

"SETTLER'S GLEN"

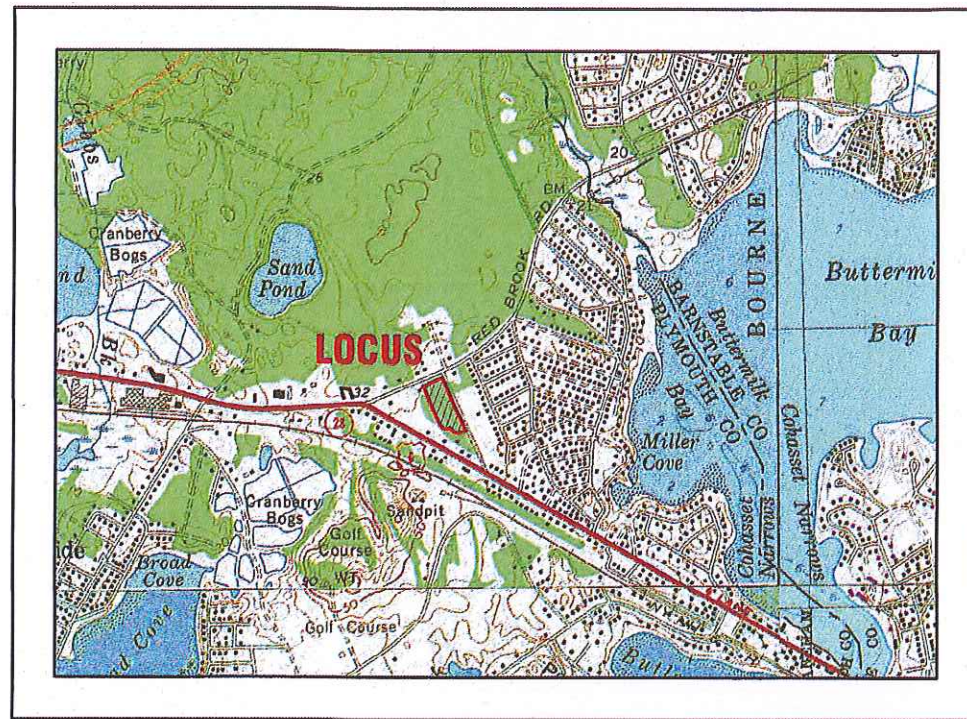
COMPREHENSIVE PERMIT PLAN

RED BROOK ROAD

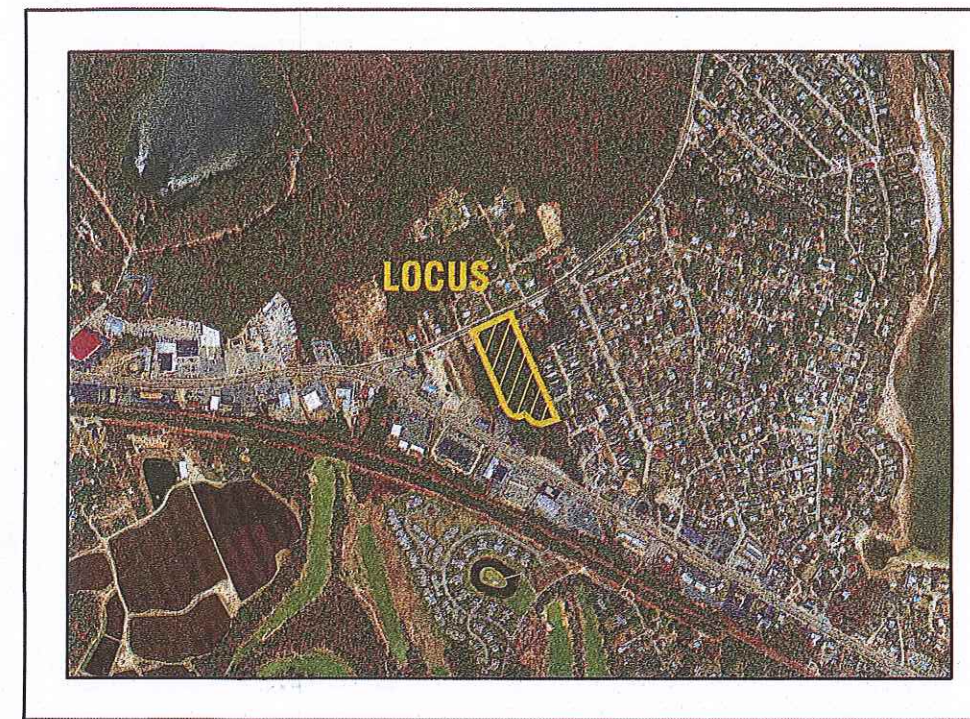
WAREHAM, MASSACHUSETTS

OWNER: SETTLER'S GLEN, LLC
 20 NORTH PARK AVE., SUITE 4
 PLYMOUTH, MA 02360

APPLICANT: SETTLER'S GLEN, LLC
 20 NORTH PARK AVE., SUITE 4
 PLYMOUTH, MA 02360



— U.S.G.S. LOCUS PLAN —
 SCALE: 1"=1000'



— AERIAL OVERVIEW —
 SCALE: 1"=500'

SITE DATA:

ASSESSORS MAP: 8 / LOT 1007C
 ADDRESS: RED BROOK ROAD
 ZONING DISTRICT: MULTIPLE RESIDENCE 30 (MR-30)
 OVERLAY DISTRICT: GROUND WATER PROTECTION OVERLAY DISTRICT.
 WATER SUPPLY: TOWN WATER
 SANITARY SEWER: TOWN SEWER

ZONING DATA:

ZONING DISTRICT	MR-30	MR-30	PROVIDED
	(1 FAMILY DWELLING)	(2 FAMILY DWELLING)	
MIN. LOT AREA:	30,000 S.F.*	45,000 S.F.*	156,708 S.F.
MIN. FRONTAGE:	150'	200'	247.66'
MIN. SIDE SETBACK:	20'	20'	21'
MIN. REAR SETBACK:	10'	10'	16'
MAX. BLDG. HEIGHT:	35'	35'	REFER TO PLANS BY OTHERS
MAX. BLDG. COVERAGE:	25%	25%	19.9%
MAX. IMPERV. COVERAGE:	NR	NR	43.2%

* (80% OF THE MINIMUM REQUIRED LOT AREA MUST BE CONTIGUOUS UPLAND)

FLOOD ZONE DATE:

THE PROJECT IS LOCATED WITHIN FLOOD ZONE X. REFER TO THE F.E.M.A. FLOOD INSURANCE RATE MAP PANEL NUMBER 25023C0494J, DATED JULY 17, 2012.



G.A.F. ENGINEERING, INC.
 PROFESSIONAL ENGINEERS & LAND SURVEYORS
 266 MAIN STREET, WAREHAM, MA 02571
 TEL: (508) 295-6600 FAX: (508) 295-6634
 E-MAIL: info@gafenginc.com

JANUARY 12, 2021

PLAN INDEX:

SHEET NO.:	DESCRIPTION:
1	COVER SHEET
2	GENERAL NOTES & LEGEND
3	EXISTING CONDITIONS PLAN
4	OVERVIEW PLAN
5	LAYOUT & UTILITIES
6	GRADING & DRAINAGE
7	PLAN & ROADWAY PROFILE-1
8	PLAN & ROADWAY PROFILE-2
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10	DETAIL SHEET 2
11	DETAIL SHEET 3
LSP-1	LANDSCAPE PLAN

PARKING DATA:

REQUIRED: 2 PARKING SPACES FOR EACH DWELLING UNIT
 20 DWELLING UNITS=40 PARKING SPACES
 TOTAL REQUIRED=40 PARKING SPACES

PROVIDED:
 40 PARKING SPACES
 20 (2) CAR GARAGES=40 PARKING SPACES
 TOTAL PROVIDED=80 PARKING SPACES

REV.	DATE	BY	APP'D	DESCRIPTION
6	5/10/22	JMP	WFM	NO CHANGE
5	2/22/22	JMP	WFM	NO CHANGES THIS SHEET
4	12/1/21	JMP	WFM	ONSET WATER DEPARTMENT COMMENTS
3	8/31/21	JMP	WFM	OWNER & STREET NAME CHANGE
2	5/11/21	JMP	WFM	NO CHANGES THIS SHEET
1	4/26/21	JMP	WFM	PER TOWN & PEER REVIEW COMMENTS

DATE: JAN. 12, 2021
 DRAWN BY: JMP
 CHECKED BY: WFM
 JOB NO.: 18-9247
 SCALE: AS NOTED

APPROVED BY: *[Signature]*
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"SETTLER'S GLEN" COMPREHENSIVE PERMIT PLAN COVER SHEET
 WAREHAM, MA
 PREPARED FOR:
 SETTLER'S GLEN, LLC
 20 NORTH PARK AVE., SUITE 4
 PLYMOUTH, MA

JOB NO.: 18-9247
 DWG. 1 OF 11

PERMIT SET (NOT FOR CONSTRUCTION)

GENERAL NOTES:

- ALL UNDERGROUND UTILITIES SHOWN OR NOT SHOWN WERE COMPILED ACCORDING TO AVAILABLE RECORD PLANS AND IN PART FROM FIELD SURVEY AND ARE APPROXIMATE ONLY. ACTUAL LOCATIONS MUST BE DETERMINED IN THE FIELD. BEFORE EXCAVATING, BLASTING, INSTALLING, BACKFILLING, GRADING, PAVEMENT RESTORATION, OR REPAIRING, ALL UTILITY COMPANIES, PUBLIC AND PRIVATE, MUST BE CONTACTED INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN. SEE MGL CHAPTER 37D, ACTS OF 1963. CONTRACTORS MUST CALL DIG-SAFE AT (1-888-DIG-SAFE OR 811) G.A.F. ENGINEERING, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN.
- EXISTING CONDITIONS INFORMATION IS BASED ON ACTUAL FIELD SURVEY, PRIVATE UTILITY PLANS, AND OTHER AVAILABLE SOURCES. FIELD SURVEY WAS PERFORMED BY G.A.F. ENGINEERING, INC., ON VARIOUS DATES AND MOST RECENTLY IN SEPTEMBER OF 2019.
- THE CONTRACTOR SHALL COORDINATE AND OBTAIN ALL REQUIRED PERMITS, GIVE ALL NOTICES, COMPLY WITH ALL LAWS AND REGULATIONS, AND PAY ALL FEES ASSOCIATED WITH THE INSTALLATION OF THIS WORK.
- THE CONTRACTOR SHALL FIELD VERIFY, PRIOR TO CONSTRUCTION ALL EXISTING UNDERGROUND UTILITY LOCATIONS AND POINTS OF INTERCONNECTION.
- THE CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR, SUPERVISION, TOOLS, EQUIPMENT, FUEL, POWER, SANITARY FACILITIES AND INCIDENTALS NECESSARY FOR THE FURNISHING, PERFORMANCE, TESTING, START-UP AND COMPLETION OF THIS WORK.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND OWNER OF ANY CONFLICTS DISCOVERED IN THE FIELD.
- ANY CHANGES TO THESE SITE PLANS THAT ARE MADE IN THE FIELD DURING CONSTRUCTION SHALL BE RECORDED BY THE CONTRACTOR ON RECORD DOCUMENTS AND REPORTED TO THE OWNER AND ENGINEER.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AN EXCAVATION AND TRENCH PERMIT PURSUANT TO 520 CMR 14.00 AS APPLICABLE PRIOR TO THE START OF CONSTRUCTION.

CONSTRUCTION NOTES:

- IN GENERAL, THE PLANS ARE DIAGRAMMATIC AND ARE NOT INTENDED TO SHOW EVERY FITTING, CHANGE IN DIRECTION OR DETAIL OF CONSTRUCTION.
- THE LOCATION OF UTILITIES WERE OBTAINED FROM VARIOUS SOURCES OF INFORMATION. THE EXACT LOCATION AND COMPLETENESS IS NOT GUARANTEED. THE CONTRACTOR MUST NOTIFY DIG-SAFE PRIOR TO THE START OF CONSTRUCTION (1-888-DIG-SAFE OR 811). G.A.F. ENGINEERING, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE SAFETY OF PERSONNEL AND PROTECTION OF PROPERTY AT THE SITE OR ADJACENT THERETO INCLUDING TREES, SHRUBS, LAWNS, PAVEMENTS, ROADWAYS, STRUCTURES AND UNDERGROUND UTILITIES NOT DESIGNED FOR REMOVAL, RELOCATION, OR REPLACEMENT.
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES OF CONSTRUCTION REQUIRED FOR THE INSTALLATION OF THIS WORK.
- ALL MATERIALS SHALL BE NEW AND FREE FROM DEFECTS AND OF GOOD QUALITY.
- THE CONTRACTOR SHALL KEEP THE PREMISES FREE FROM THE ACCUMULATION OF WASTE MATERIAL AND OTHER DEBRIS RESULTING FROM THIS WORK.
- ALL PAVEMENT MARKINGS DISTURBED BY CONSTRUCTION SHALL BE RESTORED AS PART OF THIS WORK.
- THE CONTRACTOR SHALL INSTITUTE ALL SAFETY MEASURES NECESSARY TO PROTECT THE PUBLIC SAFETY. THIS SHALL INCLUDE, BUT NOT LIMITED TO, BARRICADES, SIGNS, LIGHTING, FENCES, POLICE DETAILS, AND ANY OTHER MEANS AS DIRECTED. NO TRENCHES ARE TO REMAIN OPEN OVERNIGHT.
- ELEVATIONS ARE IN FEET AND TENTHS AND ARE BASED ON THE DATUM OF NAVD-88.
- SIDE SLOPE GRADING SHALL BE AS NOTED ON THE SITE PLANS.
- ALL SIDE SLOPES SHALL BE DRESSED WITH 4 INCHES OF TOPSOIL WHERE SIDE SLOPES EXCEED 3:1, PROVIDE AN EROSION CONTROL BLANKET OVER THE PLANTED SEED BED. SEE PLAN FOR LOCATIONS.
- PERMANENT SEEDING (BEFORE SEPTEMBER 15) LIME TO PH OF 6.5 ACCORDING TO SOIL TEST OR APPLY AT THE RATE OF 100 TO 150 LBS. PER 1,000 SQUARE FEET, APPLY 10-20-20 FERTILIZER AT 1,000 LBS. PER ACRE. INCORPORATE LIME AND FERTILIZER IN TOP 4 INCHES OF SOIL. SEED 100 LBS. PER ACRE OF THE FOLLOWING SEED MIX.

PURE PERCENT	SEED
30-35%	CREeping RED FESCUE
30-35%	PERENNIAL RYEGRASS
20-25%	KENTUCKY BLUEGRASS
10-15%	ANNUAL RYEGRASS

HYDRO SEEDING IS AN ALTERNATIVE FOR THIS APPLICATION. A MIXTURE OF SEED WATER AND MULCH IS SPRAYED ON THE SEED BED COMBINING THREE (3) SEPARATE ACTIONS INTO ONE (1) OPERATION
- ALL SEWER AND PLUMBING WORK SHALL CONFORM WITH 248 CMR 10.00 UNIFORM STATE PLUMBING CODE AND THE TOWN OF WAREHAM SEWER DEPARTMENTS SPECIFICATIONS.
- ALL METHODS AND MATERIALS SHALL CONFORM WITH MASSDOT STANDARDS AND SPECIFICATIONS, AND THE REQUIREMENTS OF THE TOWN OF WAREHAM MUNICIPAL MAINTENANCE DEPARTMENT.
- ALL UTILITY INSTALLATIONS SHALL BE IN CONFORMANCE WITH ALL APPLICABLE TOWN, STATE AND FEDERAL REQUIREMENTS & REGULATIONS.
- DEWATERING IF REQUIRED SHALL BE DIRECTED TO A 5' MIN. DIAMETER RING OF HAYBALES OR A DIRTBAG. CONTRACTOR SHALL PROVIDE AND MAINTAIN DEWATERING EQUIPMENT FOR THE CONTROL, COLLECTION AND DISPOSAL OF GROUND AND SURFACE WATER WHERE NECESSARY TO COMPLETE THE WORK.

EROSION CONTROL NOTES:

- THE SITE CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING AND MAINTAINING SUITABLE EROSION AND SEDIMENTATION CONTROL DEVICES ON SITE DURING CONSTRUCTION AS REQUIRED TO PREVENT SILT FROM LEAVING THE SITE. SILT WILL NOT BE ALLOWED BEYOND CONSTRUCTION LIMITS. ADDITIONAL PROTECTION: ON-SITE PROTECTION MUST BE PROVIDED THAT WILL NOT PERMIT SILT TO LEAVE THE PROJECT CONFINES DUE TO UNFORESEEN CONDITIONS OR ACCIDENTS.
- EROSION CONTROL MEASURES SHALL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLANS DOES NOT PROVIDE SUFFICIENT EROSION AND SEDIMENT CONTROL, ADDITIONAL CONTROL MEASURES SHALL BE IMPLEMENTED. CONTRACTOR IS RESPONSIBLE FOR REPAIRING OR REPLACING EROSION CONTROL DEVICES WHICH BECOME INEFFECTIVE.
- CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR ALL GRADING AND OTHER LAND DISTURBING ACTIVITIES PRIOR TO CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR THE CLEANUP AND REMOVAL OF ANY BUILDUP OF SEDIMENT WHICH ESCAPES FROM THE SITE.
- CONTRACTOR IS RESPONSIBLE FOR CLEANING SILT AND DEBRIS OUT OF ALL STORM DRAINAGE STRUCTURES UPON THE COMPLETION OF CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL TEMPORARY EROSION CONTROL MEASURES AFTER CONSTRUCTION IS COMPLETE AND ALL DISTURBED AREAS HAVE BEEN STABILIZED.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ANY FINES LEVIED AGAINST THE SITE FOR VIOLATIONS OF EROSION CONTROL REGULATIONS.
- CONTRACTOR SHALL PROVIDE TEMPORARY GROUND COVER FOR ALL AREAS WITH EXPOSED SOIL WHICH WILL NOT BE DISTURBED BY GRADING OPERATIONS FOR A PERIOD OF THIRTY DAYS OR MORE.
- IF WORK ON THIS PROJECT IS SUSPENDED FOR ANY REASON, THE CONTRACTOR SHALL MAINTAIN THE SOIL EROSION AND SEDIMENTATION CONTROL FACILITIES IN GOOD CONDITION DURING THE SUSPENSION OF WORK.
- SPRINKLE OR APPLY DUST SUPPRESSERS TO MINIMIZE DUST AT THE CONSTRUCTION SITE. MAINTAIN DUST CONTROL MEASURES UNTIL ALL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.
- THE CONTRACTOR WILL ALSO NEED TO COMPLY TO ANY ORDER OF CONDITIONS THAT MAY BE ISSUED BY THE TOWN OF WAREHAM CONSERVATION COMMISSION.

DRAINAGE OPERATION AND MAINTENANCE SCHEDULE:

- THE OPERATION AND MAINTENANCE (O&M) SCHEDULE DURING THE CONSTRUCTION PERIOD IS THE RESPONSIBILITY OF THE CONTRACTOR. THE OUTLINE BELOW SHALL BE FOLLOWED TO ENSURE THE PROPER CONSTRUCTION AND FUNCTION OF THE DRAINAGE FACILITIES.
- IN CONJUNCTION WITH THE SITE CONSTRUCTION, ALL DRAINAGE STRUCTURES SHALL BE INSTALLED AND THE AFFECTED AREAS STABILIZED (LOAM AND SEED, HYDROSEED, PLANTED, RIP-RAP, ETC.). PERMANENT STABILIZATION OF THESE AREAS SHALL BE STARTED AS SOON AS POSSIBLE.
 - EROSION CONTROL SHALL BE PLACED ALONG THE LIMITS OF WORK WHERE SHOWN ON THE PLAN.
 - ALL CATCH BASINS SHALL HAVE TEMPORARY SILT SACKS OR AN APPROVED EQUAL INSTALLED IN THEM AS SOON AS THE STRUCTURE IS SET. CONTRACTOR SHALL REMOVE AND DISPOSE OF THEM AT THE COMPLETION OF CONSTRUCTION. THE CATCH BASINS SHALL BE INSPECTED WEEKLY DURING CONSTRUCTION. IF THERE IS ANY SEDIMENT BUILDUP, THE AFFECTED STRUCTURES SHALL BE CLEANED IMMEDIATELY, AND ALL MATERIAL REMOVED SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL REQUIREMENTS.
 - THE LEACHING GALLEYS AND WATER QUALITY DRAIN MANHOLES BE INSPECTED WEEKLY DURING CONSTRUCTION. IF THERE IS ANY SEDIMENT BUILDUP, THE AFFECTED STRUCTURES SHALL BE CLEANED IMMEDIATELY, AND ALL MATERIAL REMOVED SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL REQUIREMENTS.
 - ALL AREAS SHALL BE INSPECTED WEEKLY, AND AFTER LARGE STORMS. IF THERE IS EVIDENCE OF EROSION, THE ERODED AREA SHALL BE RE-STABILIZED, AND MEASURES SHALL BE TAKEN TO PREVENT REOCCURRENCE. THIS SCHEDULE MUST BE ADHERED TO BY THE CONTRACTOR UNTIL THE PROJECT IS ACCEPTED BY THE OWNER.

POST-CONSTRUCTION OPERATION AND MAINTENANCE PLAN:

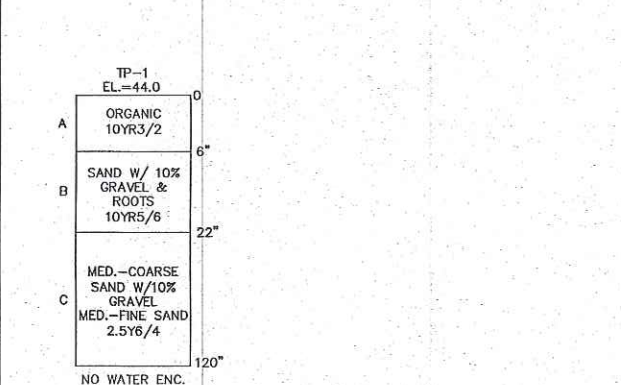
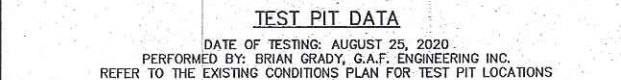
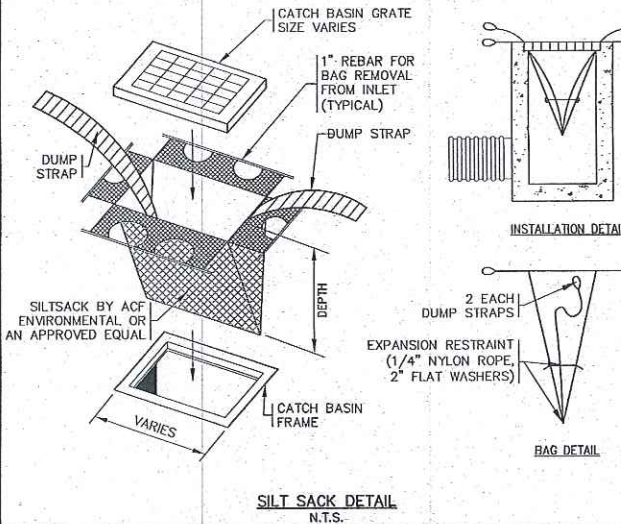
- UPON THE COMPLETION OF CONSTRUCTION, MAINTENANCE SHALL BE CONDUCTED BY THE OWNER OR OWNER'S AGENT ON THE SITE. THE FOLLOWING SHALL BE CARRIED OUT BY THE RESPONSIBLE PARTY AND SHALL BE ADHERED TO ENSURE THE PROPER OPERATION OF THE DRAINAGE FACILITIES.
- STREET SWEEPING IS AN EFFECTIVE NONSTRUCTURAL SOURCE CONTROL THAT WILL REMOVE SEDIMENT FROM PAVED SURFACES. STREET SWEEPING SHOULD BE DONE BY THE USE OF A HIGH EFFICIENCY VACUUM SWEEPER OR REGENERATIVE AIR SWEEPER. STREET SWEEPING SHALL BE DONE TWICE PER YEAR, ONCE AT LEAST TWO TIMES PER YEAR AND AT THE END OF THE FOLIAGE AND SNOW-REMOVAL SEASONS. SEDIMENTS MUST ALSO BE REMOVED WHENEVER THE DEPTH OF DEPOSITS IS GREATER THAN OR EQUAL TO ONE HALF THE DEPTH FROM THE BOTTOM OF THE INVERT. SEDIMENT SHALL BE REMOVED THROUGH THE USE OF A VACUUM TRUCK. SEDIMENT MUST BE HANDLED AND DISPOSED OF PROPERLY IN ONE OF THE WAYS ALREADY APPROVED BY MASSDEP (SEE MASSDEP POLICY ON MANAGEMENT OF CATCH BASIN CLEANINGS). IF THERE IS EVIDENCE THAT THEY HAVE BEEN CONTAMINATED BY A SPILL OR OTHER MEANS, THE CLEANINGS MUST BE EVALUATED IN ACCORDANCE WITH THE MASSDEP HAZARDOUS WASTE REGULATIONS, 310 CMR 30.00 AND HANDLED AS HAZARDOUS WASTE.
 - DEEP SUMP CATCH BASINS ARE UNDERGROUND RETENTION SYSTEMS DESIGNED TO REMOVE TRASH, DEBRIS AND COARSE SEDIMENT FROM STORMWATER RUNOFF AND SERVE AS TEMPORARY SPILL CONTAINMENT DEVICES FOR FLOATABLES SUCH AS OILS AND GREASE. INSPECT CATCH BASINS MONTHLY AND CLEAN AT LEAST TWO TIMES PER YEAR AND AT THE END OF THE FOLIAGE AND SNOW-REMOVAL SEASONS. SEDIMENTS MUST ALSO BE REMOVED WHENEVER THE DEPTH OF DEPOSITS IS GREATER THAN OR EQUAL TO ONE HALF THE DEPTH FROM THE BOTTOM OF THE INVERT. SEDIMENT SHALL BE REMOVED THROUGH THE USE OF A VACUUM TRUCK. SEDIMENT MUST BE HANDLED AND DISPOSED OF PROPERLY IN ONE OF THE WAYS ALREADY APPROVED BY MASSDEP (SEE MASSDEP POLICY ON MANAGEMENT OF CATCH BASIN CLEANINGS). IF THERE IS EVIDENCE THAT THEY HAVE BEEN CONTAMINATED BY A SPILL OR OTHER MEANS, THE CLEANINGS MUST BE EVALUATED IN ACCORDANCE WITH THE MASSDEP HAZARDOUS WASTE REGULATIONS, 310 CMR 30.00 AND HANDLED AS HAZARDOUS WASTE.
 - PROPRIETARY MANHOLES (WATER QUALITY DRAIN MANHOLES) ARE UNDERGROUND RETENTION SYSTEMS DESIGNED TO REMOVE TRASH, DEBRIS AND COARSE SEDIMENT FROM STORMWATER RUNOFF AND SERVE AS TEMPORARY SPILL CONTAINMENT DEVICES FOR FLOATABLES SUCH AS OILS AND GREASE. INSPECT THE UNITS MONTHLY AND CLEAN AT LEAST TWO TIMES PER YEAR AND AT THE END OF THE FOLIAGE AND SNOW-REMOVAL SEASONS. SEDIMENTS MUST ALSO BE REMOVED WHENEVER THE DEPTH OF DEPOSITS IS GREATER THAN OR EQUAL TO ONE HALF THE DEPTH FROM THE BOTTOM OF THE INVERT. SEDIMENT SHALL BE REMOVED THROUGH THE USE OF A VACUUM TRUCK. SEDIMENT MUST BE HANDLED AND DISPOSED OF PROPERLY IN ONE OF THE WAYS ALREADY APPROVED BY MASSDEP (SEE MASSDEP POLICY ON MANAGEMENT OF CATCH BASIN CLEANINGS). IF THERE IS EVIDENCE THAT THEY HAVE BEEN CONTAMINATED BY A SPILL OR OTHER MEANS, THE CLEANINGS MUST BE EVALUATED IN ACCORDANCE WITH THE MASSDEP HAZARDOUS WASTE REGULATIONS, 310 CMR 30.00 AND HANDLED AS HAZARDOUS WASTE.
 - LEACHING GALLEYS SHALL BE INSPECTED AFTER EVERY MAJOR STORM EVENT IN THE FIRST FEW MONTHS AFTER CONSTRUCTION TO ENSURE PROPER STABILIZATION AND FUNCTION. THEREAFTER, THE LEACHING GALLEYS SHALL BE INSPECTED AT LEAST ONCE PER YEAR. WATER DEPTH IN THE LEACHING GALLEYS SHOULD BE OBSERVED AND MEASURED AT 0, 24, AND 48-HOUR INTERVALS AFTER A MAJOR STORM EVENT AT LEAST ONCE PER YEAR. EXFILTRATION RATES ARE CALCULATED BY DIVIDING THE DROP IN THE WATER LEVEL (INCHES) BY THE ELAPSED TIME (HOUR). A COMPARISON OF EXFILTRATION RATE MEASUREMENTS TAKEN OVER THE YEARS PROVIDE A USEFUL TOOL TRACKING ANY CLOGGING PROBLEMS WITH THE UNDERGROUND INFILTRATION SYSTEM.

DRAINAGE INSTALLATION NOTES:

- ALL DRAINAGE PIPES, UNLESS OTHERWISE NOTED, ARE TO BE ADS N-12 PIPE WITH SOIL TIGHT JOINTS AND FITTINGS. REFER TO PLAN FOR LOCATION, SIZES AND SLOPES.
- ALL ROOF DRAIN PIPES, UNLESS OTHERWISE NOTED, ARE TO BE 4" ADS N-12 PIPE WITH SOIL TIGHT JOINTS AND FITTINGS. MINIMUM SLOPE TO BE 1.00%. REFER TO PLAN FOR LOCATION.
- MIN. COVER ON PIPES SHALL NOT BE LESS THAN 1.5 FEET.
- WHERE REQUIRED ALL PIPE PERFORATIONS SHALL BE AASHTO CLASS II.
- ALL WORK AND MATERIAL SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE TOWN OF WAREHAM MUNICIPAL MAINTENANCE DEPARTMENT.
- WHERE REQUIRED CONTRACTOR TO REMOVE ALL UNSUITABLE SOILS AND REPLACE WITH CLEAN SAND AND GRAVEL APPROVED BY DESIGN ENGINEER.
- IF THE TOP COURSE OF PAVEMENT IS NOT INSTALLED IMMEDIATELY AFTER THE BASE COURSE, CATCH BASIN RIMS SHALL BE SET TO THE BASE COURSE OF PAVEMENT AND THEN RAISED WHEN THE TOP COURSE OF PAVEMENT IS INSTALLED.

WATER INSTALLATION NOTES:

- ALL WATER MAINS, SERVICES, GATE VALVES/GATE BOX, CURB STOPS, HYDRANTS, FITTINGS, ETC. & METHOD OF INSTALLATION SHALL CONFORM TO THE ONSET FIRE DISTRICT AND ONSET WATER DEPARTMENTS RULES & REGULATIONS.
- WATER MAIN SHALL BE PRESSURE TESTED, FLUSHED & DISINFECTED IN ACCORDANCE WITH THE ONSET FIRE DISTRICT AND ONSET WATER DEPARTMENTS REQUIREMENTS.
- CONTRACTOR TO COORDINATE WITH THE ONSET FIRE DISTRICT AND THE ONSET WATER DEPARTMENT FOR THE INSPECTIONS OF THE WATER MAIN INSTALLATION.
- THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS TO COMPLETE THE INSTALLATION OF THE WATER SYSTEM.
- THE CONTRACTOR SHALL OBTAIN A COPY OF THE "ONSET FIRE DISTRICT, WATER DEPARTMENT GENERAL PROCEDURES, CONSTRUCTION SPECIFICATIONS & MATERIAL SPECIFICATIONS" FROM THE ONSET WATER DEPARTMENT BEFORE PROCEEDING WITH THE INSTALLATION OF THE WATER SYSTEM.
- ALL WATER MAINS SHALL BE RESTRAINED JOINT B" CLASS 52 DOUBLE CEMENT LINED DUCTILE IRON PIPE WITH PUSH-ON JOINTS AND MECHANICAL JOINT FITTINGS OR APPROVED EQUAL.
- ALL WATER SERVICE LINES SHALL BE INSTALLED A MINIMUM OF 10' FROM SEWER SERVICE LINES.



PERMIT SET
(NOT FOR CONSTRUCTION)

ABBREVIATIONS

AC	ASBESTIC CONCRETE
ADS	ADVANCED DRAINAGE SYSTEM
APPROX.	APPROXIMATE
BC	BOTTOM OF CURB
BIT. CONC.	BITUMINOUS CONCRETE
BLDRS	BOULDER
BW	BOTTOM OF WALL
BVW	BORDERING VEGETATED WETLANDS
CB	CATCH BASIN
CB/DH	CONCRETE BOUND/DRILL HOLE
CCB	CAPE COD BERM
CEM.	CEMENT
CI	CAST IRON
CONC.	CONCRETE
C.O.	CLEANOUT
C.L.D.I.	CEMENT LINED DUCTILE IRON
CMP	CORRUGATED METAL PIPE
CPP	CORRUGATED PLASTIC PIPE
C.T.B.	CONCRETE THRUST BLOCK
DIA	DIAMETER
DMH	DRAIN MANHOLE
D.I.	DUCTILE IRON
DCS	DRAINAGE CONTROL STRUCTURE
E	ELECTRIC
ELEV., EL.	ELEVATION
EXP.	EDGE OF PAVEMENT
EX.	EXISTING
F.D.C.	FIRE DEPARTMENT CONNECTION
F.E.S.	FLARED END SECTION
F.F.E.	FINISHED FLOOR ELEVATION
FND.	FOUND
FP	FIRE PROTECTION
G	GAS
GG, GV	GAS GATE, GAS VALVE
H.C.	HANDICAP PARKING
H.D.P.E.	HIGH DENSITY POLYETHYLENE
HYD	HYDRANT
INV.	INVERT
MAX	MAXIMUM
MED	MEDIUM
MIN.	MINIMUM
N.T.S.	NOT TO SCALE
N/F	NOW OR FORMERLY
OH/W	OVERHEAD WIRE
PCC	PRECAST CONCRETE CURBING
PVC	POLYVINYL CHLORIDE PIPE
PROP.	PROPOSED
RAP	RECYCLED ASPHALT PRODUCT
RCP	REINFORCED CONCRETE PIPING
R	RADIUS
R&D	REMOVE AND DISPOSE
R&S	REMOVE AND STOCK
SB/DH	STONE BOUND/DRILL HOLE
S	SEWER
SGC	SLOPED GRANITE CURBING
SMH	SEWER MANHOLE
STA	STATION
TC	TOP OF CURB
TW	TOP OF WALL
TYP.	TYPICAL
T/O/F	TOP OF FOUNDATION
UP	UTILITY POLE
UE	UNDERGROUND ELECTIC
VGC	VERTICAL GRANITE CURB
W	WATER
WG, WV	WATER GATE, WATER VALVE
WOS	WATER QUALITY STRUCTURE

EXISTING	DESC.	PROPOSED
55	CONTOURS	55
53x5	SPOT GRADES	52x5
	WETLANDS	52x5
	50' NO ACTIVITY ZONE	
	100' BUFFER ZONE	
	200' RIVERFRONT AREA	
	F.E.M.A. FLOOD ZONE	
D	DRAIN LINE	D
RD	ROOF DRAIN LINE	RD
CB	CATCH BASIN (CB)	CB
DMH	DRAIN MANHOLE (DMH)	DMH
EMH	ELECTRIC MANHOLE (EMH)	EMH
UE	UNDERGROUND UTILITIES	UE
OH/W	OVERHEAD WIRES	OH/W
UP	UTILITY POLE	UP
GUY	GUY POLE	GUY
WG	WATER GATE VALVE	WG
WV	WATER SHUTOFF/CURB STOP	WV
HYD	HYDRANT	HYD
PIV	POST INDICATOR VALVE	PIV
W	WATER LINE	W
FP	FIRE PROTECTION LINE	FP
SMH	SEWER MANHOLE (SMH)	SMH
S	SEWER LINE	S
TBL	TREE/BRUSH LINE	TBL
LP	LIGHT POST	LP
G	GAS LINE	G
GG	GAS GATE/VALVE	GG
GS	GAS SHUTOFF	GS
GM	GAS METER	GM
SIGN	SIGN	SIGN
F	FENCE	F
B	BOUND	B
TP	TEST PIT/PERC TEST	TP
SILT	SILT FENCE	SILT
GR	GUARD RAIL	GR
FL	FLARED END SECTION	FL
SW	STONE WALL	SW
W	WELL	W

NO CHANGES THIS SHEET
NO CHANGES THIS SHEET
ONSET WATER DEPARTMENT COMMENTS
OWNER & STREET NAME CHANGE
PER 2ND PEER REVIEW LETTER
PER TOWN & PEER REVIEW COMMENTS

DATE: JAN. 12, 2021
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CHECKED BY: WFM
JOB NO.: 18-9247
SCALE: AS NOTED

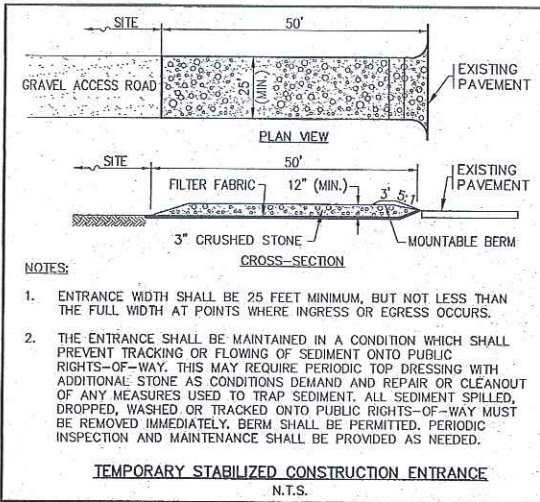
APPROVED BY:

G.A.F. ENGINEERING, INC.
PROFESSIONAL ENGINEERS & LAND SURVEYORS
265 MAIN STREET - WAREHAM, MA 02571
TEL: (508) 295-6800 FAX: (508) 295-6634
E-MAIL: info@gafenginc.com

"SETTLER'S GLEN" COMPREHENSIVE PERMIT PLAN GENERAL NOTES & LEGEND

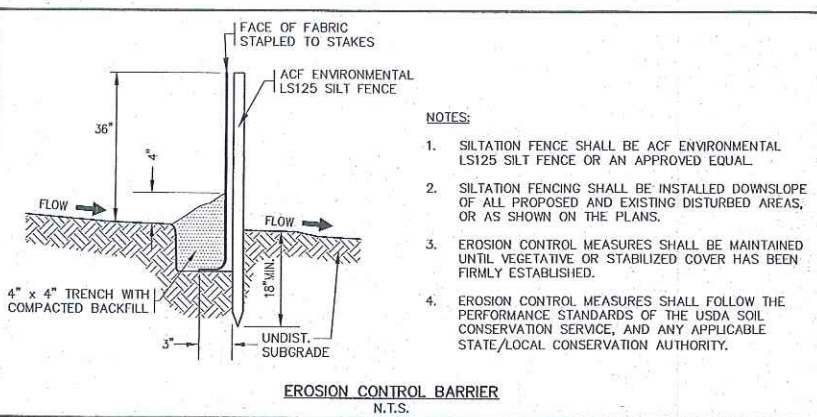
PREPARED FOR:
SETTLER'S GLEN, LLC
20 NORTH PARK AVE., SUITE 4
PLYMOUTH, MA

JOB NO.: 18-9247
DWG. 2 OF 11



NOTES:

- ENTRANCE WIDTH SHALL BE 25 FEET MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH SHALL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY. BERM SHALL BE PERMITTED. PERIODIC INSPECTION AND MAINTENANCE SHALL BE PROVIDED AS NEEDED.

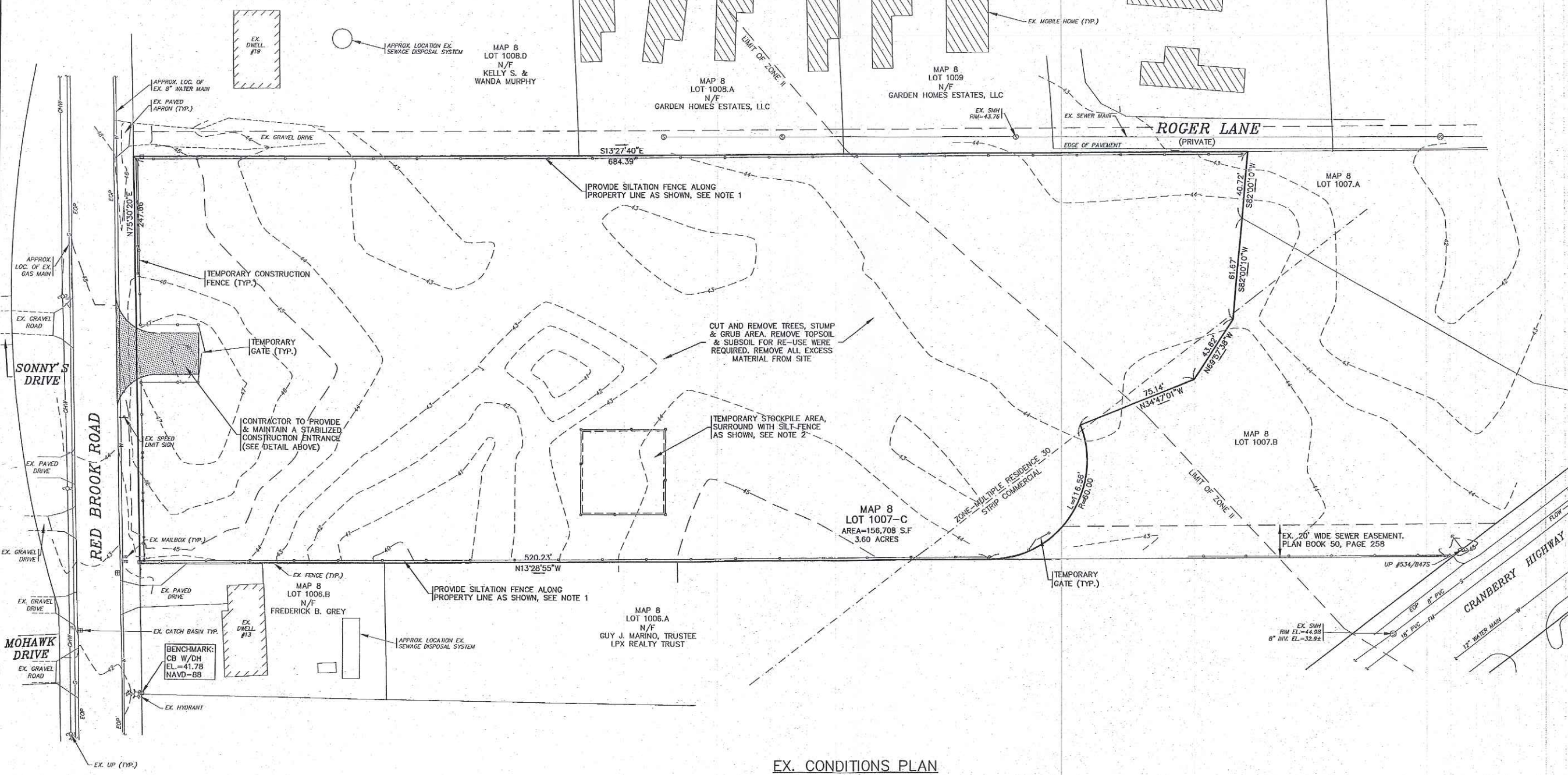


NOTES:

- SILTATION FENCE SHALL BE ACF ENVIRONMENTAL LS125 SILT FENCE OR AN APPROVED EQUAL.
- SILTATION FENCING SHALL BE INSTALLED DOWNSLOPE OF ALL PROPOSED AND EXISTING DISTURBED AREAS, OR AS SHOWN ON THE PLANS.
- EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL VEGETATIVE OR STABILIZED COVER HAS BEEN FIRMLY ESTABLISHED.
- EROSION CONTROL MEASURES SHALL FOLLOW THE PERFORMANCE STANDARDS OF THE USDA SOIL CONSERVATION SERVICE, AND ANY APPLICABLE STATE/LOCAL CONSERVATION AUTHORITY.

NOTES:

- CONTRACTOR SHALL PROVIDE AND MAINTAIN STAKED SILTATION FENCING EROSION CONTROL BARRIER AS SHOWN ON THE PLANS. SEE DETAIL.
- FINAL LOCATION OF STOCKPILE AREA SHALL BE DETERMINED BY THE CONTRACTOR AT TIME OF CONSTRUCTION. CONTRACTOR SHALL RELOCATE STOCKPILE AREA DURING CONSTRUCTION NEEDED.
- FINAL LOCATIONS AND DETAILS OF TEMPORARY CONSTRUCTION FENCE AND GATES SHALL BE DETERMINED BY THE CONTRACTOR AND ENGINEER.



EX. CONDITIONS PLAN
SCALE: 1"=30'



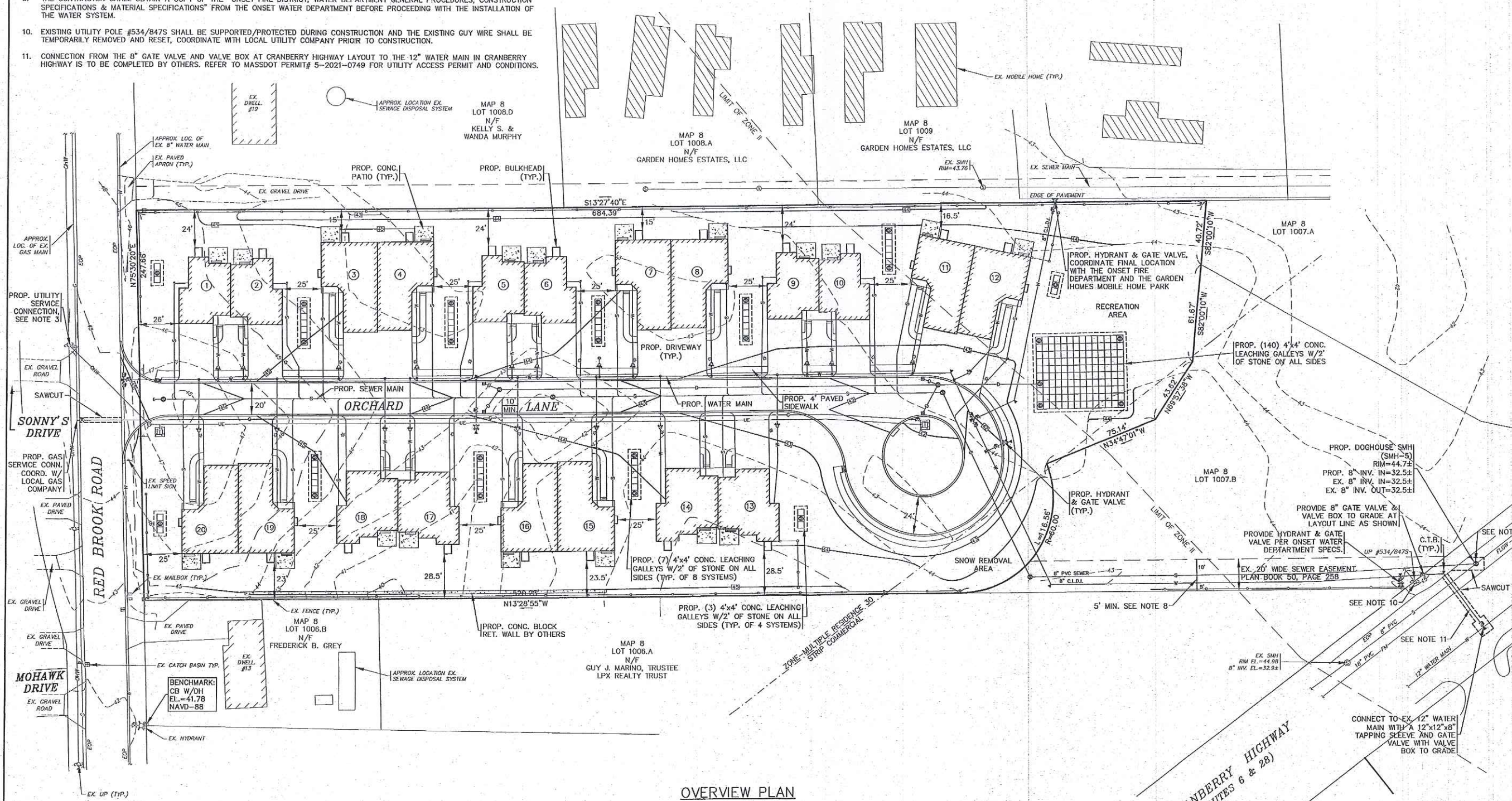
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DRAWN BY: J.M.P.	WFM	WFM	WFM	WFM	WFM	WFM	WFM	WFM	WFM
CHECKED BY: WFM	J.M.P.	J.M.P.	J.M.P.	J.M.P.	J.M.P.	J.M.P.	J.M.P.	J.M.P.	J.M.P.
JOB NO.: 18-9247	WFM	WFM	WFM	WFM	WFM	WFM	WFM	WFM	WFM
SCALE: 1" = 30'	WFM	WFM	WFM	WFM	WFM	WFM	WFM	WFM	WFM
APPROVED BY:	DATE	BY	APPD	REV.	DATE	BY	APPD	REV.	DESCRIPTION
	5/10/22	J.M.P.		6					
	2/22/22	J.M.P.		5					
	12/1/21	J.M.P.		4					
	8/31/21	J.M.P.		3					
	5/11/21	J.M.P.		2					
	4/28/21	J.M.P.		1					

G.A.F. ENGINEERING, INC.
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"SETTLER'S GLEN" COMPREHENSIVE PERMIT PLAN EXISTING CONDITIONS PLAN
PREPARED FOR:
SETTLER'S GLEN, LLC
20 NORTH PARK AVE., SUITE 4
PLYMOUTH, MA 01969

NOTES:

- REFER TO ARCHITECTURAL PLANS PREPARED BY OTHERS FOR ALL PROPOSED DWELLING DIMENSIONS, CONSTRUCTION NOTES AND DETAILS.
- ALL SEWER WORK SHALL BE DONE IN ACCORDANCE WITH THE TOWN OF WAREHAM SEWER COMMISSIONERS RULES AND REGULATIONS.
- CONTRACTOR SHALL COORDINATE WITH LOCAL UTILITY COMPANY PRIOR TO CONNECTION.
- REFER TO PAVEMENT SAWCUT/TRENCH REPAIR DETAIL ON SHEET 10.
- CONTRACTOR SHALL CONFIRM EXISTING SEWER ELEVATION PRIOR TO CONSTRUCTION. COORDINATE WITH WAREHAM SEWER DEPARTMENT. REFER TO MASSDOT PERMIT # 5-2021-0748 FOR UTILITY ACCESS PERMIT AND CONDITIONS.
- WHEN A WATER LINE CROSSES ABOVE THE SEWER LINE, THE WATER LINE SHALL BE A MINIMUM OF 18" ABOVE THE SEWER LINE. AT THE CROSSING, ONE FULL LENGTH OF WATER PIPE SHALL BE LOCATED SO BOTH JOINTS WILL BE AS FAR FROM THE SEWER AS POSSIBLE. BOTH THE WATER AND SEWER PIPES SHALL BE CONSTRUCTED OF CLASS 150 PRESSURE RATED PIPE MEETING LATEST AWWA STANDARDS. FOR COMPLETE DETAILS REFER TO THE ONSET FIRE DISTRICT AND ONSET WATER DEPARTMENTS RULES AND REGULATIONS.
- WHEN A WATER LINE CROSSES BELOW A SEWER LINE, THE WATER LINE SHALL BE A MINIMUM OF 18" BELOW THE SEWER LINE AND THE WATER LINE SHALL BE ENCASED 10' IN BOTH DIRECTIONS AND SEALED AT BOTH ENDS WITH CONCRETE. AT THE CROSSING, THE SEWER LINE SHALL BE CONSTRUCTED OF CLASS 150 PRESSURE RATED PIPE MEETING LATEST AWWA STANDARDS. FOR COMPLETE DETAILS REFER TO THE ONSET FIRE DISTRICT AND ONSET WATER DEPARTMENTS RULES AND REGULATIONS.
- WHEN A WATER LINE IS INSTALLED LESS THEN 10' TO A SEWER LINE THE WATER LINE MUST BE LAID IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELVE LOCATED ON ONE SIDE OF THE SEWER AT SUCH ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER LINE.
- THE CONTRACTOR SHALL OBTAIN A COPY OF THE "ONSET FIRE DISTRICT, WATER DEPARTMENT GENERAL PROCEDURES, CONSTRUCTION SPECIFICATIONS & MATERIAL SPECIFICATIONS" FROM THE ONSET WATER DEPARTMENT BEFORE PROCEEDING WITH THE INSTALLATION OF THE WATER SYSTEM.
- EXISTING UTILITY POLE #534/847S SHALL BE SUPPORTED/PROTECTED DURING CONSTRUCTION AND THE EXISTING GUY WIRE SHALL BE TEMPORARILY REMOVED AND RESET, COORDINATE WITH LOCAL UTILITY COMPANY PRIOR TO CONSTRUCTION.
- CONNECTION FROM THE 8" GATE VALVE AND VALVE BOX AT CRANBERRY HIGHWAY LAYOUT TO THE 12" WATER MAIN IN CRANBERRY HIGHWAY IS TO BE COMPLETED BY OTHERS. REFER TO MASSDOT PERMIT# 5-2021-0749 FOR UTILITY ACCESS PERMIT AND CONDITIONS.



OVERVIEW PLAN
SCALE: 1"=30'

DATE	BY	DESCRIPTION	
5/10/22	JMP	WATER MAIN CONNECTION, NOTES	
2/22/22	JMP	PER ZBA PETITION #2-21	
12/1/21	JMP	ONSET WATER DEPARTMENT COMMENTS	
8/31/21	JMP	OWNER & STREET NAME CHANGE	
5/11/21	JMP	PER 2ND PEER REVIEW LETTER	
4/26/21	JMP	PER TOWN & PEER REVIEW COMMENTS	
REV.	DATE	BY	APP'D

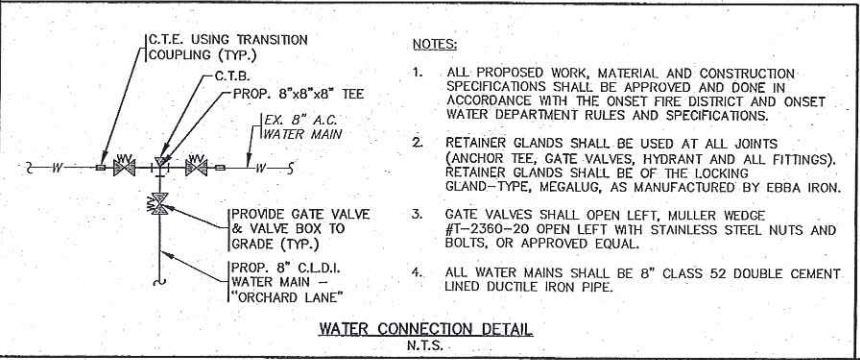
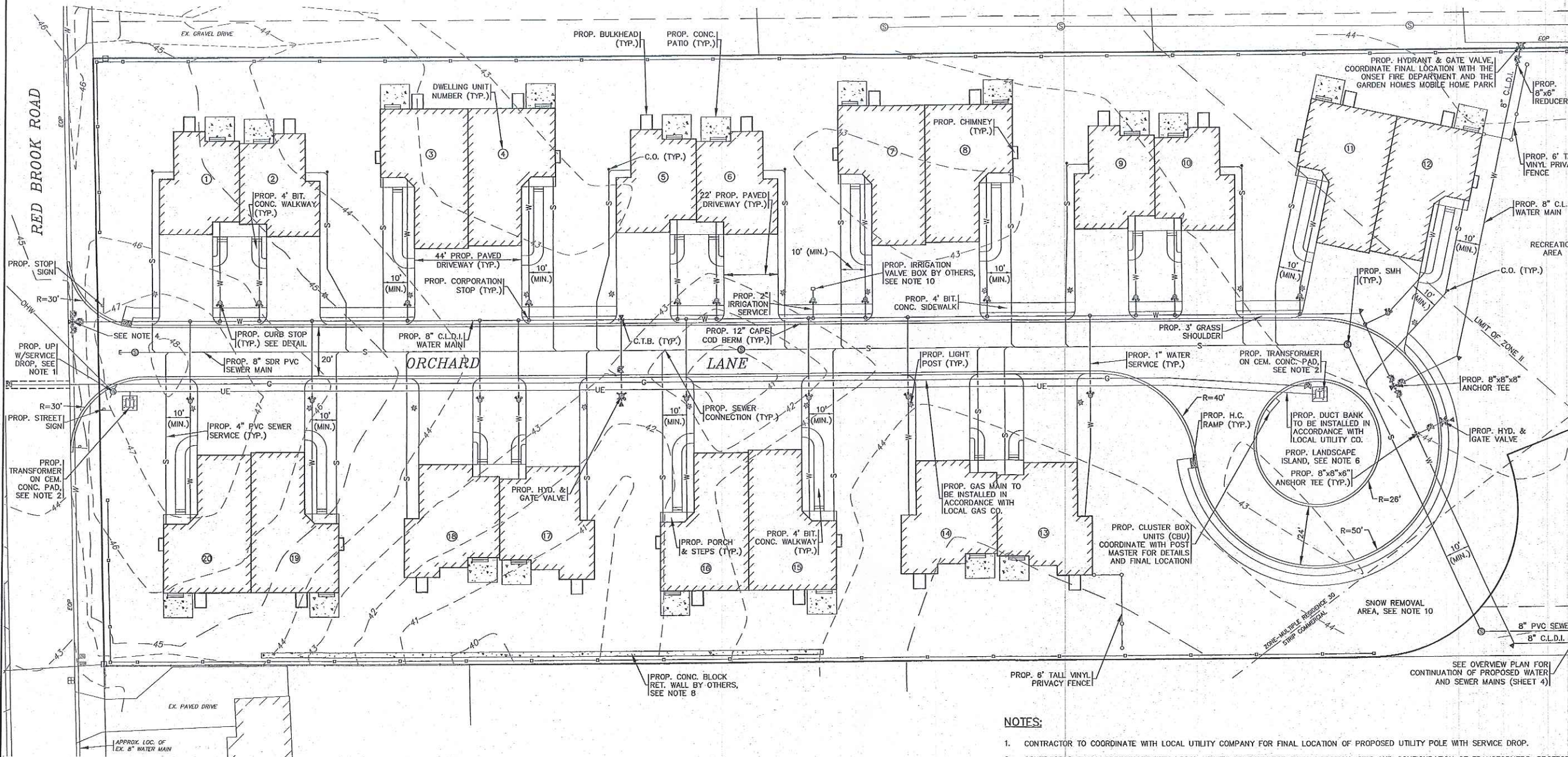
DATE: JAN. 12, 2021	APPROVED BY:
DRAWN BY: JMP	
CHECKED BY: WFM	
JOB NO.: 18-9247	
SCALE: 1" = 30'	

G.A.F. ENGINEERING, INC. PROFESSIONAL ENGINEERS & LAND SURVEYORS 266 MAIN STREET - WAREHAM, MA 02571 TEL: (508) 295-6600 FAX: (508) 295-6634 E-MAIL: info@gafenginc.com	WAREHAM, MA
	PLYMOUTH, MA

"SETTLER'S GLEN" COMPREHENSIVE PERMIT PLAN OVERVIEW PLAN	WAREHAM, MA
PREPARED FOR: SETTLER'S GLEN, LLC	PLYMOUTH, MA
RED BROOK ROAD	20 NORTH PARK AVE., SUITE 4

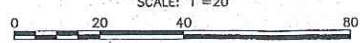
PERMIT SET (NOT FOR CONSTRUCTION)	JOB NO.: 18-9247 DWG. 4 OF 11
--------------------------------------	----------------------------------

PERMIT SET
(NOT FOR CONSTRUCTION)



- NOTES:**
- ALL PROPOSED WORK, MATERIAL AND CONSTRUCTION SPECIFICATIONS SHALL BE APPROVED AND DONE IN ACCORDANCE WITH THE ONSET FIRE DISTRICT AND ONSET WATER DEPARTMENT RULES AND SPECIFICATIONS.
 - RETAINER GLANDS SHALL BE USED AT ALL JOINTS (ANCHOR TEE, GATE VALVES, HYDRANT AND ALL FITTINGS). RETAINER GLANDS SHALL BE OF THE LOCKING GLAND-TYPE, MEGALUG, AS MANUFACTURED BY EBBA IRON.
 - GATE VALVES SHALL OPEN LEFT, MULLER WEDGE #T-2360-20 OPEN LEFT WITH STAINLESS STEEL NUTS AND BOLTS, OR APPROVED EQUAL.
 - ALL WATER MAINS SHALL BE 8" CLASS 52 DOUBLE CEMENT LINED DUCTILE IRON PIPE.

LAYOUT & UTILITIES



NOTES:

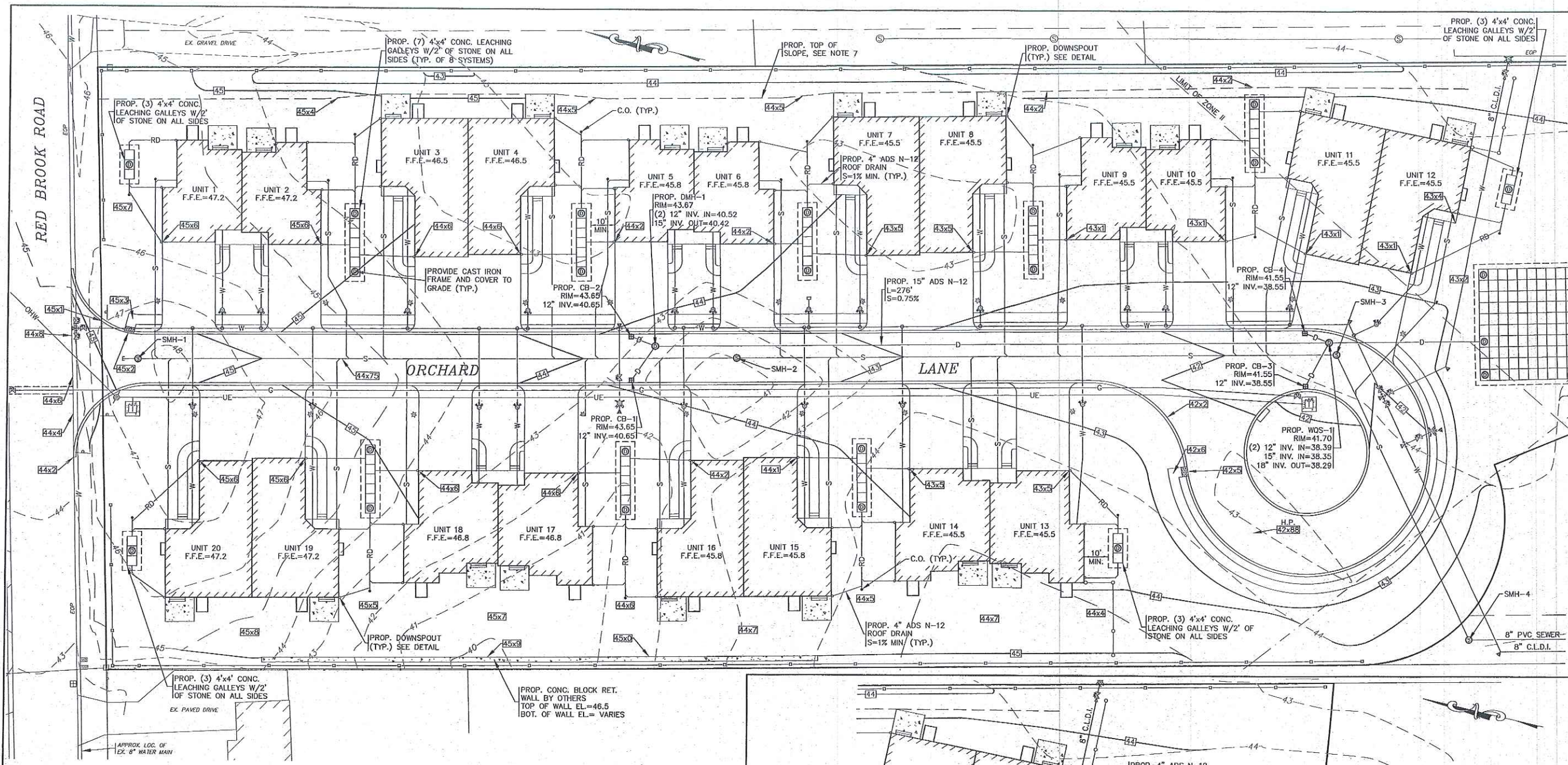
- CONTRACTOR TO COORDINATE WITH LOCAL UTILITY COMPANY FOR FINAL LOCATION OF PROPOSED UTILITY POLE WITH SERVICE DROP.
- CONTRACTOR SHALL COORDINATE WITH LOCAL UTILITY COMPANY FOR FINAL LOCATION, SIZE AND CONFIGURATION OF TRANSFORMERS. PROTECT TRANSFORMERS WITH BOLLARDS.
- FINAL LOCATIONS, DEPTHS AND CONSTRUCTION OF UNDERGROUND ELECTRIC AND GAS SERVICES SHALL BE DETERMINED BY THEIR RESPECTIVE UTILITIES COMPANY.
- CONNECT TO THE EXISTING 8" WATER MAIN WITH AN 8"x8"x8" TEE AND PROVIDE GATE VALVES WITH VALVE BOXES TO GRADE AS SHOWN, SEE WATER CONNECTION DETAIL TO THE LEFT. ALL WORK SHALL BE DONE IN ACCORDANCE TO THE ONSET FIRE DISTRICT AND ONSET WATER DEPARTMENTS RULES AND REGULATIONS.
- ALL WATER MAINS SHALL BE 8" CLASS 52 DOUBLE LINED DUCTILE IRON PIPE.
- REFER TO ARCHITECTURAL PLANS PREPARED BY OTHERS FOR ALL PROPOSED DWELLING DIMENSIONS, CONSTRUCTION NOTES AND DETAILS.
- REFER TO LANDSCAPE PLANS PREPARED BY OTHERS FOR ALL PROPOSED PLANTING LOCATIONS, DETAILS AND SPECIFICATIONS.
- CONTRACTOR SHALL PROVIDE CEMENT CONCRETE WASHOUT AREA. WASHOUT AREA SHALL BE A RING OF DOUBLE STAKED HAY BALES WITH SILTATION FENCE AND LINED WITH A 40 MIL. POLYETHYLENE BARRIER. SEE DETAIL. FINAL WASHOUT LOCATIONS SHALL BE DETERMINED IN THE FIELD BY THE CONTRACTOR AT TIME OF CONSTRUCTION.
- PROPOSED CONCRETE BLOCK RETAINING WALLS DESIGNED BY OTHERS. CONTRACTOR SHALL COORDINATE WITH OWNER. RETAINING WALL SHALL BE PROVIDED WITH SAFETY GUARDRAILS/HANDRAILS PER 780 CMR AND OSHA REGULATIONS AND SPECIFICATIONS. CONTRACTOR SHALL SUBMIT STAMPED SHOP DRAWINGS FOR RETAINING WALL CONSTRUCTION TO BUILDING DEPARTMENT FOR APPROVAL PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL COORDINATE WITH OWNER FOR DESIGN, LOCATION AND ALL DETAILS ON THE IRRIGATION SYSTEM.
- CONFIRM FINAL SNOW REMOVAL AREA WITH OWNER.
- ALL SEWER SERVICE LINES SHALL BE INSTALLED A MINIMUM OF 10' FROM WATER SERVICE LINES.

NO CHANGE	DATE: JAN. 12, 2021	APPROVED BY:	
PER ZBA PETITION #2-21	DATE: JAN. 12, 2021	APPROVED BY:	
PER WATER DEPARTMENT COMMENTS	DRAWN BY: JMP	APPROVED BY:	
OWNER & STREET NAME CHANGE	CHECKED BY: WFM	APPROVED BY:	
PER 2ND PEER REVIEW LETTER	JOB NO.: 18-9247	APPROVED BY:	
PER TOWN & PEER REVIEW COMMENTS	SCALE: 1" = 20'	APPROVED BY:	
DATE	REV.	DATE	DESCRIPTION
5/10/22	JMP	5/10/22	NO CHANGE
2/22/22	JMP	2/22/22	PER ZBA PETITION #2-21
12/1/21	JMP	12/1/21	ONSET WATER DEPARTMENT COMMENTS
8/31/21	JMP	8/31/21	OWNER & STREET NAME CHANGE
5/11/21	JMP	5/11/21	PER 2ND PEER REVIEW LETTER
4/26/21	JMP	4/26/21	PER TOWN & PEER REVIEW COMMENTS

G.A.F. ENGINEERING, INC.
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LEAD: INFO@GAFENGINEERING.COM
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"SETTLER'S GLEN" COMPREHENSIVE PERMIT PLAN LAYOUT & UTILITIES
WAREHAM, MA
RED BROOK ROAD
PREPARED FOR:
SETTLER'S GLEN, LLC
20 NORTH PARK AVE., SUITE 4
PLYMOUTH, MA

JOB NO.: 18-9247
DWG. 5 OF 11

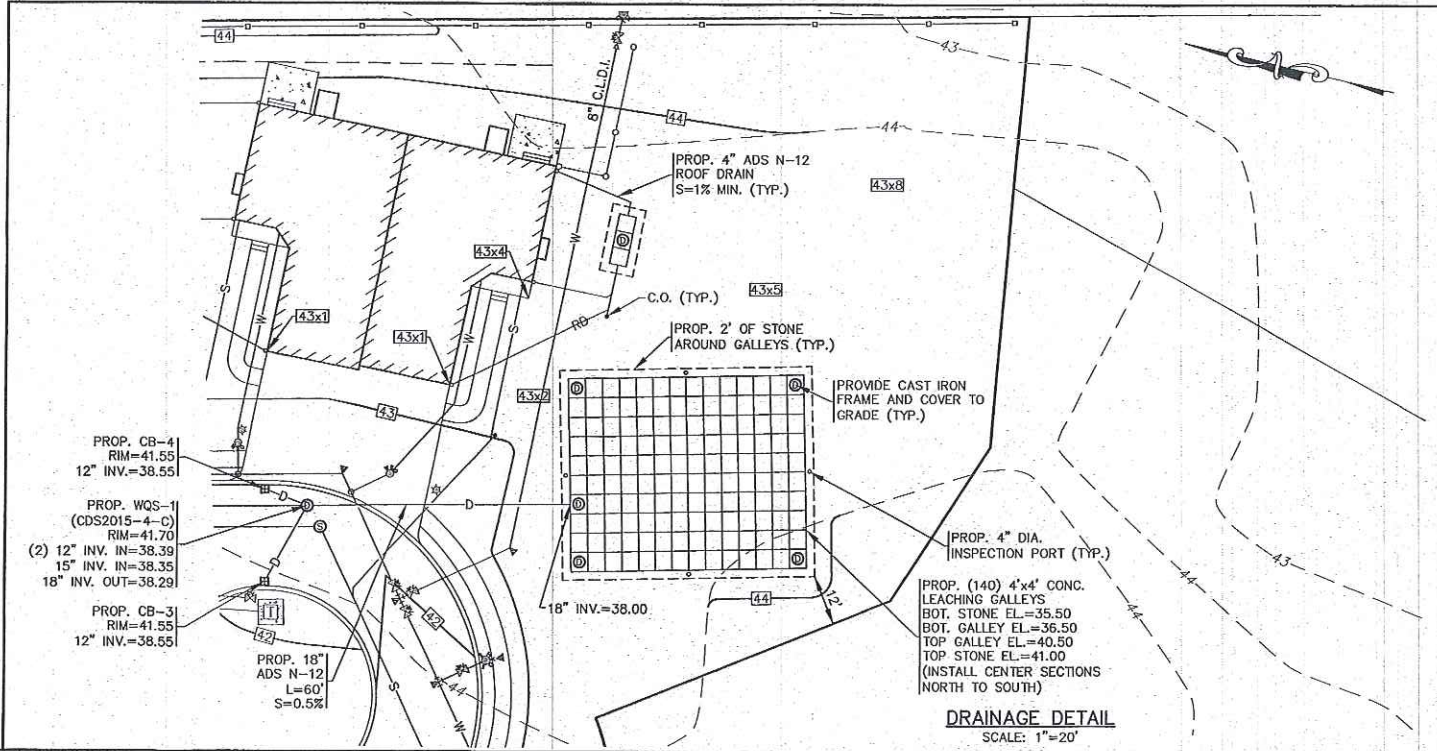
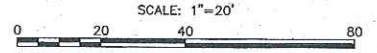


- NOTES:**
- ALL PROPOSED CATCH BASINS SHALL HAVE A TEMPORARY SILT SACK OR AN APPROVED EQUAL INSTALLED IN THEM AS SOON AS THE STRUCTURE IS SET. CONTRACTOR SHALL REMOVE AND DISPOSE OF THE SILT SACKS AT THE COMPLETION OF CONSTRUCTION.
 - WATER MAIN/SERVICES SHALL BE INSTALLED A MINIMUM OF 18" BELOW ALL PROPOSED DRAINAGE LINES.
 - PROPOSED WQS-1 SHALL BE A CDS2015-4-C UNIT FROM CONTECH ENGINEERED SOLUTIONS LLC.
 - PROPOSED CONCRETE BLOCK RETAINING WALLS DESIGNED BY OTHERS, CONTRACTOR SHALL COORDINATE WITH OWNER. RETAINING WALL SHALL BE PROVIDED WITH SAFETY GUARDRAILS/HANDRAILS PER 780 CMR AND OSHA REGULATIONS AND SPECIFICATIONS. CONTRACTOR SHALL SUBMIT STAMPED SHOP DRAWINGS FOR RETAINING WALL CONSTRUCTION TO BUILDING DEPARTMENT FOR APPROVAL PRIOR TO CONSTRUCTION.
 - FOR COMPLETE DRAINAGE OPERATION AND MAINTENANCE NOTES SEE SHEET 2.
 - ALL DWELLING UNITS TO BE PROVIDED WITH DOWNSPOUTS AND 4" ADS ROOF DRAIN PIPING TO GALLEY SYSTEMS. REFER TO ARCHITECTURAL PLANS FOR FINAL DOWNSPOUT LOCATIONS AND DETAILS.
 - THE INTENT OF THE GRADING DESIGN IS TO DIRECT ALL YARD RUNOFF TO ORCHARD LANE.
 - FINAL BUILDING FOUNDATION GRADES SHALL BE COORDINATED IN THE FIELD WITH CONTRACTOR, ARCHITECT AND ENGINEER.

SANITARY SEWER STRUCTURE SCHEDULE:

STRUCTURE	RIM EL.	INV. (IN)	INV. (OUT)
SMH-1	45.32	38.46	38.36
SMH-2	43.52	36.52	36.42
SMH-3	41.80	34.57	34.47
SMH-4	43.2±	33.84	33.74
SMH-5	44.7±	32.5±	32.5±

GRADING & DRAINAGE



DRAINAGE DETAIL

SCALE: 1"=20'

NO CHANGE	PER ZBA PETITION #2-21	DATE: JAN. 12, 2021
WFM	ONSET WATER DEPARTMENT COMMENTS	DRAWN BY: JWP
JMP	OWNER & STREET NAME CHANGE	CHECKED BY: WFM
JMP	PER 2ND PEER REVIEW LETTER	JOB NO.: 18-9247
JMP	PER TOWN & PEER REVIEW COMMENTS	SCALE: 1" = 20'
BY	APP'D	REV.
DATE	DATE	DATE
DESCRIPTION		

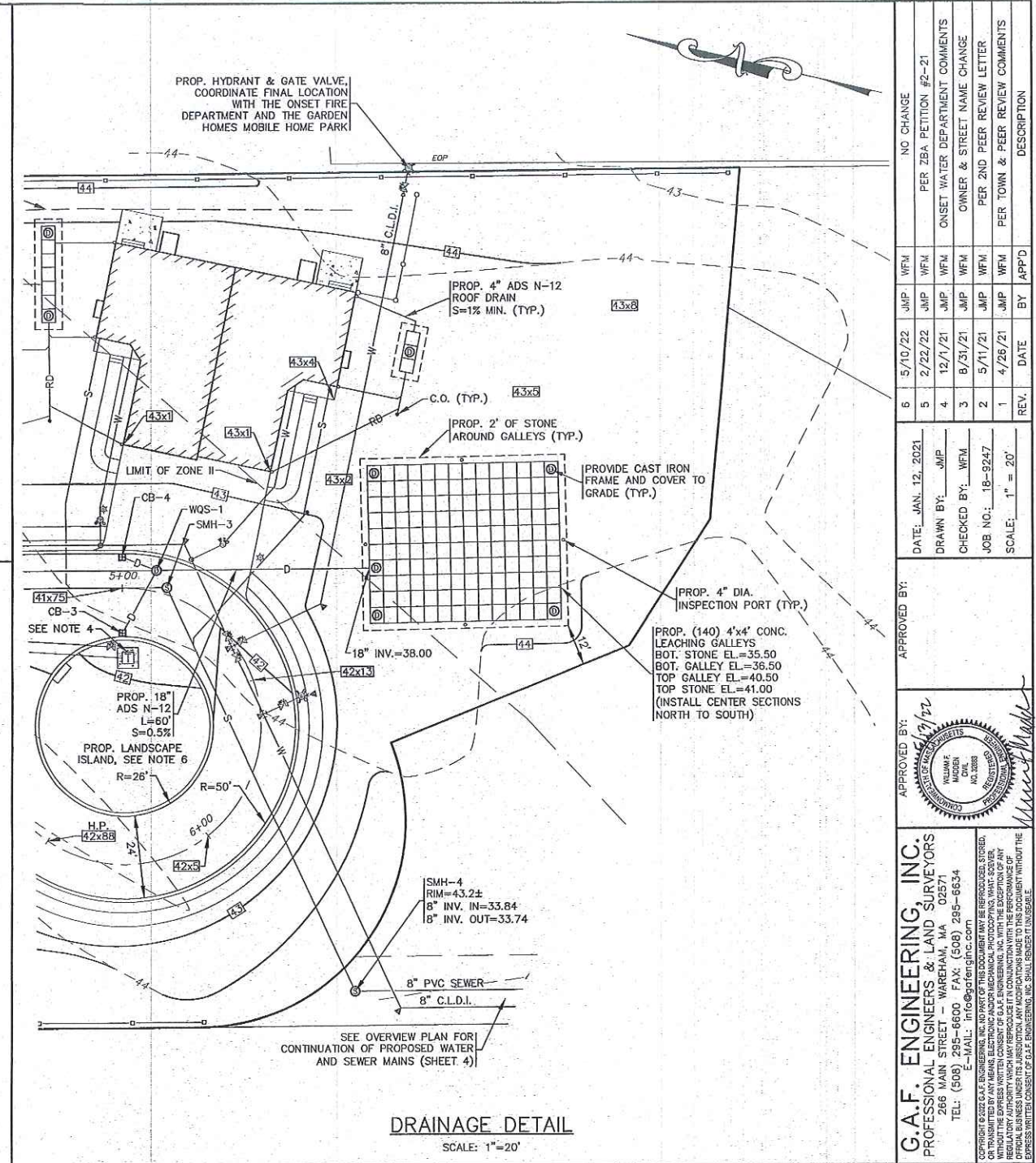
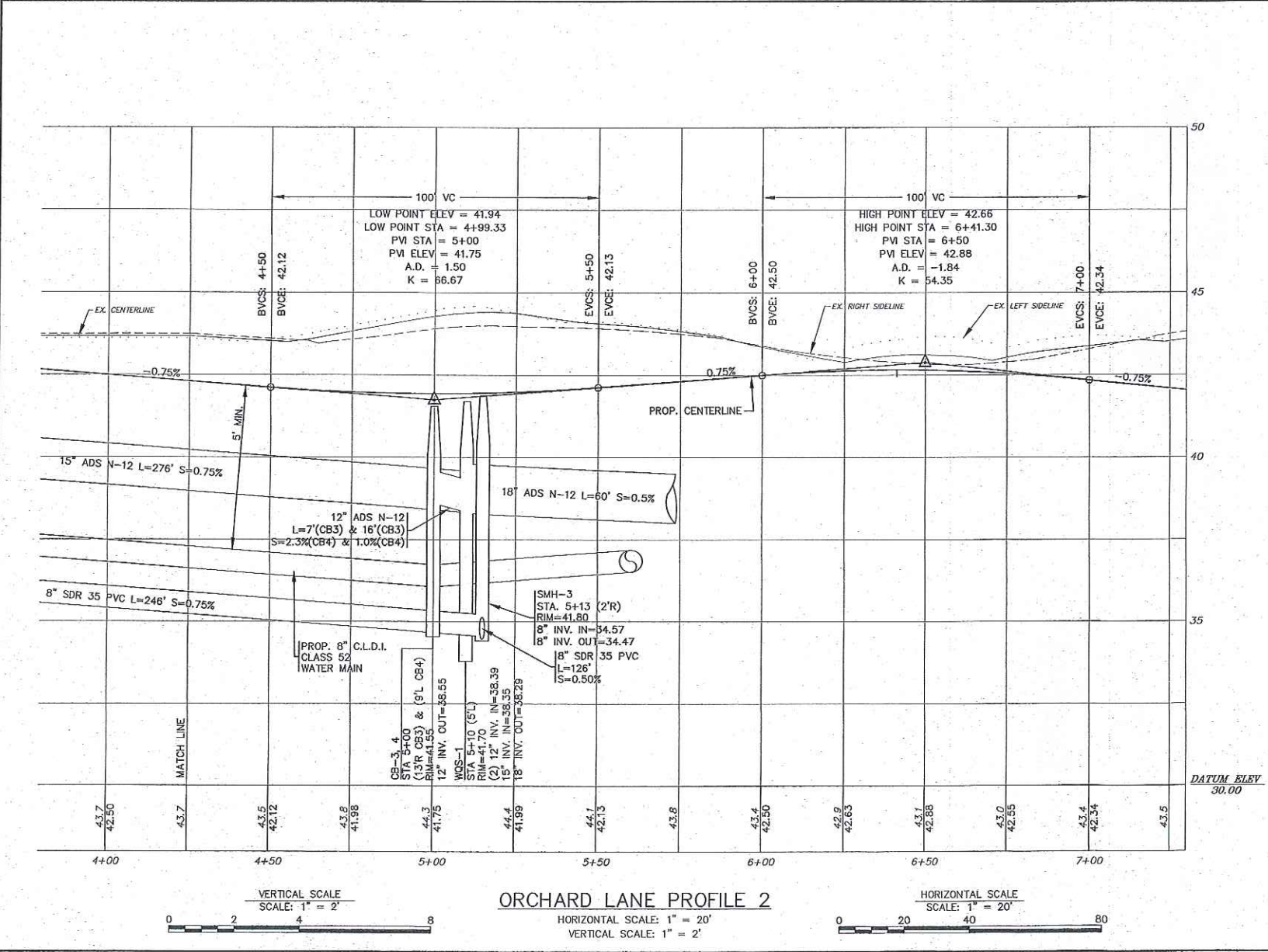
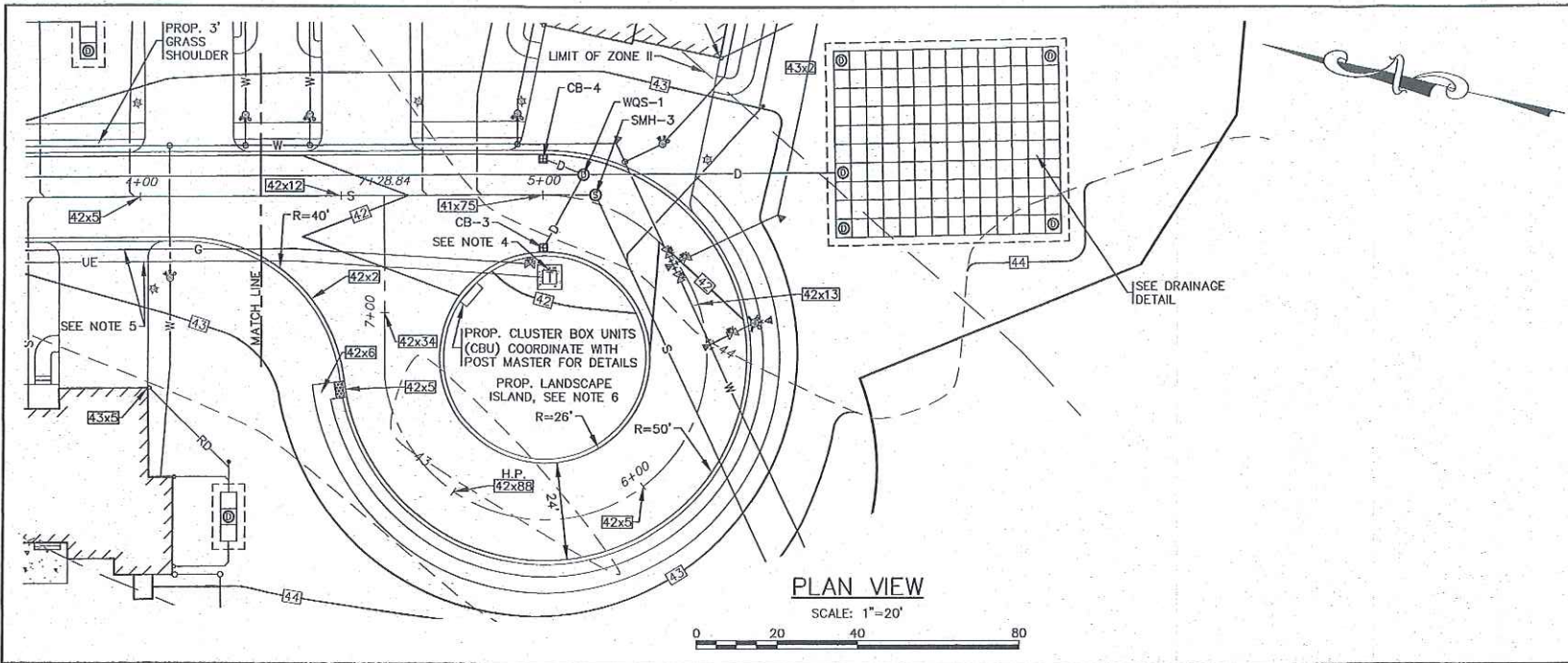
APPROVED BY: [Signature]

G.A.F. ENGINEERING, INC.
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PREPARED FOR:
"SETTLER'S GLEN" COMPREHENSIVE PERMIT PLAN GRADING & DRAINAGE
 RED BROOK ROAD WAREHAM, MA

SETTLER'S GLEN, LLC
 20 NORTH PARK AVE., SUITE 4 PLYMOUTH, MA

JOB NO.: 18-9247
 DWG. 6 OF 11



NOTES:

- ALL PROPOSED CATCH BASINS SHALL HAVE A TEMPORARY SILT SACK OR AN APPROVED EQUAL INSTALLED IN THEM AS SOON AS THE STRUCTURE IS SET. CONTRACTOR SHALL REMOVE AND DISPOSE OF THE SILT SACKS AT THE COMPLETION OF CONSTRUCTION.
- WATER MAIN/SERVICES SHALL BE INSTALLED A MINIMUM OF 18" BELOW ALL PROPOSED DRAINAGE LINES.
- FOR COMPLETE DRAINAGE OPERATION AND MAINTENANCE NOTES SEE SHEET 2.
- CONTRACTOR SHALL COORDINATE WITH LOCAL UTILITY COMPANY FOR FINAL LOCATION, SIZE AND CONFIGURATION OF TRANSFORMERS. PROTECT TRANSFORMERS WITH BOLLARDS.
- FINAL LOCATIONS, DEPTHS AND CONSTRUCTION OF UNDERGROUND ELECTRIC AND GAS SERVICES SHALL BE DETERMINED BY THEIR RESPECTIVE UTILITIES COMPANY.
- REFER TO LANDSCAPE PLANS PREPARED BY OTHERS FOR ALL PROPOSED PLANTING LOCATIONS, DETAILS AND SPECIFICATIONS.
- PROPOSED WQS-1 SHALL BE A CDS2015-4-C UNIT FROM CONTECH ENGINEERED SOLUTIONS LLC.

NO CHANGE	DATE	BY	DESCRIPTION
6	5/10/22	JMP	WFM
5	2/22/22	JMP	WFM
4	12/1/21	JMP	WFM
3	8/31/21	JMP	WFM
2	5/11/21	JMP	WFM
1	4/26/21	JMP	WFM

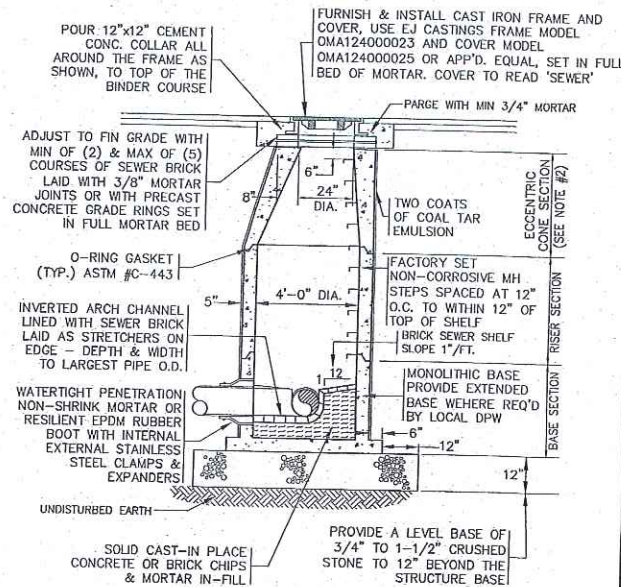
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DRAWN BY: JMP	WFM	WMA	WMA
CHECKED BY: WFM	WMA	WMA	WMA
JOB NO.: 18-9247	SCALE: 1" = 20'		

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 E-MAIL: info@gafeng.com

"SETTLER'S GLEN" COMPREHENSIVE PERMIT PLAN PLAN & ROADWAY PROFILE SHEET-2
 RED BROOK ROAD
 WAREHAM, MA
 PREPARED FOR:
SETTLER'S GLEN, LLC
 20 NORTH PARK AVE., SUITE 4
 PLYMOUTH, MA

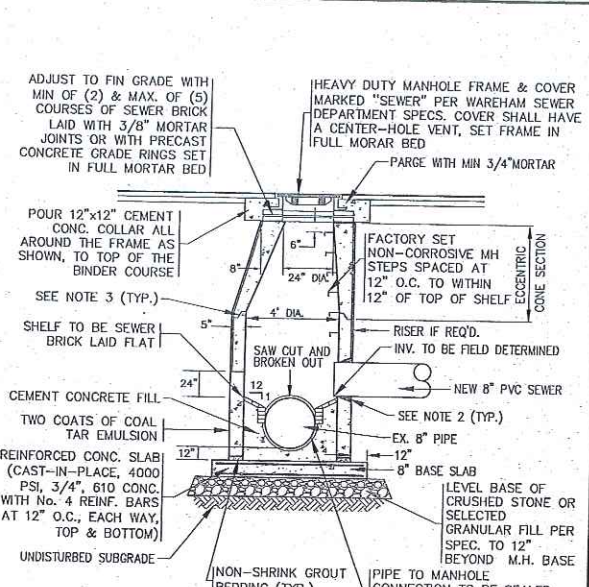
JOB NO.: 18-9247
 DWG. 8 OF 11

PERMIT SET
(NOT FOR CONSTRUCTION)



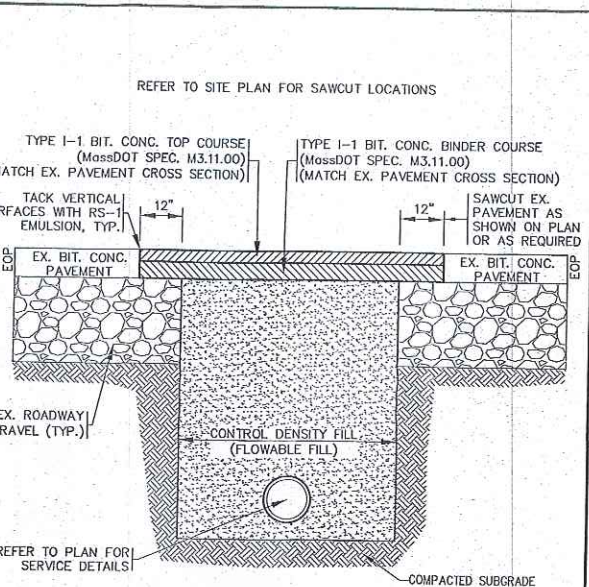
- NOTES:**
1. ALL STRUCTURES SHALL BE PRECAST CONC. IN ACCORDANCE WITH ASTM C-478 WITH H-20 LOADING. SECTION HEIGHTS VARY.
 2. FOR SHALLOW INSTALLATION AND WHEN APPROVED BY THE ENGINEER, FLAT TOP H-20 SLAB ALLOWED, SUBMIT SHOP DWGS.
 3. ALL STRUCTURE JOINTS AND PENETRATIONS SHALL BE WATER TIGHT.
 4. REFER TO PLANS FOR PIPE SIZES, INVERTS, RIMS AND LOCATIONS.

SEWER MANHOLE
N.T.S.



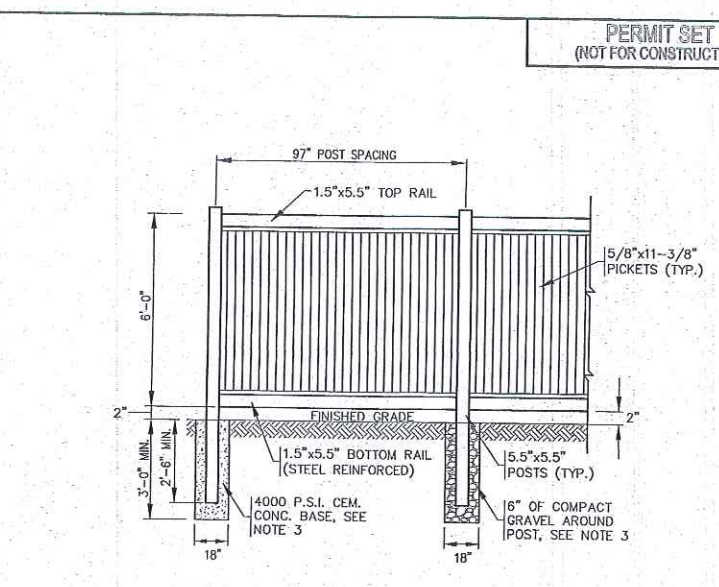
- NOTES:**
1. ALL STRUCTURES SHALL BE PRECAST CONCRETE AND BE DESIGNED FOR HS-20 LOADING. SECTION HEIGHTS VARY.
 2. PROVIDE OPENINGS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS (NON-SHRINK GROUT).
 3. ALL STRUCTURE JOINTS AND PENETRATIONS SHALL BE WATER TIGHT. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
 4. REFER TO PLANS FOR PIPE SIZES, INVERTS, RIMS AND LOCATIONS.

DOGHOUSE SEWER MANHOLE
N.T.S.



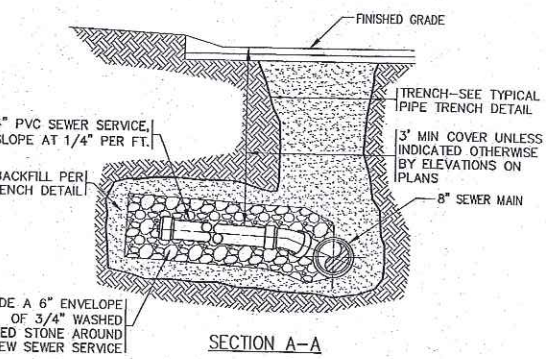
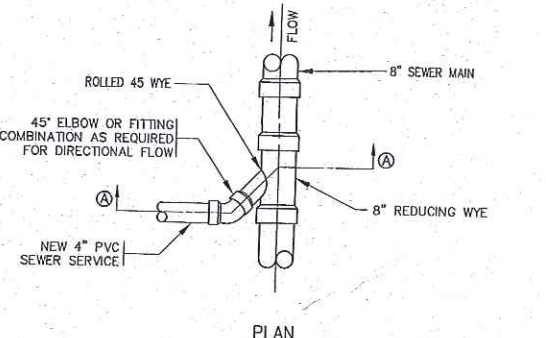
- NOTES:**
1. ALL PAVEMENT SHALL BE IN ACCORDANCE WITH MassDOT SECTION 460 & 401, UNLESS OTHERWISE NOTED.
 2. SUBGRADE & BASE SHALL BE COMPACTED TO MINIMUM 95% MAXIMUM DRY DENSITY.
 3. CONTROL DENSITY FILL (FLOWABLE FILL) SHALL CONFORM TO MassDOT M4.0B.0 TYPE 1E OR TYPE 2E.
 4. ALL WORK IN THE STATE HIGHWAY LAYOUT SHALL CONFORM TO MassDOT SPECIFICATIONS AND DETAILS, REFER TO THE LATEST REVISIONS OF THE MassDOT STANDARD SPECIFICATIONS AND DETAILS FOR HIGHWAY AND BRIDGES.

PAVEMENT SAWCUT / TRENCH REPAIR DETAIL
N.T.S.



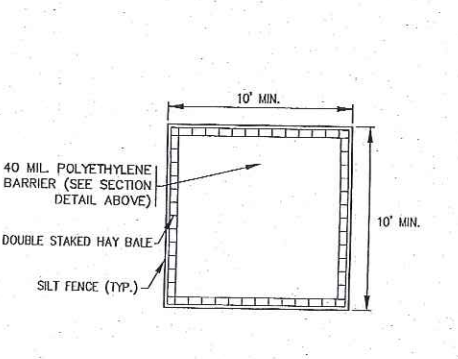
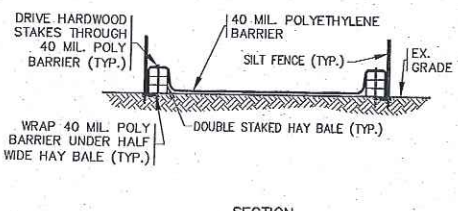
- NOTES:**
1. REFER TO MANUFACTURERS SPECIFICATIONS FOR COMPLETE DETAILS AND INSTALLATION GUIDELINES.
 2. REFER TO PLAN FOR LOCATIONS.
 3. CEMENT CONCRETE BASE SHALL BE USED AT ALL ENDS, ANGLE POINTS AND GATE POSTS. POSTS SHALL BE INSTALLED TO A DEPTH OF 2'-6" MIN. OR TO A DEPTH AS REQUIRED FOR FROST ADEQUATE PROTECTION.

VINYL FENCE DETAIL
N.T.S.



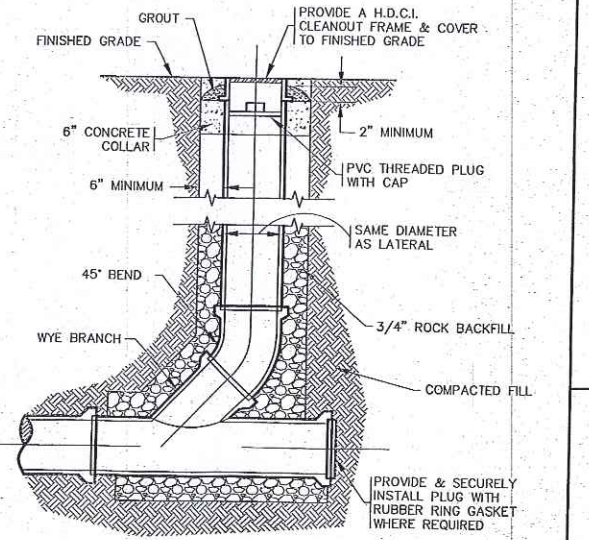
- NOTES:**
1. REFER TO PLAN FOR LOCATIONS.
 2. EXISTING SANITARY SEWER MAIN SHALL BE SAWCUT AND REDUCING WYE SHALL BE INSTALLED AT PROPER ANGLE TO ALLOW 1% OR GREATER SLOPE TO THE NEW SANITARY SEWER SERVICE PIPE.
 3. ALL SEWER WORK SHALL BE DONE IN ACCORDANCE WITH THE TOWN OF WAREHAM SEWER COMMISSIONERS RULES AND REGULATIONS.
 4. CONTRACTOR TO COORDINATE WITH THE TOWN OF WAREHAM SEWER DEPARTMENT PRIOR TO CONSTRUCTION.
 5. A SERVICE CHIMNEY MAY BE SUBSTITUTED AS REQUIRED. CONTRACTOR SHALL COORDINATE WITH THE WAREHAM SEWER DEPARTMENT AND ENGINEER.

SANITARY SEWER CONNECTION DETAIL
N.T.S.



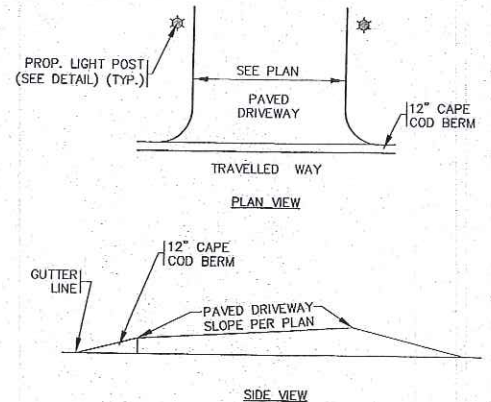
- NOTES:**
1. CONTRACTOR SHALL PROVIDE AND MAINTAIN CONCRETE WASHOUT AREA WHERE NECESSARY TO COMPLETE THE WORK.
 2. FINAL LOCATION FOR CONCRETE WASHOUT SHALL BE FIELD DETERMINED BY CONTRACTOR AT TIME OF CONSTRUCTION.
 3. CONTRACTOR SHALL REPAIR OR REPLACE 40 MIL. POLY BARRIER OR STAKED HAY BALES AS REQUIRED.

CONCRETE WASHOUT DETAIL
N.T.S.



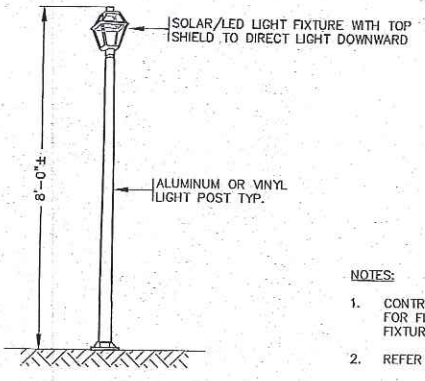
- NOTES:**
1. REFER TO PLAN FOR LOCATIONS.
 2. ALL SEWER WORK SHALL BE DONE IN ACCORDANCE WITH THE TOWN OF WAREHAM SEWER COMMISSIONERS RULES AND REGULATIONS.

STANDARD CLEANOUT
N.T.S.



- NOTES:**
1. REFER TO PLAN FOR LOCATIONS AND DIMENSIONS.

DRIVEWAY DETAIL AT ROADWAY
N.T.S.



- NOTES:**
1. CONTRACTOR TO COORDINATE WITH OWNER FOR FINAL LIGHT POST AND LIGHTING FIXTURE SPECIFICATIONS AND DETAILS.
 2. REFER TO PLAN FOR LOCATIONS.

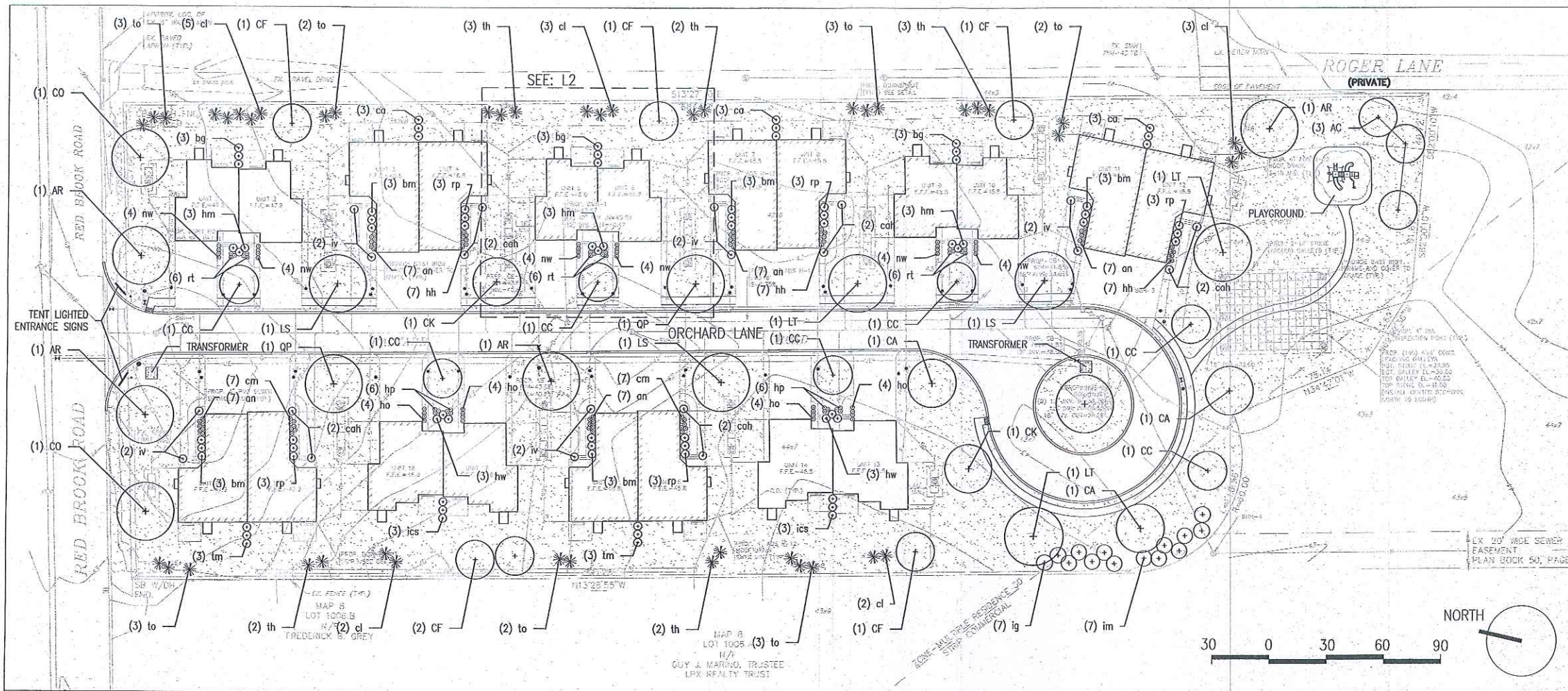
TYPICAL LIGHT POST
N.T.S.

PERMIT SET
(NOT FOR CONSTRUCTION)

NO CHANGES THIS SHEET	NO WATER DEPARTMENT COMMENTS	OWNER & STREET NAME CHANGE	PER 2ND PEER REVIEW LETTER	PER TOWN & PEER REVIEW COMMENTS	DESCRIPTION
NO CHANGES THIS SHEET	NO WATER DEPARTMENT COMMENTS	OWNER & STREET NAME CHANGE	PER 2ND PEER REVIEW LETTER	PER TOWN & PEER REVIEW COMMENTS	DESCRIPTION
DATE: JAN. 12, 2021	DRAWN BY: JWP	CHECKED BY: WFM	JOB NO.: 18-9247	SCALE: N.T.S.	
APPROVED BY:					
<p>G.A.F. ENGINEERING, INC. PROFESSIONAL ENGINEERS & LAND SURVEYORS 266 MAIN STREET - WAREHAM, MA 02571 TEL: (508) 295-8600 FAX: (508) 295-8634 E-MAIL: info@gafenginc.com</p> <p>SETTLER'S GLEN COMPREHENSIVE PERMIT PLAN DETAIL SHEET - 2 WAREHAM, MA RED BROOK ROAD PREPARED FOR: SETTLER'S GLEN, LLC 20 NORTH PARK AVE., SUITE 4 PLYMOUTH, MA</p>					
<p>JOB NO.: 18-9247 DWG. NO. 10 OF 11</p>					

WAREHAM HOUSING PROJECT

WAREHAM, MASSACHUSETTS
SETTLERS GLEN, LLC



PLANT SCHEDULE

MAIN AREA						
KEY	TREES	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	SPACING NOTES
AR	3	ACER RUBRUM 'RED SUNSET'	RED SUNSET MAPLE	3" CAL	-	SPRING DIG ONLY
AC	3	AMELANCHIER CAN. 'AUTUMN BRILLIANCE'	SHADBLOW SERVICEBERRY	12' B&B	-	
CA	3	CARPINUS CAROLINIANA	AMERICAN HORNBEEAM	3" CAL	-	SPRING DIG ONLY
CO	2	CELTIS OCCIDENTALIS	HACKBERRY	3" CAL	-	SPRING DIG ONLY
CC	7	CERCIS CANADENSIS 'MINN. STRAIN'	MINN. STRAIN EASTERN REDBUD	3" CAL	-	
CK	2	CLADRASTIS KENTUCKEA	YELLOWWOOD	3" CAL	-	SPRING DIG ONLY
CF	6	CORNUS FLORIDA 'CHEROKEE CHIEF'	CHEROKEE CHIEF DOGWOOD	3" CAL	-	SPRING DIG ONLY
LS	4	LIDUIDAMBAR STYRACIFLUA 'ROTUNDILOBA'	FRUITLESS SWEETGUM	3" CAL	-	SPRING DIG ONLY
LT	3	LIRIODENDRON TULIPIFERA	TULIPTREE	3" CAL	-	SPRING DIG ONLY
QB	1	QUERCUS BICOLOR	SWAMP WHITE OAK	3" CAL	-	SPRING DIG ONLY
QP	2	QUERCUS PALUSTRIS	PIN OAK	3" CAL	-	
SHRUBS						
KEY		BOTANICAL NAME	COMMON NAME	SIZE	SPACING	NOTES
bg	9	BUXUS X 'GREEN MOUNTAIN'	GREEN MOUNTAIN BOXWOOD	10 gal.	36" ht.	
ca	9	CLETHRA ALNIFOLIA	SWEET PEPPERBUSH	5 gal.	30" ht.	
cl	15	X CUPRESSOCYPARIS LEYLANDII 'MONCAL'	EMERALD ISLE LEYLAND CYPRESS	10 gal.	6-7' ht.	
ics	6	ILEX CRENATA 'SKY PENCIL'	SKY PENCIL HOLLY	10 gal.	42" ht.	
ig	7	ILEX GLABRA 'DENSA'	DENSA INKBERRY	5 gal.	30" ht.	
im	7	ILEX X MESERVAE 'BLUE PRINCESS'	BLUE PRINCESS HOLLY	5 gal.	36" ht.	
th	12	THUJA OCCIDENTALIS 'HETZ WINTERGREEN'	HETZ WINTERGREEN ARBORVITAE	10 gal.	6-7' ht.	
tm	6	TAXUS X MEDIA 'HICKSII'	TAXUS X MEDIA 'HICKSII'	20 gal.	42" ht.	UPRIGHT
to	18	THUJA OCCIDENTALIS 'SMARAGD'	EMERALD GREEN ARBORVITAE	10 gal.	6-7' ht.	

PLANT SCHEDULE

ENTRIES						
KEY	SHRUBS	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	NOTES
bm	15	BUXUS MICROPHYLLA VAR. JAP. 'WINTERGREEN'	WINTERGREEN BOXWOOD	5 gal.	30" w.	
cah	10	CLETHRA ALNIFOLIA 'HUMMINGBIRD'	SWEET PEPPERBUSH	5 gal.	30" ht.	DWARF
hw	6	HYDRANGEA ARBORESCENS 'WEE WHITE'	DWARF SMOOTH HYDRANGEA	5 gal.	24" ht.	
hm	9	HYDRANGEA MACROPHYLLA 'ENDLESS SUMMER'	ENDLESS SUMMER HYDRANGEA	5 gal.	24" ht.	
iv	10	ITEA VIRGINIA 'LITTLE HENRY'	LITTLE HENRY ITEA	5 gal.	30" ht.	
rp	15	RHODODENDRON X 'PURPLE GEM'	PURPLE GEM RHODODENDRON	5 gal.	30" ht.	DWARF
PERNNIALS						
KEY		BOTANICAL NAME	COMMON NAME	SIZE	SPACING	NOTES
an	35	ATHYRIUM NIPONICUM 'PICTUM'	JAPANESE PAINTED FERN	1 gal.	18" o.c.	
cm	14	COREPSIS 'MOONBEAM'	MOONBEAM TICKSEED	1 gal.	18" o.c.	
hh	21	HEMEROCALLIS 'HAPPY RETURNS'	HAPPY RETURNS DAYLILY	1 gal.	18" o.c.	
hp	12	HEUCHERA HYBRID 'PURPLE PALACE'	PURPLE PALACE CORAL BELLS	1 gal.	16" o.c.	
ho	16	HOSTA 'DAYBREAK'	DAYBREAK HOSTA	1 gal.	24" o.c.	
nw	24	NEPETA 'WALKERS LOW'	WALKERS LOW CATMINT	1 gal.	18" o.c.	
rt	18	RUDBECKIA TRILOBA	BROWN EYED SUSAN	1 gal.	18" o.c.	

LEGEND



NO.	REVISION	DATE

kz
Kyle Zick Landscape Architecture, Inc.
36 Broadfield Street Suite 202
Boston, MA 02108
617-451-1619 Tel
www.kyzick.com

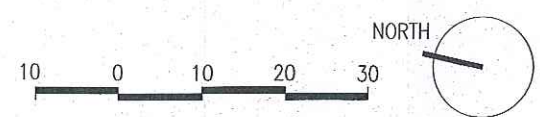
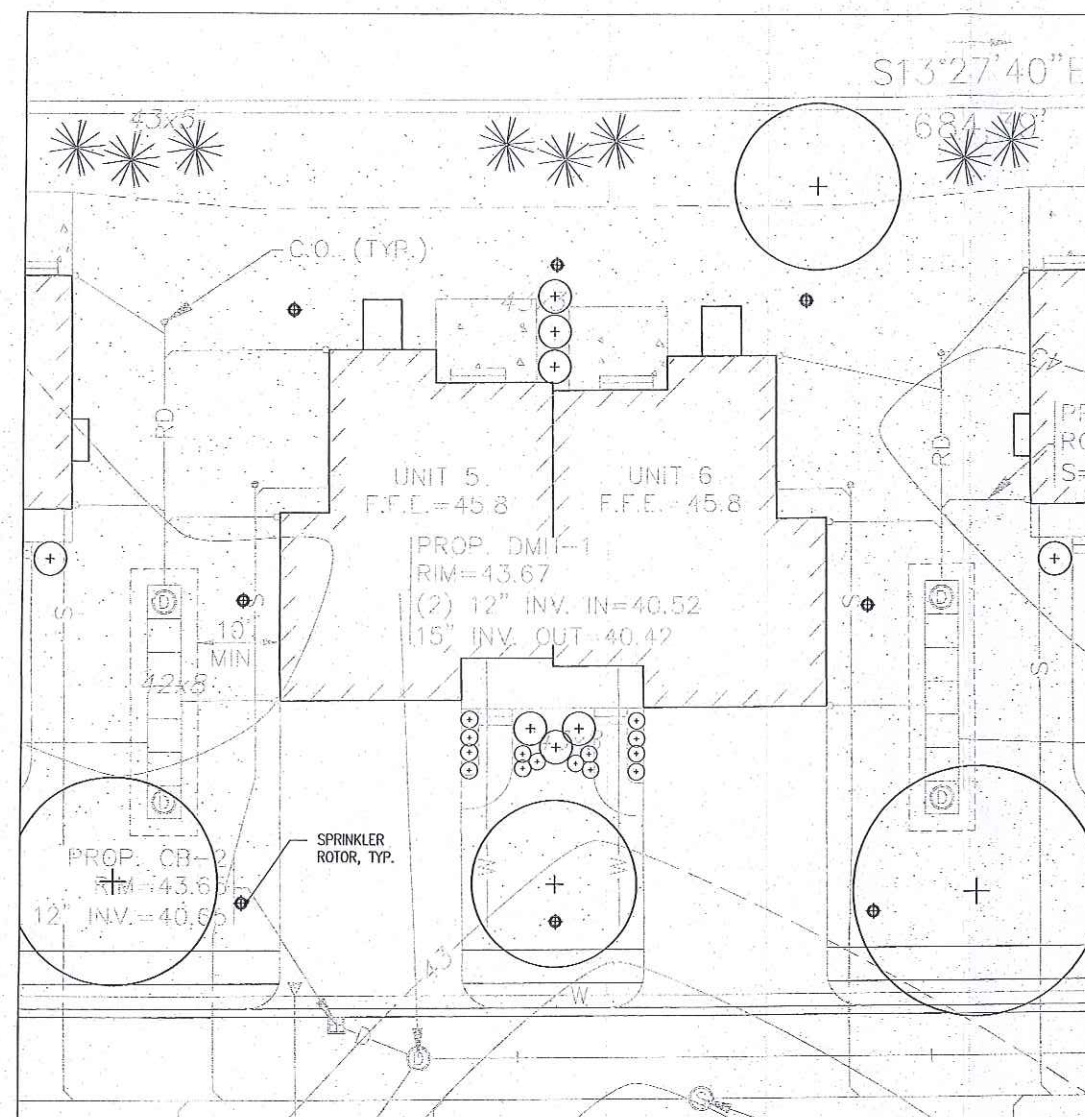
Job Number:
Project:
Drawn By: MD
Checked By: KZ
Date: MAY 5, 2022
Scale: 1" = 30'-0"
Drawing Title:

PLANTING PLAN
PERMIT SET

WAREHAM
HOUSING PROJECT

WAREHAM, MASSACHUSETTS

SETTLERS GLEN, LLC



NOTES:

1. TYPICAL IRRIGATION HEAD LAYOUT TO BE FINALIZED BY OWNER
2. COMMON AREAS TO HAVE DROUGHT RESISTANT PLANTINGS PER OWNER
3. THE IRRIGATION SYSTEM WILL REQUIRE A MINIMUM OF 50 GPM @ 65 PSI WITH AN APPROXIMATE 6 HOUR WATERING WINDOW
4. THE USE IS 16-20 GPM WHEN THE SYSTEM IS RUNNING

NO.	REVISION	DATE

kzla
 Kyle Zick Landscape Architecture, Inc.
 36 Bromfield Street Suite 202 Boston, MA 02108 617 451-1018 Tel www.kyzick.com

Job Number:
 Project:
 Drawn By: MD Checked By: KZ
 Date: MAY 5, 2022
 Scale: 1" = 10'-0"
 Drawing Title:

IRRIGATION
DIAGRAM