

Jason Grimshaw, Chair
Leicester Planning Board
3 Washburn Square
Leicester, Massachusetts 01524

November 15, 2021

RE: Site Plan Review-Peer Review
#1355 Main Street Energy Storage System (ESS)
ZP Battery Devco, LLC
Map 26/Parcel A1

Dear Mr. Grimshaw,

Hannigan Engineering is in receipt of comments from Quinn Engineering, Inc. regarding the project submitted by this office for a Solar Energy Storage System (ESS) in Leicester, Massachusetts. We have reviewed the comments and offer our responses below. We have left the same format of their letter for ease of review. These responses have been incorporated into the updated plans for final review and approval by the Board.

General Comments:

Comment #1: No landscaping or plantings are proposed. Hannigan Engineering, Inc. has indicated that they anticipate that the ESS will not be visible from the roadway or from residential properties due to the topography and due to the existing vegetation, that will remain. The Applicant should clarify to the Board how the landscaping requirements are met or should request a waiver with justification if the landscaping requirements are not met. (Zoning Bylaw 5.5.02.2, 5.14.6.4, SPRR II.F.6, SPRR II.K.1.c and Landscaping Regulations)

Comment #1 10/28/21: This office defers to the Board. Hannigan Engineering, Inc. has requested several waivers related to the landscaping requirements. No landscaping or plantings are proposed. A profile has been submitted depicting the elevation relief and layout of the system.

Under §5.5.02.2.A, a 20 foot landscape buffer is required along the roadway frontage.

Under §5.5.02.2.B and C, a 50 foot landscape buffer is required where a non-residential use abuts a residential use and a 100 foot buffer is required where the HB-1 district boundary abuts a residential district boundary. The Board may reduce these buffers to 20 feet and 50 feet, respectively, where site constraints do not allow for the full buffer and an opaque fence and/or other comparable method is provided to adequately buffer the residential property.

The Board's Landscaping Regulations state that the Board may allow or require the use of an opaque fence in addition to or in lieu of planted areas where the nature of a site or site development would not provide adequate screening.

This office defers to the Board if screening is required or if the requested waivers should be granted based on the existing vegetation and the existing topography providing a sufficient buffer. Also, the Board may request that the proposed security fence be

equipped with slats to decrease visibility of the proposed equipment in addition to any other required screening.

A waiver/relief from the landscape and screening requirements in §5.14.6 may also be required.

Response: **Acknowledged, Landscaping requirements are being reviewed with the board.**

Comment #2: Driveway slopes in the HB-1 district are limited to 5% under the Zoning Bylaw 5.5.02.1.C.3. The proposed driveway slopes at approximately 7.5% from Main Street. It appears that the proposed 7.5% slope is reasonable given that the driveway is expected to see minimal use and is not open to the public. This office defers to the Board if the 5% slope requirement can be waived by the Board or if a variance is required.

*Comment #2 10/28/21: **This office defers to the Board.** Hannigan Engineering, Inc. has requested a waiver from the 5% driveway limit specified in §5.5.02.1.C.3. The proposed 7.5% slope is reasonable; however, this office defers to the Board if a waiver can be granted or if a variance is required.*

Response: **Acknowledged, the driveway requirements are being reviewed with the board.**

Comment #6: Post Construction View Representations are required under SPRR II.K.2. The conceptual renderings provided in the application generally depict the proposed ESS components but do not appear to represent the specific configuration at this site. This office defers to the Board if the conceptual renderings are sufficient or if the renderings must be updated.

*Comment #6 10/28/21: **This office defers to the Board.** Hannigan Engineering, Inc. has indicated that a profile depicting the elevation relief and layout of the system has been provided to aid in review. This office defers to the Board if the conceptual renderings are sufficient or if the renderings must be updated*

Response: **Acknowledged.**

Comment #7: An operation and maintenance plan for the site must be submitted. The plan should include requirements for maintenance of the driveway, plowing, mowing outside of the basin, equipment maintenance, etc. (SPRR II.K.5)

Comment #7 10/28/21: Operation and maintenance requirements for the site have been included in this submission. It is recommended that the Fire Department review and comment the proposed snow plowing routine to ensure that the Department is comfortable with the proposal.

Response: **The updated Operation and Maintenance has been reviewed with the Fire Department.**

Comment #8: A specific form of decommissioning surety has not been identified. This office defers to the Board regarding the form of surety and mechanism for accounting for inflation that is to be provided. (SPRR II.K.7)

Comment #8 10/28/21: This office defers to the Board. Hannigan Engineering, Inc. has indicated that the specific type of surety will be determined prior to the issuance of a building permit.

Response: Acknowledged

Comment #11: Based on the proposed grading, it appears that runoff from the easterly equipment pads may not flow to the basin as intended. The grading should be revised to ensure that the intended runoff reaches the basin.

Comment #8 10/28/21: The grading has been revised to depict a shallow swale at the end west end of the equipment pads, however based on the revised grading, the runoff in the swale will flow towards the proposed access gate and does not appear to flow into the basin. The plan should be revised to depict a more defined channel directing runoff into the basin in order to ensure that the intended runoff reaches the basin

Response: The driveway has been pitched as to create a channelized flow from the pad area to the detention basin.

Comment #15: Check dams are recommended along the flow path of the existing discharge from the catch basin in Main Street to minimize erosion potential along the toe of the proposed slopes.

Comment #8 10/28/21: Check dams and a defined rip rap channel have been proposed along the flow path from the existing culvert. The Applicant should confirm that channelizing the flow does not increase flows to the downstream property.

Response: The HydroCAD model has been updated to depict the channelized nature of the flow relative to the peak rate impacts to the design point.

WAIVER REQUESTS - AMENDED

Per the Leicester Planning Board Site Plan Review Rules and Regulations, the Planning Board may waive any of the requirements upon submittal of information by the applicant that substantiates the waiver request. As required by the Zoning Bylaw several of the aspects of site plan review are not applicable to a project of this type specifically, traffic and water/sewer availability.

Due to the nature of this project, portions of this Site Plan Application are not applicable and waivers to these sections are requested as follows:

SPRR II.D: Traffic Study

– Due to the nature of the project, it is not anticipated that the project would have an adverse affect on traffic surrounding the site. Specifically, vehicular traffic for the project is not anticipated with the exception of the occasional maintenance and inspection. During construction, construction vehicles and equipment will be accessing the site by a proposed gravel drive off of Main Street. Additional signage will be placed along the roadway in this area to alert drivers of construction activity. Upon the completion of the project, the only traffic for the project would be for inspection and maintenance.

The applicant, therefore, requests a waiver to II.D: Traffic Study of the Bylaw.

SPRR II.I: Availability of Water and/or Sewer

-Due to the nature of the project, the project will not require any connections to the public water supply or any sewerage connections.

The applicant, therefore, requests a waiver to II.I: Availability of Water and/or Sewer of the Bylaw.

Zoning Bylaw 5.5.02.1.C.3: The Slope of Driveways shall be no greater than five percent (5%)

-It is the intent that the access drive from Main Street is approximately 7.5%, in excess of the maximum allowed of 5% per the Zoning By-Law. As the final project is not to be open to the general public and access upon the completion of construction is going to be intended only for general maintenance purposes, it is anticipated that the steeper access way will not negatively impact access to the site.

The applicant, therefore, requests a waiver to 5.5.02.1.C.3.

Zoning Bylaw 5.5.02.2.C: A landscaped buffer of at least 100 feet shall be provided where an HB-1 district boundary abuts a Residential District (R1, R2, SA)

-It is requested that the required landscaped buffer along the rear portion of the property be reduced to at minimum 20-feet abutting a Residential District (R1). The rear portion of the property abuts an existing residential property, where the existing dwelling is located immediately along Rawson Street, approximately 400-feet away, as shown on the Locus Plan. Due to the excessive distance and generally wooded characteristic and presence of jurisdictional areas of the Wetlands protection Act of the area abutting the locus property, it is anticipated that the view of the ESS system will not negatively impact the view from the dwelling.

The applicant, therefore, requests a waiver to 5.5.02.2.C.

SPRR II.F.6: Proposed landscaping, including size and type of plant material.

- The proposed Energy Storage Systems (ESS) are located on the property such that the units are located well below the abutting roadway elevation. The elevation relief from the roadway to concrete pads vary approximately 12-feet to 18-feet along the length of the project, with an average height of approximately 8-feet per ESS, the top of the units are still approximately 4-feet to 6-feet below the existing grade of the roadway. This in combination with the woodland and brush that is intended to remain it is anticipated to shield the ESS units from the abutting roadway as well as the residential properties located along the opposite side of Main Street. In addition, the abutting properties to the south of the locus property, is extensively wooded with the nearest

residential dwelling be in excess of 400-feet from the property line. This in combination with jurisdictional areas of the Wetlands protection Act and woodland, to provide adequate vegetated buffer to the abutting properties.

As such it is proposed that there not be a requirement to include additional plantings within the projects limits as the project is anticipated to be adequately shielded from the road and the abutting properties by the topographical relief between the road and the site as well as the general Landscaping Requirements.

The applicant, therefore, requests a waiver to SPRR II.F.6

SPRR II.K.1.c: Proposed screening/buffering in conformance with Zoning Bylaw requirements.

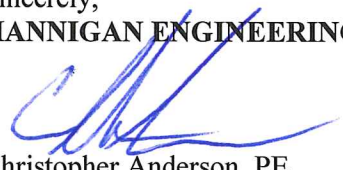
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The applicant, therefore, requests a waiver to SPRR II.K.1.c

This information is being provided as part of the review of the proposed Energy Storage Systems (ESS) submitted to the Town of Leicester. As discussed above, additional modifications and revisions to the plans were required based upon the Peer Review by the peer reviewer Quinn Engineering, Inc. The plans have been updated to reflect these modifications and revisions and are submitted herewith for final review. We look forward to the Board's anticipated approval of this project.

Hannigan Engineering, Inc. would like to thank the Town and its staff for its assistance and continued cooperation regarding this project.

Sincerely,
HANNIGAN ENGINEERING, INC.



Christopher Anderson, PE
Project Engineer

pc: Brendan Gove - ZP Battery DevCo, LLC
Pete Forte - ZP Battery DevCo, LLC
Tom Corbett - ZP Battery DevCo, LLC

SITE DEVELOPMENT PLAN SOLAR ENERGY STORAGE SYSTEM (ESS)

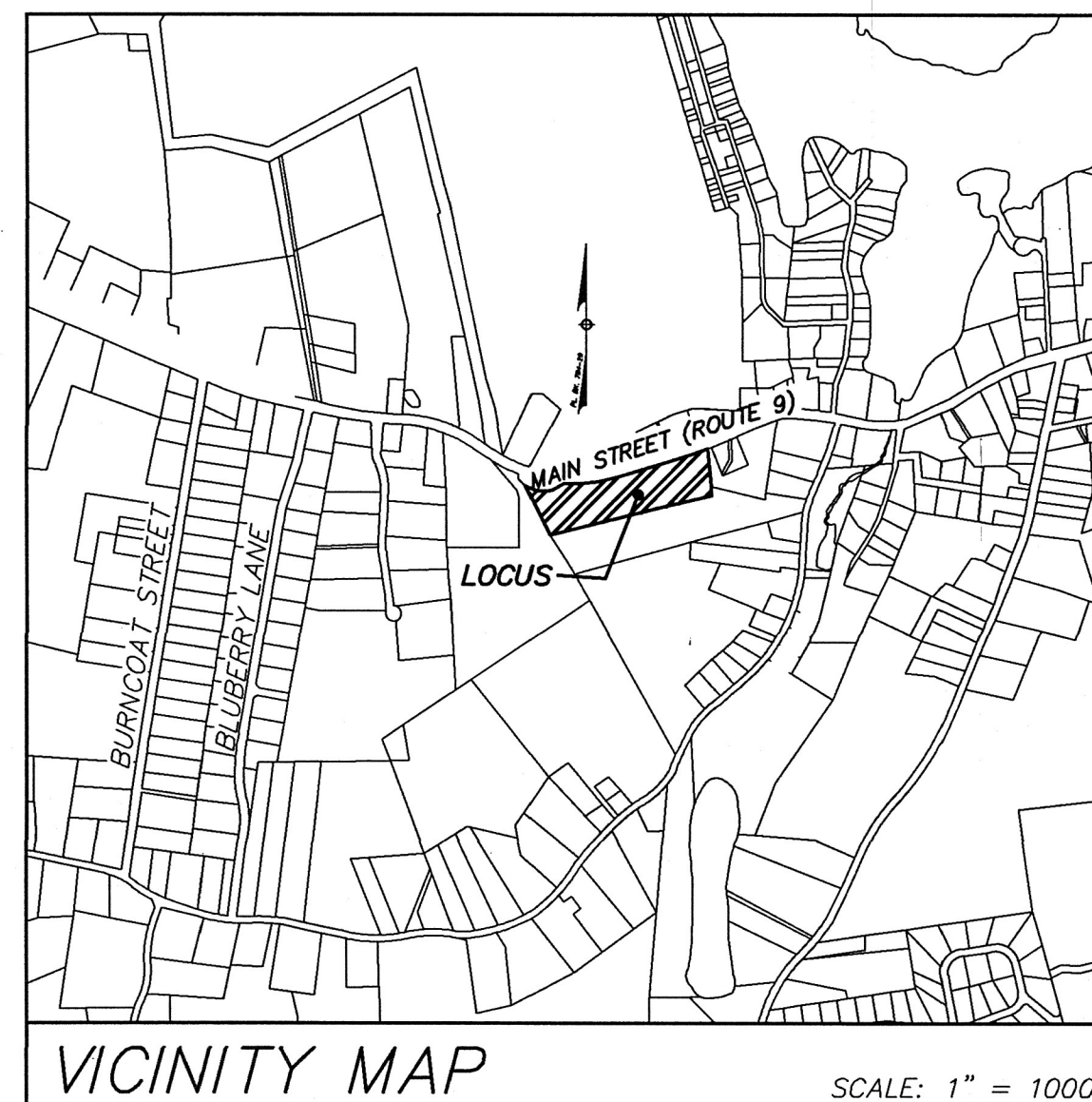
1355 MAIN STREET

IN

LEICESTER, MASSACHUSETTS

SEPTEMBER 21, 2021

REVISIONS THROUGH NOVEMBER 15, 2021



APPLICANT:

ZP BATTERY DEVCO, LLC
BRENDON GOVE
10 E. WORCESTER STREET, SUITE 3A
WORCESTER, MASSACHUSETTS 01604

OWNER:

WR ENTERPRISES, LLC
1323 MAIN STREET
LEICESTER, MASSACHUSETTS 01420

CIVIL ENGINEER & LAND SURVEYOR:

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

PLAN INDEX

SHEET 1	LOCUS PLAN
SHEET 2	INDEX PLAN
SHEET 3	EXISTING CONDITIONS PLAN
SHEET 4	SITE DEVELOPMENT PLAN
SHEETS 5-6	CONSTRUCTION DETAILS

PERMITTING SET - NOT FOR CONSTRUCTION

PROJECT INFORMATION

LAND INFORMATION	
MAP/PARCEL:	26B/A1
DEED BOOK-PAGE:	65218/149
EXISTING FRONTAGE:	794.29'
EXISTING AREA:	5.44 ACRES
ZONING INFORMATION	
ZONING DISTRICT:	HIGHWAY BUSINESS-INDUSTRIAL 1 (HB-1)
DIMENSIONAL REQUIREMENTS:	
MINIMUM AREA:	60,000 S.F.
MINIMUM FRONTAGE:	200'
MINIMUM HEIGHT:	55'
MINIMUM SETBACKS:	
FRONT YARD:	50'
SIDE YARD:	50'
REAR YARD:	50'

- GENERAL NOTES:
- PROPERTY LINE INFORMATION BASED DEEDS AND PLANS OF RECORD. NO CERTIFICATION OF PROPERTY LINES SHOWN ON THIS PLAN IS INTENDED OR IMPLIED BY HANNIGAN ENGINEERING, INC. TOPOGRAPHIC INFORMATION IS THE RESULT OF AN ON-THE-GROUND TOPOGRAPHIC SURVEY BY HANNIGAN ENGINEERING, INC. IN JULY OF 2021.
 - AREAS SUBJECT TO PROTECTION UNDER THE WETLANDS PROTECTION ACT HAVE BEEN DELINEATED BY CARON ENVIRONMENTAL CONSULTING ON MARCH 26, 2021. THESE AREAS ARE DEPICTED ON THE PLANS BASED ON FIELD SURVEY LOCATION DURING THE TOPOGRAPHIC SURVEY.
 - LOCATION OF ALL UTILITIES ARE APPROXIMATE AS SHOWN AND BASED UPON VISIBLE STRUCTURES AT THE TIME OF THE FIELD SURVEY. LOCATION OF EXISTING UTILITIES AND SUBSURFACE STRUCTURES, WHETHER OR NOT SHOWN ON THESE PLANS, SHALL BE DETERMINED BY THE CONTRACTOR, MARKED IN THE FIELD, AND REVIEWED BY THE ENGINEER PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR SHALL BE AWARE OF THE OBLIGATION TO ALL UTILITY COMPANIES AND AGENCY AS WELL AS DIG-SAFE PRIOR TO EXCAVATION. (SEE NOTE)
 - NOTIFICATION REQUIREMENTS SHOWN ON THIS PLAN SHALL NOT RELIEVE THE CONTRACTOR OF ANY OTHER REQUIREMENTS WHICH MAY EXIST UNDER LOCAL, STATE, OR FEDERAL JURISDICTION TO WHICH THE CONTRACTOR IS OBLIGATED.
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2	11/15/21	GRADING REVISIONS	CMA
1	10/19/21	PEER-REVIEW COMMENT	CMA
NO.	DATE	REVISIONS	BY

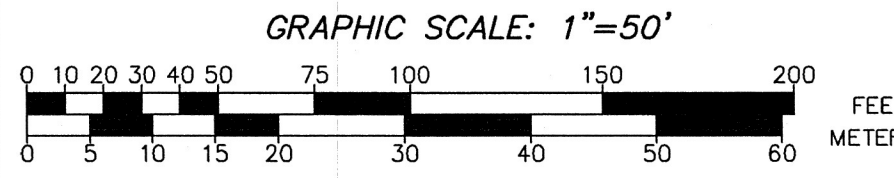


HANNIGAN ENGINEERING, INC.
CIVIL ENGINEERS & LAND SURVEYORS

8 MONUMENT SQUARE (978) 534-1234 (T)
LEOMINSTER, MASSACHUSETTS 01453 (978) 534-6060 (F)
WWW.HANNIGANENGINEERING.COM

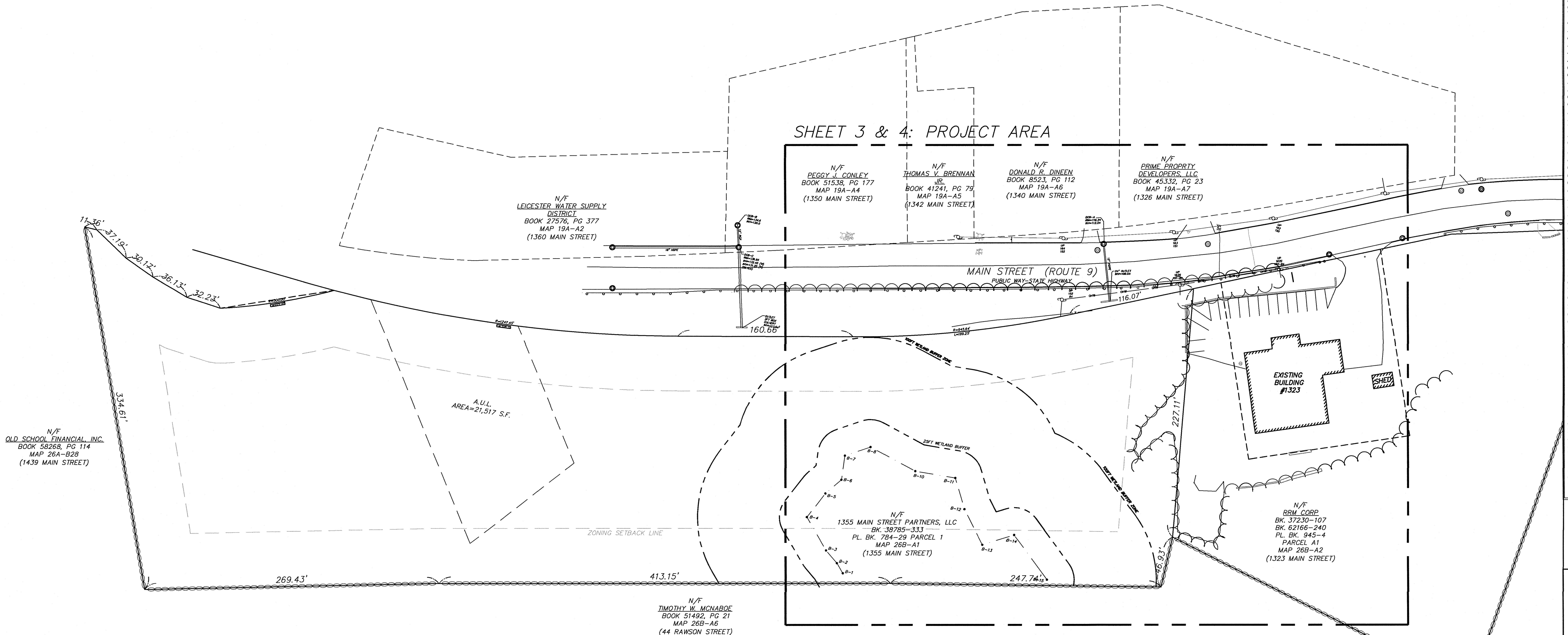
INDEX PLAN
IN
LEICESTER, MASSACHUSETTS

PREPARED FOR:
ZP BATTERY DEVCO, LLC
BRENDAN GOVE
10 E WORCESTER STREET SUITE 3A
WORCESTER, MASSACHUSETTS 01604
TEL:

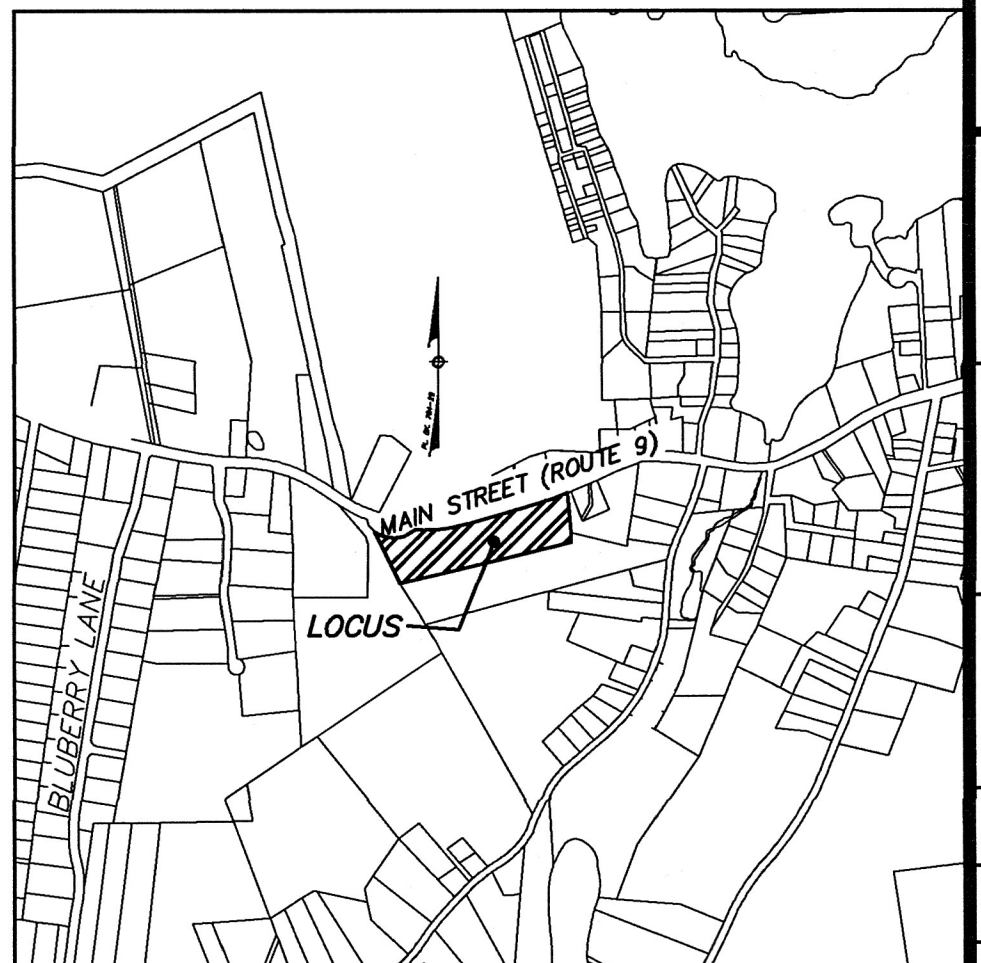


CALC: CMA	DRWN: CMA	SCALE: 1"=50'
CHKD: WDH	APPD: WDH	DATE: SEP 21, 2021
SRV: JEF	FB: 71-22	JOB NO: 3010
TAB: (2) INDEX	SHEET 2 OF 6	PLAN NO: C-17-38

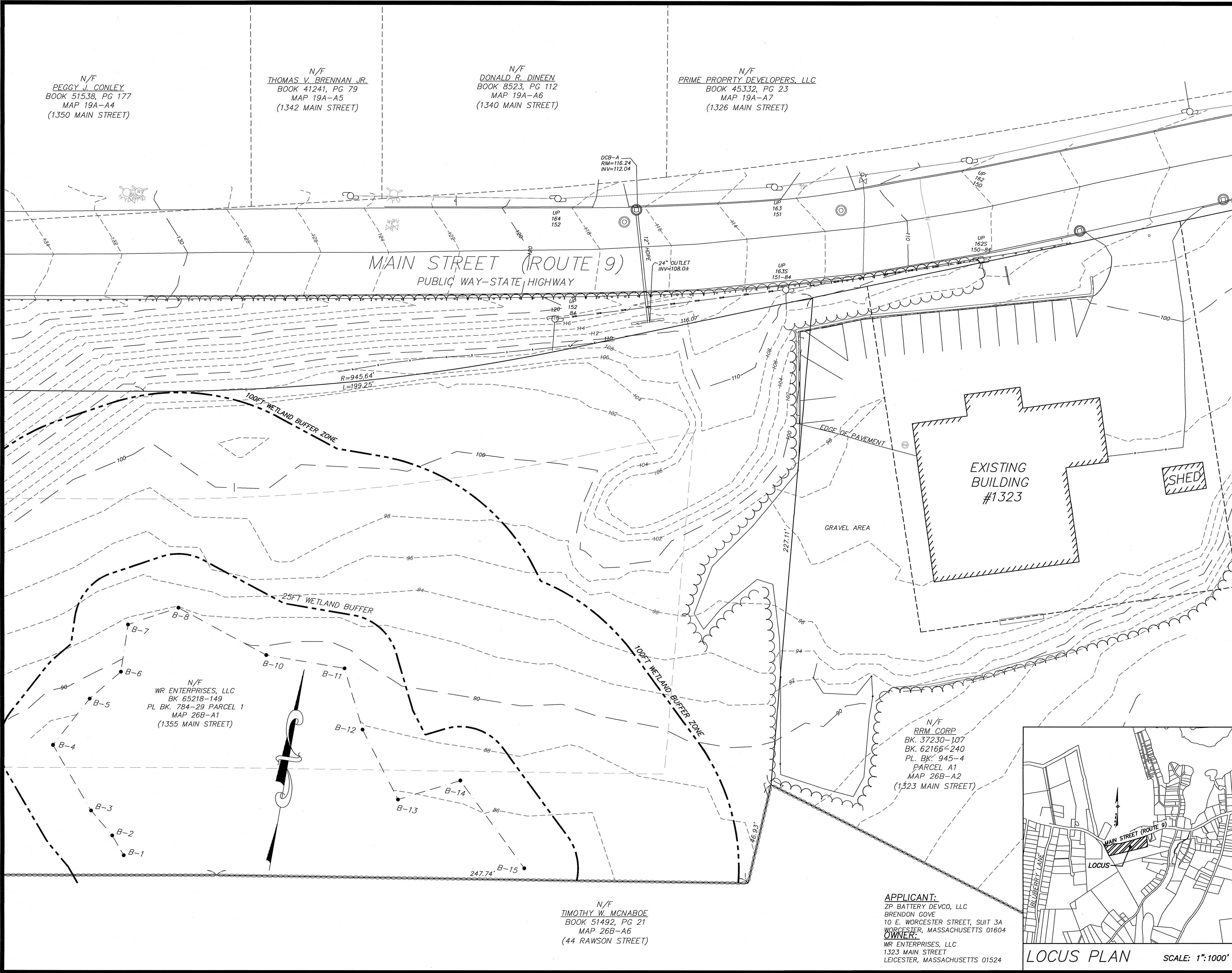
SHEET 3 & 4: PROJECT AREA



APPLICANT:
ZP BATTERY DEVCO, LLC
BRENDAN GOVE
10 E WORCESTER STREET, SUITE 3A
WORCESTER, MASSACHUSETTS 01604
OWNER:
WR ENTERPRISES, LLC
1323 MAIN STREET
LEICESTER, MASSACHUSETTS 01524



LOCUS PLAN SCALE: 1"=1000'



PROJECT INFORMATION

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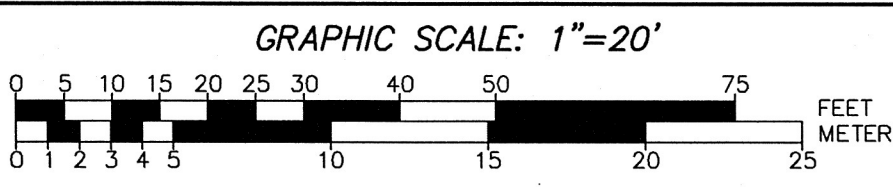
David LeRoy 10-22-21

HANNIGAN ENGINEERING, INC.
CIVIL ENGINEERS & LAND SURVEYORS

8 MONUMENT SQUARE (978) 534-1234 (T)
LEOMINSTER, MASSACHUSETTS 01453 (978) 534-6060 (F)
WWW.HANNIGANENGINEERING.COM

EXISTING CONDITIONS PLAN
IN
LEICESTER, MASSACHUSETTS

PREPARED FOR:
ZP BATTERY DEVCO, LLC
BRENDAN GOVE
10 E WORCESTER STREET SUITE 3A
WORCESTER, MASSACHUSETTS 01604
TEL:



CALC:	CMA	DRWN:	CMA	SCALE:	1"=20'
CHKD:	WDH	APPD:	WDH	DATE:	SEP 21, 2021
SRV:	JEF	FB:	71-22	JOB NO:	3010
TAB:	(3) EXCOND	SHEET	3 OF 6	PLAN NO:	C-17-38



LOCUS PLAN SCALE: 1"=1000'

APPLICANT:
ZP BATTERY DEVCO, LLC
BRENDAN GOVE
10 E. WORCESTER STREET, SUITE 3A
WORCESTER, MASSACHUSETTS 01604
OWNER:
WR ENTERPRISES, LLC
1323 MAIN STREET
LEICESTER, MASSACHUSETTS 01524

N/F
RRM CORP
BK. 37230-107
BK. 62166-240
PL. BK. 945-4
PARCEL A1
MAP 26B-A2
(1323 MAIN STREET)

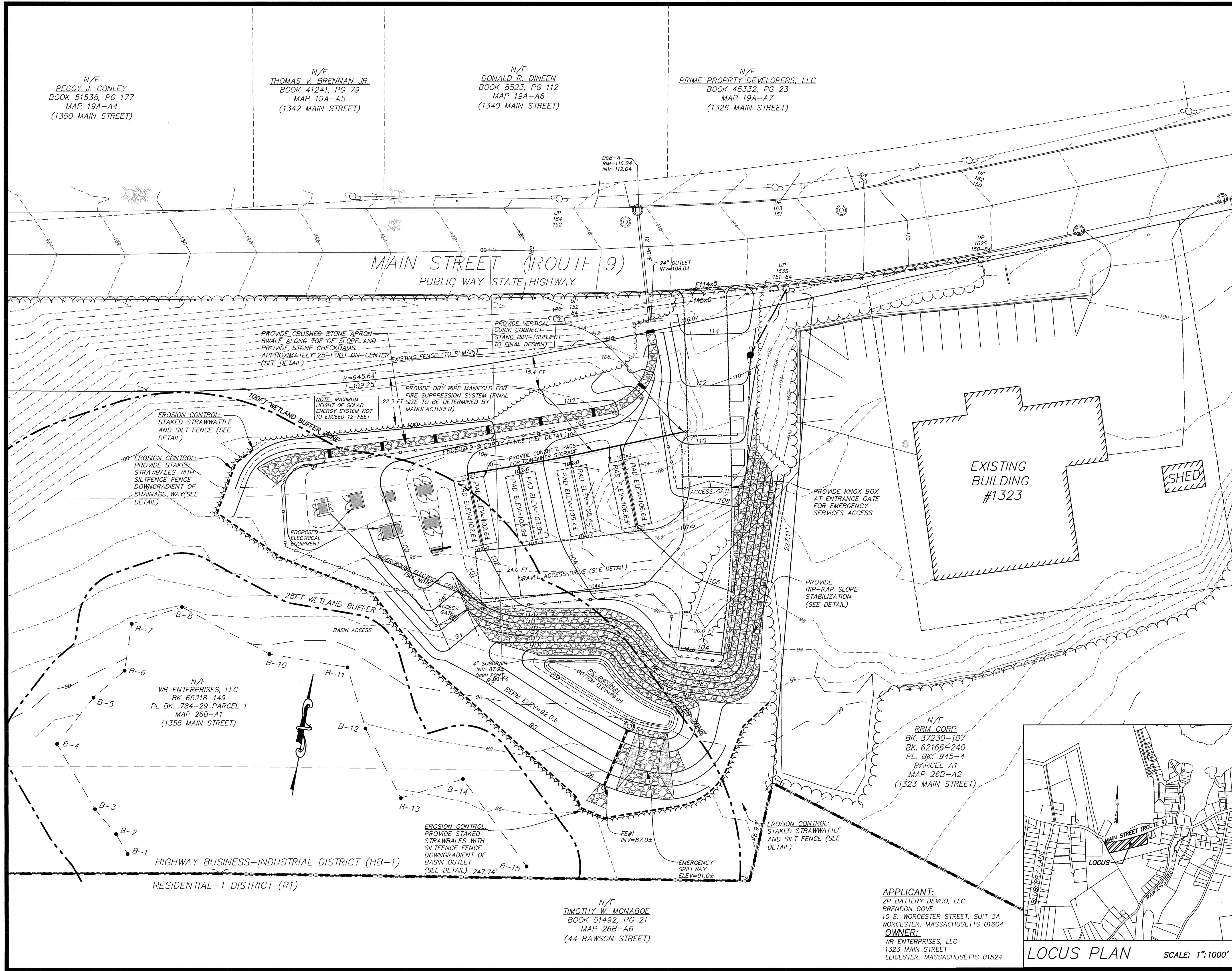
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WR ENTERPRISES, LLC
BK. 65218-149
PL. BK. 784-29 PARCEL 1
MAP 26B-A1
(1355 MAIN STREET)

N/F
PEGGY J. CONLEY
BOOK 51538, PG 177
MAP 19A-A4
(1350 MAIN STREET)

N/F
THOMAS V. BRENNAN JR.
BOOK 41241, PG 79
MAP 19A-A5
(1342 MAIN STREET)

N/F
DONALD R. DINEEN
BOOK 8523, PG 112
MAP 19A-A6
(1340 MAIN STREET)

N/F
PRIME PROPERTY DEVELOPERS, LLC
BOOK 45332, PG 23
MAP 19A-A7
(1326 MAIN STREET)



PROJECT INFORMATION

LAND INFORMATION

MAP/PARCEL: 26B/A1
DEED BOOK-PAGE: 65218/149
EXISTING FRONTAGE: 794.29'
EXISTING AREA: 5.44 ACRES

ZONING INFORMATION

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REAR YARD: 50'

GENERAL NOTES:

- PROPERTY LINE INFORMATION BASED DEEDS AND PLANS OF RECORD. NO CERTIFICATION OF PROPERTY LINES SHOWN ON THIS PLAN IS INTENDED OR IMPLIED BY HANNIGAN ENGINEERING, INC. TOPOGRAPHIC INFORMATION IS THE RESULT OF AN ON-THE-GROUND TOPOGRAPHIC SURVEY BY HANNIGAN ENGINEERING, INC. IN JULY OF 2021.
- AREAS SUBJECT TO PROTECTION UNDER THE WETLANDS PROTECTION ACT HAVE BEEN DELINEATED BY CARON ENVIRONMENTAL CONSULTING ON MARCH 26, 2021. THESE AREAS ARE DERIVED ON THE PLANS BASED ON FIELD SURVEY LOCATION DURING THE TOPOGRAPHIC SURVEY.
- LOCATION OF ALL UTILITIES ARE APPROXIMATE AS SHOWN AND BASED UPON VISIBLE STRUCTURES AT THE TIME OF THE FIELD SURVEY. LOCATION OF EXISTING UTILITIES AND SUBSURFACE STRUCTURES, WHETHER OR NOT SHOWN ON THESE PLANS, SHALL BE DETERMINED BY THE CONTRACTOR, MARKED IN THE FIELD, AND REVIEWED BY THE ENGINEER PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR SHALL BE AWARE OF THE OBLIGATION TO ALL UTILITY COMPANIES AND AGENCY AS WELL AS DIG-SAFE PRIOR TO EXCAVATION. (SEE NOTE)
- NOTIFICATION REQUIREMENTS SHOWN ON THIS PLAN SHALL NOT RELIEVE THE CONTRACTOR OF ANY OTHER REQUIREMENTS WHICH MAY EXIST UNDER LOCAL, STATE, OR FEDERAL JURISDICTION TO WHICH THE CONTRACTOR IS OBLIGATED.
- RELOCATION OF AND/OR CONNECTION TO EXISTING UTILITIES SHALL BE PERFORMED IN ACCORDANCE WITH PROVISIONS OF THE APPROPRIATE UTILITY COMPANY AND/OR REGULATORY AGENCY.
- UNLESS OTHERWISE SPECIFIED, ALL MATERIALS AND WORKMANSHIP SHALL CONFORM WITH THE REQUIREMENTS OF THE TOWN OF LEICESTER AND THE MASS DOT SPECIFICATIONS OF HIGHWAYS AND BRIDGES.
- ALL SLOPES UNLESS OTHERWISE SPECIFIED, SHALL BE LOAMED AND SEEDED FOR STABILIZATION.
- ANY DEVIATIONS IN DESIGN AS SHOWN SHALL REQUIRE A REVIEW AND APPROVAL OF THE DESIGN ENGINEER OR FIRM. CHANGES MADE IN THE FIELD MADE WITHOUT AUTHORIZATION SHALL BE SUBJECT TO REVIEW BY THE ENGINEER AND APPROPRIATE APPROVING AUTHORITY. EXPENSES INCURRED TO BRING THE UNAUTHORIZED CHANGES TO ACCEPTABLE CONFORMANCE SHALL BE BORNE BY THE COMPANY OR CONTRACTOR MAKING THE UNAUTHORIZED CHANGE.
- ANY MATERIALS DISCOVERED ON-SITE WHICH ARE NOT SUITABLE FOR USE IN THE PROJECT AS SHOWN ON THIS PLAN SHALL BE REMOVED AND HAULED OFF-SITE TO AN APPROPRIATELY LICENSED FACILITY.
- PLANS TO BE REVIEWED BY APPLICABLE UTILITY AGENCIES FOR COMPLIANCE WITH REGULATIONS. FINAL LOCATION IS SUBJECT TO CHANGE.
- APPLICANT SHOULD BE AWARE OF OBLIGATIONS TO COMPLY WITH CHAPTER 131, SECTION 40 OF THE MASSACHUSETTS GENERAL LAWS, OTHERWISE KNOWN AS THE WETLANDS PROTECTION ACT, AND THE ASSOCIATED REGULATIONS (310 CMR 10.00).
- STOCKPILING OF MATERIAL SHALL NOT BE PERMITTED WITHIN ANY AREAS SUBJECT TO PROTECTION UNDER THE WETLANDS PROTECTION ACT WITHOUT PRIOR APPROVAL BY THE LOCAL CONSERVATION COMMISSION. STOCKPILES SHALL BE PLACED IN A SUITABLE LOCATION AND SURROUNDED BY A ROW OF STAKED HAY BALES FOR EROSION CONTROL.
- AREAS OF FILL TO BE COMPACTED TO A MINIMUM 95% DRY DENSITY IN AREAS WITHIN ROADWAYS AND UTILITY EASEMENTS. OTHER AREAS OF FILL TO BE COMPACTED TO A MINIMUM 90% DRY DENSITY. ALL FILL MATERIALS ARE TO BE CLEAN FILL, FREE OF DELETERIOUS MATERIALS AND DEBRIS.
- ALL SIDEWALKS AND RAMPS TO CONFORM TO REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT (ADA), AS REQUIRED. SEE ARCHITECTURAL PLANS FOR CONFORMANCE REQUIREMENTS FOR PROPOSED BUILDINGS.
- THE AREA PROPOSED FOR DEVELOPMENT IS NOT WITHIN A 100 YEAR FLOOD PLAIN PER F.E.M.A. MAP #250313 0781 E. DATED: JULY 4, 2011. COMPLIANCE WITH APPLICABLE REGULATIONS IS REQUIRED.
- ALL REINFORCED CONCRETE PIPE TO BE CLASS III UNLESS OTHERWISE NOTED.
- PRE-CONSTRUCTION CONFERENCE SHALL BE HELD PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
- ALL UTILITIES ARE TO BE INSTALLED BY A LICENSED UTILITY CONTRACTOR LICENSED BY THE TOWN OF LEICESTER.

NO.	DATE	REVISIONS	BY
2	11/15/21	GRADING REVISIONS	CMA
1	10/19/21	PEER-REVIEW COMMENT	CMA

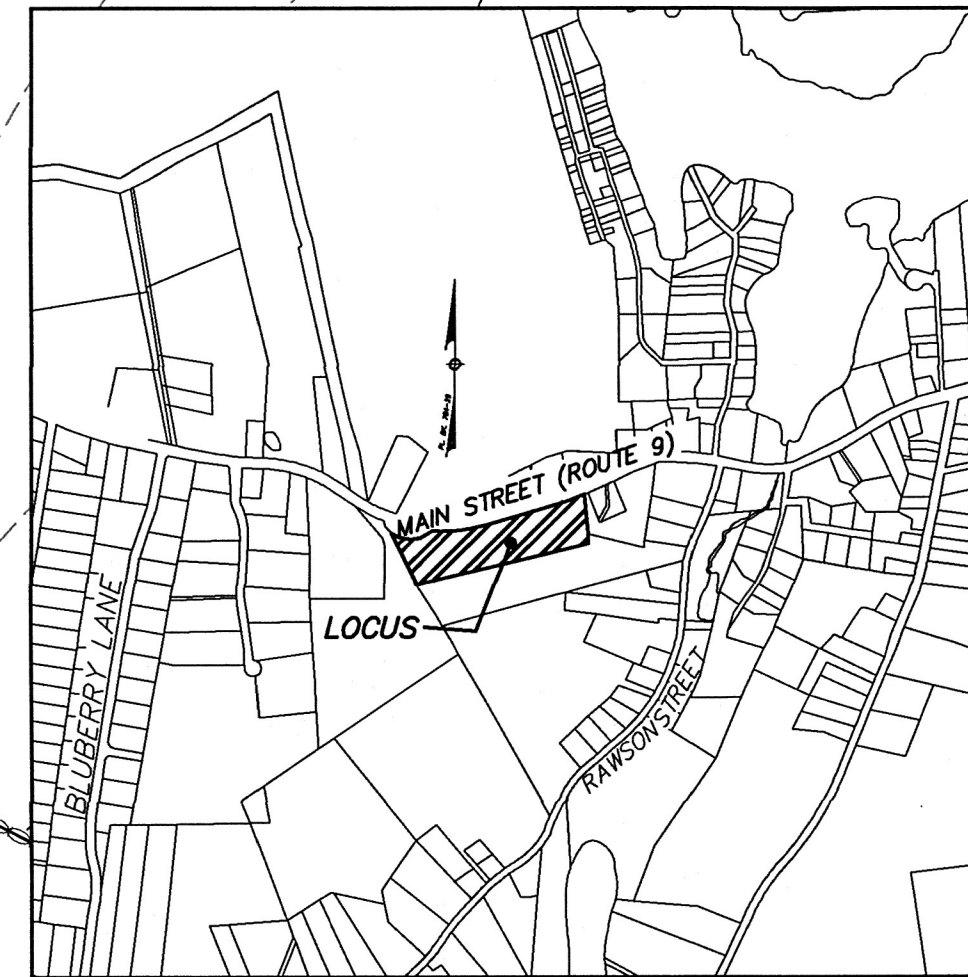
HANNIGAN ENGINEERING, INC.
CIVIL ENGINEERS & LAND SURVEYORS
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(978) 534-6060 (F)
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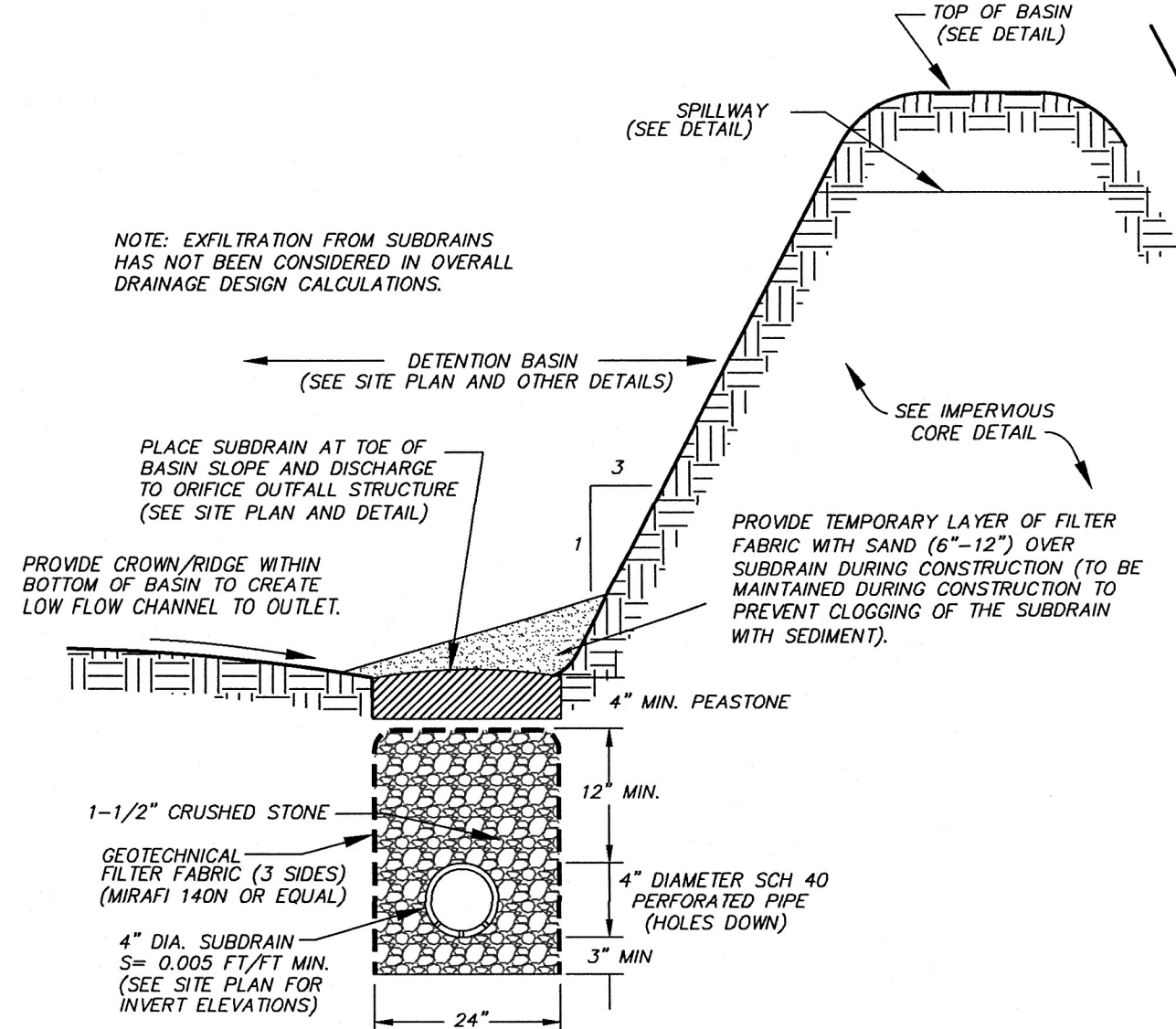
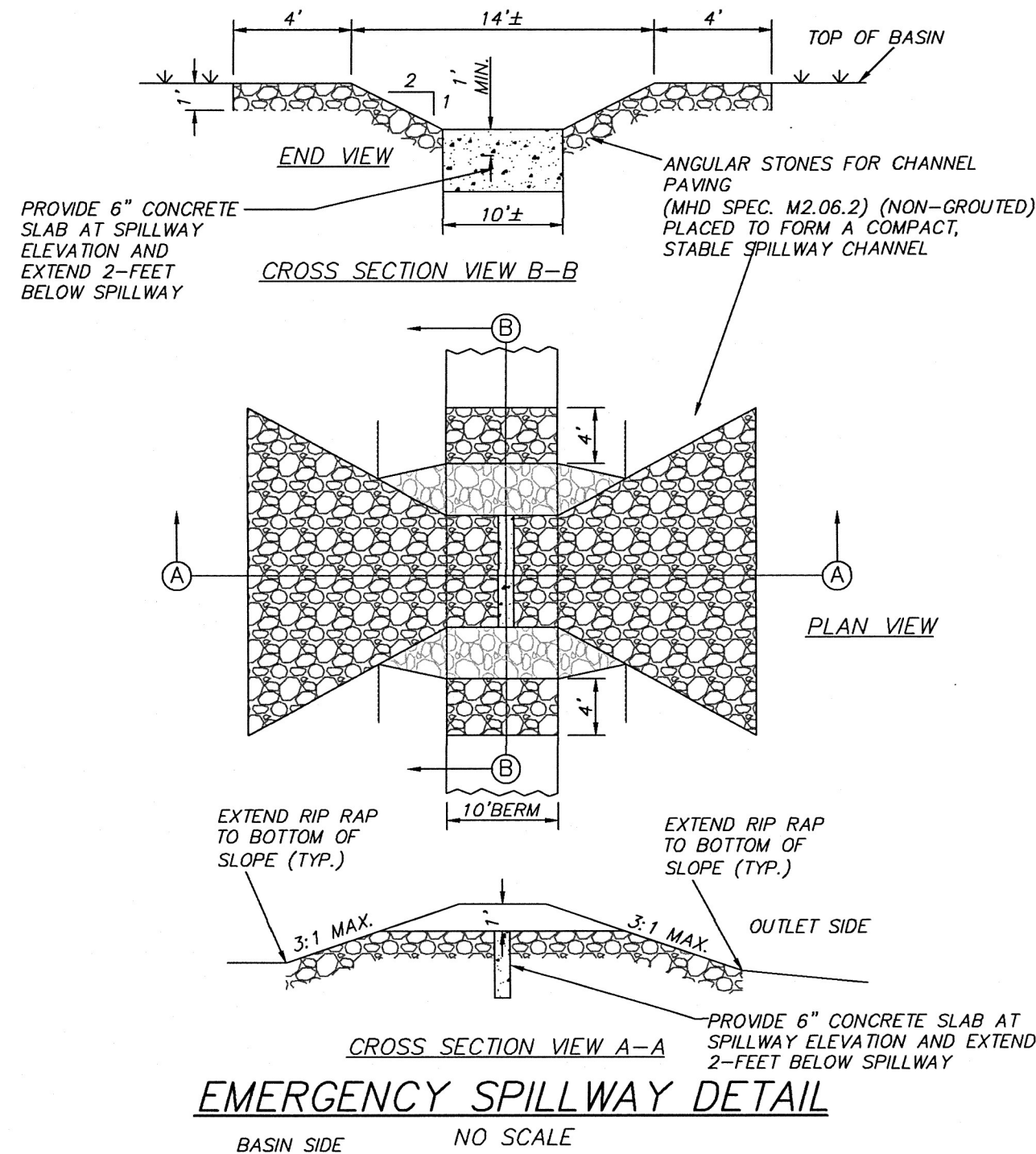
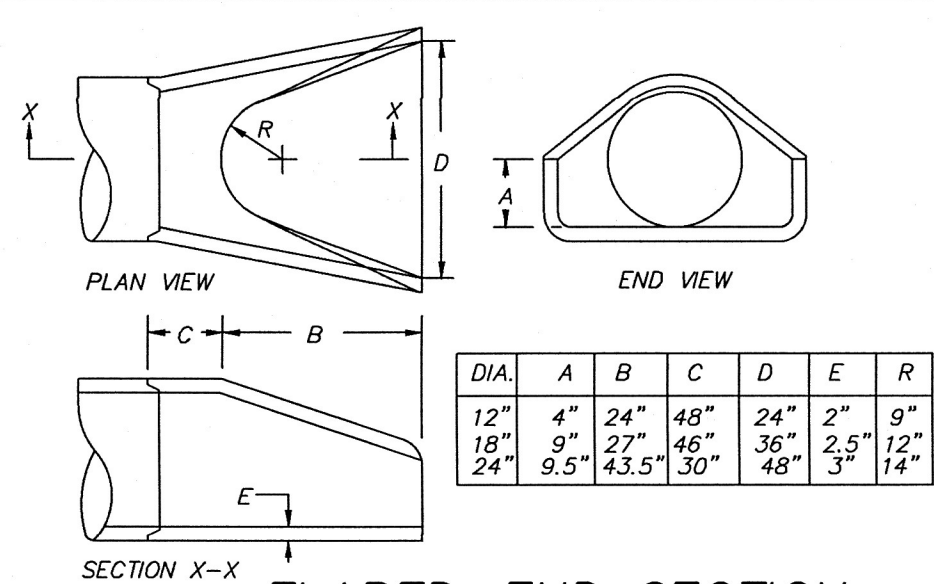
SITE DEVELOPMENT PLAN IN LEICESTER, MASSACHUSETTS

PREPARED FOR:
ZP BATTERY DEVCO, LLC
BRENDAN GOVE
10 E. WORCESTER STREET SUITE 3A
WORCESTER, MASSACHUSETTS 01604
TEL: _____

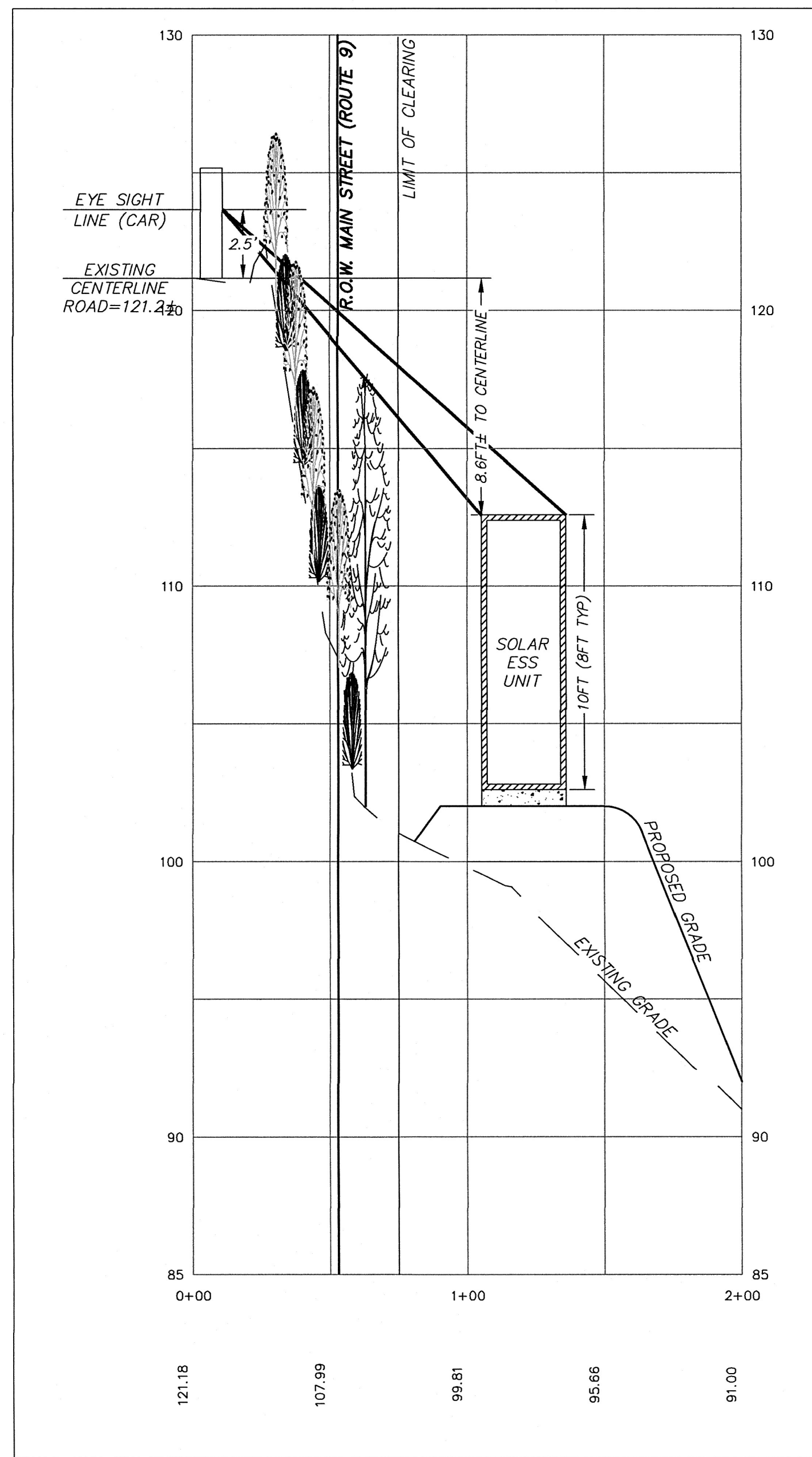
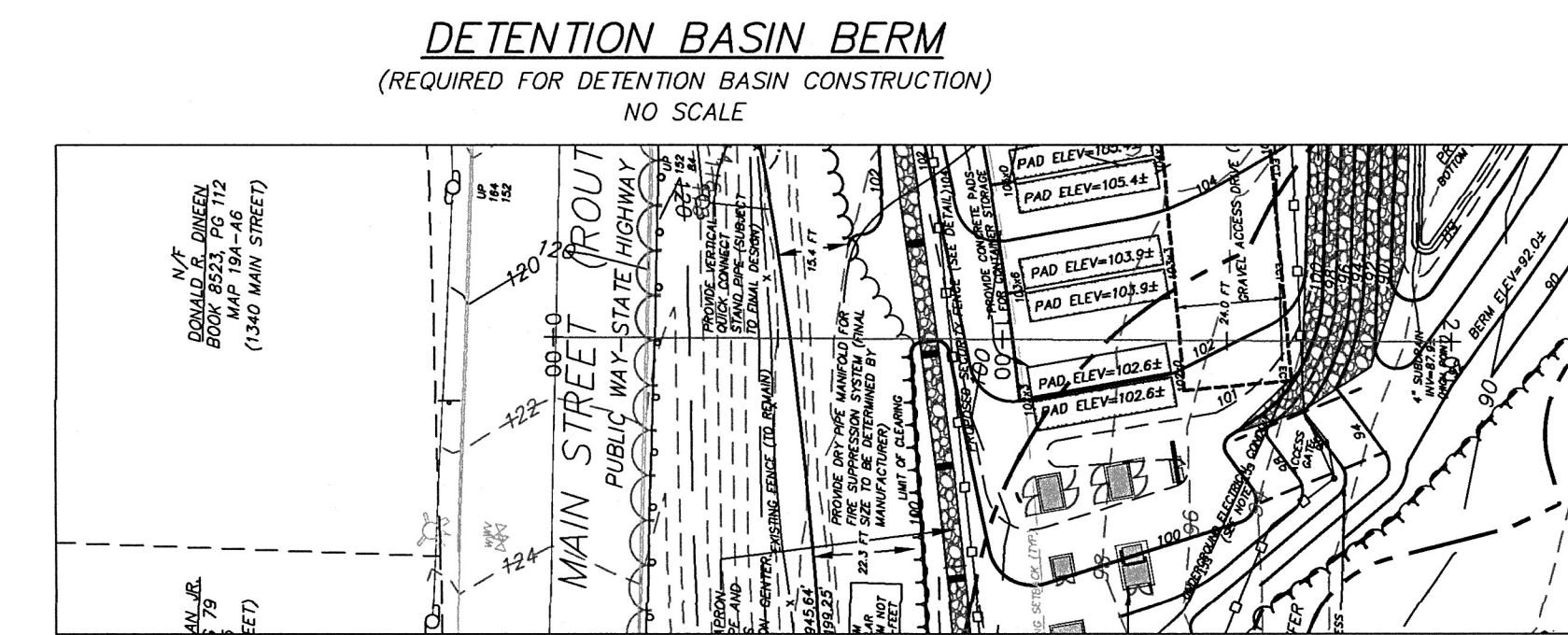
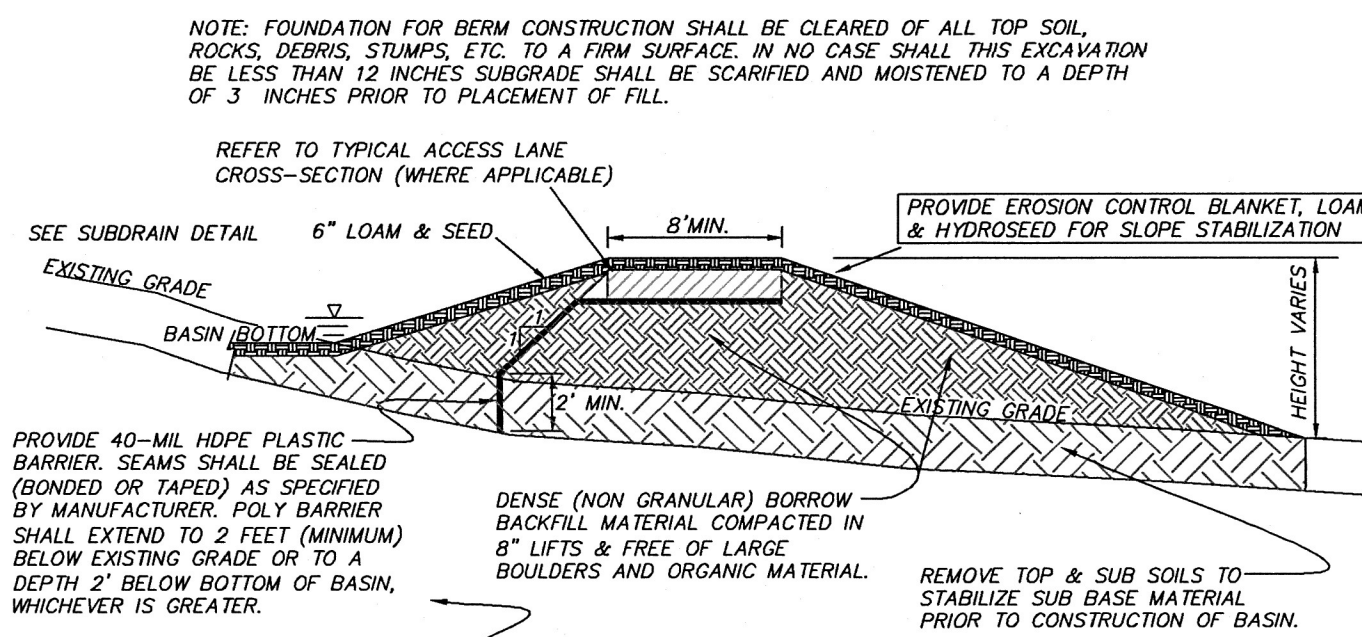
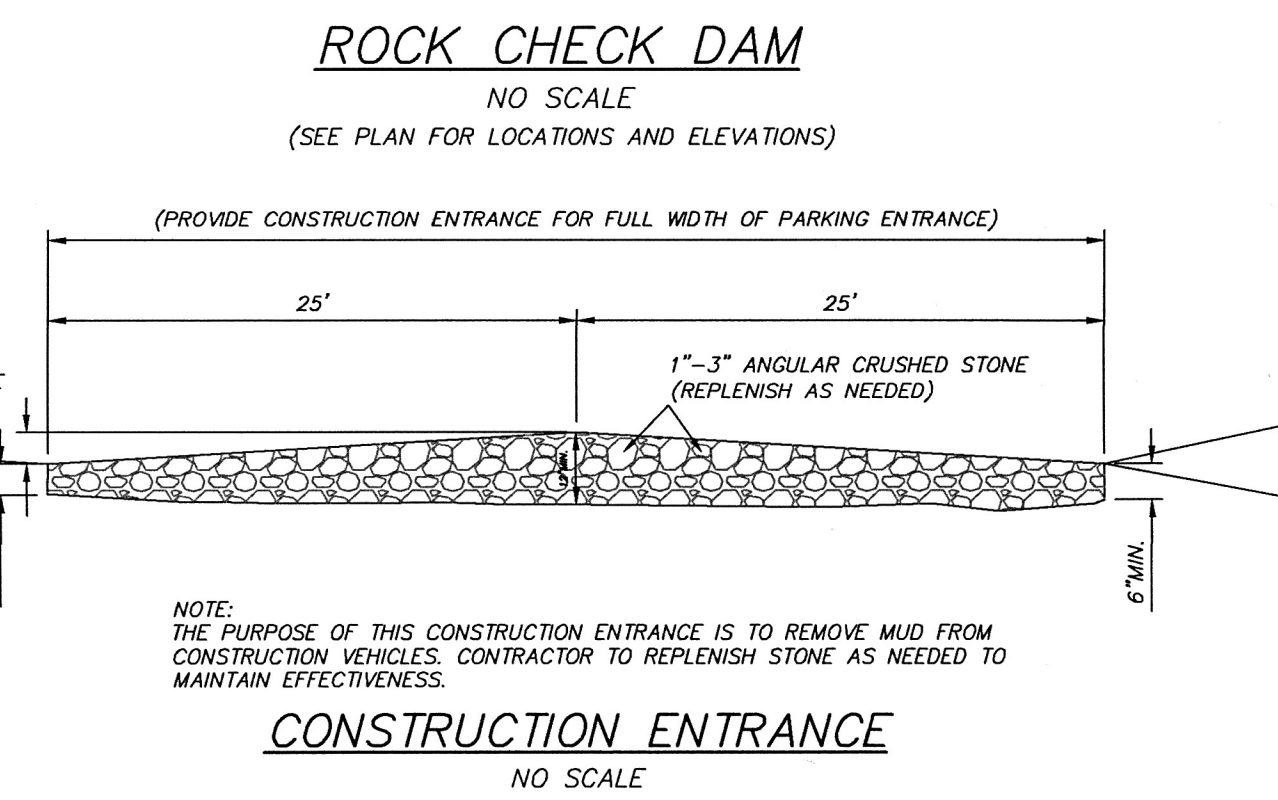
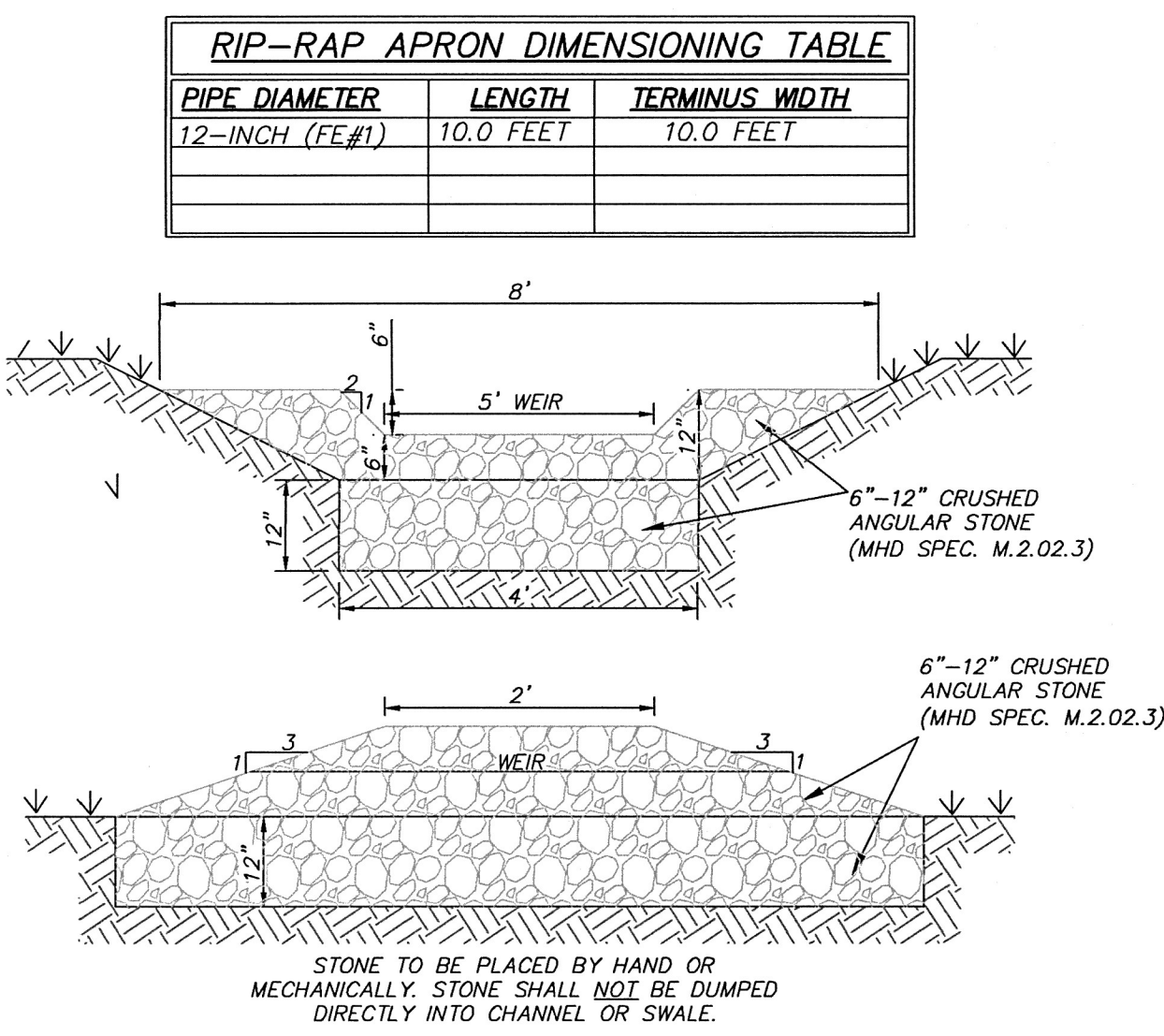
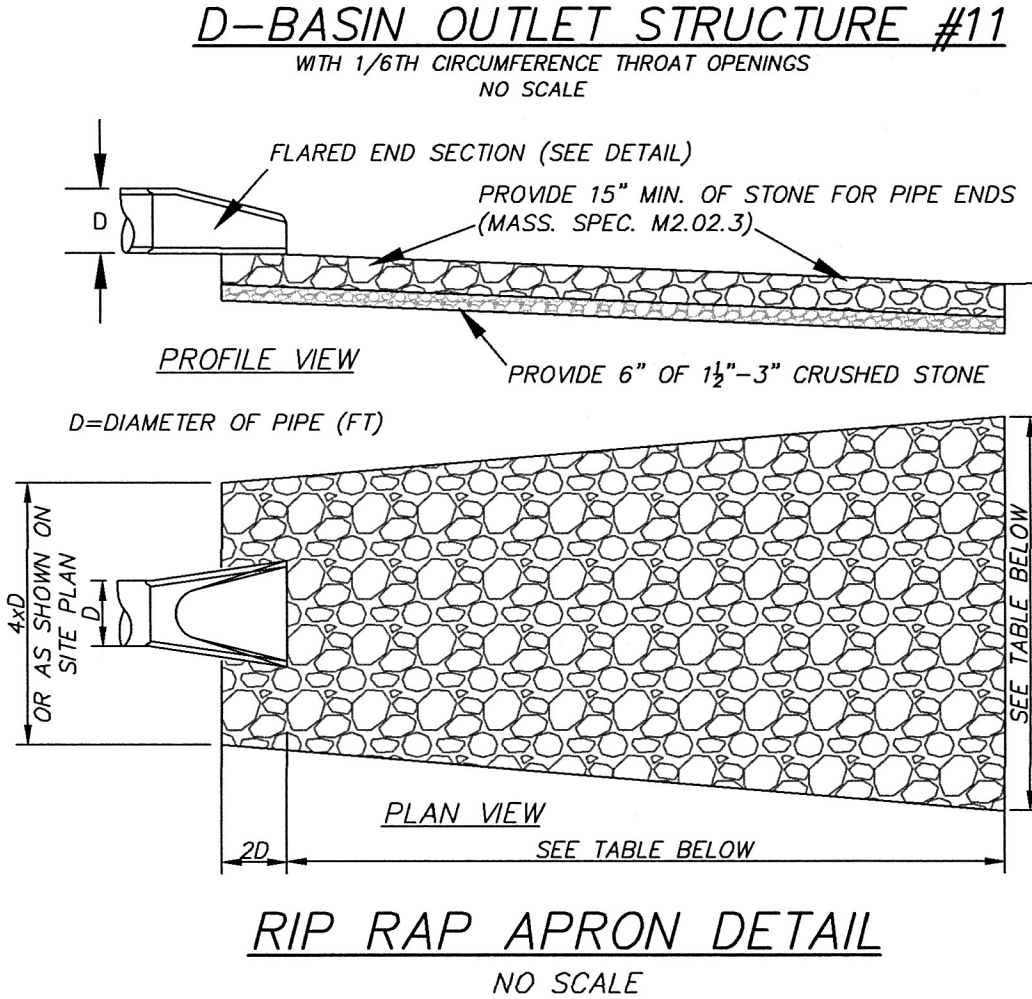
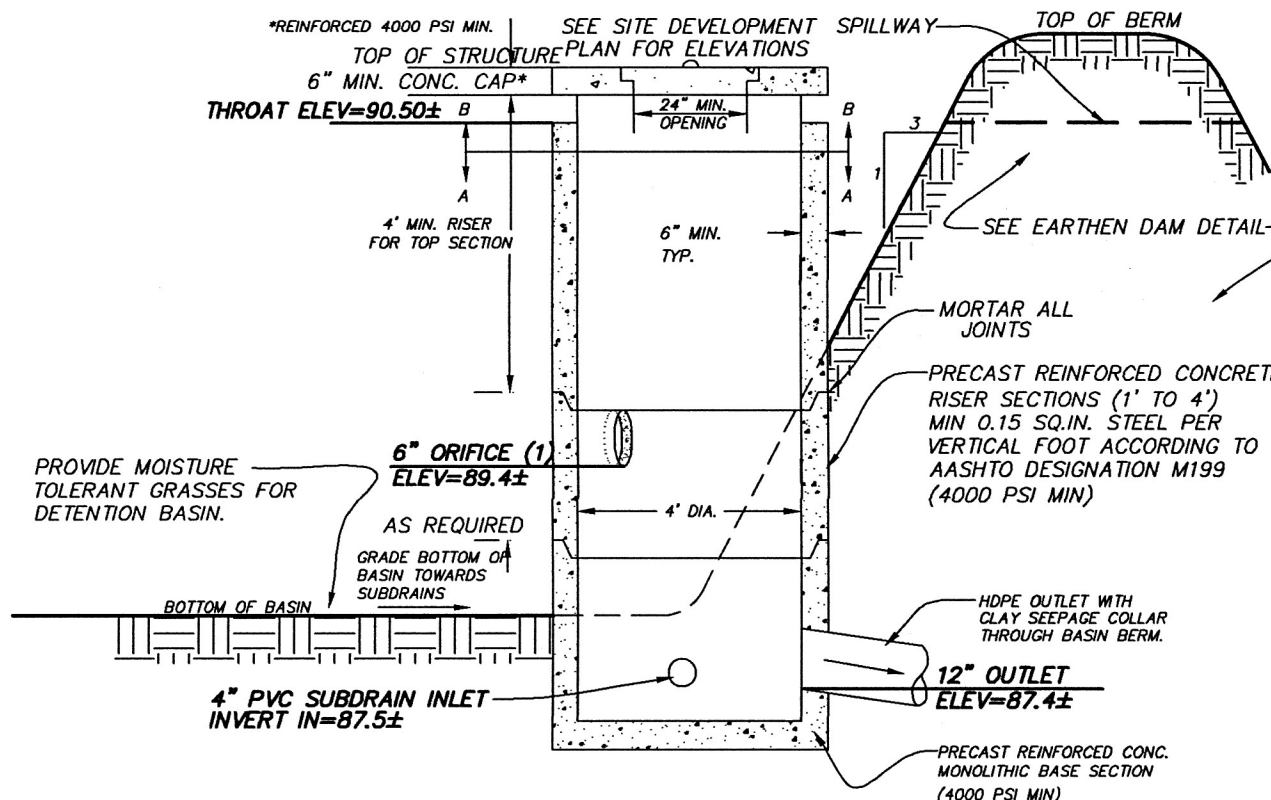
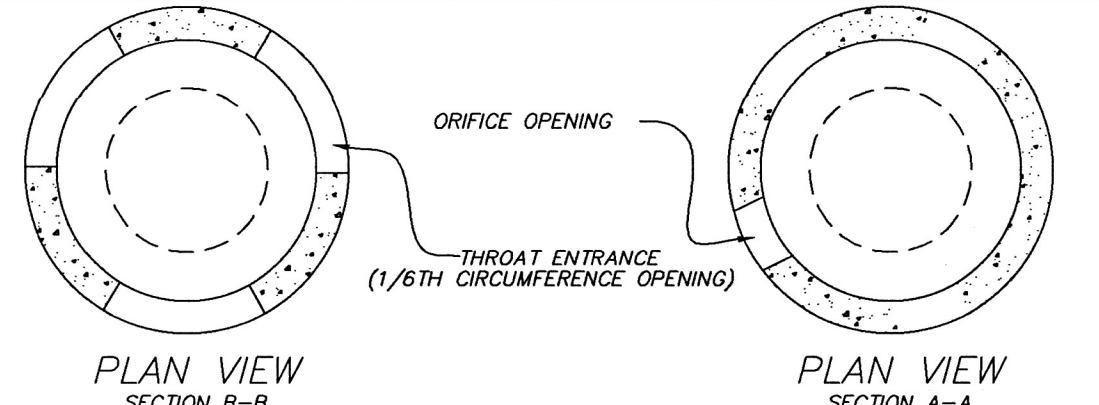
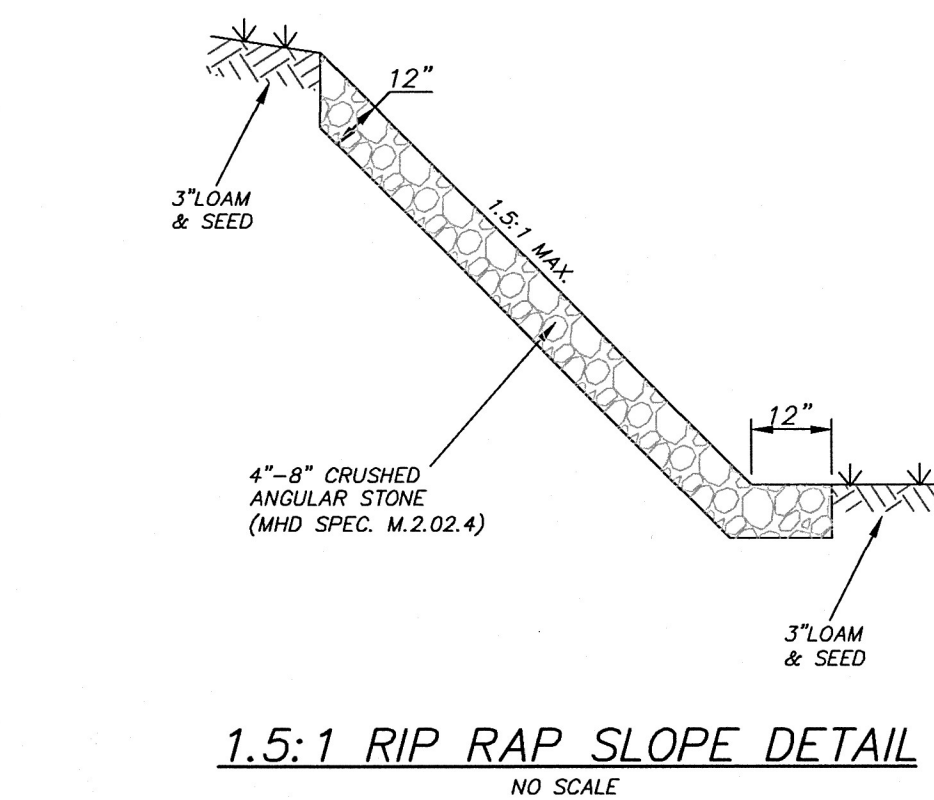
GRAPHIC SCALE: 1"=20'
0 5 10 15 20 25 30 40 50 75 FEET
0 1 2 3 4 5 10 15 20 25 METERS

CALC: CMA	DRWN: CMA	SCALE: 1"=20'
CHKD: WDH	APPD: WDH	DATE: SEP 21, 2021
SRV: JEF	FB: 71-22	JOB NO: 3010
TAB: (4) SDP	SHEET 4 OF 6	PLAN NO: C-17-38





DETENTION BASIN 4" - SUBDRAIN DETAIL
NO SCALE



PROJECT SIGHT LINE
HORIZONTAL SCALE=1": 40' VERTICAL SCALE=1": 4'

APPLICANT:
ZP BATTERY DEVCO, LLC
BRENDON GOVE
10 E. WORCESTER STREET, SUIT 3A
WORCESTER, MASSACHUSETTS 01604
OWNER:
WR ENTERPRISES, LLC
1323 MAIN STREET
LEICESTER, MASSACHUSETTS 01524

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 ISSUED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

I. 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.

II. RESPONSIBLE PARTIES
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.

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

STRUCTURE TYPE	INSPECTION	MAINTENANCE	TASK
RIP/RAP APRONS	TWICE A YEAR	EVERY 10 YEARS	REMOVE DEBRIS & ADD STONE
SUBDRAINS	TWICE A YEAR	EVERY 4 YEARS	REPLACE PEASTONE
DETENTION BASINS	MONTHLY (MAY-OCT)	MONTHLY (MAY-OCT)	MOW GRASS AREAS & REMOVE DEBRIS
OUTFALL STRUCTURES:			
SPILLWAYS	TWICE A YEAR	EVERY 10 YEARS	REMOVE SEDIMENT IF PRESENT REMOVE DEBRIS & ADD STONE

NOTE: THE DETENTION BASINS ON THIS PROJECT MAY GROW VEGETATION IN THE BOTTOM WHICH MAY INCLUDE SPECIES PART OF THE WETLAND PROTECTION ACT. THESE PLANTS SHALL NOT BE CONSTRUED AS HAVING PROTECTION UNDER THE ACT AND SHALL BE CONSIDERED OPPORTUNISTIC GROWTH PLANTS. ADDITIONALLY, THIS AREA SHALL NOT BE CONSIDERED A CONSTRUCTED WETLAND.

SEEDING OPERATION AND MAINTENANCE PLAN

I. 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 STRUCTURES.

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

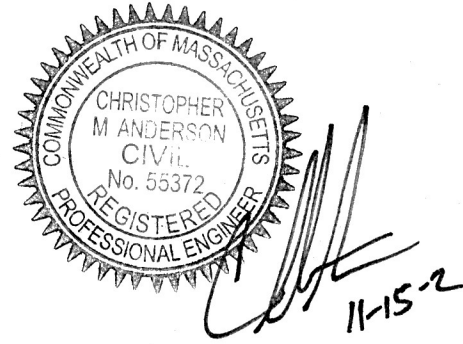
ACTIVITY	MAINTENANCE	TASK
GRASS CUTTING	MONTHLY	GRASS HEIGHT TO BE ALLOWED TO GROW TO A HEIGHT OF NO MORE THAN 18 INCHES AND BE CUT TO A HEIGHT OF 4 TO 6 INCHES.

III. APPROPRIATE SEED MIX AND APPLICATION RATES
THE FOLLOWING SEED SCHEDULE SHALL BE FOLLOWED IN ORDER TO PROPERLY MAINTAIN VEGETATED AREAS

SEED TYPE (NATIVE SEED REQUIRED)	APPLICATION RATE	% OF MIX
WILDFLOWER SEED MIX	5 TO 10 POUNDS PER ACRE	50%
WHITE CLOVER SEED MIX	3 TO 5 POUNDS PER ACRE	10%
KENTUCKY BLUEGRASS	80 TO 100 POUNDS PER ACRE	40%

IV. HERBICIDES & PESTICIDES
THERE WILL NO HERBICIDES OR PESTICIDES USED ON THIS PROJECT.

2	11/15/21	GRADING REVISIONS	CMA
1	10/19/21	PEER-REVIEW COMMENT	CMA
NO.	DATE	REVISIONS	BY



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CONSTRUCTION DETAILS IN LEICESTER, MASSACHUSETTS

PREPARED FOR:
ZP BATTERY DEVCO, LLC
BRENDON GOVE
10 E WORCESTER STREET SUITE 3A
WORCESTER, MASSACHUSETTS 01604
TEL:

CALC: CMA	DRWN: CMA	SCALE: NA
CHKD: WDH	APPD: WDH	DATE: SEP 21, 2021
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TAB: (5-6) DET	SHEET 6 OF 6	PLAN NO: C-17-38