Exhibit I3

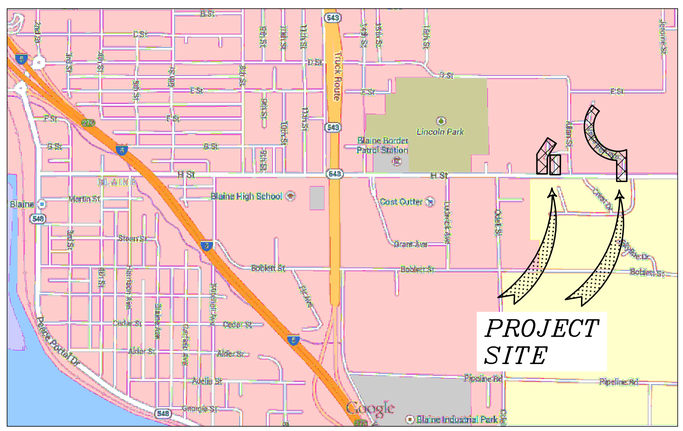
VISTA TERRACE SANITARY SEWER IMPROVEMENTS, PHASE 2

CITY OF BLAINE, WA - PROJECT NO. 10-11

FUNDED IN PART BY THE WASHINGTON STATE DEPARTMENT OF ECOLOGY

VICINITY MAP

PROJECT LOCATED IN SECTION 32 TOWNSHIP 41N, RANGE 1E, W.M.



NTS

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19	SPECIFICATIONS

KYLE EDWARD CARLSON
STATE OF WASHINGTON
50768
REGISTERED PROFESSIONAL ENGINEER
7/8/15

BID SET

DESIGNED BY KEC
DRAWN BY RWG
CHECKED BY DLB

R&E Reichhardt & Ebe ENGINEERING INC
P.O. Box 978 | 423 Front Street, Lynden, WA 98264 (360) 354-3687
813 Metcalf Street, Sedro-Woolley, WA 98284 (360) 855-1713

NO.	DATE	DESCRIPTION	BY

CITY OF BLAINE
1200 YEW AVENUE
BLAINE, WA 98230

VISTA TERRACE SANITARY SEWER IMPROVEMENTS, PHASE 2
COVER

DWG 11012.2 COVER
JOB# 11012.2
SCALE H: N/A V: N/A
DATE 7/8/2015
SHEET 1 of 19

Exhibit I3

ABBREVIATIONS

AC	= ASBESTOS CEMENT
AD	= ALGEBRAIC DIFFERENCE
ASPH	= ASPHALT
BLDG	= BUILDING
BVCE	= BEGIN VERTICAL CURVE ELEVATION
BVCS	= BEGIN VERTICAL CURVE STATION
CATV	= CABLE TELEVISION
CDF	= CONTROLLED DENSITY FILL
CL	= CLASS, CENTERLINE
CMP	= CORRUGATED METAL PIPE
CMU	= CONCRETE MASONRY UNIT
COMP	= COMPACTED
CONC	= CONCRETE
CONT	= CONTOUR
C & G	= CURB & GUTTER
CPSSP	= CORRUGATED POLYETHYLENE STORM SEWER PIPE
CULV	= CULVERT
ø	= DIAMETER
DI	= DUCTILE IRON
D/W	= DRIVEWAY
E	= EAST
EOP, EP	= EDGE OF PAVEMENT
EQUIV	= EQUIVALENT
EVCE	= END VERTICAL CURVE ELEVATION
EVLS	= END VERTICAL CURVE STATION
EX, EXIST	= EXISTING
IR	= EXISTING IRRIGATION
SN	= EXISTING SIGN
FT	= FEET
FL	= FLOW LINE
FF	= FINISHED FLOOR
FG	= FINISHED GRADE
FT/FT	= FEET PER FOOT
F&C	= FRAME AND COVER
F&G	= FRAME AND GRATE
R&C	= RING AND COVER
GALV	= GALVANIZED
GRVL	= GRAVEL
GV	= GATE VALVE
HDPE	= HIGH DENSITY POLYETHYLENE
HMA	= HOT MIX ASPHALT
HP	= HIGH POINT
HYD	= HYDRANT
IW	= INJECTION WELL
IE, INV	= INVERT ELEVATION
L	= LENGTH
LF	= LINEAR FEET
LP	= LOW POINT
LOC	= LOCATION
MAX	= MAXIMUM
MPOC	= MID-POINT ON CURVE
MIN	= MINIMUM
MOD	= MODIFIED
MW	= MONITORING WELL
MON	= MONUMENT
MTR	= METER
N	= NORTH
OC	= ON CENTER
PVMNT	= PAVEMENT
PED	= PEDESTAL
PCC	= POINT OF COMPOUND CURVATURE
PC	= POINT OF CURVATURE
PRC	= POINT OF REVERSE CURVE
PT	= POINT OF TANGENCY
POC	= POINT ON CURVE
PVC	= POLYVINYL CHLORIDE
PCC	= PORTLAND CEMENT CONCRETE
POSS	= POSSIBLE
PROP	= PROPOSED
PVI	= POINT OF VERTICAL INTERSECTION
PWR	= POWER
R	= RADIUS
RET	= RETAINING
ROW	= RIGHT OF WAY
R&C	= RING AND COVER
SSMH	= SANITARY SEWER MANHOLE
SCH	= SCHEDULE
S	= SOUTH
SD	= STORM DRAIN
STD	= STANDARD
SP	= STANDARD PLAN
STA	= STATION
SDCB	= STORM DRAIN CATCH BASIN
SDMH	= STORM DRAIN MANHOLE
TEL	= TELEPHONE
TL	= TRAFFIC LOOP
TYP	= TYPICAL
UP	= UTILITY POLE
UTIL	= UTILITY
VC	= VERTICAL CURVE
VLT	= VAULT
VPC	= VERTICAL POINT OF CURVATURE
VPI	= VERTICAL POINT OF INTERSECTION
VPT	= VERTICAL POINT OF TANGENCY
WSDOT	= WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
W	= WEST
WM	= WATER METER
XEOA	= EXISTING EDGE OF ASPHALT

NOTES

1. FIELD WORK PERFORMED BY COMPASS POINT SURVEY GROUP, LYNDEN, WA.
2. HORIZONTAL DATUM: WASHINGTON STATE PLANE (NORTH) COORDINATES – NAD 83/91
   VERTICAL DATUM: NGVD29

LEGEND

EXISTING

- = EXISTING TOP OF BANK
- = EXISTING BOTTOM OF BANK
- = EXISTING DITCH ℄
- = EXISTING GRADE BREAK
- = EXISTING MAJOR CONTOUR
- = EXISTING MINOR CONTOUR
- = EXISTING GUARDRAIL
- = EXISTING FENCE
- = EXISTING GRAVEL
- = EXISTING WALL
- = EXISTING BUILDING
- = EXISTING PROPERTY BOUNDARY
- = EXISTING RIGHT OF WAY
- = EXISTING RIGHT OF WAY ℄
- = EXISTING EASEMENT
- = EXISTING WETLANDS BOUNDARY
- = EXISTING ROAD ℄
- = EXISTING TRAFFIC STRIPING
- = EXISTING EDGE OF PAVEMENT
- = EXISTING FLOWLINE
- = EXISTING TOP BACK OF CURB
- = EXISTING SIDEWALK
- = EXISTING POWER BURIED
- = EXISTING COMMUNICATIONS BURIED
- = EXISTING OVERHEAD POWER
- = EXISTING OVERHEAD COMMUNICATIONS
- = EXISTING FIBER OPTICS BURIED
- = EXISTING TELEPHONE BURIED
- = EXISTING TV BURIED
- = EXISTING CONDUIT
- = EXISTING GAS MAIN
- = EXISTING ORDINARY HIGH WATER
- = EXISTING WATER MAIN
- = EXISTING SANITARY SEWER FORCE MAIN
- = EXISTING SANITARY SEWER
- = EXISTING STORM DRAIN
- = EXISTING UNDERDRAIN
- = EXISTING CULVERT
- = EXISTING TREE LINE
- = EXISTING CONCRETE
- = EXISTING RR TRACKS
- = EXISTING SIGNAL POLE AND ARM W/ LUMINAIRE
- = EXISTING STREET LIGHT ASSEMBLY
- = EXISTING GUY WIRE
- = EXISTING GAS METER
- = EXISTING TRANSFORMER PAD
- = EXISTING POWER VAULT
- = EXISTING JBOX
- = EXISTING SOIL BORING LOCATION
- = EXISTING MAIL BOX
- = EXISTING WATER SPIGOT
- = EXISTING WATER METER
- = EXISTING WATER VALVE
- = EXISTING FIRE HYDRANT
- = EXISTING TRAFFIC SIGNAL VAULT
- = EXISTING SEWER MANHOLE
- = EXISTING STORM DRAIN CATCH BASIN TYPE I
- = EXISTING STORM DRAIN CATCH BASIN TYPE II
- = EXISTING UTILITY POLE
- = EXISTING MONITORING WELL
- = EXISTING STORM CLEANOUT
- = EXISTING SEWER CLEANOUT
- = EXISTING SIGN
- = EXISTING TELEPHONE PEDESTAL
- = EXISTING BENCH MARK
- = EXISTING IRON PIPE
- = EXISTING MONUMENT (IN CASE)
- = EXISTING MONUMENT (SURFACE)
- = EXISTING ANGLE POINT
- = EXISTING TREE STUMP
- = EXISTING TREE
- = EXISTING VEGETATION

PROPOSED

- = PROPOSED TOP OF BANK
- = PROPOSED TOE OF BANK
- = PROPOSED SAWCUT
- = PROPOSED FIELD STORM DRAIN
- = PROPOSED MAJOR CONTOUR
- = PROPOSED MINOR CONTOUR
- = PROPOSED PAVEMENT VALLEY
- = PROPOSED DITCH ℄
- = PROPOSED FENCE
- = PROPOSED FIBER OPTICS
- = PROPOSED HANDRAIL
- = PROPOSED GUARDRAIL
- = PROPOSED GRAVEL
- = PROPOSED PATH
- = PROPOSED AUTOTURN
- = PROPOSED ROAD ℄
- = PROPOSED ROAD EDGE OF PAVEMENT
- = PROPOSED ROCK WALL
- = PROPOSED RIGHT OF WAY
- = PROPOSED TREE LINE
- = PROPOSED STORM DRAIN
- = PROPOSED TRAFFIC SIGNAL CONDUCTOR
- = PROPOSED SANITARY SEWER
- = PROPOSED TRAFFIC STRIPE
- = PROPOSED PARKING STRIPE
- = PROPOSED CURB AND GUTTER
- = PROPOSED POWER LINE
- = PROPOSED WATER MAIN
- = PROPOSED SIDEWALK
- = PROPOSED SILT FENCE
- = PROPOSED CONSTRUCTION EASEMENT
- = PROPOSED GRADE BREAK
- = PROPOSED SANITARY SEWER FORCE MAIN
- = PROPOSED UNDERDRAIN
- = PROPOSED CONDUIT
- = PROPOSED BUILDING
- = PROPOSED CONC. SIDEWALK/DRIVEWAY
- = PROPOSED INFILTRATION TRENCH
- = PROPOSED INFILTRATION FILTER MEDIA
- = PROPOSED GRIND
- = PROPOSED DEMOLITION AREA
- = PROPOSED ASPHALT
- = PROPOSED RIGHT OF WAY TAKE
- = PROPOSED STORM DRAIN INLET
- = PROPOSED COUPLER
- = PROPOSED WATER METER
- = PROPOSED WATER VALVE
- = PROPOSED HYDRANT
- = PROPOSED SANITARY SEWER MANHOLE
- = PROPOSED STORM DRAIN CATCH BASIN TYPE I
- = PROPOSED STORM DRAIN CATCH BASIN TYPE II
- = PROPOSED UTILITY POLE
- = PROPOSED MONITORING WELL
- = PROP STORM CLEANOUT
- = PROPOSED SANITARY SEWER CLEAN OUT
- = PROPOSED SIGN
- = FLOW ARROW
- = PROPOSED TREE

KILLE EDWARD CARLIAK
STATE OF WASHINGTON
50768
REGISTERED
PROFESSIONAL ENGINEER
7/8/15

BID SET

DESIGNED BY KEC
DRAWN BY RWG
CHECKED BY DLB

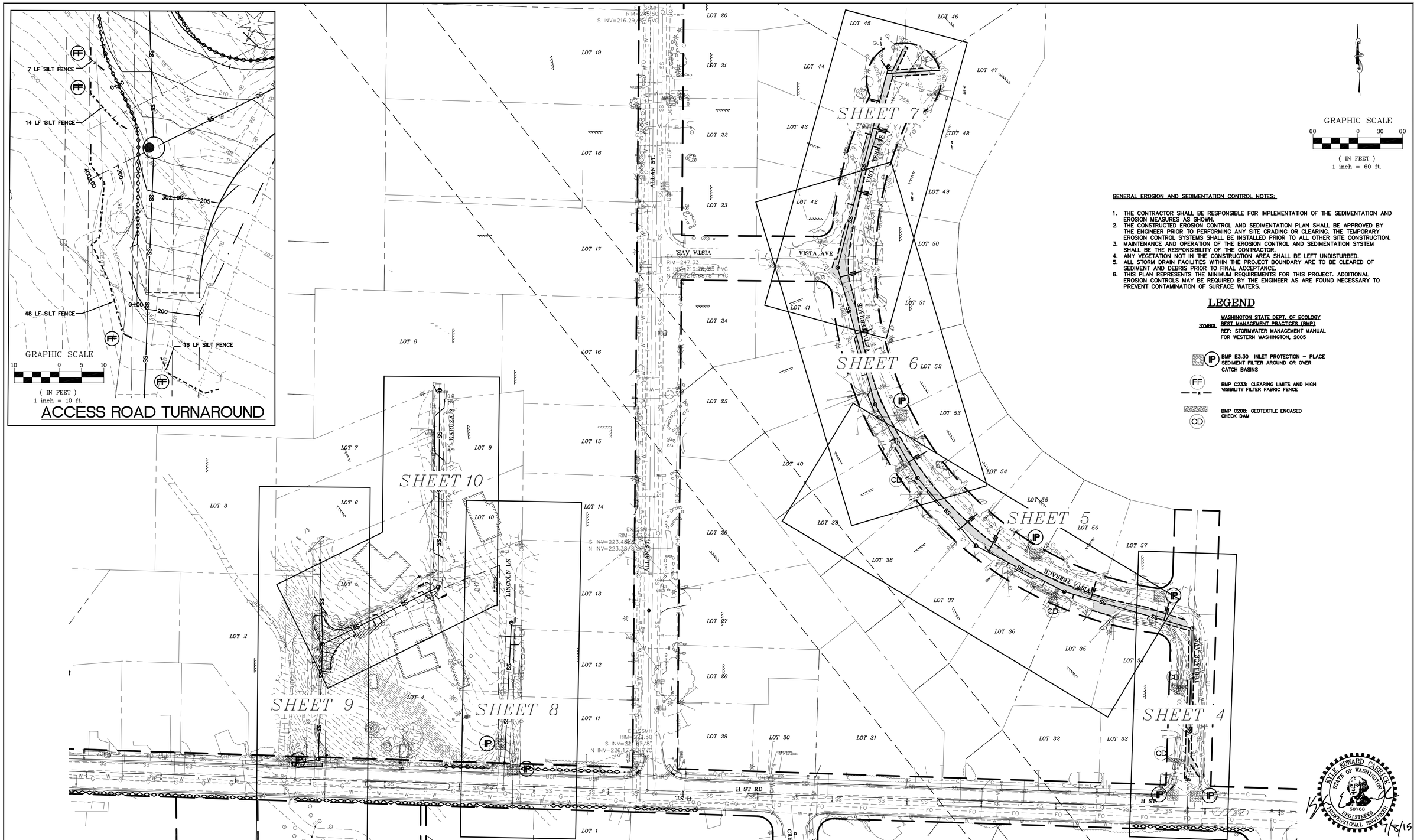
R&E Reichhardt & Ebe ENGINEERING INC
P.O. Box 978 | 423 Front Street, Lynden, WA 98264 (360) 354-3687
813 Metcalf Street, Sedro-Woolley, WA 98284 (360) 855-1713

NO.	DATE	DESCRIPTION	BY

CITY OF BLAINE
1200 YEW AVENUE
BLAINE, WA 98230

VISTA TERRACE SANITARY SEWER IMPROVEMENTS, PHASE 2
LEGEND AND ABBREVIATIONS

DWG 11012.2 COVER
JOB# 11012.2
SCALE H: N/A V: N/A
DATE 7/8/2015
SHEET 2 of 19



GENERAL EROSION AND SEDIMENTATION CONTROL NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION OF THE SEDIMENTATION AND EROSION MEASURES AS SHOWN.
2. THE CONSTRUCTED EROSION CONTROL AND SEDIMENTATION PLAN SHALL BE APPROVED BY THE ENGINEER PRIOR TO PERFORMING ANY SITE GRADING OR CLEARING. THE TEMPORARY EROSION CONTROL SYSTEMS SHALL BE INSTALLED PRIOR TO ALL OTHER SITE CONSTRUCTION.
3. MAINTENANCE AND OPERATION OF THE EROSION CONTROL AND SEDIMENTATION SYSTEM SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. ANY VEGETATION NOT IN THE CONSTRUCTION AREA SHALL BE LEFT UNDISTURBED.
5. ALL STORM DRAIN FACILITIES WITHIN THE PROJECT BOUNDARY ARE TO BE CLEARED OF SEDIMENT AND DEBRIS PRIOR TO FINAL ACCEPTANCE.
6. THIS PLAN REPRESENTS THE MINIMUM REQUIREMENTS FOR THIS PROJECT. ADDITIONAL EROSION CONTROLS MAY BE REQUIRED BY THE ENGINEER AS ARE FOUND NECESSARY TO PREVENT CONTAMINATION OF SURFACE WATERS.

LEGEND

SYMBOL	WASHINGTON STATE DEPT. OF ECOLOGY BEST MANAGEMENT PRACTICES (BMP) REF: STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON, 2005
IP	BMP E3.30 INLET PROTECTION – PLACE SEDIMENT FILTER AROUND OR OVER CATCH BASINS
FF	BMP C233: CLEARING LIMITS AND HIGH VISIBILITY FILTER FABRIC FENCE
CD	BMP C208: GEOTEXTILE ENCASED CHECK DAM

KALE EDWARD CARRICO
STATE OF WASHINGTON
50768
REGISTERED PROFESSIONAL ENGINEER
7/8/15

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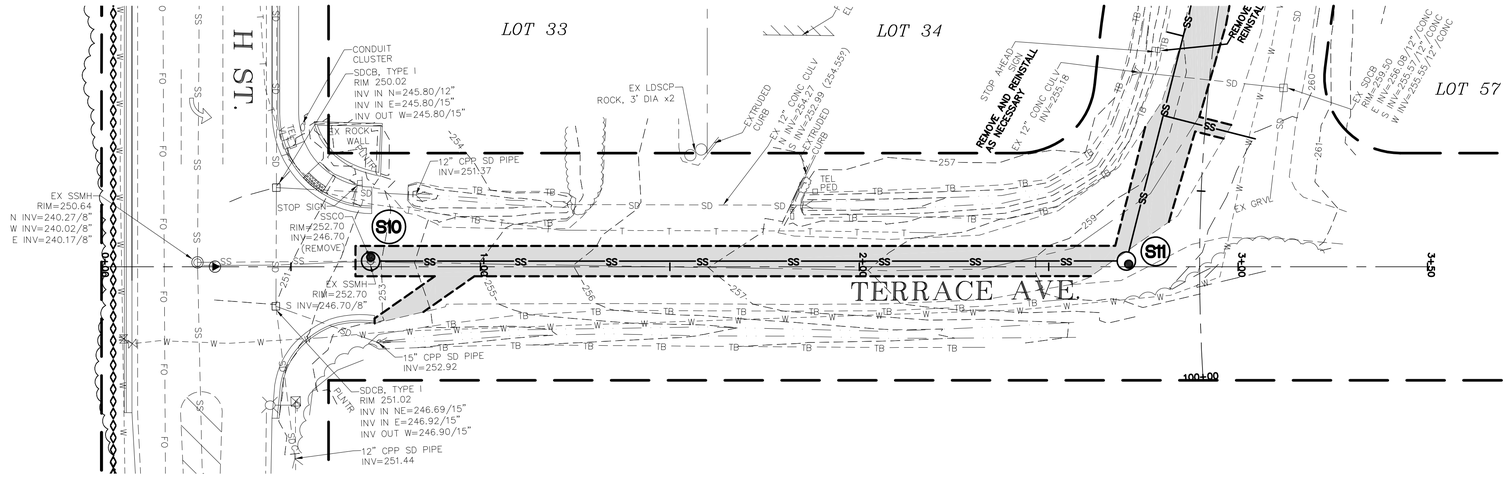
NO.	DATE	DESCRIPTION	BY

CITY OF BLAINE
1200 YEW AVENUE
BLAINE, WA 98230

VISTA TERRACE SANITARY SEWER IMPROVEMENTS, PHASE 2
SHEET INDEX/TESCP

DWG 11012.2 PROBASE
JOB# 11012.2
SCALE H: 1"=60' V: N/A
DATE 7/8/2015
SHEET 3 of 19



GRAPHIC SCALE

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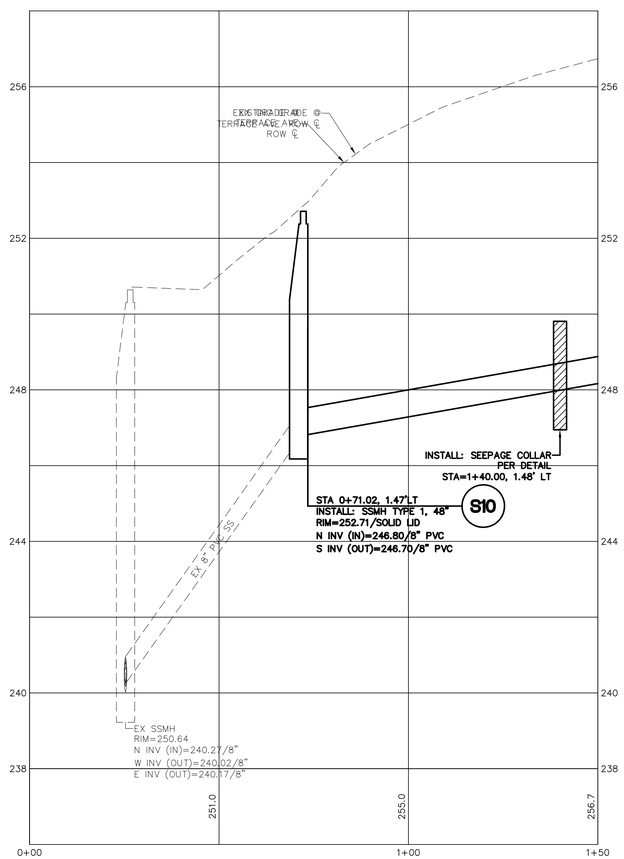
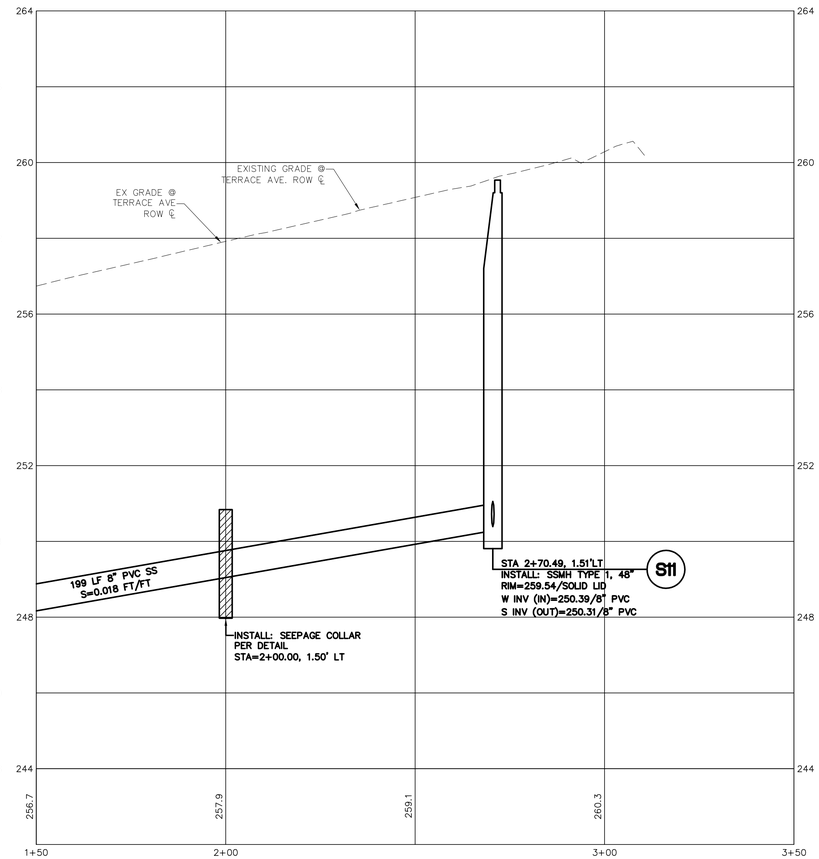
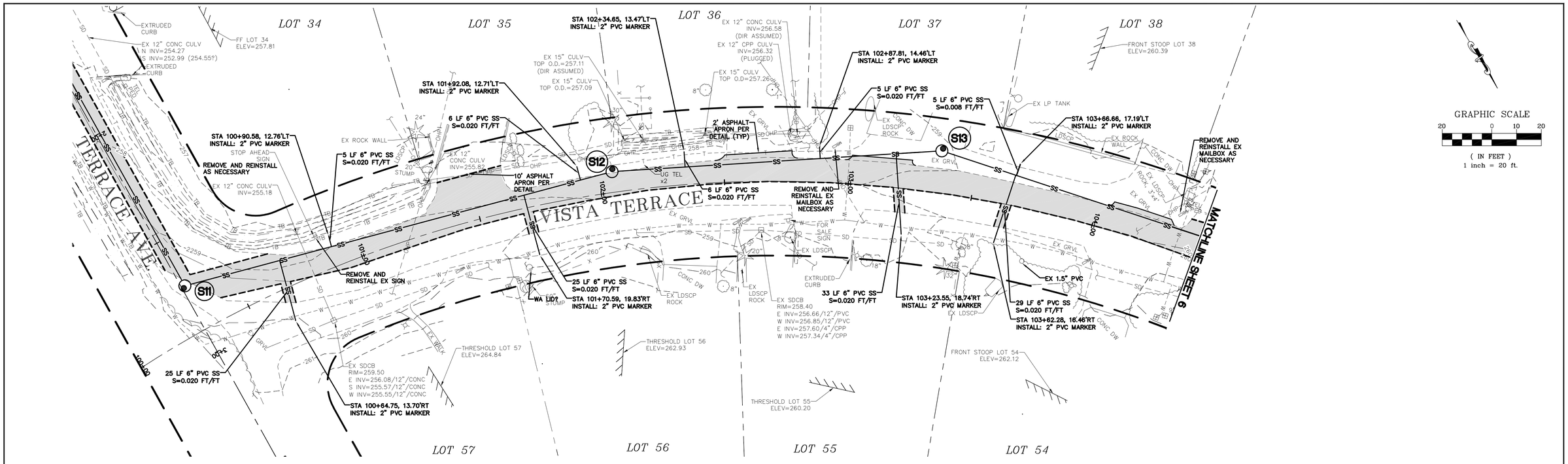
(IN FEET)
1 inch = 20 ft.

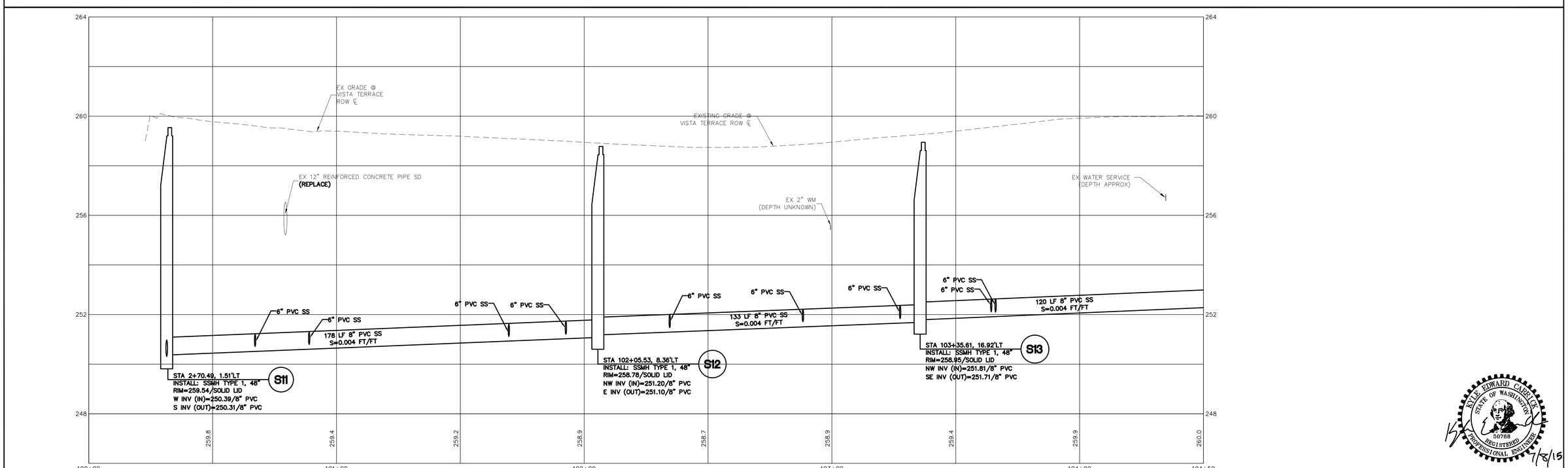




KYLE EDWARD CARRICO
STATE OF WASHINGTON
50768
REGISTERED
PROFESSIONAL ENGINEER
7/8/15

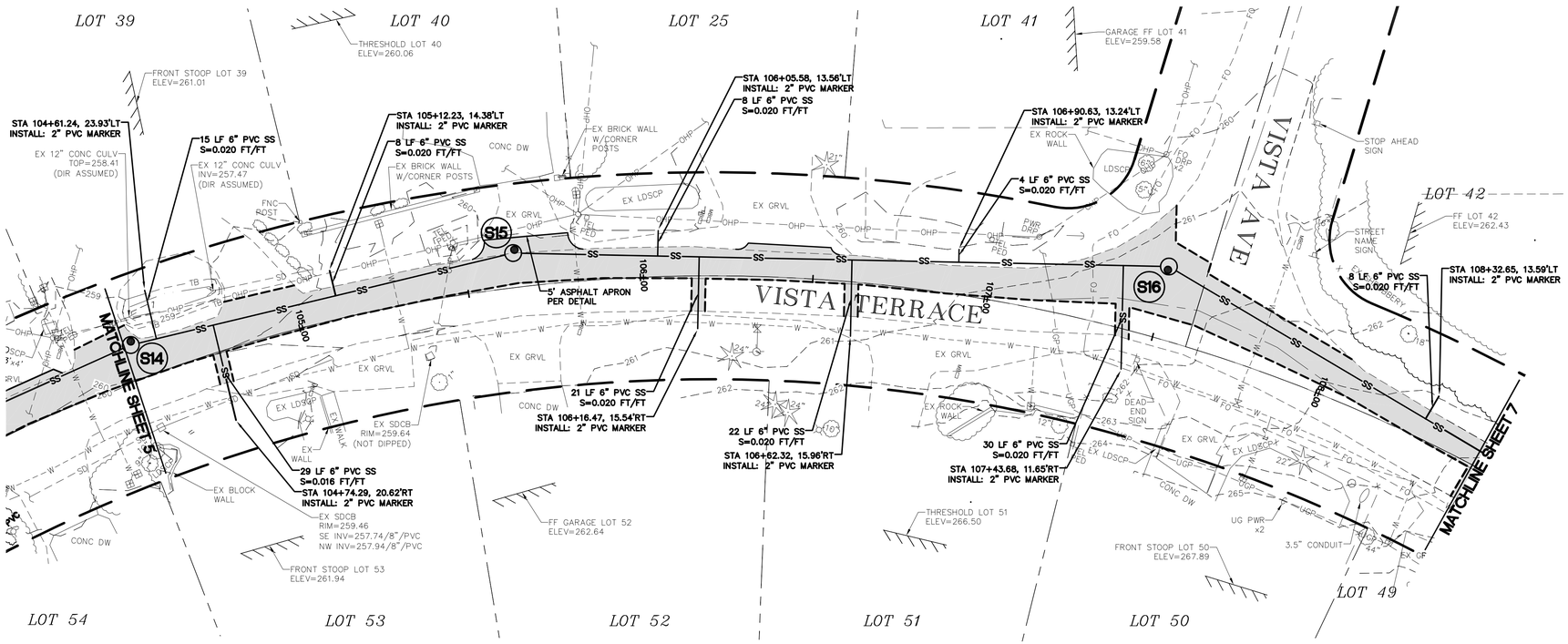
BID SET	DESIGNED BY KEC DRAWN BY RWG CHECKED BY DLB	R&E Reichhardt & Ebe ENGINEERING INC P.O. Box 978 | 423 Front Street, Lynden, WA 98264 (360) 354-3687 813 Metcalf Street, Sedro-Woolley, WA 98284 (360) 855-1713	NO. / DATE / DESCRIPTION / BY	CITY OF BLAINE 1200 YEW AVENUE BLAINE, WA 98230	VISTA TERRACE SANITARY SEWER IMPROVEMENTS, PHASE 2 PLAN AND PROFILE (TERRACE AVE 0+00 TO 3+50)	DWG 11012.2 PROBASE JOB# 11012.2	SCALE H: 1"=20' V: 1"=2'	DATE 7/8/2015 SHEET 4 of 19

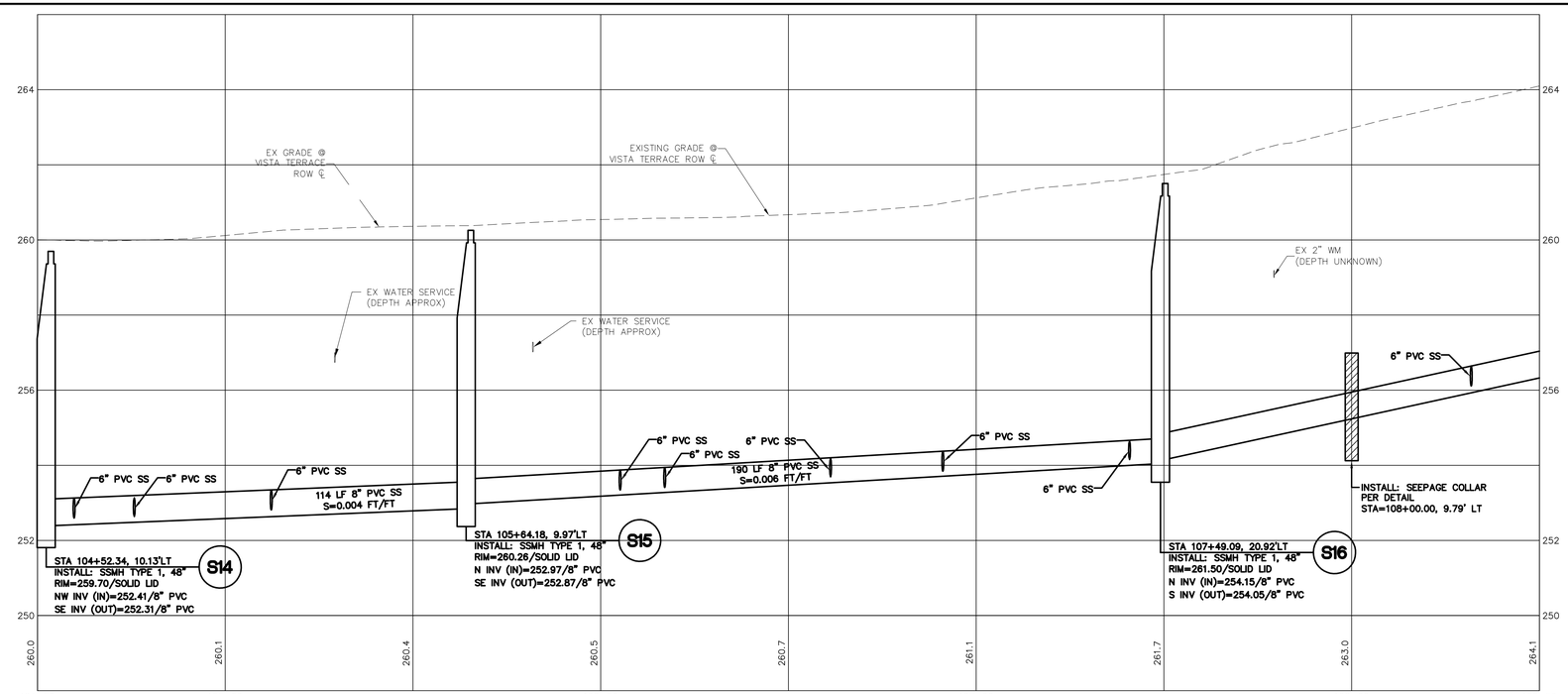




KYLE EDWARD CARLSON STATE OF WASHINGTON 50768 REGISTERED PROFESSIONAL ENGINEER 7/8/15

BID SET	DESIGNED BY KEC DRAWN BY RWG CHECKED BY DLB	R&E Reichhardt & Ebe ENGINEERING INC P.O. Box 978 | 423 Front Street, Lynden, WA 98264 (360) 354-3687 813 Metcalf Street, Sedro-Woolley, WA 98284 (360) 855-1713	NO. / DATE / DESCRIPTION / BY	CITY OF BLAINE 1200 YEW AVENUE BLAINE, WA 98230	VISTA TERRACE SANITARY SEWER IMPROVEMENTS, PHASE 2 PLAN AND PROFILE (VISTA TERRACE 100+00 TO 104+50)	DWG 11012.2 PROBASE JOB# 11012.2 SCALE H: 1"=20' V: 1"=2'	DATE 7/8/2015 SHEET 5 of 19	



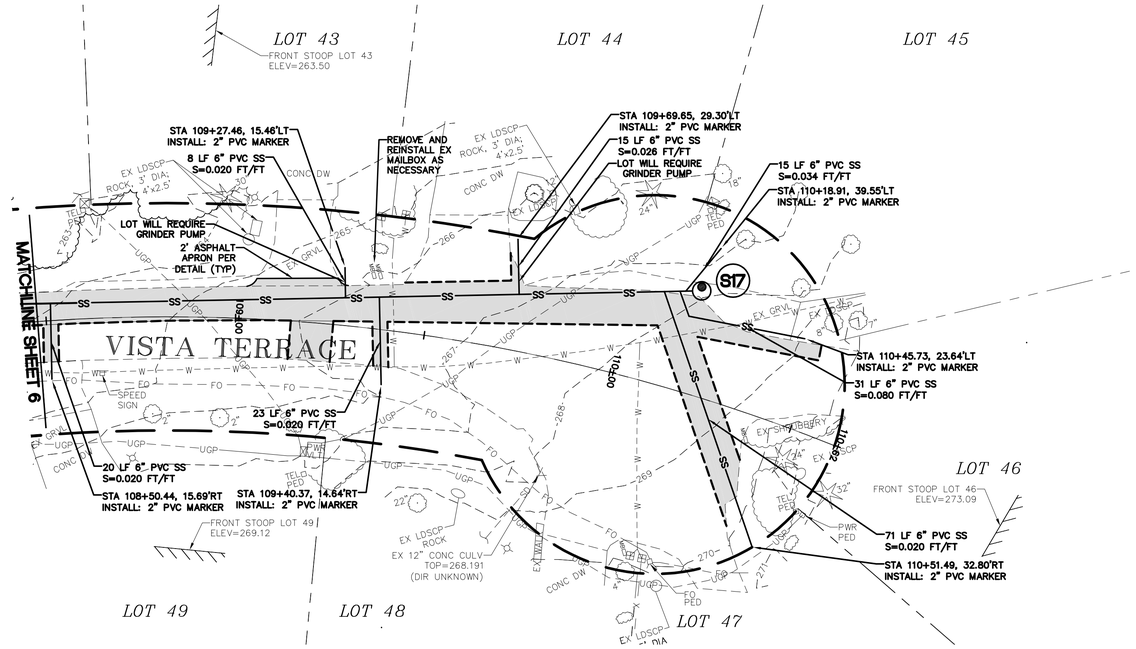


KILE EDWARD CARRIGAN
STATE OF WASHINGTON
50768
REGISTERED
PROFESSIONAL ENGINEER
7/8/15

BID SET

DESIGNED BY KEC	Reichhardt & Ebe ENGINEERING INC			CITY OF BLAINE 1200 YEW AVENUE BLAINE, WA 98230	VISTA TERRACE SANITARY SEWER IMPROVEMENTS, PHASE 2
DRAWN BY RWG	P.O. Box 978 | 423 Front Street, Lynden, WA 98264 (360) 354-3687	NO.	DATE	DESCRIPTION	BY	PLAN AND PROFILE (VISTA TERRACE 104+50 TO 108+50)
CHECKED BY DLB	813 Metcalf Street, Sedro-Woolley, WA 98284 (360) 855-1713				

DWG 11012.2 PROBASE		DATE 7/8/2015
JOB# 11012.2	SCALE H: 1"=20' V: 1"=2'	SHEET 6 of 19



GRAPHIC SCALE

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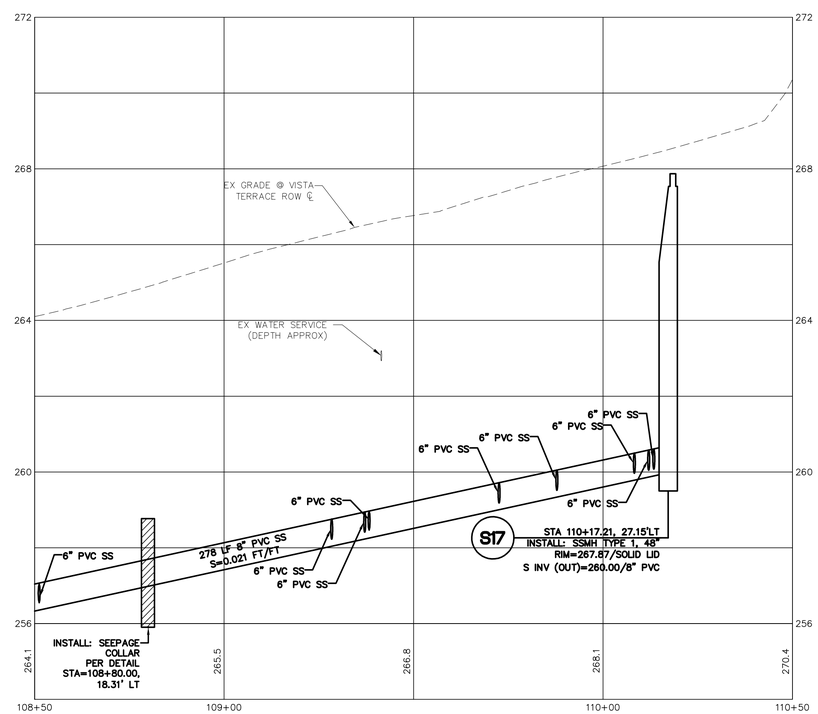
(IN FEET)
1 inch = 20 ft.



BID SET

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DRAWN BY RWG
CHECKED BY DLB

R&E Reichhardt & Ebe ENGINEERING INC
P.O. Box 978 | 423 Front Street, Lynden, WA 98264 (360) 354-3687
813 Metcalf Street, Sedro-Woolley, WA 98284 (360) 855-1713

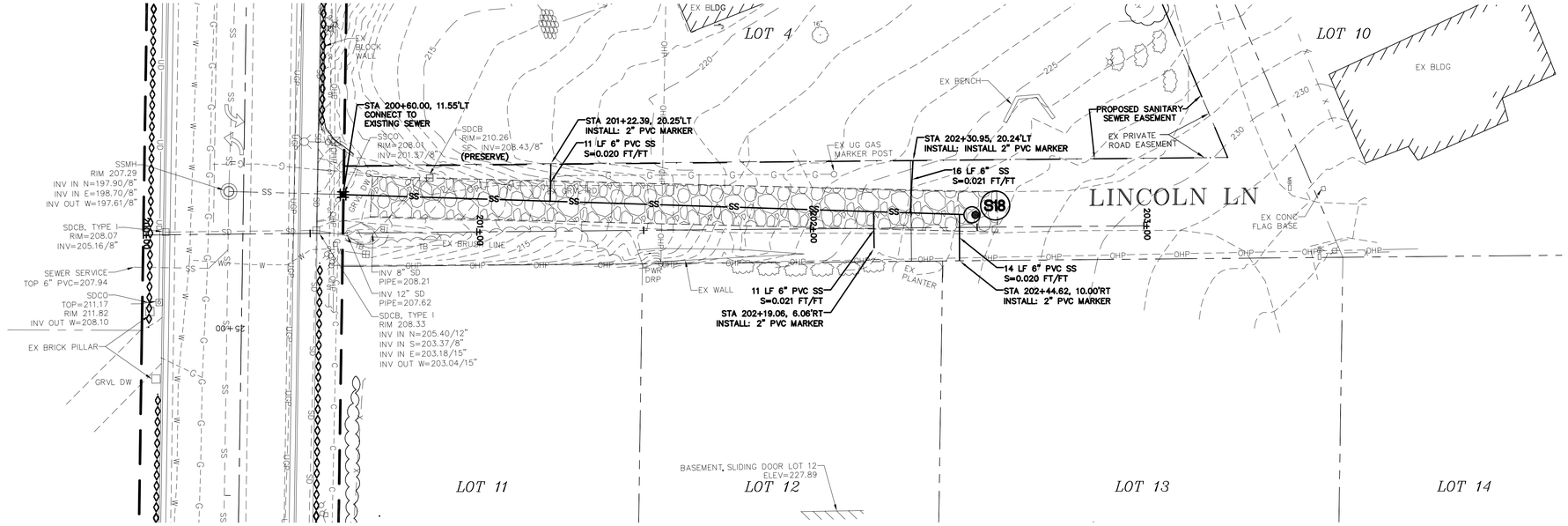
NO.	DATE	DESCRIPTION	BY

CITY OF BLAINE
1200 YEW AVENUE
BLAINE, WA 98230

VISTA TERRACE SANITARY SEWER IMPROVEMENTS, PHASE 2
PLAN AND PROFILE (VISTA TERRACE 108+50 TO 110+50)

DWG 11012.2 PROBASE
JOB# 11012.2
SCALE H: 1"=20' V: 1"=2'
DATE 7/8/2015
SHEET 7 of 19

KYLE EDWARD CARLSON
STATE OF WASHINGTON
50768
REGISTERED
PROFESSIONAL ENGINEER
7/8/15



GRAPHIC SCALE

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(IN FEET)
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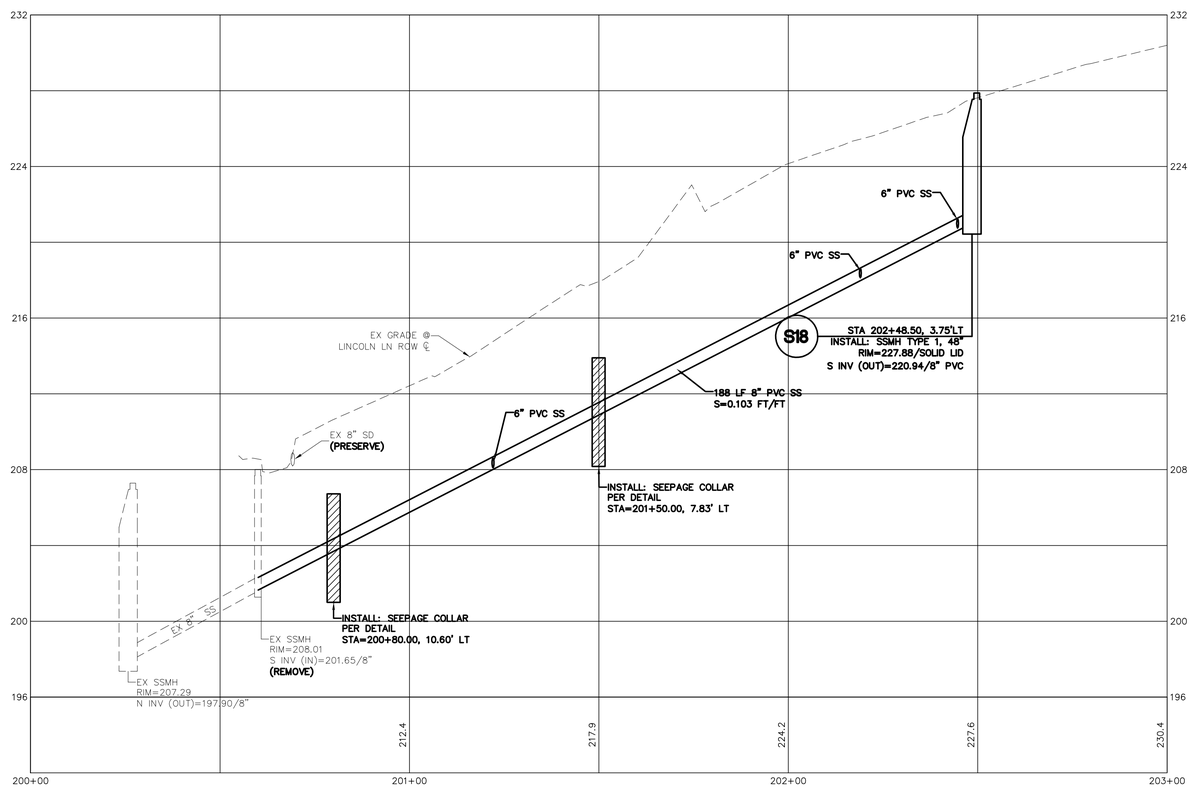


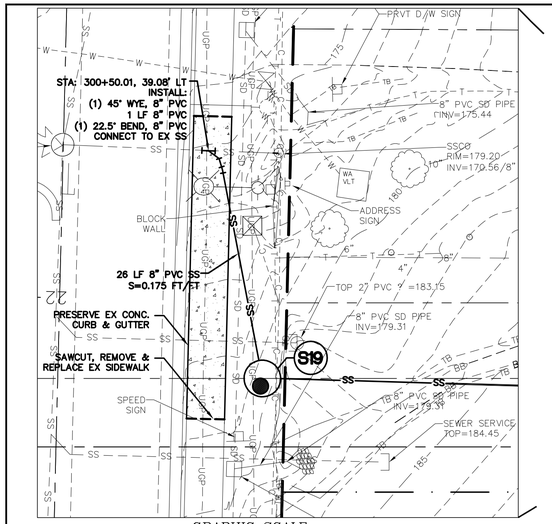
NOTE:
HORIZONTAL TO VERTICAL
SCALE RATIO IS 1"=4' FOR
THIS SHEET

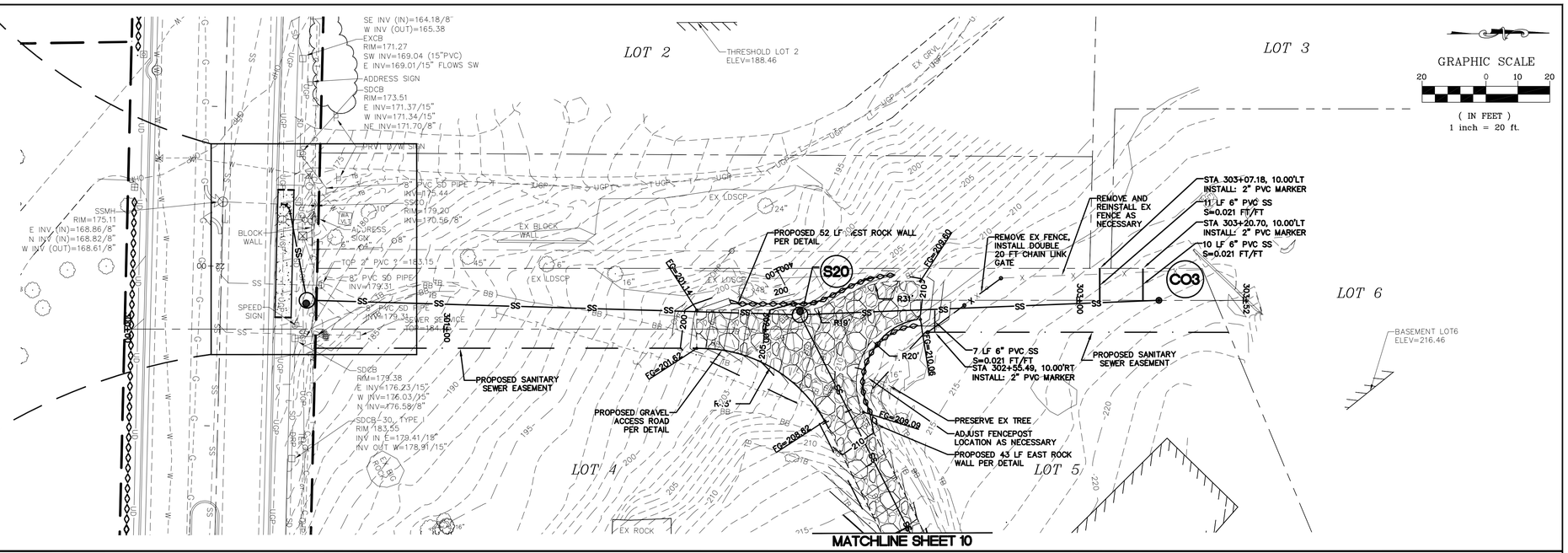
KELLY EDWARD CARRILLO
STATE OF WASHINGTON
50768
REGISTERED
PROFESSIONAL ENGINEER
7/8/15

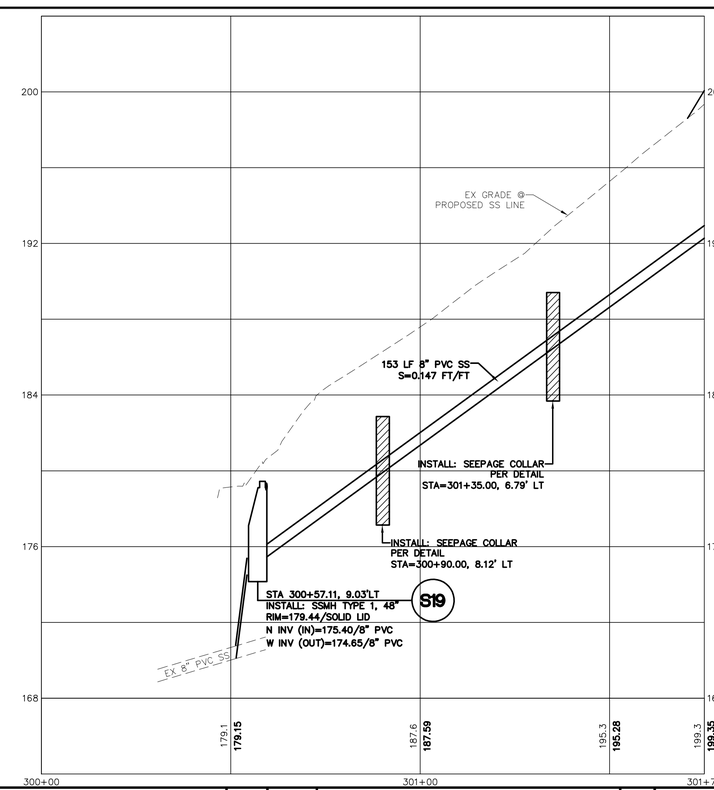
BID SET

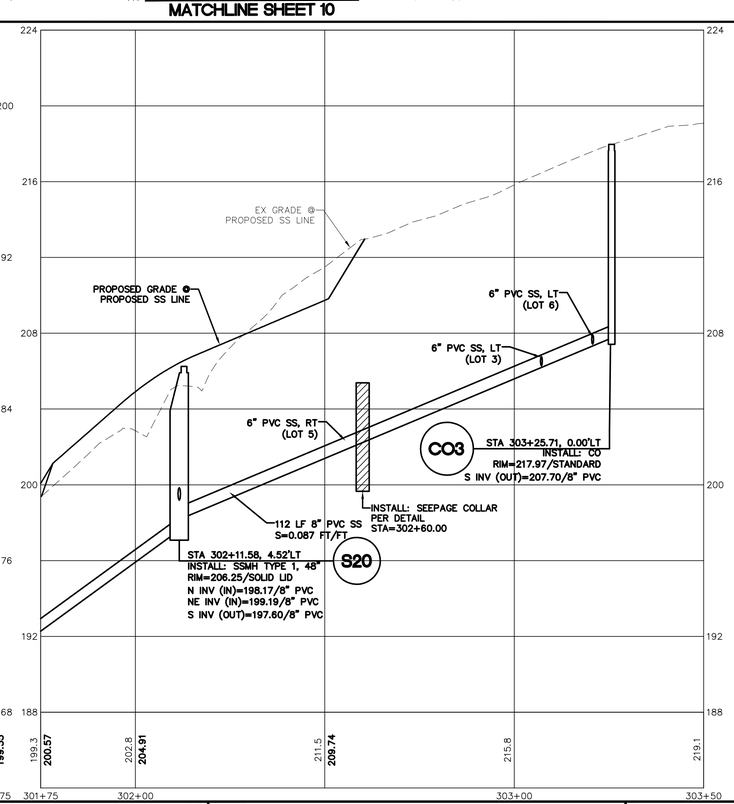
DESIGNED BY KEC	R&E Reichhardt & Ebe ENGINEERING INC			CITY OF BLAINE	VISTA TERRACE SANITARY SEWER IMPROVEMENTS, PHASE 2
DRAWN BY RWG	P.O. Box 978 | 423 Front Street, Lynden, WA 98264 (360) 354-3687	NO.	DATE	1200 YEW AVENUE	PLAN AND PROFILE (LINCOLN LN 200+00 TO 203+50)
CHECKED BY DLB	813 Metcalf Street, Sedro-Woolley, WA 98284 (360) 855-1713		DESCRIPTION	BLAINE, WA 98230	

DWG 11012.2 PROBASE			DATE 7/8/2015
JOB# 11012.2	SCALE H: 1"=20' V: 1"=4'		SHEET 8 of 19









NOTE:
HORIZONTAL TO VERTICAL SCALE RATIO IS 1"=4' FOR THIS SHEET

KYLE EDWARD CARRICO
STATE OF WASHINGTON
50768
REGISTERED PROFESSIONAL ENGINEER
7/8/15

BID SET

DESIGNED BY KEC
DRAWN BY RWG
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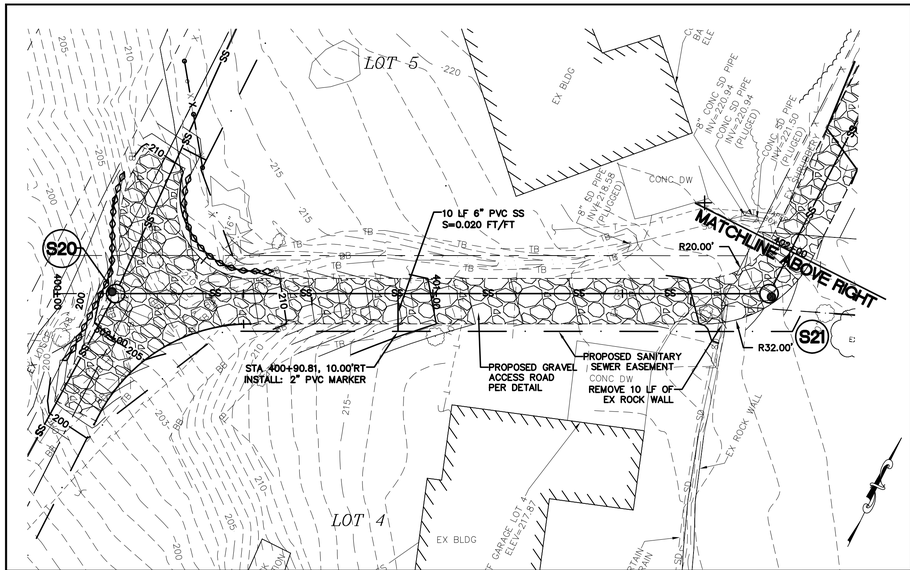
P.O. Box 978 | 423 Front Street, Lynden, WA 98264 (360) 354-3687
813 Metcalf Street, Sedro-Woolley, WA 98284 (360) 855-1713

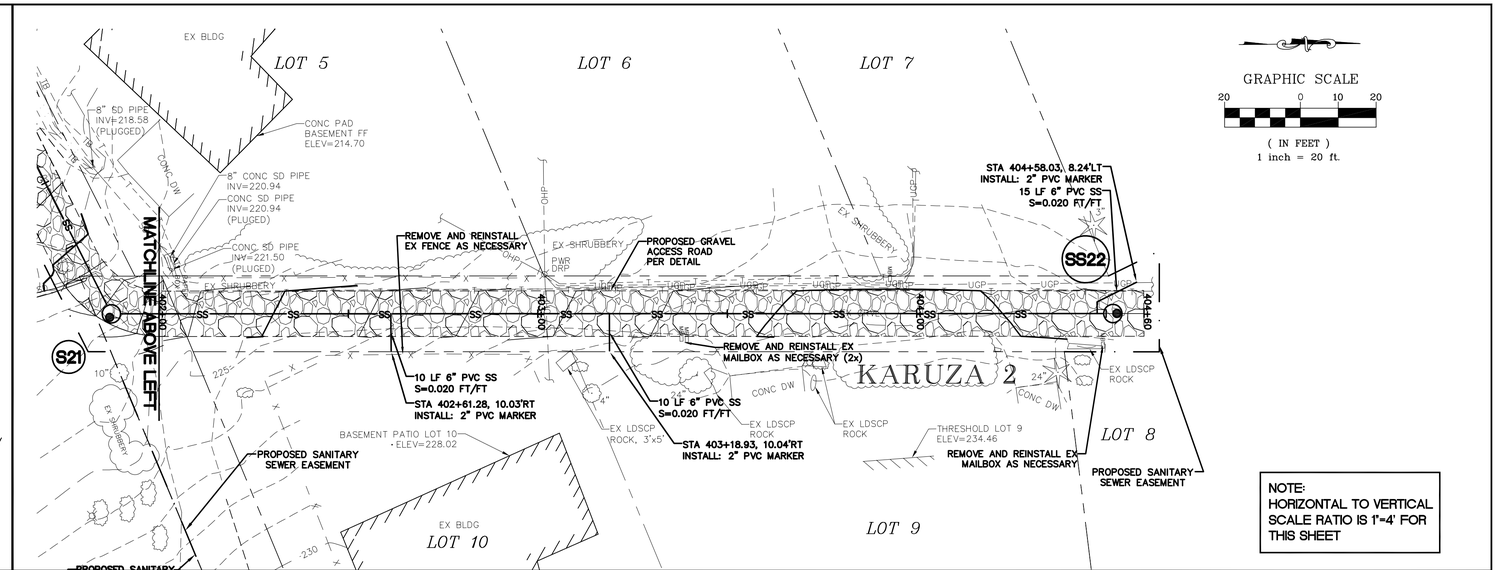
NO.	DATE	DESCRIPTION	BY

CITY OF BLAINE
1200 YEW AVENUE
BLAINE, WA 98230

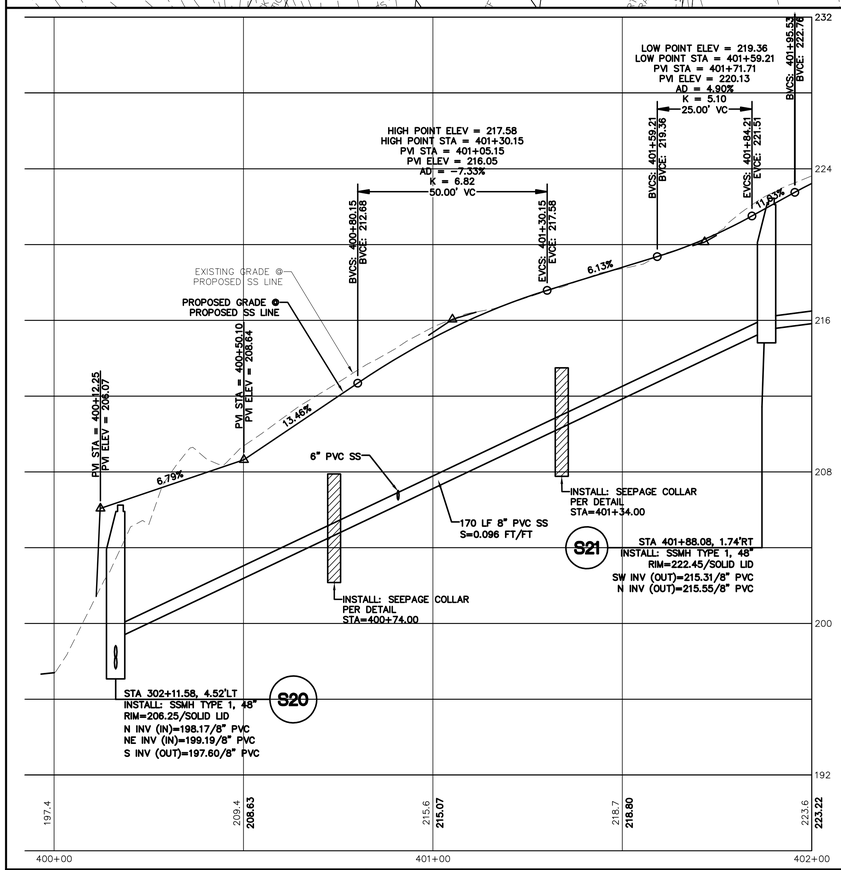
VISTA TERRACE SANITARY SEWER IMPROVEMENTS, PHASE 2
PLAN AND PROFILE (KARUZA 1 300+00 TO 303+50)

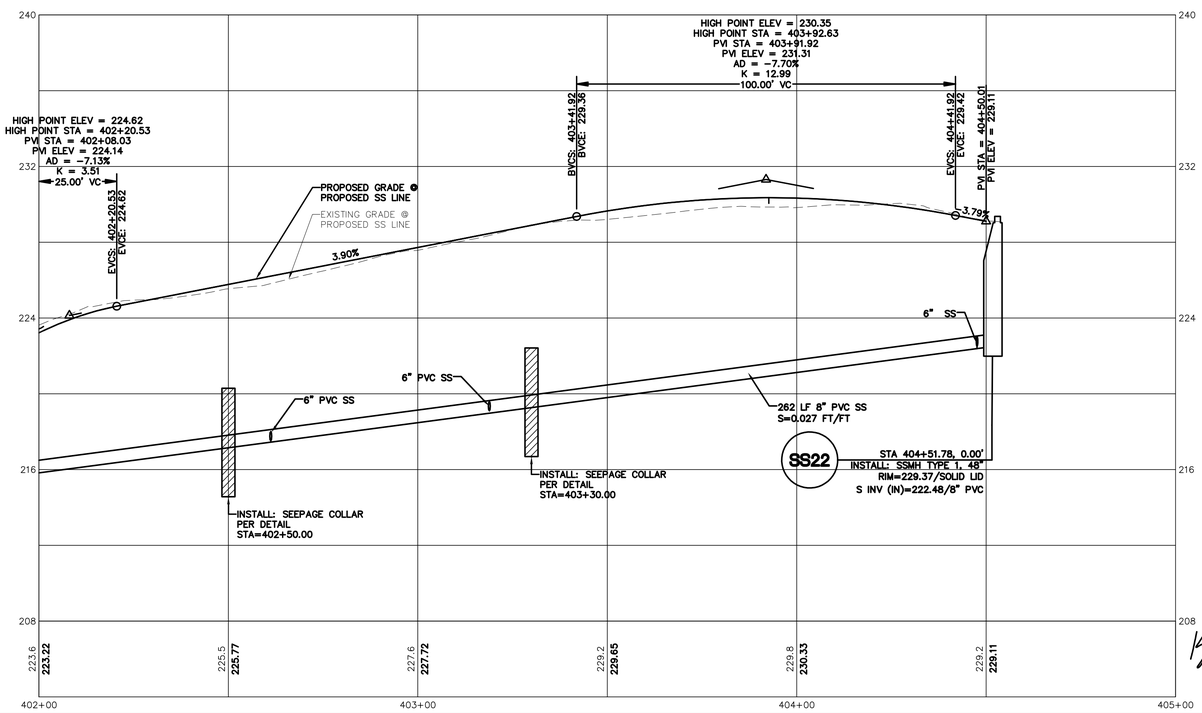
DWG 11012.2 PROBASE
JOB# 11012.2
SCALE H: 1"=20' V: 1"=4'
DATE 7/8/2015
SHEET 9 of 19





NOTE:
HORIZONTAL TO VERTICAL
SCALE RATIO IS 1"=4' FOR
THIS SHEET





KYLE EDWARD CARLSON
STATE OF WASHINGTON
50768
REGISTERED
PROFESSIONAL ENGINEER
7/8/15

BID SET

DESIGNED BY KEC
DRAWN BY RWG
CHECKED BY DLB

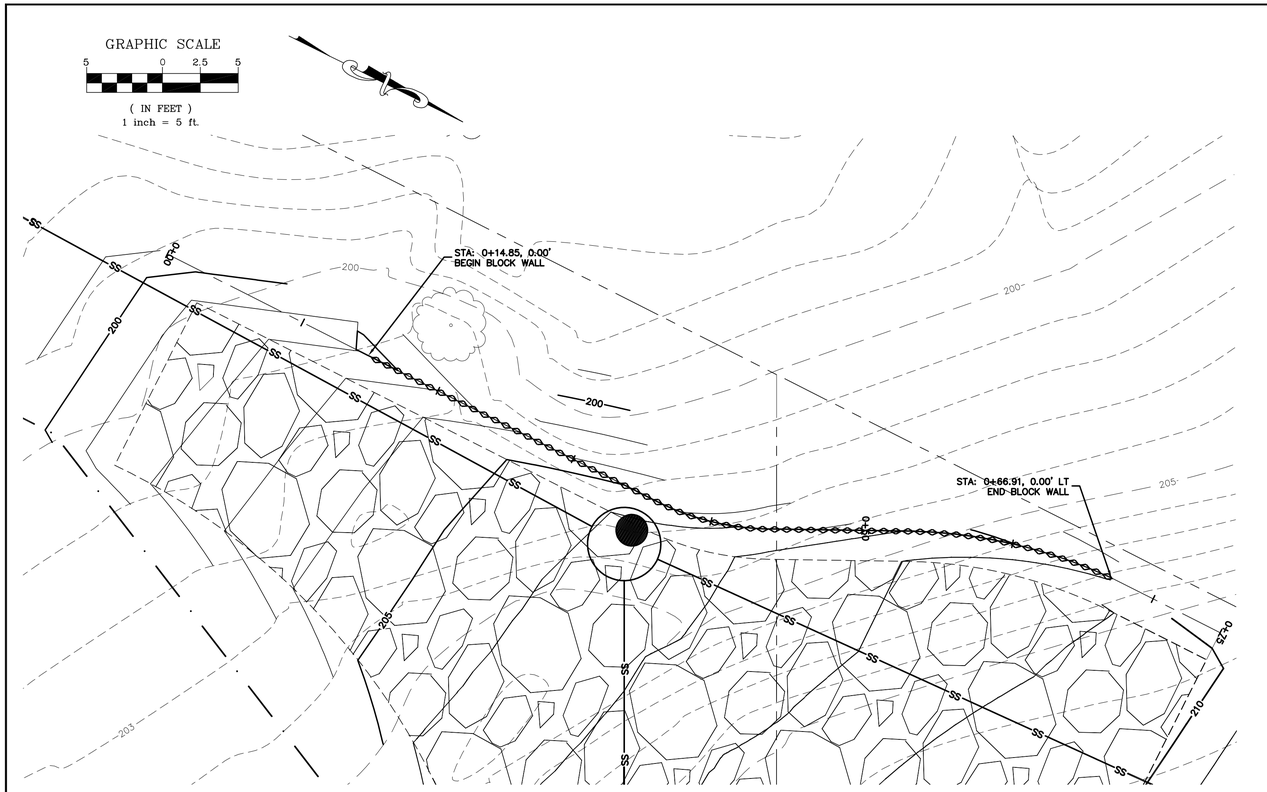
R&E Reichhardt & Ebe
ENGINEERING INC
P.O. Box 978 | 423 Front Street, Lynden, WA 98264 (360) 354-3687
813 Metcalf Street, Sedro-Woolley, WA 98284 (360) 855-1713

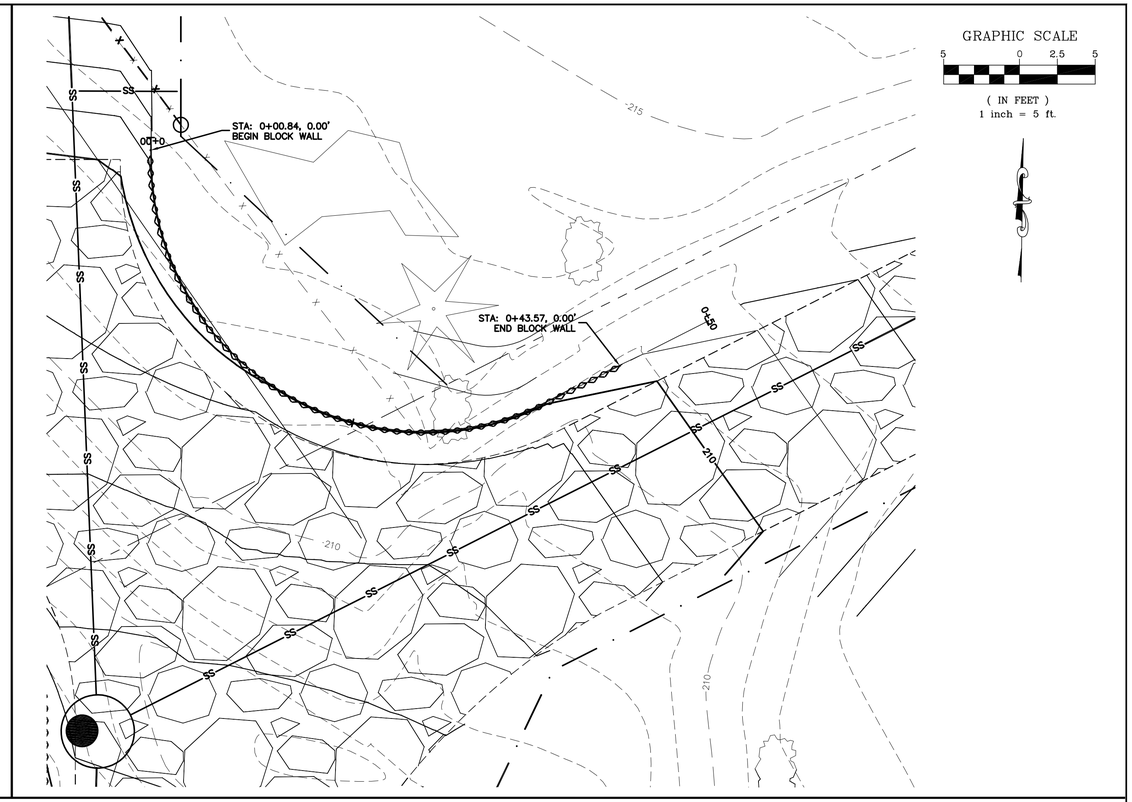
NO.	DATE	DESCRIPTION	BY

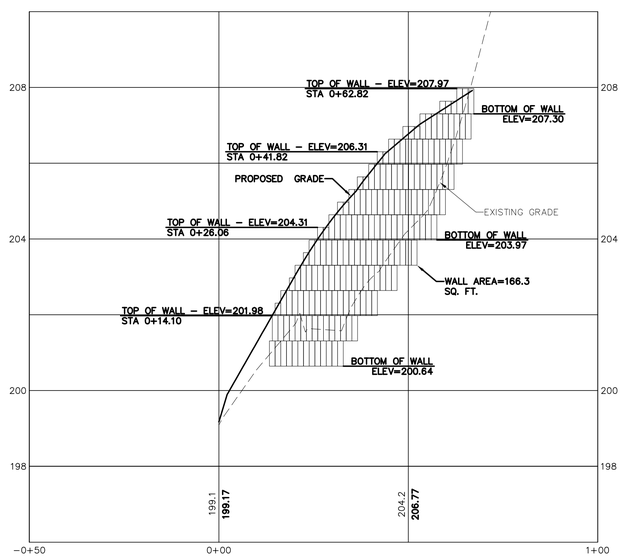
CITY OF BLAINE
1200 YEW AVENUE
BLAINE, WA 98230

VISTA TERRACE SANITARY SEWER
IMPROVEMENTS, PHASE 2
PLAN AND PROFILE (KARUZA 2 400+00 TO 404+50)

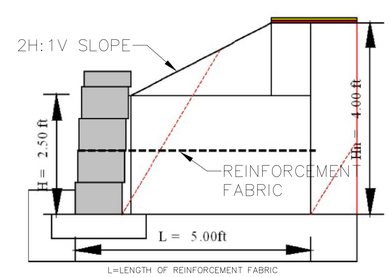
DWG 11012.2 PROBASE
DATE 7/8/2015
JOB# 11012.2
SCALE H: 1"=20' V: 1"=4'
SHEET 10 of 19



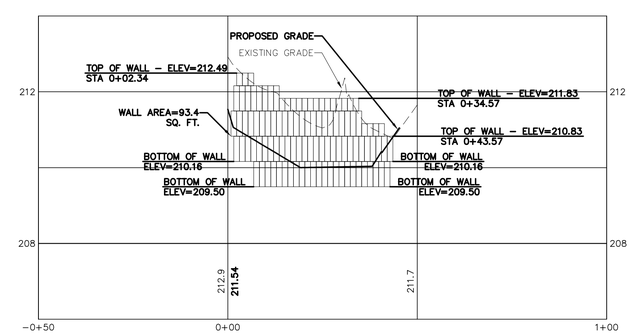




BLOCK WALL - WEST SCALE H: 1"=20' V: 1"=2'



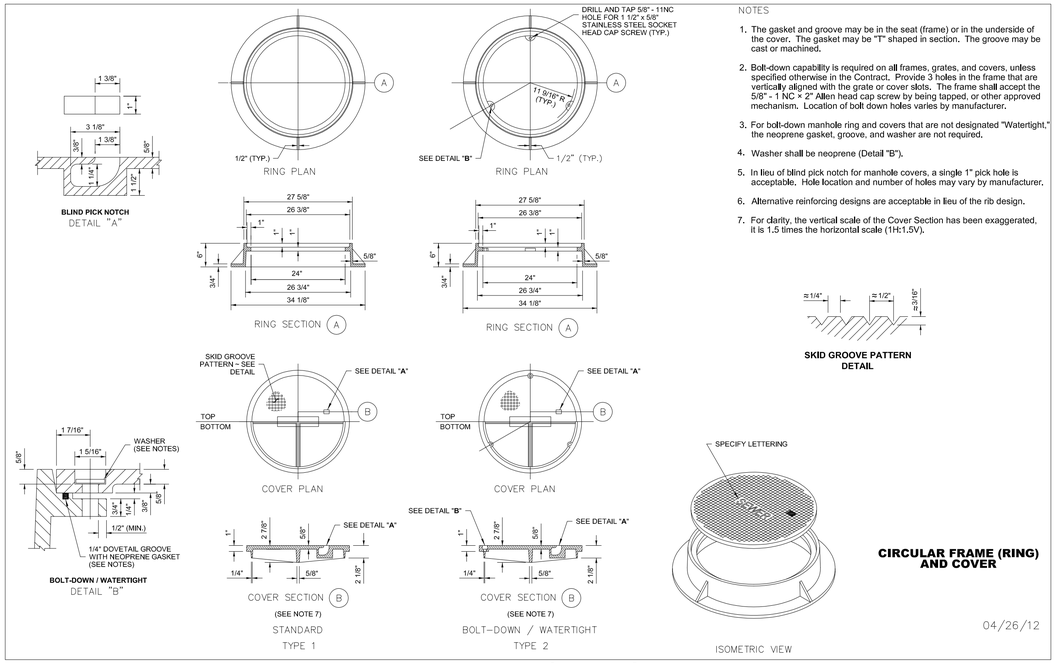
WEST WALL
REINFORCEMENT DETAIL
NTS



BLOCK WALL - EAST SCALE H: 1"=20' V: 1"=2'

KYLE EDWARD CARLSON
STATE OF WASHINGTON
50768
REGISTERED PROFESSIONAL ENGINEER
7/8/15

BID SET	DESIGNED BY KEC DRAWN BY RWG CHECKED BY DLB	R&E Reichhardt & Ebe ENGINEERING INC P.O. Box 978 | 423 Front Street, Lynden, WA 98264 (360) 354-3687 813 Metcalf Street, Sedro-Woolley, WA 98284 (360) 855-1713	NO.	DATE	DESCRIPTION	BY	CITY OF BLAINE 1200 YEW AVENUE BLAINE, WA 98230	VISTA TERRACE SANITARY SEWER IMPROVEMENTS, PHASE 2 PLAN AND PROFILE (ACCESS ROAD WALLS)	DWG 11012.2 PROBASE JOB# 11012.2 SCALE AS SHOWN DATE 7/8/2015 SHEET 10A of 19

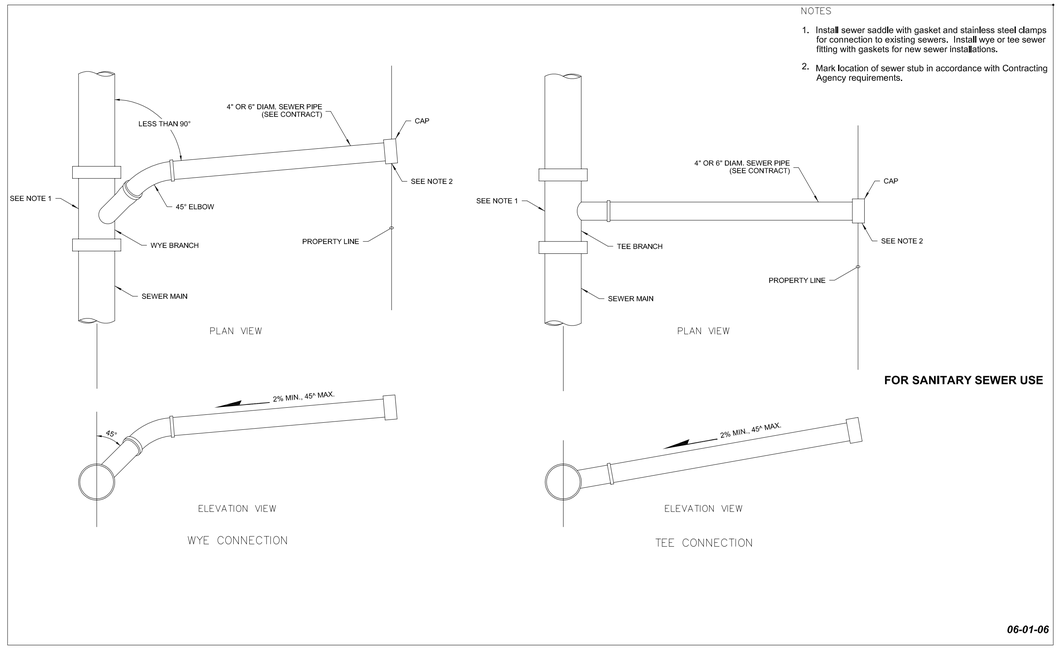


NOTES

1. The gasket and groove may be in the seat (frame) or in the underside of the cover. The gasket may be "T" shaped in section. The groove may be cast or machined.
2. Bolt-down capability is required on all frames, grates, and covers, unless specified otherwise in the Contract. Provide 3 holes in the frame that are vertically aligned with the grate or cover slots. The frame shall accept the 5/8" - 1 NC × 2" Allen head cap screw by being tapped, or other approved mechanism. Location of bolt down holes varies by manufacturer.
3. For bolt-down manhole ring and covers that are not designated "Watertight," the neoprene gasket, groove, and washer are not required.
4. Washer shall be neoprene (Detail "B").
5. In lieu of blind pick notch for manhole covers, a single 1" pick hole is acceptable. Hole location and number of holes may vary by manufacturer.
6. Alternative reinforcing designs are acceptable in lieu of the rib design.
7. For clarity, the vertical scale of the Cover Section has been exaggerated. It is 1.5 times the horizontal scale (1H:1.5V).

CIRCULAR FRAME (RING) AND COVER

NTS

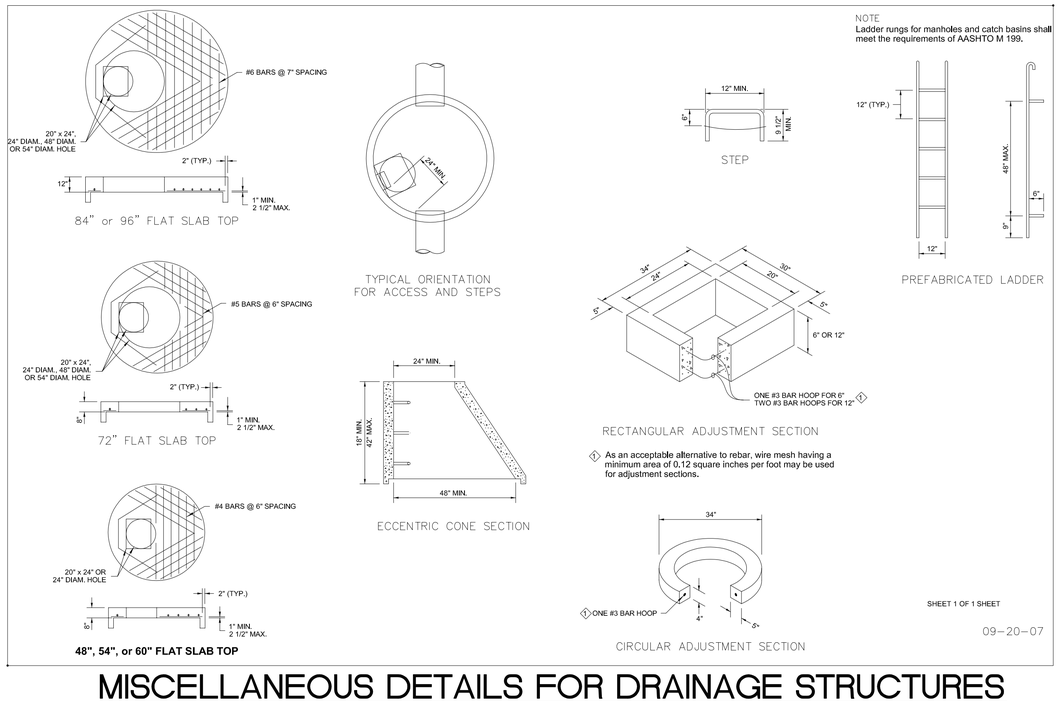


NOTES

1. Install sewer saddle with gasket and stainless steel clamps for connection to existing sewers. Install wye or tee sewer fitting with gaskets for new sewer installations.
2. Mark location of sewer stub in accordance with Contracting Agency requirements.

SIDE SEWER CONNECTION

NTS

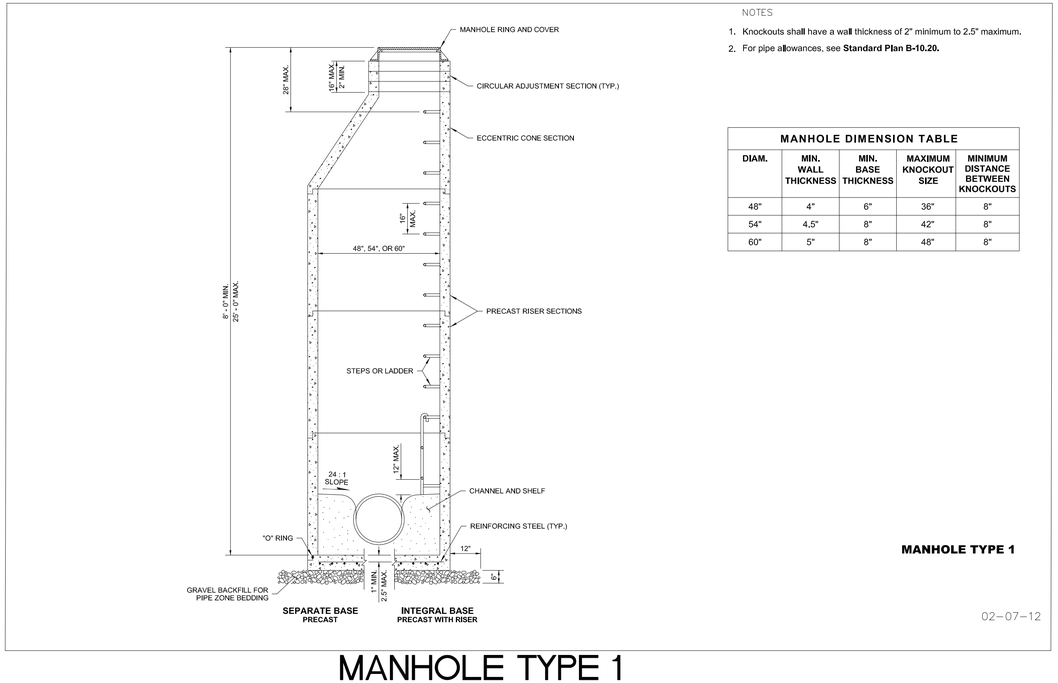


NOTE
Ladder rungs for manholes and catch basins shall meet the requirements of AASHTO M 199.

1 As an acceptable alternative to rebar, wire mesh having a minimum area of 0.12 square inches per foot may be used for adjustment sections.

MISCELLANEOUS DETAILS FOR DRAINAGE STRUCTURES

NTS



NOTES

1. Knockouts shall have a wall thickness of 2" minimum to 2.5" maximum.
2. For pipe allowances, see **Standard Plan B-10.20.**

MANHOLE DIMENSION TABLE

DIAM.	MIN. WALL THICKNESS	MIN. BASE THICKNESS	MAXIMUM KNOCKOUT SIZE	MINIMUM DISTANCE BETWEEN KNOCKOUTS
48"	4"	6"	36"	8"
54"	4.5"	8"	42"	8"
60"	5"	8"	48"	8"

MANHOLE TYPE 1

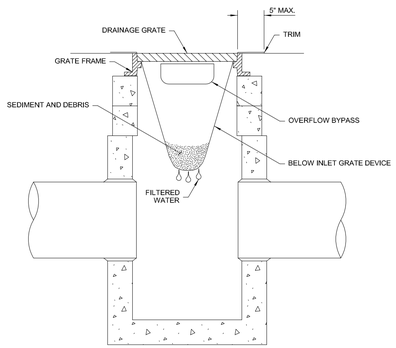
NTS

KYLE EDWARD CARLICK STATE OF WASHINGTON 50768 REGISTERED PROFESSIONAL ENGINEER 7/8/15

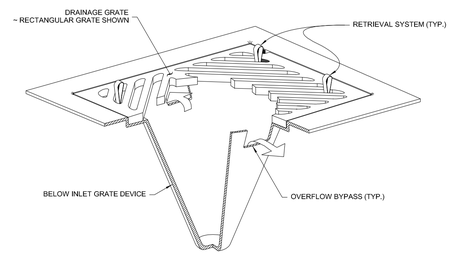
BID SET	DESIGNED BY KEC DRAWN BY RWG CHECKED BY DLB	R&E Reichhardt & Ebe ENGINEERING INC P.O. Box 978 | 423 Front Street, Lynden, WA 98264 (360) 354-3687 813 Metcalf Street, Sedro-Woolley, WA 98284 (360) 855-1713	NO. / DATE / DESCRIPTION / BY	CITY OF BLAINE 1200 YEW AVENUE BLAINE, WA 98230	VISTA TERRACE SANITARY SEWER IMPROVEMENTS, PHASE 2 DETAILS	DWG 11012.2 DETAILS JOB# 11012.2 SCALE H: N/A V: N/A	DATE 7/8/2015 SHEET 11 of 19

NOTES

1. Size the Below Inlet Grate Device (BIGD) for the storm water structure it will service.
2. The BIGD shall have a built-in high-flow relief system (overflow bypass).
3. The retrieval system must allow removal of the BIGD without spilling the collected material.
4. Perform maintenance in accordance with Standard Specification 8-01.3(15).



SECTION VIEW
NOT TO SCALE

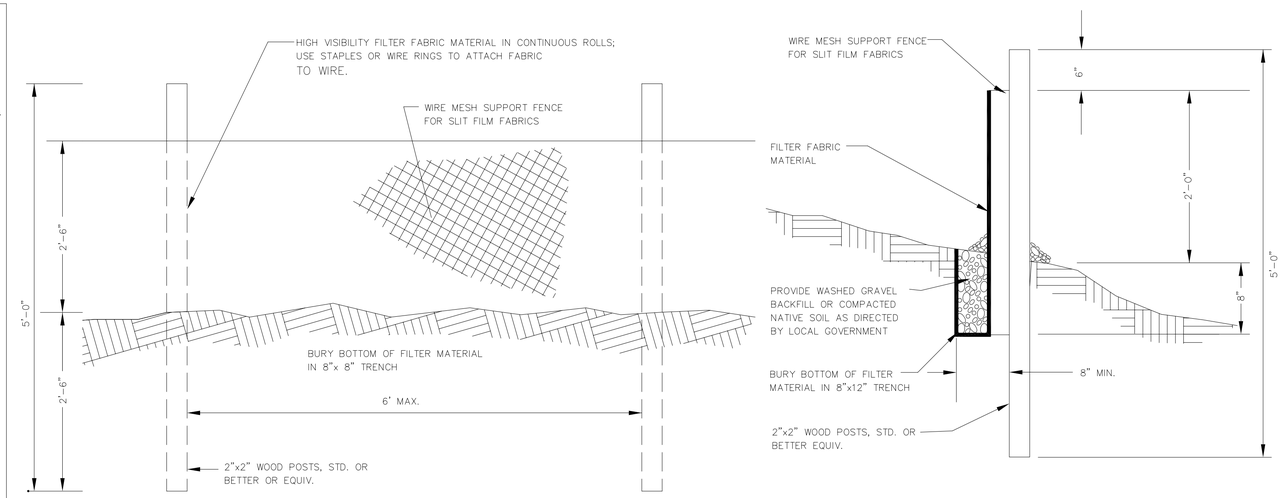


ISOMETRIC VIEW

09-20-07

STORM DRAIN INLET PROTECTION

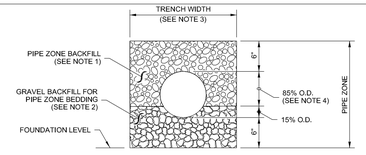
NTS



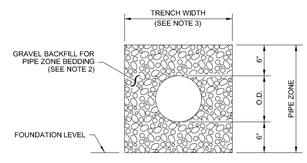
FILTER FABRIC FENCE DETAIL

NOTES

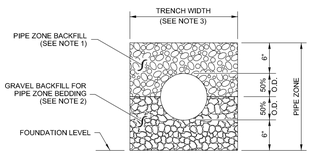
1. See Standard Specifications Section 7-08.3(3) for Pipe Zone Backfill.
2. See Standard Specifications Section 9-03.12(3) for Gravel Backfill for Pipe Zone Bedding.
3. See Standard Specifications Section 2-09.4 for Measurement of Trench Width.
4. For sanitary sewer installation, concrete pipe shall be bedded to spring line.



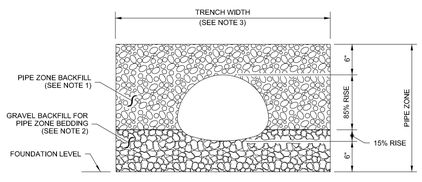
CONCRETE AND DUCTILE IRON PIPE



THERMOPLASTIC PIPE



METAL PIPE



PIPE ARCHES

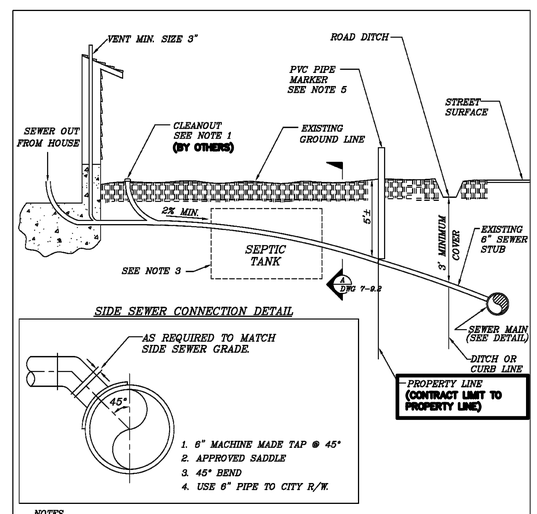
CLEARANCE BETWEEN PIPES FOR MULTIPLE INSTALLATIONS		
PIPE	SIZE	MINIMUM DISTANCE BETWEEN BARRELS
CIRCULAR PIPE (DIAMETER)	12" to 24"	12"
	30" to 96"	DIAM. /2
	102" to 180"	48"
PIPE ARCH (SPAN) METAL ONLY	18" to 36"	12"
	43" to 142"	SPAN /3
	148" to 200"	48"

06-01-06

PIPE ZONE BEDDING AND BACKFILL

NTS

NTS



SIDE SEWER CONNECTION DETAIL

NOTES

1. EACH HORIZONTAL DRAINAGE PIPE SHALL BE PROVIDED WITH A CLEANOUT AT IT'S UPPER TERMINUS AND EACH RUN OF PIPING WHICH IS MORE THAN 100' IN TOTAL DEVELOPED LENGTH, SHALL BE PROVIDED WITH A CLEANOUT FOR EACH 100' OR FRACTION THEREOF, IN LENGTH OF SUCH PIPING.
2. LINE AND GRADE
   HORIZONTAL DRAINAGE PIPING SHALL BE LAID IN PRATICAL ALLIGNMENT AND A UNIFORM SLOPE OF NOT LESS THAN 1/4" PER FOOT OR 2% TOWARD THE POINT OF DISPOSAL.
3. TANK SHALL BE PUMPED BY A LICENCED SEPTIC TANK PUMPING CONTRACTOR AND BACK FILLED WITH SAND OR PEA GRAVEL OR REMOVED AND DISPOSED OF AT AN APPROVED DISPOSAL SITE.
4. PIPE SHALL MEET ASTM D3034 SDR35 WITH GASKETED JOINTS AND CONNECTION TO BUILDING DRAIN SHALL BE RUBBER GASKET.
5. A 2-0" WHITE PVC PIPE, ASTM 2241 SDR 21 200 PSI, SHALL BE PLACED VERTICALLY AT THE END OF EACH STUB AND SHALL RISE TWO FEET ABOVE FINISHED GRADE LEVEL. BOTH ENDS OF THE PVC PIPE SHALL HAVE CAPS GLUED ON AND THE PIPE INTERIOR KEPT CLEAN FOR THE PURPOSE OF FUTURE DEPTH MEASUREMENT.

DWG#: 7-9A	TIME: 02-28-96 3:23 PM				
NO.	REVISION DESCRIPTION	PREP'D BY	DATE	APPROVED	
	PREPARED FOR STD. MANUAL	SCP	3/12/96		

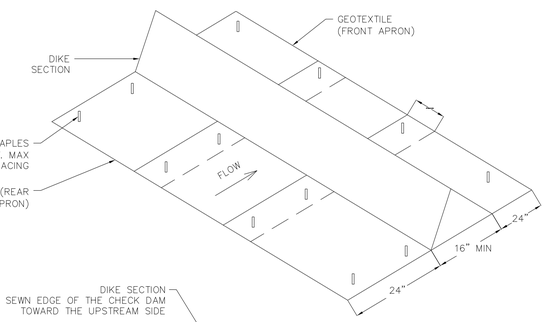
STANDARD PLANS SANITARY SEWER DRAIN INSTALLATION

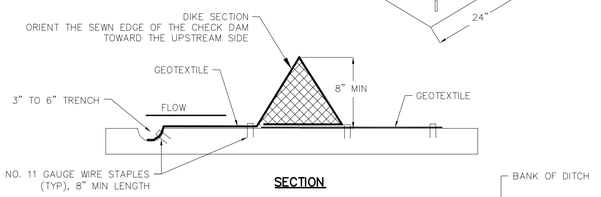
CITY OF BLAINE DEPT. OF PUBLIC WORKS

SIZE A | REV. DWG NO. | PUBLIC WORKS DRAWING NUMBER 7-9.1 | SCALE NONE | SHEET OF | REV. NO.

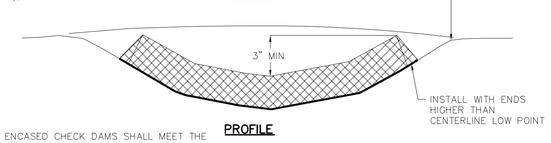
SANITARY SEWER SIDE SERVICE

NTS





SECTION



PROFILE

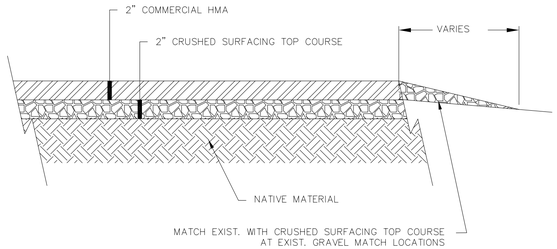
NOTE:
1. GEOTEXILE ENCASED CHECK DAMS SHALL MEET THE REQUIREMENTS OF STANDARD SPECIFICATIONS 8-01.3(A) & 9-14.5(4).
2. GEOTEXILE MATERIAL SHALL MEET THE REQUIREMENTS OF 9-33.2(1), TABLE 6.

KILE EDWARD CARRICO
STATE OF WASHINGTON
50768
REGISTERED PROFESSIONAL ENGINEER
7/8/15

GEOTEXTILE-ENCASED CHECK DAM

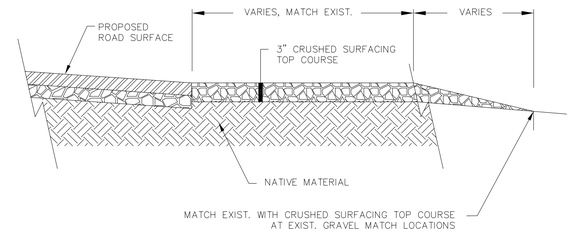
NTS

BID SET	DESIGNED BY KEC DRAWN BY RWG CHECKED BY DLB	R&E Reichhardt & Ebe ENGINEERING INC P.O. Box 978 | 423 Front Street, Lynden, WA 98264 (360) 354-3687 813 Metcalf Street, Sedro-Woolley, WA 98284 (360) 855-1713	NO. | DATE | DESCRIPTION | BY	CITY OF BLAINE 1200 YEW AVENUE BLAINE, WA 98230	VISTA TERRACE SANITARY SEWER IMPROVEMENTS, PHASE 2 DETAILS	DWG 11012.2 DETAILS JOB# 11012.2 SCALE H: N/A V: N/A	DATE 7/8/2015 SHEET 12 of 19



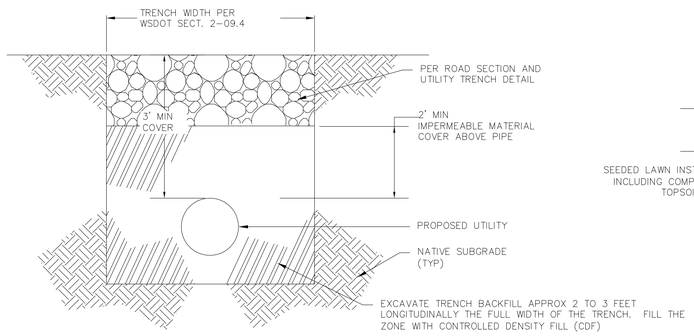
ASPHALT APRON AREA

NTS



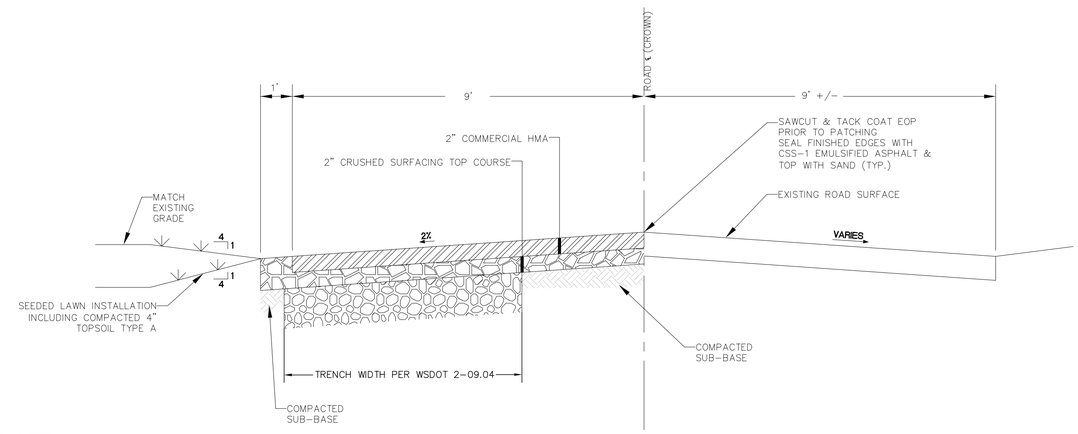
GRAVEL SHOULDER / DRIVEWAY

NTS



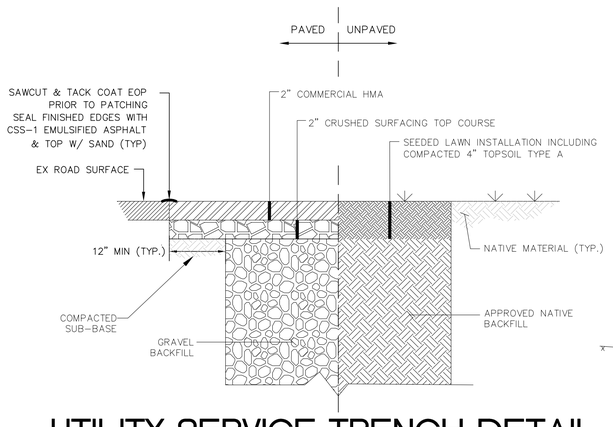
SEEPAGE COLLAR

NTS



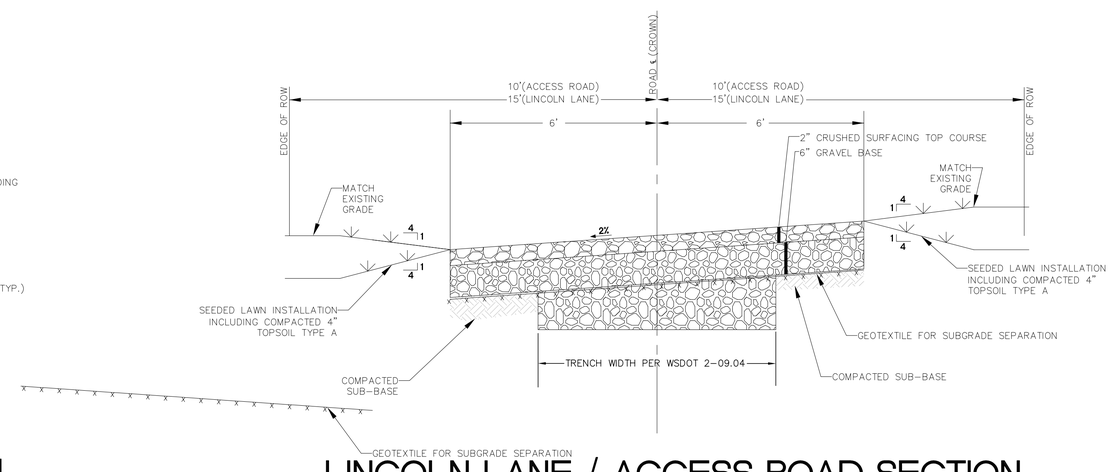
VISTA TERRACE / TERRACE AVE SECTION

NTS



UTILITY SERVICE TRENCH DETAIL

NTS

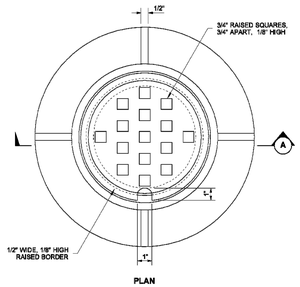


LINCOLN LANE / ACCESS ROAD SECTION

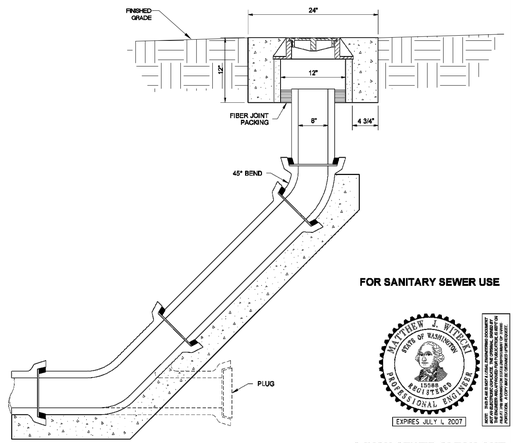
NTS

BID SET	DESIGNED BY KEC DRAWN BY RWG CHECKED BY DLB	R&E Reichhardt & Ebe ENGINEERING INC P.O. Box 978 | 423 Front Street, Lynden, WA 98264 (360) 354-3687 813 Metcalf Street, Sedro-Woolley, WA 98284 (360) 855-1713	NO.	DATE	DESCRIPTION	BY	CITY OF BLAINE 1200 YEW AVENUE BLAINE, WA 98230	VISTA TERRACE SANITARY SEWER IMPROVEMENTS, PHASE 2 DETAILS	DWG 11012.2 DETAILS JOB# 11012.2	SCALE H: N/A V: N/A	DATE 7/8/2015 SHEET 13 of 19

DRAWN BY: ADAM COCHRAN



CAST IRON RING AND COVER



FOR SANITARY SEWER USE

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8 INCH SEWER CLEAN-OUT

STANDARD PLAN B-85.40-00

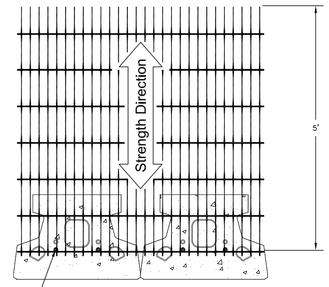
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

Harold J. Peterfeso 06-08-06

STAFF DESIGN ENGINEER DATE

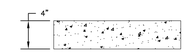
Washington State Department of Transportation



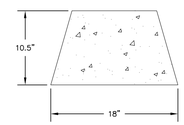
Geogrid is to be Placed on Level Backfill and Extended Over the 1/2" x 5-1/4" Fiberglass Pins.
Place Next Unit.
Pull Grid Taught and Backfill.
Stake as required.

Grid & Pin Connection

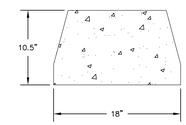
Cap Unit Elevation



Cap Unit Elevation



Cap Unit Plan



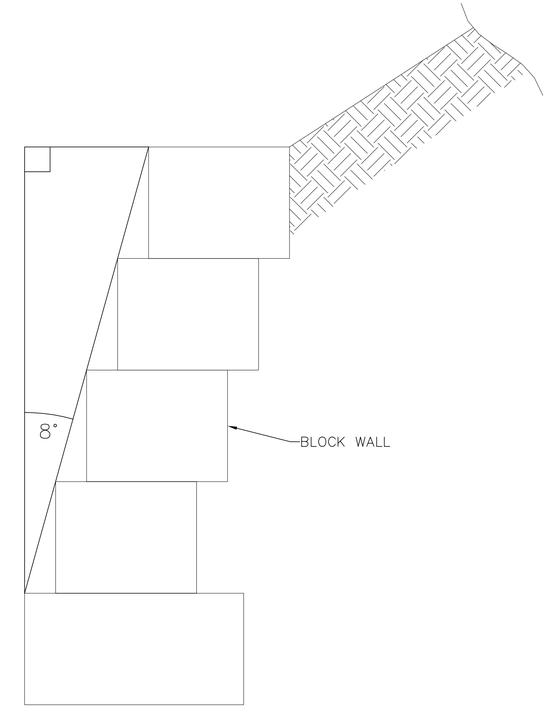
Cap Unit Plan

Universal
Cap Unit Option
* Dimensions & Availability Will Vary by Region

Straight Split
Cap Unit Option
* Dimensions & Availability Will Vary by Region

BLOCK WALL RETAINING WALL

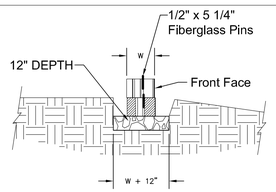
NTS



(NOTE: WALL DETAILS NOT SHOWN FOR CLARITY.)

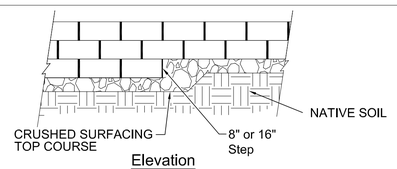
TYPICAL BATTER AT BLOCK WALLS

NTS



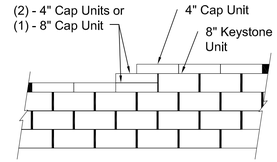
Section

Leveling Pad Detail



Elevation

TYPICAL GRAVITY AND BLOCK WALL

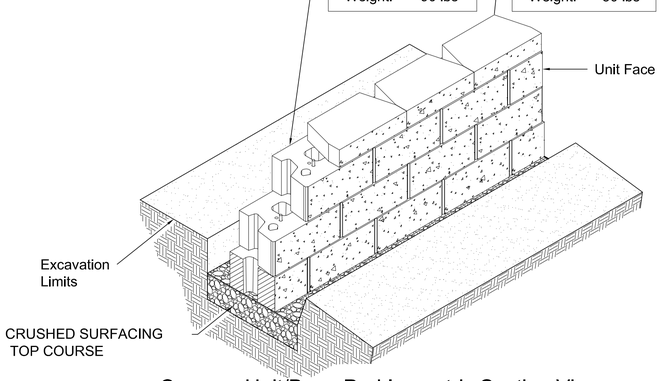


Note:
1. Secure all cap units with Keystone Kapseal or equal.

Top of Gravity and Block Wall Steps

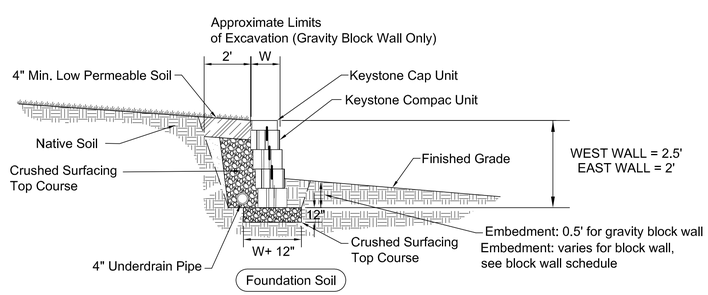
Compac Unit	
Width:	18"
*Depth:	12"
Height:	8"
*Weight:	90 lbs

Cap Unit	
Width:	18"
*Depth:	10 1/2"
Height:	4"
*Weight:	50 lbs



Compac Unit/Base Pad Isometric Section View

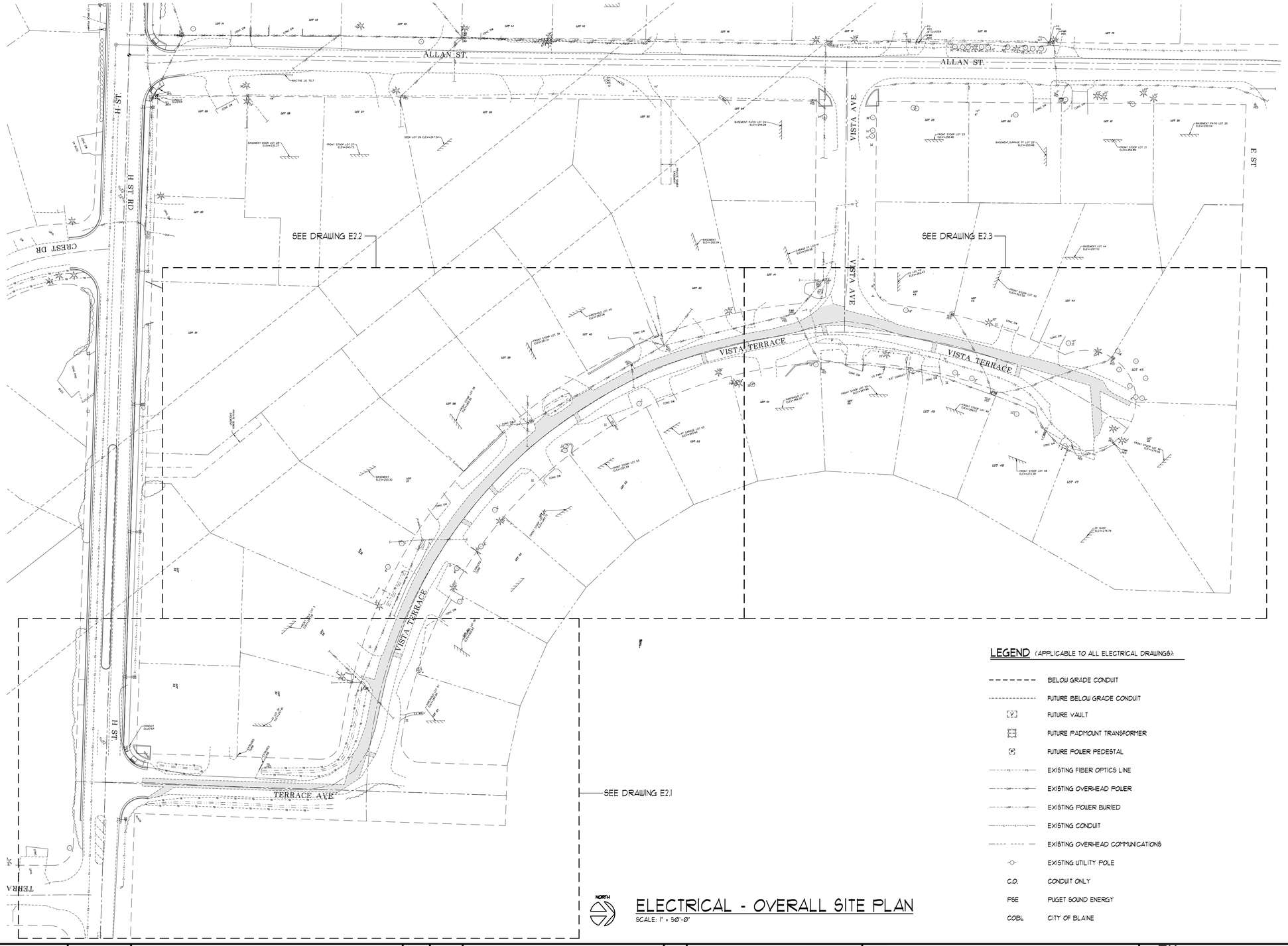
* Dimensions & Weight May Vary by Region



TYPICAL GRAVITY AND BLOCK WALL

NTS

BID SET	DESIGNED BY KEC DRAWN BY RWG CHECKED BY DLB	R&E Reichhardt & Ebe ENGINEERING INC P.O. Box 978 | 423 Front Street, Lynden, WA 98264 (360) 354-3687 813 Metcalf Street, Sedro-Woolley, WA 98284 (360) 855-1713	NO. / DATE / DESCRIPTION / BY	CITY OF BLAINE 1200 YEW AVENUE BLAINE, WA 98230	VISTA TERRACE SANITARY SEWER IMPROVEMENTS, PHASE 2 DETAILS	DWG 11012.2 DETAILS JOB# 11012.2 SCALE H: N/A V: N/A	DATE 7/8/2015 SHEET 14 of 19



LEGEND (APPLICABLE TO ALL ELECTRICAL DRAWINGS)

- - - - - -	BELOW GRADE CONDUIT
- - - - - - - - - -	FUTURE BELOW GRADE CONDUIT
V	FUTURE VAULT
	FUTURE PADMOUNT TRANSFORMER
P	FUTURE POWER PEDESTAL
—FO—	EXISTING FIBER OPTICS LINE
—OH—	EXISTING OVERHEAD POWER
—UG—	EXISTING POWER BURIED
—CO—	EXISTING CONDUIT
- - - - - -	EXISTING OVERHEAD COMMUNICATIONS
-O-	EXISTING UTILITY POLE
C.O.	CONDUIT ONLY
PSE	PUGET SOUND ENERGY
COBL	CITY OF BLAINE

NORTH

ELECTRICAL - OVERALL SITE PLAN

SCALE: 1" = 50'-0"

STEVEN B. TEVEBAUGH
STATE OF WASHINGTON
41903
REGISTERED PROFESSIONAL ENGINEER
6-23-15

K ENGINEERS INC.
208 Third Street
Lynden, WA. 98264
Bus. (360) 354-4757
FAX (360) 354-6794

BID SET

DESIGNED BY STV
DRAWN BY KL
CHECKED BY STV

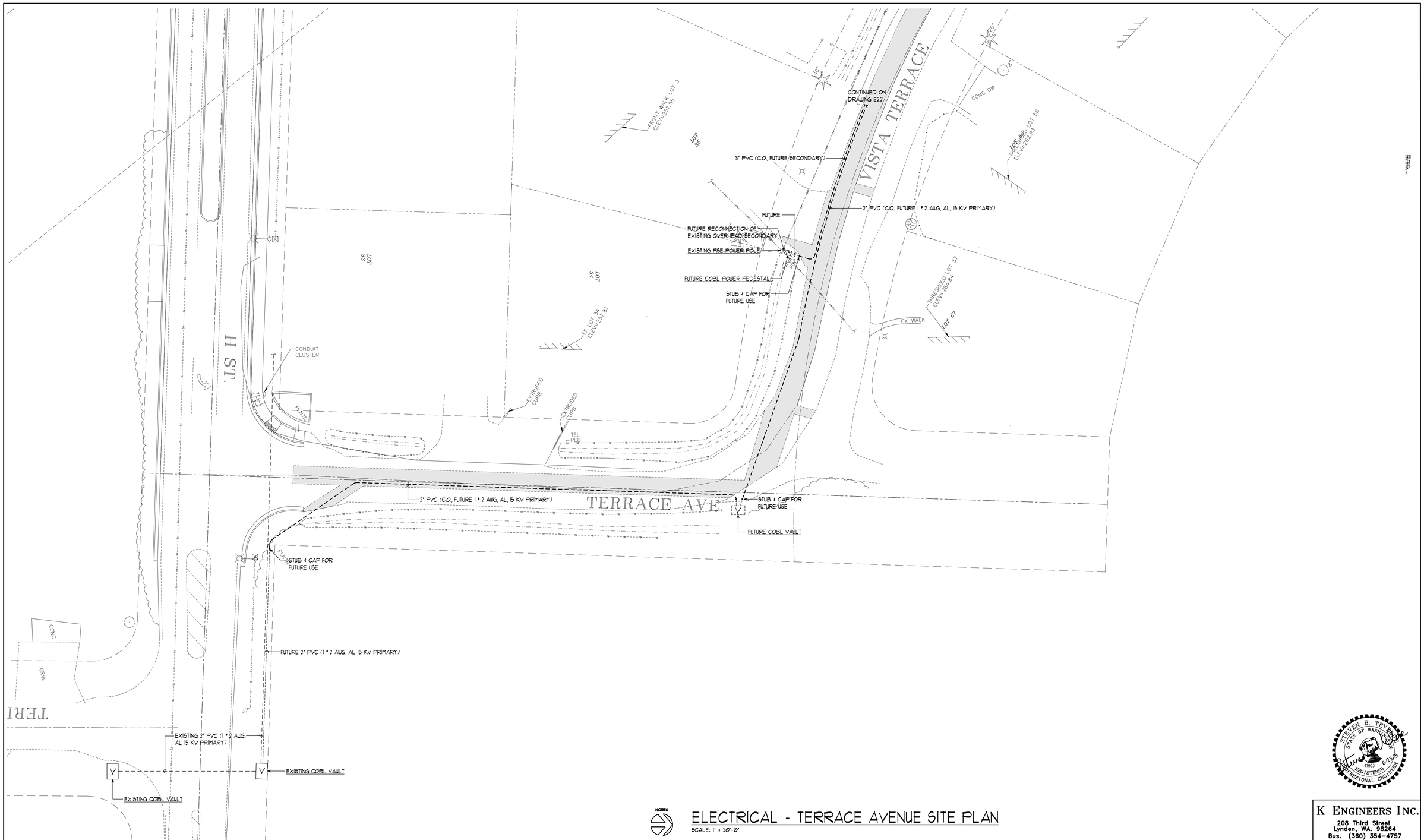
R&E Reichhardt & Ebe ENGINEERING INC
P.O. Box 978 | 423 Front Street, Lynden, WA 98264 (360) 354-3687
813 Metcalf Street, Sedro-Woolley, WA 98284 (360) 855-1713

NO.	DATE	DESCRIPTION	BY

CITY OF BLAINE
1200 YEW AVENUE
BLAINE, WA 98230

VISTA TERRACE SANITARY SEWER IMPROVEMENTS, PHASE 2
ELECTRICAL - OVERALL SITE PLAN

DWG E1.1
JOB# 1694
SCALE H: V:
DATE 6/23/2015
SHEET 15 of 19



NORTH

ELECTRICAL - TERRACE AVENUE SITE PLAN

SCALE: 1" = 20'-0"

STEVEN B. TEVEBAUGH — STATE OF WASHINGTON — 41903 — 6/23/15 — REGISTERED PROFESSIONAL ENGINEER

K ENGINEERS INC.
208 Third Street
Lynden, WA. 98264
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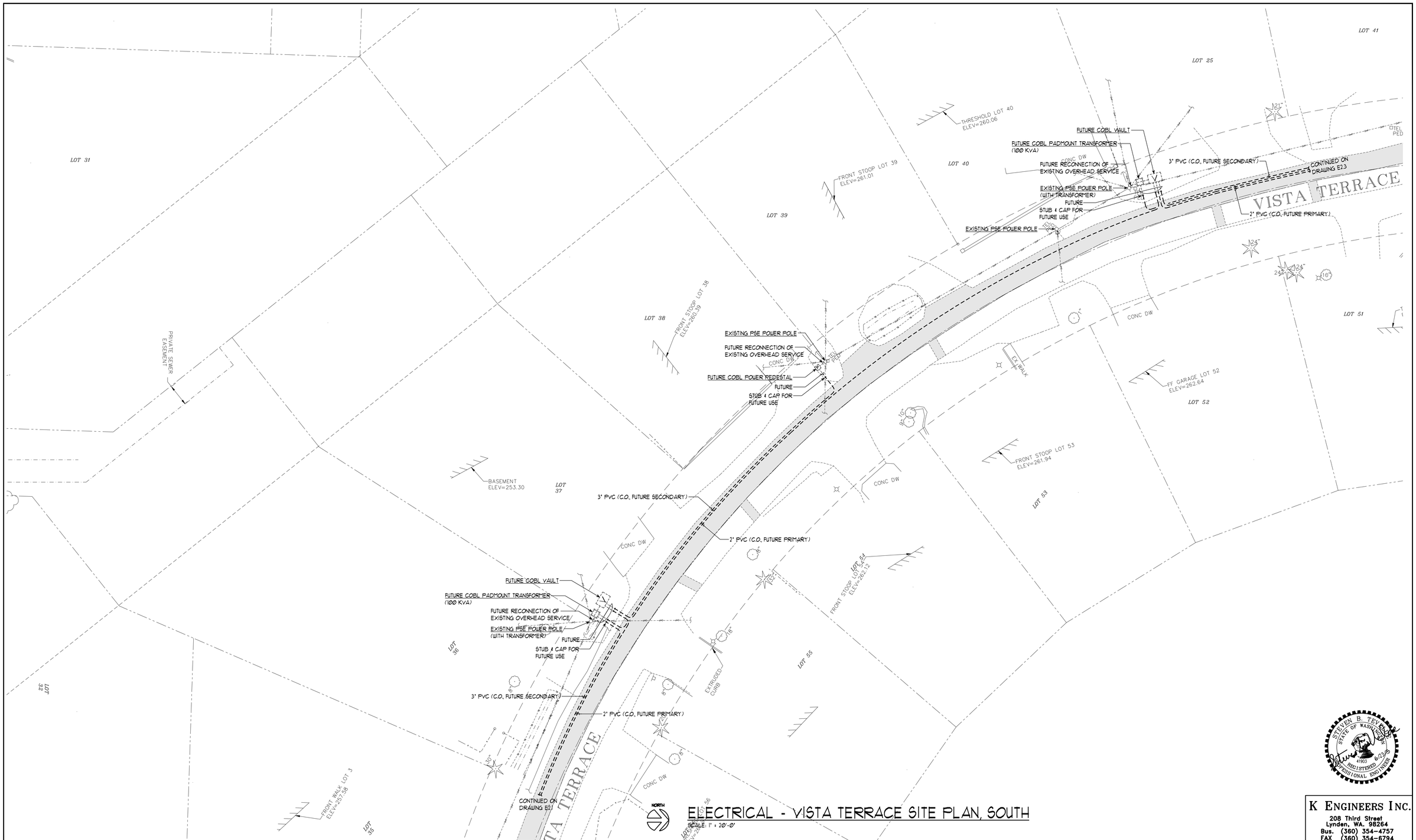
BID SET	DESIGNED BY STV DRAWN BY KL CHECKED BY STV	R&E Reichhardt & Ebe ENGINEERING INC P.O. Box 978 | 423 Front Street, Lynden, WA 98264 (360) 354-3687 813 Metcalf Street, Sedro-Woolley, WA 98284 (360) 855-1713	NO.	DATE	DESCRIPTION	BY	CITY OF BLAINE 1200 YEW AVENUE BLAINE, WA 98230	VISTA TERRACE SANITARY SEWER IMPROVEMENTS, PHASE 2 ELECTRICAL - TERRACE AVENUE SITE PLAN	DWG E2.1 JOB# 1694 SCALE H: V:	DATE 6/23/2015 SHEET 16 of 19

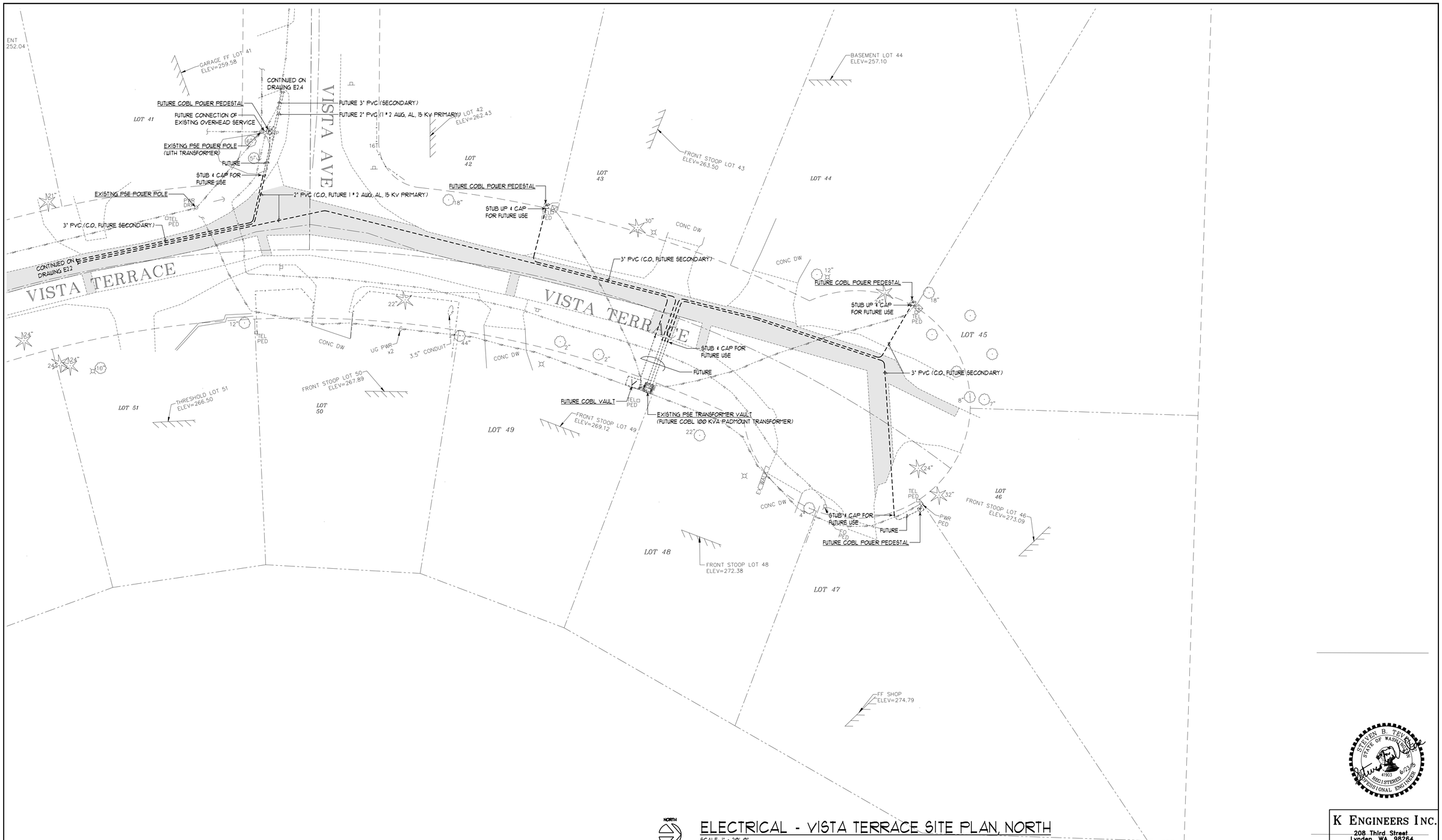


ELECTRICAL - VISTA TERRACE SITE PLAN, SOUTH

SCALE: 1" = 20'-0"

K ENGINEERS INC.
208 Third Street
Lynden, WA. 98264
Bus. (360) 354-4757
FAX (360) 354-6794

BID SET	DESIGNED BY STV DRAWN BY KL CHECKED BY STV	R&E Reichhardt & Ebe ENGINEERING INC P.O. Box 978 | 423 Front Street, Lynden, WA 98264 (360) 354-3687 813 Metcalf Street, Sedro-Woolley, WA 98284 (360) 855-1713	NO.	DATE	DESCRIPTION	BY	CITY OF BLAINE 1200 YEW AVENUE BLAINE, WA 98230	VISTA TERRACE SANITARY SEWER IMPROVEMENTS, PHASE 2 ELECTRICAL -VISTA TERRACE SITE PLAN, SOUTH	DWG E2.2 JOB# 1694 SCALE H: V:	DATE 6/23/2015 SHEET 17 of 19



ELECTRICAL - VISTA TERRACE SITE PLAN, NORTH

SCALE: 1" = 20'-0"

STEVEN B. TEVEL — STATE OF WASHINGTON — 41903 — REGISTERED PROFESSIONAL ENGINEER — 6-23-15

K ENGINEERS INC.
208 Third Street
Lynden, WA. 98264
Bus. (360) 354-4757
FAX (360) 354-6794

BID SET

DESIGNED BY	STV
DRAWN BY	KL
CHECKED BY	STV

R&E Reichhardt & Ebe ENGINEERING INC
P.O. Box 978 | 423 Front Street, Lynden, WA 98264 (360) 354-3687
813 Metcalf Street, Sedro-Woolley, WA 98284 (360) 855-1713

NO.	DATE	DESCRIPTION	BY

CITY OF BLAINE
1200 YEW AVENUE
BLAINE, WA 98230

VISTA TERRACE SANITARY SEWER IMPROVEMENTS, PHASE 2

ELECTRICAL - VISTA TERRACE SITE PLAN, NORTH

DWG	DATE
E2.3	6/23/2015

JOB#	SCALE	SHEET
1694	H: V:	18 of 19

SPECIFICATIONS:

1. THE GENERAL, SUPPLEMENTARY AND OTHER CONDITIONS OF THE CONTRACT, MODIFICATIONS TO THE GENERAL CONDITIONS, THE DRAWINGS, AND THE APPLICABLE PROVISIONS OF THE OTHER DIVISIONS ARE HEREBY MADE A PART OF THIS DIVISION AND ALL ITS SECTIONS.

2. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL ELECTRICAL WORK.

3. COORDINATE ELECTRICAL WORK WITH RELATED WORK SHOWN AND SPECIFIED ELSEWHERE.

4. WORK INCLUDED: THE CONTRACTOR SHALL PERFORM ALL THE WORK REQUIRED (INCLUDING THE FURNISHING OF ALL SUPERVISION, LABOR, SERVICES, TOOLS, MATERIALS AND EQUIPMENT AND THE PERFORMANCE OF ALL OPERATIONS AND INCIDENTALS NECESSARY) FOR A COMPLETE, SAFE AND RELIABLE ELECTRICAL INSTALLATION, ADUSTED, TESTED AND READY FOR OPERATION. THE ELECTRICAL WORK IS GENERALLY DESCRIBED AS FOLLOWS:

   A. PRIMARY AND SECONDARY ELECTRICAL CONDUITS FOR FUTURE CONNECTION WITH CITY OF BLAINE. (INCLUDING ALL NECESSARY COORDINATION WITH THE UTILITY)
   B. PULL STRINGS AND ROPES.
   C. CUTTING, TRENCHING, BACKFILLING AND PATCHING TO MATCH EXISTING FOR UNDERGROUND ELECTRICAL WORK.
   D. TEMPORARY CONSTRUCTION POWER AND LIGHTING.
   E. OBTAINING AND PAYING FOR ALL REQUIRED LICENSES, PERMITS, INSPECTIONS AND FEES.

5. EXISTING UTILITIES, CONDUITS, WATERLINES, ETC., INDICATED ON THE PLANS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES, PROTECT EXISTING UTILITIES AS REQUIRED, AND REPAIR ANY DAMAGE TO EXSITING UTILITIES (KNOWN OR UNKNOWN, LOCATED OR NOT LOCATED) RESULTING FROM CONTRACTOR'S OPERATIONS WITHOUT INCREASE IN CONTRACT SUM.

6. EXISTING CONDITIONS: BEFORE SUBMITTING BID, EXAMINE EXISTING SITE AND EQUIPMENT CONDITIONS TO DETERMINE EFFECT ON EXECUTION OF THE ELECTRICAL WORK AND INCLUDE COSTS IN BID.

7. THE CONTRACTOR SHALL COORDINATE THE WORK AND COOPERATE WITH THE OWNER, OTHER TRADES, AND SYSTEM CONTRACTORS TO HAVE THE WORK COMPLETED TO THE BEST ADVANTAGE, INSURE THERE ARE NO INTERFERENCES, PROVIDE REASONABLE OPPORTUNITY FOR THE OTHER TRADES AND CONTACTORS TO COMPLETE THEIR WORK AND TO NOT DELAY THE WORK.

8. WORK UNDER THIS PROJECT WILL BE UNDERTAKEN WITH EXISTING SYSTEMS IN FULL OPERATION.

9. CONTRACTOR SHALL COORDINATE WORK TO AVOID DISTURBANCE TO HOMEOWNER'S OPERATIONS AND PERSONNEL, AND TO ALLOW ACCESS FOR BOTH PERSONS AND VEHICLES ACCESS TO THE PARCELS.

10. ANY AND ALL COSTS INCURRED FOR NON-STANDARD HOURS, DOUBLE SHIFTS, OVERTIME, ETC. OR ANY OTHER COSTS ASSOCIATED WITH COMPLETING THE PROJECT WITHIN THE COMPLETION TIMES REQUIRED SHALL BE INCLUDED WITHOUT INCREASE IN CONTRACT SUM.

11. THE COMPLETED INSTALLATION SHALL BE DONE IN A NEAT & WORKMANLIKE MANNER, SHALL BE SUITABLE FOR THE LOCATION, AND SHALL BE IN ACCORDANCE ALL LAWS, RULES & REGULATIONS IN EFFECT AT THE SITE (INCLUDING THE LATEST EDITIONS OF THE NATIONAL ELECTRICAL CODE, THE WASHINGTON STATE RULES & REGULATIONS FOR INSTALLING ELECTRIC WIRES & EQUIPMENT.

12. ALL SYSTEMS, EQUIPMENT, DEVICES, RACEWAYS, CABLES, ETC. INDICATED ARE NEW UNLESS NOTED OTHERWISE.

13. ALL ELECTRICAL MATERIALS SHALL BE "UL" (UNDERWRITER'S LABORATORIES, INC.) LISTED, LABELED AND APPROVED FOR THE SERVICE INTENDED WHERE UL STANDARDS HAVE BEEN ESTABLISHED.

14. ALL OPERATIONS SHALL BE CONDUCTED IN A MANNER TO AVOID THE RISK OF HARM TO PERSONS OR DAMAGE TO PROPERTY. DAMAGE SHALL IMMEDIATELY BE REPAIRED. CONSTRUCTION EQUIPMENT & TOOLS SHALL BE IN GOOD OPERATING CONDITION, AND BE DESIGNED FOR THE WORK REQUIRED.

15. ALL UTILITY SERVICES SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF RESPECTIVE UTILITY.

16. POWER INTERRUPTIONS (WHETHER TO THE ENTIRE SYSTEM OR TO INDIVIDUAL BUILDINGS) SHALL BE KEPT TO AN ABSOLUTE MINIMUM, AND SHALL NOT BE DONE WITHOUT PRIOR APPROVAL, 2 WEEKS ADVANCED SCHEDULING & COORDINATION MEETING WITH THE OWNER. SECONDARY VERIFICATION THAT POWER INTERUPTION WILL OCCUR IS ALSO REQUIRED 48 HOURS PRIOR TO THE DATE OF OCCURANCE.

17. VERIFY & PAINT ON THE GROUND ALL PROPOSED CONDUIT STUB LOCATIONS, FUTURE VAULTS, TRENCHES, ETC. LOCATIONS WITH THE OWNER & ENGINEER PRIOR TO BEGINNING EXCAVATION & TRENCHING. CHANGES IN LOCATION UP TO 10' (E.G. VAULTS, TRENCH AND CONDUIT ROUTING, ETC.) MADE BEFORE INSTALLATION AND DEVIATIONS TO AVOID INTERFERENCES SHALL BE MADE WITHOUT INCREASE IN CONTRACT SUM.

18. THE CONTRACTOR SHALL OBTAIN, & PAY FOR, ALL REQUIRED ELECTRICAL LICENSES, PERMITS, INSPECTIONS, ETC.

19. DEFINITIONS

   A. THE TERM "CONTRACTOR" USED THROUGHOUT THESE SPECIFICATIONS AND ON THE ELECTRICAL DRAWINGS SHALL BE UNDERSTOOD TO MEAN THE ELECTRICAL CONTRACTOR. ALL OTHER WORK SHALL BE CALLED OUT BY NAME.

   B. "FURNISH" MEANS TO SUPPLY AND DELIVER TO THE PROJECT, READY FOR INSTALLATION AND IN OPERABLE CONDITION.

   C. "INSTALL" MEANS TO INCOPORATE IN THE WORK FINAL POSITION, COMPLETE, ANCHORED, CONNECTED, AND IN OPERABLE CONDITION.

   D. "PROVIDE" MEANS FURNISH AND INSTALL.

   E. F.O.I.C. - FURNISHED BY OTHERS, INSTALLED BY CONTRACTOR.

20. SUBMITTALS

   A. PROVIDE SUBMITTALS TO THE ENGINEER, TOGETHER, AT ONE TIME, IN BOUND FOLDERS WITH TABS AND INDEX FOR EACH SECTION. INDIVIDUAL OR INCOMPLETE SUBMITTALS ARE NOT ACCEPTABLE.

   B. THE ENGINEER WILL REVIEW EACH SUBMITTAL, MARK TO INDICATE ACTION TAKEN, AND RETURN. THE CONTRACTOR SHALL ALLOW 1 1/2 WEEKS FOR ENGINEER REVIEW, MINIMUM. COMPLIANCE WITH SPECIFIED CHACTERISTICS IS THE CONTRACTOR'S RESPONSIBILITY. APPROVAL OF SUBMITTALS DOES NOT RELEASE THE CONTRACTOR FROM A PROPER INSTALLATION, COMPLIANCE WITH THE DRAWINGS, SPECIFICATIONS, CODES, STANDARDS, SITE CONSTRAINTS, ETC. OR COORDINATION OF THE WORK.

   C. PROVIDE SUBMITTALS FOR THE FOLLOWING:

      1. CONDUITS
      2. CONDUIT ELBOWS & FITTINGS.
      3. MARKER TAPE.

21. WIRING METHODS

   A. BELOW GRADE CONDUIT SHALL BE PVC.

   B. BELOW GRADE CONDUIT BENDS OR ELBOWS SHALL BE GALVANIZED RIGID STEEL (GRS) OR FIBERGLASS.

   C. WARNING TAPE SHALL BE BURIED ABOVE ALL CONDUITS.

22. EARTHWORK

   A. THE CONTRACTOR SHALL DO ALL TRENCHING, BACKFILLING, CUTTING, PATCHING, ETC. FOR THE BELOW GRADE ELECTRICAL WORK.

   B. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE CITY OF BLAINE AND ALL UTILITY COMPANIES AND FOR FIELD LOCATION OF ALL UTILITIES PIPES, CONDUITS, 'ETC. BEFORE DOING ANY TRENCHING. THE ONE-CALL NUMBER FOR UNDERGROUND UTILITIES, SERVICES IS 1-800-424-5555. THE CONTRACTOR SHALL PROMPTLY NOTIFY THE ENGINEER OF ANY CONFLICTS BETWEEN THE CONTRACT DOCUMENTS AND FIELD LOCATION OF EXISTING UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF ALL EXISTING UTILITIES DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING &/OR REPLACING (AS REQUIRED) ALL THAT HE DAMAGES.

   C. EXCAVATE TO DEPTHS NOTED, SHORE AND BRACE EXCAVATIONS WHERE NECESSARY TO PREVENT CAVE-INS AND IN ACCORDANCE WITH ALL SAFETY LAWS AND CODES.

   D. PROVIDE A SPOTTER AT ALL TIMES WHEN EXCAVATION OCCURS BY USE OF BACKHOE, EXCAVATOR OR OTHER MECHANICAL EQUIPMENT.

   E. DIRT SHALL NOT BE PERMITTED TO ACCUMULATE ON ROADS, ADJACENT PARCELS, RIGHT OF WAYS NOR TO BE WASHED INTO DRAINAGE DITCHES. ANY DAMAGE TO ADJOINING AREAS SHALL BE REPAIRED/RESTORED TO EXISTING OR BETTER CONDITION TO THE APPROVAL OF THE OWNER AND ENGINEER.

   F. DURING EXCAVATIONS AND BACKFILLING, EXTREME CARE SHALL BE TAKEN TO KEEP ROCKS AND OTHER ROUGH MATERIAL AWAY FROM CONDUITS AND CABLES. PACK A MINIMUM OF 6 INCHES OF SOFT FILL MATERIAL (FREE FROM STONES, ROCKS AND OTHER ROUGH MATERIAL THAT MIGHT BE FORCED AGAINST THE CONDUITS AND CABLES DURING BACKFILLING, OR WHEN SETTLING OR FROST-HEAVING DISTURBS THE SURROUNDING EARTH) AROUND CONDUITS AND CABLES. WASH IN TO AVOID AIR GAPS.

   G. BACKFILL SHALL BE GOOD COMPACTABLE MATERIAL WITHOUT LARGE ROCKS, CHUNKS OR STICKS. BACKFILL IN ALL EXCAVATIONS SHALL BE PROGRESSIVELY COMPACTED IN MAXIMUM 12 INCH LIFTS TO 95% OF MAXIMUM DENSITY, AND SHALL BE WITHOUT VOIDS.

   H. THE CLEARANCE BETWEEN THE UNDERGROUND CONDUIT SYSTEMS AND OTHER UNDERGROUND ITEMS, SUCH AS WATER AND SEWER LINES SHALL BE AS LARGE AS NECESSARY TO PERMIT MAINTENANCE OF ANY OF THE SYSTEMS WITHOUT DAMAGE TO THE OTHER ITEMS. MAINTAIN A MINIMUM OF 12 INCHES FROM CONDUITS, PIPES, ETC. OF OTHER SYSTEMS.

   I. WARNING TAPE: YELLOW 3" WIDE POLYETHYLENE METALIZED WORKING TAPE SHALL BE DIRECT BURIED 12 INCHES ABOVE TOPMOST CONDUITS. TAPES SHALL EXTEND INTO VAULTS AND BE STUBBED UP WITH AND SECURED TO CONDUITS AS REQUIRED FOR ACCESS WHEN TESTING.

   J. CHANGES IN LOCATION UP TO 10' (E.G. EQUIPMENT AND DEVICES, TRENCH AND CONDUIT ROUTING, ETC.) MADE BEFORE INSTALLATION AND DEVIATIONS TO AVOID INTERFERENCES SHALL BE MADE WITHOUT INCREASE IN CONTRACT SUM.

23. RACEWAYS

   A. RACEWAYS SHALL BE SIZED SO THAT THE CABLE FILL DOES NOT EXCEED 40%.

   B. BELOW GRADE CONDUIT SHALL BE SCHEDULE 40 PVC (EXCEPT RISERS & ELBOWS SHALL BE GRS OR FIBERGLASS), DIRECT BURIED MINIMUM OF 24" BELOW GRADE FOR SECONDARY CONDUITS CONTAINING 600V CABLES AND 48" BELOW GRADE FOR PRIMARY CONDUITS CONTAINING 15KV CABLES, WITH MINIMUM 2" SPACING BETWEEN CONDUITS. CONDUIT FITTINGS, COUPLINGS, ETC. SHALL BE OF THE SAME TYPE AND MANUFACTURER AS THE CONDUIT. JOINTS IN UNDERGROUND CONDUIT SYSTEM SHALL BE SOLVENT WELDED TO PREVENT THE ENTRANCE OF MOISTURE.

   C. CONDUIT BENDS AND 90 DEGREE ELBOWS SHALL BE LONG SWEEP TYPE WITH 36" RADIUS, MINIUM.

   D. RIGID STEEL CONDUIT SHALL BE HOT-DIPPED GALVANIZED WITH THREADED COUPLINGS AND CONNECTORS.

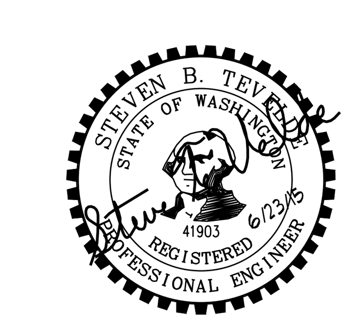
   E. CONDUIT SHALL BE RUN CONCEALED UNLESS NOTED OR INDICATED OTHERWISE.

   F. NO CONDUIT SHALL BEND MORE THAN 270 DEGREES BEFORE THE END OF ITS RUN. BENDS IN CONDUITS SHALL BE MADE WITHOUT FLATTENING, KINKING OR REDUCING THE CROSS-SECTIONAL AREA OF THE CONDUIT. CONDUIT CUTS SHALL BE MADE SQUARE WITH A PROPER CUTTING TOOL. THE INSIDE AND OUTSIDE OF ALL CONDUIT ENDS SHALL BE REAMED TO ELIMINATE BURRS AND ROUGH EDGES, THEN WIPED CLEAN.

   G. SUITABLE BUSHINGS SHALL BE USED ON ALL CONDUIT TERMINATIONS.

   H. CONDUIT SYSTEMS SHALL BE COMPLETE, SNAKED AND CLEANED BEFORE PROVIDING A PULL ROPE.

   I. ALL CONDUITS SHALL HAVE A PULL ROPE PROVIDED AND CAPED WITH A PVC CAP.



K ENGINEERS INC.
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BID SET

DESIGNED BY STV
DRAWN BY KL
CHECKED BY STV

Reichhardt & Ebe ENGINEERING INC
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NO.	DATE	DESCRIPTION	BY

CITY OF BLAINE
1200 YEW AVENUE
BLAINE, WA 98230

VISTA TERRACE SANITARY SEWER IMPROVEMENTS, PHASE 2
ELECTRICAL - SPECIFICATIONS

DWG E3.1
DATE 6/23/2015
JOB# 1694
SCALE H: V: