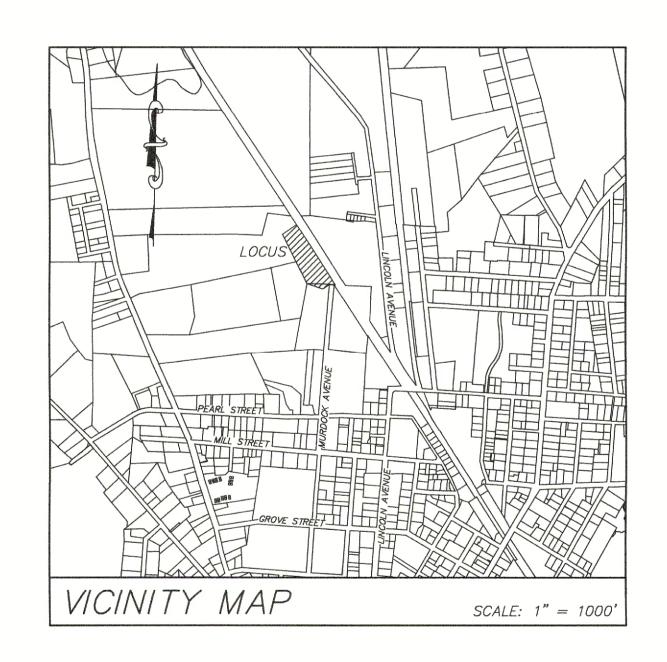
# SITE DEVELOPMENT PLAN SOLAR ENERGY STORAGE SYSTEM (ESS) 256 MURDOCK AVENUE IN WINCHENDON, MASSACHUSETTS MARCH 27, 2023

REVISIONS THROUGH JULY 10, 2023



# APPLICANT:

ZP BATTERY DEVCO, LLC
PETE FORTE
1 MERCANTILE STREET, SUITE 630
WORCESTER, MASSACHUSETTS 01608

# OWNER:

BOSTWICK REALTY TRUST 256 MURDOCK AVENUE WINCHENDON, MASSACHUSETTS 01475

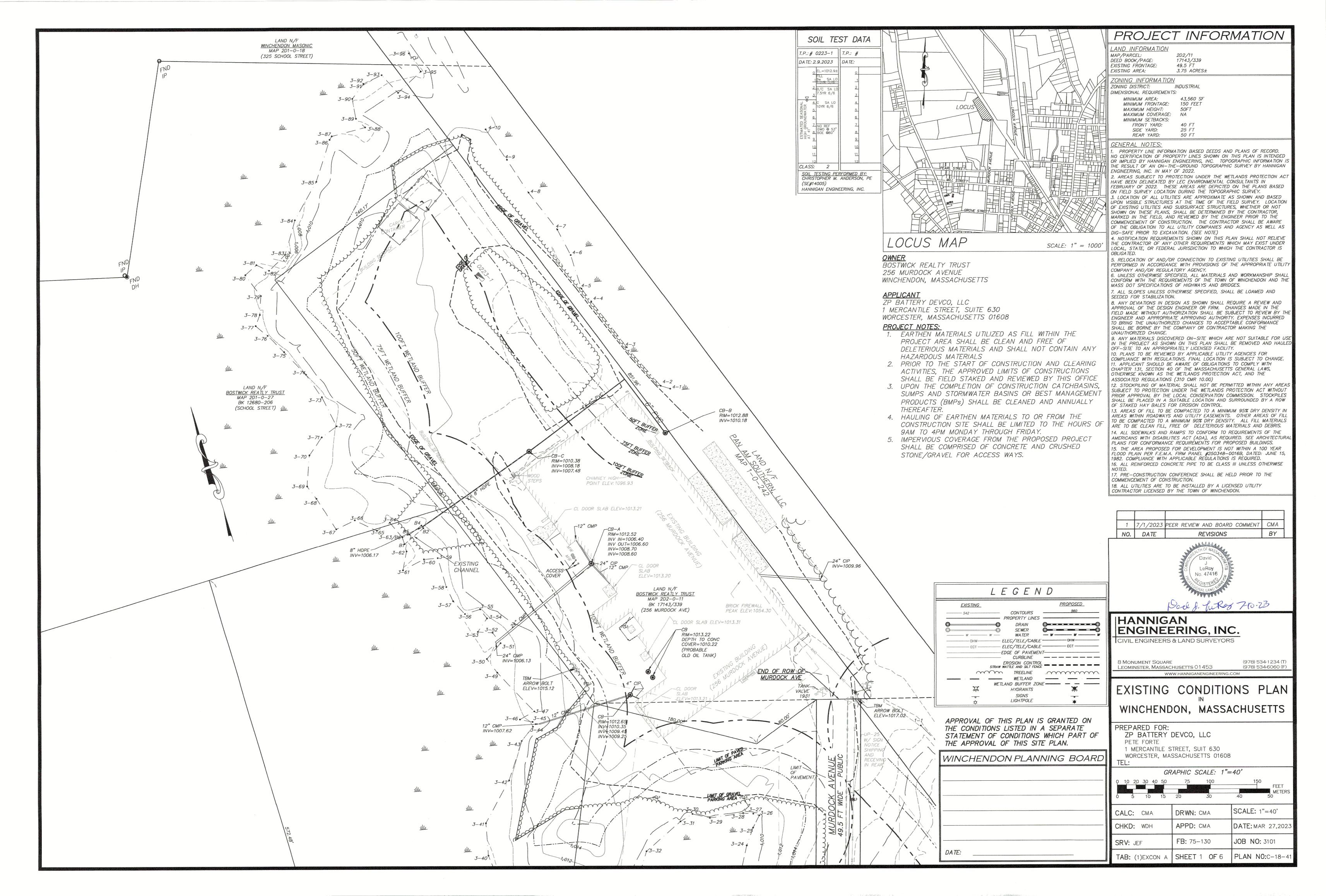
# CIVIL ENGINEER & LAND SURVEYOR:

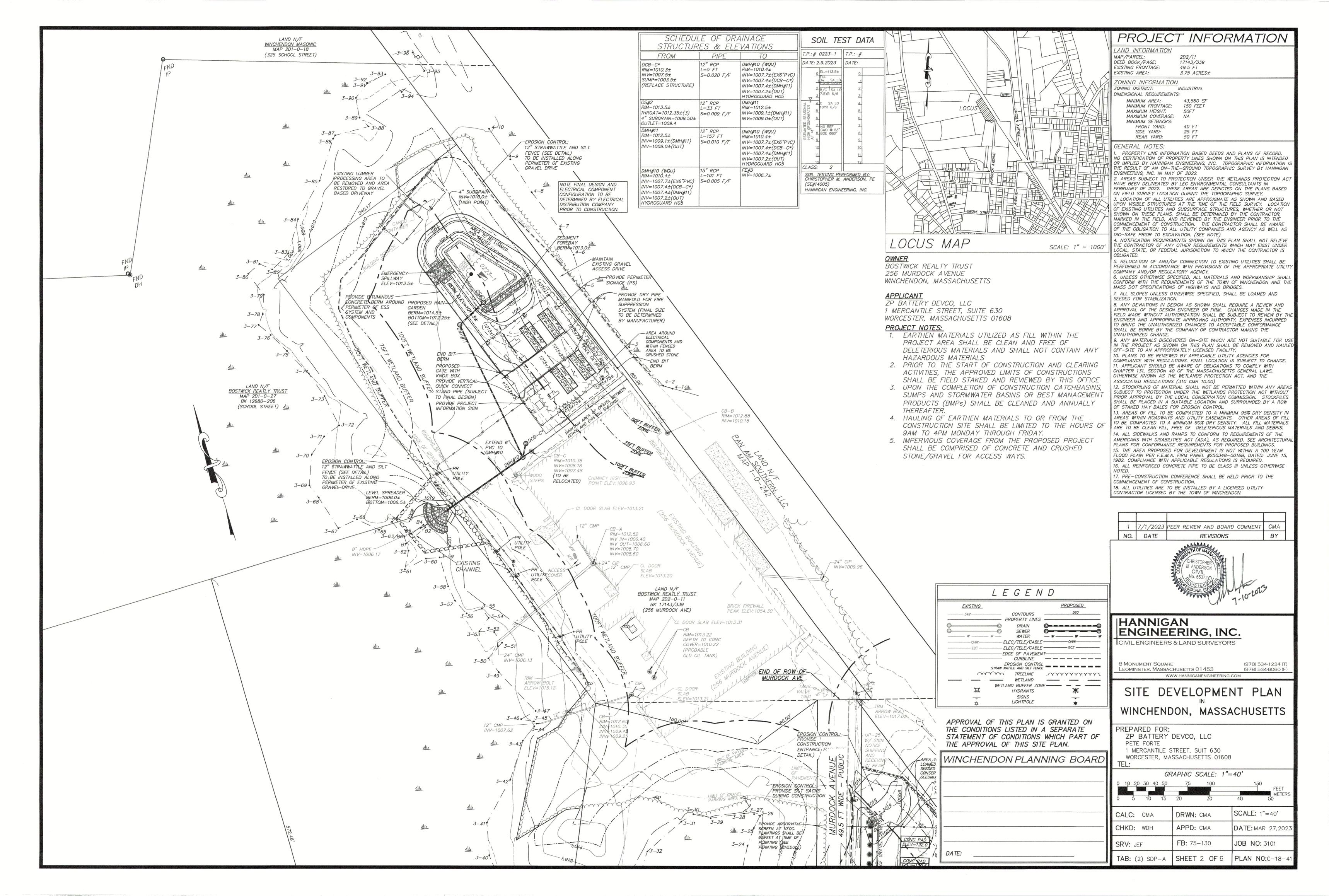
HANNIGAN ENGINEERING, INC. 8 MONUMENT SQUARE LEOMINSTER, MASSACHUSETTS 01453 TEL: (978) 534 - 1234

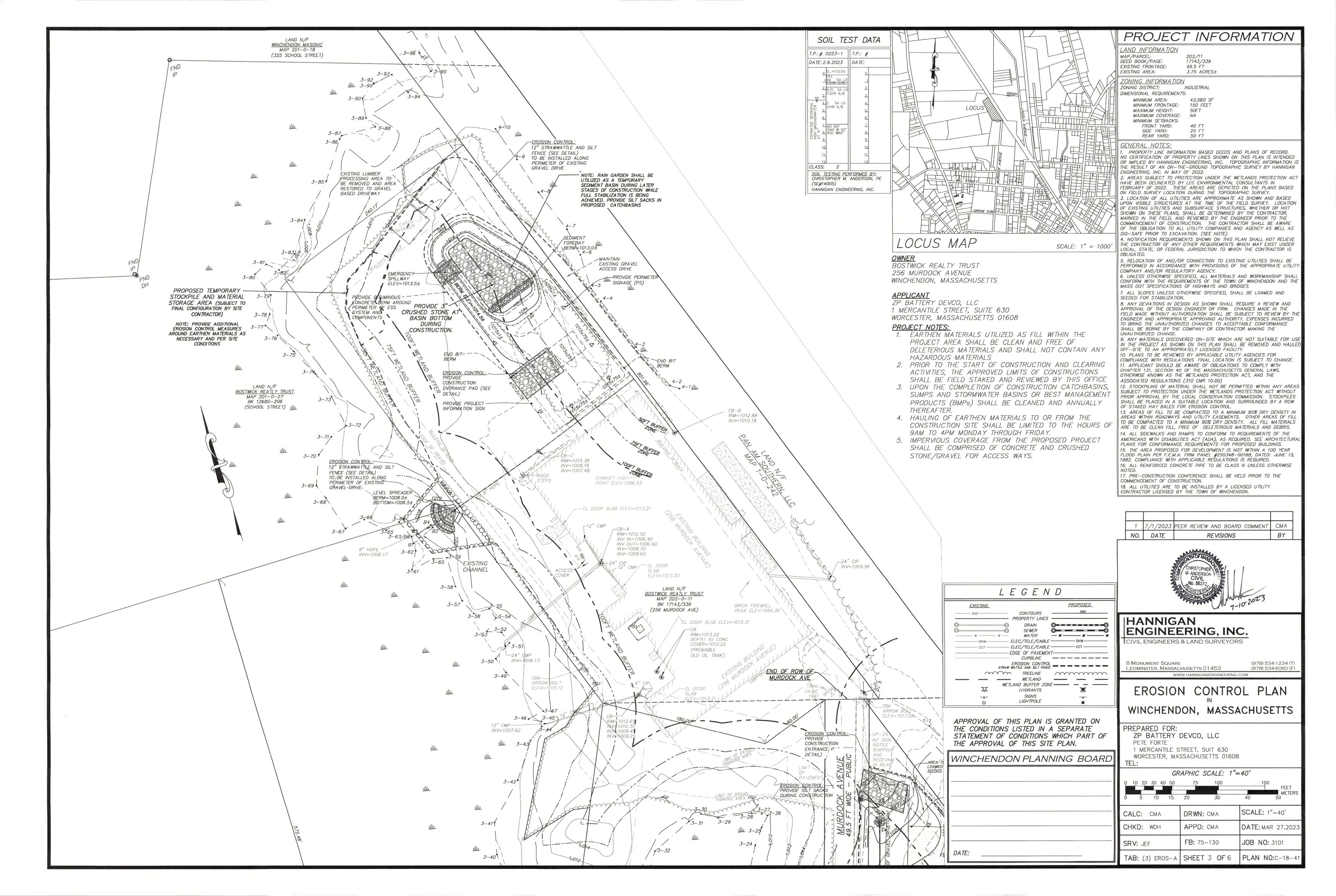
# PLAN INDEX

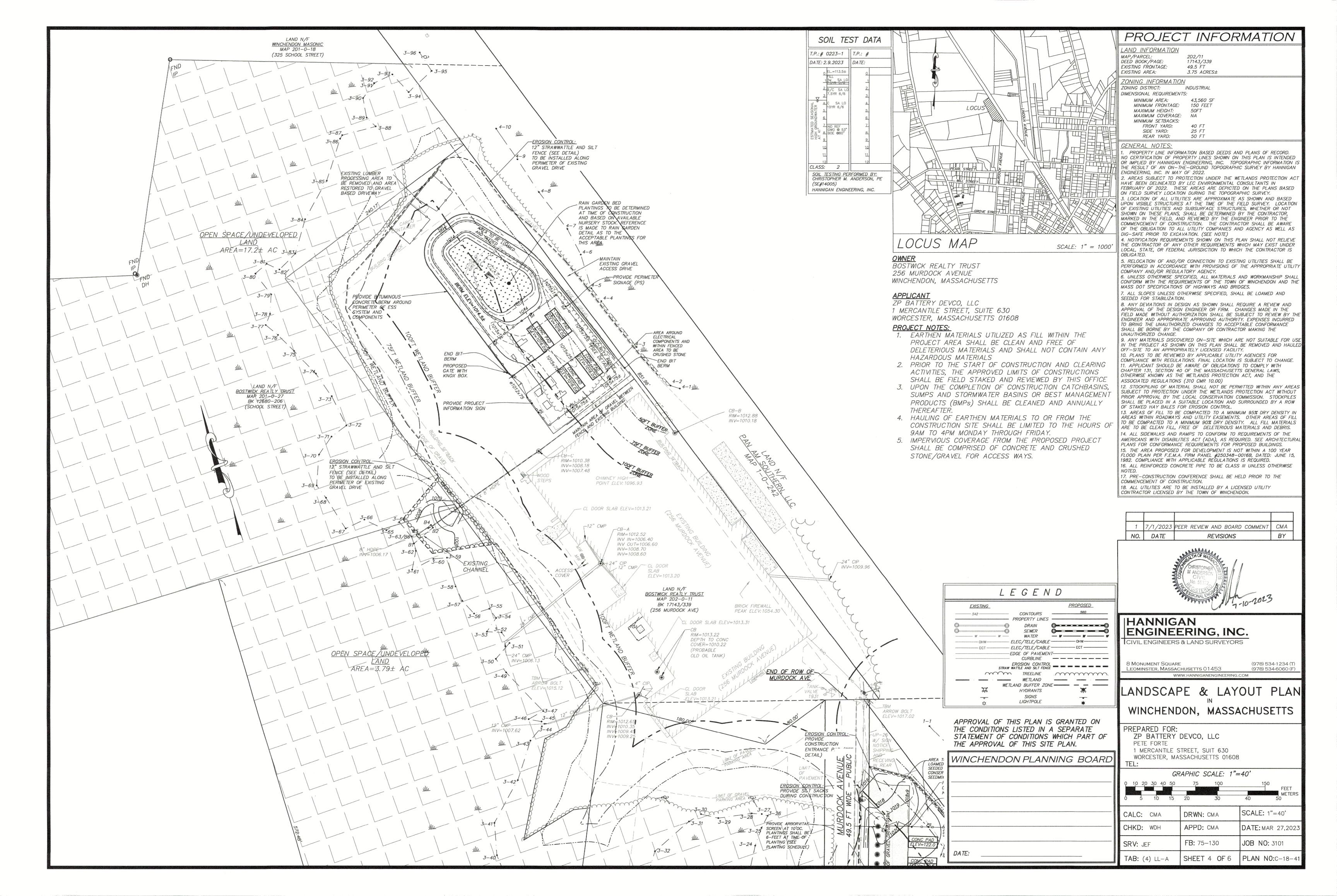
SHEET	1	EXISTING CONDITIONS PLAN
SHEET	2	SITE DEVELOPMENT PLAN
SHEET	3	EROSION CONTROL PLAN
SHEET	4	LANDSCAPE AND LAYOUT PLAN
SHEET	5 - 6	CONSTRUCTION DETAILS

PERMITTING SET - NOT FOR CONSTRUCTION









1. THE PURPOSE OF THIS PLAN IS TO PRESENT A PREVENTIVE METHOD OF CONSTRUCTION TO MINIMIZE THE IMPACT OF THE CONSTRUCTION ACTIVITIES UPON WETLAND AND OTHER SENSITIVE AREAS. THE DATA CONTAINED ON THIS PLAN IS INTENDED TO SUPPLEMENT THE DEVELOPER OR CONTRACTORS' EXPERTISE AND IS NOT MEANT TO CIRCUMVENT LOGICAL DECISIONS REQUIRED BY A VARIETY OF FIELD CONDITIONS INCLUDING WEATHER AND THE TYPE OF EQUIPMENT AVAILABLE TO THE

2. THE CONTRACTOR IS TO BE AWARE OF THE REQUIREMENTS AND OBLIGATIONS TO COMPLY WITH CHAPTER 131, SECTION 40 OF THE MASSACHUSETTS GENERAL LAWS, OTHERWISE KNOWN AS THE WETLANDS PROTECTION ACT, AND ITS ASSOCIATED REGULATIONS (310 CMR 10.00). CERTAIN PERMITS IN THE FORM OF AN ORDER OF CONDITIONS. OR OTHER FORMAT, MAY BE REQUIRED FOR THE CONSTRUCTION AS DEPICTED ON THIS PLAN. THESE PERMITS SHALL BE REVIEWED AND ADHERED TO BY THE CONTRACTOR THROUGHOUT THE CONSTRUCTION PROCESS. THE CONTRACTOR SHALL ALSO MAINTAIN COPIES OF ALL PERMITS ON SITE

3. IF CHANGES IN THE PROJECT ARE REQUIRED DUE TO FIELD CONDITIONS THE DEVELOPER/CONTRACTOR SHALL PROMPTLY NOTIFY THE ENGINEER FOR REVIEW OF THESE CONDITIONS. UPON REVIEW, AND PRIOR TO THE IMPLEMENTATION OF ANY CHANGE, THE CONTRACTOR AND THE ENGINEER SHALL MEET WITH THE APPROPRIATE LOCAL AND/OR STATE OFFICIAL, OR ITS AGENT, TO DETERMINE IF THE CHANGE REQUIRES MODIFICATION TO EXISTING APPROVED PERMITS.

4. ALTERATION AND/OR DESTRUCTION OF WETLAND AREAS WITHOUT PRIOR CONSENT OF THE CONSERVATION COMMISSION IS PROHIBITED. SILTATION PLUMES. ILLICIT DISCHARGES. OR INADVERTANT ALTERATION SHALL BE CONSIDERED AS ACTIVITIES NOT PERMITTED BY THE ORDER AND SHALL BE REPORTED TO THE CONSERVATION COMMISSION ALONG WITH THE PROPOSED MITIGATIVE MEASURES.

5. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE EROSION AND SEDIMENT CONTROL BARRIER SHALL BE INSTALLED AS SHOWN ON THE PLANS. THE CONTRACTOR SHALL MAINTAIN THE EROSION CONTROL BARRIER UNTIL ALL WORK IS COMPLETE AND ALL AREAS HAVE BEEN STABILIZED. THE REMOVAL OF SEDIMENT CONTROL DEVICES SHALL BE ONLY UPON THE APPROVAL OF THE CONSERVATION COMMISSION.

6. EROSION AND SEDIMENTATION CONTROL DEVICES, SUCH AS CHECK DAMS, SEDIMENT BASINS, ETC. ARE TO BE INSTALLED AS SHOWN ON THE SITE DEVELOPMENT PLANS WITH ASSOCIATED DETAILS, AS APPROPRIATE.

7. CONSTRUCTION OPERATIONS SHALL NOT CAUSE NOTICEABLE SEDIMENTATION PLUMES TO OCCUR ON OR SURROUNDING THE PROJECT. SHOULD SEDIMENT EXTEND BEYOND THE EROSION CONTROL BARRIERS, THE CONTRACTOR SHALL STOP WORK AND INSTALL ADDITIONAL MITIGATION MEASURES TO PREVENT FURTHER SEDIMENTATION.

8. NO MATERIAL SUBJECT TO EROSION SHALL BE STOCKPILED OVERNIGHT WITHIN 100 FEET OF ANY WETLAND AREAS WITHOUT PROPER EROSION AND SEDIMENTATION DEVICES IN PLACE.

9. EQUIPMENT SHALL NOT BE PARKED WITHIN WETLAND OR BUFFER AREAS EXCEPT DURING ACTUAL OPERATIONS REQUIRING SAID EQUIPMENT. 10. ACCUMULATED SEDIMENT ALONG EROSION CONTROL BARRIERS SHALL BE PERIODICALLY REMOVED AND DISPOSED OF BY THE CONTRACTOR AS REQUIRED BY THE CONSERVATION COMMISSION OR AS DIRECTED BY THE

# EROSION CONTROL METHODS:

1. IT IS OF GREAT IMPORTANCE THAT CONCENTRATION OF RUNOFF BE AVOIDED IN ORDER TO PREVENT THE TRANSPORT OF SEDIMENT.

THE PRIMARY EROSION CONTROL METHOD TO BE UTILIZED IS TO LIMIT THE AREA OF DISTURBANCE DURING CONSTRUCTION ACTIVITIES. THIS IS ACCOMPLISHED BY PROMPT STABILIZATION OF DISTURBED AREAS UPON COMPLETION OF SEQUENCES OF CONSTRUCTION.

3. EROSION AND SEDIMENT CONTROL DEVICES SUCH AS HAY BALES, SILT FENCES, DIVERSION BERMS, ETC. SHALL BE UTILIZED FOR THE PROTECTION OF THE AREAS BEYOND THE LIMIT OF CONSTRUCTION.

# DEMARCATION OF SENSITIVE AREAS:

CONTROL THE LIMITS OF THE DISTURBANCE. AS AN EXAMPLE, HAY BALE BARRIERS PROVIDE SUCH DEMARCATION AND OTHER METHODS SUCH AS LOG BARRIERS, ROPE WITH FLAGGING, ETC. MAY BE UTILIZED. . CARE SHOULD BE TAKEN IN THE OPERATION OF EQUIPMENT, SUCH THAT ONLY THE MINIMUM AREA NEEDED TO BE ALTERED IS DISTURBED.

. ACCESS TO THE SITE SHALL BE MADE IN THE AREA OF A PERMANENT DRIVEWAY OR ROADWAY UNLESS DOING SO WOULD RESULT IN A TRAFFIC

2. AN AREA OF CRUSHED STONE SHALL BE PLACED AT THE DRIVEWAY ENTRANCE TO INSURE THAT MUD IS NOT TRACKED ONTO THE EXISTING ROAD (SEE CONSTRUCTION ENTRANCE DETAIL). IF MUD IS INADVERTENTLY TRACKED ONTO THE ROAD. IT SHOULD BE PROMPTLY

3. LABORERS VEHICLES SHALL BE PARKED IN A DESIGNATED AREA AS TO MINIMIZE DISTURBED SURFACES AND TO INSURE THAT RUTS ARE NOT CREATED AND WHICH COULD CARRY WATER TO A WETLAND OR OTHER

4. SUITABLE MEASURES SHALL BE TAKEN TO INSURE THAT LARGE DELIVERY TRUCKS SERVICING THE SITE DO NOT DAMAGE TO AREAS OF EXISTING VEGETATION OR CAUSE DISTURBANCE TO STABILIZED AREAS.

# ORDERLY CONSTRUCTION PROCEDURES:

1. THE CONTRACTOR SHALL PERFORM SITE CONSTRUCTION IN A MANNER WHICH WILL INSURE THE STABILIZATION OF AREAS IN PROXIMITY OF OR TRIBUTARY TO WETLAND AREAS AS SOON AS POSSIBLE.

2. EROSION CONTROL DEVICES SUCH AS HAY BALE BARRIERS, SILT FENCES AND MULCH SHALL BE BROUGHT TO THE SITE AND STOCKPILED PRIOR TO INITIATING CONSTRUCTION.

3. THE CONTRACTOR SHALL PROVIDE AREAS FOR THE TEMPORARY STORAGE OF CONSTRUCTION DEBRIS. CONSTRUCTION DEBRIS SHALL NOT BE ALLOWED TO ACCUMULATE FOR AN EXTENDED PERIOD OF TIME.

1. LAND CLEARING SHALL BE PERFORMED IN PHASES CONSISTENT WITH ACTUAL CONSTRUCTION REQUIREMENTS. FINAL LAND CLEARING SHALL BE LIMITED TO RETURN TO GRADE SLOPES.

2. TREES SHALL BE CUT AND STUMPS GROUND IN PLACE TO EXISTING GRADE TO MAINTAIN SOIL STABILIZATION.

3. BRUSH AND BRANCHES SHOULD BE CHIPPED AND UTILIZED FOR WOOD MULCH IF PRACTICAL.

4. VEHICLES UTILIZED IN THE CLEARING OPERATION SHOULD NOT TRAVERSE WETLANDS OR FLOWING BROOKS OR STREAMS WITHOUT PRIOR APPROVAL FROM THE LOCAL CONSERVATION COMMISSION OR AGENT.

# GRUBBING AND STRIPPING:

1. TOP SOIL SHALL BE RETAINED FOR LANDSCAPING PURPOSES. 2. GRUBBING AND STRIPPING OF SLOPES LEADING TO WETLAND AREAS SHOULD NOT BE UNDERTAKEN DURING PERIODS OF INTENSE RAINFALL.

3. TOP SOIL STOCKPILE LOCATIONS ARE DEPICTED ON THE SITE DEVELOPMENT PLAN, THE EROSION CONTROL PLAN, AND/OR THE CONSTRUCTION PHASING PLAN AND SHALL BE ADHERED TO.

4. WHEN WORKING IN THE VICINITY OF WETLANDS, TOP SOIL SATURATED WITH WATER SHALL BE REMOVED, AND CONTAINED PRIOR TO BEING USED.

5. AREAS LEADING TO WETLANDS SHALL HAVE HAY BALE BARRIERS INSTALLED ACROSS THEM IN ARCS POINTING DOWN THE HILL AT INTERVALS SUFFICIENT TO MITIGATE RUNOFF CARRYING SEDIMENT.

6. DURING PERIODS OF INTENSE RAINFALL, OR IF THE PROJECT IS TO BE LEFT FOR A PERIOD OF TIME, CONSIDERATION SHOULD BE GIVEN TO SUPPLEMENT HAY BALE BARRIERS WITH EITHER CRUSHED STONE OR ARMORED BARRIERS. CONSIDERATION MAY ALSO BE GIVEN TO DIVERTING RUNOFF INTO TEMPORARY SEDIMENTATION CONTROL AREAS.

7. WHENEVER PRACTICAL, NATURAL VEGETATION SHALL BE RETAINED, PROTECTED AND SUPPLEMENTED.

# ROUGH GRADING:

1. THE ROUGH GRADING OF THE ROADWAY SHALL FOLLOW THE FILL AND EXCAVATION SEQUENCES, RESULTING IN SLOPES BEING MAINTAINED AWAY FROM WETLANDS AND SENSITIVE AREAS AS MUCH IS PRACTICAL.

2. DURING THIS PROCESS THE EROSION POTENTIAL IS HIGH. SUFFICIENT EROSION CONTROL BARRIERS SHOULD BE KEPT IN PROXIMITY TO THE WORK AREA TO ALLOW QUICK ACTION SHOULD EROSION BECOME AN ISSUE AND TO INSURE THAT NO SEDIMENT REACHES WETLANDS OR OTHER SENSITIVE AREAS.

3. IN AREAS OF CUT AND/OR FILL WHERE SLOPES COULD DIVERT WATER TOWARD WETLAND AREAS, DIVERSION TRENCHES AND/OR SWALES SHOULD BE CONSIDERED AND IMPLEMENTED TO DIVERT WATER AWAY FROM THESE AREAS.

4. STEEP SIDE SLOPES IN EXCAVATION OR FILL SHOULD BE AVOIDED.

5. DISTURBED AREAS SHALL BE STABILIZED BY LOAMING AND SEEDING OR RIPRAPPED IMMEDIATELY AFTER THE FINISH GRADE HAS BEEN MET. IF FINAL GRADING DOES NOT OCCUR DURING THE GROWING SEASON, THESE AREAS SHALL BE MULCHED BY HAY SECURED BY WEIGHTED SNOW FENCE, CHICKEN WIRE MESH OR JUTE NETTING WITH APPROPRIATE SECURING DEVICES.

6. A GROUND COVER SUFFICIENT TO RETAIN SOILS IN A STABILIZED CONDITION MUST BE PROVIDED WITHIN 14 WORKING DAYS, SEASON PFRMITTING. ON ANY PORTION OF THE TRACT UPON WHICH FURTHER ACTIVE CONSTRUCTION IS NOT BEING UNDERTAKEN.

## <u>DRAINAGE:</u>

1. IF DRAINAGE PIPES OR SWALES ARE TO BE INSTALLED, THEY SHALL BE CONSTRUCTED FROM DOWNSTREAM UP AND CONSTRUCTION SHALL INCLUDE THE PLACEMENT OF OUTFALL RIPRAP AND OTHER MITIGATIVE MEASURES SHOWN ON THE PLAN.

2. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, HAY BALES OR OTHER SUITABLE METHODS TO ENTRAP SEDIMENT SHALL BE PLACED

3. THE TOE OF EMBANKMENTS SHALL BE STABILIZED IMMEDIATELY, MULCHED AND TACKED DOWN BY SUITABLE MEANS. 4. IF THE PROPOSED ROADWAY IS NOT PAVED IMMEDIATELY AFTER THE INSTALLATION OF DRAINAGE STRUCTURES, HAY BALES SHALL BE PLACED

1. LANDSCAPING OF AREAS SHOULD OCCUR AS SOON AS POSSIBLE. 2. IF THE SEASON OR ADVERSE WEATHER CONDITIONS DO NOT PERMIT— THE ESTABLISHMENT OF VEGETATION, TEMPORARY HAY MULCH, OR OTHER MEANS OF STABILIZATION SHALL BE PERFORMED.

3. USE OF HERBICIDES MAY BE SUBJECT TO OTHER REGULATIONS. 4. CARE SHOULD BE TAKEN WITH FERTILIZERS SUCH THAT THEY ARE NOT CARRIED TO A WETLAND OR SENSITIVE AREA.

5. TRUNKS OF TREES SHOULD NOT BE COVERED WITH MORE THAN TWO (2) INCHES OF SOIL 6. STUMPS SHALL BE GROUND DOWN INTO A WOOD MULCH AND UTILIZED

# CREATION OF DETENTION BASIN:

OR REMOVED FROM THE SITE.

TO PROTECT THE INTEGRITY OF THE STRUCTURES.

1. THE DETENTION BASIN HAS BEEN PLACED AS A SEPARATE ITEM TO EMPHASIZE THE IMPORTANCE OF EROSION CONTROL DURING ITS CONSTRUCTION.

2. THE PRIMARY EROSION CONTROL METHOD FOR BASIN CONSTRUCTION, AS WELL AS FOR THE SITE IS THE RAPID STABILIZATION OF ALL SURFACES. SECONDARY IN IMPORTANCE IS THE CONCENTRATION OF RUNOFF BE AVOIDED IN ORDER TO PREVENT THE TRANSPORT OF

3. DURING CONSTRUCTION, THE FILL AND EXCAVATION SEQUENCES SHOWN ON THIS PLAN SHOULD BE UTILIZED. THESE SEQUENCES REQUIRE THAT SLOPED AREAS LEFT FOR ANY PERIOD OF TIME NOT SLOPED TOWARDS THE WETLAND OR SENSITIVE AREA, BUT RATHER BACK INTO THE FILL MATERIAL.

4. THE BASIN BERM IS TO BE CONSTRUCTED BY EQUIPMENT WORKING ON STABLE MATERIAL ONLY. HAY BALES SHALL BE PLACED AT THE TOE OF SLOPE UNTIL SURFACES ARE STABILIZED. 5. NO EXCAVATION WITHIN THE BASIN SHALL COMMENCE UNTIL THE

BERM IS IN PLACE. 6. CARE SHOULD BE TAKEN TO INSURE THAT ORGANIC MATERIAL REMOVED FROM THE BASIN AREA IS RESERVED FOR FINISH GRADING AND THE STABILIZATION OF DISTURBED AREAS.

7. IF DEWATERING IS NECESSARY, PUMPING TO A SETTLING BASIN SHALL BE PERMITTED IF SETTLING BASIN IS CONSTRUCTED, MAINTAINED AND OPERATED EFFECTIVELY 8. AT NO TIME SHALL RUNOFF CARRYING SEDIMENT BE ALLOWED TO

FLOW TO THE WETLANDS OR SENSITIVE AREAS. 9. THE WORK AREA SHALL REMAIN FREE OF LITTER AND DEBRIS AT ALL

TIMES AND MONITORED ON A DAILY BASIS TO ENSURE COMPLIANCE. 10. ALL MATERIALS STOCKPILED SHALL BE LOCATED, MULCHED OR OTHERWISE TREATED TO INSURE THAT MATERIALS CONTAINED, THEREIN, AREA NOT CARRIED INTO THE WETLANDS.

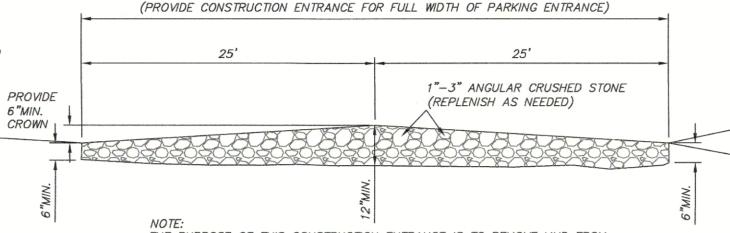
11. ANY MATERIALS BLOWN OR CARRIED BY WATER AWAY FROM THE CONSTRUCTION SITE OR INTO THE WETLAND AREAS SHALL BE PROMPTLY REMOVED AS REQUIRED BY THE LOCAL CONSERVATION COMMISSION. 12. A GEOTECHNICAL FILTER FABRIC SHALL BE PLACED OVER THE BASIN SUBDRAIN DURING CONSTRUCTION TO PREVENT SEDIMENT FROM ENTERING

AND CLOGGING THE DRAIN. THE FABRIC SHALL BE REMOVED FOR BASIN

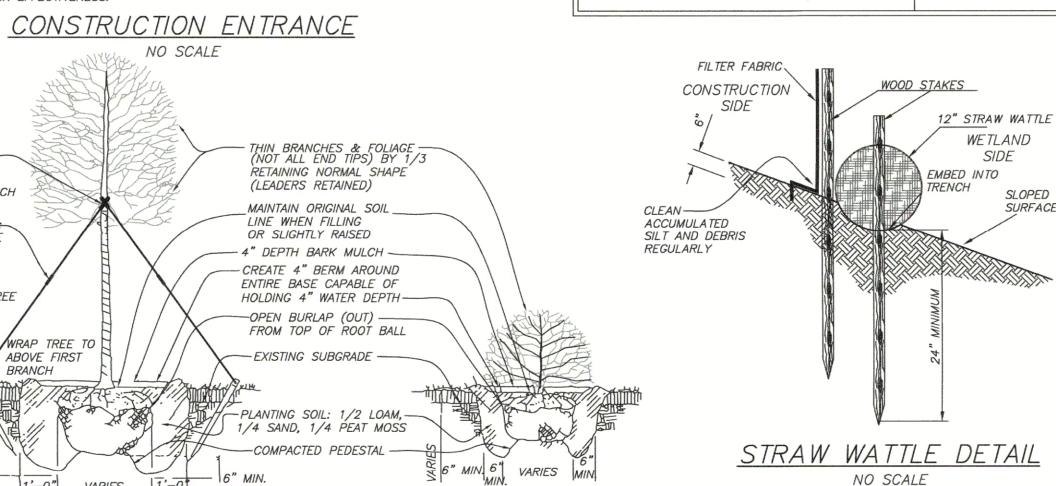
PREPARATION FOR FINAL STABILIZATION.

# DUMP STRAPS EXPANSION RESTRAINT 1/4" NYLON -OVERFLOW *WASHERS)* INSTALLATION BAG DETAIL DETAIL TEMPORARY INLET -DUMP STRAP SEDIMENT FILTER TEMPORARY INLET SEDIMENT FILTER TO INSTALLED ON ALL PAVED CATCH BASINS OR STORM INLETS. INLET FILTER TO BE SIMILAR TO "SILTSACK" AS MANUFACTURED BY ATLANTIC CONSTRUCTION FABRICS, INC. (800-448-3636) OR ENGINEER APPROVED EQUAL CLEAN FILTER AS NEEDED. SILT SACK DETAIL NO SCALE

POLYPROPYLENE



THE PURPOSE OF THIS CONSTRUCTION ENTRANCE IS TO REMOVE MUD FROM CONSTRUCTION VEHICLES. CONTRACTOR TO REPLENISH STONE AS NEEDED TO



PHASE

- MAINTAIN

PHASE III

PHASE

GRUB AND STRIP SITE LEAVING DIKES OF

UNDISTURBED MATERIAL OR GRADE TO ENTRAP

PHASE II-B

RUNOFF ON A LOCALIZED

SLOPE AWAY

FINISH GRADE-

UNTIL GRASS IS ESTABLISHED AT TOE OF BERM

SHRUB PLANTING DETAIL NO SCALE DECIDUOUS TREE PLANTING DETAIL

# "FACILITY NAME"

(###) ### - #### OPERATOR CONTACT INFORMATION (###) ### - ####

OWNER CONTACT INFORMATION

**EMERGENCY CONTACT INFORMATION** (###) ### — ####

# TYPICAL PROJECT SIGN NO SCALE

24" x 24" - MATERIAL: VINYL SIGNS TO BE PLACED AT ENTRANCE OF PROJECT

-WIDTH VARIES (SEE SITE PLAN) —

NO SCALE 12" x 9" - MATERIAL: VINYL

EXCAVATION SEQUENCE

WORKING FACE

SHALL ALWAYS

SHOULD BE AS REQUIRED

OF WATER FROM DISTURBED

ONLY AS REQUIRED PRIOR TO PLACEMENT

OF MATERIALS

INSTALL SEDIMENT

ENTRAPMENT DEVICES IN

PROXIMITY OF DISTURBANCE

IF MATERIAL CANNOT BE

PLACED AS IN PHASE 2-A

TO SENSITIVE AREA. BUT, F EROSION POTENTIAL IS

PLACE MATERIAL WITH SLOPE

PRESENT, FORM DIKES DIVERT (NOT RETAIN) WATER TO

INDISTURBED AREA CAPABLE

OF ALLOWING SEDIMENTATION.

SLOPE AWAY FROM

SENSITIVE AREA

EXCA VA TION

遊遊遊遊遊遊遊遊遊遊

NO SCALE

NO SCALE

PLACE MATERIAL WITH

SENSITIVE AREAS

INSTALL DEVICE TO

FROM EROSION

PROTECT STEEP SLOPES

*IF REQUIRED* 

DEVICE TO RETAIN

SLOPES AND MULCH

LOAM AND SEED EXCAVATED AREAS

AS SOON AS POSSIBLE

|建造造造造造

EXCAVATE TOWARDS

BASE GRADES

SENSITIVE AREA WITH FACE AS

SHOWN IN PHASE 1 WITH FINISH

**建业业业业业业业业** 

BERM AREA

FINISH GRADE -

PHASE IV

FILL SEQUENCE

FINISH GRADE -

REMOVE BERM ONCE

AREA IS STABILIZED

DEVICE TO LIMIT

PORTION OF SLOPE

SENSITIVE AREAS

TRESPASSING

# PERIMETER SIGNAGE

SIGNS TO BE PLACED ALONG FENCELINE AT 50 FT INTERVALS

NO SCALE DANGER **APPLICANT** 

(REINFORCED CONCRETE PIPE ONLY) BOSTWICK REALTY TRUST 256 MURDOCK AVENUE WINCHENDON, MASSACHUSETTS

# 1 MERCANTILE STREET, SUITE 630 WORCESTER, MASSACHUSETTS 01608

ZP BATTERY DEVCO, LLC

APPROVAL OF THIS PLAN IS GRANTED ON THE CONDITIONS LISTED IN A SEPARATE STATEMENT OF CONDITIONS WHICH PART OF THE APPROVAL OF THIS SITE PLAN.

WINCHENDON PLANNING BOARD

# STORMWATER OPERATION AND MAINTENANCE PLAN

THE FOLLOWING SHALL BE CONSIDERED THE OPERATION & MAINTENANCE PLAN (OMP) FOR THE STORMWATER COLLECTION FACILITY

FOR THIS DEVELOPMENT. THIS OMP HAS BEEN PREPARED IN ACCORDANCE WITH THE STORMWATER MANAGEMENT POLICY AS ISSUEL BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION. SYSTEM OWNERSHIP THE SYSTEM SHALL INCLUDE THE DRAINAGE INFRASTRUCTURE AND ALL OF ITS COMPONENTS AS SHOWN ON THE SITE DEVELOPMENT PLANS, INCLUDING THE DETENTION FACILITIES AND OUTFALL AREAS OF THE DRAINAGE SYSTEM. THE

STRUCTURES OF THE SYSTEM SHALL INCLUDE THE DRAINAGE SWALES AND THE OUTFALL & CONTROL STRUCTURES. THE SYSTEM SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CONSTRUCTION DETAILS AND THE APPROVED PLANS. UPON THE COMPLETION OF CONSTRUCTION THE DRAINAGE SYSTEM DESCRIBED ABOVE AND AS DEPICTED ON THE SITE PLANS SHALL BECOME PROPERTY OF THE LAND OWNER, WITH SPECIFIC EASEMENT RIGHTS TO THE OPERATOR OF THE SOLAR SYSTEM TO MAINTAIN THE DRAINAGE SYSTEM AS DEPICTED ON THE APPROVED PLANS. SAID EASEMENT RIGHTS SHALL BE SPECIFICALLY DESCRIBED IN LEASE DOCUMENTS FOR THE PROJECT.

THE OPERATOR OF THE SOLAR SYSTEM SHALL BE CONSIDERED THE RESPONSIBLE PARTY FOR THE OPERATION AND MAINTENANCE OF THE STORMWATER MANAGEMENT SYSTEM. THE SYSTEM SHALL INCLUDE THE DRAINAGE INFRASTRUCTURE AND ALL OF ITS COMPONENTS AS SHOWN ON THE APPROVED PLANS. THE SYSTEM SHALL ALSO INCLUDE THE DETENTION FACILITIES AND THE OUTFALL AREAS OF THE DRAINAGE SYSTEM.

INSPECTION & MAINTENANCE SCHEDULE THE FOLLOWING MAINTENANCE SCHEDULE SHALL BE FOLLOWED IN ORDER TO MAINTAIN THE EFFECTIVENESS OF THE STORMWATER MANAGEMENT SYSTEM STRUCTURE TYPE

REMOVE DEBRIS & ADD STONE TWICE A YEAR EVERY 10 YEARS RIP/RAP APRONS REMOVE DEBRIS AND SEDIMENT SPILL WAY TWICE A YEAR TWICE A YEAR

# SEEDING OPERATION AND MAINTENANCE PLAN

RESPONSIBLE PARTIES THE OPERATOR OF THE SOLAR SYSTEM SHALL BE CONSIDERED THE RESPONSIBLE PARTY FOR THE OPERATION AND MAINTENANCE OF THE GRASS & VEGETATION. THE VEGETATION SHALL INCLUDE ALL OF ITS AREAS AS SHOWN ON THE APPROVED PLANS. THE SYSTEM SHALL ALSO INCLUDE THE GRASSED AREAS AROUND THE PANELS AND DRAINAGE

GRASS HEIGHT TO BE ALLOWED TO GROW TO A

HEIGHT OF NO MORE THAN 18 INCHES AND BE

10%

INSPECTION & MAINTENANCE SCHEDULE THE FOLLOWING MAINTENANCE SCHEDULE SHALL BE FOLLOWED IN ORDER TO MAINTAIN THE VEGETATED AREAS ACTIVITY MAINTENANCE

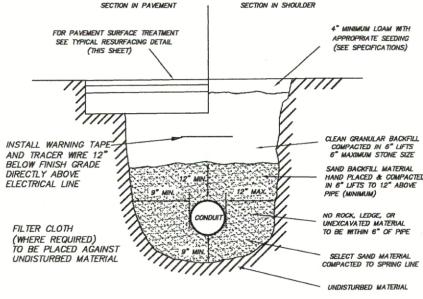
CUT TO A HEIGHT OF 4 TO 6 INCHES. APPROPIATE SEED MIX AND APPLICATION RATES THE FOLLOWING SEED SCHEDULE SHALL BE FOLLOWED IN ORDER TO PROPERLY MAINTAIN VEGETATED AREAS APPLICATION RATE WILDFLOWER SEED MIX 5 TO 10 POUNDS PER ACRE 50%

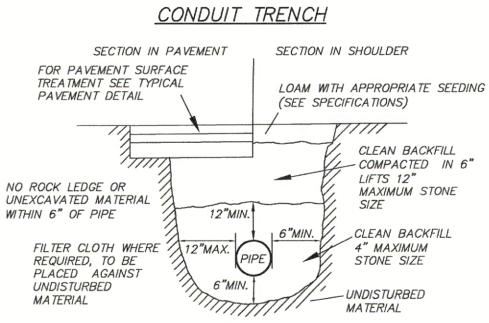
3 TO 5 POUNDS PER ACRE WHITE CLOVER SEED MIX KENTUCKY BLUEGRASS 80 TO 100 POUNDS PER ACRE

MONTHLY

THERE WILL NO HERBICIDES OR PESTICIDES USED ON THIS PROJECT.

GRASS CUTTING





# TYPICAL DRAIN TRENCH

ENGINEERING, INC. CIVIL ENGINEERS & LAND SURVEYORS

> 8 MONUMENT SQUARE LEOMINSTER, MASSACHUSETTS 01453

> > TAB: (5-6)DET

DATE

**HANNIGAN** 

# CONSTRUCTION DETAILS WINCHENDON, MASSACHUSETTS

7/1/2023 PEER REVIEW AND BOARD COMMENT | CMA

REVISIONS

7-10-2023

(978) 534-1234 (T

(978) 534-6060 (

PLAN NO:C-18-4

BY

PREPARED FOR: ZP BATTERY DEVCO, LLC PETE FORTE 1 MERCANTILE STREET, SUITE 630

WORCESTER, MASSACHUSETTS 01608

SCALE: NA DRWN: CMA CHKD: WDH APPD: CMA **DATE:** MAR 27,202 FB: 75-130 JOB NO: 3101 SRV: JEF

SHEET 5 OF 6

SUB-BASE MATERIAL, CLEAN FILL COMPACTED TO 95% DRY DENSITY UNDISTURBED EARTH OR SUITABLE MATERIAL COMPACTED TO 95% DRY DENSITY GRAVEL ACCESS LANE SECTION

12" COMPACTED GRANULAR

BASE M1.03.0- TYPE A

LATERAL SPLICE **ANCHOR** PATTERN **SPLICE** ANCHOR PATTERN. ANCHOR PATTERN

BOTTOM TRENCH AND

AS TOP TRENCH)

ANCHORS (SAME SPACING

2) START AT THE TOP OF SLOPE BY ANCHORING BLANKETS IN A 6" DEEP x 6"

DETAIL OF

TOP TRENCH

AND ANCHORS

RUN STEEL WIRE THROUGH-

BLACK REINFORCED RUBBER

ABOVE WRAPPED FIRST BRANCH

GUY WIRE &

NOTCHED GUY

120° RADIAL

STAKE 3 EA./TREE

TURNBUCKLE

HOSE AND SECURE TREE

PROCEDURES FOR INSTALLATION OF JUTE MATTING: PREPARE SLOPES WITH FINAL GRADING AND LOAM PLACEMENT. RAKE AND SMOOTH FINAL SURFACE, APPLY <u>HYDROSEED.</u>

NO SCALE

BLANKET

WIDE ANCHOR TRENCH. PLACE BLANKETS, STAPLE (8" STAPLES), BACKFILL AND

 ROLL BLANKETS DOWN THE SLOPE. STAPLE THE OPEN BLANKET EDGE USING ONE ROW OF STAPLES AT 2' INTERVALS. THE INTERIOR OF THE BLANKET SHOULD BE STAPLED USING A 2' WIDE x 3' HIGH STAPLE PATTERN. BE SURE TO LAY BLANKETS LOOSLY ON THE GROUND ALLOWING A GOOD CONTACT BETWEEN SOIL AND BLANKETS.

4) USE AN 8" OVERLAP BETWEEN BLANKET SPLICES. USE TWO ROWS OF STAPLES TO ANCHOR BLANKETS TOGETHER.

5) PROVIDE 6"x 6" ANCHOR TRENCH AT TOE OF SLOPE.

6) JUTE MATTING TYPE SHALL BE PROPERLY SELECTED FOR SOIL CONDITIONS AND MAXIMUM ALLOWABLE SLOPE. 7) ANY/ALL METALLIC ANCHORS SHALL BE PROMPTLY REMOVED ONCE THE

VEGETATIVE COVER HAS BEEN ESTABLISHED. 8) GRASS SEED VARIETY SHALL BE PROPERLY CHOSEN FOR SPECIFIC SITE CONDITIONS (SHADE OR SUN, ETC.)

JUTE MATTING PLACEMENT

NO SCALE

(FOR ACCESS TO SITE AND DETENTION BASIN) NO SCALE

