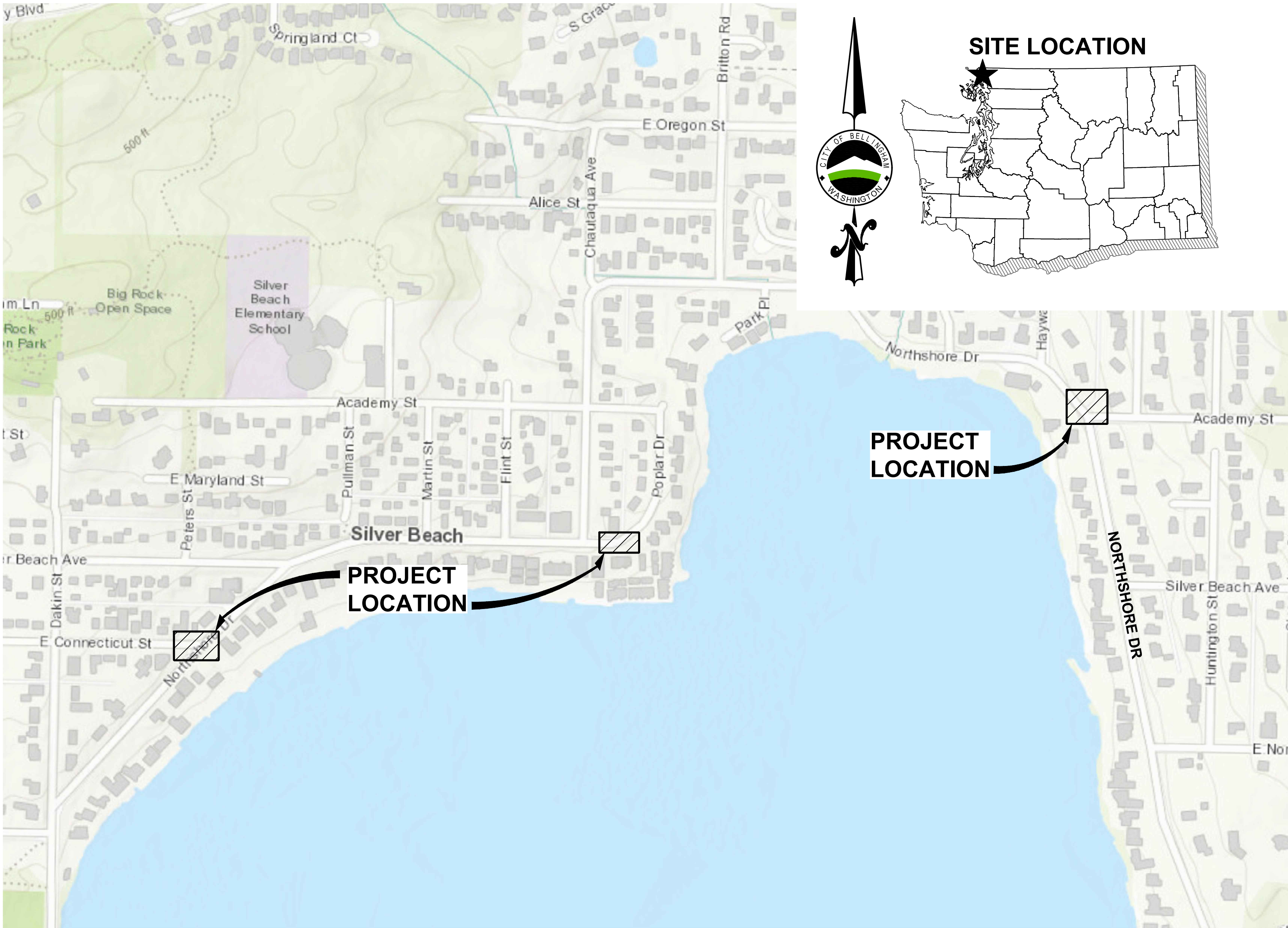


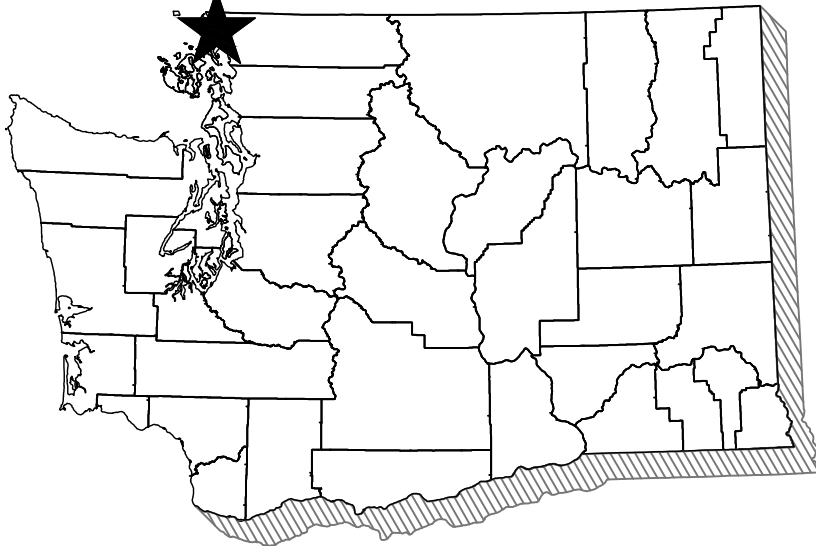
LAKE WHATCOM VAULT RETROFITS, PHASE 1 (EV176)

FUNDED IN PART BY THE WASHINGTON STATE DEPARTMENT OF ECOLOGY
ECOLOGY GRANT NUMBER WQC-2023-BELLPW-00110
BELLINGHAM, WASHINGTON
BID NUMBER 16B-2026



VICINITY MAP
SCALE: 1" = 300'

SITE LOCATION



CITY OFFICIALS:

KIM LUND
MAYOR
JOEL PFUNDT
PUBLIC WORKS DIRECTOR

CITY COUNCIL:

LISA ANDERSON
JACE COTTON
DANIEL HAMMILL
HOLLIE HUTHMAN
MICHAEL LILLQUIST
HANNAH STONE
EDWIN "SKIP" WILLIAMS

OWNER:

CITY OF BELLINGHAM
PUBLIC WORKS DEPARTMENT
104 WEST MAGNOLIA ST, SUITE 109
BELLINGHAM, WA 98225
PHONE: (360) 778-7923
EMAIL: JJBENNETT@COB.ORG
CONTACT: JESSICA BENNETT, PE

CIVIL ENGINEER:

HERRERA ENVIRONMENTAL CONSULTANTS, INC.
1329 NORTH STATE ST, SUITE 200
BELLINGHAM, WA 98225
PHONE: (360) 684-1741
EMAIL: NSCHANER@HERRERAINC.COM
CONTACT: NEIL SCHANER, PE

LAND SURVEYOR:

POWERTEK SURVEYING
5426 BARRETT RD, SUITE 104
FERNDAL, WA 98248
PHONE: (360) 746-8801
EMAIL: JDISCH@POWERTEK.NET
CONTACT: JEREMY DISCH, PLS

STRUCTURAL ENGINEER:

KINGWORKS STRUCTURAL ENGINEERS
600 DUPONT ST, SUITE B
BELLINGHAM, WA 98225
PHONE: (360) 714-8260
EMAIL: JONATHAN@KING-WORKS.COM
CONTACT: JONATHAN CALLANS, PE, SE

SHEET INDEX

NO.	DESCRIPTION
1	COVER SHEET
2	ABBREVIATIONS, LEGEND, AND NOTES
3	KEY MAP
4	TOPOGRAPHIC BASE MAP E. CONNECTICUT ST.
5	TOPOGRAPHIC BASE MAP POPLAR DR.
6	TOPOGRAPHIC BASE MAP ACADEMY ST.
7	TESC AND SITE PREP PLAN - CONNECTICUT
8	TESC AND SITE PREP PLAN - POPLAR
9	TESC PLAN - ACADEMY
10	TESC NOTES
11	TESC DETAILS
12	SITE PREPARATION - CONNECTICUT VAULT A
13	SITE PREPARATION - CONNECTICUT VAULT B
14	SITE PREPARATION - POPLAR VAULT
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16	DRAINAGE PLAN - CONNECTICUT
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19	DRAINAGE PROFILES
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24	DRAINAGE DETAILS - FLOW SPLITTER RETROFITS
25	DRAINAGE DETAILS - FLOW SPLITTER RETROFITS 2
26	DRAINAGE DETAILS 1
27	SITE & RESTORATION PLAN - CONNECTICUT
28	DETAILED GRADING PLAN - CONNECTICUT
29	RESTORATION PLAN - POPLAR
30	RESTORATION PLAN - ACADEMY
31	RESTORATION DETAILS
32	STRUCTURAL NOTES
33	STRUCTURAL PLAN AND DETAILS



Know what's below.
Call before you dig.

BID SET



4		PROJECT ENGINEER NAS	DIRECTOR PUBLIC WORKS J.E.P.	CITY OF BELLINGHAM, WASHINGTON	SCALE	DATUM	Job. No. EV176	LAKE WHATCOM VAULT RETROFITS - PHASE 1 (EV176)	SHEET 1 OF 33
3		DESIGNED/DRAWN LL, CO	CITY ENGINEER M.L.W.	PUBLIC WORKS DEPARTMENT	Horiz. AS NOTED	NAD 83/98	Date 03/2026		
2		INSPECTOR	ENGINEERING MANGER M.L.W.	ENGINEERING DIVISION	Vert. AS NOTED	NAVD 88	Field Bk.	COVER SHEET	
1									
Date	No	Revision	By						

CONTACT PERSON: JESSICA BENNETT, PE , PROJECT ENGINEER AT (360) 778-7923

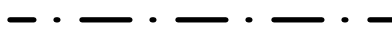
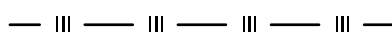
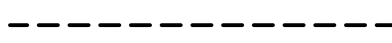
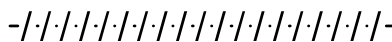
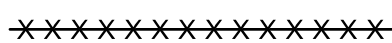
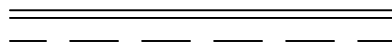
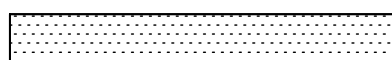
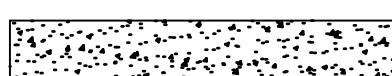
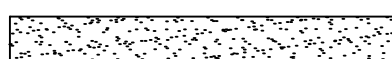
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ABBREVIATIONS

ACAD	ACADEMY
APPROX	APPROXIMATE
AVE	AVENUE
AVG	AVERAGE
BLDG	BUILDING
BMP	BEST MANAGEMENT PRACTICE
CB	CATCH BASIN
C/L, CL	CENTERLINE
COB	CITY OF BELLINGHAM
COMM	COMMUNICATION
CONC	CONCRETE
CONN	CONNECTICUT
CONST	CONSTRUCT, CONSTRUCTION
CO	CLEANOUT
CPP	CORRUGATED PLASTIC PIPE
CPPSP	CORRUGATED POLYETHYLENE STORM SEWER PIPE
CSBC	CRUSHED SURFACING BASE COURSE
CSTC	CRUSHED SURFACING TOP COURSE
DI	DUCTILE IRON
DIA	DIAMETER
DR	DRIVE
DWG	DRAWING
E	EAST, EASTING
EA	EACH
EG	EXISTING GROUND
EL	ELEVATION
EX	EXISTING
FG	FINISHED GRADE
FL	FLOW LINE
FT	FEET/FOOT
HOR	HORIZONTAL
HT	HEIGHT
IE	INVERT ELEVATION
IN	INCH/INCHES
L	LENGTH
LF	LINEAR FOOT/FEET
LT	LEFT
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
N	NORTH/NORTHING
NA	NOT APPLICABLE
NO	NUMBER
NTS	NOT TO SCALE
OHW	ORDINARY HIGH WATER
P	POWER
POP	POPLAR
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
RD	ROAD
REF	REFERENCE
ROW	RIGHT-OF-WAY
RT	RIGHT
S	SOUTH, SLOPE
SD	STORM DRAIN
SPEC	SPECIFICATION
SS	SANITARY SEWER
ST	STREET
STA	STATION
STD	STANDARD
TESC	TEMPORARY EROSION AND SEDIMENT CONTROL
TYP	TYPICAL
W	WEST, WATER
WSDOT	WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
WSEL	WATER SURFACE ELEVATION
WQ	WATER QUALITY

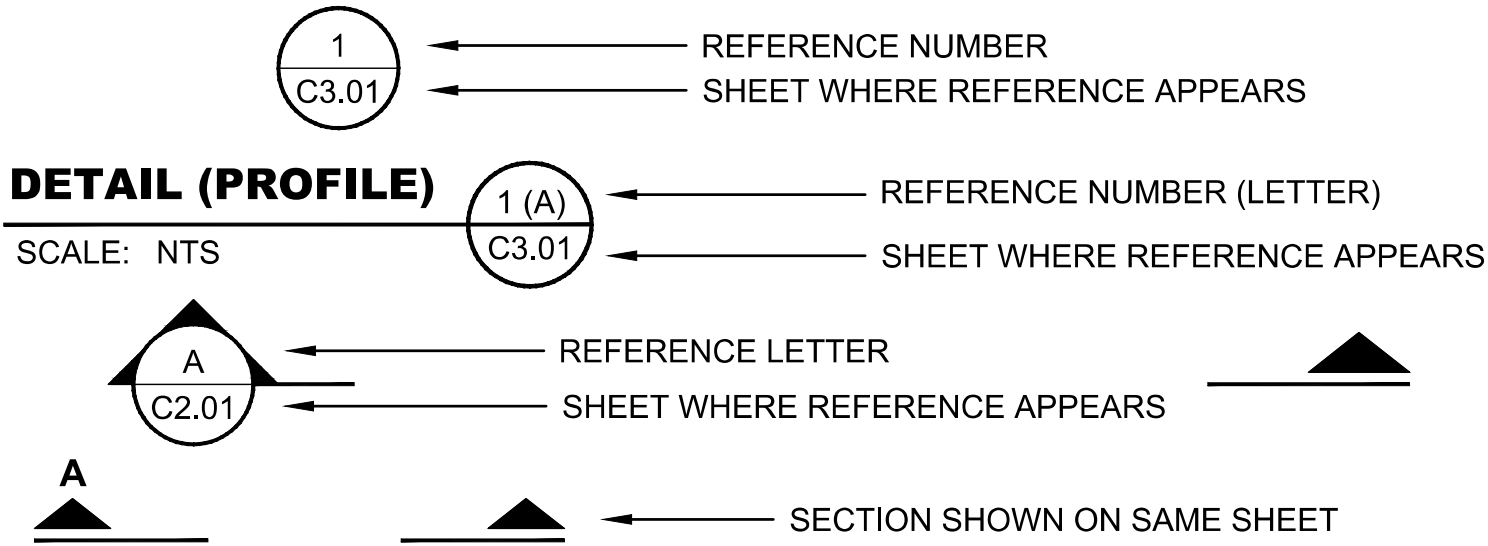
LEGEND - PROPOSED

SEE SHEETS 4-6 FOR EXISTING ITEMS

	EXISTING PERVIOUS CONCRETE
	DISTURBANCE LIMITS
	CLEARING AND GRUBBING LIMITS
	CATCH BASIN PROTECTION
	STRAW WATTLE
	SAWCUT LINE
	PAVEMENT REMOVAL - CEMENT CONCRETE
	PAVEMENT REMOVAL - ASPHALT
	PAVEMENT REMOVAL - GRAVEL
	REMOVE ITEM
	REMOVE STRUCTURE
	ABANDON PIPE
	REMOVE PIPE
	REMOVE CURB OR CURB AND GUTTER
	STORM DRAIN PIPE
	CATCH BASIN TYPE 1
	CATCH BASIN TYPE 2
	TYPE A MODIFIED CURB AND GUTTER
	ASPHALT PAVEMENT RESTORATION
	CONCRETE PAVEMENT RESTORATION
	DETECTABLE WARNING SURFACE
	COBBLE REPLACEMENT
	SOD INSTALLATION
	MULCH INSTALLATION
	CSTC

GENERAL NOTES

- ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH 2025 WSDOT/APWA STANDARD SPECIFICATIONS, CITY OF BELLINGHAM PUBLIC WORKS DEVELOPMENT GUIDELINES AND IMPROVEMENT STANDARDS (CURRENT VERSION), AND SHALL BE SUBJECT TO APPROVAL BY CITY OF BELLINGHAM PUBLIC WORKS DEPARTMENT.
- ANY LAND DISTURBING ACTIVITY SHALL OCCUR AND BE COMPLETED WITHIN THE LAKE WHATCOM WATERSHED EARTHWORK WINDOW (JUNE 1 TO SEPTEMBER 30).
- THE CONTRACTOR SHALL CONTACT UTILITY LOCATION SERVICE 48 HOURS PRIOR TO STARTING WORK AT (800) 424-5555 OR 811.
- A COPY OF THE CITY-APPROVED DRAWINGS, SPECIFICATIONS, AND PERMITS MUST BE ON THE JOB SITE WHENEVER WORK IS IN PROCESS.
- ALL TESTING, INCLUDING MATERIALS TESTING, SHALL BE IN COMPLIANCE WITH THE PROJECT SPECIFICATIONS AND WSDOT SPECIFICATIONS AND GUIDELINES.
- THE CONTRACTOR SHALL INFORM AND OBTAIN APPROVAL FROM PROJECT ENGINEER PRIOR TO IMPLEMENTATION OF ANY PLAN CHANGES. THE CONTRACTOR SHALL KEEP RECORDS OF DEVIATIONS AND FORWARD TO THE ENGINEER OF RECORD AND CITY OF BELLINGHAM PUBLIC WORKS DEPARTMENT.
- TRAFFIC CONTROL IS TO BE MAINTAINED IN ACCORDANCE WITH WSDOT/APWA STANDARD SPECIFICATIONS, MUTCD, RCW, AND CONTRACT DOCUMENTS.
- PROTECTION OF THE ENVIRONMENT: NO CONSTRUCTION RELATED ACTIVITY SHALL CONTRIBUTE TO THE DEGRADATION OF THE ENVIRONMENT, ALLOW MATERIAL TO ENTER SURFACE OR GROUNDWATERS, OR ALLOW PARTICULATE EMISSIONS TO THE ATMOSPHERE, WHICH EXCEED STATE OR FEDERAL STANDARDS. ANY ACTIONS THAT POTENTIALLY ALLOW A DISCHARGE TO STATE WATERS MUST HAVE PRIOR APPROVAL OF THE WASHINGTON STATE DEPARTMENT OF ECOLOGY.



" - " INDICATES THAT THE DETAIL IS SHOWN ON THE SAME SHEET OR IS A TYPICAL DETAIL

"VAR" SPECIFIES THAT DETAIL/SECTION WAS TAKEN FROM VARIOUS DRAWINGS

DETAIL/SECTION REFERENCING

BID SET



	4		
	3		
	2		
	1		
Date	No	Revision	By

PROJECT ENGINEER	NAS
DESIGNED/DRAWN	LL, CO
INSPECTOR	

DIRECTOR PUBLIC WORKS	J.F.P.
CITY ENGINEER	M.L.W.
ENGINEERING MANGER	M.L.W.

CITY OF BELLINGHAM, WASHINGTON
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

SCALE
Horiz. AS NOTED
Vert. AS NOTED

DATUM
NAD 83/98
NAVD 88

Job. No.	EV176
Date	03/2026
Field Bk.	

LAKE WHATCOM VAULT RETROFITS - PHASE 1 (EV176)
ABBREVIATIONS, LEGEND, AND NOTES

SHEET	2	OF
		33

CONTACT PERSON: JESSICA BENNETT, PE , PROJECT ENGINEER AT (360) 778-7923



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BID SET



	4			PROJECT ENGINEER	NAS	DIRECTOR PUBLIC WORKS	J.E.P.	CITY OF BELLINGHAM, WASHINGTON PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION	SCALE	DATUM	Job. No.	EV176	LAKE WHATCOM VAULT RETROFITS - PHASE 1 (EV176)	SHEET 3 OF 33	
	3			DESIGNED/DRAWN	LL, CO	CITY ENGINEER	M.L.W.		Horiz.	AS NOTED	NAD 83/98	Date			03/2026
	2			INSPECTOR		ENGINEERING MANGER	M.L.W.		Vert.	AS NOTED	NAVD 88	Field Bk.			
	1														
Date	No	Revision	By	KEY MAP											

CONTACT PERSON: JESSICA BENNETT, PE PROJECT ENGINEER AT (360) 778-7923

CONTACT PERSON: JESSICA BENNETT, PE , PROJECT ENGINEER AT (360) 778-7923

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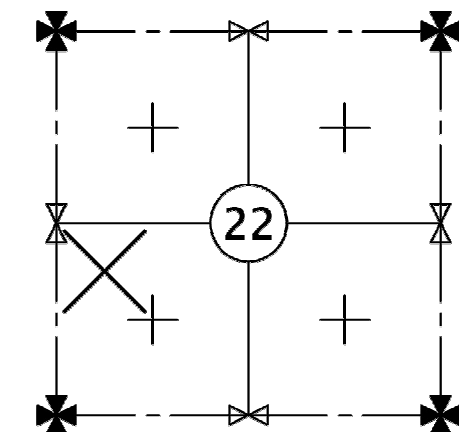
SURVEY NOTES:

- THIS SURVEY WAS PREPARED IN ACCORDANCE WITH WAC 332-130-145 IN OCTOBER 2024 AT THE REQUEST OF HERRERA ENVIRONMENTAL CONSULTANTS.
- FIELD SURVEY PERFORMED WITH TRIMBLE R8-3 GNSS RECEIVER AND LEICA TOPP 1201+ ROBOTIC TOTAL STATION AND MEETS OR EXCEEDS THE STANDARDS SET FORTH WITHIN WAC 332-130-090.
- HORIZONTAL DATUM: "CITY OF BELLINGHAM HORIZONTAL NETWORK JUNE, 2005" (NAD83/98) RECORDED UNDER A.F. NO. 2071002449. INVERSE OF COB#2738 TO COB#1130 BEARING N46°54'28"E A DISTANCE OF 514.06'.
COB#2738 N=647789.5661 E=1258108.5808
COB#1130 N=648140.7560 E=1258483.9730
- VERTICAL DATUM: CITY OF BELLINGHAM (NAVD88)
COB#6390 N=648094.9961 E=1258411.1670 EL=343.6560
P-TEK#30 N=647807.0605 E=1258147.7213 EL=334.4672
- THIS SURVEY WAS COMPLETED WITHOUT THE BENEFIT OF A TITLE REPORT AND DOES NOT PURPORT TO SHOW ANY OR ALL EASEMENTS.
- POWERTEK SURVEYING ASSUMES NO LIABILITY FOR ANY SUBSURFACE CONDITIONS OR FEATURES THAT MAY EXIST THAT ARE UNDETECTABLE AND/OR NOT VISIBLE.
- CONTOUR INTERVALS ARE SHOWN AT 1 FOOT AND ARE COMPUTER GENERATED FROM GROUND FIELD TOPOGRAPHY GATHERED FOR THIS SURVEY AND MEET OR EXCEED NATIONAL MAPPING STANDARDS UTILIZING ELECTRONIC DATA COLLECTION.
- THE TOPOGRAPHIC ELEMENTS SHOWN ON THIS MAP ARE INTENDED TO SUPPORT PLANNING AND DESIGN. UTILITY LOCATIONS DERIVED FROM ABOVE GROUND APPURTENANCES AND/OR UTILITY PAINT MARKS PER WASHINGTON STATE ONE-CALL UNDERGROUND LOCATES (811).
- OCCUPATIONAL INDICATORS AND EXISTING FENCE LINE NOTE: THIS SURVEY MAY DEPICT EXISTING FENCE LINES AND/OR ENCROACHMENTS IN ACCORDANCE WITH WAC CH 332.130. THESE OCCUPATIONAL INDICATORS MAY INDICATE A POTENTIAL FOR CLAIMS OF UNWRITTEN TITLE OWNERSHIP. THIS IS NOT A BOUNDARY SURVEY AND THE LEGAL RESOLUTION OF OWNERSHIP BASED UPON UNWRITTEN TITLE CLAIMS HAS NOT BEEN RESOLVED BY THIS SURVEY.
- BOUNDARY INFORMATION DERIVED FROM THE FOLLOWING RECORDED DOCUMENTS, AUDITOR'S FILE NUMBERS : 2019-0101562, 2021-0304545, 2021-0504441M 1415387, 1530619, 920325174, 941017096, 1990692063, 2000102040, 2071002418, 2100601923.

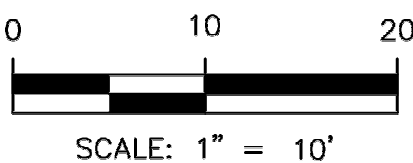


LEGEND:

- FOUND CONC. MONUMENT
- SET NAIL
- EXISTING SANITARY SEWER MANHOLE
- EXISTING SANITARY SEWER CLEAN-OUT
- EXISTING STORM DRAINAGE MANHOLE
- EXISTING STORM DRAINAGE CATCH BASIN
- EXISTING FIRE HYDRANT
- EXISTING WATERLINE VALVE
- EXISTING WATER METER SERVICE
- EXISTING UTILITY POLE
- EXISTING UTILITY JUNCTION BOX
- EXISTING SIGN
- TREE DIAMETER
- EXISTING TREE (CONIFER)
- EXISTING TREE (DECIDUOUS)



NW 1/4, SW 1/4
SECTION 22
T. 38 N., R. 3 E. OF W.M.



	4		
	3		
	2		
	1		
Date	No	Revision	By

PROJECT ENGINEER NS
DESIGNED/DRAWN HV, EM
INSPECTOR

DIRECTOR PUBLIC WORKS M.A.O.
CITY ENGINEER M.L.W.
ENGINEERING MANGER J.T.H.

CITY OF BELLINGHAM, WASHINGTON
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

SCALE
Horiz. AS NOTED
Vert. AS NOTED

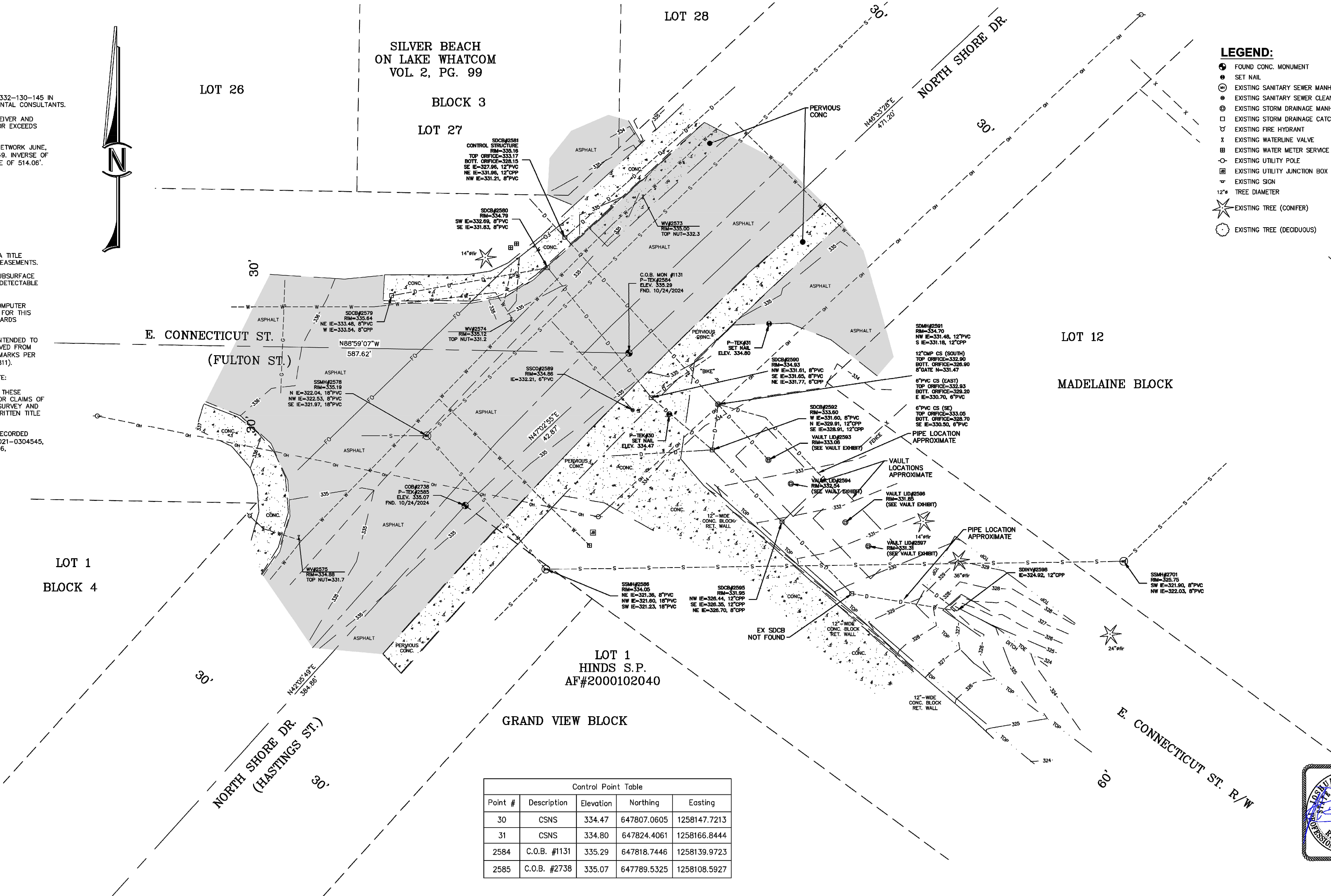
DATUM
NAD 83/98
NAVD 88

Job. No. EV-176
Date 6/2025
Field Bk.

LAKE WHATCOM VAULT RETROFITS - PHASE 1 (EV-176)
TOPOGRAPHIC BASE MAP E. CONNECTICUT ST.

SHEET
4
OF
33

CONTACT PERSON: JESSICA BENNETT, PE, PROJECT ENGINEER AT (360) 778-7923



Control Point Table				
Point #	Description	Elevation	Northing	Easting
30	CSNS	334.47	647807.0605	1258147.7213
31	CSNS	334.80	647824.4061	1258166.8444
2584	C.O.B. #1131	335.29	647818.7446	1258139.9723
2585	C.O.B. #2738	335.07	647789.5325	1258108.5927



BID SET

SURVEY NOTES:

- 1.) THIS SURVEY WAS PREPARED IN ACCORDANCE WITH WAC 332-130-145 IN OCTOBER 2024 AT THE REQUEST OF HERRERA ENVIRONMENTAL CONSULTANTS.
- 2.) FIELD SURVEY PERFORMED WITH TRIMBLE R8-3 GNSS RECEIVER AND LEICA TOPP 1201+ ROBOTIC TOTAL STATION AND MEETS OR EXCEEDS THE STANDARDS SET FORTH WITHIN WAC 332-130-090.
- 3.) HORIZONTAL DATUM: "CITY OF BELLINGHAM HORIZONTAL NETWORK JUNE, 2005" (NAD83/98) RECORDED UNDER A.F. NO. 2071002449, INVERSE OF COB#11119 TO COB#3509 BEARING S88°52'27"E A DISTANCE OF 309.98'.
- COB#11119 N=648228.7416 E=1259353.8967
COB#3509 N=648222.6508 E=1259663.8207
- 4.) VERTICAL DATUM: CITY OF BELLINGHAM (NAVD88)
- COB#6392 N=648210.7279 E=1259652.5904 EL=341.5930
P-TEK#10 N=648222.7695 E=1259801.1817 EL=337.5025
- 5.) THIS SURVEY WAS COMPLETED WITHOUT THE BENEFIT OF A TITLE REPORT AND DOES NOT PURPORT TO SHOW ANY OR ALL EASEMENTS.
- 6.) POWERTEK SURVEYING ASSUMES NO LIABILITY FOR ANY SUBSURFACE CONDITIONS OR FEATURES THAT MAY EXIST THAT ARE UNDETECTABLE AND/OR NOT VISIBLE.
- 7.) CONTOUR INTERVALS ARE SHOWN AT 1 FOOT AND ARE COMPUTER GENERATED FROM GROUND FIELD TOPOGRAPHY GATHERED FOR THIS SURVEY AND MEET OR EXCEED NATIONAL MAPPING STANDARDS UTILIZING ELECTRONIC DATA COLLECTION.
- 8.) THE TOPOGRAPHIC ELEMENTS SHOWN ON THIS MAP ARE INTENDED TO SUPPORT PLANNING AND DESIGN. UTILITY LOCATIONS DERIVED FROM ABOVE GROUND APPURTENANCES AND/OR UTILITY PAINT MARKS PER WASHINGTON STATE ONE-CALL UNDERGROUND LOCATES (811).
- 9.) OCCUPANCIAL INDICATORS AND EXISTING FENCE LINE NOTE: THIS SURVEY MAY DEPICT EXISTING FENCE LINES AND/OR ENCROACHMENTS IN ACCORDANCE WITH WAC CH 332.130. THESE OCCUPANCIAL INDICATORS MAY INDICATE A POTENTIAL FOR CLAIMS OF UNWRITTEN TITLE OWNERSHIP. THIS IS NOT A BOUNDARY SURVEY AND THE LEGAL RESOLUTION OF OWNERSHIP BASED UPON UNWRITTEN TITLE CLAIMS HAS NOT BEEN RESOLVED BY THIS SURVEY.
- 10.) BOUNDARY INFORMATION DERIVED FROM THE FOLLOWING RECORDED DOCUMENTS, AUDITOR'S FILE NUMBERS: 134262B, 1397774, 930524145, 2020902418, 2090803191.



NORTH SHORE DR.
(ALABAMA ST.)

NE 1/4, SW 1/4 SECTION 22
T. 38 N., R. 3 E. OF W.M.



0 10 20
SCALE: 1" = 10'

NORTH SHORE DR.
(MAIN ST.)

40'

LOT 10

LOT 9

SILVER BEACH
ON LAKE WHATCOM
VOL. 2, PG. 99

LOT 8

BLOCK 21

ALLEY

20'

LOT 5
AUGUST LINGBOOM'S FIRST
ADD. TO SILVER BEACH
VOL. 8, PG. 7

LEGEND:

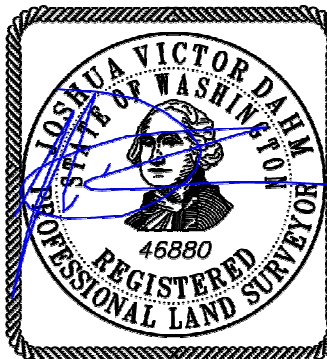
- FOUND CONC. MONUMENT
- SET NAIL
- EXISTING SANITARY SEWER MANHOLE
- EXISTING SANITARY SEWER CLEAN-OUT
- EXISTING STORM DRAINAGE MANHOLE
- EXISTING STORM DRAINAGE CATCH BASIN
- EXISTING FIRE HYDRANT
- EXISTING WATERLINE VALVE
- EXISTING WATER METER SERVICE
- EXISTING UTILITY POLE
- EXISTING UTILITY JUNCTION BOX
- EXISTING SIGN
- 12" TREE DIAMETER
- EXISTING TREE (CONIFER)
- EXISTING TREE (DECIDUOUS)

LOT 2

BELL'S LAKESIDE MANOR
SHORT PLAT
AF#1397774

LOT 3

(VAC.) AF#1133054



BLOCK 20

LOT 13

LAKE WHATCOM SHORELANDS

LOT 14

LAKESIDE NORTH CONDOMINIUM

Control Point Table				
Point #	Description	Elevation	Northing	Easting
10	CSNS	337.50	648222.7695	1259801.1817
801	C.O.B. #3509		648222.6508	1259663.8207
2002	C.O.B. BM #6392	341.59	648210.7279	1259652.5904

BID SET

Date	No	Revision	By
	4		
	3		
	2		
	1		

PROJECT ENGINEER NS
DESIGNED/DRAWN HV, EM
INSPECTOR

DIRECTOR PUBLIC WORKS M.A.O.
CITY ENGINEER M.L.W.
ENGINEERING MANGER J.T.H.

CITY OF BELLINGHAM, WASHINGTON
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

SCALE
Horiz. AS NOTED
Vert. AS NOTED

DATUM
NAD 83/98
NAVD 88

Job. No. EV-176
Date 6/2025
Field Bk.

LAKE WHATCOM VAULT RETROFITS - PHASE 1 (EV-176)
TOPOGRAPHIC BASE MAP POPLAR DR.

SHEET
5 OF
33

CONTACT PERSON: JESSICA BENNETT, PE

PROJECT ENGINEER AT (360) 778-7923

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SURVEY NOTES:

- THIS SURVEY WAS PREPARED IN ACCORDANCE WITH WAC 332-130-145 IN OCTOBER 2024 AT THE REQUEST OF HERRERA ENVIRONMENTAL CONSULTANTS.
- FIELD SURVEY PERFORMED WITH TRIMBLE R8-3 GNSS RECEIVER AND LEICA TCPR 1201+ ROBOTIC TOTAL STATION AND MEETS OR EXCEEDS THE STANDARDS SET FORTH WITHIN WAC 332-130-090.
- HORIZONTAL DATUM: "CITY OF BELLINGHAM HORIZONTAL NETWORK JUNE, 2005" (NAD83/98) RECORDED UNDER A.F. NO. 2071002449. INVERSE OF COB#1614 TO COB#3666 BEARING S88°53'44"E A DISTANCE OF 188.92'.

COB#1614
N=648727.6480
E=1261683.2300

COB#3666
N=648724.0070
E=1261872.1140
- VERTICAL DATUM: CITY OF BELLINGHAM (NAVD88)

COB#6402
N=648794.3740
E=1261636.8629
EL.=341.2090

P=TEK#20
N=648743.7333
E=1261683.1695
EL.=343.8899
- THIS SURVEY WAS COMPLETED WITHOUT THE BENEFIT OF A TITLE REPORT AND DOES NOT PURPORT TO SHOW ANY OR ALL EASEMENTS.
- POWERTEK SURVEYING ASSUMES NO LIABILITY FOR ANY SUBSURFACE CONDITIONS OR FEATURES THAT MAY EXIST THAT ARE UNDETECTABLE AND/OR NOT VISIBLE.
- CONTOUR INTERVALS ARE SHOWN AT 1 FOOT AND ARE COMPUTER GENERATED FROM GROUND FIELD TOPOGRAPHY GATHERED FOR THIS SURVEY AND MEET OR EXCEED NATIONAL MAPPING STANDARDS UTILIZING ELECTRONIC DATA COLLECTION.
- THE TOPOGRAPHIC ELEMENTS SHOWN ON THIS MAP ARE INTENDED TO SUPPORT PLANNING AND DESIGN. UTILITY LOCATIONS DERIVED FROM ABOVE GROUND APPURTENANCES AND/OR UTILITY PAINT MARKS PER WASHINGTON STATE ONE-CALL UNDERGROUND LOCATES (811).
- OCCUPATIONAL INDICATORS AND EXISTING FENCE LINE NOTE: THIS SURVEY MAY DEPICT EXISTING FENCE LINES AND/OR ENCROACHMENTS IN ACCORDANCE WITH WAC CH 332.130. THESE OCCUPATIONAL INDICATORS MAY INDICATE A POTENTIAL FOR CLAIMS OF UNWRITTEN TITLE OWNERSHIP. THIS IS NOT A BOUNDARY SURVEY AND THE LEGAL RESOLUTION OF OWNERSHIP BASED UPON UNWRITTEN TITLE CLAIMS HAS NOT BEEN RESOLVED BY THIS SURVEY.
- BOUNDARY INFORMATION DERIVED FROM THE FOLLOWING RECORDED DOCUMENTS, AUDITOR'S FILE NUMBERS: 2019-1002913, 1345375, 1371075, 1381824, 1489672, 900206018, 901101091, 901116101, 940705022, 1980801003, 2080202415, 2140700435.



SEE SURVEY AF#2080202415

SEE COB
SS EASEMENT
AF#1119510

(VAC. ACADEMY ST.)

BASELINE

EASEMENT

SEE I&E
EASEMENT
AF#910416129

LOT 1

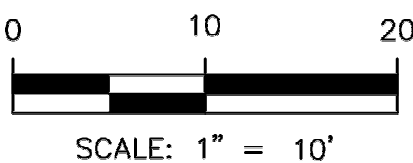
KATHLEEN TUTTLE
SHORT PLAT
AF#1980801003

LAKE BLOCK

Control Point Table

Point #	Description	Elevation	Northing	Easting
20	CSNS	343.89	648743.7333	1261683.1695
2301	C.O.B. #1614	344.25	648727.6959	1261683.2344
2302	C.O.B. BM #6402	341.21	648794.3740	1261636.8629
2303	C.O.B. #1127	341.75	648763.4432	1261640.9253
2304	C.O.B. #1128	343.46	648727.9913	1261665.4299

SE 1/4, NE 1/4 & NE 1/4, SE 1/4
SECTION 22
T. 38 N., R. 3 E. OF W.M.



LOT 10

SILVER BEACH
ON LAKE WHATCOM
VOL 2, PG. 99

BLOCK 37

LOT 9

LOT 8

LEGEND:

- FOUND CONC. MONUMENT
- SET NAIL
- EXISTING SANITARY SEWER MANHOLE
- EXISTING SANITARY SEWER CLEAN-OUT
- EXISTING STORM DRAINAGE MANHOLE
- EXISTING STORM DRAINAGE CATCH BASIN
- EXISTING FIRE HYDRANT
- EXISTING WATERLINE VALVE
- EXISTING WATER METER SERVICE
- EXISTING UTILITY POLE
- EXISTING UTILITY JUNCTION BOX
- EXISTING SIGN
- TREE DIAMETER
- EXISTING TREE (CONIFER)
- EXISTING TREE (DECIDUOUS)

ACADEMY ST.

(BENNETT / HILL ST.)

S88°52'32"E
159.78'

40'

40'

LOT A
DEHOOG SHORT PLAT
AF#1371675

SILVER BEACH
ON LAKE WHATCOM
VOL 2, PG. 99

BID SET



	4		
	3		
	2		
	1		
Date	No	Revision	By

PROJECT ENGINEER NS
DESIGNED/DRAWN HV, EM
INSPECTOR

DIRECTOR PUBLIC WORKS M.A.O.
CITY ENGINEER M.L.W.
ENGINEERING MANGER J.T.H.

CITY OF BELLINGHAM, WASHINGTON
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

SCALE
Horiz. AS NOTED
Vert. AS NOTED

DATUM
NAD 83/98
NAVD 88

Job. No. EV-176
Date 6/2025
Field Bk.

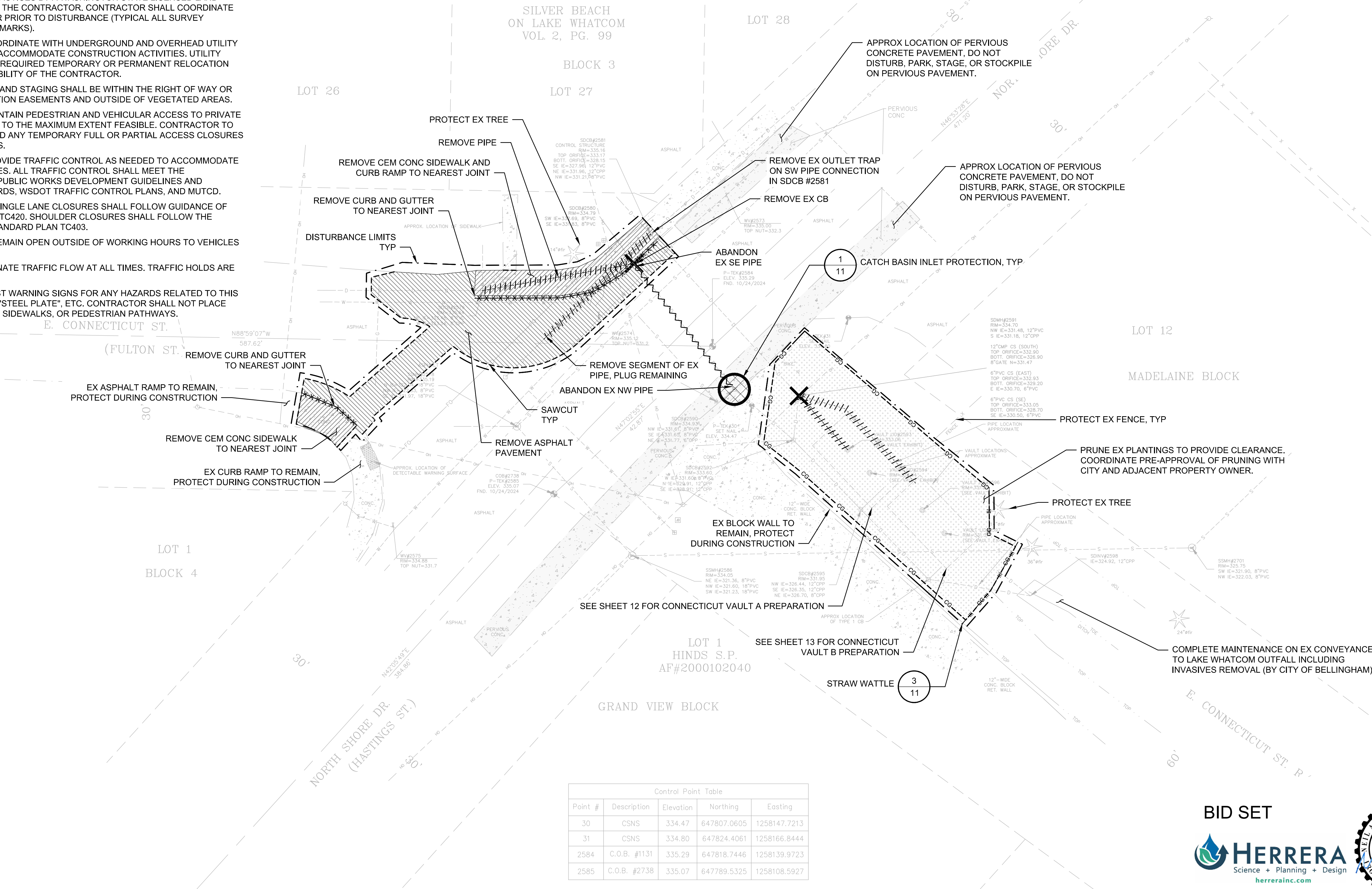
LAKE WHATCOM VAULT RETROFITS - PHASE 1 (EV-176)
TOPOGRAPHIC BASE MAP ACADEMY ST.

SHEET
6 OF
33

CONTACT PERSON: JESSICA BENNETT, PE , PROJECT ENGINEER AT (360) 778-7923

NOTES

- CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO LOCATE AND PROTECT ALL EXISTING SURVEY MONUMENTS DURING CONSTRUCTION, INCLUDING PROPERTY CORNERS. ALL SURVEY MONUMENTS THAT MAY BE DISTURBED BY CONSTRUCTION SHALL BE IDENTIFIED, REFERENCED, AND REPLACED IN ACCORDANCE WITH RECOGNIZED SURVEY PRACTICES BY A WASHINGTON STATE LICENSED LAND SURVEYOR PROVIDED BY THE CONTRACTOR. CONTRACTOR SHALL COORDINATE WITH PROJECT ENGINEER PRIOR TO DISTURBANCE (TYPICAL ALL SURVEY MONUMENTS AND BENCHMARKS).
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Control Point Table				
Point #	Description	Elevation	Northing	Eastng
30	CSNS	334.47	647807.0605	1258147.7213
31	CSNS	334.80	647824.4061	1258166.8444
2584	C.O.B. #1131	335.29	647818.7446	1258139.9723
2585	C.O.B. #2738	335.07	647789.5325	1258108.5927



Know what's below.
Call before you dig.

	4			
	3			
	2			
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Date	No	Revision	By	

PROJECT ENGINEER NAS
DESIGNED/DRAWN LL, CO
INSPECTOR

DIRECTOR PUBLIC WORKS J.E.P.
CITY ENGINEER M.L.W.
ENGINEERING MANGER M.L.W.

CITY OF BELLINGHAM, WASHINGTON
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

SCALE
Horiz. AS NOTED
Vert. AS NOTED

DATUM
NAD 83/98
NAVD 88

Job. No. EV176
Date 03/2026
Field Bk.

LAKE WHATCOM VAULT RETROFITS - PHASE 1 (EV176)
TESC AND SITE PREP PLAN - CONNECTICUT

BID SET

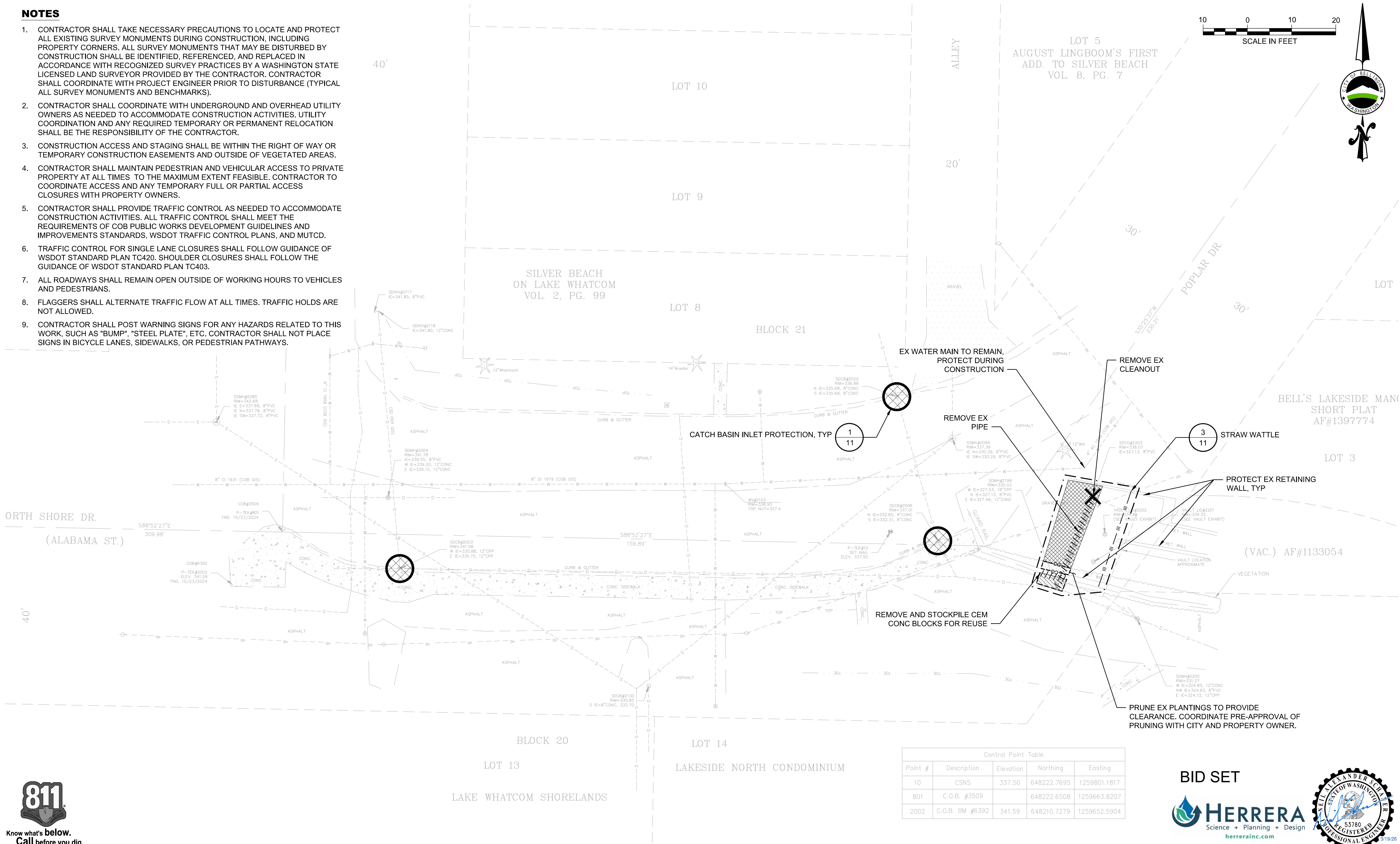


SHEET
7 OF
33

CONTACT PERSON: JESSICA BENNETT, PE, PROJECT ENGINEER AT (360) 778-7923

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Control Point Table				
Point #	Description	Elevation	Northing	Easting
10	CSNS	337.50	648222.7695	1259801.1817
801	C.O.B. #3509		648222.6508	1259663.8207
2002	C.O.B. BM #6392	341.59	648210.7279	1259652.5904

BID SET



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Date	No	Revision	By

PROJECT ENGINEER	NAS
DESIGNED/DRAWN	LL, CO
INSPECTOR	

DIRECTOR PUBLIC WORKS	J.E.P.
CITY ENGINEER	M.L.W.
ENGINEERING MANGER	M.L.W.

CITY OF BELLINGHAM, WASHINGTON
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

SCALE
Horiz. AS NOTED
Vert. AS NOTED

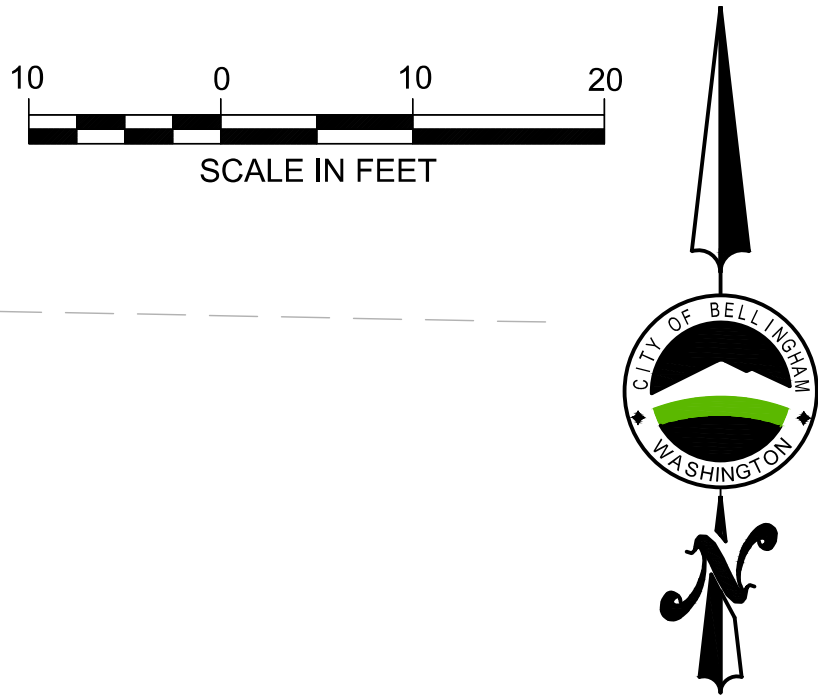
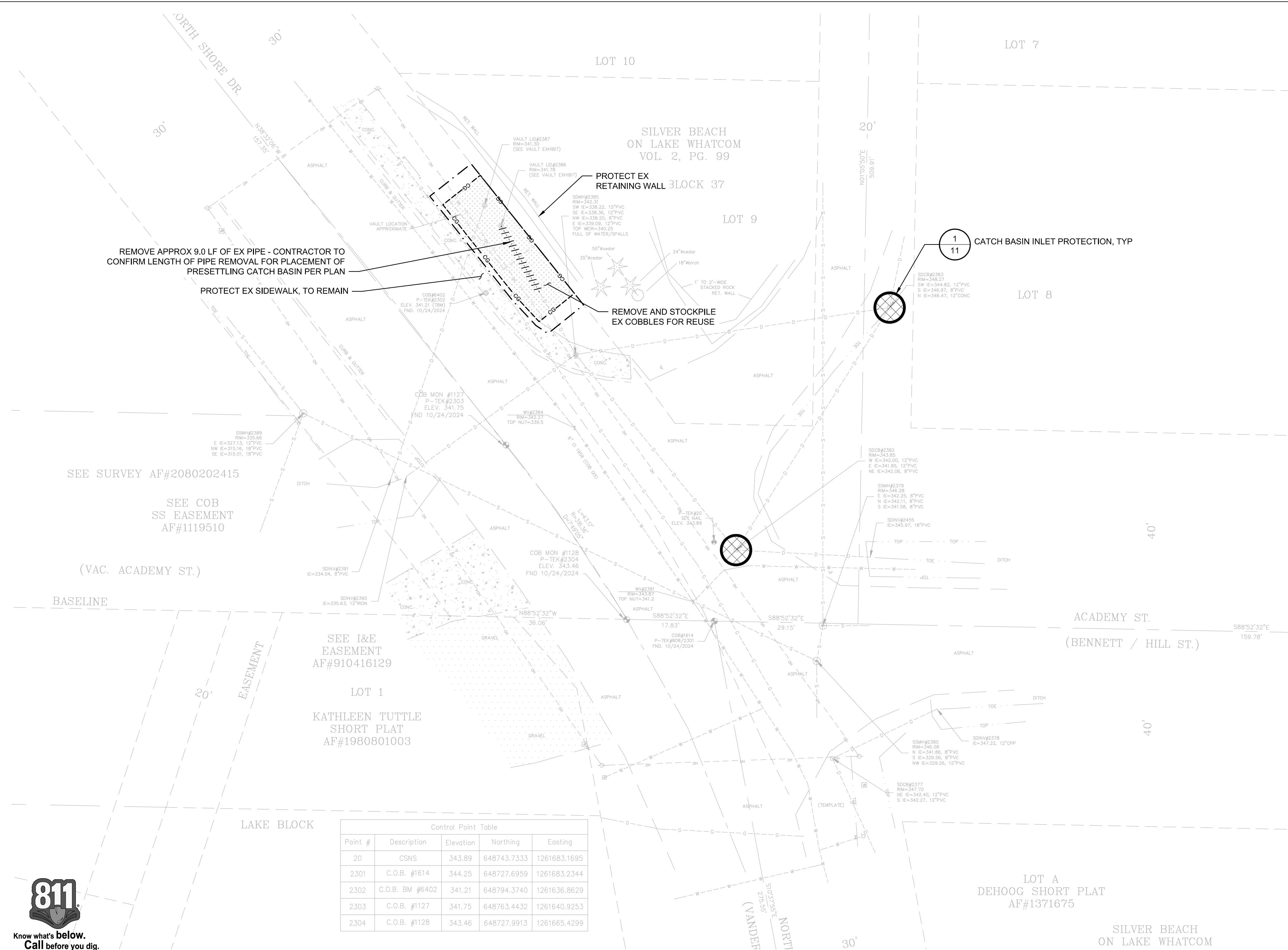
DATUM
NAD 83/98
NAVD 88

Job. No.	EV176
Date	03/2026
Field Bk.	

LAKE WHATCOM VAULT RETROFITS - PHASE 1 (EV176)	SHEET 8 OF 33
TESC AND SITE PREP PLAN - POPLAR	

CONTACT PERSON: JESSICA BENNETT, PE, PROJECT ENGINEER AT (360) 778-7923

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NOTES

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BID SET



	4		
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	1		
Date	No	Revision	By

PROJECT ENGINEER	NAS
DESIGNED/DRAWN	LL, CO
INSPECTOR	

DIRECTOR PUBLIC WORKS	J.E.P.
CITY ENGINEER	M.L.W.
ENGINEERING MANGER	M.L.W.

CITY OF BELLINGHAM, WASHINGTON
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

SCALE	
Horiz.	AS NOTED
Vert.	AS NOTED

DATUM	
NAD 83/98	NAVD 88

Job. No.	EV176
Date	03/2026
Field Bk.	

LAKE WHATCOM VAULT RETROFITS - PHASE 1 (EV176)	SHEET 9 OF 33
TESC PLAN - ACADEMY	

CONTACT PERSON: JESSICA BENNETT, PE, PROJECT ENGINEER AT (360) 778-7923

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	2		
	1		
Date	No	Revision	By

PROJECT ENGINEER	NAS
DESIGNED/DRAWN	LL, CO
INSPECTOR	

DIRECTOR	PUBLIC WORKS	J.F.P.
CITY ENGINEER		M.L.W.
ENGINEERING MANGER		M.L.W.

CITY OF BELLINGHAM, WASHINGTON
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

SCALE
Horiz. AS NOTED
Vert. AS NOTED

DATUM
NAD 83/98
NAVD 88

Job. No.	EV176
Date	03/2026
Field Bk.	

LAKE WHATCOM VAULT RETROFITS - PHASE 1 (EV176)
TESC NOTES

SHEET	10	OF
		33

STORMWATER POLLUTION PREVENTION PLAN (SWPPP) NOTES IN COMPLIANCE WITH THE BELLINGHAM MUNICIPAL CODE 15.42.060(F)2E	
PROTECTION OF THE ENVIRONMENT	NO CONSTRUCTION RELATED ACTIVITY SHALL CONTRIBUTE TO THE DEGRADATION OF THE ENVIRONMENT, ALLOW MATERIAL TO ENTER SURFACE OR GROUND WATER, OR ALLOW PARTICULATE EMISSIONS TO THE ATMOSPHERE, WHICH EXCEED STATE OR FEDERAL STANDARDS. ANY ACTIONS THAT POTENTIALLY ALLOW DISCHARGE TO STATE WATERS MUST HAVE PRIOR APPROVAL OF THE WASHINGTON STATE DEPARTMENT OF ECOLOGY.
ELEMENT REQUIREMENTS	BEST MANAGEMENT PRACTICES - (BMPs)
ELEMENT #1 "PRESERVE VEGETATION AND MARK CLEARING LIMITS"	PRIOR TO BEGINNING LAND DISTURBING ACTIVITIES, INCLUDING CLEARING AND GRADING, ALL CLEARING LIMITS, SENSITIVE AREAS AND THEIR BUFFERS, AND TREES THAT ARE TO BE PRESERVED WITHIN THE CONSTRUCTION AREA SHOULD BE CLEARLY MARKED, BOTH IN THE FIELD AND ON THE PLANS, TO PREVENT DAMAGE AND OFF-SITE IMPACTS. PLASTIC, METAL, OR STAKE WIRE FENCE MAY BE USED TO MARK THE CLEARING LIMITS. RETAIN THE DUFF LAYER, NATIVE TOPSOIL, AND NATURAL VEGETATION IN AN UNDISTURBED STATE TO THE MAXIMUM DEGREE PRACTICABLE.
ELEMENT #2 "ESTABLISH CONSTRUCTION ACCESS"	(A) EQUIPMENT SHALL OPERATE FROM THE PAVED ROADWAY AS MUCH AS POSSIBLE TO MINIMIZE TRACKOUT (B) PUBLIC ROADS SHALL AT A MINIMUM BE CLEANED THOROUGHLY AT THE END OF EACH DAY OF EARTHWORK ACTIVITY. SEDIMENT SHALL BE REMOVED FROM ROADS BY SHOVELING OR PICKUP SWEEPING AND SHALL BE TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA. STREET WASHING WILL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. (C) STREET WASH WASTEWATER SHALL BE MANAGED IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL STANDARDS, AND PREVENTED FROM DISCHARGING INTO SYSTEMS TRIBUTARY TO STATE SURFACE WATERS. CONSTRUCTION STAGING AREAS LOCATED OUTSIDE OF THE PAVED ROADWAY SHALL BE STABILIZED TO ENSURE SEDIMENT DOES NOT LEAVE THE SITE.
ELEMENT #3 "CONTROL FLOW RATES"	(A) PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM EROSION DUE TO INCREASES IN THE VOLUME, VELOCITY, AND PEAK FLOW RATE OF STORMWATER RUNOFF FROM THE PROJECT SITE. PROPERTIES SUBJECT TO MINIMUM REQUIREMENT NO. 5 AND/OR NO. 7 SHALL IMPLEMENT CONTROLS AS EARLY IN THE DEVELOPMENT AS IS PRACTICABLE TO MITIGATE FOR FLOW RATES. (B) DOWNSTREAM ANALYSIS IS NECESSARY IF CHANGES IN FLOWS COULD IMPAIR OR ALTER CONVEYANCE SYSTEMS, STREAM BANKS, BED SEDIMENT OR AQUATIC HABITAT. SEE THE ECOLOGY MANUAL FOR OFF-SITE ANALYSIS GUIDANCE. (C) WHERE NECESSARY TO COMPLY WITH MINIMUM REQUIREMENT NO. 7, STORMWATER RETENTION/DETENTION FACILITIES SHALL BE CONSTRUCTED AS ONE OF THE FIRST STEPS IN GRADING. DETENTION FACILITIES SHALL BE FUNCTIONAL PRIOR TO CONSTRUCTION OF SITE IMPROVEMENTS (E.G., IMPERVIOUS SURFACES). (D) IF PERMANENT INFILTRATION PONDS ARE USED FOR FLOW CONTROL DURING CONSTRUCTION, THESE FACILITIES SHOULD BE PROTECTED FROM SILTATION DURING THE CONSTRUCTION PHASE.

ELEMENT REQUIREMENTS	BEST MANAGEMENT PRACTICES - (BMPs)
ELEMENT #4 "INSTALL SEDIMENT CONTROLS"	(A) THE DUFF LAYER, NATIVE TOPSOIL, AND NATURAL VEGETATION SHALL BE RETAINED IN AN UNDISTURBED STATE TO THE MAXIMUM EXTENT PRACTICABLE. (B) PRIOR TO LEAVING A CONSTRUCTION SITE, OR PRIOR TO DISCHARGE TO AN INFILTRATION FACILITY, STORMWATER RUNOFF FROM DISTURBED AREAS SHALL PASS THROUGH A SEDIMENT POND OR OTHER APPROPRIATE SEDIMENT REMOVAL BMP. RUNOFF FROM FULLY STABILIZED AREAS MAY BE DISCHARGED WITHOUT A SEDIMENT REMOVAL BMP, BUT MUST MEET THE FLOW CONTROL PERFORMANCE STANDARD OF SUBSECTION (F)(2)(E)(III)(A) OF THIS SECTION (ELEMENT 3). FULL STABILIZATION MEANS CONCRETE OR ASPHALT PAVING; QUARRY SPALLS USED AS DITCH LINING; OR THE USE OF ROLLED EROSION PRODUCTS, A BONDED FIBER MATRIX PRODUCT, OR VEGETATIVE COVER IN A MANNER THAT WILL FULLY PREVENT SOIL EROSION. SEDIMENT PONDS, VEGETATED BUFFER STRIPS, SEDIMENT BARRIERS OR FILTERS, DIKES, AND OTHER BMPS INTENDED TO TRAP SEDIMENT ON SITE SHALL BE CONSTRUCTED AS ONE OF THE FIRST STEPS IN GRADING. THESE BMPS SHALL BE FUNCTIONAL BEFORE OTHER LAND-DISTURBING ACTIVITIES TAKE PLACE. (C) EARTHEN STRUCTURES SUCH AS DAMS, DIKES, AND DIVERSIONS SHALL BE SEEDED AND MULCHED ACCORDING TO THE TIMING INDICATED IN ELEMENT 5 BELOW.
ELEMENT #5 "STABILIZE SOILS"	(A) ALL EXPOSED AND UNWORKED SOILS SHALL BE STABILIZED BY APPLICATION OF EFFECTIVE BMPS THAT PROTECT THE SOIL FROM THE EROSIIVE FORCES OF RAINDROP IMPACT AND FLOWING WATER, AND WIND EROSION. (B) FROM OCTOBER 1ST THROUGH APRIL 30TH OF EACH YEAR, NO SOILS SHALL REMAIN EXPOSED AND UNWORKED FOR MORE THAN TWO DAYS. FROM MAY 1ST TO SEPTEMBER 30TH OF EACH YEAR, NO SOILS SHALL REMAIN EXPOSED AND UNWORKED FOR MORE THAN SEVEN DAYS. THIS CONDITION APPLIES TO ALL SOILS ON SITE, WHETHER AT FINAL GRADE OR NOT. (C) APPLICABLE PRACTICES INCLUDE, BUT ARE NOT LIMITED TO, TEMPORARY AND PERMANENT SEEDING, SODDING, MULCHING, PLASTIC COVERING, SOIL APPLICATION OF POLYACRYLAMIDE (PAM), EARLY APPLICATION OF GRAVEL BASE ON AREAS TO BE PAVED, AND DUST CONTROL. (D) SOIL STABILIZATION MEASURES SELECTED SHOULD BE APPROPRIATE FOR THE TIME OF YEAR, SITE CONDITIONS, ESTIMATED DURATION OF USE, AND POTENTIAL WATER QUALITY IMPACTS THAT STABILIZATION AGENTS MAY HAVE ON DOWNSTREAM WATERS OR GROUND WATER. (E) SOIL STOCKPILES MUST BE STABILIZED AND PROTECTED WITH SEDIMENT TRAPPING MEASURES. (F) WORK ON LINEAR CONSTRUCTION SITES AND ACTIVITIES, INCLUDING RIGHT-OF-WAY AND EASEMENT CLEARING, ROADWAY DEVELOPMENT, PIPELINES, AND TRENCHING FOR UTILITIES, SHALL NOT EXCEED THE CAPABILITY OF THE INDIVIDUAL CONTRACTOR FOR HIS PORTION OF THE PROJECT TO INSTALL THE BEDDING MATERIALS, ROADBEDS, STRUCTURES, PIPELINES, AND/OR UTILITIES, AND TO RESTABILIZE THE DISTURBED SOILS, MEETING THE TIMING CONDITIONS LISTED ABOVE. (G) IN ADDITION, AT THE DISCRETION OF THE PUBLIC WORKS DIRECTOR, THOSE SITES UNABLE TO MAINTAIN THE QUALITY OF THEIR STORMWATER DISCHARGE MAY BE REQUIRED TO PROVIDE SOIL STABILIZATION TO ALL EXPOSED SOIL AREAS REGARDLESS OF THE WORKING STATUS OF THE AREA. UPON WRITTEN NOTIFICATION, THE PROPERTY OWNER SHALL PROVIDE FULL STABILIZATION OF ALL EXPOSED SOIL AREAS WITHIN 24 HOURS.
ELEMENT #6 "PROTECT SLOPES"	(A) CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. (B) CONSIDER SOIL TYPE AND ITS POTENTIAL FOR EROSION. (C) REDUCE SLOPE RUNOFF VELOCITIES BY REDUCING THE CONTINUOUS LENGTH OF SLOPE WITH TERRACING AND DIVERSIONS, REDUCE SLOPE STEEPNESS, AND ROUGHEN SLOPE SURFACE. (D) DIVERT UPSLOPE DRAINAGE AND RUN-ON WATERS FROM OFF SITE WITH INTERCEPTORS AT TOP OF SLOPE. OFF-SITE STORMWATER SHOULD BE HANDLED SEPARATELY FROM STORMWATER GENERATED ON THE SITE. DIVERSION OF OFF-SITE STORMWATER AROUND THE SITE MAY BE A VIABLE OPTION. DIVERTED FLOWS SHALL BE REDIRECTED TO THE NATURAL DRAINAGE LOCATION AT OR BEFORE THE PROPERTY BOUNDARY. (E) CONTAIN DOWN SLOPE COLLECTED FLOWS IN PIPES, SLOPE DRAINS, OR PROTECTED CHANNELS. (F) PROVIDE DRAINAGE TO REMOVE GROUND WATER INTERSECTING THE SLOPE SURFACE OF EXPOSED SOIL AREAS. (G) EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES, CONSISTENT WITH SAFETY AND SPACE CONSIDERATIONS. (H) CHECK DAMS SHALL BE PLACED AT REGULAR INTERVALS WITHIN TRENCHES THAT ARE CUT DOWN A SLOPE. (I) STABILIZE SOILS ON SLOPES, AS SPECIFIED IN ELEMENT NO. 5.

ELEMENT REQUIREMENTS	BEST MANAGEMENT PRACTICES - (BMPs)
ELEMENT #7 "PROTECT DRAIN INLETS"	(A) ALL STORM DRAIN INLETS MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT STORMWATER RUNOFF SHALL NOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR TREATED TO REMOVE SEDIMENT. (B) ALL APPROACH ROADS SHALL BE KEPT CLEAN, AND ALL SEDIMENT AND STREET WASH WATER SHALL NOT BE ALLOWED TO ENTER STORM DRAINS.
ELEMENT #8 "STABILIZE CHANNELS AND OUTLETS"	(A) ALL TEMPORARY ON-SITE CONVEYANCE CHANNELS SHALL BE DESIGNED, CONSTRUCTED AND STABILIZED TO PREVENT EROSION FROM THE EXPECTED VELOCITY OF FLOW FROM A TWO-YEAR, 24-HOUR FREQUENCY STORM FOR THE DEVELOPED CONDITION. (B) STABILIZATION, INCLUDING ARMORING MATERIAL, ADEQUATE TO PREVENT EROSION OF OUTLETS, ADJACENT STREAM BANKS, SLOPES AND DOWNSTREAM REACHES SHALL BE PROVIDED AT THE OUTLETS OF ALL CONVEYANCE SYSTEMS.
ELEMENT #9 "CONTROL POLLUTANTS"	(A) ALL POLLUTANTS, INCLUDING WASTE MATERIALS AND DEMOLITION DEBRIS, THAT OCCUR ON SITE DURING CONSTRUCTION SHALL BE HANDLED AND DISPOSED OF IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF STORMWATER. (B) COVER, CONTAINMENT, AND PROTECTION FROM VANDALISM SHALL BE PROVIDED FOR ALL CHEMICALS, LIQUID PRODUCTS, PETROLEUM PRODUCTS, AND NON-INERT WASTES PRESENT ON THE SITE (SEE CHAPTER 173-304 WAC, AS CURRENTLY ENACTED OR HEREAFTER MODIFIED, FOR THE DEFINITION OF INERT WASTE, WHICH IS INCORPORATED HEREIN BY THIS REFERENCE). (C) MAINTENANCE AND REPAIR OF HEAVY EQUIPMENT AND VEHICLES INVOLVING OIL CHANGES, HYDRAULIC SYSTEM DRAIN DOWN, SOLVENT AND DE-GREASING CLEANING OPERATIONS, FUEL TANK DRAIN DOWN AND REMOVAL, AND OTHER ACTIVITIES WHICH MAY RESULT IN DISCHARGE OR SPILLAGE OF POLLUTANTS TO THE GROUND OR INTO STORMWATER RUNOFF MUST BE CONDUCTED USING SPILL PREVENTION MEASURES, SUCH AS DRIP PANS. CONTAMINATED SURFACES SHALL BE CLEANED IMMEDIATELY FOLLOWING ANY DISCHARGE OR SPILL INCIDENT. EMERGENCY REPAIRS MAY BE PERFORMED ON SITE USING TEMPORARY PLASTIC PLACED BENEATH AND, IF RAINING, OVER THE VEHICLE. (D) WHEEL WASH, OR TIRE BATH WASTEWATER, SHALL BE DISCHARGED TO A SEPARATE ON-SITE TREATMENT SYSTEM OR TO THE SANITARY SEWER. (E) APPLICATION OF AGRICULTURAL CHEMICALS, INCLUDING FERTILIZERS AND PESTICIDES, SHALL BE CONDUCTED IN A MANNER AND AT APPLICATION RATES THAT WILL NOT RESULT IN LOSS OF CHEMICAL TO STORMWATER RUNOFF. MANUFACTURERS' RECOMMENDATIONS SHALL BE FOLLOWED FOR APPLICATION RATES AND PROCEDURES. (F) MANAGEMENT OF PH-MODIFYING SOURCES SHALL PREVENT CONTAMINATION OF RUNOFF AND STORMWATER COLLECTED ON THE SITE. THESE SOURCES INCLUDE, BUT ARE NOT LIMITED TO, BULK CEMENT, CEMENT KILN DUST, FLY ASH, NEW CONCRETE WASHING AND CURING WATERS, WASTE STREAMS GENERATED FROM CONCRETE GRINDING AND SAWING, EXPOSED AGGREGATE PROCESSES, AND CONCRETE PUMPING AND MIXER WASHOUT WATERS.
ELEMENT #10 "CONTROL DEWATERING"	(A) ALL FOUNDATION, VAULT, AND TRENCH DEWATERING WATER, WHICH HAS SIMILAR CHARACTERISTICS TO STORMWATER RUNOFF AT THE SITE, SHALL BE DISCHARGED INTO A CONTROLLED CONVEYANCE SYSTEM, PRIOR TO DISCHARGE TO A SEDIMENT TRAP OR SEDIMENT POND. CHANNELS MUST BE STABILIZED, AS SPECIFIED IN ELEMENT NO. 8. (B) CLEAN, NONTURBID DEWATERING WATER, SUCH AS WELL-POINT GROUND WATER, CAN BE DISCHARGED TO SYSTEMS TRIBUTARY TO STATE SURFACE WATERS, AS SPECIFIED IN ELEMENT NO. 8, PROVIDED THE DEWATERING FLOW DOES NOT CAUSE EROSION OR FLOODING OF THE RECEIVING WATERS. THESE CLEAN WATERS SHOULD NOT BE ROUTED THROUGH SEDIMENT PONDS WITH STORMWATER. (C) HIGHLY TURBID OR OTHERWISE CONTAMINATED DEWATERING WATER, SUCH AS FROM CONSTRUCTION EQUIPMENT OPERATION, CLAMSHELL DIGGING, CONCRETE TREMIE POUR, OR WORK INSIDE A COFFERDAM, SHALL BE HANDLED SEPARATELY FROM STORMWATER AT THE SITE. (D) OTHER DISPOSAL OPTIONS, DEPENDING ON SITE CONSTRAINTS, MAY INCLUDE, BY WAY OF EXAMPLE: (1) INFILTRATION, (2) TRANSPORT OFF SITE IN VEHICLE, SUCH AS A VACUUM FLUSH TRUCK, FOR LEGAL DISPOSAL IN A MANNER THAT DOES NOT POLLUTE STATE WATERS, (3) ON-SITE TREATMENT USING CHEMICAL TREATMENT OR OTHER SUITABLE TREATMENT TECHNOLOGIES.

ELEMENT REQUIREMENTS	BEST MANAGEMENT PRACTICES - (BMPS)
ELEMENT #11 "MAINTAIN BMPS"	(A) ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL BMPS SHALL BE MAINTAINED AND REPAIRED AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. ALL MAINTENANCE AND REPAIR SHALL BE CONDUCTED IN ACCORDANCE WITH BMPS. (B) SEDIMENT CONTROL BMPS SHALL BE INSPECTED WEEKLY OR AFTER A RUNOFF-PRODUCING STORM EVENT DURING THE DRY SEASON AND DAILY DURING THE WET SEASON. (C) ALL TEMPORARY EROSION AND SEDIMENT CONTROL BMPS SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY BMPS ARE NO LONGER NEEDED. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILIZED ON SITE. DISTURBED SOIL AREAS RESULTING FROM REMOVAL OF BMPS OR VEGETATION SHALL BE PERMANENTLY STABILIZED.
ELEMENT #12 "MANAGE THE PROJECT"	(A) PHASING OF CONSTRUCTION. DEVELOPMENT PROJECTS SHALL BE PHASED WHERE FEASIBLE IN ORDER TO PREVENT, TO THE MAXIMUM EXTENT PRACTICABLE, THE TRANSPORT OF SEDIMENT FROM THE DEVELOPMENT SITE DURING CONSTRUCTION. REVEGETATION OF EXPOSED AREAS AND MAINTENANCE OF THAT VEGETATION SHALL BE AN INTEGRAL PART OF THE CLEARING ACTIVITIES FOR ANY PHASE. (B) WHEN ESTABLISHING THESE PERMITTED CLEARING AND GRADING AREAS, CONSIDERATION SHOULD BE GIVEN TO MINIMIZING REMOVAL OF EXISTING TREES AND MINIMIZING DISTURBANCE/COMPACTION OF NATIVE SOILS EXCEPT AS NEEDED FOR BUILDING PURPOSES. PERMITTED CLEARING AND GRADING AREAS AND ANY OTHER AREAS REQUIRED TO PRESERVE CRITICAL OR SENSITIVE AREAS, BUFFERS, NATIVE GROWTH PROTECTION EASEMENTS, OR TREE RETENTION AREAS, SHALL BE DELINEATED ON THE SITE PLANS AND THE DEVELOPMENT SITE. (C) COORDINATION WITH UTILITIES AND OTHER CONTRACTORS. THE PRIMARY PROJECT PROPOONENT SHALL EVALUATE, WITH INPUT FROM UTILITIES AND OTHER CONTRACTORS, THE STORMWATER MANAGEMENT REQUIREMENTS FOR THE ENTIRE PROJECT, INCLUDING THE UTILITIES, WHEN PREPARING THE CONSTRUCTION SWPPP. (D) INSPECTION AND MONITORING. ALL BMPS SHALL BE INSPECTED, MAINTAINED, AND REPAIRED AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. (E) WHENEVER INSPECTION AND/OR MONITORING REVEALS THAT THE BMPS IDENTIFIED IN THE CONSTRUCTION SWPPP ARE INADEQUATE, DUE TO THE ACTUAL DISCHARGE OF OR POTENTIAL TO DISCHARGE A SIGNIFICANT AMOUNT OF ANY POLLUTANT, THE SWPPP SHALL BE MODIFIED, AS APPROPRIATE, IN A TIMELY MANNER. (F) MAINTENANCE OF THE CONSTRUCTION SWPPP. THE CONSTRUCTION SWPPP SHALL BE RETAINED ON SITE. THE CONSTRUCTION SWPPP SHALL BE MODIFIED WHENEVER THERE IS A SIGNIFICANT CHANGE IN THE DESIGN, CONSTRUCTION, OPERATION, OR MAINTENANCE OF ANY BMP.
ELEMENT #13 "PROTECT LOW IMPACT DEVELOPMENT BMPS"	NO LOW IMPACT DEVELOPMENT BMPS ARE PROPOSED FOR THIS PROJECT. ADJACENT TO THE CONNECTICUT PROJECT SITE ALONG NORTHSORE DRIVE, PERMEABLE PAVEMENT HAS BEEN CONSTRUCTED TO TREAT RUNOFF FROM THE ROADWAY. THE PERMEABLE PAVEMENT SHALL BE PROTECTED FROM EQUIPMENT, VEHICLE TRACK-OUT, STOCKPIILING, AND OTHER SEDIMENT SOURCES.

BID SET



CONTACT PERSON: JESSICA BENNETT, PE , PROJECT ENGINEER AT (360) 778-7923

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Date	No	Revision	By

PROJECT ENGINEER NAS
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INSPECTOR _____

DIRECTOR PUBLIC WORKS J.E.P.
CITY ENGINEER M.L.W.
ENGINEERING MANGER M.L.W.

CITY OF BELLINGHAM, WASHINGTON
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

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DATUM
NAD 83/98
NAVD 88

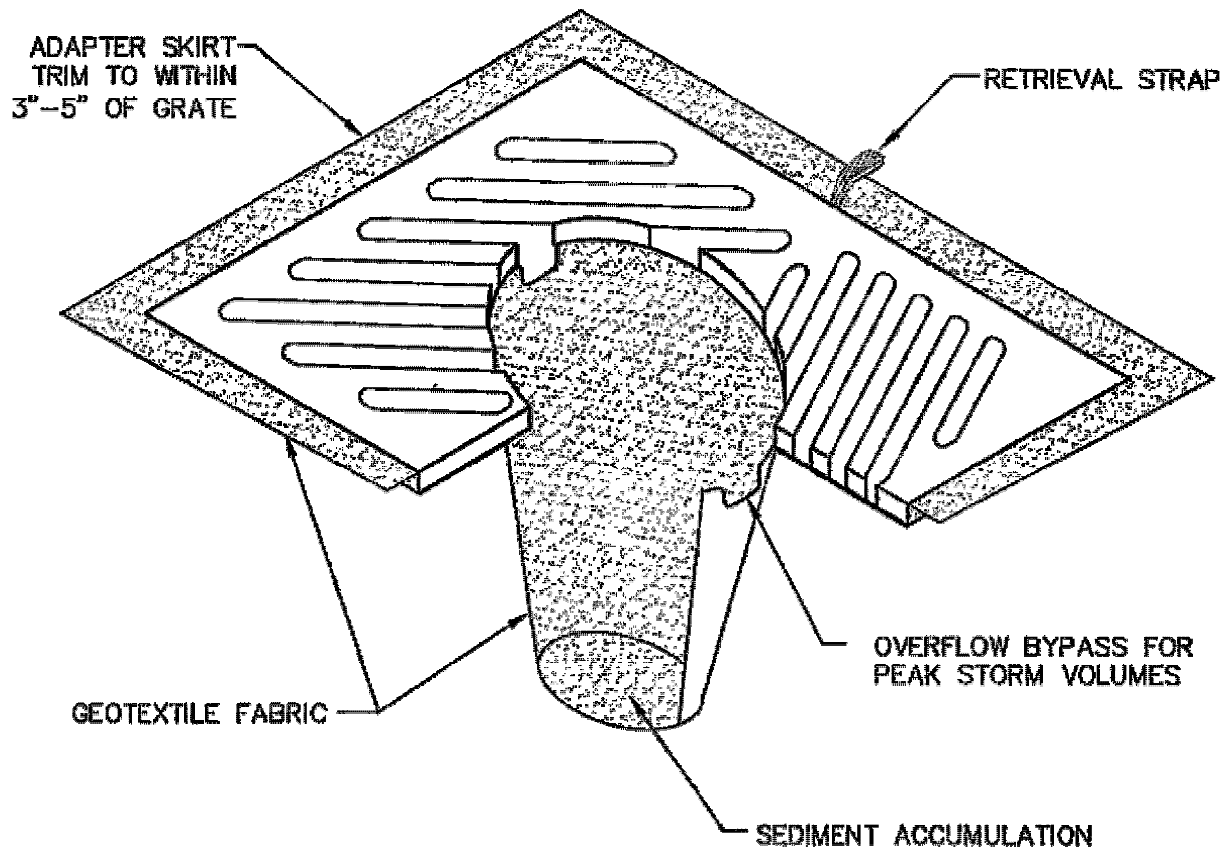
Job. No. EV176
Date 03/2026
Field Bk. _____

LAKE WHATCOM VAULT RETROFITS - PHASE 1 (EV176)

TESC DETAILS

SHEET
11 OF
33

CONTACT PERSON: JESSICA BENNETT, PE , PROJECT ENGINEER AT (360) 778-7923



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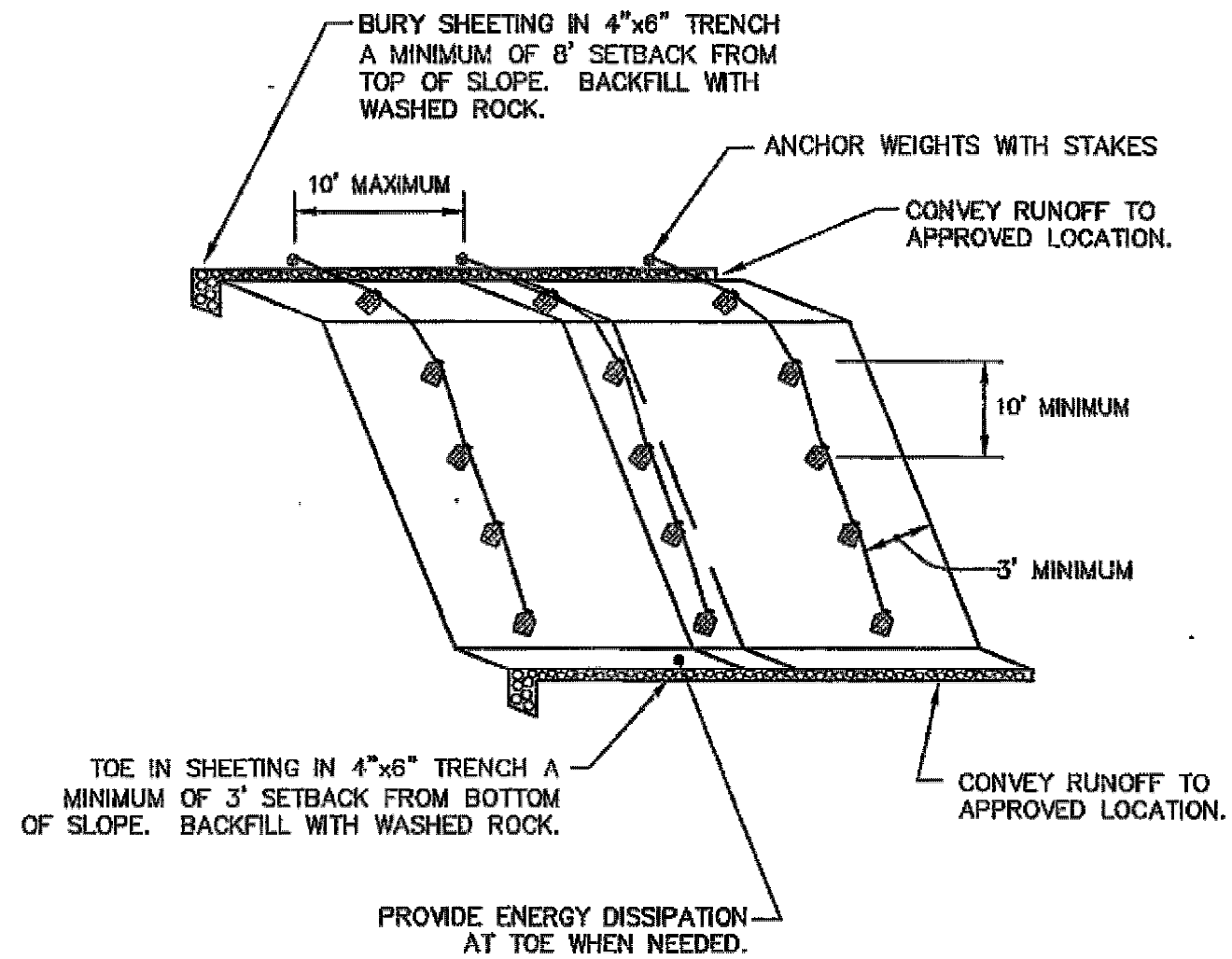
1. INSERT SHALL BE INSTALLED PRIOR TO CLEARING AND GRADING ACTIVITY, OR UPON PLACEMENT OF A NEW CATCH BASIN.
2. SEDIMENT SHALL BE REMOVED FROM THE UNIT WHEN IT BECOMES HALF FULL.
3. SEDIMENT REMOVAL SHALL BE ACCOMPLISHED BY REMOVING THE INSERT, EMPTYING, AND RE-INSERTING IT INTO THE CATCH BASIN.

APPROVED <i>Royd Routh</i> City Engineer	<u>11/29/04</u> Date	CITY OF BELLINGHAM CATCH BASIN INSERT	DRAWING EC-620
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DETAIL - CATCH BASIN INLET PROTECTION, BMP C220

SCALE: NTS

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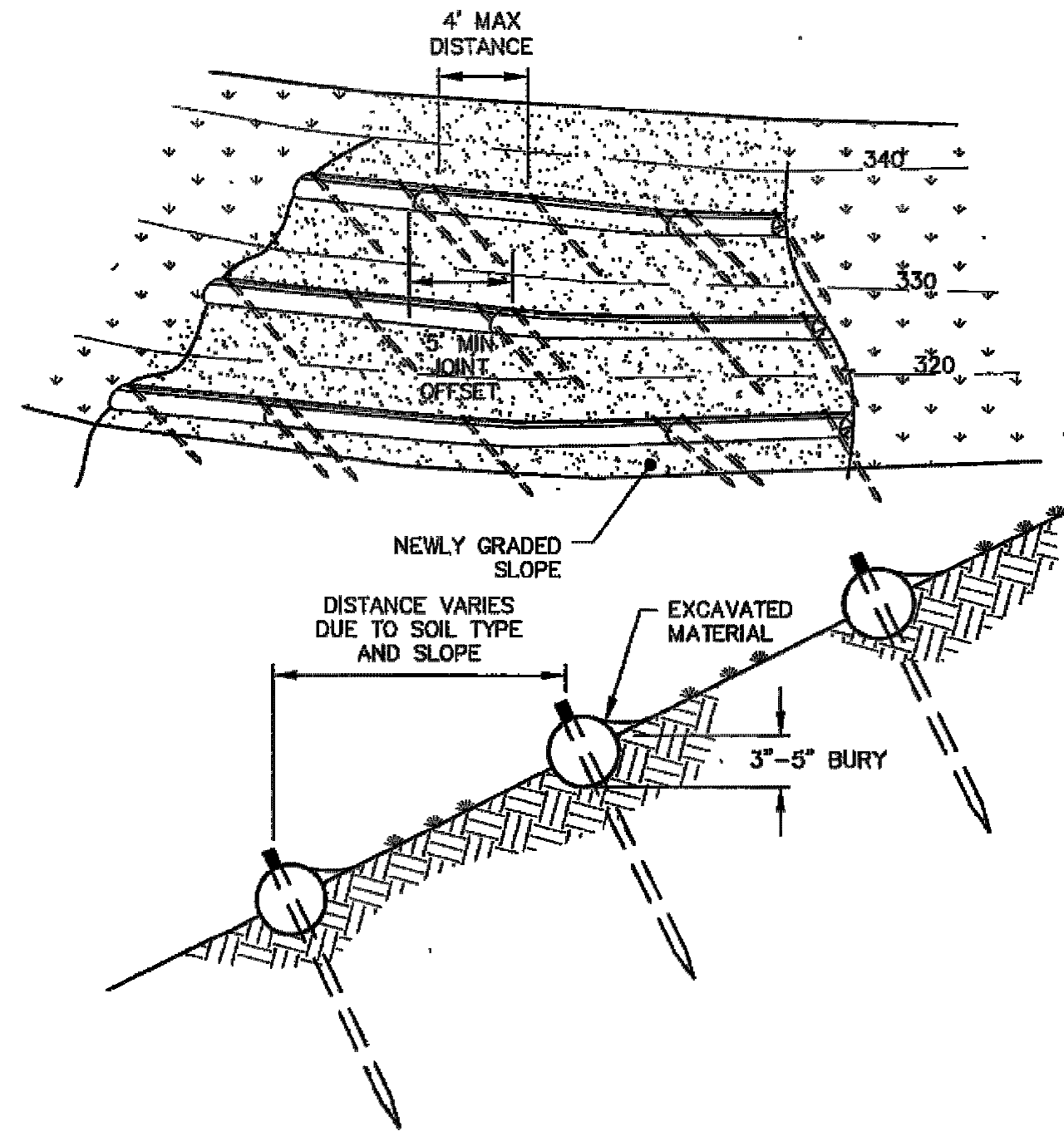
1. TIRES, SANDBAGS, OR EQUIVALENT MAY BE USED TO WEIGH DOWN PLASTIC SHEETING.
2. SEAMS BETWEEN SHEETS MUST OVERLAP A MINIMUM OF 12" AND BE WEIGHTED OR TAPED.
3. PLASTIC SHEETING SHALL HAVE A MINIMUM THICKNESS OF 6 MIL.
4. DUE TO RAPID RUNOFF CAUSED BY PLASTIC SHEETING, THIS METHOD SHALL NOT BE USED UPSLOPE OF AREAS THAT MIGHT BE ADVERSELY IMPACTED BY CONCENTRATED RUNOFF.
5. CONSTRUCT BERM OR SWALE AT TOP OF SLOPE AS DIRECTED BY THE CLEARING AND GRADING INSPECTOR.
6. CONSTRUCT DITCH AT BASE OF SLOPE AS REQUIRED BY CITY, AND DISCHARGE TO APPROVED LOCATION.

APPROVED <i>Royd Routh</i> City Engineer	<u>11/29/04</u> Date	CITY OF BELLINGHAM PLASTIC COVERING FOR SLOPES AND STOCKPILES	DRAWING EC-650
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DETAIL - SLOPE PROTECTION, BMP C123

SCALE: NTS

2
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NOTES:

1. JOINTS MUST BE OFFSET BY NO LESS THAN FIVE FEET.
2. ROLLS SHALL BE ALIGNED PARALLEL TO ELEVATION CONTOURS.
3. HYDROSEED OR MULCH SLOPE FOR ADDITIONAL EROSION CONTROL.

APPROVED <i>Royd Routh</i> City Engineer	<u>11/29/04</u> Date	CITY OF BELLINGHAM STRAW ROLLS	DRAWING EC-655
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DETAIL - STRAW WATTLE, BMP C235

SCALE: NTS

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CITY OF BELLINGHAM, WASHINGTON
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ENGINEERING DIVISION

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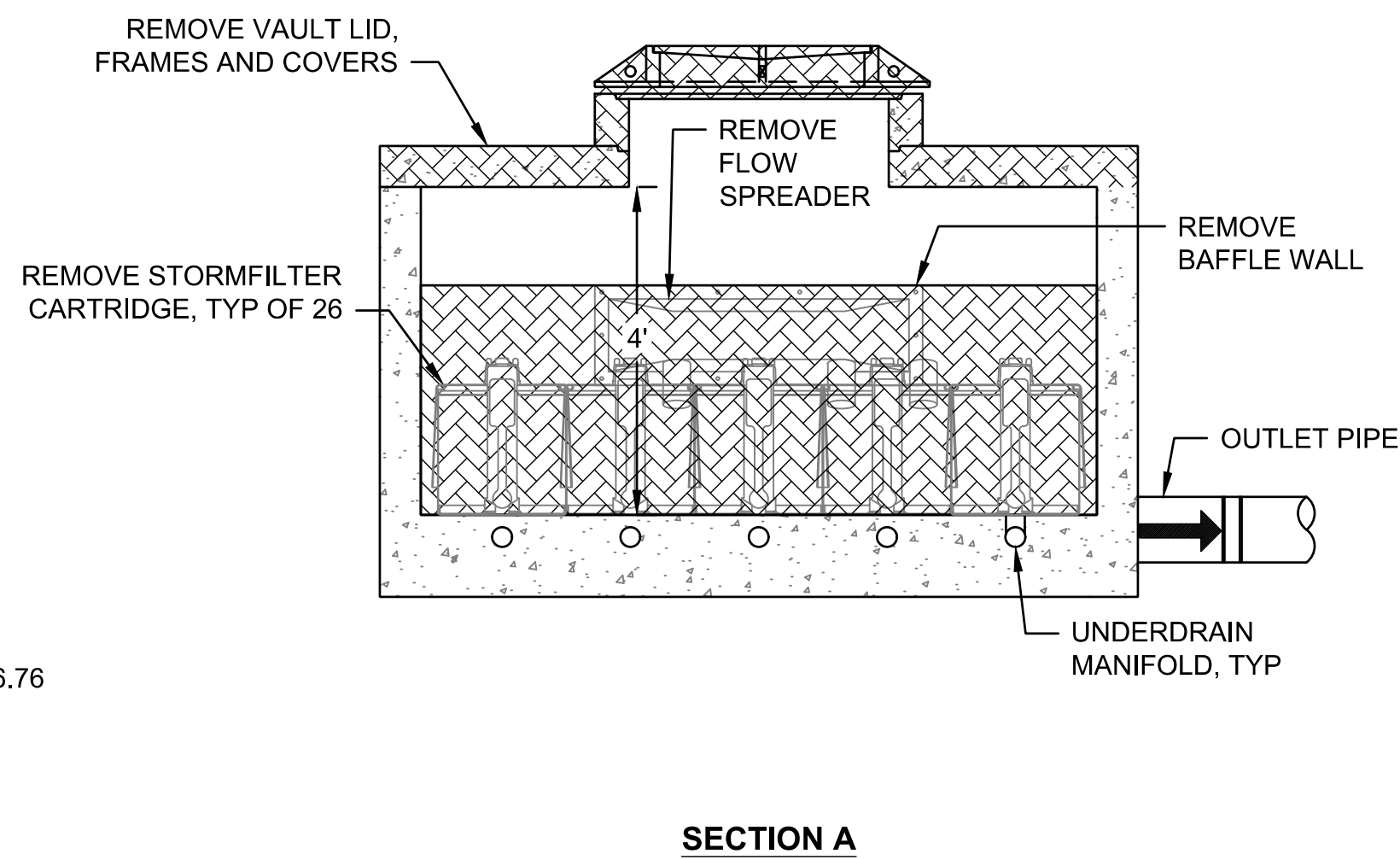
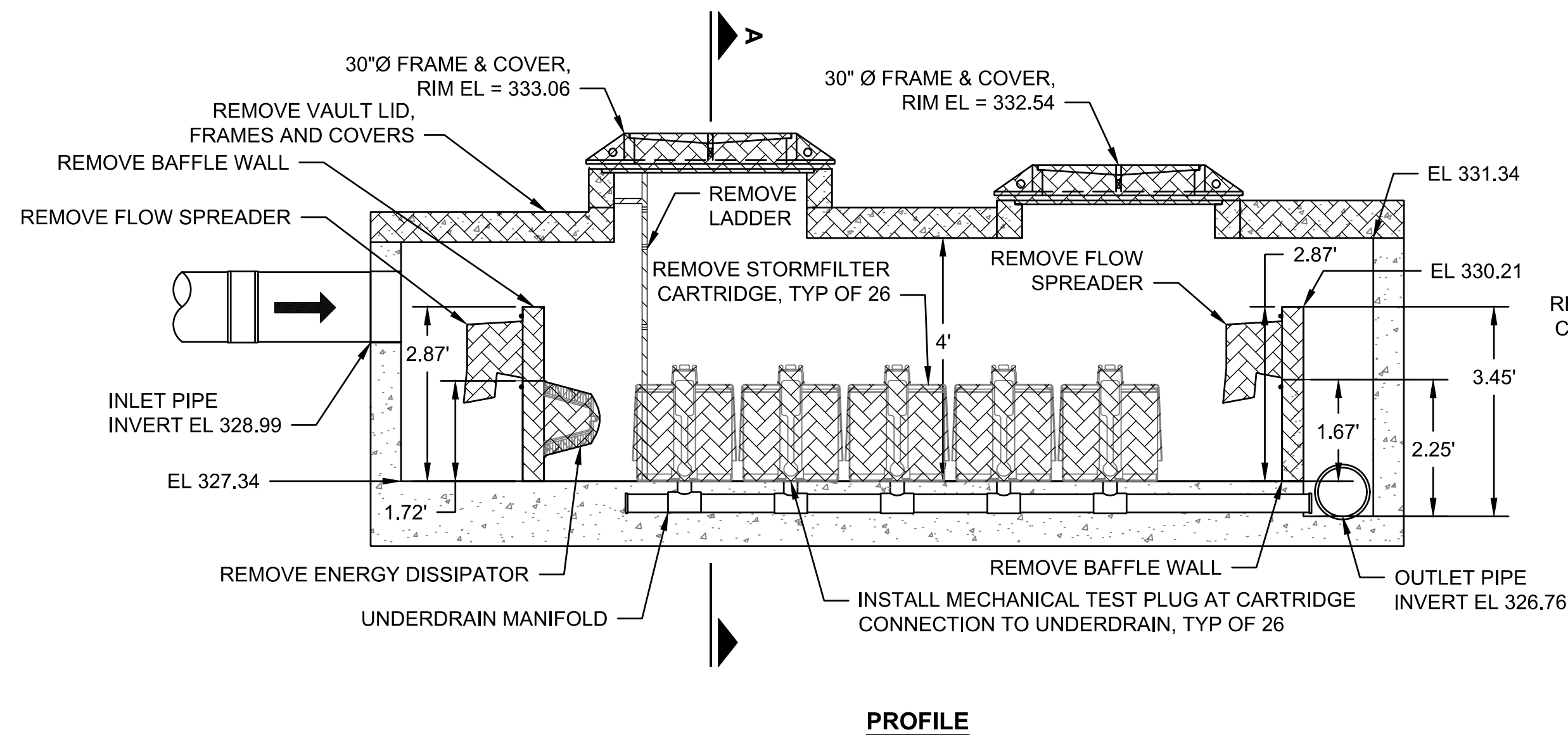
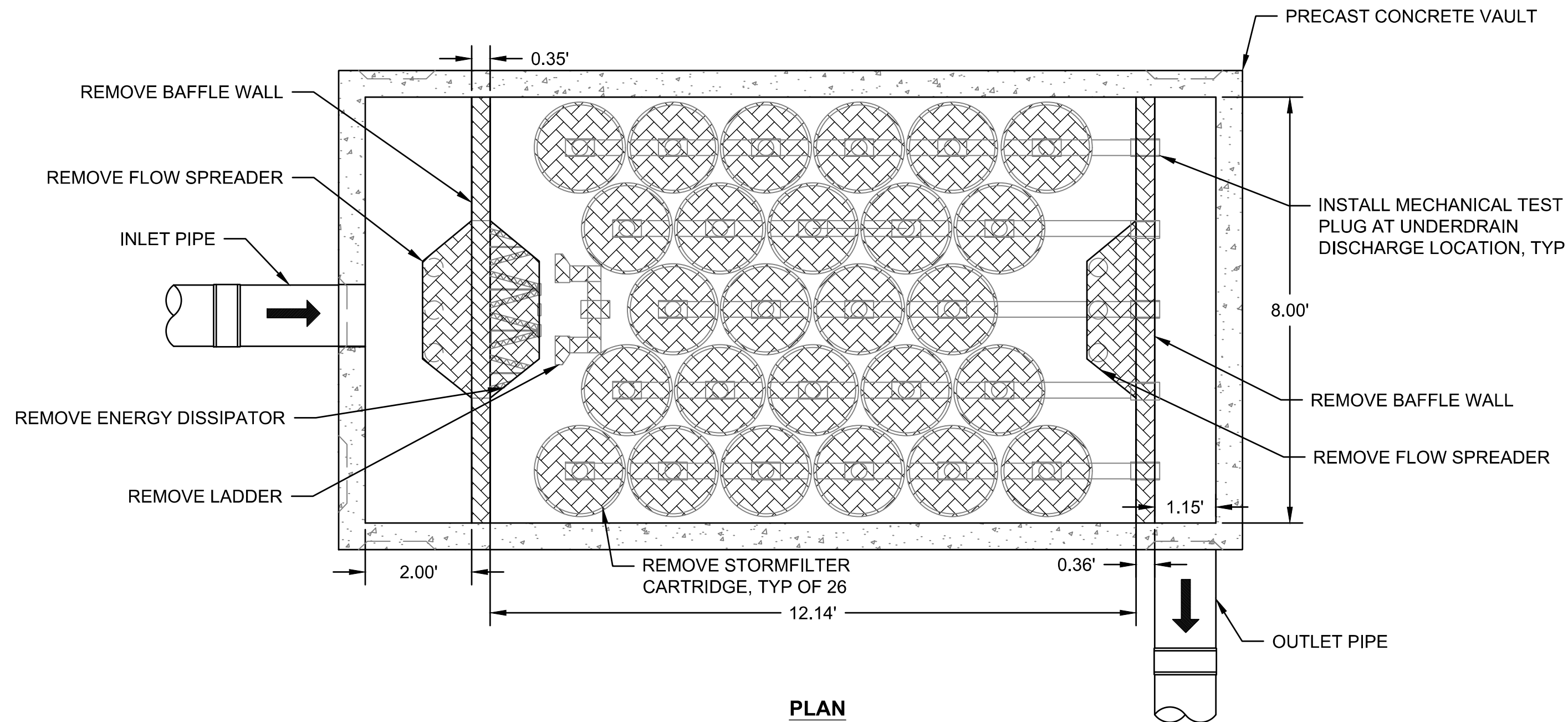
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NAVD 88

Job. No. EV176
Date 03/2026
Field Bk. _____

LAKE WHATCOM VAULT RETROFITS - PHASE 1 (EV176)
SITE PREPARATION - CONNECTICUT VAULT A

SHEET
12 **OF**
33

CONTACT PERSON: JESSICA BENNETT, PE , PROJECT ENGINEER AT (360) 778-7923



CONNECTICUT VAULT A

SCALE: 1" = 2'

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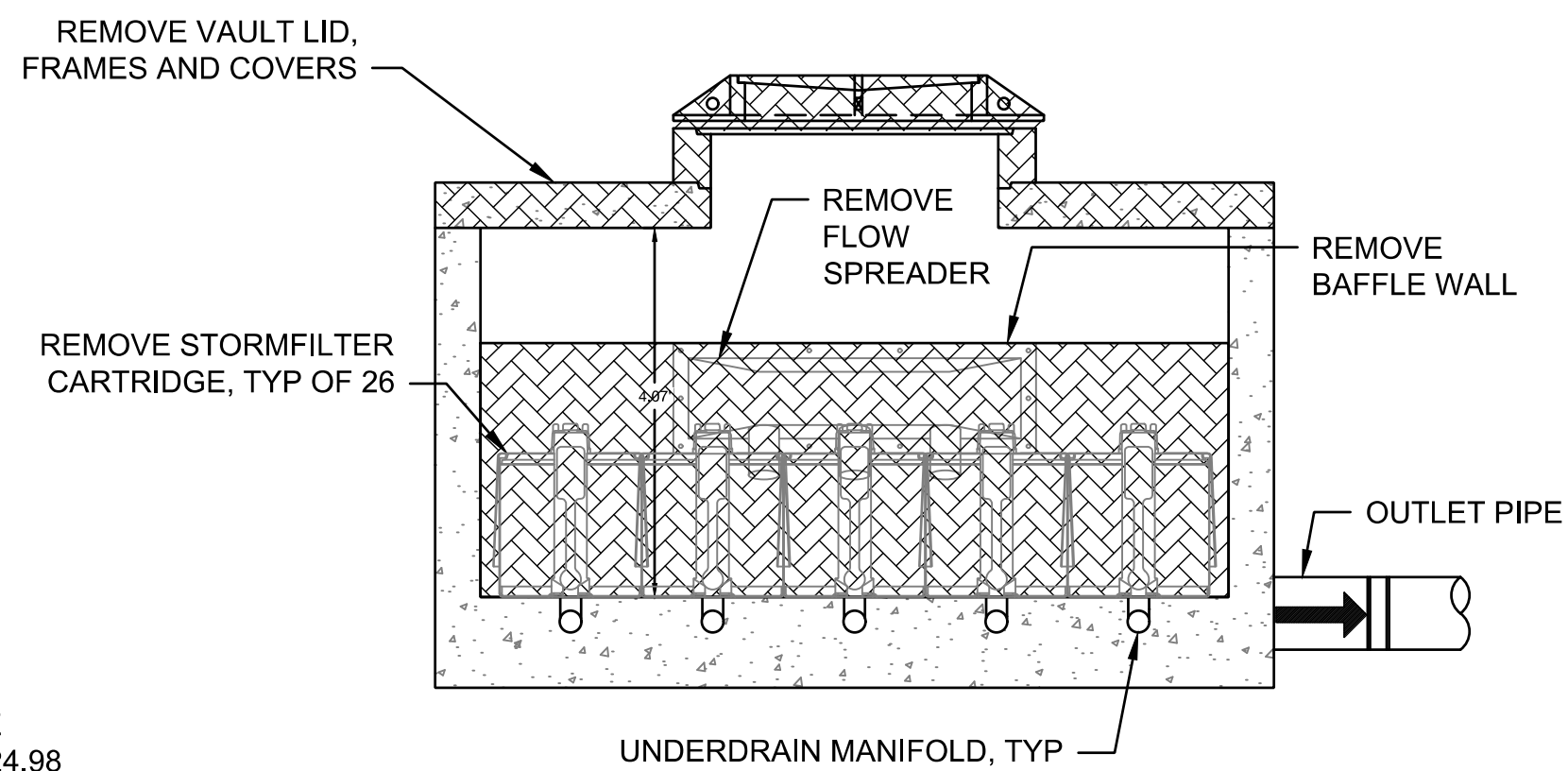
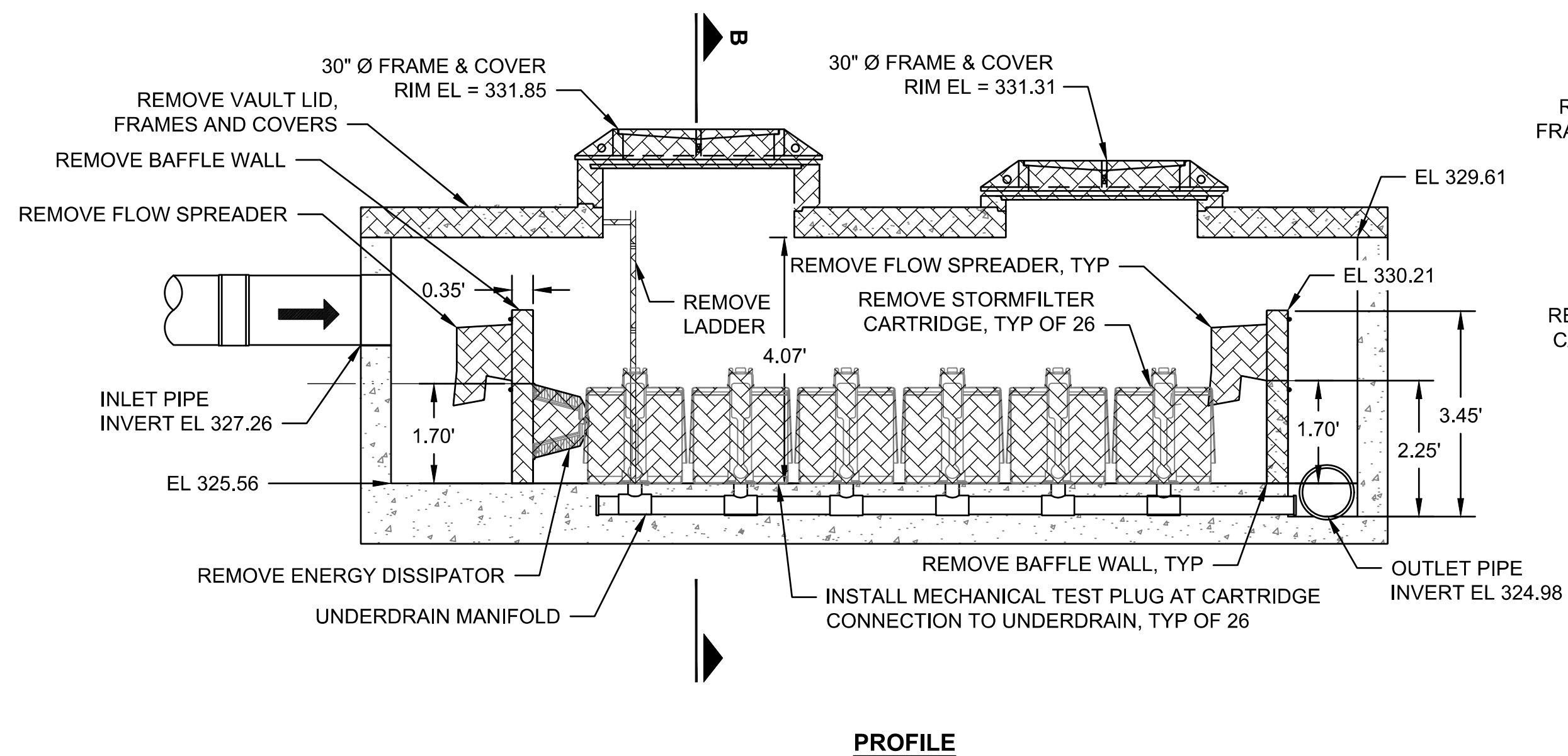
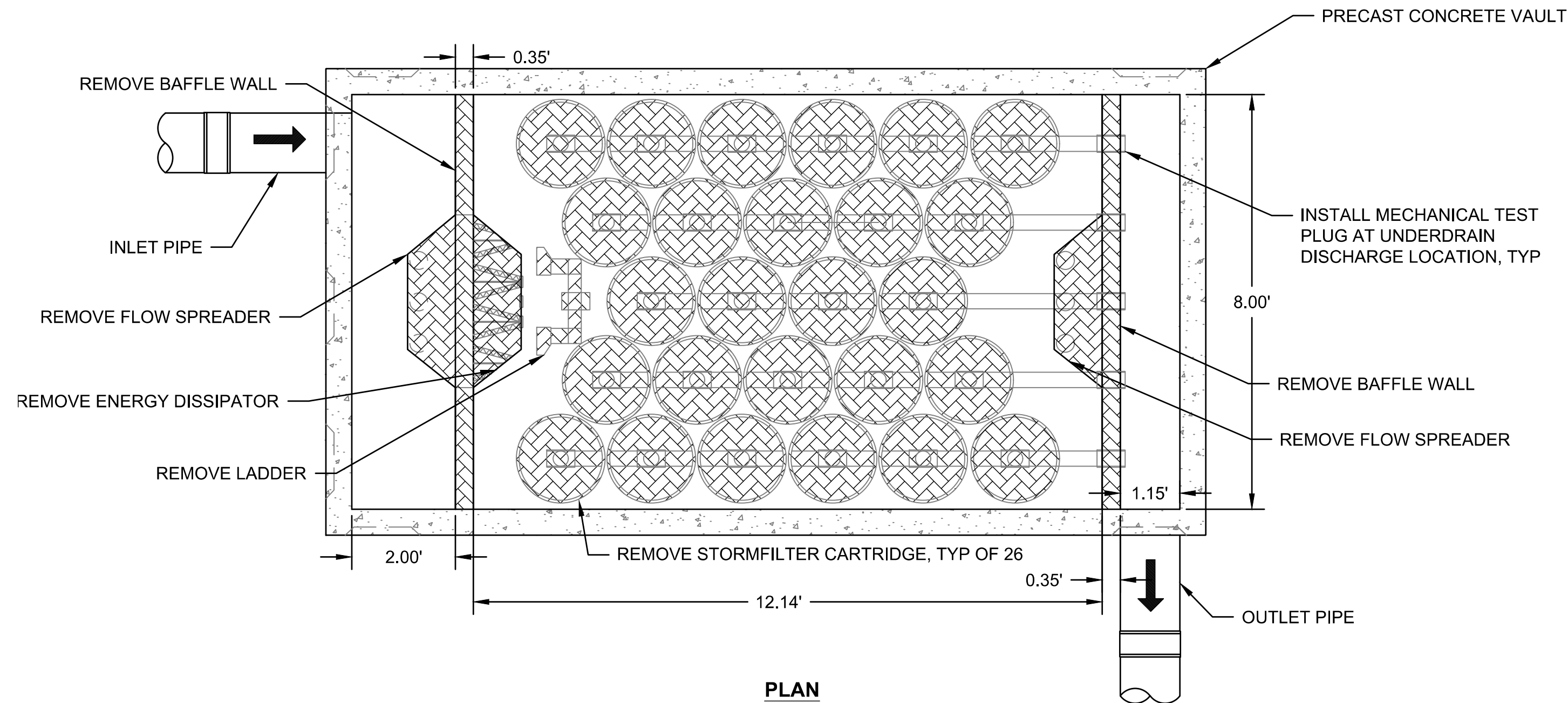
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NAVD 88

Job. No. EV176
Date 03/2026
Field Bk. _____

LAKE WHATCOM VAULT RETROFITS - PHASE 1 (EV176)
SITE PREPARATION - CONNECTICUT VAULT B

SHEET
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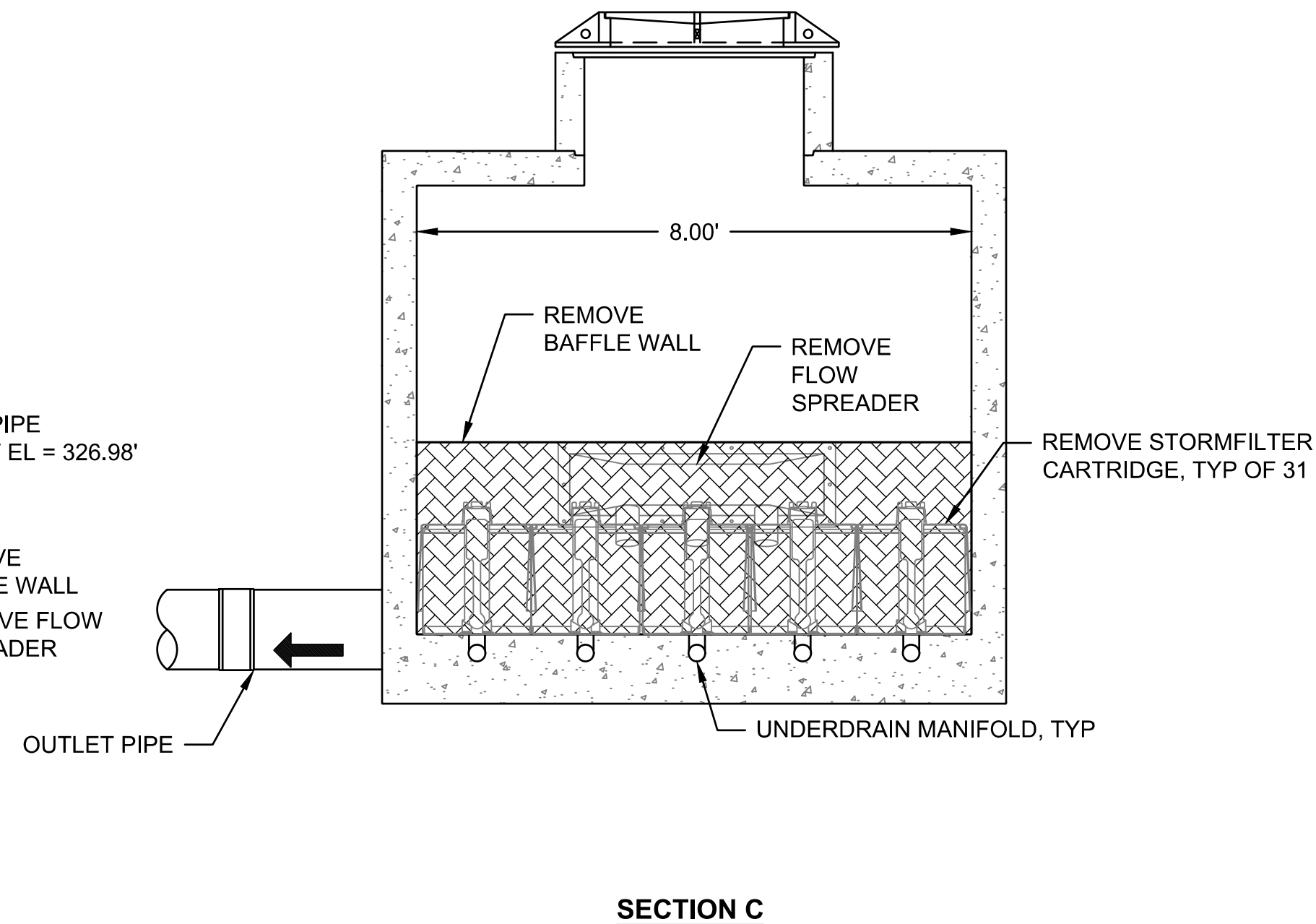
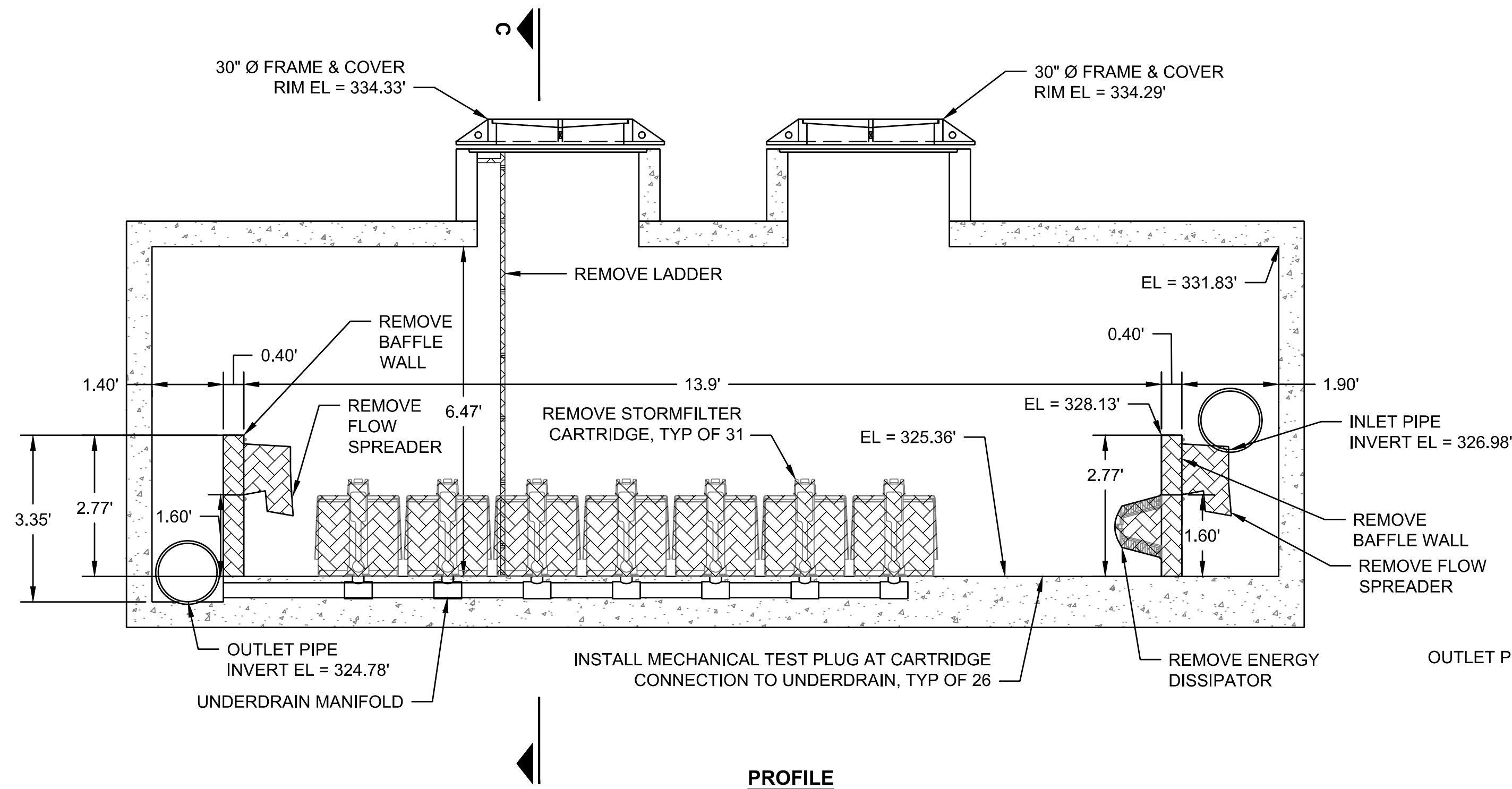
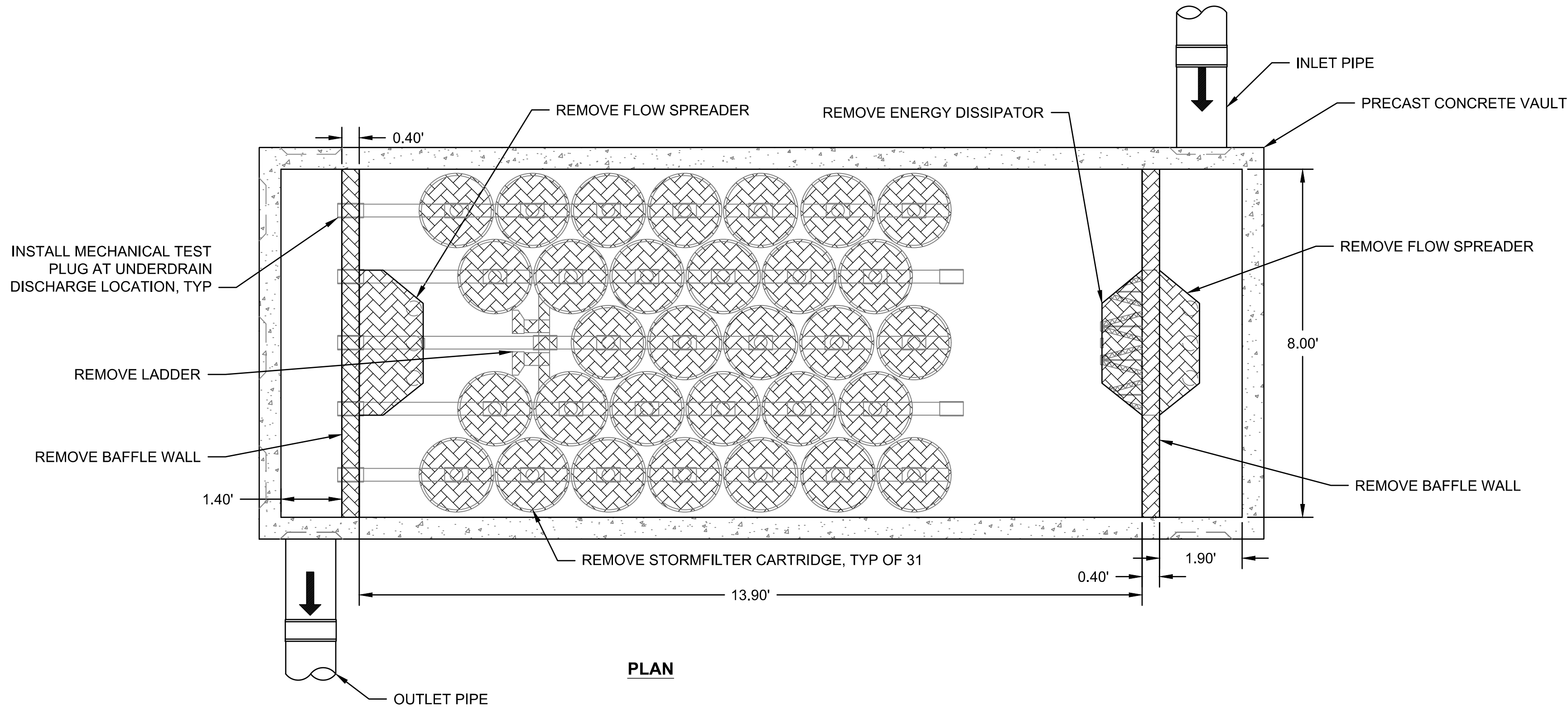
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POPLAR VAULT

SCALE: 1" = 2'



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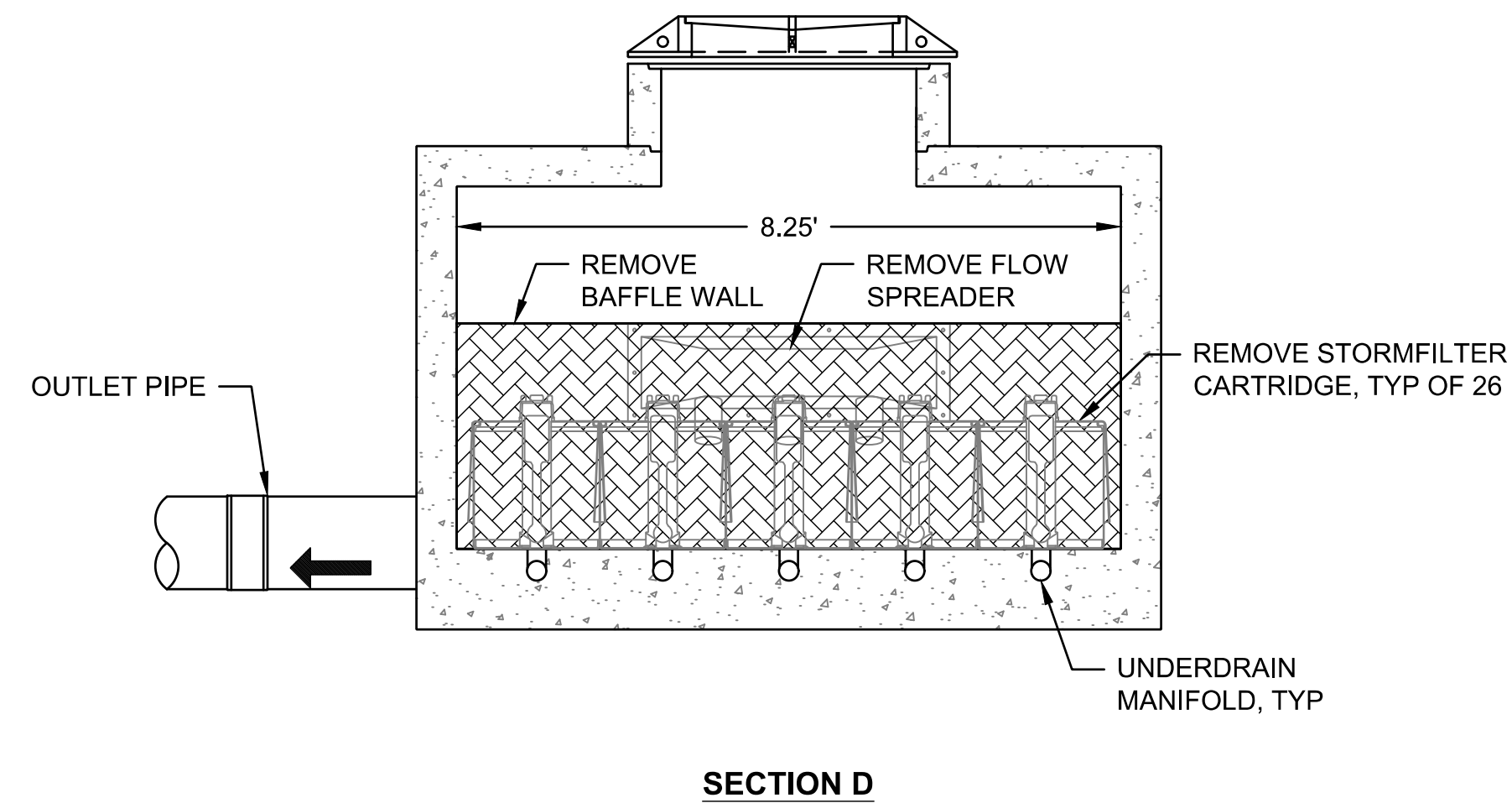
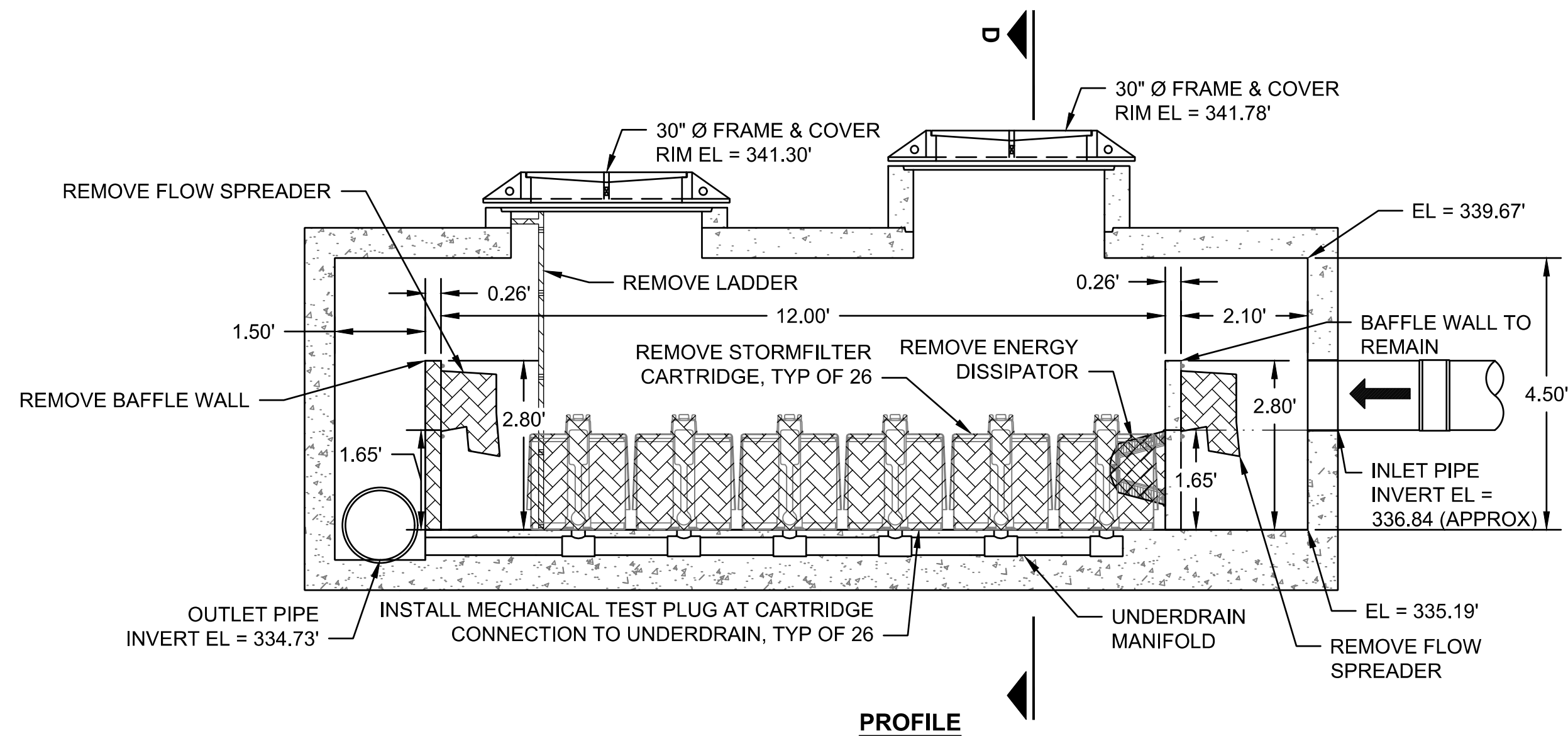
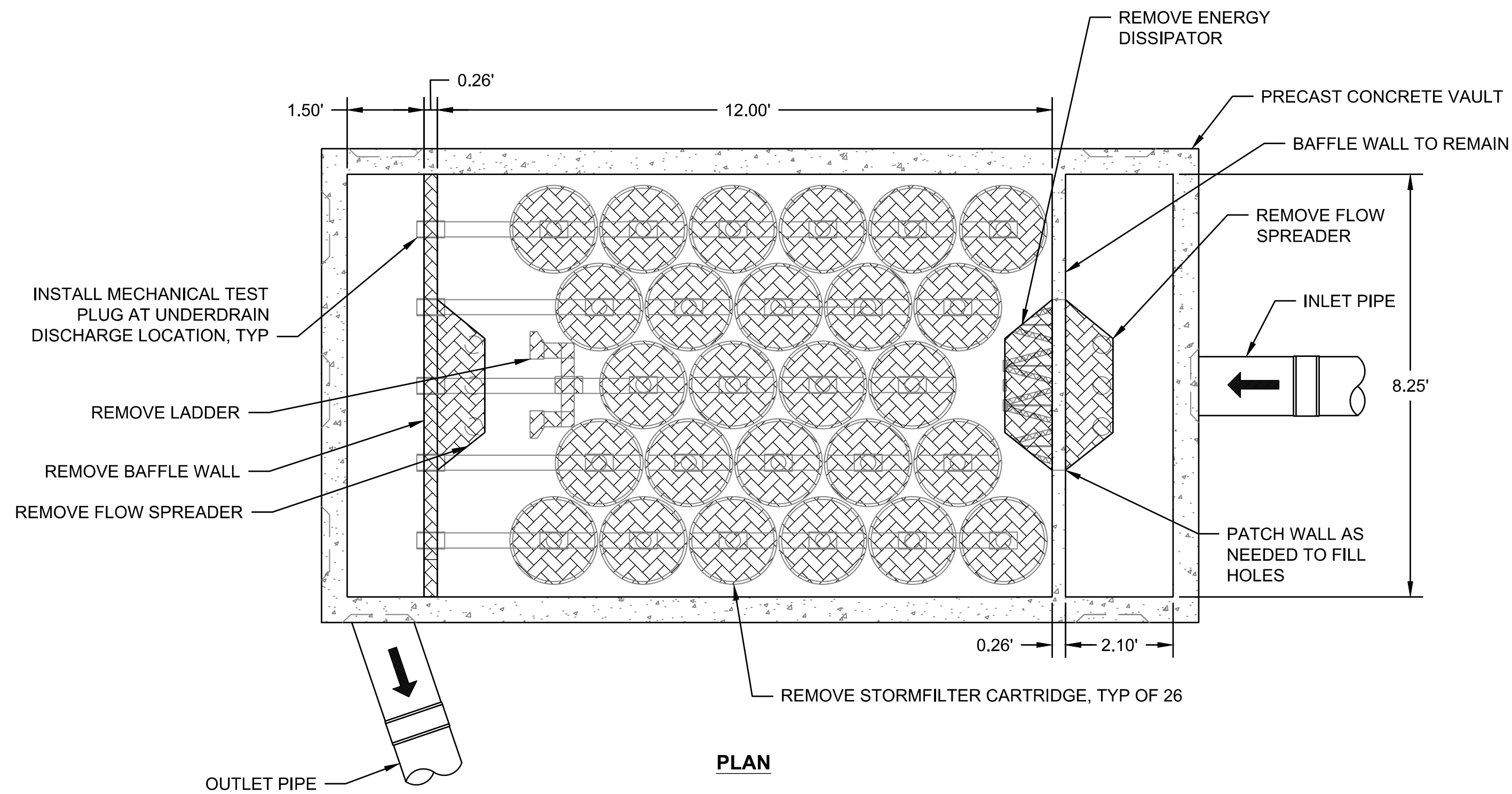
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Date 03/2026
Field Bk.

LAKE WHATCOM VAULT RETROFITS - PHASE 1 (EV176)

SITE PREPARATION - POPLAR VAULT

SHEET
14 OF
33

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ACADEMY VAULT

SCALE: 1" = 2'



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Job. No. EV176
Date 03/2026
Field Bk.

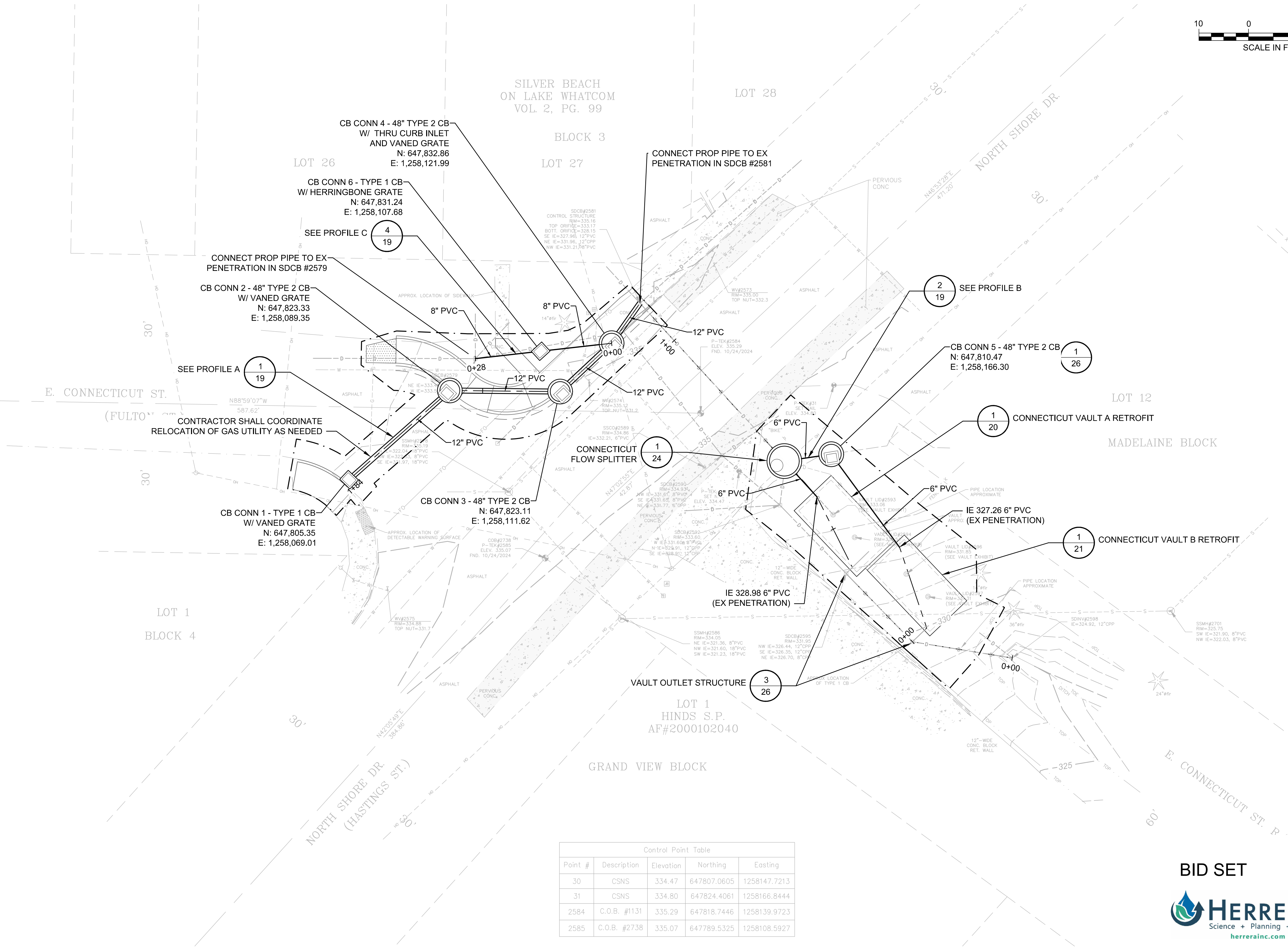
LAKE WHATCOM VAULT RETROFITS - PHASE 1 (EV176)

SITE PREPARATION - ACADEMY VAULT

SHEET
15 OF
33

CONTACT PERSON: JESSICA BENNETT, PE, PROJECT ENGINEER AT (360) 778-7923

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Control Point Table				
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31	CSNS	334.80	647824.4061	1258166.8444
2584	C.O.B. #1131	335.29	647818.7446	1258139.9723
2585	C.O.B. #2738	335.07	647789.5325	1258108.5927



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CONTACT PERSON: JESSICA BENNETT, PE, PROJECT ENGINEER AT (360) 778-7923

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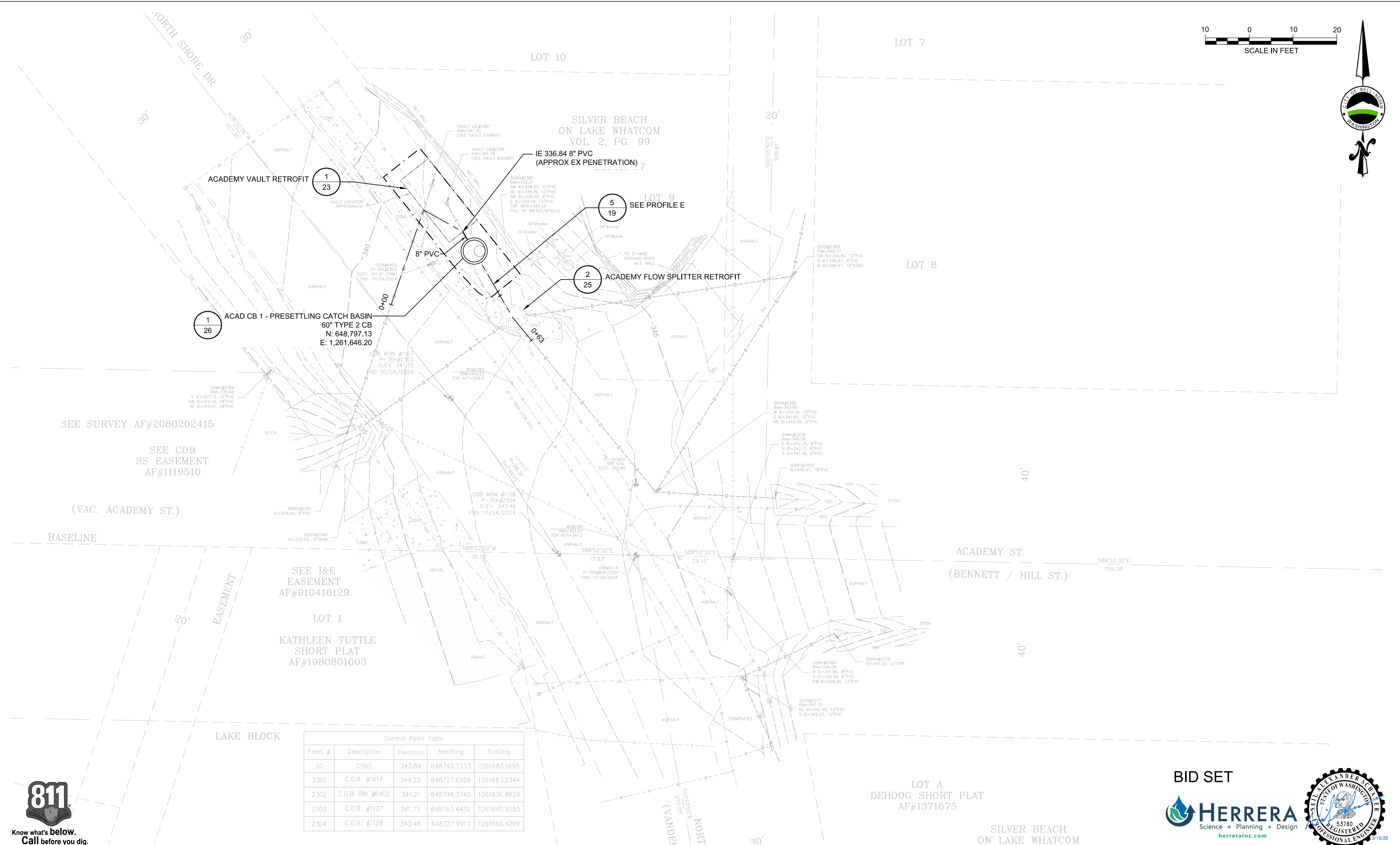
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NAVD 88

LAKE WHATCOM VAULT RETROFITS - PHASE 1 (EV176) DRAINAGE PLAN - POPLAR

SHEET 17 OF 33

CONTACT PERSON: JESSICA BENNETT, PE , PROJECT ENGINEER AT (360) 778-7923

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Control Point Table				
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2302	C.O.B. BM #6402	341.21	648794.3740	1261636.8629
2303	C.O.B. #1127	341.75	648763.4432	1261640.9253
2304	C.O.B. #1128	343.46	648727.9913	1261665.4299

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CITY ENGINEER	M.L.W.
ENGINEERING MANGER	M.L.W.

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Job. No.	EV176
Date	03/2026
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LAKE WHATCOM VAULT RETROFITS - PHASE 1 (EV176)
DRAINAGE PLAN - ACADEMY

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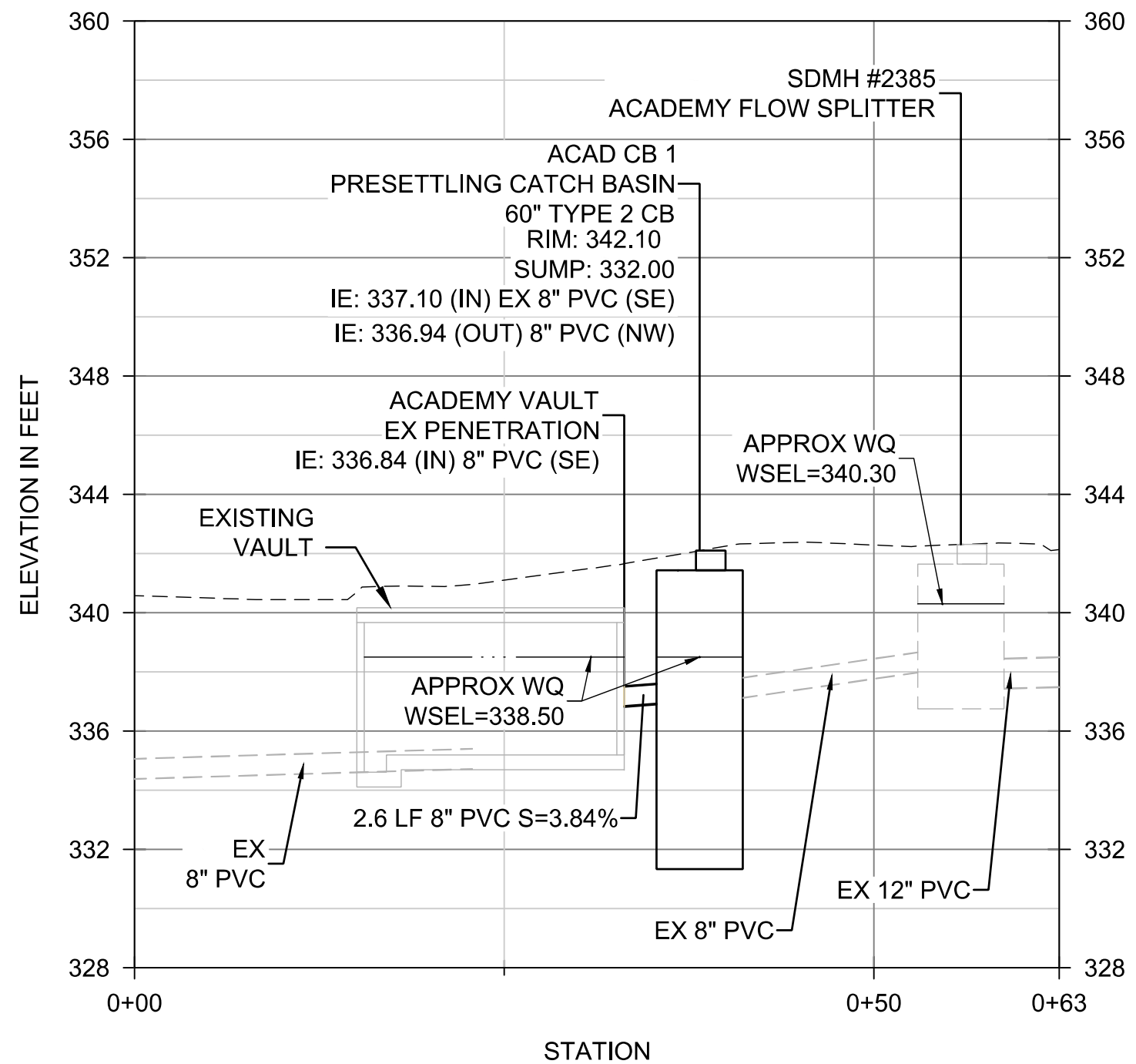
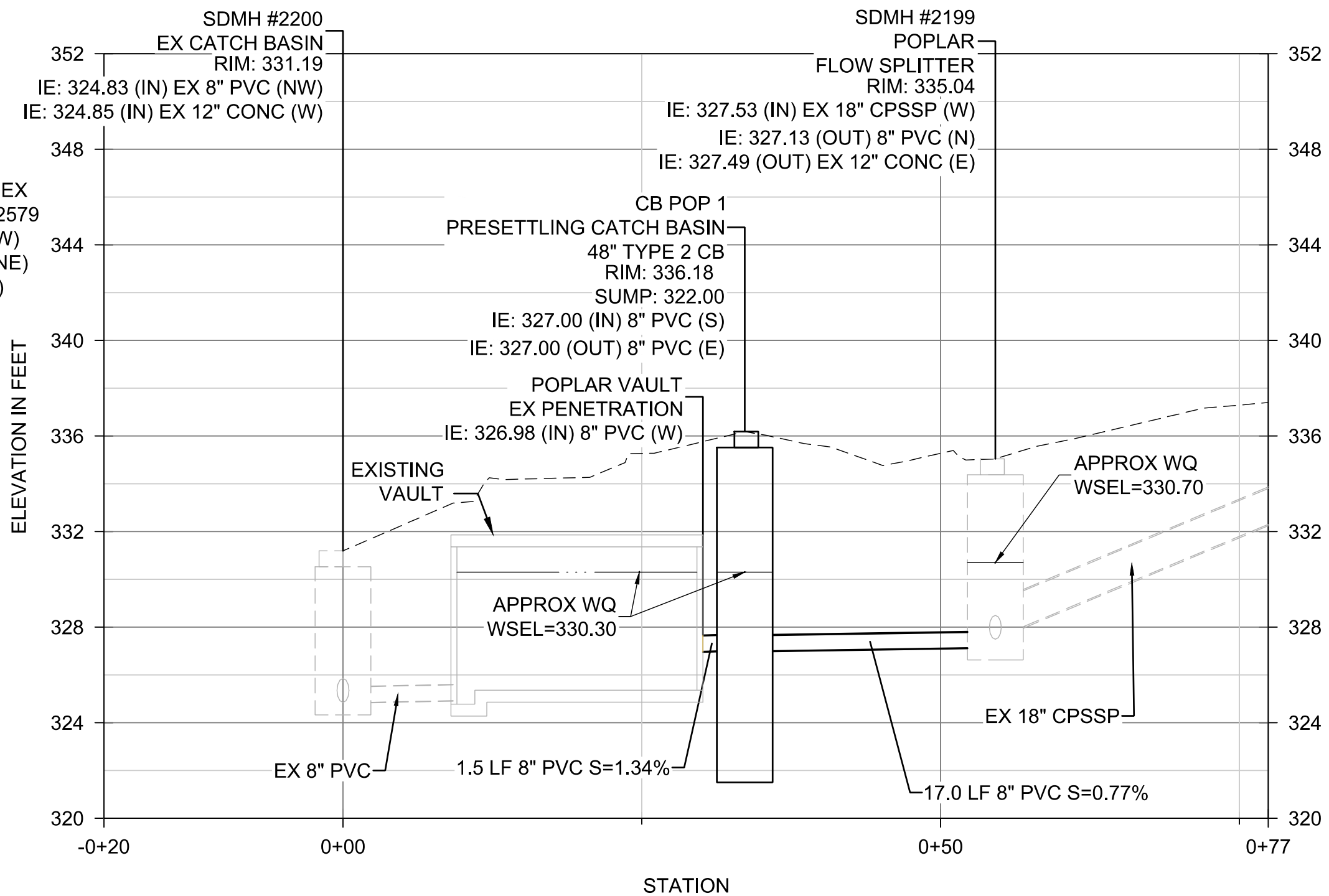
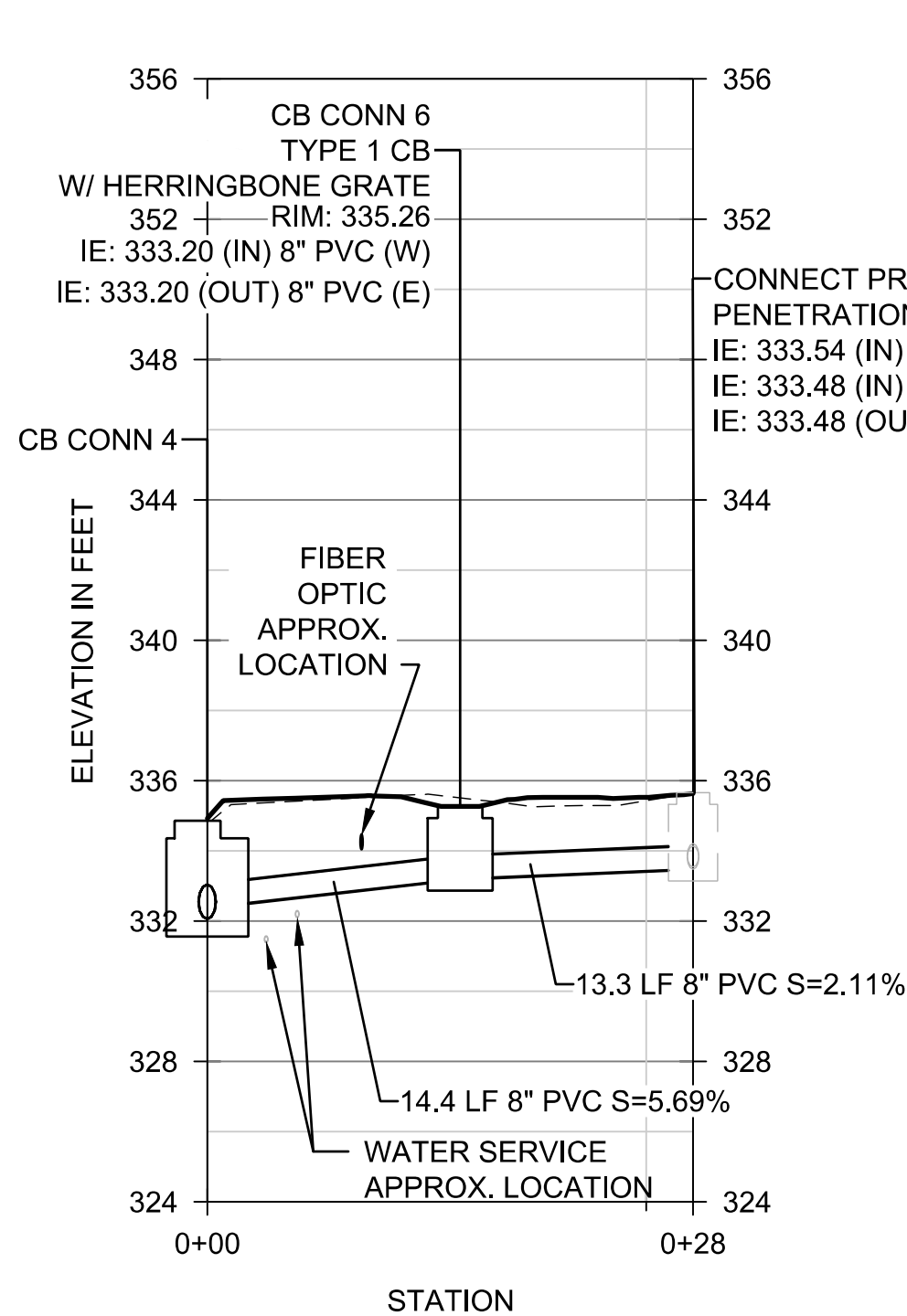
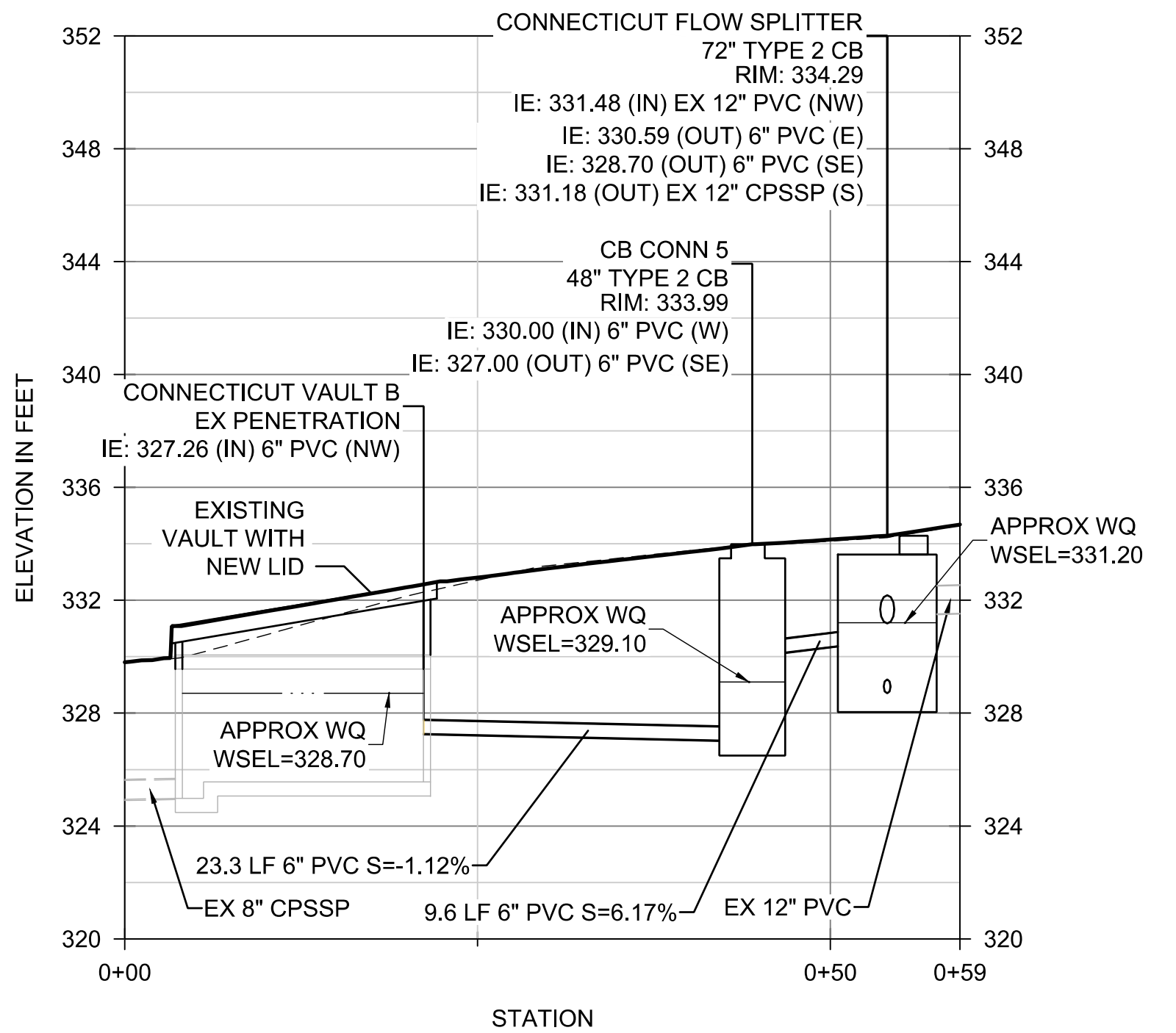
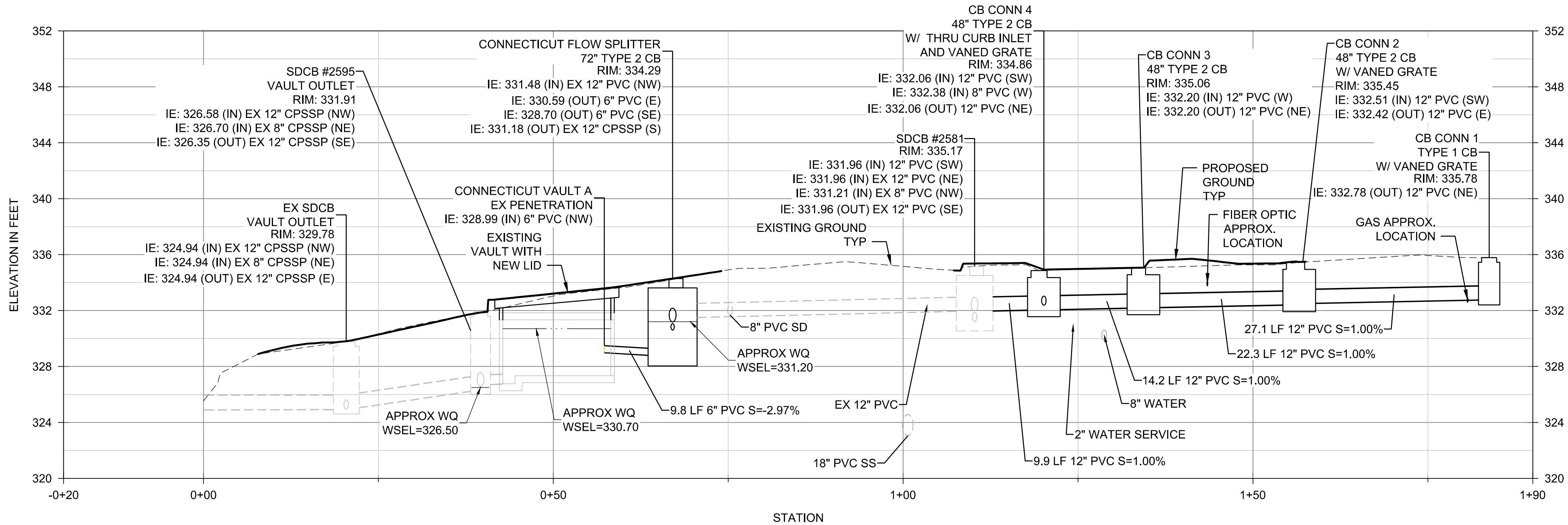
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Job. No.	EV176
Date	03/2026
Field Bk.	

LAKE WHATCOM VAULT RETROFITS - PHASE 1 (EV176)
DRAINAGE PROFILES

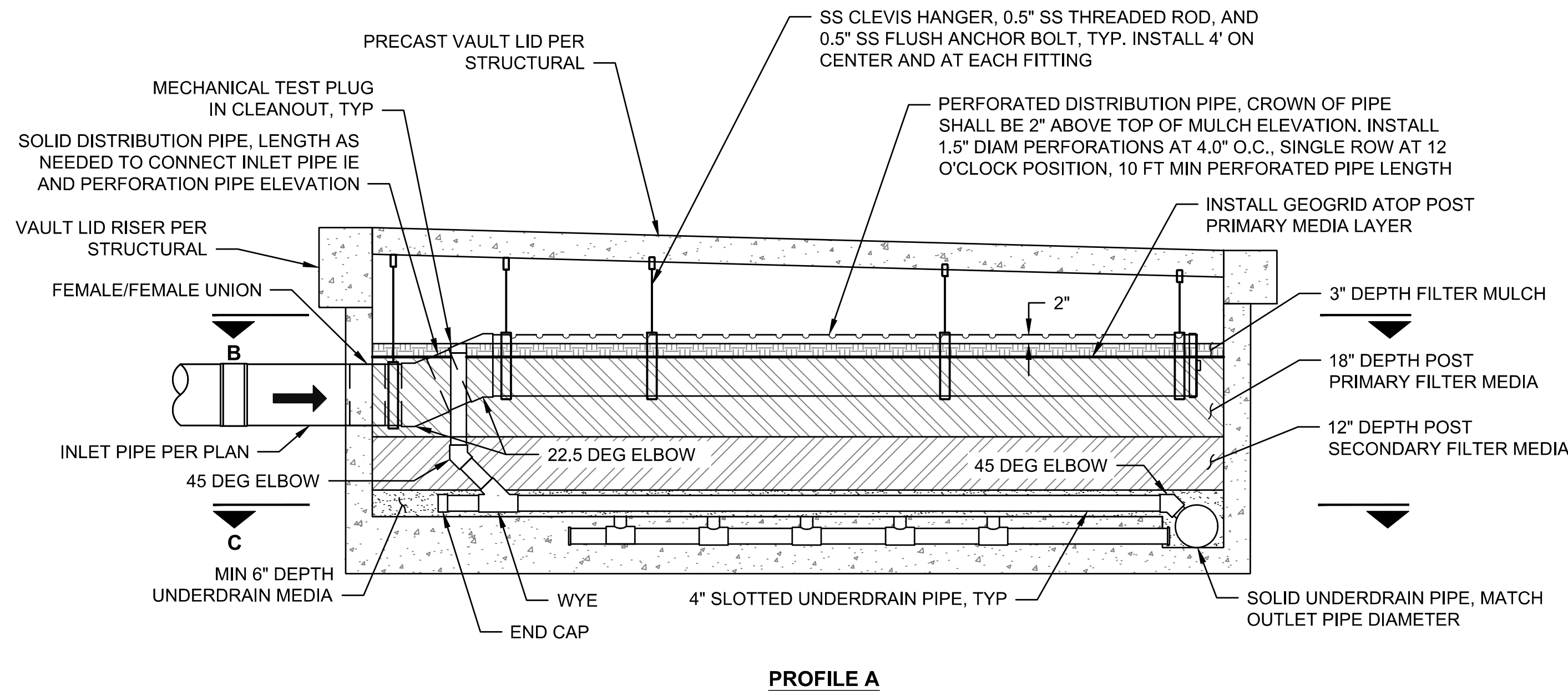
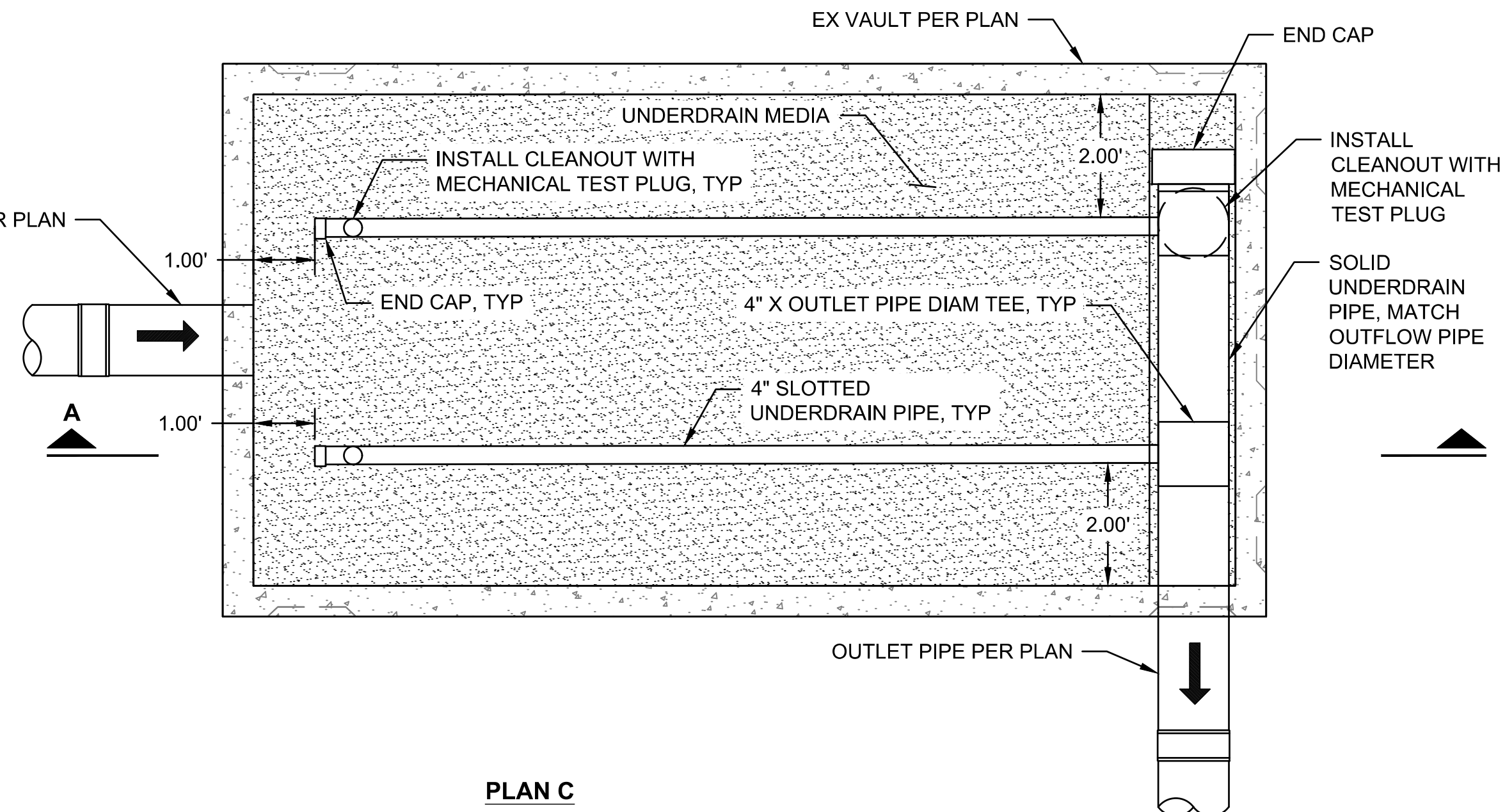
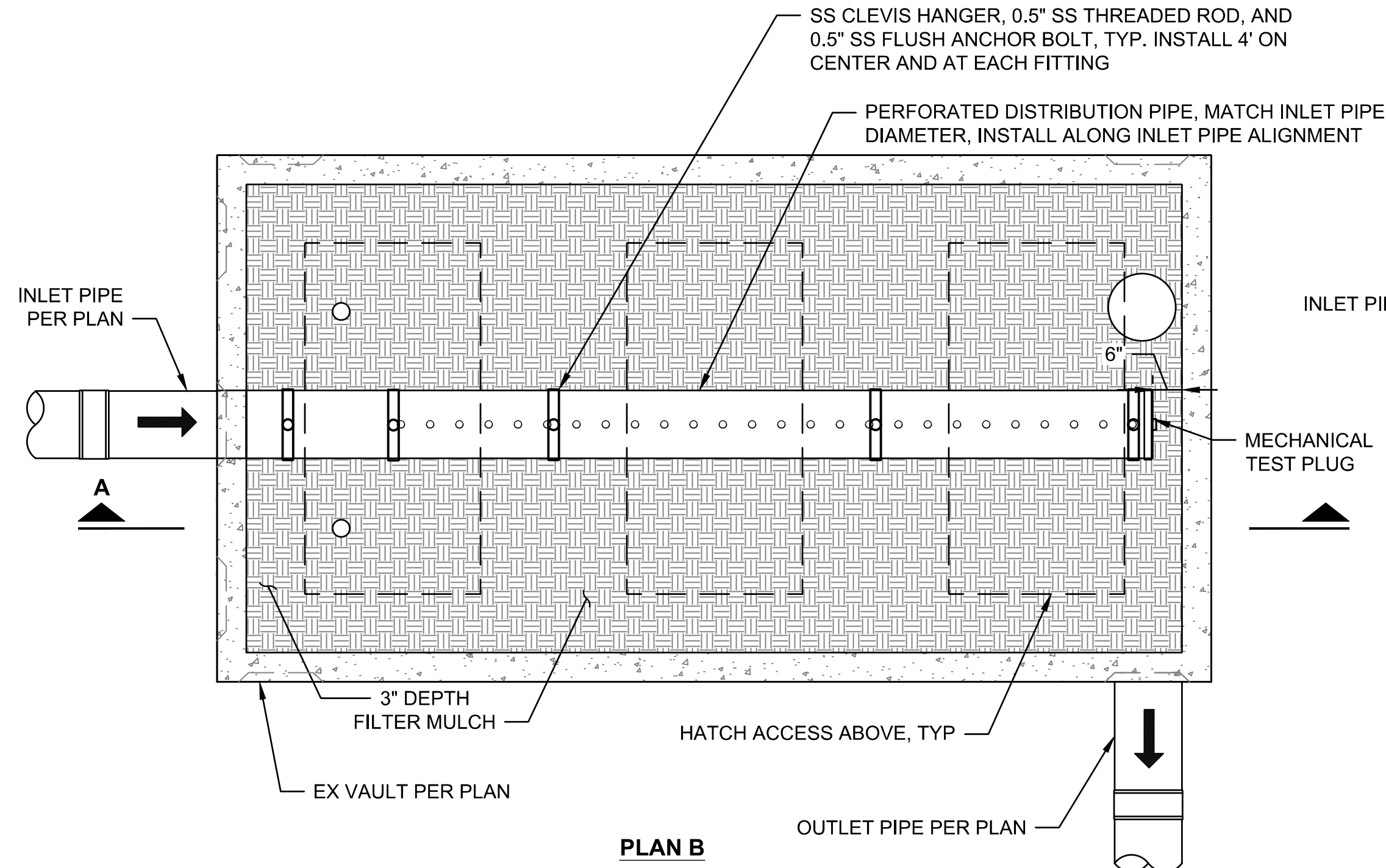
SHEET	19	OF
		33

CONTACT PERSON: JESSICA BENNETT, PE , PROJECT ENGINEER AT (360) 778-7923



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NOTES:

1. PERFORATED SEGMENTS OF DISTRIBUTION PIPE SHALL BE INSTALLED LEVEL.
2. VAULT LID RISER, VAULT LID, AND ACCESS HATCHES LOCATIONS PER STRUCTURAL, SEE SHEET 32
3. VAULT LID TOP ELEVATION PER SHEET 28. VAULT LID RISER HEIGHT SHALL BE AS REQUIRED TO ACHIEVE FINISHED GRADE.
4. VAULT DISTRIBUTION PIPING AND FITTINGS SHALL BE SOLID WALL PVC.

CONNECTICUT VAULT A RETROFIT (POST MEDIA)

SCALE: NTS

1
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CITY OF BELLINGHAM, WASHINGTON
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DATUM
NAD 83/98
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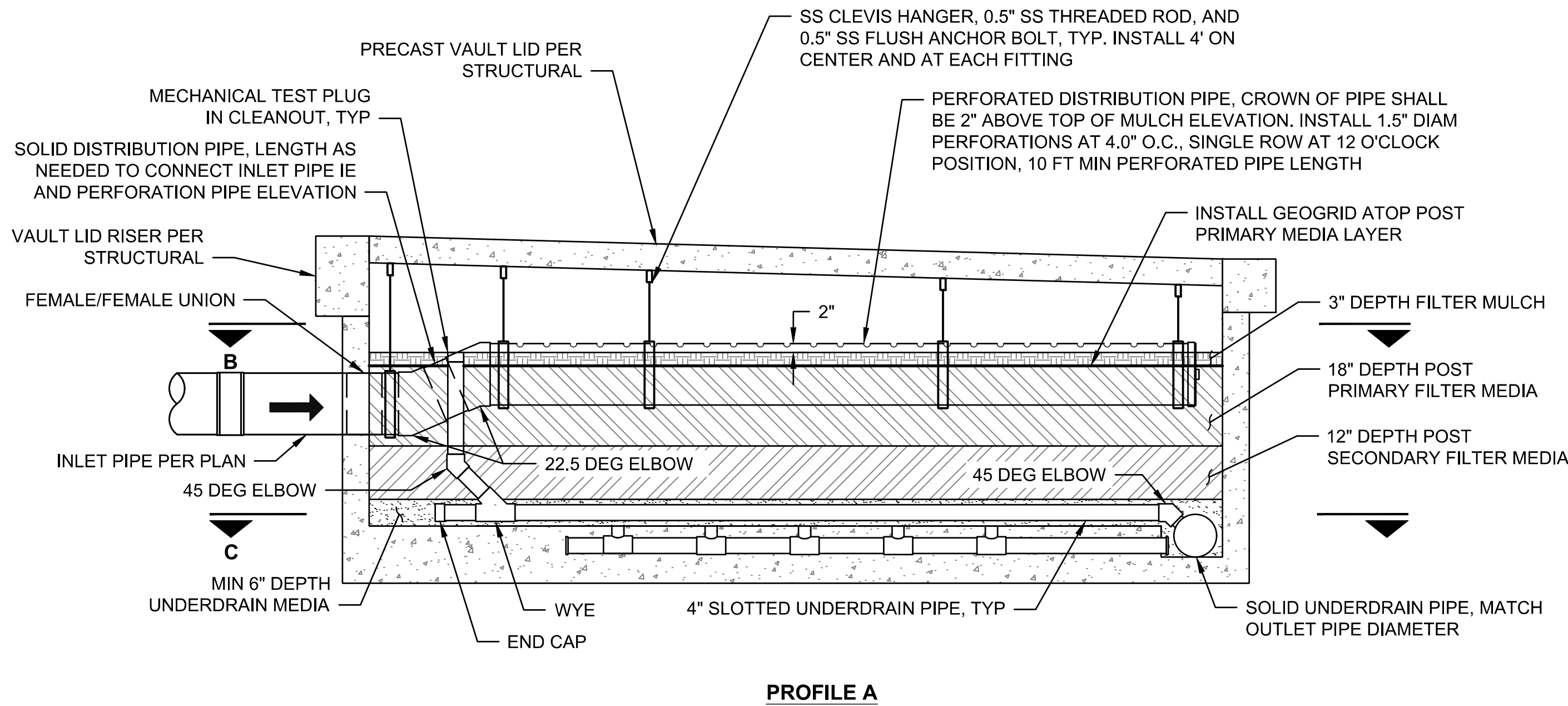
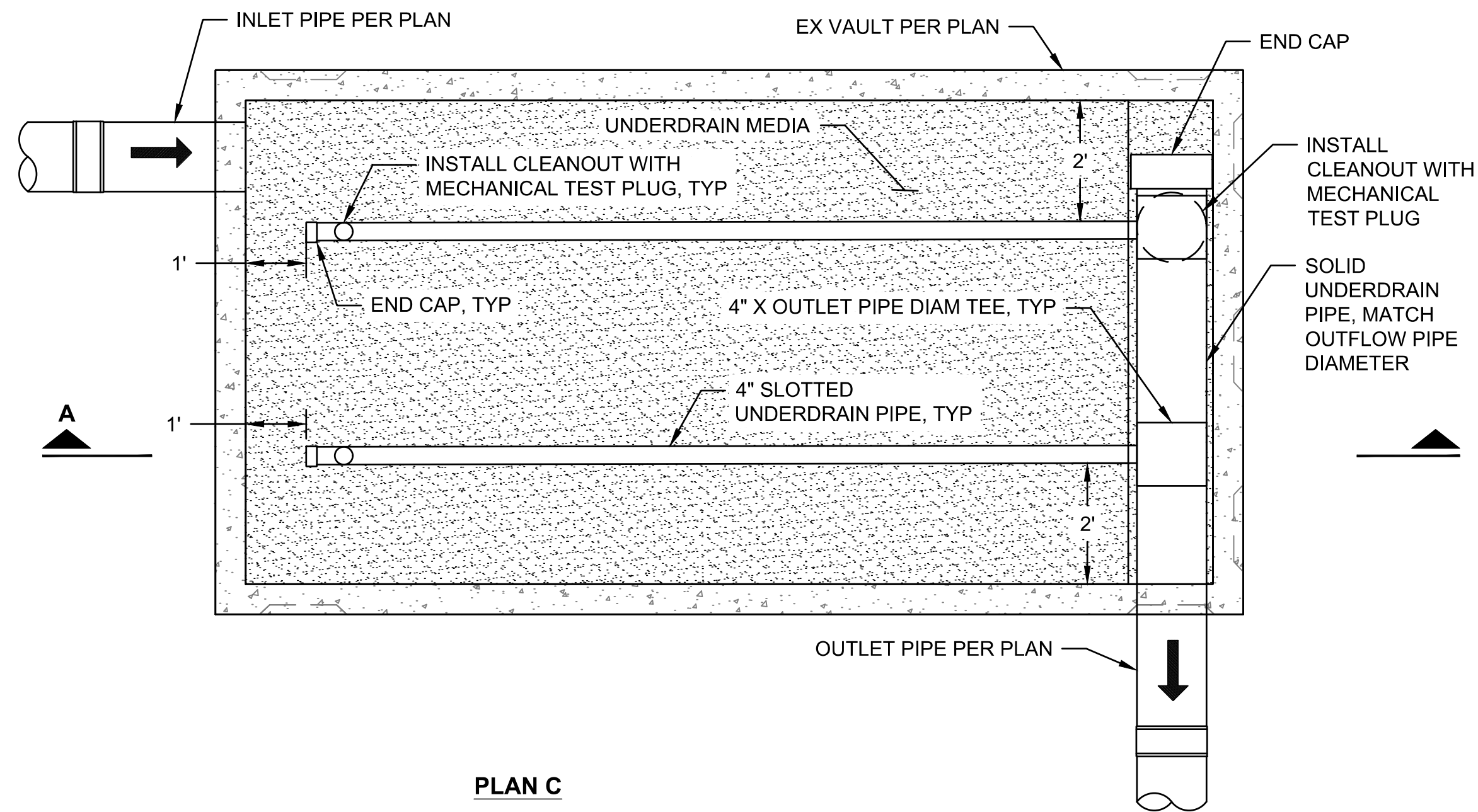
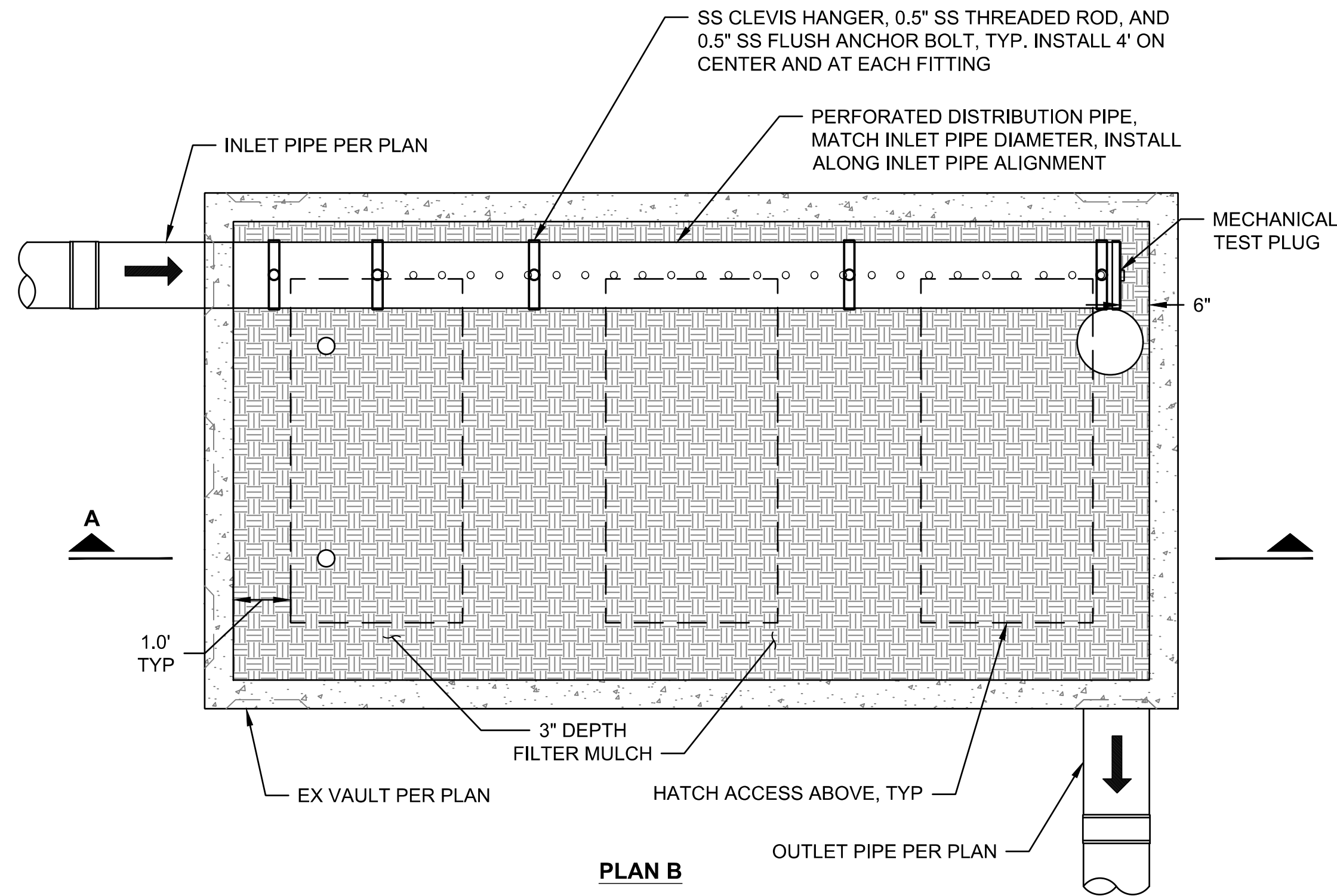
Job. No. EV176
Date 03/2026
Field Bk. _____

LAKE WHATCOM VAULT RETROFITS - PHASE 1 (EV176)
DRAINAGE DETAILS - CONNECTICUT VAULT A

SHEET
20 OF
33

CONTACT PERSON: JESSICA BENNETT, PE, PROJECT ENGINEER AT (360) 778-7923

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NOTES:

1. PERFORATED SEGMENTS OF DISTRIBUTION PIPE SHALL BE INSTALLED LEVEL.
2. VAULT LID RISER, VAULT LID, AND ACCESS HATCHES LOCATIONS PER STRUCTURAL, SEE SHEET 32
3. VAULT LID TOP ELEVATION PER SHEET 28. VAULT LID RISER HEIGHT SHALL BE AS REQUIRED TO ACHIEVE FINISHED GRADE.
4. VAULT DISTRIBUTION PIPING AND FITTINGS SHALL BE SOLID WALL PVC.

CONNECTICUT VAULT B RETROFIT (POST MEDIA)

SCALE: NTS

1
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DATUM
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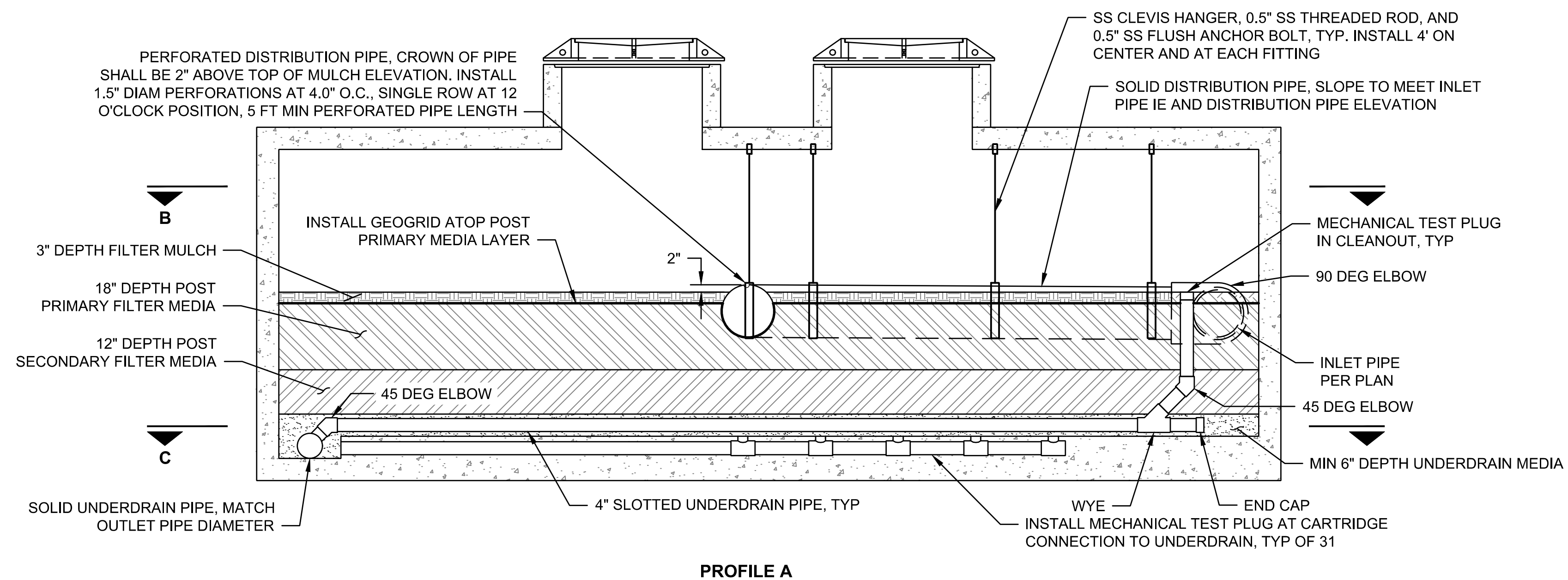
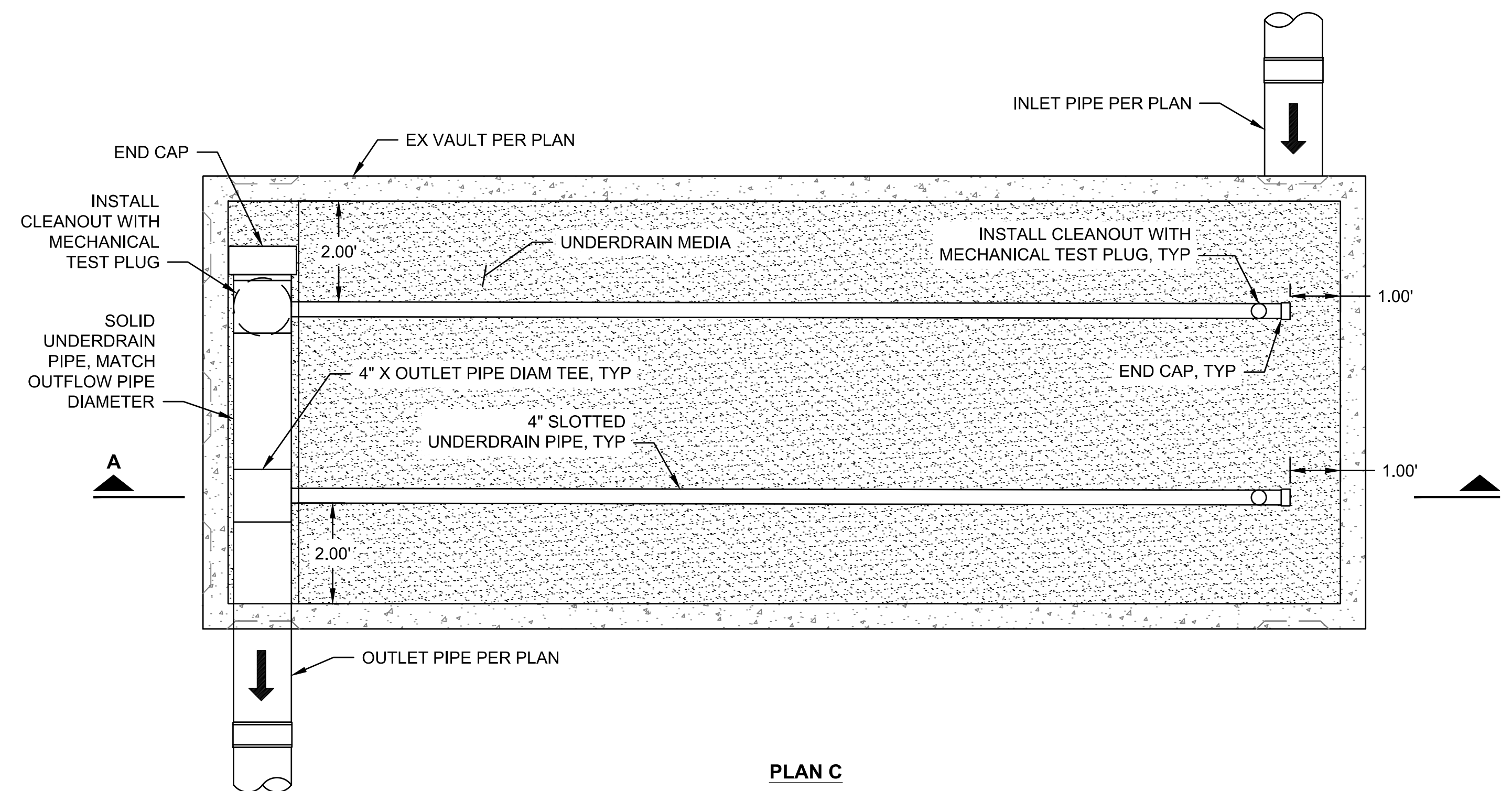
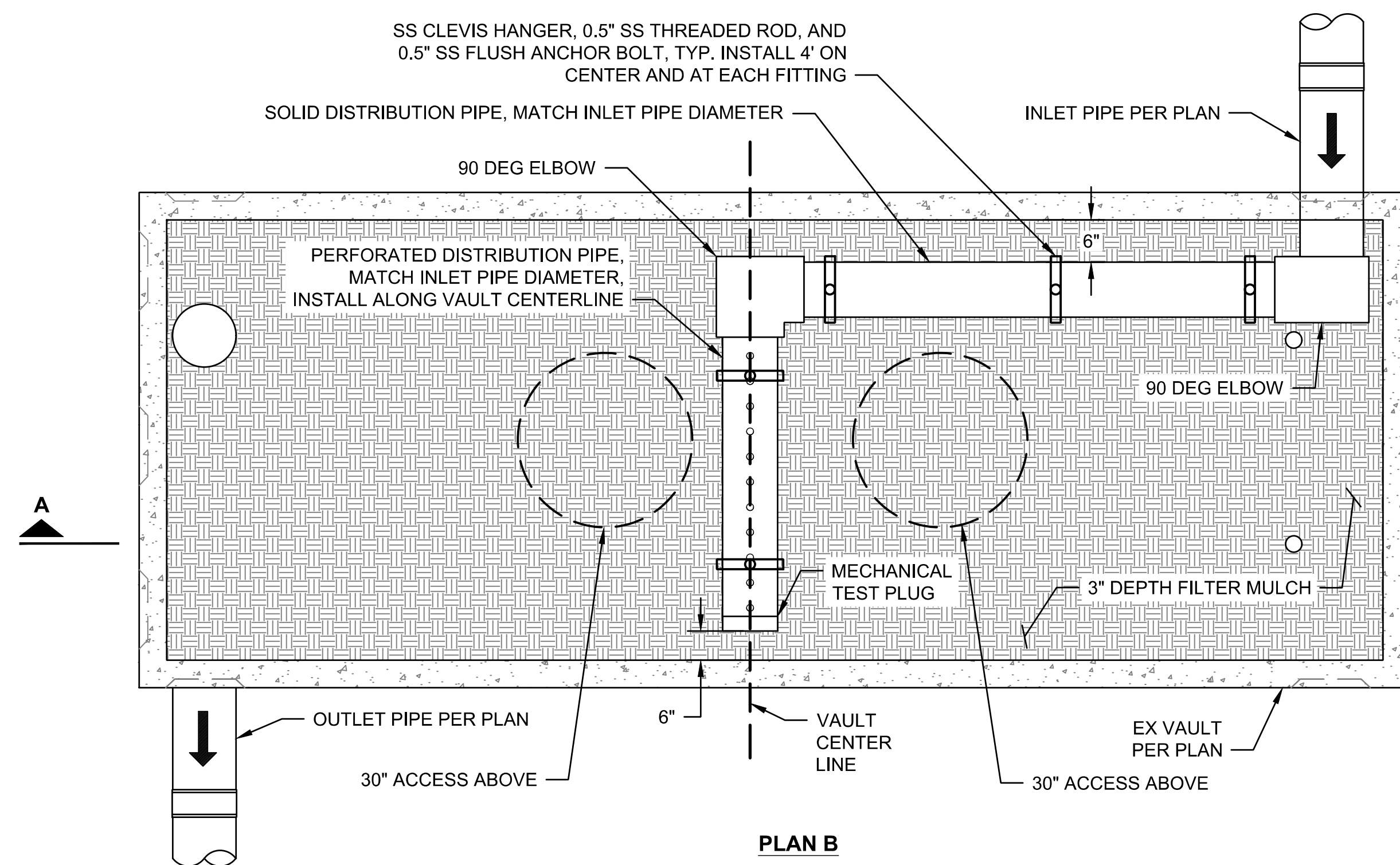
Job. No. EV176
Date 03/2026
Field Bk.

LAKE WHATCOM VAULT RETROFITS - PHASE 1 (EV176)
DRAINAGE DETAILS - CONNECTICUT VAULT B

SHEET
21 OF
33

CONTACT PERSON: JESSICA BENNETT, PE, PROJECT ENGINEER AT (360) 778-7923

FILE PATH: O:\proj\Y2024\24-083332-000\CAD\Sheet\PropVaultConditions.dwg



NOTES:

1. PERFORATED SEGMENTS OF DISTRIBUTION PIPE SHALL BE INSTALLED LEVEL.
2. VAULT DISTRIBUTION PIPING AND FITTINGS SHALL BE SOLID WALL PVC.

POPLAR VAULT RETROFIT (POST MEDIA)

SCALE: NTS



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Job. No. EV176
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LAKE WHATCOM VOLT RETROFITS - PHASE 1 (EV176)

DRAINAGE DETAILS - POPLAR VAULT

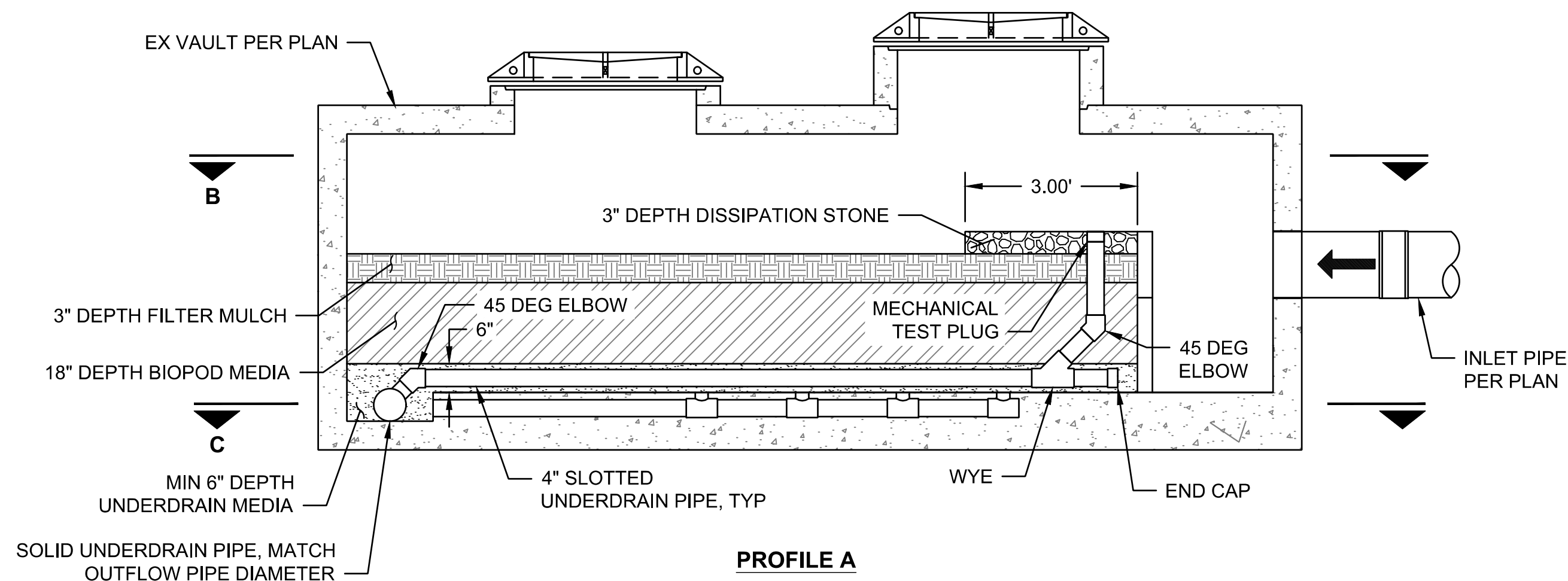
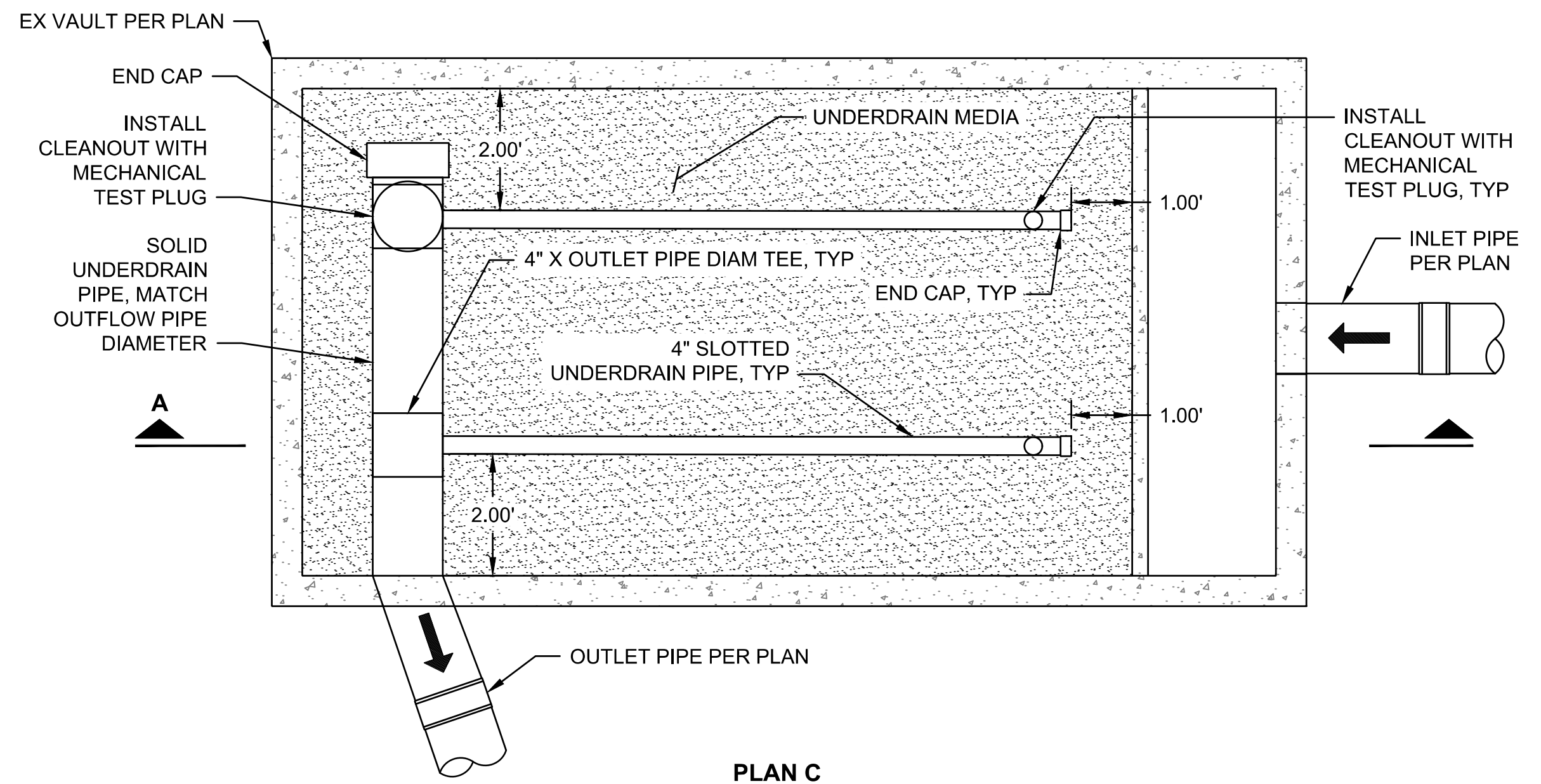
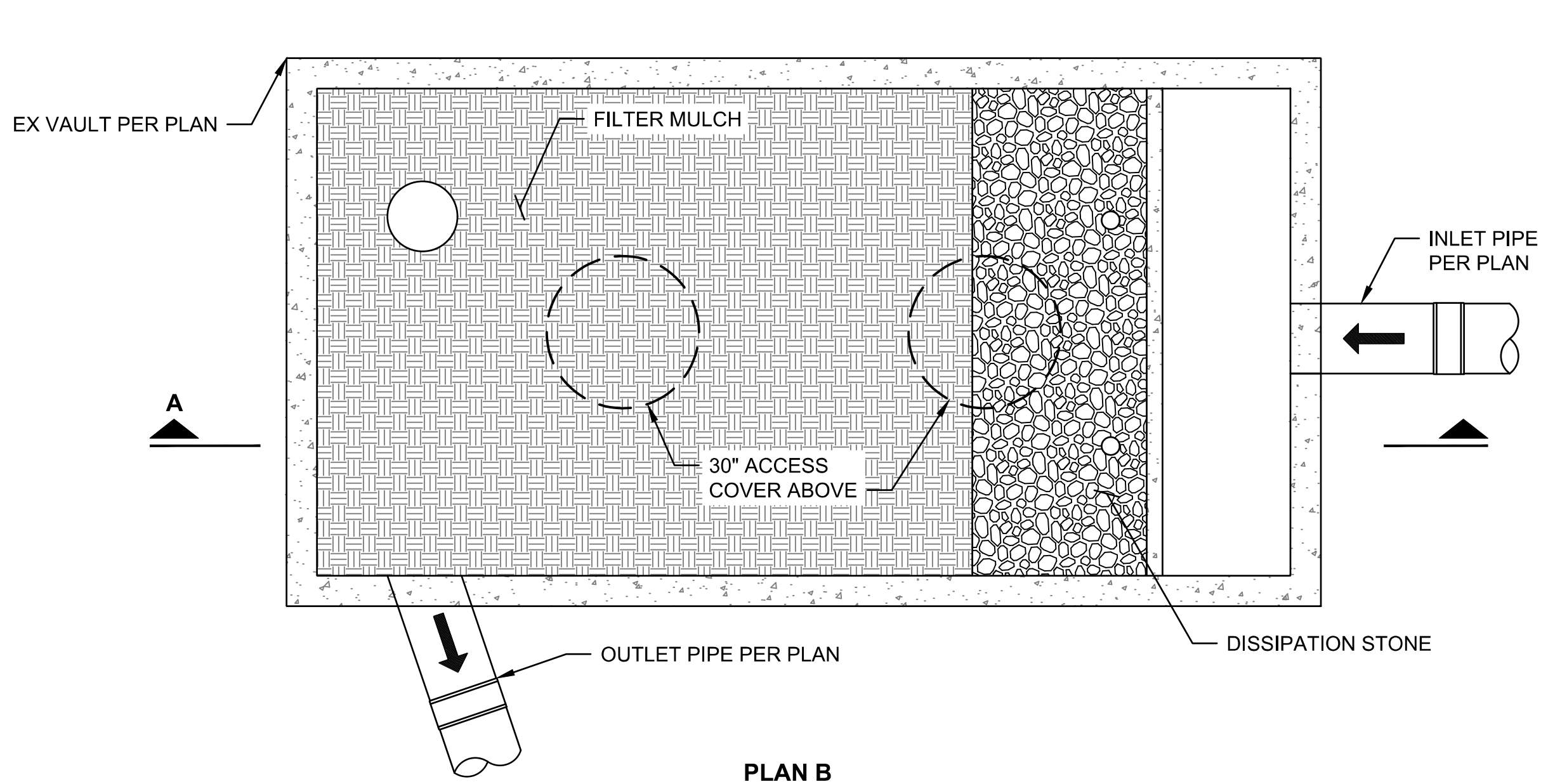
SHEET 22 OF 33

CONTACT PERSON: JESSICA BENNETT, PE, PROJECT ENGINEER AT (360) 778-7923

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ACADEMY VAULT RETROFIT (BIPOD MEDIA)

SCALE: NTS

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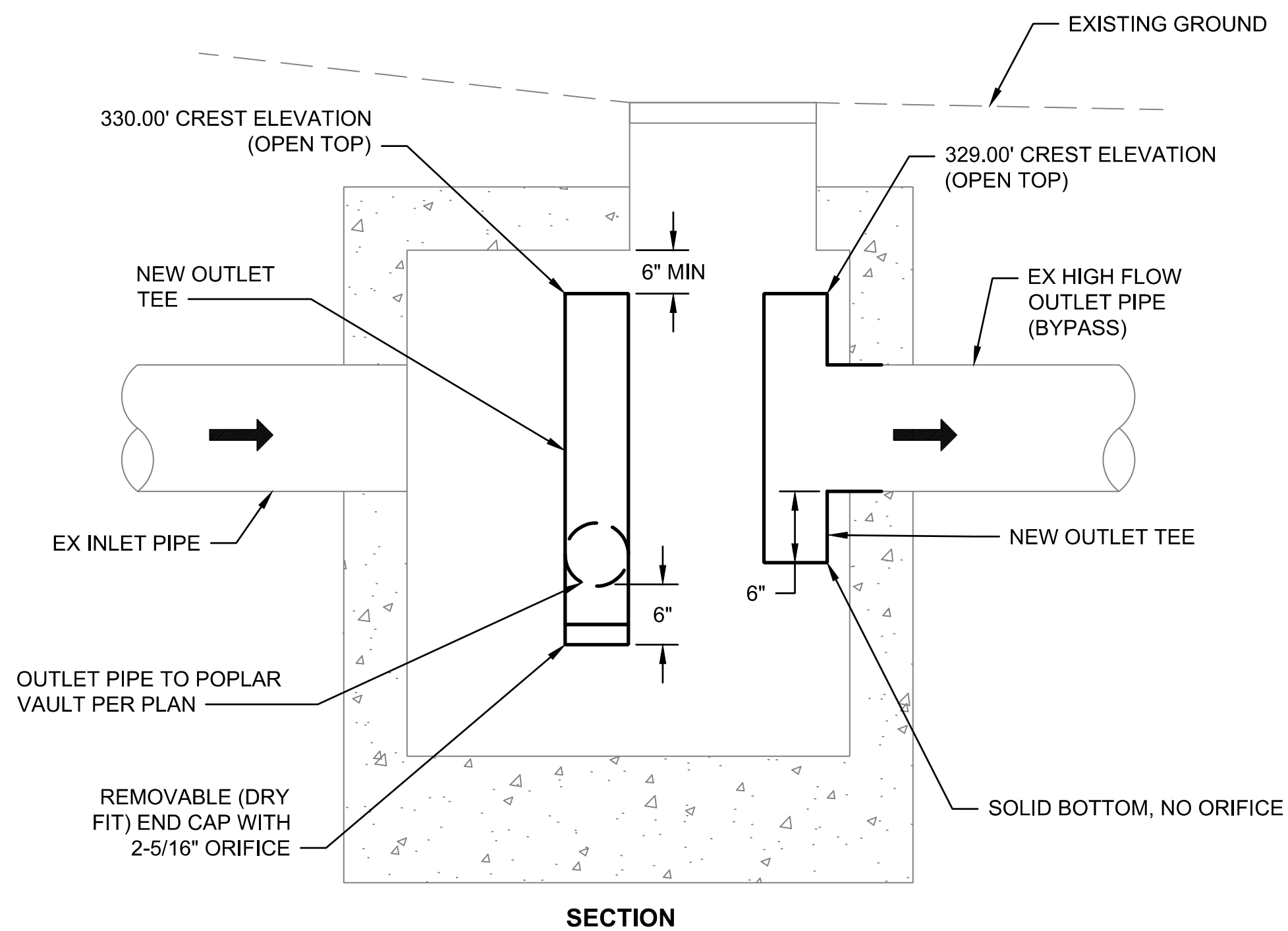
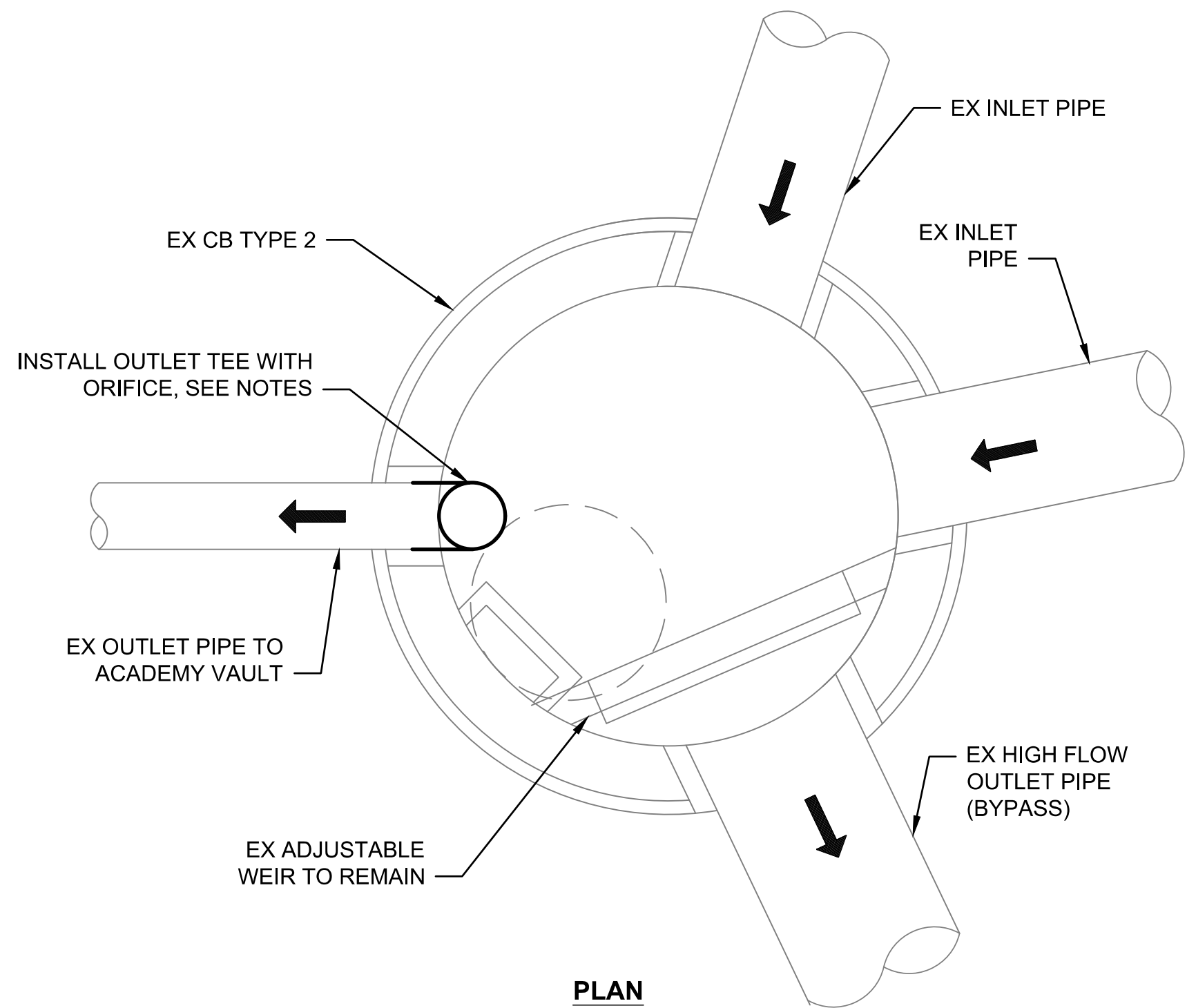
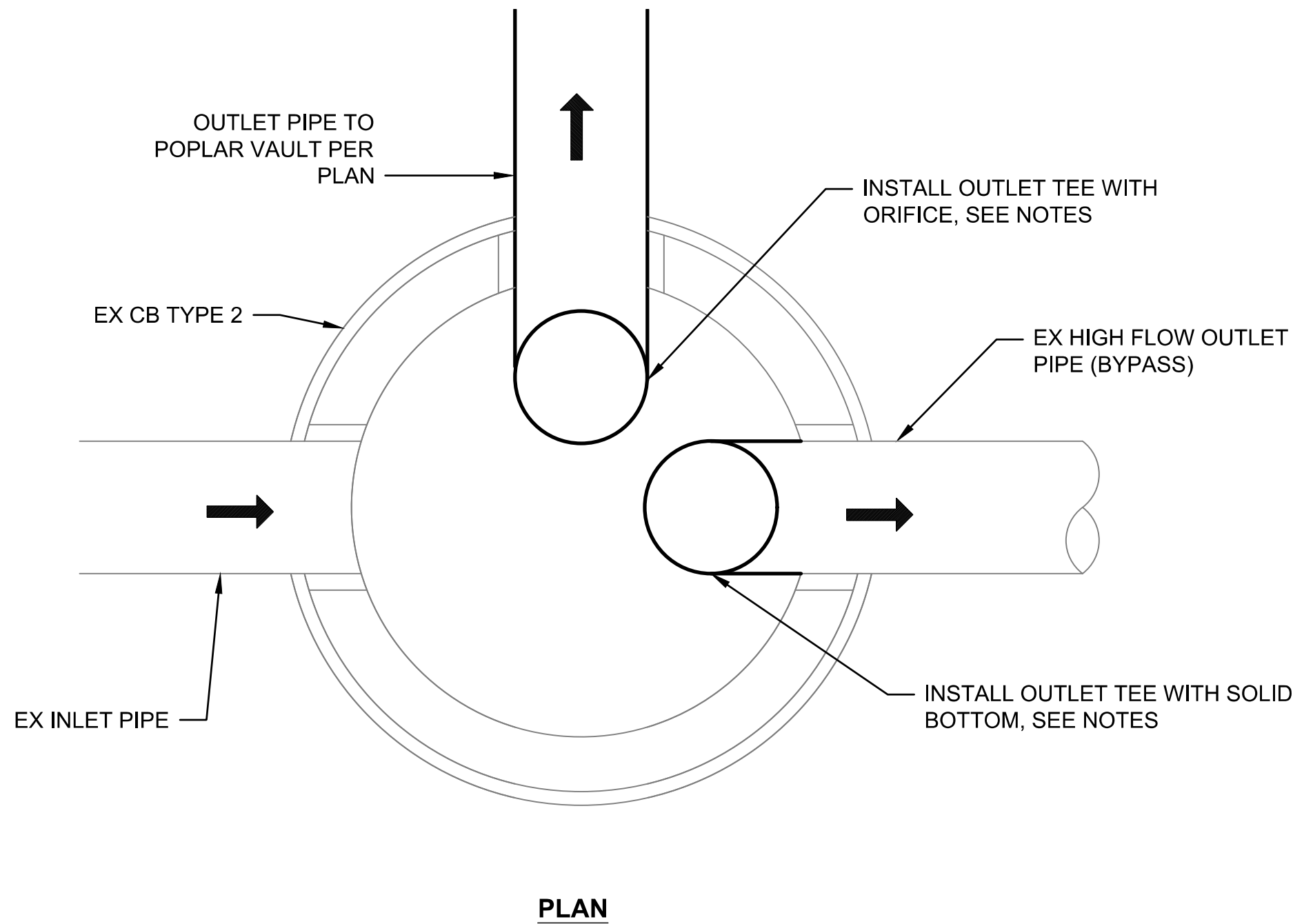
Job. No. EV176
Date 03/2026
Field Bk.

LAKE WHATCOM VAULT RETROFITS - PHASE 1 (EV176)
DRAINAGE DETAILS - ACADEMY VAULT

SHEET
23 OF
33

CONTACT PERSON: JESSICA BENNETT, PE, PROJECT ENGINEER AT (360) 778-7923

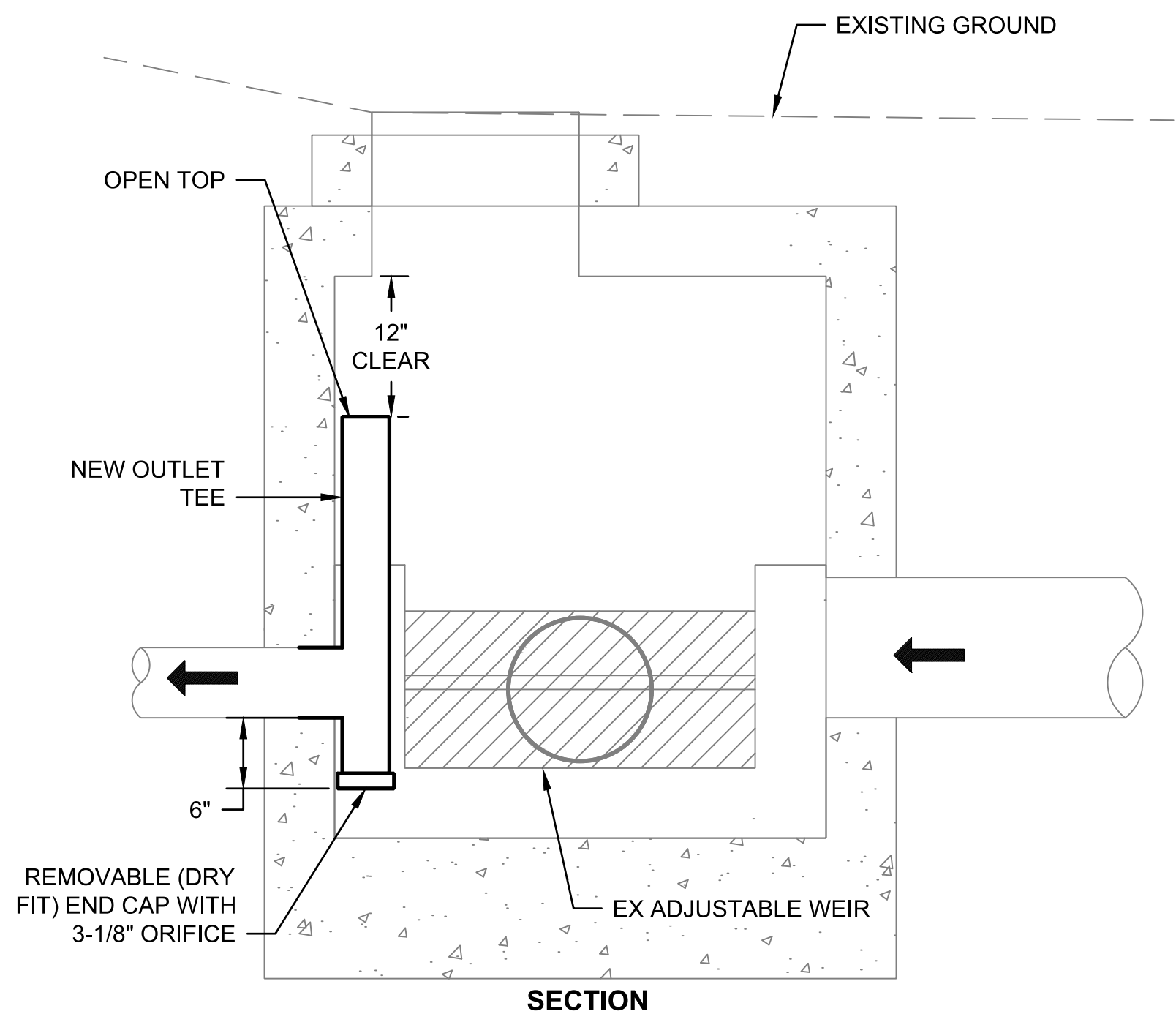
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DETAIL - POPLAR FLOW SPLITTER RETROFIT

SCALE: NTS

1
17



DETAIL - ACADEMY FLOW SPLITTER RETROFIT

SCALE: NTS

2
18



Know what's below.
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FLOW SPLITTER RETROFIT NOTES:

- OUTLET TEE SHALL BE THE SAME DIAMETER AND MATERIAL AS THE CONNECTING PIPE.
- ONE 3"x0.079" STEEL PIPE SUPPORT SHALL BE INSTALLED 1-INCH FROM EACH OUTLET TEE END. ATTACH PIPE SUPPORTS TO CATCH BASIN WALL WITH 5/8-INCH STAINLESS STEEL EXPANSION BOLTS.
- OUTLET TEES SHALL BE OPEN AT TOP.
- USE EX PENETRATIONS FOR NEW PIPE CONNECTIONS.

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Job. No. EV176

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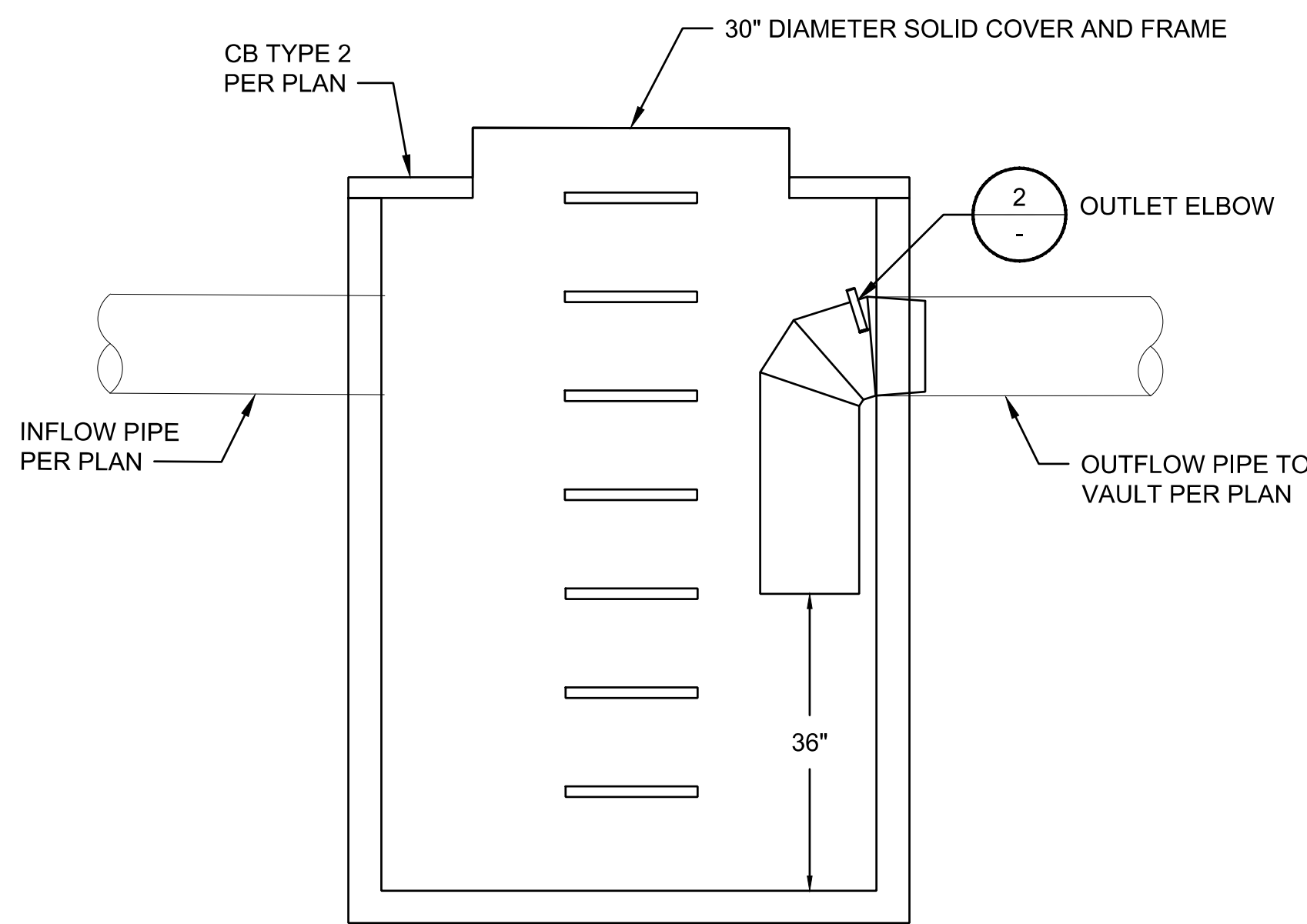
LAKE WHATCOM VAULT RETROFITS - PHASE 1 (EV176)
DRAINAGE DETAILS - FLOW SPLITTER
RETROFITS

SHEET
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BID SET

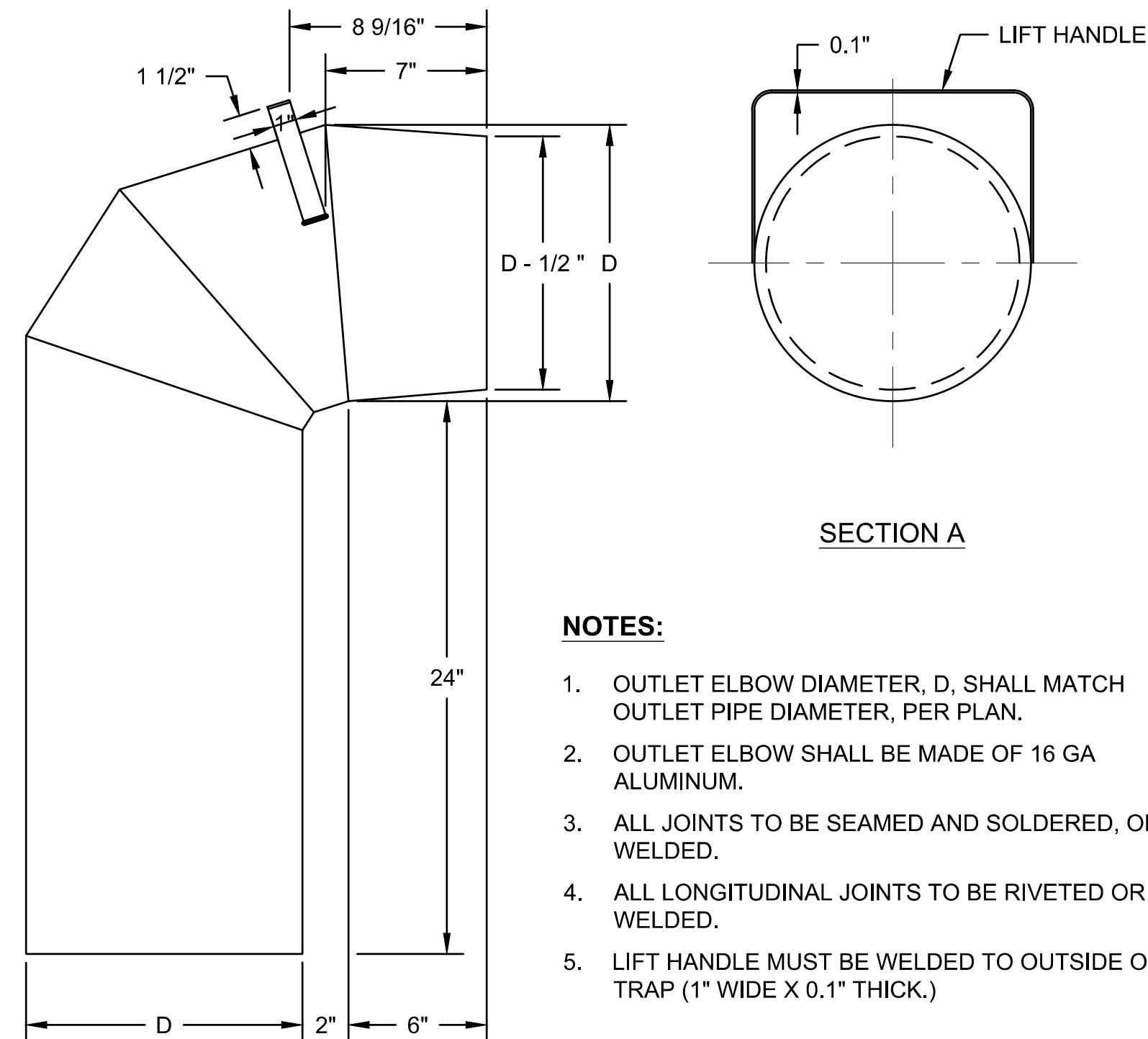


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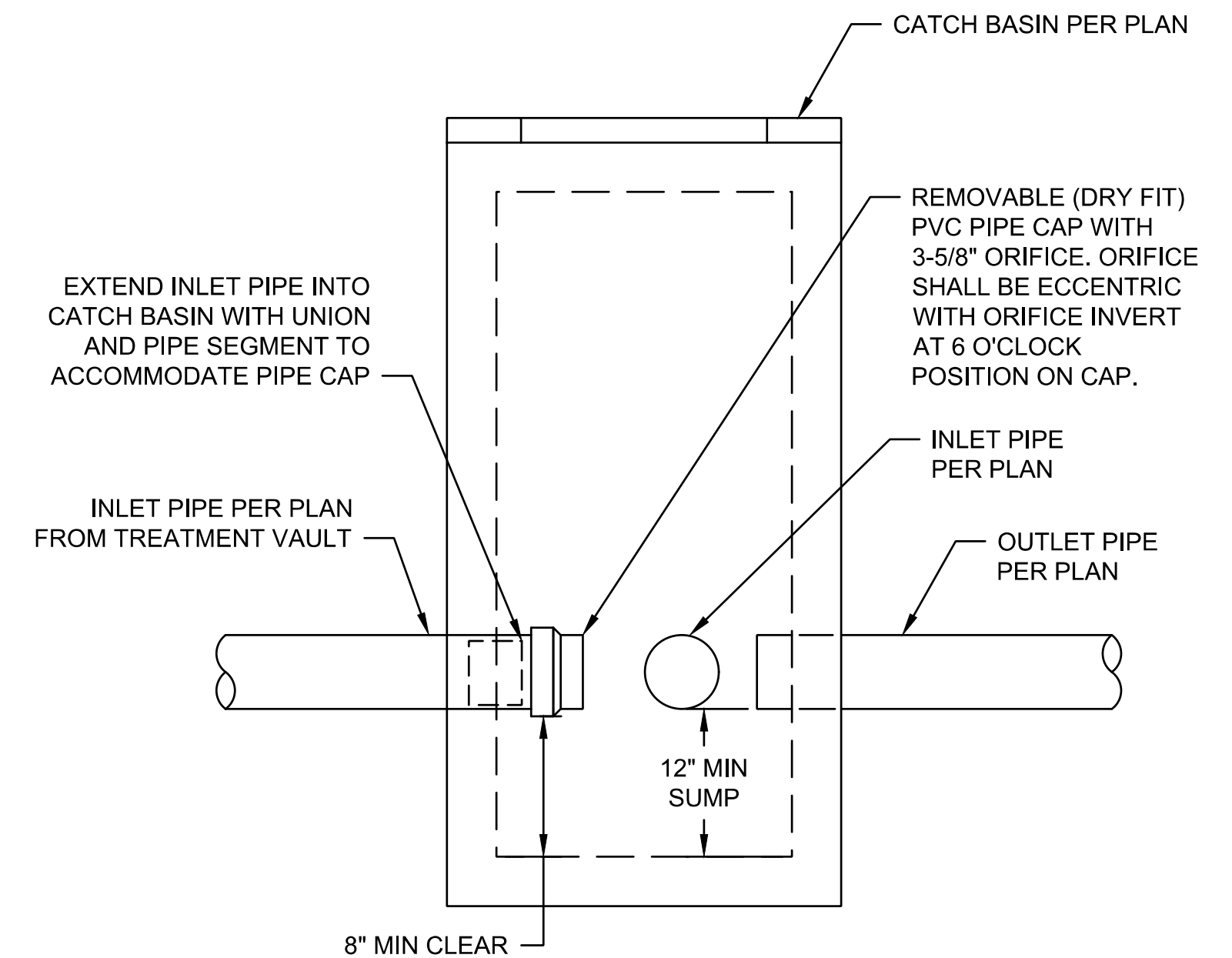
DETAIL - PRESETTLING CATCH BASIN

SCALE: NTS



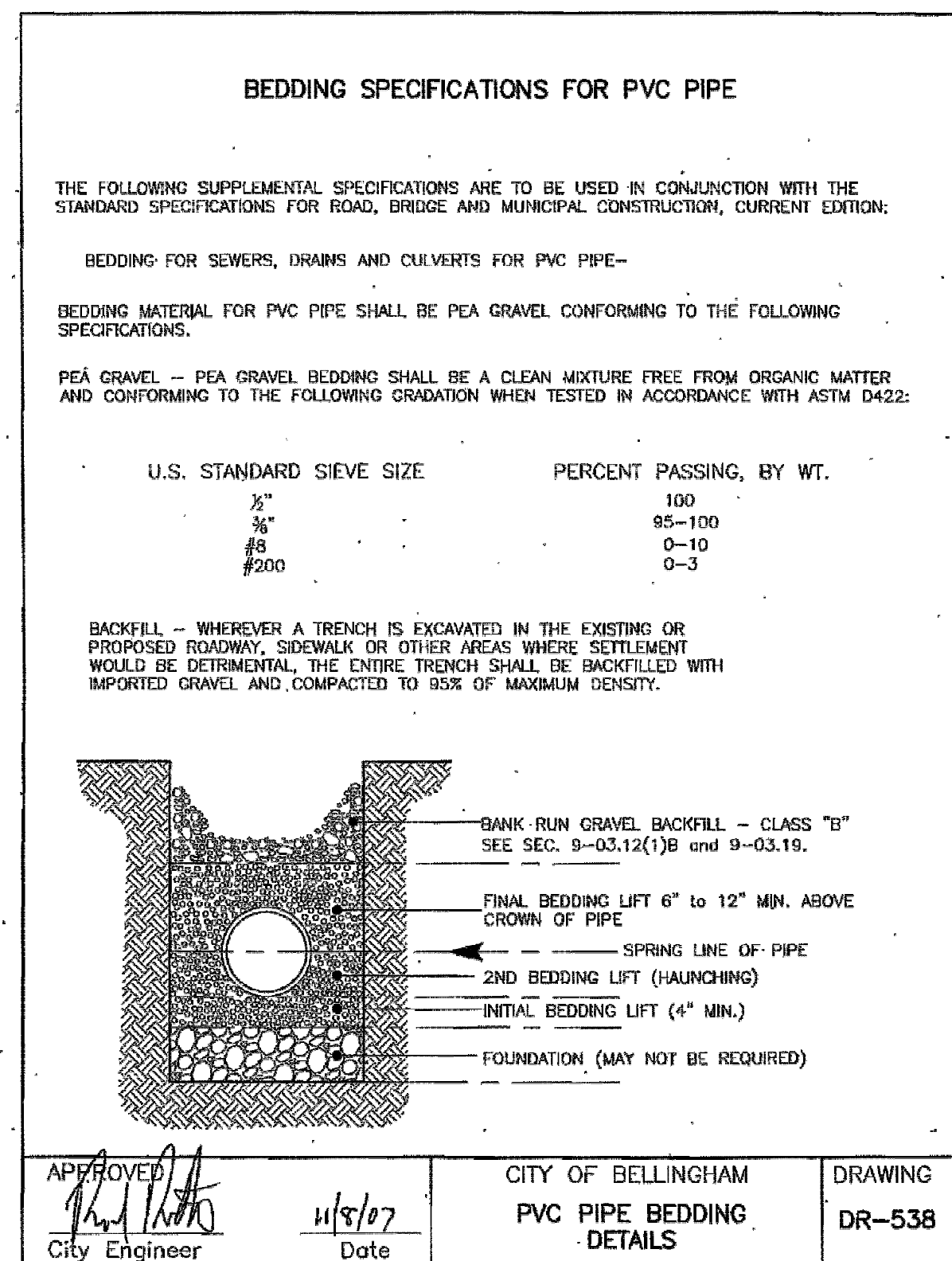
DETAIL - OUTLET ELBOW

SCALE: NTS



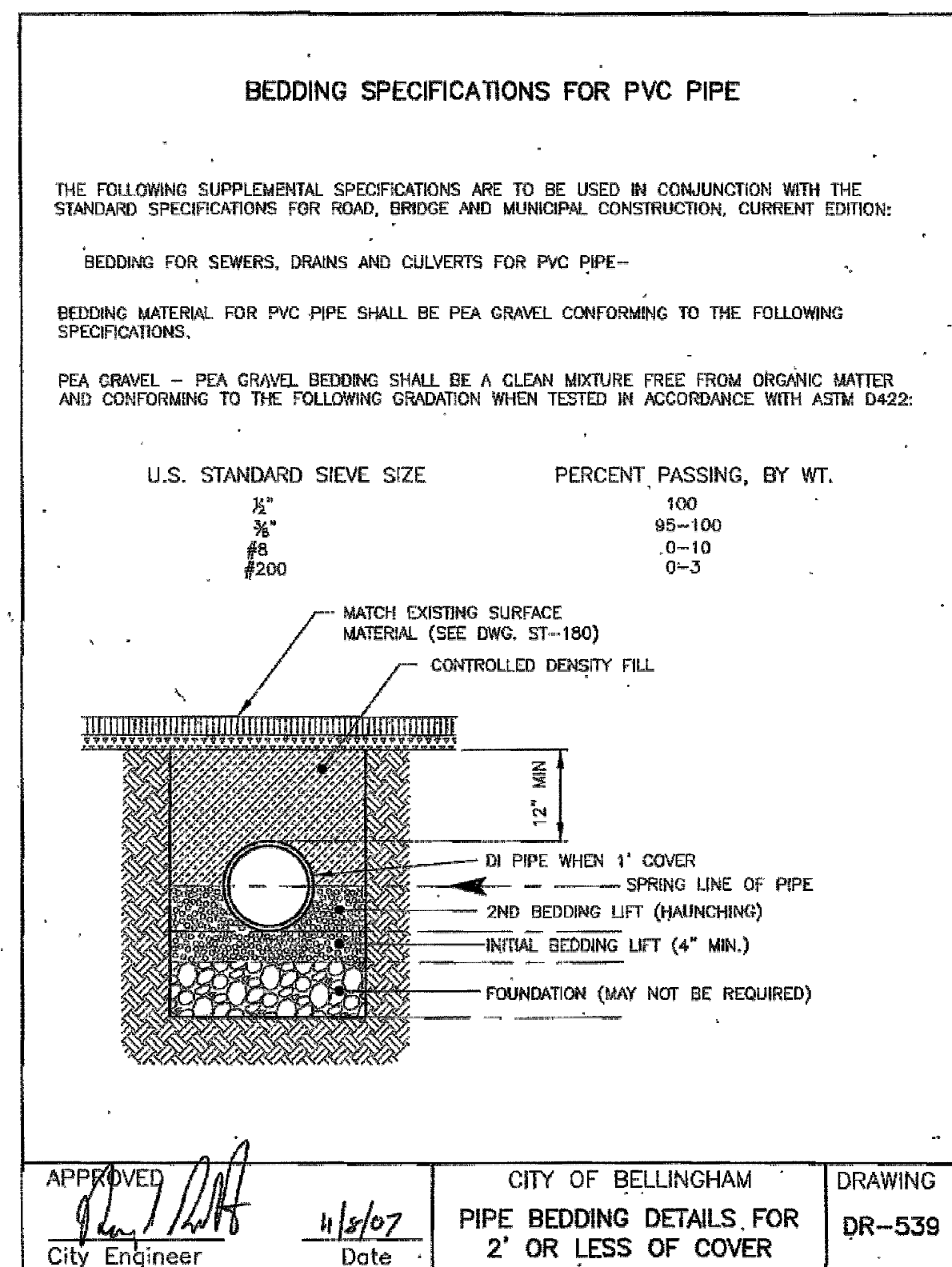
DETAIL - VAULT OUTLET STRUCTURE

SCALE: NTS



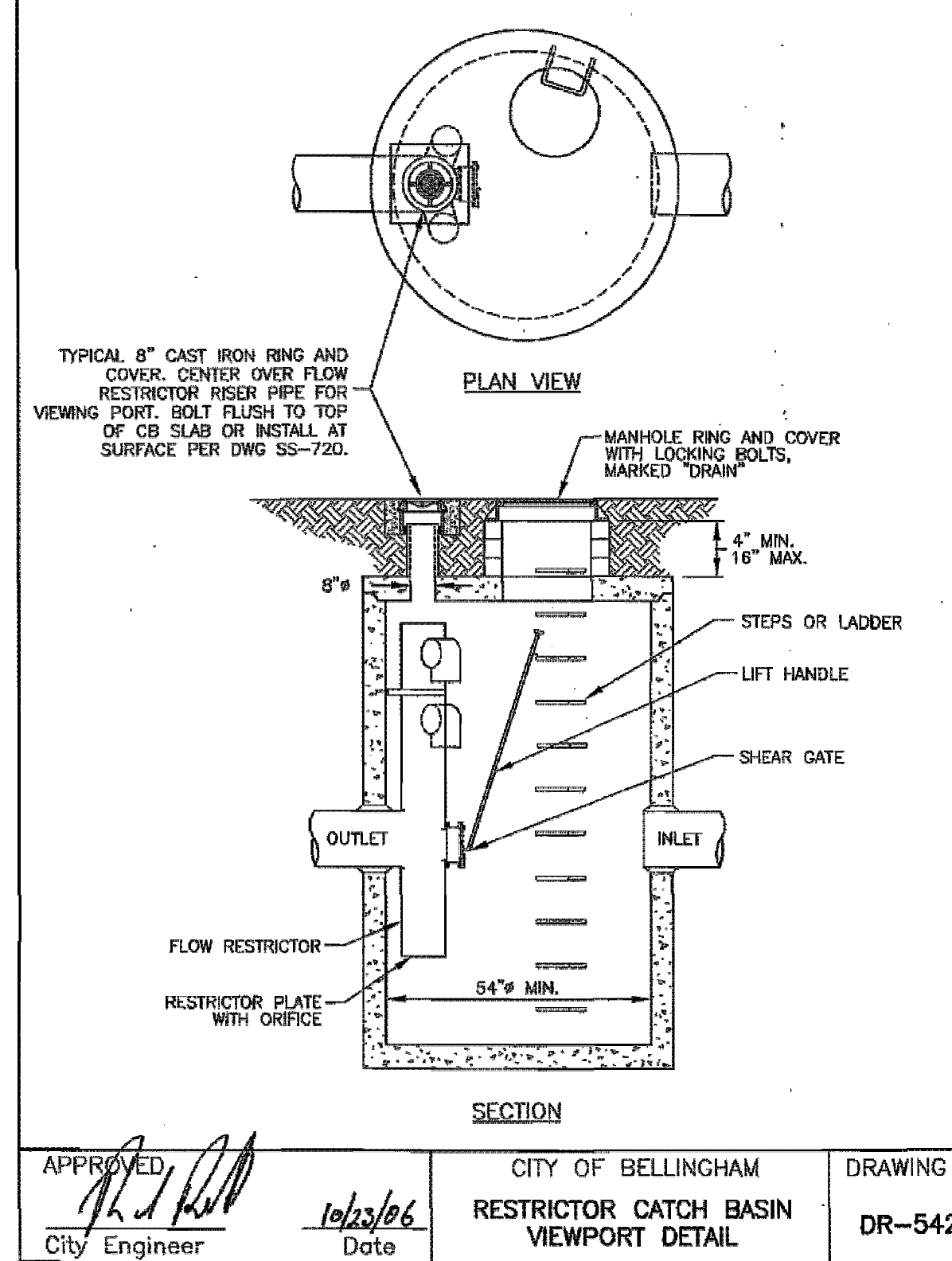
DETAIL - PIPE BEDDING

SCALE: NTS



DETAIL - PIPE BEDDING - SHALLOW COVER

SCALE: NTS



DETAIL - RESTRICTOR CATCH BASIN VIEWPORT

SCALE: NTS



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DATUM
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NAVD 88

Job. No. EV176
Date 03/2026
Field Bk.

LAKE WHATCOM VAULT RETROFITS - PHASE 1 (EV176)

DRAINAGE DETAILS 1

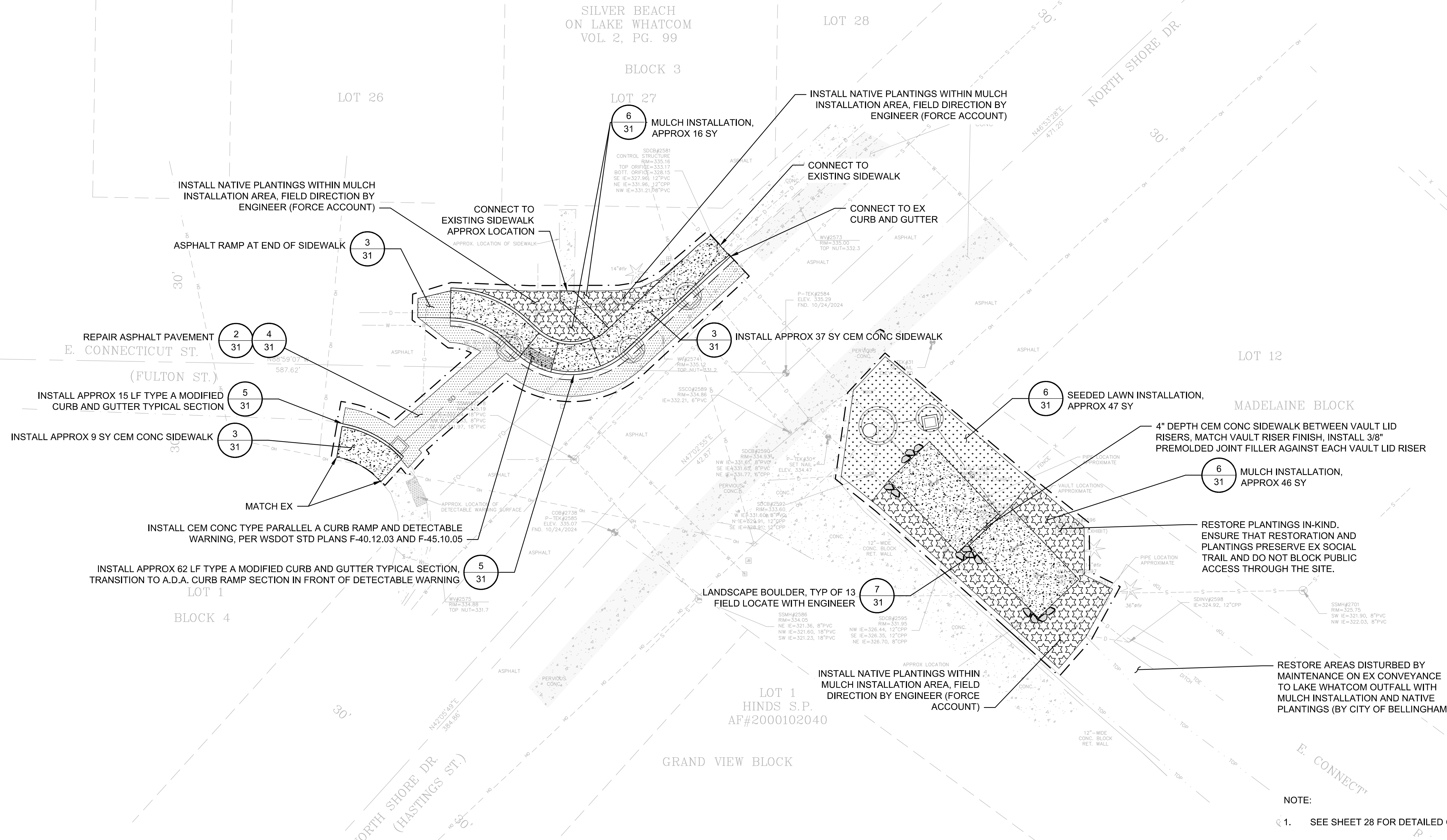
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CONTACT PERSON: JESSICA BENNETT, PE, PROJECT ENGINEER AT (360) 778-7923



NOTE:
1. SEE SHEET 28 FOR DETAILED GRADING PLAN

Control Point Table				
Point #	Description	Elevation	Northing	Easting
30	CSNS	334.47	647807.0605	1258147.7213
31	CSNS	334.80	647824.4061	1258166.8444
2584	C.O.B. #1131	335.29	647818.7446	1258139.9723
2585	C.O.B. #2738	335.07	647789.5325	1258108.5927



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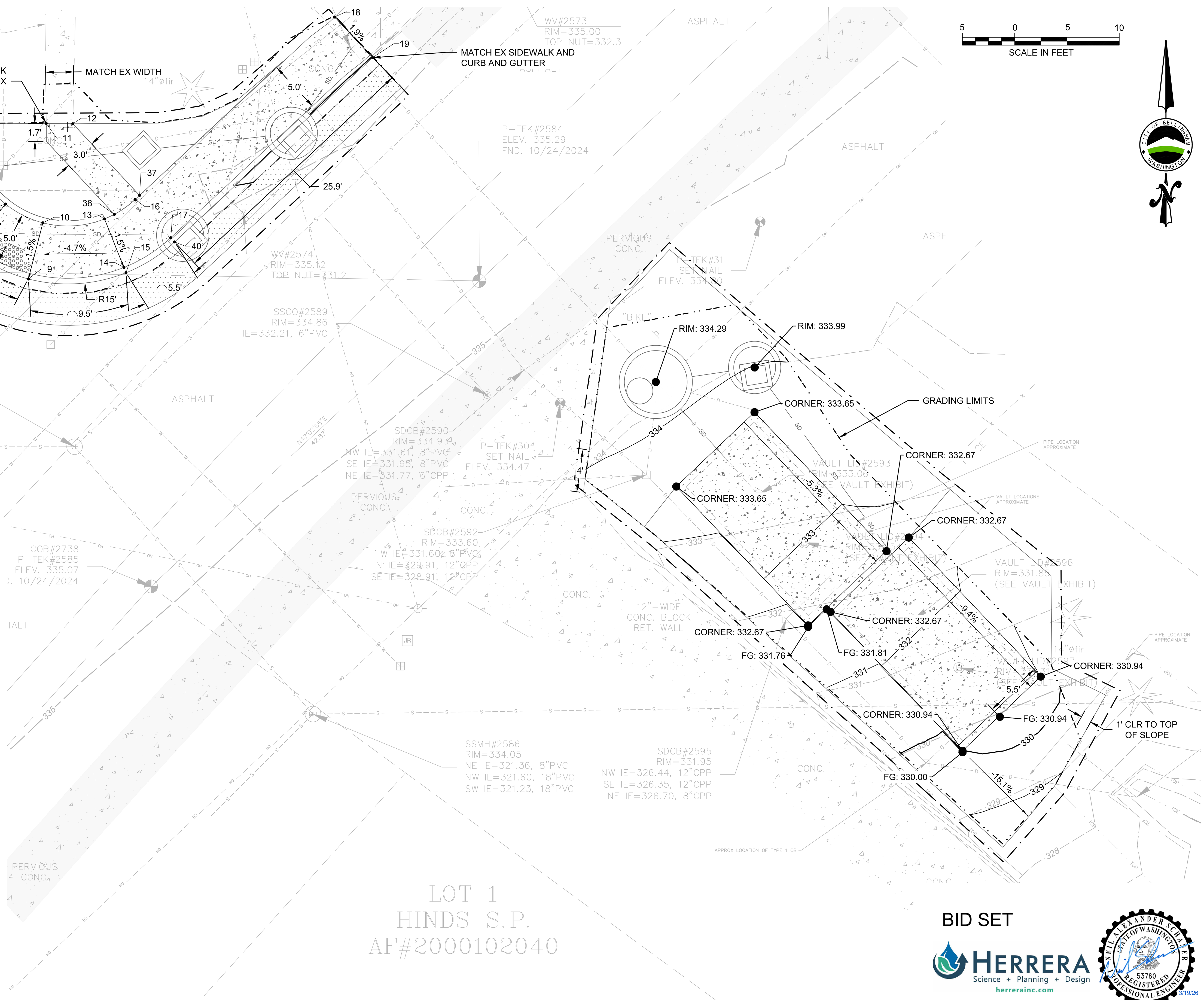
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POINT TABLE				
POINT #	ELEVATION	NORTHING	EASTING	DESCRIPTION
1	336.15	647828.30	1258078.44	FL
2	336.65	647828.84	1258078.45	TOP OF CURB
3	336.72	647833.84	1258078.54	BACK OF WALK
4	335.56	647824.43	1258088.23	FL
5	335.69	647824.83	1258088.60	TOP OF CURB
6	335.35	647821.79	1258091.19	FL
7	335.77	647828.54	1258091.95	BACK OF WALK
8	335.43	647826.10	1258094.67	BACK OF WALK
9	335.27	647818.93	1258096.86	FL
10	335.36	647824.30	1258098.25	BACK OF WALK
11	0.00	647833.81	1258098.57	MATCH EX
12	0.00	647833.77	1258101.11	MATCH EX
13	335.72	647824.67	1258104.13	BACK OF WALK
14	335.65	647820.03	1258105.99	TOP OF CURB
15	335.15	647819.53	1258106.19	FL
16	335.65	647826.53	1258107.06	BACK OF WALK
17	335.58	647822.87	1258110.47	FL
18	335.43	647843.98	1258126.15	MATCH EX
19	334.85	647840.09	1258129.77	MATCH EX
37	335.65	647826.92	1258107.49	BACK OF WALK
38	335.70	647825.11	1258105.08	BACK OF WALK
39	335.39	647822.32	1258090.56	FL
40	335.08	647822.48	1258110.84	FL



Date	No	Revision	By
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Job. No. EV176
Date 03/2026
Field Bk.

LAKE WHATCOM VAULT RETROFITS - PHASE 1 (EV176)
DETAILED GRADING PLAN - CONNECTICUT

SHEET 27 OF 33

CONTACT PERSON: JESSICA BENNETT, PE, PROJECT ENGINEER AT (360) 778-7923

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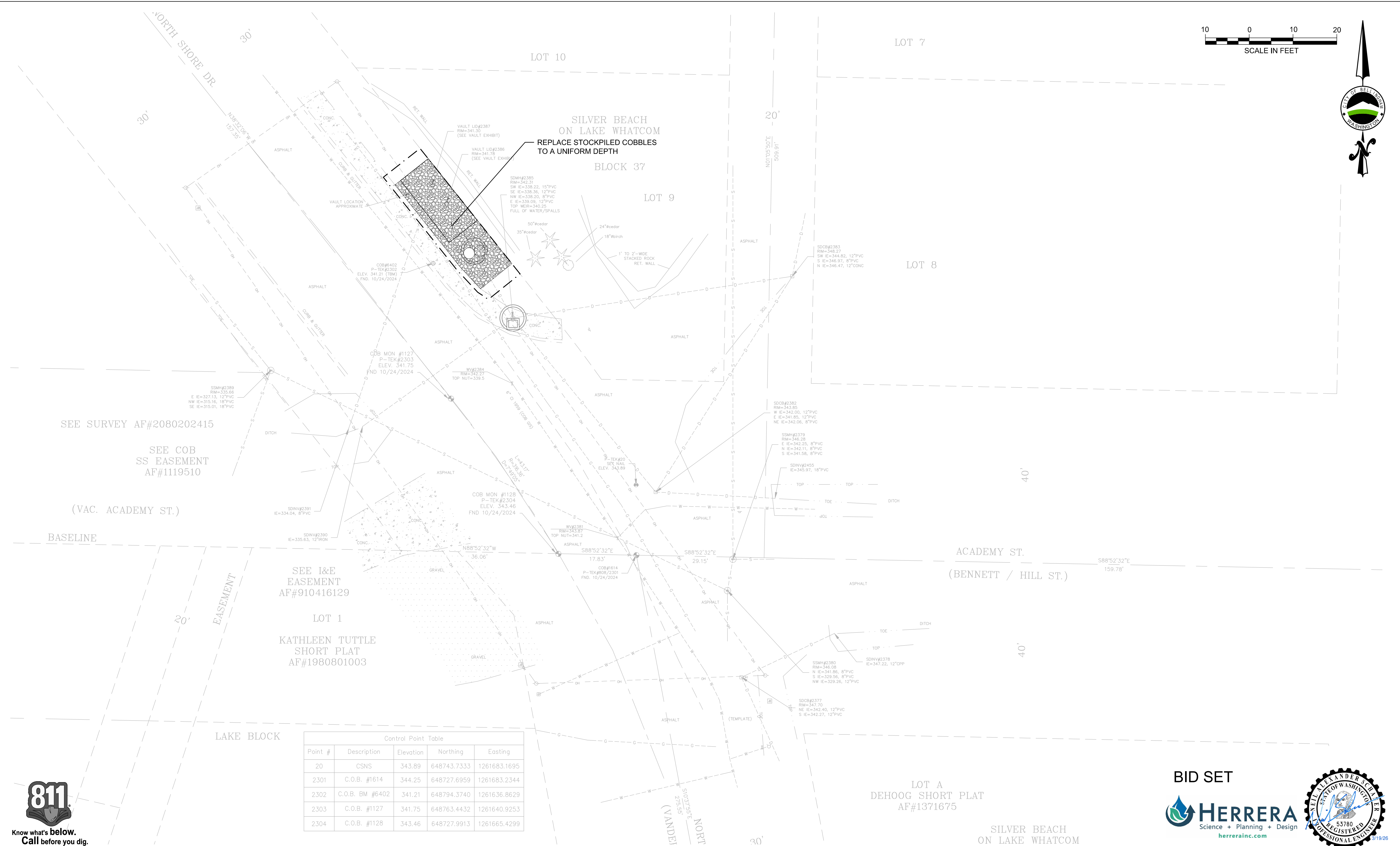
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Job. No.	EV176
Date	03/2026
Field Bk.	

LAKE WHATCOM VAULT RETROFITS - PHASE 1 (EV176)
RESTORATION PLAN - ACADEMY

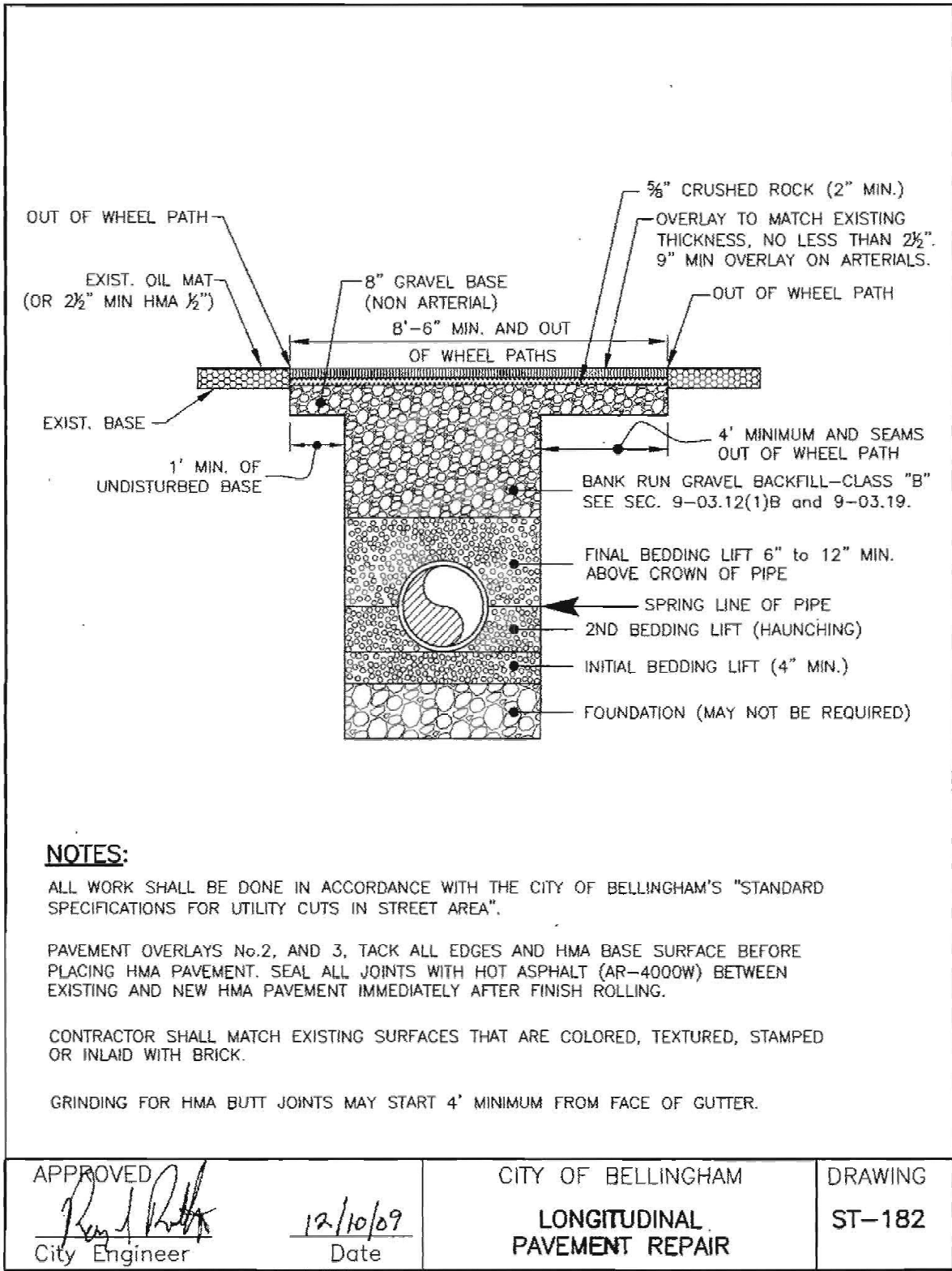
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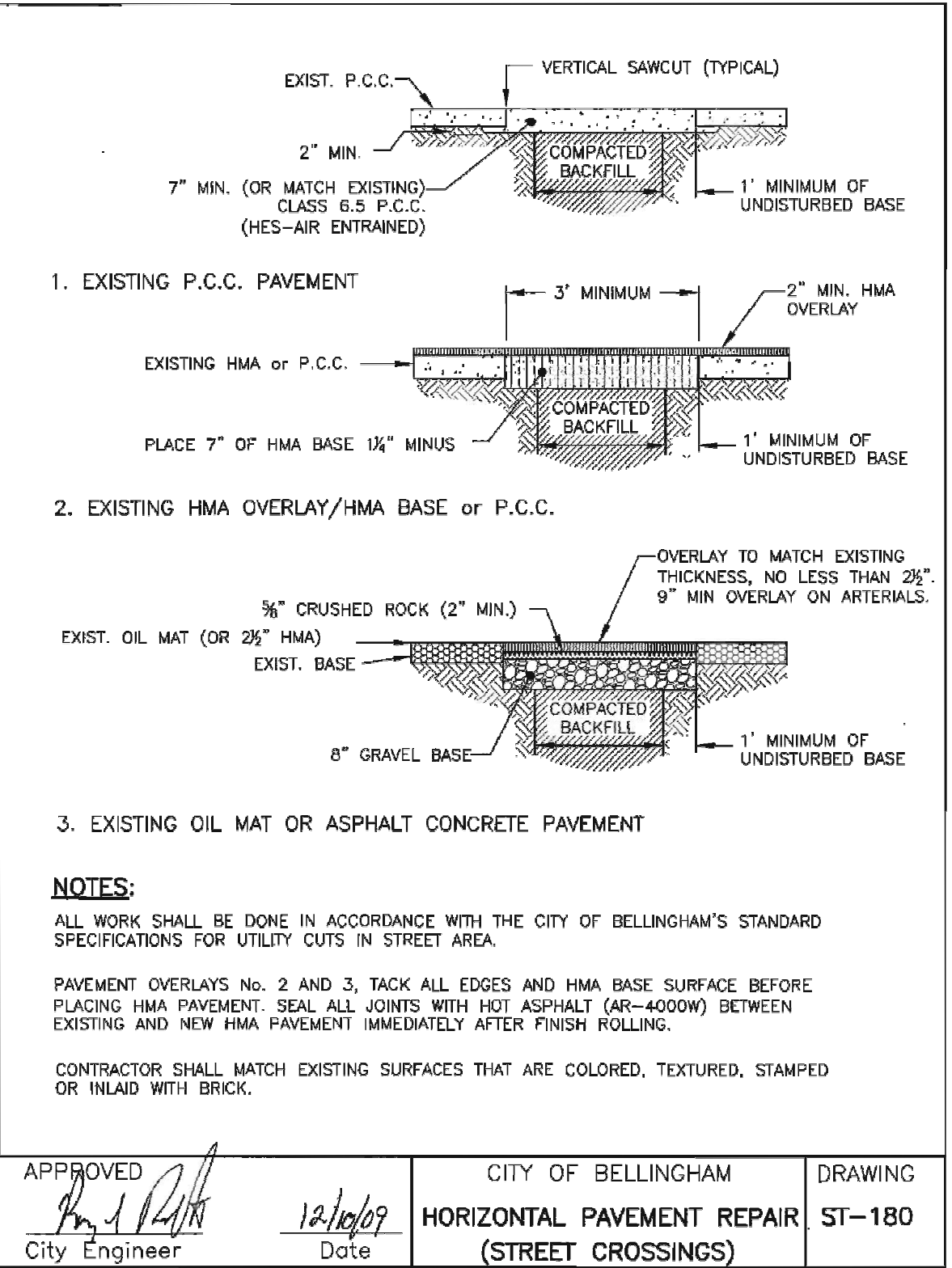


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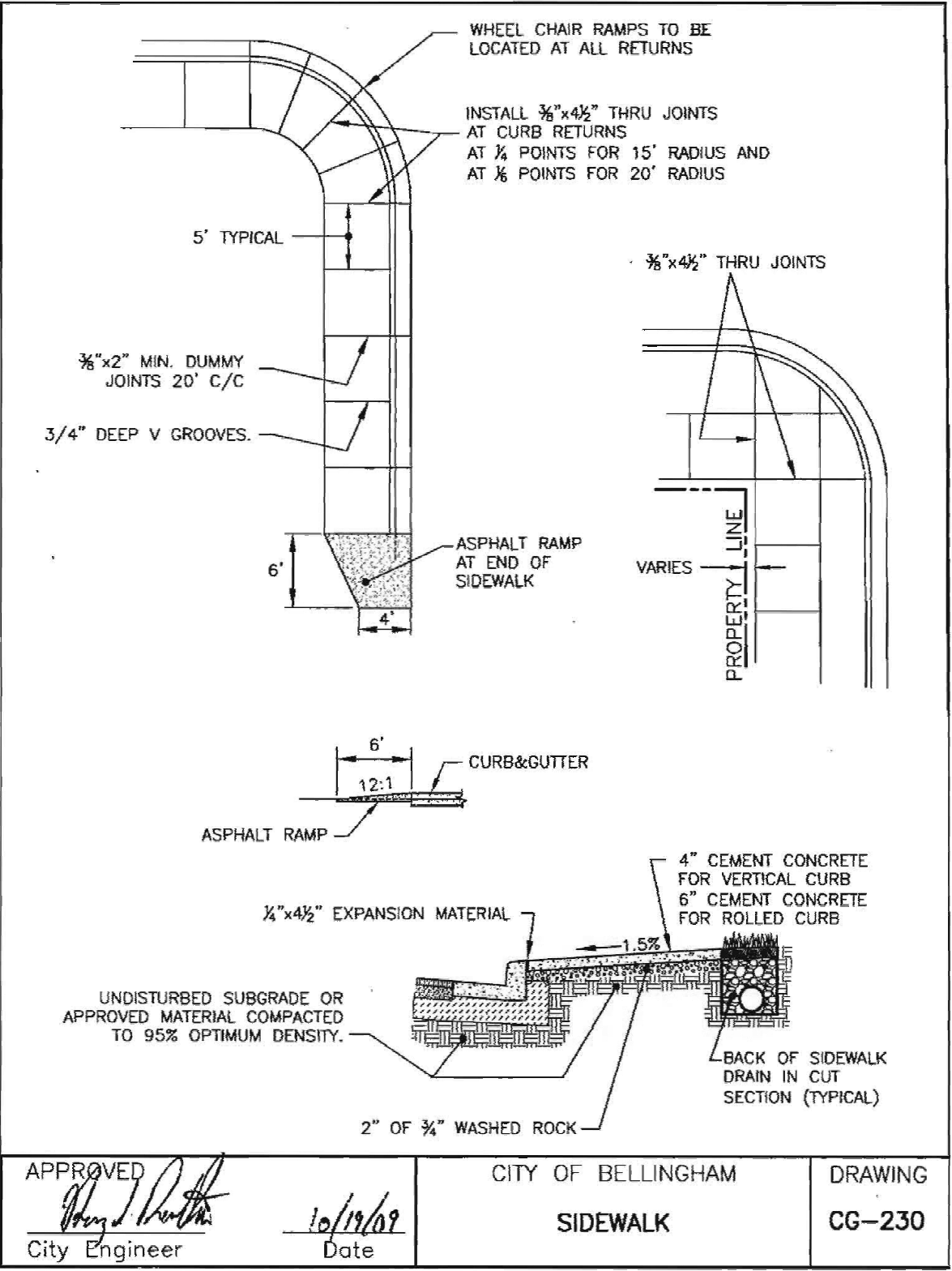
DETAIL - LONGITUDINAL PAVEMENT REPAIR

SCALE: NTS



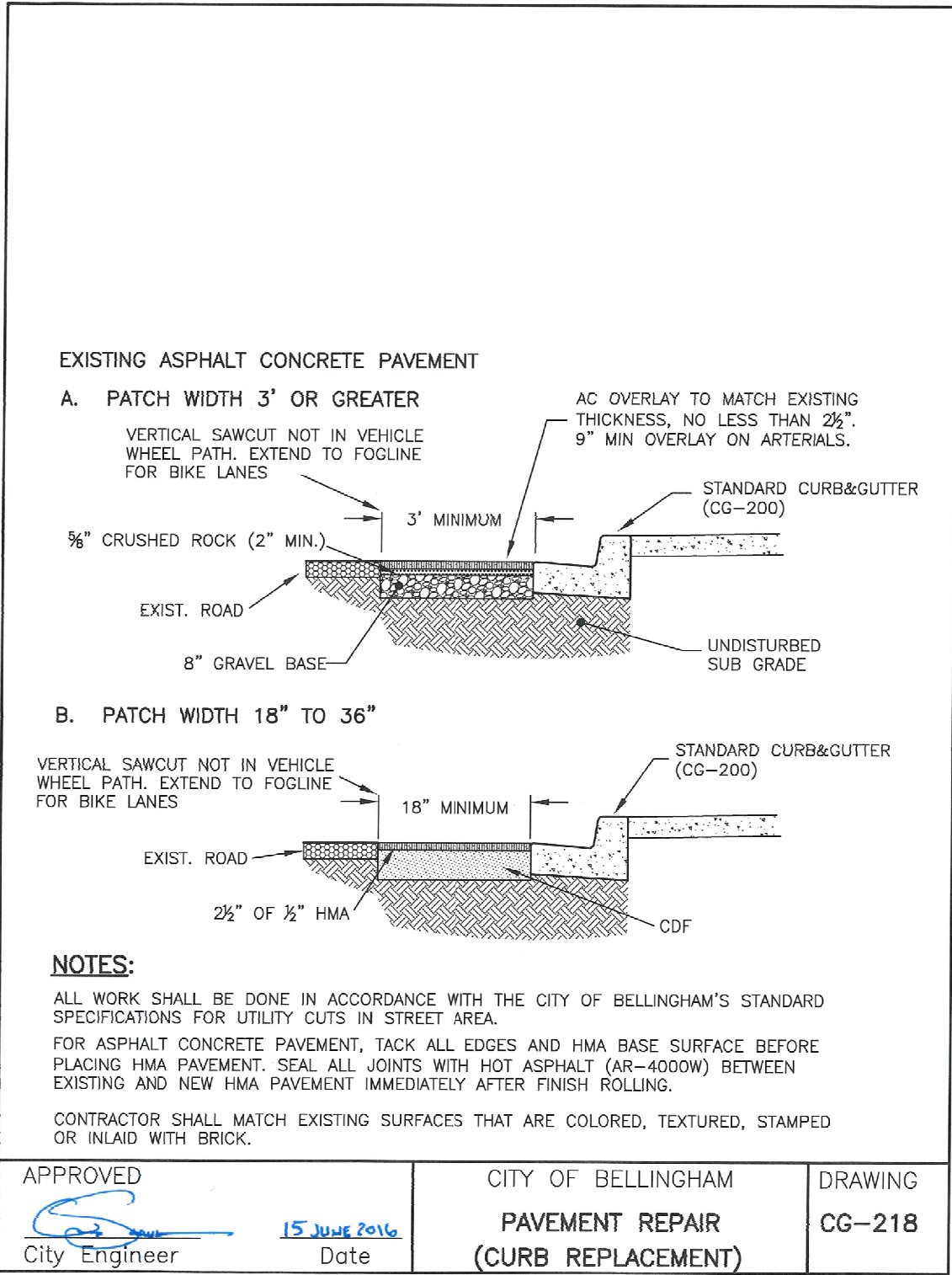
DETAIL - HORIZONTAL PAVEMENT REPAIR

SCALE: NTS



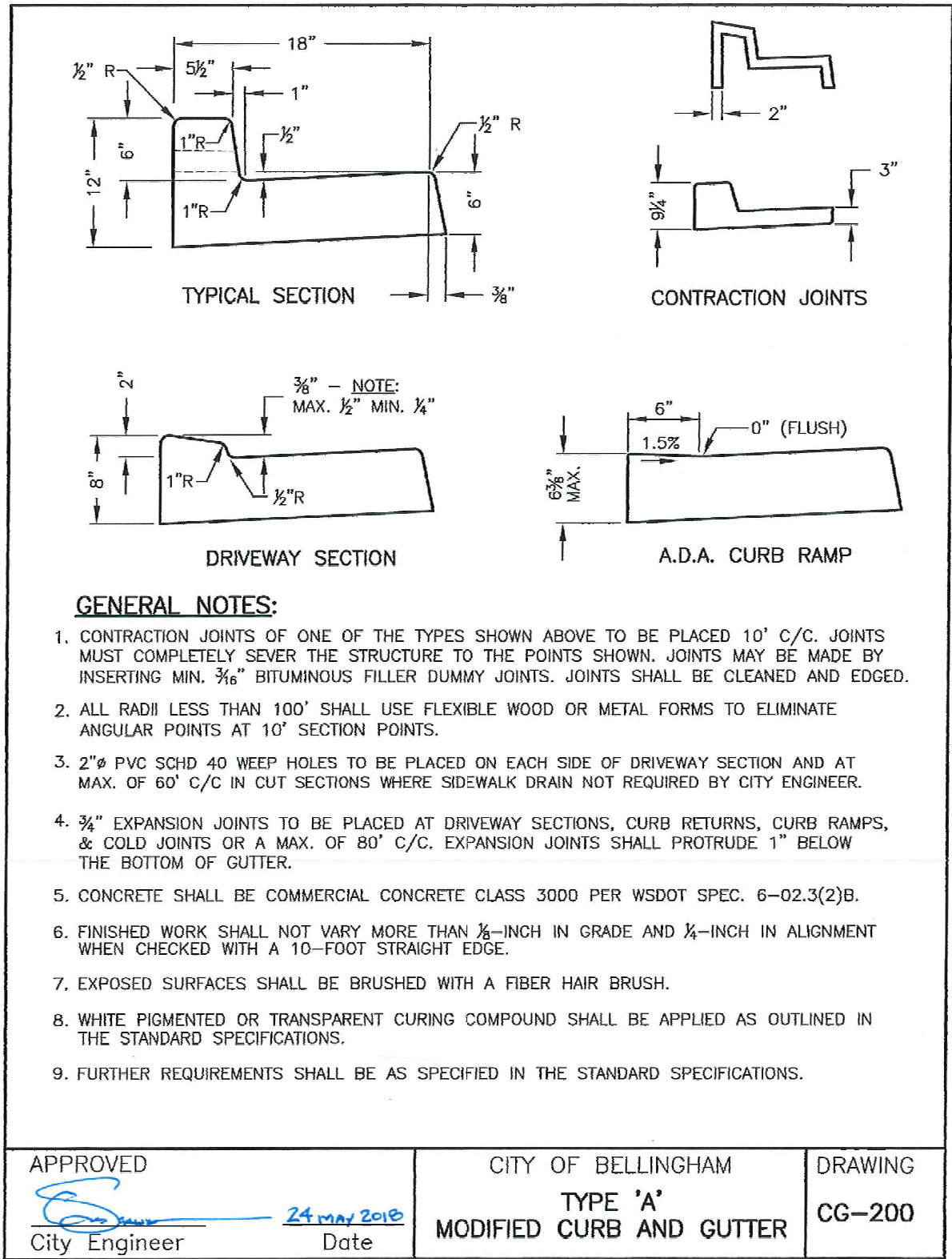
DETAIL - CEMENT CONCRETE SIDEWALK

SCALE: NTS



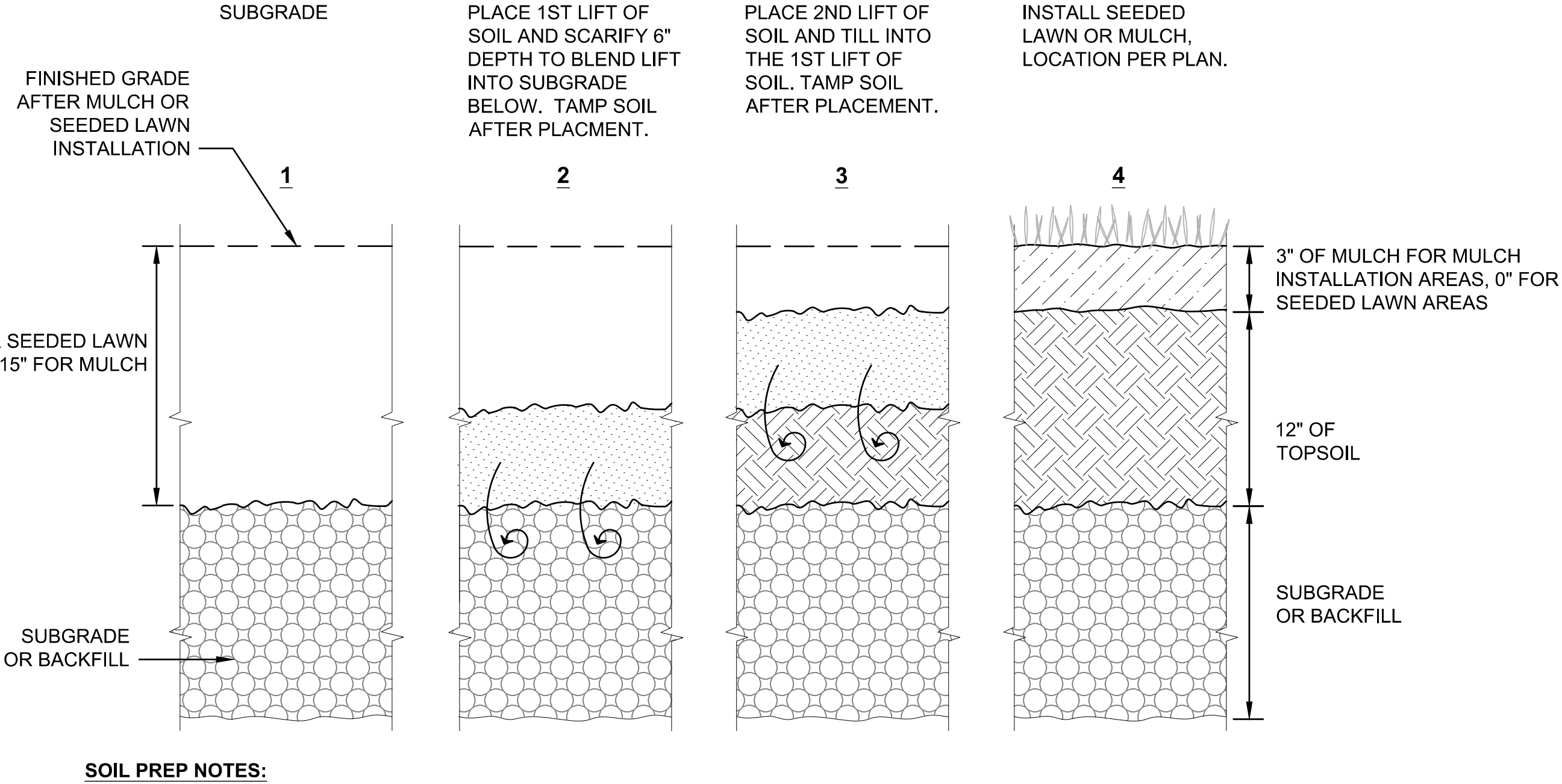
DETAIL - PAVEMENT REPAIR (CURB REPLACEMENT)

SCALE: NTS



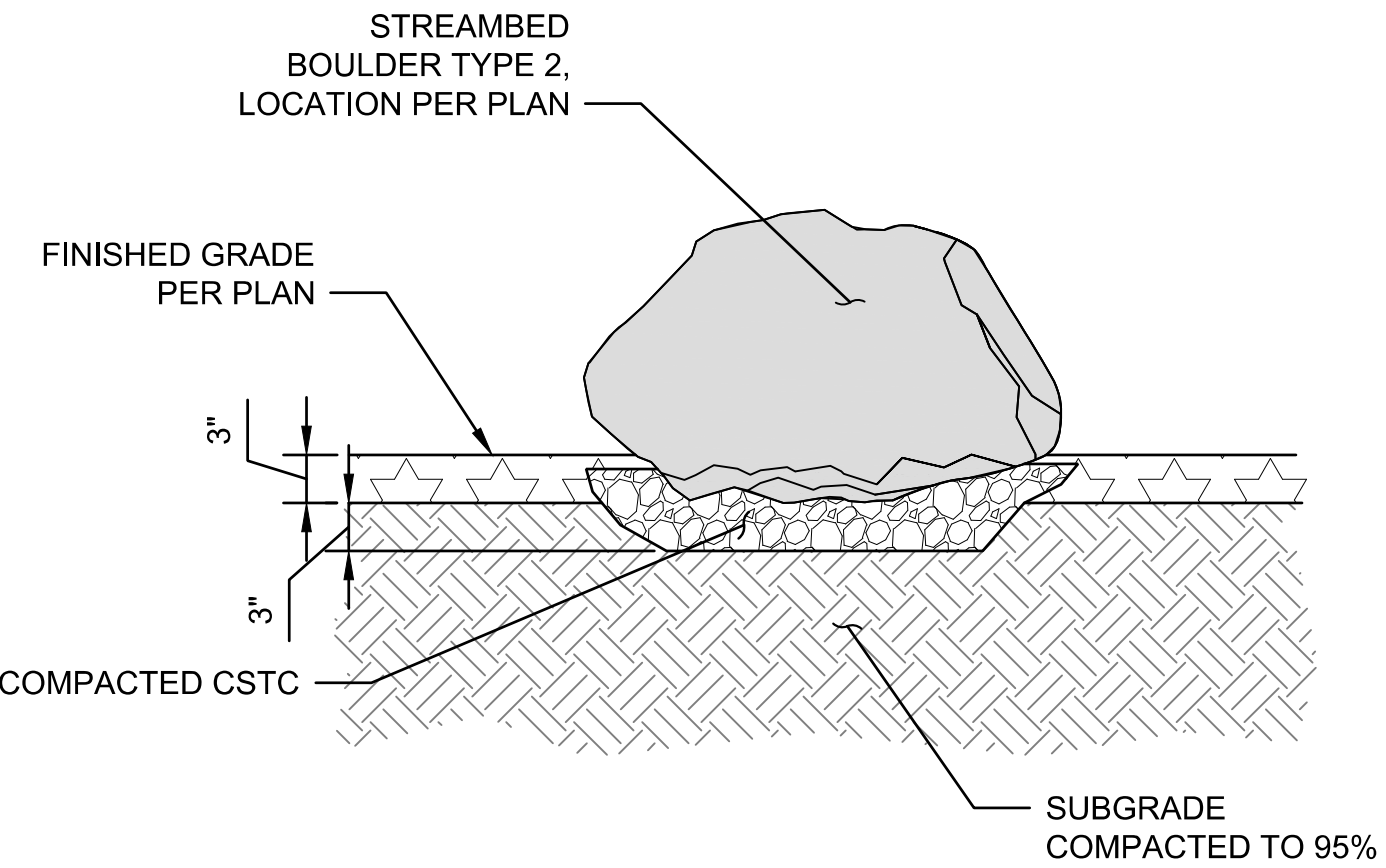
DETAIL - TYPE A MODIFIED CURB AND GUTTER

SCALE: NTS



DETAIL - SEEDED LAWN AND MULCH INSTALLATION

SCALE: NTS



DETAIL - LANDSCAPE BOULDER

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Job. No. EV176
Date 03/2026
Field Bk.

LAKE WHATCOM VAULT RETROFITS - PHASE 1 (EV176)

RESTORATION DETAILS

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-- GENERAL NOTES --

1. DESIGN BASIS: Designed in accordance with the 2021 International Building Code (IBC).
2. DESIGN DEAD / LIVE LOADS
- Precast Vault Lid DEAD LOAD: self weight
 - Precast Vault Lid LIVE LOAD: 100psf pedestrian live load or non-concurrent light maintenance vehicle = 10,000lb axle load / 5,000lb wheel load.
3. DESIGN SOIL LOADS
- Lateral active earth pressure: 50pcf in restrained wall condition
 - Surcharge pressure: 100psf vertical live load surcharge typical, 250psf where specifically indicated on plan.
4. QUALITY: Contractor shall ensure high standards of workmanship throughout, with strict adherence to the contract documents and all governing codes and standards.
5. DESIGN RESPONSIBILITY: Kingworks is responsible only for the design of the vault riser perimeter riser beams and their interaction with the existing vault walls. Design of the existing vault, precast vault lid, and other non-structural elements are by others.
6. DISCREPANCIES: Notify Kingworks immediately of any discrepancies between these notes, the contract drawings, the specification, or the governing code. Kingworks shall reply in writing. Any related work performed by the Contractor prior to receiving a reply from Kingworks is at the Contractor's sole risk. For purposes of bidding, the most stringent of the conflicting documents shall apply.
7. VERIFICATIONS: Verify all existing conditions; verify all dimensions in the field; notify Kingworks of any discrepancies, substandard existing conditions, or conditions not included in or contrary to the Contract Documents prior to shop drawing submittal.
8. DRAWING COORDINATION: Coordinate the structural drawings with drawings from all other disciplines.
9. COMPLETED FORM: The structure shown in these drawings is designed to be stable and to resist the loads above only in a fully completed form. Contractor shall ensure that the structure is adequately braced and shored during construction for all temporary loads until all elements are in place, and shall ensure that temporary loadings do not exceed the allowable capacity of any structural elements both before and after these elements are in place.
9. MEANS AND METHODS: Contractor is solely responsible for site safety, coordination, procedures, construction methodology, shoring, bracing, sequencing, and all other means and methods of construction except where specifically shown in the Contract Documents.
10. PROTECTION AND BRACING: Contractor is solely responsible for the protection of existing utilities, streets, equipment, etc. during construction. Provide temporary bracing and protection as required.
11. SCALING: Do not scale drawings. See Civil drawings for dimensions, and notify Kingworks of any discrepancies.
12. DELIVERY, STORAGE AND HANDLING: All products shall be delivered, stored, and handled according to the Manufacturer's recommendations and installation instructions. Protect all items from damage, moisture, corrosion, or other deterioration before, during and after installation.
13. COPYRIGHT: These drawings, and all designs shown within these drawings, are copyrighted by Kingworks Structural Engineers (KW). The designs shown herein are intended for this project only and may not be used on any other project or for any other purpose.
14. ABBREVIATIONS: BM - BEAM; BRG - BEARING; CLR - CLEAR; (E) - EXISTING; FG - FINISHED GRADE; GC - GENERAL CONTRACTOR; H - HEIGHT; KW - KINGWORKS; (N) - NEW; SN - STRUCTURAL NOTES; SS - STAINLESS STEEL; UHMW - ULTRA HIGH MOLECULAR WEIGHT; VIF - VERIFY IN FIELD.

-- SUBMITTALS --

1. GENERAL: Provide PDF of all submittals to the City. Submittals will be reviewed for general conformance to the contract documents. Responsibility for adherence to the contract documents lies solely with the Contractor, including but not limited to dimensions, sizes, connections, and quantities.
2. CONTRACTOR REVIEW: Contractor shall review, mark, and stamp all submittals before submittal to the City. Unreviewed or unstamped submittals will be returned to the Contractor without review.
3. RESUBMITTALS: Resubmittals shall have all revisions clearly identified with "drawing clouds" and revision dates.
4. SHOP DRAWINGS: To include all conditions and connections, shall be submitted to the City for the following products prior to fabrication. Shop drawings shall clearly demonstrate the Contractor's understanding of the contract documents. The following shall be considered minimum structural submittals for this project:
- Concrete Reinforcing Steel
 - Concrete Mix Designs (confirm f_c prior to construction)
 - Structural Steel
5. DEFERRED SUBMITTALS: Shall be designed by a Washington State Licensed Professional Engineer. Submittals shall clearly indicate all loads and reactions to be imposed on the primary structure. Submittals shall include all components and connections required to perform the work. Where the Contract Documents indicate minimum quantities, quantities, dimensions, or otherwise, these shall be considered a minimum and remain the design responsibility of the component engineer to increase as required to performance criteria. Deferred submittals shall include calculation set. Both the calculation set and all related shop drawings of the deferred submittal shall be sealed prior to submission. The Civil Engineer shall forward deferred submittals to the Building Official where required. The Contractor shall submit a Type 3E Working Drawing per Section 1-05.3 for the following:
- Precast concrete vault lid and integral hatches (incl hatch attachments)
6. SUBMITTAL REVIEW COMMENTS: Engineer marks and comments on shop drawings and other submittals are a normal and expected part of the submittal process, and are not to be used as a basis for change orders except in cases where these marks result in or derive from substantial changes to the Contract Drawings. Time required to revise and resubmit any submittal shall be considered inherent to the submittal review process and shall not be deemed a change order. If discrepancies are discovered between the submittals and the Contract Documents (either before, during, or after submittal review), the Contract shall govern and be implemented unless specifically directed otherwise.

-- STRUCTURAL STEEL --

1. REFERENCED STANDARDS: Fabrication, erection and dimensional tolerances of stainless steel members shall be in accordance with ASTM A6 and ANSI/AISC 370-16 "AISC Specification for Structural Stainless Steel Buildings."
2. MATERIALS (unless otherwise noted on drawings)
- Stainless Steel Headed Studs: ASTM F593 Type 316L ($F_u = 65\text{ksi min}$)
 - Stainless Steel Angles: ASTM A276 Type 316L ($F_y = 25\text{ksi min}$)
3. WELDING: All welding of stainless steel to be performed by qualified welders and shall conform to A.W.S. D1.6. Welding electrodes shall by type E316.

-- ACCESS HATCHES --

1. Access hatches shall be hinged, traffic rated, locking, and include lift assist and fall through protection components.
2. Access hatches shall be slip-resistant per Section 9-05.15.

-- REINFORCED CONCRETE --

1. REFERENCED STANDARDS: Reinforced concrete shall conform to the requirements of the following documents, except as modified in these drawings.
- ACI 301-16 "Standards Specifications for Structural Concrete"
 - ACI 318-19 "Building Code Requirements for Structural Concrete"

2. MATERIALS

-- CONCRETE MATERIAL SCHEDULE --				
	f_c ,min (PSI)	W/CM (MAX)	COARSE AGG (MAX)	MIN FLY ASH AND/OR SLAG
CONCRETE PERIMETER RISERS	4500	0.45	3/4"	20%
PRECAST VAULT LID	4500	PER MFR	PER MFR	PER MFR

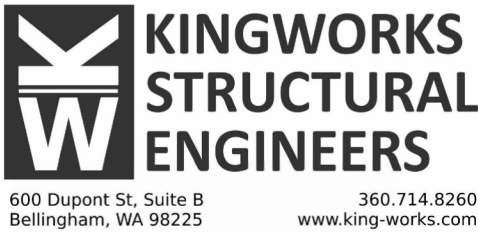
- Required concrete strength " f_c " shall be evaluated at 28 days (56 days OK for fly ash or slag concrete).
 - Conform to following concrete material schedule requirements.
 - Cementitious Materials: Provide Type I or II Cement per ASTM C150 (Type III OK for Precast) or Type II Blended Hydraulic Cement per ASTM C595. Cementitious materials for use in concrete exposed to soil or weather must meet or exceed the S1 exposure class per ACI 318-19 Table 19.3.2.1.
 - Fly Ash: Class F per ASTM C618.
 - Slag: GGBF Slag per ASTM C969, Grade 100 minimum.
 - Air Entrainment: Provide air entrainment of 6% (+/- 1.5%) for all concrete.
 - Typical Reinforcing Steel: ASTM A615, Grade 60
3. SPLICES: Lap splices for #4 bars shall be 1'-6" minimum. Lap splices for #5 bars shall be 1'-10" minimum.
4. CLEAR COVER: Provide clear cover from outermost reinforcing to surface of concrete in accordance with the details. Where not otherwise indicated, provide the following clear cover:
- Elements cast against and permanently exposed to earth: 3" clear
 - Elements formed and exposed to earth or weather: 1 1/2" clear
5. ACCESSORIES: Provide all accessories, chairs, spacer bars and supports necessary to secure steel in accordance with ACI Code of Standard Practice.
6. HOOKS: All hooked bars shall be a standard shop fabricated hook with bend radii and length per ACI 318, UON.
7. TESTING: Test cylinders shall be taken by qualified personnel according to ACI 318-19 Section 26.12.
8. WEATHER PROVISIONS: Observe all ACI recommendations for hot or cold weather concreting cure slabs using an approved curing compound or wet cure system per ACI recommendations, with special consideration for slag and fly ash concrete as appropriate.

-- SPECIAL INSPECTIONS, TESTING, AND STRUCTURAL OBSERVATION --

1. GENERAL: A special inspection agency shall be retained by the City to perform inspections according to IBC Chapter 17. The following scheduled structural special inspection and testing regimen shall be cross-referenced with the IBC and its referenced standards for more specific requirements and exceptions. Special inspection and test reports shall be submitted to KW and the Civil Engineer in accordance with IBC 1704.2.4.

-- STRUCTURAL SPECIAL INSPECTION SCHEDULE --			
	STRUCTURAL ITEM	FREQUENCY (C=continuous, P=periodic)	REFERENCE (2021 IBC Section, uon)
1	STEEL		1705.2, 1705.13.1
	- Welding	Varies	AISC 360-16 Table N5.4-1, N5.4-2, & N5.4-3
2	CONCRETE		1705.3, ACI 318-19 26.13
	- Reinf Placement	P (and prior to all pours)	Table 1705.3, ACI 318-19 26.6.2
	- Concrete Placement	C	Table 1705.3
	- Concrete Testing	Per ACI 318-19 26.12	Table 1705.3
	- Formwork & Curing	P	Table 1705.3
	- Erection of Precast Members	P	Table 1705.3

2. STRUCTURAL OBSERVATION: Structural Observation will be performed if/as required by IBC 1704.6. Structural Observation is for intermittent review of general conformance to the design intent and shall be in addition to (not replacing) any third-party special inspection regimen.



600 Dupont St. Suite B
Bellingham, WA 98225

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Project No. 25230

	4		
	3		
	2		
	1		
Date	No	Revision	By

PROJECT ENGINEER	NS
DESIGNED/DRAWN	LL, CO
INSPECTOR	

DIRECTOR	PUBLIC WORKS	J.F.P.
CITY ENGINEER		M.L.W.
ENGINEERING MANGER		M.L.W.

CITY OF BELLINGHAM, WASHINGTON
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

SCALE
Horiz. AS NOTED
Vert. AS NOTED

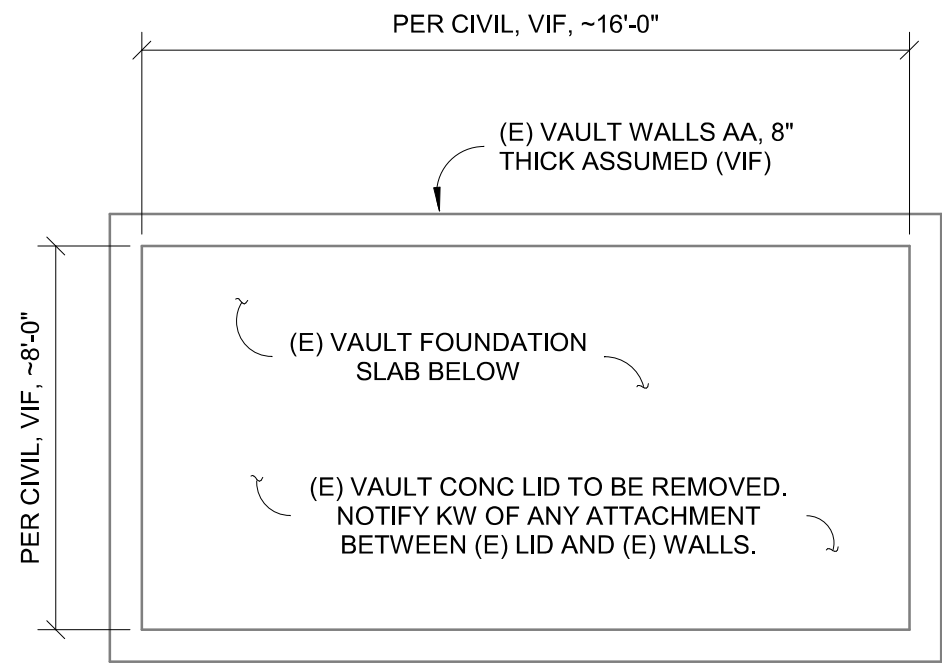
DATUM
NAD 83/98
NAVD 88

Job. No.	EV176
Date	03/2026
Field Bk.	

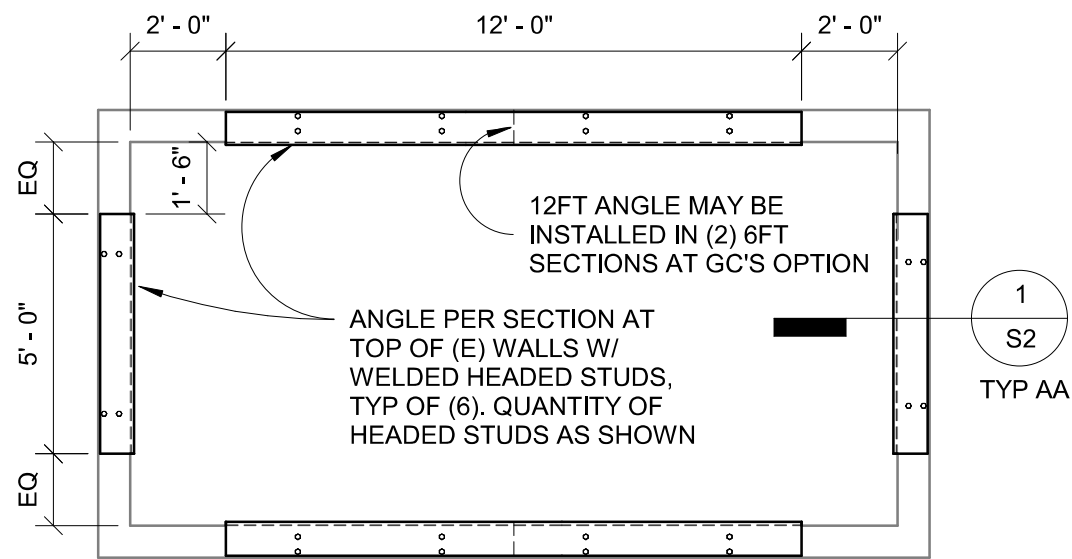
LAKE WHATCOM VAULT RETROFITS - PHASE 1 (EV176)
STRUCTURAL NOTES

SHEET 32
33

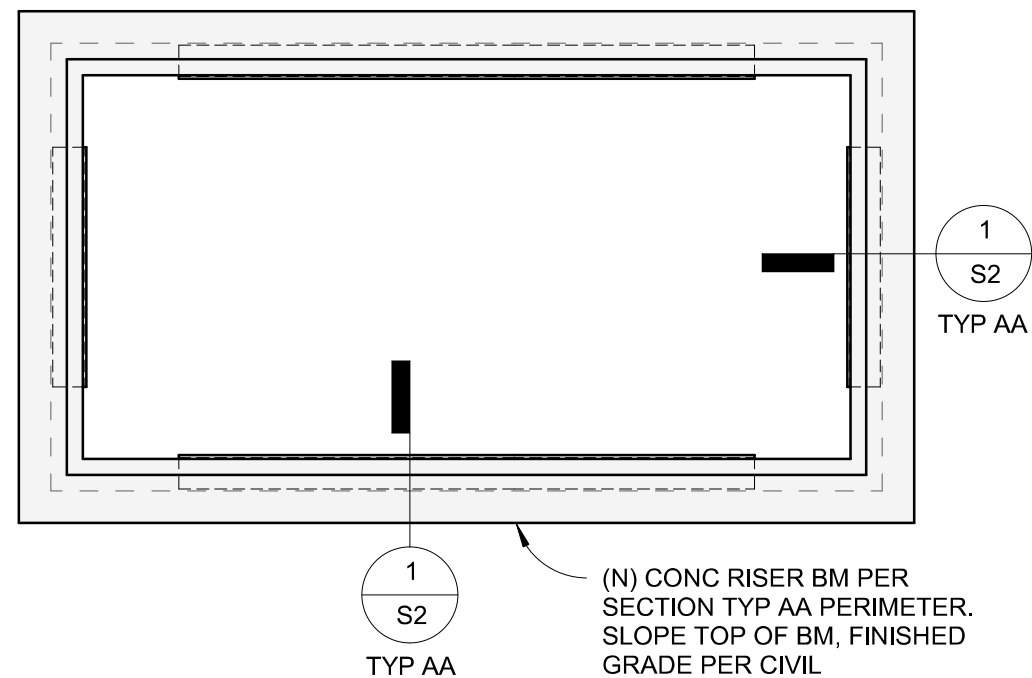
CONTACT PERSON: JESSICA BENNETT, PE, PROJECT ENGINEER AT (360) 778-7923



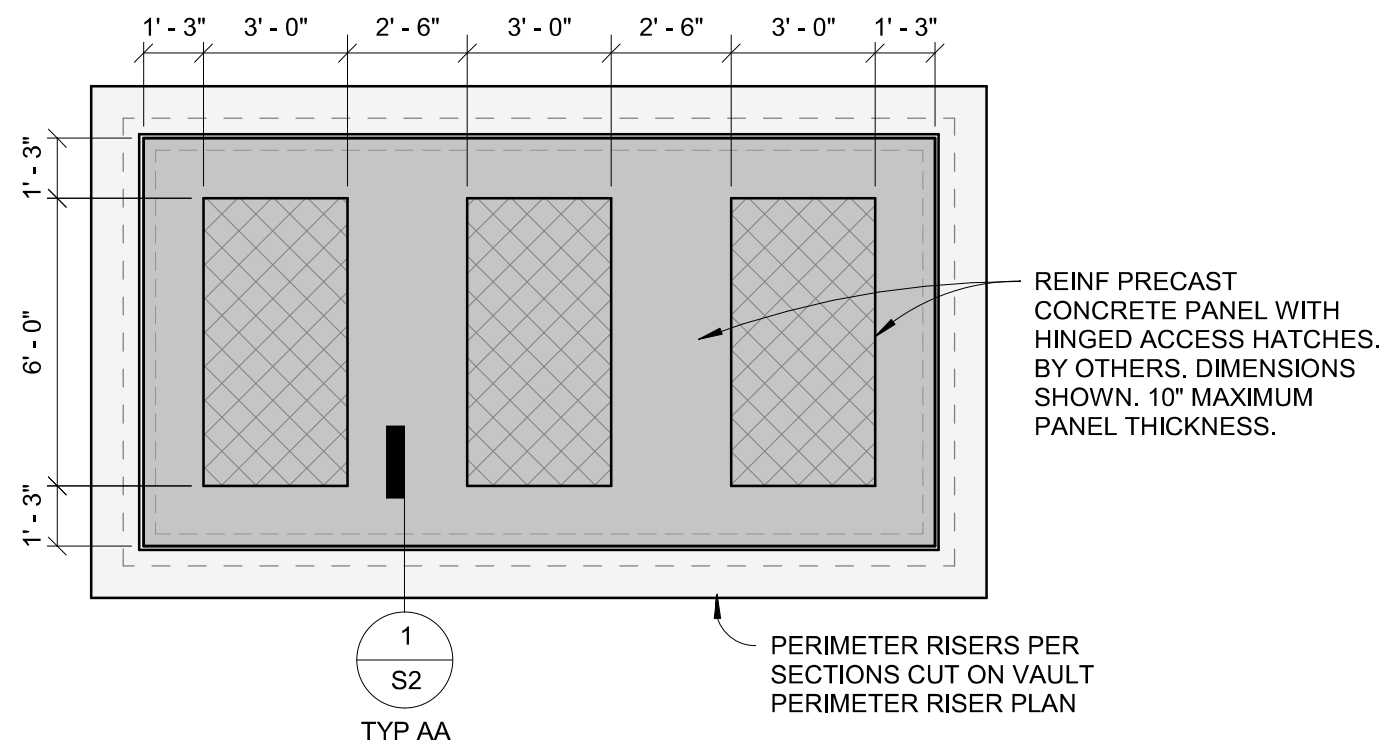
EXISTING VAULT WALLS



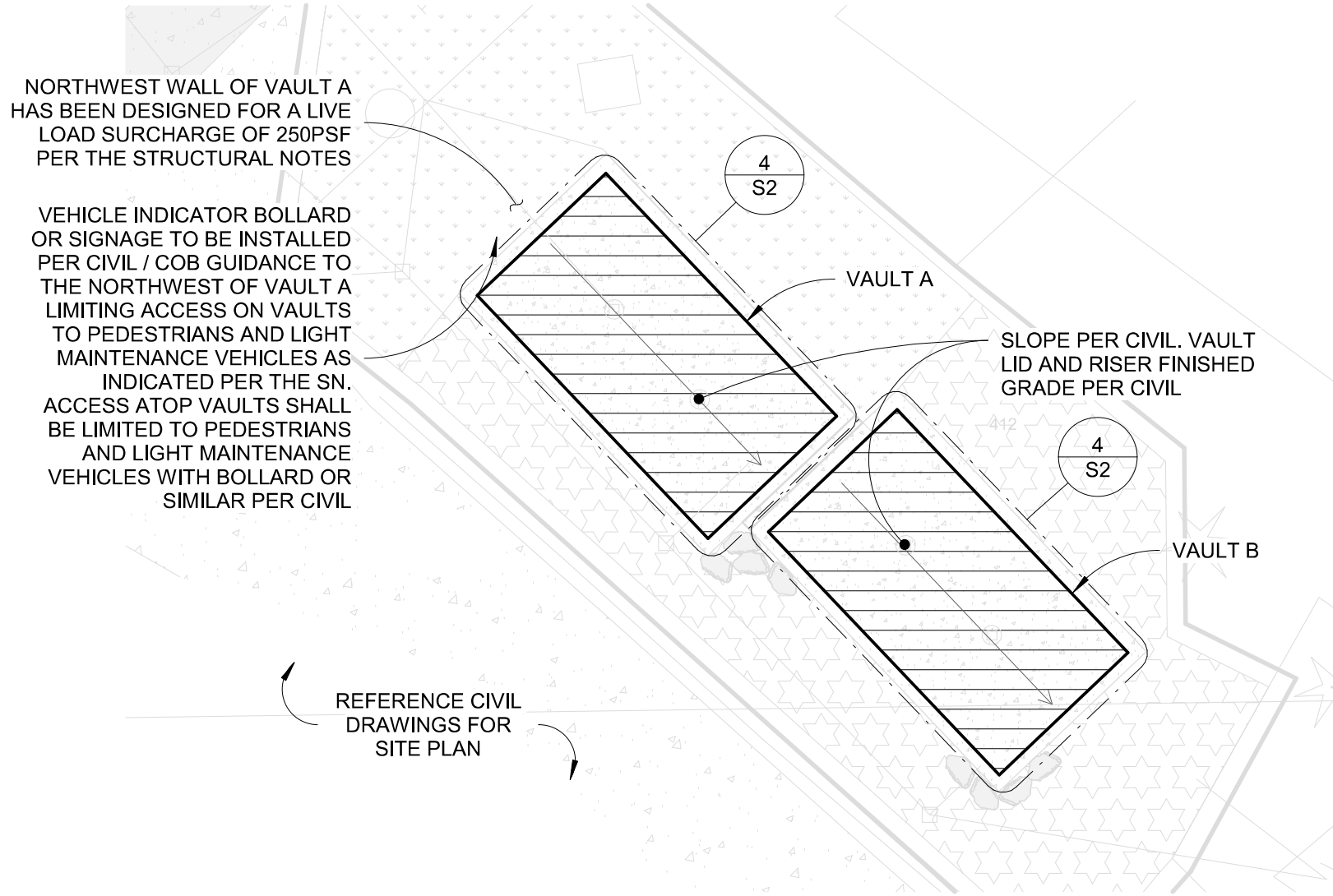
STEP 1: BRACING ANGLES



STEP 2: CONC PERIMETER RISERS

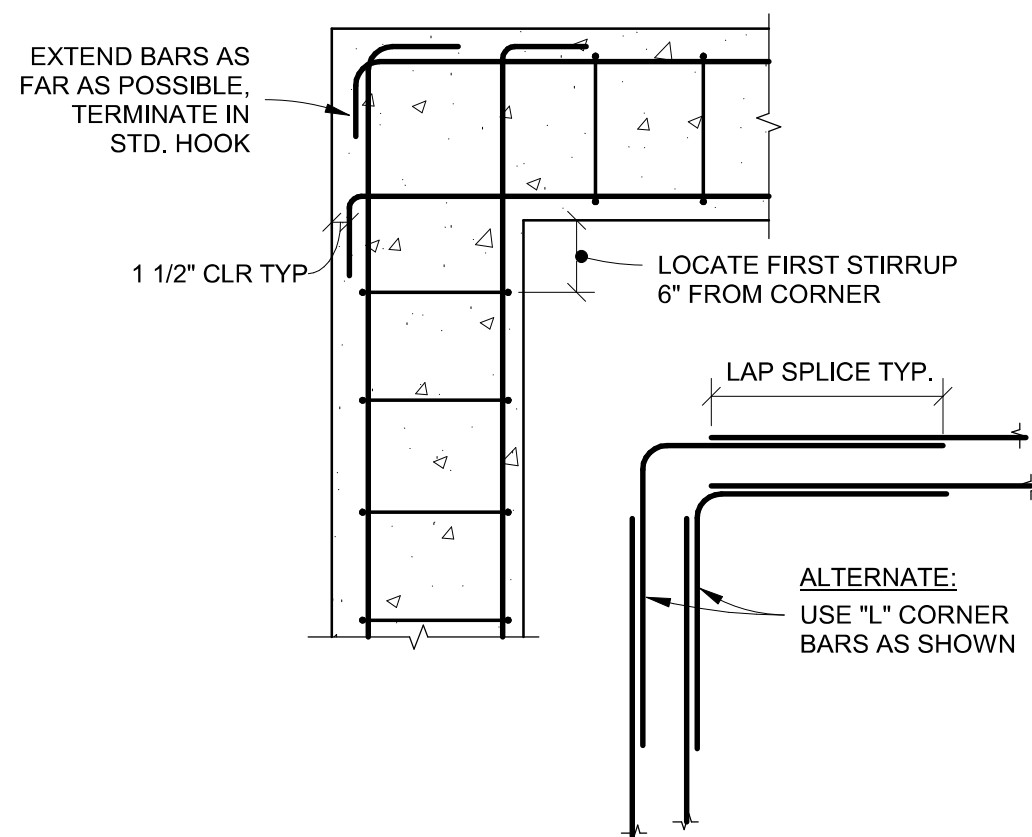


STEP 3: PRECAST VAULT LID

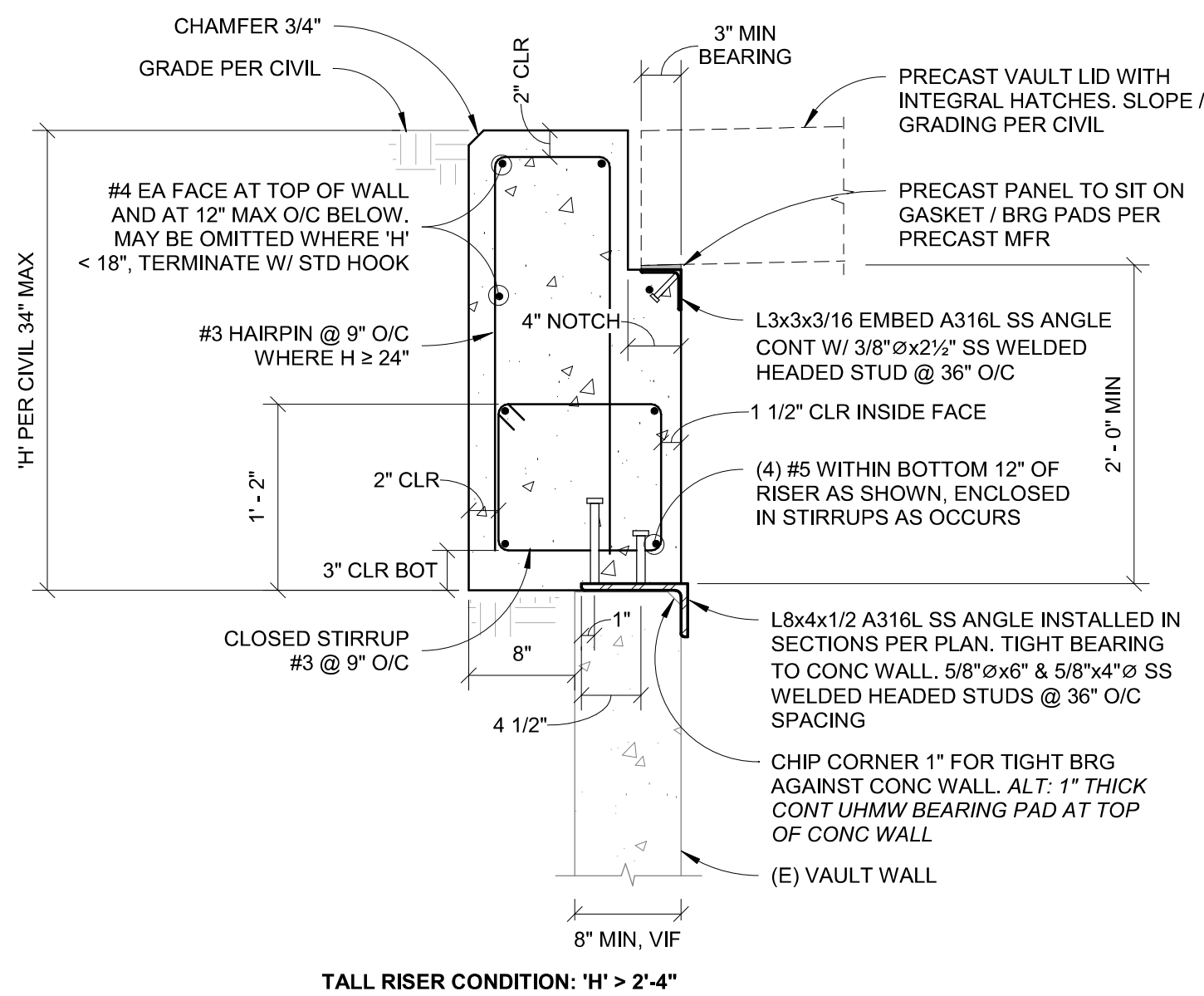


④ VICINITY PLAN
1/8" = 1'-0"

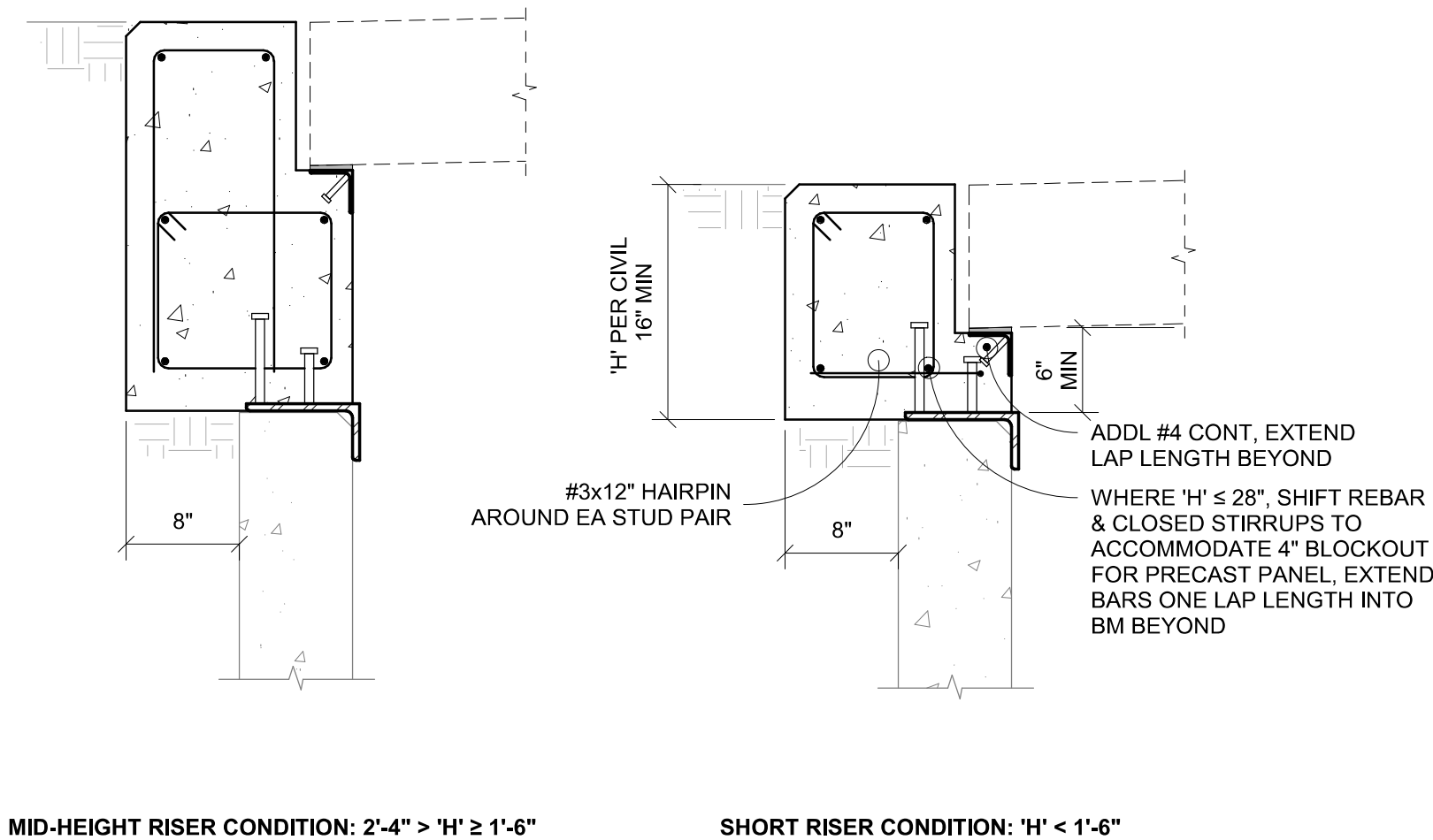
④ VAULT PLAN VIEW - SEQUENTIAL
1/4" = 1'-0"



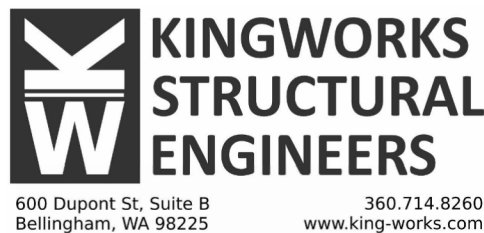
② TYP CONC CORNER REINF.
3/4" = 1'-0"



① TYPICAL VAULT RISER SECTION AT PERIMETER
1" = 1'-0"



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	2		
	1		
Date	No	Revision	By

PROJECT ENGINEER NS
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LAKE WHATCOM VAULT RETROFITS - PHASE 1 (EV176)
STRUCTURAL PLAN AND DETAILS

SHEET
33

33

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