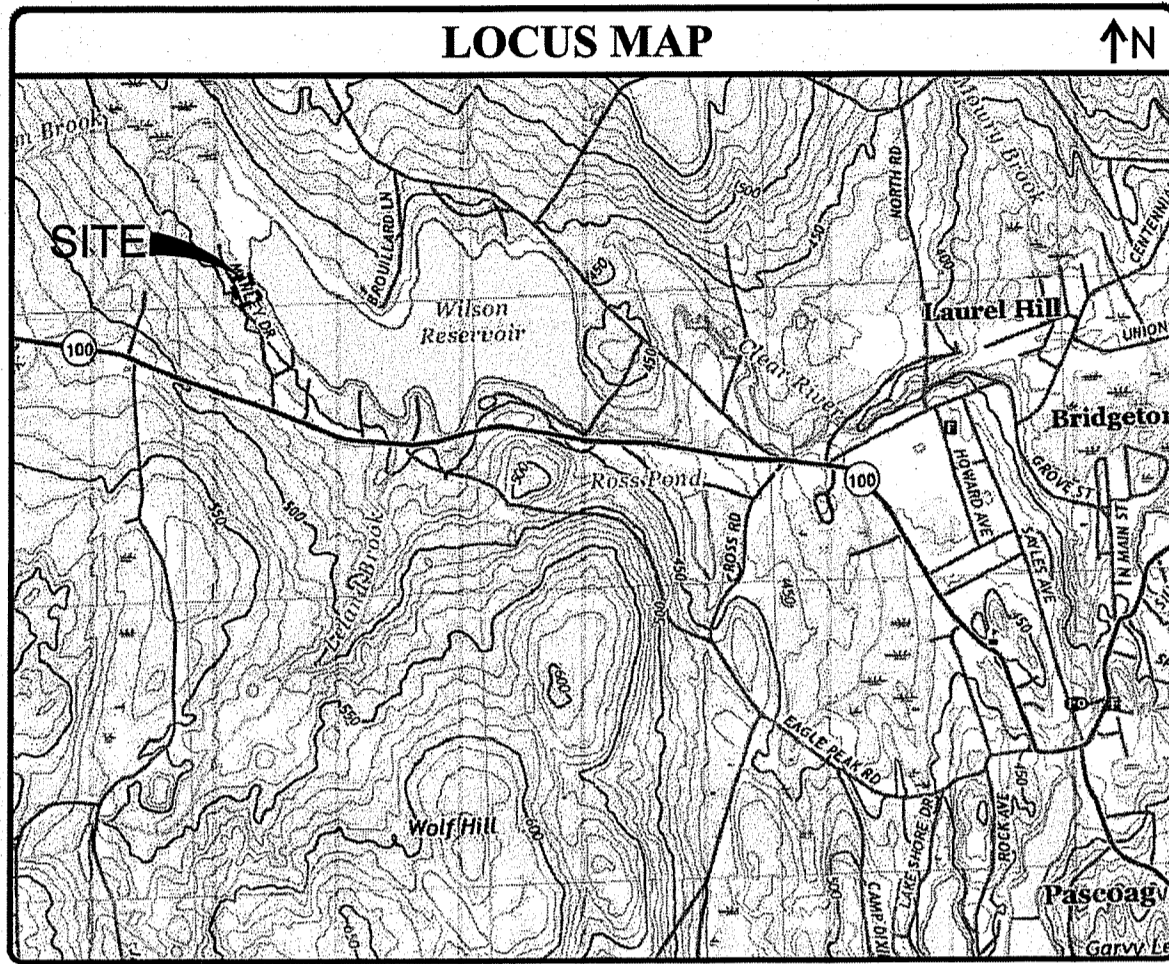


DRAINAGE IMPROVEMENTS for 89 MANLY DRIVE

BURRILLVILLE, RHODE ISLAND
AP 138, LOT 18



APPLICANT	CIVIL ENGINEER	SURVEYOR
TOWN OF BURRILLVILLE DEPARTMENT OF PUBLIC WORKS 200 CLEAR RIVER DR. OAKLAND, RI 02858 (401) 568-4440	JOE CASALI ENGINEERING, INC. 300 POST ROAD WARWICK, RI 02888 (401) 944-1300 phone (401) 944-1313 fax	WATERMAN ENGINEERING CO. 46 SUTTON AVENUE EAST PROVIDENCE, RI 02914 (401) 438-5775 phone (401) 438-5773 fax

- GENERAL NOTES:**
- CLASS I LIMITED CONTENT PROPERTY LINE AND CLASS III TOPOGRAPHIC SURVEY COMPLETED BY WATERMAN ENGINEERING COMPANY, 46 SUTTON AVENUE, EAST PROVIDENCE, RI 02914 IN AUGUST 2020.
 - WETLANDS WERE DELINEATED IN JULY 2020 BY NATURAL RESOURCE SERVICES, INC. P.O. BOX 311 HARRISVILLE, RI 02830.
 - THE LOCATION AND DEPTH OF EXISTING UTILITIES ARE APPROXIMATE AND HAVE BEEN PLOTTED FROM THE LATEST AVAILABLE INFORMATION. THE UTILITY LOCATIONS ARE APPROXIMATE AND MAY NOT BE ALL INCLUSIVE. THE CONTRACTOR SHALL CHECK AND VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES, BOTH OVERHEAD AND UNDERGROUND, AND "DIG-SAFE" MUST BE NOTIFIED PRIOR TO COMMENCING ANY CONSTRUCTION OPERATIONS. RESTORATION AND REPAIR OF DAMAGE TO EXISTING UTILITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR WITH NO ADDITIONAL COST TO THE OWNER. NO EXCAVATION SHALL COMMENCE UNTIL ALL INVOLVED UTILITY COMPANIES AND/OR CITY WHOSE FACILITIES MIGHT BE AFFECTED BY ANY WORK TO BE PERFORMED BY THE CONTRACTOR ARE NOTIFIED AT LEAST 72 HOURS IN ADVANCE.
- SOIL EROSION AND SEDIMENTATION CONTROL NOTES**
- THE STRAW WATTLE ILLUSTRATED ON THESE PLANS SHALL SERVE AS THE STRICT LIMIT OF DISTURBANCE FOR THE PROJECT WITHIN OR ADJACENT TO REGULATED FRESHWATER WETLAND AREAS.
 - THE LIMITS OF CLEARING, GRADING, AND DISTURBANCE SHALL BE KEPT TO A MINIMUM WITHIN THE PROPOSED AREA OF CONSTRUCTION. ALL AREAS OUTSIDE OF THESE LIMITS, AS DEPICTED ON THE PLAN SHALL BE TOTALLY UNDISTURBED, TO REMAIN IN NATURAL CONDITION.
 - ALL DISTURBED SLOPES EITHER NEWLY CREATED OR CURRENTLY EXPOSED SHALL BE SEED, PROTECTED AND MAINTAINED BY THE CONTRACTOR. THE CONTRACTOR SHALL REGULARLY CHECK ALL SEEDING AREAS TO ENSURE THAT A GOOD STAND IS MAINTAINED.
 - ALL SILT FENCE, TEMPORARY TREATMENT (HAY, STRAW, ETC.) AND TEMPORARY EROSION PROTECTION SHALL BE MAINTAINED BY THE CONTRACTOR THROUGHOUT CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL AN ACCEPTABLE STAND OF GRASS OR APPROVED GROUND COVER IS ESTABLISHED.
 - STOCKPILES OF TOPSOIL SHALL NOT BE LOCATED NEAR WATERWAYS. THEY SHALL HAVE SIDE SLOPES OF NO GREATER THAN 2:1 AND SHALL BE TEMPORARILY SEED AND/OR STABILIZED PER CONTRACT SPECIFICATIONS.
 - THE SILT FENCE SHALL BE CHECKED BY THE CONTRACTOR ON A WEEKLY BASIS AND AFTER EACH STORM FOR UNDERMINING OR DETERIORATION. THE CONTRACTOR SHALL CLEAN THE ACCUMULATED SEDIMENT IF HALF OF THE ORIGINAL HEIGHT OF THE HAY-BALES BECOMES FILLED WITH SEDIMENTS.
 - IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN ALL SOIL EROSION AND SEDIMENT CONTROLS ON THE PROJECT SITE FOR THE ENTIRE DURATION OF THE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL FOLLOW THE DIRECTION OF THE RESIDENT ENGINEER WITH REGARD TO INSTALLATION, MAINTENANCE, AND REPAIR OF ALL SOIL EROSION AND SEDIMENTATION CONTROLS ON THE PROJECT SITE. TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROLS SHALL BE MAINTAINED UNTIL ALL EXPOSED SOILS ARE SATISFACTORILY STABILIZED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING AND/OR RESEEDING ALL AREAS THAT DO NOT DEVELOP WITHIN ONE YEAR FROM THE COMPLETION OF CONSTRUCTION.
 - ALL REFERENCED SOIL EROSION AND SEDIMENTATION CONTROLS INCLUDING MATERIALS USED, APPLICATION RATES AND THE INSTALLATION PROCEDURES SHALL BE PERFORMED PER THE "RHODE ISLAND EROSION AND SEDIMENTATION HANDBOOK", DATED 1989, REVISED 2014.

LEGEND:

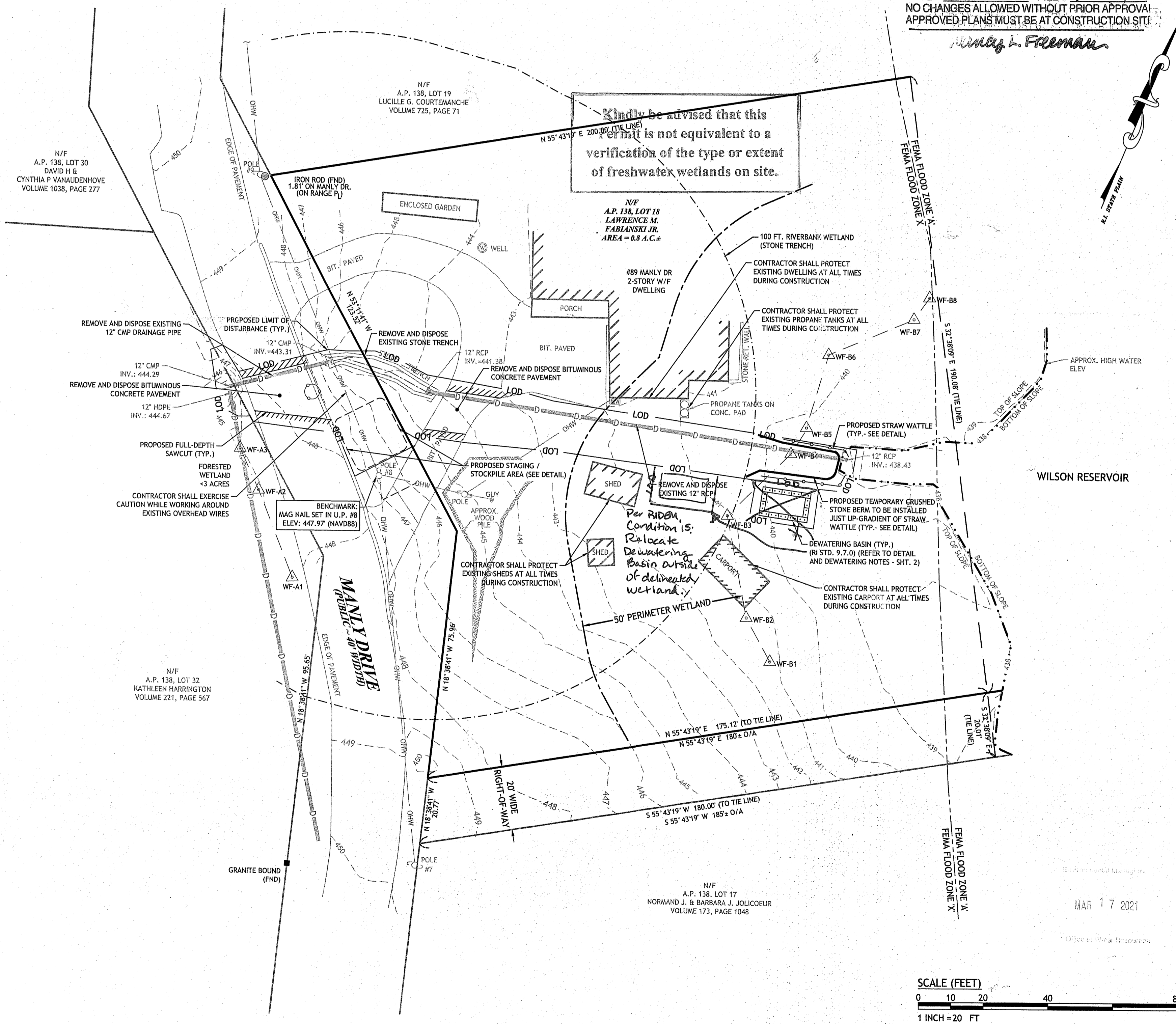
---	EXISTING PROPERTY LINE
---	ABUTTING PROPERTY LINE
---	WETLAND EDGE
△ WF-B8	WETLAND FLAG
---	50' PERIMETER WETLAND
---	100' RIVERBANK WETLAND
---	EXISTING EASEMENT
---	EXISTING CONTOUR
---	PROPOSED CONTOUR
---	EXISTING STONE WALL
●	IRON PIN
○	DRILL HOLE
□	CONCRETE BOUND
---	DRAIN LINE
○	DRAINAGE MANHOLE
○	CATCH BASIN
○	UTILITY POLE
---	OVERHEAD WIRES
---	WATER SHUT OFF VALVE
○	WELL
---	SEWER
○	SMH
---	N/F - NOW OR FORMERLY
---	TREELINE
---	SILT SOCK
---	LIMIT OF DISTURBANCE

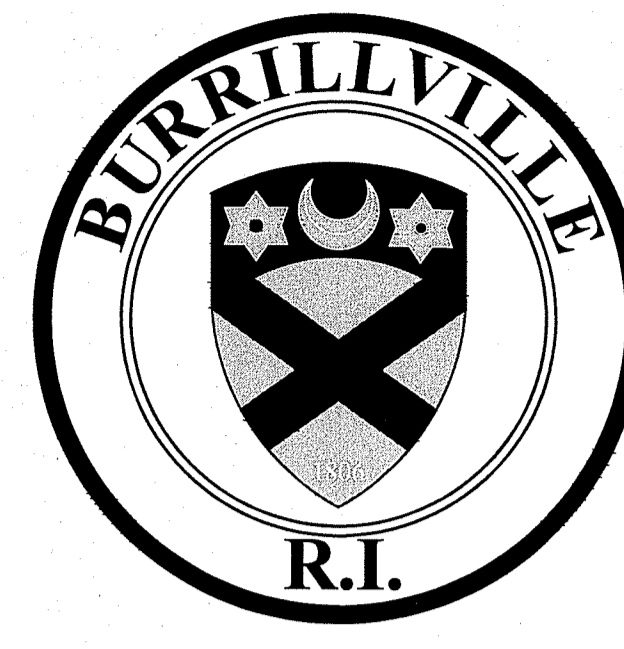
INDEX OF DRAWINGS

SHEET NO.	PLAN
1	EXISTING CONDITIONS & SITE PREP. PLAN
2	DRAINAGE PLAN
3	DETAILS

REFERENCE PLAN

1 of 1	EXISTING CONDITIONS SURVEY PLAN (PREPARED BY WATERMAN ENGINEERING COMPANY, SEPTEMBER 2020)
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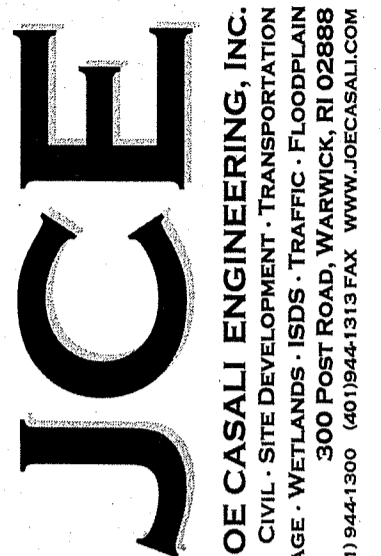


MICHAEL C. WOOD, TOWN MANAGER

**JEFFREY McCORMICK, P.E.,
DIRECTOR OF PUBLIC WORKS**

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED **MAR 31 2021** FILE # **20-0274**
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

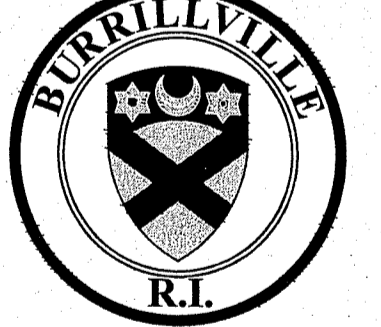
Andy L. Freeman



JOE CASALI ENGINEERING, INC.
CIVIL - SITE DEVELOPMENT - TRANSPORTATION
DRAINAGE - WETLANDS - 300 POST ROAD, WARWICK, RI 02888
(401) 944-1300 (401) 944-1313 FAX WWW.JOECASALI.COM

JOSEPH A. CASALI
No. 7250
REGISTERED PROFESSIONAL ENGINEER
CIVIL

DRAINAGE IMPROVEMENTS
89 MANLY DRIVE
BURRILLVILLE, RHODE ISLAND
AP 138, LOT 18



REVISIONS:

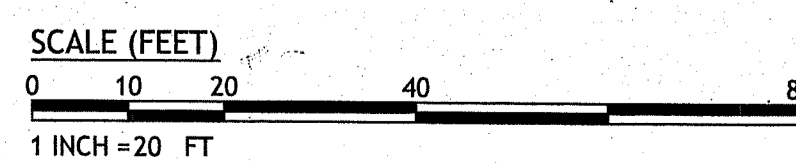
NO.	DATE	DESCRIPTION
1	01/2021	STONE TRENCH REV
2	05/2021	RIDEM RTC

DESIGNED BY: DRD
DRAWN BY: JAS/SD
CHECKED BY: JAC
DATE: NOV. 2020
PROJECT NO: 05-9251

PRELIMINARY, NOT FOR CONSTRUCTION

EXISTING CONDITIONS AND SITE PREP. PLAN


SHEET 1 OF 3



MAR 17 2021

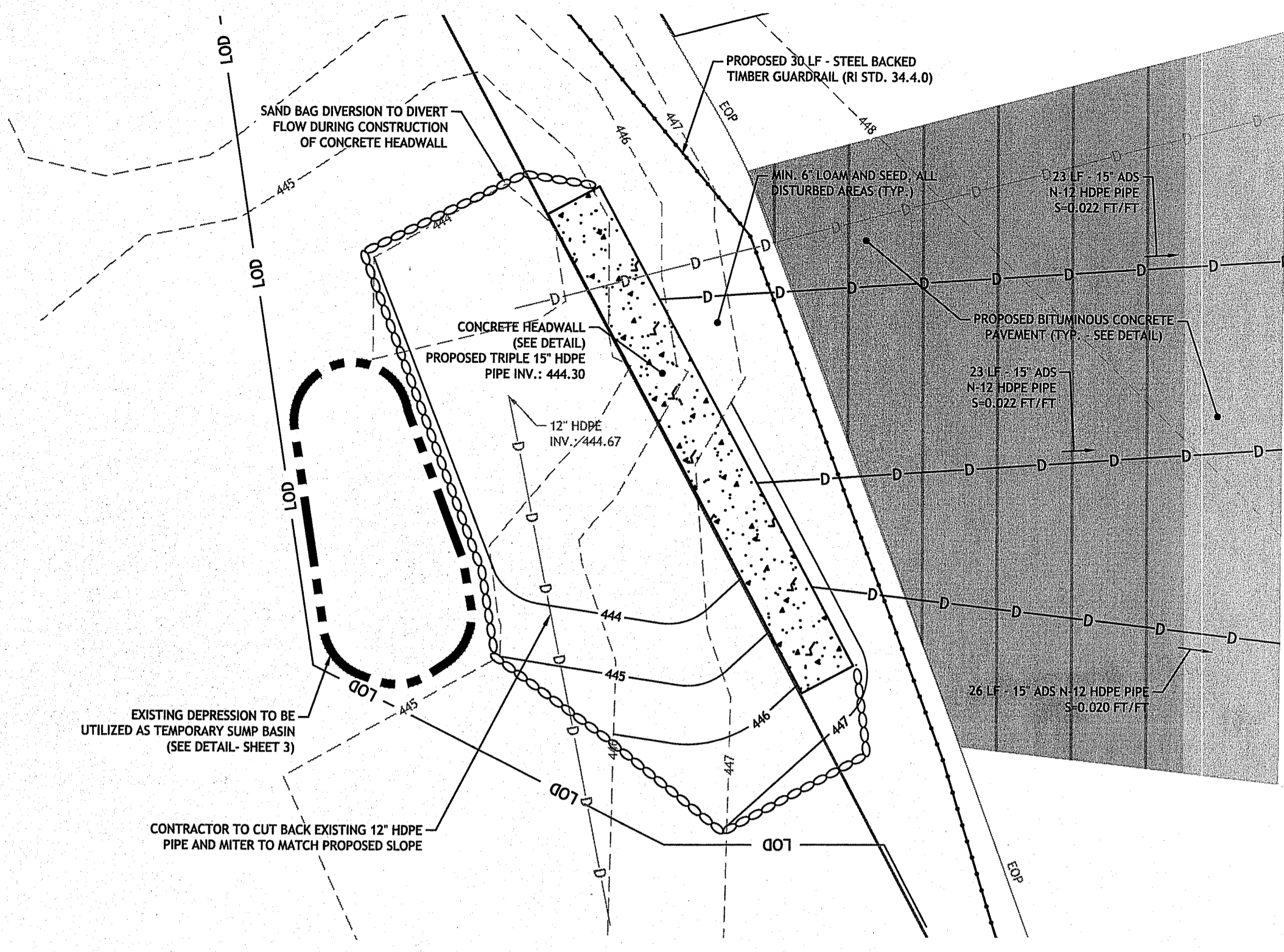
RIDEM COPY

Q:\05-92 Town of Burrillville\05-9251 Manly Dr Drainage\ACD\Manly Drive PERMIT SET R31.dwg Mar. 16, 2021 1:46pm



1-800-368-5848
PROTECT YOURSELF. USE DIG SAFE WORKING DAYS NOTICE

LOCATION OF EXISTING UTILITIES SHOWN, ARE FROM GATE LOCATION AND EXISTING DOCUMENTATION AND MAY NOT BE ACCURATE. EXACT LOCATION TO BE DONE BY THE APPROPRIATE UTILITY COMPANY OR MUNICIPALITY PRIOR TO ANY EXCAVATION CALL AT DIGSAFE 1-888-516-SAFE (1-888-544-7333)



DRAINAGE INLET & PREPARATION PLAN DETAIL
SCALE: 1 INCH = 2 FEET

DEWATERING
THE FOLLOWING ARE THE REQUIREMENTS FOR DESIGNING, FURNISHING, INSTALLING, MAINTAINING, OPERATING AND REMOVAL OF TEMPORARY DEWATERING SYSTEMS REQUIRED TO MANAGE GROUNDWATER DURING EXCAVATION ACTIVITIES.

1.01 DEFINITIONS
A. DEWATERING: LOWERING THE ZONE OF SATURATION AND INTERCEPTING GROUNDWATER SEEPAGE WHICH WOULD OTHERWISE EMERGE FROM THE SLOPES OR BOTTOM OF THE EXCAVATIONS. THE PURPOSES OF DEWATERING ARE TO INCREASE THE STABILITY OF EXCAVATED SLOPES; PREVENT LOSS OF MATERIAL FROM BENEATH THE SLOPES OR BOTTOM OF THE EXCAVATION; IMPROVE THE EXCAVATING AND HAULING CHARACTERISTICS OF ON SITE SOIL; PREVENT RUPTURE OR HEAVING OF THE BOTTOM OF AN EXCAVATION; AND DISPOSE OF PUMPED WATER.

1.02 DESIGN REQUIREMENTS
A. THE CONTRACTOR IS RESPONSIBLE FOR THE ADEQUACY OF THE DEWATERING AND SEDIMENT REMOVAL SYSTEM.
B. DESIGN DEWATERING AND SEDIMENT REMOVAL SYSTEMS TO:
1. EFFECTIVELY REDUCE THE HYDROSTATIC PRESSURE AND LOWER THE GROUNDWATER LEVELS TO A MINIMUM OF 2 FEET BELOW EXCAVATION IN SOIL;
2. DEVELOP A SUBSTANTIALLY DRY AND STABLE SUBGRADE FOR THE PROTECTION OF SUBSEQUENT OPERATIONS;
3. RESULT IN NO DAMAGE TO ADJACENT BUILDINGS, STRUCTURES, UTILITIES AND OTHER WORK, INCLUDED IN THIS CONTRACT.
4. DEPRESSURIZE STRATIFIED LAYERS OF SAND THAT MAY BE CONFINED BY SILT LAYERS SO THAT A STABLE EXCAVATION BOTTOM IS MAINTAINED.
5. ROUTE DISCHARGE FROM DEWATERING SYSTEM THROUGH A SEDIMENT REMOVAL SYSTEM SUCH THAT SEDIMENTS ARE NOT DISCHARGED TO OPEN WATERS OR WETLAND SYSTEMS. SEDIMENT REMOVAL SYSTEM SHALL BE SIZED BASED ON ANTICIPATED DISCHARGE FROM DEWATERING SYSTEM AND ADEQUATE DETENTION TIME FOR SEDIMENT REMOVAL.
6. PROTECT SEDIMENT REMOVAL SYSTEM DISCHARGE AREA FROM SCOURING.
C. DEWATERING METHODS MAY INCLUDE SUMP PUMPING, SINGLE OR MULTIPLE STAGE WELL POINT OR JET EJECTOR WELL POINT SYSTEMS, DEEP WELLS, OR COMBINATIONS THEREOF.
D. LOCATE DEWATERING FACILITIES WHERE THEY WILL NOT INTERFERE WITH EXISTING UTILITIES, FACILITIES AND/OR CONSTRUCTION WORK TO BE DONE UNDER THIS CONTRACT.
E. SEDIMENT REMOVAL SYSTEM METHODS MAY INCLUDE FILTRATION SYSTEMS, SETTLING BASINS, SEDIMENTATION TANKS OR OTHER APPROVED METHOD.
F. CONTRACTOR IS RESPONSIBLE TO OBTAIN ALL NECESSARY PERMITS FROM STATE AND LOCAL AUTHORITIES REGARDING THE OPERATION AND DISCHARGE OF THE DEWATERING AND SEDIMENT REMOVAL SYSTEM, AND TO CONDUCT ALL NECESSARY SAMPLING AND TESTING THAT MAY BE REQUIRED BY THOSE AUTHORITIES.

1.03 SUBMITTALS
A. SHOP DRAWINGS
THE FOLLOWING PRIOR TO DEWATERING SYSTEM AND SEDIMENT REMOVAL SYSTEM INSTALLATION:
1. PROPOSED SYSTEM COMPONENTS.
2. OPERATIONAL PLAN TO INCLUDE LOCATIONS AND DEPTH OF COMPONENTS.
3. METHOD OF DISPOSAL OF PUMPED WATER, INCLUDING METHOD OF INSURING PROPER SEDIMENT REMOVAL SHOULD UPSET IN DEWATERING SYSTEM OCCUR.
4. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER AND THE RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT DIVISION OF FRESHWATER WETLANDS.
B. QUALITY ASSURANCE/CONTROL SUBMITTALS
1. IN ACCORDANCE WITH SECTION 01300 SUBMIT THE FOLLOWING:
A. DEWATERING SYSTEMS TO BE DESIGNED UNDER THE DIRECT SUPERVISION OF A PROFESSIONAL CIVIL ENGINEER REGISTERED IN THE STATE WHICH THE WORK IS TO BE DONE.

1.04 PROJECT/SITE CONDITIONS
A. ENVIRONMENTAL REQUIREMENTS
1. DISPOSE OF ALL PUMPED WATER IN ACCORDANCE WITH RIDEM RULES AND REGULATIONS GOVERNING THE ADMINISTRATION AND ENFORCEMENT OF THE FRESHWATER WETLANDS ACT.
B. EXISTING CONDITIONS
1. GROUNDWATER ELEVATIONS HAVE BEEN INTERPRETED FROM SOIL EVALUATIONS AND ARE NOTED IN THE TEST PIT LOGS.
2. GROUNDWATER SURFACE IS SUBJECT TO FLUCTUATIONS DURING PERIODS OF HEAVY PRECIPITATION.

PART 2 PRODUCTS
NOT USED

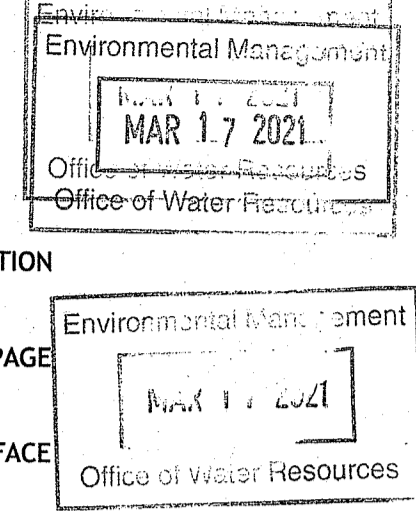
PART 3 EXECUTION
3.01 SITE PREPARATION AND INSTALLATION
A. SURFACE DRAINAGE
1. CONSTRUCT DIKES, DITCHES, PIPE LINES, SUMPS OR OTHER MEANS TO INTERCEPT AND DIVERT PRECIPITATION AND SURFACE WATER AWAY FROM EXCAVATIONS.
B. DRAINAGE OF EXCAVATED AREAS
1. CONSTRUCT DIKES, DITCHES, PIPE LINES, SUMPS OR OTHER MEANS TO COLLECT SURFACE AND SEEPAGE WATER WHICH MAY ENTER THE EXCAVATION.
2. DISCHARGE WATER THROUGH DEWATERING BASINS OR METHOD APPROVED BY ENGINEER.
3. AT NO TIME SHALL DISCHARGE WATERS BE DIRECTLY DISCHARGED TO REGULATED WETLANDS OR SURFACE WATERS.

3.02 MONITORING
A. OBSERVE AND RECORD DAILY THE ELEVATION OF THE GROUNDWATER DURING THE LENGTH OF THE DEWATERING OPERATION AND PROVIDE DATA TO ENGINEER ON DAILY BASIS.

3.03 OPERATION
A. OPERATE DEWATERING SYSTEMS TO LOWER THE GROUNDWATER LEVEL IN EXCAVATIONS ALLOWING ALL SUBSEQUENT WORK TO BE DONE ON A STABLE DRY SUBGRADE.
B. MODIFY DEWATERING PROCEDURES WHICH CAUSE, OR THREATEN TO CAUSE, DAMAGE TO NEW OR EXISTING FACILITIES, TO PREVENT FURTHER DAMAGE. MODIFICATIONS MADE AT NO ADDITIONAL EXPENSE TO THE OWNER.
C. MAINTAIN THE WATER LEVEL A MINIMUM OF TWO (2) FEET BELOW SUBGRADE OR AT LOWER ELEVATION TO ELIMINATE HYDROSTATIC PRESSURE ON STRUCTURES.
D. PREVENT DISTURBANCE OF FOUNDATION SOILS AND LOSS OF GROUND AS WATER IS REMOVED.
E. NOTIFY THE ENGINEER OF DISTURBANCE TO THE FOUNDATION SOILS CAUSED BY AN INTERRUPTION OR INADEQUACY OF THE DEWATERING SYSTEM.
F. MAINTAIN ON SITE, AUXILIARY EQUIPMENT TO OPERATE THE DEWATERING SYSTEM CONTINUOUSLY WHILE EXCAVATIONS ARE OPENED BELOW ELEVATION OF FINAL GRADE.

3.04 DISPOSAL OF WATER
A. DISCHARGE WATER IN A MANNER THAT WILL NOT CAUSE EROSION, FLOODING, DAMAGE TO EXISTING FACILITIES, COMPLETED WORK OR ADJACENT PROPERTY, IMPROVED OR OTHERWISE.

3.05 REMOVAL
A. REMOVE ALL MATERIAL AND EQUIPMENT FROM THE SITE UPON COMPLETION OF DEWATERING OPERATIONS.
B. SEAL ALL DEWATERING WELLS UPON COMPLETION OF THE DEWATERING BY PRESSURE INJECTING A GROUT CAPABLE OF SEALING THE WELLS AND PREVENTING LEAKAGE.



JCE
JOE CASALI ENGINEERING, INC.
DRAINAGE: WETLANDS: RIDEM: TRAFFIC: FLOODPLAIN
300 POST ROAD, WARRICK, RI 02889
(401) 944-1300 (401) 944-1313 FAX WWW.JCEENGINEERING.COM

JOSEPH A. CASALI
No. 7250
REGISTERED PROFESSIONAL ENGINEER CIVIL
MAR 3 2021

SITE NOTES:

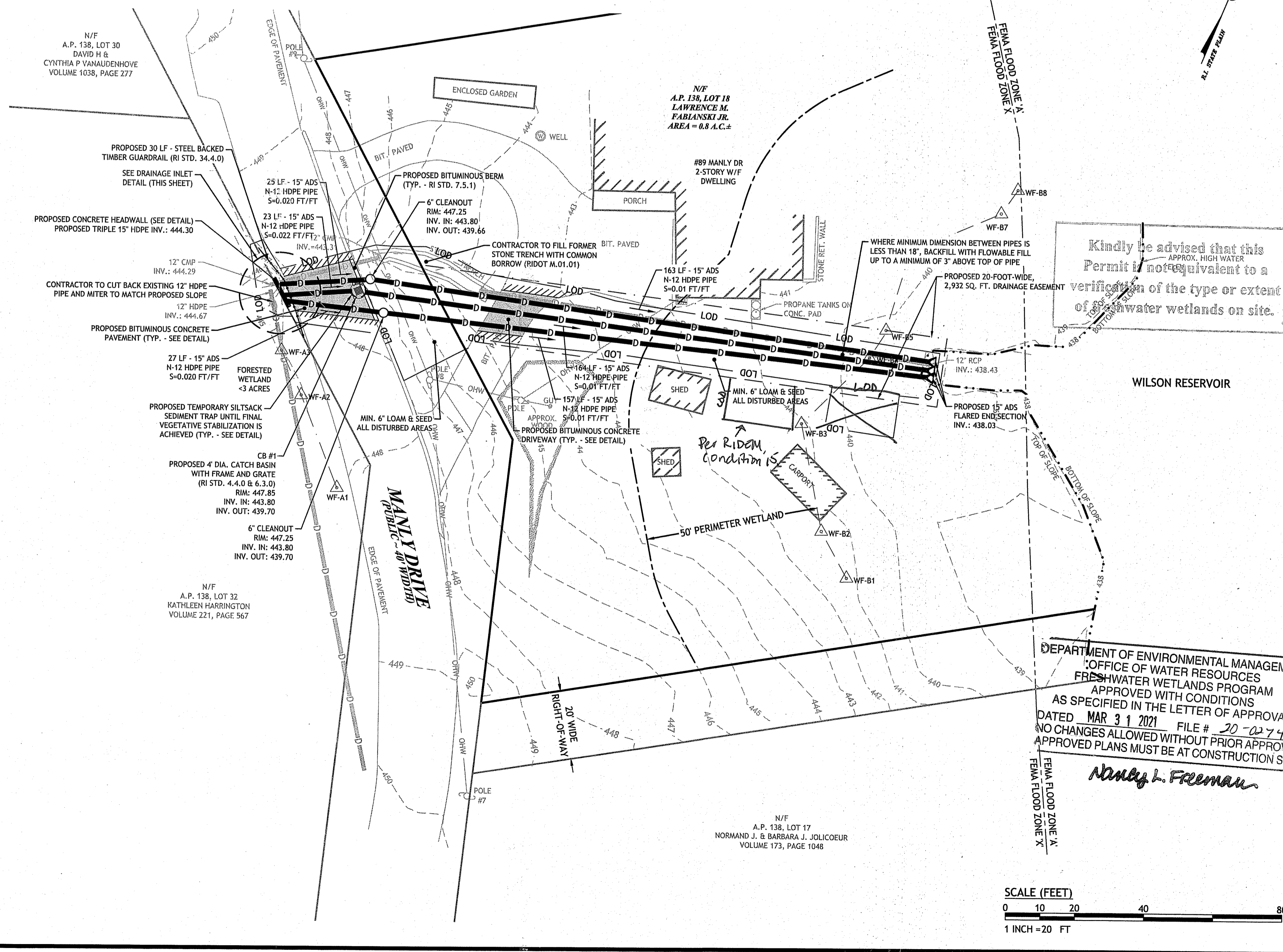
- CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND LEGALLY DISPOSING (R&D) OF ALL MATERIALS INDICATED ON THE PLANS.
- STOCKPILES OF EARTH MATERIALS SHALL NOT BE LOCATED ADJACENT TO DRAINAGE STRUCTURES.
- ALL DISTURBED AREAS OUTSIDE OF THE PAVED AREAS WILL RECEIVE A MINIMUM OF 6" OF LOAM AND SEED.
- THE LAYOUT SHOWN REPRESENTS A GRAPHICAL DESIGN, AND PRIOR TO THE CONSTRUCTION, THE CONTRACTOR SHALL ENGAGE A PROFESSIONAL LAND SURVEYOR (PLS) REGISTERED IN THE STATE OF RHODE ISLAND TO SET AND VERIFY ALL LINES AND GRADES. ALL EXISTING UTILITY LOCATIONS AND ELEVATIONS ARE TO BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ANY ITEMS FOUND WHICH DO NOT MATCH THE PLANS MUST BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO CONSTRUCTION FOR REVIEW. NO WORK SHALL PROCEED UNTIL AUTHORIZED BY THE ENGINEER.
- THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SURVEY LAYOUT SERVICES FOR THE WORK AND SHALL SUBMIT "AS-BUILT" DRAWINGS OF ALL WORK, WHICH SHALL BE STAMPED AND CERTIFIED BY A RHODE ISLAND REGISTERED PROFESSIONAL LAND SURVEYOR.
- ANY ITEM OF WORK NOT SPECIFICALLY INDICATED ON THE PLANS BUT IS REQUIRED FOR THE COMPLETE CONSTRUCTION OF THE PROJECT WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND INCLUDED IN THE CONTRACT BID PRICE. IT WILL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY ALL EXISTING SITE CONDITIONS.
- WHERE NECESSARY TO REMOVE CURBS, CATCH BASINS OR DRAINS TO COMPLETE WORK, THE CONTRACTOR SHALL REPLACE SUCH ITEMS TO THE SATISFACTION OF THE ENGINEER AND THE STATE OF RHODE ISLAND AT NO ADDITIONAL COST TO THE OWNER.
- ANY EXISTING PIPE OR UTILITY DAMAGED BY THE CONTRACTORS OPERATIONS SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR AT NO COST TO THE OWNER.
- THE CONTRACTOR SHALL RESTORE TO ITS ORIGINAL CONDITION OR REPLACE TREES, SHRUBS, FENCES, SIGNS, GUARDRAILS, DRIVEWAYS, SIDEWALKS AND ANY OTHER OBJECT AFFECTED BY THIS OPERATION, UNLESS OTHERWISE NOTED ON THE SITE PLANS.
- ROADWAYS SHALL BE LEFT PASSABLE AT ALL TIMES. CLOSURE OF ROADWAY IS NOT PERMITTED.
- WATER SERVICE SHALL BE MAINTAINED AT ALL TIMES.
- ALL LEDGE TO BE REMOVED BY MECHANICAL MEANS.
- ALL CONSTRUCTION WORK SHALL BE PERFORMED IN THE DRY. THE CONTRACTOR SHALL PROVIDE, OPERATE AND MAINTAIN ALL PUMPS, DRAINS, WET POINTS, SCREENS, OR OTHER FACILITIES NECESSARY TO CONTROL, COLLECT AND DISPOSE OF ALL SURFACE AND SUBSURFACE WATER ENCOUNTERED IN THE PERFORMANCE OF THE WORK.
- ALL SITE WORK, INCLUDING BUT NOT LIMITED TO, BITUMINOUS PAVEMENT, AGGREGATE MATERIALS, DRAINAGE STRUCTURES, CURBING, SIDEWALK, LANDSCAPING, SAW CUTTING, ETC. SHALL CONFORM TO THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADWAY AND BRIDGE CONSTRUCTION, 2004 EDITION (WITH LATEST ADDENDA) AND THE RIDOT STANDARD DETAILS, 1998 EDITION (WITH LATEST ADDENDA).

DRAINAGE SYSTEM NOTES:

- THE PROPOSED DRAINAGE LINES SHALL BE ADS N-12 HDPE PIPE OR AN APPROVED EQUAL UNLESS OTHERWISE NOTED ON THE SITE PLANS.
- ALL RIM ELEVATIONS SHOWN ARE APPROXIMATE AND ARE TO BE SET FLUSH WITH FINAL GRADES.

LOAM

- ALL DISTURBED AREAS AND AREAS LABELED AS 'LOAM AND SOD' ARE TO BE BROUGHT TO AN ELEVATION OF 5" BELOW THE PROPOSED FINISHED GRADE. SCARIFY THE SUBGRADE SURFACE WITH THE TEETH OF A BACKHOE OR A POWER RAKE TO RESULT IN AN UNCOMPACTED SUBSOIL. 4" OF GOOD QUALITY TOPSOIL IS TO BE APPLIED AND RAKED TO FINISHED GRADE.
- THE TOPSOIL IS TO BE GOOD QUALITY LOAM, FERTILE AND FREE OF WEEDS, STICKS AND STONES OVER 3/4" IN SIZE AND OTHERWISE COMPLYING WITH SECTION M.18.01 OF THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADWAY AND BRIDGE CONSTRUCTION, 2010 EDITION (WITH LATEST ADDENDA).
- PRIOR TO SEEDING OR SODDING, FERTILIZE WITH 10-10-10 OR EQUIVALENT ANALYSIS. AT LEAST 40% OF THE FERTILIZER NITROGEN SHALL BE IN SLOW RELEASE FORM. INCORPORATE THE FERTILIZER INTO THE TOP 1-2" OF THE PLANTING SOIL. APPLY AT A RATE OF 8 LBS. PER 1000 SQUARE FEET.
- APPLY LIME AT A RATE OF ONE TON PER ACRE AND UNIFORMLY INCORPORATE INTO THE TOP 1-2" OF TOPSOIL.



Kindly be advised that this permit is not equivalent to a verification of the type or extent of freshwater wetlands on site.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED MAR 31 2021 FILE # 20-0274
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APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Nancy L. Freeman

DRAINAGE IMPROVEMENTS
89 MANLY DRIVE
BURRILLVILLE, RHODE ISLAND
AP 138, LOT 18

BURRILLVILLE
RI

REVISIONS:

NO.	DATE	DESCRIPTION
1	01/2021	STONE TRENCH REV
2	03/2021	RIDEM RTC

DESIGNED BY: DRD
DRAWN BY: JAS/SD
CHECKED BY: JAC
DATE: NOV. 2020
PROJECT NO: 05-9261

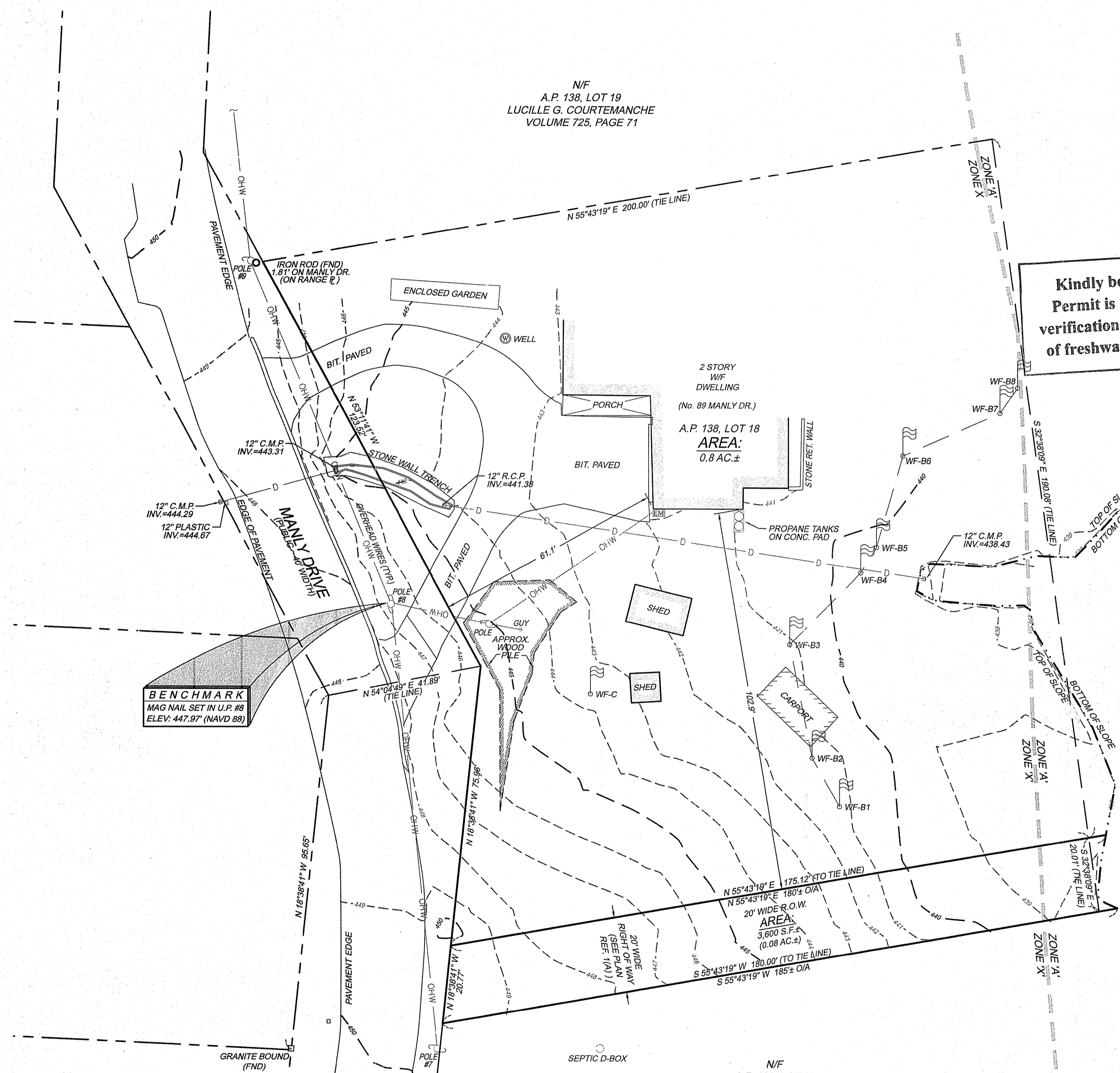
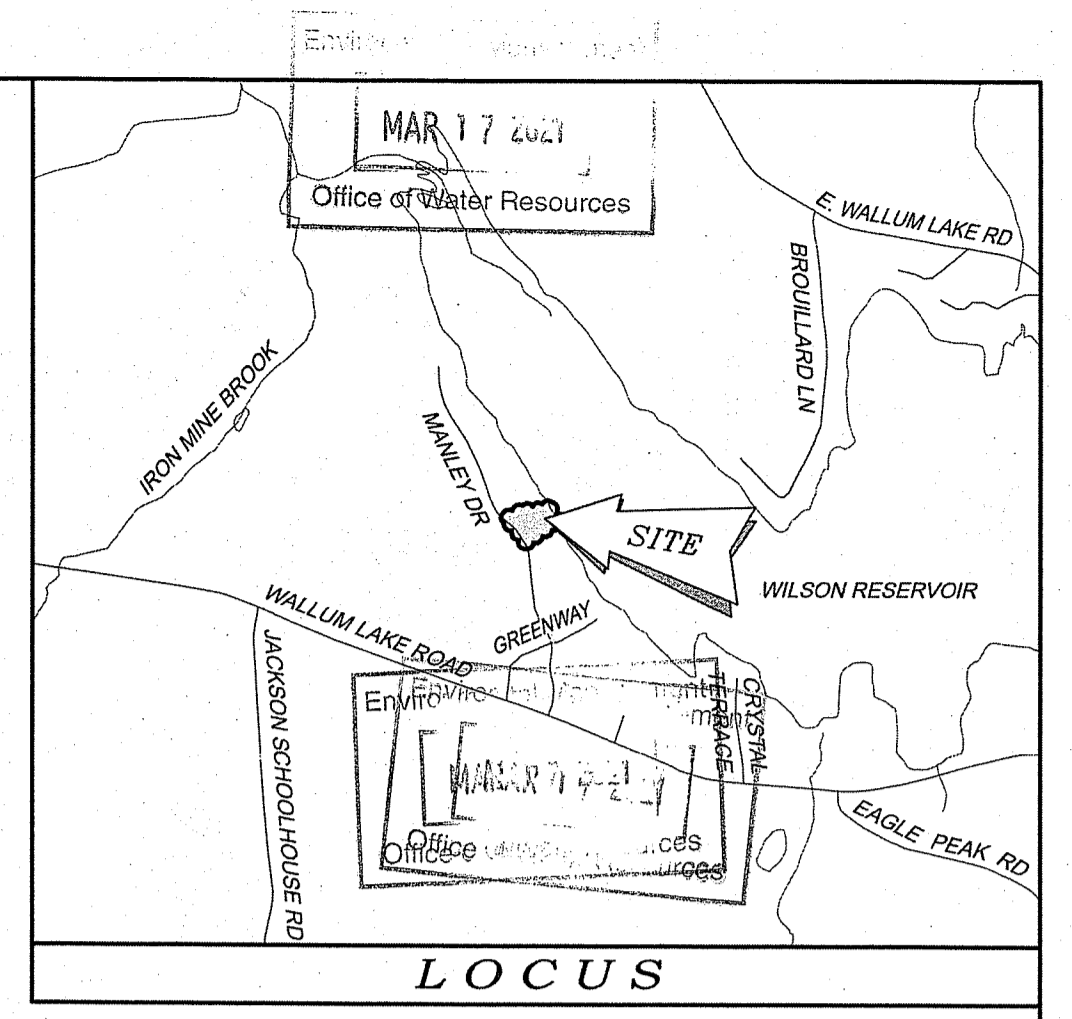
PRELIMINARY, NOT FOR CONSTRUCTION

DRAINAGE PLAN

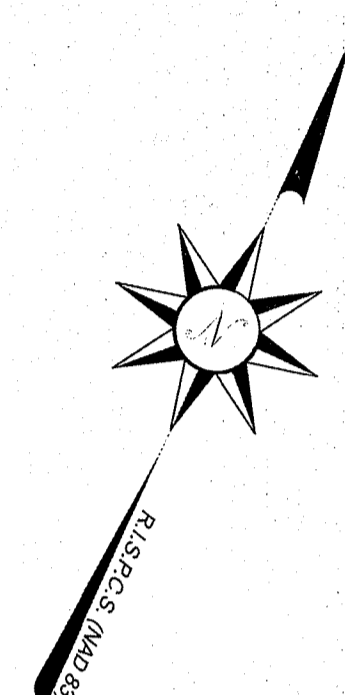
SHEET 2 OF 3

LEGEND & ABBREVIATIONS

- | | | | |
|---------|----------------------------|-----------|--------------------------|
| NF | - NOW OR FORMERLY | --- | - PROPERTY LINE |
| A.P. | - ASSESSORS PLAT | - - - | - ZONING SETBACK LINE |
| S.F. | - SQUARE FEET | - - - 15 | - EXISTING CONTOUR |
| AC. | - ACRES | - - - 15 | - NEW CONTOUR |
| ± | - PLUS OR MINUS | - - - - - | - STONE WALL |
| STY | - STORY | X | - FENCE |
| WF | - WOOD FRAMED | S | - SEWER LINE |
| SWP | - STATE HIGHWAY PLAT | D | - DRAIN LINE |
| RET. | - RETAINING WALL | W | - WATER LINE |
| PED. | - PEDESTRIAN | G | - GAS LINE |
| (FND.) | - FOUND | E | - ELECTRIC LINE |
| R/HB | - RI HIGHWAY BOUND | ⊙ | - SANITARY SEWER MANHOLE |
| PK NAIL | - MASONRY NAIL | ⊙ | - CATCH BASIN |
| FE | - FLARED END | ⊙ | - STORM DRAIN MANHOLE |
| RCP | - REINFORCED CONCRETE PIPE | ⊙ | - WATER GATE |
| CLF | - CHAIN LINK FENCE | ⊙ | - GAS VALVE |
| INV. | - INVERT | ⊙ | - ELECTRIC MANHOLE |
| x 10.80 | - EXISTING SPOT GRADE | ⊙ | - GRANITE BOUND |
| x 10.80 | - NEW SPOT GRADE | ⊙ | - DRILL HOLE |
| | | ⊙ | - IRON PIPE |



Kindly be advised that this Permit is not equivalent to a verification of the type or extent of freshwater wetlands on site.



NOTES / REFERENCES

- REFERENCE IS MADE TO THE FOLLOWING MAPS AND PLANS OF RECORD:
 - PLAN ENTITLED "CAMP SITES AT THE GEORGE MANLY FARM, PASCOAG, R.I. CLEAR RIVER LAKE SHORES PLAT SURVEYED & DRAWN LINE: 1947 BY JOHN E. HARVEY, JR., P.E." SAID PLAN IS RECORDED IN THE LAND EVIDENCE RECORDS OF THE TOWN OF BURRILLVILLE IN PLAT BOOK 2, PAGE 198.
 - PLAN ENTITLED "CLEAR RIVER LAKE SHORES PLAT SECTION II, OWNED BY GEORGE MANLY, LOCATED IN BURRILLVILLE, R.I., SCALE: 1" = 50 FEET, DATED: JULY, 1961," SAID PLAN IS RECORDED IN THE LAND EVIDENCE RECORDS OF THE TOWN OF BURRILLVILLE IN PLAT BOOK 4, PAGE 13.
 - PLAN ENTITLED "CLEAR RIVER LAKE SHORES PLAT, SECTION III, OWNED BY GEORGE MANLY, LOCATED IN BURRILLVILLE, R.I., SCALE: 1" = 50 FEET, DATED: JULY, 1961," SAID PLAN IS RECORDED IN THE LAND EVIDENCE RECORDS OF THE TOWN OF BURRILLVILLE IN PLAT BOOK 4, PAGE 14.
 - PLAN ENTITLED "RIGHT OF WAY, PREPARED FOR: TOWN OF BURRILLVILLE, MANLY DRIVE, PREPARED BY: WATERMAN ENGINEERING CO., PROJECT No. P98.004, SCALE: 1" = 50, DATED: JAN. 26, 2000." SAID PLAN IS RECORDED IN THE LAND EVIDENCE RECORDS OF THE TOWN OF BURRILLVILLE IN PLAT BOOK 2007, PAGES 48 & 49.
- REFERENCE IS MADE TO THE FOLLOWING TOWN OF BURRILLVILLE LAND EVIDENCE RECORDS REGARDING RECORDED TITLE TO THE PREMISES SURVEYED:
 - A.P. 138, LOT 18 - LAWRENCE M. FABIANSKI - VOLUME 618, PAGE 118
- THESE PREMISES MAY BE SUBJECT TO THE FOLLOWING EASEMENTS, RIGHTS OF WAY OR AGREEMENTS OF RECORD:
 - SUBJECT TO RESTRICTIONS OF RECORD AS DESCRIBED IN VOLUME 56, PAGE 122 (LOT 18).
 - 20' WIDE RIGHT OF WAY AS DELINEATED ON PLAN REF. 1(A)
- THESE PREMISES ARE SITUATED IN AN R-20 ZONE (SUBURBAN RESIDENTIAL DISTRICT).

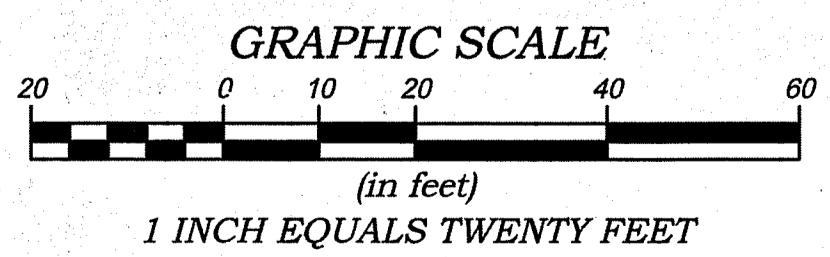
DIMENSIONAL REQUIREMENTS

MIN. LOT AREA	= 20,000 SQ.FT.
MIN. FRONTAGE / LOT WIDTH	= 125 FT.
MIN. S/B FRONT YARD	= 30 FT.
MIN. S/B REAR YARD	= 30 FT.
MIN. S/B SIDE YARD	= 10 FT.
MAX. BUILDING COVERAGE (%)	= 25 %
MAX. STRUCTURE HEIGHT	= 35 FT.

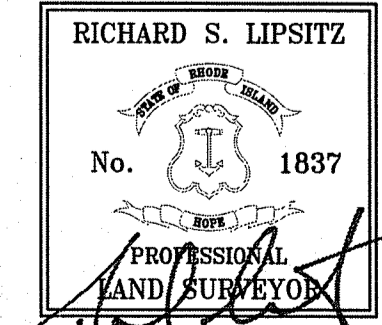
NOTE - ZONING INFORMATION IS FROM CURRENT ZONING AND MAY NOT REFLECT THE CONDITIONS AT THE TIME OF CONSTRUCTION OR ANY VARIANCES GRANTED.
- THESE PREMISES ARE SITUATED PARTLY IN A ZONE 'A' AND ZONE 'X' (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AS DESIGNATED ON THE "NATIONAL FLOOD INSURANCE PROGRAM, FIRM FLOOD INSURANCE POLICY EVIDENCE COUNTY, RHODE ISLAND (ALL JURISDICTIONS) PANEL 130 OF 451 TOWN OF BURRILLVILLE, MAP NUMBER 4407C0130G, EFFECTIVE DATE: MARCH 2, 2009, FEDERAL EMERGENCY MANAGEMENT AGENCY."
- ANY UTILITIES SHOWN ON THIS PLAN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING PLANS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES SHOWN COMPRISE ALL SUCH OR ABANDONED. THE SURVEYOR DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM ALL AVAILABLE INFORMATION. (PLEASE CONTACT DIG SAFE 72 HOURS PRIOR TO CONSTRUCTION AT PHONE NO. 1-888-DIG-SAFE AND/OR ALL LOCAL UTILITY COMPANIES.)
- THE HORIZONTAL DATUM FOR THIS PROJECT IS R.I.S.P.C.S. (NAD 83) AND THE VERTICAL DATUM FOR THIS PROJECT IS NAVD 88. THE PROJECT DATUMS WERE ESTABLISHED FROM REFERENCE STATIONS AND GNSS CORRECTIONS RECEIVED FROM THE LEICA SMARTNET NORTH AMERICA RTK NETWORK VIA CARLSON BRX GNSS ANTENNAS / RECEIVERS.
- THE FLOODPLAIN BOUNDARY HAS BEEN OVERLAID & APPROXIMATED USING FEMA'S ONLINE NATIONAL FLOOD HAZARD LAYER (NFHL) DATASET.
- A WETLAND REPORT WAS NOT PROVIDED TO WATERMAN ENGINEERING CO. PRIOR TO CONDUCTING THE FIELD SURVEY. THE SUBJECT PROPERTY AND SURROUNDING AREAS CONTAIN WETLANDS IN WHICH WETLAND FLAGS WERE OBSERVED DURING OUR FIELD WORK ON AUGUST 8, 2020. WETLAND FLAGS THAT WERE VISIBLE DURING OUR FIELD WORK WERE LOCATED AND SHOULD BE USED FOR REFERENCE PURPOSES ONLY. FLAGS DEPicted ON THIS PLAN ARE NOT INTENDED TO BE INCLUSIVE OF ALL POTENTIAL WETLAND DELINEATIONS WHICH MAY HAVE BEEN PERFORMED AS PART OF THIS PROJECT.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF WATER RESOURCES
 FRESHWATER WETLANDS PROGRAM
 APPROVED WITH CONDITIONS
 AS SPECIFIED IN THE LETTER OF APPROVAL
 DATED MAR 31 2021 FILE # 20-0274
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Nancy L. Freeman



COPYRIGHT
 THESE DRAWINGS ARE THE PROPERTY OF THE ENGINEER/SURVEYOR AND HAVE BEEN PREPARED FOR THE OWNER. FOR THIS PROJECT AT THIS SITE AND ARE NOT TO BE USED FOR ANY OTHER PURPOSE, LOCATION OR OWNER WITHOUT WRITTEN CONSENT OF THE OWNER OR ONE OF ITS DIRECTORS.



CERTIFICATION
 THIS SURVEY HAS BEEN CONDUCTED AND THE PLAN HAS BEEN PREPARED PURSUANT TO 435-RICR-00-00-1.9 OF THE RULES AND REGULATIONS ADOPTED BY THE RHODE ISLAND STATE BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS ON APRIL 26, 2018, AS FOLLOWS:
TYPE OF BOUNDARY SURVEY: LIMITED CONTENT BOUNDARY SURVEY
MEASUREMENT / ACCURACY SPECIFICATION: I (PARTIAL BOUNDARY AS SHOWN)
OTHER TYPE OF SURVEY: DATA ACCUMULATION SURVEY III TOPOGRAPHIC SURVEY I-1
 THE PURPOSE FOR CONDUCTING THIS SURVEY AND FOR THE PREPARATION OF THE PLAN IS AS FOLLOWS:
 TO PROVIDE A PARTIAL EXISTING CONDITIONS PLAN & TOPOGRAPHIC SURVEY TO ASSIST WITH THE FUTURE DEVELOPMENT OF THE SUBJECT PROPERTY.

RICHARD S. LIPSITZ
 No. 1837
 PROFESSIONAL LAND SURVEYOR

BY: *[Signature]* 1837 09/09/2020
 RICHARD S. LIPSITZ, P.L.S. REG. NO. DATE
 WATERMAN ENGINEERING COMPANY (COA No. LS-000483)

NO.	DATE	REVISION	CHECKED BY
PARTIAL BOUNDARY & TOPOGRAPHIC SURVEY A.P. 138, PORTION OF LOT 18 & ADJACENT 20' WIDE RIGHT OF WAY MANLY DRIVE - BURRILLVILLE, RHODE ISLAND			PROJECT NO. 20-074 SCALE: 1" = 20' DATE: 09/09/2020 DRAWN BY: EBP CHECKED BY: BJT / RSL FILENAME: 20-074.SU1 1 of 1 SHTS DRAWING # SU1
JOE CASALI ENGINEERING, INC. 300 POST ROAD WARWICK, RHODE ISLAND			
46 Sutton Avenue East Providence, RI Phone: (401) - 438 - 5775 Fax: (401) - 438 - 5773 www.watermanengineering.net			