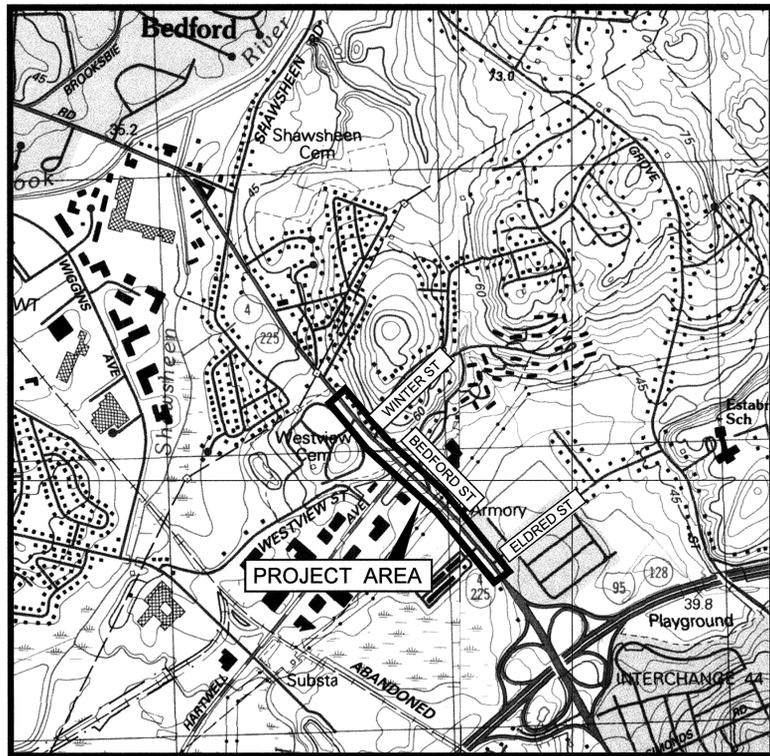


TOWN OF BEDFORD, MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS



LOCUS MAP
SCALE: 1"=1000'

DRAWING INDEX

SHEET	DESCRIPTION
G-1	ABBREVIATIONS, NOTES AND LEGEND
D-1	DETAILS
D-2	DETAILS
D-3	DETAILS
D-4	CONSTRUCTION ZONE SAFETY PLAN

BASE BID:

C-1	BEDFORD STREET STA 0+00 TO STA 9+50 SLIP LINE 18" HDPE IN 20-INCH FORCE MAIN
C-2	BEDFORD STREET STA 9+50 TO STA 20+50 SLIP LINE 18" HDPE IN 20-INCH FORCE MAIN
C-3	BEDFORD STREET STA 20+50 TO STA 27+00 SLIP LINE 18" HDPE IN 20-INCH FORCE MAIN

BID ALTERNATE NO. 1:

C-4	BEDFORD STREET STA 0+00 TO STA 9+50 INSTALL CURED-IN-PLACE LINER IN 20-INCH FORCE MAIN
C-5	BEDFORD STREET STA 9+50 TO STA 20+50 INSTALL CURED-IN-PLACE LINER IN 20-INCH FORCE MAIN
C-6	BEDFORD STREET STA 20+50 TO STA 27+00 INSTALL CURED-IN-PLACE LINER IN 20-INCH FORCE MAIN

BID ALTERNATE NO. 2:

C-7	BEDFORD STREET STA 0+00 TO STA 9+50 EXCAVATE AND REPLACE 20-INCH FORCE MAIN
C-8	BEDFORD STREET STA 9+50 TO STA 20+50 EXCAVATE AND REPLACE 20-INCH FORCE MAIN
C-9	BEDFORD STREET STA 20+50 TO STA 27+00 EXCAVATE AND REPLACE 20-INCH FORCE MAIN

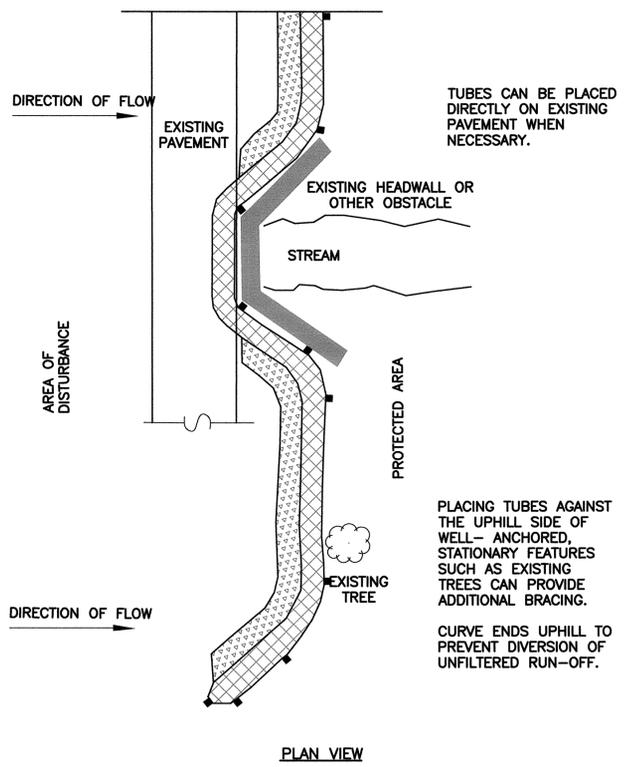
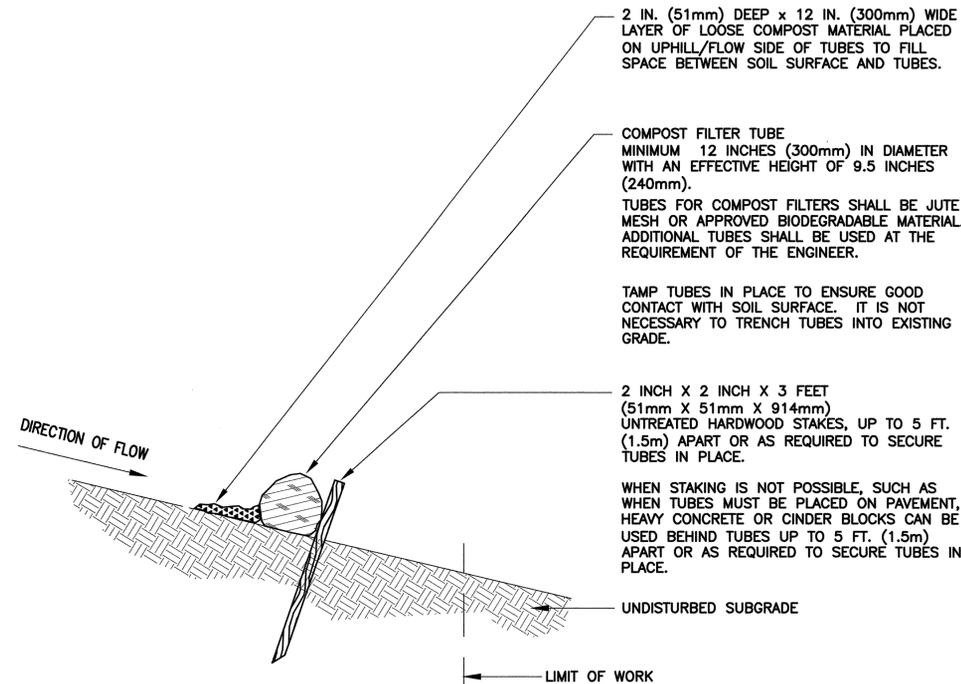
BEDFORD STREET FORCE MAIN REHABILITATION

JUNE 2014



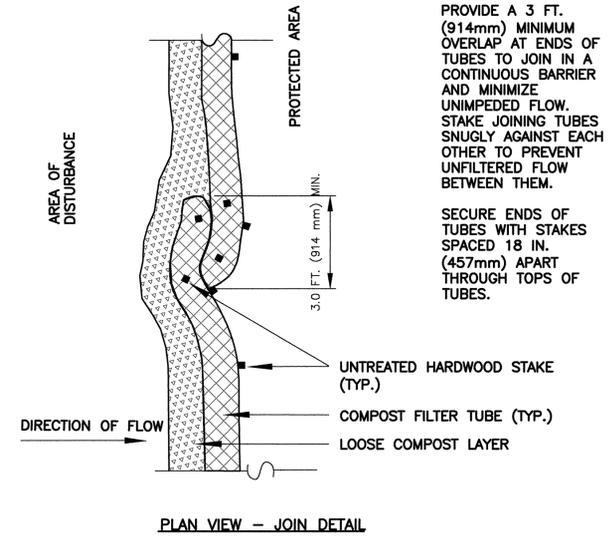
Weston & Sampson

Five Centennial Drive, Peabody, Massachusetts 01960

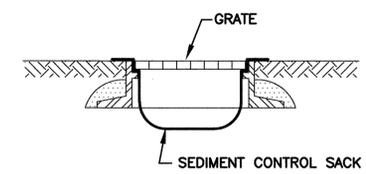


SINGLE COMPOST FILTER TUBE DETAIL
NOT TO SCALE

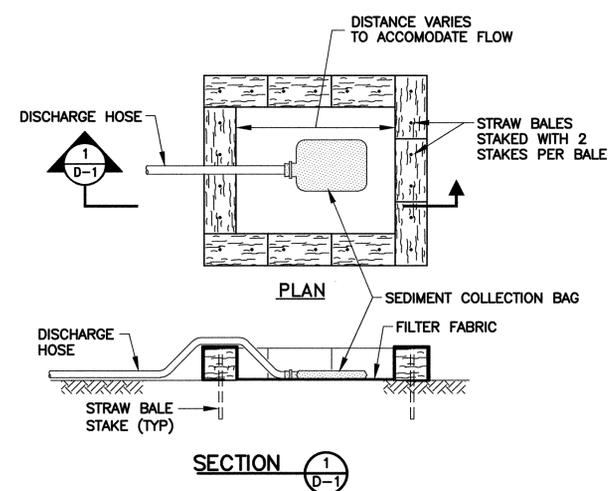
- GENERAL NOTES:**
1. PROVIDE A MINIMUM TUBE DIAMETER OF 12 INCHES (300mm) FOR SLOPES UP TO 50 FEET (15.24m) IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSING OF FILTER TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
 2. INSTALL TUBES ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
 3. DO NOT INSTALL IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS.
 4. CONFIGURE TUBES AROUND EXISTING SITE FEATURES TO MINIMIZE SITE DISTURBANCE AND MAXIMIZE CAPTURE AREA OF STORMWATER RUN-OFF.



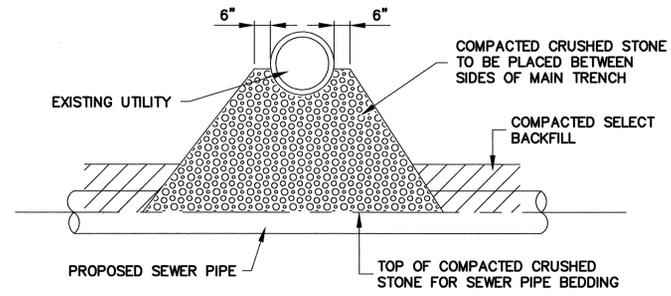
PLAN VIEW - JOIN DETAIL



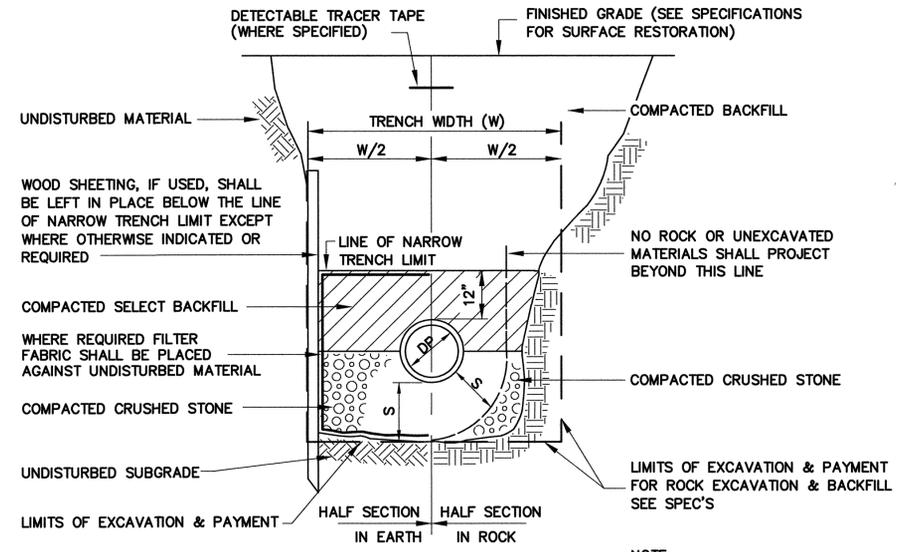
CATCH BASIN PROTECTION DETAIL
N.T.S.



DEWATERING DISCHARGE DISPOSAL DETAIL
N.T.S.



UTILITY CROSSING DETAIL
N.T.S.



TRENCH DETAIL
(SEWER, FORCE MAIN, STORM DRAIN)
N.T.S.

DEPTH TO INVERT	DIAMETER OF PIPE (DP)	MAXIMUM TRENCH WIDTH BELOW LINE OF NARROW TRENCH LIMIT (SHEETED OR UNSHEETED) (W)	MINIMUM CLEARANCE (S)
0-12'	TO 18"	5'	6"
0-12'	21"-24"	5'	7-1/2"
OVER 12'	TO 18"	7'	6"
OVER 12'	21"-24"	7'	7-1/2"

TABLE A

No.	Date	Dr. By	Ck. By	App. By	Description			
		A	P	R	O	V	E	D
								DATE
								4/2/14

REGISTERED PROFESSIONAL ENGINEER



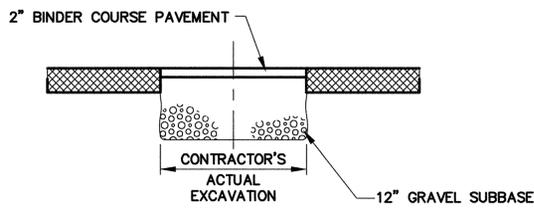
TOWN OF BEDFORD, MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS

DETAILS

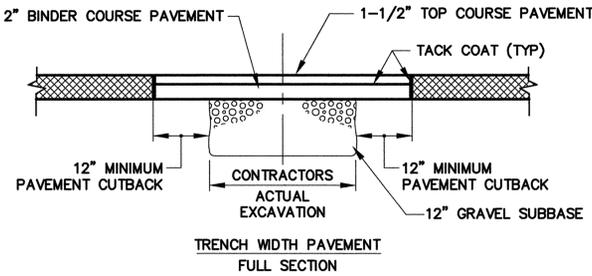
BEDFORD STREET FORCE MAIN REHABILITATION

CONTRACT:	NOTED
SCALE:	DETAILS
JOB NO.:	2140119
DR. BY:	MM
DSN. BY:	JRH
CHK. BY:	DFB
APP. BY:	DME

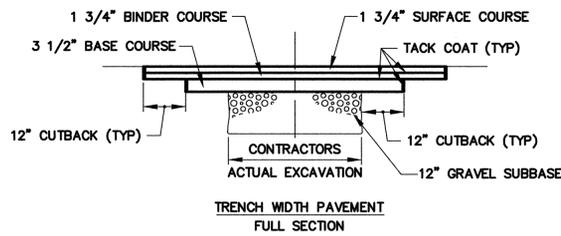
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TYPE C - TEMPORARY PAVEMENT



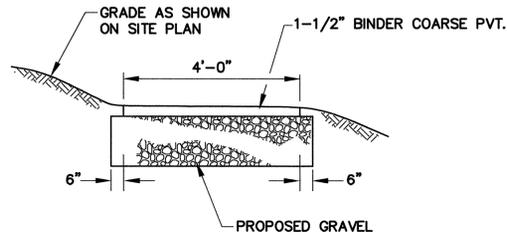
TYPE B - PERMANENT PAVEMENT



TYPE A - PERMANENT PAVEMENT

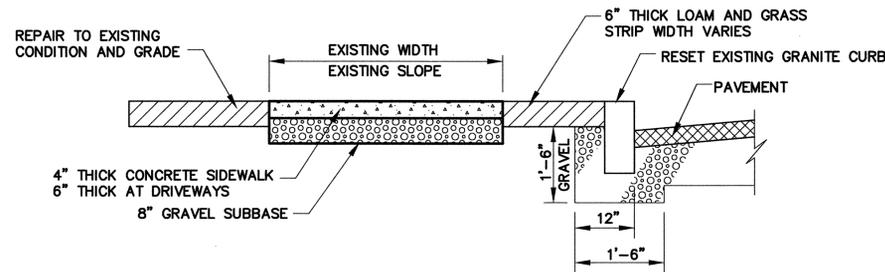
PAVEMENT REPLACEMENT DETAILS

N.T.S.



BITUMINOUS PAVEMENT WALKWAY DETAIL

N.T.S.



TYPICAL SECTION THROUGH CONCRETE SIDEWALK

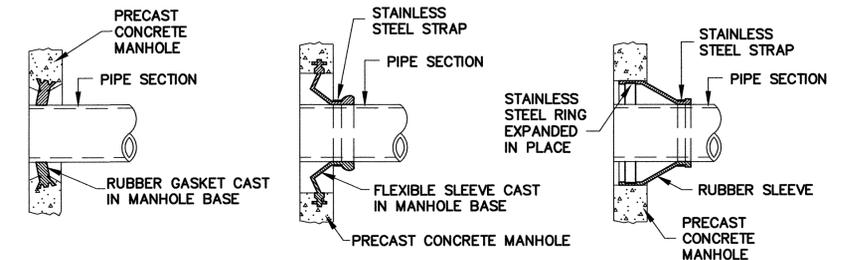
N.T.S.

TABLE 1
REQUIRED LENGTH OF RESTRAINED JOINTS FROM FITTINGS (FEET)

PIPE SIZE	90° BEND	45° BEND OR WYE BRANCH	22 1/2° BEND	11 1/4° BEND	PLUG, CAP OR IN-LINE VALVE	TEE (BRANCH)
6"	25 (30.5)	10.5 (12.5)	5 (6)	2.5 (3)	43 (64)	34 (51)
8"	33 (40)	13.5 (16.5)	6.5 (8)	3 (4)	55 (82)	47 (70)
10"	40 (48.5)	16.5 (20)	8 (9.5)	4 (5)	67 (100)	58 (87)
12"	47 (56.5)	19.5 (23.5)	9.5 (11.5)	4.5 (5.5)	79 (118)	70 (105)
16"	59.5 (72)	24.5 (30)	12 (14.5)	6 (7)	101 (152)	92 (139)
20"	72 (86.5)	30 (36)	14.5 (17)	7 (8.5)	123 (184)	114 (171)
24"	84 (100)	35 (41)	16.5 (20)	8 (10)	144 (216)	134 (202)
30"	100 (120)	41 (50)	20 (24)	10 (12)	174 (281)	165 (247)

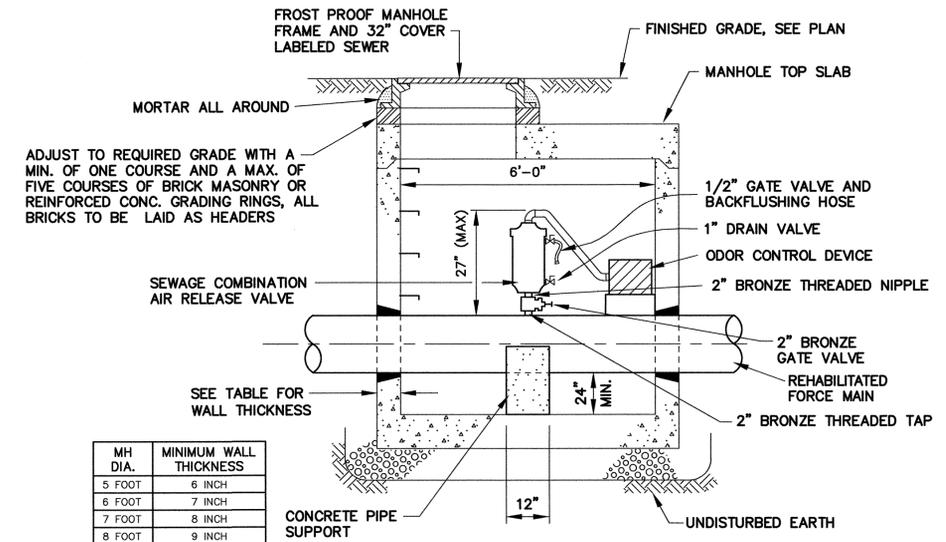
NOTES:

- RESTRAINED LENGTHS LISTED IN PARENTHESES ARE FOR PIPE WRAPPED IN POLYETHYLENE. THE OTHER ASSOCIATED LENGTHS ARE FOR PLAIN UNWRAPPED DUCTILE IRON PIPE.
- THE CONTRACTOR SHALL USE THIS TABLE IN CONJUNCTION WITH THE APPROPRIATE PIPE SPECIFICATION SECTION.



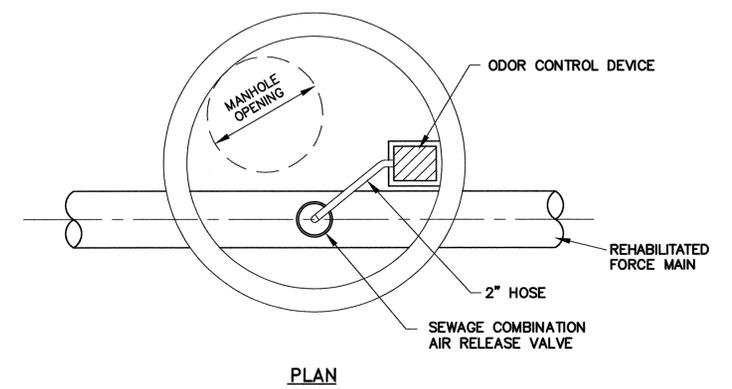
MANHOLE SEAL DETAILS

N.T.S.



MH DIA.	MINIMUM WALL THICKNESS
5 FOOT	6 INCH
6 FOOT	7 INCH
7 FOOT	8 INCH
8 FOOT	9 INCH

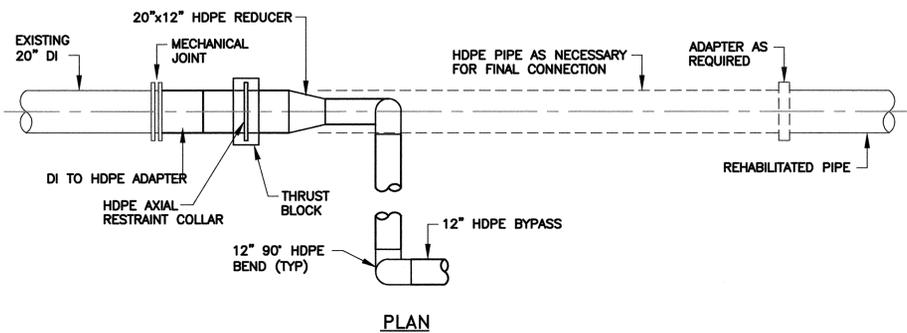
SECTION



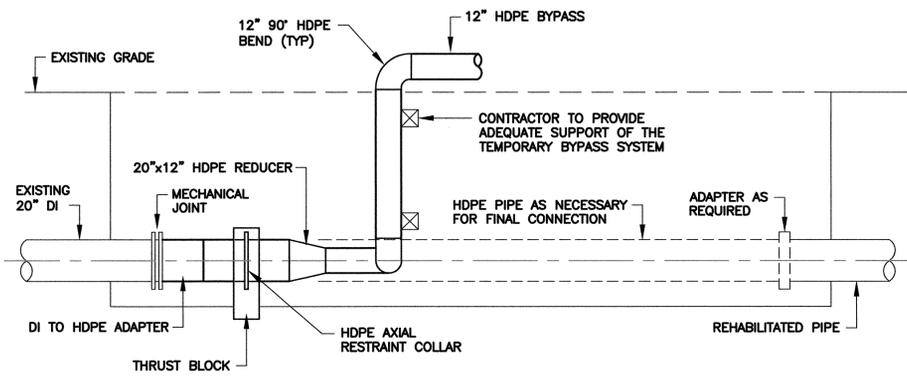
PLAN

SEWAGE COMBINATION AIR VALVE STRUCTURE

N.T.S.



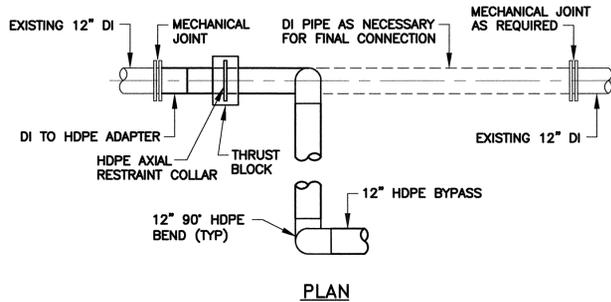
PLAN



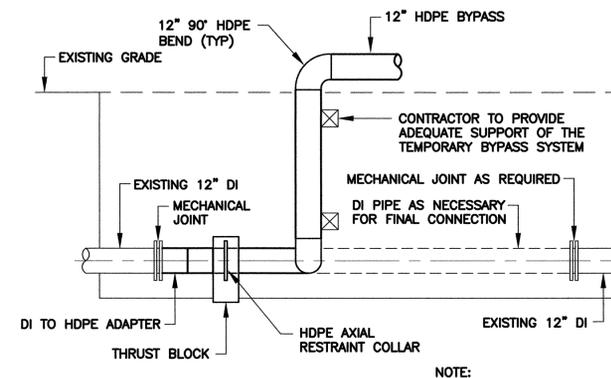
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BYPASS ACCESS PIT

N.T.S.



PLAN



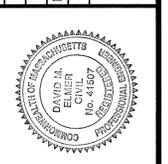
SECTION

BYPASS ACCESS PIT AT HARTWELL AVENUE

N.T.S.

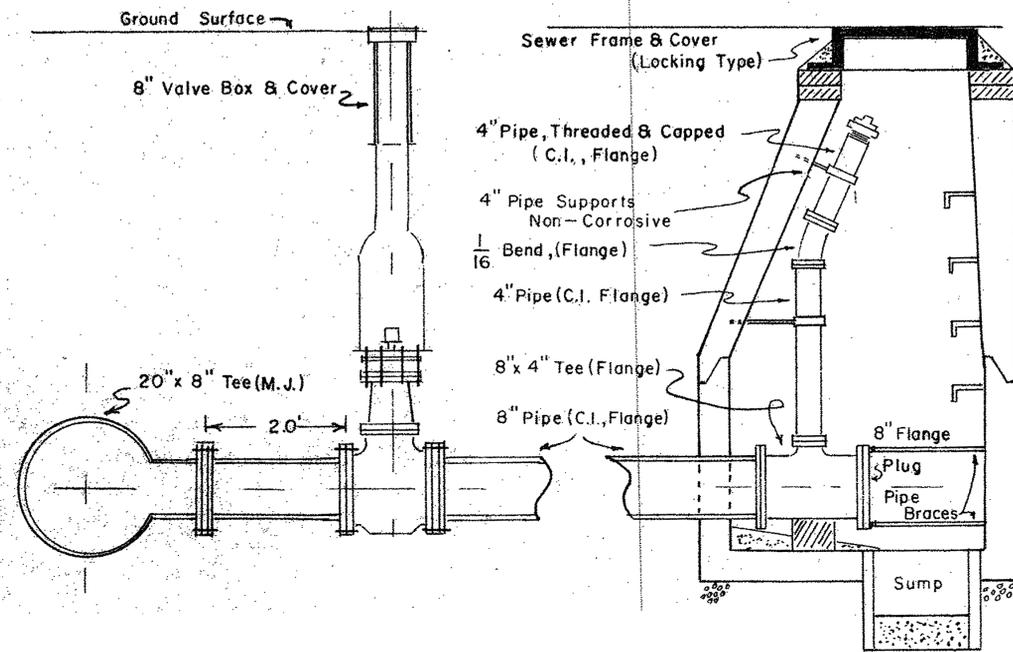
NOTE: HDPE PIPE, FITTINGS, AXIAL RESTRAINT COLLAR AND THRUST BLOCK TO BE REMOVED PRIOR TO FINAL DI CONNECTION TO EXISTING 12" FORCE MAIN.

No.	Date	Dr. By	Ck. By	App. By	Description
					P R O V E D
					DATE 6/12/14

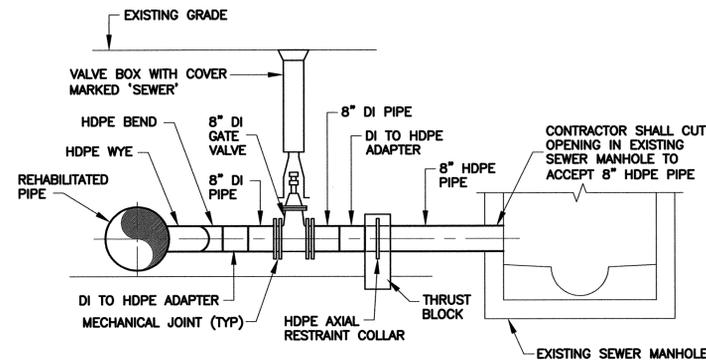


TOWN OF BEDFORD, MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS	CONTRACT: 2140119	SCALE: NOTED	FILE NO: 205-86
DR. BY: MJM	CHK. BY: JRH	APP. BY: DME	
DETAILS			
BEDFORD STREET FORCE MAIN REHABILITATION			

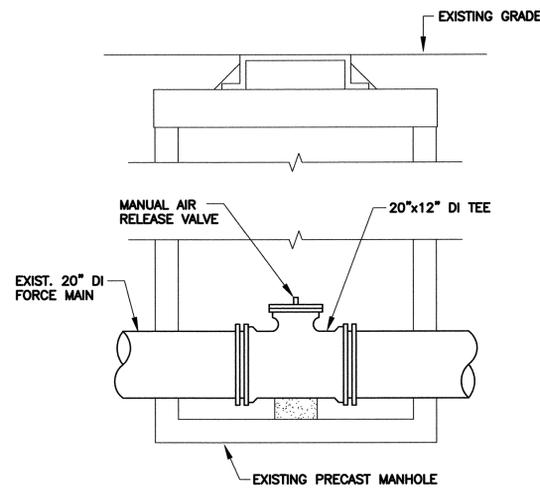
D-2



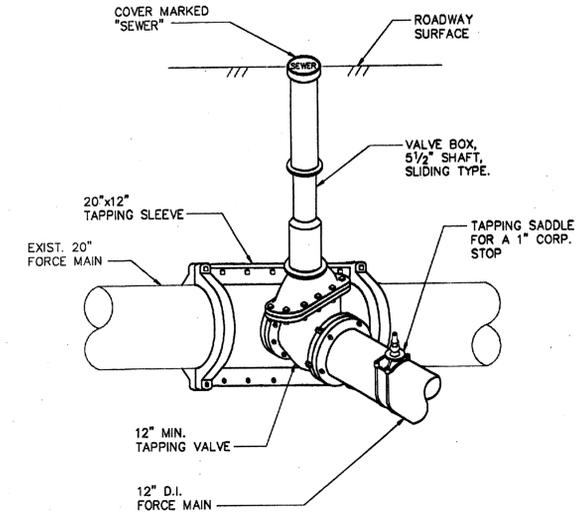
EXISTING BLOWOFF ASSEMBLY & MANHOLE – ELDRED STREET
DETAIL 'A'
 N.T.S.



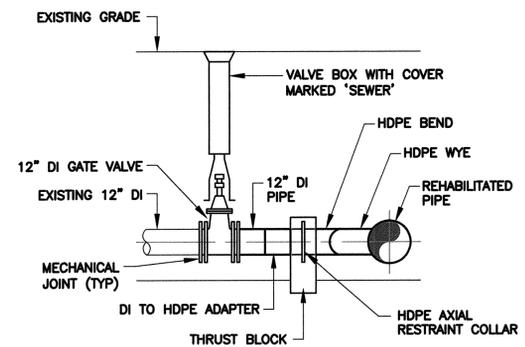
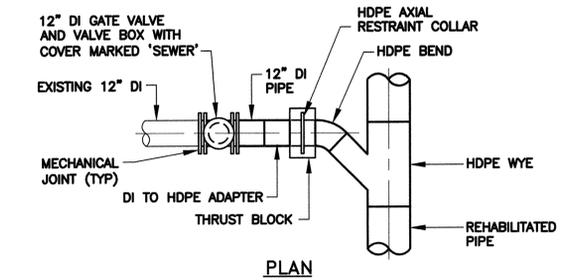
PROPOSED BLOWOFF ASSEMBLY – ELDRED STREET
 N.T.S.



EXISTING AIR RELEASE VALVE & CLEAN OUT STRUCTURE
DETAIL 'B'
 N.T.S.



EXISTING FORCE MAIN CONNECTION DETAIL
AT HARTWELL AVENUE
 N.T.S.



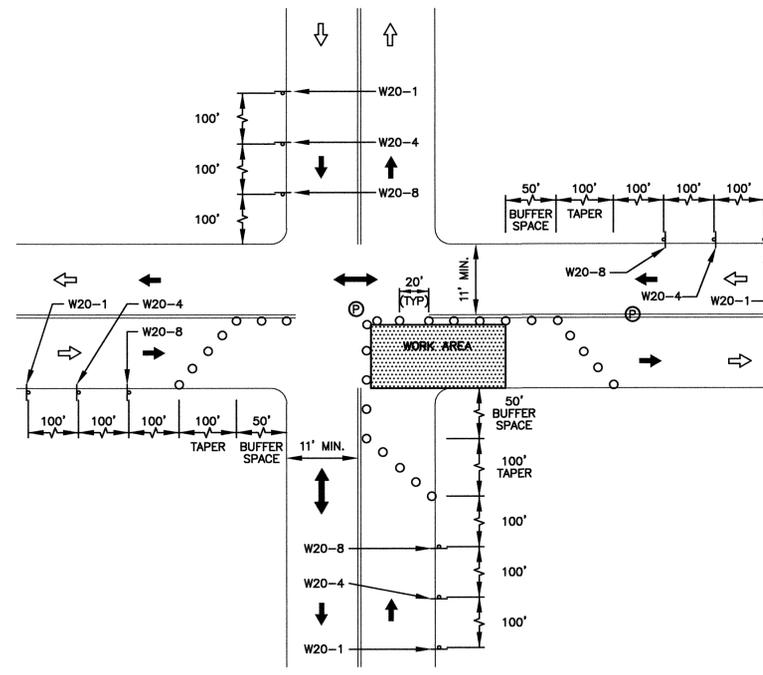
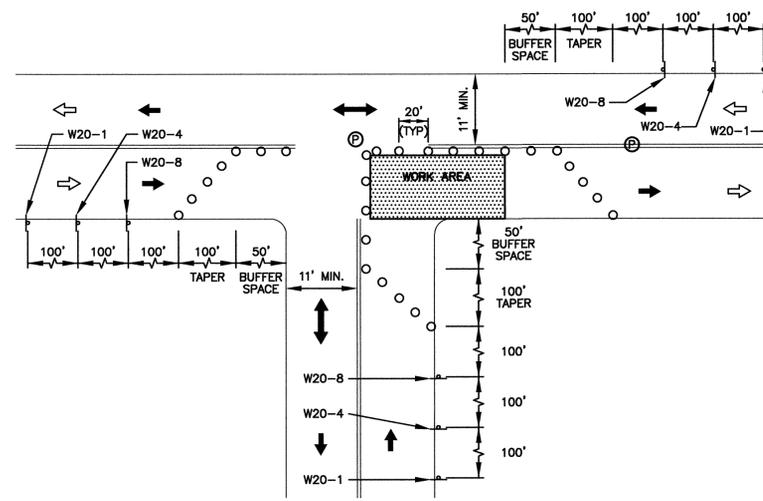
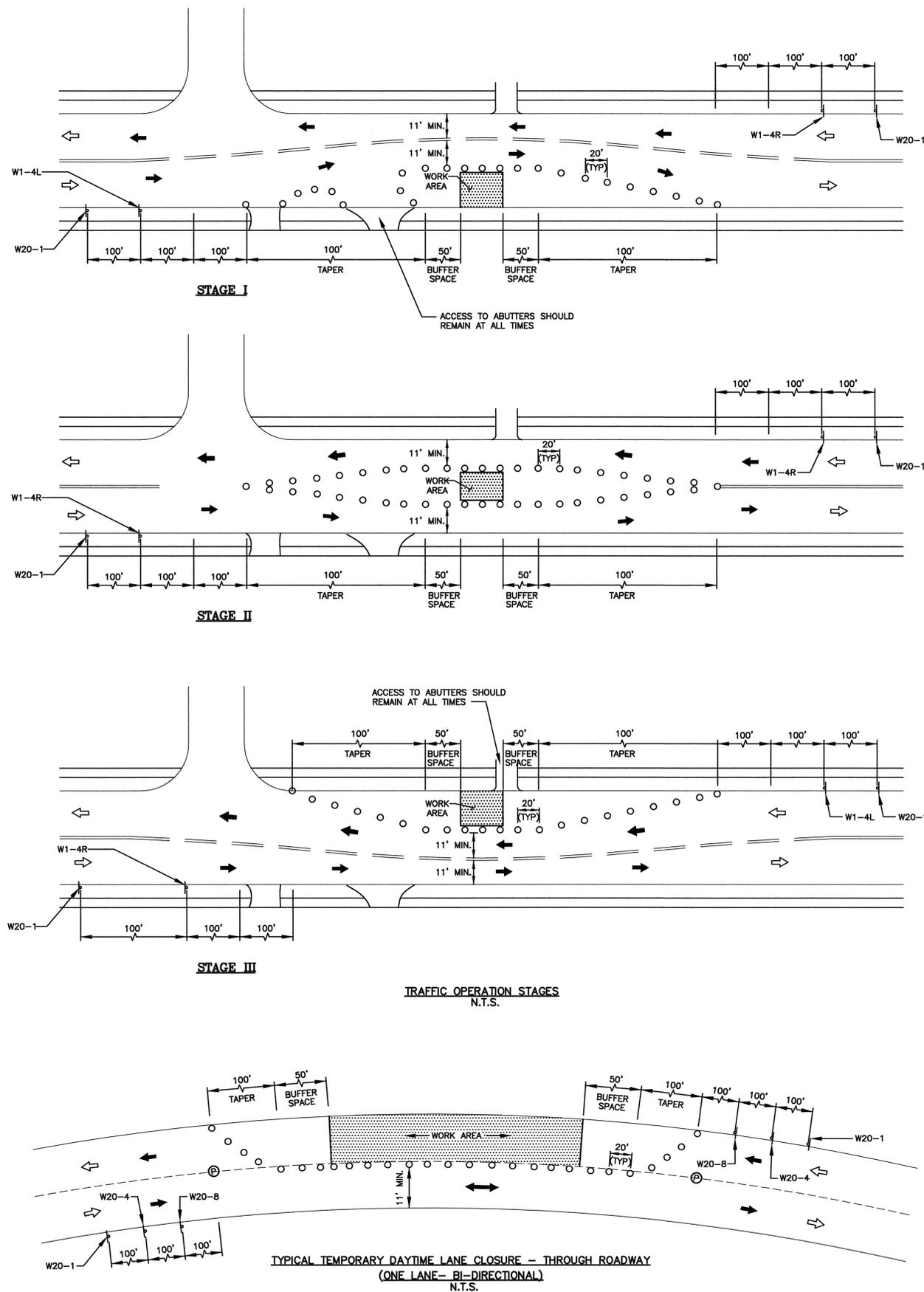
SECTION
HDPE WYE AND 12-INCH GATE VALVE
AT HARTWELL AVENUE
 N.T.S.

No.	Date	Dr. By	Ck. By	App. By	Description
					O V E R
					P R O
					J E C T
					D
					DATE
					6/2/14



TOWN OF BEDFORD, MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS	CONTRACT:	NOTED	SCALE:	DETAILS	CADD NO.:	205-85
JOB NO. 2140119	DR. BY:	MJM	CHK. BY:	DFB	APP. BY:	DME
DESIGNER:	JRH	DATE:				

FILE NO. 205-85	SCALE: NOTED	CONTRACT: NOTED	JOB NO. 2140119	DR. BY: MJM	CHK. BY: DFB	APP. BY: DME
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MUTCD CODE	SIZE OF SIGN		SIGN
	WIDTH	HEIGHT	
W1-4L	30"	30"	
W1-4R	30"	30"	
W20-1	36"	36"	
W20-4	36"	36"	
W20-8	36"	36"	
G20-2	36"	18"	

NOTE:

- FOR THE LATEST SPECIFICATION ON TEXT DIMENSIONS AND COLOR, CONTRACTOR SHALL REFER TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CURRENT EDITION).

LEGEND:

- REFLECTORIZED DRUM
- ← TRAFFIC FLOW DURING CONSTRUCTION
- NORMAL TRAFFIC FLOW
- Ⓢ POLICE DETAIL OFFICER
- ▭ CONSTRUCTION SIGN
- ▨ WORK AREA

GENERAL NOTES:

- PLACEMENT OF ALL CONSTRUCTION SIGNS, DRUMS, BARRICADES, TRAFFIC DEVICES AND THE SHAPE, SIZE & COLOR OF ALL TEMPORARY TRAFFIC SIGNS SHALL CONFORM WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- ADVANCE WARNING SIGN PLACEMENT AND TAPER LENGTH TO BE ADJUSTED ACCORDING TO STREET CONDITIONS AND DRIVEWAY OPENINGS.
- ALL DRUMS SHALL BE APPROXIMATELY PLACED AND MOVED AS NECESSARY TO MAINTAIN ADEQUATE ABUTTER ACCESS AT ALL TIMES.
- THE CONTRACTOR SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY ROADWORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT AND SIMILAR OPERATIONS.
- NONESSENTIAL TRAFFIC CONTROL DEVICES SHALL BE COVERED OR REMOVED DURING NON-WORKING HOURS.
- PEDESTRIANS SHALL BE PROVIDED WITH ACCESS AND SAFE PASSAGE THROUGH THE TEMPORARY TRAFFIC CONTROL ZONE AT ALL TIMES.
- W20-8 SHALL BE TAKEN DOWN OR COVERED AFTER EACH WORKING DAY OR WHEN OTHERWISE NOT APPLICABLE, OR WHEN POLICE OFFICERS ARE NOT PRESENT TO DIRECT TRAFFIC.
- ADVISORY SPEED PLATES (W13-1 - SEE CURRENT EDITION OF MUTCD) SHALL BE USED IF APPLICABLE AND AS REQUIRED BY THE ENGINEER.
- NO DIFFERENCE IN ROADWAY LANE ELEVATION WILL BE ALLOWED AT THE END OF THE WORK DAY.
- SAMPLE TRAFFIC PLANS INCLUDED ON THIS PLAN SHEET ARE BASED ON AN URBAN (LOW SPEED) ROAD TYPE FROM THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- DASHED LINES SHOW LANE DESIGNATIONS TO BE USED DURING CONSTRUCTION.
- THE CONTRACTOR SHALL SUBMIT ANY REVISIONS TO THE CONSTRUCTION ZONE SAFETY PLAN TO THE ENGINEER FOR APPROVAL.
- THIS CONSTRUCTION ZONE SAFETY PLAN SHALL NOT RELIEVE THE CONTRACTOR OF HIS SOLE RESPONSIBILITY FOR CONSTRUCTION SITE SAFETY.

No.	Date	Dr. By	Chk. By	App. By	Description				
		A	P	R	O	V	E	D	
									6/12/14
									DATE
									REGISTERED PROFESSIONAL ENGINEER



TOWN OF BEDFORD, MASSACHUSETTS
 DEPARTMENT OF PUBLIC WORKS

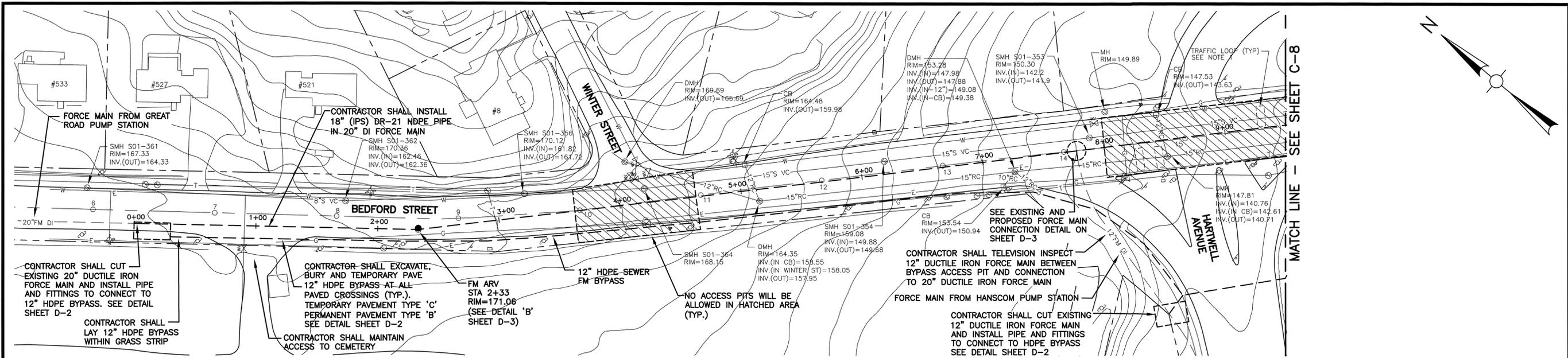
BEDFORD STREET FORCE MAIN REHABILITATION

CONSTRUCTION ZONE SAFETY PLAN

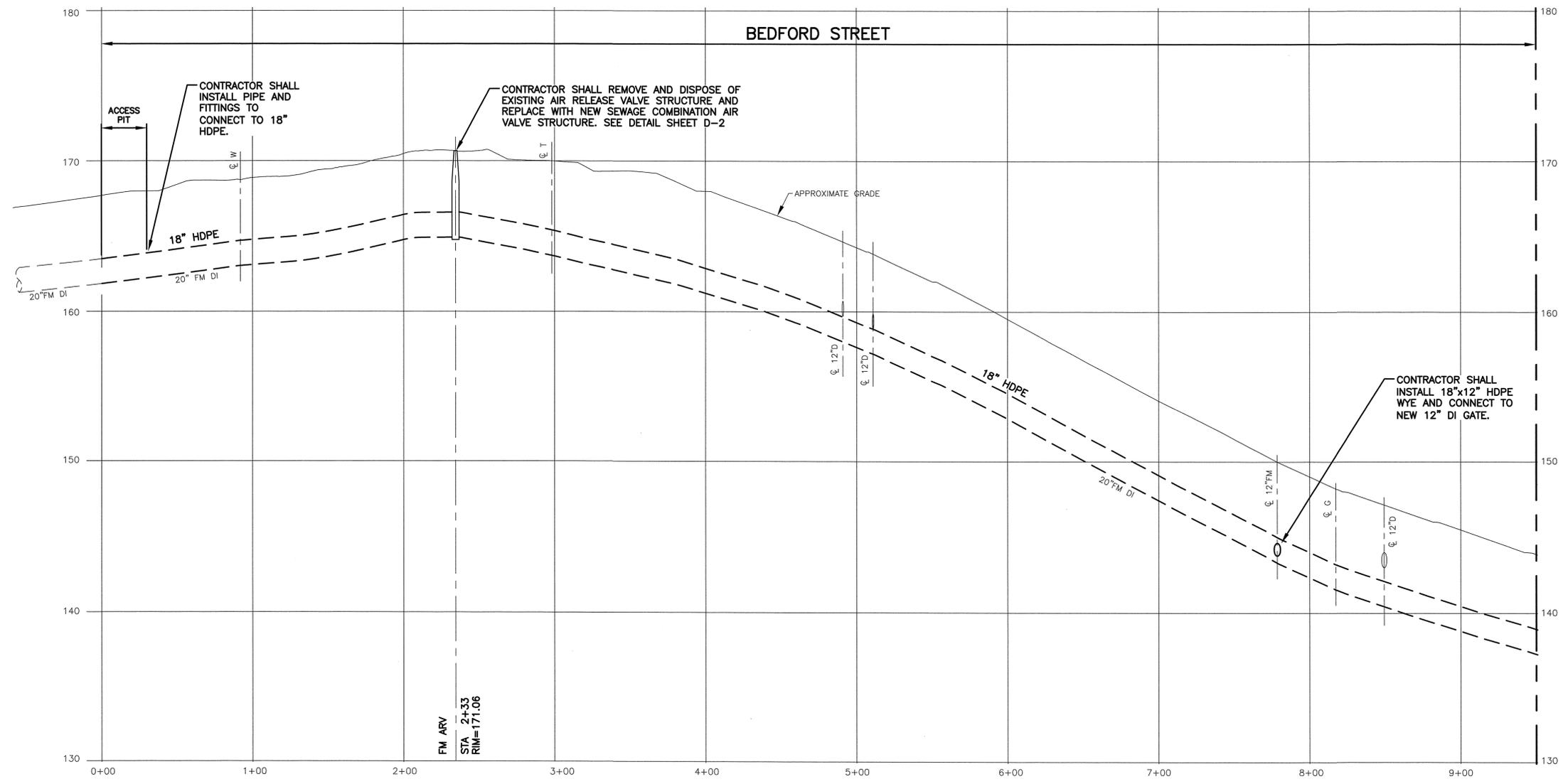
FILE NO. 205-84
 JOB NO. 2140119
 CONTRACT: NOTED
 SCALE: NOTED
 DR. BY: MJM
 DSN. BY: JRH
 CHK. BY: DFB
 APP. BY: DME

D-4

FILE NO. 205-84
 JOB NO. 2140119
 CONTRACT: NOTED
 SCALE: NOTED
 DR. BY: MJM
 DSN. BY: JRH
 CHK. BY: DFB
 APP. BY: DME



PLAN
SCALE: 1" = 40'



PROFILE
SCALE: 1"=40' HORIZ
1"=4' VERT

- NOTE:**
1. CONTRACTOR MAY LOCATE ACCESS PITS AT THEIR DISCRETION TO FACILITATE SLIP LINE PIPE WORK. TEMPORARY PAVEMENT TYPE 'C' PERMANENT PAVEMENT TYPE 'A' SEE DETAIL SHEET D-2.
 2. NO ACCESS PITS SHALL BE LOCATED WITHIN HATCHED AREAS.
 3. ACCESS PITS SHALL BE INCIDENTAL TO THE SLIP LINE COST.





Five Centennial Drive, Peabody, MA 01960
(978) 532-1900
www.westonandsampson.com

No.	Date	Dr. By	Chk. By	App. By	Description

DATE: 6/17/14

REGISTERED PROFESSIONAL ENGINEER



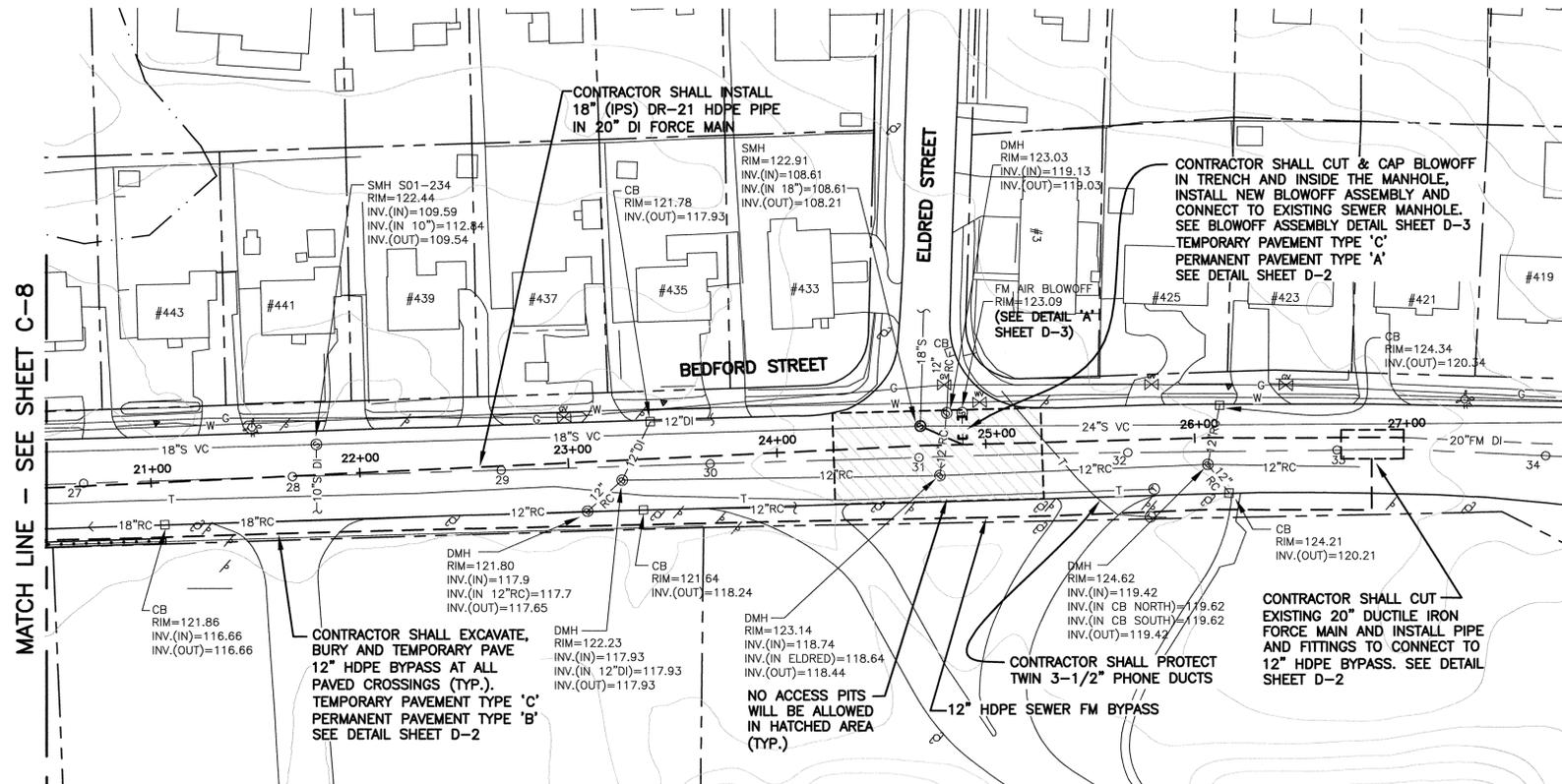
TOWN OF BEDFORD, MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS	BEDFORD STREET FORCE MAIN REHABILITATION	JOB NO. 2140119	SCALE: NOTED	CONTRACT: NOTED	DR. BY: MJM	CHK. BY: JRH	APP. BY: DME
BEDFORD STREET STA 0+00 TO STA 9+50 BASE BID - SLIP LINE 18" HDPE IN 20" FORCE MAIN							

FILE NO. 205-83

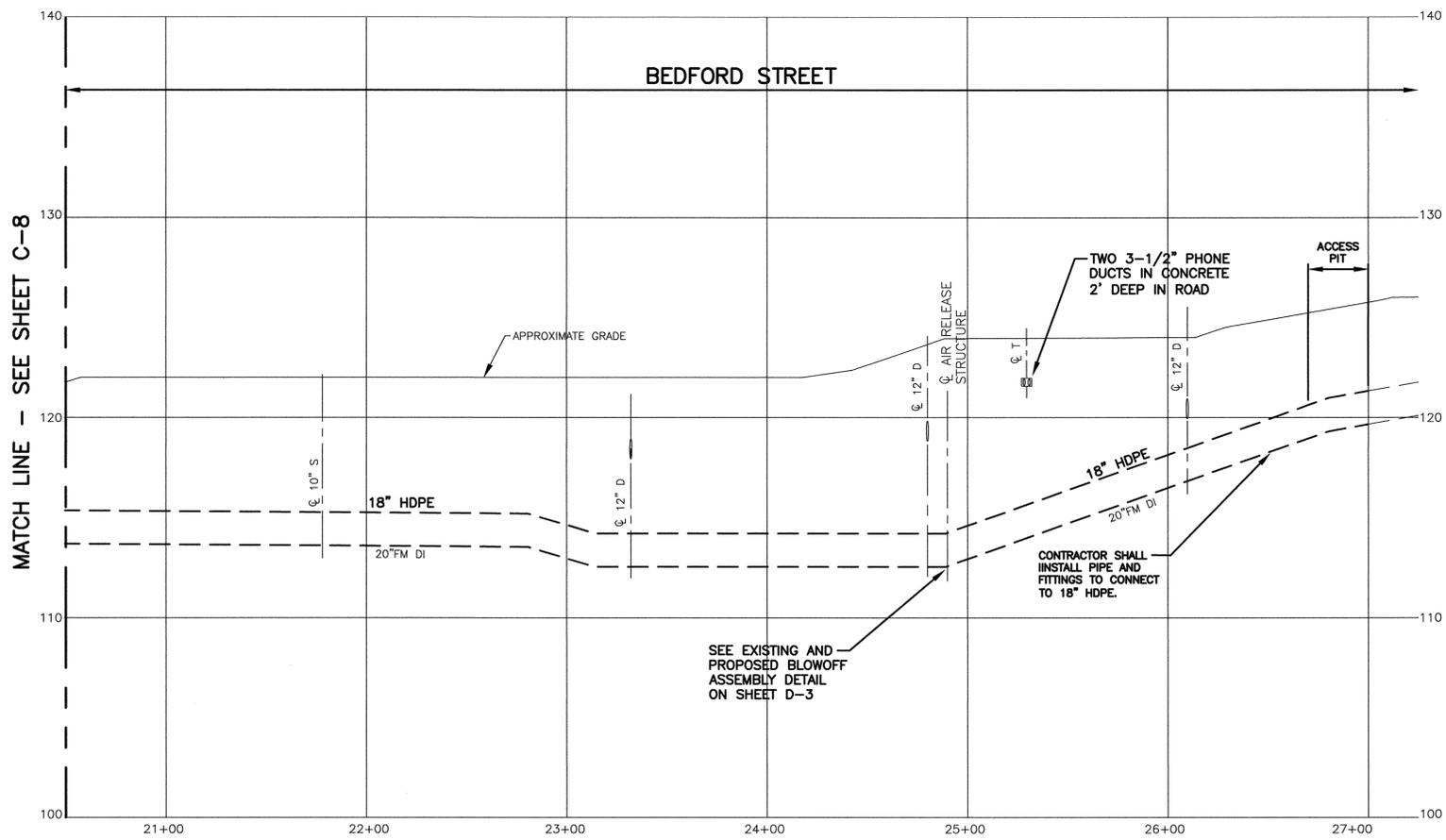


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PLAN
SCALE: 1" = 40'



PROFILE
SCALE: 1"=40' HORIZ
1"=4' VERT

NOTE:

- CONTRACTOR MAY LOCATE ACCESS PITS AT THEIR DISCRETION TO FACILITATE SLIP LINE PIPE WORK. TEMPORARY PAVEMENT TYPE 'C' PERMANENT PAVEMENT TYPE 'A' SEE DETAIL SHEET D-2.
- NO ACCESS PITS SHALL BE LOCATED WITHIN HATCHED AREAS.
- ACCESS PITS SHALL BE INCIDENTAL TO THE SLIP LINE COST.



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No.	Date	Dr. By	Chk. By	App. By	Description

REGISTERED PROFESSIONAL ENGINEER
DATE: 6/12/14



TOWN OF BEDFORD, MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS	DESIGN BY: JRM	APP. BY: DME
BEDFORD STREET FORCE MAIN REHABILITATION	DRY BY: MAM	CHK. BY: DFB
BEDFORD STREET STA 20+50 TO STA 27+00	CONTRACT: NOTED	SCALE: 1"=40' HORIZ 1"=4' VERT
BASE BID - SLIP LINE 18" HDPE IN 20" FORCE MAIN	JOB NO.: 2140119	FILE NO.: 205-81
CADD NO.: BEDFORD ST.		