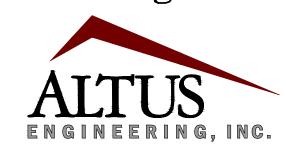
# WATSON'S LANDING Residential Subdivision

# Owner/Applicant:

FREDERICK W. WATSON REVOCABLE TRUST Robert D. Watson, Trustee

53 Sleepy Hollow Drive Greenland, NH 03840

# Civil Engineer:



133 Court Street (603) 433-2335

www.altus-eng.co

# Surveyor:

KNIGHT HILL LAND SURVEYING SERVICES, INC. c/o David Hislop, LLS

34 Old Post Road Newington, NH 03801 (603) 436—1330

# Soil Scientist:

MICHAEL CUOMO

6 York Pond Road York, ME 03909 (207) 363-4532

# Acoustics Consultant:

REUTER ASSOCIATES, LLC Eric L. Reuter, FASA, INCE Bd. Cert., Principal

10 Vaughan Mall, Suite 201A Portsmouth, NH 03801 (603) 430-2081

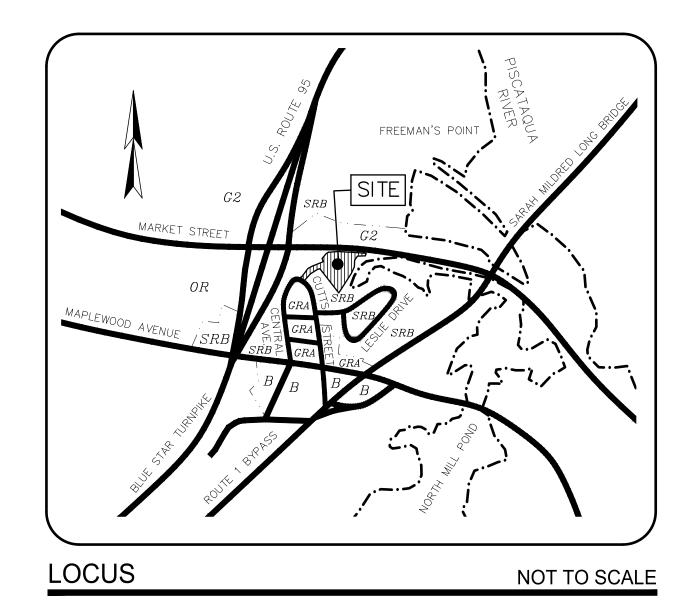
# 1 Clark Drive Portsmouth, New Hampshire

Assessor's Parcel 209, Lot 33

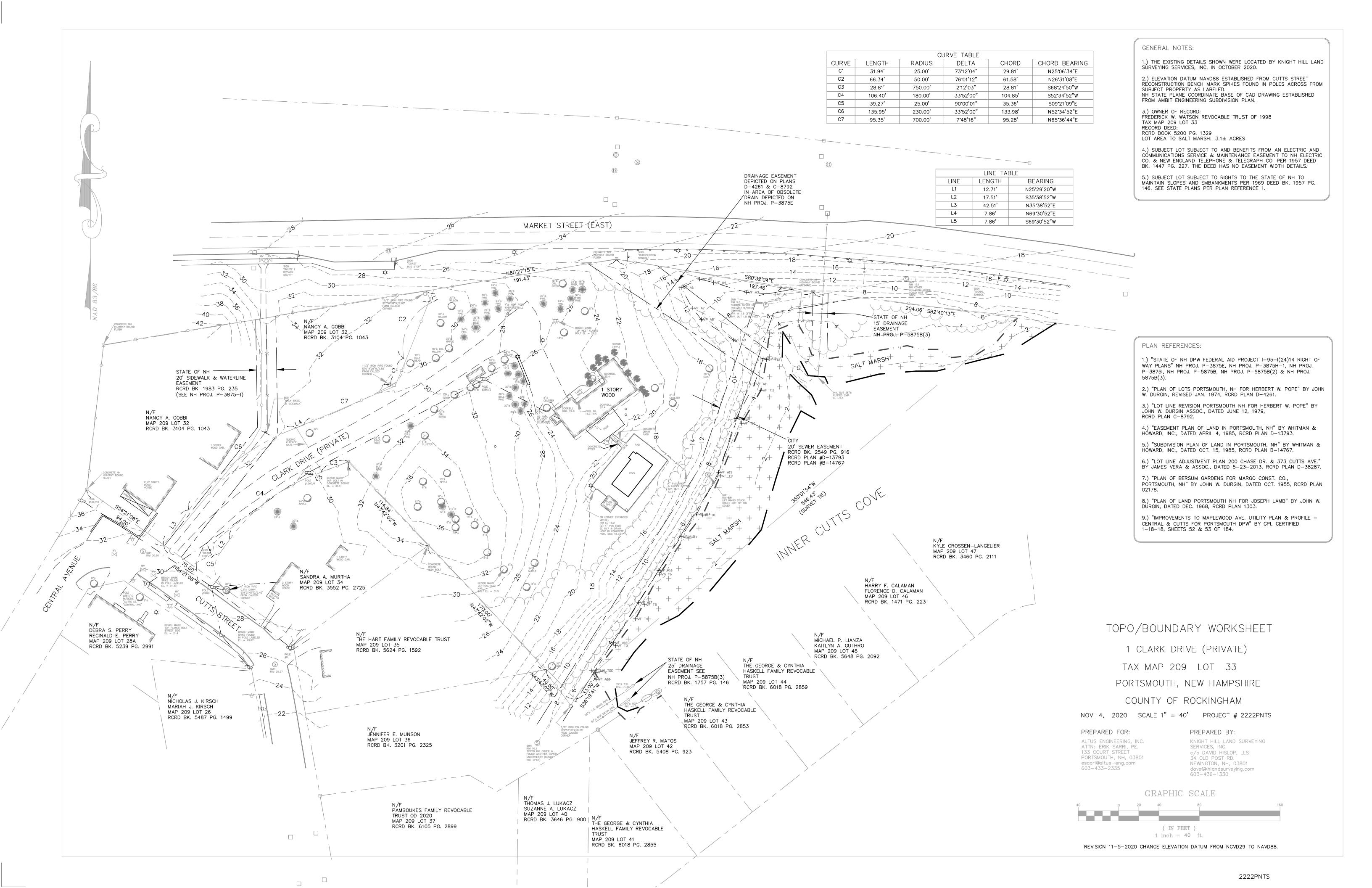
ISSUED FOR TAC WORK SESSION

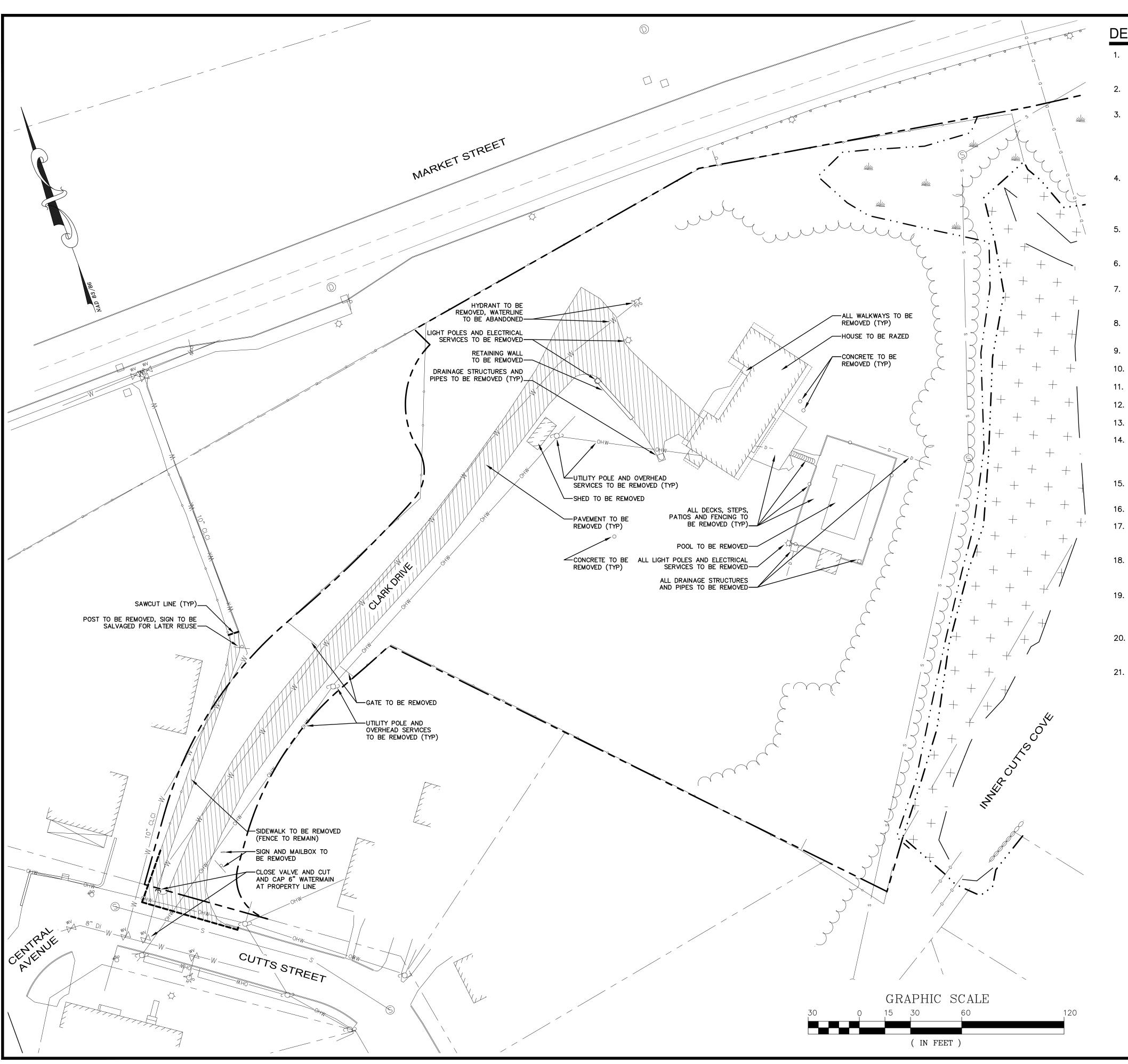
Plan Issue Date:

**DECEMBER 1, 2020** 



Sheet Index Title	$Sheet \\ No.:$	Rev.	Date
Topo/Boundary Worksheet (by KHLSS)	1 of 1	0	11/04/20
Demolition Plan	C-1	0	12/01/20
Subdivision Plan	C-2	0	12/01/20
Roadway Plan & Profile	C-3	0	12/01/20
Stormwater Management Plan	C-4	0	12/01/20
Utility Plan	C - 5	0	12/01/20
Detail Sheet	D-1	0	12/01/20
Detail Sheet	D-2	0	12/01/20
Detail Sheet	D-3	0	12/01/20
Detail Sheet	D-4	0	12/01/20





#### **DEMOLITION NOTES**

- 1. CITY DEMOLITION PERMIT REQUIRED PRIOR TO ANY DEMOLITION ACTIVITIES. CONTRACTOR IS NOTIFIED THAT THIS PERMIT PROCESS MAY REQUIRE A 30-DAY LEAD TIME.
- 2. CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING UTILITIES SCHEDULED TO REMAIN.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE TIMELY NOTIFICATION OF ALL PARTIES, CORPORATIONS, COMPANIES, INDIVIDUALS AND STATE AND LOCAL AUTHORITIES OWNING AND/OR HAVING JURISDICTION OVER ANY UTILITIES RUNNING TO, THROUGH OR ACROSS AREAS TO BE DISTURBED BY DEMOLITION AND/OR CONSTRUCTION ACTIVITIES WHETHER OR NOT SAID UTILITIES ARE SUBJECT TO DEMOLITION, RELOCATION, MODIFICATION AND/OR CONSTRUCTION.
- 4. ALL UTILITY DISCONNECTIONS/DEMOLITIONS/RELOCATIONS SHALL BE COORDINATED BETWEEN THE CONTRACTOR, ALL APPROPRIATE UTILITY COMPANIES, PORTSMOUTH DPW AND ABUTTING PROPERTY OWNERS. UNLESS OTHERWISE SPECIFIED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RELATED EXCAVATION, TRENCHING AND BACKFILLING.
- 5. WHERE SPECIFIED TO REMAIN, MANHOLE RIMS, CATCH BASIN GRATES, VALVE COVERS, HANDHOLES, ETC. SHALL BE ADJUSTED TO FINISH GRADE UNLESS OTHERWISE SPECIFIED.
- 6. SEE EROSION CONTROL PLANS FOR EROSION AND SEDIMENT CONTROL MEASURES THAT SHALL BE IN PLACE PRIOR TO DEMOLITION ACTIVITIES.
- 7. ALL MATERIALS SCHEDULED FOR DEMOLITION OR REMOVAL ON PRIVATE PROPERTY SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE SPECIFIED.
- 8. ALL MATERIAL SCHEDULED TO BE REMOVED SHALL BE LEGALLY DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS/CODES.
- 9. WATER: PORTSMOUTH DPW, JIM TOW, (603) 427-1530.
- 10. TELECOMMUNICATIONS: CONSOLIDATED, JOE CONSIDINE, (603) 427-5525.
- 11. CABLE: COMCAST, MIKE COLLINS, (603) 679-5695, EXT. 1037.
- 12. ELECTRICAL: EVERSOURCE, MICHAEL BUSBY, (603) 332-4227, EXT. 5555334.
- 13. GAS: UNITIL, DAVID BEAULIEU, (603) 294-5144.
- 14. CONTRACTOR TO CONTACT PORTSMOUTH DPW A MINIMUM OF TWO WEEKS PRIOR TO ANY DEMOLITION TO COORDINATE ALL WORK CONCERNING DISCONNECTION/DEMOLITION OF ANY PROPOSED WATER AND SEWER LINE IMPROVEMENTS.
- 15. ALL WATER MAIN AND SERVICE DISCONNECTIONS SHALL CONFORM TO PORTSMOUTH DPW STANDARDS.
- 16. NO BURNING SHALL BE PERMITTED PER LOCAL REGULATIONS.
- 17. HAZARDOUS MATERIALS ENCOUNTERED DURING DEMOLITION AND CONSTRUCTION ACTIVITIES SHALL BE ABATED IN STRICT ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL REGULATIONS.
- 18. AT NO TIME SHALL ANY UTILITY SERVICE OR VEHICULAR ACCESS TO ADJOINING PROPERTIES BE COMPLETELY INTERRUPTED UNLESS A FULL SHUTDOWN IS COORDINATED WITH ALL AFFECTED PARTIES AND UTILITY PROVIDER(S).
- 19. SHOULD GROUNDWATER BE ENCOUNTERED DURING EXCAVATION, APPROPRIATE BEST MANAGEMENT PRACTICES SHALL BE EMPLOYED TO ENSURE SEDIMENT LADEN WATER IS NOT DISCHARGED INTO THE CITY DRAINAGE SYSTEM. A DISCHARGE PERMIT SHALL BE OBTAINED PRIOR TO DISCHARGING GROUNDWATER.
- 20. EXISTING HOUSE IS SERVICE BY AN INTERNAL HEATING OIL TANK. REMOVAL AND DISPOSAL OF TANK SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE REGULATIONS.
- 21. THIS PLAN IS INTENDED TO PROVIDE MINIMUM GUIDELINES FOR THE DEMOLITION OF EXISTING SITE FEATURES. UNLESS OTHERWISE NOTED TO REMAIN, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL BUILDINGS, PAVEMENT, CONCRETE, CURBING, SIGNS, POLES, UTILITIES, FENCES, VEGETATION AND OTHER EXISTING FEATURES AS NECESSARY TO FULLY CONSTRUCT THE



133 Court Street Portsmouth, NH 03801 (603) 433-2335 www.altus-eng.com

NOT FOR CONSTRUCTION

SSUED FOR:

TAC WORK SESSION

ISSUE DATE:

DECEMBER 1, 2020

BY DATE

REVISIONS
NO. DESCRIPTION

0 TAC WORK SESSION EBS 12/01/20

DRAWN BY: \_\_\_\_\_\_EBS

APPROVED BY: \_\_\_\_\_EDW

DRAWING FILE: \_\_\_\_\_5090-SITE.dwg

SCALE:

 $22" \times 34" 1" = 30'$  $11" \times 17" 1" = 60'$ 

WNER:

FREDERICK W. WATSON
REVOCABLE TRUST,
ROBERT D. WATSON,
TRUSTEE

53 SLEEPY HOLLOW DRIVE GREENLAND, NH 03840

APPLICANT:

FREDERICK W. WATSON REVOCABLE TRUST, ROBERT D. WATSON, TRUSTEE

53 SLEEPY HOLLOW DRIVE GREENLAND, NH 03840

PROJECT:

WATSON'S LANDING

TAX MAP 209, LOT 33

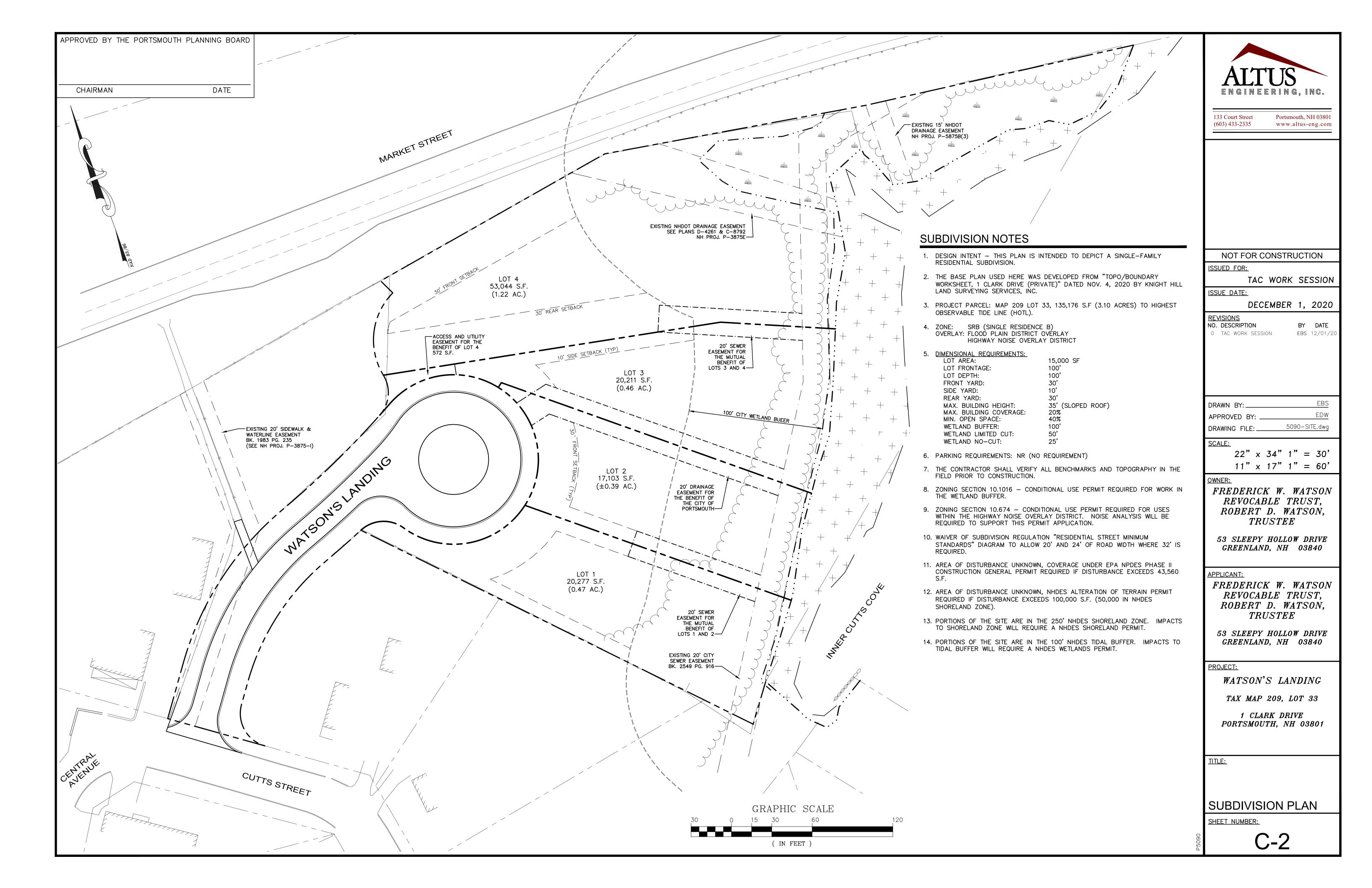
1 CLARK DRIVE PORTSMOUTH, NH 03801

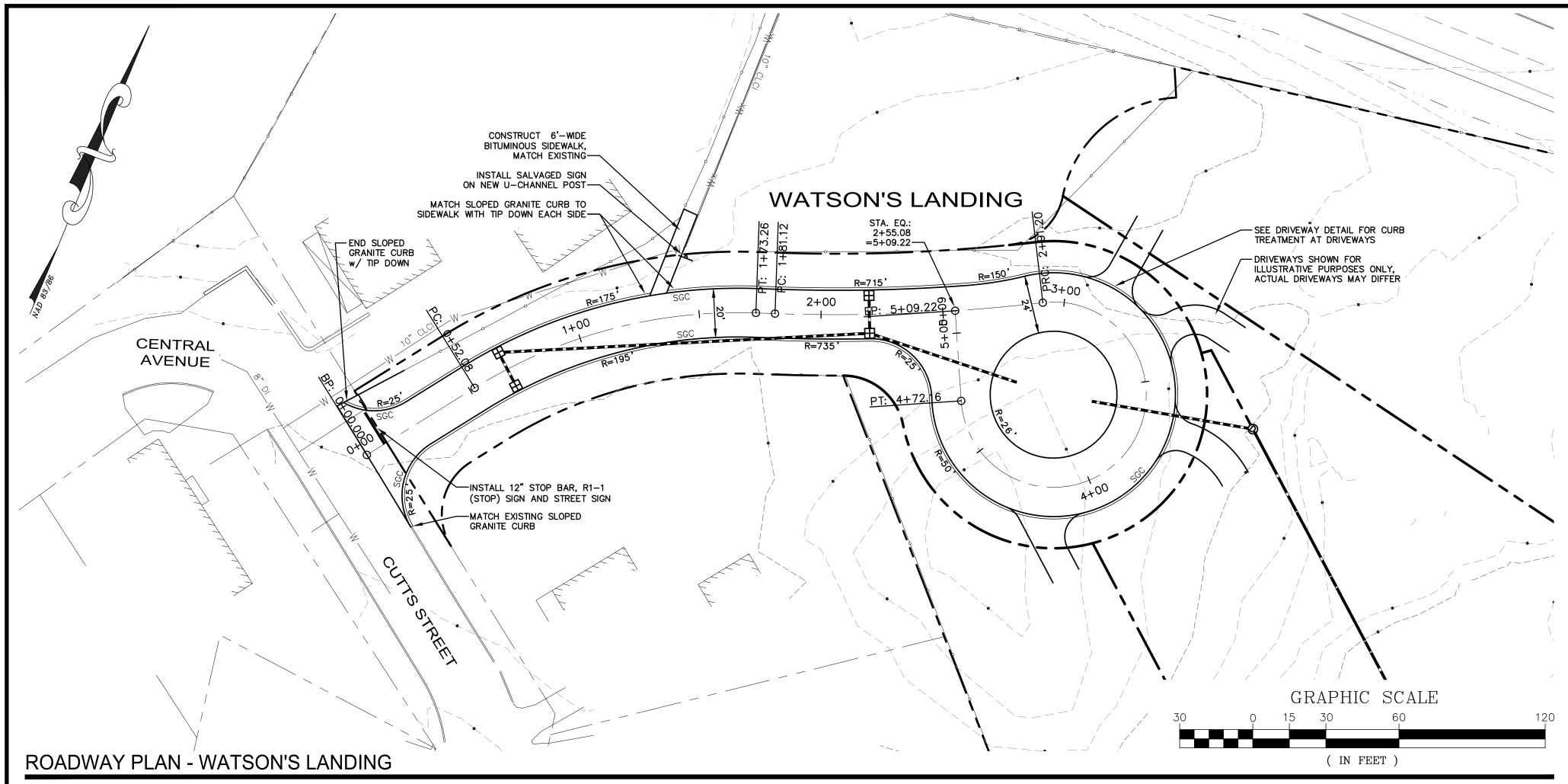
TITLE:

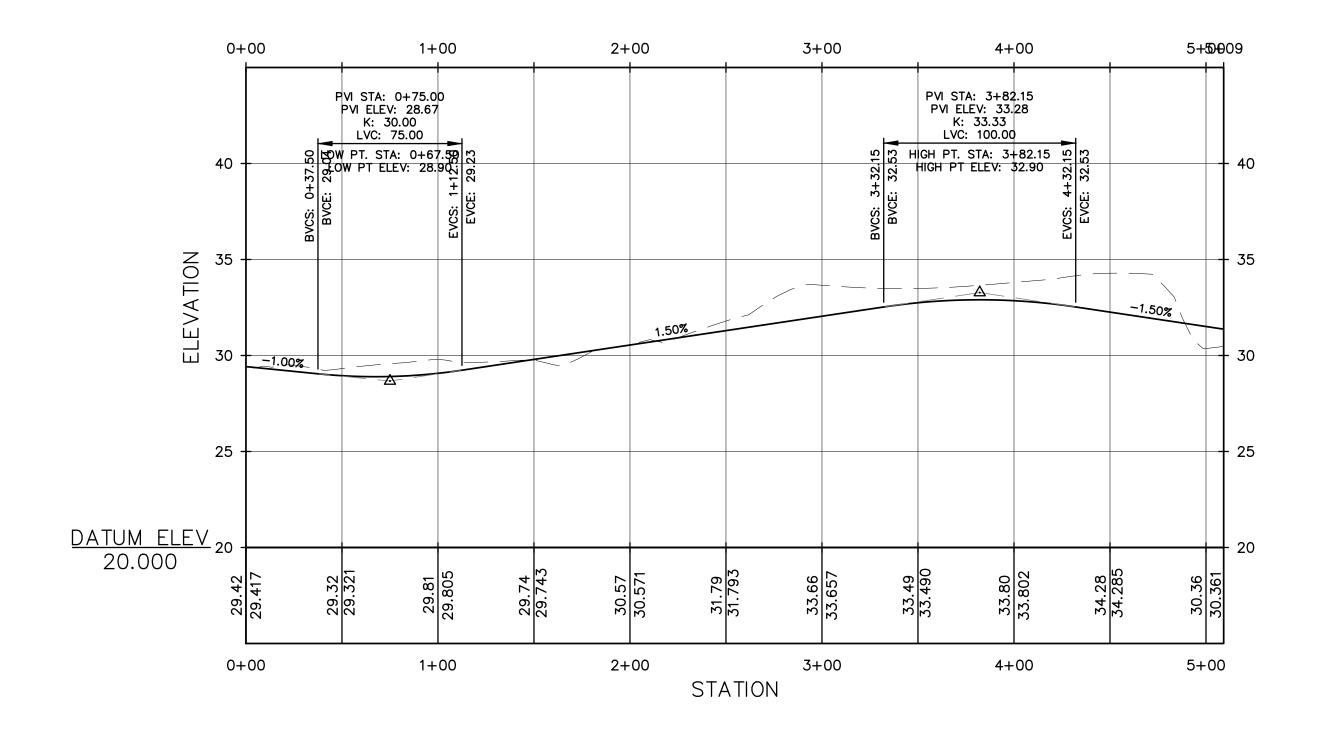
DEMOLITION PLAN

SHEET NUMBER:

C-1



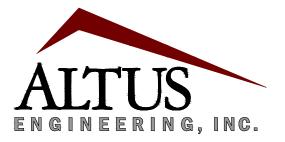




# GRAPHIC SCALE (IN FEET) 1 inch = 50 feet Horiz. 1 inch = 5 feet Vert.

## GRADING AND DRAINAGE NOTES

- 1. DO NOT BEGIN CONSTRUCTION UNTIL ALL STATE AND LOCAL PERMITS HAVE BEEN APPLIED FOR AND RECEIVED.
- 2. CONTRACTOR SHALL OBTAIN A "DIGSAFE" NUMBER AT LEAST 72 HOURS PRIOR TO COMMENCING CONSTRUCTION.
- 3. ALL CONSTRUCTION SHALL MEET THE MINIMUM CONSTRUCTION STANDARDS OF THE CITY OF PORTSMOUTH AND NHDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION. THE MORE STRINGENT SPECIFICATION SHALL GOVERN.
- 4. ALL BENCHMARKS AND TOPOGRAPHY SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO INITIATING CONSTRUCTION.
- 5. UNLESS OTHERWISE AGREED IN WRITING, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING TEMPORARY BENCHMARKS (TBM) AND PERFORMING ALL CONSTRUCTION SURVEY LAYOUT.
- 6. PRIOR TO CONSTRUCTION, FIELD VERIFY JUNCTIONS, LOCATIONS AND ELEVATIONS/INVERTS OF ALL EXISTING STORMWATER AND UTILITY LINES. PRESERVE AND PROTECT LINES TO BE RETAINED.
- 7. TEMPORARY INLET PROTECTION MEASURES SHALL BE INSTALLED IN ALL EXISTING AND PROPOSED CATCH BASINS WITHIN 100' OF THE PROJECT SITE WHEN SITE WORK WITHIN CONTRIBUTING AREAS IS ACTIVE OR SAID AREAS HAVE NOT BEEN STABILIZED.
- 8. PROTECTION OF SUBGRADE: THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN STABLE, DEWATERED SUBGRADES FOR FOUNDATIONS, PAVEMENT AREAS, UTILITY TRENCHES, AND OTHER AREAS DURING CONSTRUCTION. SUBGRADE DISTURBANCE MAY BE INFLUENCED BY EXCAVATION METHODS, MOISTURE, PRECIPITATION, GROUNDWATER CONTROL, AND CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PREVENT SUBGRADE DISTURBANCE. SUCH PRECAUTIONS MAY INCLUDE DIVERTING STORMWATER RUNOFF AWAY FROM CONSTRUCTION AREAS, REDUCING TRAFFIC IN SENSITIVE AREAS, AND MAINTAINING AN EFFECTIVE DEWATERING PROGRAM. SOILS EXHIBITING HEAVING OR INSTABILITY SHALL BE OVER EXCAVATED TO MORE COMPETENT BEARING SOIL AND REPLACED WITH FREE DRAINING STRUCTURAL FILL. IF THE EARTHWORK IS PERFORMED DURING FREEZING WEATHER, EXPOSED SUBGRADES ARE SUSCEPTIBLE TO FROST. NO FILL OR UTILITIES SHALL BE PLACED ON FROZEN GROUND. THIS WILL LIKELY REQUIRE REMOVAL OF A FROZEN SOIL CRUST AT THE COMMENCEMENT OF EACH DAY'S OPERATIONS. THE FINAL SUBGRADE ELEVATION WOULD ALSO REQUIRE AN APPROPRIATE DEGREE OF INSULATION AGAINST FREEZING.
- 9. IF SUITABLE, EXCAVATED MATERIALS SHALL BE PLACED AS FILL WITHIN UPLAND AREAS ONLY AND SHALL NOT BE PLACED WITHIN WETLANDS. PLACEMENT OF BORROW MATERIALS SHALL BE PERFORMED IN A MANNER THAT PREVENTS LONG TERM DIFFERENTIAL SETTLEMENT. EXCESSIVELY WET MATERIALS SHALL BE STOCKPILED AND ALLOWED TO DRAIN BEFORE PLACEMENT. FROZEN MATERIAL SHALL NOT BE USED FOR CONSTRUCTION.
- 10. ALL CATCH BASIN, MANHOLE AND OTHER DRAINAGE RIMS SHALL BE SET FLUSH WITH OR NO LESS THAN 0.1' BELOW FINISH GRADE. ANY RIM ABOVE SURROUNDING FINISH GRADE SHALL NOT BE ACCEPTED.
- 11. ALL SPOT GRADES ARE AT FINISH GRADE AND BOTTOM OF CURB WHERE APPLICABLE.
- 12. IN ORDER TO PROVIDE VISUAL CLARITY ON THE PLANS, DRAINAGE AND OTHER UTILITY STRUCTURES MAY NOT BE DRAWN TO SCALE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER SIZING AND LOCATION OF ALL STRUCTURES AND IS DIRECTED TO RESOLVE ANY POTENTIAL DISCREPANCY WITH THE ENGINEER PRIOR TO CONSTRUCTION.



133 Court Street Portsmouth, NH 03801 (603) 433-2335 www.altus-eng.com

NOT FOR CONSTRUCTION

ISSUED FOR:

TAC WORK SESSION

ISSUE DATE:

DECEMBER 1, 2020

BY DATE

REVISIONS
NO. DESCRIPTION

D TAC WORK SESSION EBS 12/01/20

DRAWN BY: \_\_\_\_\_\_EBS

APPROVED BY: \_\_\_\_\_EDW

DRAWING FILE: \_\_\_\_\_5090-SITE.dwg

SCALE:

22" x 34" 1" = 30' 11" x 17" 1" = 60'

WNER:

FREDERICK W. WATSON
REVOCABLE TRUST,
ROBERT D. WATSON,
TRUSTEE

53 SLEEPY HOLLOW DRIVE GREENLAND, NH 03840

APPLICANT:

FREDERICK W. WATSON REVOCABLE TRUST, ROBERT D. WATSON, TRUSTEE

53 SLEEPY HOLLOW DRIVE GREENLAND, NH 03840

PROJECT:

WATSON'S LANDING

TAX MAP 209, LOT 33

1 CLARK DRIVE PORTSMOUTH, NH 03801

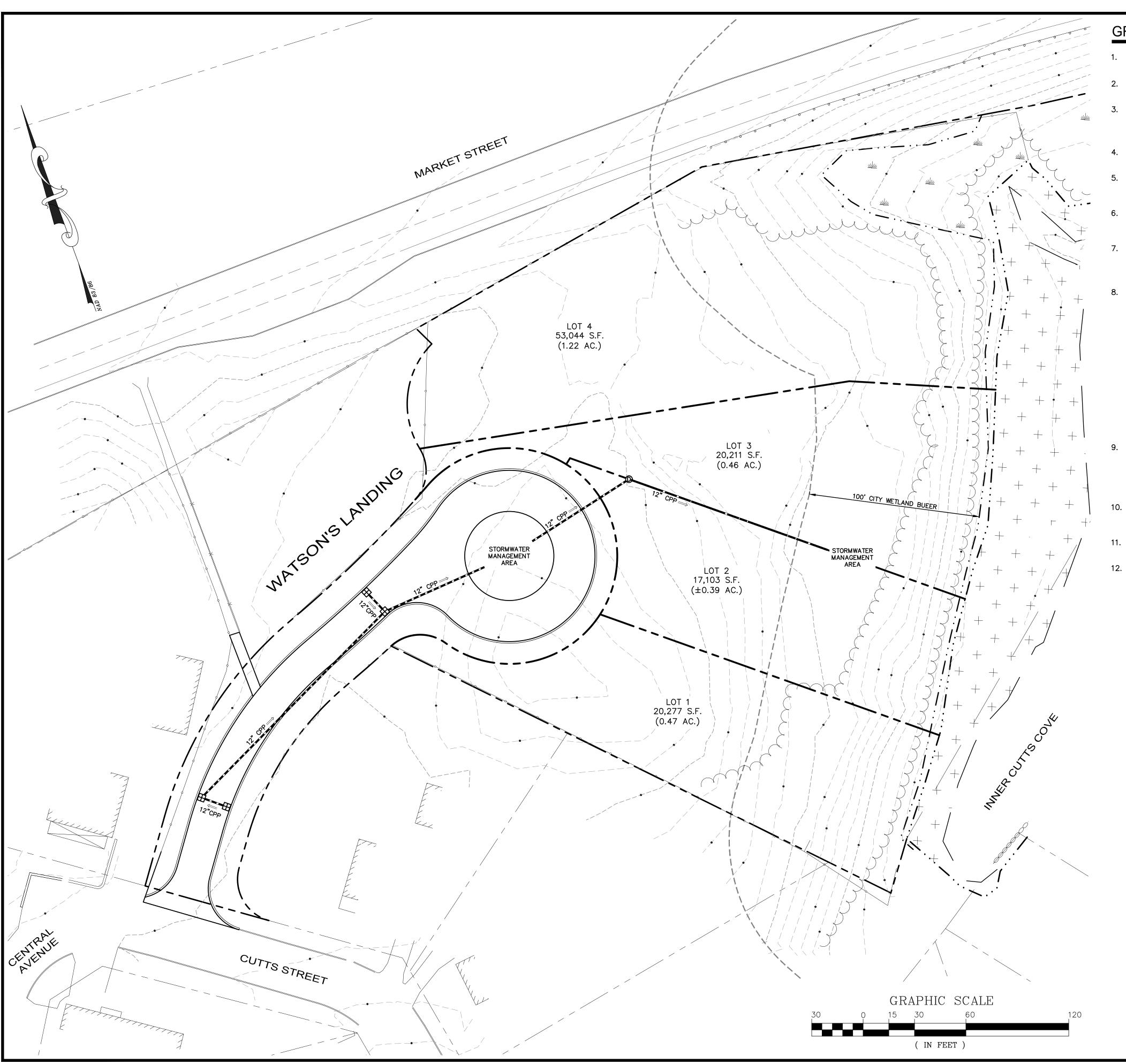
TITLE:

ROADWAY PLAN AND PROFILE

SHEET NUMBER:

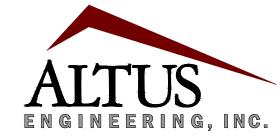
**C-3** 

ROADWAY PROFILE - WATSON'S LANDING



## GRADING AND DRAINAGE NOTES

- 1. DO NOT BEGIN CONSTRUCTION UNTIL ALL STATE AND LOCAL PERMITS HAVE BEEN APPLIED FOR AND RECEIVED.
- 2. CONTRACTOR SHALL OBTAIN A "DIGSAFE" NUMBER AT LEAST 72 HOURS PRIOR TO COMMENCING CONSTRUCTION.
- 3. ALL CONSTRUCTION SHALL MEET THE MINIMUM CONSTRUCTION STANDARDS OF THE CITY OF PORTSMOUTH AND NHDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION. THE MORE STRINGENT SPECIFICATION SHALL GOVERN.
- 4. ALL BENCHMARKS AND TOPOGRAPHY SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO INITIATING CONSTRUCTION.
- 5. UNLESS OTHERWISE AGREED IN WRITING, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING TEMPORARY BENCHMARKS (TBM) AND PERFORMING ALL CONSTRUCTION SURVEY LAYOUT.
- 6. PRIOR TO CONSTRUCTION, FIELD VERIFY JUNCTIONS, LOCATIONS AND ELEVATIONS/INVERTS OF ALL EXISTING STORMWATER AND UTILITY LINES. PRESERVE AND PROTECT LINES TO BE RETAINED.
- 7. TEMPORARY INLET PROTECTION MEASURES SHALL BE INSTALLED IN ALL EXISTING AND PROPOSED CATCH BASINS WITHIN 100' OF THE PROJECT SITE WHEN SITE WORK WITHIN CONTRIBUTING AREAS IS ACTIVE OR SAID AREAS HAVE NOT BEEN STABILIZED.
- 8. PROTECTION OF SUBGRADE: THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN STABLE, DEWATERED SUBGRADES FOR FOUNDATIONS, PAVEMENT AREAS, UTILITY TRENCHES, AND OTHER AREAS DURING CONSTRUCTION, SUBGRADE DISTURBANCE MAY BE INFLUENCED BY EXCAVATION METHODS, MOISTURE, PRECIPITATION, GROUNDWATER CONTROL, AND CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PREVENT SUBGRADE DISTURBANCE. SUCH PRECAUTIONS MAY INCLUDE DIVERTING STORMWATER RUNOFF AWAY FROM CONSTRUCTION AREAS, REDUCING TRAFFIC IN SENSITIVE AREAS, AND MAINTAINING AN EFFECTIVE DEWATERING PROGRAM. SOILS EXHIBITING HEAVING OR INSTABILITY SHALL BE OVER EXCAVATED TO MORE COMPETENT BEARING SOIL AND REPLACED WITH FREE DRAINING STRUCTURAL FILL. IF THE EARTHWORK IS PERFORMED DURING FREEZING WEATHER, EXPOSED SUBGRADES ARE SUSCEPTIBLE TO FROST. NO FILL OR UTILITIES SHALL BE PLACED ON FROZEN GROUND. THIS WILL LIKELY REQUIRE REMOVAL OF A FROZEN SOIL CRUST AT THE COMMENCEMENT OF EACH DAY'S OPERATIONS. THE FINAL SUBGRADE ELEVATION WOULD ALSO REQUIRE AN APPROPRIATE DEGREE OF INSULATION AGAINST FREEZING.
- 9. IF SUITABLE, EXCAVATED MATERIALS SHALL BE PLACED AS FILL WITHIN UPLAND AREAS ONLY AND SHALL NOT BE PLACED WITHIN WETLANDS. PLACEMENT OF BORROW MATERIALS SHALL BE PERFORMED IN A MANNER THAT PREVENTS LONG TERM DIFFERENTIAL SETTLEMENT. EXCESSIVELY WET MATERIALS SHALL BE STOCKPILED AND ALLOWED TO DRAIN BEFORE PLACEMENT. FROZEN MATERIAL SHALL NOT BE USED FOR CONSTRUCTION.
- 10. ALL CATCH BASIN, MANHOLE AND OTHER DRAINAGE RIMS SHALL BE SET FLUSH WITH OR NO LESS THAN 0.1' BELOW FINISH GRADE. ANY RIM ABOVE SURROUNDING FINISH GRADE SHALL NOT BE ACCEPTED.
- 11. ALL SPOT GRADES ARE AT FINISH GRADE AND BOTTOM OF CURB WHERE APPLICABLE.
- 12. IN ORDER TO PROVIDE VISUAL CLARITY ON THE PLANS, DRAINAGE AND OTHER UTILITY STRUCTURES MAY NOT BE DRAWN TO SCALE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER SIZING AND LOCATION OF ALL STRUCTURES AND IS DIRECTED TO RESOLVE ANY POTENTIAL DISCREPANCY WITH THE ENGINEER PRIOR TO CONSTRUCTION.



133 Court Street Portsmouth, NH 03801 (603) 433-2335 www.altus-eng.com

NOT FOR CONSTRUCTION

ISSUED FOR:

TAC WORK SESSION

ISSUE DATE:

DECEMBER 1, 2020

BY DATE

REVISIONS
NO. DESCRIPTION

TAC WORK SESSION EBS 12/01/20

DRAWN BY: \_\_\_\_\_\_EBS

APPROVED BY: \_\_\_\_\_EDW

DRAWING FILE: \_\_\_\_\_5090-SITE.dwg

SCALE:

 $22" \times 34" 1" = 30'$  $11" \times 17" 1" = 60'$ 

OWNER:

FREDERICK W. WATSON
REVOCABLE TRUST,
ROBERT D. WATSON,
TRUSTEE

53 SLEEPY HOLLOW DRIVE GREENLAND, NH 03840

APPLICANT:

FREDERICK W. WATSON REVOCABLE TRUST, ROBERT D. WATSON, TRUSTEE

53 SLEEPY HOLLOW DRIVE GREENLAND, NH 03840

PROJECT:

WATSON'S LANDING

TAX MAP 209, LOT 33

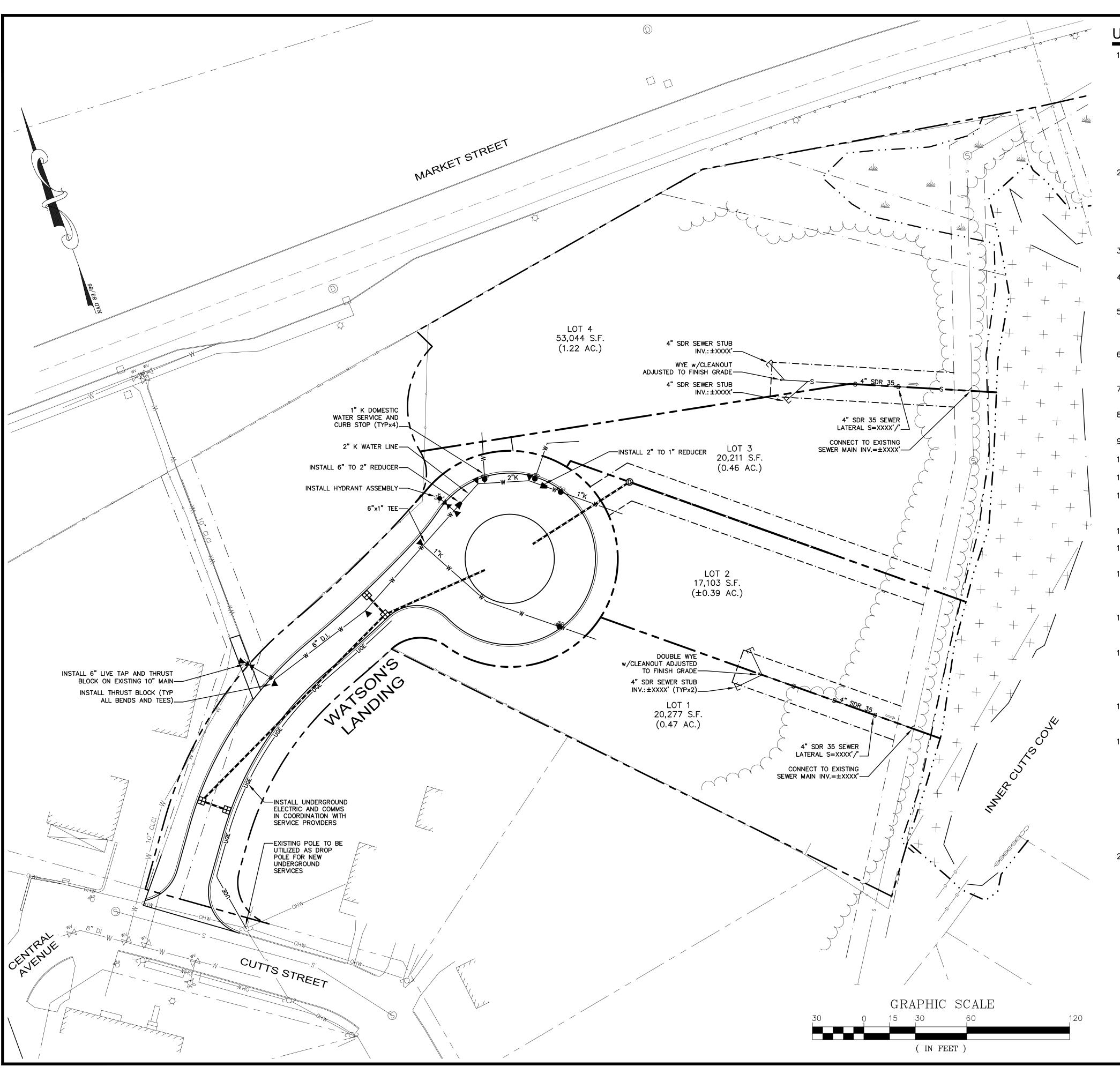
1 CLARK DRIVE PORTSMOUTH, NH 03801

TITLE:

STORMWATER
MANAGEMENT PLAN

SHEET NUMBER:

C-4



#### **UTILITY NOTES**

- 1. THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES SHOWN HEREON ARE APPROXIMATE AND ARE BASED UPON THE FIELD LOCATION OF ALL VISIBLE STRUCTURES (IE. CATCH BASINS, MANHOLES, WATER GATES, ETC.) AND INFORMATION COMPILED FROM PLANS PROVIDED BY UTILITY PROVIDERS AND GOVERNMENTAL AGENCIES. AS SUCH, THEY ARE NOT INCLUSIVE AS OTHER UTILITIES AND UNDERGROUND STRUCTURES THAT ARE NOT SHOWN ON THE PLANS MAY EXIST. THE ENGINEER, SURVEYOR AND OWNER ACCEPT NO RESPONSIBILITY FOR POTENTIAL INACCURACIES IN THE PLAN AND/OR UNFORESEEN CONDITIONS. THE CONTRACTOR SHALL NOTIFY, IN WRITING, SAID AGENCIES, UTILITY PROVIDERS, CITY OF PORTSMOUTH DPW AND OWNER'S AUTHORIZED REPRESENTATIVE AND CALL DIG SAFE AT 1 (800) DIG—SAFE AT LEAST SEVENTY—TWO (72) HOURS PRIOR TO ANY EXCAVATION WORK.
- 2. PRIOR TO CONSTRUCTION, IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND FIELD VERIFY JUNCTIONS, LOCATIONS AND ELEVATIONS/INVERTS OF ALL EXISTING AND PROPOSED STORMWATER AND UTILITY LINES. CONFLICTS SHALL BE ANTICIPATED AND ALL EXISTING LINES TO BE RETAINED SHALL BE PROTECTED. ANY DAMAGE DONE TO EXISTING UTILITIES SHALL BE REPAIRED AND, IF NECESSARY, EXISTING UTILITIES SHALL BE RELOCATED AT NO EXTRA COST TO THE OWNER. ALL CONFLICTS SHALL BE RESOLVED WITH THE INVOLVEMENT OF THE ENGINEER, DPW AND APPROPRIATE UTILITIES.
- 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE POSTING OF ALL BONDS AND PAYMENT OF ALL TAP, TIE-IN AND CONNECTION FEES.
- 4. ALL ROAD/LANE CLOSURES OR OTHER TRAFFIC INTERRUPTIONS SHALL BE COORDINATED WITH THE PORTSMOUTH POLICE DEPARTMENT AND DPW AT LEAST TWO WEEKS PRIOR TO COMMENCING RELATED CONSTRUCTION.
- 5. ALL CONSTRUCTION SHALL MEET THE MINIMUM CONSTRUCTION STANDARDS OF THE CITY OF PORTSMOUTH AND NHDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, LATEST EDITION. THE MORE STRINGENT SPECIFICATION SHALL COVERN
- 6. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRENCHING, BEDDING, BACKFILL & COMPACTION FOR ALL UTILITY TRENCHING IN ADDITION TO ALL CONDUIT INSTALLATION AND COORDINATION OF ALL REQUIRED INSPECTIONS.
- 7. ALL TRENCHING, PIPE LAYING AND BACKFILLING SHALL CONFORM TO FEDERAL OSHA AND CITY REGULATIONS.
- 8. FINAL UTILITY LOCATIONS TO BE COORDINATED BETWEEN THE ARCHITECT, CONTRACTOR, APPROPRIATE UTILITY COMPANIES AND THE PORTSMOUTH DPW.
- 9. WATER: PORTSMOUTH DPW, JIM TOW, (603) 427-1530.
- 10. TELECOMMUNICATIONS: CONSOLIDATED, JOE CONSIDINE, (603) 427-5525.
- 11. CABLE: COMCAST, MIKE COLLINS, (603) 679-5695, EXT. 1037.
- 12. ELECTRICAL: EVERSOURCE, MICHAEL BUSBY, (603) 332-4227, EXT. 5555334.

  ALL ELECTRIC CONDUIT INSTALLATION SHALL BE INSPECTED BY EVERSOURCE PRIOR TO BACKFILL, 48-HOUR MINIMUM NOTICE REQUIRED.
- 13. GAS: UNITIL, DAVID BEAULIEU, (603) 294-5144.
- 14. DETECTABLE WARNING TAPE SHALL BE PLACED OVER THE ENTIRE LENGTH OF ALL BURIED UTILITIES, COLORS PER THE RESPECTIVE UTILITY PROVIDERS.
- 15. ALL WATER MAIN AND SERVICE INSTALLATIONS SHALL BE CONSTRUCTED AND TESTED PER PORTSMOUTH DPW STANDARDS AND SPECIFICATIONS. ALL OTHER UTILITIES SHALL BE TO THE STANDARDS AND SPECIFICATIONS OF THE RESPECTIVE UTILITY PROVIDERS.
- 16. WHERE WATER LINES CROSS, RUN ADJACENT TO OR ARE WITHIN 5' OF STORM DRAINAGE PIPES OR STRUCTURES, 2"—THICK CLOSED CELL RIGID BOARD INSULATION SHALL BE INSTALLED FOR FROST PROTECTION.
- 17. PER PORTSMOUTH DPW SPECIFICATIONS, ALL NEW DUCTILE IRON WATERLINES SHALL BE WRAPPED WITH A WATER TIGHT POLYETHYLENE WRAPPING FOR THEIR FULL LENGTH, ALL DOMESTIC WATER SERVICES SHALL BE PROVIDED WITH BACKFLOW PREVENTERS AND ALL JOINTS SHALL HAVE THREE (3) WEDGES PER
- 18. WATER AND SANITARY SEWER LINES SHALL BE LOCATED AT LEAST 10' HORIZONTALLY FROM EACH OTHER. WHERE CROSSING, 18" MINIMUM VERTICAL CLEARANCE SHALL BE PROVIDED WITH WATER INSTALLED OVER SEWER.
- 19. APPLICANT SHALL HAVE A SITE SURVEY CONDUCTED BY A RADIO COMMUNICATIONS CARRIER APPROVED BY THE CITY'S COMMUNICATION DIVISION. THE RADIO COMMUNICATIONS CARRIER MUST BE FAMILIAR AND CONVERSANT WITH THE POLICE AND RADIO CONFIGURATION. IF THE SITE SURVEY INDICATES IT IS NECESSARY TO INSTALL A SIGNAL REPEATER EITHER ON OR NEAR THE PROPOSED PROJECT, THOSE COSTS SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER. THE APPLICANT SHALL BE REQUIRED TO PAY FOR THE SITE SURVEY WHETHER OR NOT THE SURVEY INDICATES A REPEATER IS NECESSARY. THE OWNER SHALL COORDINATE WITH THE SUPERVISOR OF RADIO COMMUNICATIONS FOR THE CITY. THE SURVEY SHALL BE COMPLETED AND THE REPEATER, IF DETERMINED IT IS REQUIRED, SHALL BE INSTALLED PRIOR TO THE ISSUANCE OF CERTIFICATE OF OCCUPANCY.
- 20. CONTRTACTOR/OWNER SHALL PROVIDE DPW WITH DETAILS OF TEMPORARY & PERMANENT GROUNDWATER DEWATERING DESIGN IF NECESSARY.



133 Court Street Portsmouth, NH 03801 (603) 433-2335 www.altus-eng.com

NOT FOR CONSTRUCTION

SSUED FOR:

TAC WORK SESSION

ISSUE DATE:

DECEMBER 1, 2020

BY DATE

REVISIONS
NO. DESCRIPTION

O TAC WORK SESSION EBS 12/01/20

DRAWN BY: \_\_\_\_\_EBS

APPROVED BY: \_\_\_\_\_EDW

DRAWING FILE: \_\_\_\_5090-SITE.dwg

SCALE:

 $22" \times 34" 1" = 30'$  $11" \times 17" 1" = 60'$ 

OWNER:

FREDERICK W. WATSON
REVOCABLE TRUST,
ROBERT D. WATSON,
TRUSTEE

53 SLEEPY HOLLOW DRIVE GREENLAND. NH 03840

APPLICANT:

FREDERICK W. WATSON REVOCABLE TRUST, ROBERT D. WATSON, TRUSTEE

53 SLEEPY HOLLOW DRIVE GREENLAND, NH 03840

PROJECT:

WATSON'S LANDING

TAX MAP 209, LOT 33

1 CLARK DRIVE PORTSMOUTH, NH 03801

TITLE:

UTILITY PLAN

SHEET NUMBER:

C-5

### SEDIMENT AND EROSION CONTROL NOTES

#### PROJECT NAME AND LOCATION

1 CLARK DRIVE

PORTSMOUTH, NEW HAMPSHIRE TAX MAP 209 LOT 33

LATITUDE: 43.084° N LONGITUDE: 70.771° W

## OWNER/APPLICANT:

FREDERICK W. WATSON REVOCABLE TRUST, ROBERT D. WATSON, TRUSTEE 53 SLEEPY HOLLOW DRIVE GREENLAND, NH 03840

#### **DESCRIPTION**

The project consists of the demolition of a single family residence and creation of a 4—lot subdivision along with associated site improvements.

#### **DISTURBED AREA**

The total area to be disturbed for the development is approximately  $\pm 48,000$  S.F. ( $\pm 1.10$ acres). USEPA NPDES Phase II compliance is not required.

#### PROJECT PHASING

The proposed project will be completed in one phase.

#### NAME OF RECEIVING WATER

The site drains over land to Inner Cutts Cove and eventually the Piscatagua River

#### SEQUENCE OF MAJOR ACTIVITIES

- 1. Install temporary erosion control measures including perimeter controls, stabilized construction entrance and inlet sediment filters as noted on the plan. All temporary erosion control measures shall be maintained in good working condition for the duration of the project.
- 2. Remove landscaping, strip loam and stockpile.
- 3. Demolish existing site features, single family residence, utilities, etc. as shown on Demolition
- 4. Rough grade site including placement of borrow materials.
- 5. Construct building and associated improvements.
- 6. Construct drainage structures, culverts, utilities & sidewalk base course materials.
- 7. Install base course paving & curbing. 8. Install top course paving and sidewalks.
- 9. Loam (6" min) and seed all disturbed areas not paved or otherwise stabilized.
- 10. When all construction activity is complete and site is stabilized, remove all temporary erosion control measures and any sediment that has been trapped by these devices.

#### TEMPORARY EROSION & SEDIMENT CONTROL AND STABILIZATION PRACTICES

All work shall be in accordance with state and local permits. Work shall conform to the practices described in the "New Hampshire Stormwater Manual, Volumes 1 - 3", issued December 2008, as amended. As indicated in the sequence of Major Activities, perimeter controls shall be installed prior to commencing any clearing or grading of the site. Structural controls shall be installed concurrently with the applicable activity. Once construction activity ceases permanently in an area and permanent measures are established, perimeter controls shall be removed.

During construction, runoff will be diverted around the site with stabilized channels where possible. Sheet runoff from the site shall be filtered through appropriate perimeter controls. All storm drain inlets shall be provided with inlet protection measures.

Temporary and permanent vegetation and mulching is an integral component of the erosion and sedimentation control plan. All areas shall be inspected and maintained until vegetative cover is established. These control measures are essential to erosion prevention and also reduce costly rework of graded and shaped areas.

Temporary vegetation shall be maintained in these areas until permanent seeding is applied. Additionally, erosion and sediment control measures shall be maintained until permanent vegetation established.

#### INSTALLATION, MAINTENANCE AND INSPECTION PROCEDURES FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES

A. GENERAL

These are general inspection and maintenance practices that shall be used to implement the

- 1. The smallest practical portion of the site shall be denuded at one time.
- 2. All control measures shall be inspected at least once each week and following any storm event of 0.5 inches or greater.
- 3. All measures shall be maintained in good working order; if a repair is necessary, it will be initiated within 24 hours.
- 4. Built-up sediment shall be removed from perimeter barriers when it has reached one-third the
- height of the barrier or when "bulges" occur. 5. All diversion dikes shall be inspected and any breaches promptly repaired.
- 6. Temporary seeding and planting shall be inspected for bare spots, washouts, and unhealthy
- 7. The owner's authorized engineer shall inspect the site on a periodic basis to review compliance
- with the Plans. 8. An area shall be considered stable if one of the following has occurred:
- a. Base coarse gravels have been installed in areas to be paved; b. A minimum of 85% vegetated growth as been established;
- c. A minimum of 3 inches of non-erosive material such as stone of riprap has been installed;
- d. Erosion control blankets have been properly installed.
- 9. The length of time of exposure of area disturbed during construction shall not exceed 45 days.

#### B. MULCHING

Mulch shall be used on highly erodible soils, on critically eroding areas, on areas where conservation of moisture will facilitate plant establishment, and where shown on the plans.

- 1. Timing In order for mulch to be effective, it must be in place prior to major storm events. There are two (2) types of standards which shall be used to assure this: a. Apply mulch prior to any storm event. This is applicable when working within 100 feet of wetlands. It will be necessary to closely monitor weather predictions, usually by contacting the National Weather Service in Concord, to have adequate warning of
- b. Required Mulching within a specified time period. The time period can range from 21 to 28 days of inactivity on a area, the length of time varying with site conditions. Professional judgment shall be used to evaluate the interaction of site conditions (soil erodibility, season of year, extent of disturbance, proximity to sensitive resources, etc.) and the potential impact of erosion on adjacent areas to choose an appropriate time restriction.
- 2. Guidelines for Winter Mulch Application -

significant storms.

<u>Type</u> Hay or Straw	<u>Rate per 1,000 s.f.</u> 70 to 90 lbs.	Use and Comments  Must be dry and free  from mold. May be used with plantings.
Wood Chips or Bark Mulch	460 to 920 lbs.	Used mostly with trees and shrub plantings.

#### INSTALLATION, MAINTENANCE AND INSPECTION PROCEDURES FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES (CONTINUED)

Jute and Fibrous As per manufacturer Used in slope areas, Specifications Matting (Erosion water courses and other Control Blanket Crushed Stone Spread more than Effective in controlling 1/2" thick 1/4" to 1-1/2" dia. wind and water erosion. Erosion Control Mix 2" thick (min) \* The organic matter content is between 80 and 100%, dry weight basis. \* Particle size by weight is 100% passing a 6"screen and a minimum of 70 %, maximum of 85%, passing a 0.75" screen \*The organic portion needs to be fibrous and elongated. \*Large portions of silts, clays or fine sands are not acceptable in the mix. \* Soluble salts content is less than 4.0 mmhos/cm.

3. Maintenance — All mulches must be inspected periodically, in particular after rainstorms, to check for rill erosion. If less than 90% of the soil surface is covered by mulch, additional mulch shall be immediately applied.

\*The pH should fall between 5.0 and 8.0.

- C. PERMANENT SEEDING -
- 1. Bedding stones larger than  $1\frac{1}{2}$ ", trash, roots, and other debris that will interfere with seeding and future maintenance of the area should be removed. Where feasible, the soil should be tilled to a depth of 5" to prepare a seedbed and mix fertilizer into the soil.
- 2. Fertilizer lime and fertilizer should be applied evenly over the area prior to or at the time of seeding and incorporated into the soil. Kinds 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 @ 100 lbs. per 1,000 s.f. 10-20-20 fertilizer @ 12 lbs. per 1,000 s.f.

#### 3. Seed Mixture (recommended):

<u>Type</u> Tall Fescue	<u>Lbs. / Acre</u> 24	<u>Lbs. / 1,000</u> 0.55
Creeping Red Fescue	24	0.55
 Total	48	1.10

#### Seed Mixture (For slope embankments):

Grass Seed: Provide fresh, clean, new-crop seed complying with tolerance for purity and germination established by Official Seed Analysts of North America. Provide seed mixture composed of grass species, proportions and minimum percentages of purity, germination, and maximum percentage of weed seed, as specified:

	Min.	Min.	Kg./Hectare
Type	Purity (%)	Germination (%)	(Lbs/Acre)
Creeping Red Fescue (c)	96	85	45 (40)
Perennial Rye Grass (a)	98	90	35 (30)
Redtop	95	80	5 (5)
Alsike Clover	97	90(e)	5 (5)

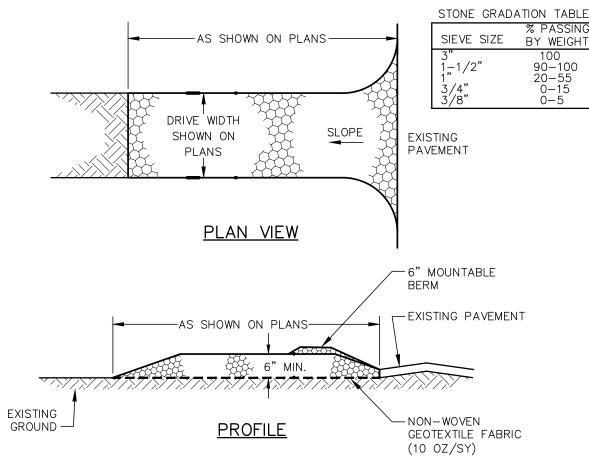
a. Ryegrass shall be a certified fine—textured variety such as Pennfine, Fiesta, Yorktown, Diplomat, or equal.

Total 90 (80)

- b. Fescue varieties shall include Creeping Red and/or Hard Reliant, Scaldis, Koket, or
- 4. Sodding sodding is done where it is desirable to rapidly establish cover on a disturbed area. Sodding an area may be substituted for permanent seeding procedures anywhere on site. Bed preparation, fertilizing, and placement of sod shall be performed according to the S.C.S. Handbook. Sodding is recommended for steep sloped areas, areas immediately adjacent to sensitive water courses, easily erodible soils (fine sand/silt), etc.

#### WINTER CONSTRUCTION NOTES

- 1. All proposed vegetated areas which do not exhibit a minimum of 85% vegetative growth by October 15th, or which are disturbed after October 15th, shall be stabilized by seeding and installing erosion control blankets on slopes greater than 3:1, and elsewhere seeding and placing 3 to 4 tons of mulch per acre, secured with anchored netting. 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;
- 2. All ditches or swales which do not exhibit a minimum of 85% vegetative growth by October 15th, or which are disturbed after October 15th, shall be stabilized temporarily with stone or erosion control blankets appropriate for the design flow conditions; and
- 3. After November 15th, incomplete road or parking surfaces where work has stopped for the winter season shall be protected with a minimum of 3 inches of crushed gravel per NHDOT



#### CONSTRUCTION SPECIFICATIONS

- 1. <u>STONE SIZE</u> NHDOT STANDARD STONE SIZE #4 SECTION 703 OF NHDOT STANDARD.
- 2. LENGTH DETAILED ON PLANS (50 FOOT MINIMUM).
- 3. <u>THICKNESS</u> SIX (6) INCHES (MINIMUM).
- 4. WIDTH FULL DRIVE WIDTH UNLESS OTHERWISE SPECIFIED.
- 5. FILTER FABRIC MIRAFI 600X OR EQUAL APPROVED BY ENGINEER.
- 6. SURFACE WATER CONTROL ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
- 7. MAINTENANCE THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT  $\overline{\mathsf{IRACKING}}$  OR  $\overline{\mathsf{FLOWING}}$  OF SEDIMENT ONTO PUBLIC RIGHTS—OF—WAY. THIS WILL REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR ADDITIONAL LENGTH AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
- WHEELS SHALL BE CLEANED TO REMOVE MUD PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
- 9. STABILIZED CONSTRUCTION EXITS SHALL BE INSTALLED AT ALL ENTRANCES TO PUBLIC RIGHTS-OF-WAY, AT LOCATIONS SHOWN ON THE PLANS, AND/OR WHERE AS DIRECTED BY THE

#### STABILIZED CONSTRUCTION EXIT NOT TO SCALE

STAKE ON 10' LINEAR SPACING

AREA TO BE

- FILTREXX®

SILT-SOXX<sup>TM</sup>

. SILTSOXX MAY BY USED IN PLACE OF SILT FENCE OR OTHER SEDIMENT BARRIERS.

3. SILTSOXX COMPOST/SOIL/ROCK/SEED FILL MATERIAL SHALL BE ADJUSTED AS NECESSARY TO MEET THE

COMPOST

4. ALL SEDIMENT TRAPPED BY SILTSOXX SHALL BE DISPOSED OF PROPERLY.

TUBULAR SEDIMENT BARRIER

PROTECTED

WATER FLOW

WORK AREA

PLAN VIEW

2. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.

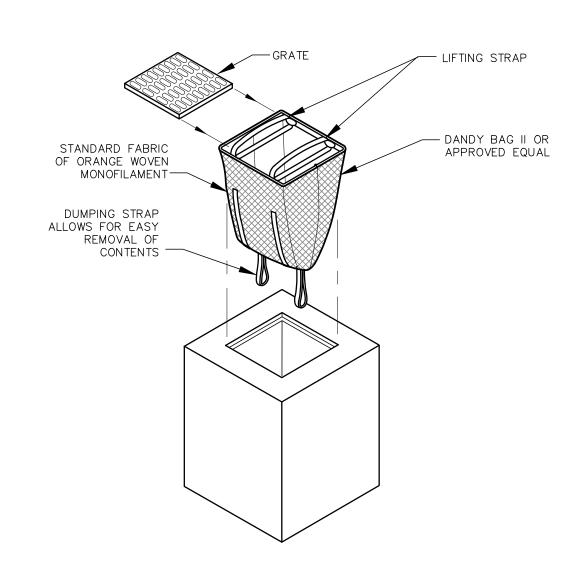
REQUIREMENTS OF THE SPECIFIC APPLICATION.

 $\Longrightarrow$ 

FILTREXX®

12" SILT-SOXX<sup>TM</sup>-

WORK AREA



#### **INSTALLATION AND MAINTENANCE:**

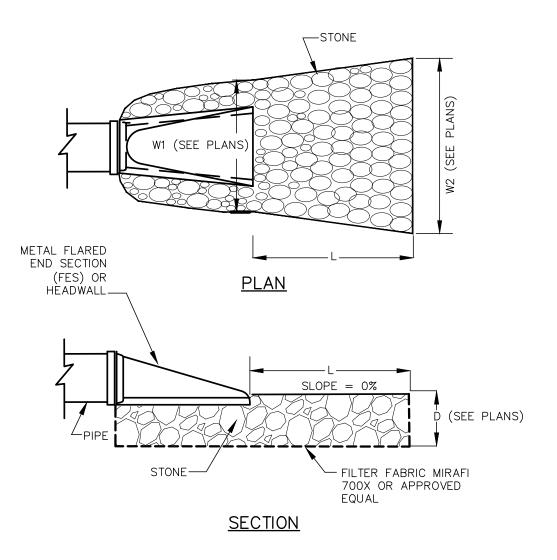
INSTALLATION: REMOVE THE GRATE FROM CATCH BASIN. IF USING OPTIONAL OIL ABSORBENTS; PLACE ABSORBENT PILLOW IN UNIT. STAND GRATE ON END. MOVE THE TOP LIFTING STRAPS OUT OF THE WAY AND PLACE THE GRATE INTO CATCH BASIN INSERT SO THE GRATE IS BELOW THE TOP STRAPS AND ABOVE THE LOWER STRAPS. HOLDING THE LIFTING DEVICES, INSERT THE GRATE INTO THE INLET.

MAINTENANCE: REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM VICINITY OF THE UNIT AFTER EACH STORM EVENT. AFTER EACH STORM EVENT AND AT REGULAR INTERVALS, LOOK INTO THE CATCH BASIN INSERT. IF THE CONTAINMENT AREA IS MORE THAN 1/3 FULL OF SEDIMENT, THE UNIT MUST BE EMPTIED. TO EMPTY THE UNIT, LIFT THE UNIT OUT OF THE INLET USING THE LIFTING STRAPS AND REMOVE THE GRATE. IF USING OPTIONAL ABSORBENTS; REPLACE ABSORBENT WHEN NEAR SATURATION.

#### **UNACCEPTABLE INLET PROTECTION METHOD:**

A SIMPLE SHEET OF GEOTEXTILE UNDER THE GRATE IS NOT ACCEPTABLE.

#### STORM DRAIN INLET PROTECTION NOT TO SCALE



#### MAINTENANCE

\_\_\_\_ 2" x 2" WOODEN

STAKE (TYP.);

**SECTION** 

REBAR W/ORANGE SAFETY

AREA TO BE

PROTECTED

NOT TO SCALE

CAP MAY BE USED IN PAVED SURFACE ONLY

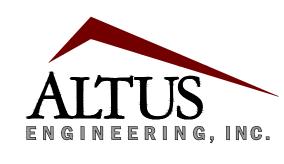
> THE OUTLET PROTECTION SHOULD BE CHECKED AT LEAST ANNUALLY AND AFTER EVERY MAJOR STORM. IF THE RIPRAP HAS BEEN DISPLACED, UNDERMINED OR DAMAGED, IT SHOULD BE REPAIRED IMMEDIATELY. THE CHANNEL IMMEDIATELY BELOW THE OUTLET SHOULD BE CHECKED TO SEE THAT EROSION IS NOT OCCURRING. THE DOWNSTREAM CHANNEL 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 THE OUTLET PROTECTION APRON.

#### **CONSTRUCTION SPECIFICATIONS**

- 1. THE SUBGRADE FOR THE FILTER MATERIAL, GEOTEXTILE FABRIC, AND RIPRAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
- 2. THE ROCK OR GRAVEL USED FOR FILTER OR RIPRAP SHALL CONFORM TO THE SPECIFIED GRADATION. 3. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE ROCK RIPRAP. 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 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.

## RIPRAP OUTLET PROTECTION

NOT TO SCALE



133 Court Street Portsmouth, NH 03801 (603) 433-2335 www.altus-eng.com

NOT FOR CONSTRUCTION

TAC WORK SESSION

SSUED FOR:

**ISSUE DATE:** 

EBS 12/01/20

DECEMBER 1, 2020

<u>REVISIONS</u> NO. DESCRIPTION BY DATE

TAC WORK SESSION

EBS DRAWN BY: EDW APPROVED BY: \_\_\_ DRAWING FILE: 5090-DETAILS.dwg

22" x 34" NOT TO SCALE

FREDERICK W. WATSON REVOCABLE TRUST, ROBERT D. WATSON, TRUSTEE

53 SLEEPY HOLLOW DRIVE GREENLAND, NH 03840

#### APPLICANT:

FREDERICK W. WATSON REVOCABLE TRUST, ROBERT D. WATSON, TRUSTEE

53 SLEEPY HOLLOW DRIVE GREENLAND, NH 03840

PROJECT:

WATSON'S LANDING

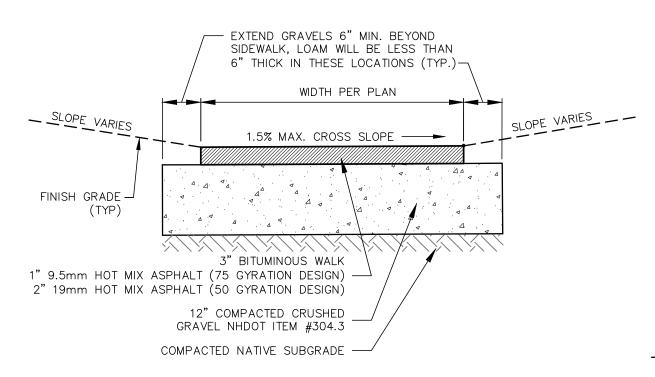
1 CLARK DRIVE

TAX MAP 209, LOT 33

PORTSMOUTH, NH 03801

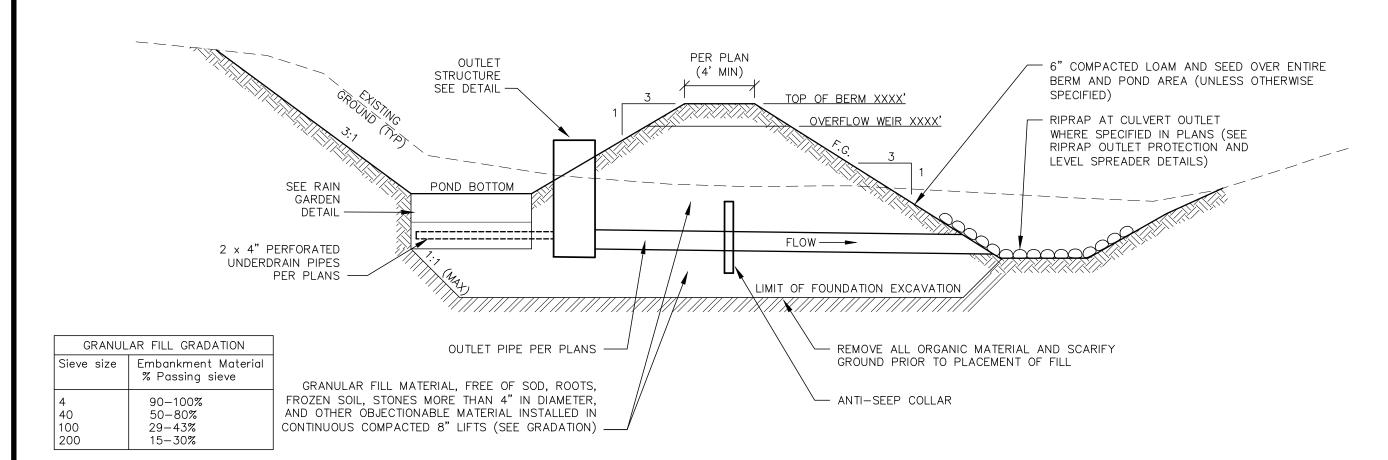
DETAILS SHEET

**SHEET NUMBER:** 



# **BITUMINOUS SIDEWALK**

NOT TO SCALE



#### Construction Criteria

Foundation Preparation —— The foundation shall be cleared of trees, logs, stumps, roots, brush, boulders, sod, and rubbish. If suitable for reuse, the topsoil and sod shall be stockpiled and spread on the completed embankment and spillways. Foundation surfaces shall be sloped no steeper than 1:1. The foundation area shall be thoroughly scarified before placement of fill material. The surface shall have moisture added and/or it shall be compacted if necessary so that the first layer of fill can be bonded to the foundation.

The cutoff trench and any other required excavations shall be dug to the lines and grades shown on the plans or as staked in the field. If they are suitable, excavated materials shall be used in

Existing stream channels in the foundation area shall be sloped no steeper than 1:1 and deepened and widened as necessary to remove all stones, gravel, sand, stumps, roots, and other objectionable material and to accommodate compaction equipment.

Foundation areas shall be kept free of standing water when fill is being placed on them

2. Granular Fill Placement — The material placed in the fill shall be free of sod, roots, frozen soil, stones more than 4 inches in diameter and other objectionable material.

Selected backfill material shall be placed around structures, pipe conduits, and drainage diaphragm at about the same rate on all sides to prevent damage from unequal loading.

The placing and spreading of fill material shall be started at the lowest point of the foundation and the fill brought up in horizontal layers of such thickness that the required compaction can be obtained. The fill shall be constructed in 8" continuous horizontal layers except where openings or sectionalized fills are required. In those cases, the slope of the bonding surfaces between the embankment in place and the embankment to be placed shall not be steeper than 3 horizontal to 1 vertical. The bonding surface shall be treated the same as that specified for the foundation so as to insure a good bond with the new fill.

The distribution and gradation of materials shall be such that no lenses, pockets, streaks, or layers of material differ substantially in texture of gradation from the surrounding material. If it is necessary to use materials of varying texture and gradation, the more impervious material shall be placed in the center and upstream parts of the fill. If zoned fills of substantially differing materials are specified, the zones shall be placed according to the lines and grades shown on the drawings. The complete work shall conform to the lines, grades, and elevations shown on the drawings or as staked in the field.

- Moisture Control —— The moisture content of the fill material shall be adequate for obtaining the required compaction. Material that is too wet shall be dried to meet this requirement, and material that is too dry shall have water added and mixed until the requirement is met.
- Compaction Construction equipment shall be operated over the areas of each layer of fill to insure that the required compaction is obtained. Special equipment shall be used if needed to obtain the required compaction.
- Fill material shall be compacted to not less than 95% of AASHTO T99 Method C compaction method.
- Fill adjacent to structures, pipe conduits, and drainage diaphragm shall be compacted to a density equivalent to that of the surrounding fill by means of hand tamping or manually directed power tamper or plate vibrators. Fill adjacent to concrete structures shall not be compacted until the concrete is strong enough to support the load.
- 5. Protection A protective cover of vegetation shall be established on all exposed surfaces of the embankment, spillway, and borrow area in accordance with the plans. If soil or climatic conditions preclude the use of vegetation and protection is needed, non-vegetative means, such as mulches or gravel, may be used. In some places, temporary vegetation may be used until conditions permit establishment of permanent vegetation.

#### <u>Maintenance</u>

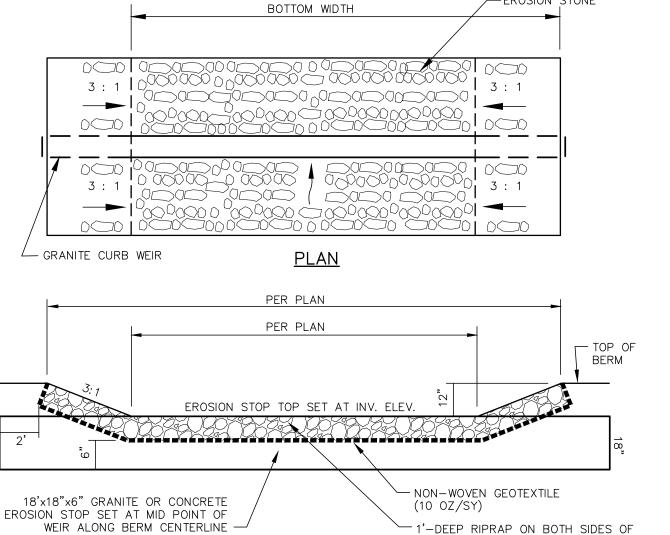
Maintenance is necessary if detention/retention basins are to continue to function as originally designed. A local government, a designated group such as a homeowners' association, or an individual must be assigned responsibility for maintaining the structures and the basin area. A maintenance plan should be developed that outlines the maintenance operations and a schedule for carrying out the procedures.

The following should be considered in formulating a maintenance plan:

STORMWATER POND BERM DETAIL

- 1. Embankment The embankment should be inspected annually to determine if rodent burrows, wet areas, or erosion of the fill is taking place.
- Vegetation —— The vegetated areas of the structure should be protected from damage by fire, grazing, traffic, and dense weed growth. Lime and fertilizer should be applied as necessary as determined by soil tests. Trees and shrubs should be kept off the embankment and emergency spillway areas.
- . Inlets —— Pipe inlets and spillway structures should be inspected annually and after every major storm. Accumulated debris and sediment should be removed.
- Outlets —— Pipe outlets should be inspected annually and after every major storm. The condition of the pipes should be noted and repairs made as necessary. If erosion is taking place, then measures should be taken to stabilize and protect the affected area.
- Sediment Sediment should be continually checked in the basin. When sediment accumulations reach the predetermined design elevation, then the sediment should be removed and properly disposed of.
- Safety Inspections —— All permanent impoundments should be inspected by a qualified professional engineer on a periodic basis. If there is potential for significant damage or loss of life downstream, then the inspection should be carried out annually.

# NOT TO SCALE



1. CONSTRUCT EMERGENCY OVERFLOW WEIR TO THE WIDTHS AND LENGTHS SHOWN ON THE PLAN. 2. THE SUBGRADE FOR THE GEOTEXTILE FABRIC AND RIPRAP SHALL BE PREPARED TO

EROSION STOP (SEE NOTE 3 BELOW)

LINES AND GRADES SHOWN ON THE PLANS. UNLESS OTHERWISE SPECIFIED OR DIRECTED, RIPRAP USED FOR THE EMERGENCY OVERFLOW WEIR SHALL MEET THE FOLLOWING GRADATION:

<u>SIZE</u> PERCENT PASSING BY WEIGHT

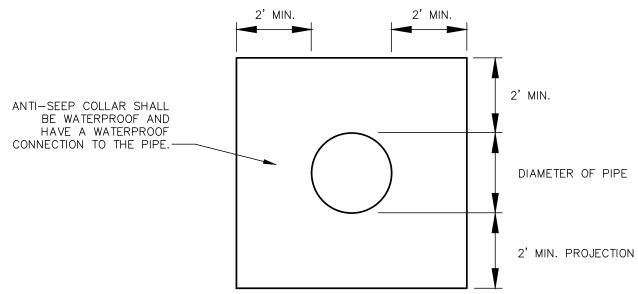
- 4. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE EROSION STONE. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 18 INCHES.
- THE EROSION STONE 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.

## BOTTOM WIDTH (W) - MINIMUM DEPTH (D) =18" OR AS SHOWN ON PLANS -6" COMPACTED LOAM, SEED, MULCH AND FERTILIZER

- 1. THE FOUNDATION AREA OF THE SWALE SHALL BE CLEARED AND GRUBBED OF ALL TREES, BRUSH,
- STUMPS, AND OTHER OBJECTIONABLE MATERIAL. 2. THE SWALE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE AND CROSS SECTION AS
- REQUIRED TO MEET THE DESIGN CRITERIA AND BE FREE OF IRREGULARITIES 3. EARTH FILLS REQUIRED TO MEET SUBGRADE REQUIREMENTS BECAUSE OF OVER EXCAVATION OR TOPOGRAPHY SHALL BE COMPACTED TO THE SAME DENSITY AS THE SURROUNDING SOIL TO
- PREVENT UNEQUAL SETTLEMENT THAT COULD CAUSE DAMAGE TO THE COMPLETED SWALE. 4. VEGETATION SHALL BE ESTABLISHED IN THE SWALE OR AN EROSION CONTROL MATTING INSTALLED PRIOR TO DIRECTING STORMWATER TO IT.
- MAINTENANCE OF THE VEGETATION IS EXTREMELY IMPORTANT IN ORDER TO PREVENT RILLING, EROSION, AND FAILURE OF THE SWALE. MOWING SHALL BE DONE FREQUENTLY ENOUGH TO CONTROL ENCROACHMENT OF WEEDS AND WOODY VEGETATION AND TO KEEP GRASSES IN A VIGOROUS CONDITION. THE VEGETATION SHALL NOT BE MOWED TOO CLOSELY SO AS TO REDUCE THE EROSION RESISTANCE IN THE SWALE.
- 6. THE SWALE SHOULD BE INSPECTED PERIODICALLY AND AFTER ANY STORM GREATER THAN 0.5" OF RAINFALL IN 24 HOURS TO DETERMINE ITS CONDITION. RILLS AND DAMAGED AREAS SHOULD BE PROMPTLY REPAIRED AND REVEGETATED AS NECESSARY TO PREVENT FURTHER DETERIORATION.

## **VEGETATED SWALE**

NOT TO SCALE



ANTI-SEEP COLLARS SHALL BE CLAY, CONCRETE, PLASTIC (AGRI-DRAIN), OR EQUAL APPROVED BY THE ENGINEER.

FILTER MEDIA MIXTURES

Filter Media Option A

Sieve

No.

200

200

200

10

20

60

200

Percent of

Mixture by

Volume

50 to 55

20 to 30

20 to 30

20 to 30

70 to 80

Filter Media Option B

## RIPRAP SPILLWAY / OVERFLOW WEIR NOT TO SCALE

# **ANTI-SEEP COLLAR**

Component Material

ASTM C-33 concrete sand

Loamy sand topsoil, with

Moderately fine shredded

bark or wood fiber mulch,

Moderately fine shredded

with fines as indicated

Loamy coarse sand

bark or wood fiber mulch,

with fines as indicated

fines as indicated

NOT TO SCALE

SIZE #67 - SECTION 703 OF NHDOT

Gradation of material

Percent by Weight

15 to 25

< 5

< 5

85 to 100

70 to 100

15 to 40

8 to 15

Passing Standard Sieve

NHDOT STANDARD SPECIFICATIONS

DRAWING FILE: \_\_\_

APPROVED BY:

DRAWN BY:

FREDERICK W. WATSON REVOCABLE TRUST, ROBERT D. WATSON, TRUSTEE

22" x 34" NOT TO SCALE

NOT FOR CONSTRUCTION

TAC WORK SESSION

DECEMBER 1, 2020

5090-DETAILS.dwg

BY DATE

EBS 12/01/20

Portsmouth, NH 03801

www.altus-eng.com

133 Court Street

(603) 433-2335

SSUED FOR:

ISSUE DATE:

<u>REVISIONS</u>

NO. DESCRIPTION

) TAC WORK SESSION

53 SLEEPY HOLLOW DRIVE GREENLAND, NH 03840

#### <u>APPLICANT:</u>

FREDERICK W. WATSON REVOCABLE TRUST, ROBERT D. WATSON, TRUSTEE

53 SLEEPY HOLLOW DRIVE GREENLAND, NH 03840

#### PROJECT:

WATSON'S LANDING TAX MAP 209, LOT 33

1 CLARK DRIVE PORTSMOUTH, NH 03801

TITLE:

DETAILS SHEET

SHEET NUMBER:

WETLAND SEED MIX (GRASSES SEE LANDSCAPE PLANS FOR S	TOLERANT IN WET AREAS) SPECIFICATIONS	
FLOW XXXX	6" COMPACTED LOAM AND SEED IN ALL AREAS OUTSIDE FILTER BED  XXXX'  PONDING AREA	— SEE STORMWATER POND BERM DETAIL
XXXX' XXXX'	18" SOIL FILTER MEDIA (OPTION A OR B BELOW) 3" 3/8" PEA STONE	· <b>v</b> /.
xxxx'	15" 3/4" WASHED CRUSHED STONE BEDDING	CRUSHED STONE BEDDING *  SIEVE SIZE % PASSING BY WEIGHT  1" 100
(PROVIDE 6" STONE BELOW PIPE)	EXISTING NATIVE EARTH	3/4" 90 - 100 3/8" 20 - 55 # 4 0 -10
<u>OTES</u>		# 8 0 - 5
I. WHEN CONTRACTOR EXCAVATES RAIN GARDEN AREA TO SUBGRADE, DESIGN ENGINEER SHALL PERFORM		* EQUIVALENT TO STANDARD STONE

- SUBSURFACE EVALUATION PRIOR TO THE PLACEMENT OF ANY SELECT MATERIAL OR OTHER BACKFILL.
- SOIL FILTER MEDIA SHALL EITHER OPTION A OR OPTION B AT CONTRACTOR'S DISCRETION.
- 3. DO NOT PLACE RAINGARDEN INTO SERVICE UNTIL IT HAS BEEN PLANTED AND ITS CONTRIBUTING AREAS STABILIZED.
- 4. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES TO THE RAINGARDEN DURING ANY STAGE OF CONSTRUCTION.
- 5. DO NOT TRAFFIC EXPOSED SURFACES OF RAINGARDEN WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATION ACTIVITIES WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE BASIN.

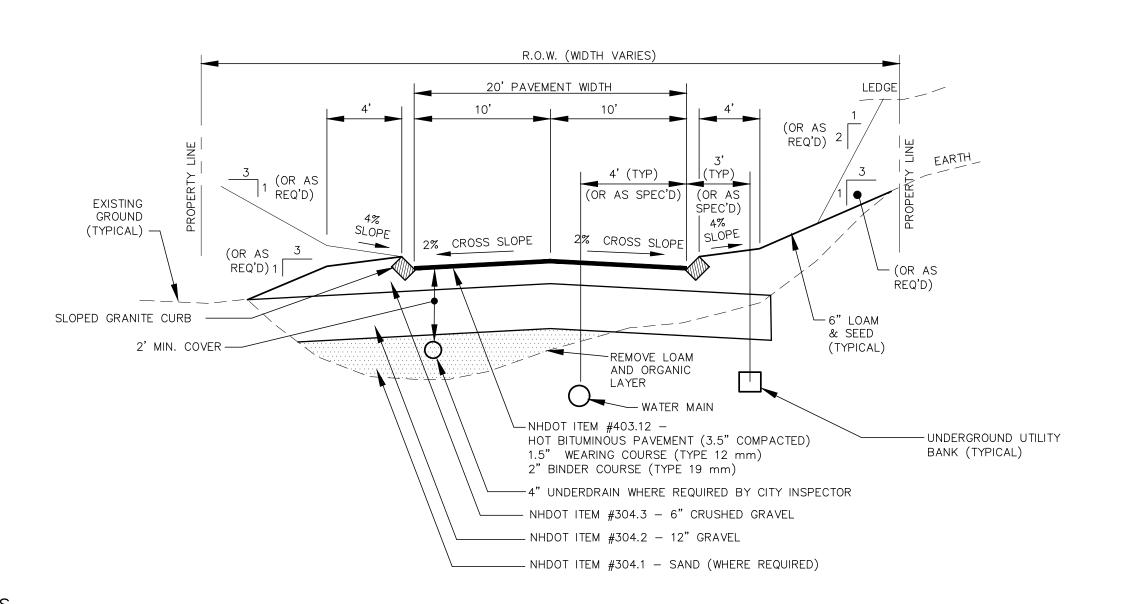
#### MAINTENANCE REQUIREMENTS

- SYSTEMS SHOULD BE INSPECTED AT LEAST TWICE ANNUALLY, AND FOLLOWING ANY RAINFALL EXCEEDING 2.5 INCHES IN A 24-HOUR PERIOD, WITH MAINTENANCE OR REHABILITATION CONDUCTED AS A WARRANTED BY SUCH INSPECTION.
- PRETREATMENT MEASURES SHOULD BE INSPECTED AT LEAST TWICE ANNUALLY, AND CLEANED OF ACCUMULATED SEDIMENT AS WARRANTED BY INSPECTION, BUT NO LESS THAN ONCE ANNUALLY.
- AT LEAST ONCE ANNUALLY, SYSTEM SHOULD BE INSPECTED FOR DRAWDOWN TIME. IF BIORETENTION SYSTEM DOES NOT DRAIN WITHIN 72-HOURS FOLLOWING A RAINFALL EVENT, THEN A QUALIFIED PROFESSIONAL SHOULD ASSESS THE CONDITION OF THE FACILITY TO DETERMINE MEASURES REQUIRED TO RESTORE FILTRATION FUNCTION OR INFILTRATION FUNCTION (AS APPLICABLE), INCLUDING BUT NOT LIMITED TO REMOVAL OF ACCUMULATED SEDIMENTS OR RECONSTRUCTION OF THE FILTER MEDIA.
- VEGETATION SHOULD BE INSPECTED AT LEAST ANNUALLY, AND MAINTAINED IN HEALTHY CONDITION, INCLUDING, WEED WHACKING, REMOVAL, AND REPLACEMENT OF DEAD OR DISEASED VEGETATION, AND REMOVAL OF INVASIVE SPECIES.

#### **DESIGN REFERENCES**

- UNH STORMWATER CENTER
- EPA (1999A)
- NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL, VOLUME 2, DECEMBER 2008 AS AMENDED.
- TYPICAL RAINGARDEN

NOT TO SCALE

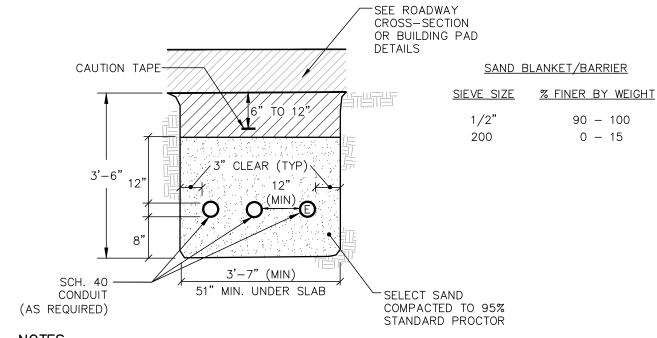


#### <u>NOTES</u>

- 1. EACH GRAVEL BASE COURSE TO BE CONSTRUCTED AT THE PAVEMENT CROSS SLOPE.
- 2. REMOVE LEDGE 18" BELOW LOWEST WORK BEING INSTALLED.
- 3. COMPACT ALL MATERIALS TO 95% STANDARD PROCTOR.
- 4. REMOVE ALL LOAM, CLAY, MUCK, ORGANIC, YIELDING OR OTHERWISE UNSTABLE MATERIAL TO A MINIMUM OF 20" BELOW THE FINISHED GRADE AND INSTALL COMPACTED SAND (OR GRAVEL BORROW APPROVED BY THE ENGINEER) TO SUBGRADE AS NECESSARY.
- 5. THE OVER-EXCAVATION OF UNSUITABLE MATERIAL BEYOND THAT SPECIFIED ABOVE, THE INSTALLATION OF UNDERDRAINAGE, AND/OR THE INSTALLATION OF GEOTEXTILE FABRIC SHALL BE PROVIDED UPON DETERMINATION OF THE DEPARTMENT OF PUBLIC WORKS.
- 6. SUBGRADE SHALL BE FREE OF VOIDS THAT ALLOW MOVEMENT AND/OR SETTLEMENT OF MATERIALS.
- SUBGRADE SHALL BE PROOF-ROLLED WITH A FULLY LOADED DUMP TRUCK PRIOR TO PLACEMENT OF SELECT GRAVELS. PROOF-ROLLING SHALL BE WITNESSED AND APPROVED BY THE ENGINEER.

# TYPICAL ROADWAY CROSS SECTION

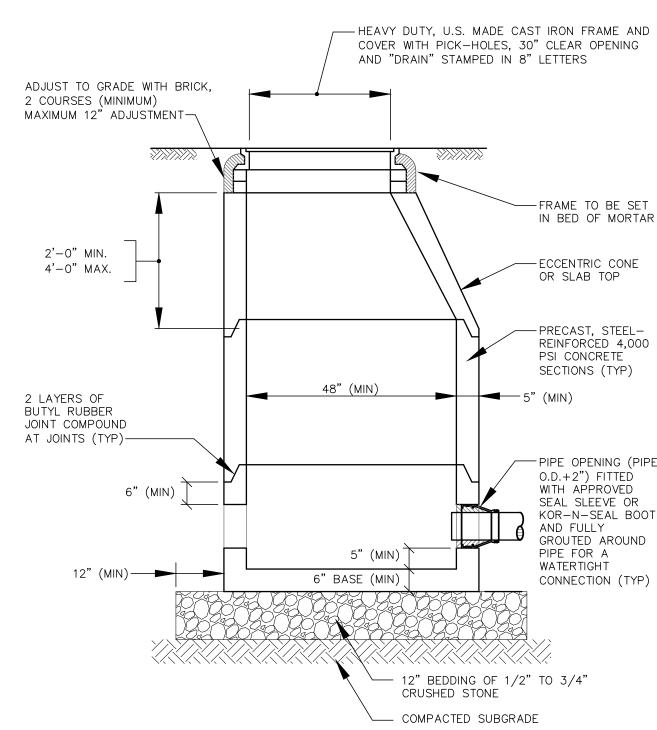
NOT TO SCALE



- 1. ALL CONDUIT IS TO BE SCHEDULE 40 PVC, ELECTRICAL GRADE, GRAY IN COLOR AND INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS. A 10-FOOT HORIZONTAL SECTION OF RIGID GALVANIZED STEEL CONDUIT WILL BE REQUIRED AT EACH SWEEP, UNLESS IN THE OPINION OF THE SERVICE PROVIDER DESIGNER, THE SWEEP-PVC JOINT IS NOT SUBJECT TO FAILURE DURING PULLING OF THE CABLE. ALL JOINTS ARE TO BE WATERTIGHT.
- 2. ALL 90 DEGREE SWEEPS WILL BE MADE WITH RIGID GALVANIZED STEEL WITH A MINIMUM RADIUS OF 36 INCHES FOR PRIMARY CABLES AND 24 INCHES FOR SECONDARY CABLES.
- 3. BACKFILL MAY BE MADE WITH EXCAVATED MATERIAL OR COMPARABLE, UNLESS MATERIAL IS DEEMED UNSUITABLE BY SERVICE PROVIDER. BACKFILL SHALL BE FREE OF FROZEN LUMPS, ROCKS, DEBRIS, AND RUBBISH. ORGANIC MATERIAL SHALL NOT BE USED AS BACKFILL. BACKFILL SHALL BE IN 6-INCH LAYERS AND THOROUGHLY COMPACTED.
- 4. A SUITABLE PULLING STRING, CAPABLE OF 300 POUNDS OF PULL, MUST BE INSTALLED IN THE CONDUIT BEFORE SERVICE PROVIDER IS NOTIFIED TO INSTALL CABLE. THE STRING SHOULD BE BLOWN INTO THE CONDUIT AFTER THE RUN IS ASSEMBLED TO AVOID BONDING THE STRING TO THE CONDUIT. A MINIMUM OF TWENTY-FOUR (24") INCHES OF ROPE SLACK SHALL REMAIN AT THE END OF EACH DUCT. PULL ROPE SHALL BE INSTALLED IN ALL CONDUIT FOR FUTURE PULLS. PULL ROPE SHALL BE NYLON ROPE HAVING A MINIMUM TENSILE STRENGTH OF THREE HUNDRED (300#) LBS.
- 5. SERVICE PROVIDER SHALL BE GIVEN THE OPPORTUNITY TO INSPECT ALL CONDUIT PRIOR TO BACKFILL. THE CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS SHOULD SERVICE PROVIDER BE UNABLE TO INSTALL ITS CABLE IN A SUITABLE MANNER.
- 6. TYPICAL CONDUIT SIZES ARE 3-INCH FOR SINGLE PHASE PRIMARY AND SECONDARY VOLTAGE CABLES, 4-INCH FOR THREE PHASE SECONDARY, AND 5-INCH FOR THREE PHASE PRIMARY. HOWEVER, SERVICE PROVIDERS MAY REQUIRE DIFFERENT NUMBERS, TYPES AND SIZES OF CONDUIT THAN THOSE SHOWN HERE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL CONDUIT SIZES, TYPES AND NUMBERS WITH EACH SERVICE PROVIDER PRIOR TO ORDERING THEM.
- 7. ROUTING OF CONDUIT, LOCATION OF MANHOLES, TRANSFORMERS, CABINETS, HANDHOLES, ETC., SHALL BE DETERMINED BY SERVICE PROVIDER DESIGN PERSONNEL. THE CONTRACTOR SHALL COORDINATE WITH ALL SERVICE PROVIDERS PRIOR TO THE INSTALLATION OF ANY CONDUIT.
- 8. ALL CONDUIT INSTALLATIONS MUST CONFORM TO THE CURRENT EDITION OF THE NATIONAL ELECTRIC SAFETY CODE, STATE AND LOCAL CODES AND ORDINANCES, AND WHERE APPLICABLE, THE NATIONAL ELECTRIC CODE. WHERE REQUIRED BY UTILITY PROVIDER, CONDUIT SHALL BE SUPPORTED IN PLACE USING PIPE STANCHIONS PLACED EVERY FIVE (5') FEET ALONG THE CONDUIT RUN.
- 9. UNDER A BUILDING SLAB THE CONDUIT SHALL BE ENCASED IN 8" OF CONCRETE ON ALL SIDES.

10. ALL CONDUIT TERMINATIONS SHALL BE CAPPED TO PREVENT DEBRIS FROM ENTERING CONDUIT.

ELECTRIC / COMMUNICATION TRENCH NOT TO SCALE

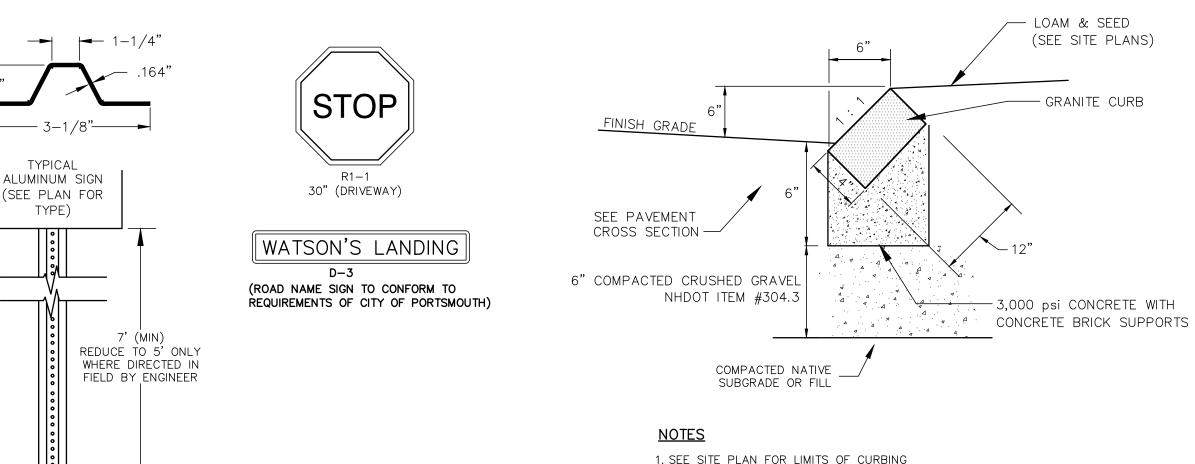


- 1. ALL SECTIONS SHALL BE CONCRETE CLASS AA (4000 psi).
- CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ.IN. PER LINEAR FT. IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.
- 3. THE TONGUE OR GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER LINEAR FT.
- 4. RISERS OF 1', 2', 3' & 4' CAN BE USED TO REACH DESIRED DEPTH. 5. ALL MANHOLE STRUCTURES SHALL BE DESIGNED FOR H20 LOADING.
- . USE H-20 LOADING SLAB TOP SECTION IN LIEU OF ECCENTRIC TOP WHERE PIPE INVERT IS WITHIN 4 FT OF GRADE.

7. MANHOLE STEPS ARE NOT PERMITTED.

## DRAIN MANHOLE DETAIL (PDMH)

NOT TO SCALE



- 1. SEE SITE PLAN FOR LIMITS OF CURBING
- 2. ADJOINING STONES OF STRAIGHT CURB LAID ON CURVES SHALL HAVE THE SAME OR APPROXIMATELY THE SAME LENGTH
- 3. MINIMUM LENGTH OF STRAIGHT CURB STONES = 18"
- 4. MAXIMUM LENGTH OF STRAIGHT CURB STONES = 8'
- 5. MAXIMUM LENGTH OF STRAIGHT CURB STONES LAID ON CURVES -SEE CHART

RADIUS FOR STONES WITH SQUARE JOINTS	MAXIMUM LENGTH
16'-28' 29'-41' 42'-55' 56'-68' 69'-82' 83'-96'	1'-6" 2' 3' 4' 5' 6' 7'
	۱ ۵٬

SIGN DETAILS SLOPED GRANITE CURB NOT TO SCALE

1. ALL SIGNS SHALL MEET THE REQUIREMENTS OF AND BE

INSTALLED AS INDICATED IN THE

MANUAL ON UNIFORM TRAFFIC

CONTROL DEVICES, LATEST

90° CUT OPTION

\* 1/3 POST HEIGHT

<u>LENGTH:</u> AS REQUIRED

\* IN LEDGE DRILL & GROUT TO A MIN OF 2'

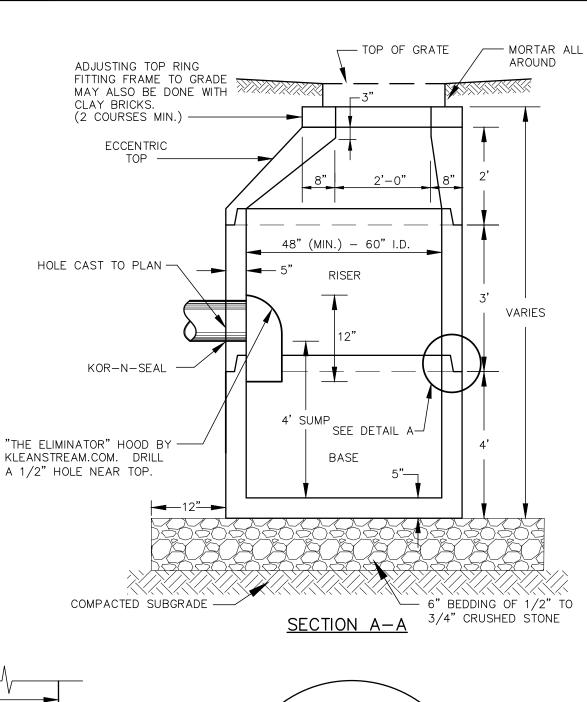
WEIGHT PER LINEAR FOOT: 2.50 LBS (MIN.)

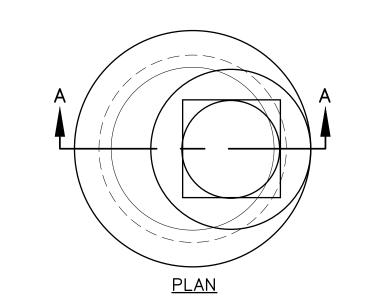
HOLES: 3/8" DIAMETER, 1" C-C FULL LENGTH

STEEL: SHALL CONFORM TO ASTM A-499 (GRADE 60) OR ASTM A-576 (GRADE 1070 - 1080)

PRODUCT SELECTED OR EQUIVALENT APRROVED BY THE ENGINEER.

**DEEP SUMP CATCH BASIN** 





ENGINEERING, INC.

- LOAM & SEED

(SEE SITE PLANS)

- GRANITE CURB

Portsmouth, NH 03801 133 Court Street (603) 433-2335 www.altus-eng.com

NOT FOR CONSTRUCTION

SSUED FOR:

TAC WORK SESSION

DECEMBER 1, 2020

<u>REVISIONS</u>

ISSUE DATE:

NO. DESCRIPTION BY DATE TAC WORK SESSION EBS 12/01/20

DRAWN BY: APPROVED BY: .

5090-DETAILS.dwg DRAWING FILE: \_\_\_

22" x 34" NOT TO SCALE

NOT TO SCALE

FREDERICK W. WATSON REVOCABLE TRUST, ROBERT D. WATSON, TRUSTEE

53 SLEEPY HOLLOW DRIVE GREENLAND, NH 03840

<u>APPLICANT:</u>

FREDERICK W. WATSON REVOCABLE TRUST, ROBERT D. WATSON, TRUSTEE

53 SLEEPY HOLLOW DRIVE GREENLAND, NH 03840

PROJECT:

WATSON'S LANDING TAX MAP 209, LOT 33

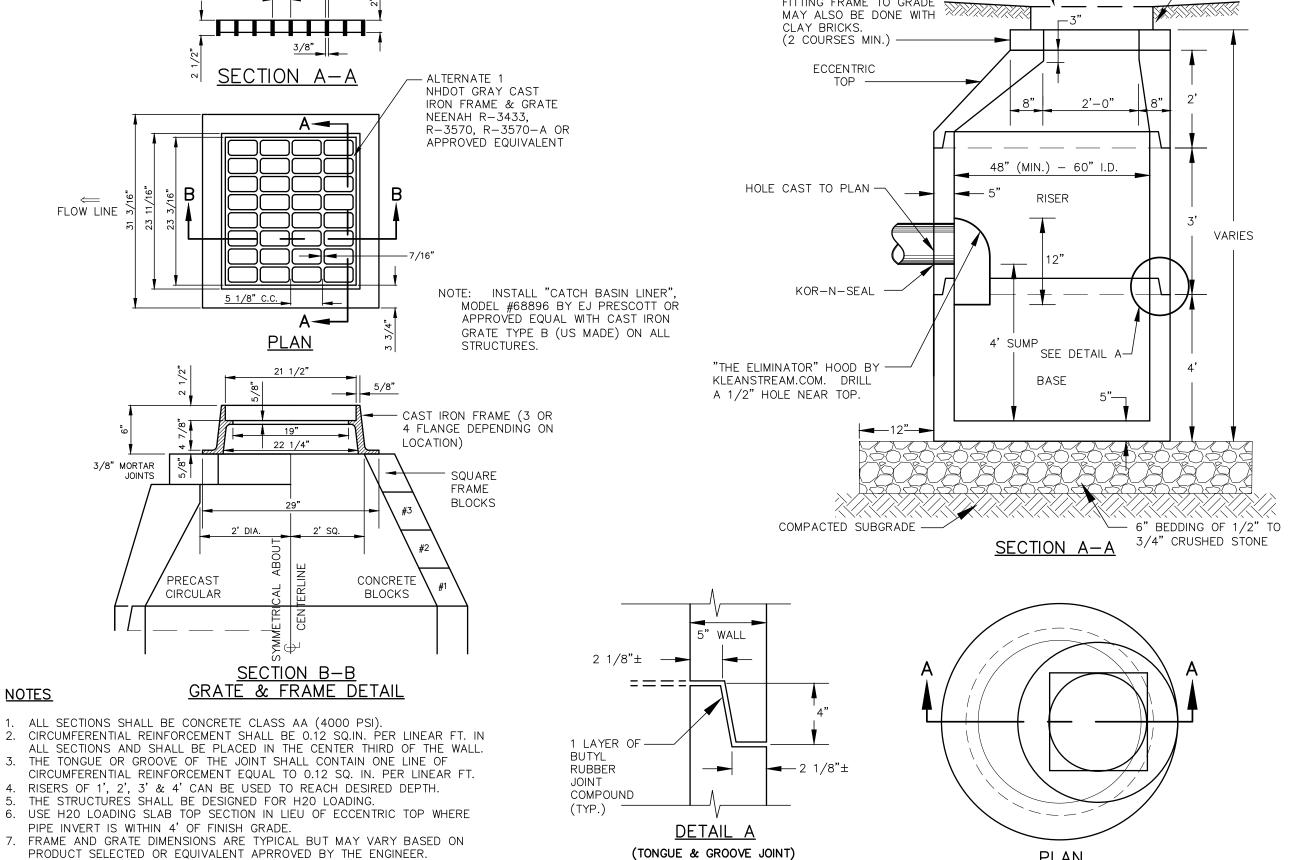
1 CLARK DRIVE PORTSMOUTH, NH 03801

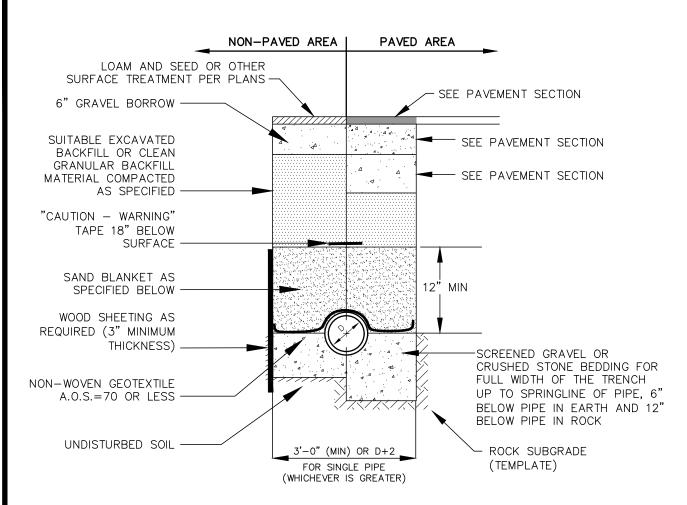
**DETAILS SHEET** 

SHEET NUMBER:

NOT TO SCALE

D-3





- 1. BACKFILL MATERIAL BELOW PAVED OR CONCRETE AREAS, BEDDING MATERIAL, AND SAND BLANKET SHALL BE COMPACTED TO NOT LESS THAN 95% OF AASHTO T 99, METHOD C. SUITABLE BACKFILL MATERIAL BELOW LOAM AREAS SHALL BE COMPACTED TO NOT LESS THAN 90% OF AASHTO T 99,
- 2. INSULATE GRAVITY SEWER AND FORCEMAINS WHERE THERE IS LESS THAN 5'-0" OF COVER WITH 2" THICK CLOSED CELL RIGID BOARD INSULATION, 18" ON EACH SIDE OF PIPE.
- 3. MAINTAIN 12" MINIMUM HORIZONTAL SEPARATION AND WIDEN TRENCH ACCORDINGLY IF MULTIPLE PIPES ARE IN TRENCH.

SAND	BLANKET/BARRIER	SCREENED GRAVEL C	OR CRUSHED STONE BEDDING*
SIEVE SIZE	% FINER BY WEIGHT	SIEVE SIZE	% PASSING BY WEIGHT
1/2" 200	90 — 100 0 — 15	1" 3/4" 3/8" # 4 # 8	100 90 - 100 20 - 55 0 - 10 0 - 5

DRAINAGE, SEWER & FORCEMAIN TRENCH

\* EQUIVALENT TO STANDARD STONE SIZE #67 -SECTION 703 OF NHDOT STANDARD SPECIFICATIONS

#### STANDARD TRENCH NOTES

- ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE: BACKFILL AS STATED IN THE TECHNICAL SPECIFICATIONS OR AS SHOWN ON THE DRAWING.
- BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING THE GRADATION SHOWN IN THE TRENCH DETAIL. WHERE ORDERED BY THE ENGINEER TO STABILIZE THE BASE, SCREENED GRAVEL OR CRUSHED STONE 1-1/2 INCH TO 1/2 INCH SHALL BE USED.
- 3. SAND BLANKET: CLEAN SAND FREE FROM ORGANIC MATTER MEETING THE GRADATION SHOWN IN THE TRENCH DETAIL. BLANKET MAY BE REPLACED WITH BEDDING MATERIAL FOR CAST-IRON, DUCTILE IRON, AND REINFORCED CONCRETE PIPE PROVIDED THAT NO STONE LARGER THAN 2" IS IN CONTACT WITH THE PIPE AND THE GEOTEXTILE IS RELOCATED ACCORDINGLY.
- 4. SUITABLE MATERIAL: IN ROADS, ROAD SHOULDERS, WALKWAYS AND TRAVELED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT, OR CLAY, ALL EXCAVATED LEDGE MATERIAL ALL ROCKS OVER 6 INCHES IN LARGEST DIMENSION, AND ANY MATERIAL WHICH, AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION. IN CROSS COUNTRY CONSTRUCTION, SUITABLE MATERIAL SHALL BE AS DESCRIBED ABOVE, EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, MUCK, OR PEAT, IF SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE AND PROVIDED THAT EASY ACCESS TO THE SEWER FOR MAINTENANCE AND POSSIBLE RECONSTRUCTION WILL BE PRESERVED.
- 5. BASE COURSE AND PAVEMENT SHALL MEET THE REQUIREMENTS OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION'S LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES - DIVISIONS 300 AND 400 RESPECTIVELY.
- 6. SHEETING, IF REQUIRED: WHERE SHEETING IS PLACED ALONGSIDE THE PIPE AND EXTENDS BELOW MID-DIAMETER, IT SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION 1 FOOT ABOVE THE TOP OF PIPE. WHERE SHEETING IS ORDERED BY THE ENGINEER TO BE LEFT IN PLACE, IT SHALL BE CUT OFF AT LEAST 3 FEET BELOW FINISHED GRADE, BUT NOT LESS THAT 1 FOOT ABOVE THE TOP OF THE PIPE.
- 7. W = MAXIMUM ALLOWABLE TRENCH WIDTH TO A PLANE 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES. FOR PIPES GREATER THAN 15 INCHES IN NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE OUTSIDE DIAMETER (O.D.) ALSO, W SHALL BE THE PAYMENT WIDTH FOR LEDGE EXCAVATION AND FOR ORDERED EXCAVATION BELOW GRADE.
- 8. FOR CROSS COUNTRY CONSTRUCTION, BACKFILL, FILL AND/OR LOAM SHALL BE MOUNDED TO A HEIGHT OF 6 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
- 9. CONCRETE FOR ENCASEMENT SHALL CONFORM TO THE NEW HAMPSHIRE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS STANDARD SPECIFICATION REQUIREMENTS FOR CLASS A (3000#) CONCRETE AS FOLLOWS:

CEMENT: 6.0 BAGS PER CUBIC YARD WATER: 5.75 GALLONS PER BAG

CEMENT MAXIMUM SIZE OF AGGREGATE: 1 INCH CONCRETE ENCASEMENT IS NOT ALLOWED FOR PVC PIPE.

- 10. CONCRETE FULL ENCASEMENT: IF FULL ENCASEMENT IS UTILIZED, DEPTH OF CONCRETE BELOW PIPE SHALL BE 1/4 I.D. (4" MINIMUM). BLOCK SUPPORT SHALL BE SOLID CONCRETE BLOCKS.
- 11. NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES DESIGN STANDARDS REQUIRE TEN FEET (10') SEPARATION BETWEEN WATER AND SEWER. REFER TO TOWN'S STANDARD SPECIFICATIONS FOR METHODS OF PROTECTION IN AREAS THAT CANNOT MEET THESE REQUIREMENTS.

#### 6" COMPACTED LOAM NON-PAVED AREA | PAVED AREA AND SEED OR OTHER SURFACE TREATMENT PER PLANS -- SEE PAVEMENT SECTION SEE PAVEMENT SECTION SEE PAVEMENT SECTION 5' COVER (MIN) (7' COVER MAX) — CAUTION TAPE READING "CAUTION WATER LINE BURIED BELOW" SUITABLE EXCAVATED BACKFILL OR CLEAN SUITABLE EXCAVATED GRANULAR BACKFILL BACKFILL MATERIAL, OR MATERIAL COMPACTED GRANULAR MATERIAL AS SPECIFIED -WHERE SPECIFIED, COMPACTED IN 12" LIFTS TO 95% STANDARD PROCTOR MAXIMUM DENSITY. TYPE "K" COPPER WATER SERVICE OR DUCTILE IRON CLASS 52 WATER MAIN AS SPECIFIED SAND BLANKET 6" NOMINAL (12" IN LEDGE)

SAND BLANKET/BARRIER		
SIEVE SIZE	% FINER BY WEIGHT	
1/2" 200	90 — 100 0 — 15	
200	0 19	

EDGE OF PAVEMENT-

VALVE BOX —

CONCRETE

SUPPORT

CRADLE —

NOT TO SCALE

1. BACKFILL MATERIAL BELOW PAVED OR CONCRETE AREAS, BEDDING MATERIAL. AND SAND BLANKET SHALL BE COMPACTED TO NOT LESS THAN 95% OF AASHTO T 99, METHOD C. SUITABLE BACKFILL MATERIAL BELOW LOAM AREAS SHALL BE COMPACTED TO NOT LESS THAN 90% OF AASHTO T 99,

3' MAX.

3' (MIN)

- 2. DUCTILE IRON WATER MAINS SHALL BE POLY WRAPPED.FOR THEIR ENTIRE LENGTH.
- 3. WATER MAINS SHALL HAVE 3 WEDGES PER JOINT.

## WATER MAIN TRENCH

NOT TO SCALE

-INDICATOR POST

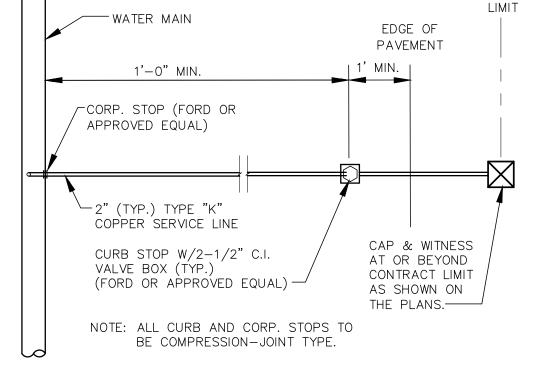
- HYDRANT SHALL BE KENNEDY

TO CITY OF PORTSMOUTH'S

K-81A GUARDIAN WITH A

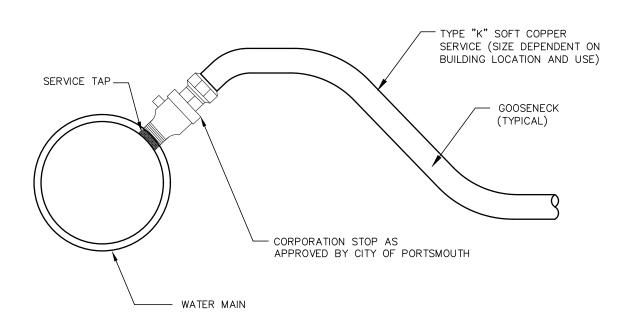
5-1/4" VALVE OPENING. HYDRANT SHALL BE PAINTED

SPECIFICATIONS.



CONTRACT

NOTE: ALL MATERIALS AND SPECIFICATIONS SHALL CONFORM TO CITY OF PORTSMOUTH WATER DEPARTMENT STANDARDS AND REQUIREMENTS. VERIFY PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES.



DIAMETER VARIES

**≦**← FOSTER TYPE ADAPTER

- MEGA-LUG TYPE

RETAINER GLAND

MECHANICAL JOINT

WATER SERVICE CONNECTION

MJ GATE VALVE

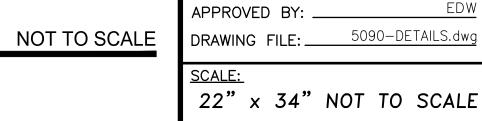
AS SHOWN ON

BOX COVER

TO BE MARKED

DRAWINGS-

DIAMETER VARIES



DRAWN BY:

133 Court Street

(603) 433-2335

SSUED FOR:

ISSUE DATE:

<u>REVISIONS</u>

NO. DESCRIPTION

TAC WORK SESSION

Portsmouth, NH 03801

www.altus-eng.com

22" x 34" NOT TO SCALE

NOT FOR CONSTRUCTION

TAC WORK SESSION

DECEMBER 1, 2020

BY DATE

EBS 12/01/20

EBS

FREDERICK W. WATSON REVOCABLE TRUST, ROBERT D. WATSON, TRUSTEE

53 SLEEPY HOLLOW DRIVE GREENLAND, NH 03840

#### <u>APPLICANT:</u>

FREDERICK W. WATSON REVOCABLE TRUST, ROBERT D. WATSON, TRUSTEE

53 SLEEPY HOLLOW DRIVE GREENLAND, NH 03840

#### PROJECT:

WATSON'S LANDING TAX MAP 209, LOT 33

1 CLARK DRIVE

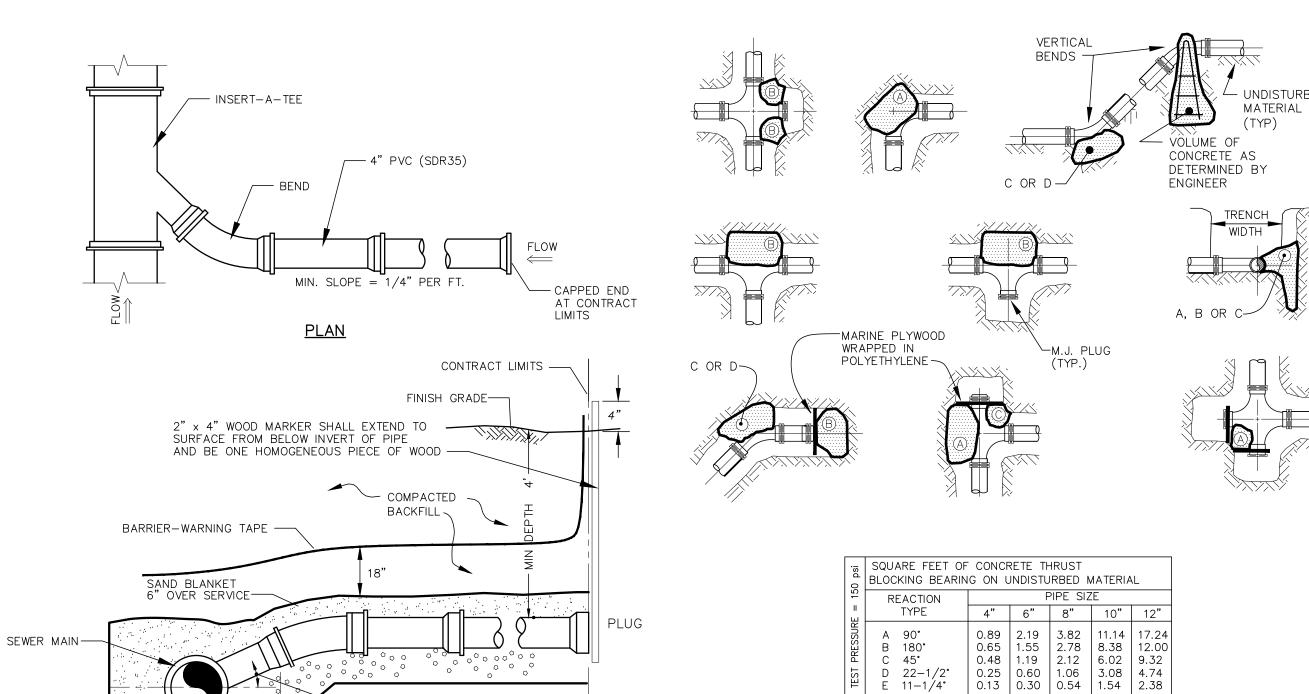
PORTSMOUTH, NH 03801

TITLE:

DETAILS SHEET

SHEET NUMBER:

D-4

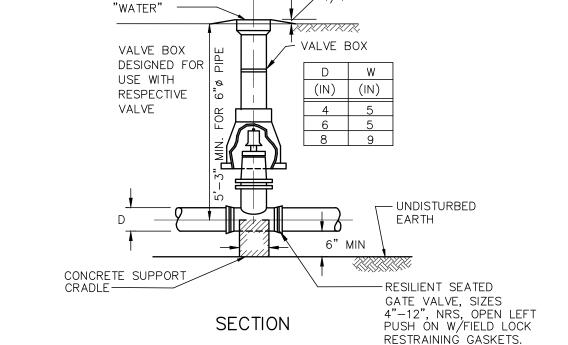


#### **NOTES**

- 1. POUR THRUST BLOCKS AGAINST UNDISTURBED MATERIAL. WHERE TRENCH WALL HAS BEEN DISTURBED, EXCAVATE LOOSE MATERIAL AND EXTEND THRUST BLOCK TO UNDISTURBED MATERIAL.
- 2. NO JOINTS SHALL BE COVERED WITH CONCRETE. POLYETHYLENE (6 MIL) SHALL BE PLACED AROUND FITTINGS PRIOR TO CONCRETE PLACEMENT.
- 3. ON BENDS AND TEES, EXTEND THRUST BLOCKS FULL LENGTH OF FITTING.
- 4. PLACE BOARD IN FRONT OF ALL PLUGS BEFORE POURING THRUST BLOCKS. WHERE M.J. PIPE IS USED, M.J. PLUG WITH RETAINER GLAND MAY BE SUBSTITUTED FOR END BLOCKINGS.

# NOT TO SCALE

## FIRE HYDRANT



WATER VALVE DETAIL

NOT TO SCALE

THREADED RODS (TYP) CONCRETE ANCHOR-NOTES: 1. GATE VALVES SHALL OPEN RIGHT, PER CITY STANDARDS. 2. BRANCH PIPING SHALL BE MECHANICALLY RESTRAINED AS NOTED UNDER THRUST BLOCK DETAIL REQUIREMENTS. 5' MIN. TEE & GATE VALVE ASSEMBLY DETAIL NOT TO SCALE

-THRUST BLOCK -CRUSHED STONE HYDRANT DRAIN SHALL BE PLUGGED - CONCRETE SITTING BLOCK — 6" M.J. RESILIENT SEALED GATE VALVE CONFORMING TO THE CITY OF PORTSMOUTH WATER DEPARTMENT REQUIREMENTS

2. GATE VALVES & HYDRANTS TO OPEN RIGHT (CLOCKWISE).

- 1. HYDRANT INSTALLATION AND OPERATION TO CONFORM TO REGULATIONS OF THE CITY OF PORTSMOUTH WATER & FIRE DEPARTMENTS.

EQUAL.) NOT TO SCALE

(BY U.S. PIPE OR APPROVED



NOTE: SERVICE CONNECTION SHALL BE INSTALLED

BELOW WATER MAIN WHERE POSSIBLE.

**ELEVATION** 

-INSERT-A-TEE AT APPROX. 45° (LENGTH VARIES)

-1/2"- 3/4" CRUSHED STONE (SEE STANDARD TRENCH SECTION)

LIMIT OF PAYMENT FOR SERVICE CONNECTION

NOT TO SCALE

THRUST BLOCKING