

Chris Keenan

From: Chris Keenan <chriskeenan@charter.net>
Sent: Wednesday, April 09, 2014 12:16 PM
To: 'J Zimmer'; pcc@cs.wpi.edu
Cc: 'Mendez, Ronald'
Subject: RE: 196 West St NOI
Attachments: ATT_Paxton.pdf

John,

Your hearing is scheduled for 7:45 pm, tomorrow, April 10th. I spent some time reviewing the latest submission, and do have extensive comments (see below and attached). I don't know if the rest of the Commission members have had the opportunity to review the revisions as they've been in our possession for less than 48 hours. I have to say I remain disappointed with the level of design and detail of the proposed stormwater management system. Minimizing disruption in wetland areas and buffer zones is certainly beneficial, but when it comes with the cost of deficient stormwater treatment; it is no benefit at all. This Commission expects an applicant to design a site which is in compliance with the current stormwater standards outlined by MA DEP. The BMP's selected for the project have specific design standards listed in Volume 2, Chapter 2 of the MA DEP Stormwater Handbook which must be met. Complete and accurate documentation of compliance must be submitted in accordance with Volume 3, Chapter 1 of the MA DEP Stormwater Handbook. The revised Stormwater Report indicates BMP's used account for 84% TSS removal, but a review of the plans reveals a much different scenario. The pretreatment device indicated, Vegetated Filter Strip, does not readily appear anywhere on the plans. The treatment device indicated, Water Quality Swale, also does not readily appear on the plans. There are locations where swales are shown, but these swales do not meet the standards of being designated as water quality swales, and are more accurately described as drainage channels. Effectively, the plans show a stormwater management system with 0% TSS removal.

Chris Keenan
Chair

1.) Stormwater Report:

- Water quality swales should be designed to accommodate the Required Water Quality Volume. Provide calculations which show the requirement has been met in the design of the water quality swales. Calculations shall show the ponding areas behind each check dam shall cumulatively meet the WQV requirement.
- Water quality swales should be designed to accommodate the Required Recharge Volume. Provide calculations which show the requirement has been met in the design of the water quality swales. Calculations shall show the ponding areas behind each check dam shall cumulatively meet the RRV requirement.

- Sections of the proposed gravel drive at the proposed gabion wall appear to have no stormwater treatment. Areas subject to zero treatment should be accounted for in the TSS removal calculation. Remaining sections of the proposed gravel drive do not appear to have the same level of treatment as is indicated in the submitted TSS removal worksheet. The percentage of treated stormwater shall be compared with the percentage of untreated stormwater to ensure compliance with the 80% TSS removal requirement for the site. An accurate representation of removal efficiencies for the site is required.
- TSS Removal Calcs:
 - a. TSS removal is required for all surfaces listed as impervious in TP 40. MA DEP considers gravel roadways impervious for the purpose of calculating TSS removal. The project should capture as much stormwater from the proposed gravel roadway as possible for treatment and removal of suspended solids.
 - b. The stormwater report claims 45% for a 50' wide or greater vegetated filter strip. Show the filter strip(s) on the plan acting as pretreatment for the water quality swales. From the plan detail Road Cross Section With Swales, Sheet C-7 it appears that stormwater originating from the proposed gravel driveway does not flow through 50' of vegetation before entering the proposed swales. Swale geometry is not consistent with the requirements of water quality swales.
 - c. Water quality swales achieve 70% TSS removal with adequate pretreatment devices. Show a check dam at 100' intervals along all water quality swales to meet this requirement. No additional TSS removal may be claimed for the required pretreatment device as it is included in the 70% removal for water quality swales.
 - d. Size dry swales to accommodate a hydraulic residence time of a minimum of 9 minutes. Size wet swales to retain the required Water Quality Volume. Provide calculations.
 - e. TSS removal calculations do not account for proposed roadway areas which are not tributary to stormwater treatment devices. The percentage of treated stormwater shall be compared with the percentage of untreated stormwater to ensure compliance with the 80% TSS removal requirement for the site.
- Operation and Maintenance Plan:
 - a. Vegetated filter strips require frequent mowing of the grass. Sediment should be removed from level spreaders and tops and toes of slopes as necessary to prevent the formation of berms and channels which may impede the distribution of sheet flow. Filter strips located in wetland buffer zones must include strict measures to ensure that maintenance operations do not alter resource areas.
 - b. Check dams require inspection after every significant rain event. Damage should be repaired as needed. Sediment should be removed as needed.
 - c. Water quality swales require inspection twice a year to check for rilling and gullyng. Eroded areas shall be repaired and revegetated. Dry swales shall be mowed regularly so grass does not exceed 6" in height (wet swales may not require it due to vegetation). Sediment and debris should be removed manually at least once a year. Water

quality swales should be protected from snow plowing operations. How often is snow plowed at the site?

- d. As this project contains stormwater management features that require routine maintenance, ongoing conditions will follow this project after the issuance of a Certificate of Compliance. Inspection and maintenance requirements shall continue for the life of the facility and will not cease after 3 years, as is listed in the Stormwater Report.

2.) Plans:

- Add wetland consultant contact information to the Title Sheet, T-1
- Note #3 , Erosion and Sediment Control Plan on Sheet G-1, the first sentence should read "disturbed" and not "undisturbed".
- Note #6 , Erosion and Sediment Control Plan on Sheet G-1, add a sentence indicating dewatering pits are not to be located within 25' of resource areas.
- Note #7 , Erosion and Sediment Control Plan on Sheet G-1, add a sentence stating soils containing invasive species shall not be reused in wetland buffer zones or replication areas.
- Note #8 , Erosion and Sediment Control Plan on Sheet G-1, inspection shall occur weekly or after every ¼" rainfall. (Revised by EPA/DEP 2012)
- Add new Note #13 , Erosion and Sediment Control Plan on Sheet G-1, that erosion controls shall be inspected and approved by the Conservation Commission prior to the commencement of any work on site.
- Add hay bale and silt fence lines to plan view of wetland replication detail on Sheet C-2A.
- Add notes to the silt fence – haybale barrier detail on Sheet C-8. Staked bales are to be weed free straw bales. Installation must be inspected and approved by the Conservation Commission prior to the commencement of any work.
- Add dimensions to the gabion wall section detail on Sheet C-9 from inside edge to inside edge of the guard rails, and outside edge to outside edge of the gabion walls.
- Add a 3:1 max slope notation to the slope leading down to the replication area on the wetland replication detail on Sheet C-9.
- Water quality swales are vegetated open channels. The construction details on Sheet C-7 indicate rip rap lined swales. Revise the details to show vegetated swale bottoms and side slopes, and provide a grass planting specification suitable to the soil and water conditions.
- Water quality swale details should reflect side slopes no greater than 3:1 for wet swales and dry swales. Longitudinal slopes shall be as close to flat as possible and no greater than 5%.
- Indicate if the swales are proposed as wet swales or dry swales. Provide a construction detail for the proposed water quality swale(s). 2' minimum separation to groundwater is required for dry swales. Provide a boring or test pit at each proposed dry water quality swale.
- Show a check dam at 100' intervals along all water quality swales. Provide a plan detail which shows rip rap check dams constructed to 50% of the swale height (i.e. a 2' deep swale shall have a 1' tall check dam every 100' along the swale). Show v-notch weirs in each check dam to control low flows.

- Note the location of all water quality swales on Sheets C-2, C-2A, and C-3. Or provide a new detail plan of specific areas.
- Note the location of all vegetated filter strips on Sheets C-2, C-2A, and C-3. Or provide a new detail plan of specific areas.
- Vegetated filter strips shall be designed with slopes between 2 and 6 percent. Show grading of proposed filter strips in the plan set showing conformity with the required slope range. Vegetated filter strips may not extend more than 50 feet into a Buffer Zone for a wetland resource area. Show a level spreader (stone diaphragm) along the leading edge of vegetated filter strips to prevent concentrated flows. Provide a grass planting specification for vegetated filter strips. Provide a planting detail or media and depth specification for all vegetated filter strips (avoid peat and compost).
- Vegetated filter strips must be constructed 2' above seasonal high ground water and 2' - 4' above bedrock. Provide one boring or test pit in the location of each proposed vegetated filter strip to show the offset has been met.
- In cold climates, Massachusetts included, the depth of soil media serving as the planting bed for vegetated filter strips must extend below the frost line to minimize the effects of freezing. Provide a planting detail or media and depth specification for all vegetated filter strips (avoid peat and compost).
- Roadway cross sections on Sheet C-7 appear to show that stormwater originating from the proposed gravel driveway does not flow through 50' of vegetation before entering the proposed swales.
- Provide a construction detail for roadway sections STA 0+00 – 10+00.
- The location of the guard rail does not appear to meet current MA DOT standards. Limit the speed on the proposed gravel drive to 10 mph with signage.
- Species of trees susceptible to the Asian Long-Horn Beetle should not be planted in wetland replication areas. Revise the planting list, and add a note precluding such species.

3.) General Comments:

- The delineation of the wetland at the proposed crossing is shown transecting the existing cart path. Was the cart path used for the construction and demonstration of the required crane test? All work in wetland areas requires a permit from the Conservation Commission.

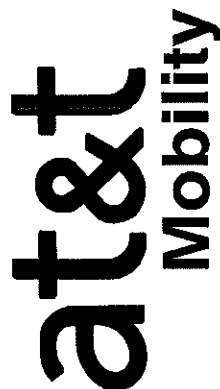
From: J Zimmer [mailto:southriverenvironmental@gmail.com]
Sent: Wednesday, April 09, 2014 8:58 AM
To: pcc@cs.wpi.edu
Cc: Mendez, Ronald
Subject: 196 West St NOI

Good morning,

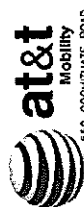
I'd like to confirm the time for the continued hearing tomorrow night and see if there are any further questions regarding the storm water management for the site. Thank you.

John

Email is virus free, scanned by Emsisoft Anti-Malware - www.emsisoft.com
Last signature update: 9/19/2013 - 10,661,234 known threats in database



**PAXTON, MA
SITE NO.: MA4388
196 WEST STREET
PAXTON, MA 01612**



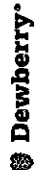
50 COCHITUATE ROAD
SUITES 13 & 14
RAVINGHAM, MA 01701

27 NORTHWESTERN DRIVE
SALEM, NH 03079

PAXTON, MA
SITE NO.: MA4388

CONSTRUCTION DRAWINGS

NO.	DATE	FOR CONSTRUCTION
2	04/07/14	FOR CONSTRUCTION
1	01/02/14	FOR CONSTRUCTION
0	10/11/13	FOR CONSTRUCTION
B	09/25/13	FOR COMMENT
A	07/02/13	FOR COMMENT



Dewberry Engineers Inc.
250 BROADWAY STE 1100
10TH FLOOR
BOCA RATON, FL 33431
PHONE: 561.363.3400
FAX: 561.363.3310

ORIGIN BY:	SK
REVIEWED BY:	ROM
CHECKED BY:	IKH
PROJECT NUMBER:	00003036
JOB NUMBER:	00007890
SITE ADDRESS:	

196 WEST STREET
PAXTON, MA 01612

SUBJECT TITLE

TITLE SHEET

REPORTING JUDGES

1

[illegible][illegible]

STATE NAME
PATTON, WA

PROPERTY OWNER
WILLIAM J. PATTON, JR.
200 PROJECT STREET
BURLING, WA 01545

AIRPORT DEVELOPER
AIAA MOBILITY
500 COMMUNITY ROAD
HARRINGTON, WA 01701

LEGISLATIVE OFFICE
PATTON WASHINGTON
(206) 799-9800

TELEPHONE UNIT/2
VIRADON
(800) 841-9000

CENTER OF PROPOSED MONORAIL
LATITUDE 47 16' 30.7" N (NAD 83)
LONGITUDE 124 56' 45.8" W (NAD 83)
TIME SURVEY

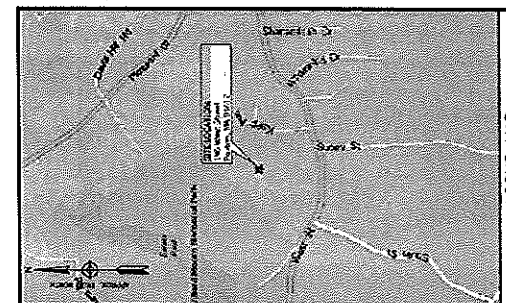
PROJECT SUMMARY

ENGINEERS
DOUGHERTY ENGINEERING, INC.
200 SUMMIT STREET
10TH FLOOR
BOSTON, MA 02210
PHONE # (617) 692-2488
FAX # (617) 692-3310

CONTACT: BOBBIAN REITEL, P.E.

SITE ACQUISITION
K&S WILCOX, LLC
1000 WILCOX AVENUE
NASHUA, NH 03062
PHONE # (603) 886-0874
CONTACT: KEN KOSTKA

CONSTRUCTION
TAM COMMUNICATIONS
777 WILCOX AVENUE
NASHUA, NH 03062
PHONE # (603) 883-4810
FAX # (603) 883-1104
CONTACT: TOM WALSH



FROM FRANKLIN, MA. TAKE I-90 W TOWARD WORCESTER. TAKE
EXIT 10A FOR RT-146/RT-20. TURN RIGHT AND MERGE ONTO
RT-146 N TOWARD WORCESTER. TAKE EXIT 13 TO MERGE ONTO
RT-20 E. TAKE EXIT 17 TO MERGE ONTO RT-9. TURN LEFT ONTO
RT-200 E. TAKE EXIT 20 TO MERGE ONTO HIGHWAY 51. AT THE
END OF HIGHWAY 51, CONTINUE STRAIGHT ONTO HIGHWAY 51. AT THE
END OF HIGHWAY 51, TURN RIGHT ONTO PLAZANT ST. PLAZANT
ST. WILL BECOME RT-122 AND FOLLOW IT INTO FORTSON.
TURN LEFT ONTO RT-31/WEST STREET. THE SITE WILL BE ON
THE RIGHT.

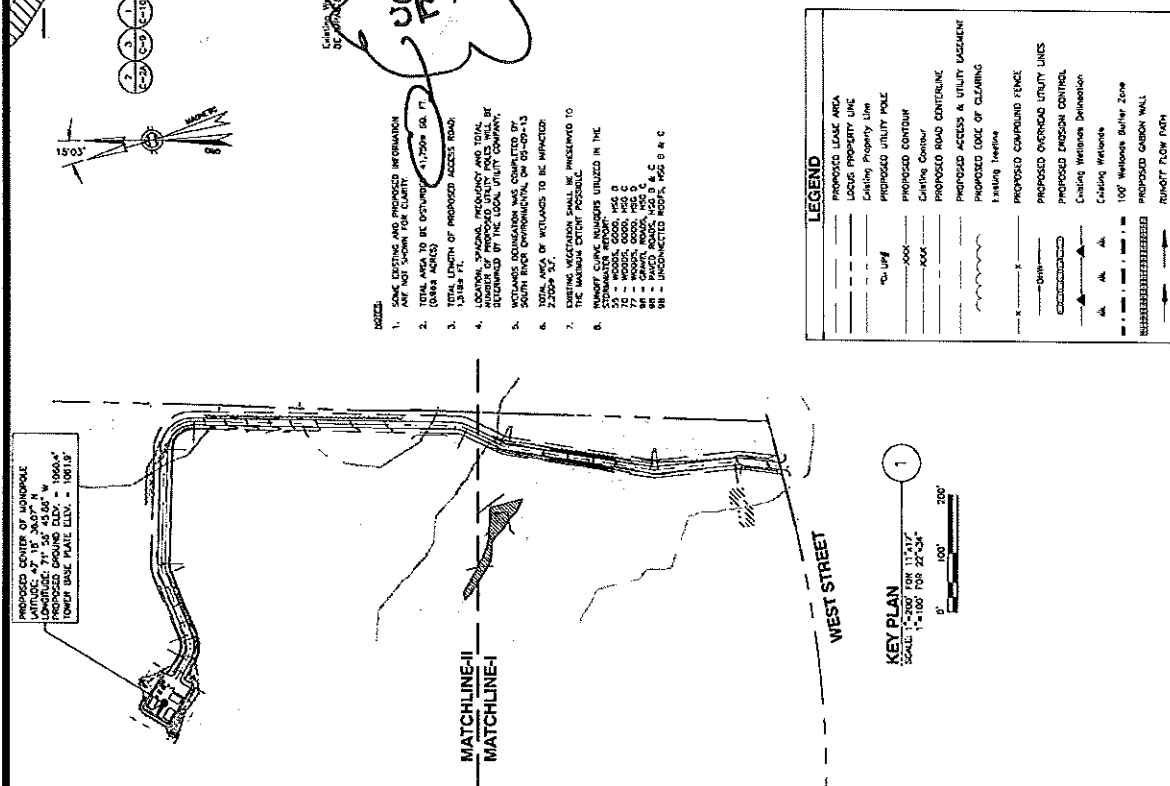
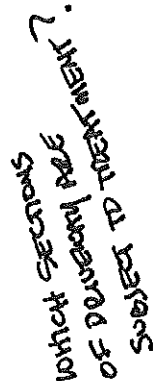
NOO
WETLAND CONSULTANT
+ CONTACT
INFO



(see comments)

STILL NOT RESP.

11/4" (REVISED BY EPA 2012)





350 CORNHILL ROAD
SUITE 13 & 14
FRAMINGHAM, MA 01701



27 NORTHWESTERN DRIVE
SALUD, NH 03079

PAXTON, MA
SITE NO.: MA4388

CONSTRUCTION DRAWINGS	
2/04/07/14 FOR CONSTRUCTION	
1/07/02/14 FOR CONSTRUCTION	
0/10/11/13 FOR CONSTRUCTION	
0/09/25/13 FOR COMMENT	
1/07/02/13 FOR COMMENT	



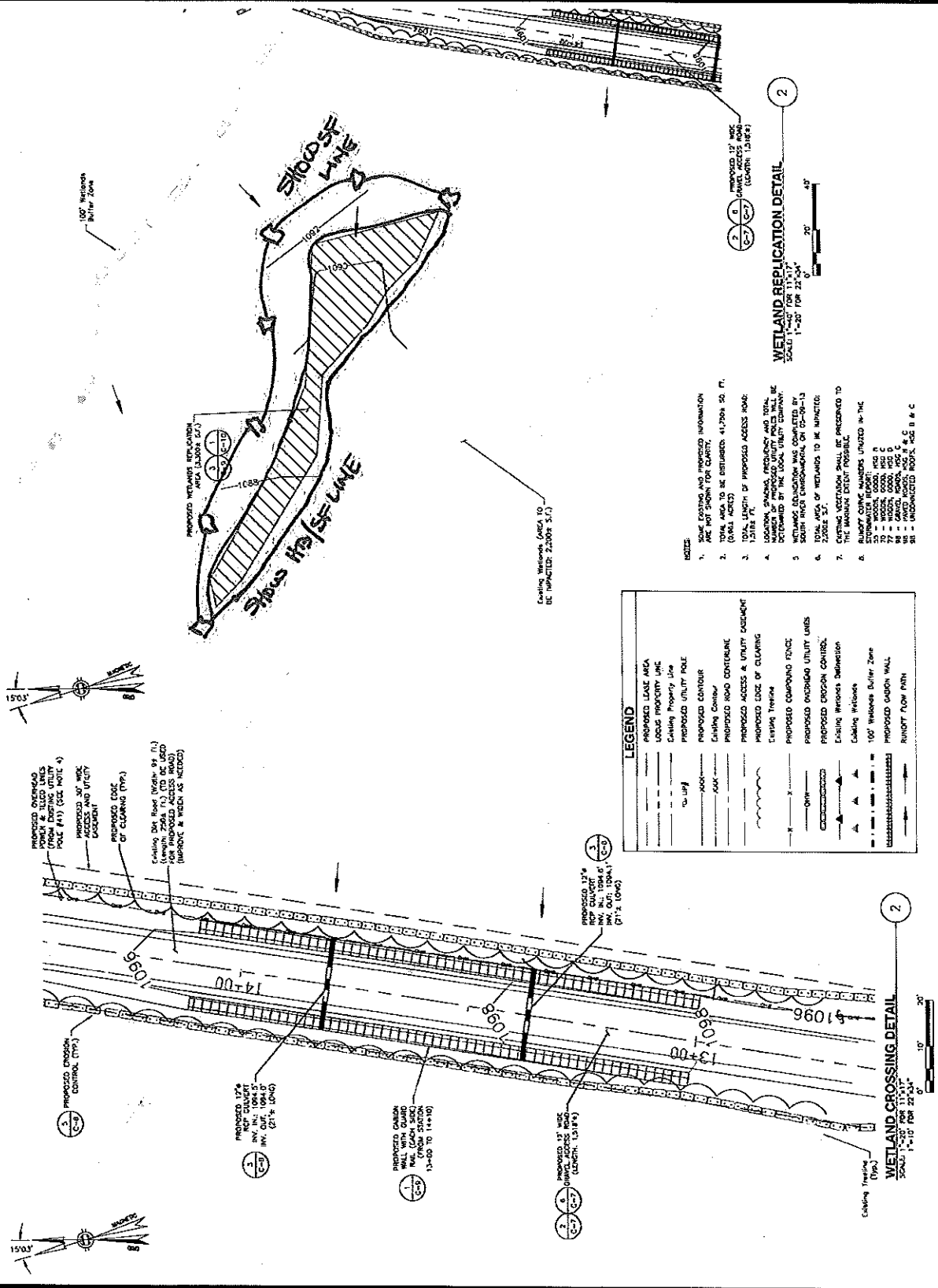
Dewberry Engineers Inc.
2000 DEWBERRY DRIVE
SALUD, NH 03079
TEL: 603.882.1100
FAX: 603.882.1100

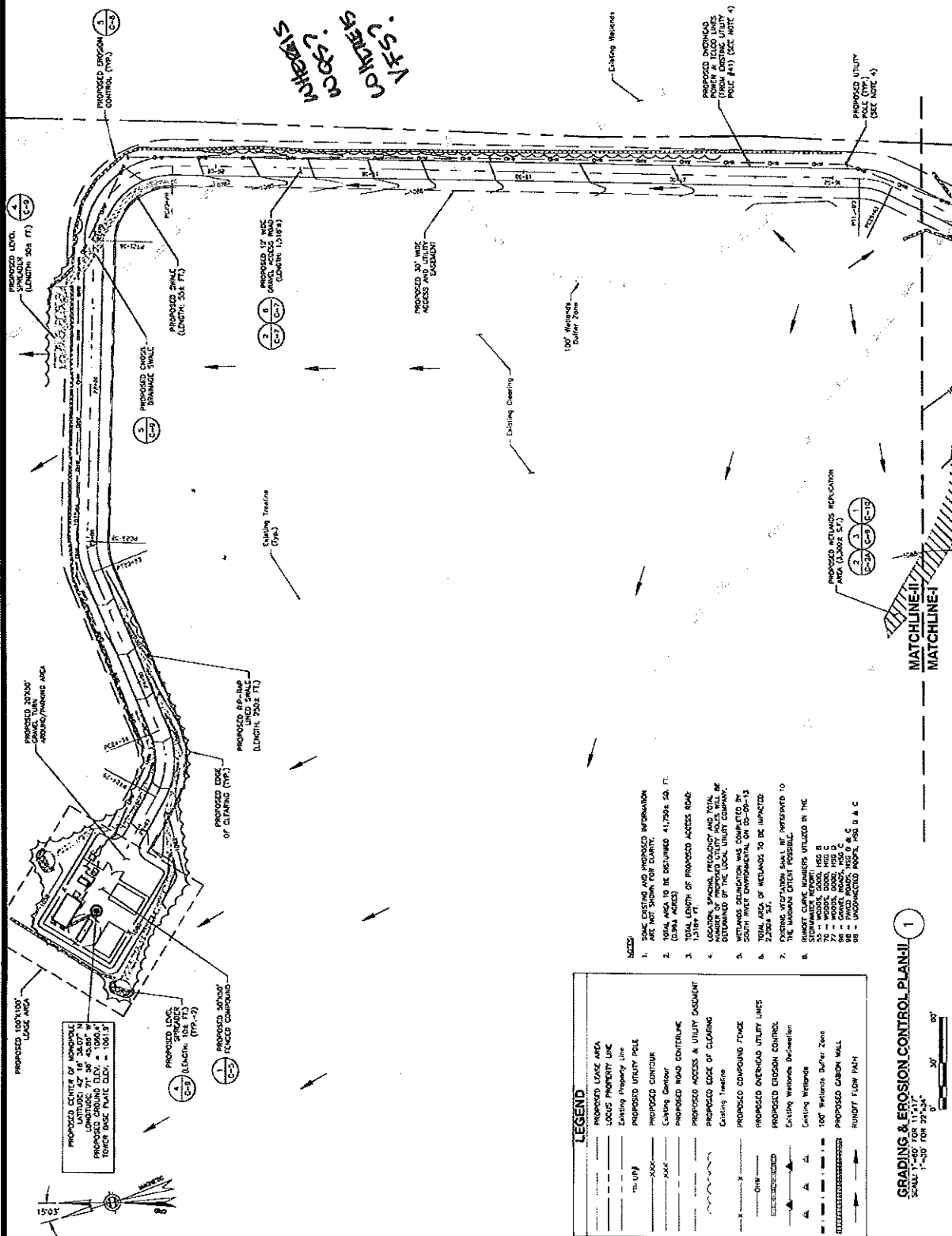
OWNER: S&B	
DESIGNED BY: RDM	
CHECKED BY: RDM	
PROJECT NUMBER: 2000330A	
JOB NUMBER: 20007820	
SITE ADDRESS:	

196 WEST STREET
PAXTON, MA 01612

SHEET TITLE	
WETLAND CROSSING & REPLICATION DETAILS	
SHEET NUMBER	

C-2A







500 COCHITATE ROAD
SUITE 13 & 14
FRAMINGHAM, MA 01701



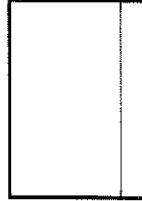
27 NORTHWESTERN DRIVE
SALUDA, NH 03079

PAXTON, MA
SITE NO.: MA4388

CONSTRUCTION DRAWINGS	
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1	01/02/14 FOR CONSTRUCTION
3	10/11/13 FOR CONSTRUCTION
3	09/25/13 FOR COMMENT
1	07/02/13 FOR COMMENT



Dewberry Engineers Inc.
2000 WEST STREET
SUITE 100
PAXTON, MA 01862
TEL: 508.385.1000
FAX: 508.385.1001



DRAWN BY:	SK
CHECKED BY:	ROM
DESIGNED BY:	BBB
PROJECT NUMBER:	5000300
JOB NUMBER:	5003700
SITE ADDRESS:	

196 WEST STREET
PAXTON, MA 01862

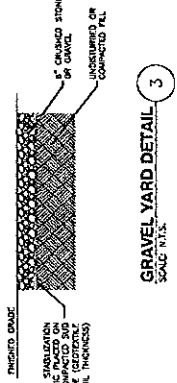
SHEET TITLE

CONSTRUCTION DETAILS-II

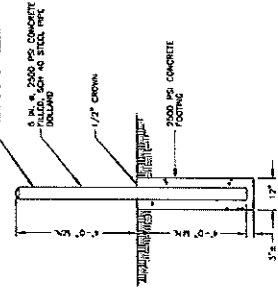
SHEET NUMBER

C-7

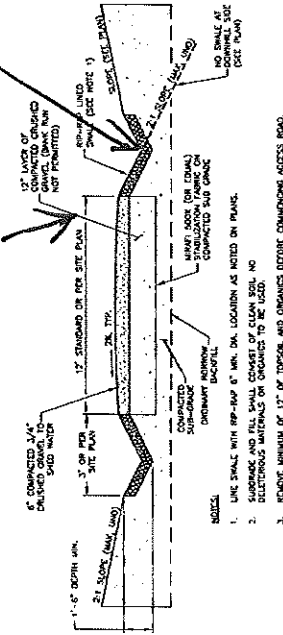
WQS IS
GRAVEL LINED
3:1 MAX SLOPES



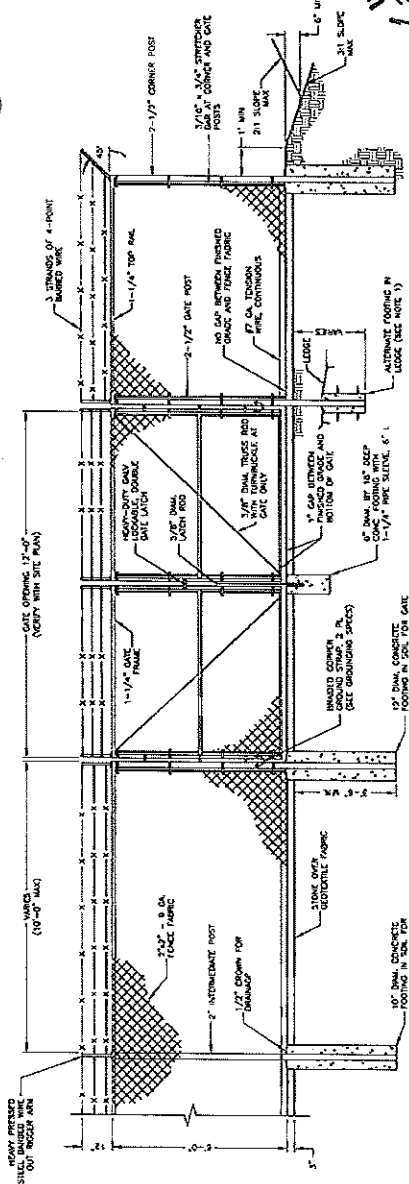
GRAVEL YARD DETAIL
SCALE N.T.S.



BOLLARD
SCALE N.T.S.



ROAD CROSS SECTION WITH SWALES
(STA. 12+75 TO 14+50) (STA. 23+00 TO 25+18)
SCALE N.T.S.



- FENCE NOTES:
1. FENCE POSTS SHALL BE 4 INCH DIAMETER IN LUGS, IF LUGS ARE SUBSTITUTED AT GATE OR AT A DEPTH SHALLOWER THAN 3'-0", CORK DRILL AN 8" DIA. HOLE 18" INTO THE LUGS, CAULK POST IN THE HOLE AND FILL WITH CONCRETE OR EPOXY. FENCE POSTS SHALL BE 4 INCH DIAMETER IN LUGS, IF LUGS ARE SUBSTITUTED AT GATE OR AT A DEPTH SHALLOWER THAN 3'-0", CORK DRILL AN 8" DIA. HOLE 18" INTO THE LUGS, CAULK POST IN THE HOLE AND FILL WITH CONCRETE OR EPOXY.
 2. ATTACH EACH GATE WITH 1-1/2 INCH DIA. OF NON-LIFT-OFF TYPE, MALLEABLE IRON OR FORMER, WIRE-TYPE HOOKS. ASSEMBLIES SHALL ALLOW FOR TOP OF GATE TRAVEL.
 3. INSTALL SWALE AROUND COMPOUND (MIN. DEPTH 6" TO ALLOW FOR DRAINAGE).

FENCE AND ACCESS GATE
SCALE N.T.S.

VEGETATED
FILLER?
STAIR?

WQS IS
GRAVEL LINED
3:1 MAX
SIDEWALKS

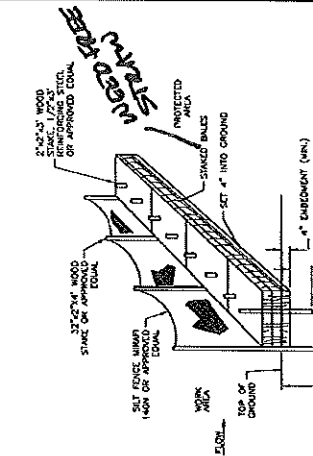
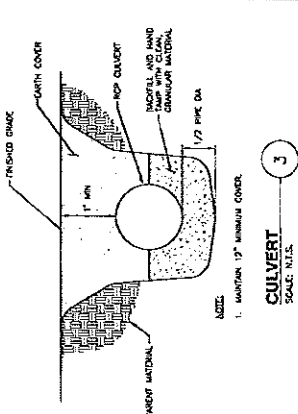
ROAD CROSS SECTION
(STA. 10+00 TO 12+75) (STA. 14+50 TO 23+00)
SCALE N.T.S.

ROAD SECTIONS
STA 0+00 -> STA 10+00

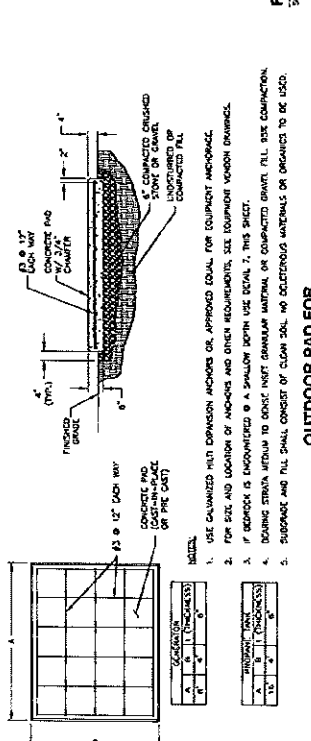
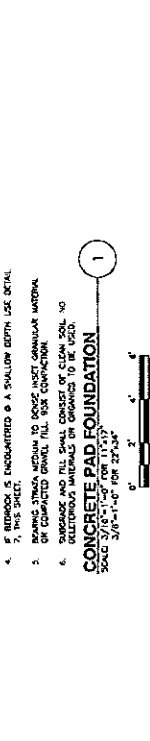
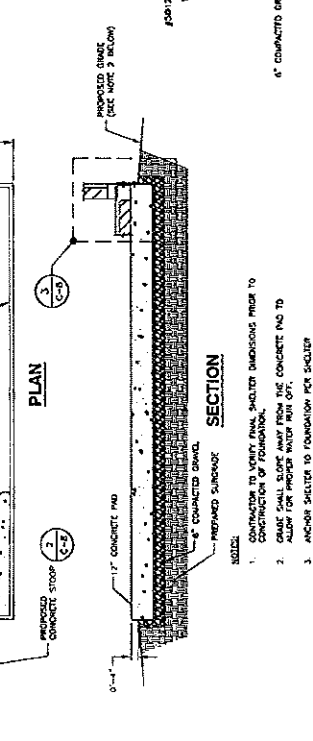
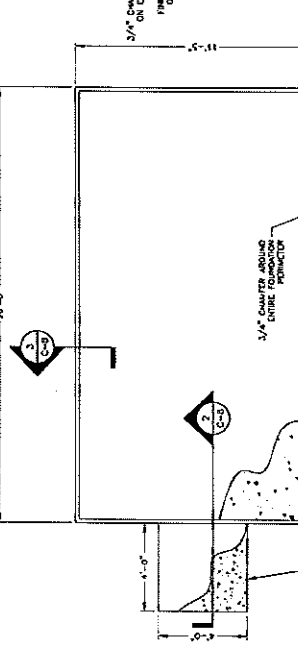
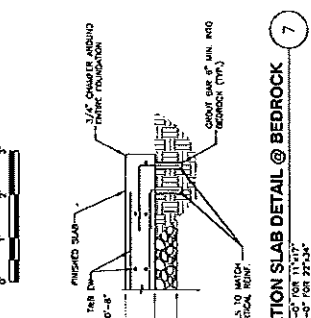
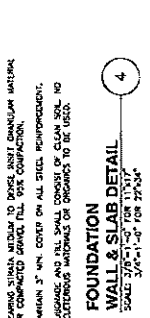
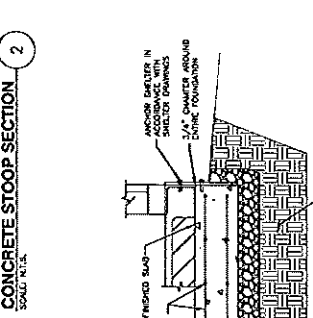
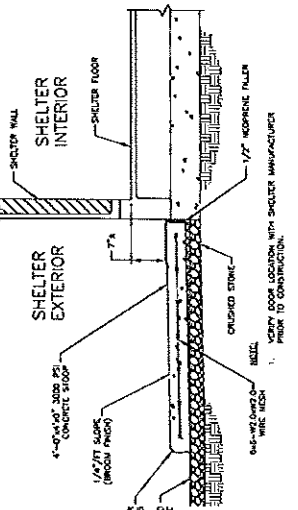
CONSTRUCTION DRAWINGS	
2	04/07/14 FOR CONSTRUCTION
1	03/02/14 FOR CONSTRUCTION
0	10/11/13 FOR CONSTRUCTION
0	09/25/13 FOR COMMENT
1	07/02/13 FOR COMMENT

DESIGN BY	DK
REVIEWED BY	RM
CHECKED BY	MM
PROJECT NUMBER	50003808
DWG NUMBER	50007600
SITE ADDRESS	

SHEET FILE	
CONSTRUCTION DETAILS-III	
SHEET NUMBER	



1. IN STRUCTURAL SHALL BE APPROVED BY P.C. SILT FENCE-HAYBALE BARRIER
BEFORE THE COMMENCEMENT OF CONSTRUCTION.





CROSS DRAINAGE SWALE DETAIL

(Both ends?)

4. ASLUSHING OR DRIVING OF POST MAY VOID UPPER LAYER OF GEOSYNTHETIC

2
TYPE SS STEEL GUARD RAIL DETAIL
SCALE: N.T.S.

on or



NORTHWESTERN DRIVE
SALUD, NH 03079

PAXTON, MA
SITE NO.: MA4388

CONSTRUCTION DRAWINGS	
1	04/02/14 FOR CONSTRUCTION
2	04/02/14 FOR CONSTRUCTION
3	04/02/14 FOR CONSTRUCTION
4	04/02/14 FOR CONSTRUCTION
5	04/02/14 FOR CONSTRUCTION
6	04/02/14 FOR CONSTRUCTION
7	04/02/14 FOR CONSTRUCTION
8	04/02/14 FOR CONSTRUCTION
9	04/02/14 FOR CONSTRUCTION
10	04/02/14 FOR CONSTRUCTION
11	04/02/14 FOR CONSTRUCTION
12	04/02/14 FOR CONSTRUCTION
13	04/02/14 FOR CONSTRUCTION
14	04/02/14 FOR CONSTRUCTION
15	04/02/14 FOR CONSTRUCTION
16	04/02/14 FOR CONSTRUCTION
17	04/02/14 FOR CONSTRUCTION
18	04/02/14 FOR CONSTRUCTION
19	04/02/14 FOR CONSTRUCTION
20	04/02/14 FOR CONSTRUCTION

Dewberry

Dewberry Engineers Inc.
200 MAIN STREET
PAXTON, MA 01861
TEL: 508.336.1111
FAX: 508.336.1111

DATE: _____

PROJECT NO.: _____

SHEET NO.: _____

TITLE: _____

DESIGN BY: _____

CHECKED BY: _____

PROJECT NO.: _____

JOB NUMBER: _____

SITE ADDRESS: _____

196 WEST STREET
PAXTON, MA 01861

SHEET TITLE: _____

CONSTRUCTION DETAILS-V

SHEET NUMBER: _____

C-10

COMMON PLANT SPECIES IN PROPOSED WETLAND SEED MIX

Seed Mix	Common Name	Scientific name
New England Wet Mix from New England Wetland Plants, Inc.	Fox Sedge	<i>Carex vulpinoidea</i>
	Hop Sedge	<i>Carex lupulina</i>
	Water Plantain	<i>Alisma plantago-aquatica</i>
	Nodding Bur-marigold	<i>Bidens cernua</i>
	Lurid Sedge	<i>Carex lurida</i>
	Soft Rush	<i>Juncus effusus</i>
	Grass-leaved Goldenrod	<i>Solidago graminifolia</i>
	Bearded Sedge	<i>Carex comosa</i>
	Fringed Sedge	<i>Carex crinita</i>
	Boneset	<i>Eupatorium perfoliatum</i>
	Flat-top Aster	<i>Aster umbellatus</i>
	Hardstem Bulrush	<i>Scirpus acutus</i>
	Green Bulrush	<i>Scirpus atrovirens</i>
	Woodgrass	<i>Scirpus typerinus</i>
	Spotted Joe-pye Weed	<i>Eupatorium maculatum</i>
	Blue Vervain	<i>Verbena hastata</i>
	Ditch Stonecrop	<i>Penstemon sedoides</i>

WETLAND REPLACEMENT PLANT SPECIES LIST

SPECIES	SIZE	CONDITION	NOTES	QUANT.
SENSITIVE FERN (ONOCLEA SENSIBILIS)	CLUMP	POT/ROOT	FERN	10
CINNAMON FERN (OSMUNDA CINNAMOMEA)	CLUMP	POT/ROOT	FERN	10
Subtotal				20
SWEETPEPPERBUSH (CLETHRA ALNIFOLA)	2 GAL.	CONTAINER	SHRUB	15
HIGHBUSH BLUEBERRY (VACCINIUM CORYMBOSUM)	2'-3' HT.	CONTAINER	SHRUB	10
NORTHERN ARROWWOOD (VIBURNUM DENTATUM)	2'-3' HT.	CONTAINER	SHRUB	10
Subtotal				30
RED MAPLE (ACER RUBRUM)	4'-5' HT.	5 GALLON CONTAINER	TREE	10
GRAY BIRCH (BETULA POPULIFOLIA)	4'-5' HT.	5 GALLON CONTAINER	TREE	5
Subtotal				20
TOTAL				70

WETLAND REPLACEMENT PLANTINGS

1. FOR COMPLETE INFORMATION, REFER TO SHEET OF WETLAND IMPROVEMENTS
196 WEST STREET, PAXTON, MA 01861. DATED 04-25-14. PROVIDED BY
SAI WITH UNREVIEWED FOR ASST. SHELLEY.

SAI'S
SPECIES
NOT SUGGESTED
TO ASK FOR
SPECIES