

4995 VT Route 14, PO Box 247, Sharon, VT 05065 • Ph 802-457-3151 • Fax 603-444-1343 • www.horizonsengineering.com

Project No. 16074
March 10, 2021

Ms. Juliet Walker
City of Portsmouth Planning Department
1 Junkins Ave., 3rd Floor
Portsmouth, New Hampshire 03801

**Subject: Response to Comments From Technical Advisory Committee
Woodbury Cooperative Site Improvements**

Dear Ms. Walker:

We are in receipt of your review comments on the above referenced project dated March 1, 2021. Our responses follow the numbering sequence in your letter.

- 1. The pavement edge line should tie into the corner of the property at Old Woodbury Ave, rather than the edge of the abutter's driveway.**

We agree with this comment. The changes have been made to the site plan (Sheet 3).

- 2. A stop sign and stop line should be provided on the driveway approach to Woodbury Ave.**

We agree with this comment. The changes have been made to the site plan (Sheet 3) and a detail has been added to Sheet 8.

- 3. A blanket easement will be required over the parcel for the purpose of valve access and leak detection for the water system.**

We are working with the client and the lawyers to get this easement. This will be ready prior to construction.

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- 4. The services in Echo Ave shall be terminated to the satisfaction of Portsmouth Water/Sewer Divisions.**

This is noted on the plans as previously discussed. No changes have been made to adjust the plan.

- 5. The site plan is currently shown removing a small amount of asphalt paving on lot 237/71. Do you have permission to do that?**

Changes have been made to the pavement cut so that no work will take place on lot 237/71.

- 6. Sewer connections to the City system need to be witnessed by Portsmouth Sewer. The entire system must be tested to ensure the system is tight with no groundwater leaks to the satisfaction of the City.**

Notation has been added to the plans on Sheet 4 Water and Sewer Construction Notes 10 and 11.

- 7. Work in the Portsmouth ROW's will require excavation permits. As previously stated, the City may provide some assistance with the work on old Woodbury Ave a formal request needs to be submitted.**

Notation has been added to the plans on Sheet 4 Water and Sewer Construction Note 12.

- 8. There is no water shut off shown for unit 13 or the apartment building.**

This has been corrected. Both shut offs are shown on Sheet 4.

- 9. The 8" water main entering site should be downsized immediately following the hydrant connection. The hydrant needs its own 6" gate xv valve (please show it) on the hydrant lateral. The 4" valve should be mounted directly behind the hydrant tee.**

This change has been made to Sheet 4.

- 10. Flush valve detail references an 1.5" corporation in the main. 2" corporation with 2" copper water line to hydrant.**

This change has been made to Sheet 5.

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- 11. Water main to be bagged in poly wrap and three brass wedges shall be installed in each bell joint for water main tracing in the future. Contactor to meet with Portsmouth water before starting project.**

This change has been made to Sheet 5 Water Main Notes and Water and Sewer Construction Note 12.

- 12. It is still not clear in the sewer service detail that the concrete slab is not bonded to the sewer lateral. This must be shown properly. The 6" sewer should come through an 8" hole in the slab.**

Notation has been added to notes on Sheet 5.

- 13. There needs to be a ball valve both before and after the water meter.**

This change has been made on Sheet 5.

- 14. Water services to homes must be 1" or larger.**

This change has been noted on Sheet 5.

- 15. Applicant shall enter into agreement with Portsmouth Water regarding flushing hydrant.**

This permit will be submitted to the City of Portsmouth prior to construction.

Thank you for your comments. Please feel free to contact me with additional comments or questions.

Ryan Libbey, P.E.
Civil Design Engineer
Horizons Engineering, Inc.
4495 VT-14
P.O. Box 247
Sharon, VT 05065

Horizons Engineering, Inc.



City of Portsmouth, New Hampshire

Site Plan Application Checklist

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

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

Name of Owner/Applicant: _____ Date Submitted: _____

Phone Number: _____ E-mail: _____

Site Address: _____ Map: _____ Lot: _____

Zoning District: _____ Lot area: _____ sq. ft.

Application Requirements			
<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page or Plan Sheet/Note #)	Waiver Requested
<input type="checkbox"/>	Fully executed and signed Application form. (2.5.2.3)		N/A
<input type="checkbox"/>	All application documents, plans, supporting documentation and other materials provided in digital Portable Document Format (PDF) on compact disc, DVD or flash drive. (2.5.2.8)		N/A

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

Site Plan Review Application Required Information

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

Site Plan Specifications

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

Site Plan Specifications

<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input type="checkbox"/>	Source and date of data displayed on the plan. (2.5.4.2D)	Required on all plan sheets	N/A
<input type="checkbox"/>	A note shall be provided on the Site Plan stating: "All conditions on this Plan shall remain in effect in perpetuity pursuant to the requirements of the Site Plan Review Regulations." (2.5.4.2E)	Required on all plan sheets	N/A
<input type="checkbox"/>	Plan sheets submitted for recording shall include the following notes: <ul style="list-style-type: none"> a. "This Site Plan shall be recorded in the Rockingham County Registry of Deeds." b. "All improvements shown on this Site Plan shall be constructed and maintained in accordance with the Plan by the property owner and all future property owners. No changes shall be made to this Site Plan without the express approval of the Portsmouth Planning Director." (2.13.3)		N/A
<input type="checkbox"/>	Plan sheets showing landscaping and screening shall also include the following additional notes: <ul style="list-style-type: none"> a. "The property owner and all future property owners shall be responsible for the maintenance, repair and replacement of all required screening and landscape materials." b. "All required plant materials shall be tended and maintained in a healthy growing condition, replaced when necessary, and kept free of refuse and debris. All required fences and walls shall be maintained in good repair." c. "The property owner shall be responsible to remove and replace dead or diseased plant materials immediately with the same type, size and quantity of plant materials as originally installed, unless alternative plantings are requested, justified and approved by the Planning Board or Planning Director." (2.13.4)		N/A

Site Plan Specifications – Required Exhibits and Data

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

Site Plan Specifications – Required Exhibits and Data

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

Other Required Information			
<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input type="checkbox"/>	Traffic Impact Study or Trip Generation Report, as required. <i>(Four (4) hardcopies of the full study/report and Six (6) summaries to be submitted with the Site Plan Application) (3.2.1-2)</i>		
<input type="checkbox"/>	Indicate where Low Impact Development Design practices have been incorporated. (7.1)		
<input type="checkbox"/>	Indicate whether the proposed development is located in a wellhead protection or aquifer protection area. Such determination shall be approved by the Director of the Dept. of Public Works. (7.3.1)		
<input type="checkbox"/>	Indicate where measures to minimize impervious surfaces have been implemented. (7.4.3)		
<input type="checkbox"/>	Calculation of the maximum effective impervious surface as a percentage of the site. (7.4.3.2)		
<input type="checkbox"/>	Stormwater Management and Erosion Control Plan. <i>(Four (4) hardcopies of the full plan/report and Six (6) summaries to be submitted with the Site Plan Application) (7.4.4.1)</i>		

Final Site Plan Approval Required Information			
<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input type="checkbox"/>	All local approvals, permits, easements and licenses required, including but not limited to: <ul style="list-style-type: none"> a. Waivers; b. Driveway permits; c. Special exceptions; d. Variances granted; e. Easements; f. Licenses. (2.5.3.2A)		
<input type="checkbox"/>	Exhibits, data, reports or studies that may have been required as part of the approval process, including but not limited to: <ul style="list-style-type: none"> a. Calculations relating to stormwater runoff; b. Information on composition and quantity of water demand and wastewater generated; c. Information on air, water or land pollutants to be discharged, including standards, quantity, treatment and/or controls; d. Estimates of traffic generation and counts pre- and post-construction; e. Estimates of noise generation; f. A Stormwater Management and Erosion Control Plan; g. Endangered species and archaeological / historical studies; h. Wetland and water body (coastal and inland) delineations; i. Environmental impact studies. (2.5.3.2B)		

Final Site Plan Approval Required Information

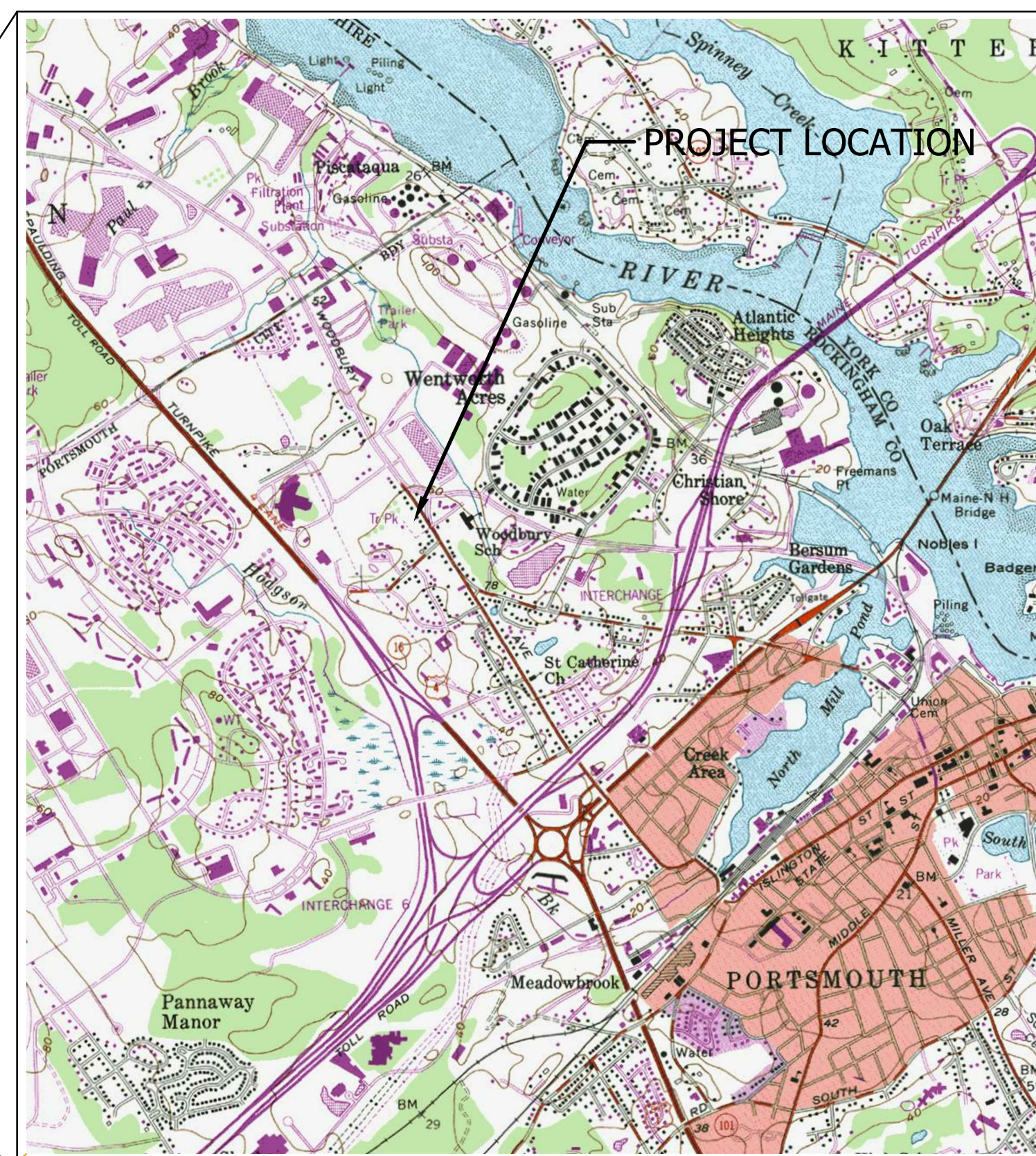
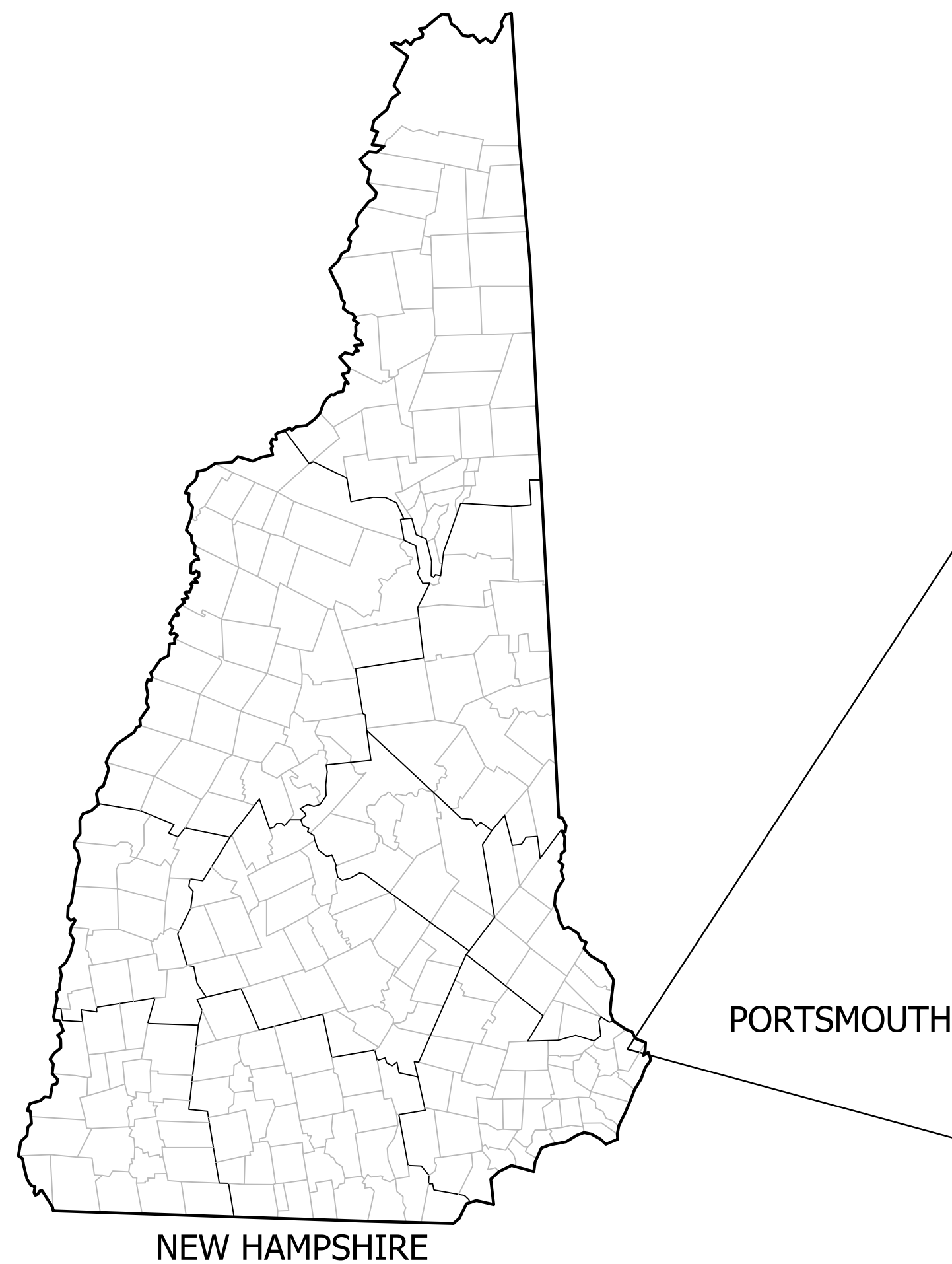
<input checked="" type="checkbox"/>	Required Items for Submittal	Item Location (e.g. Page/line or Plan Sheet/Note #)	Waiver Requested
<input type="checkbox"/>	A document from each of the required private utility service providers indicating approval of the proposed site plan and indicating an ability to provide all required private utilities to the site. (2.5.3.2D)		
<input type="checkbox"/>	A list of any required state and federal permit applications required for the project and the status of same. (2.5.3.2E)		

Applicant's Signature: _____ **Date:** _____

WOODBURY COOPERATIVE

SITE IMPROVEMENTS

PORTSMOUTH, NEW HAMPSHIRE
 FEBRUARY 2021



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:

SHEET 1	:	COVER
SHEET 2	:	EXISTING CONDITIONS & DEMOLITION PLAN
SHEET 3	:	SITE AND GRADING PLAN
SHEET 4	:	UTILITY PLAN
SHEET 5	:	POTABLE WATER DETAILS
SHEET 6	:	SEWER DETAILS
SHEET 7	:	ELECTRICAL DETAILS
SHEET 8	:	MISCELLANEOUS DETAILS
SHEET 9	:	EROSION DETAILS

FOR REVIEW
 NOT FOR CONSTRUCTION

DATE OF PRINT
 MARCH 10 2021
 HORIZONS ENGINEERING

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: (49.22%) 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: (51.07%) 33,772 SQ. FT. (0.85 ACRES)

SITE PLAN REGULATION 1.2.2

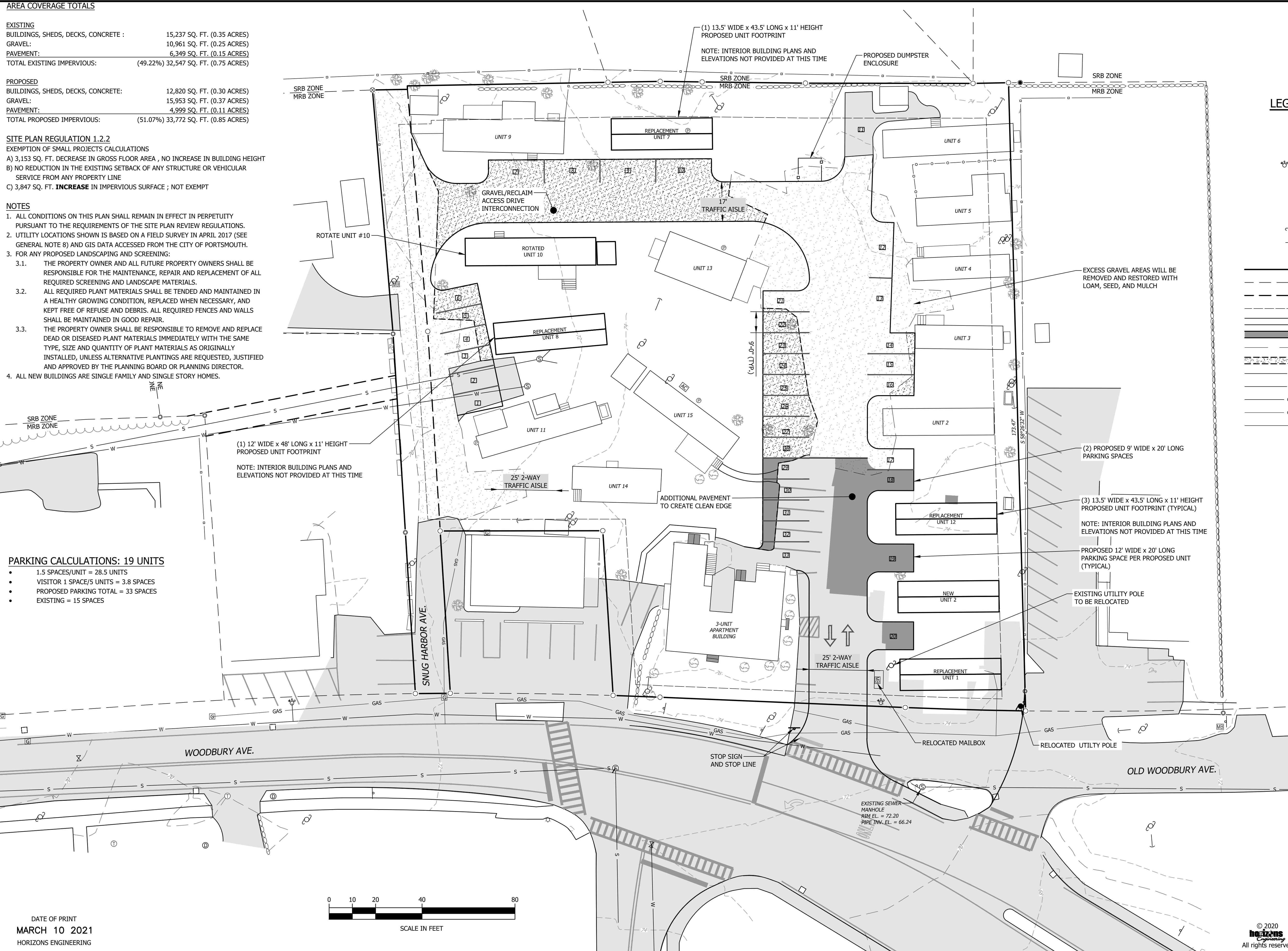
- EXEMPTION OF SMALL PROJECTS CALCULATIONS
 A) 3,153 SQ. FT. DECREASE IN GROSS FLOOR AREA, NO INCREASE IN BUILDING HEIGHT
 B) NO REDUCTION IN THE EXISTING SETBACK OF ANY STRUCTURE OR VEHICULAR SERVICE FROM ANY PROPERTY LINE
 C) 3,847 SQ. FT. **INCREASE** IN IMPERVIOUS SURFACE ; NOT EXEMPT

NOTES

- ALL CONDITIONS ON THIS PLAN SHALL REMAIN IN EFFECT IN PERPETUITY PURSUANT TO THE REQUIREMENTS OF THE SITE PLAN REVIEW REGULATIONS.
- 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.
- FOR ANY PROPOSED LANDSCAPING AND SCREENING:
 - THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS SHALL BE RESPONSIBLE FOR THE MAINTENANCE, REPAIR AND REPLACEMENT OF ALL REQUIRED SCREENING AND LANDSCAPE MATERIALS.
 - 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.
 - 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.
- ALL NEW BUILDINGS ARE SINGLE FAMILY AND SINGLE STORY HOMES.

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
- W EXISTING WATER SERVICE
- S EXISTING SEWER SERVICE
- OHE EXISTING OVERHEAD ELECTRIC LINES
- GAS EXISTING UNDERGROUND GAS
- ⊠ EXISTING FENCE

**FOR REVIEW
NOT FOR CONSTRUCTION**



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

WOODBURY COOPERATIVE, INC

SITE IMPROVEMENTS
 PORTSMOUTH, NEW HAMPSHIRE

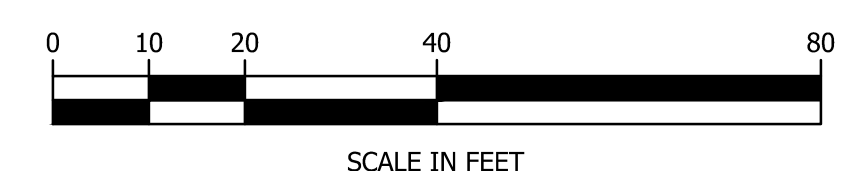
SITE PLAN

NO.	DATE	REVISION DESCRIPTION	ENG	DWG

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

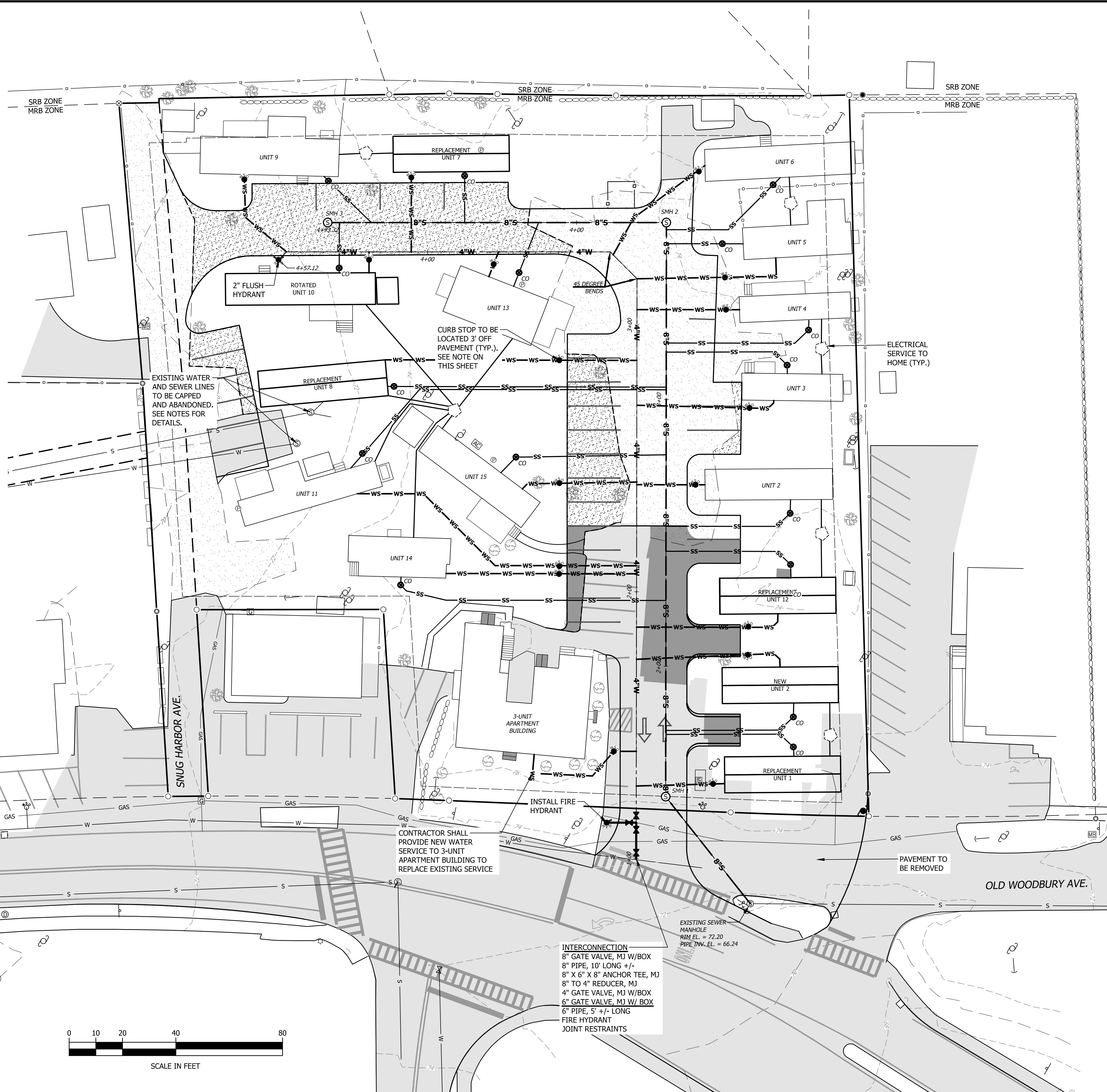
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DATE OF PRINT
MARCH 10 2021
 HORIZONS ENGINEERING



WATER AND SEWER CONSTRUCTION NOTES

- ALL NEW AND EXISTING MANUFACTURED HOMES IN THE PARK ARE TO BE CONNECTED TO THE NEW SEWER AND WATER MAINS WITH NEW SERVICE LINES.
- THE NEW WATER AND SEWER SERVICE LINES SHOWN ON THE PLANS REPRESENT THE PREFERRED 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.
- 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.
- EACH WATER SERVICE LINE SHALL INCLUDE A CORPORATION STOP, CURB STOP, AND A SHUTOFF VALVE INSTALLED AT THE RESIDENCE IN AN ACCESSIBLE LOCATION.
- 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.
- 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.
- 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.
- ALL SEWER AND WATER DESIGN SHOWN IS PRELIMINARY AND SUBJECT TO REVIEW AND APPROVAL BY NHDES WASTEWATER ENGINEERING BUREAU AND THE CITY OF PORTSMOUTH.
- THE CONTRACTOR SHALL MEET WITH REPRESENTATIVES OF THE CITY OF PORTSMOUTH PRIOR TO BEGINNING CONSTRUCTION.
- ALL SEWER CONNECTIONS SHALL BE WITNESSED BY PORTSMOUTH SEWER. THE CONTRACTOR SHALL COORDINATE ALL SEWER CONNECTIONS WITH PORTSMOUTH SEWER.
- THE NEW SEWER SHALL BE PRESSURE TESTED. ALL MANHOLES SHALL BE VACUUM TESTED. THE CITY OF PORTSMOUTH WILL REQUIRE SAME DAY TESTING ON SEWER COMPONENTS.
- THE CONTRACTOR SHALL OBTAIN EXCAVATION PERMITS FROM THE CITY OF PORTSMOUTH FOR WORK CONDUCTED WITHIN PORTSMOUTH'S RIGHT-OF-WAY.
- THE WATER MAIN SHALL BE BAGGED WITH 8MIL (MIN.) POLYWRAP.
- 3 BRASS WEDGES PER BELL JOINT FOR CONTINUITY SHALL ALSO BE INSTALLED.



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
- ⊗ — PROPOSED ELECTRICAL SERVICE
- — 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
- 2"W — PROPOSED 2" WATER SERVICE
- 4" — PROPOSED 4" SEWER SERVICE
- — PROPOSED WATER SHUT OFF

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PORTSMOUTH, NEW HAMPSHIRE

UTILITY PLAN

NO.	DATE	REVISION DESCRIPTION	ENG	DWG

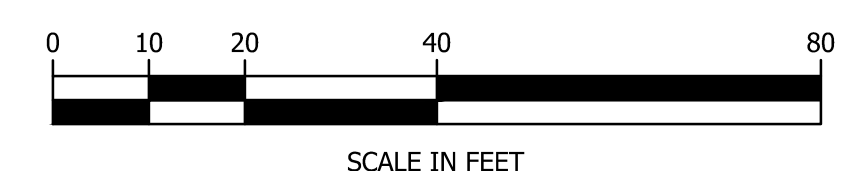
DATE: MAR. 2021 PROJECT #: 16074

ENG'D BY: RDL DRAWN BY: CLB

CHECK'D BY: ARCHIVE #: DMC

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STATE OF NEW HAMPSHIRE
WILLIAM DAVIS
No. 11918
LICENSED PROFESSIONAL ENGINEER

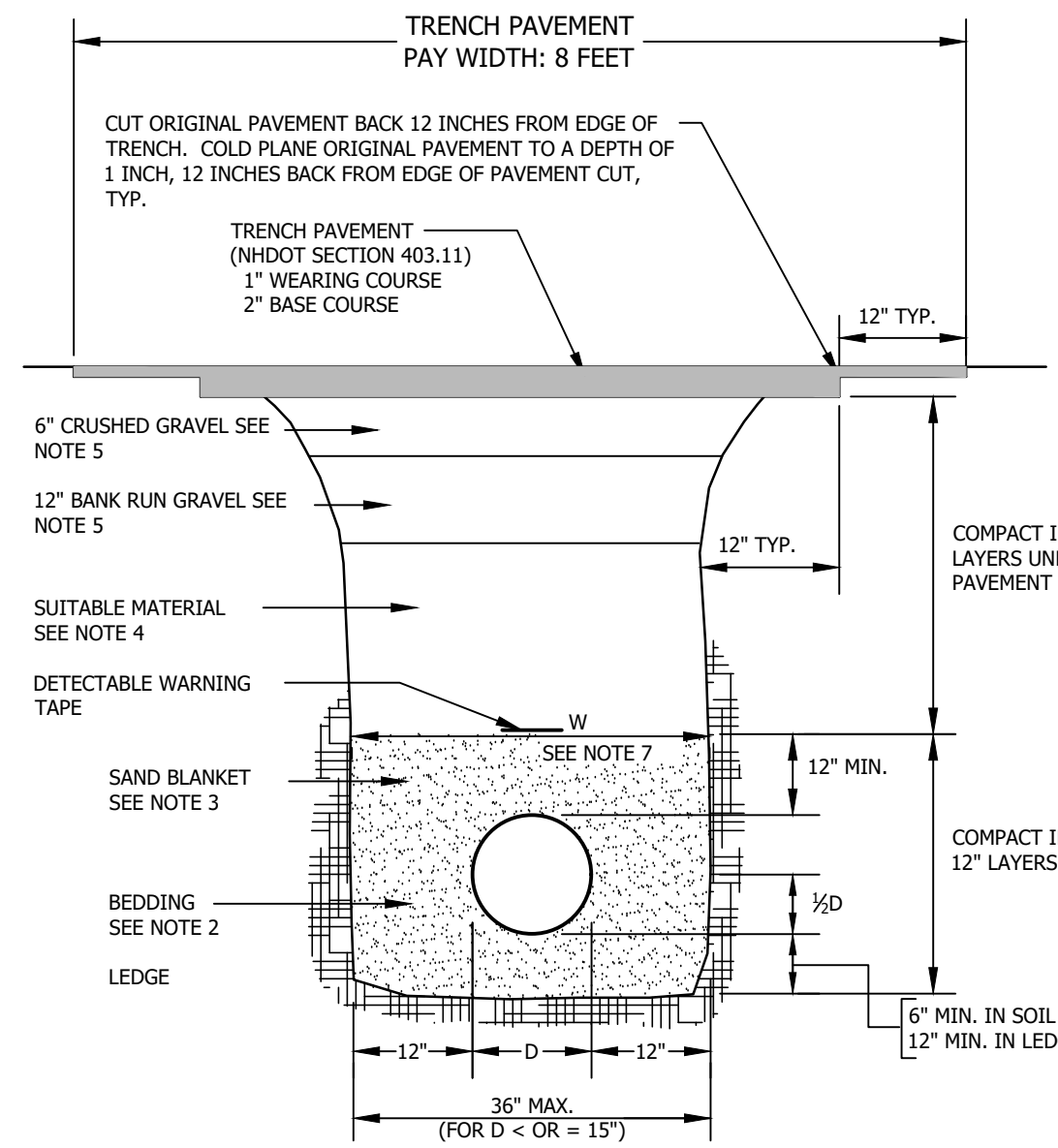


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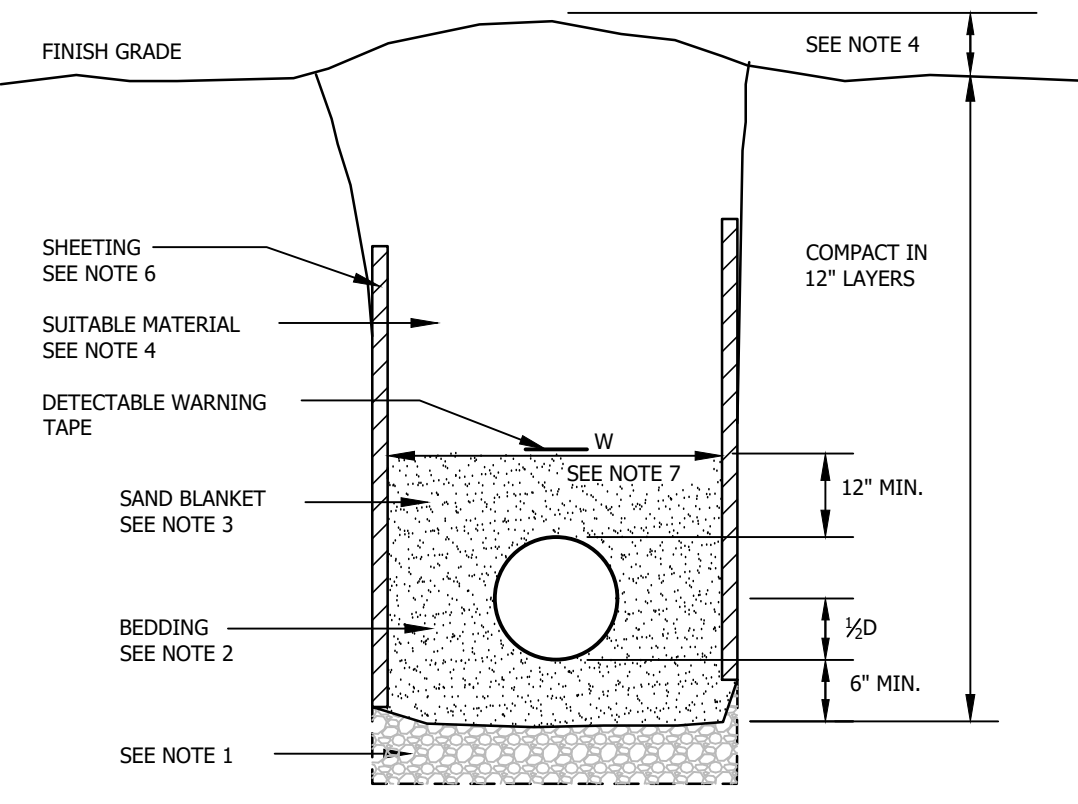
STANDARD TRENCH NOTES - WATER

- ORDERED EXCAVATION OF UNSUITABLE MATERIAL** BELOW GRADE SHALL BE REPLACED WITH BEDDING MATERIAL. SEE ALSO NOTE 4.
- BEDDING & SAND BLANKET:** CLEAN SAND FREE FROM ORGANIC MATTER, SO GRADED THAT 100% PASSES A 1/2 INCH SIEVE AND NOT MORE THAN 15% PASSES A #200 SIEVE.
- 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 MOUND TO A HEIGHT OF SIX INCHES ABOVE THE ORIGINAL GROUND SURFACE.
- 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.
- SHEETING:** ALL TRENCH SUPPORTS SHALL CONFORM TO OSHA STANDARDS. CONTRACTOR IS RESPONSIBLE FOR OSHA COMPLIANCE AND WORKER SAFETY THROUGHOUT CONSTRUCTION.
- 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.
- 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.
- PIPE COVER:** COVER OVER WATER SHALL BE 6 FEET MINIMUM IN ALL LOCATIONS.



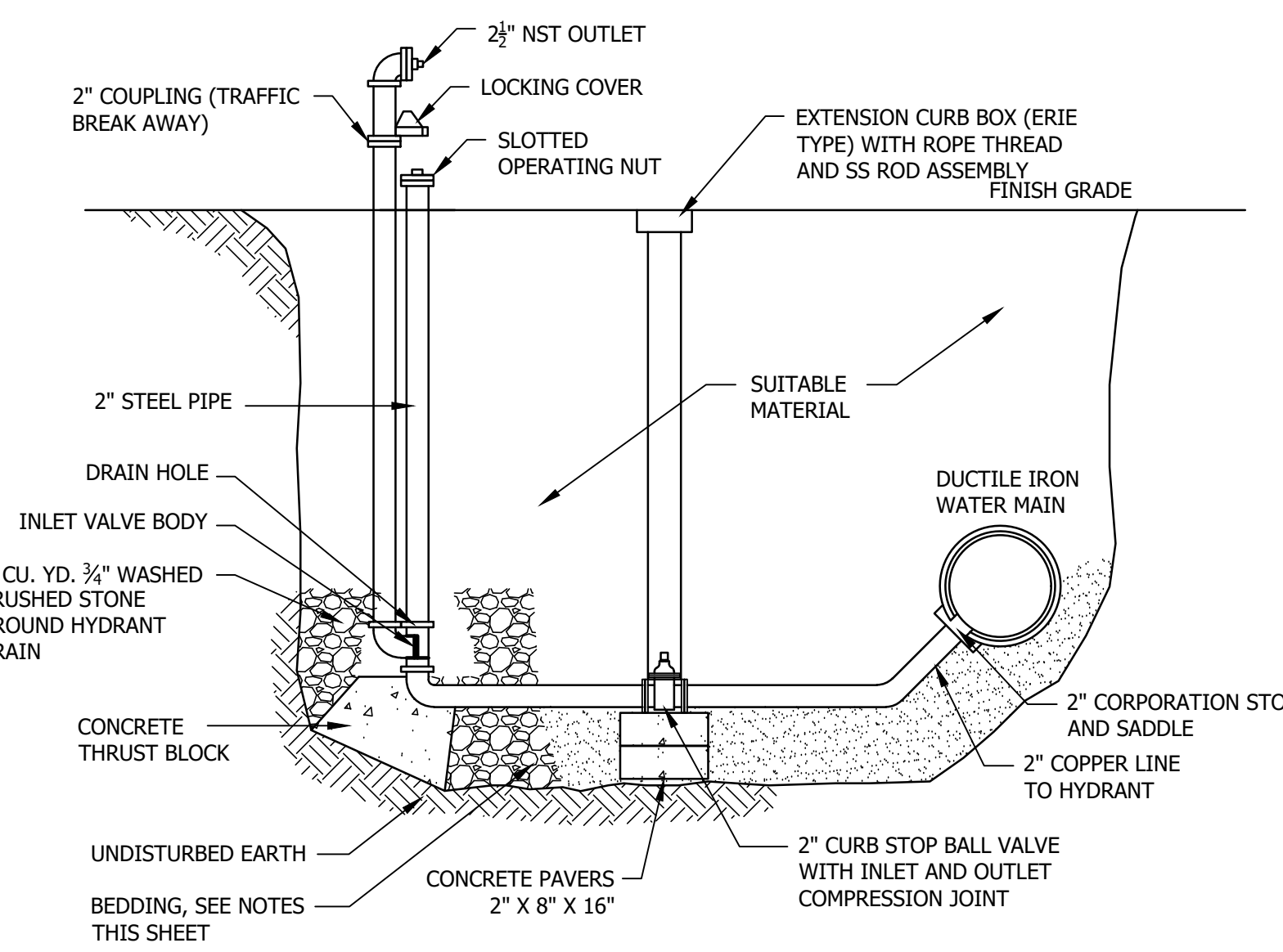
LEDGE/SUB PAVEMENT CONSTRUCTION



EARTH CONSTRUCTION WITH OR WITHOUT SHEETING

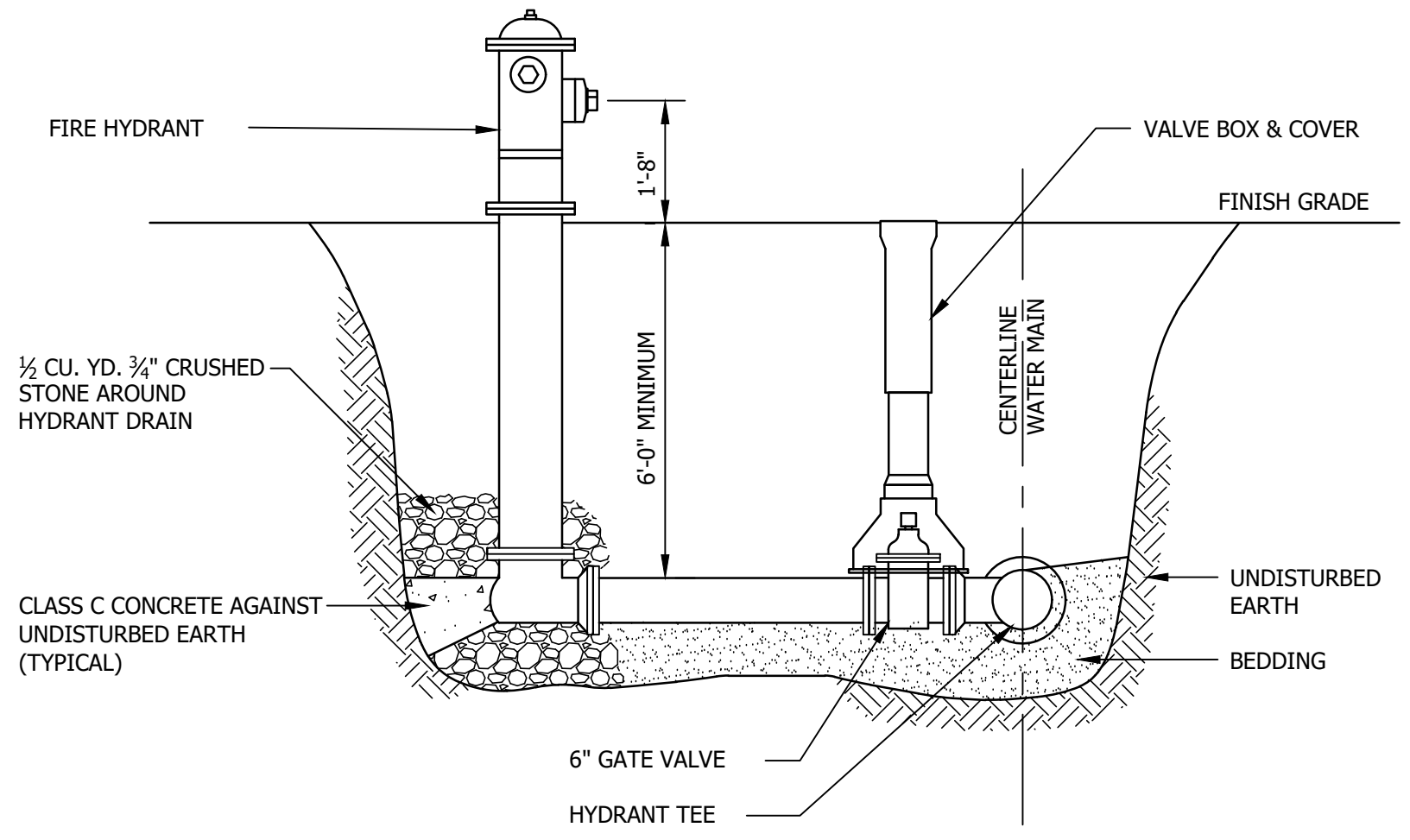
STANDARD TRENCH SECTIONS

NOT TO SCALE



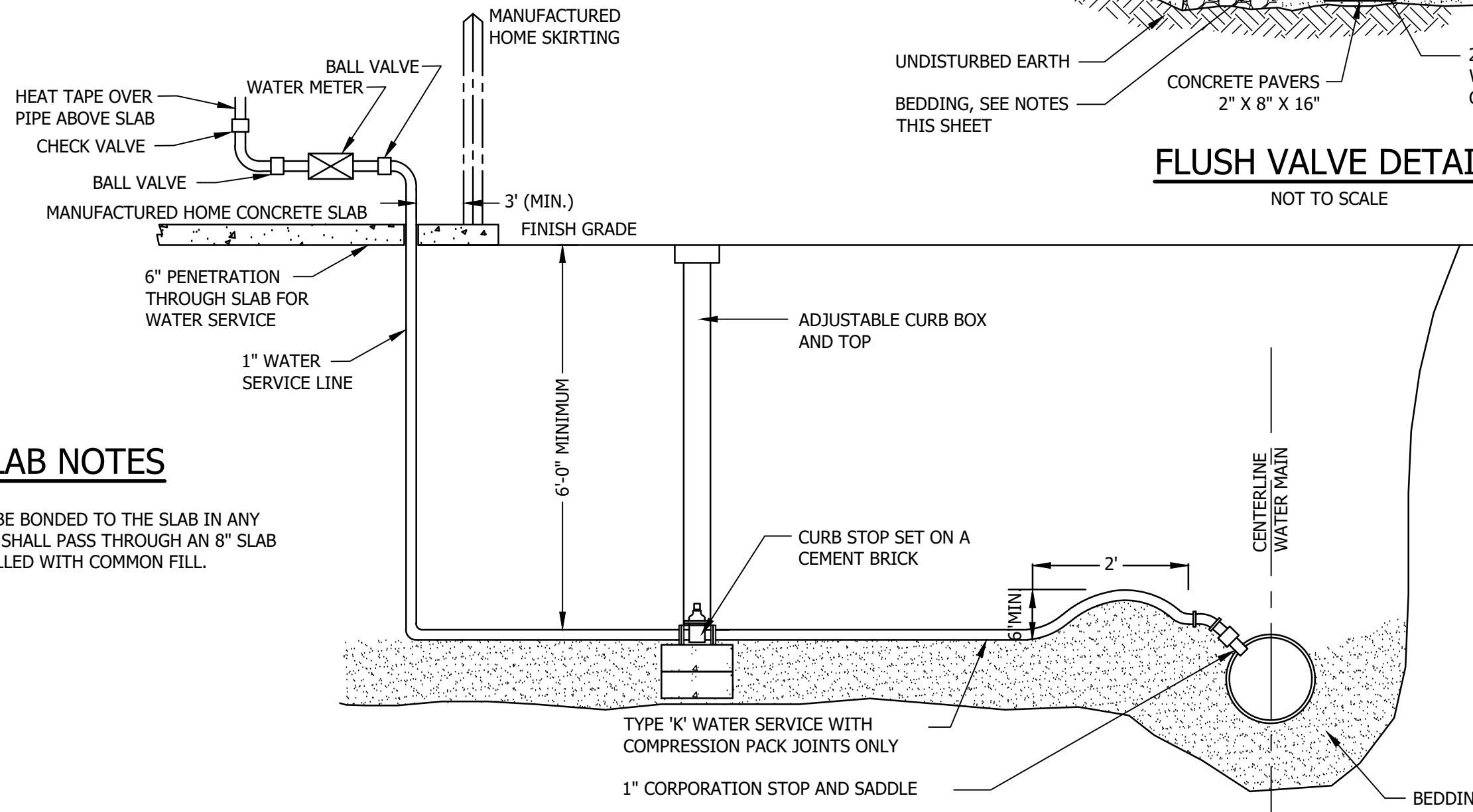
FLUSH VALVE DETAIL

NOT TO SCALE



FIRE HYDRANT DETAIL

NOT TO SCALE



WATER SERVICE CONNECTION

NOT TO SCALE

CONCRETE SLAB NOTES

- THE SEWER PIPE SHALL NOT BE BONDED TO THE SLAB IN ANY WAY. THE 6" SEWER SERVICE SHALL PASS THROUGH AN 8" SLAB PENETRATION AND BE BACKFILLED WITH COMMON FILL.

WATER MAIN NOTES

- THE WATER MAIN SHALL BE BAGGED WITH 8 MIL (MIN.) POLYWRAP.
- 3 BRASS WEDGES PER BELL JOINT FOR CONTINUITY SHALL ALSO BE INSTALLED.

- 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).

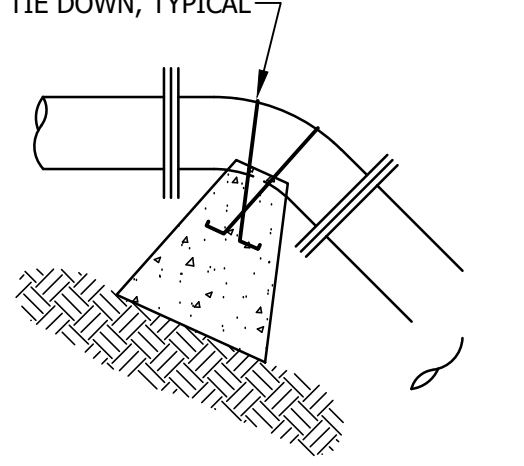
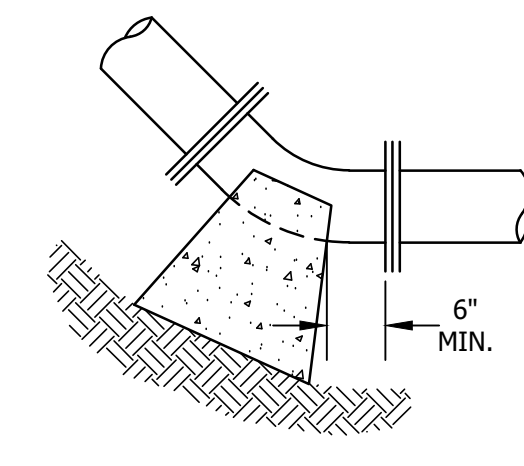
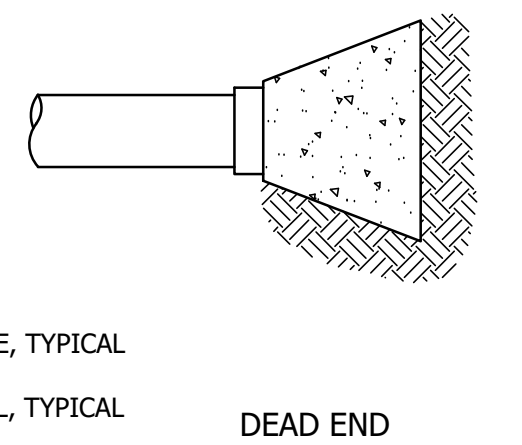
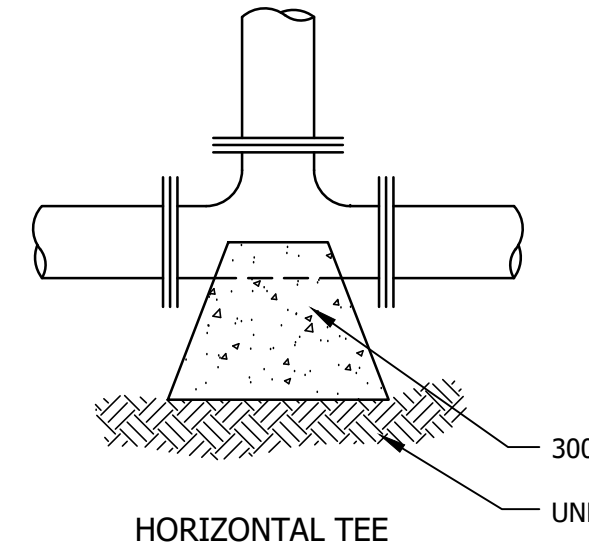
NOMINAL PIPE DIA. (INCHES)	TOTAL THRUST (POUNDS)				
	DEAD END	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND
4	1,810	2,559	1,385	706	355
6	3,739	5,288	2,862	1,459	733
8	6,433	9,097	4,923	2,510	1,261
10	9,677	13,685	7,406	3,776	1,897
12	13,685	19,353	10,474	5,340	2,683
14	18,385	26,001	14,072	7,174	3,604
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:

$$\frac{19,353 \times 125}{100} = 24,191 \text{ POUNDS}$$

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



THRUST BLOCK NOTES & DETAILS

NOT TO SCALE

NOTES

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

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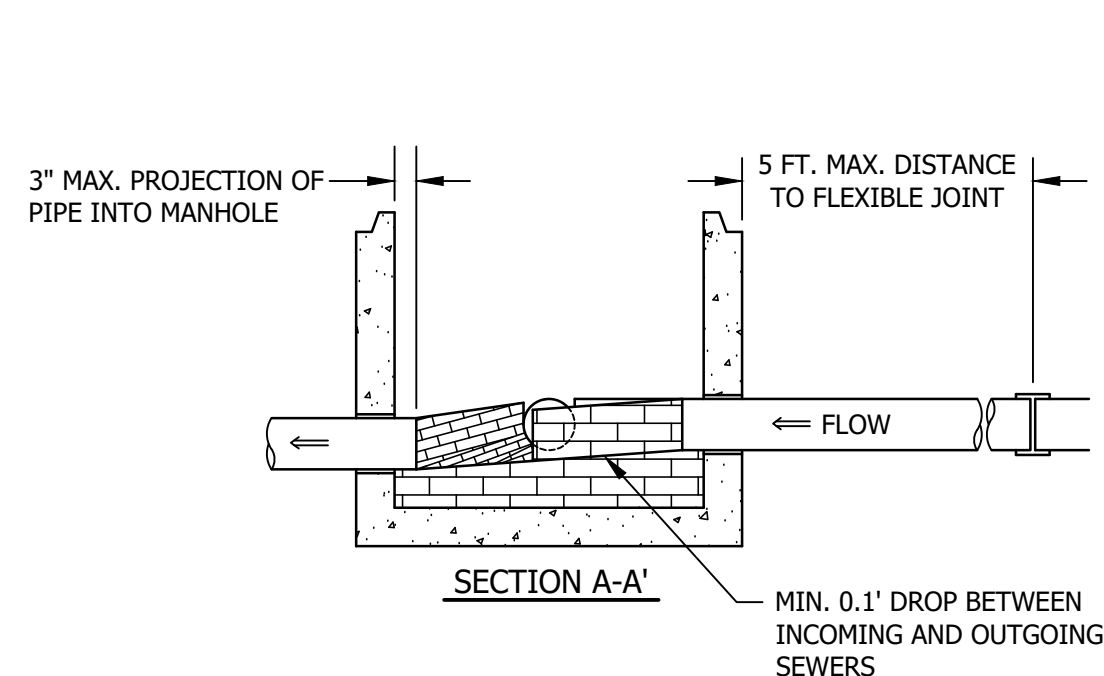
POTABLE WATER DETAILS

NO.	DATE	REVISION DESCRIPTION	ENG	DWG

	DATE:	PROJECT #:
	MAR. 2021	16074
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	RDL	CLB
CHECK'D BY:	ARCHIVE #:	
DMC		
SHEET 5 OF 9		

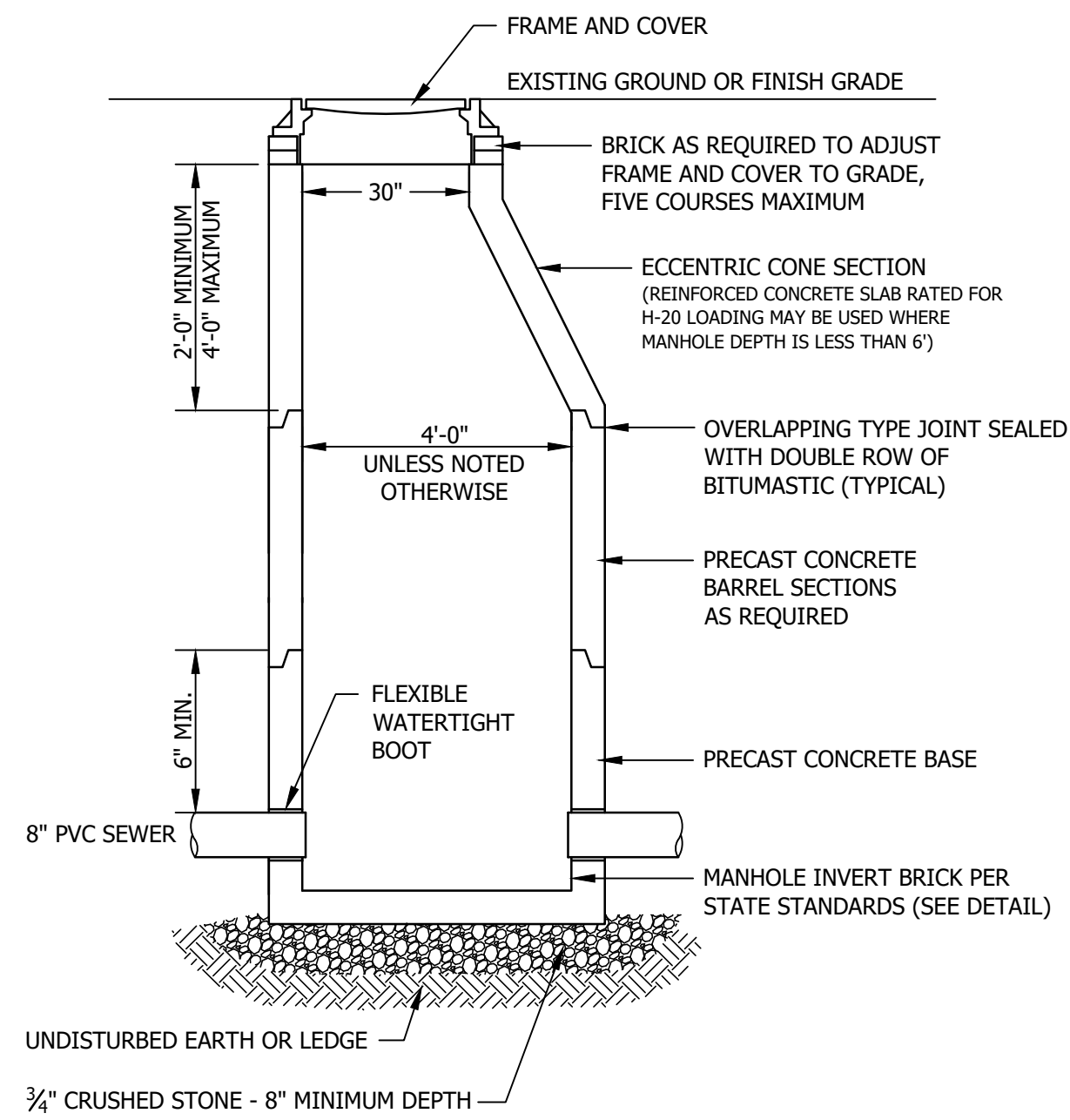
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MARCH 10 2021
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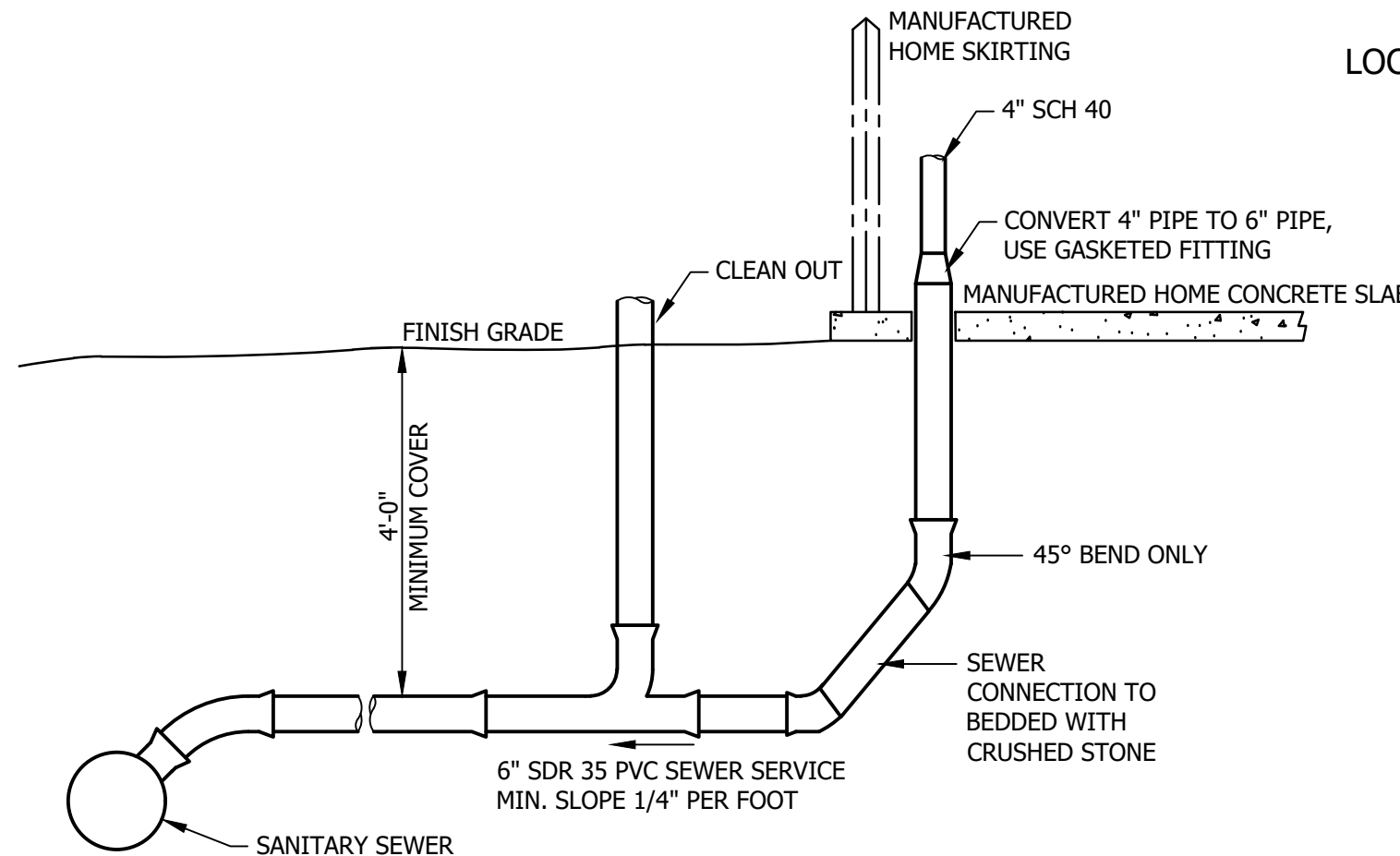
MANHOLE INVERT DETAILS

NOT TO SCALE



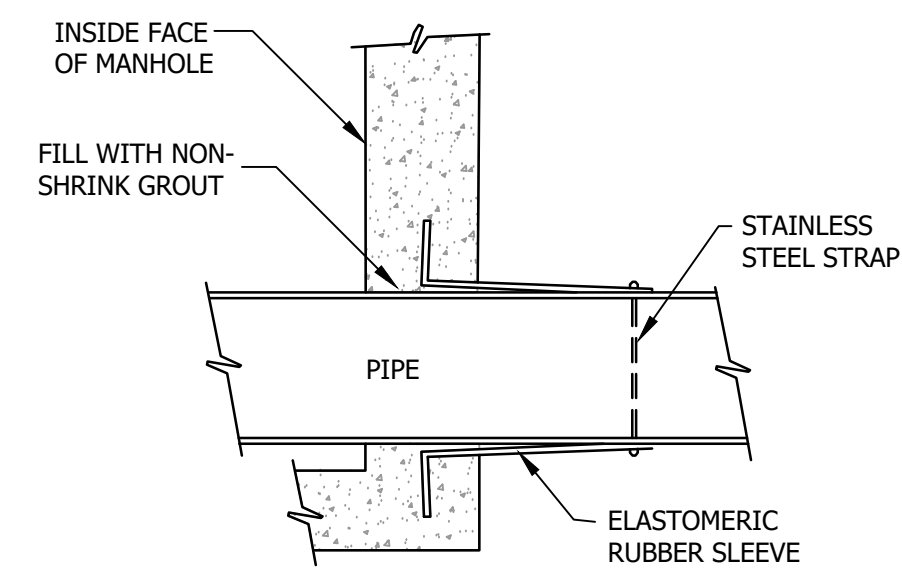
SANITARY SEWER MANHOLE DETAIL

NOT TO SCALE

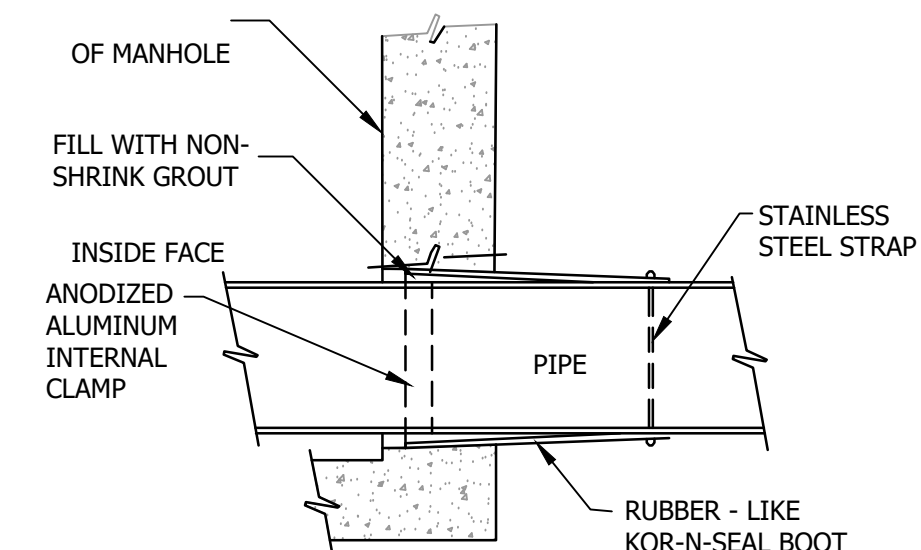


SEWER SERVICE DETAIL

NOT TO SCALE



LOCK-JOINT FLEXIBLE MANHOLE SLEEVE



KOR-N-SEAL JOINT SLEEVE

JOINTING DETAILS

NOT TO SCALE

STANDARD TRENCH NOTES - SEWER

- ORDERED EXCAVATION OF UNSUITABLE MATERIAL** BELOW GRADE SHALL BE REPLACED WITH BEDDING MATERIAL. SEE ALSO NOTE 4.
- BEDDING:** SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM ORGANIC MATTER, CLAY, AND/OR LOAM MEETING ASTM C33 STONE SIZE NO. 67.

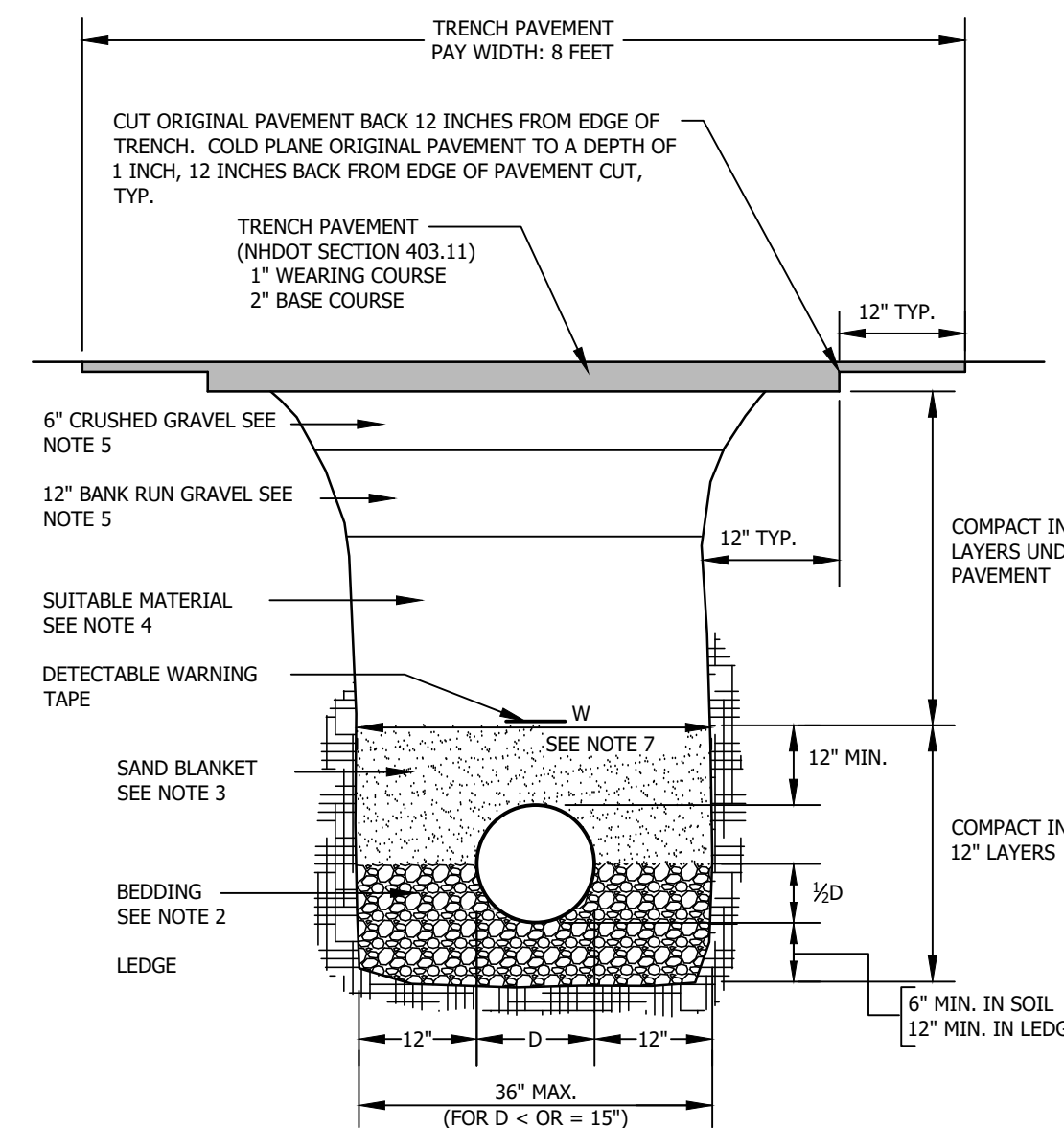
100% PASSING	1/2 INCH SCREEN
90-100% PASSING	3/4 INCH SCREEN
20-55% PASSING	5/8 INCH SCREEN
0-10% PASSING	#4 SIEVE
0-5% PASSING	#8 SIEVE
- SAND BLANKET:** CLEAN SAND FREE FROM ORGANIC MATTER, SO GRADED THAT 100% PASSES A 1/2 INCH SIEVE AND NOT MORE THAN 15% PASSES A #200 SIEVE.
- SUITABLE MATERIAL:** 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 MOUND TO A HEIGHT OF SIX INCHES ABOVE THE ORIGINAL GROUND SURFACE
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- 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.
- 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

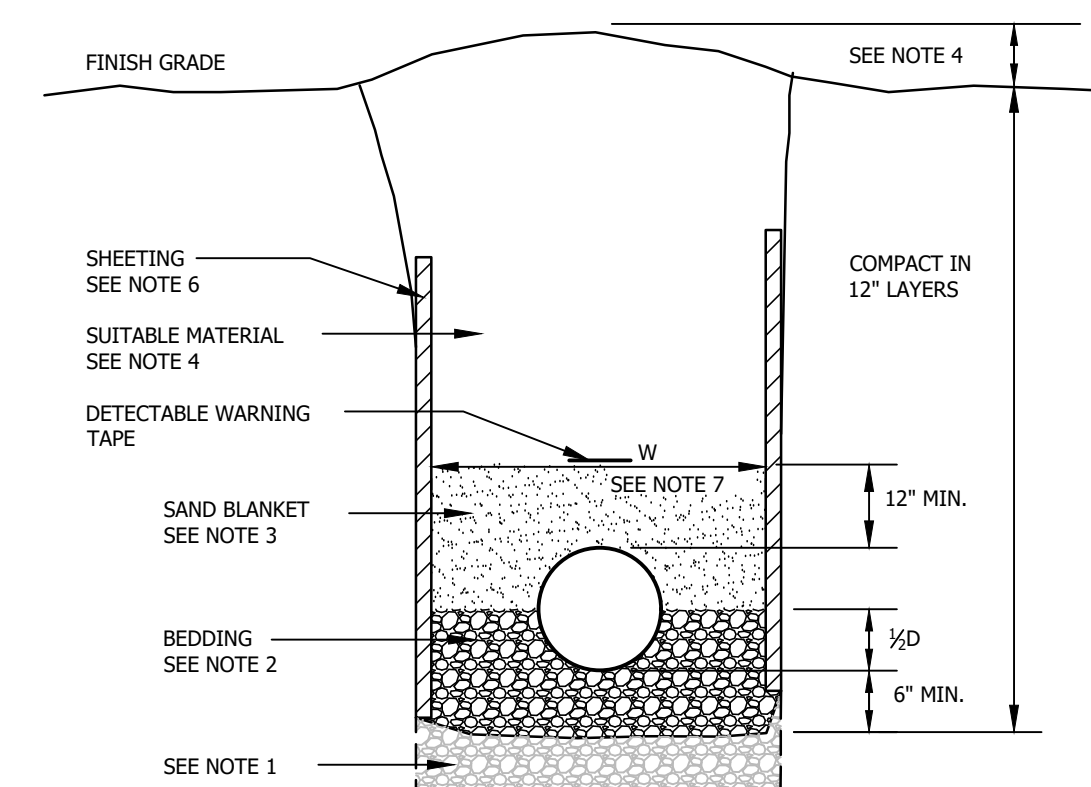
- GENERAL**
CONSTRUCTION OF ALL COMPONENTS OF THE SANITARY SEWER SYSTEM SHALL CONFORM TO THE MOST CURRENT VERSION OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES ENV-WQ 700 AND TECHNICAL SPECIFICATIONS.
- TYPES OF SEWERS**
A. THERE SHALL BE NO CONNECTION BETWEEN SANITARY SEWERS AND STORM SEWERS.
B. RUNOFF FROM ROOFS, STREETS, AND OTHER AREAS AND GROUNDWATER FROM FOUNDATION DRAINS, SUMP PUMPS, OR OTHER SUBSURFACE DRAINS SHALL BE EXCLUDED FROM SANITARY SEWERS.
- 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.
- 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.
- 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	1/2 INCH SCREEN
90-100% PASSING	3/4 INCH SCREEN
20-55% PASSING	5/8 INCH SCREEN
0-10% PASSING	#4 SIEVE
0-5% PASSING	#8 SIEVE
- 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.
- 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 LEAST 6 FEET HORIZONTALLY FROM THE WATER MAIN.



NOTE:
MINIMUM BEDDING DEPTH AND MAXIMUM PAYMENT LIMIT FOR LEDGE EXCAVATION = 1/2 D (12" MINIMUM)

LEDGE/SUB PAVEMENT CONSTRUCTION



EARTH CONSTRUCTION WITH OR WITHOUT SHEETING

STANDARD TRENCH SECTIONS

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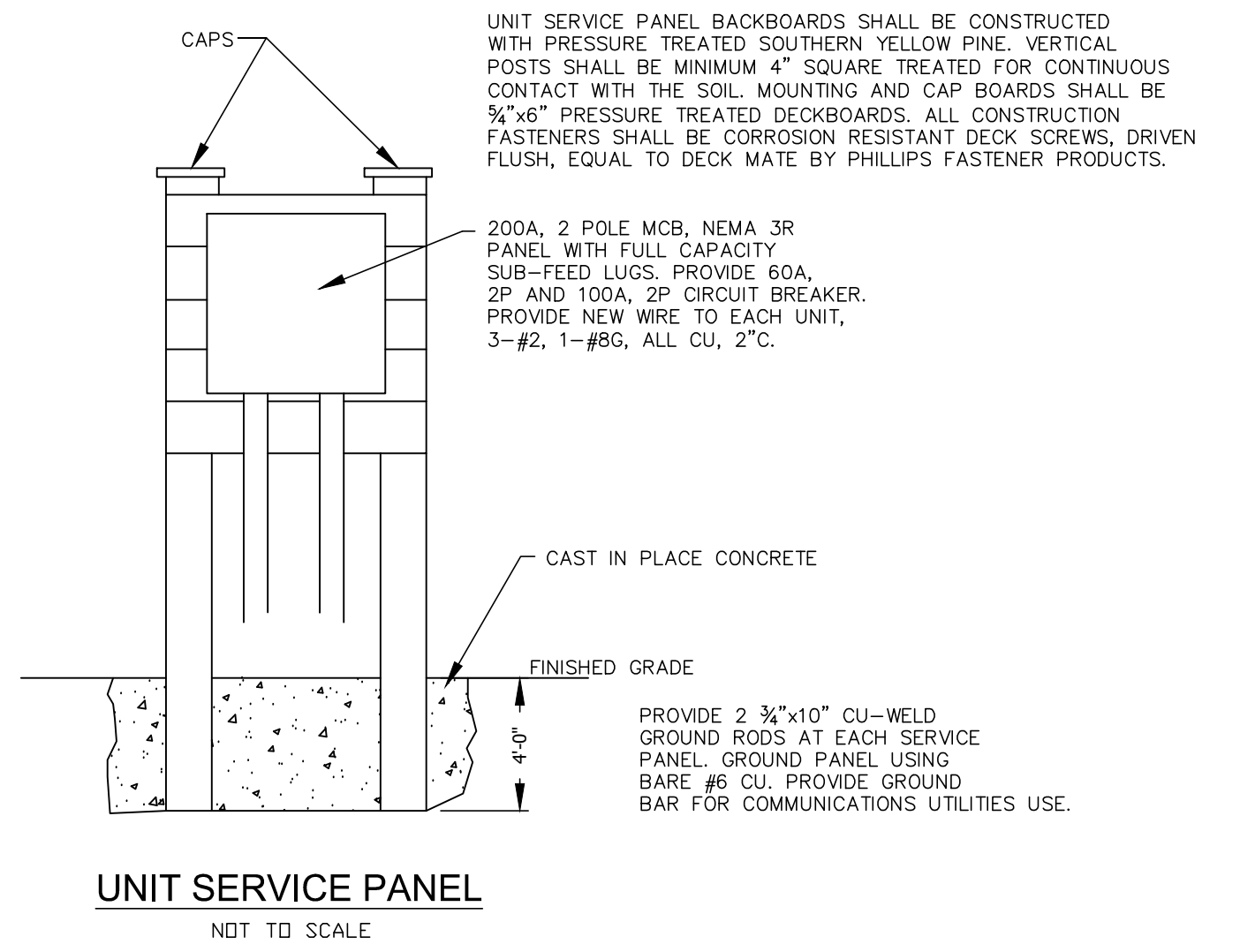
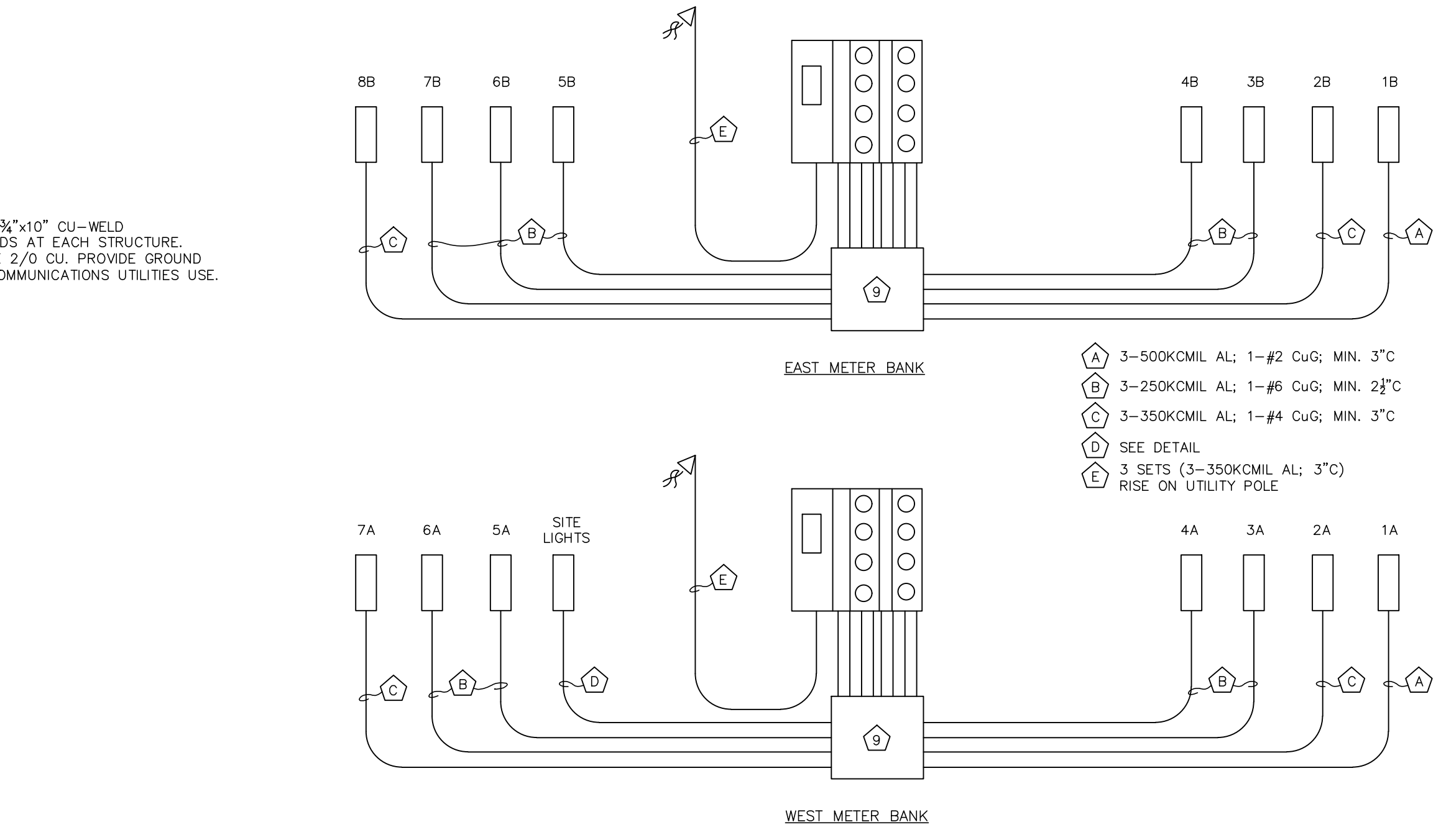
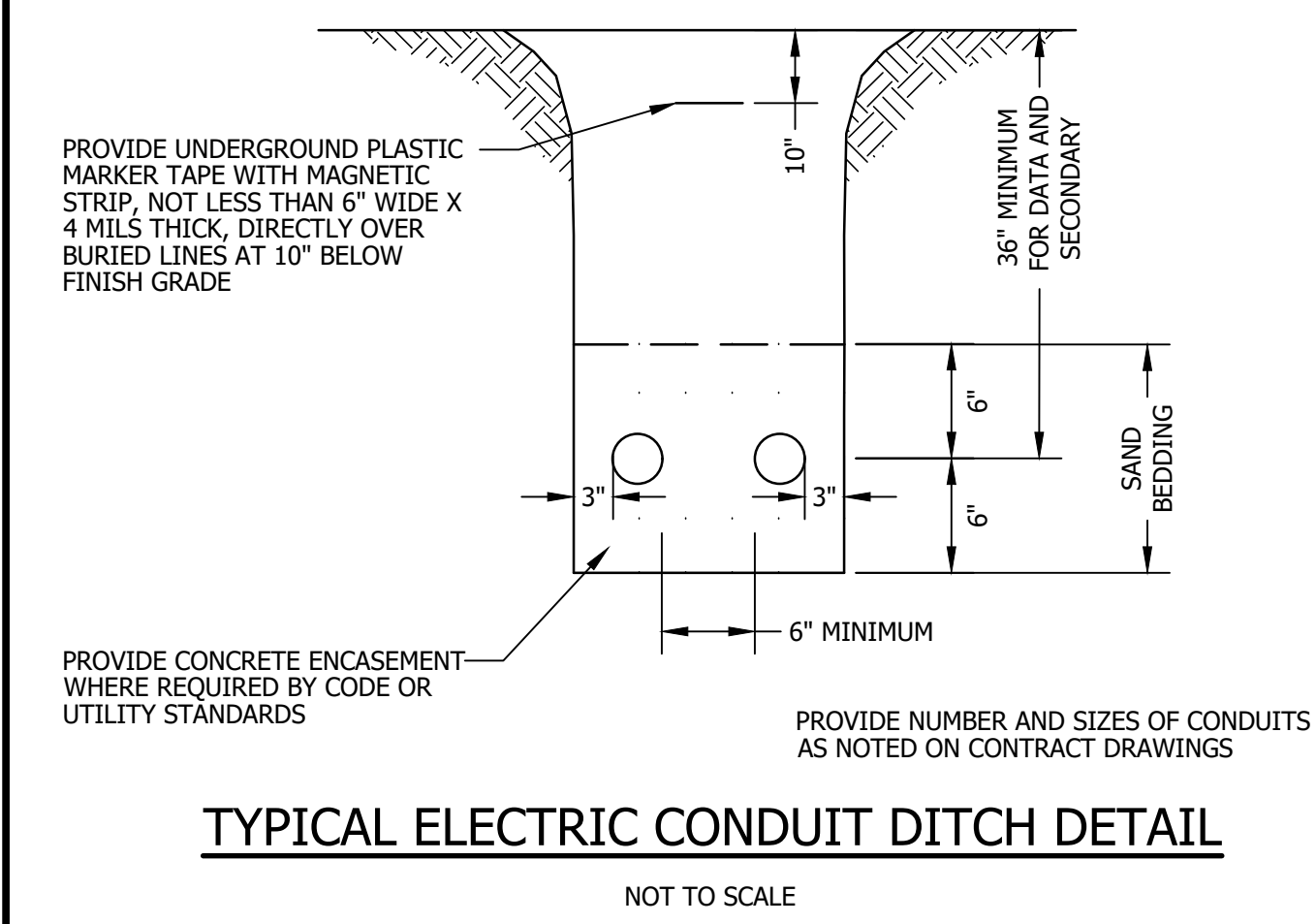
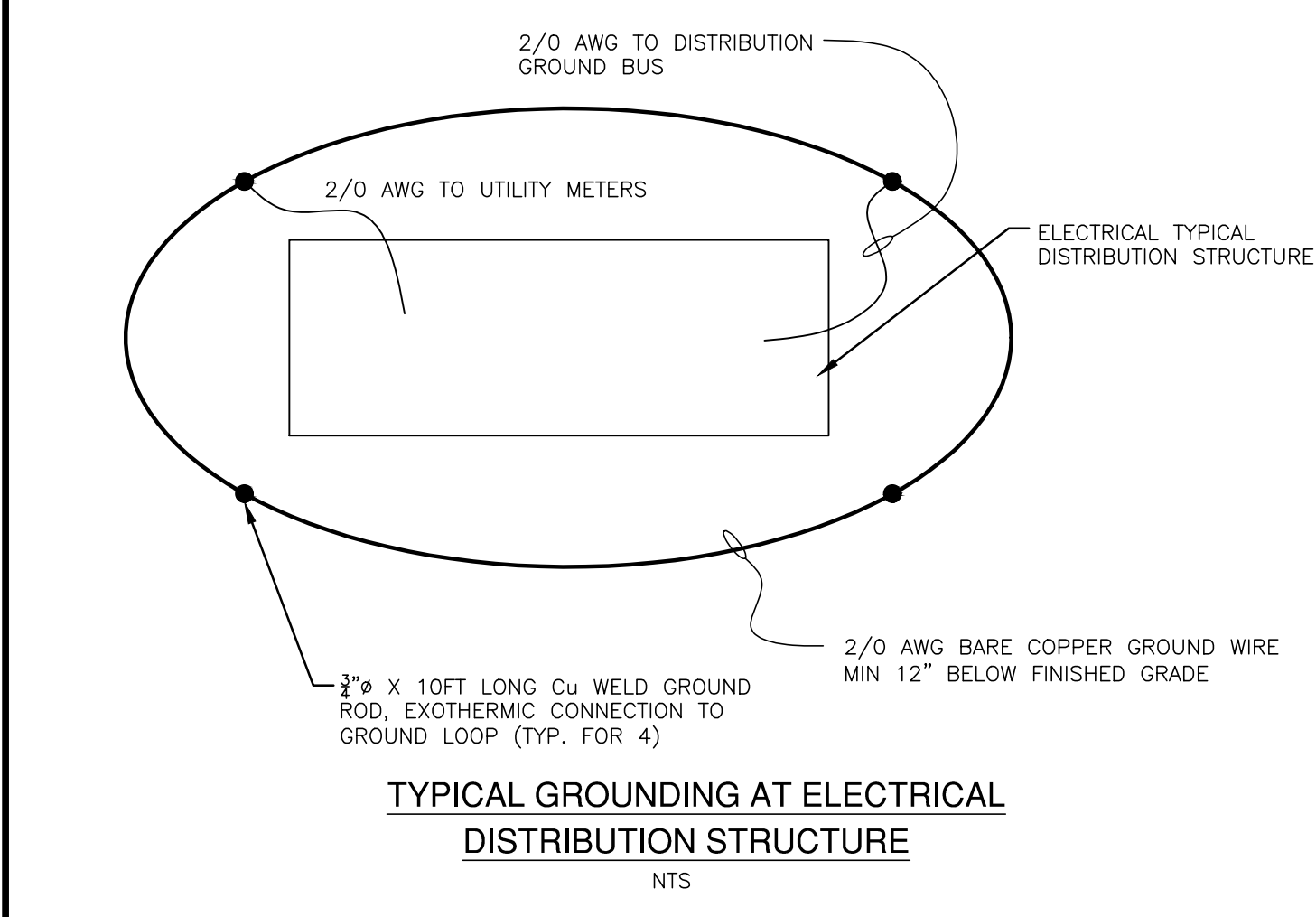
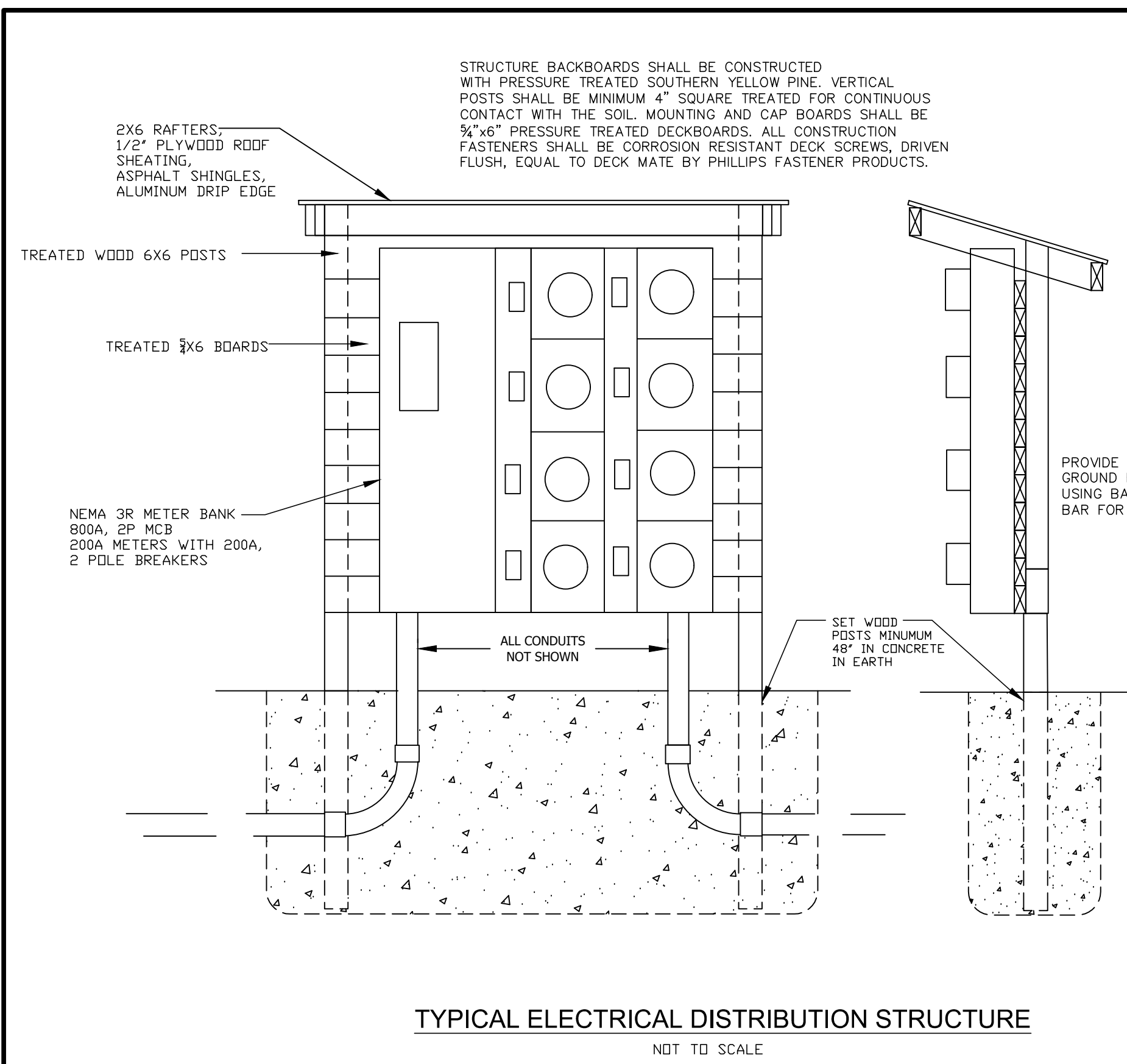
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SITE IMPROVEMENTS
PORTSMOUTH, NEW HAMPSHIRE

SEWER DETAILS

NO.	DATE	REVISION DESCRIPTION	ENG	DWG

	DATE:	PROJECT #:
	MAR. 2021	16074
	ENGINE'D BY:	DRAWN BY:
	RDL	CLB
CHECK'D BY:	ARCHIVE #:	
DMC		
SHEET 6 OF 9		

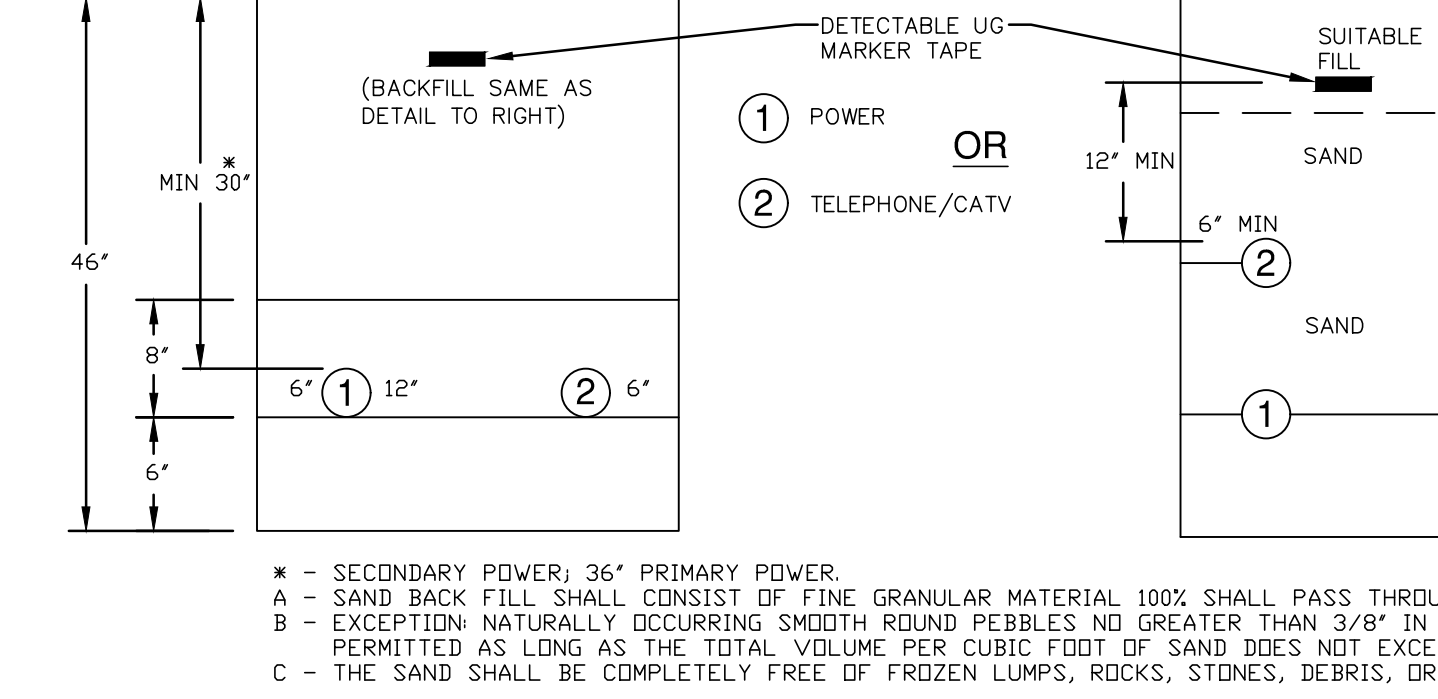


CONDUIT SPECIFICATIONS

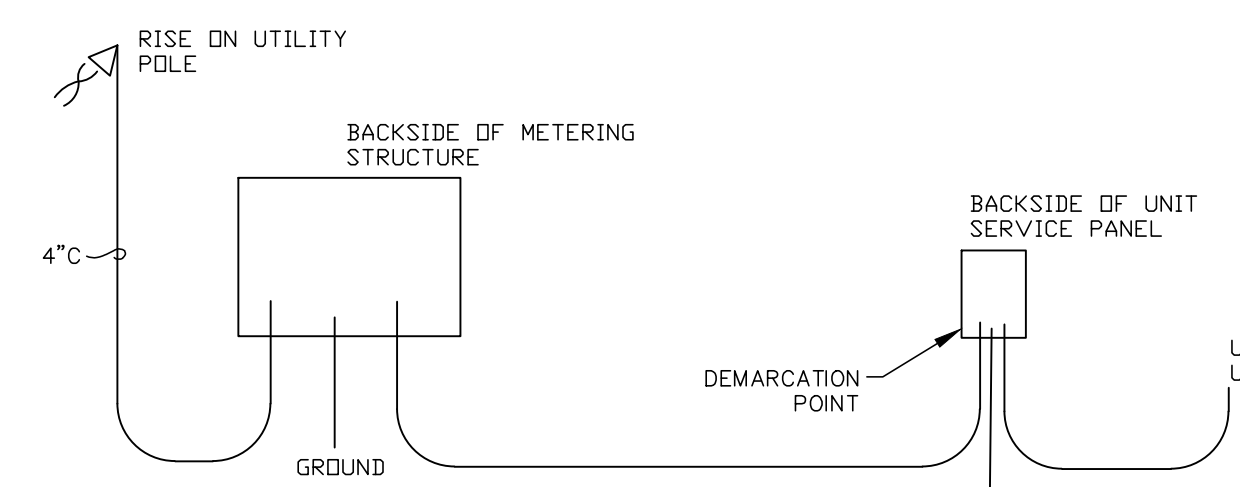
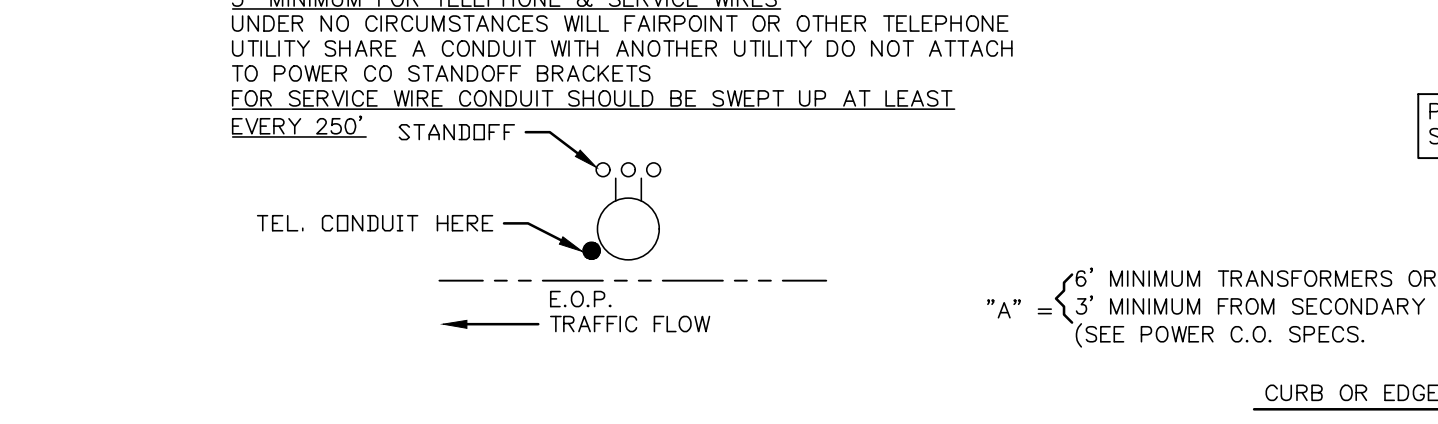
IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE CONDUIT THROUGH WHICH CABLE CAN BE SUCCESSFULLY PULLED. THE CONTRACTOR IS RESPONSIBLE FOR ALL EXPENSE ASSOCIATED WITH THE REPAIR OF CONDUIT THAT CANNOT BE USED. OWNER RESERVES THE RIGHT TO REQUIRE INSPECTION OF CONDUIT PRIOR TO BACK FILLING TO ENSURE COMPLIANCE.

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.

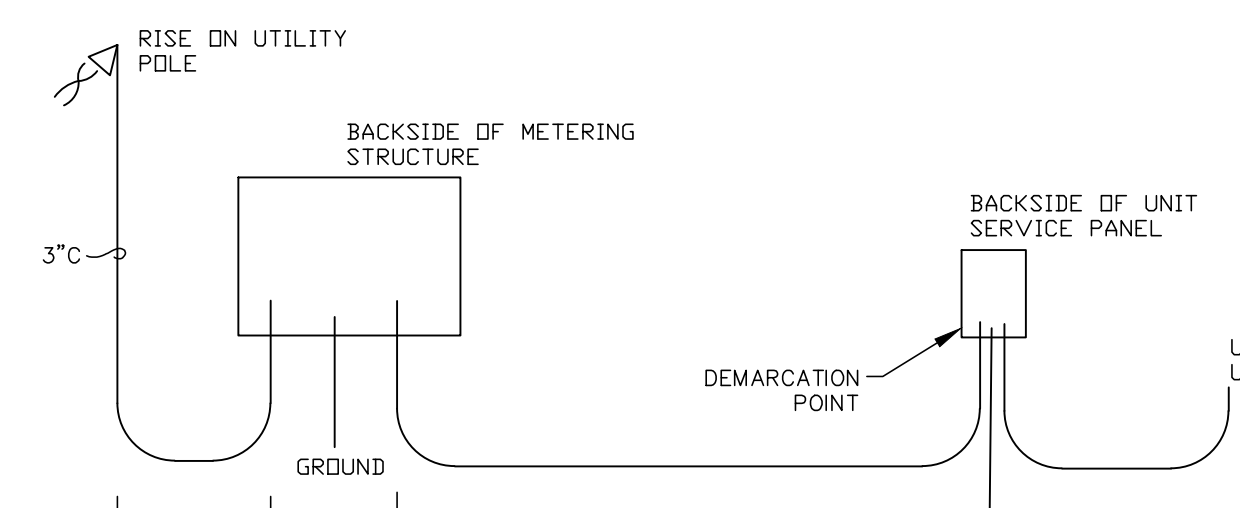
TYPICAL TRENCH DETAIL



TYPICAL UTILITY INSTALLATION



COMMUNICATIONS RISER - PHONE
NTS



COMMUNICATIONS RISER - CATV
NTS

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WOODBURY COOPERATIVE, INC

SITE IMPROVEMENTS
 PORTSMOUTH, NEW HAMPSHIRE

ELECTRICAL DETAILS

NO.	DATE	REVISION DESCRIPTION	ENG	DWG

DATE: MAR. 2021 PROJECT #: 16074

ENGINE'D BY: RDL DRAWN BY: CLB

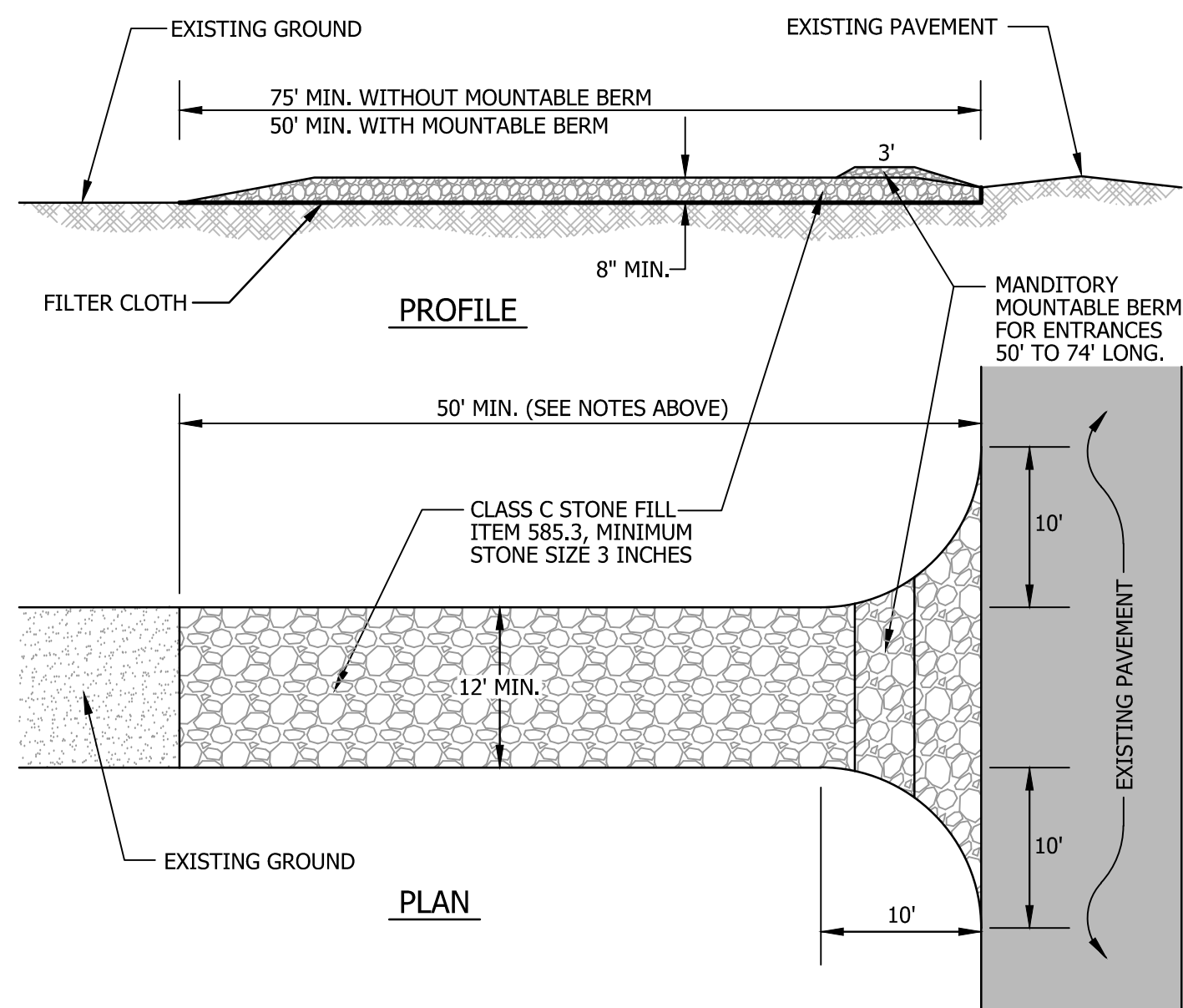
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WILLIAM T. DAVIS
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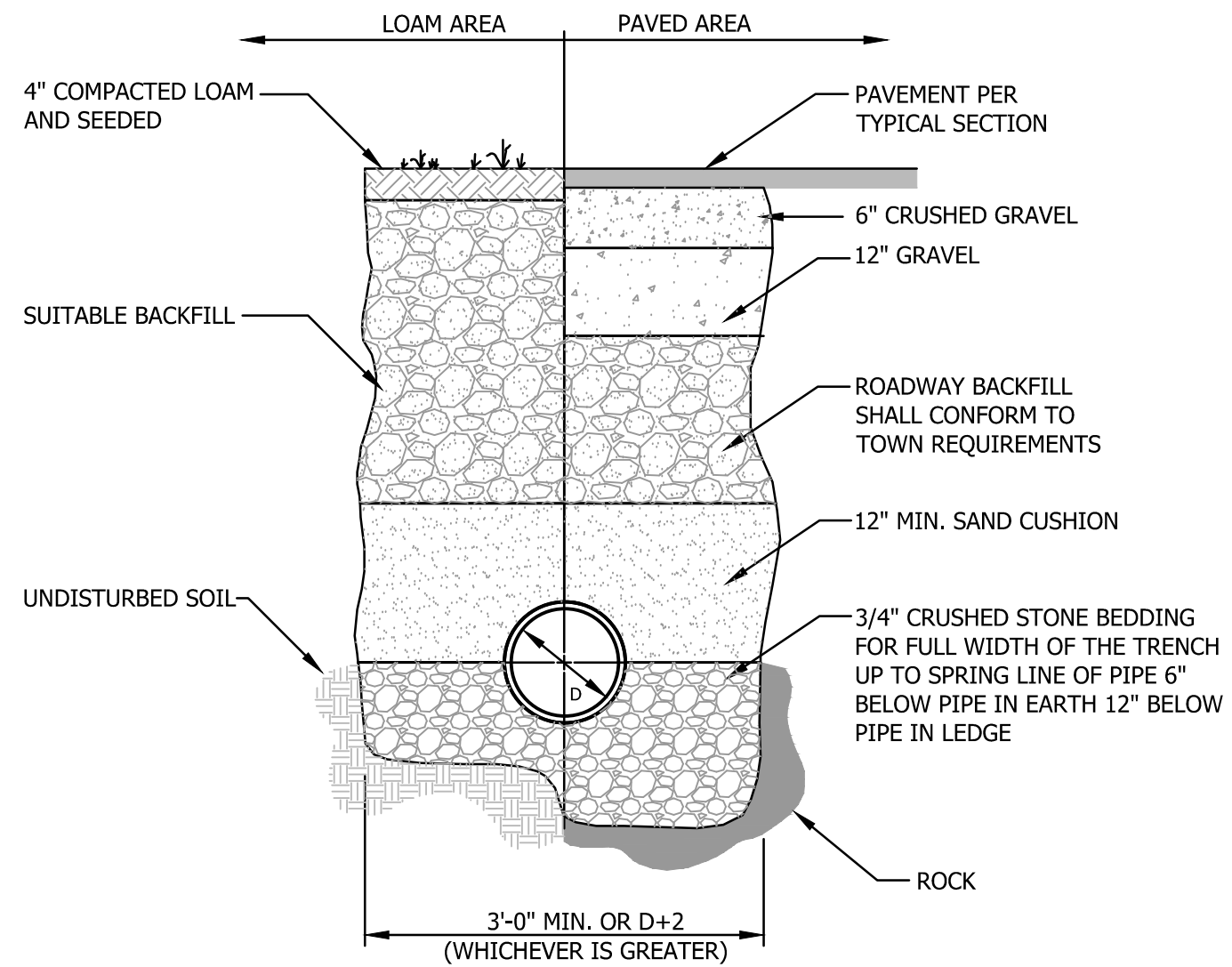
DATE OF PRINT: MARCH 10 2021
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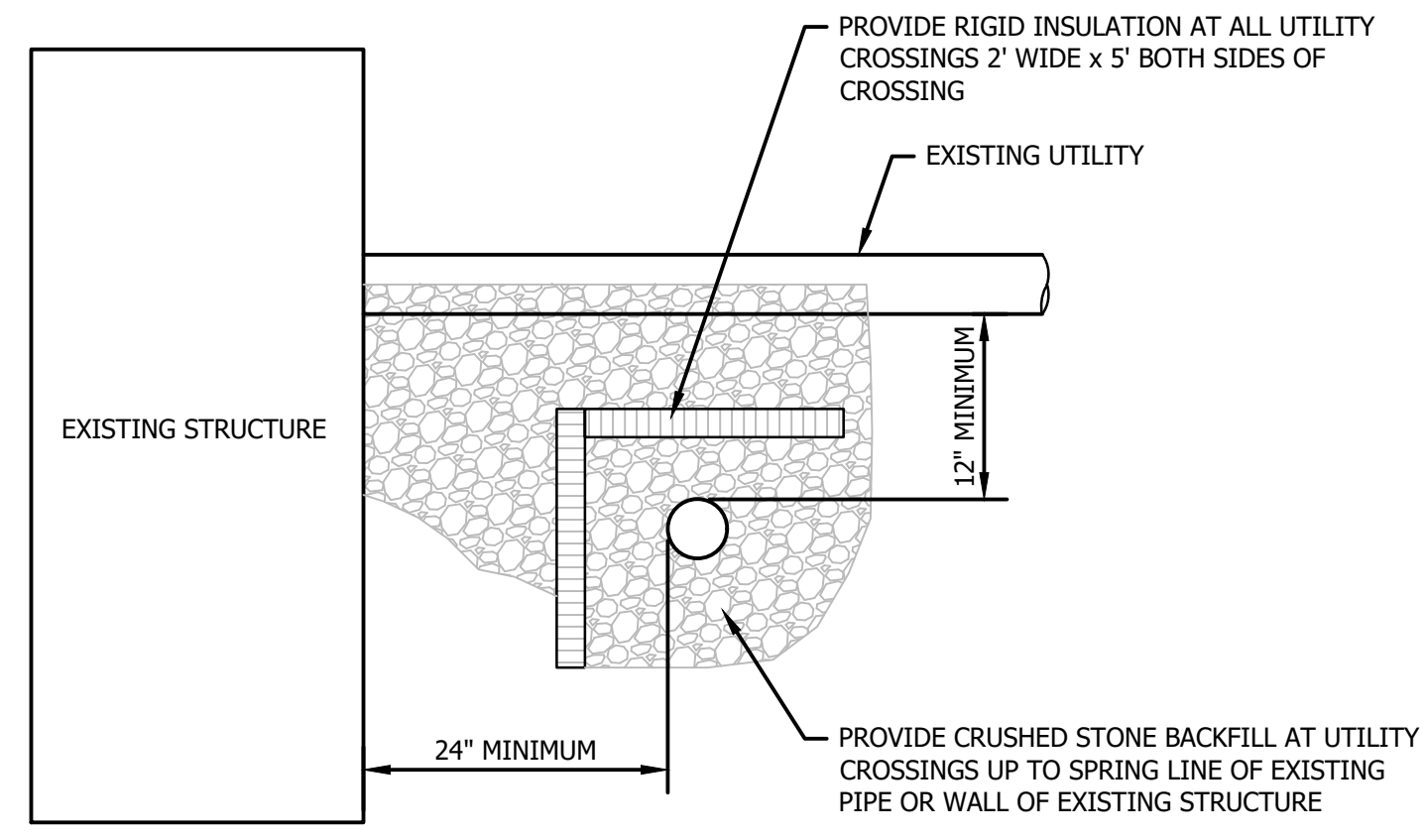
SHEET 7 OF 9



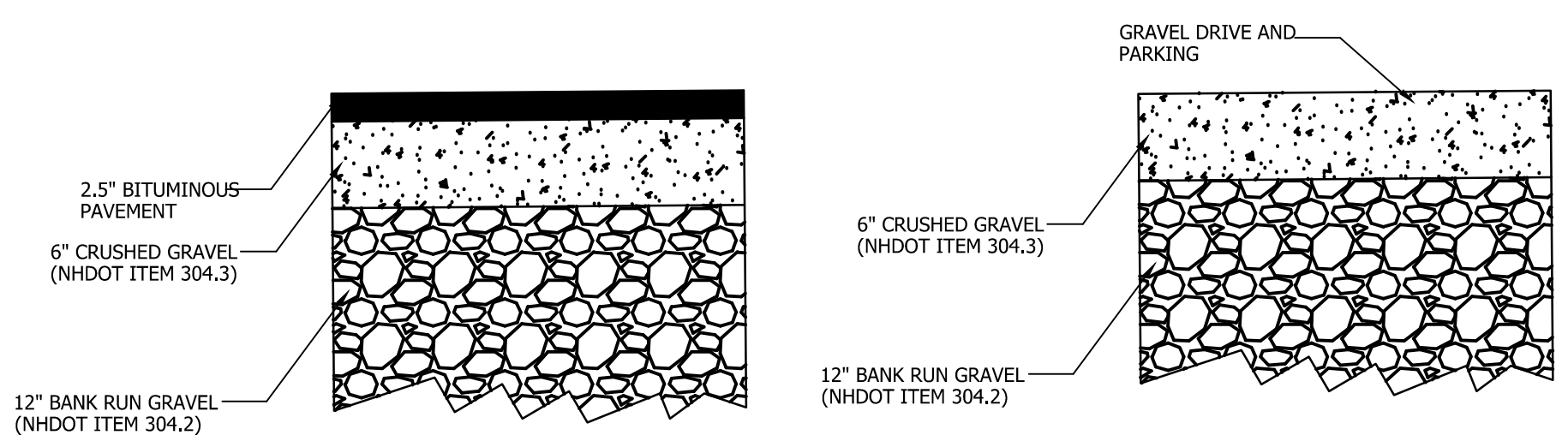
STABILIZED CONSTRUCTION ENTRANCE
 NOT TO SCALE



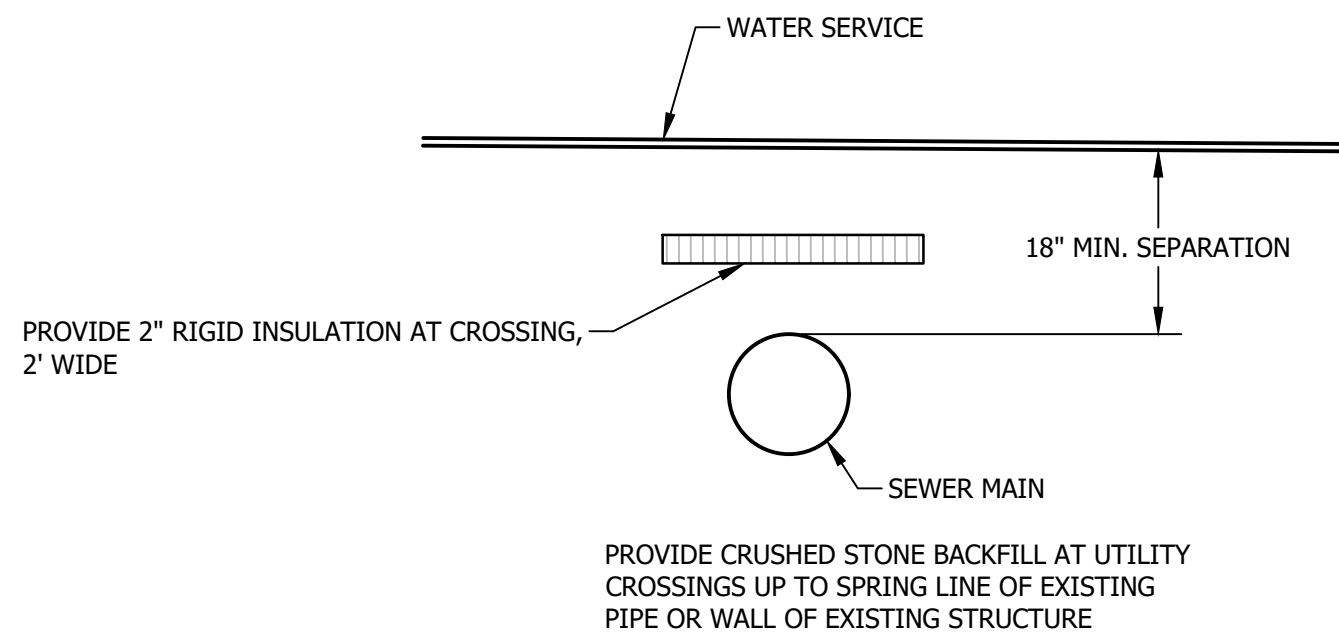
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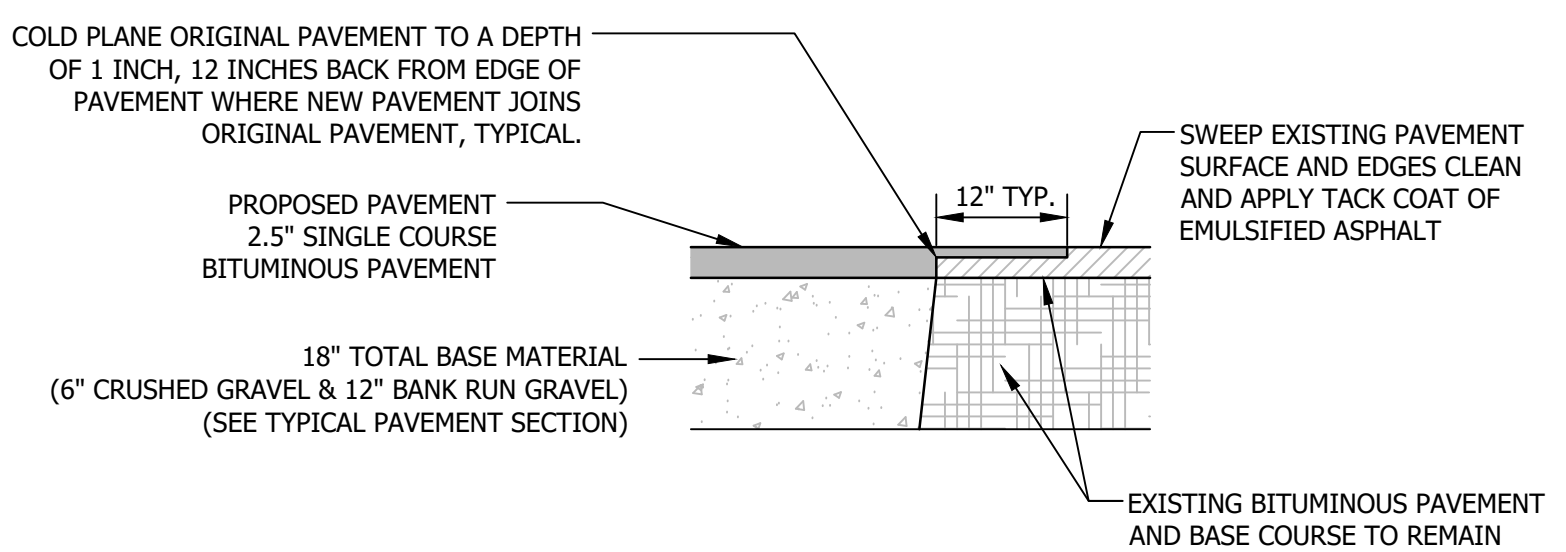
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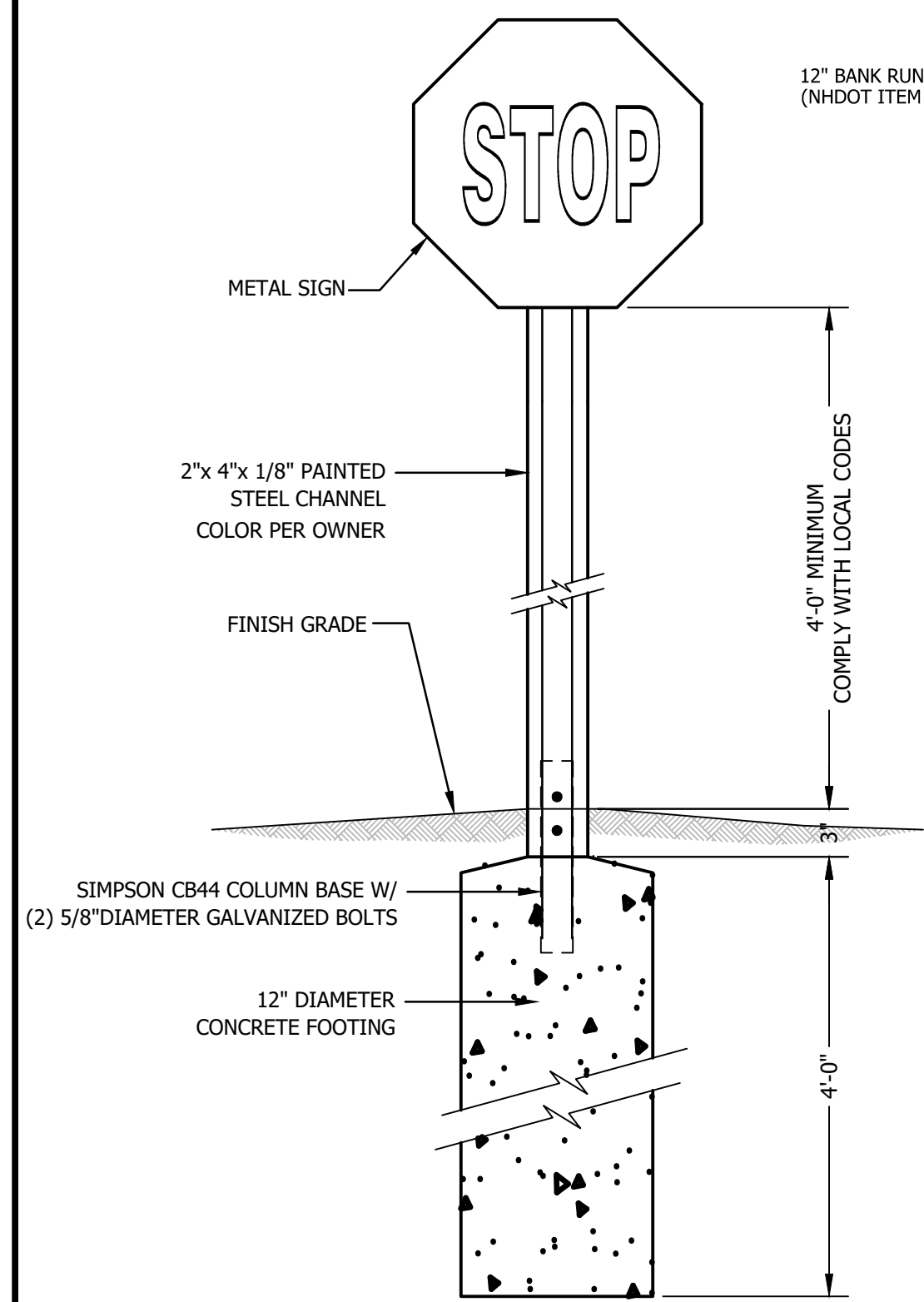
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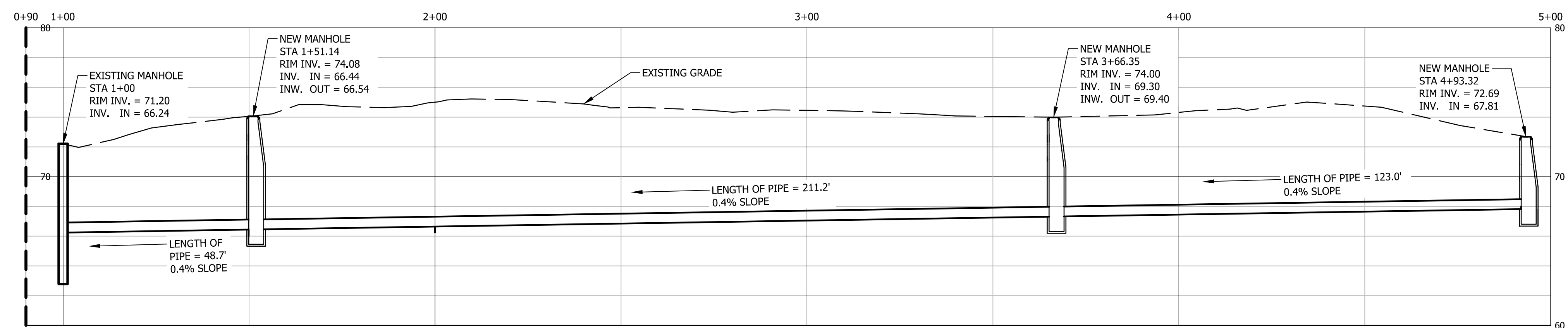
UTILITY CROSSING DETAIL
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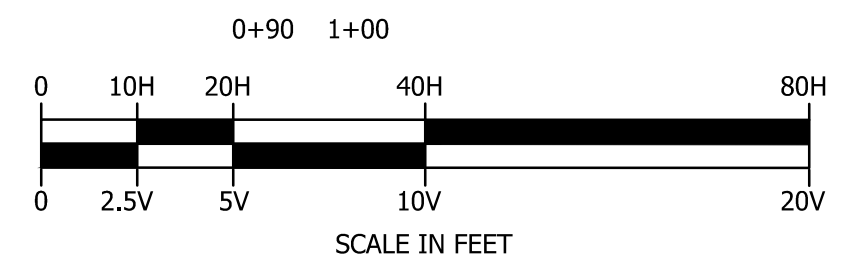
PAVEMENT JOINING DETAIL
 NOT TO SCALE



TYPICAL STOP SIGN
 NOT TO SCALE



NEW SEWER MAIN
 STA 0+90 TO STA 5+00



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WOODBURY COOPERATIVE, INC
 SITE IMPROVEMENTS
 PORTSMOUTH, NEW HAMPSHIRE

MISCELLANEOUS DETAILS

NO.	DATE	REVISION DESCRIPTION	ENG	DWG

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

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 (P₂O₅), 100 LBS. PER ACRE OR 2.2 LBS. PER 1,000 SQ. FT.
-POTASH (K₂O), 100 LBS. PER ACRE OR 2.2 LBS. PER 1,000 SQ. FT.
(NOTE: THIS IS THE EQUIVALENT OF 500 LBS. PER ACRE OF 10-20-20 FERTILIZER OR 1,000 LBS. PER ACRE OF 5-10-10).

B. SEED SHOULD BE SPREAD UNIFORMLY BY THE METHOD MOST APPROPRIATE FOR THE SITE. METHODS INCLUDE BROADCASTING, DRILLING, AND HYDROSEEDING. WHERE BROADCASTING IS USED, COVER SEED WITH .25 INCH OF SOIL OR LESS, BY CULTIPACKING OR RAKING.

C. 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 SPILLWAYS, AND OTHER CHANNELS WITH FLOWING WATER	A	GOOD	GOOD	GOOD	FAIR
	B	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 FLATPEA	15 OR 30	0.35 OR 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.

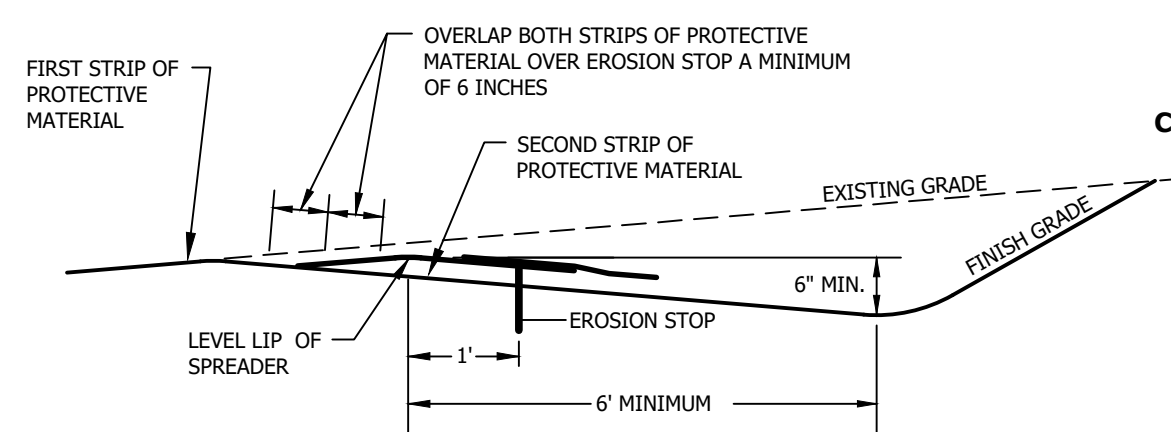
F. TEMPORARY SEEDING RATES:

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

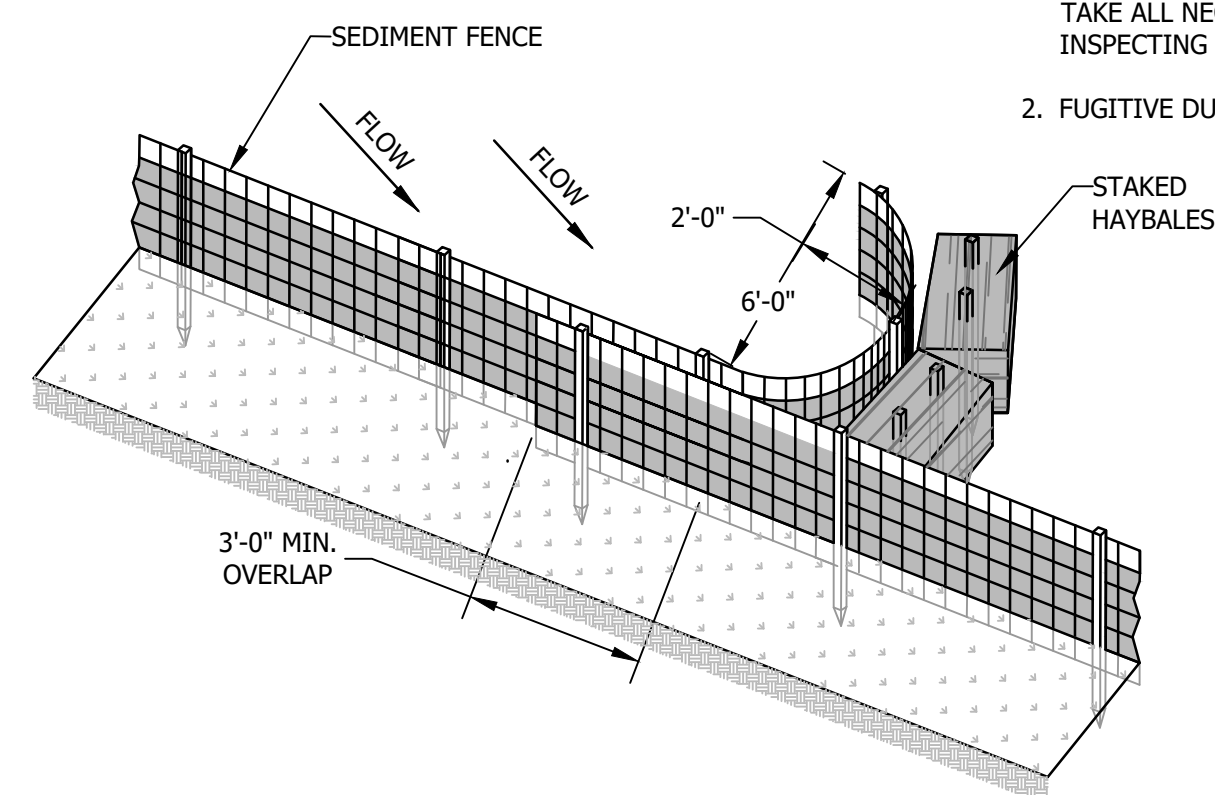
- CONSTRUCT THE LEVEL SPREADER LIP ON A ZERO PERCENT GRADE TO INSURE UNIFORM SPREADING OF RUNOFF.
- LEVEL SPREADER SHALL BE CONSTRUCTED ON UNDISTURBED SOIL AND NOT ON FILL.
- AN EROSION STOP SHALL BE PLACED VERTICALLY A MINIMUM OF SIX INCHES DEEP IN A SLIT TRENCH ONE FOOT BACK OF THE LEVEL LIP AND PARALLEL TO THE LIP. THE EROSION STOP SHALL EXTEND THE ENTIRE LENGTH OF THE LEVEL LIP.
- 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.
- THE ENTRANCE CHANNEL TO THE LEVEL SPREADER SHALL NOT EXCEED A 1 PERCENT GRADE FOR AT LEAST 50 FEET BEFORE ENTERING INTO THE SPREADER.
- THE FLOW FROM THE LEVEL SPREADER SHALL OUTLET ONTO STABILIZED AREAS. WATER SHOULD NOT RE-CONCENTRATE IMMEDIATELY BELOW THE SPREADER.
- PERIODIC INSPECTION AND REQUIRED MAINTENANCE SHALL BE PERFORMED.
- 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

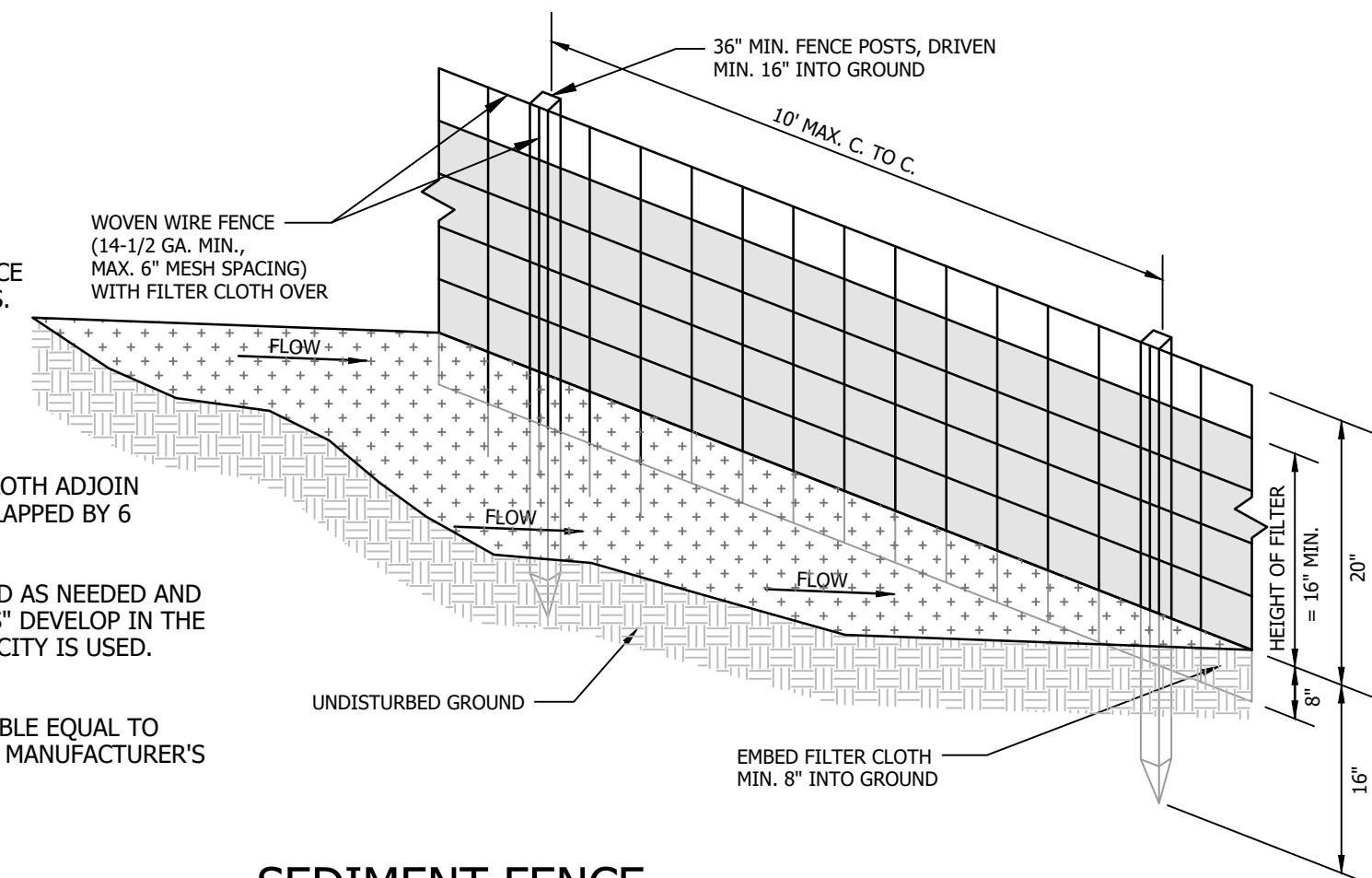


SEDIMENT FENCE POCKET

NO SCALE

CONSTRUCTION NOTES FOR SEDIMENT FENCE

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



SEDIMENT FENCE

NO SCALE

EROSION CONTROL GENERAL NOTES

A. KEEP SITE MODIFICATION TO A MINIMUM

- 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.
- EXPOSE AREAS OF BARE SOIL TO EROSION ELEMENTS FOR THE SHORTEST TIME POSSIBLE.
- SAVE AND PROTECT DESIRABLE EXISTING VEGETATION WHERE POSSIBLE. ERECT BARRIERS TO PREVENT DAMAGE FROM CONSTRUCTION EQUIPMENT.
- LIMIT THE GRADES OF SLOPES SO VEGETATION CAN BE EASILY ESTABLISHED AND MAINTAINED.
- AVOID SUBSTANTIAL INCREASE IN RUNOFF LEAVING THE SITE.

B. MINIMIZE POLLUTION OF WATER DURING CONSTRUCTION ACTIVITIES

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

C. PROTECT AREA AFTER CONSTRUCTION.

- 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.
- MAINTAIN VEGETATED AREAS USING PROPER VEGETATIVE 'BEST MANAGEMENT PRACTICES' DURING THE CONSTRUCTION PERIOD.
- MAINTAIN NEEDED STRUCTURAL 'BEST MANAGEMENT PRACTICES' AND REMOVE SEDIMENT FROM DETENTION PONDS AND SEDIMENT BASINS AS NEEDED.
- DETERMINE RESPONSIBILITY FOR LONG TERM MAINTENANCE OF PERMANENT 'BEST MANAGEMENT PRACTICES'.
- IF CONSTRUCTION IS ANTICIPATED DURING WINTER MONTHS, REFER TO 'COLD WEATHER SITE STABILIZATION REQUIREMENTS'.

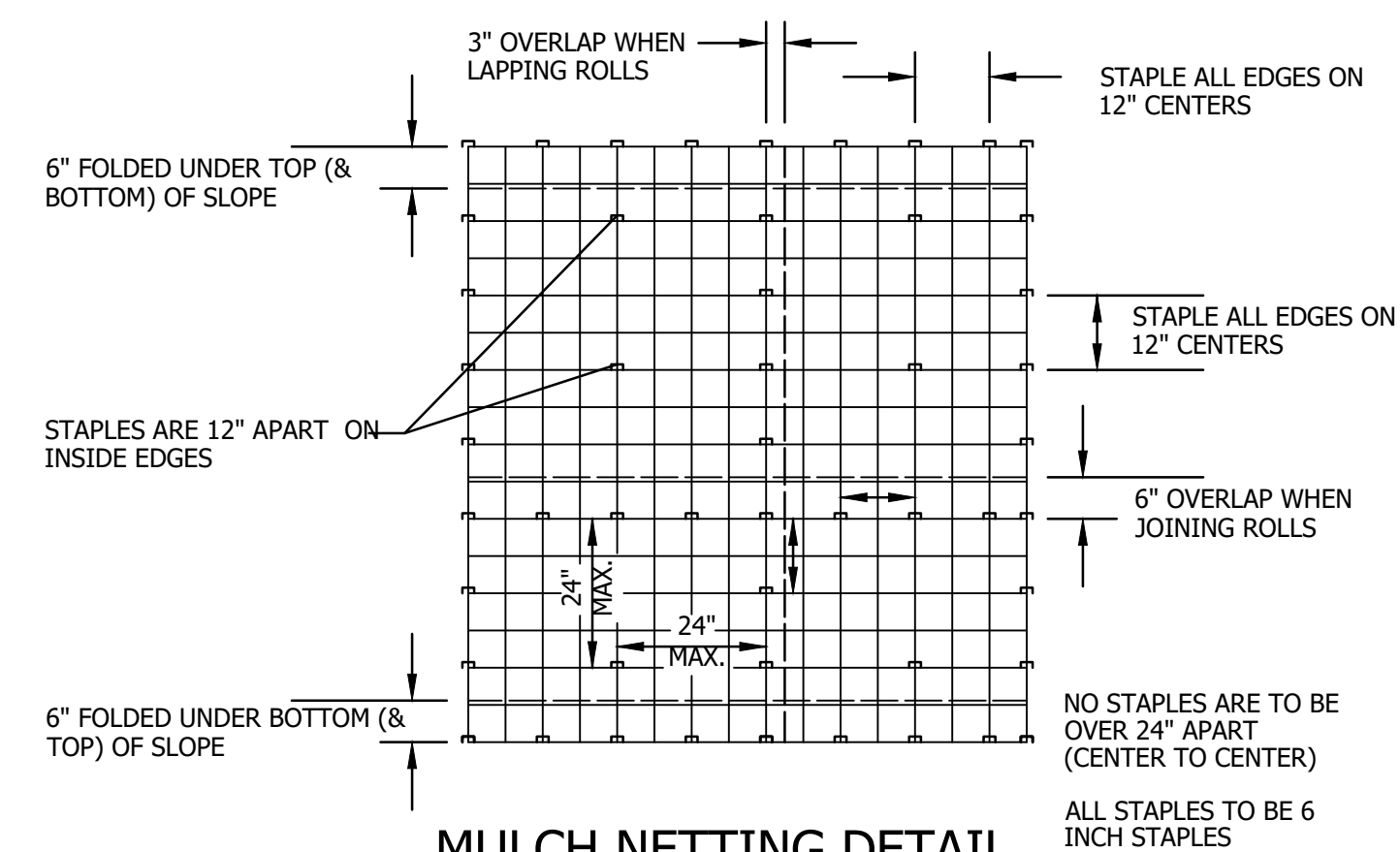
D. INVASIVE SPECIES AND FUGITIVE DUST

- 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.
- FUGITIVE DUST SHALL BE CONTROLLED IN ACCORDANCE WITH ENV-A 1000.

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:

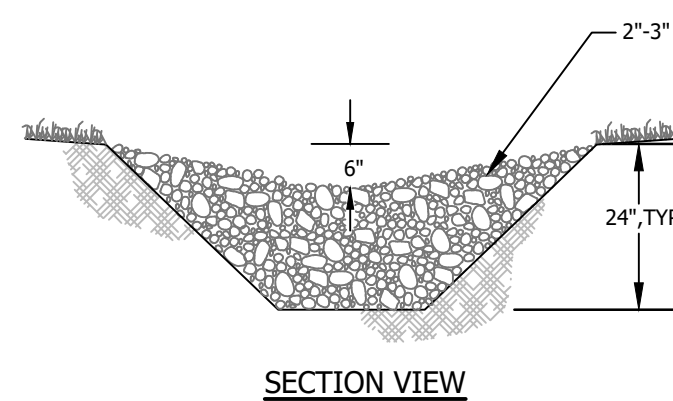
- THE AREA OF EXPOSED, UNSTABILIZED SOIL SHALL BE LIMITED TO 1 ACRE AND SHALL BE PROTECTED AGAINST EROSION BY THE METHODS DESCRIBED IN THIS SECTION PRIOR TO ANY THAW OR SPRING MELT EVENT. THE ALLOWABLE AREA OF EXPOSED SOIL MAY BE INCREASED IF A WINTER CONSTRUCTION PLAN, DEVELOPED BY A QUALIFIED ENGINEER OR A CPESC SPECIALIST, IS REVIEWED AND APPROVED BY NHDES.
- 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).
- 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).
- 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.
- INSTALLATION OF EROSION CONTROL MATTING SHALL NOT OCCUR OVER SNOW OF GREATER THAN ONE INCH IN DEPTH OR ON FROZEN GROUND.
- 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.
- 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.
- 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.



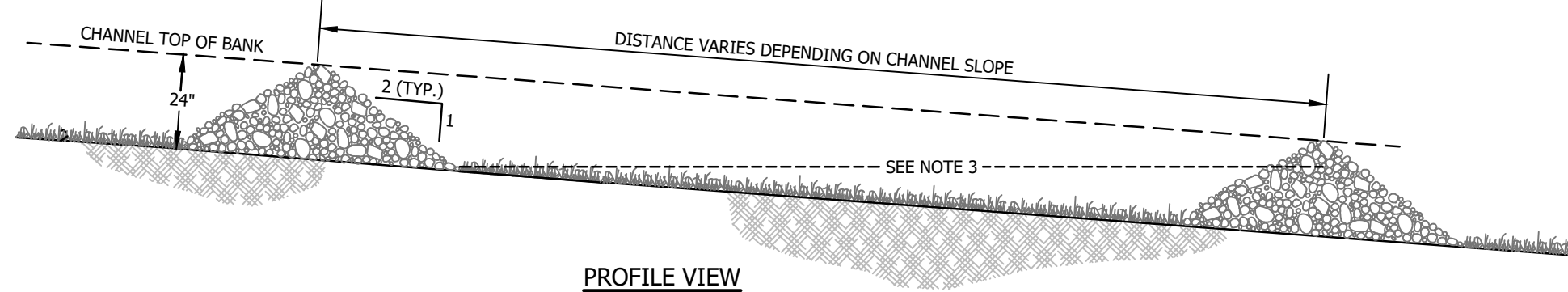
MULCH NETTING DETAIL

SOURCE: USDA SOIL CONSERVATION SERVICE

NO SCALE



SECTION VIEW



PROFILE VIEW

ROCK CHECK DAM DETAIL

NO SCALE

NOTES

- CONSTRUCT ROCK CHECK DAMS WHERE INDICATED ON THE PLANS OR AS NECESSARY.
- CONSTRUCT SPILLWAY IN CENTER OF ROCK CHECK DAM 6" BELOW TOP OF CHANNEL.
- 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.
- ROCK CHECK DAMS SHALL CONSIST OF A WELL GRADED MIXTURE OF 2" - 3" STONE.
- REMOVE ROCK CHECK DAMS AND ANY ACCUMULATED SILT IN CHANNEL ONCE PERMANENT CHANNEL LININGS HAVE BEEN ESTABLISHED AND STABILIZED.

CONSTRUCTION SEQUENCE

- PREPARE AN EROSION CONTROL PLAN OR A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS.
 - INSTALL CONSTRUCTION ENTRANCE, SEE DETAIL.
 - CUT AND CLEAR TREES WITHIN THE CLEARING LIMITS.
 - INSTALL SEDIMENT FENCES, ROCK CHECK DAMS, AND OTHER APPROPRIATE EROSION CONTROL MEASURES AT LOCATIONS SHOWN ON THE PLANS AND AS NEEDED.
 - GRUB SITE WITHIN GRADING LIMITS.
 - STRIP AND STOCKPILE TOPSOIL AND INSTALL EROSION CONTROL MEASURES.
 - INSTALL/ADJUST SEDIMENT FENCE, CHECK DAMS, AND HAYBALES, AS REQUIRED.
 - 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.
 - PROCEED WITH WORK, LIMITING THE DURATION OF 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.
 - 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:
- BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
 - A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
 - A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED; OR
 - EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
- 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.
 - PAVE ROADWAYS AND/OR PARKING AREAS.
 - PLACE TOPSOIL, SEED AND MULCH.
 - COMPLETE ALL REMAINING PERMANENT EROSION CONTROL STRUCTURES.
 - MONITOR THE SITE AND MAINTAIN STRUCTURES AS NEEDED UNTIL FULL VEGETATION IS ESTABLISHED.

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SHEET 9 OF 9		

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