



DMH-1  
RIM=178.50  
INV.IN=174.00(EXIST. CB-1)  
INV.OUT=171.50

DMH-2  
RIM=162.38  
INV.IN=158.35(DMH-1)  
INV.OUT=158.25

DMH-3  
RIM=151.50  
INV.IN=147.50(DMH-2)  
INV.OUT=147.40

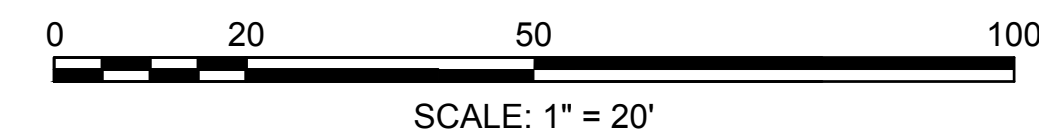
DMH-4  
RIM=137.00  
INV.IN=132.95(DMH-3)  
INV.OUT=132.85

EXIST. CB-1  
RIM=177.60  
INV.OUT=174.50

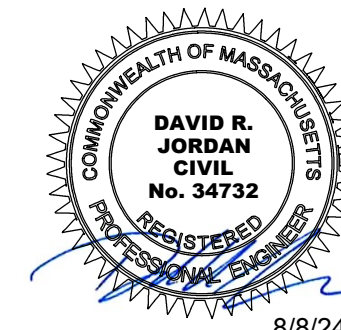
EXIST. CB-2  
RIM=134.00  
INV.IN=131.00(DMH-4)

DRAINAGE PIPE SCHEDULE					
FROM: STRUCTURE NUMBER	PIPE SIZE (INCHES)	TYPE OF PIPE	APPROX. PIPE LENGTH (FEET)	SLOPE OF PIPE (FT./FT.)	TO: STRUCTURE NUMBER
DMH-1	12	HDPE	109	0.120	DMH-2
DMH-2	12	HDPE	98	0.110	DMH-3
DMH-3	12	HDPE	179	0.081	DMH-4
DMH-4	12	HDPE	81	0.023	EXIST. CB-2
EXIST. CB-1	12	HDPE	11	0.045	DMH-1

- 1) THE PURPOSE OF THIS PLAN IS TO ILLUSTRATE DRAINAGE IMPROVEMENTS TO BE CONSTRUCTED BY THE CITY OF HAVERHILL IN THE HUMPHREY STREET, WELLING STREET, AND CLIFTWOOD STREET RIGHT OF WAYS.
- 2) THIS PLAN IS BASED ON SURVEY INFORMATION PROVIDED BY NORTHPOINT SURVEY SERVICES, INC., PREPARED ON JULY 12, 2023.
- 3) DRAINAGE AND EROSION CONTROL NOTES CAN BE FOUND ON SHEET 3.



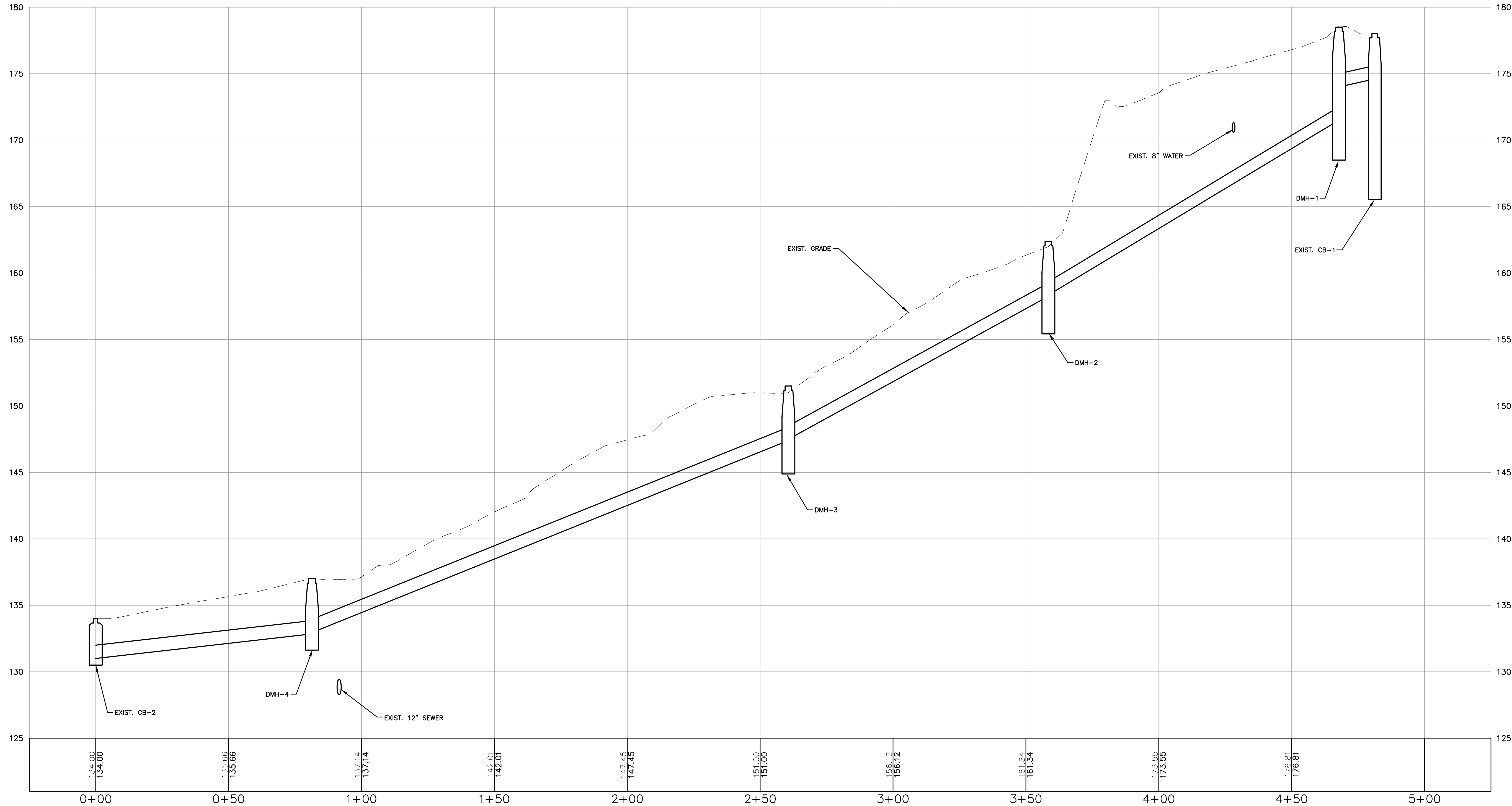
**EDGEHILL / CLIFTWOOD / WELLING  
DRAINAGE IMPROVEMENTS**



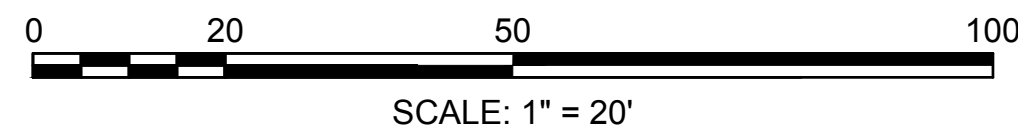
REVISIONS		
NO.	REVISION	DATE
AUGUST 8, 2024		
DRAWN/DESIGN BY SMS		CHECKED BY DRJ

SCALE:	1"=20'
PROJECT NO.	NEX-2400145

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PROFILE  
SCALE: 1"=20'H/4'V



603.893.0720

Greenman-Pedersen, Inc.  
44 Stiles Road, Suite One  
Salem, NH 03079

Engineering  
Design  
Planning  
Construction Management

GPINET.COM

PREPARED FOR

CITY OF HAVERHILL  
4 SUMMER STREET  
HAVERHILL, MA 01830

EDGEHILL / CLIFTWOOD / WELLING  
DRAINAGE IMPROVEMENTS

HAVERHILL, MASSACHUSETTS 01830

COMMONWEALTH OF MASSACHUSETTS  
DAVID R. JORDAN  
CIVIL  
No. 34732  
REGISTERED  
Professional Engineer  
8/8/24

REVISIONS		
NO.	REVISION	DATE

AUGUST 8, 2024

DRAWN/DESIGN BY  
SMS

CHECKED BY  
DRJ

DRAINAGE  
PROFILE

SCALE:  
1"=20'H/4'V

PROJECT NO.  
NEX-2400145

2 OF 3

PREPARED FOR  
CITY OF HAVERHILL  
4 SUMMER STREET  
HAVERHILL, MA 01830

**EDGEHILL / CLIFTWOOD / WELLING  
DRAINAGE IMPROVEMENTS**



## REVISIONS


NO.	REVISION	DATE
AUGUST 8, 2024		
DRAWN/DESIGN BY SMS		CHECKED BY DRJ

## CONSTRUCTION DETAILS

SCALE: NOT TO SCALE

PROJECT NO.  
NEX-2400145

3 OF 3

### **DRAINAGE:**

- 1) ALL SITE DRAINAGE PIPE SHALL BE CORRUGATED HIGH-DENSITY POLYETHYLENE PIPE WITH STANDARD JOINTS, DUAL-WALL, SMOOTH INTERIOR, AS MANUFACTURED BY ADS, INC. OR APPROVED EQUAL, UNLESS OTHERWISE NOTED ON PLAN.
- 2) ANY UTILITY FIELD DISADJUSTMENTS SHALL BE APPROVED BY THE ENGINEER OF RECORD AND COORDINATED WITH THE APPROPRIATE LOCAL UTILITY COMPANY.
- 3) THE LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE ONLY. THE CONTRACTOR IS TO VERIFY EXACT LOCATION PRIOR TO CONSTRUCTION. THE CONTRACTOR IS TO NOTIFY THE DESIGN ENGINEER OF ANY DISCREPANCIES. CONSTRUCTION SHALL COMMENCE BEGINNING AT THE LOWEST INVERT (POINT OF CONNECTION) AND PROGRESS UP GRADIENT. PROPOSED INTERFACE POINTS (CROSSINGS) WITH EXISTING UNDERGROUND INSTALLATIONS SHALL BE FIELD VERIFIED BY TEST PIT PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- 4) ALL CONSTRUCTION SHALL CONFORM TO MUNICIPAL DPW AND ALL APPLICABLE STATE AND FEDERAL STANDARDS.
- 5) THE CONTRACTOR SHALL CALL AND COORDINATE WITH DIG-SAFE (DIAL 811) PRIOR TO COMMENCING ANY EXCAVATION.
- 6) THIS SITE WILL NOT REQUIRE A USEPA NPDES PERMIT FOR STORMWATER DISCHARGE FOR THE SITE CONSTRUCTION SINCE THE DISTURBANCE IS LESS THAN ONE ACRE.
- 7) ALL TRAFFIC CONTROL AND TEMPORARY CONSTRUCTION SIGNAGE ARRANGEMENTS, ACCEPTABLE TO MASSDOT AND THE CITY DEPARTMENT OF PUBLIC WORKS, SHALL BE EMPLOYED DURING OPERATIONS WITHIN THE PUBLIC RIGHT-OF-WAY.
- 8) ALL PIPE DATA IS CALCULATED TO CENTER OF STRUCTURE, TYP.

### EROSION CONTROL:

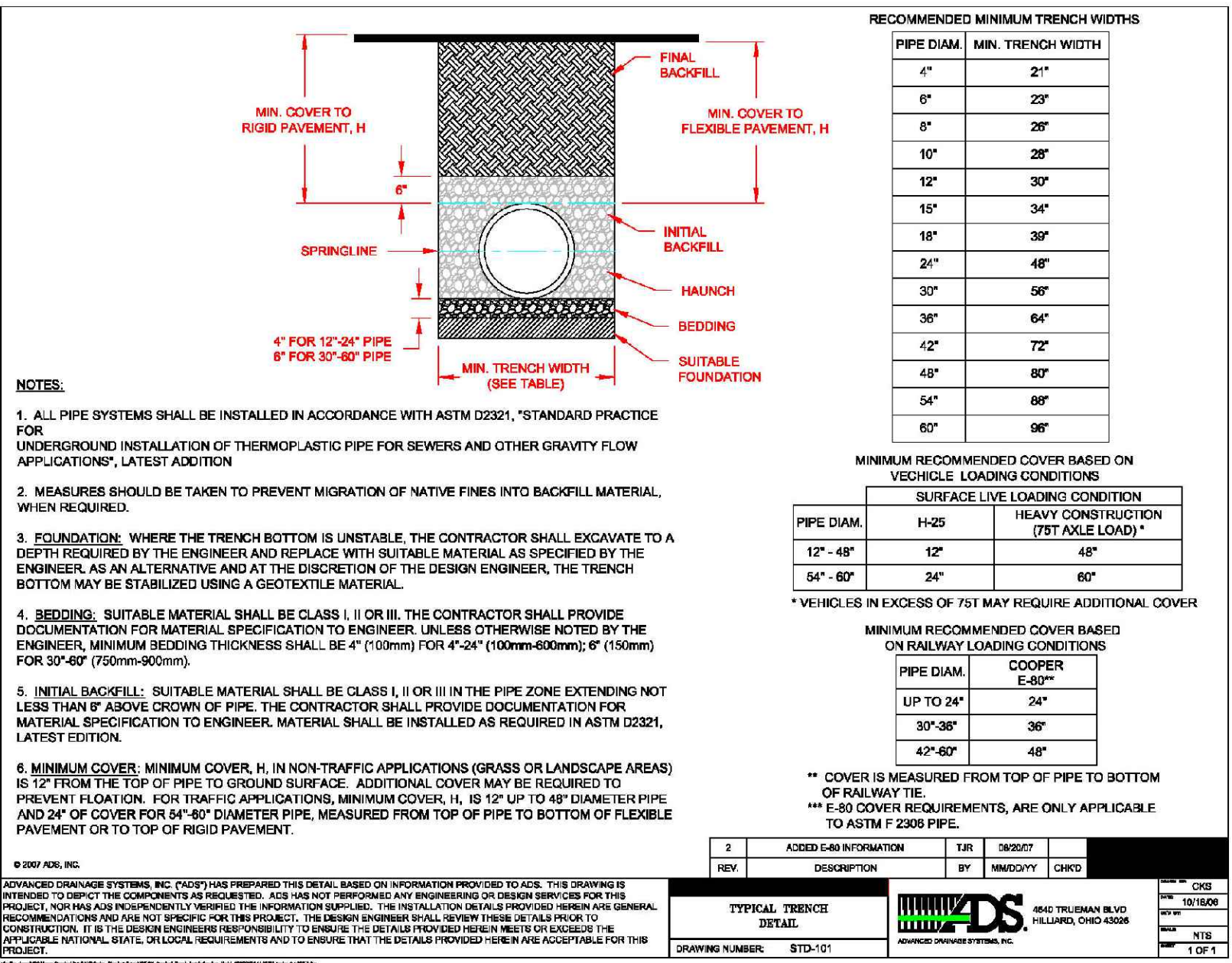
- 11) EROSION CONTROL PROCEDURES SHALL CONFORM TO THE MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS, MAY 2003, OR LATEST EDITION.

### TEMPORARY EROSION CONTROL MEASURES:

- 1) MULCH SHALL BE MOWINGS OF ACCEPTABLE HERBACEOUS GROWTH, FREE FROM NOXIOUS WEEDS OR WOODY STEMS, AND SHALL BE DRY. NO SALT HAY SHALL BE USED.
- 2) FILL MATERIAL SHALL BE FREE FROM STUMPS, WOOD, ROOTS, ETC.
- 3) ALL DISTURBED AREAS SHALL BE LOAMED AND SEEDED. A MINIMUM OF 6 INCHES OF LOAM SHALL BE INSTALLED WITH NOT LESS THAN ONE POUND OF SEED PER 50 SQUARE YARDS OF AREA.
- 4) SEED MIX SHALL BE EQUAL PARTS OF RED FESCUE (CREEPING), KENTUCKY BLUEGRASS, REDTOP, PERENNIAL RYEGRASS.
- 5) AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED THE TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED.
- 6) PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES. PROVIDE SWEEPING ON A DAILY BASIS OR AS DIRECTED BY THE TOWN.
- 7) ALL DREDGING OPERATIONS MUST DISCHARGE DIRECTLY INTO A SEDIMENT FILTER AREA.

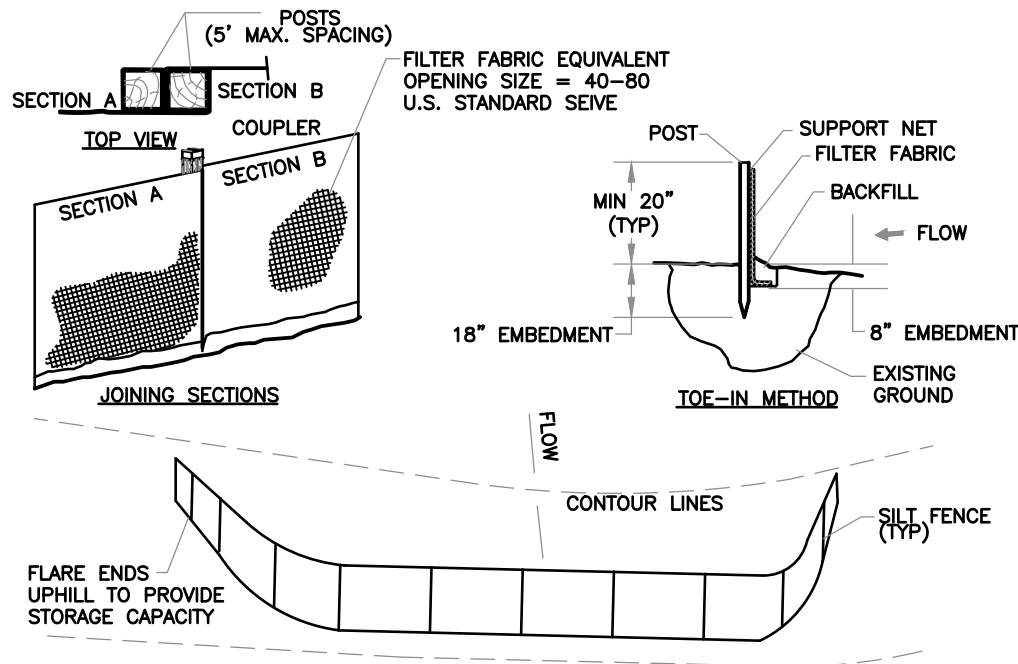
### CONSTRUCTION SEQUENCE:

- 1) INSTALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES AS REQUIRED.
- 2) CUT AND STUMP AREAS OF PROPOSED CONSTRUCTION.
- 3) CONSTRUCT COLESED DRAINAGE SYSTEM. PROTECT CULVERT INLETS AND CATCH BASINS WITH SEDIMENTATION BARRIERS.
- 4) PERFORM SITE GRADING, PLACING SEDIMENT CONTROL FENCES AS REQUIRED TO CONTROL SOIL EROSION
- 5) INSTALL UNDERGROUND UTILITIES.
- 6) BEGIN TEMPORARY AND PERMANENT SEEDING AND MULCHING. ALL CUT AND FILL SLOPES SHALL BE SEEDED OR MULCHED IMMEDIATELY AFTER THEIR CONSTRUCTION.
- 7) DAILY, OR AS REQUIRED, CONSTRUCT, INSPECT, AND IF NECESSARY, RECONSTRUCT TEMPORARY BERMS, DIPS, DITCHES, SEDIMENT CONTROL FENCES AND SEDIMENT TRAPS INCLUDING MULCHING AND SEEDING. REFER TO OPERATION AND MAINTENANCE PLAN FOR ADDITIONAL REQUIREMENTS AND INFORMATION. COPIES OF ALL INSPECTION REPORTS ARE TO BE PROVIDED TO THE CONSERVATION COMMISSION DURING CONSTRUCTION AND AVAILABLE UPON REQUEST AFTER CONSTRUCTION IS COMPLETED.
- 8) FINISH PAVING ALL DRIVES.
- 9) COMPLETE PERMANENT SEEDING AND LANDSCAPING.
- 10) AFTER GRASS HAS BEEN FULLY GERMINATED IN ALL SEEDED AREAS, REMOVE ALL TEMPORARY EROSION CONTROL MEASURES.



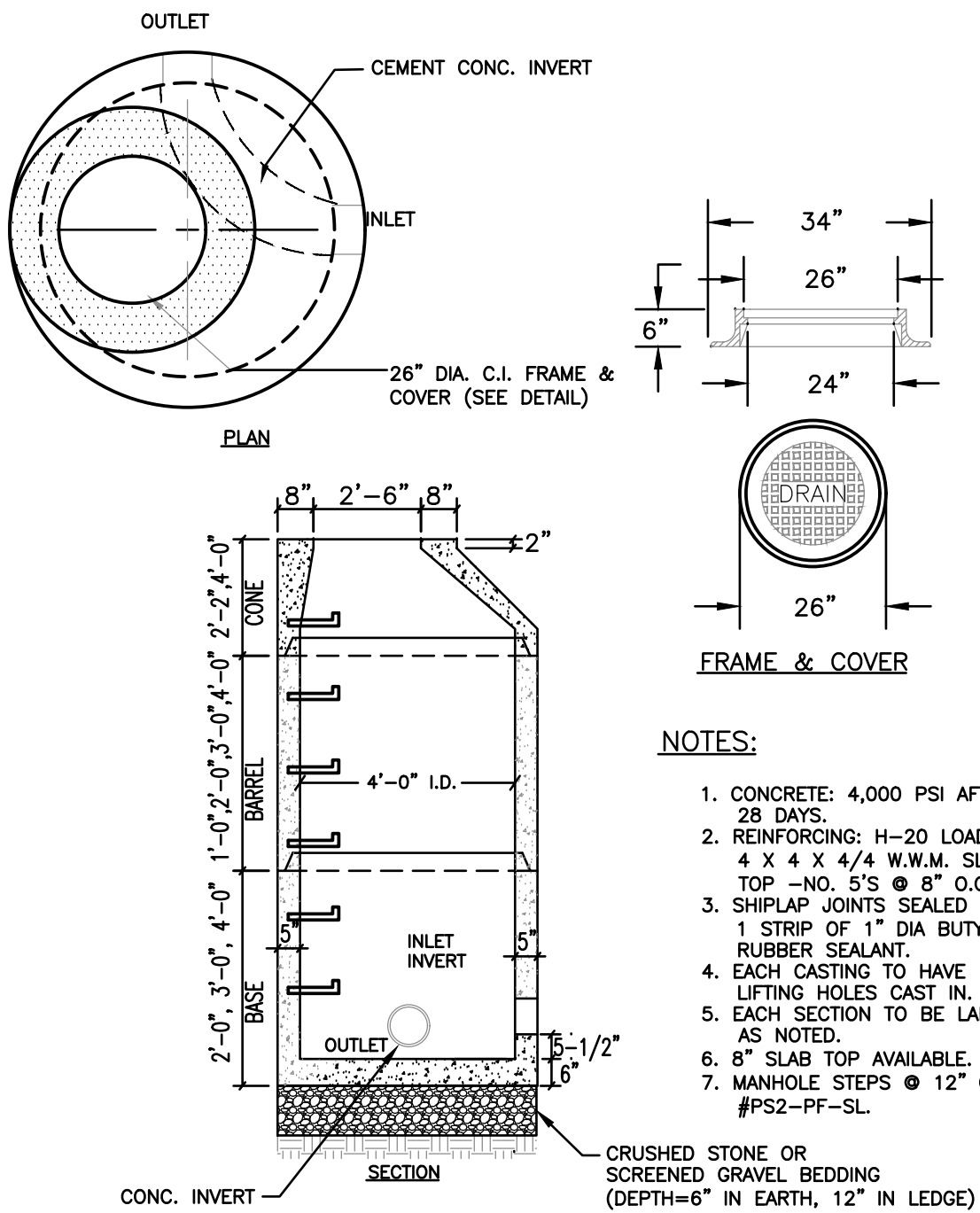
## HDPE PIPE TRENCH

NOT TO SCALE



## SEDIMENT CONTROL FENCE

NOT TO SCALE



## DRAIN MANHOLE

NOT TO SCALE