

VICINITY MAP  
NOT TO SCALE

# SNOQUALMIE PASS UTILITY DISTRICT

KITTITAS COUNTY

WASHINGTON

## PHASE 2B MEMBRANE BIOREACTOR WASTEWATER TREATMENT PLANT IMPROVEMENTS

HLA PROJECT NO. 22072

DECEMBER 2022

 **DATUM ELEVATION**  
ELEVATIONS BASED ON WASHINGTON STATE  
REFERENCE NETWORK (WSRN) NAVD88



Know what's below.  
Call before you dig.

LOCATION OF ALL UNDERGROUND UTILITIES SHOWN  
HEREON ARE APPROXIMATE AND ARE BASED ON FIELD  
LOCATIONS OF ALL VISIBLE STRUCTURES SUCH AS:  
CATCH BASINS, MANHOLES, WATER GATES, ETC. AND  
COMPILING INFORMATION FROM PLANS SUPPLIED BY  
VARIOUS UTILITY COMPANIES. ALL CONTRACTORS  
SHOULD CALL 509-248-0202 OR 1-800-424-5555  
PRIOR TO ANY EXCAVATION WORK.



2803 River Road  
Yakima, WA 98902  
509.966.7000  
Fax 509.965.3800  
www.hlacivil.com



**PRELIMINARY**  
SUBJECT TO REVISION

		JOB NUMBER: 22072	DATE: 12/02/2022
		FILE NAMES: DRAWINGSheets-G - 2B.dwg	
		PLAN: PROFILE:	21180.dwg
		DESIGNED BY: ENTERED BY:	DPS/RJS TWC/JWM
REVISION	DATE		

SNOQUALMIE PASS UTILITY DISTRICT  
PHASE 2B MEMBRANE BIOREACTOR WASTEWATER  
TREATMENT PLANT IMPROVEMENTS

COVER SHEET

G-1

SHEET  
1 OF 33

CONSTRUCTION TYPE	SHEET NO.	DRAWING NO.	DESCRIPTION
GENERAL	1	G-1	COVER SHEET
	2	G-2	SHEET INDEX
	3	G-3	SITE MAP
	4	G-4	LEGEND AND SYMBOL SCHEDULE
	5	G-5	CONSTRUCTION SEQUENCE & GENERAL NOTES
	6	G-6	PLANT DESIGN CRITERIA
	7	G-7	HYDRAULIC PROFILE
	8	G-8	PIPING, PROCESS, & INSTRUMENTATION DIAGRAM - INFLUENT
	9	G-9	PIPING, PROCESS, & INSTRUMENTATION DIAGRAM - HEADWORKS
	10	G-10	PIPING, PROCESS, & INSTRUMENTATION DIAGRAM - MBR
	11	G-11	PIPING, PROCESS, & INSTRUMENTATION DIAGRAM - SLUDGE PROCESSING
	12	G-12	PIPING, PROCESS, & INSTRUMENTATION DIAGRAM - BLOWERS
CIVIL	13	C-1	OVERALL SITE PLAN
	14	C-2	TEMPORARY EROSION AND SEDIMENT CONTROL PLAN
	15	C-3	SITE PLAN-SW
	16	C-4	SITE PLAN-SE
	17	C-5	SITE PLAN-NE
	18	C-6	SITE PLAN-SE
	19	C-7	SITE GRADING PLAN
INFLUENT	20	I-1	INFLUENT PUMP STATION PLAN
	21	I-2	INFLUENT PUMP STATION SECTION
HEADWORKS	22	H-1	HEADWORKS PLAN VIEW
	23	H-2	HEADWORKS PLAN VIEW
	24	H-3	HEADWORKS SECTION VIEW A
	25	H-4	HEADWORKS SECTION VIEW B
	26	H-5	HEADWORKS SECTION VIEW C
	27	H-6	HEADWORKS SECTION VIEW D
MBR BUILDING	28	M-1	MBR BUILDING PLAN VIEW
	29	M-2	DEWATERING ROOM PLAN VIEW
	30	M-3	MBR BUILDING SECTION
	31	M-4	MBR BUILDING SECTION
	32	M-5	MBR BUILDING SECTION
	33	M-6	MBR BUILDING SECTION
	34	M-7	SHEETS MBR-7
	35	M-8	MBR BUILDING EXITING PLAN
	36	M-9	MBR BUILDING EXTERIOR ELEVATION FRONT VIEW
	37	M-10	MBR BUILDING EXTERIOR ELEVATION BACK VIEW
	38	M-11	MBR BUILDING EXTERIOR ELEVATION SIDE VIEW
	39	M-12	SECTION VIEW DETAILS
	40	M-13	SECTION VIEW DETAIL
AEROBIC DIGESTER	41	AD-1	AEROBIC DIGESTER PLAN VIEW
	42	AD-2	AEROBIC DIGESTER SECTIONS
	43	AD-3	SLUDGE DRYING BED PLAN VIEW
	44	AD-4	SLUDGE DRYING BED DETAILS
GENERAL DETAILS	45	GA-1	ARCHITECTURAL DETAILS
	46	GA-2	ARCHITECTURAL DETAILS
	47	GA-3	ARCHITECTURAL DETAILS
	48	GC-1	CIVIL DETAILS
	49	GC-2	CIVIL DETAILS
	50	GC-3	CIVIL DETAILS
	51	GM-1	MECHANICAL DETAILS
	52	GM-2	MECHANICAL DETAILS
	53	GP-1	PIPING DETAILS
	54	GP-2	PIPING DETAILS
	55	GP-3	PIPING DETAILS

WILL UPDATE  
LATER ONCE WE  
HAVE MORE  
SHEETS IN



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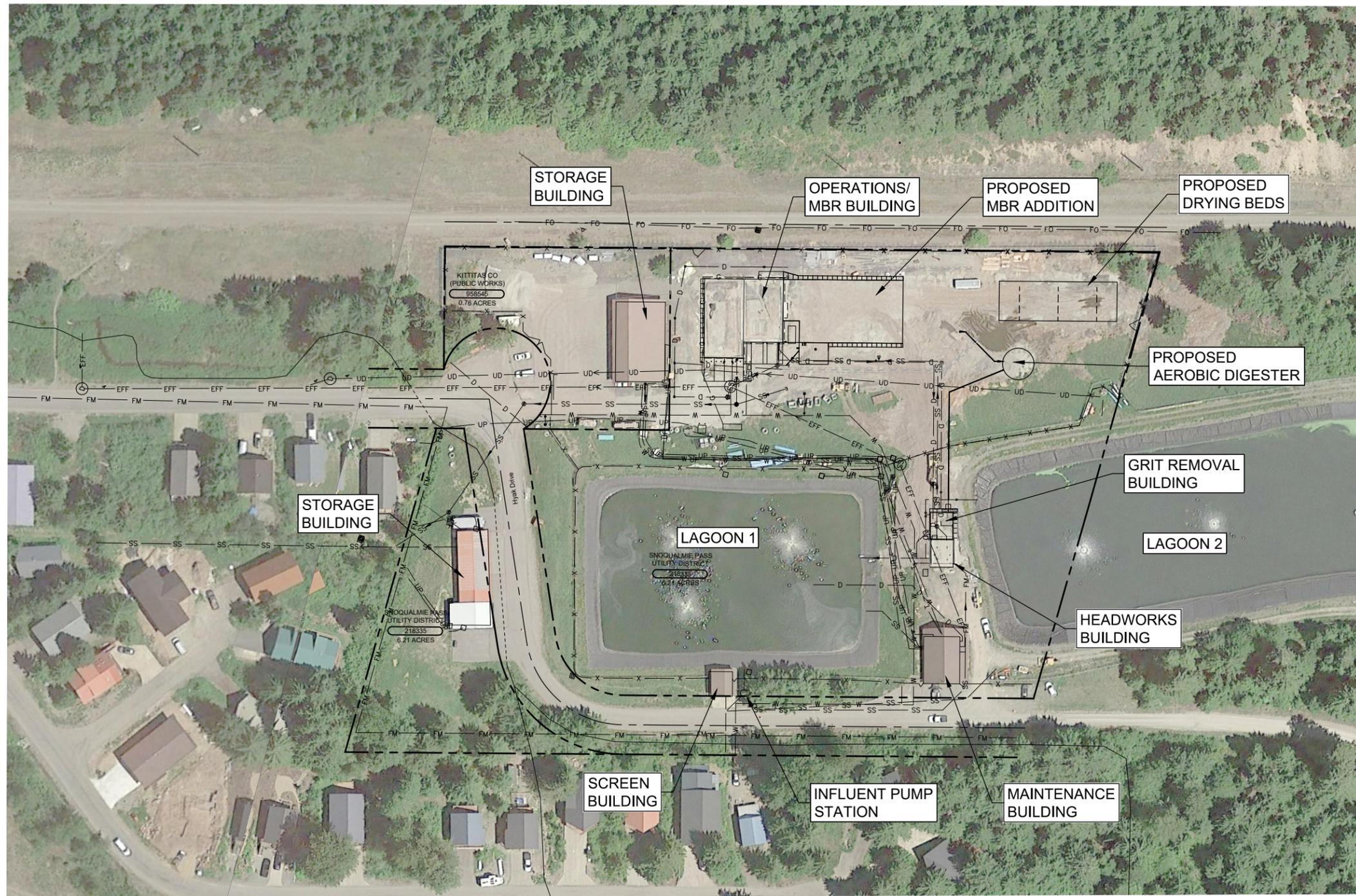
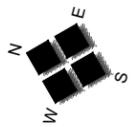
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**PHASE 2B MEMBRANE BIOREACTOR WASTEWATER TREATMENT PLANT IMPROVEMENTS**

SHEET INDEX

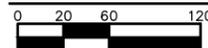
G-2

SHEET

2 OF 33



SITE MAP



SITE ADDRESS:  
932 EAST HYAK DRIVE  
P.O. BOX 131  
SNOQUALMIE PASS, WA 98068



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**PHASE 2B MEMBRANE BIOREACTOR WASTEWATER**  
**TREATMENT PLANT IMPROVEMENTS**

SITE MAP

G-3

SHEET

3 OF 33

## PIPING, PROCESS, AND, INSTRUMENTATION DIAGRAM LEGEND

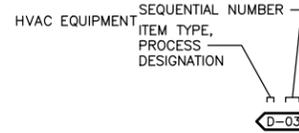
FIELD MOUNTED INSTRUMENT*	
ELECTRIC MOTOR	
SOLENOID VALVE	
MAGNETIC FLOW METER	
FLOAT SWITCH	
SUBMERSIBLE LEVEL TRANSDUCER	
PIPING REDUCER	
FLEXIBLE HOSE CONNECTION	
CHECK VALVE	
NORMALLY OPEN VALVE	
NORMALLY CLOSED VALVE	
PRESSURE GAUGE	
PRESSURE GAUGE WITH PROCESS SEAL	
ANALOG INPUT	
ANALOG OUTPUT	
DIGITAL INPUT	
DIGITAL OUTPUT	
MODULATED SIGNAL	
DISCRETE SIGNAL	
PROGRESSING CAVITY PUMP	
CHEMICAL METERING PUMP	
MIXER	
ROTARY LOBE PUMP	
ROTARY LOBE COMPRESSOR	
SUBMERSIBLE SUMP PUMP	
CENTRIFUGAL PUMP	

## SCHEDULED ITEM LEGEND

DOOR		SEE SCHEDULE ON SHEET GA-1
ROOM NUMBER		
WINDOW TYPE		
WALL TYPE		

### SCHEDULED ITEM EXAMPLE:

DOOR #3 WOULD BE CALLED OUT AS  
(SEE SCHEDULE FOR COMPLETE LIST):



### SCHEDULED ITEM NOTES:

- SEE ADDITIONAL SCHEDULES ELSEWHERE IN THE PLAN SET.
- NOT ALL SCHEDULED ITEMS ARE CALLED OUT ON THE SHEETS. REFER TO THE SCHEDULES AND PROJECT SPECIFICATIONS FOR A COMPLETE LIST OF REQUIRED ITEMS.

## CIVIL SITE PLAN LEGEND

### EXISTING FEATURES

FENCE	
POTABLE WATER	
IRRIGATION WATER	
STORM DRAIN	
UNDERGROUND POWER	
OVERHEAD POWER	
GAS	
CHLORINE SOLUTION	
CAUSTIC SOLUTION (SODIUM HYDROXIDE)	
POLYMER SOLUTION	
RAW SEWER	
SEWER FORCE MAIN	
SCUM/ HUMUS	
SLUDGE	
WASTE ACTIVATED SLUDGE	
DRAIN (STORM)	
EFFLUENT	
OVERHEAD TELEPHONE	

TREE	
UTILITY POLE	
MANHOLE	
DRYWELL	
CATCH BASIN	
WATER VALVE	
SPLICE BOX	
CLEANOUT	
FIRE HYDRANT	
YARD HYDRANT	
IRRIGATION VALVE	
GAS METER	
BOLLARD	
ANCHOR	
LIGHT	
CONTOUR	

### NEW FEATURES

ASPHALT PAVEMENT	
GRAVEL SURFACING	
HYDROSEED	
STRAIGHT CURB	
INTEGRAL CURB	
CEMENT CONCRETE SIDEWALK/FLATWORK	
POTABLE WATER LINE	
PROCESS/SEWER LINE	
IRRIGATION WATER LINE	
DRAIN LINE	
AIR LINE	
NEW AND/OR RELOCATED CHAINLINK FENCE	
MANHOLE	
YARD HYDRANT	
BOLLARD	
FIRE HYDRANT	
CLEANOUT	
WATER VALVE	
SPOT ELEVATION	
CONTOUR	

## VALVE SYMBOLS

DOUBLE LINE	SINGLE LINE	
		GATE
		BUTTERFLY
		BALL
		PLUG
		CHECK
		CONTROL VALVE
		BALL CHECK VALVE
		DIAPHRAGM VALVE
		PRESSURE REGULATING VALVE

## PIPE AND FITTING SYMBOLS

DOUBLE LINE	SINGLE LINE	
		NEW PIPE
		FLANGED JOINT
		MECHANICAL JOINT
		FLANGE COUPLING ADAPTER
		RESTRAINED FLANGE COUPLING ADAPTER
		FLEXIBLE BOLTED SLEEVE COUPLING
		ELASTOMER BELLOWS EXP JOINT
		ELBOW UP
		ELBOW DOWN
		TEE UP
		TEE DOWN
		CONCENTRIC REDUCER
		ECCENTRIC REDUCER
		UNION
		ELBOW, 90 DEGREE
		TEE
		ELBOW, 45 DEGREE
		HOSE BIBB

## SYMBOL NOTES:

- FLANGED END CONNECTIONS ARE SHOWN HERE FOR DOUBLE LINE FITTINGS. FITTINGS WITH OTHER END PATTERNS ARE SHOWN SIMILARLY ON THE CONSTRUCTION DRAWINGS.
- SYMBOLS SHOWN HERE FOR SINGLE LINE FITTINGS ARE GENERIC ONLY. REFER TO PIPING SPECIFICATIONS FOR SPECIFIC END CONNECTIONS FOR SINGLE LINE PIPE AND FITTINGS.
- EXISTING PIPE AND EQUIPMENT IS SHOWN LIGHT-LINED AND/OR SCREENED AND IS NOTED AS EXISTING. NEW PIPING AND EQUIPMENT IS SHOWN HEAVY-LINED.

## GENERAL PIPING NOTES:

- LAY PIPE TO UNIFORM GRADE BETWEEN INDICATED ELEVATION POINTS.
- SIZE OF FITTINGS SHOWN ON PLANS SHALL CORRESPOND TO ADJACENT STRAIGHT RUN OF PIPE, UNLESS OTHERWISE INDICATED. TYPE OF JOINT AND FITTING MATERIAL SHALL BE THE SAME AS SHOWN FOR ADJACENT STRAIGHT RUN OF PIPE.
- LOCATION AND NUMBER OF PIPE HANGERS AND PIPE SUPPORTS SHOWN IS ONLY APPROXIMATE. FINAL SUPPORT REQUIREMENTS SHALL BE DETERMINED IN THE FIELD AND REVIEWED BY THE ENGINEER PRIOR TO INSTALLATION. MAXIMUM SPACING SHALL BE AS SPECIFIED.
- ALL JOINTS SHALL BE WATERTIGHT. WALL PIPES SHALL BE USED WHEREVER PIPING PASSES FROM A STRUCTURE TO BACKFILL.
- ALL FLEXIBLE CONNECTORS OR FLANGED COUPLING ADAPTERS SHALL BE PROVIDED WITH THRUST TIES, BLOCKS, OR ANCHORS, UNLESS OTHERWISE NOTED. THRUST PROTECTION SHALL BE ADEQUATE FOR TEST PRESSURES SPECIFIED.
- ALL BURIED DUCTILE IRON PIPING SHALL BE MECHANICAL JOINT OR PUSH-ON JOINT PIPE. ALL JOINTS BENEATH STRUCTURES SHALL BE RESTRAINED JOINTS.
- ALL FITTINGS IN BURIED PRESSURE PIPE SHALL BE RESTRAINED USING RESTRAINED JOINTS OR CONCRETE THRUST BLOCKING. WHEN RESTRAINED JOINTS ARE USED, RESTRAIN ADJOINING PIPE JOINTS THE MINIMUM DISTANCE SPECIFIED.
- NUMBER AND LOCATION OF UNIONS SHOWN ON PLANS IS ONLY APPROXIMATE. PROVIDE ALL UNIONS NECESSARY TO FACILITATE CONVENIENT REMOVAL OF VALVES AND MECHANICAL EQUIPMENT.
- WHERE A FLANGED COUPLING ADAPTER IS SHOWN, A STANDARD FLANGE SHALL BE JOINED TO THE COUPLING ADAPTER. THE USE OF UNI-FLANGE OR SIMILAR FLANGE ADAPTERS WILL NOT BE ALLOWED.
- PIPE LOCATION DIMENSIONS ARE MEASURED TO NOMINAL FACE OF WALL OR FINISHED FLOOR UNLESS NOTED OTHERWISE.
- EQUIPMENT SCHEDULES DO NOT LIST ALL REQUIRED PIPING. THE CONTRACTOR IS RESPONSIBLE FOR HIS OWN QUANTITY TAKE-OFF FOR PIPE, FITTINGS, AND VALVES.
- ALL DUCTILE IRON SLUDGE PIPING AND FITTINGS USED ON THIS PROJECT SHALL BE GLASS-LINED.



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LEGEND AND SYMBOL SCHEDULE

**G-4**  
SHEET  
**4 OF 33**

## GENERAL NOTES

- ALL CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION AS PUBLISHED BY THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT), THE AMERICAN PUBLIC WORKS ASSOCIATION (APWA) AND THE SPECIAL PROVISIONS OF THE SNOQUALMIE PASS UTILITY DISTRICT.
- THE CONTRACTOR IS ADVISED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES SHOWN HEREON ARE BASED UPON UTILITY INFORMATION OF RECORD, INFORMATION PROVIDED TO HLA ENGINEERING AND LAND SURVEYING, INC. AND WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY PERTINENT LOCATIONS AND ELEVATIONS, ESPECIALLY AT CONNECTION POINTS AND AT POTENTIAL UTILITY CONFLICTS.
- THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION REQUEST CENTER NOT LESS THAN 72 HOURS NOR MORE THAN 10 BUSINESS DAYS BEFORE ANY EXCAVATION, TO REQUEST FIELD LOCATIONS OF UTILITIES. THE TELEPHONE NUMBER FOR THE ONE CALL CENTER FOR THIS PROJECT IS 1-800-424-5555. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY PERTINENT LOCATIONS AND ELEVATIONS, ESPECIALLY AT THE CONNECTION POINTS AND AT POTENTIAL UTILITY CONFLICTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ENGINEER IMMEDIATELY WHERE EXISTING UTILITIES ARE FOUND TO CONFLICT WITH PROJECT IMPROVEMENTS. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR POTHOLING OR VERIFICATION OF EXISTING UTILITY LOCATIONS.
- ANY DAMAGE TO PUBLIC UTILITIES OR ADJACENT PROPERTIES AS A RESULT OF THE CONSTRUCTION ACTIVITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. REPAIRS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE MADE IN A TIMELY MANNER TO THE SATISFACTION OF THE DAMAGED PARTY.
- EXCAVATION OF MATERIAL OF WHATEVER NATURE ENCOUNTERED AND DEWATERING FOR ALL UNDERGROUND ITEMS SHALL BE INCIDENTAL TO AND INCLUDED IN THE BID ITEMS. NO SEPARATE PAYMENT FOR ROCK EXCAVATION OR DEWATERING SHALL BE MADE. CONTRACTORS WHO ARE PROSPECTIVE BIDDERS ARE INSTRUCTED TO EXAMINE THE EXCAVATION AREAS TO DETERMINE THE LIKELIHOOD OF ENCOUNTERING ROCK OR WATER TO THEIR OWN SATISFACTION.
- THE CONTRACTOR SHALL REMOVE ALL DEBRIS FROM THE SITE. NO BURNING WILL BE ALLOWED. THE CONTRACTOR SHALL BE REQUIRED TO SECURE AND OPERATE HIS OWN WASTE DISPOSAL SITE AT HIS OWN EXPENSE FOR THE DISPOSAL OF ALL UNSUITABLE MATERIAL, ASPHALT, CONCRETE, DEBRIS, WASTE MATERIAL, AND ANY OTHER OBJECTIONABLE MATERIAL WHICH IS DIRECTED TO WASTE. THE CONTRACTOR SHALL COMPLY WITH THE STATE OF WASHINGTON REGULATIONS REGARDING DISPOSAL OF WASTE MATERIAL AS OUTLINED IN WAC 173-304, SUBCHAPTER 461.
- AT ALL TIMES DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROLLING ON-SITE EROSION DUE TO WIND AND RUNOFF.
- A PRECONSTRUCTION MEETING WITH THE ENGINEER, THE CONTRACTOR, AND INTERESTED UTILITY COMPANIES SHALL BE HELD A MINIMUM OF ONE WEEK PRIOR TO BEGINNING CONSTRUCTION. PUD INSPECTOR SHALL BE GIVEN 48-HOURS MINIMUM NOTICE PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE APPROVED PLANS, ONE (1) COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS, AND A COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED FOR THE JOB, ON-SITE AT ALL TIMES.
- IF WORKERS ENTER ANY TRENCH OR OTHER EXCAVATION FOUR FEET OR MORE IN DEPTH THAT DOES NOT MEET THE OPEN PIT REQUIREMENTS OF WSDOT/APWA SECTION 2-09.3(3)B, IT SHALL BE SHORED AND CRIBBED. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR WORKER SAFETY AND THE ENGINEER ASSUMES NO RESPONSIBILITY. ALL TRENCH SAFETY SYSTEMS SHALL MEET THE REQUIREMENTS OF THE WASHINGTON INDUSTRIAL SAFETY AND HEALTH ACT, CHAPTER 49.17 RCW.
- IF, DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED BY THE CONTRACTOR, HIS SUBCONTRACTORS, OR OTHER AFFECTED PARTIES, WHICH COULD INDICATE A SITUATION THAT IS NOT IDENTIFIED IN THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SAFEGUARDS, SAFETY DEVICES, PROTECTIVE EQUIPMENT, FLAGGERS, AND ANY OTHER ACTIONS NEEDED TO PROTECT THE LIFE, HEALTH, AND SAFETY OF THE PUBLIC, AND TO PROTECT PROPERTY IN CONNECTION WITH THE PERFORMANCE OF WORK COVERED BY THIS CONTRACT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANY AND ALL TRAFFIC CONTROL DEVICES AS MAY BE REQUIRED BY THE CONSTRUCTION ACTIVITIES. ALL SECTIONS OF THE WSDOT/APWA STANDARD SPECIFICATIONS SECTION 1-10, TEMPORARY TRAFFIC CONTROL, SHALL APPLY IF WORK WITHIN THE RIGHT OF WAY WILL INTERRUPT NORMAL TRAFFIC OPERATION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ROADWAYS FREE AND CLEAR OF ALL CONSTRUCTION DEBRIS AND DIRT TRACKED FROM THE SITE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING AS-BUILT INFORMATION ON A SET OF RECORD DRAWINGS KEPT AT THE CONSTRUCTION SITE, AND AVAILABLE TO THE PUD INSPECTOR AND ENGINEER AT ALL TIMES. THE CONTRACTOR SHALL DELIVER THESE DRAWINGS TO THE ENGINEER AT THE COMPLETION OF THE WORK.

## GENERAL DEWATERING NOTES

- CONTRACTOR TO DETERMINE EXTENT OF FACILITIES NECESSARY TO ADEQUATELY CONTROL DEWATERING WATER. GROUNDWATER CONDITIONS AT THE PROJECT SITE ARE GENERALLY KNOWN. A GEOTECHNICAL REPORT WAS PREPARED FOR PHASE 1 OF THIS PROJECT. WITH PRIOR APPROVAL FROM THE SNOQUALMIE PASS UTILITY DISTRICT, THE CONTRACTOR MAY CONDUCT EXPLORATORY OPERATIONS NECESSARY TO DETERMINE THE EXTENT OF DEWATERING PRIOR TO BID. SOIL EXPLORATIONS MUST BE COORDINATED WITH THE PUD PRIOR TO EXCAVATION AT NO COST TO THE OWNER.
- CONTRACTOR SHALL DESIGN, FURNISH, INSTALL, TEST, OPERATE, MONITOR, AND MAINTAIN DEWATERING SYSTEM OF SUFFICIENT SCOPE, SIZE, AND CAPACITY TO CONTROL GROUND WATER FLOW INTO EXCAVATIONS AND PERMIT CONSTRUCTION TO PROCEED ON DRY, STABLE SUBGRADES INCLUDING ANY WELLS, WELL POINTS, OR SIMILAR METHODS COMPLETE WITH PUMP EQUIPMENT, STANDBY POWER AND PUMPS, FILTER MATERIAL, VALVES, APPURTENANCES, WATER DISPOSAL, AND SURFACE WATER CONTROLS. NO ADDITIONAL COMPENSATION WILL BE MADE.
- CONTRACTOR SHALL PROVIDE A PLAN SHOWING THE ARRANGEMENT, LOCATIONS, AND DETAILS OF DEWATERING DISCHARGE MEANS PRIOR TO IMPLEMENTATION TO ENSURE COMPLIANCE OF KNOWN AGREEMENTS WITH PROPERTY OWNERS AND SNOQUALMIE PASS UTILITY DISTRICT REQUIREMENTS.
- CONTRACTOR SHALL MAINTAIN DEWATERING OPERATIONS TO ENSURE EROSION CONTROL, STABILITY OF EXCAVATIONS AND CONSTRUCTED SLOPES, AND, THAT EXCAVATIONS DO NOT FLOOD OR SUSTAIN DAMAGE.
- CONTRACTOR SHALL PREVENT SURFACE WATER FROM ENTERING EXCAVATIONS BY GRADING, CREATING DIKES, AND ANY MEANS NECESSARY TO CONTROL THE MOVEMENT OF WATER.
- CONTRACTOR SHALL PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES FROM DAMAGE CAUSED BY SETTLEMENT, LATERAL MOVEMENT, UNDERMINING, WASHOUT, AND OTHER HAZARDS CREATED BY DEWATERING OPERATIONS. NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR DAMAGE DUE TO DEWATERING OPERATIONS.
- CONTRACTOR SHALL PREVENT SURFACE WATER AND SUBSURFACE OR GROUND WATER FROM ENTERING EXCAVATIONS, FROM PONDING ON PREPARED SUBGRADES, AND FROM FLOODING THE SITE AND SURROUNDING AREAS.
- CONTRACTOR SHALL NOT CLOSE OR OBSTRUCT STREETS, WALKS, OR OTHER ADJACENT OCCUPIED OR USED FACILITIES WITHOUT PERMISSION FROM THE OWNER. PROVIDE ALTERNATE ROUTES AROUND CLOSED OR OBSTRUCTED TRAFFIC WAYS OR ACCESS POINT IF REQUIRED BY THE SNOQUALMIE PASS UTILITY DISTRICT.
- BEFORE EXCAVATING BELOW GROUND WATER LEVEL, PLACE SYSTEM INTO OPERATION TO LOWER WATER TO SPECIFIED LEVELS. OPERATE SYSTEM CONTINUOUSLY UNTIL UTILITIES AND STRUCTURES HAVE BEEN CONSTRUCTED AND FILL MATERIALS HAVE BEEN PLACED, OR UNTIL DEWATERING IS NO LONGER REQUIRED.
- PROVIDE STANDBY EQUIPMENT ON-SITE, INSTALLED AND AVAILABLE FOR IMMEDIATE OPERATION, TO MAINTAIN DEWATERING ON A CONTINUOUS BASIS IF ANY PART OF SYSTEM BECOMES INADEQUATE OR FAILS. IF DEWATERING REQUIREMENTS ARE NOT SATISFIED DUE TO INADEQUACY OR FAILURE OF DEWATERING SYSTEM, RESTORE DAMAGED STRUCTURES AND FOUNDATION SOILS AT NO ADDITIONAL EXPENSE TO THE OWNER.
- REMOVE DEWATERING SYSTEM FROM PROJECT SITE UPON COMPLETION OF DEWATERING.
- ANY DAMAGES TO ADJACENT FACILITIES CAUSED BY DEWATERING OPERATIONS SHALL BE REPAIRED WITHIN 48 HOURS.
- CONTRACTOR SHALL DISPOSE OF ALL WATER IN A MANNER THAT MEETS THE REQUIREMENTS OF THE PROJECT SPECIFICATIONS AND THE CONSTRUCTION STORMWATER GENERAL PERMIT. WATER MAY BE DISPOSED OF TO THE UNDERDRAIN MANHOLE LOCATED EAST OF THE LAGOONS.
- CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND PAYING FOR ALL PERMITS.

## GENERAL DEMOLITION NOTES

- ALL DEMOLITION WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL STATE AND LOCAL CODES AND REQUIREMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH ALL REQUIREMENTS INCLUDING, BUT NOT LIMITED TO, HAZARDOUS MATERIALS, DISPOSAL, AND HOURS OF OPERATION.
- THE CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION FROM ALL UTILITY COMPANIES AFFECTED, PRIOR TO ANY DEMOLITION WORK OR DISCONNECTION OF ANY SERVICES. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANIES.
- THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES WHICH ARE TO REMAIN IN SERVICE, INCLUDING BUT NOT LIMITED TO, ELECTRIC, GAS, SEWER, WATER, STORM WATER, AND IRRIGATION.
- ANY DAMAGE TO PUBLIC OR PRIVATE UTILITIES OR ADJACENT PROPERTIES AS A RESULT OF DEMOLITION ACTIVITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ALL REPAIR COSTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE MADE IN A TIMELY MANNER TO THE SATISFACTION OF THE DAMAGED PARTY.
- ALL UTILITIES THAT ARE TO BE VACATED, INCLUDING ELECTRICAL SERVICE CONDUIT, SHALL BE COMPLETELY REMOVED FROM THE GROUND AND DISPOSED OF OFF SITE, UNLESS OTHERWISE SPECIFIED.
- ANY UNFORESEEN CONDITIONS WHICH MAY BE UNCOVERED DURING DEMOLITION SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER. ADDITIONAL EXPENSES INCURRED BY THESE CONDITIONS SHALL BE APPROVED BY THE ENGINEER PRIOR TO THE ADDITIONAL WORK BEING PERFORMED.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT THE PROPERTY FOR TYPE AND QUANTITY OF DEMOLITION REQUIRED, PRIOR TO SUBMISSION OF A BID.
- THE CONTRACTOR SHALL HAVE WATER ON SITE FOR DUST ABATEMENT AT ALL TIMES DURING DEMOLITION ACTIVITIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE APPROPRIATE DISPOSAL OF ALL DEBRIS. BURNING ON SITE SHALL NOT BE PERMITTED. NO DEBRIS, INCLUDING CONCRETE OR ASPHALT, MAY BE PLACED IN ANY FILL AREAS UNLESS APPROVED BY THE ENGINEER.
- EXISTING EQUIPMENT AND MATERIALS THAT ARE SCHEDULED TO REMAIN OR BE REUSED SHALL BE PROTECTED AT ALL TIMES DURING DEMOLITION AND CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OR REPLACEMENT OF DAMAGED EQUIPMENT AND MATERIALS. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

## MBR BUILDING CONSTRUCTION SEQUENCE

- CONSTRUCT NEW CAST-IN-PLACE PROCESS TANKS AND TEST FOR WATER TIGHTNESS.
- CONSTRUCT UNDER SLAB PIPING AND CONDUITS.
- CONSTRUCT MBR BUILDING, INCLUDING FOUNDATION, FLOOR, SLABS, WALLS, AND ROOF.
- INSTALL ABOVE-GRADE PIPING, HVAC, ELECTRICAL, PROCESS EQUIPMENT, BRIDGE CRANE, AND MISCELLANEOUS FEATURES. IT IS RECOMMENDED THAT THIS WORK BE STARTED AFTER FIRST SUMMER CONSTRUCTION WINDOW IS COMPLETE, UNLESS ALL WORK FOR THAT CONSTRUCTION WINDOW HAS BEEN ACCEPTED AS COMPLETE.
- PERFORM OPERATIONAL TESTING AND COMMISSIONING OF PROCESSES AND EQUIPMENT IN ACCORDANCE WITH SPECIFICATION 01 11 50, SECTION 1-05.11(3). SLUDGE DEWATERING EQUIPMENT CAN NOT BE COMMISSIONED UNTIL THE AEROBIC DIGESTER AND SLUDGE DRYING BEDS AREA ACCEPTED AS COMPLETE.

## GENERAL NOTES - CONSTRUCTION SEQUENCE

- THE SPECIFICS OF THE ORDER OF WORK SHALL BE AT THE CONTRACTOR'S OPTION, BUT WORK MUST COORDINATE WITH THE CONSTRUCTION SEQUENCE DESCRIBED HEREIN. ALL WORK SHALL BE SCHEDULED SO THE EXISTING WASTEWATER TREATMENT FACILITIES CAN REMAIN IN OPERATION AT ALL TIMES.
- THE CONTRACTOR SHALL MAKE ALL PIPING CHANGEOVERS, BUT ONLY AFTER REVIEW BY THE ENGINEER. ALL PIPING SHALL BE EXPOSED, AND ALL LABOR, TOOLS, MATERIALS, AND EQUIPMENT NECESSARY TO MAKE THE CONNECTION SHALL BE ON HAND PRIOR TO BEGINNING WORK. THE CONNECTION SHALL THEN BE MADE IN THE MINIMUM TIME POSSIBLE TO MINIMIZE THE IMPACTS TO THE TREATMENT PROCESS.
- IT IS ANTICIPATED THAT REQUIRED CONSTRUCTION OUTSIDE OF BUILDINGS WILL NOT BE FEASIBLE BETWEEN NOVEMBER 1 AND APRIL 30. THE CONTRACTOR'S PROPOSED SCHEDULE SHOULD NOT REFLECT EXTERIOR WORK OCCURRING DURING THIS TIME PERIOD, RESULTING IN TWO SUMMER CONSTRUCTION WINDOWS WITH INTERIOR WORK ALLOWABLE DURING INTERVENING MONTHS.
- COORDINATE AND SCHEDULE POWER UTILITY WORK WITH OPERATIONS STAFF AND UTILITY COMPANY. PLANT OPERATIONS STAFF SHALL BE GIVEN A MINIMUM OF 3-DAY NOTICE PRIOR TO ANY POWER SERVICE SHUTDOWNS AND/OR INTERRUPTIONS THAT MAY TAKE PLACE THROUGHOUT THE CONSTRUCTION DURATION.
- COORDINATE AND SCHEDULE PROCESS REVISIONS WITH OPERATIONS STAFF. PLANT OPERATIONS STAFF SHALL BE GIVEN A MINIMUM OF 3-DAY NOTICE PRIOR TO ANY FLOW REALIGNMENT AND/OR BYPASS PUMPING PLAN BEING STARTED OR STOPPED TO ALLOW APPROPRIATE PLANT OPERATIONS TO BE MODIFIED.

## OVERALL CONSTRUCTION SEQUENCE

- INSTALL REQUIRED TESC AND BMPS FOR STORMWATER RUNOFF CONTROL SYSTEMS. WORK NEAR STREAMS SHOULD BE SCHEDULED AFTER SPRING RUNOFF WHEN THE WATER IN THE STREAMS IS MINIMIZED.
- THE CONTRACTOR SHALL PURSUE SUBMITTAL APPROVAL AND PURCHASE OF THE NEW INFLUENT FINE SCREEN, UPON NOTICE TO PROCEED TO ENABLE INSTALLATION AND TESTING THE EQUIPMENT AS SOON AS FEASIBLY POSSIBLE.
- THE FIRST CONSTRUCTION WINDOW SHALL INCLUDE CONSTRUCTION OF THE NEW MBR BUILDING FOUNDATIONS, EXTERIOR WALLS, AND ROOF. THE SECOND CONSTRUCTION WINDOW SHALL INCLUDE CONSTRUCTION OF THE AEROBIC DIGESTER AND SLUDGE DRYING BEDS.



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		FILE NAMES: DRAWINGSheets-G - 2B.dwg	
		PLAN: PROFILE:	21180.dwg
		DESIGNED BY: ENTERED BY:	DPS/RJS TWC/JWM

**SNOQUALMIE PASS UTILITY DISTRICT**  
**PHASE 2B MEMBRANE BIOREACTOR WASTEWATER**  
**TREATMENT PLANT IMPROVEMENTS**

CONSTRUCTION SEQUENCE AND GENERAL NOTES

G-5

SHEET

5 OF 33

## MEMBRANE BIOREACTOR (MBR) DESIGN CRITERIA

<u>MEMBRANE BIOREACTORS (MBRS)</u>		
NUMBER OF TANKS	4	
NUMBER OF MEMBRANE ROWS PER TANK	2 (AT BUILD OUT)	
NUMBER OF MEMBRANE UNITS PER TANK	4	
MEMBRANE UNIT TYPE	SP450	
NUMBER OF CARTRIDGES PER UNIT	TBD	
MEMBRANE TANK VOLUME	19,500 GAL/TANK	
MEMBRANE SURFACE AREA (PER TANK)	19,376 SF	
MEMBRANE AIR SCOUR RATE FOR SIZING	86 SCFM/UNIT	
MLSS CONCENTRATION	5,000-15,000 MG/L	

<u>MEMBRANE FLUX (2 TANK IN OPERATION)</u>		
AVERAGE ANNUAL	6.5	GAL/DAY/SF
MAXIMUM MONTH	13.0	GAL/DAY/SF
MAXIMUM DAY	13.0	GAL/DAY/SF

<u>MEMBRANE FLUX AT BUILDOUT (4 TANKS IN OPERATION)</u>		
AVERAGE ANNUAL	6.5	GAL/DAY/SF
MAXIMUM MONTH	13.0	GAL/DAY/SF
MAXIMUM DAY	13.0	GAL/DAY/SF
PEAK HOUR	26.0	GAL/DAY/SF

<u>PRE-AERATION TANKS</u>		
NUMBER OF BASINS	2	
BASIN VOLUME	32,000 GAL	
MLSS CONCENTRATION	5,000-15,000 MG/L	

<u>FEED FORWARD PUMPS</u>		
TYPE	DRY PIT CENTRIFUGAL	
NUMBER (2 DUTY, 1 STANDBY)	3	
POWER	5.5 HP	
CAPACITY	350 GPM	
TDH	4.7 FT	

<u>ANOXIC SELECTOR TANKS</u>		
NUMBER	2	
VOLUME (EACH)	25,300 GAL	
ANOXIC MLSS	10,000 MG/L	

<u>ANOXIC TANK MIXERS</u>		
TYPE	SUBMERSIBLE	
NUMBER	2	
POWER	4.3 HP	

<u>MBR BLOWERS</u>		
TYPE	POSITIVE DISPLACEMENT	
NUMBER (2 DUTY, 1 STANDBY)	3	
POWER	30 HP	
MBR BLOWER CAPACITY	429 SCFM EACH	

## PLANT DESIGN CRITERIA

<u>PLANT CAPACITY</u>		
MAXIMUM MONTHLY FLOW	0.25 MGD (0.5 MGD AT BUILDOUT)	
MAXIMUM DAILY FLOW	0.25 MGD (0.5 MGD AT BUILDOUT)	
PEAK HOURLY FLOW	0.50 MGD (1.0 MGD AT BUILDOUT)	
MAXIMUM MONTH BOD5	4181 LBS/DAY (835 LBS/DAY AT BUILDOUT)	
MAXIMUM MONTH TSS	4181 LBS/DAY (835 LBS/DAY AT BUILDOUT)	

<u>INFLUENT PUMPS</u>		
TYPE	SUBMERSIBLE CENTRIFUGAL	
NUMBER (1 DUTY, 1 STANDBY)	2	
POWER	7.5 HP	
CAPACITY	694 GPM	
TDH	11 PSI	

<u>LAGOON TRANSFER PUMP</u>		
TYPE	SUBMERSIBLE CENTRIFUGAL	
NUMBER (1 DUTY, 1 STANDBY)	2	
POWER	7.5 HP	
CAPACITY	346 GPM	
TDH	43.4 FT	

<u>HEADWORKS SCREEN</u>		
TYPE	2-MM FINE SCREEN	
NUMBER	2 (1 NEW)	
SIZE	31" CHANNEL (TANK)	
PEAK FLOW RATE	1.07 MGD (EA)	
TSS	350 MG/L	

<u>SLUDGE WASTING</u>		
AVERAGE WASTING RATE	384 LBS SOLIDS/DAY	
AVERAGE WASTING VOLUME	4,600 GAL/DAY	

## PLANT DESIGN CRITERIA CONT.

<u>GRIT PUMP</u>		
TYPE	SELF-PRIMING CENTRIFUGAL	
NUMBER	1	
POWER	10 HP	
CAPACITY	100 GPM	
TDH	12 PSIG	

<u>GRIT CLASSIFIER</u>		
NUMBER	1	
POWER	1 HP	
CAPACITY	60 GPM	

<u>SLUDGE THICKENER</u>		
TYPE	ROTARY DRUM THICKENER	
NUMBER	1	
HYDRAULIC CAPACITY	50 GPM	
FEED SOLIDS CONCENTRATION	1%	
DISCHARGE SOLIDS CONCENTRATION	6%	
DRIVE MOTOR SIZE	1.0 HP	
INLET FLOCCULATION TANK SIZE	125 GAL	

<u>SLUDGE THICKENER FEED PUMP</u>		
TYPE	PROGRESSIVE CAVITY	
NUMBER	1	
POWER	5 HP	
CAPACITY	50 GPM	

<u>THICKENED SLUDGE PUMP</u>		
TYPE	PROGRESSIVE CAVITY	
NUMBER	1	
POWER	5 HP	
CAPACITY	50 GPM	

<u>ROTARY DRUM THICKENER POLYMER SYSTEM</u>		
NUMBER OF UNITS	1	
TYPE	LIQUID	
MOTOR SIZE	0.5 HP	
DESIGN DOSAGE	30 LB/TON	
FEED TANK CAPACITY	330 GAL	

<u>SLUDGE DEWATERING</u>		
TYPE	SCREW PRESS	
NUMBER	1	
HYDRAULIC CAPACITY	20 GPM	
FEED SOLIDS CONCENTRATION	6%	
DISCHARGE SOLIDS CONCENTRATION	20%	
DRIVE MOTOR SIZE	1.0 HP	
INLET FLOCCULATION TANK SIZE	TBD	

<u>SCREW PRESS FEED PUMP</u>		
TYPE	PROGRESSIVE CAVITY	
NUMBER	1	
POWER	2 HP	
CAPACITY	20 GPM	

<u>SCREW PRESS POLYMER SYSTEM</u>		
NUMBER OF UNITS	1	
TYPE	LIQUID	
MOTOR SIZE	0.5 HP	
DESIGN DOSAGE	30 LB/TON	
FEED TANK CAPACITY	300 GAL	

<u>UV DISINFECTION SYSTEM</u>		
PEAK DESIGN FLOW	0.5 MGD (347 GPM)	
UV TRANSMITTANCE	65% (MONTHLY AVERAGE)	
TYPE	CLOSED VESSEL	
UV LAMP TYPE	MEDIUM DENSITY	
NUMBER (1 DUTY, 1 STANDBY)	2	
UV LAMPS PER SYSTEM	2	
POWER	5 KW EACH	

<u>AEROBIC DIGESTER TANK</u>		
NUMBER	1	
VOLUME	60,000 GAL	
DIAMETER	32 FT	
MAXIMUM SIDEWATER DEPTH	10 FT	
SOLIDS LOADING RATE	384 LB/DAY	
SOLIDS CONCENTRATION	6% SOLIDS	
OXYGEN REQUIRED	1,038 LB O2/DAY	
AIR REQUIREMENT	555 SCFM	

<u>DIGESTER BLOWERS</u>		
TYPE	POSITIVE DISPLACEMENT	
NUMBER (1 DUTY, 1 STANDBY)	2	
POWER	30 HP	
CAPACITY, EACH	555 SCFM	

<u>NON-POTABLE WATER BOOSTER STATION</u>		
PUMP TYPE	MULTI-STAGE CENTRIFUGAL	
NUMBER OF PUMPS	2	
CAPACITY	50 TO 90 GPM @ 70 PSI	



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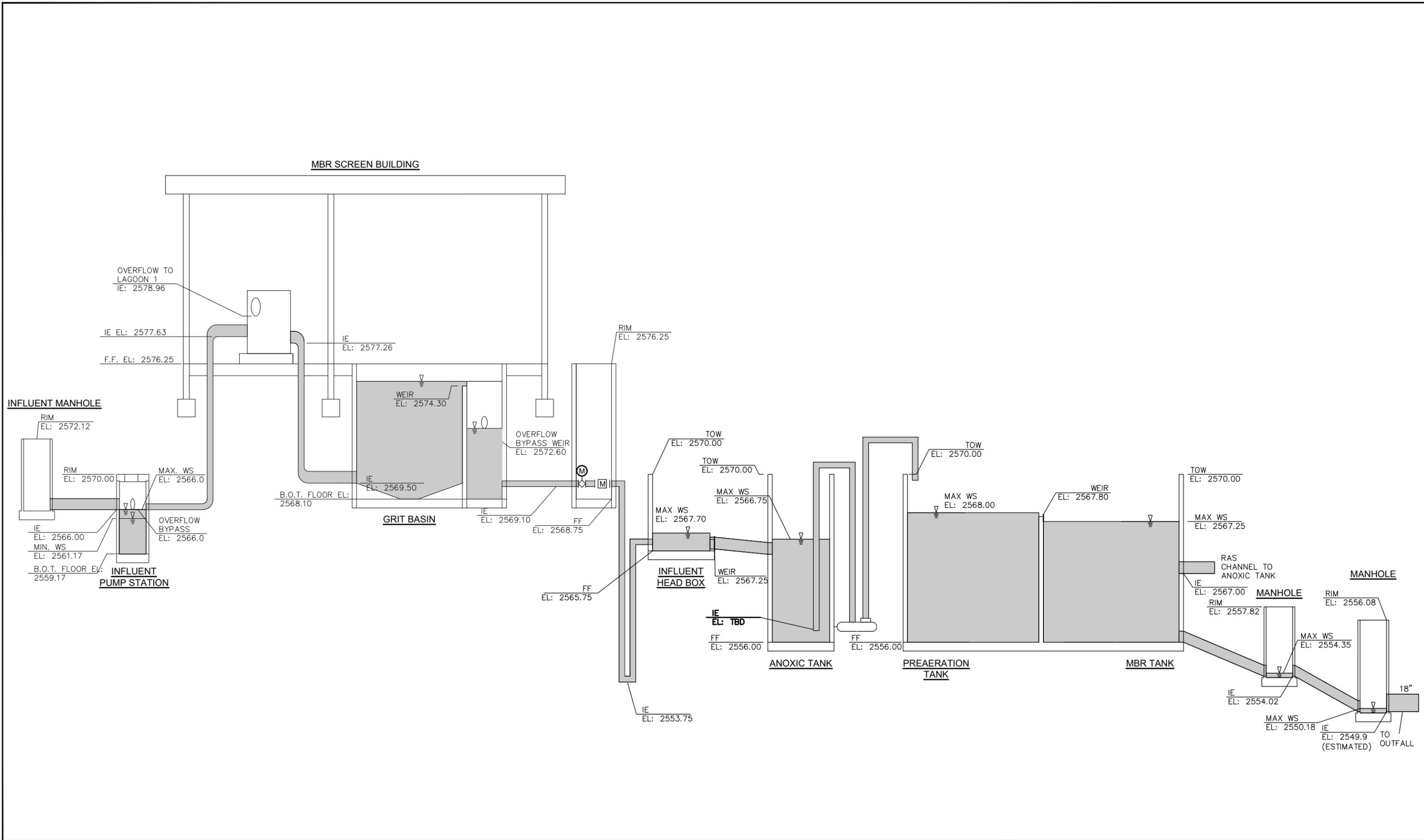
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PLAN: 21180.dwg	PROFILE:
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**SNOQUALMIE PASS UTILITY DISTRICT**  
**PHASE 2B MEMBRANE BIOREACTOR WASTEWATER TREATMENT PLANT IMPROVEMENTS**  
PLANT DESIGN CRITERIA

**G-6**  
SHEET  
**6 OF 33**



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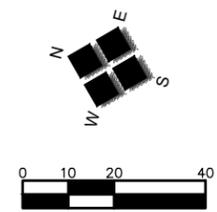
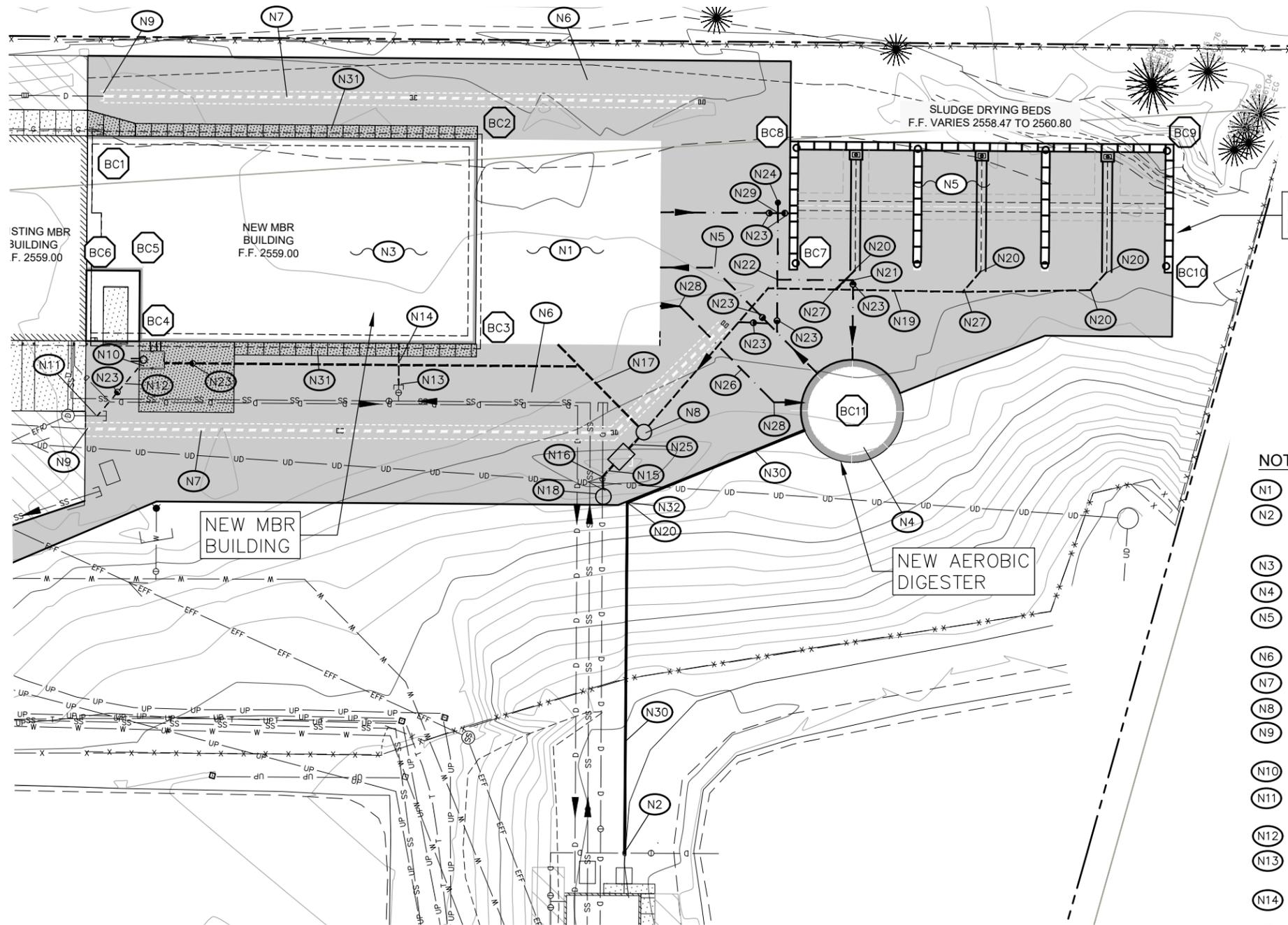
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**SNOQUALMIE PASS UTILITY DISTRICT**  
**PHASE 2B MEMBRANE BIOREACTOR WASTEWATER TREATMENT PLANT IMPROVEMENTS**

HYDRAULIC PROFILE

**G-7**  
SHEET  
7 OF 33



COORDINATE TABLE		
PT #	NORTHING	EASTING
BC1	750479.98	1419597.59
BC2	750361.90	1419628.13
BC3	750345.83	1419566.18
BC4	750442.17	1419541.18
BC5	750452.58	1419562.24
BC6	750469.43	1419556.83
BC7	750254.57	1419614.65
BC8	750263.99	1419650.95
BC9	750152.68	1419679.83
BC10	750143.26	1419643.54
BC11	750226.58	1419576.46

**GENERAL NOTES**

- SEE GENERAL DEMOLITION NOTES SHEET G-5.
- SEE SEQUENCE OF CONSTRUCTION NOTES ON SHEET G-5 FOR ADDITIONAL INFORMATION.
- SEE ELECTRICAL PLANS FOR DEMOLITION OF EXISTING ELECTRICAL FACILITIES.
- PROTECT ALL EXISTING UTILITIES AND STRUCTURES UNLESS OTHERWISE NOTED.

**NOTES**

- (N1) GRAVEL SURFACING.
- (N2) REMOVE 4" DI MJ BEND, EXTEND 4" SCUM FORCE MAIN EAST WITH DI SPOOL, AND CONNECT TO NEW 4" C900 PIPE. CAP EXISTING BRANCH OF 8" X 4" TEE.
- (N3) NEW MBR BUILDING. SEE SITE PLANS AND M DRAWINGS.
- (N4) NEW AEROBIC DIGESTER. SEE SITE PLANS AND AD DRAWINGS.
- (N5) NEW SLUDGE DRYING BEDS. SEE SITE PLANS AND AD DRAWINGS.
- (N6) NEW ASPHALT PAVING.
- (N7) NEW STORM WATER CONVEYANCE SYSTEM. SEE SHEET C-7.
- (N8) NEW PLANT DRAIN LIFT STATION. SEE SHEET PD-1.
- (N9) CONNECT TO EXISTING AND EXTEND STORM DRAIN SYSTEM. SEE SHEET ---.
- (N10) NEW NON-POTABLE WATER TANK. SEE SHEET M-5.
- (N11) CONNECT PERMEATE PIPE TO EXISTING GRAVITY EFFLUENT PIPE WITH 45° BEND AND ABANDON PIPE SOUTH OF CONNECTION.
- (N12) NEW 10" PVC GRAVITY EFFLUENT PIPE.
- (N13) REMOVE 8" CAP AND CONNECT INFLUENT PIPE TO EXISTING 8" GATE VALVE.
- (N14) NEW 8" C900 INFLUENT PIPE. SEE SHEET M-1 FOR CONTINUATION.
- (N15) NEW 6" C900 DRAIN FORCE MAIN.
- (N16) CONNECT TO EXISTING 6" C900 DRAIN WITH ROMAC COUPLING OR EQUAL.
- (N17) NEW 6" C-900 DRAIN PIPE. SEE SHEET MP-1 FOR CONTINUATION.
- (N18) NEW FLOW METER VAULT. SEE SHEET PD-1.
- (N19) NEW 4" C900 PVC DRAIN PIPE.
- (N20) 4" 45° DI MJ BEND.
- (N21) 4" 90° DI MJ BEND.
- (N22) 4" DI MJ TEE.
- (N23) 4" DI MJ PLUG VALVE AND VALVE BOX.
- (N24) NEW CLEANOUT.
- (N25) 6" C900 PVC DRAIN FORCE MAIN.
- (N26) 4" STAINLESS STEEL AIR PIPE.
- (N27) 4" DI MJ WYE.
- (N28) 4" 45° STAINLESS STEEL BEND.
- (N29) 4" DI MJ CROSS.
- (N30) NEW 4" C900 PVC DRAIN FORCE MAIN.
- (N31) NEW 8" CEMENT CONCRETE SIDEWALK. SEE DETAIL 3.4/GC-1.
- (N32) 4" DI MJ 22.5° BEND.

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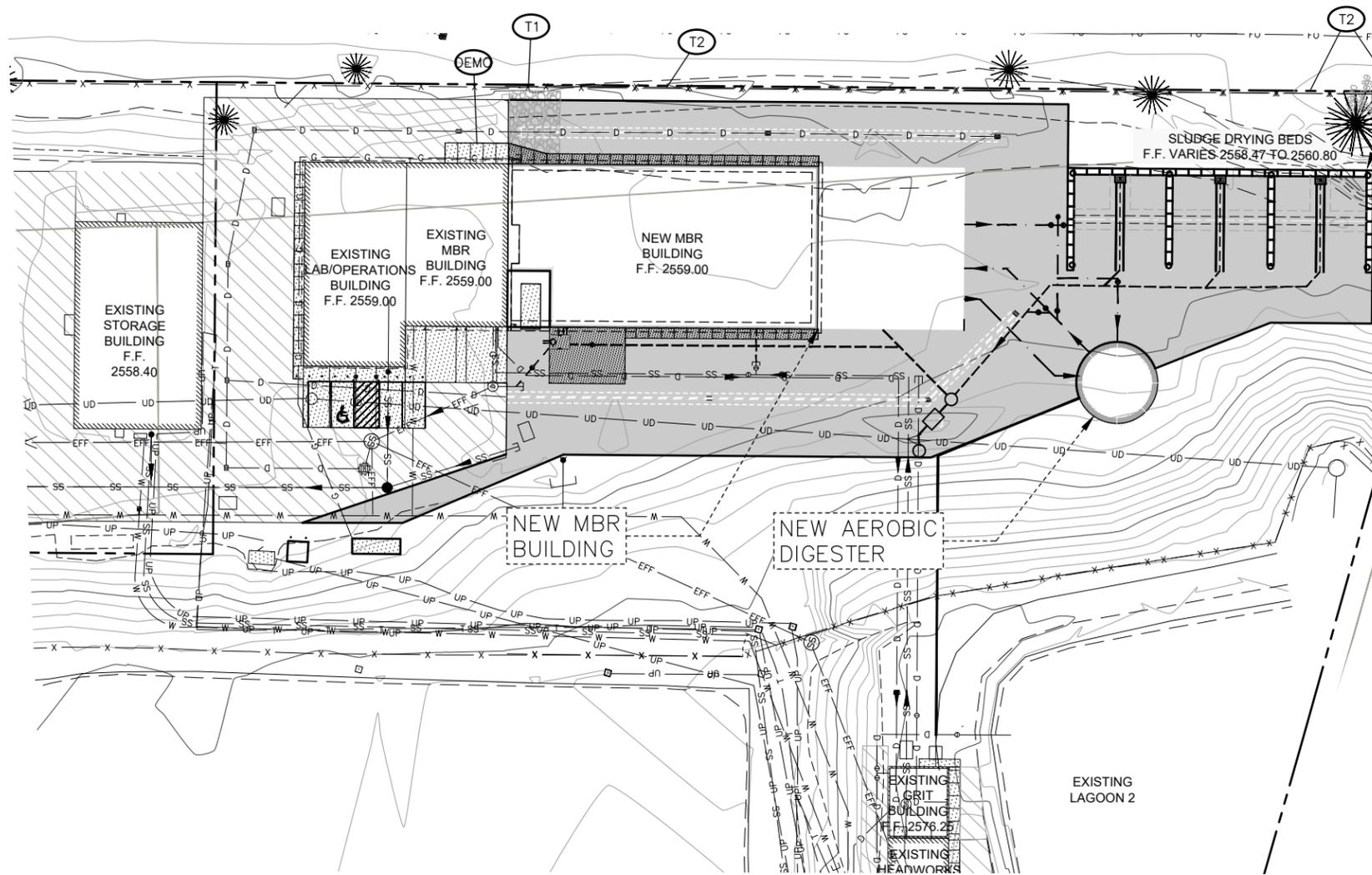


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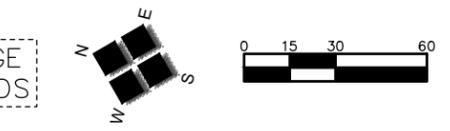
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**SNOQUALMIE PASS UTILITY DISTRICT**  
**PHASE 2B MEMBRANE BIOREACTOR WASTEWATER TREATMENT PLANT IMPROVEMENTS**  
OVERALL SITE PLAN

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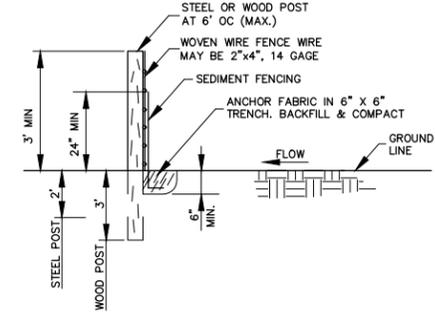


NEW SLUDGE DRYING BEDS



**DUST CONTROL BMP:**

1. WATER APPLIED TO CONSTRUCTION SITES FOR DUST CONTROL MUST NOT LEAVE THE SITE AS SURFACE RUNOFF.
2. LIMIT DUST GENERATION BY CLEARING ONLY THOSE AREAS WHERE IMMEDIATE ACTIVITY WILL TAKE PLACE, LEAVING THE REMAINING AREAS IN THE ORIGINAL CONDITIONS, IF STABLE. MAINTAIN THE ORIGINAL GROUND COVER AS LONG AS PRACTICAL.
3. PROJECT MUST COMPLY WITH THE LOCAL CLEAN AIR AUTHORITY AND KITTITAS COUNTY REQUIREMENTS.

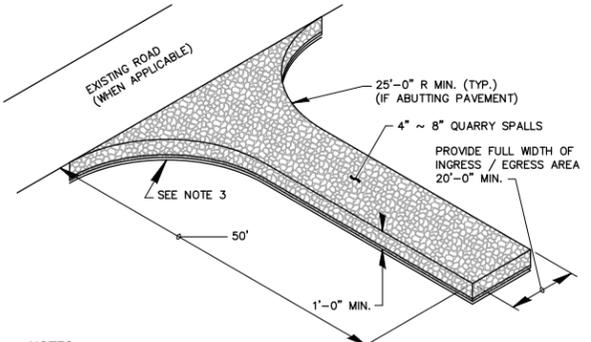


- NOTES**
1. INSTALLATION TO BE PER MANUFACTURER'S RECOMMENDATION.
  2. TO BE USED FOR TERMINAL ENDS & PERIMETER SIDES.
  3. THE TWO POST OPTIONS ARE (1) WOOD = 1" X 2" OR 3" MIN. DIA. AND (2) STEEL = 1.33 LBS/FT. MIN.

**SEDIMENT BARRIER**  
NOT TO SCALE TESC-4.DWG

**TESC NOTES:**

- (T1) CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE. SEE DETAIL THIS SHEET. IF TRACK OUT BECOMES A PROBLEM A WHEEL WASH MAY BE REQUIRED TO BE INSTALLED.
- (T2) CONSTRUCT SILT BARRIER. SEE DETAIL THIS SHEET.



- NOTES**
1. A STABILIZED CONSTRUCTION ENTRANCE SHALL BE INSTALLED AT POINTS OF CONSTRUCTION EGRESS WHERE SEDIMENT MAY BE TRACKED OFF THE CONSTRUCTION SITE.
  2. A STABILIZED CONSTRUCTION ENTRANCE MUST BE CONSTRUCTED TO A MINIMUM LENGTH OF 50 FEET WHERE THE SOILS ARE SANDS OR GRAVEL OR 100 FEET MINIMUM WHERE SOILS ARE CLAYS OR SILT; THESE LENGTHS SHALL BE INCREASED WHERE FIELD CONDITIONS DICTATE.
  3. PLACE CONSTRUCTION GEOTEXTILE FOR SOIL STABILIZATION AND A MINIMUM OF 0.15' CRUSHED ROCK UNDER THE SPALLS FOR THE LENGTH OF THE ENTRANCE, OR AS DIRECTED BY THE ENGINEER.
  4. ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED UNDER THE ENTRANCE.
  5. WHEN REQUIRED DUE TO CONSTRUCTION, TIRES SHALL BE CLEANED WITH WATER BEFORE LEAVING THE CONSTRUCTION SITE TO AVOID TRANSPORTING SEDIMENT OFF OF THE SITE (ALTERNATE BMP C106, WHEEL WASH).

**STABILIZED CONSTRUCTION ENTRANCE**  
NOT TO SCALE

**TOPSOIL STOCKPILES:**

1. STOCKPILES SHALL BE STABILIZED (WITH PLASTIC COVERING OR OTHER APPROVED DEVICE) DAILY BETWEEN NOVEMBER 1 AND MARCH 31.
2. IN ANY SEASON, SEDIMENT LEACHING FROM STOCKPILES MUST BE POSITIVELY PREVENTED.
3. TOPSOIL SHALL NOT BE PLACED WHILE IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBGRADE IS EXCESSIVELY WET, OR WHEN CONDITIONS EXIST THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING OR PROPOSED SODDING OR SEEDING.
4. PREVIOUSLY ESTABLISHED GRADES ON THE AREAS TO BE TOPSOILED SHALL BE MAINTAINED ACCORDING TO THE APPROVAL PLAN.

**SILT FENCES:**

1. FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6-INCH OVERLAP, AND SECURELY FASTENED AT BOTH ENDS TO POST.
2. POSTS SHALL BE SPACED A MAXIMUM OF 6 FEET APART AND DRIVEN SECURELY INTO THE GROUND. (MINIMUM OF 30 INCHES).
3. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 8 INCHES WIDE AND 12 INCHES DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
4. WHEN STANDARD STRENGTH FILTER FABRIC IS USED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY-DUTY WIRE STAPLES AT LEAST 1 INCH LONG, TIE WIRES OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 4 INCHES AND SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
5. THE STANDARD STRENGTH FILTER FABRIC SHALL BE STAPLED OR WIRED TO THE FENCE, AND 20 INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE. FILTER FABRIC SHALL NOT BE STAPLED TO EXISTING TREES.
6. WHEN EXTRA-STRENGTH FILTER FABRIC AND CLOSER POST SPACING IS USED, THE WIRE MESH SUPPORT FENCE MAY BE ELIMINATED. IN SUCH A CASE, THE FILTER FABRIC IS STAPLED OR WIRED DIRECTLY TO THE POSTS WITH ALL OTHER PROVISIONS OF ABOVE NOTES APPLYING.
7. FILTER FABRIC FENCES SHALL NOT BE REMOVED BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.
8. FILTER FABRIC FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.

**CONSTRUCTION ENTRANCES:**

1. CONSTRUCTION VEHICLE ACCESS AND EXIT SHALL BE LIMITED TO ONLY NECESSARY LOCATIONS. ACCESS POINTS SHALL BE STABILIZED WITH 4" TO 6" QUARRY SPALLS AND MAY BE TOP-DRESSED WITH 1" TO 3" ROCK, CRUSHED ROCK OR 2" MINUS GRAVEL TO MINIMIZE THE TRACKING OF SEDIMENT ONTO PUBLIC ROADS.
2. THE ROCK PAD SHALL BE AT LEAST 12 INCHES THICK AND 50 FEET LONG. WIDTH SHALL BE THE FULL WIDTH OF THE VEHICLE INGRESS AND EGRESS AREA. SMALLER PADS MAY BE APPROVED FOR SINGLE-FAMILY RESIDENTIAL AND SMALL COMMERCIAL SITES.
3. ADDITIONAL ROCK SHALL BE ADDED PERIODICALLY TO MAINTAIN PROPER FUNCTION OF THE PAD.
4. IF THE PAD DOES NOT ADEQUATELY REMOVE THE MUD FROM THE VEHICLE WHEELS, THE WHEELS SHALL BE HOSED OFF BEFORE THE VEHICLE ENTERS A PAVED STREET. THE WASHING SHALL BE DONE ON AN AREA COVERED WITH CRUSHED ROCK AND WASH WATER SHALL DRAIN TO A SEDIMENT RETENTION FACILITY OR THROUGH SILT FENCE. WHEEL WASH OR TIRE BATHS SHOULD BE LOCATED ON-SITE, IF NEEDED, TO PREVENT EXCESSIVE TRACKING OF SEDIMENT ON ROADS.
5. PUBLIC ROADS SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. 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.
6. ANY QUARRY SPALLS THAT ARE LOOSENED FROM THE PAD, WHICH END UP ON THE ROADWAY, SHALL BE REMOVED IMMEDIATELY.
7. STREET WASH WASTEWATER SHALL BE CONTROLLED BY PUMPING BACK ON-SITE, OR OTHERWISE BE PREVENTED FROM DISCHARGING INTO SYSTEMS TRIBUTARY TO STATE SURFACE WATERS.
8. A SUBGRADE REINFORCEMENT AND SEPARATION GEOTEXTILE SHALL BE PLACED UNDER THE FIRST 25' OF SPALLS, OR FURTHER AS DIRECTED BY THE ENGINEER, TO PREVENT FINE SEDIMENT FROM PUMPING UP INTO THE ROCK PAD. THE GEOTEXTILE SHALL BE MIRAFI 500X OR EQUAL.

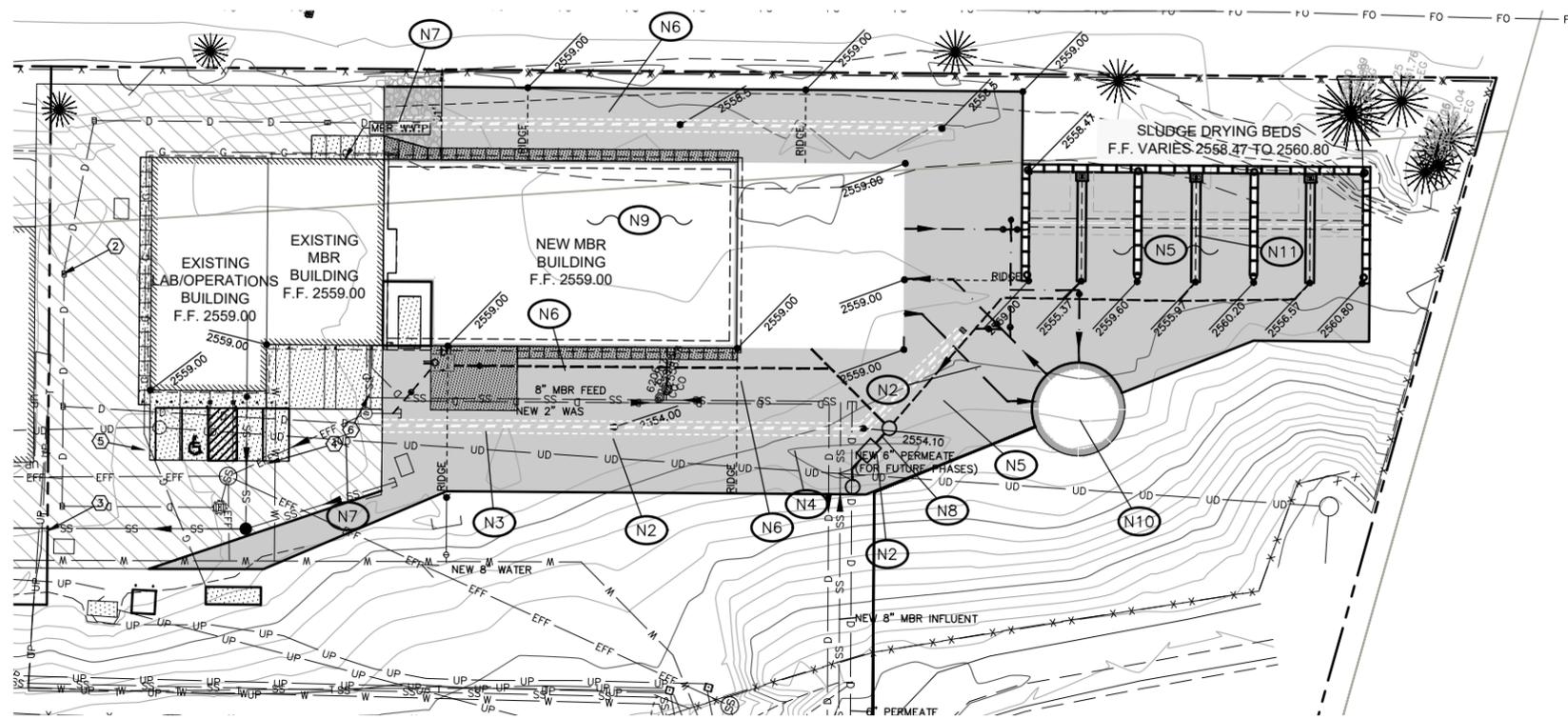
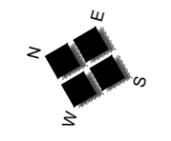
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		FILE NAMES: DRAWINGSheets-C - 2B.dwg	
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**SNOQUALMIE PASS UTILITY DISTRICT**  
**PHASE 2B MEMBRANE BIOREACTOR WASTEWATER TREATMENT PLANT IMPROVEMENTS**  
TEMPORARY EROSION AND SEDIMENT CONTROL PLAN



**GENERAL NOTES**

1. SEE GENERAL DEMOLITION NOTES SHEET G-5.
2. SEE SEQUENCE OF CONSTRUCTION NOTES ON SHEET G-5 FOR ADDITIONAL INFORMATION.
3. SEE ELECTRICAL PLANS FOR DEMOLITION OF EXISTING ELECTRICAL FACILITIES.
4. PROTECT ALL EXISTING UTILITIES AND STRUCTURES UNLESS OTHERWISE NOTED.

**NOTES**

- (N1) NEW GRIT BUILDING AND HEADWORKS BUILDING MODIFICATION. SEE SITE PLANS AND H DRAWINGS.
- (N2) CONSTRUCT WSDOT TYPE 2 48" CATCH BASIN W/ MANHOLE RING AND HERRINGBONE RECTANGULAR GRATE PER WSDOT STANDARD PLAN B-10.20-02, B-30.70-04, B-30.80-01, AND DETAIL 3.3/GC-4. CONNECT TO PROPOSED 12" DRAIN PIPE WITH PIPE AND FITTINGS AS NECESSARY.
- (N3) CONSTRUCT 80 L.F. OF 12" DIA. HIGH DENSITY POLYETHYLENE PERFORATED PIPE IN DRAIN ROCK ENVELOPE PER DETAILS 3.4 AND 3.5 ON SHEET GC-4.
- (N4) CONSTRUCT 93 L.F. OF 12" DIA. HIGH DENSITY POLYETHYLENE PERFORATED PIPE IN DRAIN ROCK ENVELOPE PER DETAILS 3.4 AND 3.5 ON SHEET GC-4.
- (N5) CONSTRUCT 47 L.F. OF 12" DIA. HIGH DENSITY POLYETHYLENE PERFORATED PIPE IN DRAIN ROCK ENVELOPE PER DETAILS 3.4 AND 3.5 ON SHEET GC-4.
- (N6) NEW ASPHALT PAVING.
- (N7) POT HOLE AND LOCATE EXISTING 8" DIA STORM DRAIN PIPE AND CONNECT TO NEW 12" HIGH DENSITY POLYETHYLENE DRAIN PIPE WITH 12" X 8" REDUCER AND ROMAC STYLE COUPLING.
- (N8) NEW PLANT DRAIN LIFT STATION. SEE DRAWING PD-1.
- (N9) NEW MBR BUILDING. SEE SITE PLANS AND M DRAWINGS.
- (N10) NEW AEROBIC DIGESTER. SEE SITE PLANS AND AD DRAWINGS.
- (N11) NEW SLUDGE DRYING BEDS. SEE SITE PLANS AND AD DRAWINGS.



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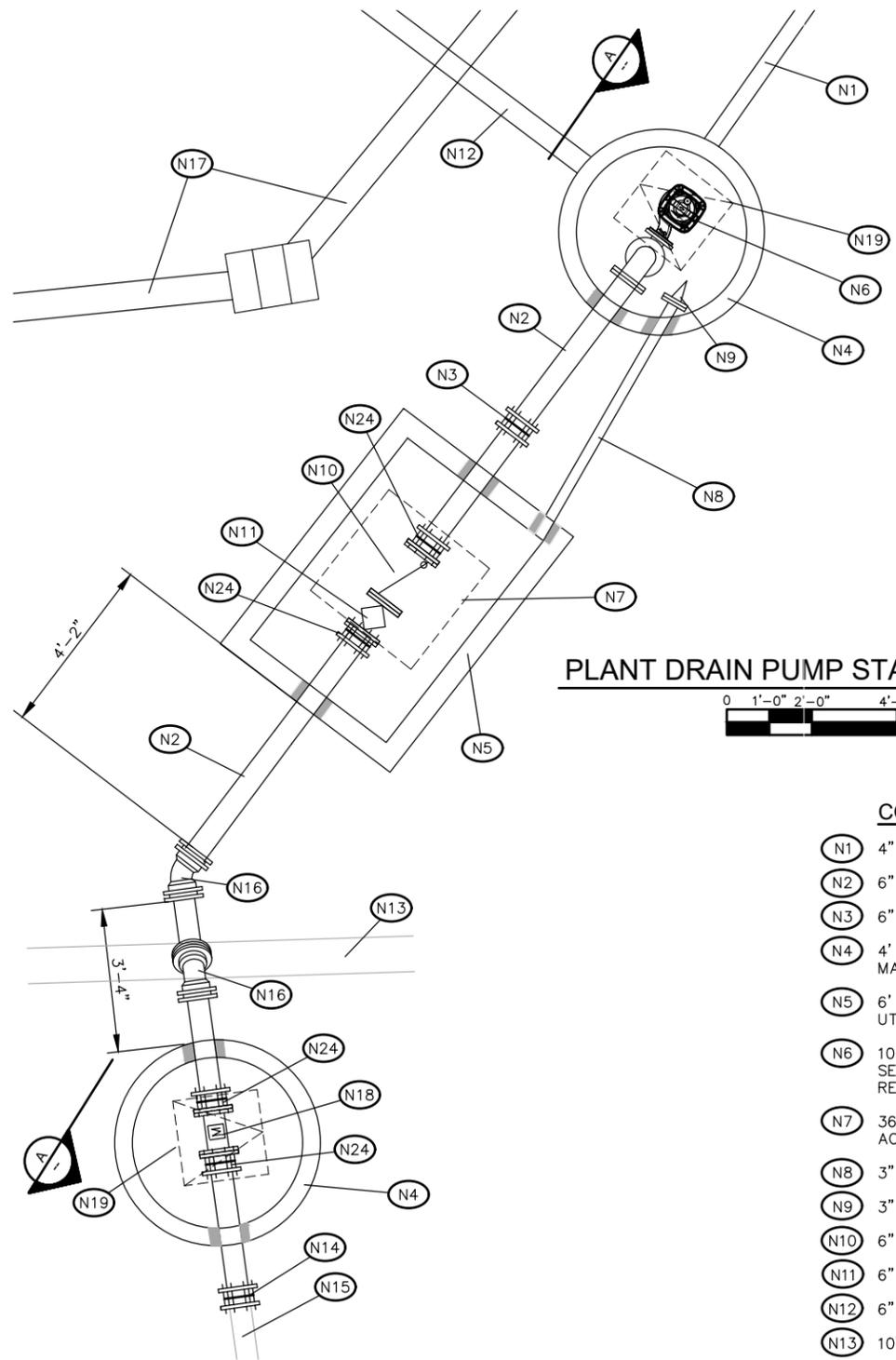
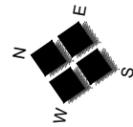
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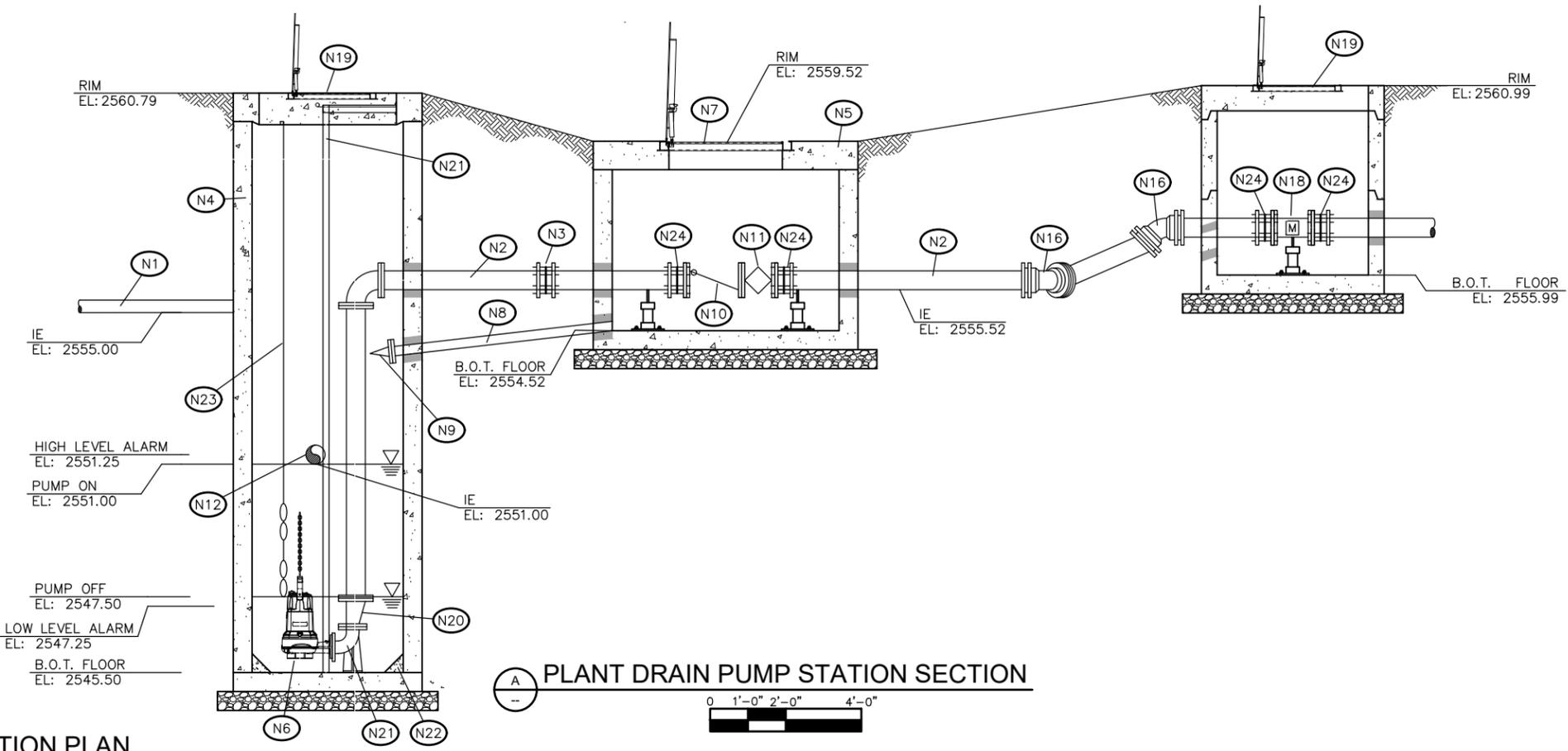
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**SNOQUALMIE PASS UTILITY DISTRICT**  
**PHASE 2B MEMBRANE BIOREACTOR WASTEWATER TREATMENT PLANT IMPROVEMENTS**  
SITE GRADING PLAN

**C-7**  
SHEET  
--- OF 33



**PLANT DRAIN PUMP STATION PLAN**



**PLANT DRAIN PUMP STATION SECTION**

**CONSTRUCTION NOTES:**

- (N1) 4" C900 PVC DRAIN PIPE.
- (N2) 6" C900 PVC DRAIN FORCE MAIN.
- (N3) 6" BOLTED SLEEVE TYPE COUPLING.
- (N4) 4' DIAMETER (INSIDE DIMENSION) PRECAST CONCRETE MANHOLE WITH INTEGRAL FLOOR, HEIGHT AS SHOWN.
- (N5) 6' L X 4' W X 4' H MINIMUM (INSIDE DIMENSION) PRECAST UTILITY VAULT.
- (N6) 10 HP SUBMERSIBLE PUMP, FLYGT CONCERTOR OR EQUAL. SEE SPECIFICATIONS. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
- (N7) 36" L X 36" W (CLEAR OPENING) SINGLE DOOR ALUMINUM ACCESS HATCH CAST INTO TOP SLAB.
- (N8) 3" DI DRAIN PIPE.
- (N9) 3" FLG DUCKBILL CHECK VALVE.
- (N10) 6" FLG X FLG SWING CHECK VALVE.
- (N11) 6" FLG X FLG ECCENTRIC PLUG VALVE.
- (N12) 6" C900 PVC DRAIN PIPE.
- (N13) 10" EXISTING UNDERDRAIN PIPE.
- (N14) CONNECT TO EXISTING C900 PVC DRAIN PIPE WITH ROMAC COUPLING OR EQUAL.
- (N15) EXISTING 6" C900 PVC DRAIN PIPE.
- (N16) 6" MJ X MJ 45° BEND.
- (N17) NEW 8" STORM DRAIN PIPE.
- (N18) 6" x 6" FLG x FLG ELECTROMAGNETIC FLOW METER. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
- (N19) 24"L X 24"W (CLEAR OPENING) ALUMINUM ACCESS HATCH CAST INTO TOP SLAB. CENTER DOOR AS SHOWN.
- (N20) 6" x 4" FLG ECCENTRIC REDUCER.
- (N21) DISCHARGE ELBOW AND STAINLESS STEEL GUIDE RAIL SYSTEM BY PUMP MANUFACTURER. SEE SPECIFICATIONS. PROVIDE STAINLESS STEEL AIRCRAFT CABLE LIFTING LINE WITH SUPPORT BRACKET TO STORE LIFTING LINE INSIDE ACCESS COVER.
- (N22) GROUT BENCH AROUND PUMP AND DISCHARGE ELBOW, TYP. DIMENSIONS AND LAYOUT AS RECOMMENDED BY THE PUMP MANUFACTURER. SLOPE GROUT TO PUMP INLETS.
- (N23) FLOAT SWITCHES. SEE DETAIL ---- AND ELECTRICAL PLAN.
- (N24) 6" FLANGED COUPLING ADAPTOR.



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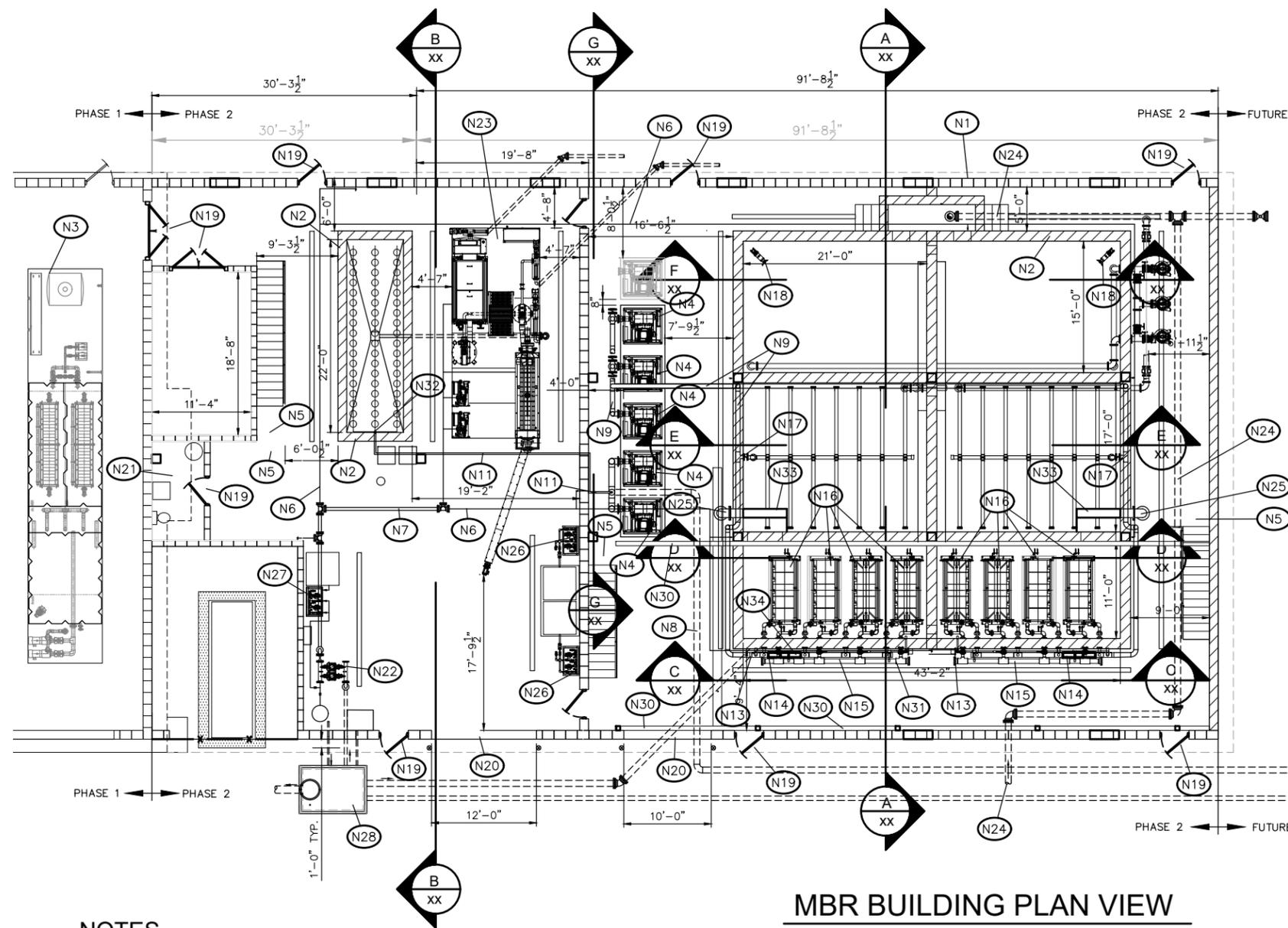
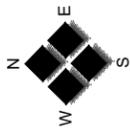
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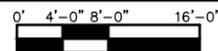
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**PHASE 2B MEMBRANE BIOREACTOR WASTEWATER TREATMENT PLANT IMPROVEMENTS**

PLANT DRAIN PUMP STATION

PD-1  
SHEET  
OF 33



**MBR BUILDING PLAN VIEW**



**NOTES**

- (N1) NEW MBR BUILDING. SEE SHEET X.
- (N2) REINFORCED CONCRETE TANK. SEE SHEET X.
- (N3) SKID-MOUNTED MBR PROCESS TO REMAIN IN SERVICE DURING CONSTRUCTION AND TO BE REMOVED FROM BUILDING AFTER NEW PROCESS COMMISSIONING.
- (N4) 30 HP CENTRIFUGAL BLOWER.
- (N5) ACCESS WALKWAYS AND MEZZANINES NOT SHOWN FOR CLARITY. SEE SHEET ---.
- (N6) 2" SCH 80 PVC NONPOTABLE WATER PIPING.
- (N7) 4" SCH 80 PVC NONPOTABLE WATER PIPING.
- (N8) 8" STAINLESS STEEL AIR PIPING.
- (N9) 6" STAINLESS STEEL AIR PIPING.
- (N10) 3" STAINLESS STEEL AIR PIPING.
- (N11) 2" STAINLESS STEEL AIR PIPING.
- (N12) 12" C900 PVC MIXED LIQUOR PIPING.
- (N13) CONNECT TO 6" MBR AIR HEADER WITH MBR MANUFACTURER SUPPLIED PIPE COUPLINGS.
- (N14) MBR MANUFACTURER SUPPLIED PERMEATE MANIFOLD. INSTALL PER MANUFACTURER RECOMMENDATIONS.
- (N15) MBR MANUFACTURER SUPPLIED AIR SUPPLY HEADER. INSTALL PER MANUFACTURER RECOMMENDATIONS.
- (N16) MBR MANUFACTURER SUPPLIED MEMBRANE MODULE. INSTALL PER MANUFACTURER RECOMMENDATIONS.
- (N17) CONNECT TO AIR DIFFUSION GRID WITH AIR DIFFUSION MANUFACTURER SUPPLIED PIPE COUPLING. AIR DIFFUSION GRID LAYOUT IS FOR ILLUSTRATIVE PURPOSES ONLY. ACTUAL LAYOUT TO BE SUBMITTED BY MBR MANUFACTURER AND REVIEWED BY ENGINEER. CONTRACTOR TO INSTALL PIPE SUPPORTS PER MANUFACTURER RECOMMENDATIONS.
- (N18) MBR MANUFACTURER SUPPLIED SUBMERSIBLE MIXER. INSTALL PER MANUFACTURER RECOMMENDATIONS.
- (N19) HOLLOW METAL DOOR AND FRAME SEE SCHEDULE ON SHEET X.
- (N20) ROLL-UP DOOR SEE SHEET X.
- (N21) BATHROOM. SEE SHEET X.
- (N22) PACKAGED UTILITY WATER BOOSTER STATION AND PIPING. SEE SHEET MBR-5.
- (N23) SLUDGE DEWATERING AND THICKENING EQUIPMENT SKID, INCLUDING SLUDGE FEED PUMP, THICKENED SLUDGE PUMP, DIGESTED SLUDGE PUMP, FLOCCULATION TANKS, POLYMER BLENDING AND FEED SYSTEMS, SHAFTLESS SPIRAL SCREW SLUDGE CONVEYOR, SCREW PRESS, ROTARY DRUM THICKENER, CONTROL PANEL, AND APPURTENANCES. SEE SOLIDS HANDLING PLAN VIEW ON SHEET M-2.
- (N24) 8" C900 PVC INFLUENT PIPING. SEE SHEET C-4 FOR CONTINUATION.
- (N25) 8" C900 PVC SCUM PIPING.
- (N26) MBR MANUFACTURER SUPPLIED CHEMICAL METERING SKID.
- (N27) CHEMICAL METERING SKID.
- (N28) NONPOTABLE WATER TANK. SEE SHEET M-6.
- (N29) 8" C900 PVC WAS PIPING.
- (N30) BRIDGE CRANE RAIL. SEE SHEET XX.
- (N31) UV DISINFECTION SYSTEM. INSTALL PER MANUFACTURER RECOMMENDATIONS.
- (N32) CONNECT TO AIR DIFFUSION GRID WITH AIR DIFFUSION MANUFACTURER SUPPLIED PIPE COUPLING. AIR DIFFUSION GRID LAYOUT IS FOR ILLUSTRATIVE PURPOSES ONLY. ACTUAL LAYOUT TO BE SUBMITTED BY MBR MANUFACTURER AND REVIEWED BY ENGINEER. CONTRACTOR TO INSTALL PIPE SUPPORTS PER MANUFACTURER RECOMMENDATIONS.
- (N33) FIBERGLASS ROTATING SCUM SKIMMER AND HANDWHEEL OPERATOR. SEE DETAIL ---.
- (N34) UV/PERMEATE PIPE HIDDEN. SEE BLOWUP ON SHEET XX.



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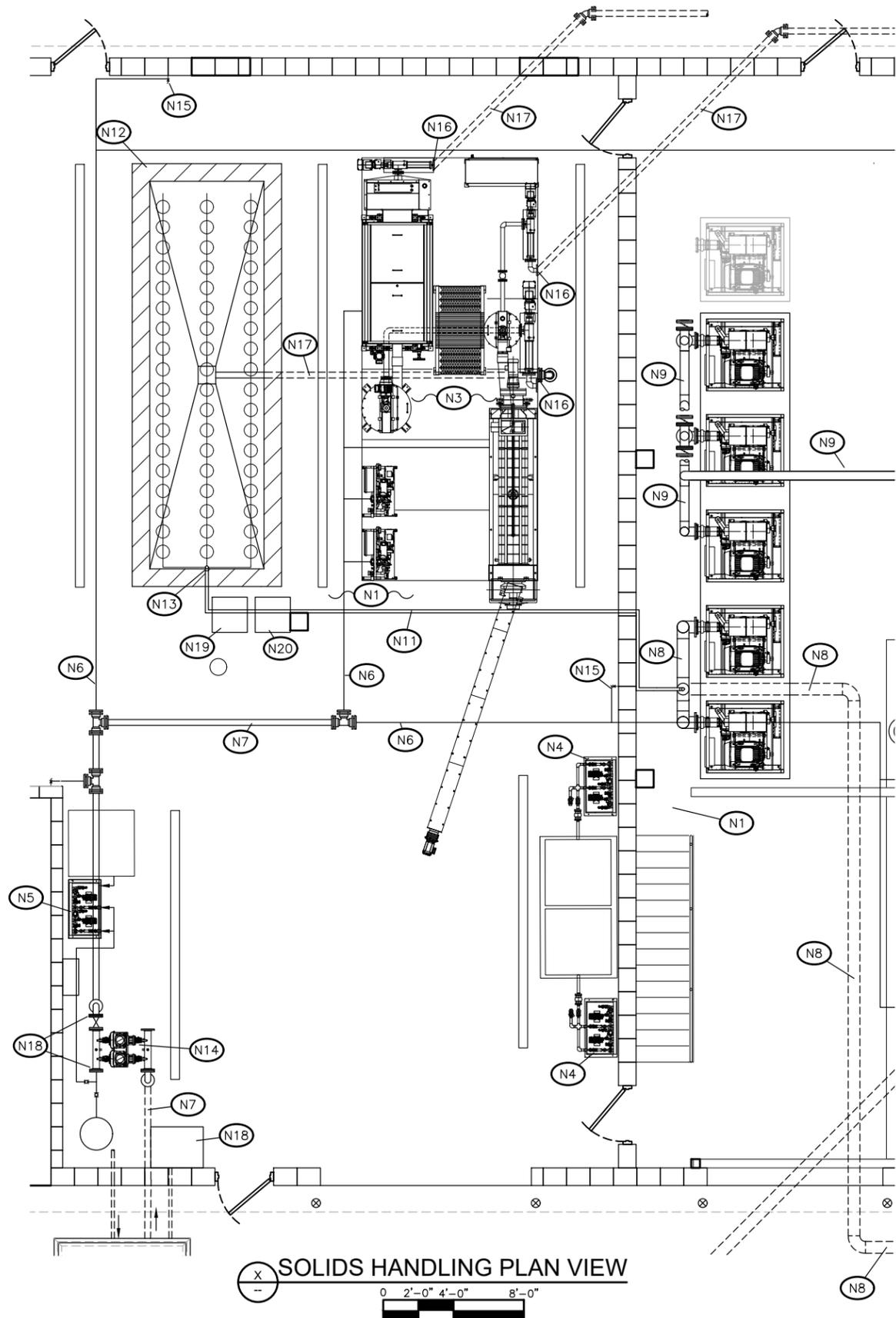
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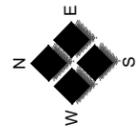
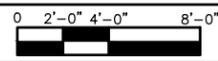
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**PHASE 2B MEMBRANE BIOREACTOR WASTEWATER TREATMENT PLANT IMPROVEMENTS**

MBR BUILDING PLAN VIEW

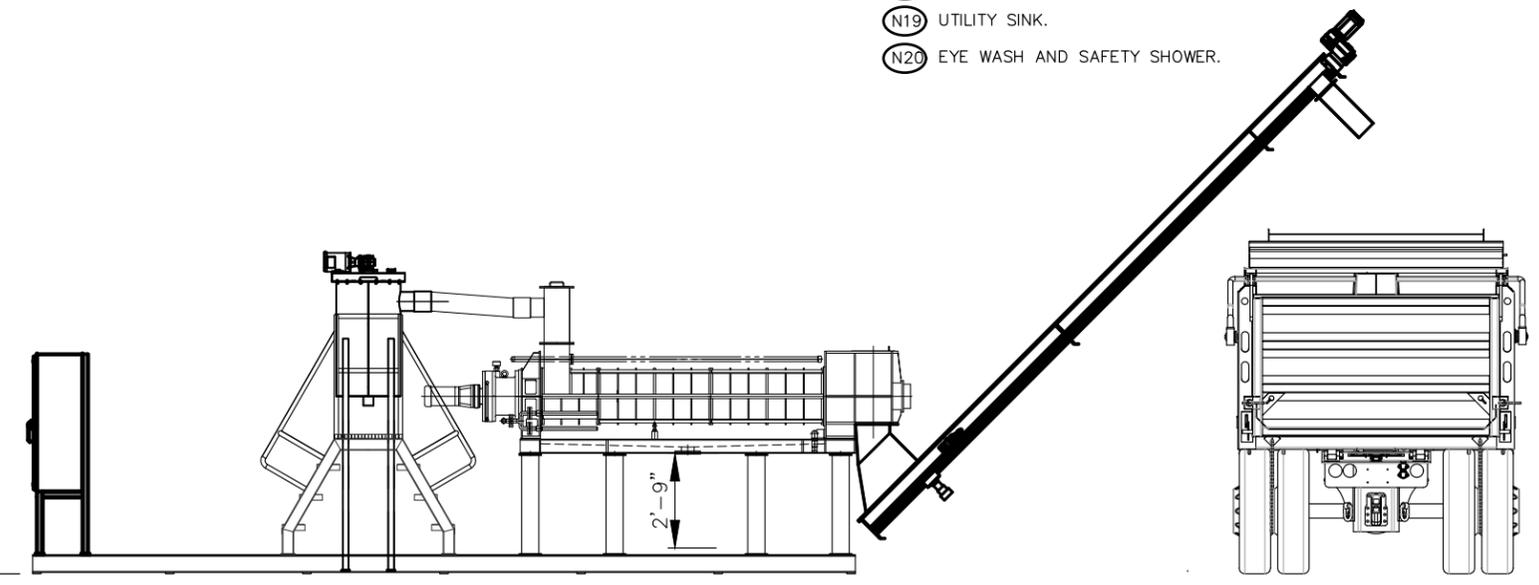
**M-1**  
SHEET  
--- OF **33**



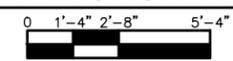
(X) SOLIDS HANDLING PLAN VIEW



- NOTES**
- (N1) ACCESS WALKWAYS AND MEZZANINES NOT SHOWN FOR CLAIRTY. SEE SHEET X.
  - (N2) SEE SHEET X FOR BUILDING PLUMBING.
  - (N3) SLUDGE DEWATERING AND THICKENING EQUIPMENT SKID, INCLUDING SLUDGE FEED PUMP, THICKENED SLUDGE PUMP, DIGESTED SLUDGE PUMP, FLOCCULATION TANKS, POLYMER BLENDING AND FEED SYSTEMS, SHAFTLESS SPIRAL SCREW SLUDGE CONVEYOR, SCREW PRESS, ROTARY DRUM THICKENER, CONTROL PANEL, AND APPURTENANCES.
  - (N4) MBR MANUFACTURER SUPPLIED CHEMICAL METERING SKID.
  - (N5) CHEMICAL METERING SKID.
  - (N6) 2" SCH 80 NONPOTABLE WATER PIPING.
  - (N7) 4" SCH 80 NONPOTABLE WATER PIPING.
  - (N8) 8" STAINLESS STEEL AIR PIPING.
  - (N9) 6" STAINLESS STEEL AIR PIPING.
  - (N11) 2" STAINLESS STEEL AIR PIPING.
  - (N12) REINFORCED CONCRETE TANK. SEE SHEET X.
  - (N13) CONNECT TO AIR DIFFUSION GRID WITH AIR DIFFUSION MANUFACTURER SUPPLIED PIPE COUPLING. AIR DIFFUSION GRID LAYOUT IS FOR ILLUSTRATIVE PURPOSES ONLY. ACTUAL LAYOUT TO BE SUBMITTED BY MBR MANUFACTURER AND REVIEWED BY ENGINEER. CONTRACTOR TO INSTALL PIPE SUPPORTS PER MANUFACTURER RECOMMENDATIONS.
  - (N14) PACKAGED UTILITY WATER BOOSTER STATION AND PIPING. SEE SHEET MBR-5.
  - (N15) 1" SCH 80 PVC NONPOTABLE WATER PIPING AND HOSE BIB.
  - (N16) CONNECT TO EQUIPMENT SKID WITH FITTINGS PER MANUFACTURER RECOMMENDATIONS.
  - (N17) 4" C900 PVC SLUDGE PIPING.
  - (N18) RELOCATED EFFLUENT SAMPLER.
  - (N19) UTILITY SINK.
  - (N20) EYE WASH AND SAFETY SHOWER.



(M-1) SKID SECTION VIEW



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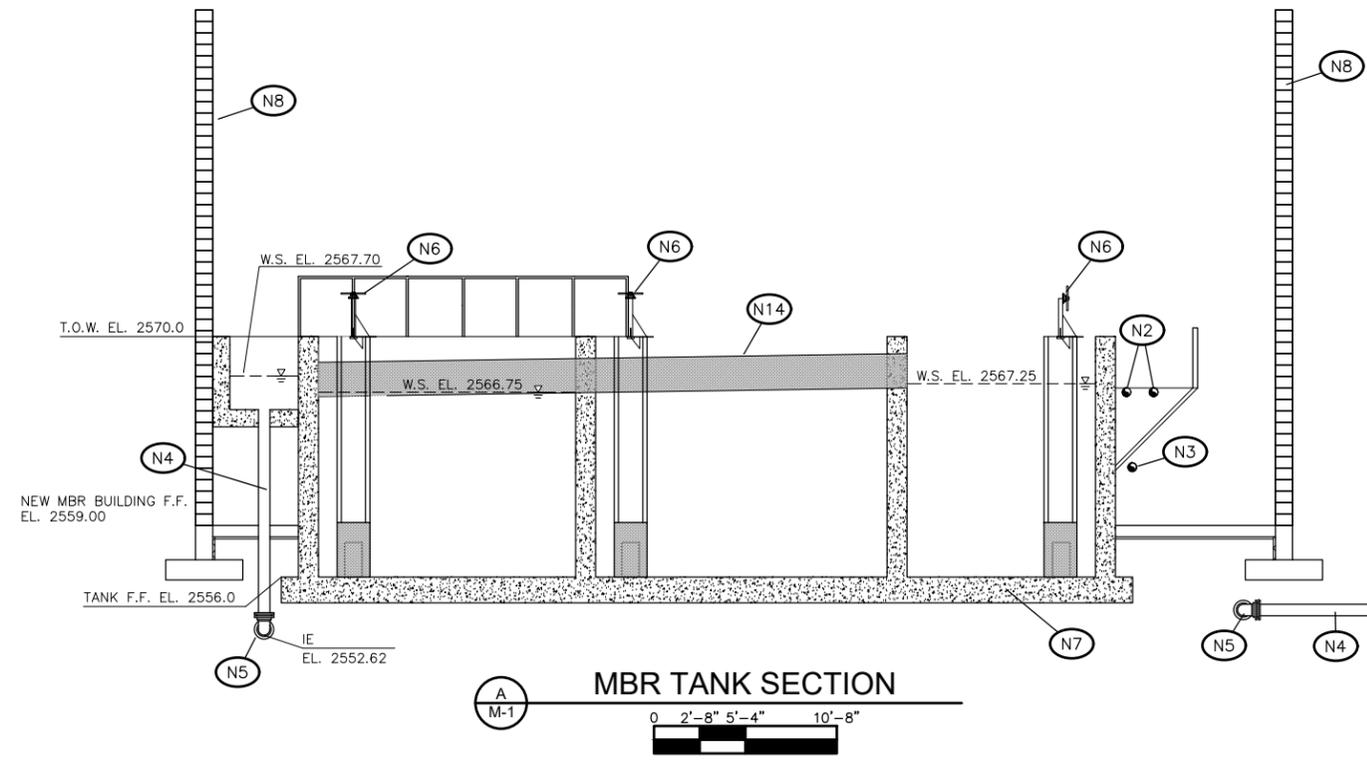
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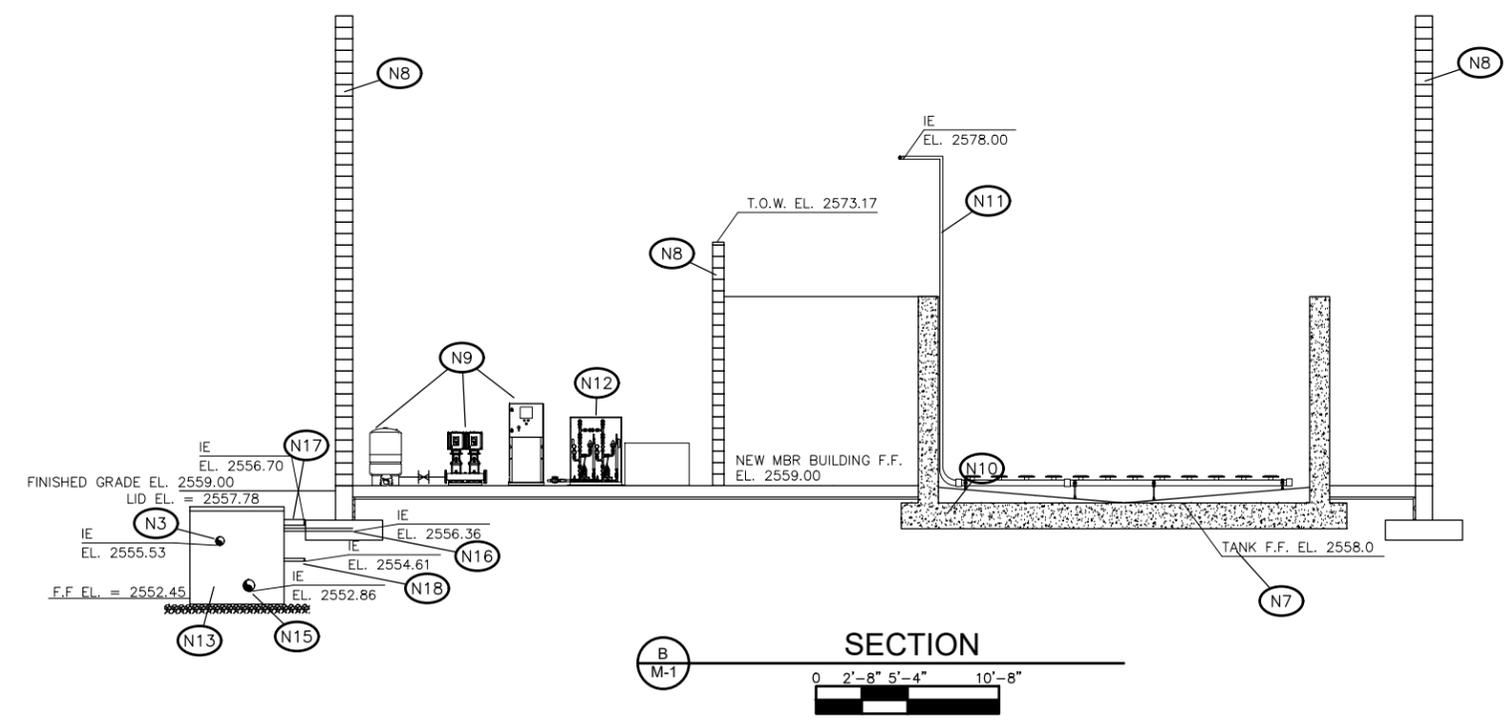
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**SNOQUALMIE PASS UTILITY DISTRICT**  
**PHASE 2B MEMBRANE BIOREACTOR WASTEWATER**  
**TREATMENT PLANT IMPROVEMENTS**  
DEWATERING ROOM PLAN VIEW

M-2  
SHEET  
OF 33



**MBR TANK SECTION**



**SECTION**

**NOTES**

- (N1) MBR MODULES NOT SHOWN FOR CLARITY.
- (N2) 6" STAINLESS STEEL AIR PIPING.
- (N3) 6" C900 PVC PERMEATE PIPING.
- (N4) 8" C900 PVC INFLUENT PIPING. SEE SHEET C-4 FOR CONTINUATION.
- (N5) 8" DI MJ 90° BEND.
- (N6) 24" X 12" SLIDE GATE WITH HANDWHEEL OPERATOR.
- (N7) REINFORCED CONCRETE TANK. SEE SHEET ----.
- (N8) CMU BLOCK WALL. SEE SHEET ----.
- (N9) PACKAGED UTILITY WATER BOOSTER STATION AND PIPING. SEE SHEET X.
- (N10) CONNECT TO AIR DIFFUSION GRID WITH AIR DIFFUSION MANUFACTURER SUPPLIED PIPE COUPLING. AIR DIFFUSION GRID LAYOUT IS FOR ILLUSTRATIVE PURPOSES ONLY. ACTUAL LAYOUT TO BE SUBMITTED BY MBR MANUFACTURER AND REVIEWED BY ENGINEER. CONTRACTOR TO INSTALL PIPE SUPPORTS PER MANUFACTURER RECOMMENDATIONS.
- (N11) 2" STAINLESS STEEL AIR PIPING.
- (N12) CHEMICAL METERING SKID.
- (N13) NONPOTABLE WATER TANK. SEE SHEET M-6.
- (N14) 12" WIDE STAINLESS STEEL RAS TROUGH. SEE SHEET ----.
- (N15) 8" C900 PVC PERMEATE PIPING FROM MBR. SEE SHEET C-5 FOR CONTINUATION.
- (N16) 2" SCH 80 PVC SAMPLER TUBING CARRIER PIPE.
- (N17) 4" C900 PVC NON-POTABLE WATER PIPE TO MBR BUILDING. SEE SHEET M-1 FOR CONTINUATION.
- (N18) 2" SCH 80 POTABLE WATER PIPE FROM MBR BUILDING. SEE SHEET M-1 FOR CONTINUATION.



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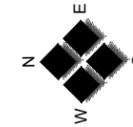
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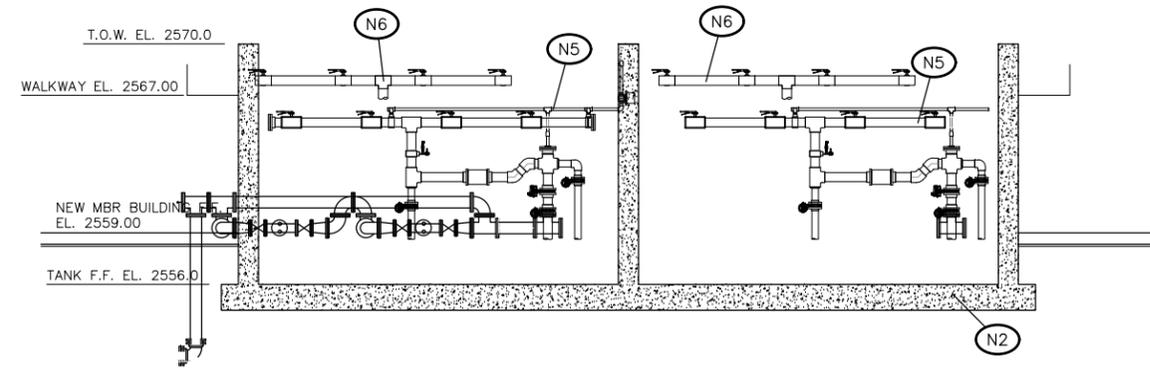
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**PHASE 2B MEMBRANE BIOREACTOR WASTEWATER TREATMENT PLANT IMPROVEMENTS**  
MBR TANK SECTION

**M-3**  
SHEET  
--- OF 33

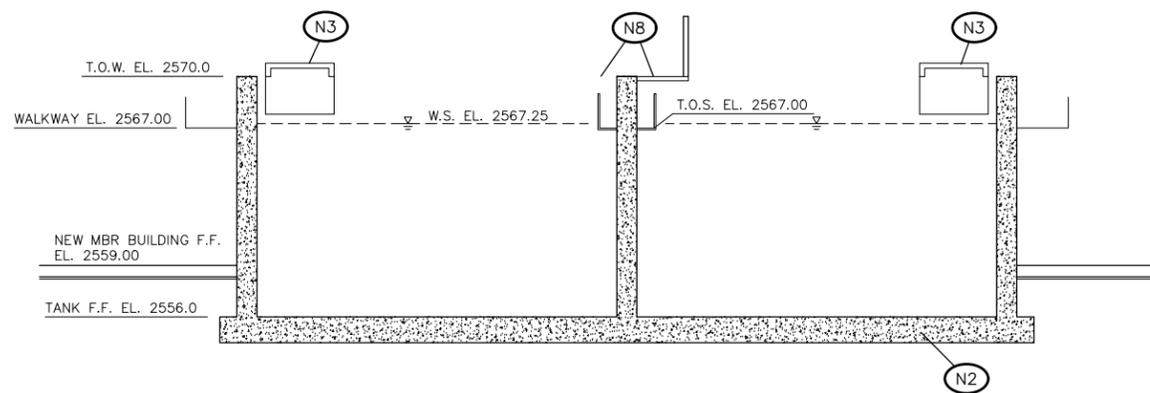


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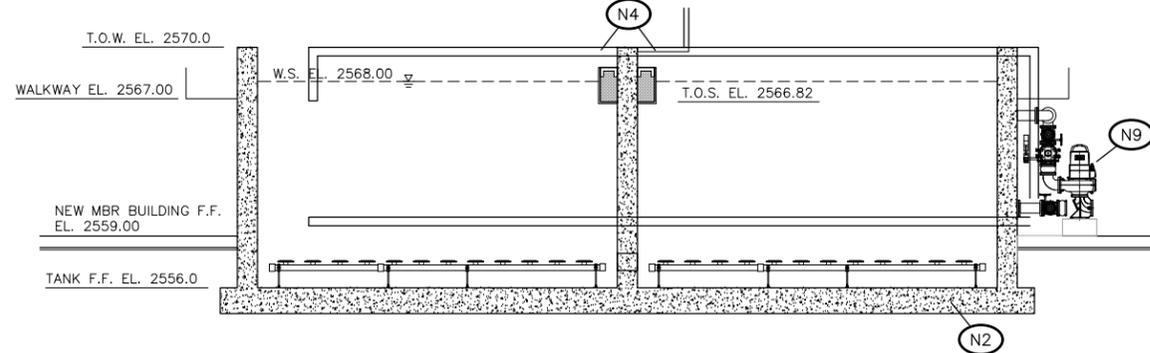
- (N2) REINFORCED CONCRETE TANK. SEE SHEET ----.
- (N3) TYPE A STOP GATE. SEE SCHEDULE ON SHEET GP-3.
- (N5) PERMEATE HEADER AND VALVING SUPPLIED BY MBR MANUFACTURER.
- (N6) AIR HEADER AND VALVING SUPPLIED BY MBR MANUFACTURER.
- (N8) 12" WIDE STAINLESS STEEL RAS TROUGH. SEE SHEET ----.
- (N9) MBR MANUFACTURER SUPPLIED FEED FORWARD PUMP.
- (N11) 6" FLG X FLG ELECTROMAGNETIC FLOW METER SUPPLIED BY MANUFACTURER. INSTALL PER MANUFACTURER RECOMMENDATIONS.
- (N12) 4" C900 PVC DRAIN PIPE. ROUTE TO FLOOR DRAIN.
- (N13) 4" C900 PIPE FROM CIP SYSTEM. SEE SHEET M-1 FOR CONTINUATION.
- (N14) TO NONPOTABLE WATER TANK.
- (N15) 10" X 6" ECCENTRIC REDUCER. FL X FL.
- (N16) 10" X 10" TEE, FL X FL.
- (N17) 10" C900 PVC PERMEATE PIPING.
- (N18) 6" 90° BEND, FL X FL.
- (N20) 10" 90° BEND, FL X FL.
- (N21) 6" X 6" GATE VALVE, FL X FL.
- (N22) UV DISINFECTION SYSTEM. INSTALL PER MANUFACTURER SPECIFICATIONS. EQUIPMENT TO BE SUPPLIED WITH MAINTENANCE ACCESS ORIENTED IN 3'O'CLOCK POSITION FROM INFLUENT CONNECTION.
- (N23) 10" FLANGE WITH 5/8" TAP AND HOSE BIB.
- (N24) UV PIPING PLAN VIEW. SEE BLOWUP THIS SHEET.
- (N25) MBR MANUFACTURER SUPPLIED SUBMERSIBLE MIXER. INSTALL PER MANUFACTURERS RECOMMENDATIONS.



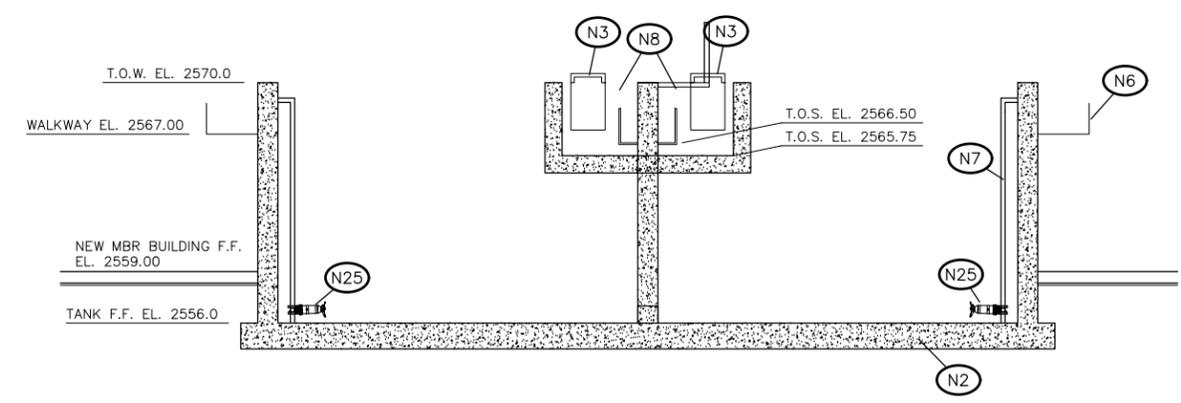
**MBR TANK SECTION**  
C  
M-1  
0 2'-8" 5'-4" 10'-8"



**MBR TANK SECTION**  
D  
M-1  
0 2'-8" 5'-4" 10'-8"



**MBR TANK SECTION**  
E  
M-1  
0 2'-8" 5'-4" 10'-8"



**MBR TANK SECTION**  
F  
M-1  
0 2'-8" 5'-4" 10'-8"



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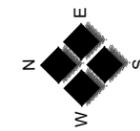


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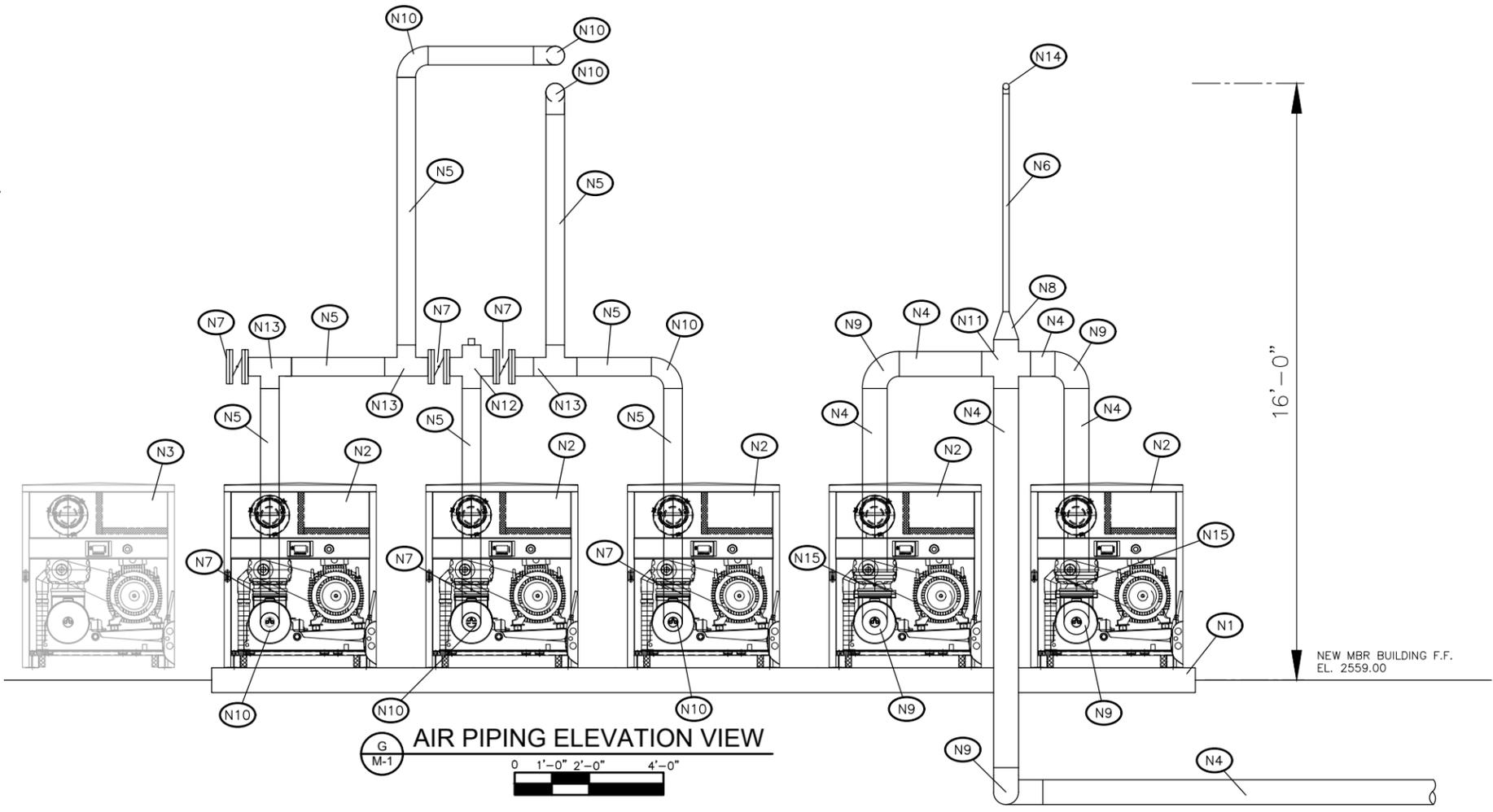
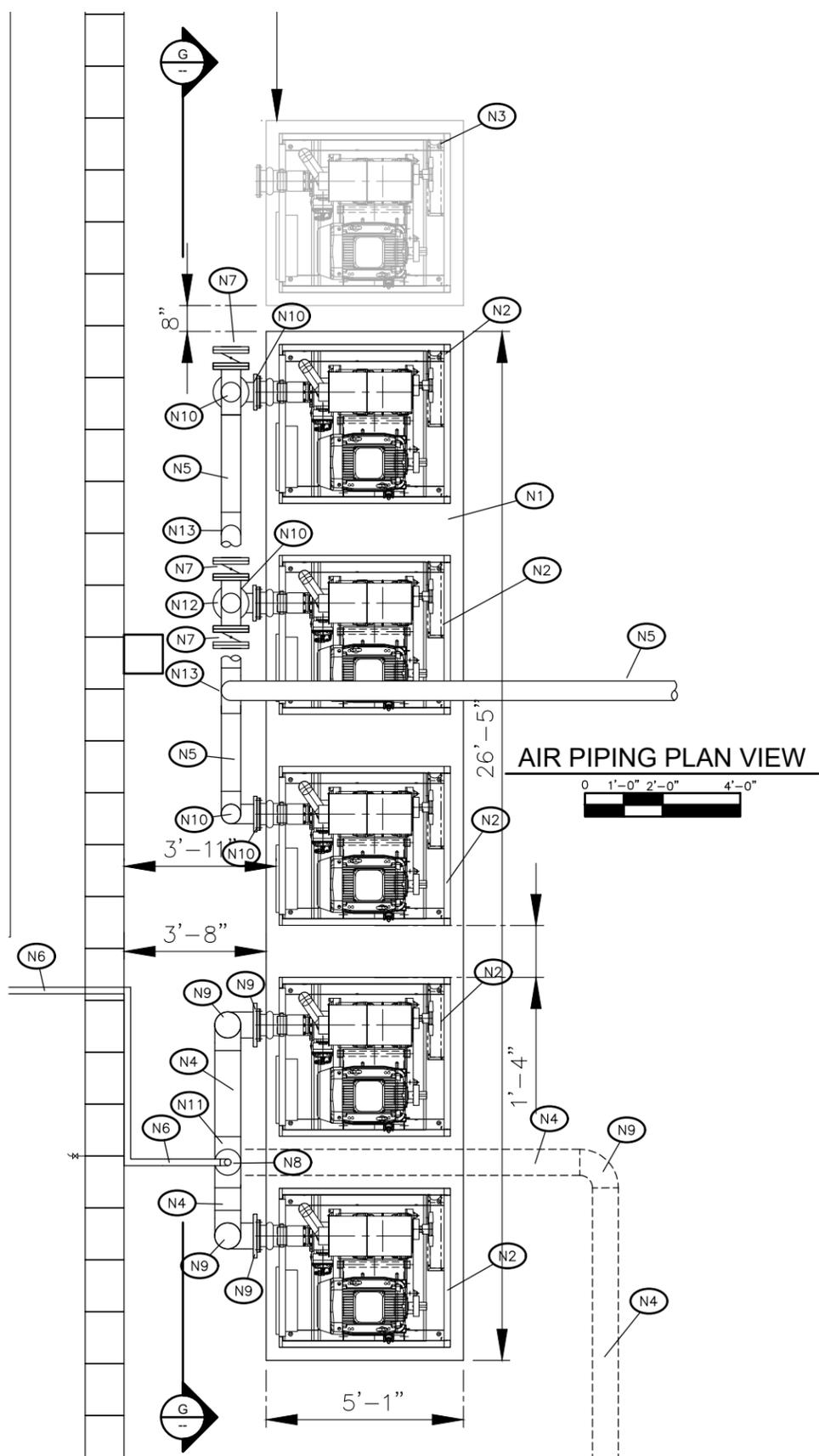
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MBR TANK SECTIONS



**NOTES**

- (N1) NEW CEMENT CONCRETE PAD. 4" ABOVE FINISH FLOOR AND 4" BELOW.
- (N2) 30 HP CENTRIFUGAL BLOWER. INSTALL PER MANUFACTURERS RECOMMENDATIONS.
- (N3) FUTURE 30 HP CENTRIFUGAL BLOWER.
- (N4) 8" STAINLESS STEEL AIR PIPING.
- (N5) 6" STAINLESS STEEL AIR PIPING.
- (N6) 2" STAINLESS STEEL AIR PIPING.
- (N7) 6" FLG X FLG BUTTERFLY VALVE.
- (N8) 8" X 2" DI WELDED REDUCER.
- (N9) 8" STAINLESS STEEL 90° WELDED ELBOW.
- (N10) 6" STAINLESS STEEL 90° WELDED ELBOW.
- (N11) 8" STAINLESS STEEL WELDED CROSS.
- (N12) 6" STAINLESS STEEL WELDED CROSS.
- (N13) 6" STAINLESS STEEL WELDED TEE.
- (N14) 2" STAINLESS STEEL 90° WELDED ELBOW.
- (N15) 8" FLG X FLG BUTTERFLY VALVE.



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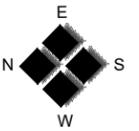


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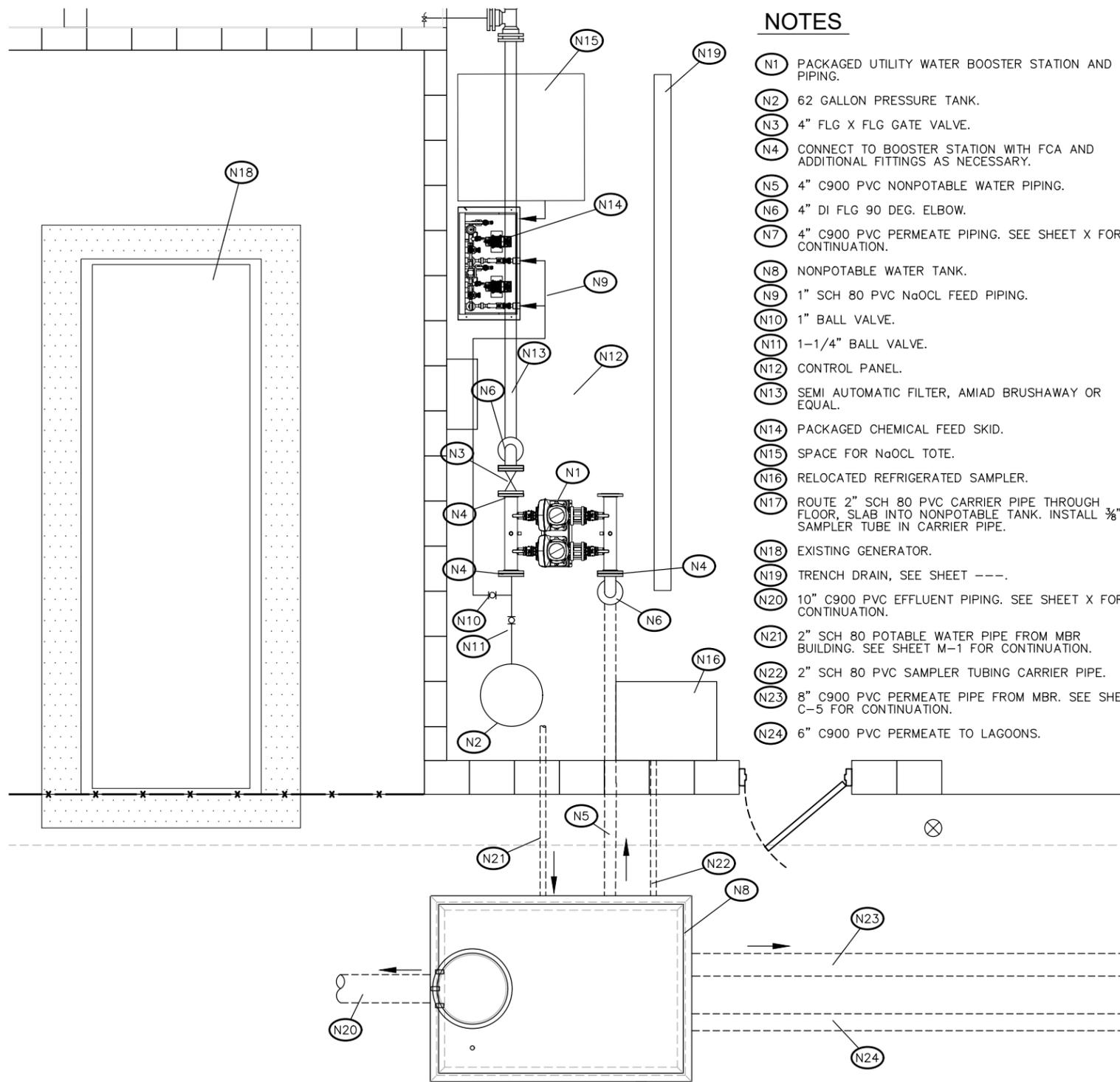
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**SNOQUALMIE PASS UTILITY DISTRICT**  
**PHASE 2B MEMBRANE BIOREACTOR WASTEWATER TREATMENT PLANT IMPROVEMENTS**  
 BLOWER AIR PIPING

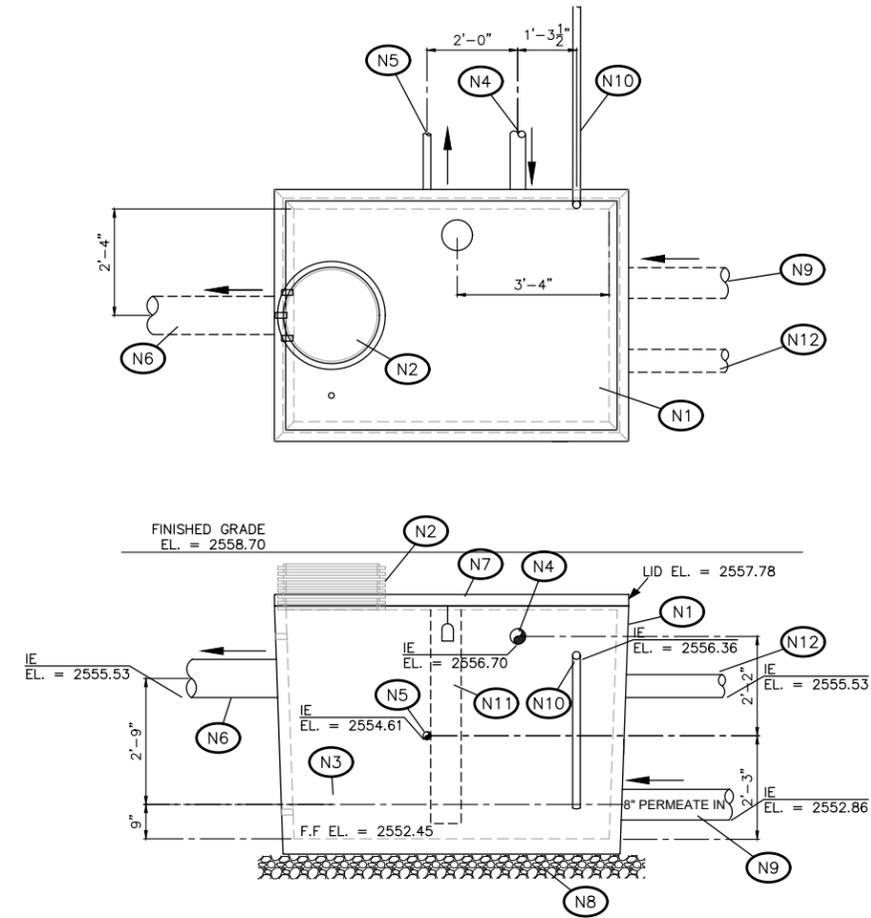
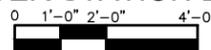


**NOTES**

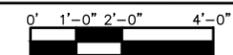
- (N1) PACKAGED UTILITY WATER BOOSTER STATION AND PIPING.
- (N2) 62 GALLON PRESSURE TANK.
- (N3) 4" FLG X FLG GATE VALVE.
- (N4) CONNECT TO BOOSTER STATION WITH FCA AND ADDITIONAL FITTINGS AS NECESSARY.
- (N5) 4" C900 PVC NONPOTABLE WATER PIPING.
- (N6) 4" DI FLG 90 DEG. ELBOW.
- (N7) 4" C900 PVC PERMEATE PIPING. SEE SHEET X FOR CONTINUATION.
- (N8) NONPOTABLE WATER TANK.
- (N9) 1" SCH 80 PVC NaOCL FEED PIPING.
- (N10) 1" BALL VALVE.
- (N11) 1-1/4" BALL VALVE.
- (N12) CONTROL PANEL.
- (N13) SEMI AUTOMATIC FILTER, AMIAD BRUSHAWAY OR EQUAL.
- (N14) PACKAGED CHEMICAL FEED SKID.
- (N15) SPACE FOR NaOCL TOTE.
- (N16) RELOCATED REFRIGERATED SAMPLER.
- (N17) ROUTE 2" SCH 80 PVC CARRIER PIPE THROUGH FLOOR, SLAB INTO NONPOTABLE TANK. INSTALL 3/8" SAMPLER TUBE IN CARRIER PIPE.
- (N18) EXISTING GENERATOR.
- (N19) TRENCH DRAIN, SEE SHEET ---.
- (N20) 10" C900 PVC EFFLUENT PIPING. SEE SHEET X FOR CONTINUATION.
- (N21) 2" SCH 80 POTABLE WATER PIPE FROM MBR BUILDING. SEE SHEET M-1 FOR CONTINUATION.
- (N22) 2" SCH 80 PVC SAMPLER TUBING CARRIER PIPE.
- (N23) 8" C900 PVC PERMEATE PIPE FROM MBR. SEE SHEET C-5 FOR CONTINUATION.
- (N24) 6" C900 PVC PERMEATE TO LAGOONS.



**PACKAGED UTILITY WATER BOOSTER STATION DETAIL**



**NON-POTABLE WATER TANK DETAIL**



**NOTES**

- (N1) 1,000 GALLON TRAFFIC-RATED PRECAST SEPTIC TANK WILBERT PRECAST 1604 OR EQUAL.
- (N2) FIBERGLASS RISER WITH TRAFFIC-RATED ACCESS COVER.
- (N3) 8" C900 PVC PERMEATE PIPE FROM MBR BUILDING. SEE SHEET M-1 FOR CONTINUATION.
- (N4) 4" C900 PVC NON-POTABLE WATER PIPE TO MBR BUILDING. SEE SHEET M-1 FOR CONTINUATION.
- (N5) 2" SCH 80 POTABLE WATER PIPE FROM MBR BUILDING. SEE SHEET M-1 FOR CONTINUATION.
- (N6) 10" C900 PVC PERMEATE PIPE TO GRAVITY OUTFALL. SEE SHEET C-4 FOR CONTINUATION.
- (N7) CONCRETE PAVING. SEE SHEET X.
- (N8) 6" MIN COMPACTED DEPTH CRUSHED SURFACING BENEATH STRUCTURE, TYP.
- (N9) 8" C900 PVC PERMEATE PIPE FROM MBR. SEE SHEET C-5 FOR CONTINUATION.
- (N10) 2" SCH 80 PVC SAMPLER TUBING CARRIER PIPE.
- (N11) POTABLE WATER CONTROL VALVE FLOAT AND STILLING WALL.
- (N12) 6" C900 PVC PERMEATE TO LAGOONS.



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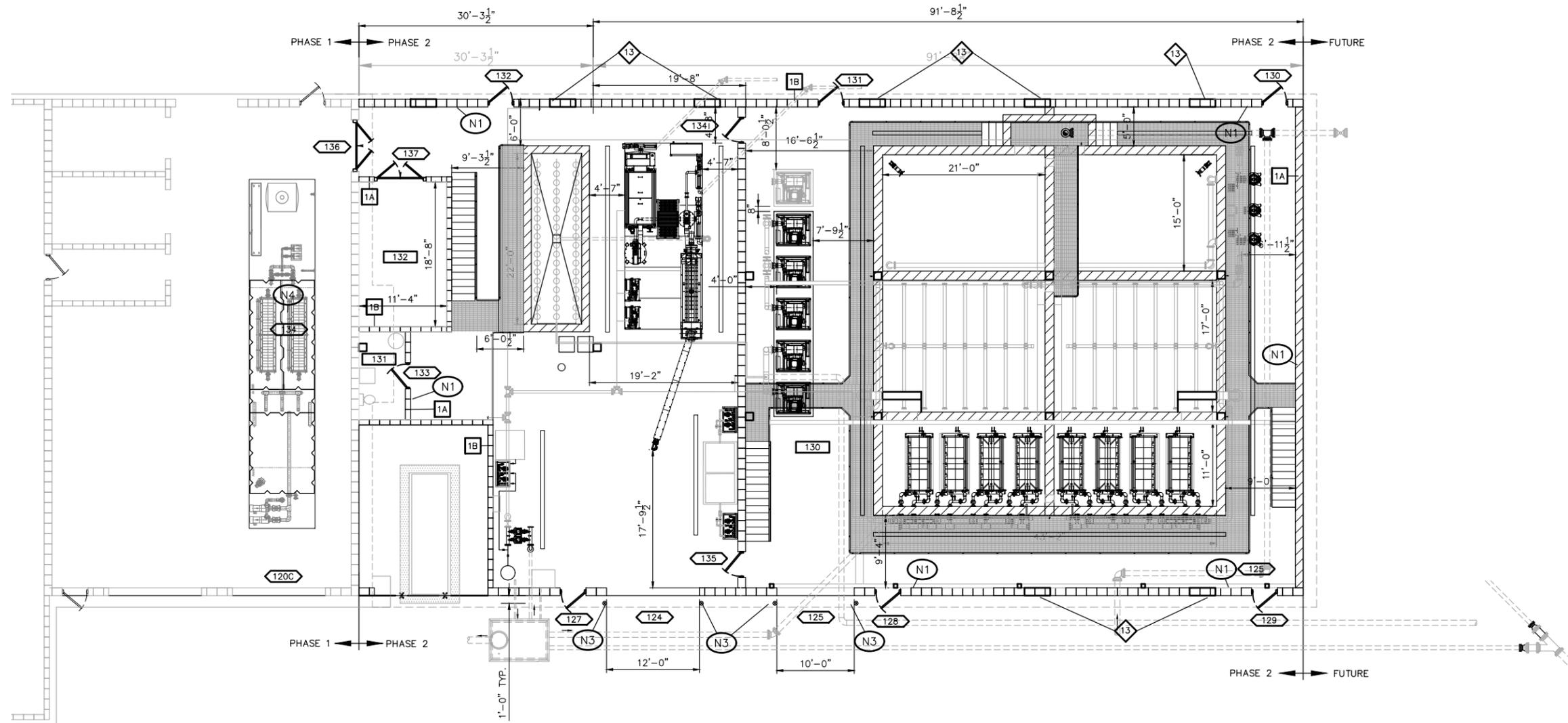
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**SNOQUALMIE PASS UTILITY DISTRICT**  
**PHASE 2B MEMBRANE BIOREACTOR WASTEWATER TREATMENT PLANT IMPROVEMENTS**  
UTILITY WATER BOOSTER STATION

**M-6**  
SHEET  
--- OF 33

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**NOTES**

- (N1) SURFACE MOUNTED FIRE EXTINGUISHER.
- (N2) HINGED SHIP LADDER, REFER TO SPECIFICATIONS AND DETAIL A13/GA-8.
- (N3) BOLLARDS, REFER TO CIVIL. 6" DI. USE BOLLARD COVER.
- (N4) BRIDGE CRANE BEAM.

**GENERAL NOTES**

- DIMENSIONS ARE TO FACE OF STRUCTURE (FACE OF STEEL FRAME, FACE OF C.M.U.WALL, ETC.) OR TO CENTERLINE OF NEW WALLS U.N.O.
- REFER TO CIVIL AND STRUCTURAL FOR ADDITIONAL INFORMATION.
- PROVIDE SOLID BACKING AT ALL WALL MOUNTED ITEMS, CASEWORK AND ACCESSORIES, INCLUDING OWNER/TENANT PROVIDED ITEMS AND ENTRY CANOPY.
- DIMENSIONS NOTED "CLEAR" OR "CLR" ARE MINIMUM REQUIRED DIMENSIONS AND CLEARANCE MUST BE ACCURATELY MAINTAINED.
- ALL HEIGHTS ARE DIMENSIONED FROM TOP OF EXISTING SLAB UNLESS NOTED "AFF" (ABOVE FINISH FLOOR).
- PROVIDE ACOUSTIC INSULATION AT WALLS, TYPICAL UNLESS OTHERWISE NOTED.
- CONTRACTOR TO PROVIDE SOUND RATED TREATMENT AT ALL OUTLET AND RECESSED FIXTURE CONNECTIONS.
- SEAL ALL SOUND-RATED CONSTRUCTIONS AIRTIGHT AT INTERSECTION SURFACES AND PENETRATIONS.
- SEE SHEET GA-3 FOR WALL TYPES
- SEE SHEET GA-5 FOR DOOR, FRAME, AND WINDOW TYPES.
- PROVIDE SILL SEALER UNDER BOTTOM TRACK AT ALL FRAMED PARTITIONS.
- ALL FRAMED INTERIOR PARTITIONS TO BE FULL-HEIGHT TO STRUCTURE ABOVE AND SEALED. GYPSUM WALLBOARD TO EXTEND FROM FLOOR TO UNDERSIDE OF ROOF STRUCTURE ABOVE ON BOTH SIDES OF WALL.



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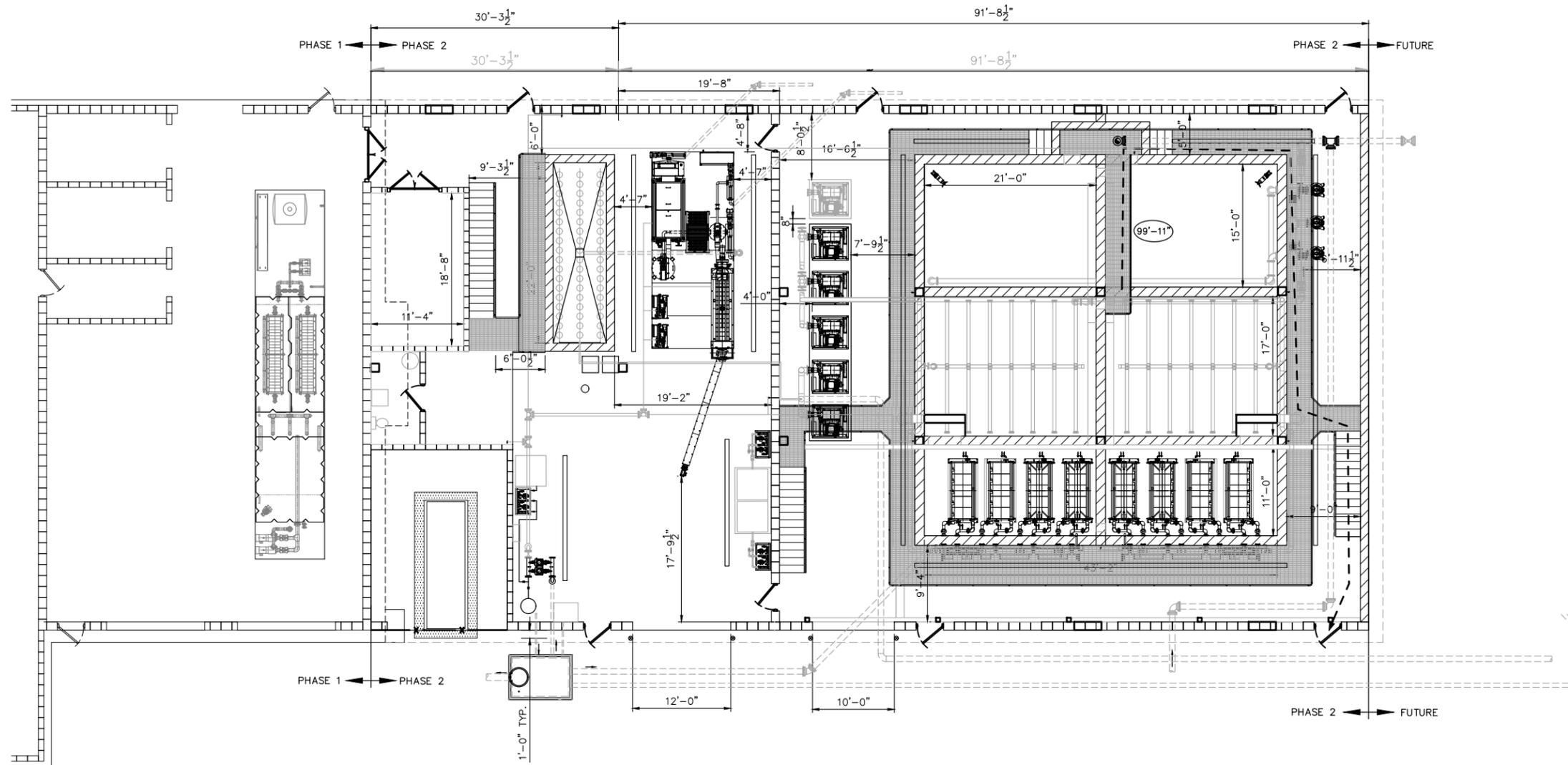
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**SNOQUALMIE PASS UTILITY DISTRICT**  
**PHASE 2B MEMBRANE BIOREACTOR WASTEWATER TREATMENT PLANT IMPROVEMENTS**  
MBR BUILDING LAYOUT

**M-7**  
SHEET  
OF 33

**LEGEND**

- LONGEST PATH OF EGRESS TRAVEL
- (50) OCCUPANT LOAD PER ROOM
- (50'-0") MAXIMUM TRAVEL DISTANCE TO EXIT
- ▶ 10 OCCUPANT LOAD AT EXTERIOR EXIT



**CODE INFORMATION (NEEDS TO BE UPDATED)**

**A. PROPOSED STRUCTURE - PHASE 2**

1 OCCUPANCY TYPES :  
NEW STRUCTURES - PHASE 2 ONLY S-2

**2 CONSTRUCTION:**

- A) TYPE II-B
- B) BUILDING AREA MBR (S-2) = 8,844.17 SF  
TOTAL NEW BUILDING AREA = 11,056.66 SF  
BASIC ALLOWABLE BUILDING AREA = 23,000 SF (PER FLOOR)
- C) FRONTAGE INCREASE PER SECTION 506
- D) ALLOWABLE NO. OF STORIES - 3 NUMBER OF STORIES SHOWN - 1
- E) ALLOWABLE BUILDING HEIGHT = 55 FT ACTUAL BUILDING HEIGHT = 33'-6"

B. FIRE SPRINKLERS  
A) NO

**C. EXISTING**

A) MAXIMUM EXIST ACCESS TRAVEL DISTANCE, IBC TABLE 1017.2 OCCUPANCY-GROUP B, WITHOUT AUTOMATIC SPRINKLERS 200 FEET GROUP S-2, WITHOUT AUTOMATIC SPRINKLERS 300 FEET

B) MAXIMUM DEAD END CORRIDOR LENGTH, IBC 1020.4 OCCUPANCY-GROUP B, 20 FEET GROUP S-2, 20 FEET  
C) MINIMUM WIDTH OF EXIT CORRIDORS

**D. FIRE SEPARATIONS**

A) REQUIRED FIRE SEPARATIONS IFC TABLE 508.4 FIRE SEPARATIONS - NO SEPARATION REQUIRED

**E. EXTERIOR WALLS & OPENINGS**

A) PER IBC TABLE 601 AND 602 - NO PROTECTION REQUIRED  
B) PER IBC TABLE 705.8 - NO PROTECTION REQUIRED

**F. PORTABLE FIRE EXTINGUISHERS**

A) PER IFC TABLE 906.3 (2) - TYPE 2A FIRE EXTINGUISHERS ARE REQUIRED IN BUILDING.  
B) MAXIMUM TRAVEL DISTANCE BETWEEN EXTINGUISHERS TO BE 75 FEET.

**G. OCCUPANT LOAD**

A) TOTAL OCCUPANT LOAD FOR BUILDING (PER TABLE 1004.1.1):  
'B' OFFICE AREA (1:100) = 30  
S-2' EQUIPMENT AREA (1:300) = 9

B) CALCULATED DOOR WIDTH = 39 X 0.2 = 8' PRESCRIPTIVE DOOR WIDTH = 32"  
C) EXIT WIDTH PROVIDED OFFICE AREA = 34" EXIT WIDTH PROVIDED MBR AREA = 34" + 34" = 68"

**H. NUMBER OF EXITS**

B) PER TABLE 1006.3.2(2) - OCCUPANT LOAD LESS THAN 50 EXITS REQUIRED = 1 - EXITS PROVIDED = 1 OFFICE AREA PER TABLE 1006.3.2(2) OCCUPANT LOAD LESS THAN 29 EXITS REQUIRED = 1 - EXITS PROVIDED = 2 MBR AREA

I. ROOF COVERING A) PER TABLE 1505.1 - MINIMUM ROOF COVERING CLASSIFICATION C.

J. PARKING SPACES REQUIRED (STAFF CAR POOLS TO WORK, PROVIDING, 4 NEW STALLS IN FRONT OF BUILDING FOR ACCESSIBLE REQUIREMENTS AND VISITORS.) FLOOR AREA = 5,760 SF / 400 = 15 PARKING SPACES: ACCESSIBLE PARKING STALL = 1. STANDARD PARKING STALLS = 14.

STAFF PARKING HANDLED BY FACILITY PARKING, GUEST PARKING HANDLED BY 3 STANDARD STALL AND 1 ACCESSIBLE STALL AT FRONT OF BUILDING.

**K. NUMBER OF PLUMBING FIXTURES**

A) PER TABLE 2902.1 - MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES:

B MAIN FLOOR (30 OCCUPANTS 1:25 & 1:40) WATERCLOSETS (M) = 1 - WATERCLOSETS (W) = 1. LAVATORIES (M) = 1 - LAVATORIES (W) = 1.

PROVIDE TWO UNI-SEX RESTROOMS TO MEET OWNERS NEEDS BASED ON 30 EMPLOYEES AND I.B.C. CODE SECTION 2902.2.1.



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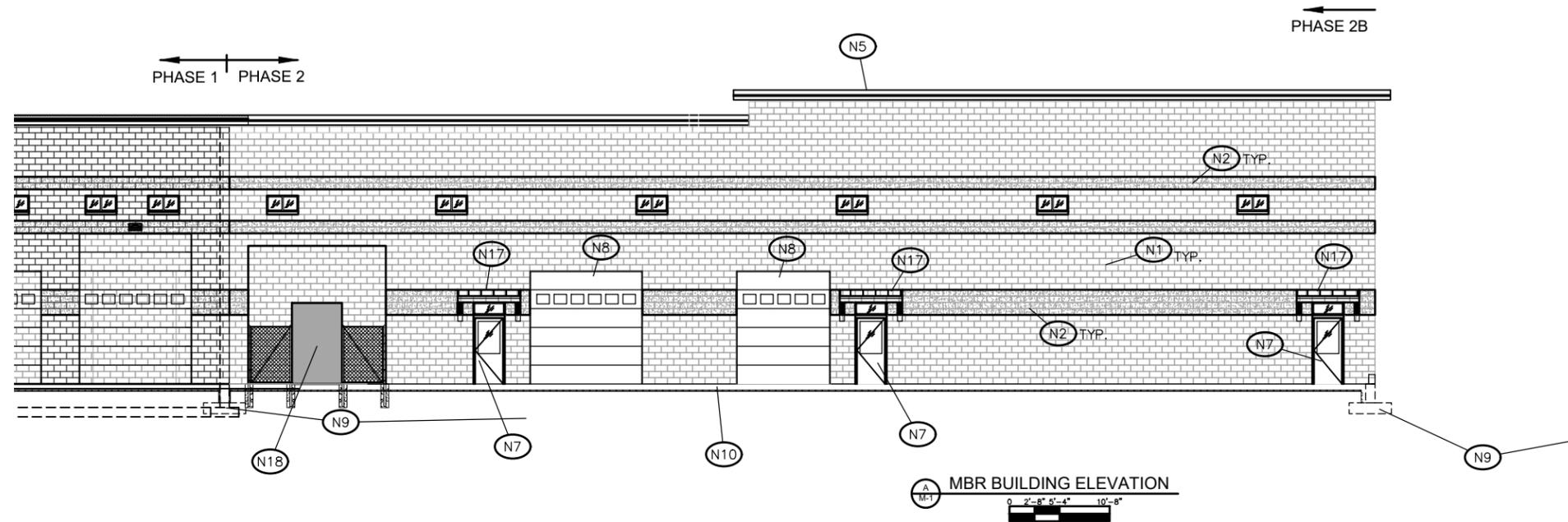
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**SNOQUALMIE PASS UTILITY DISTRICT**  
**PHASE 2B MEMBRANE BIOREACTOR WASTEWATER TREATMENT PLANT IMPROVEMENTS**  
MBR BUILDING EXITING PLAN

**M-8**  
SHEET  
OF 33



**NOTES**

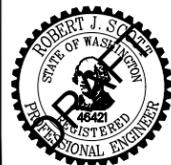
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- (N2) CMU 'ACCENT' - INSULATED 8" AND 12" SPLIT FACED.
- (N3) INTAKE LOUVRE AND DAMPER, SEE SHEET XX, CONTRACTOR TO COORDINATE LOCATION AND REQUIRED OPENING SIZE.
- (N4) EXHAUST LOUVRE, SEE SHEET XX. CONTRACTOR TO COORDINATE LOCATION AND REQUIRED OPENING SIZE.
- (N5) TPO MEMBRANE MAIN ROOF SEE ROOFING PLAN XX.
- (N6) FACTORY FINISHED FASCIA TRIM WRAP. SEE XX, SIMILAR TO DTAIL X, X, AND X.
- (N7) HOLLOW METAL DOOR AND FRAME. SEE SCHEDULE ON XX. SEE XX, DETAIL X, X, AND X.
- (N8) FACTORY FINISHED OVERHEAD ROLL-UP DOOR. SEE SCHEDULE ON XX, XX, DETAIL X, X, AND X.
- (N9) CONCRETE FOUNDATION WALL AND FOOTING, TYP.
- (N10) CONCRETE SIDEWALK, TYP.
- (N11) PROTECTIVE BOLLARD, TYP.
- (N12) EXTERIOR LIGHT FIXTURE, TYP. SEE ELECTRICAL PLANS.
- (N13) EXTERIOR RECEPTACLE, TYP. SEE ELECTRICAL PLANS.
- (N14) EXTERIOR ALARM HORN AND/OR STROBE, SEE ELECTRICAL PLANS.
- (N15) LEL GAS TRANSMITTER AND DISPLAY. SEE ELECTRICAL PLANS.
- (N16) EXTERIOR LIGHT SWITCH FOR INTERIOR LIGHTS. SEE ELECTRICAL PLANS.
- (N17) ENTRY DOOR CANOPY, TYPICAL. SEE SHEET XX.
- (N18) EXISTING STANDBY GENERATOR.

**GENERAL NOTES**

1. SEE SHEETS XX AND XX FOR GENERAL STRUCTURAL NOTES, ABBREVIATIONS, AND LEGEND.
2. SEE FOUNDATION PLAN XX AND TPICAL CMU DETAILS ON SHEET XX FOR ADDITIONAL REINFORCEMENT REQUIREMENTS.
3. THIS DRAWING MAY NOT INDICATE ALL REQUIRED PENETRATIONS THROUGH THE WALLS (NO PENETRATIONS ALLOWED THROUGH ROOF). ALL PENETRATIONS ARE REQUIRED TO HAVE APPROPRIATE DETAILING PER THE MANUFACTURER'S STANDARDS AND THE ENGINEERS DETAILS TO COMPLETE THE WALL SYSTEMS. THE CONTRACTOR IS RESPONSIBLE TO VERIFY AND COORDINATE MECHANICAL AND ELECTRICAL PORTIONS OF THE WORK FOR ADDITIONAL REQUIREMENTS AND EQUIPMENT.
4. SEAL AROUND ALL PENETRATIONS IN EXTERIOR WALL.



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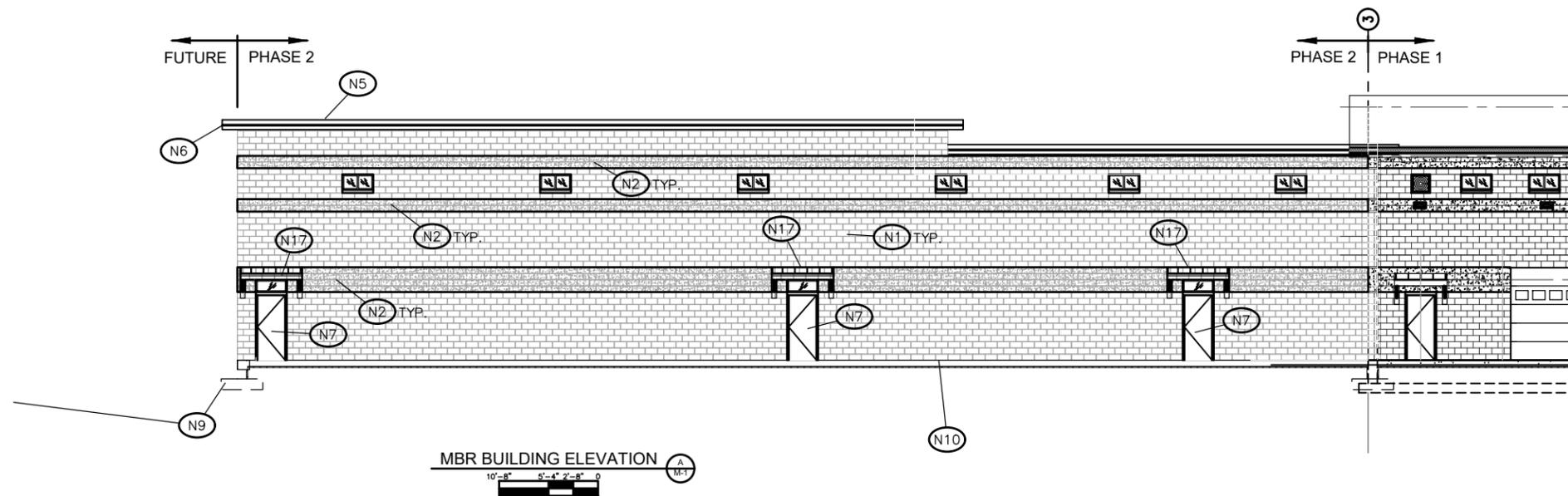


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**SNOQUALMIE PASS UTILITY DISTRICT**  
**PHASE 2B MEMBRANE BIOREACTOR WASTEWATER TREATMENT PLANT IMPROVEMENTS**  
MBR BUILDING EXTERIOR ELEVATION FRONT VIEW

M-9  
SHEET  
--- OF 33



**NOTES**

- (N1) CMU 'FIELD' – INSULATED 8" AND 12" SMOOTH FACED.
- (N2) CMU 'ACCENT' – INSULATED 8" AND 12" SPLIT FACED.
- (N3) INTAKE LOUVRE AND DAMPER, SEE SHEET XX, CONTRACTOR TO COORDINATE LOCATION AND REQUIRED OPENING SIZE.
- (N4) EXHAUST LOUVRE, SEE SHEET XX. CONTRACTOR TO COORDINATE LOCATION AND REQUIRED OPENING SIZE.
- (N5) TPO MEMBRANE MAIN ROOF SEE ROOFING PLAN XX.
- (N6) FACTORY FINISHED FASCIA TRIM WRAP. SEE XX, SIMILAR TO DTAIL X, X, AND X.
- (N7) HOLLOW METAL DOOR AND FRAME. SEE SCHEDULE ON XX. SEE XX, DETAIL X, X, AND X.
- (N8) FACTORY FINISHED OVERHEAD HIGH LIFT DOOR. SEE SCHEDULE ON XX, XX, DETAIL X, X, AND X.
- (N9) CONCRETE FOUNDATION WALL AND FOOTING, TYP.
- (N10) CONCRETE SIDEWALK, TYP.
- (N11) PROTECTIVE BOLLARD, TYP.
- (N12) EXTERIOR LIGHT FIXTURE, TYP. SEE ELECTRICAL PLANS.
- (N13) EXTERIOR RECEPTACLE, TYP. SEE ELECTRICAL PLANS.
- (N14) EXTERIOR ALARM HORN AND/OR STROBE, SEE ELECTRICAL PLANS.
- (N15) LEL GAS TRANSMITTER AND DISPLAY. SEE ELECTRICAL PLANS.
- (N16) EXTERIOR LIGHT SWITCH FOR INTERIOR LIGHTS. SEE ELECTRICAL PLANS.
- (N17) ENTRY DOOR CANOPY, TYPICAL. SEE SHEET XX.

**GENERAL NOTES**

1. SEE SHEETS XX AND XX FOR GENERAL STRUCTURAL NOTES, ABBREVIATIONS, AND LEGEND.
2. SEE FOUNDATION PLAN XX AND TPICAL CMU DETAILS ON SHEET XX FOR ADDITIONAL REINFORCEMENT REQUIREMENTS.
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4. SEAL AROUND ALL PENETRATIONS IN EXTERIOR WALL.



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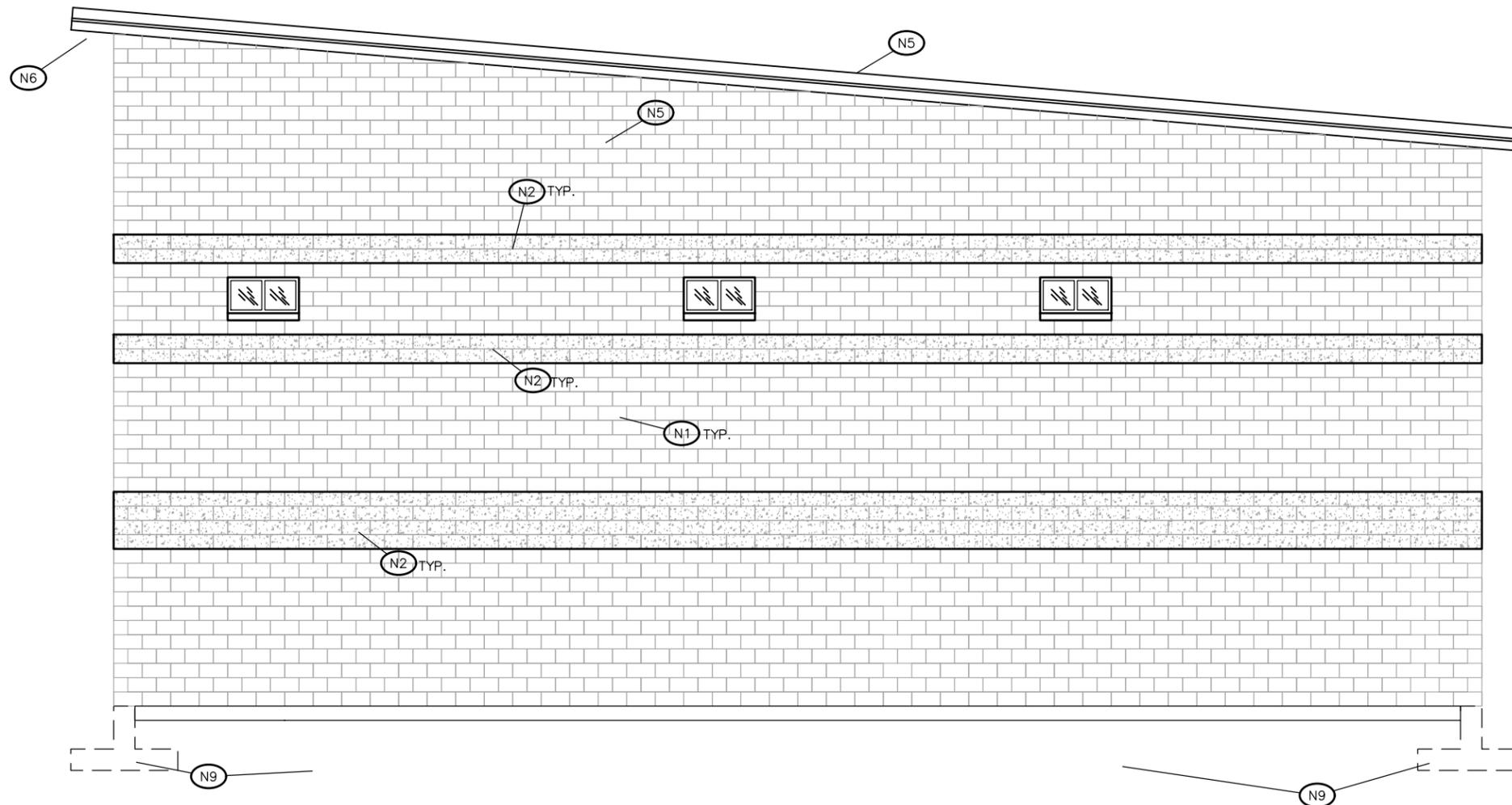
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**SNOQUALMIE PASS UTILITY DISTRICT**  
**PHASE 2B MEMBRANE BIOREACTOR WASTEWATER TREATMENT PLANT IMPROVEMENTS**  
MBR BUILDING EXTERIOR ELEVATION BACK VIEW

M-10  
SHEET  
--- OF 33



E M-1
**MBR BUILDING ELEVATION**

0    2'-8"    5'-4"    10'-8"

**NOTES**

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- (N10) CONCRETE SIDEWALK, TYP.
- (N11) PROTECTIVE BOLLARD, TYP.
- (N12) EXTERIOR LIGHT FIXTURE, TYP. SEE ELECTRICAL PLANS.
- (N13) EXTERIOR RECEPTACLE, TYP. SEE ELECTRICAL PLANS.
- (N14) EXTERIOR ALARM HORN AND/OR STROBE, SEE ELECTRICAL PLANS.
- (N15) LEL GAS TRANSMITTER AND DISPLAY. SEE ELECTRICAL PLANS.
- (N16) EXTERIOR LIGHT SWITCH FOR INTERIOR LIGHTS. SEE ELECTRICAL PLANS.
- (N17) ENTRY DOOR CANOPY, TYPICAL. SEE SHEET XX.

**GENERAL NOTES**

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**SNOQUALMIE PASS UTILITY DISTRICT**  
**PHASE 2B MEMBRANE BIOREACTOR WASTEWATER TREATMENT PLANT IMPROVEMENTS**  
 MBR BUILDING EXTERIOR ELEVATION SIDE VIEW

M-11

SHEET

OF 33

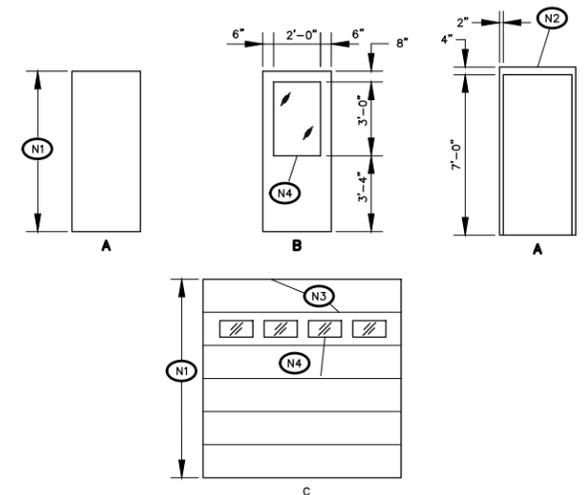
DOOR AND WINDOW SCHEDULE													
DOOR NUMBER	DOORS							FRAME				HARDWARE GROUP	REMARKS
	SIZE			MATL.	TYPE	GLASS	SWING	MATL.	TYPE	DETAILS			
	WIDTH	HEIGHT	THICK.							JAMB	HEAD		
D-01	12'-0"	12'-0"	-	SEC.	C	-	-	STL.	-	3.4/GA-1	3.4/GA-1	-	AUTOMATIC OPERATION. GLASS FOR SECTIONAL DOOR VISION LITES SHALL BE AS SPECIFIED IN SECTION 08 36 13.
D-02	3'-0"	7'-0"	1-3/4"	H.M.	B	GL-2	LHR	H.M.	A	3.5/GA-1	3.5/GA-1	HW-1	-----
D-03	3'-0"	7'-0"	1-3/4"	H.M.	B	GL-2	LHR	H.M.	A	3.5/GA-1	3.5/GA-1	HW-1	-----

NOTE: SCHEDULES ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE FROM THE PLANS, SECTIONS, ISOMETRICS, DETAILS, AND SPECIFICATIONS, THE REQUIRED QUANTITY AND QUALITY OF EQUIPMENT AND MATERIALS TO COMPLETE THE PROJECT.

**1.5 DOOR & WINDOW SCHEDULE**  
NOT TO SCALE

NOTES

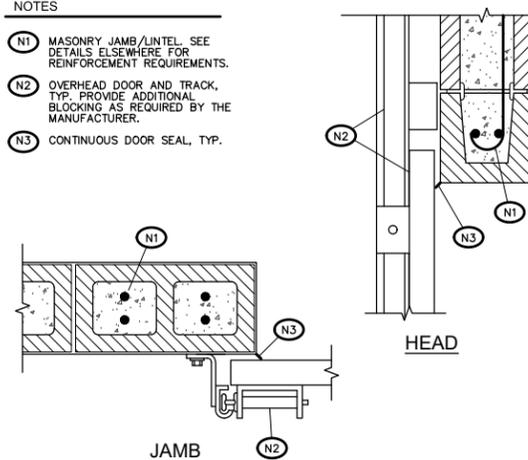
- N1 SEE DOOR SCHEDULE FOR HEIGHT AND WIDTH OF DOOR/WINDOW.
- N2 HOLLOW METAL FRAME, SEE DOOR SCHEDULE FOR HEIGHT AND WIDTH.
- N3 SECTION PANELS.
- N4 VISION LITE.



**2.5 DOOR & FRAME TYPES**  
NOT TO SCALE

NOTES

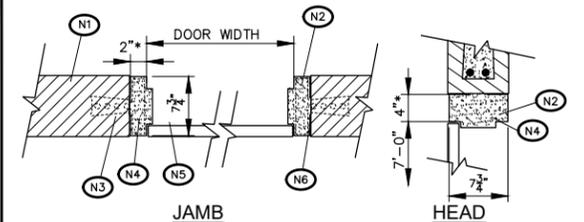
- N1 MASONRY JAMB/LINTEL, SEE DETAILS ELSEWHERE FOR REINFORCEMENT REQUIREMENTS.
- N2 OVERHEAD DOOR AND TRACK, TYP. PROVIDE ADDITIONAL BLOCKING AS REQUIRED BY THE MANUFACTURER.
- N3 CONTINUOUS DOOR SEAL, TYP.



**3.4 OVERHEAD DOOR HEAD & JAMB, MASONRY WALLS**  
NOT TO SCALE

NOTES

- N1 8" CMU WALL, TYP. SEE DETAILS ELSEWHERE FOR REINFORCEMENT REQUIREMENTS.
- N2 HOLLOW METAL DOOR FRAME.
- N3 MASONRY DOOR FRAME ANCHOR, SEE SPECIFICATIONS.
- N4 GROUT DOOR FRAME SOLID, TYP.
- N5 HOLLOW METAL DOOR, TYP.
- N6 SEALANT, TYP.



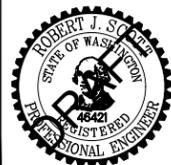
**3.5 HEAD & JAMB, MASONRY WALLS**  
NOT TO SCALE

NOTE: CONTRACTOR TO VERIFY REQUIRED MASONRY OPENINGS FOR DOORS SUPPLIED FOR THIS PROJECT PRIOR TO START OF WORK.

\* TYPICAL DOOR FRAME DIMENSIONS, SEE DOOR AND FRAME TYPE DETAIL THIS SHEET FOR HEAD AND JAMB DIMENSIONS OF EACH DOOR FRAME TYPE.



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FILE NAMES: DRWNS-Gen Det - 2B.dwg	
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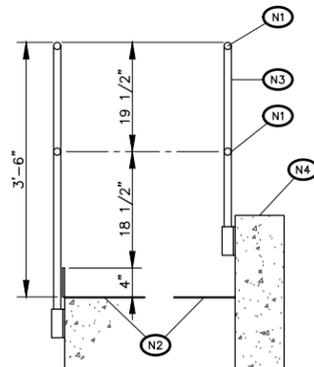
**SNOQUALMIE PASS UTILITY DISTRICT**  
**PHASE 2A MEMBRANE BIOREACTOR WASTEWATER TREATMENT PLANT IMPROVEMENTS**  
ARCHITECTURAL DETAILS

**GA-1**  
SHEET  
----- OF 33

NOTES

- (N1) PIPE RAILINGS.
- (N2) WALKING SURFACE.
- (N3) UPRIGHTS. SEE OTHER DETAILS FOR MAXIMUM SPACING.
- (N4) TOP OF CONCRETE WALL AT TANK OR OTHER CHANGE OF ELEVATION OF 30" OR MORE.

NOTE:  
USE PROFILE TYPE B UNLESS NOTED OTHERWISE. USE PROFILE TYPE C WHERE THE CONCRETE WALL FORMS THE "TOEBOARD" AND THE WALKING SURFACE IS LOWER THAN THE TOP OF THE WALL OF THE TANK OR OTHER CHANGE IN ELEVATION.

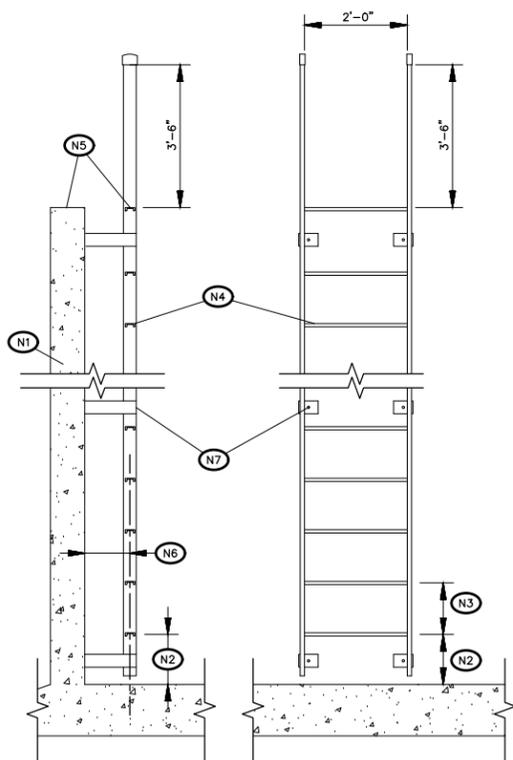


PROFILE B PROFILE C

1.3 TYPICAL GUARDRAIL PROFILES  
NOT TO SCALE

NOTES

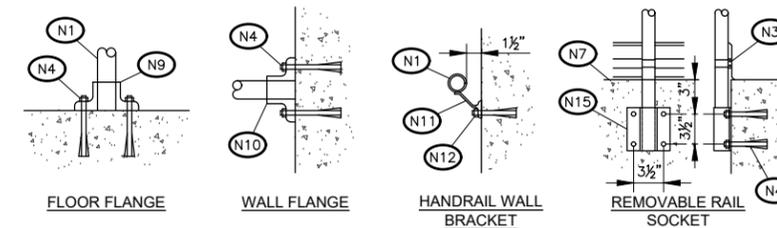
- (N1) CONCRETE WALL, TYPICAL.
- (N2) 6" MIN. TO 18" MAX. TO BOTTOM RUNG OF LADDER.
- (N3) ALL RUNGS TO BE 12" O.C. SPACING.
- (N4) RUNGS: 1-1/2" MIN. WIDTH.
- (N5) TOP OF PLATFORM OR WALKING SURFACE IS TO BE LEVEL WITH TOP RUNG OF LADDER.
- (N6) 7" MINIMUM TOE CLEARANCE FROM CENTERLINE OF RUNG TO OBSTRUCTION.
- (N7) 3/8" X 3" BENT PLATE WITH 3" LEG AT CONCRETE AT 5'-0" MAXIMUM SPACING. WELD TO LADDER SIDE RAIL. FASTEN TO CONCRETE WITH 1/2" STAINLESS STEEL ANCHORS.



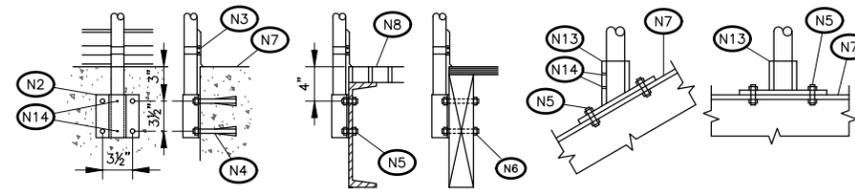
3.3 FIXED ALUMINUM ACCESS LADDER  
NOT TO SCALE

NOTES

- (N1) 1 1/2" ALUMINUM PIPE RAIL TYPICAL.
- (N2) SIDE MOUNT FLANGE.
- (N3) TOE BOARD WITH CLAMPING ASSEMBLY.
- (N4) CONCRETE: 3/8" x 5" EXPANSION OR EPOXY GROUTED ANCHORS.
- (N5) METAL: 3/8" MACHINE BOLTS.
- (N6) WOOD: 3/8" MACHINE BOLTS WITH LARGE FLAT WASHERS ON THE WOOD SIDE.
- (N7) TOP FLANGE OF STEEL CHANNEL OR TOP OF CONCRETE.
- (N8) TOP OF GRATING.
- (N9) HEAVY DUTY FLOOR FLANGE.
- (N10) WALL END FITTING.
- (N11) MANUFACTURED WALL BRACKET.
- (N12) 3/8" x 5" SLEEVE ANCHOR.
- (N13) STAIR STRINGER BASE.
- (N14) SET SCREW, TYPICAL.
- (N15) SIDE MOUNT FLANGE WITHOUT SET SCREWS AND ALUMINUM FIXED BOTTOM PLUG WITH WEEP HOLE. FIELD LOCATED AND DRILL THROUGH BOLT HOLE IN VERTICAL RAIL POST. RAIL SHALL FIT SNUG IN REMOVABLE BRACKET IN ORDER TO MINIMIZE RAIL MOVEMENT WHEN IN PLACE.



FLOOR FLANGE WALL FLANGE HANDRAIL WALL BRACKET REMOVABLE RAIL SOCKET



SIDE MOUNT BRACKETS TOP FLANGE BRACKETS

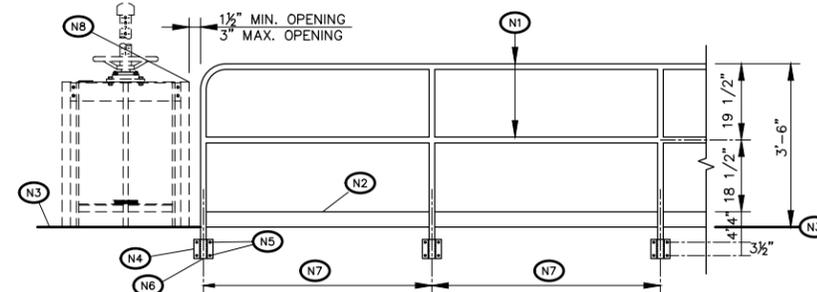
2.5 TYPICAL ALUMINUM HANDRAIL & GUARDRAIL SUPPORT CONNECTIONS  
NOT TO SCALE

NOTES

- (N1) GUARDRAIL FROM 1 1/2" ALUMINUM TUBING (1.90" O.D.).
- (N2) 4" KICK PLATE WITH CLAMPING ASSEMBLY. EXTRUDED STIFFENED SHAPE OR REINFORCED TO MAINTAIN STRAIGHT LINE.
- (N3) FINISHED FLOOR OR WALKING SURFACE.
- (N4) ALUMINUM SIDE MOUNT FLANGE WITH SET SCREWS, TYPICAL.
- (N5) 3/8" MACHINE BOLTS AT METAL, 3/8" x 5" EXPANSION OR EPOXY GROUTED ANCHORS AT CONCRETE. (4) EACH MOUNTING BRACKET.
- (N6) PROVIDE ALUMINUM END CAP AT BOTTOM OF RAIL POSTS.
- (N7) MAXIMUM SPACING 5'-0" BETWEEN VERTICAL SUPPORTS.
- (N8) EDGE OF WALL, RAIL OR EQUIPMENT.

GENERAL NOTES

1. ALL HANDRAILS, GUARDRAILS AND POSTS ARE TO BE ALUMINUM.
2. GUARDRAILS REQUIRED BY THE INTERNATIONAL BUILDING CODE, OR BY OSHA ARE TO BE PROVIDED AND INSTALLED, WHETHER SHOWN ON THE DRAWINGS OR NOT.
3. PROVIDE SUP JOINTS IN RAILINGS AT INTERVALS NOT TO EXCEED 50 FEET.
4. BENDS AND CORNERS IN RAILINGS ARE TO BE BENT ON A CURVE, NOT MITERED.
5. RAILS ARE TO BE FREE FROM SHARP CORNERS OR BURRS. GRIND ALL WELDS SMOOTH. RIVETS SHALL NOT HAVE ANY PROTRUDING SHARP EDGES.



3.5 TYPICAL GUARDRAIL ELEVATION  
NOT TO SCALE



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SNOQUALMIE PASS UTILITY DISTRICT  
PHASE 2A MEMBRANE BIOREACTOR WASTEWATER  
TREATMENT PLANT IMPROVEMENTS  
ARCHITECTURAL DETAILS

GA-2  
SHEET  
OF 33

DOOR SCHEDULE														
DOOR NO.	DOOR		TYPE	OPEN'G	MAT'L	FINISH	FRAME		TYPE	DETAILS			GLASS	REMARKS
	WIDTH	HEIGHT					MAT'L	FINISH		JAMB	HEAD	THRESH		
120C	12'-0"	16'-0"	D	OH	STL	PT	STL	PT	-	D1/GA-6	G1/GA-6	A1/GA-6	ISG	INSTALL OPERATOR ON EXISTING DOOR
124	10	10	C	ROLL-UP	STL	FF	STL	PT	-	D1/GA-6	G1/GA-6	A1/GA-6	ISG	ELECTRICAL OPERATOR
125	10	10	C	ROLL-UP	STL	FF	STL	PT	-	D1/GA-6	G1/GA-6	A1/GA-6	ISG	ELECTRICAL OPERATOR
126	12	12	C	ROLL-UP	STL	FF	STL	PT	-	D1/GA-6	G1/GA-6	A1/GA-6	ISG	ELECTRICAL OPERATOR
127	3	7	B	S	HM	PT	HM	PT	3	D5/GA-6	G5/GA-6, SIM.	A5/GA-6	ISG	ELECTRICAL OPERATOR
124	3	7	A	S	HM	PT	HM	PT	3	D5/GA-6	G5/GA-6, SIM.	A5/GA-6	ISG	ELECTRICAL OPERATOR
124	3	7	A	S	HM	PT	HM	PT	3	D5/GA-6	G5/GA-6, SIM.	A5/GA-6	ISG	ELECTRICAL OPERATOR
130	3	7	A	S	HM	PT	HM	PT	3	D5/GA-6	G5/GA-6, SIM.	A5/GA-6	ISG	ELECTRICAL OPERATOR
131	3	7	A	S	HM	PT	HM	PT	3	D5/GA-6	G5/GA-6, SIM.	A5/GA-6	ISG	GLASS ONLY ABOVE DOOR
132	6	7	A	S	HM	PT	HM	PT	3	D5/GA-6	G5/GA-6, SIM.	A5/GA-6	ISG	GLASS ONLY ABOVE DOOR
134	6	7	A	S	HM	PT	HM	PT	3	D5/GA-6	G5/GA-6, SIM.	A5/GA-6	ISG	GLASS ONLY ABOVE DOOR
135	6	7	A	S	HM	PT	HM	PT	3	D5/GA-6	G5/GA-6, SIM.	A5/GA-6	ISG	GLASS ONLY ABOVE DOOR

HEADWORKS BUILDING														
DOOR NO.	DOOR		TYPE	OPEN'G	MAT'L	FINISH	FRAME		TYPE	DETAILS			GLASS	REMARKS
	WIDTH	HEIGHT					MAT'L	FINISH		JAMB	HEAD	THRESH		
H102A	3'-0"	7'-0"	B	S	HM	PT	HM	PT	3	D5/GA-6	D17/GA-9, SIM.	A5/GA-6	ISG	
H102B	10'-0"	12'-0"	C	OH	STL	PT	HM	PT	-	D1/GA-6	G1/GA-6	A1/GA-6	ISG	

**LEGEND**  
 FF FACTORY FINISH  
 HM HOLLOW METAL  
 ISG INSULATED SAFETY GLASS  
 PT PAINT  
 STL STEEL  
 OH OVERHEAD DOOR  
 S SINGLE

ROOM SCHEDULE															
RM NO.	ROOM NAME	FLOOR		WALL MATERIAL				WALL FINISH				CEILING		NOTES	
		FINISH	BASE	NORTH	EAST	SOUTH	WEST	NORTH	EAST	SOUTH	WEST	TYPE	FIN.		HGT.
H102	GRIT	CONC	-	CMU	CMU	CMU	CMU	-	-	-	-	O.T.S.	-	O.T.S.	
130	MBR TREATMENT	CONC	-	CMU	CMU	CMU	CMU	-	-	-	-	O.T.S.	-	O.T.S.	
131	BLOWER	CONC	-	CMU	CMU	CMU	CMU	-	-	-	-	O.T.S.	-	O.T.S.	
132	ELECTRICAL	CONC	-	CMU	CMU	CMU	CMU	-	-	-	-	O.T.S.	-	O.T.S.	
133	SOLIDS HANDLING	CONC	-	CMU	CMU	CMU	CMU	-	-	-	-	O.T.S.	-	O.T.S.	

**LEGEND**  
 CONC CONCRETE (SEALED)  
 CMU CONCRETE MASONRY UNIT  
 O.T.S. OPEN TO STRUCTURE  
**NOTES**  
 1  
 2  
 3



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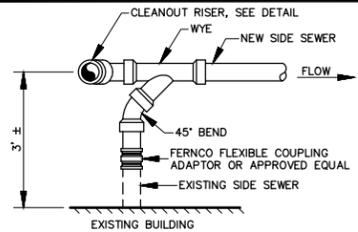
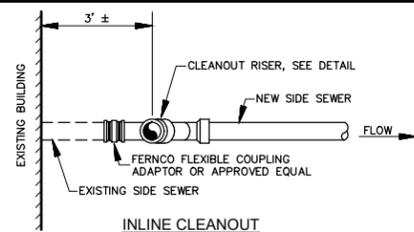
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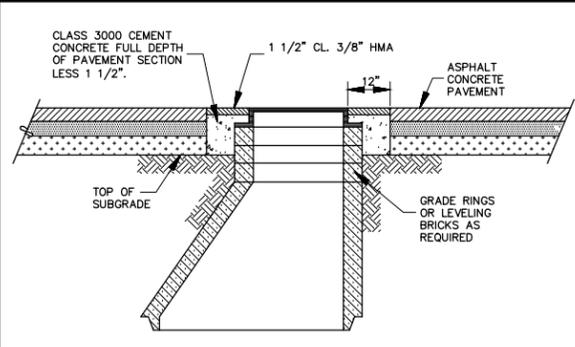
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 PLAN: 21180.dwg  
 PROFILE:  
 DESIGNED BY: DPS/RJS  
 ENTERED BY: TWC/JWM

**SNOQUALMIE PASS UTILITY DISTRICT**  
**PHASE 2A MEMBRANE BIOREACTOR WASTEWATER TREATMENT PLANT IMPROVEMENTS**  
 ARCHITECTURAL DETAILS

**GA-3**  
 SHEET  
 OF 33

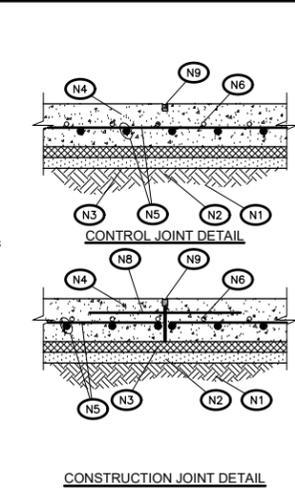


NOTE:  
CLEANOUTS SHALL BE CONSTRUCTED OF THE SAME SIZE AND MATERIALS AS THE SIDE SEWER IN WHICH THEY ARE INSTALLED.

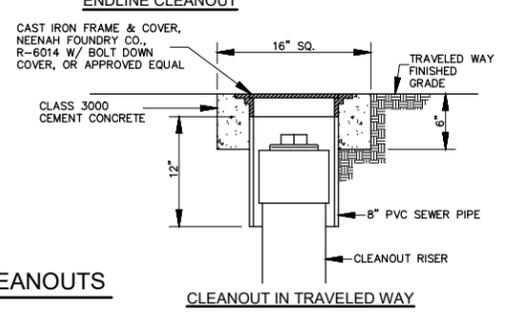
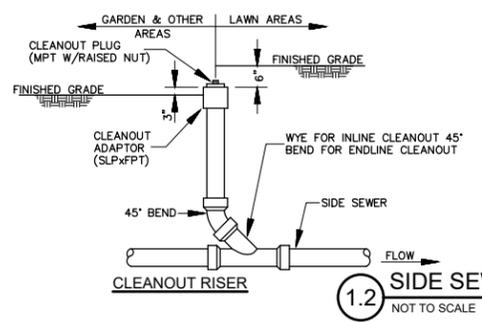
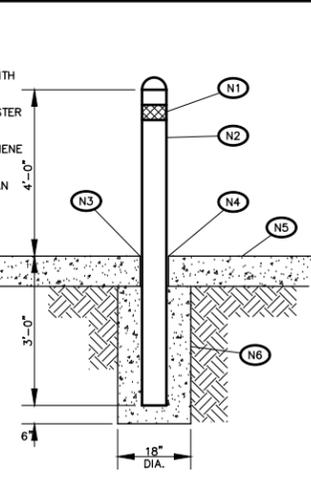


- NOTES:
1. MANHOLES SHALL BE ADJUSTED TO FINISHED GRADE AFTER PLACEMENT OF ASPHALT CONCRETE PAVEMENT.
  2. GRADE RINGS AND/OR LEVELING BRICKS SHALL BE GROUTED IN PLACE AND BE WATER TIGHT.
  3. IN UNPAVED AREAS, PROVIDE 12\"/>

- CONSTRUCTION NOTES:
- (N1) COMPACTED SUBGRADE
  - (N2) 2\"/>
  - (N3) R-10 RIGID INSULATION
  - (N4) 8\"/>
  - (N5) #5 AT 12\"/>
  - (N6) HYDRONIC TUBING ATTACHED TO REINFORCEMENT, TYPICAL. SLEEVE TUBING THROUGH ALL JOINTS PER MECHANICAL.
  - (N7) 1/4\"/>
  - (N8) 5/8\"/>
  - (N9) 1/2\"/>



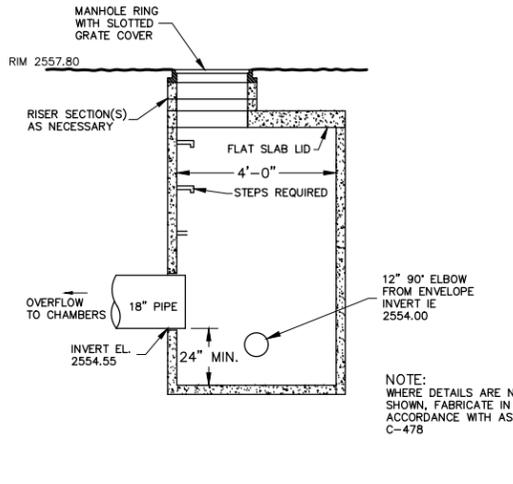
- CONSTRUCTION NOTES:
- (N1) 4\"/>
  - (N2) 6\"/>
  - (N3) SELF-LEVELING POLYTHENE JOINT, MASTER SEAL SL2 OR EQUAL
  - (N4) WRAP WITH 1/2\"/>
  - (N5) PAVEMENT THICKNESS VARIES SEE PLAN
  - (N6) 18\"/>



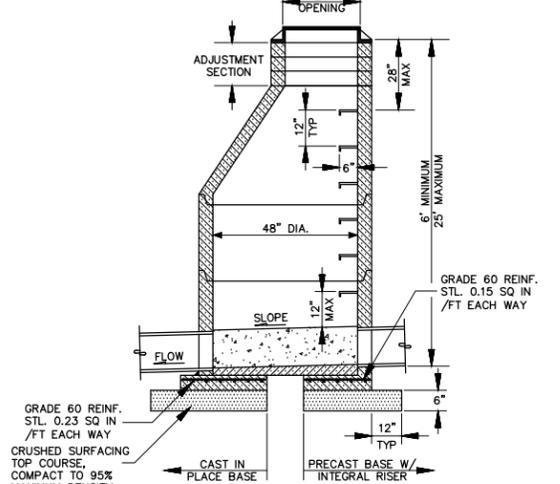
1.3 MANHOLE ADJUSTMENT DETAIL  
NOT TO SCALE

1.4 CONCRETE PAVEMENT JOINTING  
NOT TO SCALE

1.5 PROTECTIVE BOLLARD (IN CONCRETE PAVEMENT)  
NOT TO SCALE

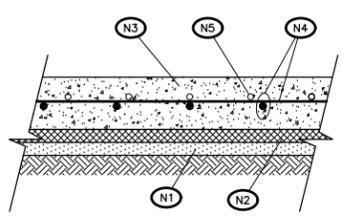


2.2 48\"/>



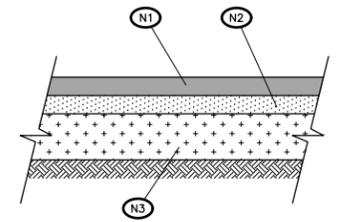
2.3 TYPICAL MANHOLE DETAIL  
NOT TO SCALE

- CONSTRUCTION NOTES:
- (N1) 2\"/>
  - (N2) R-10 RIGID INSULATION
  - (N3) 8\"/>
  - (N4) #5 AT 12\"/>
  - (N5) HYDRONIC TUBING, TYPICAL. SIZE AND SPACING PER MECHANICAL. SECURE TO TOP OF REBAR MAT. PROVIDE 3\"/>

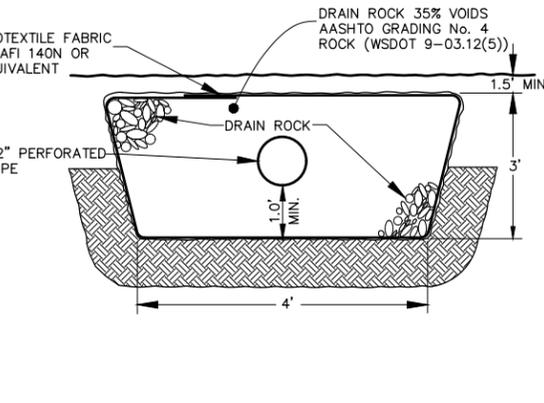


2.4 CONCRETE PAVEMENT SECTION  
NOT TO SCALE

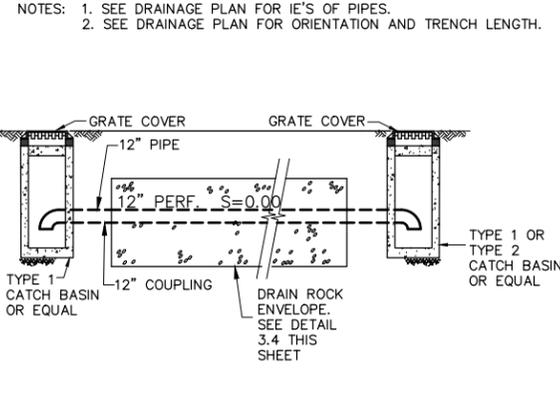
- CONSTRUCTION NOTES:
- (N1) 3\"/>
  - (N2) 3\"/>
  - (N3) 6\"/>



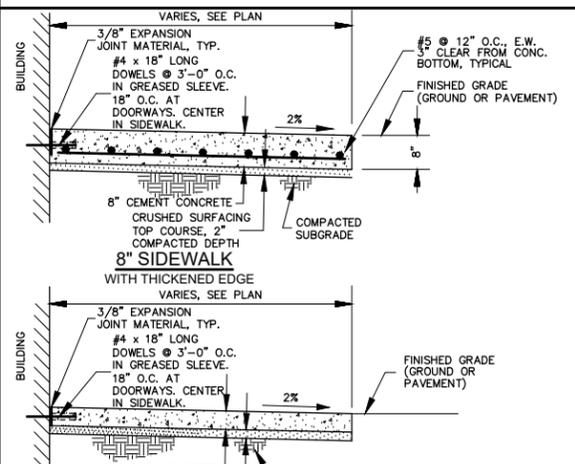
2.5 HMA PAVEMENT SECTION  
NOT TO SCALE



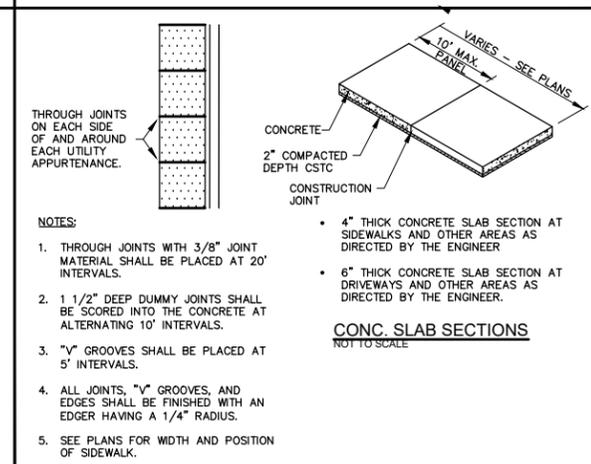
3.2 TYPICAL 4\"/>



3.3 INFILTRATION TRENCH DETAIL  
NOT TO SCALE



3.4 SIDEWALK DETAILS AT BUILDING  
NOT TO SCALE



3.5 TYPICAL SIDEWALK JOINTING  
NOT TO SCALE

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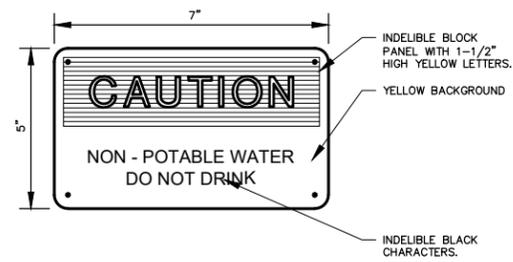
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**PHASE 2A MEMBRANE BIOREACTOR WASTEWATER TREATMENT PLANT IMPROVEMENTS**

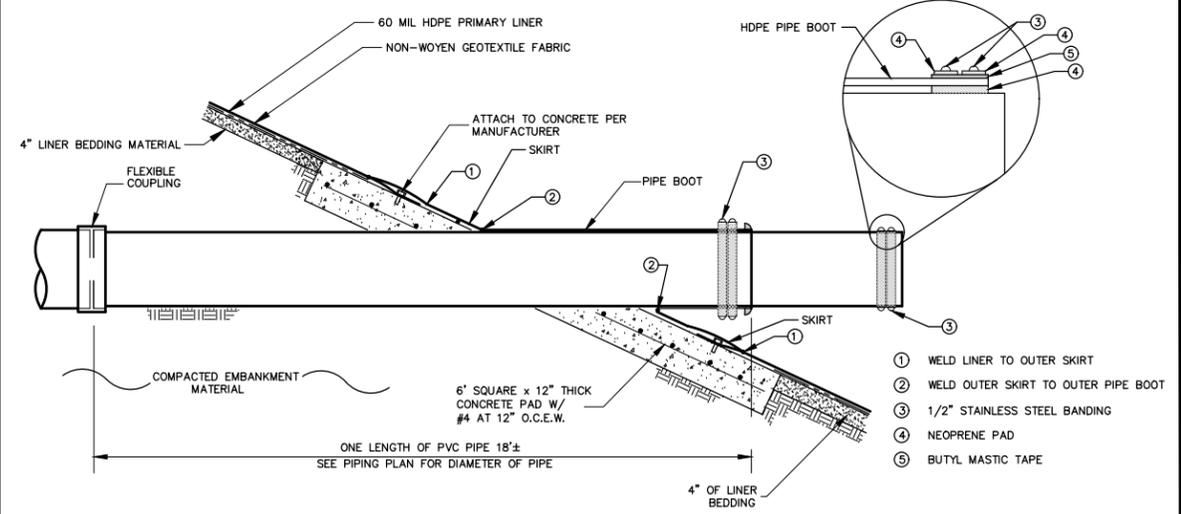
CIVIL DETAILS

GC-1  
SHEET  
OF 33



- INDELIBLE BLOCK PANEL WITH 1-1/2" HIGH YELLOW LETTERS.
- YELLOW BACKGROUND
- INDELIBLE BLACK CHARACTERS.
- NOTES:
1. MATERIAL TO BE FIBERGLASS PER PROJECT SPECIFICATIONS.
  2. COLORS AND SIZES TO BE PER OSHA STANDARDS FOR CAUTION SIGNS.
  3. PROVIDE THE SIGN AT ALL HOSE BIBBS OR POST HYDRANT LOCATIONS WHERE WATER IS NON-POTABLE (UTILITY WATER).
  4. MOUNT TO YARD HYDRANT RISER WITH U-BOLTS OR WALL WITH FASTENERS AS APPLICABLE.

**1.2 NON-POTABLE WATER WARNING SIGN**  
NOT TO SCALE



**1.4 PIPE BOOT SEALING SYSTEM**  
NOT TO SCALE

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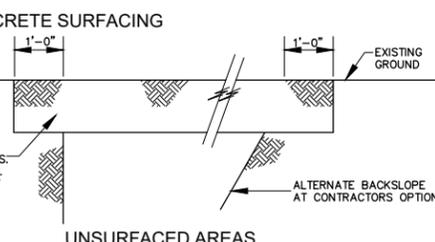
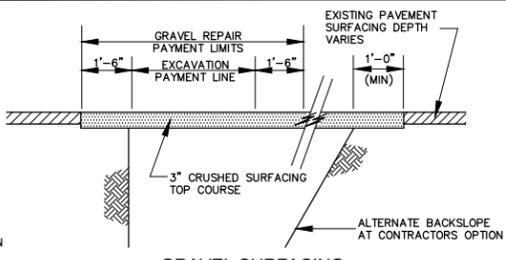
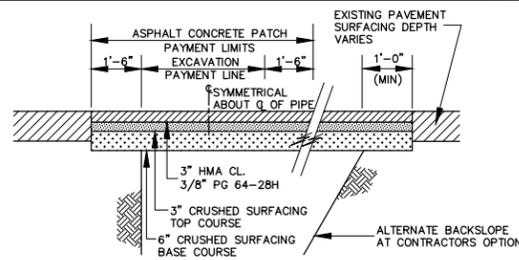
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CIVIL DETAILS

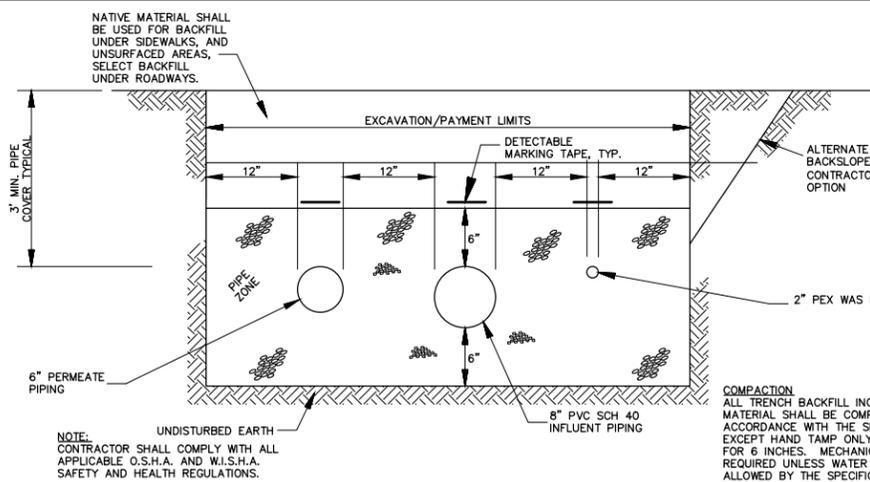
**GC-2**  
SHEET  
--- OF **33**



12" (MIN.) SILT MATERIAL FREE FROM ROCKS. STORE IN STOCKPILE WHEN REMOVED DURING TRENCHING OPERATIONS. REPLACE TO MINIMUM THICKNESS SHOWN. IF EXISTING GROUND SURFACE ADJACENT TO TRENCH DOES NOT INCLUDE SILT OVERBURDEN, THEN BACKFILL TO SURFACE WITH NATIVE MATERIAL EXCAVATED FROM TRENCH.

- NOTES:**
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRENCH SURFACE RESTORATION BEYOND THE PAYMENT LIMITS SHOWN, INCLUDING WIDER TRENCH SECTIONS RESULTING FROM LAYING BACK TRENCH SIDES AT THE CONTRACTORS OPTION. NO MEASUREMENT OR PAYMENT WILL BE MADE FOR SURFACE REPAIR BEYOND THE PAYMENT LIMITS.
  - NO MEASUREMENT OR PAYMENT WILL BE MADE FOR TRENCH SURFACING REPAIR IN UNSURFACED AREAS.
  - ALL THICKNESSES ARE COMPACTED DEPTHS.

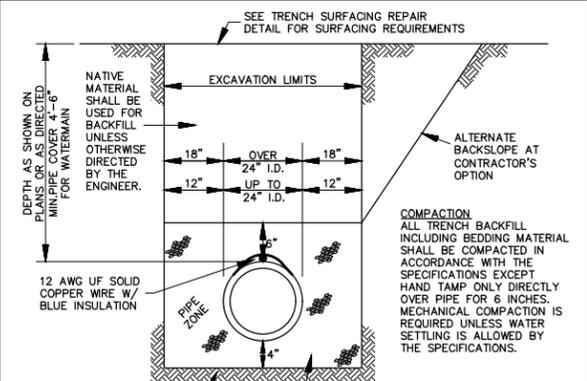
**1.2 TRENCH SURFACING REPAIR**  
NOT TO SCALE



**NOTE:** CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE O.S.H.A. AND W.I.S.H.A. SAFETY AND HEALTH REGULATIONS.

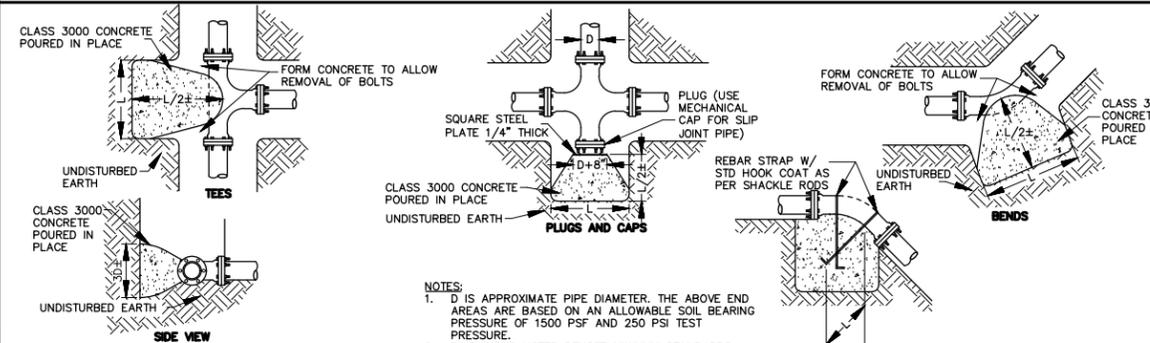
**COMPACTION:** ALL TRENCH BACKFILL INCLUDING BEDDING MATERIAL SHALL BE COMPACTED IN ACCORDANCE WITH THE SPECIFICATIONS EXCEPT HAND TAMP ONLY DIRECTLY OVER PIPE FOR 6 INCHES. MECHANICAL COMPACTION IS REQUIRED UNLESS WATER SETTLING IS ALLOWED BY THE SPECIFICATIONS.

**1.4 TYPICAL TRENCH DETAIL**  
NOT TO SCALE



- NOTES:**
- FOR 4" AND 6" SIDE SEWERS, INSTALL IMPORTED PIPE BEDDING A MINIMUM OF 3" THICK ON ALL SIDES OF PIPE.
  - CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE O.S.H.A. AND W.I.S.H.A. SAFETY AND HEALTH REGULATIONS.
- COMPACTION:** ALL TRENCH BACKFILL INCLUDING BEDDING MATERIAL SHALL BE COMPACTED IN ACCORDANCE WITH THE SPECIFICATIONS EXCEPT HAND TAMP ONLY DIRECTLY OVER PIPE FOR 6 INCHES. MECHANICAL COMPACTION IS REQUIRED UNLESS WATER SETTLING IS ALLOWED BY THE SPECIFICATIONS.
- PIPE BEDDING:** BEDDING MATERIAL SHALL BE AS FOLLOWS UNLESS OTHERWISE DIRECTED BY THE ENGINEER:  
**SANITARY SEWER & STORM DRAIN:** CRUSHED SURFACING TOP COURSE PER SECTION 9-03.9(3) OF THE STANDARD SPECIFICATIONS.  
**DOMESTIC WATERMAIN:** BEDDING MATERIAL SHALL MEET THE REQUIREMENTS OF SECTION 7-10.2 OF THE SPECIFICATIONS.

**1.5 TYPICAL TRENCH DETAIL**  
NOT TO SCALE

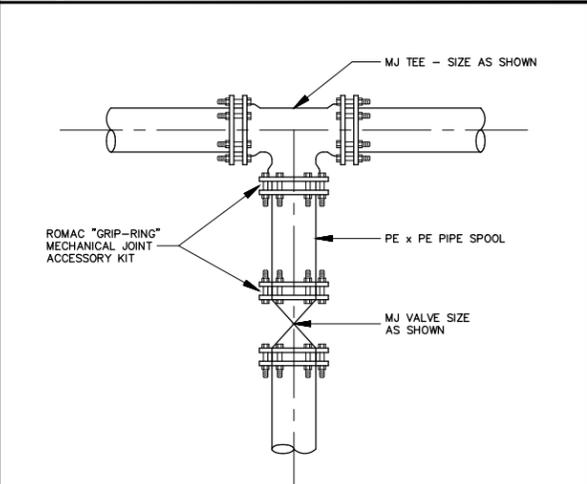


- NOTES:**
- D IS APPROXIMATE PIPE DIAMETER. THE ABOVE END AREAS ARE BASED ON AN ALLOWABLE SOIL BEARING PRESSURE OF 1500 PSF AND 250 PSI TEST PRESSURE.
  - DIMENSIONS LISTED DENOTE MINIMUM STANDARDS FOR TYPICAL SOIL AND TEST PRESSURES.
  - ALL FITTINGS AND/OR PIPE MAKING DIRECT CONTACT WITH CONCRETE SHALL BE WRAPPED WITH 4 MIL POLYETHYLENE SHEETING PRIOR TO PLACEMENT OF CONCRETE.
  - FORM CONCRETE TO ALLOW REMOVAL OF BOLTS.
  - ALL CONCRETE TO BE CLASS "B" CONCRETE AND IS TO BE POURED IN PLACE.
  - MECHANICAL RESTRAINT OF FITTINGS AND PIPE WITH ROMAC "GRIP-RING" AND FIELD-LOK GASKETS ALLOWED IN LIEU OF THRUST BLOCK AS APPROVED BY ENGINEER.

PIPE SIZE (D)	MINIMUM END AREAS			
	TEES & PLUGS	90° BENDS	45° BENDS	11¼° AND 22½° BENDS
6"	5.1 SQ FT	7.2 SQ FT	3.9 SQ FT	2.0 SQ FT
8"	8.8 SQ FT	12.4 SQ FT	6.7 SQ FT	3.4 SQ FT
10"	14.3 SQ FT	20.2 SQ FT	11.0 SQ FT	5.6 SQ FT
12"	20.4 SQ FT	28.9 SQ FT	15.7 SQ FT	7.9 SQ FT
14"	27.7 SQ FT	39.2 SQ FT	21.2 SQ FT	10.7 SQ FT
16"	35.8 SQ FT	51.2 SQ FT	27.5 SQ FT	13.9 SQ FT

PIPE SIZE (D)	VERTICAL OVERBEND			
	22½° BEND	45° BEND	REBAR SIZE	L
6"	20 CU FT	39 CU FT	#5	2.0 FT
8"	34 CU FT	67 CU FT	#5	2.0 FT
10"	56 CU FT	110 CU FT	#5	2.0 FT
12"	79 CU FT	157 CU FT	#6	2.5 FT
14"	107 CU FT	212 CU FT	#7	3.0 FT
16"	139 CU FT	275 CU FT	#9	4.0 FT

**2.4 TYPICAL THRUST BLOCKING**  
NOT TO SCALE



**2.5 THRUST TIE DETAIL (TYPICAL)**  
NOT TO SCALE



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REVISION	DATE

JOB NUMBER: 22072 DATE: 12/02/2022  
 FILE NAMES: DRWNS-Gen Det - 2B.dwg  
 PLAN: 21180.dwg  
 PROFILE:  
 DESIGNED BY: DPS/RJS  
 ENTERED BY: TWC/JWM

**SNOQUALMIE PASS UTILITY DISTRICT**  
**PHASE 2A MEMBRANE BIOREACTOR WASTEWATER TREATMENT PLANT IMPROVEMENTS**  
 CIVIL DETAILS

**GC-3**  
SHEET  
OF 33

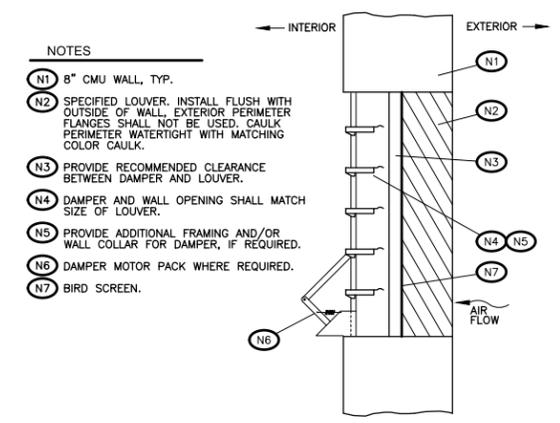
HVAC SCHEDULE

DESIGNATION	MANUFACTURER	MODEL NO.	LOCATION	TYPE	SIZE/ CAPACITY	FAN SPEED	MOTOR SIZE/TYPE	ELECTRICAL V/PH	ACCESSORIES	NOTES
SD-1	GREENHECK	VCD-23	DEWATERING ROOM, E WALL	SUPPLY DAMPER	24"W X 24"H/ 1,500 CFM	N/A	2.5 W	120/1	N/A	
SL-1	GREENHECK	EDJ-401	DEWATERING ROOM, E WALL	SUPPLY LOUVER	24"W X 24"H	N/A	N/A	N/A	3/4" MESH BIRDSCREEN.	
EF-1	GREENHECK	SE1-14-432-VG	DEWATERING ROOM, W WALL	EXHAUST FAN	20"W X 20"H/ 1,500 CFM	1616 RPM	1/4 HP	115/1	1/2" MESH BIRDSCREEN.	
EFL-1	GREENHECK	ESD-435	DEWATERING ROOM, W WALL	EXHAUST LOUVER	24"W X 24"H/ 1,500 CFM	N/A	N/A	N/A	3/4" MESH BIRDSCREEN.	3
UH-1/2	Q-MARK	MUH-10-04	A. DEWATERING ROOM, SE CORNER B. DEWATERING ROOM, NW CORNER	ELECTRIC HEAT	34,100 BTU/h/ 10 kW	1600 RPM	1/30 HP	480/3	INTERNAL THERMOSTAT, INTEGRAL POWER DISCONNECT, WALL MOUNTING BRACKET	1,2

NOTE: REFER TO PLANS AND SPECIFICATIONS FOR ADDITIONAL HVAC EQUIPMENT REQUIREMENTS.  
 1. MOUNT HEATER AT 10'-0" ABOVE FINISH FLOOR, OR AT MANUFACTURER'S RECOMMENDED HEIGHT. DIMENSION TO BOTTOM OF HEATER.  
 2. INSTALL THERMOSTAT AT LOCATION SHOWN ON THE PLANS. SEE ELECTRICAL DRAWINGS.  
 3. COORDINATE INSTALLATION WITH EXHAUST FAN. SEE DETAILS THIS SHEET.

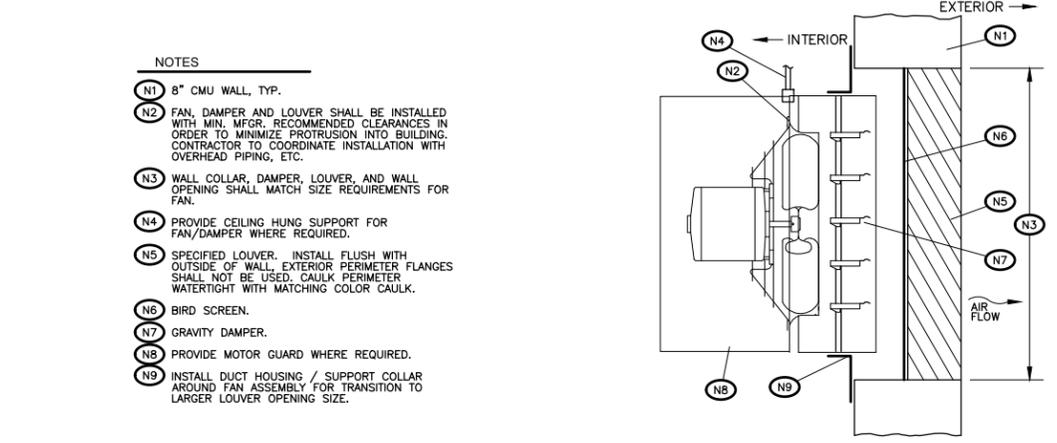
NOTE: SCHEDULES ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE FROM PLANS, SECTIONS, DETAILS, AND SPECIFICATIONS, THE REQUIRED QUANTITY OF EQUIPMENT AND MATERIALS TO COMPLETE THE PROJECT.

1.5 HVAC SCHEDULE  
NOT TO SCALE



- NOTES
- N1 8" CMU WALL, TYP.
  - N2 SPECIFIED LOUVER. INSTALL FLUSH WITH OUTSIDE OF WALL. EXTERIOR PERIMETER FLANGES SHALL NOT BE USED. CAULK PERIMETER WATERTIGHT WITH MATCHING COLOR CAULK.
  - N3 PROVIDE RECOMMENDED CLEARANCE BETWEEN DAMPER AND LOUVER.
  - N4 DAMPER AND WALL OPENING SHALL MATCH SIZE OF LOUVER.
  - N5 PROVIDE ADDITIONAL FRAMING AND/OR WALL COLLAR FOR DAMPER, IF REQUIRED.
  - N6 DAMPER MOTOR PACK WHERE REQUIRED.
  - N7 BIRD SCREEN.

2.3 INTAKE LOUVER  
NOT TO SCALE



- NOTES
- N1 8" CMU WALL, TYP.
  - N2 FAN, DAMPER AND LOUVER SHALL BE INSTALLED WITH MIN. MFR. RECOMMENDED CLEARANCES IN ORDER TO MINIMIZE PROTRUSION INTO BUILDING. CONTRACTOR TO COORDINATE INSTALLATION WITH OVERHEAD PIPING, ETC.
  - N3 WALL COLLAR, DAMPER, LOUVER AND WALL OPENING SHALL MATCH SIZE REQUIREMENTS FOR FAN.
  - N4 PROVIDE CEILING HUNG SUPPORT FOR FAN/DAMPER WHERE REQUIRED.
  - N5 SPECIFIED LOUVER. INSTALL FLUSH WITH OUTSIDE OF WALL. EXTERIOR PERIMETER FLANGES SHALL NOT BE USED. CAULK PERIMETER WATERTIGHT WITH MATCHING COLOR CAULK.
  - N6 BIRD SCREEN.
  - N7 GRAVITY DAMPER.
  - N8 PROVIDE MOTOR GUARD WHERE REQUIRED.
  - N9 INSTALL DUCT HOUSING / SUPPORT COLLAR AROUND FAN ASSEMBLY FOR TRANSITION TO LARGER LOUVER OPENING SIZE.

2.5 SIDEWALL EXHAUST FAN AND LOUVER  
NOT TO SCALE



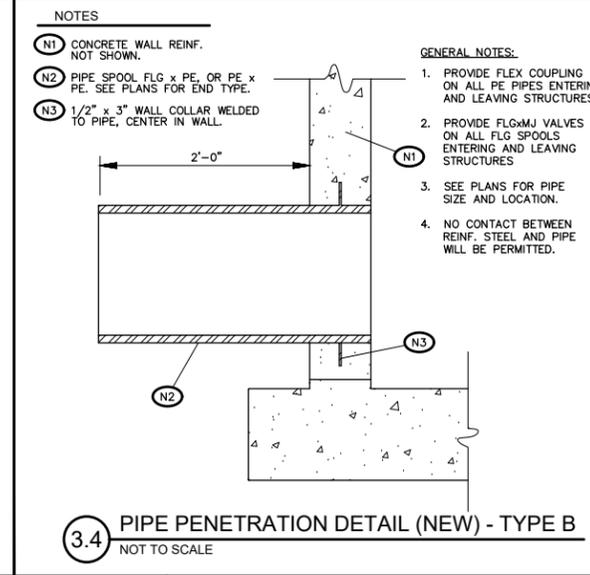
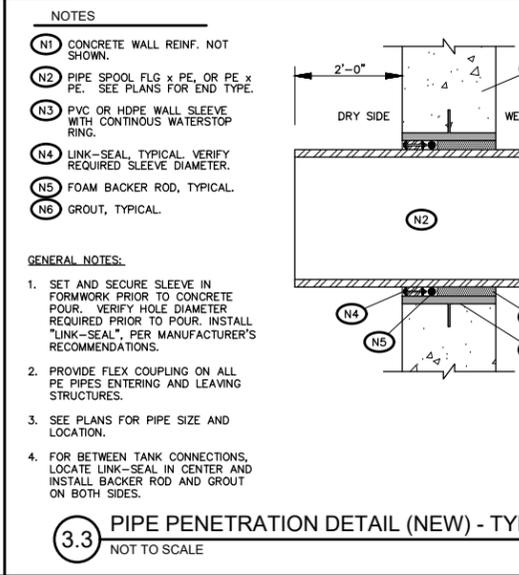
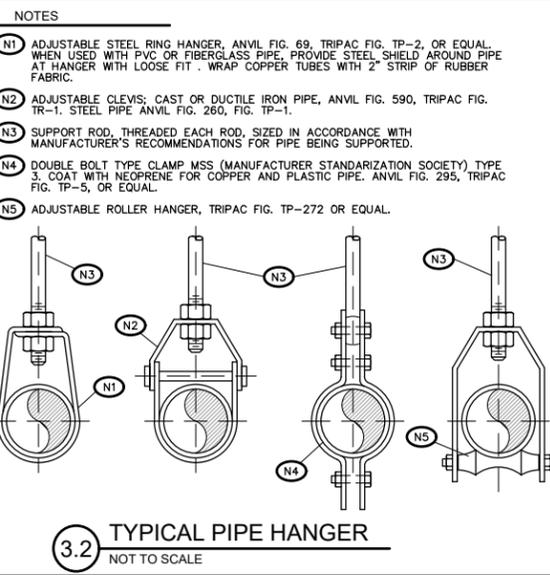
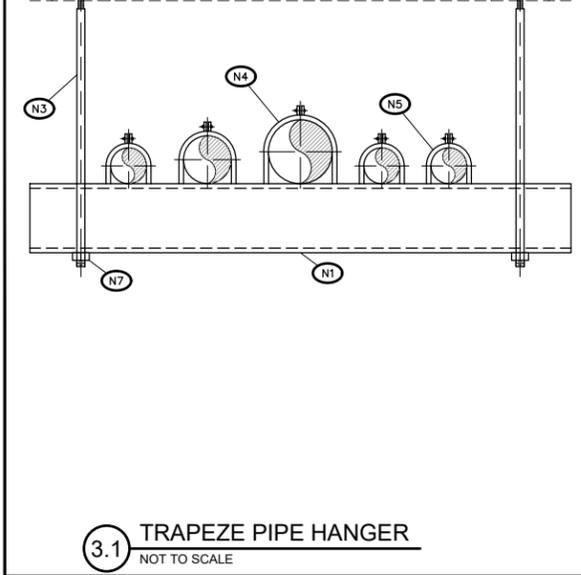
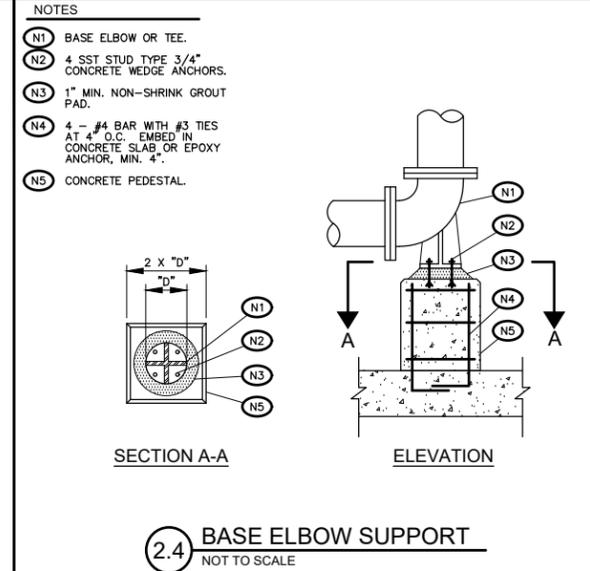
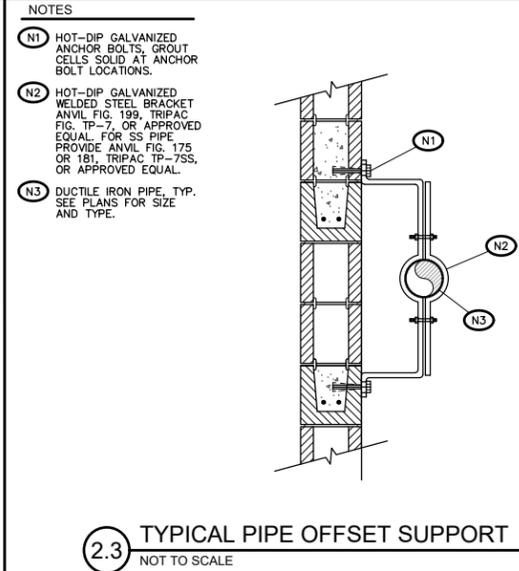
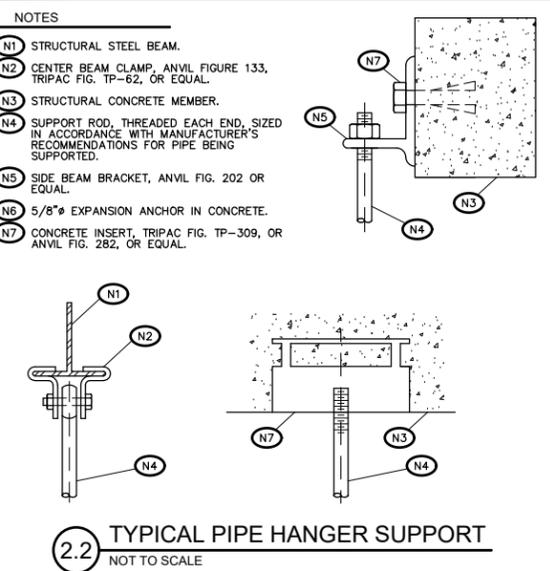
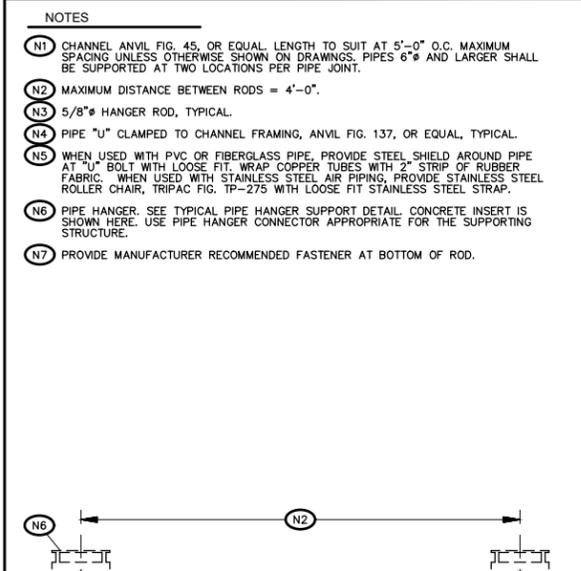
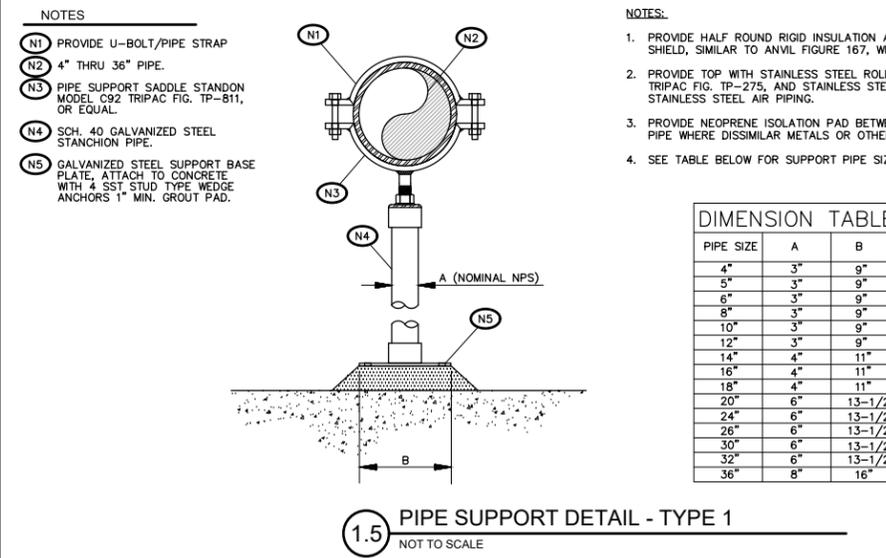
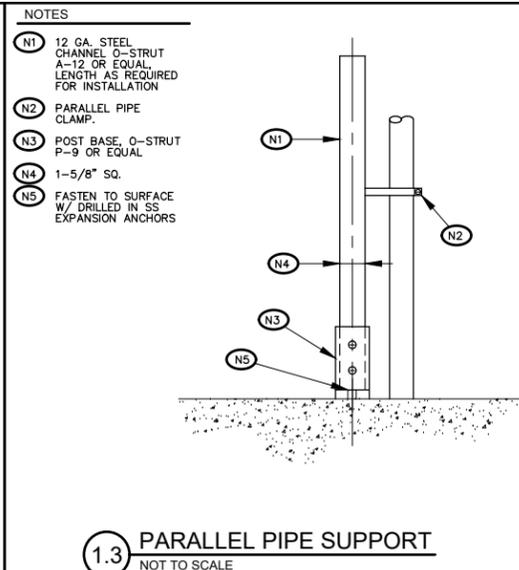
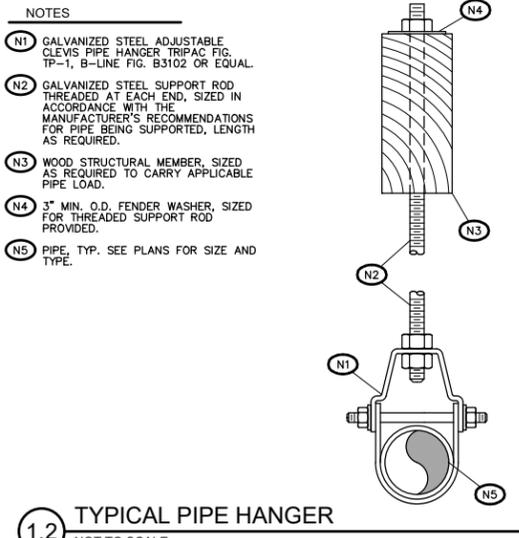
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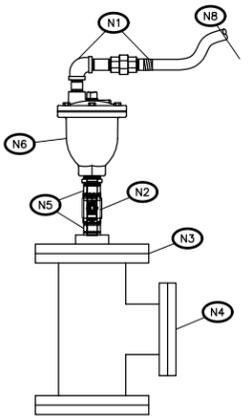
REVISION	DATE	FILE NAMES:
		DRWNS-Gen Det - 2B.dwg
		21180.dwg
		DESIGNED BY: DPS/RJS
		ENTERED BY: TWC/JWM

**SNOQUALMIE PASS UTILITY DISTRICT**  
**PHASE 2A MEMBRANE BIOREACTOR WASTEWATER TREATMENT PLANT IMPROVEMENTS**  
 MECHANICAL DETAILS



NOTES

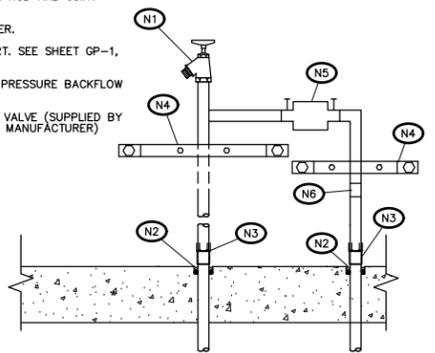
- (N1) G.I. THREADED PIPE AND FITTINGS. PROVIDE UNION FOR DISCONNECTION OF OUTLET PIPING. PIPE AIR RELEASE VALVE OUTLET TO 6" ABOVE FLOOR DRAIN AND INSTALL OVERSIZED BUG SCREEN ON END OF OUTLET.
- (N2) NPT BRONZE BALL VALVE, TYP.
- (N3) BLIND FLG WITH 2" THREADED TAP. PROVIDE BRASS BUSHING AS REQUIRED FOR AIR VALVE SIZE. SEE PLAN FOR SIZE AND LOCATION.
- (N4) D.I. FITTING. SEE PLAN FOR SIZE AND ORIENTATION.
- (N5) BRASS NPT NIPPLES, TYP.
- (N6) AIR RELEASE VALVE, APCO SERIES 50, VAL-MATIC SERIES 22, OR APPROVED EQUAL.
- (NB) 1" BRAIDED PVC FLEXIBLE TUBING TO ISOLATION VALVE. SEE PLAN FOR LOCATION.



2.2 AIR RELEASE VALVE ASSEMBLY  
NOT TO SCALE

NOTES

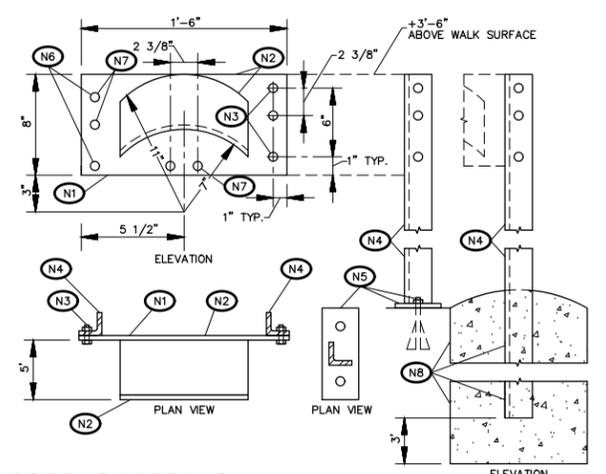
- (N1) 1" x 3/4" HOSE BIB.
- (N2) HOLD BACK CONCRETE 3/4". SEAL WITH BACKER ROD AND JOINT SEALANT.
- (N3) PEX ADAPTER.
- (N4) PIPE SUPPORT. SEE SHEET GP-1, DETAIL 2.3.
- (N5) 1" REDUCED PRESSURE BACKFLOW ASSEMBLY.
- (N6) 1" SOLENOID VALVE (SUPPLIED BY GRIT SYSTEM MANUFACTURER)



2.5 GRIT SYSTEM WATER SERVICE  
NOT TO SCALE

NOTES

- (N1) TYPICAL HOSE RACK. HOT DIP GALVANIZE AFTER FABRICATION. ALL WELDS 3/16" FILLETS. BREAK ALL SHARP EDGES.
- (N2) BACK, FRONT, AND RADIUS PLATE FROM 1/4" STEEL PLATE.
- (N3) ALL HOLES 7/16"Ø, BOLTS 3/8"Ø, HOT DIP GALVANIZED.
- (N4) (2) ANGLE 2 X 2 X 1/4 HOT DIP GALVANIZED AFTER FABRICATION.
- (N5) FOR CONCRETE WALK OR FLOOR MOUNTING, ANGLE LEGS WITH BASE PLATE 8 X 4 X 3/8 EACH LEG. FASTEN TO CONCRETE WITH (2) 1/2"Ø X 4" EXPANSION ANCHORS PER BASE PLATE.
- (N6) FOR CONCRETE WALL MOUNTING, FASTEN IN (4) HOLES AT CORNERS OF PLATE WITH 3/8"Ø X 4" EXPANSION ANCHORS.
- (N7) FOR GUARDRAIL MOUNTING, FASTEN TO GUARDRAIL WITH (3) 3/8"Ø X 2" HOT DIP GALVANIZED "U" BOLTS. FASTEN TO TOP-RAIL USING TOP (2) HOLES EACH SIDE, AND STANCHION USING HOLES AT BOTTOM CENTER.
- (NB) WHERE NO CONCRETE IS AVAILABLE, CAST ANGLE LEGS 1'-6" INTO 12"Ø CONCRETE ENCASEMENT.



3.5 TYPICAL HOSE RACK DETAILS  
NOT TO SCALE



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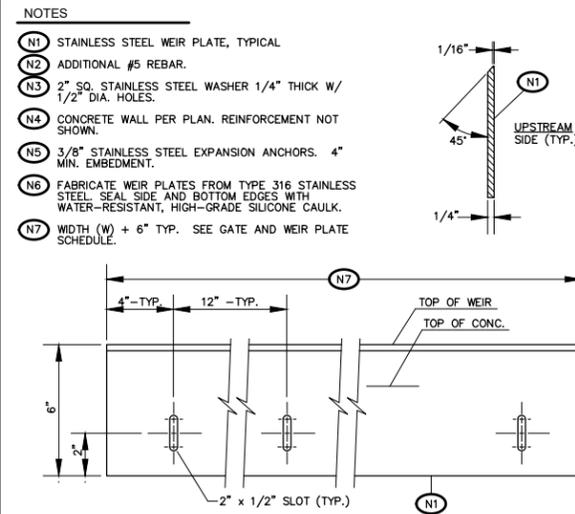
REVISION	DATE

JOB NUMBER:	22072	DATE:	12/02/2022
FILE NAMES:	DRWNS-Gen Det - 2B.dwg		
PLAN:	21180.dwg	PROFILE:	
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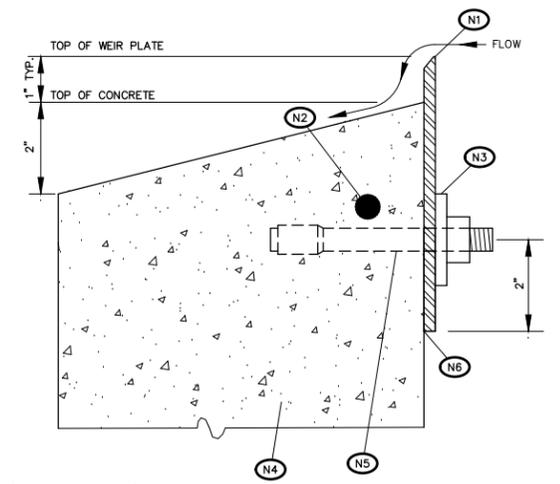
**SNOQUALMIE PASS UTILITY DISTRICT**  
**PHASE 2A MEMBRANE BIOREACTOR WASTEWATER TREATMENT PLANT IMPROVEMENTS**  
PIPING DETAILS

GATE AND WEIR SCHEDULE										
GATE NO.	GATE TYPE	"H"	"W"	"D"	"D1"	SEATING HEAD	UNSEATING HEAD	QTY.	LOCATION	DESCRIPTION
G1	STOP GATE - TYPE A	3'-2"	2'-0"	4'-2"	--	--	--	2	NEW ANOXIC TANK INFLUENT BOX	ALUMINUM STOP GATE, EMBEDDED FLUSH FRAME (TYPE A), FLUSH NEOPRENE BOTTOM SEAL, UHMW POLYETHYLENE GUIDE SEAT, WITH SINGLE LIFTING HANDLE.
G2	STOP GATE - TYPE A	1'-10"	8'-0"	2'-10"	--	--	--	3	NEW DISTRIBUTION CHANNEL	ALUMINUM STOP GATE, EMBEDDED FLUSH FRAME (TYPE A), FLUSH NEOPRENE BOTTOM SEAL, UHMW POLYETHYLENE GUIDE SEAT, WITH SINGLE LIFTING HANDLE.
G3	WEIR GATE - TYPE A	1'-0"	4'-0"	2'-0"	--	--	--	1	GRIT TANK	STAINLESS STEEL SURFACE MOUNTED DOWNWARD OPENING WEIR GATE. SELF-CONTAINED WITH P-SEALS AND HANDWHEEL OPERATOR.
GATE NO.	GATE TYPE	"H"	"W"	"D"	"D1"	SEATING HEAD	UNSEATING HEAD	QTY.	LOCATION	DESCRIPTION
W1	TYPE 1	--	8'-0"	--	--	--	--	3	NEW MBR TANK DISTRIBUTION BOX	316 STAINLESS STEEL WEIR PLATE. FABRICATE AND INSTALL PER DETAIL.

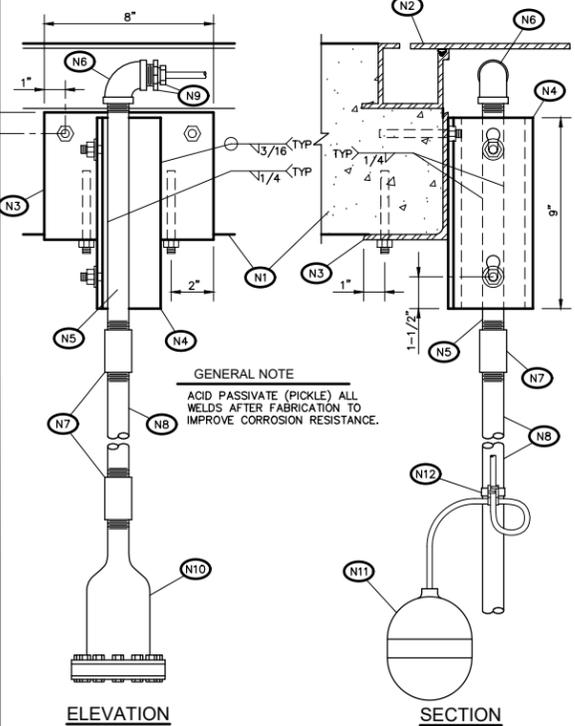
1.3 GATE AND WEIR PLATE SCHEDULE  
NOT TO SCALE



1.5 WEIR PLATE - TYPE 1  
NOT TO SCALE

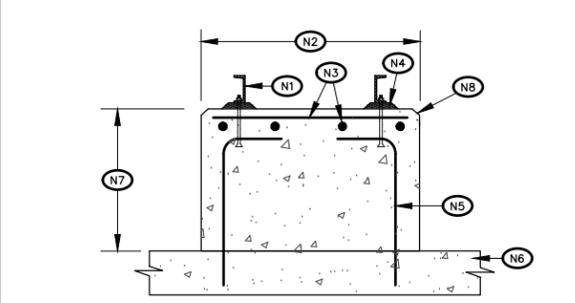


- NOTES
- N1 CEMENT CONCRETE WETWELL SLAB, TYP.
  - N2 ALUMINUM ACCESS DOOR CAST INTO SLAB, TYP.
  - N3 6X4X1/4 TYPE 304 STAINLESS STEEL ANGLE OR BENT PLATE WITH (4) 3/8" TYPE 316 STAINLESS STEEL ADHESIVE ANCHORS, 3" MIN EMBED.
  - N4 4X3X1/4 TYPE 304 STAINLESS STEEL ANGLE OR BENT PLATE WITH (2) 7/16" KEYHOLE SLOTS FOR EASE OF INSTRUMENT SUPPORT REMOVAL.
  - N5 1" X 12" TYPE 316 STAINLESS STEEL NPT NIPPLE WELDED TO 1/4X3 TYPE 316 STAINLESS STEEL FLAT BAR WITH (2) 3/8X1 TYPE 316 STAINLESS STEEL WELDED STUDS AND 3/8" WASHERS AND NYLON LOCK NUTS.
  - N6 1" TYPE 316 STAINLESS STEEL 90-DEGREE ELBOW, TYP.
  - N7 1" NPT TYPE 316 STAINLESS STEEL COUPLING, TYP.
  - N8 1" NPT TYPE 316 STAINLESS STEEL PIPE, TYP. SEE PLAN FOR REQUIRED LENGTH.
  - N9 1" NPT REDUCING BUSHING AND CORDGRIP/STRAIN RELIEF BUSHING, TYP. SIZE AS REQUIRED TO FIT MANUFACTURER'S CABLE.
  - N10 SUBMERSIBLE LEVEL TRANSMITTER, TYP. SEE SPECIFICATIONS.
  - N11 FLOAT SWITCH AND CABLE, TYP. SEE SPECIFICATIONS.
  - N12 STAINLESS STEEL COMBINATION CABLE CLAMP AND STRAIN RELIEF, TYP. SJE RHOMBUS OR APPROVED EQUAL. INSTALL AT 2'-0" MAX. SPACING ALONG LENGTH OF SUPPORT PIPE.



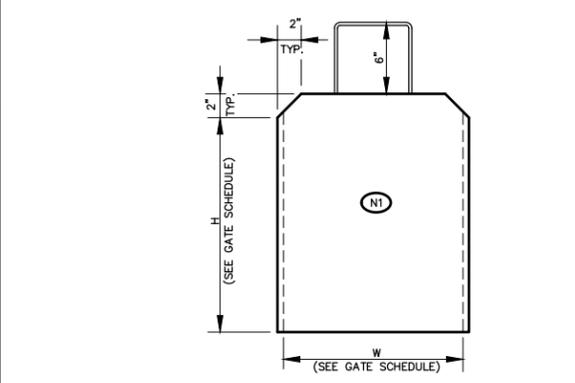
3.1 SUBMERSIBLE TRANSDUCER/FLOAT SUPPORT  
NOT TO SCALE

- NOTES
- N1 EQUIPMENT RAIL FOR INFORMATION ONLY. COORDINATE WITH MFGS. APPROVED SHOP DRAWINGS.
  - N2 WIDTH OF EQUIPMENT MOUNTING RAIL +4", EACH SIDE.
  - N3 #5 HORIZONTALS @ 12" O.C. EACH WAY 2" CLR. OF TOP OF CONCRETE.
  - N4 1" NON-SHRINK LEVELING GROUT UNDER EQUIPMENT RAIL OR AS REQUIRED BY EQUIPMENT MANUFACTURER.
  - N5 #5 DOWELS EPOXY GROUTED INTO SLAB, 2" CLR. FROM CONCRETE FACE, MAX SPACING 2'-0" O.C.
  - N6 CONCRETE FLOOR SLAB. REINFORCING NOT SHOWN.
  - N7 HEIGHT AS REQUIRED PER PIPING AND EQUIPMENT. COORDINATE.
  - N8 1" CHAMFER, TYPICAL.



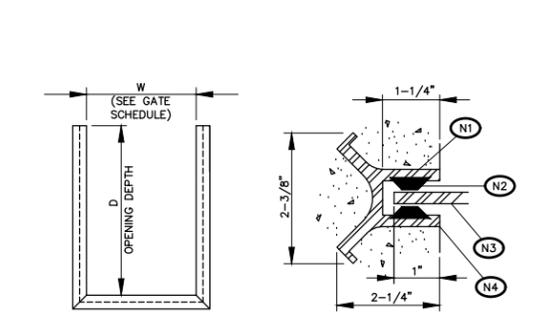
2.3 HOUSEKEEPING PAD  
NOT TO SCALE

- NOTES
- N1 1/4" ALUMINUM PLATE STOP GATE.



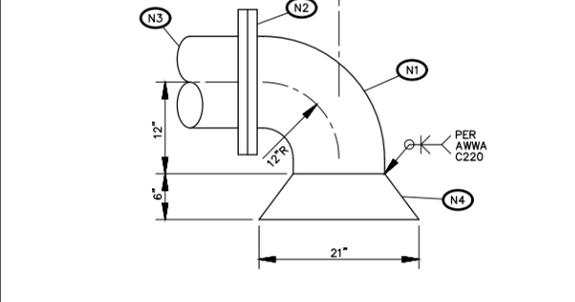
2.4 STOP GATE - TYPE A  
NOT TO SCALE

- NOTES
- N1 ALUMINUM GUIDE.
  - N2 GUIDE SEAT, UHMW POLYETHYLENE.
  - N3 1/4" THICK ALUMINUM GATE.
  - N4 MASTIC GASKET WHERE GUIDE IS IN CONTACT WITH CONCRETE.



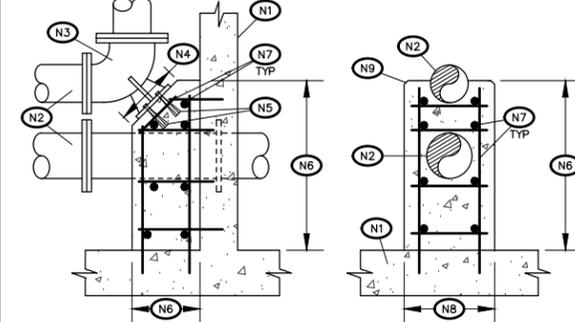
2.5 STOP GATE FRAME - TYPE A  
NOT TO SCALE

- NOTES
- N1 12" SCH. 40S STAINLESS STEEL SHORT RADIUS 90° ELBOW.
  - N2 12" STAINLESS STEEL FLANGE.
  - N3 12" STAINLESS STEEL FLG SPOOL. SEE PLAN FOR CONTINUATION.
  - N4 STAINLESS STEEL SUCTION BELL WELDED TO 12" ELBOW. GRIND WELDS AND EDGES SMOOTH INSIDE AND OUT.
  - N5 PER AWWA C220



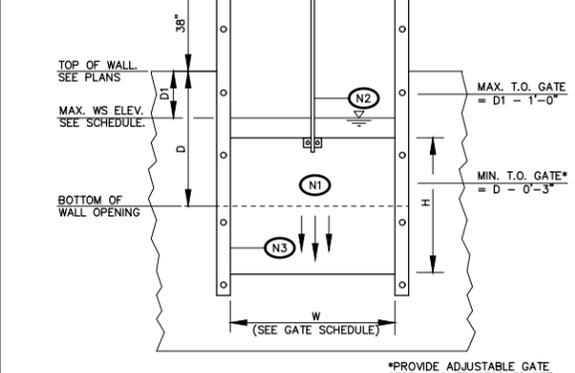
3.2 FABRICATED SUCTION ELBOW - TYPE A  
NOT TO SCALE

- NOTES
- N1 CONCRETE WALL/FLOOR, TYPICAL.
  - N2 PIPING, TYPICAL. SEE PLANS FOR SIZE AND TYPE.
  - N3 PIPE ELBOW WITH FABRICATED SUPPORT BASE.
  - N4 WIDTH OF PIPE BASE +4".
  - N5 STAINLESS STEEL ANCHORS, 6" MIN. EMBED.
  - N6 AS REQUIRED, SEE PLAN FOR PIPE LAYOUT AND ELEVATIONS.
  - N7 #5 @ 12" O.C. EACH WAY, 2" CLR. OF CONCRETE EDGES, 5" MIN. EMBEDMENT INTO CONCRETE WALLS/FLOOR. BARS MAY BE EPOXY GROUTED INTO CONCRETE.
  - N8 PIPE O.D. +6" EACH SIDE, MIN.
  - N9 1" CHAMFER, TYPICAL.



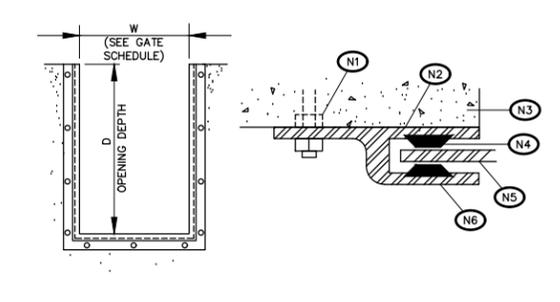
3.3 TYPICAL SUPPORT AT PIPING ELBOW  
NOT TO SCALE

- NOTES
- N1 DOWNWARD OPENING WEIR GATE. SEE SCHEDULE.
  - N2 STEM, STAINLESS STEEL, THREADED.
  - N3 ALUMINUM FRAME.



3.4 WEIR GATE  
NOT TO SCALE

- NOTES
- N1 3/8" STAINLESS STEEL EXPANSION ANCHORS, 4" MIN. EMBEDMENT.
  - N2 MASTIC GASKET WHERE GUIDE IS IN CONTACT WITH CONCRETE.
  - N3 NON-SHRINK GROUT.
  - N4 GUIDE SEAT, UHMW POLYETHYLENE.
  - N5 1/4" THICK ALUMINUM GATE.
  - N6 ALUMINUM GUIDE.



3.5 STOP GATE FRAME - TYPE B  
NOT TO SCALE

2803 River Road  
Yakima, WA 98902  
509.966.7000  
Fax 509.965.3800  
www.hlacivil.com



PRELIMINARY  
SUBJECT TO REVISION

REVISION	DATE

JOB NUMBER: 22072	DATE: 12/02/2022
FILE NAMES: DRWNS-Gen Det - 2B.dwg	
PLAN: 21180.dwg	
PROFILE:	
DESIGNED BY: DPS/RJS	
ENTERED BY: TWC/JWM	

SNOQUALMIE PASS UTILITY DISTRICT  
PHASE 2A MEMBRANE BIOREACTOR WASTEWATER TREATMENT PLANT IMPROVEMENTS  
PIPING DETAILS