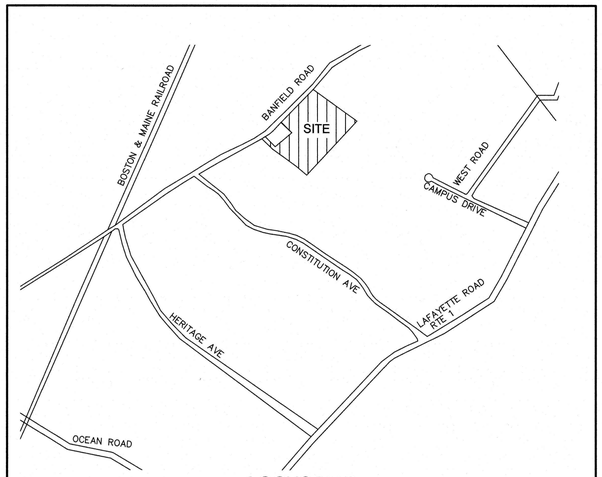
COMMERCIAL SITE PLAN
"INDUSTRIAL WAREHOUSE"
TAX MAP 266, LOT 7
375 BANFIELD ROAD, PORTSMOUTH, NH

GENERAL LEGEND

EXISTING	PROPOSED	DESCRIPTION
		PROPERTY LINES
		SETBACK LINES
		CENTERLINE
		FRESHWATER WETLANDS LINE
		TIDAL WETLANDS LINE
		STREAM CHANNEL
		TREE LINE
		STONEWALL
		BARBED WIRE
		FENCE
		STOCKADE FENCE
		SOIL BOUNDARY
		AQUIFER PROTECTION LINE
		FLOOD PLAIN LINE
		ZONELINE
		EASEMENT
100	100	MAJOR CONTOUR
98	98	MINOR CONTOUR
		EDGE OF PAVEMENT
VGC	VGC	VERTICAL GRANITE CURB
SGC	SGC	SLOPE GRANITE CURB
CCB	CCB	CAPE COD BERM
PCC	PCC	POURED CONCRETE CURB
X	X	SILT FENCE
D		DRAINAGE LINE
S	S	SEWER LINE
FM	FM	SEWER FORCE MAIN
G	G	GAS LINE
W	W	WATER LINE
WS	WS	WATER SERVICE
OHE	OHE	OVERHEAD ELECTRIC
UGE	UGE	UNDERGROUND ELECTRIC
		GUARDRAIL
UD	UD	UNDERDRAIN
F	F	FIRE PROTECTION LINE
	W	THRUST BLOCK
		IRON PIPE/IRON ROD
		DRILL HOLE
		IRON ROD/DRILL HOLE
		STONE/GRANITE BOUND
100x0	100x0	SPOT GRADE
x 100.00	x 100.00	PAVEMENT SPOT GRADE
x 100.00 / 99.50	x 100.00 / 99.50	CURB SPOT GRADE
		BENCHMARK (TBM)
		DOUBLE POST SIGN
		SINGLE POST SIGN
W TP1	W	WELL
TP1		TEST PIT
	M	FAILED TEST PIT
PT M	M	MONITORING WELL
1		PERC TEST
		PHOTO LOCATION
		TREES AND BUSHES
		UTILITY POLE
		LIGHT POLES
D	D	DRAIN MANHOLE
S	S	SEWER MANHOLE
		HYDRANT
		WATER GATE
		WATER SHUT OFF
		REDUCER
		SINGLE GRATE CATCH BASIN
		DOUBLE GRATE CATCH BASIN
T	T	TRANSFORMER
		CULVERT W/WINGWALLS
		CULVERT W/FLARED END SECTION
		CULVERT W/STRAIGHT HEADWALL
		STONE CHECK DAM
		DRAINAGE FLOW DIRECTION
		4K SEPTIC AREA
		WETLAND IMPACT
		VEGETATED FILTER STRIP
		RIPRAP
		OPEN WATER
		FRESHWATER WETLANDS
		TIDAL WETLANDS
		STABILIZED CONSTRUCTION ENTRANCE
		CONCRETE
		GRAVEL
		SNOW STORAGE
		RETAINING WALL



LOCUS MAP
SCALE 1" = 1000'

SHEET INDEX

CIVIL ENGINEER / SURVEYOR
JONES & BEACH ENGINEERS, INC.
85 PORTSMOUTH AVENUE
PO BOX 219
STRATHAM, NH 03885
(603) 772-4746
CONTACT: JOSEPH CORONATI
JCORONATI@JONESANDBEACH.COM

WETLAND AND SOIL CONSULTANT
GOVE ENVIRONMENTAL SERVICES, INC.
8 CONTINENTAL DRIVE BUILDING 2 UNIT H
EXETER, NH 03833
(603) 778-0644
CONTACT: JAMES GOVE
JGOVE@GESINC.BIZ

LANDSCAPE DESIGNER
LM LAND DESIGN
11 SOUTH ROAD
BRENTWOOD, NH 03833
CONTACT: LISE MCNAUGHTON
(603) 770-7728
LMLANDDESIGN@GMAIL.COM

ELECTRIC
EVERSOURCE ENERGY
74 OLD DOVER ROAD
ROCHESTER, NH 03867
CONTACT: NICHOLAI KOSKO
(603) 555-5334

TELEPHONE
FAIRPOINT COMMUNICATIONS
1575 GREENLAND ROAD
GREENLAND, NH 03840
CONTACT: JOE CONSIDINE
(603) 427-5525

CABLE TV
COMCAST COMMUNICATION CORPORATION
334-B CALEF HIGHWAY
EPPING, NH 03402-2325
(603) 679-5695

PROJECT PARCEL
CITY OF PORTSMOUTH
TAX MAP 266, LOT 7

TOTAL LOT AREA
651,747 S.F.
14.96 ACRES

APPROVED – PORTSMOUTH, NH
PLANNING BOARD

DATE:

F:\CADD\MASTER STANDARD\dwg\JB-LAYOUTS.dwg 3/12/2015 3:27:29 PM EDT

Design: JAC	Draft: DJM	Date: 04/21/20
Checked: JAC	Scale: AS NOTED	Project No.: 19190.2
Drawing Name: 19190-PLAN.dwg		

STATE OF NEW HAMPSHIRE — MICHAEL J. NERVAN NO. 9946 — LICENSED PROFESSIONAL ENGINEER — 12/21/2020

REV.	DATE	REVISION	BY
6	12/30/20	ISSUED TO PLANNING BOARD	DJM
5	11/17/20	REVISED PROFILES	DJM
4	11/10/20	ADDED SIGHT DISTANCE PROFILE	DJM
3	11/3/20	ISSUED TO TECHNICAL ADVISORY COMMITTEE	DJM
2	10/21/20	MEETING WITH CITY PLANNER	DJM

Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

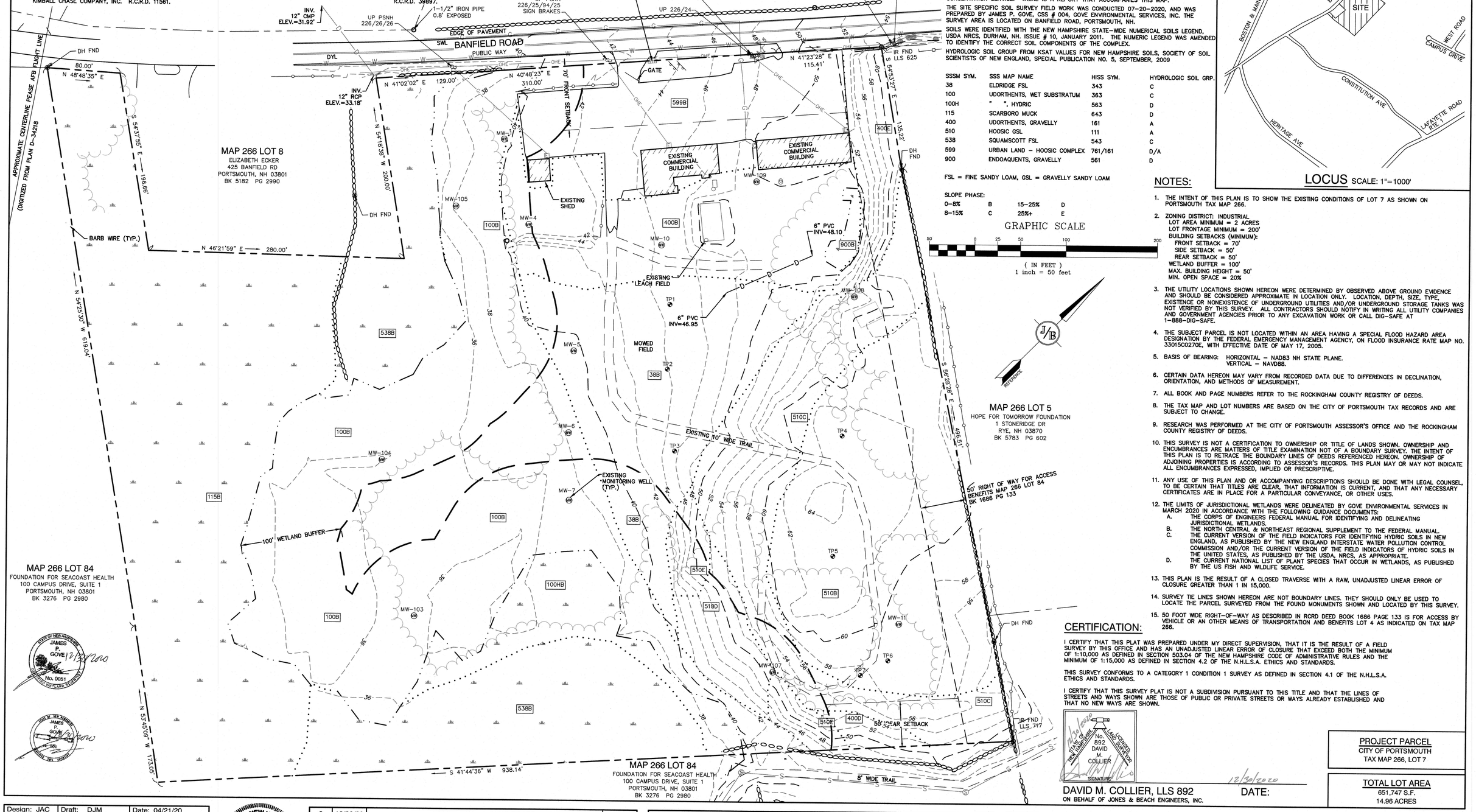
Plan Name:	COVER SHEET
Project:	INDUSTRIAL WAREHOUSE 375 BANFIELD ROAD, PORTSMOUTH, NH 03801
Owner of Record:	BANFIELD REALTY LLC 304 MAPLEWOOD AVENUE, PORTSMOUTH, NH 03801

DRAWING No.
CS
SHEET 1 OF 21
JBE PROJECT NO. 19190.2

PROJECT NAME AND LOCATION
JBE # 19190.2 REVISION X - XX/XX/XX

PLAN REFERENCES:

1. "PLAN OF LAND IN PORTSMOUTH, N.H. OWNED BY PEVERLY HILL CORPORATION AND JOHN IAFOLLA COMPANY INC." DATED DECEMBER 1975. PREPARED BY FRANCIS BARRETT. R.C.R.D. 5657.
2. "PLAN OF LAND FOR MICHAEL R. IAFOLLA & FERRIS G. BAVICCHI." DATED MAY 2, 1983. PREPARED BY KIMBALL CHASE COMPANY, INC. R.C.R.D. 11561.
3. "SUBDIVISION PLAN FOR JOHN IAFOLLA COMPANY, INC, PEVERLY HILL ROAD / BANFIELD ROAD, PORTSMOUTH, N.H." DATED OCTOBER 11, 1996. R.C.R.D. 25153.
4. "BOUNDARY PLAN, TAX MAP R66, LOT 4." DATED JUNE 1997. PREPARED BY LITTLE RIVER SURVEY COMPANY. R.C.R.D. 26190.
5. "LOT LINE ADJUSTMENT, JOHN IAFOLLA COMPANY, INC. AND CITY OF PORTSMOUTH." DATED NOVEMBER 16, 1997. R.C.R.D. 26202.
6. "LOT LINE REVISION PLAN, CAMPUS DRIVE, BANFIELD & PEVERLY HILL ROADS, PORTSMOUTH, NEW HAMPSHIRE." DATED OCTOBER 24, 2016. PREPARED BY JAMES VERRA AND ASSOCIATES. R.C.R.D. 39897.



SOIL NOTES:

THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PURPOSE PRODUCT, INTENDED FOR INFILTRATION REQUIREMENTS BY THE NH DES ALTERATION OF TERRAIN BUREAU. IT WAS PRODUCED BY A PROFESSIONAL SOIL SCIENTIST, AND IS NOT A PRODUCT OF THE USDA NATURAL RESOURCES CONSERVATION SERVICE. THERE IS A REPORT THAT ACCOMPANIES THIS MAP.

THE SITE SPECIFIC SOIL SURVEY FIELD WORK WAS CONDUCTED 07-20-2020, AND WAS PREPARED BY JAMES P. GOVE, CSS # 004, GOVE ENVIRONMENTAL SERVICES, INC. THE SURVEY AREA IS LOCATED ON BANFIELD ROAD, PORTSMOUTH, NH.

SOILS WERE IDENTIFIED WITH THE NEW HAMPSHIRE STATE-WIDE NUMERICAL SOILS LEGEND, USDA NRCS, DURHAM, NH. ISSUE # 10, JANUARY 2011. THE NUMERIC LEGEND WAS AMENDED TO IDENTIFY THE CORRECT SOIL COMPONENTS OF THE COMPLEX.

HYDROLOGIC SOIL GROUP FROM KSAT VALUES FOR NEW HAMPSHIRE SOILS, SOCIETY OF SOIL SCIENTISTS OF NEW ENGLAND, SPECIAL PUBLICATION NO. 5, SEPTEMBER, 2009

SSSM SYM.	SSS MAP NAME	HISS SYM.	HYDROLOGIC SOIL GRP.
38	ELDRIDGE FSL	343	C
100	UDORTHENTS, WET SUBSTRATUM	363	C
100H	" ", HYDRIC	563	D
115	SCARBORO MUCK	643	D
400	UDORTHENTS, GRAVELLY	161	A
510	HOOSIC GSL	111	A
538	SQUAMSCOTT FSL	543	C
599	URBAN LAND - HOOSIC COMPLEX	761,161	D/A
900	ENDOAQUENTS, GRAVELLY	561	D

FSL = FINE SANDY LOAM, GSL = GRAVELLY SANDY LOAM

SLOPE PHASE:

0-8%	B	15-25%	D
8-15%	C	25%+	E

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 feet

LOCUS SCALE: 1"=1000'

NOTES:

1. THE INTENT OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS OF LOT 7 AS SHOWN ON PORTSMOUTH TAX MAP 266.
2. ZONING DISTRICT: INDUSTRIAL
   LOT AREA MINIMUM = 2 ACRES
   LOT FRONTAGE MINIMUM = 200'
   BUILDING SETBACKS (MINIMUM):
   FRONT SETBACK = 70'
   SIDE SETBACK = 50'
   REAR SETBACK = 50'
   WETLAND BUFFER = 100'
   MAX. BUILDING HEIGHT = 50'
   MIN. OPEN SPACE = 20%
3. THE UTILITY LOCATIONS SHOWN HEREON WERE DETERMINED BY OBSERVED ABOVE GROUND EVIDENCE AND SHOULD BE CONSIDERED APPROXIMATE IN LOCATION ONLY. LOCATION, DEPTH, SIZE, TYPE, EXISTENCE OR NONEXISTENCE OF UNDERGROUND UTILITIES AND/OR UNDERGROUND STORAGE TANKS WAS NOT VERIFIED BY THIS SURVEY. ALL CONTRACTORS SHOULD NOTIFY IN WRITING ALL UTILITY COMPANIES AND GOVERNMENT AGENCIES PRIOR TO ANY EXCAVATION WORK OR CALL DIG-SAFE AT 1-888-DIG-SAFE.
4. THE SUBJECT PARCEL IS NOT LOCATED WITHIN AN AREA HAVING A SPECIAL FLOOD HAZARD AREA DESIGNATION BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, ON FLOOD INSURANCE RATE MAP NO. 33015C0270E, WITH EFFECTIVE DATE OF MAY 17, 2005.
5. BASIS OF BEARING: HORIZONTAL - NAD83 NH STATE PLANE.
   VERTICAL - NAVD88.
6. CERTAIN DATA HEREON MAY VARY FROM RECORDED DATA DUE TO DIFFERENCES IN DECLINATION, ORIENTATION, AND METHODS OF MEASUREMENT.
7. ALL BOOK AND PAGE NUMBERS REFER TO THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
8. THE TAX MAP AND LOT NUMBERS ARE BASED ON THE CITY OF PORTSMOUTH TAX RECORDS AND ARE SUBJECT TO CHANGE.
9. RESEARCH WAS PERFORMED AT THE CITY OF PORTSMOUTH ASSESSOR'S OFFICE AND THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
10. THIS SURVEY IS NOT A CERTIFICATION TO OWNERSHIP OR TITLE OF LANDS SHOWN. OWNERSHIP AND ENCUMBRANCES ARE MATTERS OF TITLE EXAMINATION NOT OF A BOUNDARY SURVEY. THE INTENT OF THIS PLAN IS TO RETRACE THE BOUNDARY LINES OF DEEDS REFERENCED HEREON. OWNERSHIP OF ADJOINING PROPERTIES IS ACCORDING TO ASSESSOR'S RECORDS. THIS PLAN MAY OR MAY NOT INDICATE ALL ENCUMBRANCES EXPRESSED, IMPLIED OR PRESCRIPTIVE.
11. ANY USE OF THIS PLAN AND OR ACCOMPANYING DESCRIPTIONS SHOULD BE DONE WITH LEGAL COUNSEL, TO BE CERTAIN THAT TITLES ARE CLEAR, THAT INFORMATION IS CURRENT, AND THAT ANY NECESSARY CERTIFICATES ARE IN PLACE FOR A PARTICULAR CONVEYANCE, OR OTHER USES.
12. THE LIMITS OF JURISDICTIONAL WETLANDS WERE DELINEATED BY GOVE ENVIRONMENTAL SERVICES IN MARCH 2020 IN ACCORDANCE WITH THE FOLLOWING GUIDANCE DOCUMENTS:
   A. THE CORPS OF ENGINEERS FEDERAL MANUAL FOR IDENTIFYING AND DELINEATING JURISDICTIONAL WETLANDS.
   B. THE NORTH CENTRAL & NORTHEAST REGIONAL SUPPLEMENT TO THE FEDERAL MANUAL.
   C. THE CURRENT VERSION OF THE FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, AS PUBLISHED BY THE NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION AND/OR THE CURRENT VERSION OF THE FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, AS PUBLISHED BY THE USDA, NRCS, AS APPROPRIATE.
   D. THE CURRENT NATIONAL LIST OF PLANT SPECIES THAT OCCUR IN WETLANDS, AS PUBLISHED BY THE US FISH AND WILDLIFE SERVICE.
13. THIS PLAN IS THE RESULT OF A CLOSED TRAVERSE WITH A RAW, UNADJUSTED LINEAR ERROR OF CLOSURE GREATER THAN 1 IN 15,000.
14. SURVEY TIE LINES SHOWN HEREON ARE NOT BOUNDARY LINES. THEY SHOULD ONLY BE USED TO LOCATE THE PARCEL SURVEYED FROM THE FOUND MONUMENTS SHOWN AND LOCATED BY THIS SURVEY.
15. 50 FOOT WIDE RIGHT-OF-WAY AS DESCRIBED IN RCRD DEED BOOK 1686 PAGE 133 IS FOR ACCESS BY VEHICLE OR AN OTHER MEANS OF TRANSPORTATION AND BENEFITS LOT 4 AS INDICATED ON TAX MAP 266.

CERTIFICATION:

I CERTIFY THAT THIS PLAT WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN UNADJUSTED LINEAR ERROR OF CLOSURE THAT EXCEED BOTH THE MINIMUM OF 1:10,000 AS DEFINED IN SECTION 503.04 OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES AND THE MINIMUM OF 1:15,000 AS DEFINED IN SECTION 4.2 OF THE N.H.L.S.A. ETHICS AND STANDARDS.

THIS SURVEY CONFORMS TO A CATEGORY 1 CONDITION 1 SURVEY AS DEFINED IN SECTION 4.1 OF THE N.H.L.S.A. ETHICS AND STANDARDS.

I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN.

STATE OF NEW HAMPSHIRE LAND SURVEYOR No. 892 DAVID M. COLLIER SIGNATURE

DAVID M. COLLIER, LLS 892 — DATE: 12/30/2020
ON BEHALF OF JONES & BEACH ENGINEERS, INC.

PROJECT PARCEL
CITY OF PORTSMOUTH
TAX MAP 266, LOT 7

TOTAL LOT AREA
651,747 S.F.
14.96 ACRES

STATE OF NEW HAMPSHIRE JAMES P. GOVE No. 004 LAND SURVEYOR — 12/30/2020

STATE OF NEW HAMPSHIRE JAMES P. GOVE No. 004 WETLAND SCIENTIST — 12/30/2020

STATE OF NEW HAMPSHIRE MICHAEL J. KERVAN No. 9646 LICENSED PROFESSIONAL ENGINEER — 12/30/20

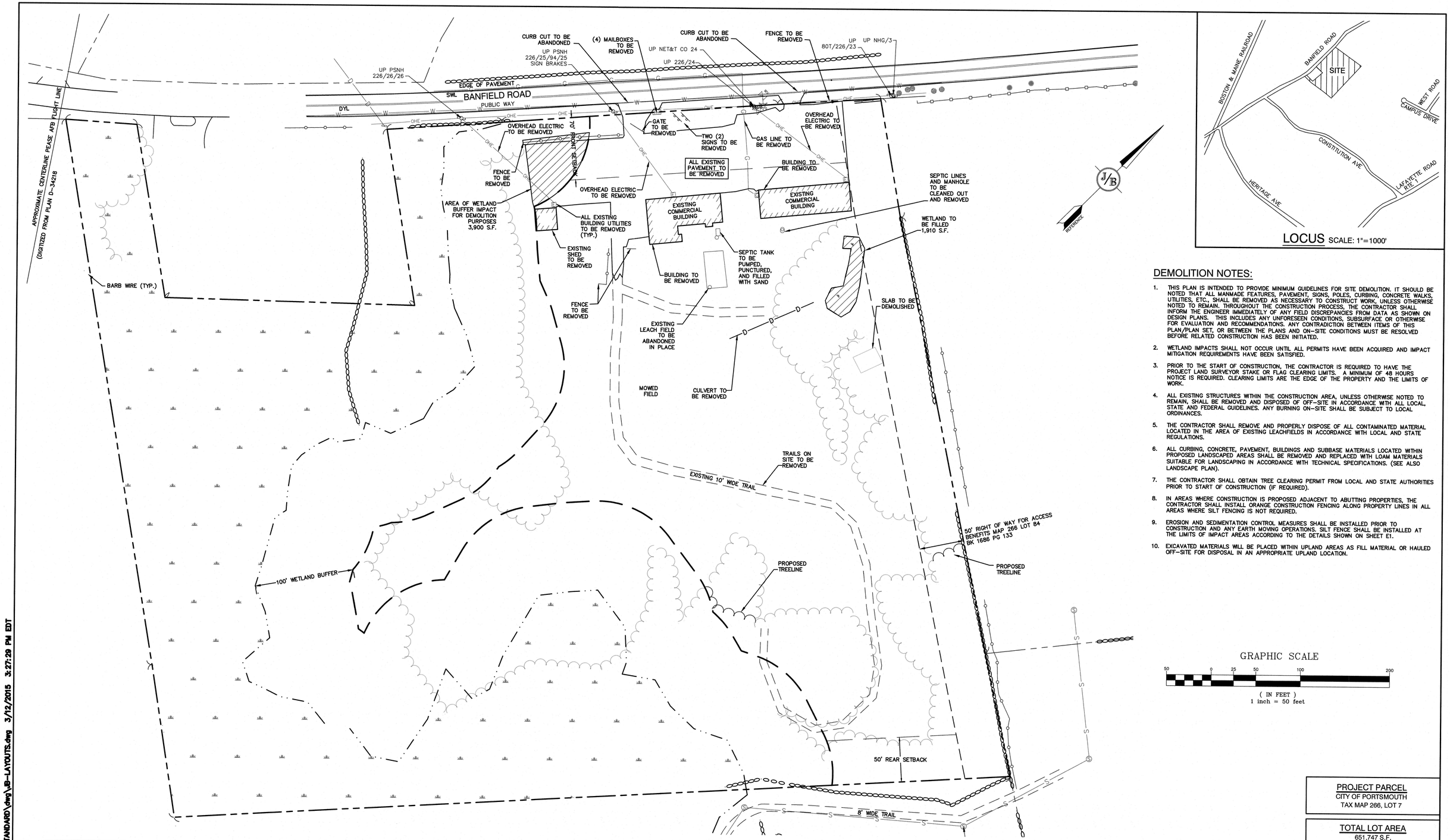
Design: JAC	Draft: DJM
Checked: JAC	Scale: AS-NOTED
Drawing Name: 19190-PLAN.dwg	Date: 04/21/20
	Project No.: 19190.2

REV.	DATE	REVISION	BY
6	12/30/20	ISSUED TO PLANNING BOARD	DJM
5	11/17/20	REVISED PROFILES	DJM
4	11/10/20	ADDED SIGHT DISTANCE PROFILE	DJM
3	11/3/20	ISSUED TO TECHNICAL ADVISORY COMMITTEE	DJM
2	10/21/20	MEETING WITH CITY PLANNER	DJM

Designed and Produced in NH
Jones & Beach Engineers, Inc.
85 Portsmouth Ave. PO Box 219 Stratham, NH 03885
Civil Engineering Services
603-772-4746 FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: EXISTING CONDITIONS PLAN
Project: INDUSTRIAL WAREHOUSE
375 BANFIELD ROAD, PORTSMOUTH, NH 03801
Owner of Record: BANFIELD REALTY LLC
304 MAPLEWOOD AVENUE, PORTSMOUTH, NH 03801

DRAWING No.
C1
SHEET 2 OF 21
JBE PROJECT NO. 19190.2



LOCUS SCALE: 1"=1000'

DEMOLITION NOTES:

1. THIS PLAN IS INTENDED TO PROVIDE MINIMUM GUIDELINES FOR SITE DEMOLITION. IT SHOULD BE NOTED THAT ALL MANMADE FEATURES, PAVEMENT, SIGNS, POLES, CURBING, CONCRETE WALKS, UTILITIES, ETC., SHALL BE REMOVED AS NECESSARY TO CONSTRUCT WORK, UNLESS OTHERWISE NOTED TO REMAIN. THROUGHOUT THE CONSTRUCTION PROCESS, THE CONTRACTOR SHALL INFORM THE ENGINEER IMMEDIATELY OF ANY FIELD DISCREPANCIES FROM DATA AS SHOWN ON DESIGN PLANS. THIS INCLUDES ANY UNFORESEEN CONDITIONS, SUBSURFACE OR OTHERWISE FOR EVALUATION AND RECOMMENDATIONS. ANY CONTRADICTION BETWEEN ITEMS OF THIS PLAN/PLAN SET, OR BETWEEN THE PLANS AND ON-SITE CONDITIONS MUST BE RESOLVED BEFORE RELATED CONSTRUCTION HAS BEEN INITIATED.
2. WETLAND IMPACTS SHALL NOT OCCUR UNTIL ALL PERMITS HAVE BEEN ACQUIRED AND IMPACT MITIGATION REQUIREMENTS HAVE BEEN SATISFIED.
3. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR IS REQUIRED TO HAVE THE PROJECT LAND SURVEYOR STAKE OR FLAG CLEARING LIMITS. A MINIMUM OF 48 HOURS NOTICE IS REQUIRED. CLEARING LIMITS ARE THE EDGE OF THE PROPERTY AND THE LIMITS OF WORK.
4. ALL EXISTING STRUCTURES WITHIN THE CONSTRUCTION AREA, UNLESS OTHERWISE NOTED TO REMAIN, SHALL BE REMOVED AND DISPOSED OF OFF-SITE IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL GUIDELINES. ANY BURNING ON-SITE SHALL BE SUBJECT TO LOCAL ORDINANCES.
5. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL CONTAMINATED MATERIAL LOCATED IN THE AREA OF EXISTING LEACHFIELDS IN ACCORDANCE WITH LOCAL AND STATE REGULATIONS.
6. ALL CURBING, CONCRETE, PAVEMENT, BUILDINGS AND SUBBASE MATERIALS LOCATED WITHIN PROPOSED LANDSCAPED AREAS SHALL BE REMOVED AND REPLACED WITH LOAM MATERIALS SUITABLE FOR LANDSCAPING IN ACCORDANCE WITH TECHNICAL SPECIFICATIONS. (SEE ALSO LANDSCAPE PLAN).
7. THE CONTRACTOR SHALL OBTAIN TREE CLEARING PERMIT FROM LOCAL AND STATE AUTHORITIES PRIOR TO START OF CONSTRUCTION (IF REQUIRED).
8. IN AREAS WHERE CONSTRUCTION IS PROPOSED ADJACENT TO ABUTTING PROPERTIES, THE CONTRACTOR SHALL INSTALL ORANGE CONSTRUCTION FENCING ALONG PROPERTY LINES IN ALL AREAS WHERE SILT FENCING IS NOT REQUIRED.
9. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO CONSTRUCTION AND ANY EARTH MOVING OPERATIONS. SILT FENCE SHALL BE INSTALLED AT THE LIMITS OF IMPACT AREAS ACCORDING TO THE DETAILS SHOWN ON SHEET E1.
10. EXCAVATED MATERIALS WILL BE PLACED WITHIN UPLAND AREAS AS FILL MATERIAL OR HAULED OFF-SITE FOR DISPOSAL IN AN APPROPRIATE UPLAND LOCATION.

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 feet

PROJECT PARCEL
CITY OF PORTSMOUTH
TAX MAP 266, LOT 7

TOTAL LOT AREA
651,747 S.F.
14.96 ACRES

F:\CADD\MASTER STANDARD\(dwg)\JB-LAYOUTS.dwg 3/12/2015 3:27:29 PM EDT

Design: JAC	Draft: DJM	Date: 04/21/20
Checked: JAC	Scale: AS-NOTED	Project No.: 19190.2
Drawing Name: 19190-PLAN.dwg		

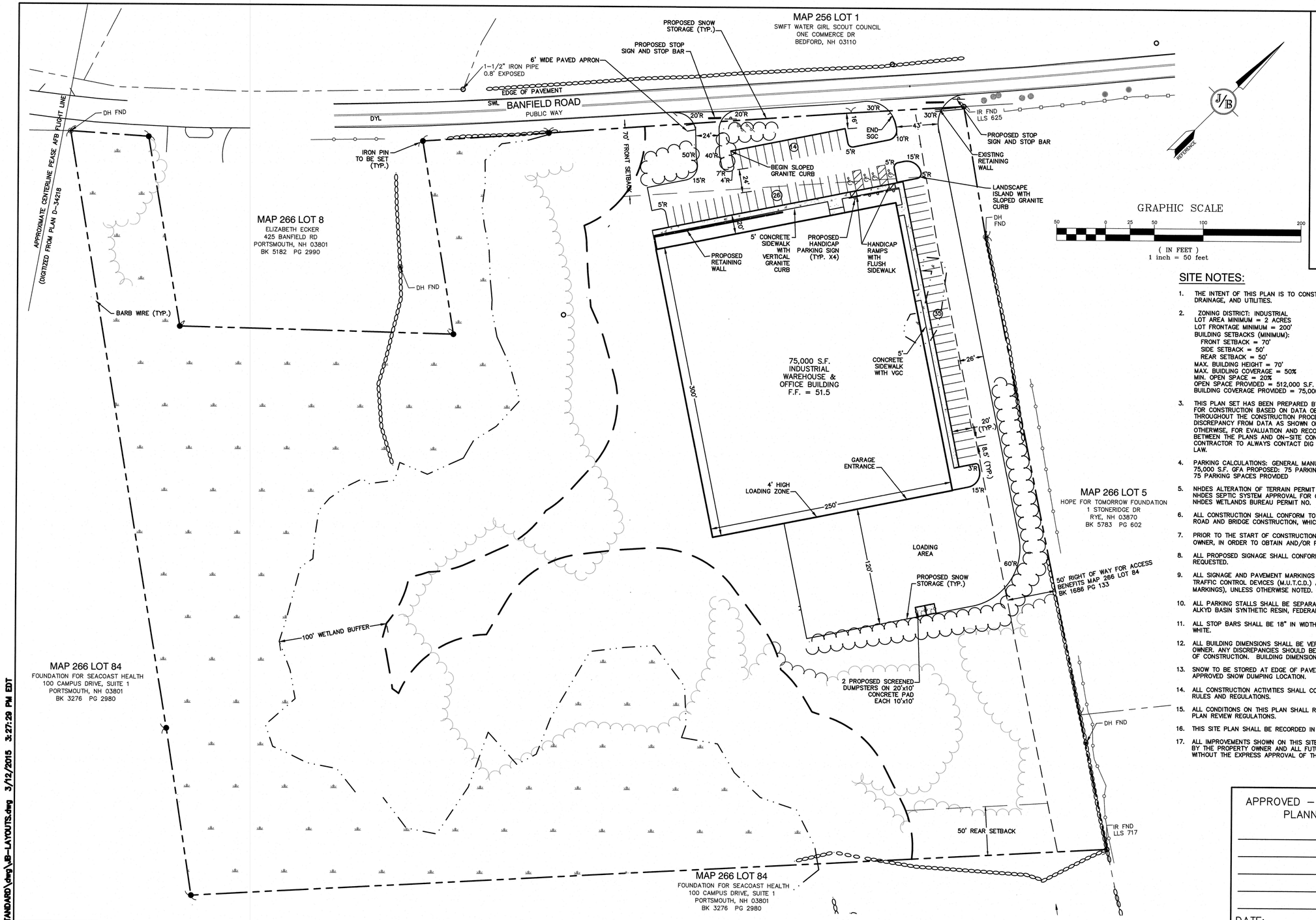
STATE OF NEW HAMPSHIRE – MICHAEL J. KERIVAN No. 9646 – LICENSED PROFESSIONAL ENGINEER

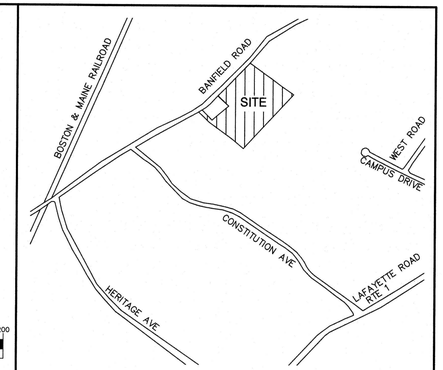
REV.	DATE	REVISION	BY
6	12/30/20	ISSUED TO PLANNING BOARD	DJM
5	11/17/20	REVISED PROFILES	DJM
4	11/10/20	ADDED SIGHT DISTANCE PROFILE	DJM
3	11/3/20	ISSUED TO TECHNICAL ADVISORY COMMITTEE	DJM
2	10/21/20	MEETING WITH CITY PLANNER	DJM

Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave. PO Box 219 Stratham, NH 03885
Civil Engineering Services
603-772-4746 FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	DEMOLITION PLAN
Project:	INDUSTRIAL WAREHOUSE 375 BANFIELD ROAD, PORTSMOUTH, NH 03801
Owner of Record:	BANFIELD REALTY LLC 304 MAPLEWOOD AVENUE, PORTSMOUTH, NH 03801

DRAWING No.
DM-1
SHEET 3 OF 21
JBE PROJECT NO. 19190.2





LOCUS SCALE: 1"=1000'

SITE NOTES:

1. THE INTENT OF THIS PLAN IS TO CONSTRUCT AN INDUSTRIAL WAREHOUSE & OFFICE BUILDING WITH ASSOCIATED GRADING, DRAINAGE, AND UTILITIES.
2. ZONING DISTRICT: INDUSTRIAL
   LOT AREA MINIMUM = 2 ACRES
   LOT FRONTAGE MINIMUM = 200'
   BUILDING SETBACKS (MINIMUM):
   FRONT SETBACK = 70'
   SIDE SETBACK = 50'
   REAR SETBACK = 50'
   MAX. BUILDING HEIGHT = 70'
   MAX. BUILDING COVERAGE = 50%
   MIN. OPEN SPACE = 20%
   OPEN SPACE PROVIDED = 512,000 S.F. = 78.6%
   BUILDING COVERAGE PROVIDED = 75,000 S.F. = 11.5%
3. THIS PLAN SET HAS BEEN PREPARED BY JONES & BEACH ENGINEERS, INC., FOR MUNICIPAL AND STATE APPROVALS AND FOR CONSTRUCTION BASED ON DATA OBTAINED FROM ON-SITE FIELD SURVEY AND EXISTING MUNICIPAL RECORDS. THROUGHOUT THE CONSTRUCTION PROCESS, THE CONTRACTOR SHALL INFORM THE ENGINEER IMMEDIATELY OF ANY FIELD DISCREPANCY FROM DATA AS SHOWN ON THE DESIGN PLANS, INCLUDING ANY UNFORESEEN CONDITIONS, SUBSURFACE OR OTHERWISE, FOR EVALUATION AND RECOMMENDATIONS. ANY CONTRADICTION BETWEEN ITEMS ON THIS PLAN/PLAN SET, OR BETWEEN THE PLANS AND ON-SITE CONDITIONS, MUST BE RESOLVED BEFORE RELATED CONSTRUCTION HAS BEEN INITIATED. CONTRACTOR TO ALWAYS CONTACT DIG SAFE PRIOR TO DIGGING ONSITE OR OFFSITE TO ENSURE SAFETY AND OBEY THE LAW.
4. PARKING CALCULATIONS: GENERAL MANUFACTURING: 1 SPACE REQUIRED PER 1000 SF GFA
   75,000 S.F. GFA PROPOSED: 75 PARKING SPACES REQUIRED
   75 PARKING SPACES PROVIDED
5. NHDES ALTERATION OF TERRAIN PERMIT NO. DATED .
   NHDES SEPTIC SYSTEM APPROVAL FOR CONSTRUCTION NO. DATED .
   NHDES WETLANDS BUREAU PERMIT NO. DATED .
6. ALL CONSTRUCTION SHALL CONFORM TO TOWN STANDARDS AND REGULATIONS, AND NHDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, WHICHEVER IS MORE STRINGENT.
7. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER, ARCHITECT AND/OR OWNER, IN ORDER TO OBTAIN AND/OR PAY ALL THE NECESSARY LOCAL PERMITS, FEES AND BONDS.
8. ALL PROPOSED SIGNAGE SHALL CONFORM WITH THE TOWN ZONING REGULATIONS, UNLESS A VARIANCE IS OTHERWISE REQUESTED.
9. ALL SIGNAGE AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.) AND NHDOT STANDARDS AND SPECIFICATIONS (NON-REFLECTORIZED PAVEMENT MARKINGS), UNLESS OTHERWISE NOTED.
10. ALL PARKING STALLS SHALL BE SEPARATED USING 4" WIDE SOLID STRIPES. STRIPING SHALL HAVE TWO COATS OF PAINT, ALKYD BASIN SYNTHETIC RESIN, FEDERAL SPECIFICATION TTP-115 TYPE 1, IN A COLOR OF WHITE.
11. ALL STOP BARS SHALL BE 18" IN WIDTH IN A COLOR OF WHITE; ALL TRAFFIC ARROWS SHALL BE PAINTED IN A COLOR OF WHITE.
12. ALL BUILDING DIMENSIONS SHALL BE VERIFIED WITH THE ARCHITECTURAL AND STRUCTURAL PLANS PROVIDED BY THE OWNER. ANY DISCREPANCIES SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND OWNER PRIOR TO THE START OF CONSTRUCTION. BUILDING DIMENSIONS AND AREAS TO BE TO OUTSIDE OF MASONRY, UNLESS OTHERWISE NOTED.
13. SNOW TO BE STORED AT EDGE OF PAVEMENT AND IN AREAS SHOWN ON THE PLANS, OR TRUCKED OFFSITE TO AN APPROVED SNOW DUMPING LOCATION.
14. ALL CONSTRUCTION ACTIVITIES SHALL CONFORM TO LABOR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) RULES AND REGULATIONS.
15. ALL CONDITIONS ON THIS PLAN SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE SITE PLAN REVIEW REGULATIONS.
16. THIS SITE PLAN SHALL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
17. ALL IMPROVEMENTS SHOWN ON THIS SITE PLAN SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE PLAN BY THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS. NO CHANGES SHALL BE MADE TO THIS SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE PORTSMOUTH PLANNING DIRECTOR.

APPROVED – PORTSMOUTH, NH
PLANNING BOARD

DATE:

PROJECT PARCEL
CITY OF PORTSMOUTH
TAX MAP 266, LOT 7

TOTAL LOT AREA
651,747 S.F.
14.96 ACRES

F:\CADD\MASTER STANDARD\dwg\JB-LAYOUTS.dwg 3/12/2015 3:27:29 PM EDT

Design: JAC	Draft: DJM
Checked: JAC	Scale: AS-NOTED
Drawing Name: 19190-PLAN.dwg	Date: 04/21/20
Project No.: 19190.2	

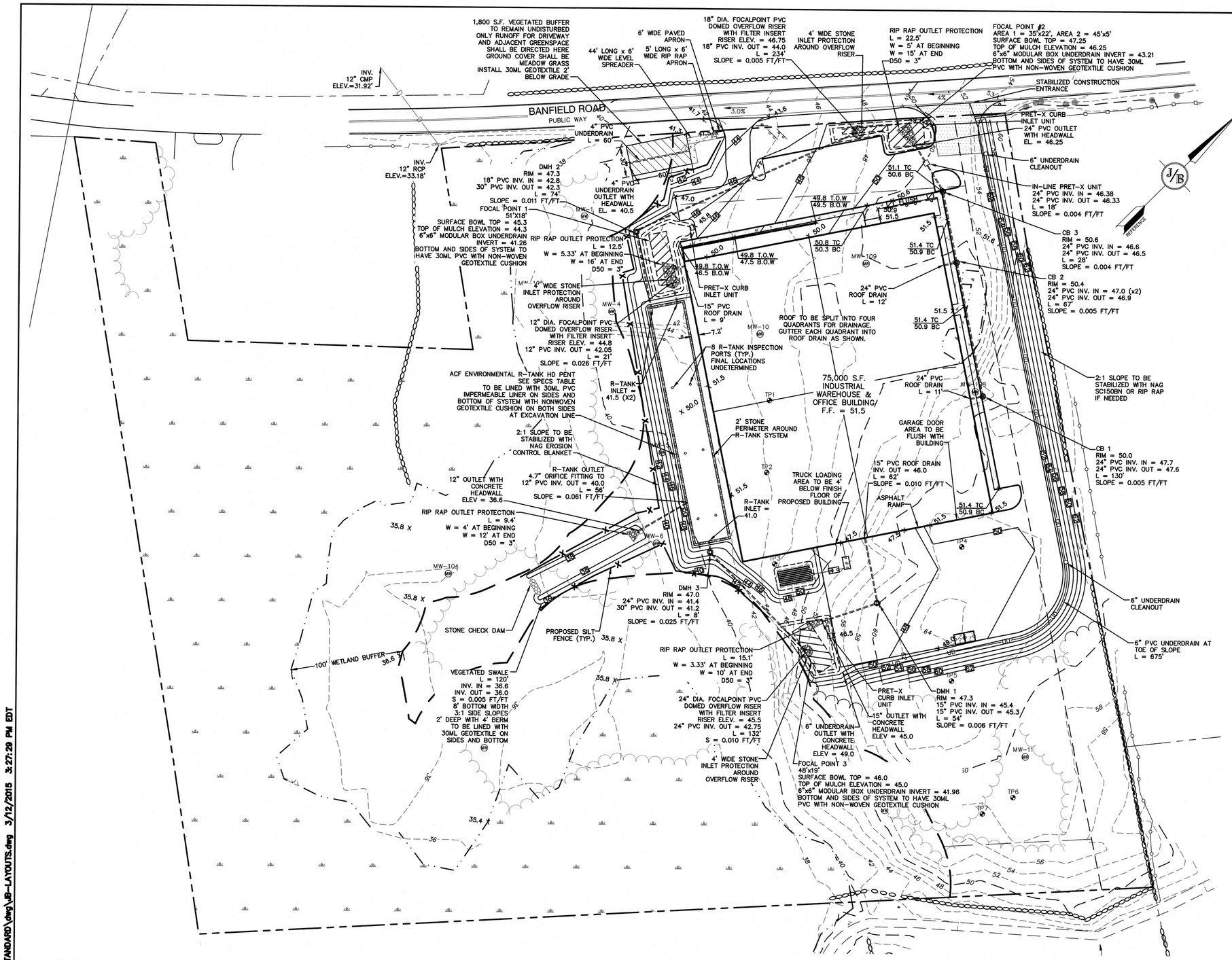
STATE OF NEW HAMPSHIRE
MICHAEL J. KERIVAN
No. 9646
LICENSED PROFESSIONAL ENGINEER
12/21/20

REV.	DATE	REVISION	BY
6	12/30/20	ISSUED TO PLANNING BOARD	DJM
5	11/17/20	REVISED PROFILES	DJM
4	11/10/20	ADDED SIGHT DISTANCE PROFILE	DJM
3	11/3/20	ISSUED TO TECHNICAL ADVISORY COMMITTEE	DJM
2	10/21/20	MEETING WITH CITY PLANNER	DJM

Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	SITE PLAN
Project:	INDUSTRIAL WAREHOUSE 375 BANFIELD ROAD, PORTSMOUTH, NH 03801
Owner of Record:	BANFIELD REALTY LLC 304 MAPLEWOOD AVENUE, PORTSMOUTH, NH 03801

DRAWING No.
C2
SHEET 4 OF 21
JBE PROJECT NO. 19190.2



GRADING AND DRAINAGE NOTES:

1. UNDERGROUND FACILITIES, UTILITIES AND STRUCTURES HAVE BEEN PLOTTED FROM FIELD OBSERVATION AND THEIR LOCATION MUST BE CONSIDERED APPROXIMATE ONLY. NEITHER JONES & BEACH ENGINEERS, INC., NOR ANY OF THEIR EMPLOYEES TAKE RESPONSIBILITY FOR THE LOCATION OF ANY UNDERGROUND STRUCTURES AND/OR UTILITIES NOT SHOWN THAT MAY EXIST. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL UNDERGROUND STRUCTURES AND/OR UTILITIES LOCATED PRIOR TO EXCAVATION WORK BY CALLING 888-DIG-SAFE (888-344-7233).
2. VERTICAL DATUM: NAVD88.
3. ALL BENCHMARKS AND TOPOGRAPHY SHOULD BE FIELD VERIFIED BY THE CONTRACTOR.
4. SITE GRADING SHALL NOT PROCEED UNTIL EROSION CONTROL MEASURES HAVE BEEN INSTALLED. SEE CONSTRUCTION SEQUENCE ON SHEET E1.
5. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR IS REQUIRED TO HAVE THE PROJECT'S LAND SURVEYOR STAKE OR FLAG CLEARING LIMITS. A MINIMUM OF 48 HOURS NOTICE IS REQUIRED.
6. ALL ROOF DRAINS FROM BUILDING SHALL END 5' OUTSIDE THE BUILDING LIMITS AS SHOWN ON PLAN AND SHALL BE PROVIDED WITH A TEMPORARY PLUG AND WITNESS AT THE END. ALL EXTERIOR ROOF DOWNSPOUTS ARE TO BE INSTALLED WITH OVERFLOW DEVICES.
7. ALL SWALES AND DETENTION PONDS ARE TO BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
8. PROPOSED RIM ELEVATIONS OF DRAINAGE STRUCTURES ARE APPROXIMATE. FINAL ELEVATIONS ARE TO BE SET FLUSH WITH FINISH GRADES.
9. ALL SWALES AND ANY SLOPES GREATER THAN 3:1 SHALL BE STABILIZED WITH NORTH AMERICAN GREEN S75 EROSION CONTROL BLANKETS (OR AN EQUIVALENT APPROVED IN WRITING BY THE ENGINEER), UNLESS OTHERWISE SPECIFIED.
10. ALL DRAINAGE AND SANITARY STRUCTURE INTERIOR DIAMETERS (4' MIN) SHALL BE DETERMINED BY THE MANUFACTURER BASED ON THE PIPE CONFIGURATIONS SHOWN ON THESE PLANS. CATCH BASINS SHALL HAVE 3' DEEP SUMPS WITH GREASE HOODS, UNLESS OTHERWISE NOTED.
11. ALL DRAINAGE STRUCTURES SHALL BE PRECAST, UNLESS OTHERWISE SPECIFIED. SEE SHEETS D2-D6 FOR DRAINAGE DETAILS.
12. ALL DRAINAGE STRUCTURES AND STORMWATER PIPES SHALL MEET HEAVY DUTY TRAFFIC H20 LOADING AND SHALL BE INSTALLED ACCORDINGLY.
13. IN AREAS WHERE CONSTRUCTION IS PROPOSED ADJACENT TO ABUTTING PROPERTIES, THE CONTRACTOR SHALL INSTALL ORANGE CONSTRUCTION FENCING ALONG PROPERTY LINES IN ALL AREAS WHERE SILT FENCING IS NOT REQUIRED.
14. ALL DRAINAGE PIPE SHALL BE NON-PERFORATED ADS N-12 OR APPROVED EQUAL.
15. STONE INLET PROTECTION SHALL BE PLACED AT ALL CATCH BASINS. SEE DETAIL WITHIN THE DETAIL SHEETS.
16. LAND DISTURBING ACTIVITIES SHALL NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED BY ALL GOVERNING AUTHORITIES. THE GENERAL CONTRACTOR SHALL STRICTLY ADHERE TO THE EPA SWPPP DURING CONSTRUCTION OPERATIONS.
17. NO LAND CLEARING OR GRADING SHALL BEGIN UNTIL ALL EROSION CONTROL MEASURES HAVE BEEN INSTALLED.
18. ALL EXPOSED AREAS SHALL BE SEEDED AS SPECIFIED WITHIN 3 DAYS OF FINAL GRADING.
19. SHOULD CONSTRUCTION STOP FOR LONGER THAN 3 DAYS, THE SITE SHALL BE SEEDED AS SPECIFIED.
20. MAINTAIN EROSION CONTROL MEASURES AFTER EACH RAIN EVENT OF 0.5" OR GREATER IN A 24 HOUR PERIOD AND AT LEAST ONCE A WEEK.
21. THIS PLAN SHALL NOT BE CONSIDERED ALL INCLUSIVE, AS THE GENERAL CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SEDIMENT FROM LEAVING THE SITE.
22. CONSTRUCTION VEHICLES SHALL UTILIZE THE STABILIZED CONSTRUCTION ENTRANCE TO THE EXTENT POSSIBLE THROUGHOUT CONSTRUCTION.
23. IF INSTALLATION OF STORM DRAINAGE SYSTEM SHOULD BE INTERRUPTED BY WEATHER OR NIGHTFALL, THE PIPE ENDS SHALL BE COVERED WITH FILTER FABRIC.
24. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO TAKE WHATEVER MEANS NECESSARY TO ESTABLISH PERMANENT SOIL STABILIZATION.
25. SEDIMENT SHALL BE REMOVED FROM ALL SEDIMENT BASINS BEFORE THEY ARE 25% FULL.
26. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH PROJECT SPECIFICATIONS.
27. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED, IF DEEMED NECESSARY BY ON-SITE INSPECTION BY ENGINEER AND/OR REGULATORY OFFICIALS.
28. ALL CULVERT OR DRAINPIPE OUTLETS ARE TO HAVE CONCRETE HEADWALLS UNLESS OTHERWISE STATED.
29. AREA OF DISTURBANCE = 212,000 S.F.
    AREA OF DISTURBANCE IN 100' WETLAND BUFFER = 3,900 S.F. TO REMOVE PAVEMENT, INSTALL UNDERDRAIN, PLANT TREES
    AREA OF WETLAND FILL = 1,910 S.F.
    IMPERVIOUS SURFACE IN WETLAND BUFFER TO BE REMOVED = 3,350 S.F.
    * PERMANENT DISTURBANCE = IMPERVIOUS SURFACE, TEMPORARY DISTURBANCE = VEGETATED AREA
30. ALL STORMWATER TREATMENT, DETENTION, AND BIOFILTRATION PRACTICES TO BE LINED AS SPECIFIED
31. SEE ALSO EROSION AND SEDIMENT CONTROL SPECIFICATIONS ON SHEET E1.

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 feet

R-TANK SPECS	
TOP OF FILL	50.0
TOP OF STONE COVER	48.21
TOP OF CHAMBER	47.21
BOTTOM OF CHAMBER	40.25
BOTTOM OF STONE BASE	40.0
CHAMBERS PER ROW	100
# OF ROWS	25
LENGTH	238.58'
WIDTH	36.81'

PROJECT PARCEL
CITY OF PORTSMOUTH
TAX MAP 266, LOT 7

TOTAL LOT AREA
651,747 S.F.
14.96 ACRES

F:\CADD\MASTER STANDARD\dwg\JB-LAYOUTS.dwg 3/12/2015 3:27:29 PM EDT

Design: JAC	Draft: DJM	Date: 04/21/20	
Checked: JAC	Scale: AS-NOTED	Project No.: 19190.2	
Drawing Name: 19190-PLAN.dwg			

STATE OF NEW HAMPSHIRE — MICHAEL J. KERVAN No. 9846 — LICENSED PROFESSIONAL ENGINEER — 12/30/20

REV.	DATE	REVISION	BY
6	12/30/20	ISSUED TO PLANNING BOARD	DJM
5	11/17/20	REVISED PROFILES	DJM
4	11/10/20	ADDED SIGHT DISTANCE PROFILE	DJM
3	11/3/20	ISSUED TO TECHNICAL ADVISORY COMMITTEE	DJM
2	10/21/20	MEETING WITH CITY PLANNER	DJM

Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
Civil Engineering Services
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: GRADING AND DRAINAGE PLAN
Project: INDUSTRIAL WAREHOUSE
375 BANFIELD ROAD, PORTSMOUTH, NH 03801
Owner of Record: BANFIELD REALTY LLC
304 MAPLEWOOD AVENUE, PORTSMOUTH, NH 03801

DRAWING No.
C3
SHEET 5 OF 21
JBE PROJECT NO. 19190.2

UTILITY NOTES:

1. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER, ARCHITECT AND/OR OWNER, IN ORDER TO OBTAIN AND/OR PAY ALL THE NECESSARY LOCAL PERMITS, CONNECTION FEES AND BONDS.
2. THE CONTRACTOR SHALL PROVIDE A MINIMUM NOTICE OF FOURTEEN (14) DAYS TO ALL CORPORATIONS, COMPANIES AND/OR LOCAL AUTHORITIES OWNING OR HAVING A JURISDICTION OVER UTILITIES RUNNING TO, THROUGH OR ACROSS PROJECT AREAS PRIOR TO DEMOLITION AND/OR CONSTRUCTION ACTIVITIES.
3. THE LOCATION, SIZE, DEPTH AND SPECIFICATIONS FOR CONSTRUCTION OF PROPOSED PRIVATE UTILITY SERVICES SHALL BE TO THE STANDARDS AND REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANY (ELECTRIC, TELEPHONE, CABLE TELEVISION, FIRE ALARM, GAS, WATER, AND SEWER).
4. A PRECONSTRUCTION MEETING SHALL BE HELD WITH THE OWNER, ENGINEER, ARCHITECT, CONTRACTOR, LOCAL OFFICIALS, AND ALL PROJECT-RELATED UTILITY COMPANIES (PUBLIC AND PRIVATE) PRIOR TO START OF CONSTRUCTION.
5. ALL CONSTRUCTION SHALL CONFORM TO THE TOWN STANDARDS AND REGULATIONS, AND NHDES STANDARDS AND SPECIFICATIONS, WHICHEVER ARE MORE STRINGENT, UNLESS OTHERWISE SPECIFIED.
6. ALL CONSTRUCTION ACTIVITIES SHALL CONFORM TO LABOR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) RULES AND REGULATIONS.
7. BUILDING TO BE SERVICED BY UNDERGROUND UTILITIES UNLESS OTHERWISE NOTED.
8. THE CONTRACTOR IS TO VERIFY LOCATION AND DEPTH OF ALL EXISTING UTILITY STUBS PRIOR TO CONSTRUCTION AND DISCONNECT ALL EXISTING SERVICE CONNECTIONS AT THEIR RESPECTIVE MAINS IN ACCORDANCE WITH THE RESPECTIVE UTILITY COMPANY'S STANDARDS AND SPECIFICATIONS. ENGINEER TO BE NOTIFIED.
9. AS-BUILT PLANS SHALL BE SUBMITTED TO DEPARTMENT OF PUBLIC WORKS.
10. INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW AT CHANGES IN DIRECTION. THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE THROUGH CHANNEL UNDERLAYMENT OF INVERT, AND SHELF SHALL CONSIST OF BRICK MASONRY.
11. FRAMES AND COVERS: MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30 INCH DIA, CLEAR OPENING. THE WORD "SEWER" OR "DRAIN" SHALL BE CAST INTO THE CENTER OF THE UPPER FACE OF EACH COVER WITH RAISED, 3" LETTERS.
12. SHALLOW MANHOLE: IN LIEU OF A CONE SECTION, WHEN MANHOLE DEPTH IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER MAY BE USED HAVING AN ECCENTRIC ENTRANCE OPENING AND CAPABLE OF SUPPORTING H20 LOADS.
13. CONTRACTOR SHALL PLACE 2" WIDE METAL WIRE IMPREGNATED RED PLASTIC WARNING TAPE OVER ENTIRE LENGTH OF ALL GRAVITY SEWERS, SERVICES, AND FORCE MAINS.
14. PROPOSED RIM ELEVATIONS OF DRAINAGE AND SANITARY MANHOLES ARE APPROXIMATE. FINAL ELEVATIONS ARE TO BE SET FLUSH WITH FINISH GRADES. ADJUST ALL OTHER RIM ELEVATIONS OF MANHOLES, WATER GATES, GAS GATES AND OTHER UTILITIES TO FINISH GRADE AS SHOWN ON THE GRADING AND DRAINAGE PLAN.
15. ALL WATER MAINS AND SERVICE PIPES SHALL HAVE A MINIMUM 12" VERTICAL AND 24" HORIZONTAL SEPARATION TO MANHOLES, OR CONTRACTOR SHALL INSTALL BOARD INSULATION FOR FREEZING PROTECTION.
16. WATER MAINS SHALL BE HYDROSTATICALLY PRESSURE TESTED FOR LEAKAGE PRIOR TO ACCEPTANCE. WATERMAINS SHALL BE TESTED AT 1.5 TIMES THE WORKING PRESSURE OR 150 PSI, WHICH EVER IS GREATER. TESTING SHALL BE CONDUCTED IN ACCORDANCE WITH SECTION 4 OF AWWA STANDARD C 600. WATERMAINS SHALL BE DISINFECTED AFTER THE ACCEPTANCE OF THE PRESSURE AND LEAKAGE TESTS ACCORDING TO AWWA STANDARD C 651.
17. ALL WATER AND SANITARY LEADS TO BUILDING(S) SHALL END 5' OUTSIDE THE BUILDING LIMITS AS SHOWN ON PLANS AND SHALL BE PROVIDED WITH A TEMPORARY PLUG AND WITNESS AT END.
18. IF THE BUILDING IS REQUIRED TO HAVE A SPRINKLER SYSTEM, A PRECONSTRUCTION MEETING SHALL BE HELD BETWEEN THE CONTRACTOR, OWNER, ARCHITECT AND THE LOCAL FIRE DEPARTMENT PRIOR TO THE INSTALLATION.
19. THRUST BLOCKS SHALL BE PROVIDED AT ALL BENDS, TEES, MECHANICAL JOINTS AND FIRE HYDRANTS.
20. DIMENSIONS ARE SHOWN TO CENTERLINE OF PIPE OR FITTING.
21. THE CONTRACTOR SHALL HAVE THE APPROVAL OF ALL GOVERNING AGENCIES HAVING JURISDICTION OVER FIRE PROTECTION SYSTEM PRIOR TO INSTALLATION.
22. CONTRACTOR TO FURNISH SHOP DRAWINGS FOR UTILITY RELATED ITEMS TO ENSURE CONFORMANCE WITH THE PLANS AND SPECIFICATIONS. SHOP DRAWINGS SHOULD BE SENT IN TRIPLICATE TO THE DESIGN ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
23. EXISTING UTILITIES SHALL BE DIGSAFED BEFORE CONSTRUCTION.
24. ALL WATER LINES SHOULD HAVE TESTABLE BACKFLOW PREVENTERS AT THE ENTRANCE TO EACH BUILDING.
25. ALL WATER AND SANITARY LEADS TO BUILDING(S) SHALL END AT RIGHT OF WAY AS SHOWN ON PLANS AND SHALL BE PROVIDED WITH A TEMPORARY PLUG AND WITNESS AT END.
26. LIGHTING CONDUIT SHALL BE SCHEDULE 40 PVC, AND SHALL BE INSTALLED IN CONFORMANCE WITH THE NATIONAL ELECTRIC CODE. CONTRACTOR SHALL PROVIDE EXCAVATION AND BACKFILL.
27. ALL TRENCHING, PIPE LAYING, AND BACKFILLING SHALL BE IN ACCORDANCE WITH FEDERAL OSHA REGULATIONS.

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 feet

F:\CADD\MASTER STANDARD\dwg\JB-LAYOUTS.dwg 3/12/2015 3:27:29 PM EDT

Design: JAC	Draft: DJM	Date: 04/21/20
Checked: JAC	Scale: AS-NOTED	Project No.: 19190.2
Drawing Name: 19190-PLAN.dwg		

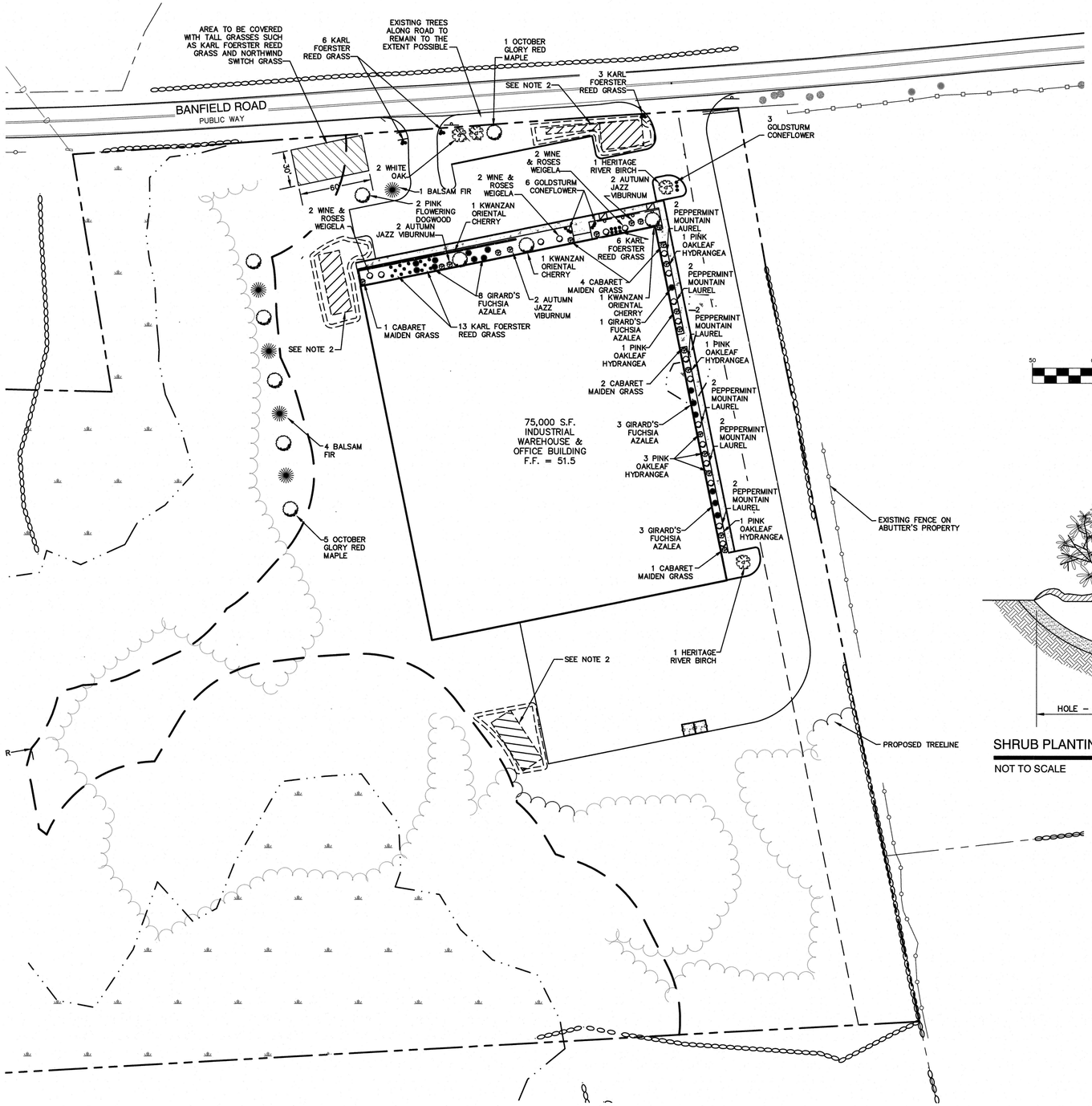
STATE OF NEW HAMPSHIRE
MICHAEL J. KERIVAN No. 9648 LICENSED PROFESSIONAL ENGINEER
12/30/20

REV.	DATE	REVISION	BY
6	12/30/20	ISSUED TO PLANNING BOARD	DJM
5	11/17/20	REVISED PROFILES	DJM
4	11/10/20	ADDED SIGHT DISTANCE PROFILE	DJM
3	11/3/20	ISSUED TO TECHNICAL ADVISORY COMMITTEE	DJM
2	10/21/20	MEETING WITH CITY PLANNER	DJM

Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	UTILITY PLAN
Project:	INDUSTRIAL WAREHOUSE 375 BANFIELD ROAD, PORTSMOUTH, NH 03801
Owner of Record:	BANFIELD REALTY LLC 304 MAPLEWOOD AVENUE, PORTSMOUTH, NH 03801

DRAWING No.
C4
SHEET 6 OF 21
JBE PROJECT NO. 19190.2



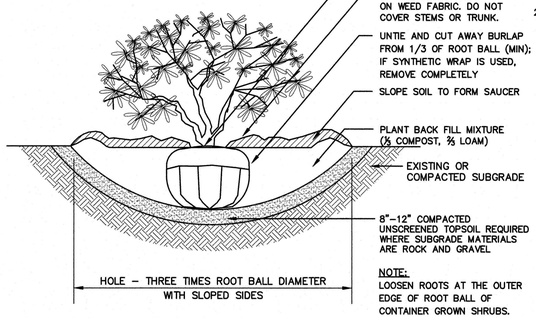
GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 feet

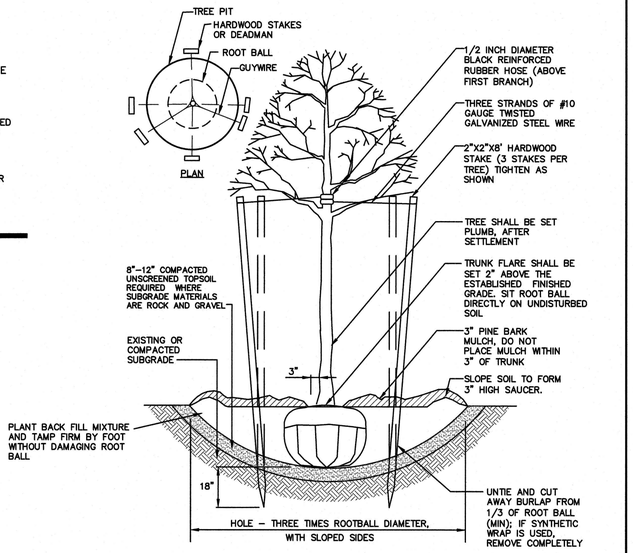
LANDSCAPE NOTES:

1. THE CONTRACTOR SHALL LOCATE AND VERIFY THE EXISTENCE OF ALL UTILITIES PRIOR TO STARTING WORK.
2. FOCAL POINT STORMWATER TREATMENT AREAS TO BE PLANTED WITH PERRENIAL GRASSES, CONEFLOWERS, AND DAYLILIES.
3. THE CONTRACTOR SHALL SUPPLY ALL PLANT MATERIALS IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTINGS SHOWN ON THE DRAWINGS.
4. ALL MATERIAL SHALL CONFORM TO THE GUIDELINES ESTABLISHED BY THE CURRENT AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
5. PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL AT THE PLACE OF GROWTH, UPON DELIVERY OR AT THE JOB SITE WHILE WORK IS ON-GOING FOR CONFORMITY TO SPECIFIED QUALITY, SIZE AND VARIETY.
6. PLANTS FURNISHED IN CONTAINERS SHALL HAVE THE ROOTS WELL ESTABLISHED IN THE SOIL MASS AND SHALL HAVE AT LEAST ONE (1) GROWING SEASON. ROOT-BOUND PLANTS OR INADEQUATELY SIZED CONTAINERS TO SUPPORT THE PLANT MAY BE DEEMED UNACCEPTABLE.
7. ALL WORK AND PLANTS SHALL BE DONE, INSTALLED AND DETAILED IN STRICT ACCORDANCE WITH PROJECT SPECIFICATIONS.
8. ALL PLANTS SHALL BE WATERED THOROUGHLY TWICE DURING THE FIRST 24-HOUR PERIOD AFTER PLANTING. ALL PLANTS SHALL BE WATERED WEEKLY, OR MORE OFTEN IF NECESSARY, DURING THE FIRST GROWING SEASON.
9. ALL LANDSCAPE AREAS TO BE GRASS COMMON TO REGION, EXCEPT FOR INTERIOR LANDSCAPED ISLANDS OR WHERE OTHER PLANT MATERIAL IS SPECIFIED.
10. ALL TREES AND SHRUBS SHALL BE PLANTED IN MULCH BEDS WITH EDGE STRIPS TO SEPARATE TURF GRASS AREAS.
11. THE CONTRACTOR SHALL REMOVE WEEDS, ROCKS, CONSTRUCTION ITEMS, ETC. FROM ANY LANDSCAPE AREA SO DESIGNATED TO REMAIN, WHETHER ON OR OFF-SITE. GRASS SEED OR PINE BARK MULCH SHALL BE APPLIED AS DEPICTED ON PLANS.
12. FINISHED GRADES IN LANDSCAPED ISLANDS SHALL BE INSTALLED SO THAT THEY ARE 1" HIGHER THAN THE TOP OF THE SURROUNDING CURB.
13. ALL LANDSCAPING SHALL MEET THE TOWN STANDARDS AND REGULATIONS.
14. EXISTING TREES TO REMAIN SHALL BE PROTECTED WITH TEMPORARY SNOW FENCING AT THE DRIPLINE OF THE TREE. THE CONTRACTOR SHALL NOT STORE VEHICLES OR MATERIALS WITHIN THE LANDSCAPED AREAS. ANY DAMAGE TO EXISTING TREES, SHRUBS OR LAWN SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
15. ALL MULCH AREAS SHALL RECEIVE A 3" LAYER OF SHREDDED PINE BARK MULCH OVER A 10 MIL WEED MAT EQUAL TO 'WEEDBLOCK' BY EASY GARDENER OR DEWITT WEED BARRIER.
16. ALL LANDSCAPED AREAS SHALL HAVE SELECT MATERIALS REMOVED TO A DEPTH OF AT LEAST 9" BELOW FINISH GRADE. THE RESULTING VOID IS TO BE FILLED WITH A MINIMUM OF 9" HIGH-QUALITY SCREENED LOAM AMENDED WITH 3" OF AGED ORGANIC COMPOST.
17. THIS PLAN IS INTENDED FOR LANDSCAPING PURPOSES ONLY. REFER TO CIVIL/SITE DRAWINGS FOR OTHER SITE CONSTRUCTION INFORMATION.
18. IRRIGATION PIPING SYSTEM SHALL BE REVIEWED AND APPROVED BY OWNER AND ENGINEER PRIOR TO INSTALLATION.
19. THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS SHALL BE RESPONSIBLE FOR THE MAINTENANCE, REPAIR, AND REPLACEMENT OF ALL REQUIRED SCREENING AND LANDSCAPE MATERIALS.
20. ALL REQUIRED PLANT MATERIALS SHALL BE TENDED AND MAINTAINED IN A HEALTHY GROWING CONDITION, REPLACED WHEN NECESSARY, AND KEPT FREE OF REFUSE AND DEBRIS. ALL REQUIRED FENCES AND WALLS SHALL BE MAINTAINED IN GOOD REPAIR.
21. THE PROPERTY OWNER SHALL BE RESPONSIBLE TO REMOVE AND REPLACE DEAD OR DISEASED PLANT MATERIALS IMMEDIATELY WITH THE SAME TYPE, SIZE, AND QUANTITY OF PLANT MATERIALS AS ORIGINALLY INSTALLED, UNLESS ALTERNATIVE PLANTINGS ARE REQUESTED, JUSTIFIED, AND APPROVED BY THE PLANNING BOARD OR PLANNING DIRECTOR.



SHRUB PLANTING

NOT TO SCALE



TREE PLANTING (FOR TREES UNDER 4" CALIPER)

NOT TO SCALE

F:\CADD\MASTER STANDARD\dwg\JB-LAYOUTS.dwg 3/12/2015 3:27:29 PM EDT

Design: JAC	Draft: DJM	Date: 04/21/20
Checked: JAC	Scale: AS-NOTED	Project No.: 19190.2
Drawing Name: 19190-PLAN.dwg		

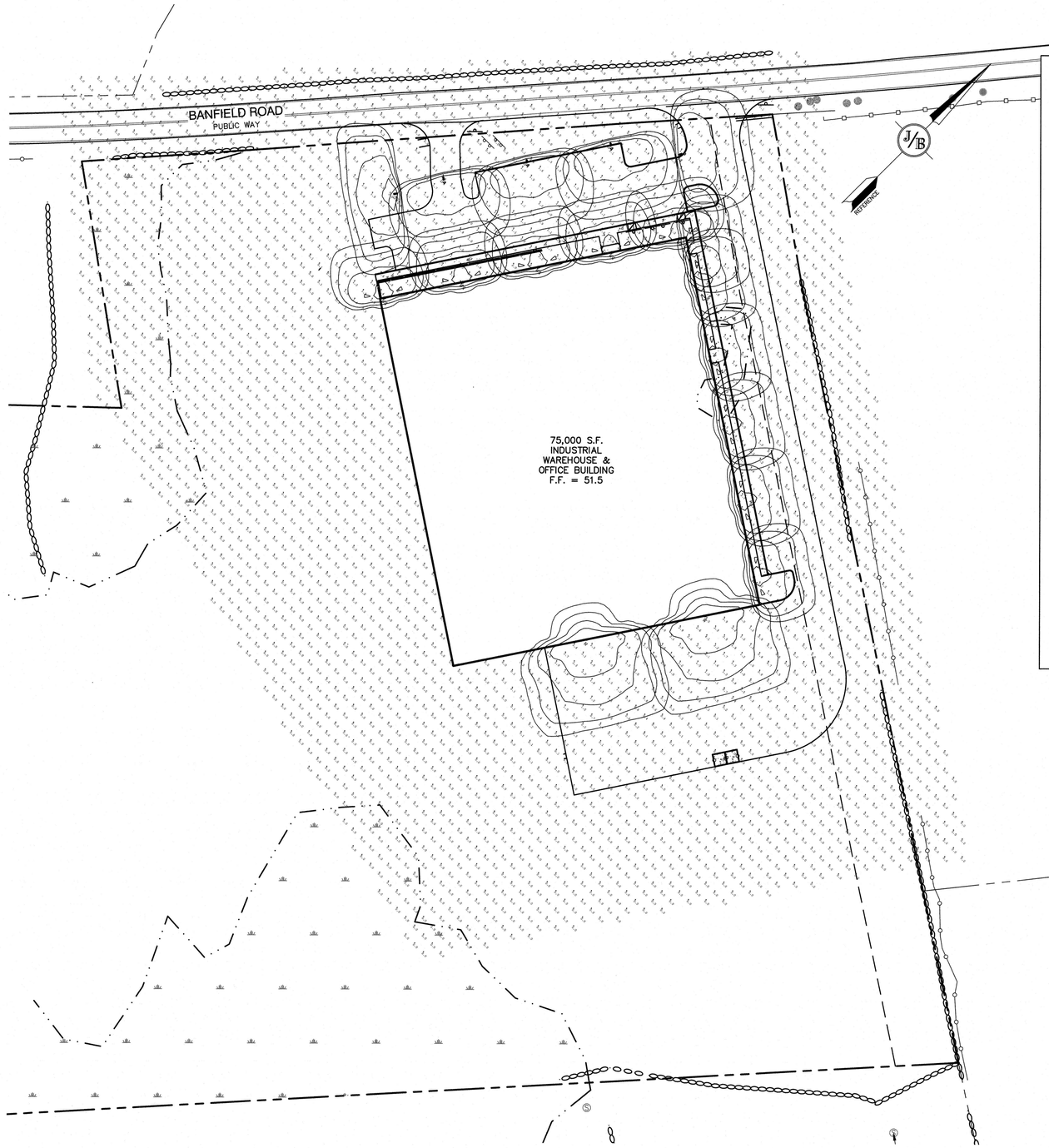
STATE OF NEW HAMPSHIRE
MICHAEL J. KERWAN
No. 9648
LICENSED
PROFESSIONAL ENGINEER
4/22/20

REV.	DATE	REVISION	BY
6	12/30/20	ISSUED TO PLANNING BOARD	DJM
5	11/17/20	REVISED PROFILES	DJM
4	11/10/20	ADDED SIGHT DISTANCE PROFILE	DJM
3	11/3/20	ISSUED TO TECHNICAL ADVISORY COMMITTEE	DJM
2	10/21/20	MEETING WITH CITY PLANNER	DJM

Designed and Produced in NH
Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	LANDSCAPE PLAN
Project:	INDUSTRIAL WAREHOUSE 375 BANFIELD ROAD, PORTSMOUTH, NH 03801
Owner of Record:	BANFIELD REALTY LLC 304 MAPLEWOOD AVENUE, PORTSMOUTH, NH 03801

DRAWING No.
L1
SHEET 7 OF 21
JBE PROJECT NO. 19190.2



GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 feet

McGraw-Edison

DESCRIPTION

The Galleon™ LED luminaire delivers exceptional performance in a highly scalable, low-profile design. Patented, high-efficiency AccuLED Optics™ system provides uniform and energy conscious illumination to walkways, parking lots, roadways, building areas and security lighting applications. IP66 rated and UL/cUL Listed for wet locations.

		Type
Catalog #		
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Construction
Extruded aluminum driver enclosure thermally isolated from Light Squares for optimal thermal performance. Heavy-wall, die-cast aluminum end caps enclose housing and die-cast aluminum heat sinks. A unique, patent pending interlocking housing and heat sink provides scalability with superior structural rigidity. 3G vibration tested and rated. Optional tool-less hardware available for ease of entry into electrical chamber. Housing is IP66 rated.

Optics
Patented, high-efficiency injection-molded AccuLED Optics technology. Optics are precisely designed to shape the distribution maximizing efficiency and application spacing. AccuLED Optics create consistent distributions with the scalability to meet customized application requirements. Offered standard in 4000K (+/- 275K) CCT 70 CRI. Optional 3000K, 5000K and 6000K CCT.

Electrical
LED drivers are mounted to removable tray assembly for ease of maintenance. 120-277V 50/60Hz, 347V 60Hz or 480V 60Hz operation. 480V is compatible for use with 480V Wye systems only. Standard with 0-10V dimming. Shipped standard with Eaton proprietary circuit module designed to withstand 10kV of transient line surge. The Galleon LED luminaire is suitable for operation in -40°C to 40°C ambient environments. For applications with ambient temperatures exceeding 40°C, specify the HA (High Ambient) option. Light Squares are IP66 rated. Greater than 90% lumen maintenance expected at 60,000 hours. Available in standard 1A drive current and optional 600mA, 800mA and 1200mA drive currents (nominal).

Mounting
STANDARD ARM MOUNT:
Extruded aluminum arm includes internal bolt guides allowing for easy positioning of fixture during mounting. When mounting two or more luminaires at 90° and 120° apart, the EA extended arm may be required. Refer to the arm mounting requirement table. Round pole adapter included. For wall mounting, specify wall mount bracket option. QUICK MOUNT ARM: Adapter is bolted directly to the pole. Quick mount arm slids into place on the adapter and is secured via two screws, facilitating quick and easy installation. The versatile, patent pending, quick mount arm accommodates multiple drill patterns ranging from 1-1/2" to 4-7/8". Removal of the door on the quick mount arm enables wiring of the fixture without having to access the driver compartment. A knock-out enables round pole mounting.

Finish
Housing finished in super durable TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Heat sink is powder coated black. Standard housing colors include black, bronze, grey, white, dark platinum and graphite metallic. RAL and custom color matches available.

Warranty
Five-year warranty.

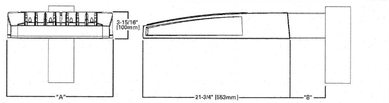
GLEON
GALLEON LED

1-10 Light Squares
Solid State LED

AREA/SITE LUMINAIRE

Lumenfinity Technology
TECHNOLOGY

DIMENSIONS



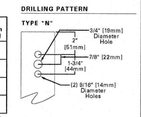
DIMENSION DATA

Number of Light Squares	"A" Width	"B" Standard Arm Length	"B" Optional Arm Length [1]	Weight with Arm (lbs.)	EPA with Arm [2](Sq. Ft.)
1-4	15-1/2" (394mm)	7" (178mm)	10" (254mm)	33 (15.0 kgs.)	0.86
5-6	21-5/8" (549mm)	7" (178mm)	10" (254mm)	44 (20.0 kgs.)	1.00
7-8	27-5/8" (702mm)	7" (178mm)	13" (330mm)	54 (24.5 kgs.)	1.07
9-10	33-3/4" (857mm)	7" (178mm)	16" (406mm)	63 (28.6 kgs.)	1.12

NOTES: 1. Optional arm length to be used when mounting two fixtures at 90° on a single pole. **2.** EPA calculated with optional arm length.

DRILLING PATTERN

TYPE "N"



EATON
Powering Business Worldwide

*www.designlights.org

TD500020EN
January 17, 2019 2:38 PM

CERTIFICATION DATA
UL/cUL Wet Location Listed
ISO 9001
LM79 / LM80 Compliant
3G Vibration Rated
IP66 Rated
DesignLights Consortium® Qualified*

ENERGY DATA
Electronic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120V-277V 50/60Hz
347V & 480V 60Hz
-40°C Min. Temperature
40°C Max. Temperature
50°C Max. Temperature (HA Option)

McGraw-Edison

DESCRIPTION

The Galleon™ Wall LED luminaire's appearance is complementary with the Galleon area and site luminaire bringing a modern architectural style to lighting applications. Flexible mounting options accommodate wall surfaces in both an upward and downward configuration. The Galleon family of LED products deliver exceptional performance with patented, high-efficiency AccuLED Optics™, providing uniform and energy conscious lighting for parking lots, building and security lighting applications.

		Type
Catalog #		
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Construction
Driver enclosure thermally isolated from optics for optimal thermal performance. Heavy wall aluminum housing die-cast with integral external heat sinks to provide superior structural rigidity and an IP66 rated housing. Overall construction passes a 1.5G vibration test to ensure mechanical integrity. UPLIGHTING: Specify with the UPL option for inverted mount uplight housing with additional protections to maintain IP rating.

Optics
Choice of thirteen patented, high-efficiency AccuLED Optics. The optics are precisely designed to shape the distribution maximizing efficiency and application spacing. AccuLED Optics create consistent distributions with the scalability to meet customized application requirements. Offered standard in 4000K (+/- 275K) CCT and minimum 70 CRI. Optional 3000K, 5000K and 6000K CCT. Greater than 90% lumen maintenance expected at 60,000 hours. Available in standard 1A drive current and optional 1200mA, 800mA, and 600mA drive currents.

Electrical
LED drivers are mounted for ease of maintenance. 120-277V 50/60Hz, 347V or 480V 60Hz operation. 480V is compatible for use with 480V Wye systems only. Drivers are provided standard with 0-10V dimming. An optional Eaton proprietary surge protection module is available and designed to withstand 10kV of transient line surge. The Galleon Wall LED luminaire is available for operation in -40°C to 40°C ambient environments. For applications with ambient temperatures exceeding 40°C, specify the HA (High Ambient) option. Emergency egress options for -20°C ambient environments and occupancy sensor available.

Mounting
Gasketed and zinc plated rigid steel mounting attachment fits directly to 4" j-box or wall with the Galleon Wall "Hook-N-Lock" mechanism for quick installation. Secured with two captive corrosion resistant black oxide coated allen head set screws which are concealed but accessible from bottom of fixture.

Finish
Housing finished in super durable TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Standard colors include black, bronze, grey, white, dark platinum and graphite metallic. RAL and custom color matches available. Consult the McGraw-Edison Architectural Colors brochure for the complete selection.

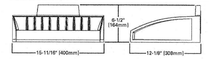
Warranty
Five-year warranty.

GWC GALLEON WALL

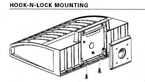
1-2 Light Squares
Solid State LED

WALL MOUNT LUMINAIRE

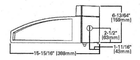
DIMENSIONS



HOOK-N-LOCK MOUNTING



BATTERY BACKUP AND THRU-BRANCH BACK BOX



EATON
Powering Business Worldwide

*www.designlights.org

TD514017EN
June 21, 2018 4:07 PM

CERTIFICATION DATA
UL/cUL Listed
LM79 / LM80 Compliant
IP66 Housing
ISO 9001
DesignLights Consortium® Qualified*

ENERGY DATA
Electronic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120-277V/50 & 60Hz, 347V/60Hz, 480V/60Hz
-30°C Minimum Temperature
40°C Ambient Temperature Rating

SHIPPING DATA
Approximate Net Weight:
27 lbs. (12.2 kgs.)

LIGHTING AND ELECTRICAL NOTES:

1. SITE ELECTRICAL CONTRACTOR SHALL COORDINATE LOCATION OF EASEMENTS, UNDERGROUND UTILITIES AND DRAINAGE BEFORE DRILLING POLE BASES.
2. CONTRACTOR SHALL INSTALL PROPOSED LIGHT POLES ACCORDING TO TOWN REGULATIONS.
3. ALL OUTDOOR LIGHTING SYSTEMS SHALL BE EQUIPPED WITH TIMERS TO REDUCE ILLUMINATION LEVELS TO NON-OPERATIONAL VALUES PER TOWN REGULATIONS.
4. LIGHTING CONDUIT SHALL BE SCHEDULE 40 PVC, AND SHALL BE INSTALLED IN CONFORMANCE WITH THE NATIONAL ELECTRICAL CODE. CONTRACTOR SHALL PROVIDE EXCAVATION AND BACKFILL.
5. ILLUMINATION READINGS SHOWN ARE BASED ON A TOTAL LLF OF 0.75 AT GRADE. ILLUMINATION READINGS SHOWN ARE IN UNITS OF FOOT-CANDLES.
6. LIGHTING CALCULATIONS SHOWN ARE NOT A SUBSTITUTE FOR INDEPENDENT ENGINEERING ANALYSIS OF LIGHTING SYSTEM AND SAFETY.
7. ALL LIGHTING FIXTURES SHALL BE FULL CUT-OFF DARK-SKY COMPLIANT, UNLESS OTHERWISE NOTED.
8. NL INDICATES THAT THIS LUMINAIRE SHALL BE ON A NIGHT LIGHT CIRCUIT. FL INDICATES THAT THIS LUMINAIRE SHALL BE A FLOOD LIGHT FIXTURE. MOUNTING BRACKET FOR THIS FL FIXTURE SHALL BE MOUNTED 25' ABOVE BOTTOM OF POLE BASE FOR ALL LIGHT POLES. THESE DESIGNATIONS INDICATE WHAT PHASE LIGHTS ARE WIRED TO (TYP).
9. THE PROPOSED LIGHTING CALCULATIONS AND DESIGN WAS PERFORMED BY CHARRON, INC., P.O. BOX 4550, MANCHESTER, NH 03108, ATTENTION KEN SWEENEY. ALL LIGHTS SHOULD BE PURCHASED FROM THIS COMPANY OR ONE OF THEIR SUPPLIERS, OR AN EQUAL LIGHTING DESIGN SHOULD BE SUBMITTED FOR REVIEW IF EQUAL SUBSTITUTIONS ARE PROPOSED BY THE CONTRACTOR OR OWNER.

Luminaire Schedule				
Symbol	Qty	Label	Arrangement	Description
	1	S3	SINGLE	GLEON-AF-01-LED-E1-SL3-HSS/ SSS4A20SFN1 (20' AFG)
	4	S4	SINGLE	GLEON-AF-01-LED-E1-SL4-HSS/ SSS4A20SFN1 (20' AFG)
	2	W	SINGLE	GWC-AF-02-LED-E1-T4FT/ WALL MTD 20' AFG
	11	W4	SINGLE	GWC-AF-01-LED-E1-SL4-600/ WALL MTD 15' AFG

F:\CADD\MASTER STANDARD\dwg\JB-LAYOUTS.dwg 3/12/2015 3:27:29 PM EDT

Design: JAC	Draft: DJM	Date: 04/21/20
Checked: JAC	Scale: AS-NOTED	Project No.: 19190.2
Drawing Name: 19190-PLAN.dwg		

STATE OF NEW HAMPSHIRE
MICHAEL J. KERVAN No. 9946
LICENSED PROFESSIONAL ENGINEER
12/30/20

REV.	DATE	REVISION	BY
6	12/30/20	ISSUED TO PLANNING BOARD	DJM
5	11/17/20	REVISED PROFILES	DJM
4	11/10/20	ADDED SIGHT DISTANCE PROFILE	DJM
3	11/3/20	ISSUED TO TECHNICAL ADVISORY COMMITTEE	DJM
2	10/21/20	MEETING WITH CITY PLANNER	DJM

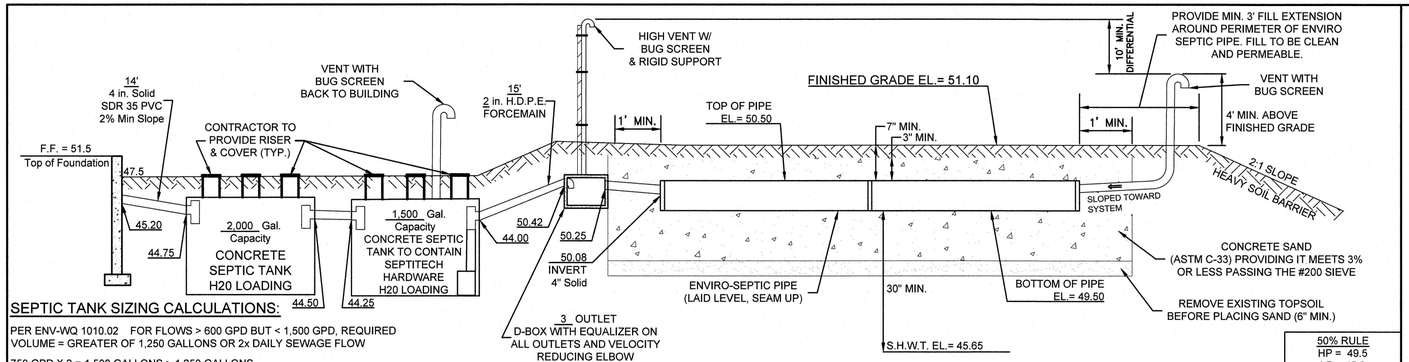
Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave. PO Box 219 Stratham, NH 03885
Civil Engineering Services
603-772-4746 FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: LIGHTING PLAN

Project: INDUSTRIAL WAREHOUSE
375 BANFIELD ROAD, PORTSMOUTH, NH 03801

Owner of Record: BANFIELD REALTY LLC
304 MAPLEWOOD AVENUE, PORTSMOUTH, NH 03801

DRAWING No.
L2
SHEET 8 OF 21
JBE PROJECT NO. 19190.2



SEPTIC TANK SIZING CALCULATIONS:

PER ENV-WQ 1010.02 FOR FLOWS > 600 GPD BUT < 1,500 GPD, REQUIRED VOLUME = GREATER OF 1,250 GALLONS OR 2x DAILY SEWAGE FLOW

750 GPD X 2 = 1,500 GALLONS > 1,250 GALLONS

1,500 GALLONS REQUIRED

2,000 GAL. PROVIDED.

CROSS SECTION - DISPOSAL SYSTEM

N.T.S.

50% RULE
HP = 49.5
LP = 45.8
AVG. = 47.65
SHWT = 24"
ESHWT = 45.65

TEST PIT LOGS

PERFORMED BY: JOSEPH CORONATI, JONES & BEACH ENGINEERS, INC. SSD# 1716

TEST PIT #3

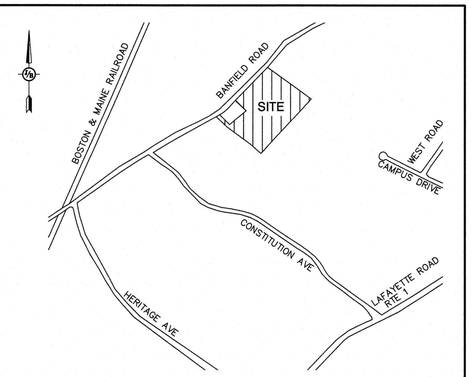
0"-3"		LOAM
3"-24"	10YR 4/4	DARK YELLOWISH BROWN FINE SANDY LOAM GRANULAR, LOOSE, FRIABLE
24"-72"	10YR 5/6	YELLOWISH BROWN SILTY LOAM FIRM

SHWT = 24"
ROOTS TO 24"
H_2O @ 48"
NO REFUSAL OBSERVED

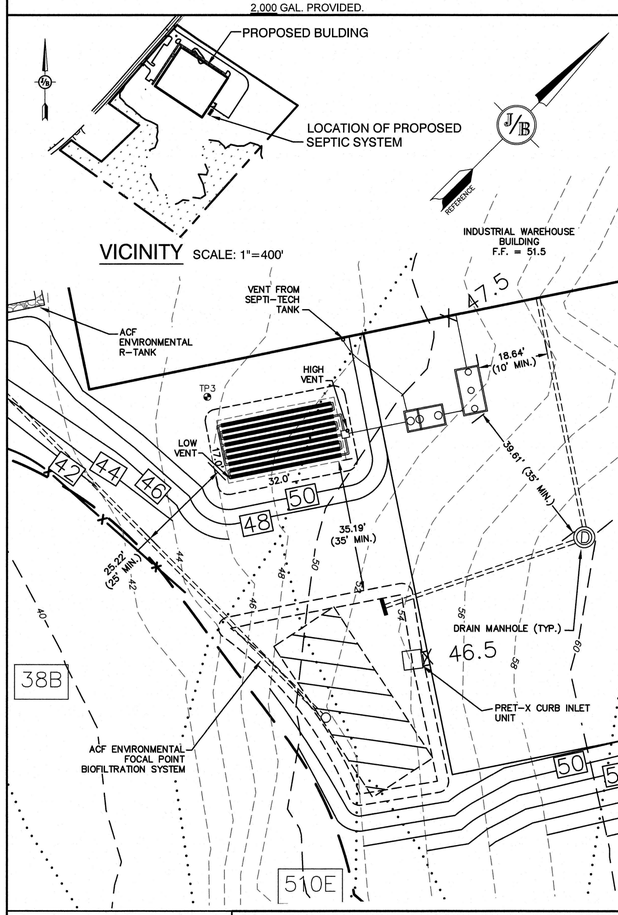
◔ TEST PIT, DATE: APRIL 8, 2020

◐ PERC. TEST, DATE: APRIL 8, 2020

16 MIN./INCH



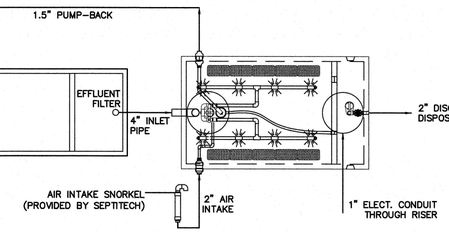
LOCUS SCALE: 1"=1000'



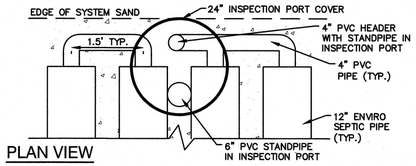
VICINITY SCALE: 1"=400'

NOTE:

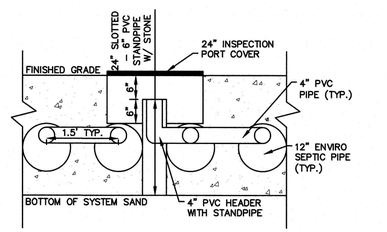
- CONTRACTOR IS RESPONSIBLE FOR PURCHASE AND INSTALLATION OF BOTH TANKS ON THE LOT. SEPTITECH WILL INSTALL THE EQUIPMENT AFTER THE TANK IS INSTALLED IN GROUND
- ALL PUMP SPECIFICATIONS AND MODELS TO BE SUPPLIED BY SEPTITECH
- SEPTITECH MODEL STAAR 1.0 DENITE REQUIRES A DISCHARGE PUMP UPGRADE THAT IS TO BE DETERMINED BY SEPTITECH.



SEPTI-TECH PLAN VIEW



PLAN VIEW



SECTION VIEW

INSPECTION PORT DETAIL

NOT TO SCALE

Dig Safe Systems, Inc.
It's Smart. It's Easy. It's the Law.

1-888-DIG-SAFE
digsafe.com

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 feet

ENVIRO-SEPTIC DESIGN CALCULATIONS

WAREHOUSE: 70 EMPLOYEES = 700 GPD (10 GPD / PERSON, PER ENV-WQ 1008-1)

OFFICE WITH CAFETERIA: 17 EMPLOYEES = 255 GPD (15 GPD / PERSON, PER ENV-WQ 1008-1)

955 GPD @ 16 MIN./INCH = 2,148 S.F. REQUIRED PER ENV-WQ 1016-1.
2,148 S.F. x 75% PRE-TREATMENT REDUCTION = 537 S.F. REQUIRED.

544 S.F. PROVIDED (SEE DIMENSIONS BELOW) = 240 L.F. OF ENVIRO-SEPTIC PIPE.
9 ROWS OF ENVIRO-SEPTIC PIPE x 30' LONG. 3 SERIES OF 3 ROWS.

BED DIMENSIONS 32' x 17'

DESIGN INTENT

THE BOTTOM OF THE EFFLUENT DISPOSAL SYSTEM (E.D.S.) SHALL BE CONSTRUCTED AT ELEVATION 49.50 THIS IS APPROXIMATELY AT ORIGINAL GROUND ON THE HIGH CONTOUR (49.50) OF THE DESIGNED E.D.S. (ENV-WQ-1003.13(aa))

GENERAL NOTES

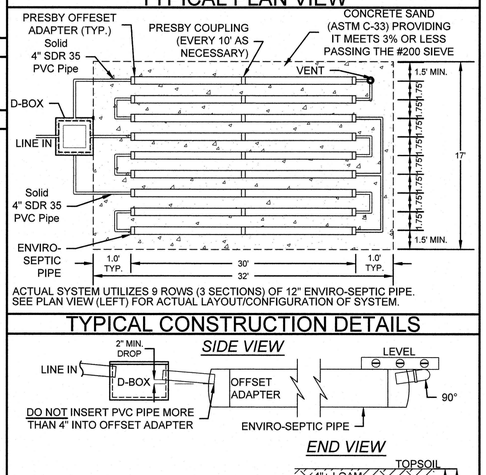
- CONTRACTOR TO VERIFY ALL ELEVATIONS IN FIELD PRIOR TO CONSTRUCTION. CONTRACTOR TO NOTIFY DESIGNER OF ANY ABNORMAL CONDITIONS (HARDPAN OR SATURATED SOILS, LEDGE, ETC.) FOUND WHEN EXCAVATING PRIOR TO INSTALLING THE SYSTEM.
- LEACH BED COMPRISED OF ADVANCED ENVIRO-SEPTIC LEACHING PIPE. FOR DETAILED INSTALLATION INFORMATION REFER TO "ENVIRO-SEPTIC & SIMPLE-SEPTIC LEACHING SYSTEMS DESIGN AND INSTALLATION MANUAL", 2017 EDITION (OR MOST CURRENT EDITION). CONTACT PRESBY ENVIRONMENTAL AT PHONE (800) 473-5298 OR WWW.PRESBYENVIRONMENTAL.COM
- PER ENV-WQ 1016.03, CONTRACTOR IS TO PROTECT THE NATURAL ABSORPTION QUALITIES OF THE SOIL. DO NOT COMPACT OR DRIVE OVER THE AREA WITH EQUIPMENT AND PROTECT OPEN EXCAVATION TO PREVENT THE ENTRANCE OF SILT AND DEBRIS.
- FILL AROUND ENVIRO PIPES TO ASTM C-33 (CONCRETE SAND) OR EQUAL
- REMOVE TOPSOIL BEFORE PLACING FILL.
- 4 INCH THICK LOAM & SEED AROUND PERIMETER OF FILL.
- VENTING IS REQUIRED FOR PUMP SYSTEMS.
- 3 FT. FILL EXTENSION. SIDE SLOPES OF FILL = 2(HORIZONTAL): 1(VERTICAL).
- CROWN SYSTEM TO SHED RAINWATER; SLOPE SYSTEM AWAY FROM BUILDING.
- SYSTEM WILL BE REPLACED IN SAME LOCATION IN CASE OF FAILURE.
- DISTRIBUTION BOX SHALL HAVE FLOW EQUALIZERS INSTALLED IN THE OUTLET PORTS.
- JOINTS ARE TO BE BELLED PVC OR STANDARD SLIP COLLARS
- INLET AND OUTLET OF SEPTIC TANK SHALL BE SEALED WITH HYDRAULIC CEMENT PRIOR TO INSPECTION.
- THE OUTLET BAFFLE SHALL BE A VENTED TEE WHICH SHALL EXTEND TO A DISTANCE BELOW THE SURFACE EQUAL TO 40% OF THE LIQUID DEPTH.
- THE OUTLET AND INLET BAFFLES SHALL EXTEND ABOVE THE LIQUID LINE TO NOT LESS THAN ONE INCH FROM THE TOP OF THE TANK.
- ALL CONNECTIONS BETWEEN A SEPTIC TANK AND THE PIPES LEADING TO AND EXITING FROM THE SEPTIC TANK SHALL BE SEALED WITH A WATERTIGHT, FLEXIBLE JOINT CONNECTOR THAT: (1) WILL ACCOMMODATE NORMAL MOVEMENT OF THE SEPTIC TANK WITHOUT LEAKING OR BREAKING; AND (2) HAS BEEN CERTIFIED BY ITS MANUFACTURER OR DISTRIBUTOR AS MEETING OR EXCEEDING THE APPLICABLE STANDARD IN ASTM C 1644-06, SECTION 7.
- CONTRACTOR TO PROVIDE RISERS FOR TANKS WITH MORE THAN 12" OF COVER.
- IF GARBAGE GRINDERS ARE DESIRED, SEPTIC TANK 50% LARGER.
- PER ENV-WQ 1010.11, THE FIRST COMPARTMENT IN MULTI-COMPARTMENT SEPTIC TANKS MUST EQUAL AT LEAST 2/3 OF THE REQUIRED VOLUME.
- CITY OF PORTSMOUTH REQUIRES BED BOTTOM INSPECTION.
- ENVIRO-SEPTIC TO BE SUPPLIED BY: ELIMINATOR SYSTEMS INC. (603-868-2242) OR EQUAL.
- 2,000 GALLON SEPTIC TANK & D-BOX TO BE SUPPLIED BY: SHEA CONCRETE. (800-696-7432) OR EQUAL.
- ADVANCED NITRATE TREATMENT SYSTEM AND 1,500 GAL. CONCRETE SEPTIC TANK TO BE SUPPLIED BY: SEPTITECH / BIO-MICROBICS MAINE INC., 207-333-6940. PRODUCT MAY NOT BE SUBSTITUTED WITHOUT FIRST CONTACTING THE DESIGNER.
- ROCKINGHAM COUNTY SOIL CONSERVATION SERVICE SOIL TYPE: HOOSIC
- ANY CHANGES TO SEPTIC TANK, BUILDING OR WELL LOCATION/ORIENTATION WILL REQUIRE AN AS-BUILT PLAN TO BE PROVIDED BY THE DESIGNER PRIOR TO NHDES FINAL INSPECTION.
- PER ENV-WQ 1004.10, SYSTEMS OVER 2,500 GPD ARE TO BE INSPECTED BY DESIGNER.
- PER ENV-WQ 1003.13(a)(3) THERE ARE NO KNOWN BURIAL SITES OR CEMETERIES ON THE LOT WITHIN 100' OF ANY COMPONENT OF THE ISDS.
- 50' SETBACK FROM POORLY DRAINED SOILS.
- DISTANCE FROM SEWER PIPE TO SURFACE WATER, OPEN DRAINAGE, VERY POORLY DRAINED SOIL, AN OPEN LOOP GEOTHERMAL WELL, OR A PRIVATE ON-SITE WELL SHALL BE 75 FT. THIS MAY BE REDUCED TO 50 FT IF SDR26 OR EQUIVALENT IS USED IN ACCORDANCE WITH ENV-WQ 1008.04(c)(1).
- DISTANCE FROM SEPTIC TANK TO SURFACE WATER, OPEN DRAINAGE, VERY POORLY DRAINED SOIL, AN OPEN LOOP GEOTHERMAL WELL, OR A PRIVATE ON-SITE WELL SHALL BE 75 FT. THIS MAY BE REDUCED TO 50 FT IF THE SEPTIC TANK IS EITHER MADE FROM PLASTIC OR COATED WITH A SEALANT TO PREVENT INFILTRATION AND EXFILTRATION IN ACCORDANCE WITH ENV-WQ 1008.04(c)(2).
- APPROVAL FOR CONSTRUCTION IS VALID FOR 4 YEARS FROM DATE OF ISSUE.

REFERENCES

APPROVAL FOR CONSTRUCTION IS VALID FOR 4 YEARS FROM DATE OF ISSUE

- PREV. CONSTRUCTION APPROVAL #CA1998009388 ISSUED: 06/03/1998.
- SUBDIVISION APPROVAL: LARGER THAN 5 ACRES.

TYPICAL PLAN VIEW



ACTUAL SYSTEM UTILIZES 9 ROWS (3 SECTIONS) OF 12" ENVIRO-SEPTIC PIPE.
SEE PLAN VIEW (LEFT) FOR ACTUAL LAYOUT/CONFIGURATION OF SYSTEM.

TYPICAL CONSTRUCTION DETAILS

WETLAND DELINEATION

WETLANDS ON-SITE WERE DELINEATED BY: GOVE ENVIRONMENTAL SERVICES, INC. 8 CONTINENTAL DRIVE, UNIT H EXETER, NH 03833

DATE: SPRING, 2020

OWNER NOTES

- KNOW THE LOCATION OF YOUR SEPTIC TANK AND LEACHING AREA.
- INSPECT YOUR SEPTIC TANK YEARLY. HAVE THE SEPTIC TANK PUMPED AS NEEDED BUT AT LEAST ONCE EVERY THREE YEARS.
- DO NOT FLUSH BULKY ITEMS SUCH AS DIAPERS, SANITARY PADS OR BABY WIPES.
- DO NOT FLUSH TOXIC CHEMICALS SUCH AS PAINT THINNERS, DRANO, PESTICIDES, OR CHLORINE, AS THEY MAY KILL THE NECESSARY BACTERIA IN THE SEPTIC TANK.
- REPAIR LEAKING FIXTURES IN THE BUILDING PROMPTLY.
- BE CONSERVATIVE WITH WATER USE, SPREAD OUT USE OVER TIME, AND USE WATER-REDUCING FIXTURES WHENEVER AND WHEREVER POSSIBLE. TOO MUCH USE IN A SHORT TIME CAN OVERLOAD THE SYSTEM, WHICH MAY LEAD TO FAILURE.
- MOW YOUR LEACHING AREA REGULARLY. PREVENT DEEP-ROOTED TREES AND SHRUBS FROM GROWING ON AND ADJACENT TO YOUR LEACHING AREA.
- NO VEHICULAR TRAVEL, LIVESTOCK TRAVEL, OR SNOW REMOVAL IN AREA OF SYSTEM, UNLESS SPECIFICALLY DESIGNED FOR H20 LOADING.

PROJECT PARCEL
CITY OF PORTSMOUTH
TAX MAP 266, LOT 7
R.C.R.D. BK. 6081 PG. 2150

TOTAL LOT AREA: 14.96 ACRES

- CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTING THE SEPTIC PLAN FROM THE NHDES APPROVED PLAN
- THE BUILDER/SITE CONTRACTOR IS RESPONSIBLE TO CONFIRM THE ZONING DIMENSIONAL REQUIREMENTS AND SETBACK LINE REQUIREMENTS PRIOR TO INITIATING CONSTRUCTION OF THE PROPOSED HOUSE AND SEPTIC SYSTEM. THE ZONING ORDINANCE OF THE MUNICIPALITY IS TO BE COMPLIED WITH. THE BUILDER/SITE CONTRACTOR IS ALSO RESPONSIBLE TO CONTACT THE MUNICIPALITY REGARDING INSPECTIONS PRIOR TO AND DURING CONSTRUCTION, I.E. LOCATION AND BED-BOTTOM INSPECTIONS.

Design: JAC	Draft: DJM
Checked: JAC	Scale: 1" = 20'
Drawing Name: 19190-PLAN.DWG	Date: 04/21/20
	Project No.: 19190.2

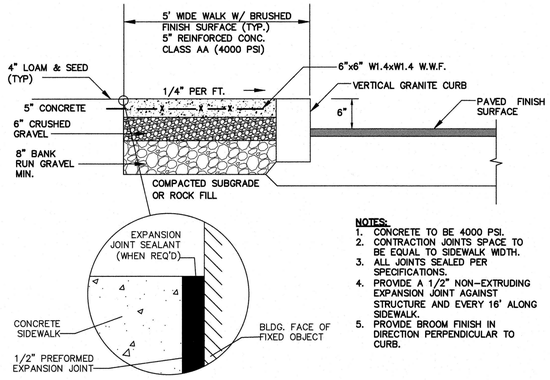
NEW HAMPSHIRE Designer of Subsurface Disposal Systems Michael J. Karivan No. 1200 Water Supply & Pollution Control

REV.	DATE	REVISION	BY
6	12/30/20	ISSUED TO PLANNING BOARD	DJM
5	11/17/20	REVISED PROFILES	DJM
4	11/10/20	ADDED SIGHT DISTANCE PROFILE	DJM
3	11/3/20	ISSUED TO TECHNICAL ADVISORY COMMITTEE	DJM
2	10/21/20	MEETING WITH CITY PLANNER	DJM

Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	EFFLUENT DISPOSAL DESIGN
Project:	INDUSTRIAL WAREHOUSE 375 BANFIELD ROAD, PORTSMOUTH, NH 03801
Owner of Record:	BANFIELD REALTY LLC 304 MAPLEWOOD AVENUE, PORTSMOUTH, NH 03801

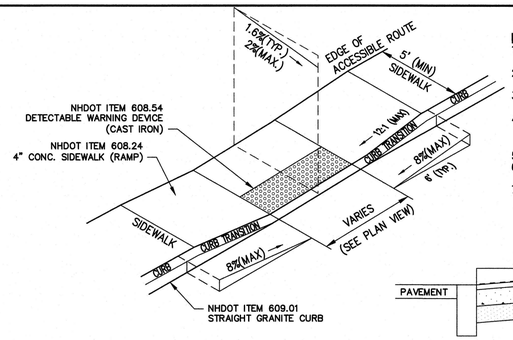
DRAWING No.
S1
SHEET 9 OF 21
JBE PROJECT NO. 19190.2



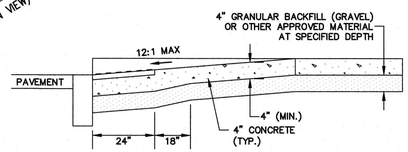
NOTES:
1. CONCRETE TO BE 4000 PSI.
2. CONTRACTION JOINTS SPACE TO BE EQUAL TO SIDEWALK WIDTH.
3. ALL JOINTS SEALED PER SPECIFICATIONS.
4. PROVIDE A 1/2" NON-EXTRUDING EXPANSION JOINT AGAINST STRUCTURE AND EVERY 16' ALONG SIDEWALK.
5. PROVIDE BROOM FINISH IN DIRECTION PERPENDICULAR TO CURB.

CONCRETE SIDEWALK W/ VERTICAL GRANITE CURB

NOT TO SCALE

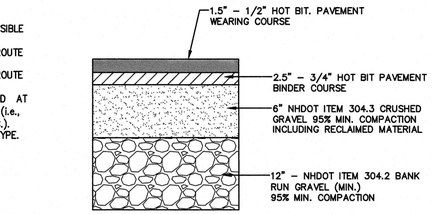


NOTES:
1. THE MAXIMUM ALLOWABLE CROSS SLOPE OF ACCESSIBLE ROUTE (SIDEWALK) AND CURB SHALL BE 1.5%
2. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE 5%
3. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE (SIDEWALK) CURB RAMPS SHALL BE 8%
4. A MINIMUM OF 4 FEET CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (i.e., HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS, ETC.).
5. CURB TREATMENT VARIES, SEE PLANS FOR CURB TYPE.
6. BASE OF RAMP SHALL BE GRADED TO PREVENT PONDING.
7. SEE TYPICAL SECTION FOR RAMP CONSTRUCTION.



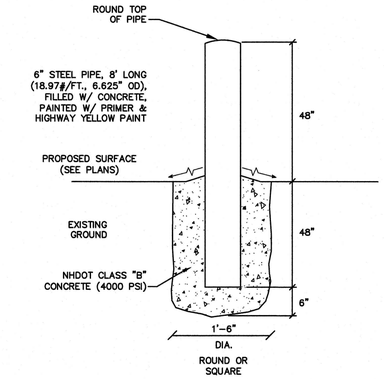
ACCESSIBLE CURB RAMP (TYPE `A')

NOT TO SCALE



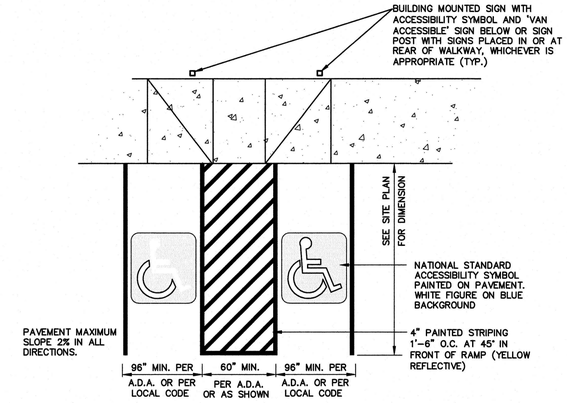
TYPICAL BITUMINOUS PAVEMENT

NOT TO SCALE



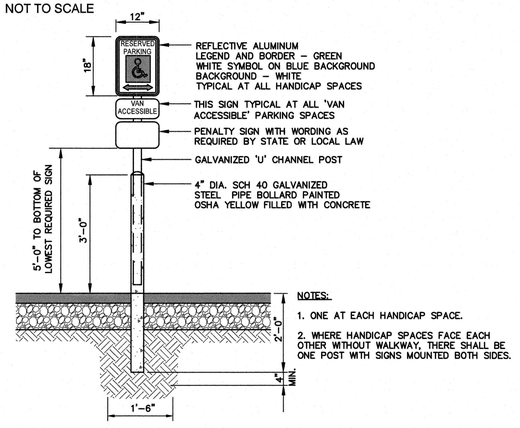
BOLLARD DETAIL

NOT TO SCALE



HANDICAP PARKING LAYOUT

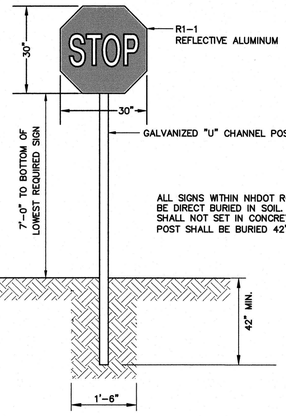
NOT TO SCALE



NOTES:
1. ONE AT EACH HANDICAP SPACE.
2. WHERE HANDICAP SPACES FACE EACH OTHER WITHOUT WALKWAY, THERE SHALL BE ONE POST WITH SIGNS MOUNTED BOTH SIDES.

HANDICAP PARKING SIGN (R7-8)

NOT TO SCALE

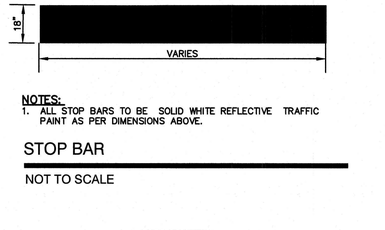


ALL SIGNS WITHIN NHDOT ROW SHALL BE DIRECT BURIED IN SOIL. THE SIGNS SHALL NOT SET IN CONCRETE. THE POST SHALL BE BURIED 42" MIN.

NOTES:
1. ALL SIGNAGE SHALL BE TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) STANDARDS AND NHDOT STANDARDS.
2. SIGN, HARDWARE, AND INSTALLATION TO CONFORM TO 2016 NHDOT STANDARD SPECIFICATION, SECTION 615 - TRAFFIC SIGNS.
3. THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS/CATALOG CUTS TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ERECTING SIGNS.
4. THE LOCATION OF THE SIGNS SHALL BE AS INDICATED ON THE DRAWINGS AND/OR AS DIRECTED BY THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS.

STOP SIGN (R1-1)

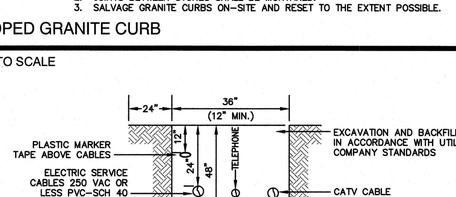
NOT TO SCALE



NOTES:
1. ALL STOP BARS TO BE SOLID WHITE REFLECTIVE TRAFFIC PAINT AS PER DIMENSIONS ABOVE.

STOP BAR

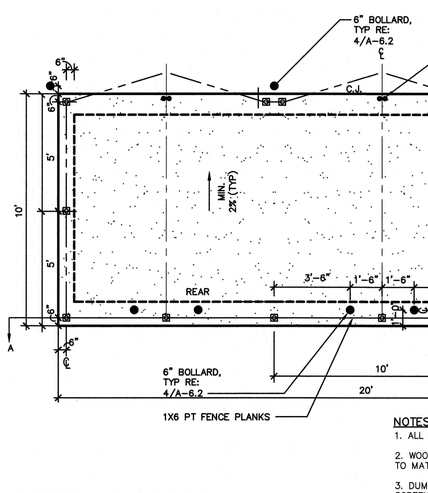
NOT TO SCALE



NOTES:
1. EDGING TO BE PLACED PRIOR TO PLACING TOP SURFACE COURSE.
2. JOINTS BETWEEN STONES SHALL BE MORTARED.
3. SALVAGE GRANITE CURBS ON-SITE AND RESET TO THE EXTENT POSSIBLE.

SLOPED GRANITE CURB

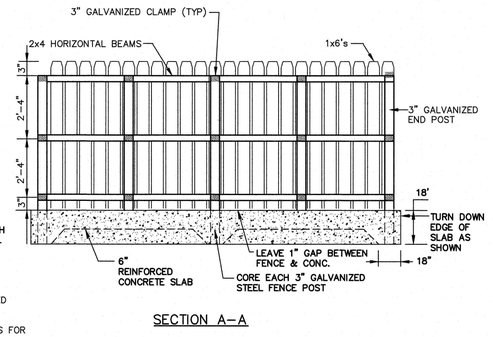
NOT TO SCALE



NOTES
1. ALL LUMBER TO BE PRESSURE TREATED.
2. WOOD FENCE TO BE PAINTED OR STAINED TO MATCH BUILDING FOUNDATION.
3. DUMPSTER SIZE VARIES, SEE SITE PLANS FOR SCREENING SIZE

DUMPSTER ENCLOSURE PLAN

NOT TO SCALE



UNDERDRAIN DETAIL

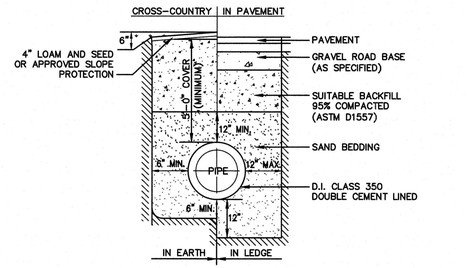
NOT TO SCALE

SECTION A-A

NOTE: ALL UTILITIES SHALL BE REVIEWED AND APPROVED BY APPROPRIATE UTILITY COMPANY.

UTILITY TRENCH

NOT TO SCALE



WATER SYSTEM TRENCH

NOT TO SCALE

F:\CADD\MASTER STANDARD\dwg\B-LAYOUTS.dwg 3/12/2015 3:27:29 PM EDT

Design: JAC	Draft: DJM	Date: 04/21/20	
Checked: JAC	Scale: AS NOTED	Project No.: 19190.2	
Drawing Name: 19190-PLAN.dwg			

STATE OF NEW HAMPSHIRE — MICHAEL J. KERIVAN No. 9846 LICENSED PROFESSIONAL ENGINEER — 12/30/20

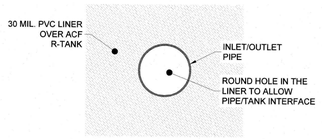
REV.	DATE	REVISION	BY
6	12/30/20	ISSUED TO PLANNING BOARD	DJM
5	11/17/20	REVISED PROFILES	DJM
4	11/10/20	ADDED SIGHT DISTANCE PROFILE	DJM
3	11/3/20	ISSUED TO TECHNICAL ADVISORY COMMITTEE	DJM
2	10/21/20	MEETING WITH CITY PLANNER	DJM

Designed and Produced in NH
Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

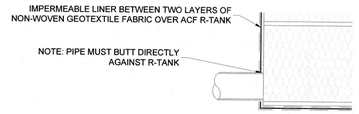
Plan Name:	DETAIL SHEET
Project:	INDUSTRIAL WAREHOUSE 375 BANFIELD ROAD, PORTSMOUTH, NH 03801
Owner of Record:	BANFIELD REALTY LLC 304 MAPLEWOOD AVENUE, PORTSMOUTH, NH 03801

DRAWING No.
D1
SHEET 10 OF 21
JBE PROJECT NO. 19190.2

CUT A ROUND HOLE IN THE LINER ENVELOPE AND GEOTEXTILE PROTECTION FABRIC THAT IS SLIGHTLY LARGER THAN THE PIPE.

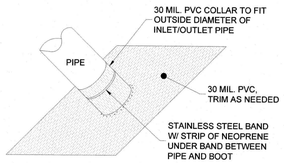


END VIEW OF PIPE/LINER CONNECTION

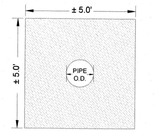


SIDE VIEW OF PIPE/LINER CONNECTION

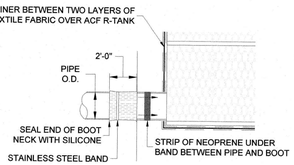
AFTER LINER IS CUT AND PIPE INSTALED, SLIDE BOOT AGAINST TANK AND SECURE WITH STAINLESS STEEL BAND, THEN BOND BOOT TO TANK LINER AND SEAL END OF BOOT WITH SILICONE. REPLACE ANY GEOTEXTILE PROTECTION FABRIC REMOVED DURING BOOT INSTALLATION PROCESS.



30 MIL. PVC BOOT



FRONT VIEW OF 30 MIL. PVC BOOT



SIDE VIEW OF 30 MIL PVC BOOT

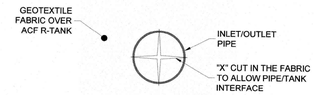
ACF ENVIRONMENTAL — LET'S GET IT DONE

07/26/19

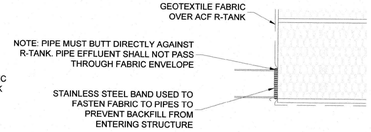
R-TANK TYPICAL INLET/OUTLET W/ 30 MIL PVC BOOT

FOR ADDITIONAL INFORMATION PLEASE CONTACT: ACF ENVIRONMENTAL, 1-800-448-3636, www.acfenvironmental.com

CUT AN "X" IN THE FABRIC ENVELOPE THAT IS SLIGHTLY LARGER THAN THE PIPE. PULL THE FABRIC FLAPS AROUND THE PIPE, AND SEAL WITH A STAINLESS STEEL BAND.

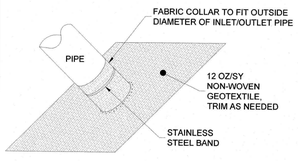


END VIEW OF PIPE/FABRIC CONNECTION

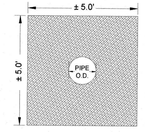


SIDE VIEW OF PIPE/FABRIC CONNECTION

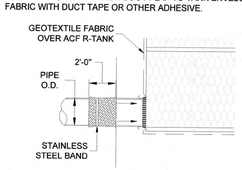
AFTER TANK WRAP IS SECURED TO PIPE, SLIDE BOOT AGAINST R-TANK AND SECURE WITH SECOND STAINLESS STEEL BAND, THEN ATTACH BOOT FLAP TO TANK ENVELOPE FABRIC WITH DUCT TAPE OR OTHER ADHESIVE.



GEOTEXTILE BOOT



FRONT VIEW OF GEOTEXTILE BOOT



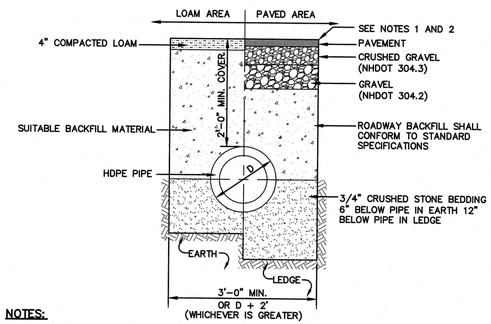
SIDE VIEW OF GEOTEXTILE BOOT

ACF ENVIRONMENTAL — LET'S GET IT DONE

07/26/19

R-TANK TYPICAL INLET/OUTLET W/ GEOTEXTILE BOOT

FOR ADDITIONAL INFORMATION PLEASE CONTACT: ACF ENVIRONMENTAL, 1-800-448-3636, www.acfenvironmental.com



NOTES:

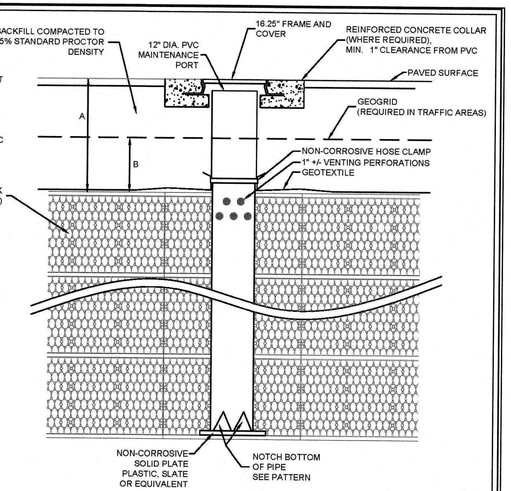
1. PAVEMENT REPAIR IN EXISTING ROADWAYS SHALL CONFORM TO STREET OPENING REGULATIONS.
2. NEW ROADWAY CONSTRUCTION SHALL CONFORM WITH PROJECT AND TOWN SPECIFICATIONS.
3. ALL MATERIALS ARE TO BE COMPACTED TO 95% OF ASTM D-1557.

DRAINAGE TRENCH

NOT TO SCALE

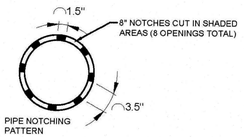
NOTES

- THIS PORT IS USED TO PUMP WATER INTO THE SYSTEM AND RE-SUSPEND ACCUMULATED SEDIMENT SO THAT IT MAY BE PUMPED OUT.
- MINIMUM REQUIRED MAINTENANCE INCLUDES A QUARTERLY INSPECTION DURING THE FIRST YEAR OF OPERATION AND A YEARLY INSPECTION THEREAFTER. FLUSH AS NEEDED.
- ONLY R-TANK[LD] AND R-TANK[SD] MAY BE USED IN TRAFFIC APPLICATIONS.



DEPTH SUMMARY

TYPE	A	B
R-TANK[LD]	12" MIN - 36" MAX	AS SHOWN ON PLANS
R-TANK[HD]	20" MIN - 6.99' MAX.	12"
R-TANK[SD]	18" MIN - 9.99' MAX.	12"



ACF ENVIRONMENTAL — LET'S GET IT DONE

02/08/19

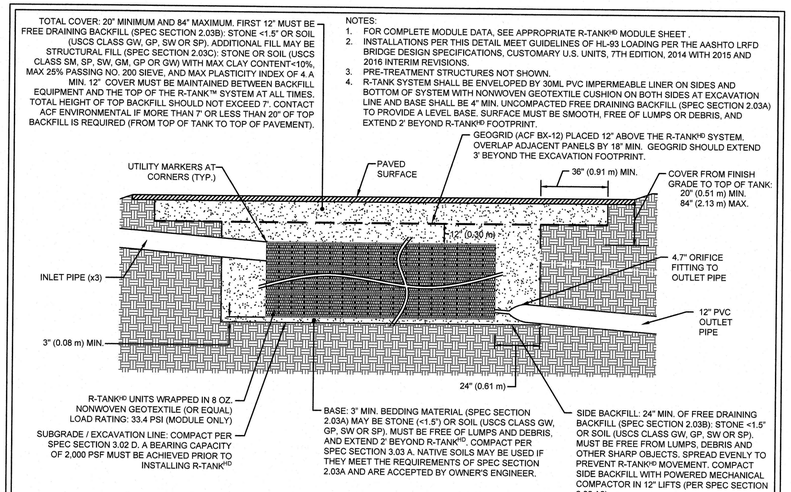
MAINTENANCE PORT FOR R-TANK[LD], R-TANK[HD], AND R-TANK[SD]

FOR ADDITIONAL INFORMATION PLEASE CONTACT: ACF ENVIRONMENTAL, 1-800-448-3636, www.acfenvironmental.com

TOTAL COVER: 20" MINIMUM AND 84" MAXIMUM. FIRST 12" MUST BE FREE DRAINING BACKFILL (SPEC SECTION 2.03B): STONE <1.5" OR SOIL (USCS CLASS GW, GP, SW OR SP). ADDITIONAL FILL MAY BE STRUCTURAL FILL (SPEC SECTION 2.03C): STONE OR SOIL (USCS CLASS SM, SP, SW, GM, GP OR GW) WITH MAX CLAY CONTENT<10%, MAX 25% PASSING NO. 200 SIEVE, AND MAX PLASTICITY INDEX OF 4. A MIN. 12" COVER MUST BE MAINTAINED BETWEEN BACKFILL EQUIPMENT AND THE TOP OF THE R-TANK™ SYSTEM AT ALL TIMES. TOTAL HEIGHT OF TOP BACKFILL SHOULD NOT EXCEED 7'. CONTACT ACF ENVIRONMENTAL IF MORE THAN 7' OR LESS THAN 20" OF TOP BACKFILL IS REQUIRED (FROM TOP OF TANK TO TOP OF PAVEMENT).

NOTES:

1. FOR COMPLETE MODULE DATA, SEE APPROPRIATE R-TANK© MODULE SHEET .
2. INSTALLATIONS PER THIS DETAIL MEET GUIDELINES OF HL-93 LOADING PER THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, CUSTOMARY U.S. UNITS, 7TH EDITION, 2014 WITH 2015 AND 2016 INTERIM REVISIONS.
3. PRE-TREATMENT STRUCTURES NOT SHOWN.
4. R-TANK SYSTEM SHALL BE ENVELOPED BY 30MIL PVC IMPERMEABLE LINER ON SIDES AND BOTTOM OF SYSTEM WITH NONWOVEN GEOTEXTILE CUSHION ON BOTH SIDES AT EXCAVATION LINE AND BASE SHALL BE 4" MIN. UNCOMPACTED FREE DRAINING BACKFILL (SPEC SECTION 2.03A) TO PROVIDE A LEVEL BASE. SURFACE MUST BE SMOOTH, FREE OF LUMPS OR DEBRIS, AND EXTEND 2' BEYOND R-TANK© FOOTPRINT.

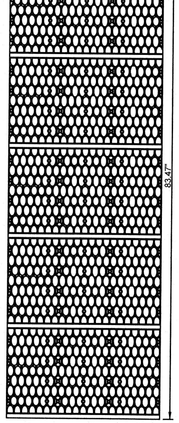


ACF ENVIRONMENTAL — LET'S GET IT DONE

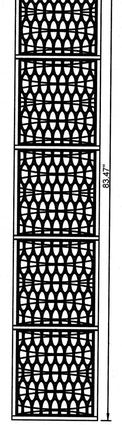
08/29/2018

R-TANK[HD] & HS-20 LOADS - SECTION VIEW

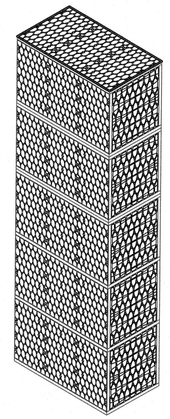
FOR ADDITIONAL INFORMATION PLEASE CONTACT: ACF ENVIRONMENTAL, 1-800-448-3636, www.acfenvironmental.com



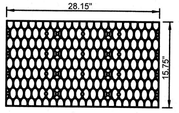
SECTION VIEW



FRONT VIEW



ISOMETRIC VIEW



PLAN VIEW

MODULE DATA

GEOMETRY: LENGTH = 28.15 IN. (715 MM)	**LOAD RATING:** 33.4 PSI, (MODULE ONLY)
WIDTH = 15.75 IN. (400 MM)	HS25, (WITH ACF COVER SYSTEM)
HEIGHT = 83.47 IN. (2120 MM)	**MATERIAL:** 100% RECYCLED POLYPROPYLENE
TANK VOLUME = 21.42 CF	
STORAGE VOLUME = 20.35 CF	**SMALL PLATES PER SEGMENT/TOTAL:** 5/20
VOID INTERNAL VOLUME: 95%	
VOID SURFACE AREA: 90%	

ACF ENVIRONMENTAL — LET'S GET IT DONE

R-TANK[HD] - PENT MODULE

FOR ADDITIONAL INFORMATION PLEASE CONTACT: ACF ENVIRONMENTAL, 1-800-448-3636, www.acfenvironmental.com

5/16

F:\CADD\MASTER STANDARD\dwg\JB-LAYOUTS.dwg 3/12/2015 3:27:29 PM EDT

Design: JAC	Draft: DJM
Checked: JAC	Scale: AS NOTED
Drawing Name: 19190-PLAN.dwg	Date: 04/21/20
	Project No.: 19190.2

STATE OF NEW HAMPSHIRE — MICHAEL J. KERWAN No. 9648 — LICENSED PROFESSIONAL ENGINEER — 12/21/20

REV.	DATE	REVISION	BY
6	12/30/20	ISSUED TO PLANNING BOARD	DJM
5	11/17/20	REVISED PROFILES	DJM
4	11/10/20	ADDED SIGHT DISTANCE PROFILE	DJM
3	11/3/20	ISSUED TO TECHNICAL ADVISORY COMMITTEE	DJM
2	10/21/20	MEETING WITH CITY PLANNER	DJM

Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave. PO Box 219 Stratham, NH 03885
Civil Engineering Services
603-772-4746 FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	DETAIL SHEET
Project:	INDUSTRIAL WAREHOUSE 375 BANFIELD ROAD, PORTSMOUTH, NH 03801
Owner of Record:	BANFIELD REALTY LLC 304 MAPLEWOOD AVENUE, PORTSMOUTH, NH 03801

DRAWING No.

D2

SHEET 11 OF 21
JBE PROJECT NO. 19190.2

PRETREATMENT DETAIL

PRETX SPECIFICATIONS

A. GENERAL

1. PRETX SYSTEMS ARE A PRE-FILTER AND CRITICAL MAINTENANCE DEVICE THAT EXTENDS THE OPERATING LIFE AND REDUCES THE MAINTENANCE BURDEN OF BIORETENTION SYSTEMS, RAIN GARDENS, BIOSWALES AND OTHER TYPES OF SURFACE BEST MANAGEMENT PRACTICES BY FILTERING OUT SEDIMENT, TRASH AND DEBRIS AT THE INLET.

B. PRODUCTS

1. PRETX IS AVAILABLE IN 3 MODELS THAT MANAGE MOST BIORETENTION INLET CONFIGURATIONS: CURB, DROP, AND INLINE.
2. PRETX-CURB IS FOR EDGE OF PAVEMENT RUNOFF AT A CURB CUT IN LIEU OF A STONE SPREADER.
3. PRETX-DROP IS FOR USE AS A DROP INLET CONFIGURATION ALONG A CURB LINE AND WOULD BE INSTALLED WITH A STANDARD DROP INLET GRATE.
4. PRETX-INLINE IS FOR USE WITH SUBSURFACE INLET AND OUTLET PIPE.
5. PRETX IS SIZED TO PRETREAT WATER QUALITY FLOWS AND BYPASS LARGER FLOWS THAT HAVE MINIMAL TRASH AND DEBRIS. PRETX CAN BE USED BOTH IN RETROFIT OR NEW INSTALLATIONS.
6. ACCEPTABLE SYSTEM SUPPLIER:
   CONVERGENT WATER TECHNOLOGIES, INC. OR ITS AUTHORIZED VALUE-ADDED RESELLER
   (800) 711-5428
   WWW.CONVERGENTWATER.COM

C. SUBMITTALS

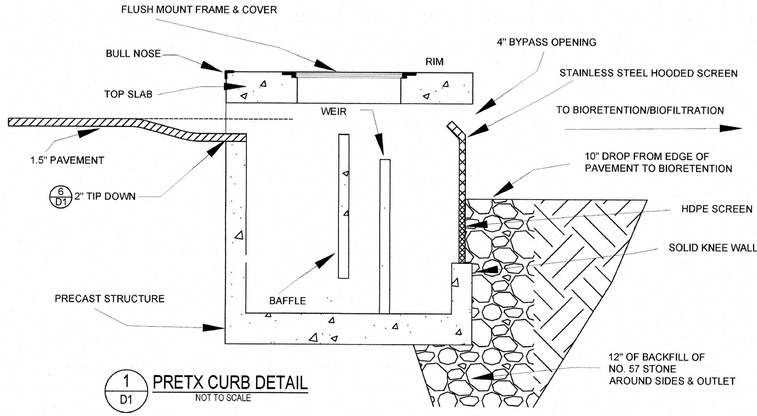
1. SUBMIT PROPOSED LAYOUT DRAWINGS. DRAWINGS SHALL INCLUDE TYPICAL SECTION DETAILS ANNOTED WITH SYSTEM ELEVATIONS (E.G., RIM, PIPE INVERTS, OUTSIDE BOTTOM OF STRUCTURE, ETC.).
2. SUBMIT MATERIAL CERTIFICATES FOR FRAMES AND COVERS
3. ANY PROPOSED EQUAL ALTERNATE PRODUCT SUBSTITUION TO THIS SPECIFICATON MUST BE SUBMITTED FOR REVIEW AND APPROVED PRIOR TO BID OPENING.

D. EXECUTION

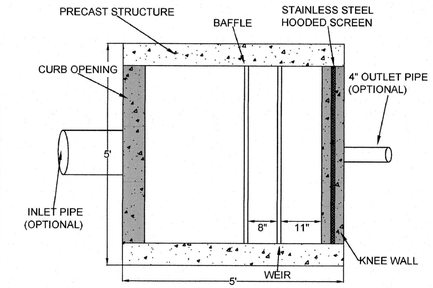
1. All PUBLIC STORM DRAINAGE SYSTEMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS AND ACCORDING TO LOCAL MUNICIPAL REQ UIREME NTS.
2. All STORM DRAINAGE SYSTEM CONSTRUCTION IS SUBJECT TO INSPECTION AND APPROVAL BY THE PROJECT ENGINEER.
3. THE CONTRACTOR SHALL NOTIFYTHE PROJECT ENGINEER A MINIMUM OF TWO FULL BUSINESS DAYS PRIOR TO THE START OF CONSTRUCTIO N.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING AND OBTAINING APPROVAL FROM DIG-SAFE AND DETERMINING THE LOCATION OF All UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION/ EXCAVATI ON AND SHALL NOTIFY THE PROJECT ENGINEER OF ANY POTENTIAL CONFLICTS.
5. TO PROTECT STORMWATER FLOW CONTROL AND QUALITY TREATMENT FACILITIES FROM SEDIMENTATION, THEY SHALL BE CONNECTED TO THE STORM CONVEYANCE SYSTEM ONLY AFTER ALL SITE WORK, ROAD CONSTRUCTION, UTILITY WORK AND LANDSCAPING ARE IN PLACE IN ALL AREAS ABOVE AND UPSTREAM OF THE FACILITY.
6. THE EXISTING STORM SEWER SYSTEM SHALL STAY ISOLATED FROM THE NEW SYSTEM UNTIL THE NEW SYSTEM IS CLEANED, AND APPROVED FOR USE. THERE SHALL BE NO DEBRIS IN THE LINES OR FURTHER CLEANING Will BE REQUIRED PRIOR TO ACCEPTANCE.
7. PROVIDE A 1.5" MINIMUM GAP BETWEEN THE KNOCKOUT WALL AND THE OUTSIDE OF THE PIPE. AFTER THE PIPE IS INSTALLED, FILL THE GAP WITH JOINT MORTAR
8. THE OPENING SHALL BE MEASURED ATTHE TOP OF THE PRECAST BASE SECTION.
9. All PICKUP HOLES SHALL BE GROUTED FULL AFTER THE BASIN HAS BEEN PLACED.
10. STANDARD CURB INLETS AND TIPDOWNS SHALL BE PRECAST CONCRETE OR ASPHALT.
11. PIPE ENDS SHALL BE FLUSH WITH THE INNER WALL OR 1" MAXIMUM INTRUSION. MASONRY, CINDER BLOCKS, OR SIMILIAR MATERIALS MA Y BE USED TO ADJUST THE RISERS TO GRADE PRIOR TO GROUTING.
12. GROUTING SHALL BE SUFFICIENTTO PREVENT LEAKS BETWEEN THE PRECAST COMPONENTS OF THE COMPLETED STRUCTURE & SHALL BE PERFORMED INSIDE, BETWEEN & OUTSIDE OF All RISERS, JOINTS & PIPE PENETRATIONS.
13. MANHOLES TO BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M-199 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE STANDARD SPECIFICATIONS.
14. All REINFORCED CAST IN PLACE CONCRETE SHALL BE CLASS 4000. All PRECAST CONCRETE SHALL BE CLASS 4000.
15. RECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MINIMUM.
16. MATING SURFACES OF MANHOLE RINGS AND COVERSSHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITIONS.

E. CONSTRUCTION AND SEQUENCING

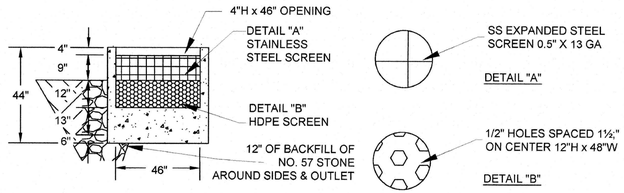
1. EXAMINATION
   A. VERIFY LAYOUT AND ORIENTATION OF PRE-TX SYSTEM AREA INCLUDING EDGE OF PAVEMENT, TIP DOWN, CURBS AND SIDEWALK, BIOFILTRATION SYSTEM, AND CONNECTIONS.
   B. VERIFY EXCAVATION BASE IS READY TO RECEIVE WORK AND EXCAVATIONS, DIMENSIONS, AND ELEVATIONS ARE AS INDICATED ON DRAWINGS.
2. PREPARATION
   A. CALL DIG SAFE AND RECEIVE APPROVAL BEFORE PERFORMING WORK.
   B. REQUEST UNDERGROUND UTILITIES TO BE LOCATED AND MARKED WITHIN AND SURROUNDING CONSTRUCTION AREAS.
   C. IDENTIFY REQUIRED LINES, LEVELS, CONTOURS, AND DATUM.
   D. CLEAR AND GRUB THE PROPOSED PRE-TX SYSTEM AREA.
3. EXCAVATION AND INSTALLATION
   A. THE FOLLOWING CONSTRUCTION SEQUENCE IS TO BE USED AS A GENERAL GUIDELINE. COORDINATE WITH THE OWNER, AND ENGINEERS FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
   B. INSTALL TEMPORARY EROSION AND SEDIMENT CONTROLS TO DIVERT STORM WATER AWAY FROM THE PRE-TX SYSTEM AREA.
   C. EXCAVATE TO THE BOTTOM INVERT OF THE SYSTEM.
   D. TO MINIMIZE COMPACTION OF ADJACENT BIOFILTRATION SYSTEMS, WORK EXCAVATORS OR BACKHOES FROM THE SIDES TO EXCAVATE THE PRE-TX SYSTEM AREA TO ITS APPROPRIATE DESIGN DEPTH AND DIMENSIONS.
   E. ROUGH GRADE THE PRE-TX SYSTEM AREA DURING GENERAL CONSTRUCTION. EXCAVATE THE PRE-TX SYSTEM FACILITIES TO WITHIN 1 FOOT OF STRUCTURE BOTTOM.
   F. PLACE 1 FOOT BED OF COARSE STONE TO ELEVATION OF BASE OF STRUCTURE.
   G. ESTABLISH ELEVATIONS FOR ADJACENT CURBS, EDGE OF PAVEMENT AND TIP DOWN, SIDEWALK, PIPE INVERTS FOR INLETS AND OUTLETS AS INDICATED ON DRAWINGS.
4. INSTALLATION
   A. PLACE THE PRECAST SYSTEM TO NECESSARY ELEVATION.
   B. VERIFY ELEVATIONS FOR ADJACENT CURBS, EDGE OF PAVEMENT, PAVEMENT GRADING FOR INLET GRATE FOR PRETX-DROP, SIDEWALK, PIPE INVERTS FOR INLETS AND OUTLETS, OUTLET INVERT FOR KNEE WALL.
   C. FOR PRETX-SURFACE:
      a. VERIFY ELEVATIONS FOR ADJACENT CURBS.
      b. VERIFY EDGE OF PAVEMENT TIP DOWN PAVEMENT GRADING FOR INLET GRATE.
      c. VERIFY CURB ELEVATION IN RELATION TO PAVEMENT AND TIP DOWN.
      d. VERIFY OUTLET INVERT FOR KNEE WALL IN RELATION TO FILTER MEDIA.
   D. FOR PRETX-DROP:
      a. VERIFY ALL INLET PIPES ENTER THE STRUCTURE UPSTREAM OF BAFFLE.
      b. VERIFY FRAME AND GRATE OFFSET ON INLET SIDE AND UPSTREAM OF BAFFLE.
      c. VERIFY CURB LOCATION WITH RESPECT TO FRAME AND GRATE ORIENTATION.
   E. INSTALL BAFFLES, WEIR, AND SCREENS AS INDICATED ON DRAWINGS.
   F. VERIFY MAINTENANCE ACCESS THROUGH GRATE OR COVER AND CLEARANCE FOR VACTOR.
   G. INSTALL TOP OF STRUCTURE LEVEL WITH ADJACENT CURB OR SIDEWALK AS PER MANUFACTURERS SPECIFICATIONS. ENGINEER FIELD VISIT REQUIRED PRIOR TO BACKFILLING.
5. BACKFILLING
   A. BACKFILL WITH APPROVED SOIL AND STONE TO THE DESIGN GRADE AS SPECIFIED IN THE DRAWINGS.
   B. BACKFILL WITH 12" OF NO. 57 STONE AROUND REAR, LEFT, AND RIGHT SIDES TO LEVEL WITH TOP OF HDPE SCREEN.
   C. BACKFILL WITH BIORETENTION SOIL MIX BEYOND STONE BACKFILL TO EQUAL ELEVATION OF THE TOP OF HDPE SCREEN.
   D. DO NOT BACKFILL SOIL OR STONE AGAINST STAINLESS SCREEN.
   E. DO NOT COMPACT ADJACENT FILTRATION SYSTEM SOIL WITH MECHANICAL EQUIPMENT.
   F. STABILIZE All REMAINING DISTURBED AREAS AND SIDE SLOPES WITH SEEDING, HYDROSEEDING, AND/ ORREROSION CONTROL BLANKETS AS INDICATED ON DRAWINGS.
6. CLEAN UP
   A. AFTER COMPLETION OF THE WORK, REMOVE AND PROPERLY DISPOSE ALL DEBRIS, CONSTRUCTION MATERIA LS, RUBBISH, EXCESS SOIL, ETC., FROM THE PROJECT SITE. REPAIR PROMPTL Y ANY IDENTIFIED DEFICIENCIES AND LEAVE THE PROJECT SITE IN A CLEAN AND SATISFACTORY CONDITION.



1/D1 PRETX CURB DETAIL
NOT TO SCALE

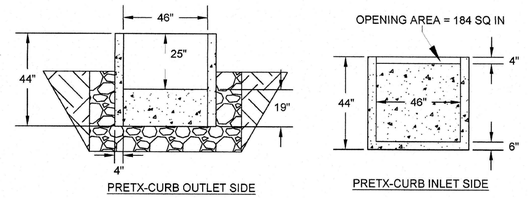


2/D1 PRETREATMENT CATCH BASIN PLAN VIEW
NOT TO SCALE



3/D1 PRETX CURB OUTLET SIDE
NOT TO SCALE

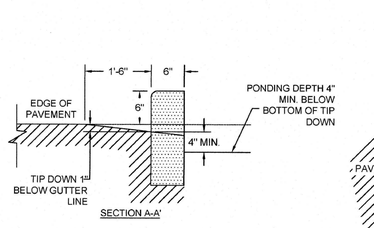
OUTLET SIDE INSTALLED W/ SCREENS

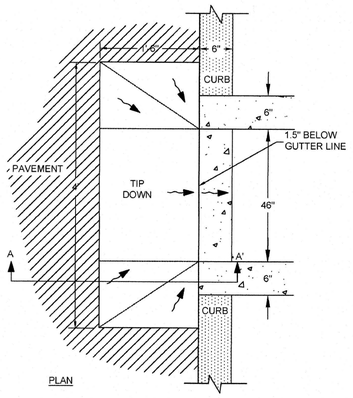


PRETX-CURB OUTLET SIDE

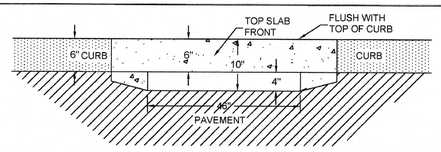
PRETX-CURB INLET SIDE

4/D1 PRETX CURB SIDE DETAIL
NOT TO SCALE

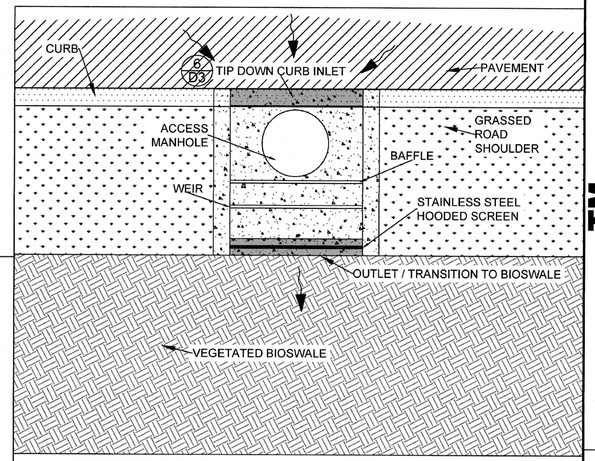




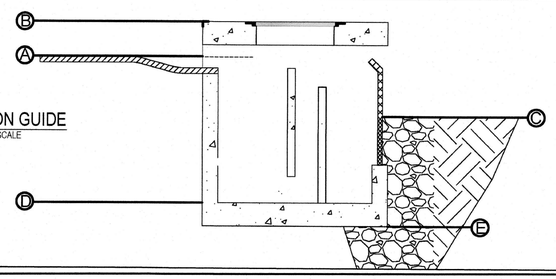
5/D1 TIP DOWN CURB INLET DETAIL
NOT TO SCALE



FRONT VIEW



7/D1 PRETX CURB OUTLET TO BIORETENTION CONFIGURATION
NOT TO SCALE



6/D1 ELEVATION GUIDE
NOT TO SCALE

PRETX–CURB ELEVATION GUIDE				
POINT	DESCRIPTION	ELEV. (FP1)	ELEV. (FP2)	ELEV. (FP3)
A	EDGE OF PAVEMENT	45.8	49.1	46.5
B	OUTSIDE TOP SLAB	46.5	49.8	47.2
C	TOP OF BIOFILTRATION	44.3	46.25	45.0
D	SUMP INVERT	42.8	46.1	43.5
E	OUTSIDE BOTTOM	42.3	45.6	43.0

PRETX™ CURB INLET PRETREATMENT DETAIL

D-1

TO FIND A VALUE ADDED RESELLER IN YOUR AREA VISIT WWW.CONVERGENTWATER.COM/STORMWATER-PRODUCTS OR CONTACT CONVERGENT WATER TECHNOLOGIES AT 1.800.711.5428

REVISED 11/2/2018. ELEVATION DETAILS ADDED. CHECKED BY RR

CONVERGENT WATER TECHNOLOGIES

F:\CADD\MASTER STANDARD\dwg\JB-LAYOUTS.dwg 3/12/2015 3:27:29 PM EDT

Design: JAC	Draft: DJM	Date: 04/21/20
Checked: JAC	Scale: AS NOTED	Project No.: 19190.2
Drawing Name: 19190-PLAN.dwg		

STATE OF NEW HAMPSHIRE — MICHAEL J KERVAN No. 9346 — LICENSED PROFESSIONAL ENGINEER — 12/21/2020

REV.	DATE	REVISION	BY
6	12/30/20	ISSUED TO PLANNING BOARD	DJM
5	11/17/20	REVISED PROFILES	DJM
4	11/10/20	ADDED SIGHT DISTANCE PROFILE	DJM
3	11/3/20	ISSUED TO TECHNICAL ADVISORY COMMITTEE	DJM
2	10/21/20	MEETING WITH CITY PLANNER	DJM

Designed and Produced in NH
Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	DETAIL SHEET
Project:	INDUSTRIAL WAREHOUSE 375 BANFIELD ROAD, PORTSMOUTH, NH 03801
Owner of Record:	BANFIELD REALTY LLC 304 MAPLEWOOD AVENUE, PORTSMOUTH, NH 03801

DRAWING No.
D3
SHEET 12 OF 21
JBE PROJECT NO. 19190.2

PRETX SPECIFICATIONS

A. GENERAL

1. PRETX SYSTEMS ARE A PRE-FILTER AND CRITICAL MAINTENANCE DEVICE THAT EXTENDS THE OPERATING LIFE AND REDUCES THE MAINTENANCE BURDEN OF BIORETENTION SYSTEMS, RAIN GARDENS, BIOSWALES AND OTHER TYPES OF SURFACE BEST MANAGEMENT PRACTICES BY FILTERING OUT SEDIMENT, TRASH AND DEBRIS AT THE INLET.

B. PRODUCTS

1. PRETX IS AVAILABLE IN 3 MODELS THAT MANAGE MOST BIORETENTIOIN INLET CONFIGURATIONS: CURB, DROP, AND INLINE.
2. PRETX-CURB IS FOR EDGE OF PAVEMENT RUNOFF AT A CURB CUT IN LIEU OF A STONE SPREADER.
3. PRETX-DROP IS FOR USE AS A DROP INLET CONFIGURATION ALONG A CURB LINE AND WOULD BE INSTALLED WITH A STANDARD DROP INLET GRATE.
4. PRETX-INLINE IS FOR USE WITH SUBSURFACE INLET AND OUTLET PIPE.
5. PRETX IS SIZED TO PRETREAT WATER QUALITY FLOWS AND BYPASS LARGER FLOWS THAT HAVE MINIMAL TRASH AND DEBRIS. PRETX CAN BE USED BOTH IN RETROFIT OR NEW INSTALLATIONS.
6. ACCEPTABLE SYSTEM SUPPLIER:
   CONVERGENT WATER TECHNOLOGIES, INC. OR ITS AUTHORIZED VALUE-ADDED RESELLER
   (800) 711-5428
   WWW.CONVERGENTWATER.COM

C. SUBMITTALS

1. SUBMIT PROPOSED LAYOUT DRAWINGS. DRAWINGS SHALL INCLUDE TYPICAL SECTION DETAILS ANNOTED WITH SYSTEM ELEVATIONS (E.G., RIM, PIPE INVERTS, OUTSIDE BOTTOM OF STRUCTURE, ETC.).
2. SUBMIT MATERIAL CERTIFICATES FOR FRAMES AND COVERS
3. ANY PROPOSED EQUAL ALTERNATE PRODUCT SUBSTITUION TO THIS SPECIFICATON MUST BE SUBMITTED FOR REVIEW AND APPROVED PRIOR TO BID OPENING.

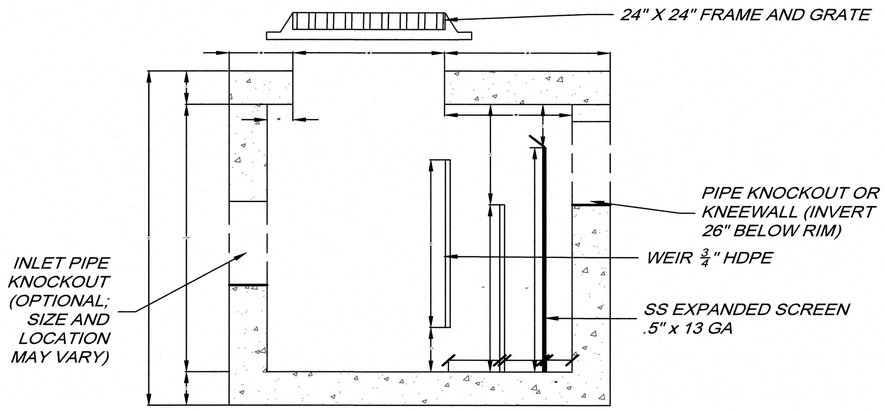
D. EXECUTION

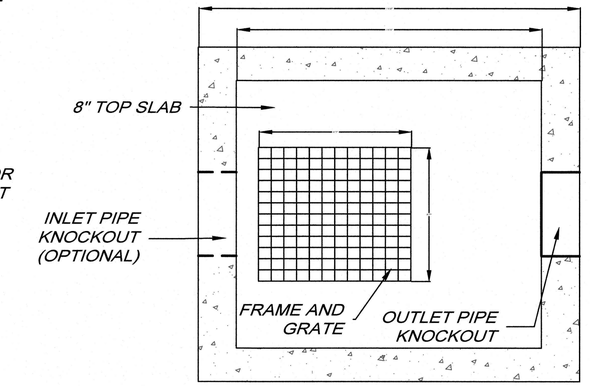
1. All PUBLIC STORM DRAINAGE SYSTEMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS AND ACCORDING TO LOCAL MUNICIPAL REQ UIREME NTS.
2. All STORM DRAINAGE SYSTEM CONSTRUCTION IS SUBJECT TO INSPECTION AND APPROVAL BY THE PROJECT ENGINEER.
3. THE CONTRACTOR SHALL NOTIFYTHE PROJECT ENGINEER A MINIMUM OF TWO FULL BUSINESS DAYS PRIOR TO THE START OF CONSTRUCTIO N.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING AND OBTAINING APPROVAL FROM DIG-SAFE AND DETERMINING THE LOCATION OF All UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION/ EXCAVATI ON AND SHALL NOTIFY THE PROJECT ENGINEER OF ANY POTENTIAL CONFLICTS.
5. TO PROTECT STORMWATER FLOW CONTROL AND QUALITY TREATMENT FACILITIES FROM SEDIMENTATION, THEY SHALL BE CONNECTED TO THE STORM CONVEYANCE SYSTEM ONLY AFTER ALL SITE WORK, ROAD CONSTRUCTION, UTILITY WORK AND LANDSCAPING ARE IN PLACE IN ALL AREAS ABOVE AND UPSTREAM OF THE FACILITY.
6. THE EXISTING STORM SEWER SYSTEM SHALL STAY ISOLATED FROM THE NEW SYSTEM UNTIL THE NEW SYSTEM IS CLEANED, AND APPROVED FOR USE. THERE SHALL BE NO DEBRIS IN THE LINES OR FURTHER CLEANING Will BE REQUIRED PRIOR TO ACCEPTANCE.
7. PROVIDE A 1.5" MINIMUM GAP BETWEEN THE KNOCKOUT WALL AND THE OUTSIDE OF THE PIPE. AFTER THE PIPE IS INSTALLED, FILL THE GAP WITH JOINT MORTAR
8. THE OPENING SHALL BE MEASURED ATTHE TOP OF THE PRECAST BASE SECTION.
9. All PICKUP HOLES SHALL BE GROUTED FULL AFTER THE BASIN HAS BEEN PLACED.
10. STANDARD CURB INLETS AND TIPDOWNS SHALL BE PRECAST CONCRETE OR ASPHALT.
11. PIPE ENDS SHALL BE FLUSH WITH THE INNER WALL OR 1" MAXIMUM INTRUSION. MASONRY, CINDER BLOCKS, OR SIMILIAR MATERIALS MA Y BE USED TO ADJUST THE RISERS TO GRADE PRIOR TO GROUTING.
12. GROUTING SHALL BE SUFFICIENTTO PREVENT LEAKS BETWEEN THE PRECAST COMPONENTS OF THE COMPLETED STRUCTURE & SHALL BE PERFORMED INSIDE, BETWEEN & OUTSIDE OF All RISERS, JOINTS & PIPE PENETRATIONS.
13. MANHOLES TO BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M-199 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE STANDARD SPECIFICATIONS.
14. All REINFORCED CAST IN PLACE CONCRETE SHALL BE CLASS 4000. All PRECAST CONCRETE SHALL BE CLASS 4000.
15. RECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MINIMUM.
16. MATING SURFACES OF MANHOLE RINGS AND COVERSSHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITIONS.

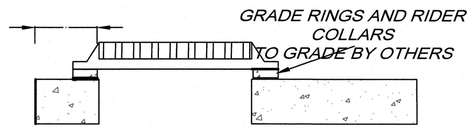
E. CONSTRUCTION AND SEQUENCING

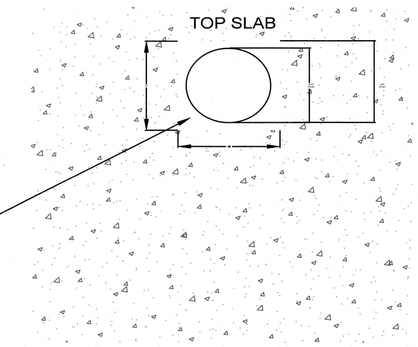
1. EXAMINATION
   A. VERIFY LAYOUT AND ORIENTATION OF PRE-TX SYSTEM AREA INCLUDING EDGE OF PAVEMENT, TIP DOWN, CURBS AND SIDEWALK, BIOFILTRATION SYSTEM, AND CONNECTIONS.
   B. VERIFY EXCAVATION BASE IS READY TO RECEIVE WORK AND EXCAVATIONS, DIMENSIONS, AND ELEVATIONS ARE AS INDICATED ON DRAWINGS.
2. PREPARATION
   A. CALL DIG SAFE AND RECEIVE APPROVAL BEFORE PERFORMING WORK.
   B. REQUEST UNDERGROUND UTILITIES TO BE LOCATED AND MARKED WITHIN AND SURROUNDING CONSTRUCTION AREAS.
   C. IDENTIFY REQUIRED LINES, LEVELS, CONTOURS, AND DATUM.
   D. CLEAR AND GRUB THE PROPOSED PRE-TX SYSTEM AREA.
3. EXCAVATION AND INSTALLATION
   A. THE FOLLOWING CONSTRUCTION SEQUENCE IS TO BE USED AS A GENERAL GUIDELINE. COORDINATE WITH THE OWNER, AND ENGINEERS FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
   B. INSTALL TEMPORARY EROSION AND SEDIMENT CONTROLS TO DIVERT STORM WATER AWAY FROM THE PRE-TX SYSTEM AREA.
   C. EXCAVATE TO THE BOTTOM INVERT OF THE SYSTEM.
   D. TO MINIMIZE COMPACTION OF ADJACENT BIOFILTRATION SYSTEMS, WORK EXCAVATORS OR BACKHOES FROM THE SIDES TO EXCAVATE THE PRE-TX SYSTEM AREA TO ITS APPROPRIATE DESIGN DEPTH AND DIMENSIONS.
   E. ROUGH GRADE THE PRE-TX SYSTEM AREA DURING GENERAL CONSTRUCTION. EXCAVATE THE PRE-TX SYSTEM FACILITIES TO WITHIN 1 FOOT OF STRUCTURE BOTTOM .
   F. PLACE 1 FOOT BED OF COARSE STONE TO ELEVATION OF BASE OF STRUCTURE.
   G. ESTABLISH ELEVATIONS FOR ADJACENT CURBS, EDGE OF PAVEMENT AND TIP DOWN, SIDEWALK, PIPE INVERTS FOR INLETS AND OUTLETS AS INDICATED ON DRAWINGS.
4. INSTALLATION
   A. PLACE THE PRECAST SYSTEM TO NECESSARY ELEVATION.
   B. VERIFY ELEVATIONS FOR ADJACENT CURBS, EDGE OF PAVEMENT, PAVEMENT GRADING FOR INLET GRATE FOR PRETX-DROP, SIDEWALK, PIPE INVERTS FOR INLETS AND OUTLETS, OUTLET INVERT FOR KNEE WALL.
   C. FOR PRETX-SURFACE:
      a. VERIFY ELEVATIONS FOR ADJACENT CURBS.
      b. VERIFY EDGE OF PAVEMENT TIP DOWN PAVEMENT GRADING FOR INLET GRATE.
      c. VERIFY CURB ELEVATION IN RELATION TO PAVEMENT AND TIP DOWN.
      d. VERIFY OUTLET INVERT FOR KNEE WALL IN RELATION TO FILTER MEDIA.
   D. FOR PRETX-DROP:
      a. VERIFY ALL INLET PIPES ENTER THE STRUCTURE UPSTREAM OF BAFFLE.
      b. VERIFY FRAME AND GRATE OFFSET ON INLET SIDE AND UPSTREAM OF BAFFLE.
      c. VERIFY CURB LOCATION WITH RESPECT TO FRAME AND GRATE ORIENTATION.
   E. INSTALL BAFFLES, WEIR, AND SCREENS AS INDICATED ON DRAWINGS.
   F. VERIFY MAINTENANCE ACCESS THROUGH GRATE OR COVER AND CLEARANCE FOR VACTOR.
   G. INSTALL TOP OF STRUCTURE LEVEL WITH ADJACENT CURB OR SIDEWALK AS PER MANUFACTURERS SPECIFICATIONS. ENGINEER FIELD VISIT REQUIRED PRIOR TO BACKFILLING.
5. BACKFILLING
   A. BACKFILL WITH APPROVED SOIL AND STONE TO THE DESIGN GRADE AS SPECIFIED IN THE DRAWINGS.
   B. BACKFILL WITH 12" OF NO. 57 STONE AROUND REAR, LEFT, AND RIGHT SIDES TO LEVEL WITH TOP OF HDPE SCREEN.
   C. BACKFILL WITH BIORETENTION SOIL MIX BEYOND STONE BACKFILL TO EQUAL ELEVATION OF THE TOP OF HDPE SCREEN.
   D. DO NOT BACKFILL SOIL OR STONE AGAINST STAINLESS SCREEN.
   E. DO NOT COMPACT ADJACENT FILTRATION SYSTEM SOIL WITH MECHANICAL EQUIPMENT.
   F. STABILIZE All REMAINING DISTURBED AREAS AND SIDE SLOPES WITH SEEDING, HYDROSEEDING, AND/ ORROSION CONTROL BLANKETS AS INDICATED ON DRAWINGS.
6. CLEAN UP
   A. AFTER COMPLETION OF THE WORK, REMOVE AND PROPERLY DISPOSE ALL DEBRIS, CONSTRUCTION MATERIA LS, RUBBISH, EXCESS SOIL, ETC., FROM THE PROJECT SITE. REPAIR PROMPTL Y ANY IDENTIFIED DEFICIENCIES AND LEAVE THE PROJECT SITE IN A CLEAN AND SATISFACTORY CONDITION.

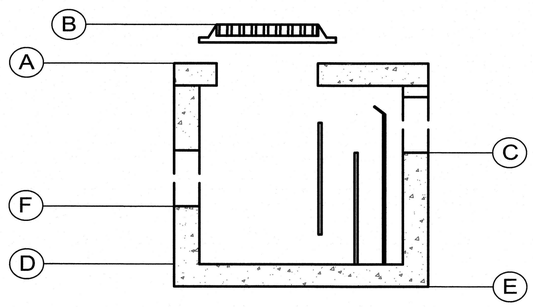
PRETX–DROP ELEVATION GUIDE		
POINT	DESCRIPTION	HEIGHT IN REFERENCE TO PT. A
A	OUTSIDE OF TOP SLAB	0"
B	EDGE OF PAVEMENT	5", MIN.
C	PIPE INVERT	25.5" FOR 12" PIPE, 21" FOR 8" PIPE, 19" FOR 6" PIPE
D	SUMP INVERT	56"
E	OUTSIDE BOTTOM	62"
F	OPTIONAL INLET PIPE KNOCKOUT	VARIES

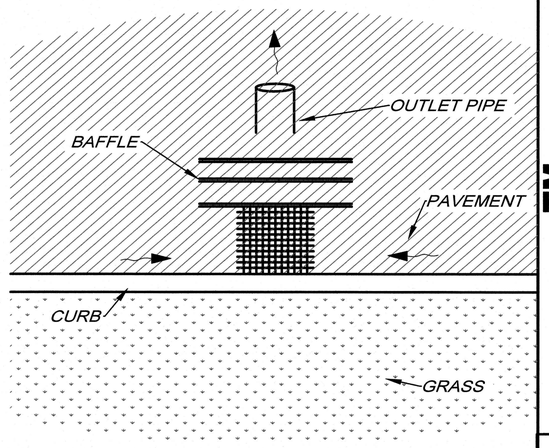












PRETX™ DROP INLET PRETREATMENT DETAIL

D-1

TO FIND A VALUE ADDED RESELLER IN YOUR AREA VISIT
WWW.CONVERGENTWATER.COM/STORMWATER-PRODUCTS
OR CONTACT CONVERGENT WATER TECHNOLOGIES AT
1.800.711.5428

REVISED 11/2016; ELEVATION DETAILS ADDED; CHECKED BY RR

F:\CADD\MASTER STANDARD\dwg\JB-LAYOUTS.dwg 3/12/2015 3:27:29 PM EDT

Design: JAC	Draft: DJM	Date: 04/21/20
Checked: JAC	Scale: AS NOTED	Project No.: 19190.2
Drawing Name: 19190-PLAN.dwg		

STATE OF NEW HAMPSHIRE – MICHAEL J. KERIVAN No. 9846 – LICENSED PROFESSIONAL ENGINEER – 12/30/2020

REV.	DATE	REVISION	BY
6	12/30/20	ISSUED TO PLANNING BOARD	DJM
5	11/17/20	REVISED PROFILES	DJM
4	11/10/20	ADDED SIGHT DISTANCE PROFILE	DJM
3	11/3/20	ISSUED TO TECHNICAL ADVISORY COMMITTEE	DJM
2	10/21/20	MEETING WITH CITY PLANNER	DJM

Designed and Produced in NH
Jones & Beach Engineers, Inc.
85 Portsmouth Ave. PO Box 219 Stratham, NH 03885
Civil Engineering Services
603-772-4746 FAX: 603-772-0227 E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	DETAIL SHEET
Project:	INDUSTRIAL WAREHOUSE 375 BANFIELD ROAD, PORTSMOUTH, NH 03801
Owner of Record:	BANFIELD REALTY LLC 304 MAPLEWOOD AVENUE, PORTSMOUTH, NH 03801

DRAWING No.
D4
SHEET 13 OF 21
JBE PROJECT NO. 19190.2

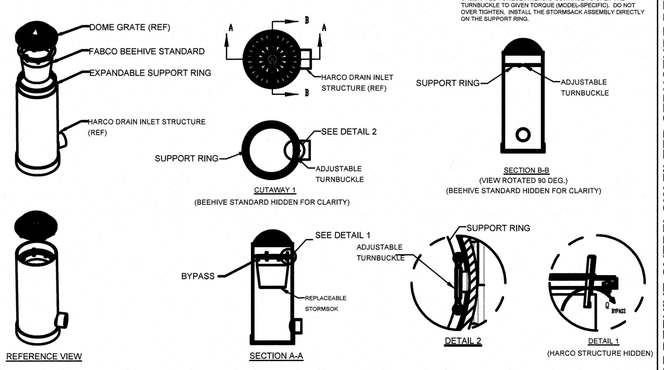
STRUCTURE DIAMETER (IN.)	DEBRIS CAPACITY (CU.FT)	FILTERED FLOWRATE (CFS)	BYPASS FLOWRATE (CFS)
12	0.66	1.7	1.0
15	1.0	2.1	1.3
18	1.2	2.3	1.4
24	2.8	3.9	2.2
30	2.8	3.9	2.2

NOTES:

1. MATERIAL:
   - A) SUPPORT FLANGE: ALUMINUM ALLOY PLATE, 5000 SERIES
   - B) STORMSOK: WOVEN POLYPROPYLENE GEOTEXTILE
   - C) EXPANSION RING: ALUMINUM ALLOY CHANNEL, 6000 SERIES
   - D) HARDWARE: STAINLESS STEEL.
2. RECOMMENDED MINIMUM VAULT DEPTH: 2-IN BELOW STORMSOK
3. USE ONLY WITH FABCO REPLACEABLE STORMSOK

GENERAL INSTALLATION:

ADJUST THE TURNBUCKLE DOWN TO GIVE THE SMALLEST RING DIAMETER AND LOCATE THE EXPANSION RING INTO THE HARCO STRUCTURE MINIMUM OF 6-IN DOWN FROM THE TOP OPENING AS SHOWN. BEGIN OPENING THE TURNBUCKLE UNTIL THE EXPANSION RING IS SELF SUPPORTING, THEN VERIFY THE RING IS LEVEL AND PLUMB TO THE HARCO STRUCTURE. USING A CALIBRATED TORQUE WRENCH, CONTINUE TO OPEN THE TURNBUCKLE TO GIVEN TORQUE (MODEL-SPECIFIC). DO NOT OVER TIGHTEN. INSTALL THE STORMSACK ASSEMBLY DIRECTLY ON THE SUPPORT RING.



ACF BEEHIVE OVERFLOW FILTER STRUCTURE DETAILS

FOR MORE INFORMATION CONTACT ACF ENVIRONMENTAL
WWW.ACFENVIRONMENTAL.COM
800.448.3636

FocalPoint BIORETENTION SYSTEMS

REVISED AUG 2020

FOCALPOINT HP PERFORMANCE SPECIFICATION:

HIGH PERFORMANCE MEDIA

HIGH PERFORMANCE MEDIA MUST MEET A MINIMUM OF 100" PER HOUR INFILTRATION RATE.

HIGH PERFORMANCE STRUCTURAL UNDERDRAIN

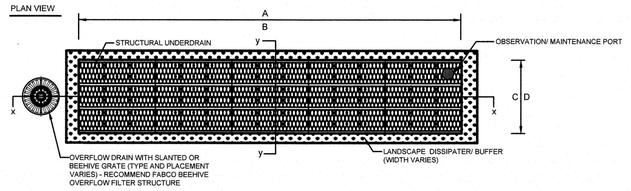
MUST HAVE A MINIMUM OF 19 SQUARE INCHES OF ORIFICE OPENING PER SQUARE FOOT.
MUST MEET H20 LOADING REQUIREMENTS.
MUST BE MODULAR IN NATURE AND ASSEMBLED ON SITE.
MUST HAVE MINIMUM 90% INTERIOR VOID SPACE.

PLANT COMPONENT

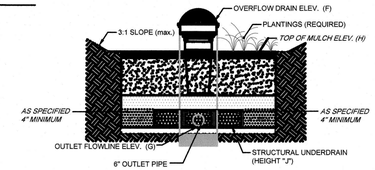
SUPPLIER SHALL PROVIDE LIST OF ACCEPTABLE PLANTS
IF PLANTS ARE NOT INCLUDED IN THE LANDSCAPE CONTRACT/PLANS, SITE CONTRACTOR SHALL PROVIDE PLANTS. PLANTS SHALL BE INSTALLED AT THE TIME THE SYSTEM IS COMMISSIONED FOR USE. PLANTING OUTSIDE THIS TIME REQUIRES APPROVAL BY THE ENGINEER/LANDSCAPE ARCHITECT OF RECORD.
SEE FOCALPOINT INSTALLATION GUIDE FOR PLANT SPACING, PLANTING PROCEDURES ETC.

FOCALPOINT HP CONSTRUCTION GUIDE		
A	FOCALPOINT LENGTH	SEE PLANS
B	# UNDERDRAIN LONG	SEE PLANS
C	FOCALPOINT WIDTH	SEE PLANS
D	# UNDERDRAIN WIDE	SEE PLANS
E	WATER QUALITY VOLUME	VARIES
F	OVERFLOW ELEVATION	SEE PLANS
G	OUTLET FLOWLINE	SEE PLANS
H	TOP OF MULCH	SEE PLANS
I	TOP OF GABION (OPTIONAL)	NO GABION
J	UNDERDRAIN HEIGHT	SEE PLANS

PLAN VIEW



SECTION Y-Y

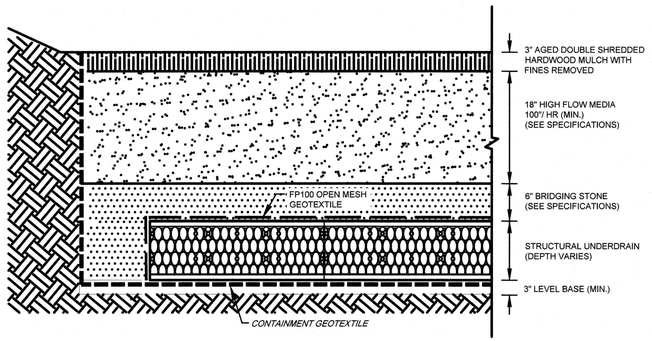


FOCALPOINT HP CONSTRUCTION GUIDE

FOR MORE INFORMATION CONTACT ACF ENVIRONMENTAL
WWW.ACFENVIRONMENTAL.COM
800.448.3636

FocalPoint BIORETENTION SYSTEMS

REVISED AUG 2020

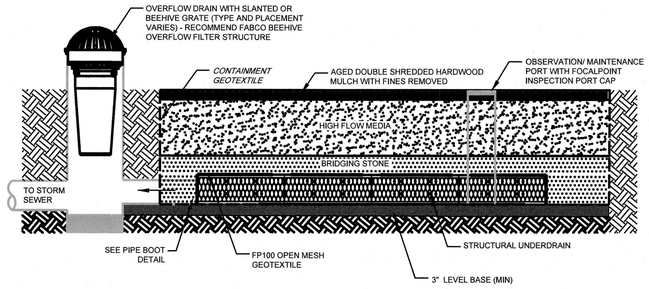


FOCALPOINT HP DETAILED CROSS SECTION

FOR MORE INFORMATION CONTACT ACF ENVIRONMENTAL
WWW.ACFENVIRONMENTAL.COM
800.448.3636

FocalPoint BIORETENTION SYSTEMS

REVISED AUG 2020



FOCALPOINT HP SECTION X-X

FOR MORE INFORMATION CONTACT ACF ENVIRONMENTAL
WWW.ACFENVIRONMENTAL.COM
800.448.3636

FocalPoint BIORETENTION SYSTEMS

REVISED AUG 2020

F:\CADD\MASTER STANDARD\dwg\JB-LAYOUTS.dwg 3/12/2015 3:27:29 PM EDT

Design: JAC	Draft: DJM	Date: 04/21/20
Checked: JAC	Scale: AS NOTED	Project No.: 19190.2
Drawing Name: 19190-PLAN.dwg		

STATE OF NEW HAMPSHIRE – MICHAEL J. KERIVAN No. 9846 – LICENSED PROFESSIONAL ENGINEER – 12/21/2020

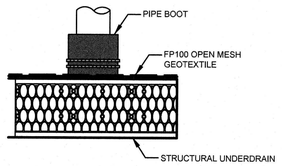
REV.	DATE	REVISION	BY
6	12/30/20	ISSUED TO PLANNING BOARD	DJM
5	11/17/20	REVISED PROFILES	DJM
4	11/10/20	ADDED SIGHT DISTANCE PROFILE	DJM
3	11/3/20	ISSUED TO TECHNICAL ADVISORY COMMITTEE	DJM
2	10/21/20	MEETING WITH CITY PLANNER	DJM

Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

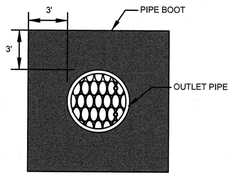
Plan Name:	DETAIL SHEET
Project:	INDUSTRIAL WAREHOUSE 375 BANFIELD ROAD, PORTSMOUTH, NH 03801
Owner of Record:	BANFIELD REALTY LLC 304 MAPLEWOOD AVENUE, PORTSMOUTH, NH 03801

DRAWING No.
D5
SHEET 14 OF 21
JBE PROJECT NO. 19190.2

OBSERVATION/ MAINTENANCE PORT CONNECTION

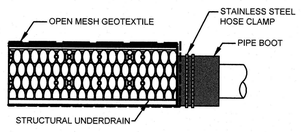


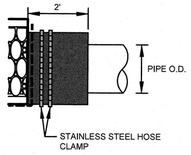
PIPE BOOT DETAIL



FRONT VIEW

OUTLET/ INLET PIPE CONNECTION





SIDE VIEW

FOCALPOINT PIPE CONNECTION

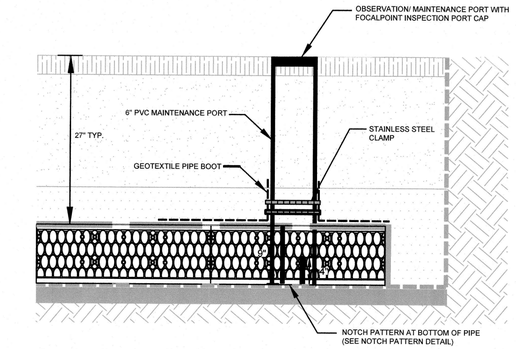
FOR MORE INFORMATION CONTACT ACF ENVIRONMENTAL
WWW.ACFENVIRONMENTAL.COM
800.448.3636

FocalPoint
BIOFILTRATION SOLUTIONS

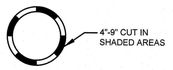
REVISED
AUG 2020

OBSERVATION/ MAINTENANCE PORT

PORT USED FOR INSPECTION PURPOSES AND FOR SYSTEM MAINTENANCE AS REQUIRED. WATER SHALL BE PUMPED INTO THE SYSTEM AND RESUSPEND ACCUMULATED SEDIMENT. MINIMUM REQUIRED MAINTENANCE INCLUDES A QUARTERLY INSPECTION FOR THE FIRST YEAR OF OPERATION AND A YEARLY INSPECTION THEREAFTER FLUSH AS NEEDED.



PIPE NOTCH PATTERN DETAIL



FOCALPOINT OBSERVATION/ MAINTENANCE PORT

FOR MORE INFORMATION CONTACT ACF ENVIRONMENTAL
WWW.ACFENVIRONMENTAL.COM
800.448.3636

FocalPoint
BIOFILTRATION SOLUTIONS

REVISED
AUG 2020

F:\CADD\MASTER STANDARD\dwg\JB-LAYOUTS.dwg 3/12/2015 3:27:29 PM EDT

Design: JAC	Draft: DJM	Date: 04/21/20
Checked: JAC	Scale: AS NOTED	Project No.: 19190.2
Drawing Name: 19190-PLAN.dwg		

STATE OF NEW HAMPSHIRE – MICHAEL J. KERIVAN No. 9646 – LICENSED PROFESSIONAL ENGINEER – 2020

REV.	DATE	REVISION	BY
6	12/30/20	ISSUED TO PLANNING BOARD	DJM
5	11/17/20	REVISED PROFILES	DJM
4	11/10/20	ADDED SIGHT DISTANCE PROFILE	DJM
3	11/3/20	ISSUED TO TECHNICAL ADVISORY COMMITTEE	DJM
2	10/21/20	MEETING WITH CITY PLANNER	DJM

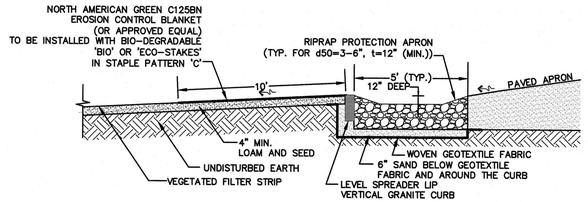
Designed and Produced in NH
Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	DETAIL SHEET
Project:	INDUSTRIAL WAREHOUSE 375 BANFIELD ROAD, PORTSMOUTH, NH 03801
Owner of Record:	BANFIELD REALTY LLC 304 MAPLEWOOD AVENUE, PORTSMOUTH, NH 03801

DRAWING No.

D6

SHEET 15 OF 21
JBE PROJECT NO. 19190.2

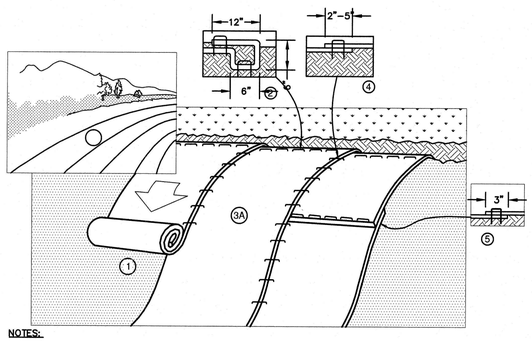


NOTES:

1. CONSTRUCT LEVEL SPREADER LIP ON ZERO PERCENT GRADE TO ENSURE UNIFORM SPREADING OF RUNOFF.
2. VERTICAL GRANITE CURB SHALL BE PLACED A MINIMUM OF SIX INCHES DEEP AND EXTEND ENTIRE LENGTH OF LIP.
3. THE RIP RAP APRON PRIOR TO THE LEVEL SPREADER SHALL NOT EXCEED A 0 PERCENT GRADE.
4. THE FLOW FROM THE LEVEL SPREADER SHALL OUTLET ONTO STABILIZED AREAS. WATER MUST NOT RECONCENTRATE IMMEDIATELY BELOW THE SPREADER.
5. PERIODIC INSPECTION AND REQUIRED MAINTENANCE SHALL BE PERFORMED.
6. MAINTENANCE: LEVEL SPREADER SHOULD BE CHECKED PERIODICALLY AND AFTER EVERY MAJOR STORM TO DETERMINE IF THE SPREADER HAS BEEN DAMAGED. SEDIMENT DEEPER THAN FOUR INCHES ACCUMULATION SHOULD BE REMOVED. IF RILLING HAS TAKEN PLACE ON LIP, THEN DAMAGE SHOULD BE REPAIRED AND REVEGETATED. VEGETATION SHOULD BE MOWED OCCASIONALLY TO CONTROL WEEDS AND ENCROACHMENT OF WOODY VEGETATION. CLIPPINGS SHOULD BE REMOVED AND DISPOSED OF OUTSIDE SPREADER AND AWAY FROM OUTLET AREA. FERTILIZATION SHOULD BE DONE AS NECESSARY TO KEEP VEGETATION HEALTHY AND DENSE.

LEVEL SPREADER

NOT TO SCALE



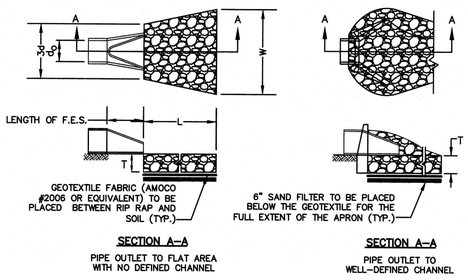
NOTES:

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP BY 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM™, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH. NOTE: IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

NORTH AMERICAN GREEN
14649 HIGHWAY 41 NORTH
EVANSVILLE, INDIANA 47725
1-800-772-2040

EROSION CONTROL BLANKET SLOPE INSTALLATION (North American Green)

NOT TO SCALE



SECTION A-A
PIPE OUTLET TO FLAT AREA WITH NO DEFINED CHANNEL

SECTION A-A
PIPE OUTLET TO WELL-DEFINED CHANNEL

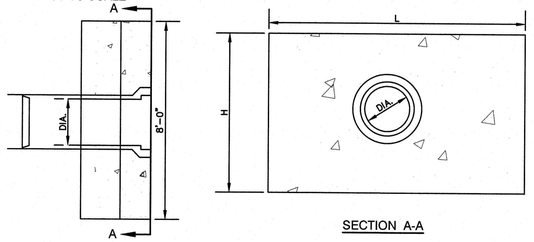
TABLE 7-24--RECOMMENDED RIP RAP GRADATION RANGES		
THICKNESS OF RIP RAP = 1.5 FEET		
d50 SIZE= 0.50 FEET 6 INCHES		
% OF WEIGHT SMALLER THAN THE GIVEN d50 SIZE	SIZE OF STONE (INCHES) FROM	TO
100%	9	12
85%	8	11
50%	6	9
15%	2	3

NOTES:

1. THE SUBGRADE FOR THE GEOTEXTILE FABRIC AND RIP RAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
2. THE RIP RAP SHALL CONFORM TO THE SPECIFIED GRADATION.
3. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE ROCK RIP. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES.
4. STONE FOR THE RIP RAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.
5. OUTLETS TO A DEFINED CHANNEL SHALL HAVE 2:1 OR FLATTER SIDE SLOPES AND SHOULD BEGIN AT THE TOP OF THE CULVERT AND TAPER DOWN TO THE CHANNEL BOTTOM THROUGH THE LENGTH OF THE APRON.
6. MAINTENANCE: THE OUTLET PROTECTION SHOULD BE CHECKED AT LEAST ANNUALLY AND AFTER EVERY MAJOR STORM. IF THE RIP RAP HAS BEEN DISPLACED, UNDERMINED OR DAMAGED, IT SHOULD BE REPAIRED IMMEDIATELY. THE CHANNEL IMMEDIATELY BELOW THE OUTLET SHOULD BE CHECKED TO SEE THAT EROSION IS NOT OCCURRING. THE DOWNSTREAM CHANNEL SHOULD BE KEPT CLEAR OF OBSTRUCTIONS SUCH AS FALLEN TREES, DEBRIS, AND SEDIMENT THAT COULD CHANGE FLOW PATTERNS AND/OR TAILWATER DEPTHS ON THE PIPES. REPAIRS MUST BE CARRIED OUT IMMEDIATELY TO AVOID ADDITIONAL DAMAGE TO OUTLET PROTECTION.

RIP RAP OUTLET PROTECTION APRON

NOT TO SCALE



SECTION A-A

LONGITUDINAL SECTION

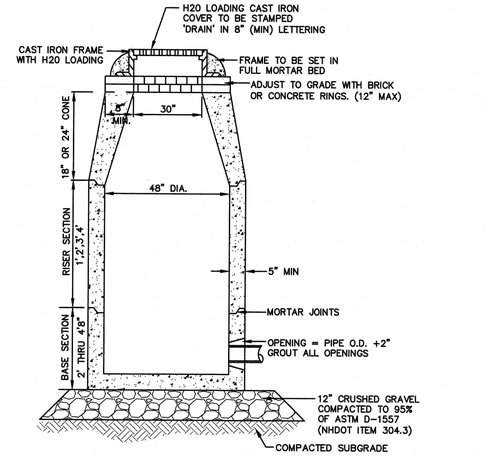
DIA.	HEADWALL LENGTH	HEADWALL HEIGHT	FILL HEIGHT	PIPE COVER	HEADWALL BOTTOM WIDTH
D	L	H	FH	h	W
12"	4'-2"	3'-9"	1'-6"	1'-3"	1'-11"
15"	5'-11"	4'-2"	1'-6"	1'-5"	2'-0"
18"	6'-11"	4'-5"	1'-6"	1'-5"	2'-1"
24"	8'-10"	4'-11"	1'-6"	1'-5"	2'-3"

NOTES:

1. ALL DIMENSIONS GIVEN IN FEET & INCHES.
2. PROVIDE BELL END AT INLET HEADWALL, AND SPIGOT END AT OUTLET END HEADWALL.
3. CONCRETE: 5,000 PSI MINIMUM AFTER 28 DAYS. CEMENT TO BE TYPE III PER ASTM C-150. REINFORCING TO MEET OR EXCEED ASTM A-615 GRADE 60 DEFORMED BARS.
4. 1" THREADED INSERTS PROVED FOR FINAL ATTACHMENT IN FIELD BY OTHERS.

PRECAST CONCRETE HEADWALL

NOT TO SCALE

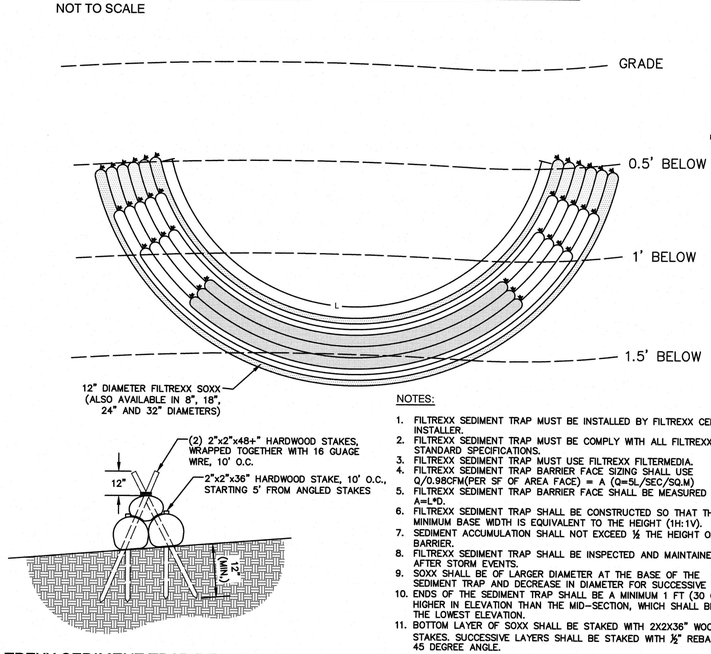


NOTES:

1. BASE SECTION SHALL BE MONOLITHIC WITH 48" INSIDE DIAMETER.
2. ALL SECTIONS SHALL BE DESIGNED FOR H20 LOADING.
3. CONCRETE SHALL BE COMPRESSIVE STRENGTH 4000 PSI, TYPE II CEMENT.
4. FRAMES AND GRATES SHALL BE HEAVY DUTY AND DESIGNED FOR H20 LOADING.
5. PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS SO AS TO BE WATERTIGHT.
6. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE BUTYL RUBBER.
7. ALL DRAIN MANHOLE FRAMES AND GRATES SHALL BE NHDOT TYPE MH-1, OR NEENAH R-1798 OR APPROVED EQUAL (30" DIA. TYPICAL).
8. STANDARD FRAME(S) AND GRATE(S) SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM, BUT NO MORE THAN 12"), OR PRECAST CONCRETE 'DONUTS'.

DRAIN MANHOLE

NOT TO SCALE

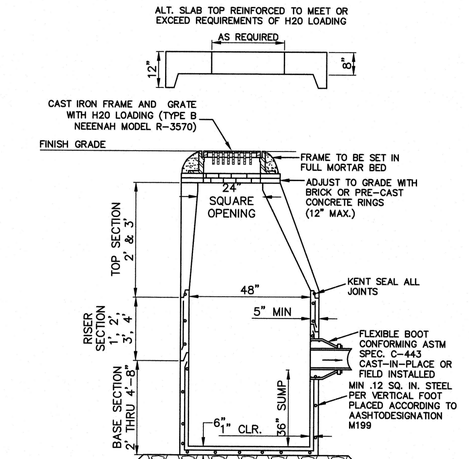


NOTES:

1. FILTREXX SEDIMENT TRAP MUST BE INSTALLED BY FILTREXX CERTIFIED INSTALLER.
2. FILTREXX SEDIMENT TRAP MUST BE COMPLY WITH ALL FILTREXX STANDARD SPECIFICATIONS.
3. FILTREXX SEDIMENT TRAP MUST USE FILTREXX FILTERMEDIA.
4. FILTREXX SEDIMENT TRAP BARRIER FACE SIZING SHALL USE Q/0.98CFM(PER SF OF AREA FACE) = A (Q=5L/SEC/SQ.M)
5. FILTREXX SEDIMENT TRAP BARRIER FACE SHALL BE MEASURED AS A=L*D.
6. FILTREXX SEDIMENT TRAP SHALL BE CONSTRUCTED SO THAT THE MINIMUM BASE WIDTH IS EQUIVALENT TO THE HEIGHT (1H:1V).
7. SEDIMENT ACCUMULATION SHALL NOT EXCEED ½ THE HEIGHT OF THE BARRIER.
8. FILTREXX SEDIMENT TRAP SHALL BE INSPECTED AND MAINTAINED AFTER STORM EVENTS.
9. SOXX SHALL BE OF LARGER DIAMETER AT THE BASE OF THE SEDIMENT TRAP AND DECREASE IN DIAMETER FOR SUCCESSIVE LAYERS.
10. ENDS OF THE SEDIMENT TRAP SHALL BE A MINIMUM 1 FT (30 CM) HIGHER IN ELEVATION THAN THE MID-SECTION, WHICH SHALL BE AT THE LOWEST ELEVATION.
11. BOTTOM LAYER OF SOXX SHALL BE STAKED WITH 2X2X36" WOODEN STAKES. SUCCESSIVE LAYERS SHALL BE STAKED WITH ½" REBAR AT A 45 DEGREE ANGLE.

FILTREXX SEDIMENT TRAP DETAIL

NOT TO SCALE



NOTES:

1. BASE SECTION SHALL BE MONOLITHIC WITH 48" INSIDE DIAMETER.
2. ALL SECTIONS SHALL BE DESIGNED FOR H20 LOADING.
3. CONCRETE SHALL BE COMPRESSIVE STRENGTH 4000 PSI, TYPE II CEMENT.
4. FRAMES AND GRATES SHALL BE HEAVY DUTY AND DESIGNED FOR H20 LOADING
5. PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS SO AS TO BE WATERTIGHT.
6. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE BUTYL RUBBER.
7. ALL CATCH BASIN FRAMES AND GRATES SHALL BE NHDOT CATCH BASIN TYPE ALTERNATE 1 OR NEENAH R-3570 OR APPROVED EQUAL (24"x24" TYPICAL).
8. STANDARD CATCH BASIN FRAME AND GRATE(S) SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM, BUT NO MORE THAN 12"), OR PRECAST CONCRETE 'DONUTS'.

CATCH BASIN

NOT TO SCALE

GENERAL NOTES:

1. THE TRAP SHALL BE INSTALLED AS CLOSE TO THE DISTURBED AREA OR SOURCE OF SEDIMENT AS POSSIBLE.
2. THE MAXIMUM CONTRIBUTING DRAINAGE AREA TO THE TRAP SHALL BE LESS THAN 5 ACRES.
3. THE MINIMUM VOLUME OF THE TRAP SHALL BE 3,600 CUBIC FEET OF STORAGE FOR EACH ACRE OF DRAINAGE AREA.
4. THE SIDE SLOPES OF THE TRAP SHALL BE 3:1 OR FLATTER, AND SHALL BE STABILIZED IMMEDIATELY AFTER THEIR CONSTRUCTION.
5. THE OUTLET OF THE TRAP SHALL BE A MINIMUM OF ONE FOOT BELOW THE CREST OF THE TRAP AND SHALL DISCHARGE TO A STABILIZED AREA.
6. THE TRAP SHALL BE CLEANED WHEN 50% OF THE ORIGINAL VOLUME IS FILLED.
7. THE MATERIALS REMOVED FROM THE TRAP SHALL BE PROPERLY DISPOSED OFF AND STABILIZED.

F:\CADD\MASTER STANDARD\dwg\JB-LAYOUTS.dwg 3/12/2015 3:27:29 PM EDT

Design: JAC	Draft: DJM	Date: 04/21/20
Checked: JAC	Scale: AS NOTED	Project No.: 19190.2
Drawing Name: 19190-PLAN.dwg		

STATE OF NEW HAMPSHIRE
MICHAEL J. KERIVAN No. 9646
LICENSED PROFESSIONAL ENGINEER
12/30/2020

REV.	DATE	REVISION	BY
6	12/30/20	ISSUED TO PLANNING BOARD	DJM
5	11/17/20	REVISED PROFILES	DJM
4	11/10/20	ADDED SIGHT DISTANCE PROFILE	DJM
3	11/3/20	ISSUED TO TECHNICAL ADVISORY COMMITTEE	DJM
2	10/21/20	MEETING WITH CITY PLANNER	DJM

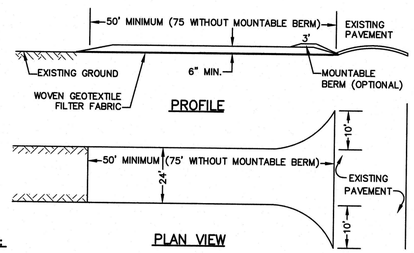
Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave. PO Box 219 Stratham, NH 03885
Civil Engineering Services
603-772-4746 FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	DETAIL SHEET
Project:	INDUSTRIAL WAREHOUSE 375 BANFIELD ROAD, PORTSMOUTH, NH 03801
Owner of Record:	BANFIELD REALTY LLC 304 MAPLEWOOD AVENUE, PORTSMOUTH, NH 03801

DRAWING No.
D7
SHEET 16 OF 21
JBE PROJECT NO. 19190.2

TEMPORARY EROSION CONTROL NOTES

1. THE SMALLEST PRACTICAL AREA OF LAND SHALL BE EXPOSED AT ANY ONE TIME. AT NO TIME SHALL AN AREA IN EXCESS OF 5 ACRES BE EXPOSED AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.
2. EROSION, SEDIMENT AND DETENTION MEASURES SHALL BE INSTALLED AS SHOWN ON THE PLANS AND AT LOCATIONS AS REQUIRED, DIRECTED BY THE ENGINEER.
3. ALL DISTURBED AREAS (INCLUDING POND AREAS BELOW THE PROPOSED WATERLINE) SHALL BE RETURNED TO PROPOSED GRADES AND ELEVATIONS. DISTURBED AREAS SHALL BE LOAMED WITH A MINIMUM OF 6" OF SCREENED ORGANIC LOAM AND SEEDED WITH SEED MIXTURE 'C' AT A RATE NOT LESS THAN 1.10 POUNDS OF SEED PER 1,000 S.F. OF AREA (48 LBS. / ACRE).
4. SILT FENCES AND OTHER BARRIERS SHALL BE INSPECTED EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 0.5" OR GREATER. ALL DAMAGED AREAS SHALL BE REPAIRED, AND SEDIMENT DEPOSITS SHALL PERIODICALLY BE REMOVED AND DISPOSED OF.
5. AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED, THE TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED AND THE AREA DISTURBED BY THE REMOVAL SMOOTHED AND RE-VEGETATED.
6. AREAS MUST BE SEEDED AND MULCHED OR OTHERWISE PERMANENTLY STABILIZED WITHIN 3 DAYS OF FINAL GRADING, OR TEMPORARILY STABILIZED WITHIN 14 DAYS OF THE INITIAL DISTURBANCE OF SOIL. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
7. ALL PROPOSED VEGETATED AREAS THAT DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED BY SEEDING AND INSTALLING NORTH AMERICAN GREEN S75 EROSION CONTROL BLANKETS (OR AN EQUIVALENT APPROVED IN WRITING BY THE ENGINEER) ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.
8. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
9. AFTER OCTOBER 15th, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3" OF CRUSHED GRAVEL PER NHDOT ITEM 304.3.
10. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
    a. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
    b. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
    c. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH STONE OR RIPRAP HAS BEEN INSTALLED; OR
    d. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
11. FUGITIVE DUST CONTROL IS REQUIRED TO BE CONTROLLED IN ACCORDANCE WITH ENV-A 1000, AND THE PROJECT IS TO MEET THE REQUIREMENTS AND INTENT OF RSA 430:53 AND AGR 3800 RELATIVE TO INVASIVE SPECIES.
12. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR'S NAME, ADDRESS, AND PHONE NUMBER SHALL BE SUBMITTED TO DES VIA EMAIL (SEE BELOW).
13. PRIOR TO CONSTRUCTION, A PHASING PLAN THAT DELINEATES EACH PHASE OF THE PROJECT SHALL BE SUBMITTED. ALL TEMPORARY SEDIMENT BASINS THAT WILL BE NEEDED FOR DEWATERING WORK AREAS SHALL BE LOCATED AND IDENTIFIED ON THIS PLAN.
14. IN ORDER TO ENSURE THE STABILITY OF THE SITE AND EFFECTIVE IMPLEMENTATION OF THE SEDIMENT AND EROSION CONTROL MEASURES SPECIFIED IN THE PLANS FOR THE DURATION OF CONSTRUCTION, THE CONTRACTOR SHALL BE IN STRICT COMPLIANCE WITH THE FOLLOWING INSPECTION AND MAINTENANCE REQUIREMENTS IN ADDITION TO THOSE CALLED FOR IN THE SWPPP:
    a. A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL OR A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW HAMPSHIRE ("MONITOR") SHALL BE EMPLOYED TO INSPECT THE SITE FROM THE START OF ALTERATION OF TERRAIN ACTIVITIES UNTIL THE SITE IS IN FULL COMPLIANCE WITH THE SITE SPECIFIC PERMIT ("PERMIT").
    b. DURING THIS PERIOD, THE MONITOR SHALL INSPECT THE SUBJECT SITE AT LEAST ONCE A WEEK, AND IF POSSIBLE, DURING ANY ½ INCH OR GREATER RAIN EVENT (I.E. ½ INCH OF PRECIPITATION OR MORE WITHIN A 24 HOUR PERIOD). IF UNABLE TO BE PRESENT DURING SUCH A STORM, THE MONITOR SHALL INSPECT THE SITE WITHIN 24 HOURS OF THIS EVENT.
    c. THE MONITOR SHALL PROVIDE TECHNICAL ASSISTANCE AND RECOMMENDATIONS TO THE CONTRACTOR ON THE APPROPRIATE BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROLS REQUIRED TO MEET THE REQUIREMENTS OF RSA 485 A:17 AND ALL APPLICABLE DES PERMIT CONDITIONS.
    d. WITHIN 24 HOURS OF EACH INSPECTION, THE MONITOR SHALL SUBMIT A REPORT TO DES VIA EMAIL (RIDGELY MAUCK AT: RIDGELY.MAUCK@DES.NH.GOV).
    e. THE MONITOR SHALL MEET WITH DES TO DECIDE UPON A REPORT FORMAT. THE REPORT FORMAT SHALL BE REVIEWED AND APPROVED BY DES PRIOR TO THE START OF CONSTRUCTION.

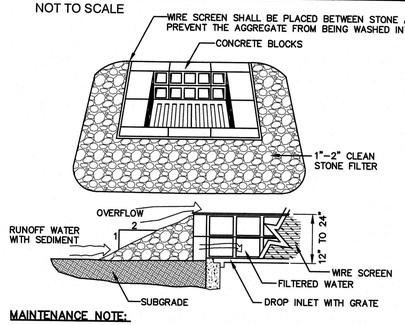


NOTES:

1. STONE FOR STABILIZED CONSTRUCTION ENTRANCE SHALL BE 3 INCH STONE, RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT.
2. THE LENGTH OF THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 50 FEET, 75' WITHOUT A MOUNTABLE BERM, AND EXCEPT FOR A SINGLE RESIDENTIAL LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY.
3. THICKNESS OF THE STONE FOR THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 6 INCHES.
4. THE WIDTH OF THE ENTRANCE SHALL NOT BE LESS THAN THE FULL WIDTH OF THE ENTRANCE WHERE INGRESS OR EGRESS OCCURS, OR 10 FEET, WHICHEVER IS GREATER.
5. GEOTEXTILE FILTER FABRIC SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE. FILTER FABRIC IS NOT REQUIRED FOR A SINGLE FAMILY RESIDENTIAL LOT.
6. ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A STONE BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
7. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO THE PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, WASHED, OR TRACKED ONTO THE PUBLIC RIGHT-OF-WAY MUST BE REMOVED PROMPTLY.

STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE

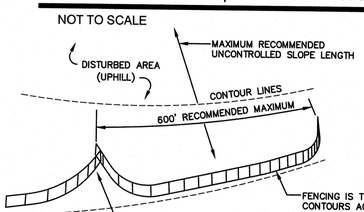


MAINTENANCE NOTE:

1. ALL STRUCTURES SHOULD BE INSPECTED AFTER EVERY RAINFALL AND REPAIRS MADE AS NECESSARY. SEDIMENT SHOULD BE REMOVED FROM TRAPPING DEVICES AFTER THE SEDIMENT HAS REACHED A MAXIMUM OF ONE HALF THE DEPTH OF THE TRAP. THE SEDIMENT SHOULD BE DISPOSED IN A SUITABLE UPLAND AREA AND PROTECTED FROM EROSION BY EITHER STRUCTURE OR VEGETATIVE MEANS. THE TEMPORARY TRAPS SHOULD BE REMOVED AND THE AREA REPAIRED AS SOON AS THE CONTRIBUTING DRAINAGE AREA TO THE INLET HAS BEEN COMPLETELY STABILIZED.

TEMPORARY CATCH BASIN INLET PROTECTION
(Block and Gravel Drop Inlet Sediment Filter)

NOT TO SCALE



CONSTRUCTION SPECIFICATIONS:

1. WOVEN FABRIC FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. FILTER CLOTH SHALL BE FASTENED TO WOVEN WIRE EVERY 24" AT TOP, MID AND BOTTOM AND EMBEDDED IN THE GROUND A MINIMUM OF 8" AND THEN COVERED WITH SOIL.
2. THE FENCE POSTS SHALL BE A MINIMUM OF 48" LONG, SPACED A MAXIMUM 10' APART, AND DRIVEN A MINIMUM OF 16" INTO THE GROUND.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THE ENDS OF THE FABRIC SHALL BE OVERLAPPED 6", FOLDED AND STAPLED TO PREVENT SEDIMENT FROM BY-PASSING.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND SEDIMENT REMOVED AND PROPERLY DISPOSED OF WHEN IT IS 6" DEEP OR VISIBLE 'BULGES' DEVELOP IN THE SILT FENCE.
5. PLACE THE ENDS OF THE SILT FENCE UP CONTOUR TO PROVIDE FOR SEDIMENT STORAGE.
6. SILT FENCE SHALL REMAIN IN PLACE FOR 24 MONTHS.

SILT FENCE

NOT TO SCALE

7. SILT FENCES SHALL BE REMOVED WHEN NO LONGER NEEDED AND THE SEDIMENT COLLECTED SHALL BE DISPOSED AS DIRECTED BY THE ENGINEER. THE AREA DISTURBED BY THE REMOVAL SHALL BE SMOOTHED AND REVEGETATED.

MAINTENANCE:

1. SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS THAT ARE REQUIRED SHALL BE DONE IMMEDIATELY.
2. IF THE FABRIC ON A SILT FENCE SHOULD DECOMPOSE OR BECOME INEFFECTIVE DURING THE EXPECTED LIFE OF THE FENCE, THE FABRIC SHALL BE REPLACED PROMPTLY.
3. SEDIMENT DEPOSITS SHOULD BE INSPECTED AFTER EVERY STORM EVENT. THE DEPOSITS SHOULD BE REMOVED WHEN THEY REACH APPROXIMATELY ONE HALF THE HEIGHT OF THE BARRIER.
4. SEDIMENT DEPOSITS THAT ARE REMOVED, OR LEFT IN PLACE AFTER THE FABRIC HAS BEEN REMOVED, SHALL BE GRADED TO CONFORM WITH THE EXISTING TOPOGRAPHY AND VEGETATED.

SEEDING SPECIFICATIONS

1. GRADING AND SHAPING
   A. SLOPES SHALL NOT BE STEEPER THAN 2:1 WITHOUT APPROPRIATE EROSION CONTROL MEASURES AS SPECIFIED ON THE PLANS (3:1 SLOPES OR FLATTER ARE PREFERRED).
   B. WHERE MOWING WILL BE DONE, 3:1 SLOPES OR FLATTER ARE RECOMMENDED.
2. SEEDBED PREPARATION
   A. SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.
   B. STONES LARGER THAN 4 INCHES AND TRASH SHOULD BE REMOVED BECAUSE THEY INTERFERE WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA. WHERE FEASIBLE, THE SOIL SHOULD BE TILLED TO A DEPTH OF ABOUT 4 INCHES TO PREPARE A SEEDBED AND FERTILIZER AND LIME MIXED INTO THE SOIL. THE SEEDBED SHOULD BE LEFT IN A REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.
3. ESTABLISHING A STAND
   A. LIME AND FERTILIZER SHOULD BE APPLIED PRIOR TO OR AT THE TIME OF SEEDING AND INCORPORATED INTO THE SOIL. TYPES AND AMOUNTS OF LIME AND FERTILIZER SHOULD BE BASED ON AN EVALUATION OF SOIL TESTS. WHEN A SOIL TEST IS NOT AVAILABLE, THE FOLLOWING MINIMUM AMOUNTS SHOULD BE APPLIED:
      AGRICULTURAL LIMESTONE, 2 TONS PER ACRE OR 100 LBS. PER 1,000 SQ.FT.
      NITROGEN(N), 50 LBS. PER ACRE OR 1.1 LBS. PER 1,000 SQ.FT.
      PHOSPHATE(P2O5), 100 LBS. PER ACRE OR 2.2 LBS. PER 1,000 SQ.FT.
      POTASH(K2O), 100 LBS. PER ACRE OR 2.2 LBS. PER 1,000 SQ.FT.
      (NOTE: THIS IS THE EQUIVALENT OF 500 LBS. PER ACRE OF 10-20-20 FERTILIZER OR 1,000 LBS. PER ACRE OF 5-10-10.)
   B. SEED SHOULD BE SPREAD UNIFORMLY BY THE METHOD MOST APPROPRIATE FOR THE SITE. METHODS INCLUDE BROADCASTING, DRILLING AND HYDROSEEDING. WHERE BROADCASTING IS USED, COVER SEED WITH .25 INCH OF SOIL OR LESS, BY CULTIPACKING OR RAKING.
   C. REFER TO THE 'SEEDING GUIDE' AND 'SEEDING RATES' TABLES ON THIS SHEET FOR APPROPRIATE SEED MIXTURES AND RATES OF SEEDING. ALL LEGUMES (CROWNVETCH, BIRDSFOOT, TREFOIL AND FLATPEA) MUST BE INOCULATED WITH THEIR SPECIFIC INOCULANT PRIOR TO THEIR INTRODUCTION TO THE SITE.
   D. WHEN SEEDED AREAS ARE MULCHED, PLANTINGS MAY BE MADE FROM EARLY SPRING TO EARLY OCTOBER. WHEN SEEDED AREAS ARE NOT MULCHED, PLANTINGS SHOULD BE MADE FROM EARLY SPRING TO MAY 20th OR FROM AUGUST 10th TO SEPTEMBER 1st.
4. MULCH
   A. HAY, STRAW, OR OTHER MULCH, WHEN NEEDED, SHOULD BE APPLIED IMMEDIATELY AFTER SEEDING.
   B. MULCH WILL BE HELD IN PLACE USING APPROPRIATE TECHNIQUES FROM THE BEST MANAGEMENT PRACTICE FOR MULCHING. HAY OR STRAW MULCH SHALL BE PLACED AT A RATE OF 90 LBS PER 1000 S.F.
5. MAINTENANCE TO ESTABLISH A STAND
   A. PLANTED AREAS SHOULD BE PROTECTED FROM DAMAGE BY FIRE, GRAZING, TRAFFIC, AND DENSE WEED GROWTH.
   B. FERTILIZATION NEEDS SHOULD BE DETERMINED BY ONSITE INSPECTIONS. SUPPLEMENTAL FERTILIZER IS USUALLY THE KEY TO FULLY COMPLETE THE ESTABLISHMENT OF THE STAND BECAUSE MOST PERENNIALS TAKE 2 TO 3 YEARS TO BECOME FULLY ESTABLISHED.
   C. IN WATERWAYS, CHANNELS, OR SWALES WHERE UNIFORM FLOW CONDITIONS ARE ANTICIPATED, ANNUAL MOWING MAY BE NECESSARY TO CONTROL GROWTH OF WOODY VEGETATION.

USE	SEEDING MIXTURE 1/	DROUGHTY	WELL DRAINED	MODERATELY WELL DRAINED	POORLY DRAINED
STEEP CUTS AND FILLS, BORROW AND DISPOSAL AREAS	A	FAIR	GOOD	GOOD	FAIR
	B	POOR	GOOD	FAIR	FAIR
	C	POOR	GOOD	EXCELLENT	GOOD
	D	FAIR	EXCELLENT	EXCELLENT	POOR
WATERWAYS, EMERGENCY SPILLWAYS, AND OTHER CHANNELS WITH FLOWING WATER.	A	GOOD	GOOD	GOOD	FAIR
	C	GOOD	EXCELLENT	EXCELLENT	FAIR
LIGHTLY USED PARKING LOTS, ODD AREAS, UNUSED LANDS, AND LOW INTENSITY USE RECREATION SITES.	A	GOOD	GOOD	GOOD	FAIR
	B	GOOD	GOOD	FAIR	POOR
	C	GOOD	EXCELLENT	EXCELLENT	FAIR
PLAY AREAS AND ATHLETIC FIELDS. (TOPSOIL IS ESSENTIAL FOR GOOD TURF.)	E	FAIR	EXCELLENT	EXCELLENT	2/
	F	FAIR	EXCELLENT	EXCELLENT	2/

GRAVEL PIT, SEE NH-PM-24 IN APPENDIX FOR RECOMMENDATION REGARDING RECLAMATION OF SAND AND GRAVEL PITS.

1/ REFER TO SEEDING MIXTURES AND RATES IN TABLE BELOW.
2/ POORLY DRAINED SOILS ARE NOT DESIRABLE FOR USE AS PLAYING AREA AND ATHLETIC FIELDS.

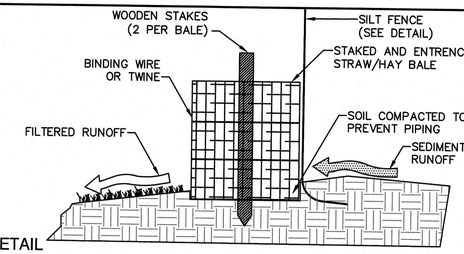
NOTE: TEMPORARY SEED MIX FOR STABILIZATION OF TURF SHALL BE WINTER RYE OR OATS AT A RATE OF 2.5 LBS. PER 1000 S.F. AND SHALL BE PLACED PRIOR TO OCTOBER 15th, IF PERMANENT SEEDING NOT YET COMPLETE.

SEEDING GUIDE

MIXTURE	POUNDS PER ACRE	POUNDS PER 1,000 Sq. Ft.
A. TALL FESCUE	20	0.45
CREEPING RED FESCUE	20	0.45
RED TOP	2	0.05
TOTAL	42	0.95
B. TALL FESCUE	15	0.35
CREEPING RED FESCUE	10	0.25
CROWN VETCH	15	0.35
OR		
FLAT PEA	30	0.75
TOTAL	40 OR 55	0.95 OR 1.35
C. TALL FESCUE	20	0.45
CREEPING RED FESCUE	20	0.45
BIRDS FOOT TREFOIL	8	0.20
TOTAL	48	1.10
D. TALL FESCUE	20	0.45
FLAT PEA	30	0.75
TOTAL	50	1.20
E. CREEPING RED FESCUE 1/	50	1.15
KENTUCKY BLUEGRASS 1/	50	1.15
TOTAL	100	2.30
F. TALL FESCUE 1	150	3.60

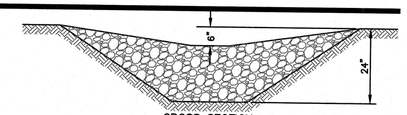
1/ FOR HEAVY USE ATHLETIC FIELDS CONSULT THE UNIVERSITY OF NEW HAMPSHIRE COOPERATIVE EXTENSION TURF SPECIALIST FOR CURRENT VARIETIES AND SEEDING RATES.

SEEDING RATES

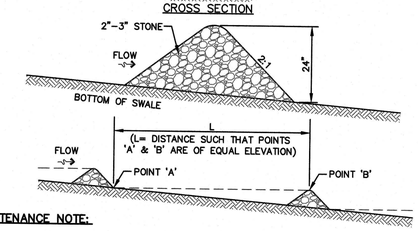


HAYBALE DETAIL

NOT TO SCALE



CROSS SECTION



MAINTENANCE NOTE:

1. STONE CHECK DAMS SHOULD BE CHECKED AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY NECESSARY REPAIRS SHOULD BE MADE IMMEDIATELY. PARTICULAR ATTENTION SHOULD BE GIVEN TO END RUN AND EROSION AT THE DOWNSTREAM TOE OF THE STRUCTURE. WHEN THE STRUCTURES ARE REMOVED, THE DISTURBED PORTION SHOULD BE BROUGHT TO THE EXISTING CHANNEL GRADE AND THE AREAS PREPARED, SEEDED AND MULCHED. WHILE THIS PRACTICE IS NOT INTENDED TO BE USED PRIMARILY FOR SEDIMENT TRAPPING, SOME SEDIMENT WILL ACCUMULATE BEHIND THE STRUCTURES. SEDIMENT SHALL BE REMOVED FROM BEHIND THE STRUCTURES WHEN IT HAS ACCUMULATED TO ONE HALF OF THE ORIGINAL HEIGHT OF THE STRUCTURE.

STONE CHECK DAM

NOT TO SCALE

CONSTRUCTION SEQUENCE

1. PRIOR TO THE START OF ANY ACTIVITY, IT IS THE RESPONSIBILITY OF THE SITE'S SITE DEVELOPER (OR OWNER) TO FILE A NOTICE OF INTENT (NOI) FORM WITH THE ENVIRONMENTAL PROTECTION AGENCY (EPA) IN ORDER TO GAIN COVERAGE UNDER THE NPDES GENERAL PERMIT FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES. A PRE CONSTRUCTION MEETING IS TO BE HELD WITH ALL DEPARTMENT HEADS PRIOR TO THE START OF CONSTRUCTION.
2. WETLAND BOUNDARIES ARE TO BE CLEARLY MARKED PRIOR TO THE START OF CONSTRUCTION. AT LEAST A TEMPORARY CULVERT OR ROADBED TO BE IN PLACE PRIOR TO THE START OF CONSTRUCTION.
3. CUT AND REMOVE TREES IN CONSTRUCTION AREA AS REQUIRED OR DIRECTED.
4. INSTALL SILT FENCING, HAY BALES AND CONSTRUCTION ENTRANCES PRIOR TO THE START OF CONSTRUCTION. THESE ARE TO BE MAINTAINED UNTIL THE FINAL PAVEMENT SURFACING AND LANDSCAPING AREAS ARE ESTABLISHED.
5. CLEAR, CUT, GRUB AND DISPOSE OF DEBRIS IN APPROVED FACILITIES. THIS INCLUDES ANY REQUIRED DEMOLITION OF EXISTING STRUCTURES, UTILITIES, ETC.
6. CONSTRUCT AND/OR INSTALL TEMPORARY OR PERMANENT SEDIMENT AND/OR DETENTION BASIN(S) AS REQUIRED. THESE FACILITIES SHALL BE INSTALLED AND STABILIZED PRIOR TO DIRECTING RUN-OFF TO THEM.
7. STRIP LOAM AND PAVEMENT, OR RECLAIM EXISTING PAVEMENT WITHIN LIMITS OF WORK PER THE RECOMMENDATIONS OF THE PROJECT ENGINEER AND STOCKPILE EXCESS MATERIAL. STABILIZE STOCKPILE AS NECESSARY.
8. PERFORM PRELIMINARY SITE GRADING IN ACCORDANCE WITH THE PLANS, INCLUDING THE CONSTRUCTION OF ANY RETAINING WALLS AND SOUND WALLS.
9. PREPARE BUILDING PAD(S) TO ENABLE BUILDING CONSTRUCTION TO BEGIN.
10. INSTALL THE SEWER AND DRAINAGE SYSTEMS FIRST, THEN ANY OTHER UTILITIES IN ACCORDANCE WITH THE PLAN AND DETAILS. ANY CONFLICTS BETWEEN UTILITIES ARE TO BE RESOLVED WITH THE INVOLVEMENT AND APPROVAL OF THE ENGINEER.
11. INSTALL INLET PROTECTION AT ALL CATCH BASINS AS THEY ARE CONSTRUCTED IN ACCORDANCE WITH DETAILS.
12. ALL SWALES AND DRAINAGE STRUCTURES ARE TO BE CONSTRUCTED AND STABILIZED PRIOR TO HAVING RUN-OFF DIRECTED TO THEM.
13. DAILY, OR AS REQUIRED, CONSTRUCT TEMPORARY BERMS, DRAINAGE DITCHES, CHECK DAMS, SEDIMENT TRAPS, ETC., TO PREVENT EROSION ON THE SITE AND PREVENT ANY SILTATION OF ABUTTING WATERS AND/OR PROPERTY.
14. PERFORM FINAL FINE GRADING, INCLUDING PLACEMENT OF 'SELECT' SUBGRADE MATERIALS.
15. PAVE ALL PARKING LOTS AND ROADWAYS WITH INITIAL 'BASE COURSE'.
16. PERFORM ALL REMAINING SITE CONSTRUCTION (i.e. BUILDING, CURBING, UTILITY CONNECTIONS, ETC.).
17. LOAM AND SEED ALL DISTURBED AREAS AND INSTALL ANY REQUIRED SEDIMENT AND EROSION CONTROL FACILITIES (i.e. RIP RAP, EROSION CONTROL BLANKETS, ETC.).
18. FINISH PAVING ALL ROADWAYS AND PARKING AREAS WITH 'FINISH' COURSE.
19. ALL ROADWAYS AND PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
20. ALL CUT AND FILL SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
21. COMPLETE PERMANENT SEEDING AND LANDSCAPING.
22. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER SEEDING AREAS HAVE BEEN 75%-85% ESTABLISHED AND SITE IMPROVEMENTS ARE COMPLETE. SMOOTH AND RE-VEGETATE ALL DISTURBED AREAS.
23. CLEAN SITE AND ALL DRAINAGE STRUCTURES, PIPES AND SUMPS OF ALL SILT AND DEBRIS.
24. INSTALL ALL PAINTED PAVEMENT MARKINGS AND SIGNAGE PER THE PLANS AND DETAILS.
25. ALL EROSION CONTROLS SHALL BE INSPECTED WEEKLY AND AFTER EVERY HALF-INCH OF RAINFALL.
26. UPON COMPLETION OF CONSTRUCTION, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY ANY RELEVANT PERMITTING AGENCIES THAT THE CONSTRUCTION HAS BEEN FINISHED IN A SATISFACTORY MANNER.

F:\CADD\MASTER STANDARD\dwg\JB-LAYOUTS.dwg 3/12/2015 3:27:29 PM EDT

Design: JAC	Draft: DJM
Checked: JAC	Scale: AS NOTED
Drawing Name: 19190-PLAN.dwg	Date: 04/21/20
	Project No.: 19190.2

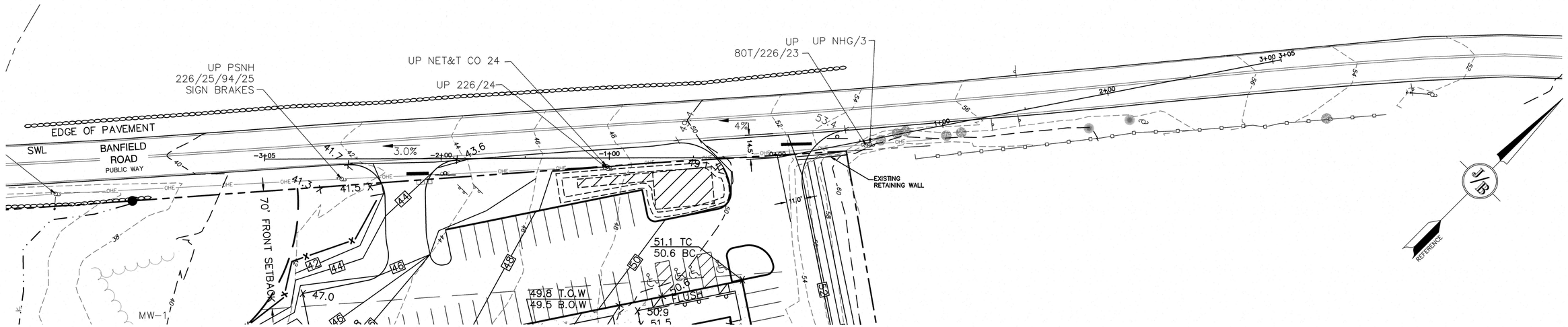
STATE OF NEW HAMPSHIRE — MICHAEL J. KERVAN No. 9846 — LICENSED PROFESSIONAL ENGINEER — 12/30/2020

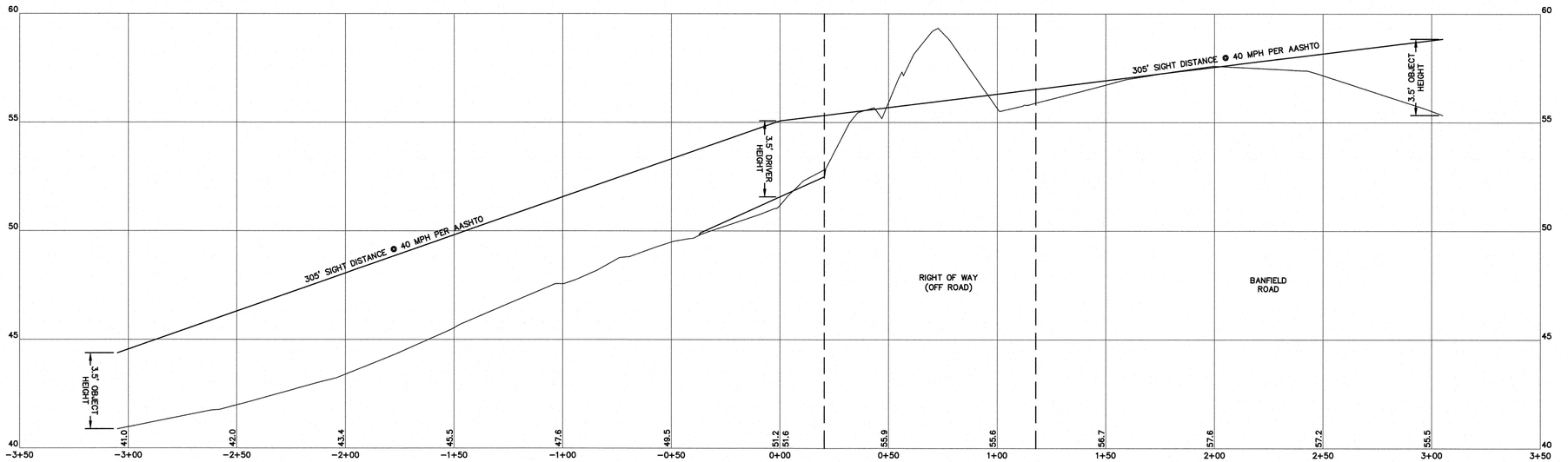
REV.	DATE	REVISION	BY
6	12/30/20	ISSUED TO PLANNING BOARD	DJM
5	11/17/20	REVISED PROFILES	DJM
4	11/10/20	ADDED SIGHT DISTANCE PROFILE	DJM
3	11/3/20	ISSUED TO TECHNICAL ADVISORY COMMITTEE	DJM
2	10/21/20	MEETING WITH CITY PLANNER	DJM

Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave. PO Box 219 Stratham, NH 03885
Civil Engineering Services
603-772-4746 FAX: 603-772-0227 E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: EROSION AND SEDIMENT CONTROL DETAILS
Project: INDUSTRIAL WAREHOUSE, 375 BANFIELD ROAD, PORTSMOUTH, NH 03801
Owner of Record: BANFIELD REALTY LLC, 304 MAPLEWOOD AVENUE, PORTSMOUTH, NH 03801

DRAWING No. E1
SHEET 17 OF 21
JBE PROJECT NO. 19190.2





SIGHT DISTANCE PROFILE

GRAPHIC SCALE
(IN FEET)
1 inch = 30 ft Horiz.
1 inch = 3 ft Vert.

F:\CADD\MASTER STANDARD\dwg\JB-LAYOUTS.dwg 3/12/2015 3:27:29 PM EDT

Design: JAC	Draft: DJM	Date: 04/21/20
Checked: JAC	Scale: AS-NOTED	Project No.: 19190.2
Drawing Name: 19190-PLAN.dwg		

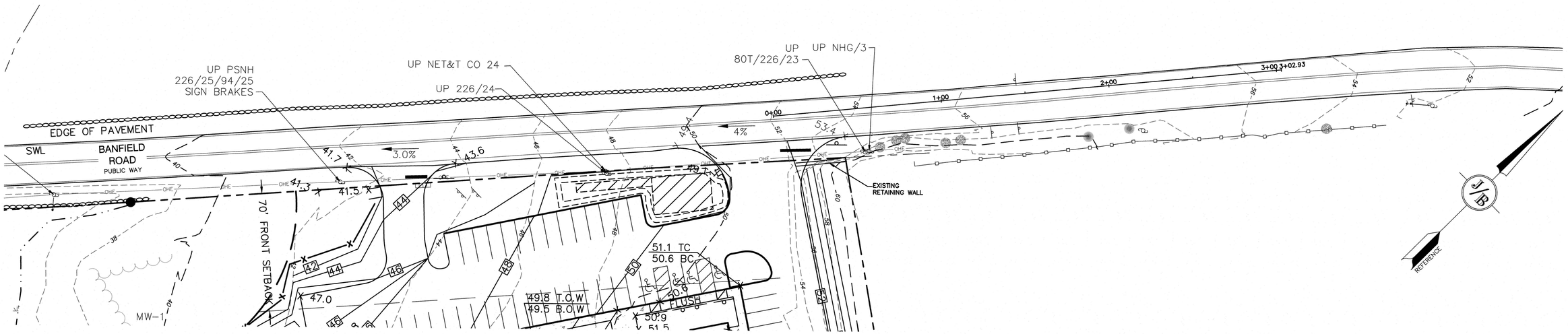
STATE OF NEW HAMPSHIRE
MICHAEL J. KERVAN No. 9846
LICENSED PROFESSIONAL ENGINEER
06/22/20

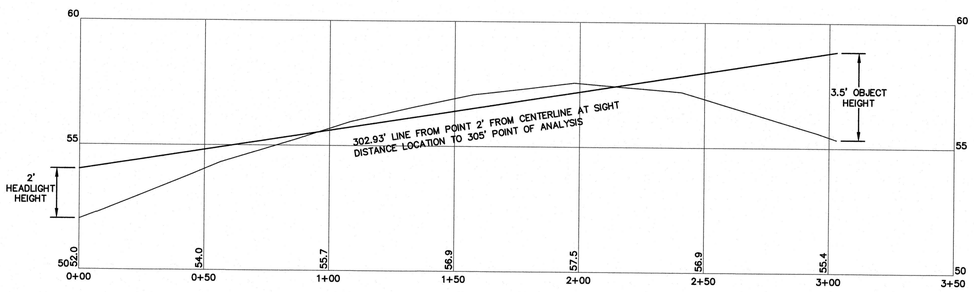
REV.	DATE	REVISION	BY
6	12/30/20	ISSUED TO PLANNING BOARD	DJM
5	11/17/20	REVISED PROFILES	DJM
4	11/10/20	ADDED SIGHT DISTANCE PROFILE	DJM
3	11/3/20	ISSUED TO TECHNICAL ADVISORY COMMITTEE	DJM
2	10/21/20	MEETING WITH CITY PLANNER	DJM

Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	HIGHWAY ACCESS PLAN
Project:	INDUSTRIAL WAREHOUSE 375 BANFIELD ROAD, PORTSMOUTH, NH 03801
Owner of Record:	BANFIELD REALTY LLC 304 MAPLEWOOD AVENUE, PORTSMOUTH, NH 03801

DRAWING No.
H1
SHEET 18 OF 21
JBE PROJECT NO. 19190.2





SIGHT DISTANCE PROFILE ALONG BANFIELD ROAD

GRAPHIC SCALE
(IN FEET)
1 inch = 30 ft Horiz.
1 inch = 3 ft Vert.

F:\CADD\MASTER STANDARD\dwg\JB-LAYOUTS.dwg 3/12/2015 3:27:29 PM EDT

Design: JAC	Draft: DJM	Date: 04/21/20
Checked: JAC	Scale: AS-NOTED	Project No.: 19190.2
Drawing Name: 19190-PLAN.dwg		

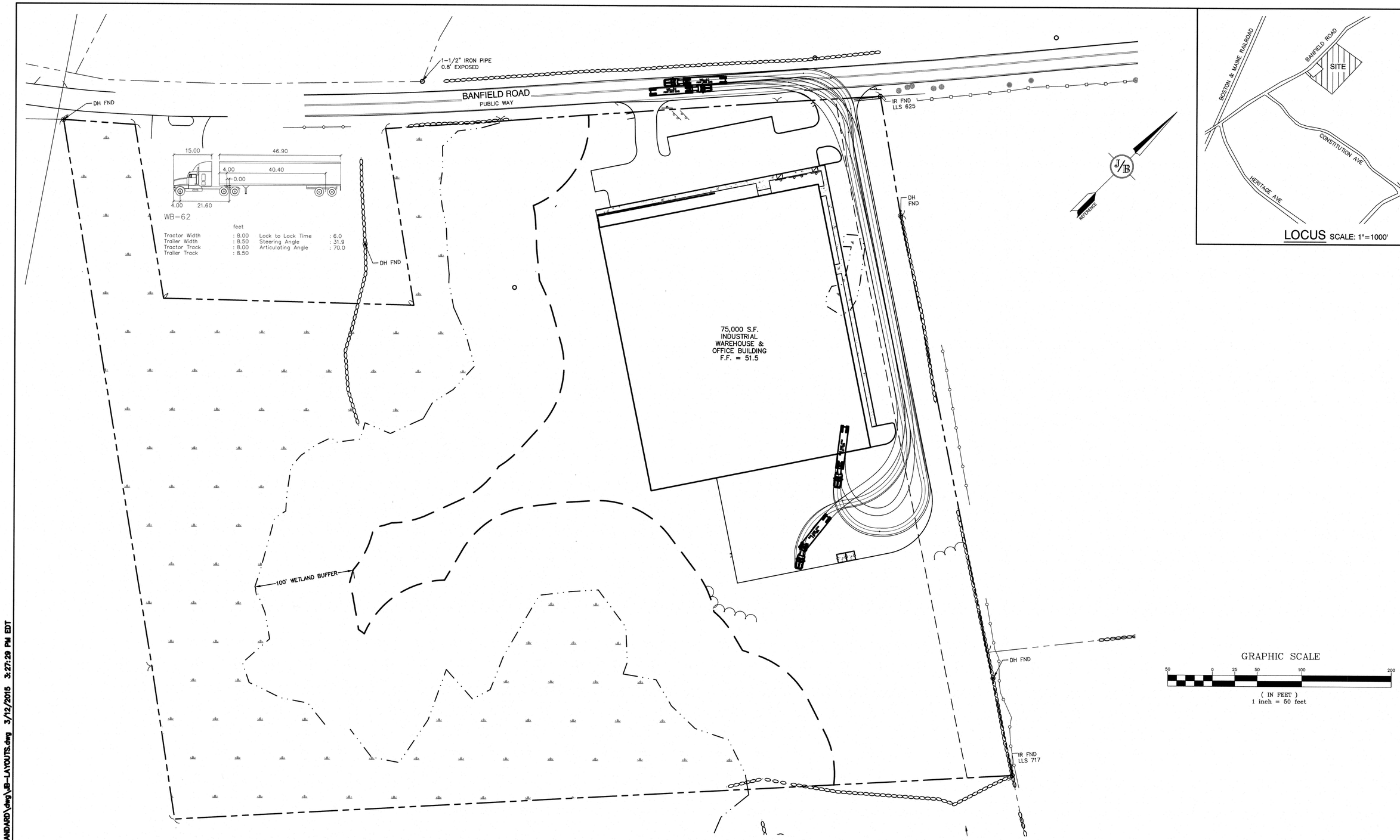
STATE OF NEW HAMPSHIRE
MICHAEL J. KERIVAN
No. 9846
LICENSED
PROFESSIONAL ENGINEER
12/30/20

REV.	DATE	REVISION	BY
6	12/30/20	ISSUED TO PLANNING BOARD	DJM
5	11/17/20	REVISED PROFILES	DJM
4	11/10/20	ADDED SIGHT DISTANCE PROFILE	DJM
3	11/3/20	ISSUED TO TECHNICAL ADVISORY COMMITTEE	DJM
2	10/21/20	MEETING WITH CITY PLANNER	DJM

Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	HIGHWAY ACCESS PLAN
Project:	INDUSTRIAL WAREHOUSE 375 BANFIELD ROAD, PORTSMOUTH, NH 03801
Owner of Record:	BANFIELD REALTY LLC 304 MAPLEWOOD AVENUE, PORTSMOUTH, NH 03801

DRAWING No.
H2
SHEET 19 OF 21
JBE PROJECT NO. 19190.2



F:\CADD\MASTER STANDARD\dwg\JB-LAYOUTS.dwg 3/12/2015 3:27:29 PM EDT

Design: JAC	Draft: DJM	Date: 04/21/20
Checked: JAC	Scale: AS-NOTED	Project No.: 19190.2
Drawing Name: 19190-PLAN.dwg		

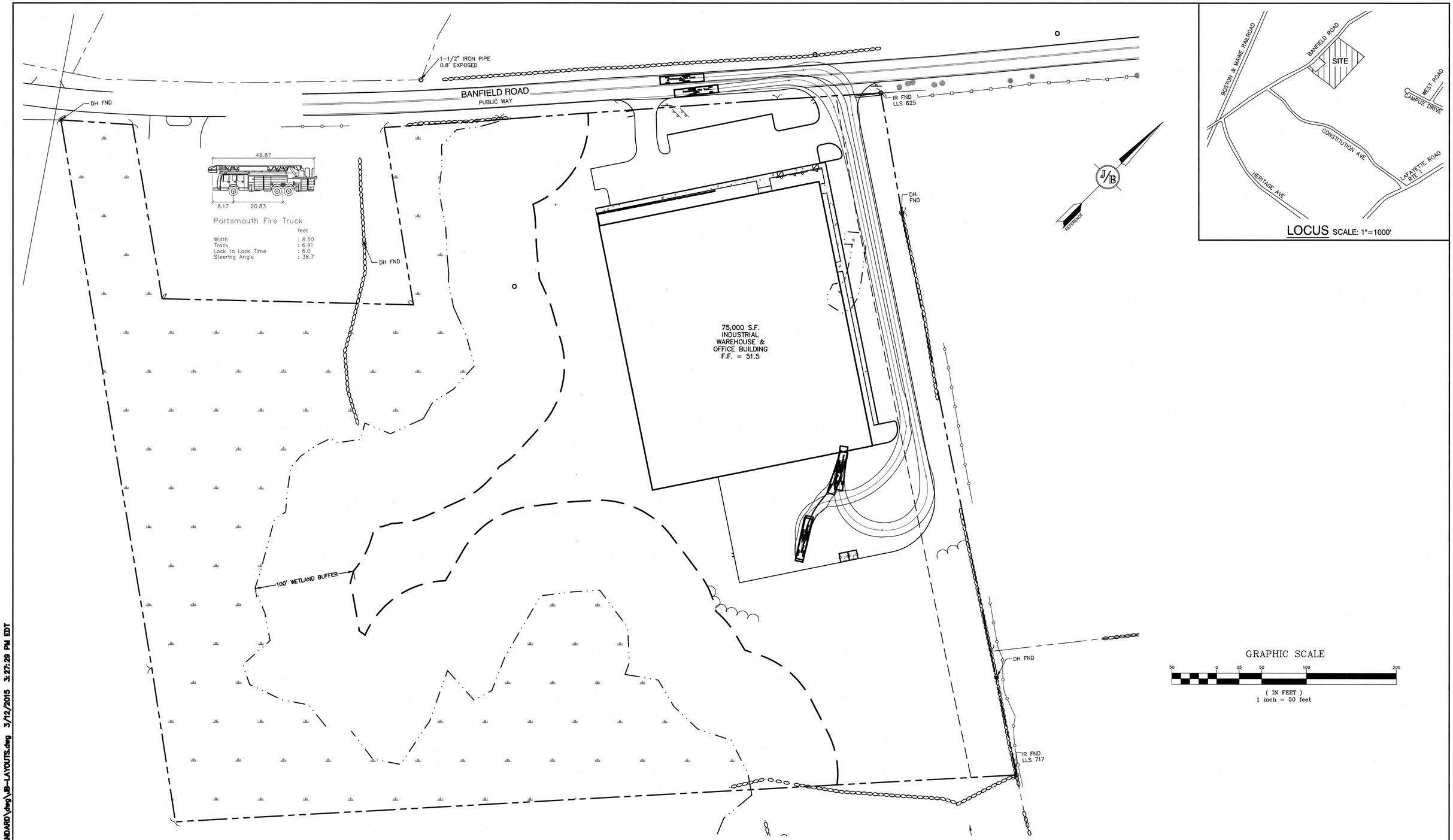
STATE OF NEW HAMPSHIRE
MICHAEL J. KERIVAN No. 9346 LICENSED
PROFESSIONAL ENGINEER
12/30/2020

REV.	DATE	REVISION	BY
6	12/30/20	ISSUED TO PLANNING BOARD	DJM
5	11/17/20	REVISED PROFILES	DJM
4	11/10/20	ADDED SIGHT DISTANCE PROFILE	DJM
3	11/3/20	ISSUED TO TECHNICAL ADVISORY COMMITTEE	DJM
2	10/21/20	MEETING WITH CITY PLANNER	DJM

Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	TRUCK TURNING PLAN
Project:	INDUSTRIAL WAREHOUSE 375 BANFIELD ROAD, PORTSMOUTH, NH 03801
Owner of Record:	BANFIELD REALTY LLC 304 MAPLEWOOD AVENUE, PORTSMOUTH, NH 03801

DRAWING No.
T1
SHEET 20 OF 21
JBE PROJECT NO. 19190.2



F:\CADD\MASTER STANDARD\dwg\JB-LAYOUTS.dwg 3/12/2015 3:27:29 PM EDT

Design: JAC	Draft: DJM	Date: 04/21/20
Checked: JAC	Scale: AS-NOTED	Project No.: 19190.2
Drawing Name: 19190-PLAN.dwg		

STATE OF NEW HAMPSHIRE – MICHAEL J. KERIVAN No. 9846 LICENSED PROFESSIONAL ENGINEER – 12/30/20

REV.	DATE	REVISION	BY
6	12/30/20	ISSUED TO PLANNING BOARD	DJM
5	11/17/20	REVISED PROFILES	DJM
4	11/10/20	ADDED SIGHT DISTANCE PROFILE	DJM
3	11/3/20	ISSUED TO TECHNICAL ADVISORY COMMITTEE	DJM
2	10/21/20	MEETING WITH CITY PLANNER	DJM

Designed and Produced in NH
Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	TRUCK TURNING PLAN
Project:	INDUSTRIAL WAREHOUSE 375 BANFIELD ROAD, PORTSMOUTH, NH 03801
Owner of Record:	BANFIELD REALTY LLC 304 MAPLEWOOD AVENUE, PORTSMOUTH, NH 03801

DRAWING No.
T2
SHEET 21 OF 21
JBE PROJECT NO. 19190.2


RECEIVING
7
8
9
10
PINARD
PINARD
PINARD

City of Portsmouth, New Hampshire

Site Plan Application Checklist

This site plan application checklist is a tool designed to assist the applicant in the planning process and for preparing the application for Planning Board review. A pre-application conference with a member of the planning department is strongly encouraged as additional project information may be required depending on the size and scope. The applicant is cautioned that this checklist is only a guide and is not intended to be a complete list of all site plan review requirements. Please refer to the Site Plan review regulations for full details.

Applicant Responsibilities (Section 2.5.2): Applicable fees are due upon application submittal along with required attachments. The application shall be complete as submitted and provide adequate information for evaluation of the proposed site development. Waiver requests must be submitted in writing with appropriate justification.

Name of Owner/Applicant: Banfield Realty, LLC Date Submitted: 12/30/2020

Phone Number: (603) 479-3666 E-mail: rob@graham-consult.com

Site Address: 375 Banfield Road Map: 266 Lot: 7

Zoning District: Industrial Lot area: 651,747 sq. ft.

Application Requirements			
☑	**Required Items for Submittal**	**Item Location (e.g. Page or Plan Sheet/Note #)**	**Waiver Requested**
☒	Fully executed and signed Application form. **(2.5.2.3)**		N/A
☒	All application documents, plans, supporting documentation and other materials provided in digital Portable Document Format (PDF). **(2.5.2.8)**		N/A

Site Plan Review Application Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☐	Statement that lists and describes "green" building components and systems. **(2.5.3.1A)**		
☒	Gross floor area and dimensions of all buildings and statement of uses and floor area for each floor. **(2.5.3.1B)**		N/A
☒	Tax map and lot number, and current zoning of all parcels under Site Plan Review. **(2.5.3.1C)**	C1 & C2	N/A
☒	Owner's name, address, telephone number, and signature. Name, address, and telephone number of applicant if different from owner. **(2.5.3.1D)**	C1 & C2	N/A

Site Plan Review Application Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☒	Names and addresses (including Tax Map and Lot number and zoning districts) of all direct abutting property owners (including properties located across abutting streets) and holders of existing conservation, preservation or agricultural preservation restrictions affecting the subject property. **(2.5.3.1E)**	COVER SHEET	N/A
☒	Names, addresses and telephone numbers of all professionals involved in the site plan design. **(2.5.3.1F)**	COVER SHEET	N/A
☒	List of reference plans. **(2.5.3.1G)**	C1	N/A
☒	List of names and contact information of all public or private utilities servicing the site. **(2.5.3.1H)**	COVER SHEET	N/A

Site Plan Specifications			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☒	Full size plans shall not be larger than 22 inches by 34 inches with match lines as required, unless approved by the Planning Director. Submittals shall be a minimum of 11 inches by 17 inches as specified by Planning Dept. staff. **(2.5.4.1A)**	Required on all plan sheets	N/A
☒	Scale: Not less than 1 inch = 60 feet and a graphic bar scale shall be included on all plans. **(2.5.4.1B)**	Required on all plan sheets	N/A
☒	GIS data should be referenced to the coordinate system New Hampshire State Plane, NAD83 (1996), with units in feet. **(2.5.4.1C)**		N/A
☒	Plans shall be drawn to scale. **(2.5.4.1D)**	Required on all plan sheets	N/A
☒	Plans shall be prepared and stamped by a NH licensed civil engineer. **(2.5.4.1D)**	ALL SHEETS	N/A
☒	Wetlands shall be delineated by a NH certified wetlands scientist and so stamped. **(2.5.4.1E)**	C1	N/A
☒	Title (name of development project), north point, scale, legend. **(2.5.4.2A)**	COVER SHEET	N/A
☒	Date plans first submitted, date and explanation of revisions. **(2.5.4.2B)**	ALL SHEETS	N/A
☒	Individual plan sheet title that clearly describes the information that is displayed. **(2.5.4.2C)**	Required on all plan sheets	N/A
☒	Source and date of data displayed on the plan. **(2.5.4.2D)**	C1	N/A

Site Plan Specifications			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☒	A note shall be provided on the Site Plan stating: "All conditions on this Plan shall remain in effect in perpetuity pursuant to the requirements of the Site Plan Review Regulations." **(2.5.4.2E)**	C2 NOTE #15	N/A
☒	Plan sheets submitted for recording shall include the following notes: a. "This Site Plan shall be recorded in the Rockingham County Registry of Deeds." b. "All improvements shown on this Site Plan shall be constructed and maintained in accordance with the Plan by the property owner and all future property owners. No changes shall be made to this Site Plan without the express approval of the Portsmouth Planning Director." **(2.13.3)**	C2 NOTES #16 & 17	N/A
☒	Plan sheets showing landscaping and screening shall also include the following additional notes: a. "The property owner and all future property owners shall be responsible for the maintenance, repair and replacement of all required screening and landscape materials." b. "All required plant materials shall be tended and maintained in a healthy growing condition, replaced when necessary, and kept free of refuse and debris. All required fences and walls shall be maintained in good repair." c. "The property owner shall be responsible to remove and replace dead or diseased plant materials immediately with the same type, size and quantity of plant materials as originally installed, unless alternative plantings are requested, justified and approved by the Planning Board or Planning Director." **(2.13.4)**	L1 NOTES # 19, 20, & 21	N/A

Site Plan Specifications – Required Exhibits and Data			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
	1. Existing Conditions: (2.5.4.3A)		
☒	a. Surveyed plan of site showing existing natural and built features;	C1	
☒	b. Zoning boundaries;	C1	
☒	c. Dimensional Regulations;	C1	
☒	d. Wetland delineation, wetland function and value assessment;	C1	
☒	e. SFHA, 100-year flood elevation line and BFE data.	N/A	
	2. Buildings and Structures: (2.5.4.3B)		
☐	a. Plan view: Use, size, dimensions, footings, overhangs, 1st fl. elevation;		x
☐	b. Elevations: Height, massing, placement, materials, lighting, façade treatments;		x
☒	c. Total Floor Area;	C2	
☐	d. Number of Usable Floors;		x
☐	e. Gross floor area by floor and use.		x
	3. Access and Circulation: (2.5.4.3C)		
☒	a. Location/width of access ways within site;	C2	
☒	b. Location of curbing, right of ways, edge of pavement and sidewalks;	C2	
☒	c. Location, type, size and design of traffic signing (pavement markings);	C2	
☒	d. Names/layout of existing abutting streets;	C2	
☒	e. Driveway curb cuts for abutting prop. and public roads;	C2	
☒	f. If subdivision; Names of all roads, right of way lines and easements noted;	N/A	
☒	g. AASHTO truck turning templates, description of minimum vehicle allowed being a WB-50 (unless otherwise approved by TAC).	T1-T2	
	4. Parking and Loading: (2.5.4.3D)		
☒	a. Location of off street parking/loading areas, landscaped areas/buffers;	C2	
☒	b. Parking Calculations (# required and the # provided).	C2	
	5. Water Infrastructure: (2.5.4.3E)		
☒	a. Size, type and location of water mains, shut-offs, hydrants & Engineering data;	C2	
☒	b. Location of wells and monitoring wells (include protective radii).	C1	
	6. Sewer Infrastructure: (2.5.4.3F)		
☒	a. Size, type and location of sanitary sewage facilities & Engineering data.	S1	
	7. Utilities: (2.5.4.3G)		
☒	a. The size, type and location of all above & below ground utilities;	C2	
☒	b. Size type and location of generator pads, transformers and other fixtures.	C2	

Site Plan Specifications – Required Exhibits and Data			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☒	**8. Solid Waste Facilities: (2.5.4.3H)**		
☒	a. The size, type and location of solid waste facilities.	C2	
	9. Storm water Management: (2.5.4.3I)		
☒	a. The location, elevation and layout of all storm-water drainage.	C3	
	10. Outdoor Lighting: (2.5.4.3J)		
☒	a. Type and placement of all lighting (exterior of building, parking lot and any other areas of the site) and; b. photometric plan.	L2	
☒	**11.** Indicate where dark sky friendly lighting measures have been implemented. **(10.1)**	L2	
	12. Landscaping: (2.5.4.3K)		
☒	a. Identify all undisturbed area, existing vegetation and that which is to be retained;	L1	
☒	**b.** Location of any irrigation system and water source.	TBD	
	13. Contours and Elevation: (2.5.4.3L)		
☒	a. Existing/Proposed contours (2 foot minimum) and finished grade elevations.	C3	
	14. Open Space: (2.5.4.3M)		
☒	a. Type, extent and location of all existing/proposed open space.	C2	
☒	**15. All easements, deed restrictions and non-public rights of ways. (2.5.4.3N)**	C1	
☒	**16. Location of snow storage areas and/or off-site snow removal. (2.5.4.3O)**	C2	
☒	**17. Character/Civic District (All following information shall be included): (2.5.4.3Q)**	N/A	
	a. Applicable Building Height (10.5A21.20 & 10.5A43.30);		
	b. Applicable Special Requirements (10.5A21.30);		
	c. Proposed building form/type (10.5A43);		
	d. Proposed community space (10.5A46).		

Other Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☒	Traffic Impact Study or Trip Generation Report, as required. (*Four (4) hardcopies of the full study/report and Six (6) summaries to be submitted with the Site Plan Application*) **(3.2.1-2)**	Provided by Steven Pernaw	
☒	Indicate where Low Impact Development Design practices have been incorporated. **(7.1)**	DRAINAGE REPORT	
☒	Indicate whether the proposed development is located in a wellhead protection or aquifer protection area. Such determination shall be approved by the Director of the Dept. of Public Works. **(7.3.1)**	NOT LOCATED IN EITHER	
☒	Indicate where measures to minimize impervious surfaces have been implemented. **(7.4.3)**		
☒	Calculation of the maximum effective impervious surface as a percentage of the site. **(7.4.3.2)**		
☒	Stormwater Management and Erosion Control Plan. (*Four (4) hardcopies of the full plan/report and Six (6) summaries to be submitted with the Site Plan Application*) **(7.4.4.1)**		

Final Site Plan Approval Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☒	All local approvals, permits, easements and licenses required, including but not limited to: a. Waivers; b. Driveway permits; c. Special exceptions; d. Variances granted; e. Easements; f. Licenses. **(2.5.3.2A)**		
☒	Exhibits, data, reports or studies that may have been required as part of the approval process, including but not limited to: a. Calculations relating to stormwater runoff; b. Information on composition and quantity of water demand and wastewater generated; c. Information on air, water or land pollutants to be discharged, including standards, quantity, treatment and/or controls; d. Estimates of traffic generation and counts pre- and post-construction; e. Estimates of noise generation; f. A Stormwater Management and Erosion Control Plan; g. Endangered species and archaeological / historical studies; h. Wetland and water body (coastal and inland) delineations; i. Environmental impact studies. **(2.5.3.2B)**		

Final Site Plan Approval Required Information			
☑	**Required Items for Submittal**	**Item Location (e.g. Page/line or Plan Sheet/Note #)**	**Waiver Requested**
☐	A document from each of the required private utility service providers indicating approval of the proposed site plan and indicating an ability to provide all required private utilities to the site. **(2.5.3.2D)**	PENDING	
☒	A list of any required state and federal permit applications required for the project and the status of same. **(2.5.3.2E)**	C2 PERMITS PENDING	

Applicant's Signature: Joseph Coronati HR **Date:** 12/29/2020

Stephen G. Pernaw & Company, Inc.
P.O. Box 1721 • Concord, NH 03302
tel: (603) 731-8500 • fax: (866) 929-6094 • sgp@ pernaw.com
Transportation: Engineering • Planning • Design

M E M O R A N D U M

Ref: 2058A

To: Robert Graham
Banfield Realty, LLC

From: Stephen G. Pernaw, P.E., PTOE

Subject: Proposed Industrial Warehouse Building
Portsmouth, New Hampshire

Date: December 28, 2020

As requested, Pernaw & Company, Inc. has conducted a "trip generation analysis" for the proposed industrial warehouse building that will be constructed at 375 Banfield Road in Portsmouth, New Hampshire. The subject site is located on the south side of Banfield Road approximately 0.36 miles east of the Constitution Avenue intersection. Available count data was also researched at the NHDOT. The purpose of this memorandum is to summarize the available count data and the trip generation analyses for the existing use and the proposed industrial warehouse building. To summarize:

Proposed Development – According to the plan entitled *"Site Plan,"* prepared by Jones & Beach Engineers, Inc. (dated 4/21/20; Revised 11/3/20), the development proposal calls for the construction of a new industrial warehouse building (75,000 sf) with a garage entrance located in the rear of the building (see Attachment 1). The existing buildings and shed on the property will be razed. Access to the site will continue to be provided by two full-access driveways on the south side of Banfield Road.

Existing Conditions – This section of Banfield Road provides one general-purpose travel lane in each direction, with paved and gravel shoulders of variable width on both sides of the roadway. The pavement is delineated with a four-inch double-yellow centerline (passing maneuvers prohibited) and four-inch white edge lines. The horizontal alignment is basically straight and the vertical profile follows a rolling terrain. The speed limit on Banfield Road is posted at 30 mph in the area.

Existing Traffic Volumes – Research at the New Hampshire Department of Transportation (NHDOT) revealed that there are no recent count stations on Banfield Road. Recent counts conducted by our office in November 2019 at the nearby St. Patrick Academy Site revealed that the two-way traffic flow passing the subject site totaled 520-559 vehicles during the weekday AM peak hour period, and 567-577 during the weekday PM peak hour period.

Trip Generation - To estimate the quantity of vehicle-trips that will be produced by the existing site and the proposed industrial warehouse building, the standard trip generation rates and equations published by the Institute of Transportation Engineers[1] (ITE) were considered. The closest ITE Land Use Codes (LUC) for the proposed building are LUC 140 (Manufacturing) and LUC 150 (Warehousing). ITE LUC 848 (Tire Store) was utilized to estimate the vehicle-trips associated with the existing facility.

Table 1A below summarizes the results of the trip generation analysis for the AM and PM peak hour periods, as well as on a 24-hour average weekday basis. These results are based on the gross floor areas of the existing/proposed buildings as the independent variable.

Table 1A — Trip Generation Comparison

		Existing Site	Proposed Building			
		Tire Store [1]	Manufacturing [2]		Warehousing [3]	Net Change
Weekday (24 Hour)						
	Entering	143 veh	199 veh		82 veh	-61 or +56 veh
	Exiting	143 veh	199 veh		82 veh	-61 or +56 veh
	Total	286 trips	398 trips	or	164 trips	-122 or +112 trips
AM Peak Hour						
	Entering	17 veh	**36 veh**		26 veh	+9 or +19 veh
	Exiting	10 veh	**11 veh**		8 veh	-2 or +1 veh
	Total	27 trips	**47 trips**	or	34 trips	+7 or +20 trips
PM Peak Hour						
	Entering	17 veh	**16 veh**		10 veh	-7 or -1 veh
	Exiting	23 veh	**34 veh**		27 veh	+4 or +11 veh
	Total	40 trips	**50 trips**	or	37 trips	-3 or +10 trips

[1] ITE Land Use Code 848 - Tire Store - Rate method (10,000 sf)
[2] ITE Land Use Code 140 - Manufacturing - Rate method-AM & PM peak hours, Equation method-weekday (75,000 sf)
[3] ITE Land Use Code 150 - Warehousing - Equation method (75,000 sf)

Table 1A shows that the proposed industrial warehouse building will likely generate approximately +7 to +20 additional vehicle-trips during the weekday AM peak hour, when compared with the existing site. During the weekday PM peak hour, the net change is on the order of -3 to +10 vehicle-trips during the peak hour period. The computations pertaining to these analyses are attached (see Attachment 2).

[1] Institute of Transportation Engineers, *Trip Generation Manual*, 10th edition (Washington, D.C., 2017).

Truck Trip Generation – To estimate the quantity of truck-trips that will be produced by the proposed industrial warehouse building, the truck-trip rates and equations published by the Institute of Transportation Engineers [2] (ITE) were considered.

Table 1B **Truck Trip Generation Comparison**

		Possible Proposed Use		
		Manufacturing [1]		Warehousing [2]
Weekday (24 Hour)				
	Entering	18 veh		24 veh
	Exiting	18 veh		24 veh
	Total	36 trips	or	48 trips
AM Peak Hour				
	Entering	1 veh		1 veh
	Exiting	1 veh		1 veh
	Total	2 trips	or	2 trips
PM Peak Hour				
	Entering	1 veh		1 veh
	Exiting	1 veh		1 veh
	Total	2 trips	or	2 trips

[1] ITE Land Use Code 140 - Manufacturing - 10th Edition Supplement (75,000 sf)

[2] ITE Land Use Code 150 - Warehousing - 10th Edition Supplement (75,000 sf)

It should be noted that the truck-trip estimates in Table 1B are included in the overall trip estimates shown on Table 1A.

[2] Institute of Transportation Engineers, *Trip Generation Manual*, 10th edition Supplement (Washington, D.C., 2020).

Findings & Conclusions

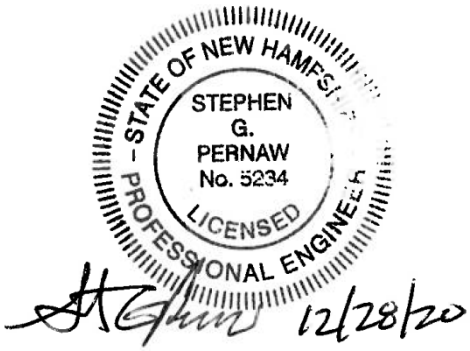
1. Recent counts conducted on Banfield Road in November 2019 by our office revealed that the two-way traffic volume passing the subject site ranged from 520-559 vehicles during the weekday AM peak hour period, and from 567-577 vehicles during the weekday PM peak hour period. The predominant travel direction was eastbound in the morning, and westbound in the evening.

2. The trip generation analysis indicates that the existing site likely generates approximately 27 vehicle-trips (17 arrivals, 10 departures) during the AM peak hour period and 40 vehicle-trips (17 arrivals, 23 departures) during the PM peak hour period.

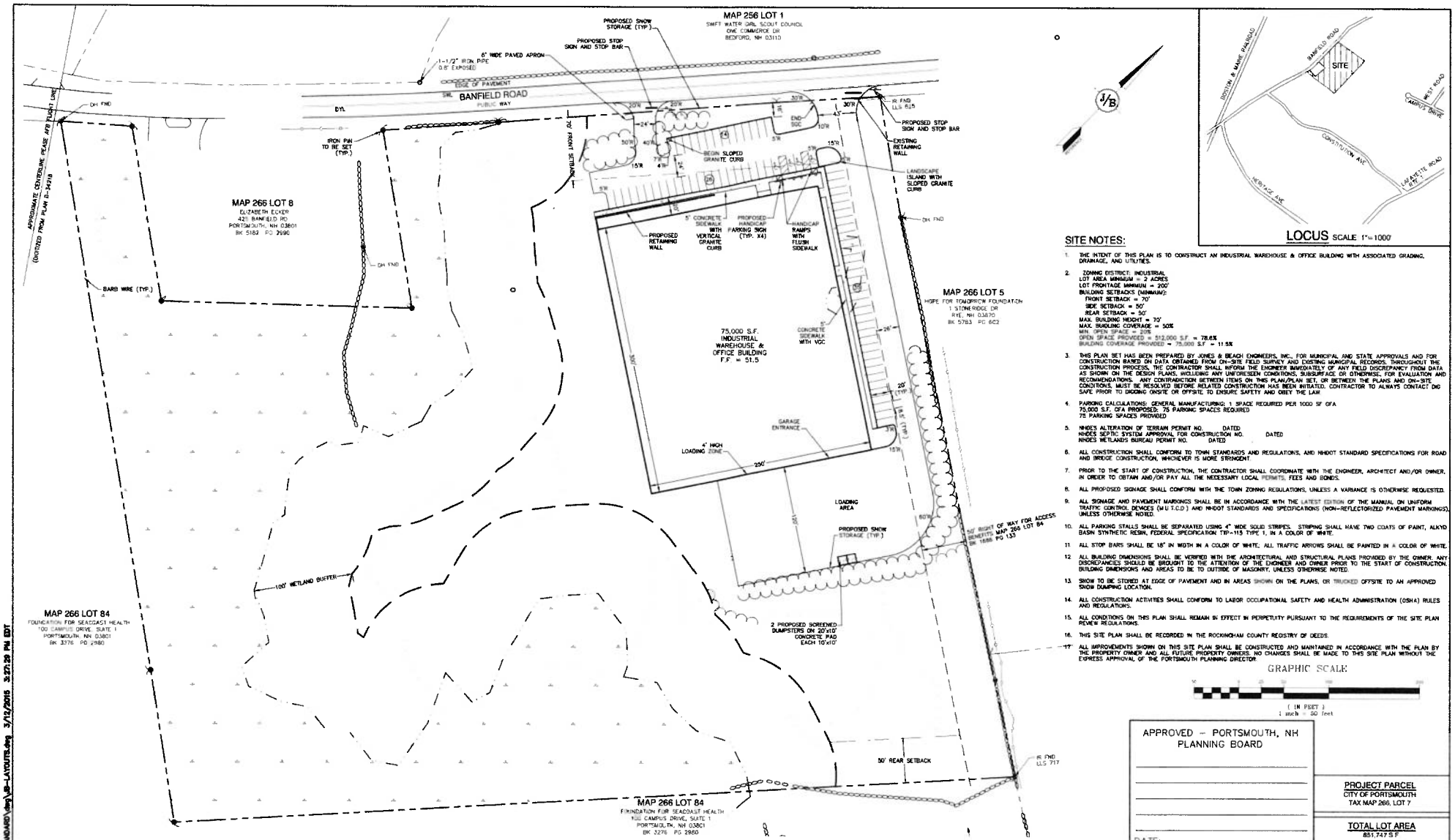
3. The trip generation analysis for the proposed building indicates that it will generate approximately 34-47 AM trips and 37-50 PM trips depending on tenant/use. Truck trips account for approximately two of these trips during the peak hour periods.

4. Development sites that generate fewer than 500 vehicle-trips per day are generally considered to be "low-volume" traffic generators. Clearly, the proposed warehouse building does not constitute a major traffic generator.

Attachments



A T T A C H M E N T S



LOCUS SCALE 1"=1000'

SITE NOTES:

1. THE INTENT OF THIS PLAN IS TO CONSTRUCT AN INDUSTRIAL WAREHOUSE & OFFICE BUILDING WITH ASSOCIATED GRADING, DRAINAGE, AND UTILITIES.
2. ZONING DISTRICT: INDUSTRIAL
   LOT AREA MINIMUM = 2 ACRES
   LOT FRONTAGE MINIMUM = 200'
   BUILDING SETBACKS (MINIMUM):
   FRONT SETBACK = 70'
   SIDE SETBACK = 50'
   REAR SETBACK = 50'
   MAX. BUILDING HEIGHT = 70'
   MAX. BUILDING COVERAGE = 50%
   MIN. OPEN SPACE = 20%
   OPEN SPACE PROVIDED = 512,000 S.F. = 78.6%
   BUILDING COVERAGE PROVIDED = 75,000 S.F. = 11.5%
3. THIS PLAN SET HAS BEEN PREPARED BY JONES & BEACH ENGINEERS, INC., FOR MUNICIPAL AND STATE APPROVALS AND FOR CONSTRUCTION BASED ON DATA OBTAINED FROM ON-SITE FIELD SURVEY AND EXISTING MUNICIPAL RECORDS. THROUGHOUT THE CONSTRUCTION PROCESS, THE CONTRACTOR SHALL INFORM THE ENGINEER IMMEDIATELY OF ANY FIELD DISCREPANCY FROM DATA AS SHOWN ON THE DESIGN PLANS, INCLUDING ANY UNFORESEEN CONDITIONS, SUBSURFACE OR OTHERWISE, FOR EVALUATION AND RECOMMENDATIONS. ANY CONTRADICTION BETWEEN ITEMS ON THIS PLAN/PLAN SET, OR BETWEEN THE PLANS AND ON-SITE CONDITIONS, MUST BE RESOLVED BEFORE RELATED CONSTRUCTION HAS BEEN INITIATED. CONTRACTOR TO ALWAYS CONTACT DIG SAFE PRIOR TO DIGGING ONSITE OR OFFSITE TO ENSURE SAFETY AND OBEY THE LAW
4. PARKING CALCULATIONS: GENERAL MANUFACTURING: 1 SPACE REQUIRED PER 1000 SF OF A 75,000 S.F. OF A PROPOSED: 75 PARKING SPACES REQUIRED 75 PARKING SPACES PROVIDED
5. NHDES ALTERATION OF TERRAIN PERMIT NO. DATED
   NHDES SEPTIC SYSTEM APPROVAL FOR CONSTRUCTION NO. DATED
   NHDES WETLANDS BUREAU PERMIT NO. DATED
6. ALL CONSTRUCTION SHALL CONFORM TO TOWN STANDARDS AND REGULATIONS, AND NHDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, WHICHEVER IS MORE STRINGENT.
7. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER, ARCHITECT AND/OR OWNER, IN ORDER TO OBTAIN AND/OR PAY ALL THE NECESSARY LOCAL PERMITS, FEES AND BONDS.
8. ALL PROPOSED SIGNAGE SHALL CONFORM WITH THE TOWN ZONING REGULATIONS, UNLESS A VARIANCE IS OTHERWISE REQUESTED.
9. ALL SIGNAGE AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.) AND NHDOT STANDARDS AND SPECIFICATIONS (NON-REFLECTORIZED PAVEMENT MARKINGS), UNLESS OTHERWISE NOTED.
10. ALL PARKING STALLS SHALL BE SEPARATED USING 4" WIDE SOLID STRIPES. STRIPING SHALL HAVE TWO COATS OF PAINT, ALKYD BASIN SYNTHETIC RESIN, FEDERAL SPECIFICATION TTP-115 TYPE 1, IN A COLOR OF WHITE.
11. ALL STOP BARS SHALL BE 18" IN WIDTH IN A COLOR OF WHITE. ALL TRAFFIC ARROWS SHALL BE PAINTED IN A COLOR OF WHITE.
12. ALL BUILDING DIMENSIONS SHALL BE VERIFIED WITH THE ARCHITECTURAL AND STRUCTURAL PLANS PROVIDED BY THE OWNER. ANY DISCREPANCIES SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND OWNER PRIOR TO THE START OF CONSTRUCTION. BUILDING DIMENSIONS AND AREAS TO BE TO OUTSIDE OF MASONRY, UNLESS OTHERWISE NOTED.
13. SNOW TO BE STORED AT EDGE OF PAVEMENT AND IN AREAS SHOWN ON THE PLANS, OR TRUCKED OFFSITE TO AN APPROVED SNOW DUMPING LOCATION.
14. ALL CONSTRUCTION ACTIVITIES SHALL CONFORM TO LABOR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) RULES AND REGULATIONS.
15. ALL CONDITIONS ON THIS PLAN SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE SITE PLAN REVIEW REGULATIONS.
16. THIS SITE PLAN SHALL BE RECORDED IN THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
17. ALL IMPROVEMENTS SHOWN ON THIS SITE PLAN SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE PLAN BY THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS. NO CHANGES SHALL BE MADE TO THIS SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE PORTSMOUTH PLANNING DIRECTOR.

GRAPHIC SCALE

(IN FEET)
1 inch = 50 feet

APPROVED – PORTSMOUTH, NH
PLANNING BOARD

DATE:

PROJECT PARCEL
CITY OF PORTSMOUTH
TAX MAP 266, LOT 7

TOTAL LOT AREA
651,747 S.F.
14.95 ACRES

F:\CADD\MASTER STANDARD\dwg\JB-LAYOUTS.dwg 3/12/2015 3:27:29 PM EDT

Design: JAC	Draft: DJM
Checked: JAC	Scale: AS-NOTED
Drawing Name: 19190-PLAN.dwg	Date: 04/21/20
	Project No: 19190.2

REV	DATE	REVISION	BY
3	11/3/20	ISSUED TO TECHNICAL ADVISORY COMMITTEE	DJM
2	10/21/20	MEETING WITH CITY PLANNER	DJM
1	10/8/20	REVISED DRAINAGE, REISSUED TO CLIENT	DJM
0	9/14/20	ISSUED TO CLIENT	DJM

Designed and Produced in NH
J/B Jones & Beach Engineers, Inc.
85 Portsmouth Ave
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX 603 772-0227
E-MAIL JBE@JONESANDBEACH.COM

Plan Name:	SITE PLAN
Project:	INDUSTRIAL WAREHOUSE 375 BANFIELD ROAD, PORTSMOUTH, NH 03801
Owner of Record:	BANFIELD REALTY LLC 304 MAPLEWOOD AVENUE, PORTSMOUTH, NH 03801

DRAWING No:
C2
SHEET 4 OF 18
JBE PROJECT NO 19190.2

Attachment 1

Trip Generation Summary

Alternative: Alternative 1
Phase:
Project: 2058A Gen

Open Date: 12/24/2020
Analysis Date: 12/24/2020

ITE	Land Use		Weekday Average Daily Trips *	Enter	Exit	Total	Weekday AM Peak Hour of Adjacent Street Traffic *	Enter	Exit	Total	Weekday PM Peak Hour of Adjacent Street Traffic *	Enter	Exit	Total
140	MANUFACTURING 1			199	198	397		36	11	47		16	34	50
	75	1000 Sq. Ft. GFA												
150	WAREHOUSE 1			82	82	164		26	8	34		10	27	37
	75	1000 Sq. Ft. GFA												
848	STORETIRE 1			143	142	285		17	10	27		17	23	40
	10	1000 Sq. Ft. GFA												
Unadjusted Volume				424	422	846		79	29	108		43	84	127
Internal Capture Trips				0	0	0		0	0	0		0	0	0
Pass-By Trips				0	0	0		0	0	0		6	6	12
Volume Added to Adjacent Streets				424	422	846		79	29	108		37	78	115

Total Weekday Average Daily Trips Internal Capture = 0 Percent
Total Weekday AM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent
Total Weekday PM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

* - Custom rate used for selected time period.

Source: Institute of Transportation Engineers, Trip Generation Manual 10th Edition
TRIP GENERATION 10, TRAFFICWARE, LLC

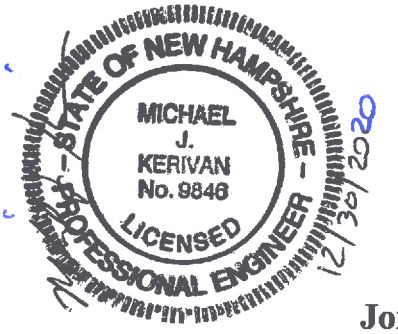
DRAINAGE ANALYSIS

SEDIMENT AND EROSION CONTROL PLAN

375 Banfield Road
Portsmouth, NH 03801
Tax Map 266, Lot 7

Prepared for:

Banfield Realty, LLC
304 Maplewood Ave.
Portsmouth, NH 03801



Prepared by:
Jones & Beach Engineers, Inc.
85 Portsmouth Avenue
P.O. Box 219
Stratham, NH 03885
(603) 772-4746
December 30, 2020
JBE Project No. 19190.2

EXECUTIVE SUMMARY

Banfield Realty, LLC proposes to construct a 75,000 S.F. industrial warehouse building on a 14.96-acre parcel of land located at 375 Banfield Road in Portsmouth, NH. Currently the parcel consists of two commercial buildings with an associated accessory shed and parking. The existing buildings and parking with their associated utilities are to be removed so the new development can occur. LAYER A drainage analysis of the entire site was conducted for the purpose of estimating the peak rate of stormwater runoff and to subsequently design adequate drainage structures. Two models were compiled, one for the area in its existing (pre-construction) condition, and a second for its proposed (post-construction) condition. The analysis was conducted using data for the 2 Year – 24 Hour (3.71"), 10 Year – 24 Hour (5.64"), 25 Year – 24 Hour (7.14"), and 50 Year – 24 Hour (8.57") storm events using the USDA SCS TR-20 method within the HydroCAD Stormwater Modeling System environment. This data was taken from the Extreme Precipitation Tables developed by the Northeast Regional Climate Center (NRCC), and the values have been increased by 15% due to the project being within the Coastal/Great Bay Region. A summary of the existing and proposed conditions peak rates of runoff is as follows:

Analysis Point	2 Year		10 Year		25 Year		50 Year	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Analysis Point #1	2.82	2.80	9.93	7.16	16.83	11.16	24.06	15.60
Analysis Point #2	0.00	0.00	0.02	0.01	0.12	0.06	0.39	0.22

The project site is located in the Industrial (I) Zoning District. The existing topography is such that runoff for the majority of the site (Subcatchment 1) flows into a major wetland (Analysis Point 1) which ultimately drains to a cross-street 12" culvert and runoff from the undeveloped western corner (Subcatchment 2) sheet flows directly into an abutting lot (Analysis Point 2). The proposed development results in a decrease in the peak flow rate to both Analysis Points during all analyzed storms.

The proposed site development consists of the aforementioned industrial warehouse building with associated parking, utilities, and septic system. The same 2 Analysis Points were used in the Post Development Analysis. Runoff from most of the developed portions of the site will be treated with ACF Focal Point biofiltration systems and then detained in the ACF R-Tank subsurface detention basin before being discharged through a vegetated swale into Analysis Point 1. The exception to that is for the driveway that will be discharged through a level spreader into a Developed Area Buffer, designed per NHDES standards for stormwater treatment. Runoff from the periphery of the site will maintain its existing flow pattern.

The use of Best Management Practices per the NHDES Stormwater Manual have been applied to the design of this drainage system and will be observed during all stages of construction. All land disturbed during construction will be stabilized within thirty days of groundbreaking and abutting property owners will suffer minimal adversity resultant of this development.

SITE COORDINATES: 43° 02' 34" N, 70° 47' 23" W

GRAPHIC SCALE

2000 0 1000 2000 4000 8000

(IN FEET)

1 inch = 2000ft.

Designed and Produced in NH
Jones & Beach Engineers, Inc.
Civil Engineering Services
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
603-772-4746
FAX: 603-772-0227
E-Mail: JBE@jonesandbeach.com

Drawing Name:	**USGS**
Project:	**INDUSTRIAL WAREHOUSE**
Project Site:	375 BANFIELD ROAD, PORTSMOUTH, NH

DRAWING No.
USGS1
SHEET 1 OF 1
JBE PROJECT No. **19190.2**

TABLE OF CONTENTS

1.0 RAINFALL CHARACTERISTICS

This drainage report includes an existing conditions analysis of the area involved in the proposed development, as well as a proposed condition, or post-construction analysis, of the same location. These analyses were accomplished using the USDA SCS TR-20 Method within the HydroCAD Stormwater Modeling System. The curve numbers were developed using the SCS TR-55 Runoff Curve numbers for Urban Areas. A Type III SCS 24-hour rainfall distribution was utilized in analyzing the data for the 2 Year – 24 Hour (3.71"), 10 Year – 24 Hour (5.64"), 25 Year – 24 Hour (7.14"), and 50 Year – 24 Hour (8.57") storm events. This data was taken from the Extreme Precipitation Tables developed by the Northeast Regional Climate Center (NRCC), and the values have been increased by 15% due to the project being within the Coastal/Great Bay Region.

The proposed peak rates of runoff will be reduced from the existing condition, thereby minimizing any potential for a negative impact on abutting properties or erosion of the wetland system. This is accomplished through treatment of stormwater runoff and attenuation of peak flows resulting from storm events.

2.0 EXISTING CONDITIONS ANALYSIS

The subject parcel consists of two commercial buildings and an accessory shed with associated parking. Behind this development, there are foot trails, lawns, woods, and two separate wetlands; one of which encumbers a large portion of the property and has an associated 100' buffer and another small, isolated wetland. The existing buildings are serviced by City water, natural gas, overhead electric, and an on-site septic system. The existing topography of the site features a hill on the north side with a sharp dropoff to relatively level ground around the major wetland system.

In the existing condition, the aforementioned hill divides the site into two subcatchments. Subcatchment 1 consists of developed area, lawn, and woods, runoff from all of which flows directly into the major wetland. Subcatchment 2 consists of a small area of forest and lawn on the opposite slope of the hill from which runoff flows to the abutter's property.

Existing soil types were determined through a Site-Specific Soil Survey conducted by a Certified Soil Scientist. These soils are categorized into Hydrologic Soil Groups (HSG) A, C, and D.

3.0 PROPOSED CONDITIONS ANALYSIS

The addition of the proposed impervious parking areas and the 75,000 S.F. industrial warehouse building causes an increase in the curve number (C_n) and a decrease in the time of concentration (T_c), the result being a potential increase in peak rates of runoff from the site. The construction of the parking lot, industrial warehouse building, catch basins, focal points, R-Tank, and associated grading, split the site into 13 subcatchments. The site will be graded such that runoff from most of the developed areas of the site will receive treatment through ACF Focal Point biofiltration systems. All runoff treated by the biofiltration system will then be directed into a lined R-Tank subsurface detention system for attenuation before being discharged into a vegetated swale which leads Analysis Point 1. The driveway will runoff through a level spreader into a Developed Area Buffer per NHDES standards for stormwater treatment. The undeveloped remainder of the site will maintain its existing flow pattern.

The peak flow rates to Analysis Point 2 are decreased as the site grading leads to a smaller portion of land being sloped in that direction, all of which is to remain undisturbed with this development.

4.0 SEDIMENT & EROSION CONTROL BEST MANAGEMENT PRACTICES

The proposed site development is protected from erosion and the roadways and abutting properties are protected from sediment by the use of Best Management Practices as outlined in the NHDES Stormwater Manual. Any area disturbed by construction will be re-stabilized within 30 days and abutting properties and wetlands will suffer minimal adversity resultant of this development. All drainage structures will be constructed and stabilized prior to having runoff directed to them.

4.1 Silt Fence / Construction Fence

The plan set delineates the location of silt fence for sediment control. Sheet E1 – Erosion and Sediment Control Details, has the specifications for installation of the silt fence. This is necessary in areas where there is adjacent property or wetlands downslope of the area of development. In areas where the limits of construction need to be emphasized to operators, construction fence for added visibility will be installed. Orange construction fence will be VISI Perimeter Fence by Conwed Plastic Fencing, or equal. The four-foot fencing to be installed using six-foot posts at least two feet in the ground at a spacing of six to eight feet.

4.2 Stabilized Construction Entrance

A temporary gravel construction entrance provides an area where mud can be dislodged from tires before the vehicle leaves the construction site to reduce the amount of mud and sediment transported onto paved municipal and state roads. The stone size for the pad should be between 3-inch coarse aggregate, and the pad itself constructed to a minimum length of 50 feet for the full width of the access road. The aggregate should be placed at least six inches thick. A plan view and profile are shown on Sheet E1.

4.3 Environmental Dust Control

Dust will be controlled on the site by the use of multiple Best Management Practices. Mulching and temporary seeding will be the first line of protection to be utilized where problems occur. If dust problems are not solved by these applications, the use of water can be applied. Dump trucks hauling material from the construction site will be covered with a tarpaulin.

4.4 Vegetated Stabilization

All areas that are disturbed during construction will be stabilized with vegetated material within 30 days of breaking ground. Construction will be managed in such a manner that erosion is prevented and that no abutting property will be subjected to any siltation, unless otherwise permitted. All areas to be planted with grass for long-term cover will follow the specification on Sheet E1 using seeding mixture C.

4.5 Temporary Sediment Traps

Temporary Sediment Traps are small temporary ponding areas that are formed by excavation or by constructing an earthen embankment across a drainage way and providing a stabilized outlet. These structures intercept sediment-laden runoff from small, disturbed areas and detain it long enough for the majority of the sediment to settle out into the sump of the trap.

4.6 Riprap Outlet Protection

Riprap Outlet Protection will be provided at the outlet of all culverts that discharge runoff into the environment (as opposed to a catch basin). The riprap outlet protection has been designed with the equations provided in the NHDES Stormwater Manual depending on inlet or outlet control. Details of the protection design can be found on Sheet E1 – Erosion & Sediment Control Details.

4.7 Catch Basins

A catch basin is a pre-cast concrete structure intended for the capture of stormwater utilized in streets and parking areas. Grease hoods attached to the outlet pipe of the structures allow for the capture of grease, oils, and other floatable solids from runoff, thereby minimizing their presence in the subsequent discharge.

4.8 Construction Sequence

1. Prior to the start of *any* activity, it is the responsibility of the site's Developer (or Owner) to file a Notice of Intent (NOI) form and a copy of one (shared) Stormwater Pollution Prevention Plan (SWPPP) with the U.S. Environmental Protection Agency (EPA) in order to gain coverage under the NPDES General Permit for Stormwater Discharges from Construction Activities. A pre-construction meeting shall be held prior to the start of construction to discuss the SWPPP and all associated responsibilities. Participants shall include the developer (or owner), the General Contractor, the Site Contractor, and the Engineer.

2. Cut and remove trees in construction area as required or directed.

3. Install silt fencing, and construction entrances prior to the start of earthwork. These shall be maintained until the final pavement surfacing and landscaping areas are established.

4. Clear, cut, grub, and dispose of debris in approved facilities. This includes any required demolition of existing structures, utilities, etc.

5. Construct and/or install temporary sediment basin(s) as required. These facilities shall be installed and stabilized prior to directing runoff to them.

6. Strip loam and pavement, or reclaim existing pavement within limits of work per the recommendations of the project engineer and stockpile excess material. Stabilize stockpile as necessary.

7. Perform preliminary site grading in accordance with the plans, including the construction of any stormwater detention/retention ponds, drainage swales, retaining walls, and sound walls.

8. Prepare building pad(s) to enable building construction to begin.

9. Install the sewer and drainage systems first, then any other utilities in accordance with the plans and details. Any conflicts between utilities are to be resolved with the involvement and approval of the engineer.

10. Install inlet protection at all catch basins as they are constructed, in accordance with the details.

11. All swales and drainage structures are to be constructed and stabilized prior to having runoff directed to them.

12. Daily, or as required, construct temporary berms, drainage ditches, check dams, sediment traps, etc., to prevent erosion on the site and prevent any siltation of abutting waters and/or property.

13. Perform final fine grading, including placement of any "select" subgrade materials.

14. Pave all parking lots and roadways with initial base course.

15. Perform all remaining site construction (i.e. building, curbing, utility connections, etc.).

16. Loam and seed all disturbed areas and install any required sediment and erosion control facilities (i.e. riprap, erosion control blankets, etc.).

17. Finish paving all roadways and parking areas with finish course.

18. Complete permanent seeding and landscaping.

19. Remove temporary erosion control measures after seeding areas have been 85% established and site improvements are complete. Smooth and re-vegetate all disturbed areas.

20. Clean site and all drainage structures, pipes, and sumps of all silt and debris.

21. Install all painted pavement markings and signage per the plans and details.

22. Upon completion of construction, it is the responsibility of the contractor to notify any relevant permitting agencies that the construction has been finished in a satisfactory manner.

4.9 Temporary Erosion Control Measures

1. The smallest practical area of land shall be exposed at any one time. At no time shall an area in excess of that required for construction be exposed.

2. Erosion, sediment and detention measures shall be installed as shown on the plans and at locations as required, or directed by the engineer.

3. All disturbed areas (including pond areas below the proposed waterline) shall be returned to proposed grades and elevations. Disturbed areas shall be loamed with a minimum of 6" of loam and seeded with seed mixture "C" at a rate not less than 1.10 pounds of seed per 1,000 square feet of area (48 lbs. per acre).

4. Silt fences and other barriers shall be inspected every seven days and within 24 hours of a rainfall of 0.5" or greater. All damaged areas shall be repaired, and sediment deposits shall periodically be removed and properly disposed of.

5. After all disturbed areas have been stabilized, the temporary erosion control measures are to be removed and the area disturbed by the removal smoothed and revegetated.

6. Areas must be seeded and mulched within 3 days of final grading, or temporarily stabilized within 14 days of initial disturbance of soil.

7. All proposed vegetated areas not stabilized by or are disturbed after October 15th must be protected with North American Green S75 erosion control blankets (or an equivalent approved in writing by the engineer) and seeded with winter rye or oats at a rate of 2.50 pounds per 1,000 square feet of area (108.90 lbs. per acre). Unstabilized swales shall be protected with erosion control blankets appropriate to the design flow conditions and seeded to the same specification. Placement of blankets shall not occur over accumulated snow.

8. An area shall be considered stable if one of the following has occurred:
   a. Base course gravels have been installed in areas to be paved;
   b. A minimum of 85% vegetated growth has been established;
   c. A minimum of 3" or non-erosive material such as stone or riprap has been installed; or
   d. Erosion control blankets have been properly installed.

9. After October 15th where work has stopped for the season, incomplete roadway or parking surfaces shall be protected with a minimum of 3" of crushed gravel meeting NHDOT Item 304.3.

10. In order to ensure the stability of the site and effective implementation of the sediment and erosion control measures specified in the plans for the duration of construction, the contractor shall be in strict compliance with the inspection and maintenance requirements to those called for in the SWPPP.

4.10 Inspection and Maintenance Schedule

4.26.1 Temporary Best Management Practices

Silt Fencing

During the construction process, all silt fencing will be inspected during and after storm events to ensure that the fence still has integrity and is not allowing sediment to pass. Any section of fence that has failed or is failing is to be replaced immediately, overlapping adjacent fence sections by at least one foot. If the problem persists, measures such as additional fencing (i.e. double) or the addition of hay-bales on the project side of the fence line should be considered. Sediment is to be removed from behind the fencing if found to be deeper than six inches and disposed of properly.

Swales

Sediment build-up in swales will be removed if it is deeper than six inches and disposed of properly.

Sediment Traps

Sediment traps are to be inspected once per week and after every precipitation event. Sediment is to be removed from the traps if it is deeper than six inches and disposed of properly. The lip of the outlet crest should be maintained so as to provide an even, level edge so as to promote sheet flow out of the structure so as to minimize the potential for erosion downstream form the structure. Any erosion must be repaired and stabilized immediately.

4.26.2 Permanent Best Management Practices

Catch Basins

Sediment and debris is to be removed from catch basin sumps semi-annually (as well as from sumps below the inlet of culverts). Grease hoods are to be wiped clean and the rags disposed of properly. Debris obscuring the grate inlet should also be removed.

Drainage Swales

Sediment build-up in swales is to be removed if it is deeper than six inches, and any debris also removed. Areas where vegetation has not become established or has died should be reseeded. If this fails, additional loam and seed may be required. *Fertilizers should be utilized only as a last resort.* Mowing should be performed at least once a year, but not shorter than four inches, and all grass clippings removed.

5.0 CONCLUSION

This proposed site development located at 375 Banfield Road in Portsmouth, NH will have minimal adverse effect on abutting infrastructures, properties, and wetlands by way of stormwater runoff or siltation. Appropriate steps will be taken to eliminate erosion and sedimentation; these will be accomplished through the construction of a drainage system consisting of site grading, curbing, catch basins, ACF Focal Point biofiltration systems, a treatment buffer, and subsurface detention with a downstream vegetated treatment swale. The use of Best Management Practices developed by the State of New Hampshire have been utilized in the design of this system and their application will be enforced throughout the construction process.

A site specific, terrain alteration permit (RSA 485:A-17) is required for this site plan due to the area of disturbance being greater than 100,000 square-feet.

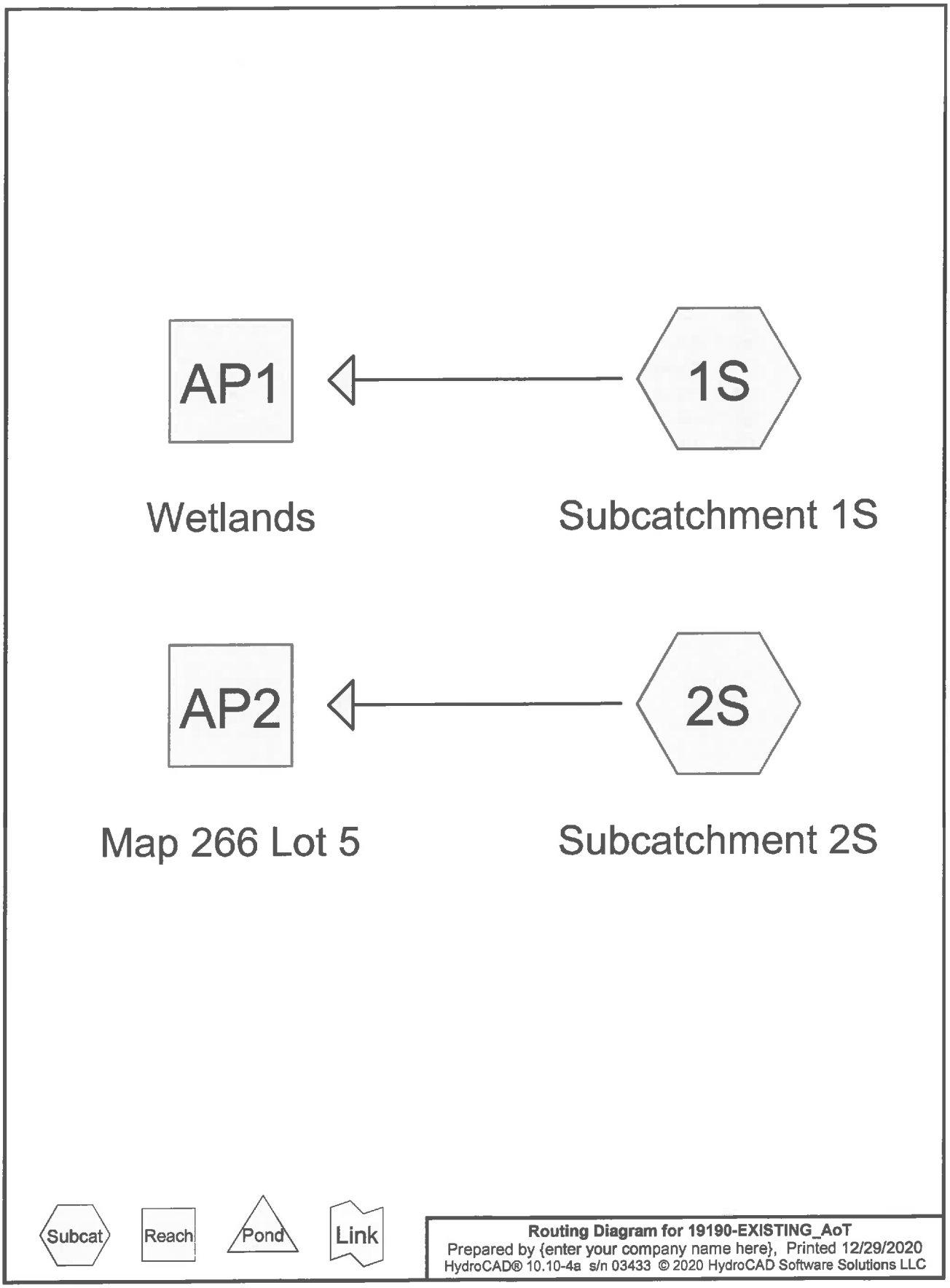
Respectfully Submitted,
JONES & BEACH ENGINEERS, INC.

Daniel Meditz, E.I.T
Project Engineer

APPENDIX I

EXISTING CONDITIONS DRAINAGE ANALYSIS

Summary 2 YEAR
Complete 10 YEAR
Summary 25 YEAR
Complete 50 YEAR


AP1
1S
Wetlands
Subcatchment 1S
AP2
2S
Map 266 Lot 5
Subcatchment 2S
Subcat
Reach
Pond
Link
Routing Diagram for 19190-EXISTING_AoT
Prepared by {enter your company name here}, Printed 12/29/2020
HydroCAD® 10.10-4a s/n 03433 © 2020 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.601	39	>75% Grass cover, Good, HSG A (1S, 2S)
0.786	74	>75% Grass cover, Good, HSG C (1S)
0.045	80	>75% Grass cover, Good, HSG D (1S)
0.389	65	Brush, Good, HSG C (1S)
0.033	96	Gravel surface, HSG D (1S)
0.010	98	Paved parking, HSG A (1S)
0.715	98	Paved parking, HSG D (1S)
0.166	98	Roofs, HSG D (1S)
2.453	30	Woods, Good, HSG A (1S, 2S)
2.318	70	Woods, Good, HSG C (1S)
0.141	77	Woods, Good, HSG D (1S)
0.050	32	Woods/grass comb., Good, HSG A (1S)
1.059	72	Woods/grass comb., Good, HSG C (1S)
10.766	**56**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
5.113	HSG A	1S, 2S
0.000	HSG B	
4.552	HSG C	1S
1.101	HSG D	1S
0.000	Other	
10.766		**TOTAL AREA**

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Subcatchment1S Runoff Area=420,946 sf 9.22% Impervious Runoff Depth>0.58"
Flow Length=864' Tc=27.0 min CN=59 Runoff=2.82 cfs 0.463 af

Subcatchment2S: Subcatchment2S Runoff Area=48,019 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=323' Tc=14.7 min CN=33 Runoff=0.00 cfs 0.000 af

Reach AP1: Wetlands Inflow=2.82 cfs 0.463 af
Outflow=2.82 cfs 0.463 af

Reach AP2: Map 266 Lot 5 Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Total Runoff Area = 10.766 ac Runoff Volume = 0.463 af Average Runoff Depth = 0.52"
91.72% Pervious = 9.875 ac 8.28% Impervious = 0.891 ac

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Subcatchment1S Runoff Area=420,946 sf 9.22% Impervious Runoff Depth>1.60"
Flow Length=864' Tc=27.0 min CN=59 Runoff=9.93 cfs 1.289 af

Subcatchment2S: Subcatchment2S Runoff Area=48,019 sf 0.00% Impervious Runoff Depth>0.11"
Flow Length=323' Tc=14.7 min CN=33 Runoff=0.02 cfs 0.010 af

Reach AP1: Wetlands Inflow=9.93 cfs 1.289 af
Outflow=9.93 cfs 1.289 af

Reach AP2: Map 266 Lot 5 Inflow=0.02 cfs 0.010 af
Outflow=0.02 cfs 0.010 af

Total Runoff Area = 10.766 ac Runoff Volume = 1.300 af Average Runoff Depth = 1.45"
91.72% Pervious = 9.875 ac 8.28% Impervious = 0.891 ac

Summary for Subcatchment 1S: Subcatchment 1S

Runoff = 9.93 cfs @ 12.42 hrs, Volume= 1.289 af, Depth> 1.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Yr 24 Hr(+15%) Rainfall=5.64"

Area (sf)	CN	Description
7,231	98	Roofs, HSG D
31,165	98	Paved parking, HSG D
416	98	Paved parking, HSG A
19,112	39	>75% Grass cover, Good, HSG A
53,727	39	>75% Grass cover, Good, HSG A
26,447	39	>75% Grass cover, Good, HSG A
72,824	30	Woods, Good, HSG A
2,193	32	Woods/grass comb., Good, HSG A
6,121	77	Woods, Good, HSG D
46,133	72	Woods/grass comb., Good, HSG C
100,976	70	Woods, Good, HSG C
25,142	74	>75% Grass cover, Good, HSG C
9,094	74	>75% Grass cover, Good, HSG C
16,936	65	Brush, Good, HSG C
1,295	80	>75% Grass cover, Good, HSG D
679	80	>75% Grass cover, Good, HSG D
1,455	96	Gravel surface, HSG D
420,946	59	Weighted Average
382,134		90.78% Pervious Area
38,812		9.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	31	0.0500	0.13		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.23"
2.7	20	0.0500	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.23"
4.5	49	0.2400	0.18		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.23"
4.1	124	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.2	111	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	105	0.0500	3.60		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
1.1	94	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.0	330	0.0150	0.61		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
27.0	864	Total			

Summary for Subcatchment 2S: Subcatchment 2S

Runoff = 0.02 cfs @ 15.07 hrs, Volume= 0.010 af, Depth> 0.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Yr 24 Hr(+15%) Rainfall=5.64"

Area (sf)	CN	Description
34,026	30	Woods, Good, HSG A
13,993	39	>75% Grass cover, Good, HSG A
48,019	33	Weighted Average
48,019		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	72	0.0300	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.23"
5.4	28	0.0500	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.23"
1.7	113	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.2	110	0.1000	1.58		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.7	323	Total			

Summary for Reach AP1: Wetlands

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 9.664 ac, 9.22% Impervious, Inflow Depth > 1.60" for 10 Yr 24 Hr(+15%) event
Inflow = 9.93 cfs @ 12.42 hrs, Volume= 1.289 af
Outflow = 9.93 cfs @ 12.42 hrs, Volume= 1.289 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach AP2: Map 266 Lot 5

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.102 ac, 0.00% Impervious, Inflow Depth > 0.11" for 10 Yr 24 Hr(+15%) event
Inflow = 0.02 cfs @ 15.07 hrs, Volume= 0.010 af
Outflow = 0.02 cfs @ 15.07 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Subcatchment1S Runoff Area=420,946 sf 9.22% Impervious Runoff Depth>2.59"
Flow Length=864' Tc=27.0 min CN=59 Runoff=16.83 cfs 2.083 af

Subcatchment2S: Subcatchment2S Runoff Area=48,019 sf 0.00% Impervious Runoff Depth>0.40"
Flow Length=323' Tc=14.7 min CN=33 Runoff=0.12 cfs 0.037 af

Reach AP1: Wetlands Inflow=16.83 cfs 2.083 af
Outflow=16.83 cfs 2.083 af

Reach AP2: Map 266 Lot 5 Inflow=0.12 cfs 0.037 af
Outflow=0.12 cfs 0.037 af

Total Runoff Area = 10.766 ac Runoff Volume = 2.120 af Average Runoff Depth = 2.36"
91.72% Pervious = 9.875 ac 8.28% Impervious = 0.891 ac

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Subcatchment1S Runoff Area=420,946 sf 9.22% Impervious Runoff Depth>3.63"
Flow Length=864' Tc=27.0 min CN=59 Runoff=24.06 cfs 2.920 af

Subcatchment2S: Subcatchment2S Runoff Area=48,019 sf 0.00% Impervious Runoff Depth>0.81"
Flow Length=323' Tc=14.7 min CN=33 Runoff=0.39 cfs 0.075 af

Reach AP1: Wetlands Inflow=24.06 cfs 2.920 af
Outflow=24.06 cfs 2.920 af

Reach AP2: Map 266 Lot 5 Inflow=0.39 cfs 0.075 af
Outflow=0.39 cfs 0.075 af

Total Runoff Area = 10.766 ac Runoff Volume = 2.995 af Average Runoff Depth = 3.34"
91.72% Pervious = 9.875 ac 8.28% Impervious = 0.891 ac

Summary for Subcatchment 1S: Subcatchment 1S

Runoff = 24.06 cfs @ 12.39 hrs, Volume= 2.920 af, Depth> 3.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 Yr 24 Hr(+15%) Rainfall=8.57"

Area (sf)	CN	Description
7,231	98	Roofs, HSG D
31,165	98	Paved parking, HSG D
416	98	Paved parking, HSG A
19,112	39	>75% Grass cover, Good, HSG A
53,727	39	>75% Grass cover, Good, HSG A
26,447	39	>75% Grass cover, Good, HSG A
72,824	30	Woods, Good, HSG A
2,193	32	Woods/grass comb., Good, HSG A
6,121	77	Woods, Good, HSG D
46,133	72	Woods/grass comb., Good, HSG C
100,976	70	Woods, Good, HSG C
25,142	74	>75% Grass cover, Good, HSG C
9,094	74	>75% Grass cover, Good, HSG C
16,936	65	Brush, Good, HSG C
1,295	80	>75% Grass cover, Good, HSG D
679	80	>75% Grass cover, Good, HSG D
1,455	96	Gravel surface, HSG D
420,946	59	Weighted Average
382,134		90.78% Pervious Area
38,812		9.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	31	0.0500	0.13		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.23"
2.7	20	0.0500	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.23"
4.5	49	0.2400	0.18		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.23"
4.1	124	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.2	111	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	105	0.0500	3.60		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
1.1	94	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.0	330	0.0150	0.61		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
27.0	864	Total			

Summary for Subcatchment 2S: Subcatchment 2S

Runoff = 0.39 cfs @ 12.42 hrs, Volume= 0.075 af, Depth> 0.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 Yr 24 Hr(+15%) Rainfall=8.57"

Area (sf)	CN	Description
34,026	30	Woods, Good, HSG A
13,993	39	>75% Grass cover, Good, HSG A
48,019	33	Weighted Average
48,019		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	72	0.0300	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.23"
5.4	28	0.0500	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.23"
1.7	113	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.2	110	0.1000	1.58		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.7	323	Total			

Summary for Reach AP1: Wetlands

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 9.664 ac, 9.22% Impervious, Inflow Depth > 3.63" for 50 Yr 24 Hr(+15%) event
Inflow = 24.06 cfs @ 12.39 hrs, Volume= 2.920 af
Outflow = 24.06 cfs @ 12.39 hrs, Volume= 2.920 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach AP2: Map 266 Lot 5

[40] Hint: Not Described (Outflow=Inflow)

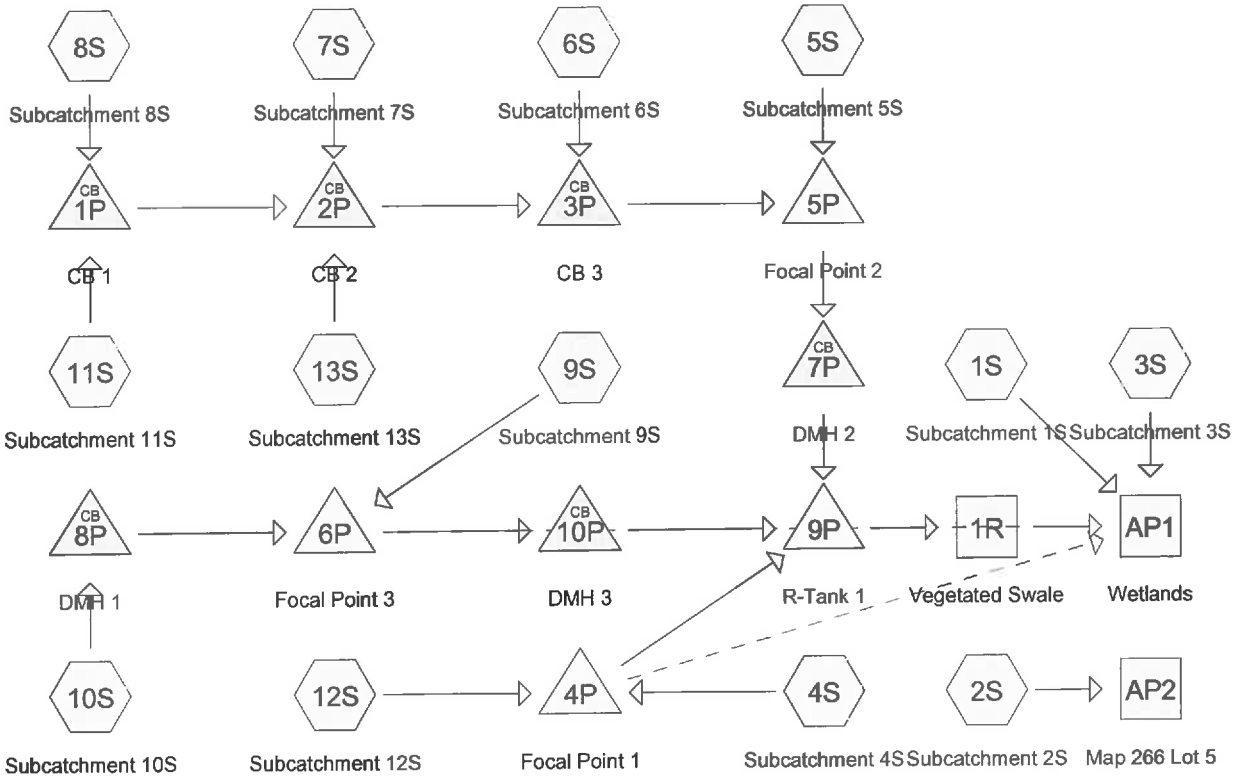
Inflow Area = 1.102 ac, 0.00% Impervious, Inflow Depth > 0.81" for 50 Yr 24 Hr(+15%) event
Inflow = 0.39 cfs @ 12.42 hrs, Volume= 0.075 af
Outflow = 0.39 cfs @ 12.42 hrs, Volume= 0.075 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

APPENDIX II

PROPOSED CONDITIONS DRAINAGE ANALYSIS

Summary 2 YEAR
Complete 10 YEAR
Summary 25 YEAR
Complete 50 YEAR



Subcat Reach Pond Link

Routing Diagram for 19190-PROPOSED_AoT
Prepared by {enter your company name here}, Printed 12/29/2020
HydroCAD® 10.10-4a s/n 03433 © 2020 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.341	39	>75% Grass cover, Good, HSG A (1S, 2S, 4S, 5S, 6S, 7S, 8S, 9S)
0.623	74	>75% Grass cover, Good, HSG C (1S, 9S)
0.431	80	>75% Grass cover, Good, HSG D (1S, 3S, 4S, 5S, 7S, 8S)
1.039	98	Paved parking, HSG A (4S, 5S, 6S, 7S, 8S, 9S)
0.433	98	Paved parking, HSG D (3S, 4S, 7S, 8S)
0.955	98	Roofs, HSG A (10S, 11S, 12S, 13S)
0.609	98	Roofs, HSG C (10S, 11S, 12S, 13S)
0.158	98	Roofs, HSG D (12S, 13S)
1.699	30	Woods, Good, HSG A (1S, 2S)
2.240	70	Woods, Good, HSG C (1S)
0.080	32	Woods/grass comb., Good, HSG A (5S)
1.080	72	Woods/grass comb., Good, HSG C (1S)
0.080	79	Woods/grass comb., Good, HSG D (3S)
10.766	**69**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
5.113	HSG A	1S, 2S, 4S, 5S, 6S, 7S, 8S, 9S, 10S, 11S, 12S, 13S
0.000	HSG B	
4.552	HSG C	1S, 9S, 10S, 11S, 12S, 13S
1.101	HSG D	1S, 3S, 4S, 5S, 7S, 8S, 12S, 13S
0.000	Other	
10.766		**TOTAL AREA**

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Subcatchment1S Runoff Area=238,618 sf 0.00% Impervious Runoff Depth>0.66"
Flow Length=703' Tc=33.8 min CN=61 Runoff=1.80 cfs 0.302 af

Subcatchment2S: Subcatchment2S Runoff Area=34,249 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=301' Tc=16.6 min CN=32 Runoff=0.00 cfs 0.000 af

Subcatchment3S: Subcatchment3S Runoff Area=9,043 sf 17.44% Impervious Runoff Depth>2.03"
Flow Length=260' Tc=18.6 min CN=83 Runoff=0.34 cfs 0.035 af

Subcatchment4S: Subcatchment4S Runoff Area=24,375 sf 62.86% Impervious Runoff Depth>2.20"
Flow Length=301' Slope=0.0200 '/' Tc=6.0 min CN=85 Runoff=1.41 cfs 0.103 af

Subcatchment5S: Subcatchment5S Runoff Area=11,285 sf 31.65% Impervious Runoff Depth>0.76"
Flow Length=125' Tc=19.9 min CN=63 Runoff=0.13 cfs 0.016 af

Subcatchment6S: Subcatchment6S Runoff Area=4,121 sf 38.80% Impervious Runoff Depth>0.71"
Flow Length=119' Tc=13.3 min CN=62 Runoff=0.05 cfs 0.006 af

Subcatchment7S: Subcatchment7S Runoff Area=10,998 sf 41.74% Impervious Runoff Depth>0.81"
Flow Length=130' Tc=14.9 min CN=64 Runoff=0.15 cfs 0.017 af

Subcatchment8S: Subcatchment8S Runoff Area=21,365 sf 49.08% Impervious Runoff Depth>1.02"
Flow Length=151' Tc=10.9 min CN=68 Runoff=0.45 cfs 0.042 af

Subcatchment9S: Subcatchment9S Runoff Area=39,922 sf 67.50% Impervious Runoff Depth>1.80"
Flow Length=277' Tc=6.0 min CN=80 Runoff=1.90 cfs 0.138 af

Subcatchment10S: Subcatchment10S Runoff Area=18,750 sf 100.00% Impervious Runoff Depth>3.47"
Tc=6.0 min CN=98 Runoff=1.52 cfs 0.125 af

Subcatchment11S: Subcatchment11S Runoff Area=18,760 sf 100.00% Impervious Runoff Depth>3.47"
Tc=6.0 min CN=98 Runoff=1.52 cfs 0.125 af

Subcatchment12S: Subcatchment12S Runoff Area=18,750 sf 100.00% Impervious Runoff Depth>3.47"
Tc=6.0 min CN=98 Runoff=1.52 cfs 0.125 af

Subcatchment13S: Subcatchment13S Runoff Area=18,750 sf 100.00% Impervious Runoff Depth>3.47"
Tc=6.0 min CN=98 Runoff=1.52 cfs 0.125 af

Reach 1R: Vegetated Swale Avg. Flow Depth=0.31' Max Vel=0.30 fps Inflow=0.85 cfs 0.739 af
n=0.150 L=120.0' S=0.0050 '/' Capacity=24.03 cfs Outflow=0.85 cfs 0.734 af

Reach AP1: Wetlands Inflow=2.80 cfs 1.072 af
Outflow=2.80 cfs 1.072 af

Reach AP2: Map 266 Lot 5 Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond 1P: CB 1 Peak Elev=48.34' Inflow=1.87 cfs 0.166 af
24.0" Round Culvert n=0.013 L=130.0' S=0.0046 '/' Outflow=1.87 cfs 0.166 af

Pond 2P: CB 2 Peak Elev=47.90' Inflow=3.47 cfs 0.308 af
24.0" Round Culvert n=0.013 L=67.0' S=0.0045 '/' Outflow=3.47 cfs 0.308 af

Pond 3P: CB 3 Peak Elev=47.47' Inflow=3.49 cfs 0.314 af
24.0" Round Culvert n=0.013 L=51.0' S=0.0049 '/' Outflow=3.49 cfs 0.314 af

Pond 4P: Focal Point 1 Peak Elev=43.36' Storage=315 cf Inflow=2.93 cfs 0.227 af
Primary=2.68 cfs 0.227 af Secondary=0.00 cfs 0.000 af Outflow=2.68 cfs 0.227 af

Pond 5P: Focal Point 2 Peak Elev=44.98' Storage=260 cf Inflow=3.54 cfs 0.330 af
Outflow=3.49 cfs 0.330 af

Pond 6P: Focal Point 3 Peak Elev=43.75' Storage=226 cf Inflow=3.41 cfs 0.262 af
Primary=3.14 cfs 0.262 af Secondary=0.00 cfs 0.000 af Outflow=3.14 cfs 0.262 af

Pond 7P: DMH 2 Peak Elev=43.13' Inflow=3.49 cfs 0.330 af
30.0" Round Culvert n=0.013 L=74.0' S=0.0108 '/' Outflow=3.49 cfs 0.330 af

Pond 8P: DMH 1 Peak Elev=46.01' Inflow=1.52 cfs 0.125 af
15.0" Round Culvert n=0.013 L=54.0' S=0.0056 '/' Outflow=1.52 cfs 0.125 af

Pond 9P: R-Tank 1 Peak Elev=42.34' Storage=17,044 cf Inflow=9.30 cfs 0.818 af
Outflow=0.85 cfs 0.739 af

Pond 10P: DMH 3 Peak Elev=42.34' Inflow=3.14 cfs 0.262 af
30.0" Round Culvert n=0.013 L=8.0' S=0.0250 '/' Outflow=3.14 cfs 0.262 af

Total Runoff Area = 10.766 ac Runoff Volume = 1.157 af Average Runoff Depth = 1.29"
70.34% Pervious = 7.573 ac 29.66% Impervious = 3.193 ac

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Subcatchment1S Runoff Area=238,618 sf 0.00% Impervious Runoff Depth>1.75"
Flow Length=703' Tc=33.8 min CN=61 Runoff=5.70 cfs 0.800 af

Subcatchment2S: Subcatchment2S Runoff Area=34,249 sf 0.00% Impervious Runoff Depth>0.08"
Flow Length=301' Tc=16.6 min CN=32 Runoff=0.01 cfs 0.006 af

Subcatchment3S: Subcatchment3S Runoff Area=9,043 sf 17.44% Impervious Runoff Depth>3.75"
Flow Length=260' Tc=18.6 min CN=83 Runoff=0.63 cfs 0.065 af

Subcatchment4S: Subcatchment4S Runoff Area=24,375 sf 62.86% Impervious Runoff Depth>3.96"
Flow Length=301' Slope=0.0200 '/' Tc=6.0 min CN=85 Runoff=2.50 cfs 0.185 af

Subcatchment5S: Subcatchment5S Runoff Area=11,285 sf 31.65% Impervious Runoff Depth>1.92"
Flow Length=125' Tc=19.9 min CN=63 Runoff=0.38 cfs 0.041 af

Subcatchment6S: Subcatchment6S Runoff Area=4,121 sf 38.80% Impervious Runoff Depth>1.84"
Flow Length=119' Tc=13.3 min CN=62 Runoff=0.15 cfs 0.015 af

Subcatchment7S: Subcatchment7S Runoff Area=10,998 sf 41.74% Impervious Runoff Depth>2.00"
Flow Length=130' Tc=14.9 min CN=64 Runoff=0.43 cfs 0.042 af

Subcatchment8S: Subcatchment8S Runoff Area=21,365 sf 49.08% Impervious Runoff Depth>2.34"
Flow Length=151' Tc=10.9 min CN=68 Runoff=1.12 cfs 0.096 af

Subcatchment9S: Subcatchment9S Runoff Area=39,922 sf 67.50% Impervious Runoff Depth>3.46"
Flow Length=277' Tc=6.0 min CN=80 Runoff=3.63 cfs 0.264 af

Subcatchment10S: Subcatchment10S Runoff Area=18,750 sf 100.00% Impervious Runoff Depth>5.40"
Tc=6.0 min CN=98 Runoff=2.32 cfs 0.194 af

Subcatchment11S: Subcatchment11S Runoff Area=18,760 sf 100.00% Impervious Runoff Depth>5.40"
Tc=6.0 min CN=98 Runoff=2.32 cfs 0.194 af

Subcatchment12S: Subcatchment12S Runoff Area=18,750 sf 100.00% Impervious Runoff Depth>5.40"
Tc=6.0 min CN=98 Runoff=2.32 cfs 0.194 af

Subcatchment13S: Subcatchment13S Runoff Area=18,750 sf 100.00% Impervious Runoff Depth>5.40"
Tc=6.0 min CN=98 Runoff=2.32 cfs 0.194 af

Reach 1R: Vegetated Swale Avg. Flow Depth=0.38' Max Vel=0.34 fps Inflow=1.16 cfs 1.133 af
n=0.150 L=120.0' S=0.0050 '/' Capacity=24.03 cfs Outflow=1.16 cfs 1.126 af

Reach AP1: Wetlands Inflow=7.16 cfs 1.991 af
Outflow=7.16 cfs 1.991 af

Reach AP2: Map 266 Lot 5 Inflow=0.01 cfs 0.006 af
Outflow=0.01 cfs 0.006 af

Pond 1P: CB 1 Peak Elev=48.66' Inflow=3.27 cfs 0.290 af
24.0" Round Culvert n=0.013 L=130.0' S=0.0046 '/' Outflow=3.27 cfs 0.290 af

Pond 2P: CB 2 Peak Elev=48.29' Inflow=5.86 cfs 0.525 af
24.0" Round Culvert n=0.013 L=67.0' S=0.0045 '/' Outflow=5.86 cfs 0.525 af

Pond 3P: CB 3 Peak Elev=47.82' Inflow=5.97 cfs 0.540 af
24.0" Round Culvert n=0.013 L=51.0' S=0.0049 '/' Outflow=5.97 cfs 0.540 af

Pond 4P: Focal Point 1 Peak Elev=44.33' Storage=700 cf Inflow=4.82 cfs 0.378 af
Primary=3.98 cfs 0.378 af Secondary=0.00 cfs 0.000 af Outflow=3.98 cfs 0.378 af

Pond 5P: Focal Point 2 Peak Elev=45.83' Storage=611 cf Inflow=6.16 cfs 0.581 af
Outflow=5.59 cfs 0.581 af

Pond 6P: Focal Point 3 Peak Elev=45.05' Storage=711 cf Inflow=5.95 cfs 0.458 af
Primary=5.68 cfs 0.457 af Secondary=0.00 cfs 0.000 af Outflow=5.68 cfs 0.457 af

Pond 7P: DMH 2 Peak Elev=44.20' Inflow=5.59 cfs 0.581 af
30.0" Round Culvert n=0.013 L=74.0' S=0.0108 '/' Outflow=5.59 cfs 0.581 af

Pond 8P: DMH 1 Peak Elev=46.22' Inflow=2.32 cfs 0.194 af
15.0" Round Culvert n=0.013 L=54.0' S=0.0056 '/' Outflow=2.32 cfs 0.194 af

Pond 9P: R-Tank 1 Peak Elev=44.19' Storage=31,430 cf Inflow=15.24 cfs 1.416 af
Outflow=1.16 cfs 1.133 af

Pond 10P: DMH 3 Peak Elev=44.19' Inflow=5.68 cfs 0.457 af
30.0" Round Culvert n=0.013 L=8.0' S=0.0250 '/' Outflow=5.68 cfs 0.457 af

Total Runoff Area = 10.766 ac Runoff Volume = 2.288 af Average Runoff Depth = 2.55"
70.34% Pervious = 7.573 ac 29.66% Impervious = 3.193 ac

Summary for Subcatchment 1S: Subcatchment 1S

Runoff = 5.70 cfs @ 12.51 hrs, Volume= 0.800 af, Depth> 1.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Yr 24 Hr(+15%) Rainfall=5.64"

Area (sf)	CN	Description
46,488	30	Woods, Good, HSG A
14,640	39	>75% Grass cover, Good, HSG A
97,556	70	Woods, Good, HSG C
47,045	72	Woods/grass comb., Good, HSG C
25,840	74	>75% Grass cover, Good, HSG C
7,049	80	>75% Grass cover, Good, HSG D
238,618	61	Weighted Average
238,618		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.9	88	0.0100	0.09		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.23"
0.7	12	0.5000	0.28		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.23"
0.7	59	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.7	160	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.8	384	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
33.8	703	Total			

Summary for Subcatchment 2S: Subcatchment 2S

Runoff = 0.01 cfs @ 15.43 hrs, Volume= 0.006 af, Depth> 0.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Yr 24 Hr(+15%) Rainfall=5.64"

Area (sf)	CN	Description
27,532	30	Woods, Good, HSG A
6,717	39	>75% Grass cover, Good, HSG A
34,249	32	Weighted Average
34,249		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2	100	0.0200	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.23"
1.6	97	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	104	0.1800	2.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.6	301	Total			

Summary for Subcatchment 3S: Subcatchment 3S

Runoff = 0.63 cfs @ 12.25 hrs, Volume= 0.065 af, Depth> 3.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Yr 24 Hr(+15%) Rainfall=5.64"

Area (sf)	CN	Description
1,577	98	Paved parking, HSG D
3,475	79	Woods/grass comb., Good, HSG D
3,991	80	>75% Grass cover, Good, HSG D
9,043	83	Weighted Average
7,466		82.56% Pervious Area
1,577		17.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.2	100	0.0400	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.23"
2.2	135	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	25	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
18.6	260	Total			

Summary for Subcatchment 4S: Subcatchment 4S

Runoff = 2.50 cfs @ 12.09 hrs, Volume= 0.185 af, Depth> 3.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Yr 24 Hr(+15%) Rainfall=5.64"

Area (sf)	CN	Description
15,255	98	Paved parking, HSG D
2,920	80	>75% Grass cover, Good, HSG D
3,531	39	>75% Grass cover, Good, HSG A
2,601	80	>75% Grass cover, Good, HSG D
68	98	Paved parking, HSG A
24,375	85	Weighted Average
9,052		37.14% Pervious Area
15,323		62.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	19	0.0200	0.30		**Sheet Flow,** Fallow n= 0.050 P2= 3.23"
1.0	79	0.0200	1.32		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.23"
1.2	203	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.3	301	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 5S: Subcatchment 5S

Runoff = 0.38 cfs @ 12.30 hrs, Volume= 0.041 af, Depth> 1.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Yr 24 Hr(+15%) Rainfall=5.64"

Area (sf)	CN	Description
1,989	39	>75% Grass cover, Good, HSG A
3,465	32	Woods/grass comb., Good, HSG A
3,572	98	Paved parking, HSG A
282	39	>75% Grass cover, Good, HSG A
1,977	80	>75% Grass cover, Good, HSG D
11,285	63	Weighted Average
7,713		68.35% Pervious Area
3,572		31.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.7	56	0.0100	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.23"
1.5	18	0.5000	0.20		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.23"
0.5	26	0.0100	0.80		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.23"
0.2	25	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
19.9	125	Total			

Summary for Subcatchment 6S: Subcatchment 6S

Runoff = 0.15 cfs @ 12.20 hrs, Volume= 0.015 af, Depth> 1.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Yr 24 Hr(+15%) Rainfall=5.64"

Area (sf)	CN	Description
1,599	98	Paved parking, HSG A
1,611	39	>75% Grass cover, Good, HSG A
911	39	>75% Grass cover, Good, HSG A
4,121	62	Weighted Average
2,522		61.20% Pervious Area
1,599		38.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	55	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.23"
1.0	19	0.5000	0.31		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.23"
0.5	26	0.0100	0.80		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.23"
0.2	19	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
13.3	119	Total			

Summary for Subcatchment 7S: Subcatchment 7S

Runoff = 0.43 cfs @ 12.22 hrs, Volume= 0.042 af, Depth> 2.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Yr 24 Hr(+15%) Rainfall=5.64"

Area (sf)	CN	Description
395	39	>75% Grass cover, Good, HSG A
48	80	>75% Grass cover, Good, HSG D
1,290	98	Paved parking, HSG D
3,301	98	Paved parking, HSG A
2,341	39	>75% Grass cover, Good, HSG A
3,623	39	>75% Grass cover, Good, HSG A
10,998	64	Weighted Average
6,407		58.26% Pervious Area
4,591		41.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	62	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.23"
1.6	26	0.3300	0.28		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.23"
0.3	12	0.0100	0.69		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.23"
0.2	30	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
14.9	130	Total			

Summary for Subcatchment 8S: Subcatchment 8S

Runoff = 1.12 cfs @ 12.16 hrs, Volume= 0.096 af, Depth> 2.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Yr 24 Hr(+15%) Rainfall=5.64"

Area (sf)	CN	Description
1,334	39	>75% Grass cover, Good, HSG A
198	80	>75% Grass cover, Good, HSG D
719	98	Paved parking, HSG D
9,766	98	Paved parking, HSG A
5,991	39	>75% Grass cover, Good, HSG A
3,357	39	>75% Grass cover, Good, HSG A
21,365	68	Weighted Average
10,880		50.92% Pervious Area
10,485		49.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	37	0.0100	0.07		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.23"
1.3	26	0.5000	0.32		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.23"
0.7	37	0.0100	0.86		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.23"
0.4	51	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.9	151	Total			

Summary for Subcatchment 9S: Subcatchment 9S

Runoff = 3.63 cfs @ 12.09 hrs, Volume= 0.264 af, Depth> 3.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Yr 24 Hr(+15%) Rainfall=5.64"

Area (sf)	CN	Description
175	39	>75% Grass cover, Good, HSG A
26,946	98	Paved parking, HSG A
11,498	39	>75% Grass cover, Good, HSG A
1,303	74	>75% Grass cover, Good, HSG C
39,922	80	Weighted Average
12,976		32.50% Pervious Area
26,946		67.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	27	0.5000	0.33		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.23"
0.7	59	0.0300	1.46		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.23"
0.2	14	0.0300	1.10		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.23"
0.8	177	0.0300	3.52		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.1	277	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 10S: Subcatchment 10S

Runoff = 2.32 cfs @ 12.09 hrs, Volume= 0.194 af, Depth> 5.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Yr 24 Hr(+15%) Rainfall=5.64"

Area (sf)	CN	Description
1,229	98	Roofs, HSG A
17,521	98	Roofs, HSG C
18,750	98	Weighted Average
18,750		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 11S: Subcatchment 11S

Runoff = 2.32 cfs @ 12.09 hrs, Volume= 0.194 af, Depth> 5.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Yr 24 Hr(+15%) Rainfall=5.64"

Area (sf)	CN	Description
13,629	98	Roofs, HSG A
5,131	98	Roofs, HSG C
18,760	98	Weighted Average
18,760		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 12S: Subcatchment 12S

Runoff = 2.32 cfs @ 12.09 hrs, Volume= 0.194 af, Depth> 5.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Yr 24 Hr(+15%) Rainfall=5.64"

Area (sf)	CN	Description
12,104	98	Roofs, HSG A
3,476	98	Roofs, HSG C
3,170	98	Roofs, HSG D
18,750	98	Weighted Average
18,750		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 13S: Subcatchment 13S

Runoff = 2.32 cfs @ 12.09 hrs, Volume= 0.194 af, Depth> 5.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Yr 24 Hr(+15%) Rainfall=5.64"

Area (sf)	CN	Description
14,648	98	Roofs, HSG A
409	98	Roofs, HSG C
3,693	98	Roofs, HSG D
18,750	98	Weighted Average
18,750		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Reach 1R: Vegetated Swale

Inflow Area = 4.295 ac, 73.51% Impervious, Inflow Depth > 3.17" for 10 Yr 24 Hr(+15%) event
Inflow = 1.16 cfs @ 13.87 hrs, Volume= 1.133 af
Outflow = 1.16 cfs @ 13.93 hrs, Volume= 1.126 af, Atten= 0%, Lag= 3.9 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.34 fps, Min. Travel Time= 6.0 min
Avg. Velocity = 0.24 fps, Avg. Travel Time= 8.5 min

Peak Storage= 414 cf @ 13.93 hrs
Average Depth at Peak Storage= 0.38' , Surface Width= 10.27'
Bank-Full Depth= 2.00' Flow Area= 28.0 sf, Capacity= 24.03 cfs

8.00' x 2.00' deep channel, n= 0.150 Sheet flow over Short Grass
Side Slope Z-value= 3.0 '/' Top Width= 20.00'
Length= 120.0' Slope= 0.0050 '/'
Inlet Invert= 36.60', Outlet Invert= 36.00'

‡

Summary for Reach AP1: Wetlands

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 9.980 ac, 32.00% Impervious, Inflow Depth > 2.39" for 10 Yr 24 Hr(+15%) event
Inflow = 7.16 cfs @ 12.50 hrs, Volume= 1.991 af
Outflow = 7.16 cfs @ 12.50 hrs, Volume= 1.991 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach AP2: Map 266 Lot 5

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.786 ac, 0.00% Impervious, Inflow Depth > 0.08" for 10 Yr 24 Hr(+15%) event
Inflow = 0.01 cfs @ 15.43 hrs, Volume= 0.006 af
Outflow = 0.01 cfs @ 15.43 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: CB 1

Inflow Area = 0.921 ac, 72.88% Impervious, Inflow Depth > 3.77" for 10 Yr 24 Hr(+15%) event
Inflow = 3.27 cfs @ 12.10 hrs, Volume= 0.290 af
Outflow = 3.27 cfs @ 12.10 hrs, Volume= 0.290 af, Atten= 0%, Lag= 0.0 min
Primary = 3.27 cfs @ 12.10 hrs, Volume= 0.290 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 48.66' @ 12.14 hrs
Flood Elev= 50.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	47.60'	**24.0" Round Culvert** L= 130.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 47.60' / 47.00' S= 0.0046 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=2.74 cfs @ 12.10 hrs HW=48.64' TW=48.27' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 2.74 cfs @ 2.43 fps)

Summary for Pond 2P: CB 2

Inflow Area = 1.604 ac, 75.26% Impervious, Inflow Depth > 3.93" for 10 Yr 24 Hr(+15%) event
Inflow = 5.86 cfs @ 12.10 hrs, Volume= 0.525 af
Outflow = 5.86 cfs @ 12.10 hrs, Volume= 0.525 af, Atten= 0%, Lag= 0.0 min
Primary = 5.86 cfs @ 12.10 hrs, Volume= 0.525 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 48.29' @ 12.12 hrs
Flood Elev= 50.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.90'	**24.0" Round Culvert** L= 67.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 46.90' / 46.60' S= 0.0045 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=5.29 cfs @ 12.10 hrs HW=48.27' TW=47.82' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 5.29 cfs @ 3.26 fps)

Summary for Pond 3P: CB 3

Inflow Area = 1.699 ac, 73.23% Impervious, Inflow Depth > 3.81" for 10 Yr 24 Hr(+15%) event
Inflow = 5.97 cfs @ 12.10 hrs, Volume= 0.540 af
Outflow = 5.97 cfs @ 12.10 hrs, Volume= 0.540 af, Atten= 0%, Lag= 0.0 min
Primary = 5.97 cfs @ 12.10 hrs, Volume= 0.540 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 47.82' @ 12.10 hrs
Flood Elev= 50.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.50'	**24.0" Round Culvert** L= 51.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 46.50' / 46.25' S= 0.0049 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=5.96 cfs @ 12.10 hrs HW=47.82' TW=45.67' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 5.96 cfs @ 3.84 fps)

Summary for Pond 4P: Focal Point 1

[92] Warning: Device #4 is above defined storage

Inflow Area = 0.990 ac, 79.01% Impervious, Inflow Depth > 4.59" for 10 Yr 24 Hr(+15%) event
Inflow = 4.82 cfs @ 12.09 hrs, Volume= 0.378 af
Outflow = 3.98 cfs @ 12.14 hrs, Volume= 0.378 af, Atten= 17%, Lag= 3.2 min
Primary = 3.98 cfs @ 12.14 hrs, Volume= 0.378 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 44.33' @ 12.14 hrs Surf.Area= 2,032 sf Storage= 700 cf

Plug-Flow detention time= 15.3 min calculated for 0.377 af (100% of inflow)
Center-of-Mass det. time= 14.4 min (787.8 - 773.4)

Volume	Invert	Avail.Storage	Storage Description
#1	42.05'	650 cf	**18.00'W x 51.00'L x 2.25'H Focal Point Area 1 Z=3.0** 3,250 cf Overall x 20.0% Voids
#2	44.30'	3,759 cf	**Surface Bowl (Prismatic)**Listed below (Recalc) -Impervious
		4,409 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
44.30	1,611	0	0
44.80	1,883	874	874
45.30	2,169	1,013	1,887
46.00	3,182	1,873	3,759

Device	Routing	Invert	Outlet Devices
#1	Primary	42.05'	**12.0" Round Culvert** L= 21.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 42.05' / 41.50' S= 0.0262 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	42.05'	**100.000 in/hr Exfiltration over Surface area** Phase-In= 0.10'
#3	Device 1	44.80'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	46.00'	**220.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=3.96 cfs @ 12.14 hrs HW=44.31' TW=42.48' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 3.96 cfs @ 5.04 fps)
└─**2=Exfiltration** (Passes 3.96 cfs of 4.70 cfs potential flow)
└─**3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=42.05' TW=0.00' (Dynamic Tailwater)
└─**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 5P: Focal Point 2

Inflow Area = 1.958 ac, 67.73% Impervious, Inflow Depth > 3.56" for 10 Yr 24 Hr(+15%) event
Inflow = 6.16 cfs @ 12.10 hrs, Volume= 0.581 af
Outflow = 5.59 cfs @ 12.15 hrs, Volume= 0.581 af, Atten= 9%, Lag= 3.0 min
Primary = 5.59 cfs @ 12.15 hrs, Volume= 0.581 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 45.83' @ 12.15 hrs Surf.Area= 2,415 sf Storage= 611 cf

Plug-Flow detention time= 3.2 min calculated for 0.581 af (100% of inflow)
Center-of-Mass det. time= 2.4 min (785.4 - 783.0)

Volume	Invert	Avail.Storage	Storage Description
#1	44.00'	547 cf	**22.00'W x 35.00'L x 2.25'H Focal Point Area 1 Z=3.0** 2,735 cf Overall x 20.0% Voids
#2	44.00'	280 cf	**5.00'W x 45.00'L x 2.25'H Focal Point Area 2 Z=3.0** 1,402 cf Overall x 20.0% Voids
#3	46.25'	1,725 cf	**Surface Bowl (Prismatic)**Listed below (Recalc)
		2,552 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
46.25	1,369	0	0
46.75	1,720	772	772
47.25	2,089	952	1,725

Device	Routing	Invert	Outlet Devices
#1	Primary	44.00'	**18.0" Round Culvert** L= 234.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 44.00' / 42.80' S= 0.0051 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	44.00'	**100.000 in/hr Exfiltration over Surface area** Phase-In= 0.10'
#3	Device 1	46.75'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=5.58 cfs @ 12.15 hrs HW=45.83' TW=43.37' (Dynamic Tailwater)
└**1=Culvert** (Passes 5.58 cfs of 8.14 cfs potential flow)
  ├**2=Exfiltration** (Exfiltration Controls 5.58 cfs)
  └**3=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 6P: Focal Point 3

[92] Warning: Device #4 is above defined storage

Inflow Area = 1.347 ac, 77.88% Impervious, Inflow Depth > 4.08" for 10 Yr 24 Hr(+15%) event
Inflow = 5.95 cfs @ 12.09 hrs, Volume= 0.458 af
Outflow = 5.68 cfs @ 12.14 hrs, Volume= 0.457 af, Atten= 5%, Lag= 3.0 min
Primary = 5.68 cfs @ 12.14 hrs, Volume= 0.457 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 45.05' @ 12.13 hrs Surf.Area= 3,533 sf Storage= 711 cf

Plug-Flow detention time= 6.9 min calculated for 0.456 af (100% of inflow)
Center-of-Mass det. time= 6.3 min (792.6 - 786.3)

Volume	Invert	Avail.Storage	Storage Description
#1	42.75'	641 cf	**19.00'W x 48.00'L x 2.25'H Focal Point Z=3.0** 3,206 cf Overall x 20.0% Voids
#2	45.00'	2,800 cf	**Surface Bowl (Prismatic)**Listed below (Recalc)
		3,441 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
45.00	1,510	0	0
45.50	1,772	821	821
46.00	2,048	955	1,776
46.50	2,048	1,024	2,800

Device	Routing	Invert	Outlet Devices
#1	Primary	42.75'	**24.0" Round Culvert** L= 132.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 42.75' / 41.40' S= 0.0102 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 1	42.75'	**100.000 in/hr Exfiltration over Surface area** Phase-In= 0.10'
#3	Device 1	45.00'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	46.50'	**194.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=4.63 cfs @ 12.14 hrs HW=45.00' TW=42.49' (Dynamic Tailwater)
↑**1=Culvert** (Passes 4.63 cfs of 13.35 cfs potential flow)
↑**2=Exfiltration** (Exfiltration Controls 4.63 cfs)
3=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=42.75' TW=0.00' (Dynamic Tailwater)
↑**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 7P: DMH 2

Inflow Area = 1.958 ac, 67.73% Impervious, Inflow Depth > 3.56" for 10 Yr 24 Hr(+15%) event
Inflow = 5.59 cfs @ 12.15 hrs, Volume= 0.581 af
Outflow = 5.59 cfs @ 12.15 hrs, Volume= 0.581 af, Atten= 0%, Lag= 0.0 min
Primary = 5.59 cfs @ 12.15 hrs, Volume= 0.581 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 44.20' @ 13.91 hrs
Flood Elev= 47.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	42.30'	**30.0" Round Culvert** L= 74.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 42.30' / 41.50' S= 0.0108 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=5.58 cfs @ 12.15 hrs HW=43.37' TW=42.54' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 5.58 cfs @ 2.78 fps)

Summary for Pond 8P: DMH 1

Inflow Area = 0.430 ac,100.00% Impervious, Inflow Depth > 5.40" for 10 Yr 24 Hr(+15%) event
Inflow = 2.32 cfs @ 12.09 hrs, Volume= 0.194 af
Outflow = 2.32 cfs @ 12.09 hrs, Volume= 0.194 af, Atten= 0%, Lag= 0.0 min
Primary = 2.32 cfs @ 12.09 hrs, Volume= 0.194 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 46.22' @ 12.09 hrs
Flood Elev= 47.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	45.30'	**15.0" Round Culvert** L= 54.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 45.30' / 45.00' S= 0.0056 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.26 cfs @ 12.09 hrs HW=46.21' TW=44.83' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 2.26 cfs @ 3.32 fps)

Summary for Pond 9P: R-Tank 1

[80] Warning: Exceeded Pond 4P by 0.01' @ 12.60 hrs (0.26 cfs 0.003 af)
[80] Warning: Exceeded Pond 7P by 0.04' @ 12.50 hrs (2.19 cfs 0.145 af)
[80] Warning: Exceeded Pond 10P by 0.19' @ 12.25 hrs (6.65 cfs 0.391 af)

Inflow Area = 4.295 ac, 73.51% Impervious, Inflow Depth > 3.96" for 10 Yr 24 Hr(+15%) event
Inflow = 15.24 cfs @ 12.14 hrs, Volume= 1.416 af
Outflow = 1.16 cfs @ 13.87 hrs, Volume= 1.133 af, Atten= 92%, Lag= 103.4 min
Primary = 1.16 cfs @ 13.87 hrs, Volume= 1.133 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 44.19' @ 13.87 hrs Surf.Area= 8,782 sf Storage= 31,430 cf

Plug-Flow detention time= 284.0 min calculated for 1.133 af (80% of inflow)
Center-of-Mass det. time= 203.8 min (992.2 - 788.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	40.00'	7,411 cf	**36.81'W x 238.58'L x 8.21'H Field A** 72,058 cf Overall - 53,530 cf Embedded = 18,528 cf x 40.0% Voids
#2A	40.25'	50,853 cf	**ACF R-Tank HD 5** x 2500 Inside #1 Inside= 15.7"W x 83.5"H => 8.67 sf x 2.35'L = 20.3 cf Outside= 15.7"W x 83.5"H => 9.13 sf x 2.35'L = 21.4 cf 2500 Chambers in 25 Rows
		58,265 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	40.00'	**12.0" Round Culvert** L= 56.0' CPP, projecting, no headwall, Ke= 0.900

			Inlet / Outlet Invert= 40.00' / 36.60' S= 0.0607 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	40.00'	**4.7" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.16 cfs @ 13.87 hrs HW=44.19' TW=36.98' (Dynamic Tailwater)
↑—**1=Culvert** (Passes 1.16 cfs of 5.74 cfs potential flow)
↑—**2=Orifice/Grate** (Orifice Controls 1.16 cfs @ 9.63 fps)

Summary for Pond 10P: DMH 3

[80] Warning: Exceeded Pond 6P by 0.04' @ 12.60 hrs (1.03 cfs 0.055 af)

Inflow Area =	1.347 ac,	77.88% Impervious,	Inflow Depth >	4.07"	for 10 Yr 24 Hr(+15%) event
Inflow =	5.68 cfs @	12.14 hrs,	Volume=	0.457 af	
Outflow =	5.68 cfs @	12.14 hrs,	Volume=	0.457 af,	Atten= 0%, Lag= 0.0 min
Primary =	5.68 cfs @	12.14 hrs,	Volume=	0.457 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 44.19' @ 13.91 hrs
Flood Elev= 47.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.20'	**30.0" Round Culvert**
			L= 8.0' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 41.20' / 41.00' S= 0.0250 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=1.14 cfs @ 12.14 hrs HW=42.49' TW=42.47' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.14 cfs @ 0.45 fps)

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Subcatchment1S Runoff Area=238,618 sf 0.00% Impervious Runoff Depth>2.78"
Flow Length=703' Tc=33.8 min CN=61 Runoff=9.37 cfs 1.269 af

Subcatchment2S: Subcatchment2S Runoff Area=34,249 sf 0.00% Impervious Runoff Depth>0.34"
Flow Length=301' Tc=16.6 min CN=32 Runoff=0.06 cfs 0.022 af

Subcatchment3S: Subcatchment3S Runoff Area=9,043 sf 17.44% Impervious Runoff Depth>5.14"
Flow Length=260' Tc=18.6 min CN=83 Runoff=0.86 cfs 0.089 af

Subcatchment4S: Subcatchment4S Runoff Area=24,375 sf 62.86% Impervious Runoff Depth>5.38"
Flow Length=301' Slope=0.0200 '/' Tc=6.0 min CN=85 Runoff=3.36 cfs 0.251 af

Subcatchment5S: Subcatchment5S Runoff Area=11,285 sf 31.65% Impervious Runoff Depth>2.99"
Flow Length=125' Tc=19.9 min CN=63 Runoff=0.60 cfs 0.065 af

Subcatchment6S: Subcatchment6S Runoff Area=4,121 sf 38.80% Impervious Runoff Depth>2.90"
Flow Length=119' Tc=13.3 min CN=62 Runoff=0.25 cfs 0.023 af

Subcatchment7S: Subcatchment7S Runoff Area=10,998 sf 41.74% Impervious Runoff Depth>3.10"
Flow Length=130' Tc=14.9 min CN=64 Runoff=0.69 cfs 0.065 af

Subcatchment8S: Subcatchment8S Runoff Area=21,365 sf 49.08% Impervious Runoff Depth>3.52"
Flow Length=151' Tc=10.9 min CN=68 Runoff=1.70 cfs 0.144 af

Subcatchment9S: Subcatchment9S Runoff Area=39,922 sf 67.50% Impervious Runoff Depth>4.82"
Flow Length=277' Tc=6.0 min CN=80 Runoff=5.02 cfs 0.368 af

Subcatchment10S: Subcatchment10S Runoff Area=18,750 sf 100.00% Impervious Runoff Depth>6.90"
Tc=6.0 min CN=98 Runoff=2.94 cfs 0.247 af

Subcatchment11S: Subcatchment11S Runoff Area=18,760 sf 100.00% Impervious Runoff Depth>6.90"
Tc=6.0 min CN=98 Runoff=2.95 cfs 0.248 af

Subcatchment12S: Subcatchment12S Runoff Area=18,750 sf 100.00% Impervious Runoff Depth>6.90"
Tc=6.0 min CN=98 Runoff=2.94 cfs 0.247 af

Subcatchment13S: Subcatchment13S Runoff Area=18,750 sf 100.00% Impervious Runoff Depth>6.90"
Tc=6.0 min CN=98 Runoff=2.94 cfs 0.247 af

Reach 1R: Vegetated Swale Avg. Flow Depth=0.41' Max Vel=0.35 fps Inflow=1.33 cfs 1.389 af
n=0.150 L=120.0' S=0.0050 '/' Capacity=24.03 cfs Outflow=1.33 cfs 1.380 af

Reach AP1: Wetlands Inflow=11.16 cfs 2.739 af
Outflow=11.16 cfs 2.739 af

Reach AP2: Map 266 Lot 5 Inflow=0.06 cfs 0.022 af
Outflow=0.06 cfs 0.022 af

Pond 1P: CB 1 Peak Elev=48.92' Inflow=4.42 cfs 0.391 af
24.0" Round Culvert n=0.013 L=130.0' S=0.0046 '/' Outflow=4.42 cfs 0.391 af

Pond 2P: CB 2 Peak Elev=48.58' Inflow=7.81 cfs 0.704 af
24.0" Round Culvert n=0.013 L=67.0' S=0.0045 '/' Outflow=7.81 cfs 0.704 af

Pond 3P: CB 3 Peak Elev=48.08' Inflow=8.00 cfs 0.727 af
24.0" Round Culvert n=0.013 L=51.0' S=0.0049 '/' Outflow=8.00 cfs 0.727 af

Pond 4P: Focal Point 1 Peak Elev=45.47' Storage=2,936 cf Inflow=6.30 cfs 0.498 af
Primary=4.08 cfs 0.493 af Secondary=0.00 cfs 0.000 af Outflow=4.08 cfs 0.493 af

Pond 5P: Focal Point 2 Peak Elev=46.26' Storage=847 cf Inflow=8.34 cfs 0.791 af
Outflow=8.52 cfs 0.790 af

Pond 6P: Focal Point 3 Peak Elev=45.46' Storage=1,398 cf Inflow=7.96 cfs 0.616 af
Primary=8.52 cfs 0.614 af Secondary=0.00 cfs 0.000 af Outflow=8.52 cfs 0.614 af

Pond 7P: DMH 2 Peak Elev=45.46' Inflow=8.52 cfs 0.790 af
30.0" Round Culvert n=0.013 L=74.0' S=0.0108 '/' Outflow=8.52 cfs 0.790 af

Pond 8P: DMH 1 Peak Elev=46.37' Inflow=2.94 cfs 0.247 af
15.0" Round Culvert n=0.013 L=54.0' S=0.0056 '/' Outflow=2.94 cfs 0.247 af

Pond 9P: R-Tank 1 Peak Elev=45.46' Storage=41,250 cf Inflow=20.33 cfs 1.898 af
Outflow=1.33 cfs 1.389 af

Pond 10P: DMH 3 Peak Elev=45.46' Inflow=8.52 cfs 0.614 af
30.0" Round Culvert n=0.013 L=8.0' S=0.0250 '/' Outflow=8.52 cfs 0.614 af

Total Runoff Area = 10.766 ac Runoff Volume = 3.286 af Average Runoff Depth = 3.66"
70.34% Pervious = 7.573 ac 29.66% Impervious = 3.193 ac

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Subcatchment1S Runoff Area=238,618 sf 0.00% Impervious Runoff Depth>3.86"
Flow Length=703' Tc=33.8 min CN=61 Runoff=13.19 cfs 1.760 af

Subcatchment2S: Subcatchment2S Runoff Area=34,249 sf 0.00% Impervious Runoff Depth>0.72"
Flow Length=301' Tc=16.6 min CN=32 Runoff=0.22 cfs 0.047 af

Subcatchment3S: Subcatchment3S Runoff Area=9,043 sf 17.44% Impervious Runoff Depth>6.50"
Flow Length=260' Tc=18.6 min CN=83 Runoff=1.07 cfs 0.113 af

Subcatchment4S: Subcatchment4S Runoff Area=24,375 sf 62.86% Impervious Runoff Depth>6.76"
Flow Length=301' Slope=0.0200 '/' Tc=6.0 min CN=85 Runoff=4.16 cfs 0.315 af

Subcatchment5S: Subcatchment5S Runoff Area=11,285 sf 31.65% Impervious Runoff Depth>4.11"
Flow Length=125' Tc=19.9 min CN=63 Runoff=0.84 cfs 0.089 af

Subcatchment6S: Subcatchment6S Runoff Area=4,121 sf 38.80% Impervious Runoff Depth>3.99"
Flow Length=119' Tc=13.3 min CN=62 Runoff=0.35 cfs 0.031 af

Subcatchment7S: Subcatchment7S Runoff Area=10,998 sf 41.74% Impervious Runoff Depth>4.23"
Flow Length=130' Tc=14.9 min CN=64 Runoff=0.94 cfs 0.089 af

Subcatchment8S: Subcatchment8S Runoff Area=21,365 sf 49.08% Impervious Runoff Depth>4.71"
Flow Length=151' Tc=10.9 min CN=68 Runoff=2.29 cfs 0.192 af

Subcatchment9S: Subcatchment9S Runoff Area=39,922 sf 67.50% Impervious Runoff Depth>6.16"
Flow Length=277' Tc=6.0 min CN=80 Runoff=6.35 cfs 0.470 af

Subcatchment10S: Subcatchment10S Runoff Area=18,750 sf 100.00% Impervious Runoff Depth>8.32"
Tc=6.0 min CN=98 Runoff=3.54 cfs 0.299 af

Subcatchment11S: Subcatchment11S Runoff Area=18,760 sf 100.00% Impervious Runoff Depth>8.32"
Tc=6.0 min CN=98 Runoff=3.54 cfs 0.299 af

Subcatchment12S: Subcatchment12S Runoff Area=18,750 sf 100.00% Impervious Runoff Depth>8.32"
Tc=6.0 min CN=98 Runoff=3.54 cfs 0.299 af

Subcatchment13S: Subcatchment13S Runoff Area=18,750 sf 100.00% Impervious Runoff Depth>8.32"
Tc=6.0 min CN=98 Runoff=3.54 cfs 0.299 af

Reach 1R: Vegetated Swale Avg. Flow Depth=0.43' Max Vel=0.36 fps Inflow=1.44 cfs 1.545 af
n=0.150 L=120.0' S=0.0050 '/' Capacity=24.03 cfs Outflow=1.44 cfs 1.536 af

Reach AP1: Wetlands Inflow=15.60 cfs 3.541 af
Outflow=15.60 cfs 3.541 af

Reach AP2: Map 266 Lot 5 Inflow=0.22 cfs 0.047 af
Outflow=0.22 cfs 0.047 af

Pond 1P: CB 1 Peak Elev=49.19' Inflow=5.54 cfs 0.491 af
24.0" Round Culvert n=0.013 L=130.0' S=0.0046 '/' Outflow=5.54 cfs 0.491 af

Pond 2P: CB 2 Peak Elev=48.88' Inflow=9.72 cfs 0.879 af
24.0" Round Culvert n=0.013 L=67.0' S=0.0045 '/' Outflow=9.72 cfs 0.879 af

Pond 3P: CB 3 Peak Elev=48.33' Inflow=9.99 cfs 0.910 af
24.0" Round Culvert n=0.013 L=51.0' S=0.0049 '/' Outflow=9.99 cfs 0.910 af

Pond 4P: Focal Point 1 Peak Elev=46.02' Storage=4,409 cf Inflow=7.70 cfs 0.614 af
Primary=3.68 cfs 0.469 af Secondary=1.39 cfs 0.132 af Outflow=3.68 cfs 0.601 af

Pond 5P: Focal Point 2 Peak Elev=46.60' Storage=1,348 cf Inflow=10.48 cfs 0.999 af
Outflow=9.19 cfs 0.998 af

Pond 6P: Focal Point 3 Peak Elev=46.34' Storage=3,108 cf Inflow=9.89 cfs 0.769 af
Primary=9.33 cfs 0.769 af Secondary=0.00 cfs 0.000 af Outflow=9.33 cfs 0.769 af

Pond 7P: DMH 2 Peak Elev=46.34' Inflow=9.19 cfs 0.998 af
30.0" Round Culvert n=0.013 L=74.0' S=0.0108 '/' Outflow=9.19 cfs 0.998 af

Pond 8P: DMH 1 Peak Elev=46.52' Inflow=3.54 cfs 0.299 af
15.0" Round Culvert n=0.013 L=54.0' S=0.0056 '/' Outflow=3.54 cfs 0.299 af

Pond 9P: R-Tank 1 Peak Elev=46.33' Storage=48,004 cf Inflow=22.12 cfs 2.236 af
Outflow=1.44 cfs 1.545 af

Pond 10P: DMH 3 Peak Elev=46.34' Inflow=9.33 cfs 0.769 af
30.0" Round Culvert n=0.013 L=8.0' S=0.0250 '/' Outflow=9.33 cfs 0.769 af

Total Runoff Area = 10.766 ac Runoff Volume = 4.302 af Average Runoff Depth = 4.79"
70.34% Pervious = 7.573 ac 29.66% Impervious = 3.193 ac

Summary for Subcatchment 1S: Subcatchment 1S

Runoff = 13.19 cfs @ 12.49 hrs, Volume= 1.760 af, Depth> 3.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 Yr 24 Hr(+15%) Rainfall=8.57"

Area (sf)	CN	Description
46,488	30	Woods, Good, HSG A
14,640	39	>75% Grass cover, Good, HSG A
97,556	70	Woods, Good, HSG C
47,045	72	Woods/grass comb., Good, HSG C
25,840	74	>75% Grass cover, Good, HSG C
7,049	80	>75% Grass cover, Good, HSG D
238,618	61	Weighted Average
238,618		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.9	88	0.0100	0.09		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.23"
0.7	12	0.5000	0.28		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.23"
0.7	59	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.7	160	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.8	384	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
33.8	703	Total			

Summary for Subcatchment 2S: Subcatchment 2S

Runoff = 0.22 cfs @ 12.48 hrs, Volume= 0.047 af, Depth> 0.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 Yr 24 Hr(+15%) Rainfall=8.57"

Area (sf)	CN	Description
27,532	30	Woods, Good, HSG A
6,717	39	>75% Grass cover, Good, HSG A
34,249	32	Weighted Average
34,249		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2	100	0.0200	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.23"
1.6	97	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	104	0.1800	2.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.6	301	Total			

Summary for Subcatchment 3S: Subcatchment 3S

Runoff = 1.07 cfs @ 12.25 hrs, Volume= 0.113 af, Depth> 6.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 Yr 24 Hr(+15%) Rainfall=8.57"

Area (sf)	CN	Description
1,577	98	Paved parking, HSG D
3,475	79	Woods/grass comb., Good, HSG D
3,991	80	>75% Grass cover, Good, HSG D
9,043	83	Weighted Average
7,466		82.56% Pervious Area
1,577		17.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.2	100	0.0400	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.23"
2.2	135	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	25	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
18.6	260	Total			

Summary for Subcatchment 4S: Subcatchment 4S

Runoff = 4.16 cfs @ 12.09 hrs, Volume= 0.315 af, Depth> 6.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 Yr 24 Hr(+15%) Rainfall=8.57"

Area (sf)	CN	Description
15,255	98	Paved parking, HSG D
2,920	80	>75% Grass cover, Good, HSG D
3,531	39	>75% Grass cover, Good, HSG A
2,601	80	>75% Grass cover, Good, HSG D
68	98	Paved parking, HSG A
24,375	85	Weighted Average
9,052		37.14% Pervious Area
15,323		62.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	19	0.0200	0.30		**Sheet Flow,** Fallow n= 0.050 P2= 3.23"
1.0	79	0.0200	1.32		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.23"
1.2	203	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.3	301	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 5S: Subcatchment 5S

Runoff = 0.84 cfs @ 12.28 hrs, Volume= 0.089 af, Depth> 4.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 Yr 24 Hr(+15%) Rainfall=8.57"

Area (sf)	CN	Description
1,989	39	>75% Grass cover, Good, HSG A
3,465	32	Woods/grass comb., Good, HSG A
3,572	98	Paved parking, HSG A
282	39	>75% Grass cover, Good, HSG A
1,977	80	>75% Grass cover, Good, HSG D
11,285	63	Weighted Average
7,713		68.35% Pervious Area
3,572		31.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.7	56	0.0100	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.23"
1.5	18	0.5000	0.20		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.23"
0.5	26	0.0100	0.80		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.23"
0.2	25	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
19.9	125	Total			

Summary for Subcatchment 6S: Subcatchment 6S

Runoff = 0.35 cfs @ 12.19 hrs, Volume= 0.031 af, Depth> 3.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 Yr 24 Hr(+15%) Rainfall=8.57"

Area (sf)	CN	Description
1,599	98	Paved parking, HSG A
1,611	39	>75% Grass cover, Good, HSG A
911	39	>75% Grass cover, Good, HSG A
4,121	62	Weighted Average
2,522		61.20% Pervious Area
1,599		38.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	55	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.23"
1.0	19	0.5000	0.31		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.23"
0.5	26	0.0100	0.80		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.23"
0.2	19	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
13.3	119	Total			

Summary for Subcatchment 7S: Subcatchment 7S

Runoff = 0.94 cfs @ 12.21 hrs, Volume= 0.089 af, Depth> 4.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 Yr 24 Hr(+15%) Rainfall=8.57"

Area (sf)	CN	Description
395	39	>75% Grass cover, Good, HSG A
48	80	>75% Grass cover, Good, HSG D
1,290	98	Paved parking, HSG D
3,301	98	Paved parking, HSG A
2,341	39	>75% Grass cover, Good, HSG A
3,623	39	>75% Grass cover, Good, HSG A
10,998	64	Weighted Average
6,407		58.26% Pervious Area
4,591		41.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	62	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.23"
1.6	26	0.3300	0.28		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.23"
0.3	12	0.0100	0.69		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.23"
0.2	30	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
14.9	130	Total			

Summary for Subcatchment 8S: Subcatchment 8S

Runoff = 2.29 cfs @ 12.16 hrs, Volume= 0.192 af, Depth> 4.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 Yr 24 Hr(+15%) Rainfall=8.57"

Area (sf)	CN	Description
1,334	39	>75% Grass cover, Good, HSG A
198	80	>75% Grass cover, Good, HSG D
719	98	Paved parking, HSG D
9,766	98	Paved parking, HSG A
5,991	39	>75% Grass cover, Good, HSG A
3,357	39	>75% Grass cover, Good, HSG A
21,365	68	Weighted Average
10,880		50.92% Pervious Area
10,485		49.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	37	0.0100	0.07		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.23"
1.3	26	0.5000	0.32		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.23"
0.7	37	0.0100	0.86		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.23"
0.4	51	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.9	151	Total			

Summary for Subcatchment 9S: Subcatchment 9S

Runoff = 6.35 cfs @ 12.09 hrs, Volume= 0.470 af, Depth> 6.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 Yr 24 Hr(+15%) Rainfall=8.57"

Area (sf)	CN	Description
175	39	>75% Grass cover, Good, HSG A
26,946	98	Paved parking, HSG A
11,498	39	>75% Grass cover, Good, HSG A
1,303	74	>75% Grass cover, Good, HSG C
39,922	80	Weighted Average
12,976		32.50% Pervious Area
26,946		67.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	27	0.5000	0.33		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.23"
0.7	59	0.0300	1.46		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.23"
0.2	14	0.0300	1.10		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.23"
0.8	177	0.0300	3.52		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.1	277	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment 10S: Subcatchment 10S

Runoff = 3.54 cfs @ 12.09 hrs, Volume= 0.299 af, Depth> 8.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 Yr 24 Hr(+15%) Rainfall=8.57"

Area (sf)	CN	Description
1,229	98	Roofs, HSG A
17,521	98	Roofs, HSG C
18,750	98	Weighted Average
18,750		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 11S: Subcatchment 11S

Runoff = 3.54 cfs @ 12.09 hrs, Volume= 0.299 af, Depth> 8.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 Yr 24 Hr(+15%) Rainfall=8.57"

Area (sf)	CN	Description
13,629	98	Roofs, HSG A
5,131	98	Roofs, HSG C
18,760	98	Weighted Average
18,760		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 12S: Subcatchment 12S

Runoff = 3.54 cfs @ 12.09 hrs, Volume= 0.299 af, Depth> 8.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 Yr 24 Hr(+15%) Rainfall=8.57"

Area (sf)	CN	Description
12,104	98	Roofs, HSG A
3,476	98	Roofs, HSG C
3,170	98	Roofs, HSG D
18,750	98	Weighted Average
18,750		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 13S: Subcatchment 13S

Runoff = 3.54 cfs @ 12.09 hrs, Volume= 0.299 af, Depth> 8.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 Yr 24 Hr(+15%) Rainfall=8.57"

Area (sf)	CN	Description
14,648	98	Roofs, HSG A
409	98	Roofs, HSG C
3,693	98	Roofs, HSG D
18,750	98	Weighted Average
18,750		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Reach 1R: Vegetated Swale

Inflow Area = 4.295 ac, 73.51% Impervious, Inflow Depth > 4.32" for 50 Yr 24 Hr(+15%) event
Inflow = 1.44 cfs @ 13.82 hrs, Volume= 1.545 af
Outflow = 1.44 cfs @ 13.88 hrs, Volume= 1.536 af, Atten= 0%, Lag= 3.6 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.36 fps, Min. Travel Time= 5.5 min
Avg. Velocity = 0.27 fps, Avg. Travel Time= 7.5 min

Peak Storage= 477 cf @ 13.88 hrs
Average Depth at Peak Storage= 0.43' , Surface Width= 10.57'
Bank-Full Depth= 2.00' Flow Area= 28.0 sf, Capacity= 24.03 cfs

8.00' x 2.00' deep channel, n= 0.150 Sheet flow over Short Grass
Side Slope Z-value= 3.0 '/' Top Width= 20.00'
Length= 120.0' Slope= 0.0050 '/'
Inlet Invert= 36.60', Outlet Invert= 36.00'

‡

Summary for Reach AP1: Wetlands

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 9.980 ac, 32.00% Impervious, Inflow Depth > 4.26" for 50 Yr 24 Hr(+15%) event
Inflow = 15.60 cfs @ 12.59 hrs, Volume= 3.541 af
Outflow = 15.60 cfs @ 12.59 hrs, Volume= 3.541 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Reach AP2: Map 266 Lot 5

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.786 ac, 0.00% Impervious, Inflow Depth > 0.72" for 50 Yr 24 Hr(+15%) event
Inflow = 0.22 cfs @ 12.48 hrs, Volume= 0.047 af
Outflow = 0.22 cfs @ 12.48 hrs, Volume= 0.047 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: CB 1

Inflow Area = 0.921 ac, 72.88% Impervious, Inflow Depth > 6.40" for 50 Yr 24 Hr(+15%) event
Inflow = 5.54 cfs @ 12.11 hrs, Volume= 0.491 af
Outflow = 5.54 cfs @ 12.11 hrs, Volume= 0.491 af, Atten= 0%, Lag= 0.0 min
Primary = 5.54 cfs @ 12.11 hrs, Volume= 0.491 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 49.19' @ 12.16 hrs
Flood Elev= 50.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	47.60'	**24.0" Round Culvert** L= 130.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 47.60' / 47.00' S= 0.0046 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=3.78 cfs @ 12.11 hrs HW=49.08' TW=48.85' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 3.78 cfs @ 2.11 fps)

Summary for Pond 2P: CB 2

Inflow Area = 1.604 ac, 75.26% Impervious, Inflow Depth > 6.57" for 50 Yr 24 Hr(+15%) event
Inflow = 9.72 cfs @ 12.10 hrs, Volume= 0.879 af
Outflow = 9.72 cfs @ 12.10 hrs, Volume= 0.879 af, Atten= 0%, Lag= 0.0 min
Primary = 9.72 cfs @ 12.10 hrs, Volume= 0.879 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 48.88' @ 12.13 hrs
Flood Elev= 50.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.90'	**24.0" Round Culvert** L= 67.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 46.90' / 46.60' S= 0.0045 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=8.57 cfs @ 12.10 hrs HW=48.85' TW=48.33' (Dynamic Tailwater)
1=Culvert (Inlet Controls 8.57 cfs @ 2.75 fps)

Summary for Pond 3P: CB 3

Inflow Area = 1.699 ac, 73.23% Impervious, Inflow Depth > 6.43" for 50 Yr 24 Hr(+15%) event
Inflow = 9.99 cfs @ 12.10 hrs, Volume= 0.910 af
Outflow = 9.99 cfs @ 12.10 hrs, Volume= 0.910 af, Atten= 0%, Lag= 0.0 min
Primary = 9.99 cfs @ 12.10 hrs, Volume= 0.910 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 48.33' @ 12.10 hrs
Flood Elev= 50.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.50'	**24.0" Round Culvert** L= 51.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 46.50' / 46.25' S= 0.0049 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=9.93 cfs @ 12.10 hrs HW=48.32' TW=46.49' (Dynamic Tailwater)
1=Culvert (Barrel Controls 9.93 cfs @ 4.34 fps)

Summary for Pond 4P: Focal Point 1

[92] Warning: Device #4 is above defined storage
[93] Warning: Storage range exceeded by 0.02'
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=37)

Inflow Area = 0.990 ac, 79.01% Impervious, Inflow Depth > 7.44" for 50 Yr 24 Hr(+15%) event
Inflow = 7.70 cfs @ 12.09 hrs, Volume= 0.614 af
Outflow = 3.68 cfs @ 12.08 hrs, Volume= 0.601 af, Atten= 52%, Lag= 0.0 min
Primary = 3.68 cfs @ 12.08 hrs, Volume= 0.469 af
Secondary = 1.39 cfs @ 12.61 hrs, Volume= 0.132 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 46.02' @ 12.60 hrs Surf.Area= 2,032 sf Storage= 4,409 cf

Plug-Flow detention time= 82.2 min calculated for 0.601 af (98% of inflow)
Center-of-Mass det. time= 69.2 min (833.7 - 764.5)

Volume	Invert	Avail.Storage	Storage Description
#1	42.05'	650 cf	**18.00'W x 51.00'L x 2.25'H Focal Point Area 1 Z=3.0** 3,250 cf Overall x 20.0% Voids
#2	44.30'	3,759 cf	**Surface Bowl (Prismatic)**Listed below (Recalc) -Impervious
		4,409 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
44.30	1,611	0	0
44.80	1,883	874	874
45.30	2,169	1,013	1,887
46.00	3,182	1,873	3,759

Device	Routing	Invert	Outlet Devices
#1	Primary	42.05'	**12.0" Round Culvert** L= 21.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 42.05' / 41.50' S= 0.0262 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	42.05'	**100.000 in/hr Exfiltration over Surface area** Phase-In= 0.10'
#3	Device 1	44.80'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	46.00'	**220.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=3.12 cfs @ 12.08 hrs HW=44.72' TW=43.63' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 3.12 cfs @ 3.97 fps)
└**2=Exfiltration** (Passes 3.12 cfs of 4.70 cfs potential flow)
└**3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=1.24 cfs @ 12.61 hrs HW=46.02' TW=0.00' (Dynamic Tailwater)
└**4=Broad-Crested Rectangular Weir** (Weir Controls 1.24 cfs @ 0.32 fps)

Summary for Pond 5P: Focal Point 2

Inflow Area = 1.958 ac, 67.73% Impervious, Inflow Depth > 6.12" for 50 Yr 24 Hr(+15%) event
Inflow = 10.48 cfs @ 12.11 hrs, Volume= 0.999 af
Outflow = 9.19 cfs @ 12.17 hrs, Volume= 0.998 af, Atten= 12%, Lag= 3.6 min
Primary = 9.19 cfs @ 12.17 hrs, Volume= 0.998 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 46.60' @ 12.17 hrs Surf.Area= 4,418 sf Storage= 1,348 cf

Plug-Flow detention time= 9.7 min calculated for 0.995 af (100% of inflow)

Center-of-Mass det. time= 8.8 min (787.6 - 778.9)

Volume	Invert	Avail.Storage	Storage Description
#1	44.00'	547 cf	**22.00'W x 35.00'L x 2.25'H Focal Point Area 1 Z=3.0** 2,735 cf Overall x 20.0% Voids
#2	44.00'	280 cf	**5.00'W x 45.00'L x 2.25'H Focal Point Area 2 Z=3.0** 1,402 cf Overall x 20.0% Voids
#3	46.25'	1,725 cf	**Surface Bowl (Prismatic)**Listed below (Recalc)
		2,552 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
46.25	1,369	0	0
46.75	1,720	772	772
47.25	2,089	952	1,725

Device	Routing	Invert	Outlet Devices
#1	Primary	44.00'	**18.0" Round Culvert** L= 234.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 44.00' / 42.80' S= 0.0051 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	44.00'	**100.000 in/hr Exfiltration over Surface area** Phase-In= 0.10'
#3	Device 1	46.75'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=9.09 cfs @ 12.17 hrs HW=46.58' TW=44.33' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 9.09 cfs @ 5.15 fps)
  └─**2=Exfiltration** (Passes 9.09 cfs of 10.20 cfs potential flow)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond 6P: Focal Point 3

[92] Warning: Device #4 is above defined storage
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=39)
[80] Warning: Exceeded Pond 8P by 0.03' @ 12.65 hrs (0.38 cfs 0.019 af)

Inflow Area =	1.347 ac,	77.88% Impervious,	Inflow Depth >	6.85" for 50 Yr 24 Hr(+15%) event
Inflow =	9.89 cfs @	12.09 hrs,	Volume=	0.769 af
Outflow =	9.33 cfs @	12.10 hrs,	Volume=	0.769 af, Atten= 6%, Lag= 0.8 min
Primary =	9.33 cfs @	12.10 hrs,	Volume=	0.769 af
Secondary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 46.34' @ 13.91 hrs Surf.Area= 4,047 sf Storage= 3,108 cf

Plug-Flow detention time= 36.6 min calculated for 0.768 af (100% of inflow)
Center-of-Mass det. time= 36.9 min (813.4 - 776.6)

Volume	Invert	Avail.Storage	Storage Description
#1	42.75'	641 cf	**19.00'W x 48.00'L x 2.25'H Focal Point Z=3.0** 3,206 cf Overall x 20.0% Voids
#2	45.00'	2,800 cf	**Surface Bowl (Prismatic)**Listed below (Recalc)
		3,441 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
45.00	1,510	0	0
45.50	1,772	821	821
46.00	2,048	955	1,776
46.50	2,048	1,024	2,800

Device	Routing	Invert	Outlet Devices
#1	Primary	42.75'	**24.0" Round Culvert** L= 132.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 42.75' / 41.40' S= 0.0102 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 1	42.75'	**100.000 in/hr Exfiltration over Surface area** Phase-In= 0.10'
#3	Device 1	45.00'	**24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	46.50'	**194.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=9.31 cfs @ 12.10 hrs HW=45.14' TW=43.65' (Dynamic Tailwater)
└─**1=Culvert** (Passes 9.31 cfs of 14.06 cfs potential flow)
  ├─**2=Exfiltration** (Exfiltration Controls 8.29 cfs)
  └─**3=Orifice/Grate** (Weir Controls 1.02 cfs @ 1.20 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=42.75' TW=0.00' (Dynamic Tailwater)
└─**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 7P: DMH 2

Inflow Area = 1.958 ac, 67.73% Impervious, Inflow Depth > 6.11" for 50 Yr 24 Hr(+15%) event
Inflow = 9.19 cfs @ 12.17 hrs, Volume= 0.998 af
Outflow = 9.19 cfs @ 12.17 hrs, Volume= 0.998 af, Atten= 0%, Lag= 0.0 min
Primary = 9.19 cfs @ 12.17 hrs, Volume= 0.998 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 46.34' @ 13.86 hrs
Flood Elev= 47.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	42.30'	**30.0" Round Culvert** L= 74.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 42.30' / 41.50' S= 0.0108 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=0.00 cfs @ 12.17 hrs HW=44.33' TW=44.45' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Summary for Pond 8P: DMH 1

Inflow Area = 0.430 ac,100.00% Impervious, Inflow Depth > 8.32" for 50 Yr 24 Hr(+15%) event
Inflow = 3.54 cfs @ 12.09 hrs, Volume= 0.299 af
Outflow = 3.54 cfs @ 12.09 hrs, Volume= 0.299 af, Atten= 0%, Lag= 0.0 min
Primary = 3.54 cfs @ 12.09 hrs, Volume= 0.299 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 46.52' @ 12.09 hrs
Flood Elev= 47.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	45.30'	**15.0" Round Culvert** L= 54.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 45.30' / 45.00' S= 0.0056 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.44 cfs @ 12.09 hrs HW=46.50' TW=45.13' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 3.44 cfs @ 3.65 fps)

Summary for Pond 9P: R-Tank 1

[80] Warning: Exceeded Pond 4P by 0.33' @ 13.85 hrs (1.71 cfs 0.424 af)
[80] Warning: Exceeded Pond 7P by 0.18' @ 12.20 hrs (7.80 cfs 0.347 af)
[80] Warning: Exceeded Pond 10P by 2.82' @ 23.90 hrs (23.41 cfs 0.682 af)

Inflow Area = 4.295 ac, 73.51% Impervious, Inflow Depth > 6.25" for 50 Yr 24 Hr(+15%) event
Inflow = 22.12 cfs @ 12.12 hrs, Volume= 2.236 af
Outflow = 1.44 cfs @ 13.82 hrs, Volume= 1.545 af, Atten= 94%, Lag= 102.2 min
Primary = 1.44 cfs @ 13.82 hrs, Volume= 1.545 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 46.33' @ 13.82 hrs Surf.Area= 8,782 sf Storage= 48,004 cf

Plug-Flow detention time= 311.1 min calculated for 1.542 af (69% of inflow)
Center-of-Mass det. time= 185.1 min (991.0 - 805.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	40.00'	7,411 cf	**36.81'W x 238.58'L x 8.21'H Field A** 72,058 cf Overall - 53,530 cf Embedded = 18,528 cf x 40.0% Voids
#2A	40.25'	50,853 cf	**ACF R-Tank HD 5** x 2500 Inside #1 Inside= 15.7"W x 83.5"H => 8.67 sf x 2.35'L = 20.3 cf Outside= 15.7"W x 83.5"H => 9.13 sf x 2.35'L = 21.4 cf 2500 Chambers in 25 Rows
		58,265 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	40.00'	**12.0" Round Culvert** L= 56.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 40.00' / 36.60' S= 0.0607 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	40.00'	**4.7" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.44 cfs @ 13.82 hrs HW=46.33' TW=37.03' (Dynamic Tailwater)
↑**1=Culvert** (Passes 1.44 cfs of 7.21 cfs potential flow)
↑**2=Orifice/Grate** (Orifice Controls 1.44 cfs @ 11.93 fps)

Summary for Pond 10P: DMH 3

[80] Warning: Exceeded Pond 6P by 0.61' @ 23.95 hrs (3.45 cfs 0.246 af)

Inflow Area =	1.347 ac,	77.88% Impervious,	Inflow Depth >	6.85"	for 50 Yr 24 Hr(+15%) event
Inflow =	9.33 cfs @	12.10 hrs, Volume=	0.769 af		
Outflow =	9.33 cfs @	12.10 hrs, Volume=	0.769 af,	Atten= 0%,	Lag= 0.0 min
Primary =	9.33 cfs @	12.10 hrs, Volume=	0.769 af		

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 46.34' @ 13.87 hrs
Flood Elev= 47.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	41.20'	**30.0" Round Culvert** L= 8.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 41.20' / 41.00' S= 0.0250 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=0.00 cfs @ 12.10 hrs HW=43.65' TW=43.85' (Dynamic Tailwater)
↑**1=Culvert** (Controls 0.00 cfs)

APPENDIX III

Charts, Graphs, and Calculations

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	New Hampshire
Location	
Longitude	70.790 degrees West
Latitude	43.043 degrees North
Elevation	0 feet
Date/Time	Mon, 03 Aug 2020 15:51:28 **-0400**

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.82	1.04	**1yr**	0.71	0.98	1.22	1.57	2.04	2.67	2.94	**1yr**	2.37	2.83	3.24	3.96	4.58	**1yr**
2yr	0.32	0.50	0.62	0.81	1.02	1.30	**2yr**	0.88	1.18	1.52	1.94	2.50	3.23	3.59	**2yr**	2.86	3.45	3.96	4.71	5.36	**2yr**
5yr	0.37	0.58	0.73	0.98	1.25	1.61	**5yr**	1.08	1.47	1.89	2.44	3.15	4.09	4.61	**5yr**	3.62	4.43	5.07	5.97	6.74	**5yr**
10yr	0.41	0.65	0.82	1.12	1.45	1.89	**10yr**	1.25	1.73	2.24	2.90	3.77	4.90	5.57	**10yr**	4.34	5.35	6.13	7.16	8.03	**10yr**
25yr	0.48	0.76	0.97	1.34	1.78	2.34	**25yr**	1.53	2.15	2.78	3.64	4.76	6.21	7.15	**25yr**	5.50	6.87	7.87	9.09	10.12	**25yr**
50yr	0.54	0.86	1.10	1.54	2.08	2.76	**50yr**	1.79	2.53	3.30	4.34	5.69	7.45	8.64	**50yr**	6.59	8.31	9.50	10.90	12.07	**50yr**
100yr	0.60	0.97	1.25	1.77	2.42	3.26	**100yr**	2.09	2.98	3.92	5.18	6.81	8.92	10.46	**100yr**	7.90	10.05	11.49	13.08	14.39	**100yr**
200yr	0.68	1.10	1.43	2.05	2.83	3.85	**200yr**	2.44	3.52	4.63	6.16	8.13	10.69	12.65	**200yr**	9.46	12.16	13.89	15.69	17.16	**200yr**
500yr	0.80	1.32	1.72	2.49	3.49	4.78	**500yr**	3.01	4.39	5.79	7.74	10.29	13.60	16.27	**500yr**	12.03	15.65	17.86	19.98	21.68	**500yr**

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.23	0.36	0.44	0.59	0.73	0.89	**1yr**	0.63	0.87	0.92	1.33	1.67	2.24	2.55	**1yr**	1.99	2.45	2.88	3.17	3.91	**1yr**
2yr	0.32	0.49	0.60	0.81	1.00	1.19	**2yr**	0.86	1.16	1.37	1.82	2.34	3.08	3.48	**2yr**	2.72	3.35	3.85	4.58	5.11	**2yr**
5yr	0.35	0.54	0.67	0.92	1.17	1.41	**5yr**	1.01	1.38	1.61	2.12	2.73	3.82	4.24	**5yr**	3.38	4.08	4.76	5.59	6.30	**5yr**
10yr	0.39	0.60	0.74	1.03	1.33	1.60	**10yr**	1.15	1.57	1.81	2.39	3.06	4.41	4.93	**10yr**	3.91	4.74	5.52	6.49	7.28	**10yr**
25yr	0.44	0.67	0.84	1.19	1.57	1.91	**25yr**	1.36	1.86	2.10	2.76	3.54	4.75	6.00	**25yr**	4.20	5.77	6.78	7.92	8.80	**25yr**
50yr	0.49	0.74	0.92	1.32	1.78	2.18	**50yr**	1.54	2.13	2.35	3.08	3.94	5.37	6.95	**50yr**	4.75	6.68	7.91	9.22	10.17	**50yr**
100yr	0.54	0.82	1.03	1.48	2.03	2.48	**100yr**	1.75	2.42	2.63	3.42	4.36	6.04	8.04	**100yr**	5.35	7.73	9.24	10.74	11.76	**100yr**
200yr	0.60	0.90	1.14	1.66	2.31	2.83	**200yr**	1.99	2.77	2.94	3.78	4.81	6.78	9.31	**200yr**	6.00	8.95	10.79	12.52	13.61	**200yr**
500yr	0.70	1.04	1.34	1.94	2.76	3.39	**500yr**	2.38	3.31	3.42	4.32	5.49	7.89	11.30	**500yr**	6.99	10.86	13.26	15.37	16.49	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.29	0.44	0.54	0.72	0.89	1.08	**1yr**	0.77	1.06	1.26	1.74	2.20	3.01	3.16	**1yr**	2.66	3.04	3.61	4.39	5.08	**1yr**
2yr	0.34	0.52	0.64	0.86	1.07	1.27	**2yr**	0.92	1.24	1.48	1.96	2.51	3.45	3.71	**2yr**	3.05	3.57	4.10	4.85	5.67	**2yr**
5yr	0.40	0.62	0.77	1.05	1.34	1.62	**5yr**	1.15	1.59	1.88	2.53	3.24	4.36	4.96	**5yr**	3.86	4.77	5.40	6.38	7.17	**5yr**
10yr	0.47	0.72	0.89	1.25	1.61	1.98	**10yr**	1.39	1.93	2.28	3.10	3.94	5.37	6.20	**10yr**	4.75	5.96	6.80	7.85	8.76	**10yr**
25yr	0.58	0.88	1.09	1.56	2.05	2.57	**25yr**	1.77	2.51	2.95	4.06	5.13	7.84	8.31	**25yr**	6.94	7.99	9.09	10.34	11.41	**25yr**
50yr	0.67	1.02	1.27	1.83	2.46	3.13	**50yr**	2.12	3.06	3.59	4.99	6.28	9.81	10.40	**50yr**	8.68	10.00	11.34	12.71	13.95	**50yr**
100yr	0.79	1.19	1.49	2.16	2.96	3.81	**100yr**	2.55	3.72	4.36	6.14	7.71	12.28	13.01	**100yr**	10.87	12.51	14.13	15.66	17.06	**100yr**
200yr	0.92	1.39	1.76	2.55	3.55	4.65	**200yr**	3.07	4.55	5.32	7.56	9.46	15.41	16.29	**200yr**	13.63	15.66	17.64	19.29	20.88	**200yr**
500yr	1.14	1.70	2.19	3.18	4.53	6.04	**500yr**	3.91	5.90	6.91	9.98	12.44	20.81	21.93	**500yr**	18.42	21.08	23.64	25.40	27.27	**500yr**

RIP RAP CALCULATIONS
Industrial Warehouse
375 Banfield Road
Portsmouth, NH 03801

Jones & Beach Engineers, Inc.
P.O. Box 219
Stratham, NH 03885
30-Dec-20

Rip Rap equations were obtained from the *Stormwater Management and Erosion Control Handbook for Urban and Developing Areas in New Hampshire.*
Aprons are sized for the 25-Year storm event.

TAILWATER < HALF THE D_o

$L_a = (1.8 \times Q) / D_0^{3/2} + (7 \times D_o)$

$W = L_a + (3 \times D_o)$ or defined channel width

$d_{50} = (0.02 \times Q^{4/3}) / (T_w \times D_0)$

Culvert or Catch Basin (Sta. No.)	Tailwater (Feet) T_w	Discharge (C.F.S.) Q	Diameter of Pipe D_o	Length of Rip Rap L_a (feet)	Width of Rip Rap W (feet)	d_{50}-Median Stone Rip Rap d50 (feet)
12" PVC (Pond #9P)	0.26	1.33	1	9.4	12	0.11
15" PVC (Sub #12S)	0.47	2.95	1.25	12.5	16	0.14

TAILWATER > HALF THE D_o

$L_a = (3.0 \times Q) / D_0^{3/2} + (7 \times D_o)$

$W = (0.4 \times L_a) + (3 \times D_o)$ or defined channel width

$d_{50} = (0.02 \times Q^{4/3}) / (T_w \times D_0)$

Culvert or Catch Basin (Sta. No.)	Tailwater (Feet) T_w	Discharge (C.F.S.) Q	Diameter of Pipe D_o	Length of Rip Rap L_a (feet)	Width of Rip Rap W (feet)	d_{50}-Median Stone Rip Rap d50 (feet)
24" PVC (Pond #3P)	1.01	8.01	2	22.5	15	0.16
15" PVC (Pond #8P)	0.71	2.95	1.25	15.1	10	0.10

Table 7-24 -- Recommended Rip Rap Gradation Ranges				
d_{50} Size =	0.25	Feet	3	Inches
% of Weight Smaller		Size of Stone (Inches)		
Than the Given d_{50} Size		From		To
100%		5		6
85%		4		5
50%		3		5
15%		1		2

Table 7-24 -- Recommended Rip Rap Gradation Ranges				
d_{50} Size =	0.5	Feet	6	Inches
% of Weight Smaller		Size of Stone (Inches)		
Than the Given d_{50} Size		From		To
100%		9		12
85%		8		11
50%		6		9
15%		2		3

STORMWATER MANAGEMENT OPERATION AND MAINTENANCE MANUAL

Prepared for:

Banfield Realty, LLC
Map 266, Lot 7
375 Banfield Road
Portsmouth, NH

Prepared by:
Jones & Beach Engineers, Inc.
85 Portsmouth Avenue
P.O. Box 219
Stratham, NH 03885
Phone: (603) 772-4746
December 30, 2020
JBE Project No. 19190.2

Inspection and Maintenance of Facilities and Property

A. Maintenance of Common Facilities or Property

1. Banfield Realty, LLC, future owners and assigns are responsible to perform the maintenance obligations or hire a Professional Engineer to review the site on an annual basis for maintenance and certification of the stormwater system. Banfield Realty, LLC, future owners and assigns shall keep receipts and records of all maintenance companies hired throughout the year to submit along with the following form. The annual report and certification shall be submitted with three copies to the DPW and the Town Planner by December 31st of each year. The Inspection and Maintenance records must be provided to NH Department of Environmental Services upon request.

B. General Inspection and Maintenance Requirements

1. Temporary and permanent stormwater and sediment and erosion control facilities to be maintained on the site include, but are not limited to, the following:

   a. Silt fencing
   b. Temporary diversion and swales
   c. Construction entrances
   d. Catch basins and drain manholes
   e. Culverts
   f. Vegetated Treatment Swale
   g. Vegetation and landscaping
   h. Parking lots and roadways
   i. ACF Environmental R-Tank Underground Detention System
   j. ACF Environmental Focal Point Biofiltration System
   k. Riprap inlet and outlet protection aprons

2. Maintenance of temporary measures shall follow the following schedule:

   a. The general contractor shall strictly adhere to the Stormwater Pollution Prevention Plan (SWPPP) during construction operations.

   b. During the construction process, all silt fencing will be **inspected during and after storm events** to ensure that the fence still has integrity and is not allowing sediment to pass. Any section of fence that has failed or is failing is to be replaced immediately, overlapping adjacent fence sections by at least one foot. If the problem persists, measures such as additional fencing (i.e. double) or the addition of haybales on the project side of the fence line should be considered. Sediment is to be removed from behind the fencing if found to be deeper than six inches and disposed of properly.

   c. Sediment is to be removed from behind diversions if found to be deeper than six inches and disposed of properly.

d. Culvert inlet protection measures should be **inspected once per week** and after every major storm event. Sediment accumulations around the stone should be removed if they are deeper than six inches. If extensive amounts of sediment appear to have become trapped within the gravel filter stone such that proper operation of the structure has become impractical, the stone should be cleaned or otherwise replaced.

e. The stabilized construction entrance(s) shall be **inspected weekly** and after every rain event in order to ensure that the pad(s) are not becoming choked with sediment. Additional stone shall be added if required.

f. All construction debris and trash shall be removed from the site at the completion of construction and disposed of properly.

g. Once construction has been completed, the contractor is to remove all temporary erosion control measures and, if necessary, smooth and revegetated the areas disturbed by the removal.

3. Maintenance of permanent measures shall follow the following schedule:

a. Normal winter roadway and parking lot maintenance including plowing and snow removal.

b. Road and parking lot sweeping at the end of every winter, preferably at the start of the spring rain season.

c. **Inspection** of culvert inlets and outlets at least **once per month** during the rainy season (March to November). Any debris is to be removed and disposed of properly.

d. **Annual inspection** of the site for erosion, destabilization, settling, and sloughing. Any needed repairs are to be conducted immediately.

e. Annual inspection of catch basins and drain manholes to determine if they need to be cleaned. Catch basins are to be cleaned if the depth of deposits is greater than one-half the depth from the basin bottom to the invert of the lowest pipe or opening into or out of the basin. If a catch basin significantly exceeds the one-half depth standard during the inspection, then it should be cleaned more frequently. If woody debris or trash accumulates in a catch basin, then it should be cleaned on a weekly basis. Manholes should be cleaned of any material upon inspection. Catch basins and manholes can be cleaned either manually or by specially designed equipment including, but not limited to, bucket loaders and vacuum pumps. Before any materials can be disposed, it is necessary to perform a detailed chemical analysis to determine if the materials meet the EPA criteria for hazardous waste. This will help determine how the materials should be stored, treated, and disposed. Grease hoods are to be wiped clean and the rags disposed of properly. Debris obscuring the grate inlet should also be removed.

f. **Annual inspection** of site's vegetation and landscaping. Any areas that are bare shall be reseeded and mulched with hay or, if the case is extreme, loamed and seeded or sodded to ensure adequate vegetative cover. Landscape specimens shall be replaced in kind if they are found to be dead or dying.

g. Permanent stone check dams should be **inspected annually** in order to ensure that they are in good condition. Any sediment accumulated behind them shall be removed if it is deeper than six inches.

h. Rock riprap should be **inspected annually** and after every major storm event in order to ensure that it has not been displaced, undermined, or otherwise damaged. Displaced rock should be replaced, or additional rock added in order to maintain the structure(s) in their undamaged state. Woody vegetation should not be allowed to become established in riprap areas, and/or any debris removed from the void spaces between the rocks. If the riprap is adjacent to a stream or other waterbody, the water should be kept clear of obstructions, debris, and sediment deposits.

i. ACF Environmental R-Tank Underground Detention System:

See attached ACF Environmental inspection and maintenance guidance document.

j. ACF Environmental Focal Point Biofiltration System:

See attached ACF Environmental inspection and maintenance guidance document.

k. Treatment Swales:

Inspect annually for erosion, sediment accumulation, vegetation loss, and presence of invasive species. Perform periodic mowing; frequency depends on location and type of grass. Do not cut shorter than Water Quality Flow depth (maximum 4-inches). Remove debris and accumulated sediment, based on inspection. Repair eroded areas, remove invasive species and dead vegetation, and reseed with applicable grass mix as warranted by inspection.

Annual Operations and Maintenance Report

Banfield Realty, LLC, future owners and assigns are responsible to perform the maintenance obligations or hire a Professional Engineer to review the site on an annual basis for maintenance and certification of the stormwater system. Banfield Realty, LLC, future owners and assigns shall keep receipts and records of all maintenance companies hired throughout the year to submit along with the following form. The annual report and certification shall be submitted with three copies to the DPW and the Town Planner by December 31st of each year. The Inspection and Maintenance records must be provided to NH Department of Environmental Services upon request.

Construction Activity	Date of Inspection	Who Inspected	Findings of Inspector
Catch Basin #1			
Catch Basin #2			
Catch Basin #3			
Drain Manhole #1			
Drain Manhole #2			
Drain Manhole #3			
Drain Manhole #4			

Culverts			
Vegetation and landscaping			
Parking lots and roadways			
Vegetated Swale			
ACF R-Tank			
ACF Focal Point #1			
ACF Focal Point #2			

ACF Focal Point #3			
Rip-Rap Inlet and Outlet Protection Aprons			
Other:			
Other:			
Other:			

See attached sample forms as a guideline.

Any inquiries in regards to the design, function, and/or maintenance of any one of the above-mentioned facilities or tasks shall be directed to the project engineer:

Jones & Beach Engineers, Inc.
85 Portsmouth Avenue
P.O. Box 219
Stratham, NH 03885

T#: (603) 772-4746
F#: (603) 772-0227

Commitment to maintenance requirements

I agree to complete and/or observe all of the required maintenance practices and their respective schedules as outlined above.

_____
Owner's Name

_____
Print Name

_____
Title

_____
Date

SWIFT WATER GIRL SCOUT COUNCIL
ONE COMMERCE DR
BEDFORD, NH 03110

(4) MAILBOXES

UP NET&T CO 24

UP PSNH
226/25/94/25
SIGN BRAKES

UP 226/24

UP NHG/3
80T/226/23

1-1/2" IRON PIPE
0.8' EXPOSED

UP PSNH
226/26/26

INV.
12" CMP
ELEV.=31.92'

EDGE OF PAVEMENT

SWL BANFIELD ROAD
PUBLIC WAY

DYL

GUARD RAIL

GATE

N 41°23'28" E
115.41'

IR FND
LLS 625

S 54°53'27" E
135.22'

N 40°48'23" E
310.00'

N 41°02'02" E
129.00'

INV.
12" RCP
ELEV.=33.18'

DH FND

80.00'
N 48°48'35" E

APPROXIMATE CENTERLINE PEASE AFB FLIGHT LINE
(DIGITIZED FROM PLAN D-34218)

S 54°37'55" E
196.66'

N 54°18'38" W
200.00'

DH FND

BARB WIRE (TYP.)

N 46°21'59" E
280.00'

N 54°25'30" W
619.04'

MAP 266 LOT 8
ELIZABETH ECKER
425 BANFIELD RD
PORTSMOUTH, NH 03801
BK 5182 PG 2990

1S

599B

400E

EXISTING
COMMERCIAL
BUILDING

EXISTING
COMMERCIAL
BUILDING

DH FND

MW-109

MW-105

EXISTING
SHED

100B

MW-4

400B

MW-10

6" PVC
INV=48.10

900B

EXISTING
LEACH FIELD

MW-108

6" PVC
INV=46.95

MOWED
FIELD

MW-5

538B

TP2

38B

510C

TP4

EXISTING 10' WIDE TRAIL

TP3

MW-6

MW-104

AP1

EXISTING
MONITORING WELL
(TYP.)

MW-7

1158

100B

38B

2S

TP5

510E

510B

510D

100HB

MW-103

MW-11

DH FND

60

MW-107

TP6

TP7

AP2

510C

400D

510E

JB FND
LLS 717

S 56°28'28" E
496.53'

S 54°44'36" W
938.14'

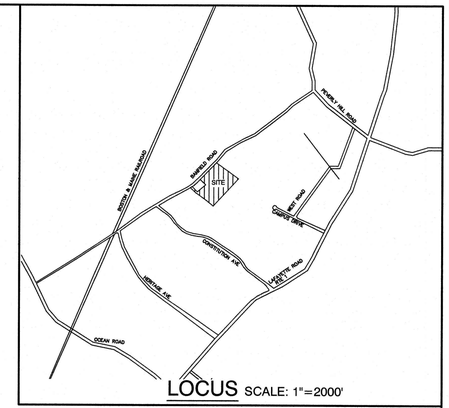
8' WIDE TRAIL

MAP 266 LOT 5
HOPE FOR TOMORROW FOUNDATION
1 STONERIDGE DR
RYE, NH 03870
BK 5783 PG 602

MAP 266 LOT 84
FOUNDATION FOR SEACOAST HEALTH
100 CAMPUS DRIVE, SUITE 1
PORTSMOUTH, NH 03801
BK 3276 PG 2980

N 53°45'09" W
173.05'

MAP 266 LOT 84
FOUNDATION FOR SEACOAST HEALTH
100 CAMPUS DRIVE, SUITE 1
PORTSMOUTH, NH 03801
BK 3276 PG 2980



LOCUS SCALE: 1"=2000'

LEGEND

- SUBCATCHMENT BOUNDARY
- SUBCATCHMENT (X)
- REACH [X]
- POND (X)
- TC PATH
- WETLANDS
- HISS SOILS
- FLOW ARROW

PROJECT PARCEL
TOWN OF PORTSMOUTH
TAX MAP 266, LOT 7

TOTAL LOT AREA
651,747 S.F.
14.96 ACRES

F:\CADD\MASTER STANDARD\dwg\JB-LAYOUTS.dwg 3/12/2015 3:27:29 PM EDT

Design: JAC	Draft: DJM
Checked: JAC	Scale: AS-NOTED
Drawing Name: 19190-PLAN.dwg	

Date: 04/21/20
Project No.: 19190.2

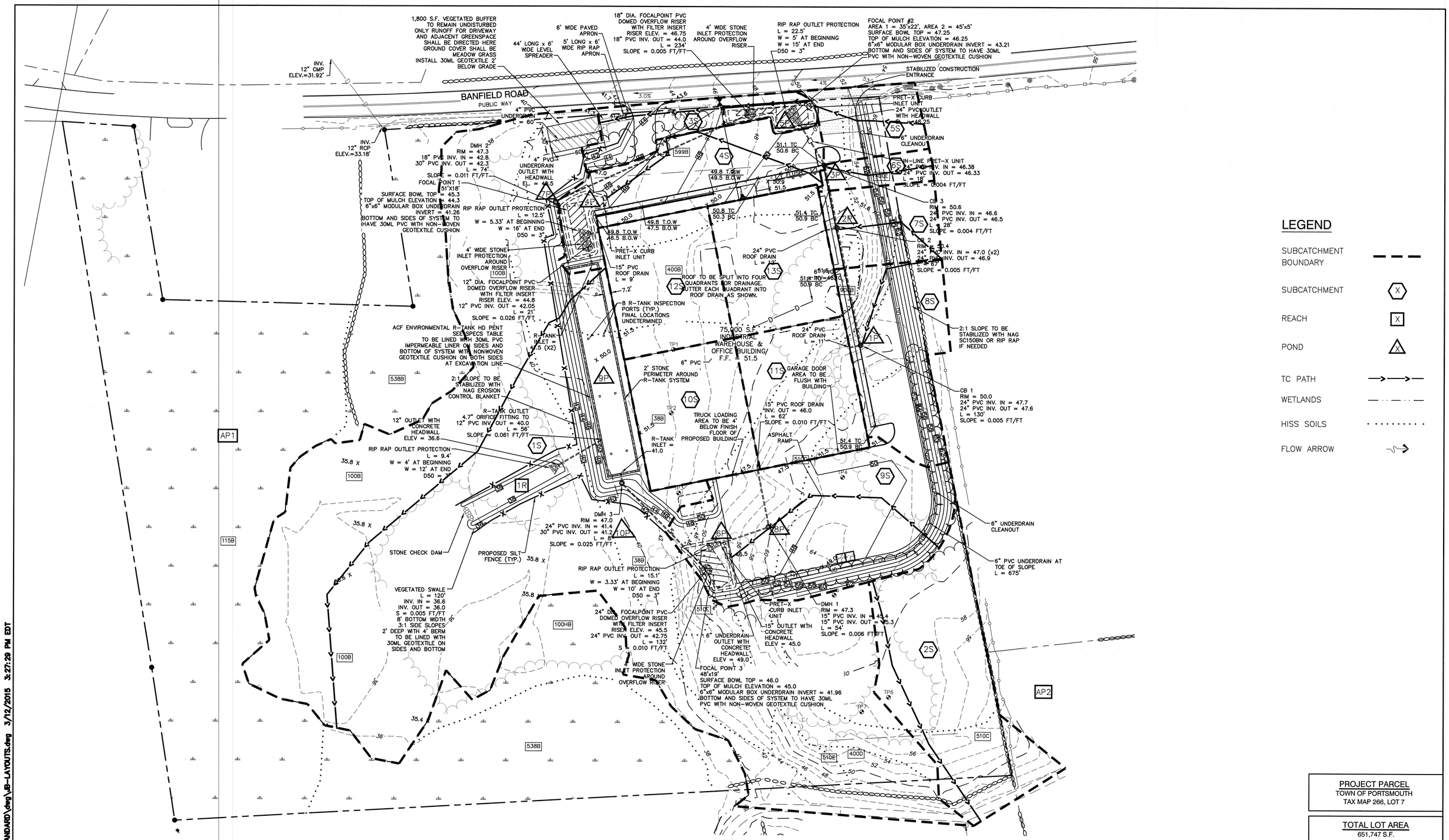
STATE OF NEW HAMPSHIRE
MICHAEL J. KE... No. 9648
LICENSED PROFESSIONAL ENGINEER

REV.	DATE	REVISION	BY
0	12/30/20	ISSUED FOR REVIEW	DJM

Designed and Produced in NH
Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: EXISTING WATERSHED PLAN
Project: INDUSTRIAL WAREHOUSE
375 BANFIELD ROAD, PORTSMOUTH, NH 03801
Owner of Record: BANFIELD REALTY LLC
304 MAPLEWOOD AVENUE, PORTSMOUTH, NH 03801

DRAWING No.
W1
SHEET 1 OF 2
JBE PROJECT NO. 19190.2



LEGEND

- SUBCATCHMENT BOUNDARY
- SUBCATCHMENT (X)
- REACH [X]
- POND (X)
- TC PATH
- WETLANDS
- HISS SOILS
- FLOW ARROW

PROJECT PARCEL
TOWN OF PORTSMOUTH
TAX MAP 266, LOT 7

TOTAL LOT AREA
651,747 S.F.
14.96 ACRES

F:\CADD\MASTER STANDARD\dwg\JB-LAYOUTS.dwg 3/12/2015 3:27:29 PM EDT

Design: JAC	Draft: DJM	Date: 04/21/20
Checked: JAC	Scale: AS-NOTED	Project No.: 19190.2
Drawing Name: 19190-PLAN.dwg		

STATE OF NEW HAMPSHIRE – MICHAEL J. KERIVAN No. 9640 – LICENSED PROFESSIONAL ENGINEER

REV.	DATE	REVISION	BY
0	12/30/20	ISSUED FOR REVIEW	DJM

Designed and Produced in NH
Jones & Beach Engineers, Inc.
85 Portsmouth Ave.
PO Box 219
Stratham, NH 03885
Civil Engineering Services
603-772-4746
FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	PROPOSED WATERSHED PLAN
Project:	INDUSTRIAL WAREHOUSE 375 BANFIELD ROAD, PORTSMOUTH, NH 03801
Owner of Record:	BANFIELD REALTY LLC 304 MAPLEWOOD AVENUE, PORTSMOUTH, NH 03801

DRAWING No.
W2
SHEET 2 OF 2
JBE PROJECT NO. 19190.2