFILE



**MONUMENT REMOVAL PERMIT PROCESS**  
 NO SURVEY MONUMENT SHALL BE REMOVED OR DESTROYED (THE PHYSICAL DISTURBANCE OR COVERING OF A MONUMENT SUCH THAT THE SURVEY POINT IS NO LONGER VISIBLE OR READILY ACCESSIBLE) BEFORE A PERMIT IS OBTAINED FROM THE DEPARTMENT OF NATURAL RESOURCES (DNR). WAC 352-120-0200 STATES IT IS THE RESPONSIBILITY OF THOSE PERFORMING CONSTRUCTION WORK OR OTHER ACTIVITY (INCLUDING ROAD AND STREET RESURFACING PROJECTS) TO ADEQUATELY SEARCH THE RECORDS AND THE PHYSICAL AREA OF THE PROPOSED CONSTRUCTION WORK OR OTHER ACTIVITY FOR THE PURPOSE OF LOCATING AND REFERENCING ANY KNOWN OR EXISTING SURVEY MONUMENTS. CONSTRUCTION SHALL NOT COMMENCE UNTIL WAC OUTLINED IN CHAPTER 352-120 IS COMPLIED WITH.

DESIGNED BY	CTB				
DRAWN BY	PWB				
CHECKED BY	CTB				
SEC	35	TWN	24N	R	1E
SCALE	H: 1"=20', V: 1"=10'				
REV.		DESCRIPTION	DATE	BY	DATE SEALED
					1/20/2022



**TITLE** RIVERSTONE PLAT  
 ROAD A - WATER AND SANITARY SEWER PLAN AND PROFILE

**CLIENT** HOUSING KITSAP  
 2344 NE BUCKLIN HILL ROAD  
 SILVERDALE, WA 98383  
 360-535-6134

**WestSound Engineering, Inc.**  
 ENGINEERING, PLANNING AND SURVEYING

217 S.W. Wilkins Drive  
 Phone (360) 876-3770  
 E-mail: [wse@wseengineering.com](mailto:wse@wseengineering.com)

Port Orchard, Wa. 98366  
 Fax (360) 876-0439  
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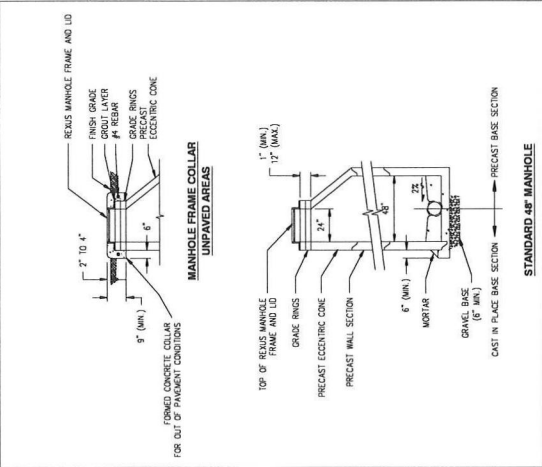
JCB No. **2724** SHT **C5.2** OF **29** SHTS

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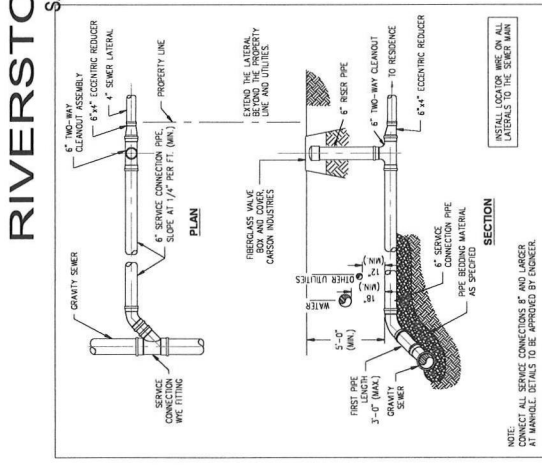




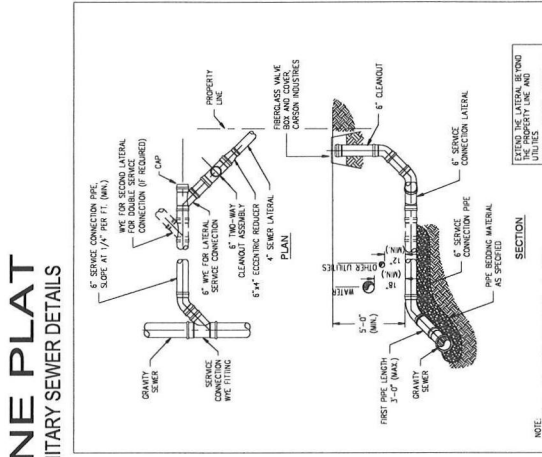
# RIVERSTONE PLAT SANITARY SEWER DETAILS



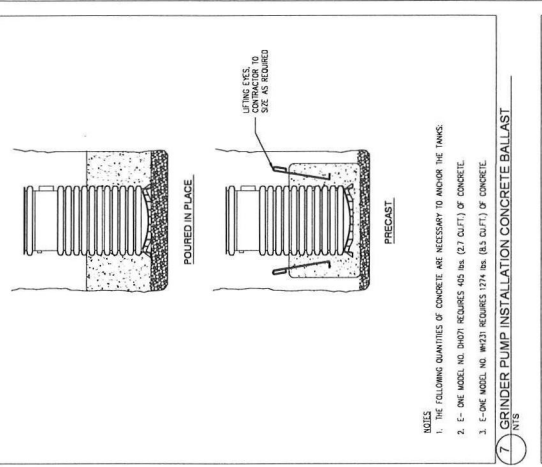
**1. MANHOLE DETAILS 2**  
N/S



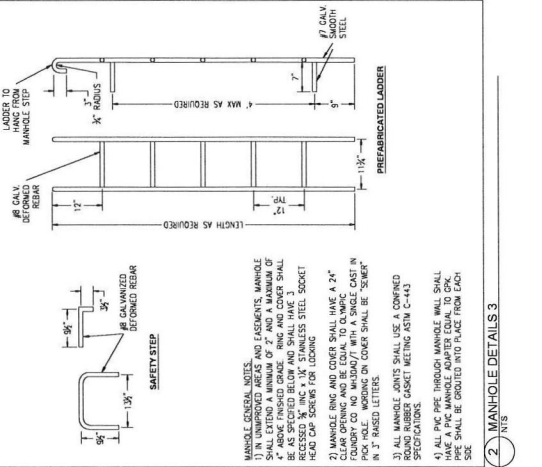
**3. SINGLE SERVICE CONNECTION**  
N/S



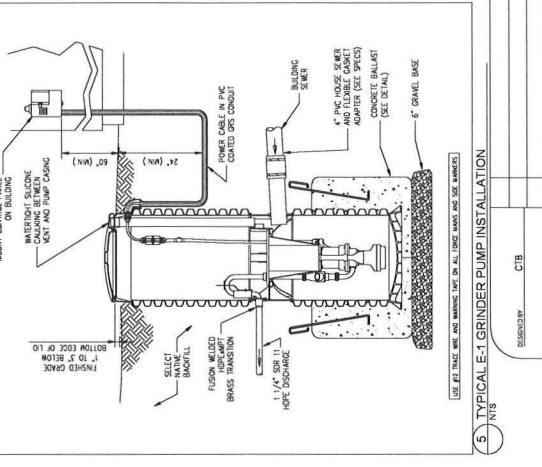
**4. DOUBLE SERVICE CONNECTION**  
N/S



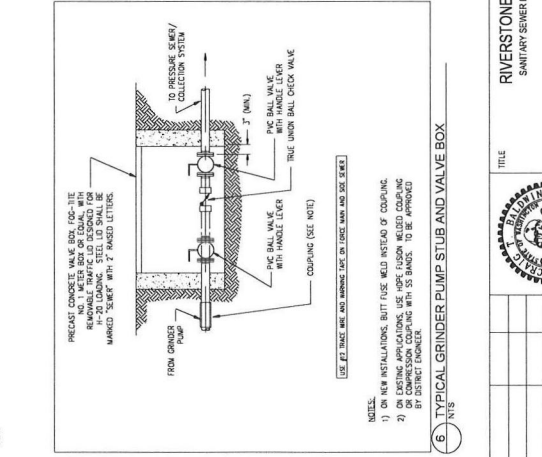
**7. GRINDER PUMP INSTALLATION CONCRETE BALLAST**  
N/S



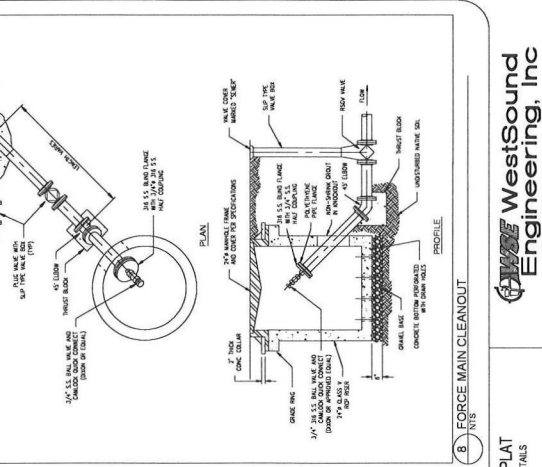
**2. MANHOLE DETAILS 3**  
N/S



**5. TYPICAL E-1 GRINDER PUMP INSTALLATION**  
N/S



**6. TYPICAL GRINDER PUMP STUB AND VALVE BOX**  
N/S



**8. FORCE MAIN CLEANOUT**  
N/S

- NOTES:
1. THE FOLLOWING QUANTITIES OF CONCRETE ARE NECESSARY TO ANCHOR THE TANKS.
  2. E-ONE MODEL NO. D8011 REQUIRES 400 LB. (2.7 CU FT.) OF CONCRETE.
  3. E-TWO MODEL NO. W921 REQUIRES 1274 LB. (8.5 CU FT.) OF CONCRETE.

**WestSound Engineering, Inc.**  
ENGINEERING, PLANNING AND SURVEYING

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PO BOX 1080  
SILVERDALE, WA 98133  
TEL: 206-525-4248  
FAX: 206-525-4249  
WWW.WESTSOUNDENGINEERING.COM

PROJECT NO. 2724  
JOB NO. C-5.5-29  
SHTS

**RIVERSTONE PLAT**  
SANITARY SEWER DETAILS

CLIENT: HOUSING KITSAP  
224 NE BLOCKLIN HILL ROAD  
SILVERDALE, WA 98133  
360-535-6134

DATE: 1/20/22  
BY: [Signature]  
REV: [Signature]

**MANHOLE DETAILS 1**  
UNPAVED AREAS

FOR OUT OF PLACE CONDITIONS

**MANHOLE DETAILS 2**  
N/S

CAST IN PLACE BASE SECTION

**MANHOLE DETAILS 3**  
N/S

PRECAST MANHOLE FRAME AND LID

**MANHOLE DETAILS 4**  
N/S

GRAVITY SEWER

**MANHOLE DETAILS 5**  
N/S

DOUBLE SERVICE CONNECTION

**MANHOLE DETAILS 6**  
N/S

TYPICAL GRINDER PUMP STUB AND VALVE BOX

**MANHOLE DETAILS 7**  
N/S

GRINDER PUMP INSTALLATION CONCRETE BALLAST

**MANHOLE DETAILS 8**  
N/S

FORCE MAIN CLEANOUT

**MANHOLE DETAILS 9**  
N/S

MANHOLE GENERAL NOTES

**MANHOLE DETAILS 10**  
N/S

SAFETY STEP

**MANHOLE DETAILS 11**  
N/S

PRECAST MANHOLE FRAME AND LID

**MANHOLE DETAILS 12**  
N/S

GRAVITY SEWER

**MANHOLE DETAILS 13**  
N/S

DOUBLE SERVICE CONNECTION

**MANHOLE DETAILS 14**  
N/S

TYPICAL GRINDER PUMP STUB AND VALVE BOX

**MANHOLE DETAILS 15**  
N/S

GRINDER PUMP INSTALLATION CONCRETE BALLAST

**MANHOLE DETAILS 16**  
N/S

FORCE MAIN CLEANOUT

**MANHOLE DETAILS 17**  
N/S

MANHOLE GENERAL NOTES

**MANHOLE DETAILS 18**  
N/S

SAFETY STEP

**MANHOLE DETAILS 19**  
N/S

PRECAST MANHOLE FRAME AND LID

**MANHOLE DETAILS 20**  
N/S

GRAVITY SEWER

**MANHOLE DETAILS 21**  
N/S

DOUBLE SERVICE CONNECTION

**MANHOLE DETAILS 22**  
N/S

TYPICAL GRINDER PUMP STUB AND VALVE BOX

**MANHOLE DETAILS 23**  
N/S

GRINDER PUMP INSTALLATION CONCRETE BALLAST

**MANHOLE DETAILS 24**  
N/S

FORCE MAIN CLEANOUT

**MANHOLE DETAILS 25**  
N/S

MANHOLE GENERAL NOTES

**MANHOLE DETAILS 26**  
N/S

SAFETY STEP

**MANHOLE DETAILS 27**  
N/S

PRECAST MANHOLE FRAME AND LID

**MANHOLE DETAILS 28**  
N/S

GRAVITY SEWER

**MANHOLE DETAILS 29**  
N/S

DOUBLE SERVICE CONNECTION

**MANHOLE DETAILS 30**  
N/S

TYPICAL GRINDER PUMP STUB AND VALVE BOX

**MANHOLE DETAILS 31**  
N/S

GRINDER PUMP INSTALLATION CONCRETE BALLAST

**MANHOLE DETAILS 32**  
N/S

FORCE MAIN CLEANOUT

**MANHOLE DETAILS 33**  
N/S

MANHOLE GENERAL NOTES

**MANHOLE DETAILS 34**  
N/S

SAFETY STEP

**MANHOLE DETAILS 35**  
N/S

PRECAST MANHOLE FRAME AND LID

**MANHOLE DETAILS 36**  
N/S

GRAVITY SEWER

**MANHOLE DETAILS 37**  
N/S

DOUBLE SERVICE CONNECTION

**MANHOLE DETAILS 38**  
N/S

TYPICAL GRINDER PUMP STUB AND VALVE BOX

**MANHOLE DETAILS 39**  
N/S

GRINDER PUMP INSTALLATION CONCRETE BALLAST

**MANHOLE DETAILS 40**  
N/S

FORCE MAIN CLEANOUT

**MANHOLE DETAILS 41**  
N/S

MANHOLE GENERAL NOTES

**MANHOLE DETAILS 42**  
N/S

SAFETY STEP

**MANHOLE DETAILS 43**  
N/S

PRECAST MANHOLE FRAME AND LID

**MANHOLE DETAILS 44**  
N/S

GRAVITY SEWER

**MANHOLE DETAILS 45**  
N/S

DOUBLE SERVICE CONNECTION

**MANHOLE DETAILS 46**  
N/S

TYPICAL GRINDER PUMP STUB AND VALVE BOX

**MANHOLE DETAILS 47**  
N/S

GRINDER PUMP INSTALLATION CONCRETE BALLAST

**MANHOLE DETAILS 48**  
N/S

FORCE MAIN CLEANOUT

**MANHOLE DETAILS 49**  
N/S

MANHOLE GENERAL NOTES

**MANHOLE DETAILS 50**  
N/S

SAFETY STEP

**MANHOLE DETAILS 51**  
N/S

PRECAST MANHOLE FRAME AND LID

**MANHOLE DETAILS 52**  
N/S

GRAVITY SEWER

**MANHOLE DETAILS 53**  
N/S

DOUBLE SERVICE CONNECTION

**MANHOLE DETAILS 54**  
N/S

TYPICAL GRINDER PUMP STUB AND VALVE BOX

**MANHOLE DETAILS 55**  
N/S

GRINDER PUMP INSTALLATION CONCRETE BALLAST

**MANHOLE DETAILS 56**  
N/S

FORCE MAIN CLEANOUT

**MANHOLE DETAILS 57**  
N/S

MANHOLE GENERAL NOTES

**MANHOLE DETAILS 58**  
N/S

SAFETY STEP

**MANHOLE DETAILS 59**  
N/S

PRECAST MANHOLE FRAME AND LID

**MANHOLE DETAILS 60**  
N/S

GRAVITY SEWER

**MANHOLE DETAILS 61**  
N/S

DOUBLE SERVICE CONNECTION

**MANHOLE DETAILS 62**  
N/S

TYPICAL GRINDER PUMP STUB AND VALVE BOX

**MANHOLE DETAILS 63**  
N/S

GRINDER PUMP INSTALLATION CONCRETE BALLAST

**MANHOLE DETAILS 64**  
N/S

FORCE MAIN CLEANOUT

**MANHOLE DETAILS 65**  
N/S

MANHOLE GENERAL NOTES

**MANHOLE DETAILS 66**  
N/S

SAFETY STEP

**MANHOLE DETAILS 67**  
N/S

PRECAST MANHOLE FRAME AND LID

**MANHOLE DETAILS 68**  
N/S

GRAVITY SEWER

**MANHOLE DETAILS 69**  
N/S

DOUBLE SERVICE CONNECTION

**MANHOLE DETAILS 70**  
N/S

TYPICAL GRINDER PUMP STUB AND VALVE BOX

**MANHOLE DETAILS 71**  
N/S

GRINDER PUMP INSTALLATION CONCRETE BALLAST

**MANHOLE DETAILS 72**  
N/S

FORCE MAIN CLEANOUT

**MANHOLE DETAILS 73**  
N/S

MANHOLE GENERAL NOTES

**MANHOLE DETAILS 74**  
N/S

SAFETY STEP

**MANHOLE DETAILS 75**  
N/S

PRECAST MANHOLE FRAME AND LID

**MANHOLE DETAILS 76**  
N/S

GRAVITY SEWER

**MANHOLE DETAILS 77**  
N/S

DOUBLE SERVICE CONNECTION

**MANHOLE DETAILS 78**  
N/S

TYPICAL GRINDER PUMP STUB AND VALVE BOX

**MANHOLE DETAILS 79**  
N/S

GRINDER PUMP INSTALLATION CONCRETE BALLAST

**MANHOLE DETAILS 80**  
N/S

FORCE MAIN CLEANOUT

**MANHOLE DETAILS 81**  
N/S

MANHOLE GENERAL NOTES

**MANHOLE DETAILS 82**  
N/S

SAFETY STEP

**MANHOLE DETAILS 83**  
N/S

PRECAST MANHOLE FRAME AND LID

**MANHOLE DETAILS 84**  
N/S

GRAVITY SEWER

**MANHOLE DETAILS 85**  
N/S

DOUBLE SERVICE CONNECTION

**MANHOLE DETAILS 86**  
N/S

TYPICAL GRINDER PUMP STUB AND VALVE BOX

**MANHOLE DETAILS 87**  
N/S

GRINDER PUMP INSTALLATION CONCRETE BALLAST

**MANHOLE DETAILS 88**  
N/S

FORCE MAIN CLEANOUT

**MANHOLE DETAILS 89**  
N/S

MANHOLE GENERAL NOTES

**MANHOLE DETAILS 90**  
N/S

SAFETY STEP

**MANHOLE DETAILS 91**  
N/S

PRECAST MANHOLE FRAME AND LID

**MANHOLE DETAILS 92**  
N/S

GRAVITY SEWER

**MANHOLE DETAILS 93**  
N/S

DOUBLE SERVICE CONNECTION

**MANHOLE DETAILS 94**  
N/S

TYPICAL GRINDER PUMP STUB AND VALVE BOX

**MANHOLE DETAILS 95**  
N/S

GRINDER PUMP INSTALLATION CONCRETE BALLAST

**MANHOLE DETAILS 96**  
N/S

FORCE MAIN CLEANOUT

**MANHOLE DETAILS 97**  
N/S

MANHOLE GENERAL NOTES

**MANHOLE DETAILS 98**  
N/S

SAFETY STEP

**MANHOLE DETAILS 99**  
N/S

PRECAST MANHOLE FRAME AND LID

**MANHOLE DETAILS 100**  
N/S

GRAVITY SEWER

**MANHOLE DETAILS 101**  
N/S

DOUBLE SERVICE CONNECTION

**MANHOLE DETAILS 102**  
N/S

TYPICAL GRINDER PUMP STUB AND VALVE BOX

**MANHOLE DETAILS 103**  
N/S

GRINDER PUMP INSTALLATION CONCRETE BALLAST

**MANHOLE DETAILS 104**  
N/S

FORCE MAIN CLEANOUT

**MANHOLE DETAILS 105**  
N/S

MANHOLE GENERAL NOTES

**MANHOLE DETAILS 106**  
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SAFETY STEP

**MANHOLE DETAILS 107**  
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PRECAST MANHOLE FRAME AND LID

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GRAVITY SEWER

**MANHOLE DETAILS 109**  
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DOUBLE SERVICE CONNECTION

**MANHOLE DETAILS 110**  
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TYPICAL GRINDER PUMP STUB AND VALVE BOX

**MANHOLE DETAILS 111**  
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GRINDER PUMP INSTALLATION CONCRETE BALLAST

**MANHOLE DETAILS 112**  
N/S

FORCE MAIN CLEANOUT

**MANHOLE DETAILS 113**  
N/S

MANHOLE GENERAL NOTES

**MANHOLE DETAILS 114**  
N/S

SAFETY STEP

**MANHOLE DETAILS 115**  
N/S

PRECAST MANHOLE FRAME AND LID

**MANHOLE DETAILS 116**  
N/S

GRAVITY SEWER

**MANHOLE DETAILS 117**  
N/S

DOUBLE SERVICE CONNECTION

**MANHOLE DETAILS 118**  
N/S

TYPICAL GRINDER PUMP STUB AND VALVE BOX

**MANHOLE DETAILS 119**  
N/S

GRINDER PUMP INSTALLATION CONCRETE BALLAST

**MANHOLE DETAILS 120**  
N/S

FORCE MAIN CLEANOUT

**MANHOLE DETAILS 121**  
N/S

MANHOLE GENERAL NOTES

**MANHOLE DETAILS 122**  
N/S

SAFETY STEP

**MANHOLE DETAILS 123**  
N/S

PRECAST MANHOLE FRAME AND LID

**MANHOLE DETAILS 124**  
N/S

GRAVITY SEWER

**MANHOLE DETAILS 125**  
N/S

DOUBLE SERVICE CONNECTION

**MANHOLE DETAILS 126**  
N/S

TYPICAL GRINDER PUMP STUB AND VALVE BOX

**MANHOLE DETAILS 127**  
N/S

GRINDER PUMP INSTALLATION CONCRETE BALLAST

**MANHOLE DETAILS 128**  
N/S

FORCE MAIN CLEANOUT

**MANHOLE DETAILS 129**  
N/S

MANHOLE GENERAL NOTES

**MANHOLE DETAILS 130**  
N/S

SAFETY STEP

**MANHOLE DETAILS 131**  
N/S

PRECAST MANHOLE FRAME AND LID

**MANHOLE DETAILS 132**  
N/S

GRAVITY SEWER

**MANHOLE DETAILS 133**  
N/S

DOUBLE SERVICE CONNECTION

**MANHOLE DETAILS 134**  
N/S

TYPICAL GRINDER PUMP STUB AND VALVE BOX

**MANHOLE DETAILS 135**  
N/S

GRINDER PUMP INSTALLATION CONCRETE BALLAST

**MANHOLE DETAILS 136**  
N/S

FORCE MAIN CLEANOUT

**MANHOLE DETAILS 137**  
N/S

MANHOLE GENERAL NOTES

**MANHOLE DETAILS 138**  
N/S

SAFETY STEP

**MANHOLE DETAILS 139**  
N/S

PRECAST MANHOLE FRAME AND LID

**MANHOLE DETAILS 140**  
N/S

GRAVITY SEWER

**MANHOLE DETAILS 141**  
N/S

DOUBLE SERVICE CONNECTION

**MANHOLE DETAILS 142**  
N/S

TYPICAL GRINDER PUMP STUB AND VALVE BOX

**MANHOLE DETAILS 143**  
N/S

GRINDER PUMP INSTALLATION CONCRETE BALLAST

**MANHOLE DETAILS 144**  
N/S

FORCE MAIN CLEANOUT

**MANHOLE DETAILS 145**  
N/S

MANHOLE GENERAL NOTES

**MANHOLE DETAILS 146**  
N/S

SAFETY STEP

**MANHOLE DETAILS 147**  
N/S

PRECAST MANHOLE FRAME AND LID

**MANHOLE DETAILS 148**  
N/S

GRAVITY SEWER

**MANHOLE DETAILS 149**  
N/S

DOUBLE SERVICE CONNECTION

**MANHOLE DETAILS 150**  
N/S

TYPICAL GRINDER PUMP STUB AND VALVE BOX

**MANHOLE DETAILS 151**  
N/S

GRINDER PUMP INSTALLATION CONCRETE BALLAST

**MANHOLE DETAILS 152**  
N/S

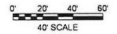
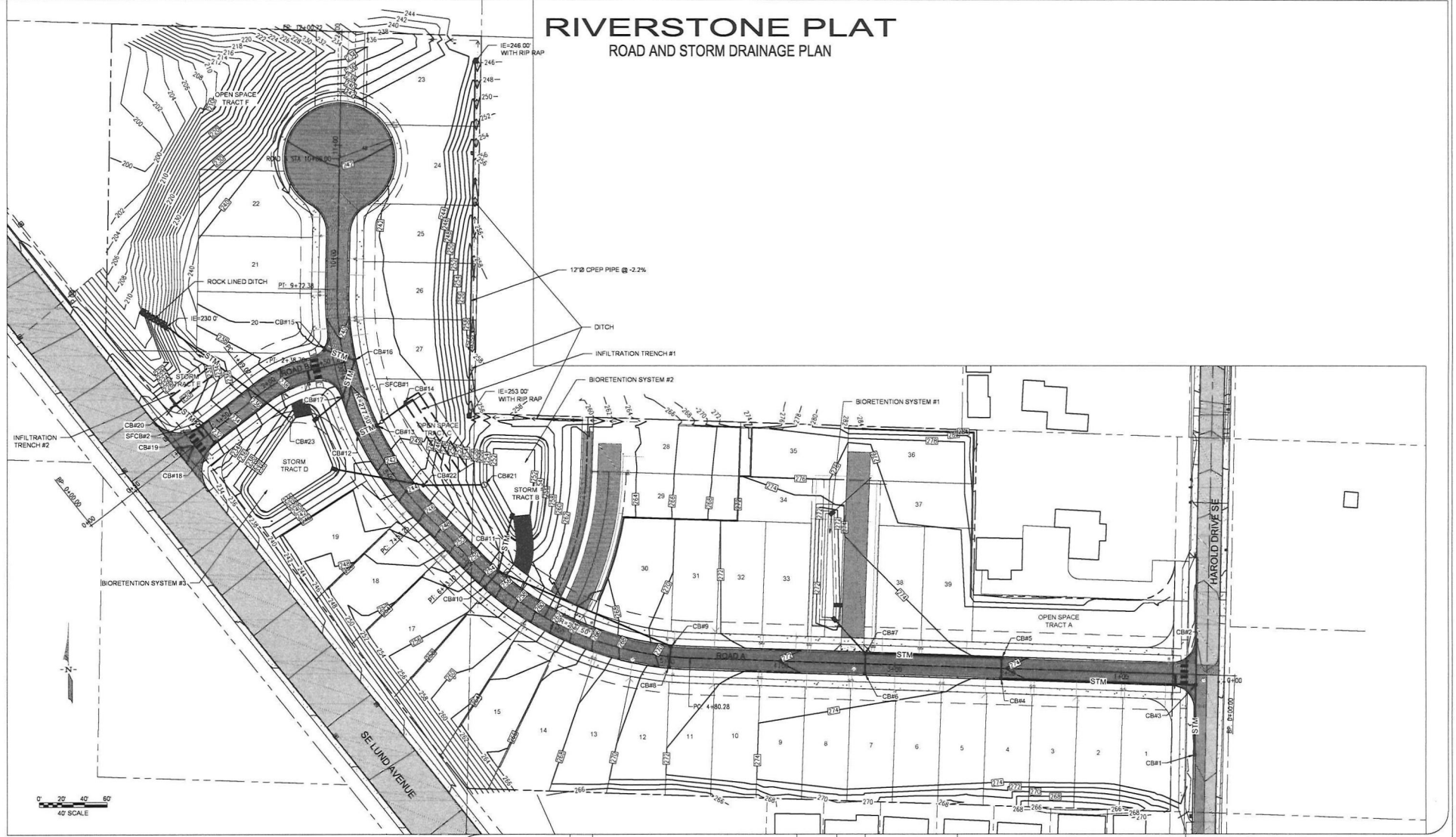
FORCE MAIN CLEANOUT





# RIVERSTONE PLAT

## ROAD AND STORM DRAINAGE PLAN



**MONUMENT REMOVAL PERMIT PROCESS**  
 NO SURVEY MONUMENT SHALL BE REMOVED OR DESTROYED (THE PHYSICAL DISTURBANCE OR COVERING OF A MONUMENT SUCH THAT THE SURVEY POINT IS NO LONGER VISIBLE OR READILY ACCESSIBLE) BEFORE A PERMIT IS OBTAINED FROM THE DEPARTMENT OF NATURAL RESOURCES (DNR). WAC 332-120-030(2) STATES IT IS THE RESPONSIBILITY OF THOSE PERFORMING CONSTRUCTION WORK OR OTHER ACTIVITY (INCLUDING ROAD AND STREET RESURFACING PROJECTS) TO ADEQUATELY SEARCH THE RECORDS AND THE PHYSICAL AREA OF THE PROPOSED CONSTRUCTION WORK OR OTHER ACTIVITY FOR THE PURPOSE OF LOCATING AND REFERENCING ANY KNOWN OR EXISTING SURVEY MONUMENTS. CONSTRUCTION SHALL NOT COMMENCE UNTIL WAC OUTLINED IN CHAPTER 332-120 IS COMPLIED WITH.

DESIGNED BY	CTB
DRAWN BY	PWB
CHECKED BY	CTB
SEC	35 T2W 24N R 1E
SCALE	1"=40'
REV.	
DESCRIPTION	
DATE	
BY	
DATE SEALED	1/20/2022



TITLE  
**RIVERSTONE PLAT**  
 ROAD AND STORM DRAINAGE PLAN

CLIENT  
**HOUSING KITSAP**  
 2244 NE BUCKLIN HILL ROAD  
 SILVERDALE, WA 98383  
 360-535-6134

**WestSound Engineering, Inc**  
 ENGINEERING, PLANNING AND SURVEYING

217 S.W. Wilkins Drive  
 Phone (360) 876-3770  
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Port Orchard, Wa. 98366  
 Fax (360) 876-0438  
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JOB No. **2724** SHT **C6.0** OF **29** SHTS

File: K:\Projects\2022\0224 - Riverstone\2022\224 SLS\_SDP.dwg Layer: 4.1 Date: 11/30/2022 11:11:11 AM User:







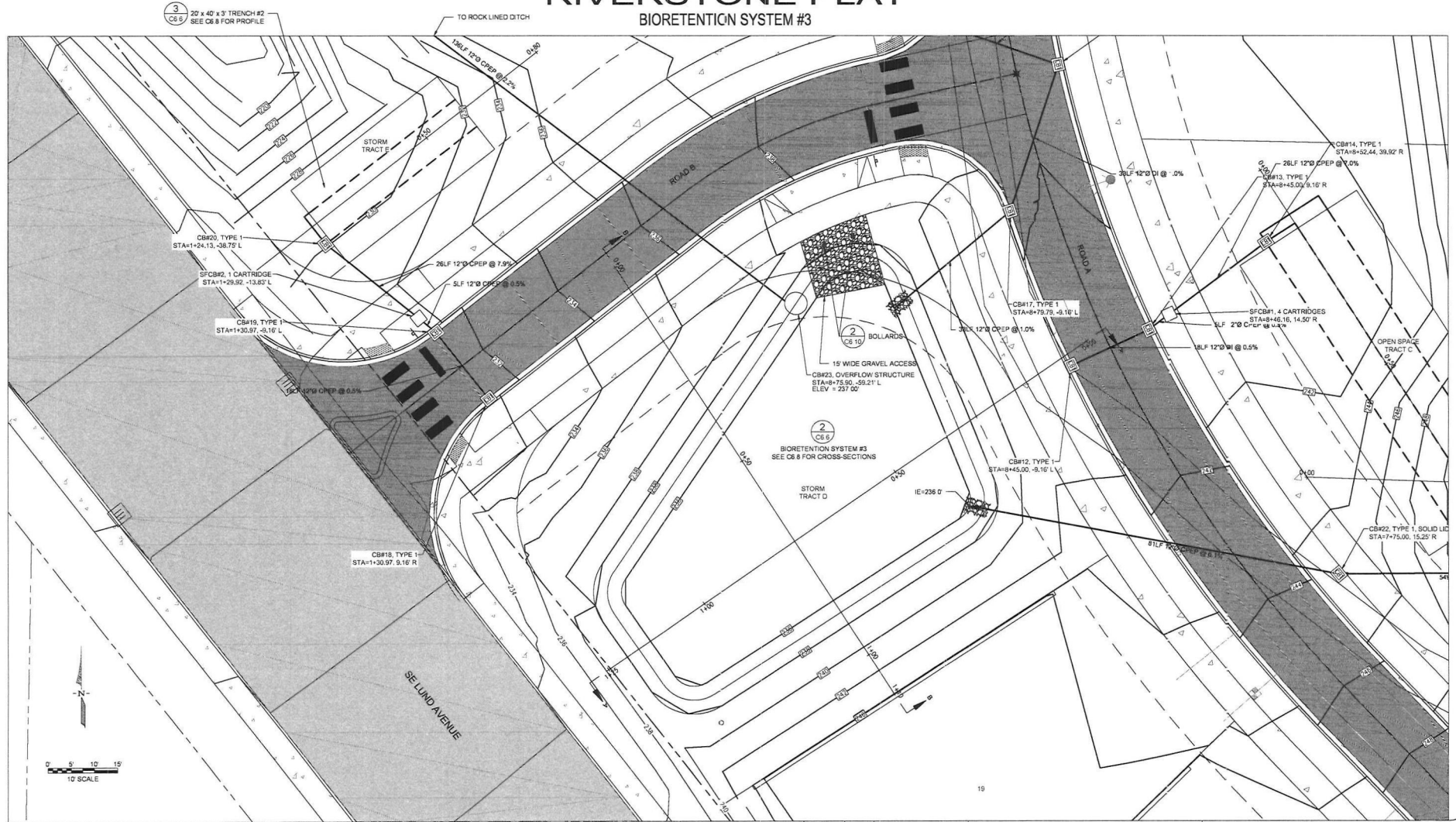






# RIVERSTONE PLAT

## BIORETENTION SYSTEM #3



FILE: R:\PROJECTS\2022\222222\Riverstone\Plan\222222\BIORETENTION SYSTEM #3.dwg, 1/20/2022, 11:11, User: JWB

DESIGNED BY	CTB				
DRAWN BY	PWB				
CHECKED BY	CTB				
SEC	35	TWN	24N	R	1E
SCALE	1"=10'				
REV.		DESCRIPTION	DATE	BY	DATE SEALED
					1/20/2022



**TITLE** RIVERSTONE PLAT  
BIORETENTION SYSTEM #3

**CLIENT** HOUSING KITSAP  
2244 NE BUCKLIN HILL ROAD  
SILVERDALE, WA 98383  
360-535-6134

**WestSound Engineering, Inc.**  
ENGINEERING, PLANNING AND SURVEYING

217 S.W. Wilkins Drive  
Phone (360) 876-3770  
E-mail: [wse@westsoundeng.com](mailto:wse@westsoundeng.com)

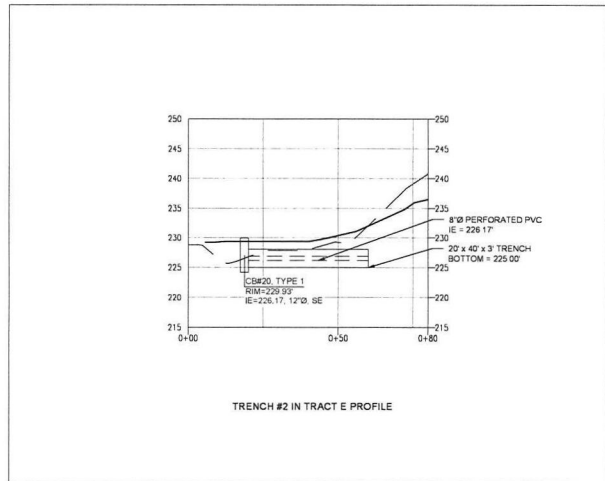
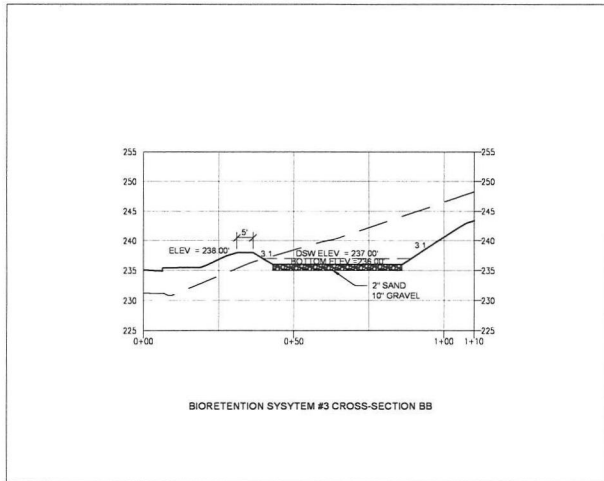
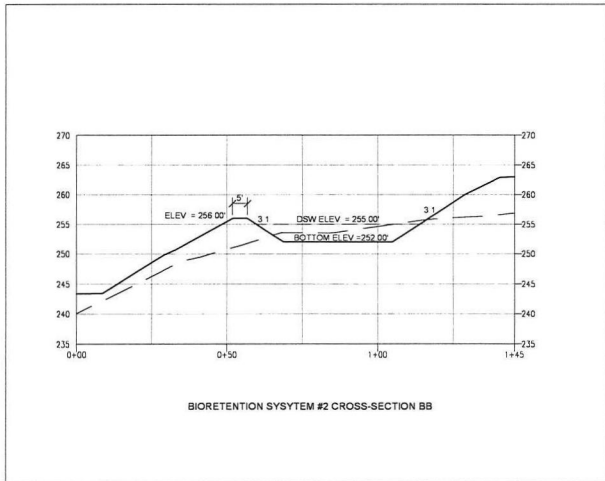
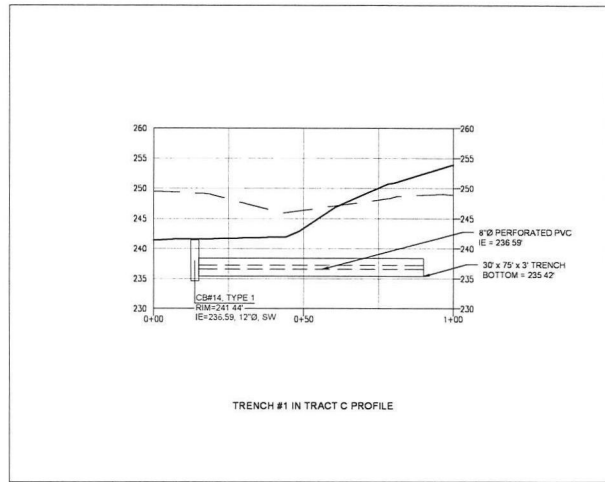
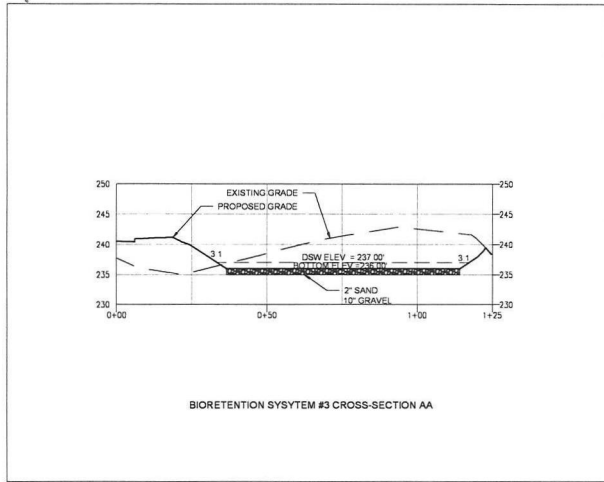
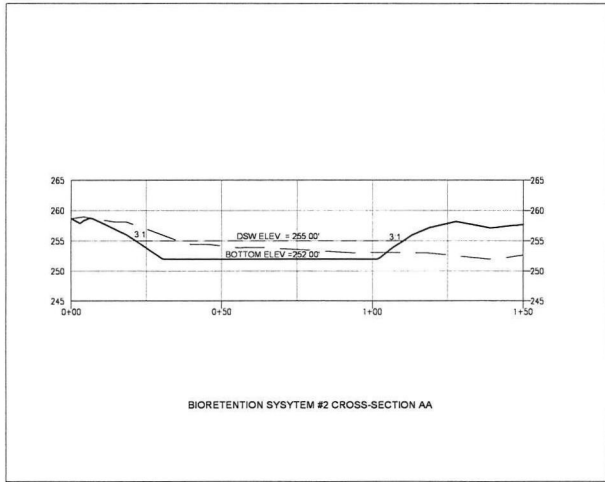
Port Orchard, Wa. 98366  
Fax (360) 876-0439  
<http://www.westsoundeng.com>

JOB No. **2724** SHT **C6.7** OF **29** SHTS



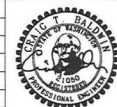
# RIVERSTONE PLAT

## BIORETENTION SYSTEM CROSS-SECTIONS



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DESIGNED BY	CTB						
DRAWN BY	PWB						
CHECKED BY	CTB						
SEC	35	TWN	24N	R	1E		
SCALE	H: 1"=20'		V: 1"=10'				
REV.		DESCRIPTION		DATE	BY	DATE SEALED	1/20/2022



**TITLE**  
 RIVERSTONE PLAT  
 BIORETENTION SYSTEM CROSS-SECTIONS

**CLIENT**  
 HOUSING KITSAP  
 2244 NE BUCKLIN HILL ROAD  
 SILVERDALE, VA 98383  
 360-435-6134

**WestSound Engineering, Inc.**  
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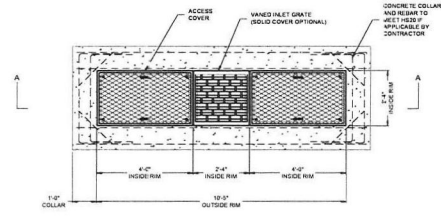
JOB No. **2724**      SHT **C6.8** OF **29**      SHTS





# RIVERSTONE PLAT

## ROAD AND STORM DETAILS



PLAN VIEW  
27" CARTRIDGES

4-CARTRIDGE CATCHBASIN STORMFILTER DATA	
STRUCTURE ID	SPFORM
WATER QUALITY FLOW RATE (GPM)	0.068
PEAK FLOW RATE (15 MIN)	0.37
RETURN PERIOD OF PEAK FLOW (MINS)	100
CATCHMENT FLOW RATE (GPM)	7.5
MEDIA TYPE (OR INLET, ZONE, POSSES)	ZPS
INLET ELEVATION	231.07
PIPE DATA	1E DRAINAGE
INLET STUB	208.47 12"
OUTLET STUB	238.47 8"
CONFIGURATION	OUTLET INLET
SLURPED LID	NO
SOLID COVER	YES
NOTES/SPECIAL REQUIREMENTS	1" CARTRIDGES
PREP ENGINEER OF RECORD	

### STORMFILTER STEEL CATCHBASIN DESIGN NOTES

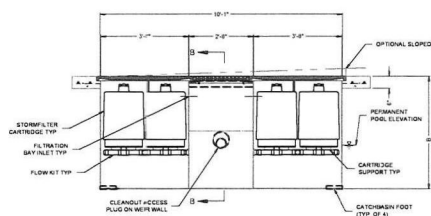
STORMFILTER TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE SELECTION AND THE NUMBER OF CARTRIDGES. 4-CARTRIDGE CATCHBASIN HAS A MAXIMUM OF FOUR CARTRIDGES. SYSTEM IS SHOWN WITH A 27" CARTRIDGE AND IS ALSO AVAILABLE WITH AN 18" CARTRIDGE. STORMFILTER CATCHBASIN COVER GUARDRAILS ARE AVAILABLE WITH A 27" INLET. 27" INLET COVER GUARDRAILS ARE NOT AVAILABLE.

PEAK HYDRAULIC CAPACITY FOR TABLE BELOW IF THE SITE CONDITIONS EXCEED PEAK HYDRAULIC CAPACITY, AN UPSWEEP BYPASS STRUCTURE IS REQUIRED.

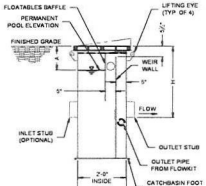
CARTRIDGE SELECTION	27"	18"	18" DEEP
CARTRIDGE HEIGHT	27"	18"	33"
RECOMMENDED HYDRAULIC DROP (IN)	3.00	3.0	3.0
SPECIFIC FLOW RATE (GPM/IN)	2 gpm/1"	1.5 gpm/1"	1 gpm/1"
CARTRIDGE FLOW RATE (GPM)	22.5	13.5	9
PEAK HYDRAULIC CAPACITY	1.8	1.1	0.75
FULL PERMANENT POOL LEVEL (AL)	1.0'	1.0'	1.0'
MINIMUM STRUCTURE HEIGHT (IN)	4'-0"	3'-0"	4'-0"

1. 15 GPM SPECIFIC FLOW RATE IS APPROVED WITH PHOSPHORUS (P) MEDIA ONLY.

- GENERAL NOTES**
- CONTRACTOR TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
  - FOR SITE SPECIFIC DRAWINGS WITH DETAILS STORMFILTER CATCHBASIN STRUCTURE, DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR COUNTY ENGINEER'S SOLUTIONS REPRESENTATIVE: [www.wsdengineers.com](http://www.wsdengineers.com)
  - STORMFILTER CATCHBASIN WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
  - INLET SHOULD NOT BE LOWER THAN OUTLET. INLET (IF APPLICABLE) AND OUTLET PIPING TO BE SPECIFIED BY ENGINEER AND PROVIDED BY CONTRACTOR.
  - MANUFACTURER TO APPLY A SURFACE BEAD WELD IN THE SHAPE OF THE LETTER "O" ABOVE THE OUTLET PIPE STUB ON THE EXTERIOR SURFACE OF THE STEEL SHEET.
  - STORMFILTER CATCHBASIN EQUIPPED WITH 1/4" HMM (HARDENED MANGANESE) LINING STUDS FOR INLET (IF APPLICABLE) AND OUTLET PIPING. STANDARD CAST IRON STUDS IN EXCESS OF 1/4" DIAMETER. MAXIMUM OUTLET STUB IS 11" INCHES IN DIAMETER. CONNECTION TO COLLECTION PIPING CAN BE MADE USING FLANGIBLE COUPLERS BY CONTRACTOR.
  - STEEL STRUCTURE TO BE MANUFACTURED OF 1/4" INCH STEEL PLATE. CASTINGS SHALL MEET AASHTO M108 LOAD RATING TO MEET HEAVY LOAD RATING OVER STRUCTURE. A CONCRETE COLLAR IS REQUIRED WHEN REQUIRED. CONCRETE COLLAR WITH AN INSET PILING (JAN) TO BE PROVIDED BY CONTRACTOR.
  - FILTER CARTRIDGES SHALL BE MEDIA FILLED, PASSIVE, BIPHENOLACTATED, RADIAL FLOW AND SELF-CLEANING. RADIAL MEDIA DEPTH SHALL BE 6 INCHES. FILTER MEDIA CONTACT TIME SHALL BE AT LEAST 30 SECONDS.
  - SPECIFIC FLOW RATE IS EQUAL TO THE FILTER TREATMENT CAPACITY (GPM) DIVIDED BY THE FILTER CONTACT SURFACE AREA (IN<sup>2</sup>).
- INSTALLATION NOTES**
- CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CATCHBASIN LIFTING CLUTCHES PROPERLY.
  - CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION RELATED EROSION RUNOFF.

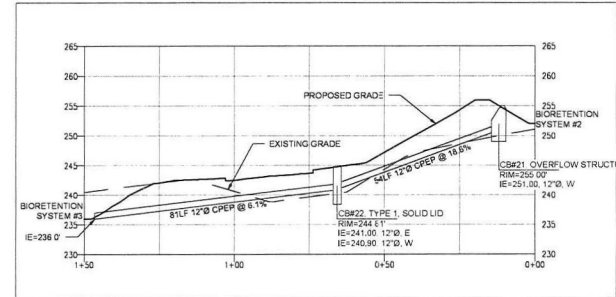


SECTION A-A



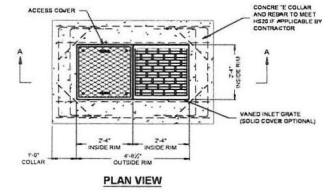
SECTION C-C

### 1 4-CARTRIDGE CONTECH STORMFILTER CATCH BASIN



### 3 OVERFLOW PIPE PROFILE

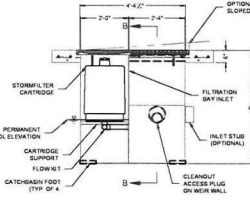
NTS



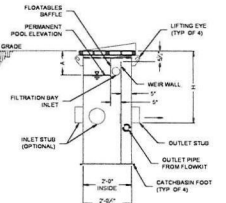
PLAN VIEW

1-CARTRIDGE CATCHBASIN STORMFILTER DATA	
STRUCTURE ID	SPFORM
WATER QUALITY FLOW RATE (GPM)	0.0176
PEAK FLOW RATE (15 MIN)	0.24
RETURN PERIOD OF PEAK FLOW (MINS)	100
CATCHMENT FLOW RATE (GPM)	1.8
CARTRIDGE FLOW RATE (GPM)	7.5
MEDIA TYPE (OR INLET, ZONE, POSSES)	ZPS
INLET ELEVATION	231.77
PIPE DATA	1E DRAINAGE
INLET STUB	238.20 12"
OUTLET STUB	238.20 8"
CONFIGURATION	OUTLET INLET
SLURPED LID	NO
SOLID COVER	YES
NOTES/SPECIAL REQUIREMENTS	1" CARTRIDGE
PREP ENGINEER OF RECORD	

THE CONTECH CONCRETE 1-CARTRIDGE CATCH BASIN IS AN ACCEPTABLE ALTERNATIVE.



SECTION A-A



SECTION B-B

### 2 1-CARTRIDGE CONTECH STORMFILTER CATCH BASIN

NTS

DESIGNED BY	CTB								
DRAWN BY	PWS								
CHECKED BY	CTB								
SEC	35	TWN	24N	R	1E				
SCALE		REV.		DESCRIPTION	DATE	BY	DATE SEALED	1/20/2022	



TITLE	RIVERSTONE PLAT ROAD AND STORM DETAILS
CLIENT	HOUSING KITSAP 2244 NE BUCKLIN HILL ROAD SILVERDALE, WA 98383 360-535-6134

217 S.W. Wilkins Drive Phone (360) 876-3770 E-mail: <a href="mailto:wse@wseengineering.com">wse@wseengineering.com</a>	Port Orchard, WA, 98366 Fax (360) 876-0439 <a href="http://www.wseengineering.com">http://www.wseengineering.com</a>
JOB No. 2724	SHT C6.11 of 29 SHTS

# RIVERSTONE PLAT

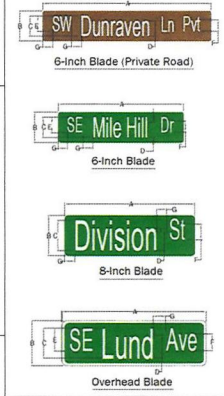
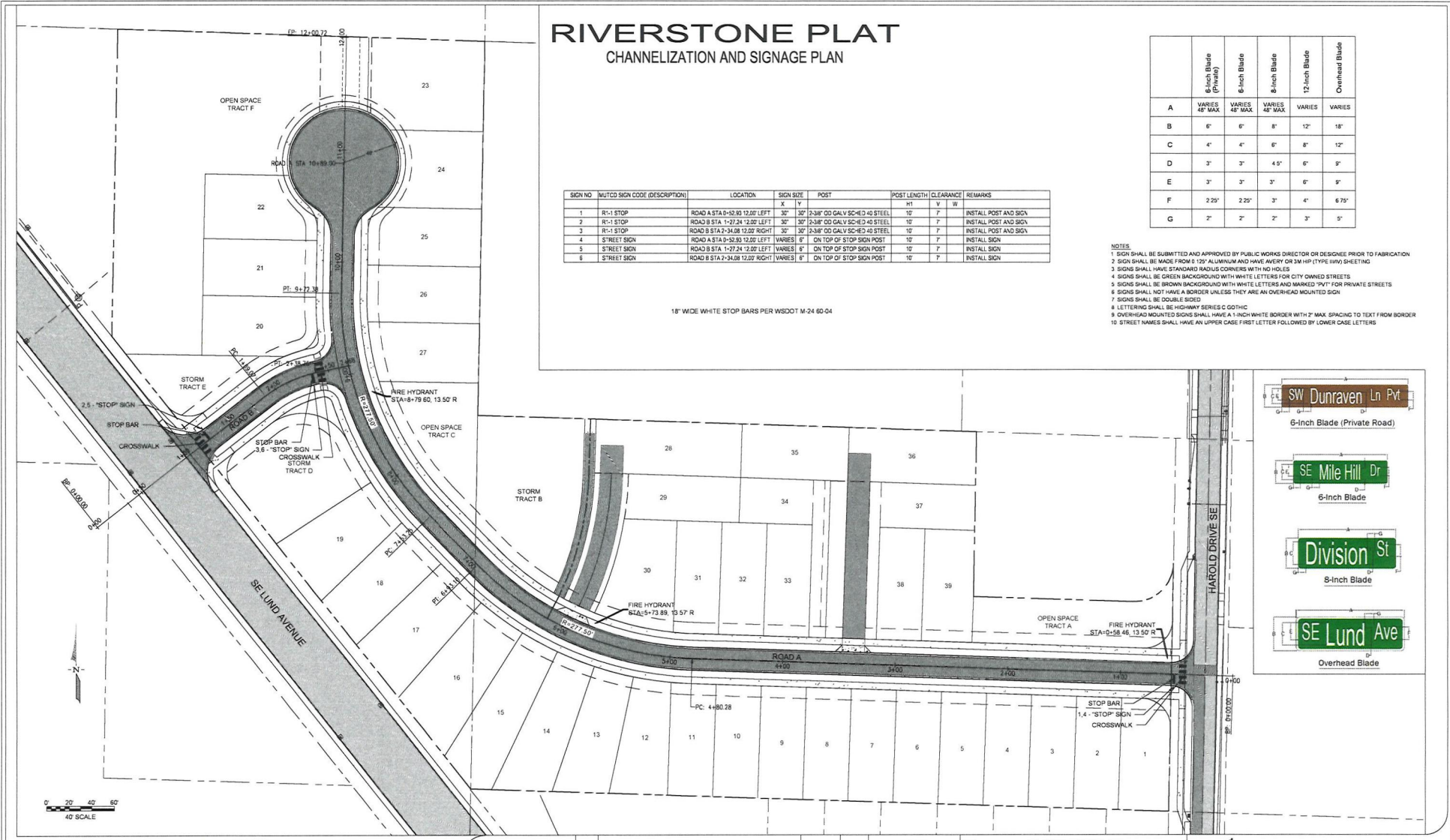
## CHANNELIZATION AND SIGNAGE PLAN

SIGN NO	MUTCD SIGN CODE (DESCRIPTION)	LOCATION	SIGN SIZE		POST	POST LENGTH / CLEARANCE			REMARKS
			X	Y		H1	V	W	
1	R-1 STOP	ROAD A STA D-32.93 12.00' LEFT	30"	30"	2-3/8" OD GALV SC#42 STEEL	10'	7'		INSTALL POST AND SIGN
2	R-1 STOP	ROAD B STA 1-27.24 12.00' LEFT	30"	30"	2-3/8" OD GALV SC#42 STEEL	10'	7'		INSTALL POST AND SIGN
3	R-1 STOP	ROAD B STA 2-24.08 12.00' RIGHT	30"	30"	2-3/8" OD GALV SC#42 STEEL	10'	7'		INSTALL POST AND SIGN
4	STREET SIGN	ROAD A STA D-32.93 12.00' LEFT	VARIES	6"	ON TOP OF STOP SIGN POST	10'	7'		INSTALL SIGN
5	STREET SIGN	ROAD B STA 1-27.24 12.00' LEFT	VARIES	6"	ON TOP OF STOP SIGN POST	10'	7'		INSTALL SIGN
6	STREET SIGN	ROAD B STA 2-24.08 12.00' RIGHT	VARIES	6"	ON TOP OF STOP SIGN POST	10'	7'		INSTALL SIGN

	6-inch Blade (Private)	6-inch Blade	8-inch Blade	12-inch Blade	Overhead Blade
A	VARIES 48" MAX	VARIES 48" MAX	VARIES 48" MAX	VARIES	VARIES
B	6"	6"	8"	12"	18"
C	4"	4"	6"	8"	12"
D	3"	3"	4.5"	6"	9"
E	3"	3"	3"	6"	9"
F	2.25"	2.25"	3"	4"	6.75"
G	2"	2"	2"	3"	5"

- NOTES:
- SIGN SHALL BE SUBMITTED AND APPROVED BY PUBLIC WORKS DIRECTOR OR DESIGNEE PRIOR TO FABRICATION
  - SIGN SHALL BE MADE FROM 0.125" ALUMINUM AND HAVE AVERY OR 3M HP (TYPE III) SHEETING
  - SIGNS SHALL HAVE STANDARD RADIUS CORNERS WITH NO HOLES
  - SIGNS SHALL BE GREEN BACKGROUND WITH WHITE LETTERS FOR CITY OWNED STREETS
  - SIGNS SHALL BE BROWN BACKGROUND WITH WHITE LETTERS AND MARKED "PVT" FOR PRIVATE STREETS
  - SIGNS SHALL NOT HAVE A BORDER UNLESS THEY ARE AN OVERHEAD MOUNTED SIGN
  - SIGNS SHALL BE DOUBLE SIDED
  - LETTERING SHALL BE HIGHWAY SERIES C GOTHIC
  - OVERHEAD MOUNTED SIGNS SHALL HAVE A 1-INCH WHITE BORDER WITH 2" MAX SPACING TO TEXT FROM BORDER
  - STREET NAMES SHALL HAVE AN UPPER CASE FIRST LETTER FOLLOWED BY LOWER CASE LETTERS

18" WIDE WHITE STOP BARS PER WSDOT M-24-60-04



DESIGNED BY	CTB				
DRAWN BY	PWB				
CHECKED BY	CTB				
SEC	35	TWN	24N	R	1E
SCALE	1"=40'				
REV.	1	DESCRIPTION	10/26/2020	CTB	
		REVISED PER CITY COMMENTS			
			DATE	BY	DATE SEALED 1/20/2022



TITLE  
**RIVERSTONE PLAT**  
 CHANNELIZATION AND SIGNAGE PLAN

CLIENT  
**HOUSING KITSAP**  
 2244 NE BUCKLIN HILL ROAD  
 SILVERDALE, WA 98383  
 360-535-6134

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JOB No. **2724** SHEET **C6.12** OF **29** SHTS

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