

PROJECT INFORMATION

SITE ADDRESS - 23 CENTRAL STREET, BYFIELD, MA || ASSESSOR MAP R-20-0-28

OWNER - R&E REALTY TRUST, 2 FRUIT STREET, BYFIELD MA 01922  
TRUSTEES RONALD O. PEARSON & EDNA L. PEARSON

APPLICANT - A.L. PRIME ENERGY CONSULTANT, INC., 18 LARK AVE, SAUGUS MA  
- ANTHONY GUBA, ENGR - 512-745-6400  
- NASSER ABU-EID, VP - 617-212-3551

EMERGENCY - 911 || DIGSAFE - 811  
BYFIELD INSPECTIONAL SVCS AND BLDG COMMISSIONER - 978-465-0862  
BYFIELD FIRE DEPT (BUSINESS) - 978-462-2282  
BYFIELD POLICE (BUSINESS) - 978-462-4440  
BYFIELD PUBLIC WORKS - 978-465-0112

ELECTRIC UTILITY - NATIONAL GRID - 800-233-5325  
GAS UTILITY - NATIONAL GRID - 800-233-5325  
WATER UTILITY - BYFIELD WATER DISTRICT - 978-462-3023  
SEWER UTILITY - ON SITE SEPTIC SYSTEM, BD OF HEALTH - 978-465-0862 x316

PROJECT GENERAL SCOPE OF WORK

THIS PROJECT IS INTENDED TO REPLACE THE EXISTING NON-CONFORMING RESIDENTIAL USE WITH AN ALLOWED BUSINESS USE - NEW CONVENIENCE STORE AND GAS STATION. THE WORK WILL INCLUDE:

- DEMOLISH ALL EXISTING IMPROVEMENTS AT THE PROPERTY
- INSTALL NEW STORMWATER STRUCTURES INCLUDING SUBSURFACE INFILTRATION
- CONSTRUCT NEW ~4,000 SF CONVENIENCE STORE INCLUDING COFFEE DRIVE-THRU (WITH LIMITED INSIDE SEATING).
- INSTALL ALL NEW UTILITIES
- CONSTRUCT NEW STEEL CANOPY OVER FUELING AREAS
- INSTALL UG MOTOR FUEL STORAGE TANKS AND ASSOCIATED UG PIPING TO INCLUDE DIESEL, FUEL DISPENSERS, ISLANDS, AND DRY CHEMICAL FIRE SUPPRESSION SYSTEM AT FUELING AREA
- INSTALL ALL NEW CURBING, PAVING, ACCESS DRIVEWAYS AND SITE LANDSCAPE
- THE BUSINESS IS PROPOSED TO OPERATE 24 HRS

CODES SUMMARY

- CODES:
- MA STATE BUILDING CODE 780, 9TH EDITION BASED ON MODIFIED VERSION OF 2015 INTERNATIONAL CODES AS PUBLISHED BY INTL CODE COUNCIL (ICC):
    - IBC - INTL BUILDING CODE
    - IECC - INTL ENERGY CONSERVATION CODE
    - IMC - INTL MECHANICAL CODE
    - IFC - PORTIONS OF INTL FIRE CODE
  - MA STATE FIRE CODE 527 CMR 1.00, 2015 EDITION
  - MA ELECTRICAL CODE 527 CMR 12.00, 2017 EDITION
  - MA UNIFORM STATE PLUMBING CODE 248 CMR 10, 2017 EDITION
  - ARCHITECTURAL ACCESS BOARD REGULATIONS CMR 521 CMR
  - EPA GEN CONST PERMIT - SITE IS LESS THAN ONE ACRE AND CONST PHASE RUNOFF WILL BE RETAINED ON SITE. HOWEVER, GC TO VERIFY NPDES PERMIT NOT REQ'D PRIOR TO CONST

OCCUPANCY - USE GROUP M MERCANTILE - CONVENIENCE STORE AND GAS STATION  
TOTAL GROSS FOOT AREA - ~4,000 GFA CONVENIENCE STORE  
CONSTRUCTION TYPE - IIIB - NON COMBUSTIBLE EXT WALLS, STEEL ROOF FRAMING/DECK  
HEIGHT - ~20'-2" (SINGLE STORY)

- EGRESS:
- MAX EGRESS TRAVEL DISTANCE - 75 FEET - SINGLE STORY
  - PROVIDED EGRESS WIDTH - 72" - ONE EACH EGRESS AT FRONT CENTER
  - OCCUPANCY CALC - 69 = 60 MERCANTILE + 4 KITCHEN + 5 STORAGE
  - OCCUPANCY EXCEEDING 49 REQUIRES SECONDARY EGRESS

FIRE PROTECTION: UNPROTECTED CONSTRUCTION. PROVISIONS MADE FOR SMOKE DETECTORS, EMERGENCY LIGHTING AND SIGNAGE, HORN AND STROBE ANNUNCIATORS

- PLUMBING:
- COMPLY WITH STATE PLUMBING AND FUEL GAS CODES
  - MIN OF ONE RESTROOM FOR MEN AND ONE RESTROOM FOR WOMEN
  - COMPLY WITH BOARD OF HEALTH REQUIREMENTS FOR RETAIL AND FOOD SERVICE
  - ON-SITE SEPTIC SYSTEM PER APPROVED DESIGN
  - EXTERNAL GREASE TRAP TO BE INSTALLED

- ENERGY: CLIMATE ZONE 5
- WALLS - CMU WITH FURRED INTERIOR DRYWALL - R 13.3ci
  - FLAT ROOF - R 30 ci
  - SLAB ON GRADE - R-15 FOR 36" BELOW
  - WINDOWS AND STOREFRONT
    - SOUTHWEST FACING
    - <30% WALL AREA
    - NO OPERABLE FENESTRATION
    - U 0.38 FIXED, 0.77 ENTRANCE DOOR

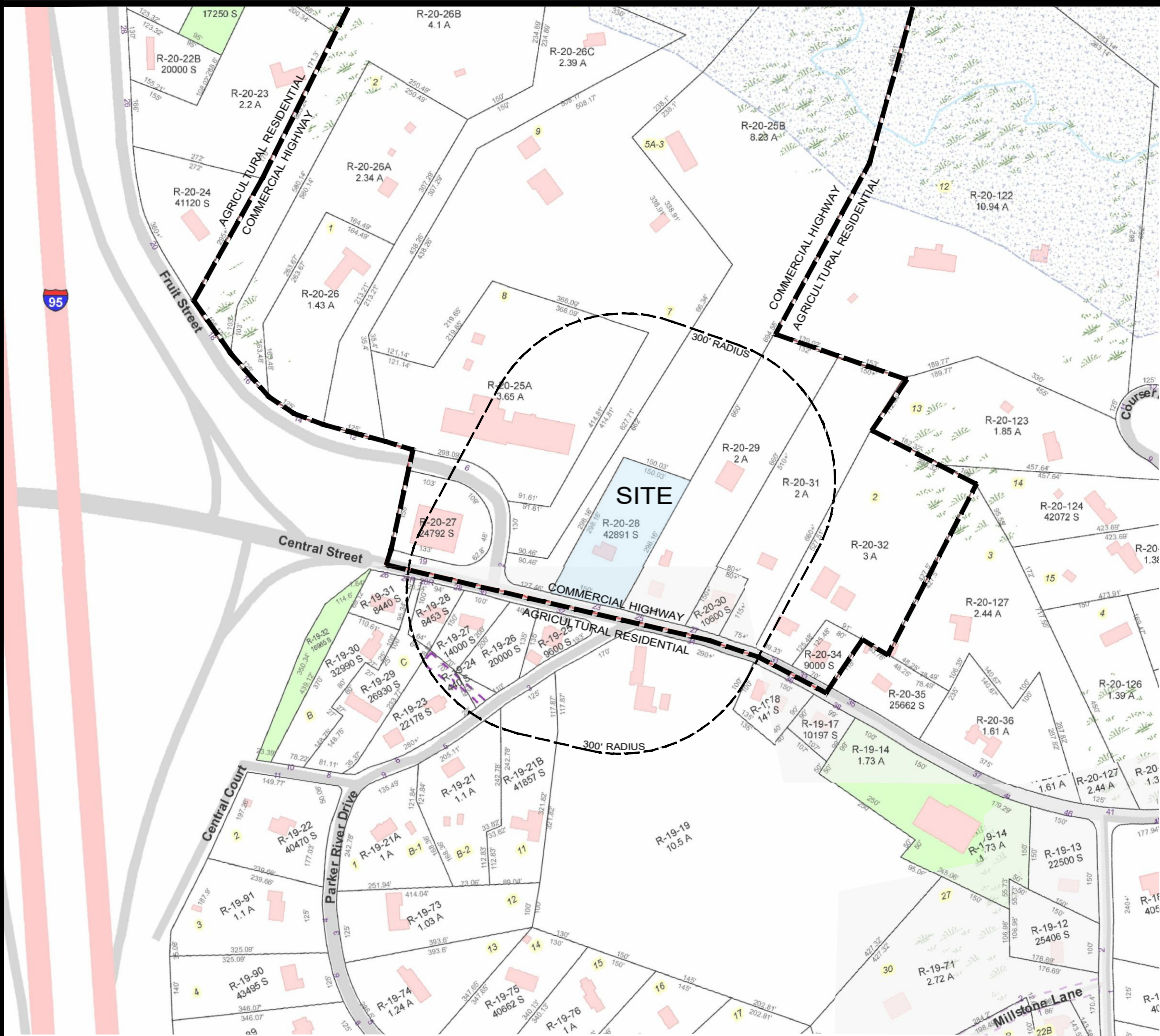
- DESIGN LOADS:
- GROUND SNOW LOAD - 50 PSF
  - ROOF TOP MECH LOAD - POINT LOAD SPECIFIED ON STRUCTURAL SHEET
  - ROOF UPLIFT - 40PSF
  - PRESUMPTIVE SOIL BEARING - 2,500 PSF
  - DESIGN WIND LOAD - (I) 114MPH, (II) 125MPG, (III) 136MPG
  - SEISMIC S1- 0.077



A.L. PRIME ENERGY  
CONSULTANT, INC.  
18 LARK AVENUE  
SAUGUS MA 01906  
(781) 246-0201

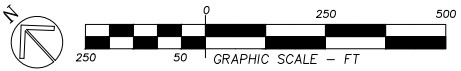
NEW GAS STATION, C-STORE, DRIVE-THRU  
A.L. PRIME #TBD  
23 CENTRAL STREET  
BYFIELD, MASS

APPLICANT CONTACT: ANTHONY GUBA, P.E. -- MOBILE 512-745-6400



VICINITY MAP

REFERENCE - TOWN OF NEWBURY ASSESSOR MAPS



APPROX SCALE

DRAWING INDEX

THIS SET ISSUED FOR SPR & SP 01/06/21 (4th) HRG, W/ REV PER CMTS

			ORIG DATE	LAST REV	REV DATE
C-0	COVER	01	29 APR 2020	4	13 DEC 20
1 of 2	EXSTG CONDITIONS SHT 1 OF 2 (ELS, LLC)	02	12 DEC 2019	4	20 AUG 20
2 of 2	EXSTG CONDITIONS SHT 2 OF 2 (ELS, LLC)	03	12 DEC 2019	4	20 AUG 20
1	EASEMENT PLAN SHT 1 (ELS, LLC)	04	22 SEP 2020	NONE	N/A
C-1.0	PROPOSED SITE IMPROVEMENTS	05	29 APR 2020	4	13 DEC 20
C-2	GRADING	06	29 APR 2020	3	2 DEC 20
C-3	UTILITIES	07	29 APR 2020	3	2 DEC 20
ER-1	EROSION CONTROL	08	29 APR 2020	3	13 DEC 20
SW-1	STORMWATER AREAS	09	29 APR 2020	3	2 DEC 20
L-1	LANDSCAPE	10	29 APR 2020	3	27 NOV 20
6493	LIGHTING (RED LEONARD ASSOC)	11	04 DEC 2019	1	1 SEP 20
TR-1	EMGCY, TANKER, & DRIVE-THRU VEH PATH	12	29 APR 2020	2	28 OCT 20
TK-1	TANK AND PIPING LAYOUT	13	29 APR 2020	4	13 DEC 20
TK-2	TANK AND PIPING DETAILS	14	29 APR 2020	NONE	N/A
FSP-1	SELF SERVICE FIRE SUPPRESSION	15	29 APR 2020	3	13 DEC 20
FSP-2	SELF SERVICE FIRE SUPPRESSION	16	29 APR 2020	2	28 OCT 20
SD-1	SITE DETAILS	17	29 APR 2020	2	28 OCT 20
SD-2	SITE DETAILS	18	29 APR 2020	3	13 DEC 20
A1.0	FLOOR PLAN	19	29 APR 2020	3	13 DEC 20
A2.1	BUILDING ELEVATIONS	20	29 APR 2020	1	23 SEP 20
A2.2	BUILDING ELEVATIONS	21	29 APR 2020	2	28 OCT 20
A2.3	CANOPY ELEVATIONS	22	29 APR 2020	2	28 OCT 20
SG-1	SIGN AND GRAPHICS	23	29 APR 2020	1	23 SEP 20

13 DEC 2020  
28 OCT 2020  
23 SEP 2020  
19 MAY 2020  
29 APR 2020

REVISED PER PEER REVIEW COMMENTS DATED 11/16/2020  
REGRADED ENTIRE SITE, RELOCATED INF SYSTEMS AND UG TANKS  
ADDED EASEMENT PLAN AND PLAN REVISIONS AND DATES  
ADDED OWNER TRUST NAME AND ZONING LABELS TO MAP  
ORIGIN DATE OF DRAWING

4  
3  
2  
1  
0

AG  
AG  
AG  
AG  
AG

DATE  
BY  
DESCRIPTION

COMMONWEALTH OF MASSACHUSETTS  
ANTHONY GUBA  
121710  
REGISTERED  
PROFESSIONAL ENGINEER

A.L. PRIME ENERGY  
CONSULTANT, INC.  
18 LARK AVENUE  
SAUGUS MA 01906  
(781)246-0201

PROJECT ADDRESS  
BYFIELD, MA  
23 CENTRAL STREET

PROJECT COVER SHEET

DWG FILE  
TBD-019-01 BYFIELD

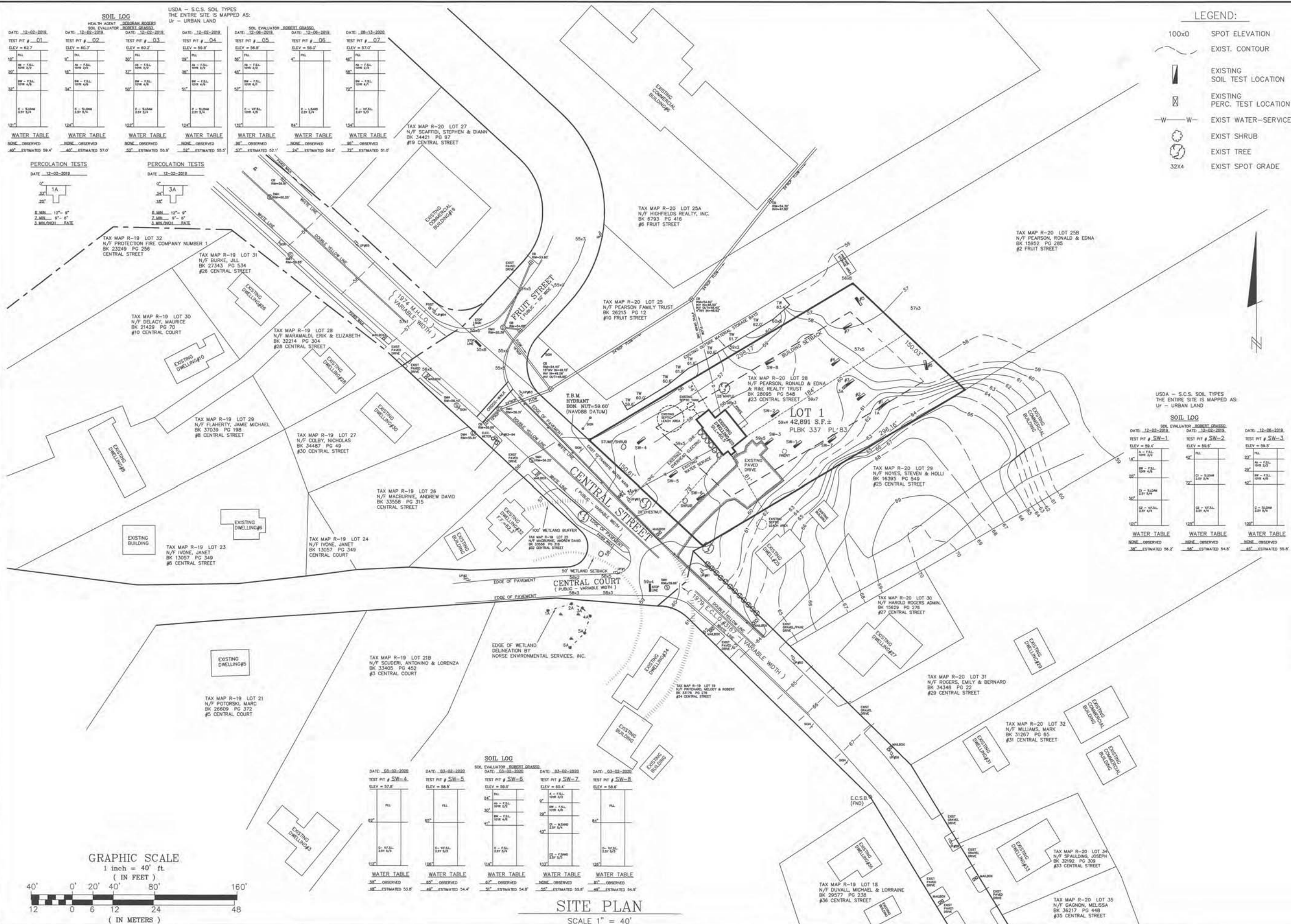
SCALE  
AS NOTED

SHEET  
C-0









LEGEND:

REVISIONS: 03-03-2020 08-12-2020 08-13-2020 08-20-2020	DRAWN: RMG CHECKED: RMG SCALE: 1" = 40' DATE: 12-17-2019 DWG NO. JCS-016-01-000-0000	SHEET No. 2 OF
--	--	----------------

Professional Engineer Seal for Robert M. Grasso, No. 40215, State of Massachusetts, Land and Surveyor.

TRUSTEES: RONALD & EDNA PEARSON

OWNER: R & E REALTY TRUST

TAX MAP R-20 LOT 28  
LOCUS DEED: BK 28095 PG 548

LOCATION: 23 CENTRAL STREET  
NEWBURY, MA 019

Engineering Land Services, L.L.C.

P.O. BOX 41  
WEST NEWBURY, MASS. 01985  
TEL: 978-815-6744 & 978-462-6800

SITE PLAN OF LAND  
EXISTING CONDITIONS

SHEET No 2 OF 2



CERTIFICATION IS HEREBY MADE THAT THE STRUCTURE(S) SHOWN ON THIS IS NOT LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA (100 YEAR) AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR:

COMMUNITY No. 25009C PANEL No. 0114F DATED: 03-JULY-2012

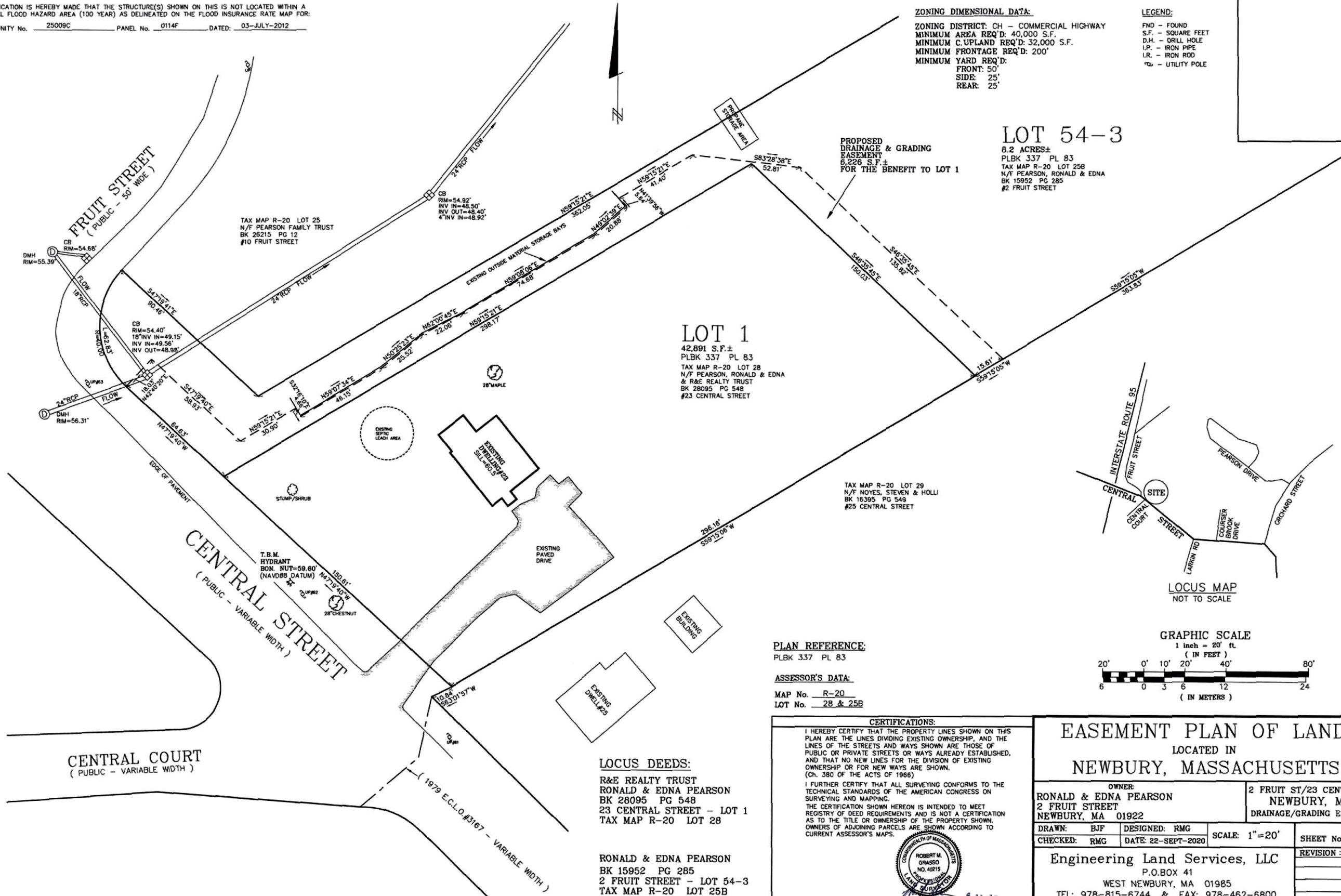
#### ZONING DIMENSIONAL DATA:

ZONING DISTRICT: CH - COMMERCIAL HIGHWAY  
MINIMUM AREA REQ'D: 40,000 S.F.  
MINIMUM C.UPLAND REQ'D: 32,000 S.F.  
MINIMUM FRONTAGE REQ'D: 200'  
MINIMUM YARD REQ'D:  
FRONT: 50'  
SIDE: 25'  
REAR: 25'

#### LEGEND:

FND - FOUND  
S.F. - SQUARE FEET  
D.H. - DRILL HOLE  
I.P. - IRON PIPE  
I.R. - IRON ROD  
U - UTILITY POLE

FOR REGISTRY USE ONLY:

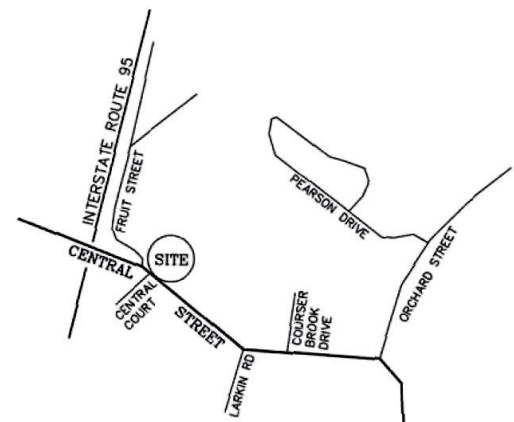


LOT 54-3

8.2 ACRES±  
PLBK 337 PL 83  
TAX MAP R-20 LOT 25B  
N/F PEARSON, RONALD & EDNA  
BK 15952 PG 285  
#2 FRUIT STREET

LOT 1

42,891 S.F.±  
PLBK 337 PL 83  
TAX MAP R-20 LOT 28  
N/F PEARSON, RONALD & EDNA  
& R&E REALTY TRUST  
BK 28095 PG 548  
#23 CENTRAL STREET



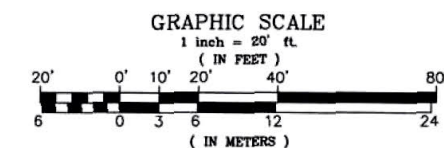
LOCUS MAP  
NOT TO SCALE

#### PLAN REFERENCE:

PLBK 337 PL 83

#### ASSESSOR'S DATA:

MAP No. R-20  
LOT No. 28 & 25B



#### LOCUS DEEDS:

R&E REALTY TRUST  
RONALD & EDNA PEARSON  
BK 28095 PG 548  
23 CENTRAL STREET - LOT 1  
TAX MAP R-20 LOT 28

RONALD & EDNA PEARSON  
BK 15952 PG 285  
2 FRUIT STREET - LOT 54-3  
TAX MAP R-20 LOT 25B

#### CERTIFICATIONS:

I HEREBY CERTIFY THAT THE PROPERTY LINES SHOWN ON THIS PLAN ARE THE LINES DIVIDING EXISTING OWNERSHIP, AND THE LINES OF THE STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED, AND THAT NO NEW LINES FOR THE DIVISION OF EXISTING OWNERSHIP OR FOR NEW WAYS ARE SHOWN.  
(Ch. 380 OF THE ACTS OF 1966)  
I FURTHER CERTIFY THAT ALL SURVEYING CONFORMS TO THE TECHNICAL STANDARDS OF THE AMERICAN CONGRESS ON SURVEYING AND MAPPING.  
THE CERTIFICATION SHOWN HEREON IS INTENDED TO MEET REGISTRY OF DEED REQUIREMENTS AND IS NOT A CERTIFICATION AS TO THE TITLE OR OWNERSHIP OF THE PROPERTY SHOWN. OWNERS OF ADJOINING PARCELS ARE SHOWN ACCORDING TO CURRENT ASSESSOR'S MAPS.

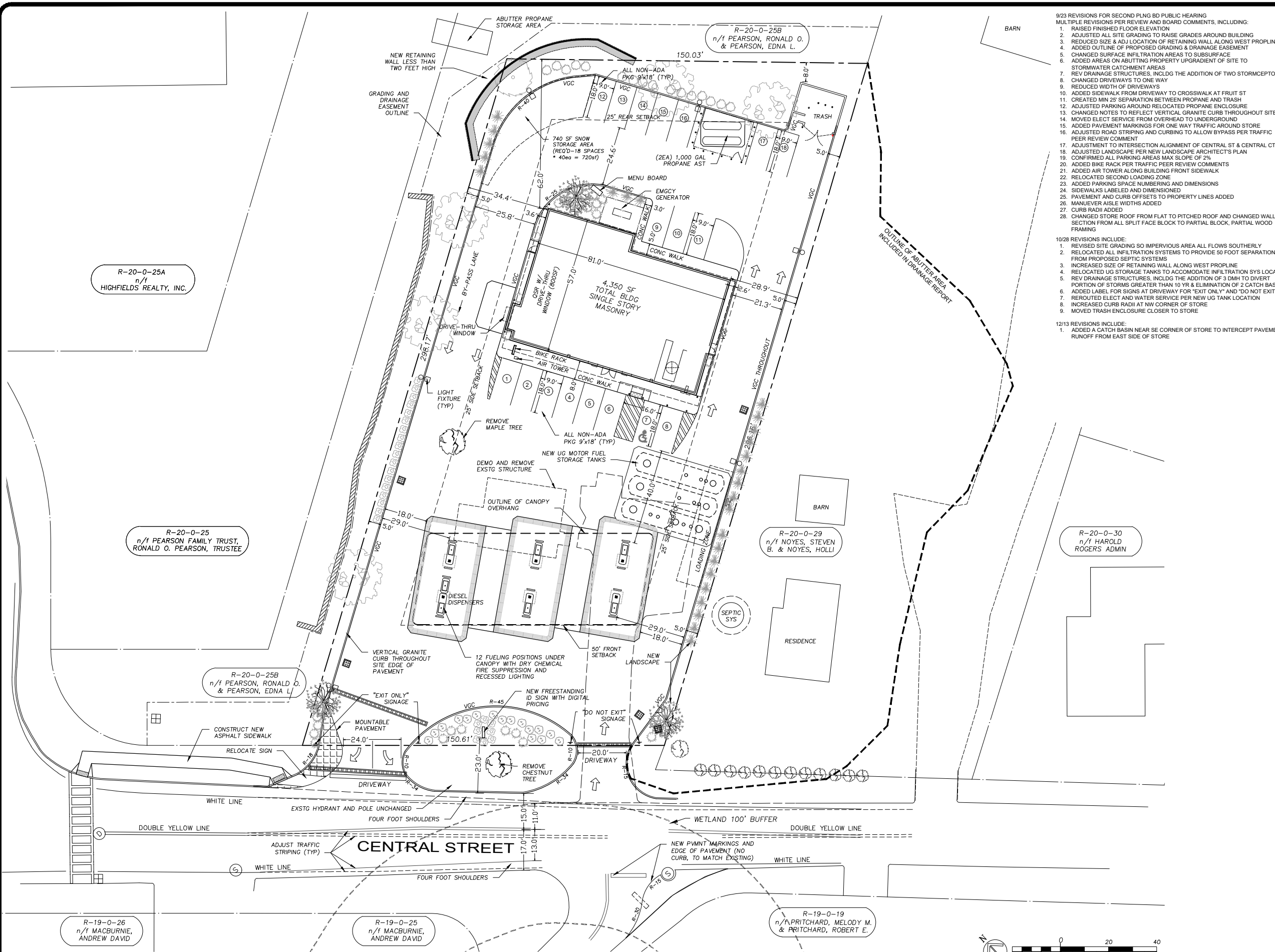


ROBERT M. GRASSO, P.L.S. #40215 DATE

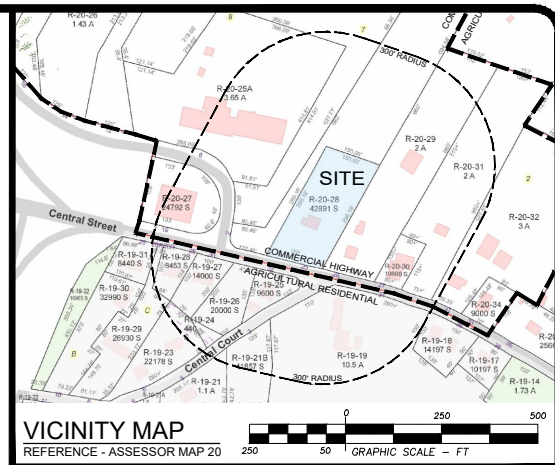
## EASEMENT PLAN OF LAND LOCATED IN NEWBURY, MASSACHUSETTS

OWNER: RONALD & EDNA PEARSON 2 FRUIT STREET NEWBURY, MA 01922		2 FRUIT ST/23 CENTRAL ST NEWBURY, MA DRAINAGE/GRADING EASEMENT	
DRAWN: BJF	DESIGNED: RMG	SCALE: 1"=20'	SHEET No. 1
CHECKED: RMG	DATE: 22-SEPT-2020		REVISION: BY
Engineering Land Services, LLC P.O. BOX 41 WEST NEWBURY, MA 01985 TEL: 978-815-6744 & FAX: 978-462-6800 EMAIL: MASSPLSRG@AOL.COM			





- 9/23 REVISIONS FOR SECOND PLNG BD PUBLIC HEARING  
MULTIPLE REVISIONS PER REVIEW AND BOARD COMMENTS, INCLUDING:
1. RAISED FINISHED FLOOR ELEVATION
  2. ADJUSTED ALL SITE GRADING TO RAISE GRADES AROUND BUILDING
  3. REDUCED SIZE & ADJ LOCATION OF RETAINING WALL ALONG WEST PROPLINE
  4. ADDED OUTLINE OF PROPOSED GRADING & DRAINAGE EASEMENT
  5. CHANGED SURFACE INFILTRATION AREAS TO SUBSURFACE
  6. ADDED AREAS ON ABUTTING PROPERTY UPGRADIENT OF SITE TO STORMWATER CATCHMENT AREAS
  7. REV DRAINAGE STRUCTURES, INCLDG THE ADDITION OF TWO STORMCEPTORS
  8. CHANGED DRIVEWAYS TO ONE WAY
  9. REDUCED WIDTH OF DRIVEWAYS
  10. ADDED SIDEWALK FROM DRIVEWAY TO CROSSWALK AT FRUIT ST
  11. CREATED MIN 25' SEPARATION BETWEEN PROPANE AND TRASH
  12. ADJUSTED PARKING AROUND RELOCATED PROPANE ENCLOSURE
  13. CHANGED NOTES TO REFLECT VERTICAL GRANITE CURB THROUGHOUT SITE
  14. MOVED ELECT SERVICE FROM OVERHEAD TO UNDERGROUND
  15. ADDED PAVEMENT MARKINGS FOR ONE WAY TRAFFIC AROUND STORE
  16. ADJUSTED ROAD STRIPING AND CURBING TO ALLOW BYPASS PER TRAFFIC PEER REVIEW COMMENT
  17. ADJUSTMENT TO INTERSECTION ALIGNMENT OF CENTRAL ST & CENTRAL CT
  18. ADJUSTED LANDSCAPE PER NEW LANDSCAPE ARCHITECT'S PLAN
  19. CONFIRMED ALL PARKING AREAS MAX SLOPE OF 2%
  20. ADDED BIKE RACK PER TRAFFIC PEER REVIEW COMMENTS
  21. ADDED AIR TOWER ALONG BUILDING FRONT SIDEWALK
  22. RELOCATED SECOND LOADING ZONE
  23. ADDED PARKING SPACE NUMBERING AND DIMENSIONS
  24. SIDEWALKS LABELED AND DIMENSIONED
  25. PAVEMENT AND CURB OFFSETS TO PROPERTY LINES ADDED
  26. MANUEVER AISLE WIDTHS ADDED
  27. CURB RADII ADDED
  28. CHANGED STORE ROOF FROM FLAT TO PITCHED ROOF AND CHANGED WALL SECTION FROM ALL SPLIT FACE BLOCK TO PARTIAL BLOCK, PARTIAL WOOD FRAMING
- 10/28 REVISIONS INCLUDE:
1. REVISED SITE GRADING SO IMPERVIOUS AREA ALL FLOWS SOUTHERLY
  2. RELOCATED ALL INFILTRATION SYSTEMS TO PROVIDE 50 FOOT SEPARATION FROM PROPOSED SEPTIC SYSTEMS
  3. INCREASED SIZE OF RETAINING WALL ALONG WEST PROPLINE
  4. RELOCATED UG STORAGE TANKS TO ACCOMMODATE INFILTRATION SYS LOCATION
  5. REV DRAINAGE STRUCTURES, INCLDG THE ADDITION OF 3 DMH TO DIVERT PORTION OF STORMS GREATER THAN 10 YR & ELIMINATION OF 2 CATCH BASINS
  6. ADDED LABEL FOR SIGNS AT DRIVEWAY FOR "EXIT ONLY" AND "DO NOT EXIT"
  7. REROUTED ELECT AND WATER SERVICE PER NEW UG TANK LOCATION
  8. INCREASED CURB RADII AT NW CORNER OF STORE
  9. MOVED TRASH ENCLOSURE CLOSER TO STORE
- 12/13 REVISIONS INCLUDE:
1. ADDED A CATCH BASIN NEAR SE CORNER OF STORE TO INTERCEPT PAVEMENT RUNOFF FROM EAST SIDE OF STORE



ZONING INFO - PARCEL R20-0-28 - BK28095/PG548 - 23 CENTRAL ST				
ZONE: CH - COMMERCIAL HIGHWAY				
PROPOSED USES: RETAIL MOTOR FUEL - PERMITTED BY SPECIAL PERMIT RETAIL CONVENIENCE STORE - PERMITTED FOOD SERVICE - PERMITTED BY SPECIAL PERMIT				
	REQUIRED	EXISTING	PROPOSED	RELIEF ROSTD
MIN. LOT AREA	40,000 SF	42,891 SF±	NO CHANGE	NONE
MIN. LOT FRONTAGE	200 FT	150 FT	NO CHANGE	NONE
FRONT YARD SETBACK	50 FT	78 FT±	50 FT	NONE
SIDE YARD SETBACK	25 FT	34 FT±	25 FT	NONE
REAR YARD SETBACK	25 FT	184 FT±	59 FT±	NONE
MAX BLDG AREA (SF)	N/A	1,138 SF	4,350 SF	NONE
MAX. BLDG. HEIGHT	35 FT (max)	25 FT±	20 FT±	NONE
MAX LOT COVERAGE (%)	50 % (max)	2.7%	18.5 %	NONE
PARKING SPACES (MIN 9.0'x18')				
-RETAIL - 3ea / 1,000 * 3,000 GFA = 9	13	4	18	NONE
-FOOD - 0.3ea / 12 SEATS = 4				
REFERENCE: TOWN OF NEWBURY MA eCODE360 CH 97 ZONING ADOPTED OCT 8, 1959 W/ AMENDMENTS THRU APRIL 23, 2019				

- GENERAL NOTES
1. THE GENERAL PURPOSE OF THIS WORK IS TO REMOVE THE EXISTING RESIDENTIAL USE AND IMPROVEMENTS AND CONSTRUCT A NEW GAS STATION AND CONVENIENCE STORE WITH DRIVE-THRU
  2. THE PROSPECTIVE PROPERTY OWNER WILL OBTAIN ANY APPLICABLE BOARD AND STATE APPROVALS AND GENERAL BUILDING PERMIT. THE CONTRACTOR WILL BE RESPONSIBLE FOR PERMITS FROM THE LOCAL FIRE MARSHAL'S OFFICE AND TRADE OR BUILDING PERMITS FROM THE LOCAL BLDG DEPT AND ALL ASSOCIATED TESTING AND INSPECTION REQUIREMENTS.
  3. THE CONTRACTOR SHALL CONTACT DIG-SAFE PRIOR TO ANY CONSTRUCTION EXCAVATION (811 IN MA)
  4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL FIELD VERIFY:
    - 4.1. PROPERTY BOUNDARIES, EASEMENTS, AND RIGHT OF WAYS.
    - 4.2. EXSTG STRUCTURES, BUILDINGS, AND DRIVEWAYS
    - 4.3. LOCATIONS, SIZES, DEPTHS OF EXSTG UG UTILITIES, PIPING, STRUCTURES, TANKS, ETC.
    - 4.4. ALL EXSTG AND PROPOSED CRITICAL ELEVATIONS
  5. WHERE CONFLICTS ARISE BETWEEN THE FIELD CONDITIONS & PROPOSED CONSTRUCTION, OR IF THERE IS A CONFLICT BETWEEN ANY REGS OR MUNICIPAL REQMENTS AND PROPOSED PLANS, CONTRACTOR SHALL NOTIFY OWNER'S REP PRIOR TO CONTINUANCE OF THE WORK.
  6. PROPOSED WORK INCLUDES:
    - 6.1. PREP SITE PER ANY CONDITIONS OF SITE APPROVALS FROM ZONING, PLANNING, CONSERVATION COMMISSION, OR ANY OTHER APPLICABLE BODY
    - 6.2. RAZE AND REMOVE ALL EXISTING IMPROVEMENTS
    - 6.3. REPLACE UG UTILITIES AND INSTALL ANY STORMWATER MANAGEMENT STRUCTURES
    - 6.4. INSTALL NEW UNDERGROUND STORAGE TANKS
    - 6.5. CONSTRUCT NEW STORE, GAS STATION ISLANDS & CANOPIES
    - 6.6. INSTALL PAVEMENT & CURBING INCLUDING DRIVEWAYS, MATCH GRADE ALONG ALL PROP LINES
    - 6.7. INSTALL SIGNAGE IAW SIGNAGE APPROVALS
    - 6.8. INSTALL LANDSCAPING AND FENCING PER APPROVED SITE PLAN AS WELL AS SCREENED TRASH ENCLOSURE

LAYOUT OF PROPOSED SITE IMPROVEMENTS

REFERENCE:  
PROPERTY LINES AND OTHER EXISTING SITE IMPROVEMENT INFORMATION ON THIS DRAWING TAKEN FROM SITE PLAN OF LAND EXISTING CONDITIONS BY ENGINEERING LAND SERVICES, LLC, WEST NEWBURY MA, 12/17/19. SCALE 1"=20'. ALL SITE IMPROVEMENTS ARE SHOWN PER THE BEST AVAIL INFO AND MUST BE VERIFIED IN THE FIELD, PARTICULARLY PRIOR TO ANY EXCAVATION OR WORK THAT MAY AFFECT BURIED UTILITIES.

13 DEC 2020

4

AG

REV PER PEER REVIEW CMTS - ADDED CB NEAR TANKS & CORNER OF STORE

28 OCT 2020

3

AG

RELOCATED INFILT SYS, ELECT, WTR, UG TANKS, ADDED DRIVEWAY SIGNS

23 SEP 2020

2

AG

MULTIPLE REVISIONS PER PEER REVIEW AND HRG CMTS

19 MAY 2020

1

AG

ADDED ABUTTER SEPTIC SYS LOCATION

29 APR 2020

0

AG

ORIGINAL DRAWING DATE

REV

BY

DESCRIPTION

DRWG FILE

TBD-019-01 BYFIELD

SHEET

SCALE

AS NOTED

C-1.0

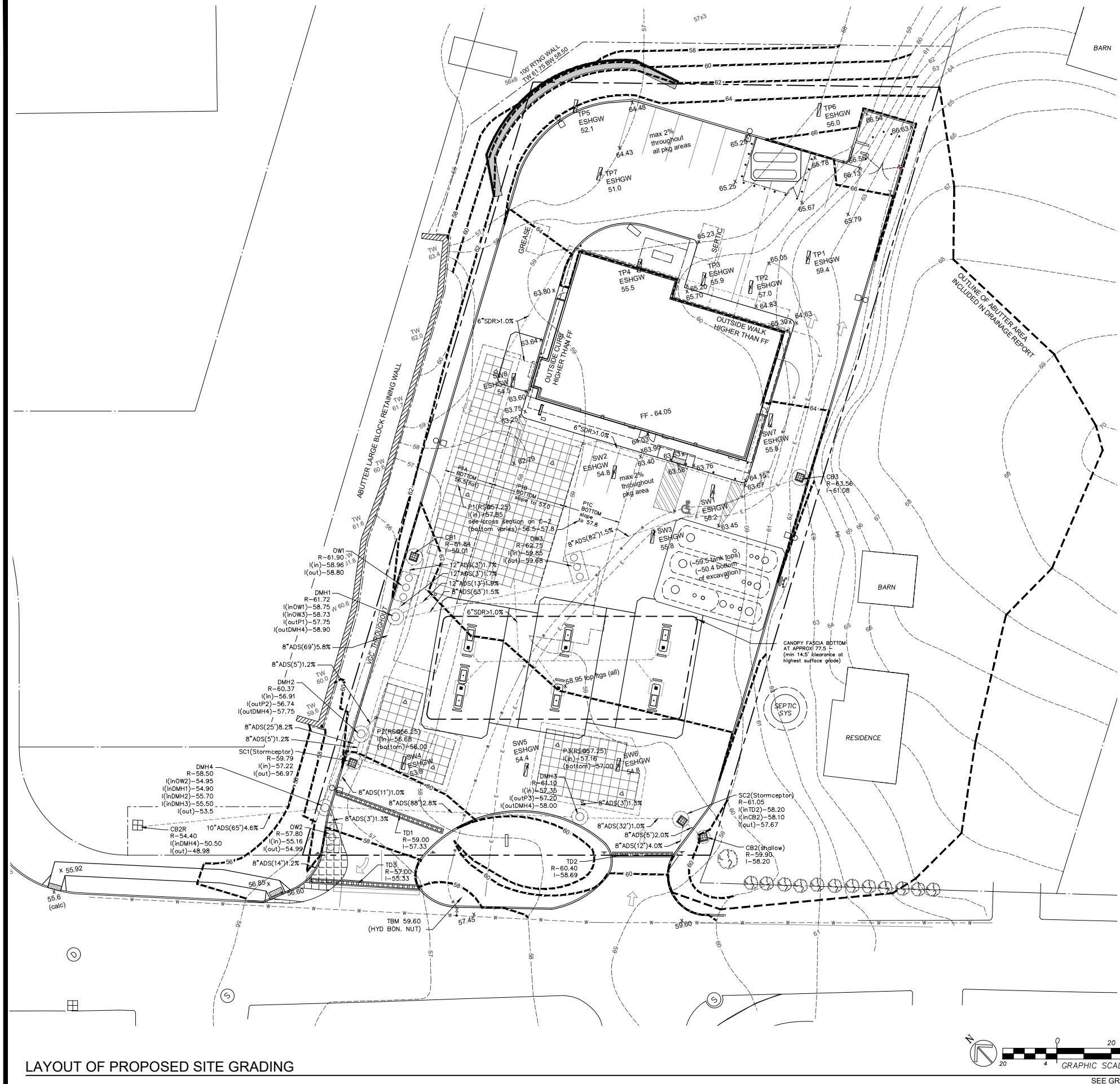
**A.L. PRIME ENERGY CONSULTANT, INC.**  
18 LARK AVENUE  
SAUGUS MA 01906  
(781)246-0201

PROJECT ADDRESS

**BYFIELD, MA**  
23 CENTRAL STREET

**SITE LAYOUT**





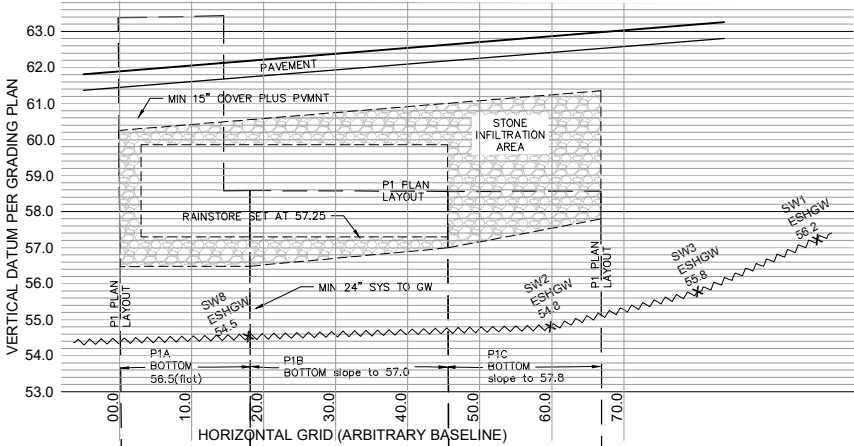
LAYOUT OF PROPOSED SITE GRADING

GENERAL NOTES

1. THE CONTRACTOR SHALL CONTACT DIG-SAFE PRIOR TO ANY CONSTRUCTION EXCAVATION (811 IN MA)
2. SITE GRADES VARY LESS THAN SEVEN FEET ACROSS ENTIRE PROPERTY, CONTOURS SHOWN AT ONE FOOT INTERVAL
3. OWNER WILL HAVE SURVEYOR CONFIRM LOCAL TEMP BM AT HYDRANT ALONG FRONTAGE PRIOR TO START OF CONSTRUCTION AND CONTRACTOR WILL MAINTAIN AND PROTECT THE BM THROUGHOUT THE PROJECT
4. BY TOWN REGULATION, ALL PARKING AREAS TO HAVE A MAXIMUM 2% SLOPE IN ALL DIRECTIONS
5. WHERE CONFLICTS ARISE BETWEEN THE FIELD CONDITIONS VERIFIED AND PROPOSED CONSTRUCTION, OR IF THERE IS A CONFLICT BETWEEN ANY REGULATIONS OR MUNICIPAL REQUIREMENTS AND THE PROPOSED PLANS, THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE PRIOR TO CONTINUANCE OF THE WORK.

12/02/20 Revisions per Peer Review Cmts

1. RAISED FF 2"
2. ADJUSTED GRADES SLIGHTLY HIGHER FROM CB1 TO TRASH ENCLOSURE
3. LOWERED BOTTOM OF P1 RAINSTORE STRUCTURES AND REDUCED NUMBER OF STRUCTURES
4. ADDED LABELS TO CLEARLY SHOW WHERE P1 BOTTOM OF SYSTEM ADJUSTS, CHANGED FROM STEP CHANGES TO GRADUAL SLOPE
5. ADDED CROSS SECTION TO SHOW P1 SYSTEM PROFILE
6. ADJUSTED INVERTS TO ALLOW FOR ADEQUATE CLEARANCE TO INSIDE TOP OF STRUCTURES
7. ADDED CB3 AND OW3
8. ADDED DMH4
9. ADDED LABELS FOR ALL PIPING AND GRADE INFO FOR ALL INVERTS
10. UPDATED UTILITY SHEET C-3 TO INCORPORATE CHANGES



P1 PROFILE CROSS SECTION - VERTICAL EXAGGERATED 1:5

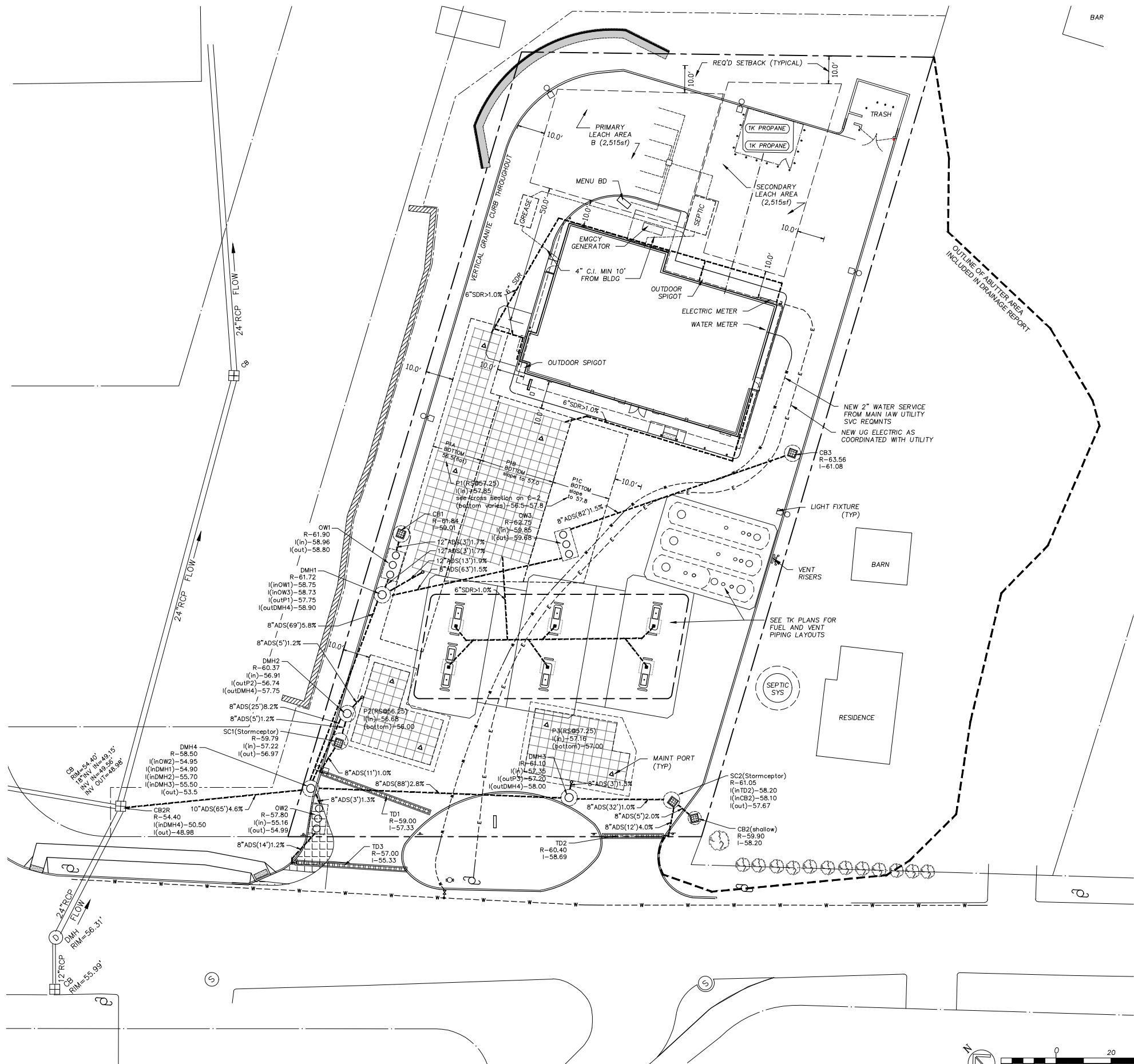
SEE GRID LABELS FOR SCALE

12/02/20		3	AG	REVISED PER REVIEW COMMENTS (SEE NOTE)
10/28/2020		2	AG	REGRADED SITE; RELOCATED INFL 50' FROM SEPTIC
05/25/2020		1	AG	ADDED ABUTTER CONTOURS, RAISED FF AND REAR PAVMT GRADES 2'-3'
04/28/2020		0	AG	ORIGINAL DRAWING DATE
DATE	REV	BY	DESCRIPTION	

**A Prime Energy**  
A.L. PRIME ENERGY CONSULTANT, INC.  
18 LARK AVENUE  
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PROJECT ADDRESS	
BYFIELD, MA 23 CENTRAL STREET	
GRADING	
DWG FILE TBD-019-01 BYFIELD	SHEET C-2
SCALE AS NOTED	





LAYOUT OF PROPOSED SITE IMPROVEMENTS

### GENERAL NOTES

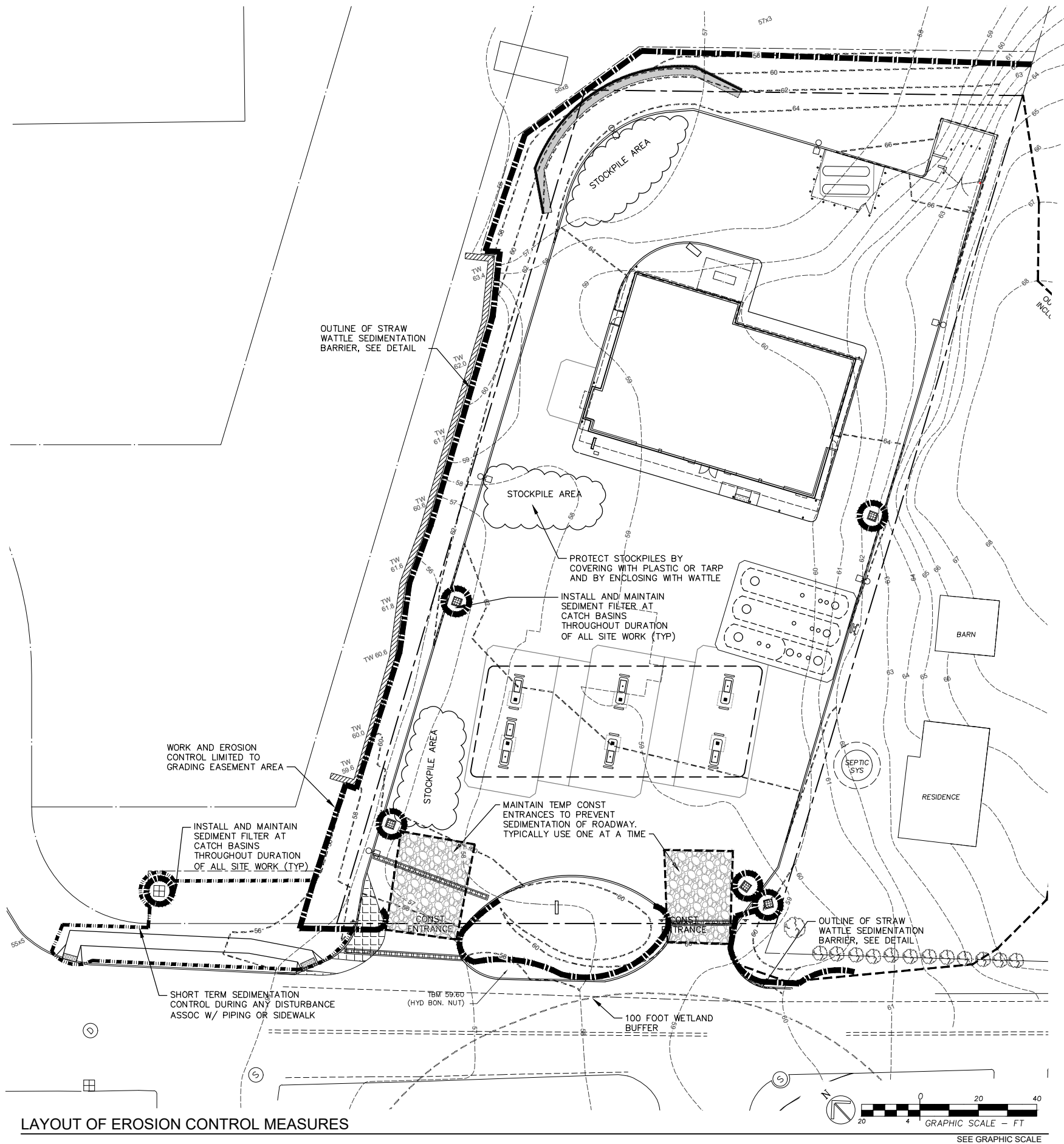
1. SITE WILL BE SERVED BY ON SITE SEPTIC. PERC TESTING AND PRELIMINARY DESIGN HAS BEEN COMPLETED TO CONFIRM THAT THE SITE LAYOUT WILL PROVIDE NECESSARY AREA, GRADING AND DEPTH FOR THE FINAL SEPTIC DESIGN. A DETAILED SEPTIC PLAN WILL BE PREPARED FOR MUNICIPAL APPROVAL FOLLOWING APPROVAL OF THE SITE PLAN, SPECIAL PERMIT, AND OTHER REQUIRED PERMITTING.
2. A NEW 2" WATER SERVICE IS PROPOSED. THE CLOSURE OF THE EXISTING SERVICE AND TIE FOR THE NEW SERVICE WILL BE COMPLETED IN ACCORDANCE WITH UTILITY PROVIDER REQUIREMENTS.
3. A NEW OVERHEAD ELECTRIC SERVICE WILL BE ROUTED ALONG THE EAST PROPERTY LINE TO THE NEW BUILDING.
4. AN EMERGENCY GENERATOR IS PROPOSED TO BE INSTALLED.
5. PROPANE TANKS WILL BE INSTALLED FOR BUILDING HEATING, GENERATOR, AND KITCHEN APPLIANCES AS NECESSARY.
6. THE CONTRACTOR SHALL CONTACT DIG-SAFE PRIOR TO ANY CONSTRUCTION EXCAVATION (811 IN MA).
7. WHERE CONFLICTS ARISE BETWEEN THE FIELD CONDITIONS VERIFIED AND PROPOSED CONSTRUCTION, OR IF THERE IS A CONFLICT BETWEEN ANY REGULATIONS OR MUNICIPAL REQUIREMENTS AND THE PROPOSED PLANS, THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE PRIOR TO CONTINUANCE OF THE WORK.
8. PROPOSED WORK INCLUDES THE INSTALLATION OF NEW SUBSURFACE STORMWATER INFILTRATION SYSTEMS FOR THE BUILDING AND CANOPY ROOF DRAINS AS WELL AS THE MAJORITY OF THE NEW PAVEMENT AREA.
9. IT IS INTENDED TO LEAVE UNCHANGED THE EXISTING FIRE HYDRANT AT APPROXIMATELY THE MIDDLE OF THE PROPERTY FRONTAGE.
10. A.L. PRIME OR ITS INSTALLATION CONTRACTOR WILL OBTAIN UTILITY APPROVALS AND PAY WATER CONNECTION FEES AS APPLICABLE PRIOR TO ANY WATER UTILITY WORK.
11. SEE THE TANK AND PIPING PLANS FOR LAYOUT OF MOTOR FUEL AND VENT PIPING.

### ANTICIPATED WATER AND SEWER QOMNTS

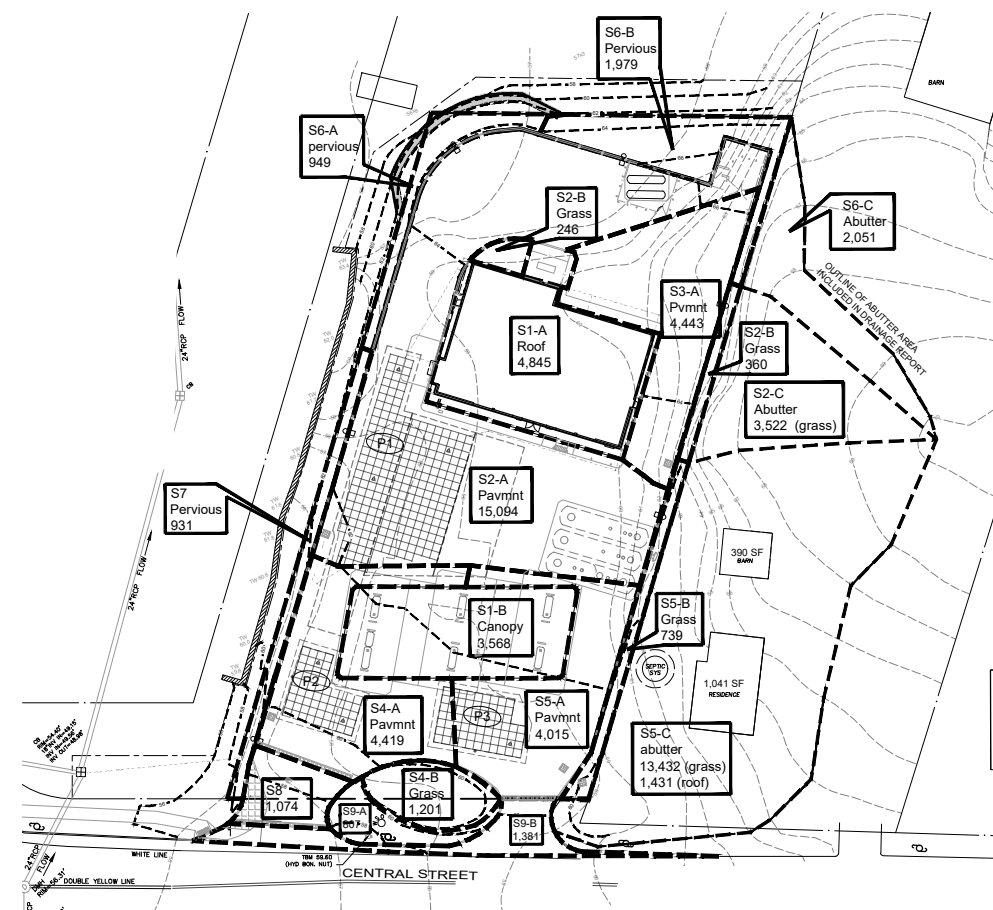
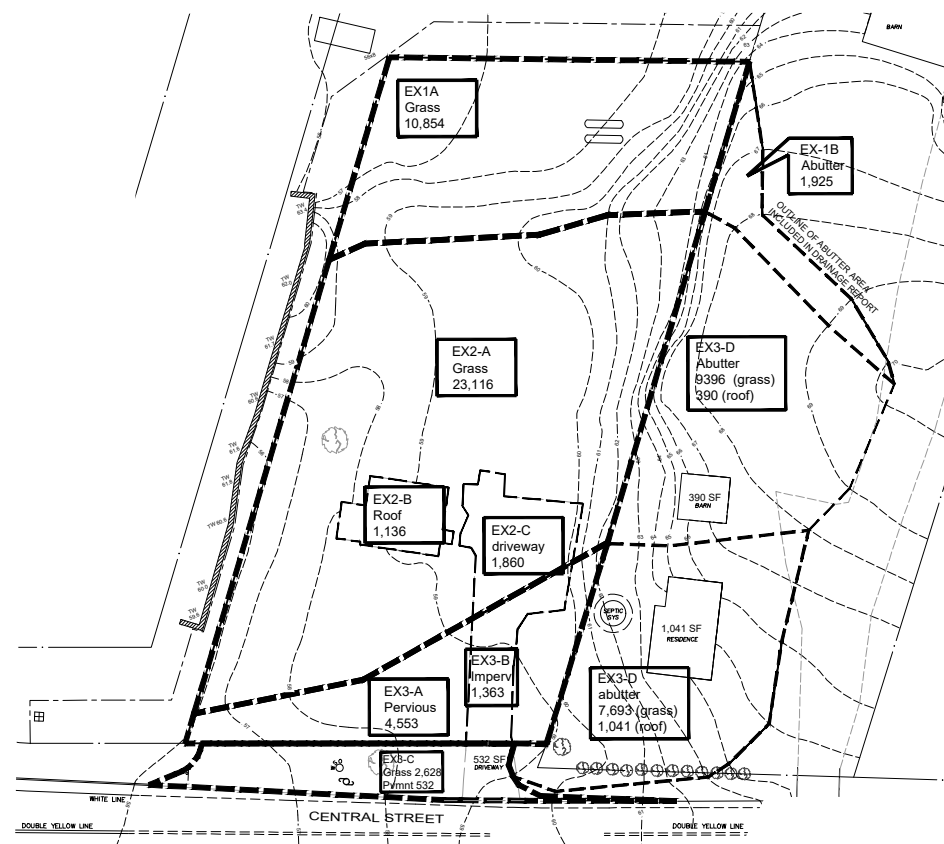
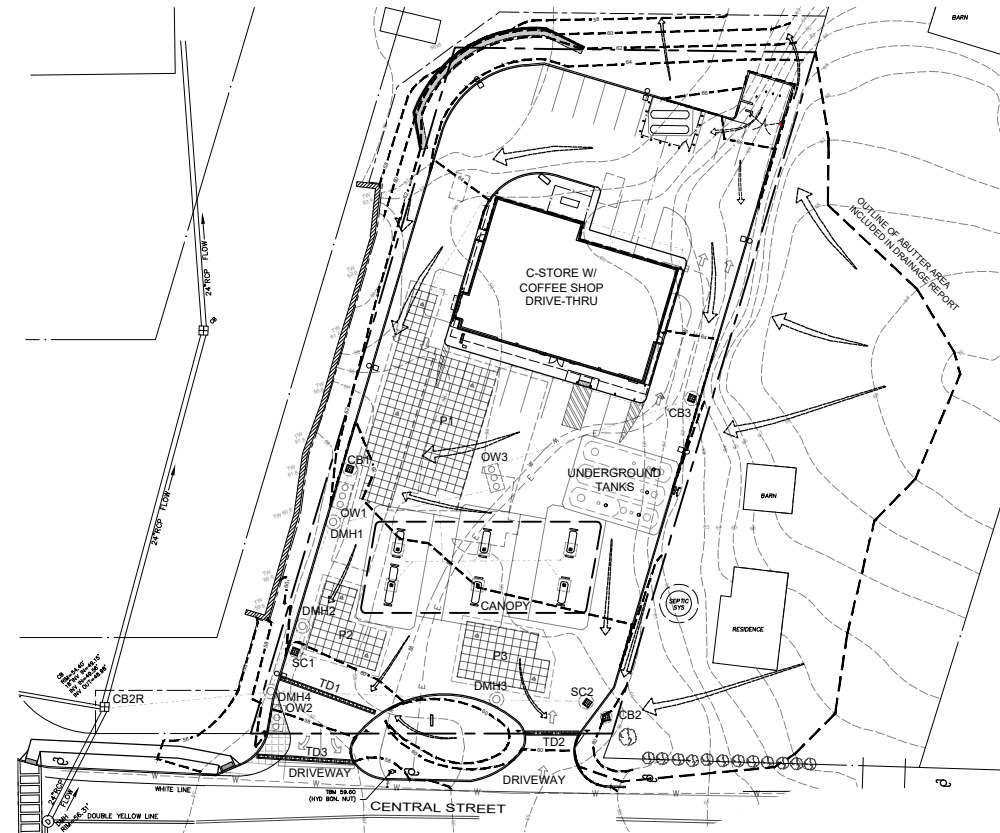
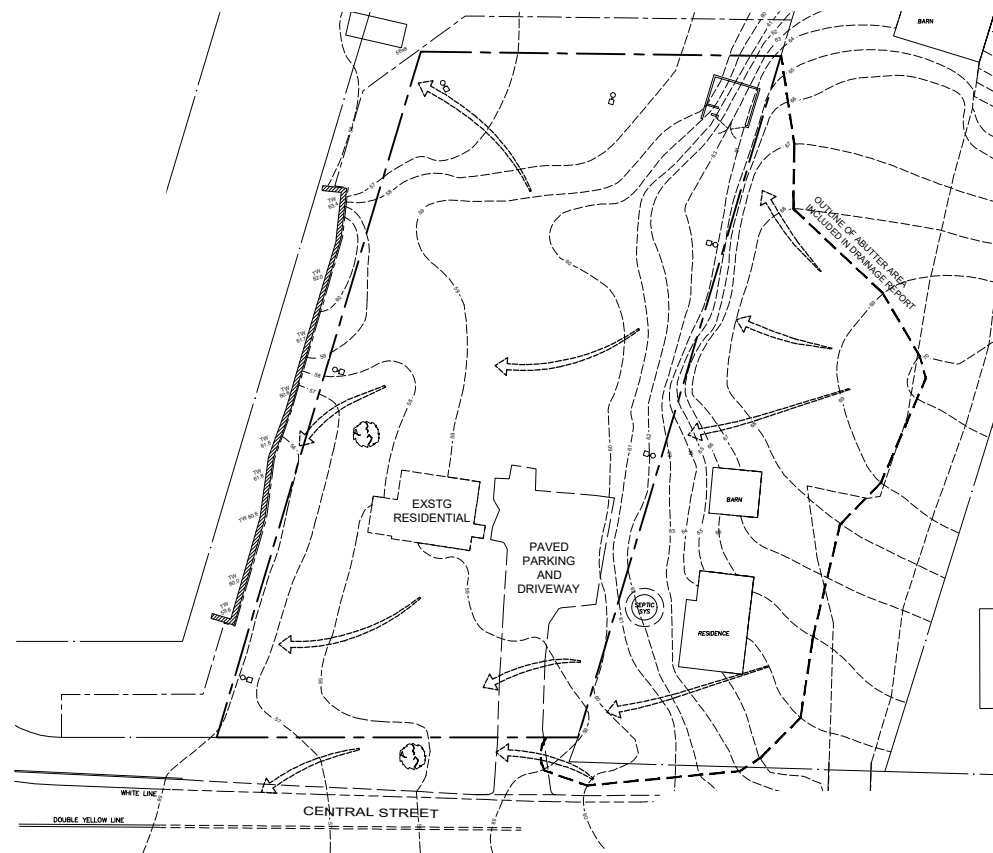
1. ANTICIPATED WATER AND SEWER FLOWS OF 1,500 GALLONS PER DAY BASED ON MA TITLE V AND SIMILAR STATION EXPERIENCE.
  - 1.1. RESTAURANT - (MIN) 1000 GPD
  - 1.2. RETAIL STORE - (MIN) 200 GPD
  - 1.3. MOTOR FUEL - (MIN) 300 GPD

02 DEC 2020	3	AG	REVISED PER REVIEW COMMENTS (SEE NOTE ON SHT C-2)
28 OCT 2020	2	AG	REROUTE ELECT AND WTR FOR RELOCATED INFLI SYS AND UG TANKS
23 SEP 2020	1	AG	CHANGED ELECT TO UG, MOVED PROPANE, REV PER CMTS
29 APR 2020	0	AG	ORIGINAL DRAWING DATE
DATE	REV	BY	DESCRIPTION
PROJECT ADDRESS			
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UTILITIES			
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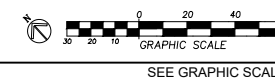
## GENERAL NOTES

1. THE GENERAL PURPOSE OF THIS WORK IS TO REMOVE THE EXISTING NON-CONFORMING RESIDENTIAL USE AND IMPROVEMENTS AND CONSTRUCT A NEW ALLOWED USE GAS STATION AND CONVENIENCE STORE WITH DRIVE-THRU
2. STORMWATER IMPACTS OF THE PROPOSED DEVELOPMENT HAVE BEEN MODELED IN HYDROCAD AND RUNOFF MITIGATION HAS BEEN DESIGNED AS INFLUENCED BY THAT MODELING TO REDUCE POST DEVELOPMENT RUNOFF BELOW PRE-DEVELOPMENT RATES AND VOLUMES. PLEASE REFER TO THE STORMWATER MANAGEMENT PLAN.
3. THE LAYOUTS ON THIS SHEET ARE INCLUDED IN THE STORMWATER MANAGEMENT PLAN AND USED IN THE HYDROCAD MODEL

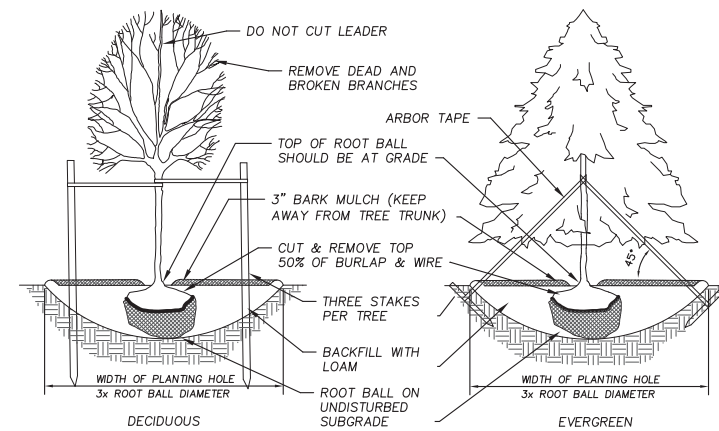
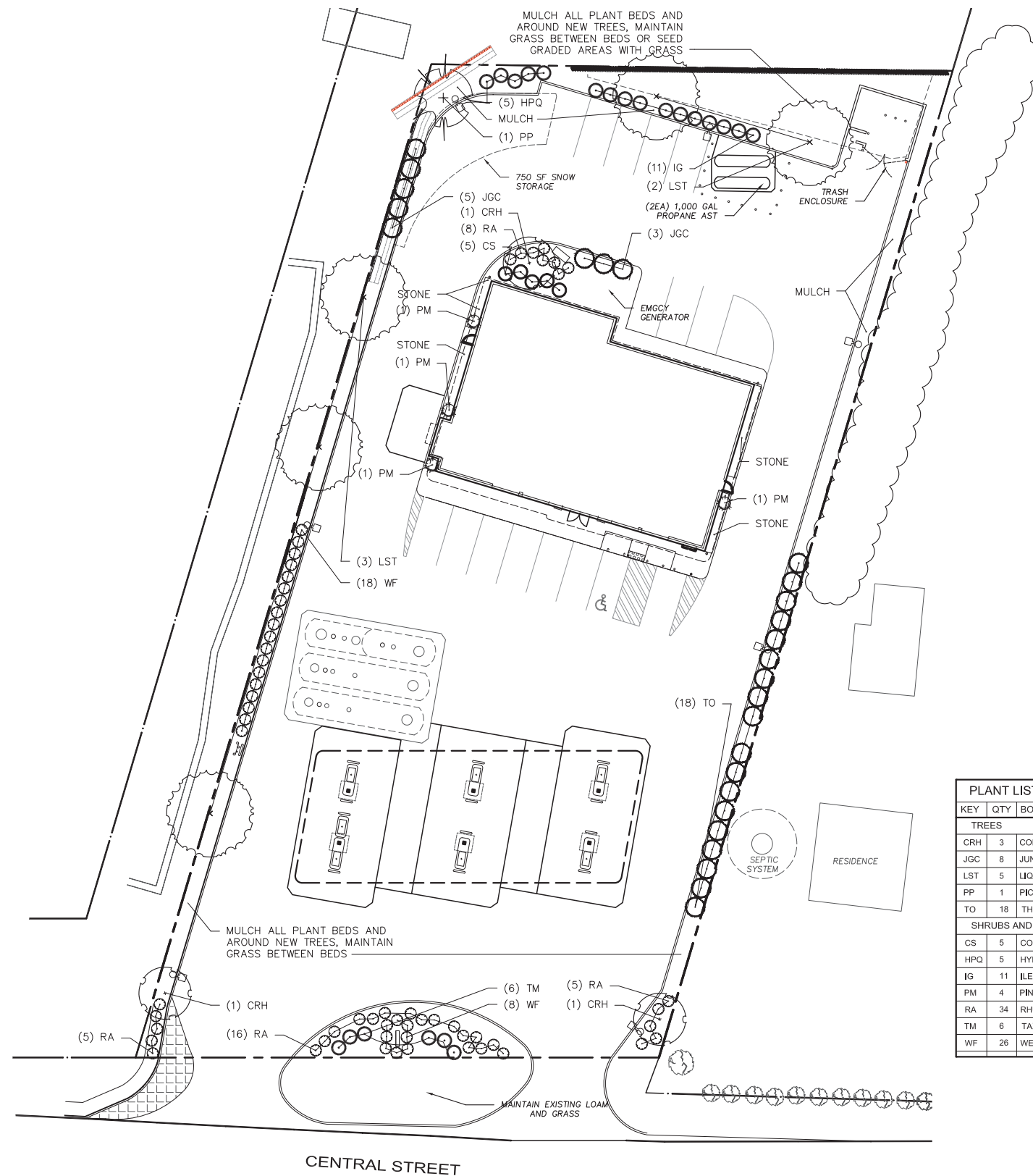
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3. THE LAYOUTS ON THIS SHEET ARE INCLUDED IN THE STORMWATER MANAGEMENT PLAN AND USED IN THE HYDROCAD MODEL

## PRE AND POST DEVELOPMENT STORMWATER RUNOFF AREAS AND FLOW DIRECTIONS

[illegible]



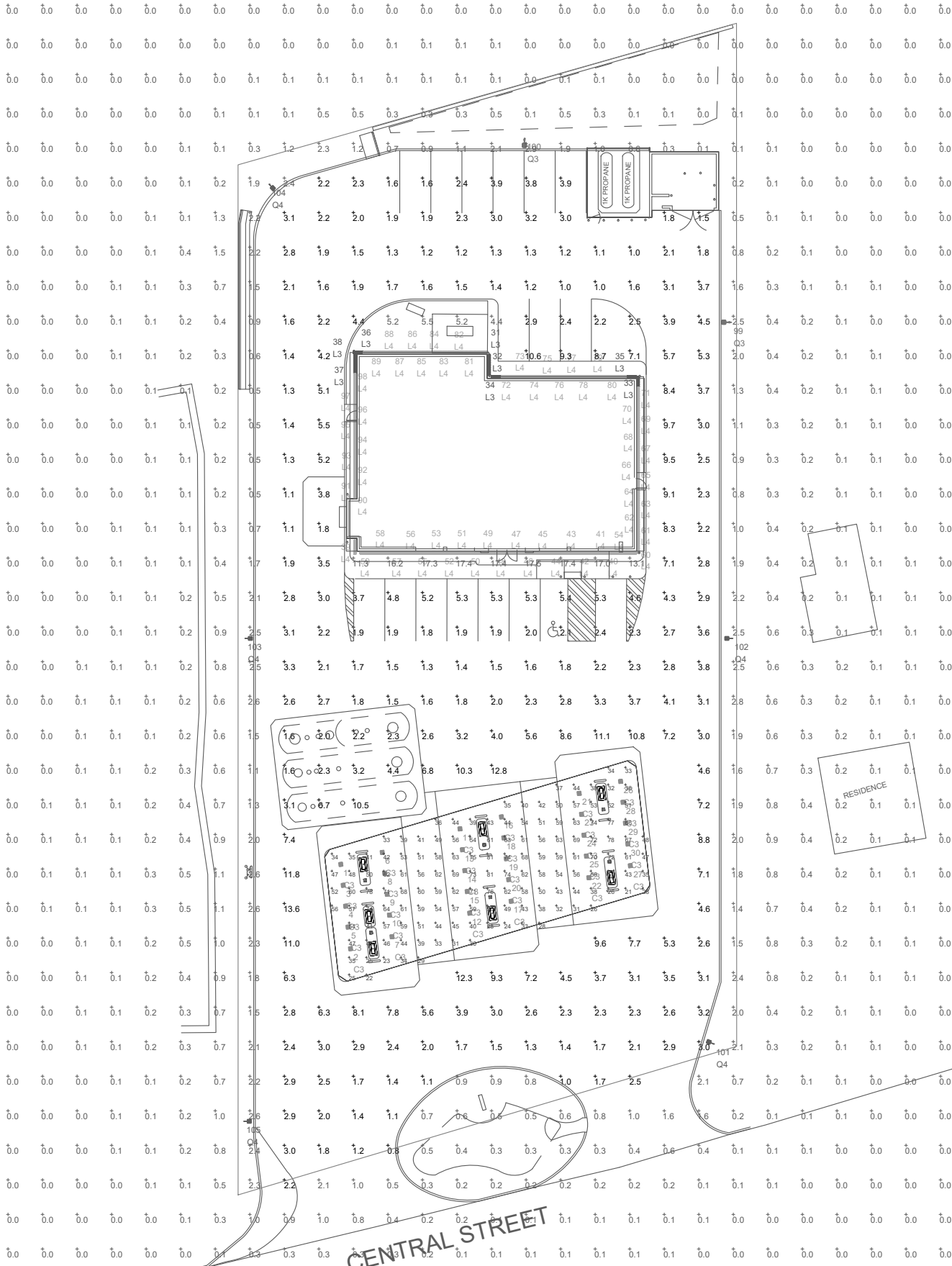


- ## GENERAL NOTES

1. THE LOCATION OF UG UTILITIES MUST BE VERIFIED IN THE FIELD PRIOR TO ANY EXCAVATION. VERIFY EXISTING AND PROPOSED UTILITY LOCATIONS IN THE FIELD AND VERIFY WITH PROJECT MANAGER PRIOR TO ANY EXCAVATION.
2. ALL WORK TO BE DONE IN ACCORDANCE WITH ALL CONDITIONS OF APPROVAL AND ANY SITE PLAN REQUIREMENTS OF THE TOWN OF NEWBURY.
3. VERIFY QUANTITIES SHOWN ON PLANT LIST. QUANTITIES SHOWN ON LAYOUT PLAN GOVERN OVER THE PLANT LIST IN THE CASE OF ANY DISCREPANCY.
4. ANY PLANT SUBSTITUTION MUST BE APPROVED BY THE OWNER'S REPRESENTATIVE.
5. ALL TREES TO BE STAKED WITH THREE HARDWOOD STAKES, SEE PLANTING DETAILS.
6. ALL NEW LANDSCAPE AREAS WITHIN 3 FEET OF NEW PLANTINGS TO HAVE MIN 12 INCHES TOPSOIL NOT INCLUDING THAT SOIL WITH THE TREE OR SHRUB PIT FOR FULL DEPTH OF ROOT BALL.
7. ALL MULCH AREAS TO BE A MIN OF 3 INCHES DEPTH OF SHREDDED HARDWOOD BARK.
8. AREAS AGAINST THE BUILDING WILL BE "MULCHED" WITH NON-FLAMMABLE LANDSCAPE STONE, COLOR AND TYPE TO BE APPROVED BY THE OWNER REPRESENTATIVE PRIOR TO PLACEMENT.
9. DURING PLANTING, APPLY SOIL ADDITIVES AND SLOW RELEASE FERTILIZER AND WATER THOROUGHLY AT COMPLETION.

PLANT LIST					
KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	COMMENTS
TREES					
CRH	3	CORNUS X 'RUTBAN'	RUTGERS HYBRD DOGWOOD	2" CAL.	
JGC	8	JUNIPERUS CHINENSIS 'HETZII COLUM'	JUNIPER	5-6" HT.	
LST	5	LIQUIDAMBAR SYRACIFLUA	SWEETGUM	2.5" CAL.	
PP	1	PICEA PUNGENS 'GLAUCO'	BLUE SPRUCE	6-8" HT.	
TO	18	THUJA OCCIDENTALIS 'EMERALD GR'	ARBORVITAE	6-8" HT.	
SHRUBS AND GROUNDCOVER					
CS	5	CORNUS SERICEA 'SANTT'	RED-TWIG DOGWOOD	5 GAL	
HPQ	5	HYDRANGEA PAN. 'QUICKFIRE'	PANICLE HYDRANGEA	5 GAL	
IG	11	ILEX GABRA 'COMPACTA'	INKBERRY	5 GAL	
PM	4	PINUS MUGO 'COMPACTA'	DWARF MUGO PINE	3 GAL	
RA	34	RHUS AROMATICA 'GRO-LOW'	GRO-LOW SUMAC	3 GAL	
TM	6	TAXUS X MEDIA 'DENSIFORMIS'	SPREADING YEW	5 GAL	
WF	26	WEIGELA FLORIDA 'MINUET'	WEIGELA	3 GAL	





NOTE:  
AREA LIGHTS ON NEW15 FT. POLES MOUNTED ON 2 FT. CONCRETE BASES

FOOTCANDLE LEVELS CALCULATED AT GRADE USING INITIAL LUMEN VALUES					
LABEL	AVG	MAX	MIN	AVG/MIN	MAX/MIN
CANOPY	50.71	81	21	2.41	3.86
PAVED	3.59	13.6	0.8	4.49	17.00
UNDEFINED	0.49	17.5	0.0	N.A.	N.A.

LUMINAIRE SCHEDULE										
SYMBOL	QTY	LABEL	ARRANGEMENT	LUMENS	LLF	BUG RATING	WATTS/LUMINAIRE	TOTAL WATTS	MANUFACTURER	DESCRIPTION
	30	C3	SINGLE	8924	1.030	B3-U0-G1	92	2760	CREE, INC.	CAN-304-SL-XX-04-E-UL-XX-700-57K
	8	L3	3FT LINEAR	148	1.000	B0-U1-G0	2.9	139.2	MAXLITE INC.	LB3650
	60	L4	4FT LIGHTBAR	148	1.000	B0-U1-G0	2.9	1392	MAXLITE INC.	LB4850
	2	Q3	SINGLE	5551	1.030	B1-U0-G1	53	106	Cree Inc	OSQ-A-NM-3ME-Z-57K-UL-XX + OSQ-BLSMF
	5	Q4	SINGLE	5402	1.030	B1-U0-G1	53	265	Cree Inc	OSQ-A-NM-4ME-Z-57K-UL-XX + OSQ-BLSMF

LUMINAIRE LOCATION SUMMARY		
LUM NO.	LABEL	MTG. HT.
1	C3	15
2	C3	15
3	C3	15
4	C3	15
5	C3	15
6	C3	15
7	C3	15
8	C3	15
9	C3	15
10	C3	15
11	C3	15
12	C3	15
13	C3	15
14	C3	15
15	C3	15
16	C3	15
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18	C3	15
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22	C3	15
23	C3	15
24	C3	15
25	C3	15
26	C3	15
27	C3	15
28	C3	15
29	C3	15
30	C3	15
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33	L3	10
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35	L3	10
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40	L4	10
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43	L4	10
44	L4	10
45	L4	10
46	L4	10
47	L4	10
48	L4	10
49	L4	10
50	L4	10
51	L4	10
52	L4	10

LUMINAIRE LOCATION SUMMARY		
LUM NO.	LABEL	MTG. HT.
53	L4	10
54	L4	10
55	L4	10
56	L4	10
57	L4	10
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97	L4	10
98	L4	10
99	Q3	17
100	Q3	17
101	Q4	17
102	Q4	17
103	Q4	17
104	Q4	17
105	Q4	17

REV.	BY	DATE	DESCRIPTION
R1	LMP	09/01/2020	REVISED PER UPDATED SITE PLAN AND COMMENTS

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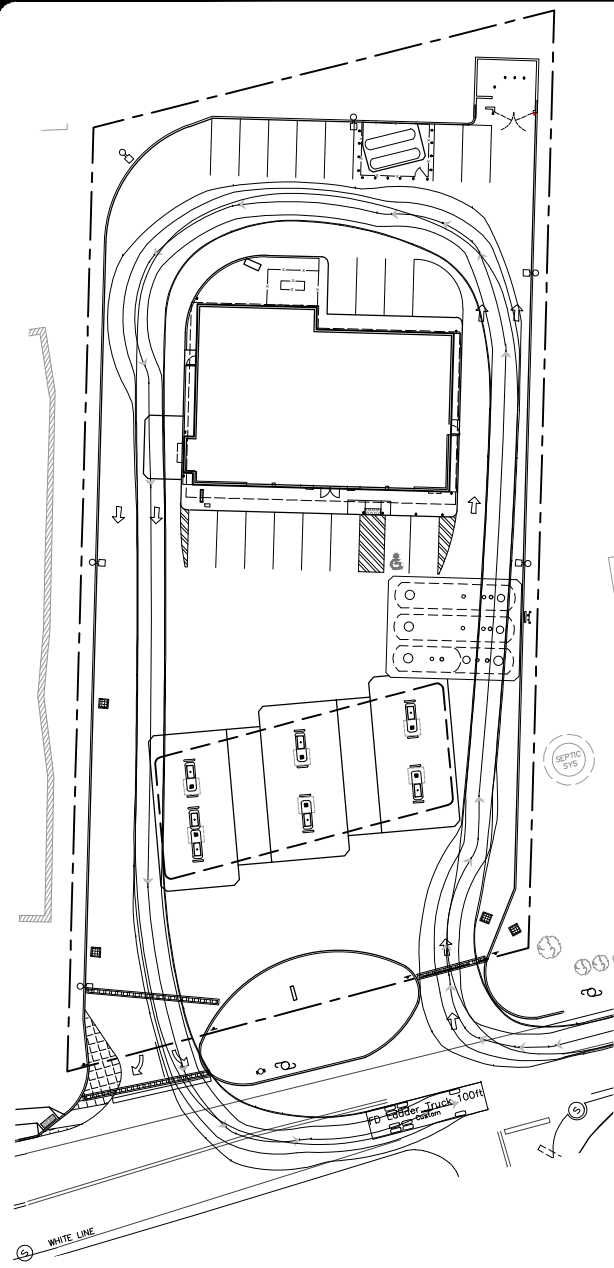
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SCALE: 1" = 20'  
DWG SIZE: D  
LAYOUT BY: LMP  
DATE: 12/04/19

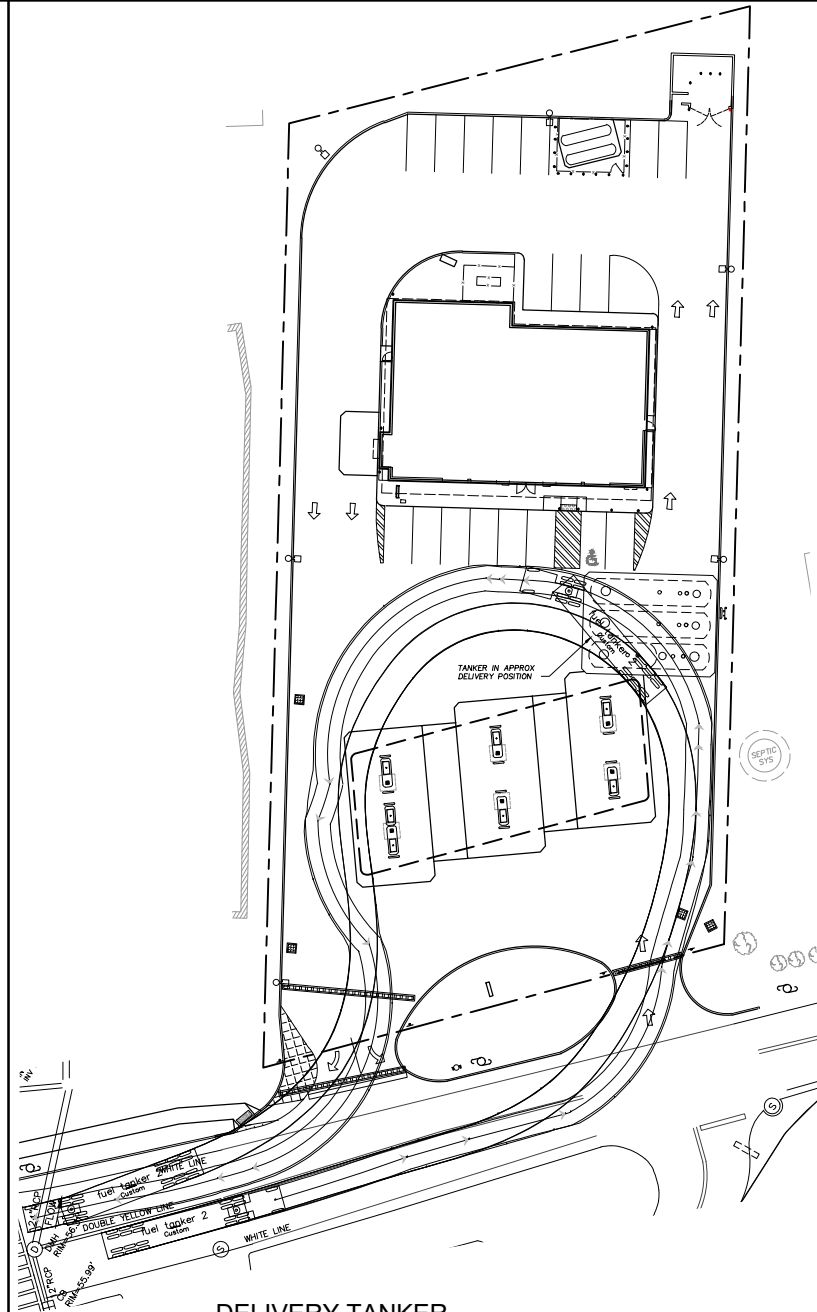
PROJECT NAME:  
AL PRIME  
BYFIELD, MA  
DRAWING NUMBER:  
RL-6493-S1-R1



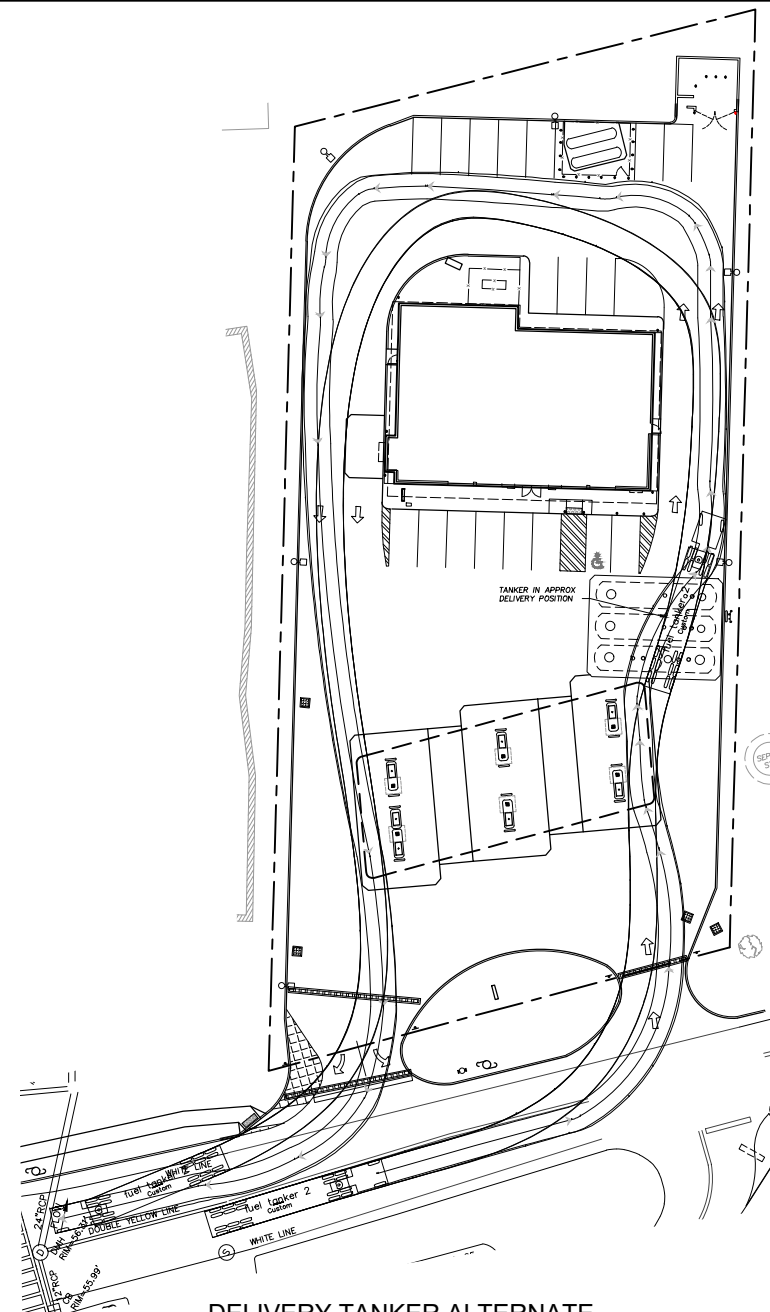




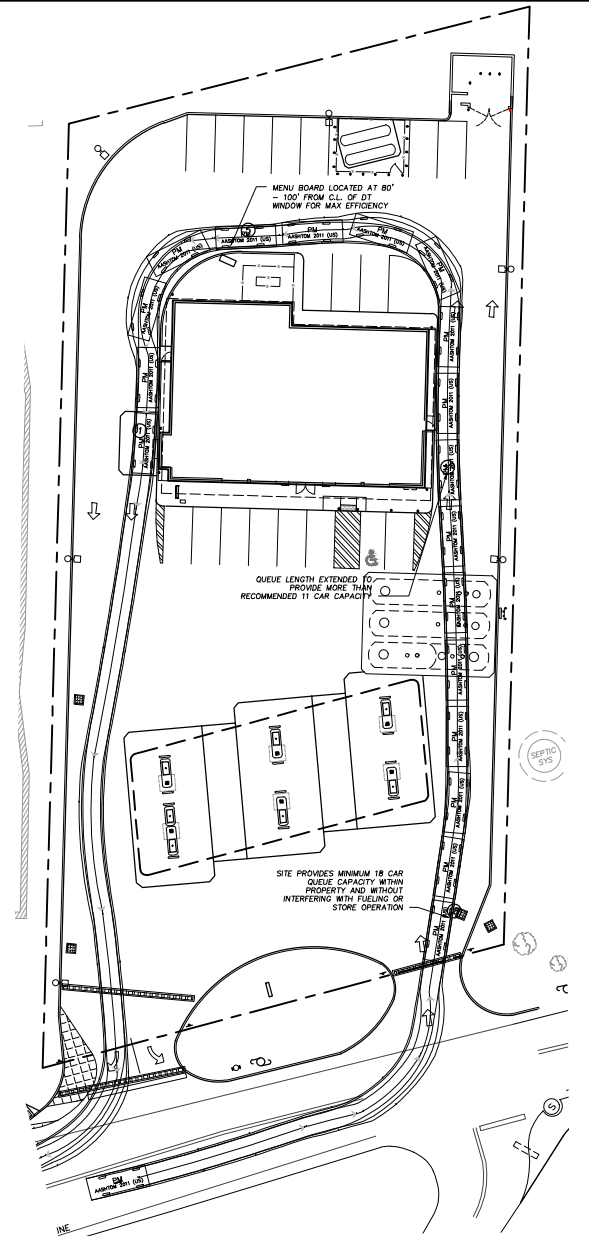
EMGCY VEHICLE LADDER TRUCK



DELIVERY TANKER

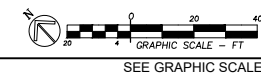


DELIVERY TANKER ALTERNATE

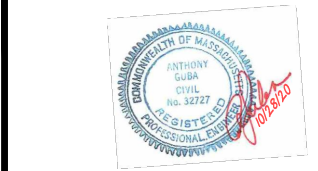


DRIVE-THRU QUEUE

# AUTOTURN SWEEP PATH ANALYSIS



DATE	REV	BY	DESCRIPTION
28 OCT 2020	2	AG	REV SWEEP PATHS FOR NEW UG TANK LOCATION
23 SEP 2020	1	AG	REV SITE AND DRIVEWAYS AND ADJUSTED PATHS
29 APR 2020	0	AG	ORIGINAL DRAWING DATE



**APrime**  
Energy  
A.L. PRIME ENERGY  
CONSULTANT, INC.  
18 LARK AVENUE  
SAUGUS MA 01906  
(781)246-0201

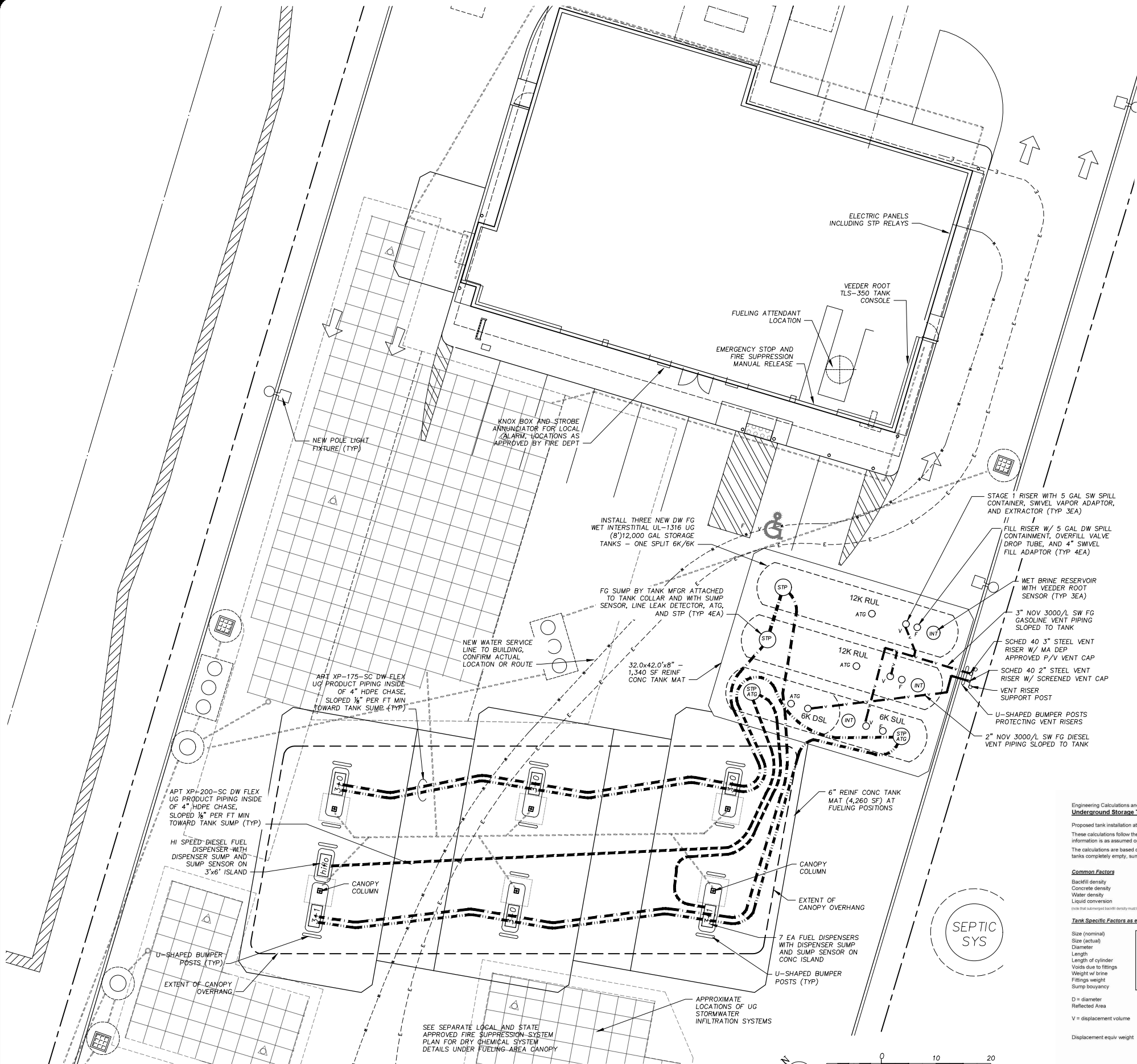
PROJECT ADDRESS  
**BYFIELD, MA**  
23 CENTRAL STREET

## VEHICLE PATHS

DWG FILE  
TBD-019-01 BYFIELD  
SCALE  
AS NOTED

SHEET  
TR-1.0





TANK AND PIPING LAYOUT

SEE GRAPHIC SCALE

THIS TANK WORK CONSISTS OF:

1. REMOVE ALL EXISTING SITE IMPROVEMENTS
2. INSTALL THREE NEW UG DW FG MOTOR FUEL TANKS
3. INSTALL NEW TANK TOP EQUIPMENT AND FUEL PRODUCT PIPING, INCLUDING NEW DW SPILL CONTAINMENT, MONITORED TANK SUMPS, AND TANK AND PIPING MONITORING SENSORS AND PROBES, VENT RISERS.
4. INSTALL NEW CONCRETE PAVING OVER TANKS AND THROUGHOUT FUELING AREA
5. INSTALL NEW DISPENSERS AT NEW ISLANDS WITH SUMPS AND SUMP SENSORS
6. INSTALL NEW DRY CHEMICAL FIRE SUPPRESSION SYSTEM AT FUELING AREA PER FD APPROVED PLAN

GENERAL NOTES

1. THIS PLAN TO BE USED IN CONJUNCTION WITH OTHER SITE AND ARCHITECTURAL PLANS. THIS PLAN ONLY FOR UG TANK INFORMATION, REFER TO OTHER PLANS FOR LAYOUT AND SPECS RELATED TO OTHER SITE IMPROVEMENTS.
2. UG STORAGE TANK FACILITIES IN MA ARE REGULATED UNDER 310 CMR. FACILITY OWNERS, OPERATORS AND INSTALLERS ARE SUBJECT TO THESE REGS. THIS UG TANK WORK SHALL COMPLY WITH ALL APPLICABLE REGS, ALL REQMENTS OF FEDERAL, STATE, AND LOCAL CODES INCLUDING, BUT NOT LIMITED TO, OSHA, TANKS, PIPING, AND ALL TANK OR PIPING RELATED EQUIP SHALL BE INSTALLED IN ACCORDANCE WITH MFG'S RECOMMENDATIONS AND/OR SPECS.
3. THE PROPERTY IS NOT LOCATED WITHIN 100' BUFFER TO VEGETATED WETLANDS OR RIVERFRONT PROTECTION AREA.
4. THE CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING ANY APPLICABLE PERMITS FROM THE LOCAL FIRE DEPARTMENT AND TRADE OR BUILDING PERMITS FROM THE LOCAL BLDG DEPT AND FOR COMPLYING WITH ALL ASSOCIATED TESTING AND INSPECTION REQMENTS.
5. THE CONTRACTOR SHALL CONTACT DIG-SAFE PRIOR TO ANY CONSTRUCTION EXCAVATION (811)
6. THE CONTRACTOR SHALL FIELD VERIFY THE FOLLOWING ITEMS PRIOR TO CONSTRUCTION: LOCATION OF PROPERTY BOUNDARIES, EASEMENTS, AND RIGHT OF WAYS; LOCATIONS OF STRUCTURES, BUILDINGS, AND DRIVEWAYS; LOCATIONS, SIZES, DEPTHS OF EXSTG UG UTILITIES, PIPING, STRUCTURES, TANKS, ETC.; AND EXSTG AND PROPOSED CRITICAL ELEVATIONS.
7. WHERE CONFLICTS ARISE BETWEEN FIELD CONDITIONS VERIFIED AND PROPOSED CONSTRUCTION, OR IF THERE IS A CONFLICT BETWEEN ANY REGULATIONS OR MUNICIPAL REQUIREMENTS AND THE PROPOSED PLANS, THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE PRIOR TO CONTINUANCE OF THE WORK.
8. GW IS EXPECTED ABOVE BOTTOM OF TANK EXCAVATION SO CONSTRUCTION DEWATERING IS EXPECTED TO BE REQUIRED. DEWATERING PROCESS AND WATER DISPOSAL WILL BE ACCOMPLISHED IN ACCORDANCE WITH DEWATERING PLAN AS DEVELOPED BY THE ENVIRONMENTAL LSP. ALL DEWATERING WILL BE DONE IN IAW MA DEP REQMENTS AND REGS AND ALSO WITH ANY LOCAL MUNICIPAL REQMENTS.
9. TANKS WILL BE SECURED BY DEADMEN ANCHORS SIZED TO PREVENT FLOATOUT EVEN IN THE EVENT OF WORST CASE FULL FLOOD AND EMPTY TANK CONDITIONS.
10. FOLLOW SAFETY PRECAUTIONS DUE TO SAFETY HAZARDS CREATED BY AIR TESTING - FAILURE OF TANKS OR PIPING UNDER AIR TEST MAY CAUSE SEVERE PERSONAL INJURY OR DEATH.

INSTALLATION AND TESTING

1. INSURE ALL TANKS PROPERLY BALLASTED AND PROTECTED DURING ALL WORK.
2. TANK TO BE BACKFILLED TO GRADE WITH TANK MFGR RECOMMENDED BACKFILL MAT'L AND COVERED WITH 8" REINF CONC MAT EXTENDING A MIN OF TWO FT BEYOND THE TANK SHADOW IN ALL DIRECTIONS.
3. ALL METAL RISERS AND BURIED PORTIONS OF VENT RISERS TO BE SCHEDULE 40 AND COATED TO PROTECT FROM CORROSION
4. ALL PIPING SHALL MEET UL-971 AND APPLICABLE ASTM STANDARDS.
5. PRODUCT PIPING TO BE FRANKLIN FUELING APT XP-175-SC, VENT/VAPOR PIPING TO BE NOV 3000 SW FG. ALL PIPING WILL BE SLOPED BACK TO A MONITORED SUMP AT MIN 1/8" PER FOOT AND WILL BE INSTALLED IAW MFGR INSTALLATION GUIDELINES, RECOMMENDATIONS OR SPECS. INSPECT ALL PIPING PRIOR TO INSTALLATION FOR ANY SHIPPING OR HANDLING DAMAGE.
6. AFTER ALL NEW PIPING IS INSTALLED, BUT PRIOR TO BACKFILLING, THE PRIMARY AND SECONDARY LINES ARE TO BE DISCONNECTED FROM THE TANKS AND DISPENSERS, FLEX CONNECTORS INCLUDED, AND PLUGGED OR CAPPED. THE LIQUID AND VAPOR PRIMARY LINES SHALL THEN BE TESTED, AT A MIN, TEST PRIMARY PIPING AT 50 TO 60 PSIG FOR AT LEAST 4 HRS AND SOAP TEST ALL FITTINGS. TEST SECONDARY PIPING AT 6PSI OR SMALLEST MAX RATING OF ANY COMPONENT (DO NOT EXCEED RATING OF ANY COMPONENT) FOR MINIMUM OF 4 HRS AND SOAP TEST ALL FITTINGS. IF TESTING PRIMARY AND SECONDARY SIMULTANEOUSLY, MAINTAIN MIN 10P PSI DIFFERENCE IN TEST PRESSURES.
7. TEST ALL VENT PIPING PRIOR TO BACKFILL IN ACCORDANCE WITH PIPING MFGR'S INSTALLATION INSTRUCTIONS. SEPARATE PIPING FROM TANK BY INSERTING PLUG INTO EXTRACTOR VALVE AND OPEN OTHER TANK FITTINGS TO PREVENT BUILDUP OF EXCESSIVE PRESSURE INSIDE THE TANK. VISUALLY INSPECT ALL BONDED JTS AND MAKE ANY NECESSARY REPAIRS PRIOR TO PRESSURIZING PIPING SYSTEM. CHECK INTEGRITY OF JTS BY PRESSURIZING TO MAX 50 PSIG AND SOAP TEST ALL JTS.
8. ONCE THE SECONDARY LINE IS TESTED, TEST FITTINGS WILL BE LOOSENED AND MOVED BACK TO ALLOW COMMUNICATION BETWEEN THE INTERSTITIAL SPACES AND THE SUMPS.

SUMP NOTES

1. ALL SUMPS TO BE WATERTIGHT TO PREVENT LEAKS FROM OR WATER INTRUSION INTO SUMP. MEASURES PROPOSED TO PREVENT WATER INTRUSION INCLUDE CROWNING OF CONC TANK PAD AROUND SUMPS, MANHOLES AND SUMPS WITH WATERTIGHT GASKETED LIDS, AND WATERTIGHT BULKHEAD ENTRY FITTINGS
2. ALL NEW OR MODIFIED SUMPS, INCLUDING SPILL CONTAINMENT BUCKETS SHALL BE TESTED IAW MA DEP REQUIREMENTS.
3. ALL CONDUIT AND PIPING INSTALLED AND TERMINATION FITTINGS, SEAMS AND FITTINGS TIGHT AND/OR CLOSED. FILL EACH SUMP AND SPILL BUCKET TO WITHIN 1 INCH OF THE TOP OF THE SUMP AND MONITORING WATER LEVEL FOR 1 HR MIN WITHOUT ADDITION OF LIQUID TO THE SUMP. VISUALLY INSPECT THE SUMP FOR ANY EVIDENCE OF WATER LEAKAGE AND THE INSIDE FOR ANY AIR BUBBLES INDICATING A LEAK. A PASSING TEST SHALL HAVE NO LOSS OF LIQUID OR OBSERVED LEAKS.

BED AND BACKFILL MATERIAL - TANK AND PIPING

1. ALL BACKFILL MAT'L SHALL MEET TANK AND/OR PIPING MFGR'S INSTALLATION SPEC'S. IF NO SPEC'S ARE AVAIL, USE FOLLOWING:
  - 1.1. GRAVEL: STANDARD BED AND BACKFILL MAT'L SHOULD BE A NATURALLY ROUNDED AGGREGATE, CLEAN AND FREE-FLOWING, WITH PARTICLE SIZES NOT LESS THAN 1/2" NOR MORE THAN 3/4" IN DIAM AND CONTAINING NO MORE THAN 5% (VOL) FINES PASSING #8 SIEVE, COMMONLY KNOWN AS ASTM C-33 PEA GRAVEL
  - 1.2. STONE OR GRAVEL CRUSHINGS: CRUSHINGS WITH ANGULAR PARTICLE SIZE NOT LESS THAN 3/4" OR MORE THAN 1 1/2" IN DIAM, WASHED AND FREE FLOWING AND CONTAINING NO MORE THAN 5% (VOL) FINES PASSING THROUGH A #8 SIEVE IS ACCEPTABLE AS AN ALT MAT'L. THIS MATERIAL MUST MEET ASTM C-33 PARA 9.1 ROMNTS LIMITS ON FINES CONTENT AND FOR SOUNDNESS AND QUALITY.
  - 1.3. CAUTION: IN FREEZING CONDITIONS, BACKFILL MUST BE DRY AND FREE OF ICE. DO NOT USE OTHER BACKFILL MATERIALS. DO NOT ALLOW BACKFILL MATERIAL TO INTERMIX WITH AN EXCAVATED SOIL AT THE SITE.
2. DRY GRAVEL DENSITY MUST BE MIN OF 95 LBS PER CUBIC FOOT.

Engineering Calculations and Certification

Underground Storage Tank Floatout

Proposed tank installation at 23 Central St, Byfield MA

These calculations follow the format suggested in "PEIRP 100-17, Recommended Practices for Installation of Underground Liquid Storage Systems" Appdx A. All information is as assumed or as supplied by the tank contractor or manufacturer.

The calculations are based on the assumption of flooding scenario where all equipment completely submerged with water table above paved grade, tanks completely empty, sumps are empty and not flooded. Conservatively, calculations do not take into account washout or erosion, nor friction or cohesion forces.

Common Factors

Backfill density	120.00	lb/cf
Concrete density	150.00	lb/cf
Water density	62.40	lb/cf
Liquid conversion	7.48	gal/cf

Tank Specific Factors as entered into calculation

Size (nominal)	12,000	gal
Size (actual)	11,595	gal
Diameter	92	in
Length	36.00	ft
Length of cylinder	29.25	ft
Volume due to fittings	70.00	cf
Weight w/ brine	7,050	lbs
Fittings weight	300	lbs
Sump buoyancy	1,100	lbs

D = diameter	7.67	ft
Reflected Area	270.39	sf
V = displacement volume	1,585	cf
	11,859	gal

Displacement equiv weight	95.932	lbs
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Containment Solutions 12,000 gallon brine interstitial double wall fiberglass UST

Restraining Effect of Concrete Paving and Overburden

Thickness of pad	5.0	in
Min depth of burial (incldg pad)	45	in

1. Concrete paving		
Length of pad (tank plus 4' - 2' ea s	40.00	ft
Width of pad (tank plus 2' - 1' ea s	9.67	ft

Submerged weight concrete:	22,281	lbs
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2. Overburden		
B1 = concrete pad area	387	sf
B2 = reflected area	270	sf
d = depth of burial minus pad	3.08	ft
M = overburden voids	70	cf
n = (D/2)^2	6.92	ft

Overburden total volume	1,397.85	cf
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Submerged weight overburden:	80,505	lbs
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3. Deadmen (12"high by 12" wide)		
deadmen, length of tank (1 (drft)	6,307	lbs
deadmen overburden to mid tank	23,846	lbs
Submerged effect of deadmen:	30,154	lbs

Adequacy of Restraining Forces

Total restraint		
Overburden	80,505	lbs
Concrete	22,281	lbs
Fittings	300	lbs
Total	110,436	lbs

Total buoyant force to overcome		
Tank displacement	68,932	lbs
Sump displacement	1,100	lbs
Total	100,032	lbs

Excess Restraint (without anchoring)		
Restraint - Buoyancy	10,404	lbs

Safety Factor (without anchoring)		
Restraint/Buoyancy =	1.10	

Excess Restraint (with anchoring)		
Restraint - Buoyancy	61,558	lbs

Safety Factor (with anchoring)		
Restraint/Buoyancy =	1.41	



**A.L. Prime Energy**  
CONSULTANT, INC.  
18 LARK AVENUE  
SAUGUS MA 01906  
(781)246-0201

PROJECT ADDRESS

BYFIELD, MA  
23 CENTRAL STREET

TANK & PIPING  
LAYOUT

TK-1

DATE

SCALE

AS NOTED

13 DEC 2020

28 OCT 2020

03 OCT 2020

23 SEP 2020

29 APR 2020

13 DEC 2020

28 OCT 2020

03 OCT 2020

23 SEP 2020

29 APR 2020

13 DEC 2020

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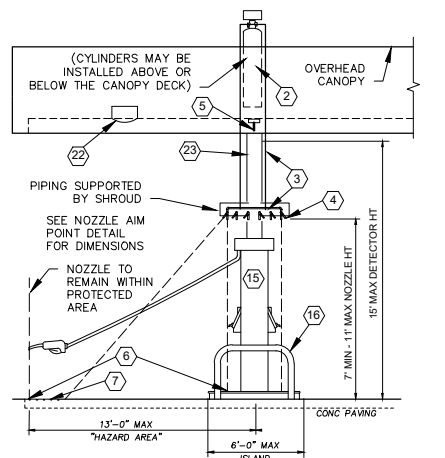
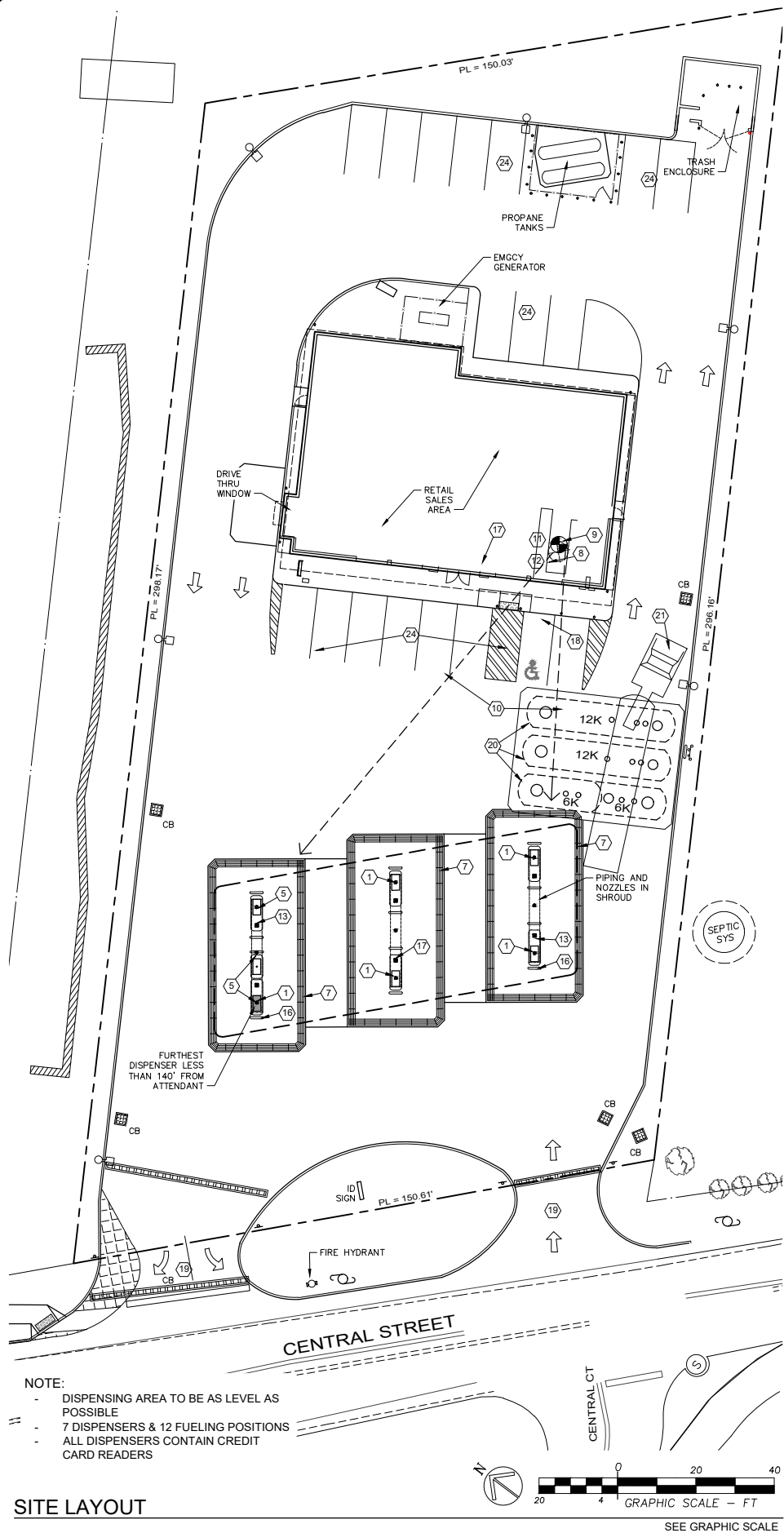
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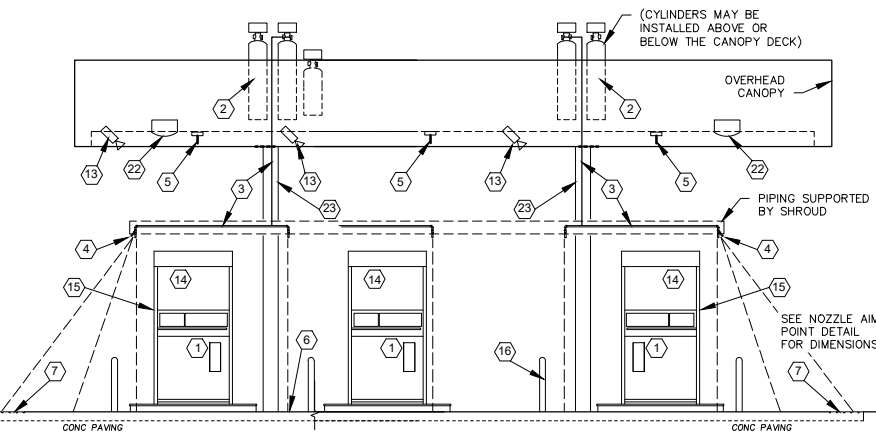




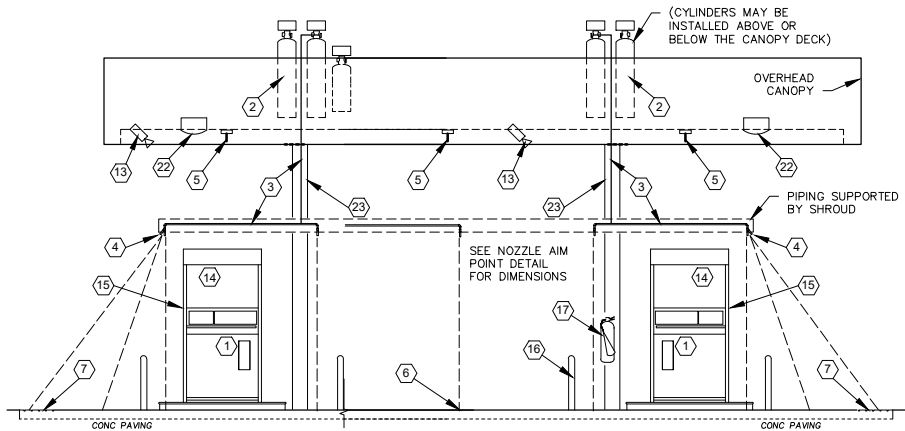


ISLAND END ELEVATION

- LEGEND
- 1 MOTOR FUEL DISPENSER - U/L APPROVED
  - 2 DRY CHEMICAL CYLINDER
  - 3 OH FSS PIPING - SCHED 40 (DIST & SUPPLY)
  - 4 UL LISTED SYSTEM NOZZLE
  - 5 225 (MAX) DEGREE AUTO THERMOSTAT
  - 6 NOZZLE AIMING POINT
  - 7 PLB - POSITIVE LIMITING BARRIER GROOVES
  - 8 CONTROL CONSOLE EQUIPMENT
  - 9 SELF-SERVICE ATTENDANT LOCATION
  - 10 ATTENDANT SIGHT LINES
  - 11 DISPENSER EMGCY SHUTDOWN SWITCH
  - 12 MANUAL SYSTEM RELEASE SWITCH
  - 13 CCTV CAMERA (AT EA DISPENSER)
  - 14 INTERCOM SPEAKER (AT EA DISPENSER)
  - 15 MA FIRE MARSHAL APPROVED SIGNAGE
  - 16 SAFETY BUMPER OR BOLLARD
  - 17 HAND OPERATED 40BC HI FLOW EXTINGUISHER
  - 18 GLASS DOOR OR WINDOW FOR SIGHT LINE
  - 19 DRIVEWAY
  - 20 UG MOTOR FUEL STORAGE TANK
  - 21 FUEL TRANSPORT AT DROP POSITION
  - 22 LIGHTING WITHIN FUELING AREA
  - 23 COLUMN OR LIGHT POLE
  - 24 PARKING SPACES



ISLAND SIDE ELEVATION - WEST ISLAND



ISLAND SIDE ELEVATION - MIDDLE AND EAST ISLANDS

BYFIELD FIRE DEPT REQUIREMENT  
A MONITORED BUILDING FIRE ALARM PANEL WILL BE INSTALLED AND THIS FIRE SUPPRESSION SYSTEM WILL BE ADDED TO THE PANEL AS A SEPARATE ZONE

GENERAL NOTES

1. REFER TO THE MOST CURRENT MASS DEPT OF FIRE SVCS DIV OF FIRE SAFETY "GUIDELINES FOR SELF-SERVICE MOTOR FUEL FACILITY GUIDELINES", 527 CMR 1.00 FIRE REGS, NFPA 17, & THE SYS MFGRL UL LISTING, SYS MANUALS, & LOCAL AND STATE APPROVALS FOR THIS SYSTEM
2. ALL MA SELF SERVICE DISPENSING AREAS OPEN TO THE PUBLIC SHALL BE EQUIPPED WITH A LISTED UL-1254 COMPLIANT PRE-ENGINEERED DRY CHEMICAL EXTINGUISHING SYSTEM, INCLUDING END OF ISLAND PROTECTION; AND DESIGNED & INSTALLED TO PROTECT THE ENTIRE SPILL & HAZARD AREA.
3. STATE REQUIRED PLAN STATEMENTS:
  - 3.1. SELF-SERVE EXTINGUISHING SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH STATE FIRE MARSHAL APPROVED PLANS.
  - 3.2. ALL EXTINGUISHING SYSTEMS, DISPENSING SYSTEMS, AND CONTROL EQUIPMENT SHALL BE UNDERWRITERS LABORATORY (UL) LISTED.
  - 3.3. CREDIT CARD READING DEVICES ARE PROPOSED AT THIS LOCATION AND ARE SUBJECT TO 527 CMR 1.00 SECTION 42.7.4.5 (1)(K):
    - 3.3.1. EA SALE SHALL BE INDIVIDUALLY AUTHORIZED BY THE SELF-SERVICE ATTENDANT
    - 3.3.2. THE AUTOMATIC CREDIT CARD READING DEVICE SHALL NOT BE USED AS PHYSICAL AUTHORIZATION FOR THE DISPENSING OF MOTOR FUEL
    - 3.3.3. THE AUTOMATIC CREDIT CARD READING DEVICES ARE INCLUDED ON PLANS SUBMITTED TO AND APPROVED BY THE STATE FIRE MARSHAL (SEE NOTES AND LEGEND)
  - 3.4. FAILURE TO CONSTRUCT, INSTALL, OR MAINTAIN ANY EQUIPMENT, DEVICES, SYSTEM, OR PROCEDURE INDICATED ON THE APPROVED PLANS SHALL BE CAUSE FOR THE REVOCATION OF THIS APPROVAL
  - 3.5. PLANS APPROVED BY THE MARSHAL ARE ON THE CONDITION THAT THEY COMPLY IN ALL RESPECTS TO 527 CMR 1.00. ANY OMISSIONS OR ERRORS ON THE PLANS DO NOT RELIEVE THE APPLICANT OR INSTALLER FROM COMPLYING WITH ALL APPLICABLE REQUIREMENTS OF 527 CMR 1.00.
  - 3.6. STATE FIRE MARSHAL APPROVAL OF PLANS TO CONSTRUCT/RENOVATE A SELF-SERVICE FACILITY BECOMES NULL AND VOID ONE YEAR FROM THE DATE OF THE APPROVAL.
4. ALL FIRE SUPPRESSION SYSTEMS SHALL BE INSTALLED & MAINTAINED BY COMPANIES & PERSONS HOLDING REQ'D CERTIFICATES OF COMPETENCY & REGISTRATION ISSUED BY THE MARSHAL.
5. FIRE SUPPRESSION SYS SHALL BE INSTALLED & MAINTAINED IN ACCORDANCE WITH THE PROVISIONS OF NFPA 17 (SEE 527 CMR 1.00 CH 2 FOR CURRENT EDITION), AND THE MFGR'S INSTALLATION & MAINTENANCE MANUAL.
6. CLOSED CIRCUIT TV (CCTV) COVERAGE IS REQUIRED ON ALL FUELING POSITIONS. CCTV MONITORS SHALL DISPLAY ALL CAMERA ANGLES SIMULTANEOUSLY ON THE SCREEN WITH A MIN FRAME OF 5" BY 6.5" PER CAMERA. CCTV SHALL DISPLAY IMAGES IN COLOR.
7. AN INTERCOM SYS IS REQ'D BETWEEN THE CONTROL CONSOLE AND DISPENSING ISLAND.
8. THE CONTROL CONSOLE WILL BE LOCATED IN DIRECT LINE OF SIGHT AND WITHIN 200 FEET OF THE MOST REMOTE DISPENSER. DISTANCES GREATER THAN 200 FT MAY BE APPROVED AT SOLE DISCRETION OF THE STATE FIRE MARSHAL.
9. ON PARTIAL (SPLIT SERVICE) SELF-SERVICE FACILITIES AN ADDITIONAL SWITCH, WHICH WILL DISCONNECT POWER TO THE SELF-SERVE ISLAND AND ACTIVATE THE SUPPRESSION SYS SHALL BE INSTALLED ON THE FULL SERVE ISLAND.
10. WARNING SIGNS SHALL BE CONSPICUOUSLY POSTED ON BOTH ENDS OF THE DISPENSER AND SHALL INCORPORATE STATE REQD LANGUAGE (SEE SIGN DETAIL)
11. THE CONCRETE PAD SURROUNDING THE DISPENSING ISLAND SHALL BE INSTALLED AS LEVEL AS POSSIBLE. THE POSITIVE LIMITING BARRIER (PLB)(GROOVES) SHALL BE INSTALLED IN THIS PAD WITH OUTER GROOVE LOCATED NO FURTHER THAN THE PROTECTED HAZARD AREA DEFINED BY THE FIRE SUPPRESSION SYSTEM DESIGN. NOZZLES SHALL NOT EXTEND BEYOND THE PLB AT THE AVERAGE FUELING HEIGHT OF 3 TO 4 FEET.
12. A MEANS TO INSTANTLY DISCONNECT THE POWER TO ALL DISPENSERS AND ACTIVATE THE SUPPRESSION SYS SHALL BE CONSPICUOUSLY MARKED AND LOCATED AT THE CONTROL CONSOLE.
13. THE USE OF AUTOMATIC CREDIT READING DEVICES ARE PERMITTED PROVIDED THAT THEY ARE INDICATED ON THE PLANS & COMPLY WITH THE REQMTS OF 527 CMR 1.00 SECTION 42.7.4.5 (1)(k).
14. 225° (MAX) ELECTRIC THERMOSTAT DETECTORS SHALL BE INSTALLED ON 15 FOOT (MAX) CENTERS IN A SINGLE LINE OVER THE CENTER OF THE ISLAND FOR ISLANDS UP TO 6 FT WIDE. FOR WIDER ISLANDS 2 ROWS OF DETECTORS SHALL BE LOCATED 1 FT IN FROM EA CURB. IF A CANOPY IS PROVIDED DETECTORS SHALL BE LOCATED ON THE UNDERSIDE OF THE CANOPY. IF THERE IS NO CANOPY, THE DETECTOR(S) SHALL BE MOUNTED TO THE UNDERSIDE OF AN 18"x18"x2" HEAT COLLECTOR, WHICH SHALL BE LOCATED NO HIGHER THAN THE NOZZLES.
15. FIRE EXTINGUISHERS SHALL BE A MINIMUM 40BC HIGH FLOW.
16. RAISING OR LOWERING OF AN EXSTG SUPPRESSION SYS OR TEMP RELOCATION OF CONTROL CONSOLE MAY BE COMPLETED ONLY AFTER WRITTEN NOTIFICATION TO AND WRITTEN ACKNOWLEDGEMENT FROM THE HEAD OF THE LOCAL FD AND STATE FIRE MARSHAL OFFICE.
17. CHANGING HEAT DETECTORS TO THOSE SPECIFIED IN CURRENT GUIDELINES, OR REPLACING DISPENSING NOZZLES WITH "HOLD OPEN" NOZZLES SHALL NOT REQUIRE NOTICE OR APPROVAL FROM STATE FIRE MARSHAL OFFICE.
18. A COMPLETE RESUBMITTAL IN ACCORDANCE WITH THEN CURRENT SELF-SERVICE GUIDELINES IS REQUIRED IN THE FOLLOWING CASES:
  - 17.1. REPLACEMENT OF THE FIRE SUPPRESSION SYSTEM
  - 17.2. CHANGE IN METHOD OF DISPENSING (I.E. - CHANGING FROM SPD TO MPD DISPENSERS)
  - 17.3. REPLACEMENT OR RECONSTRUCTION OF THE DISPENSING ISLAND
  - 17.4. MATERIAL CHANGE IN ENVIRONMENTAL CONDITIONS OR HAZARD AREA (I.E.- CHANGE THAT IMPACTS ATTENDANT ABILITY TO OBSERVE THE FUELING OPERATION)
19. THE CONTRACTOR SHALL VISIT THE SITE AND BE RESPONSIBLE FOR FIELD CONFIRMATION OF ALL ITEMS ON THE PLAN AND SHALL NOTIFY THE DESIGNER IN WRITING OF ANY DISCREPANCY BEFORE PROCEEDING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF THE ENTIRE SYSTEM AND SHALL COMPLY WITH THE REGULATIONS SET FORTH BY THE PREVAILING MASSACHUSETTS CODE AND THE EQUIPMENT MANUFACTURER SPECIFICATIONS.

NARRATIVE:

THE PURPOSE OF THIS WORK IS TO INSTALL A DRY CHEMICAL FIRE SUPPRESSION SYSTEM MEETING UL-1254 AT THIS NEW-TO-INDUSTRY SELF-SERVICE RETAIL MOTOR FUEL STATION. IN ADDITION TO THE FUELING ISLANDS, THE ATTENDANT MAY MONITOR A CONVENIENCE STORE WITH APPROX 1,600 SF OF RETAIL AREA. PROPOSED TO BE OPERATED BY OTHERS THAN THE MOTOR FUEL SELF SERVICE ATTENDANT IS A COFFEE MENU DRIVE-THRU FOOD OPERATION.

PLBs (POSITIVE LIMITING BARRIERS) WILL BE INSTALLED AS WELL AS CAMERAS AT EACH DISPENSER AND SIGNAGE TO MEET STATE FIRE MARSHAL GUIDELINE REQUIREMENTS. ALL EQUIPMENT WILL BE INSTALLED PER THE PRE-ENGINEERED DESIGN MANUAL FROM THE SYSTEM MANUFACTURER.

THE SYSTEM WILL PROVIDE BOTH AUTOMATIC AND MANUAL ACTIVATION SWITCHES. THERE WILL BE HI TEMP SENSORS INSTALLED IN THE FUEL DISPENSING AREAS. SYSTEM OPERATION IS PER THE PRE-ENGINEERED DESIGN BY THE MANUFACTURER, PYRO-CHEM. REFER TO MANUFACTURER DESIGN MANUAL FOR TECHNICAL SPECIFICATIONS AND GENERAL SYSTEM SEQUENCE.

NEW TO INDUSTRY  
SELF SERVICE FACILITY

SYSTEM INFORMATION

ATTENDANT 1 SYSTEM MFGRD BY PYRO CHEM, INC.  
MODEL ATD-35/75 -- MEETS UL-1254

SYSTEM INSTALLER - TO BE DETERMINED

INSTALLER MA CERT OF COMPETENCY NUMBER - \_\_\_\_\_

INSTALLER MA CERT OF REGISTRATION NUMBER - \_\_\_\_\_

PROTECTED AREA - (3 EA) SYSTEMS EACH PROTECTING 24' x 48.5'

NUMBER OF 75# CYLINDERS - 3ea x 4 per sys = TOTAL OF 12ea 75# CYLINDERS

NUMBER OF 35# CYLINDERS - 3ea x 1 per sys = TOTAL OF 3ea 35# CYLINDERS

NUMBER OF FIRE SUPP NOZZLES - 8ea x 12(75#) + 4ea x 3(35#) = 108ea TOTAL NOZZLES

NUMBER OF HI TEMP HEAT DETECTORS - 3ea x 3 per sys = 9ea TOTAL HEAT DETECTORS

THIS BOX RESERVED FOR LOCAL FIRE DEPARTMENT OFFICE USE

I, \_\_\_\_\_, CHIEF OF THE DEPARTMENT OR HIS DESIGNEE, HAVE REVIEWED THE ATTACHED INFORMATION AND HAVE ACKNOWLEDGEMENT THEREOF:

CITY/TOWN \_\_\_\_\_ DATE \_\_\_\_\_

THIS BOX RESERVED FOR LOCAL FIRE DEPARTMENT USE

THIS BOX RESERVED FOR STATE FIRE MARSHAL OFFICE USE ONLY

THIS BOX RESERVED FOR STATE FIRE MARSHAL OFFICE USE ONLY

THIS  
COPY:

DATE	REV	BY	DESCRIPTION
13 DEC 2020	3	AG	NO CHANGE TO SYS. ADDED CB. REV NOTES PER SFM POINTS EFF 1/1/2021
28 OCT 2020	2	AG	NO CHANGE TO FIRE SYS. RELOCATED UG TANKS
23 SEP 2020	1	AG	ADDED NOTE PER FD COMMENTS FOR MONITORED FIRE ALARM
29 APR 2020	0	AG	ORIGINAL DRAWING DATE



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BYFIELD, MA  
23 CENTRAL STREET

SELF SERVICE  
FIRE SUPPRESSION

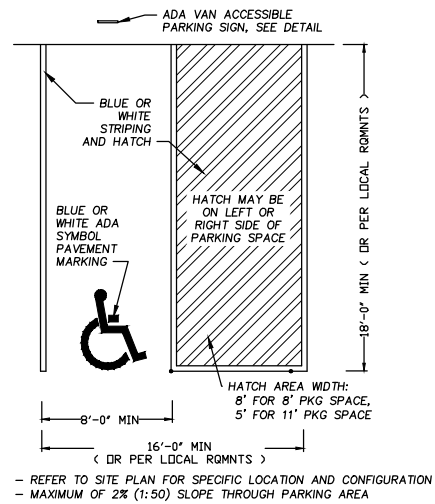
PROJECT ADDRESS  
TBD-019-01 BYFIELD

SCALE  
AS NOTED

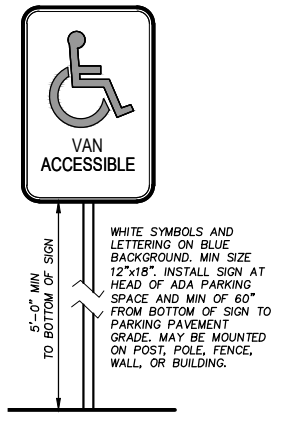
SHEET  
FSP-1



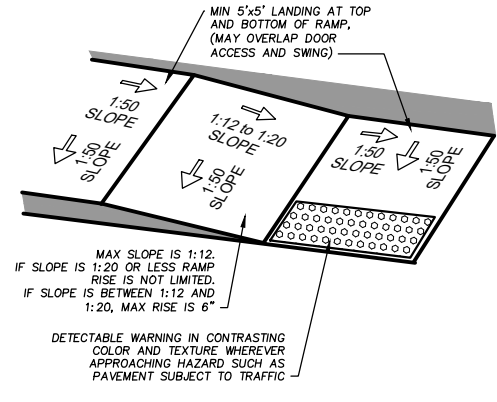




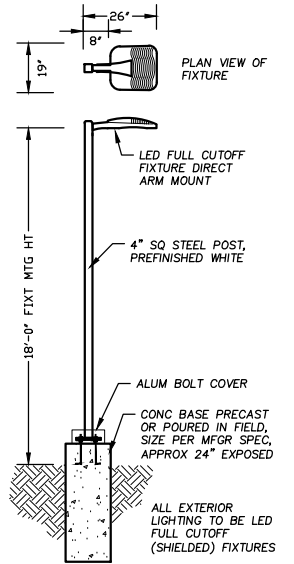
ADA PKG PAVEMENT MARKING  
NOT TO SCALE



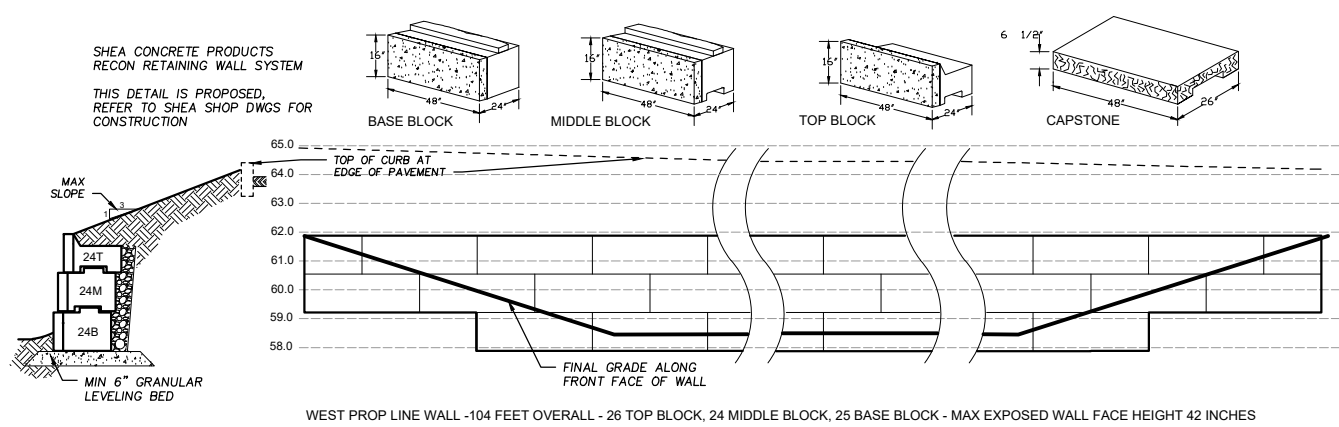
ADA PKG SIGNAGE  
NOT TO SCALE



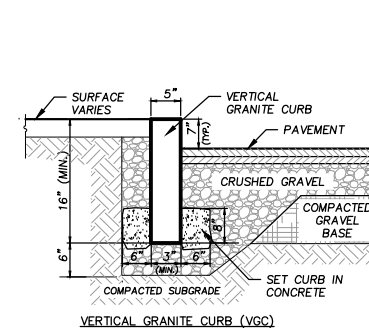
SIDEWALK ADA PARALLEL CURB RAMP  
NOT TO SCALE



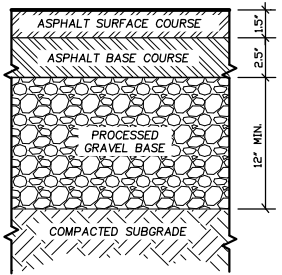
YARD POLE LIGHT  
NOT TO SCALE



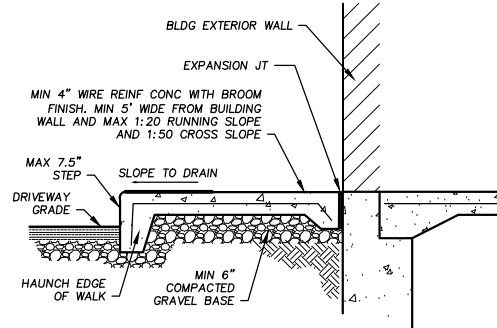
RETAINING WALL (NW PROPERTY CORNER)  
NOT TO SCALE



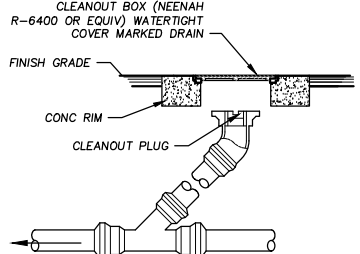
CURBING  
NOT TO SCALE



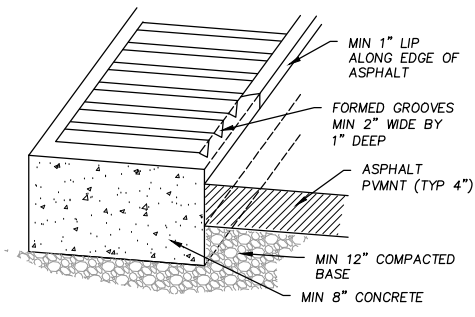
ASPHALT PAVEMENT  
NOT TO SCALE



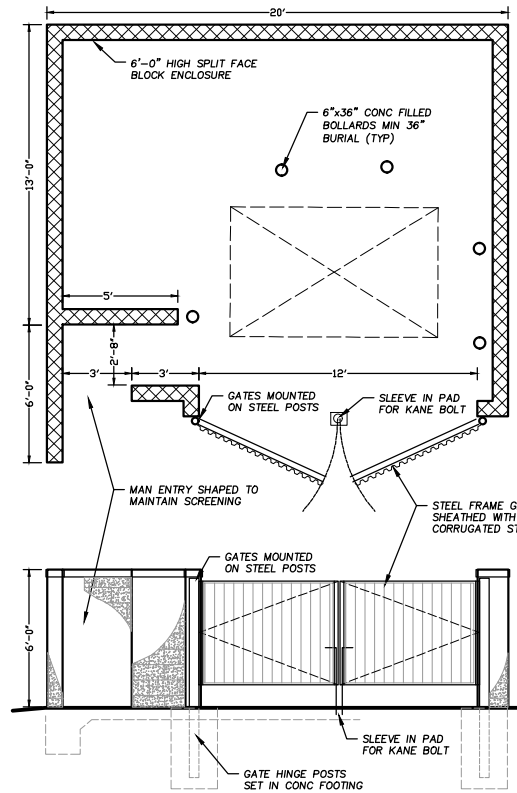
BUILDING SIDEWALK  
NOT TO SCALE



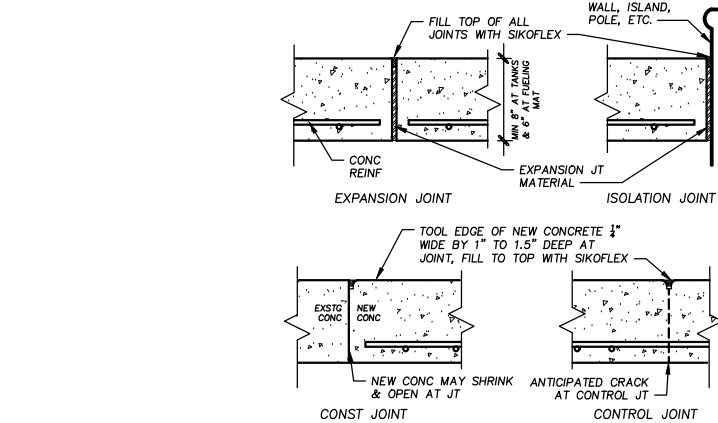
CLEAN-OUT  
NOT TO SCALE



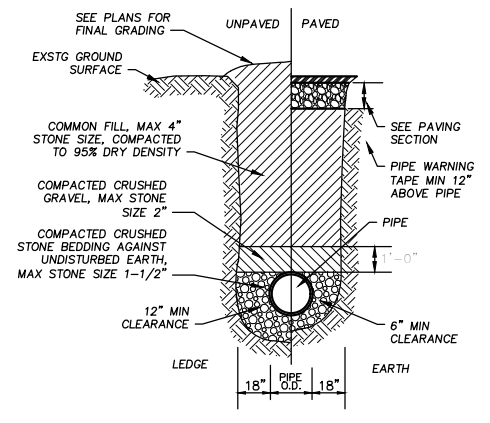
MOUNTABLE CURB  
NOT TO SCALE



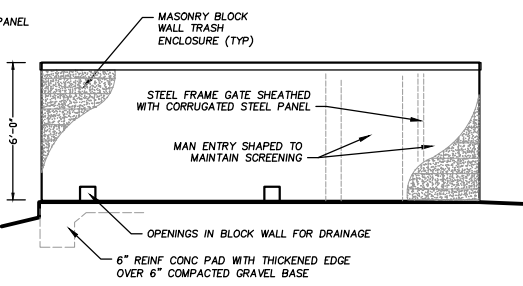
SCREENED TRASH ENCLOSURE  
NOT TO SCALE



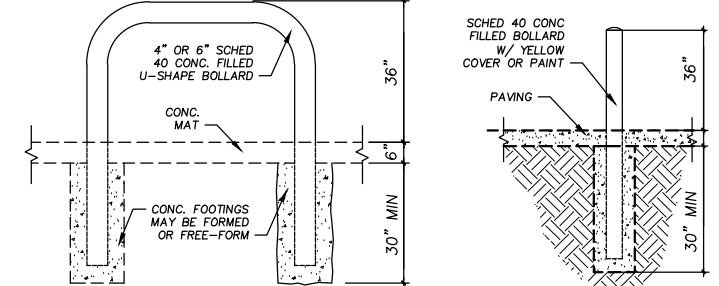
CONCRETE PAVEMENT JOINTS  
NOT TO SCALE



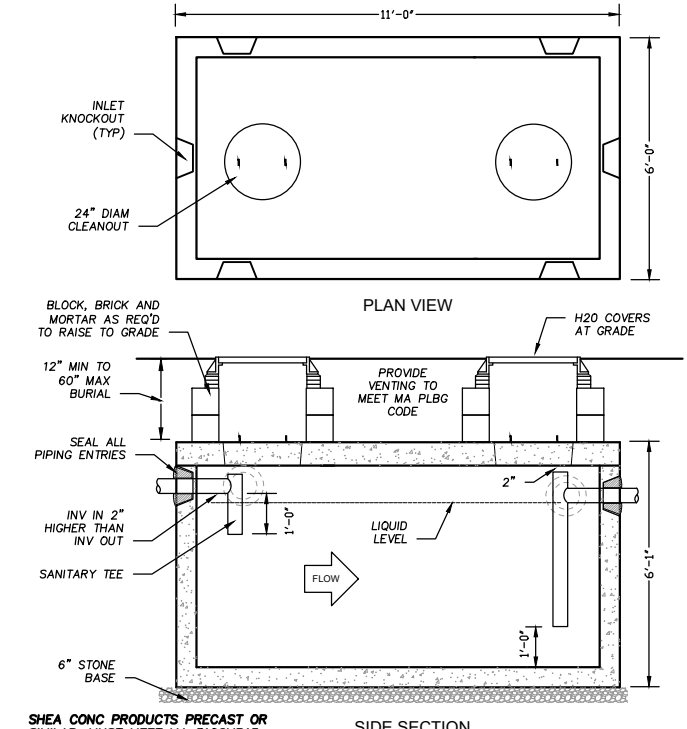
UTILITY PIPE TRENCH  
NOT TO SCALE



U-SHAPE BOLLARD  
NOT TO SCALE



BOLLARD  
NOT TO SCALE



GREASE TRAP - EXTERIOR UG 1,500 GAL  
NOT TO SCALE

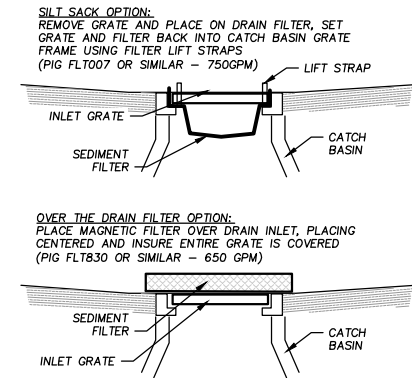
28 OCT 2020		AG	REV WALL DETAIL FOR LONGER TALLER WALL
23 SEP 2020		1 AG	REV PMNT DETAIL TO 12" BASE, ADDED MOUNTABLE CURB
29 APR 2020		0 AG	ORIGINAL DRAWING DATE
DATE		REV	DESCRIPTION
TBD-019-01 BYFIELD		SD-1	AS NOTED

**A.L. PRIME ENERGY CONSULTANT, INC.**  
18 LARK AVENUE  
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(781) 246-0201

**BYFIELD, MA**  
23 CENTRAL STREET

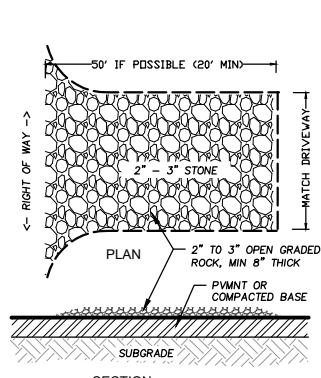
**SITE DETAILS 1**





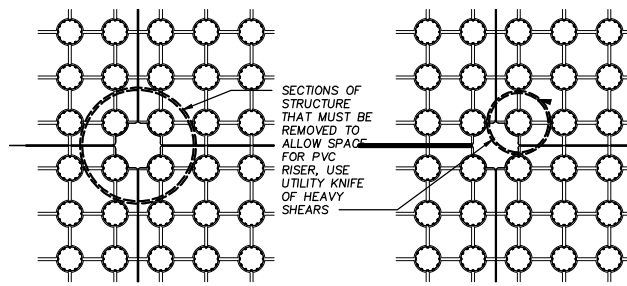
CB INLET PROTECTION

NOT TO SCALE

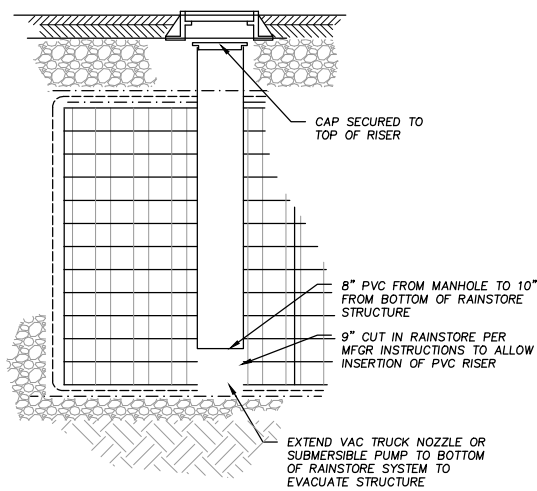


CONSTRUCTION ENTRANCE

NOT TO SCALE

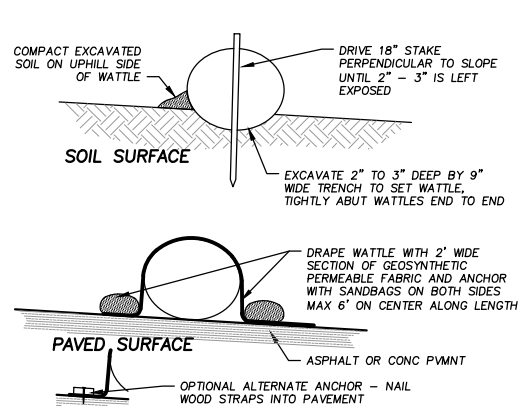


Top view illustrating the removal of either one Rainstore3 structure column for a 9" access or four columns for up to a 16" maintenance port



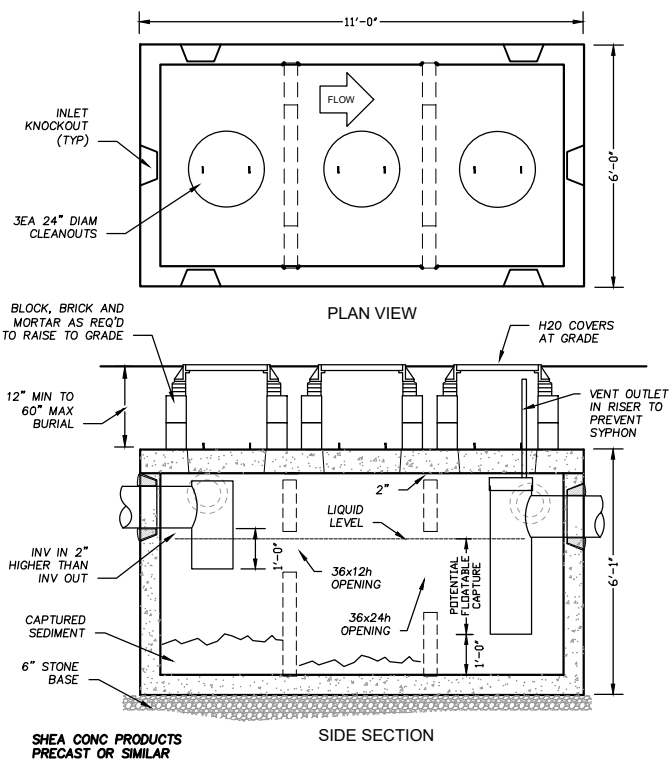
INFILTRATION SYS INSP/MAINT PORT

NOT TO SCALE



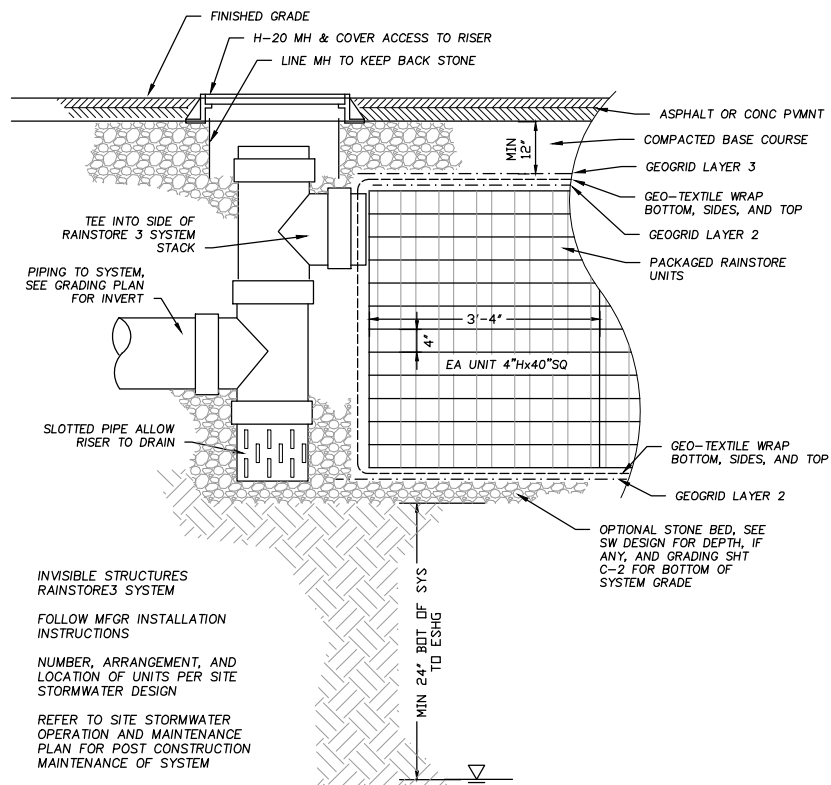
STRAW WATTLE SEDIMENT BARRIER

NOT TO SCALE



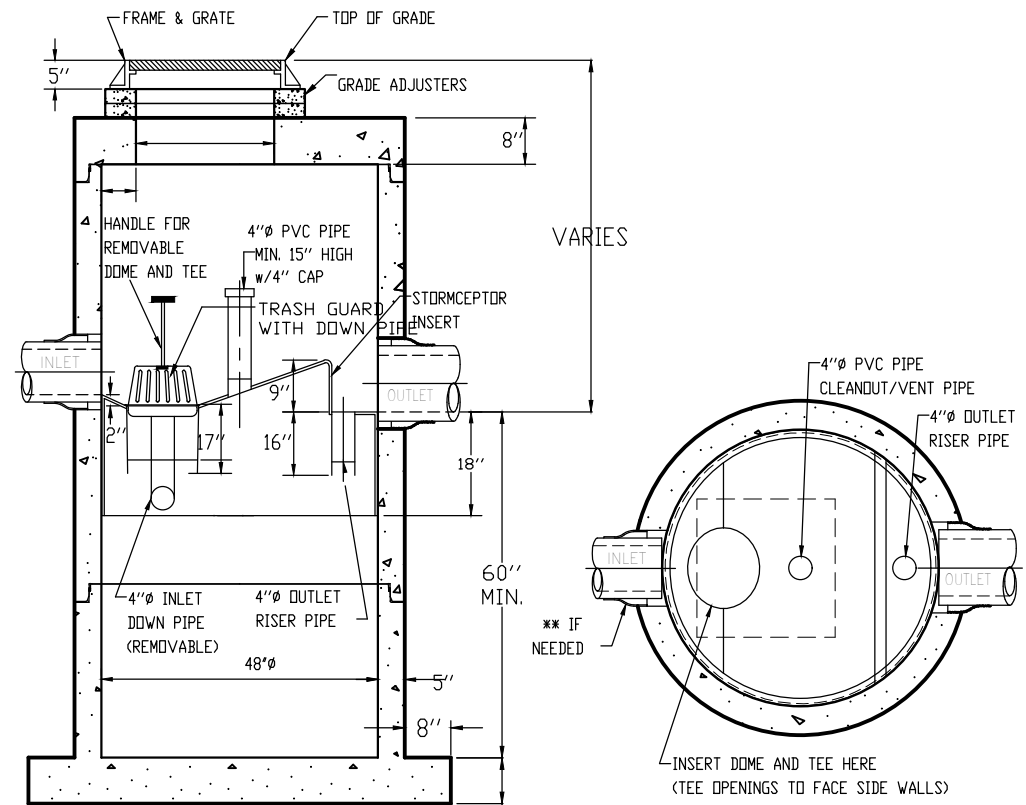
OIL/GRIT CHAMBER

NOT TO SCALE



INFILTRATION SYSTEM (TYP)

NOT TO SCALE



NOTE 1:

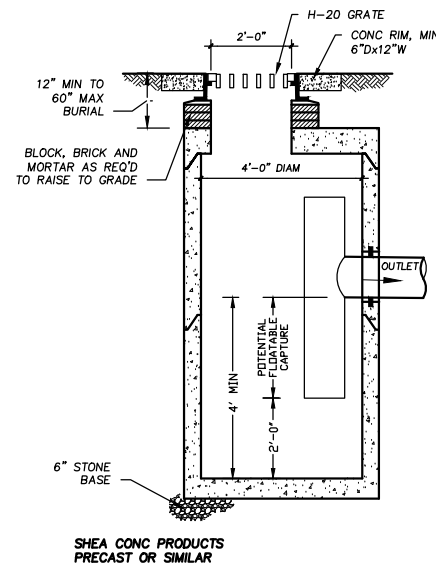
1. THE USE OF FLEXIBLE CONNECTIONS IS RECOMMENDED AT THE OUTLET WHERE APPLICABLE.
2. THE COVER SHOULD BE POSITIONED OVER THE 4"Ø CLEANOUT/VENT PIPE AND THE 4"Ø INLET DOWN PIPE.
3. THE STORMCEPTOR SYSTEM IS PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: #4985148, #5498331, #5725760, #5753115, #5849181.

MAINTENANCE:

1. INSPECT AT LEAST TWICE THE FIRST YEAR, AND SUBSEQUENT YEARS BASED ON ACCUMULATION RATE DETERMINED DURING FIRST YEAR OBSERVATIONS.
2. CLEAN OUT WHEN SEDIMENT DEPTH REACHES 15% OF STORAGE CAPACITY.
3. STRUCTURE SHOULD BE INSPECTED AFTER ANY MAJOR STORM EVENT OR FUEL SPILL.

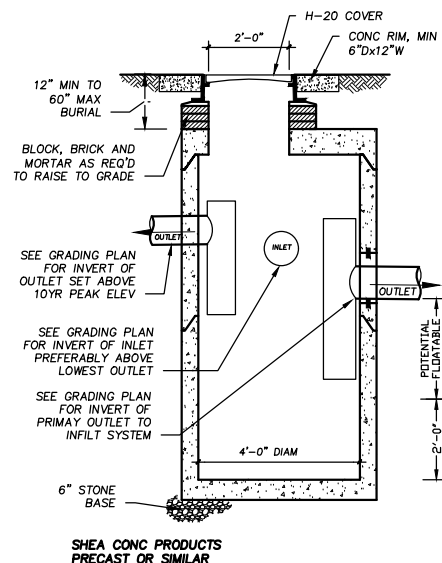
STC 450i Precast Concrete Stormceptor  
(450 US Gallon Capacity)

NOT TO SCALE



DEEP SUMP CATCH BASIN

NOT TO SCALE




INF SYS DRAIN MANHOLE

NOT TO SCALE

13 DEC 2020				3	AG	CORRECTED COVER DEPTH ON RAINSTORE DETAIL
28 OCT 2020				2	AG	ADDED DIMH DETAIL
23 SEP 2020				1	AG	REMOVED, REVISED, ADDED DETAILS PER PEER REVIEW COMMENTS
29 APR 2020				0	AG	ORIGINAL DRAWING DATE
DATE		REV		BY		DESCRIPTION
PROJECT ADDRESS						
BYFIELD, MA 23 CENTRAL STREET						
SITE DETAILS 2						
DWG FILE		TBD-019-01 BYFIELD			SHEET	
SCALE		AS NOTED			SD-2	

13 DEC 2020	3	AG	UPDATED SIDEWALK RAMP GRADES PER REV GRADING PLAN
28 OCT 2020	2	AG	UTILITY REROUTE
23 SEP 2020	1	AG	MINOR REVISIONS PER ROOF STYLE CHANGE AND UTILITY REROUTE
29 APR 2020	0	AG	ORIGINAL DRAWING DATE
DATE	REV	BY	DESCRIPTION



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## BYFIELD, MA

### 23 CENTRAL STREET

# FLOOR PLAN

DWG FILE  
TBD-019-01 BYFIELD

SHEET  

# A1.0

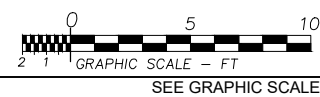
SCALE  
AS NOTED







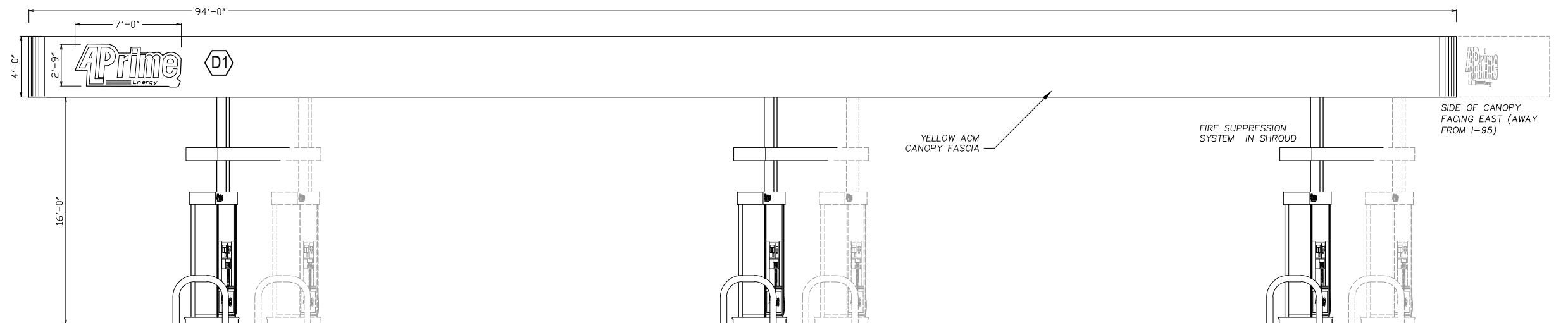
SEE GRAPHIC SCALE



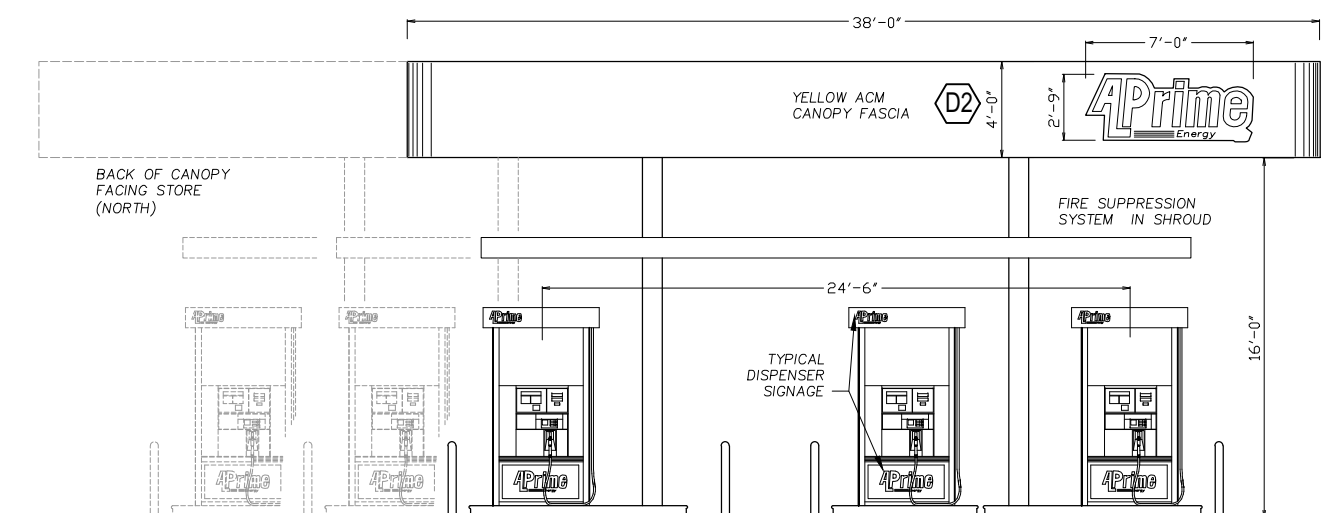
SEE GRAPHIC SCALE

[illegible]





CANOPY SOUTH ELEVATION (FACING CENTRAL)

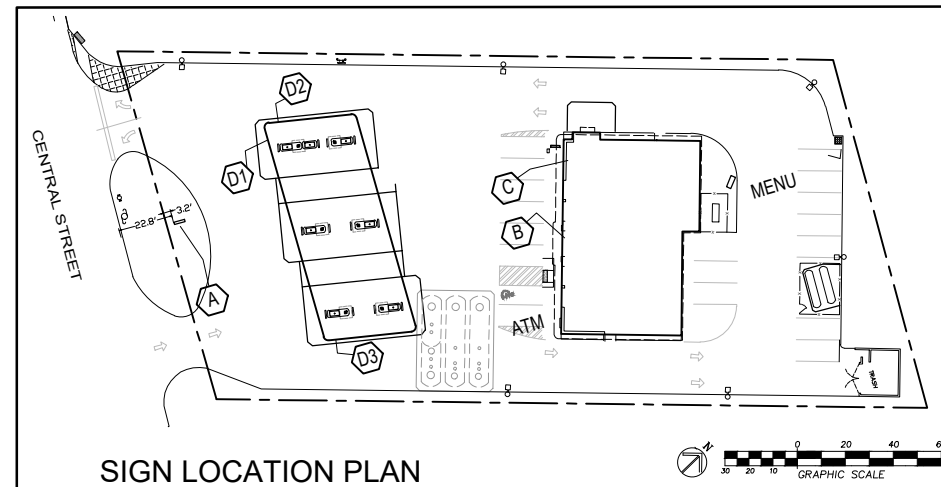
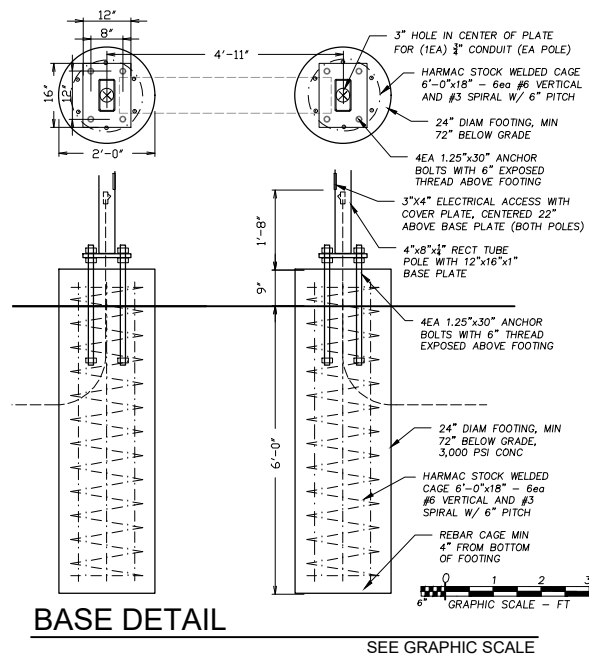
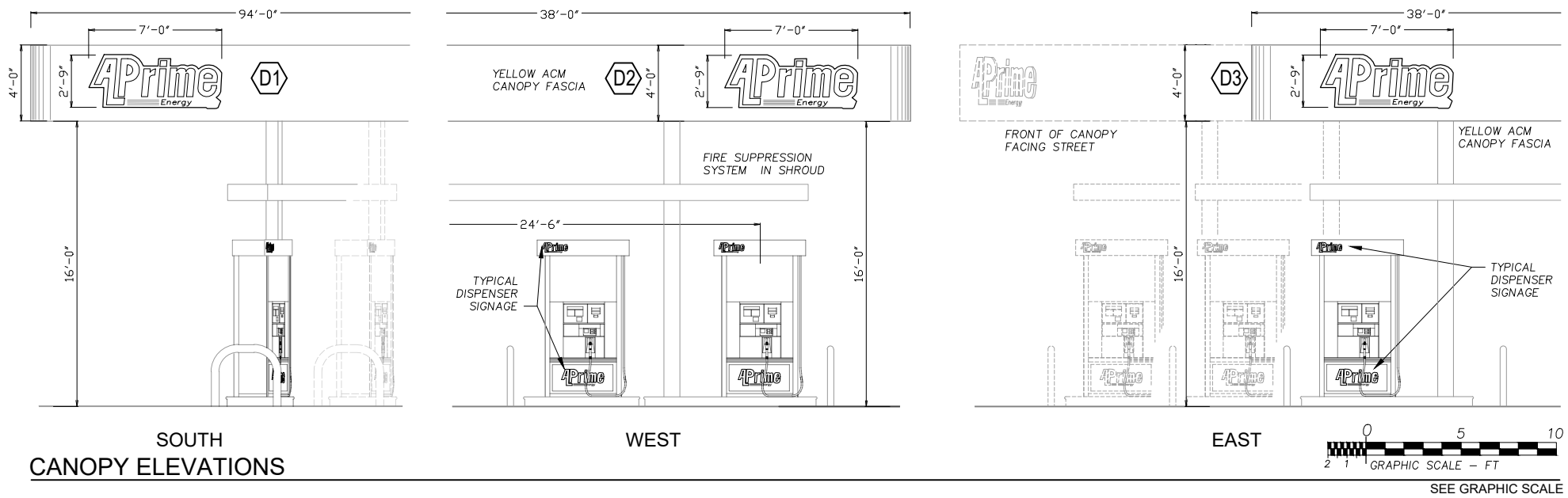
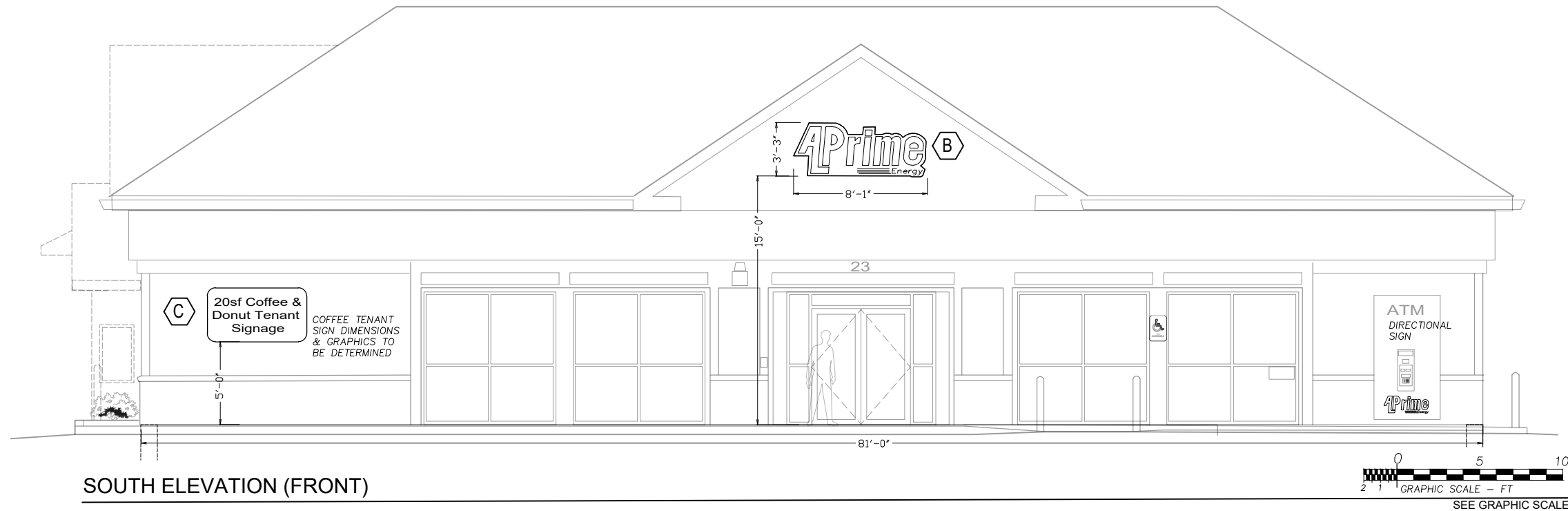
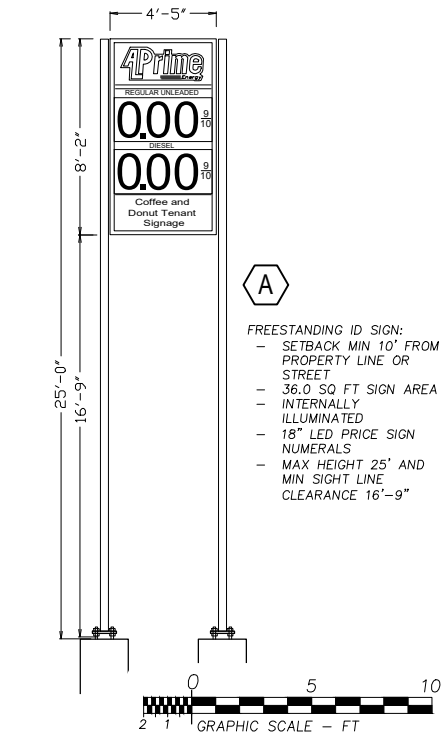


CANOPY WEST ELEVATION (FACING I-95)

### GENERAL NOTES

1. DO NOT REFER TO THIS PLAN FOR CONSTRUCTION LAYOUT OR PURPOSES. THIS PLAN IS ONLY FOR BOARD REVIEW AND APPROVAL AND DOES NOT CONTAIN ADEQUATE INFORMATION FOR CONSTRUCTION.
2. REFER TO CANOPY MANUFACTURER STAMPED STRUCTURAL DRAWINGS, INCLUDING FOOTING DETAILS FOR ALL COLUMN AND FOOTING LAYOUT.
3. REFER TO TK-1 TANK AND PIPING PLAN FOR ISLAND AND DISPENSER SUMP LAYOUT.
4. REFER TO LOCAL AND STATE FIRE APPROVED FIRE SUPPRESSION PLAN FOR SHROUD AND FIRE SUPPRESSION SYSTEM PIPING LAYOUT
5. REFER TO BUILDING DEPARTMENT APPROVED SIGN PLAN FOR LAYOUT OF ANY APPROVED SIGNAGE. SIGNAGE SHOWN IS PROPOSED AND WILL BE APPROVED SEPARATELY AS ALLOWED BY RIGHT.
6. REFER TO LIGHTING PLAN AND OWNER SPECIFICATIONS REGARDING NUMBER AND LOCATION OF LIGHTING FIXTURES TO BE INSTALLED INTO CANOPY DECK.

[illegible]



PROPOSED SIGNAGE						
KEY	TYPE	SIZE	AREA (sf)	DIST TO BOTTOM	DIST TO TOP	INTERNALLY ILLUMINATED
<b>A</b>	FREESTANDING	4'-5" x 8'-2"	36.00	16'-9"	25'-0"	Y
<b>B</b>	WALL (BLDG)	8'-1" x 3'-3"	20.33	15'-0"	18'-3"	Y
<b>C</b>	WALL (BLDG)		20.00	11'-0"	14'-6"	Y
<b>D1</b>	WALL (CANOPY)	7'-0" x 2'-9"	15.45	16'-9"	19'-6"	Y
<b>D2</b>	WALL (CANOPY)	6'-10" x 2'-7"	15.45	16'-9"	19'-6"	Y
<b>D3</b>	WALL (CANOPY)	6'-10" x 2'-7"	15.45	16'-9"	19'-6"	Y

TOTAL PROPOSED FREESTANDING SIGNAGE: 36.00 SF

TOTAL PROPOSED BUILDING WALL SIGNAGE: 40.33 SF

TOTAL BUILDING FRONT LENGTH: 81 LF (Allowed Signage Calc - 1 SF / 2 LF \* (81 LF) = 40.5 SF)

TOTAL PROPOSED CANOPY WALL SIGNAGE: 46.35 SF

TOTAL CANOPY FRONT LENGTH: 94 LF (Allowed Signage Calc - 1 SF / 2 LF \* (94 LF) = 47.0 SF)

IT IS INTENDED AND BELIEVED THAT PROPOSED SIGNAGE IS AS ALLOWED BY RIGHT AND MAY BE REVISED OR RECONFIGURED AFTER SITE PLAN APPROVAL PROVIDED CHANGES ALSO MEET ZONING BYLAW AND ARE ALLOWED BY RIGHT. IN THE FUTURE, SHOULD ANY NON-CONFORMING SIGNAGE BE DESIRED, APPROVAL WILL BE OBTAINED SEPARATELY VIA APPLICABLE ZBA PROCEDURE.

NO CHANGES TO PROPOSED SIGNS - ADJUG TANK LOCATION

REVISED BUILDING ROOF LINE, CORRECTED SIGN AREA TABLE

ORIGINAL DRAWING DATE

DATE

28 OCT 2020

23 SEP 2020

29 APR 2020

SCALE

AS NOTED

DESCRIPTION

BY

DATE

28 OCT 2020

23 SEP 2020

29 APR 2020

SCALE

AS NOTED

PROJECT ADDRESS

BYFIELD, MA  
23 CENTRAL STREET

SIGNAGE & GRAPHICS

TBD-019-01 BYFIELD

SG-1

PROFESSIONAL ENGINEER

ANTHONY GUBA

01912

0102020

A.L. PRIME ENERGY CONSULTANT, INC.

18 LARK AVENUE

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