

PART 1 – GENERAL

1.01 RELATED WORK DESCRIBED ELSEWHERE

- A. The provisions and intent of the Contract, including the General Conditions apply to this work as if specified in this section. Work related to this section is described throughout these Specifications
- B. Individual submittals required in accordance with the pertinent sections of these specifications. Other submittals may be required during the course of the project and are considered part of the normal work to be completed under the Contract.

1.02 SUBMITTAL LOG

- A. Contractor shall, within ten days of receipt of the Notice of Award prepare and submit for Engineer approval a detailed log of all the submittals required under this Contract, along with any other submittals identified by the Port or Contractor. The log shall include, but not be limited to, schedules, required construction work plans, equipment and material cut sheets, shop drawings, project record documents, test results, survey records, record drawings, results of QC testing, and all other items for which a submittal is required. The submittal log shall be organized by CSI Specification Division, and Section number and include the following information:
 - 1. Submittal Number
 - 2. Item identification.
 - 3. Scheduled submittal date, date returned, date approved.
 - 4. Date submittal or material is needed.
 - 5. After the submittal log is reviewed and approved by the Engineer, it shall become the basis for the submittal of all items by Contractor.

1.03 COMPLIANCE

- A. Failure to comply with these requirements shall be deemed as the Contractor's agreement to furnish the exact materials specified or materials selected by the Engineer based on these specifications.

1.04 SHOP DRAWINGS AND MANUFACTURERS' LITERATURE

- A. The Port will not accept shop drawings that prohibit the Port from making copies for its own use.
- B. Shop drawings shall be prepared accurately and to a scale sufficiently large to indicate all pertinent features of the products and the method of fabrication, connection, erection, or assembly with respect to the work.
- C. All drawings submitted to the Engineer for approval shall be drawn to scale as ANSI D
- D. Required electronic formats for these drawings are as follows:
 - 1. AutoCad DWG
 - 2. PDF – Formatted to print to half-scale using 11x17 paper.
- E. Catalog cuts or brochures shall show the type, size, ratings, style, color, manufacturer, and catalog number of each item and be complete enough to provide for positive and rapid identification in the field. General catalogs or partial lists will not be accepted. Manufacturers' original electronic files are required for submitting.

1.05 SUBMITTAL REVIEW

- A. After review of each of Contractor's submittals, the submittal will be returned to Contractor with a form indicating one or more of the following:
 - 1. No Exceptions Taken - Means, accepted subject to its compatibility with future submittals and additional partial submittals for portions of the work not covered in this submittal. But it does not constitute approval or deletion of specified or required items not shown in the partial submittal.

ATTACHMENT C
DIVISION 01 – GENERAL REQUIREMENTS
SECTION 01 33 00 – SUBMITTAL PROCEDURES

2. Make Corrections Noted – Same as Item 1, except that minor corrections as noted shall be made by Contractor.
 3. Reviewed – Submittal has been reviewed by the port. Does not constitute approval and the Contractor is responsible for requirements in submittal.
 4. Review as Noted – Submittal has to be reviewed by the Port with comments as noted.
 5. Revise and Resubmit – Means, rejected because of major inconsistencies or errors. Resolve or correct before next submittal.
- B. Submittals marked “No Exceptions Taken”, “Make Corrections Noted” or “Reviewed as Noted” authorizes Contractor to proceed with construction covered by those data sheets or shop drawings with corrections, if any, incorporated.
- C. When submittals or prints of shop drawings have been marked “Revise and Resubmit” or “Rejected,” Contractor shall make the necessary corrections and submit required copies. Every revision shall be shown by number, date, and subject in a revision block, and each revised shop drawing shall have its latest revision numbers and items clearly indicated by clouding around the revised areas on the shop drawing.
- D. Submittals authorized by the Engineer do not in any case supersede the Contract Documents. The approval by the Engineer shall not relieve the Contractor from responsibility to conform to the Drawings or Specifications, or correct details when in error, or ensure the proper fit of parts when installed. A favorable review by the Port of shop drawings, method of work, or information regarding material and equipment Contractor proposes to furnish shall not relieve Contractor of its responsibility for errors therein and shall not be regarded as assumption of risk or liability by the Port or its officers, employees, or representatives. Contractor shall have no claim under the Contract on account of failure or partial failure, or inefficiency or insufficiency of any plan or method of work, or material and equipment so accepted. Favorable review means that the Port has no objection to Contractor using, upon its own full responsibility, the plan or method of work proposed, or furnishing the material and equipment proposed.
- E. It is considered reasonable that the Contractor’s submittals shall be complete and acceptable by at least the second submission of each submittal. The Port reserves the right to deduct monies from payments due Contractor to cover additional costs for review beyond the second submission.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 PREPARATION OF SUBMITTALS

- A. The Contractor shall use the Port supplied transmittal form for all submittals and email submittals in a clear PDF document to the Engineer at EMAIL.
- B. The Contractor shall use the eBuilder software to submit all shop drawings, catalog cuts, brochures including sample which must be hand-delivered. Notes, clouding, arrows or other post document generation notations must be applied directly into the electronic file using software designed for that purpose. **Each submittal shall be accompanied by a transmittal developed within the eBuilder software.**
- C. A separate submittal shall be prepared for each product or procedure and shall be further identified by referencing the Specification Section and paragraph number and each submittal shall be numbered consecutively. An example of the numbering protocol is given here for an Electrical Submittal “26 05 33-001 – PVC Schedule 80 Conduit”. If something is rejected and needs resubmitted it gets resubmitted with the same number adding an R for revised or .1, but the submittal number stays the same ALWAYS.
- D. Product submittals that cannot be accomplished electronically shall be accompanied by a printed version of the transmittal. These submittals will be hand delivered to the Port offices at One Sitcum Plaza, Attention: Engineering Department.
- E. Shop and detail drawings shall be submitted in related packages. All equipment or material details which are interdependent or are related in any way must be submitted indicating the complete installation.

ATTACHMENT C
DIVISION 01 – GENERAL REQUIREMENTS
SECTION 01 33 00 – SUBMITTAL PROCEDURES

Submittals shall not be altered once marked "No Exceptions Taken" Revisions shall be clearly marked and dated. Major revisions must be submitted for approval.

- F. The Contractor shall thoroughly review all shop and detail drawings, prior to submittal, to assure coordination with other parts of the work.
- G. Components or materials which require shop drawings and which arrive at the job site prior to approval of shop drawings shall be considered as not being made for this project and shall be subject to rejection and removal from the premises.
- H. All submittal packages including (but not limited to) product data sheets, mix designs, shop drawings and other required information for submittal must be submitted, reviewed and approved before the relevant scheduled task may commence. It is the responsibility of the Contractor to provide the submittal information which may drive a task on the construction schedule to submit items well enough in advance as to provide adequate time for review and comment from the Engineer without adversely impacting the construction schedule.
- I. When completing the eBuilder submittal form, a Date Due field is required to be completed. This field is intended to inform the Port of the urgency of the submittal. Failure of the Port to return the submittal by the date provided by the Contractor will not be considered grounds for a contract time extension.

3.02 MAINTENANCE OF SUBMITTAL LOG

- A. Prepare and submit for Port review a detailed submittal log conforming to the requirements of paragraph 1.02 of this section. When approved by the Engineer use the submittal log to track the transmittal of submittals to the Engineer, the receipt of submittal comments from the Engineer, and all subsequent action with respect to each submittal. Provide an updated copy of the submittal log to the Engineer during each weekly progress meeting, unless otherwise approved by the Engineer.

END OF SECTION

This Page Intentionally Left Blank

PART 1 – GENERAL

1.01 SUMMARY

- A. The Work under this section includes procurement, required storage prior to delivery, insurance, and transport of all the stormwater treatment system equipment, materials, and appurtenances as shown on the Drawings and specified herein.

1.02 REFERENCES

- A. Not Used.

1.03 SUBMITTALS

- A. Submit the following information in a single package under the Product Review category, according to Section 01 33 00, Submittal Procedures.
 - 1. Shop drawings showing general arrangement of equipment and dimensions and supporting hydraulic calculations.
 - 2. Structural design calculations sealed by a professional engineer licensed to practice in the State of Washington. Calculations shall demonstrate that the treatment system are designed to meet above ground structural design requirements for concrete structures and applicable building codes.
 - 3. System performance data.
 - 4. Handling, storage and installation instructions.
 - 5. Manufacturer representative qualifications.
 - 6. Operation and maintenance instructions.

1.04 QUALITY ASSURANCE

- A. Field Quality Control:
 - 1. The Engineer will:
 - a. Review materials proposed for use.
 - b. Inspect prior to installation.
 - c. Observe placement.
- B. Manufacturer shall provide, at no additional cost to the Port, 10 inspections and 1 annual maintenance of the treatment system for a period of one year. Provide a schedule for tenant notification at the time of installation completion.

1.05 REFERENCE DOCUMENTS

- A. The following reference documents are available at the Port for review or are included in the Construction Plans:
 - 1. Stormwater Engineering Report for West Sitcum Marine Terminal, Parametrix, January 2018.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Treatment Systems supplier shall deliver all treatment system equipment and materials to the West Sitcum Marine Terminal for storage by the General Contractor of the West Sitcum Stormwater Treatment project, and not before General Contractor has mobilized and is ready to accept delivery. The specific delivery location shall be designated by the Engineer. Supplier shall coordinate delivery with the Port's installation Contractor, who shall provide equipment for material offloading at the delivery site. No material shall be

ATTACHMENT C
DIVISION 33 – UTILITIES
SECTION 33 44 19 – TREATMENT SYSTEMS

delivered prior to the times and dates specified by the Contractor. The Port shall incur no additional costs if the delivery schedule differs from this delivery date window.

- B. Protect all materials from damage during delivery, offloading, and storage. Cover UV sensitive materials if materials will be stored for more than one week. Storage surfaces should be free from dirt, mud and debris.
- C. Filter media shall be stored away and covered to prevent from being fouled by other granular materials and construction related sediment in the air.

PART 2 – PRODUCTS

2.01 TREATMENT SYSTEMS

A. GENERAL REQUIREMENTS

- 1. The stormwater treatment systems shall have an approximate loading rate of 1.0 gpm per square foot of filtration media. The number of cells required for each system and the Basis of Design model numbers are provided below.

Location	Port Asset Nos.	No. of Units	MWS Model No.	No. of Treatment Cells per Unit
Basin A	TBD	6	MWS-L-8-24-V-HC	6
		2	MWS-L-8-8-V	2
Basin B	TBD	4	MWS-L-8-24-V-HC	6
		2	MWS-L-8-20-V	5
Basin C	TBD	10	MWS-L-8-24-V-HC	6
		2	MWS-L-8-20-V	5

- 2. The treatment systems shall have a pre-filtration stage followed by an adsorption media stage and utilize flow-through chambers where stormwater is introduced to the adsorption media using horizontal flow.
- 3. The treatment system must possess a flow control device or orifice to meet and maintain the water quality flow capacity. High flow bypass will be provided by an upstream diversion structure. Treatment system will also possess an internal bypass system to bypass flows that exceed the system treatment capacity.
- 4. The treatment system's piping shall possess clean outs with slotted collection piping configured in such a way to provide back flush capacity without removing the adsorption media.
- 5. The treatment system components shall be made in the USA, unless otherwise indicated.
- 6. The treatment system shall have a minimum 5-year warranty on non-consumable parts.
- 7. The supplier of the treatment system shall provide a one year supply of pre-filtration and adsorption media, conduct 10 system inspections within a 12-month period after activation, and provide chain of custody inspection and maintenance documentation.
- 8. Required treatment system reported minimum removal efficiencies:

<u>Pollutant</u>	<u>Minimum Removal Efficiency</u>
TSS	63%
Dissolved Copper	70%
Total Copper	60%
Dissolved Zinc	69%
Total Zinc	49%
TPH-Oil	53%

B. TREATMENT SYSTEM

1. All internal piping shall be SD35 PVC.
2. Basin filter components, including mounting hardware, fasteners, support brackets, filtration material, and support frame shall be constructed of 316 SST and fiberglass. Fasteners shall be stainless steel.
3. Primary filter mesh shall be 316 stainless steel welded screens. Filtration basket screens for coarse, medium and fine filtration is 3/4-inch by 1-3/4-inch expanded, 10 x 10 mesh, and 35 x 35 mesh, respectively. Mounts shall be constructed of SST.
4. Perimeter filter structure shall be constructed of lightweight injection molded plastic. Mounting brackets shall be constructed of SD40 PVC and shall be mounted with 3/8-inch diameter SST redheads.
5. The systems shall be contained in precast concrete structures designed for pedestrian traffic loading.
6. Manufacturer: BioClean Modular Wetlands models MWS L-8-8-V, MWS-L-8-20-V, and MWS L 8-24-V-HC, or approved equal.

C. TREATMENT SYSTEM MEDIA

1. Prefiltration Media:
 - a. Media shall be an inert material in cubed or block form.
 - b. Manufacturer: BioClean Modular Wetlands – BioMedia Green or approved equal.
2. Filtration Media:
 - a. Filtration media shall consist of structural light weight aggregates made of ceramic material produced by expanding and vitrifying select shales, clays, and slates in a rotary kiln. This process produces a high-quality ceramic aggregate that is structurally strong, physically stable, durable, environmentally inert, light in weight, and highly insulative. Media shall be a natural, non-toxic, absorptive aggregate that is dimensionally stable and will not degrade over time. Media must be produced to meet the requirements of ASTM C 330, ASTM C 331, and AASHTO M 195. Aggregates must have a minimum 24-hour water absorption of 10.5 percent mass.
 - b. Manufacturer: BioClean Modular Wetlands, Industrial Mix, or approved equal.

PART 3 – EXECUTION

3.01 TRAINING

- A. The Treatment Systems supplier shall arrange for one 8-hour day of operations training for Port personnel provided by the manufacturer's representative during system startup, or activation. Follow up training shall be provided by the manufacturer during the scheduled annual maintenance.

END OF SECTION

This Page Intentionally Left Blank

90% Design Drawings

PORT OF TACOMA

WEST SITCUM STORMWATER TREATMENT CONTRACT NO. 070664 MID NO. 201024.01

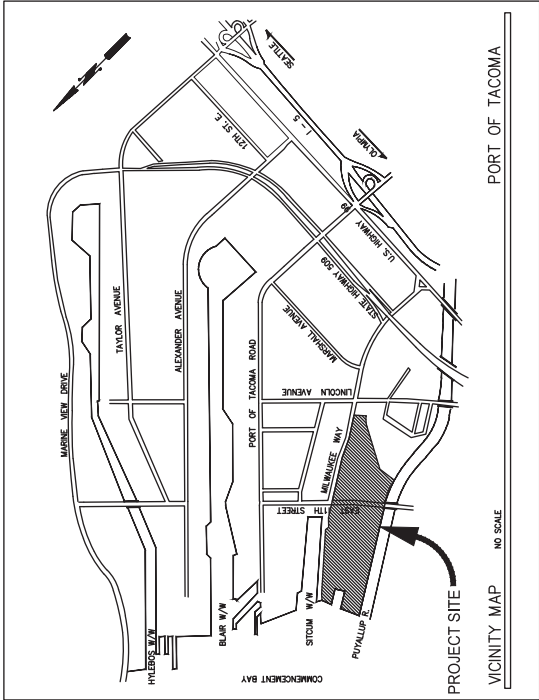
PORT COMMISSIONERS:

JOHN MCCARTHY
DONALD C. JOHNSON
RICHARD P. MARZANO
CLARE PETRICH
DON MEYER

PORT STAFF:

JOHN WOLFE
Chief Executive Officer
DAKOTA CHAMBERLAIN, PE
Chief Facilities
Development Director
JANE VANDENBERG, PE
Director of Engineering

HUGHES WIKE, PE
Project Manager



APPLICANT:
NAME: PORT OF TACOMA - WEST SITCUM TERMINAL
CONTACT: HUGHES WIKE
ADDRESS: 1400 EAST 11TH AVE., TACOMA, WA 98421
PHONE NUMBER: 253-320-5330
EMAIL: hwike@portoftacoma.com

ENGINEER:
NAME: PARAMETRIX
CONTACT: CEDAR SIMMONS
ADDRESS: 1400 EAST 11TH AVE., STE 300, BREMERTON, WA 98337
PHONE NUMBER: 541-598-7324
EMAIL: cssimmons@parametrix.com

SHEET DESIGNATION		DRAWING LIST	
		SHEET #	SHEET TITLE
G01	01		TITLE SHEET
G02	02		LEGEND, ABBREVIATIONS, AND GENERAL NOTES
G03	03		SITE KEY MAP AND SURVEY CONTROL
G04	04		PROCESS FLOW DIAGRAM AND DESIGN CRITERIA - BASINS A AND B
G05	05		PROCESS FLOW DIAGRAM AND DESIGN CRITERIA - BASIN C
G06	06		HYDRAULIC PROFILE
G07	07		CONSTRUCTION STAGING - BASINS A, B, & C
G08	08		TRAFFIC ROUTING PLAN
D01	09		DEMOLITION PLAN
D02	10		OWS DEMOLITION DETAILS
C01	11		SITE PLAN - BASIN A
C02	12		SITE PLAN - BASIN B
C03	13		SITE PLAN - BASIN C
C04	14		EROSION CONTROL PLAN - BASINS A, B, & C
C05	15		EROSION CONTROL NOTES AND DETAILS
C06	16		GENERAL CIVIL DETAILS
S01	17		STRUCTURAL DETAILS
M01	18		MECHANICAL PLAN - BASIN A
M02	19		MECHANICAL PLAN - BASIN B
M03	20		MECHANICAL PLAN - BASIN C
M04	21		MECHANICAL SECTION - BASIN A
M05	22		MECHANICAL SECTION - BASIN A
M06	23		MECHANICAL SECTION - BASIN B
M07	24		MECHANICAL SECTION - BASIN B
M08	25		MECHANICAL SECTION - BASIN C
M09	26		MECHANICAL SECTION - BASIN C
M10	27		DETAILS - HYDRODYNAMIC SEPARATOR - BASIN A
M11	28		DETAILS - HYDRODYNAMIC SEPARATOR - BASIN B
M12	29		DETAILS - HYDRODYNAMIC SEPARATOR - BASIN C
M13	30		DETAIL - WW6SL-8-24-VHC
M14	31		DETAIL - WW6SL-8-24-VHC
M15	32		DETAIL - WW6SL-8-24-VHC
E01	33		ELECTRICAL LEGEND AND ABBREVIATIONS
E02	34		ONE-LINE DIAGRAM AND LOAD CALCULATIONS
E03	35		P & ID
E04	36		ELECTRICAL SITE PLAN - BASIN A
E05	37		ELECTRICAL SITE PLAN - BASIN B
E06	38		ELECTRICAL SITE PLAN - BASIN C
E07	39		ELECTRICAL ENCLOSURE PLAN AND DETAILS
E08	40		ELECTRICAL PUMP STATION DETAILS
E09	41		ELECTRICAL ELEMENTARY DIAGRAMS
E10	42		ELECTRICAL ELEMENTARY DIAGRAMS

6583

G01

SH 01 OF 42

CONTRACT NO. 070664
MID NO. 201024.01
TOWNSHIP: 21N
RANGE: 3E
SECTION: 33 & 34
DATE: 01/01/2018
PROJECT: WEST SITCUM STORMWATER TREATMENT
SHEET: 01 OF 42

APPROVED:

DIRECTOR ENG. DATE

PRINTED BY: aismood Feb 01, 2018

PORT ADDRESS: ONE SITCUM PLAZA
TACOMA, WA 98401-1837

DRAWING SCALE: AS NOTED

PARCEL: SEE G02

PHASE: 90%

DATE: 01/01/2018

BY: [Signature]

REVISION: [Signature]

APPR: [Signature]

DATE: 01/01/2018

PARAMETRIX

ENGINEERING, PLANNING, SKINNING, ENVIRONMENTAL SCIENCES

TACOMA

PORT OF TACOMA

SEAL

PARAMETRIX

ENGINEERING, PLANNING, SKINNING, ENVIRONMENTAL SCIENCES

TACOMA

THIS DRAWING IS THE PROPERTY OF THE PORT OF TACOMA AND SHALL NOT BE USED ON OTHER WORK, DISCLOSED, COPIED, IN WHOLE OR IN PART, WITHOUT WRITTEN PERMISSION

PRELIMINARY 90% SUBMITTAL
NOT FOR CONSTRUCTION

SURVEY NOTES:

1. THIS MAP CORRECTLY REPRESENTS CONDITIONS AND FEATURES EXISTING AT THE TIME OF THIS SURVEY IN NOVEMBER, 2017.
2. CONVENTIONAL AND GPS SURVEY EQUIPMENT WAS USED IN THE PERFORMANCE OF THIS SURVEY. ALL EQUIPMENT IS MAINTAINED IN CONFORMANCE WITH CURRENT STATE STATUTE.
3. THIS SURVEY WAS PREPARED BY FIELD TRAVERSE AS PER STANDARD PRACTICE. A RELATIVE ACCURACY EXCEEDS 1 FOOT IN TEN THOUSAND.
4. ALL SURFACE FEATURES AND INVERT STRUCTURE ELEVATION SHOWN HEREON WERE FIELD LOCATED AND MEASURED BY PARAMETRIX FOR THIS SURVEY. UNDERGROUND UTILITY LINES ARE BASED UPON A COMBINATION OF ASBUILT PLANS, FIELD SURVEY, AND INFORMATION FROM ON-SITE UNDERGROUND UTILITY MARKINGS PERFORMED BY OTHERS.
5. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE.
6. BOUNDARY INFORMATION SHOWN HEREON IS BASED ON PUBLIC GIS INFORMATION PROVIDED BY THE PIERCE COUNTY. BOUNDARY LINES SHOWN ARE FOR REPRESENTATION PURPOSES ONLY AND ARE NOT TO BE USED FOR DESIGN ACTIVITIES THAT WILL RELY ON AN ACCURATE REPRESENTATION OF BOUNDARY INFORMATION.
7. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT, WHICH MAY REVEAL RESTRICTIONS OR EASEMENTS OF RECORD. ACCORDINGLY, NONE ARE SHOWN HEREON.

HORIZONTAL DATUM:

THE HORIZONTAL DATUM FOR THIS SURVEY IS NAD 83/91, WASHINGTON STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, BASED ON THE WASHINGTON STATE REFERENCE NETWORK (WSRN) WITH A CONFIRMATION TIE TO CITY OF TACOMA SURVEY MONUMENT NO. 552.

SURVEY MONUMENT NO. 555 SURVEY MONUMENT NO. 552
NORTHING: 705,705.799 NORTHING: 704,923.149
EASTING: 1167945.472 EASTING: 1168286.477

VERTICAL DATUM:

VERTICAL DATUM FOR THIS SURVEY IS MLLW (MEAN LOW LOW WATER) PER CITY OF TACOMA PUBLIC WORKS VERTICAL DATUM CHART NGVD 29 FIELD SURVEYED ELEVATION DATA ESTABLISHED UTILIZING THE WASHINGTON STATE REFERENCE NETWORK (WSRN) ADJUSTED TO CITY OF TACOMA VERTICAL CONTROL MONUMENT NO. 2595 AND CONVERTED TO MLLW DATUM WITH A MONUMENT TIE TO CITY OF TACOMA VERTICAL CONTROL MONUMENT NO. 2597

VERTICAL CONTROL MONUMENT NO. 2595.
ELEV. 10.909' - NGVD 29
ELEV. 16.869' - MLLW

VERTICAL CONTROL MONUMENT NO. 2597.
ELEV. 10.047' - NGVD 29
ELEV. 16.007' -MLLW

THE CONVERSION FROM NGVD 29 TO MLLW DATUM WAS REFERENCED TO NOAA TIDAL BENCHMARK "TIDAL 22" AND THE CITY OF TACOMA PUBLIC VERTICAL DATUM CONVERSION CHART (EPOCH 1983-2001).

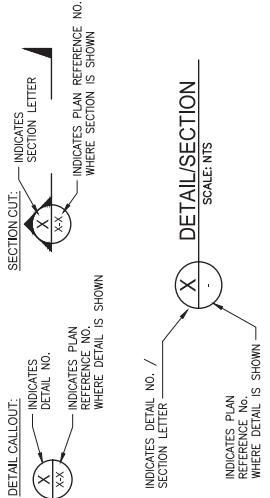
HIGHEST OBSERVED (12/17/2012) 14.87 FT.
MEAN HIGHER HIGH WATER (MHHW) 11.80 FT.
MEAN HIGH WATER (MHW) 10.92 FT.
MEAN TIDE LEVEL (MTL) 6.89 FT.
NGVD 29 5.96 FT.
MEAN LOW WATER (MLW) 2.85 FT.
MEAN LOWER LOW WATER (MLLW) 0.00 FT.

SOURCE: NOAA, STATION ID = 9446484,
NAME = TIDAL 22, TACOMA, WASHINGTON
NGVD29 + 5.96' = MLLW ELEVATION

GENERAL NOTES:

1. THIS PROJECT INVOLVES INSTALLING STORMWATER PUMP STATIONS, HYDRODYNAMIC SEPARATORS, TREATMENT SYSTEMS, CONSTRUCTION OF CONVEYANCE FEATURES, AND ASSOCIATED PAVEMENT RECONSTRUCTION.
2. THE PROJECT TERMINAL, PROJECT LOCATIONS ARE AS FOLLOWS:
BASIN A: 1002 MILWAUKEE WY, TACOMA, WA 98421
PARCEL NO. 89500000050 & 89500000061
BASIN B: 1002 MILWAUKEE WY, TACOMA, WA 98421
PARCEL NO. 89500000061
BASIN C: 1738 MILWAUKEE WY, TACOMA, WA 98421
PARCEL NO. 89500000092
3. ALL SAFETY CODES, REGULATIONS AND SPECIFICATIONS SHALL BE COMPLIED WITH FOR THE DURATION OF THE PROJECT. CONTRACTOR SHALL WEAR ALL LIGHTS, SIGNS, PARRICADES, FLAG PERSONNEL, AND CONE TRAFFIC CONTROL TO MAINTAIN THE PORT OF TACOMA'S DESIGNATED PERSONNEL. ALL CONSTRUCTION SHALL BE COORDINATED WITH THE PORT OF TACOMA'S DESIGNATED PERSONNEL.
4. REFER TO SPECIFICATIONS SECTION 01 14 00 FOR WORK STAGING AND WORKING HOURS RESTRICTIONS.
5. ALL INDICATED SCALES IN DRAWINGS ARE APPROXIMATE AND DIMENSIONS SHOWN TAKE PRECEDENCE OVER SCALED DISTANCES. CONTRACTOR SHALL VERIFY DIMENSIONS AND QUANTITIES.
6. EXISTING FEATURES WERE DETERMINED BY FIELD SURVEYS PERFORMED IN JULY OF 2016 BY OTHERS AND BY PARAMETRIX IN 2017.
7. EXISTING UTILITY INFORMATION SHOWN ON THESE DRAWINGS WAS FIELD SURVEYED BY THE PORT OF TACOMA AND LOCATIONS SHOULD BE CONSIDERED APPROXIMATE.
8. PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL PROVIDE ALL CONSTRUCTION SURVEYING AND VERIFY EXISTING UTILITY LOCATIONS, AS WELL AS CALL AND ARRANGE FOR ANY LOCATIONS NOT SHOWN ON THESE DRAWINGS. CONTRACTOR SHALL WALK THE SITES WITH THE ENGINEER AND PORT PERSONNEL TO REVIEW EXACT LOCATION OF PROPOSED TREATMENT SYSTEMS AND TIE-IN LOCATIONS TO EXISTING CONVEYANCE SYSTEMS.
9. ALL TRACK, PAVEMENT, EXCAVATIONS MATERIALS NOT REQUIRED FOR NEW WORK AND OTHER MISCELLANEOUS ITEMS DESIGNATED FOR NEW WORK SHALL BE STOCKPILED ON-SITE WITH SUFFICIENTLY IN ACCORDANCE WITH ALL PROJECT SPECIFICATION, APPLICABLE LOCAL, STATE, AND FEDERAL LAWS AND REGULATIONS.
10. MATERIAL STOCKPILES SHALL BE LOCATED AS SHOWN ON THE DRAWINGS.
11. FOR ALL PROJECT EXCAVATIONS, CONTRACTOR SHALL DENVATER AS NECESSARY FOR DRY PLACEMENT OF NEW MATERIALS AND SHORE OPERATIONS IN ACCORDANCE WITH OSHA WORKING SAFETY REQUIREMENTS' AS APPLICABLE. REFER TO SPEC SECTION 31 23 19 AND 31 23 33.
12. CONTRACTOR TO RESTORE ALL AREAS AFFECTED BY WORK AND OPERATIONS. UPON COMPLETION OF A WORK AREA, THE CONTRACTOR SHALL THOROUGHLY CLEAN AND BROOM SWEEP THE AREA PRIOR TO MOVING TO NEXT WORK AREA.
13. REFERENCE DOCUMENTS INCLUDING GEOTECHNICAL REPORT BY HWA, AS BUILT PLANS, AND EXISTING TACOMA PLANS ARE PROVIDED IN THE APPENDIX OF THE CONTRACT DOCUMENTS.

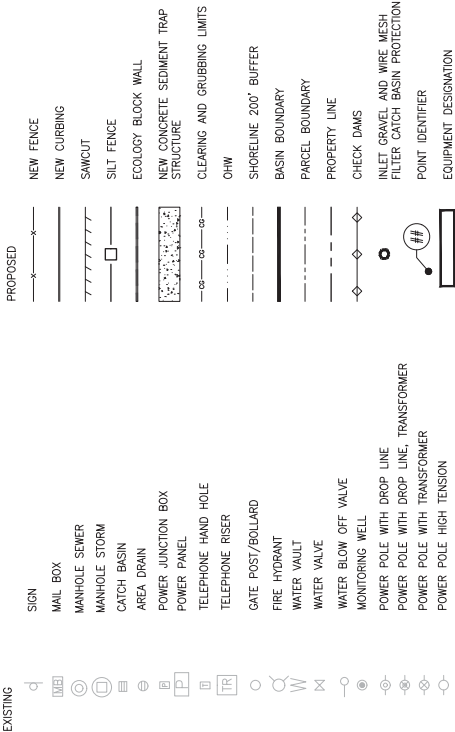
DETAIL AND SECTION DESIGNATIONS



ABBREVIATIONS:

AC	ASPHALT CONCRETE	G	GAS
ASPH	ASPHALT	GIS	SYSTEM
AVE	AVENUE	GPM	GALLONS PER MINUTE
BLDG	BUILDING	GV	GATE VALVE
BMP	BEST MANAGEMENT PRACTICE	HL	HYDRAULIC GRADE LINE
CB	CATCH BASIN	HP	HORSE POWER
CFS	CUBIC FEET PER SECOND	ID	IDENTIFICATION
CL	CENTERLINE	IE	INVERT ELEVATION
CL OR E	CENTERLINE OR EAST	L	LENGTH
CONC	CONCRETE	MAX	MAXIMUM
CSBC	CRUSHED SURFACING BASE	MJ	MODULAR JOINT
CSTC	CRUSHED SURFACING TOP	MIN	MINIMUM
CULV	CULVERT	MMS	MODULAR WETLAND SYSTEM
CT	CULVERT	N	NORTH/NORTHWEST
DEMO	DEMOLISH	N	NOT TO SCALE
DIA	DIAMETER	NE	NORTHEAST
DIP	DUCTILE IRON PIPE	NW	NORTHWEST
DWG	DRAWING	OWS	OIL/WATER SEPARATOR
E	EAST/EASTING	PAID	PROCESS AND INSTRUMENTATION
ECO	ECOLOGICAL	PFD	PROCESS FLOW DIAGRAM
EL/ELEV	ELEVATION	PLC	PROGRAMMABLE LOGIC
EX/EXIST	EXISTING	PMT	PARAMETER
FH	FIRE HYDRANT	PVC	POLYVINYL CHLORIDE
FL	FLANGE	R	RADIUS/RIVER
FRP	FIBERGLASS REINFORCED PLASTIC	RCP	REINFORCED CONCRETE PIPE
FT	FEET, FOOT	R/W	RIGHT OF WAY

LEGEND:



PRELIMINARY 90% SUBMITTAL
NOT FOR CONSTRUCTION

6583		G02		SH 02 OF 42		CONTRACT/CONS: 201024.01		M. ID: 907		PHASE: 907	
WEST SITCOM		STORMWATER TREATMENT		LEGEND, ABBREVIATIONS, AND GENERAL NOTES		APPROVED:		DIRECTOR ENG. DATE		PRINTED BY: ondrej@p Feb 01, 2018	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	
TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837					

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
102	709,877.02	1,165,033.64	19.22	SET MAG NAIL
103	709,877.02	1,165,033.64	19.22	SET MAG NAIL
104	711,886.97	1,163,191.17	18.28	SET MAG NAIL
105	711,886.97	1,163,247.27	18.28	SET MAG NAIL
106	711,305.01	1,163,911.58	17.15	SET MAG NAIL
107	711,305.01	1,163,922.55	17.15	SET MAG NAIL
108	711,337.20	1,163,222.55	18.18	SET MAG NAIL
109	711,337.20	1,163,260.19	17.48	SET MAG NAIL
110	711,750.86	1,163,660.19	16.89	SET MAG NAIL
111	711,827.27	1,163,266.66	17.37	SET MAG NAIL
112	709,822.56	1,165,217.96	17.37	SET MAG NAIL
113	709,822.56	1,165,187.53	18.12	SET MAG NAIL
114	709,452.56	1,165,067.70	17.40	SET MAG NAIL
115	709,452.56	1,165,007.70	17.40	SET MAG NAIL
116	709,378.54	1,164,760.80	17.59	SET MAG NAIL
117	709,378.54	1,164,760.80	17.59	SET MAG NAIL
118	709,225.04	1,164,368.73	17.35	SET MAG NAIL
119	709,225.04	1,164,368.73	17.35	SET MAG NAIL
120	708,981.54	1,164,953.73	18.06	SET MAG NAIL
121	708,981.54	1,164,953.73	18.06	SET MAG NAIL
122	708,626.59	1,165,091.63	17.49	SET MAG NAIL
123	708,626.59	1,165,091.63	17.49	SET MAG NAIL
124	708,433.67	1,165,862.19	18.31	SET MAG NAIL
125	708,433.67	1,165,862.19	18.31	SET MAG NAIL
126	708,024.34	1,165,426.96	17.97	SET MAG NAIL

LEGEND

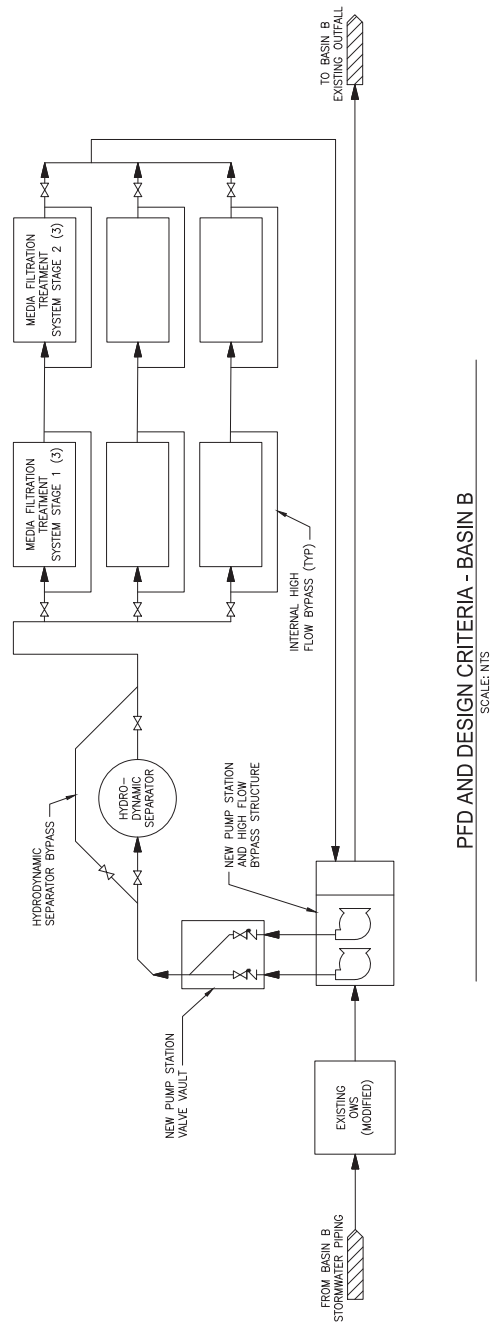
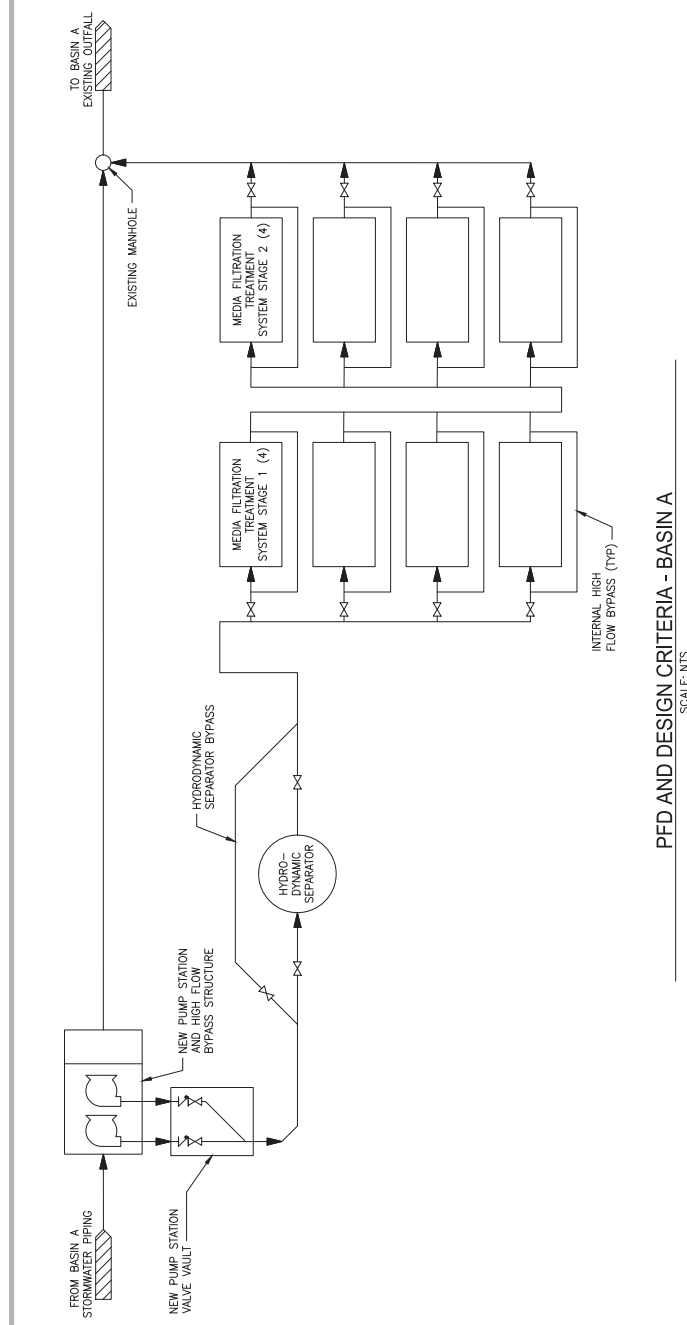
- SHORELINE
200' SHORELINE ZONE
DRAINAGE BASIN BOUNDARY
PARCEL BOUNDARY
WORK SITE LOCATION
FILL AREA BOUNDARY
MONITORING WELL – MEASURED IN THE FIELD IN APRIL 2008
MONITORING WELL – PREVIOUS SURVEY CONDUCTED IN 1996
SURVEY CONTROL POINT
OUTFALL

SITE KEY MAP AND SURVEY CONTROL



PRELIMINARY 90% SUBMITTAL
NOT FOR CONSTRUCTION

6583		G03		WEST SITCUM STORMWATER TREATMENT SITE KEY MAP AND SURVEY CONTROL		APPROVED: _____ DIRECTOR ENG. DATE _____ CHECKED BY DATE _____		SEALED AND SIGNED 		Parametrix Parametrix, PLLC, 1000 UNIVERSITY AVENUE 		Port of Tacoma 		APRR: _____ DATE: _____ BY: _____ MARK: _____ REVISION: _____		TOWN: SHIP: 21N RANGE: 3E SECTIONS: 33 & 34 VERT: MTLW DRAWING SCALE: AS NOTED PORT ADDRESS: ONE SITCUM PLAZA TACOMA, WA 98401-1837		PHASE: _____ DATE: 2010.02.01 PROJECT: SEE G02 DAT: HW2: WA3-S		CONT./CONS: 070664 M. ID: 201024.01 PHASE: 90%	
------	--	-----	--	--	--	--	--	--	--	---	--	---	--	--	--	---	--	---	--	--	--



DESIGN CRITERIA	
ITEM	DESCRIPTION
PORT OF JACOBA	
COMMENCEMENT BAY ORDINARY	
HIGH WATER MARK	
MEAN HIGHER HIGH WATER	
	VALUE
	12.2 FT
	11.8 FT
BASIN A	
WATER QUALITY FLOW RATE	
PUMP STATION	
PUMP QUANTITY (1 STBY)	
PUMP CAPACITY (EA)	
HP (EA)	
BYPASS STRUCTURE	
TYPE	
HEADLOSS	
TREATMENT SYSTEM	
TYPE	
2	
1,430 GPM @ 30.2 TDH	
20	
FLAP GATE	
0.65 FEET	
2. STAGE MEDIA FILTRATION	
(100% REDUNDANCY)	
8	
6 @ 1 CFS, 2 @ 0.23 CFS	
6 @ 4.9 FT, 2 @ 3.4 FT	
BASIN B	
WATER QUALITY FLOW RATE	
PUMP STATION	
PUMP QUANTITY (1 STBY)	
PUMP CAPACITY (EA)	
HP (EA)	
BYPASS STRUCTURE	
TYPE	
HEADLOSS	
TREATMENT SYSTEM	
TYPE	
2.2 CFS	
2	
1,090 GPM @ 25.6 TDH	
12	
FLAP GATE	
0.65 FEET	
2. STAGE MEDIA FILTRATION	
(100% REDUNDANCY)	
4 @ 1 CFS, 2 @ 0.5777 CFS	
4 @ 4.9 FT, 2 @ 3.4 FT	

					
APPROVED: _____ CHECKED BY: _____ DATE: _____ DIRECTOR: _____ ENG. DATE: _____ PRINTED BY: _____ PORT ADDRESS: ONE SITUUM PLAZA TACOMA, WA 98401-1837		TOWNSHIP: 21N RANGE: 3E SECTIONS: 33 & 34 VERT: MLTW DATE: 10/20/2011 PARCEL: WA83-S PHASE: 90%		TOWNSHIP: 21N RANGE: 3E SECTIONS: 33 & 34 VERT: MLTW DATE: 10/20/2011 PARCEL: WA83-S PHASE: 90%	
MARK: _____ REVISION: _____ BY: _____ APPR: _____ DATE: _____		PROCESS FLOW DIAGRAM AND DESIGN CRITERIA - BASINS A AND B FLOW DIAGRAM AND DESIGN CRITERIA - BASINS A AND B		G04 6583 07/66 02/44 HS 94	

6583

G05

SH 05 OF 42

CONTRACT: 070664
M. ID: 201024.01
PHASE: 90%

WEST SLUICUM
STORMWATER TREATMENT

PROCESS FLOW DIAGRAM AND DESIGN CRITERIA - BASIN C

APPROVED:

DIRECTOR ENG. DATE

PROJ. ENGR DATE

CHECKED BY DATE

PRINTED BY: andrew Feb 01, 2018

TACOMA, WA 98401-1837

DRAWING SCALE: AS NOTED

SECTION: 33 & 34

RANGE: 21N

TOWNSHIP: 21N

DATE: 201024.01

PARCEL: SEE G02

PHASE: 90%

MARK: REVISION: BY: APPR: DATE:

Parametrix

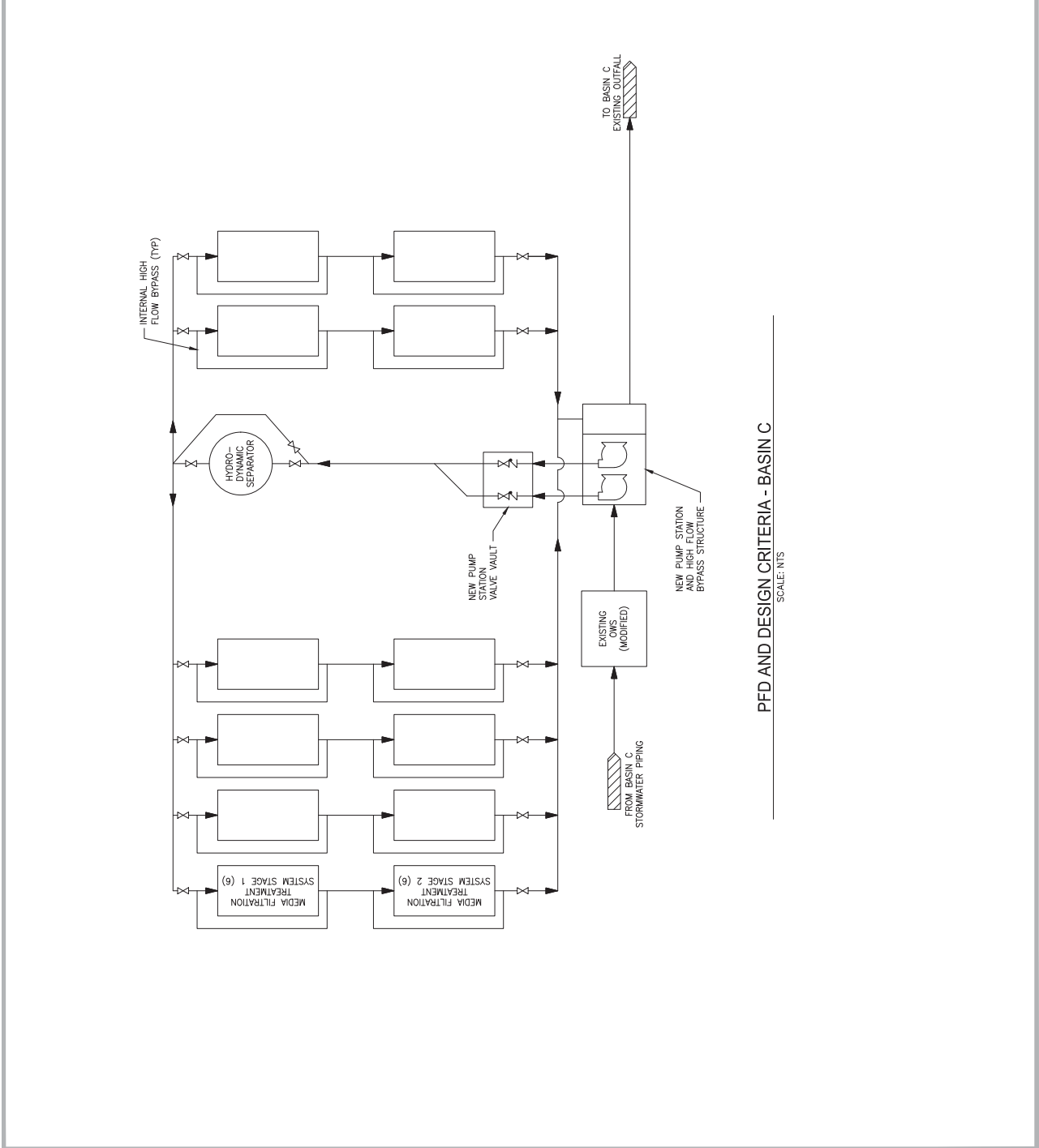
Tacoma

DESIGN CRITERIA

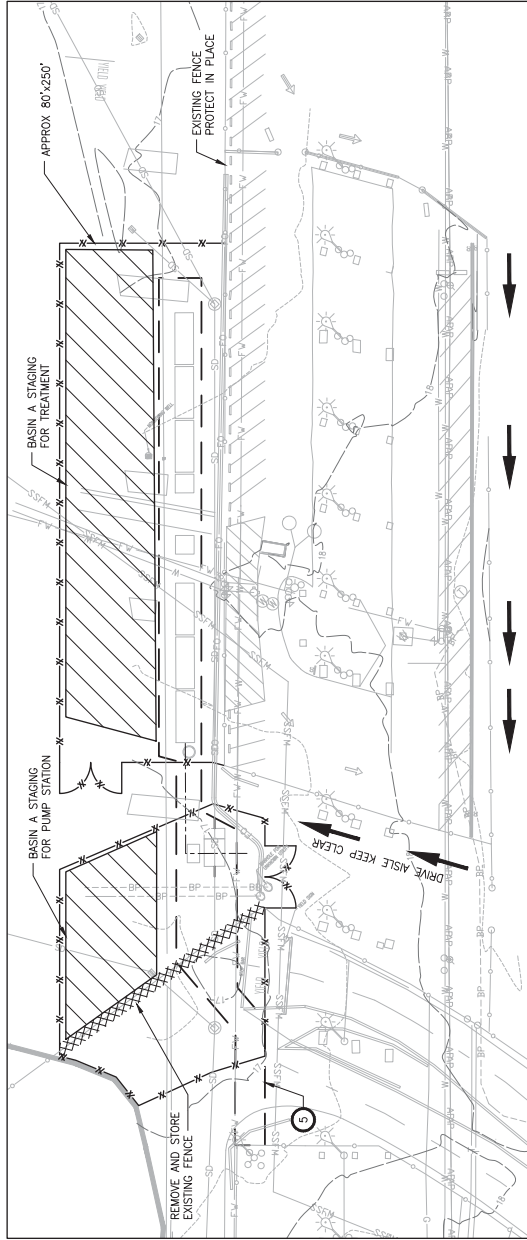
ITEM	DESCRIPTION	VALUE
PORT OF TACOMA	COMMENCEMENT BAY ORDINARY	12.2 FT
HIGH WATER MARK		
BASIN C		
WATER QUALITY	FLOW RATE	4.9 CFS
PUMP STATION		
PUMP QUANTITY (1 STBY)		2
PUMP CAPACITY (EA)		2,420 GPM @ 31.6 TDH
HP (EA)		25
BYPASS STRUCTURE		
FLAP GATE		0.65 FEET
HEADLOSS		
TREATMENT SYSTEM		
TYPE		2 STAGE MEDIA FILTRATION (100% REDUNDANCY)
QUANTITY, TOTAL		12
CAPACITY, EA		10 @ 1 CFS, 2 @ 0.577 CFS
OPERATING HEAD		10 @ 4.9 FT, 2 @ 3.4 FT

PRELIMINARY 90% SUBMITTAL

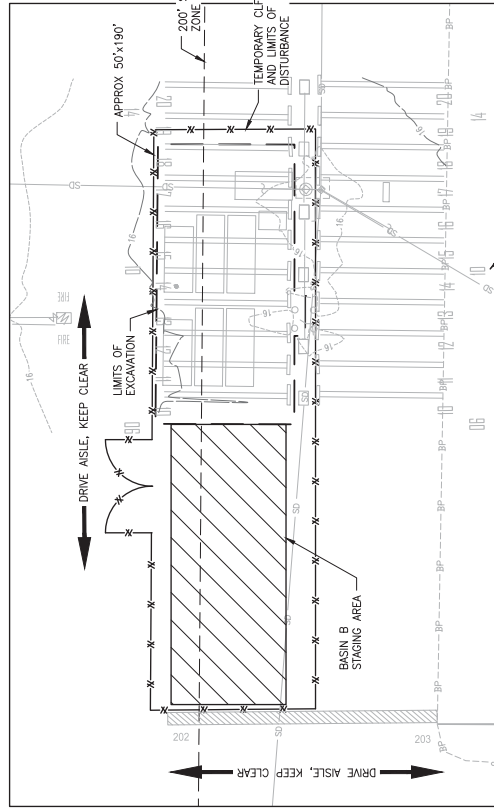
NOT FOR CONSTRUCTION



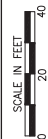




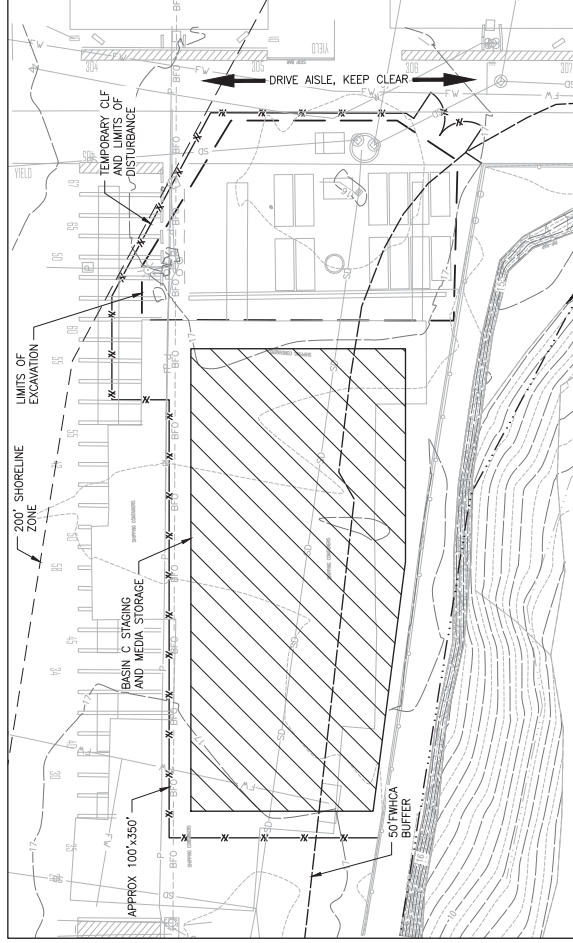
CONSTRUCTION STAGING - BASIN A



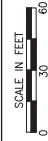
CONSTRUCTION STAGING - BASIN B



PRELIMINARY 90% SUBMITTAL
NOT FOR CONSTRUCTION



CONSTRUCTION STAGING - BASIN C



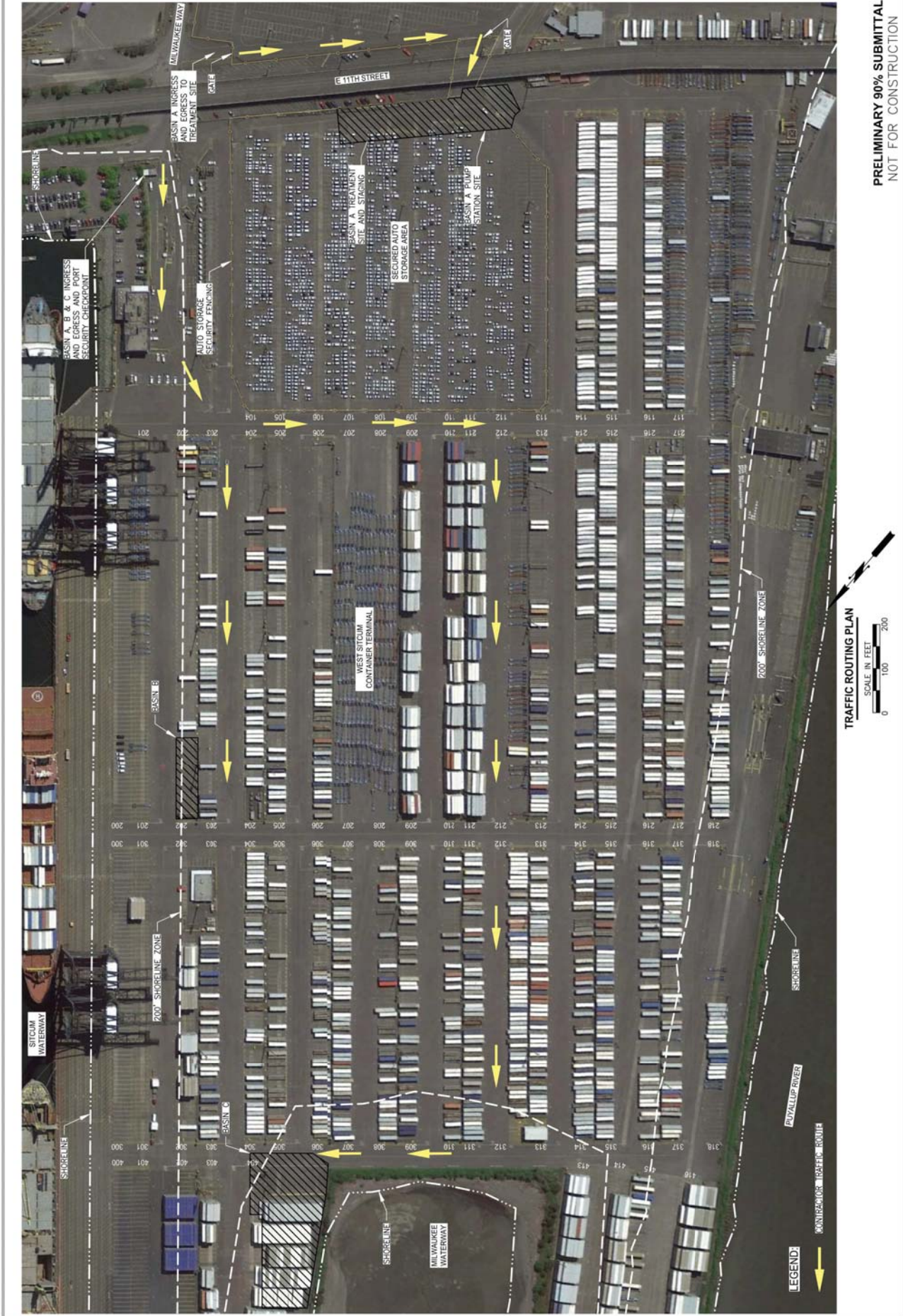
6583	G07	SH OF 42	CONTS: 070664	TOWNSHIP: 21N	RANGE: 3E	SECTIONS: 33 & 34	VERT: MLW	PRINTED BY: anderson Feb 01, 2018	PORT ADDRESS: ONE SITCUM PLAZA	TACOMA, WA 98401-1837
PHASE: 90%	DATE: 201024.01	PARCEL: SEE G02	DRAWING SCALE: AS NOTED	APPROVED:	CHECKED BY: DATE	PROJ. ENGR DATE	PRINTED BY: anderson Feb 01, 2018	PORT ADDRESS: ONE SITCUM PLAZA	TACOMA, WA 98401-1837	APPROVED:
MARK: REVISION:	BY: APPR: DATE:	PARAMETRIX	PROFESSIONAL PLANNING ENGINEERING SERVICES	PARAMETRIX	PROFESSIONAL PLANNING ENGINEERING SERVICES	PARAMETRIX	PROFESSIONAL PLANNING ENGINEERING SERVICES	PARAMETRIX	PROFESSIONAL PLANNING ENGINEERING SERVICES	PARAMETRIX

NOTES:

1. CLEARLY DELINEATE WORK LIMITS, STAGING AND STOCKPILE AREAS, AND TEMPORARY CLF PRIOR TO CONSTRUCTION. CLF SHALL BE 6" HIGH WEIGHTED AGAINST TIPPING AT BASE, DUE TO HIGH WIND GUSTS. MARK WITH FLASHING YELLOW LIGHTS.
2. ACCESS TO ALL SITES SHALL BE COORDINATED WITH PORT OF TACOMA AND FACILITY PERSONNEL.
3. NO DISTURBANCE BEYOND EXCAVATION LIMITS IS PERMITTED WITHOUT WRITTEN PERMISSION.
4. ALL FACILITY TRAFFIC LANES SHALL REMAIN CLEAR AT ALL TIMES UNLESS OTHERWISE NOTED.
5. COORDINATE CLF PLACEMENT WITH PROJECT PHASING PER TACOMA PORT STAFF, TENANT, AND SECURITY REQUIREMENTS.

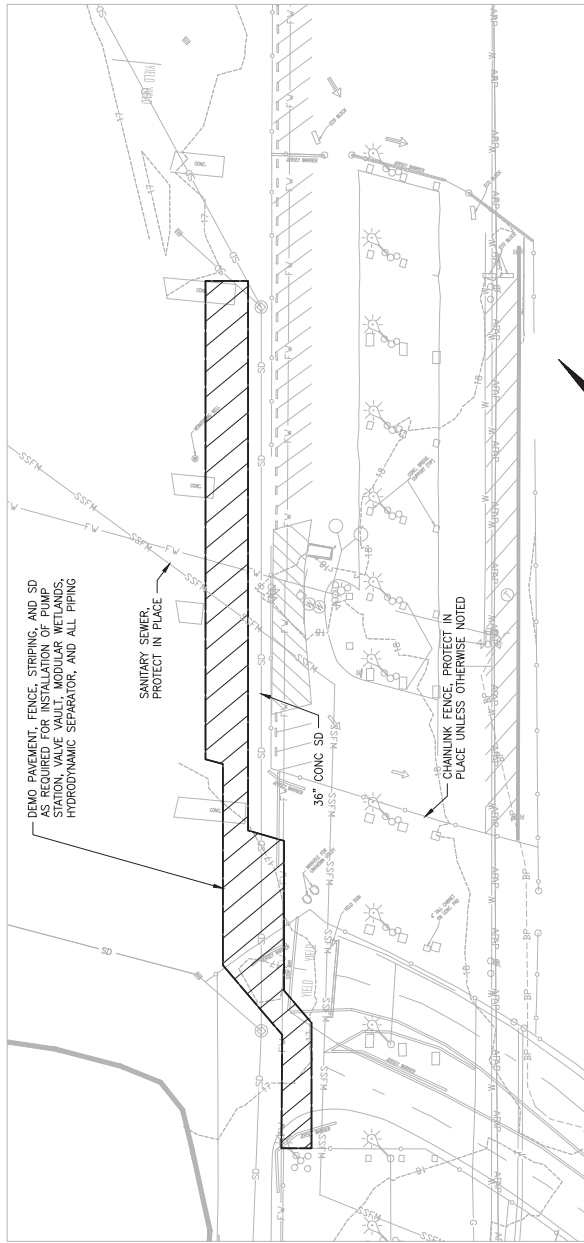
LEGEND:

- TEMPORARY CHAINLINK FENCE (CLF)
- STAGING AREA
- TRAFFIC ROUTING
- CONSTRUCTION ACCESS GATE
- LIMITS OF EXCAVATION
- REMOVE AND RESTORE

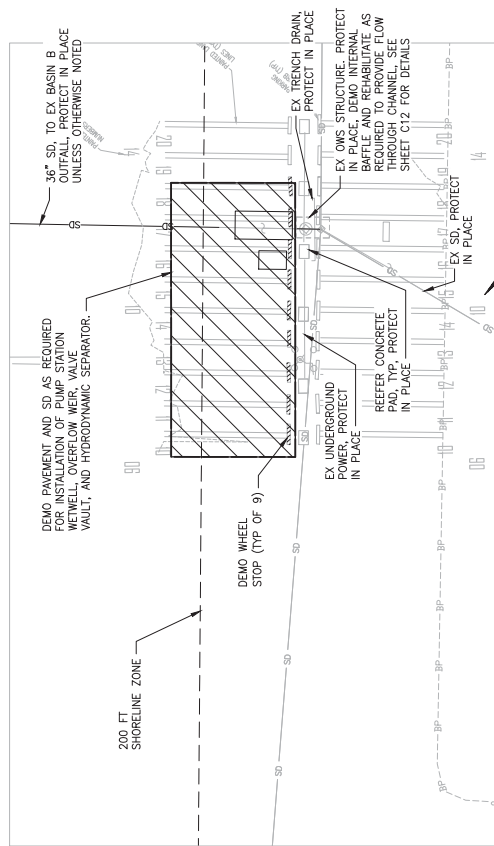


PRELIMINARY 90% SUBMITTAL
NOT FOR CONSTRUCTION

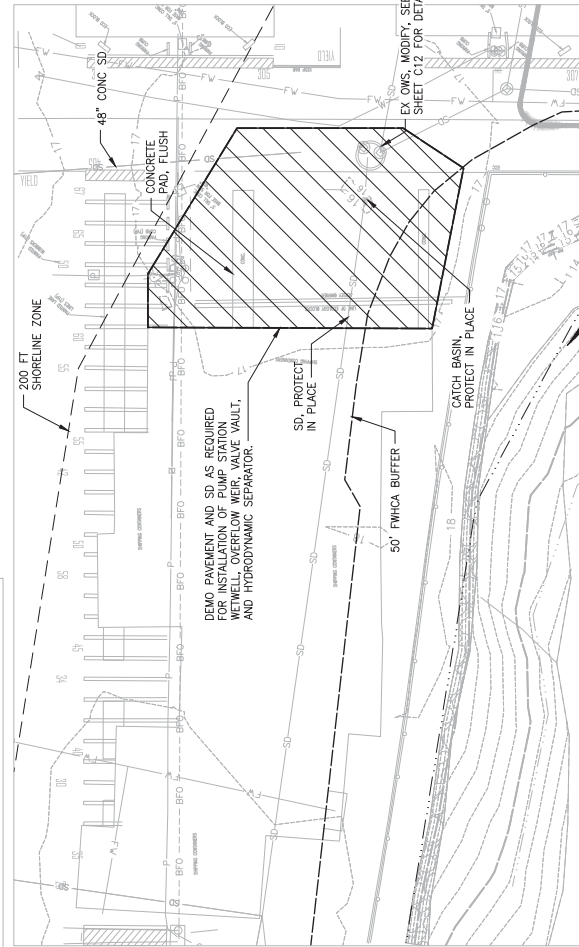
6583	G08	SH 08 OF 42
CONTRACT NO. 070664	TOWNSHIP: 21N	RANGE: 3E
DATE: 201024.01	PARCEL: SEE 002	DRAWING SCALE: AS NOTED
PHASE: 90%	VERT: MLLW	PRINTED BY: ondrbry Feb 01, 2018
PORT ADDRESS: ONE SITCUM PLAZA	TACOMA WA 98401-1837	APPROVED:
DIRECTOR ENG. DATE	PROJ. ENGR DATE	CHECKED BY DATE
MARK: REVISION:	BY:	APPR. DATE:
PARAMETRIX	PORT OF TACOMA	



BASIN A - DEMO PLAN



BASIN B - DEMO PLAN



BASIN C - DEMO PLAN



PRELIMINARY 90% SUBMITTAL
NOT FOR CONSTRUCTION

6583	D01	59 OF 42	CONT/CONS: 070664	TOWNSHIP: 21N	RANGE: 3E	SECTIONS: 33 & 34	VERT: MLLW	PRINTED BY: andrew Feb 01, 2018	PORT ADDRESS: ONE SITCUM PLAZA	TACOMA, WA 98401-1837	APPROVED:	CHECKED BY: DATE	PROJ. ENR DATE	DATE	REVISION:	BY:	APPR: DATE:	PHASE: 90%	DRAWING SCALE: AS NOTED	THIS DRAWING IS THE PROPERTY OF THE PORT OF TACOMA AND SHALL NOT BE USED ON OTHER WORK, DISCLOSED, COPIED, IN WHOLE OR IN PART, WITHOUT WRITTEN PERMISSION
------	-----	----------	-------------------	---------------	-----------	-------------------	------------	---------------------------------	--------------------------------	-----------------------	-----------	------------------	----------------	------	-----------	-----	-------------	------------	-------------------------	--

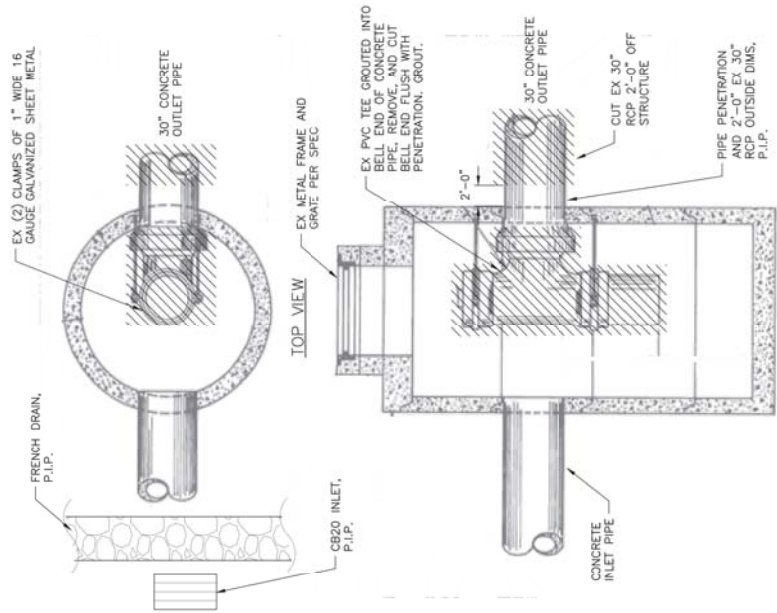
Parametrix
ARCHITECTURAL PLANNING ENVIRONMENTAL SERVICES

Tacoma
PORT OF TACOMA WA 98401-1837



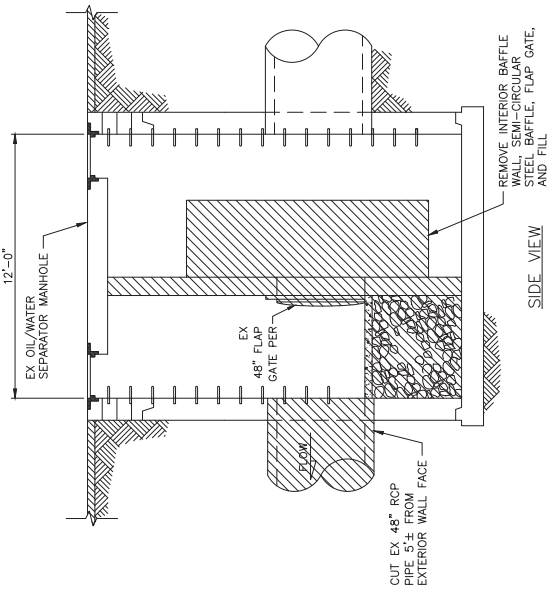
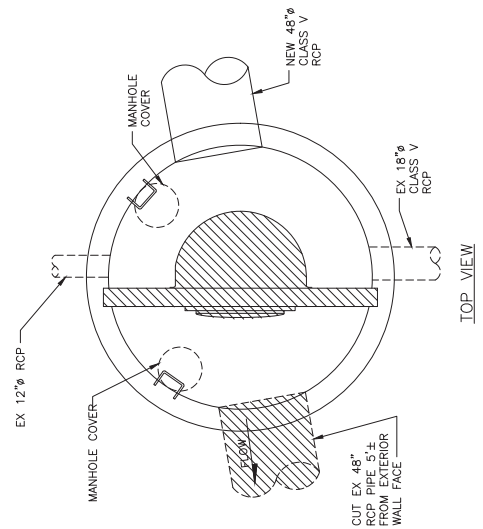
DEMOLITION NOTES:

1. LOCATE AND PROTECT IN PLACE ALL EXISTING UNDERGROUND PIPING AND OTHER UTILITIES DURING ALL CONSTRUCTION. DEMOLITION SHALL BE BASED ON BEST AVAILABLE INFORMATION SHOWN BASED ON BEST AVAILABLE INFORMATION. CONTRACTOR TO CONFIRM HORIZONTAL AND VERTICAL LOCATION & MATERIAL PRIOR TO CONSTRUCTION.
2. ALL DEMOLISHED MATERIAL SHALL BE DISPOSED AND/OR SALVAGED BY CONTRACTOR IN ACCORDANCE WITH THE SPECS.
3. PAVEMENT TO BE REMOVED OR DEMOLISHED SHALL BE SAW CUT IN STRAIGHT AND PERPENDICULAR LINES. REPLACE WITH AC PAVEMENT PER DETAIL 67007.



SIDE VIEW

1
D4
EXISTING BASIN B
OIL/WATER SEPARATOR DETAIL
SCALE: NTS



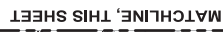
SIDE VIEW

2
D4
EXISTING BASIN C
OIL/WATER SEPARATOR DETAIL
SCALE: NTS

APPROVED:		CHECKED BY DATE	PROJ. ENGR DATE	PRINTED BY: andrew Feb 01, 2018	PORT ADDRESS: ONE SITCUM PLAZA	TACOMA, WA 98401-1837
DIRECTOR ENG. DATE		TACOMA, WA 98401-1837				
TOWNSHIP: 21N		RANGE: 3E				
SECTION: 33 & 34		VERT: MLW				
DRAWING SCALE: AS NOTED		PARCEL: SEE G02				
PHASE: 90%		M. ID: 201024.01				
CONT/CONS: 070664		DATE-HRZ: WA83-S				
SH 10 OF 42		D02				
6583		WEST SITCUM STORMWATER TREATMENT OWS DEMOLITION DETAILS				

MARK:	REVISION:	BY:	APPR:	DATE:
Parametrix				
TACOMA				

THIS DRAWING IS THE PROPERTY OF THE PORT OF TACOMA AND SHALL NOT BE USED ON OTHER WORK, DISCLOSED, COPIED, IN WHOLE OR IN PART, WITHOUT WRITTEN PERMISSION



POINT TABLE



- NOTES:

2 PREPARE SURGRADE PER GEOTECHNICAL REPORT SEE MEETING MINUTES

DACCINI A CDEM

SCALE: H = 20', V = 10'

100

CONCLUSION

1. SEE SHEET G08 FOR WORK AND STAGING AREA LIMITS.

FOR 125,000-LB WHEEL LOADS PER SPEC SECTION 33 49 20

3. ALL FILL MATERIAL SHALL BE COMPACTED TO 95% RELATIVE DENSITY

4. CONTRACTOR SHALL MATCH EXISTING GRADES UNLESS SHOWN OTHERWISE

5. COORDINATES (CU) ARE APPROXIMATE. CONTRACTOR SHALL VERIFY LOCATIONS BASED ON EXISTING CONDITIONS.

Downloaded from <http://ajph.org/> on November 10, 2014

3. SEE SHEET GOR FOR HATCHES AND STAGING AREA LIMITS.
4. PRECAST LIDS AND HATCHES INSTALLED SHALL BE DESIGNED FOR 125,000-LB WHEEL LOADS PER SPEC SECTION 33.49.20 UNLESS OTHERWISE NOTED.
5. ALL FILL MATERIAL SHALL BE COMPACTED TO 95% RELATIVE DENSITY.
6. CONTRACTOR SHALL MATCH EXISTING GRADES UNLESS SHOWN OTHERWISE.
7. COORDINATES (OO) ARE APPROXIMATE. CONTRACTOR SHALL VERIFY LOCATIONS BASED ON EXISTING CONDITIONS.
8. CONTRACTOR SHALL VERIFY PIPE DIAMETERS AND MATERIAL PRIOR TO CONNECTION.
9. RESTORE PAVEMENT STRIPING AS REQUIRED.
10. RELOCATE EXISTING UTILITIES AS NECESSARY BASED ON RESULTS OF FIELD EXPLORATIONS. CONFIRM RELOCATION WITH PORT AND ENGINEER PRIOR TO PERFORMING WORK.



POINT TABLE			
POINT #	NORTHING	EASTING	DESC
C1	711328.61	1163947.23	MWS 8x20 – NORTH CORNER
C2	711503.93	1163957.05	MWS 8x20 – SOUTH CORNER
C3	711521.99	1163839.74	MWS 8x24 – NORTH CORNER
C4	711497.30	1163848.56	MWS 8x24 – SOUTH CORNER
C5	711498.48	116361.316	MWS 8x24 – NORTH CORNER
C6	711473.79	1163922.98	MWS 8x24 – SOUTH CORNER
C7	711491.85	1163905.67	MWS 8x24 – NORTH CORNER
C8	711467.16	1163615.49	MWS 8x24 – SOUTH CORNER
C9	711485.23	1163598.18	MWS 8x24 – NORTH CORNER
C10	711460.54	1163908.00	MWS 8x24 – SOUTH CORNER
C11	711475.76	1163593.20	MWS 8x24 – NORTH CORNER
C12	711453.78	1163600.35	MWS 8x24 – SOUTH CORNER
C13	711505.39	1163367.77	MWS 8x20 – NORTH CORNER
C14	711480.71	1163367.59	MWS 8x20 – SOUTH CORNER
C15	711498.77	1163560.28	MWS 8x24 – NORTH CORNER
C16	711474.08	1163970.10	MWS 8x24 – SOUTH CORNER
C17	711475.26	1163633.70	MWS 8x24 – NORTH CORNER
C18	711460.57	1163943.52	MWS 8x24 – SOUTH CORNER
C19	711468.63	1163926.21	MWS 8x24 – NORTH CORNER
C20	711443.94	1163936.03	MWS 8x24 – SOUTH CORNER
C21	711462.01	1163616.72	MWS 8x24 – NORTH CORNER
C22	711437.32	1163528.54	MWS 8x24 – SOUTH CORNER
C23	711452.51	1163613.70	MWS 8x24 – NORTH CORNER
C24	711430.52	1163620.86	MWS 8x24 – SOUTH CORNER
C25	711500.26	1163634.15	HYDRODYNAMIC SEPARATOR – CENTER
C26	711479.99	1163558.44	VALVE VAULT – NORTH CORNER
C27	711463.88	1163954.57	VALVE VAULT – SOUTH CORNER
C28	711463.88	1163967.75	PUMP STATION – NORTH CORNER
C29	711449.12	1163871.91	PUMP STATION – SOUTH CORNER
C30	711422.73	1163617.17	ECOLOGOY BLOCK – SOUTH CORNER
C31	711480.05	1163996.44	ECOLOGOY BLOCK – EAST CORNER
C32	711537.31	1163956.30	ECOLOGOY BLOCK – NORTH CORNER

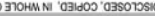
1. SEE SHEET G08 FOR WORK AND STAGING AREA LIMITS.
2. PRECAST LIDS AND HATCHES INSTALLED SHALL BE DESIGNED FOR 125,000-LB WHEEL LOADS PER SPEC SECTION 33 49 20 UNLESS OTHERWISE NOTED.
3. FILL MATERIAL SHALL BE COMPACTED TO 95% RELATIVE DENSITY.
4. CONTRACTOR SHALL MATCH EXISTING GRADES UNLESS SHOWN OTHERWISE.
5. COORDINATES (CO) ARE APPROXIMATE. CONTRACTOR SHALL VERIFY LOCATIONS BASED ON EXISTING CONDITIONS.
6. EXISTING SDWA IDENTIFIERS ARE ARBITRARY AND BASED ON PAST SURVEYS.
7. CONTRACTOR SHALL VERIFY PIPE DIAMETERS AND MATERIAL PRIOR TO CONNECTION.
8. RESTORE PAVEMENT STRIPING AS REQUIRED.
9. RELOCATE EXISTING UTILITIES AS NECESSARY BASED ON RESULTS OF FIELD EXPLORATIONS. CONFIRM RELOCATION WITH PORT AND ENGINEER PRIOR TO PERFORMING WORK.

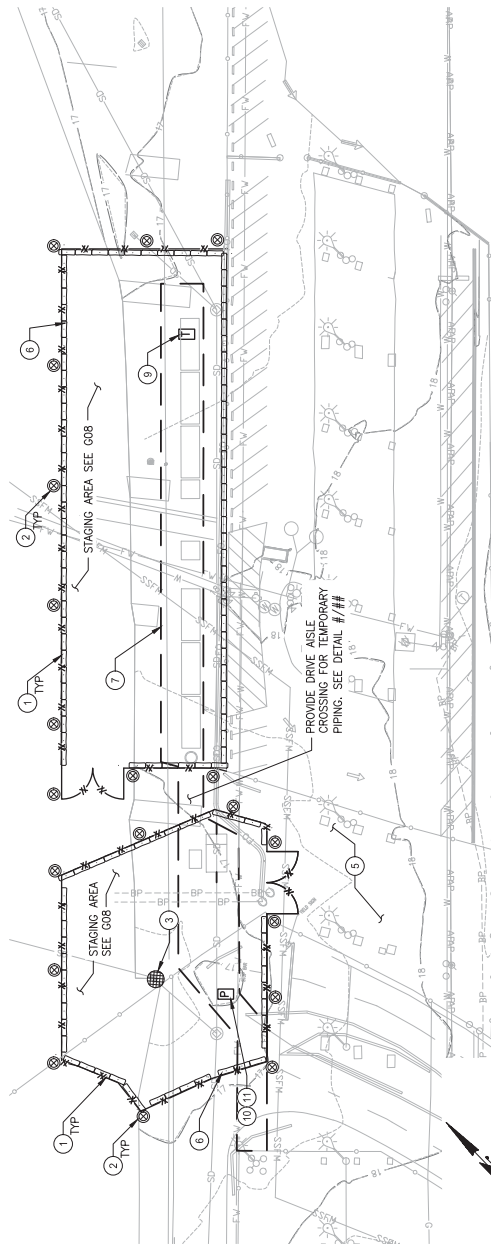
SCALE IN FEET



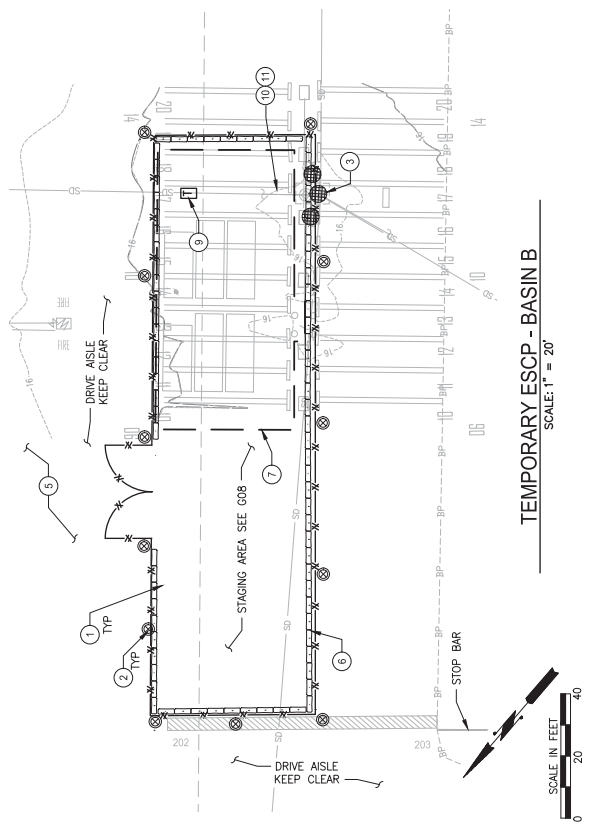
0 10 20

PRELIMINARY 90% SUBMITTAL
NOT FOR CONSTRUCTION

6583 C03 15 HS 10 43 CONT/CONS. 070564 M. ID: 202042.01 DATE-HZ: WAB3-S PHASE: 90%		TOWNSHIP: 21N RANGE: 3E SECTION: 33 & 34		DIRECTOR ENG. DATE CHECKED BY DATE PLOD. ENGR DATE PRINTED BY: gowdard Feb. 09, 2018 PROJECT ADDRESS: ONE SITCUM PLAZA TACOMA, WA 98401-1817				MARK: REVISION: BY: _____ APPR. DATE: _____		 		THIS DRAWING IS THE PROPERTY OF TACOMA AND SHALL NOT BE USED ON OTHER WORK, DISCLOSED, COPIED, IN WHOLE OR IN PART, WITHOUT WRITTEN PERMISSION.	
---	--	--	--	---	--	---	--	---	--	---	--	---	--



TEMPORARY ESCP - BASIN A
SCALE: 1" = 30'

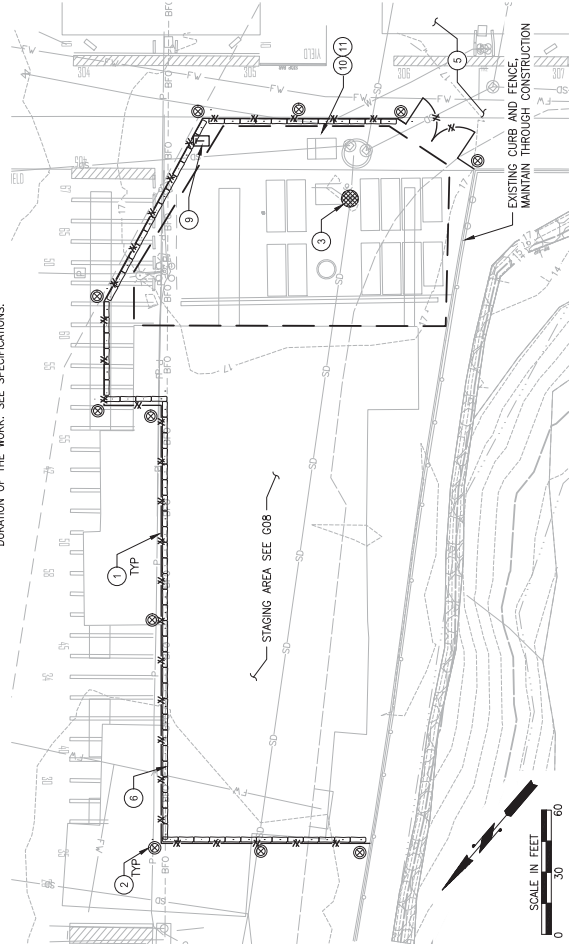


TEMPORARY ESCP - BASIN B
SCALE: 1" = 20'

- NOTES:**
1. PROVIDE AND INSTALL TEMPORARY CONSTRUCTION FENCING AND GATES AROUND WORK LIMITS; ADJUST AND RELOCATE FENCING ACCORDING TO PHASING, SECURITY, AND PORT AND TENANT REQUIREMENTS.
 2. PROVIDE AND INSTALL BARREL WITH FLASHING BARRICADE LIGHTS.
 3. PROVIDE AND INSTALL INLET PROTECTION PER 1/004.
 4. AT EACH CONSTRUCTION ENTRANCE/GATE, CONTRACTOR SHALL ESTABLISH AND MAINTAIN A TEMPORARY ASPHALT BARRIER TO CONTROL RUNOFF.
 5. CONTRACTOR SHALL PROVIDE VACUUM SWEEPING AROUND THE WORK LIMITS. NO AGGREGATE, PAVEMENT, SOIL, OR OTHER MATERIALS SHALL BE ALLOWED TO "TRACK" ACROSS THE TERMINAL. SEE SPECIFICATIONS FOR FURTHER REQUIREMENTS.
 6. CONTRACTOR SHALL INSTALL TEMPORARY CURB AROUND WORK ZONES.
 7. AS PAVEMENT REMOVAL AND LIMITS OF EXCAVATION, THE SITE IS FULLY PAVED AND THE CONTRACTOR SHALL MARK ALL SAWCUT LIMITS AND/OR EXCAVATION ZONES WITH SPRAY PAINT PRIOR TO REMOVAL.
 8. CONTRACTOR SHALL PROVIDE PLASTIC COVERING FOR SOIL STOCKPILES AND AGGREGATE STOCKPILE MATERIALS WITH RUNOFF COLLECTED AND TREATED PER NOTE 9.
 9. CONTRACTOR SHALL PROVIDE A TEMPORARY TREATMENT SYSTEM CAPABLE OF TREATING ALL WATER DISCHARGED ACCORDING TO THE APPLICABLE PERMIT REQUIREMENTS. SEE SPECIFICATIONS.
 10. INSTALL GROUNDWATER Dewatering SYSTEM AS NEEDED.
 11. INSTALL TEMPORARY STORMWATER Reroute SYSTEM. CONTRACTOR SHALL SECURE THE EXISTING MANHOLE LID/OPENING DURING Reroute. SEE SPECIFICATIONS.
 12. WATER MANAGEMENT: CONTRACTOR SHALL BE RESPONSIBLE FOR MANAGING ALL SURFACE RUNOFF, GROUNDWATER, AND TEMPORARY STORMWATER Reroute FLOWS FOR THE DURATION OF THE WORK. SEE SPECIFICATIONS.

ESCP LEGEND:

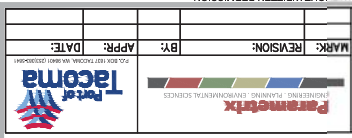
- INLET PROTECTION
- TEMPORARY CONSTRUCTION FENCE
- CONSTRUCTION ACCESS GATE
- BARREL WITH FLASHING BARRICADE LIGHTS
- TEMPORARY CURB, SEE SPECIFICATIONS
- TEMPORARY PUMPING SYSTEM
- TEMPORARY TREATMENT SYSTEM



TEMPORARY ESCP - BASIN C
SCALE: 1" = 30'

PRELIMINARY 90% SUBMITTAL
NOT FOR CONSTRUCTION

6583		C04		SH 14 OF 42		CONT/CONS: 070664		M. ID: 201024.01		PHASE: 90%	
TOWNSHIP: 21N		RANGE: 3E		SECTION: 33 & 34		VERT: MLW		DRAWING SCALE: AS NOTED		TACOMA, WA 98401-1837	
PRINTED BY: andrew.b. fob 01.2018		DIRECTOR ENG. DATE		CHECKED BY DATE		APPROVED:		STORMWATER TREATMENT WEST SLUICUM		EROSION CONTROL PLAN - BASINS A, B, & C	
DATE		DATE		DATE		DATE		DATE		DATE	
BY:		BY:		BY:		BY:		BY:		BY:	
APPR: DATE:		APPR: DATE:		APPR: DATE:		APPR: DATE:		APPR: DATE:		APPR: DATE:	



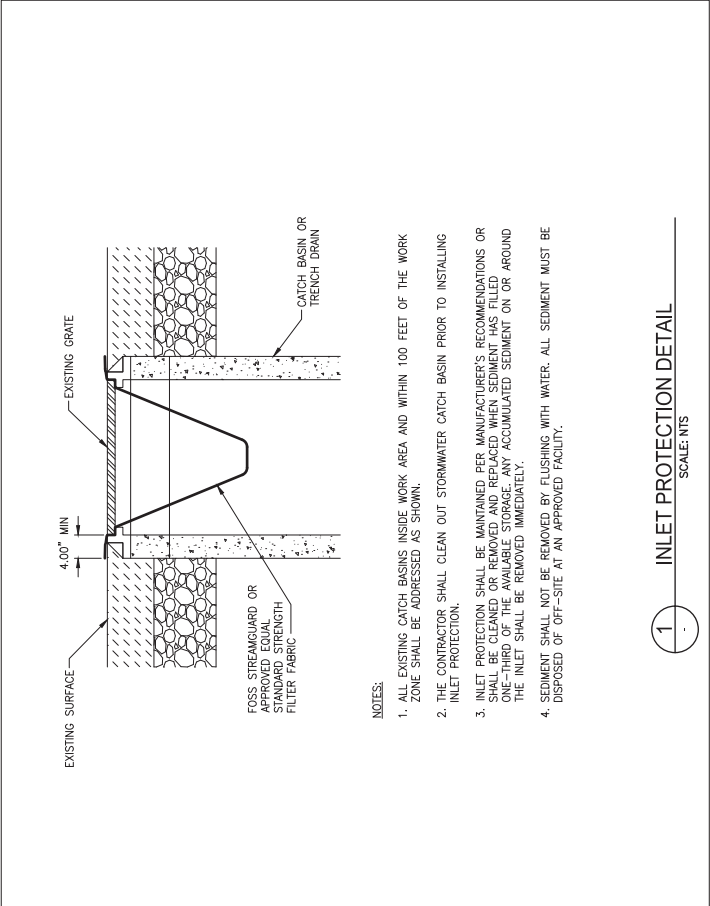
THIS DRAWING IS THE PROPERTY OF THE PORT OF TACOMA AND SHALL NOT BE USED ON OTHER WORK, DISCLOSED, COPIED, IN WHOLE OR IN PART, WITHOUT WRITTEN PERMISSION.

APPENDIX II-A: RECOMMENDED STANDARD NOTES FOR EROSION CONTROL PLANS

THE FOLLOWING STANDARD NOTES ARE SUGGESTED FOR USE IN EROSION CONTROL PLANS. LOCAL JURISDICTIONS MAY HAVE OTHER MANDATORY NOTES FOR CONSTRUCTION PLANS THAT ARE APPLICABLE. PLANS SHOULD ALSO IDENTIFY WITH PHONE NUMBERS THE PERSON OR FIRM RESPONSIBLE FOR THE PREPARATION OF AND MAINTENANCE OF THE EROSION CONTROL PLAN.

STANDARD NOTES

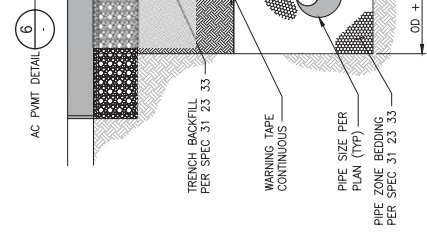
1. APPROVAL OF THIS EROSION/SEDIMENTATION CONTROL (ESC) PLAN DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN (E.G. LOCATION OF ROADS, ETC., RESTRICTIONS, CHANNELS, RETENTION FACILITIES, UTILITIES).
2. THE MAINTENANCE OF THESE ESC PLANS AND THE INSPECTION, MAINTENANCE, REPLACEMENT AND UPGRADE OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE APPLICANT/CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION/LANDSCAPING IS ESTABLISHED.
3. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED CLEARING LIMITS SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE APPLICANT/CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
4. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO INSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS.
5. THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, ESC FACILITIES SHALL BE MONITORED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO INSURE THAT SEDIMENT LADEN WATER DOES NOT LEAVE THE SITE.
6. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.
7. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN THE 48 HOURS FOLLOWING A MAJOR STORM EVENT.
8. AT NO TIME SHALL MORE THAN ONE FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A TRAPPED CATCH BASIN. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT LADEN WATER INTO THE DOWNSTREAM SYSTEM.
9. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.



6583		SH 15 OF 42	C05
CONT/CONS:	070664	TOWNSHIP:	21N
M. ID:	201024.01	DATE-HRZ:	WA83-S
PHASE:	90%	PARCEL:	SEE G02
DRAWING SCALE: AS NOTED		RANGE:	3E
VERT: MLW		SECTIONS:	33 & 34
PRINTED BY: anderson Feb 01, 2018		PORT ADDRESS:	ONE SITCUM PLAZA
TACOMA, WA 98401-1837		PROJECT:	MLW
DIRECTOR ENG. DATE		PROJ. ENGR	DATE
APPROVED:		CHECKED BY	DATE
MARK:		REVISION:	BY:
APPR:		DATE:	
PARAMETRIX		TACOMA	

PRELIMINARY 90% SUBMITTAL
NOT FOR CONSTRUCTION

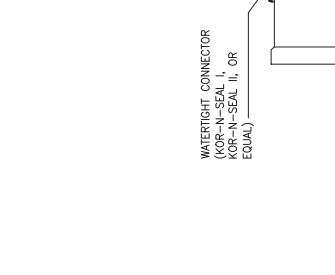
THIS DRAWING IS THE PROPERTY OF THE PORT OF TACOMA AND SHALL NOT BE USED ON OTHER WORK, DISCLOSED, COPIED, IN WHOLE OR IN PART, WITHOUT WRITTEN PERMISSION



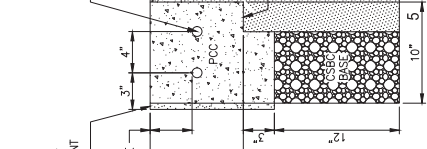
2 PIPE TRENCH
SCALE: NTS



6 ASPHALT C
SCALE: NTS



7 CONNECTION SCALE: NTS



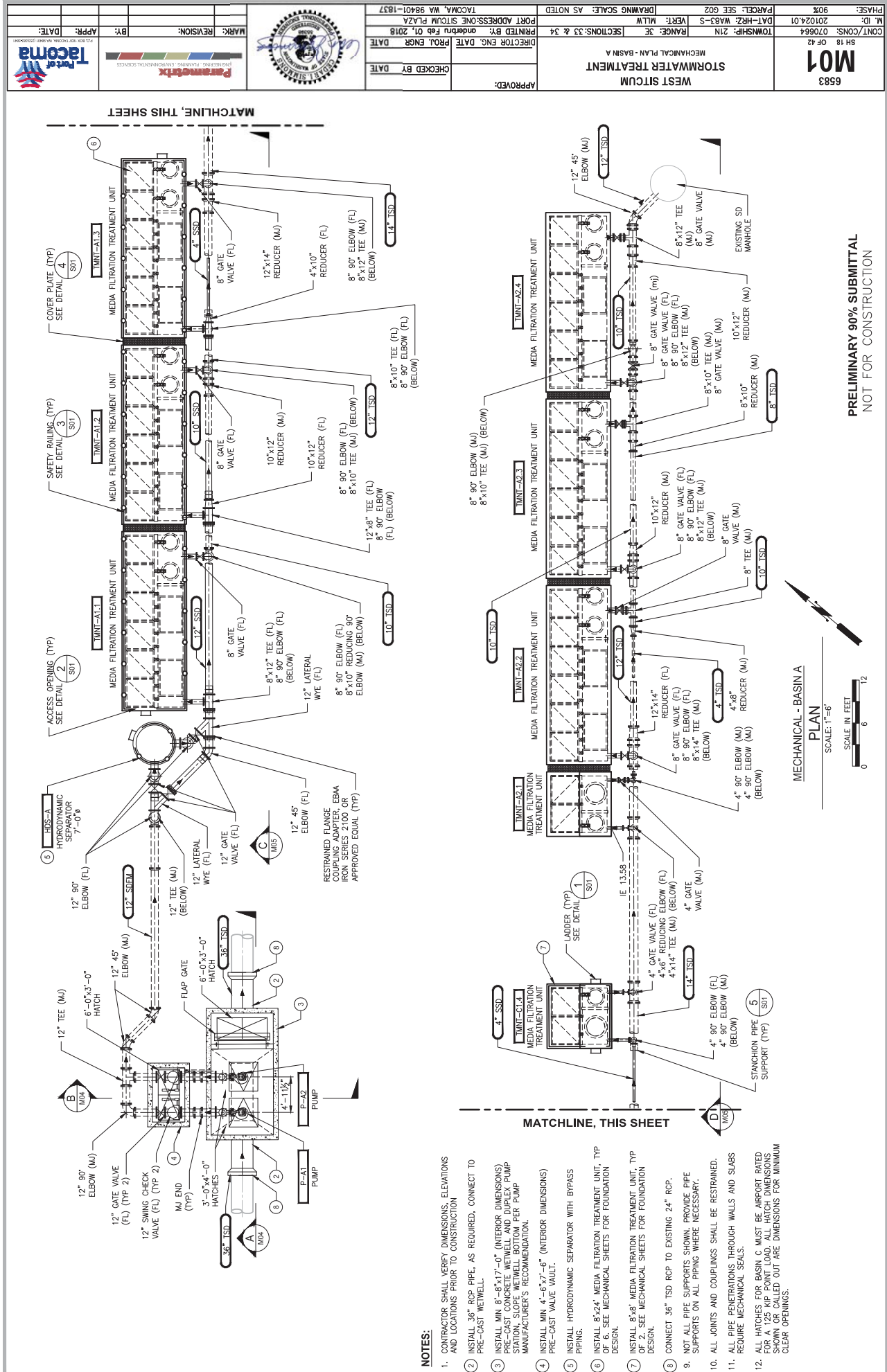
DOLLAR DETAIL
SCALE: NTS

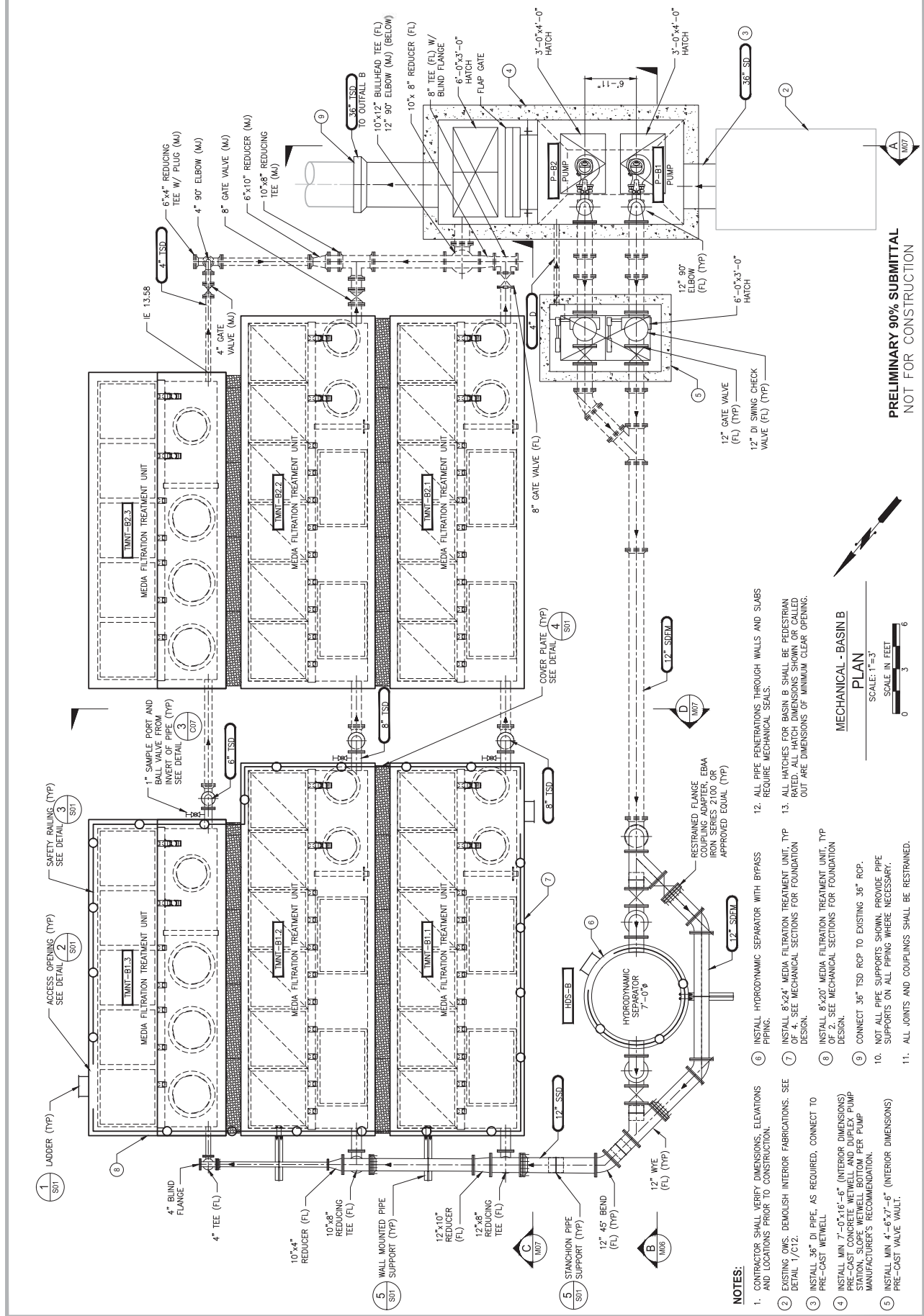
STRUCTURE DETAIL

[illegible]



**PRELIMINARY 90% SUBMITTAL
NOT FOR CONSTRUCTION**





PRELIMINARY 90% SUBMITTAL
NOT FOR CONSTRUCTION

MECHANICAL - BASIN B

PLAN

SCALE: 1"=3'

SCALE IN FEET

0 3 6

NOTES:

1. CONTRACT AND LOCAL
2. EXISTING DETAIL 1/
3. INSTALL 3 PRE-CAST
4. INSTALL 4 PRE-CAST STATION, MANUFACT
5. INSTALL 5 PRE-CAST

6. INSTALL HYDRODYNAMIC SEPARATOR WITH BYPASS PIPING.
7. INSTALL 8" x 24" MEDIA FILTRATION TREATMENT UNIT, TYPE OF 2. SEE MECHANICAL SECTIONS FOR FOUNDATION DESIGN.
8. INSTALL 8" x 20" MEDIA FILTRATION TREATMENT UNIT, TYPE OF 2. SEE MECHANICAL SECTIONS FOR FOUNDATION DESIGN.
9. CONNECT 36" TSD RCP TO EXISTING 36" RCP.
10. NOT ALL PIPE SUPPORTS SHOWN. PROVIDE PIPE SUPPORTS ON ALL PIPINGS WHEN NECESSARY.
11. ALL JOINTS AND COUPLINGS SHALL BE RESTRAINED.

MECHANICAL - BASIN B

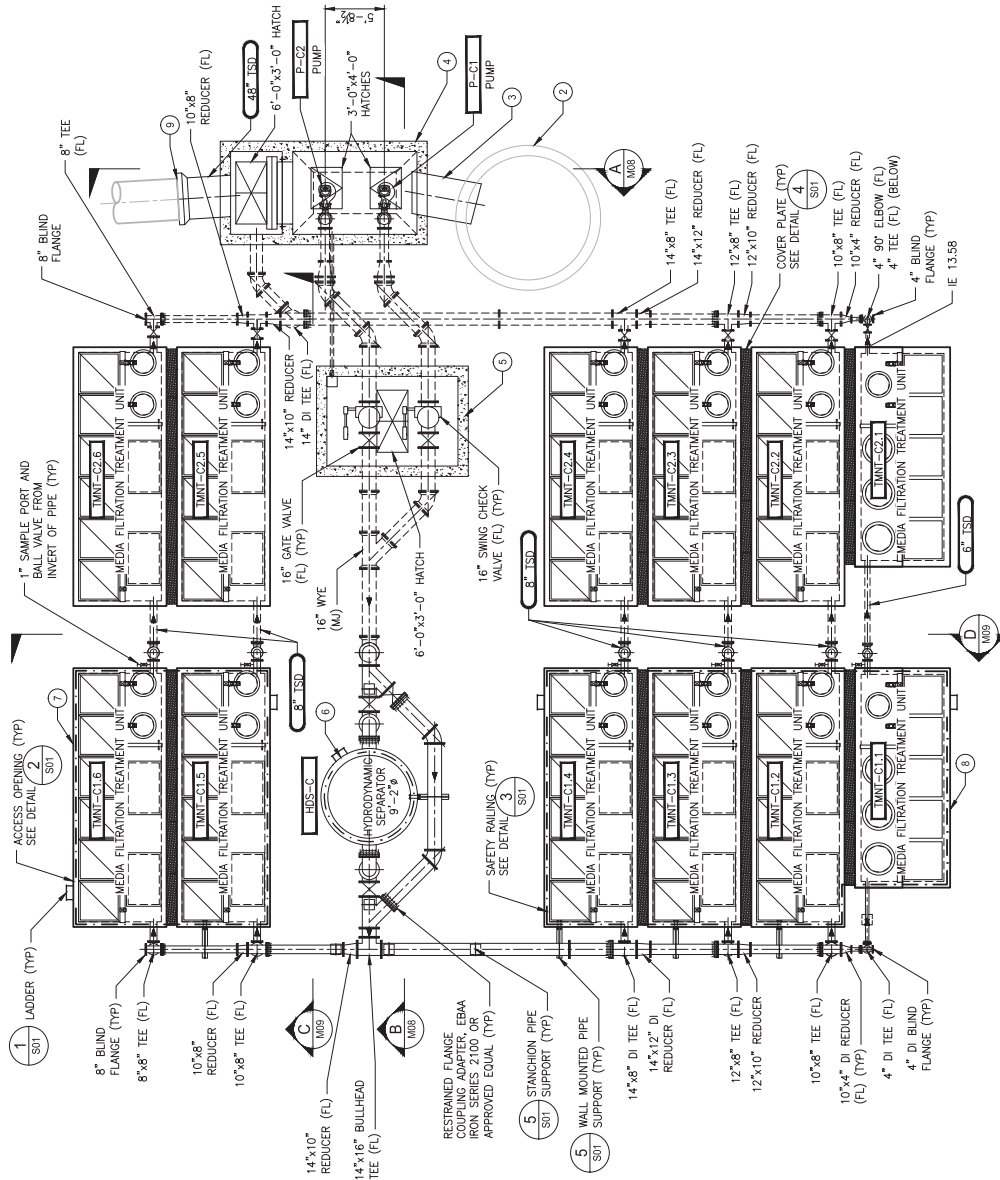
PLAN

SCALE: 1"=3'

0 3 6

SCALE IN FEET

6583 M02 SH 19 0F AC 8		CONT/CONS: 070664 DATE: 2010/24/01		PHASE: 90% MAP ID: 2010/24/01	
WEST SITCUM STORMWATER TREATMENT MECHANICAL PLANT BASIN B		TOWNSHIP: 21N RANGE: 3E SECTIONS: 33 & 34		DRAWING SCALE: AS NOTED DATE: 2010/24/01	
APPROVED:		PRINTED BY: andrew.bryant DATE: Feb 07, 2010		PORT ADDRESS: ONE SITCUM PLAZA TACOMA, WA 98401-1837	
CHECKED BY: DATE:		POST ENGR DATE:		MARK: REVISION: BY: DATE:	
					



- ② EXISTING OWS. DEMOLISH INTERIOR FABRICATIONS. SEE DETAIL 2/C12.
- ③ INSTALL 48" DI PIPE, AS REQUIRED, CONNECT TO PRE-CAST WETWELL.
- ④ INSTALL MIN 8'-0"x18'-0" (INTERIOR DIMENSIONS) PRE-CAST CONCRETE WETWELL AND DUPLEX PUMP STATION, SLOPE WETWELL BOTTOM PER PUMP MANUFACTURER'S RECOMMENDATION.
- ⑤ INSTALL MIN 8'-5"x12'-8" (INTERIOR DIMENSIONS) PRE-CAST VALVE VAULT.
- ⑥ INSTALL HYDRODYNAMIC SEPARATOR WITH BYPASS PIPING.
- ⑦ INSTALL 8'x24" MEDIA FILTRATION TREATMENT UNIT, TYP OF 10. SEE STRUCTURAL SHEETS FOR FOUNDATION DESIGN.
- ⑧ INSTALL 8'x20" MEDIA FILTRATION TREATMENT UNIT, TYP OF 2. SEE STRUCTURAL SHEETS FOR FOUNDATION DESIGN.
- ⑨ CONNECT 48" TSD RCP TO EXISTING 48" RCP.
- ⑩ DO NOT ALP PIPE SUPPORTS SHOWN. PROVIDE PIPE SUPPORTS ON ALL PIPING WHERE NECESSARY.
1. ALL JOINTS AND COUPLINGS SHALL BE RESTRAINED.
2. ALL PIPE PENETRATIONS THROUGH WALLS AND SLABS REQUIRE MECHANICAL SEALS.
3. ALL HATCHES FOR BASIN C MUST BE AIRPORT FLAT FOR A 125KIP POINT LOAD. DIMENSIONS SHOWN OR CALLED OUT ARE DIMENSIONS FOR MINIMUM CLEAR OPENINGS.

SCALE: 1" = 6'

SCALE IN FEET

0 6 12

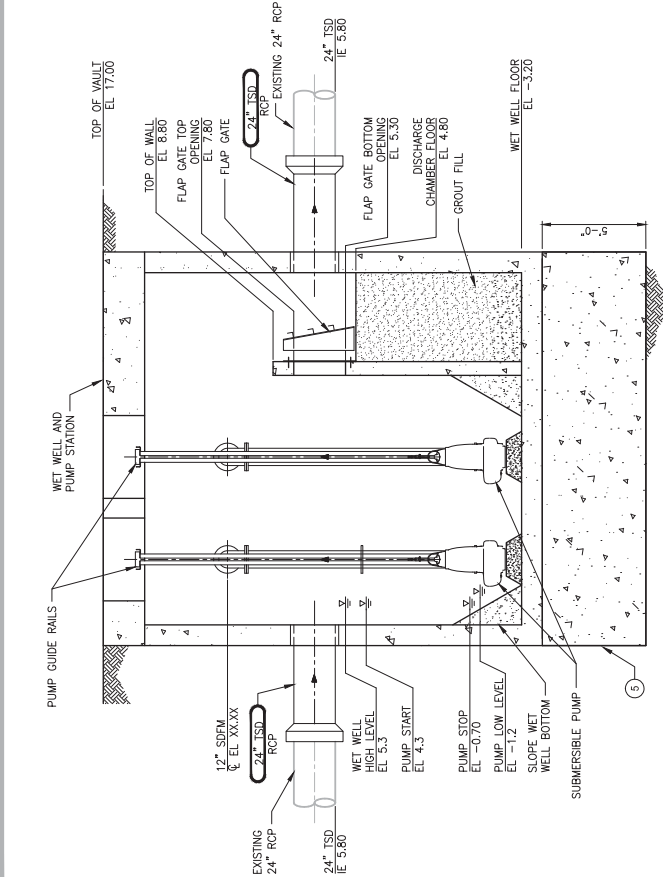
PRELIMINARY 90% SUBMITTAL
NOT FOR CONSTRUCTION

6583 303 SH 20 OFF 42		WEST SITCUM STORMWATER TREATMENT MECHANICAL PLAN - BASIN C		TOWNSHIP: 21N RANGE: 3E SECTIONS: 3, 4 & 34 PRINTED BY: andrew.r.fab.01.2018 PORT ADDRESS: ONE SITCUM PLAZA TACOMA, WA 98401-1837		PHASE: 90% PARCEL: SEE 002 DATE: 2/10/2017 VERT: MTLW DRAWING SCALE: AS NOTED	
6583 303 SH 20 OFF 42		WEST SITCUM STORMWATER TREATMENT MECHANICAL PLAN - BASIN C		TOWNSHIP: 21N RANGE: 3E SECTIONS: 3, 4 & 34 PRINTED BY: andrew.r.fab.01.2018 PORT ADDRESS: ONE SITCUM PLAZA TACOMA, WA 98401-1837		PHASE: 90% PARCEL: SEE 002 DATE: 2/10/2017 VERT: MTLW DRAWING SCALE: AS NOTED	
6583 303 SH 20 OFF 42		WEST SITCUM STORMWATER TREATMENT MECHANICAL PLAN - BASIN C		TOWNSHIP: 21N RANGE: 3E SECTIONS: 3, 4 & 34 PRINTED BY: andrew.r.fab.01.2018 PORT ADDRESS: ONE SITCUM PLAZA TACOMA, WA 98401-1837		PHASE: 90% PARCEL: SEE 002 DATE: 2/10/2017 VERT: MTLW DRAWING SCALE: AS NOTED	

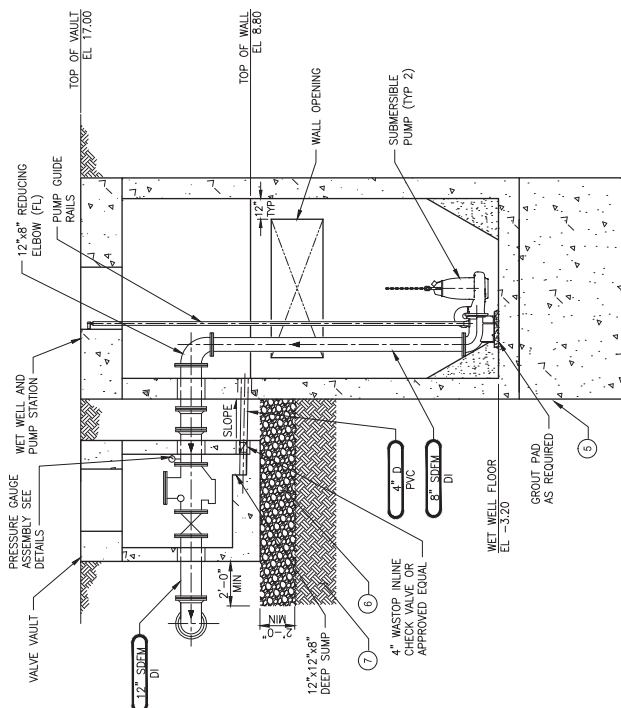
6583		SH 21 OF 42	M04	CONTRACT/CONS: 070664	TOWNSHIP: 21N	RANGE: 3E	SECTIONS: 33 & 34	VERT: MLW	DRAWING SCALE: AS NOTED	APPROVED:	
PHASE: 90%		M. ID: 201024.01	DATE: 070664	DATE: 070664	DATE: 070664	DATE: 070664	DATE: 070664	DATE: 070664	DATE: 070664	PRINTED BY: andrew.fab 01.2018	
TACOMA, WA 98401-1837		PORT ADDRESS: ONE SITUUM PLAZA		DIRECTOR ENG. DATE		PROJ. ENR DATE		CHECKED BY DATE		TACOMA, WA 98401-1837	
MARK: REVISION:		BY:		APPR: DATE:		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837		TACOMA, WA 98401-1837	

NOTES:

1. CONTRACTOR SHALL VERIFY DIMENSIONS, ELEVATIONS AND LOCATIONS PRIOR TO CONSTRUCTION.
2. PIPE SUPPORTS NOT SHOWN. PROVIDE PIPE SUPPORTS ON ALL PIPING WHERE NECESSARY.
3. ALL JOINTS AND COUPLINGS SHALL BE RESTRAINED.
4. ALL PIPE PENETRATIONS THROUGH WALLS AND SLABS REQUIRE MECHANICAL SEALS.
5. MUD SLAB, SEE SPECIFICATIONS FOR MATERIAL AND INSTALLATION REQUIREMENTS.
6. CSFG. SEE SPECIFICATIONS FOR MATERIAL AND INSTALLATION REQUIREMENTS.
7. SCARIFY 2' OF EXISTING MATERIAL AND RECOMPACT TO 95% MAX DRY DENSITY.



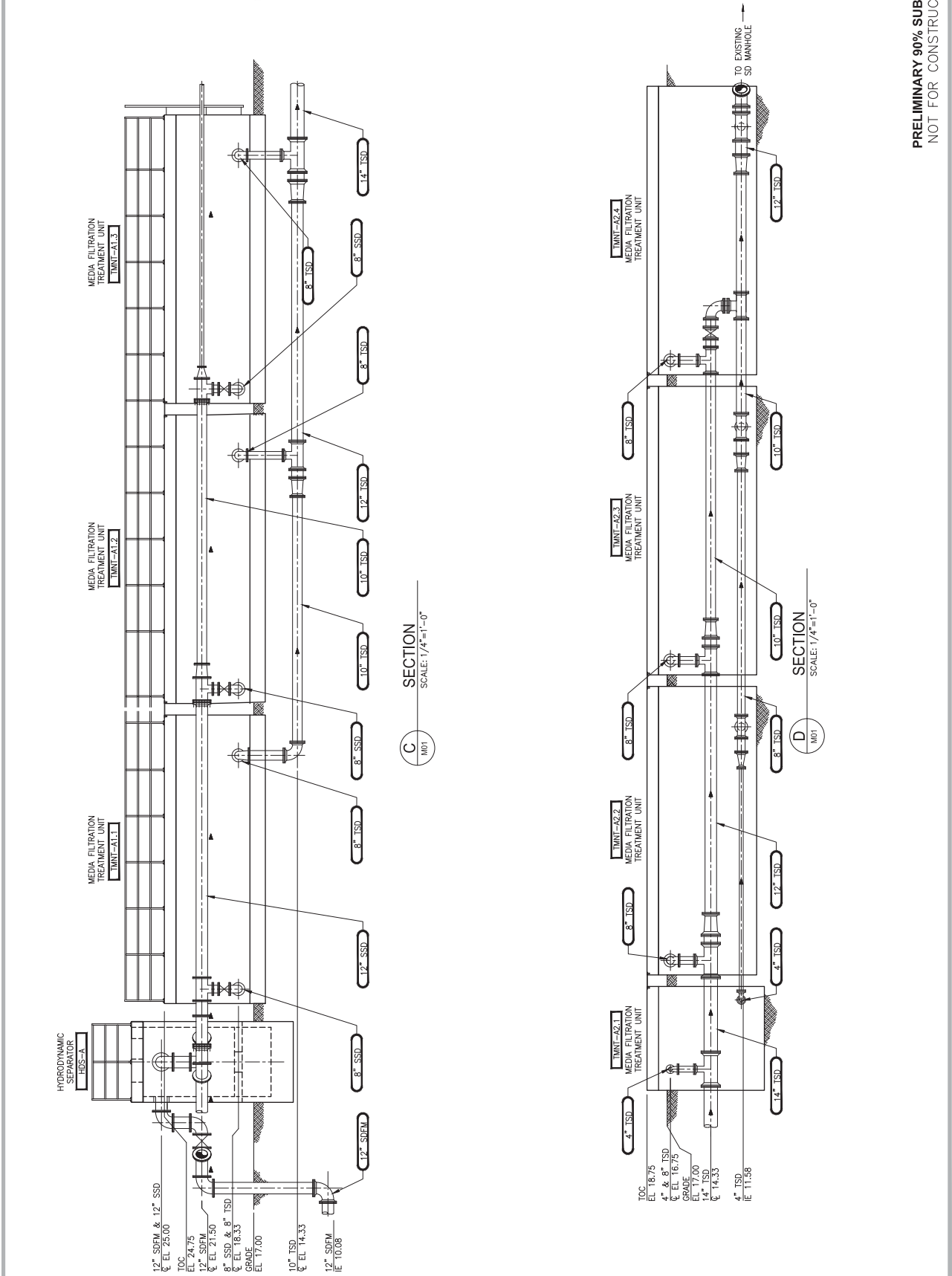
A SECTION
SCALE: 1"=3'



B SECTION
SCALE: 1"=3'

PRELIMINARY 90% SUBMITTAL
NOT FOR CONSTRUCTION

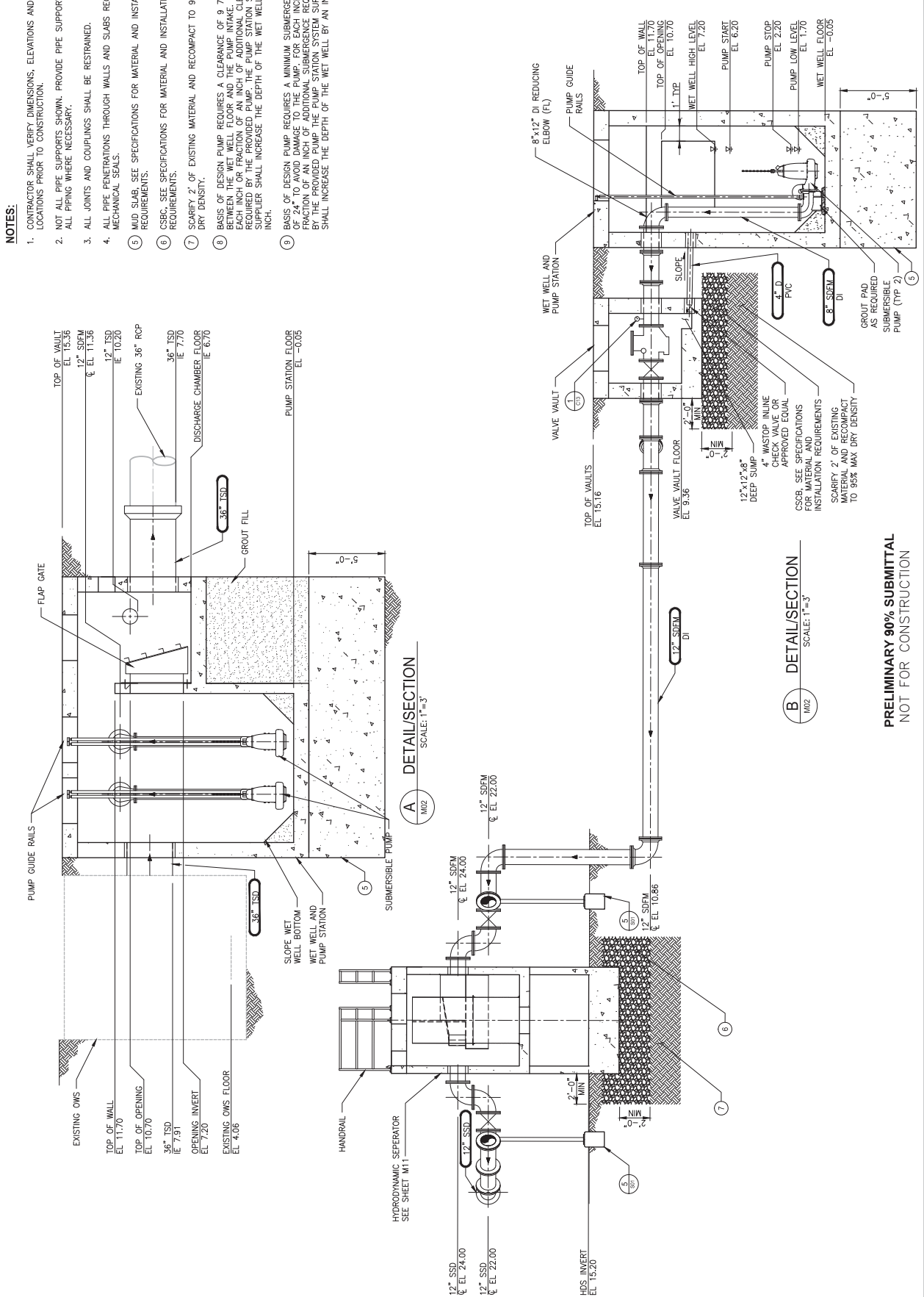
6583		SH 22 OF 42	M05
CONTRACT/CONS: 070664		TOWNSHIP: 21N	RANGE: 3E
M. ID: 201024.01		DATE-HRZ: WA83-S	VERT: MLW
PHASE: 90%		PARCEL: SEE 002	DRAWING SCALE: AS NOTED
THIS DRAWING IS THE PROPERTY OF THE PORT OF TACOMA AND SHALL NOT BE USED ON OTHER WORK, DISCLOSED, COPIED, IN WHOLE OR IN PART, WITHOUT WRITTEN PERMISSION			
TACOMA, WA 98401-1837			
PRINTED BY: andrew Feb 01, 2018			
PORT ADDRESS: ONE SITCUM PLAZA			
DIRECTOR ENG. DATE			
PROJ. ENGR DATE			
CHECKED BY DATE			
APPROVED:			
WEST SITCUM STORMWATER TREATMENT MECHANICAL SECTION - BASIN A			



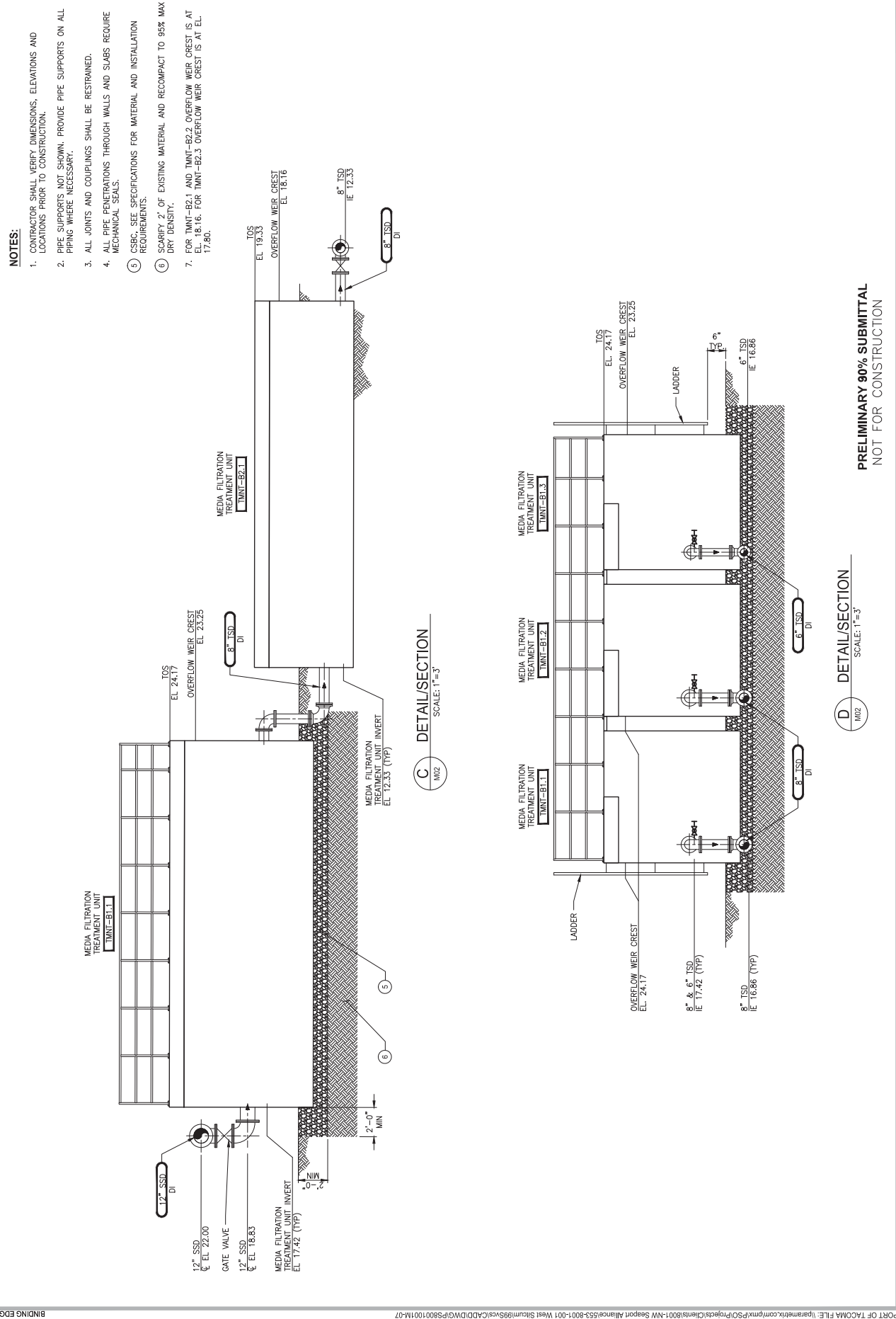
PRELIMINARY 90% SUBMITTAL
NOT FOR CONSTRUCTION

6583	M06	SH 31 OF 42	CONT./CONS: 070664	M. ID: 201024.01	PHASE: 90%
TOWNSHIP: 21N					
RANGE: 3E					
SECTION: 33 & 34					
VERT: MLLW					
DRAWING SCALE: AS NOTED					
TACOMA, WA 98401-1837					
PRINTED BY: andrew Feb 01, 2018					
PORT ADDRESS: ONE SITUUM PLAZA					
DIRECTOR ENG. DATE					
PROJ. ENGR DATE					
CHECKED BY DATE					
APPROVED:					

- NOTES:**
1. CONTRACTOR SHALL VERIFY DIMENSIONS, ELEVATIONS AND LOCATIONS PRIOR TO CONSTRUCTION.
 2. NOT ALL PIPE SUPPORTS SHOWN. PROVIDE PIPE SUPPORTS ON ALL PIPING WHERE NECESSARY.
 3. ALL JOINTS AND COUPLINGS SHALL BE RESTRAINED.
 4. ALL PIPE PENETRATIONS THROUGH WALLS AND SLABS REQUIRE MECHANICAL SEALS.
 5. MUD SLAB, SEE SPECIFICATIONS FOR MATERIAL AND INSTALLATION REQUIREMENTS.
 6. CSBG, SEE SPECIFICATIONS FOR MATERIAL AND INSTALLATION REQUIREMENTS.
 7. SCARIFY 2" OF EXISTING MATERIAL AND RECOMPACT TO 95% MAX DRY DENSITY.
 8. BASIS OF DESIGN PUMP REQUIRES A CLEARANCE OF 9' 7/8" BETWEEN THE WET WELL FLOOR AND THE PUMP INTAKE. FOR EACH INCH OR FRACTION OF AN INCH OF ADDITIONAL CLEARANCE REQUIRED BY THE PROVIDED PUMP, THE PUMP STATION SYSTEM SUPPLIER SHALL INCREASE THE DEPTH OF THE WET WELL BY AN INCH.
 9. BASIS OF DESIGN PUMP REQUIRES A MINIMUM SUBMERGED LEVEL OF 24" TO AVOID DAMAGE TO THE PUMP. FOR EACH INCH OR FRACTION OF AN INCH OF ADDITIONAL CLEARANCE REQUIRED BY THE PROVIDED PUMP, THE PUMP STATION SYSTEM SUPPLIER SHALL INCREASE THE DEPTH OF THE WET WELL BY AN INCH.



PRELIMINARY 90% SUBMITTAL
NOT FOR CONSTRUCTION





B DETAIL/SECTION
M03 SCALE: 1"=3'