Staff Report

Devens Enterprise Commission

Date: October 23, 2020

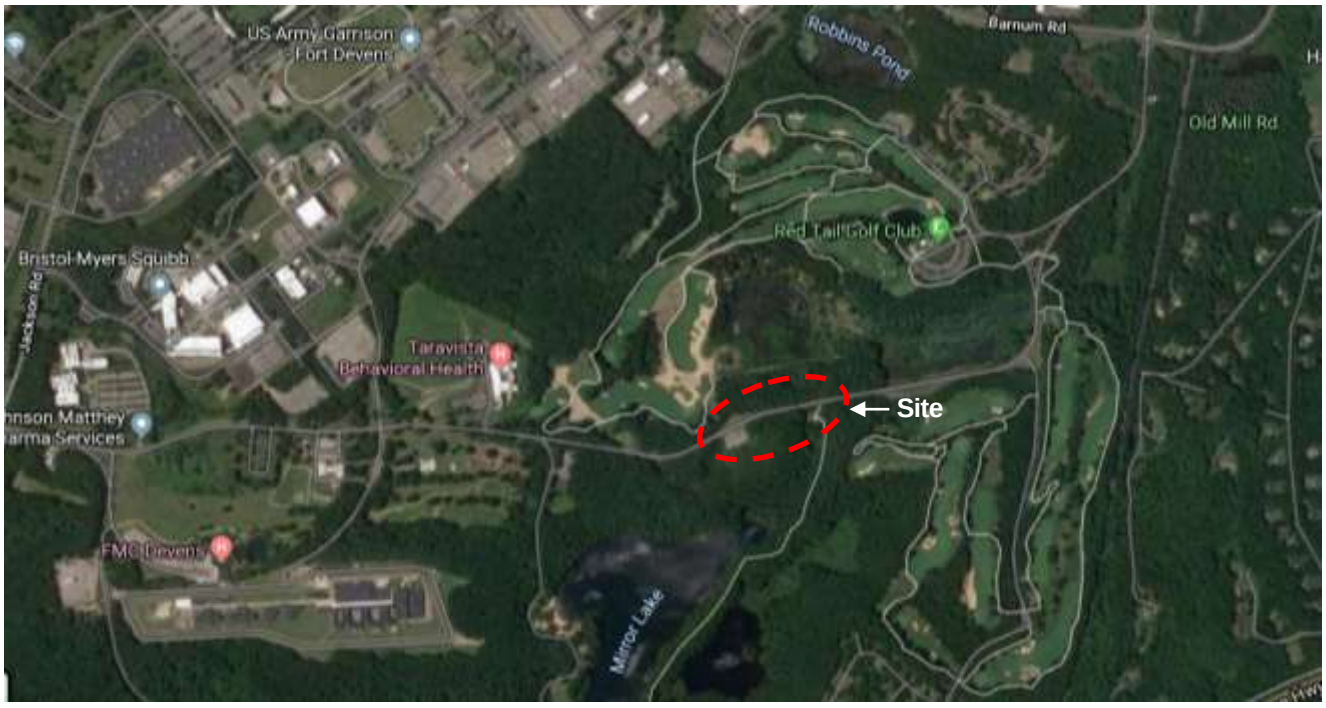
To: **Devens Enterprise Commission**

From: Peter Lowitt, Director

RE: **Patton Well Pilot PFAS Treatment System Improvements**

Owner: MassDevelopment
Applicant: MassDevelopment/Devens Utilities
Location: 150 and 168 Patton Road, Devens, MA (Parcel ID 10-9-200 & 11-99-204)
Zoning: Open Space Recreation, Zone I and 2 Water Resources Protection Overlay District

1. **Premises and Proposed Project:** Devens Utilities is seeking site plan approval and a Wetland Request for Determination of Applicability for the construction of a new water treatment plant, parking, driveway, emergency generator, and associated drainage improvements as well as utility connections within the Patton Road Right of Way which are within 100 feet of wetlands on the north side of Patton Road. Devens Utilities has been before the DEC previously for pilot PFAS treatment systems at the Shabokin Well, Patton Well, and MacPherson Well. Those treatment systems, now in operation, utilize granular activated carbon (GAC) filtration and Patton Well uses a resin filter (ion exchange) to remove PFAS from the drinking water and supply Devens with drinking water that has non-detectable levels of PFAS.



2. **Site issues:**
Upgrades to the Patton Well site were approved by the DEC in 2007. Early in 2020 a temporary resin filtration system was installed at the Patton Well site in order to provide the Utilities Department with a comparision between granular activated filtration and resin filtration treatments. Additional riprap and geotextiles were added at the time to the steep slope area between the site and the wetlands to address run-off problems. This project proposes to install the permanent water treatment fix for PFAS in the Patton Well water system. It involves utility connection work within the Patton Road Right of Way which are within the 100-foot wetlands buffer on the north

side of Patton Road., and the installation of a new water treat plant with diesel generator tank, a sewage tank and a residuals tank. The project is west of the existing Patton Well site and adjacent to a Slope Resource Area and within a Priority Habitat Area for Blandings Turtle, therefore the project will need to consult with and obtain authorization from the Natural Heritage Endangered Species Program. To avoid impacts to this threatened species, any ground disturbance needs to occur outside of the turtle's active season (April 15-October 15). Additional landscaping has been proposed to buffer the facility from Patton Road. MassDevelopment is investigating the need to redraw the parcel boundary containing the facility in order to better address setback issues and to not encroach on abutters.

3. **Application and Process:** Wright Pierce, on behalf of MassDevelopment Utilities Department, submitted a Level II Unified Permit application package, including the application, Request for Determination of Applicability, project narrative for ReUse Plan and Industrial Performance Standards Shabokin and Patton Water Treatment Plan Projects dated September 2, 2020, requests for waivers, abutters list, stormwater report entitled MassDevelopment Stormwater Management Plan, Patton Water Treatment Plant, dated September 2020; Emergency Action Plan Site Specific Program, Devens, project checklist and additional document required per the Project Checklist that included a Geotechnical Report, Proposed Water Treatment Building, Patton Well Site, Devens Massachusetts dated July 10, 2020 and Plans prepared by Wright Pierce on behalf of MassDevelopment Utilities and consisting of 16 sheets dated September 9, 2020 on September 11, 2020 as follows:
    - Cover Sheet
    - C-1 General Notes, Legends and Abbreviations
    - C-2 Existing Conditions and Demolition
    - C-3 Site Plan
    - C-4 Site Grading Plan
    - C-5 Site Piping Plan
    - C-6 Water Main Plan
    - C-7 Site Lighting Plan
    - C-8 Site Landscaping Plan
    - C-9-12 Details
    - C-13 Erosion Control Notes and Details
    - A-3 First Floor Plan
    - A-4 Elevations

    A Convault Brochure was also part of the submittal package.

4. **Site Issues at a glance:** After review by Nitsch and staff, the Applicant revised their plans. Overall the proposed low-impact drainage design, reduced limits of disturbance, landscaping, and pavement reduction are a great improvement over the preliminary plan design.

- The main outstanding issue is if MassDevelopment is proposing to establish a new parcel boundary for the Patton Well site. The proposed activity appears to encroach into the Mirror Lake Conservation Restriction area soe MassDevelopment and their consultant are investigating if the proposed actcity is consistent with the allowed uses in the CR or not. If not, they will need to re-design the project.

- **Lighting**: Can the wall pack lights that need to be on overnight be motion-activated to reduce unnecessary light pollution (remain on at a lower level of illumination until motion-activated)?

There are minor plan revisions and Plans should be updated to include the following:

a. Erosion and Sediment Control Plan showing construction laydown and material stockpile areas, and temporary sedimentation basin(s). Notes should be updated on C-13 (or new E&S Plan) with notes as required under 974 CMR 3.02(3)(e), along with Turtle protection measures.
b. The names and addresses of the record owner of the land and the applicant and the name, seal, and address of the designer, Engineer, Surveyor, and Registered Landscape Architect who made the plan, all of which shall appear in the lower right-hand corner.
c. Devens Lot number of the site, size of parcel, and zoning and overlay districts.
d. Space for Chair's signature and date on sheets A-3 and A-4.

e. FEMA/FIRM Flood Map and Zone information.
f. Existing tree line (greyed out like existing contours) and proposed limits of clearing (darkened) on all relevant sheets.
g. The Landscape Plan (C-8) should be updated to include a mix of deciduous and coniferous tree plantings on top of excess material stockpile. A couple of additional shade trees could also be added along the driveway just south of the Propane tank pad area to aid in stormwater management and heat island reduction.
h. Loading dock and dumpster pad details, as well as all proposed tank details.
i. Permanent stone check dam and rip rap outlet details.
j. The revised narrative submitted indicates the existing propane generator will be removed from the existing well site and a new generator will be installed. Will the existing propane tank be removed as well? If so, the pad should also be removed and this area re-stabilized and restored. Please clarify whether or not any work proposed at the Patton Well site involves any ground disturbance or revised limits of clearing as this will need to be included as part of the NOI work.
k. These facilities will have a number of operations that require special oversight/attention to ensure proper functioning and to prevent any hazards. An Operations and Maintenance Plan should be prepared and submitted for review to ensure it covers all operations, including but not limited to:
l. The O&M Plan submitted as part of the Drainage Report should be updated to include inspection and maintenance procedures for stone check dams, pipe outlets and rip rap aprons, and all LID drainage elements.
m. Snow/ice management, including identifying snow stockpiling areas outside of swales and basin that drain into treatment system (no-salt applications);
n. Waste management/dumpsters;
o. Septic and residuals tank details, monitoring, maintenance;
p. Diesel fuel tank monitoring, maintenance, as well as filling procedures and spill prevention and pollution controls measures specific to fuel deliveries and filling.
q. Diesel Generator operations and maintenance (permitting, exercising, monitoring and maintenance.
r. Propane storage tank (inspections, maintenance, and filling procedures**)**

5. **Recommended Action:** Staff recommends continuing the public hearing until the November 17, 2020 meeting at 6:45PM in order to provide adequate time for MassDevelopment to address the property line issue. The remaining issues are minor and can be addressed as conditions of approval once the property line issue is addressed.

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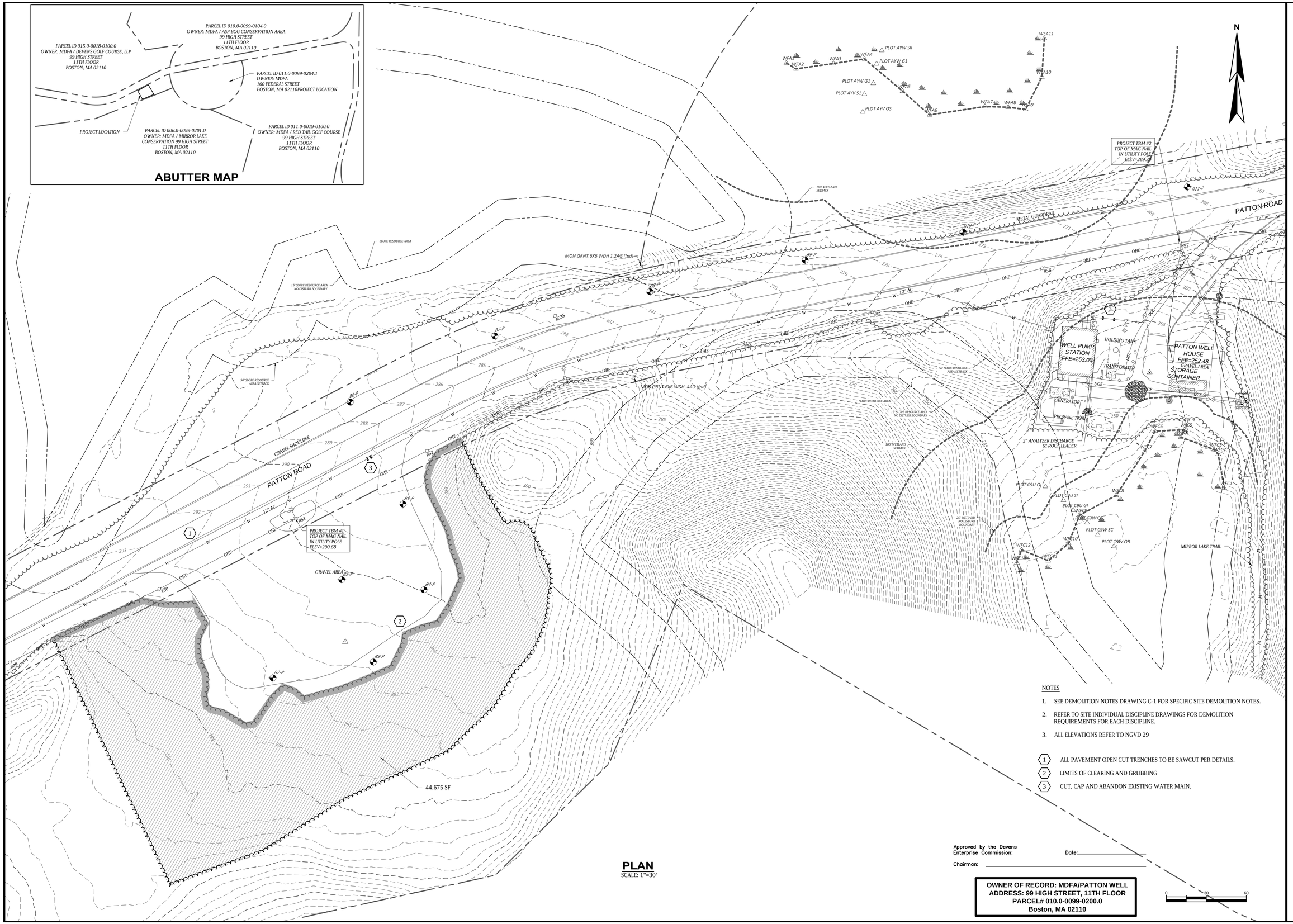

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SLOPE RESOURCE AREA

15' SLOPE RESOURCE AREA NO DISTURB BOUNDARY

50' SLOPE RESOURCE AREA SETBACK

PATTON ROAD

GRAVEL SHOULDER

PROJECT TBM #1
TOP OF MAG NAIL
IN UTILITY POLE
ELEV=290.68

INSTALL SILT FENCE, TYP

CONSTRUCTION ENTRANCE

INV OUT = 284.50'

INV IN = 285.26'

INV OUT = 288.23'

INV IN = 289.00'

RIM EL. = 287.5
INV IN = 284.60
INV OUT = 284.50

INFILTRATION BASIN, SEE DETAIL
SHEET C-12 FOR MORE INFORMATION

RIPRAP APRON, TYP

INV OUT = 287.00'

INV IN = 287.40'

INV OUT = 287.00'

SEDIMENT FOREBAY -
BOTTOM AREA = 55 SF

ROOF LEADER DOWNSPOUT, TYP
SEE DETAIL DWG C-12

PATTON WTP

FFE = 295.50

11.5'x11.5'x3' DEEP
DRYWELL (SEE DETAIL
SHEET C-12)

11'x11'x3' DEEP
DRYWELL (SEE DETAIL
SHEET C-12)

6'x6'x3' DEEP
DRYWELL (SEE
DETAIL SHEET C-12)

EXCESS
SOIL
AREA

SILT FENCE/TURTLE
EXCLUSION BARRIER

STONE CHECK
DAM, TYP.

INV IN = 288.10'

SLOPE RESOURCE AREA

15' SLOPE RESOURCE
AREA NO DISTURB
BOUNDARY

50' SLOPE RESOURCE
AREA SETBACK

SEDIMENT FOREBAY -
BOTTOM AREA = 130 SF

Approved by the Devens
Enterprise Commission:

Date:_____

Chairman: _____

OWNER OF RECORD: MDFA/PATTON WELL
ADDRESS: 99 HIGH STREET, 11TH FLOOR
PARCEL# 010.0-0099-0200.0
Boston, MA 02110

0 20 40

PLAN
SCALE: 1"=20'

NO	SUBMISSIONS/REVISIONS	APP'D	DATE
1	UNIFIED PERMIT	J.CRA	

DESIGNED BY: C.DAI
CAD COORD: W.BAI
CAD: C.HIN
CHECKED BY: L.ANT
DATE:
APPROVED BY: J.CRA
DATE:
PROJECT NO: 14083H

COMMONWEALTH OF MASSACHUSETTS
JAMES E. CRAIG
CIVIL
No. 40459
REGISTERED PROFESSIONAL ENGINEER

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MASSDEVELOPMENT
DEVENS, MASSACHUSETTS
PATTON WATER TREATMENT PLANT

SITE GRADING PLAN

DRAWING
C-4

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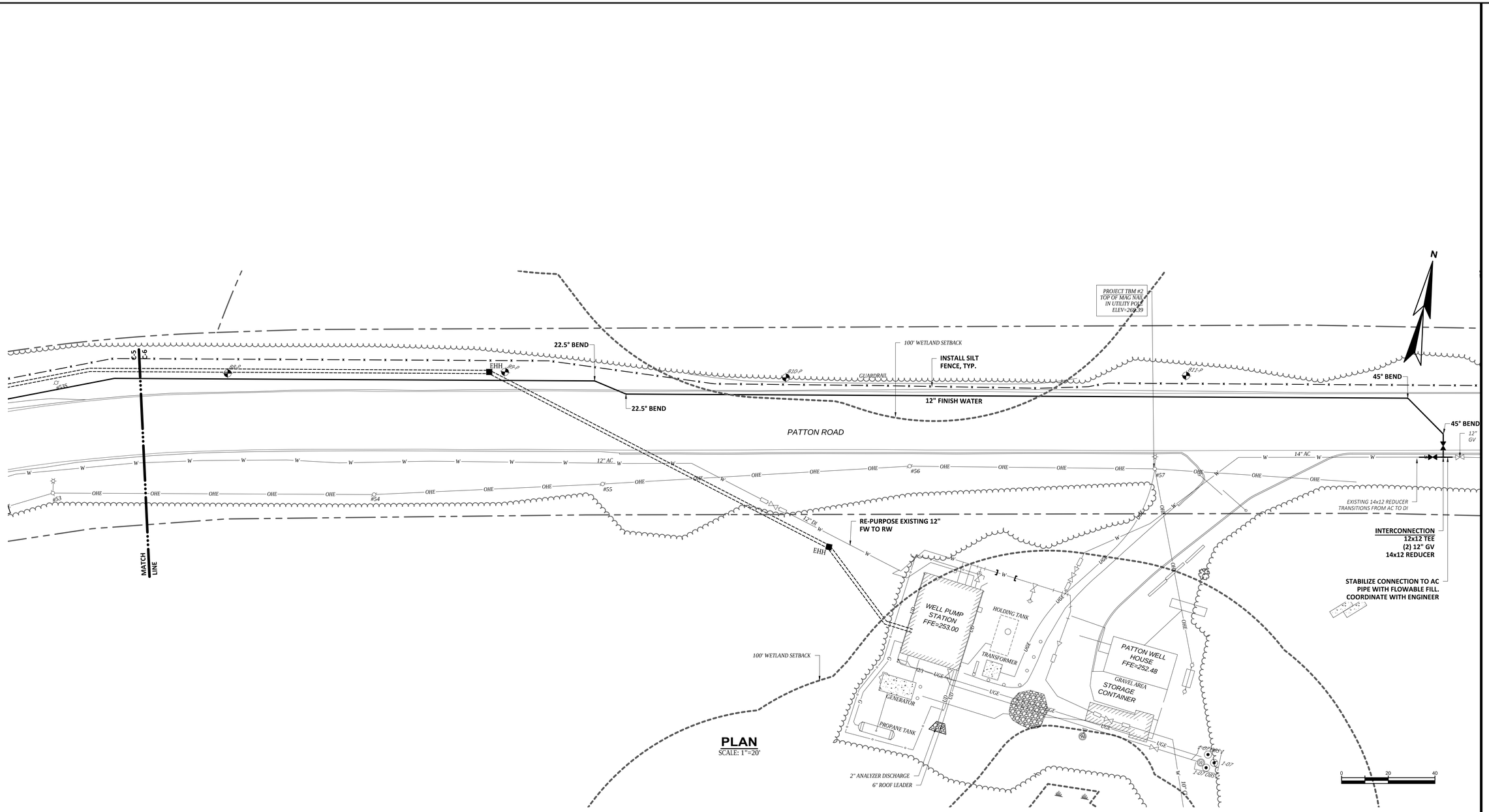

PLAN
SCALE: 1"=20'

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Enterprise Commission: Date:_____

Chairman: _____

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DESIGNED BY: C.DAI
CAD COORD: W.BAI
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DATE:
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PROJECT NO: 140823H

COMMONWEALTH OF MASSACHUSETTS
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CIVIL
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REGISTERED PROFESSIONAL ENGINEER

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MASSDEVELOPMENT
DEVENS, MASSACHUSETTS
PATTON WATER TREATMENT PLANT

WATER MAIN PLAN

DRAWING
C-6

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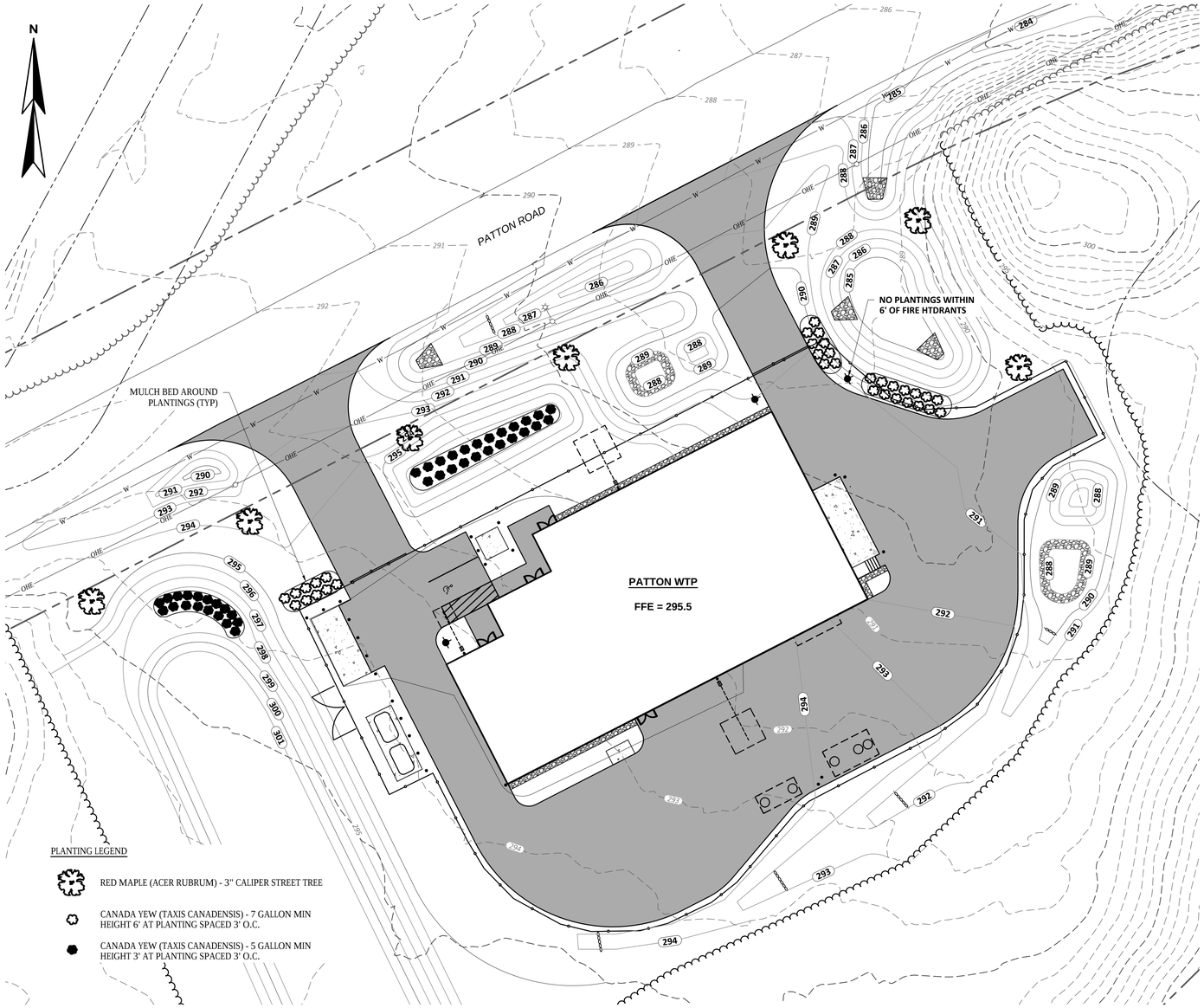

PLAN
SCALE: 1"=20'

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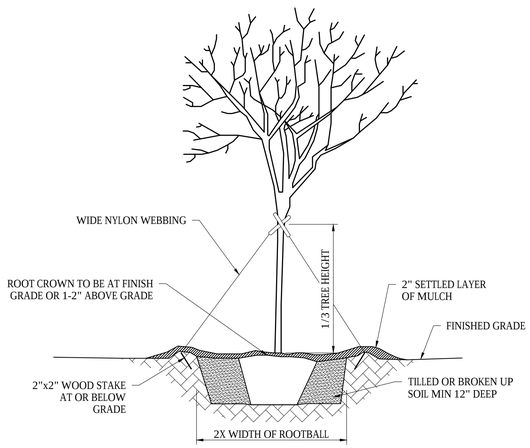
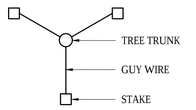
NOTES

1. THE LANDSCAPE CONTRACTOR IS ADVISED TO CALL DIG-SAFE (1-888-344-7233 OR 811) PRIOR TO BEGINNING WORK. THE LANDSCAPE CONTRACTOR IS ADVISED OF THE PRESENCE OF UNDERGROUND UTILITIES AND SHALL VERIFY THE EXISTENCE AND LOCATION OF SAME BEFORE COMMENCING AND DIGGING OPERATIONS. THE LANDSCAPE CONTRACTOR SHALL REPLACE OR REPAIR UTILITIES, PAVING, WALKS, CURBING, ETC. DAMAGED IN PERFORMANCE OF THIS JOB AT NO ADDITIONAL COST TO OWNER.
2. CONTRACTOR SHALL THOROUGHLY FAMILIARIZE THEMSELVES WITH ALL SITE CONDITIONS PRIOR TO BIDDING.
3. DO NOT SCALE FROM DRAWINGS. ANY OMISSIONS IN DIMENSIONING SHALL BE REPORTED IMMEDIATELY TO THE OWNER AND ENGINEER. ANY DISCREPANCIES BETWEEN DRAWINGS, PLANT QUANTITIES, DETAILS, NOTES AND SPECIFICATIONS SHALL BE IMMEDIATELY REPORTED TO THE OWNER AND ENGINEER FOR FURTHER DIRECTION AND RESOLUTION BEFORE ANY ADDITIONAL WORK PROCEEDS.
4. PROVIDE SMOOTH TRANSITION WHERE NEW WORK MEETS EXISTING CONDITIONS.
5. ALL DISTURBED AREAS TO RECEIVE 4" LOAM, LIME, SEED, AND MULCH.
6. CONTRACTOR SHALL FURNISH AND PLACE 12 INCHES OF LOAM IN ALL SHRUB BEDS, 30 INCHES IN ALL TREE PITS, AND 6 INCHES UNDER ALL TURF AREAS. THE LANDSCAPE CONTRACTOR SHALL COORDINATE SUBGRADE PREPARATION WITH THE GENERAL CONTRACTOR PRIOR TO PLACING LOAM.
7. ALL PLANT MATERIAL INSTALLED SHALL MEET THE SPECIFICATIONS OF "AMERICAN STANDARDS FOR NURSERY STOCK BY THE AMERICAN ASSOCIATION OF NURSERYMEN".
8. ALL PLANT MATERIAL SHALL BE FREE FROM INSECTS AND DISEASE.
9. ALL PLANTING SHALL BE DONE IN ACCORDANCE WITH ACCEPTABLE HORTICULTURAL PRACTICES. THIS IS TO INCLUDE ALL PLANTING,PROPER PLANTING MIX, PLANT BED AND TREE PIT PREPARATION, PRUNING STAKING OR GUYING WRAPPING, SPRAYING, FERTILIZATION, PLANTING AND ADEQUATE MAINTENANCE UNTIL ACCEPTANCE FROM THE OWNER.
10. ALL GRASS, OTHER VEGETATION AND DEBRIS SHALL BE REMOVED FROM ALL PLANTING AREAS PRIOR TO PLANTING.
11. EXISTING TREES TO BE PRESERVED SHALL BE PROTECTED DURING CONSTRUCTION AND SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
12. ANY DEVIATION FROM THE LANDSCAPE PLAN, INCLUDING PLANT LOCATION, SELECTION, SIZE, QUANTITY, OR CONDITION SHALL BE REVIEWED AND APPROVED BY THE OWNER AND ENGINEER PRIOR TO INSTALLATION ON SITE.
13. DAMAGE TO EXISTING SITE IMPROVEMENTS DURING INSTALLATION OF LANDSCAPE MATERIAL SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR.
14. MAINTENANCE REQUIREMENTS: PRUNE DEAD OR DAMAGED BRANCHES, MAINTAIN GUY POSTS AND WATER AS REQUIRED UNTIL PROJECT COMPLETION AND ACCEPTANCE BY OWNER.
15. WATERING: ALL PLANTINGS SHALL BE THOROUGHLY WATERED UPON INSTALLATION, AND THEN WEEKLY WHENEVER ANY DRY SPELLS OCCUR, UNTIL ACCEPTANCE BY OWNER.
16. LANDSCAPE CONTRACTOR OR PLANT SUPPLIER SHALL GUARANTEE PLANTS AND PROVIDE REPLACEMENTS FOR TWO YEARS FROM INSTALLATION.



ELEVATION

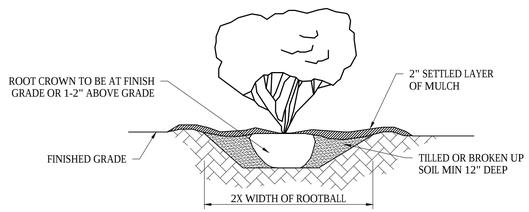


PLAN

NOTES:

1. ALL PLANT MATERIALS SHALL BE IN ACCORDANCE WITH THE AMERICAN STANDARDS FOR NURSERY STOCK (ANSI 260.1-2004). PLANT ACCORDING TO ANSI A300 PART 6.
2. DIG THE PLANTING HOLE A MINIMUM OF 2X WIDTH OF ROOTBALL FOR AT LEAST THE FIRST 12 INCHES OF DEPTH. BELOW 12 INCHES, DIG HOLE WIDE ENOUGH TO PERMIT ADJUSTING. DO NOT DIG THE HOLE DEEPER THAN ROOT BALL DEPTH.
3. SCARIFY THE SUBGRADE AND SIDES OF THE PLANTING HOLE WHEN PLANTING IN CLAY SOILS (MORE THAN 15% CLAY).
4. LIFT AND SET THE TREE BY ROOT BALL ONLY. DO NOT LIFT USING THE TREE TRUNK AND DO NOT USE TREE TRUNK AS A LEVER.
5. SET THE TOP OF THE ROOT BALL LEVEL WITH THE SOIL SURFACE OR SLIGHTLY HIGHER IF THE SOIL IS PRONE TO SETTLING.
6. AFTER THE TREE IS SET IN PLACE, REMOVE BURLAP1 WIRE AND STRAPS FROM AT LEAST THE UPPER 1/3 OF THE ROOTBALL.
7. BACKFILL WITH 3 PARTS LOAM TO 1 PART PEAT, FREE OF UNDESIRABLE MATERIALS. WATER TO REMOVE AIR POCKETS.
8. USE THREE 2" X 2" WOOD STAKES DRIVEN INTO UNDISTURBED SOIL A MINIMUM OF 16 INCHES. SPACE STAKES EQUALLY AROUND THE TREE.
9. ATTACH ¾" NYLON WEBBING TO CONNECT THE TREE TO STAKES. ATTACH WEBBING AT 1/3 THE TREE HEIGHT.
10. APPLY A 2-3" (SETTLED) DEPTH OF PINE STRAW OR BARK MULCH TO THE PLANTING SURFACE. LEAVE A 2" SPACE AROUND THE TRUNK FOR AIR CIRCULATION.
11. PRUNING SHALL BE LIMITED TO DEAD, DISEASED, OR BROKEN LIMBS ONLY AND SHALL BE IN ACCORDANCE WITH ANSI A300 SPECIFICATIONS.
12. REMOVE ANY TRUNK WRAP REMAINING AT TIME OF PLANTING. NO WRAPS SHALL BE PLACED ON TRUNK.

TREE PLANTING
SCALE: NTS



NOTES:

1. DIG PLANTING HOLE AT LEAST 2X THE WIDTH OF THE ROOT BALL OR CONTAINER.
2. SCARIFY SUBGRADE AND SIDES OF PLANTING HOLE WHEN PLANTING IN CLAY SOIL.
3. SET THE TOP OF THE ROOT BALL LEVEL WITH THE SOIL SURFACE, OR 1-2" ABOVE IF THE SOIL IS PRONE TO SETTLING.
4. IF CONTAINER GROWN PLANT, GENTLY SLIDE PLANT OUT OF CONTAINER. DISTURB THE ROOTS.
5. IF B&B PLANT, REMOVE BURLAP FROM AT LEAST THE TOP 12 INCHES OF THE ROOTBALL, WITHOUT DISTURBING THE ROOTBALL. REMOVE ALL CORD FROM THE TRUNK. REMOVE BURLAP AND WIRE BASKET (IF PRESENT) FROM THE ROOT BALL.
6. BACKFILL WITH 3 PARTS LOAM TO 1 PART PEAT, FREE OF UNDESIRABLE MATERIALS. WATER TO REMOVE AIR POCKETS.
7. PLACE PINE STRAW OR BARK MULCH ON THE SURFACE TO A (SETTLED) DEPTH OF 1 TO 3 INCHES.

SHRUB PLANTING
SCALE: NTS

Approved by the Devens Enterprise Commission: Date:_____

Chairman: _____

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MASSDEVELOPMENT
DEVENS, MASSACHUSETTS
PATTON WATER TREATMENT PLANT

LANDSCAPE PLAN AND DETAILS

DRAWING
C-8

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