

DEFINITIVE SUBDIVISION PLAN

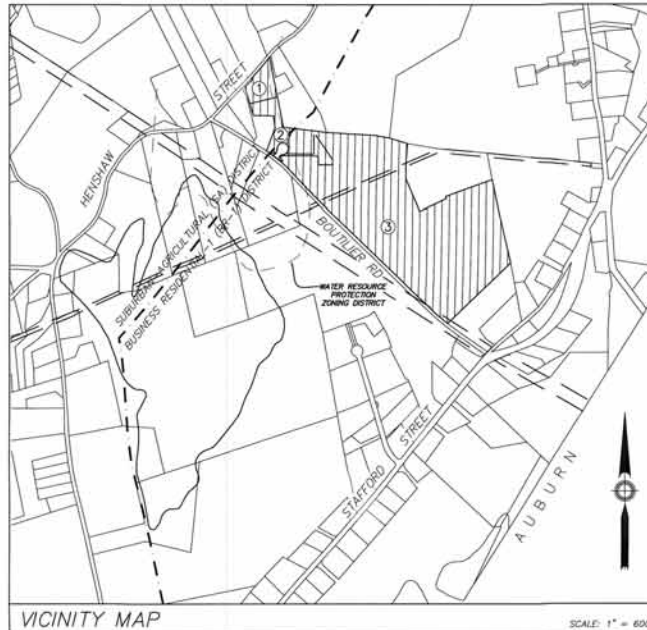
BOUTILIER ROAD

IN

LEICESTER, MASSACHUSETTS

MARCH 20, 2019

REVISIONS THROUGH JUNE 3, 2019



APPLICANT:

ZPT ENERGY SOLUTIONS II, LLC
BRENDON GOVE
6 PARK AVENUE
WORCESTER, MASSACHUSETTS 01605
TEL: (774) 314-2549

OWNER

NICHOLAS A. CASELLO
21 BOUTILIER ROAD
LEICESTER, MASSACHUSETTS 01524

CIVIL ENGINEER & LAND SURVEYOR:

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

PLAN INDEX

SHEET 1	INDEX PLAN
SHEET 2-5	PLAN OF LAND
SHEET 6-8	DEFINITIVE SUBDIVISION PLAN
SHEET 9	ROADWAY PROFILE
SHEET 10-11	CONSTRUCTION DETAILS

APPROVAL UNDER THE
SUBDIVISION CONTROL LAW,
IS REQUIRED.
MGL CHAPTER 41A, SECTION 81-K
LEICESTER PLANNING BOARD

DATE: _____

I HEREBY CERTIFY THAT THIS PLAN
WAS PREPARED IN CONFORMANCE WITH
THE RULES AND REGULATIONS OF THE
REGISTER OF DEEDS.

James R. Sabean 06/05/2019
JAMES R. SABEAN, P.L.S. 34625 DATE:

NO.	DATE	REVISIONS	BY
1	6/3/19	REVIEW AND TOWN COMMENTS	CMA



**HANNIGAN
ENGINEERING, INC.**
CIVIL ENGINEERS & LAND SURVEYORS

8 MARLBOROUGH SQUARE
LEICESTER, MASSACHUSETTS 01453
WWW.HANNIGANENGINEERING.COM

**DEFINITIVE SUBDIVISION PLAN
IN
LEICESTER, MASSACHUSETTS**

PREPARED FOR:
ZPT ENERGY SOLUTIONS II, LLC
6 PARK AVENUE
WORCESTER, MASSACHUSETTS, 01605
TEL: (774) 314-2549

GRAPHIC SCALE: 1"=60'
0 10 20 30 40 50 60 70 80 90 100 FEET
0 10 20 30 40 50 60 70 80 90 100 METERS

CALC: CMA/WDH	DRWN: LRS	SCALE: 1" = 60'
CHKD: WDH	APPD: LRS	DATE: MAR 20, 2019
SRV: JET-EDH	FB: 56/01	JOB NO: 2719
TAB: (3) POL	SHEET 3 OF 5	PLAN NO: C-14-25

APPLICANT:
ZPT ENERGY SOLUTIONS II, LLC
BRENDON ODVE, MANAGER
6 PARK AVENUE
WORCESTER, MA 01605

OWNER:
NICHOLAS A. CASELLO
JACQUELINE MATHEWS
21 BOUTLIER ROAD
LEICESTER, MA 01524

PLAN REFERENCE:
PLAN BOOK 89, PLAN 14
PLAN BOOK 318, PLAN 7
PLAN BOOK 552, PLAN 6
PLAN BOOK 669, PLAN 73
PLAN BOOK 783, PLAN 89
PLAN BOOK 885, PLAN 63
PLAN BOOK 885, PLAN 102
PLAN BOOK 885, PLAN 112
PLAN BOOK 891, PLAN 114
PLAN BOOK 909, PLAN 78

REFERENCE:
ASSESSOR MAP 35, BLOCK B, LOT 3
DEED BOOK 42787, PAGE 182
ASSESSOR MAP 35, BLOCK B, LOT 2
DEED BOOK 39509, PAGE 087

ZONE: RR-1
BUSINESS-RESIDENTIAL 1
STRUCTURE
AREA = 20,000 SF
FRONTAGE = 150'
SETBACKS: FRONT = 50'
SIDE = 40'
REAR = 40'

I, _____, CLERK OF THE TOWN OF LEICESTER
RECEIVED AND RECORDED APPROVAL FROM THE PLANNING BOARD
OF THIS PLAN ON _____ AND NO APPEAL WAS TAKEN
FOR TWENTY (20) DAYS THEREAFTER.

CONDITIONS OF APPROVAL ARE CONTAINED IN THE WRITTEN DECISION OF THE PLANNING BOARD
ENTITLED CERTIFICATE OF APPROVAL OF A DEFINITIVE SUBDIVISION PLAN, DATED _____

THE CONSTRUCTION OF WAYS AND INSTALLATION OF SERVICES SHOWN ON THIS PLAN ARE SECURED BY
WAY OF A COVENANT DATED _____ TO BE RECORDED HEREWITH.

APPROVAL BY THE BOARD OF HEALTH IS BY FAILURE TO REPORT.

APPROVAL OF THE LEICESTER PLANNING BOARD IS FOR _____ YEARS ONLY. IN THE EVENT THE WAYS
AND SERVICES SHOWN ON THIS PLAN ARE NOT CONSTRUCTED AND INSTALLED WITHIN _____ YEARS
FROM THE DATE OF ENDORSEMENT, THE BOARD'S APPROVAL IS RESCINDED, AND THIS PLAN IS AND
SHALL BE NULL AND VOID.

LAND N/F/
LEICESTER ONE MA SOLAR, LLC
BOOK 24700, PAGE 247
MAP 35, BLOCK A, LOT 3
(396 AUBURN ST)

LAND N/F/
INGHAM REALTY, INC
BOOK 8938, PAGE 315
MAP 35, BLOCK B, LOT 8
(STAFFORD ST)

LAND N/F/
CHRISTINA L. ROBERTS
JOSEPH H. ROBERTS, III
BOOK 45521, PAGE 346
MAP 35, BLOCK B, LOT 10

LOT 3
AREA = 2,124,415 SF
(48.77± ACRES)
FRONTAGE = 2,300.08'-BOUTLIER
FRONTAGE = 238.67'-ROAD A

LAND OF
NICHOLAS A. CASELLO
JACQUELINE MATHEWS
BOOK 42787, PAGE 182
MAP 35, BLOCK B, LOT 3
(500 BOUTLIER RD)

NOTES:

THIS SURVEY WAS PREPARED WITH THE BENEFIT OF A TITLE EXAMINATION BY FIRST
AMERICAN TITLE INSURANCE COMPANY, COMMITMENT No. 3020-879808-22, DATED MAY 4,
2018 AND IS SUBJECT TO ANY AND ALL RIGHTS AND ENCUMBRANCES THAT SUCH
REPORTS MAY DISCLOSE.

HANNIGAN ENGINEERING, INC. MAKES NO REPRESENTATION AS TO THE EXISTENCE OF ANY
OTHER PRIVATE OR PUBLIC UTILITIES THAT MAY AFFECT THE SURVEYED PROPERTY.

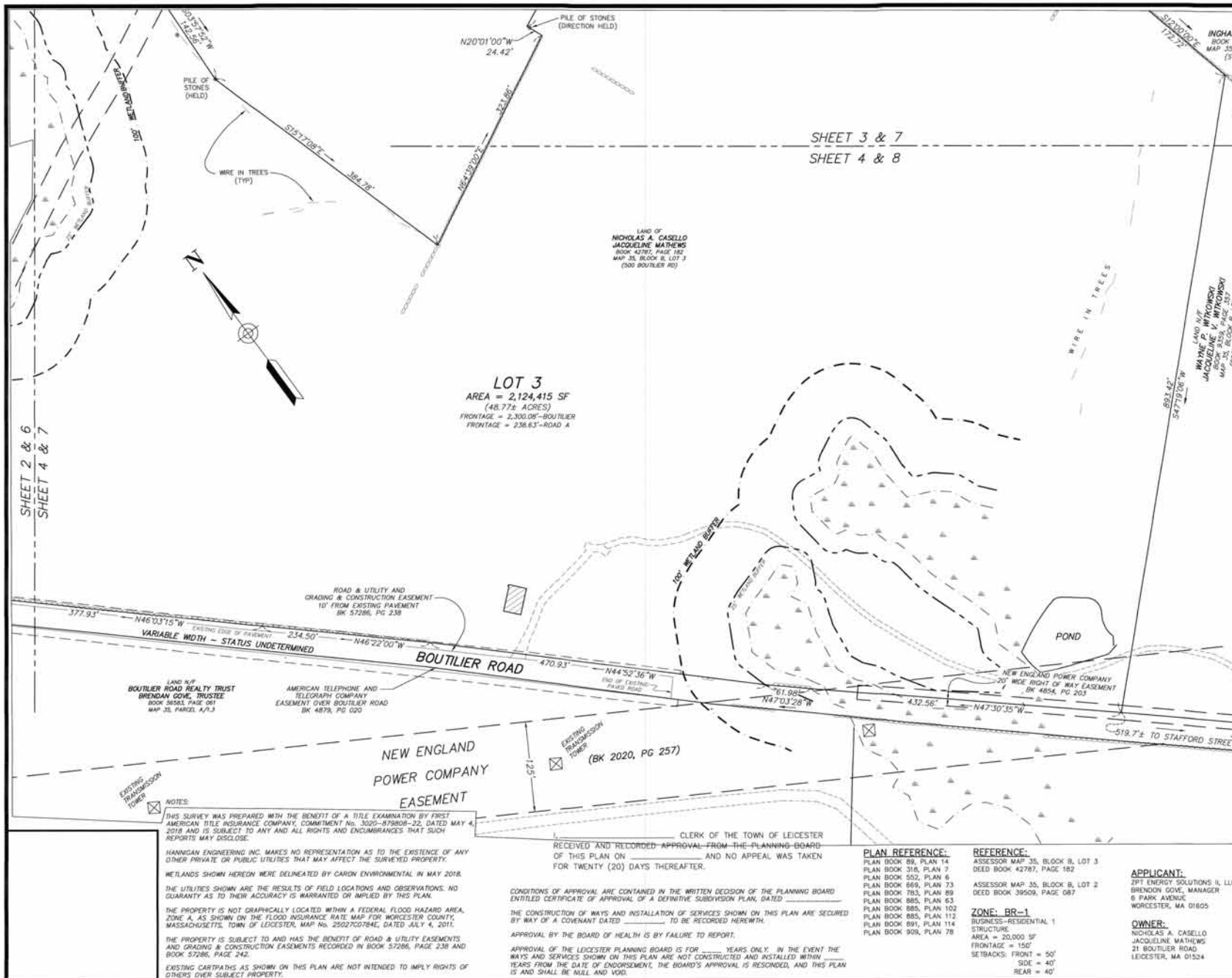
WETLANDS SHOWN HEREON WERE DELINEATED BY CARON ENVIRONMENTAL IN MAY 2018.

THE UTILITIES SHOWN ARE THE RESULTS OF FIELD LOCATIONS AND OBSERVATIONS. NO
GUARANTEE AS TO THEIR ACCURACY IS WARRANTED OR IMPLIED BY THIS PLAN.

THE PROPERTY IS NOT GRAPHICALLY LOCATED WITHIN A FEDERAL FLOOD HAZARD AREA,
ZONE A, AS SHOWN ON THE FLOOD INSURANCE RATE MAP FOR WORCESTER COUNTY,
MASSACHUSETTS, TOWN OF LEICESTER, MAP No. 2502700784E, DATED JULY 4, 2011.

THE PROPERTY IS SUBJECT TO AND HAS THE BENEFIT OF ROAD & UTILITY EASEMENTS
AND GRADING & CONSTRUCTION EASEMENTS RECORDED IN BOOK 57286, PAGE 238 AND
BOOK 57286, PAGE 245.

EXISTING CARPARKS AS SHOWN ON THIS PLAN ARE NOT INTENDED TO IMPLY RIGHTS OF
OTHERS OVER SUBJECT PROPERTY.



APPROVAL UNDER THE
 SUBDIVISION CONTROL LAW,
 IS REQUIRED.
 MGL CHAPTER 41A, SECTION 81-K
 LEICESTER PLANNING BOARD

DATE: _____

I HEREBY CERTIFY THAT THIS PLAN
 WAS PREPARED IN CONFORMANCE WITH
 THE RULES AND REGULATIONS OF THE
 REGISTERS OF DEEDS.

James R. Sabean, P.L.S.
 JAMES R. SABLEAN, P.L.S. 34625 DATE: _____

NO.	DATE	REVISIONS	BY
1	6/3/19	PEER REVIEW AND TOWN COMMENTS	CMA



HANNIGAN ENGINEERING, INC.
 CIVIL ENGINEERS & LAND SURVEYORS

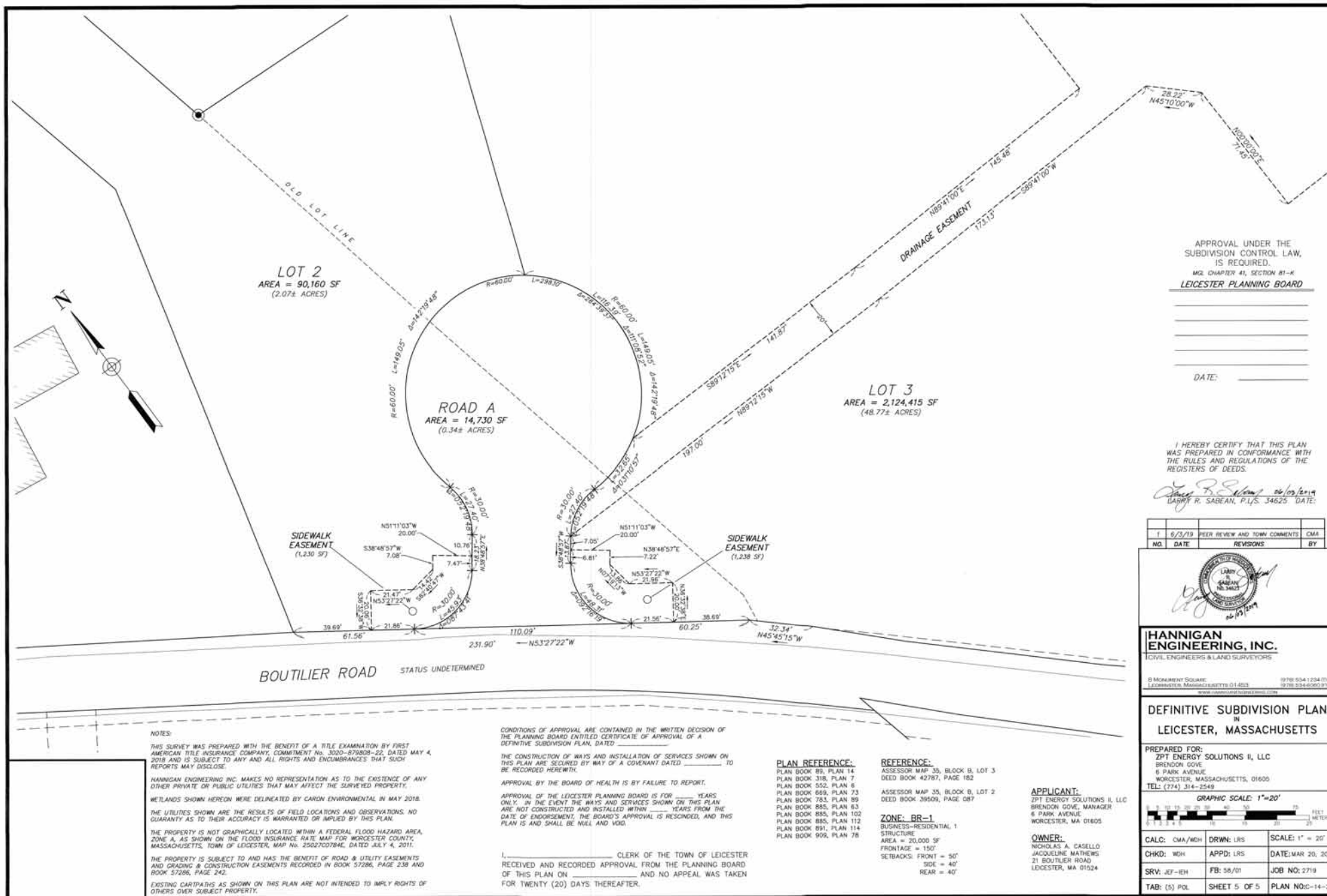
8 MONUMENT SQUARE
 LEICESTER, MASSACHUSETTS 01463
 WWW.HANNIGANENGINEERING.COM

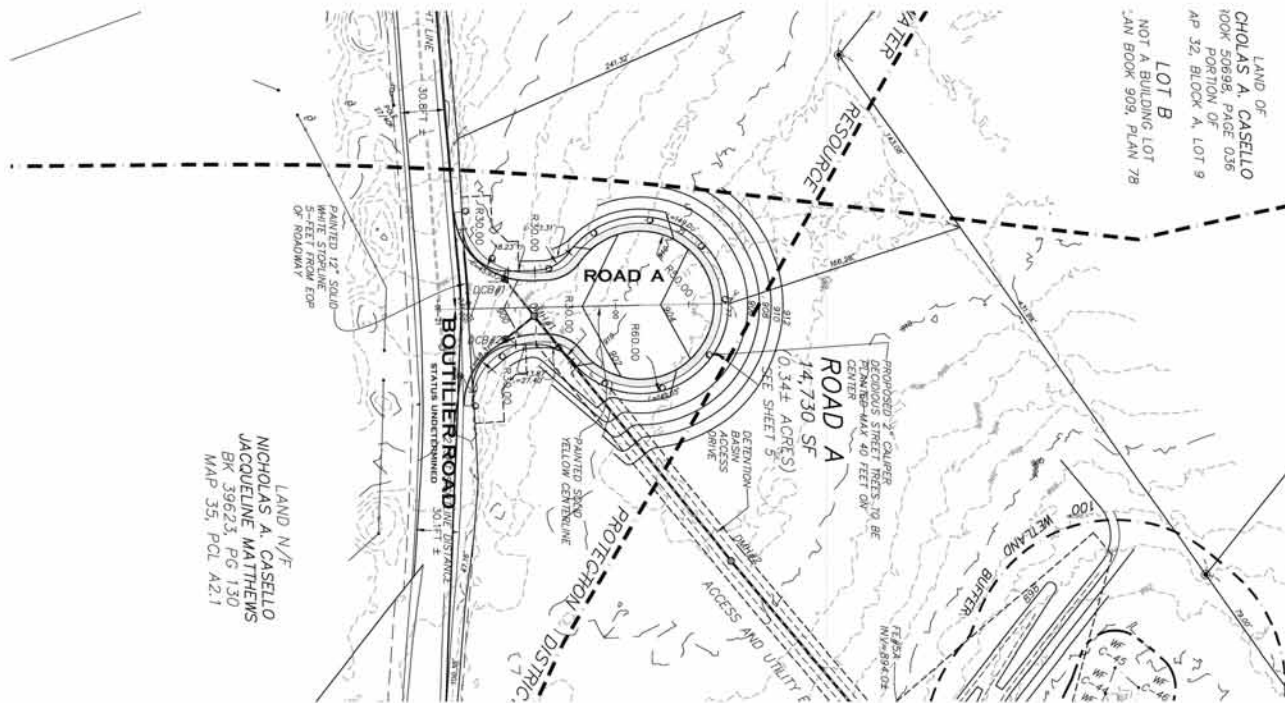
**DEFINITIVE SUBDIVISION PLAN
 IN
 LEICESTER, MASSACHUSETTS**

PREPARED FOR:
 ZPT ENERGY SOLUTIONS II, LLC
 BRENDON GOVE
 6 PARK AVENUE
 WORCESTER, MASSACHUSETTS, 01605
 TEL: (774) 314-2549

GRAPHIC SCALE: 1"=60'
 0 10 20 30 40 50 60 70 80 90 100 FEET
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CALC: CMA/WDH	DRWN: URS	SCALE: 1" = 60'
CHKD: WDH	APPD: URS	DATE: MAR 20, 2019
SRV: JEF-ICH	FB: 38/01	JOB NO: 2719
TAB: (4) POL	SHEET 4 OF 5	PLAN NO: 14-25





LAND OF
CHOLAS A. CASELLO
BOOK 50898, PAGE 036
PORTION OF
AP 32, BLOCK A, LOT 9
NOT A BUILDING LOT
PLAN BOOK 909, PLAN 78

LAND N/F
NICHOLAS A. CASELLO
JACQUELINE MATTHEWS
BK 39623, PG 130
MAP 35, PCL A2.1

APPLICANT:
ZPT ENERGY SOLUTIONS II, LLC
BRENDON GOVE, MANAGER
6 PARK AVENUE
WORCESTER, MASSACHUSETTS 01605

OWNER:
NICHOLAS A. CASELLO
21 BOUTLIER ROAD
LOCESTER, MASSACHUSETTS 01524

REFERENCES:
ASSESSORS INFORMATION:
MAP 35, PARCELS B3
DEED: BOOK 42787, PAGE 182

MPA35 PARCEL B/2
DEED: BOOK 39059, PAGE 087

PROJECT INFORMATION

LAND INFORMATION			
MAP PARCEL:	35.8/1, 35.8/2		
DEED BOOK/PAGE:	42787/PAGE 3508/047		
ZONING INFORMATION			
ZONING DISTRICT:	BUSINESS	SUBURBAN	
ADDITIONAL - 1 (DR-1)	AGRICULTURAL (SA)		
DIMENSIONAL REQUIREMENTS			
MINIMUM AREA:	20,000 SF	80,000 SF	
MINIMUM FRONTAGE:	100 FEET	200 FEET	
MINIMUM HEIGHT:	10 FEET	35 FEET	
MINIMUM SETBACKS:			
FRONT YARD:	50 FT	40 FT	
SIDE YARD:	40 FT	40 FT	
REAR YARD:	40 FT	40 FT	
GENERAL NOTES:			
1. PROPERTY LINE INFORMATION BASED ON DEEDS AND PLANS OF RECORD. NO CERTIFICATION OF PROPERTY LINES SHOWN ON THIS PLAN IS INTENDED OR IMPLIED BY HANNIGAN ENGINEERING, INC. PROPERTY LINE DETERMINATIONS MADE BY A ON-THE-GROUND PROPERTY LINE SURVEY IN JULY OF 2018.			
2. TOPOGRAPHIC SURVEY INFORMATION AS DEPICTED HEREON IS BASED ON LEAN (LIGHT DETECTION AND RANGING) INFORMATION MADE AND PROVIDED BY WILSON, INC. IN 2014 AND PROVIDED BY THE US GEOLOGICAL SURVEY. POST-PROCESSING BY OTHERS AND PROVIDED TO THIS OFFICE. DATUM IS BASED ON NAD83.			
3. AREAS SUBJECT TO PROTECTION UNDER THE WETLANDS PROTECTION ACT HAVE BEEN DELINEATED BY CARON ENVIRONMENTAL IN JULY OF 2018. THESE AREAS ARE DEPICTED ON THE PLAN BASED ON FIELD SURVEY LOCATION DURING THE TOPOGRAPHIC SURVEY.			
4. LOCATION OF ALL UTILITIES ARE APPROXIMATE AS SHOWN AND BASED UPON VISUAL INSPECTION AT THE TIME OF THE FIELD SURVEY. LOCATION OF UTILITIES SHALL BE DETERMINED BY THE CONTRACTOR. UTILITIES NOT SHOWN ON THESE PLANS SHALL BE DETERMINED BY THE CONTRACTOR. MARKED IN THE FIELD PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR SHALL BE AWARE OF THE LOCATION OF ALL UTILITIES AND AVOIDANCE AS WELL AS DIG-SAFE PRIOR TO EXCAVATION (SEE NOTE).			
5. NOTIFICATION REQUIREMENTS SHOWN FOR THE 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.			
6. RELIANCE OF ANALYSIS CONDUCTED BY EXISTING UTILITIES SHALL BE PERFORMED IN ACCORDANCE WITH PROVISIONS OF THE APPROPRIATE UTILITY COMPANY AND/OR REGULATORY AGENCY.			
7. UNLESS OTHERWISE SPECIFIED, ALL MATERIALS AND WORKMANSHIP SHALL CONFORM WITH THE REQUIREMENTS OF THE CITY OF LOCESTER AND THE MASS DOT SPECIFICATIONS OF HIGHWAYS AND BRIDGES.			
8. ALL SLOPES UNLESS OTHERWISE SPECIFIED, SHALL BE LOANED AND SEEDED FOR STABILIZATION.			
9. ANY DEVIATIONS IN DESIGN AS SHOWN SHALL REQUIRE A REVIEW AND APPROVAL OF THE DESIGN ENGINEER OR FIRM. CHANGES MADE IN THE FIELD MAKE WITHOUT AUTHORIZATION SHALL BE SUBJECT TO REVIEW BY THE ENGINEER AND APPROPRIATE AUTHORITY. EXCESSIVE CHANGES TO BEING THE UNAUTHORIZED CHANGES TO ACCEPTABLE PERFORMANCE SHALL BE DONE BY THE COMPANY OR CONTRACTOR MAKING THE CHANGES.			
10. ANY MATERIALS DISCOVERED ON-SITE WHICH ARE NOT SUITABLE FOR USE SHALL BE REMOVED FROM THE PLAN LINE AND REMOVED AND HALVED OFF-SITE TO AN APPROPRIATELY LICENSED FACILITY.			
11. ALL AREAS TO BE REMOVED OR EXCAVATED SHALL BE SUBJECT TO CHANGE. COMPLIANCE WITH REGULATIONS, FINAL LOCATION IS SUBJECT TO CHANGE.			
12. APPLICANT SHALL BE AWARE OF OBLIGATIONS TO COMPLY WITH CHAPTER 131, SECTION 45 OF THE MASSACHUSETTS GENERAL LAWS, STRONG ARMED AS PER 93A-139. LOCAL CONSTRUCTION.			
13. ALL AREAS TO BE REMOVED OR EXCAVATED SHALL BE SUBJECT TO CHANGE. COMPLIANCE WITH REGULATIONS, FINAL LOCATION IS SUBJECT TO CHANGE.			
14. AREAS OF FILL TO BE COMPACTED TO A MINIMUM SOIL DRY DENSITY IN AREAS SUBJECT TO PROTECTION UNDER THE WETLANDS PROTECTION ACT WITHOUT FILL TO BE COMPACTED TO A MINIMUM SOIL DRY DENSITY. ALL FILL MATERIALS ARE TO BE CLEAN FILL FREE OF CONTAMINANTS AND SOILS.			
15. THE AREA PROPOSED FOR DEVELOPMENT IS NOT WITHIN A 100-YEAR FLOOD PLAIN PER FEMA FLOOD INSURANCE RATE MAP, JULY 04, 2011. COMPLIANCE WITH APPLICABLE REGULATIONS IS REQUIRED.			
16. PRE-CONSTRUCTION CONFERENCE SHALL BE HELD PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.			
17. ALL UTILITIES ARE TO BE INSTALLED BY A LICENSED UTILITY CONTRACTOR LICENSED BY THE CITY OF LOCESTER.			

DEFINITE PLANS

DEFINITIVE PLAN

NO.	DATE	REVISIONS	BY
1	6/3/19	REVIEW AND TOWN COMMENTS	CMA

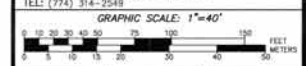


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CIVIL ENGINEERS & LAND SURVEYORS

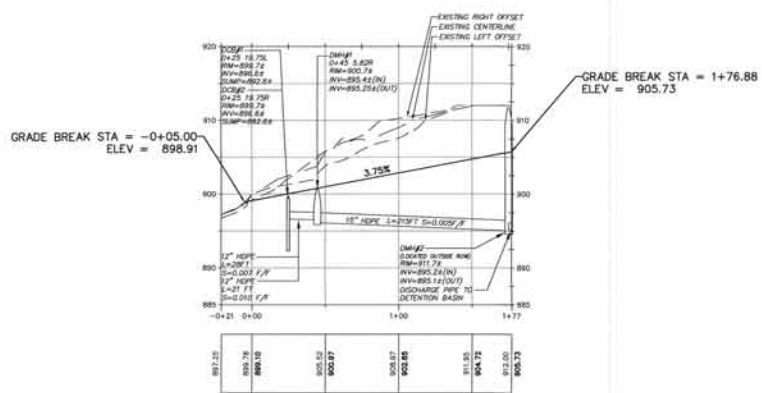
8 Monument Square
LOCESTER, MASSACHUSETTS 01453
TEL: (774) 314-2548
WWW.HANNIGANENGINEERING.COM

ROADWAY PROFILE IN LOCESTER, MASSACHUSETTS

PREPARED FOR:
ZPT ENERGY SOLUTIONS II, LLC
BRENDON GOVE
6 PARK AVENUE
WORCESTER, MASSACHUSETTS, 01605
TEL: (774) 314-2548



CALC: CMA/WDH	DRWN: CMA/WDH	SCALE: 1"=40'
CHKD: WDH	APPD: WDH	DATE: MAR 20, 2019
SRV: JET/EH	FB: 62719.070618	JOB NO: 2719
TAB: (8) PRD	SHEET 9 OF 11	PLAN NO: C-14-25



ROADWAY PROFILE
HORIZONTAL SCALE = 1:40
VERTICAL SCALE = 1:8

EROSION & SEDIMENTATION CONTROL PLAN

GENERAL:
THE PURPOSE OF THIS PLAN IS TO PRESENT A PREVENTIVE METHOD OF CONSTRUCTION TO MINIMIZE THE IMPACT OF THE CONSTRUCTION PHASES UPON THE WETLANDS AND OTHER RESOURCES. THE PLAN CONTAINED ON THIS PLAN IS INTENDED TO SUPPLEMENT THE DEVELOPMENT OF CONSTRUCTION EXPENSE AND IS NOT MEANT TO DETERMINE THE LOCAL CONDITIONS REQUIRED BY A VARIETY OF FIELD CONDITIONS. THE CONTRACTOR AND THE TYPE OF EQUIPMENT AVAILABLE TO THE CONTRACTOR.

2. THE CONTRACTOR IS TO BE AWARE OF THE REQUIREMENTS AND REGULATIONS TO COMPLY WITH CHAPTER 13A, SECTION 40 OF THE MASSACHUSETTS GENERAL LAWS, OTHERWISE KNOWN AS THE WETLANDS PROTECTION ACT, AND ITS ASSOCIATED REGULATIONS (10M CMR 1.00). EROSION PERMITS IN THE FORM OF AN ORDER OF CONDITIONS, OR OTHER DOCUMENT, MAY BE REQUIRED FOR THE CONSTRUCTION OF THE CONSTRUCTION. 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 AT ALL TIMES.

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. SLOTTED PLUGS, SLOTTED DISCHARGES, OR INADEQUATE ALTERNATION SHALL BE CONSIDERED AS ACTIVITIES NOT PERMITTED BY THE ORDER AND SHALL BE REPORTED TO THE CONSERVATION COMMISSION ALONG WITH THE PROPOSED MODIFICATION MEASURES.

5. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE EROSION AND SEDIMENT CONTROL BARRIER SHALL BE INSTALLED AS SHOWN ON THE PLAN. THE CONTRACTOR SHALL MAINTAIN THE 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 THE SURROUNDING THE PROJECT. ANY SEDIMENTATION PLUMES SHALL BE REPORTED TO THE CONSERVATION COMMISSION IMMEDIATELY TO PREVENT FURTHER SEDIMENTATION.

8. NO MATERIAL SUBJECT TO EROSION SHALL BE STOCKPILED OUTSIDE OF THE CONSTRUCTION SITE. MATERIAL SHALL BE STOCKPILED WITHIN 100 FEET OF ANY WETLANDS SURFACE WITHOUT PROPER EROSION AND SEDIMENTATION BARRIERS IN PLACE.

9. EQUIPMENT SHALL NOT BE PARKED WITHIN WETLAND OR BUFFER AREAS EXCEPT DURING ACTUAL OPERATIONS REQUIRING SUCH EQUIPMENT. THE 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 ENGINEER.

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

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

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

DEMARCATION OF SENSITIVE AREAS:
1. IT IS RECOMMENDED THAT BARRIERS BE PLACED ON THE SITE TO PROTECT 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.

2. CARE SHOULD BE TAKEN IN THE OPERATION OF EQUIPMENT, SUCH THAT ONLY THE MINIMUM AREA NEEDED TO BE ALTERED IS DISTURBED.

3. ACCESS TO THE SITE SHALL BE MADE IN THE AREA OF A PERMANENT DRIVEWAY OR ROADWAY (UNLESS SOME SOULD RESULT IN A TRAFFIC HAZARD).

4. 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 REMOVED.

5. LANDOWNERS VEHICLES SHALL BE PARKED IN A DESIGNATED AREA AS MANAGER DETERMINES SURFACE AND TO INSURE THAT VEHICLES ARE NOT CLEARED AND WHICH COULD CARRY WATER TO A WETLAND OR OTHER SENSITIVE AREA.

6. SUSTAINABLE MEASURES SHALL BE TAKEN TO INSURE THAT LARGE DELIVERY TRUCKS SERVING 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 ADJACENT TO WETLAND AREAS AS SOON AS POSSIBLE.

2. EROSION CONTROL DEVICES SUCH AS HAY BALE BARRIERS, SILT FENCES AND MUDS 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.

CLEARING:
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 FOR INTER SITE LEAVING STUMPS IN PLACE TO MAINTAIN SOIL STABILIZATION.

3. STUMPS SHALL BE PULLED AND STOCKPILED FOR GRINDING. BRUSH AND BRANDES SHOULD BE CHIPPED AND UTILIZED FOR WOOD BURNING IF PRACTICAL.

4. VEHICLES UTILIZED IN THE CLEARING OPERATION SHOULD NOT BE CLEARED WETLANDS OR (CROSSING) OR (CROSSING) WITHOUT PRIOR APPROVAL FROM THE LOCAL CONSERVATION COMMISSION OR AGENT.

ROUGH GRADING:

1. THE ROUGH GRADING OF THE SITE SHALL FOLLOW THE FILL AND EROSION SEQUENCES AS DESIGNED ON THE CONSTRUCTION PHASING PLANS. SLOPES SHALL BE MAINTAINED AWAY FROM WETLANDS AND SENSITIVE AREAS AS MUCH AS PRACTICAL.

2. DURING THE PROCESS THE EROSION POTENTIAL IS HIGH. SUFFICIENT EROSION CONTROL BARRIERS SHOULD BE KEPT IN PROXIMITY TO THE EROSION CONTROL BARRIERS TO PREVENT FURTHER EROSION. THE CONTRACTOR SHALL MAINTAIN COPIES OF ALL PERMITS ON SITE AT ALL TIMES.

3. IN AREAS OF CUT AND/OR FILL WHERE SLOPES COULD OVERLY WATER TOWARD WETLAND AREAS, EROSION TRENCHES AND/OR SHALES SHOULD BE CONSIDERED AND IMPLEMENTED TO PREVENT WATER FROM ISSUING FROM THESE AREAS.

4. STEP-STEP SLOPES IN EROSION OR FILL SHOULD BE AVOIDED.

5. FILL AREAS SHOULD BE COVERED IMMEDIATELY BY LOGGING, SEEDING OR REVEGETATION IMMEDIATELY AFTER THE FINISH GRADE HAS BEEN SET.

6. A DRAINAGE COVER SUFFICIENT TO RETAIN SOLIDS IN A STABILIZED CONDITION MUST BE PROVIDED WITHIN 14 MONTHS (DATE, SEASON PERMITTING) ON ANY PORTION OF THE TRACT UPON WHICH FURTHER ACTIVE CONSTRUCTION IS NOT BEING UNDERTAKEN.

DRAINAGE:

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

2. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, HAY BALES OR OTHER STABLE MATERIALS TO ENTRAP SEDIMENT SHALL BE PLACED DOWNSTREAM.

3. THE TOE OF EMBANKMENTS SHALL BE STABILIZED IMMEDIATELY, MULCHED AND TACKED DOWN BY SUITABLE MEANS.

CREATION OF DETENTION BASIN:

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 EROSION CONTROL BARRIERS. SENSITIVE AREAS OF DISTURBED AREAS UPON COMPLETION OF SEQUENCES OF CONSTRUCTION.

3. DURING CONSTRUCTION, THE FILL AND EROSION SEQUENCES SHOWN ON THE CONSTRUCTION PHASING PLANS, ALONG WITH THE DETAILS PROVIDED IN THIS PLAN, SHALL BE UTILIZED. THESE SEQUENCES REQUIRE THAT SLOPED AREAS LEFT FOR ANY PERIOD OF TIME NOT SLOPES TOWARD 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 REUSED FOR FINISH GRADING AND THE STABILIZATION OF DISTURBED AREAS.

7. IF DRAINAGE IS NECESSARY, PUMPING TO A SETBACK BASIN SHALL BE PERMITTED IF SETBACK 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 ARE NOT CARRIED INTO THE WETLANDS.

11. ANY MATERIALS BLOWN OR CARRIED BY WINDS AWAY FROM THE CONSTRUCTION SITE OR INTO THE WETLAND AREAS SHALL BE PROMPTLY REMOVED AS REQUIRED BY THE LOCAL CONSERVATION COMMISSION.

12. A GEOTEXTILE FILTER FABRIC SHALL BE PLACED OVER THE BASIN SLOPES DURING CONSTRUCTION TO PREVENT SEDIMENT FROM ENTERING AND CLOGGING THE DRAIN. THE FABRIC SHALL BE REMOVED FOR BASIN PREPARATION FOR FINAL STABILIZATION.

GRUBBING AND STRIPPING:

1. TOP SOIL SHALL BE RETAINED AND STOCKPILED FOR LANDSCAPING PURPOSES.

2. GRUBBING AND STRIPPING OF SLOPES LEADING TO WETLAND AREAS SHOULD NOT BE UNDERTAKEN DURING PERIODS OF INTENSE RAINFALL.

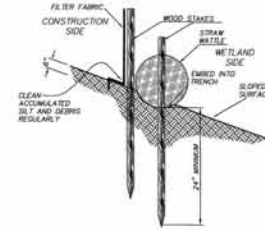
3. TOP SOIL STOCKPILE LOCATIONS ARE SHOWN ON THE SITE DEVELOPMENT PLAN, THE EROSION CONTROL PLAN, AND/OR THE CONSTRUCTION PHASING PLAN AND SHALL BE ADHERED TO.

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

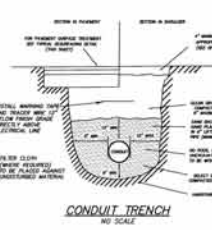
5. AREAS LEADING TO WETLANDS SHALL HAVE HAY BALE BARRIERS INSTALLED ACROSS THEM IN AREAS POINTING DOWN THE HILL AT INTERVALS SUFFICIENT TO MITIGATE RUNOFF CARRYING SEDIMENT.

6. DURING PERIODS OF INTENSE RAINFALL, OR IF THE PROJECT IS TO BE LEFT FOR A PERIOD OF TIME, CONSIDERATION SHOULD BE GIVEN TO SUPPLEMENTING HAY BALE BARRIERS WITH OTHER CHAINING DEVICES OR ANCHORED BARRIERS. CONSIDERATION MAY ALSO BE GIVEN TO DIVERTING RUNOFF INTO TEMPORARY SEDIMENTATION CONTROLS AREAS.

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



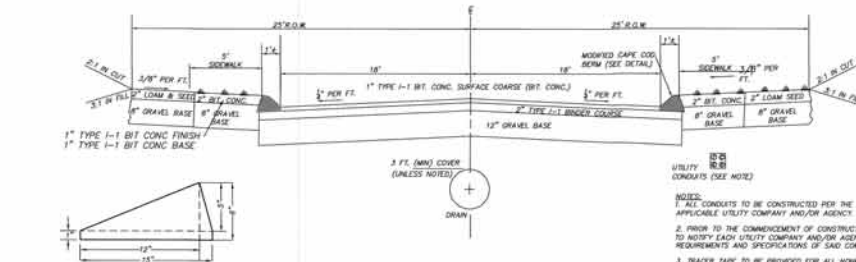
STRAW WATTLE DETAIL
NO SCALE



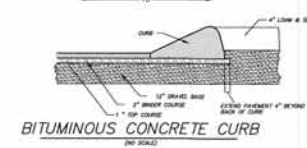
CONDUIT TRENCH
NO SCALE



GRAVEL ACCESS LANE SECTION
(FOR ACCESS TO PANELS AND DETENTION BASIN)
NO SCALE - 10 FT WIDE



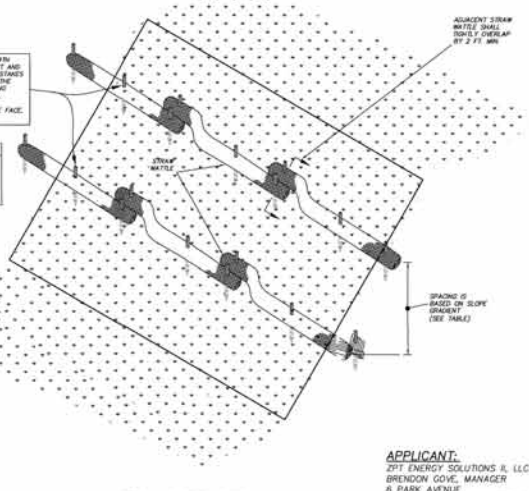
TYPICAL ROADWAY CROSS-SECTION
20 FT WIDE - NO SCALE



BITUMINOUS CONCRETE CURB
(IN SLOPE)

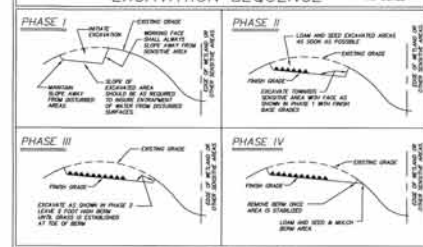
REMOVE THE STRAW WATTLE WITH WOOD STAKES EVERY 3-4 FEET AND WITH A STATE STREET LIGHT. THE STAKES SHOULD BE DRIVEN THROUGH THE MIDDLE OF THE WATTLE LANE. 2-3\"/>

SLOPE	SPACING
1% TO 5%	100 FEET
5% TO 10%	80 FEET
10% TO 15%	60 FEET
15% TO 20%	40 FEET
20% TO 25%	20 FEET

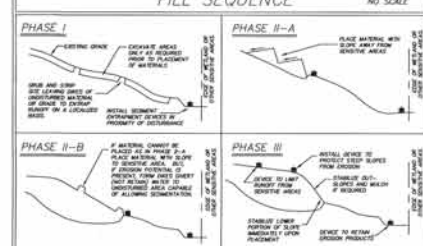


EROSION CONTROL SLOPE DETAIL

EXCAVATION SEQUENCE



FILL SEQUENCE



NOTES:

1. ALL CONDUITS TO BE CONSTRUCTED PER THE SPECIFICATIONS OF THE APPLICABLE UTILITY COMPANY AND/OR AGENCY.
2. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR IS TO NOTIFY EACH UTILITY COMPANY AND/OR AGENCY TO DETERMINE THE REQUIREMENTS AND SPECIFICATIONS OF SAID COMPANY OR AGENCY.
3. TRACER TAPES TO BE PROVIDED FOR ALL NONMETALLIC UTILITIES FROM MAIN LINE TO POINT OF CONNECTION.

DEFINITIVE PLAN

NO.	DATE	REVISIONS	BY
1	8/3/19	PEER REVIEW AND TOWN COMMENTS	CMA



HANNIGAN ENGINEERING, INC.
CIVIL ENGINEERS & LAND SURVEYORS
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BOSTON, MASSACHUSETTS 02114
(781) 534-1234
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CONSTRUCTION DETAILS IN LEICESTER, MASSACHUSETTS

PREPARED FOR:
ZPT ENERGY SOLUTIONS II, LLC
BRENDON GOVE
8 PARK AVENUE
WORCESTER, MASSACHUSETTS, 01605
TEL: (774) 314-2549

CALC: CMA/MDH	DRWN: CMA/MDH	SCALE: NA
CHKD: MDH	APPD: MDH	DATE: MAR 20, 2019
SRV: JEF/EH	FB: E2719/070618	JOB NO: 2719
TAB: (10) DET	SHEET 10 OF 11	PLAN NO: C-14-25

APPLICANT:
ZPT ENERGY SOLUTIONS II, LLC
BRENDON GOVE, MANAGER
8 PARK AVENUE
WORCESTER, MASSACHUSETTS 01605
OWNER:
NICHOLAS A. CASELLO & JACQUELINE MATTHEWS
500 BOUTLER ROAD
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 OVERSIGHT

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 SHEDS 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 OF THE DRAINAGE SYSTEM DESCRIBED ABOVE AND AS DEPICTED ON THE SITE PLANS, THE SYSTEM SHALL BECOME PROPERTY OF THE LAND OWNER, WITH SPECIFIC EASEMENT RIGHTS TO THE OPERATION 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

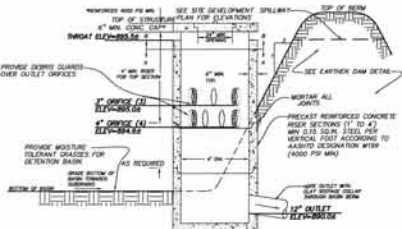
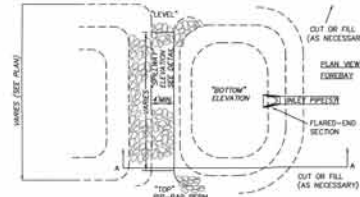
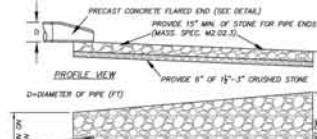
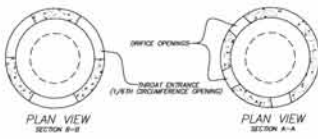
THE OPERATOR OF THE SOLAR SYSTEM SHALL BE CONSIDERED THE RESPONSIBLE PARTY FOR THE OPERATION AND MAINTENANCE OF THE STORMWATER MANAGEMENT SYSTEM. THE SYSTEM SHALL INCLUDE THE DRAINAGE INFRASTRUCTURE AND ALL OF ITS COMPONENTS AS SHOWN ON THE APPROVED PLANS. THE SYSTEM SHALL ALSO INCLUDE THE DETENTION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

III. INSPECTION & MAINTENANCE SCHEDULE

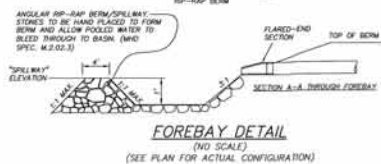
THE FOLLOWING MAINTENANCE SCHEDULE SHALL BE FOLLOWED IN ORDER TO MAINTAIN THE EFFECTIVENESS OF THE STORMWATER MANAGEMENT SYSTEM.

STRUCTURE TYPE	INSPECTION	MAINTENANCE	TASK
IN-ROAD APPROACH	EVERY 4 YEARS	EVERY 10 YEARS	REMOVE DEBRIS & ADD STONE
OUTFALL & DETENTION BASIN	EVERY 4 YEARS	EVERY 4 YEARS	REMOVE DEBRIS & ADD STONE
OUTFALL STRUCTURES	EVERY 4 YEARS	EVERY 4 YEARS	REMOVE DEBRIS & ADD STONE
SPILLWAYS	EVERY 4 YEARS	EVERY 4 YEARS	REMOVE DEBRIS & ADD STONE
DRAINAGE SHALE	EVERY 4 YEARS	EVERY 4 YEARS	REMOVE DEBRIS & ADD STONE
CATCH BASINS	QUARTERLY AND AT THE END OF EACH YEAR	QUARTERLY OR WHENEVER THE DEBRIS IS MORE THAN 1/2 INCH DEEP OR GREATER THAN 1/2 INCH DEEP	REMOVE DEBRIS FROM LUMPS
SEDIMENT FOREBAY	QUARTERLY	QUARTERLY	REMOVE DEBRIS FROM LUMPS

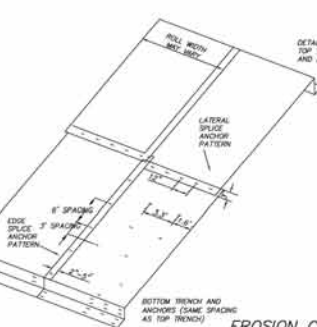
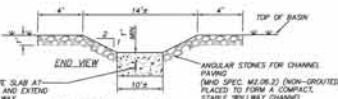
NOTE: THE DETENTION BASINS ON THIS PROJECT MAY GROW VEGETATION IN THE BOTTOM WHICH MAY INCLUDE SPECIES PART OF THE WETLAND PROTECTION ACT. THESE PLANTS SHALL NOT BE CONSIDERED AS HAVING PROTECTION UNDER THE ACT. THE PLANTS SHALL BE CONSIDERED OPPORTUNISTIC GROWTH PLANTS. ADDITIONALLY, THIS AREA SHALL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



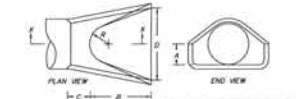
PIPE DIAMETER	LENGTH	WIDTH
12-INCH (305.0)	10.0 FEET	10.0 FEET
15-INCH (381.0)	10.0 FEET	11.0 FEET



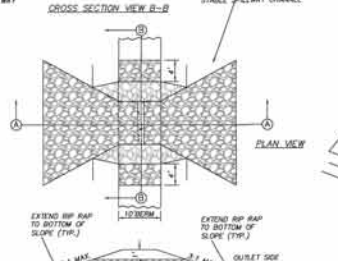
D-BASIN OUTLET STRUCTURE #13
(NO SCALE)



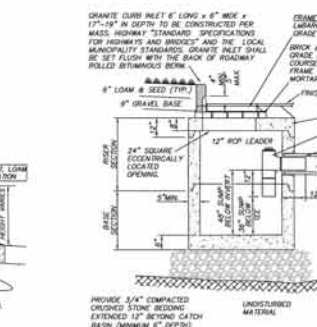
EROSION CONTROL BLANKET PLACEMENT
(NO SCALE)



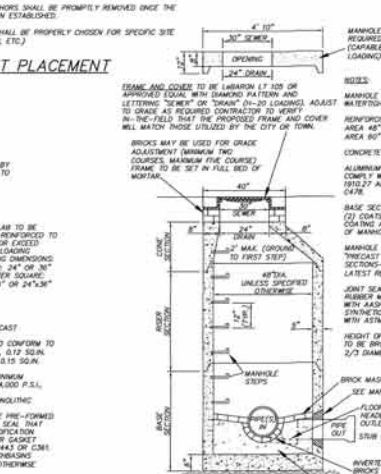
FLARED-END SECTION
(NO SCALE)



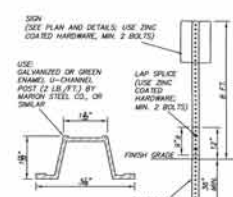
EMERGENCY SPILLWAY DETAIL
(NO SCALE)



TYPICAL PRECAST CATCH BASIN
(NO SCALE)



TYPICAL PRECAST MANHOLE
(NO SCALE)



SIGN POST DETAIL
(NO SCALE)



S-3
30" x 30"

DEFINITIVE PLAN

NO.	DATE	REVISIONS	BY
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0780 334 6000 071

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CONSTRUCTION DETAILS IN LEICESTER, MASSACHUSETTS

CALC: CMA/WH DRWN: CMA/WH SCALE: NA
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