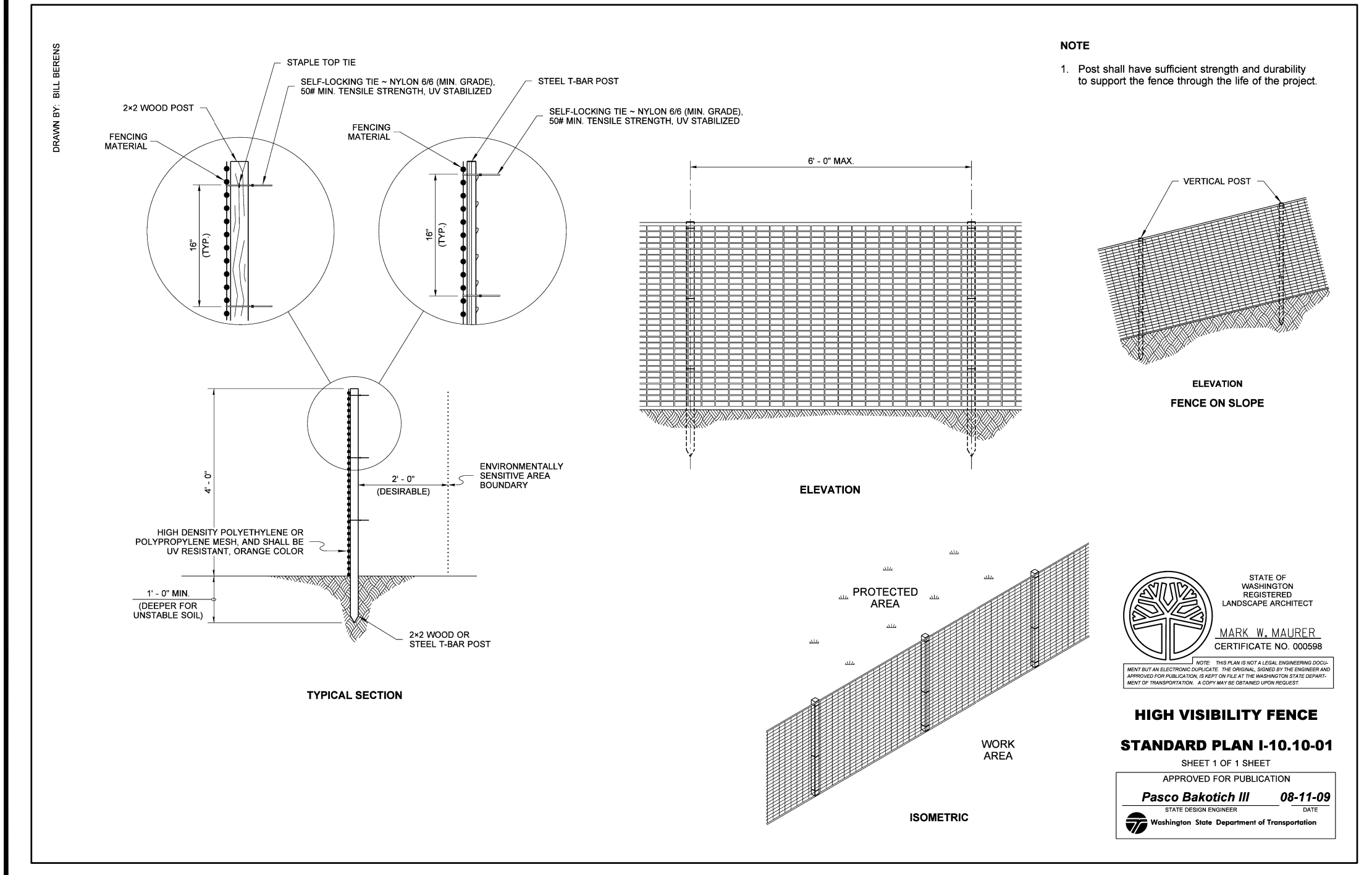
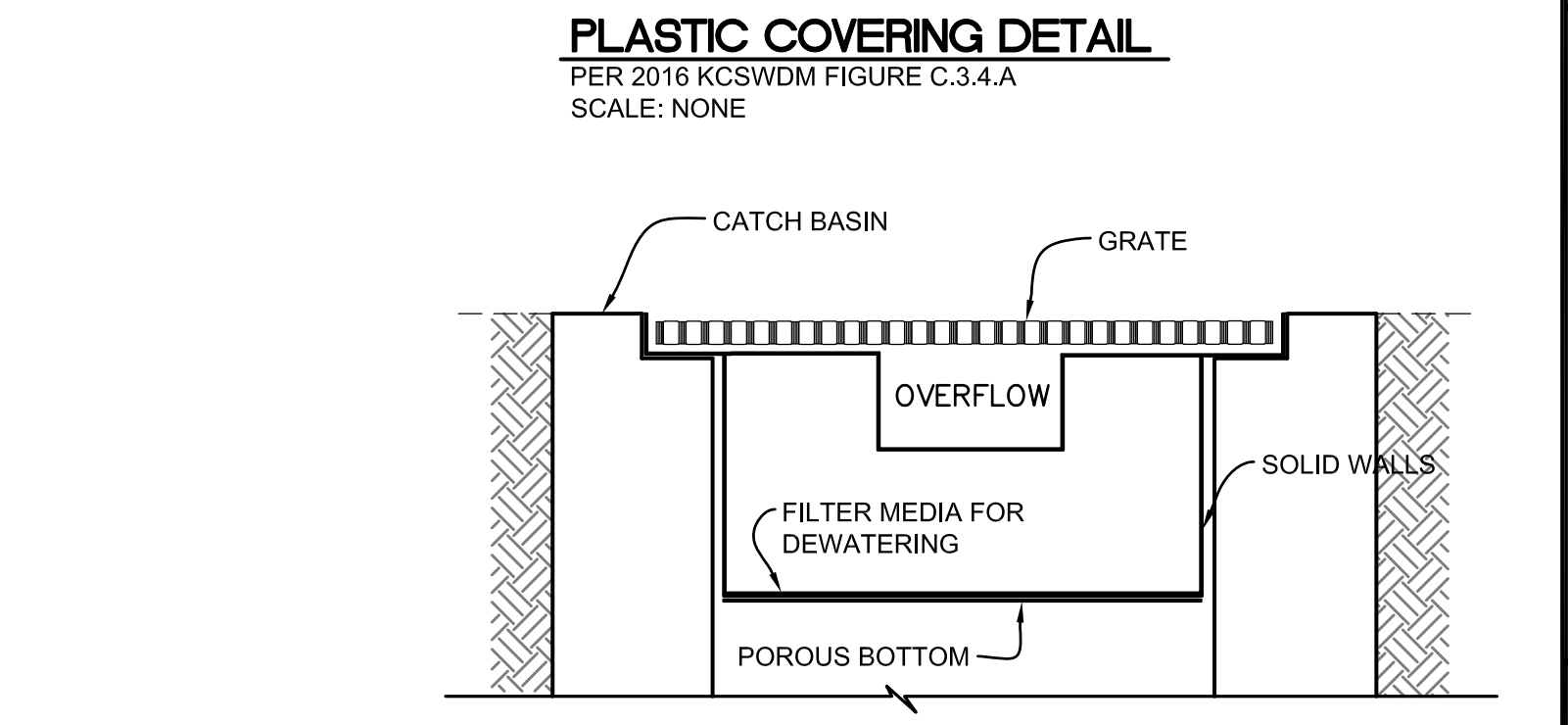
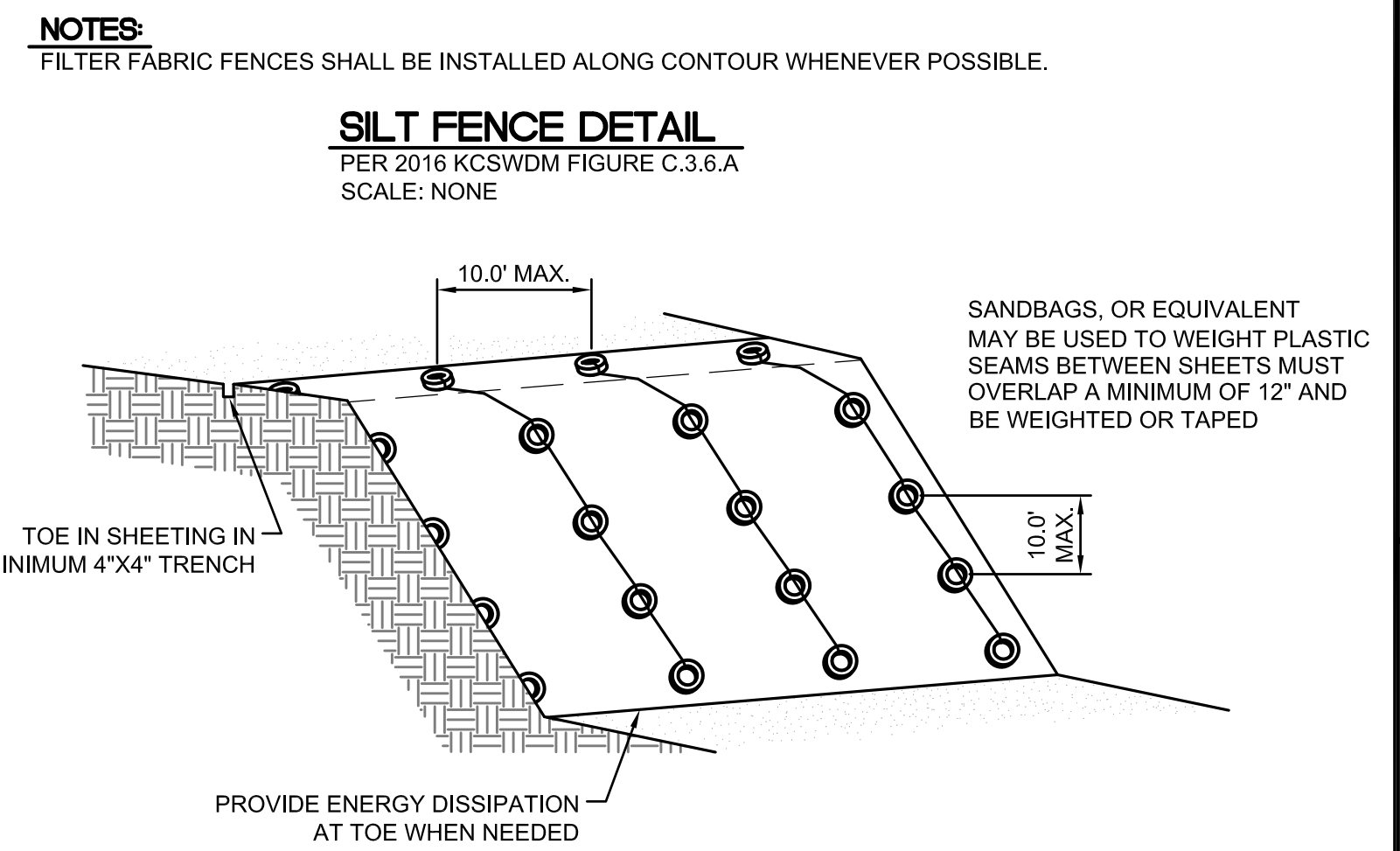
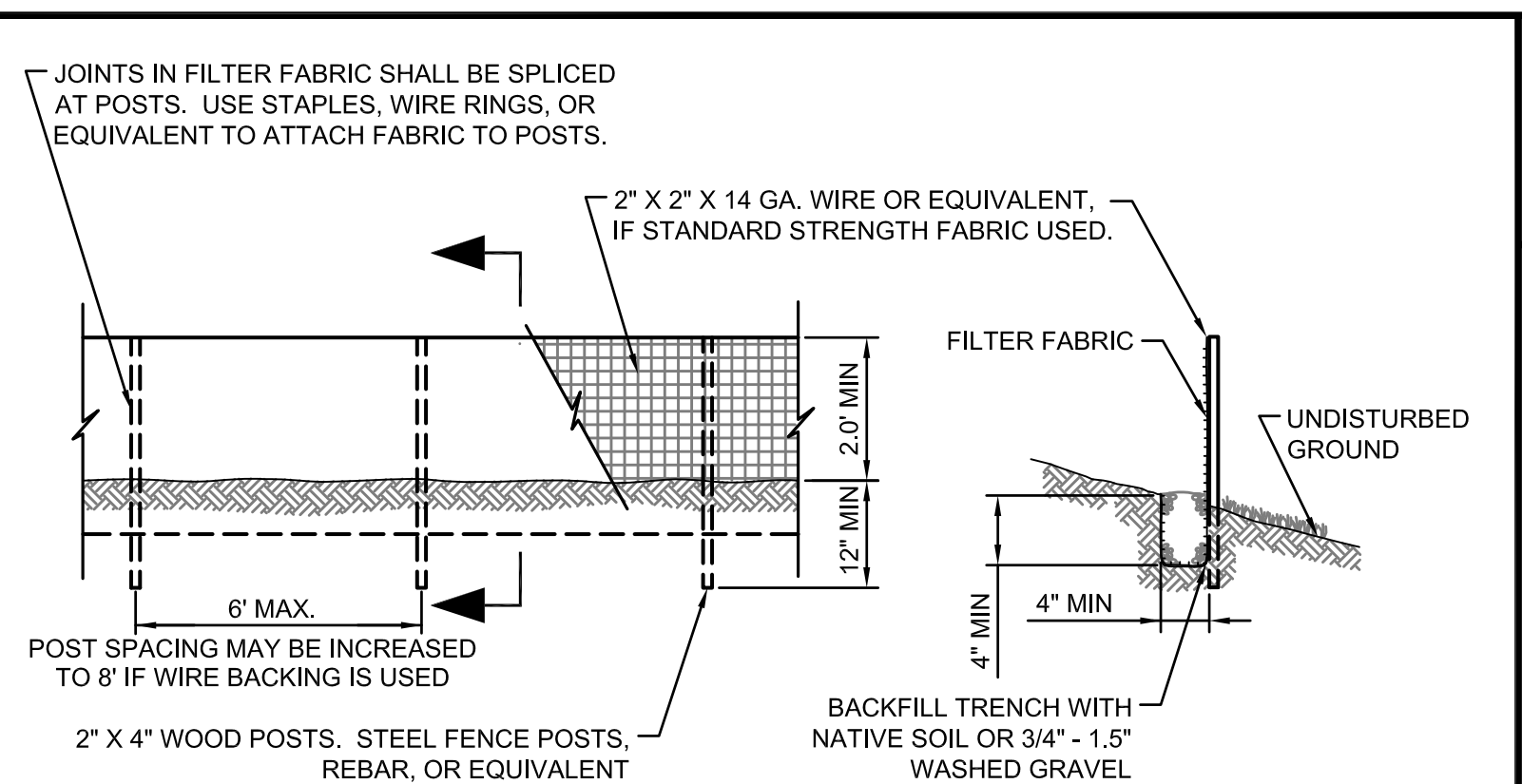
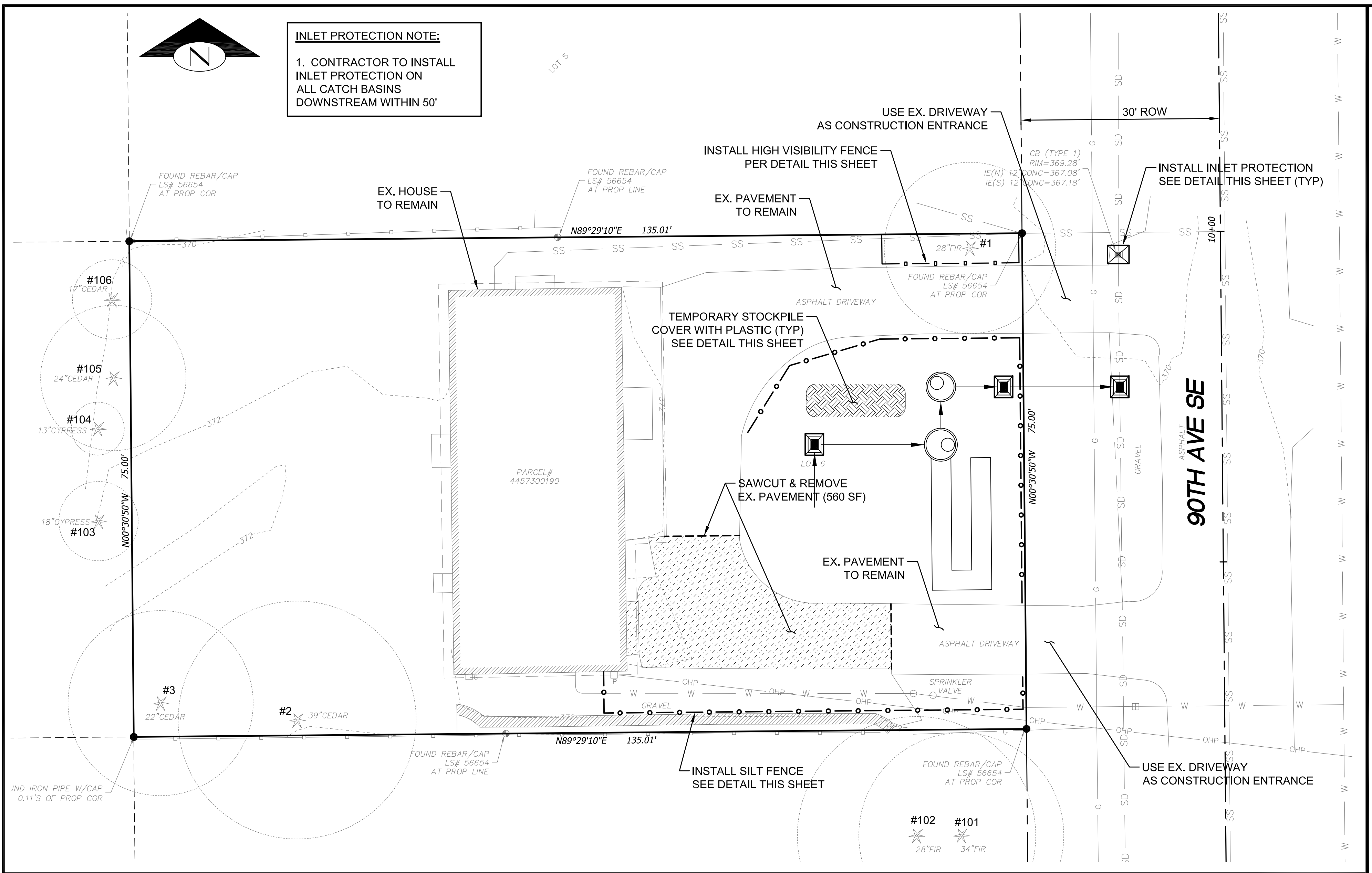


Dec 22, 2020 11:31:18am Hon Phan L:\Working\2020295 - 4245 90th Ave SE (Nakamura Residence)\CAD\Drawings\2020295-PS-C1.dwg Layout Name: Layout1



STABILIZE SOILS:
TEMPORARY COVER MEASURES SHALL BE PROVIDED WHEN NECESSARY TO PROTECT DISTURBED AREAS. THE INTENT OF THESE MEASURES IS TO PREVENT EROSION BY HAVING AS MUCH AREA AS POSSIBLE COVERED DURING ANY PERIOD OF PRECIPITATION. TOPSOIL LAYERS SHALL BE RETAINED AND PROTECTED TO THE MAXIMUM EXTENT FEASIBLE. ANY TOPSOIL THAT IS STOCKPILED ON SITE SHALL BE COVERED TO PREVENT EROSION AND SATURATION, AND SHALL BE REUSED IN LANDSCAPED AREAS UPON COMPLETION OF THE GROUND DISTURBING ACTIVITIES. TEMPORARY COVER SHALL BE INSTALLED IF AN AREA IS TO REMAIN UNWORKED FOR MORE THAN 7 DAYS DURING THE DRY SEASON (MAY 1 TO SEPTEMBER 30) OR FOR MORE THAN TWO CONSECUTIVE WORKING DAYS DURING THE WET SEASON (OCTOBER 1 TO APRIL 30). COVER METHODS INCLUDE THE USE OF SURFACE ROUGHENING, MULCH, EROSION CONTROL NETS AND BLANKETS, PLASTIC COVERING, SEEDING, AND SODDING. MULCH AND PLASTIC SHEETING ARE PRIMARILY INTENDED TO PROTECT DISTURBED AREAS FOR A SHORT PERIOD OF TIME, TYPICALLY DAYS TO A FEW MONTHS. SEEDING AND SODDING ARE MEASURES FOR AREAS THAT ARE TO REMAIN UNWORKED FOR MONTHS. EROSION NETS AND BLANKETS ARE TO BE USED IN CONJUNCTION WITH SEEDING STEEP SLOPES

GENERAL NOTE:
1. LAND CLEARING, GRADING, FILLING, AND FOUNDATION WORK ARE NOT PERMITTED BETWEEN OCTOBER 1ST AND APRIL 1ST. ANY WORK THAT IS PROPOSED DURING THE WET SEASON MUST SUBMIT A SEASONAL DEVELOPMENT LIMITATION WAIVER FOR APPROVAL BY THE BUILDING OFFICIAL

PROJECT ENGINEER'S CERTIFICATION:
I HEREBY STATE THAT THIS CONSTRUCTION STORMWATER POLLUTION PREVENTION PLAN FOR NAKAMURA RESIDENCE HAS BEEN PREPARED BY ME OR UNDER MY SUPERVISION AND MEETS THE STANDARD OF CARE AND EXPERTISE WHICH IS USUAL AND CUSTOMARY IN THIS COMMUNITY OF PROFESSIONAL ENGINEERS. I UNDERSTAND THAT THE CITY OF MERCER ISLAND DOES NOT AND WILL NOT ASSUME LIABILITY FOR THE SUFFICIENCY, SUITABILITY, OR PERFORMANCE OF CONSTRUCTION SWPPP Bmps PREPARED BY ME.

TREE INVENTORY:

#1 - 28"	FIR (PSEUDOTSUGA MENZIESII)	REGULATED-YES
#2 - 39"	CEDAR (THUJA PLICATA)	REGULATED-YES
#3 - 26"	CEDAR (CEDRUS DEODORA)	REGULATED-YES
#103 - 18"	CYPRESS (CHAMAECYPARIS LAWSONIANA)	REGULATED-YES
#104 - 13"	CYPRESS (CHAMAECYPARIS LAWSONIANA)	REGULATED-YES
#105 - 24"	CEDAR (THUJA PLICATA)	REGULATED-YES
#106 - 17"	CEDAR (THUJA PLICATA)	REGULATED-YES

LEGEND

- PROPERTY LINE
- - - ADJACENT PROPERTY LINE
- RIGHT OF WAY LINE
- - - RIGHT OF WAY CENTERLINE

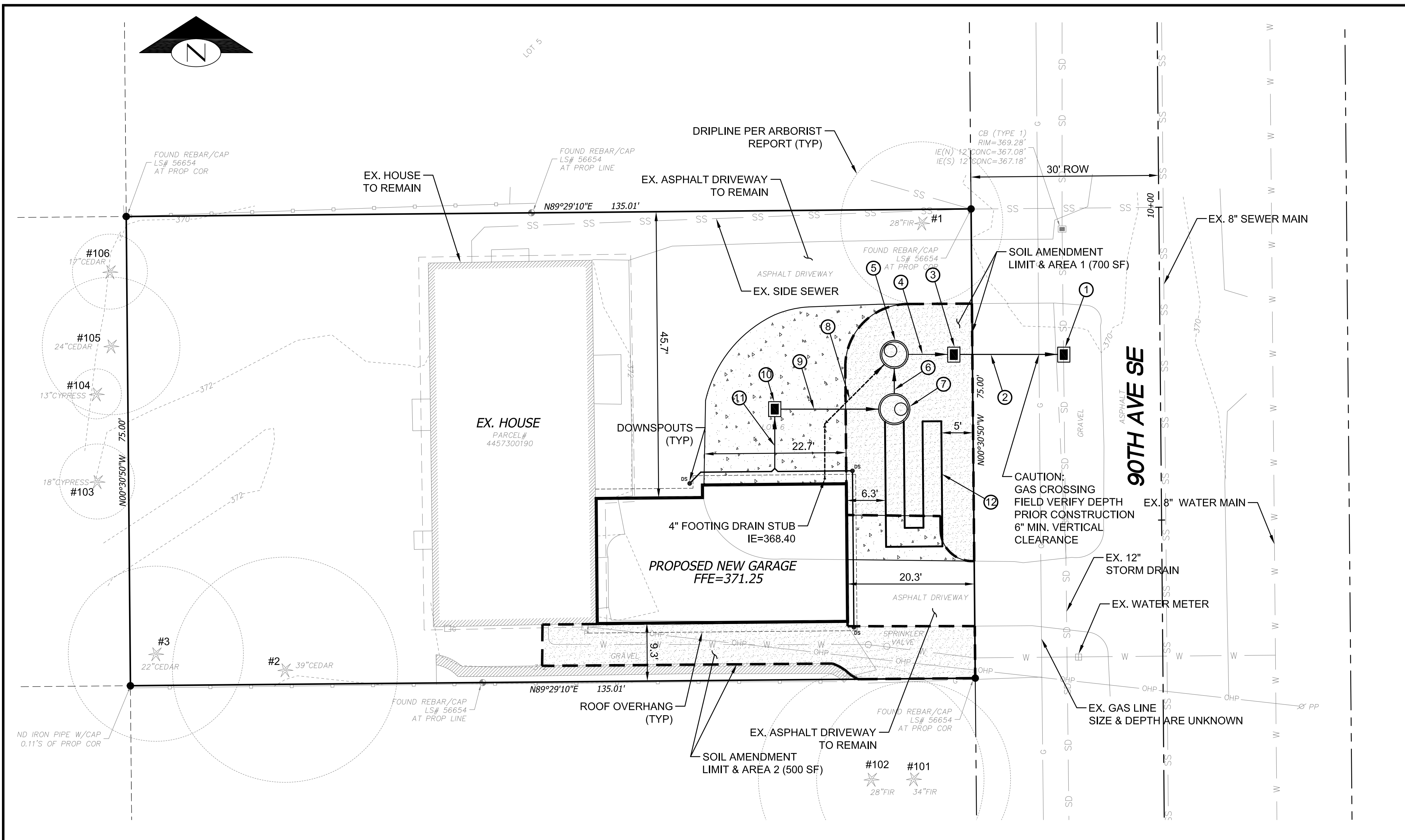
811
Know what's below.
Call before you dig.

HORIZONTAL GRAPHIC SCALE
10 5 0 5 10
1 inch = 10 ft.

NO.	DATE	BY	REVISION DESCRIPTION

REFERENCE SHEET NO. C	SHEET 1 OF 4 SHEETS
<p>NAKAMURA RESIDENCE 4245 90TH AVE SE MERCER ISLAND, WA 98040</p> <p>TREE PROTECTION PLAN TESC PLAN AND DETAILS</p>	
<p>PBC, LLC Land Development and Civil Engineering Consultants 5130 South 166th Lane Seattle, WA 98188 T (206) 229-6422</p>	
ISSUE DATE 11-15-2020	DESIGNED BY: K. TRAN
JOB NO. R20295	DRAWN BY: K. TRAN
	CHECKED BY: H.H. PHAN
	PROJ. MGR: H.H. PHAN

Dec 22, 2020 3:41pm Han Phan L:\Working\2020295 - 4245 90th Ave SE (Nakamura Residence)\CAD\Drawings\2020295-PS-C2.dwg Layout Name: Layout1



LEGEND

- PROPERTY LINE
- ADJACENT PROPERTY LINE
- RIGHT OF WAY LINE
- RIGHT OF WAY CENTERLINE
- OVERHANG / EAVE
- PROPOSED STRUCTURE
- SOIL AMENDMENT
- 4" CEMENT CONCRETE PAVEMENT

A BACKUP GENERATOR IS REQUIRED FOR THE PUMP SYSTEM

PRIVATE PROPERTY OWNER SHALL BE RESPONSIBLE FOR ANY AND ALL CLAIMS FOR INJURIES AND DAMAGE DUE TO THE OPERATION OR NON-OPERATION OF THE PUMP SYSTEM

REFERENCE SHEET NO. **02**

SHEET **2** OF **4** SHEETS

NAKAMURA RESIDENCE
4245 90TH AVE SE
MERCER ISLAND, WA 98040

STORMWATER / UTILITY PLAN AND DETAILS



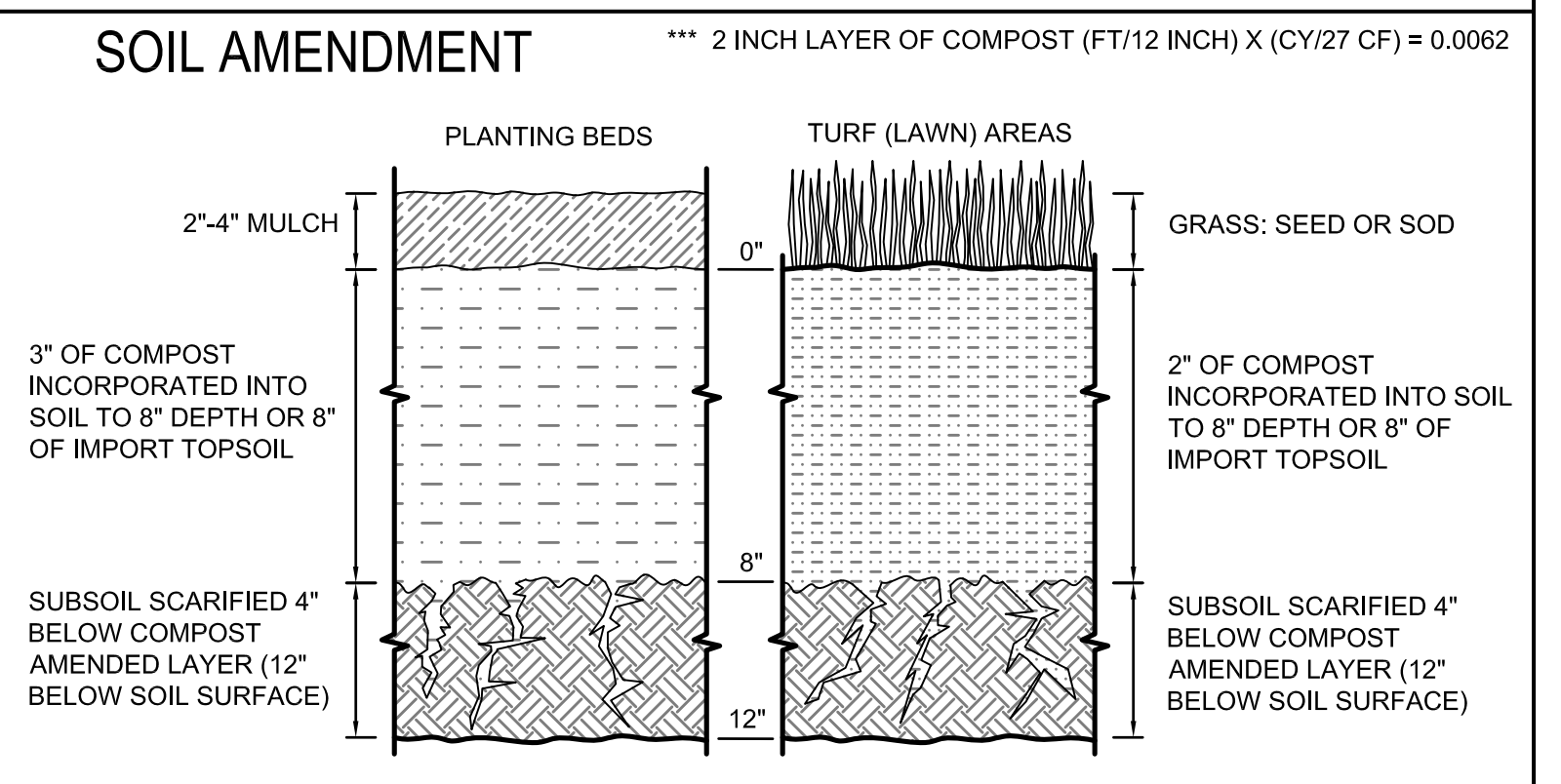
PBC, LLC
 Land Development and Civil Engineering Consultants
 5130 South 166th Lane
 Seattle, WA 98188
 T (206) 229-6422

CONSTRUCTION NOTES:

- 1 INSTALL CB #1-TYPE 1 WITH VANED GRATE
RIM=370.11
EX. IE (N)=367.35
EX. IE (S)=367.45
IE (W)=367.94
- 2 INSTALL 16 LF 6" DI SD @ 2.00%
- 3 INSTALL CB #3-TYPE 1 WITH SOLID LID
RIM=370.50
IE (W)=368.76
IE (E)=368.26
- 4 INSTALL 6 LF 2" HPDE STORM DRAIN FORCE MAIN
- 5 INSTALL CB #3 TYPE 1 - 48" WITH SOLID LID & DUPLEX PUMP STATION PER DETAIL ON SHEET 4
RIM=370.85
IE (SW)=366.00
IE (S)=365.85
IE (E)=366.85
SUMP=362.85
- 6 INSTALL 4 LF 6" PVC SDR 35 @ 2.00%
- 7 INSTALL CB #4 TYPE 2 - 54" WITH FLOW CONTROL & SOLID LOCKING LID PER DETAIL ON SHEET C3
RIM=370.95
IE (W)=367.93
IE (S,N)=365.93
- 8 INSTALL 24 LF SOLID PVC SDR 35 FOOTING DRAIN COLLECTOR @ 10.00%
- 9 INSTALL 16 LF 6" PVC SDR 35 @ 2.00%
- 10 INSTALL CB #1-TYPE 40 WITH GRATE & OIL SEPARATOR (RISER TEE)
RIM=371.00
IE (S)=368.35
IE (E)=368.25
- 11 INSTALL 60 LF 4" PVC SDR 35 ROOF DRAIN COLLECTOR @ 2.00% MIN.
- 12 INSTALL 3' DIA. X 43' LONG CMP DETENTION TANK PER DETAIL ON SHEET C3

ESTIMATED COMPOST REQUIRED FOR SOIL AMENDMENT

1,728	(SQUARE FEET) X 0.0062 *** =	11	(CUBIC YARDS)
DISTURBED AREA REQUIRING AMENDMENT		REQUIRED COMPOST	



811
 Know what's below.
 Call before you dig.

HORIZONTAL GRAPHIC SCALE
 10 5 0 5 10
 1 inch = 10 ft.

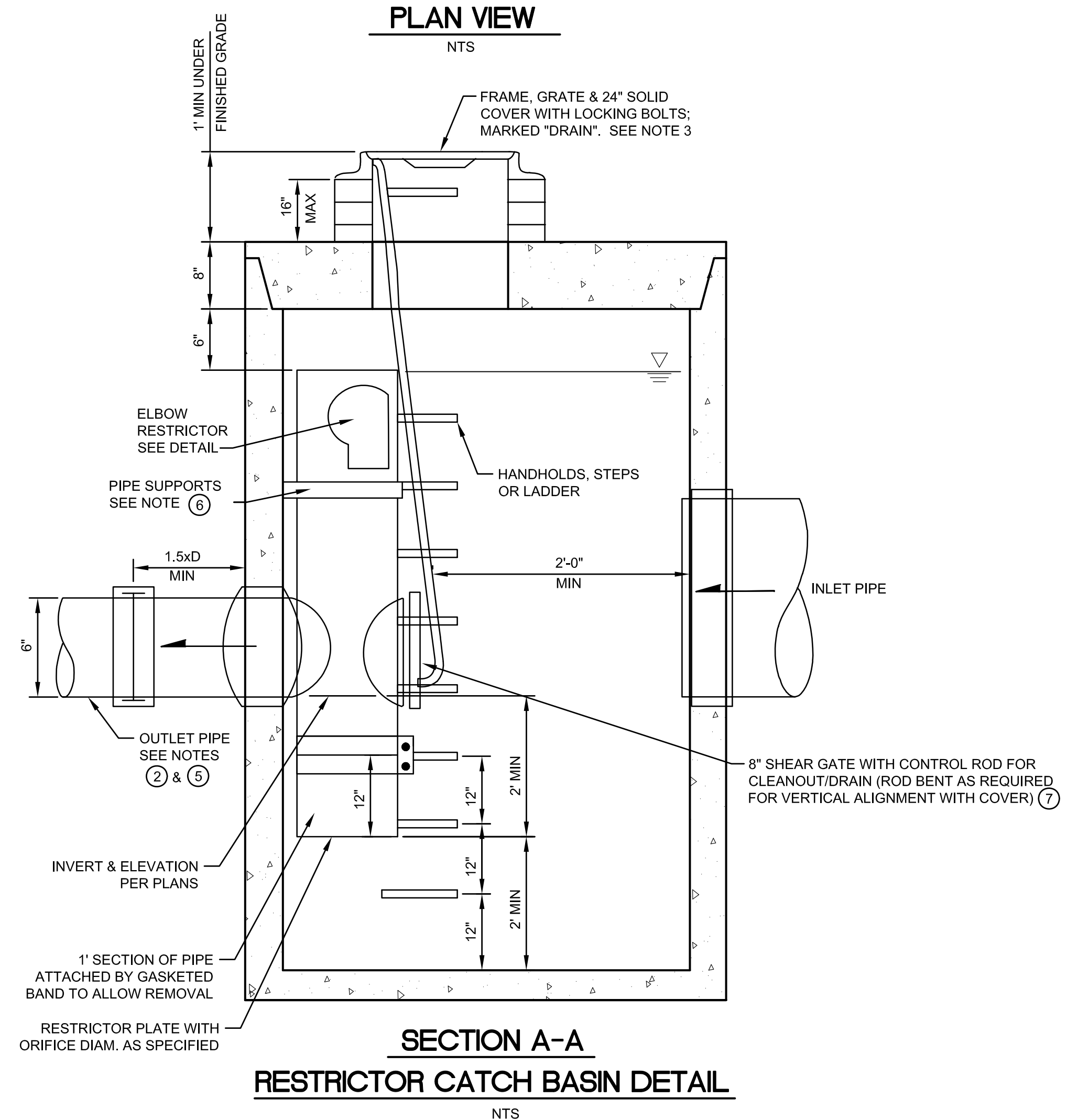
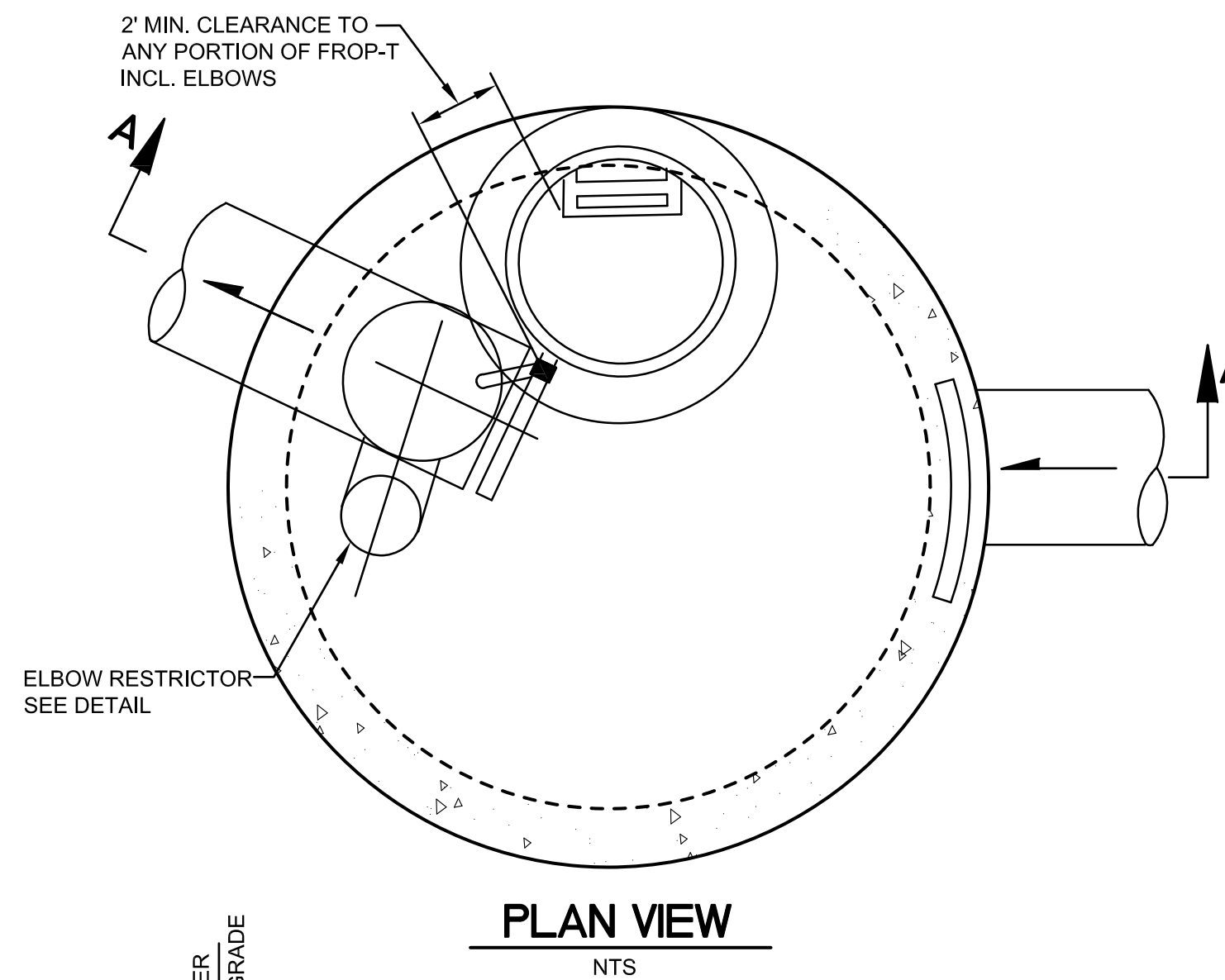
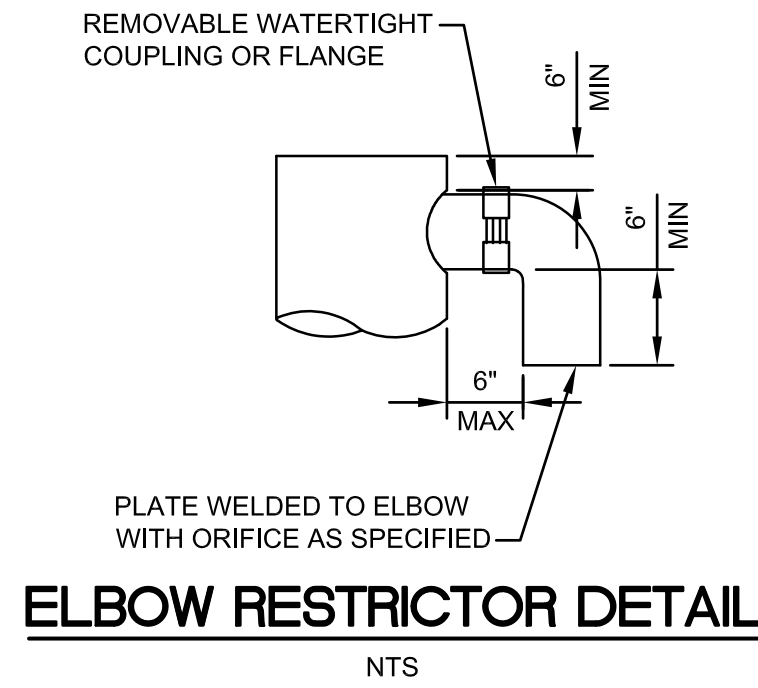
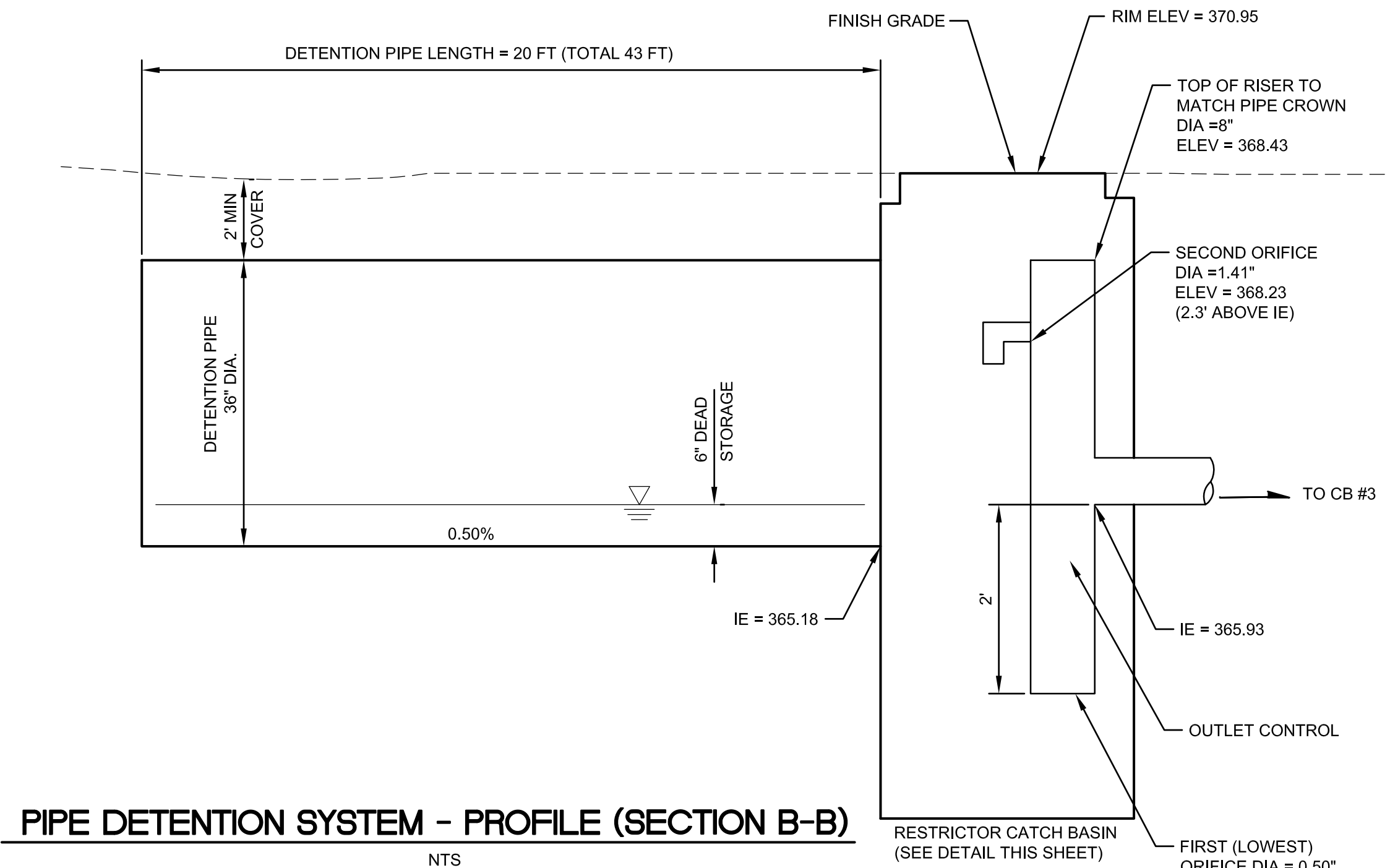
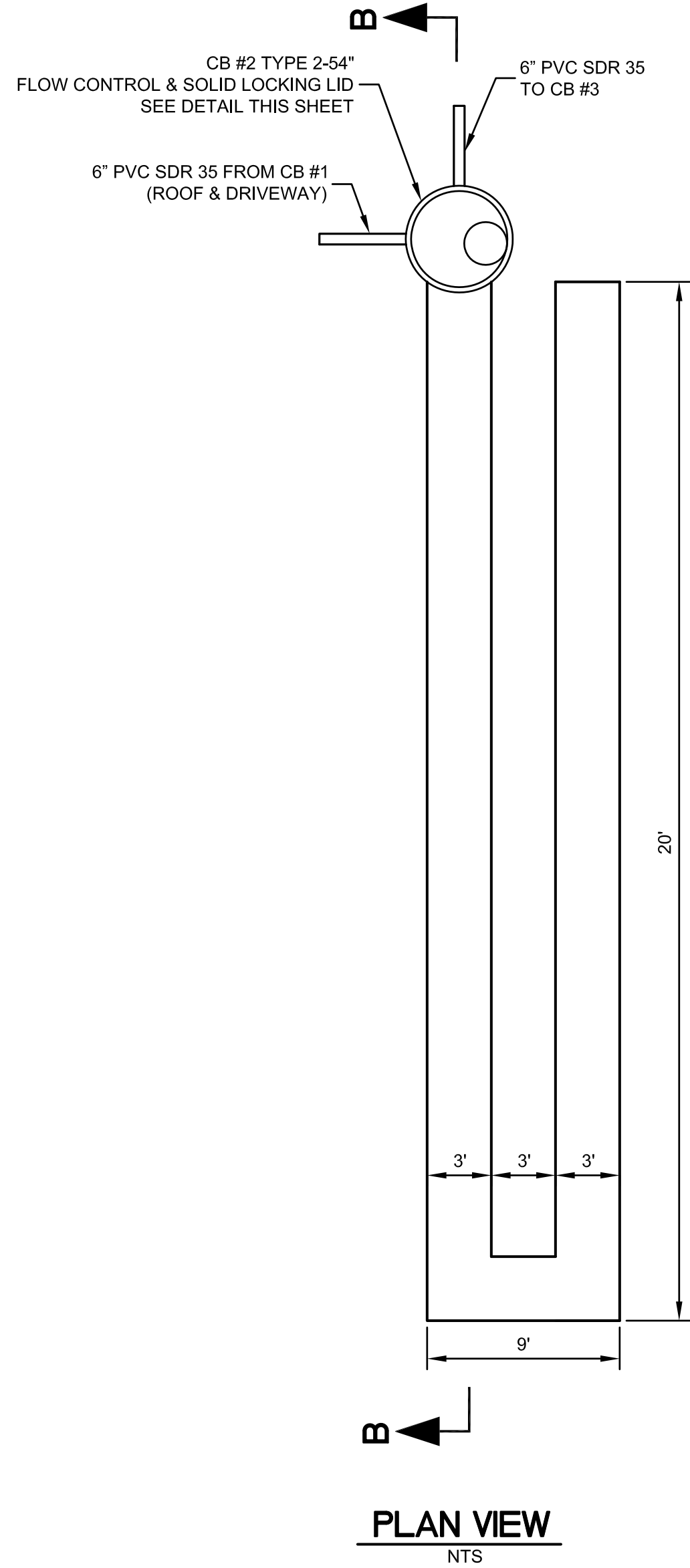
ISSUE DATE	11-15-2020		
JOB NO.	R20295		
DESIGNED BY:	K. TRAN		
DRAWN BY:	K. TRAN		
CHECKED BY:	H.H. PHAN		
PROJ. MNGR:	H.H. PHAN		
NO.	DATE	BY	REVISION DESCRIPTION

STANDARD DETENTION SYSTEM NOTES:

- CALL DEVELOPMENT SERVICES (206-275-7605) 24 HOURS IN ADVANCE FOR A DETENTION SYSTEM INSPECTION BEFORE BACKFILLING AND FOR FINAL INSPECTIONS.
- RESPONSIBILITY FOR OPERATION AND MAINTANANCE OF DRAINAGE SYSTEMS ON PRIVATE PROPERTY IS REPOSIBILITY OF THE PROPERTY OWNER. MATERIAL ACCUMULATED IN THE STORAGE PIPE MUST BE REMOVED FROM CATCH BASINS TO ALLOW PROPER OPERATION. THE OUTLET CONTROL ORIFICE MUST BE KEPT OPEN AT ALL TIMES.
- PIPE MATERIAL, JOINT, AND PROTECTIVE TREATMENT SHALL BE IN ACCORDANCE WITH SECTION 7.04 AND 9.05 OF THE WSDOT STANDARD SPECIFICATION FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION, LATEST VERSION. SUCH MATERIALS INCLUDE THE FOLLOWING: LINED CORRUGATED POLYETHYLENE PIPE (LCPE), ALUMINIZED TYPE 2 CORRUGATED STEEL PIPE AND PIPE ARCH (MEETS AASHTO DESIGNATIONS M274 AND M36), CORRUGATED OR SPIRAL RIB ALUMINUM PIPE, OR REINFORCED CONCRETE PIPE. CORRUGATED STEEL PIPE IS NOT ALLOWED.

OWNER: AKIHIRO NAKAMURA ADDRESS: 4245 90TH AVE SE PREPARED BY: HAN PHAN, PE
 PERMIT #: _____ MERCER ISLAND, WA 98040 PHONE: 206-229-6422
 DATE: 11-15-2020
 IMPERVIOUS SURFACE AREA (SF): 1,728 DETENTION PIPE DIA (INCH) 36 DETENTION PIPE LENGTH (FT): 43 ORIFICE #1 DIA = 0.50 INCH, ELEV = 363.93
 PIPE MATERIAL: CMP ORIFICE #2 DIA = 1.41 INCH, ELEV = 368.23

FOOTING DRAINS SHALL NOT BE CONNECTED TO DETENTION SYSTEM



RESTRICTOR CATCH BASIN NOTES:

- USE A MINIMUM OF A 72" DIA. TYPE 2 CATCH BASIN WHEN CONNECTING PIPE MATERIAL IS CONCRETE OR LCPE. A 54" DIA. TYPE 2 CATCH BASIN MAY BE USED FOR OTHER CIRCULAR SINGLE WALL PIPE (SUCH AS CORRUGATED ALUMINUM PIPE).
- OUTLET PIPE: MIN. 6".
- METAL PARTS: CORROSION RESISTANT. NON-GALVANIZED PARTS PREFERRED. GALVANIZE PIP PARTS TO HAVE ASPHALT TREATMENT 1.
- FRAME AND LADDER OR STEPS OFFSET SO:
 - CLEANOUT GATE IS VISIBLE FROM TOP;
 - CLIMB-DOWN SPACE IS CLEAR OF RISER AND CLEANOUT GATE;
 - FRAME IS CLEAR OF CURB.
- IF METAL OUTLET PIPE CONNECTS TO CEMENT CONCRETE PIPE, OUTLET PIPE TO HAVE SMOOTH O.D. EQUAL TO CONCRETE PIPE I.D. LESS 1/4 IN.
- PROVIDE AT LEAST ONE 3 X 0.090 GAUGE SUPPORT BRACKET ANCHORED TO CONCRETE WALL WITH 3/8 IN. STAINLESS STEEL EXPANSION BOLTS OR EMBEDDED SUPPORTS 2 IN. INTO CATCH BASIN WALL (MAXIMUM 3'-0" VERTICAL SPACING).
- THE SHEAR GATE SHALL BE MADE ON ALUMINUM ALLOY IN ACCORDANCE WITH ASTM B 26M AND ASTM B 275, DESIGNATION ZG32A; OR CAST IRON IN ACCORDANCE WITH ASTM A 48, CLASS 30B. THE LIFT HANDLE SHALL BE MADE OF A SIMILAR METAL TO THE GATE (TO PREVENT GALVANIC CORROSION). IT MAY BE OF SOLID ROD OR HOLLOW TUBING, WITH ADJUSTABLE HOOK AS REQUIRED. A NEOPRENE RUBBER GASKET IS REQUIRED BETWEEN THE RISER MOUNTING FLANGE AND THE GATE FLANGE. INSTALL THE GATE SO THAT THE LEVEL-LINE MARK IS LEVEL WHEN THE GATE IS CLOSED. THE MATING SURFACES OF THE LID AND THE BODY SHALL BE MACHINED FOR PROPER FIT. ALL SHEAR GATE BOLTS SHALL BE STAINLESS STEEL.

REFERENCE SHEET NO. **03** SHEET **3** OF **4** SHEETS

NAKAMURA RESIDENCE
4245 90TH AVE SE
MERCER ISLAND, WA 98040
**DETENTION PIPE SYSTEM
DETAILS**



PBC, LLC
Land Development and Civil Engineering Consultants
5130 South 166th Lane
Seattle, WA 98188
T (206) 229-6422

ISSUE DATE: 11-15-2020
 DESIGNED BY: K. TRAN
 DRAWN BY: K. TRAN
 CHECKED BY: H.H. PHAN
 PROJ. MNGR: H.H. PHAN

REVISION DESCRIPTION

NO. DATE BY

Nov 16, 2020 - 4:33pm Han Phan L:\Working\2020295 - 4245 90th Ave SE (Nakamura Residence)\CAD\Drawings\2020295-PS-C4.dwg Layout Name: Layout1

Soil Type*	New Impervious Area (sf)														
	500 to 1,000 sf			1,001 to 2,000 sf			2,001 to 3,000 sf			3,001 to 4,000 sf			4,001 to 5,000 sf		
	Detention Pipe Size (in.) and Length (ft)			Detention Pipe Size (in.) and Length (ft)			Detention Pipe Size (in.) and Length (ft)			Detention Pipe Size (in.) and Length (ft)			Detention Pipe Size (in.) and Length (ft)		
B	36"	48"	60"	36"	48"	60"	36"	48"	60"	36"	48"	60"	36"	48"	60"
C	30	18	11	66	34	22	90	48	30	120	62	42	186	90	48
	22	11	7	43	23	14	66	36	20	78	42	26	132	60	37

Outlet Orifice Size and Design Height for Type B Soils Only															
Detention Pipe Size (in)	Lowest Orifice Diameter (inches)	Distance from Outlet to Second Orifice (feet)	Second Orifice Diameter (inches)	Lowest Orifice Diameter (inches)	Distance from Outlet to Second Orifice (feet)	Second Orifice Diameter (inches)	Lowest Orifice Diameter (inches)	Distance from Outlet to Second Orifice (feet)	Second Orifice Diameter (inches)	Lowest Orifice Diameter (inches)	Distance from Outlet to Second Orifice (feet)	Second Orifice Diameter (inches)	Lowest Orifice Diameter (inches)	Distance from Outlet to Second Orifice (feet)	Second Orifice Diameter (inches)
36	0.5	2.2	0.5	0.5	2.2	0.94	0.5	2.2	0.94	0.5	2.4	1.4	0.5	2.44	1.4
48	0.5	3.3	0.94	0.5	3.2	0.9	0.5	3.1	0.9	0.5	2.8	0.8	0.5	2.7	0.75
60	0.5	4.15	0.47	0.5	4.3	0.94	0.5	4.2	0.94	0.5	3.8	0.94	0.5	4.14	0.9

Outlet Orifice Size and Design Height for Type C Soils Only															
Detention Pipe Size (in)	Lowest Orifice Diameter (inches)	Distance from Outlet to Second Orifice (feet)	Second Orifice Diameter (inches)	Lowest Orifice Diameter (inches)	Distance from Outlet to Second Orifice (feet)	Second Orifice Diameter (inches)	Lowest Orifice Diameter (inches)	Distance from Outlet to Second Orifice (feet)	Second Orifice Diameter (inches)	Lowest Orifice Diameter (inches)	Distance from Outlet to Second Orifice (feet)	Second Orifice Diameter (inches)	Lowest Orifice Diameter (inches)	Distance from Outlet to Second Orifice (feet)	Second Orifice Diameter (inches)
36	0.5	2	0.8	0.5	2.3	1.41	0.5	2.4	1.9	0.5	2.15	1.64	0.5	1.72	2.3
48	0.5	3.2	0.8	0.5	3.3	1.17	0.5	2.83	1.5	0.5	2.9	1.3	0.5	2.43	1.6
60	0.5	3.4	0.6	0.5	3.6	0.89	0.5	3.7	1.1	0.5	3.9	1.28	0.5	4.3	2.2

NEW IMPERVIOUS CALC.

ROOF AREA (INCLUDING OVERHANG): 1,026 SF
 DRIVEWAY: 702 SF
 TOTAL: 1,728 SF

REFERENCE SHEET NO. **C4**
 SHEET 4 OF 4 SHEETS

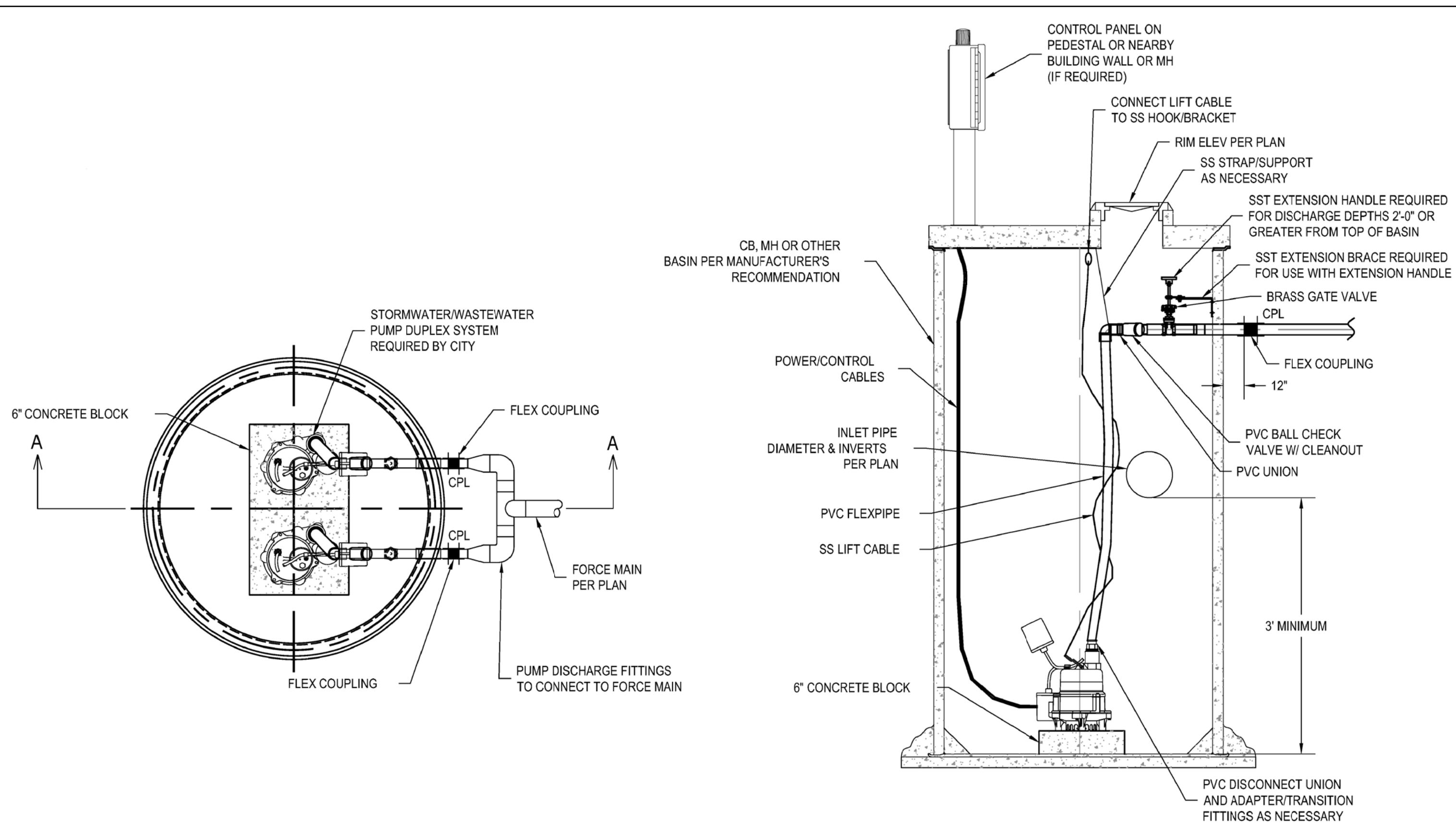
NAKAMURA RESIDENCE
 4245 90TH AVE SE
 MERCER ISLAND, WA 98040

DETAILS



PBC, LLC
 Land Development and Civil Engineering Consultants
 5130 South 166th Lane
 Seattle, WA 98188
 T (206) 229-6422

ISSUE DATE: 11-15-2020
 DESIGNED BY: K. TRAN
 DRAWN BY: K. TRAN
 CHECKED BY: H.H. PHAN
 PROJ. MGR: H.H. PHAN



DUPLEX PUMP STATION
 SCALE: NONE

GENERAL DESCRIPTION	DUPLEX PARALLEL SUBMERSIBLE GRINDER PUMPS
DESIGN CALCULATIONS	FROM RATIONAL METHOD CALCULATION: PEAK INFLOWS: 25-YR = 13 GPM 100-YR = 15 GPM
DESIGN FLOW AND TDH	1 PUMP: 15 GPM @ 12' TDH 2 PUMP: 15 GPM @ 12' TDH
PUMP ELECTRICAL	1/3 HP, 1 PHASE, 115 V, GOULD WS_BHF SERIES (MODEL WS0311BHF OR EQ.)
PUMP CONTROLS	ALTERNATE PUMP STARTS, LOW AND HIGH LEVEL ALARM LIGHT
PUMP MOUNTING AND DISCHARGE	INCREASER TO 2" DISCHARGE WITH 2" UNION, CHECK VALVE, AND GATE VALVE FROM EACH PUMP
DISCHARGE MANIFOLD	2" x 2" DISCHARGE TO FORCE MAIN
FORCE MAIN & FITTINGS	2"
FLOAT SPECIFICATIONS	
REDUNDANT OFF AND LOW LEVEL ALARM	PER MANUFACTURE'S REQUIREMENTS
OFF	PER MANUFACTURE'S REQUIREMENTS
ON (1ST PUMP)	1.5' ABOVE OFF
ON (2ND PUMP)	2.5' ABOVE OFF
HIGH LEVEL ALARM	0.5' ABOVE 2ND PUMP ON
MIN. HEIGHT FROM HIGH LEVEL ALARM TO LOWEST INLET	0.5'
NOTES:	
1. THESE SPECIFICATIONS ARE SCHEMATIC IN NATURE AND SHALL BE CONFIRMED BY SUPPLIER AND CONTRACTOR.	
2. PUMP FLOATS/CONTROLS SHALL BE FIELD TESTED AND ADJUSTED TO ACHIEVE OPTIMUM PUMP CYCLE TIMES PER MANUFACTURE'S RECOMMENDATIONS.	
3. EXPLOSION PROOF PUMPS, CONTROLS, AND ELECTRICAL COMPONENTS SHALL BE INSTALLED IF REQUIRED BY CODE.	

STORM DRAIN DUPLEX PUMP STATION SPECIFICATIONS

NO. DATE BY REVISION DESCRIPTION