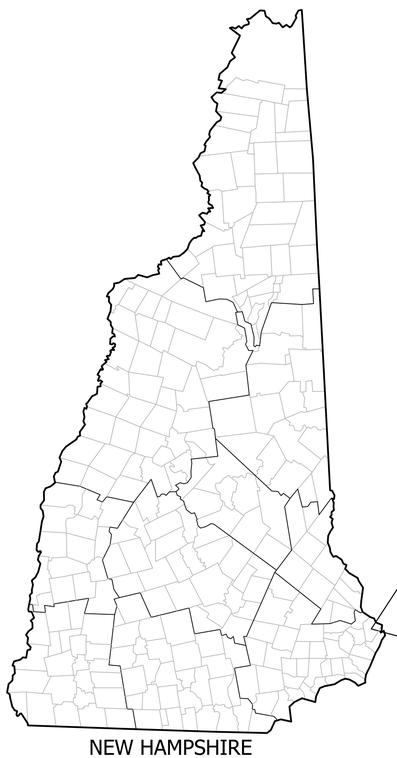
WOODBURY COOPERATIVE

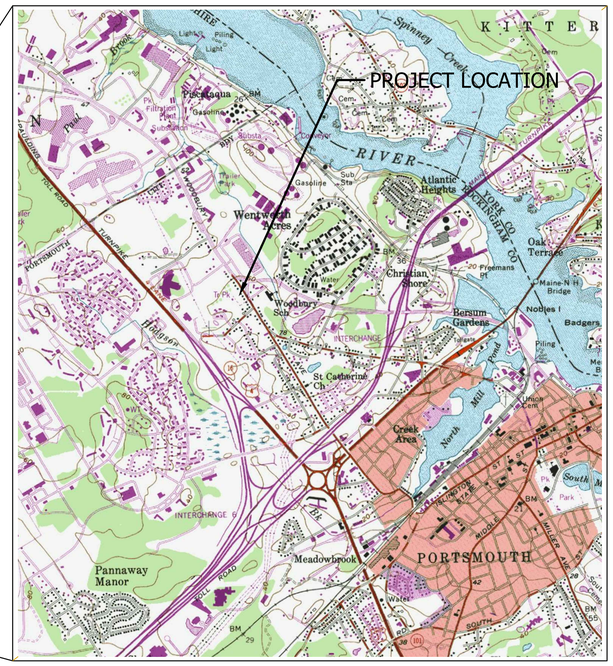
SITE IMPROVEMENTS

PORTSMOUTH, NEW HAMPSHIRE

JANUARY 2021



PORTSMOUTH



LOCATION PLAN

SCALE: 1" = 2000'

OWNER:

WOODBURY COOPERATIVE
ROC-NH
7 WALL STREET
CONCORD, NH 03301
(603) 224-6669

ENGINEER & SURVEYOR:

horizons Engineering Inc.

34 SCHOOL STREET
LITTLETON, NH 03561
(603) 444-4111

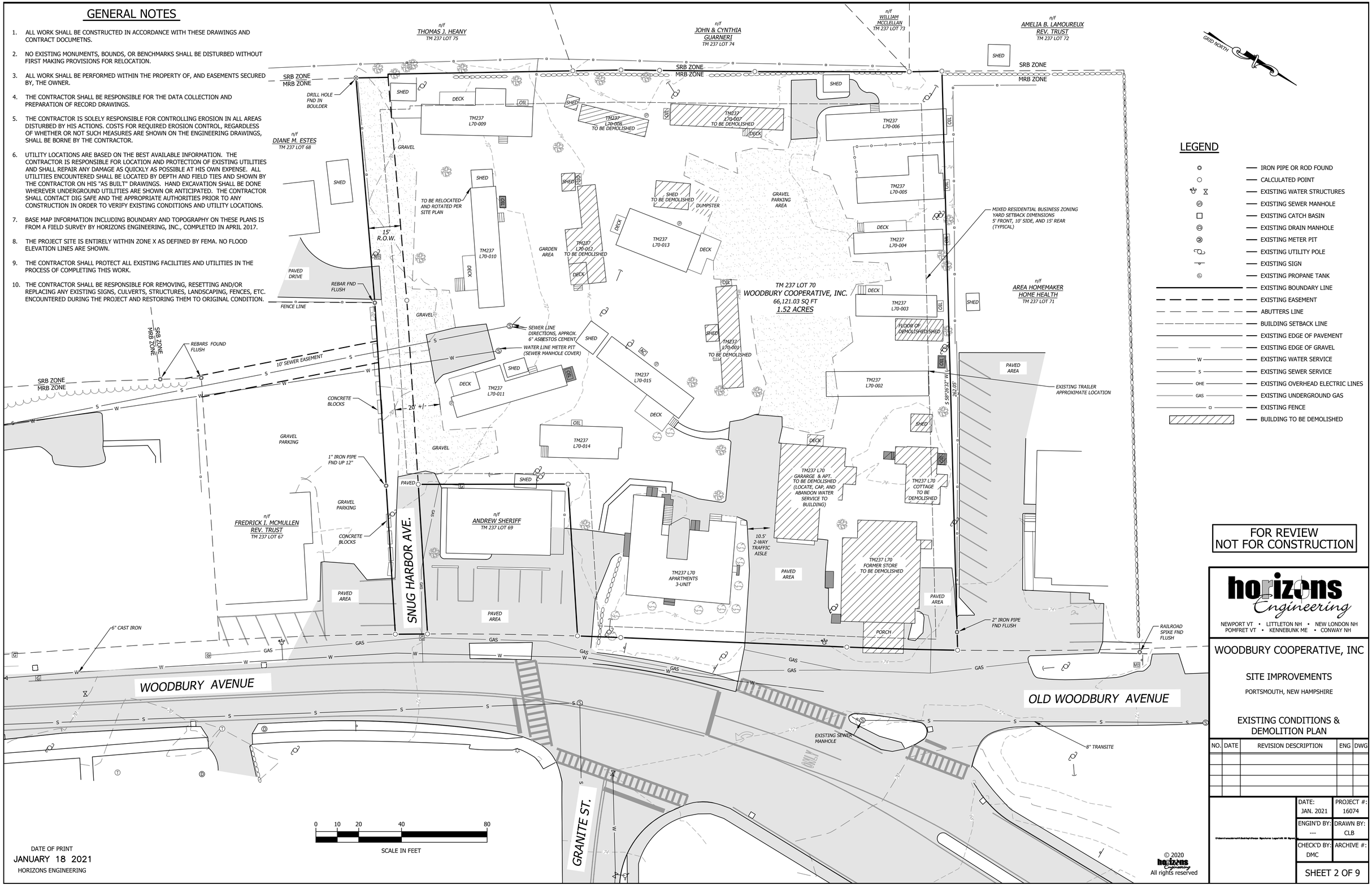
INDEX OF SHEETS:

FOR REVIEW
NOT FOR CONSTRUCTION

DATE OF PRINT
JANUARY 18 2021
HORIZONS ENGINEERING

GENERAL NOTES

1. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THESE DRAWINGS AND CONTRACT DOCUMETNS.
2. NO EXISTING MONUMENTS, BOUNDS, OR BENCHMARKS SHALL BE DISTURBED WITHOUT FIRST MAKING PROVISIONS FOR RELOCATION.
3. ALL WORK SHALL BE PERFORMED WITHIN THE PROPERTY OF, AND EASEMENTS SECURED BY, THE OWNER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DATA COLLECTION AND PREPARATION OF RECORD DRAWINGS.
5. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONTROLLING EROSION IN ALL AREAS DISTURBED BY HIS ACTIONS. COSTS FOR REQUIRED EROSION CONTROL, REGARDLESS OF WHETHER OR NOT SUCH MEASURES ARE SHOWN ON THE ENGINEERING DRAWINGS, SHALL BE BORNE BY THE CONTRACTOR.
6. UTILITY LOCATIONS ARE BASED ON THE BEST AVAILABLE INFORMATION. THE CONTRACTOR IS RESPONSIBLE FOR LOCATION AND PROTECTION OF EXISTING UTILITIES AND SHALL REPAIR ANY DAMAGE AS QUICKLY AS POSSIBLE AT HIS OWN EXPENSE. ALL UTILITIES ENCOUNTERED SHALL BE LOCATED BY DEPTH AND FIELD TIES AND SHOWN BY THE CONTRACTOR ON HIS "AS BUILT" DRAWINGS. HAND EXCAVATION SHALL BE DONE WHEREVER UNDERGROUND UTILITIES ARE SHOWN OR ANTICIPATED. THE CONTRACTOR SHALL CONTACT DIG SAFE AND THE APPROPRIATE AUTHORITIES PRIOR TO ANY CONSTRUCTION IN ORDER TO VERIFY EXISTING CONDITIONS AND UTILITY LOCATIONS.
7. BASE MAP INFORMATION INCLUDING BOUNDARY AND TOPOGRAPHY ON THESE PLANS IS FROM A FIELD SURVEY BY HORIZONS ENGINEERING, INC., COMPLETED IN APRIL 2017.
8. THE PROJECT SITE IS ENTIRELY WITHIN ZONE X AS DEFINED BY FEMA. NO FLOOD ELEVATION LINES ARE SHOWN.
9. THE CONTRACTOR SHALL PROTECT ALL EXISTING FACILITIES AND UTILITIES IN THE PROCESS OF COMPLETING THIS WORK.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING, RESETTING AND/OR REPLACING ANY EXISTING SIGNS, CULVERTS, STRUCTURES, LANDSCAPING, FENCES, ETC. ENCOUNTERED DURING THE PROJECT AND RESTORING THEM TO ORIGINAL CONDITION.



LEGEND

- IRON PIPE OR ROD FOUND
- CALCULATED POINT
- EXISTING WATER STRUCTURES
- EXISTING SEWER MANHOLE
- EXISTING CATCH BASIN
- EXISTING DRAIN MANHOLE
- EXISTING METER PIT
- EXISTING UTILITY POLE
- EXISTING SIGN
- EXISTING PROPANE TANK
- EXISTING BOUNDARY LINE
- EXISTING EASEMENT
- ABUTTERS LINE
- BUILDING SETBACK LINE
- EXISTING EDGE OF PAVEMENT
- EXISTING EDGE OF GRAVEL
- EXISTING WATER SERVICE
- EXISTING SEWER SERVICE
- EXISTING OVERHEAD ELECTRIC LINES
- EXISTING UNDERGROUND GAS
- EXISTING FENCE
- BUILDING TO BE DEMOLISHED

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WOODBURY COOPERATIVE, INC

SITE IMPROVEMENTS

PORTSMOUTH, NEW HAMPSHIRE

EXISTING CONDITIONS & DEMOLITION PLAN

NO.	DATE	REVISION DESCRIPTION	ENG	DWG

DATE: JAN. 2021 | PROJECT #: 16074
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AREA COVERAGE TOTALS

EXISTING

BUILDINGS, SHEDS, DECKS, CONCRETE :	15,237 SQ. FT. (0.35 ACRES)
GRAVEL:	10,961 SQ. FT. (0.25 ACRES)
PAVEMENT:	6,349 SQ. FT. (0.15 ACRES)
TOTAL EXISTING IMPERVIOUS:	32,547 SQ. FT. (0.75 ACRES)

PROPOSED

BUILDINGS, SHEDS, DECKS, CONCRETE:	12,820 SQ. FT. (0.30 ACRES)
GRAVEL:	15,953 SQ. FT. (0.37 ACRES)
PAVEMENT:	4,999 SQ. FT. (0.11 ACRES)
TOTAL PROPOSED IMPERVIOUS:	33,772 SQ. FT. (0.85 ACRES)

SITE PLAN REGULATION 1.2.2

EXEMPTION OF SMALL PROJECTS CALCULATIONS

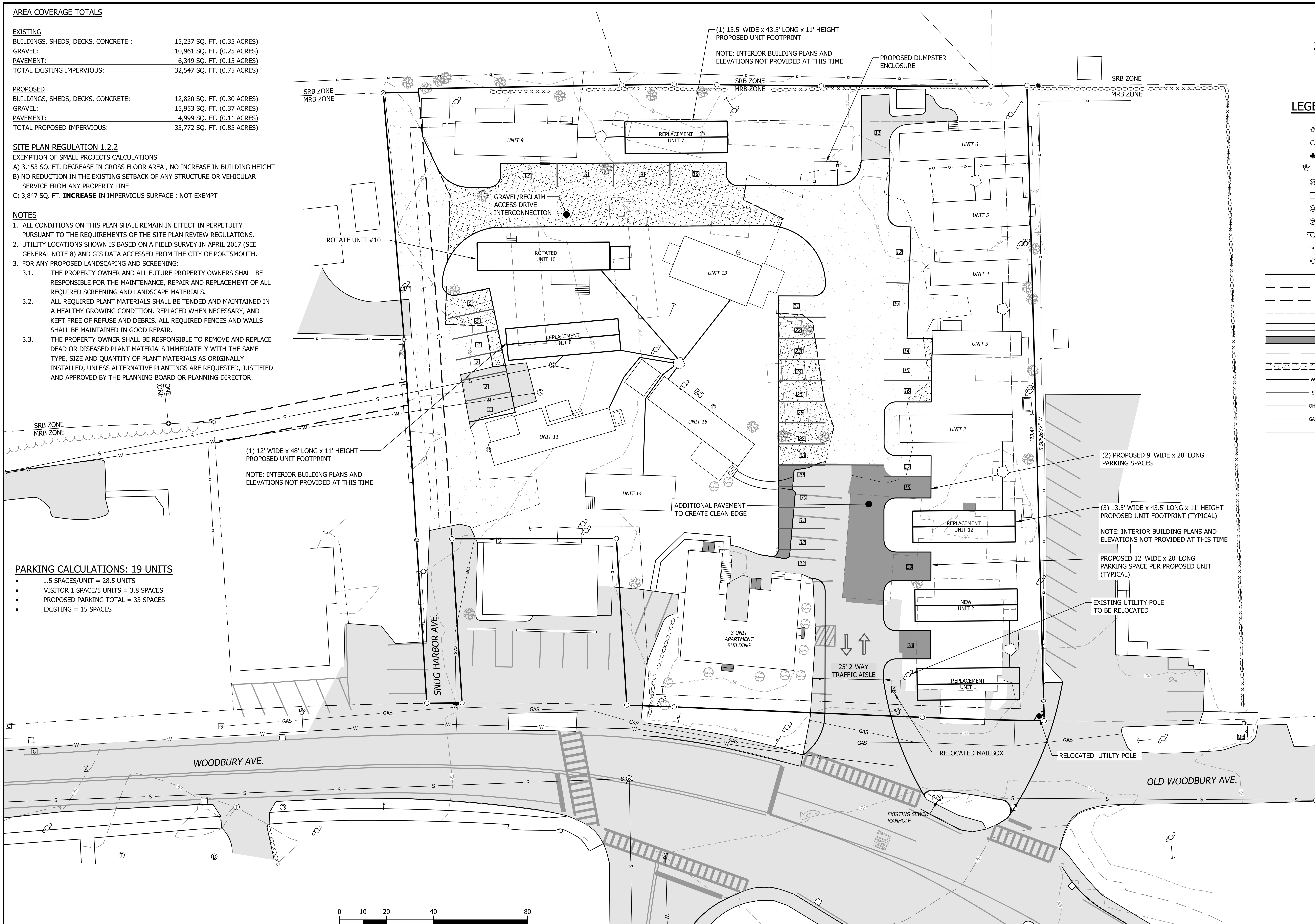
A) 3,153 SQ. FT. DECREASE IN GROSS FLOOR AREA , NO INCREASE IN BUILDING HEIGHT

B) NO REDUCTION IN THE EXISTING SETBACK OF ANY STRUCTURE OR VEHICULAR SERVICE FROM ANY PROPERTY LINE

C) 3,847 SQ. FT. **INCREASE** IN IMPERVIOUS SURFACE ; NOT EXEMPT

NOTES

1. ALL CONDITIONS ON THIS PLAN SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE SITE PLAN REVIEW REGULATIONS.
2. UTILITY LOCATIONS SHOWN IS BASED ON A FIELD SURVEY IN APRIL 2017 (SEE GENERAL NOTE 8) AND GIS DATA ACCESSED FROM THE CITY OF PORTSMOUTH.
3. FOR ANY PROPOSED LANDSCAPING AND SCREENING:
   - 3.1. THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS SHALL BE RESPONSIBLE FOR THE MAINTENANCE, REPAIR AND REPLACEMENT OF ALL REQUIRED SCREENING AND LANDSCAPE MATERIALS.
   - 3.2. 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.
   - 3.3. 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.



PARKING CALCULATIONS: 19 UNITS

- 1.5 SPACES/UNIT = 28.5 UNITS
- VISITOR 1 SPACE/5 UNITS = 3.8 SPACES
- PROPOSED PARKING TOTAL = 33 SPACES
- EXISTING = 15 SPACES

LEGEND

- IRON PIPE OR ROD FOUND
- CALCULATED POINT
- 5/8" REBAR TO BE SET
- EXISTING WATER STRUCTURES
- EXISTING SEWER MANHOLE
- EXISTING CATCH BASIN
- EXISTING DRAIN MANHOLE
- EXISTING METER PIT
- EXISTING UTILITY POLE
- EXISTING SIGN
- EXISTING PROPANE TANK
- EXISTING BOUNDARY LINE
- ABUTTERS LINE
- EXISTING EASEMENT
- SETBACK LINE
- EXISTING EDGE OF PAVEMENT
- PROPOSED EDGE OF PAVEMENT
- EXISTING EDGE OF GRAVEL
- PROPOSED EDGE OF GRAVEL
- EXISTING WATER SERVICE
- EXISTING SEWER SERVICE
- EXISTING OVERHEAD ELECTRIC LINES
- EXISTING UNDERGROUND GAS
- EXISTING FENCE

GRID NORTH

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0 10 20 40 80

SCALE IN FEET

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WOODBURY COOPERATIVE, INC

SITE IMPROVEMENTS

PORTSMOUTH, NEW HAMPSHIRE

SITE AND GRADING PLAN

NO.	DATE	REVISION DESCRIPTION	ENG	DWG

DATE: JAN. 2021	PROJECT #: 16074
ENGIN'D BY: RDL	DRAWN BY: CLB
CHECK'D BY: DMC	ARCHIVE #:
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WATER AND SEWER CONSTRUCTION NOTES

1. ALL NEW AND EXISTING MANUFACTURED HOMES IN THE PARK ARE TO BE CONNECTED TO THE NEW SEWER AND WATER MAINS WITH NEW SERVICE LINES.

2. THE NEW WATER AND SEWER SERVICE LINES SHOWN ON THE PLANS REPRESENT THE PERFERRED ROUTING TO EACH UNIT, **THE CONTRACTOR IS REQUIRED TO VERIFY THE LOCATION OF THE EXISTING UNIT SPECIFIC SEWER AND WATER SERVICE LINES AS THEY EXIT THE HEATED SPACE BELOW EACH UNIT.** ADJUSTMENTS TO THE SERVICE LINE ROUTING SHOWN ARE EXPECTED AND SHALL BE APPROVED BY THE OWNER PRIOR TO INSTALLATION.

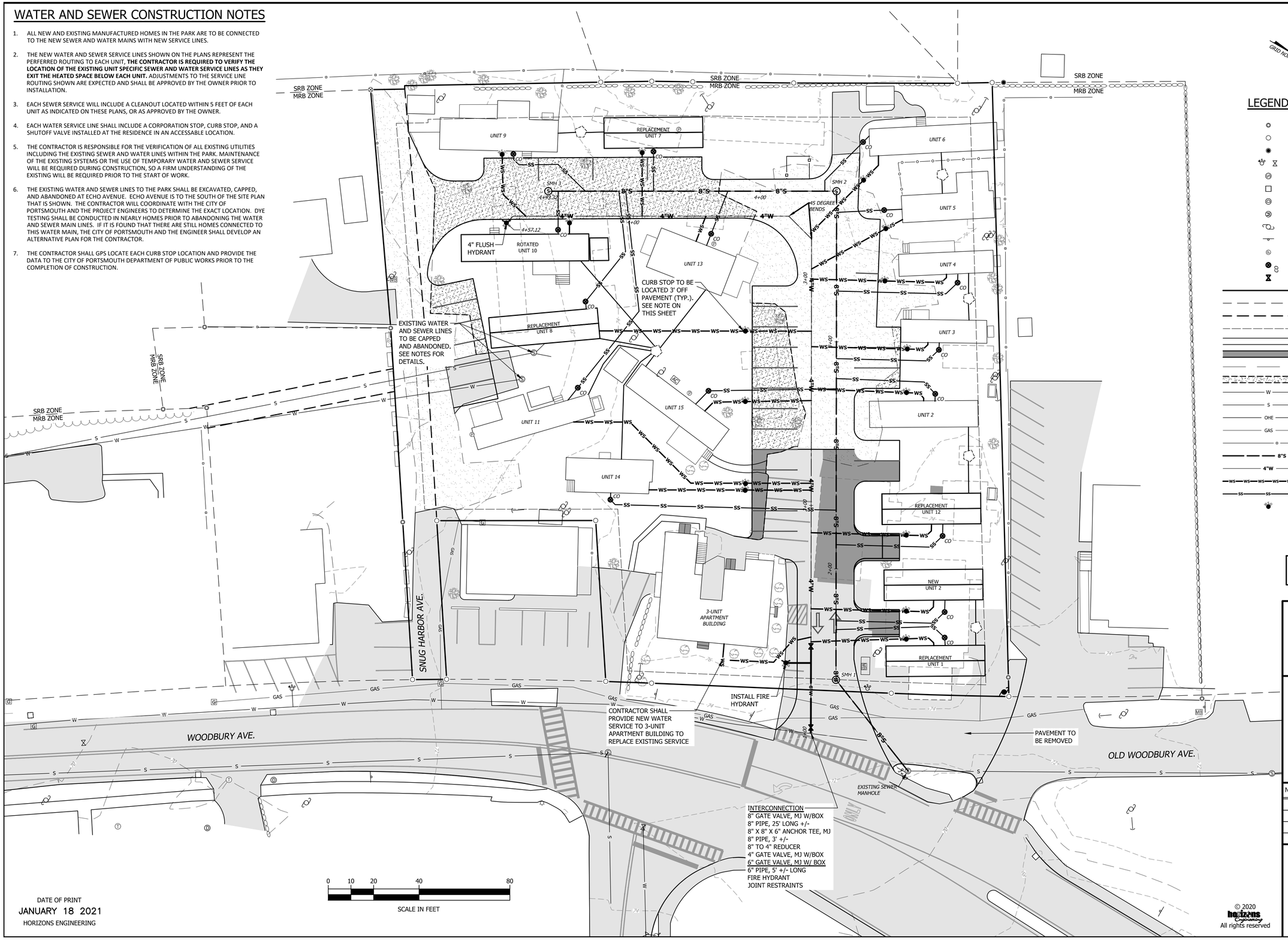
3. EACH SEWER SERVICE WILL INCLUDE A CLEANOUT LOCATED WITHIN 5 FEET OF EACH UNIT AS INDICATED ON THESE PLANS, OR AS APPROVED BY THE OWNER.

4. EACH WATER SERVICE LINE SHALL INCLUDE A CORPORATION STOP, CURB STOP, AND A SHUTOFF VALVE INSTALLED AT THE RESIDENCE IN AN ACCESSABLE LOCATION.

5. THE CONTRACTOR IS RESPONSIBLE FOR THE VERIFICATION OF ALL EXISTING UTILITIES INCLUDING THE EXISTING SEWER AND WATER LINES WITHIN THE PARK. MAINTENANCE OF THE EXISTING SYSTEMS OR THE USE OF TEMPORARY WATER AND SEWER SERVICE WILL BE REQUIRED DURING CONSTRUCTION, SO A FIRM UNDERSTANDING OF THE EXISTING WILL BE REQUIRED PRIOR TO THE START OF WORK.

6. THE EXISTING WATER AND SEWER LINES TO THE PARK SHALL BE EXCAVATED, CAPPED, AND ABANDONED AT ECHO AVENUE. ECHO AVENUE IS TO THE SOUTH OF THE SITE PLAN THAT IS SHOWN. THE CONTRACTOR WILL COORDINATE WITH THE CITY OF PORTSMOUTH AND THE PROJECT ENGINEERS TO DETERMINE THE EXACT LOCATION. DYE TESTING SHALL BE CONDUCTED IN NEARLY HOMES PRIOR TO ABANDONING THE WATER AND SEWER MAIN LINES. IF IT IS FOUND THAT THERE ARE STILL HOMES CONNECTED TO THIS WATER MAIN, THE CITY OF PORTSMOUTH AND THE ENGINEER SHALL DEVELOP AN ALTERNATIVE PLAN FOR THE CONTRACTOR.

7. THE CONTRACTOR SHALL GPS LOCATE EACH CURB STOP LOCATION AND PROVIDE THE DATA TO THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS PRIOR TO THE COMPLETION OF CONSTRUCTION.



LEGEND

- IRON PIPE OR ROD FOUND
- CALCULATED POINT
- 5/8" REBAR TO BE SET
- EXISTING WATER STRUCTURES
- EXISTING SEWER MANHOLE
- EXISTING CATCH BASIN
- EXISTING DRAIN MANHOLE
- EXISTING METER PIT
- EXISTING UTILITY POLE
- EXISTING SIGN
- EXISTING PROPANE TANK
- PROPOSED SEWER SERVICE CLEANOUT
- PROPOSED GATE VALVE
- EXISTING BOUNDARY LINE
- ABUTTERS LINE
- EXISTING EASEMENT
- SETBACK LINE
- EXISTING EDGE OF PAVEMENT
- PROPOSED EDGE OF PAVEMENT
- EXISTING EDGE OF GRAVEL
- PROPOSED EDGE OF GRAVEL
- W — EXISTING WATER SERVICE
- S — EXISTING SEWER SERVICE
- OHE — EXISTING OVERHEAD ELECTRIC LINES
- GAS — EXISTING UNDERGROUND GAS
- EXISTING FENCE
- 8"S — PROPOSED 8" SEWER MAIN
- 4"W — PROPOSED 4" WATER MAIN
- PROPOSED 2" WATER SERVICE
- PROPOSED 4" SEWER SERVICE
- PROPOSED WATER SHUT OFF

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WOODBURY COOPERATIVE, INC

SITE IMPROVEMENTS

PORTSMOUTH, NEW HAMPSHIRE

UTILITY PLAN

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HORIZONS ENGINEERING

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STANDARD TRENCH NOTES - WATER

1. ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE SHALL BE REPLACED WITH BEDDING MATERIAL. SEE ALSO NOTE 4.

2. BEDDING & SAND BLANKET: CLEAN SAND FREE FROM ORGANIC MATTER, SO GRADED THAT 100% PASSES A ½ INCH SIEVE AND NOT MORE THAN 15% PASSES A #200 SIEVE.

3. SUITABLE MATERIAL: IN ROADS, ROAD SHOULDERS, WALKWAYS, AND TRAVELED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED FROM THE TRENCH DURING THE COURSE OF CONSTRUCTION, AFTER EXCLUDING DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, WET OR SOFT MUCK, PEAT OR CLAY, EXCAVATED LEDGE MATERIAL, AND ALL ROCKS OVER SIX INCHES IN LARGEST DIMENSION, OR ANY MATERIAL NOT APPROVED BY THE ENGINEER.

   TRENCH BACKFILL IN CROSS-COUNTRY LOCATIONS SHALL BE SUITABLE MATERIAL AS DESCRIBED ABOVE, EXCEPT THAT TOP SOIL, LOAM, MUCK, OR PEAT MAY BE USED PROVIDED THAT THE COMPLETED CONSTRUCTION WILL BE STABLE AND ACCESS TO THE PIPE FOR MAINTENANCE AND RECONSTRUCTION IS PRESERVED. BACKFILL SHALL BE MOUNDED TO A HEIGHT OF SIX INCHES ABOVE THE ORIGINAL GROUND SURFACE

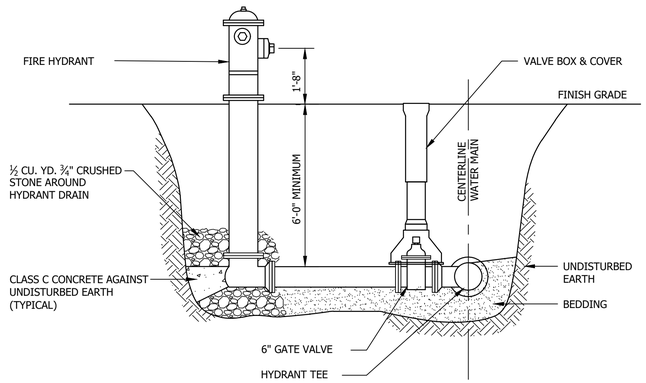
4. BASE COURSE FOR TRENCH REPAIR SHALL MEET THE REQUIREMENTS OF SECTION 300 OF THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION OF THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION.

5. SHEETING: ALL TRENCH SUPPORTS SHALL CONFORM TO OSHA STANDARDS. CONTRACTOR IS RESPONSIBLE FOR OSHA COMPLIANCE AND WORKER SAFETY THROUGHOUT CONSTRUCTION.

6. TRENCH DIMENSIONS: W = MAXIMUM ALLOWABLE TRENCH WIDTH MEASURED 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER (D) OR LESS, W SHALL BE NO MORE THAN 36 INCHES; FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS THE PIPE OUTSIDE DIAMETER. W SHALL ALSO BE THE PAYMENT WIDTH FOR LEDGE EXCAVATION AND FOR ORDERED EXCAVATION BELOW GRADE. THE MAXIMUM ALLOWABLE TRENCH PAVEMENT PAYMENT WIDTH SHALL BE 8 FEET CENTERED OVER PIPE.

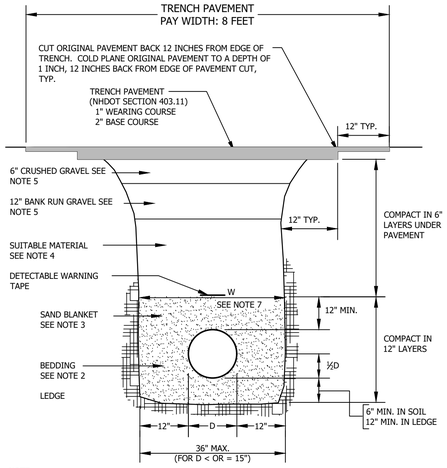
7. WATER/SEWER SEPARATION: WATER MAINS SHALL BE SEPARATED FROM SANITARY SEWER BY A MINIMUM OF 10 FEET HORIZONTALLY AND A MINIMUM OF 18 INCHES VERTICALLY, WITH THE WATER MAIN ABOVE THE SEWER.

8. PIPE COVER:
   COVER OVER WATER SHALL BE 6 FEET MINIMUM IN ALL LOCATIONS.



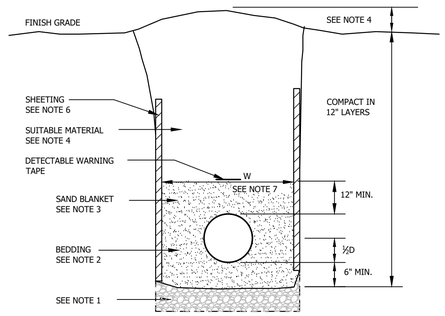
FIRE HYDRANT DETAIL

NOT TO SCALE



NOTE:
MINIMUM BEDDING DEPTH AND MAXIMUM PAYMENT LIMIT FOR LEDGE EXCAVATION = ½D (12" MINIMUM)

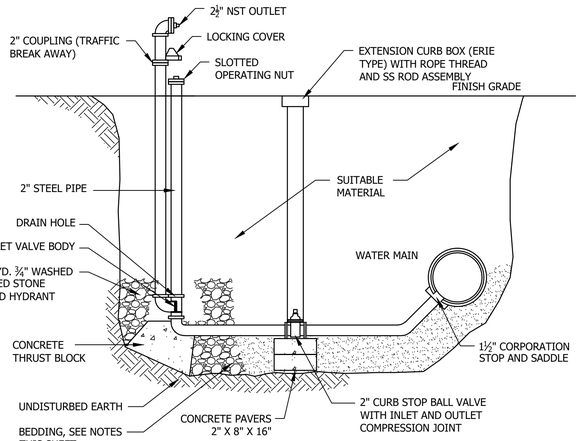
LEDGE/SUB PAVEMENT CONSTRUCTION



EARTH CONSTRUCTION WITH OR WITHOUT SHEETING

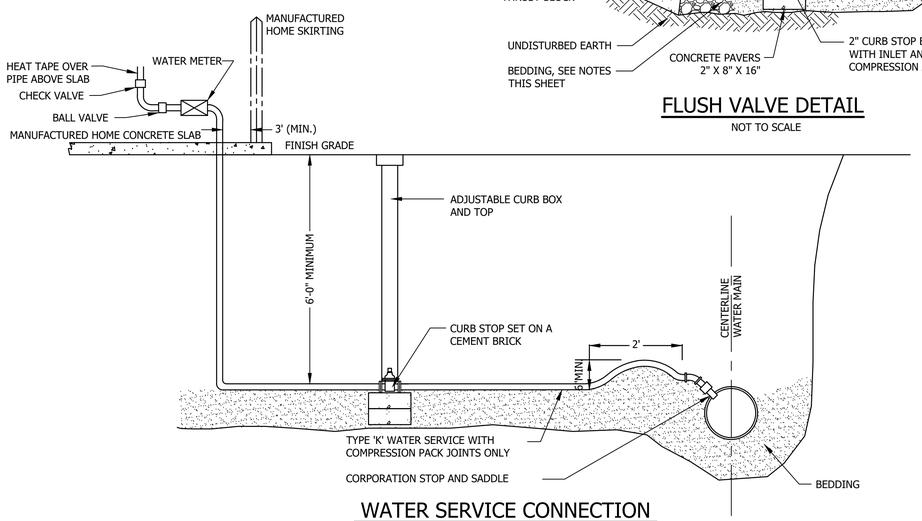
STANDARD TRENCH SECTIONS

NOT TO SCALE



FLUSH VALVE DETAIL

NOT TO SCALE



WATER SERVICE CONNECTION

NOT TO SCALE

NOTES

1. MAINGUARD #77 KUPFERLE FOUNDRY OR APPROVED EQUAL.
2. PAINTED RED ABOVE GRADE.
3. MINIMUM OF 4 CUBIC FEET OF CRUSHED STONE FOR PROPER DRAINAGE.
4. PAY ITEM FOR FLUSHING HYDRANT INCLUDES CORPORATION AND CURB STOP IN ROADWAY.

- BLOCKS MUST BE POURED AGAINST UNDISTURBED SOIL
- THE PIPE JOINT AND BOLTS MUST BE ACCESSIBLE.
- CONCRETE SHOULD BE CURED FOR AT LEAST 5 DAYS AND SHOULD HAVE A COMPRESSION STRENGTH OF 3,000 LBS. AT 28 DAYS.
- BLOCKS MUST BE POSITIONED TO COUNTERACT THE DIRECTION OF THE RESULTANT THRUST FORCE.

RESTRAINED JOINTS MAY BE USED FOR RESISTING THRUST FORCES WHERE THERE IS A SHORTAGE OF SPACE OR WHERE THE SOIL BEHIND A FITTING WILL NOT PROVIDE ADEQUATE SUPPORT. THIS RESTRAINING METHOD INVOLVES PLACEMENT OF THESE SPECIAL JOINTS AT APPROPRIATE FITTINGS AND FOR A PREDETERMINED NUMBER OF PIPE LENGTHS ON EACH SIDE, (MINIMUM 15 FEET).

RESULTANT THRUST AT FITTINGS AT 100 PSI WATER PRESSURE

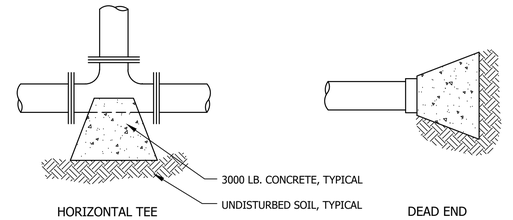
NOMINAL PIPE DIA. (INCHES)	TOTAL THRUST (POUNDS)				
	DEAD END	90° BEND	45° BEND	22½° BEND	11¼° BEND
4	1,810	2,559	1,385	706	355
6	3,739	5,288	2,862	1,459	733
8	6,433	9,097	4,923	2,510	1,261
10	9,677	13,685	7,406	3,776	1,897
12	13,685	19,353	10,474	5,340	2,683
14	18,385	26,001	14,072	7,174	3,604
16	23,779	33,628	18,199	9,278	4,661
18	29,865	42,235	22,858	11,653	5,855
20	36,644	51,822	28,046	14,298	7,183
24	52,279	73,934	40,013	20,398	10,249

NOTE:
TO DETERMINE THRUST AT PRESSURES OTHER THAN 100 PSI, MULTIPLY THE THRUST OBTAINED IN THE TABLE BY THE RATIO OF THE PRESSURE TO 100. FOR EXAMPLE, THE THRUST ON A 12 INCH, 90° BEND AT 125 PSI IS:

19,353 x 125 = 24,191 POUNDS
100

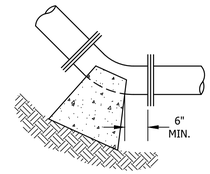
TO DETERMINE THE SIZE OF A CONCRETE THRUST BLOCK, DIVIDE THE TOTAL FORCE BY THE BEARING VALUE OF THE SOIL. THE QUOTIENT WILL BE THE SIZE OF THE BEARING AREA OF THE THRUST BLOCK IN SQUARE FEET. APPROXIMATE VALUES FOR VARIOUS TYPES OF SOIL ARE LISTED BELOW.

SOIL	BEARING LOAD (LBS./SQ. FT.)
MUCK	0
SOFT CLAY	1,000
SILT	1,500
SANDY SILT	3,000
SAND	4,000
SANDY CLAY	6,000

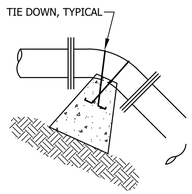


HORIZONTAL TEE

DEAD END



HORIZONTAL BEND



VERTICAL BEND

THRUST BLOCK NOTES & DETAILS

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WOODBURY COOPERATIVE, INC

SITE IMPROVEMENTS

PORTSMOUTH, NEW HAMPSHIRE

POTABLE WATER DETAILS

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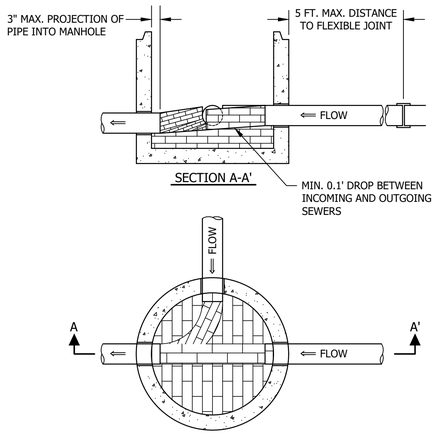
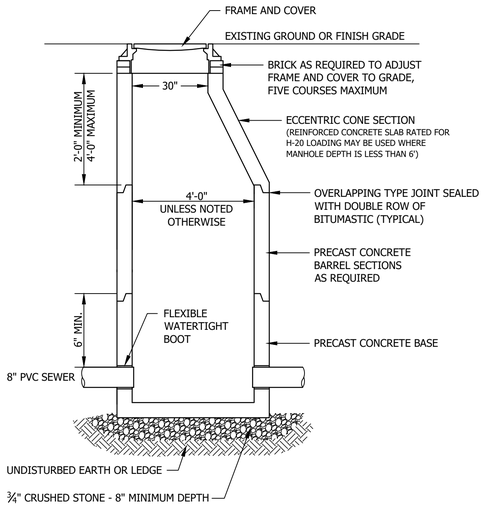


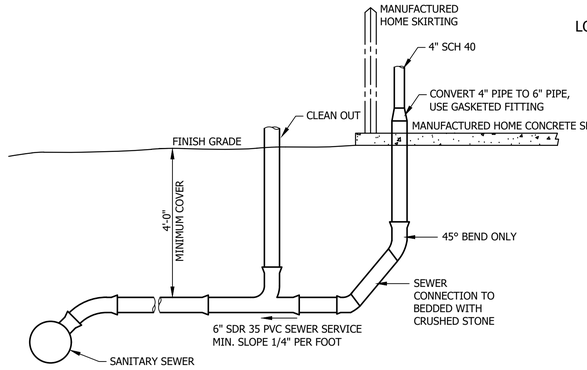
MANHOLE INVERT DETAILS

NOT TO SCALE



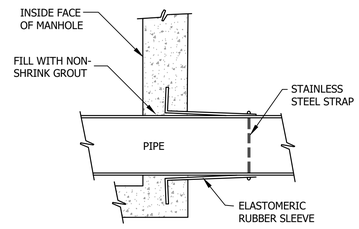
SANITARY SEWER MANHOLE DETAIL

NOT TO SCALE

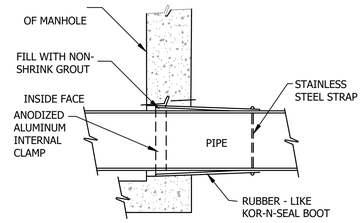


SEWER SERVICE DETAIL

NOT TO SCALE



LOCK-JOINT FLEXIBLE MANHOLE SLEEVE



KOR-N-SEAL JOINT SLEEVE

JOINTING DETAILS

NOT TO SCALE

STANDARD TRENCH NOTES - SEWER

1. ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE SHALL BE REPLACED WITH BEDDING MATERIAL. SEE ALSO NOTE 4.

2. BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM ORGANIC MATTER, CLAY, AND/OR LOAM MEETING ASTM C33 STONE SIZE NO. 67.

100% PASSING	1 INCH SCREEN
90-100% PASSING	¾ INCH SCREEN
20-55% PASSING	⅜ INCH SCREEN
0-10% PASSING	#4 SIEVE
0-5% PASSING	#8 SIEVE

3. SAND BLANKET: CLEAN SAND FREE FROM ORGANIC MATTER, SO GRADED THAT 100% PASSES A ½ INCH SIEVE AND NOT MORE THAN 15% PASSES A #200 SIEVE.

4. SUITABLE MATERIAL: IN ROADS, ROAD SHOULDERS, WALKWAYS, AND TRAVELED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED FROM THE TRENCH DURING THE COURSE OF CONSTRUCTION, AFTER EXCLUDING DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, WET OR SOFT MUCK, PEAT OR CLAY, EXCAVATED LEDGE MATERIAL, AND ALL ROCKS OVER SIX INCHES IN LARGEST DIMENSION, OR ANY MATERIAL NOT APPROVED BY THE ENGINEER.

   TRENCH BACKFILL IN CROSS-COUNTRY LOCATIONS SHALL BE SUITABLE MATERIAL AS DESCRIBED ABOVE, EXCEPT THAT TOP SOIL, LOAM, MUCK, OR PEAT MAY BE USED PROVIDED THAT THE COMPLETED CONSTRUCTION WILL BE STABLE AND ACCESS TO THE PIPE FOR MAINTENANCE AND RECONSTRUCTION IS PRESERVED. BACKFILL SHALL BE MOUNDED TO A HEIGHT OF SIX INCHES ABOVE THE ORIGINAL GROUND SURFACE

5. BASE COURSE FOR TRENCH REPAIR SHALL MEET THE REQUIREMENTS OF SECTION 300 OF THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION OF THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION.

6. SHEETING: ALL TRENCH SUPPORTS SHALL CONFORM TO OSHA STANDARDS. CONTRACTOR IS RESPONSIBLE FOR OSHA COMPLIANCE AND WORKER SAFETY THROUGHOUT CONSTRUCTION.

7. TRENCH DIMENSIONS: W = MAXIMUM ALLOWABLE TRENCH WIDTH MEASURED 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER (D) OR LESS, W SHALL BE NO MORE THAN 36 INCHES; FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS THE PIPE OUTSIDE DIAMETER. W SHALL ALSO BE THE PAYMENT WIDTH FOR LEDGE EXCAVATION AND FOR ORDERED EXCAVATION BELOW GRADE. THE MAXIMUM ALLOWABLE TRENCH PAVEMENT PAYMENT WIDTH SHALL BE 8 FEET CENTERED OVER PIPE.

8. PIPE INSULATION AT STORM DRAIN CROSSING: INSTALL 2" THICK RIGID FOAM INSULATION OVER SEWER AT STORM DRAIN CROSSINGS, EXTEND INSULATION 4 FEET EITHER SIDE OF STORM DRAIN ALONG SEWER.

SEWER NOTES

1. GENERAL

   CONSTRUCTION OF ALL COMPONENTS OF THE SANITARY SEWER SYSTEM SHALL CONFORM TO THE MOST CURRENT VERSION OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES ENV-WQ 700 AND TECHNICAL SPECIFICATIONS ENTITLED "_____".

2. TYPES OF SEWERS

   A. THERE SHALL BE NO CONNECTION BETWEEN SANITARY SEWERS AND STORM SEWERS.
   B. RUNOFF FROM ROOFS, STREETS, AND OTHER AREAS AND GROUNDWATER FROM FOUNDATION DRAINS, SUMP PUMPS, OR OTHER SUBSURFACE DRAINS SHALL BE EXCLUDED FROM SANITARY SEWERS.

3. SEWER SIZE AND COVER

   A. MINIMUM PIPE SIZE FOR GRAVITY SEWER MAINS SHALL BE 8 INCHES.
   B. MINIMUM PIPE SIZE FOR GRAVITY SEWER SERVICES SHALL BE 4 INCHES.
   C. MINIMUM PIPE SIZE FOR FORCE MAIN SEWER SERVICES SHALL BE 2 INCHES.
   D. SANITARY SEWERS SHALL HAVE 6 FEET MINIMUM COVER IN ALL ROADWAY LOCATIONS AND 4 FEET MINIMUM COVER IN ALL CROSS-COUNTRY LOCATIONS.

4. PIPE AND FITTING MATERIALS:

A. DUCTILE IRON PIPE

   DUCTILE IRON PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE AMERICAN WATER WORKS ASSOCIATION:
   (1) AWWA C151 FOR DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL OR SAND LINED MOLDS, FOR WATER OR OTHER LIQUIDS;
   (2) AWWA C150 FOR THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A 536 IRON CASTINGS; AND
   (3) JOINTS SHALL BE MECHANICAL TYPE, PUSH-ON TYPE, OR BALL-AND-SOCKET TYPE;

B. PVC (POLY VINYL CHLORIDE) PIPE

   PVC PIPE AND FITTINGS SHALL BE APPROVED FOR SEWAGE SERVICE AND CONFORM TO THE FOLLOWING:
   (1) PVC PIPE USED FOR GRAVITY SEWERS SHALL BE TYPE SDR 35 CONFORMING TO ASTM D3034;
   (2) PVC PIPE USED FOR FORCE MAINS SHALL BE TYPE SDR 26 CONFORMING TO ASTM D2241 OR ASTM D1785;
   (3) JOINTS SHALL BE PUSH-ON, BELL-AND-SPIGOT TYPE HAVING OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D3212.

5. BEDDING

   PIPE BEDDING SHALL BE SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM ORGANIC MATTER, CLAY, AND/OR LOAM MEETING ASTM C33 STONE SIZE NO. 67. BEDDING SHALL EXTEND FROM THE SPRING LINE OF THE PIPE TO A MINIMUM DEPTH OF 6" BELOW THE BOTTOM OF THE PIPE OUTSIDE SURFACE.

100% PASSING	1 INCH SCREEN
90-100% PASSING	¾ INCH SCREEN
20-55% PASSING	⅜ INCH SCREEN
0-10% PASSING	#4 SIEVE
0-5% PASSING	#8 SIEVE

6. MANHOLES

   A. PRECAST CONCRETE BARREL SECTIONS, CONES, AND BASES SHALL CONFORM TO ASTM C478.
   B. MANHOLES SHALL BE DESIGNED FOR H-20 LOADING.
   C. HORIZONTAL JOINTS BETWEEN BARREL SECTIONS SHALL BE OF AN OVERLAPPING TYPE WHICH SHALL DEPEND UPON A DOUBLE ROW OF ELASTOMERIC OR MASTIC-LIKE SEALANT FOR WATER TIGHTNESS.
   D. PIPE TO MANHOLE JOINTS SHALL BE AS FOLLOWS:
      (1) ELASTOMERIC, RUBBER SLEEVE WITH WATERTIGHT JOINTS AT THE MANHOLE OPENING AND PIPE SURFACES;
      (2) CAST INTO THE WALL OR SECURED WITH STAINLESS STEEL CLAMPS;
      (3) ELASTOMERIC SEALING RING CAST IN THE MANHOLE OPENING WITH SEAL FORMED ON THE SURFACE OF THE PIPE BY COMPRESSION OF THE RING; AND
      (4) NON-SHRINK GROUTED JOINTS WHERE WATERTIGHT BONDING TO THE MANHOLE AND PIPE CAN BE OBTAINED.

   E. 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 HIGHEST PIPE CROWN AND SLOPED TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY. INVERTS AND SHELVES SHALL BE PLACED AFTER TESTING.

7. PROTECTION OF WATER SUPPLIES

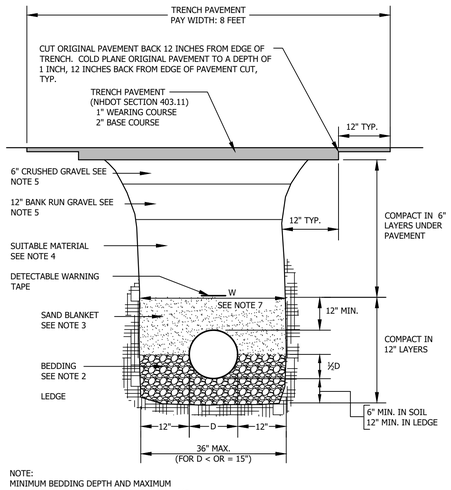
   A. THERE SHALL BE NO PHYSICAL CONNECTION BETWEEN A PUBLIC OR PRIVATE WATER SUPPLY SYSTEM AND A SEWER OR SEWER APPURTENANCE WHICH WOULD PERMIT THE PASSAGE OF SEWAGE OR POLLUTED WATER INTO THE POTABLE SUPPLY. NO WATER PIPE SHALL PASS THROUGH OR COME IN CONTACT WITH ANY PART OF A SEWER OR SEWER MANHOLE.

   B. NO SEWER SHALL BE LOCATED WITHIN THE WELL PROTECTIVE RADII ESTABLISHED IN ENV-WS 300 FOR ANY PUBLIC WATER SUPPLY WELLS OR WITHIN 100 FEET OF ANY PRIVATE WATER SUPPLY WELL.

   C. SEWERS SHALL BE LOCATED AT LEAST 10 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN.

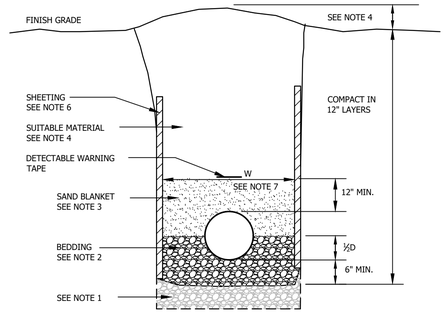
   D. A DEVIATION FROM THE SEPARATION REQUIREMENTS OF (B) OR (C) ABOVE SHALL BE ALLOWED WHERE NECESSARY TO AVOID CONFLICT WITH SUBSURFACE STRUCTURES, UTILITY CHAMBERS, AND BUILDING FOUNDATIONS, PROVIDED THAT THE SEWER IS CONSTRUCTED IN ACCORDANCE WITH THE FORCE MAIN CONSTRUCTION REQUIREMENTS SPECIFIED IN ENV-WQ 704.06.

   E. WHENEVER SEWERS MUST CROSS WATER MAINS, THE SEWER SHALL BE CONSTRUCTED AS FOLLOWS:
      (1) VERTICAL SEPARATION OF THE SEWER AND WATER MAIN SHALL BE NOT LESS THAN 18 INCHES, WITH WATER ABOVE SEWER; AND
      (2) SEWER PIPE JOINTS SHALL BE LOCATED AT LEASE 6 FEET HORIZONTALLY FROM THE WATER MAIN.



NOTE:
MINIMUM BEDDING DEPTH AND MAXIMUM PAYMENT LIMIT FOR LEDGE EXCAVATION = ½D (12" MINIMUM)

LEDGE/SUB PAVEMENT CONSTRUCTION



EARTH CONSTRUCTION
WITH OR WITHOUT SHEETING

STANDARD TRENCH SECTIONS

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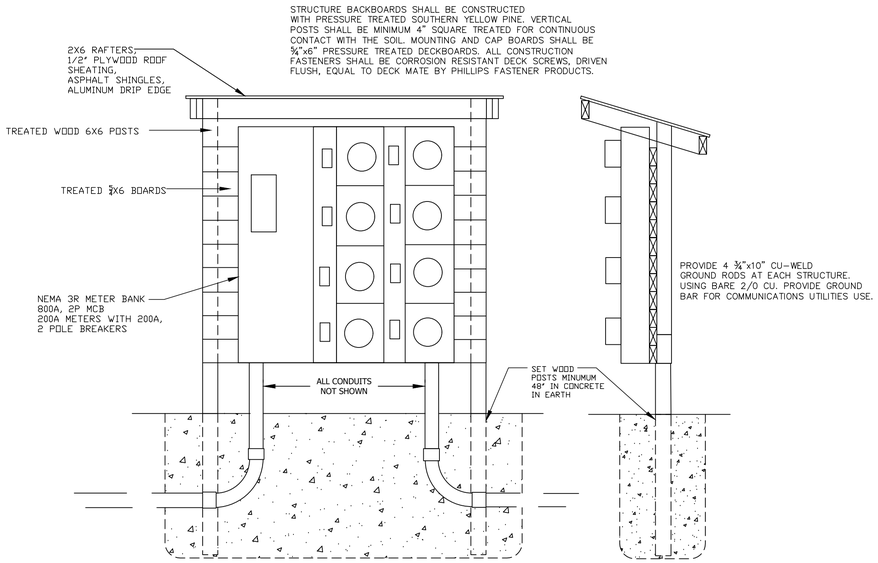

TYPICAL ELECTRICAL DISTRIBUTION STRUCTURE

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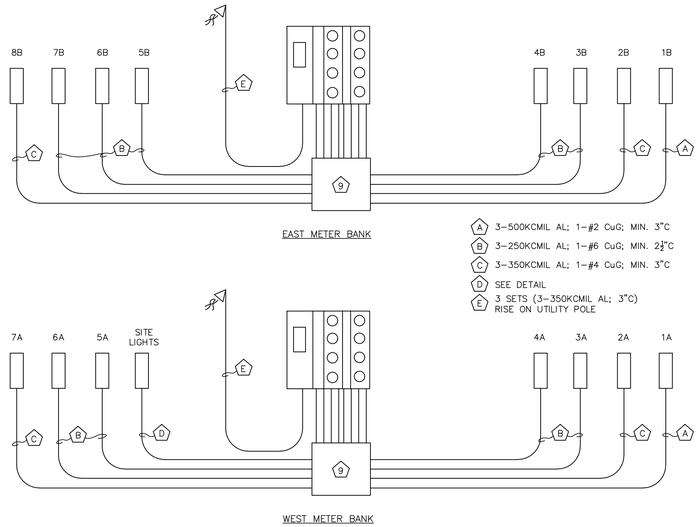
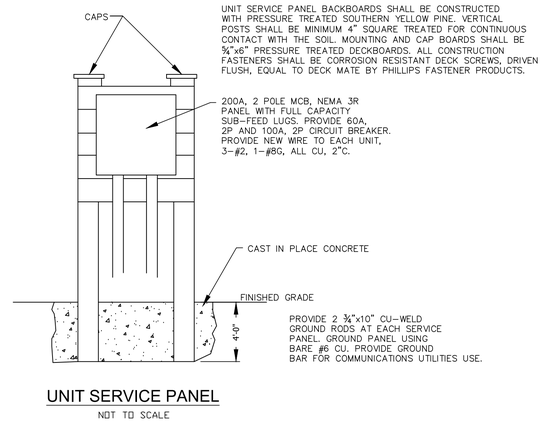


ELECTRICAL DISTRIBUTION STRUCTURE

NTS



UNIT SERVICE PANEL

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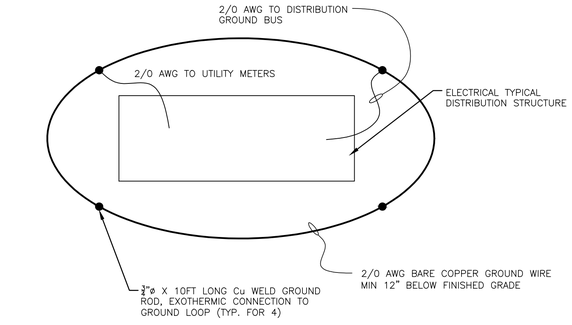
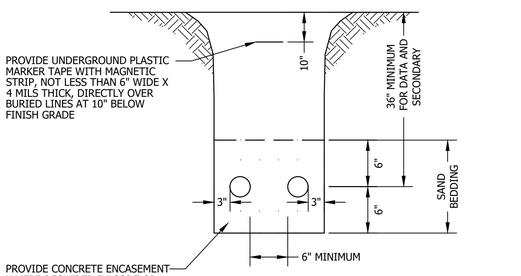


TYPICAL GROUNDING AT ELECTRICAL DISTRIBUTION STRUCTURE

NTS



PROVIDE NUMBER AND SIZES OF CONDUITS AS NOTED ON CONTRACT DRAWINGS

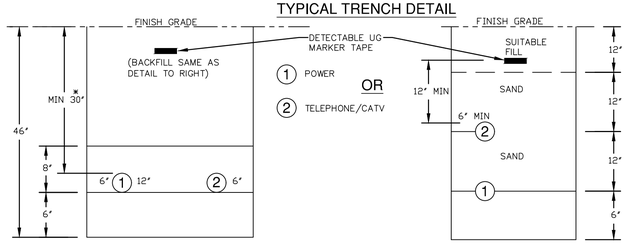
TYPICAL ELECTRIC CONDUIT DITCH DETAIL

NOT TO SCALE

CONDUIT SPECIFICATIONS

IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE CONDUIT THROUGH WHICH CABLE CAN BE SUCCESSFULLY PULLED. THE CONTRACTOR IS RESPONSIBLE FOR ALL EXPENSE ASSOCIATED WITH THE REPAIR OF CONDUIT THAT CANNOT BE USED. OWNER RESERVES THE RIGHT TO REQUIRE INSPECTION OF CONDUIT PRIOR TO BACK FILLING TO ENSURE COMPLIANCE.
NOTE: WHERE LEDGE DOES NOT PERMIT DEPTHS NOTED, CONCRETE ENCASEMENT WILL BE REQUIRED TO CONFORM TO NEC AND/OR UTILITY REQUIREMENT TO, WHICHEVER IS MORE STRINGENT.

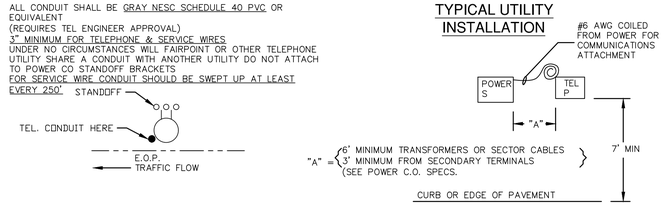
TYPICAL TRENCH DETAIL

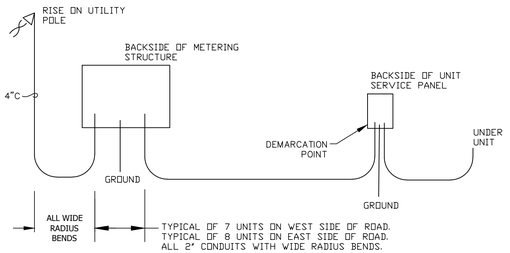


* - SECONDARY POWER; 36" PRIMARY POWER.
A - SAND BACK FILL SHALL CONSIST OF FINE GRANULAR MATERIAL 100% SHALL PASS THROUGH A 1/4" SIEVE
B - EXCEPTION: NATURALLY OCCURRING SMOOTH ROUND PEBBLES NO GREATER THAN 3/8" IN DIAMETER ARE PERMITTED AS LONG AS THE TOTAL VOLUME PER CUBIC FOOT OF SAND DOES NOT EXCEED 1%
C - THE SAND SHALL BE COMPLETELY FREE OF FROZEN LUMPS, ROCKS, STONES, DEBRIS, OR RUBBISH

ALL CONDUIT SHALL BE GRAY NESC SCHEDULE 40 PVC OR EQUIVALENT
(REQUIRES TEL ENGINEER APPROVAL)
3" MINIMUM FOR TELEPHONE & SERVICE WIRES
UNDER NO CIRCUMSTANCES WILL FAIRPOINT OR OTHER TELEPHONE UTILITY SHARE A CONDUIT WITH ANOTHER UTILITY DO NOT ATTACH TO POWER CO STANDOFF BRACKETS
FOR SERVICE WIRE CONDUIT SHOULD BE SWEPT UP AT LEAST EVERY 250'

TYPICAL UTILITY INSTALLATION





COMMUNICATIONS RISER - PHONE

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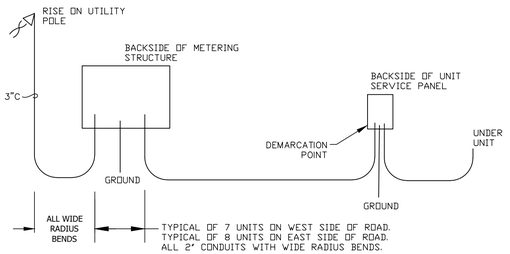

COMMUNICATIONS RISER - CATV

NTS

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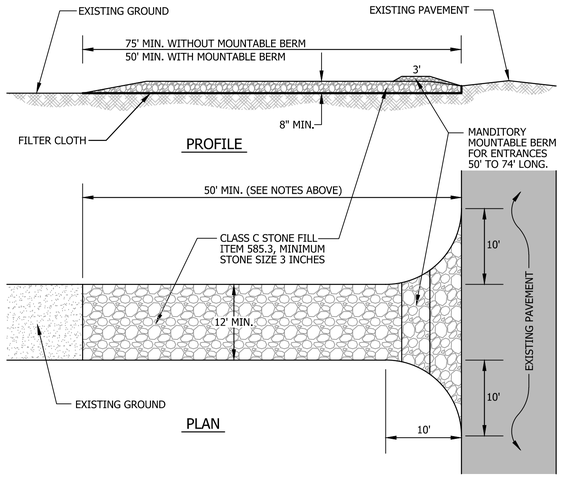

STABILIZED CONSTRUCTION ENTRANCE

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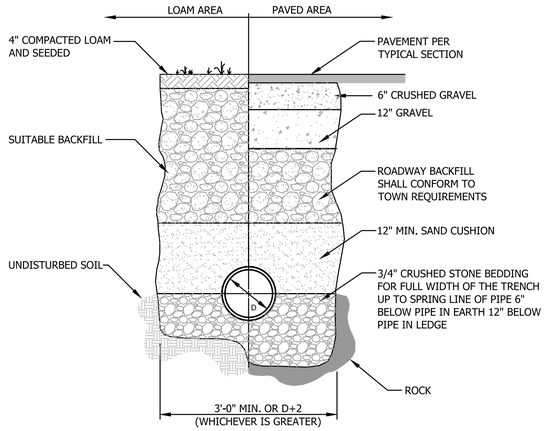

TYPICAL DRAINAGE TRENCH DETAIL

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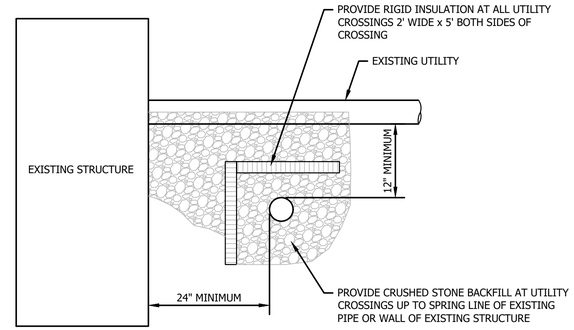

UTILITY / DRAINAGE CROSSING DETAIL

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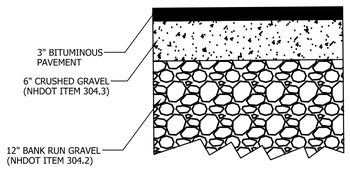

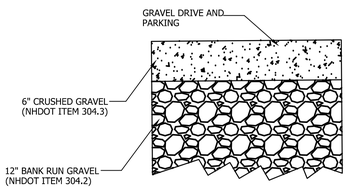

TYPICAL SECTIONS

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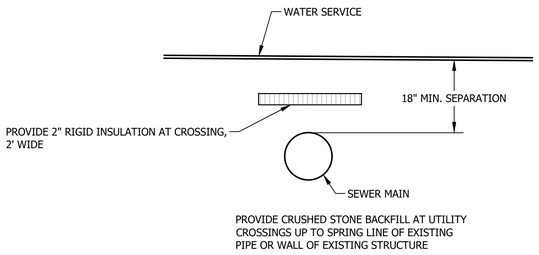

UTILITY CROSSING DETAIL

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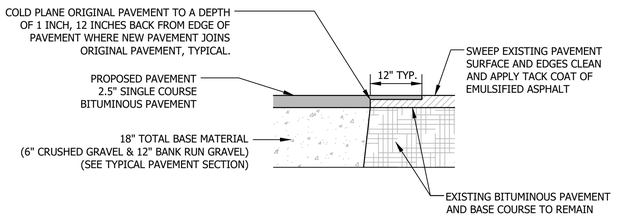

PAVEMENT JOINING DETAIL

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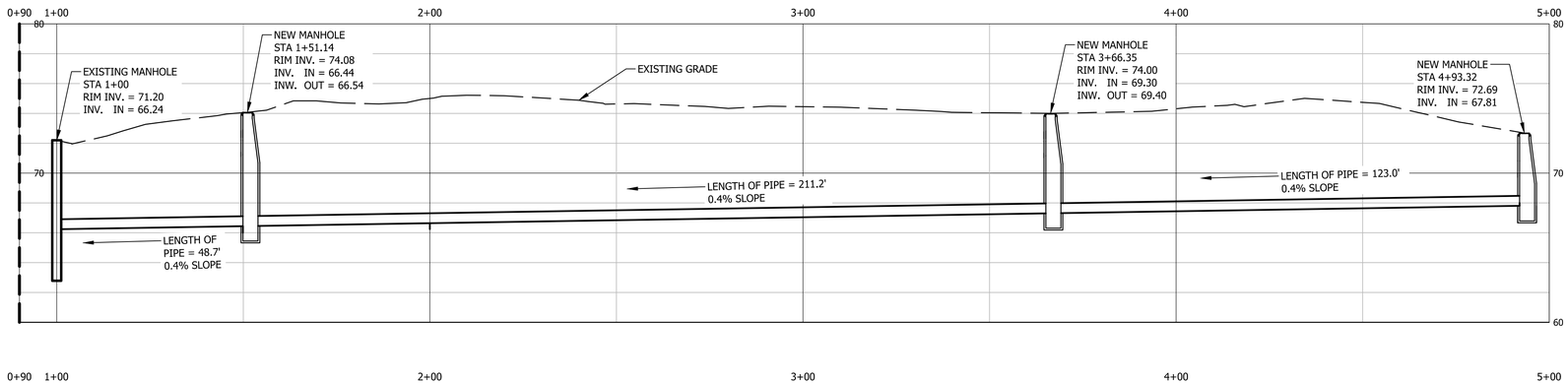

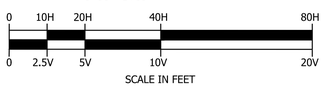

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SEEDING RECOMMENDATIONS

1. GRADING AND SHAPING

A. SLOPES SHALL NOT BE STEEPER THAN 2:1; 3:1 SLOPES OR FLATTER ARE PREFERRED. 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 AMENDED WITH ORGANIC MATTER AND TILLED TO A DEPTH OF ABOUT 4 INCHES TO PREPARE A SEEDBED AND MIX FERTILIZER AND LIME THOROUGHLY 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 VEGETATION

A. LIME AND FERTILIZER SHOULD BE APPLIED 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, 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 (P_2O_5), 100 LBS. PER ACRE OR 2.2 LBS. PER 1,000 SQ. FT.
-POTASH (K_2O), 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. SEEDING GUIDE:

USE	SEEDING MIXTURE (SEE 3D)	SOIL TYPE: DROUGHTY	WELL DRAINED	MOD. WELL DRAINED	POORLY DRAINED
STEEP CUTS AND FILLS, BORROW AND DISPOSAL AREAS	A	FAIR	GOOD	GOOD	FAIR
	B	POOR	GOOD	FAIR	FAIR
	C	FAIR	EXCELLENT	EXCELLENT	POOR
WATERWAYS, EMERGENCY SPILL-WAYS, AND OTHER CHANNELS WITH FLOWING WATER	A	GOOD	GOOD	GOOD	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

D. SEEDING RATES:

MIXTURE	POUNDS PER ACRE	POUNDS PER 1,000 SQ. FT.
A TALL FESCUE	20	0.45
CREEPING RED FESCUE	20	0.45
REDTOP	2	0.05
TOTAL:	42	0.95
B TALL FESCUE	15	0.35
CREEPING RED FESCUE	10	0.25
CROWN VETCH **OR**	15 **OR**	0.35 **OR**
FLATPEA	30	0.75
TOTAL:	40 **OR** 55	0.95 **OR** 1.35
C TALL FESCUE	20	0.45
FLATPEA	30	0.75
TOTAL:	50	1.20

E. WHEN SEEDED AREAS ARE MULCHED, PLANTINGS MAY BE MADE FROM EARLY SPRING TO SEPTEMBER 15. WHEN SEEDED AREAS ARE NOT MULCHED, PLANTINGS SHOULD BE MADE FROM EARLY SPRING TO MAY 20 OR FROM AUGUST 10 TO SEPTEMBER 1.

F. TEMPORARY SEEDING RATES:

SPECIES	POUNDS PER ACRE	POUNDS PER 1,000 SQ. FT.	REMARKS
WINTER RYE	112	2.5	BEST FOR FALL SEEDING. SEED FROM AUGUST TO SEPTEMBER 5TH FOR BEST COVER. SEED TO A DEPTH OF 1 INCH.
OATS	80	2.0	BEST FOR SPRING SEEDING. SEED NO LATER THAN MAY 15TH FOR SUMMER PROTECTION. SEED TO A DEPTH OF 1 INCH.
ANNUAL RYEGRASS	40	1.0	GROWS QUICKLY, BUT IS OF SHORT DURATION. USE WHERE APPEARANCES ARE NOT IMPORTANT. SEED EARLY SPRING AND/OR BETWEEN AUGUST 15TH AND SEPTEMBER 15TH. COVER SEED WITH NO MORE THAN 0.25 INCH OF SOIL.
PERENNIAL RYEGRASS	30	0.7	GOOD COVER WHICH IS LONGER LASTING THAN ANNUAL RYEGRASS. SEED BETWEEN APRIL 1ST AND JUNE 1ST AND/OR BETWEEN AUGUST 15TH AND SEPTEMBER 15TH. MULCHING WILL ALLOW SEEDING THROUGHOUT THE GROWING SEASON. SEED TO A DEPTH OF APPROXIMATELY 0.5 INCH.

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.

5. MAINTENANCE TO ESTABLISH A STAND

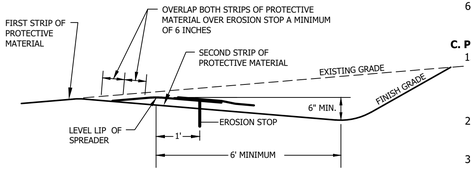
A. PLANTED AREAS SHOULD BE PROTECTED FROM DAMAGE BY FIRE, GRAZING, TRAFFIC, AND DENSE WEED GROWTH.

B. FERTILIZATION NEEDS SHOULD BE DETERMINED BY ON SITE 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 ESTABLISHED.

C. IN WATERWAYS, CHANNELS, OR SWALES WHERE UNIFORM FLOW CONDITIONS ARE ANTICIPATED, OCCASIONAL MOWING MAY BE NECESSARY TO CONTROL GROWTH OF WOODY VEGETATION.

LEVEL LIP SPREADER INSTALLATION

1. CONSTRUCT THE LEVEL SPREADER LIP ON A ZERO PERCENT GRADE TO INSURE UNIFORM SPREADING OF RUNOFF.
2. LEVEL SPREADER SHALL BE CONSTRUCTED ON UNDISTURBED SOIL AND NOT ON FILL.
3. AN EROSION STOP SHALL BE PLACED VERTICALLY A MINIMUM OF SIX INCHES DEEP IN A SLIT TRENCH ONE FOOT BACK OF THE LEVEL LIP AND PARALLEL TO THE LIP. THE EROSION STOP SHALL EXTEND THE ENTIRE LENGTH OF THE LEVEL LIP.
4. THE ENTIRE LEVEL LIP AREA SHALL BE PROTECTED BY PLACING TWO STRIPS OF JUTE OR EXCELSIOR MATTING ALONG THE LIP. EACH STRIP SHALL OVERLAP THE EROSION STOP BY AT LEAST SIX INCHES.
5. THE ENTRANCE CHANNEL TO THE LEVEL SPREADER SHALL NOT EXCEED A 1 PERCENT GRADE FOR AT LEAST 50 FEET BEFORE ENTERING INTO THE SPREADER.
6. THE FLOW FROM THE LEVEL SPREADER SHALL OUTLET ONTO STABILIZED AREAS. WATER SHOULD NOT RE-CONCENTRATE IMMEDIATELY BELOW THE SPREADER.
7. PERIODIC INSPECTION AND REQUIRED MAINTENANCE SHALL BE PERFORMED.
8. PROTECTIVE MATERIAL AND EROSION STOP SHALL BE NORTH AMERICAN GREEN C125 EROSION CONTROL BLANKET OR APPROVED EQUAL.



LEVEL SPREADER DETAIL

NO SCALE

SOURCE: ROCKINGHAM COUNTY CONSERVATION SERVICE

EROSION CONTROL GENERAL NOTES

A. KEEP SITE MODIFICATION TO A MINIMUM

1. CONSIDER FITTING THE BUILDINGS AND STREETS TO THE NATURAL TOPOGRAPHY. THIS REDUCES THE NEED FOR CUTS AND FILLS. AVOID EXTENSIVE GRADING THAT WOULD ALTER DRAINAGE PATTERNS OR CREATE VERY STEEP SLOPES.
2. EXPOSE AREAS OF BARE SOIL TO EROSIVE ELEMENTS FOR THE SHORTEST TIME POSSIBLE.
3. SAVE AND PROTECT DESIRABLE EXISTING VEGETATION WHERE POSSIBLE. ERECT BARRIERS TO PREVENT DAMAGE FROM CONSTRUCTION EQUIPMENT.
4. LIMIT THE GRADES OF SLOPES SO VEGETATION CAN BE EASILY ESTABLISHED AND MAINTAINED.
5. AVOID SUBSTANTIAL INCREASE IN RUNOFF LEAVING THE SITE.

B. MINIMIZE POLLUTION OF WATER DURING CONSTRUCTION ACTIVITIES

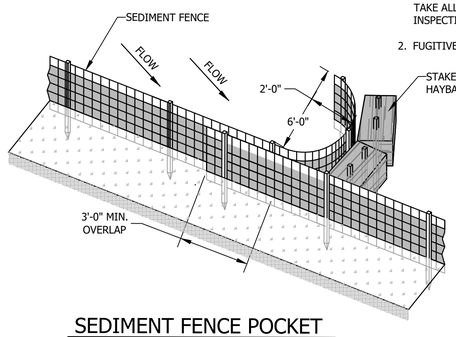
1. STOCKPILE TOPSOIL REMOVED FROM CONSTRUCTION AREA AND SPREAD OVER ANY DISTURBED AREAS PRIOR TO REVEGETATION. TOPSOIL STOCKPILES MUST BE PROTECTED FROM EROSION.
2. PROTECT BARE SOIL AREAS EXPOSED BY GRADING ACTIVITIES WITH TEMPORARY VEGETATION OR MULCHES.
3. USE SEDIMENT BASINS TO TRAP DEBRIS AND SEDIMENT WHICH WILL PREVENT THESE MATERIALS FROM MOVING OFF SITE.
4. USE DIVERSIONS TO DIRECT WATER AROUND THE CONSTRUCTION AREA AND AWAY FROM EROSION PRONE AREAS TO POINTS OF SAFE DISPOSAL.
5. USE TEMPORARY CULVERTS OR BRIDGES WHEN CROSSING STREAMS WITH EQUIPMENT.
6. PLACE CONSTRUCTION FACILITIES, MATERIALS, AND EQUIPMENT STORAGE AND MAINTENANCE AREAS AWAY FROM DRAINAGE WAYS.

C. PROTECT AREA AFTER CONSTRUCTION.

1. ESTABLISH GRASS OR OTHER SUITABLE VEGETATION ON ALL DISTURBED AREAS. SELECT SPECIES ADAPTED TO THE SITE CONDITIONS AND THE FUTURE USE OF THE AREA. FINAL GRADES SHALL BE SEEDED WITHIN 72 HOURS. STABILIZATION SHALL BE DEFINED AS 85% VEGETATIVE COVER.
2. MAINTAIN VEGETATED AREAS USING PROPER VEGETATIVE 'BEST MANAGEMENT PRACTICES' DURING THE CONSTRUCTION PERIOD.
3. MAINTAIN NEEDED STRUCTURAL 'BEST MANAGEMENT PRACTICES' AND REMOVE SEDIMENT FROM DETENTION PONDS AND SEDIMENT BASINS AS NEEDED.
4. DETERMINE RESPONSIBILITY FOR LONG TERM MAINTENANCE OF PERMANENT 'BEST MANAGEMENT PRACTICES'.
5. IF CONSTRUCTION IS ANTICIPATED DURING WINTER MONTHS, REFER TO 'COLD WEATHER SITE STABILIZATION REQUIREMENTS'.

D. INVASIVE SPECIES AND FUGITIVE DUST

1. THE PROJECT SHALL NOT CONTRIBUTE TO THE SPREAD OF INVASIVE SPECIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EVALUATE WORK AREAS FOR THE PRESENCE OF INVASIVE SPECIES, AND IF FOUND SHALL TAKE NECESSARY MEASURES TO PREVENT THEIR SPREAD IN ACCORDANCE WITH RSA 430:51-57 AND AGR 3800. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PREVENT THE INTRODUCTION OF INVASIVE SPECIES BY INSPECTING AND CLEANING ALL EQUIPMENT ARRIVING ON SITE.
2. FUGITIVE DUST SHALL BE CONTROLLED IN ACCORDANCE WITH ENV-A 1000.

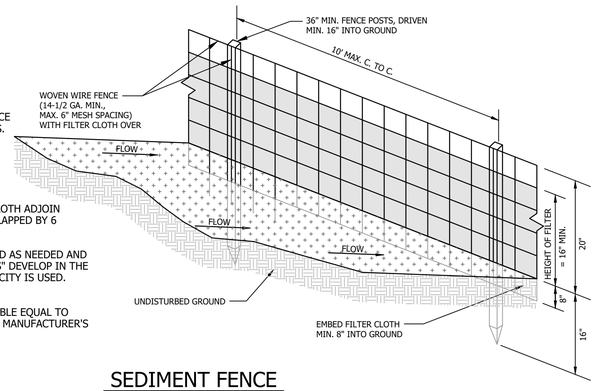


SEDIMENT FENCE POCKET

NO SCALE

CONSTRUCTION NOTES FOR SEDIMENT FENCE

1. WOVEN WIRE FENCE, IF REQUIRED, TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP, MID SECTION, AND BOTTOM.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6 INCHES, FOLDED AND STAPLED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SEDIMENT FENCE, OR 50% OF CAPACITY IS USED.
5. 12" DIAMETER FILTREXX SILTSOXX SHALL BE CONSIDERED AN ACCEPTABLE EQUAL TO SEDIMENT FENCE IF INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.



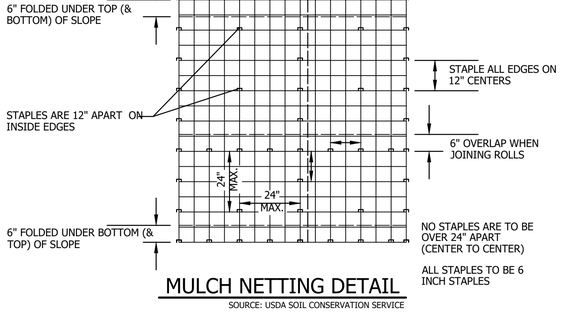
SEDIMENT FENCE

NO SCALE

COLD WEATHER SITE STABILIZATION REQUIREMENTS

TO ADEQUATELY PROTECT WATER QUALITY DURING COLD WEATHER AND DURING SPRING RUNOFF, THE FOLLOWING ADDITIONAL STABILIZATION TECHNIQUES SHALL BE EMPLOYED DURING THE PERIOD FROM OCTOBER 15 THROUGH MAY 1:

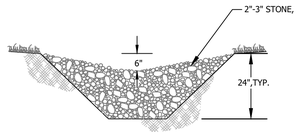
1. THE AREA OF EXPOSED, UNSTABILIZED SOIL SHALL BE LIMITED TO 1 ACRE AND SHALL BE PROTECTED AGAINST EROSION BY THE METHODS DESCRIBED IN THIS SECTION PRIOR TO ANY THAW OR SPRING MELT EVENT. THE ALLOWABLE AREA OF EXPOSED SOIL MAY BE INCREASED IF A WINTER CONSTRUCTION PLAN, DEVELOPED BY A QUALIFIED ENGINEER OR A CPESC SPECIALIST, IS REVIEWED AND APPROVED BY NHDES.
2. ALL PROPOSED VEGETATED AREAS HAVING A SLOPE OF LESS THAN 15% WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE SEEDED AND COVERED WITH 3 TO 4 TONS OF HAY OR STRAW MULCH PER ACRE, SECURED WITH ANCHORED NETTING OR TACKIFIER, OR 2 INCHES OF EROSION CONTROL MIX MEETING THE CRITERIA OF ENV-WQ 1506.05(D) THROUGH (H).
3. ALL PROPOSED VEGETATED AREAS HAVING A SLOPE OF GREATER THAN 15% WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE SEEDED AND COVERED WITH PROPERLY INSTALLED AND ANCHORED EROSION CONTROL MATTING OR WITH A MINIMUM 4 INCH THICKNESS OF EROSION CONTROL MIX MEETING THE CRITERIA OF ENV-WQ 1506.05(D) THROUGH (H).
4. INSTALLATION OF ANCHORED HAY MULCH OR EROSION CONTROL MIX, MEETING THE CRITERIA OF ENV-WQ 1506.05(D) THROUGH (H), SHALL NOT OCCUR OVER SNOW OF GREATER THAN 1 INCH IN DEPTH.
5. INSTALLATION OF EROSION CONTROL MATTING SHALL NOT OCCUR OVER SNOW OF GREATER THAN ONE INCH IN DEPTH OR ON FROZEN GROUND.
6. ALL PROPOSED STABILIZATION IN ACCORDANCE WITH NOTES 2 OR 3 ABOVE, SHALL BE COMPLETED WITHIN 1 DAY OF ESTABLISHING THE GRADE THAT IS FINAL OR THAT OTHERWISE WILL EXIST FOR MORE THAN 5 DAYS.
7. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% 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, AS DETERMINED BY THE OWNER'S ENGINEERING CONSULTANT.
8. AFTER OCTOBER 15, INCOMPLETE ROAD OR PARKING AREAS WHERE ACTIVE CONSTRUCTION OF THE ROAD OR PARKING AREA HAS STOPPED FOR THE WINTER SEASON SHALL BE PROTECTED WITH A MINIMUM 3 INCH LAYER OF BASE COURSE GRAVELS MEETING THE GRADATION REQUIREMENTS OF NHDOT STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION, 2016, ITEM NO. 304.1 OR 304.2.



MULCH NETTING DETAIL

SOURCE: USDA SOIL CONSERVATION SERVICE

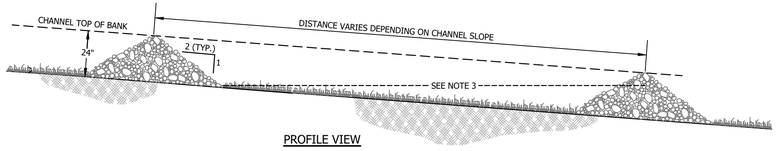
NO SCALE



SECTION VIEW

NOTES

1. CONSTRUCT ROCK CHECK DAMS WHERE INDICATED ON THE PLANS OR AS NECESSARY.
2. CONSTRUCT SPILLWAY IN CENTER OF ROCK CHECK DAM 6" BELOW TOP OF CHANNEL.
3. THE MAXIMUM SPACING BETWEEN THE CHECK DAMS SHOULD BE SUCH THAT THE TOE OF THE UPSTREAM CHECK DAM IS AT THE SAME ELEVATION AS THE SPILLWAY ELEVATION OF THE DOWNSTREAM CHECK DAM, THIS WILL VARY DEPENDING ON THE SLOPE OF THE CHANNEL.
4. ROCK CHECK DAMS SHALL CONSIST OF A WELL GRADED MIXTURE OF 2" - 3" STONE.
5. REMOVE ROCK CHECK DAMS AND ANY ACCUMULATED SILT IN CHANNEL ONCE PERMANENT CHANNEL LININGS HAVE BEEN ESTABLISHED AND STABILIZED.



PROFILE VIEW

ROCK CHECK DAM DETAIL

NO SCALE

CONSTRUCTION SEQUENCE

1. PREPARE AN EROSION CONTROL PLAN OR A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS.
2. INSTALL CONSTRUCTION ENTRANCE, SEE DETAIL.
3. CUT AND CLEAR TREES WITHIN THE CLEARING LIMITS.
4. INSTALL SEDIMENT FENCES, ROCK CHECK DAMS, AND OTHER APPROPRIATE EROSION CONTROL MEASURES AT LOCATIONS SHOWN ON THE PLANS AND AS NEEDED.
5. GRUB SITE WITHIN GRADING LIMITS.
6. STRIP AND STOCKPILE TOPSOIL AND INSTALL EROSION CONTROL MEASURES.
7. INSTALL/ADJUST SEDIMENT FENCE, CHECK DAMS, AND HAYBALES, AS REQUIRED.
8. CONSTRUCT PERMANENT STORMWATER CONTROLS AS SOON AS PRACTICAL. DO NOT DIRECT STORMWATER TOWARD TREATMENT BASINS, PONDS, SWALES, DITCHES AND LEVEL SPREADERS UNTIL THEY HAVE BEEN STABILIZED.
9. PROCEED WITH WORK, LIMITING THE DURATION 0F DISTURBANCE. THE MAXIMUM OF UNCOVERED DISTURBED EARTH AT ANY ONE TIME IS FIVE ACRES. THE MAXIMUM LENGTH OF TIME THAT DISTURBED EARTH MAY BE LEFT UNSTABILIZED IS 45 DAYS.
10. BEGIN SEEDING AND MULCHING IMMEDIATELY AFTER GRADING. ALL DISTURBED AREAS SHALL BE STABILIZED WITH APPROVED METHODS WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.

    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 AS STONE OR RIPRAP HAS BEEN INSTALLED; OR
    D) EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
11. INSPECT ALL EROSION CONTROL MEASURES ON A DAILY BASIS AND AFTER EVERY 0.5 INCHES OF PRECIPITATION. MAINTAIN SEDIMENT FENCE, SEDIMENT TRAPS, HAY BALES, ETC., AS NECESSARY.
12. PAVE ROADWAYS AND/OR PARKING AREAS.
13. PLACE TOPSOIL, SEED AND MULCH.
14. COMPLETE ALL REMAINING PERMANENT EROSION CONTROL STRUCTURES.
15. MONITOR THE SITE AND MAINTAIN STRUCTURES AS NEEDED UNTIL FULL VEGETATION IS ESTABLISHED.

FOR REVIEW
NOT FOR CONSTRUCTION

horizons Engineering
NEWPORT VT • LITTLETON NH • NEW LONDON NH
POMFRET VT • KENNEBUNK ME • CONWAY NH

WOODBURY COOPERATIVE, INC

SITE IMPROVEMENTS

PORTSMOUTH, NEW HAMPSHIRE

EROSION PREVENTION & SEDIMENT CONTROL DETAILS

NO.	DATE	REVISION DESCRIPTION	ENG	DWG

DATE: JAN. 2021	PROJECT #: 16074
ENGIN'D BY: RDL	DRAWN BY: CLB
CHECK'D BY: DMC	ARCHIVE #:

SHEET 9 OF 9

DATE OF PRINT
JANUARY 18 2021
HORIZONS ENGINEERING

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info@communityloanfund.org
www.communityloanfund.org

Devan Currier
Horizons Engineering
8836 Pomfret Rd, PO Box 248
North Pomfret, VT 05053

RE Woodbury Cooperative, Inc.

Dear Devan:

The ROC-NH program of the New Hampshire Community Loan Fund provides technical assistance to the applicant, Woodbury Cooperative, Inc. Please consider this letter as permission for Horizons Engineering to submit an application on behalf of Woodbury Cooperative, Inc. to the City of Portsmouth Zoning Board of Adjustment.

Please do not hesitate to contact me if you have any questions.
Sincerely,

Tara Reardon
Director, ROC-NH