

# CONSTRUCTION DRAWINGS FINAL CLEANUP ACTION PHASE I

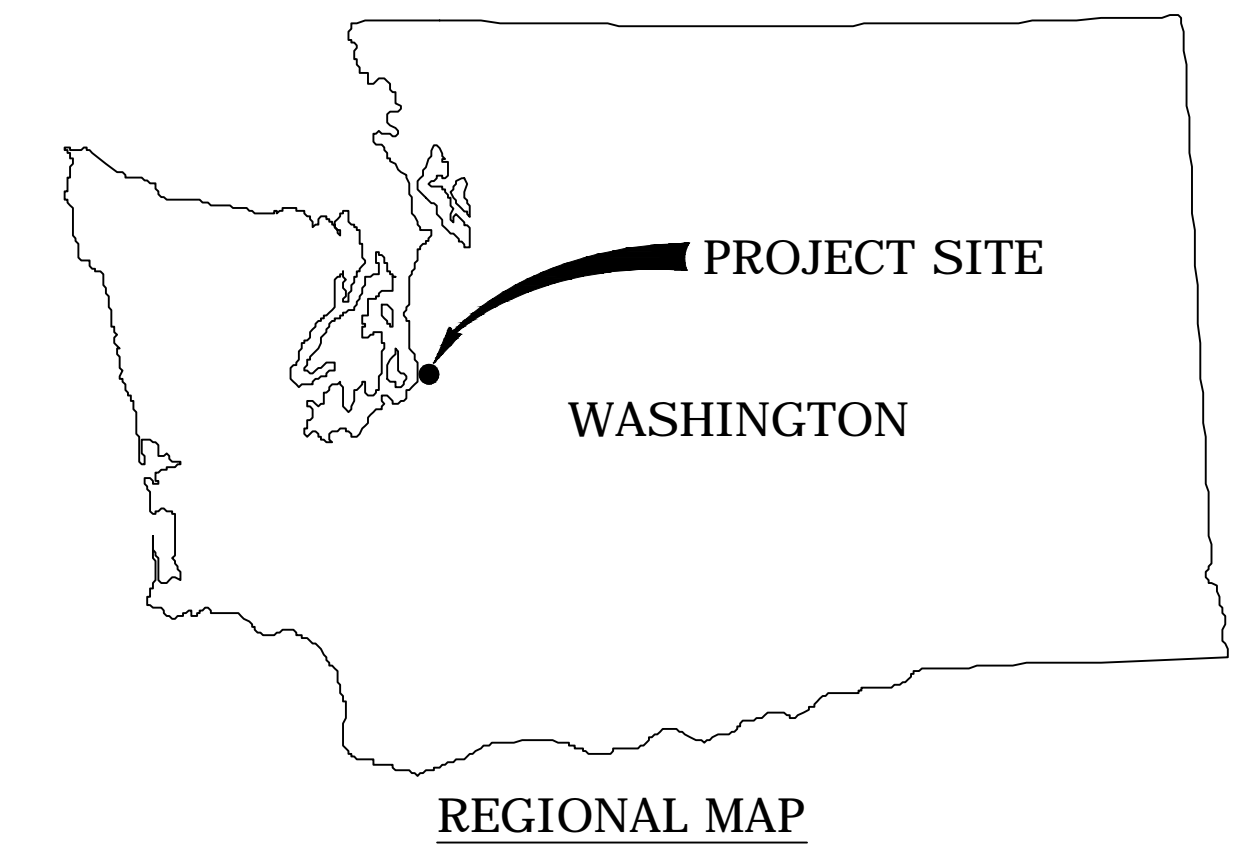
FOR  
BSB DIVERSIFIED, INC. PROPERTY  
8202 S. 200TH STREET, KENT, WASHINGTON

AUGUST 2009  
(REVISED JUNE 2011)

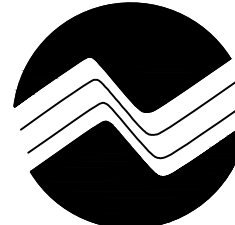
PREPARED FOR:

**BSB DIVERSIFIED, INC.**

C/O BURT GEOLOGY AND ENVIRONMENTAL APPLICATIONS PLLC  
902 GRAPEVINE LANE  
NASHVILLE, TENNESSEE 37221  
PH. (615) 828-6126  
RON BURT (OWNER'S REPRESENTATIVE)



ENVIRONMENTAL ENGINEER:

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Engineering & Environmental Services  
1215 4TH AVENUE - SUITE 1350  
SEATTLE, WASHINGTON 98161  
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BRIAN O'NEAL P.E. (PROJECT MANAGER)

CIVIL ENGINEER:

**VISTA CONSULTANTS, LLC**  
4132 SW BARBUR BLVD.  
PORTLAND, OREGON 97239  
PH. (503) 922-2522  
ROGER NORTH P.E. (PROJECT MANAGER)

STRUCTURAL ENGINEER:

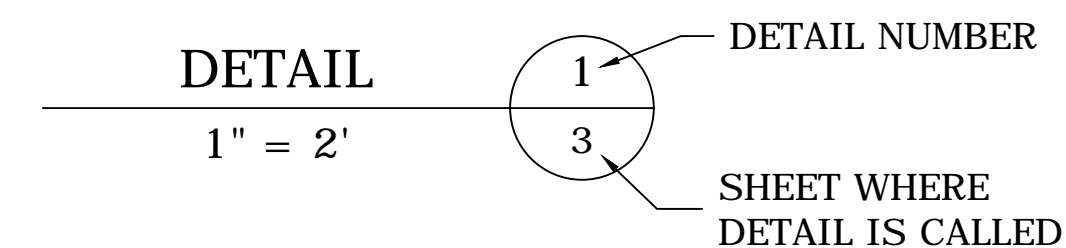
**LIVERMORE ASSOCIATES, INC.**  
140 SW ARTHUR STREET, SUITE 200  
PORTLAND, OREGON 97201  
PH. 503-892-3002  
FX. 503-892-3003  
GARY LIVERMORE P.E. (PROJECT MANAGER)

## Sheet List Table

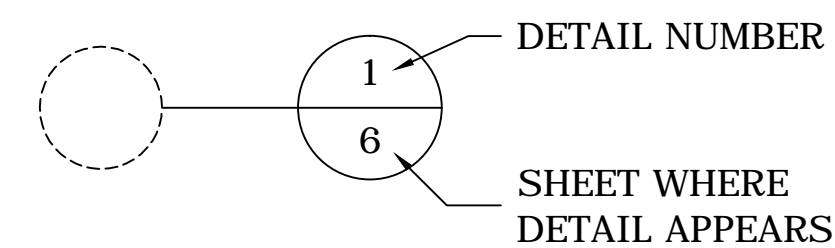
Sheet Number	Sheet Title
1	TITLE PAGE
2	NOTES
3	EXISTING SITE PLAN
4	EROSION CONTROL PLAN
5	ZVI REACTOR VAULT PLAN VIEW
6	REACTOR VAULT PLAN & DETAIL 1
7	REACTOR VAULT SECTIONS A-C
8	REACTOR VAULT SECTIONS D-E

## DETAIL INDICATOR:

SHEET WHERE DETAIL IS SHOWN:

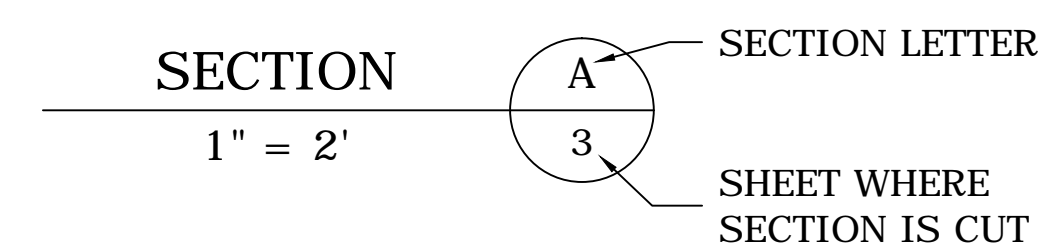


SHEET WHERE DETAIL IS CALLED:

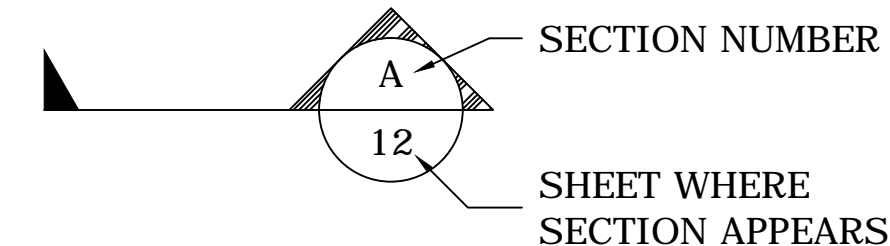


## SECTION INDICATOR:

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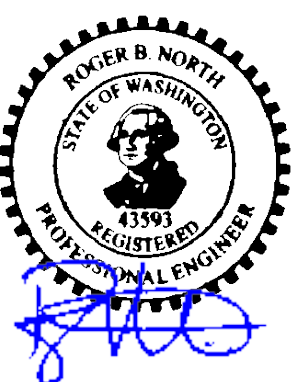
SHEET WHERE SECTION IS CUT:



## ABBREVIATIONS:

AC	ACRES	FT	FEET
BLDG	BUILDING	G.B.	GRADE BREAK
¢	CENTERLINE	GALV	GALVANIZED
CO	CLEANOUT	HORIZ	HORIZONTAL
DIA or Ø	DIAMETER	HP	HIGH POINT
DWG	DRAWING	ID	INSIDE DIAMETER
E	EAST	I.E.	INVERT ELEVATION
EL or ELEV	ELEVATION	L	LENGTH
FT	FEET	L.F.	LINEAR FEET
H or h	HEIGHT	N	NORTH
HDPE	HIGH DENSITY POLYETHYLENE	N.I.C.	NOT IN CONTRACT
E	EAST	OD	OUTSIDE DIAMETER
EL OR ELEV	ELEVATION	ℓ	PROPERTY LINE
EXIST OR EX	EXISTING	S	SLOPE IN FEET/FOOT
		TYP	TYPICAL

APPROVED:



ENGINEER OF RECORD - ROGER B. NORTH, P.E.

6/10/11  
DATE

C:\CIVIL 3D PROJECTS\BSB\PRODUCTION DRAWINGS\PHASE 1 CLEANUP DRAWINGS\LEGEND AND NOTES.DWG PLOTTED: 6/20/2011 9:25 AM ON ANSI FULL BLEED D (22.00 X 34.00 INCHES)

**GENERAL NOTES:**

- CONTRACTOR SHALL PROCURE AND CONFORM TO ALL CONSTRUCTION PERMITS REQUIRED BY THE CITY. OWNER TO PAY ALL PROJECT PERMIT COSTS. CONTRACTOR SHALL PROVIDE OWNER 48 HOURS NOTICE PRIOR TO REQUIRING PAYMENT FOR PERMITS.
- THE CONTRACTOR SHALL PERFORM ALL WORK NECESSARY TO COMPLETE THE PROJECT IN ACCORDANCE WITH THE APPROVED CONSTRUCTION DRAWINGS INCLUDING SUCH INCIDENTALS AS MAY BE NECESSARY TO MEET APPLICABLE AGENCY REQUIREMENTS AND PROVIDE A COMPLETED PROJECT.
- ANY INSPECTION BY THE CITY OR OTHER AGENCIES SHALL NOT, IN ANY WAY, RELIEVE THE CONTRACTOR FROM ANY OBLIGATION TO PERFORM THE WORK IN STRICT COMPLIANCE WITH THE CONTRACT DOCUMENTS, APPLICABLE CODES AND AGENCY REQUIREMENTS.
- CONTRACTOR SHALL ERECT AND MAINTAIN BARRICADES, WARNING SIGNS, TRAFFIC CONES PER CITY REQUIREMENTS IN ACCORDANCE WITH THE MUTCD (INCLUDING WASHINGTON AMENDMENTS). ACCESS TO DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES. ALL TRAFFIC CONTROL MEASURES SHALL BE APPROVED AND IN PLACE PRIOR TO ANY CONSTRUCTION ACTIVITY.
- CONTRACTOR SHALL BE LICENSED WITH THE CONSTRUCTION CONTRACTOR BOARD.
- ELEVATIONS ARE BASED ON NAVD 1988 DATUM.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MANAGING CONSTRUCTION ACTIVITIES TO ENSURE THAT PUBLIC STREETS AND RIGHT-OF-WAYS ARE KEPT CLEAN OF MUD, DUST OR DEBRIS. DUST ABATEMENT SHALL BE MAINTAINED BY ADEQUATE WATERING OF THE SITE BY THE CONTRACTOR.

**EXISTING UTILITIES & FACILITIES:**

- CONTRACTOR SHALL PROTECT EXISTING GROUNDWATER TREATMENT FACILITIES AND EQUIPMENT. ANY DAMAGE TO SAME WILL BE REPAIRED BY CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL MAINTAIN ONE COMPLETE SET OF APPROVED DRAWINGS ON THE CONSTRUCTION SITE AT ALL TIMES WHEREON HE WILL RECORD ANY APPROVED DEVIATIONS IN CONSTRUCTION FROM THE APPROVED DRAWINGS, AS WELL AS THE STATION LOCATIONS AND DEPTHS OF ALL EXISTING UTILITIES ENCOUNTERED. THESE FIELD RECORD DRAWINGS SHALL BE KEPT UP TO DATE AT ALL TIMES AND SHALL BE AVAILABLE FOR INSPECTION BY THE OWNER UPON REQUEST. FAILURE TO CONFORM TO THIS REQUIREMENT MAY RESULT IN DELAY OF PAYMENT AND/OR FINAL ACCEPTANCE OF THE PROJECT.
- UPON COMPLETION OF CONSTRUCTION OF ALL NEW FACILITIES, CONTRACTOR SHALL SUBMIT A CLEAN SET OF FIELD RECORD DRAWINGS CONTAINING ALL AS-BUILT DRAWINGS TO THE OWNER FOR USE IN THE PREPARATION OF AS-BUILT DRAWINGS. ALL INFORMATION SHOWN ON THE CONTRACTORS FIELD RECORD DRAWINGS SHALL BE SUBJECT TO VERIFICATION BY THE ENGINEER. IF SIGNIFICANT ERRORS OR DEVIATIONS ARE NOTED BY THE ENGINEER, AN AS-BUILT SURVEY PREPARED AND STAMPED BY A REGISTERED PROFESSIONAL LAND SURVEYOR AND/OR QUALIFIED ENGINEER SHALL BE COMPLETED AT THE CONTRACTOR'S EXPENSE.
- THE LOCATION AND DESCRIPTIONS OF EXISTING UTILITIES SHOWN ON THE DRAWING, ARE COMPILED FROM AVAILABLE RECORDS AND/OR FIELD SURVEYS. THE ENGINEER OR UTILITY COMPANIES DO NOT GUARANTEE THE ACCURACY OR THE COMPLETENESS OF SUCH RECORDS. CONTRACTOR SHALL FIELD VERIFY LOCATIONS AND SIZES OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL LOCATE AND MARK ALL EXISTING PROPERTY AND STREET MONUMENTS PRIOR TO CONSTRUCTION. ANY MONUMENTS DISTURBED DURING CONSTRUCTION OF THE PROJECT SHALL BE REPLACED BY A REGISTERED LAND SURVEYOR AT THE CONTRACTORS EXPENSE.
- CONTRACTOR SHALL FIELD VERIFY LOCATION AND DEPTH OF ALL EXISTING UTILITIES WHERE NEW FACILITIES CROSS. CONTRACTOR SHALL BE RESPONSIBLE FOR EXPOSING POTENTIAL UTILITY CONFLICTS FAR ENOUGH AHEAD OF CONSTRUCTION TO MAKE NECESSARY CONSTRUCTION MODIFICATIONS WITHOUT DELAYING THE WORK.
- ALL FACILITIES SHALL BE MAINTAINED IN-PLACE BY THE CONTRACTOR UNLESS OTHERWISE SHOWN OR DIRECTED. CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO SUPPORT, MAINTAIN, OR OTHERWISE PROTECT EXISTING UTILITIES AND OTHER FACILITIES AT ALL TIMES DURING CONSTRUCTION. CONTRACTOR TO LEAVE EXISTING MONITORING WELLS, AND OTHER FACILITIES IN AN EQUAL OR BETTER-THAN-ORIGINAL CONDITION AND TO THE SATISFACTION OF THE OWNER.
- UTILITIES OR INTERFERING PORTIONS OF UTILITIES THAT ARE ABANDONED IN PLACE SHALL BE REMOVED BY THE CONTRACTOR TO THE EXTENT NECESSARY TO ACCOMPLISH THE WORK. THE CONTRACTOR SHALL PLUG THE REMAINING EXPOSED ENDS OF ABANDONED UTILITIES.
- ALL PIPED UTILITIES ABANDONED IN PLACE SHALL HAVE ALL OPENINGS CLOSED WITH CONCRETE PLUGS WITH A MINIMUM LENGTH EQUAL TO 2 TIMES THE DIAMETER OF THE ABANDONED PIPE.
- ANY WELLS TO BE DECOMMISSIONED SHALL BE ABANDONED PER STATE REQUIREMENTS.

**TESTING AND INSPECTION**

- THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT ALL REQUIRED OR NECESSARY INSPECTIONS ARE COMPLETED BY THE OWNER'S AUTHORIZED INSPECTORS PRIOR TO PROCEEDING WITH SUBSEQUENT WORK WHICH COVERS OR THAT IS DEPENDENT ON THE WORK TO BE INSPECTED. FAILURE TO OBTAIN NECESSARY INSPECTION(S) AND APPROVAL(S) SHALL RESULT IN THE CONTRACTOR BEING FULLY RESPONSIBLE FOR ALL PROBLEMS ARISING FROM UNINSPECTED WORK.

**GRADING, & DRAINAGE:**

- CLEAR AND GRUB WITHIN WORK LIMITS ALL SURFACE VEGETATION, TREES, STUMPS, BRUSH, ETC.
- ALL TREES, BRUSH AND DEBRIS ASSOCIATED WITH CLEARING, STRIPPING OR GRADING SHALL BE REMOVED AND DISPOSED OF OFF-SITE.

- UNLESS OTHERWISE SHOWN ON THE DRAWINGS, STRAIGHT GRADES SHALL BE RUN BETWEEN ALL FINISH GRADE ELEVATIONS AND/OR FINISH CONTOUR LINES SHOWN.
- FINISH PAVEMENT GRADES AT TRANSITION IN EXISTING PAVEMENT SHALL MATCH EXISTING PAVEMENT GRADES OR BE FEATHERED PAST JOINTS WITH EXISTING PAVEMENT AS REQUIRED TO PROVIDE A SMOOTH, FREE DRAINING SURFACE.
- ALL EXISTING OR CONSTRUCTED MANHOLES, CLEANOUTS, MONUMENTS, GAS VALVES, WATER VALVES AND SIMILAR STRUCTURES SHALL BE ADJUSTED TO MATCH FINISH GRADES OF THE PAVEMENT, SIDEWALK, LANDSCAPED AREA OR MEDIAN STRIP WHEREIN THEY LIE.
- UNLESS OTHERWISE SHOWN ON THE DRAWINGS, NO CUT OR FILL SLOPES SHALL BE CONSTRUCTED STEEPER THAN 2H: 1V.

**UTILITIES:**

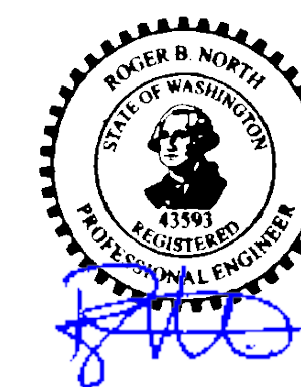
- THE END OF ALL UTILITY STUBS SHALL BE MARKED WITH A 2X4 COLOR CODED TAG WIRED TO THE PIPE STUB.
- ALL NON-METALLIC WATER, SANITARY AND STORM SEWER PIPING SHALL HAVE 14 GAUGE COLOR CODED TRACER WIRE INSTALLED AS PER CITY OF KENT DETAILS.
- SANITARY SEWER LATERALS TO BE RUN TO EDGE OF R.O.W. AT 1/4" PER 12" SLOPE. LATERALS TO BE INSTALLED DOWNSTREAM OF MAINLINE CLEAN OUTS AND/OR MANHOLES. ALL CATCH BASINS TO HAVE 8" PVC. SDR-35 LATERALS. CATCH BASIN LOCATION MAY BE MODIFIED TO ACCOMMODATE LOW SPOTS CREATED DURING CONSTRUCTION. ENGINEER AND/OR CITY PROJECT MANAGER MAY REQUIRE ADDITIONAL CATCH BASINS TO BE PLACED AT LOW SPOTS CREATED DURING CONSTRUCTION.
- CONTRACTOR TO MAKE MINOR ADJUSTMENT TO SERVICE LOCATIONS, WHERE NECESSARY, TO AVOID CONFLICT. MAINTAIN 5' MINIMUM SEPARATION BETWEEN STORM AND SANITARY AND 10' MIN. SEPARATION BETWEEN SANITARY AND WATER, 1' TO MANHOLES OR CATCH BASINS AND 5' BETWEEN MANHOLES AND CATCH BASINS. MAINTAIN 1' VERTICAL AND 2' HORIZONTAL SEPARATION BETWEEN CITY AND PRIVATE FRANCHISE UTILITY SERVICES AND 2' HORIZONTAL SEPARATION BETWEEN CITY UTILITIES IN A COMMON TRENCH.

**WATER SYSTEM:**

- CITY FORCES TO OPERATE ALL VALVES INCLUDING FIRE HYDRANTS ON EXISTING PUBLIC MAINS.
- ALL WATER SUPPLY PIPE SHALL BE PVC C-900 COLORED BLUE THROUGHOUT THE ENTIRE COMPOSITION OF THE PIPE. ALL FITTINGS SHALL BE DUCTILE IRON FITTINGS IN CONFORMANCE WITH AWWA C-153 AND NSF 61. THE MINIMUM WORKING PRESSURE FOR ALL MJ CAST IRON OR DUCTILE IRON FITTINGS 4-INCHES THROUGH 24-INCH IN DIAMETER SHALL BE 350 PSI FOR MJ FITTING AND 250 PSI FOR FLANGED FITTINGS.
- MATERIALS THAT COME INTO CONTACT WITH POTABLE WATER SHALL MEET NATIONAL SANITATION FOUNDATION STANDARD 61, SECTION 9 REQUIREMENTS.
- ALL WATER MAINS TO BE INSTALLED WITH A MINIMUM 36 INCH COVER TO FINISH GRADE UNLESS OTHERWISE NOTED OR DIRECTED. SERVICE LINE TO BE INSTALLED WITH A MINIMUM 24 INCH COVER.

**VALVES IN ZVI REACTOR VESSEL:**

- FURNISH AND INSTALL COMPLETE VALVE ASSEMBLIES FOR INLET AND OUTLET PIPES.
- VALVES SHALL BE TYPE 57 BUTTERFLY VALVES MANUFACTURED BY ASAHI-AMERICA.
- VALVES SHALL BE 4-INCH NOMINAL DIAMETER.
- VALVES SHALL BE LEVER-OPERATED BUTTERFLY VALVES WITH TWO-PIECE STEM AND HOUSING EXTENSIONS.
- STEM AND HOUSING EXTENSIONS SHALL BE SUPPORTED TO WALL OF ZVI REACTOR VESSEL.
- VALVE LEVER HANDLES SHALL HAVE PROVISION FOR A PADLOCK.
- VALVE LEVERS TO BE POSITIONED AT LOCATIONS OPERABLE FROM THE ACCESS DOOR THROUGH THE TOP OF THE REACTOR VESSEL.
- VALVES SHALL BE SUPPLIED WITH FLANGES AT EACH END FOR CONNECTION TO FLANGES ON ENDS OF ADJACENT 4-INCH DIAMETER SDR 17 HDPE PIPE.
- MANUFACTURERS OTHER THAN ASAHI-AMERICA SHALL BE ISO-9001 CERTIFIED AND SHALL PROVIDE DOCUMENTATION THAT PROPOSED PRODUCT IS AT LEAST EQUIVALENT TO SPECIFIED PRODUCT.



REDUCTION SCALE CHECK

**VISTA CONSULTANTS, LLC**  
 4132 SW BARBUR BLVD.  
 PORTLAND, OREGON 97239  
 (503) 922-2522  
**PROJECT NO. 11-13**

REV	DATE	REVISION DESCRIPTION	DES	DRN	APP
1	05/28/09	PHASE I REVIEW	RN	STM	RN
1	06-10-11	CHANGE ORDER #8	RN	STM	RN

SCALE:  
**AS SHOWN**

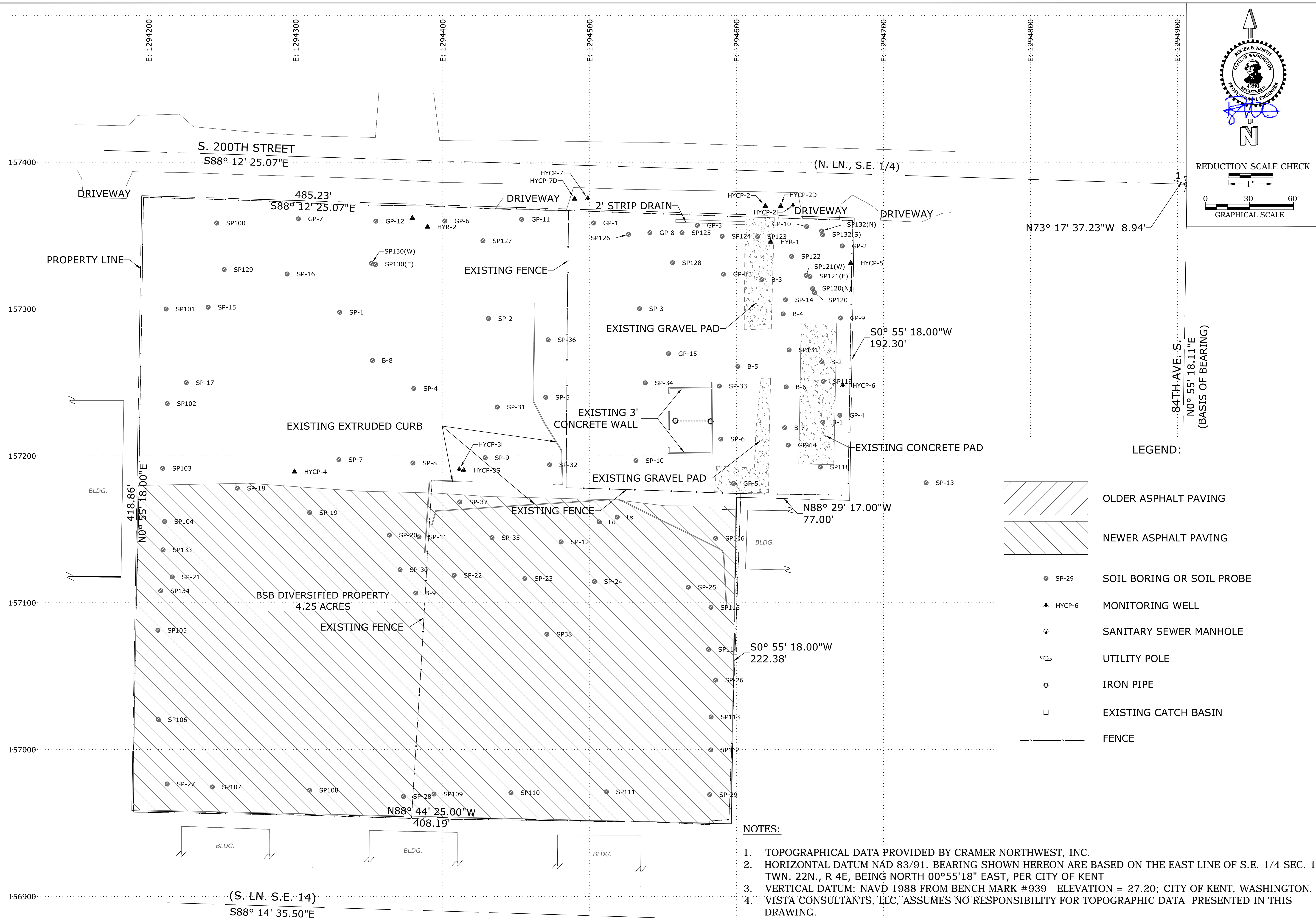
DATE: 6/20/2011

**FINAL CLEANUP ACTION**  
 VAULT CONSTRUCTION DRAWINGS  
 BSB DIVERSIFIED, INC. PROPERTY  
 KENT, WASHINGTON  
**NOTES**

DRAWING NO.

**2** OF 14

C:\CIVIL\3D PROJECTS\BSB\PRODUCTION DRAWINGS\PHASE 1 CLEANUP DRAWINGS\EXISTING SITE PLAN.DWG PLOTTED: 6/20/2011 9:25 AM ON ANSI FULL BLEED D (22.00 X 34.00 INCHES)



REDUCTION SCALE CHECK

1" = 60'

GRAPHICAL SCALE

0 30' 60'

STATE OF WASHINGTON  
REGISTERED PROFESSIONAL ENGINEER  
VISTA CONSULTANTS, LLC

**VISTA CONSULTANTS, LLC**  
4132 SW BARBUR BLVD.  
PORTLAND, OREGON 97239  
(503) 922-2522

PROJECT NO. 11-13

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1	05/28/09	PHASE I REVIEW	RN	STM	RN
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SCALE: AS SHOWN

DATE: 6/20/2011

- LEGEND:
- OLDER ASPHALT PAVING
  - NEWER ASPHALT PAVING
  - SOIL BORING OR SOIL PROBE
  - MONITORING WELL
  - SANITARY SEWER MANHOLE
  - UTILITY POLE
  - IRON PIPE
  - EXISTING CATCH BASIN
  - FENCE

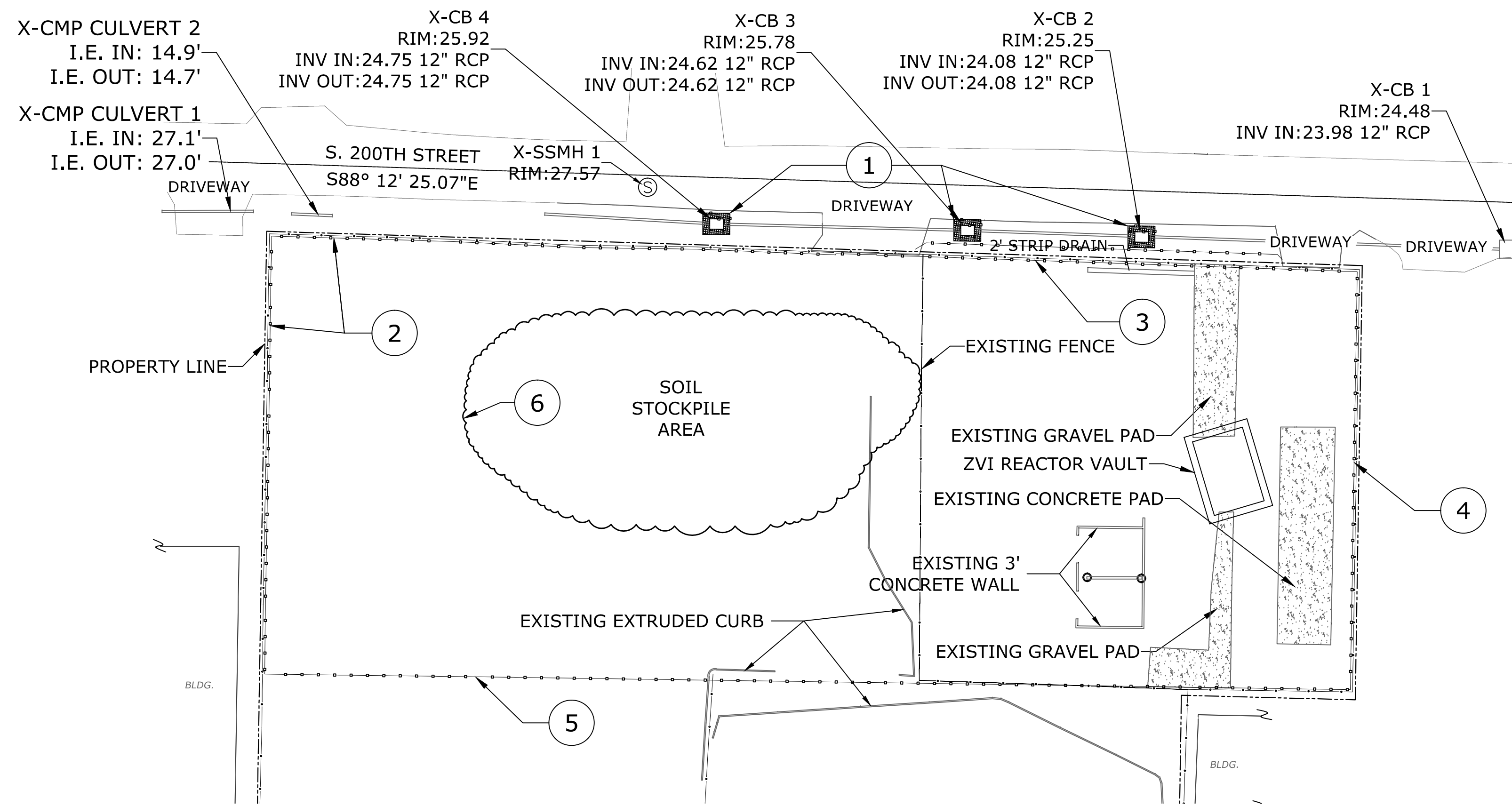
- NOTES:
- TOPOGRAPHICAL DATA PROVIDED BY CRAMER NORTHWEST, INC.
  - HORIZONTAL DATUM NAD 83/91. BEARING SHOWN HEREON ARE BASED ON THE EAST LINE OF S.E. 1/4 SEC. 1, TWN. 22N., R 4E, BEING NORTH 00°55'18" EAST, PER CITY OF KENT
  - VERTICAL DATUM: NAVD 1988 FROM BENCH MARK #939 ELEVATION = 27.20; CITY OF KENT, WASHINGTON.
  - VISTA CONSULTANTS, LLC, ASSUMES NO RESPONSIBILITY FOR TOPOGRAPHIC DATA PRESENTED IN THIS DRAWING.

FINAL CLEANUP ACTION  
VAULT CONSTRUCTION DRAWINGS  
BSB DIVERSIFIED, INC. PROPERTY  
KENT, WASHINGTON

**EXISTING SITE PLAN**

DRAWING NO. **3** OF 14

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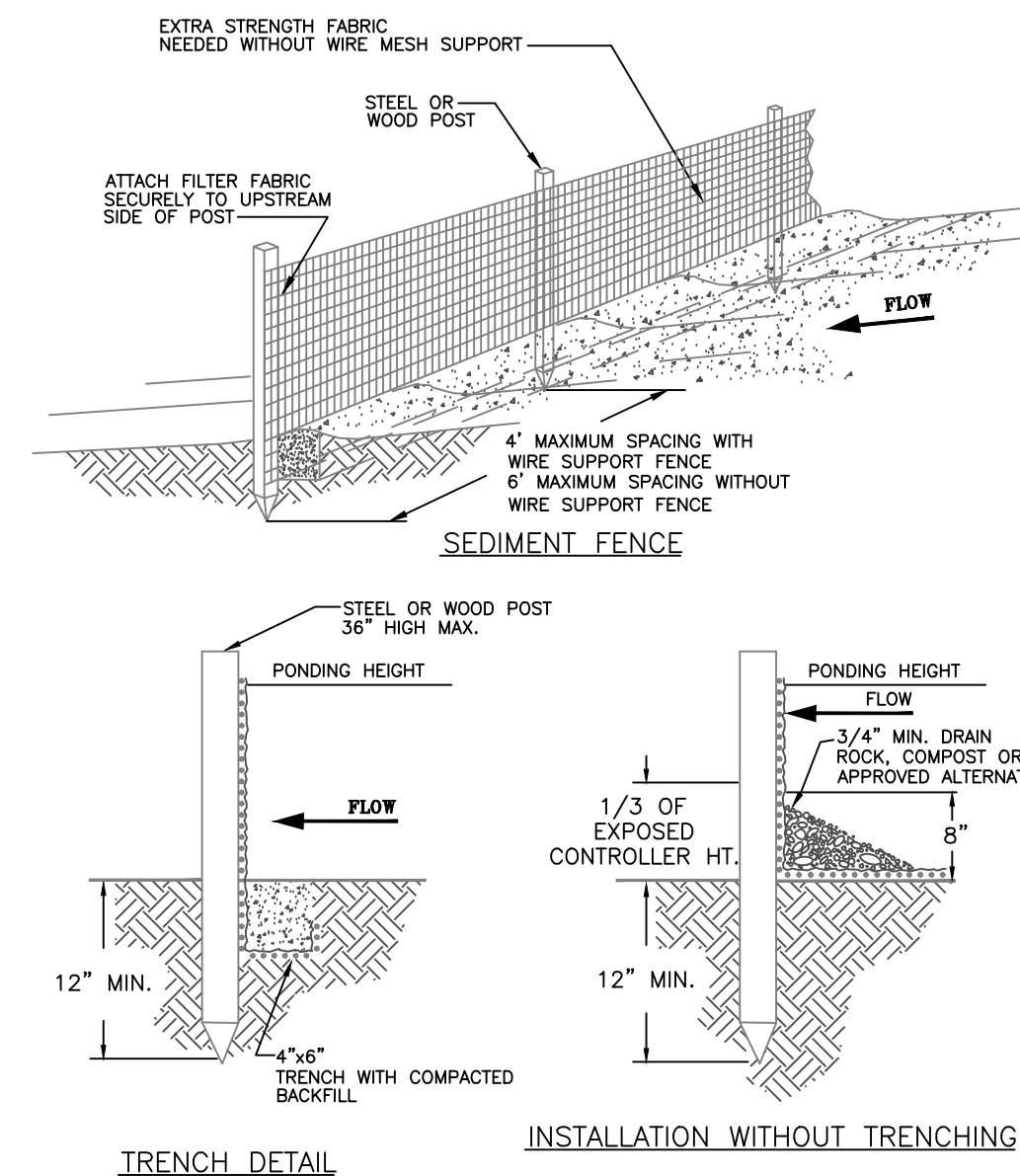


**EROSION CONTROL NOTES:**

- SILT FABRIC SHALL BE PLACED OVER THE CATCH BASIN INLETS SO THAT NO SEDIMENT WILL ACCUMULATE IN THE CATCH BASINS.
- THE CONTRACTOR SHALL INSPECT SITE AND ENTRANCE DRIVEWAY DAILY AND WASH AS NEEDED SO THAT NO SEDIMENT IS WASHED OR CARRIED OFF-SITE.
- THE IMPLEMENTATION OF THESE ESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE APPLICANT/CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED.
- THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS.
- THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT LEAVE THE SITE.
- THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/CONTRACTOR AND MAINTAINED AS NECESSARY.
- STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.

**NOTES FOR SEDIMENT FENCES:**

- THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL AND SHALL 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 6-INCH OVERLAP, AND BOTH ENDS SECURELY FASTENED TO THE POST, OR OVERLAP 2" X 2" POSTS AND ATTACHED AS SHOWN ON DETAIL.
- THE FILTER FABRIC FENCE SHALL BE INSTALLED TO FOLLOW THE CONTOURS WHERE FEASIBLE. THE FENCE POSTS SHALL BE SPACED A MAXIMUM OF 6 FEET APART AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 18 INCHES.
- THE FILTER FABRIC SHALL HAVE A MINIMUM VERTICAL BURIAL OF 6 INCHES. ALL EXCAVATED MATERIAL FROM FILTER FABRIC FENCE INSTALLATION SHALL BE BACKFILLED AND COMPACTED ALONG THE ENTIRE DISTURBED AREA.
- STANDARD OR HEAVY DUTY FILTER FABRIC FENCE SHALL HAVE MANUFACTURED STITCHED LOOPS FOR 2" X 2" POST INSTALLATION. STITCHED LOOPS SHALL BE INSTALLED ON THE UPHILL SIDE OF THE SLOPED AREA.
- FILTER FABRIC FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY PROTECTED AND STABILIZED.
- FILTER FABRIC FENCES SHALL BE INSPECTED BY APPLICANT/CONTRACTOR IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.



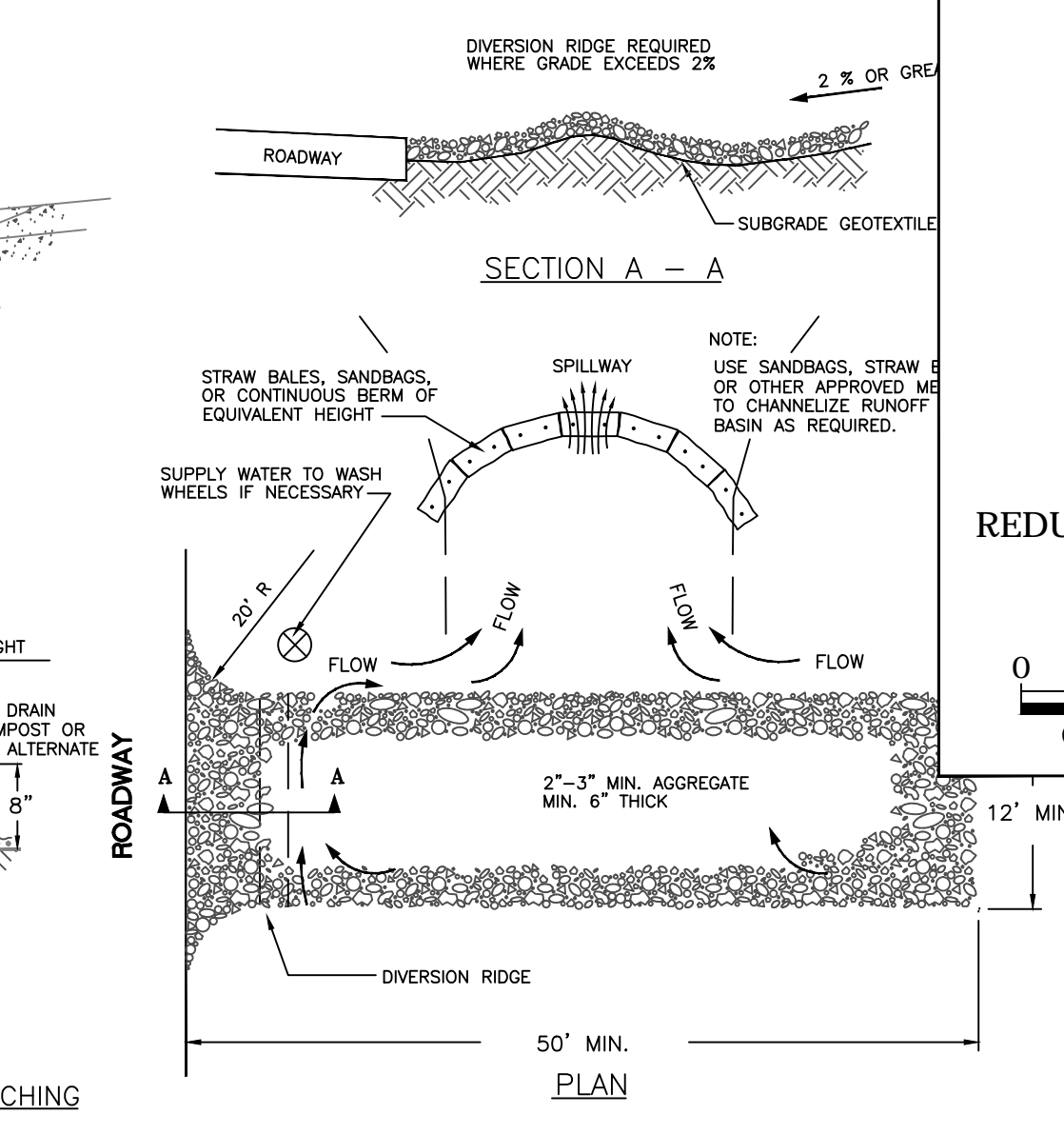
- NOTES:**
- SEDIMENT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
  - INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN IT EXCEEDS 1/3 THE EXPOSED HEIGHT OF CONTROLLER STORAGE DEPTH.
  - REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.

**CONSTRUCTION NOTES:**

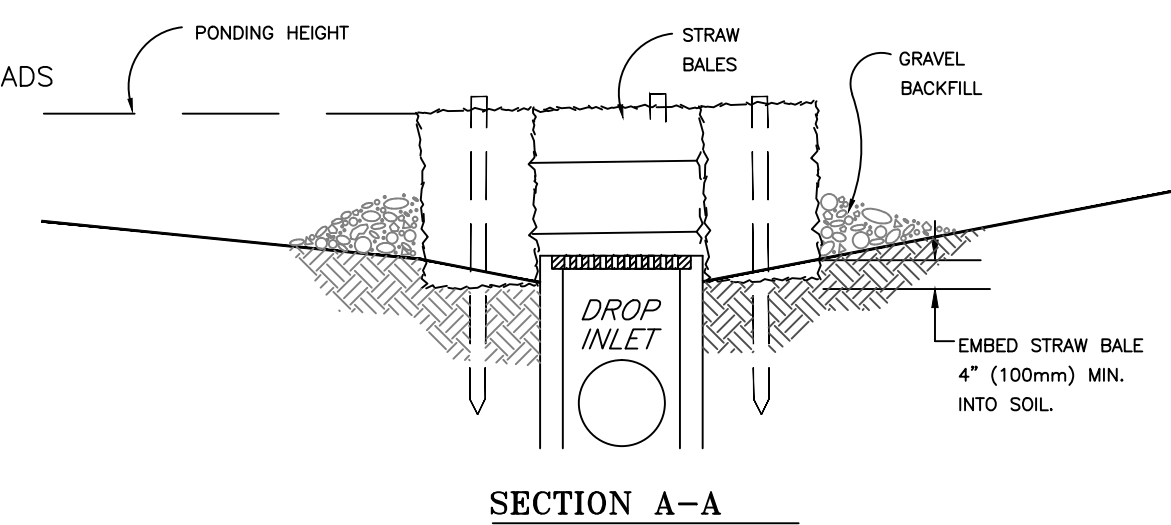
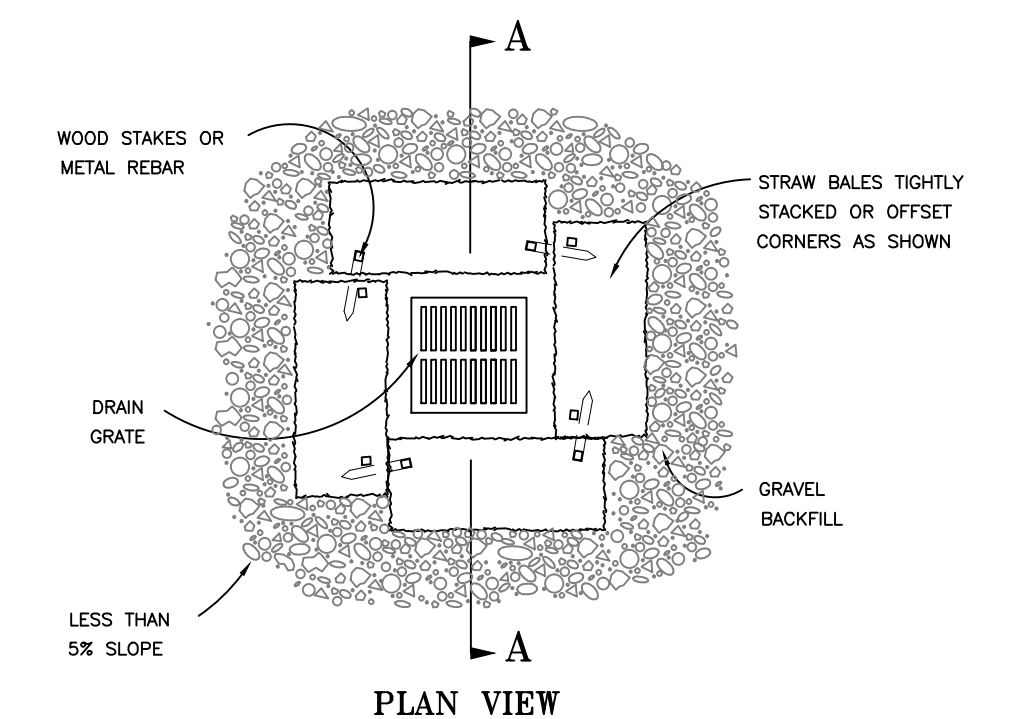
- INSTALL STRAW BALE/GRAVEL DROP INLET SEDIMENT BARRIER
- INSTALL 430 LF SILT FENCE
- INSTALL 190 LF SILT FENCE
- INSTALL 190 LF SILT FENCE
- INSTALL 480 LF SILT FENCE
- INSTALL STRAW BALES AROUND SOIL STOCKPILE AREA. ALL STOCKPILED SOILS SHALL BE COVERED DAILY.

**OTHERS NOTES:**

- CLEAR AND GRUB ALL VEGETATION
- REMOVE FENCES, CURBS, WALLS AND CONCRETE PADS

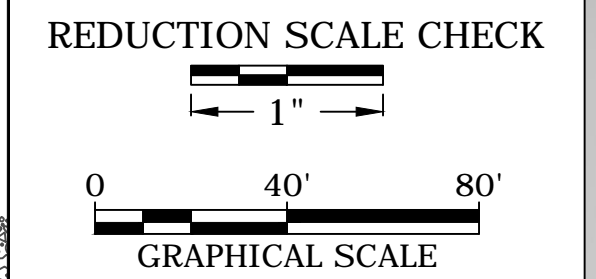


- NOTES:**
- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
  - WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
  - WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.



**NOTES:**

- DROP INLET SEDIMENT BARRIERS ARE TO BE USED FOR SMALL, NEARLY LEVEL DRAINAGE AREAS. (LESS THAN 5%).
- EMBED THE BALES 4" (100mm) INTO THE SOIL AND OFFSET CORNERS OR PLACE BALES WITH ENDS TIGHTLY ABUTTING. GRAVEL BACKFILL WILL PREVENT EROSION OR FLOW AROUND THE BALES. STRAW BALE/GRAVEL DROP INLET SEDIMENT BARRIER.
- THE TOP OF THE STRUCTURE (PONDING HEIGHT) MUST BE WELL BELOW THE GROUND ELEVATION. DOWNSLOPE TO PREVENT RUNOFF FROM BYPASSING THE INLET. EXCAVATION OF A BASIN ADJACENT TO THE DROP INLET OR A TEMPORARY DIKE ON THE DOWNSLOPE OF THE STRUCTURE MAY BE NECESSARY.



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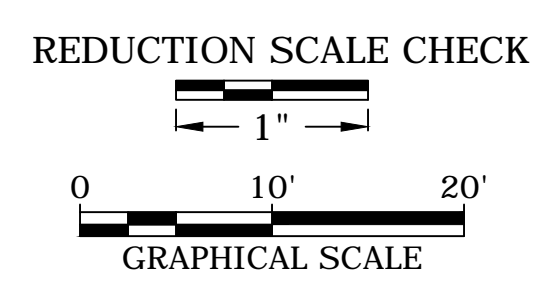
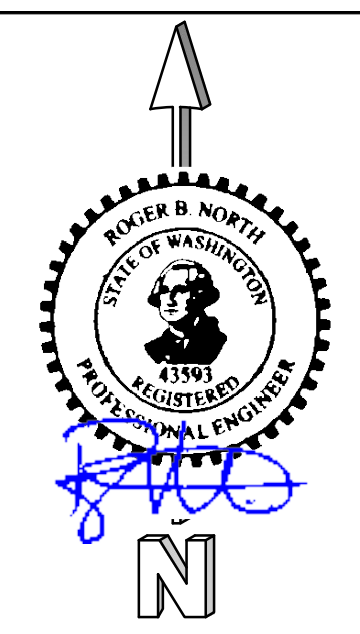
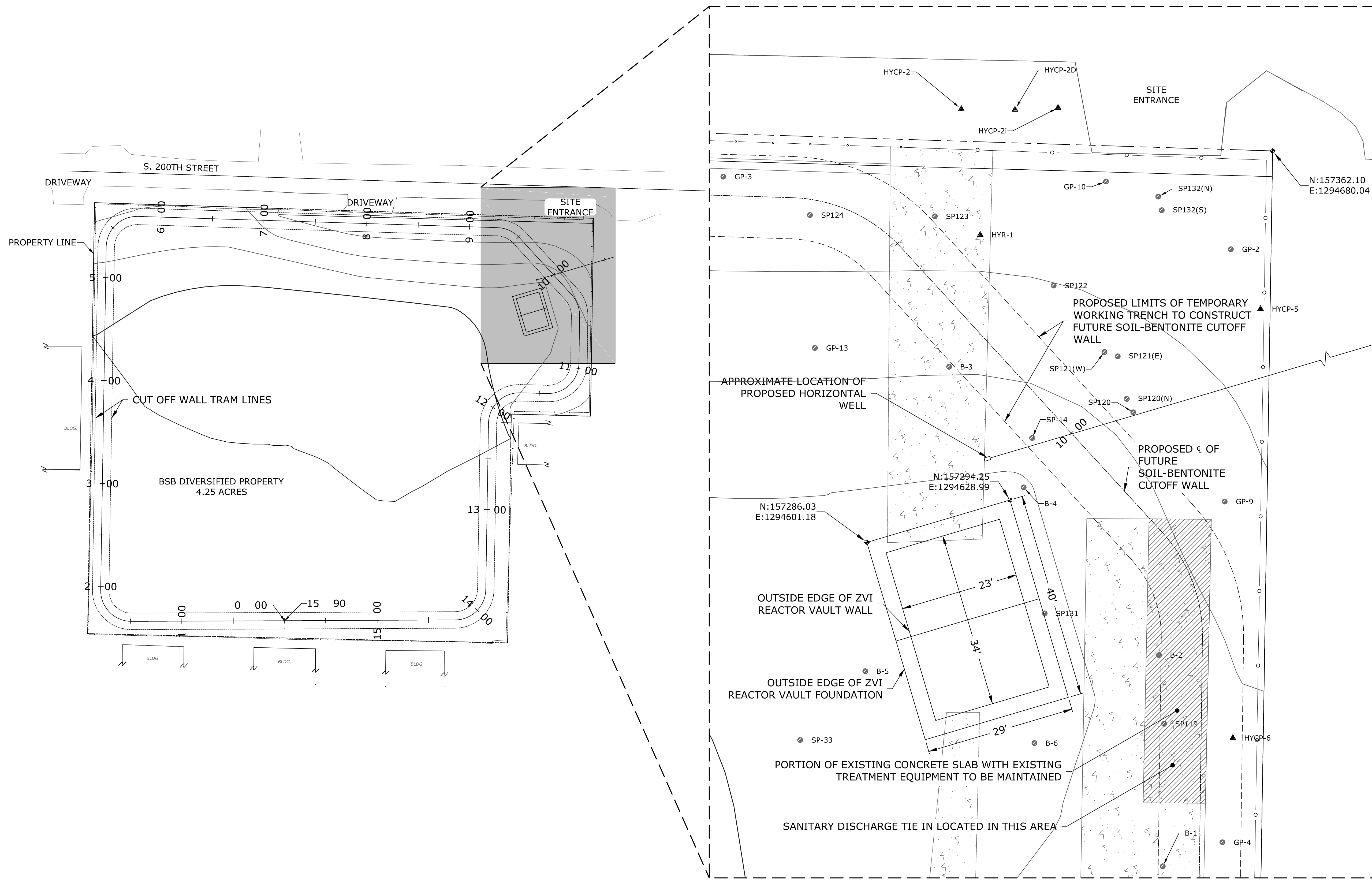
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**VAULT CONSTRUCTION DRAWINGS**  
 BSB DIVERSIFIED, INC. PROPERTY  
 KENT, WASHINGTON

DRAWING NO.

**4**

C:\CIVIL\3D PROJECTS\BSB\PRODUCTION DRAWINGS\PHASE 1 CLEANUP DRAWINGS\ZVI REACTOR VAULT AREA PLAN VIEW.DWG PLOTTED: 6/20/2011 9:25 AM ON ANSI FULL BLEED D (22.00 X 34.00 INCHES)



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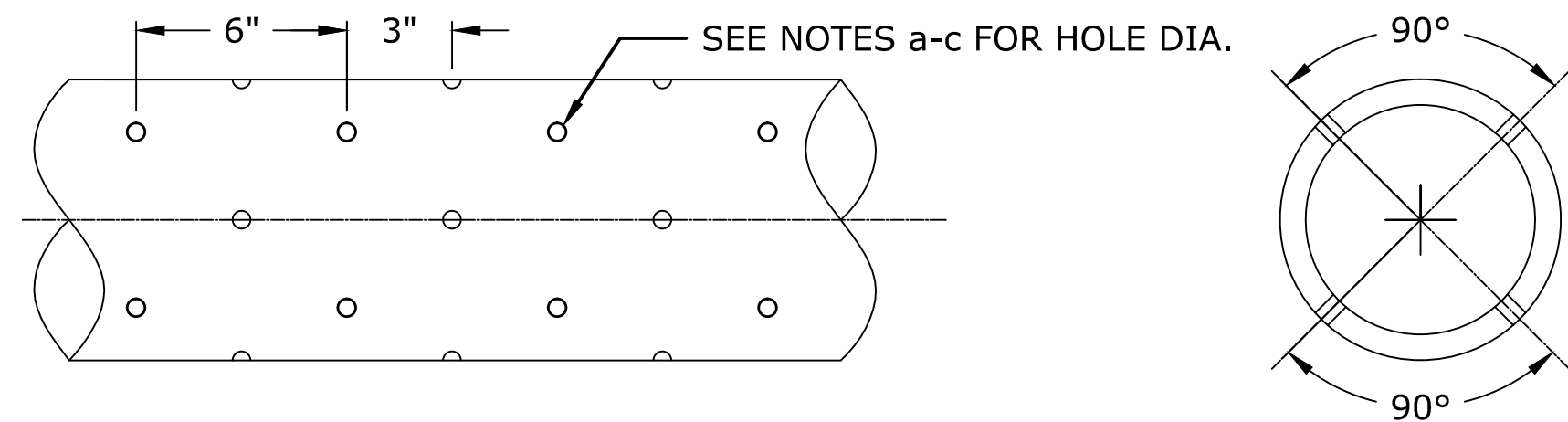
PROJECT NO. 11-13

REV	DATE	DESCRIPTION	DES	DRN	APP
-	05/28/09	PHASE I REVIEW	RN	STM	RN
1	06-10-11	CHANGE ORDER #8	RN	STM	RN

SCALE: AS SHOWN  
 DATE: 6/20/2011

VAULT CONSTRUCTION DRAWINGS  
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**ZVI REACTOR VAULT PLAN VIEW**

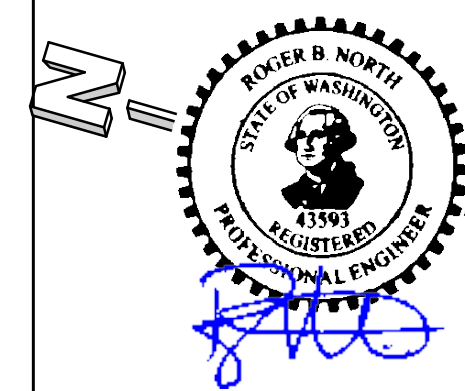


DETAIL NOTES:

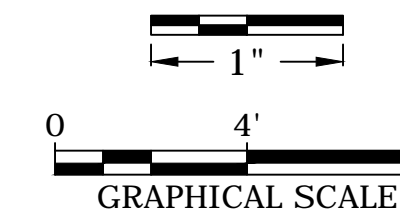
- HOLES SHALL BE DRILLED AT 90° CIRCUMFERENCE AROUND PIPE. SUCCESSIVE ROWS SHALL BE SEPARATED BY 3" AND STAGGERED.
- HOLE DIAMETER SHALL BE 3/8" FOR ALL PERFORATED HDPE PIPE.
- REMOVE INTERIOR WELD BEADS AND ALL CUTTINGS INSIDE AND OUT BEFORE PIPE IS INSTALLED.

CONSTRUCTION NOTES:

- PROVIDE PIPE SADDLE CLAMP SUPPORTS (STANDON MODEL C92 [www.standon.net], OR APPROVED ALTERNATE) ON ALL PIPES NOT LOCATED ON THE BASE OF THE VAULT. SET SUPPORTS AT 5 FEET MAXIMUM SPACING AND WITHIN 9 INCHES OF PIPE ENDS AND WALL PENETRATIONS. SET PIPES A MINIMUM OF 6 INCHES FROM VAULT WALLS. CENTER REMOVABLE COVERS OVER RISER PIPES.
- PROVIDE PIPE CLAMPS TO SECURE ALL PIPES LOCATED ON BASE OF VAULT TO CONCRETE. SECURE AT MAXIMUM SPACING OF 5 FEET AND WITHIN 9 INCHES OF PIPE ELBOWS AND JUNCTIONS. SECURE PIPE TO VAULT BASE.
- PERFORATE ALL HORIZONTAL PIPE AROUND OUTSIDE OF VAULT AND ALL 9.5-FT LONG SECTIONS OF PIPE ON INSIDE BASE OF VAULT. ALL OTHER HORIZONTAL SECTIONS OF PIPE AND ALL VERTICAL SECTIONS OF PIPE SHALL BE SOLID WALL.

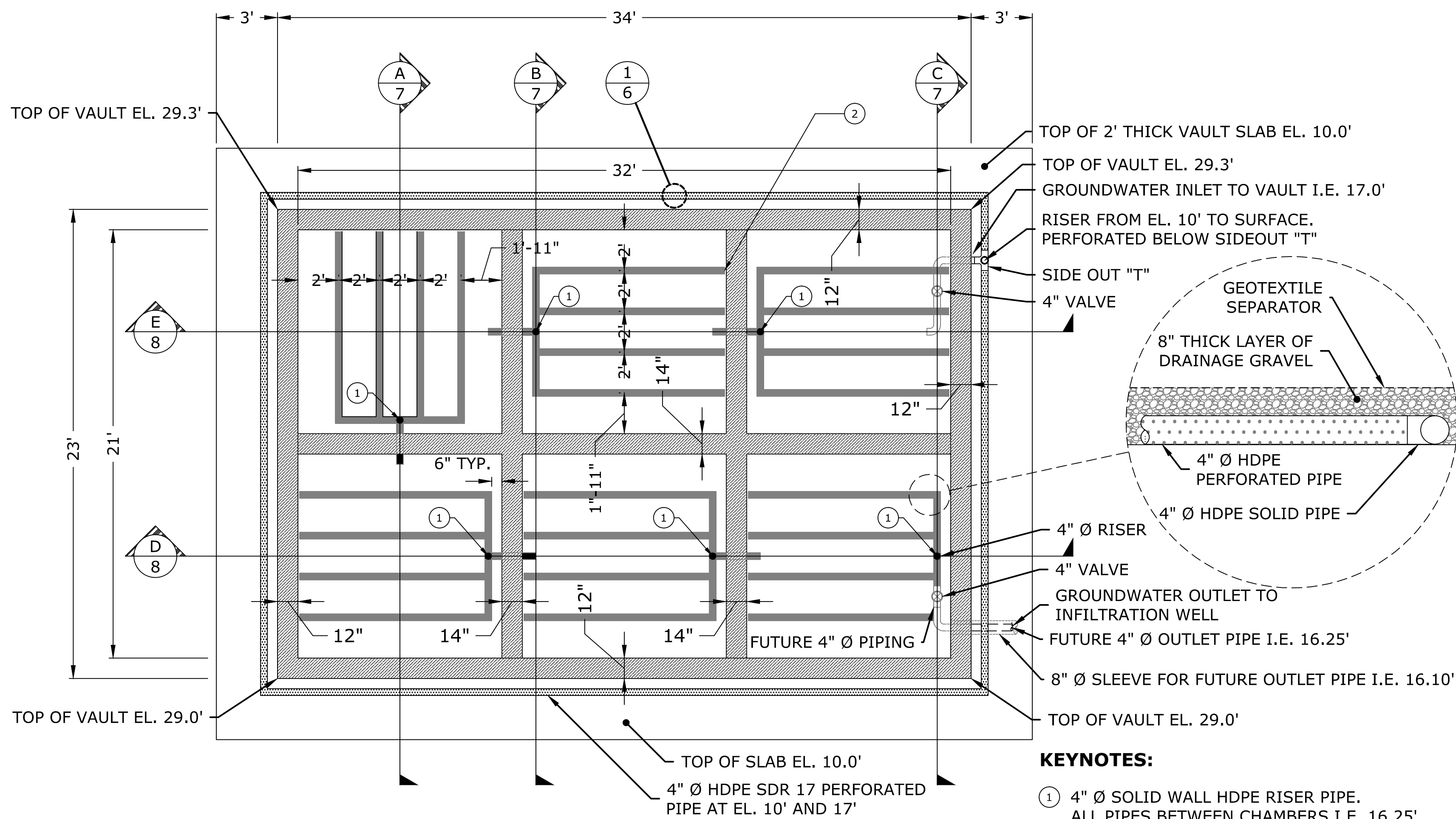


REDUCTION SCALE CHECK



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DETAIL 1 PIPE DETAIL  
 N.T.S.



KEYNOTES:

- 4" Ø SOLID WALL HDPE RISER PIPE. ALL PIPES BETWEEN CHAMBERS I.E. 16.25'
- PROVIDE END CAPS ON OPEN ENDS OF PERFORATED PIPES

VAULT AND PIPING PLAN  
 SCALE: 1" = 4'

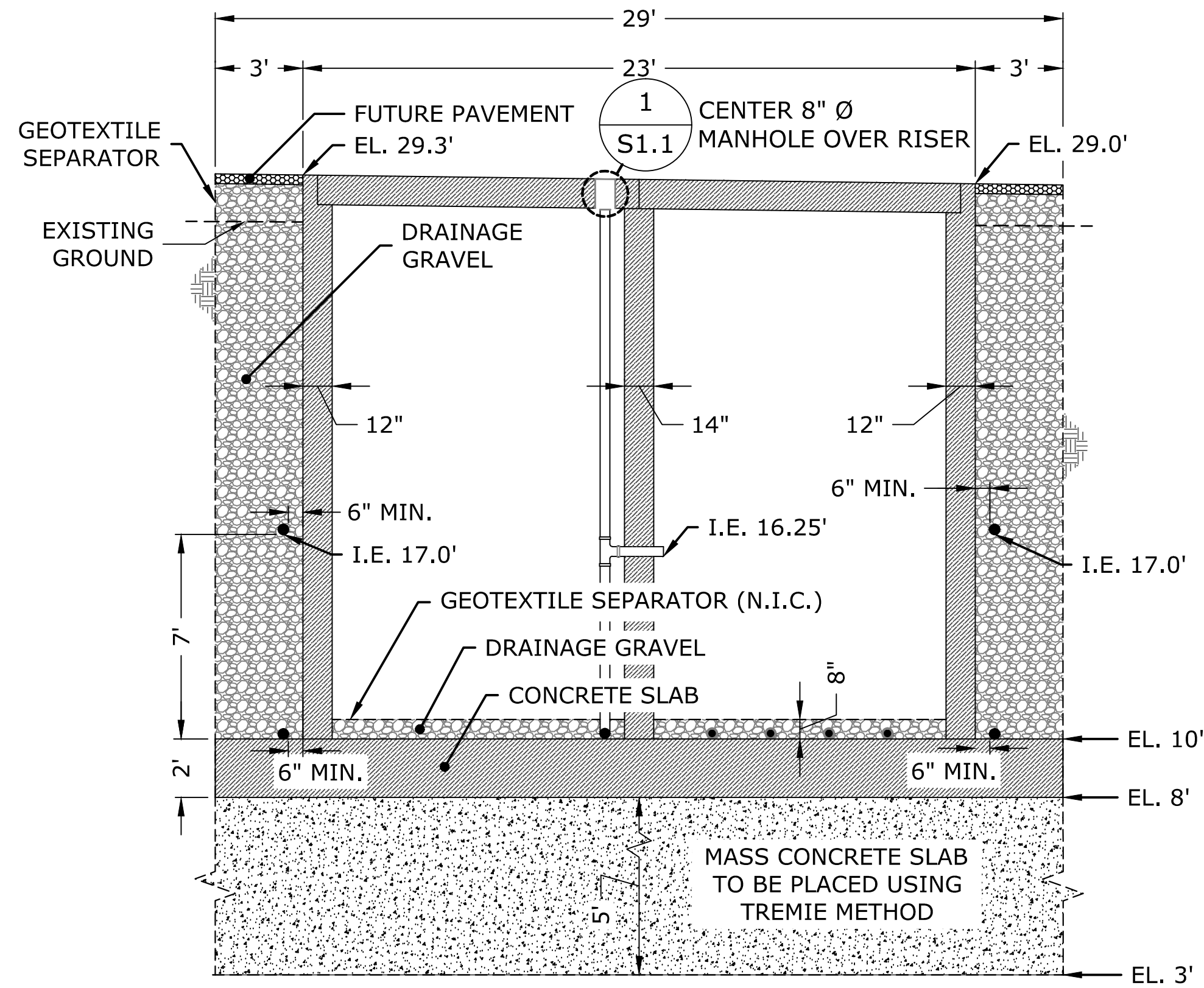
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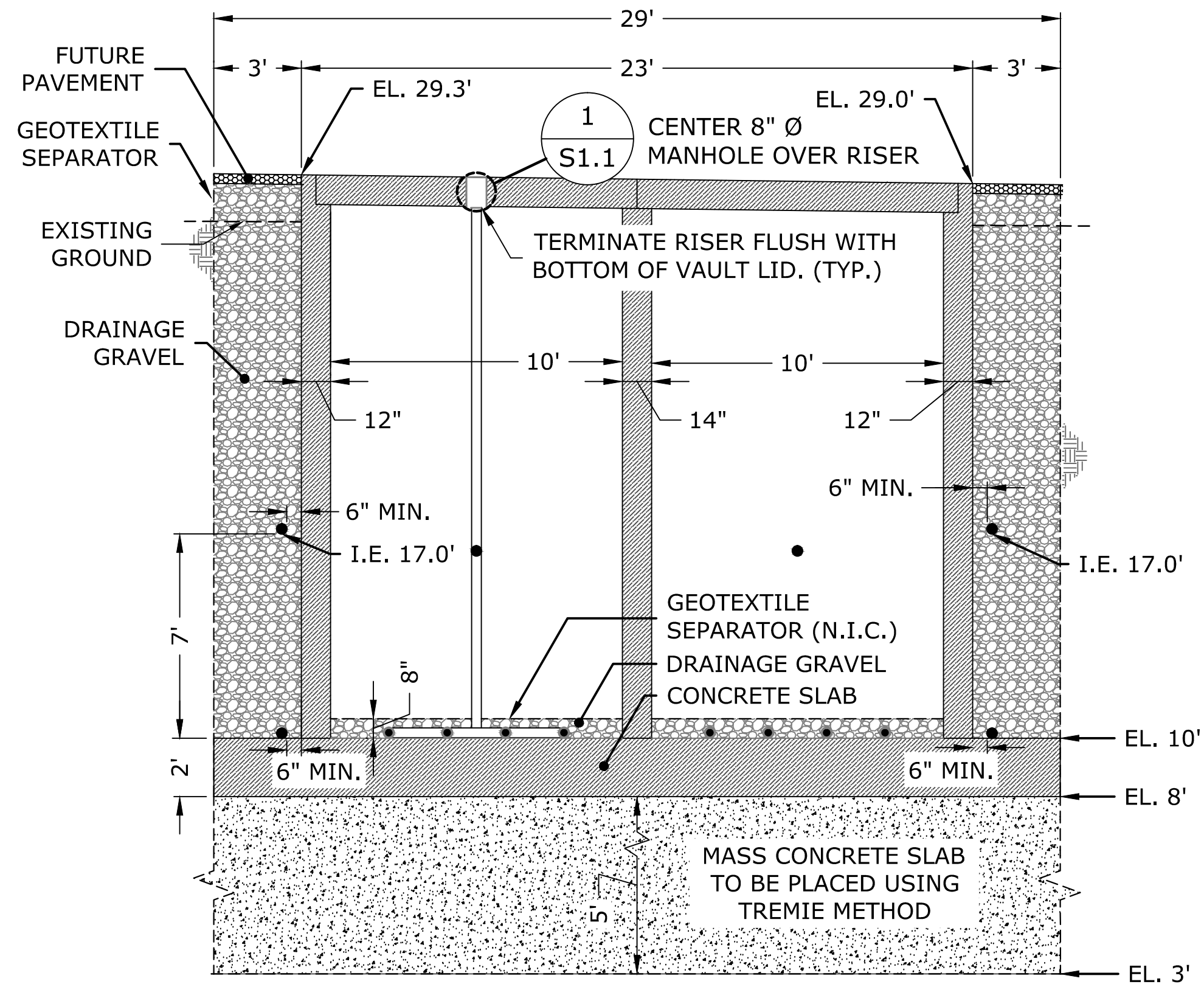
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**REACTOR VAULT PLAN & DETAIL 1**

DRAWING NO.

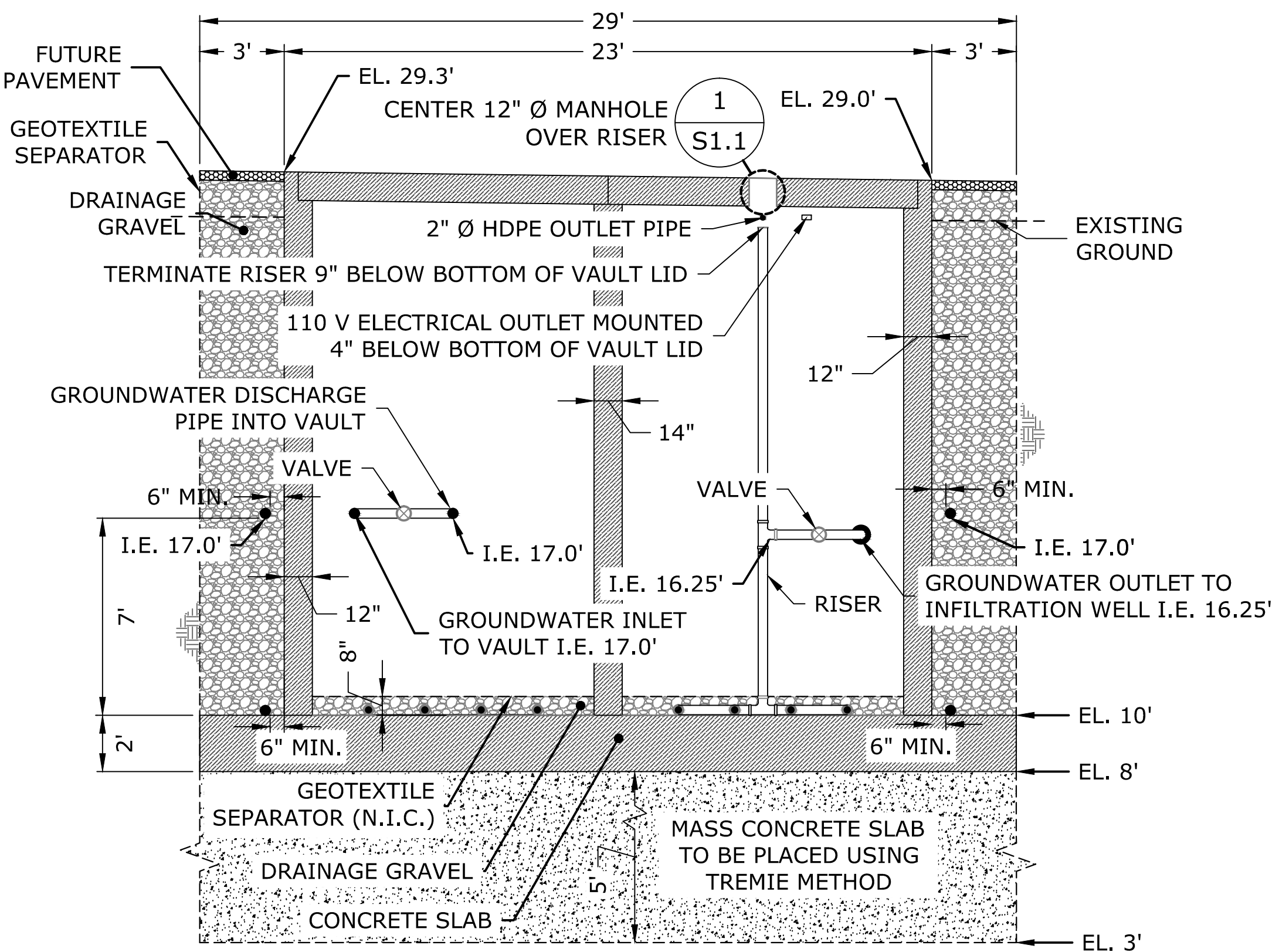
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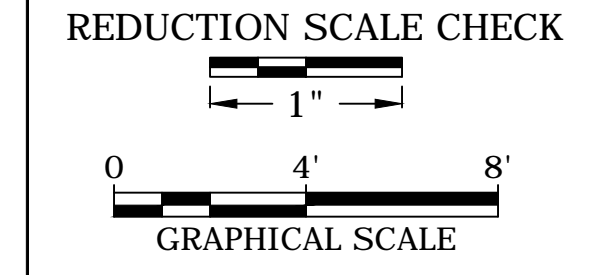
SECTION A  
1" = 4'  
TRANSVERSE SECTION



SECTION B  
1" = 4'  
TRANSVERSE SECTION



SECTION C  
1" = 4'  
TRANSVERSE SECTION



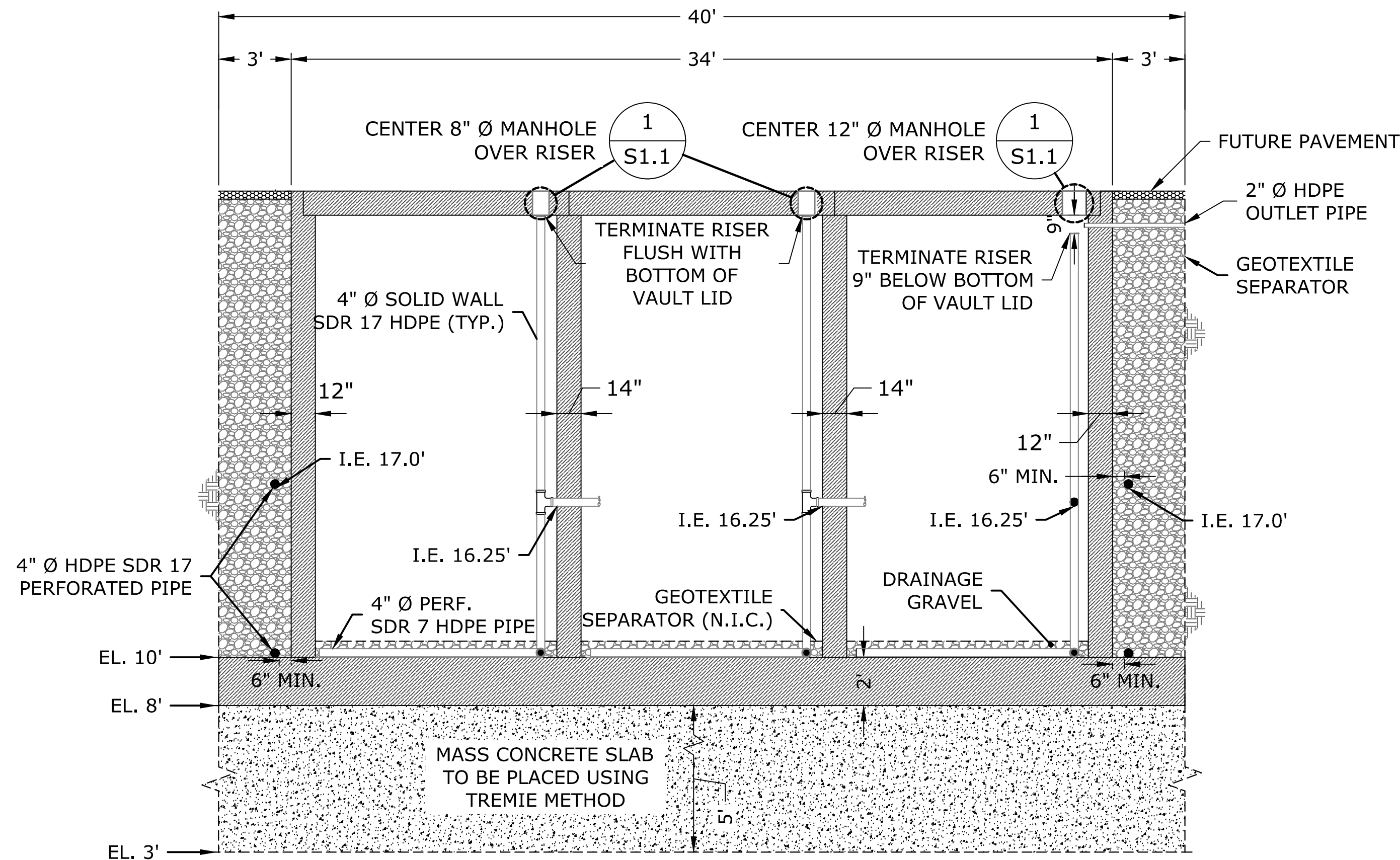
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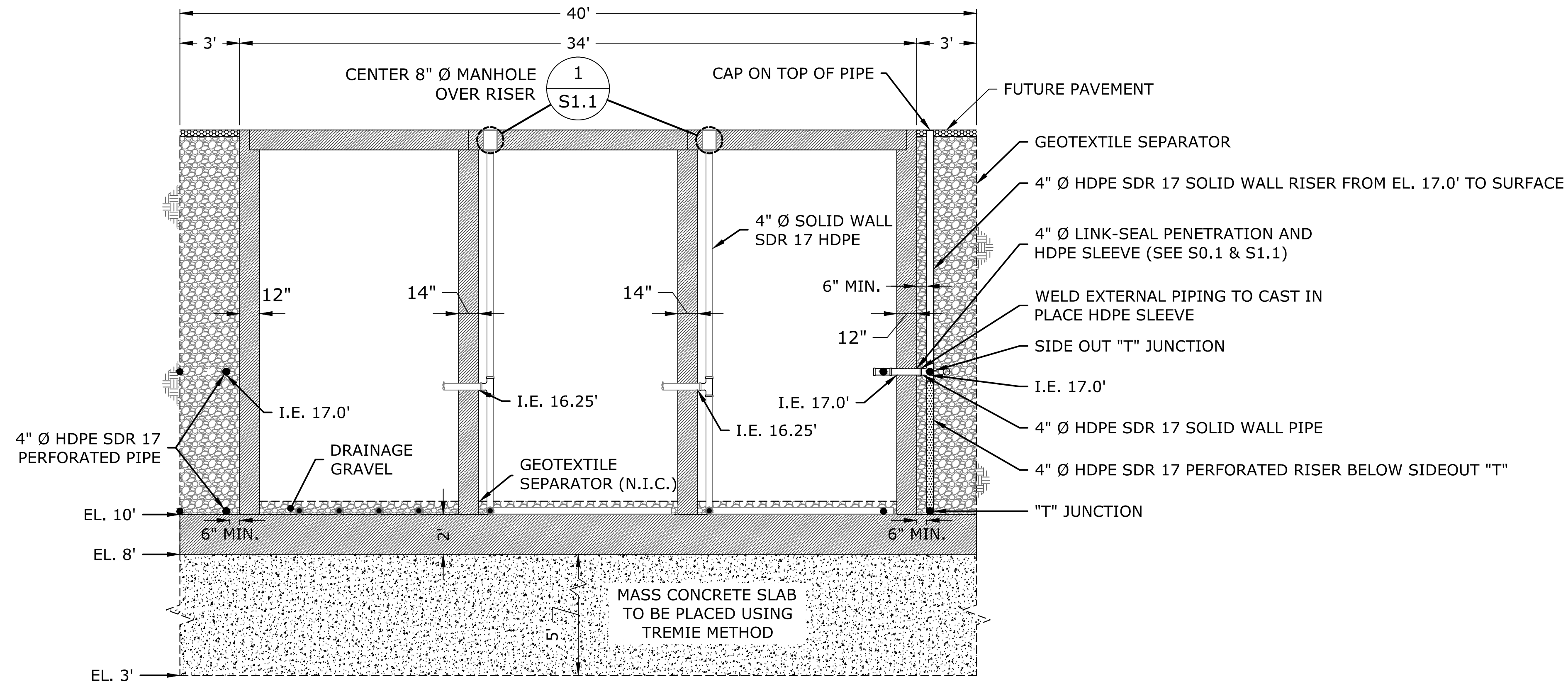
SCALE:  
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**REACTOR VAULT SECTIONS A-C**

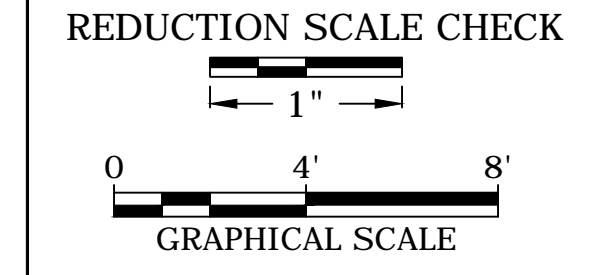
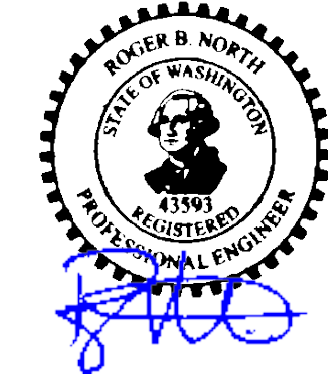
DRAWING NO. **7**  
OF 14



SECTION **D**  
1" = 4' VAULT LOGITUDIINAL SECTION



SECTION **E**  
1" = 4' VAULT LOGITUDIINAL SECTION



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**FINAL CLEANUP ACTION**  
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**REACTOR VAULT SECTIONS D-E**