

BARRY GLASSMAN
HARFORD COUNTY EXECUTIVE

BILLY BONIFACE
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REQUEST FOR PROPOSAL

JOPPATOWNE WWTP ULTRAVIOLET DISINFECTION SYSTEM RFP NO. 16-060

ADDENDUM NO. 3

October 21, 2015

Ladies and Gentlemen:

The purpose of this addendum is to provide clarification (s) to all prospective bidders.

QUESTION NO. 1: In Request For Proposals (article 4.3 on page 12) it states that the project schedule should be included with the technical proposal-Volume However, article 5.3 on page 17 states that the project schedule should be included with the price proposal-Volume 2. Please confirm that it should be included in Volume 1 since it is 15% of the technical proposal score.

ANSWER NO. 1: The schedule should be included in Volume 1 of the Technical proposal

QUESTION NO. 2: In Request for Proposals (article 5.2.6.B.) it refers to a signature page that needs to be provided with the technical proposal. However, we could not find this page in the document. Please provide direction as to where this page is located.

ANSWER NO. 2: A signature page will be provided in a later Addendum.

QUESTION NO. 3: Article 6.12 of the General Conditions refers to record documents that need to be supplied by Multivista. This is a significant cost that will be added to the project. Please confirm that you want this to be included in the price.

ANSWER NO. 3: Delete section 6.12 C,D, E, F,G and H of the General conditions that refers to the digital image recordation. Project Progress imaging will be completed by the County inspections staff.

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220 South Main Street, Bel Air, Maryland 21014

THIS DOCUMENT IS AVAILABLE IN ALTERNATIVE FORMAT UPON REQUEST

QUESTION NO. 4: Refer to the Contract Cost Limit Form (CCL) starting on page PP-1. There appears to be a date missing for the bottom of page PP-1. Also, Keyed Note #1 is missing on page PP-2 and keyed note #2 is on a blank line. Please provide a modified form that shows where to write the costs for keyed notes #1 & 2.

ANSWER NO. 4: An updated Form (CCL) will be provided in a later Addendum.

QUESTION NO. 5: Article 30.48 (1.) on page 19 (Attachment H) states that a 5% bid guarantee is required. Please confirm that a bid guarantee will not be required for this project.

ANSWER NO. 5: A 5% Bid Guarantee is not required for the Project. The Bonds required for the project are listed in Article 5 BONDS and INSURANCE of the General Conditions.

QUESTION NO. 6: In Request for Proposals (article 5.3.5 on page 17) it states to provide an owner alternate proposal for a building generator and ATS switch. It appears that there currently is a plant generator onsite. Please clarify if this generator is to replace the existing and serves the entire plant or if it only serves the UV system being supplied with this project.

ANSWER NO. 6: Please delete section 5.3.5 C. from the scope of services.

QUESTION NO. 7: With regard to the project schedule, please provide the number of calendar days that are to be allotted for the owner to review each design submission.

ANSWER NO. 7: The owner will provide comments on the design within 2 weeks of receipt of the submission.

QUESTION NO. 8: Can you provide copies of the ENR upgrade Civil drawings for reference please.

ANSWER NO. 8: The ENR Civil drawings are attached.

QUESTION NO. 9: Page 10, para. 2.25 states: "Design Build Entity shall perform any and all surveys/test pits necessary to verify [as-built] information" and "Cost for redesign during construction due to improperly located utilities shall be the responsibility of the Design/Builder." The short time frame of the RFP does not facilitate surveys and test pitting of existing utilities by the D/B teams in our preparation of D/B proposals. Does the Owner anticipate many conflicts between actual conditions and the as-builts?

ANSWER NO. 9: It is anticipated that survey and site verification would take place during the design phase prior to construction.

QUESTION NO. 10: Can the Owner provide a copy of RFI 26 from the ENR Upgrade project? This RFI seems to include a significant piping change at the Secondary Effluent Pump Station.

ANSWER NO. 10: The requested RFI will be provided in a separate Addendum. The as-built drawings provided accurately reflect the piping installed.

QUESTION NO. 11: Page 11, para. 2.27 regarding Ownership of documents: the A/E agrees to the Owner's sole ownership of the documents; however, the A/E requests that para 3.05 of the EJCDC documents remain intact except that the first sentence "All documents including Drawings and Specifications prepared or furnished by Design/Builder pursuant to this Agreement are for Design/Builder's own use, and Design/Builder shall retain an ownership and property interest therein whether or not the Project is completed." may be replaced by "The drawings, specifications and other documents furnished by the Design/Builder shall, upon delivery to the Owner and receipt of payment therefore, become the property of the Owner." Would the Owner agree to this change?

ANSWER NO. 11: The existing language will not be changed.

QUESTION NO. 12: Page 12, section 4.2, 2nd paragraph states that "the Owner reserves the right to award all or part of the project." Under what circumstances would the Owner only award part of the UV project?

ANSWER NO. 12: A full project award is anticipated, however this language allows the project to move forward if prices are beyond those budgeted.

QUESTION NO. 13: S.O.S. section 1.1, 1st paragraph states the peak design flow for the UV system is 3.20 MGD; however, page 5 of draft spec section 11200 says the peak design flow is 4.0 MGD. Please clarify what is the desired design peak flow.

ANSWER NO. 13: Please see the response provided in Addendum #2.

QUESTION NO. 14: S.O.S. section 1.1, 3rd paragraph states the D/B is responsible for all permits through approval. S.O.S. section 1.1.9 further states that the D/B is responsible for modifying the MDE NPDES permit. Please note the A/E cannot guarantee issuance of an MDE NPDES permit if the Owner has not previously discussed and received preliminary "buy-in" from MDE for the proposed UV upgrades and sampler relocation. Can the Owner provide any correspondence showing that MDE is on-board with the proposed D/B improvements?

ANSWER NO. 14: There is no correspondence regarding the change of NPDES outfall location. MDE is reviewing the request.

QUESTION NO. 15: S.O.S. section 1.1.2 states the UV equipment shall incorporate 100% redundancy at peak design flow; however, page 3 para B of draft spec

section 11200 says to provide "2 modules operating (1 module redundant) which implies only 50% redundancy. Please clarify the desired redundancy at design peak flow (50% or 100%).

ANSWER NO. 15: Please see the response provided in Addendum #2.

QUESTION NO. 16: Once the existing chlorination and dechlorination equipment is removed from the existing chlorine building, what will the Owner use this building for? Future use could affect the building permit process.

ANSWER NO. 16: The building is expected to be used for cold storage, with the exception of the electrical room.

QUESTION NO. 17: S.O.S. section 1.3.5 requires as part of the design work: site, accent, and task lighting; architectural and landscaping design; acoustical; audio/visual; security; furniture plan; and sound masking. These items seem unusual for a UV disinfection project. Please confirm whether or not the Owner wants these items included in the project.

ANSWER NO. 17: Delete section 1.3.5 and replace with the following: The design work shall include all necessary subcontractor and consultant design professionals needed to complete the design and secure the permits for construction.

QUESTION NO. 18: S.O.S. section 1.3.6: confirm that the Owner wants drawings in mylar format.

ANSWER NO. 18: Delete section 1.3.7 of the Scope of Services and replace with the following: "Preliminary and 95% drawing shall be provided in Electronic PDF format along with 6 printed copies. Final drawings will be provided with a Mylar set along with drawings on a disk in CADD format. All drawings shall utilize Harford County Standard title sheet and signature blocks (digital format available)." In Section 2.5.1 under "Reproduction" change the word "eight" to "six" in the first sentence. Delete Sub section 2.5.2

QUESTION NO. 19: S.O.S. section 1.3.7 and 3.6.4: confirm that electronic copies of drawings and specs in PDF format are acceptable to the Owner.

ANSWER NO. 19: See the response to Question 18 of this Addendum.

QUESTION NO. 20: S.O.S. Section 2.4.2 states that the A/E shall incorporate the Owner's independent consultant's 95% Constructability Review findings as required at no additional cost to the Owner. Please confirm that this requirement will be viewed in light of the "65% design freeze" provisions which define the types of changes the A/E will be required to make at no additional charge to the Owner.

ANSWER NO. 20: The constructability review will be performed by the Owner or if need be the owner's consultant. The purpose of the review is to prevent any

critical flaws that may be avoided prior to proceeding with the final design. The intent is not to add scope or modify the scope but to prevent errors or omissions in the design that would adversely impact the construction of the project. In section 3.1 "Summary Outline of Submissions" Delete the references to "Owner's and Owners Consultant Review" and replace with "Owner's Review" Delete "Constructability Review by Arcadis" and replace with "Constructability review by Owner or Owner's Consultant if needed".

QUESTION NO. 21: S.O.S. Section 3.2.1 requires the A/E's registered surveyor to perform a topographic survey. Given that most work will be done inside existing structures and that no significant changes to existing grades are anticipated, does the Owner still require a topo survey by a registered surveyor for the UV project?

ANSWER NO. 21: The owner feels it is critical to verify the elevations of the walls, the weirs, and the effluent pipeline to properly design the hydraulics of the system through the new UV units taking into account the head losses of the units.

QUESTION NO. 22: Is the Owner under any consent order deadlines associated with the UV project?

ANSWER NO. 22: No there is no Consent order on the Project.

QUESTION NO. 23: S.O.S. 5.3.5 C Owner Alternate 1: Does the Owner anticipate a new dedicated generator and ATS for the UV system only, or a new generator for the entire WWTP?

ANSWER NO. 23: See the answer provided in question 6 of this Addendum.

QUESTION NO. 24: MBE/WBE good faith notification requirements – I am unclear how these notification requirements can be implemented in the framework currently prescribed in this RFQ. Essentially under my proposal, I am providing a design build entity proposal consisting of various constituents, namely as the lead and various design professionals in a contracting tier. It is not feasible as the lead to bid out design consultants given the integrated and risk laden roles played within the design build entity. To further clarify, is it Harford's intent that the design build lead engage in good faith efforts by which to enlist their design build design team members? The same would apply as it relates to potentially any key supplier or subcontractor partners if necessary as part of the design build entity team.

ANSWER NO. 24: WBE/MBE requirements and completing the Good Faith Efforts are a requirement of the Grant and a requirement of the Design /Build team to provide with their proposal.

QUESTION NO. 25: b. These parties may dictate higher rather than lower costs which could invert the CCL and GMP proposal cost expectations c. Advertisement and good faith efforts would have to be employed a month or so earlier prior

to the 65% level in order to comply with the bid documents as they are currently understood which creates possibly timing conflicts and d. receipt of ANY proposals at this stage by requirement of the good faith efforts REQUIRE commitment letters for cost and performance to the MBE/WBE which may be in conflict with results from question 1 and will definitely be in conflict with the results mentioned hereafter. e. All commitment letters and related obligations are binding on the design build lead and/or team member(s) but are clearly not binding on Harford County under the terms of this bid document but, upon completion of the 65% phase process according to our interpretation of reading Attachment D 6.06 and following, particularly J., there is yet again one or two further rounds of bidding which per good faith efforts requires procedures already mentioned and in conflict with prior commitments yet again. Succinctly stated, the proposal requirements as currently set forth and interpreted appear to be conflicting, in some cases mutually exclusive and essentially impossibly burden the design build team leader and members to violate some portion of these requirements as well as expose the design build team lead to considerable risk in the design and/or construction of the project.

ANSWER NO. 25: See Answer to question 27 below.

QUESTION NO. 26: In the development of the proposal, there are some sections which could be interpreted to require lengthy if not significant proposal write-ups in order to not be considered incomplete, ambiguous or otherwise overly simplistic / non responsive. Examples might be a comprehensive project understanding statement (5.2.6 all subsections) or work approach (5.2.7 all subsections). By the same token, Section 2, 2.4 under General Information leads me to interpret the need for brevity and succinctness. Given the relatively straightforward to the project and related cost benefits of such a treatment, I am unsure which approach is anticipated by the Review Team. More specifically, in the interest of providing a responsive proposal recognizing the cost to all the team members of its development, it is important to properly assess your expectations so as not be disqualified as non-responsive.

ANSWER NO. 26: Please use your best judgement in creating a proposal.

QUESTION NO. 27: In regards to the MDE NPDES discharge permit revision, has the County been in contact MDE for planning limits for the conversion to UV? What is the design flow condition? Attachment A SOS (1.1 & 1.1.1) and the agreement (Article 1.01) asks for 3.2 mgd PDF. UV specs (11200-1.05.C.1.a) calls for 4.0 mgd PDF.

ANSWER NO. 27: MDE is managing the Grant and aware of the project. There have been no direct discussions with MDE regarding design criteria. They received a copy of the Project documents for review prior to advertisement. Please see the response in Addendum #2 for the peak flow and redundancy requirement.

QUESTION NO. 28: What is the design redundancy required for the UV modules? Attachment A SOS (1.1.2) is asking for 100% redundancy at peak flow rate, while UV specifications (11200-1.05.E.1.a & b) calls for units to provide 50% redundancy (i.e. 3 modules – 2 modules in service at peak).

ANSWER NO. 28: Please see the response provided in Addendum #2.

QUESTION NO. 29: Is there a preferred completion target or goal? We understand no timeframe has been established which is appreciated to avoid artificial times but in order to optimize cost and speed, if there is a relative timeframe preferred, that would be helpful as we approach possible solutions.

ANSWER NO. 29: We would prefer to have Design and Construction complete in 2016.

QUESTION NO. 30: It was mentioned during the Pre-Proposal Conference that the RFP contained conflicting information on the UV system redundancy requirements. The draft specification Section 11200 requires one channel with three modules for a peak flow of 4.0 mgd (Article 1.05). The detailed scope in Attachment A states that the peak flow is 3.20 mgd, and that 100% module redundancy is required (Paragraphs 1.1.1-2). If two modules are required to meet the peak flow, it would seem than having one spare module would provide only 50% redundancy. The scope also makes mention of multiple UV channels to facilitate tank cleaning (Paragraph 1.1.4).

ANSWER NO. 30: Please see the responses to this question in Addendum #2.

QUESTION NO. 31: Please clarify: a. The design peak flow for the UV facility b. The desired number of UV channels c. The desired redundancy for UV lamps

ANSWER NO. 31: Please see the response provided to this question in Addendum #2.. The minimum number of channels that will need to be provided is one (1) as stated in Addendum #2. However, the tank or channel will need to be drained occasionally for cleaning since there will be no Chlorine preventing algae growth on the tank walls. Also, the overflow from the Secondary Clarifies Effluent pumping station along with the denitrification filter effluent sampling pump system have to be incorporated into the new system. There also needs to be a location planned for a UV system Dip Tank for cleaning the UV tubes. Therefore the best schematic design may not be a one channel system and will be part of the evaluation process.

QUESTION NO. 32: During the plant tour it was noted that the facility currently has no dedicated equipment for post-aeration, and that the drop over the effluent weir has been sufficient in the past to meet the effluent DO limits. Would you please confirm that provisions for supplemental post-aeration are not a part of this scope? If post-aeration is to be considered, please provide the current discharge permit and DO sample data from the existing CCT if possible.

ANSWER NO. 32: Data containing the D.O levels in the Chlorine Contact tank and on the downstream side of the Weir exiting the Chlorine Contact Tank have been collected for the past week. The average values upstream of the weir are 6.0 ppm D.O. and 9.0 ppm D.O. downstream of the weir. Attached to this Addendum is the Plant NPDES permit.

QUESTION NO. 33: The existing effluent samplers on site appear to be in good condition. Is it required that this equipment be replaced as a part of this upgrade, or can the existing units be re-used at the new location?

ANSWER NO. 33: The existing effluent samplers should be reused and not replaced as part of the UV project. Also delete Section 1.1.11 of the Scope of Service referring to the effluent DO, pH and Orp sensors. They cannot be used for NPDES effluent reporting so they will be deleted from the project and provided to the plant staff when the system is demolished.

QUESTION NO. 34: The scope for the construction administration (Attachment A, Paragraph 1.4) states that the A-E is required to make routine job site visits during construction. Please clarify if the intent is for the minimum visit frequency to be monthly (once per month) or bi-weekly (every two weeks).

ANSWER NO. 34: Once per month, at monthly progress meetings, is the minimum frequency.

QUESTION NO. 35: The scope for reproduction (Attachment A, Paragraph 2.5) states Owner requires "...eight (6) sets of all plans..." Please clarify how many hard copies are required, six or eight.

ANSWER NO. 35: Six hard copies are required see the response provided earlier in this Addendum.

Should you have additional questions regarding this project, please do not hesitate to contact me at djguthrie@harfordcountymd.gov.

Sincerely,



Daniel J. Guthrie, CPPB
Chief

cc: Dave Pergrin, DPWW&S



MARYLAND DEPARTMENT OF THE ENVIRONMENT

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DISCHARGE PERMIT

NPDES Discharge Permit Number: MD0022535	State Discharge Permit Number: 13-DP-0675
Effective Date: mo/dd/yyyy	Expiration Date: mo/dd/yyyy
Modification Date: (Not applicable)	Reapplication Due Date: mo/dd/yyyy

Pursuant to the provisions of Title 9 of the Environment Article, Annotated Code of Maryland, and regulations promulgated thereunder, and the provisions of the Clean Water Act, 33 U.S.C. Section 1251 et seq., and implementing regulations 40 CFR Parts 122, 123, 124 and 125, the Department of the Environment hereby establishes conditions and requirements pertinent to the wastewater treatment plant and collection system and authorizes:

Harford County Department of Public Works
212 S. Bond Street
Bel Air, Maryland 21014

TO DISCHARGE FROM: Joppatowne Wastewater Treatment Plant (WWTP)

LOCATED AT: 101 Shore Drive
Joppa, Harford County, Maryland 21085

THROUGH OUTFALL: 001 (WWTP Effluent)

TO: the **Little Gunpowder Falls**, designated as **Use I water protected for water contact recreation and nontidal warmwater aquatic life**; in accordance with the following special and general conditions and a map incorporated herein and made a part hereof.

I. DEFINITIONS

- A. "Ambient temperature" of the effluent receiving stream means the water temperature that is not impacted by a point source discharge, and it shall be measured in areas of the stream representative of typical or average conditions of the stream segment in question.
- B. "Bypass" means the intentional diversion of pollutants from any portion of a treatment or collection facility.
- C. "BOD₅ (Biochemical Oxygen Demand)" means the amount of oxygen consumed in a standard BOD₅ test without the use of a nitrification inhibitor at 20 degree centigrade on an unfiltered sample.
- D. "Clean Water Act" means the Federal Water Pollution Control Act, as amended, 33 U.S.C. Section 1251 et seq.
- E. "CFR" means the Code of Federal Regulations.
- F. "COMAR" means the Code of Maryland Regulations.
- G. "Department" means the Maryland Department of the Environment (MDE).
- H. Discharge Limits
1. "Daily *maximum* (or *minimum*)" limitation means the *highest* (or *lowest*) allowable the daily averages in a calendar month. The daily discharge expressed as concentration (in mg/l) shall be calculated by dividing total of measurement readings by number of sample collected during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge expressed as loading rate (in pounds/day) is calculated by using this formula {daily average concentration (mg/l) x the same day total flow (in million gallons) x 8.34}.
 2. "Weekly average *maximum* (or *minimum*)" limitation means the *highest* (or *lowest*) allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week. Each of the following 7-day periods is defined as a calendar week: Week 1 is Days 1 - 7 of the month; Week 2 is Days 8 - 14; Week 3 is Days 15 - 21; and Week 4 is Days 22 - 28. *For weekly average maximum*, if the "daily discharge" on days 29, 30 or 31 exceeds the "weekly average" discharge limitation, MDE may elect to evaluate the last 7 days of the month as Week 4 instead of Days 22 - 28. *For weekly average minimum*, if the "daily discharge" on days 29, 30 or 31 is lower than the "weekly average" discharge limitation, MDE may elect to evaluate the last 7 days of the month as Week 4 instead of Days 22 - 28.

I. DEFINITIONS

3. "Monthly average *maximum* (or *minimum*)" limitation means the *highest* (or *lowest*) allowable monthly average concentration or waste load of a parameter over a calendar month. The monthly average is calculated as the sum of all daily discharges for a parameter sampled and/or measured in that calendar month divided by the number of days on which monitoring was performed.
4. "*Minimum* (or *maximum*)" limit means the *lowest* (or *highest*) allowable value measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling.
5. "Monthly loading rate (in pounds/month)" means the total load of a parameter calculated for that calendar month. It is calculated using this formula $\{(\text{monthly average concentration in mg/l}) \times (\text{Total monthly flow in Million Gallons}) \times 8.34\}$.
6. "Annual Maximum Loading Rate (in pounds/year)" limit means the highest allowable year-to-date cumulative load of a parameter for a calendar year. It is calculated as the sum of the individual Total Monthly Loading Rates from January through December of the current calendar year.
7. "Year-to-date Cumulative load (pounds)" value means cumulative load of a parameter through the reporting month in a calendar year. It is calculated as a sum of the individual total monthly loads from January through the reporting month in a calendar year.
8. "Monthly log mean (Monthly geometric mean)" limit means the highest allowable value calculated as the logarithmic or geometric mean of all samples taken in the calendar month. The geometric mean is the antilogarithm of the mean of the logarithms.

I. Discharge Monitoring

1. "Composite sample" means a combination of individual samples obtained at hourly or smaller intervals over a time period. Either the volume of each individual sample is proportional to discharge flow rates or the sampling interval (for constant volume samples) is proportional to the flow rates over the time period used to produce the composite.
2. "Grab sample" means an individual sample collected over a period of time not exceeding 15 minutes.
3. "Estimated flow" value means a calculated volume or discharge rate which is based on a technical evaluation of the sources contributing to the discharge including, but not limited to, pump capabilities, water meters, and batch discharge volumes.

I. DEFINITIONS

4. "Measured flow" value means any method of liquid volume measurement, the accuracy of which has been previously demonstrated in engineering practice, or for which a relationship to absolute volume has been obtained.
 5. "Recorded flow" means any method of providing a permanent, continuous record of flow including, but not limited to, circular and strip charts.
 6. "Monthly average flow" means the total flow for a calendar month divided by the number of days in the same month.
- J. "i-s (immersion stabilization)" means a calibrated device immersed in the effluent or stream, as applicable, until the temperature reading is stabilized.
- K. "NetDMR" means a nationally-available electronic reporting tool, initially designed by states and later adapted for national use by EPA, which can be used by NPDES-regulated facilities to submit discharge monitoring reports (DMRs) electronically to EPA through a secure Internet application over the National Environmental Information Exchange Network (NEIEN). EPA can then share this information with authorized states, tribes, and territories.
- L. "NPDES (National Pollutant Discharge Elimination System)" means the national system for issuing permits as designated by the Clean Water Act.
- M. "Nondetectable Level" for total residual chlorine means a residual concentration of less than 0.10 mg/l as determined using either the DPD titrimetric or chlorimetric method or an alternative method approved by the Department.
- N. "Outfall" means the location where the effluent is discharged into the receiving waters.
- O. "Overflow" means any loss of wastewater or discharge from a sanitary sewer system, combined sewer system or wastewater treatment plant bypass (as defined in I.B) which results in the direct or potential discharge of raw, partially treated wastewater into the waters of the State.
- P. "Permittee" means an individual or organization holding the discharge permit issued by the Department.
- Q. "POTW" means a publicly owned treatment works.
- R. "Sampling Point" means the effluent sampling location in the outfall line(s) downstream from the last addition point or as otherwise specified.
- S. "Sanitary Sewer Overflow (SSO)" means a discharge of untreated or partially treated sewage from a separate sewer system before the sanitary wastewater reaches the headworks of a wastewater treatment facility, pursuant to COMAR 26.08.10.01.

I. DEFINITIONS

- T. "Significant Industrial User (SIU)" is defined as any industrial user (IU) that:
1. is subject to national categorical standards; and
 2. any other IU that:
 - a. discharges an average of 25,000 gallons per day or more of process wastewater (excluding sanitary, non-contact cooling and boiler blowdown wastewater); or
 - b. contributes a process wastestream that makes up 5% or more of the average dry weather hydraulic or organic capacity of the POTW; or
 - c. is designated as such by the POTW on the basis that the IU has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement; or
 - d. is found by the POTW, the Department, or the Environmental Protection Agency (EPA) to have significant impact either individually or in combination with other contributing industries to the POTW, on the quality of the sludge, the POTW's effluent quality, or air emissions generated by the system.
- S. "TKN (Total Kjeldahl Nitrogen)" means organic nitrogen plus ammonia nitrogen.
- T. "TSS (Total Suspended Solids)" means the residue retained on the filter by an analysis done in accordance with Standard Methods or other approved methods.
- U. "Upset" means the exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

II. SPECIAL CONDITIONS

A. Effluent Limitations, Outfall 001 ^{(1) (2) (3) (4)}

The quality of the effluent discharged by the facility at a discharge point location- 001 shall be limited at all times as shown below:

<u>Effluent Characteristics</u>	<u>Maximum Effluent Limits</u>					
	<u>Monthly Average Loading Rate, Pounds/day</u>	<u>Weekly Average Loading Rate, Pounds/day</u>	<u>Daily Average Loading Rate, Pounds/day</u>	<u>Monthly Average Concentration, mg/l</u>	<u>Weekly Average Concentration, mg/l</u>	<u>Daily Average Concentration, mg/l</u>
BOD ₅	240	360	N/A	30	45	N/A
TSS	240	360	N/A	30	45	N/A

<u>Effluent Characteristics</u>	<u>Maximum Effluent Limits</u>		
	<u>Total Monthly Loading Rate, Pounds/Month</u>	<u>Annual Maximum Loading Rate, Pounds/Year</u>	<u>Monthly Average Concentration, mg/l</u>
TSS ⁽⁴⁾	REPORT	86,798	--
Total Nitrogen-N ^{(4) (5) (6)}	REPORT	11,573	REPORT
Total Phosphorus-P ^{(4) (5) (6)}	REPORT	868	REPORT

<u>Effluent Characteristics</u>	<u>Effluent Limits</u>	
	<u>Maximum</u>	<u>Minimum</u>
E. Coli	126 MPN/ 100 ml monthly geometric mean value	N/A
Total Residual Chlorine ⁽⁷⁾	0.04 mg/l (See footnote- 7)	N/A
pH	8.5	6.5
Dissolved Oxygen	N/A	5.0 mg/l at anytime

An annual average flow of 0.95 million gallons per day (mgd) was used in waste allocation calculations (expressed as waste loading rate limit), and this unit shall be used when reporting on the Discharge Monitoring Report (DMR), (EPA Form 3320-1, Rev. 01/06). Notification is to be provided to the Department at least 180 days before the annual average flow is expected to exceed this flow level. If a permit modification is required, the Department will initiate the public participation NPDES process.

II. SPECIAL CONDITIONS

A. Effluent Limitations, Continued

Footnotes for effluent limitations:

- (1) When this permit is renewed, the new limitations may not be equal to the above limitations.
- (2) There shall be no discharge of floating solids or visible foam other than trace amounts.
- (3) The permit may also be reopened in accordance with the requirements of MDE's Watershed Permitting Plan under which all discharge permits in a watershed are issued the same year.
- (4) The Little Gunpowder Falls (basin code 02-13-08-04) was identified on the State's 1996 list of Water Quality Limited Segments as impaired by heavy metals and nutrients. A Water Quality Analysis (WQA) for heavy metals (approved by EPA on 02/20/2003) and nutrients (approved on 08/26/2009) support the conclusion that Total Maximum Daily Loads (TMDLs) are not necessary to achieve water quality standards for heavy metals and nutrients. This permit is in conformance with the "Chesapeake Bay TMDL for Nitrogen, Phosphorus and Sediment" established on December 29, 2010.

When TMDLs for other remaining parameters are completed, limits may be imposed, after the public participation process, to incorporate any TMDL requirements.

- (5) At the end of each calendar year, the permittee shall comply with the *concentration-based* limitations for the Annual Maximum Loading Rate defined below or the *Tributary Strategy-based* loading rate limitation listed above in the effluent limitations table, whichever is lower:

(a) TN Limitation (lbs/year): $4.0 \text{ mg/l} \times \text{annual total flow (calendar year based in million gallons per year)} \times 8.34$. To the extent that the permittee alleges that temperature levels of 12 degrees C or lower have diminished the treatment system's capability of complying with this *concentration-based* loading rate limitation for Total Nitrogen, the permittee shall provide notification beginning with the calendar year report under the "Upset" provision in Section III.B.6 of this permit. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

(b) TP Limitation (lbs/year): $0.30 \text{ mg/l} \times \text{annual total flow (calendar year based in million gallons per year)} \times 8.34$.

The details and results of all required annual calculations shall be submitted to the Department with the Discharge Monitoring Report for December. See Special Condition II.J for further details.

The *concentration-based* loading requirements may be revised if the limits or schedule are determined to be impracticable based on actual performance and the Department re-opens the permit as a major modification (which requires public participation) to impose (an) alternate effluent limitation(s) or revised schedule.

- (6) The permittee may request that the permit be reopened and modified to include nutrient trading consistent with the most current "Maryland Policy for Nutrient Cap Management and Trading in Maryland's Chesapeake Bay Watershed" in effect at that time.

II. SPECIAL CONDITIONS

- ⁽⁷⁾ Total residual chlorine limitation of 0.04 mg/l shall be applicable, when chlorine or any chlorine-containing compound is used in any treatment process(es), including but not limited to disinfection, that could become a potential constituent of the effluent discharged from the Joppatowne WWTP.

II. SPECIAL CONDITIONS

B(1). Minimum Monitoring Requirements

The effluent characteristics listed below in Table B(1) shall be monitored at the sampling point (Definition I.R). If the sampling point is other than the outfall- 001, the permittee shall ensure that the effluent samples are representative of the effluent quality being discharged at the outfall 001.

<u>Effluent Characteristics</u>	<u>Monitoring Period</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
BOD ₅ ⁽⁸⁾⁽¹⁷⁾	All Year	Two per week	24-hour composite
Total Suspended Solids ⁽⁸⁾⁽¹⁷⁾	All Year	Two per week	24-hour composite
Total Ammonia Nitrogen as N ⁽⁸⁾⁽⁹⁾⁽¹⁰⁾⁽¹⁷⁾	All Year	Two per week	24-hour composite
Total Phosphorus as P ⁽⁸⁾⁽¹¹⁾⁽¹⁷⁾	All Year	Two per week	24-hour composite
Total Nitrogen as N ⁽⁸⁾⁽¹⁰⁾⁽¹¹⁾⁽¹⁷⁾	All Year	Two per week	Calculated
(Nitrite + Nitrate) as N ⁽⁸⁾⁽⁹⁾⁽¹⁰⁾⁽¹⁷⁾	All Year	Two per week	24-hour composite
Organic Nitrogen as N ⁽⁸⁾⁽⁹⁾⁽¹⁰⁾⁽¹⁷⁾	All Year	Two per week	24-hour composite
Orthophosphate as P ⁽⁸⁾⁽⁹⁾⁽¹⁷⁾	All Year	Two per week	24-hour composite
E. Coli ⁽⁸⁾	All Year	One per week	Grab
Total Residual Chlorine ⁽⁸⁾⁽¹²⁾⁽¹³⁾	All Year	Two per day	Grab
Dissolved Oxygen ⁽⁸⁾⁽¹³⁾	All Year	Two per day	Grab
pH ⁽⁸⁾⁽¹³⁾	All Year	Two per day	Grab
Flow ⁽⁸⁾⁽¹⁴⁾⁽¹⁵⁾	All Year	Continuous	Recorded ⁽¹⁵⁾
Total Monthly Flow ⁽⁸⁾⁽¹⁶⁾	All Year	Monthly	Calculated ⁽¹⁶⁾

II. SPECIAL CONDITIONS

B(1). Minimum Monitoring Requirements, Continued:

Footnotes for the monitoring requirements, continued:

- (8) "STORET" (short for STORage and RETrieval) is a widely-used repository for water quality data reporting and monitoring. The STORET codes for the effluent characteristics described as limitations and/or monitoring requirements are: BOD₅ (00310), Total Suspended Solids (00530), Total Ammonia Nitrogen as N (00610), Total Phosphorus as P (00665), Total Nitrogen as N (00600), (Nitrite + Nitrate) as N (00630), Organic Nitrogen as N (00605), Orthophosphate as P (04175), Fecal Coliform (74055), E. Coli (51040), Total Residual Chlorine (50060), Dissolved Oxygen (00300), pH (00400), Flow (50050), and Total monthly flow (82220).
- (9) This parameter (without effluent limitations) must be monitored, and it shall be reported on the Monthly Operating Report (MOR) as individual results and on the Discharge Monitoring Report (DMR) (EPA Form 3320-1) as monthly average concentrations.
- (10) Total nitrogen as N (in mg/l) is a calculated parameter as the sum of individual results for total ammonia nitrogen as N, organic nitrogen as N and (nitrite + nitrate) as N. All the nitrogen species must be sampled on the same day.
- (11) The permittee shall also calculate and report on the monthly DMR the TN and TP total monthly loads (Definition I.H.5) plus year-to-date cumulative loads (Definition I.H.6) for the calendar year in question for the outfall-001.
- For each calendar year, the year-to-date cumulative loads of TN and TP for the month of December shall represent the total annual loads, and they must be incorporated toward complying with the respective annual maximum load limits. Refer to Special Condition II.J for "Reporting TN and TP total annual loads for compliance to the Concentration-based maximum annual loading rate limits".
- (12) The minimum detection level (quantification level) for total residual chlorine is 0.10 mg/l. The permittee may report all results below the minimum level as <0.10 mg/l. All results reported below the minimum level shall be considered in compliance.
- (13) The monitoring of parameters (total residual chlorine, pH and dissolved oxygen) by two per day-grab samplings shall be distributed on a daily basis during the entire staffed period in accordance with the representative sampling requirements as stated in General Condition III.A.1.
- (14) Flows shall be reported in millions gallons per day (mgd) to at least the nearest 1,000 gallons per day. (Example: A flow of 524,699 gallons per day shall be reported as 0.525 mgd.). For each calendar month, flows shall be reported on the MOR as daily individual results and on the DMR as monthly average (mgd) and daily maximum (mgd)).
- (15) Continuous electronic flow measurement and recording which can produce a permanent record are acceptable to the Department.
- (16) Total monthly flow is a calculated parameter equal to sum of the daily flow results in a calendar month. It shall be reported on the monthly DMR as Total monthly flow in millions gallons (MG) to at least the nearest 1,000 gallons. (Example: A flow of 1,524,699 gallons shall be reported as 1.525 MG).
- (17) The permittee shall distribute the timing for effluent sampling with a minimum of 48-hours apart for two per week monitoring frequencies.

II. SPECIAL CONDITIONS

B(2). Report Submittal Requirements

Report Description	Reporting Frequency	Report Submittal Deadline
Effluent Biomonitoring Study Plan and Toxic Chemical Testing Plan ⁽¹⁸⁾⁽¹⁹⁾	See footnote – 19	See footnote – 19
Effluent Biomonitoring Study Report ⁽¹⁸⁾⁽²⁰⁾	See footnote – 20	See footnote – 20
Effluent Toxic Chemical Testing Report ⁽¹⁸⁾⁽²¹⁾	See footnote – 21	See footnote – 21
Wastewater Capacity Management Plan (WCMP) ⁽¹⁸⁾⁽²²⁾	See footnote – 22	See footnote – 22
Flow Capacity Report (FCR) ⁽¹⁸⁾⁽²³⁾	See footnote – 23	See footnote – 23

- ⁽¹⁸⁾ If the permittee has selected a third party for submitting reports to the Department, the permittee must provide to the third party with a document of authorization for report submission which is required with the report.
- ⁽¹⁹⁾ Within three months from the effective date of this permit, the permittee shall submit the Study Plans for effluent biomonitoring as well as toxic chemical testing and obtain approval from the Department.
- ⁽²⁰⁾ After MDE's approval of the Effluent Biomonitoring Study Plan, the permittee shall perform the effluent biomonitoring study and submit the results in a comprehensive report to the Department as per requirements of the Special Condition II.D. The reporting frequency of this report shall be once per quarter for two quarters beginning no later than three months following the Department's acceptance of the study plan. The report shall be submitted to the Department along with the DMR for the month during which the test was completed, and it shall be postmarked by the 28th of the month following the test completion month. (Example: If the test is completed in March, the comprehensive report shall be submitted with the March DMR postmarked by 28th April).
- ⁽²¹⁾ After MDE's approval of the Effluent Toxic Chemical Testing Plan, the permittee shall perform the effluent toxic chemical testing and submit the results in a comprehensive report to the Department as per requirements of the Special Condition II.F. The reporting frequency of this report shall be once per quarter for two quarters concurrently with the Biomonitoring Study. The report shall be submitted to the Department along with DMR for the month during which the test was completed, and it shall be postmarked by the 28th of the month following the test completion month. (Example: If the test is completed in March, the comprehensive report shall be submitted with the March DMR postmarked by 28th April).
- ⁽²²⁾ Unless the permittee has previously submitted the WCMP to the Department; the permittee shall submit the WCMP one time within 90 (Ninety) days of the effective days of this permit.
- ⁽²³⁾ The permittee shall submit the FCR to the Department as per the Special Condition II.C. This report shall be submitted once per year along with the DMR for the month of December.

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C. Wastewater Capacity Management

The permittee shall report the total cumulative flow for the each calendar year for the above referenced facility. The total cumulative flow should be reported in million gallons for the entire calendar year to the nearest ten thousand gallons. The annual total cumulative flow determination shall be provided to the Department by January 28 of the following year to the address below:

Attention: Calendar Year Total Cumulative Flow
WMA – Wastewater Discharge Permits Program
Maryland Department of the Environment
1800 Washington Boulevard, STE-455
Baltimore, MD 21230-1708

Because the most recent three-year average flow for this facility is over 80% of its design capacity, unless it has already been submitted, a Wastewater Capacity Management Plan (WCMP) must be submitted within 90 days of the issuance date of this discharge permit.

In addition, the permittee shall submit a “Flow Capacity Report (FCR)” and “worksheet for FCR” for the previous calendar year to the Department by January 28th of each year along with the December month DMR. If the permittee has not previously submitted the WCMP or the annual FCR, the first FCR shall be submitted within 90 days from the effective date of this permit. (The Department has published a “Wastewater Capacity Management Plans” guidance document, which can be found on the Department’s web site as indicated below): <http://bitly.com/CMPSGuidance> (This link is case-sensitive).

D. Biomonitoring Program

1. Within three months of the effective date of the permit, the permittee shall submit to the Department for approval a study plan to evaluate wastewater toxicity at Outfall 001 by using biomonitoring. The study plan should include a discussion of:
 - a. wastewater and production variability
 - b. sampling & sample handling
 - c. source & age of test organisms
 - d. source of dilution water
 - e. testing procedures/experimental design
 - f. data analysis

II. SPECIAL CONDITIONS

- g. quality control/quality assurance
 - h. report preparation
 - i. testing schedule
2. The testing program shall consist of two definitive acute testing events, three months apart. This testing shall be initiated no later than three months following the Department's acceptance of the study plan.

Each of the two testing events shall include a 48-hour static renewal test using fathead minnow and a 48-hour static renewal test using a daphnid species.
3. The samples used for biomonitoring shall be collected at the same time and location as the samples analyzed for the effluent limitations and monitoring requirements for this outfall. For chlorinated effluents, samples shall be collected after dechlorination. The permittee shall collect 24-hour flow-proportioned composite samples unless the Department has given prior approval of an alternative sampling type.
4. Testing shall be conducted in accordance with the procedures described in Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, EPA-821-R-02-012, October 2002
5. Test results shall be submitted to the Department within one month of completion of each set of tests.
6. Test results shall be reported in accordance with MDE/WMA "Reporting Requirements for Effluent Biomonitoring Data," 3/21/03.
7. If testing is not performed in accordance with MDE-approved study plan, additional testing may be required by the Department.
8. If the test results of any two consecutive valid toxicity tests conducted within any 12-month period show acute toxicity (LC_{50} equal to or less than 100%) the permittee shall repeat the test within 30 days to confirm the findings of acute toxicity. If acute toxicity is confirmed, the permittee shall:
 - a. Eliminate the source of toxicity through operational changes as soon as possible but in any case not longer than within three months, or
 - b. Perform a TRE. If the permittee repeats the toxicity testing as stated above and the results of the repeat test do not confirm the acute toxicity, the Department will require the permittee to repeat the toxicity testing as

II. SPECIAL CONDITIONS

stated above to reconfirm a finding of no acute toxicity. After reconfirmation, the permittee shall complete any remaining quarterly testing required.

9. If the permittee completes a TRE in accordance with II.D.8.b and unacceptable toxicity is confirmed, a Whole Effluent Toxicity (WET) permit limit and a compliance schedule will be required.
10. To address federal NPDES requirements for WET testing and limits, MDE shall implement permit limits in a new or renewal permit when a WET test result shows reasonable potential for toxicity unless it can be demonstrated that the source of toxicity has been eliminated, inappropriate test procedures were utilized, or the source has been controlled via a chemical specific permit limitation. Where reasonable potential has been assumed based on one test result, the permit shall include a WET limit effective within three years unless the effluent shows no toxicity in six follow-up quarterly tests. The permit may be modified to remove the WET limit if the six follow-up quarterly tests show no toxicity.
11. If plant processes or operations change so that there is a significant change in the nature of the wastewater, the Department may require the permittee to conduct a new set of tests.
12. If a significant industrial user locates within the service area so that significant change in the nature of the wastewater might be anticipated, MDE may require the permittee to conduct a new set of tests.
13. The biomonitoring program study plan, WET test results and related materials shall be submitted electronically to the Department if the permittee has already been approved for the NetDMR process. Otherwise, the permittee shall submit all pertinent physical documents to:

Attention: Whole Effluent Toxicity Coordinator
Compliance Program
Water management Administration
Maryland Department of the Environment
1800 Washington Blvd., Suite 420
Baltimore, MD 21230-1708

(NOTE: If the documents are submitted electronically using NetDMR process, the permittee must make written notification upon submission to the Whole Effluent Toxicity Coordinator.)

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E. Toxicity Reduction Evaluation (TRE)

The permittee shall conduct a Toxicity Reduction Evaluation (TRE) when a review of toxicity test data by the Department indicates unacceptable acute or chronic effluent toxicity. A TRE is an investigation conducted to identify the causative agents of effluent toxicity, isolate the source(s), determine the effectiveness of control options, implement the necessary control measures and then confirm the reduction in toxicity.

1. Within 90 days of notification by the Department that a TRE is required, the permittee shall submit for approval by the Department a plan of study, schedule and completion date for conducting a TRE. The permittee shall conduct the TRE study consistent with the submitted plan and schedule.
2. This plan should follow the framework presented in Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants (EPA/833B-99/002) August 1999.

Additional Guidance documents on the TRE process are shown below:

Methods for Aquatic Toxicity Identification Evaluations Phase I Toxicity Characterization Procedures Second Edition United States Environmental Protection Agency Office of Research and Development Washington, DC 20460 EPA/600/6-9 1/003 February 1991

Methods for Aquatic Toxicity Identification Evaluations Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity, United States Environmental Protection Agency Office of Research and Development EPA/600/R-92/080 September 1993 Washington DC 20460

Methods for Aquatic Toxicity Identification Evaluations Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity, United States Environmental Protection Agency Office of Research and Development Washington DC 20460 EPA /600/R-92/08 1 September 1993

Clarifications Regarding Toxicity Reduction and Identification Evaluations in the National Pollutant Discharge Elimination System Program, March 27, 2001, U.S. Environmental Protection Agency, Office of Wastewater Management , Office of Regulatory Enforcement, Washington, DC 20460

3. Beginning 60 days from the date of the Department's acceptance of the TRE study plan and every 60 days thereafter, the permittee shall submit progress reports including all relevant test data to the Department. This shall continue until completion of the toxicity reduction confirmation.

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4. Within 60 days of completion of the toxicity identification or the source identification phase of the TRE, the permittee shall submit to the Department a plan, schedule and completion date for implementing those measures necessary to eliminate acute toxicity, an LC_{50} greater than 100%, and/or eliminate chronic toxicity, an IC_{25} greater than the in-stream waste concentration (IWC). The implementation of these measures shall begin immediately upon submission of this plan.
5. Within 60 days of completing the implementation of the control measures to eliminate or reduce toxicity, the permittee shall submit to the Department for approval a study plan to confirm the elimination or reduction of toxicity by using biomonitoring.
6. If, for any reason, the implemented measures do not result in compliance with the Department's toxicity limitations, the permittee shall continue the TRE and a Whole Effluent Toxicity (WET) permit limit and a compliance schedule will be required.
7. All the TRE-related materials shall be submitted electronically to the Department if the permittee has already been approved for the NetMR process. Otherwise, the permittee shall submit all pertinent physical documents to:

Attention: Whole Effluent Toxicity Coordinator
Compliance Program
Water management Administration
Maryland Department of the Environment
1800 Washington Blvd., Suite 420
Baltimore, MD 21230-1708

- F. Toxic Chemical Testing
 1. Concurrent with the biomonitoring study plan, the permittee shall submit to the Department for approval, a study plan to perform two sets of analytical testing for toxic chemicals.
 2. The toxic chemical testing study plan shall include a description of:
 - a. sampling methods;
 - b. analytical methods;
 - c. practical detection levels; and
 - d. quality control procedures.

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3. Concurrently with each biomonitoring toxicity test (Special Condition II.D.2), the permittee shall perform analytical testing for the toxic chemicals identified in the Department's "Toxic Pollutant Monitoring Protocol and Reporting Requirements for Toxic Chemical Testing Analytical Data"(05/18/2011).
4. Toxic chemical testing shall be performed in accordance with 40 CFR Part 136 and the Department-approved toxic chemical testing plan. Grab samples must be used for cyanide, phenols, and volatile organic compounds. All other pollutants shall be collected using 24-hour flow-proportioned composite samples unless the Department has given prior approval of an alternative sampling type.
5. Substances other than those identified in Section 3 above may be detected in the effluent. If so, the permittee shall identify and quantify the ten present in highest concentration for those compounds for which standards are available.
6. - Results of each toxic chemical test performed as per Sections II.F.3 and II.F.4 shall be submitted to the Department with results of the concurrent biomonitoring toxicity test.
7. Toxic chemical testing results shall be reported in accordance with the Department's "Toxic Pollutant Monitoring Protocol and Reporting Requirements for Toxic Chemical Testing Analytical Data"(05/18/2011).
8. If testing is not performed in accordance with the Department's approved study plan, additional testing may be required by the Department.
9. All the toxic chemical testing results and related materials shall be submitted electronically to the Department if the permittee has already been approved for the NetDMR process. Otherwise, the permittee shall all pertinent physical documents to:

Attention: Toxic Chemical Testing Coordinator
Compliance Program
Water Management Administration
Maryland Department of the Environment
Montgomery Park Business Center
1800 Washington Boulevard, STE 420
Baltimore, MD. 21230-1708

G. Pretreatment Program/Influent Restriction

1. The permittee is not authorized to receive the discharge of any type or quantity of substances which may cause interference with the operation of the treatment works. The permittee is required to notify the Pretreatment Section of the Department, in writing, prior to allowing:

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- a. Any new introduction of pollutants into the treatment works from an indirect discharger which would be subject to Section 301 or 306 of the Clean Water Act and COMAR 26.08.08 if it were directly discharging those pollutants; and
 - b. Any substantial change in the volume or character of pollutants being introduced into the treatment works by a source at the time of issuance of this permit.
2. Adequate notice shall include information on (i) the quality, quantity and frequency of wastewater introduced into the treatment works, and (ii) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the treatment works. The permittee shall also maintain an updated list of indirect dischargers which shall be available upon the request of the Department. Under no circumstances shall the permittee allow introduction of the following wastes into the waste treatment system:
- a. Pollutants which cause pass through or interference;
 - b. Pollutants which create a fire hazard or explosion hazard in the sewerage system, including, but not limited to waste streams with a closed cup flashpoint of less than 140 degrees Fahrenheit or 60 degrees Centigrade using the test methods specified in 40 CFR 261.21;
 - c. Pollutants which will cause corrosive structural damage to the sewerage system; but in no case, discharges with pH less than 5.0, unless the works is specifically designed to accommodate such discharges;
 - d. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the sewerage system resulting in interference;
 - e. Any pollutant, including oxygen demanding pollutants (BOD, etc.) released in a discharge at a flow rate and/or pollutant concentration which will cause interference with the treatment plant;
 - f. Heat in amounts which will inhibit biological activity in the treatment plant resulting in interference; but in no case, heat in such quantities that the temperature at the treatment plant exceeds 90 degrees Fahrenheit (32 degrees Centigrade) unless the Pretreatment Section of the Department, upon request of the permittee, approves alternate temperature limits;
 - g. Pollutants which result in the presence of toxic gases, vapors or fumes within the sewerage system in a quantity that may cause acute worker health and safety problems; and
 - h. Any trucked or hauled wastewater is prohibited, except for (1) domestic septage from within the service area, (2) wastewater from within the collection system and/or the treatment works due to blockage, or breaks in the system, (3) drinking water plant wastewater located from within the service area, or, (4) other sources specifically authorized by the Department. Prior to the acceptance of any trucked waste other than those listed in this section, the permittee must make an official written request and, if approved by the Department, must follow the

II. SPECIAL CONDITIONS

permit requirements which may be modified or rescinded at the discretion of the Department for any reason.

H. Protection Of Water Quality

It is a violation of this permit to discharge any substance not otherwise listed under the permit's "Effluent Limitations and Monitoring Requirements" special conditions at a level which would cause or contribute to any exceedance of the numerical water quality standards in COMAR 26.08.02.03 unless the level and the substance were disclosed in writing in the permit application prior to the issuance of the permit. If a discharge regulated by this permit causes or contributes to an exceedance of the water quality standards in COMAR 26.08.02.03, including but not limited to the general water quality standards, or if the discharge includes a pollutant that was not disclosed or addressed in the public record for the permit determination, the Department is authorized to modify, suspend or revoke this permit or take enforcement action to address unlawful discharges of pollutants.

I. Reapplication for a Permit

No later than **12 months before the expiration of this permit**, unless permission for a later date has been granted by the Department, the permittee shall submit a new application for a permit or notify the Department of the intent to cease discharging by the expiration date. In the event that a timely and complete reapplication has been submitted and the Department is unable, through no fault of the permittee, to issue a new permit before the expiration date of this permit, the terms and conditions of this permit continue and remain fully effective and enforceable. The renewal application is required by that date in accordance with the requirements of MDE's Watershed Permitting Plan under which all discharge permits in a watershed should be issued in the same year.

J. Reporting Nutrient Total Annual Loads to Comply with Concentration-based Annual Loading Rate Limits

The Department has assigned a Discharge Number **001-Z** to report the concentration-based (also known as Floating Cap) annual loading requirements for TN and TP on the December Month DMR. The Department will generate the pre-printed DMR forms by incorporating the above stated discharge number. For each calendar year, the permittee shall calculate the annual concentration-based loads for TN and TP as per the footnote-5 of the Special Condition II.A, and report these loadings along with the total annual cumulative flow on the December month DMR forms. If the Joppatowne WWTP discharges effluent at more than a single outfall, the total annual loads for TN, TP and total annual discharge flow shall be reported as a sum of the individual results from each outfall.

III. GENERAL CONDITIONS

A. Monitoring and Reporting

1. Representative Sampling

Samples and measurements shall be taken at times that are representative of the quantity and quality of the discharge, and at evenly spaced intervals.

2. Monthly Monitoring Results

a. Discharge Monitoring Reports

Monitoring results obtained during each calendar month shall be summarized on a Discharge Monitoring Report form (EPA No. 3320-1) or via NetDMR (Definition I.K). Results shall be submitted to the Department postmarked or via NetDMR no later than the 28th of the month following the end of the reporting month.

If the permittee prefers to submit a hard copy of the Discharge Monitoring Report instead of the electronic submission via NetDMR, it shall be submitted to:

Attention: Discharge Monitoring Reports
Water Management Administration
Compliance Program
Maryland Department of the Environment
1800 Washington Boulevard, STE-425
Baltimore, MD 21230-1708

b. Monthly Operating Reports (MORs)

The permittee shall submit monthly operating reports on a form acceptable to the Compliance Program. For each calendar month, the permittee shall submit to the Department a signed original of the MORs either in paper format or via NetDMR in electronic format concurrently with the Discharge Monitoring Report submission postmarked no later than the 28th day of the month following the reporting month.

c. Toxic Chemical Reporting

Any data collected according to the Department's "Toxic Pollutant Monitoring Protocol and Reporting Requirements for Toxic Chemical Testing Analytical Data" (05/18/2011) being submitted to the Department, either in fulfillment of Special Conditions II.B or pursuant to the toxic chemical testing requirement, pretreatment requirements or toxic metals or organic data collected on a voluntary basis, must be

III. GENERAL CONDITIONS

accompanied by laboratory data reports. At a minimum, these reports shall include, the name of the facility, the date(s) of sampling, beginning and ending sample time, place of sampling collection, the sample type (grab, composite, etc.), the sample description (influent or effluent), the preservation method, the analytical method used for each parameter, the analytical method detection limit, the date of analysis, the name of person performing the analysis, the analytical result, and the name and address of the laboratory performing the analyses. Chain-of-custody forms shall also be submitted.

If the permittee prefers to submit hard copy of this information along with the supporting documentations instead of the electronic submission via NetDMR, they shall be submitted to:

Attention: Toxic Chemical Data
WMA – Compliance Program
Maryland Department of the Environment
1800 Washington Boulevard, STE 420
Baltimore, Maryland 21230-1708

3. Sampling and Analysis Methods

Analytical and sampling methods shall conform to test procedures for the analysis of pollutants as identified in 40 CFR Part 136 - "Guidelines Establishing Test Procedures for the Analysis of Pollutants."

4. Analytical Laboratory

Within 30 days after the effective date of this permit, the permittee shall submit to the Department the name and address of the analytical laboratory (including the permittee's own laboratory) which is used to perform the monitoring required by this permit.

If the laboratory changes during the effective period of this permit, the permittee shall notify the Department of the new laboratory within 30 days after the change.

5. Monitoring Equipment Maintenance

- a. The permittee shall calibrate and maintain all monitoring and analytical instrumentation to ensure accuracy of measurements.
- b. Environment Article, Section 9-343 provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall, upon

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conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or by both.

6. Recording of Results

For each measurement or sample taken pursuant to the requirements of the permit, the permittee shall record the following information:

- a. the date, exact place and time of sampling or measurement;
- b. the person(s) who performed the sampling or measurement;
- c. the dates analyses were performed;
- d. the person(s) who performed each analysis;
- e. the analytical techniques or methods used; and
- f. the results of such analyses.

7. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report form (EPA No. 3320-1). The increased frequency shall also be reported. The results of any other monitoring performed by the permittee shall be made available to the Department upon request.

8. Record Retention

All data used to complete the permit application and all records and information resulting from the monitoring activities required by this permit, including all records of sampling and analyses performed, calibration and maintenance of instrumentation, and recordings from continuous monitoring instruments, shall be retained for a minimum of three years. This period shall be extended automatically during the course of litigation or when requested by the Department.

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B. General Requirements

1. Permit Noncompliance - Notification Requirements

All discharges authorized herein shall be consistent with the terms and conditions of this permit. If, for any reason, the permittee does not comply with or will be unable to comply with any permit condition, the permittee shall, within 24 hours, notify the Department by telephone at (410) 537-3510 during work hours or at (866) 633-4686 during evenings, weekends, and holidays. The permittee shall provide the Department with the following information in writing within five days of such oral notification.

- a. a description of the noncomplying discharge including the name of the stream and the impact upon the receiving waters;
- b. cause of noncompliance;
- c. the duration of the period of noncompliance and the anticipated time the condition of noncompliance is expected to continue;
- d. steps taken by the permittee to reduce and eliminate the noncomplying discharge;
- e. steps to be taken by the permittee to prevent recurrence of the condition of noncompliance;
- f. a description of the accelerated or additional monitoring to determine the nature and impact of the noncomplying discharge; and
- g. the results of the monitoring described in f. above.

2. Change in Discharge

The permittee shall report any anticipated facility expansions, production increases, or process modifications which will result in new, different or an increased discharge of pollutants by submitting a new application at least 180 days prior to the commencement of the changed discharge except that if the change only affects a listed pollutant and will not violate the effluent limitations specified in this permit, by providing written notice to the Department. Following such notice, the permit may be modified by the Department to include new effluent limitations on those pollutants.

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3. Facility Operation and Quality Control

All waste collection, control, treatment and disposal facilities shall be operated in a manner consistent with the following:

- a. Facilities shall be operated efficiently to minimize upsets and discharges of excessive pollutants.
- b. The permittee shall provide an adequate operating staff qualified to carry out operation, maintenance and testing functions required to ensure compliance with this permit. Superintendents and operators must be certified by the Board of Waterworks and Waste Systems Operators located at Montgomery Park Business Center, 1800 Washington Boulevard, STE- 410, Baltimore, Maryland 21230 in accordance with Title 12 of Environmental Article, Annotated Code of Maryland, and Section 26.06.01 of the COMAR.
- c. Facility maintenance work, which adversely affects or may adversely affect the discharge quality shall be scheduled during non-critical water quality periods.

4. Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to waters of this State, human health or the environment resulting from noncompliance with any effluent limitations specified in this permit, and must perform accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

5. Bypassing

Any bypass of treatment facilities is prohibited unless the bypass does not cause any violations of the effluent limitations specified in Special Condition II.A, and is for essential maintenance to assure efficient operation, or unless the permittee can prove that:

- a. the bypass is unavoidable to prevent loss of life, personal injury, or substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources; and
- b. there are no feasible alternatives to the bypass; and
- c. the Department receives notification pursuant to General Condition III.B.1 above. Where the need for a bypass is known (or should have

III. GENERAL CONDITIONS

been known) in advance, this notification shall be submitted to the Department for approval at least ten days before the date of the bypass or at the earliest possible date if the period of advance knowledge is less than ten days; and

- d. the bypass is allowed under conditions approved by the Department to be necessary to minimize adverse effects.

6. Conditions Necessary for Demonstration of Upset

An upset shall constitute an affirmative defense to an action brought for noncompliance with technology-based effluent limitations only if the permittee demonstrates, through properly signed, contemporaneous operating logs, or other relevant evidence, that:

- a. an upset occurred and that the permittee can identify the specific cause(s) of the upset;
- b. the permitted facility was at the time being operated in a prudent and workman-like manner and in compliance with proper operation and maintenance procedures;
- c. the permittee submitted a 24-hour notification of upset in accordance with the reporting requirements of General Condition III.B.1 above;
- d. the permittee submitted, within five calendar days of becoming aware of the upset, documentation to support and justify the upset; and
- e. the permittee complied with any remedial measures required to minimize adverse impact.

In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

7. Sewage Sludge Requirements

The permittee shall comply with all State and federal laws and regulations regarding Sewage Sludge Management, and with any regulations promulgated pursuant to Environment Article, Section 9-230 *et seq.* or to the Clean Water Act, Section 405 (d). A Sewage Sludge Utilization Permit is required for the collection, handling, burning, storage, treatment, land application, disposal, or transportation of sewage sludge, processed sewage sludge, or any product containing these materials in Maryland. If the sludge is hauled out of the State for disposal, a transportation permit must be obtained from the Department.

III. GENERAL CONDITIONS

8. Power Failure

The permittee shall maintain compliance with the effluent limitations and all other terms and conditions of this permit in the event of a reduction, loss or failure of the primary source of power to the wastewater collection and treatment facilities.

9. Right of Entry

The permittee shall allow the Secretary of the Department, the Regional Administrator of the Environmental Protection Agency, and their authorized representatives, upon the presentation of credentials to enter upon the permittee's premises and:

- a. to have access to and to copy any records required to be kept under the terms and conditions of this permit;
- b. to inspect any monitoring equipment or monitoring method required in this permit;
- c. to inspect any collection, treatment, pollution management, or discharge facilities required under this permit; or
- d. to sample any discharge of pollutants.

10. Property Rights/Compliance With Other Requirements

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property, invasion of personal rights, or any infringement of federal, State or local laws or regulations.

11. Reports and Information

- a. Upon request, the permittee shall provide to the Department, within a reasonable time, copies of records required to be kept by this permit. The permittee shall also furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit; or to determine compliance with this permit.
- b. All applications, reports or information submitted to the Department shall be signed and certified as required by COMAR 26.08.04.01 and 40 CFR 122.22.

III. GENERAL CONDITIONS

- c. Except for data determined to be confidential under COMAR 26.08.04.01, all data shall be available for public inspection at the Department and the Office of the Regional Administrator of the Environmental Protection Agency. Effluent data shall not be considered confidential.
- d. Environment Article, Section 9-343 provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, shall upon conviction be punished by a fine of not more than \$10,000 or by imprisonment for not more than six months or by both.

12. Transfer of Ownership or Control

In the event of any change in ownership or control of facilities from which the authorized discharge emanates, the permit may be transferred automatically to another person only if:

- a. the current permittee notify the Department, in writing, of the proposed transfer at least 30 days prior to the proposed transfer date;
- b. the notice includes a written agreement between the existing permittee and a new permittee containing the specific date of proposed transfer of permit coverage, and of responsibilities and liabilities under the permit; and
- c. neither the current permittee nor the new permittee receive notification from the Department, within 30 days of the Department's receipt of the agreement, of its intent to modify, revoke, reissue or terminate the existing permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph 12(b) above.

13. New Effluent Standards

This permit shall be revoked and reissued or modified to meet any effluent standard, water quality standard or prohibition established under the Environment Article, the Clean Water Act, or regulations promulgated thereto, and the permittee shall be so notified.

III. GENERAL CONDITIONS

14. Industrial Users

The permittee shall require all industrial users of the wastewater treatment facility to comply with user charges as established by the permittee, pursuant to Section 9-326(a)(i) of the Environment Article.

15. Noncompliance

Nothing in this permit shall be construed to preclude the institution of any legal action for noncompliance with State, federal or local laws and regulations.

16. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action against the permittee or to relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Clean Water Act or under the Environment Article.

17. Waterway Construction and Obstruction

The permit does not authorize the construction or placing of physical structures, facilities, debris, or the undertaking of related activities in any waters of this State including the 100 year flood plain.

18. Construction Permit

This permit is not a permit to construct. For a new facility, in order to make this permit valid, a construction permit shall be obtained to meet the requirements of COMAR 26.03.12.03(A) and Environment Article, Section 9-204(d).

19. Severability

If any provision of this permit shall be held invalid for any reason, the remaining provisions shall remain in full force and effect, and such invalid provisions shall be considered severed and deleted from this permit.

C. Wastewater Collection System

This permit shall not authorize discharges from the wastewater collection system for this facility.

1. Reporting Requirements

Pursuant to Environment Article Sub title 9-331.1, the permittee must report sanitary sewer overflows (SSOs) which result in the direct or potential discharge

III. GENERAL CONDITIONS

of raw or diluted sewage into the surface waters or ground waters of the State to the Water Management Administration's Compliance Program. Concurrently, the permittee shall also notify the local health department. Such reports must be made via telephone as soon as practicable, but no later than 24 hours after the time that the permittee became aware of the event. Reportable SSOs include, but are not limited to, overflows into the surface of the ground, into waterways, storm drains, ditches or other manmade or natural drainage conveyances to surface or ground waters which are reasonably likely to reach waters of the State. Overflows that are wholly contained within buildings and not likely to discharge to waterways need not be reported. Treatment plant bypasses shall be reported under General Condition III.B.1. Telephone reports shall be made to (410) 537-3510 on weekdays between 8:00 a. m. and 5:00 p.m. After hours telephone notification shall be made to emergency response number at (866) 633-4686.

When the incident is reported to the Department, the following information needs to be included:

- a. the location of the overflow, including city or county,
- b. the name of the receiving water, if applicable;
- c. an estimate of the volume of sewage discharged;
- d. a description of the sewer system or treatment plant component from which the overflow was released (such as manhole, crack in pipe, pumping station wet well or constructed overflow pipe);
- e. an estimate of the overflow's impact upon public health and to waters of the State;
- f. the cause or suspected cause of the overflow;
- g. the estimated date and time when the overflow began and stopped or the anticipated time the overflow is expected to continue;
- h. if known at the time of reporting, the steps taken or planned to reduce, eliminate and prevent reoccurrence of the overflow and a schedule of major milestones for those steps; (if unknown at the time the telephone report is made, the steps must be included in the written reports submitted under general conditions III.C.2).
- i. if known at the time of reporting, measures taken or planned to mitigate the adverse impact of the overflow and a schedule of major milestones for those steps (if unknown at the time the telephone report is made, the

III. GENERAL CONDITIONS

steps must be included in the written reports submitted under general conditions III.D.2); and

- j. whether there has already been a notification to the public and other City or County Agencies or Departments and how notification was done.

2. Written Reports

Within 5 calendar days following telephone notification of the event, the permittee shall provide MDE with a written report regarding the incident that includes, at a minimum, the information cited above.

The permittee shall maintain copies of all overflow records and reports, work orders associated with investigation of overflows, a list and description of complaints from customers or others related to overflows (including backups of sewage in to houses or businesses), and documentation of performance and implementation measures for minimum period of three years and shall make this information available to MDE for review upon written request.

This wastewater collection system provision may be superseded by a general permit for collection systems, when such a permit is issued by MDE and the permittee have been accepted for registration under the permit.

3. Other Requirements

The permittee, as directed by the State or local health department, shall also be responsible for posting notification in close proximity to the affected area/stream and for conducting appropriate water quality sampling as deemed necessary.

D. Permit Expiration, Modification, or Revocation

1. Expiration of Permit

This permit and the authorization to discharge shall expire at midnight on the expiration date of the permit unless the permittee has submitted a timely and complete reapplication pursuant to Section II.I.

2. [Reserved.]

3. Permit Modification - Request of Responsible Permittee

A permit may be modified by the Department upon the written request of the permittee and after notice and opportunity for a public hearing in accordance with the provisions set forth in COMAR 26.08.04.10.

III. GENERAL CONDITIONS

4. Permit Modification, Suspension, Revocation - Violation of Laws

A permit may also be modified, suspended or revoked by the Department, in the event of a violation of the terms or conditions of the permit, or of State or federal laws and regulations and in accordance with the provisions set forth in COMAR 26.08.04.10. This permit may be suspended or revoked upon a final, unreviewable determination that the permittee lacks, or is in violation of, any federal, state, or local approval necessary to conduct the activities authorized by this permit.

IV. CIVIL AND CRIMINAL PENALTIES

A. Civil Penalties for Violations of Permit Conditions

In addition to civil penalties for violations of State water pollution control laws set forth in Section 9-342 of the Environment Article, Annotated Code of Maryland, the Clean Water Act provides that any person who violates Section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under Section 402 of the Act or in a permit issued under Section 404 of the Act, is subject to a civil penalty not to exceed \$37,500 per day for each violation.

B. Criminal Penalties for Violations of Permit Conditions

In addition to criminal penalties for violations of State water pollution control laws set forth in Section 9-343 of the Environment Article, Annotated Code of Maryland, the Clean Water Act provides that:

1. any person who negligently violates Section 301, 302, 306, 307, 308, 318, or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under Section 402 of the Act, or in a permit issued under Section 404 of the Act, is subject to a fine of not less than \$2,500 nor more than \$25,000 per day of violation, or by imprisonment for not more than one year, or by both.
2. any person who knowingly violates Section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under Section 402 of the Act, or in a permit issued under Section 404 of the Act, is subject to a fine of not less than \$5,000 nor more than \$50,000 per day of violation, or by imprisonment for not more than three years, or by both.
3. any person who knowingly violates Section 301, 302, 306, 307, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under Section 402 of the Act, or in a permit issued under Section 404 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, is subject to a fine of not more than \$250,000 or imprisonment of not more than 15 years, or both.
4. any person who knowingly makes any false material statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained under the Act or who knowingly falsifies, tampers with or renders inaccurate any monitoring device or method required to be maintained under the Act, is subject to a fine of not more than \$10,000 or by imprisonment for not more than two years, or by both.

V. MAP SHOWING DISCHARGE POINT LOCATION



VI. NPDES PROGRAM

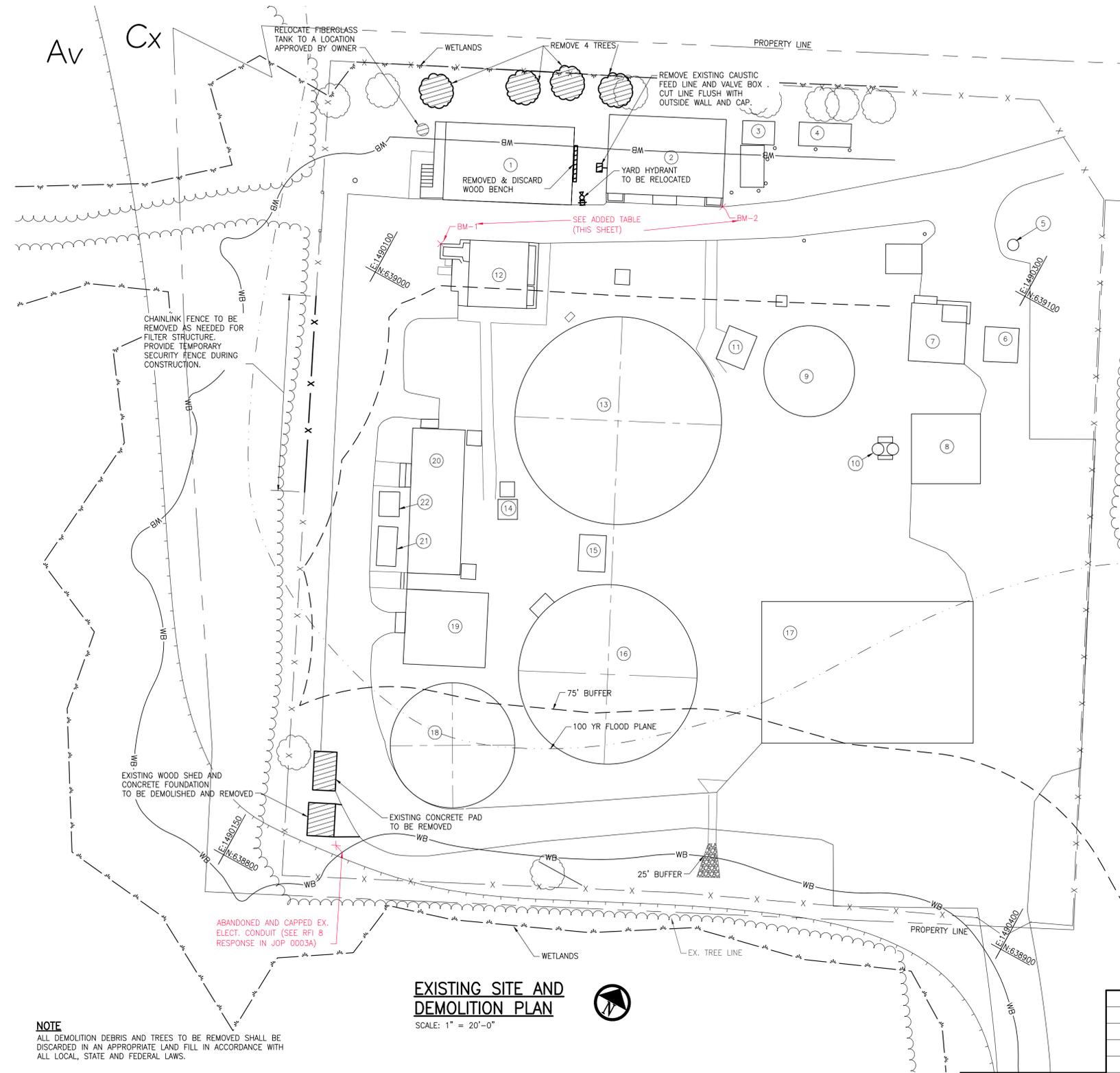
On September 5, 1974, the Administrator of the U.S. Environmental Protection Agency approved the proposal submitted by the State of Maryland for the operation of a permit program for wastewater discharges pursuant to Section 402 of the Clean Water Act.

Pursuant to the aforementioned approval, this discharge permit is both a State of Maryland discharge permit and an NPDES permit.

Virginia F. Kearney, Acting Director
Water Management Administration

BUILDING AND STRUCTURE LEGEND

- | | |
|---------------------------------|---|
| ① CHLORINE CONTACT TANK No.1 | ⑫ CHLORINE BUILDING AND CHLORINE CONTACT TANK No. 2 |
| ② CHEMICAL FEED BUILDING | ⑬ REACTOR/ CLARIFIER TANK No. 1 |
| ③ GENERATOR AND FUEL TANK | ⑭ SCUM PUMP STATION |
| ④ MAIN SWITCHGEAR | ⑮ REACTOR FLOW DISTRIBUTION BOX |
| ⑤ BY-PASS PUMPING STATION # 51 | ⑯ REACTOR / CLARIFIER No. 2 |
| ⑥ DIVERSION CHAMBER | ⑰ ADMINISTRATION BUILDING |
| ⑦ INFLUENT PUMPING STATION # 50 | ⑱ CLARIFIER No. 3 |
| ⑧ SCREENING AND GRIT BUILDING | ⑲ SECONDARY SLUDGE BUILDING |
| ⑨ FLOW EQUALIZATION TANK | ⑳ BLOWER BUILDING |
| ⑩ GRIT REMOVAL UNITS | ㉑ GENERATOR |
| ⑪ AUXILIARY BLOWER BUILDING | ㉒ FUEL TANK |



NOTE
ALL DEMOLITION DEBRIS AND TREES TO BE REMOVED SHALL BE DISCARDED IN AN APPROPRIATE LAND FILL IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL LAWS.

EXISTING SITE AND DEMOLITION PLAN

SCALE: 1" = 20'-0"



BENCHMARKS				
#	NORTHING	EASTING	ELEVATION	DESCRIPTION
BM-1	639018.85200	1490115.16800	14'-0.60000"	'X' CUT ON TOP OF CONCRETE WALL AT NORTHWEST CORNER OF CHLORINE BUILDING WELL
BM-2	639075.73800	1490193.21000	17'-8.52000"	'X' CUT ON TOP OF CONCRETE WALL AT NORTHWEST CORNER OF CHLORINE FEED BUILDING WELL

S/ AOY 09-15-11

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 39599 EXPIRATION DATE 02/28/2015

APPROVED	REV. NO.	DATE	REVISION	BY

PLANNING	ENGINEERING	AS-BUILT PER INSPECTOR TRANS. BY: <u>HMM</u> DATE: <u>11-07-2013</u> RESIDENT INSPECTOR: <u>CHRIS MATTHEWS PE</u> ARCADIS US INC.
MAINTENANCE CHIEF	S/ DEP 09-15-11 OPERATIONS CHIEF	
PROPERTY MANAGEMENT	S/ TS 09-15-11 CONST. MGMT.	
SEDIMENT CONTROL	TRAFFIC CONTROL	

HARFORD COUNTY MARYLAND

DEPUTY DIRECTOR, DIVISION OF WATER AND SEWER
S/ JC, PE DATE 06-29-11

THIRD ELECTION DISTRICT
HARFORD COUNTY, MARYLAND
JOPPATOWNE WASTEWATER TREATMENT PLANT ENR UPGRADE
EXISTING SITE AND DEMOLITION PLAN
SEWER CONTRACT NO. 10-134

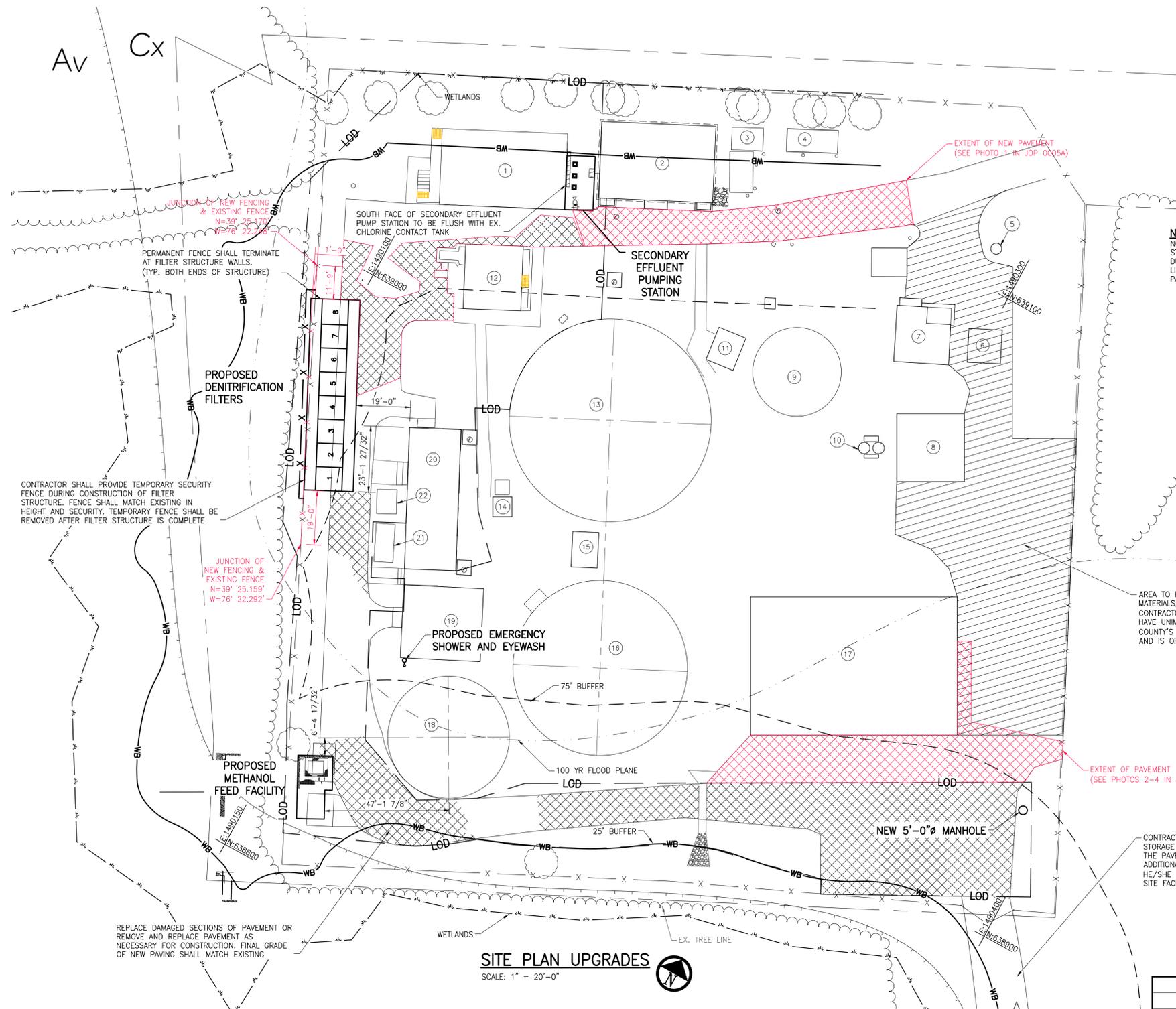
Hatch Mott MacDonald
11019 McCormick Road, Suite 260
Hunt Valley, MD 21031 Phone: 866-363-1471

DESIGNED: _____	SCALE: 1" = 20'	TAX MAP 40, Blk D3	SHEET NO. 4	JOB NO. 272548
TRACED: MAC	ADC MAP NO. 16	ADC GRID KS	OF 48	C-1
CHECKED: _____				

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BUILDING AND STRUCTURE LEGEND

- | | |
|---------------------------------|---|
| ① CHLORINE CONTACT TANK No.1 | ⑫ CHLORINE BUILDING AND CHLORINE CONTACT TANK No. 2 |
| ② CHEMICAL FEED BUILDING | ⑬ REACTOR/ CLARIFIER TANK No. 1 |
| ③ GENERATOR AND FUEL TANK | ⑭ SCUM PUMP STATION |
| ④ MAIN SWITCHGEAR | ⑮ REACTOR FLOW DISTRIBUTION BOX |
| ⑤ BY-PASS PUMPING STATION # 51 | ⑯ REACTOR / CLARIFIER No. 2 |
| ⑥ DIVERSION CHAMBER | ⑰ ADMINISTRATION BUILDING |
| ⑦ INFLUENT PUMPING STATION # 50 | ⑱ CLARIFIER No. 3 |
| ⑧ SCREENING AND GRIT BUILDING | ⑲ SECONDARY SLUDGE BUILDING |
| ⑨ FLOW EQUALIZATION TANK | ⑳ BLOWER BUILDING |
| ⑩ GRIT REMOVAL UNITS | ㉑ GENERATOR |
| ⑪ AUXILIARY BLOWER BUILDING | ㉒ FUEL TANK |



NOTE:
 NO MATERIALS, DEMOLITION DEBRIS, EQUIPMENT, TOOLS, VEHICLES, STORAGE CONTAINERS OR OTHER ITEMS REQUIRED BY THE CONTRACTOR DURING CONSTRUCTION CAN BE PLACED OR STORED OUTSIDE THE LIMITS OF DISTURBANCE SHOWN ON THIS PLAN WITH EXCEPTION OF THE PAVED PORTION OF THE SOUTH ACCESS ROAD ONLY

AREA TO REMAIN CLEAR OF BUILDING MATERIALS, EQUIPMENT, DEBRIS AND CONTRACTOR'S VEHICLES. AREA SHALL HAVE UNIMPEDED ACCESS FOR HARFORD COUNTY'S USE DURING CONSTRUCTION AND IS OFF LIMITS TO CONTRACTOR.

CONTRACTOR SHALL HAVE USE OF ACCESS ROAD FOR STORAGE OF MATERIALS AND PARKING OF VEHICLES ON THE PAVED SURFACE ONLY. IF CONTRACTOR REQUIRES ADDITIONAL SPACE OR PREFERRED FENCED ENCLOSURE, HE/SHE SHALL BE RESPONSIBLE FOR SECURING AN OFF SITE FACILITY AT NO ADDITIONAL EXPENSE TO THE OWNER.

SITE PLAN UPGRADES
 SCALE: 1" = 20'-0"



CONTRACTOR SHALL INSTALL TEMPORARY CONSTRUCTION SECURITY ENTRANCE GATE ON ACCESS ROAD AT SHORE DRIVE. GATE SHALL BE REMOVED AFTER CONSTRUCTION IS COMPLETE AND APPROVED BY OWNER AND ENGINEER.

APPROVED	REV. NO.	DATE	REVISION	BY

PLANNING	ENGINEERING	AS-BUILT PER INSPECTOR TRANS. BY: HMM DATE: 11-07-2013 RESIDENT INSPECTOR: CHRIS MATTHEWS PE ARCADIS US, INC.
MAINTENANCE CHIEF	S/ DEP 09-15-11 OPERATIONS CHIEF	
PROPERTY MANAGEMENT	S/ TS 09-15-11 CONST. MGMT.	
SEDIMENT CONTROL	TRAFFIC CONTROL	

DESIGNED:	SCALE	TAX MAP	SHEET	JOB NO.
TRACED: MAC	1" = 20'	40, Bik D3	NO. 5	272548
CHECKED:		ADC MAP NO. 16	OF 48	C-2
		ADC GRID KS		

S/ AOY 09-15-11

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE: NL39598 EXPIRATION DATE: 02/28/2025

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PIPING LEGEND

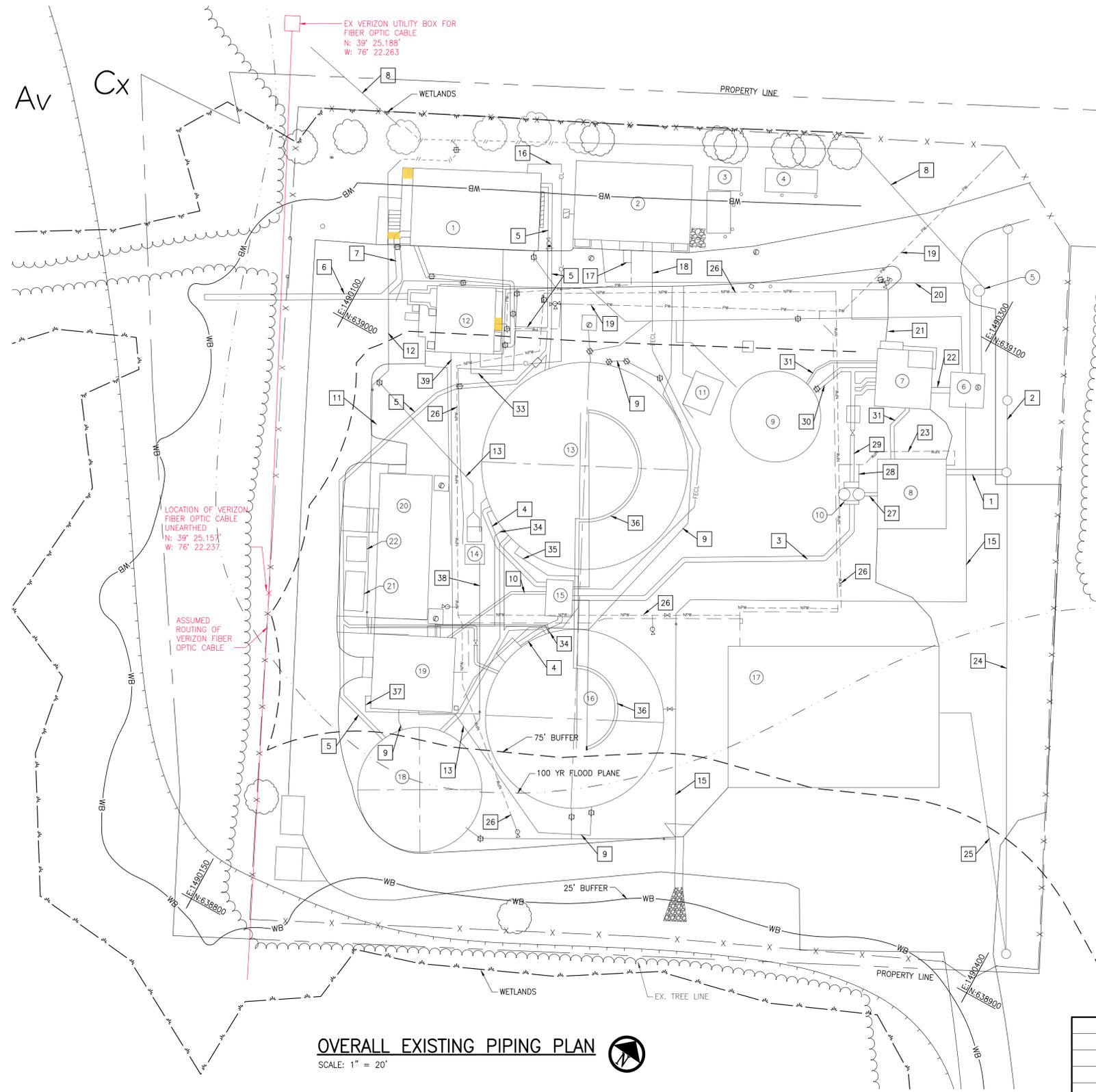
- | | | |
|---------------------------------|--|-----------------------------|
| 1 24" DIP RAW WASTEWATER | 16 2" PVC CHLORINE | 31 8" CIP DRAIN |
| 2 10" DIP RAW WASTEWATER | 17 1-1/2" PVC POTABLE WATER | 32 24" DIP PRIMARY INFLUENT |
| 3 18" DIP PRIMARY EFFLUENT | 18 1" SODIUM HYDROXIDE & FERRIC CHLORIDE | 33 2" PVC SULFUR DIOXIDE |
| 4 18" DIP SECONDARY INNFLUENT | 19 6" CIP POTABLE WATER | 34 1" CPVC POLYMER |
| 5 16" DIP SECONDARY EFFLUENT | 20 4" DIP DRAIN | 35 1" FERRIC CHLORIDE |
| 6 24" ACP FINAL EFFLUENT | 21 6" CIP DRAIN | 36 10" S.S. AIR |
| 7 16" DIP FINAL EFFLUENT | 22 24" CIP RAW WASTEWATER BY-PASS | 37 1-1/2" PVC DRAIN |
| 8 6" DIP RAW WASTEWATER BY-PASS | 23 1-1/2" PVC NON-POTABLE WATER | 38 6" DIP SCUM |
| 9 6" DIP RAS | 24 18" ASBESTOS CEMENT DRAIN | 39 1" CPVC CHLORINE |
| 10 10" DIP RAS | 25 6" PVC SAN | |
| 11 4" DIP WAS | 26 4" NON-POTABLE WATER | |
| 12 6" DIP WAS | 27 2" GALV. STEEL GRIT | |
| 13 6" CPVC SCUM | 28 2" PVC NON-POTABLE WATER | |
| 14 18" DIP SAN | 29 14" DIP PRIMARY INFLUENT | |
| 15 6" DIP DRAIN | 30 12" DIP PRIMARY INFLUENT | |

BUILDING AND STRUCTURE LEGEND

- | | |
|---------------------------------|--|
| 1 CHLORINE CONTACT TANK No. 1 | 12 CHLORINE BUILDING AND CHLORINE CONTACT TANK No. 2 |
| 2 CHEMICAL FEED BUILDING | 13 REACTOR/ CLARIFIER TANK No. 1 |
| 3 GENERATOR AND FUEL TANK | 14 SCUM PUMP STATION |
| 4 MAIN SWITCHGEAR | 15 REACTOR FLOW DISTRIBUTION BOX |
| 5 BY-PASS PUMPING STATION # 51 | 16 REACTOR / CLARIFIER No. 2 |
| 6 DIVERSION CHAMBER | 17 ADMINISTRATION BUILDING |
| 7 INFLUENT PUMPING STATION # 50 | 18 CLARIFIER No. 3 |
| 8 SCREENING AND GRIT BUILDING | 19 SECONDARY SLUDGE BUILDING |
| 9 FLOW EQUALIZATION TANK | 20 BLOWER BUILDING |
| 10 GRIT REMOVAL UNITS | 21 GENERATOR |
| 11 AUXILIARY BLOWER BUILDING | 22 FUEL TANK |

LINES LEGEND

- CL CHLORINE
 FECL FERRIC CHLORINE FEED
 NaOH SODIUM HYDROXIDE
 PW POTABLE WATER
 NPW NON-POTABLE WATER



OVERALL EXISTING PIPING PLAN

SCALE: 1" = 20'



APPROVED	REV. NO.	DATE	REVISION	BY

PLANNING	ENGINEERING	AS-BUILT PER INSPECTOR TRANS. BY: HMM DATE: 11-07-2013 RESIDENT INSPECTOR: CHRIS MATTHEWS PE ARCADIS US, INC.
MAINTENANCE CHIEF	S/ DEP 09-15-11 OPERATIONS CHIEF	
PROPERTY MANAGEMENT	S/ TS 09-15-11 CONST. MGMT.	
SEDIMENT CONTROL	TRAFFIC CONTROL	

S/ AOY 09-15-11

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HARFORD COUNTY MARYLAND

DEPUTY DIRECTOR, DIVISION OF WATER AND SEWER

S/ JC, PE DATE 06-29-11

THIRD ELECTION DISTRICT

JOPPATOWNE WASTEWATER TREATMENT PLANT ENR UPGRADE
OVERALL EXISTING PIPING PLAN
 SEWER CONTRACT NO. 10-134

HARFORD COUNTY, MARYLAND

Hatch Mott MacDonald
 11019 McCormick Road, Suite 260
 Hunt Valley, MD 21031 Phone: 866-363-1471

DESIGNED:	SCALE	TAX MAP	SHEET	JOB NO.
TRACED: MAC	1" = 20'	40, Bik D3	NO. 6	272548
CHECKED:		ADC MAP NO. 16	OF 48	C-3
		ADC GRID KS		

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PIPING LEGEND

- | | | |
|---------------------------------|--|---|
| 1 24" DIP RAW WASTEWATER | 16 2" PVC CHLORINE | 31 8" CIP DRAIN |
| 2 10" DIP RAW WASTEWATER | 17 1-1/2" PVC POTABLE WATER | 32 24" DIP PRIMARY INFLUENT |
| 3 18" DIP PRIMARY EFFLUENT | 18 1" SODIUM HYDROXIDE & FERRIC CHLORIDE | 33 2" PVC SULFUR DIOXIDE |
| 4 18" DIP SECONDARY INNFLUENT | 19 6" CIP POTABLE WATER | 34 1" CPVC POLYMER |
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| 9 6" DIP RAS | 24 18" ASBESTOS CEMENT DRAIN | 39 1" CPVC CHLORINE |
| 10 10" DIP RAS | 25 6" PVC SAN | 40 12" DIP FILTER INFLUENT |
| 11 4" DIP WAS | 26 4" NON-POTABLE WATER | 41 16" DIP TERTIARY EFFLUENT |
| 12 6" DIP WAS | 27 2" GALV. STEEL GRIT | 42 1" SCH 80 PVC FILTER INFLUENT SAMPLE LINE |
| 13 6" CPVC SCUM | 28 2" PVC NON-POTABLE WATER | 43 1" SCH 80 PVC FILTER EFFLUENT SAMPLE LINE |
| 14 18" DIP SAN | 29 14" DIP PRIMARY INFLUENT | 44 3/4" TYPE K HARD COPPER POTABLE WATER |
| 15 6" DIP DRAIN | 30 12" DIP PRIMARY INFLUENT | 45 3" SCH 40 PVC DRAIN |
| | | 46 4" DRAIN |
| | | 47 1" SCH 80 SAMPLE RETURN LINE |
| | | 48 1" SCH 80 SAMPLE RETURN LINE |

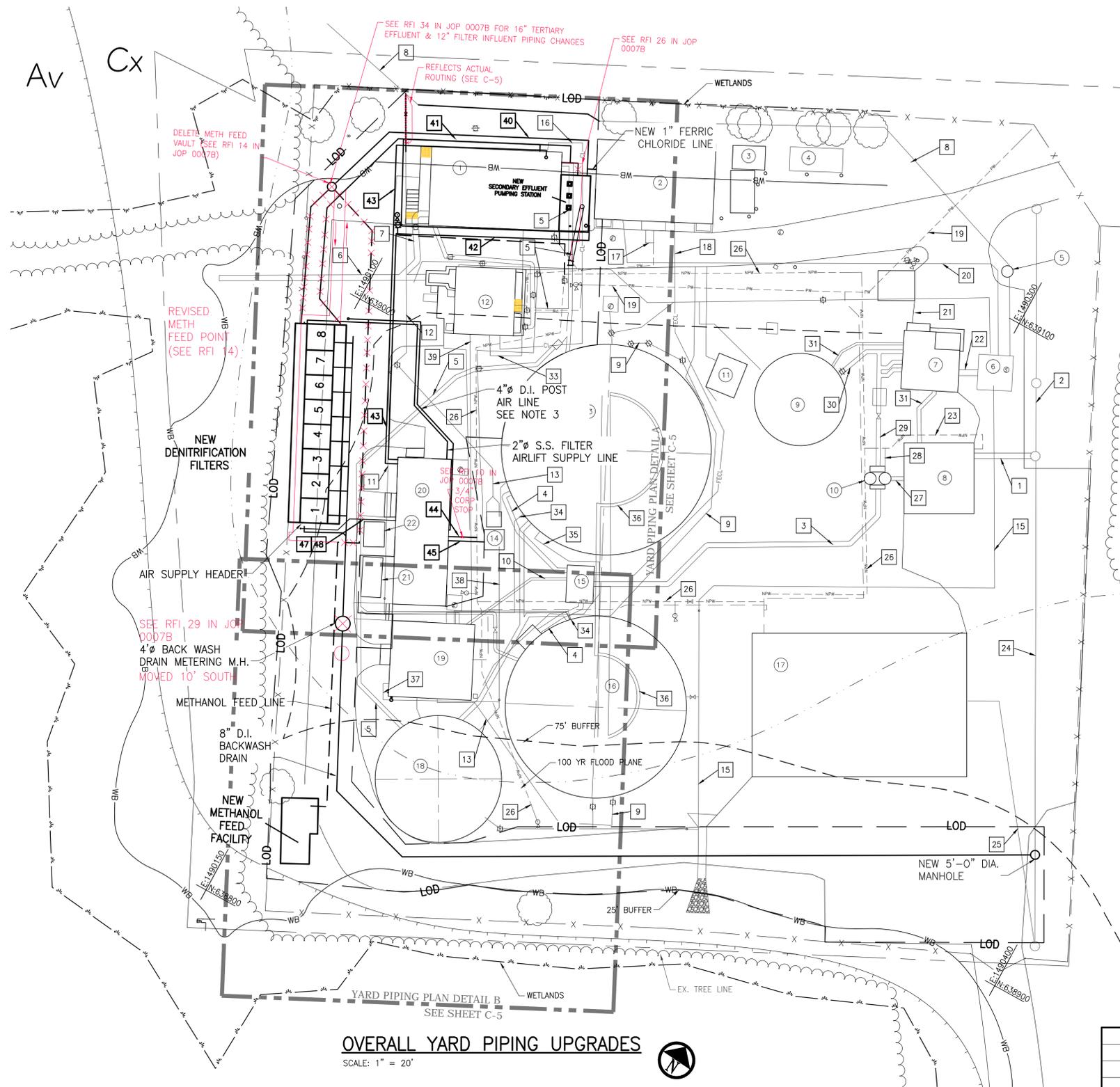
SEE RFI 10 RESPONSE IN JOP 0007B

BUILDING AND STRUCTURE LEGEND

- | | |
|---------------------------------|--|
| 1 CHLORINE CONTACT TANK No.1 | 12 CHLORINE BUILDING AND CHLORINE CONTACT TANK No. 2 |
| 2 CHEMICAL FEED BUILDING | 13 REACTOR/ CLARIFIER TANK No. 1 |
| 3 GENERATOR AND FUEL TANK | 14 SCUM PUMP STATION |
| 4 MAIN SWITCHGEAR | 15 REACTOR FLOW DISTRIBUTION BOX |
| 5 BY-PASS PUMPING STATION # 51 | 16 REACTOR / CLARIFIER No. 2 |
| 6 DIVERSION CHAMBER | 17 ADMINISTRATION BUILDING |
| 7 INFLUENT PUMPING STATION # 50 | 18 CLARIFIER No. 3 |
| 8 SCREENING AND GRIT BUILDING | 19 SECONDARY SLUDGE BUILDING |
| 9 FLOW EQUALIZATION TANK | 20 BLOWER BUILDING |
| 10 GRIT REMOVAL UNITS | 21 GENERATOR |
| 11 AUXILIARY BLOWER BUILDING | 22 FUEL TANK |

LINES LEGEND

- | |
|---------------------------|
| CL CHLORINE |
| FECL FERRIC CHLORINE FEED |
| NaOH SODIUM HYDROXIDE |
| PW POTABLE WATER |
| NPW NON-POTABLE WATER |



OVERALL YARD PIPING UPGRADES

SCALE: 1" = 20'

NOTES

- CONTRACTOR SHALL VERIFY EXISTING LINE SIZES PRIOR TO INITIALIZING WORK. WHERE CONNECTIONS OR MODIFICATIONS TO EXISTING PIPE IS REQUIRED.
- RELOCATION OF THE EXISTING BY-PASS PUMP STATION DISCHARGE LINE AND SCUM/WAS LINE SHALL BE COMPLETED, TESTED AND PLACED INTO OPERATION PRIOR TO INITIATING WORK FOR THE SECONDARY EFFLUENT PUMP STATION STRUCTURE, PIPING OR DENITRIFICATION FILTER PIPING.
- BURIED 4" POST AIR LINE SHALL BE DUCTILE IRON, EPOXY LINED WITH VITON GASKETS, AND RESTRAINED JOINTS. SEE MECHANICAL SHEETS FOR INTERIOR AIR LINE.
- RELOCATED BY-PASS AND SCUM/WAS LINES SHALL BE ADJUSTED VERTICALLY TO AVOID CONFLICTS WITH NEW PIPING. CONTRACTOR SHALL MAINTAIN 3'-0" MIN. COVER OVER ALL PIPING.
- FILTER SAMPLE LINES AND METANOL FEED LINE SHALL HAVE AMIN. 3'-0" COVER.
- FILTER INFLUENT, TERTIARY EFFLUENT, AND RELOCATED RAW WASTEWATER BY-PASS LINES SHALL BE SPECIAL CLASS 53 DUCTILE IRON.
- BACKWASH DRAIN LINE SHALL BE SPECIAL CLASS 53 DUCTILE IRON WITH PROTECTO 401 EPOXY INTERIOR COATING.
- METHANOL FEED LINE SHALL BE 1 1/4" x 1" 316L DOUBLE CONTAINMENT PIPE. CARRIER PIPE SHALL BE SCH-40S. OUTER CONTAINMENT PIPE SHALL BE SCH 10S
- 2" FILTER AIRLIFT SUPPLY LINE SHALL BE SCH 40S 304L S.S.
- ALL BURIED AIR PIPING SHALL HAVE MIN. 2'-0" COVER.

APPROVED	REV. NO.	DATE	REVISION	BY
PLANNING		ENGINEERING		AS-BUILT PER INSPECTOR
MAINTENANCE CHIEF		S/ DEP 09-15-11		
PROPERTY MANAGEMENT		S/ TS 09-15-11		
SEDIMENT CONTROL		TRAFFIC CONTROL		TRANS. BY: HMM
				DATE: 11-07-2013
				RESIDENT INSPECTOR:
				CHRIS MATTHEWS PE
				ARCADIS US INC.
DESIGNED:	SCALE	TAX MAP	SHEET	JOB NO.
TRACED: MAC	1" = 20'	40, Bik D3	NO. 7	272548
CHECKED:		ADC MAP NO. 16	OF 48	C-4
		ADC GRID KS		

HARFORD COUNTY MARYLAND

DEPUTY DIRECTOR, DIVISION OF WATER AND SEWER

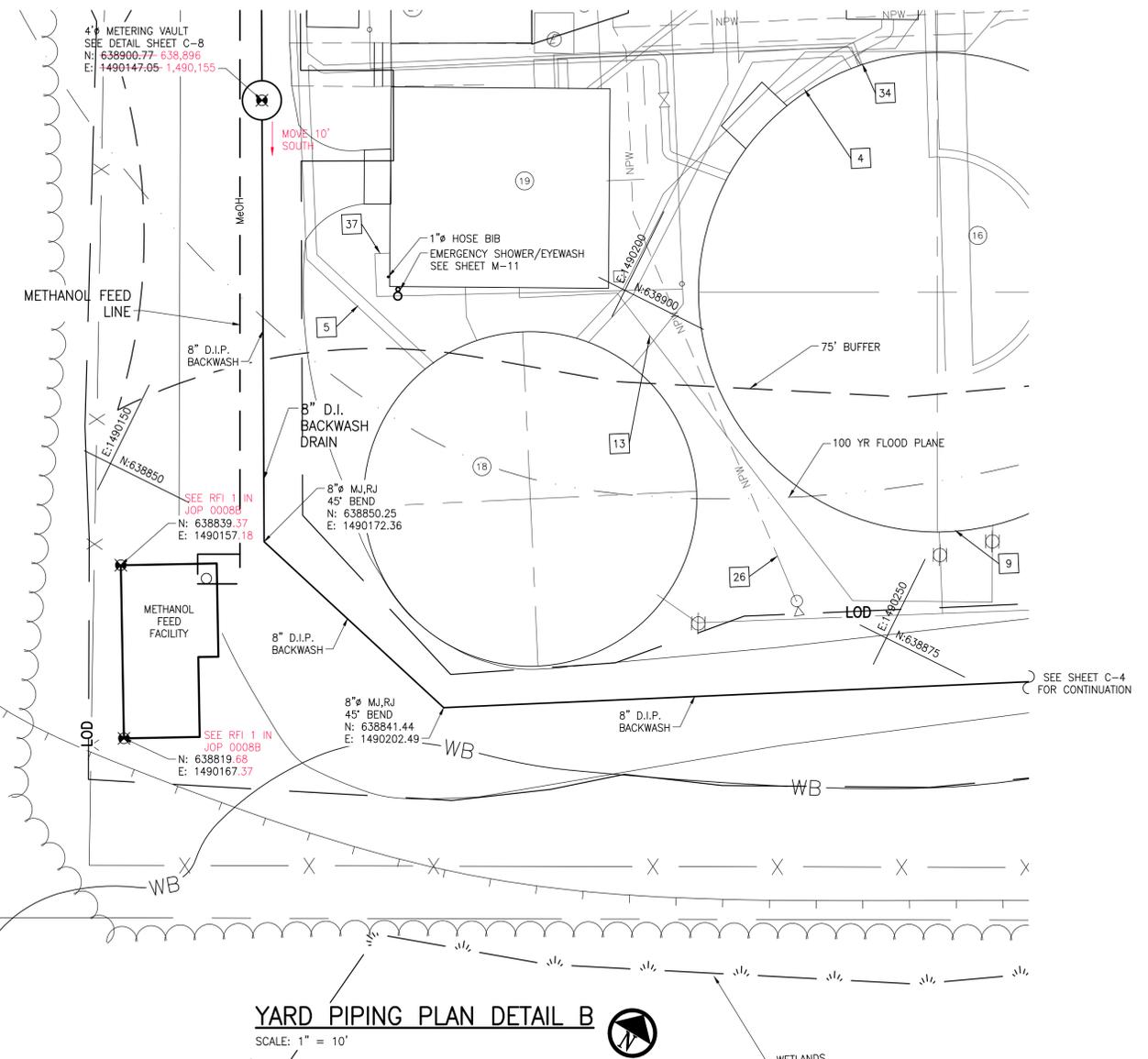
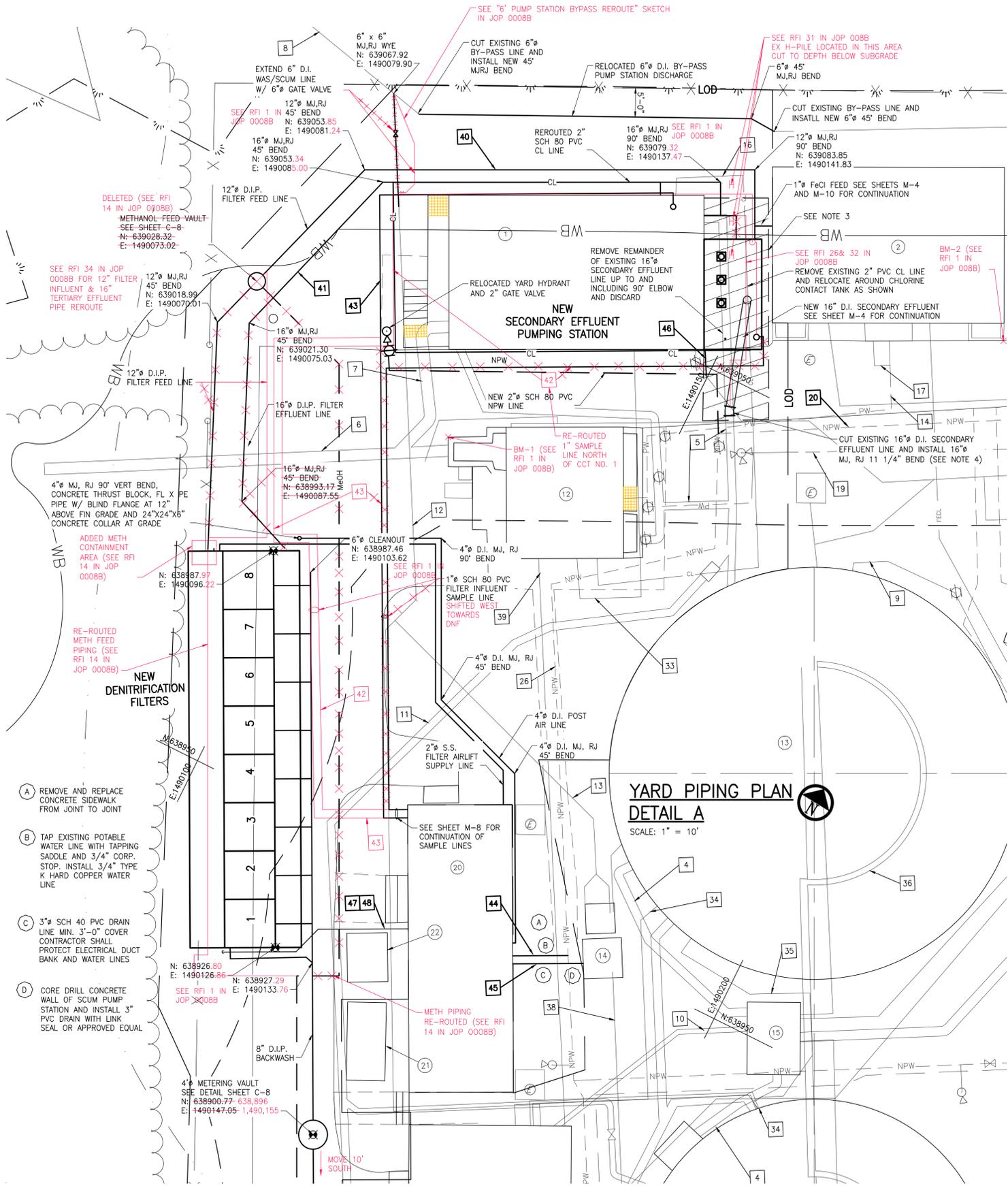
S/ JC, PE DATE 06-29-11

THIRD ELECTION DISTRICT

JOPPATOWNE WASTEWATER TREATMENT PLANT ENR UPGRADE
OVERALL YARD PIPING UPGRADES
SEWER CONTRACT NO. 10-134

HARFORD COUNTY, MARYLAND

Hatch Mott MacDonald
11019 McCormick Road, Suite 260
Hunt Valley, MD 21031 Phone: 866-363-1471



- NOTES:
- REFER TO PIPING, BUILDING AND STRUCTURES AND CHEMICAL LINES LEGENDS ON SHEET C-4 FOR PIPING AND STRUCTURE LABELING.
 - ALL AIR LINES SHALL HAVE MIN. 2'-0" COVER.
 - HATCHED AREA MAY REQUIRE HAND AND/OR VACUUM EXCAVATION DUE TO CONGESTED NATURE OF EXISTING PIPING AND UTILITIES.
 - PLANT PERSONNEL SHALL SET VALVES TO BY-PASS CHLORINE CONTACT TANK NO. 1 DURING CONSTRUCTION, AS DESCRIBED IN THE SEQUENCE OF CONSTRUCTION SECTION OF THE SPECIFICATIONS. SECONDARY EFFLUENT LINE AFTER CHLORINE CONTACT TANK NO. 1 IS DRAINED.

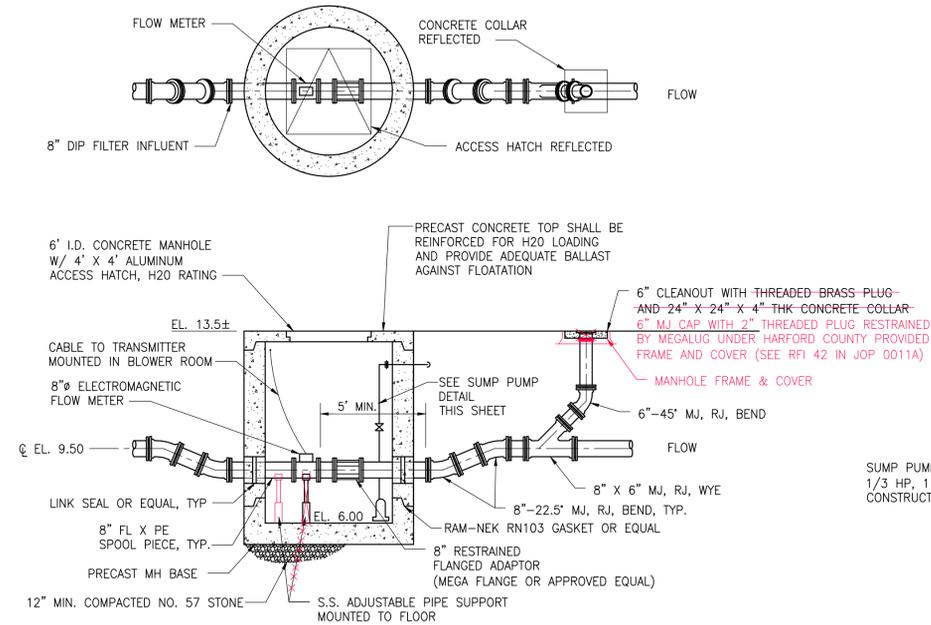
- (A) REMOVE AND REPLACE CONCRETE SIDEWALK FROM JOINT TO JOINT
- (B) TAP EXISTING POTABLE WATER LINE WITH TAPPING SADDLE AND 3/4" CORP. STOP. INSTALL 3/4" TYPE K HARD COPPER WATER LINE
- (C) 3" SCH 40 PVC DRAIN LINE MIN. 3'-0" COVER CONTRACTOR SHALL PROTECT ELECTRICAL DUCT BANK AND WATER LINES
- (D) CORE DRILL CONCRETE WALL OF SCUM PUMP STATION AND INSTALL 3" PVC DRAIN WITH LINK SEAL OR APPROVED EQUAL

APPROVED	REV. NO.	DATE	REVISION	BY
PLANNING			ENGINEERING	
MAINTENANCE CHIEF			S/ DEP 09-15-11	
PROPERTY MANAGEMENT			OPERATIONS CHIEF	
SEDIMENT CONTROL			S/ TS 09-15-11	
			CONST. MGMT.	
			TRAFFIC CONTROL	

AS-BUILT PER INSPECTOR	
TRANS. BY: HMM	DATE: 11-07-2013
RESIDENT INSPECTOR:	
CHRIS MATTHEWS PE	
ARCADIS US, INC.	

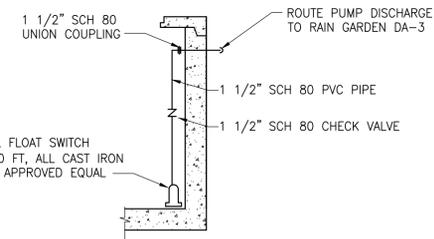
DESIGNED:	SCALE	TAX MAP	SHEET	JOB NO.
TRACED: MAC	1" = 20'	40, Bik D3	NO. 8	272548
CHECKED:		ADC MAP NO. 16	OF 48	C-5
		ADC GRID K5		

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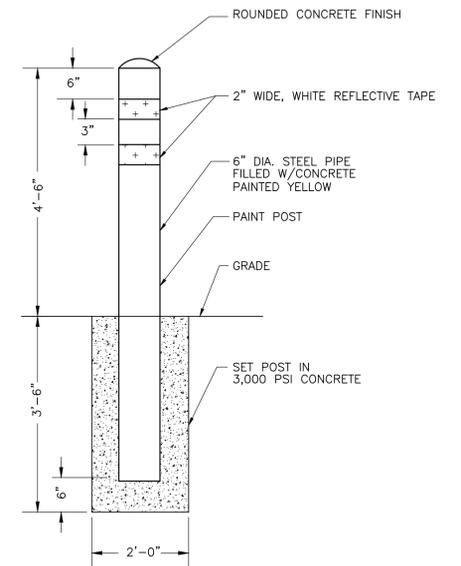


METER M.H. DETAIL

SCALE: 1/4" = 1'-0"

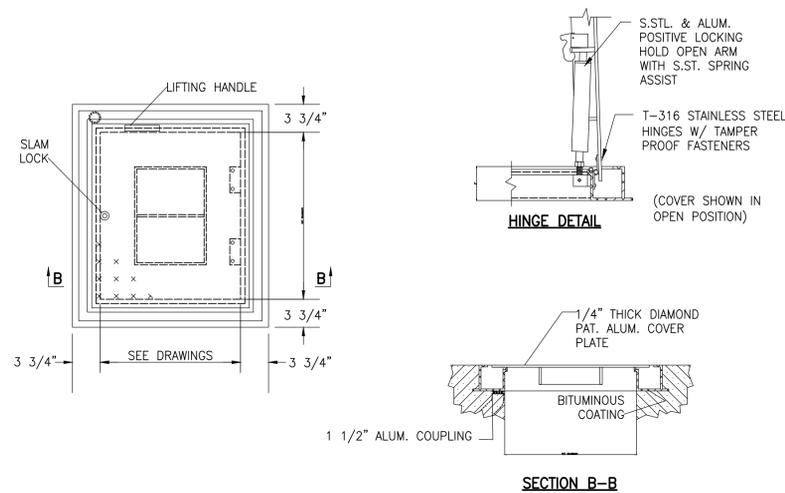


SUMP PUMP DETAIL



TYPICAL BOLLARD DETAIL

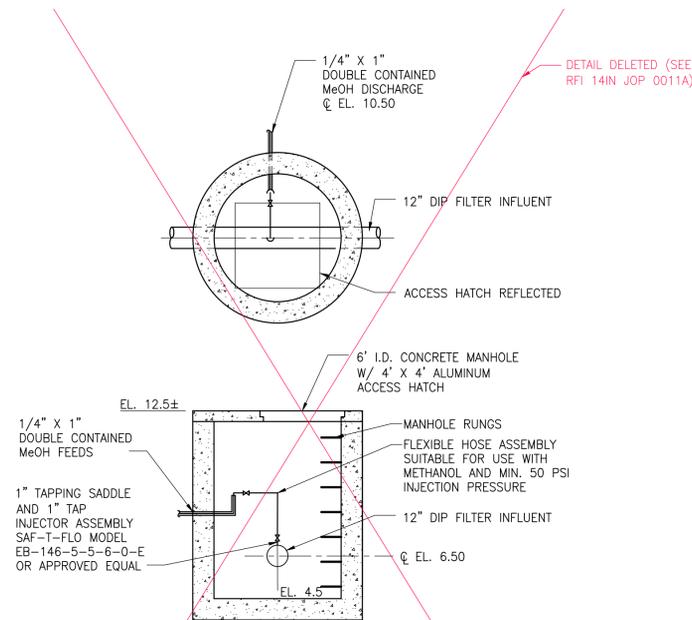
SCALE: N.T.S.



ALUMINUM ACCESS HATCH DETAILS

NO TO SCALE

AH



METHANOL M.H. DETAIL

SCALE: N.T.S.

DETAIL DELETED (SEE RFI 14IN JOP 0011A)

APPROVED	REV. NO.	DATE	REVISION	BY

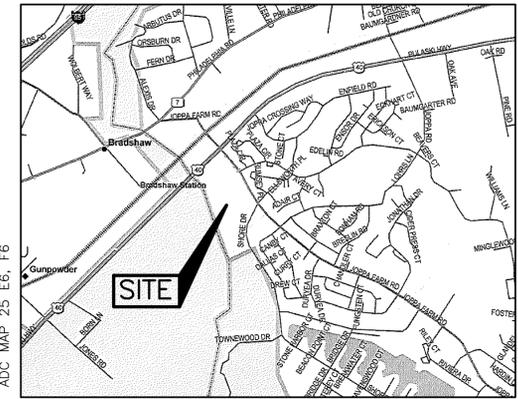
S/ AOY 09-15-11

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE: NL39598 EXPIRATION DATE: 02/28/2025

PLANNING	ENGINEERING	AS-BUILT PER INSPECTOR
MAINTENANCE CHIEF	S/ DEP 09-15-11 OPERATIONS CHIEF	TRANS. BY: HMM
PROPERTY MANAGEMENT	S/ TS 09-15-11 CONST. MGMT.	DATE: 11-07-2013
SEDIMENT CONTROL	TRAFFIC CONTROL	RESIDENT INSPECTOR: CHRIS MATTHEWS PE ARCADIS US INC.

DESIGNED:	SCALE	TAX MAP	SHEET	JOB NO.
TRACED: MAC	3/8"=1'-0"	40, Bik D3	NO. 11	272548
CHECKED:		ADC MAP NO. 16	OF 48	C-8
		ADC GRID KS		

AS-BUILT REVIEWED BY: _____



LOCATION MAP
SCALE: 1" = 2,000'

LOT COVERAGE

SITE AREA = 2.56 AC. = 111,514 SF.
(NOTE: SITE LOCATED IN THE INTENSIVELY DEVELOPED AREA OF THE CBCA, 10% POLLUTANT REDUCTION APPLIES)

EXISTING LOT COVER	AREA
1. CHLORINE CONTACT TANK	1319
2. CHEMICAL FEED BUILDING	1144
3. GENERATOR AND FUEL TANK	89
4. MAIN SWITCHGEAR	145
5. BY-PASS PUMPING STATION	12
6. DIVERSION CHAMBER	139
7. INFLUENT PUMPING STATION	426
8. SCREENING AND GRIT BUILDING	567
9. FLOW EQUALIZATION TANK	762
10. GRIT REMOVAL UNITS	52
11. AUXILIARY BLOWER BUILDING	125
12. CHLORINE BUILDING AND CONTACT TANK	672
13. REACTOR / CLARIFIER TANK NO. 1	3968
14. SCUM PUMP STATION	46
15. REACTOR FLOW DISTRIBUTION BOX	115
16. REACTOR / CLARIFIER NO. 2	2994
17. ADMINISTRATION BUILDING	3525
18. CLARIFIER NO. 3	1442
19. SECONDARY SLUDGE BUILDING	743
20. BLOWER BUILDING	951
21. GENERATOR	90
22. GENERATOR	117
EX. PAVING	29609
SUBTOTAL	49052

PROPOSED LOT COVER

PROP. PUMPING STATION	190
PROP. DENITRIFICATION FILTERS	1164
PROP. GENERATOR FUEL TANK	39
PROP. METHANOL PUMP STATION	229
SUBTOTAL	1622

TOTAL LOT COVERAGE 50,674 sf 45.4%

PROPOSED BUFFER IMPACTS

25' BUFFER = 2,120 SF. OF TEMPORARY IMPACTS
75' BUFFER = 15,231 SF. (AREA WITHIN LOD)
- 13,726 SF. OF TEMPORARY IMPACTS
- 1,505 SF. OF PERMANENT IMPACTS (NEW STRUCTURES)

BUILDING AND STRUCTURE LEGEND

- | | |
|---------------------------------|--|
| 1 CHLORINE CONTACT TANK No.1 | 12 CHLORINE BUILDING AND CHLORINE CONTACT TANK No. 2 |
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BUFFER MITIGATION CALCULATIONS:

MITIGATION IS REQUIRED FOR THE PLACEMENT OF NEW STRUCTURES WITHIN THE BUFFER.
TOTAL PROPOSED NEW STRUCTURES IN BUFFER = 1,505 SF
MITIGATION IS PROPOSED AT A 1:1 RATIO = 1,505 SF TO BE MET THRU ON SITE PLANTING
1,505 SF OF MITIGATION = 0.035 AC @ 200 TREES / AC = 8 TREES PROVIDED

NOTE:

- THERE IS NO PROPOSED FOREST CLEARING FOR THIS PROJECT.
- (4) TREES ARE TO BE REMOVED FOR THIS PROJECT AND FOUR TREES ARE BEING PLANTED FOR MITIGATION AND ARE INCLUDED IN THE PLANTING SCHEDULE.

BUFFER MITIGATION PLANT LIST

KEY	QTY	BOTANICAL NAME COMMON NAME	SIZE	COND	REMARKS
	7	QUERCUS PHELLOS WILLOW OAK	2" CAL. 8' HT.	B&B	PLANT I.O.O.C. AND MIN. 5' OFF EX. ROAD
	5	BETULA NIGRA RIVER BIRCH	1" CAL. 6' HT.	CONT. GROWN	PLANT I.O.O.C. AND MIN. 5' OFF EX. ROAD

STANDARDS AND SPECIFICATIONS FOR MITIGATION PLANTING

TIMETABLE FOR MITIGATION PLANTING ESTABLISHMENT
ALL PLANTING SHALL BE DONE BETWEEN MARCH 25 AND APRIL 30, FOR SPRING PLANTING, AND BETWEEN OCTOBER 15 AND DECEMBER 1 FOR FALL PLANTING.

PLANT MATERIAL
SEE MITIGATION OR BUFFER ESTABLISHMENT PLANT LIST - THIS SHEET

PLANTING SITE PREPARATION
CONTRACTOR SHALL ERADICATE ALL INVASIVE PLANT MATERIAL WITHIN MITIGATION AND BUFFER ESTABLISHMENT PLANTING AREAS PRIOR TO PLANTING. ONCE THE PLANTING AREA IS CLEAR OF INVASIVES PREPARE A PLANTING PIT FOR EACH TREE OR SHRUB. THE AREA DISTURBED FOR THE PIT IS TO BE MULCHED WITH A SHEEPSHOD HARDWOOD PRODUCT. SOIL TESTING IS RECOMMENDED FOR MACRONUTRIENT DEFICIENCIES AND pH LEVELS. PROPER SOIL AMENDMENTS SHOULD BE MADE IF DEEMED NECESSARY. (SEE PLANTING DETAIL)

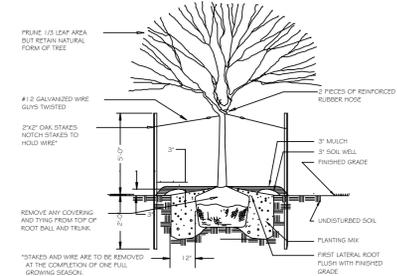
PLANT MATERIAL STORAGE
IT IS RECOMMENDED THAT PLANTING OCCUR WITHIN 24 HOURS OF DELIVERY TO THE SITE. PLANT MATERIALS LEFT UNPLANTED FOR MORE THAN 24 HOURS SHALL BE PROTECTED FROM DIRECT SUN AND WEATHER AND KEPT MOIST. NURSERY STOCK SHOULD NOT BE LEFT UNPLANTED FOR MORE THAN TWO WEEKS.

PLANTING METHOD
SEE PLANTING DETAILS - THIS SHEET

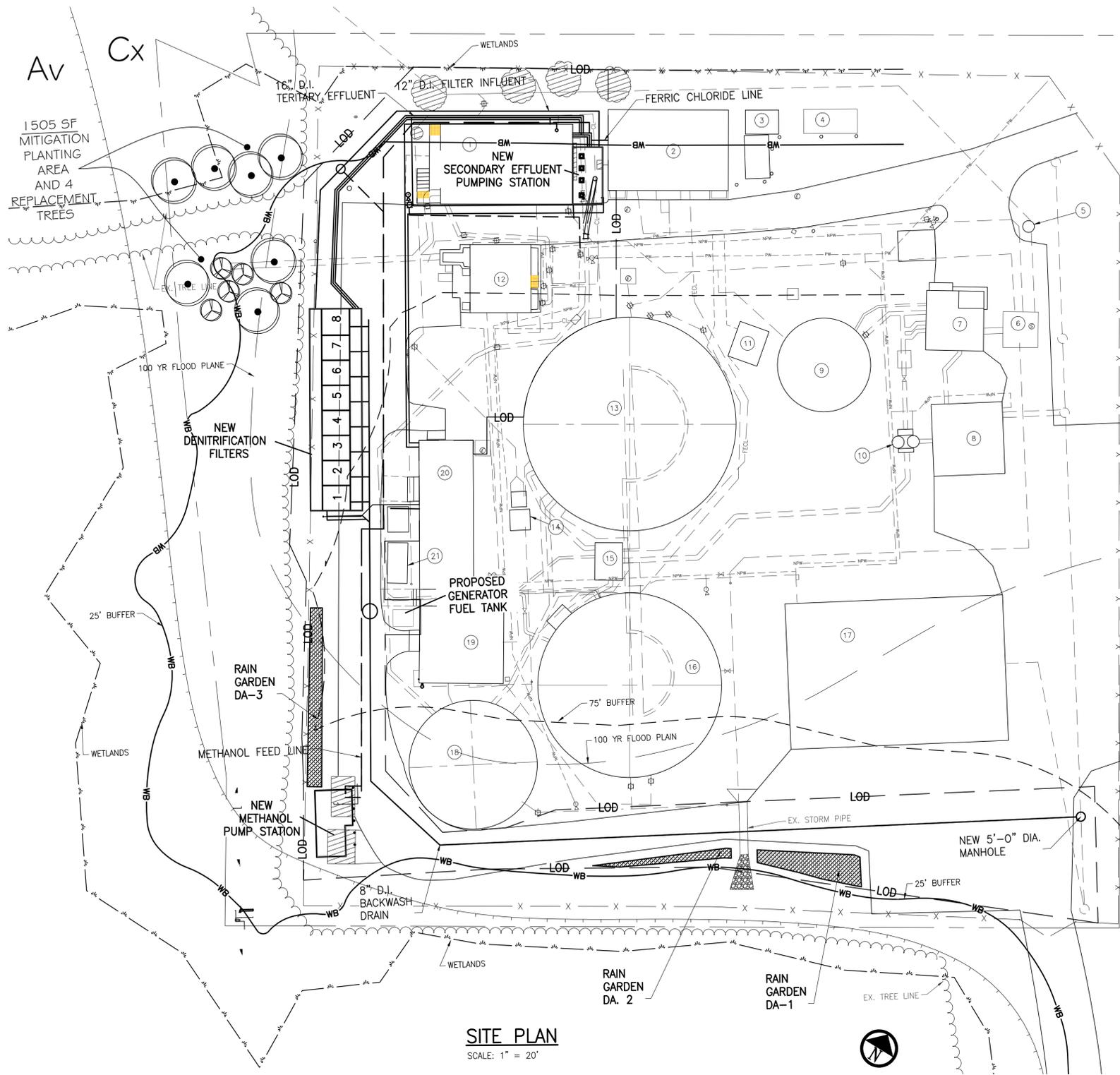
MAINTENANCE
OWNER IS TO MONITOR AND MAINTAIN THE MITIGATION PLANTING.
TO INCLUDE:
a. WATERING TO OCCUR WHEN PLANTED AND AS REQUIRED TO ASSURE GOOD PLANT GROWTH.
b. FERTILIZER SHOULD ONLY BE APPLIED ON AS NEEDED BASIS IN CONJUNCTION WITH PROPER SOIL TESTING. THE USE OF SLOW RELEASE OR ORGANIC FERTILIZERS IS RECOMMENDED.
c. PROTECTION FROM INVASIVE PLANTS, DISEASE, PESTS, AND MECHANICAL INJURY SHOULD BE HANDLED ON AN AS NEEDED BASIS.
2. A MAINTENANCE INSPECTION SHALL BE MADE THREE TIMES A YEAR (I.E. MARCH, JULY, NOVEMBER) TO ASSESS IMPACTS FROM COMPETING VEGETATION, PESTS, DISEASE, ETC.

INVASIVE SPECIES NOTE:

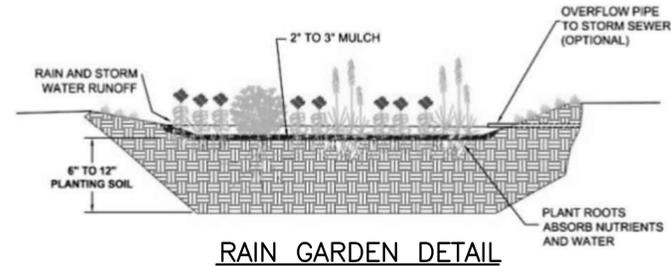
INVASIVE SPECIES (IE MULTIFLORA ROSE) SHALL BE REMOVED BY HAND BEFORE PLANTING AND AFTER TO PROTECT THE SURVIVABILITY OF THE PLANTING SPECIES.



PLANTING DETAIL FOR TREES
NOT TO SCALE



SITE PLAN
SCALE: 1" = 20'



RAIN GARDEN DETAIL

LEGEND

- EXISTING FENCE LINE
- EXISTING TREE LINE
- CBCA BOUNDARY
- NON-TIDAL WETLANDS
- 75' COUNTY WETLAND BUFFER
- 25' MIDE WETLAND BUFFER
- SOILS
- 100' YEAR FLOODPLAIN
- PROPOSED LIMITS OF DISTURBANCE

PLAN PREPARED BY:
HUMAN & ROHDE, INC.
Landscape Architects
512 Virginia Ave.
Towson, Maryland 21286
(410) 825-3885 Phone
(410) 825-3887 Fax

HARFORD COUNTY MARYLAND

DEPUTY DIRECTOR, DIVISION OF WATER AND SEWER
S/ J.C. PE DATE 09-16-11

THIRD ELECTION DISTRICT
**JOPPATOWNE WASTEWATER TREATMENT PLANT ENR UPGRADE
CRITICAL AREA BUFFER MANAGEMENT PLAN**
SEWER CONTRACT NO. 10-134

HARFORD COUNTY, MARYLAND

Hatch Mott MacDonald
11019 McCormick Road, Suite 260
Hunt Valley, MD 21031 Phone: 866-363-1471

APPROVED	DES. NO.	DATE	REVISION	BY
PLANNING				
MAINTENANCE CHIEF				
PROPERTY MANAGEMENT				
SEDIMENT CONTROL				
ENGINEERING	S/ DEP. 09-16-11			
OPERATIONS CHIEF				
CONST. MGMT.				
TRAFFIC CONTROL				
AS-BUILT PER INSPECTOR				
TRANS. BY:	HMM			
DATE:	11-07-2013			
RESIDENT INSPECTOR:	CHRIS MATTHEWS PE			
	ARCADIS US, INC.			
DESIGNED:	SCALE 1" = 20'	TAX MAP 40, BK. D3	SHEET	JOB NO.
TRACED: MS		ADC MAP NO. 16	NO. 6	272548
CHECKED:		ADC GRID MS	OF 48	C-9