Atlantic
DESIGN ENGINEERS, INC.

Letter of Transmittal

To: Laurie Connors, Director
Dept. of Planning and Development
Town of Millbury
127 Elm Street
Millbury, MA 01527

Date: 8/10/20
Project #: 3085.00
Project: Colton Road Extension
Millbury, MA

We are sending you:

_X_ Enclosed __ Under separate cover

Via:

__ Direct from printer __Taxi

_X_ Messenger __ Mail

The following items:

_X_ Prints ___ Sepias __Tracings ____ Reports ___ Shop Drawings __Original Drawings
___Mylar ___ Linen __Specifications ___ Samples ___ Other

Description:
Six (6) full size copies and six (6) 11 X 17 copies of the Definitive Subdivision Plan – revised dated 8/10/2020, Sheets 1-9
Six (6) Copies of the Revised Long Term Operation and Maintenance Plan – revised dated 8/10/2020
Six (6) Copies of the Response Letter (Questions, Comments, and Recommendations by the Planning Director on 7/16/2020)
Six (6) Copies of the Response Letter to Reviewing Engineer (Stantec)
Six (6) Copies of the Revised List of Requested Waivers – dated 8/10/2020

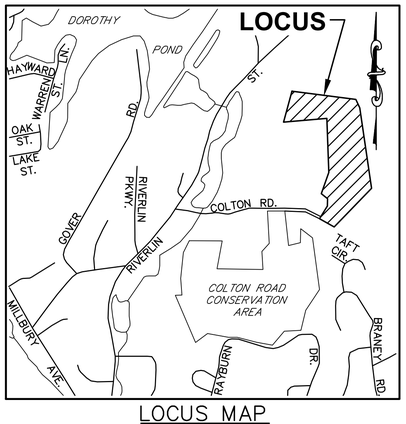
Remarks:

Signed: **Richard J. Tabacynski, P.E.**

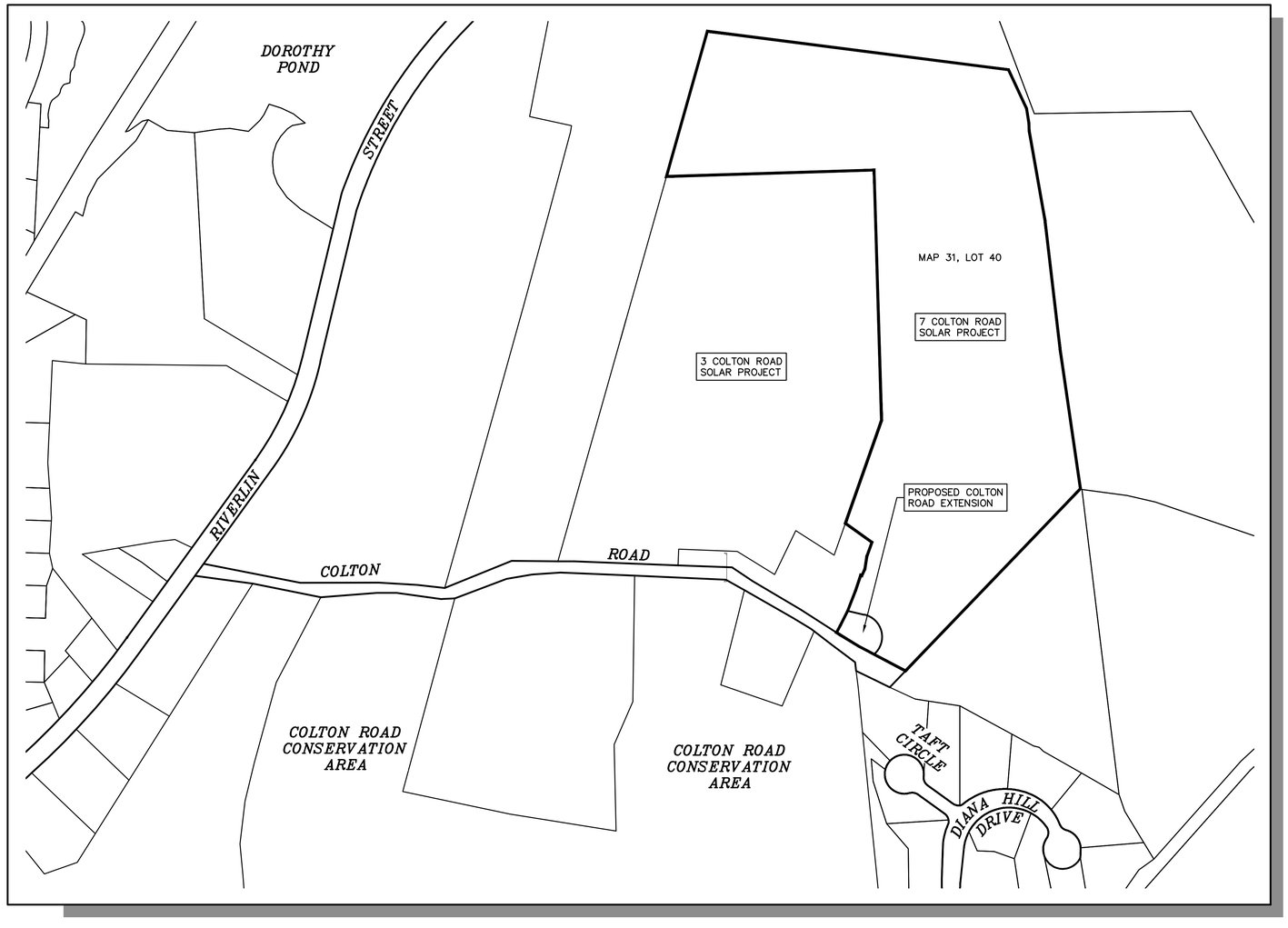
Copy to: Stephanie Collins

DEFINITIVE SUBDIVISION PLAN
FOR
COLTON ROAD EXTENSION

MILLBURY, MASSACHUSETTS
DATE: JUNE 10, 2020
REVISED: AUGUST 10, 2020



LOCUS MAP
1" = 1,000'



OVERALL LOCATION PLAN
SCALE: 1" = 200'

INDEX OF PLANS		
SHEET NO.	TITLE	SCALE
1	COVER SHEET	1" = 200'
2 (1 OF 1)	DEFINITIVE PLAN OF LAND – LOT LAYOUT PLAN	1" = 100'
3	OVERALL PLAN – INDEX PLAN	1" = 80'
4	RIGHT–OF–WAY PLAN	1" = 60'
5–7	PLAN AND PROFILES	40'H/8'V
8–9	DETAILS PLAN	N.T.S.

MASS STATE PLANE

OWNER:
RAGNAR W. GUSTAFSON, III
P.O. BOX 226
MILLBURY, MASSACHUSETTS 01527
1–774–641–0124

APPLICANT:
NEXT GRID COLTON, LLC
P.O. BOX 7775 #73069
SAN FRANCISCO, CA 94120–775

ENGINEER:
Atlantic®
DESIGN ENGINEERS, INC.
P.O. Box 1051, Sandwich, MA 02563
PHONE NUMBER: (508) 888–9282

TOWN OF
MILLBURY PLANNING BOARD

APPROVAL REQUIRED UNDER THE
SUBDIVISION CONTROL LAW

DATE: _____
DATE APPROVED: _____
DATE ENDORSED: _____

I CERTIFY THAT NOTICE OF APPROVAL OF THIS PLAN BY THE MILLBURY PLANNING BOARD HAS BEEN RECEIVED AND RECORDED AT THIS OFFICE AND NO APPEAL WAS RECEIVED IN THE TWENTY DAYS SUBSEQUENT TO SUCH RECEIPT AND RECORDING.

MILLBURY TOWN CLERK

DATE: _____

COMMONWEALTH OF MASSACHUSETTS
RICHARD J. TARASEVICZ
CIVIL
No. 33746
REGISTERED PROFESSIONAL ENGINEER

FILE: 3085.00–DEF–1–R1

Sheet	of
1	9

JOB NUMBER
3085.00

FOR REGISTRY USE ONLY

GENERAL NOTES:

1. OWNER OF RECORD:
   RAGNAR W. GUSTAFSON, III
   P.O. BOX 226
   MILLBURY, MASSACHUSETTS 01527
   BOOK 54154 PAGE 8
2. THE PROPERTY LIES WITHIN SUBURBAN III (S-3) DISTRICT BASED UPON A REVIEW OF THE TOWN OF MILLBURY ZONING MAP. A PORTION OF THE PROPERTY IS LOCATED WITHIN THE AQUIFER AND WATERSHED PROTECTION OVERLAY DISTRICT AREA A BASED ON A REVIEW OF THE TOWN OF MILLBURY ZONING MAP AND HAS BEEN DELINEATED PER MASS GIS WHICH FOLLOWS THE DEP ZONE II BOUNDARY.
3. THE PROPERTY LINES SHOWN HEREON, ARE COMPILED FROM PLANS AND DEED OF RECORD AND FIELD SURVEYS BY ATLANTIC DESIGN ENGINEERS, INC. IN JANUARY AND FEBRUARY OF 2019 AND FEBRUARY AND MARCH OF 2020. THE HORIZONTAL DATUM IS THE NORTH AMERICAN DATUM OF 1983 (NAD83) MASSACHUSETTS STATE PLANE, MAINLAND ZONE, BASED UPON A GPS SURVEY BY ATLANTIC DESIGN ENGINEERS, INC.
4. EXISTING CONDITIONS DEPICTED HEREON ARE BASED UPON THE MASSACHUSETTS GEOGRAPHIC INFORMATION SYSTEM AND PARTIAL FIELD SURVEYS BY ATLANTIC DESIGN ENGINEERS, INC. IN NOVEMBER OF 2018, FEBRUARY OF 2019 AND FEBRUARY AND MARCH OF 2020.
5. A PORTION OF THE PROPERTY LIES WITHIN FLOOD ZONE A (AS DELINEATED ON THE PLAN) AND THE REMAINING MAJORITY OF THE PROPERTY LIES WITHIN FLOOD ZONE X (NON-SHADED) BASED UPON A REVIEW OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM), MAP NUMBER 25027C0828E, EFFECTIVE DATE JULY 4, 2011.
6. A PORTION OF THE PROPERTY IS LOCATED WITHIN A MA DEP WELLHEAD PROTECTION ZONE II BASED UPON A REVIEW OF THE MASSACHUSETTS GEOGRAPHIC INFORMATION SYSTEM AND IS SHOWN HEREIN.
7. THE PROPERTY IS LOCATED WITHIN A NATURAL HERITAGE AND ENDANGERED SPECIES PROGRAM BIOMAP2 CORE HABITAT.
8. THE PROPERTY IS NOT LOCATED WITHIN AN AREA OF CRITICAL ENVIRONMENTAL CONCERN (ACEC) BASED UPON A REVIEW OF THE MASSACHUSETTS GEOGRAPHIC INFORMATION SYSTEM.
9. SELECT ONSITE WETLANDS WERE DELINEATED BY WARD SMITH OF WENDELL WETLAND SERVICES. WETLAND FLAGS WERE GPS LOCATED BY ATLANTIC DESIGN ENGINEERS, INC.
10. STREET NUMBERS ARE ASSIGNED BY THE POLICE DEPARTMENT, FOR FURTHER INFORMATION CALL (508) 865-3521

LEGEND

	EXISTING WETLANDS
	EXISTING STONE WALLS
D.H. FND.	DRILL HOLE FOUND
ZONE A	EXISTING FEMA FLOOD ZONE BOUNDARY
APOAA / ZONE II	EXISTING DEP WELLHEAD PROTECTION-ZONE II & MILLBURY AQUIFER PROTECTION OVERLAY AREA A

LINE TABLE

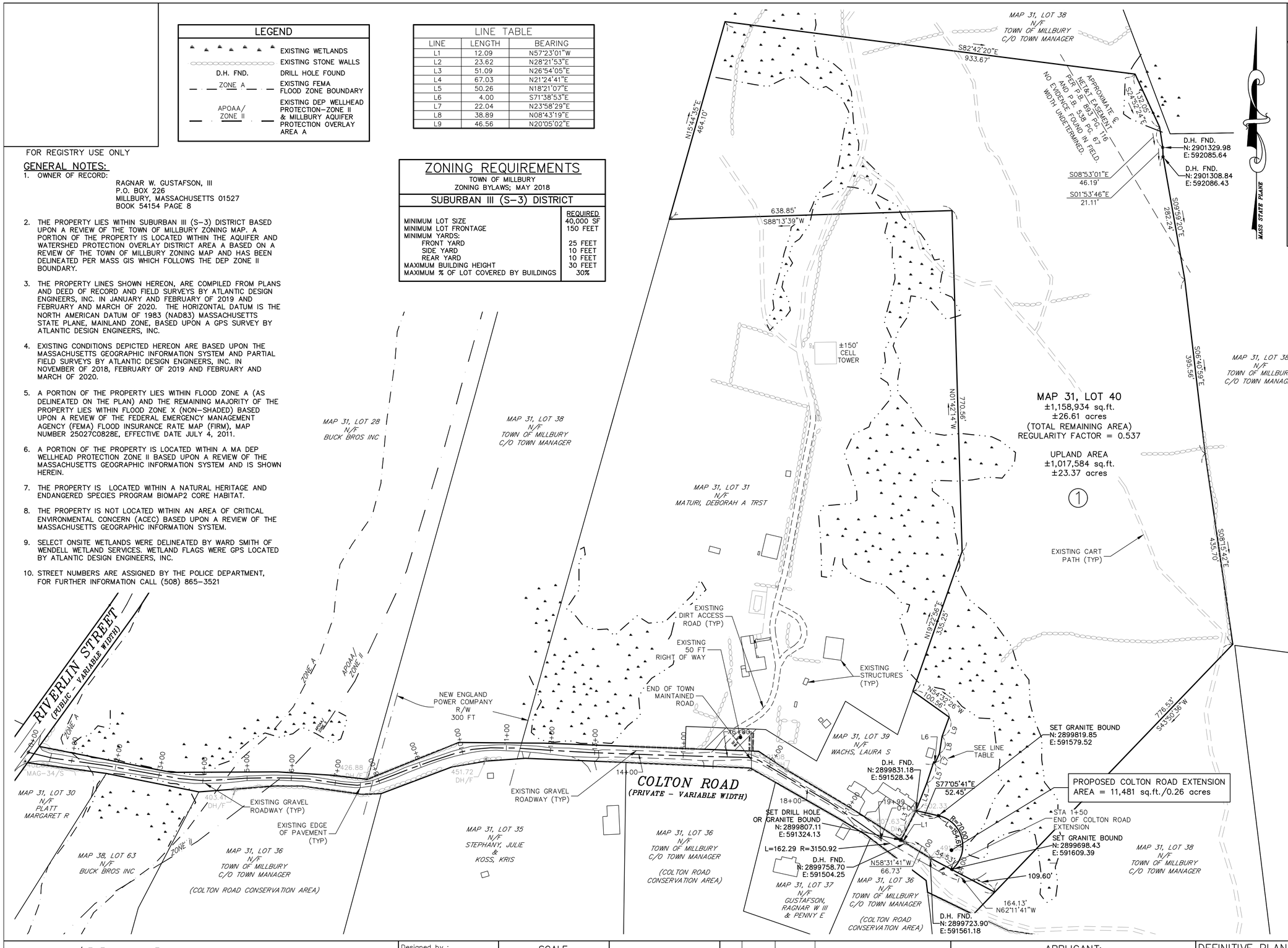
LINE	LENGTH	BEARING
L1	12.09	N57°23'01"W
L2	23.62	N28°21'53"E
L3	51.09	N26°54'05"E
L4	67.03	N21°24'41"E
L5	50.26	N18°21'07"E
L6	4.00	S71°38'53"E
L7	22.04	N23°58'29"E
L8	38.89	N08°43'19"E
L9	46.56	N20°05'02"E

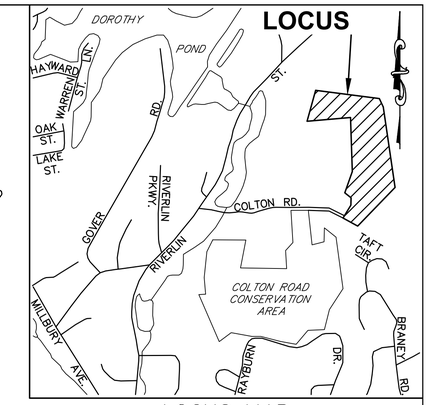
ZONING REQUIREMENTS

TOWN OF MILLBURY
ZONING BYLAWS; MAY 2018

SUBURBAN III (S-3) DISTRICT

	REQUIRED
MINIMUM LOT SIZE	40,000 SF
MINIMUM LOT FRONTAGE	150 FEET
MINIMUM YARDS:	
FRONT YARD	25 FEET
SIDE YARD	10 FEET
REAR YARD	10 FEET
MAXIMUM BUILDING HEIGHT	30 FEET
MAXIMUM % OF LOT COVERED BY BUILDINGS	30%





LOCUS MAP
1" = 1,000'

REFERENCES
WORCESTER COUNTY REGISTRY OF DEEDS

DEEDS		PLANS	
BK 54154	PG 8	BK 518	PG 75
		BK 538	PG 67
		BK 550	PG 79
		BK 715	PG 3
		BK 893	PG 116

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTRY OF DEEDS AND THE RELATIVE ERROR OF CLOSURE SHALL MEET OR EXCEED THE REQUIREMENTS OF CMR 250.6

COMMONWEALTH OF MASSACHUSETTS
TIMOTHY R. CALLAHAN
NO. 35022
REGISTERED PROFESSIONAL LAND SURVEYOR

TIMOTHY R. CALLAHAN, PLS. LIC. # 35022

TOWN OF MILLBURY PLANNING BOARD

APPROVAL REQUIRED UNDER THE SUBDIVISION CONTROL LAW

DATE: _____
DATE APPROVED: _____
DATE ENDORSED: _____

I CERTIFY THAT NOTICE OF APPROVAL OF THIS PLAN BY THE MILLBURY PLANNING BOARD HAS BEEN RECEIVED AND RECORDED AT THIS OFFICE AND NO APPEAL WAS RECEIVED IN THE TWENTY DAYS SUBSEQUENT TO SUCH RECEIPT AND RECORDING.

MILLBURY TOWN CLERK

DATE: _____

FILE3085.00-DEF-1-R1

Atlantic® DESIGN ENGINEERS, INC.
P.O. Box 1051, Sandwich, MA 02563 (508) 888 - 9282

Designed by :
Drawn by :
Checked by :
Survey chk. by :
Approved by :

SCALE
SCALE 1" = 100'
0 25 50 100 200

NO.	BY	DATE	REVISION
1	PMJ	8-10-20	REVISED PER TOWN COMMENTS

DATE

APPLICANT:
NEXT GRID COLTON, LLC
P.O. BOX 7775 #73069
SAN FRANCISCO, CA 94120-775

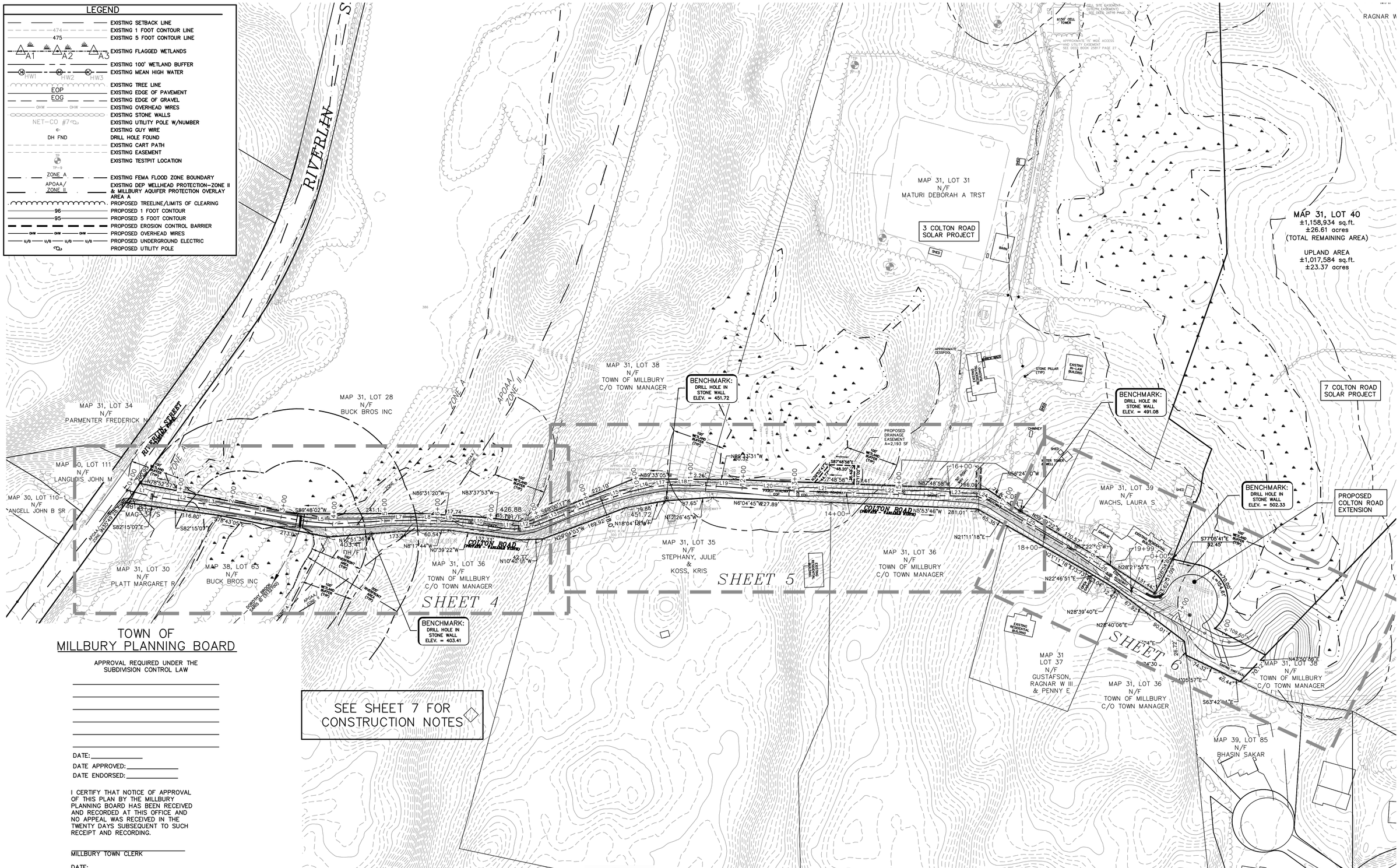
DEFINITIVE PLAN OF LAND - LOT LAYOUT PLAN
FOR
COLTON ROAD EXTENSION
MILLBURY, MASSACHUSETTS
JUNE 10, 2020

Sheet 1 of 1

JOB NUMBER 3085.00

LEGEND

- EXISTING SETBACK LINE
- EXISTING 1 FOOT CONTOUR LINE
- EXISTING 5 FOOT CONTOUR LINE
- EXISTING FLAGGED WETLANDS
- EXISTING 100' WETLAND BUFFER
- EXISTING MEAN HIGH WATER
- EXISTING TREE LINE
- EXISTING EDGE OF PAVEMENT
- EXISTING EDGE OF GRAVEL
- EXISTING OVERHEAD WIRES
- EXISTING STONE WALLS
- EXISTING UTILITY POLE W/NUMBER
- EXISTING GUY WIRE
- DRILL HOLE FOUND
- EXISTING CART PATH
- EXISTING EASEMENT
- EXISTING TESTPIT LOCATION
- EXISTING FEMA FLOOD ZONE BOUNDARY
- EXISTING DEP WELLHEAD PROTECTION–ZONE II & MILLBURY AQUIFER PROTECTION OVERLAY AREA A
- PROPOSED TREELINE/LIMITS OF CLEARING
- PROPOSED 1 FOOT CONTOUR
- PROPOSED 5 FOOT CONTOUR
- PROPOSED EROSION CONTROL BARRIER
- PROPOSED OVERHEAD WIRES
- PROPOSED UNDERGROUND ELECTRIC
- PROPOSED UTILITY POLE



SEE SHEET 7 FOR CONSTRUCTION NOTES

TOWN OF MILLBURY PLANNING BOARD

APPROVAL REQUIRED UNDER THE SUBDIVISION CONTROL LAW

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MILLBURY TOWN CLERK

DATE: _____

FILE:3085.00–PROFILES–1–R1

Atlantic® DESIGN ENGINEERS, INC.
P.O. Box 1051, Sandwich, MA 02563 (508) 888 – 9282

Designed by :
Drawn by :
Checked by :
Survey chk. by :
Approved by :

SCALE
SCALE 1" = 80'
0 20 40 80 160

COMMONWEALTH OF MASSACHUSETTS
RICHARD J. TABACZYNSKI
CIVIL
No. 33746
PROFESSIONAL ENGINEER

DATE

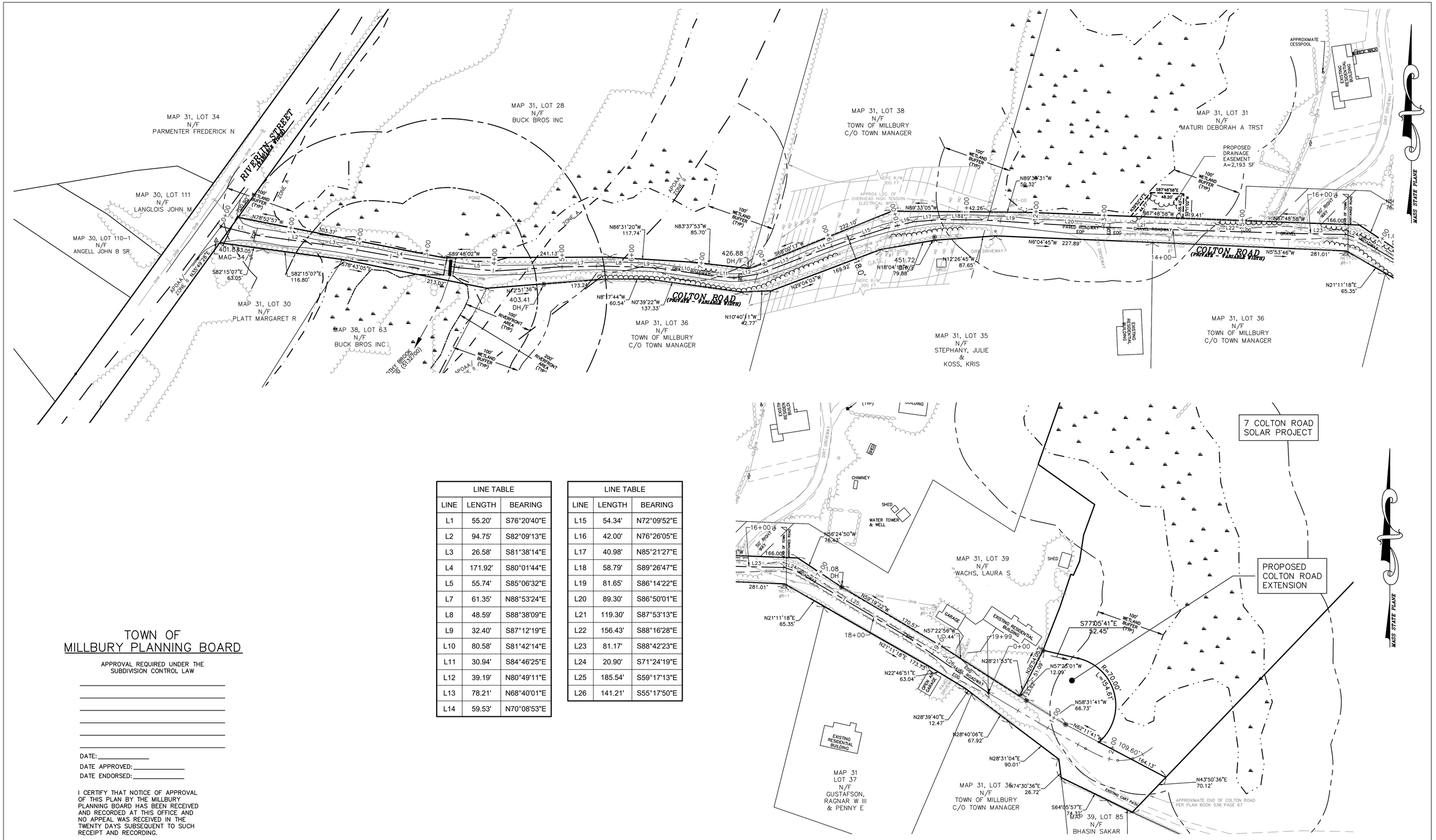
NO.	BY	DATE	REVISION
1	PMJ	8–10–20	REVISED PER TOWN COMMENTS

APPLICANT:
NEXT GRID COLTON, LLC
P.O. BOX 7775 #73069
SAN FRANCISCO, CA 94120–775

OVERALL PLAN – INDEX PLAN
FOR
COLTON ROAD EXTENSION
MILLBURY, MASSACHUSETTS
JUNE 10, 2020

Sheet 3 of 9

JOB NUMBER 3085.00



LINE TABLE		
LINE	LENGTH	BEARING
L1	55.20'	S76°20'40"E
L2	94.75'	S82°09'13"E
L3	26.58'	S81°38'14"E
L4	171.92'	S80°01'44"E
L5	55.74'	S85°06'32"E
L7	61.35'	N88°53'24"E
L8	48.59'	S88°38'09"E
L9	32.40'	S87°12'19"E
L10	80.58'	S81°42'14"E
L11	30.94'	S84°46'25"E
L12	39.19'	N80°49'11"E
L13	78.21'	N68°40'01"E
L14	59.53'	N70°08'53"E

LINE TABLE		
LINE	LENGTH	BEARING
L15	54.34'	N72°09'52"E
L16	42.00'	N76°26'05"E
L17	40.98'	N85°21'27"E
L18	58.79'	S89°26'47"E
L19	81.65'	S86°14'22"E
L20	89.30'	S86°50'01"E
L21	119.30'	S87°53'13"E
L22	156.43'	S88°16'28"E
L23	81.17'	S88°42'23"E
L24	20.90'	S71°24'19"E
L25	185.54'	S59°17'13"E
L26	141.21'	S55°17'50"E

TOWN OF
MILLBURY PLANNING BOARD

APPROVAL REQUIRED UNDER THE
SUBDIVISION CONTROL LAW

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MILLBURY TOWN CLERK

DATE: _____

FILE:3085.00-PROFILES-1-R1

Atlantic® DESIGN ENGINEERS, INC.
P.O. Box 1051, Sandwich, MA 02563 (508) 888 - 9282

Designed by :
Drawn by :
Checked by :
Survey chk. by :
Approved by :

SCALE
SCALE 1" = 60'
0 30 60 120

COMMONWEALTH OF MASSACHUSETTS
RICHARD J. TABACZYNSKI
CIVIL
No. 33748
REGISTERED PROFESSIONAL ENGINEER

DATE

NO.	BY	DATE	REVISION
1	PMJ	8-10-20	REVISED PER TOWN COMMENTS

APPLICANT:
NEXT GRID COLTON, LLC
P.O. BOX 7775 #73069
SAN FRANCISCO, CA 94120-775

RIGHT-OF-WAY PLAN
FOR
COLTON ROAD EXTENSION
MILLBURY, MASSACHUSETTS
JUNE 10, 2020

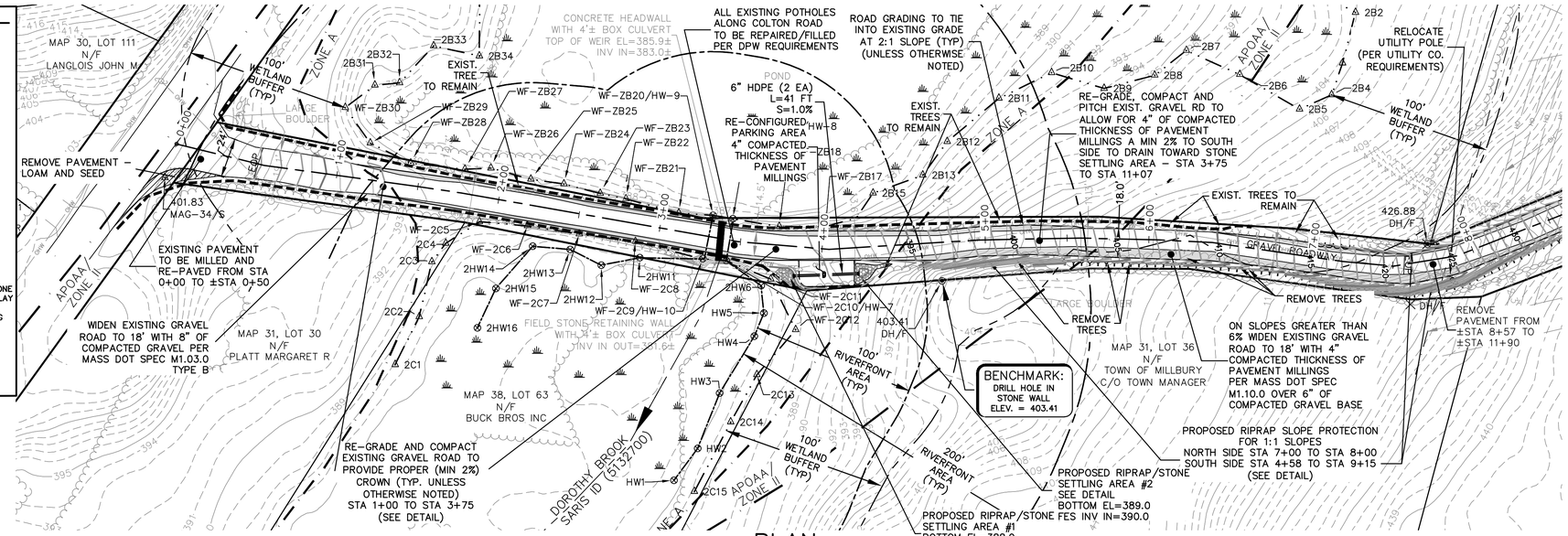
Sheet 4 of 9

JOB NUMBER
3085.00

LEGEND

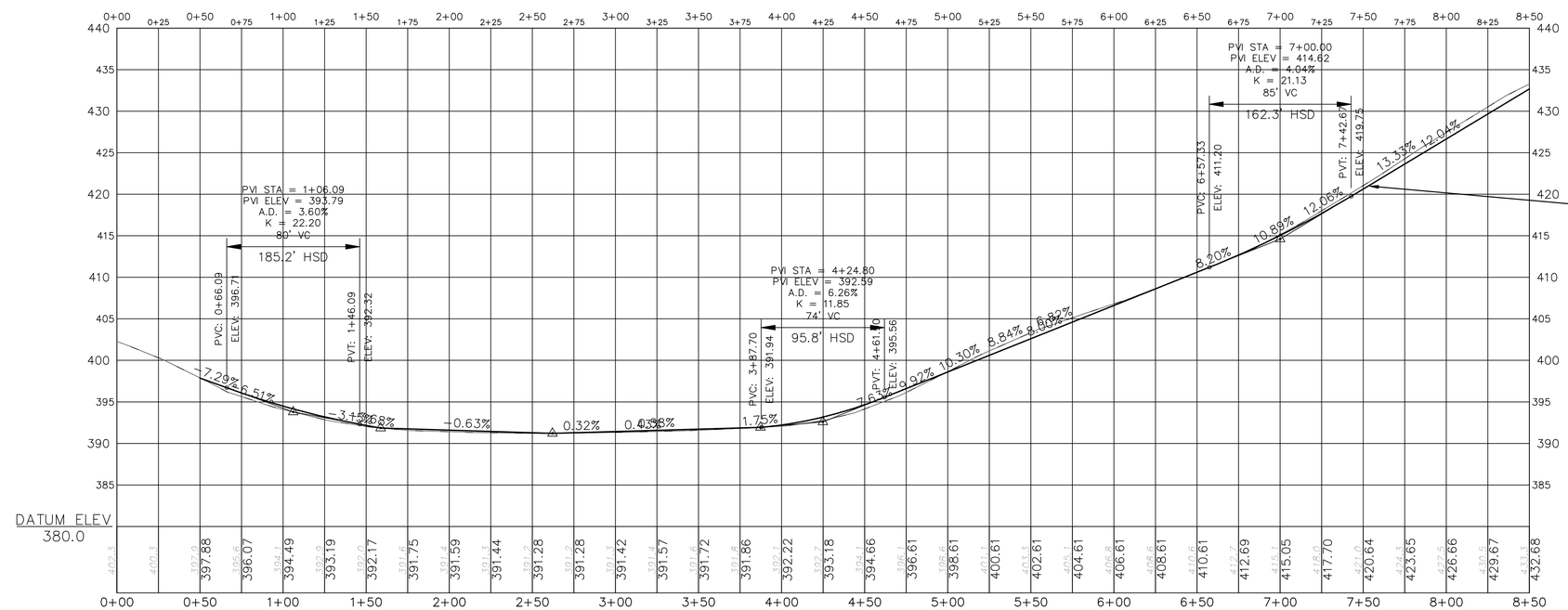
- EXISTING SETBACK LINE
- EXISTING 1 FOOT CONTOUR LINE
- EXISTING 5 FOOT CONTOUR LINE
- EXISTING FLAGGED WETLANDS (A1, A2, A3)
- EXISTING 100' WETLAND BUFFER
- EXISTING MEAN HIGH WATER (HW1, HW2, HW3)
- EXISTING TREE LINE
- EXISTING EDGE OF PAVEMENT (EOP)
- EXISTING EDGE OF GRAVEL (EOG)
- EXISTING OVERHEAD WIRES (OHW)
- EXISTING STONE WALLS
- EXISTING UTILITY POLE W/NUMBER (NET-CO #7)
- EXISTING GUY WIRE
- DRILL HOLE FOUND (DH FND)
- EXISTING CART PATH
- EXISTING EASEMENT
- EXISTING TESTPIT LOCATION (TP, TP-9)
- EXISTING FEMA FLOOD ZONE BOUNDARY (ZONE A)
- EXISTING DEP WELLHEAD PROTECTION-ZONE & MILLBURY AQUIFER PROTECTION OVERLAY AREA A (APOAA/ZONE II)
- PROPOSED TREELINE/LIMITS OF CLEARING
- PROPOSED 1 FOOT CONTOUR (96)
- PROPOSED 5 FOOT CONTOUR (95)
- PROPOSED EROSION CONTROL BARRIER
- PROPOSED OVERHEAD WIRES (OHW)
- PROPOSED UNDERGROUND ELECTRIC (U/G)
- PROPOSED UTILITY POLE

SEE SHEET 7 FOR CONSTRUCTION NOTES



SEE SHEET 5

PLAN
1" = 40'



ON SLOPES STEEPER THAN 6% PROVIDE 4" COMPACTED THICKNESS OF PAVEMENT MILLINGS PER MASS DOT SPEC M1.10.0 OVER 6" OF COMPACTED GRAVEL BASE

PROFILE
HORIZ. 1" = 40'
VERT. 1" = 8'

TOWN OF MILLBURY PLANNING BOARD

APPROVAL REQUIRED UNDER THE SUBDIVISION CONTROL LAW

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_____
MILLBURY TOWN CLERK

DATE: _____

FILE:3085.00–PROFILES–1–R1

Atlantic® DESIGN ENGINEERS, INC.
P.O. Box 1051, Sandwich, MA 02563 (508) 888 – 9282

Designed by : _____
Drawn by : _____
Checked by : _____
Survey chk. by : _____
Approved by : _____

SCALE: AS SHOWN

COMMONWEALTH OF MASSACHUSETTS RICHARD J. TABACZYNSKI CIVIL No. 33748 REGISTERED PROFESSIONAL ENGINEER

DATE

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1	PMJ	8–10–20	REVISED PER TOWN COMMENTS

APPLICANT:
NEXT GRID COLTON, LLC
P.O. BOX 7775 #73069
SAN FRANCISCO, CA 94120–775

ROAD PLAN AND PROFILE STA 0+00 TO 8+50
FOR
COLTON ROAD EXTENSION
MILLBURY, MASSACHUSETTS
JUNE 10, 2020

Sheet 5 of 9

JOB NUMBER 3085.00

LEGEND

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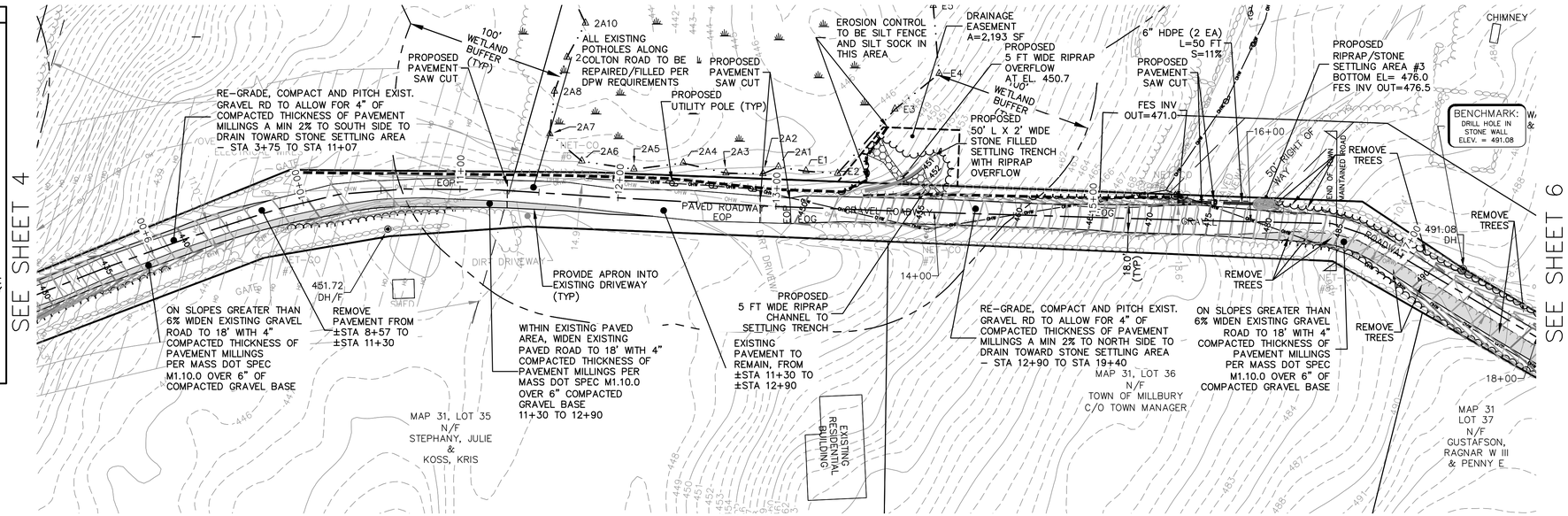
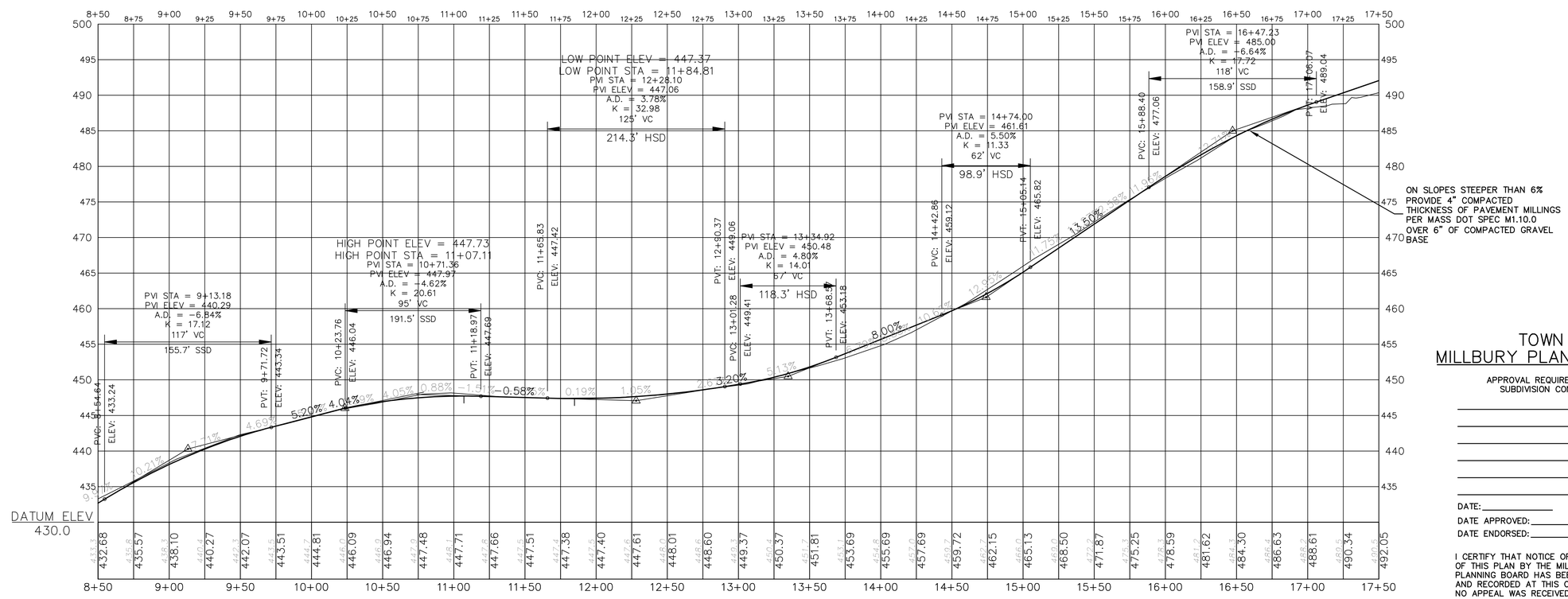
SEE SHEET 7 FOR CONSTRUCTION NOTES



PLAN
1" = 40'



PROFILE
HORIZ. 1" = 40'
VERT. 1" = 8'

TOWN OF MILLBURY PLANNING BOARD

APPROVAL REQUIRED UNDER THE SUBDIVISION CONTROL LAW

DATE: _____

DATE APPROVED: _____

DATE ENDORSED: _____

I CERTIFY THAT NOTICE OF APPROVAL OF THIS PLAN BY THE MILLBURY PLANNING BOARD HAS BEEN RECEIVED AND RECORDED AT THIS OFFICE AND NO APPEAL WAS RECEIVED IN THE TWENTY DAYS SUBSEQUENT TO SUCH RECEIPT AND RECORDING.

_____
MILLBURY TOWN CLERK

DATE: _____

FILE:3085.00–PROFILES–1–R1

Atlantic® DESIGN ENGINEERS, INC.
P.O. Box 1051, Sandwich, MA 02563 (508) 888 – 9282

Designed by : _____
Drawn by : _____
Checked by : _____
Survey chk. by : _____
Approved by : _____

SCALE: AS SHOWN

COMMONWEALTH OF MASSACHUSETTS — RICHARD J. TABACZYNSKI — CIVIL — No. 33746 — REGISTERED PROFESSIONAL ENGINEER

DATE

NO.	BY	DATE	REVISION
1	PMJ	8–10–20	REVISED PER TOWN COMMENTS

APPLICANT:
NEXT GRID COLTON, LLC
P.O. BOX 7775 #73069
SAN FRANCISCO, CA 94120–775

ROAD PLAN AND PROFILE STA 8+50 TO 17+50
FOR
COLTON ROAD EXTENSION
MILLBURY, MASSACHUSETTS
JUNE 10, 2020

Sheet 6 of 9

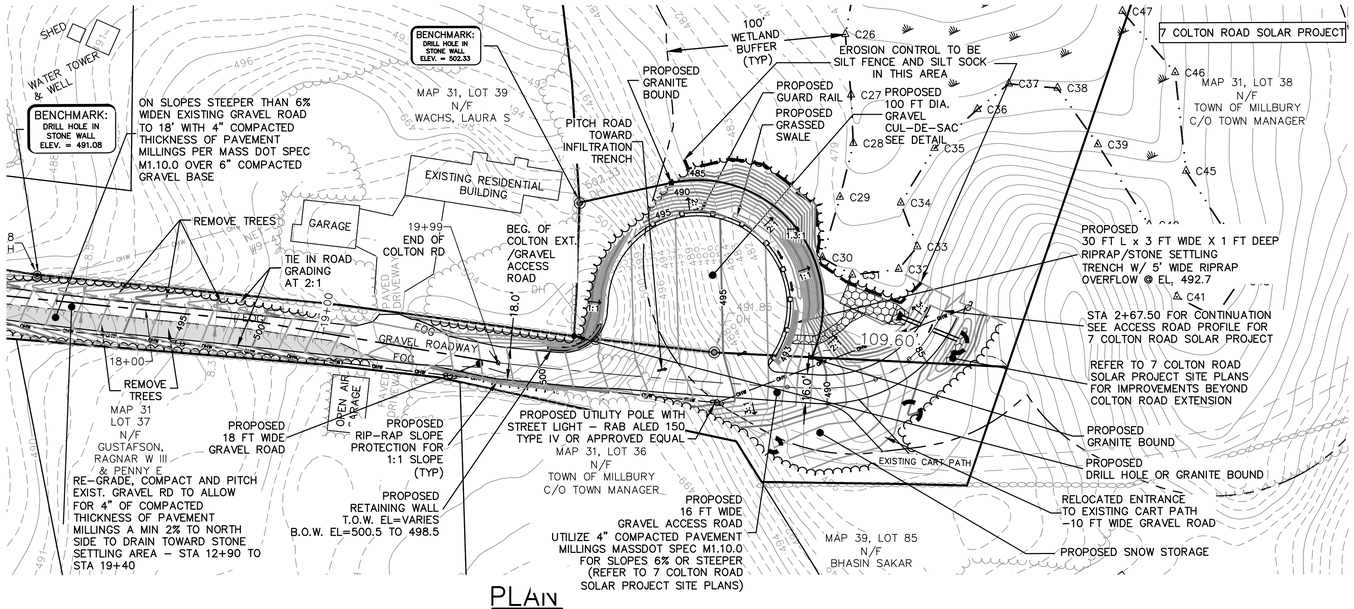
JOB NUMBER 3085.00

LEGEND

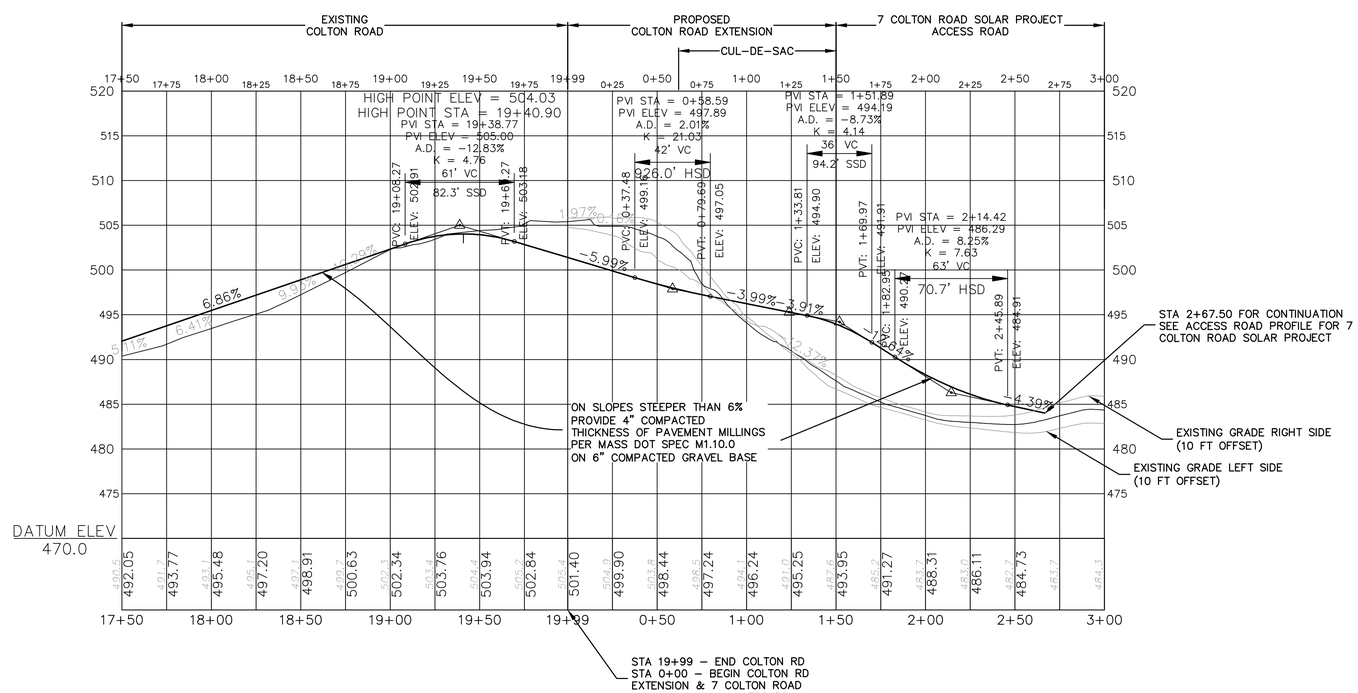
- EXISTING SETBACK LINE
- EXISTING 1 FOOT CONTOUR LINE
- EXISTING 5 FOOT CONTOUR LINE
- A1 A2 A3 — EXISTING FLAGGED WETLANDS
- EXISTING 100' WETLAND BUFFER
- HW1 HW2 HW3 — EXISTING MEAN HIGH WATER
- EXISTING TREE LINE
- EOP — EXISTING EDGE OF PAVEMENT
- EOG — EXISTING EDGE OF GRAVEL
- OHW — EXISTING OVERHEAD WIRES
- EXISTING STONE WALLS
- NET-CO #7 — EXISTING UTILITY POLE W/NUMBER
- EXISTING GUY WIRE
- DH FND — DRILL HOLE FOUND
- EXISTING CART PATH
- EXISTING EASEMENT
- TP-9 — EXISTING TESTPIT LOCATION
- ZONE A — EXISTING FEMA FLOOD ZONE BOUNDARY
- APOAA/ ZONE II — EXISTING DEP WELLHEAD PROTECTION-ZONE & MILLBURY AQUIFER PROTECTION OVERLAY AREA A
- PROPOSED TREELINE/LIMITS OF CLEARING
- 96 — PROPOSED 1 FOOT CONTOUR
- 95 — PROPOSED 5 FOOT CONTOUR
- PROPOSED EROSION CONTROL BARRIER
- OHW — PROPOSED OVERHEAD WIRES
- U/G — PROPOSED UNDERGROUND ELECTRIC
- PROPOSED UTILITY POLE

SEE SHEET 7 FOR CONSTRUCTION NOTES

SEE SHEET 5



PLAN
1" = 40'



PROFILE
HORIZ. 1" = 40'
VERT. 1" = 8'

TOWN OF MILLBURY PLANNING BOARD

APPROVAL REQUIRED UNDER THE SUBDIVISION CONTROL LAW

DATE: _____

DATE APPROVED: _____

DATE ENDORSED: _____

I CERTIFY THAT NOTICE OF APPROVAL OF THIS PLAN BY THE MILLBURY PLANNING BOARD HAS BEEN RECEIVED AND RECORDED AT THIS OFFICE AND NO APPEAL WAS RECEIVED IN THE TWENTY DAYS SUBSEQUENT TO SUCH RECEIPT AND RECORDING.

_____
MILLBURY TOWN CLERK

DATE: _____

FILE:3085.00-PROFILES-1-R1

Atlantic® DESIGN ENGINEERS, INC.
P.O. Box 1051, Sandwich, MA 02563 (508) 888 - 9282

Designed by : _____
Drawn by : _____
Checked by : _____
Survey chk. by : _____
Approved by : _____

SCALE: AS SHOWN

DATE

NO.	BY	DATE	REVISION
1	PMJ	8-10-20	REVISED PER TOWN COMMENTS

APPLICANT:
NEXT GRID COLTON, LLC
P.O. BOX 7775 #73069
SAN FRANCISCO, CA 94120-775

ROAD PLAN AND PROFILE STA 17+50 TO 3+00
FOR
COLTON ROAD EXTENSION
MILLBURY, MASSACHUSETTS
JUNE 10, 2020

Sheet 7 of 9

JOB NUMBER 3085.00

CONSTRUCTION PERIOD STORMWATER OPERATION AND MAINTENANCE:

SCHEDULE:

EROSION CONTROL BARRIERS:
EROSION CONTROL BARRIERS (SILT SOCK, ETC.) SHOULD BE INSPECTED IMMEDIATELY AFTER EACH RUN-OFF PRODUCING RAINFALL EVENT AND AT LEAST DAILY DURING PROLONGED RAINFALL. SEDIMENT DEPOSITS MUST BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER. SEDIMENT SHOULD BE DISPOSED OF IN A SUITABLE AREA AND PROTECTED FROM EROSION BY EITHER STRUCTURAL OR VEGETATIVE MEANS.

GRASSED SWALES WITH CHECK DAMS:
DURING CONSTRUCTION GRASSED LINED SWALES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RUN-OFF PRODUCING RAINFALL EVENT AND AT LEAST DAILY DURING PROLONGED RAINFALL. AFTER CONSTRUCTION, INSPECT AT A MINIMUM OF FOUR TIMES A YEAR (QUARTERLY), FOR THE FIRST TWO YEARS AND TWICE A YEAR THEREAFTER OR AFTER MAJOR STORM EVENTS (2" OR GREATER). REPAIR ERODED SPOTS IMMEDIATELY AFTER INSPECTION. ADDITIONAL INSPECTIONS SHOULD BE SCHEDULED DURING THE FIRST FEW MONTHS TO ENSURE THAT THE VEGETATION IN THE CHANNELS IS ESTABLISHED ADEQUATELY. ACCUMULATED SEDIMENT SHALL BE REMOVED AT LEAST ONCE A YEAR OR BEFORE IT EXCEEDS 0.5' IN DEPTH, WHICHEVER OCCURS FIRST.

OUTLET PIPES AND FLARED END SECTIONS:
INSPECT AFTER EVERY MAJOR STORM EVENT (2" OR GREATER) FOR THE FIRST FEW MONTHS AFTER CONSTRUCTION TO ENSURE PROPER STABILIZATION AND FUNCTION, THEREAFTER INSPECT TWICE A YEAR FOR EROSION, CLOGGING, SETTLING, AND EXCESSIVE ACCUMULATION OF LEAVES, TRASH, DEBRIS OR SEDIMENT AND CHANNELIZATION OF STORMWATER DISCHARGE.

RIPRAP/STONE SETTLING TRENCH AND AREAS:
INSPECT AFTER EVERY MAJOR STORM EVENT (2" OR GREATER) DURING CONSTRUCTION AND FOR THE FIRST FEW MONTHS AFTER CONSTRUCTION TO ENSURE PROPER STABILIZATION AND FUNCTION, THEREAFTER INSPECT AT LEAST FOUR TIMES PER YEAR (QUARTERLY) FOR THE FIRST TWO YEARS AND TWICE A YEAR THEREAFTER DURING WET WEATHER TO ENSURE THE SYSTEM IS WORKING PROPERLY. CHECK FOR ACCUMULATION OF SEDIMENT, DEBRIS AND LEAF LITTER. REMOVE SEDIMENT AS NECESSARY DURING CONSTRUCTION, AND AT LEAST TWICE A YEAR AFTER CONSTRUCTION IS COMPLETED.

ROCK LINED SWALES :
DURING CONSTRUCTION ROCK LINED SWALES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RUN-OFF PRODUCING RAINFALL EVENT AND AT LEAST DAILY DURING PROLONGED RAINFALL. AFTER CONSTRUCTION, INSPECT AT A MINIMUM OF TWICE A YEAR OR AFTER MAJOR STORM EVENTS (2" OR GREATER). REPAIR ERODED SPOTS IMMEDIATELY AFTER INSPECTION. ADDITIONAL INSPECTIONS SHOULD BE SCHEDULED DURING THE FIRST FEW MONTHS TO ENSURE THAT THE CHANNELS IS ESTABLISHED ADEQUATELY. ACCUMULATED SEDIMENT SHALL BE REMOVED AT LEAST ONCE A YEAR OR BEFORE IT EXCEEDS 0.25' IN DEPTH, WHICHEVER OCCURS FIRST.

NOTES:
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER INSPECTION AND MAINTENANCE OF ALL STORMWATER AND EROSION CONTROL FACILITIES UNTIL THE PROJECT CONSTRUCTION IS COMPLETED. THE CONTRACTOR SHALL CLEAN ALL COMPONENTS OF THE STORMWATER MANAGEMENT SYSTEM AT THE COMPLETION OF CONSTRUCTION, IMMEDIATELY PRIOR TO TURNING OVER OPERATION AND MAINTENANCE RESPONSIBILITY TO THE PROJECT PROPONENT.
2. UPON COMPLETION OF CONSTRUCTION, THE OPERATION AND MAINTENANCE OF ALL COMPONENTS OF THE STORMWATER MANAGEMENT SYSTEM WILL BE THE RESPONSIBILITY OF THE SYSTEM OWNER:

NEXT GRID COLTON, LLC
P.O. BOX 7775 #73069
SAN FRANCISCO, CA 94120-775

THE SYSTEM OWNER SHALL COMPLY WITH THE POST CONSTRUCTION LONG TERM STORMWATER OPERATION AND MAINTENANCE PLAN APPROVED FOR THIS PROJECT.

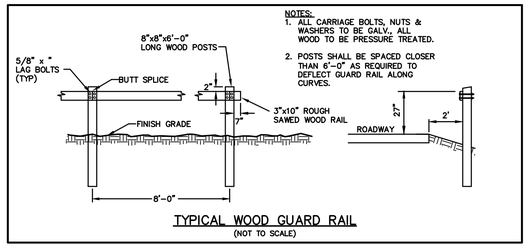
3. DISPOSAL OF ACCUMULATED SEDIMENT AND HYDROCARBONS TO BE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL GUIDELINES AND REGULATIONS.
4. THERE SHALL BE NO ILLICIT DISCHARGE OF ANY WASTE OR WASTE WATER INTO THE STORMWATER MANAGEMENT SYSTEM. THE MAINTENANCE OF THE FACILITY SHALL BE UNDERTAKEN IN SUCH A MANNER AS TO PREVENT ANY DISCHARGE OF WASTE OR WASTE WATER INTO STORMWATER MANAGEMENT SYSTEM. ANY WASTE OIL OR OTHER WASTE PRODUCTS GENERATED DURING MAINTENANCE SHALL BE PROPERLY DISPOSED OF OFF SITE.

EROSION CONTROL NOTES:

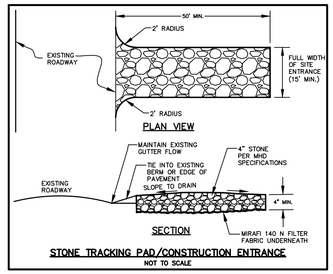
1. PRIOR TO COMMENCING SITE WORK OR EARTHWORK OPERATIONS, INSTALL EROSION CONTROL BARRIERS AND MAINTAIN THROUGHOUT CONSTRUCTION.
2. ALL DISTURBED AREAS SHALL BE RE-ESTABLISHED WITH 6" COMPACTED DEPTH OF GOOD QUALITY LOAM AND SEEDED IMMEDIATELY UPON COMPLETION OF CONSTRUCTION AND AS NEEDED DURING CONSTRUCTION TO PREVENT EROSION.
3. ALL MATERIALS AND STOCKPILES SHALL BE STORED ON LEVEL AREAS OUTSIDE OF ANY FLOOD ZONES, WETLANDS OR BUFFER ZONE AREAS. ALL STOCKPILES SHALL BE SURROUNDED BY SILT SOCK, SHALL HAVE SIDE SLOPES NO GREATER THAN 30% AND SHALL BE SEEDED OR STABILIZED IF LEFT UNDISTURBED FOR TWO WEEKS OR MORE.
4. SEDIMENTATION CONTROL DEVICES AND EROSION CONTROL BARRIERS SHALL BE INSPECTED WEEKLY AND MAINTAINED AS NECESSARY THROUGHOUT ALL PHASES OF CONSTRUCTION AND PROMPTLY AFTER EACH RAINFALL.
5. ANY SLOPE STEEPER AND 3:1 SHALL BE EQUIPPED WITH SLOPE STABILIZATION FABRIC OR EROSION CONTROL MATTING. FOR SLOPES THAT ARE 2:1 SHALL BE EQUIPPED WITH EROSION CONTROL MATTING. FOR SLOPES THAT ARE 1:1 SLOPES SHALL BE EQUIPED WITH RIP RAP.
6. ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTITUTED AS CONDITIONS WARRANT OR AS DIRECTED BY THE ENGINEER AND/OR THE TOWN.
7. THE CONTRACTOR MUST INSPECT ALL SLOPES, PANEL DRIP EDGES, AND GRADED AREAS THROUGHOUT THE PROJECT ON A QUARTERLY BASIS FOR THE FIRST TWO YEARS AFTER COMPLETION OF CONSTRUCTION AND REPAIR OR RE-SEED ANY AREAS THAT DO NOT DEVELOP WITHIN THIS PERIOD AT NO ADDITIONAL EXPENSE TO THE OWNER.
8. MATERIAL STOCKPILES SHALL NOT BE LOCATED WITHIN THE PATH OF EXISTING OR PROPOSED WATERCOURSES (BOTH TEMPORARY OR PERMANENT) OR THOSE AREAS SUBJECT TO STORM WATER FLOW.
9. SEDIMENT CONTROL DEVICES AND EROSION CONTROL BARRIERS MAY BE REMOVED ONLY AFTER THE SITE HAS BEEN STABILIZED.
10. ALL DISTURBED OR EXPOSED AREAS SUBJECT TO EROSION, WHICH REMAIN DISTURBED BUT INACTIVE FOR AT LEAST 15 DAYS, SHALL RECEIVE TEMPORARY SEEDING IN ACCORDANCE WITH THE MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES. IN ALL CASES, STABILIZATION MEASURES SHALL BE IMPLEMENTED AS SOON AS POSSIBLE IN ACCORDANCE WITH THE MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES.
11. EARTHWORK ACTIVITY ON THE SITE SHALL BE DONE IN A MANNER SUCH THAT RUNOFF IS DIRECTED AWAY FROM ABUTTING STRUCTURES, PROPERTY, ETC.
12. THE CONTRACTOR SHALL KEEP ON SITE AT ALL TIMES ADDITIONAL SILT SOCK AND EXTRA SILTATION FENCING FOR INSTALLATION AT THE DIRECTION OF THE ENGINEERS OR THE PLANNING BOARD TO MITIGATE ANY EMERGENCY CONTROL.
13. REFER TO CONSTRUCTION DETAILS FOR ADDITIONAL EROSION CONTROL MEASURES.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SITING, RELOCATION AND AUGMENTATION OF EROSION CONTROL DEVICES AS THE PROJECT PROGRESSES AND THE SITE DRAINAGE CONDITIONS CHANGE.
15. THE CONTRACTOR SHALL MINIMIZE THE AREA OF DISTURBED SOIL. EFFORTS SHALL BE MADE TO LIMIT THE TIME OF EXPOSURE OF DISTURBED AREAS.
16. ANY DISTURBED SOILS NOT PERMANENTLY STABILIZED PRIOR TO OCTOBER 15 OF ANY YEAR SHALL BE TEMPORARILY STABILIZED TO PREVENT EROSION UNTIL ACTIVE USE RESUMES.
17. SEDIMENT CONTROLS SHALL NOT CONTAIN ANY NYLON MESH OR NETTING FOUND TO BE A HAZARD TO LOCAL WILDLIFE. HAYBALES ARE NOT RECOMMENDED AS SEDIMENT CONTROL DUE TO THE POTENTIAL TO SPREAD INVASIVE PLANT SPECIES. 100% BIO-DEGRADABLE CONTROLS ARE PREFERRED, SUCH AS ROLLED EROSION CONTROL PRODUCTS (I.E., MULCH CONTROL NETTING, EROSION CONTROL BLANKETS, TURF MATS, MULCH SOCKS, FIBER ROLLS, WATTLES, ETC.) WHICH MUST BE 100% NATURAL BIO-DEGRADABLE MATERIAL. PHOTO-DEGRADABLE, UV DEGRADABLE OR OXO-(BIO)DEGRADABLE PLASTICS ARE NOT CONSIDERED BIO-DEGRADABLE.
18. ALL SLOPES AND GRADED AREAS ARE TO BE INSPECTED IMMEDIATELY AFTER EACH RUN-OFF PRODUCING RAINFALL EVENT AND AT LEAST DAILY DURING PROLONGED RAINFALL. REPAIRS TO ANY ERODED AREA ARE TO BE MADE IMMEDIATELY.

CONSTRUCTION NOTES:

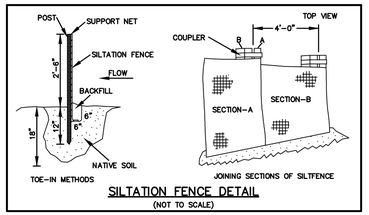
1. THE PROPERTY LINES AND EXISTING CONDITIONS SHOWN HEREON ARE BASED UPON A PARTIAL FIELD SURVEY BY ATLANTIC DESIGN ENGINEERS, INC.
2. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS SHOWN AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES THAT MAY BE FOUND IN THE PLAN.
3. CONTRACTOR SHALL VERIFY ALL CRITICAL ELEVATIONS AND INVERTS PRIOR TO CONSTRUCTION.
4. WHERE AN EXISTING PUBLIC UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED AND THE INFORMATION FURNISHED TO THE UTILITY COMPANY AND OWNER FOR RESOLUTION OF THE CONFLICT.
5. SUBSURFACE AND ENVIRONMENTAL CONDITIONS WERE NOT EXAMINED OR CONSIDERED AS PART OF THIS SURVEY. NO STATEMENT IS MADE CONCERNING THE EXISTENCE OF UNDERGROUND OR OVERHEAD CONTAINERS OR FACILITIES THAT MAY AFFECT THE USE OR DEVELOPMENT OF THIS SITE.
6. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY DIGSAFE, THE TOWN OF MILLBURY DEPARTMENT OF PUBLIC WORKS AND ALL UTILITY COMPANIES A MINIMUM OF 72 HOURS PRIOR TO CONSTRUCTION ACTIVITIES FOR LOCATION OF ALL UNDERGROUND UTILITIES AND UTILITY COMPANY APPROVALS.
7. ALL BUILDINGS, SURFACE, AND SUBSURFACE IMPROVEMENTS ON AREAS ADJACENT TO THE SITE ARE NOT NECESSARILY SHOWN HEREON.
8. THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVES. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL UTILITIES AND RIM AND INVERTS BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES THAT MIGHT OCCUR BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
9. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENTS OF ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES WITH THE UTILITY COMPANY, IF NECESSARY. IF ANY INTERRUPTIONS IN SERVICE ARE NECESSARY TO ABUTTING PROPERTY OWNERS, A MINIMUM OF 48 HOURS NOTICE SHALL BE GIVEN.
10. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING CONTINUOUS ACCESS ALONG COLTON ROAD AND ALL EXISTING DRIVEWAYS WITHIN THE LIMIT OF WORK. CONTRACTOR SHALL MAINTAIN A MINIMUM OF ONE TRAVEL LANE IN COLTON ROAD DURING BUSINESS HOURS AND TWO LANES AT ALL OTHER TIMES. TEMPORARY SIGANGE AND TRAFFIC CONTROLS SHALL MEET MASS DPW STANDARDS AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. COORDINATE WITH THE TOWN OF MILLBURY POLICE AND HIGHWAY DEPARTMENTS.
10. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATION SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
11. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ALL REQUIRED INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODES AND/OR UTILITY COMPANIES ARE COMPLETED PRIOR TO INSTALLATION, BACKFILLING, ANNOUNCED BUILDING POSSESSION, AND THE FINAL CONNECTION OF SERVICES.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL SURVEY CONTROL POINTS AND BENCHMARKS NECESSARY FOR THE PROPOSED WORK.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ADEQUATE RECORDS OF THE LOCATION AND ELEVATION OF ALL WORK INSTALLED.
14. THE CONTRACTOR SHALL INSTITUTE AND MAINTAIN ALL SAFETY MEASURES NECESSARY TO PROTECT THE PUBLIC DURING CONSTRUCTION, INCLUDING, BUT NOT LIMITED TO BARRICADES, SIGNS, FENCES, FLAGGERS, LIGHTING, POLICE DETAIL, AND ANY OTHER MEANS AS DIRECTED BY THE TOWN. NO TRENCHES ARE TO REMAIN OPEN OVERNIGHT.
15. THE CONTRACTOR SHALL KEEP THE PREMISES FREE FROM THE ACCUMULATION OF WASTE MATERIAL AND OTHER DEBRIS RESULTING FROM THE WORK. AT THE END OF CONSTRUCTION THE CONTRACTOR SHALL REMOVE ALL CONSTRUCTION DEBRIS AND SURPLUS MATERIALS FROM THE SITE. A THOROUGH INSPECTION OF THE WORK PERIMETER IS TO BE MADE AND ALL DISCARDED MATERIALS, BLOWN OR WATER CARRIED DEBRIS, SHALL BE COLLECTED AND REMOVED FROM THE SITE.
16. ALL WORK SHALL BE DONE IN STRICT COMPLIANCE WITH ALL APPROVED PERMITS AND WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES, STANDARDS, ORDINANCES, RULES AND REGULATIONS.
17. CONTRACTOR TO DESIGNATE A SPECIFIC AREA FOR COMBUSTIBLE MATERIALS, APPROVED BY THE FIRE DEPARTMENT, SO THAT COMBUSTIBLES ARE NOT SPREAD THROUGHOUT THE CONSTRUCTION SITE.
18. THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH STORMWATER POLLUTION PREVENTION PLAN (SWPPP) FOR CONSTRUCTION ACTIVITIES FOR THIS PROJECT.



TYPICAL WOOD GUARD RAIL
(NOT TO SCALE)



STONE TRACKING PAD/CONSTRUCTION ENTRANCE
NOT TO SCALE



SILTATION FENCE DETAIL
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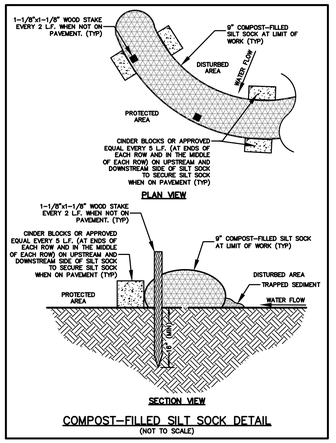
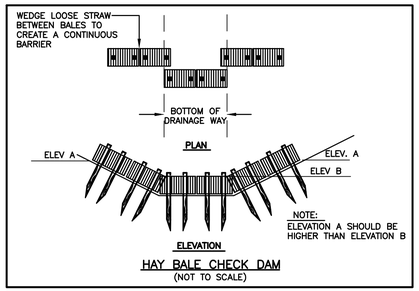


COMPOST-FILLED SILT SOCK DETAIL
(NOT TO SCALE)



HAY BALE CHECK DAM
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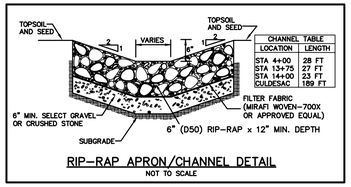
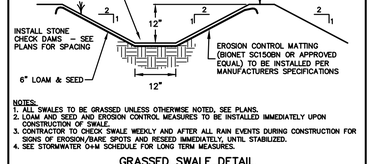
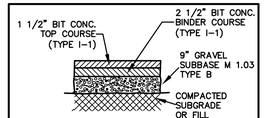


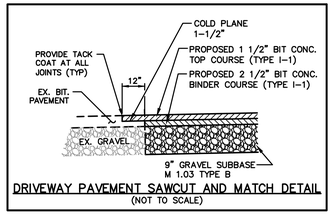
RIP-RAP APRON/CHANNEL DETAIL
NOT TO SCALE



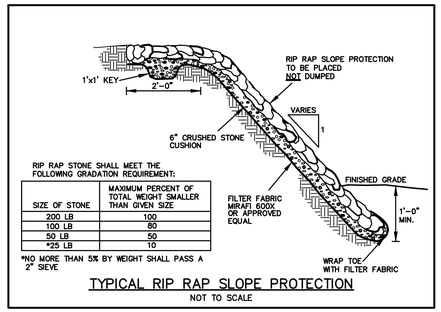
GRASSED SWALE DETAIL
NOT TO SCALE



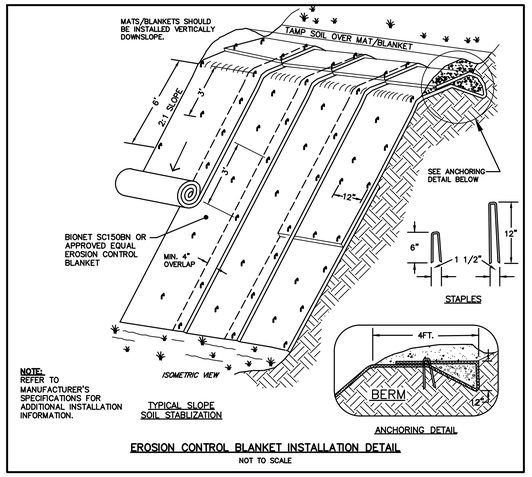
PAVEMENT CROSS SECTION
NOT TO SCALE



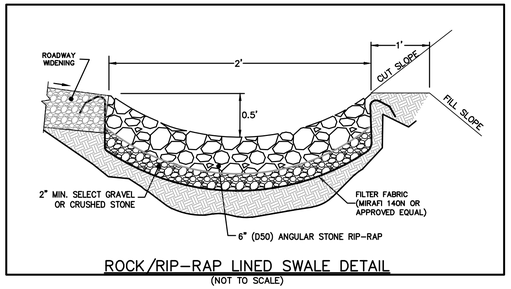
DRIVEWAY PAVEMENT SAWCUT AND MATCH DETAIL
(NOT TO SCALE)



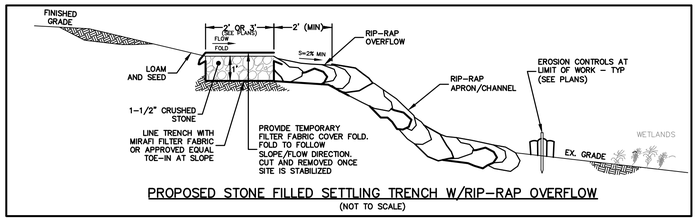
TYPICAL RIP RAP SLOPE PROTECTION
NOT TO SCALE



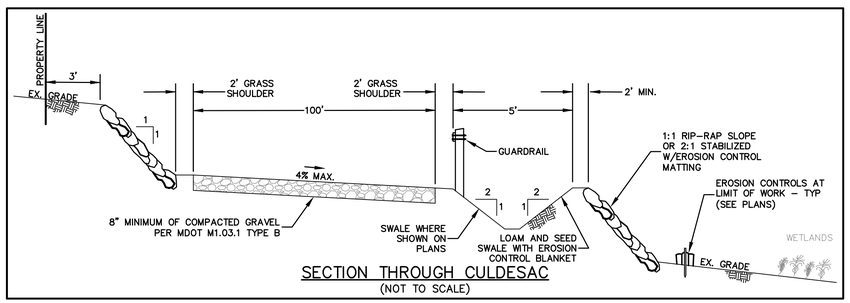
EROSION CONTROL BLANKET INSTALLATION DETAIL
NOT TO SCALE



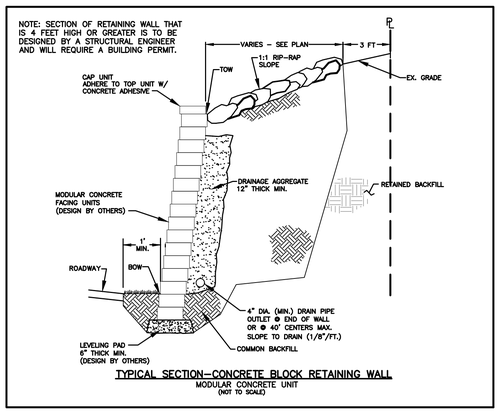
ROCK/RIP-RAP LINED SWALE DETAIL
(NOT TO SCALE)



PROPOSED STONE FILLED SETTLING TRENCH W/RIP-RAP OVERFLOW
(NOT TO SCALE)



SECTION THROUGH CULDESAC
(NOT TO SCALE)



TYPICAL SECTION-CONCRETE BLOCK RETAINING WALL
MODULAR CONCRETE UNIT
(NOT TO SCALE)

TOWN OF MILLBURY PLANNING BOARD

APPROVAL REQUIRED UNDER THE SUBDIVISION CONTROL LAW

DATE: _____

DATE APPROVED: _____

DATE ENDORSED: _____

I CERTIFY THAT NOTICE OF APPROVAL OF THIS PLAN BY THE MILLBURY PLANNING BOARD HAS BEEN RECEIVED AND RECORDED AT THIS OFFICE AND NO APPEAL WAS RECEIVED IN THE TWENTY DAYS SUBSEQUENT TO SUCH RECEIPT AND RECORDING.

_____
MILLBURY TOWN CLERK

DATE: _____

FILE: 3085.00-DEF-DET-1-R1

Atlantic® DESIGN ENGINEERS, INC.
P.O. Box 1051, Sandwich, MA 02563 (508) 888 - 9282

Designed by :
Drawn by :
Checked by :
Survey chk. by :
Approved by :

SCALE: AS NOTED

COMMONWEALTH OF MASSACHUSETTS RICHARD J. TABACZYNSKI CIVIL No. 33746 PROFESSIONAL ENGINEER

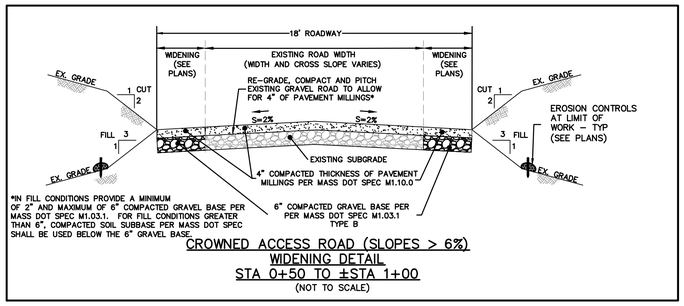
DATE

NO.	BY	DATE	REVISION
1	PMJ	8-10-20	REVISED PER TOWN COMMENTS

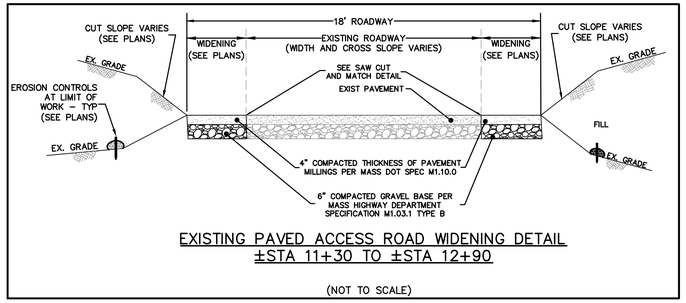
APPLICANT:
NEXT GRID COLTON, LLC
P.O. BOX 7775 #73069
SAN FRANCISCO, CA 94120-775

DETAILS PLAN
FOR
COLTON ROAD EXTENSION
MILLBURY, MASSACHUSETTS
JUNE 10, 2020

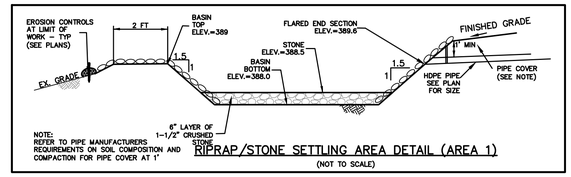
Sheet 8 of 9
JOB NUMBER 3085.00



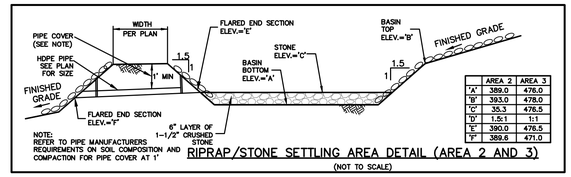
CROWNED ACCESS ROAD (SLOPES > 6%)
WIDENING DETAIL
STA 0+50 TO ±STA 1+00
(NOT TO SCALE)



EXISTING PAVED ACCESS ROAD WIDENING DETAIL
±STA 11+30 TO ±STA 12+90
(NOT TO SCALE)

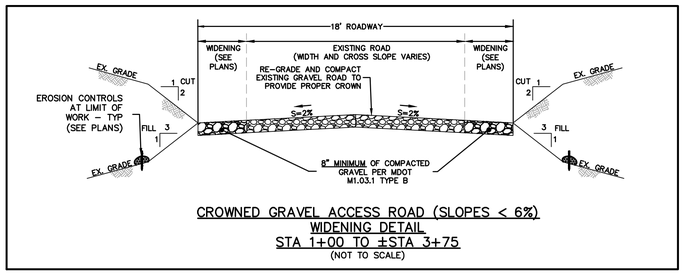


RIPRAP/STONE SETTLING AREA DETAIL (AREA 1)
(NOT TO SCALE)

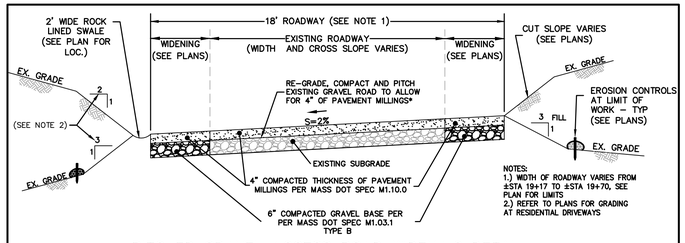


	AREA 2	AREA 3
'A'	389.0	476.0
'B'	393.0	478.0
'C'	35.3	476.5
'D'	1.5:1	1:1
'E'	390.0	476.5
'F'	389.6	471.0

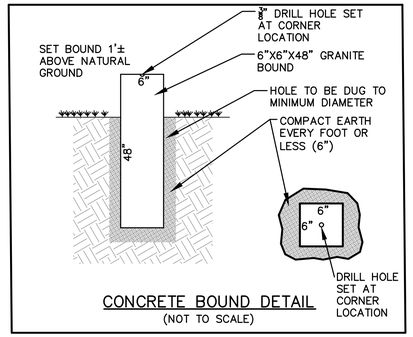
RIPRAP/STONE SETTLING AREA DETAIL (AREA 2 AND 3)
(NOT TO SCALE)



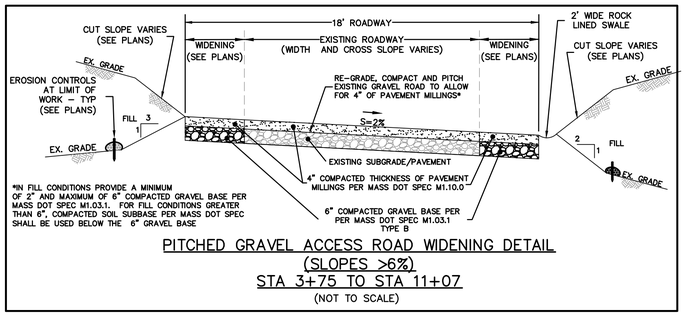
CROWNED GRAVEL ACCESS ROAD (SLOPES < 6%)
WIDENING DETAIL
STA 1+00 TO ±STA 3+75
(NOT TO SCALE)



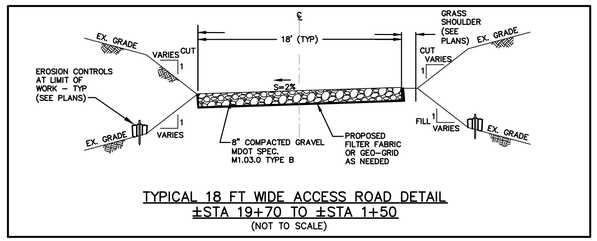
PITCHED GRAVEL ACCESS ROAD WIDENING DETAIL
STA 12+90 TO 19+40
(NOT TO SCALE)



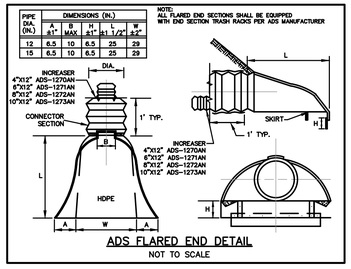
CONCRETE BOUND DETAIL
(NOT TO SCALE)



PITCHED GRAVEL ACCESS ROAD WIDENING DETAIL
(SLOPES >6%)
STA 3+75 TO STA 11+07
(NOT TO SCALE)

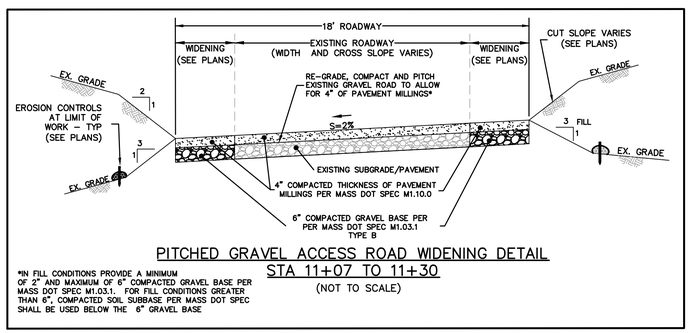


TYPICAL 18 FT WIDE ACCESS ROAD DETAIL
±STA 19+70 TO ±STA 1+50
(NOT TO SCALE)

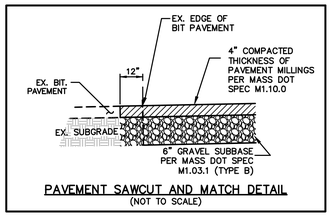


PIPE DIA. (IN.)	DIMENSIONS (IN.)				
	A ±1"	B MAX.	H ±1"	L ±1 1/2"	W ±2"
12	6.5	10	6.5	25	29
15	6.5	10	6.5	25	29

ADS FLARED END DETAIL
NOT TO SCALE



PITCHED GRAVEL ACCESS ROAD WIDENING DETAIL
STA 11+07 TO 11+30
(NOT TO SCALE)



PAVEMENT SAWCUT AND MATCH DETAIL
(NOT TO SCALE)

TOWN OF
MILLBURY PLANNING BOARD

APPROVAL REQUIRED UNDER THE SUBDIVISION CONTROL LAW

DATE: _____

DATE APPROVED: _____

DATE ENDORSED: _____

I CERTIFY THAT NOTICE OF APPROVAL OF THIS PLAN BY THE MILLBURY PLANNING BOARD HAS BEEN RECEIVED AND RECORDED AT THIS OFFICE AND NO APPEAL WAS RECEIVED IN THE TWENTY DAYS SUBSEQUENT TO SUCH RECEIPT AND RECORDING.

_____
MILLBURY TOWN CLERK

DATE: _____

FILE: 3085.00-DEF-DET-1-R1

Atlantic® DESIGN ENGINEERS, INC.
P.O. Box 1051, Sandwich, MA 02563 (508) 888 - 9282

Designed by : _____
Drawn by : _____
Checked by : _____
Survey chk. by : _____
Approved by : _____

SCALE
AS NOTED

DATE

NO.	BY	DATE	REVISION
1	PMJ	8-10-20	REVISED PER TOWN COMMENTS

APPLICANT:
NEXT GRID COLTON, LLC
P.O. BOX 7775 #73069
SAN FRANCISCO, CA 94120-775

DETAILS PLAN
FOR
COLTON ROAD EXTENSION
MILLBURY, MASSACHUSETTS
JUNE 10, 2020

Sheet 9 of 9
JOB NUMBER 3085.00

Definitive Subdivision Plan for Colton Road Extension

Post-Construction

Long Term Stormwater Operation & Maintenance Plan-Revision 1

August 10, 2020

A. GENERAL NOTES

1. Upon completion of construction, the operation and maintenance of all components of the stormwater management system will be the responsibility (financially and otherwise) of the system owner (responsible party):

Next Grid Colton, LLC
P.O. Box 7775 #73069
San Francisco, CA 94120-7775
(559) 731-4645
daniel@nextgridpartners.com

Daniel Serber _____ 8/10/2020_____

Signature **Date**

2. The responsible party shall file an inspection report with the Town of Millbury Planning Board and Conservation Commission following each site inspection as recommended in the Operation & Maintenance (O&M) Schedule. The inspection report shall identify the date of inspection, name, and contact number of responsible party, specific structures inspected, specific maintenance and/or repairs required and general observations. Any deficiencies noted in the inspection report shall be corrected to the Town of Millbury Planning Board and Conservation Commission's satisfaction.

3. Disposal of accumulated sediment and hydrocarbons to be in accordance with the applicable local, state, and federal guidelines and regulations.

4. There shall be no illicit discharge of any waste or waste water into the stormwater management system. The maintenance of the facility shall be undertaken in such a manner as to prevent any discharge of waste or waste water into the stormwater management system. Any waste oil or other waste products generated during the maintenance shall be properly disposed of offsite.

Daniel Serber _____ 8/10/2020_____

Signature **Date**

5. The Town will be notified of changes in project ownership or assignment of operation and maintenance financial responsibility.

6. The maintenance schedule in this operation and maintenance (O&M) Plan will only be amended by mutual agreement of the Town and the responsible party. Amendments will be made in writing and signed by the responsible party.

B. STORMWATER SYSTEM/BMPs

Erosion Control Barriers:

Erosion control barriers (sediment log, straw wattles, silt fence, etc.) should be inspected immediately after each run-off producing rainfall event and at least daily during prolonged rainfall. Sediment deposits must be removed when the level of deposition reaches approximately one-half the height of the barrier. Sediment shall be disposed of in a suitable area and protected from erosion by either structural or vegetative means.

Grassed Swale with Check-Dams:

During construction grassed lined swales shall be inspected immediately after each run-off producing rainfall event and at least daily during prolonged rainfall. After construction, inspect at a minimum of four times a year (quarterly), for the first two years and twice a year thereafter or after major storm events (2” or greater). Repair eroded spots immediately after inspection. additional inspections should be scheduled during the first few months to ensure that the vegetation in the channels is established adequately. Accumulated sediment shall be removed at least once a year or before it exceeds 0.5' in depth, whichever occurs first.

Outlet Pipes and Flared End Sections:

Inspect after every major storm event (2" or greater) for the first few months after

construction to ensure proper stabilization and function, thereafter inspect twice a year for erosion, clogging, settling, and excessive accumulation of leaves, trash, debris or sediment and channelization of stormwater discharge.

Rock Lined Swales, Rip-rap aprons:

During construction rock lined swales shall be inspected immediately after each run-off producing rainfall event and at least daily during prolonged rainfall. After construction, inspect at a minimum of twice a year or after major storm events (2" or greater), repair eroded spots immediately after inspection. additional inspections should be scheduled during the first few months to ensure that the channels is established adequately. accumulated sediment shall be removed at least once a year or before it exceeds 0.25' in depth, whichever occurs first.

Riprap/Stone Settling Trench and Areas:

Inspect after every major storm event (2" or greater) during construction and for the first few months after construction to ensure proper stabilization and function, thereafter inspect at least four times per year (quarterly) for the first two years and twice a year thereafter during wet weather to ensure the system is working properly. Check for accumulation of sediment, debris and leaflitter. Remove sediment as necessary during construction, and at least twice a year after construction is completed.

Drainage Easement:

There is a drainage easement of 2,193 sq. ft. located on the property at Map 31, Lot 31 (Town of Millbury) and is on the north side of the Colton Road Right-of-way at STA 14+00 (see sheet 4 of the Definitive Subdivision plan for Colton Road Extension - revised August 10, 2020 by Atlantic Design Engineers) . The easement is for drainage structures associated with the stormwater runoff from Colton road. The riprap/stone settling trenches will require maintenance per the schedule outlined herein.

Owner: Deborah A Maturi, Town of Millbury Map 31, Lot 31.

Owner Signature: _____

Date:_____

SAMPLE INSPECTION LOG

COLTON ROAD EXTENSIN PROJECT
MILLBURY, MASSACHUSETTS

LONG TERM STORMWATER OPERATIONS & MAINTENANCE PLAN

INSPECTION CHECKLIST/REPORT

Date: _____ **Personnel Present:** _____

_____

Inspectors Name: _____

Inspectors Contact Information: _____

Signatures: _____

_____

_____

Type of Inspection: Scheduled Pre-Storm During Storm Post Storm
(circle one) Other: _____

Areas to be Inspected: • *Drainage structures:* o *Riprap/Stone Settling Areas* o *Rock Lined swales* o *Outlet Pipes & Flared End Sections* o *Rirrap aprons /slopes* o *Erosion Control Barriers* o *Grassed Swales*	

General Evaluation Checklist:

1. *Has there been a storm event since the last inspection?*

2. *Weather at time of inspection?*

3. *Is there any evidence of pollution or sediment entering the storm water drainage system or surrounding wetlands/receiving waters?*

4. *Is any cleanup of spills, leaks, or refuse needed?*

5. *Are the engineering controls working effectively to prevent storm water pollution?*

6. *What, if any, changes to the plans are necessary?*

7. *Are all sediment traps, barriers, and basins clean and functioning properly?*

8. *Are all discharge points free of noticeable pollutant discharges?*

9. *Are all natural resource areas (e.g. streams, wetlands, mature trees, etc.) protected with proper BMP's?*

Items to be Cleaned/Replaced:

- *Detention basins shall be inspected after every major storm event (2" or greater) for the first few months after construction to ensure proper stabilization and function, thereafter inspect at least four times per year (quarterly) for the first two years and twice a year thereafter during wet weather to ensure the system is draining properly. Check for accumulation of sediment and ponding of water. If ponding water is visible inside the basin for several days after a storm event, notify the engineer for possible remedial measures. (Possible remedial measures include but are not limited to improved maintenance, aerating or reshaping the bottom of basin). Remove sediment as necessary during construction, while the system is dry, and at least every 5 years after construction. Check for erosion, invasive tree growth, clogging and trash, and remove organic matter, trash and debris as necessary. Re-seed eroded or barren spots immediately after inspection. Detention basins upper stage, side slope, embankment and spillway shall be mowed twice a year. Clippings to be removed from basins, areas immediately up-gradient and properly disposed of.*

- *Infiltration trenches shall be inspected after every major storm event (2" or greater) during construction and for the first few months after construction to ensure proper stabilization and function, thereafter inspect at least four times per year (quarterly) for the first two years and twice a year thereafter during wet weather to ensure the system is working properly. Observation wells provided for inspection purposes. If clogging is observed, notify the engineer for remedial measures. (Possible remedial measures include but are not limited to improved maintenance or removal and replacement of trench material). Check for accumulation of sediment, debris and leaf litter twice a year. Remove sediment as necessary during construction, and at least twice a year after construction is completed.*

- *Outlet pipes and flared end sections shall be inspected after every major storm event (2" or greater) for the first few months after construction to ensure proper stabilization and function, thereafter inspect twice a year for erosion, clogging, settling, and excessive accumulation of leaves, trash, debris or sediment and channelization of stormwater discharge. Inspect rip-rap aprons for signs of failure. Repair eroded spots immediately after inspection.*

- *Vegetated filter strips and pea gravel diaphragm shall be inspected semi-annually during the first year (and annually thereafter). Inspect the pea gravel diaphragm for sediment buildup and the vegetation for signs of erosion, bare spots, and overall health. Regular, frequent mowing of the grass is required and should be performed at least four times per year (quarterly). Remove sediment from the toe of slope or pea gravel diaphragm, and reseed bare spots as necessary. Periodically, remove sediment that accumulates near the top of the strip to maintain the appropriate slope and prevent formation of a "berm" that could impede the distribution of runoff as sheet flow.*

NOTES:

1. *The developer (responsible party) shall be responsible for the proper inspection and maintenance of all stormwater facilities once construction is completed.*

2. *The developer/contractor shall file an inspection report with the design engineer and, if necessary, the Town of Norton Conservation Commission following each site inspection as recommended in the O & M schedule. Copies of the inspection reports are to be made available to the Norton Building Inspector or Conservation Agent upon request. The inspection report shall identify the date of inspection, name and contact number of responsible party, specific structures inspected, specific maintenance and/or repairs required and general observations. Any deficiencies noted in the inspection report shall be corrected to the design engineer and/or the Town of Norton Conservation Commission satisfaction.*

3. *Disposal of accumulated sediment and hydrocarbons to be in accordance with applicable local, state and federal guidelines and regulations.*

4. *There shall be no illicit discharge of any waste or waste water into the stormwater management system. The maintenance of the facility shall be undertaken in such a manner as to prevent any discharge of waste or waste water into stormwater management system. Any waste products generated during maintenance shall be properly disposed of off-site.*

ITEMS INSPECTED	LOCATION	COMMENTS, CORRECTIVE ACTION NEEDED, AND NOTES

August 10, 2020

Laurie Connors
Planning Director
Town of Millbury
127 Elm Street
Millbury, MA 01527-2632

RE: Response to Planning Director Questions, Comments And Recommendations, July 16, 2020
Definitive Subdivision Plan Pre-Application Review 2
Colton Road Extension
7 Colton Road – Millbury, MA
ADE Job #3085.00

Dear Ms. Connors:

This response letter addresses the comments made in your Definitive Subdivision Plan Pre-Application Review 2 memorandum dated July 16, 2020 for the above-referenced project. Please note that the Planning Department remaining comments are italicized, and our responses follow in bold text. Additionally, a formal response to address the Planning Boards comments regarding the design slopes of Colton road, received during the July 20th planning board hearing are included.

1. *Please submit required application forms with the Definitive Plan application (Form C, Checklist, Designers Certificate, Form E, Application Signature Form) and required application and technical review fees.*

   July 16 Comment: The required application forms noted above have been submitted with the Definitive Plan Application. This comment has been addressed.

   ADE Response: No response required.

2. *Note that this property is located within a Natural Heritage and Endangered Species Program BioMap2 Core Habitat. A note to this effect should be added to Sheet 1.*

   July 16 Comment: A note was added to Sheet 1 that the property is located within a Natural Heritage and Endangered Species Program BioMap2 Core Habitat. This comment has been addressed.

   ADE Response: No response required.

3. *The definitive plan shows that Colton Road will be regraded and widened to 18' with 8" compacted gravel per MassDOT spec M1.03.0 Type B. Where the grade exceeds 6%, the Applicant proposes to install 4" compacted thickness of pavement millings per MassDOT spec M1.10.0 over 6" of compacted gravel base. Subdivision Regulations, Section 7.2 requires 5" of*

gravel base, 10" of processed gravel for sub-base, a 2 1/2" thickness of binder course and 1 ½" thickness of finish course. The Applicant should either modify the design of Colton Road Extension to comply with our Subdivision Regulations or submit a waiver request letter specifying the relief you seek and reasons therefore for Planning Board review and approval. If the Planning Board opts to waive the bulk of the design standards, I recommend including a Condition of Approval requiring that the roadway remain private until such time as it complies.

July 16 Comment: The Applicant submitted the suggested written waiver request to "allow Colton Road Extension to be constructed with 8" of compacted gravel per MassDOT Specification M1.03.0 Type B".

ADE Response: No response required.

4. *It is my opinion that the improved section of Colton Road should be built on a 12" gravel base. That gravel base thickness is consistent with Subdivision Rules & Regulations, Section 4.2, which specifies the minimum standard for determining whether an existing way is sufficient for qualifying a plan as not constituting a subdivision. Also, existing roadway cross sections on Sheet 8 specify that only the widened portions of the roadway will contain the 4" compacted thickness of millings where the roadway grade exceeds 6%. I recommend that the Planning Board require the entire road width to consist of 4" compacted thickness of millings where the roadway grade exceeds 6%. The Plan should be revised accordingly.*

   ADE Response: The plans have been updated to show 4" compacted thickness of millings the entire width where the roadway grade exceeds 6%.

   As for the newly constructed section of roadway/cul-de-sac, I recommend that the Planning Board require the Applicant to construct it to Subdivision design standards (Section 7.2) with regards to gravel base, binder and top course of pavement.

   ADE Response: The applicant requests a waiver. The new cul-de-sac/roadway is located past all residential driveways. It is unlikely that most residents will utilize this as a turn around point considering they will just turn into their own respective driveway for daily operations. Furthermore, upon completion of construction, the solar projects anticipate less than 4 trips a year for maintenance vehicles. During these maintenance visits it is unlikely that they will utilize the cul-de-sac to turnaround therefore you can anticipate almost zero use required for the solar project for maintenance reasons for the cul-de-sac. Based on the limited use by the current residents and the negligible use for the solar projects the applicant requests a waiver to the design standards and is submitting 8" of gravel base.

   The Planning Board should consider requiring the Applicant to plow/maintain Colton Road long term as the surfacing does not adhere to Subdivision Regulation design standards.

ADE Response: Per the notice of decision for the 7 Colton road Solar project Dated May 13, 2019, one of the conditions requires that the operations and maintenance plan shall include that the applicant plow snow from the limit of plowing by the town of Millbury to the electrical cabinet turnaround area. Upon completion of construction the solar projects will require approximately 4 vehicle trips per year. Additionally, the applicant is substantially improving the road for residents who live off Colton road. Based on the limited use and the substantial improvements it is our opinion that the applicant should not be required to maintain the entire length of Colton road (up to the town-maintained line).

5. *Please specify on the Plan that all existing potholes along Colton Road will be filled.*

   July 16 Comment: This comment has been addressed on the modified plan.

   ADE Response: No response required.

6. *At a minimum, I recommend that the Applicant mill and pave a 50' wide strip at the intersection of Colton Road and Riverlin Street. The pavement in this location is in very poor condition with numerous potholes and patches of missing pavement.*

   July 16 Comment: This comment has been addressed and a note to this effect appears on Sheet 4. During my follow up site visit on July 16th, I noted that Colton Road is excessively wide at its intersection with Riverlin Street (more than 70' at its widest point). I recommend narrowing the paved width of the roadway in this location to 24' with radii of not less than 30'. The excess pavement should be removed and the area loam and seeded.

   ADE Response: The reduction to the width has been provided. The southern side of the driveway was modified to meet the 30 ft radii. The north side radii is currently less than 30 ft so therefore this section of pavement was left as-is. Increasing the radii to 30 ft would require the pavement to extend on the northern abutters property which I do not think is the intention of this improvement.

7. *Areas of existing pavement along Colton Road are broken along the gutter line where the road will be widened. How does the Applicant plan to address these areas?*

   July 16 Comment: This comment has been addressed.

   ADE Response: No response required.

8. *Please identify the location of the high tension wires and associated easement on the Plan sheets.*

   July 16 Comment: This comment has been addressed. Both the high tension wires and associated easement are now depicted on the revised plan.

   ADE Response: No response required.

9. *Please denote the location of monuments on Sheet 1 (for Colton Extension only) in conformance with Subdivision Regulations, Section 5.2(2)(i) and Section 6.9. A detail of the monuments should also be included.*

   July 16 Comment: This comment is partially addressed. Two monuments were included and a detail of a 5" square concrete monument that is 3' long depicted on Sheet 8. Subdivision Regulations Section 6.9 requires granite monuments not less than 6" square and 4' long with a 3/8" drill hole to be furnished and set on both sidelines of all points of curvature of the street where the sideline changes direction and point of tangency. Please modify the Plan to comply with these requirements.

   ADE Response: The plans have been updated to include the additional monuments.

10. *Provide a signed note on Sheet 1 stating that the "relative error of closure shall exceed CMR 250.6" and identify applicable deed references used to create the subdivision plan (Subdivision Regulations Section 5.3(2)(s) and (u)).*

    July 16 Comment: This comment is addressed on the plan modification.

    ADE Response: No response required.

11. *In accordance with Subdivision Regulations, Section 5.3(3)(i), please depict a street light at the cul-de-sac location and provide proposed street light specifications. I recommend a solar-powered or LED street light.*

    July 16 Comment: This comment has been addressed. The Applicant proposes to install an LED street light on a new telephone pole.

    ADE Response: No response required.

12. *In accordance with Subdivision Regulations Section 5.3(1)(g), please provide surveyor's certificate certifying that the center line stationing stakes have been cleared and staked where the road will be extended.*

    July 16 Comment: This comment has been partially addressed. The certificate was supplied and the center line stationing stakes have been set, however the area has not yet been cleared.

    ADE Response: The area was cleared during staking but appears to have grown back in.

13. *In accordance with Subdivision Regulations Section 5.3(1)(k), please submit soil surveys or test pits or borings every 100' along the extension of the proposed roadway or request a waiver from this requirement.*

    July 16 Comment: A waiver request for this requirement has been submitted. The Planning Board should decide if they are amenable to this request.

    ADE Response: No additional response required.

14. *Please identify trees that will be removed as a result of the roadway widening and extension. Also identify trees within the ROW that will be retained.*

    July 16 Comment: This comment has been addressed.

    ADE Response: No additional response required.

15. *In accordance with Subdivision Regulations Section 5.3(1)(i), please provide drainage calculations certified by the engineer who prepared them.*

    July 16 Comment: A Stormwater Report has been submitted. This comment has been addressed.

    ADE Response: No additional response required.

16. *In accordance with Subdivision Regulations Section 5.3(1)(k), please submit soil surveys or test pits or borings every 100' along the extension of the proposed roadway or request a waiver from this requirement.*

    July 16 Comment: A waiver request for this requirement has been submitted. The Planning Board should decide if they are amenable to this request.

    ADE Response: No additional response required.

17. *In accordance with Subdivision Regulations Section 5.3(1)(j), please provide details and locations of proposed erosion control measures.*

    July 16 Comment: This comment has been addressed.

    ADE Response: No additional response required.

18. *Please provide environmental analysis in conformance with Subdivision Regulations, Section 5.3(4).*

    July 16 Comment: A waiver request for this requirement has been submitted. The Planning Board should decide if they are amenable to this request.

ADE: Response: The project has received approval with the towns conservation commission, see order of conditions #224-0788 dated April 4, 2019. Based on this and the fact that substantial additional stormwater treatment improvements over existing are incorporated into the design we request for a waiver.

19. *Note that walls retaining 4 or more feet of unbalanced fill require a structural engineer's stamp and building permit.*

    July 16 Comment: Comment to this effect was placed on the revised plan.

    ADE: No response required.

Additional Comments:

20. *The Applicant requests the following additional waivers from the Rules and Regulations Governing the Subdivision of Land:*

    a. *Section 7.2.4 and 7.2.5 – Preparation and Surfacing of Streets*
    The Applicant requests a waiver to allow Colton Road Extension to be constructed with 8" of compacted gravel per MassDOT Specification M1.03.0 Type B. As reflected above under comment #3, it is my opinion that the newly constructed section of roadway/cul-de-sac should be built in accordance with Subdivision design standards (Section 7.2) with regards to gravel base, binder and top course of pavement.

    ADE: See response to item #2 above.

    b. *Section 6.5.2 – Street Trees*
    Given the wooded nature of the area, I recommend that the Planning Board grant this waiver request.

    ADE: No response required.

    c. *Section 6.5 – Cul-de-sac Plantings*
    This waiver is not necessary as the Applicant does not propose to install a cul-de-sac island.

    ADE: No response required.

    d. *Section 6.7.6 – Width*
    The Applicant requests a waiver to allow Colton Road Extension to be constructed at 18' width so that it is consistent with the widened width of the existing roadway. I recommend that the Planning Board grant that waiver request.

    ADE: No response required

e. Section 6.10 – Curbing
Given the proposed elevations and fact that a grass swale is proposed around the cul-de-sac, I recommend that the Planning Board grant this waiver request.

ADE: No response required

f. Section 6.13 – Sidewalk
Given the rural nature of the roadway, I recommend that the Planning Board grant this waiver request.

ADE: No response required

21. *The Applicant proposes to convert an informal parking lot at the trailhead of the Colton Conservation Area (near STA 4+00) into a stone filled infiltration area. The Applicant should reconstruct the informal parking lot elsewhere. I recommend revising the plan to denote the location of and detail for the new informal parking lot. I recommend surfacing for the new informal parking lot that is consistent with what exists currently (millings).*

    ADE: The plan has been updated with a re-configured informal parking lot with the recommended surfacing.

22. *Where will flow from swale along north side of Colton Road (STA 6+35 to STA 7+57) be directed?*

    ADE: The swale locations have been redesigned and the updated plan shows the updated locations.

23. *Colton Road between Stations 7+57 and 10+00 has obvious problems with erosion and rutting along the south side. The proposed road profile in this location does not include provision for any stormwater mitigation despite the fact that the slope of the roadway varies between as much as 10% and 12.33% in this location. I strongly recommend construction of a stone-lined swale along the south side of the roadway in this location.*

    ADE: A roadside swale is now included in this section, see plan for location.

24. *Where will flow from swale along the south side from STA 16+90 to STA 19+45 be directed?*

    ADE: The road grading and swale locations have been re-designed to be on the norther side.

25. *Please provide a detail showing how stormwater from proposed swales will be directed under existing driveways.*

ADE: The swale locations have been reconfigured and where they intercept a driveway additional detail has been added to indicate how stormwater will be directed.

26. *Please update the note on Sheet 1 to specify that street numbers are assigned by the Millbury Police Department.*

    ADE: The note has been updated to reflect this.

Planning Board Comment on Design Slopes during the July 20th hearing:

The board commented that the design slopes for Colton road should be designed at a maximum grade of 8% per the subdivision regulations.

ADE Response: Colton road has been re-designed to get as much of the road to 8% or flatter as possible as was pointed out by Richard Gosselin during the hearing. Unfortunately, it is impossible to achieve 8% throughout the entire length due to existing access points that intersect Colton Road. There are residential driveways, access roads for the electric company, and an informal parking lot for a hiking/nature trail that limit the ability to achieve 8% for the entire length. Many design scenarios were run to achieve 8 %, for example, the section between 4+00 to 10+00 during the initial design was run at 8% by cutting the slope down substantially as was recommended by one of the board members, Richard Gosselin. Unfortunately, this required a substantial drop in elevation at the two access drives for the electric utility easement. Our design shifted at this point to providing as much of an improvement to the 8% as possible while maintaining grades at the existing access points.

The plans show the improvements that we were able to accomplish with these constraints. The improvements include a reduction of the overall slopes greater than 8% from approximately 750 ft to 400 ft while incorporating vertical curves. Additionally, the sections steeper than 8% were held to 200 ft or less. Substantial improvements to stormwater have also been incorporated including the addition of erosion control measures, road side rock lined swales, and riprap/stone filled settling areas. The Colton road extension portion was designed to have less than 6% slopes on the approach to the cul-de-sac and maintains 4% along the cul-de-sac meeting significant requirements of the subdivision regulations. In summary, we feel we have made every effort within reason to address the boards concerns regarding the slope of Colton road and would reiterate that the residents will have the most to benefit from this project considering the limited use of a solar project after it is constructed.

Please call us at (508) 888-9282 if you should have any questions.

Sincerely,

ATLANTIC DESIGN ENGINEERS, INC.

Richard J. Tabaczynski, P.E.
Vice President

cc: Dave Glenn, Stantec, Inc.

August 10, 2020

David Glenn, P.E.
Senior Civil Engineer
Stantec Consulting Services
5 Burlington Woods Drive, STE 210
Burlington, MA 01803-4542

RE: Response to Engineering Peer Review Comments, July 13, 2020
Colton Road Extension
7 Colton Road – Millbury, MA
ADE Job #3085.00

Dear Mr. Glenn:

This response letter addresses the comments made in the Peer Review Comment letter from David Glenn, P.E. of Stantec Consulting Services Inc. dated July 13, 2020 for the above-referenced project. Please note Stantec's comments are italicized, and our responses follow in bold text.

Section 5 – Procedures for the Submission and Approval of Subdivision Plans

Subsection 5.3.1 and 5.3.2 – Definitive Plan submission requirements and contents, requires specific information be shown on the Definitive Plan. We offer the following comments for the Board's consideration.

The following list refers to the Millbury Planning Board Submission of Definitive Plan Requirements:

2d. We request a property line/right-of-way plan of "Colton Road" be submitted by ADE.

ADE Response: A Right of way plan has been added to the sheet set.

2n. For comments on the existing and proposed drainage see subsection 6.71 Stormwater Management, and Stormwater Management Plan section in subsequent section of this letter report.

Subsection 5.3.3 – Street Plans and Profiles

• *Bearings and distances of Colton Road Extension centerline need to be identified on the definitive plan.*

ADE Response: Colton Road Extension Centerline has been labeled.

• *Revise the Colton Road Extension profile to identify existing ground right and left side.*

ADE Response: The profile has been revised to show the existing grade at a 10 ft offset for the left and right sides for the Colton Road extension.

Subsection 5.3.4 – Environmental Analysis

An Environmental Analysis was not included in the submitted material. We question if the applicant has requested a waiver from the Environmental Analysis requirements as per the Subdivision Rules and Regulations.

ADE Response: A waiver for the Environmental Analysis has been requested.

Subsection 5.3.5 – Construction Plan

A Construction Plan was not included in the submitted material. We question if the applicant has requested a waiver from the Construction Plan requirements as per the Subdivision Rules and Regulations.

ADE Response: The construction related information is included in the plan set. A waiver will be requested to address this.

Subsection 5.3.6 – Erosion and Sediment Control Plan

We recommend proposed erosion and sedimentation controls be identified on plan and profile sheets 4, 5 and 6 associated with "Colton Road".

ADE Response: Sediment controls are identified on sheets 4, 5 and 6 and are indicated with a dashed linetype. Sediment controls are located down gradient of the proposed work.

Section 6 – Roadway Design Standards

1. Ingress and egress to 7 Colton Road is shown off Riverlin Street via an existing private variable width dead-end drive entitled "Colton Road" of approximately 2000 feet in length to the solar array project area. Colton Road surface treatment is a combination of paved and gravel segments varying in width between 12 and 15 feet. We recommend ADE prepare a description of the proposed improvements associated with Colton Road such as roadway cross section, width, surface treatment and drainage.

ADE Response: The roadway cross sections are shown in the details sheet indicating the width, surface treatment and associated drainage. Additional drainage information is provided in the plan and profiles. Based on this information being available on the plans we feel an additional narrative to describe these items to be unnecessary.

2. The proposed extension of Colton Road is approximately 150 feet and consists of an 18- foot wide gravel road and 100- foot diameter gravel cul-de-sac, 2-foot grass shoulders, retaining wall, rip-rap swales and stone infiltration trench with no sidewalk or curbing. Stormwater runoff from the proposed roadway extension is collected and conveyed through proposed grass /rip-rap swales along the proposed roadway and discharged into an infiltration basin located within the adjacent 7 Colton Road property. We note ADE has requested a series of waiver regarding roadway surface treatment and width, curbing, sidewalk, trees, plantings, test pits and environmental analysis.

ADE Response: A waiver has been requested.

3. The roadway cross-section as shown on sheet 7 identifies a 8-inch gravel surface treatment with 4-inches of pavement millings on slopes steeper than 6 percent which is not in compliance with the required gravel sub-base and pavement thickness of 2.5" binder and 1.5" top.

ADE Response: The applicant has requested a waiver for this understanding the limited traffic this road and cul-de-sac will experience.

4. As per the Board's Design Standards, roadway vertical curves shall be designed to provide a minimum stopping sight distance of 200 feet. We recommend the proposed stopping sight distance be labeled at each roadway tangent. No vertical curves are provided along the proposed centerline roadway grades.

ADE Response: The subdivision regulations state indicates a preferred minimum stopping sight distance of 200 ft while 150 ft may be permitted. All proposed vertical curves along Colton road have a stopping sight distance of over 150 ft with exception to the vertical curve located at approximately 19+40. At this location we anticipate traffic to be limited to 4 trips per year for the solar project and anticipate a max speed of 15 mph. Stopping sight distance for this speed from FHWA AASHTO's Signalized Intersections Information Guide indicate a design distance of 80 ft (minimum) should be used. The current design is providing 82.3' of stopping sight distance. The applicant will request a waiver for this.

5. The applicant has requested a waiver regarding the required 22 feet of paved travel way. The applicant is proposing 18 feet of compacted gravel with 4-inches of pavement millings on slopes steeper than 6 percent. We recommend these issues be discussed by the applicant with the Board.

ADE Response: No response required.

6. We recommend the control of stormwater runoff within the existing Colton Road be addressed by ADE. No formal stormwater analysis of the existing Colton Road (approximately 2,000 feet) was provided by ADE

ADE Response: Currently there are not any measures for stormwater runoff or erosion provided for Colton road. We are proposing many improvements including road side rock lined swales to rip rap settling areas, re-graded roadway slopes to divert stormwater to swales, and erosion controls along the downgradient edge. Based on these improvements we believe the control of stormwater will be greatly improved over existing and therefore stormwater analysis is unnecessary.

STORMWATER MANAGEMENT PLAN

The submitted Definitive Plan provides a layout of the proposed drainage system facilities, including Best Management Practices (BMPs) such as an infiltration trench associated with the proposed 150-foot long roadway extension/cul-de-sac. No formal stormwater analysis of the existing Colton Road (approximately 2,000 feet) was provided by ADE. The road extension proposes no impervious area and has been graded to direct stormwater to the infiltration trench with an overflow. The stormwater analysis shows a minor change in a watershed that was previously reviewed and approved by the Town as part of the stormwater design for the 7 Colton Road Solar Project. The submitted Stormwater Management Report included calculations that provide an analysis of the site hydrology for existing and proposed conditions during the 2-, 10-, 25- and 100-year storm events.

The report includes a narrative with attachments which addresses the Town's General Bylaws for Stormwater Management. The Bylaws include addressing the Massachusetts Department of Environmental Protection (MassDEP) Stormwater Management Standards. Stantec offers the following comments for the Board's consideration.

Chapter 16 – Water, Sewer, and Sewage Disposal, Section 16-3 – Post-construction Stormwater Management of New Developments and Redevelopments, Subsection 7 – Stormwater Management Plan of the Town's General Bylaws identifies information required for the Board to evaluate the environmental impact, effectiveness, and acceptability of the proposed measures, as

well as meet the Massachusetts Stormwater Management Standards as set by the Department of Environmental Protection (DEP). The Project Definitive Plan appears to conform to the Town's Stormwater Management Plan requirements, with the following exceptions.

The following list refers to the Millbury Plan Board Submission of Stormwater Plan Review Checklist. Our review has only included "design" related items as part of the checklist.

l) The estimated seasonal high groundwater elevation near the proposed infiltration trench is not shown on the plans and the prepared boring logs are not provided in the Stormwater Management Report. .

ADE Response: The stormwater structure has been redesigned to be a settling area. Since it is not infiltrating stormwater boring logs are not applicable.

m) The existing and proposed ground cover and runoff coefficients have been provided in the Stormwater Management report.

ADE Response: No response required

n) Drainage area maps showing pre-and post-construction watershed boundaries, drainage area and stormwater flow paths has been provided.

ADE Response: No response required

o) See the General Stormwater comments section at the end of this report.

ADE Response: No response required

p) The location of proposed improvements has been identified on the plans.

ADE Response: No response required

q) A construction sequence has been provided on the Erosion & Sedimentation Control Plan.

ADE Response: No response required

r) A maintenance schedule during construction has been provided. See comments below in Standard #8.

ADE Response: See comments below in Standard #8.

s) For comments on the Operation and Maintenance Plans, see Standard #9 below.
MassDEP Stormwater Standards

ADE Response: See comments below in Standard #9.

1. Standard 1 - No new stormwater conveyances (e.g. outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.

ADE has provided sufficient information to meet this standard.

ADE Response: No response required

2. Standard 2 - Stormwater management systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. This Standard may be waived for discharges to land subject to coastal storm flowage as defined in 310 CMR 10.04.

Our review of the drainage calculations is as follows:

a. We note that a test pit is needed near the proposed infiltration trench.

ADE Response: The stormwater structure has been redesigned to be a settling area. Since it is not infiltrating stormwater boring logs/test pits are not applicable.

b. We note that the proposed infiltration trench is on the plan set but not modeled in the HydroCAD Report. We recommend ADE clarify and revise the plans/report as necessary.

ADE Response: The structure has been re-designed to be a settling area. Furthermore, we have conservatively provided pre- and post-development peak discharge rates without the minimal attenuation this structure would provide. The effect on the post development peak rates will be minimal and/or show a decrease in stormwater runoff and because of this we feel it is unnecessary to include in the model.

3. Standard 3 - Loss of annual recharge to groundwater shall be eliminated or minimized through the use of infiltration measures including environmentally sensitive site design, low impact development techniques, stormwater best management practices, and good operation and maintenance. At a minimum, the annual recharge from the post-development site shall approximate the annual recharge from pre-development conditions based on soil type. This Standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook.

The proposed gravel road extension does not include any new measurable impervious surface to the previously approved stormwater design for the 7 Colton Road Solar Project. The Applicant has provided sufficient information to meet this standard.

ADE Response: No response required

4. Standard 4 - Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS).

The proposed gravel road extension does not include any new measurable impervious surface to the previously approved stormwater design for the 7 Colton Road Solar Project. ADE has provided sufficient information to meet this standard.

ADE Response: No response required

5. Standard 5 - For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through source control and/or pollution prevention all land uses with higher potential pollutant loads cannot be completely protected from exposure to rain, snow, snow melt, and stormwater runoff, the proponent shall use the specific structural stormwater BMPs determined by the Department to be suitable for such uses as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53 and the regulations promulgated thereunder at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.

ADE has provided a statement that meets the Standard.

ADE Response: No response required.

6. Standard 6 - Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply, and stormwater discharges near or to any other critical area, require the use of the specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas, as provided in the Massachusetts Stormwater Handbook. A discharge is near a critical area if there is a strong likelihood of a significant impact occurring to said area, taking into account site-specific factors. Stormwater discharges to Outstanding

Resource Waters and Special Resource Waters shall be removed and set back from the receiving water or wetland and receive the highest and best practical method of treatment. A "storm water discharge" as defined in 314 CMR 3.04(2)(a)1 or (b) to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00 and 314 CMR 4.00. Stormwater discharges to a Zone I or Zone A are prohibited unless essential to the operation of a public water supply.

ADE has provided a statement that meets the Standard.

ADE Response: No response required.

7. Standard 7 - A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.

ADE has provided a statement that meets the Standard.

ADE Response: No response required.

8. Standard 8 - A plan to control construction-related impacts including erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be developed and implemented.

ADE has provided a Construction Period Erosion and Sedimentation Control plan on the Site plans. The Construction Period Pollution Prevention and Erosion and Sedimentation Control narrative has not been provided. We recommend ADE provide a narrative describing the controls as required in the MassDEP Checklist for Stormwater Report.

ADE Response: As mentioned, the construction Period Erosion and Sedimentation Control plan are included on the site plans and we consider this to meet the requirements of the MassDEP checklist. Additionally, this information was provided in a similar way on the two solar projects last year so we question why we now need to provide an additional narrative when it was not required previously.

9. Standard 9 - A long-term operation and maintenance plan shall be developed and implemented to ensure that stormwater management systems function as designed.

ADE has provided a Long-Term Operation and Maintenance Plan as part of the Stormwater Management Report. Our review of the Operation and Maintenance Plan is as follows:

a. An Operation and Maintenance Log has not been provided. We recommend ADE provide a log.

ADE Response:

b. According to the Millbury Planning Board Submission of Stormwater Plan Review Checklist, the plan shall include:
(1) The list of easements with the purpose and location of each.
ADE Response: The drainage easement was listed in the Operation and Maintenance Plan as requested.

(2) Signatures of the owners.
ADE Response: We have reached out to the owner and are awaiting for their return signature to complete this request. Upon receipt we will provide it to the planning board and Stantec.

We recommend ADE revise the Operation & Maintenance Plan to include the above-listed.

10. Standard 10 - All illicit discharges to the stormwater management system are prohibited.

An illicit discharge signed statement has not been provided. We recommend ADE submit this statement signed.

ADE Response: An illicit discharge statement with signature is provided in the Long Term Stormwater Operation and Maintenance plan, See item number 3 for this statement.

General Stormwater Comments

1. We note that the proposed infiltration trench requires a test pit performed within the footprint of the trench. A boring log and infiltration rate shall also be provided by ADE.

ADE Response: The structure has been re-designed to be a settling area and therefore this is not applicable.

2. Stantec recommends modeling the infiltration trench in the drainage calculations. We note that the proposed infiltration trench overflow is at an elevation 492.7'. Clarify the depth and elevations of the trench and model in HydroCAD. Clarify the overflow in the detail.

ADE Response: See response to Standard 2 above (b). Details of the structure are provided on sheet 7.

3. Stantec recommends including an observation well in the 30 ft long infiltration trench.

ADE Response: The structure has been re-designed to be a settling area and therefore this is not applicable.

Please call us at (508) 888-9282 if you should have any questions.

Sincerely,

ATLANTIC DESIGN ENGINEERS, INC.

Richard J. Tabaczynski, P.E.
Vice President

Atlantic
DESIGN ENGINEERS, INC.

August 10, 2020

Millbury Planning Board
Municipal Office Building
127 Elm Street
Millbury, MA 01527

RE: Revised List of Requested Waivers
Definitive Subdivision Plan for Colton Road Extension
7 Colton Road – Millbury, MA

Dear Board Members:

We respectfully request on behalf of the applicant (Next Grid Colton, LLC) the following list of waivers to the requirements of the Rules and Regulations governing the Subdivision of Land relative to the Definitive Subdivision Plan for Colton Road Extension:

-Section 7.2.4 and 7.2.5 – Preparation and Surfacing of Streets
Request waiver to allow Colton Road Extension to be constructed with 8" of compacted gravel per MassDOT Specification M1.03.0 Type B. This is consistent with the existing unpaved portions of Colton Road leading up to Colton Road Extension.

-Section 6.5.2 – Street Trees
Request waiver of the requirement for Street Trees. Colton Road Extension is surrounded by existing wooded/treed areas that will remain natural/uncleared.

-Section 6.5 – Cul-de-Sac Plantings
Request waiver of the requirement of Cul-de-Sac Plantings. There is no island proposed in the center of the cul-de-sac.

-Section 6.7.6 – Width
Request waiver to allow a travelled way width of 18'. This is consistent with the existing unpaved portions of Colton Road leading up to Colton Road Extension, and is the width deemed adequate by the Fire Department.

-Section 6.10 – Curbing
Request waiver of the requirement to install curbing. This is consistent with the existing unpaved portions of Colton Road leading up to Colton Road Extension.

-Section 6.13 – Sidewalk
Request waiver of the requirement to install sidewalks. This is consistent with the existing unpaved portions of Colton Road leading up to Colton Road Extension.

-Section 5.3 – Definitive Plan Submission Requirements - Environmental Analysis
Request waiver of the requirement to prepare an Environmental Analysis. Colton Road Extension is a short, 150' long 18' wide gravel road that is simply providing legal frontage for only one, single existing lot, on which a solar array has already been reviewed and approved by the Planning Board and Conservation Commission. Therefore, we feel the environmental impacts are negligible and preparation of an Environmental Analysis is an unnecessary expense.

-Section 5.3 – Definitive Plan Submission Requirements – Test Pits/Borings
Request waiver of the requirement to provide test pits or borings. We feel that test pits/borings for a short 150' gravel road extension is an unnecessary expense and will not have any affect on the design.

-Section 6.7.4 – 150 ft Stopping Sight Distance
The subdivision regulations state indicates a preferred minimum stopping sight distance of 200 ft while 150 ft may be permitted. All proposed vertical curves along Colton road have a stopping sight distance of over 150 ft with exception to the vertical curve located at approximately 19+40. At this location we anticipate traffic to be limited to 4 trips per year for the solar project and anticipate a max speed of 15 mph. Stopping sight distance for this speed from FHWA AASHTO's Signalized Intersections Information Guide indicate a design distance of 80 ft (minimum) should be used. The current design is providing 82.3' of stopping sight distance. The applicant will request a waiver for this.

-Section 5.3.5 – Construction Plan
The applicant is requesting a waiver for the construction plan requirement as the construction information is included in the submitted plan set.

Please call me at (508) 888-9282 if you should have any questions.

Sincerely,

ATLANTIC DESIGN ENGINEERS, INC.

Richard J. Tabaczynski, P.E.
Vice President