

MEETING NOTICE AND AGENDA
MANSFIELD INLAND WETLANDS AGENCY

Monday, May 2, 2016 ■ 6:30 PM

Audrey P. Beck Municipal Building ■ 4 South Eagleville Road ■ Council Chambers

1. Call to Order

2. Roll Call

3. Review of Minutes

- a. 04-04-16– Meeting Minutes
- b. 04-13-16-Field Trip Notes

4. Communications

- a. Conservation Commission Minutes
- b. Monthly Business Memorandum

5. Public Hearing

6:30 p.m.

W1561– H. Raphaelson, Dog Lane, lot split

Memo from Inland Wetlands Agent

6:45 p.m.

W1562-Meadowbrook Gardens, 91 & 93 Meadowbrook Lane, 36 Units

Memo from Inland Wetlands Agent- Public Hearing will be opened and then adjourning to 5/16/16

6. Old Business

- a. **W1561– H. Raphaelson, Dog Lane, lot split**
- b. **W1562-Meadowbrook Gardens, 91 & 93 Meadowbrook Lane, 36 Units**
Continued to 5/16/16
- c. **W1564- Storrs Lodges, 218 Units, Hunting Lodge Road (Parcel I.D. 15.21.3)**
Tabled pending 6/6/16 Public Hearing
- d. **W1565- Uniglobe Investment, LLC., Meadowbrook Road, Sidewalk**
Memo from Inland Wetlands Agent

7. New Business

- a. **W1566- Groundwater & Environmental Services, 7 Storrs Road, Remedial Soil Excavation**
Memo from Inland Wetlands Agent
- b. **W1567-R. Henning, 166 Moulton Road, Water Wheel**
Memo from Inland Wetlands Agent

8. Reports from Officers and Committees

9. Other Communications and Bills

- a. Other

10. Adjournment

Charles Ausburger ■ Binu Chandy ■ JoAnn Goodwin ■ Roswell Hall III ■ Gregory Lewis ■ Kenneth Rawn ■ Bonnie Ryan
Vera Stearns Ward ■ Susan Westa ■ Paul Aho (A) ■ Terry Berthelot (A)

DRAFT Minutes
Mansfield Inland Wetlands Agency
Regular Meeting
Monday, April 4, 2016 adjourned to Wednesday, April 6, 2016
Council Chambers, Audrey P. Beck Municipal Building

Members present: J. Goodwin, B. Chandy, R. Hall, K. Rawn, V. Ward
Members absent: C. Ausburger, G. Lewis, B. Ryan, S. Westa
Alternates present: T. Berthelot
Alternates absent: P. Aho
Staff present: J. Kaufman, Wetlands Agent

Chairman Goodwin called the meeting to order at 6:33 p.m. and appointed alternate Berthelot to act.

Approval of Minutes:

a. 03/07/2016 Regular Meeting:

Chandy MOVED and Ward seconded to approve the 3/7/2016 minutes as corrected. MOTION PASSED.

b. 03/16/2016 Field Trip:

The notes from the 3/16/2016 field trip were noted.

Communications:

The Conservation Commission meeting minutes and Kaufman's monthly business memo were noted.

Public Hearing:

W1561– H. Raphaelson, Dog Lane, 2 lot subdivision

Chairman Goodwin opened the Public Hearing at 6:36 pm. Members present were Chandy, Goodwin, Hall, Rawn, Ward, and alternate Berthelot who was appointed to act. Jennifer Kaufman, Wetlands Agent read the Legal Notice as it appeared in The Chronicle on 3/22/16 and 3/30/16 and noted the following communications received and distributed to members: an undated letter from Kathryn Ratcliff of 60 Bundy Lane; a 3/14/2016 memo from Sherry McGann, Eastern Highlands Health District; a 3/28/16 letter from DEEP regarding the NDDN Determination; and a 3/29/16 memo from J. Kaufman, Wetland Agent.

At 6:39 p.m. Rawn MOVED, Hall SECONDED, to adjourn the public hearing on the lot split application (W1561) submitted by H. Raphaelson, adjacent to 128 Dog Lane, to May 2, 2016. MOTION PASSED UNANIMOUSLY.

Old Business:

a. W1561– H. Raphaelson, Dog Lane, 2 lot subdivision

Item tabled pending continued public hearing on 5/2/16.

b. W1562-Meadowbrook Gardens, 91 & 93 Meadowbrook Lane, 36 Units

Item tabled pending 5/2/16 Public Hearing.

c. W1563-Bicentennial Pond, Aquatic Weed Management and Sediment Removal

Chandy MOVED, Rawn seconded, to grant an Inland Wetlands License, pursuant to the Inland Wetlands and Watercourses Regulations of the Town of Mansfield to the Town of Mansfield (File #W1563) for aquatic weed management and sediment removal on property owned by the applicant and located at Bicentennial Pond (Assessor's Parcel ID 23.60.7) as shown on plans dated 10/27/2015 and as described in application submissions.

This action is based on a finding of no anticipated significant impact on the wetlands, and is conditioned on the following provisions being met:

1. Appropriate erosion and sedimentation controls shall be in place prior to the activity, maintained during the activity and removed when disturbed areas are completely stabilized;
2. Herbicide treatments shall be conducted in accordance with a CT DEEP Aquatics Pesticide Use Permit and shall be coordinated with the Town of Mansfield's Parks and Recreation Department to ensure that no treatments occur during the swim/camp season; and
3. Material removed from the pond will be immediately removed from the site for dewatering.

This approval is valid for five years (until April 4, 2021) unless additional time is requested by the applicant and granted by the Inland Wetlands Agency. The applicant shall notify the Wetlands Agent before any work begins and all work shall be completed within one year. Any extension of the activity period shall come before this Agency for further review and comment.

MOTION PASSED UNANIMOUSLY.

New Business:

a. W1564- Storrs Lodges, 218 Units, Hunting Lodge Road (Parcel I.D. 15.21.3)

Rawn MOVED, Ward seconded, to:

- 1) Receive the application submitted by Storrs Lodges LLC (IWA File #1564) under the Inland Wetlands and Watercourses Regulations of the Town of Mansfield for the construction of a 218-unit apartment complex on property owned by the applicants and located at Hunting Lodge Road (Assessor's Parcel ID 15.21.3) as shown on plans dated 3/18/2016 and as described in application submissions, schedule a public hearing on June 6, 2016, and refer said application to the Conservation Commission for review and comment.
- 2) Authorize staff to engage the services of GEI Consultants to provide independent review of the application. Pursuant to section 8.6 of Mansfield's Inland Wetlands and Watercourses Regulations, fees incurred for this review will be the responsibility of the applicants; a deposit in the amount of the estimated cost shall be provided prior to issuance of a notice to proceed.

MOTION PASSED UNANIMOUSLY.

b. W1565- Uniglobe Investment, LLC., Meadowbrook Road, Sidewalk

Ward MOVED, Hall seconded, to receive the application submitted by Uniglobe Investment, LLC (IWA File #W1565) under the Wetlands and Watercourses Regulations of the Town of Mansfield for the construction of a sidewalk on property located at Meadowbrook Lane (73 Meadowbrook Lane to Sunny Acres Park) as shown on a map dated 9/21/2015 and as described in application submissions, to refer said application to staff and the Conservation Commission for review and comments, and to waive the application fee pursuant to section 19.6.A of Mansfield's Inland Wetlands and Watercourses Regulations. MOTION PASSED UNANIMOUSLY.

Reports from Officers and Committees: A Field Trip was scheduled for 4/13/16 at 2:30 p.m.

Other Communications: None.

Adjournment: The Chairman declared the meeting adjourned at 6:46 p.m.

Respectfully submitted,
Vera S. Ward, Secretary

Field Trip Notes

MANSFIELD PLANNING AND ZONING COMMISSION
INLAND WETLANDS AGENCY
SPECIAL MEETING – FIELD TRIP
APRIL 13, 2016

Members present: V. Ward, P. Aho
Conservation: J. Silander (Item #1)
Staff present: Jennifer Kaufman, Inland Wetlands Agent
Janell Mullen, Assistant Planner

The field trip began at approximately 2:35 p.m.

W1564- Storrs Lodges, 218 Units, Hunting Lodge Road (Parcel I.D. 15.21.3)

Members were met on site by the applicant's team: Attorney Thomas Fahey, George Logan, and Dave Ziaks. Members observed current conditions, and site characteristics. No decisions were made.

W1565- Uniglobe Investment, LLC., Meadowbrook Road, Sidewalk

Members were met on site by the applicant's team: Bob Maggi and Michael Yenke. Members observed current conditions, and site characteristics. No decisions were made.

W1562-Meadowbrook Gardens, 91 & 93 Meadowbrook Lane, 36 Units

Members were met on site by the applicant's team: Bob Maggi and Michael Yenke. Members observed current conditions, and site characteristics. No decisions were made.

The field trip ended at approximately 4:30 p.m.

Town of Mansfield
CONSERVATION COMMISSION
Meeting of 20 April 2016
Conference B, Audrey P. Beck Building
(draft) MINUTES

Members present: Aline Booth (Alt.), Neil Facchinetti, Quentin Kessel, Scott Lehmann, Grant Meitzler, John Silander. *Members absent:* Joan Buck (Alt.), Robert Dahn, Michael Soares.

Others present: Jennifer Kaufman (Wetlands Agent); Howard Raphaelson, Janet Welch, Jim Wohl, Kathryn Ratcliff, Leonard Jacobs (W1561); Ed Pelletier (Datum Engineering, W1561, W1562, W1565); George Logan (REMA Ecological Services, W1561 & W1564); Gerald Hardisty (CES Engineering, W1561 & W1562); Rick Zulick (Datum Engineering, W1562); Robert Magi, Michael Yenke (W1562); Tony Giorgio & Tom Fahey (The Keystone Companies, W1564); Dave Ziaks (F. A. Hesketh & Assoc., W1564); Alison Hilding.

1. The meeting was **called to order** at 7:30p by Chair Quentin Kessel. Booth was designated a voting member for this meeting. The agenda was reordered to take up W1565 after W1562.

2. The **draft minutes** of the 16 March 2016 meeting were approved as written.

3. IWA referrals.

a. W1561 (Raphaelson, Dog La). {Material regarding this application included in the packet for this meeting:

(1) Report dated 3/27/16 on the parcel's wetlands by REMA's George Logan. In Mr. Logan's professional opinion, "existing wetland and watercourse functions and values will not be degraded by the proposed activities." (p.1) Points relevant to the Commission's concerns about nutrient loading of wetlands (expressed in the first bullet under (2) of the motion on item 3a, 3/16/16 minutes) are:

- The conservative design of septic systems under the current permitting regime minimizes risk of system failure. (p.6, third diamond)
- In normal operation, the septic systems should not overload the wetlands with nitrate:
 - a. During dry periods, septic nitrate is unlikely to get into the wetland, because the primary systems on Lots 1 and 2 (resp.) are 66 ft and 94 ft (resp.) from it (p.6, second diamond), and the "eastern stream" is only "intermittent" (p.4, third diamond; p.7, second bullet).
 - b. During "high flow and high groundwater periods" septic nitrate may be transported into the wetland but not at concentrations that would overwhelm its de-nitrification processes (see p.7, third bullet): "... even concentrations of 4 to 7 mg/L would not be detrimental to the wetlands or the watercourse, because during the times of higher stream flows, when nitrate-nitrogen could be experienced here, there would immediately be significant dilution from surface flows generated in the +/- 85.8-acre watershed." (p.7, fourth bullet).

Mr. Logan also doubts that two species of Special State Concern – the Appalachian brook crayfish and the wood turtle – are present on the parcel. A "moderate intensity search for crayfish species" on 320 ft of the eastern stream channel failed to turn up any sign of them (p.4, fourth diamond). The wood turtle prefers "more open successional habitats" and the site is a long way (2K ft & uphill) from the Fenton River, where individuals of this species have been found (p.5, first diamond).

(2) Letter dated 3/30/16 from CES's Gerald Hardisty, which estimates nitrogen loading of 7.26 mg/l based on modeling in a 1992 technical bulletin from the Water Resources Office of the

Cape Cod Commission.

(3) Letter dated 3/28/16 from Dawn McKay at DEEP, noting that, according to DEEP's records, there are "extant populations" of the two species of Special State Concern "in the vicinity of the project site" and recommending strategies to protect these species during construction, should they be present.}

Owners of two neighboring properties voiced misgivings about the project. On behalf of several neighbors, Jim Wohl (128 Dog La) read a statement questioning whether the Town's zoning regulations really permit disconnected frontage to count toward meeting the frontage requirement for Lot 2; in any case, it seems a bad policy with a potential for adverse impacts on wetlands. He urged that only one house be approved for the parcel. Datum's Ed Pelletier responded by saying that Lot 2 meets all dimensional requirements in current zoning regulations.

Kathryn Ratcliff (60 Bundy La) asked if there wasn't a more recently developed model for estimating nitrogen loading than the one used by Mr. Hardisty. Kessel wondered why it was appropriate to use a nitrogen-loading model developed for use on Cape Cod, which is basically nothing but sand. Kaufman responded that DEEP is satisfied with the model. Ms. Ratcliff pointed out that nitrate is not the only problem-substance that leaches from septic systems; pharmaceuticals may also adversely affect amphibians and other wetland organisms. In her view, proposals should be approved only if they can be shown to be benign (rather than disapproved only if they can be shown to be harmful). She also noted that there were crayfish and turtles, though perhaps not of the species of concern, at a nearby pond on her property. Silander wondered if there was any actual evidence that wood turtles were not present on the parcel.

In response, Mr. Logan conceded that wood turtles could be present, though he thought it unlikely. In any case, the main threat to them would be in the construction phase and could be addressed by strict sediment controls. As indicated in his report, no crayfish were found in the eastern stream below the two house sites at a time one might expect to find them, if present, though there might be some farther downstream. Regarding nitrogen-loading, Mr. Logan expects that the moderately well-drained soils between the proposed septic systems and the wetland would ordinarily denitrify septic leachate before it enters the wetland.

When questions regarding the proposal (or the people inclined to raise them) appeared to be exhausted, Kessel moved that the Commission reiterate to the IWA the concerns expressed in (2) of the motion on W1561 passed at its March meeting:

Having read the wetland report on W1561 and heard from local residents and the applicant's representatives, the Commission:

- Remains concerned about the potential for nutrient loading from the engineered septic systems, and suggests moving these systems farther from wetlands or reducing the number of houses from two to one; and
- Suggests that the parcel's owner consider conservation easements to enhance wetlands protection and a trail easement across Lot 2 to provide for a future connection to Whetten Woods & Storrs Center from the Nipmuck Trail, via the Torrey Preserve and Holly La.

This **motion**, seconded by Facchinetti, passed unanimously. Visitors drawn to the meeting only by W1561 then left.

b. W1562 (Meadowbrook Gardens, Meadowbrook Rd) A 3/31/16 report on this project by BSC Group-Connecticut was included in the packet. Kaufman summarized its recommendations regarding wetlands protections and storm-water management. These include maintaining a buffer of trees and other vegetation between the development and wetlands, particularly on steep slopes to the south and west (comment 21, p.6); moving the west and

southwest storm-water basins father from wetlands (comments 22 & 23, p.6); reducing paved area at the southeast corner to save more natural vegetation (comment 24, p.6); enhancing silt barriers along the west-southwest-south perimeter of the construction envelope (comments 15 & 16, p.4); increasing the diameter of drainage piping to handle large storm events (comments 4, 5 & 6, pp.2-3); redesigning catch basin 7 near the southeast corner (comment 10, p.3).

Mr. Pelletier described changes in the design, noting that many of BSC's recommendations had been incorporated into it. Substantial plantings have been added to separate the development from the wooded slope, and to screen it from Meadowbrook Rd. There is now just one driveway into the complex from Meadowbrook Rd; a sidewalk along it will connect to the sidewalk from Whispering Glen to Sunny Acres (see W1565 below). A 1-acre conservation easement adjacent to the one at Whispering Glen is proposed for the steep slope on the south; access to a trail along Conantville Brook would be provided at the southeast corner of the development. Silander observed that the rain gardens previously suggested by the Commission hadn't made it into the revised plan: the storm-water basins will be planted in grass, not wetland vegetation.

Datum's Rick Zulick reviewed his 4/06/16 "Wetland function and value assessment" report on the project, which was distributed at the meeting. The site is a gravel plateau sided on the west & south by wooded slopes down to wetlands. Mr. Zulick believes the proposed storm-water management system is adequate to infiltrate runoff and avoid dumping it into wetlands, save in extreme events. He noted that wood turtles may live along Conantville Brook below the proposed complex. Though he doubts that they would be attracted to the dry plateau, he recommends that plastic-sheeting silt barriers be supplemented with hay bales to keep them out during construction.

The Commission agreed unanimously (**motion:** Silander, Kessel) to comment that:

The potential for a significant wetlands impact by this project appears to have been minimized by the design of its storm-water management system and commitments to preserve natural vegetation on the slopes to the west and south and to add plantings along the top of these slopes. The Commission notes that many of its previous comments and suggestions about the project (see 3/16/16 minutes, item 3b, motion) have been addressed in the revised plan.

c. W1565 (Sidewalk, Meadowbrook Rd) PZC approval of the Whispering Glen project (adjacent to Meadowbrook Gardens on the east) required the developer to construct a sidewalk along Meadowbrook Rd from Whispering Glen west to Sunny Acres. Originally, the sidewalk was to be on the north side of Meadowbrook Rd, which would have required two crosswalks. This proposal moves the sidewalk to the south side, eliminating the need for them. Crossing the brook just west of the proposed Meadowbrook Gardens development would involve somewhat more work in and adjacent to wetlands. After brief discussion, the Commission unanimously agreed (**motion:** Silander, Booth) to comment that:

In the Commission's view, the somewhat greater wetlands impact of moving the Meadowbrook Rd sidewalk to the south side of the road is outweighed by safety considerations, since the new design eliminates two crosswalks.

Visitors not concerned with the remaining agenda items then left at 8:55p, and Kessel apologized to those who remained for having to wait so long for W1564 to be taken up.

d. W1564 (Storrs Lodges, Hunting Lodge Rd) Silander, who joined the 4/13 IWA Field Trip to the site and e-mailed some photographs of it to Commission members in advance of this meeting, recused himself from acting on this application. However, the presentation that followed was strictly informational and the Commission took no action. The Town has

commissioned a review of the proposal, which should be available at the Commission's 5/18 meeting. A public hearing is scheduled for 6/06.

A 218-unit (692 bed) apartment complex is proposed for a 45.9-acre parcel off Hunting Lodge Rd. {This is the same property formerly proposed for development as Ponde Place. That proposal was withdrawn when UConn refused to supply water, and test wells indicated that sufficient water was not available on site. Now that UConn can draw on the Shenipsit Reservoir via the Connecticut Water Company's new water main, a new proposal has been made.} Tony Giorgio, the developer's Managing Director, introduced Dave Ziaks and George Logan, who discussed wetlands on the parcel and what would be done to minimize the project's impact on them.

A displayed map of the parcel showed three wetland areas: (1) a large wetland between Hunting Lodge Rd and upland to the west; (2) a smaller wetland containing a vernal pool and separated from the wetland (1) by an old farm road running north from Northwood Rd; and (3) a piece of wetland jutting into the western part of the property from the south. Wetland (1) drains to Eagleville Brook, wetlands (2) and (3) to Cedar Swamp Brook. {GIS overlays for the map of Mansfield at <http://www.mainstreetmaps.com/CT/Mansfield/public.asp> show these three wetland areas joined by wetland or poorly drained soils.} Mr. Logan believes that wetlands (1) and (2) were once one and are separated by fill imported to construct the old farm road across it.

The proposed apartment complex of 47 two-story buildings would be accessed by a drive from Hunting Lodge Rd crossing wetland (1) on a bridge with a 30-ft span and turning north along the route of the old farm road between wetlands (1) and (2) to uplands on the northern part of the parcel, where most of the apartment buildings would be sited. (Emergency access would be from Northwood Rd.) Some fill on the east side of this route opposite the vernal pool would be removed to restore wetland in this area, and invasive barberry would be removed from wetland (1) north of the bridge. Two tunnels beneath the access drive would enable wildlife to move between wetlands (1) and (2) without dodging traffic.

According to Mr. Logan, the project has been designed to minimize impacts on wetlands and downstream areas. The apartment complex would be served by UConn's water and sewer system. Its buildings are to be spread out in small clusters so that runoff from impervious surfaces infiltrates the soil locally and the present pattern of drainage into wetlands is preserved. Pervious pavement would be used in overflow parking areas. Wetlands are to be buffered by undeveloped land, and bio-retention basins would filter runoff. In Mr. Logan's opinion, this project should not increase the volume (or decrease the quality) of runoff to Eagleville and Cedar Swamp Brooks.

The remaining visitors left the meeting at the conclusion of the presentation.

4. Membership. Alternate member Joan Buck is resigning. The Commission endorsed a statement of thanks drafted by Kessel:

The Commission thanks Joan Buck for her faithful efforts and for the perspective she has provided to it in recent years. It has been a privilege to have a former Town Council member work with us in dealing with Mansfield's conservation issues.

Kessel mentioned several people he thought would be good to have on the Commission; perhaps one of them can be interested in replacing Buck as an Alternate member.

5. Adjourned at 10:03p. Next meeting: 7:30p, Wednesday, 18 May 2016.

Scott Lehmann, Secretary, 24 April 2016.



Town of Mansfield

Inland Wetlands Agency

Date: April 27, 2016
To: Mansfield Inland Wetlands Agency
From: Jennifer Kaufman, Inland Wetlands Agent
Subject: Monthly Business Report

Mansfield Auto Parts - Route 32

On Friday, April 22, 2016, I met David Stokes from CT DEEP on site. He completed an inspection for solid and hazardous waste. His report is forthcoming and I will forward it to the Agency as soon as I receive it. It is my understanding the owners have been given an extension to comply with their Notice of Violation from CT DEEP's Bureau of Materials Management and Compliance Assurance for their industrial stormwater permit. I am in touch with CT DEEP and will update the Agency as soon as I get further information.

I inspected the site and there were no cars or potentially hazardous materials 25 feet from the edge of wetlands.

Carriage House Apartments

On Tuesday, April 26th, I was completing a site walk with the applicants and GEI Consultants at the Storrs Lodges, LLC site. As we approached the northeasterly boundary with Carriage house, I observed a large amount of silt and sediment entering the wetland from a concrete pipe that is connected to the storm drain system on Carriage House Drive. Upon further investigation, I determined that Carriage House was completing an emergency water main repair. No erosion or sedimentation controls were in place during this activity and because of this and the heavy rain, a large amount of sediment washed into the downgradient catch basins that drain directly to the wetlands through a concrete pipe. The contractors were approached and told to stop work immediately and install silt fence and hay bales at the outflow of the concrete pipe and to install silt socks in the two downgradient catch basins. I will continue to monitor this site until it is completely stabilized. When I inspected the site on Wednesday, April 27th the silt fence and hay bales were in place. The silt socks are being installed shortly. The owners are working to stabilize the area as soon as possible.

Agent Approvals

- **A9-Richard Knowlton-225 Mt Hope Road-** Construction of 14 x28 foot shed, over 75 feet from the edge of wetlands.



Town of Mansfield

Department of Planning and Development

Date: April 14, 2016

To: Mansfield Inland Wetlands Agency

From: Jennifer Kaufman, Inland Wetlands Agent

Subject: Dog Lane (Assessor's Parcel ID 14.41.23, File #W1561)
H. Raphaelson
Description of work: Lot Split
Map Date: January 12, 2016, revised through March 16, 2016

Notifications

- The applicant has paid the required application fee
- The applicant has submitted certified mail receipts for notices mailed to abutters

Project Overview

The applicant proposes to split a 15.85-acre parcel into two single family building lots served by on-site wells and septic systems. The proposed development will occur on approximately 2 acres of wooded uplands on the eastern edge of the parcel. The wetlands on the site are wooded fed by two unnamed intermittent streams and a culverted tributary that crosses dog lane. The wetland drains to the northeast and eventually to the Fenton River. Per staff request, the applicant submitted a Wetlands Assessment and Impact Analysis Summary of Findings.

There are no activities proposed in the wetlands or watercourses on the site, however the vast majority of the construction activities are proposed in the upland review area, with the closest activity being a footing drain, which is proposed to discharge 10 feet from the edge of wetlands. Per staff request, the applicant's engineer calculated the maximum discharge of this footing drain to be 1.0 gallon per minute. The footing drain will discharge groundwater and, at this rate, should provide no significant impacts to the wetlands.

Septic System: The primary septic systems fields for lots 1 and 2 are located approximately 66 feet and 94 feet from the edge of wetlands, respectively. The reserve septic system fields for lots one and two are located approximately 70 feet and 50 feet from the edge of wetlands, respectively. According to a March 14, 2016 memo from Eastern Highlands Health District, both proposed lots meet the State of Connecticut Public Health Code requirements for on-site sewage disposal systems and private water supply for a four bedroom house. As shown on the March 16, 2016 plan, engineered systems will be required. When the homes are ready to be built the applicants will be required to submit a detailed design of the engineered septic system to Eastern Highland Health District for review and approval. There has been concern expressed by the abutters and the Conservation Commission that there may be increased nitrogen loading as a result of the proposed septic systems. The nitrogen loading calculations

performed by Gerald Hardisty of CES were sent to the Sean Merrigan of the CT Department of Public Health (CT DPH) for review. Mr. Merrigan, of this CT DPH states in his 4/20/2016 email to Jeff Polhemus of Eastern Highlands Health District that Mr. Hardisty appears to have satisfactorily addressed the Town's concerns regarding nitrogen loading and that his calculations in fact do take a conservative approach to calculating nitrogen loading for wastewater. Mr. Merrigan points out that that Mansfield's Inland Wetlands regulations do not prescribe a method of calculation or specific limits for nitrogen loading from septic systems as these systems are regulated by Eastern Highlands Health District and the CT Public Health Code.

Species of Concern-The Regulations require applicant to review the State of Connecticut Department of Environmental Protection's Natural Diversity Database for the presence of any state-listed species or significant natural communities on the property. Two CT State Listed Species of Special Concern are within the vicinity of the site: the Appalachian brook crayfish and the wood turtle. From both the CT DEEP's recommendation and the applicant's analysis, it appears that the construction activities can be managed so as not to adversely impact these species. All recommendations detailed in the March 28, 2016 CT DEEP memo from Dawn McKay to Edward Pelletier should be incorporated into the site plan.

Long-term protection of the functions and values of the wetlands-It is likely that the construction activities associated with the two building lots can be adequately managed. However, the long term impacts of having development so close to a wetland is more difficult to manage. To ensure that a permanent buffer to protect the wetlands is maintained, the applicants should strongly consider placing a conservation easement that creates a 50 feet buffer from the edge of the wetlands on the site. The purpose of this easement would be restrict future development close to the edge of the wetlands, application of fertilizers and pesticides, and the cutting of vegetation. Buffering the wetland from nutrient loading and erosion sedimentation that could result from these activities will ensure the long-term protection of the resource.

Stormwater Management-To ensure that there will be no significant impact to the wetlands resulting from the increase in impervious surface I requested that Derek Dilaj, Mansfield's Assistant Engineer review the calculation provided by Mr. Hardisty for consistency with generally accepted engineering practices. The proposed project is identified to discharge by sheet flow to a wetland to the north east. This wetland eventually discharges below Farrell Road. The Engineer is considering a whole watershed based analysis. The project is located at the base of a 163 acre watershed. The Engineer's calculations indicate a negligible impact from the proposed development to the peak flow from the watershed.

Civil Engineering Services, LLC

203 Boston Hill Rd
ANDOVER, CT 06232
(860) 742-0364

JOB Raphaelsen - 214044

SHEET NO. 1 OF _____

CALCULATED BY CEB DATE 4-26-16

CHECKED BY _____ DATE _____

SCALE _____

Nitrogen Loading Calculation: (Due to septic system)

Lot 1:

Area: 28,137 SF above wetlands

rainfall contribution ~ 0.1 inch/day

$$= 2,345 \text{ ft}^3/\text{day}$$

$$\times \frac{7.48 \text{ g}}{\text{ft}^3} \cdot \frac{3.78 \text{ L}}{\text{gal}} = 66,647 \text{ L/day}$$

Nitrogen loading 40 mg/L * daily effluent

- 40% removal in septic tank

Assume daily effluent = 1 bedroom * 150 gal/bedm = 600 gal

$$\text{Nitrogen load} = (0.6)(40 \text{ mg/L}) (600 \frac{\text{gal}}{\text{day}}) (\frac{3.78 \text{ L}}{\text{gal}})$$

$$= 54,720 \text{ mg/day}$$

Nitrogen concentration =

$$\frac{54,720 \text{ mg/day}}{66,647 \text{ L/day}} = \underline{\underline{0.82 \text{ mg/L}}}$$

Lot 2:

Area: 40,826 SF \Rightarrow 96,703 L/day precip

Nitrogen load: 54,720 mg/day

$$\text{Concentration: } \frac{54,720 \text{ mg/d}}{96,703 \text{ L/day}} = \underline{\underline{0.56 \text{ mg/L}}}$$



Town of Mansfield

Department of Planning and Development

Date: April 27, 2016
To: Mansfield Inland Wetlands Agency
From: Jennifer Kaufman, Inland Wetlands Agent
Subject: 91 & 93 Meadowbrook Lane (File #W1562)
Uniglobe Investments, LLC
Description of work: construction of 36 dwelling units
Map Date: 1/8/2016, revised through 4/11/2016

Notifications

- The applicant has paid the required application fee
- The applicant has submitted certified mail receipts for notices mailed to abutters

Project Overview

The applicants propose to develop 36 dwelling units on a 4.6-acre parcel immediately west of the Whispering Glen multi-family complex on the south side of Meadowbrook Lane. There is an unnamed brook on the far west side of the parcel that drains to Conantville Brook, approximately 250 feet east of the site.

The area of development consists of flat upland area consisting of well, drained soils. There is no work proposed within the wetlands, however, the applicants have proposed to install two stormwater basins: one located on the northwestern portion of the site, approximately 15 feet from the edge of wetlands and one on the southwestern portion of the site approximately 45 feet from the edge of wetlands. I agree with the BSC report, which states that moving that the stormwater basins further away from wetlands would provide more protection of the wetland resources during construction and over the long term. However, as long as the design meets stormwater management requirements and sedimentation and erosion controls are carefully monitored during the construction activity, in my opinion, there will not be significant impact to wetlands. I have discussed this with the wetland ecologist, at BSC and she concurs with this opinion.

Wood Turtles, which are a species of concern have been identified on the site. The applicant has noted on the revised special recommended protection for wood turtles. This should be changed on the plans to read “special requirements for protection for wood turtles.”

The steep slopes are also of concern. The addition of the conservation easement on the revised plans will offer long term protection of the wetland resources, however, monitoring of sediment and erosion controls during construction along these slopes is imperative. Effort should be made to maintain a vegetative buffer composed of native plants between the disturbed area and the conservation easement area.

Recommendation/Suggested Motion

_____ MOVES, _____ seconds to adjourn the public hearing on the Inlands Wetlands Application of Uniglobe Investment, LLC to construct a 36 unit multi-family development at 91 and 93 Meadowbrook Lane (IWA File 1562) to May 16, 2016 and to schedule a special meeting of the Inland Wetlands Agency on May 16, 2016.

March 31, 2016

Tel: 860-652-8227
800-288-8123

Town of Mansfield Inland Wetland Agency
Town of Mansfield Planning & Zoning Commission
Attention: Ms. Linda Painter
Director of Planning and Development – Town of Mansfield
Audrey P. Beck Municipal Building
4 South Eagleville Road
Mansfield, CT 06268

www.bscgroup.com

RE: Peer Review
Meadowbrook Gardens
Special Permit Application and Inland Wetlands License

Dear Planning & Zoning Commission and Inland Wetland Agency Members and Ms. Painter:

BSC has completed its review of the applications for a Special Permit and Inland Wetlands license for the proposed 36 unit apartment complex known as Meadowbrook Gardens located at 91-93 Meadowbrook Lane in Mansfield, Connecticut. This letter report summarizes our findings and presents comments and questions that we have formed as a result of the review. This review encompasses the Project's compliance with the Town of Mansfield Zoning Regulations, Town of Mansfield Inland Wetlands & Watercourses Regulations, Town of Mansfield Engineering Standards and Specifications, 2004 Connecticut Stormwater Quality Manual and the 2002 Connecticut Guidelines for Soil Erosion & Sediment Control, and general engineering and best development practices.

Project Summary and Information Reviewed

The proposed project includes an expansion of the existing 50-unit development apartment complex, currently under construction at 73 Meadowbrook Lane, by an additional 36-units. The development will include four (4) buildings with associated bituminous parking and drive areas, as well as associated sidewalks, landscaping, and utilities. The main access to the site is off Meadowbrook Lane, with a secondary connection to the adjacent development. The site is approximately 4.6 acres and is a combination of wooded and grass areas with several small structures. The portion of the site to be developed, which is located on the northern half of the site, is relatively flat and generally slopes from east to west. The southern half of the site, as well as the portion along the western border, slopes down to an existing unnamed brook, which also helps define the limits of on-site wetlands. Portions of the slope exhibit a gradient of 40% and a change in vertical elevation of up to 28 feet.

This reports was generated based on our review of the following:

- The plan set "Meadowbrook Gardens, 91-93 Meadowbrook Lane, Mansfield Center, CT 06250," Uniglobe Investments, LLC, 73 Meadowbrook Lane, Mansfield Center, CT 06250, January 8, 2016.

Engineers

Environmental
Scientists

Custom Software
Developers

Landscape
Architects

Planners

Surveyors



- “Design Statement Drainage Calculations & Hydraulic Analysis, Uniglobe Investments, LLC,” by Civil Engineering Services, LLC, 203 Boston Hill Road, Andover, CT 06232, February 5, 2016.
- “Traffic Impact Report, Meadowbrook Gardens, Meadowbrook Lane, Mansfield, CT, Draft 3” by F.A. Hesketh & Associates, Inc., August 14, 2015.
- “On-Site Investigation Report, 91 & 93 Meadowbrook Lane, Mansfield, CT,” by Connecticut Ecosystems, LLC, August 11, 2015.
- Meadowbrook Gardens “Special Permit Application”, dated 2-9-16.

Additionally, we made several site visits to observe field conditions, and had conversations with Bob Magi (Uniglobe) and Gerald Hardisty, PE (Civil Engineering Services).

Stormwater Review

The site generally consists of sand, gravel and loam which, as defined by the National Resources Conservation Service (NRCS), are “well drained.” The applicant had soil samples tested for permeability by Connecticut-certified materials testing laboratory and the results verified the soils depicted by NRCS and observed by us on the site. The stormwater design intent was to take advantage of the existing soils and maximize percolation by utilizing a combination of dry wells (18), underground leaching galleys (27 4’x4’x4’ units) and two (2) shallow above-ground detention basins. The design intent was to infiltrate all stormwater generated within the development footprint for storms up to the 25-year storm, and thereby reduce the peak flow as required by the Town of Mansfield Zoning Regulations.

Our stormwater review comments are as follows:

1. We concur with the Applicant’s hydrologic design assumptions and computations, as well as the resulting intent to infiltrate stormwater utilizing the previously mentioned drainage facilities. We concur that the site peak flows will be reduced for storms up to the 50-Year storm, which satisfies the Town zoning requirements.
2. Based upon the specific site characteristics, the 2004 CT DEEP Stormwater Quality Manual requires a Water Quality Volume (WQV) storage of approximately 6,800 cubic feet. The applicant, through the use of dry wells, leaching galleys, and above-ground detention, has provided a water quality volume of approximately 11,100 cubic feet, which exceeds the required WQV.
3. Based upon the specific site characteristics, the 2004 CT DEEP Stormwater Quality Manual requires a Groundwater Recharge Volume (GRV) storage of approximately 1,670 cubic feet. The applicant, through the use of dry wells, leaching galleys, and above-ground detention, has provided a water quality volume of approximately 11,100 cubic feet, which exceeds the GRV.
4. The horizontal roof leaders that connect the roof drainage to the dry wells are designed to be four (4) inch diameter. We recommend the diameter be increased from four (4) inches to eight (8) inches.
5. The pipe connections between the two (2) sets of leaching galleys located on the southern end of the development are designed to be four (4) inches. We recommend



the diameter be increased to 12 inches.

6. A large percentage of drainage piping between dry wells and connected to catch basins are designed to be a diameter of six (6) inches. We recommend piping between dry wells and any piping connected to a catch basin and/or leaching basin be a minimum of 12 inch diameter.
7. Catch Basin – 4 is designed to have a TF = 236.7. Based upon the design contours at CB-4, the proposed grade is approximately 240. We recommend this be reviewed and the top of frame grade revised as appropriate.
8. We recommend that a detail, or at the least some more spot grading, be provided for the outlet of the detention basin located on the west side of the paved area.
9. We recommend that a detail of the emergency spillway at the small basin located west of the main entrance drive be provided.
10. Catch Basin – 7 has been designed to be at the low point of the paved area and it has been designed with a modified rip rap overflow to prevent erosion of the hill during large storm events, during which the leaching galleys/existing soil do not have the volume/percolation to prevent runoff from leaving the site. By our computations, the large storm events (50-year and up) will overflow and, during those events, the entire paved drive to the “238” contour will be ponded. We recommend, as a safety measure in lieu of the rip rap overflow down the entirety of the slope, that CB-7 be designed with a 12” outlet pipe at elevation 236. The outlet pipe would extend approximately 30’ to the bottom of the slope and be fitted with a concrete flared end and rip rap outlet control. We recommend this be designed per the 2000 ConnDOT Drainage Manual standards and a detail be provided.

Erosion & Sedimentation Control Review

11. Based on the fifth paragraph of the General Erosion and Sedimentation Control Notes, dust control seems to be left up to the contractor. We recommend that the notes be revised to indicated it is the contractor’s responsibility to provide dust control as necessary, and as required by the Town, to prevent fugitive emissions from leaving the site.
12. Based on the sixth paragraph of the General Erosion and Sedimentation Control Notes, an anti-tracking pad seems to be recommended but not required. Although there is an anti-tracking pad detail, we recommend revising the notes to indicate that an anti-tracking pad is required.
13. Although the plan calls for the use of temporary sediment traps, we do not see a detail of one. We recommend placing a temporary sediment trap detail, as shown on page 5-11-25 of the 2002 Connecticut Guidelines for Erosion & Sediment Control, on the plans.
14. We recommend a detail for a concrete washout area be provided on the plans, to ensure chemicals associated with concrete do not get washed towards the resource areas as concrete trucks and other equipment, are washed on-site after use. We also



recommend a note be added to the general notes requiring the contractor to utilize the concrete washout area detail during any operations that involve washing concrete off concrete trucks or other equipment.

15. Erosion and sedimentation controls should be extended along the southwest edge of the construction envelope, so that a continuous line of erosion and sedimentation controls extends along the undeveloped perimeter of the construction envelope.
16. We recommend that as an extra layer of protection for the resource area, along the southern and western borders of the developed area, a double row of silt fence or a hay bale-reinforced row of silt fence be used in lieu of the single row of silt fence that is currently shown.

Sanitary Review

In accordance with the Connecticut Department of Public Health Code On-Site Sewage Disposal Regulations, and Technical Standards for Subsurface Sewage Disposal Systems, Section IV, Design Flows, the peak design flow for a residential building is 150 gallons per day per bedroom. Assuming two (2) bedrooms per unit, the peak design flow is 300 gallons per day (gpd). Based on 18 units, the total peak flow for the development is 5,400 gallons per day.

17. Sanitary laterals are shown on the Site Plan; however, their material, diameter, inverts, and slopes are not shown. In accordance with Section V.A.1 – Utilities, of the Town of Mansfield Department of Public Works Engineering Standards and Specifications, we recommend the plans be revised to show the following:
 - Diameter (minimum 4”).
 - Inverts and slopes, to ensure the laterals do not conflict with storm drain pipes.
 - Material (recommend PVC to match the same material as the sanitary collector pipes, which are designed to be PVC.)
18. We recommend that reference on the plans be made to require the construction of all sanitary facilities to be constructed to the Mansfield Department of Public Works Engineering Standards and Specifications, specifically:
 - Sanitary Drop Manhole.
 - Sanitary Manhole Invert.
 - Sanitary Service Connection to Sanitary Main.
 - Typical Trench Section.
19. Based on a conversation on March 28, 2016 with David Garand, Windham Water Pollution Control Authority (WPCA), he has received a set of plans and performed a review. He indicated that the WPCA facility has the capacity to accept the proposed design flow. He indicated that the WPCA had several minor comments that were sent back to the applicant but that he has not received any revised plans yet.



Wetlands Review

On Thursday, March 24th, BSC conducted a site visit to evaluate proposed potential impacts to regulated wetland/watercourse resources and the associated 150' Upland Review Area (URA). BSC reviewed the project site in accordance with Connecticut Public Act No 155 of 1972 and associated amendments, Connecticut General Statutes Sections 22a-36 to 22a-45 inclusive, and with Bylaws for the Mansfield Inland Wetlands Agency and associated "Inland Wetlands & Watercourses Regulations". BSC reviewed project documents listed above, and the Natural Resources Conservation Service soils mapping (Web Soil Survey) for the project site. It should be noted that BSC was not requested to review the placement of wetland boundary flagging on the site, but has been requested to evaluate the proposed project for potential impacts to wetland resource areas. In this regard, BSC provides the following comments.

20. Although not specifically requested to review wetland flag locations, BSC did walk the flagged wetland boundary, and concurs that flagging is generally correctly located. The flagged wetland borders the stream that flows along the western edge and through the southern portion of the property. Land slopes steeply upwards from the wetland and stream, with forested upland occurring on the slopes. Most of the level land at the top of the slope is mowed grass and yard associated with existing houses and buildings on the property.
21. No direct impacts to wetlands or stream are proposed. Maintenance of naturally vegetated areas that buffer these resources, particularly where slopes are steep, will help protect wetland resources from impacts. Greater protection of regulated wetland/watercourse resources would be achieved if proposed development were removed from forested areas within the 150' URA. Portions of the URA are already altered and maintained as mowed grass/yard. These altered URA areas provide fewer of the buffering services that the undisturbed URA provides, and thus are more suited to development. BSC recommends that the Applicant evaluate opportunities to move development out of the forested portion of the 150' URA.
22. On the western side of the property, near Meadowbrook Lane, a stormwater basin is proposed within approximately 15 feet of the wetland boundary. BSC recommends that this feature be moved as far as possible from the wetland boundary.
23. On the southwest side of the development, another stormwater basin is located within approximately 45 feet of the wetland boundary. BSC recommends that the Applicant consider moving this feature as far as possible from the wetland boundary.
24. In the southeast portion of the development footprint, forested land is proposed to be cut within the URA, and a paved drive and parking area are proposed in this area. BSC recommends that the Applicant consider reducing or moving the footprint for the paved area so that impacts to the naturally vegetated URA area are reduced.
25. Maintaining erosion and sedimentation controls during the construction phase will be essential for protecting the stream, wetlands and associated naturally vegetated URA,



given the steep grade on the slopes above the regulated wetland/waterway resources. BSC recommends at least weekly construction phase environmental inspections to ensure that erosion and sedimentation controls are maintained, and an inspection of erosion and sedimentation controls prior to the start of construction.

Traffic Impact Study

In general, we concur with the design approach and methodology of the applicant's traffic impact study. We concur that the report demonstrates that the existing roadway infrastructure has sufficient capacity to accommodate the proposed site generated traffic and should not require off-site mitigation with the exceptions and requested clarifications as outlined below.

26. Traffic Counts - The traffic turning movement counts were collected in late June and early July of 2015. Eastern Connecticut State University is located approximately one mile from the project site and the University of Connecticut is located approximately six miles from the project site. Both of these universities significantly affect the traffic volumes in the area which would not have been reflected in the traffic data that was collected since the academic year had ended. We would recommend that the traffic information at a minimum be seasonally adjusted to account for this condition or new data be collected and analyzed.
27. The report does not include any discussion or analysis of the intersection of Meadowbrook Lane and Mansfield City Road. All traffic heading to or from the west and south of the project site will travel through this intersection and therefore we recommend it should be studied.
28. Sight Distance - We concur that the proposed site driveway location appears to have sufficient sight distance to allow ingress and egress to the site. Please confirm that any proposed driveway landscaping or signing does not block the required sight lines. No sight distance triangle diagrams were provided.
29. Turning Movements - The report states that an SU-30 design vehicle was used to determine the layout of the proposed site driveway which is in concurrence with the ConnDOT Highway Design Manual for a minor commercial drive. However, no turning movement graphics we provided for review. Additionally, we would recommend that the Town of Mansfield emergency personnel be given the opportunity to comment regarding emergency vehicles access into as well as circulation throughout the entire proposed site.
30. Trip Generation – It is discussed that the two Meadowbrook Garden developments will have separate access points onto Meadowbrook Lane as well as the proposed internal connection. We would suggest that the two developments be analyzed separately as there will not likely be many trips that cross the developments to utilize another driveway. The trip distribution showing 134% instead of 100% is not standard. As noted in the report, this could account for some variation in the distribution and given the small volumes would not likely have a large impact on the analysis.
31. The site location referenced as Figure 1 was not provided. Please provide.



32. Description of the Area – the 3rd paragraph states “Conantville Road originates at an un-signalized intersection with S.R. 632 (North Frontage Road).” This intersection appears to be signalized. Please clarify.
33. Table 2 indicates that the traffic data is for EB only but the data provided in the appendix appears to indicate it is for both directions. Please clarify.
34. Capacity Analysis and Traffic Impact
 - a. The LOS for the intersection of Route 195 and Conantville Road will be reduced to LOS D in the future condition. Although there is a decrease in the LOS, as noted in the report the increase in the delay is minor.
 - b. Intersection Analysis does not include discussion or analysis of the intersection of Meadowbrook Lane and Mansfield City Road.
35. Crosswalk – a proposed midblock crosswalk is shown on the submitted plans but lack proposed signing. Please provide appropriate signing and pavement markings that meet Town, ConnDOT, and MUTCD standards.

Please do not hesitate to contact our office with any inquiries you may have.

Very truly yours,
BSC Group-Connecticut, Inc.

Will Walter, PE, LEED AP
Manager of Civil Engineering

Richard Zulick
Certified Forester / Soil Scientist
400 Nott Highway
Ashford, CT
06278

April 6, 2016

Town of Mansfield
Inland Wetlands and Watercourses Commission
Mansfield, CT.

Re: Wetland function and value assessment report, Meadowbrook Gardens 91 -93 Meadowbrook Lane ,
Mansfield Center, Connecticut 06250

Dear Commissioners:

At your request, I have reviewed the Meadowbrook Gardens development plan for the purposes of assessing the wetland functions and values and potential impacts to the wetlands associated with the development of four multiple unit buildings on approximately 4.6 acres.

Existing Conditions

The proposed development area consists of a relatively flat gravelly upland area located south of Meadowbrook Lane and west of the Whispering Glen – Phase 1 development.

Currently, the proposed development area consists of upland well drained soils. These soils are a Canton – Charlton series which consist of very deep soils formed in a loamy mantle underlain by sandy till. The Taxonomic Class is coarse loamy over sandy-skeletal, mixed semiactive, mesic Typic Dystrudepts. These soils are deep and well drained. They have moderately rapid permeability in the substratum. The runoff class is low, the depth to a spring water table is in excess of 80 inches and the frequency of flooding and ponding is none. The Canton – Charlton gravelly soils are very well suited for the proposed development.

The uplands adjacent to the proposed development are currently forested and will remain as such with the exception of the sparsely vegetated area located to the east between the proposed development and the Whispering Glen development which is under construction.

The central area of this lot, while fairly open, has a good number of early succession White Pine saplings and seedlings. The uplands adjacent to the wetlands is a mature forest containing well stocked White Pine, Hickory, White Oak with an understory of suppressed White Pine, Maple, Beech and Black Birch. The area between the proposed development and the Whispering Glen development contains a 50' to 75' sparsely wooded strip containing large diameter pasture type Maple and White Pine near Meadowbrook Lane transitioning to mature White and Black Oak toward the rear of the lot.

The development area is relatively level throughout while the areas adjacent to the south and west have steeper slopes which drop down to wetlands and an intermittent watercourse beyond the toe of the slopes. This intermittent watercourse leads to Conantville Brook which is a significant watercourse that originates south of Stearns Road and travels under Pleasant Valley as well as Mansfield City Road. Conantville Brook intersects Sawmill Brook, east of Conantville Road. Sawmill Brook empties into the Natchaug River at Lauter Park east of Route 195 and south of the Willimantic Reservoir which is well downstream of the Willimantic Water Works facility

The wetlands and watercourse has been field delineated in April of 2016. This delineation is in agreement of the prior delineation provided by Edward Pawlak. The wetlands were field delineated in accordance with the standards of the standards of the National Cooperative Soil Survey and the definition of wetlands as found in the Connecticut General Statutes, Chapter 440, Section 22A-38. My delineation has been flagged with Fluorescent pink and blue flagging labeled with numbers WB1 to WB34.

This delineation is not intended to be used for soil mapping but to identify the wetland soils relative to the development and management of this parcel. The wetlands/ watercourse boundaries have been marked with florescent pink and blue flagging as shown on plan.

Wetlands

The predominant wetland area flagged is an intermittent watercourse, however, a few small areas of wetland soil exist adjacent to the watercourse between the edge of the watercourse and the upland soil leading to the area of proposed development. These wetland areas range in depth from 2 linear feet to approximately 20 linear feet south and west of some of the larger flatter areas along the toe of the slope. Additional forested wetland soils exist beyond the watercourse primarily to the west and southwest.

Soils in the wetland areas are primarily the Ridgebury Soil Series and Ridgebury Leicester complex. The Ridgebury Soil Series consists of deep, somewhat poorly and poorly drained soils formed in till derived from granite and schist. These soils are commonly shallow to a densic contact. They are nearly level and gently sloping in low areas within uplands.

TAXONOMIC CLASS: Loamy, mixed, active, acid, mesic shallow Areic Endoaquept

A palustrine scrub-shrub/forested wetland complex lies adjacent to the rear of the intermittent stream on the abutting property. This wetland is vegetated with mixed hardwoods in the sapling and/or small saw timber stages in the overstory, (red and sugar maple, scarlet oak and hickory) and the understory is made up of saplings and various wetland shrub species and vines.

Wetland Functions and Values

The wetland complex was inspected to determine wetland functions utilizing the Army Corps. Of Engineers methodology as outlined in "The Highway Methodology Workbook Supplement". These wetlands and Brook exhibited the following wetland functions with the corresponding rationale:

Ground water recharge and discharge: potential for and public or private wells occur downstream of the wetland, wetland is underlain by stratified drift and gravel or sandy soils present in or adjacent to the wetland, wetland is associated with a perennial watercourse, quality of water associated with the wetland is high and wetland shows signs of variable water levels.

Flood flow alteration: the area of this wetland is large relative to its watershed, effective flood storage is small or non-existent upslope of or above the wetland, wetland contains hydric soils which are able to absorb and detain water, wetland exists in a relatively flat area that has flood storage potential, wetland has ponded water, and signs are present of variable water level, wetland receives and retains overland or sheet flow runoff from surrounding uplands, in the event of a large storm, this wetland receives and detains excessive flood water from a watercourse, valuable properties, structures, or resources are located in or near the floodplain downstream from the wetland, this wetland watercourse is sinuous and diffuse and channel flow velocity is reduced by this wetland.

Fish habitat: forest land and open land are dominant in the watershed above and adjacent to this wetland, there are an abundance of cover objects present, the size of the ponded areas and Brook are able to support very limited small fish populations The wetland is part of a larger, contiguous downstream watercourse, the quality of the watercourse associated with this wetland is able to support healthy fish/shellfish populations in Conantville Brook well downstream of the site.

Sediment/toxicant retention: potential sources of sediment are in the watershed above the wetland, opportunity for sediment trapping by slow moving water and deep water habitat are present in this wetland, fine grained mineral or organic soils are present, long duration water retention time is present in this wetland, public or private water sources occur downstream, effective floodwater storage in wetland is occurring, areas of impounded open water are present, channelized flows have visible velocity decreases in the wetland, diffuse water flows are present in the wetland, wetland has a high degree of water and vegetation interspersion, and dense vegetation provides opportunity for sediment trapping and/or signs of sediment accumulation by dense vegetation is present.

Nutrient removal: Shallow water and limited open water habitat exists within the complex beyond the intermittent watercourse. Overall potential for sediment trapping exists in the same areas. Saturated soils exist for most of the season, ponded water may be present in the wetland, organic/sediment deposits are present, dense vegetation is present with emergent vegetation and/or dense woody stems

dominant, water retention/detention time in this wetland is increased by thick vegetation and other dense herbaceous and shrub vegetation in wetlands utilize and immobilize excess nutrients transported/deposited by developed areas upstream.

Production export: Wildlife food sources grow within the wetland beyond the watercourse, evidence of limited wildlife use found within this wetland, higher trophic level consumers may be utilizing this wetland, a few high vegetation density are present, wetland exhibits moderate degree of plant community structure/species diversity, wetland contains flowering plants that are used by nectar-gathering insects.

Sediment/shoreline stabilization: indications of limited siltation is present, topographical gradient exist in wetland, potential sediment sources are present upstream, a wide wetland (>10') borders the backside of the Brook , some moderate flow velocities can occur in the Brook during and after significant storm events , dense vegetation and energy-absorbing emergents and/or shrubs border the Brook to protect water quality.

Wildlife habitat: Wetland is fragmented by significant development both upstream and downstream, however, upland immediately surrounding this wetland is undeveloped and will remain so after completion of this project. No significant animal signs observed (tracks, scats, nesting areas, etc.), wetland contains a population of insects and amphibian populations

A review of the Natural Diversity Data Base maps and files for this area show records of *Glyptemys insculpta* (Wood Turtle) in the vicinity of this property. While no indication of this turtle was observed during my investigation, best management practices for this state special concern turtle are recommended.

Disturbances to the stream and riparian habitats as well as activities that change the hydrology of the stream (watercourse) could threaten the wood turtle. Although Wood Turtle can be found in forested areas, they always prefer areas that do not have full tree canopy cover similar to the areas observed on the streamside opposite the proposed development. The greatest concern during projects within Wood Turtle habitat are for turtles being run over and crushed by mechanized equipment.

Work within the wetlands and the riparian area between April 1st and September 30th should follow the recommended strategies to protect the Wood Turtle:

- Silt fencing should be installed around the work area prior to construction. This fencing should consist of a full row of natural hay bales well outside of a standard row of silt fence. The use of plastic embedded netting should not be used within direct contact of this type of wildlife.
- Where possible, avoid installing sediment and erosion control materials from late August through September and from March through mid-May. These two time periods are when amphibians and reptiles are most active.
- After silt fencing is installed and prior to construction, a thorough sweep of the work area should be conducted by a qualified individual to look for turtles.
- Workers should be apprised of the possible presence of Wood Turtles , and provided with a description of the species.

- If turtles are discovered, they should be moved, unharmed, to an area immediately outside of the fenced area, and positioned in the same direction that it was moving.
- No vehicles or machinery should be parked in the area outside the installed fence.
- Work conducted during early morning and evening hours should occur with special care not to harm basking or foraging turtles.
- All silt fencing should be removed after work is completed and soils are stable so that reptile and amphibian movement is not restricted.
- Stockpiles of soil should be well cordoned off with silt fence to prevent any native species from nesting in them.

If these protective strategies are followed, it is my opinion that no significant risk to the Wood Turtles will be imparted to this area.

The wetlands were also examined for wetland values (recreational, educational/scientific, visual/aesthetic, or uniqueness/heritage values) and the following values were noted with their rationale:

Recreational value: The wetlands and brook have a limited trail along the abutting sewer line accessible for hiking and photography.

Educational/scientific value: There are a diversity of wetland classes present, any wetland is considered valuable wildlife habitat, there is potential direct access to a perennial stream, if the trail was utilized, it could serve as an educational site a short distance from public schools.

Visual/aesthetic value: There are more than 3 acres of wetlands, an intermittent watercourse and a diversity of vegetative species in view from primary viewing locations, wetland is also easily accessed and considered to be valuable wildlife habitat.

Endangered species habitat: A review of the Natural Diversity Database and a thorough inspection of the wetlands and uplands surrounding the site revealed no specific endangered species habitat was present.

Conclusions:

In summary, it is my opinion that the wetland area, which includes the palustrine scrub-shrub/forested wetlands and floodplain beyond the watercourse / property boundary, are a highly functioning wetland ecosystem which exhibits 8 wetland functions and 3 out wetland values.

Design Plan Review

The extensive use of the seven T-type catch basins combined with storm sewer piping to two storm water recharge basins and three ground water infiltration units consisting of twenty seven individual concrete 4x4 HD Galleries should provide adequate control of precipitation and subsequent impermeable surface runoff generated by this site. It is my opinion that given the permeable type of soils that this project is proposed upon, this proposed construction will have no adverse impact on the surrounding areas including the wetlands.

If you have any questions concerning the wetland function assessment or this report, please feel free to contact me.

Sincerely,



Richard Zulick
Certified Forester and Soil Scientist
Member SSSSNE

SCHEDULE OF DIMENSIONAL REQUIREMENTS
ZONE R-20 DMR

	REQUIRED/ALLOWED	PROVIDED
MINIMUM LOT AREA:	5 ACRES	14.79 ACRES
MINIMUM LOT FRONTAGE:	300'	774.41'
MAXIMUM BUILDING HEIGHT:	40'	33'
MAXIMUM BUILDING COVERAGE:	25%	9.9%
*UNIT DENSITY: (5000 SF/UNIT)	86	86

*SEE ART. X.4.A.4.D REQUIRING SPECIAL DIMENSIONAL EXCEPTIONS BY THE COMMISSION

AFFORDABLE HOUSING UNITS (20%) - ART. X SEC. 6.K	
TWO BEDROOM UNITS - 1200 SQ.FT. LIVABLE AREA OR LESS	
UNITS IN 2-FAMILY DWELLINGS	0
MULTI FAMILY DWELLINGS	18
ACCESSIBLE HOUSING UNITS	4 MIN. 4

NOTE: THE DEVELOPER WILL COORDINATE WITH THE MANSFIELD HOUSING AUTHORITY AND OTHER STATE AND REGIONAL AGENCIES THAT PROMOTE AFFORDABLE HOUSING OPPORTUNITIES TO MARKET THE AFFORDABLE UNITS TO LOW AND MODERATE INCOME FAMILIES.

UNIT DENSITY CALCULATION (ART.X.A.5.B)*
 TOTAL SITE AREA = 14.89 ACRES (648,302 SQ.FT.)
 AREA OF SLOPES > 15% = 1.97 ACRES (85,085 SQ.FT.)
 AREA OF WETLANDS = 2.89 ACRES (125,828 SQ.FT.)
 641,302 - 85,085 - 125,828 = 430,389 SQ.FT.
 430,389 SQ.FT./5000SF/UNIT = 86.07 UNITS

PARKING-MEADOWBROOK GARDENS-(ART X.A.5.B)
 PARKING REQUIRED (36 UNITS x 2 SPACES/UNIT) = 72
 REGULAR PARKING SPACES PROVIDED - 81
 HANDICAP PARKING SPACES PROVIDED - 4
 TOTAL PARKING SPACES PROVIDED - 85

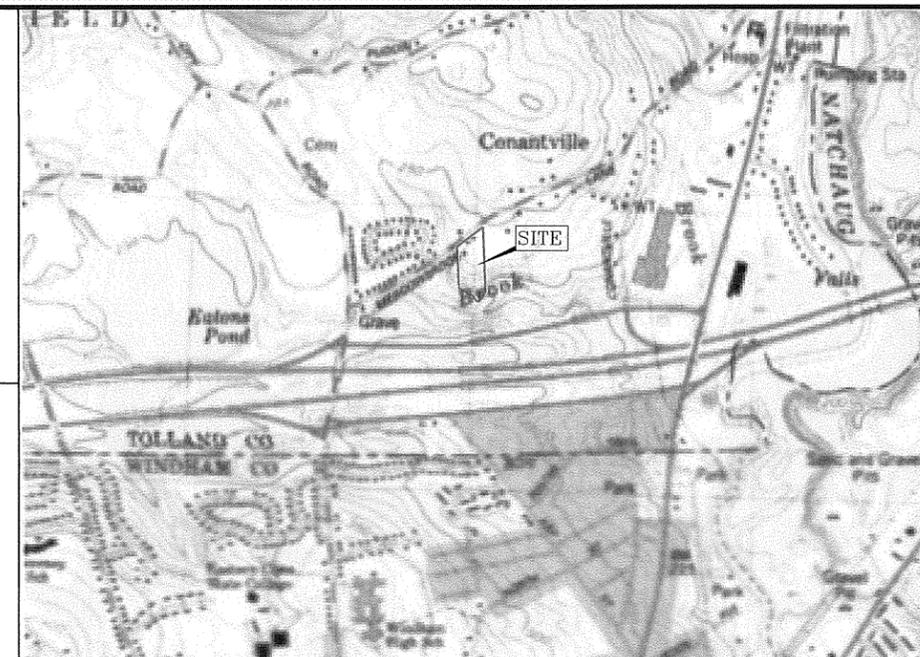
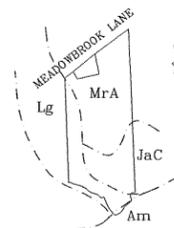
SOIL MAP

SCALE : 1" = 400'

--- SOILS LEGEND ---

SYMBOL DESCRIPTION
 Am ALLUVIAL LAND
 JcC JAFFREY GRAVELLY SANDY LOAM AND LOAMY SAND, 3 TO 15 PERCENT SLOPES
 Lg LEICESTER-RIDGEBURY-WHITMAN VERY STONY COMPLEX
 MxA MERRIMAC FINE SANDY LOAM, 0 TO 3 PERCENT SLOPES

--- SOILS DATA AS PER : "SOIL SURVEY, TOLLAND COUNTY, CONNECTICUT, UNITED STATES DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE"



LOCATION MAP

SCALE : 1" = 1000'

NOTES:

1.) SUBJECT PROPERTY IS NOT LOCATED IN AN AQUIFER PROTECTION AREA AS DELINEATED ON MAP ENTITLED "AQUIFER PROTECTION AREAS MANSFIELD, CT, DECEMBER 28, 2015" PREPARED BY THE STATE OF CONNECTICUT DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION 79 ELM STREET HARTFORD, CT 06106-5127.

MEADOWBROOK GARDENS

91-93 MEADOWBROOK LANE
 MANSFIELD CENTER, CONNECTICUT 06250

OWNER & APPLICANT

UNIGLOBE INVESTMENT, LLC
 73 MEADOWBROOK LANE
 MANSFIELD CENTER, CT 06250

JANUARY 8, 2016

REVISED: APRIL 11, 2016

INDEX TO SHEETS

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EROSION, SEDIMENTATION & MAINTENANCE PLAN	SHEET 6 OF 11
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LANDSCAPE-LIGHTING-SIGN DETAILS	SHEET 11 OF 11

APPROVED BY THE TOWN OF MANSFIELD INLAND WETLAND AGENCY

CHAIRMAN _____ DATE _____

APPROVED BY THE MANSFIELD PLANNING AND ZONING COMMISSION

CHAIRMAN _____ DATE _____

APPROVED BY THE DIRECTOR OF HEALTH

DIRECTOR _____ DATE _____

APPROVED BY THE DIRECTOR OF PUBLIC WORKS

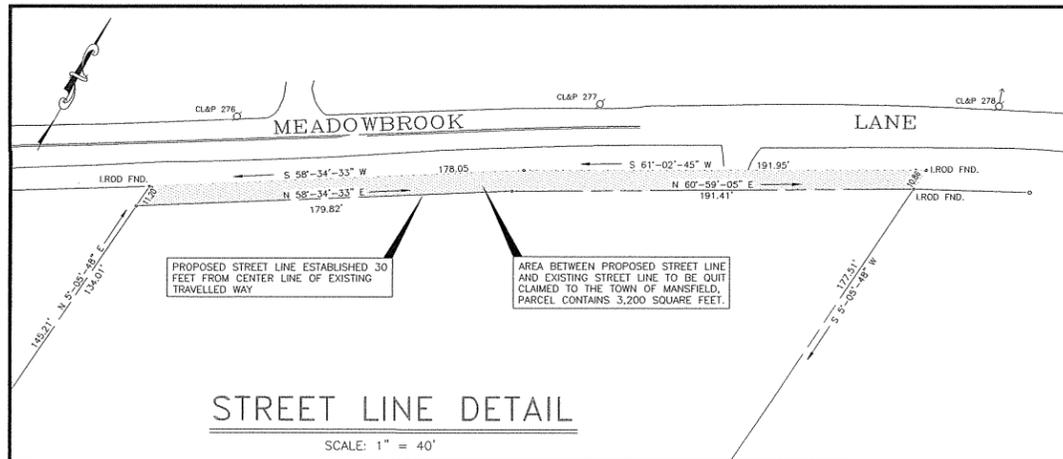
DIRECTOR _____ DATE _____

DATUM ENGINEERING & SURVEYING, LLC
 132 CONANTVILLE ROAD
 MANSFIELD CENTER, CONNECTICUT 06250

GERALD HARDISTY, P.E.
 203 BOSTON HILL ROAD
 ANDOVER, CONNECTICUT 06232

JOHN ALEXOPOULOS, ASLA
 16 STORRS HEIGHTS ROAD
 STORRS, CONNECTICUT 06268

JOB NO. 215049
 SHEET 1 OF 11



TEST HOLE DATA

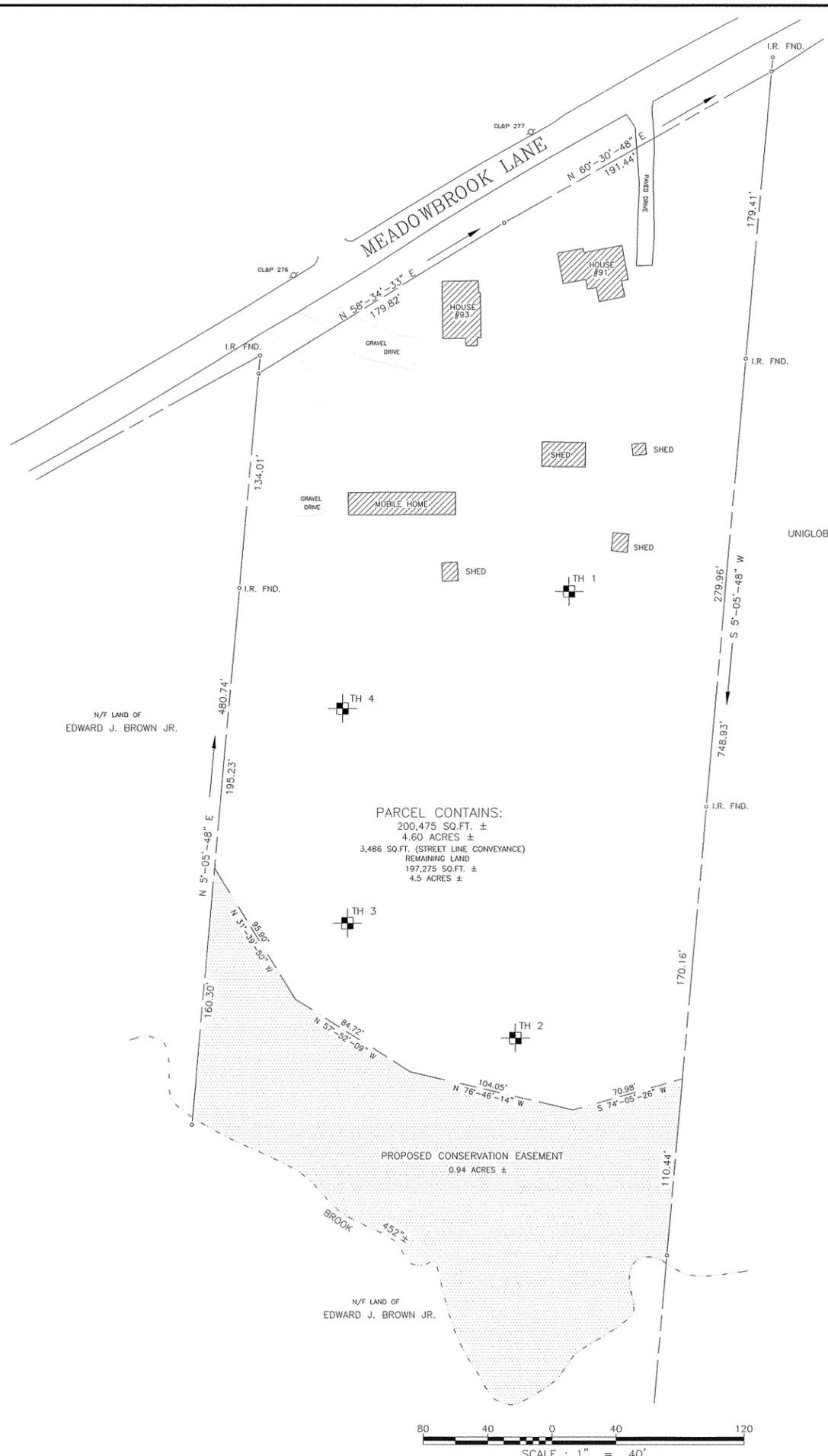
OBSERVED BY GERRY HARDISTY, P.E. ON 12/30/15

TEST HOLE 1
0-5" TOPSOIL
5-12" BROWN FINE SANDY LOAM
12-22" LT. BROWN FINE SAND W/3" BAND AT BOTTOM
22-36" YELLOW/BROWN MED SAND
36-57" REDDISH COARSE SAND & GRAVEL
57-77" YELLOW/BROWN MED/COARSE SAND
VERY DISTINCT LAYERS

TEST HOLE 2
0-20" DARK BROWN FINE SANDY LOAM
20-44" TAN VERY FINE SILTY SAND
44-60" LAYERS OF FINE SAND & VERY FINE SAND
STRIPPED ORANGE AND GRAY
60-84" COARSE AND VERY COARSE SAND & GRAVEL
NOTE: LAYER OF VERY FINE SAND IN A SLOPE GETTING
DEEPER TOWARDS THE EAST, BETTER MATERIAL
ON THE WEST END.

TEST HOLE 3
COARSE SAND AND GRAVEL TOP TO BOTTOM

TEST HOLE 4
0-24" TRACE TOPSOIL TO DARK BROWN FINE SANDY LOAM
24-46" REDDISH/BROWN FINE SAND TO SILT
46-60" VERY COARSE SAND & GRAVEL
60-72" CLEAN MED-COARSE SAND



LEGEND

- PROPERTY LINE _____
- ABUTTER PROPERTY LINE _____
- EDGE PAVEMENT _____
- EDGE GRAVEL _____
- IRON ROD FOUND I.R. FND. ○
- UTILITY POLE CL&P 276 ○
- TEST HOLE [Symbol]

APPROVED BY THE TOWN OF MANSFIELD INLAND WETLAND AGENCY

CHAIRMAN _____ DATE _____

APPROVED BY THE MANSFIELD PLANNING AND ZONING COMMISSION

CHAIRMAN _____ DATE _____

APPROVED BY THE DIRECTOR OF HEALTH

DIRECTOR _____ DATE _____

APPROVED BY THE DIRECTOR OF PUBLIC WORKS

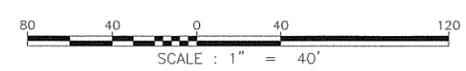
DIRECTOR _____ DATE _____

MAP REFERENCE:

"PROPERTY SURVEY OF 91 & 93 MEADOWBROOK LANE MANSFIELD, CT PREPARED FOR JACK YANG" SHEET NO. 1 OF 1 SCALE 1"=40' JANUARY 8, 2015 PROJECT NO. 14-079 PREPARED BY J DEMPSEY ASSOCIATES PROFESSIONAL LAND SURVEYORS 76 BRAINARD ST. NEW LONDON, CT.

BOUNDARY SURVEY
PREPARED FOR
UNIGLOBE INVESTMENT, LLC.

91 & 93 MEADOWBROOK LANE
MANSFIELD, CONNECTICUT
SCALE: 1" = 40' DATE: JANUARY 7, 2016
REVISED: APRIL 11, 2016



THIS SURVEY AND MAP HAS BEEN PREPARED IN ACCORDANCE WITH SECTIONS 20-300b-1 THRU 20-300b-30 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES - "MINIMUM STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ENDOSED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. IT IS AN IMPROVEMENT LOCATION MAP BASED ON A DEPENDENT RESURVEY CONFORMING TO HORIZONTAL ACCURACY CLASS "A-2". THIS SURVEY AND MAP IS INTENDED TO ENABLE DETERMINATION OF COMPLIANCE OR NON-COMPLIANCE WITH APPLICABLE MUNICIPAL OR STATUTORY REQUIREMENTS.

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

EDWARD PELLETER, L.S. #14203

ANY ORIGINAL OR DUPLICATE OF THIS MAP IS NOT VALID UNLESS IT BEARS THE EMBOSSED SEAL OF THE SURVEYOR WHOSE REGISTRATION NUMBER AND SIGNATURE APPEAR ABOVE. NO OTHER CERTIFICATION OR WARRANTY IS EXPRESSED OR IMPLIED.

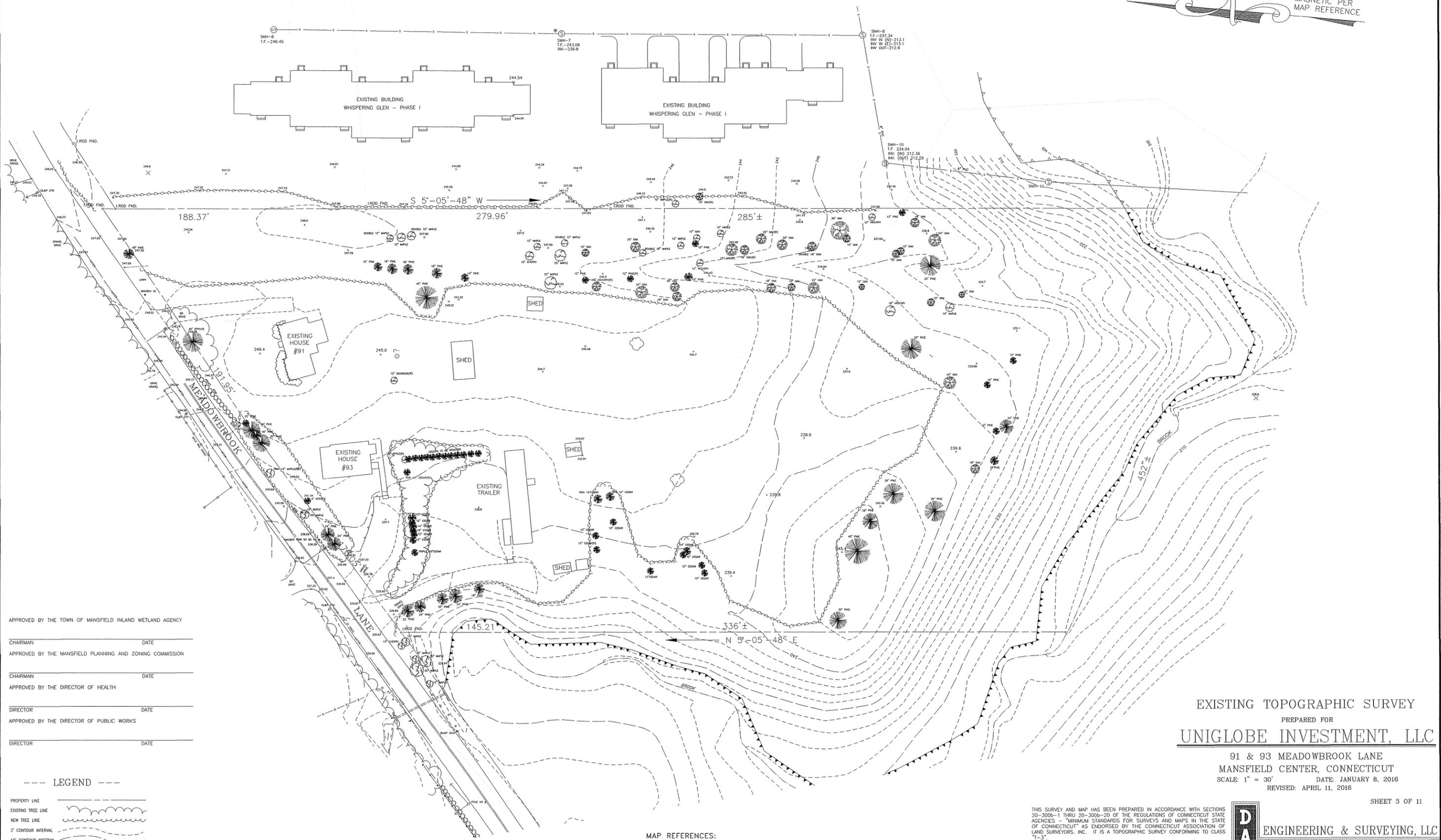
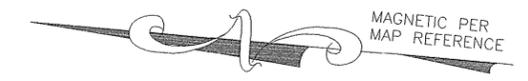
DATUM

SHEET 2 OF 11
ENGINEERING & SURVEYING, LLC

132 CONANTVILLE ROAD
MANSFIELD CENTER, CT 06250
TEL (860)456-1357 FAX (860)456-1840

CHECKED BY: _____ CORRECTIONS BY: _____

MAGNETIC PER
MAP REFERENCE



APPROVED BY THE TOWN OF MANSFIELD INLAND WETLAND AGENCY

CHAIRMAN _____ DATE _____

APPROVED BY THE MANSFIELD PLANNING AND ZONING COMMISSION

CHAIRMAN _____ DATE _____

APPROVED BY THE DIRECTOR OF HEALTH

DIRECTOR _____ DATE _____

APPROVED BY THE DIRECTOR OF PUBLIC WORKS

DIRECTOR _____ DATE _____

--- LEGEND ---

- PROPERTY LINE
- EXISTING TREE LINE
- NEW TREE LINE
- 2' CONTOUR INTERVAL
- 10' CONTOUR INTERVAL
- EXISTING SPOT GRADE
- WETLAND SOIL LIMITS
- EXISTING WATER LINE
- EXISTING SEWER LINE
- WATER SHUTOFF VALVE



MAP REFERENCES:

- 1.) "PROPERTY SURVEY OF 91 & 93 MEADOWBROOK LANE MANSFIELD, CT PREPARED FOR JACK YANG" SHEET NO. 1 OF 1 SCALE 1"=40' JANUARY 8, 2015 PROJECT NO. 14-079 PREPARED BY J DEMPSEY ASSOCIATES PROFESSIONAL LAND SURVEYORS 76 BRAINARD ST. NEW LONDON, CT.
- 2.) "PROPOSED WALKWAY - WHISPERING GLEN ALONG MEADOWBROOK LANE MANSFIELD CENTER, CT. PREPARED FOR UNIGLOBE INVESTMENTS, LLC SCALE: 1" = 20' DATE: SEPT. 21, 2015" PREPARED BY DATUM ENGINEERING AND SURVEYING, LLC.

THIS SURVEY AND MAP HAS BEEN PREPARED IN ACCORDANCE WITH SECTIONS 20-300b-1 THRU 20-300b-20 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES "MINIMUM STANDARDS FOR SURVEYS AND MAPS" IN THE STATE OF CONNECTICUT AS ENDORSED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. IT IS A TOPOGRAPHIC SURVEY CONFORMING TO CLASS "T-3".

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

EDWARD A. PELLETIER, L.S. # 14203

ANY ORIGINAL OR DUPLICATE OF THIS MAP IS NOT VALID UNLESS IT BEARS THE EMBOSSED SEAL OF THE SURVEYOR WHOSE REGISTRATION NUMBER AND SIGNATURE APPEAR ABOVE. NO OTHER CERTIFICATION OR WARRANTY IS EXPRESSED OR IMPLIED.

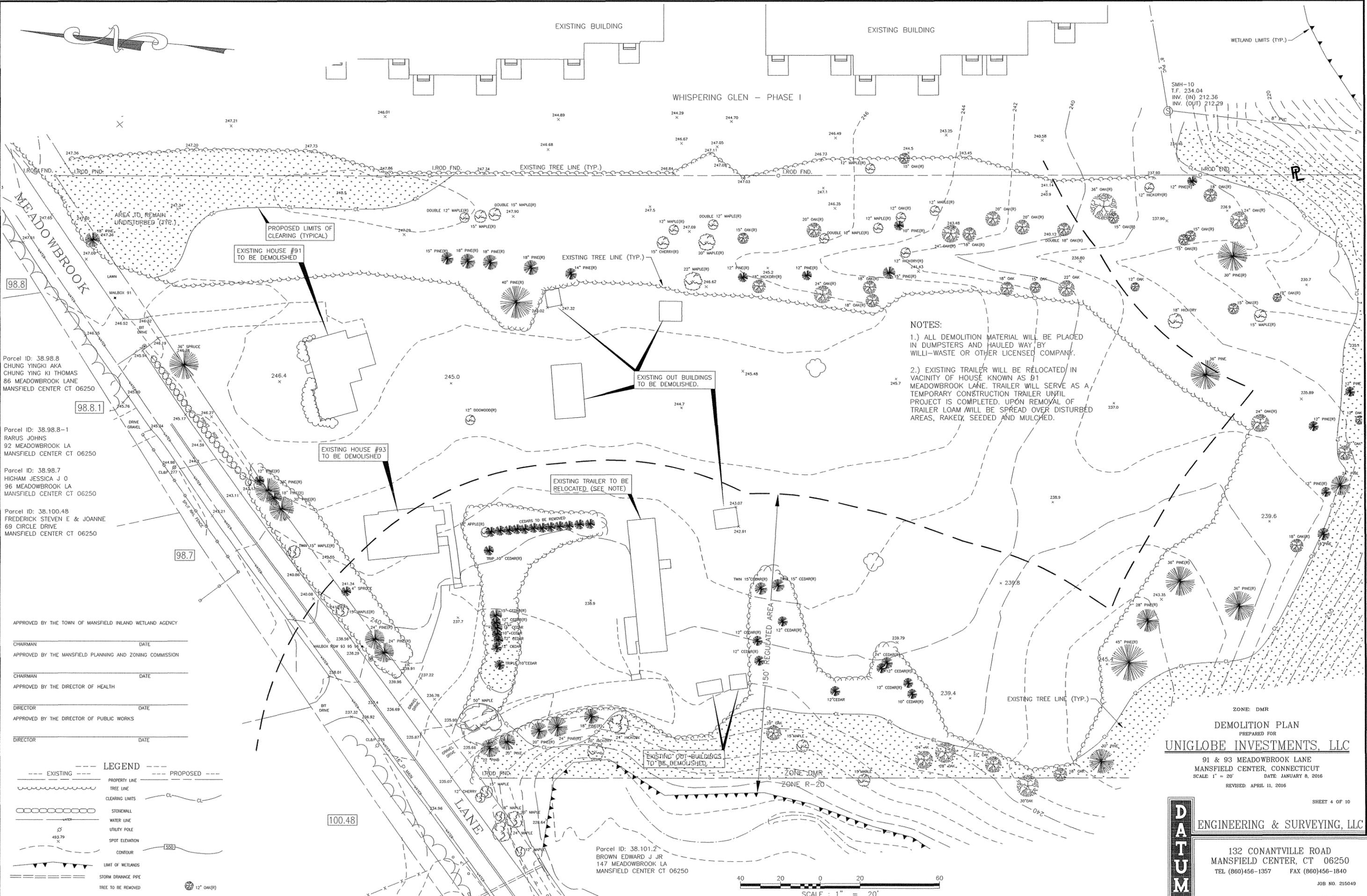
EXISTING TOPOGRAPHIC SURVEY
 PREPARED FOR
UNIGLOBE INVESTMENT, LLC
 91 & 93 MEADOWBROOK LANE
 MANSFIELD CENTER, CONNECTICUT
 SCALE: 1" = 30' DATE: JANUARY 8, 2016
 REVISED: APRIL 11, 2016



ENGINEERING & SURVEYING, LLC

132 CONANTVILLE ROAD
 MANSFIELD CENTER, CT 06250
 TEL (860)456-1357 FAX (860)456-1840
 JOB NO. 215049

WHISPERING GLEN - PHASE I



Parcel ID: 38.98.8
 CHUNG YING KI AKA
 CHUNG YING KI THOMAS
 86 MEADOWBROOK LANE
 MANSFIELD CENTER CT 06250

Parcel ID: 38.98.8-1
 RARUS JOHNS
 92 MEADOWBROOK LA
 MANSFIELD CENTER CT 06250

Parcel ID: 38.98.7
 HIGHAM JESSICA J O
 96 MEADOWBROOK LA
 MANSFIELD CENTER CT 06250

Parcel ID: 38.100.48
 FREDERICK STEVEN E & JOANNE
 69 CIRCLE DRIVE
 MANSFIELD CENTER CT 06250

NOTES:
 1.) ALL DEMOLITION MATERIAL WILL BE PLACED IN DUMPSTERS AND HAULED AWAY BY WILLI-WASTE OR OTHER LICENSED COMPANY.
 2.) EXISTING TRAILER WILL BE RELOCATED IN VICINITY OF HOUSE KNOWN AS B1 MEADOWBROOK LANE. TRAILER WILL SERVE AS A TEMPORARY CONSTRUCTION TRAILER UNTIL PROJECT IS COMPLETED. UPON REMOVAL OF TRAILER LOAM WILL BE SPREAD OVER DISTURBED AREAS, RAKED, SEEDED AND MULCHED.

APPROVED BY THE TOWN OF MANSFIELD INLAND WETLAND AGENCY

CHAIRMAN _____ DATE _____

APPROVED BY THE MANSFIELD PLANNING AND ZONING COMMISSION

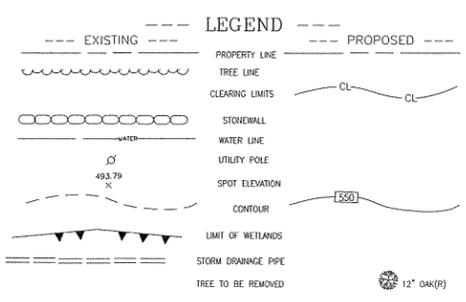
CHAIRMAN _____ DATE _____

APPROVED BY THE DIRECTOR OF HEALTH

DIRECTOR _____ DATE _____

APPROVED BY THE DIRECTOR OF PUBLIC WORKS

DIRECTOR _____ DATE _____



ZONE: DMR

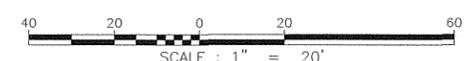
DEMOLITION PLAN
 PREPARED FOR
UNIGLOBE INVESTMENTS, LLC
 91 & 93 MEADOWBROOK LANE
 MANSFIELD CENTER, CONNECTICUT
 SCALE: 1" = 20'
 DATE: JANUARY 8, 2016
 REVISED: APRIL 11, 2016

DATUM
 ENGINEERING & SURVEYING, LLC

132 CONANTVILLE ROAD
 MANSFIELD CENTER, CT 06250
 TEL (860)456-1357 FAX (860)456-1840

JOB NO. 215049

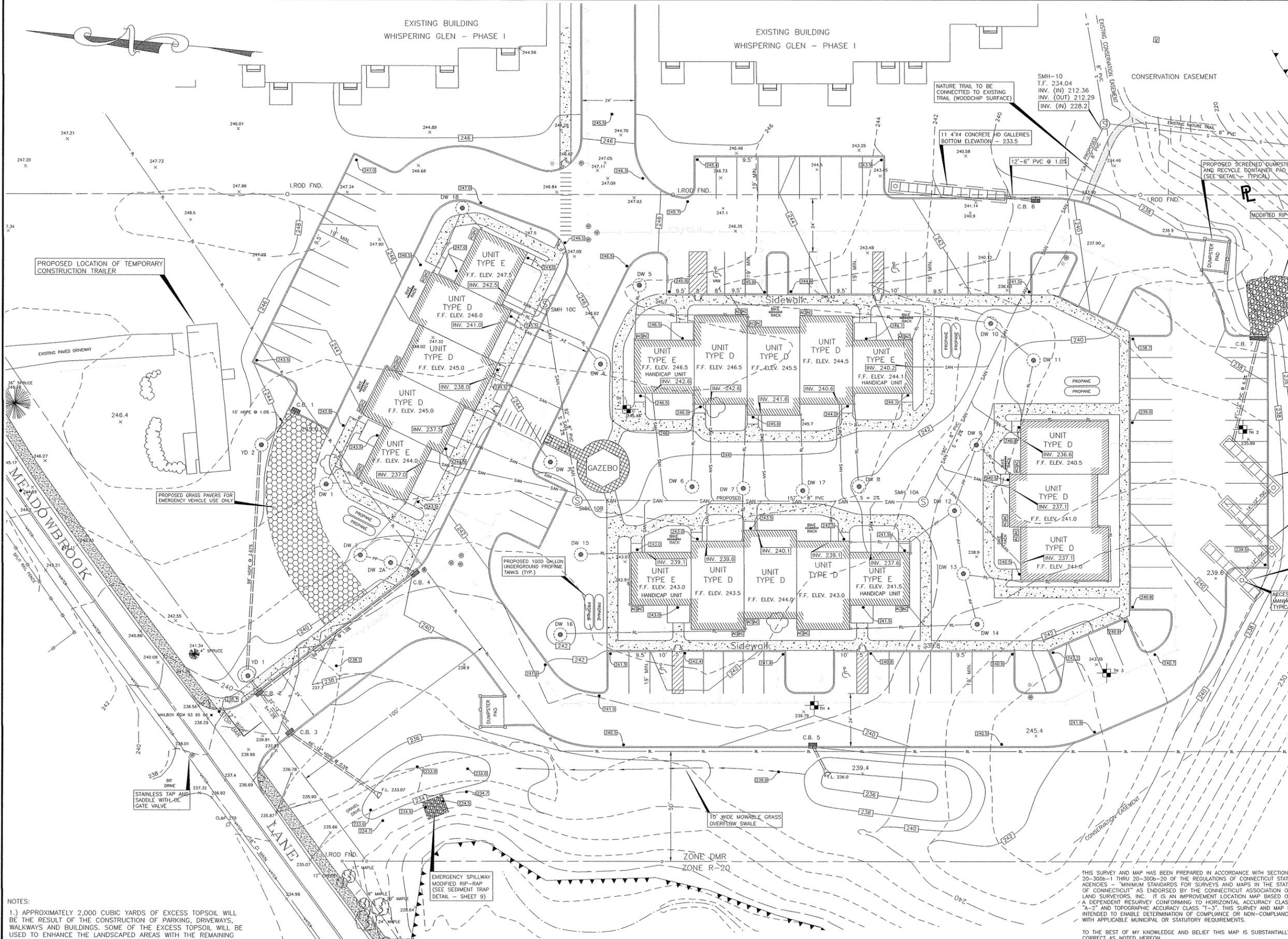
CHECKED BY: _____ CORRECTIONS BY: _____



Parcel ID: 38.101.2
 BROWN EDWARD J JR
 147 MEADOWBROOK LA
 MANSFIELD CENTER CT 06250

--- LEGEND ---

- PROPERTY LINE
- EXISTING TREE LINE
- NEW TREE LINE
- TEST HOLE
- 2' CONTOUR INTERVAL
- 10' CONTOUR INTERVAL
- PROPOSED CONTOUR
- EXISTING SPOT GRADE
- PROPOSED SPOT GRADE
- WETLAND SOIL LIMITS
- BUILDING LINE
- EXISTING WATER LINE
- PROPOSED WATER LINE
- EXISTING SEWER LINE
- PROPOSED SEWER LINE
- PROPOSED HYDRANT
- PROPOSED VALVE
- PROPOSED CATCH BASIN
- STORM DRAINAGE PIPE (15" HOPE)
- PROPOSED DRAINAGE PIPE (6" PERF.)
- PROPOSED DRAINAGE PIPE (6" SOLID)
- PROPOSED DRY WELL
- PROPOSED WATER SERVICE SHUTOFF VALVE
- PROPOSED BITUMINOUS CURBING
- PROPOSED SILT FENCE
- CONSERVATION EASEMENT
- PROPOSED AIR CONDITION UNIT



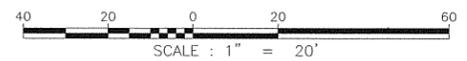
APPROVED BY THE TOWN OF MANSFIELD INLAND WETLAND AGENCY	DATE
CHAIRMAN	
APPROVED BY THE MANSFIELD PLANNING AND ZONING COMMISSION	DATE
CHAIRMAN	
APPROVED BY THE DIRECTOR OF HEALTH	DATE
DIRECTOR	
APPROVED BY THE DIRECTOR OF PUBLIC WORKS	DATE
DIRECTOR	

ZONE: DMR
 SITE PLAN
 PREPARED FOR
UNIGLOBE INVESTMENT LLC
 91 & 93 MEADOWBROOK LANE
 MANSFIELD CENTER, CONNECTICUT
 SCALE 1" = 20' DATE: JANUARY 8, 2016
 REVISED: APRIL 11, 2016

SHEET 5 OF 11
DATUM ENGINEERING & SURVEYING, LLC

132 CONANTVILLE ROAD
 MANSFIELD CENTER, CT 06250
 TEL (860)456-1357 FAX (860)456-1840
 JOB NO. 215049

- NOTES:
- 1.) APPROXIMATELY 2,000 CUBIC YARDS OF EXCESS TOPSOIL WILL BE THE RESULT OF THE CONSTRUCTION OF PARKING, DRIVEWAYS, WALKWAYS AND BUILDINGS. SOME OF THE EXCESS TOPSOIL WILL BE USED TO ENHANCE THE LANDSCAPED AREAS WITH THE REMAINING BALANCE OF TOPSOIL BEING REMOVED OFF SITE.
 - 2.) AREAS TO BE UNDISTURBED ARE DEPICTED ON THE EROSION AND SEDIMENTATION PLAN (SEE SHEET 6).
 - 3.) EXISTING TREE LINES AND PROPOSED TREE LINES ALONG WITH CLEARING LIMITS ARE DEPICTED ON THE DEMOLITION PLAN (SEE SHEET 4).



THE WETLAND SOILS ON THIS SITE WERE IDENTIFIED IN THE FIELD USING THE CRITERIA REQUIRED BY CONNECTICUT P.A. 72-155 AS AMENDED BY CONN. P.A. 73-571, CONN. P.A. 87-339 AND P.A. 87-533. THE BOUNDARIES OF THESE SOILS AND OF IDENTIFIED WATERCOURSES ARE ACCURATELY REPRESENTED ON THIS PLAN.

THIS SURVEY AND MAP HAS BEEN PREPARED IN ACCORDANCE WITH SECTIONS 20-300B-1 THRU 20-300B-20 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES - MINIMUM STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT AS ENDORSED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. IT IS AN IMPROVEMENT LOCATION MAP BASED ON A DEPENDENT RESURVEY CONFORMING TO HORIZONTAL ACCURACY CLASS "A-2" AND TOPOGRAPHIC ACCURACY CLASS "T-3". THIS SURVEY AND MAP IS INTENDED TO ENABLE DETERMINATION OF COMPLIANCE OR NON-COMPLIANCE WITH APPLICABLE MUNICIPAL OR STATUTORY REQUIREMENTS.

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

EDWARD PELLETIER, L.S. #14203

ANY ORIGINAL OR DUPLICATE OF THIS MAP IS NOT VALID UNLESS IT BEARS THE EMBOSSED SEAL OF THE SURVEYOR WHOSE REGISTRATION NUMBER AND SIGNATURE APPEAR ABOVE. NO OTHER CERTIFICATION OR WARRANTY IS EXPRESSED OR IMPLIED.

RICHARD ZULICK

DATE

CHECKED BY: _____ CORRECTIONS BY: _____

SILT SACS FOR YARD DRAINS AND DRYWELLS
 BMP SUPPLIES (WWW.BMPSUPPLIES.COM) OR EQUAL

SILT SACS FOR CATCH BASINS
 TERMARK GEOSYNTHETICS INC.
 (WWW.TERMARKEOSYNTHETICS.COM) OR EQUAL

I. GENERAL EROSION AND SEDIMENTATION CONTROL NOTES

THIS CONSTRUCTION PLAN PROPOSES EROSION CONTROL MEASURES WHICH WILL PERFORM ONE OR MORE OF THE FOLLOWING FUNCTIONS: MINIMIZATION OF SOIL EXPOSURE, CONTROL OF RUNOFF, SHIELDING OF THE SOILS, PROPER EROSION MANAGEMENT WILL MINIMIZE THE EROSION, BUT IT MUST BE UNDERSTOOD THAT ONLY "REASONABLE" EROSION CONTROL CAN BE EXPECTED. THIS, EVEN WITH THE BEST PLAN, SOME EROSION MUST BE ANTICIPATED. SEDIMENTATION CONTROLS ARE THE SECONDARY LINE OF DEFENSE ON THE CONSTRUCTION SITE.

WATER GENERATED SEDIMENT IS A SERIOUS PROBLEM WHEN NATURAL VEGETATION IS REMOVED OR ALTERED. FOR THIS REASON, A RECOMMENDATION FOR MINIMAL SITE DISTURBANCE TO THE EXISTING VEGETATION AND SOIL IS PROPOSED. MINIMAL SOIL EXPOSURE NOT ONLY ENTAILS DEMARCATING SITE DISTURBANCE LIMITS, BUT ALSO INVOLVES THE STAGING OF GRADING AND SUBSEQUENT RE-VEGETATION OF DISTURBED AREAS, SO THAT THE LEAST AMOUNT OF SOIL SURFACE IS EXPOSED AT ANY ONE TIME.

RUNOFF SHALL BE CONTROLLED BY THE INTERCEPTION, DIVERSION AND SAFE DISPOSAL OF PRECIPITATION. RUNOFF SHALL ALSO BE CONTROLLED BY THE STAGING OF CONSTRUCTION ACTIVITY AND THE PRESERVATION OF NATURAL VEGETATION WHENEVER POSSIBLE. THE BINDING OF SOIL PARTICLES TO MAKE THEM LESS SUSCEPTIBLE TO REMOVAL BY RAIN SPLASH OR RUNOFF USING NATURAL AND PHYSICAL "BARRIERS" (MULCH AND FABRICS) MAY BE REQUIRED AS DIRECTED BY THE ENGINEER.

TO PREVENT SEDIMENT FROM LEAVING THE SITE, TURBID SURFACE RUNOFF SHALL BE DIVERTED THROUGH "LEVEL SPREADER" DEVICES. TEMPORARY LEVEL SPREADER DEVICES SHALL BE CREATED BY PLACING ENGINEERING FABRIC DOWN GRADIENT OF SOIL DISTURBING ACTIVITIES. THIS FLOW WILL BE DISPERSED OVER A WIDE AREA AND FILTERED BY THE FABRIC. THE FENCE SHALL FOLLOW THE EXISTING CONTOURS WITH ENDS OF THE FENCE TURNED UPHILL TO PREVENT END CUTTING. FILTER FABRIC USED AS SILT FENCE AND NOT PLACED ON THE CONTOURS SHOULD HAVE "WINGS" AT INTERVALS OF NO GREATER THAN 100 FEET TO INTERRUPT FLOW PARALLEL TO THE FENCE. TECHNIQUES SUCH AS "WINDED" FABRIC SILT FENCE, CHECK DAMS, HAY BALES INSTALLED AND MAINTAINED AROUND ALL CATCH BASINS, FABRIC SILT FENCE/LEVEL SPREADERS AND SEDIMENTATION PANS MAY BE USED.

DUST CONTROL. IT IS THE CONTRACTOR'S RESPONSIBILITY AS NECESSARY AND AS REQUIRED BY THE TOWN, TO PREVENT FUGITIVE EMISSIONS FROM LEAVING THE SITE. DUST CONTROL SHALL BE ACHIEVED BY THE APPLICATION OF ANIONIC OR CATIONIC ASPHALT EMULSIONS, LATEX EMULSION, OR RESIN IN WATER. FOR APPLICATION RATES AND DILUTION REQUIREMENTS, REFER TO THE MANUFACTURER'S GUIDELINES. THE EXPOSED SOIL SURFACE SHOULD BE MOISTENED PERIODICALLY WITH ADEQUATE WATER TO CONTROL DUST, BUT WATER SHALL NOT BE USED EXCLUSIVELY.

IN AN EFFORT TO REDUCE THE POTENTIAL FOR TRACKING MUD OFF THE SITE, COURSE STONE "TRACKING PADS" AND AN IMMEDIATE CONSTRUCTION OF A GRAVEL SUB-BASE FOR ROADWAYS ARE REQUIRED. DIRT TRACKED ONTO EXISTING ROADWAYS SHALL BE REMOVED BY SHOVEL AND C-BROOM AT THE END OF EACH DAY.

EXCAVATION THAT MUST BE DE-WATERED WILL BE PUMPED INTO AN ACTIVE DRAINAGE SYSTEM. BOTH THE INLET AND OUTLET OF THE PUMPS SHOULD BE FILTERED AND PROTECTED FROM SURGE ACTION. DEBRIS AND OTHER WASTE RESULTING FROM EQUIPMENT MAINTENANCE AND CONSTRUCTION SHALL NOT BE DISCARDED ON SITE. THE BI-WEEKLY EROSION AND SEDIMENTATION MONITORING REPORTS SHALL BE SUBMITTED TO THE ZONING AGENT DURING THE TIME THE ROADWAYS ARE BEING CONSTRUCTED.

CONTRACTORS SHALL UTILIZE THE CONCRETE WASHOUT AREA DURING ANY OPERATIONS THAT INVOLVE WASHING CONCRETE OFF CONCRETE TRUCKS OR OTHER EQUIPMENT.

IN THE EVENT OF CONFLICT BETWEEN THESE PLANS AND OTHER REGULATIONS, THE MORE STRINGENT SHALL APPLY.

II. CONSTRUCTION SEQUENCE AND DETAILED EROSION CONTROL MEASURES

- THIS CONSTRUCTION PLAN PROPOSES EROSION CONTROL MEASURES WHICH WILL PERFORM ONE OR MORE OF THE FOLLOWING FUNCTIONS:
1. A REGISTERED LAND SURVEYOR SHALL FIELD STAKE LIMITS OF CLEARING AND LOCATION OF TEMPORARY SEDIMENTATION BASINS.
 2. UPON COMPLETION OF THE FIELD STAKING, ALL VEGETATION, INCLUDING OVERHANGING TREE LIMBS SHALL BE CHIPPED AND SUCH CHIPS SHALL BE STORED IN NON-GRADED AREAS FOR FUTURE USE AS EROSION BARRIERS ALONG SILT FENCING AND MULCH. EROSION AND SEDIMENT MEASURES SHALL BE INSTALLED AS APPROPRIATE PRIOR TO ANY SITE DISTURBANCE.
 3. TEMPORARY STORM WATER RETENTION BASINS SHALL BE CONSTRUCTED AND SITE RUNOFF DIRECTED TOWARD THE BASINS.
 4. STUMPING CAN COMMENCE AND BE GROUND INTO CHIPS. CHIPS SHALL BE STOCK PILED IN NON-GRADED AREAS. ANTI-TRACKING PADS SHALL BE INSTALLED PRIOR TO STRIPPING OF THE BALANCE OF THE SITE. THIS ANTI-TRACKING PADDING SHALL BE MAINTAINED AND REPLACED AS NECESSARY.
 5. TEMPORARY SEDIMENTATION BASINS SHALL BE CONSTRUCTED AS DEPICTED, AND MAINTAINED UNTIL STORM DRAINAGE STRUCTURES ALONG WITH EROSION AND SEDIMENTATION CONTROLS, HAY BALES, CHECK DAMS, SILT SACKS AND LEVEL SPREADERS HAVE BEEN INSTALLED.
 6. ROADWAYS AND PARKING AREAS SHALL BE ROUGH GRADED, DIRECTING STORM WATER RUNOFF TOWARD THE SEDIMENTATION BASINS. EROSION AND SEDIMENTATION CONTROLS SHALL BE INSTALLED AND MAINTAINED UNTIL COMPLETION OF THE PROJECT AND SITE DISTURBANCE IS STABILIZED.
 7. INSTALLATION OF THE SEWER SYSTEM FROM THE EXISTING MANHOLE ON PHASE 1 AND THEN THE WATER MAIN FROM MEADOWBROOK LANE TO THE EXISTING CONNECTION PROVIDED FOR IN PHASE 1. INDIVIDUAL WATER SERVICES SHALL BE INSTALLED AS BUILDINGS ARE CONSTRUCTED.
 8. UNDERGROUND TELEPHONE, CABLE AND ELECTRIC SHALL BE INSTALLED, FOLLOWED BY THE PLACEMENT OF THE PROCESS GRAVEL BASE, BITUMINOUS PAVEMENT AND BITUMINOUS CONCRETE LIP CURBING. THE SHOULDERS OF ROADWAYS AND PARKING AREAS SHALL BE FINE GRADED, LOAMED AND SEEDED, AS SPECIFIED.
 9. PERMANENT STORM WATER RECHARGE BASINS SHALL BE COMPLETED AND STABILIZED IMMEDIATELY, ALONG WITH THE RIP-RAP OVERFLOW AREA SOUTH OF CATCH BASIN 7. ALL SILT SACKS SHALL BE MAINTAINED AND CHECKED AFTER EVERY STORM EVENT UNTIL THE SITE HAS BEEN COMPLETELY STABILIZED.
- BEFORE AND AFTER EACH STORM EVENT AND ONCE EVERY DAY, ALL SEDIMENT AND EROSION CONTROLS WILL BE INSPECTED BY THE ENGINEER OR ENVIRONMENTAL SUPERVISOR. ANY CORRECTIVE MEASURES TO MITIGATE ENVIRONMENTAL CONCERNS WILL BE ORDERED AT THAT TIME. THERE WILL BE 150 FEET OF SILT FENCE WITH THE REQUIRED POSTS ON HAND FOR EMERGENCY SITUATIONS.

III. BUILDING SITE DEVELOPMENT

1. THE LIMITS OF DISTURBANCE SHALL BE ESTABLISHED IN THE FIELD FOR EACH PROPOSED BUILDING. THE MAXIMUM DISTURBANCE LIMITS OF 24-30 FEET BEYOND THE PHYSICAL DIMENSIONS OF THE BUILDING AND RELATED APPURTENANCES IS RECOMMENDED.
2. TOPSOIL AND EXCAVATED SUBSOIL FROM THE FOUNDATION AREA SHALL BE STOCKPILED WITH THE AREA OF DISTURBANCE IF NOT USED FOR THE ON SITE RE-GRADING. EACH STOCKPILE SHALL BE ADEQUATELY RINGED ON THE DOWN GRADIENT SIDE WITH SEDIMENT CONTROL MATERIALS MENTIONED PREVIOUSLY.
3. ANY ADDITIONAL STOCKPILING OF LUMBER AND OTHER BUILDING MATERIALS SHALL ALSO BE CONFINED TO THE AREA OF DISTURBANCE. VEHICULAR MOVEMENT SHALL BE DIRECTED TO ESTABLISHED PARKING AREAS.
4. ONCE THE PROPOSED BUILDING IS ENCLOSED, ALL EFFORTS SHALL BE MADE TO COMPLETE ON SITE IMPROVEMENTS, SUCH AS WATER SERVICE, SEWER LATERALS, ROOF LEADER DRAINS, ETC. THEREAFTER, AREA AROUND THE BUILDING SHALL BE FINE GRADED AND MULCHED.

IV. SEEDING AND PLANTING:

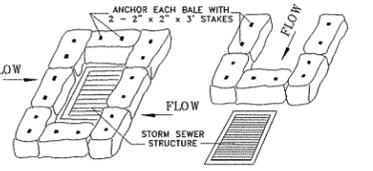
1. SEED BED PREPARATION: FINE GRADE AND PAKE SOIL SURFACE TO REMOVE STONES LARGER THAN 2 INCHES IN DIAMETER FROM LAWN AREAS. APPLY LIMESTONE AT A MINIMUM RATE OF 2 TONS PER ACRE OR 40 LBS. PER 1000 SQUARE FEET. FERTILIZE WITH 10-10-10 AT A RATE OF 300 LBS. PER ACRE OR 7.5 LBS. PER 1000 SQUARE FEET. WORK LIME AND FERTILIZER INTO SOIL UNIFORMLY TO A DEPTH OF 4 INCHES WITH A WHISK, SPRING-TOOTH HARROW OR OTHER SUITABLE EQUIPMENT FOLLOWING THE CONTOUR LINES.
2. SEED APPLICATION: APPLY GRASS SEED MIXTURE BY HAND, CYCLONE SEEDER OR HYDROSEED. INCREASE SEED MIXTURE BY 10% IF HYDROSEEDING. LIGHTLY CROW OR TOLL THE SEEDER SURFACE TO COVER SEED. SEED SHALL CONSIST OF A MIXTURE OF KENTUCKY BLUEGRASS (0.45LBS/1000 SF), CREEPING RED FESCUE (0.45 LBS/1000 SF), AND PERENNIAL RYE GRASS (0.10 LBS/1000 SF). SEEDING OF PERMANENT GRASS SEED SHALL BE DONE BETWEEN APRIL 15 AND JUNE 15, OR SEPTEMBER 1 THROUGH OCTOBER 15. IN THE EVENT THAT SEEDING CANNOT BE COMPLETED DURING THE ABOVE DATES, A TEMPORARY GRASS SEED CONSISTING OF 1.0 LBS/1000 SF OF ANNUAL RYE GRASS SHALL BE APPLIED. MOISTURE CONDITIONS SHALL BE SUPPLEMENTED FOR TEMPORARY SEEDING BETWEEN JUNE 16 AND AUGUST 31.
3. MULCHING: IMMEDIATELY FOLLOWING SEEDING, MULCH THE SEEDER SURFACE WITH STRAW OR HAY AT A RATE OF 1.5 TO 2 TONS PER ACRE WHERE SLOPES EXCEED 10 PERCENT. SPREAD MULCH BY HAND OR MULCH BLOWER. PUNCH MULCH INTO SOIL SURFACE WITH TRACK MACHINE OR DISH HARROW SET STRAIGHT UP. MULCH MATERIAL SHOULD BE SET INTO SOIL SURFACE APPROXIMATELY EVERY 2-3 INCHES.

V. PLAN IMPLEMENTATION

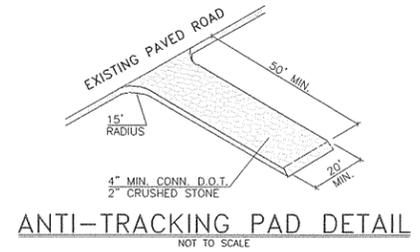
PRIOR TO THE START OF CONSTRUCTION, THERE SHALL BE A PRE-CONSTRUCTION MEETING WITH THE TOWN ZONING AGENT, THE TOWN WETLANDS AGENT, THE SITE CONTRACTOR AND THE CONTRACTOR'S PROFESSIONAL SOIL EROSION AND SEDIMENT CONTROL SPECIALIST TO DISCUSS THE PLAN, INSPECTION PROCEDURES AND REPORT REQUIREMENTS.

REGULAR INSPECTION OF THE SITE SHALL BE PERFORMED TO ENSURE COMPLIANCE WITH THIS SEDIMENT AND EROSION CONTROL PLAN, AND A SEDIMENT AND EROSION MONITORING REPORT MAY BE REQUIRED BY THE TOWN OF MANSFIELD ZONING AGENT AND INLAND WETLAND AGENT AS DEEMED NECESSARY.

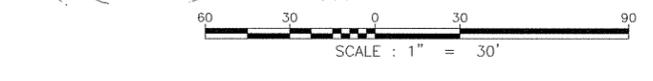
DURING CONSTRUCTION IT SHALL BE THE RESPONSIBILITY OF ROBERT MAGI (TEL. NO. (203) 692-5222) TO ENSURE THE IMPLEMENTATION OF THIS SEDIMENT & EROSION CONTROL PLAN. HIS RESPONSIBILITY INCLUDES INSTALLATION AND MAINTENANCE OF CONTROL MEASURES. INFORMING ALL PARTIES ENGAGED ON THE SITE OF THE OBJECTIVES OF THE PLAN, NOTIFYING THE WETLAND AGENT OR HIS DESIGNATEE OF ANY TRANSFER OF THIS RESPONSIBILITY AND FOR CONVEYING A COPY OF THE SEDIMENT & EROSION CONTROL PLAN IF AND WHEN SUCH TRANSFER IS APPROPRIATE. ANY MATERIAL REMOVED FROM SITE AND DEPOSITED IN MANSFIELD MUST BE IN FULL COMPLIANCE WITH APPLICABLE ZONING AND INLAND WETLAND REQUIREMENTS.



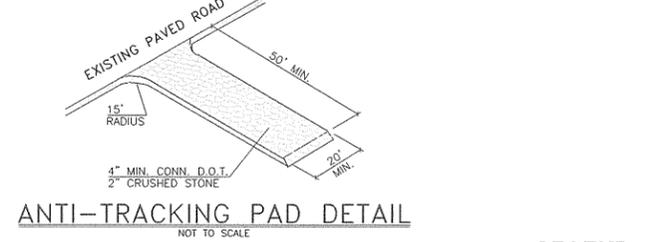
HAY BALE INSTALLATION AT CATCH BASIN
 NO SCALE



ANTI-TRACKING PAD DETAIL
 NOT TO SCALE



SCALE: 1" = 30'



APPROVED BY THE TOWN OF MANSFIELD INLAND WETLAND AGENCY

CHAIRMAN _____ DATE _____

APPROVED BY THE MANSFIELD PLANNING AND ZONING COMMISSION

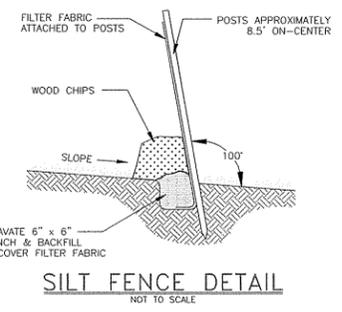
CHAIRMAN _____ DATE _____

APPROVED BY THE DIRECTOR OF HEALTH

DIRECTOR _____ DATE _____

APPROVED BY THE DIRECTOR OF PUBLIC WORKS

DIRECTOR _____ DATE _____



SILT FENCE DETAIL
 NOT TO SCALE

EROSION, SEDIMENTATION & MAINTENANCE PLAN

PREPARED FOR
UNIGLOBE INVESTMENT LLC

91 & 93 MEADOWBROOK LANE
 MANSFIELD CENTER, CONNECTICUT
 SCALE: 1" = 30' DATE: JANUARY 8, 2016

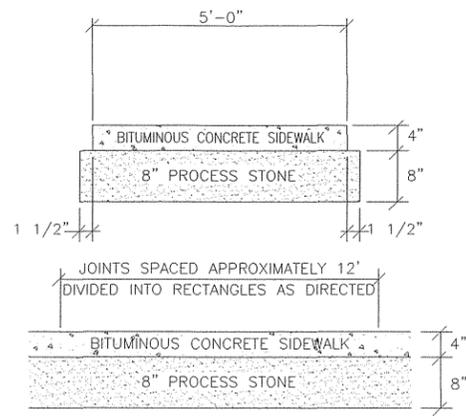
REVISED: APRIL 11, 2016

SHEET 6 OF 11

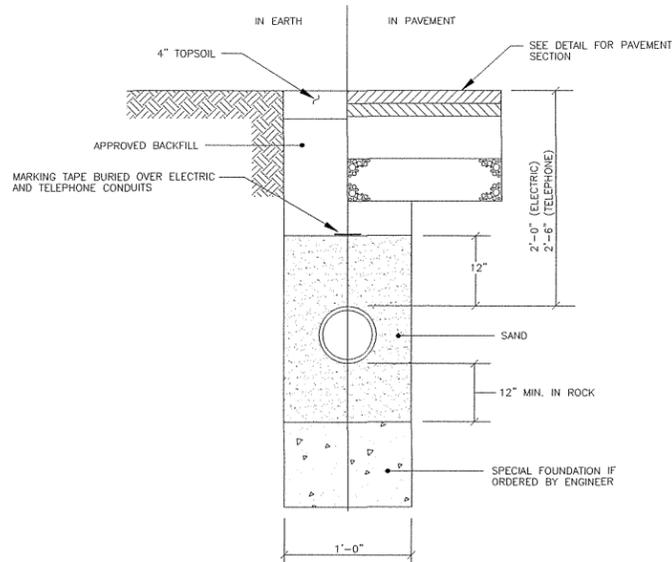
DATUM
 ENGINEERING & SURVEYING, LLC

132 CONANTVILLE ROAD
 MANSFIELD CENTER, CT 06250
 TEL (860)456-1357 FAX (860)456-1840
 JOB NO. 215049

CHECKED BY: _____ CORRECTIONS BY: _____

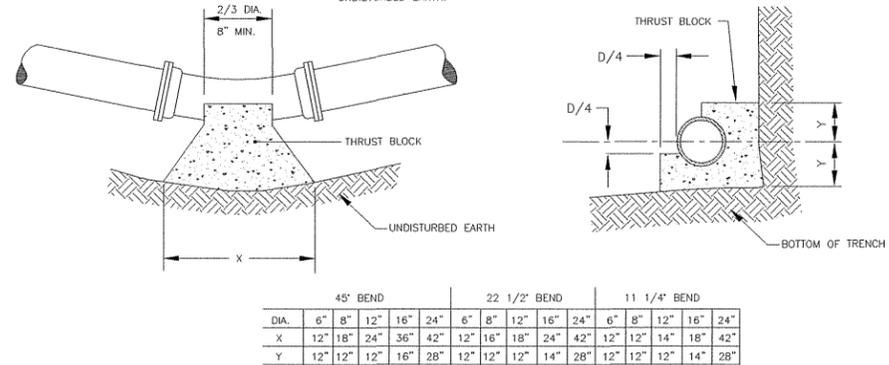


5' BITUMINOUS CONCRETE SIDEWALK
NO SCALE

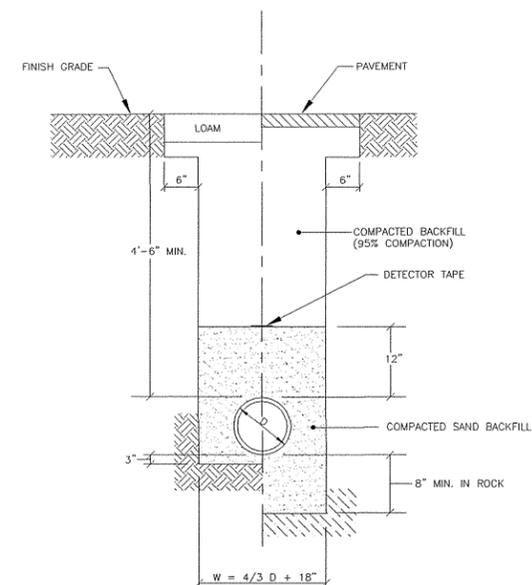


ELECTRICAL & TELEPHONE PVC CONDUIT TRENCH DETAIL
NOT TO SCALE

NOTE:
1.) ALL CONCRETE SHALL BE 3000 PSI AT 28 DAYS
2.) DIMENSIONS SHOWN ARE MINIMUM AND ARE BASED UPON SOIL PRESSURE OF 3000 PSF AND STATIC WATER PRESSURE OF 180 PSI
3.) CONCRETE THRUST BLOCK SHALL BEAR AGAINST UNDISTURBED EARTH.

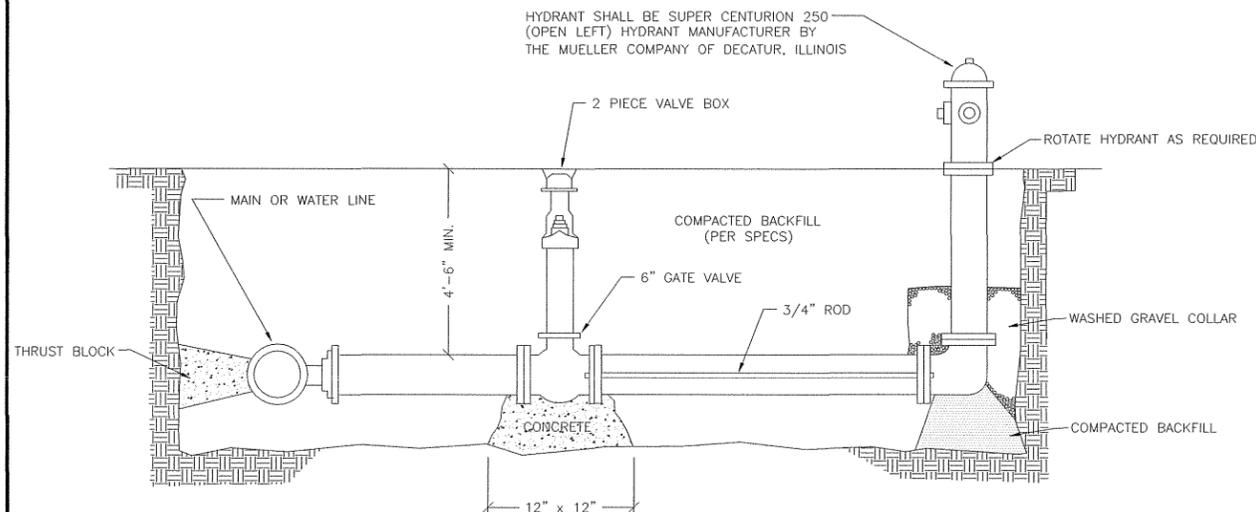


THRUST BLOCK DETAIL
NOT TO SCALE

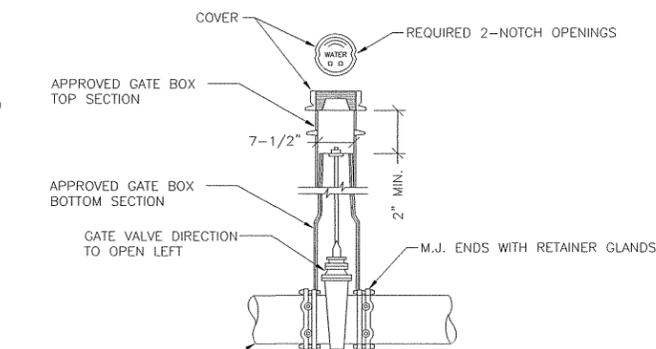


TYPICAL WATER MAIN TRENCH DETAIL
NOT TO SCALE

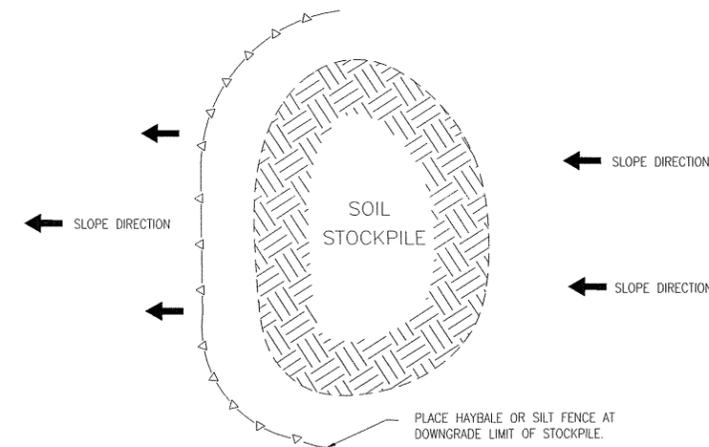
1. ALL WATER LINE MATERIALS SHALL BE PER WWW SPECS
2. WATER MAIN TO MAINTAIN A MINIMUM 10 FEET FROM STORM DRAINAGE RECHARGE STRUCTURES UNLESS APPROVED BY WWW.
3. ALL BUILDING WATER LINE SERVICES TO BE 1" COPPER



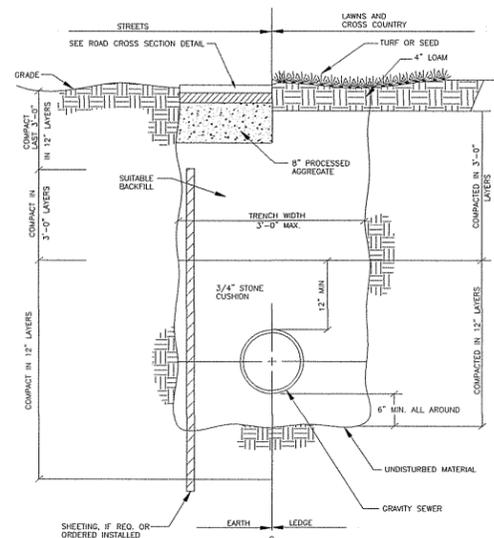
FIRE HYDRANT ASSEMBLY
NO SCALE



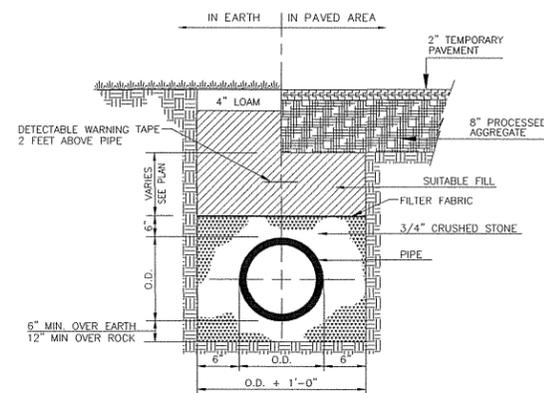
12" OR LESS VERTICAL GATE VALVE AND GATE BOX (OPEN LEFT)
NO SCALE



STOCKPILE EROSION PROTECTION DETAIL
NOT TO SCALE



TYPICAL GRAVITY SEWER TRENCH SECTION DETAIL
NOT TO SCALE



STORM SEWER TRENCH SECTION
NO SCALE

APPROVED BY THE TOWN OF MANSFIELD INLAND WETLAND AGENCY

CHAIRMAN _____ DATE _____
APPROVED BY THE MANSFIELD PLANNING AND ZONING COMMISSION

CHAIRMAN _____ DATE _____
APPROVED BY THE DIRECTOR OF HEALTH

DIRECTOR _____ DATE _____
APPROVED BY THE DIRECTOR OF PUBLIC WORKS

DIRECTOR _____ DATE _____

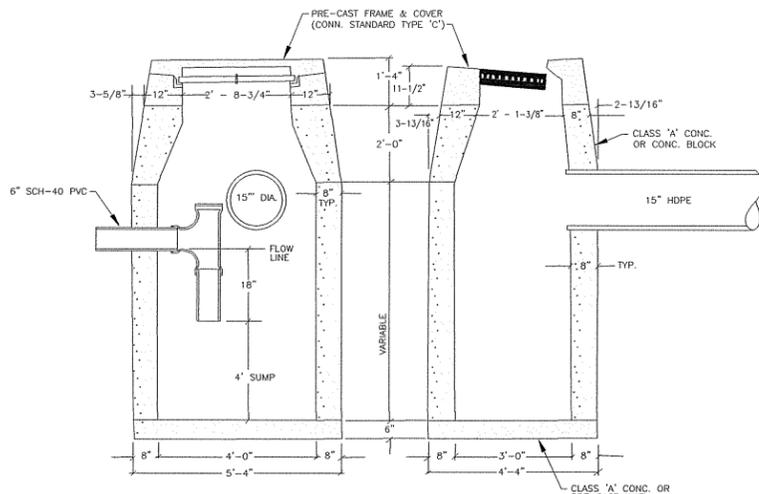
DETAIL SHEET
PREPARED FOR
UNIGLOBE INVESTMENT LLC

91 & 93 MEADOWBROOK LANE
MANSFIELD CENTER, CONNECTICUT
SCALE AS NOTED DATE JANUARY 8, 2016
REVISED: APRIL 11, 2016

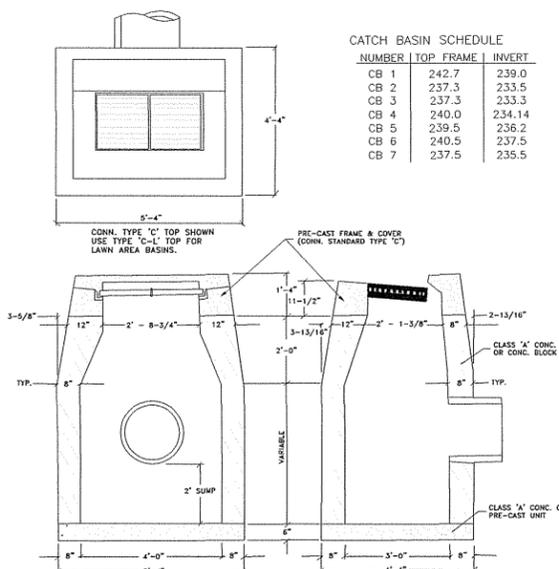
DATUM
ENGINEERING & SURVEYING, LLC

132 CONANTVILLE ROAD
MANSFIELD CENTER, CT 06250
TEL (860)456-1357 FAX (860)456-1840
JOB NO. 215049

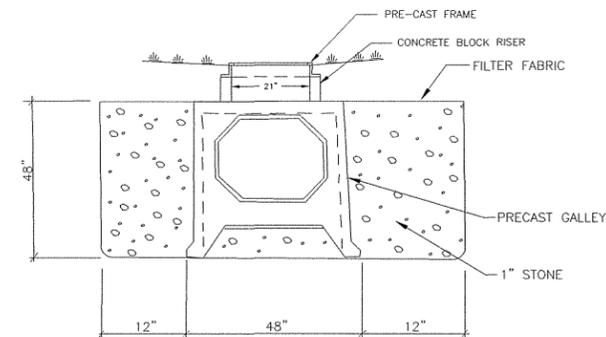
CHECKED BY: _____ CORRECTIONS BY: _____



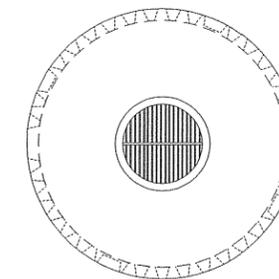
CONN. STATE STANDARD CATCH BASIN
NO SCALE



CONN. STATE STANDARD CATCH BASIN
NO SCALE

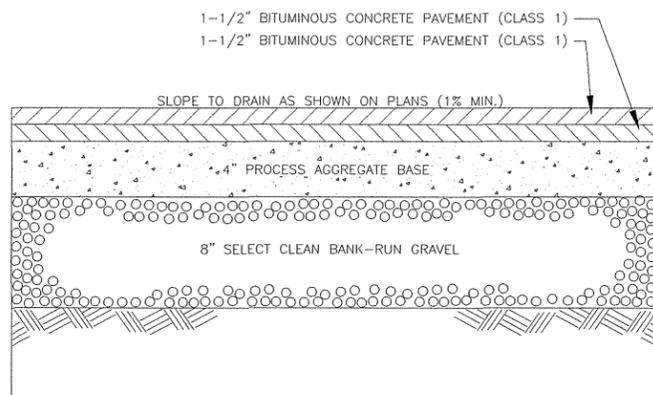


GALLERY CROSS SECTION
NO SCALE

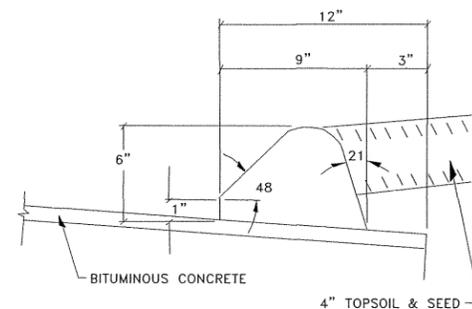


DRY WELL/YARD DRAIN SCHEDULE

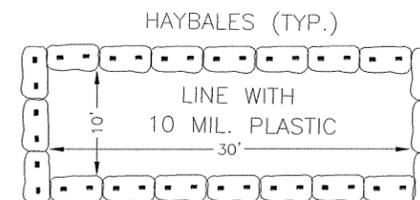
NUMBER	SIZE	TOP FRAME	BOTTOM ELEV.	INVERT
DW 1	6'Dx4'H	242.8	237.6	-
DW 2	6'Dx4'H	241.5	235.8	241.34
DW 2A	6'Dx4'H	241.0	235.8	241.34
DW 3	6'Dx6'H	242.8	235.4	-
DW 4	6'Dx4'H	242.1	236.9	-
DW 5	6'Dx4'H	246.0	240.8	-
DW 6	6'Dx4'H	242.5	237.3	-
DW 7	6'Dx4'H	242.5	237.3	-
DW 8	6'Dx4'H	241.8	236.6	-
DW 9	6'Dx6'H	239.5	230.1	235.64
DW 10	6'Dx6'H	241.5	231.6	237.14
DW 11	6'Dx6'H	239.5	231.6	237.14
DW 12	6'Dx6'H	240.0	231.1	236.64
DW 13	6'Dx6'H	240.0	230.1	236.64
DW 14	6'Dx6'H	240.5	230.1	235.64
DW 15	6'Dx4'H	243.0	237.8	-
DW 16	6'Dx4'H	241.8	236.4	-
DW 17	6'Dx4'H	242.5	237.3	-
DW 18	6'Dx4'H	247.3	242.1	-
YD 1	6'Dx6'H	237.8	230.4	236.20
YD 2	6'Dx6'H	242.5	235.1	238.86



PAVEMENT DETAIL
NOT TO SCALE



CURB DETAIL
NO SCALE

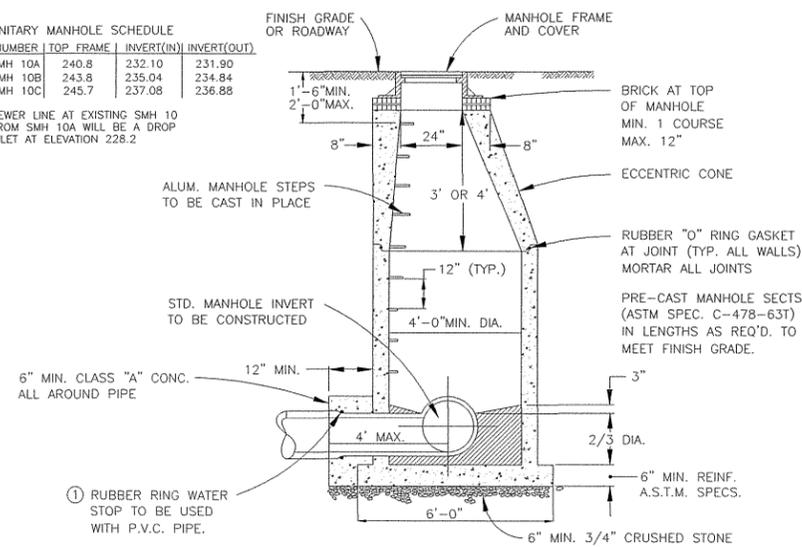


CONCRETE TRUCK WASHOUT DETAIL
NO SCALE

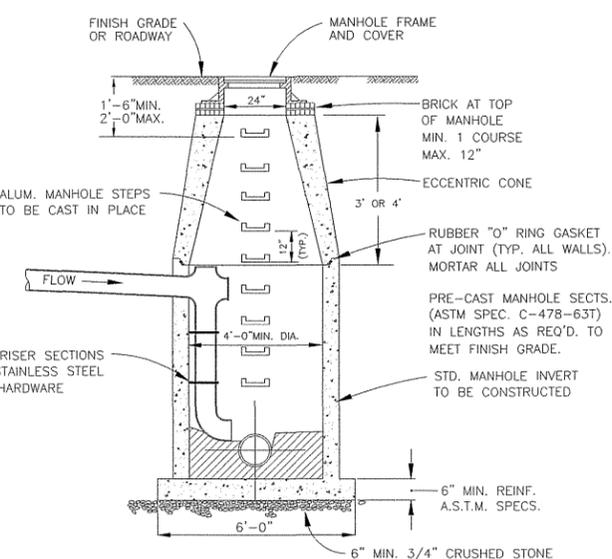
SANITARY MANHOLE SCHEDULE

NUMBER	TOP FRAME	INVERT(IN)	INVERT(OUT)
SMH 10A	240.8	232.10	231.90
SMH 10B	243.8	235.04	234.84
SMH 10C	245.7	237.08	236.88

SEWER LINE AT EXISTING SMH 10 FROM SMH 10A WILL BE A DROP INLET AT ELEVATION 228.2



PRECAST MANHOLE DETAIL
NOT TO SCALE



PRECAST DROP MANHOLE DETAIL
NOT TO SCALE

- MANHOLE SHALL BE WATERTIGHT. IN LIEU OF PARING, TWO COATS OF BITUMINOUS WATERPROOFING MAY BE BRUSHED ON OR SPRAYED ON. INERTOL, TREMCO OR APPROVED EQUAL MAY BE USED TO OBTAIN DESIRED RESULTS. DO NOT BACKFILL UNTIL LAST COAT IS DRY.

APPROVED BY THE TOWN OF MANSFIELD INLAND WETLAND AGENCY

CHAIRMAN _____ DATE _____

APPROVED BY THE MANSFIELD PLANNING AND ZONING COMMISSION

CHAIRMAN _____ DATE _____

APPROVED BY THE DIRECTOR OF HEALTH

DIRECTOR _____ DATE _____

APPROVED BY THE DIRECTOR OF PUBLIC WORKS

DIRECTOR _____ DATE _____

DETAIL SHEET
PREPARED FOR
UNIGLOBE INVESTMENT LLC

91 & 93 MEADOWBROOK LANE
MANSFIELD CENTER, CONNECTICUT
SCALE: AS NOTED DATE: JANUARY 8, 2016
REVISED: APRIL 11, 2016

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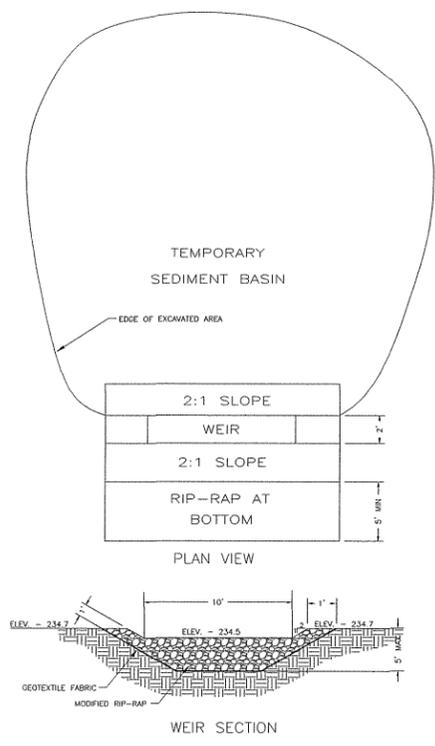
ENGINEERING & SURVEYING, LLC

132 CONANTVILLE ROAD
MANSFIELD CENTER, CT 06250
TEL (860)456-1357 FAX (860)456-1840

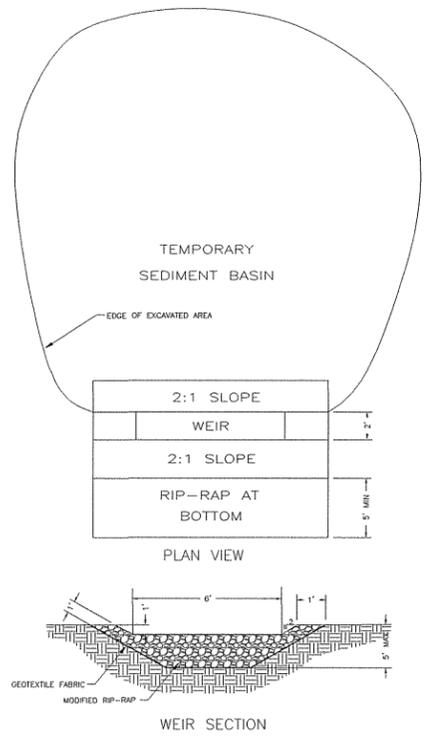
JOB NO. 215049

CHECKED BY: _____ CORRECTIONS BY: _____

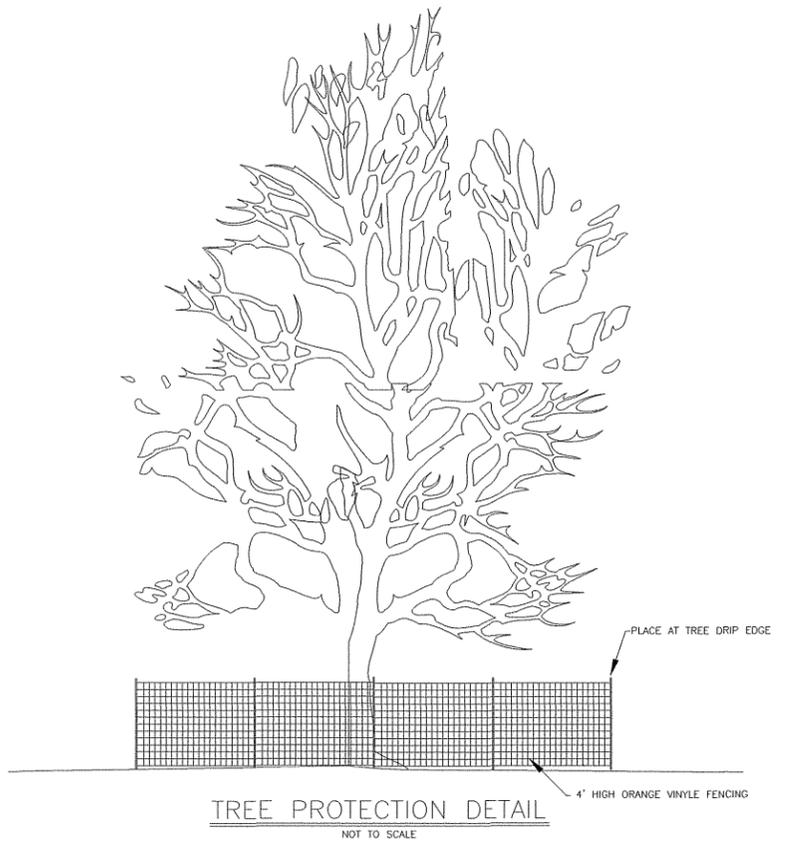
SHEET 8 OF 11



TEMPORARY SEDIMENT TRAP #1 DETAIL
NOT TO SCALE



TEMPORARY SEDIMENT TRAP #2 DETAIL
NOT TO SCALE



APPROVED BY THE TOWN OF MANSFIELD INLAND WETLAND AGENCY

CHAIRMAN _____ DATE _____
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CHAIRMAN _____ DATE _____
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DIRECTOR _____ DATE _____
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DIRECTOR _____ DATE _____

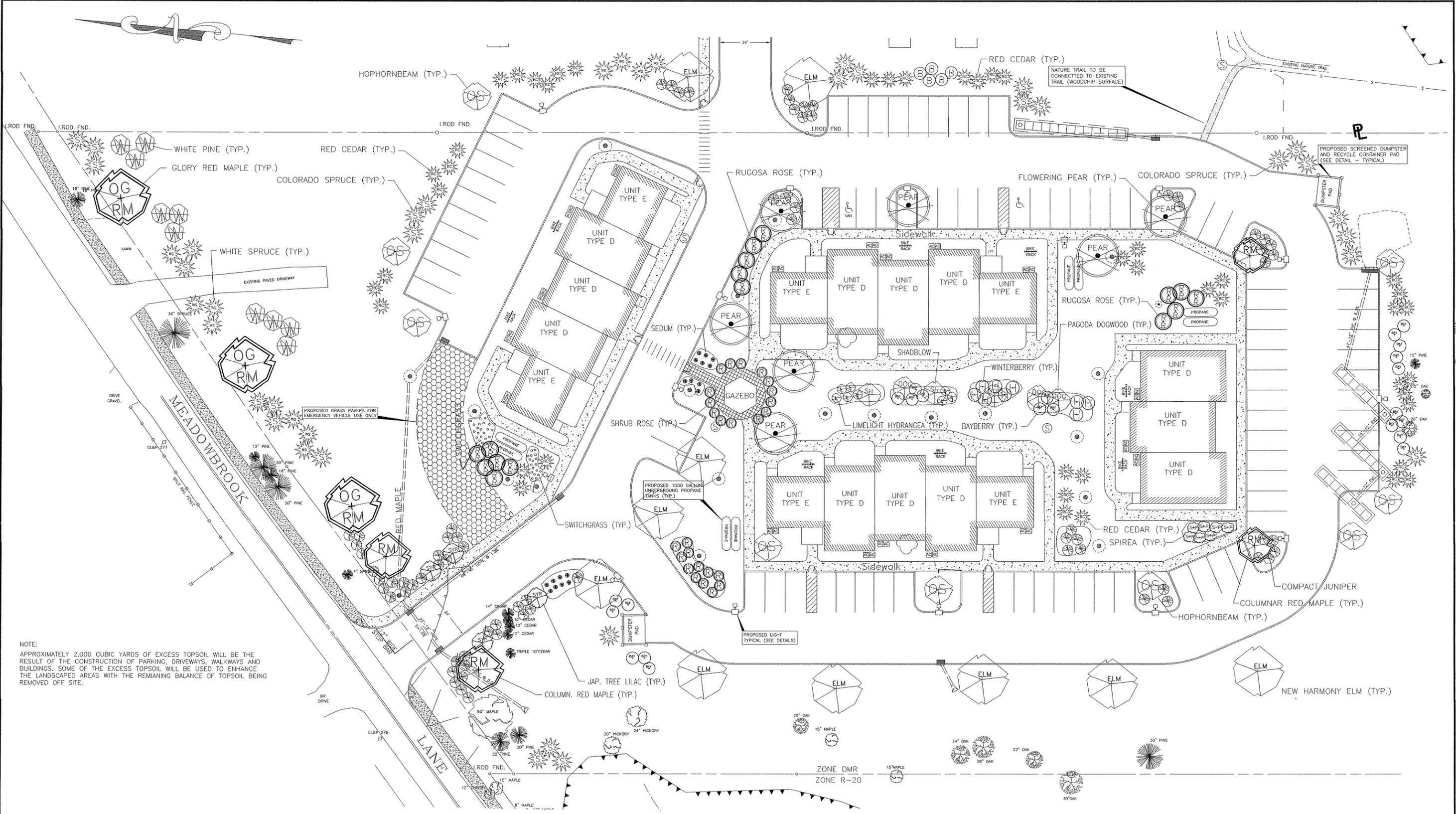
DETAIL SHEET
PREPARED FOR
UNIGLOBE INVESTMENT LLC
91 & 93 MEADOWBROOK LANE
MANSFIELD CENTER, CONNECTICUT
SCALE: AS NOTED DATE: JANUARY 8, 2016
REVISED: APRIL 11, 2016

SHEET 9 OF 11

DATUM
ENGINEERING & SURVEYING, LLC

132 CONANTVILLE ROAD
MANSFIELD CENTER, CT 06250
TEL (860)456-1357 FAX (860)456-1840
JOB NO. 215049

CHECKED BY: _____ CORRECTIONS BY: _____



NOTE:
 APPROXIMATELY 2,000 CUBIC YARDS OF EXCESS TOPSOIL WILL BE THE RESULT OF THE CONSTRUCTION OF PARKING, DRIVEWAYS, WALKWAYS AND BUILDINGS. SOME OF THE EXCESS TOPSOIL WILL BE USED TO ENHANCE THE LANDSCAPED AREAS WITH THE REMAINING BALANCE OF TOPSOIL BEING REMOVED OFF SITE.

APPROVED BY THE TOWN OF MANSFIELD INLAND WETLAND AGENCY
 CHAIRMAN _____ DATE _____
 APPROVED BY THE MANSFIELD PLANNING AND ZONING COMMISSION
 CHAIRMAN _____ DATE _____
 APPROVED BY THE DIRECTOR OF HEALTH
 DIRECTOR _____ DATE _____
 APPROVED BY THE DIRECTOR OF PUBLIC WORKS
 DIRECTOR _____ DATE _____



LANDSCAPE ARCHITECT
 J. ALEXOPOULOS, LAND. ARCH.
 CT LIC. NO. 550

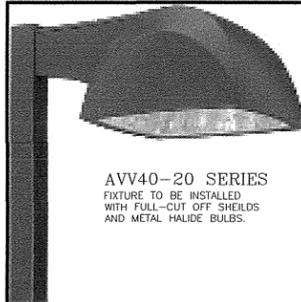
LANDSCAPE-LIGHTING-SIGN PLAN
 PREPARED FOR
ARTISAN DEVELOPMENT, LLC

91 & 93 MEADOWBROOK LANE
 MANSFIELD CENTER, CONNECTICUT
 SCALE: 1" = 20" DATE: OCTOBER 12, 2015
 REVISED: APRIL 11, 2016

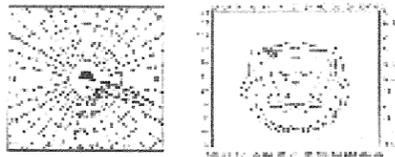


DATUM ENGINEERING & SURVEYING, LLC

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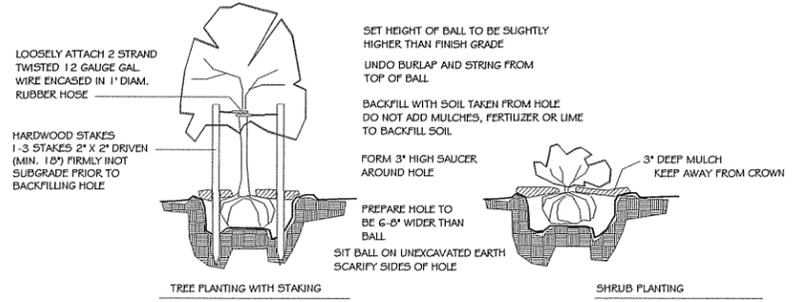
AVV40-20 SERIES
FIXTURE TO BE INSTALLED
WITH FULL-CUT OFF SHEILDS
AND METAL HALIDE BULBS.



LIGHTING SCIENCES INC. CERTIFIED TEST
REPORT NO. LS 20057 ON-POWER
DISTRIBUTION CURVE OF 400W PSMH
KEROSENE LIGHT.

60FOOTCANDLE PLOT OF 400W PSMH
KEROSENE LIGHT AT 25' MOUNTING HEIGHT
(PLAN VIEW)

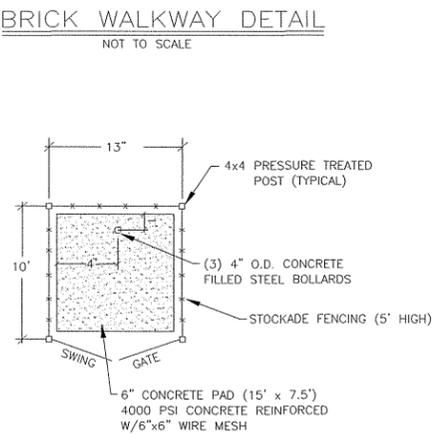
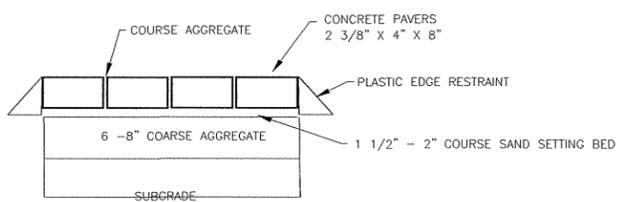
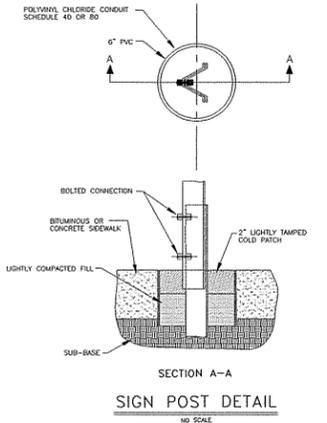
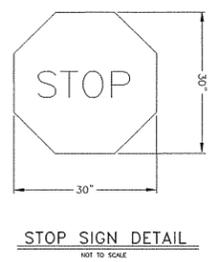
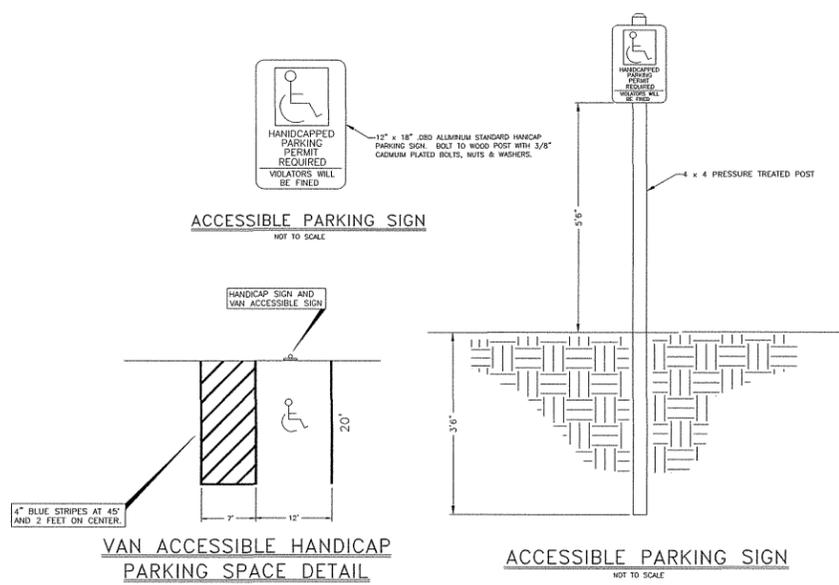
SITE LIGHTING
NOT TO SCALE



PLANTING DETAILS - NOT TO SCALE

PLANTING SCHEDULE

Symbol Code	Name/ Scientific Name	Size	Quantity
SM	ACER RUBRUM 'COLUMNARE'/ COLUMNAR RED MAPLE	2 1/2" - 3" CAL.	4
OG	ACER RUBRUM 'OCTOBER GLORY'/ OCTOBER GLORY RED MAPLE	2 1/2" - 3" CAL.	3
SH	AMELANCHIER CANADENSIS/ SHADBLOW	6 - 7'	2
DOG	CORNUS ALTERNIFOLIA/ PAGODA DOGWOOD	2 1/2" - 3" CAL.	4
DP	DOSTRYA VIRGINICA/ HOPHORNBEAM	2 1/2" - 3" CAL.	8
PEAR	PYRUS CALLERYANA 'CHANTICLEER'/ FLOWERING PEAR	2 1/2" - 3" CAL.	6
SYR	SYRINGA RETICULATA/ JAPANESE TREE LILAC	2 1/2" - 3" CAL.	4
ELM	ULMUS AMERICANA 'NEW HARMONY'/ NEW HARMONY ELM	2 1/2" - 3" CAL.	10
RC	JUNIPERUS VIRGINIANA/ RED CEDAR	6 - 7'	38
SPRUCE	PICEA GLAUCA/ WHITE SPRUCE	6 - 7'	9
SPRUCE	PICEA PUNGENS/ COLDRADD SPRUCE	6 - 7'	28
PINE	PINUS STROBUS/ WHITE PINE	6 - 7'	9
HYDR	HYDRANGEA PANICULATA 'LIMELIGHT'/LIMELIGHT HYDRANGEA	18 - 21"	8
WINT	ILEX VERTICILLATA/ WINTERBERRY	18 - 21"	9
JUNIP	JUNIPERUS CHIN. PFITZ. COMPACTUM/ COMPACT PFITZER JUNIPER	18 - 21"	75
BAY	MYRICA PENNSYLVANICUM/ BAYBERRY	18 - 21"	26
ROSE	ROSA 'KNOCKOUT'/ KNOCKOUT SHRUB ROSE	18 - 21"	25
ROSE	ROSA RUGOSA/ RUGOSA ROSE	18 - 21"	16
SPIR	SPIRAEA BUMALDA 'ANTHONY WATERER'/ SPIREA	18 - 21"	7
SEDUM	SEDUM 'BRILLIANT'/ SEDUM	1 GAL.	18
GRASS	PANICUM VIRGATUM 'RUBY RIBBONS'/ SWITCHGRASS	PLUGS	40



MEADOWBROOK GARDENS
LANDSCAPE MANAGEMENT

TREES AND SHRUBS, LAWNS
ALL SHRUB MASSES TO BE IN BEDS WITH NO GREATER THAN 3" DEPTH OF PINE BARK MULCH.

A DEPTH OF 3" OF THIS MULCH SHOULD BE MAINTAINED IN SUBSEQUENT YEARS. NO MULCH SHOULD BE PILED AGAINST THE TRUNKS OF TREES OR THE BASE OF ANY SHRUB.

PRUNING SHOULD ONLY BE DONE TO REMOVE ANY DEAD OR DAMAGED BRANCHES ON BOTH TREES AND SHRUBS. PLANTS ARE NOT TO BE SHAPED.

IN THE YEAR FOLLOWING INITIAL PLANTING AND IN THE SPRING, ALL PLANTS TO BE SIDE DRESSED WITH ORGANIC BASED FERTILIZERS.

PESTICIDES SHOULD ONLY BE USED WHEN A PROBLEM IS SEVERE. REGULAR INSPECTION SHOULD BE DONE TO BE ABLE TO TREAT A PROBLEM AT ITS EARLIEST STAGES. INTEGRATED PEST MANAGEMENT BEST PRACTICES SHOULD BE USED.

LAWNS ARE TO BE FERTILIZED USING LOW MAINTENANCE FREQUENCY, TIME OF YEAR AND RATE. FERTILIZING SHOULD ONLY BE DONE ACCORDING TO ANNUAL SOIL TESTING AND RECOMMENDATIONS ARE TO BE FOLLOWED. ONLY ORGANIC BASED FERTILIZERS ARE TO BE USED. LIME SHOULD BE APPLIED ACCORDING TO SOIL TEST RESULTS.

MOWING HEIGHT TO BE 2 1/2".

LAWN MIXTURE TO BE A LOW MAINTENANCE MIX SUITABLE FOR DROUGHTY, WELL DRAINED SOILS.

APPROVED BY THE TOWN OF MANSFIELD INLAND WETLAND AGENCY

CHAIRMAN _____ DATE _____
APPROVED BY THE MANSFIELD PLANNING AND ZONING COMMISSION

CHAIRMAN _____ DATE _____
APPROVED BY THE DIRECTOR OF HEALTH

DIRECTOR _____ DATE _____
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DIRECTOR _____ DATE _____

LANDSCAPE ARCHITECT
J. ALEXOPOULOS, LAND. ARCH.
CT LIC. NO. 550

LANDSCAPE-LIGHTING-SIGN DETAILS
PREPARED FOR
ARTISAN DEVELOPMENT, LLC

91 & 93 MEADOWBROOK LANE
MANSFIELD CENTER, CONNECTICUT
SCALE: AS NOTED DATE: JANUARY 8, 2016
REVISED: APRIL 11, 2016

DATUM ENGINEERING & SURVEYING, LLC

132 CONANTVILLE ROAD
MANSFIELD CENTER, CT 06250
TEL (860)456-1357 FAX (860)456-1840
JOB NO. 215049

CHECKED BY: _____ CORRECTIONS BY: _____



Town of Mansfield

Department of Planning and Development

Date: April 27, 2016
To: Mansfield Inland Wetlands Agency
From: Jennifer Kaufman, Inland Wetlands Agent
Subject: Meadowbrook Lane (73 Meadowbrook Lane to Sunny Acres Park) (File #W1565)
Uniglobe Investments
Description of work: construction of a sidewalk
Map Date: 9/21/2015, revised through 3/31/2016

Notifications

- The applicant has paid the required application fee
- The applicant has submitted certified mail receipts for notices mailed to abutters

Project Overview

The applicants propose to construct a 5 foot bituminous sidewalk starting at the Whispering Glen multifamily apartment complex at 73 Meadowbook Lane to Sunny Acres Park. The sidewalk will be installed in the Town Right of Way and was a condition of approval by PZC (PZC File #1283). Construction of the sidewalk includes a modular block retaining wall and installation of a new catch basin to direct stormwater from the edge of pavement to the brook. The retaining wall will be installed around the existing 30 inch pipe that allows the stream to flow under the road. The applicants estimate that there will be approximately 72 square feet of disturbance to in the wetlands as part of the construction of the retaining wall and approximately 2800 square feet of disturbance in the upland review area. Silt fence will be installed along the edge of construction along the brook to minimize erosion and sediment from traveling down gradient of the brook.

While there will be activity in the brook, in my opinion, the applicants have taken necessary precautions to minimize impacts to the stream. Therefore, I recommend approval of this application.

Suggested Motion

If the Agency concurs with my recommendation, the following motion is in order:

_____ MOVES, _____ seconds to grant an Inland Wetlands License pursuant to the Inland Wetlands and Watercourses Regulations of the Town of Mansfield to Uniglobe Investments (File #W1565) for construction of a sidewalk on property owned by the applicants and located at Meadowbrook Lane (73 Meadowbrook Lane to Sunny Acres Park) as shown on plans dated 9/21/2016, revised through 3/31/2016 and as described in application submissions.

This action is based on a finding of no anticipated significant impact on the wetlands, and is conditioned on the following provisions being met:

1. Appropriate erosion and sedimentation controls shall be in place prior to construction, maintained during construction and removed when disturbed areas are completely stabilized; and

This approval is valid for five years (until May 2, 2021) unless additional time is requested by the applicant and granted by the Inland Wetlands Agency. The applicant shall notify the Wetlands Agent before any work begins and all work shall be completed within one year. Any extension of the activity period shall come before this Agency for further review and comment.



Department of Planning and Development

Date: April 26, 2016
To: Mansfield Inland Wetlands Agency
From: Jennifer Kaufman, Inland Wetlands Agent
Subject: Receipt of New Application for Wetlands License
7 Storrs Road (IWA File #W1566)
Groundwater and Environmental Services, Inc./Magic Holdings, LLC
Description of work: removal of petroleum impacted soil

Project Description

The applicants propose to excavate approximately 75 tons of existing soil that has been impacted by a petroleum release. At its closest point, the excavation will take place approximately 25 feet from the edge of wetlands. No activity will occur within the wetlands. Excavated material will be removed from the site and disposed of at a licensed disposal facility. Prior to the excavation, the applicant will install silt fence between the work area and the wetland to prevent runoff and sediment migration. The area of activity is fairly flat and the area of activity is within a previously disturbed area.

- The project includes work in wetlands.
- The project includes work in the 150 foot upland review area.
- The project is located in a Public Water Supply Watershed.

Application Fees and Notifications

- The applicant has paid the required application fee
- The applicant has submitted copies of the notice mailed to neighbors and a list of abutters to be notified. Certified mail receipts must be submitted prior to action on the application.
- The applicant has submitted copies of notices provided to the Connecticut DPH and Windham Water Works. Certified mail receipts must be submitted prior to action on the application.
- Natural Diversity Database has been checked and state and/or federal listed species or significant natural communities have been identified on the property.

Receipt Motion

_____ MOVES, _____ seconds to receive the application submitted by Groundwater and Environmental Services, Inc./Magic Holdings, LLC (IWA File #W1566) under the Wetlands and Watercourses Regulations of the Town of Mansfield for removal of petroleum impacted soil on property located at 7 Storrs Road as shown on a map dated 4/18/2016 and as described in application submissions, and to refer said application to staff and the Conservation Commission for review and comments.

**APPLICATION FOR PERMIT
MANSFIELD INLAND WETLANDS AGENCY
4 SOUTH EAGLEVILLE ROAD, STORRS, CT 06268
860-429-3015x6204 (DIRECT) TEL: 860-429-3330 OR
FAX: 860-429-6863**

FOR OFFICE USE ONLY

File # _____
W _____
Fee Paid _____
Official Date of Receipt _____

Applicants are referred to the Mansfield Inland Wetlands and Watercourses Regulations for complete requirements, and are obligated to follow them. For assistance, please contact the Inland Wetlands Agent at the telephone numbers above.

Please print or type or use similar format for computer; attach additional pages as necessary.

Part A - Applicant

Name Groundwater & Environmental Services, Inc., Matthew Duffy
Mailing Address 425E Hayden Station Road
Windsor, CT Zip 06095
Phone 800-220-6119, ext 3545 Email mduffy@gesonline.com

Title and Brief Description of Project

Remedial Soil Excavation - removal of petroleum impacted soil

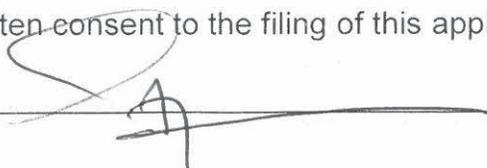
Location of Project 7 Storrs Road, Mansfield, Connecticut

Intended Start Date June 2016

Part B - Property Owner (if applicant is the owner, just write "same")

Name Mohammad Kahn, Magic Holdings LLC
Mailing Address 52 Brothers Way
Southington, CT Zip 06489
Phone 203-725-5252 Email mak5423@gmail.com

Owner's written consent to the filing of this application, if owner is not the applicant:

Signature  date 4/13/2016

Applicant's interest in the land: (if other than owner) Environmental Remediation

Part C - Project Description (attach extra pages, if necessary)

1) Describe in detail the proposed activity here or on an attached page. (**See guidelines at end of application**)

Please include a description of all activity or construction or disturbance:

- a) **in** the wetland/watercourse
- b) **in** the area **adjacent** to (within 150 feet from the edge of) the wetland/watercourse, even if wetland/watercourse is **off** your property

See attached scope of work

Note: A "Request for Natural Diversity Database (NDDDB) State Listed Species Review" has been submitted to the CTDEEP. A copy is attached.

2) Describe the amount or area of disturbance (in square feet or cubic yards or acres):

- a) **in** the wetland/watercourse
- b) **in** the area **adjacent** to (within 150 feet from the edge of) the wetland/watercourse, even if wetland/watercourse is **off** your property

Two areas of excavation, each 10' x 10' are located immediately north of the station building.

Staging area will be located west of the station building

3) Describe the type of materials you are using for the project: Excavator, dump truck, skid steer trench box

- a) include **type** of material used as fill or to be excavated soil
- b) include **volume** of material to be filled or excavated 75 tons of impacted soil will be excavated and backfilled with clean fill to match existing grade

4) Describe measures to be taken to minimize or avoid any adverse impacts on the wetlands and regulated areas (silt fence, staked hay bales or other Erosion and Sedimentation control measures).

Silt fence with stacked hay bales will be installed between the work area and the wetland. Excavated soils will be live-loaded into trucks and removed the day of excavation or soil piles will be stored on and covered with polyethylene sheeting at the end of each day.

Part D - Site Description

Describe the general character of the land. (Hilly? Flat? Wooded? Well drained? etc.)

The work area is generally flat and covered with bare dirt, weeds, limited grass and partial pavement.

Outside the work area, the land slopes downwards towards the north to wetlands.

Part E - Alternatives

Have you considered any alternatives to your proposal that would meet your needs and might have less impact on the wetland/watercourse? Please list these alternatives.

Other soil remediation options were implemented yet petroleum impacts still remain. Excavation is the most effective option.

Part F - Map/Site Plan (all applications)

1) Attach to the application a map or site plan showing **existing conditions** and the **proposed project** in relation to wetland/ watercourses. Scale of map or site plan should be 1" = 40'; if this is not possible, please indicate the scale that you are using. A sketch map may be sufficient for small, minor projects. **(See guidelines at end of application)**

2) Applicant's map date and date of last revision 4/18/2016

3) Zone Classification PB-1 (Planned Business 1 zone)

4) Is your property in a flood zone? Yes X No Don't Know

Part G - Major Applications Requiring Full Review and a Public Hearing

See Section 6 of the Mansfield Regulations for additional requirements.

Part H - Notice to Abutting Property Owners

1) Attach list of abutters, name, and address

2) **Proof of Written Notice to Abutters.** You must notify abutting (neighboring) property owners (any property immediately contiguous with the subject property, including those across the street) by certified mail, return receipt requested, stating that a wetland application is in progress, and that abutters may contact the Mansfield Inland Wetlands Agent for more information. Include a brief description of your project. **Postal receipts of your notice to abutters must accompany your application.** To generate an abutters list go to <http://www.mainstreetmaps.com/CT/Mansfield/>

Part I - Additional Notices, if necessary

Notice to Windham Water Works and CT Department of Public Health is attached. If this application is in the public watershed for the Windham Water Works (WWW), you must notify the WWW and the Department of Public Health of your project within 7 days of sending the application to Mansfield--sending it by certified mail, return receipt requested. Contact the Mansfield Inland Wetlands Agent to find out if you are in this watershed.

Notice to Adjoining Town. If your property is within 500 feet of an adjoining town, you must also send a copy of the application, on the same day you sent one to Mansfield, to the Inland Wetlands Agency of the adjoining town, by certified mail, return receipt requested.

The Statewide Reporting Form shall be part of the application and specified parts must be completed and returned with this application.

Part J - Other Impacts To Adjoining Towns, if applicable

- 1) Will a significant portion of the traffic to the completed project on the site use streets within the adjoining municipality to enter or exit the site? ___ Yes X No ___ Don't Know
- 2) Will sewer or water drainage from the project site flow through and impact the sewage or drainage system within the adjoining municipality? ___ Yes X No ___ Don't Know
- 3) Will water run-off from the improved site impact streets or other municipal or private property within the adjoining municipality? ___ Yes X No ___ Don't Know

Part K - Additional Information from the Applicant

Set forth (or attach) any other information which would assist the Agency in evaluating your application. (*Please provide extra copies of any lengthy documents or reports, and extra copies of maps larger than 8.5" x 11", which are not easily copied.*)

Part L - Filing Fee

Application fees shall be in accordance with the current Mansfield Code of Ordinance fee Schedule, pursuant to Section 8-1c of the Connecticut General Statutes. The fee schedule includes provisions for applicant-funded consultant studies and reports. The current fee schedule is available in the Planning and Zoning office.

Note: The Agency may require additional information about the upland review area or about wetlands or watercourses affected by the regulated activity. If the Agency, upon review of your application, finds the activity proposed may involve a "significant activity" as defined in the Regulations, additional information and/or a public hearing may be required.

Certification

I hereby certify that:

- I am familiar with the information contained in this form and that such information is true and correct to the best of my knowledge.
- I understand the penalties for obtaining a permit through deception or through inaccurate or misleading information.

4/19/2016

Signature

Date

Authorization to Enter Property

The undersigned hereby consent to necessary and proper inspections of the above-mentioned property by members and agents of the Inland Wetlands Agency at reasonable times, both before and after the permit in question has been issued by the Agency.

4/19/2016

Signature

Date



Former Mobil Service Station #01-G1P
7 Storrs Road
Mansfield, CT
CTDEEP REM ID# 9455

Part C – Project Description

Groundwater & Environmental Services, Inc., (GES), on behalf of ExxonMobil Environmental Services Company (EMESC) for ExxonMobil Oil Corporation (the former tenants of the property), is proposing to conduct remedial soil excavation at Former Mobil Service Station #01-G1P located at 7 Storrs Road, Mansfield, Connecticut (the site). The site currently operates as a retail gasoline station. The purpose of the remedial action is to remove existing soil impacts that contain concentrations of petroleum constituents that are above Connecticut Department of Energy and Environmental Protection (CTDEEP) Remediation Standard Regulations (RSRs) criteria.

Activities will be conducted adjacent to the wetlands; the closest distance from the work area to the wetlands is approximately 25 feet. None of the proposed activities will be conducted in wetlands. The project activity includes excavation of impacted soils from two areas (Area A and Area B on the attached map). The excavation areas will each be approximately 10 feet wide by 10 feet long to a depth no greater than 8 feet below grade (fbg) immediately north of the station building. Impacted soils will be removed for proper off-site disposal at a licensed disposal facility. Confirmatory bottom and sidewall soil samples will be collected for laboratory analysis. The excavation areas will be backfilled to existing grade with certified clean fill soils.

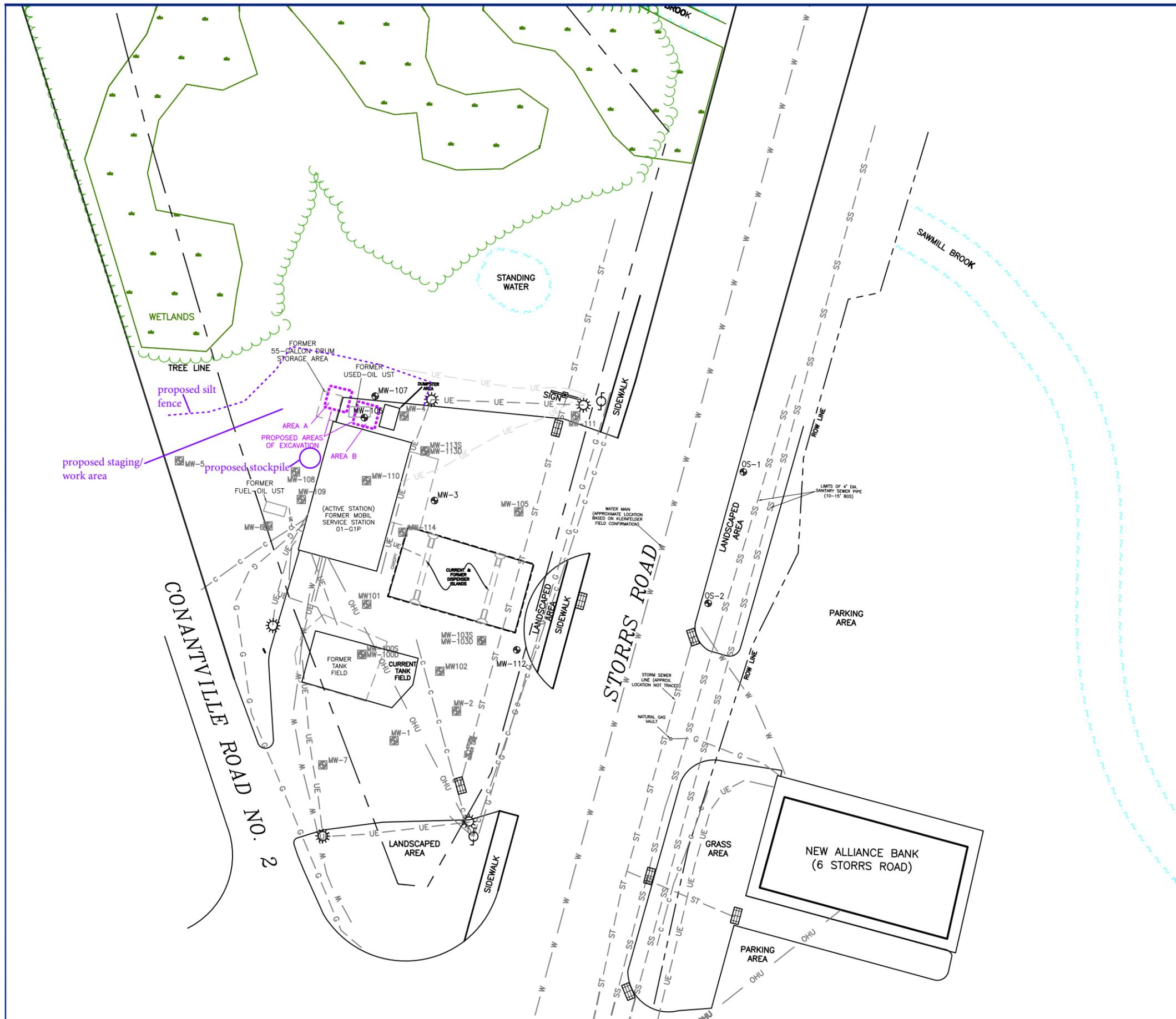
Excavation activities will be completed in an area of the property that has been previously developed and includes bare dirt, weeds, limited grass and partial pavement. Approximately 75 tons of soil will be excavated using an excavator. Impacted soils will be transported off-site via dump truck, where truck traffic will be limited to developed portions of the property, west of the station building. The work area is generally flat and covered with bare dirt, weeds, limited grass and partial pavement. Outside the work area, the land slopes downwards towards the north to wetlands. The only disturbance will be to the flat developed areas to allow for the excavation of impacts soils. The excavations will be backfilled to existing grade, then ground surface will be restored to prior conditions, including top soil, hay and grass seed at excavation Area A and compacted stone at excavation Area B. The work is estimated to take approximately 1 week to complete.

Prior to excavation activities, storm water runoff and sediment control measures including silt fencing and stacked hay bales will be installed between the work area and the wetland to prevent runoff and sediment migration. Excavated soils will be live-loaded into trucks and removed the day of excavation or soil piles will be stored on and covered with polyethylene sheeting at the end of each day. The work is proposed to be conducted in June (summer) when rainfalls are typically lower, thereby reducing potential surface water run-off towards the wetlands.

Prior wetlands applications have been submitted by prior environmental consultants for the collection of soil samples within the wetlands area.

LEGEND

- PROPERTY BOUNDARY
- [Grid] CATCH BASIN
- (M) UTILITY MANHOLE
- (Sun) LIGHT POLE
- (Circle with dot) UTILITY POLE
- (Circle with cross) MONITORING WELL
- (Square with cross) DESTROYED/ABANDONED WELL
- SS --- UNDERGROUND SANITARY SEWER LINE
- ST --- UNDERGROUND STORM SEWER LINE
- C --- UNDERGROUND COMMUNICATION LINE
- UE --- UNDERGROUND ELECTRIC LINE
- W --- UNDERGROUND WATER LINE
- G --- UNDERGROUND GAS LINE
- OHU --- OVERHEAD UTILITIES



Source: Wetlands based on Town of Mansfield Wetlands/Watercourses/Waterbodies Map, April 2006 and site observations.

DRAFTED BY: W.G.S.	SITE MAP	
CHECKED BY:	MOBIL SERVICE STATION #01-G1P 7 STORRS ROAD MANSFIELD, CONNECTICUT	
REVIEWED BY:		
NORTH 	Groundwater & Environmental Services, Inc. 425E HAYDEN STATION ROAD, WINDSOR, CT 06095	
	SCALE IN FEET 0 APPROXIMATE 40	DATE 4-18-16



Department of Planning and Development

Date: April 26, 2016
To: Mansfield Inland Wetlands Agency
From: Jennifer Kaufman, Inland Wetlands Agent
Subject: Receipt of New Application for Wetlands License
166 Moulton Road (IWA File #W1567)
R. Henning
Description of work: installation of a small scale waterwheel to generate electricity

Project Description

The applicant proposes to place a free standing waterwheel in the main watercourse of Mason Brook just below the remnants of a 3-foot high dam made out of rock. The old dam is approximately 150 feet east and downstream from Moulton Road crosses Mason Brook. Water from just above the old dam will be diverted through a 12-inch diameter feeder pipe about 20 feet below the old dam where the water wheel would be located on an existing flat portion of the streambed.

- The project includes work in wetlands.
- The project includes work in the 150 foot upland review area.
- The project is located in a Public Water Supply Watershed.

Application Fees and Notifications

- The applicant has paid the required application fee
- The applicant has submitted copies of the notice mailed to neighbors and a list of abutters to be notified. Certified mail receipts must be submitted prior to action on the application.
- The applicant has submitted copies of notices provided to the Connecticut DPH and Windham Water Works. Certified mail receipts must be submitted prior to action on the application.
- Natural Diversity Database has been checked and state and/or federal listed species or significant natural communities have not been identified on the property.

Receipt Motion

_____ MOVES, _____ seconds to receive the application submitted by R. Henning (IWA File #W1567) under the Wetlands and Watercourses Regulations of the Town of Mansfield for installation of a small scale waterwheel to generate electricity on property located at 166 Moulton Road as shown on a map dated 1/12/2015 and as described in application submissions, and to refer said application to staff and the Conservation Commission for review and comments.

APPLICATION FOR PERMIT
MANSFIELD INLAND WETLANDS AGENCY
4 SOUTH EAGLEVILLE ROAD, STORRS, CT 06268
860-429-3015x6204 (DIRECT) TEL: 860-429-3330 OR
FAX: 860-429-6863

FOR OFFICE USE ONLY

File # _____
W _____ Fee _____
Paid _____
Official Date of Receipt _____

Applicants are referred to the Mansfield Inland Wetlands and Watercourses Regulations for complete requirements, and are obligated to follow them. For assistance, please contact the Inland Wetlands Agent at the telephone numbers above.

Please print or type or use similar format for computer; attach additional pages as necessary.

Part A - Applicant

Name Robert Henning

Mailing Address: 166 Moulton Rd., Storrs, CT

Zip 06268

Phone 860 429-1504

Email: robert.henning@uconn.edu

Title and Brief Description of Project

Small-scale waterwheel for generating electricity

Location of Project 166 Moulton Rd.

Intended Start Date March 4, 2015

Part B - Property Owner (if applicant is the owner, just write "same")

Name same

Mailing Address _____

Zip _____

Phone _____

Email _____

Owner's written consent to the filing of this application, if owner is not the applicant:

Signature _____

date _____

Applicant's interest in the land: (if other than owner) N/A

Part C - Project Description (attach extra pages, if necessary)

- 1) Describe in detail the proposed activity here or on an attached page. (See guidelines at end of application)

Please include a description of all activity or construction or disturbance:

- a) in the wetland/watercourse
- b) in the area *adjacent* to (within 150 feet from the edge of) the wetland/watercourse, even if wetland/watercourse is *off* your property
- a) A free-standing waterwheel is to be placed in the main watercourse of Mason Brook just below the remnants of a 3-foot high dam made out of rocks that is believed to have once been associated with a blacksmith's shop on the property. The old dam is approximately 150 ft east and downstream from where Moulton Rd. crosses Mason Brook. Water from just above the old dam will be diverted through a 12-in diameter feeder pipe to about 20 feet below the old dam where the waterwheel would be located on an existing flat portion of the streambed.
- b) N/A

- 2) Describe the amount or area of disturbance (in square feet or cubic yards or acres):

- a) in the wetland/watercourse
- b) in the area *adjacent* to (within 150 feet from the edge of) the wetland/watercourse, even if wetland/watercourse is *off* your property
- a) Some repositioning of rocks at the top of the dam, over an area of about 2 square yards, would help promote water flow into the feeder pipe. Some other rocks over another area of about 2 square yards will need to be repositioned for the course of the feeder pipe.
- b) N/A

- 3) Describe the type of materials you are using for the project: _

The waterwheel is to be approximately 6 ft in diameter with six or more catchbasins and a metal support structure that consisting of two vertical arms in parallel that support an axle located about 3 ft high from the base. The flat base of the support structure is 13 x 21 inches. Two 3-ft stabilizing arms bolted to the base and parallel to the stream bed will prevent the structure from tipping over during high water events. The feeder pipe or sluice will consist of some combination of flexible black plastic or steel or aluminum. Power output by a low-voltage DC generator will be used to help heat a woodworking shop located nearby, and to power a light mounted on the waterwheel.

- a) include *type* of material used as fill or to be excavated N/A
- b) include *volume* of material to be filled or excavated N/A

- 4) Describe measures to be taken to minimize or avoid any adverse impacts on the wetlands and regulated areas (silt fence, staked hay bales or other Erosion and Sedimentation control measures).

Rocks will be placed around the base of the waterwheel to prevent erosion of the stream bed and to prevent any destabilization of the support structure.

Construction of the nearby barn required obtaining a wetlands permit about 8 years ago.

Part D - Site Description

Describe the general character of the land. (Hilly? Flat? Wooded? Well drained? etc.)

Mason Brook is a seasonal brook that drains overflow water from a natural basin formed by hills east of Rt 195. About 1 mile further downstream from the proposed waterwheel, Mason Brook empties into the Fenton River. Mason Brook has 8-ft high banks at the proposed location of the waterwheel. The waterwheel will be inactive during some periods during the year, particularly late summer when the water flow in Mason Brook reduces to a trickle or stops altogether.

Part E - Alternatives

Have you considered any alternatives to your proposal that would meet your needs and might have less impact on the wetland/watercourse? Please list these alternatives.

I considered locating the waterwheel above the old dam and within 50 feet of Moulton Rd. but this did not seem feasible due to the lack of sufficient drop in the height of the stream bed in that area, which would therefore require more extensive piping in the culvert area underneath Moulton Rd. that would risk blocking water flow during serious rain storms.

Part F - Map/Site Plan (all applications)

1) Attach to the application a map or site plan showing **existing conditions** and the **proposed project** in relation to wetland/ watercourses. Scale of map or site plan should be 1" = 40'; if this is not possible, please indicate the scale that you are using. A sketch map may be sufficient for small, minor projects. **(See guidelines at end of application)**

- 2) Applicant's map date and date of last revision _____
- 3) Zone Classification _____
- 4) Is your property in a flood zone? Yes No Don't Know

Part G - Major Applications Requiring Full Review and a Public Hearing

See Section 6 of the Mansfield Regulations for additional requirements.

Part H - Notice to Abutting Property Owners

- 1) Attach list of abutters, name, and address
- 2) **Proof of Written Notice to Abutters.** You must notify abutting (neighboring) property owners (any property immediately contiguous with the subject property, including those across the street) by certified mail, return receipt requested, stating that a wetland application is in progress, and that abutters may contact the Mansfield Inland Wetlands Agent for more information. Include a brief description of your project. **Postal receipts of your notice to abutters must accompany your application.** To generate an abutters list go to

Part I - Additional Notices, if necessary

Notice to Windham Water Works and CT Department of Public Health is attached. If this application is in the public watershed for the Windham Water Works (WWW), you must notify the WWW and the Department of Public Health of your project within 7 days of sending the application to Mansfield--sending it by certified mail, return receipt requested. Contact the Mansfield Inland Wetlands Agent to find out if you are in this watershed.

Notice to Adjoining Town. If your property is within 500 feet of an adjoining town, you must also send a copy of the application, on the same day you sent one to Mansfield, to the Inland Wetlands Agency of the adjoining town, by certified mail, return receipt requested.

The Statewide Reporting Form shall be part of the application and specified parts must be completed and returned with this application.

Part J - Other Impacts To Adjoining Towns, if applicable

- 1) Will a significant portion of the traffic to the completed project on the site use streets within the adjoining municipality to enter or exit the site? ___ Yes X No ___ Don't Know
- 2) Will sewer or water drainage from the project site flow through and impact the sewage or drainage system within the adjoining municipality? ___ Yes X No ___ Don't Know
- 3) Will water run-off from the improved site impact streets or other municipal or private property within the adjoining municipality? ___ Yes X No ___ Don't Know

Part K - Additional Information from the Applicant

Set forth (or attach) any other information which would assist the Agency in evaluating your application. *(Please provide extra copies of any lengthy documents or reports, and extra copies of maps larger than 8.5" x 11", which are not easily copied.)*

Part L - Filing Fee

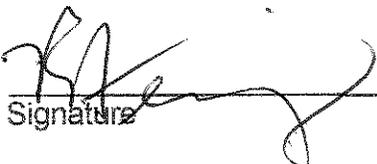
Application fees shall be in accordance with the current Mansfield Code of Ordinance fee Schedule, pursuant to Section 8-1c of the Connecticut General Statutes. The fee schedule includes provisions for applicant-funded consultant studies and reports. The current fee schedule is available in the Planning and Zoning office.

Note: The Agency may require additional information about the upland review area or about wetlands or watercourses affected by the regulated activity. If the Agency, upon review of your application, finds the activity proposed may involve a "significant activity" as defined in the Regulations, additional information and/or a public hearing may be required.

Certification

I hereby certify that:

- I am familiar with the information contained in this form and that such information is true and correct to the best of my knowledge.
- I understand the penalties for obtaining a permit through deception or through inaccurate or misleading information.



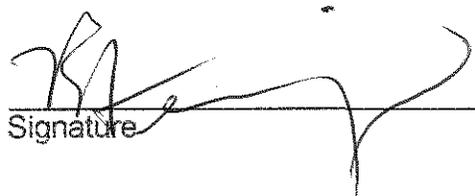
Signature

Jan 12, 2015

Date

Authorization to Enter Property

The undersigned hereby consent to necessary and proper inspections of the above-mentioned property by members and agents of the Inland Wetlands Agency at reasonable times, both before and after the permit in question has been issued by the Agency.



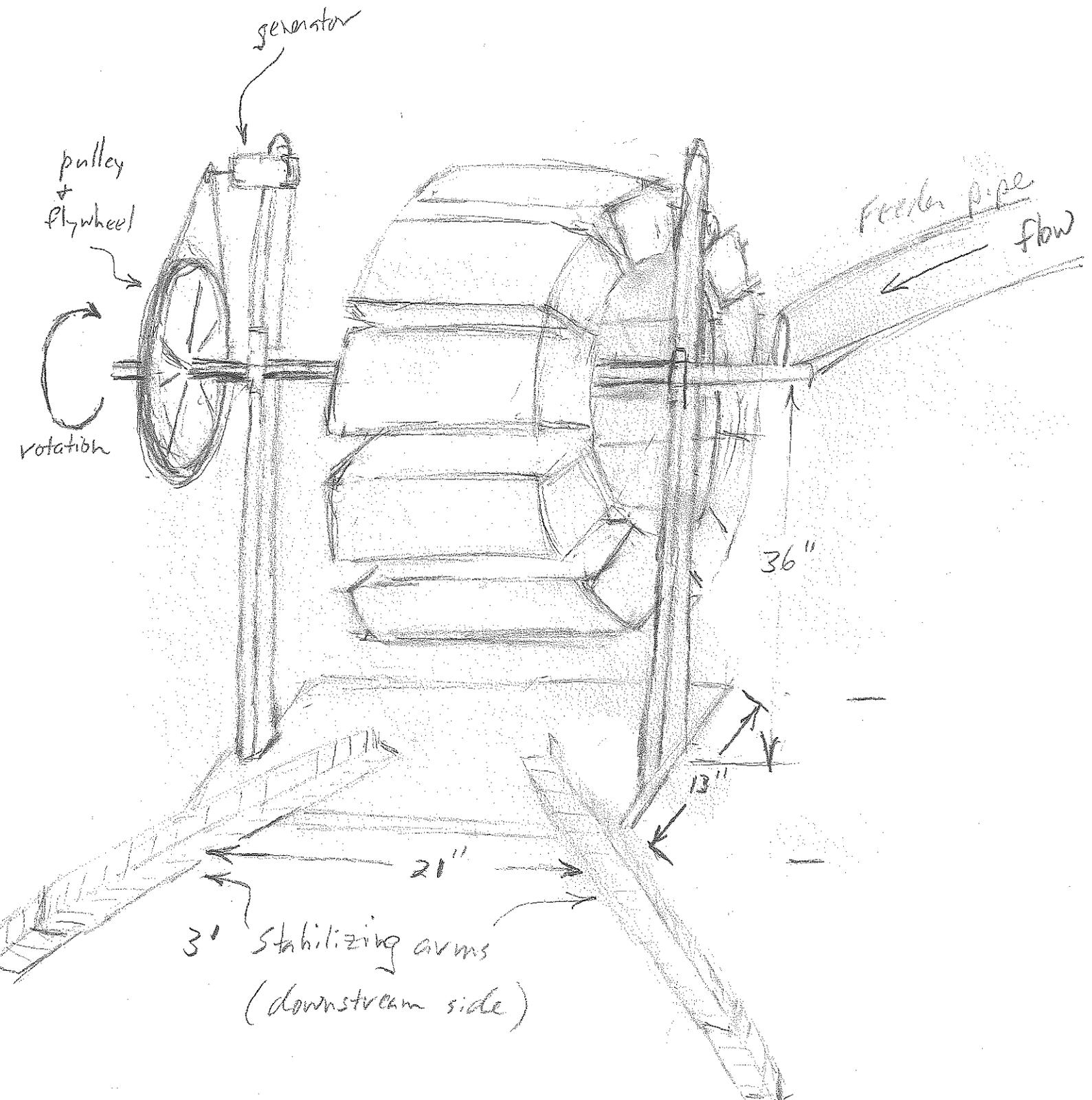
Signature

Jan 12, 2015

Date

Small-scale waterwheel

Henning
12-Jan-2015



Small-scale waterwheel

Hemming, 166 Monltan Rd
12-Jan-2015

Monltan Rd

Barn +
woodshop

rock bridge



150 ft

old dam and falls

feeder pipe

waterwheel

House

property lines

