II. Suggested Notice of Intent (NOI) Form

1. General facility information. Please provide the following information about the facility.

a) Name of facility: WINNIPESAUKEE RIVER BASIN WASTEWATER TREATMENT PLANT

Mailing Address for the Facility:
PO BOX 68
FRANKLIN, NH 03825

b) Location Address of the Facility (if different from mailing address):
528 RIVER ST., FRANKLIN, NH

Facility Location
longitude: 71.65
latitude: 43.41

Type of Business: WASTEWATER TREATMENT PLANT
Facility SIC codes:

c) Name of facility owner: NHDES
Owner's email: SHARON.MCMILLIN@DES.NH.GOV
Owner's Tel #: 603-934-4032
Owner's Fax #: 603-934-4831
Address of owner (if different from facility address)

Owner is (check one): 1. Federal ___ 2. State X 3. Tribal ___ 4. Private ___ 4. Other ___ (Describe)

Legal name of Operator, if not owner: STEVEN DOLLOFF
Operator Contact Name: STEVEN DOLLOFF
Operator Tel Number: 603-934-4032 Fax Number: 603-934-4831
Operator's email: STEVE.DOLLOFF@DES.NH.GOV
Operator Address (if different from owner)

d) Attach a topographic map indicating the location of the facility and the outfall(s) to the receiving water. Map attached? Yes

e) Check Yes or No for the following:
1. Has a prior NPDES permit been granted for the discharge? Yes ___ No X If Yes, Permit Number: ___
2. Is the discharge a "new discharge" as defined by 40 CFR Section 122.22? Yes X No ___
3. Is the facility covered by an individual NPDES permit? Yes X No ___ If Yes, Permit Number NH0100960
4. Is there a pending application on file with EPA for this discharge? Yes ___ No X If Yes, date of submittal:

2. Discharge information. Please provide information about the discharge, (attaching additional sheets as needed)

a) **Name of receiving water into which discharge will occur:** MERRIMACK RIVER
State Water Quality Classification: B **Freshwater:** X **Marine Water:** _____

b) **Describe the discharge activities for which the owner/applicant is seeking coverage:**
1. Construction dewatering of groundwater intrusion and/or storm water accumulation.
2. Short-term or long-term dewatering of foundation sumps.
3. Other.

c) **Number of outfalls** 1

For each outfall:

d) **Estimate the maximum daily and average monthly flow of the discharge (in gallons per day – GPD). Max Daily Flow** 0 **GPD**
Average Monthly Flow 0 **GPD**

e) **What is the maximum and minimum monthly pH of the discharge (in s.u.)? Max pH** _____ **Min pH** NO CHANGE FROM EXISTING GROUNDWATER PH

f) **Identify the source of the discharge (i.e. potable water, surface water, or groundwater). If groundwater, the facility shall submit effluent test results, as required in Section 4.4.5 of the General Permit.** GROUNDWATER

g) **What treatment does the wastewater receive prior to discharge?** SEE DEWATERING PLAN

h) **Is the discharge continuous? Yes** _____ **No** X **If no, is the discharge periodic (P) (occurs regularly, i.e., monthly or seasonally, but is not continuous all year) or intermittent (I) (occurs sometimes but not regularly) or both (B)** I
If (P), number of days or months per year of the discharge _____ **and the specific months of discharge** _____;
If (I), number of days/year there is a discharge 0
Is the discharge temporary? Yes X **No** _____
If yes, approximate start date of dewatering 9/1/11 **approximate end date of dewatering** 11/1/11

i) **Latitude and longitude of each discharge within 100 feet (See http://www.epa.gov/tri/report/siting_tool): Outfall 1: long.** 71.42 **lat.** 43.26;
Outfall 2: long. _____ **lat.** _____; **Outfall 3: long.** _____ **lat.** _____.

j) **If the source of the discharge is potable water, please provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water and attach any calculation sheets used to support stream flow and dilution calculations** _____ **cfs**
(See Appendix VII for equations and additional information)
N/A

MASSACHUSETTS FACILITIES: See Section 3.4 and Appendix 1 of the General Permit for more information on Areas of Critical Environmental Concern (ACEC):

k) **Does the discharge occur in an ACEC? Yes _____ No _____**
If yes, provide the name of the ACEC: _____

3. Contaminant Information

a) **Are any pH neutralization and/or dechlorination chemicals used in the discharge? If so, include the chemical name and manufacturer; maximum and average daily quantity used as well as the maximum and average daily expected concentrations (mg/l) in the discharge, and the vendor's reported aquatic toxicity (NOAEL and/or LC_{50} in percent for aquatic organism(s)).** ~~[illegible]~~ NO DISCHARGE ANTICIPATED

b) **Please report any known remediation activities or water-quality issues in the vicinity of the discharge.**

4. Determination of Endangered Species Act Eligibility: Provide documentation of ESA eligibility as required at Part 3.4 and Appendices III and IV. In addition, respond to the following questions.

a) **Are any listed threatened or endangered species, or designated critical habitat, in proximity to the discharge? Yes___ No** ✓
b) **Has any consultation with the federal services been completed ? Yes___ No** ✓
c) **Is consultation underway? Yes ____ No** ✓
d) **What were the results of the consultation with the U.S. Fish and Wildlife Service and/or NOAA Fisheries Service (check one): a "no jeopardy" opinion _____or written concurrence____ on a finding that the discharges are not likely to adversely affect any endangered species or critical habitat.**
e) **Which of the five eligibility criteria listed in Appendix 2, Section B (A,B,C,D,or E) have you met?** A
f) **Please attach a copy of the most current federal listing of endangered and threatened species, found at USF&W website.**

5. Documentation of National Historic Preservation Act requirements: Please respond to the following questions:

a) **Are any historic properties listed or eligible for listing on the National Register of Historic Places located on the facility site or in proximity to the discharge? Yes _____ No** X
b) **Have any State or Tribal historic preservation officers been consulted in this determination? Yes _____ or No** X **If yes, attach the results of the consultation(s).**
c) **Which of the three National Historic Preservation Act requirements listed in Appendix 3, Section C (1,2 o3) have you met?** 1

6. Supplemental Information: Please provide any supplemental information. Attach any analytical data used to support the application. Attach any certification(s) required by the general permit

7. Signature Requirements: The Notice of Intent must be signed by the operator in accordance with the signatory requirements of 40 CFR Section 122.22 (see below) including the following certification:

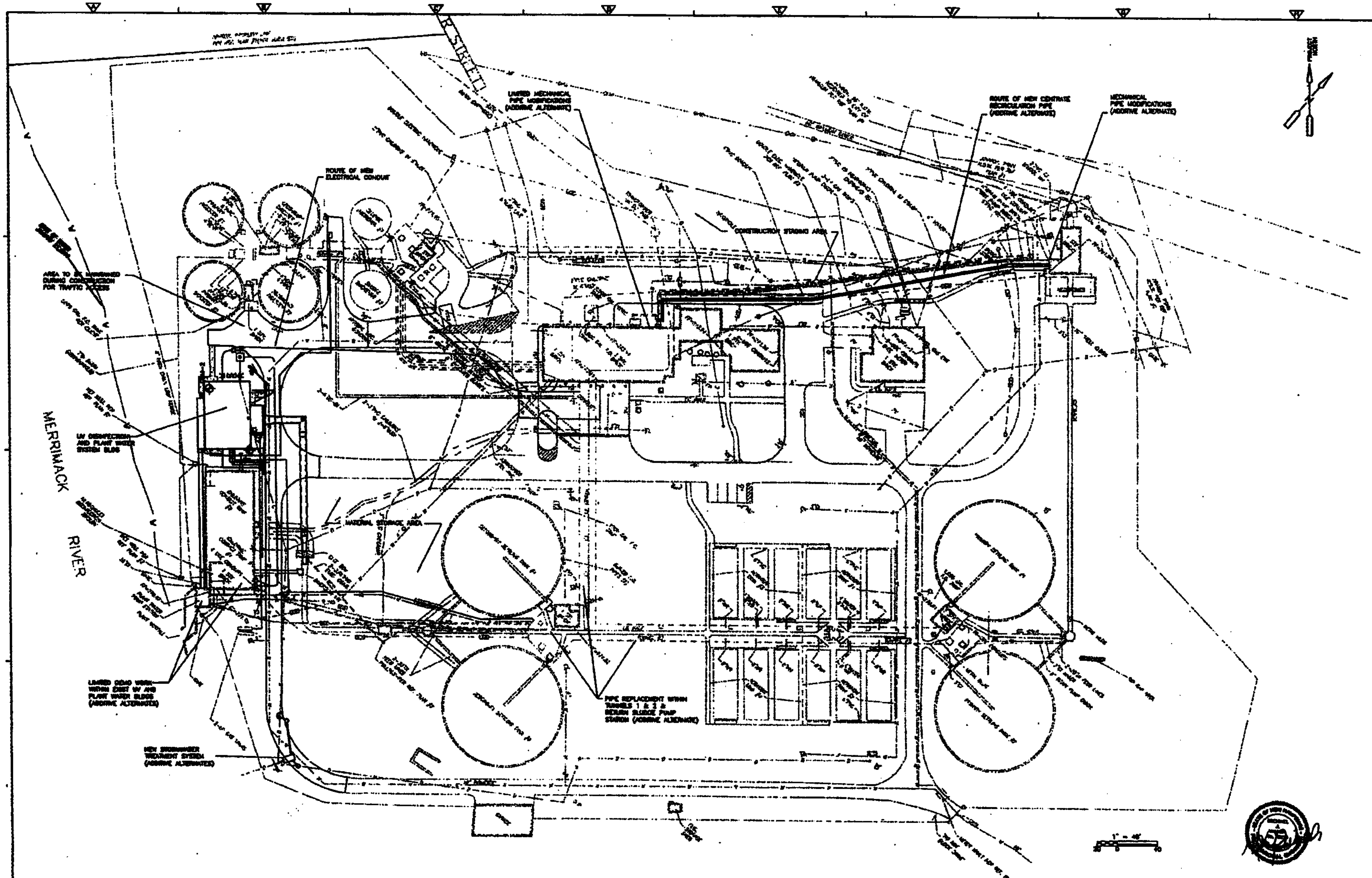
I certify under penalty of law that (1) no biocides or other chemical additives except for those used for pH adjustment and/or dechlorination are used in the dewatering system; (2) the discharge consists solely of dewatering and authorized pH adjustment and/or

dechlorination chemicals; (3) the discharge does not come in contact with any raw materials, intermediate product, water product or finished product; (4) if the discharge of dewatering subsequently mixes with other permitted wastewater (i.e.stormwater) prior to discharging to the receiving water, any monitoring provided under this permit will be only for dewatering discharge; (5) where applicable, the facility has complied with the requirements of this permit specific to the Endangered Species Act and National Historic Preservation Act; and (6) this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.

Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I certify that I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Facility Name:	WINNIPESAUKEE RIVER BASIN FRANKLIN ~~Wastewater Treatment~~ Plant
Operator signature:	
Title:	DIRECTOR, WATER DIVISION, NHDES
Date:	8/30/11

Federal regulations require this application to be signed as follows:
1. For a corporation, by a principal executive officer of at least the level of vice president;
2. For partnership or sole proprietorship, by a general partner or the proprietor, respectively, or,
3. For a municipality, State, Federal or other public facility, by either a principal executive officer or ranking elected official.



REV. NO.	DATE	DRAWN	CHKD	REMARKS	CDM	STATE OF NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES WINNIPESAUKEE RIVER BASIN PROGRAM FRANKLIN WASTEWATER TREATMENT PLANT ULTRAVIOLET DISINFECTION SYSTEM, PLANT WATER AND SCADA SYSTEM UPGRADES	WORK AREA GENERAL PLAN

SHEET NO. G-2

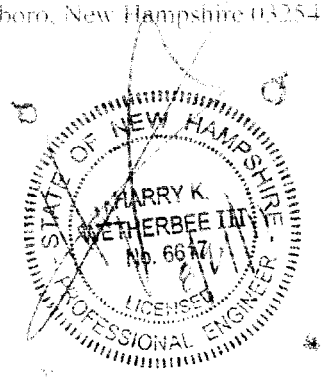
TECHNICAL SUBMITTAL
DEWATERING
FRANKLIN WWTF UV DISINFECTION BUILDING
FRANKLIN, NEW HAMPSHIRE

August 24, 2011

GSI PROJECT No. 211234

Prepared for:

Mr. Hiland Doolittle
Penta Corporation
1253 Woodlee Highway
Moultonboro, New Hampshire 03254



Prepared by:

Harry K. Wetherbee, P.E.
Geotechnical Services, Inc.
18 Cote Ave.
Goffstown, New Hampshire 03045
603/624/2722

hwetherbee@geotechserve.com

GENERAL

This submittal was prepared by Geotechnical Services Inc. (GSI) on behalf of Penta Corporation to meet the submittal requirements specified in Contract Specifications Section 02200-Earthwork and 02140-Dewatering and Drainage. These provisions require that the contractor submit an Earth Support and Dewatering Plan to the engineer, designed and stamped by a Registered Professional Engineer (P.E) licensed to practice in the State of New Hampshire, prior to proceeding with the work.

The construction of the proposed U.V Disinfection and Plant Water System Building will require an earth cut of 15 to 20 feet (ft) below existing site grades. The new building is to be located along the western bound of the project site nearest to the Merrimack River. The contractor has proposed a general site cut in the area of the tank from existing grades to elevation 265 ft. This will require the removal of a prominent earthen mound to the west of the proposed building. Once the building site has been leveled at elevation 265 ft, the contractor will proceed with the installation of dewatering pumps as described below.

Although groundwater on-site was noted to be relatively high in relation to the subgrade surface (265 ft) within the test boring logs, on-site monitoring wells place current water levels in the range of elevation 247 ft. The in-situ soils consist of a medium to fine sand, little silt, therefore dewatering of the excavation may be required to complete the subgrade excavation "in the dry" if groundwater levels should rise due to rain events. General subsurface information was derived from a series of test borings and advanced by Camp, Dresser & McKee, Inc. which indicated that the predominate soil at the project site consisted of a fine Sand, which overlays a fine to coarse Sand and Gravel at a depth of 23 ft below existing grades.

The excavation of the subgrade is to be sloped downward from the surface grade of 265 ft to the subgrade surface at elevation 255 ft at a 1.5 horizontal to 1 vertical slope as specified by OSHA standards for Class "C" soils. During the excavation process, the contractor shall locate and field verify the locations of all existing utilities in the immediate area, including an existing water line, which runs parallel to the east wall of the proposed UV Building. The depth of the footing of the existing chlorine contact tank #2 shall also be researched by the contractor to ensure that the excavation will not encroach upon the footing zone of influence.

SUBSURFACE CONDITIONS

The site subsurface conditions represented by soils borings designated as CDM-1 and CDM-2 were advanced within the footprint of the proposed UV building. The soil borings were advanced using wash and drive methods inside a 4 inch diameter casing. As it pertains to the development of earth retention and dewatering systems, the following pertinent observations and considerations are made:

Sand & Silt: The predominate material within the building area is a loose to medium dense fine Sand with trace to little silt dependent on sampling depth. "N" values within this material varied between 6 and 24 blows per foot with an average value of 15.

Sand/Gravel: A sand and gravel material was encountered underlying the sand deposit at a depth of 19 to 22 feet below existing grades. This material lies below the proposed subgrade surface elevation.

Groundwater: Groundwater levels were measured at the completion of each boring and noted on the borings logs. Because the borings were advanced using wash and drive methods, water was introduced into the boreholes during drilling and the static water levels read after completion do not accurately reflect stabilized conditions. Although water levels were not directly recorded, groundwater was implied in the form of wet samples below a depth of ten feet below existing grades.

DEWATERING DESIGN

The project specifications require that "The Contractor shall design, furnish, install, operate, monitor, maintain, and remove a temporary dewatering system as required to lower and control water levels at least 2 feet below subgrades of excavations and permit construction to proceed in-the-dry." The requirement of lowering and controlling groundwater levels at least 2 ft below subgrade elevations of excavations was considered in developing the temporary construction dewatering systems in this submittal. The effectiveness of the dewatering efforts will be demonstrated with an observation well installed within the excavation limits.

Pertinent index properties relative to the soil within the aquifer used in the design of the wellpoint system are based on the sieve analysis performed by GSI on samples taken at test boring CDM-2 which indicates a silt content of 13.5% at a depth of 5 to 7 ft below existing grades, and 18.0% at 15 to 17 ft below existing grades. The wellpoint filter will be sized with these parameters to optimize flow rate while preventing the pumping of fines. It is anticipated that the filter will undergo revision based on actual subsurface conditions.

The groundwater elevation per wet samples observed is assumed to be at or below elevation 265 ft. The groundwater readings were taken at the time of completion of the soil borings and may not accurately reflect stabilized elevations. Observation wells on-site however, indicate groundwater levels at a much lower elevation (247 ft).

The excavation for the proposed UV building will require a cut of over 10 feet from elevation 265 ft to the subgrade elevation of 255 ft. In order to achieve a competent subgrade, the groundwater must be lowered to elevation 253 ft or about 2 ft below the CCT base elevation. It is noted that construction dewatering system design is based on idealized subsurface aquifer models using empirically derived and theoretical formulas. The actual volume and rate of dewatering will vary with site specific conditions such as soil stratigraphy, rainfall, season, and other factors not apparent until construction dewatering operations are actually implemented.

Dewatering Components

Deep Wells

It is recommended that a minimum of three (3) deep wells will be installed within 30 inch diameter boreholes by Griffin Dewatering or other qualified contractor. The deep wells will consist of 12 inch diameter, double-louvered or slotted wellscreen with a 0.032 inch slot. The filter pack surrounding the screen may consist of #2 filter pack as processed by Hollister Sand Company. The spacing of the wells, which commonly varies from 20 to 200 ft, depends primarily on the permeability of the soil and depth of the permeable stratum. Water collected within the deep wells will be evacuated with 15 HP Beech Pumps capable of pumping 600 gpm at 50 feet TDH (see pump curve depicted as Figure 1).

Wellpoints are considered technically feasible based on the nature of the subsurface soils as depicted in Figure 1 taken from NAVFAC DM 7.1. A general configuration of the wellpoint assembly is shown in Figure 2.

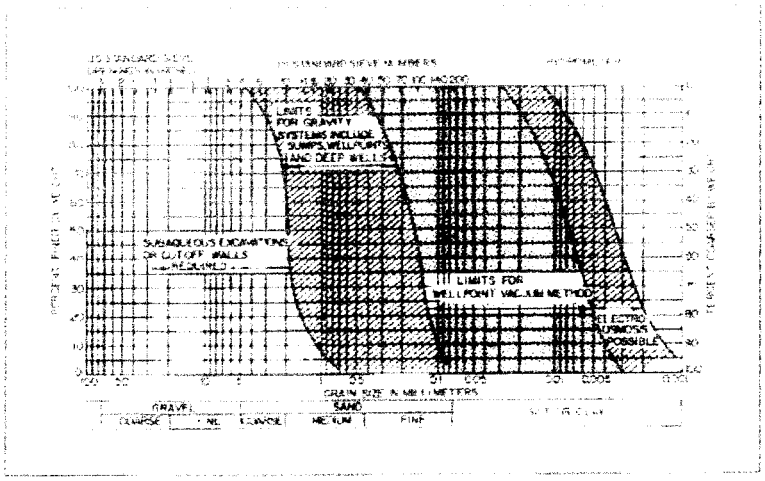


FIGURE 1

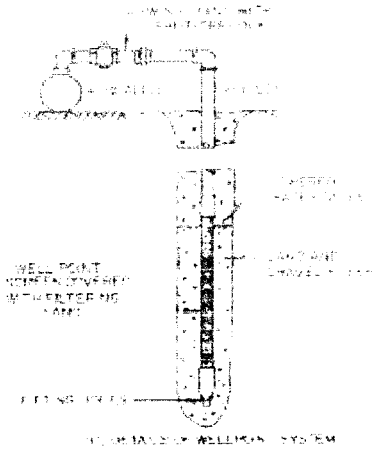


FIGURE 2

Sump Pumping into Sedimentation Basins

Groundwater may also be controlled via pumping utilizing 2 and 3 inch diameter sump pumps dependent on the actual volume of groundwater or runoff. Dewatering discharge would be pumped to two 15 ft by 10 ft sedimentation basins lined with hay bales. The filtered stormwater would then be evacuated to an existing catch basin lined with grate inlet protection. As the existing catch basins outlet directly to the Merrimack River, it is imperative that the discharge water does not contain sediment. Sump pumping may only be used in lieu of deep wells if the level of groundwater can be maintained below the subgrade elevation without the overtopping the sedimentation basins or discharging contaminated discharge water into the existing catch basins.

In order to comply with the provisions of the CGP, the dewatering discharge must be free of sediments. We propose that the turbidity of the discharge be less than 25 NTUs. If necessary, a flocculent agent could be introduced as required to accelerate the settling of sediments from suspension in the discharge. Alternatively, the discharge will be subjected to secondary treatment by pumping into a geotextile bladder such as the "Dirtbag" device manufactured by Mirafi installed to clean the outgoing flow from the sedimentation basin to the catch basin.

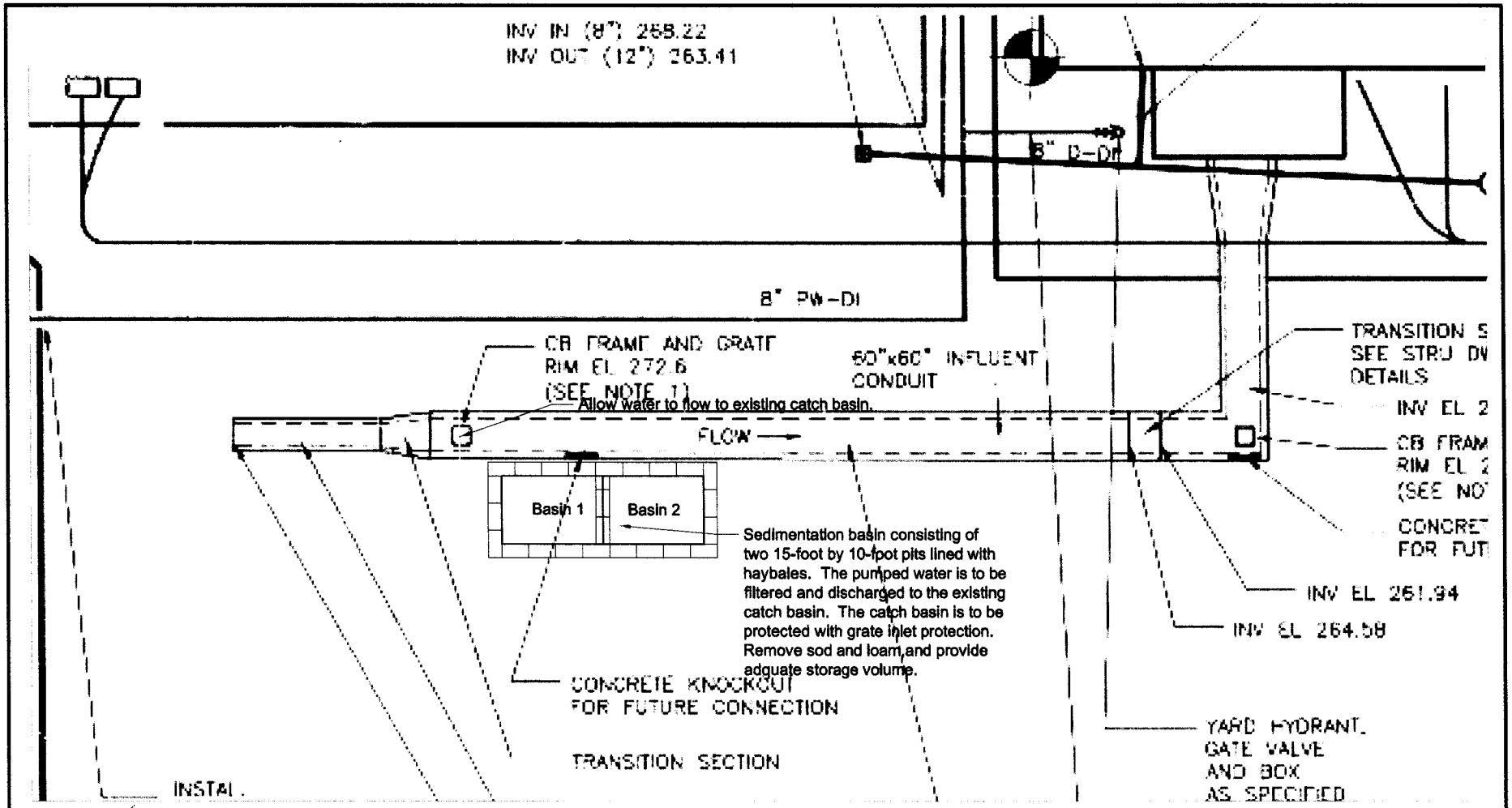
Treatment of Dewatering Discharge

Indirect disposal of non-polluted construction dewatering into surface waters is a permitted activity under the provisions of the EPA NPDES Construction General Permit (CGP) granted to New Hampshire. The CGP relates to stormwater discharges from construction sites, which comprise over an acre of disturbance and also provides for the release of "non-polluted" construction dewatering discharges.

> *CGP Part 1.5.B Allowable Non-Stormwater Discharges*. This permit authorizes certain non-stormwater discharges associated with construction activity, provided that the non-stormwater component is in compliance with Part 5.2 of the permit. Allowable non-stormwater discharges include those listed in Part 1.5.B of the CGP.

Also, with particular emphasis on item 11:

> ***B. Allowable Non-Stormwater Discharges***
> You are authorized for the following non-stormwater discharges, provided the non-stormwater component of the discharge is in compliance with Part 5.4 (Non-Stormwater Discharges):
>
> 1. Discharges from fire-fighting activities.
> 2. Fire hydrant flushings.
> 3. Waters used to wash vehicles where detergents are not used.
> 4. Water used to control dust in accordance with Part 5.1.B.
> 5. Potable water including uncontaminated water line flushings.
> 6. Routine external building wash down that does not use detergents.
> 7. Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used.
> 8. Uncontaminated air conditioning or compressor condensate.
> 9. Uncontaminated ground water or spring water.
> 10. Foundation or footing drains where flows are not contaminated with process materials such as solvents.
> 11. Uncontaminated excavation dewatering.
> 12. Landscape irrigation.



Plan View
1"=20'

REV.	DATE	REVISION	BY	CHK'D	APP'D

TITLE: DEWATERING PLAN

PROJECT: FRANKLIN WWTF UV BUILDING
FRANKLIN, NEW HAMPSHIRE

CLIENT: PENTA CORPORATION
Moultonborough, New Hampshire

GEOTECHNICAL SERVICES INC.
18 COTE AVENUE, UNIT #11, GOFFSTOWN, NH 03045
TEL. (603) 624-3722 FAX. (603) 624-3733

DATE: August 2011

DESIGN BY: H. WETHERBEE, P.E.
DRAWN BY: K. MATHIEU
CHECKED BY: H. WETHERBEE, P.E.

PROJECT No. 211234
SHEET No. 1
SCALE: As Shown