

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 (NO 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:

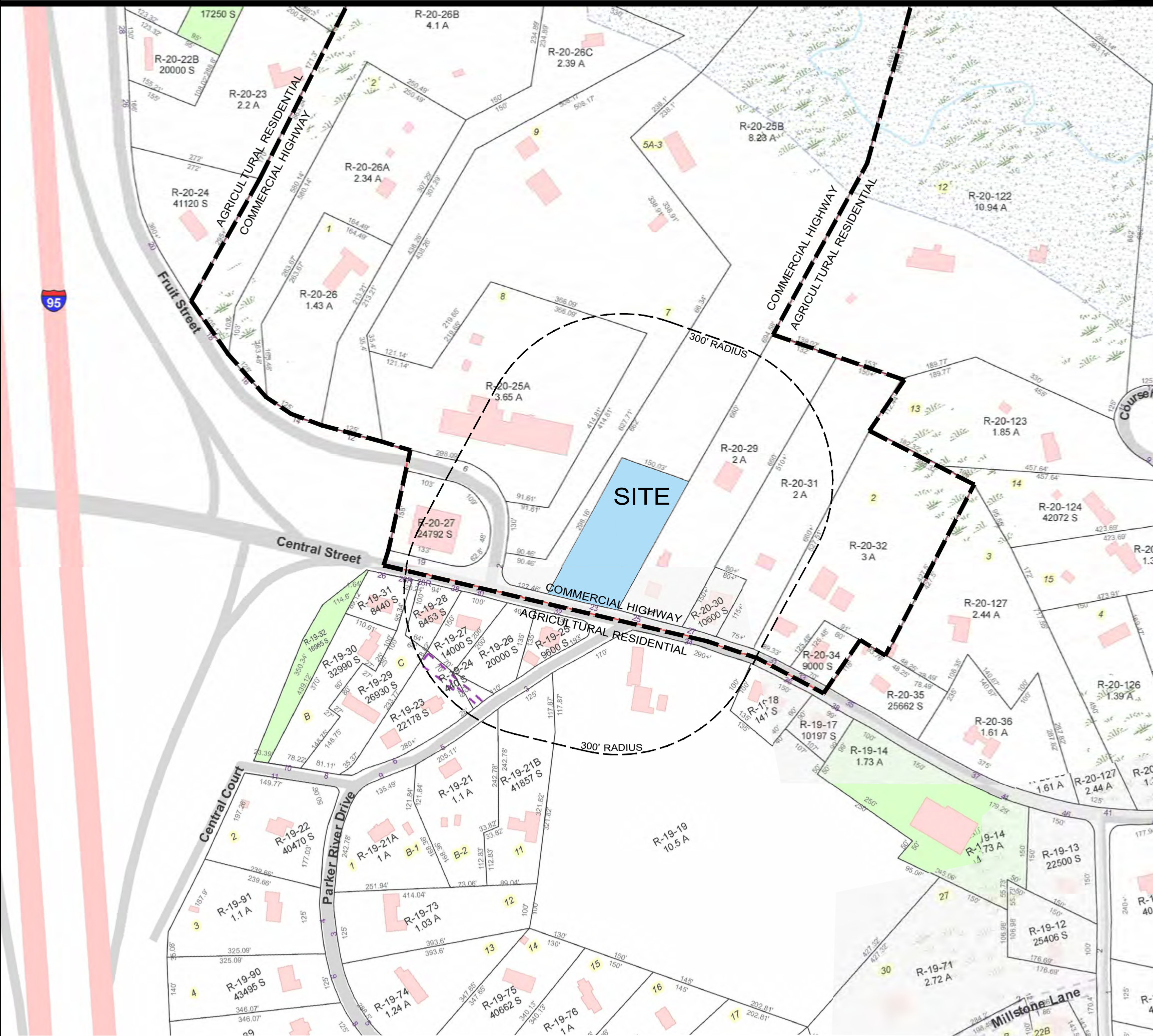
- GROUND SNOW LOAD - 50 PSF
- ROOF TOP MECH LOAD - POINT LOAD SPECIFIED ON STRUCTURAL SHEET
- ROOF UPLIFT - 40PSF
- PRESUMPTIVE SOIL BEARING - 2,500 PSF
- DESIGN WIND LOAD - (I) 114MPH, (II) 125MPG, (III) 136MPG
- SEISMIC S1- 0.077



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

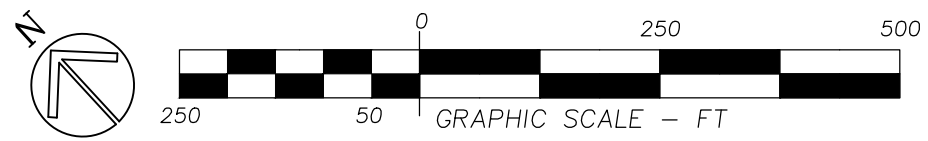
NEW GAS STATION, C-STORE, DRIVE-THRU
A.L. PRIME #TBD
23 CENTRAL STREET
BYFIELD, MASS

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 SITE PLAN & SPECIAL PERMIT APP

		ORIG DATE	LAST REV	REV DATE
C-0	COVER	29 APR 2020	1	19 MAY 20
--	EXSTG CONDITIONS SHT 1 OF 2 (ELS, LLC)	12 DEC 2019	1	3 MAR 2020
--	EXSTG CONDITIONS SHT 2 OF 2 (ELS, LLC)	12 DEC 2019	1	3 MAR 2020
C-1.0	PROPOSED SITE IMPROVEMENTS	29 APR 2020	1	19 MAY 20
C-2	GRADING	29 APR 2020	NONE	N/A
C-3	UTILITIES	29 APR 2020	NONE	N/A
ER-1	EROSION CONTROL	29 APR 2020	NONE	N/A
SW-1	STORMWATER AREAS	29 APR 2020	NONE	N/A
L-1	LANDSCAPE	29 APR 2020	NONE	N/A
--	LIGHTING (RED LEONARD ASSOC)	04 DEC 2019	NONE	N/A
TR-1	EMGCY, TANKER, & DRIVE-THRU VEHICLE PATH	29 APR 2020	NONE	N/A
TK-1	TANK AND PIPING LAYOUT	29 APR 2020	NONE	N/A
TK-2	TANK AND PIPING DETAILS	29 APR 2020	NONE	N/A
FSP-1	SELF SERVICE FIRE SUPPRESSION	29 APR 2020	NONE	N/A
FSP-2	SELF SERVICE FIRE SUPPRESSION	29 APR 2020	NONE	N/A
SD-1	SITE DETAILS	29 APR 2020	NONE	N/A
SD-2	SITE DETAILS	29 APR 2020	NONE	N/A
A1.0	FLOOR PLAN	29 APR 2020	NONE	N/A
A2.1	BUILDING ELEVATIONS	29 APR 2020	NONE	N/A
A2.2	BUILDING ELEVATIONS	29 APR 2020		N/A
A2.3	CANOPY ELEVATIONS	29 APR 2020	NONE	N/A
SG-1	SIGN AND GRAPHICS	29 APR 2020	NONE	N/A



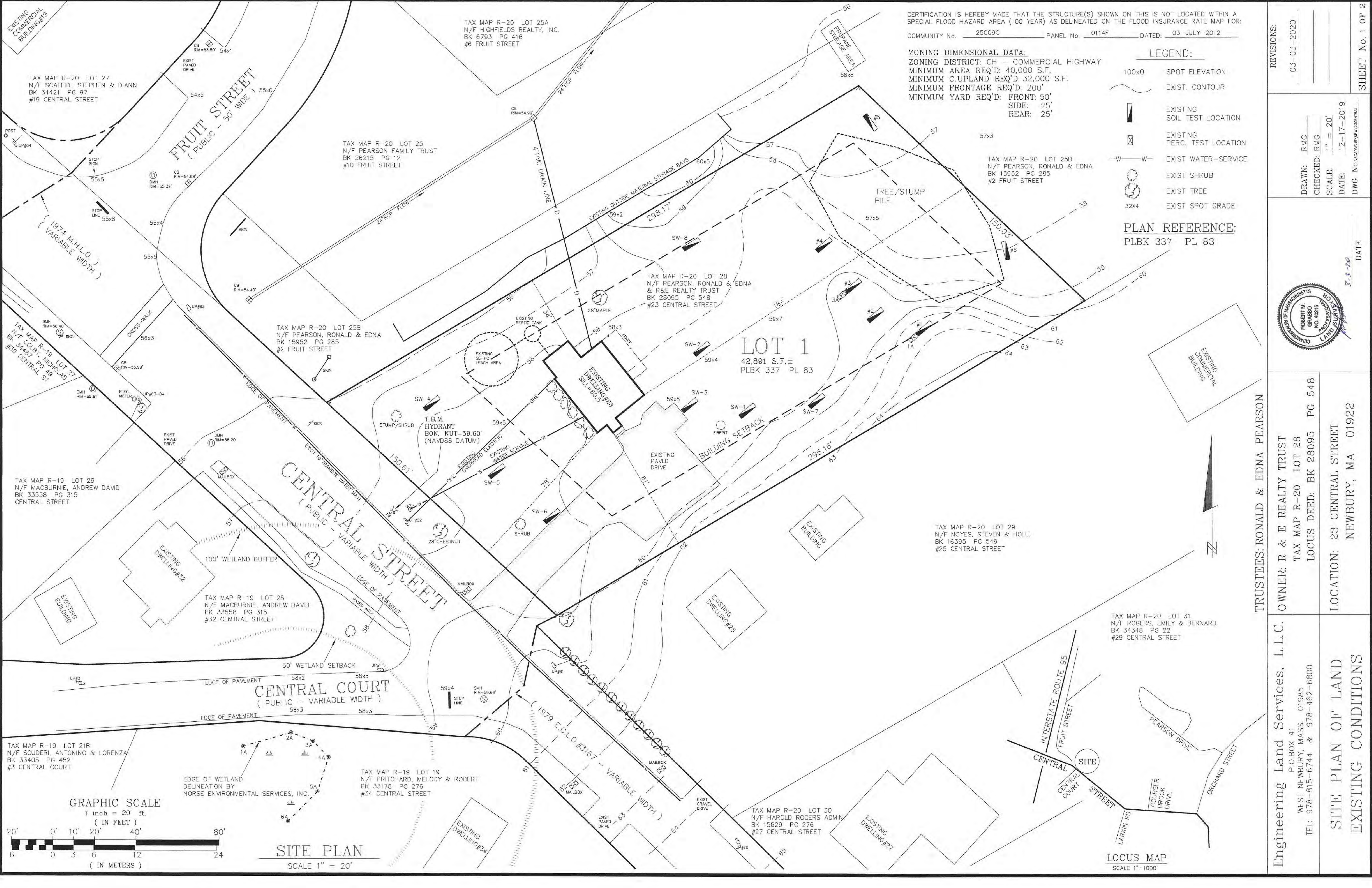
A.L. PRIME ENERGY
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BYFIELD, MA
23 CENTRAL STREET

PROJECT
COVER SHEET

DWG FILE
TBD-019-01 BYFIELD
SCALE
AS NOTED

SHEET
C-0



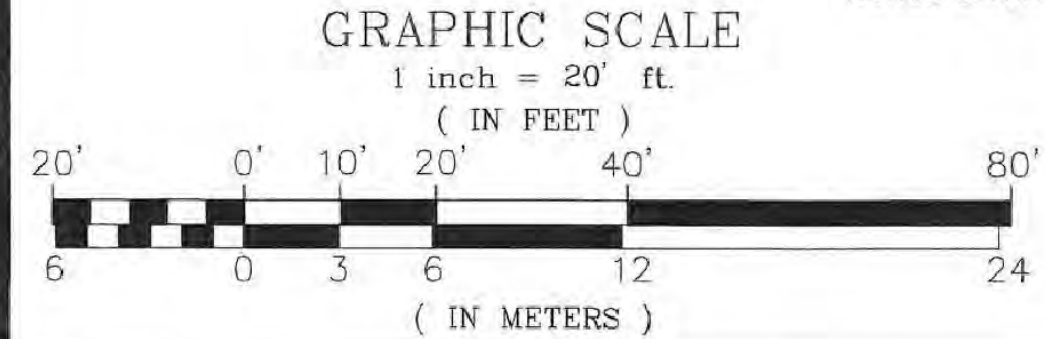
CERTIFICATION IS HEREBY MADE THAT THE STRUCTURE(S) SHOWN ON THIS IS NOT LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA (100 YEAR) AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR:
COMMUNITY No. 25009C PANEL No. 0114F DATED: 03-JULY-2012

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:**
- 100x0 SPOT ELEVATION
 - EXIST. CONTOUR
 - EXISTING SOIL TEST LOCATION
 - EXISTING PERC. TEST LOCATION
 - EXIST WATER-SERVICE
 - EXIST SHRUB
 - EXIST TREE
 - EXIST SPOT GRADE

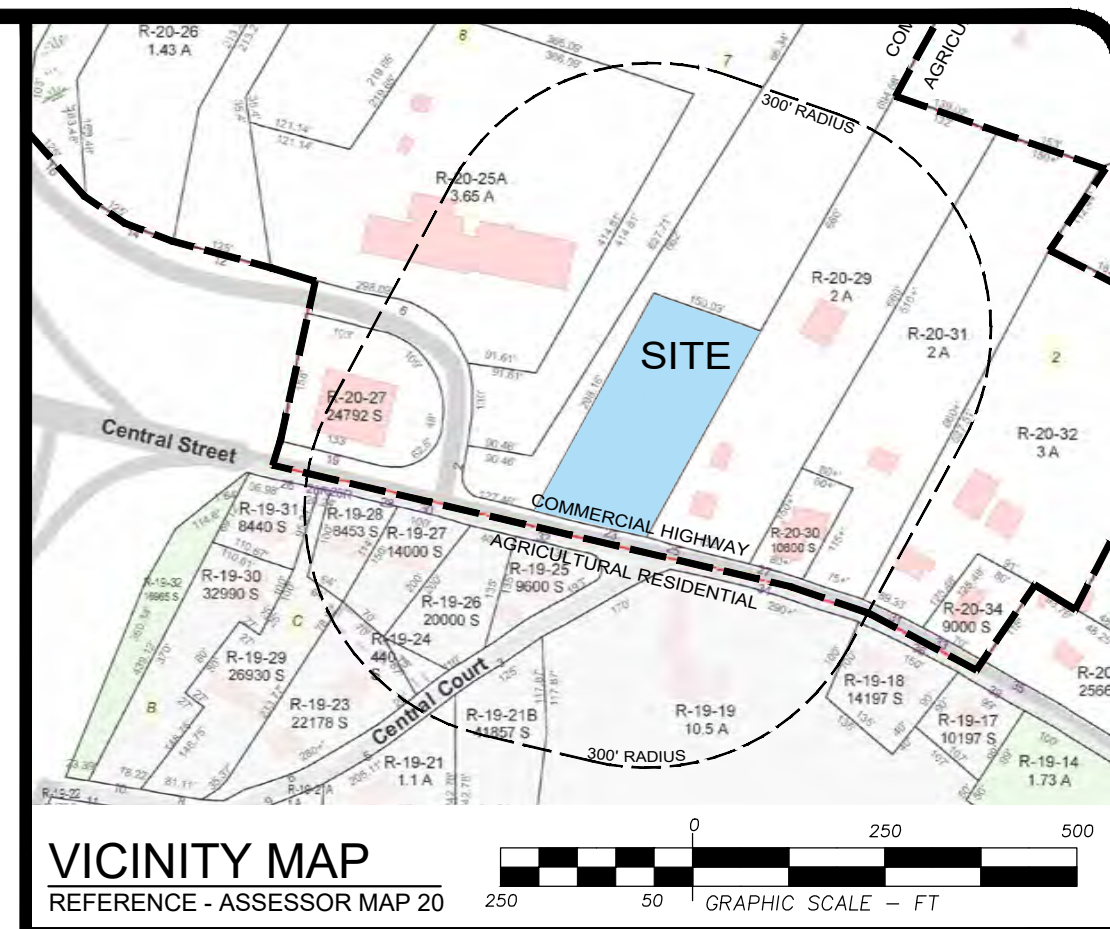
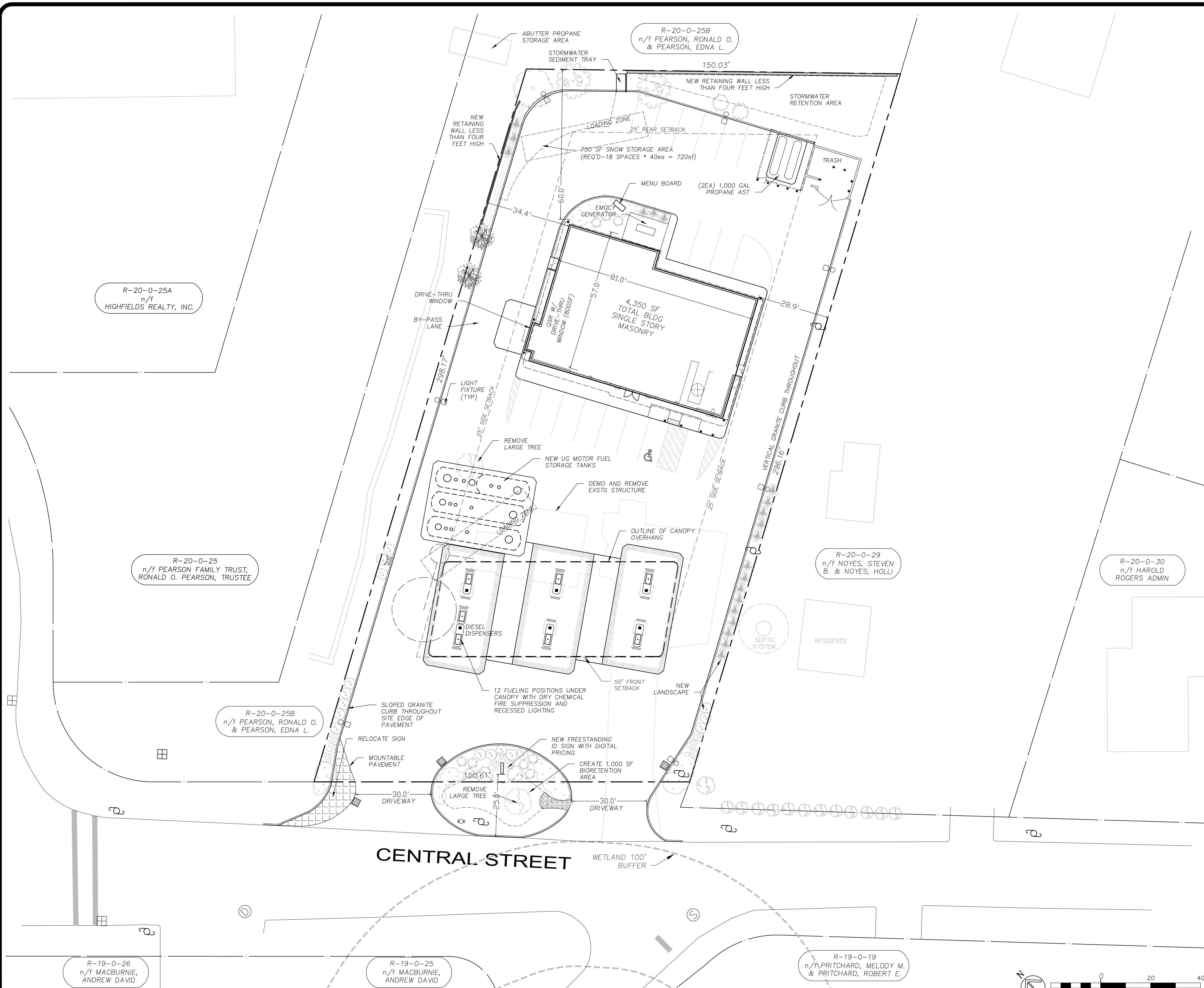
PLAN REFERENCE:
PLBK 337 PL 83

REVISIONS: 03-03-2020		DRAWN: RMG CHECKED: RMG SCALE: 1" = 20' DATE: 12-17-2019 DWG No. A-015 (P) NEWBURY CENTRAL		SHEET No. 1 OF 2
<div><div>TRUSTEES: RONALD & EDNA PEARSON</div><div><div>OWNER: R & E REALTY TRUST TAX MAP R-20 LOT 28 LOCUS DEED: BK 28095 PG 548</div><div>LOCATION: 23 CENTRAL STREET NEWBURY, MA 01922</div></div></div>				
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		



SITE PLAN
SCALE 1" = 20'

LOCUS MAP
SCALE 1"=1000'

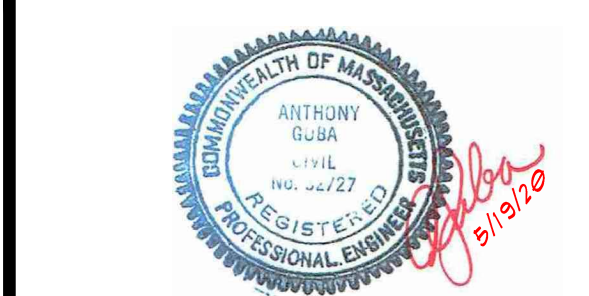
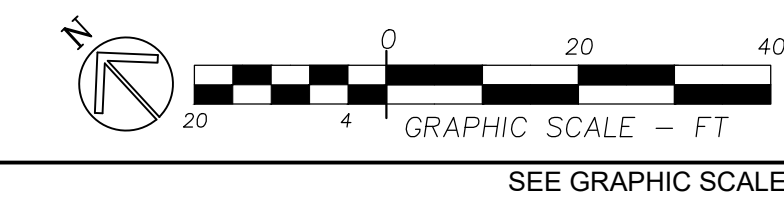


ZONING INFO - PARCEL R20-0-28 - BK28095/PG548 - 23 CENTRAL ST				
ZONE: CH - COMMERCIAL HIGHWAY				
PROPOSED USES:				
RETAIL MOTOR FUEL - PERMITTED BY SPECIAL PERMIT				
RETAIL CONVENIENCE STORE - PERMITTED				
FOOD SERVICE - PERMITTED BY SPECIAL PERMIT				
	REQUIRED	EXISTING	PROPOSED	RELIEF ROSTD
MIN. 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	17	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
- 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.
 - 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.
 - THE CONTRACTOR SHALL CONTACT DIG-SAFE PRIOR TO ANY CONSTRUCTION EXCAVATION (811 IN MA).
 - PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL FIELD VERIFY:
 - PROPERTY BOUNDARIES, EASEMENTS, AND RIGHT OF WAYS.
 - EXISTG STRUCTURES, BUILDINGS, AND DRIVEWAYS
 - LOCATIONS, SIZES, DEPTHS OF EXISTG UG UTILITIES, PIPING, STRUCTURES, TANKS, ETC.
 - ALL EXISTG AND PROPOSED CRITICAL ELEVATIONS
 - 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.
 - PROPOSED WORK INCLUDES:
 - PREP SITE PER ANY CONDITIONS OF SITE APPROVALS FROM ZONING, PLANNING, CONSERVATION COMMISSION, OR ANY OTHER APPLICABLE BODY
 - RAZE AND REMOVE ALL EXISTING IMPROVEMENTS
 - REPLACE UG UTILITIES AND INSTALL ANY STORMWATER MANAGEMENT STRUCTURES
 - INSTALL NEW UNDERGROUND STORAGE TANKS
 - CONSTRUCT NEW STORE, GAS STATION ISLANDS & CANOPIES
 - INSTALL PAVEMENT & CURBING INCLUDING DRIVEWAYS, MATCH GRADE ALONG ALL PROP LINES
 - INSTALL SIGNAGE IAW SIGNAGE APPROVALS
 - 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.



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BYFIELD, MA
23 CENTRAL STREET

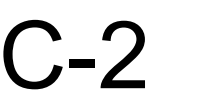
SITE
LAYOUT

DWG FILE: TBD-019-01 BYFIELD
SCALE: AS NOTED
SHEET: C-1.0

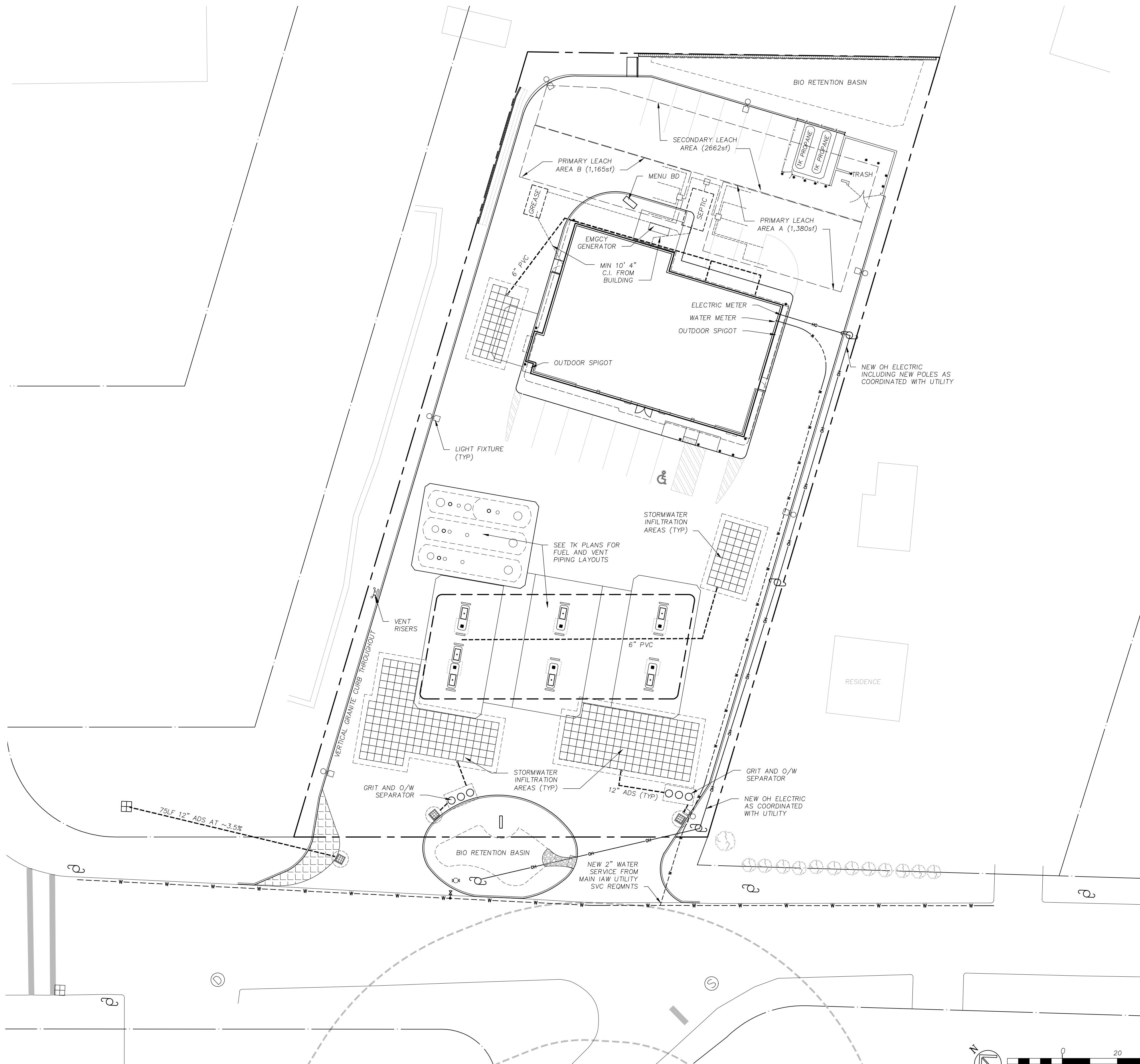
19 MAY 2020	1	AG	ADDED ABUTTER SEPTIC SYS LOCATION
23 APR 2020	0	AG	ORIGINAL DRAWING DATE
		REV	DESCRIPTION
		BY	



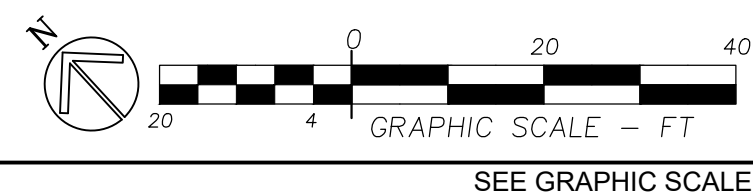
1. THE CONTRACTOR SHALL CONTACT DIG-SAFE PRIOR TO ANY CONSTRUCTION EXCAVATION (811 IN MA)
2. SITE GRADES VARY LESS THAN SEVEN FEET ACROSS ENTIRE PROPERTY, CONTOURS SHOWN AT ONE FOOT INTERVAL.
3. OWNER WILL HAVE SURVEYOR CONFIRM LOCAL TEMP BM AT HYDRANT ALONG FRONTAGE PRIOR TO START OF CONSTRUCTION AND CONTRACTOR WILL MAINTAIN AND PROTECT THE BM THROUGHOUT THE PROJECT
4. 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.



SEE GRAPHIC SCALE



LAYOUT OF PROPOSED SITE IMPROVEMENTS

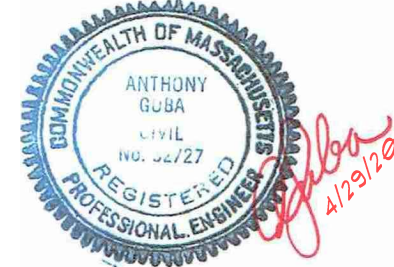



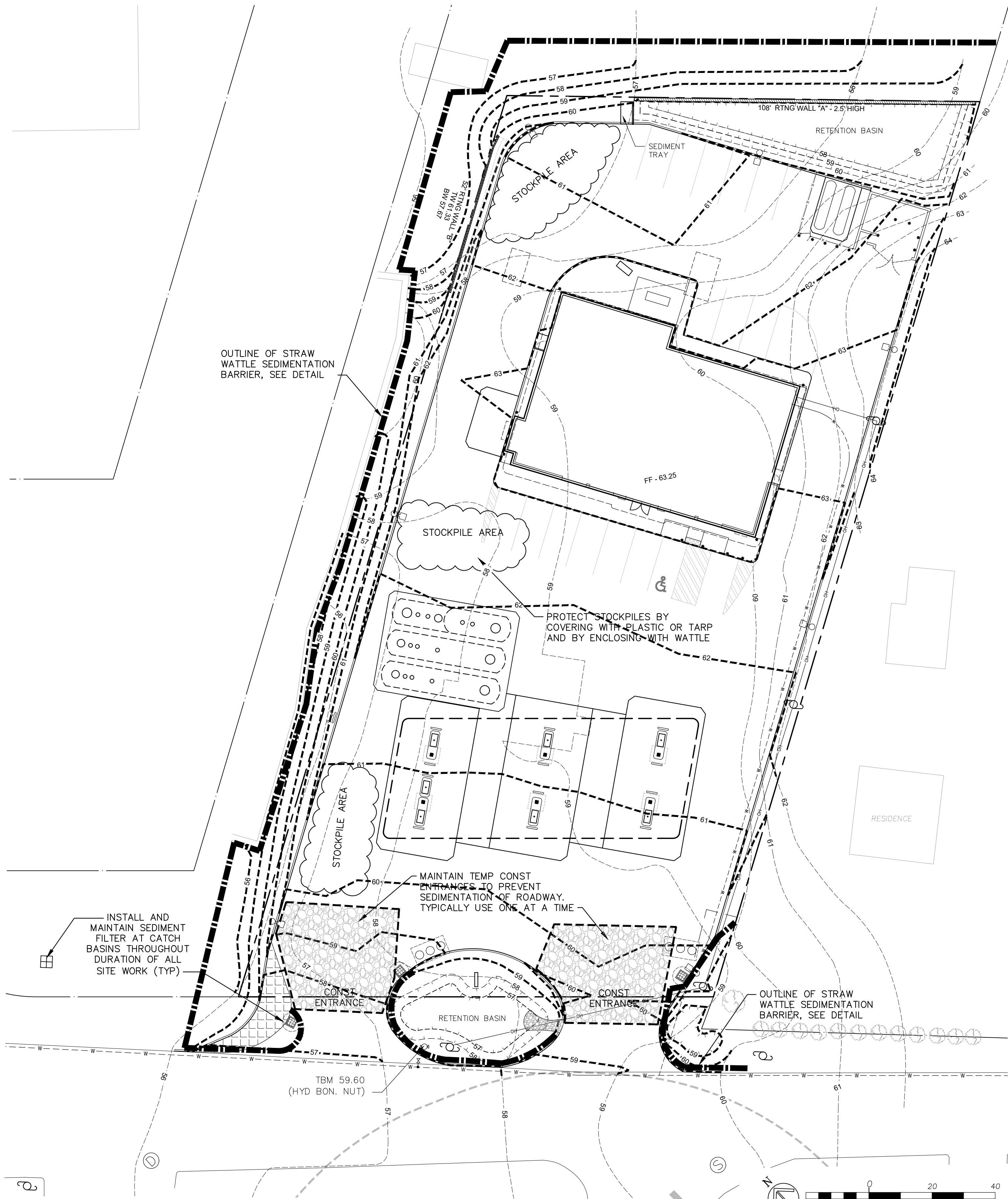
GENERAL NOTES

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 RQMNTS

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

29 APR 2020 DATE	0 REV	AG BY	ORIGINAL DRAWING DATE	PROJECT ADDRESS	
					 A.L. PRIME ENERGY CONSULTANT, INC. 18 LARK AVENUE SAUGUS MA 01906 (781)246-0201
					BYFIELD, MA 23 CENTRAL STREET
					UTILITIES
DWG FILE TBD-019-01 BYFIELD	SHEET C-3				
SCALE AS NOTED					



LAYOUT OF EROSION CONTROL MEASURES

EROSION CONTROL AND SOIL STABILIZATION

SEE DETAIL SHEETS FOR ADDITIONAL DETAILS

TEMPORARY STABILIZATION

- ALL DISTURBED SLOPES SHALL BE STABILIZED WITH TEMPORARY TREATMENT SUCH AS EROSION CONTROL BLANKETS OR HYDRO SEEDED AND PROTECTED WITHIN ONE WEEK OR BEFORE ANY EXPECTED STORM EVENT.
- EROSION CONTROL MEASURES SHALL BE INSPECTED AND MAINTAINED DAILY.
- TOPSOIL SHALL HAVE A SANDY LOAM TEXTURE RELATIVELY FREE OF SUBSOIL MATERIAL, STONES, ROOTS, TREE LIMBS, TRASH OR CONSTRUCTION DEBRIS.
- DESIGN SEED MIX SHALL BE COMPRISED OF THE FOLLOWING SEED RATE MIXTURE:
 - PER ACRE: 20 LBS TALL FESCUE, 20 LBS CREEPING RED FESCUE, 8 LBS BIRDSFOOT TREFOIL.
 - PER 1,000 SF: 0.45 LBS TALL FESCUE, 0.45 LBS CREEPING RED FESCUE, 0.20 LBS BIRDSFOOT TREFOIL.
- TEMPORARY TREATMENTS SHALL CONSIST OF HAY, STRAW, FIBER MULCH, OR PROTECTIVE COVER SUCH AS BURLAP, JUTE, FIBERGLASS NETTING OR BLANKETS. HAY OR STRAW SHOULD BE APPLIED AT MAXIMUM OF 3 TONS PER ACRE.
- ALL TEMPORARY PROTECTION INCLUDING SILT FENCE, HAY BALES OR STRAW WATTLES SHALL REMAIN IN PLACE UNTIL AN ACCEPTABLE STAND OF GRASS OR GROUND COVER IS ESTABLISHED.
- ALL FILL SHALL BE THOROUGHLY COMPACTED UPON PLACEMENT.
- STOCKPILES OF TOPSOIL SHALL NOT BE LOCATED NEAR WATERWAYS AND SHALL HAVE MAX SIDE SLOPE LESS THAN 2:1.
- CONTRACTOR TO TAKE WHATEVER MEASURES APPROPRIATE DURING EACH PHASE OF WORK TO DIVERT RUNOFF AROUND DISTURBED AREAS AND TO LIMIT THE AMOUNT OF RUNOFF FLOWING INTO OR THROUGH DISTURBED AREAS.

CONSTRUCTION SEQUENCE

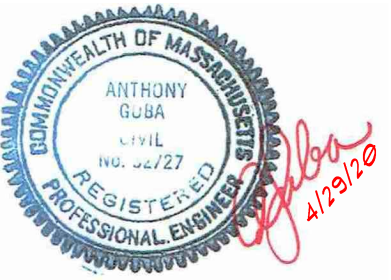

- ESTIMATED TIME OF CONSTRUCTION FOR THIS PROJECT IS FIVE MONTHS.
- TEMPORARY CONTROL MEASURES AND ANY REQUIRED MA DEP SIGNAGE TO BE INSTALLED PRIOR TO ANY SITE WORK OR DEMO OF EXISTING IMPROVEMENTS.
- INSTALL PERIMETER FENCING, SILT CONTROLS, CONSTRUCTION ENTRANCES AND ESTABLISH STOCKPILE AREAS PRIOR TO SITE WORK EXCAVATION.
- THROUGHOUT THE COURSE OF THE WORK, MAINTAIN EROSION AND SEDIMENTATION CONTROL STRUCTURES AS NECESSARY TO KEEP ALL OPERATING AS INTENDED.
- DRAINAGE SHALL BE PREVENTED FROM ENTERING SUBSURFACE INFILTRATION SYSTEM BEFORE THE SYSTEM IS COMPLETED AND BACKFILLED.
- TEMPORARY HAY BALES, STRAW WATTLES, OR SILT FENCES MAY BE REMOVED AFTER FINAL SOIL STABILIZATION AND BASE PAVEMENT HAS BEEN INSTALLED AND ISSUANCE OF ANY REQUIRED APPROVAL FROM MUNICIPAL AUTHORITY.
- CATCH BASIN INLET PROTECTION MUST REMAIN UNTIL BASE PAVEMENT IS INSTALLED AND ALL STOCKPILES ARE REMOVED AND NO LONGER NECESSARY.
- AT THE CONCLUSION OF CONSTRUCTION AND AFTER ALL FINAL STABILIZATION IS ACHIEVED, CLEAN ALL DRAINAGE STRUCTURES OF ALL DIRT, DEBRIS, OR ANY LOOSE MATERIALS.

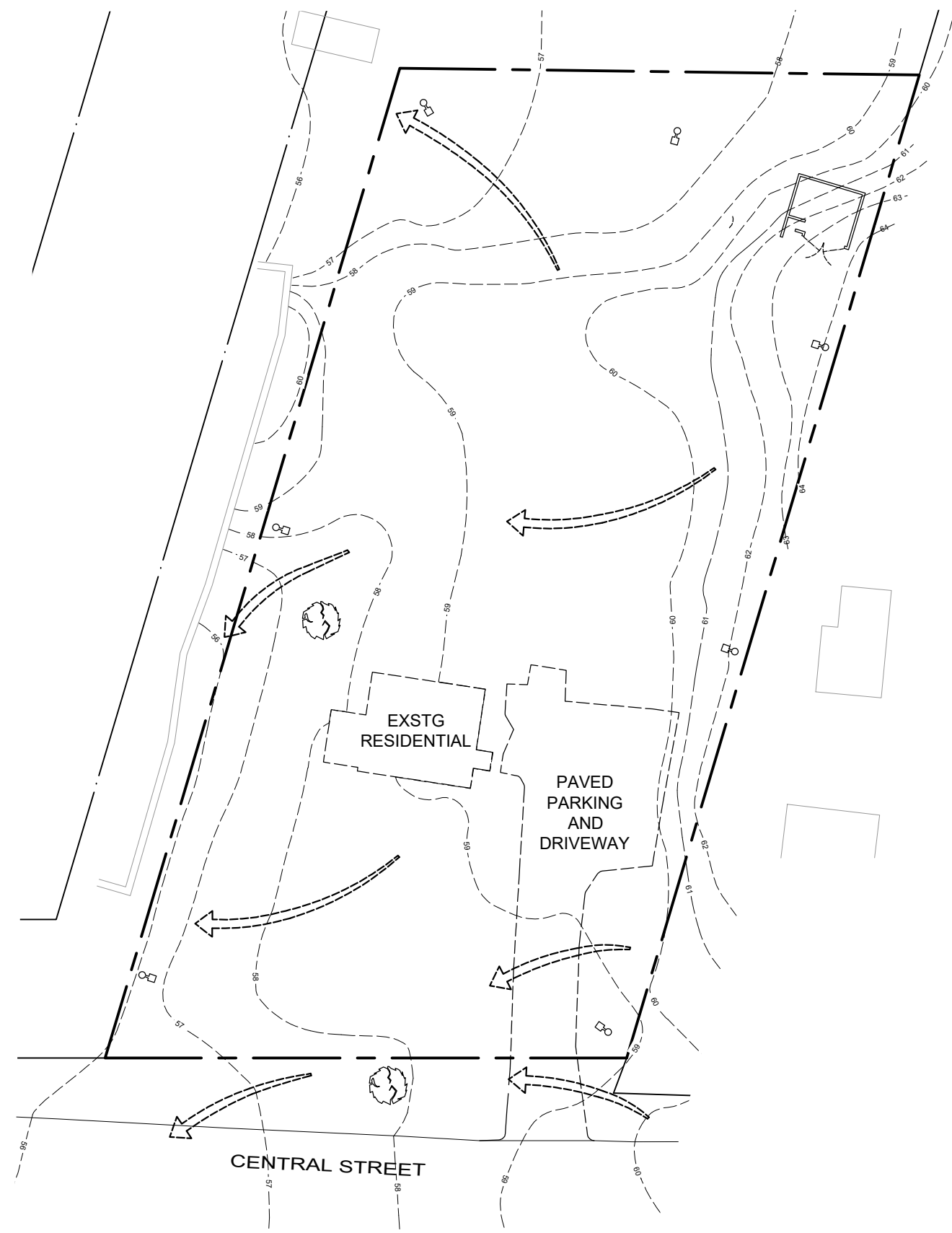
SEDIMENTATION CONTROL AND CONSTRUCTION OPN AND MAINT PLAN

- CARE SHALL BE TAKEN TO PREVENT ANY UNSUITABLE MATERIAL FROM ENTERING ROADWAYS OR ANY DRAINAGE STRUCTURE.
- PROTECT ALL INLETS, STOCKPILES AND UN-ESTABLISHED SOIL AREAS DURING STORMS AND PERIODS OF RAINFALL.
- INSPECT ALL SEDIMENTATION CONTROL DEVICES PROMPTLY AFTER EACH RAINFALL AND REPAIR OR CLEAN OUT SEDIMENTATION AS NECESSARY.
- INSTALL ADDITIONAL CONTROL MEASURES AS NECESSARY AS CONDITIONS WARRANT.
- AT THE END OF EACH WORK DAY, COVER ALL STOCKPILES AND INSURE ALL SEDIMENTATION CONTROL DEVICES ARE IN PLACE. STOCKPILE SIDE SLOPES SHALL NOT BE GREATER THAN 2:1.
- SEDIMENT SHALL BE REMOVED FROM SILT WATTLE BARRIER ONCE THE VOLUME REACHES $\frac{1}{2}$ HEIGHT OF THE WATTLE.
- CONSTRUCT AND MAINTAIN A TEMPORARY CONSTRUCTION ENTRANCE PRIOR TO EXISTING PAVED AREAS ARE DISTURBED AND CONSTRUCTION VEHICLES START TRACKING SEDIMENTATION INTO THE ROADWAY. CONSTRUCTION ENTRANCE(S) WILL BE MONITORED AND CLEANED OF SEDIMENT AS NEEDED ON A DAILY BASIS. SWEEP THE CONSTRUCTION SITE AND ENTRANCES AS NECESSARY TO PREVENT TRACKING OF SEDIMENTATION INTO THE ROADWAY.
- TOPSOIL SHALL BE STRIPPED FROM AREAS TO BE DISTURBED, STOCKPILED IN APPROVED AREAS AND STABILIZED WITH TEMP VEGETATIVE COVER IF TO BE LEFT STOCKPILED FOR MORE THAN 30 CALENDAR DAYS.
- MAINTAIN PROPER DUST CONTROL THROUGHOUT THE PROJECT.
- INSTALL A CONTINUOUS LINE OF SEDIMENTATION CONTROL ALONG THE PERIMETER OF ALL CONSTRUCTION ACTIVITY PER THE EROSION CONTROL SITE PLAN.
- PROTECT THE INLET OF ALL CATCH BASINS SUBJECT TO POSSIBLE RUNOFF FROM THE SITE WITH SEDIMENT FILTER AND INSPECT THE FILTER AFTER ALL RAINFALLS AND ANY RUNOFF THAT REACHES THE CATCH BASIN.
- INSURE PROPER HANDLING OF CONCRETE WASH OR OTHER CONSTRUCTION ACTIVITY TO PREVENT ANY SUCH WASH FROM REACHING THE CATCH BASIN OR ROADWAY.

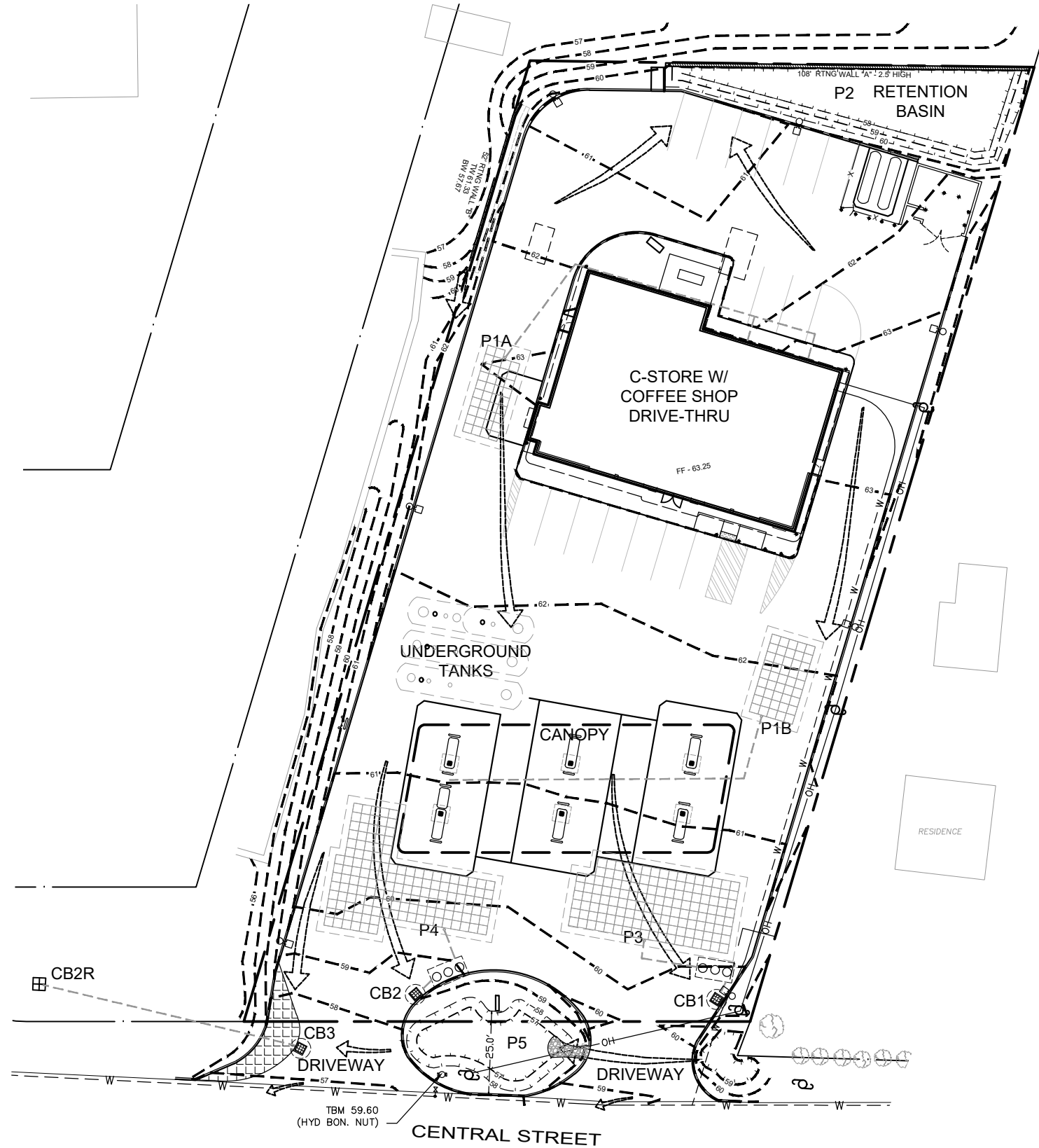
POST CONSTRUCTION

- UPON COMPLETION OF CONSTRUCTION, STORM WATER CONTROLS ARE TO BE MAINTAINED IN ACCORDANCE WITH FOLLOWING PERMANENT PROCEDURES:
 - CATCH BASINS SHALL BE INSPECTED AT LEAST ANNUALLY AND CLEANED AS NECESSARY.
 - MAINTAIN A WRITTEN EMERGENCY RESPONSE PROCEDURE AND TRAIN ALL SITE EMPLOYEES HOW TO RESPOND IN CASE OF ANY SPILL.
 - PAVED AREAS SHOULD BE SWEEPED AT LEAST ANNUALLY IN SPRING TO REMOVE SEDIMENT ACCUMULATED THROUGHOUT THE WINTER.
- LANDSCAPE AREAS ARE TO BE MAINTAINED AND ANY BARE SOIL IN GRASSSED AREAS SHALL BE RE-SEEDED.
- SEE WRITTEN OPERATION AND MAINTENANCE PLAN SUBMITTED AS PART OF SITE PLAN APPLICATION.

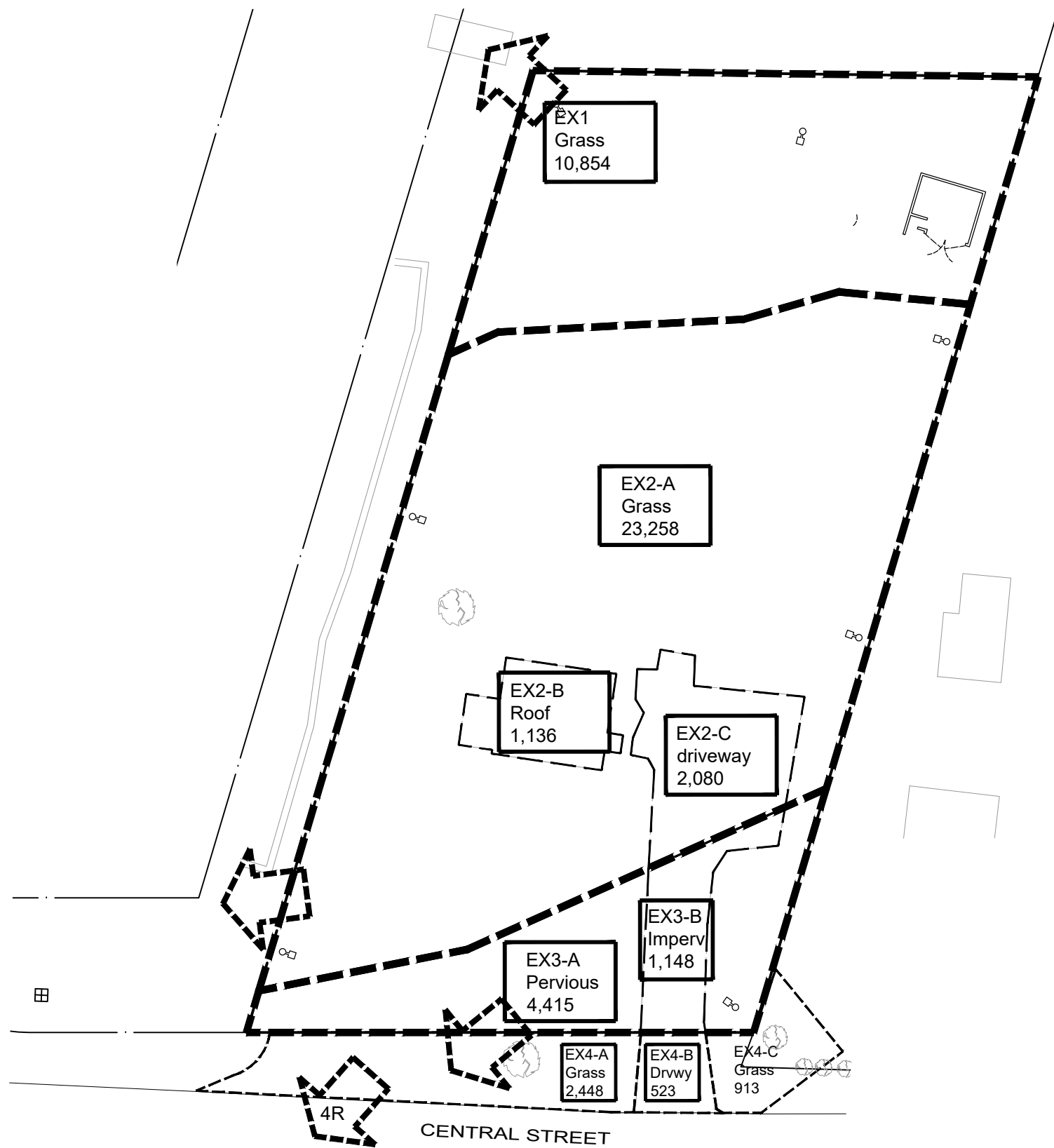
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					EROSION CONTROL	
DWG FILE TBD-019-01 BYFIELD					SHEET ER-1	
SCALE AS NOTED						



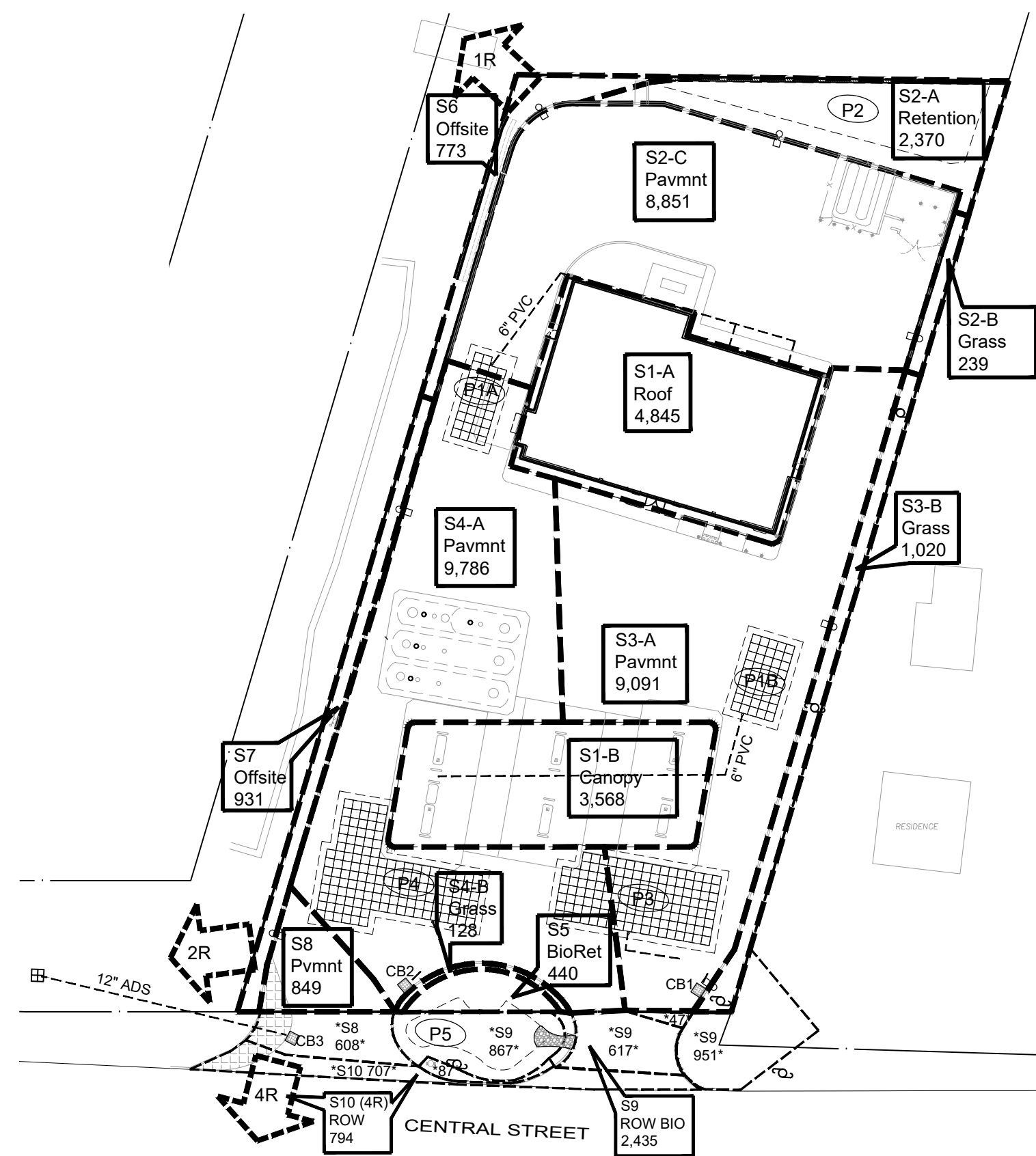
EXISTING SITE LAYOUT



PROPOSED LAYOUT

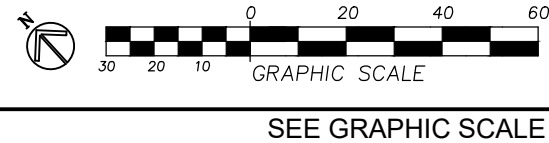


PRE DEV RUNOFF AREAS



POST DEV RUNOFF AREAS

PRE AND POST DEVELOPMENT STORMWATER RUNOFF AREAS AND FLOW DIRECTIONS



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. 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

Runoff Comparison of Rates and Volumes from Pre to Post Conditions				
	Total Runoff to St (4R) or (S10)		Total Runoff to Offsite (5R)	
	Rate	Volume	Rate	Volume
2yr Pre Dev	0.16	0.012	0.73	0.048
2yr Post Dev	0.08	0.004	0.31	0.016
Change	-0.08	-0.008	-0.42	-0.032
% change Pre to Post	-50%	-67%	-58%	-67%
10yr Pre Dev	0.41	0.027	2.06	0.117
10yr Post Dev	0.11	0.006	0.49	0.026
Change	-0.3	-0.021	-1.57	-0.091
% change Pre to Post	-73%	-78%	-76%	-78%
100yr Pre Dev	0.83	0.054	4.40	0.240
100yr Post Dev	0.17	0.009	0.75	0.04
Change	-0.66	-0.045	-3.65	-0.2
% change Pre to Post	-80%	-83%	-83%	-83%



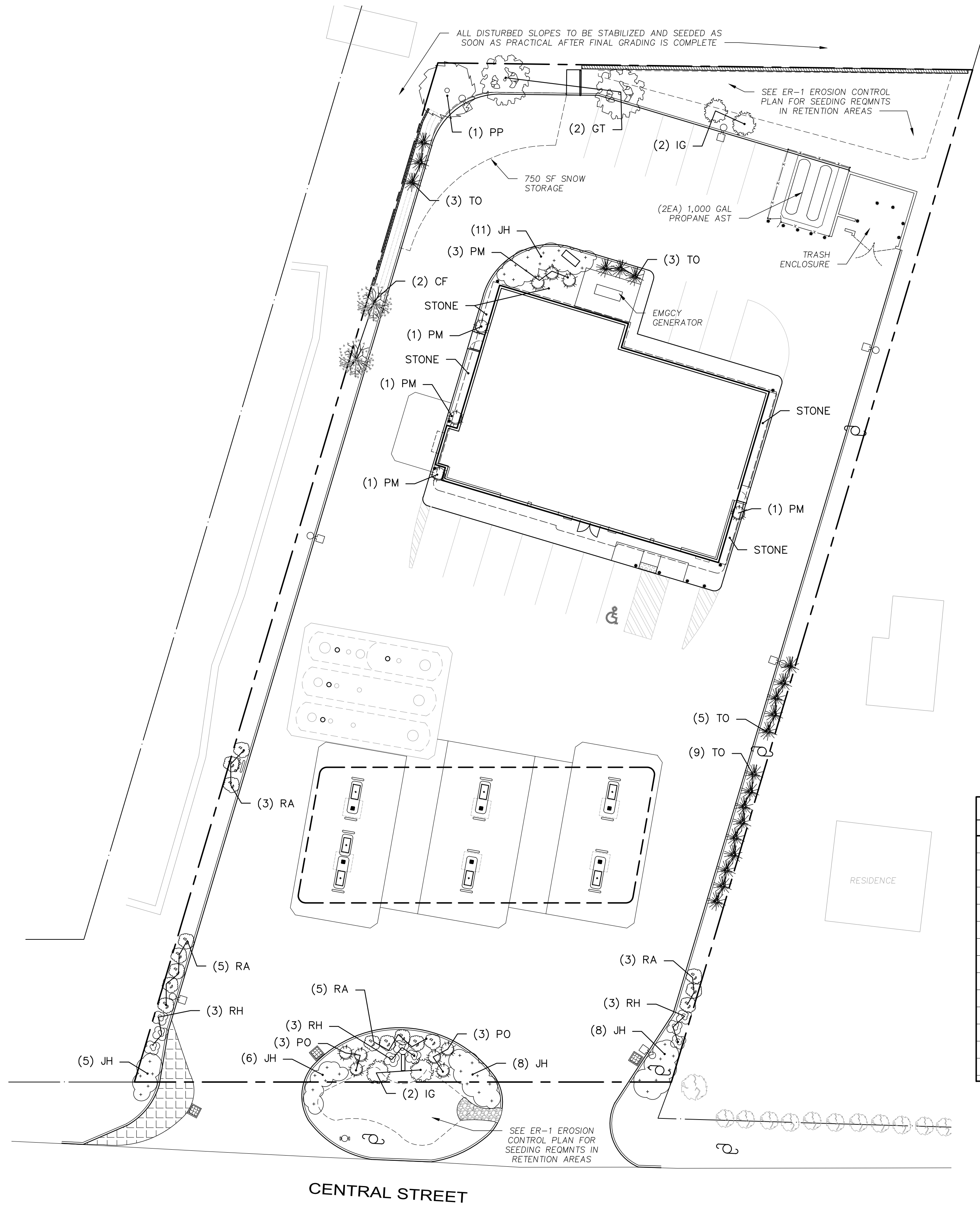
APrime
Energy
A.L. PRIME ENERGY
CONSULTANT, INC.
18 LARK AVENUE
SAUGUS MA 01906
(781)246-0201

PROJECT ADDRESS
BYFIELD, MA
23 CENTRAL STREET

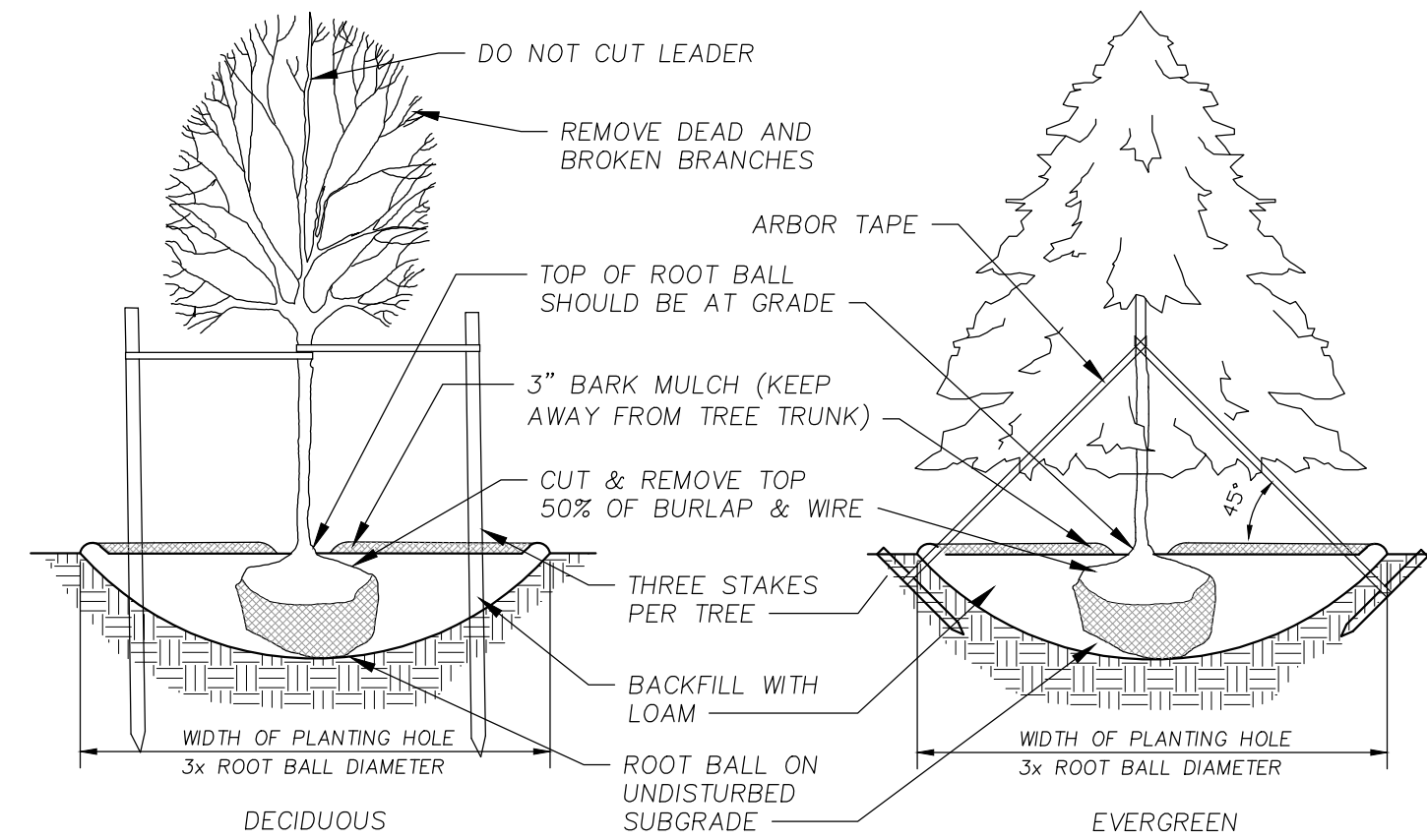
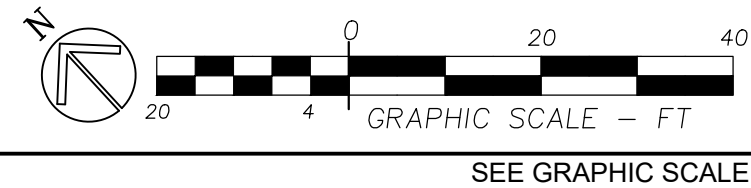
**STORMWATER
ANALYSIS**

DWG FILE
TBD-019-01 BYFIELD
SCALE
AS NOTED
SHEET
SW-1

29 APR 2020
DATE
0
REV
BY
DESCRIPTION
AG
ORIGINAL DRAWING DATE



LAYOUT OF PROPOSED SITE IMPROVEMENTS



TREE PLANTING

SEE GRAPHIC SCALE



SHRUB PLANTING

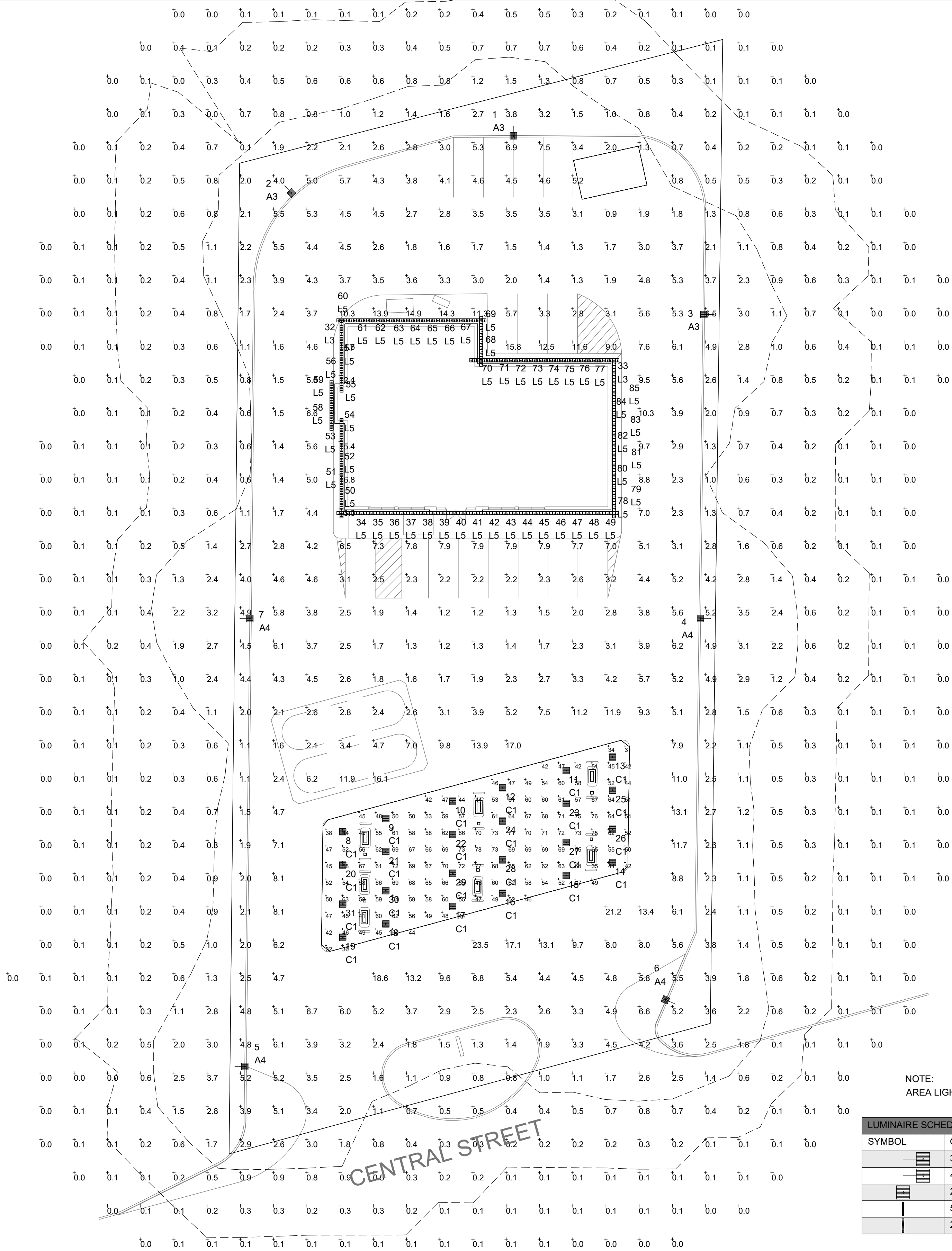
SEE GRAPHIC SCALE

PLANT LIST					
KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	COMMENTS
TREES					
CF	2	CORNUS FLORIDA	FLOWERING DOGWOOD	2" CAL.	
GT	2	GLEDTISIA T.I. "SKYLINE"	SKYLINE HONEYLOCUST	2.5" CAL.	
PP	1	PICEA PUNGENS "GLAUCA GLOBOSA"	BLUE SPRUCE	48"-60"	
SHRUBS AND GROUND COVER					
IG	4	ILEX GABRA "COMPACTA"	INKBERRY	5 GAL	
PM	7	PINUS MUGO "COMPACTA"	DWARF MUGO PINE	2 GAL	
PO	6	PHYSOCARPUS OPULIFOLIUS NANUS	DWARF GREEN NINEBARK	3 GAL	
RH	9	RHODODENDRON "HINO-CRIMSON"	EVERGREEN AZALEA	2 GAL	
RA	16	RHUS AROMATICA "GRO-LOW"	GRO LOW SUMAC	3 GAL	
TO	20	THUJA OCCIDENTALIS "EMERALD"	ARBORVITAE	48"-60"	
JH	38	JUNIPEROUS H. "WILTONI"	BLUE RUG JUNIPER	3 GAL	PLANT RANDOMLY AT 36" TO 48" SPACING W/ GROUP OUTLINE

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. SEE SHEET ER-1, EROSION CONTROL, FOR BIO-RETENTION AREA SEED MIX. BIO-RETENTION AREAS TO BE SEEDED AND STABILIZED AS SOON AS PRACTICAL AFTER GRADING OF THE AREA.
9. ALL TREES TO BE STAKED WITH THREE HARDWOOD STAKES, SEE PLANTING DETAILS.
10. 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.
11. ALL MULCH AREAS TO BE A MIN OF 3 INCHES DEPTH OF SHREDDED HARDWOOD BARK.
12. 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.
13. DURING PLANTING, APPLY SOIL ADDITIVES AND SLOW RELEASE FERTILIZER AND WATER THOROUGHLY AT COMPLETION.

ORIGINAL DRAWING DATE		PROJECT ADDRESS		A.L. PRIME ENERGY CONSULTANT, INC. 18 LARK AVENUE SAUGUS MA 01906 (781)246-0201	
				BYFIELD, MA 23 CENTRAL STREET	
DATE		REV		LANDSCAPE	
				L-1	
29 APR 2020		0		TBD-019-01 BYFIELD	
				AS NOTED	








LUMINAIRE LOCATION SUMMARY		
LUM NO.	LABEL	MTG. HT.
1	A3	17
2	A3	17
3	A3	17
4	A4	17
5	A4	17
6	A4	17
7	A4	17
8	C1	15
9	C1	15
10	C1	15
11	C1	15
12	C1	15
13	C1	15
14	C1	15
15	C1	15
16	C1	15
17	C1	15
18	C1	15
19	C1	15
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22	C1	15
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25	C1	15
26	C1	15
27	C1	15
28	C1	15
29	C1	15
30	C1	15
31	C1	15
32	L3	10
33	L3	10
34	L5	10
35	L5	10
36	L5	10
37	L5	10
38	L5	10
39	L5	10
40	L5	10
41	L5	10
42	L5	10

LUMINAIRE LOCATION SUMMARY		
LUM NO.	LABEL	MTG. HT.
43	L5	10
44	L5	10
45	L5	10
46	L5	10
47	L5	10
48	L5	10
49	L5	10
50	L5	10
51	L5	10
52	L5	10
53	L5	10
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55	L5	10
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77	L5	10
78	L5	10
79	L5	10
80	L5	10
81	L5	10
82	L5	10
83	L5	10
84	L5	10
85	L5	10

FOOTCANDLE LEVELS CALCULATED AT GRADE USING INITIAL LUMEN VALUES					
LABEL	AVG	MAX	MIN	AVG/MIN	MAX/MIN
CANOPY	56.82	78	31	1.83	2.52
PAVED	4.95	23.5	0.8	6.19	29.38
UNDEFINED	0.83	16.8	0.0	N.A.	N.A.

NOTE:
AREA LIGHTS ON NEW 15 FT. POLES MOUNTED ON 2 FT. CONCRETE BASES

LUMINAIRE SCHEDULE										
SYMBOL	QTY	LABEL	ARRANGEMENT	LUMENS	LLF	BUG RATING	WATTS/LUMINAIRE	TOTAL WATTS	MANUFACTURER	DESCRIPTION
	3	A3	SINGLE	11648	1.030	B3-U0-G3	86	258	Cree Inc	OSQ-A-NM-3ME-B-57K-UL-XX
	4	A4	SINGLE	11648	1.030	B2-U0-G2	86	344	Cree Inc	OSQ-A-NM-4ME-B-57K-UL-XX
	24	C1	SINGLE	13251	1.030	B3-U0-G1	134	3216	CREE, INC.	CAN-304-SL-XX-06-E-UL-XX-700-57K
	52	L5	5FT LINEAR	148	1.000	B0-U1-G0	2.9	1508	MAXLITE INC.	60LB50
	2	L3	3FT LINEAR	148	1.000	B0-U1-G0	2.9	34.8	MAXLITE INC.	36LB50

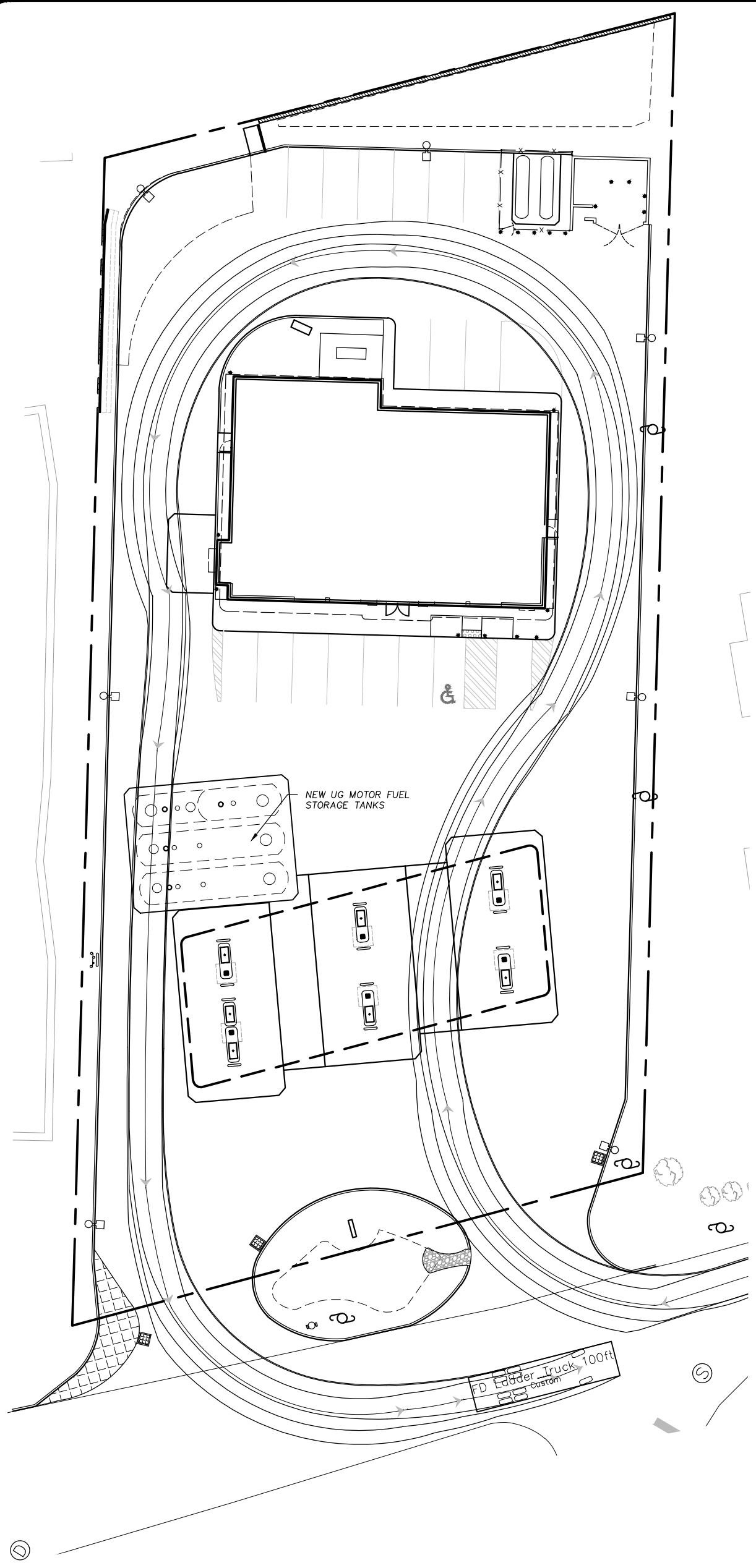
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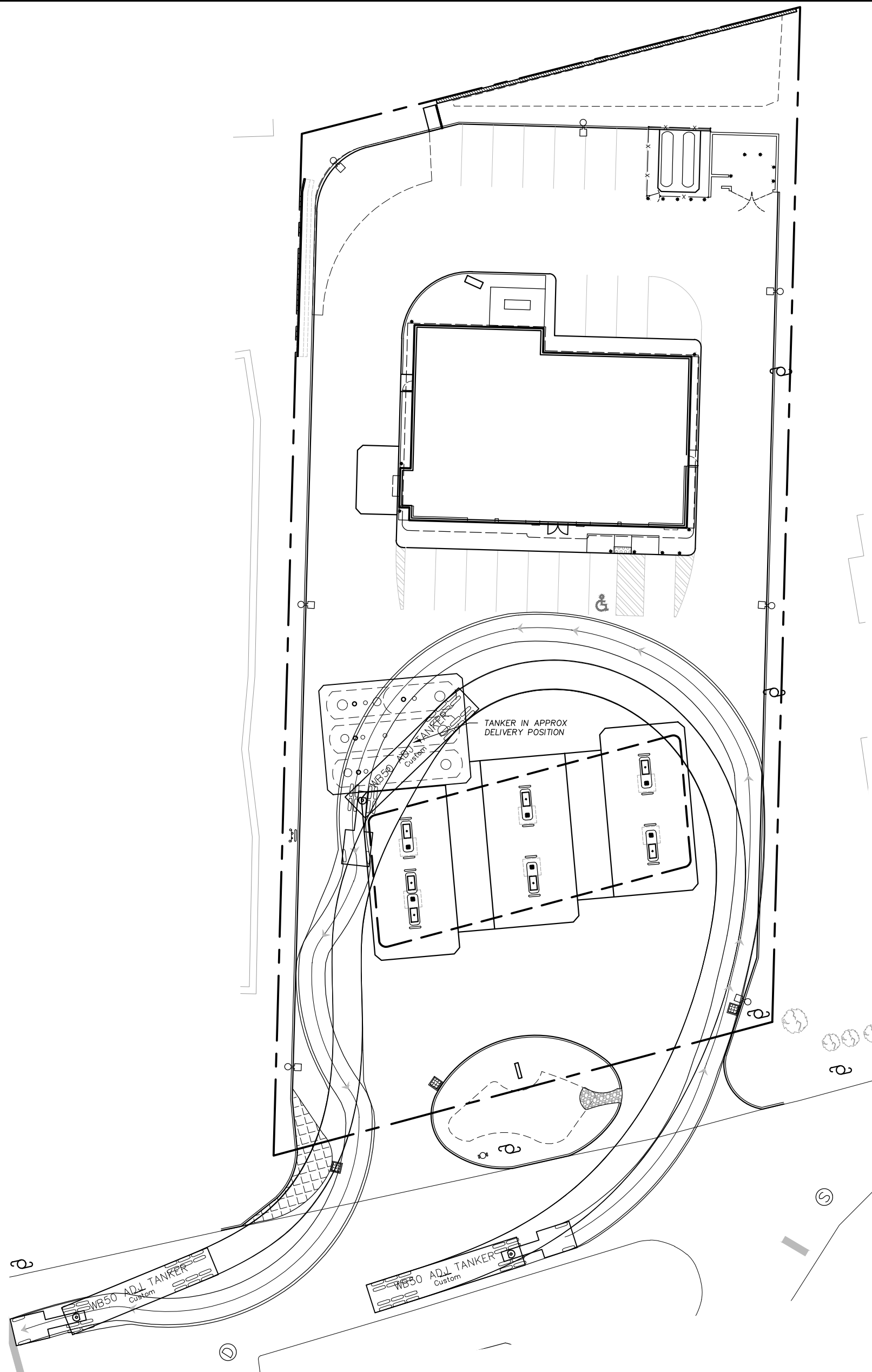
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1" = 20'
DWG SIZE:
D
LAYOUT BY:
LMP
DATE:
12/04/19

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

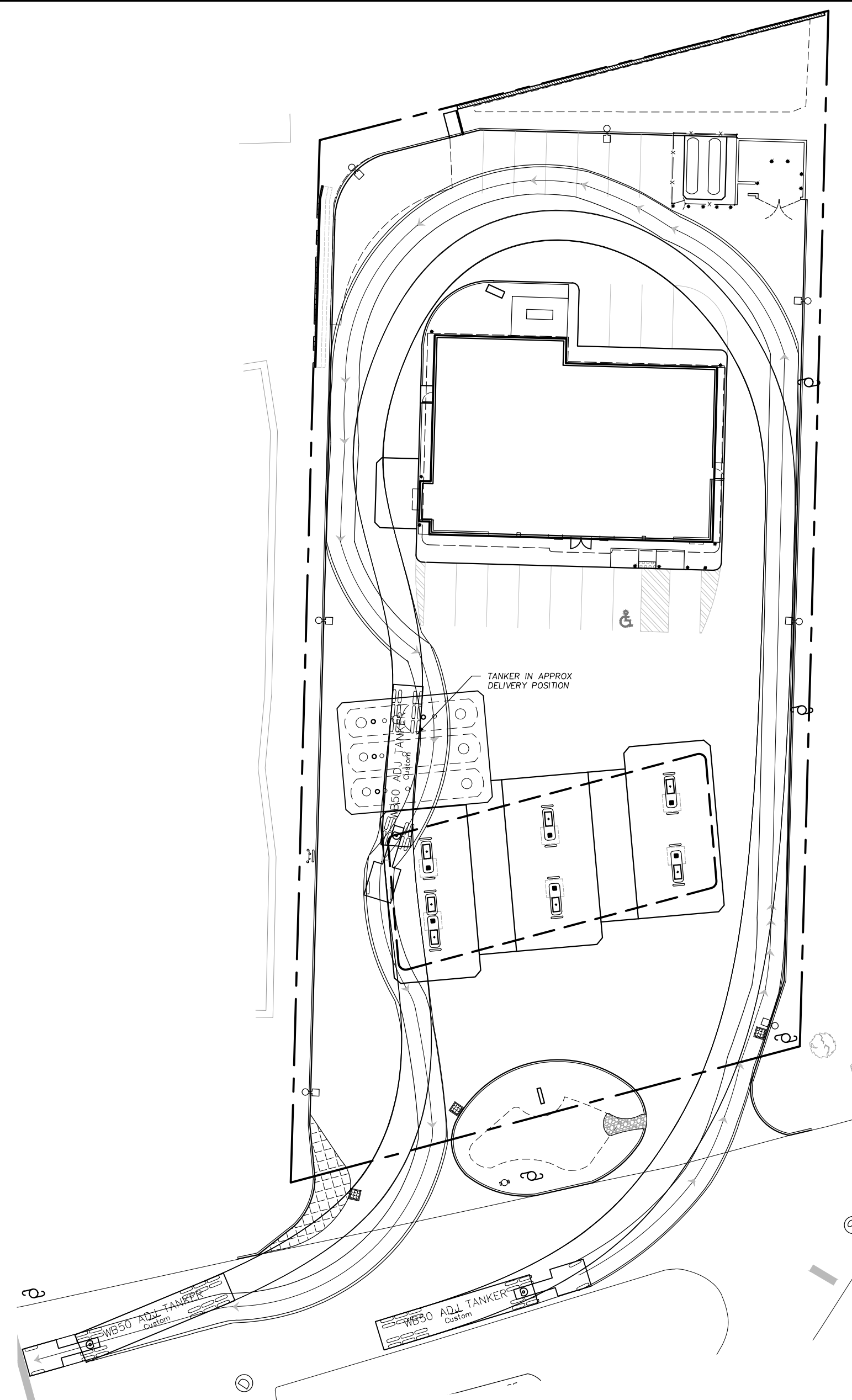




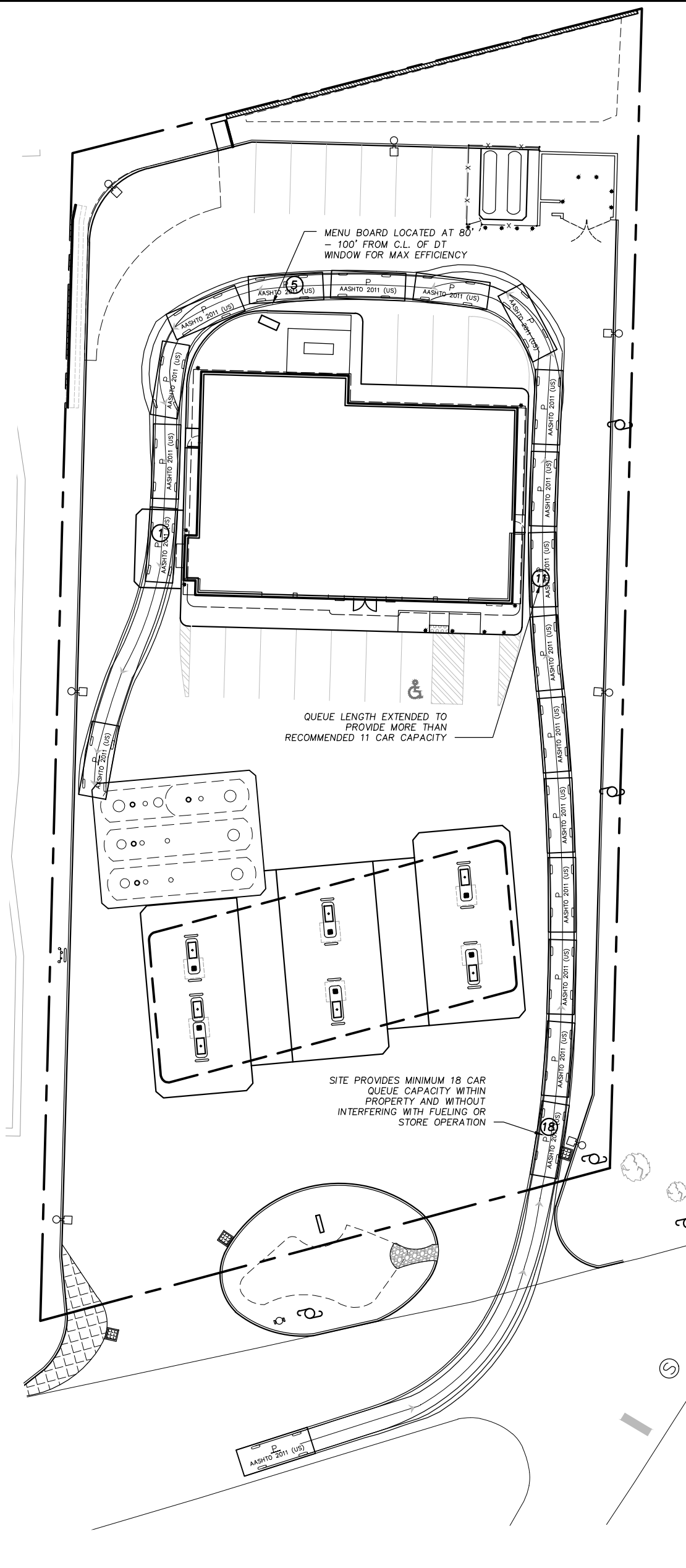
EMGCY VEHICLE LADDER TRUCK



DELIVERY TANKER

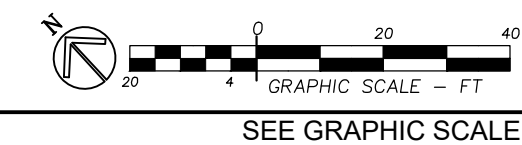



DELIVERY TANKER ALTERNATE

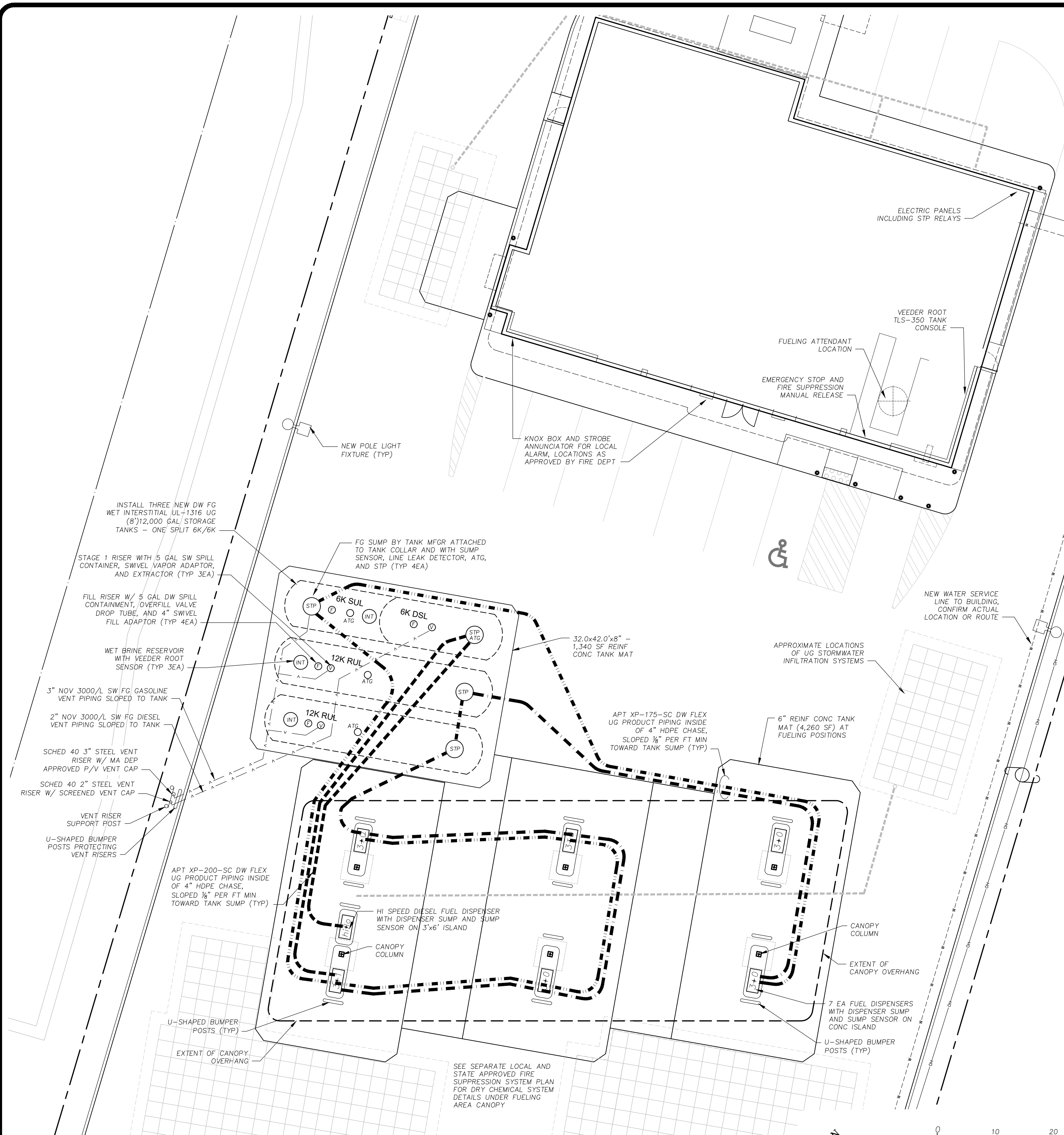


DRIVE-THRU QUEUE

AUTOTURN SWEEP PATH ANALYSIS



29 APR 2020		0	AG	ORIGINAL DRAWING DATE
DATE		REV	BY	DESCRIPTION
<div> A.L. PRIME ENERGY CONSULTANT, INC. 18 LARK AVENUE SAUGUS MA 01906 (781)246-0201</div>				
PROJECT ADDRESS				
BYFIELD, MA 23 CENTRAL STREET				
VEHICLE PATHS				
DWG FILE TBD-019-01 BYFIELD				SHEET
SCALE AS NOTED				TR-1.0



TANK AND PIPING LAYOUT

- 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 PIPING AND 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 SPEC'S RELATED TO OTHER SITE IMPROVEMENTS.
 2. UG STORAGE TANK FACILITIES IN MA ARE REGULATED UNDER 800.00 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 MFGR'S RECOMMENDATIONS AND/OR SPEC'S.
 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 SPEC'S. 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. 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 REQUIREMNTS.
 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 OUTSIDE OF 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 1/4" 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 1/8" OR MORE THAN 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 REQMENTS 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.

Underground Storage Tank Floatout

Engineering Calculations and Certification
Proposed tank installation at **23 Central St, Byfield MA**

These calculations follow the format suggested in "PEURP 100-17, Recommended Practices for Installation of UG Liquid Storage Systems" Appdx A.

The calculations are based on worst case flooding scenario where all equipment is completely submerged with water table above paved grade, tanks completely empty, sumps are empty and not flooded.

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

(note that submerged backfill density must be reduced by density of water)

Restraining Effect of Concrete Paving & Overburden

Thickness of pad	8.0	in
Min depth of burial (incldg pad)	45	in

1. Concrete paving

Length of pad (tank plus 4")	40.00	ft
Width of pad (tank plus 2")	9.67	ft

Submerged weight concrete: **22,581 lbs**

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
h = (D/2)+d	6.92	ft

Overburden total volume: 1,397.65 cf

Submerged weight overburden: **80,505 lbs**

3. Deadmen (12"high by 12" wide)

deadmen, length of tank (1.0cft)	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	22,581	lbs
Tank	7,050	lbs
Fittings	300	lbs
Total	110,436	lbs

Total bouyant force to overcome

Tank displacement	98,932	lbs
Sump displacement	1,100	lbs
Total	100,032	lbs

Excess Restraint (without anchoring)

Restraint - Bouyancy	10,404	lbs
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Safety Factor (without anchoring)

Restraint/Bouyancy =	1.10	
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Excess Restraint (with anchoring)

Restraint - Bouyancy	40,558	lbs
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Safety Factor (with anchoring)

Restraint/Bouyancy =	1.41	
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Tanks meet floatout restraint w/ 8" conc mat, min 45" burial, and 1.0sqft deadmen the length of tank providing a 1.4 safety factor during complete flood conditions and tank empty

01 ORIGINAL DRAWING DATE

02 REV BY DESCRIPTION

29 APR 2020 DATE

DWG FILE TBD-019-01 BYFIELD

SCALE AS NOTED

PROJECT ADDRESS

BYFIELD, MA

23 CENTRAL STREET

TANK & PIPING LAYOUT

PROFESSIONAL ENGINEER

ANTHONY GUBA

MA 01927

REGISTERED

4/19/20

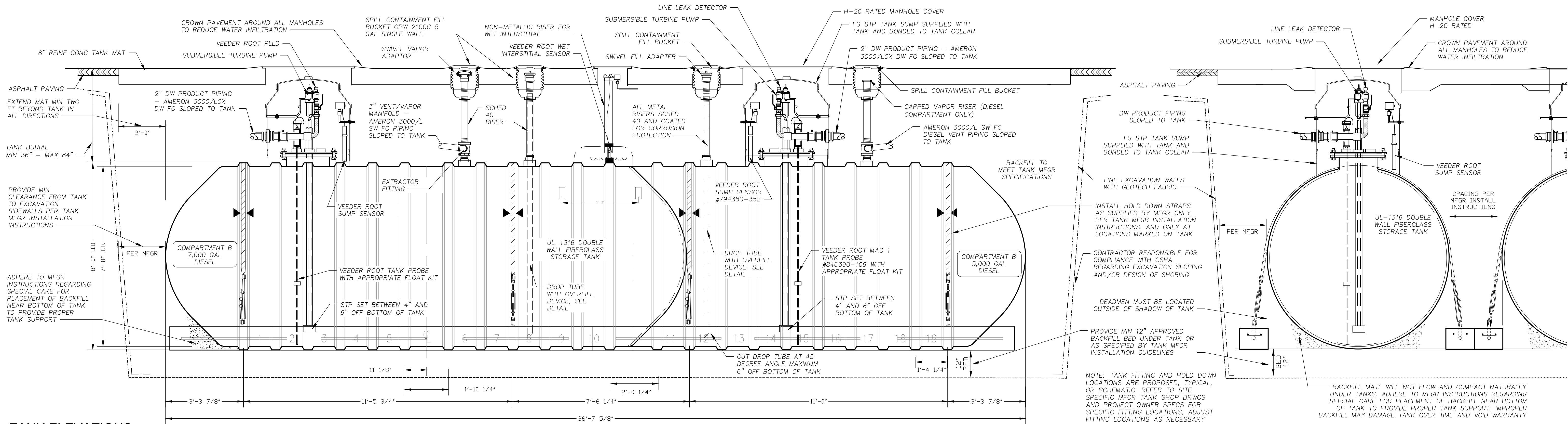
A.L. PRIME ENERGY CONSULTANT, INC.

18 LARK AVENUE

SAUGUS MA 01906

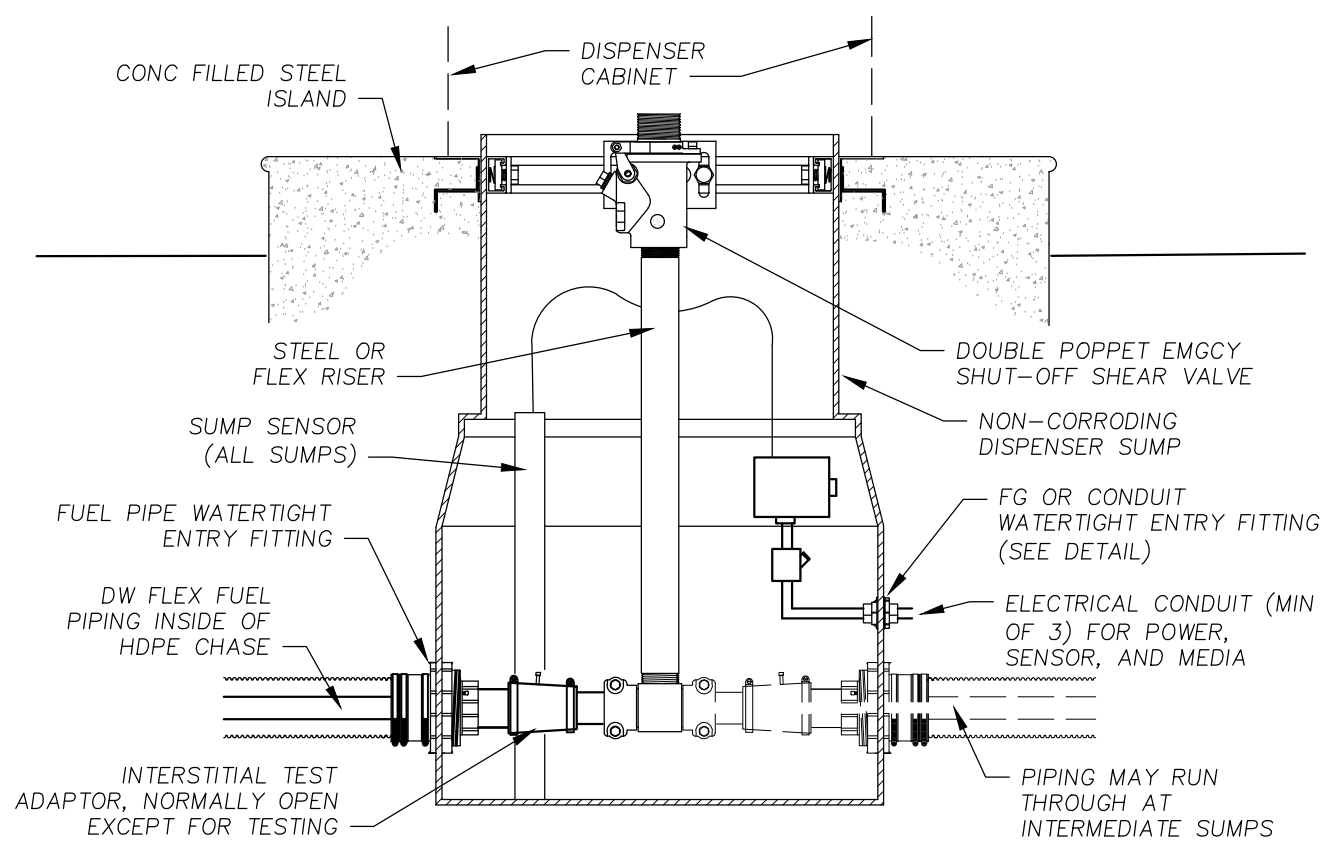
(781)246-0201

TK-1



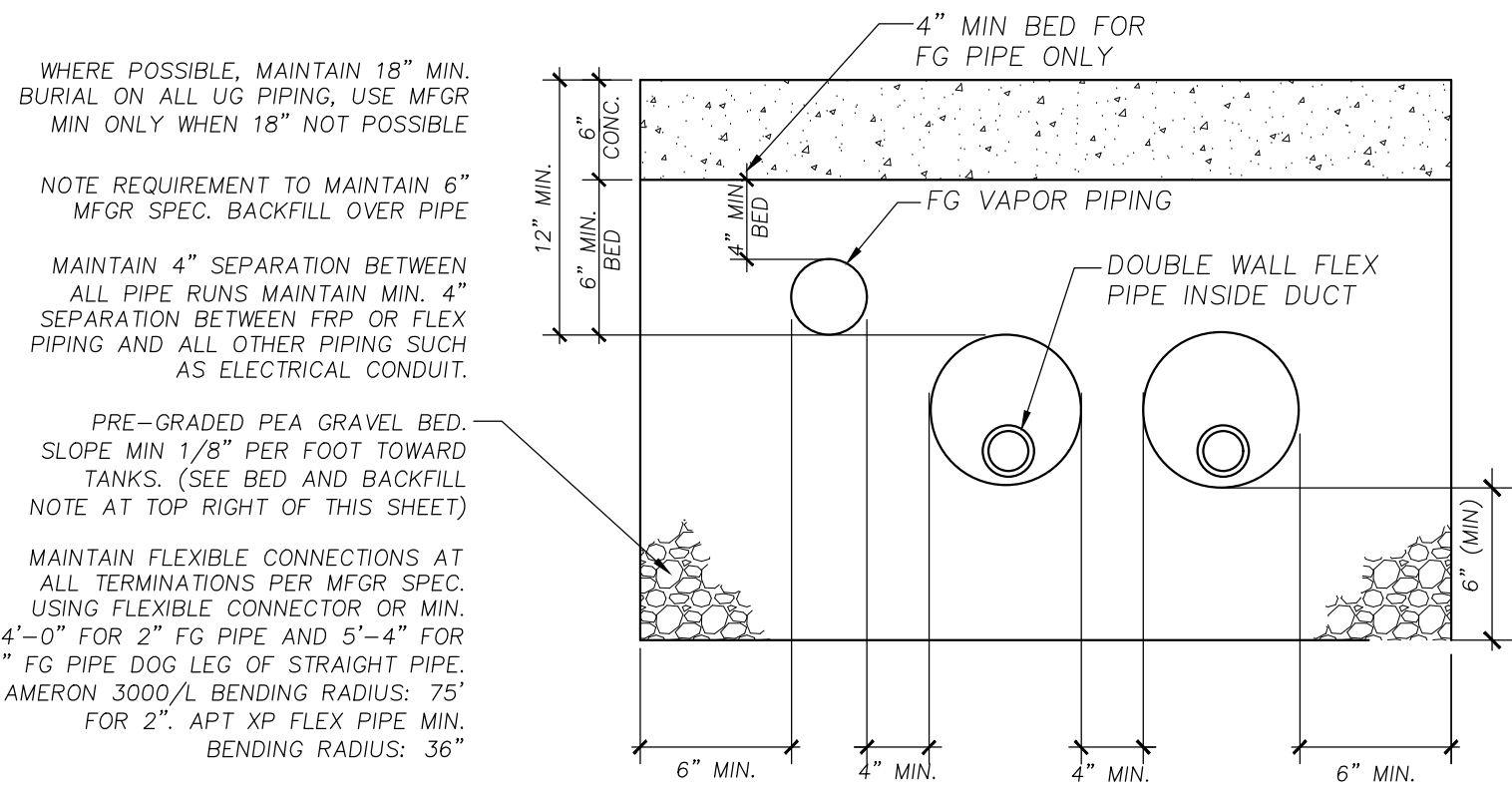
TANK ELEVATIONS

NOT TO SCALE



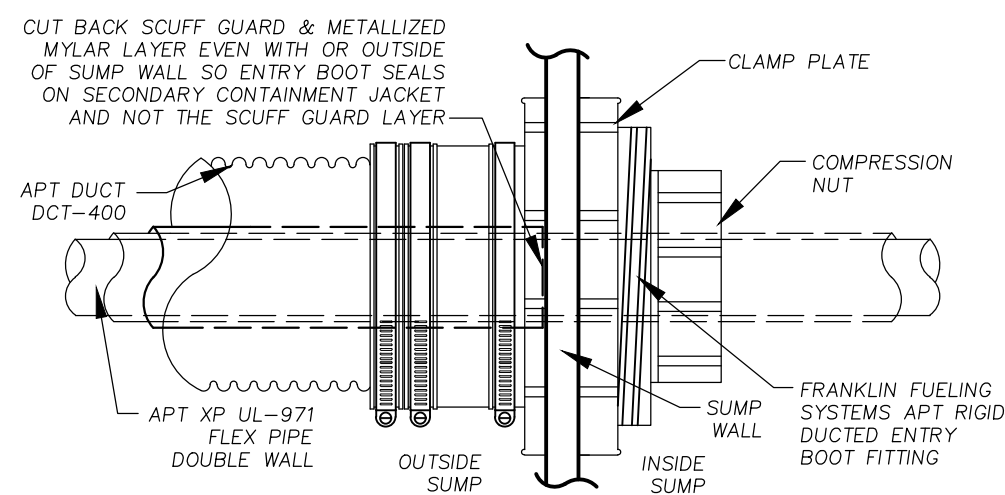
DISPENSER SUMP

NOT TO SCALE



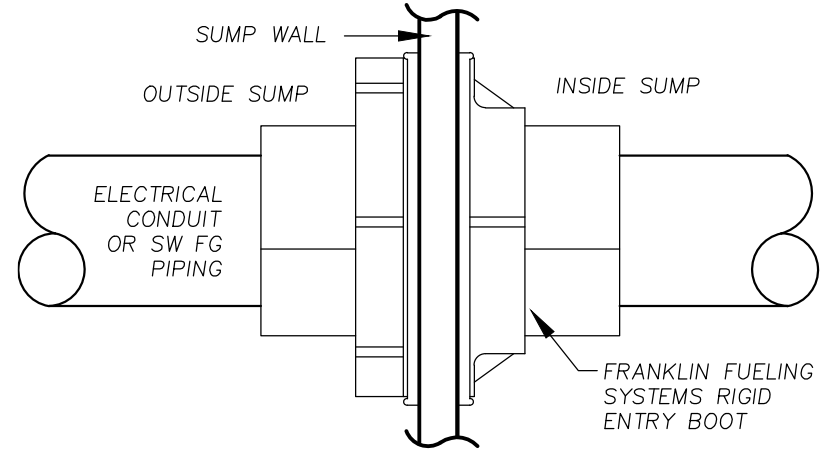
FUEL PIPING TRENCH

NOT TO SCALE



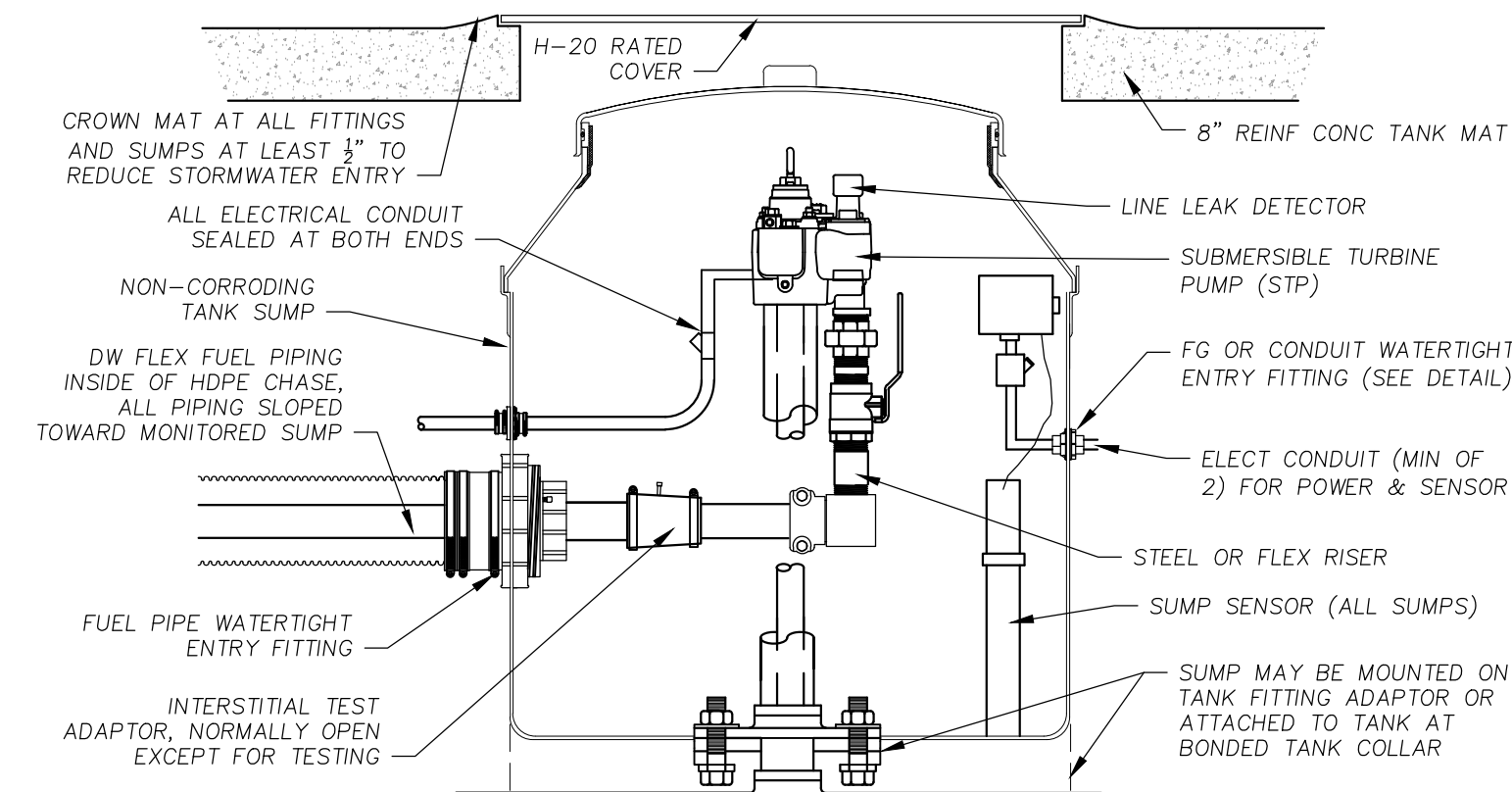
FUEL PIPING ENTRY

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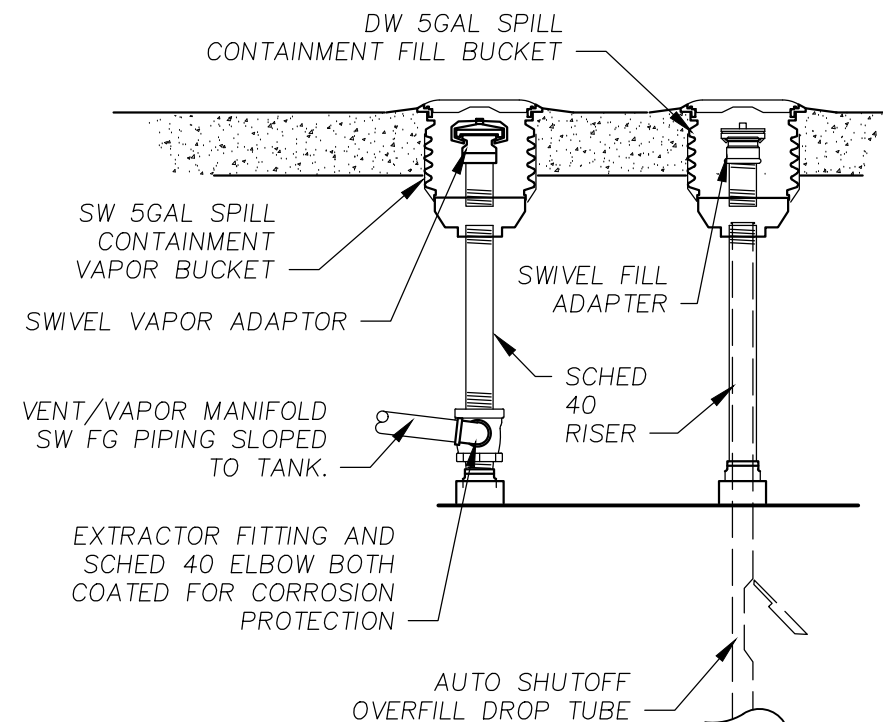
SW PIPE OR CONDUIT ENTRY

NOT TO SCALE



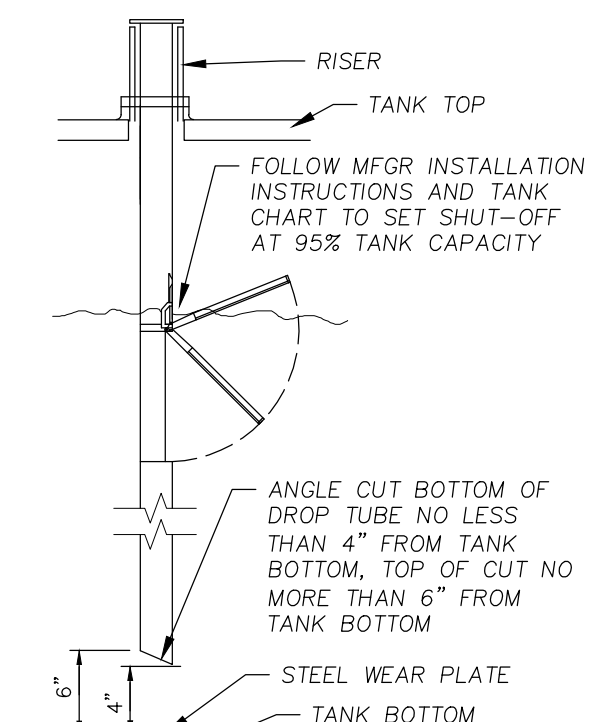
TANK SUMP

NOT TO SCALE



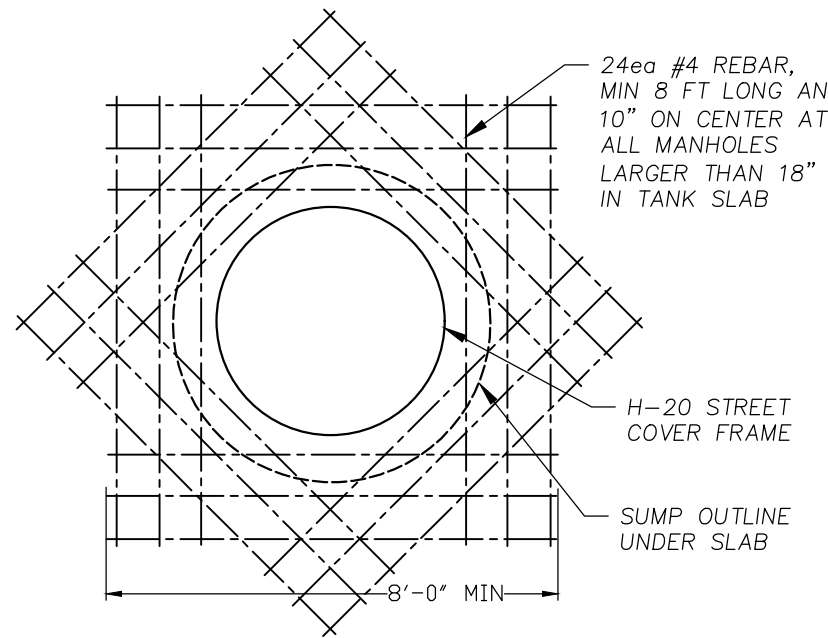
TANK FILL & VAPOR FITTINGS

NOT TO SCALE



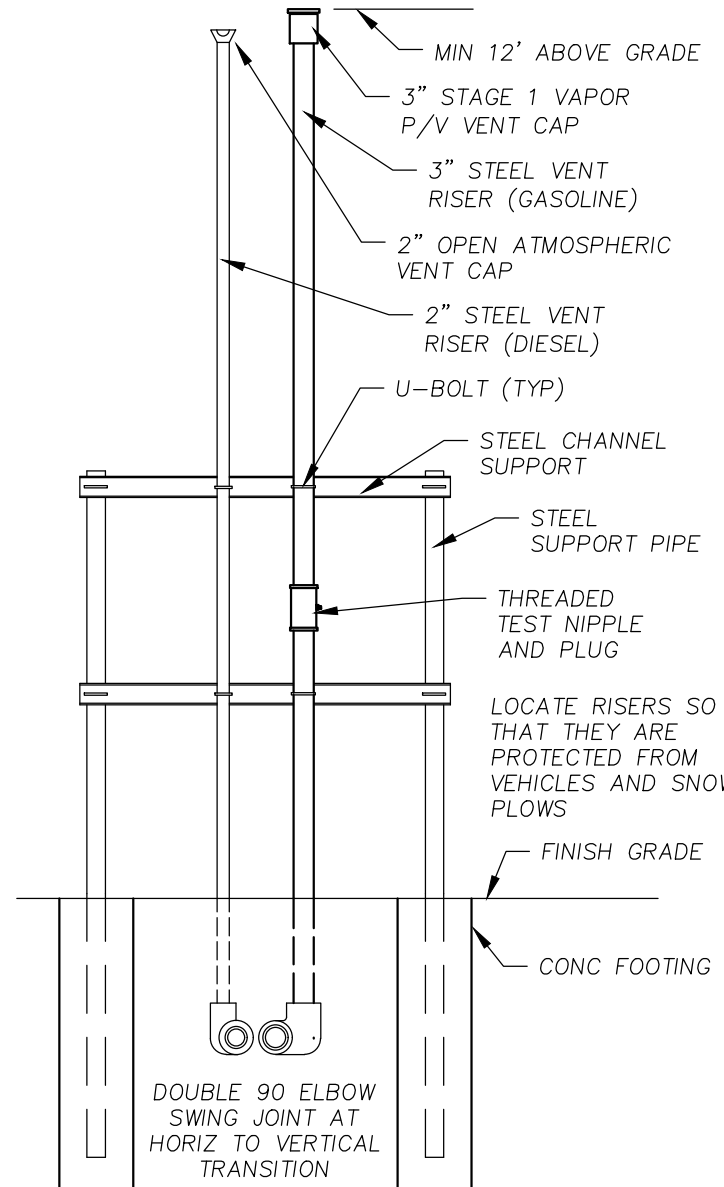
OVERFILL DEVICE

NOT TO SCALE



MAT REINF AT SUMP

NOT TO SCALE



VENT RISERS

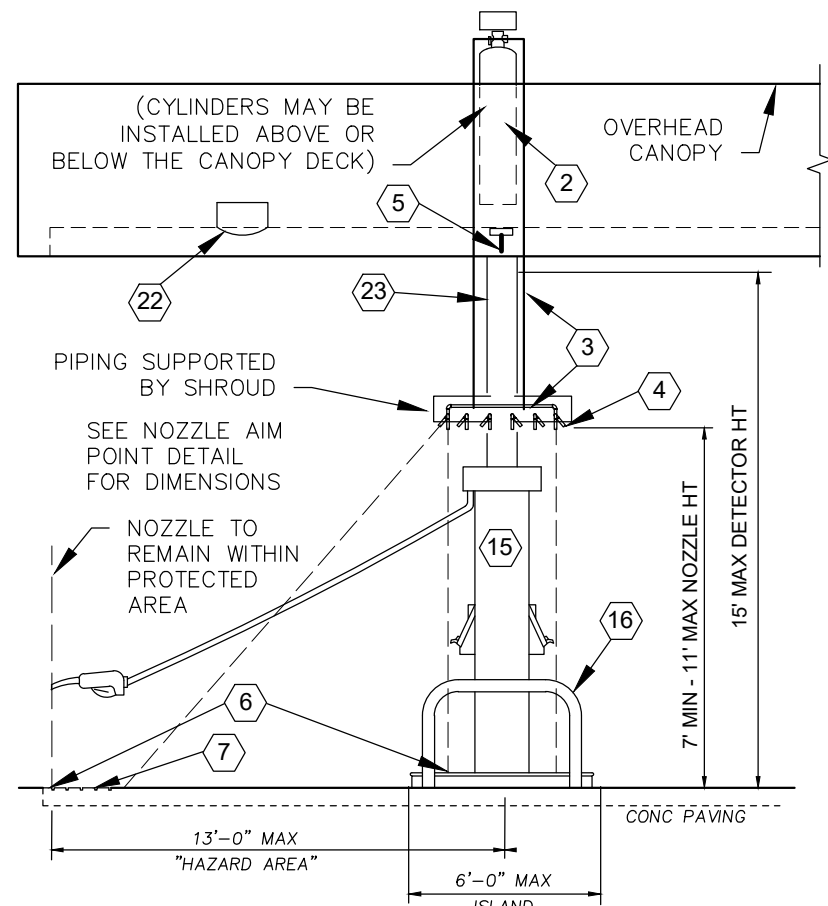
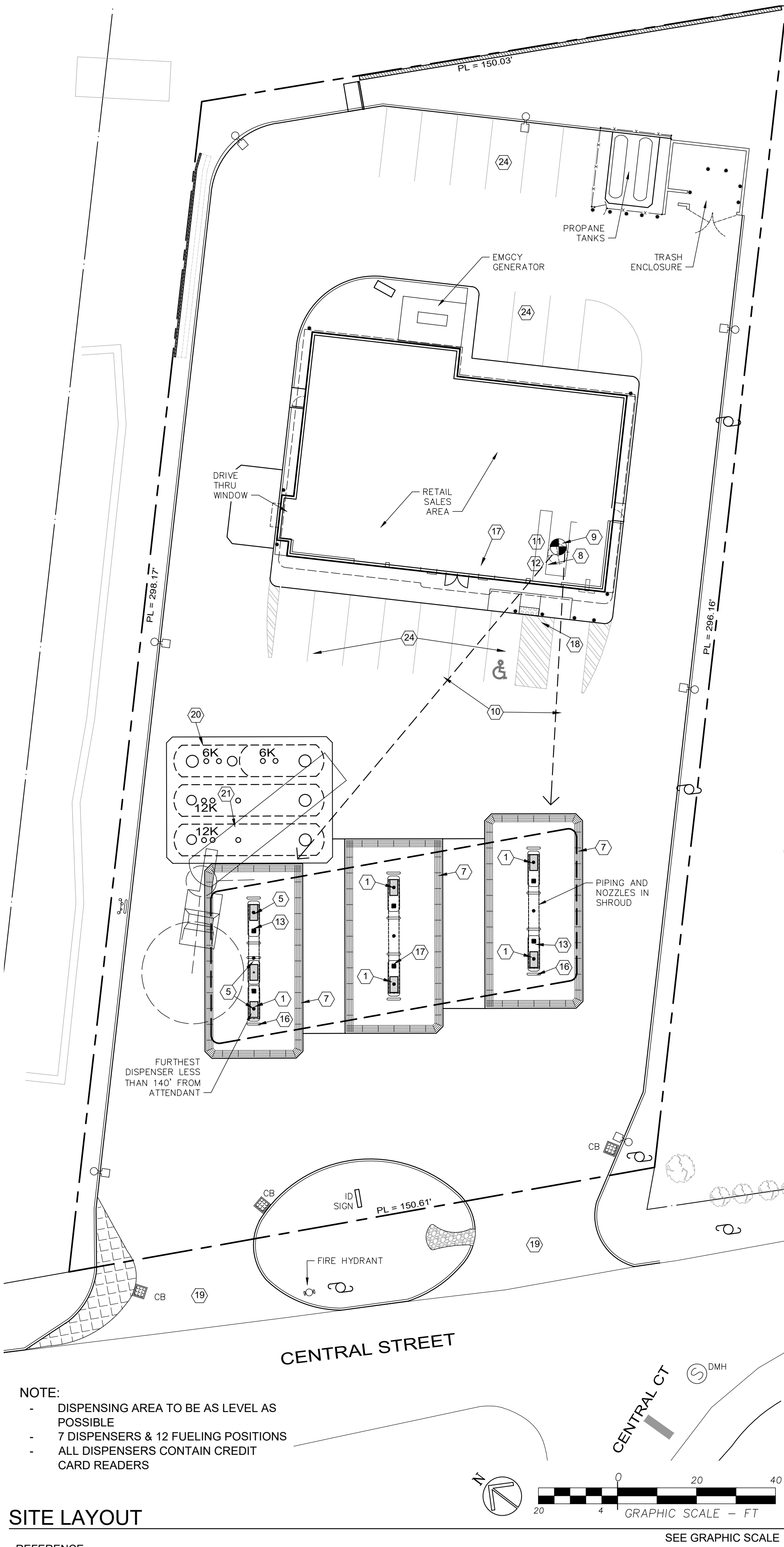
NOT TO SCALE

		PROJECT ADDRESS	
		BYFIELD, MA 23 CENTRAL STREET	
DATE		DATE	DATE
29 APR 2020	0	AG	0
SCALE		AS NOTED	
DWG FILE		SHEET	
TBD-019-01 BYFIELD		TK-2	

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

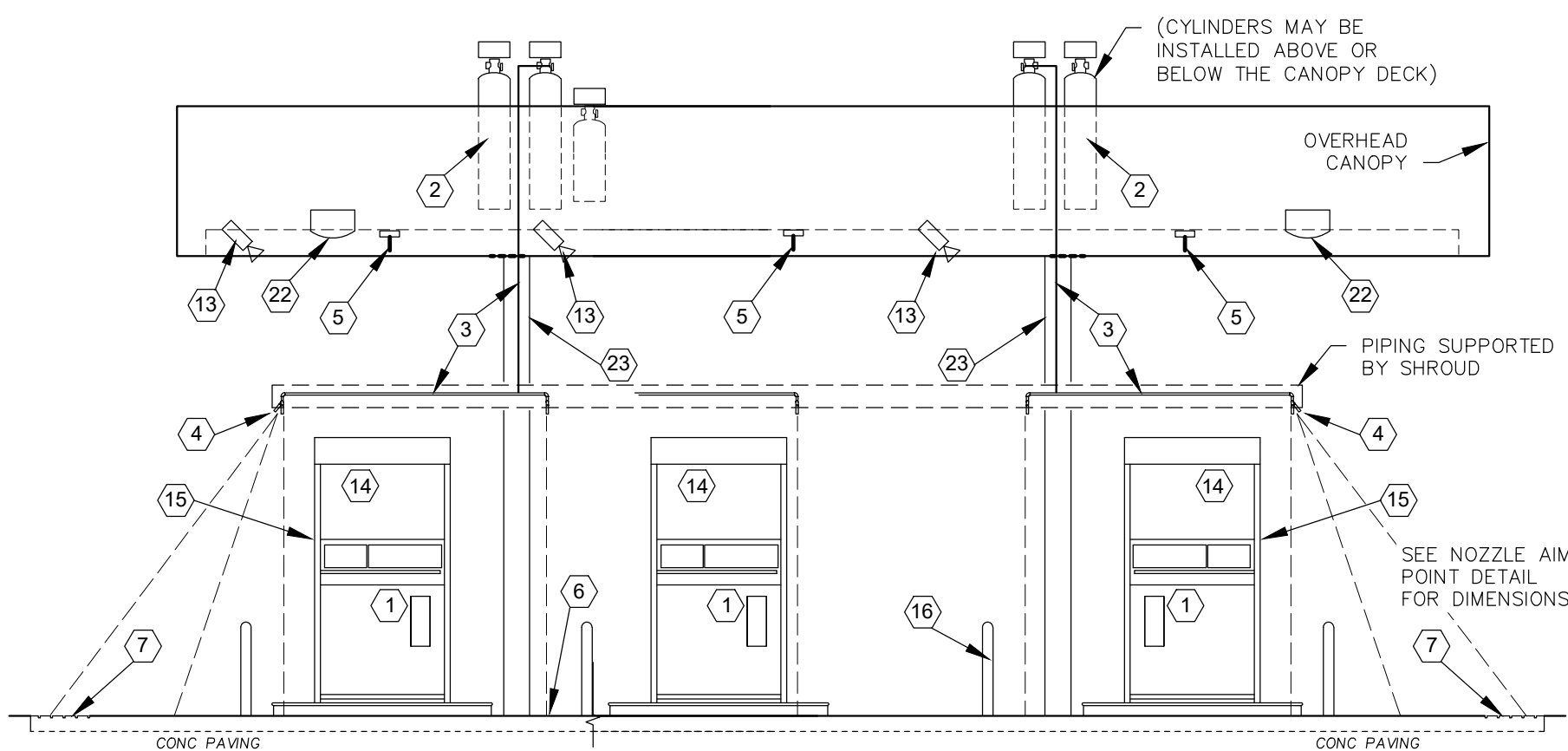
BYFIELD, MA
23 CENTRAL STREET

TANK & PIPING DETAILS



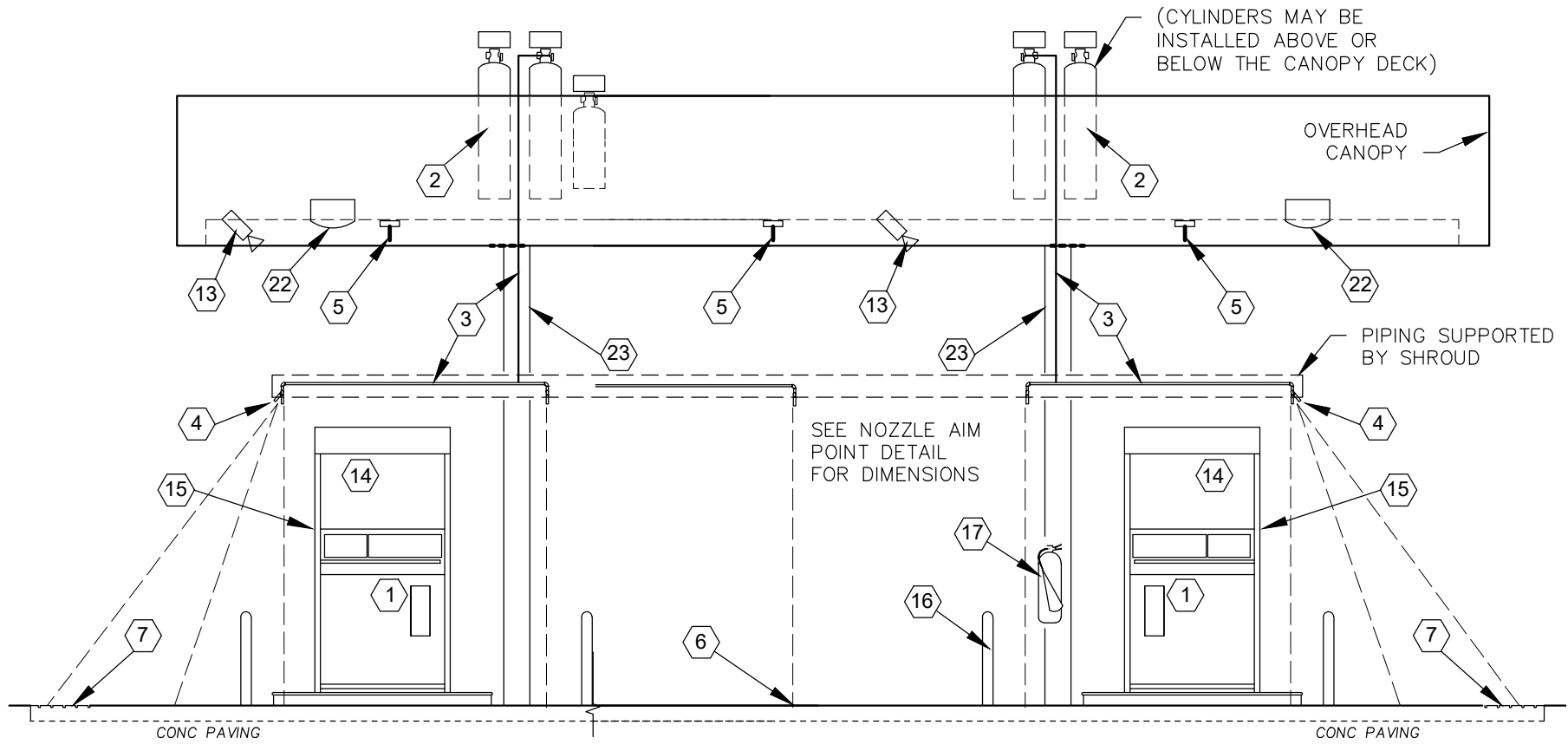
ISLAND END ELEVATION

NOT TO SCALE



ISLAND SIDE ELEVATION - WEST ISLAND

NOT TO SCALE



ISLAND SIDE ELEVATION - MIDDLE AND EAST ISLANDS

NOT TO SCALE

- LEGEND**
- 1 MOTOR FUEL DISPENSER - UL 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

GENERAL NOTES

- 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 REGULATIONS, NFPA 17, AND THE SYSTEM MFR UL LISTING AND SYSTEM MANUALS.
- ALL MASSACHUSETTS 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 AND INSTALLED TO PROTECT THE ENTIRE SPILL AND HAZARD AREA.
- STATE REQUIRED PLAN STATEMENTS:
 - THE SELF-SERVE EXTINGUISHING SYSTEM SHALL BE INSTALLED FROM AND IN ACCORDANCE WITH APPROVED/STAMPED PLANS FROM THE STATE FIRE MARSHAL.
 - ALL EXTINGUISHING SYSTEMS, DISPENSING SYSTEMS, AND CONTROL EQUIPMENT SHALL BE UNDERWRITERS LABORATORY (UL) LISTED.
 - CREDIT CARD READING DEVICES ARE PROPOSED AT THIS LOCATION AND ARE SUBJECT TO 527 CMR 1.00 SECTION 42.7.4.5 (1)(K):
 - EA SALE SHALL BE INDIVIDUALLY AUTHORIZED BY THE SELF-SERVICE ATTENDANT.
 - THE AUTOMATIC CREDIT CARD READING DEVICE SHALL NOT BE USED AS PHYSICAL AUTHORIZATION FOR THE DISPENSING OF MOTOR FUEL.
 - THE AUTOMATIC CREDIT CARD READING DEVICES ARE INCLUDED ON PLANS SUBMITTED TO AND APPROVED BY THE STATE FIRE MARSHAL (SEE NOTES AND LEGEND).
 - 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.
 - 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.
 - 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 (IF CONSTRUCTION HAS NOT STARTED).
- ALL FIRE SUPPRESSION SYSTEMS SHALL BE INSTALLED AND MAINTAINED BY COMPANIES AND PERSONS HOLDING REQUIRED CERTIFICATES OF COMPETENCY AND REGISTRATION ISSUED BY THE MA STATE FIRE MARSHAL.
- THE INSTALLATION OF THIS FIRE EXTINGUISHING SYSTEM MUST BE IN ACCORDANCE WITH THE PREVAILING MASSACHUSETTS CODE REQUIREMENTS AND THE PROVISIONS OF NFPA 17 (SEE 527 CMR 1.00 CH 2 FOR CURRENT EDITION).
- 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.
- THE CONTROLLING MECHANISM CONSOLE SHALL INCLUDE A DISCONNECT SWITCH WHICH WILL INSTANTLY CUT OFF ALL PUMPING POWER TO ALL MOTOR FUEL PUMPS AT THE SERVICE STATION. THE CONTROLLING MECHANISM CONSOLE, SWITCHES AND RELATED EQUIPMENT SHALL BE A DESIGN AND TYPE APPROVED BY THE FIRE MARSHAL AND SHALL BE UNDERWRITERS LABORATORIES (U.L.) LISTED EQUIPMENT, LISTED FOR USE WITH THE DISPENSING DEVICES.
- 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.
- AN INTERCOM SYSTEM IS REQD BETWEEN THE CONTROL CONSOLE AND DISPENSING ISLANDS.
- 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.
- ANY ISLAND USED AS FULL SERVICE WILL HAVE A SWITCH WHICH WILL ACTIVATE THE OVERHEAD FIRE EXTINGUISHING SYSTEM AND DEACTIVATE POWER TO THE SELF-SERVICE ISLAND DISPENSING PUMPS AND THE SELF-SERVICE ISLANDS.
- WARNING SIGNS SHALL BE CONSPICUOUSLY POSTED ON BOTH ENDS OF THE DISPENSER AND SHALL INCORPORATE STATE REQD LANGUAGE (SEE DETAIL 1).
- THE CONCRETE PAD SURROUNDING THE DISPENSING ISLAND SHALL BE INSTALLED AS LEVEL AS POSSIBLE. THE POSITIVE LIMITING BARRIER (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.
- A MEANS TO INSTANTLY DISCONNECT THE POWER TO ALL DISPENSERS AND ACTIVATE THE SUPPRESSION SYSTEM SHALL BE CONSPICUOUSLY MARKED AND LOCATED AT THE CONTROL CONSOLE.
- 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 FROM EA CURB. IF A CANOPY IS PROVIDED DETECTORS SHALL BE LOCATED ON THE UNDERSIDE (15 FT MAX HEIGHT) 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.
- UNRELATED BUSINESS, VENDING AREAS, CONVENIENCE FOOD MART, AUTOMOTIVE REPAIR GARAGE, AND SIMILAR BUSINESS SHALL BE OPERATED BY OTHERS.
- THE CONTROLLING MECHANISM CONSOLE MUST BE IN CONSTANT ATTENDANCE BY THE ATTENDANT WHILE MOTOR FUEL IS BEING DISPENSED AND A MEANS MUST BE PROVIDED FOR THE ATTENDANT TO OBSERVE THE FILLING OPERATION AT EA VEHICLE DURING THE TIME THAT ANY OF THE PUMPS HAVE BEEN ACTIVATED TO DISPENSE MOTOR FUEL.
- THE LICENSED INSTALLING CONTRACTOR SHALL INSURE THAT THE LIMITS OF THE FIRE SUPPRESSION SYS ARE NOT EXCEEDED. THE INSTALLING CONTRACTOR SHALL TEST FIRE THE ENTIRE SYSTEM, INCLUDING ALL CONTROLS AND SHALL CERTIFY TO THE OWNER IN WRITING OF THE SYSTEM'S SATISFACTORY OPERATIONAL PERFORMANCE AND COMPLIANCE WITH U.L. APPROVAL.
- AT LEAST SEMIANNUALLY, ALL DISCHARGE NOZZLES, PIPING DRY CHEMICAL CONTAINERS, HEAT COLLECTORS, ETC. SHALL BE INSPECTED BY APPROVED AND CERTIFIED COMPANIES WITH VALID MASSACHUSETTS ISSUED CERTIFICATE OF REGISTRATION. REPORTS OF SUCH INSPECTIONS SHALL BE SUBMITTED TO THE HEAD OF THE FIRE DEPARTMENT IN ACCORDANCE WITH NFPA STANDARDS (NFPA-17).
- FAILURE TO MAINTAIN AN EXISTING FACILITY IAW GUIDELINES UNDER WHICH APPROVED MAY REQUIRE THE FACILITY BE UPGRADED TO THEN CURRENT GUIDELINES.
- A COMPLETE RESUBMITAL IN ACCORDANCE WITH THEN CURRENT SELF-SERVICE GUIDELINES IS REQUIRED IN THE FOLLOWING CASES:
 - REPLACEMENT OF THE FIRE SUPPRESSION SYSTEM
 - CHANGE IN METHOD OF DISPENSING (I.E. - CHANGING FROM SINGLE PRODUCT TO MULTI-PRODUCT DISPENSERS)
 - REPLACEMENT OR RECONSTRUCTION OF THE DISPENSING ISLAND
 - MATERIAL CHANGE IN ENVIRONMENTAL CONDITIONS OR HAZARD AREA (I.E. - CHANGE THAT IMPACTS ATTENDANT ABILITY TO OBSERVE THE FUELING OPERATION)

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:

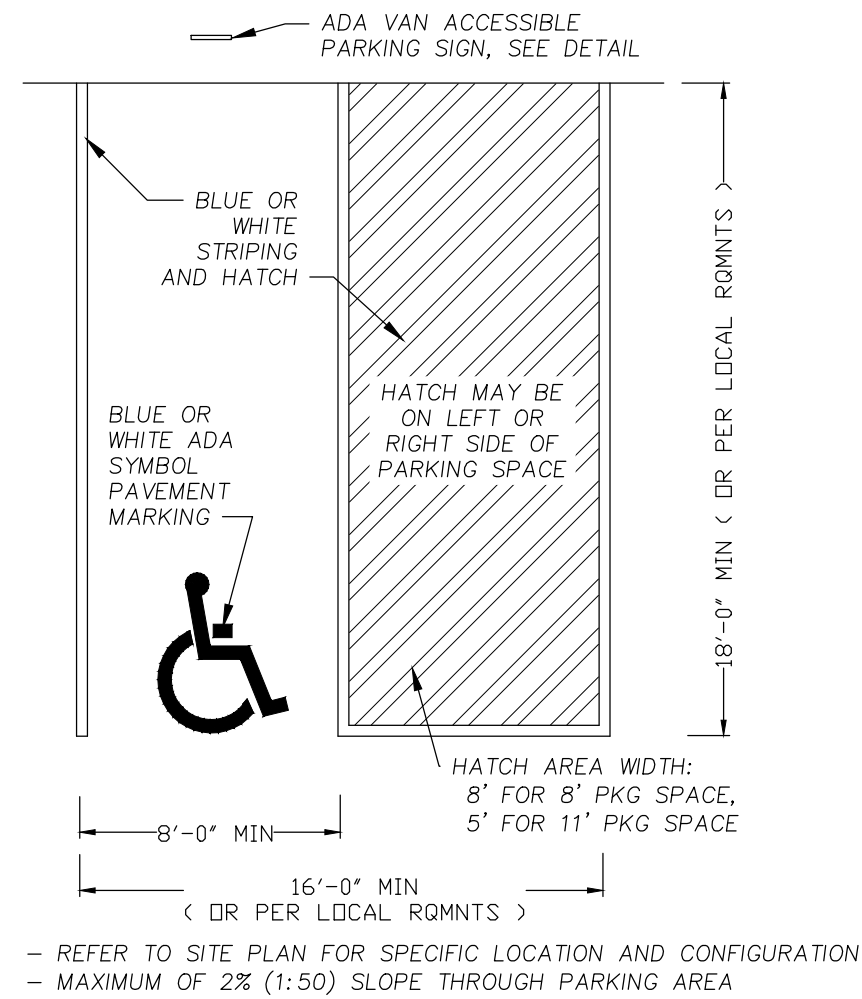
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20 APR 2020	0	AG	ORIGINAL DRAWING DATE

PROJECT ADDRESS: BYFIELD, MA 23 CENTRAL STREET

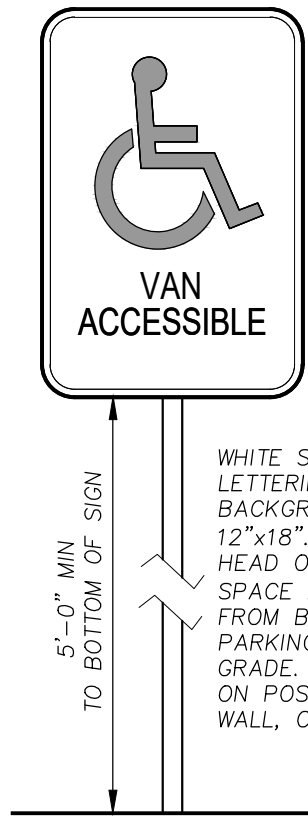
**SELF SERVICE
FIRE SUPPRESSION**

DWG FILE: TBD-019-01 BYFIELD
SCALE: AS NOTED

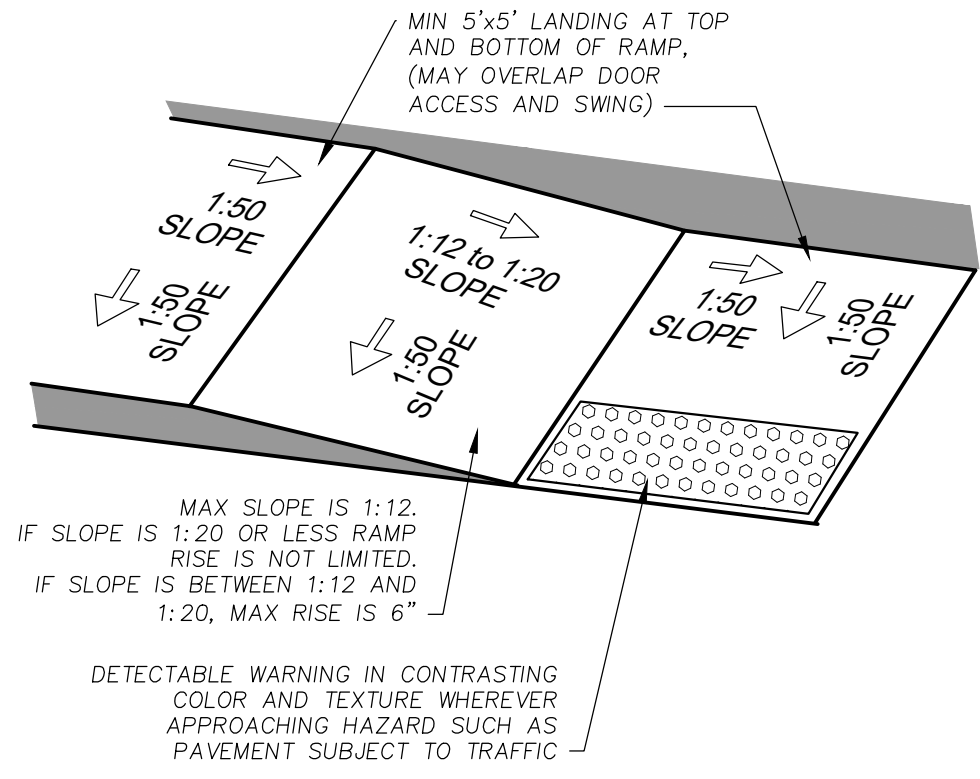
SHEET: FSP-1



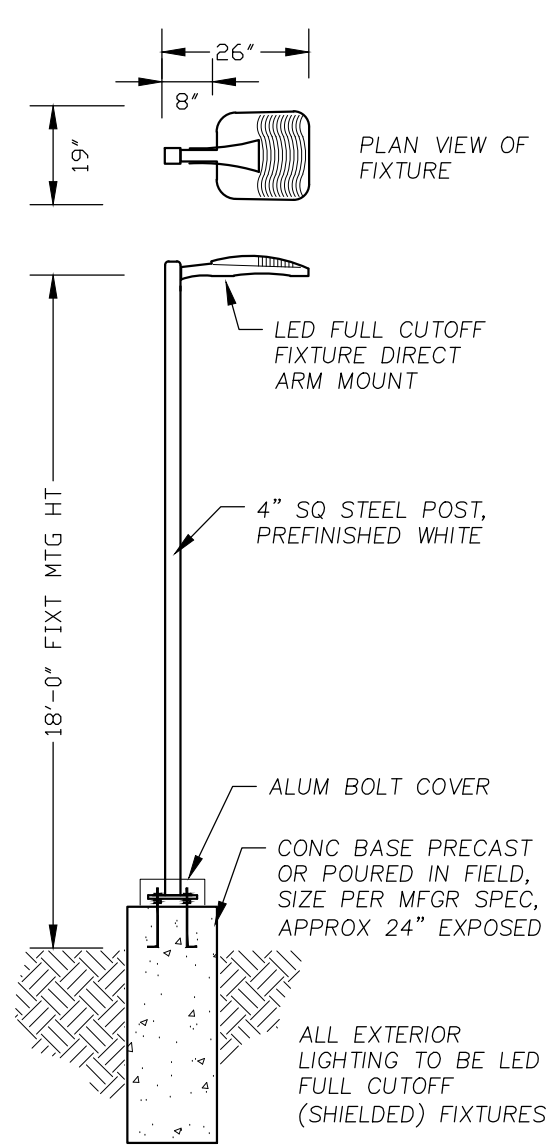
ADA PKG PAVEMENT MARKING
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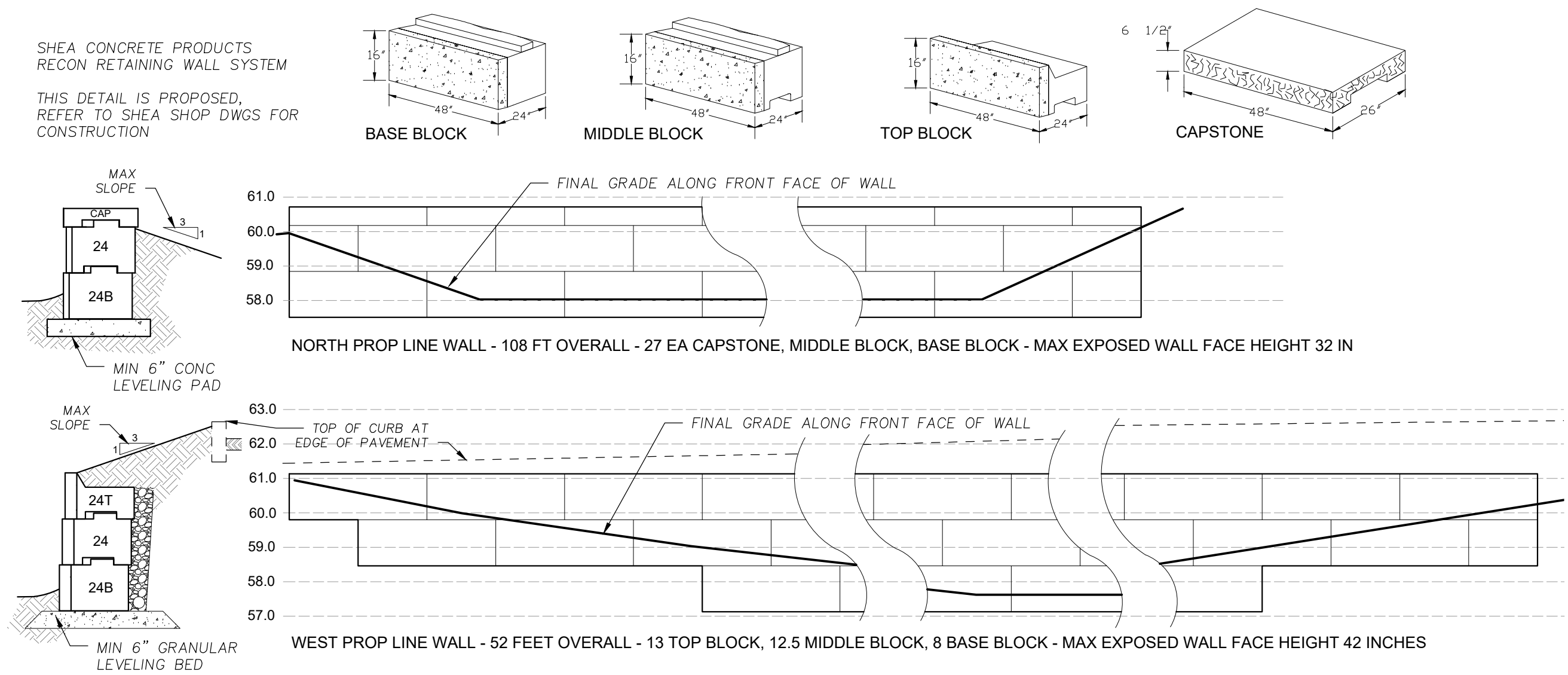
ADA PKG SIGNAGE
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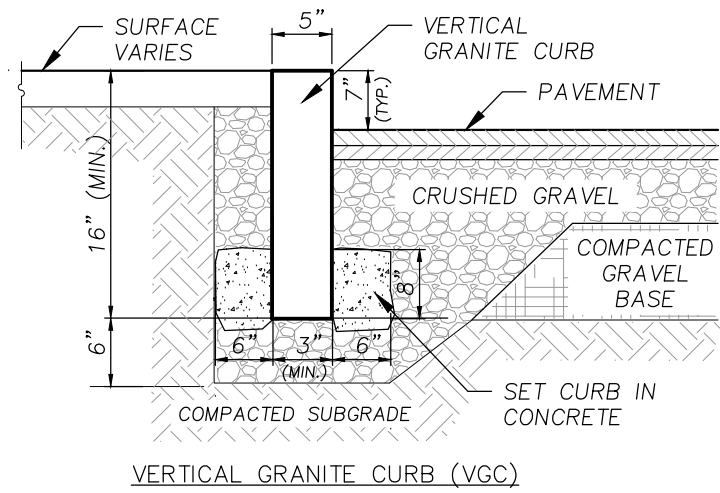
SIDEWALK ADA PARALLEL CURB RAMP
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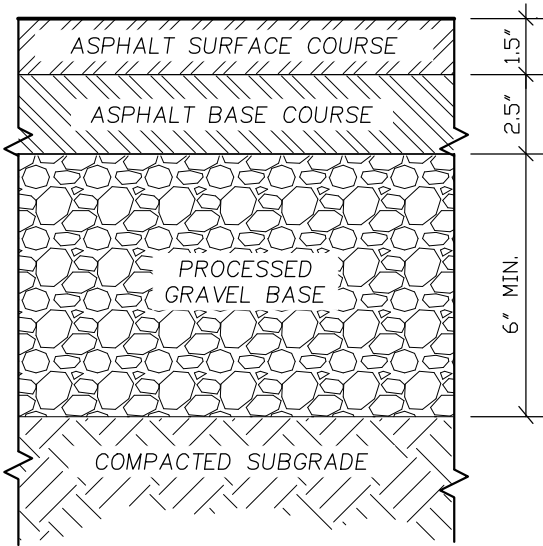
YARD POLE LIGHT
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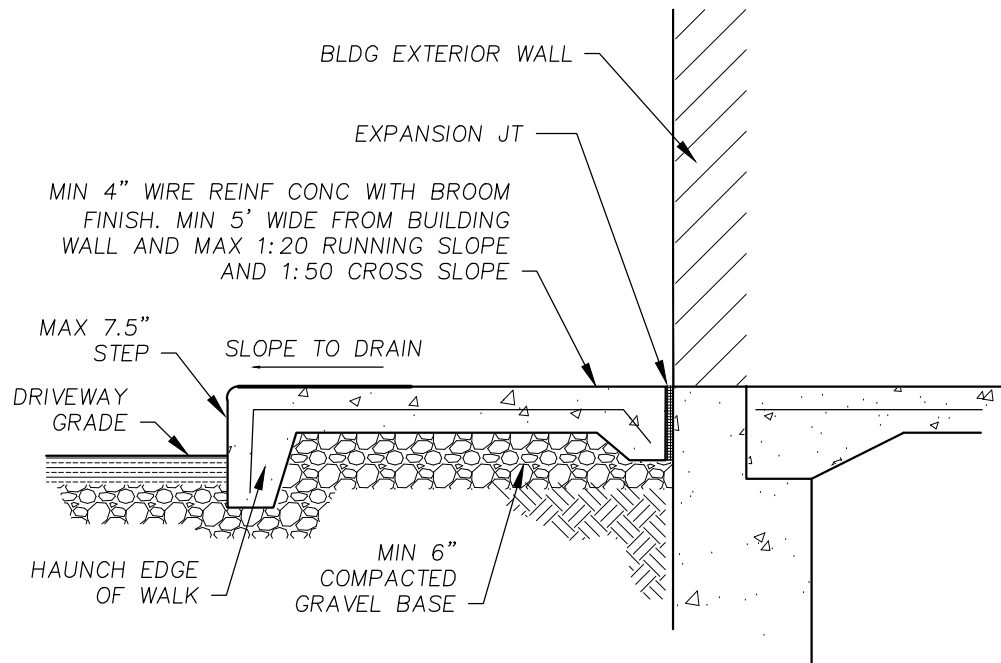
RETAINING WALLS
NOT TO SCALE



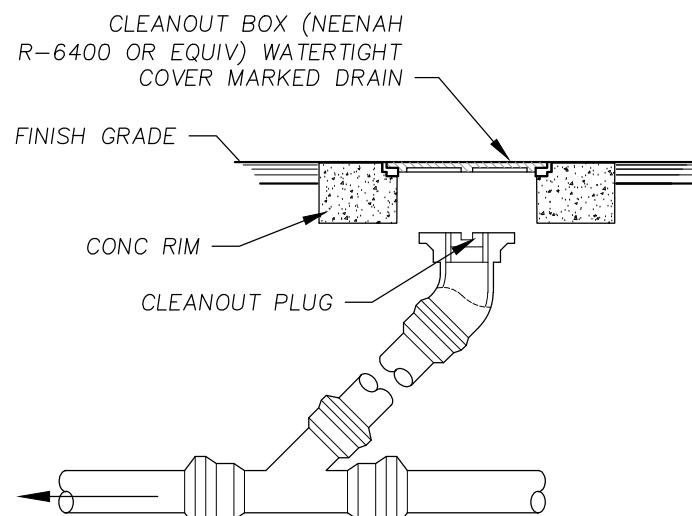
CURBING
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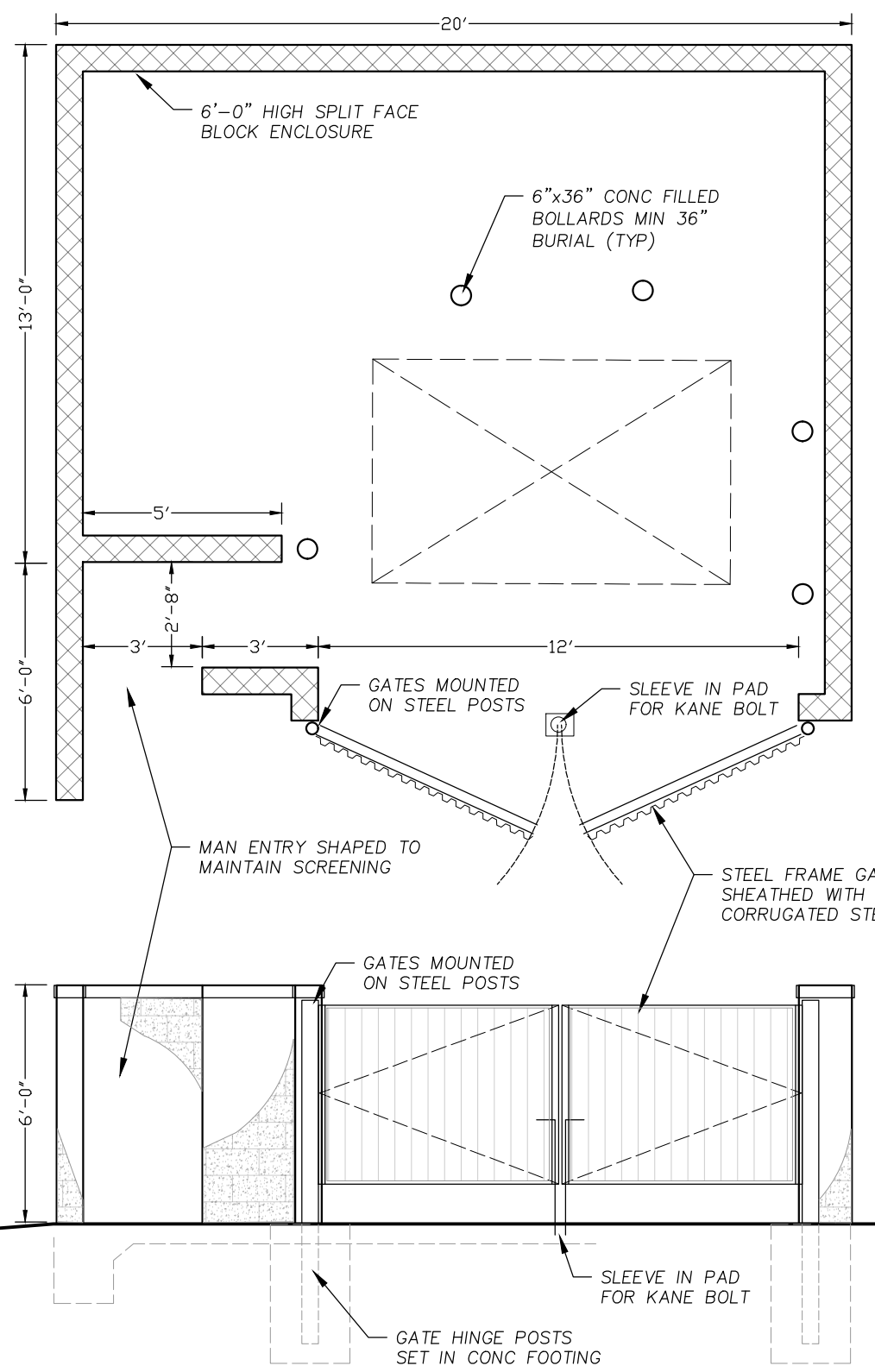
ASPHALT PAVEMENT
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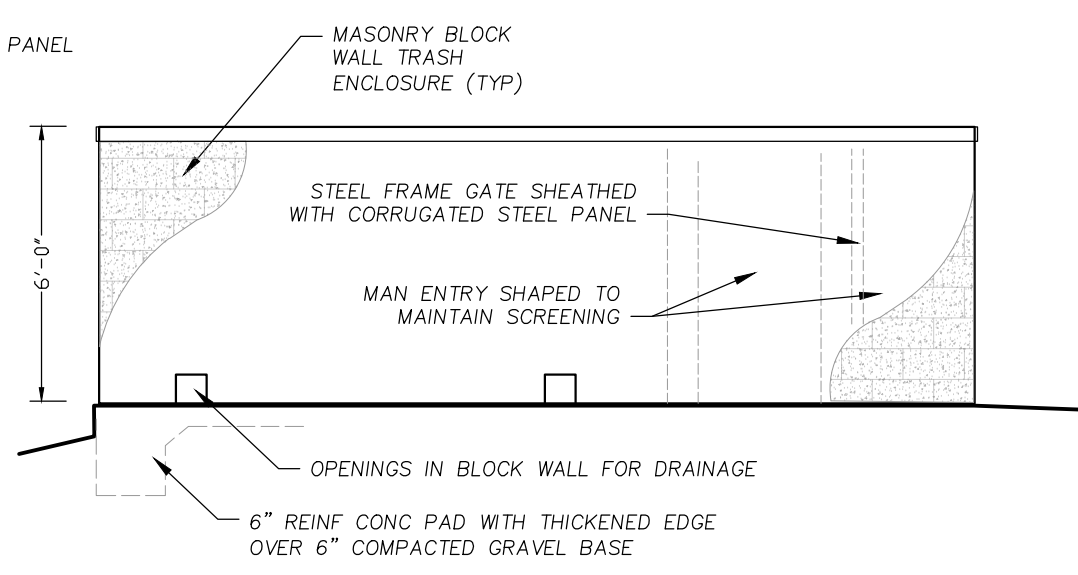
BUILDING SIDEWALK
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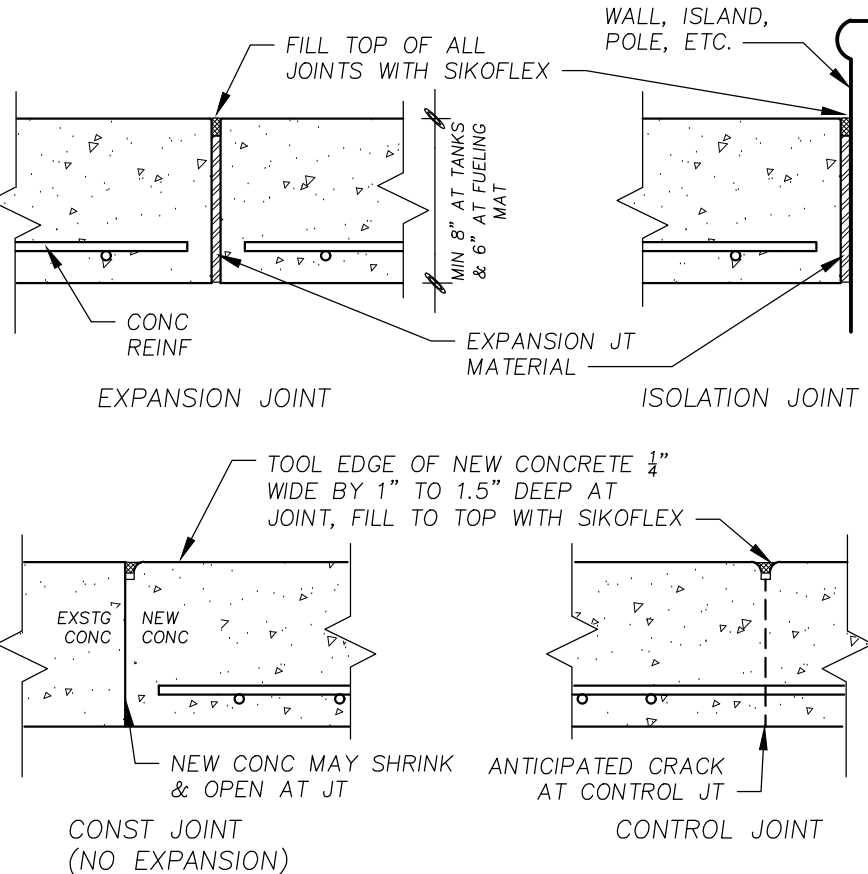
CLEAN-OUT
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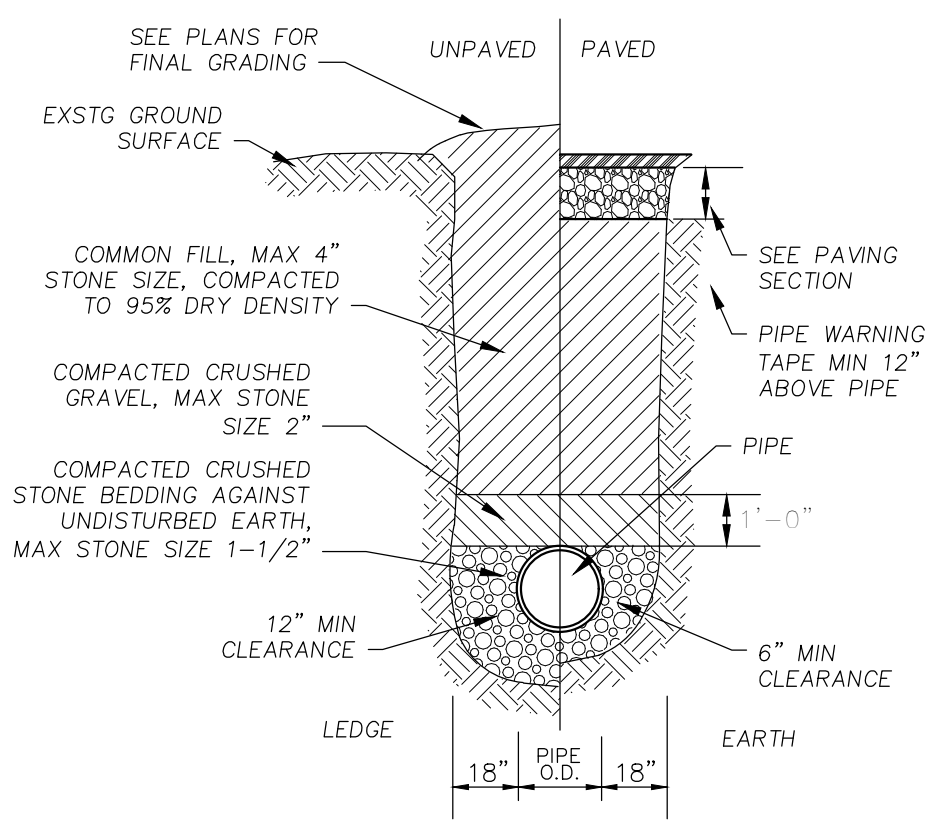
SCREENED TRASH ENCLOSURE



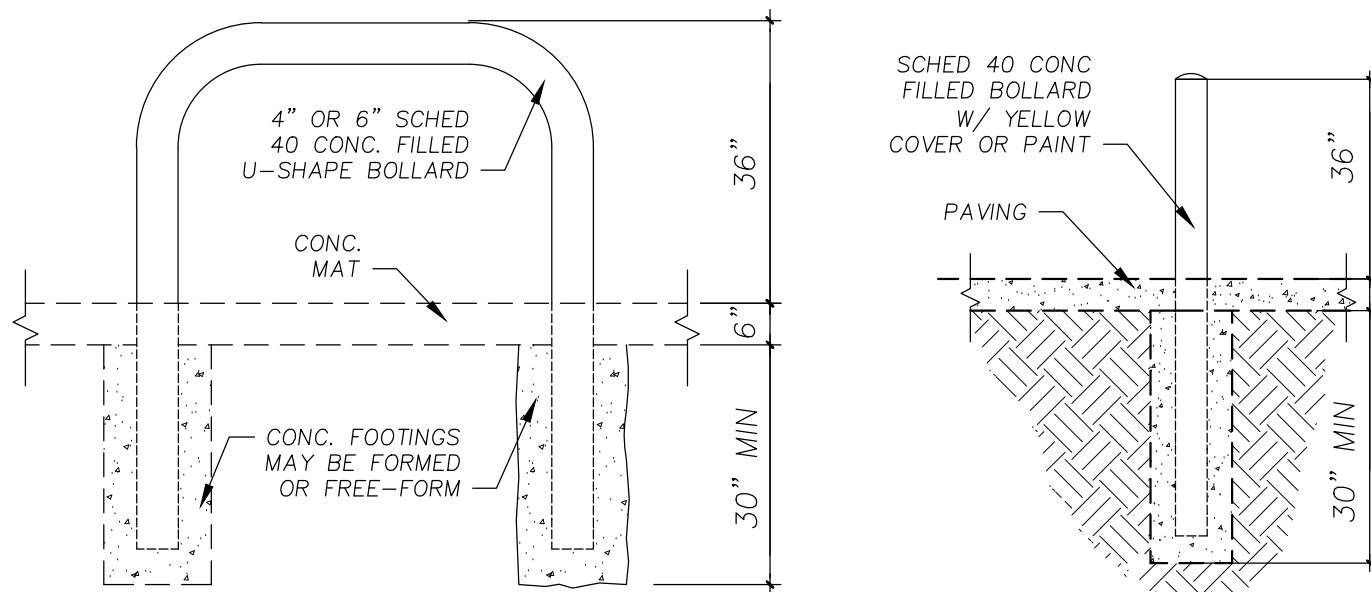
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CONCRETE PAVEMENT JOINTS
NOT TO SCALE

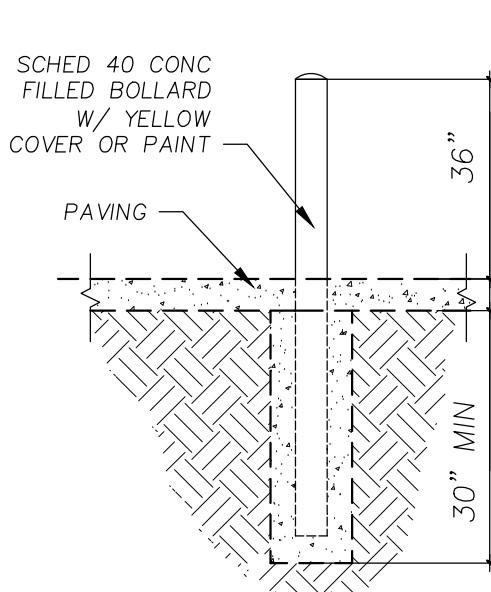


UTILITY PIPE TRENCH
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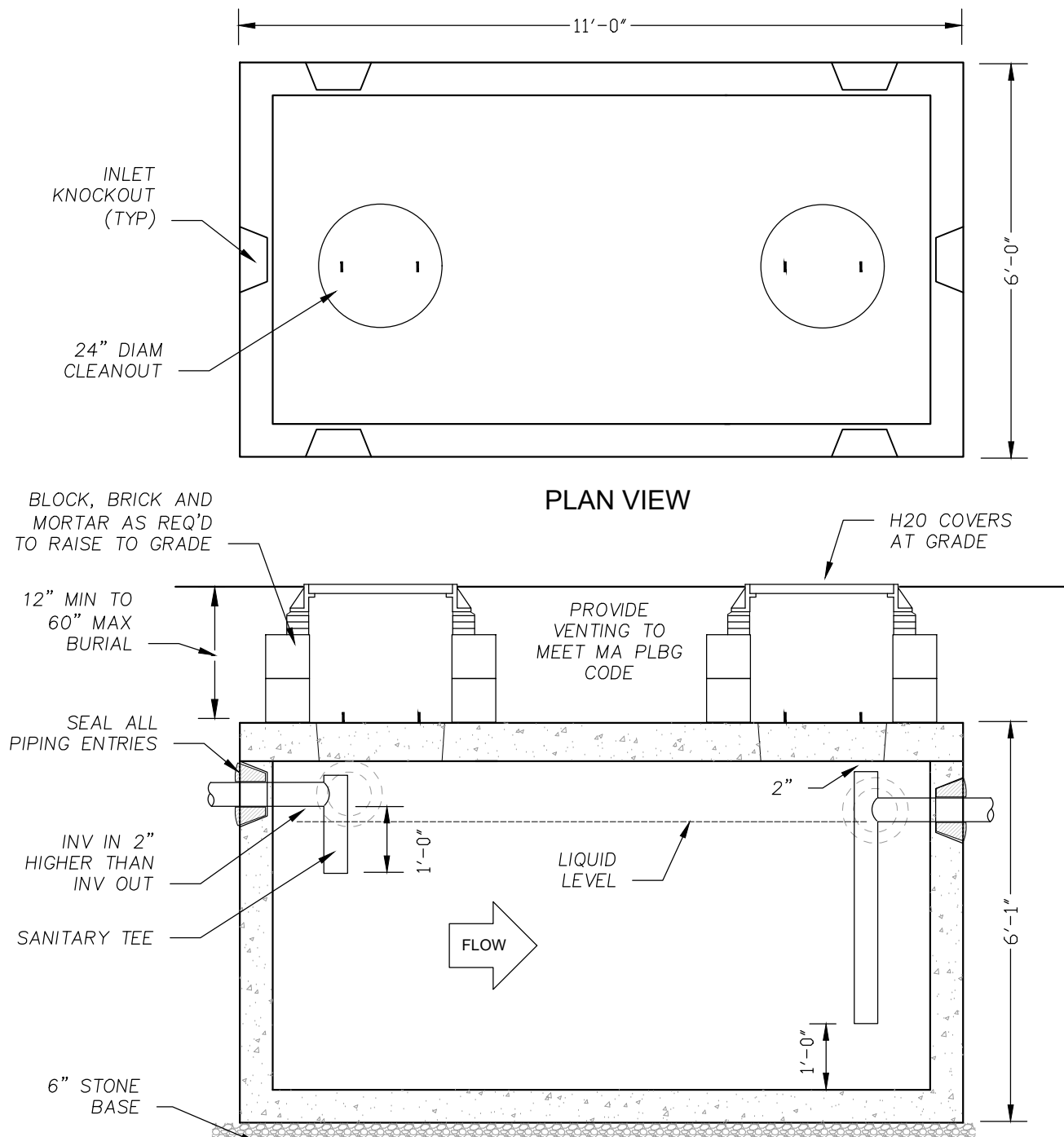
U-SHAPE BOLLARD

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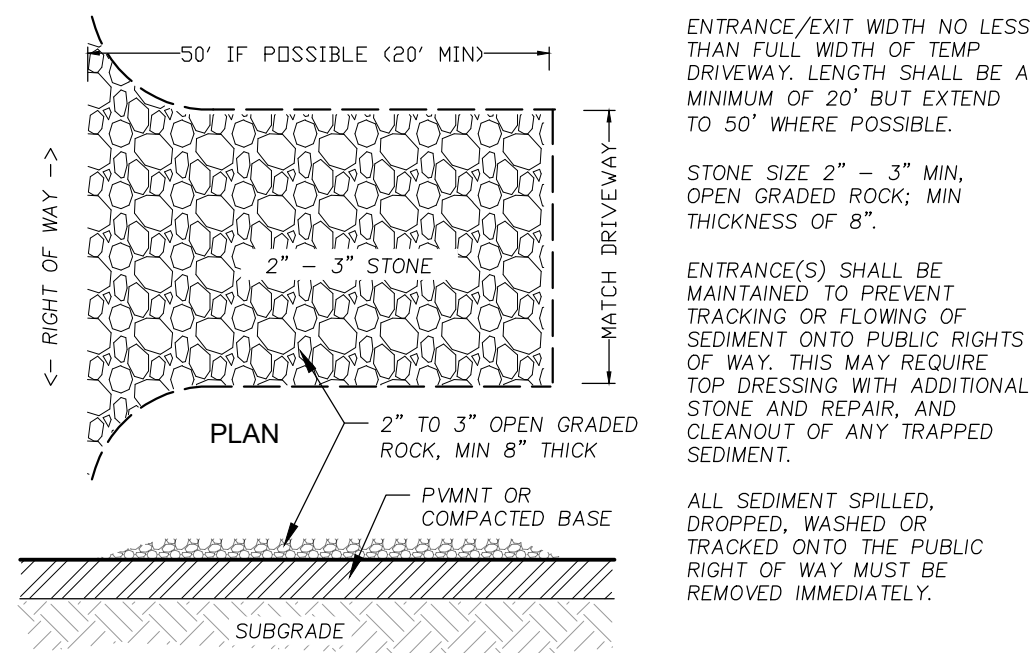
BOLLARD

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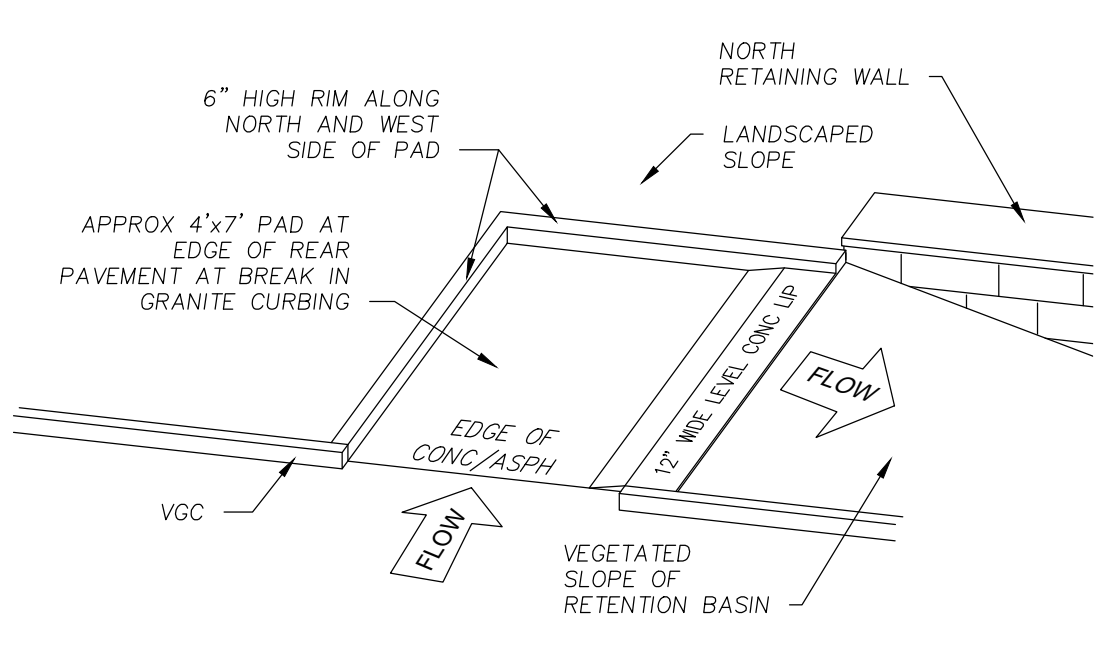
GREASE TRAP - EXTERIOR UG 1,500 GAL
NOT TO SCALE

29 APR 2020		DATE	0	AG	ORIGINAL DRAWING DATE	BY	DESCRIPTION
TBD-019-01 BYFIELD		DWG FILE	SCALE		AS NOTED		
SD-1		SHEET		PROJECT ADDRESS			
BYFIELD, MA 23 CENTRAL STREET		A.L. PRIME ENERGY CONSULTANT, INC. 18 LARK AVENUE SAUGUS MA 01906 (781)246-0201					
SITE DETAILS 1		Professional Engineer ANTHONY GUBA LICENSE No. 00727 EXPIRATION DATE 12/31/2020					



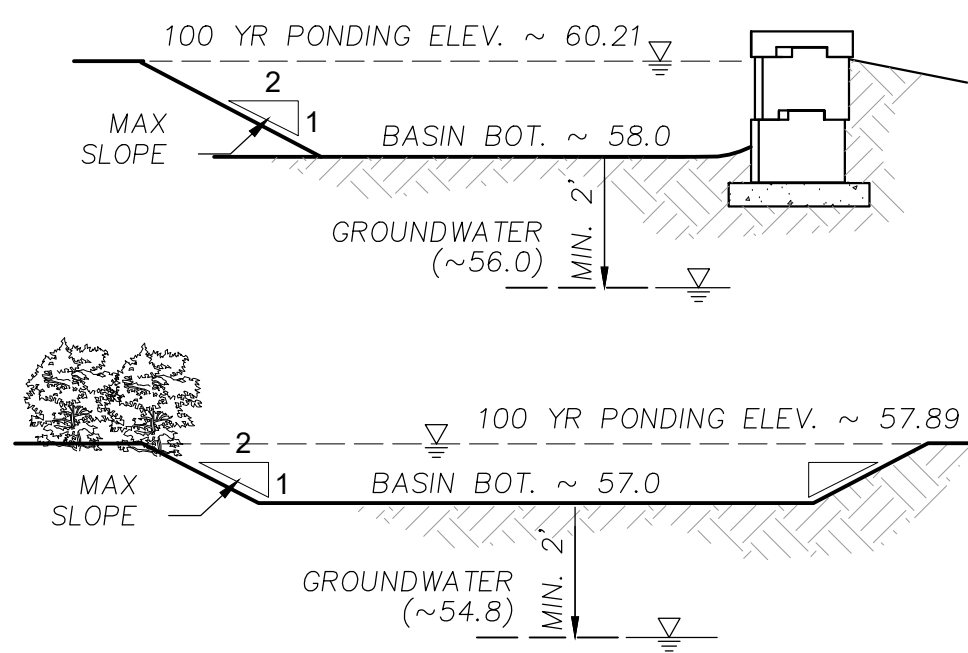
CONSTRUCTION ENTRANCE

NOT TO SCALE



LEVEL SPREADER

NOT TO SCALE

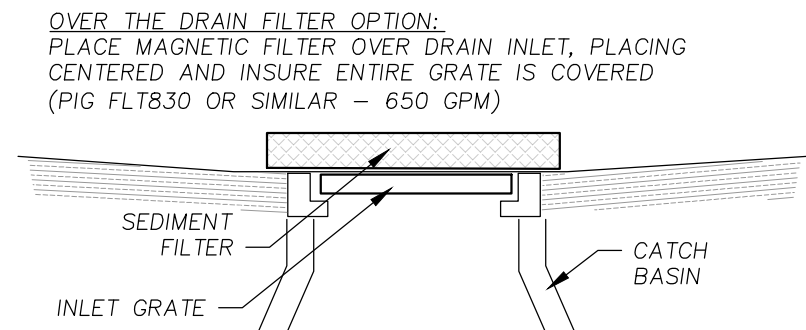
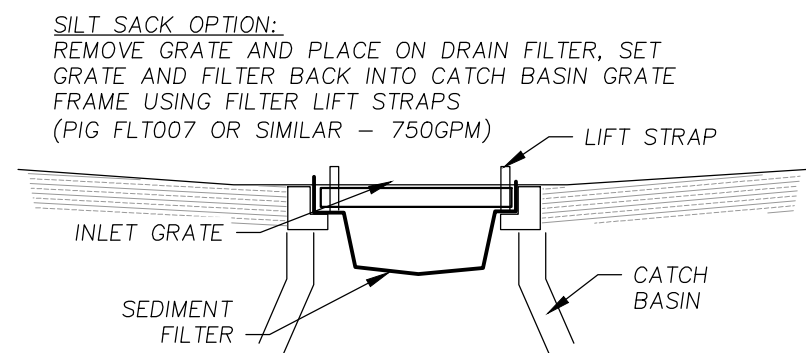


RETENTION BASINS

NOT TO SCALE

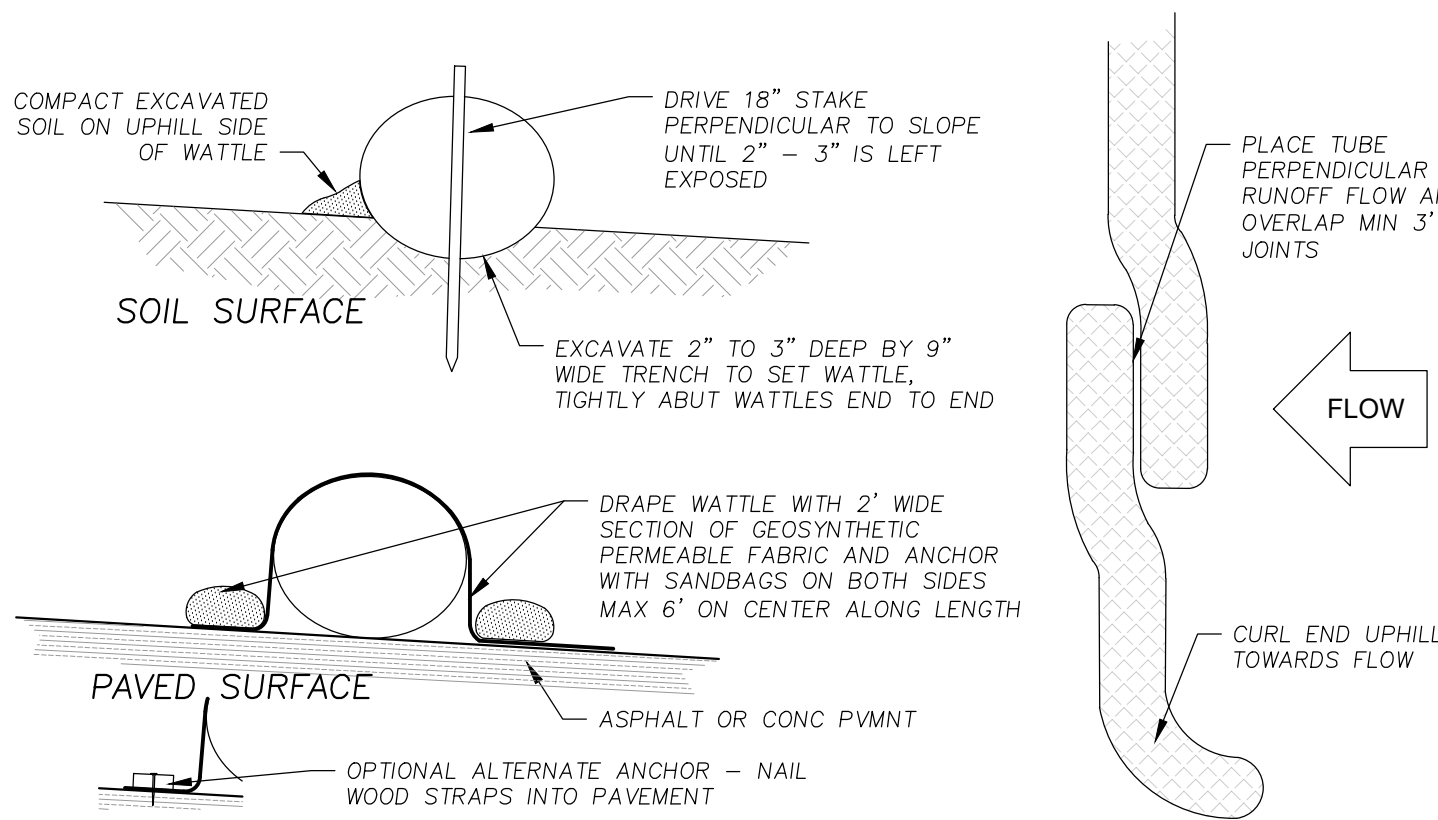
SOIL TO BE A MIN 12" DEPTH OF SAND/COMPOST/SOIL MIX CONTAINING 40% SAND, 20-30% TOPSOIL, AND 30-40% COMPOST BY VOLUME WITH A CLAY CONTENT OF LESS THAN 5% BY VOLUME. SOILS SHALL BE FREE OF STONES, STUMPS, ROOTS AND OTHER WOODY MATERIAL AND BRUSH. SOIL SHALL ALSO BE FREE OF SEEDS FROM NOXIOUS WEEDS. SOIL PH SHOULD GENERALLY BE BETWEEN 5.5-6.5.

A DENSE AND VIGOROUS VEGETATIVE COVER SHOULD BE ESTABLISHED BEFORE RUNOFF IS ROUTED INTO THE BASIN AREA.



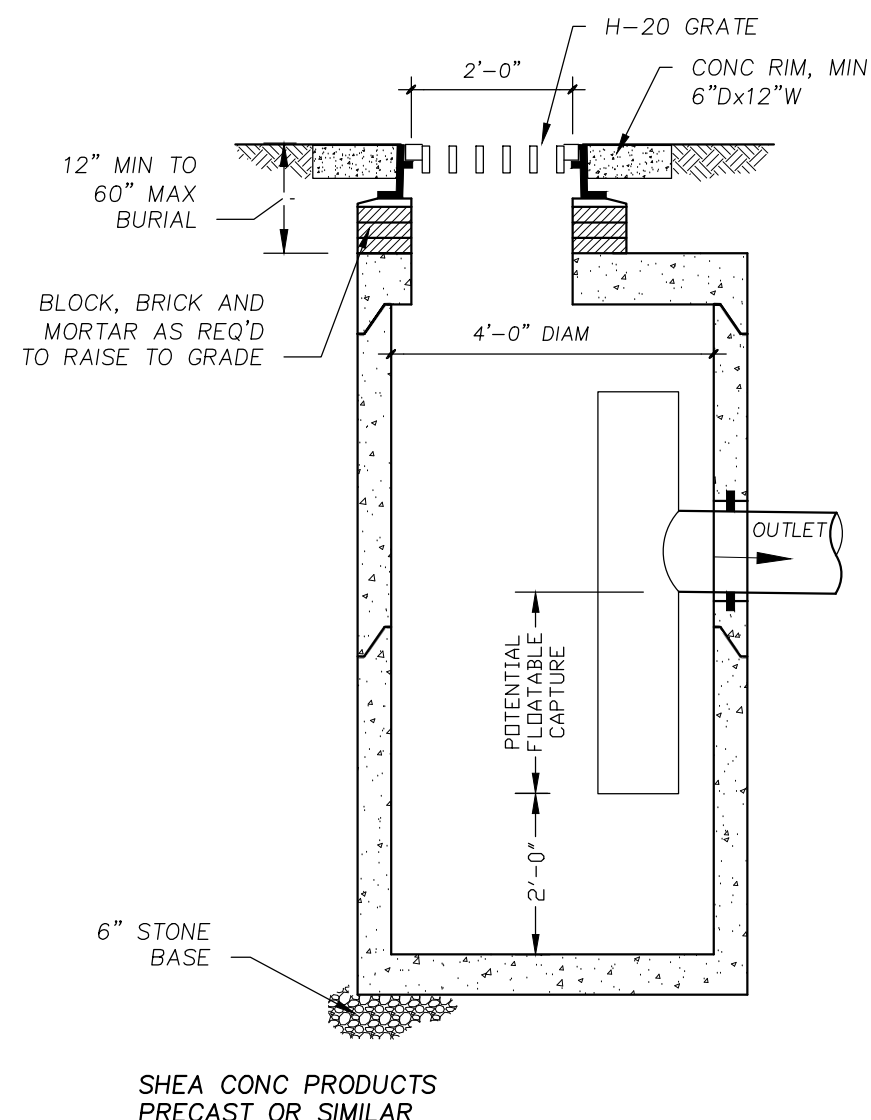
CB INLET PROTECTION

NOT TO SCALE



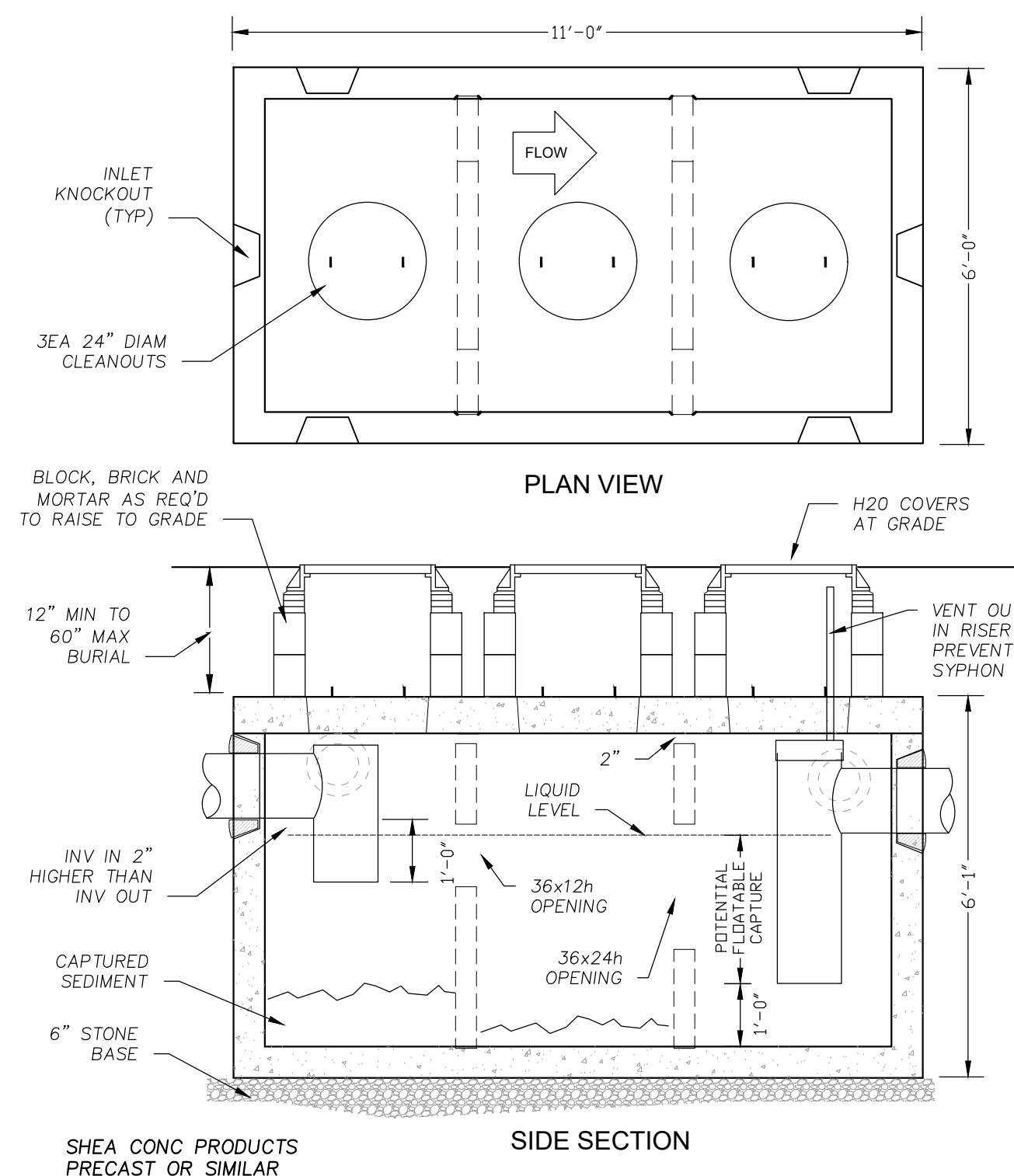
STRAW WATTLE SEDIMENT BARRIER

NOT TO SCALE



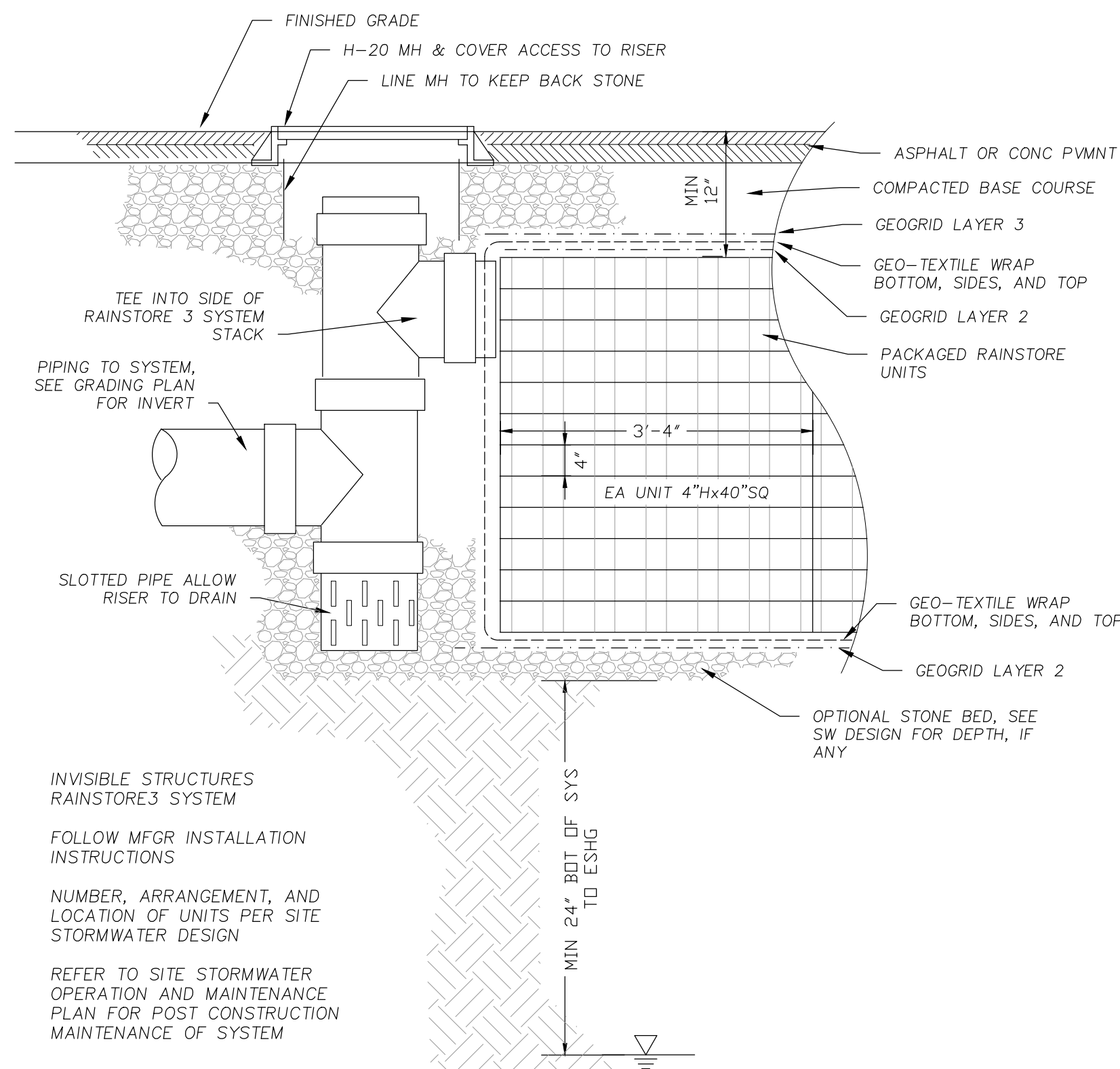
DEEP SUMP CATCH BASIN

NOT TO SCALE



OIL/GRIT CHAMBER

NOT TO SCALE



INFILTRATION SYSTEM (TYP)

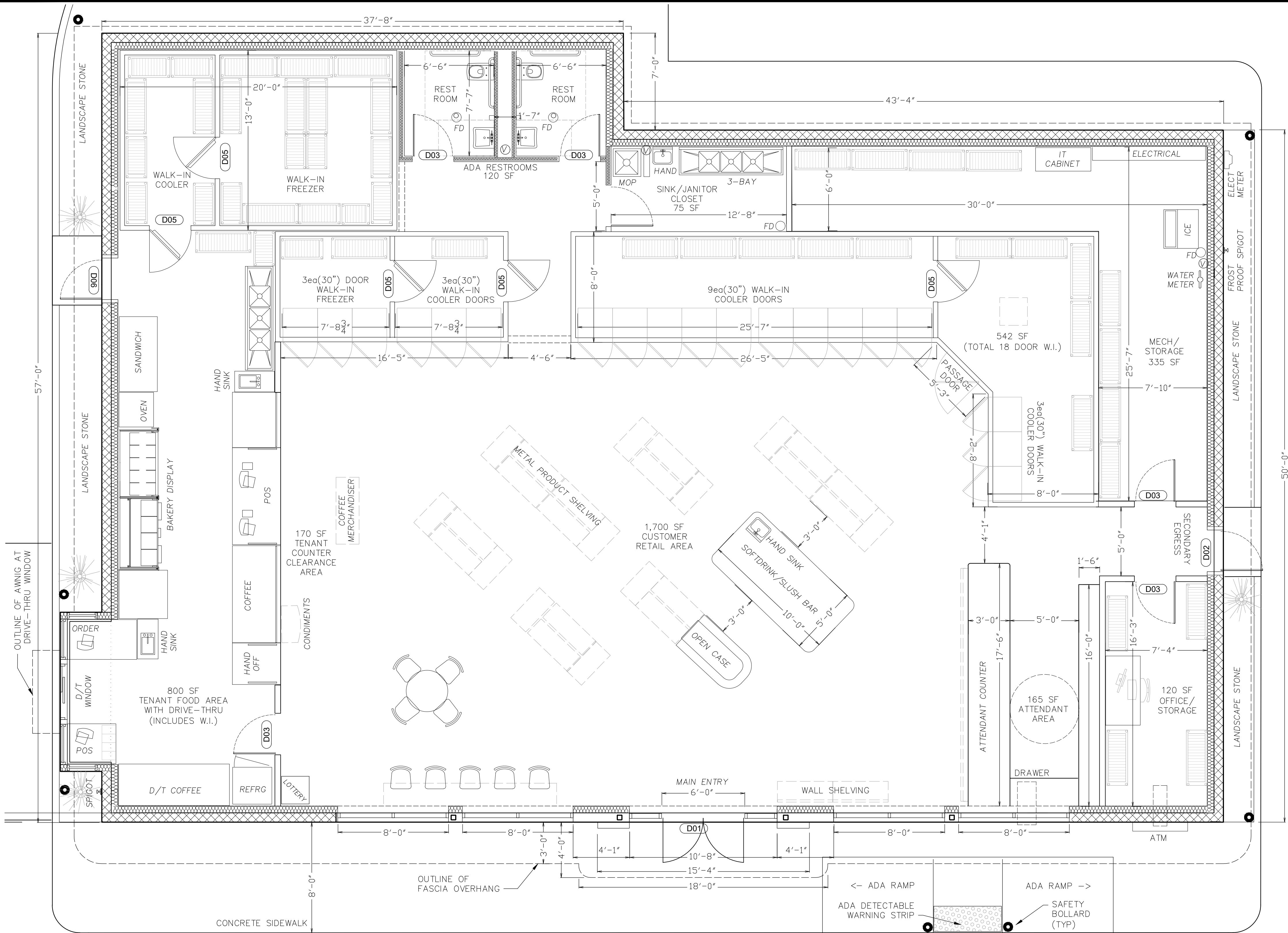
NOT TO SCALE

29 APR 2020				DATE	29 APR 2020	BY	AG	0	REV	DESCRIPTION	ORIGINAL DRAWING DATE
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AS NOTED				SCALE	AS NOTED	BY	AG	0	REV	DESCRIPTION	ORIGINAL DRAWING DATE
SD-2				SHEET	SD-2	BY	AG	0	REV	DESCRIPTION	ORIGINAL DRAWING DATE

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

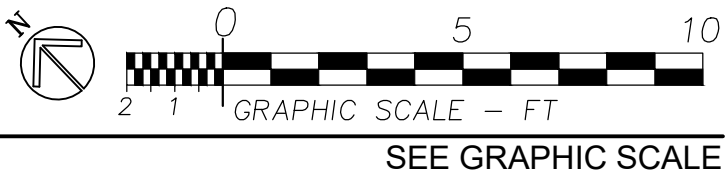
BYFIELD, MA
23 CENTRAL STREET

SITE DETAILS 2



FLOOR PLAN

- GENERAL NOTES
1. ALL EXTERIOR DIMENSIONS TO EXTERIOR FACE OF FOUNDATION OR CMU
 2. ALL INTERIOR DIMENSIONS TO FACE OF FINISH EXCEPT WHERE NOTED AS OTHERWISE.
 3. ALL WOOD IN CONTACT WITH MASONRY OR CONCRETE SHALL BE PRESSURE TREATED.
 4. PROVIDE SOLID WOOD BLOCKING BEHIND ALL WALL MOUNT FIXTURES.
 5. REFER TO DOOR AND FINISH SCHEDULE
 6. PROVIDE TILE BACKER BOARD BEHIND ALL TILED WALL SURFACES.
 7. TRADE CONTRACTORS SHALL SUBMIT SHOP DRAWINGS AND/OR EQUIPMENT CUT SHEETS AND SPECS PRIOR TO PROCEEDING WITH PURCHASE OF MATERIALS OR FABRICATION.
 8. MECHANDISE SHELVING NOT ATTACHED AND MOVABLE, LAYOUT WILL VARY FROM TIME TO TIME.
 9. ALL FINISHES SUBJECT TO APPROVAL AND REQUIREMENTS OF THE HEALTH DEPARTMENT
 10. TENANT AREA LAYOUT CONCEPTUAL AND SUBJECT TO CHANGE PER TENANT SPECIFICATIONS.
 11. TENANT AREA TO BE FINISHED BY AND PER TENANT SPECIFICATION AND COLORS.



ROOM	FLOOR	BASE	WALL	CEILING	NOTE
MAIN SALES AREA	CERAMIC TILE	CERAMIC TILE	PAINTED GYPSUM	EXPOSED STEEL FRAMING	SLAT DISPLAY WALL BEHIND COUNTER
RESTROOMS	CERAMIC TILE	CERAMIC TILE	CERAMIC TILE	2x2 SUSPENDED CEILING	
OFFICE	CERAMIC TILE	CERAMIC TILE	PAINTED GYPSUM	2x2 SUSPENDED CEILING	
MECHANICAL/STORAGE	CERAMIC TILE	VINYL COVE	PAINTED GYPSUM	EXPOSED STEEL FRAMING	
WALK-IN COOLER	CERAMIC TILE	VINYL COVE	MFGR INSULATED WALL	MFGR INSULATED PANEL	
WALK-IN FREEZER	MFGR INSULATED FLOOR	VINYL COVE	MFGR INSULATED WALL	MFGR INSULATED PANEL	
FOOD PREP AREA	CERAMIC TILE	TENANT SPEC	TENANT SPEC	TENANT SPEC - SUSPENDED	

DOOR SCHEDULE							
MARK	QTY	SIZE		DOOR MATERIAL	FRAME MATERIAL	CLOSER?	NOTES
		WIDTH	HEIGHT				
D01	1	6'-0"	7'-0"	ALUM/GLASS	ALUMINUM	Y	DBL DOOR, NO CENTER MULLION, EXTERIOR FRAME FINISHED BLUE
D02	1	3'-0"	7'-0"	HOLLOW METAL	STEEL	Y	EMERGENCY ALARM EXIT ONLY, BLANK HARDWARE ON EXTERIOR
D03	5	3'-0"	6'-8"	SOLID WOOD	STEEL	Y	INTERIOR DOOR, WITH LOCKSET AND ADA HARDWARE
D04	0	3'-0"	6'-8"	SOLID WOOD	WOOD	N	POCKET DOOR
D05	5	3'-0"	6'-6"	INSULATED ALUMINUM	ALUMINUM/STEEL	Y	AS PROVIDED BY COOLER MANUFACTURER, INCLUDE VACUUM RELEASE
D06	1	3'-0"	7'-0"	HOLLOW METAL	STEEL	Y	TENANT STOCK AND EXIT ONLY, BLANK HARDWARE ON EXTERIOR

28 APR 2020

DATE

0

AG

ORIGINAL DRAWING DATE

REV

BY

DESCRIPTION

BYFIELD, MA

23 CENTRAL STREET

FLOOR PLAN

TBD-019-01 BYFIELD

AS NOTED

A1.0

PROJECT ADDRESS

BYFIELD, MA

23 CENTRAL STREET

SCALE

AS NOTED

DATE

28 APR 2020

REV

0

BY

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DESCRIPTION

ORIGINAL DRAWING DATE

PRIME

Energy

A.L. PRIME ENERGY CONSULTANT, INC.

18 LARK AVENUE

SAUGUS MA 01906

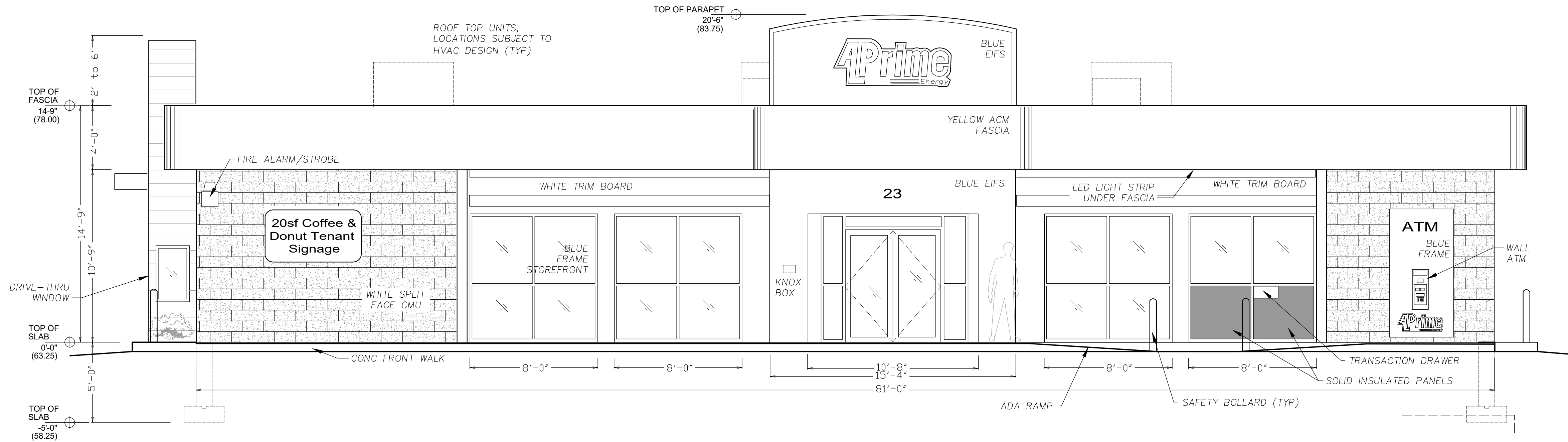
(781)246-0201

COMMONWEALTH OF MASSACHUSETTS

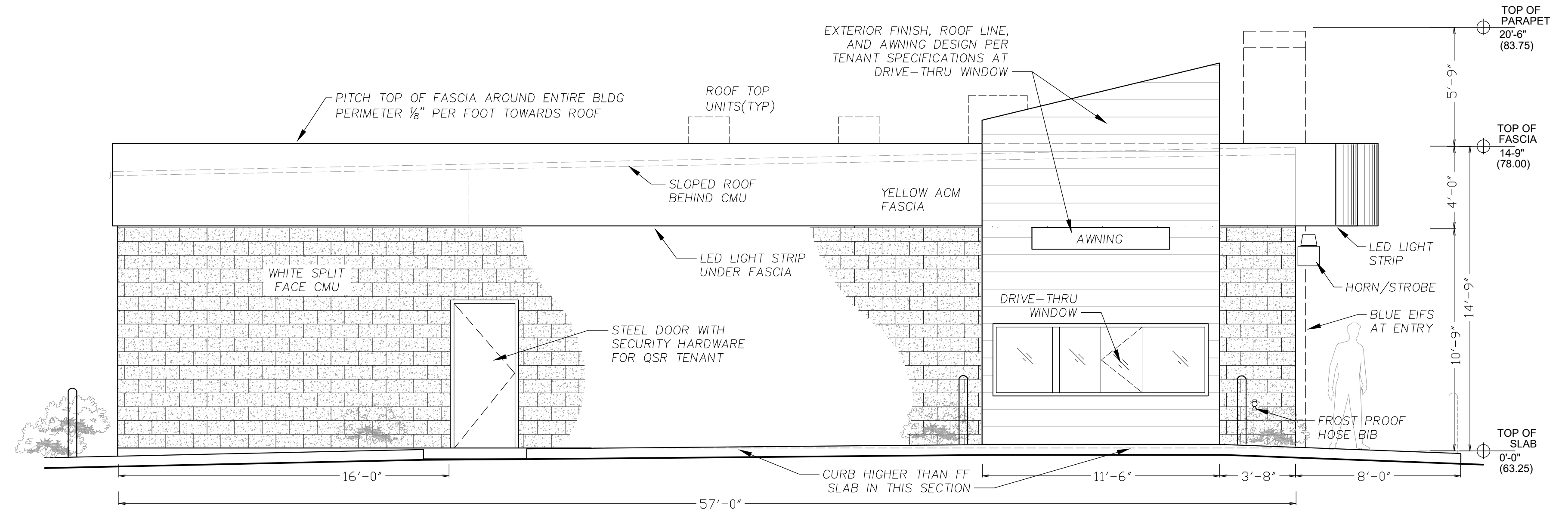
ANTHONY GUIDA

REGISTERED PROFESSIONAL ENGINEER

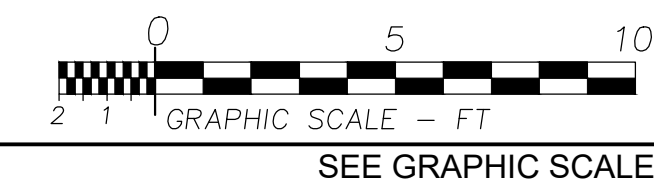
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SOUTH ELEVATION (FRONT)





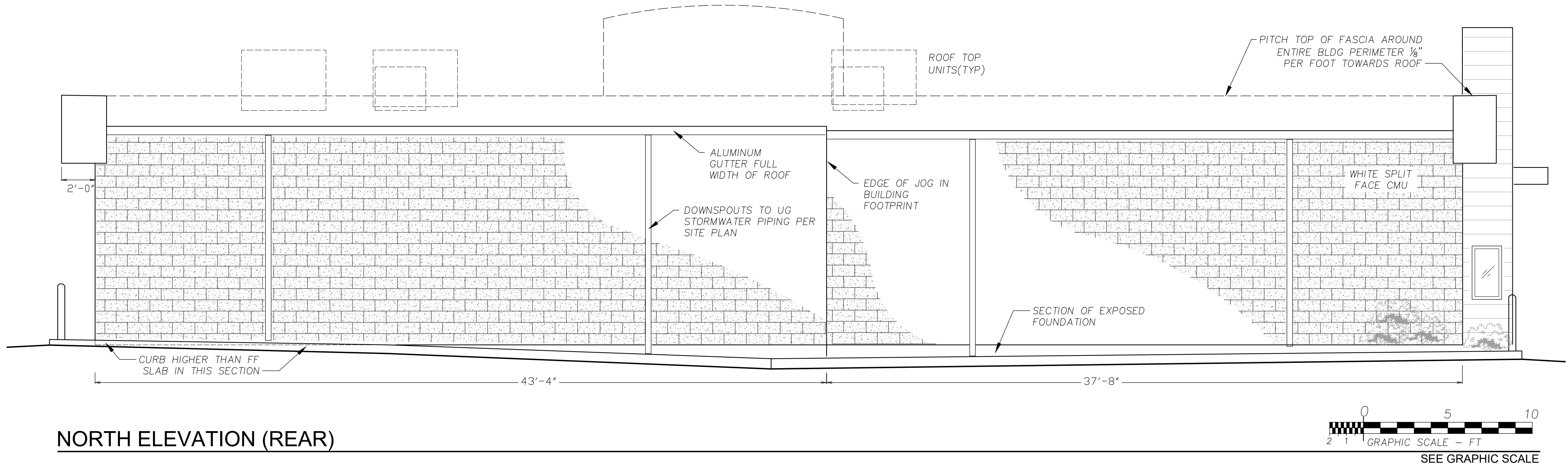
WEST ELEVATION (DRIVE-THRU SIDE)



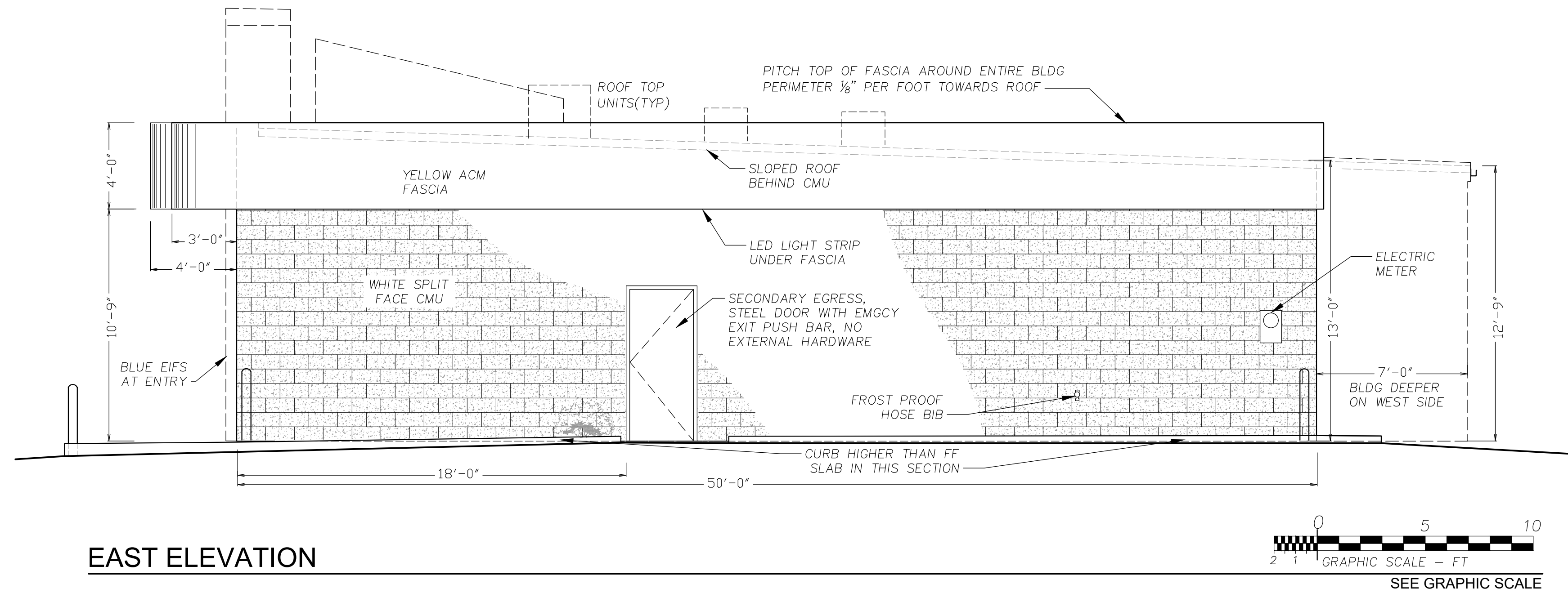
GENERAL NOTES

1. PROPOSED BUILDING IS A SINGLE STORY SLAB ON GRADE MASONRY BUILDING.
2. SIGNAGE SHOWN ON THIS SHEET AND SG-1 SIGN AND GRAPHICS SHEET ARE PROPOSED. IT IS INTENDED TO PERMIT SIGNAGE SEPARATELY AS ALLOWED BY RIGHT. PETITIONER IS NOT SEEKING VARIANCE OR WAIVER FOR SIGNAGE AS PART OF SITE PLAN OR SPECIAL PERMIT APPROVAL.
3. ALL DIMENSIONS TO FACE OF FINISH EXCEPT WHERE NOTED AS OTHERWISE.
4. CONFIRM MOUNTING HEIGHT OF TRANSACTION DRAWER AND ATM FOR PROPER ADA ACCESSIBILITY.
5. LOCATION OF KNOX BOX AND EXTERNAL FIRE ALARM/STROBE SUBJECT TO FINAL LOCATION APPROVAL BY FIRE DEPARTMENT.
6. TRADE CONTRACTORS INCLUDING STOREFRONT FABRICATOR SHALL SUBMIT SHOP DRAWINGS AND/OR EQUIPMENT CUT SHEETS AND SPECS PRIOR TO PROCEEDING WITH PURCHASE OF MATERIALS OR FABRICATION.
7. TOP OF FASCIA TO PITCH BACK TOWARDS ROOF AT 1/8" PER FOOT.
8. ALUMINUM STOREFRONT - PRE-FINISHED BLUE ALUMINUM FRAMES (SEE A.L. PRIME SPECIFICATION) WITH ONE INCH INSULATED GLASS, TEMPERED AS REQ'D BY CODE. BOTTOM PANELS AT COUNTER TO BE OPAQUE OR SOLID INSULATED PANEL.
9. SIZE, SHAPE, AND FINISH OF DRIVE-THRU PARAPET TO BE ADJUSTED PER TENANT CORPORATE IMAGE AND COLORS BUT HEIGHT WILL NOT EXCEED MAX HEIGHT OF PARAPET OVER FRONT DOOR AND WIDTH WILL NOT EXCEED THAT SHOWN.
10. TENANT DRIVE-THRU WINDOW AWNING STYLE, HEIGHT, SIZE AND COLOR ARE CONCEPTUAL ONLY AND TO BE ADJUSTED PER TENANT SPECIFICATIONS

		ORIGINAL DRAWING DATE		DESCRIPTION			
						 A.L. PRIME ENERGY CONSULTANT, INC. 18 LARK AVENUE SAUGUS MA 01906 (781)246-0201	
						PROJECT ADDRESS BYFIELD, MA 23 CENTRAL STREET	
						EXTERIOR ELEVATIONS	
29 APR 2020	0	AG	REV	BY	DATE	DWG FILE TBD-019-01 BYFIELD	SHEET A-2.1
						SCALE AS NOTED	

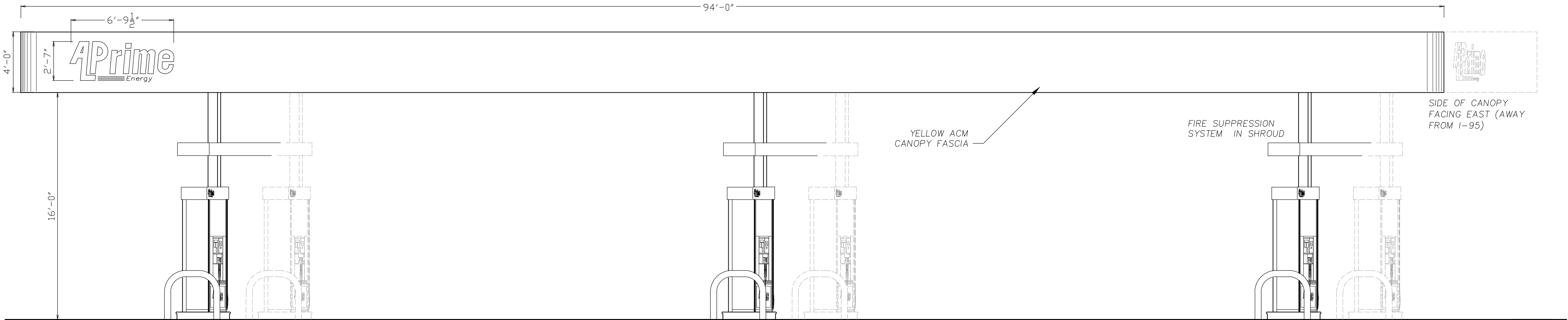


NORTH ELEVATION (REAR)

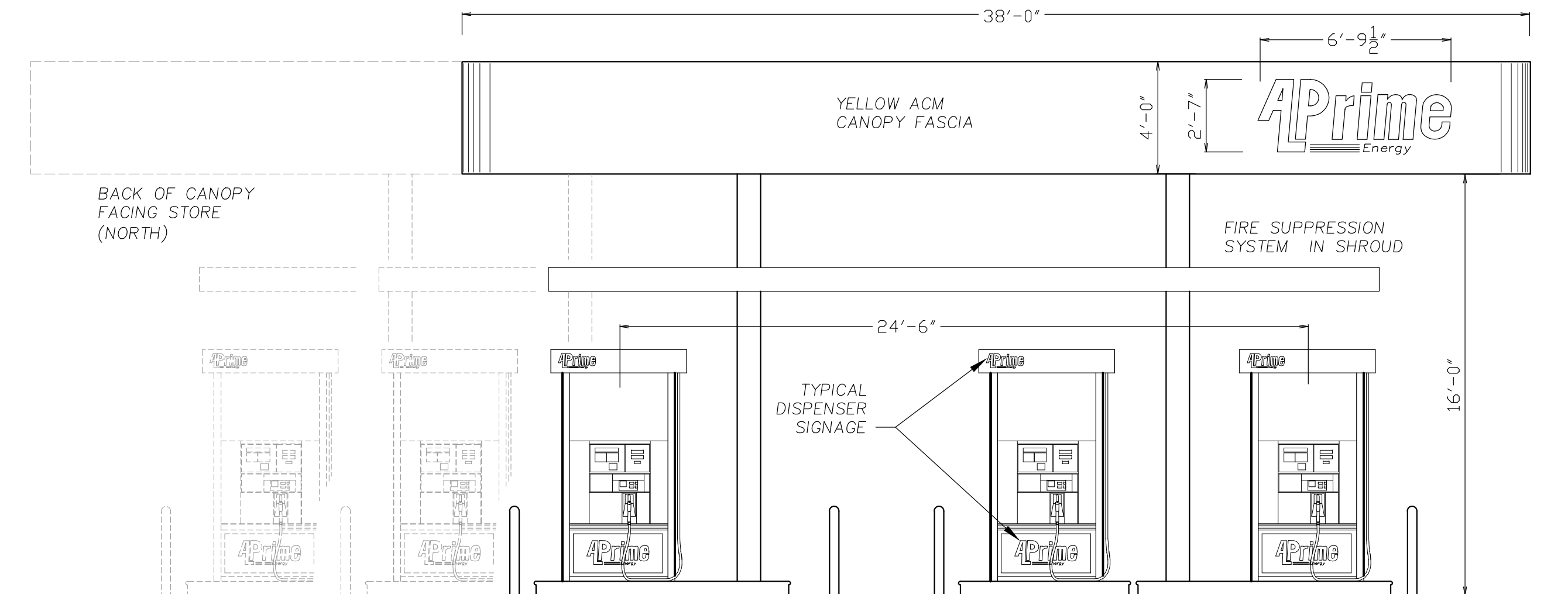


EAST ELEVATION

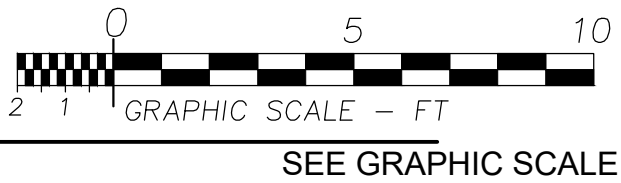
29 APR 2020		DATE	0	AG	ORIGINAL DRAWING DATE	PROJECT ADDRESS	
						BYFIELD, MA 23 CENTRAL STREET	
29 APR 2020		DATE	0	AG	ORIGINAL DRAWING DATE	PROJECT ADDRESS	
TBD-019-01 BYFIELD						BYFIELD, MA 23 CENTRAL STREET	
SCALE		DATE	0	AG	ORIGINAL DRAWING DATE	PROJECT ADDRESS	
AS NOTED						BYFIELD, MA 23 CENTRAL STREET	
SHEET		A-2.2		A.L. PRIME ENERGY CONSULTANT, INC. 18 LARK AVENUE SAUGUS MA 01906 (781)246-0201			



CANOPY SOUTH ELEVATION (FACING CENTRAL)



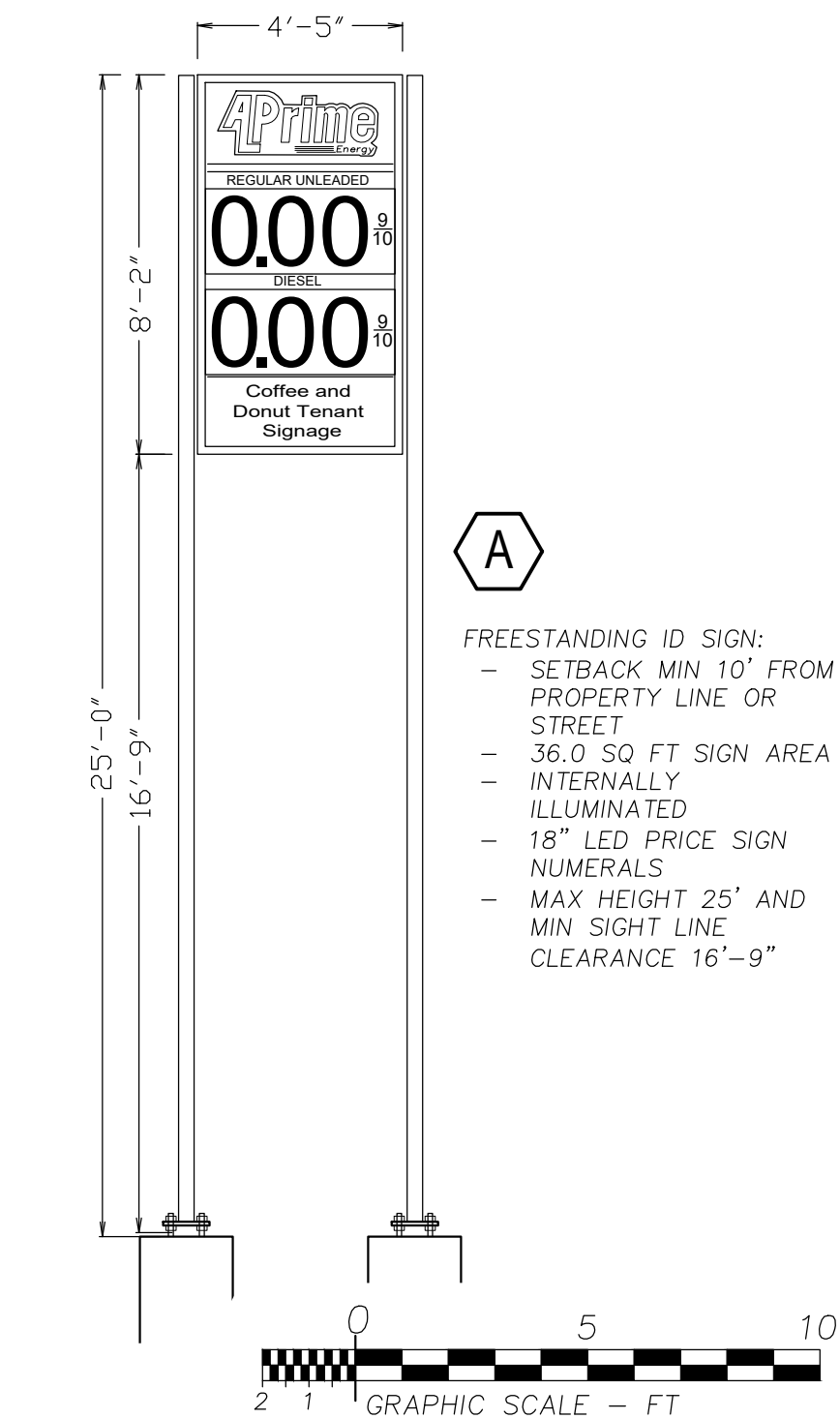
CANOPY WEST ELEVATION (FACING I-95)



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.

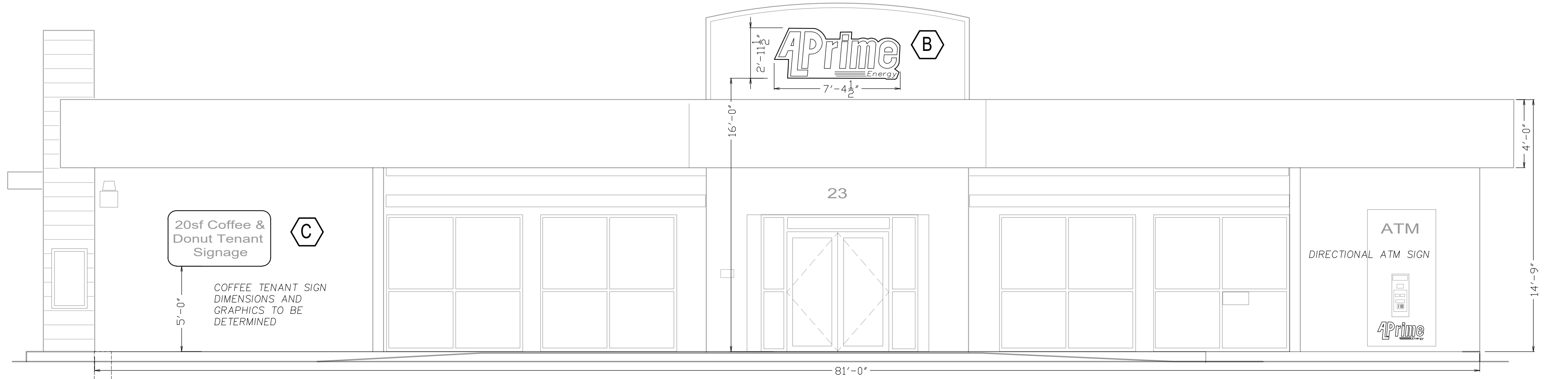
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							A.L. PRIME ENERGY CONSULTANT, INC. 18 LARK AVENUE SAUGUS MA 01906 (781)246-0201
						PROJECT ADDRESS	
						BYFIELD, MA 23 CENTRAL STREET	
CANOPY ELEVATIONS						A-2.3	
DWG FILE TBD-019-01 BYFIELD							
SCALE AS NOTED							



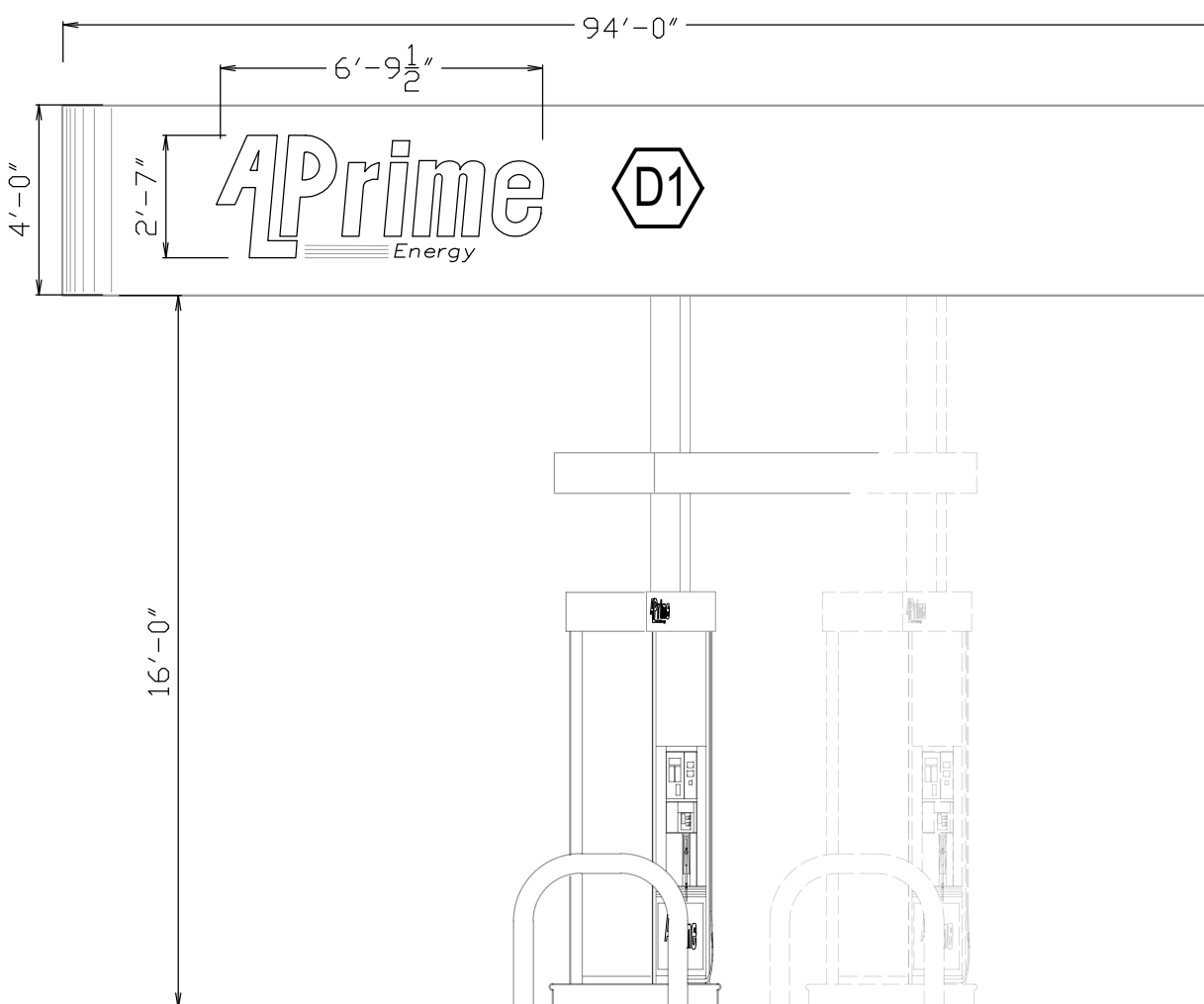
A

- FREESTANDING ID SIGN:
- SETBACK MIN 10' FROM PROPERTY LINE OR STREET
 - 36.0 SQ FT SIGN AREA
 - INTERNALLY ILLUMINATED
 - 18" LED PRICE SIGN NUMERALS
 - MAX HEIGHT 25' AND MIN SIGHT LINE CLEARANCE 16'-9"

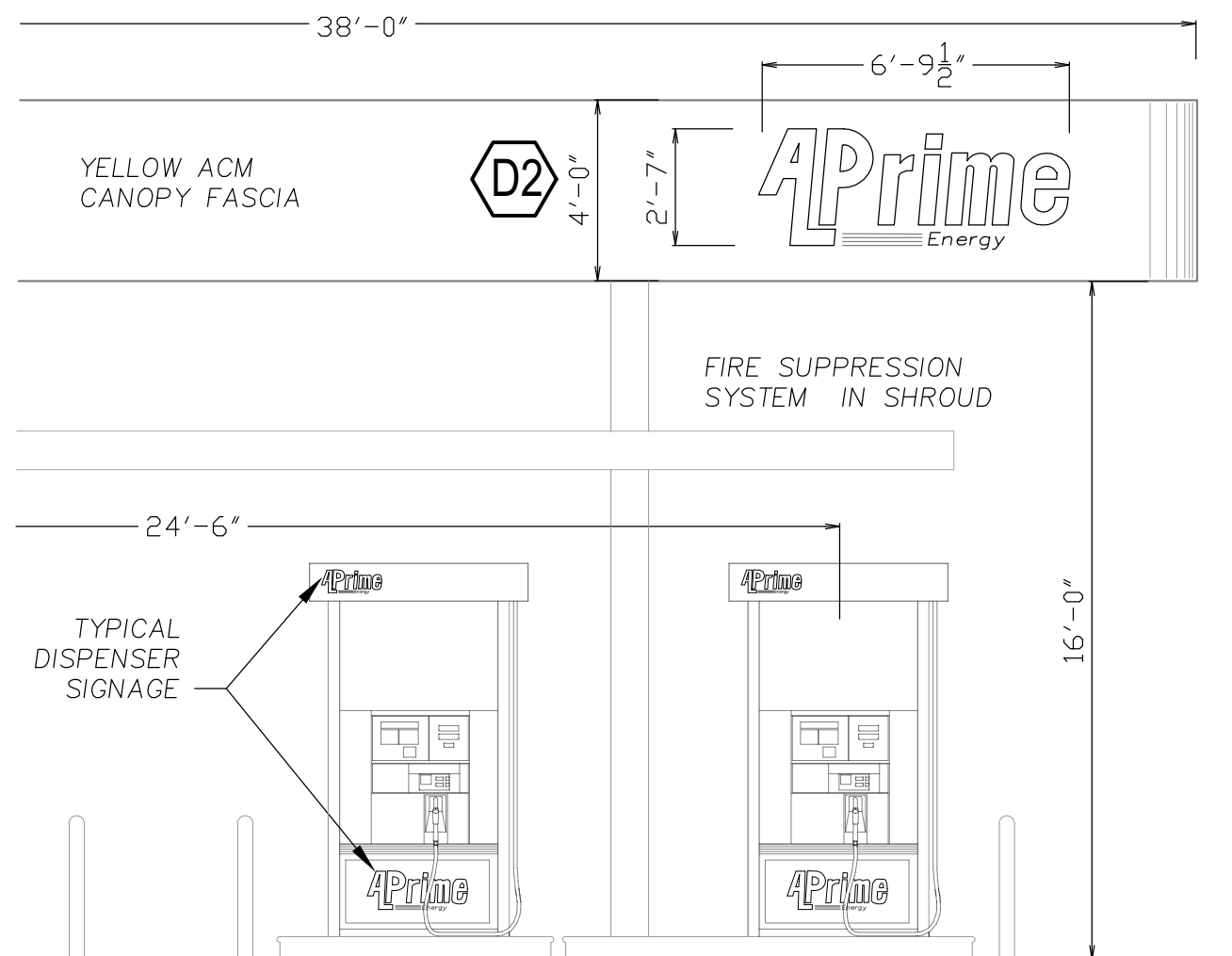
FREESTANDING SIGN
SEE GRAPHIC SCALE



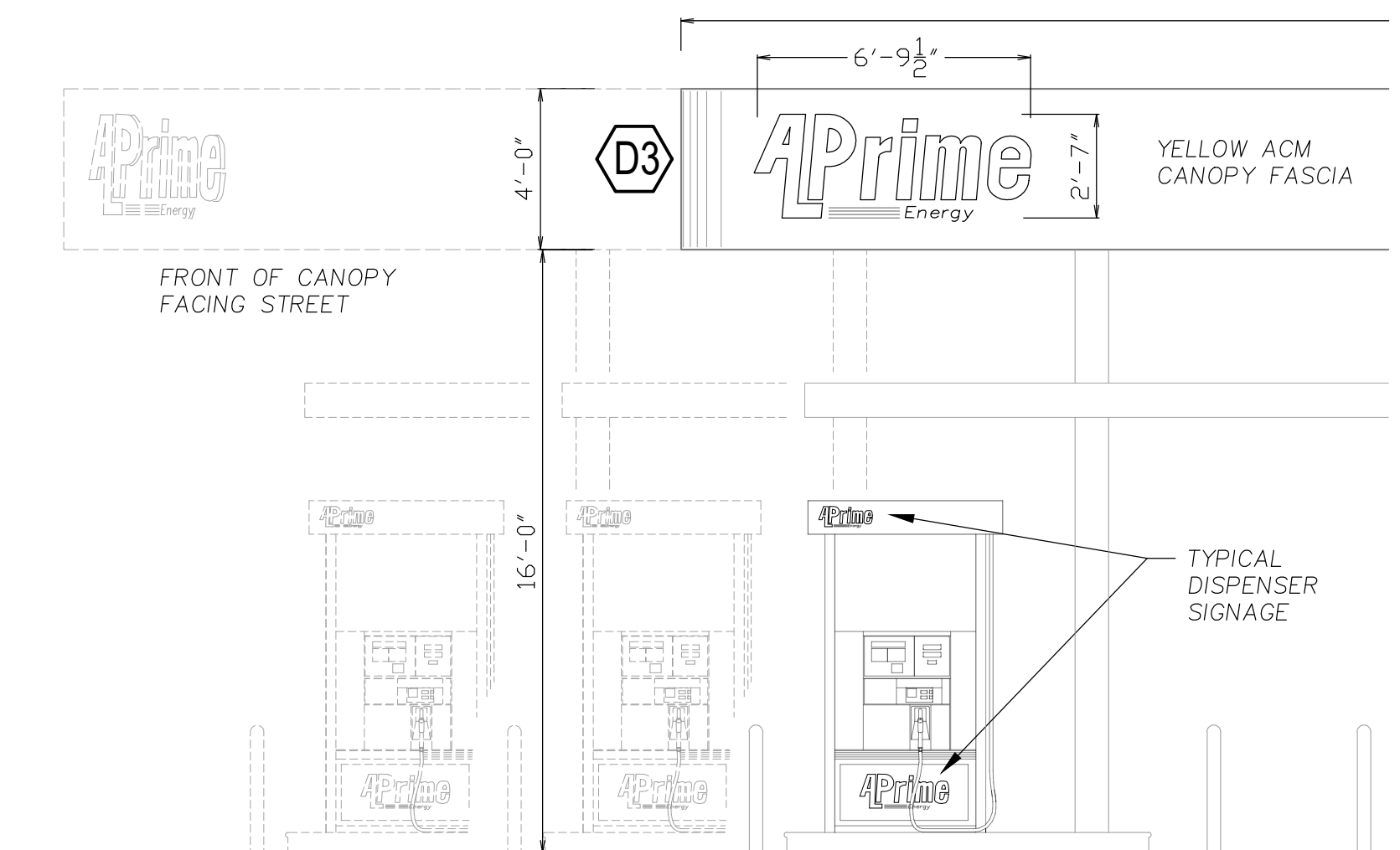
SOUTH ELEVATION (FRONT)



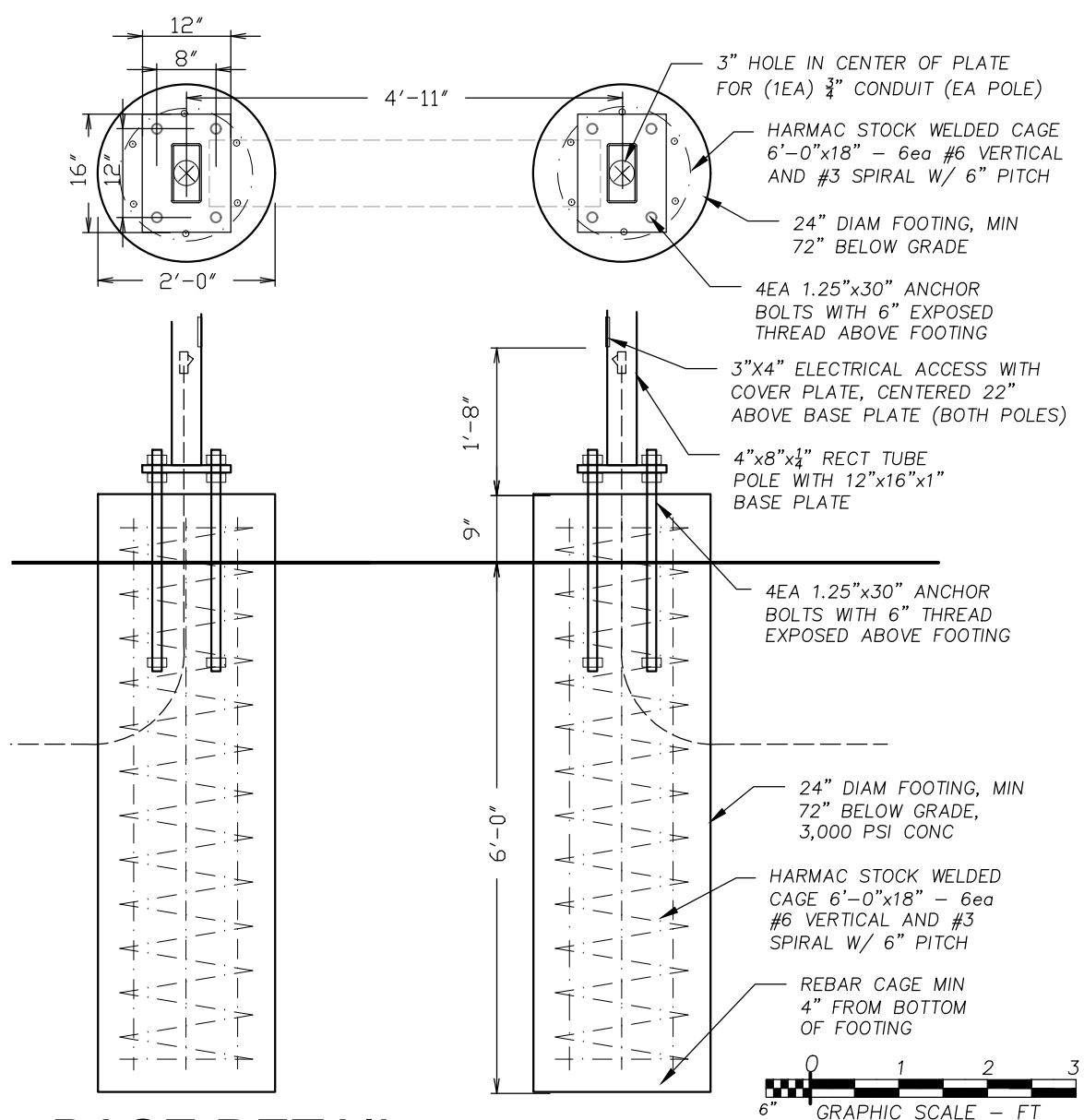
CANOPY SOUTH ELEV - WALL SIGN
SEE GRAPHIC SCALE



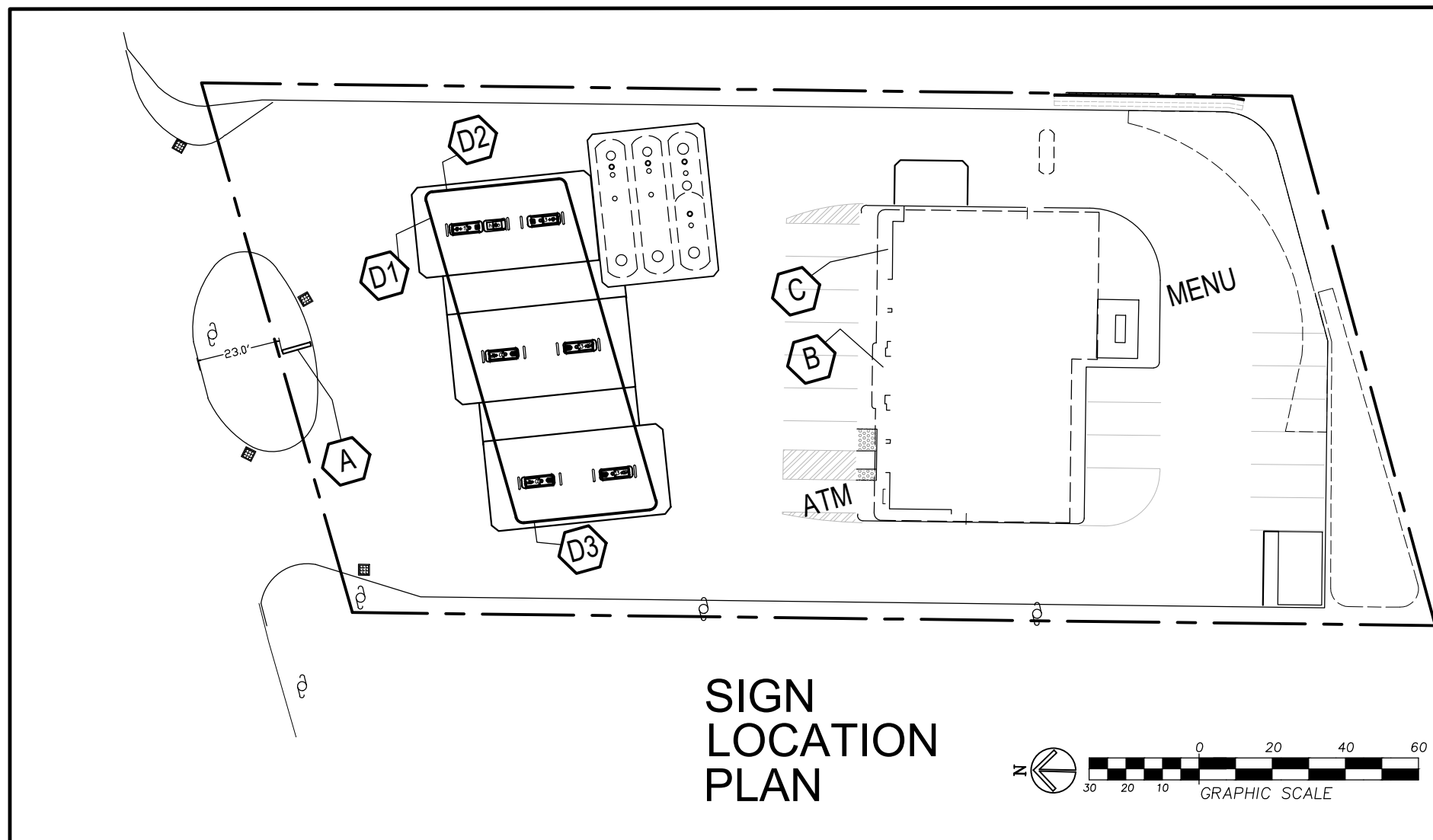
CANOPY WEST ELEV - WALL SIGN
SEE GRAPHIC SCALE



CANOPY EAST ELEV - WALL SIGN
SEE GRAPHIC SCALE



BASE DETAIL
SEE GRAPHIC SCALE



SIGN LOCATION PLAN

PROPOSED SIGNAGE

KEY	TYPE	SIZE	AREA (sf)	DIST TO BOTTOM	DIST TO TOP	INTERNALLY ILLUMINATED	CMTS
A	FREESTANDING	4'-5" x 8'-2"	36.00	16'-9"	25'-0"	Y	LED PRICES
B	WALL (BLDG)	7'-4-1/2" x 2'-11-1/2"	20.50	16'-0"	18'-11"	Y	IRREGULAR OUTLINE
C	WALL (BLDG)		20.00	11'-0"	14'-6"	Y	SIZE & GRAPHICS TBD
D1	WALL (CANOPY)	6'-10" x 2'-7"	17.50	16'-9"	19'-4"	Y	
D2	WALL (CANOPY)	6'-10" x 2'-7"	17.50	16'-9"	19'-4"	Y	
D3	WALL (CANOPY)	6'-10" x 2'-7"	17.50	16'-9"	19'-4"	Y	

TOTAL PROPOSED FREESTANDING SIGNAGE: 36.00 sf

TOTAL PROPOSED WALL SIGNAGE: 40.5 sf

TOTAL BUILDING FRONT LENGTH: 81 lf (Allowed Signage Calc 1sf/2lf*(81lf)=40.5sf)

IT IS INTENDED AND UNDERSTOOD 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.



4Prime Energy
A.L. PRIME ENERGY CONSULTANT, INC.
18 LARK AVENUE
SAUGUS MA 01906
(781)246-0201

BYFIELD, MA
23 CENTRAL STREET

SIGNAGE & GRAPHICS

SG-1