

PRELIMINARY MINOR SUBDIVISION

AP 158 LOTS 20 & 25

AND

MASSASOIT AVENUE EXTENSION

IN

BRISTOL, RHODE ISLAND

APPLICANT/OWNER:

NCD DEVELOPERS, INC.

C/O MICHAEL FONSECA

370 METACOM AVENUE

BRISTOL, RI 02809



PREPARED BY:

PRINCIPE COMPANY, INC.

ENGINEERING DIVISION

PO BOX 298
TIVERTON, RHODE ISLAND 02878
401.816.5385
INFO@PRINCIPEENGINEERING.COM
WWW.PRINCIPEENGINEERING.COM

AUGUST 17, 2017

REVISED: 12/12/17

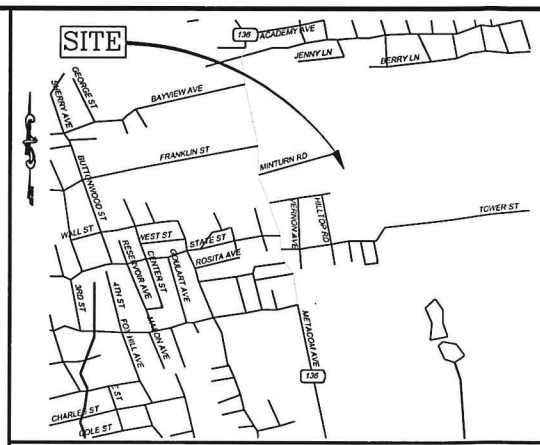
1/3/18

1/19/18

4/9/18

TOWN OF BRISTOL
COMMUNITY DEV.

2018 APR 25 AM 9:45



LOCUS MAP

NOT TO SCALE

LIST OF DRAWINGS

1. COVER SHEET
2. EXISTING SURVEY
3. SITE DEVELOPMENT LAYOUT
4. DRAINAGE AND GRADING
5. ROADWAY PLAN AND PROFILE
6. CONSTRUCTION DETAILS
7. CONSTRUCTION DETAILS
8. CONSTRUCTION DETAILS
9. CONSTRUCTION DETAILS

PLANNING BOARD NOTE:

IN LIEU OF HAVING A DEAD END STREET THE PLANNING BOARD APPROVED THE CONNECTION OF ABILIO DRIVE ON JAN. 11, 2018 FOR SAFETY REASONS. DO TO SITE CONSTRAINTS THE ONE INCH WATER QUALITY RUNOFF HAS BEEN MITIGATED AS REQUESTED BY THE PLANNING BOARD WITH THE USE OF A STONE DRAINAGE INFILTRATION SWALE AND CORRESPONDING CALCULATIONS AS SHOWN ON SHEET 4 OF 9.

SOILS ON THE SITE CONSIST ENTIRELY OF SOIL TYPE CeC - CANTON AND CHARLTON-FINE SANDY LOAMS, VERY ROCKY 3-8% SLOPES

THE SITE IS LOCATED IN ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN) AS SHOWN ON FLOOD INSURANCE RATE MAP COMMUNITY PANEL NUMBER 44001C0014H MAP REVISED ON JULY 7, 2014

REFERENCE:

EXISTING CONDITIONS PLAN MASSASOIT AVENUE EXTENTION ASSESSOR'S PLAT 158, LOTS 20 AND 25 SITUATED AT MASSASOIT AVENUE IN BRISTOL, RHODE ISLAND PREPARED BY STEPHEN M. MURGO SR. DATED DEC. 6th. 2017

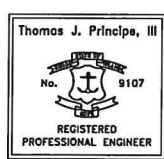
SURVEY & TOPOGRAPHIC PLAN AP 158 LOT 20-28, 53 & 54 MASSASOIT AVENUE BRISTOL, RHODE ISLAND FOR ADRIANO ANDRADE 225 WOOD STREET BRISTOL, RHODE ISLAND 02809 PREPARED BY WATERMAN ENGINEERING DATED APRIL 26, 2005

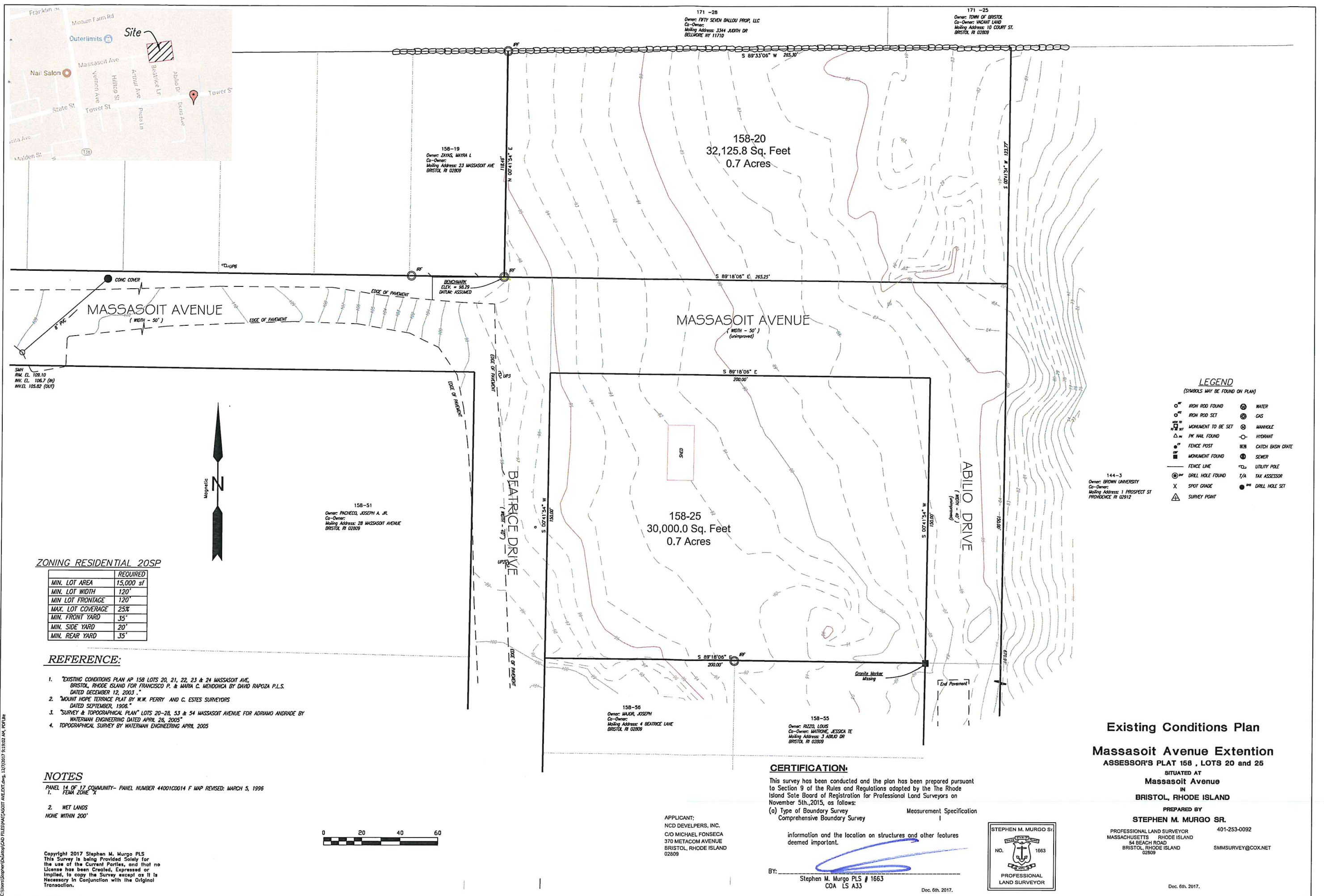
ZONING CRITERIA

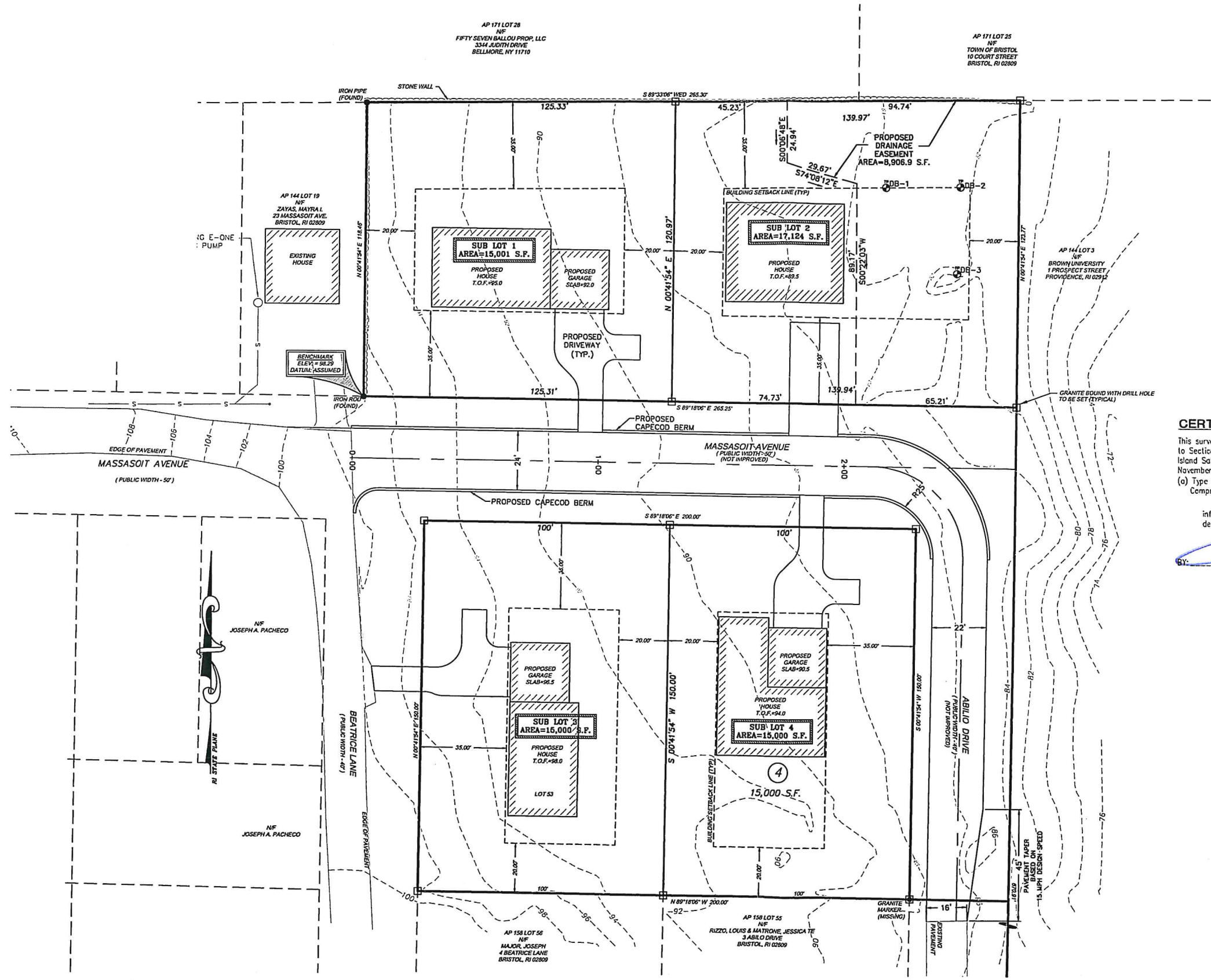
R-20SP ZONING

MINIMUM LOT AREA	15,000 S.F. WITH TOWN SEWER & WATER
MINIMUM LOT WIDTH	120'
MINIMUM LOT FRONTAGE	120'
*MINIMUM FRONT YARD SETBACK	35'
*MINIMUM SIDE YARD SETBACK	20'
*MINIMUM REAR YARD SETBACK	35'
MAXIMUM LOT BUILDING COVERAGE	25%
MAXIMUM BUILDING HEIGHT	35'

Corner lot: A corner lot will have more than one front lot line, all of which shall meet the front yard setback. The yard setback of one of the rear lot lines may be reduced to side yard setback requirements.







- LEGEND & ABBREVIATIONS**
- | | | | |
|---------|----------------------------|-------|---|
| NF | - NOW OR FORMERLY | --- | - PROPERTY LINE |
| A.P. | - ASSESSORS PLAT | - - - | - ZONING SETBACK LINE |
| S.F. | - SQUARE FEET | - - - | - EXISTING CONTOUR |
| AC. | - ACRES | ----- | - STONE WALL |
| ± | - PLUS OR MINUS | ----- | - FENCE |
| STY | - STORY | ----- | - SEWER LINE |
| WF | - WOOD FRAMED | ----- | - DRAIN LINE |
| SH | - STATE HIGHWAY PLAT | ----- | - WATER LINE |
| RET. | - RETAINING WALL | ----- | - GAS LINE |
| PED. | - PEDESTRIAN | ----- | - ELECTRIC LINE |
| (FND.) | - FOUND | ----- | - SANITARY SEWER MANHOLE |
| RHB | - RI HIGHWAY BOUND | ----- | - CATCH BASIN |
| PK NAIL | - MASONRY NAIL | ----- | - STORM DRAIN MANHOLE |
| FE | - FLARED END | ----- | - WATER GATE |
| RCP | - REINFORCED CONCRETE PIPE | ----- | - GAS VALVE |
| CLF | - CHAIN LINK FENCE | ----- | - ELECTRIC MANHOLE |
| INV. | - INVERT | ----- | - CONCRETE BOUND |
| x 10.80 | - SPOT GRADE | ----- | - DRILL HOLE |
| | | ----- | - IRON PIPE |
| | | ----- | - GRANITE BOUND WITH DRILL HOLE TO BE SET |

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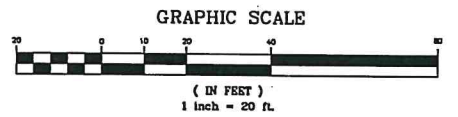
CERTIFICATION:

This survey has been conducted and the plan has been prepared pursuant to Section 9 of the Rules and Regulations adopted by the Rhode Island State Board of Registration for Professional Land Surveyors on November 5th, 2015, as follows:

(a) Type of Boundary Survey
Comprehensive Boundary Survey

information and the location on structures and other features deemed important.

Stephen M. Murgos PLS # 1663
COA LS A33

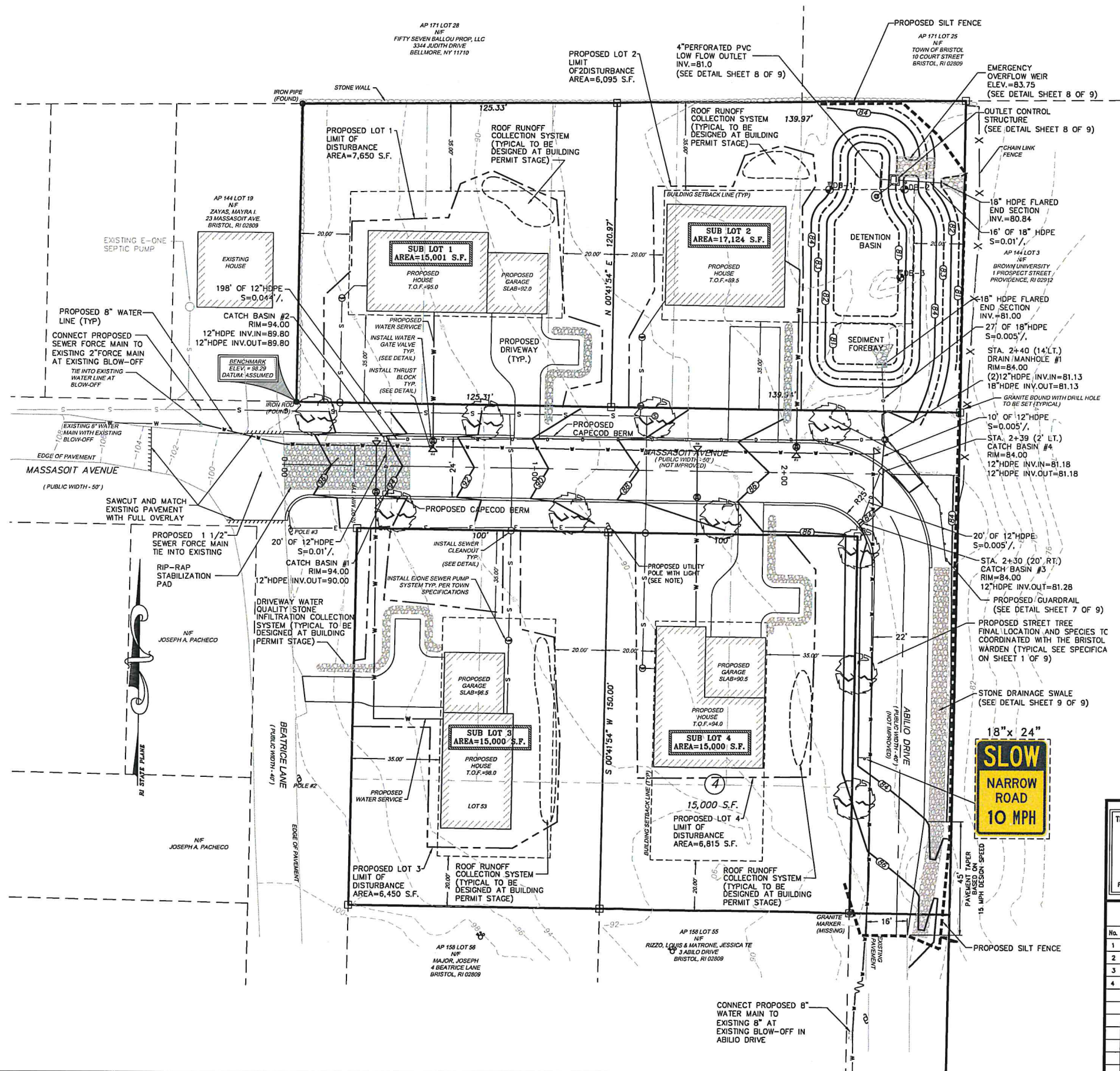


SITE DEVELOPMENT LAYOUT

 PRINCIPE COMPANY, INC. ENGINEERING DIVISION PO BOX 298 TIVERTON, RI 02878 401.816.5385 WWW.PRINCIPEENGINEERING.COM	PRELIMINARY MINOR SUBDIVISION AP 158 LOTS 20 & 25 AND MASSASOIT AVENUE EXTENSION IN BRISTOL, RHODE ISLAND	
	SCALE: 1"=20' SHEET NO: 3 OF 9 DRAWN BY: TJP DESIGN BY: TJP CHECKED BY: TJP DATE: 8/17/17 PROJECT NO.: LDP 17-36	

REVISIONS			
No.	DATE	DRWN	CHKD
1	12/12/17	TJP	TJP
2	1/5/18	TJP	TJP
3	1/19/18	TJP	TJP

APPLICANT/OWNER:
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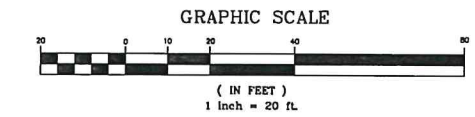
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SOIL TESTING NOTE:
DATE EXCAVATED: 8/22/17
DB-1: LEDGE 24"
DB-2: LEDGE 72" (48" ESHGWT)
DB-3: LEDGE 96" (48" ESHGWT)
(SEE SHEET 7 OF 9)

NOTE: PROPOSED STREET LIGHT TO BE MOUNTED ONTO PROPOSED UTILITY POLE AT HEIGHT AS REQUIRED BY BRISTOL DEPARTMENT OF PUBLIC WORKS. LIGHT FIXTURE TO BE ALL NEW COBRA HEAD STREET LIGHT (24 WATT LED) MANUFACTURED BY LEOTEK, MODEL NUMBER GCJ1-20G-MV-WW-2-GY-350 OR APPROVED EQUAL.

ABILIO DRIVE DRAINAGE CALCULATION:

ABILIO DRIVE PROPOSED SURFACE AREA = 3,996 S.F.
TOTAL VOLUME REQUIRED = 333 CU. FT. (USE 1" OF RUNOFF)
STONE SWALE VOLUME FROM ELEVATION 82.5 TO ELEVATION 83.5 = 382 CU. FT.



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DRAINAGE AND UTILITIES

Thomas J. Principe, III
No. 9107
REGISTERED PROFESSIONAL ENGINEER

PRINCIPLE COMPANY, INC.
ENGINEERING DIVISION
PO BOX 298
TIVERTON, RI 02878
401.816.5385
WWW.PRINCIPLEENGINEERING.COM

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PRELIMINARY MINOR SUBDIVISION
AP 158 LOTS 20 & 25
AND
MASSASOIT AVENUE EXTENSION
IN
BRISTOL, RHODE ISLAND

SCALE: 1"=20'

SHEET NO: 4 OF 9

DRAWN BY: TJP DESIGN BY: TJP CHECKED BY: TJP

DATE: 8/17/17 PROJECT NO.: LDP 17-36

GENERAL NOTES:

1. THE STATE OF RHODE ISLAND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2004 EDITION, AND THE RHODE ISLAND STANDARD DETAILS ARE MADE A PART HEREOF AS FULLY AND COMPLETELY AS IF ATTACHED HERETO. THE 2004 STANDARD SPECIFICATIONS MAY BE OBTAINED AT THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION WEB PAGE. THESE SPECIFICATIONS ARE MADE A PART HEREOF AS FULLY AND COMPLETELY AS IF ATTACHED HERETO.
2. ALL REQUIRED SITE IMPROVEMENTS SHALL BE INSPECTED BY THE TOWN ENGINEER TO ENSURE SATISFACTORY COMPLETION. IN NO CASE SHALL THE INSTALLATION OF ANY IMPROVEMENTS BE STARTED UNTIL PRIOR NOTIFICATION IS GIVEN TO THE TOWN ENGINEER. AT LEAST A 48-HOUR NOTICE SHALL BE GIVEN TO THE TOWN ENGINEER PRIOR TO ANY SUCH START OF CONSTRUCTION. A FINAL INSPECTION OF ALL SITE IMPROVEMENTS, UTILITIES AND GRADING WILL BE MADE TO DETERMINE WHETHER THE WORK IS SATISFACTORY AND IN SUBSTANTIAL AGREEMENT WITH THE APPROVED FINAL CONSTRUCTION DRAWING AND THE TOWN SPECIFICATIONS.
3. LOCATION AND DEPTH OF EXISTING UTILITIES ARE APPROXIMATE AND HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL CHECK AND VERIFY LOCATIONS OF ALL EXISTING UTILITIES BOTH UNDERGROUND AND OVERHEAD. ANY DAMAGE TO EXISTING UTILITIES AS SHOWN OR NOT SHOWN ON THE PLANS SHALL BE THE CONTRACTOR'S RESPONSIBILITY. COSTS OF SUCH DAMAGE SHALL BE BORNE BY THE CONTRACTOR. NO EXCAVATION SHALL BE DONE UNTIL ALL INVOLVED UTILITY COMPANIES ARE NOTIFIED 48-HOURS IN ADVANCE. THE CONTRACTOR SHALL BE RESPONSIBLE TO NOTIFY DIG-SAFE (1-800-344-7233) A MINIMUM OF 48 WORKING HOURS, EXCLUDING WEEKENDS AND HOLIDAYS, PRIOR TO THE START OF ANY EXCAVATION AND/OR BLASTING WORK. THE NAME OF THE COMPANY PERFORMING THE EXCAVATION AND/OR BLASTING WORK MUST BE SUPPLIED TO DIG-SAFE, IF IT IS DIFFERENT FROM THE CALLER.
4. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO OBTAIN ANY AND ALL PERMITS REQUIRED BY, BUT NOT LIMITED TO, THE STATE OF RHODE ISLAND, THE FEDERAL GOVERNMENT, THE TOWN OF BRISTOL AND ALL INDIVIDUAL UTILITY COMPANIES PRIOR TO COMMENCING ANY WORK.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL TEMPORARY SEDIMENTATION AND EROSION CONTROLS.
6. THE INSTALLATION OF THE WATER UTILITY IMPROVEMENTS SHALL CONFORM TO THE REQUIREMENTS OF THE BRISTOL COUNTY WATER DEPARTMENT AND THE AMERICAN WATER WORKS STANDARDS.
7. ALL MATERIAL FOR FILL SHALL BE CLEAN AND FREE OF MATTER WHICH COULD POLLUTE ANY DOWN STREAM WATERCOURSE.
8. VERTICAL DATUM: MEAN SEA LEVEL (NGVD 29).
9. FILL MATERIAL SHALL BE COMPACTED IN ONE FOOT (MAXIMUM) LIFTS TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED IN ACCORDANCE WITH ASTM D-1557 (MODIFIED PROCTOR TEST).

STORM DRAINAGE SYSTEM MAINTENANCE PLAN:

THE FOLLOWING LIST OF MAINTENANCE TASKS AND FREQUENCIES MUST BE ADHERED TO IN ORDER TO INSURE A SUCCESSFUL LONG TERM OPERATION OF THE STORM DRAINAGE SYSTEM.

1. DURING CONSTRUCTION ACTIVITIES ALL EROSION CONTROLS ON THE SITE SHALL BE INSPECTED AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN TWENTY FOUR (24) HOURS AFTER AN EVENT WHICH GENERATES AT LEAST 0.25 INCHES OF RAIN IN A TWENTY FOUR (24) HOUR PERIOD.
2. SEDIMENTS SHALL BE REMOVED FROM THE ALL BASINS IMMEDIATELY AFTER SITE STABILIZATION.
3. ALL TRASH, LITTER AND OTHER DEBRIS SHALL BE REMOVED FROM ALL STORM WATER INLET AND OUTLET STRUCTURES A MINIMUM OF TWICE PER YEAR. THESE STRUCTURES SHALL ALSO BE INSPECTED TWICE PER YEAR. INSPECTIONS SHALL BE PERFORMED SEVERAL TIMES WITHIN THE FIRST SIX MONTHS OF OPERATION.
4. INSPECTIONS OF ALL CATCH BASINS SHALL OCCUR ON AN ANNUAL BASIS TO CHECK FOR DEBRIS REMOVAL (SEDIMENT AND HYDROCARBONS) AND STRUCTURAL INTEGRITY OR DAMAGE. SUCH DEFICIENCIES SHALL BE CORRECTED IMMEDIATELY.
5. REPAIRS OR REPLACEMENT OF INLET/OUTLET STRUCTURES OR ANY ELEMENT OF THE FACILITY SHALL BE DONE WITHIN THIRTY (30) DAYS OF DEFICIENCY REPORTS. IF AN EMERGENCY SITUATION IS IMMINENT THEN REPAIR/REPLACEMENT SHALL BE DONE IMMEDIATELY TO AVERT FAILURE OR DANGER TO NEARBY RESIDENTS.
6. MAKE REPAIRS IMMEDIATELY USING APPROPRIATE STONE SIZES. DO NOT PLACE STONES ABOVE FINISHED GRADE.
7. ALL REMOVED SEDIMENTS AND DEBRIS SHALL BE DISPOSED OF OFF SITE IN IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS.
8. ALL OUTLET STRUCTURES AND OUTFLOW CHANNELS WILL BE INSPECTED ANNUALLY. INSPECTIONS WILL BE ACCOMPLISHED SEVERAL TIMES DURING THE FIRST SIX MONTHS OF OPERATION, ESPECIALLY AFTER RAINFALL EVENTS TO CHECK FOR CLOGGING OR, CONVERSELY, TOO RAPID OF A RELEASE.
9. REPAIRS OR REPLACEMENT OF INLET/OUTLET STRUCTURES, RIP-RAP CHANNELS, FENCES, OR OTHER ELEMENTS OF THE FACILITY WILL BE DONE WITHIN 30 DAYS OF DEFICIENCY REPORTS. IF AN EMERGENCY SITUATION IS IMMINENT THEN REPAIR/REPLACEMENT MUST BE DONE IMMEDIATELY TO AVERT FAILURE OR DANGER TO NEARBY RESIDENTS.
10. ALL SEDIMENT GENERATED DURING CONSTRUCTION AND AS A RESULT OF MAINTENANCE OF THE DRAINAGE SYSTEM MUST BE DISPOSED OF PROPERLY. SEDIMENT SHALL NOT BE DISPOSED OF IN OR NEAR STATE OR FEDERAL REGULATED WATERS.
11. RECORDS OF THE FIRST TWO YEARS OF MAINTENANCE FOLLOWING CONSTRUCTION SHALL BE SUBMITTED TO RIDEM DIVISION OF WATER RESOURCES. MAINTENANCE RECORDS FOR SUBSEQUENT YEARS SHALL BE KEPT ON FILE AND SUBMITTED TO RIDEM, DIVISION OF WATER RESOURCES, UPON REQUEST.
12. Grasses shall be planted around and within the detention basin immediately following construction to stabilize slopes and prevent erosion. Trees and shrubs are not to be planted on basin slopes.
13. All drainage structures are to be inspected at least three times in the first six months of operation. Evidence of clogging or rapid release of flow shall be remedied immediately.
14. Side slopes, embankments, and the upper stages of all detention basins are to be mowed at least three times per growing season, to prevent unwanted growth, and to maintain the capacity and integrity of the facilities. Mowing should include the removal of woody growth, which may compromise the integrity of the basin slopes.

15. The grossed areas of all basins are to be inspected at least twice a year to check for erosion problems. Areas subject to erosion problems shall be re-seeded immediately to stabilize any exposed soils. Where pools of stagnant water are observed in a detention basin, the deficiency shall be corrected immediately. This will prevent the formation of a nuisance habitat for insects.
16. Trash, litter and other debris are to be removed from all stormwater facilities at least twice a year to prevent blockage of inlet and outlet structures, and hence failure of the structure. Where the amounts of debris found are large, a careful inspection of all adjacent inlet and outlet structures shall be undertaken to identify any damage that may have occurred. Litter shall be removed from the detention basin prior to mowing operations.
17. If a blockage occurs to a basin outlet, it may necessary to drain the basin in order to effect a repair. All water that is drained from the basin shall be adequately filtered to remove suspended solids prior to discharge to a receiving body.
18. All catch basins shall be inspected at least twice a year for debris and the presence of potential pollutants. Catch basins and manholes shall be inspected twice a year for structural integrity.
19. Maintenance of the stormwater system during the construction process shall be the responsibility of the contractor.
20. On completion of construction maintenance of the stormwater system shall become the responsibility of the Town of Bristol.

EROSION CONTROL AND SOIL STABILIZATION PROGRAM:

1. DENUDED SLOPES SHALL NOT BE LEFT EXPOSED FOR EXCESSIVE PERIODS OF TIME, SUCH AS THE INACTIVE WINTER SEASONS.
2. TEMPORARY TREATMENTS SHALL CONSIST OF A HAY, STRAW, FIBER MULCH OR PROTECTIVE COVERS SUCH AS A MAT OR FIBER LINING (BURLAP, JUTE, FIBERGLASS NETTING, EXCELSIOR BLANKETS). THEY SHALL BE INCORPORATED INTO THE WORK AS WARRANTED OR AS ORDERED BY THE ENGINEER.
3. HAY OR STRAW APPLICATIONS SHOULD BE IN THE AMOUNT OF 2000 LBS/ACRE.
4. ALL HAY BALES OR TEMPORARY PROTECTION SHALL REMAIN IN-PLACE UNTIL AN ACCEPTABLE STAND OF GRASS OR APPROVED GROUND COVER IS ESTABLISHED.
5. THE TOPSOIL SHALL HAVE A SANDY LOAM TEXTURE RELATIVELY FREE OF SUBSOIL MATERIAL, STONES, ROOTS, LUMPS OF SOIL, TREE LIMBS, TRASH OR CONSTRUCTION DEBRIS AND SHALL CONFORM WITH RHODE ISLAND STANDARD SPECIFICATION M.20.01.
6. THE SEED MIX SHALL BE INOCULATED WITHIN 24-HOURS BEFORE MIXING AND PLANTING, WITH APPROPRIATE INOCULUM FOR EACH VARIETY.
7. THE DESIGN MIX UTILIZED IN ALL DISTURBED AREAS TO BE SEEDING SHALL BE COMPRISED OF THE FOLLOWING:

TYPE	% BY WEIGHT	SEEDING DATE
CREEPING RED FESCUE	70	APRIL 1 - JUNE 15
ASTORIA BENTGRASS	5	AUGUST 15 - OCTOBER
BIRDFOOT TREEFOIL	15	
PERENNIAL RYEGRASS	10	
8. THE CONTRACTOR MUST REPAIR AND/OR RESEED ANY AREAS THAT DO NOT DEVELOP WITHIN THE PERIOD OF ONE YEAR, AND SHALL DO SO AT NO ADDITIONAL EXPENSE.
9. THE NORMAL ACCEPTABLE SEASONAL SEEDING DATES ARE APRIL 1ST THROUGH OCTOBER 15TH.
10. STABILIZATION OF ONE FORM OR ANOTHER AS DESCRIBED ABOVE SHALL BE ACHIEVED WITHIN FIFTEEN (15) DAYS OF FINAL GRADING.
11. STOCKPILES OF TOPSOIL AND EARTH MATERIALS SHALL NOT BE LOCATED NEAR WATERWAYS. THEY SHALL HAVE SIDE SLOPES NO GREATER THAN THIRTY PERCENT (30%) AND STOCKPILE SHALL ALSO BE SEED AND/OR STABILIZED.
12. ON BOTH STEEP AND LONG SLOPES, CONSIDERATION SHOULD BE GIVEN TO "CRIMPING" OR "TRACKING" TO TACK DOWN MULCH APPLICATIONS.
13. TREES TO BE RETAINED SHALL BE FENCED OR ROPED OFF TO PROTECT THEM FROM CONSTRUCTION EQUIPMENT.
14. ALL PROPOSED PLANTINGS MUST BE ACCOMPLISHED AS EARLY AS POSSIBLE UPON COMPLETION OF GRADING AND CONSTRUCTION, AND AT LEAST PRIOR TO ANY ON-SITE OCCUPANCY.
15. ALL PROPOSED PLANTINGS MUST BE MAINTAINED BY THE PROPERTY OWNER TO ENSURE SURVIVAL.
16. SHOULD ANY OR ALL OF THE PROPOSED PLANTS FAIL TO SURVIVE AT LEAST ONE (1) FULL GROWING SEASON FROM THE TIME THEY HAVE BEEN PLANTED, THE OWNER SHALL BE FULLY RESPONSIBLE FOR REPLACING AND MAINTAINING THE SAME PLANT SPECIES FOR ONE (1) ADDITIONAL GROWING SEASON.
17. ALL DISTURBED AREAS MUST BE SEED OR PLANTED WITHIN THE CONSTRUCTION SEASON.
18. TEMPORARY SEEDING MUST BE DONE WITHIN ONE (1) MONTH AFTER DISTURBANCE.
19. ALL DISTURBED AREAS MUST BE PERMANENTLY SEED OR PLANTED BEFORE OCTOBER 1ST, IF NOT THEY MUST BE TEMPORARILY SEED.

MAINTENANCE RESPONSIBILITY

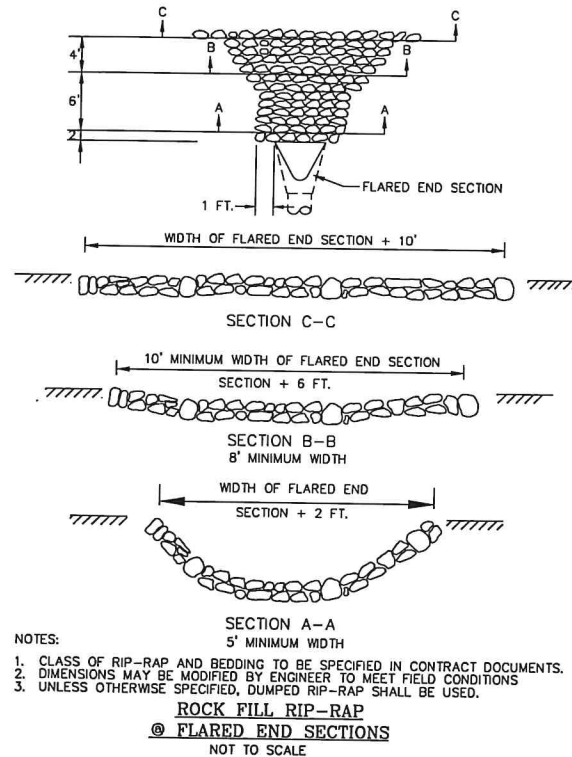
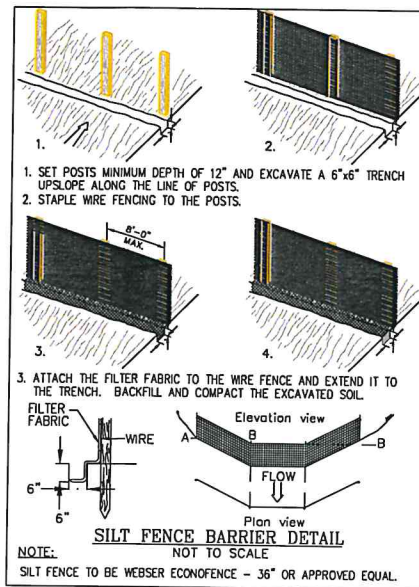
THE APPLICANT IS RESPONSIBLE FOR THE MAINTENANCE OF ALL DRAINAGE STRUCTURES.

SEDIMENTATION CONTROL PROGRAM:

1. EXTREME CARE SHALL BE EXERCISED SO AS TO PREVENT ANY UNSUITABLE MATERIAL FROM ENTERING DOWNSIDE DRAINAGE COURSES AND STORMWATER DRAINAGE SYSTEMS.
2. DURING CONSTRUCTION, THE CONTRACTOR AND/OR DEVELOPER SHALL BE RESPONSIBLE FOR MAINTAINING DRAINAGE AND RUN-OFF FLOW DURING STORMS AND PERIODS OF
3. SEDIMENTATION CONTROL DEVICES SHALL BE INSPECTED CLOSELY AND MAINTAINED PROMPTLY AFTER EACH RAINFALL. 4. CARE SHALL BE TAKEN SO AS NOT TO PLACE "REMOVED SEDIMENTS" WITHIN THE PATH OF EXISTING, NEWLY CREATED (BOTH TEMPORARY AND PERMANENT) OR PROPOSED WATERCOURSES OR THOSE AREAS SUBJECTED TO STORMWATER FLOWAGE.
5. ADDITIONAL HAYBALES OR SANDBAGS SHALL BE LOCATED AS CONDITIONS WARRANT OR AS DIRECTED BY THE ENGINEER.
6. SEDIMENTATION TRAPS SHALL BE PROVIDED AT ALL DRAINAGE STRUCTURES DURING CONSTRUCTION.
7. EROSION AND SEDIMENTATION CONTROLS SHALL BE INSTALLED AT THE SITE PRIOR TO THE START OF CONSTRUCTION AND BE PROPERLY MAINTAINED UNTIL ALL DISTURBED AREAS ARE STABILIZED INCLUDING:
 - A) THE INSTALLATION OF A CONTINUOUS LINE OF STAKED HAYBALES IN ALL LOCATIONS SHOWN ON THE APPROVED SITE PLANS AND WHERE OTHERWISE NECESSARY TO PREVENT SEDIMENTS FROM ENTERING DOWNSIDE WATERCOURSES AND STORMWATER DRAINAGE SYSTEMS.
 - B) ALL DISTURBED AREAS ARE TO BE PERMANENTLY STABILIZED WITH APPROVED GROUND COVER PRIOR TO THE COMPLETION OF THE PROJECT. AREAS EXPOSED FOR EXTENDED TIME PERIODS ARE TO BE COMPLETELY COVERED WITH SPREAD HAY MULCH.
 - C) CATCH BASINS WILL BE PROTECTED WITH HAYBALE FILTERS THROUGHOUT THE CONSTRUCTION PERIOD AND UNTIL ALL DISTURBED AREAS ARE THOROUGHLY STABILIZED. PUMPS ARE TO BE CLEANED IMMEDIATELY FOLLOWING INSTALLATION OF PERMANENT PAVEMENT.
 - D) OUTFALLS ARE TO BE PROTECTED BY HAYBALE FILTERS UNTIL DISTURBED AREAS ARE PERMANENTLY STABILIZED WITH APPROVED GROUND COVER.
 - E) ALL CONTROL MEASURES WILL BE MAINTAINED IN EFFECTIVE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD.
8. THE LIMITS OF ALL CLEARING, GRADING AND DISTURBANCE SHALL BE KEPT TO A MINIMUM WITHIN THE PROPOSED AREA OF CONSTRUCTION. ALL AREAS OUTSIDE OF THE LIMITS OF DISTURBANCE SHALL REMAIN TOTALLY UNDISTURBED.
9. UPON COMPLETION OF CONSTRUCTION OF SITE IMPROVEMENTS AND THE STORMWATER DRAINAGE SYSTEM, ALL CATCH BASINS AND STORM DRAIN PIPING SHALL BE CLEANED OF SEDIMENT. DETENTION BASINS SHALL BE CLEANED OF SEDIMENT TO THE DESIGN GRADES INDICATED.
10. AT NO TIME DURING CONSTRUCTION SHALL THE SUBGRADE OF THE SITE BE SUCH THAT SURFACE RUNOFF WILL BE PERMITTED TO DIRECTLY ENTER ANY DRAINAGE STRUCTURE. A TEMPORARY DEPRESSED AREA AROUND THE STRUCTURE SHALL BE INCORPORATED AS A SEDIMENTATION TRAP. THE MOUTH OF THE TRAP SHALL BE LINED WITH HAYBALES AROUND THE COMPLETE PERIMETER. DURING ALL PRELIMINARY STAGES, THE TOP OF THE STRUCTURE SHALL ALWAYS BE HIGHER THAN THE SUBGRADE.
11. HAYBALE EROSION CHECKS SHALL BE MAINTAINED AROUND ALL CATCH BASINS UNTIL ALL UPGRADIENT DISTURBED AREAS ARE STABILIZED BY PAVEMENT OR VEGETATION.
12. ALL COMPONENTS OF THE DRAINAGE SYSTEM MUST BE CLEANED OF SEDIMENT BY THE APPLICANT OR HIS REPRESENTATIVE IMMEDIATELY AFTER CONSTRUCTION IS COMPLETED.
13. INSPECT TEMPORARY DIVERSIONS AND THEIR COMPONENTS ONCE A WEEK AND AFTER EVERY RAINFALL. DAMAGE CAUSED BY CONSTRUCTION TRAFFIC OR OTHER ACTIVITY SHOULD BE REPAIRED BEFORE THE END OF EACH WORKING DAY. A SEDIMENTATION TRAP. THE MOUTH OF THE TRAP SHALL BE LINED WITH HAYBALES AROUND THE COMPLETE PERIMETER. DURING ALL PRELIMINARY STAGES, THE TOP OF THE STRUCTURE SHALL ALWAYS BE HIGHER THAN THE SUBGRADE.
14. CHECK DAMS SHALL BE INSTALLED EVERY 300 FEET FOR SLOPES OF 1% OR LESS, EVERY 200 FEET FOR SLOPES OF 2%, EVERY 150 FEET FOR SLOPES OF 3% TO 5%, AND EVERY 100 FEET FOR SLOPES OF 5% OR GREATER.
15. SEDIMENTS SHOULD BE REMOVED FROM THE CHECK DAM WHEN IT REACHES ONE-HALF THE DAM HEIGHT.

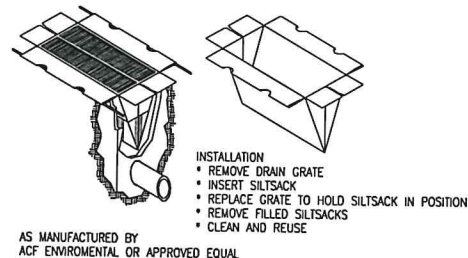
CATCH BASIN AND WATER QUALITY INLET TANK SEDIMENTATION CONTROL AND MAINTENANCE:

1. AT NO TIME DURING CONSTRUCTION SHALL THE SUBGRADE OF THE SITE BE SUCH THAT SURFACE RUNOFF WILL BE PERMITTED TO DIRECTLY ENTER ANY DRAINAGE STRUCTURE. A TEMPORARY DEPRESSED AREA AROUND THE STRUCTURE SHALL BE INCORPORATED AS A SEDIMENTATION TRAP. THE MOUTH OF THE TRAP SHALL BE LINED WITH STRAW BALES AROUND THE COMPLETE PERIMETER. DURING ALL PRELIMINARY STAGES, THE TOP OF THE STRUCTURE SHALL ALWAYS BE HIGHER THAN THE SUBGRADE.
2. STRAW BALE EROSION CHECKS SHALL BE MAINTAINED AROUND ALL STRUCTURES UNTIL ALL UPGRADIENT DISTURBED AREAS ARE STABILIZED BY VEGETATION.
3. ALL COMPONENTS OF THE DRAINAGE SYSTEM MUST BE CLEANED OF SEDIMENT BY THE APPLICANT OR HIS REPRESENTATIVE IMMEDIATELY AFTER CONSTRUCTION IS COMPLETED.

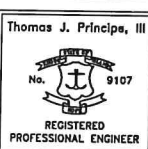


RIP-RAP TABLE

MO2.02.4	=	8"	-	95	/	100%
		4"	-	0	/	25%
		2 1/2"	-	0	/	5%



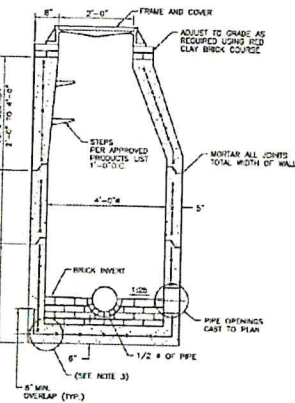
CONSTRUCTION DETAILS-1

 PRINCIPE COMPANY, INC. ENGINEERING DIVISION PO BOX 298 TIVERTON, RI 02878 401.816.5385 WWW.PRINCIPEENGINEERING.COM		
PRELIMINARY MINOR SUBDIVISION AP 158 LOTS 20 & 25 AND MASSASOIT AVENUE EXTENSION IN BRISTOL, RHODE ISLAND		
SCALE: AS NOTED	SHEET NO: 6 OF 9	
DRAWN BY: TJP	DESIGN BY: TJP	CHECKED BY: TJP
DATE: 8/17/17	PROJECT NO.: LDP 17-36	

APPLICANT/OWNER:

NCD DEVELOPERS, INC.
C/O MICHAEL FONSECA
370 METACOM AVENUE
BRISTOL, RI 02809

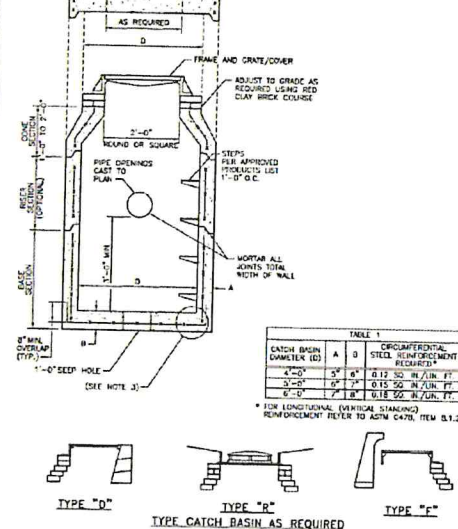
ALTERNATE TOP LOADING (SEE NOTES 7 AND 8)



- NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
 2. SET TABLE 1 FOR STEEL REINFORCEMENT REQUIREMENTS.
 3. CIRCUMFERENTIAL STEEL REINFORCEMENT REQUIRED - 0.12 SQ. IN. PER LINEAL FT. (BOTH WAYS).
 4. STEEL REINFORCEMENT FOR BASE SECTION (BOTTOM) SHALL BE A MINIMUM OF 0.12 SQ. IN. PER LINEAL FT. (BOTH WAYS).
 5. ONE FOUR MONOLITHIC BASE SECTION.
 6. ANY NECESSARY ADJUSTMENTS DURING CONSTRUCTION WILL BE DONE BY SAW-CUTTING AND/OR CORING ONLY. NO JACKHAMMERS, HAMMERS AND CHISELS OR PNEUMATIC TOOLS WILL BE ALLOWED.
 7. STEPS SHALL CONFORM TO STD. 5.2.2 AND SHALL BE INSTALLED AT THE CASTING PLANT.
 8. ALTERNATE TOP SLAB IS STEEL REINFORCED TO MEET OR EXCEED H-25 LOADING (SEE STD. 4.7.2).
 9. ALTERNATE TOP SLAB IS ONLY FOR USE WHEN PRELIMINARY SECTION DOES NOT FIT BECAUSE OF STRUCTURE DEPTH.
 10. REFER TO STD. 5.2.2 FOR MAXIMUM PIPE SIZES.

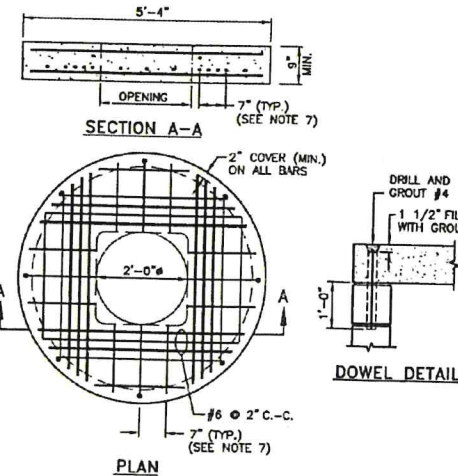
RHODE ISLAND DEPARTMENT OF TRANSPORTATION
PRECAST 4'-0" ROUND MANHOLE
JUNE 15, 1998
R.I. STANDARD 4.2.0

ALTERNATE TOP SLAB (SEE NOTES 10 AND 11)



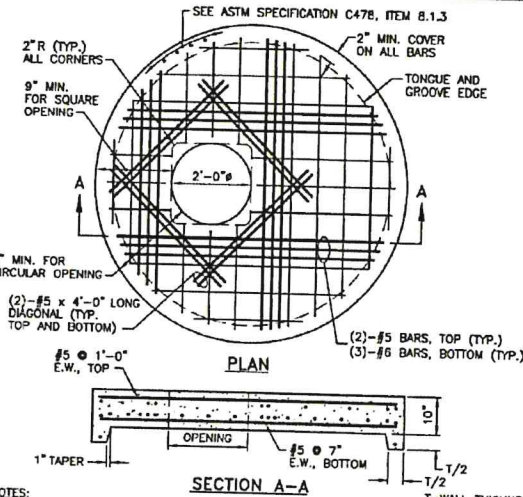
- NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
 2. SET TABLE 1 FOR STEEL REINFORCEMENT REQUIREMENTS.
 3. CIRCUMFERENTIAL STEEL REINFORCEMENT REQUIRED - 0.12 SQ. IN. PER LINEAL FT. (BOTH WAYS).
 4. STEEL REINFORCEMENT FOR BASE SECTION (BOTTOM) SHALL BE A MINIMUM OF 0.12 SQ. IN. PER LINEAL FT. (BOTH WAYS).
 5. ONE FOUR MONOLITHIC BASE SECTION.
 6. ANY NECESSARY ADJUSTMENTS DURING CONSTRUCTION WILL BE DONE BY SAW-CUTTING AND/OR CORING ONLY. NO JACKHAMMERS, HAMMERS AND CHISELS OR PNEUMATIC TOOLS WILL BE ALLOWED.
 7. STEPS SHALL CONFORM TO STD. 5.2.2 AND SHALL BE INSTALLED AT THE CASTING PLANT.
 8. ALTERNATE TOP SLAB IS STEEL REINFORCED TO MEET OR EXCEED H-25 LOADING (SEE STD. 4.7.2).
 9. ALTERNATE TOP SLAB IS ONLY FOR USE WHEN PRELIMINARY SECTION DOES NOT FIT BECAUSE OF STRUCTURE DEPTH.
 10. REFER TO STD. 5.2.2 FOR MAXIMUM PIPE SIZES.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
PRECAST 4'-0", 5'-0", OR 6'-0" ROUND CATCH BASIN
JUNE 15, 1998
R.I. STANDARD 4.4.0



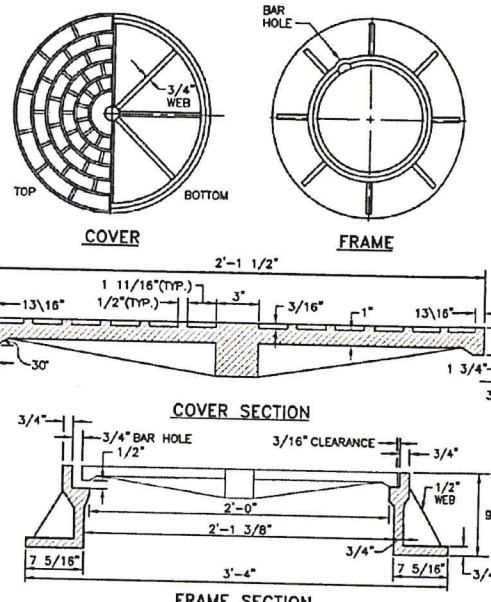
- NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
 2. THE CENTERLINE OF THE OPENING MUST BE WITHIN 2'-0" FROM THE STEPS.
 3. TOP SLAB HAS BEEN REINFORCED TO MEET OR EXCEED H-25 OR HS-25 LOADINGS WITH EARTH PRESSURES INCLUDED. THIS IMPLIES THAT THE TOP SLAB IS DESIGNED FOR AXLE LOADS OF NO MORE THAN 20 TONS.
 4. ALL REBARS ARE TO HAVE A MINIMUM 2" CLEARANCE FROM OPENING.
 5. PRECAST SECTION SHALL BE LIFTED USING APPROVED LIFTING LUGS LOCATED SUCH THAT NO DAMAGE TO THE SLAB OCCURS.
 6. DOWEL HOLES IN COVER TO BE FORMED OR CORED BY THE FABRICATOR.
 7. ALL REBARS IN THE BOTTOM MAT ARE #5 @ 7" BOTH WAYS, WITH 2" MINIMUM COVER, EXCEPT FOR REBARS ADJACENT TO THE OPENING. THESE REBARS SHALL BE #6 (SHOWN WITH HEAVIER LINE FOR CLARITY). REBARS IN THE TOP MAT ARE #6 BARS PLACED ADJACENT TO THE OPENING, BOTH WAYS, WITH 2" MINIMUM COVER.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
CONCRETE COVER FOR SHALLOW 4'-0" ROUND MANHOLES
JUNE 15, 1998
R.I. STANDARD 4.6.0



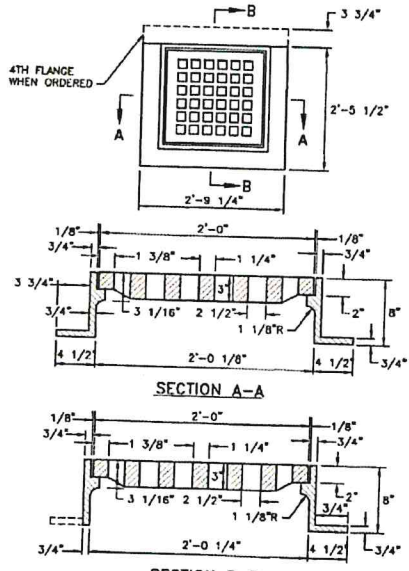
- NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
 2. ANY NECESSARY ADJUSTMENTS DURING CONSTRUCTION WILL BE DONE BY SAW-CUTTING AND/OR CORING ONLY. NO JACKHAMMERS, HAMMERS AND CHISELS OR PNEUMATIC TOOLS WILL BE ALLOWED.
 3. THE CENTER LINE OF THE OPENING MUST BE WITHIN 2" FROM THE STEPS.
 4. ALTERNATE TOP COVER IS STEEL REINFORCED TO MEET OR EXCEED H-25 OR HS-25 LOADINGS WITH EARTH PRESSURES INCLUDED. THIS IMPLIES THAT THE TOP SLAB IS DESIGNED FOR AXLE LOADS OF NO MORE THAN 20 TONS.
 5. ALL REBAR SHALL HAVE A MINIMUM OF 2" CLEARANCE FROM OPENING.
 6. ALL REBARS IN THE BOTTOM MAT ARE #5 @ 2" BOTH WAYS, WITH 2" MINIMUM COVER, EXCEPT FOR REBARS ADJACENT TO THE OPENING. THESE REBARS SHALL BE (3)-#6 SHOWN WITH A HEAVIER LINE FOR CLARITY. REBARS IN THE TOP MAT ARE #5 @ 1'-0" BOTH WAYS, WITH 2" MINIMUM COVER, EXCEPT FOR REBARS ADJACENT TO THE OPENING. THESE BARS SHALL BE (2)-#5 BARS.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
ALTERNATE TOP COVER FOR ROUND PRECAST MANHOLES AND CATCH BASINS
JUNE 15, 1998
R.I. STANDARD 4.7.2

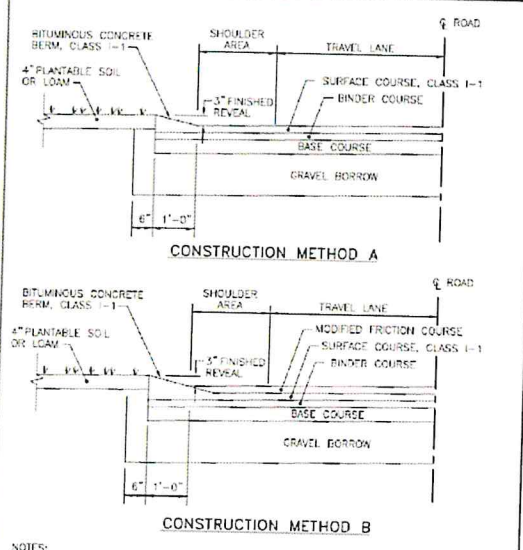


- NOTES:
1. FRAME AND GRATE SHALL CONFORM TO SECTION M.04 OF THE R.I. STANDARD SPECIFICATIONS.
 2. FRAME AND COVER SEATS MUST HAVE MACHINE FINISH.

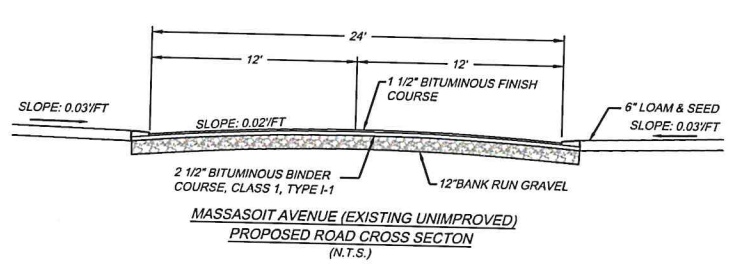
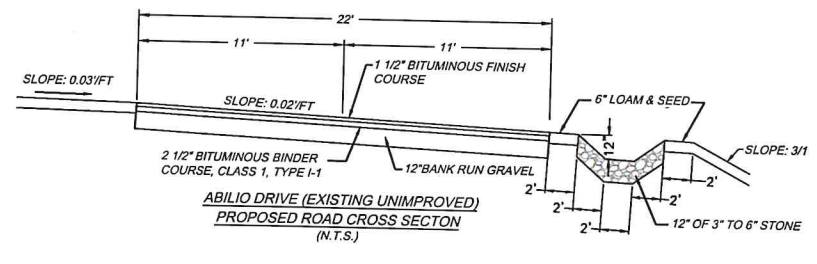
RHODE ISLAND DEPARTMENT OF TRANSPORTATION
HEAVY-DUTY ROUND FRAME AND COVER
JUNE 15, 1998
R.I. STANDARD 6.2.1



RHODE ISLAND DEPARTMENT OF TRANSPORTATION
SQUARE FRAME AND GRATE
JUNE 15, 1998
R.I. STANDARD 6.3.0



RHODE ISLAND DEPARTMENT OF TRANSPORTATION
BITUMINOUS BERM
JUNE 15, 1998
R.I. STANDARD 7.5.1



APPLICANT/OWNER:
NCD DEVELOPERS, INC.
C/O MICHAEL FONSECA
370 METACOM AVENUE
BRISTOL, RI 02809

Thomas J. Principe, III
No. 9107
REGISTERED PROFESSIONAL ENGINEER

REVISIONS			
No.	DATE	DRWN	CHKD
1	1/3/18	TJP	TJP
2	1/19/18	TJP	TJP

PRINCIPE COMPANY, INC.
ENGINEERING DIVISION
PO BOX 298
TIVERTON, RI 02878
401.816.5385
WWW.PRINCIPEENGINEERING.COM

PRELIMINARY MINOR SUBDIVISION
AP 158 LOTS 20 & 25
AND
MASSASOIT AVENUE EXTENSION
IN
BRISTOL, RHODE ISLAND

SCALE: AS NOTED
SHEET NO: 9 OF 9
DRAWN BY: TJP
DESIGN BY: TJP
CHECKED BY: TJP
DATE: 8/17/17
PROJECT NO.: LDP 17-36