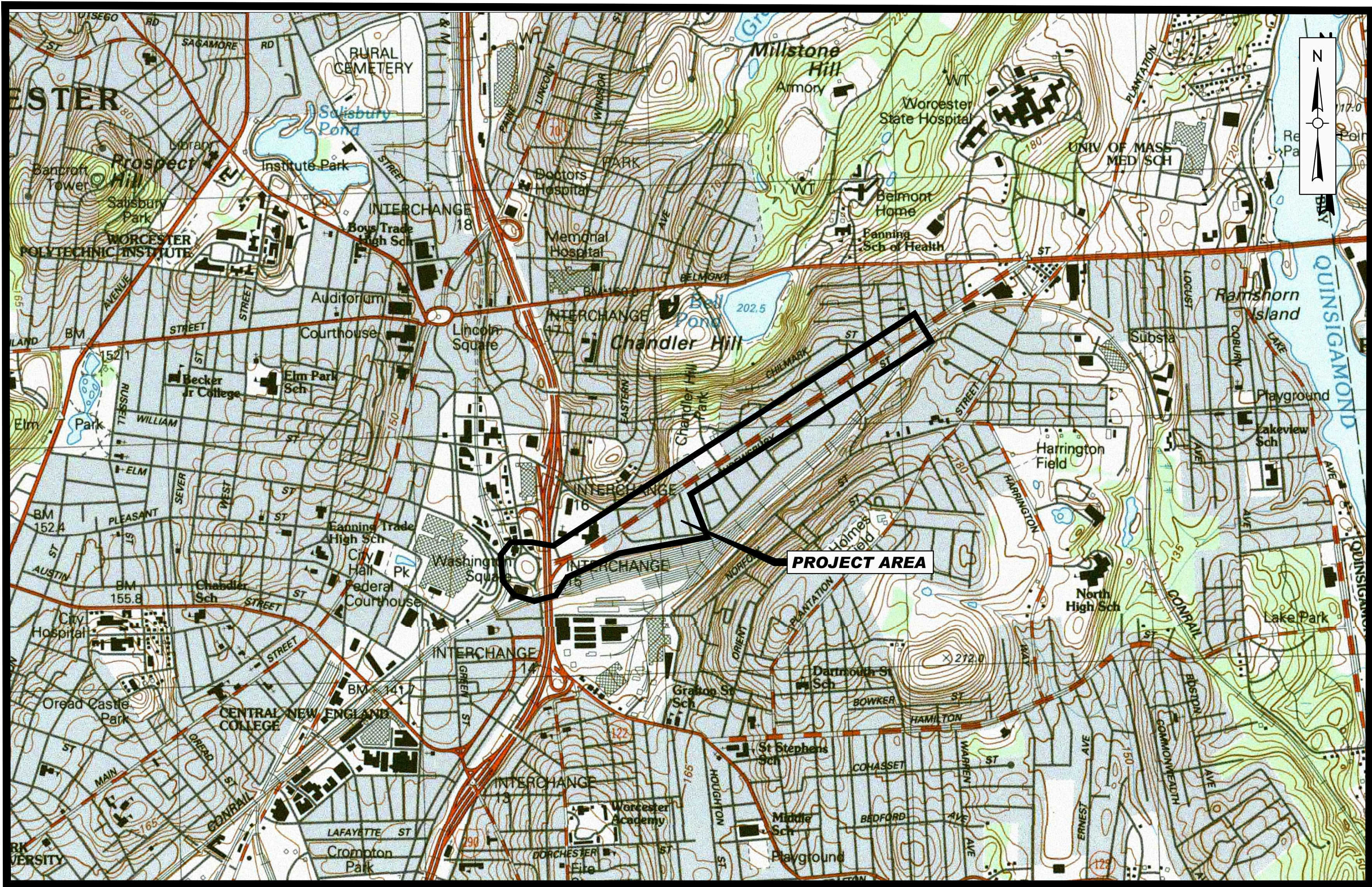


CITY OF WORCESTER, MASSACHUSETTS
SHREWSBURY STREET SEWER REHABILITATION PROJECT
DEPARTMENT OF PUBLIC WORKS AND PARKS



LOCUS MAP
SCALE: 1" = 1,000'

DRAWING INDEX	
SHEET	TITLE
G000	COVER AND DRAWING INDEX
G001	ABBREVIATIONS, NOTES, AND LEGEND
C101	PLANS AND TABLES
C102	PLANS AND TABLES
C501	CONSTRUCTION DETAILS I
C502	SHREWSBURY STREET-MUSKEGO STREET INTERSECTION CURB RELOCATION
C503	WASHINGTON SQUARE REGULATOR RECORD DRAWING
C504	WORCESTER STANDARD CONSTRUCTION DETAILS
C505	CONSTRUCTION ZONE SAFETY PLAN

Weston & Sampson
Weston & Sampson Engineers, Inc.
427 Main Street, Suite 400
Worcester, MA 01608
978.532.1900 800.SAMPSON
www.westonandsampson.com



CONTRACT NO. S24-1-ARPA
BID NO. 8180-W4



ERIC D. BATISTA, CITY MANAGER
JAY J. FINK, PE, COMMISSIONER OF PUBLIC WORKS AND PARKS

Issued Date:

APRIL 2024



Know what's below.
Call before you dig.

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GENERAL NOTES:

1. CONTRACTOR SHALL VERIFY ALL ACTIVE SERVICE CONNECTION LOCATIONS DURING INITIAL TELEVISION INSPECTION WITH DYE TESTING. SERVICE CONNECTION LOCATIONS WERE OBTAINED FROM AVAILABLE TELEVISION INSPECTIONS AND MAY NOT BE ACCURATE.
2. SEVERAL MANHOLE DEPTHS WERE OBTAINED FROM AVAILABLE RECORD INFORMATION.
3. INFILTRATION WAS OBSERVED THROUGHOUT PROJECT AREA. CONTRACTOR SHALL INSTALL PRE-LINER AND/OR GROUT INFILTRATION SOURCES PRIOR TO INSTALLATION OF CURED-IN-PLACE PIPE ACCORDING TO SPECIFICATION SECTION 02428.
4. SERVICE CONNECTION STATION LOCATIONS BEGIN FROM UPSTREAM MANHOLE TO DOWNSTREAM MANHOLE, UNLESS OTHERWISE NOTED.
5. CONTRACTOR MAY ELECT TO UTILIZE/OVERFLOW PIPES TO DIVERT FLOWS INTO THE 96-IN COMBINED SEWER BY INSTALLING PLUGS. CONTRACTOR SHALL SUBMIT A FLOW DIVERSION PLAN FOR APPROVAL PRIOR TO ANY DIVERSION OF FLOWS.
6. PAVEMENT REPLACEMENT SHALL BE PERFORMED ACCORDING TO THE CITY OF WORCESTER'S STANDARD SPECIFICATIONS AND DETAILS.

WATER CROSS BORE REMOVAL												
ASSET ID	MH	TO MH	STREET/LOCATION	PIPE DIA. (IN)	MATERIAL	APPROX. MH TO MH LENGTH (LF)	APPROX. UPSTREAM MH DEPTH (VF)	APPROX. DOWNSTREAM MH DEPTH (VF)	WATER SERVICE CROSSING APPROX. STATION	WATER SERVICE DIA. (IN)	DRAIN PIPE MATERIAL	APPROX. WATER SERVICE DEPTH (FT)
SM00997	SS00807	SS00262	SHREWSBURY STREET	60	BRICK	108	8.1	8.4	0+16	2	UNK	9
TOTAL WATER CROSS BORE REMOVAL (EA) = 1												

DRAIN CROSS BORE REMOVAL

CONTRACTOR SHALL COMPLETE THE FOLLOWING:

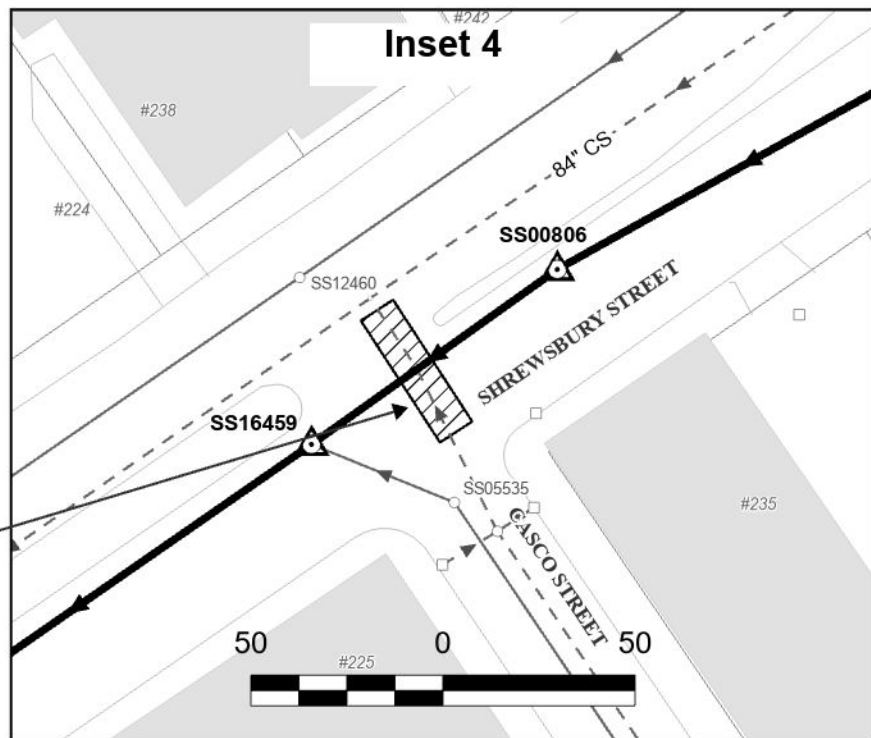
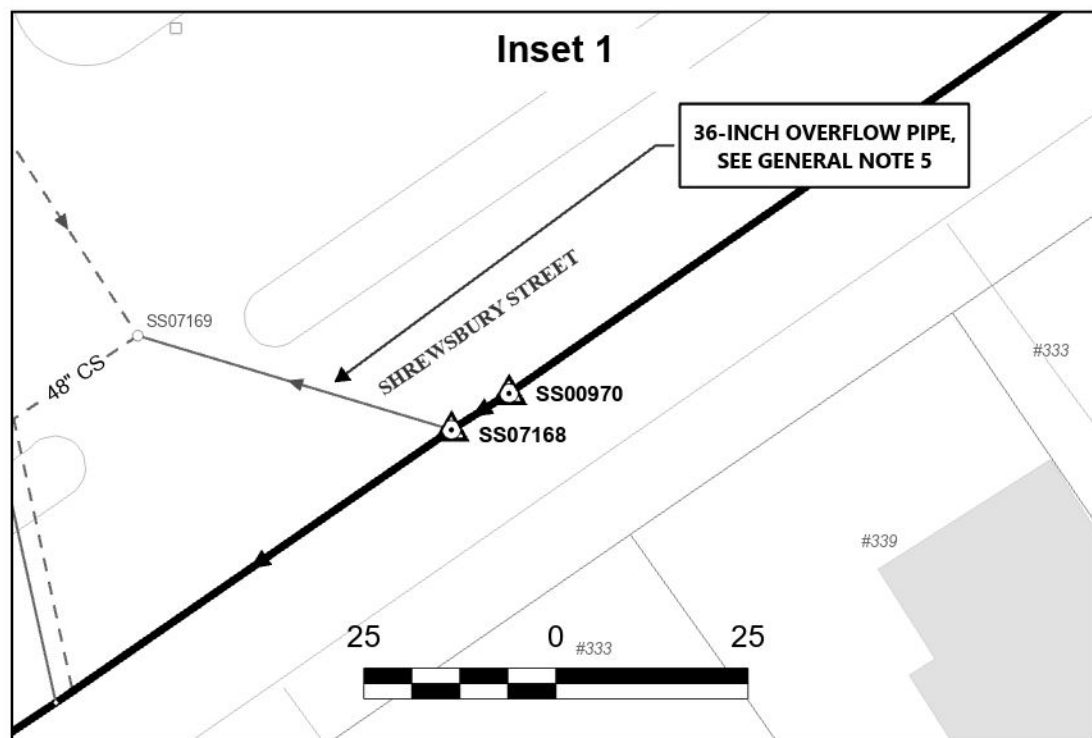
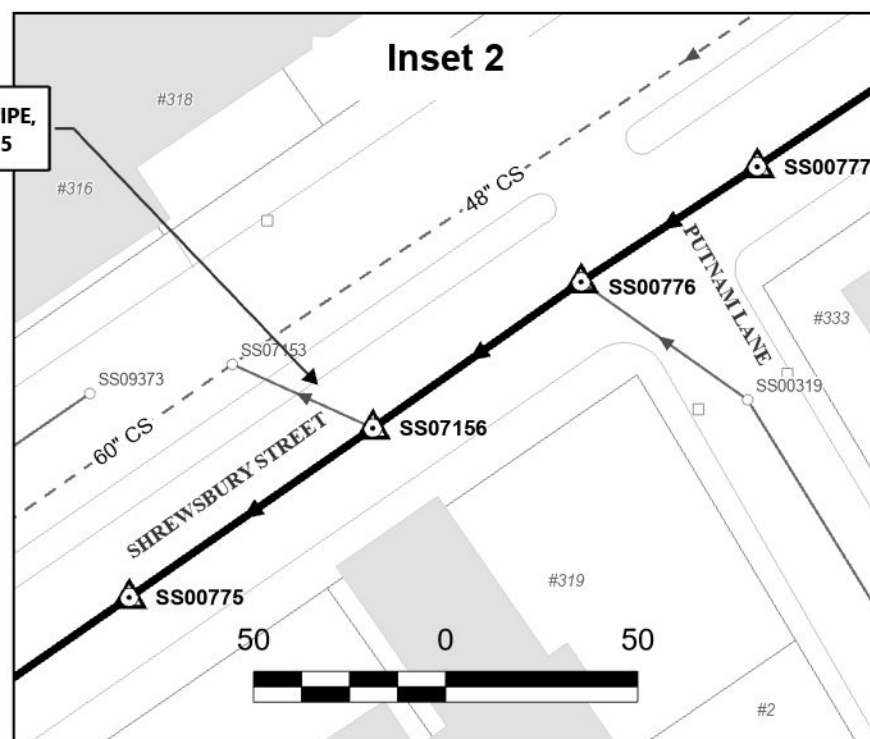
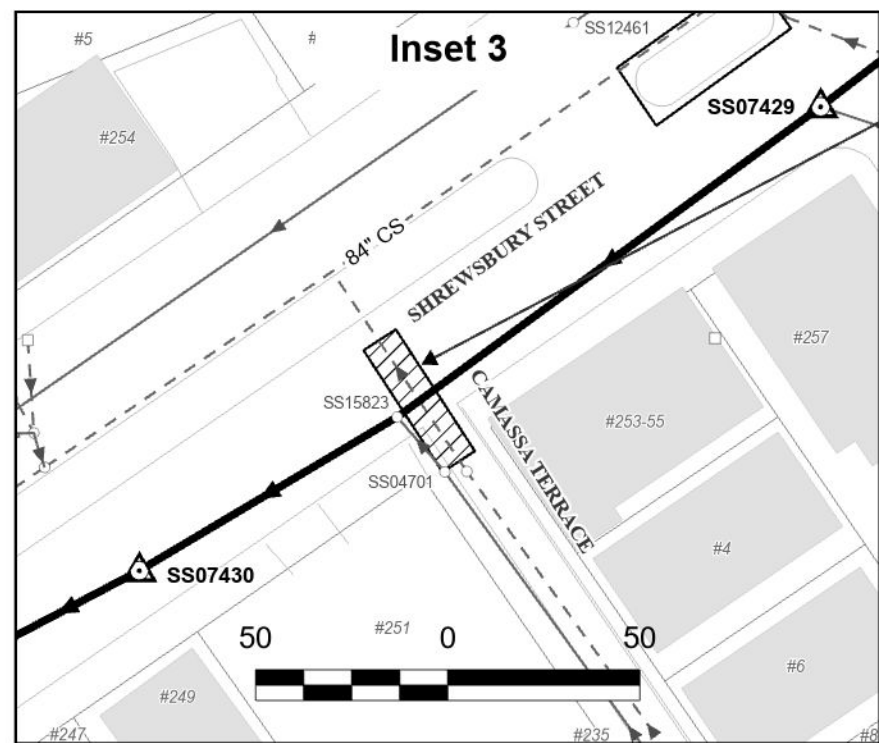
1. REMOVE CROSS BORE, A 12-IN DRAIN PIPE, AND GROUT THE 12-IN DRAIN PIPE CONNECTION TO THE SEWER MAIN, ACCORDING TO SPECIFICATION SECTION 02443.
2. PLUG AND ABANDONE THE CROSS BORE (12-IN DRAIN) DOWNSTREAM FROM THE SEWER MAIN ACCORDING TO SECTION 02222.

STRUCTURAL CURED-IN-PLACE PIPE							REINSTATE SERVICE(S)	APPROX. DEBRIS VOLUME
ASSET ID	MH	TO MH	STREET/LOCATION	PIPE DIA. (IN)	MATERIAL	APPROX. MH TO MH LENGTH (LF)	(APPROX. STA)	(CY) ⁽¹⁾
SM17747	SS00328	SS07423	SHREWSBURY STREET	30x45	BRICK	140	0+05, 0+06, 0+15, 0+58, 0+60, 0+79, 0+88, 0+89, 1+32	SEE NOTE 2
SM05183	SS07423	SS00327	SHREWSBURY STREET	30x45	BRICK	131	0+02, 0+23, 0+40, 0+79, 1+18	SEE NOTE 2
SM03343	SS00327	SS00323	SHREWSBURY STREET	30x45	BRICK	146	0+17, 0+35, 0+69, 0+79, 1+14, 1+26	SEE NOTE 2
SM03524	SS00323	SS00320	SHREWSBURY STREET	30x45	BRICK	129	0+27, 0+78, 0+87, 0+88, 1+06, 1+25	SEE NOTE 2
SM03554	SS00320	SS00971	SHREWSBURY STREET	30x45	BRICK	178	0+80, 1+11, 1+31	SEE NOTE 2
SM00080	SS00971	SS00970	SHREWSBURY STREET	32x48	BRICK	125	-	SEE NOTE 2
SM01088	SS00970	SS07168	SHREWSBURY STREET	32x48	BRICK	21	-	SEE NOTE 2
SM10718	SS07168	SS00777	SHREWSBURY STREET	32x48	BRICK	162	0+43, 1+16, 1+39	SEE NOTE 2
SM00589	SS00777	SS00776	SHREWSBURY STREET	32x48	BRICK	69	0+07, 0+11, 0+20, 0+26, 0+41, 0+51	SEE NOTE 2
SM10014	SS00776	SS07156	SHREWSBURY STREET	48	BRICK	68	0+05	2.1
SM10012	SS07156	SS00775	SHREWSBURY STREET	48	BRICK	80	0+19, 0+22, 0+60	13.4
SM02803	SS00775	SS00774	SHREWSBURY STREET	48	BRICK	239	0+78, 1+18, 1+58, 1+81, 1+98, 2+29, 2+30	29.4
SM10969	SS00774	SS07434	SHREWSBURY STREET	54	BRICK	229	0+04, 0+13, 0+56, 2+12, 2+57, 2+62, 3+09, 3+14, 3+24	47.0
SM06827	SS07434	SS07429	SHREWSBURY STREET	54	BRICK	295	0+35, 0+84, 0+98, 1+08, 1+22, 1+56, 2+42, 2+68, 2+92	31.0
SM11022	SS07429	SS07430	SHREWSBURY STREET	54	BRICK	215	0+36, 0+90, 0+94, 1+05, 1+33, 1+69	19.6
SM05138	SS07430	SS00806	SHREWSBURY STREET	60	BRICK	163	0+02, 1+16, 1+40	15.1
SM09306	SS00806	SS16459	SHREWSBURY STREET	60	BRICK	77	0+13, 0+20, 0+25, 0+33, 0+33, 0+43, 0+64, 0+71, 0+75	8.5
SM08636	SS16459	SS07427	SHREWSBURY STREET	60	BRICK	152	0+21, 0+28, 0+54, 0+59, 0+81, 0+90, 1+11, 1+20, 1+42, 1+44	25.0
SM05133	SS07427	SS07426	SHREWSBURY STREET	60	BRICK	35	0+12, 0+12, 0+20, 0+25, 0+28	5.5
SM05132	SS07426	SS00807	SHREWSBURY STREET	60	BRICK	218	0+06, 0+15, 0+25, 0+46, 0+56, 0+76, 0+86, 1+06, 1+17, 1+24, 1+37, 1+49, 1+66, 1+83, 1+88, 2+11, 2+15, 2+15	37.8
SM00997	SS00807	SS00262	SHREWSBURY STREET	60	BRICK	108	0+02, 0+30, 0+60, 0+70, 0+76, 0+95, 1+02	13.1
SM10711	SS00262	SS00263	SHREWSBURY STREET	60	BRICK	131	0+12, 0+47, 0+54, 0+68, 0+76, 1+10, 1+12	15.1
APPROX. TOTAL (LF) = 3,209						APPROX. TOTAL NUMBER OF SERVICES = 134		
APPROX. SUBTOTAL 30x45-INCH (LF) = 724								
APPROX. SUBTOTAL 32x48-INCH (LF) = 377								
APPROX. SUBTOTAL 48-INCH (LF) = 385								
APPROX. SUBTOTAL 54-INCH (LF) = 839								
APPROX. SUBTOTAL 60-INCH (LF) = 884								

NOTES:

1. DEBRIS VOLUME IS ESTIMATED FROM A MULTI-SENSOR INSPECTION PERFORMED IN 2016. CONTRACTOR SHALL FIELD VERIFY DEBRIS VOLUME.

2. DEBRIS VOLUME WAS LOW OR UNDETECTABLE IN THESE PIPE SEGMENTS. CONTRACTOR SHALL FIELD VERIFY DEBRIS VOLUME.

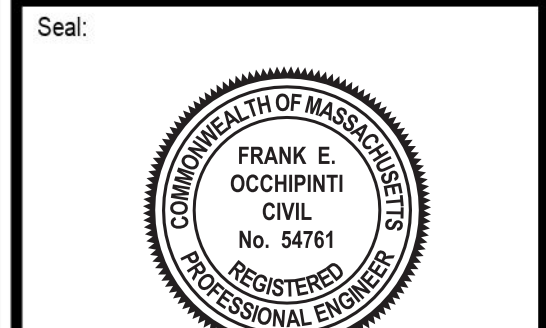


Consultants:

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Drawn By: CDG
Reviewed By: FEO
Approved By: FEO

W&S Project No.: ENG22-1073
W&S File No.:

Drawing Title:

PLANS AND TABLES

Sheet Number:

STRUCTURAL CURED-IN-PLACE PIPE								
ASSET ID	MH	TO MH	STREET/LOCATION	PIPE DIA. (IN)	MATERIAL	APPROX. MH TO MH LENGTH (LF)	REINSTATE SERVICE(S) (APPROX. STA)	APPROX. DEBRIS VOLUME (CY) ⁽¹⁾
SM00996	SS00263	SS07502	SHREWSBURY STREET	60	BRICK	382	0+08, 0+17, 0+18, 0+44, 0+50, 0+62, 0+68, 0+76, 0+77, 0+79, 1+04, 1+11, 1+27, 1+43, 1+43, 1+60, 1+68, 1+75, 1+75, 1+89, 2+08, 3+04, 3+36, 3+66, 3+75	38.8
SM07930	SS07502	SS07191	SHREWSBURY STREET	48x72	BRICK	10	-	SEE NOTE 2
SM11060 ⁽³⁾	SS07191	SS00745	SHREWSBURY STREET	48x72	BRICK	220	0+30, 0+36, 0+47, 0+73, 0+84, 0+84, 1+29, 1+37, 1+69 0+05, 0+42, 1+06, 1+18, 1+20, 1+32, 1+52, 1+68, 1+80, 2+14, 2+16, 2+65, 2+73, 2+96, 3+16, 3+36, 3+51, 3+70, 4+11, 4+23, 4+44, 4+50, 4+54, 5+05	SEE NOTE 2
SM06360	SS00745	SS00479	PLUM STREET	48x72	BRICK	525	-	SEE NOTE 2
SM07913	SS01595	SS01774	EAST WORCESTER STREET	48x72	BRICK	204	0+06, 0+08, 0+34, 0+37, 0+37, 0+51, 0+62, 0+72, 1+13, 1+36, 1+38, 1+41, 1+52, 1+52, 2+04, 2+04	SEE NOTE 2
SM10797	SS01774	SS01881	EAST WORCESTER STREET	48x72	BRICK	172	0+04, 0+12, 0+23, 0+58, 0+92, 1+20, 1+31, 1+57, 1+72, 1+72	SEE NOTE 2
SM11114	SS01881	SS01880	EAST WORCESTER STREET	48x72	BRICK	189	0+22, 0+26, 0+31, 0+50, 0+50, 0+58, 0+75, 0+79, 0+88, 1+01, 1+05, 1+18, 1+29, 1+29, 1+44, 1+49	SEE NOTE 2
SM06919	SS01880	SS01337	EAST WORCESTER STREET	48x72	BRICK	164	0+23, 0+53, 0+57, 0+63, 0+71, 0+95, 0+96, 1+11, 1+13, 1+60, 1+62	SEE NOTE 2
SM06934	SS01337	SS02058	EAST WORCESTER STREET	48x72	BRICK	152	0+18, 0+31, 0+54, 0+68, 1+01, 1+24	SEE NOTE 2
SM06216	SS02058	SS07440	EAST WORCESTER STREET	48x72	BRICK	278	0+48, 1+02, 2+00, 2+38, 2+64, 2+78	SEE NOTE 2
SM06933	SS07440	SS00044	SHREWSBURY STREET	48x72	BRICK	72	0+14, 0+39, 0+45, 0+54, 0+84, 129	SEE NOTE 2
SM11043 ⁽⁴⁾	SS00044	SS07439	SHREWSBURY STREET	48	BRICK	120	-	UNKNOWN
SM0931	SS07439	SS00731	SHREWSBURY STREET	48x72	BRICK	69	0+31	11.0
SM00092	SS00731	SS00730	SHREWSBURY STREET	48x72	BRICK	252	0+68, 0+69, 0+84, 0+88, 2+00, 2+45	34.6
SM10838	SS00730	SS15794	SHREWSBURY STREET	48x72	BRICK	104	0+26, 0+83	10.9
SM07922	SS15794	SS00729	SHREWSBURY STREET	48x72	BRICK	170	0+35, 1+00	24.6
SM04551	SS00729	SS07190	SHREWSBURY STREET	48x72	BRICK	231	0+17, 0+55, 0+83, 1+41, 2+24	9.9
SM11039	SS02316	SS02074	SHREWSBURY STREET	48x72	BRICK	227	0+82, 1+20, 1+74	3.0

APPROX. TOTAL (LF) = 3,541
APPROX. SUBTOTAL 48-INCH (LF) = 120
APPROX. SUBTOTAL 60-INCH (LF) = 382
APPROX. SUBTOTAL 48x72-INCH (LF) = 3,039
APPROX. TOTAL NUMBER OF SERVICES = 150
APPROX. VOLUME OF SEWER DEBRIS (CY) = 94+
SEE NOTES BELOW

NOTES:

- DEBRIS VOLUME IS ESTIMATED FROM A MULTI-SENSOR INSPECTION PERFORMED IN 2016. CONTRACTOR SHALL FIELD VERIFY DEBRIS VOLUME.
- THE SHREWSBURY STREET INTERCEPTOR, FROM ASSET ID SM07930 TO SM06933, WAS CLEANED IN 2011. APPROXIMATELY 420 CY OF DEBRIS WAS REMOVED. CONTRACTOR SHALL FIELD VERIFY DEBRIS VOLUME.
- SERVICE CONNECTION STATION LOCATIONS FOR ASSET ID SM11060 BEGINS FROM DOWNSTREAM MANHOLE TO UPSTREAM MANHOLE
- ASSET ID SM11043 IS A SINGLE BARREL SIPHON. HEAVY INFILTRATION, ESTIMATED AT APPROXIMATELY 9,000 GPD, WAS OBSERVED IN THIS PIPE.

WATER CROSS BORE RELOCATION										
ASSET ID	MH	TO MH	STREET/LOCATION	PIPE DIA. (IN)	MATERIAL	APPROX. MH TO MH LENGTH (LF)	APPROX. UPSTREAM MH DEPTH (VF)	APPROX. DOWNSTREAM MH DEPTH (VF)	WATER SERVICE CROSSING APPROX. STATION	WATER SERVICE DIA. (IN)
SM00996	SS00263	SS07502	SHREWSBURY STREET	60	BRICK	382	8.4	12	0+22	UNK
TOTAL WATER CROSS BORE RELOCATION (EA) = 1										

GEOPOLYMER LINING OF SEWERS						
ASSET ID	MH	TO MH	STREET/LOCATION	PIPE DIA. (IN)	MATERIAL	APPROX. DEBRIS VOLUME (CY) ⁽¹⁾
SM07912	SS00479	SS01595	PLUM STREET	48x72	BRICK	54
APPROX. TOTAL (LF) = 54						

CUT PROTRUDING SERVICE CONNECTION						
ASSET ID	MH	TO MH	STREET / LOCATION	PIPE DIA (IN)	MATERIAL	APPROXIMATE MH TO STATION
SM00996	SS00263	SS07502	SHREWSBURY STREET	60	BRICK	0+08, 0+50, 0+62
SM04551	SS00729	SS07190	SHREWSBURY STREET	48x72	BRICK	0+83
TOTAL (EA) = 4						

EPOXY LINING AND EXTERIOR SEALING OF SEWER STRUCTURE			
MH	STREET/LOCATION	MATERIAL	APPROX. STRUCTURE DIMENSION (FT)
SS07190/SS02316 ⁽¹⁾	SHREWSBURY STREET	PRECAST	19' 3" H X 12' 4" X 33' 3" L
TOTAL (EA) = 1			

NOTES:

- RECORD DRAWING OF THE STRUCTURE IS ATTACHED, SEE SHEET C503

CONTRACTOR SHALL LIMIT DISTURBANCE TO THE LANDSCAPED AREA AND RESTORE DISTURBED AREA ACCORDING TO SPECIFICATIONS SECTION 02920

WASHINGTON SQUARE SEWAGE OVERFLOW REGULATOR STRUCTURE (SEE SHEET C503)

48-in Siphon

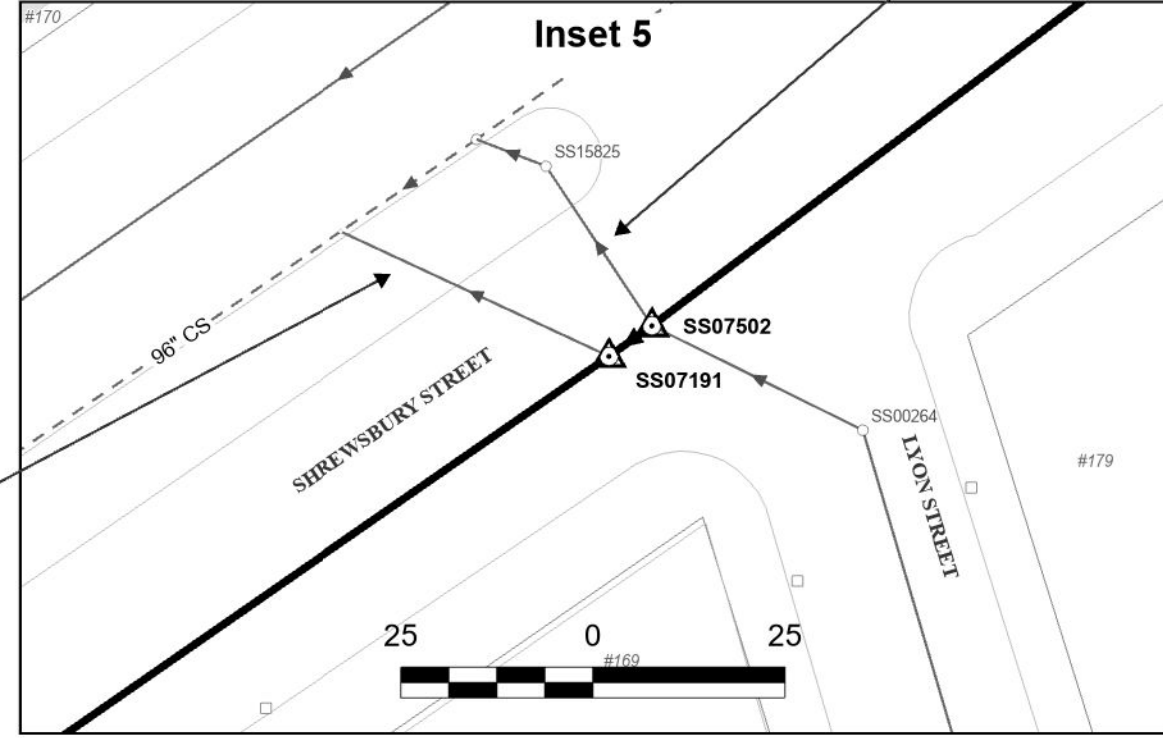
36-INCH OVERFLOW PIPE, SEE GENERAL NOTE 5

GENERAL NOTES:

- CONTRACTOR SHALL VERIFY ALL ACTIVE SERVICE CONNECTION LOCATIONS DURING INITIAL TELEVISION INSPECTION WITH DYE TESTING. SERVICE CONNECTION LOCATIONS WERE OBTAINED FROM AVAILABLE TELEVISION INSPECTIONS AND MAY NOT BE ACCURATE.
- SEVERAL MANHOLE DEPTHS WERE OBTAINED FROM AVAILABLE RECORD INFORMATION.
- INFILTRATION WAS OBSERVED THROUGHOUT PROJECT AREA. CONTRACTOR SHALL INSTALL PRE-LINER AND/OR GROUT INFILTRATION SOURCES PRIOR TO INSTALLATION OF CURED-IN-PLACE PIPE ACCORDING TO SPECIFICATION SECTION 02428.
- SERVICE CONNECTION STATION LOCATIONS BEGIN FROM UPSTREAM MANHOLE TO DOWNSTREAM MANHOLE, UNLESS OTHERWISE NOTED.
- CONTRACTOR MAY ELECT TO UTILIZE OVERFLOW PIPES TO DIVERT FLOWS INTO THE 96-IN COMBINED SEWER BY INSTALLING PLUGS. CONTRACTOR SHALL SUBMIT A FLOW DIVERSION PLAN FOR APPROVAL PRIOR TO ANY DIVERSION OF FLOWS.
- PAVEMENT REPLACEMENT SHALL BE PERFORMED ACCORDING TO THE CITY OF WORCESTER'S STANDARD SPECIFICATIONS AND DETAILS.

EPOXY LINING AND EXTERIOR SEALING OF SEWER MANHOLES			
MH	STREET/LOCATION	MATERIAL	APPROX. MH DEPTH (VF)
SS00263	SHREWSBURY STREET	BRICK	8.4
SS07502	SHREWSBURY STREET	BRICK	12
SS07191	SHREWSBURY STREET	BRICK	12
SS00745	PLUM STREET	BRICK	15
SS00479	PLUM STREET	BRICK	9.3
SS01595	EAST WORCESTER STREET	BRICK	10.4
SS01774	EAST WORCESTER STREET	BRICK	14.4
SS01881	EAST WORCESTER STREET	BRICK	16.7
SS01880	EAST WORCESTER STREET	BRICK	17.7
SS01337	EAST WORCESTER STREET	BRICK	18.5
SS02058	EAST WORCESTER STREET	BRICK	19.1
SS07440	SHREWSBURY STREET	BRICK	23.8
SS00044	SHREWSBURY STREET	BRICK	24
SS07439	SHREWSBURY STREET	PRECAST	23.8
SS00731	SHREWSBURY STREET	BRICK	23.4
SS00730	SHREWSBURY STREET	BRICK	21.5
SS15794	SHREWSBURY STREET	BRICK	21
SS00729	SHREWSBURY STREET	BRICK	20.9
APPROX. TOTAL (VF) = 311.9			

WATER CROSS BORE RELOCATION
CONTRACTOR SHALL COMPLETE THE FOLLOWING:
1. REMOVE CROSS BORE, AN ACTIVE WATER SERVICE, AND SEAL ANY OPENINGS CAUSED BY THE REMOVAL OF THE CROSS BORE, ACCORDING TO SPECIFICATION SECTION 02443.
2. RELOCATE THE ACTIVE WATER SERVICE (SEE SHEET C501 FOR DETAILS) ACCORDING TO THE CITY OF WORCESTER'S STANDARD SPECIFICATIONS AND DETAILS ITEM 309.



Consultants:

Revisions:

No.	Date	Description

COA:

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APRIL 2024

Drawn By:

CDG

Reviewed By:

FEO

Approved By:

FEO

W&S Project No.: ENG22-1073

W&S File No.:

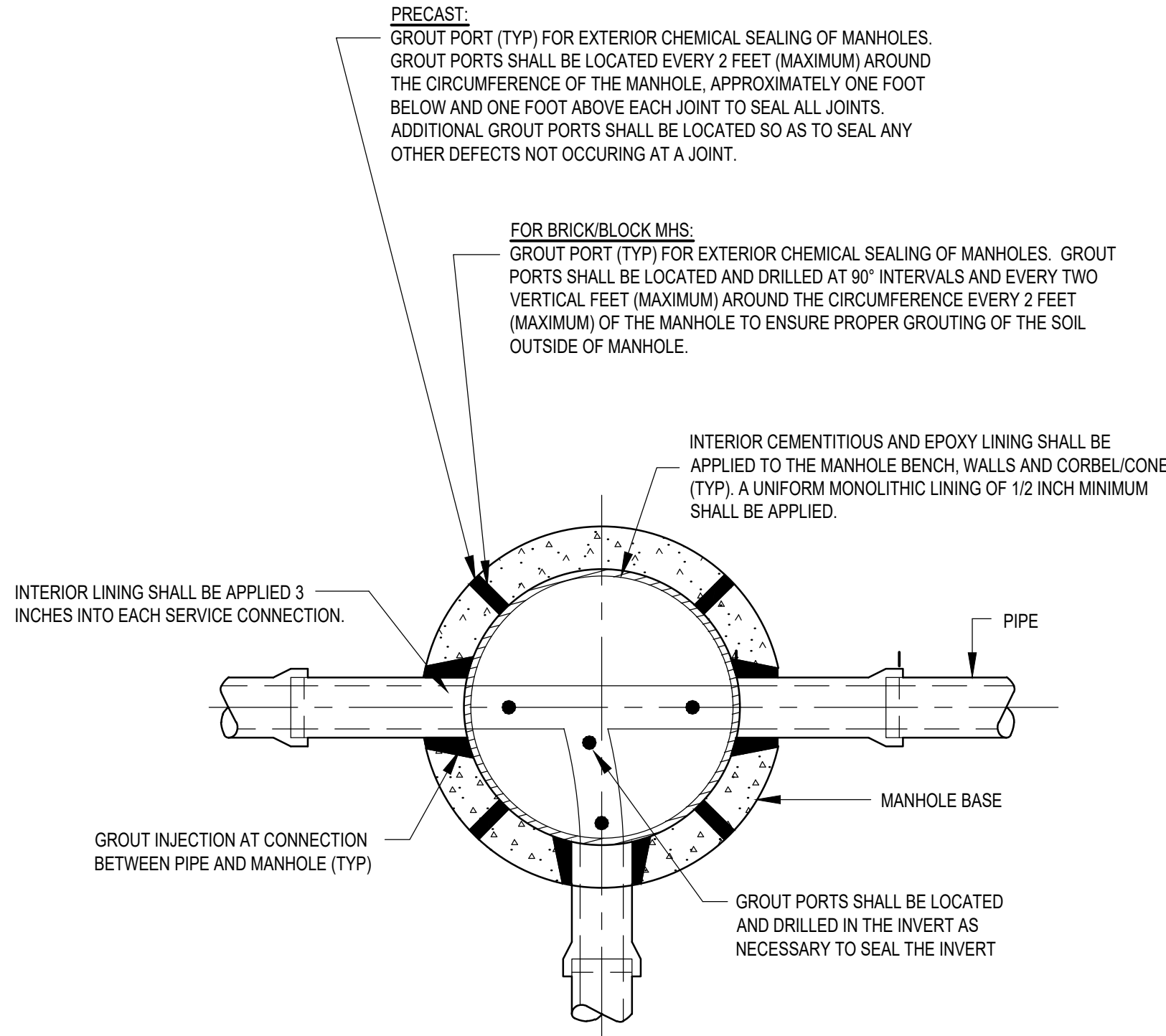
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PLANS AND TABLES

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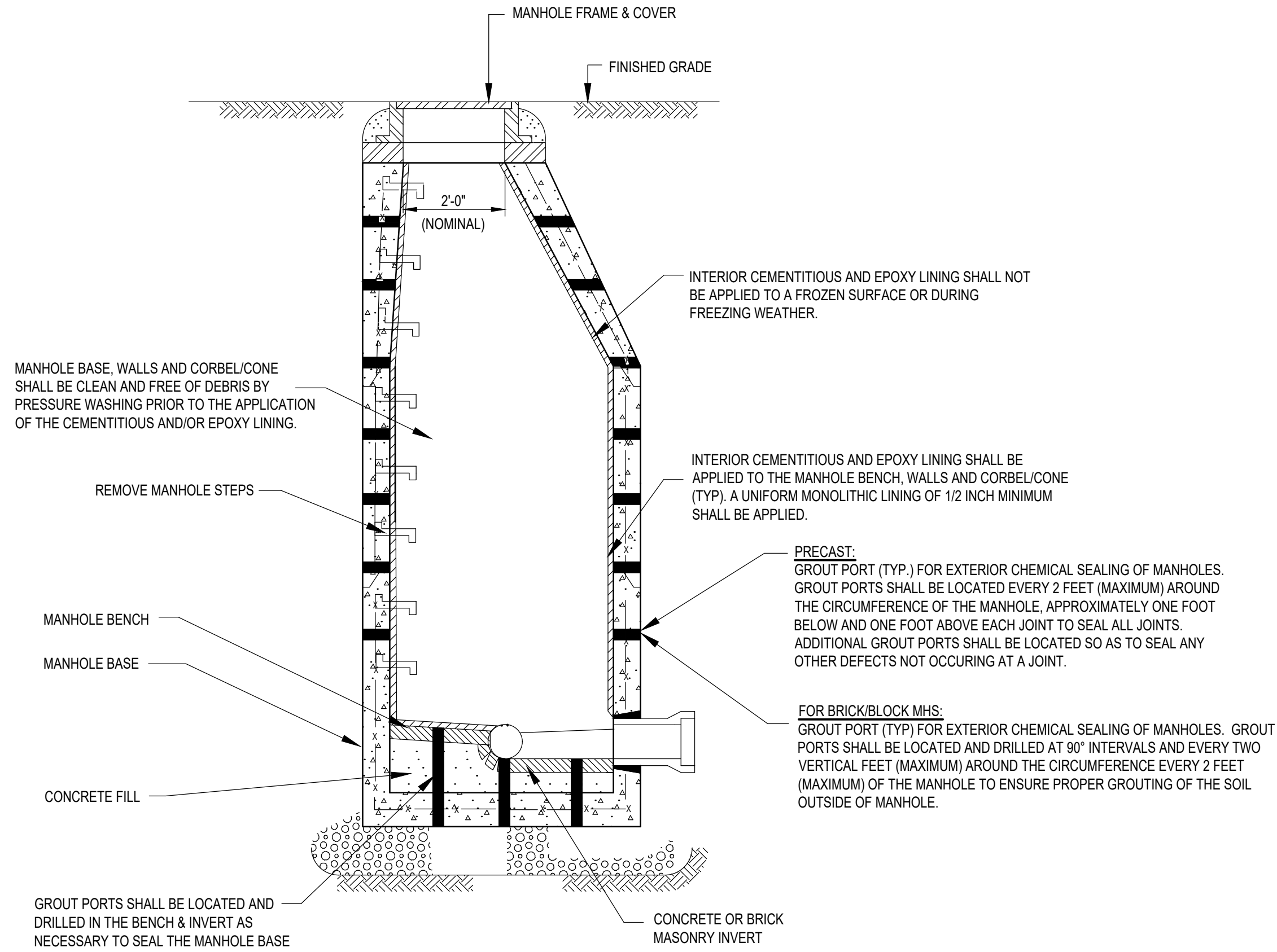
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MANHOLE REHABILITATION PLAN

N.T.S.

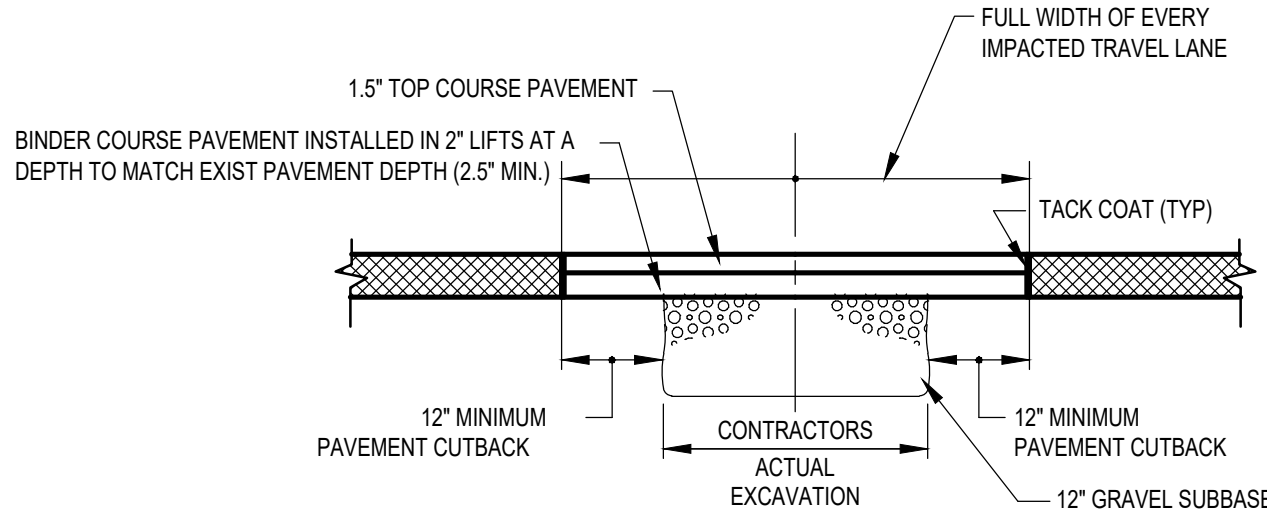


MANHOLE REHABILITATION DETAIL

N.T.S.

NOTE:

1. CONTRACTOR SHALL REFER TO SHEET C502 REGARDING THE LAYOUT AND DIMENSIONS OF THE WASHINGTON SQUARE SEWER OVERFLOW STRUCTURE PRIOR TO CEMENTITIOUS/EPOXY LINING AND GROUTING OF THE STRUCTURE.

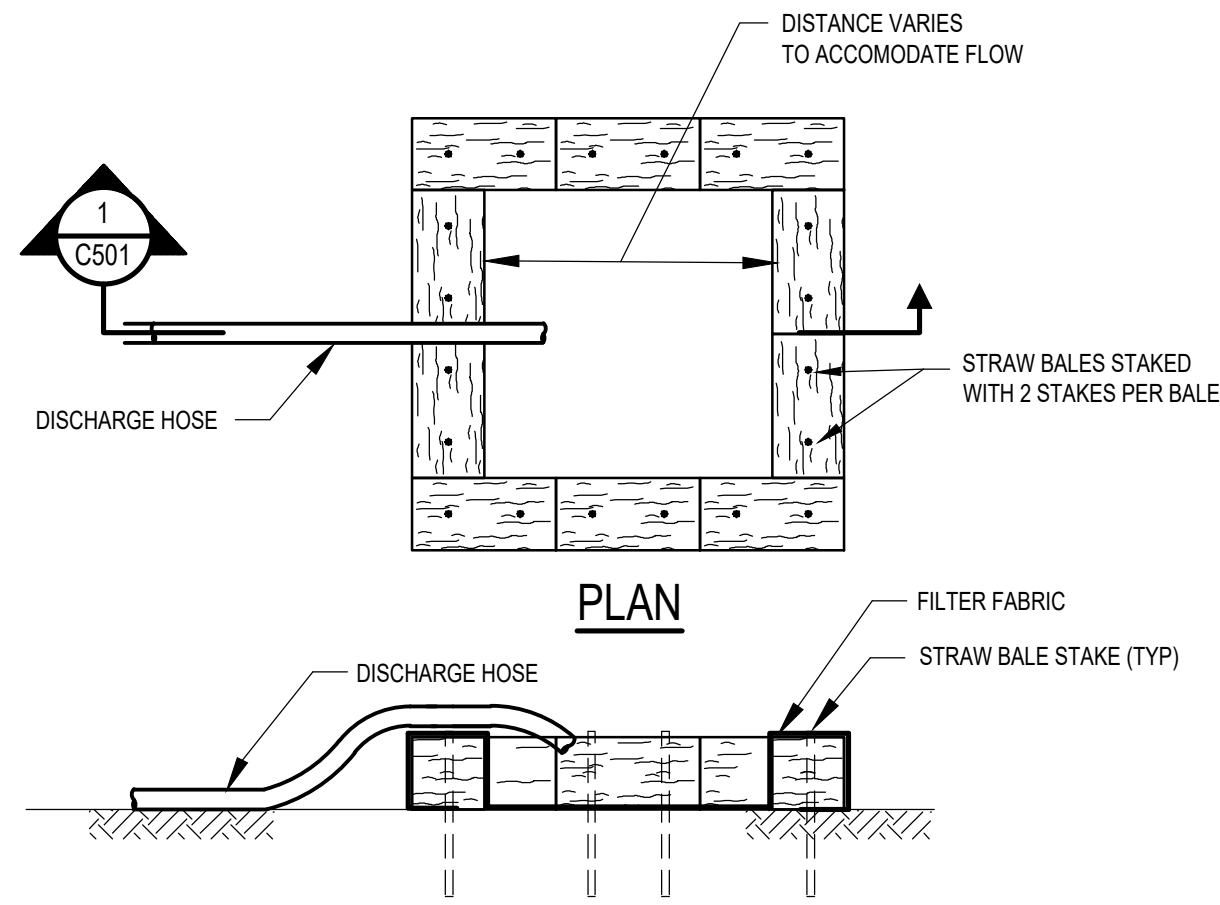


NOTES:

1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT DEPTH. PERMANENT TRENCH PAVEMENT SHALL BE INSTALLED TO THE FULL WIDTH OF ALL TRAVEL LANES IMPACTED BY TRENCH CONSTRUCTION.
2. 2-INCH TEMPORARY TRENCH PATCH SHALL BE INSTALLED AS SOON AS PRACTICABLE AFTER INSTALLATION OF INDIVIDUAL PIPELINE SEGMENTS. TEMPORARY TRENCH PAVEMENT SHALL BE MAINTAINED A MINIMUM OF 90-DAYS OR UNTIL THE FOLLOWING YEAR, AT WHICH TIME PERMANENT TRENCH PAVEMENT SHALL BE INSTALLED. PERMANENT TRENCH PAVEMENT SHALL BE INSTALLED ONLY WITH THE APPROVAL OF THE ENGINEER. NO UNPAVED TRENCHES SHALL BE LEFT UNPAVED OVER THE WEEKEND.
3. PRIOR TO INSTALLATION OF PERMANENT TRENCH PAVEMENT, THE ROADWAY SHALL BE SAW CUT A MINIMUM OF 12-INCHES BEYOND THE LIMITS OF THE TRENCH WIDTH. AFTER PERMANENT TRENCH PAVEMENT IS INSTALLED, ALL SEAMS SHALL BE TREATED USING HOT POURED RUBBERIZED EMULSIFIED ASPHALT SEALANT.
4. PERMANENT PATCH FOR ROADS HAVING A PAVING BLOCK OR CONCRETE BASE SHALL INCLUDE A LAYER OF CONCRETE EQUAL TO THE DEPTH OF THE EXISTING CONCRETE OR PAVING BLOCK. IN SUCH CASES THE DEPTH OF THE GRAVEL BACKFILL SHALL NOT BE LESS THAN 12-INCHES.

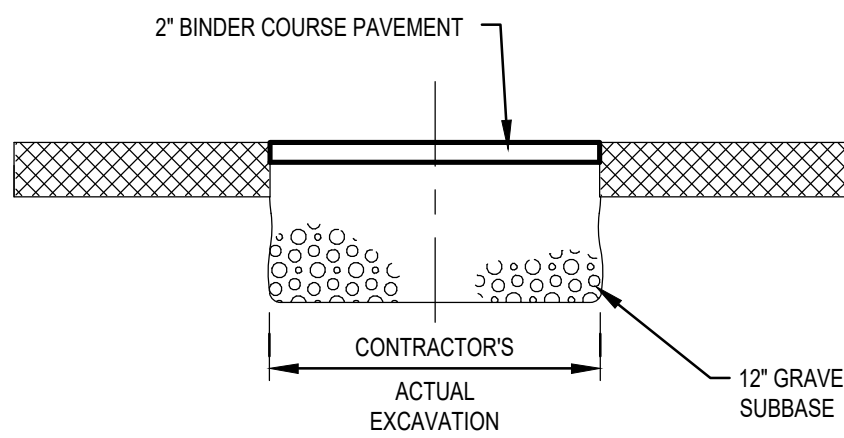
PAVEMENT REPLACEMENT DETAILS

N.T.S.



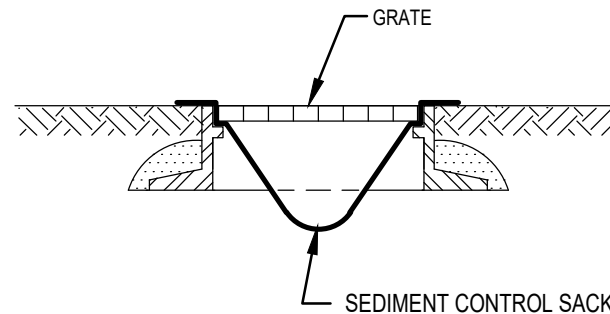
DEWATERING DISCHARGE DISPOSAL DETAIL

N.T.S.



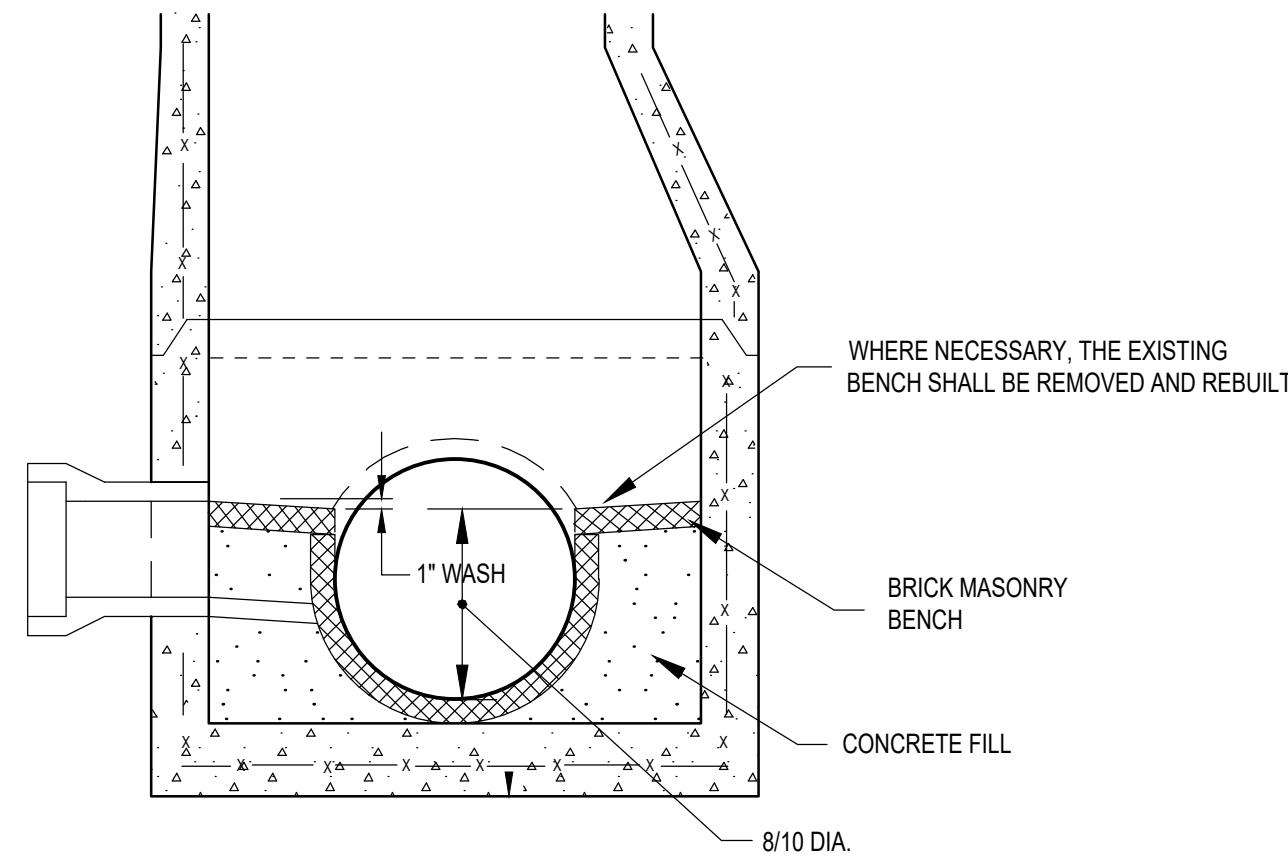
TEMPORARY PAVEMENT DETAIL

N.T.S.



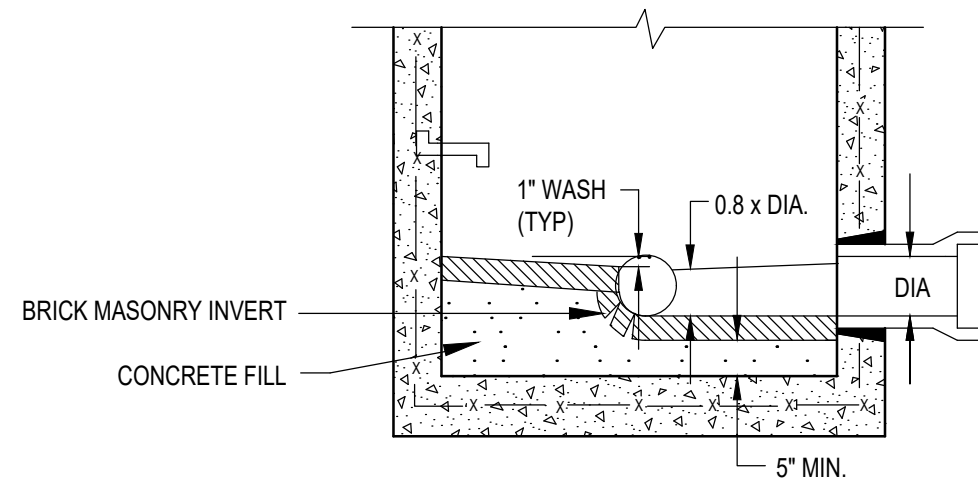
CATCH BASIN PROTECTION DETAIL

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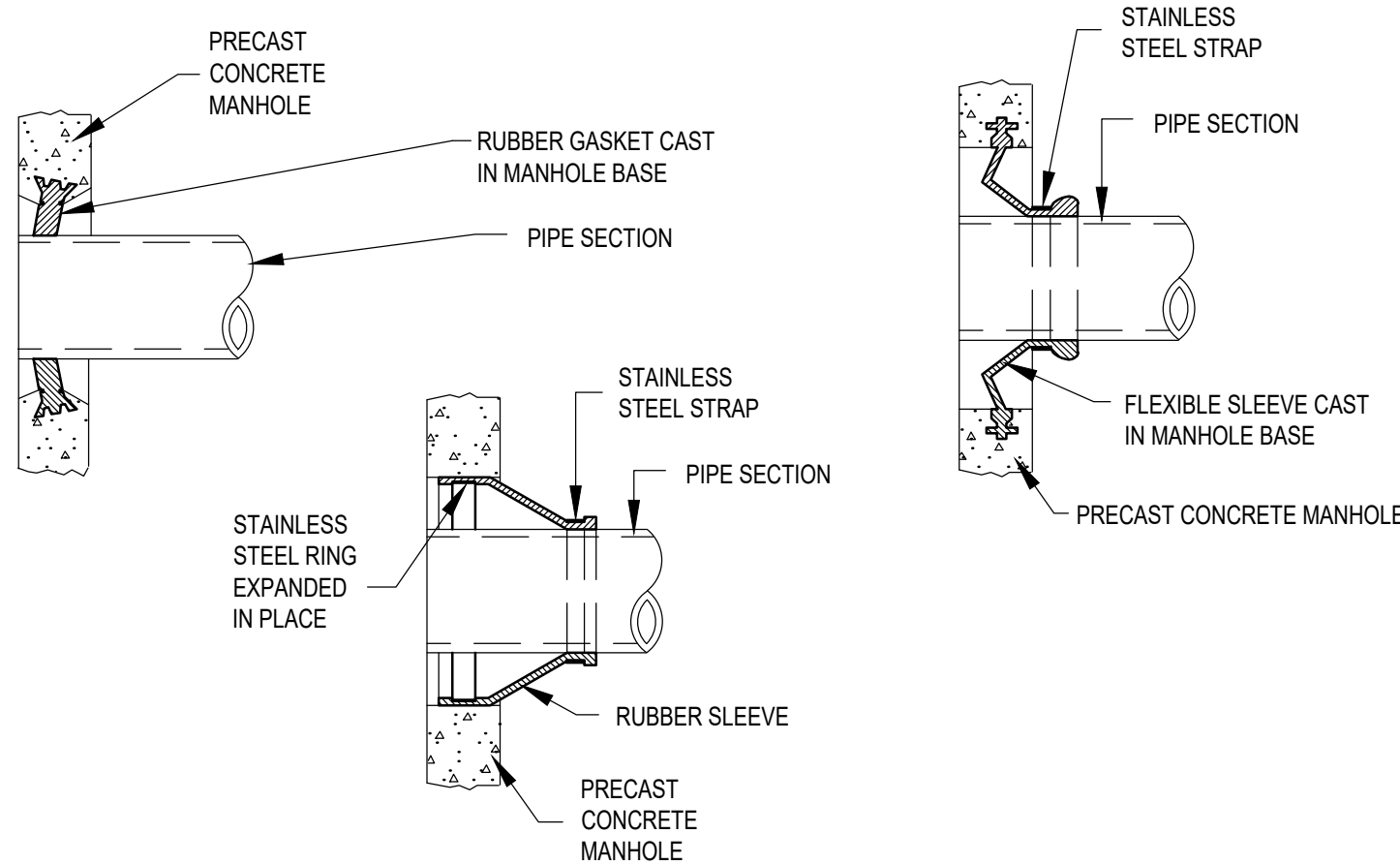
SEWER MANHOLE BENCH DETAIL

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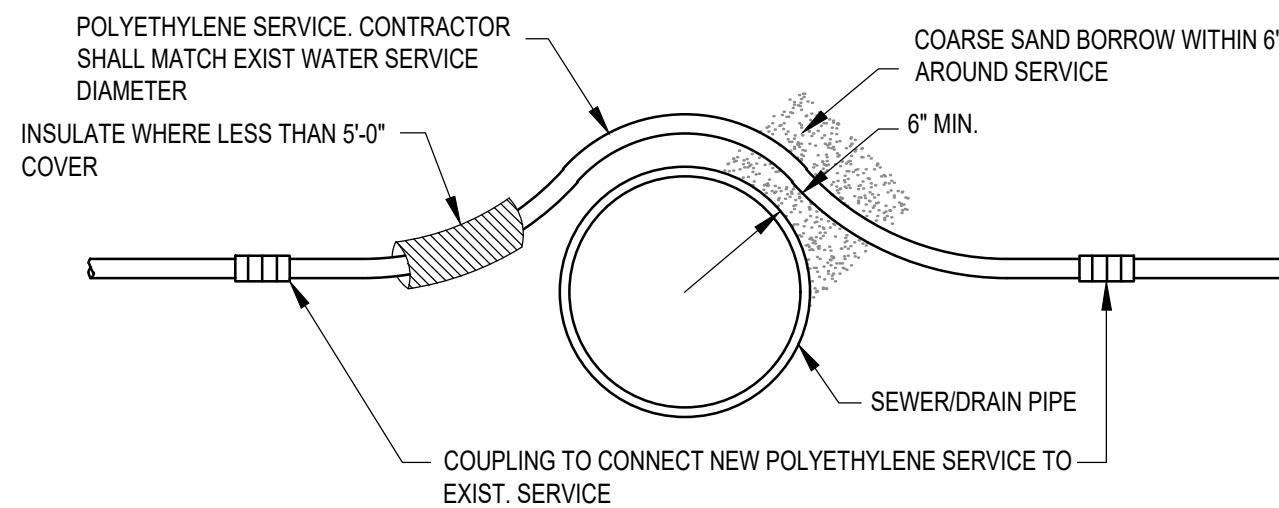
SEWER MANHOLE BENCH AND INVERT DETAIL

N.T.S.



MANHOLE SEAL DETAILS

N.T.S.



WATER SERVICE RELOCATION DETAIL

N.T.S.

NOTE: WORK SHALL BE PERFORMED ACCORDING TO THE CITY OF WORCESTER'S STANDARD SPECIFICATIONS AND DETAILS ITEM 309.

No.	Date	Description

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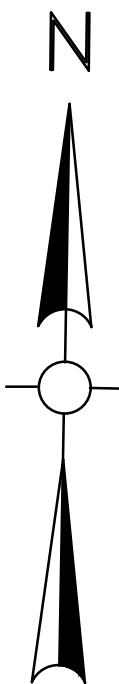
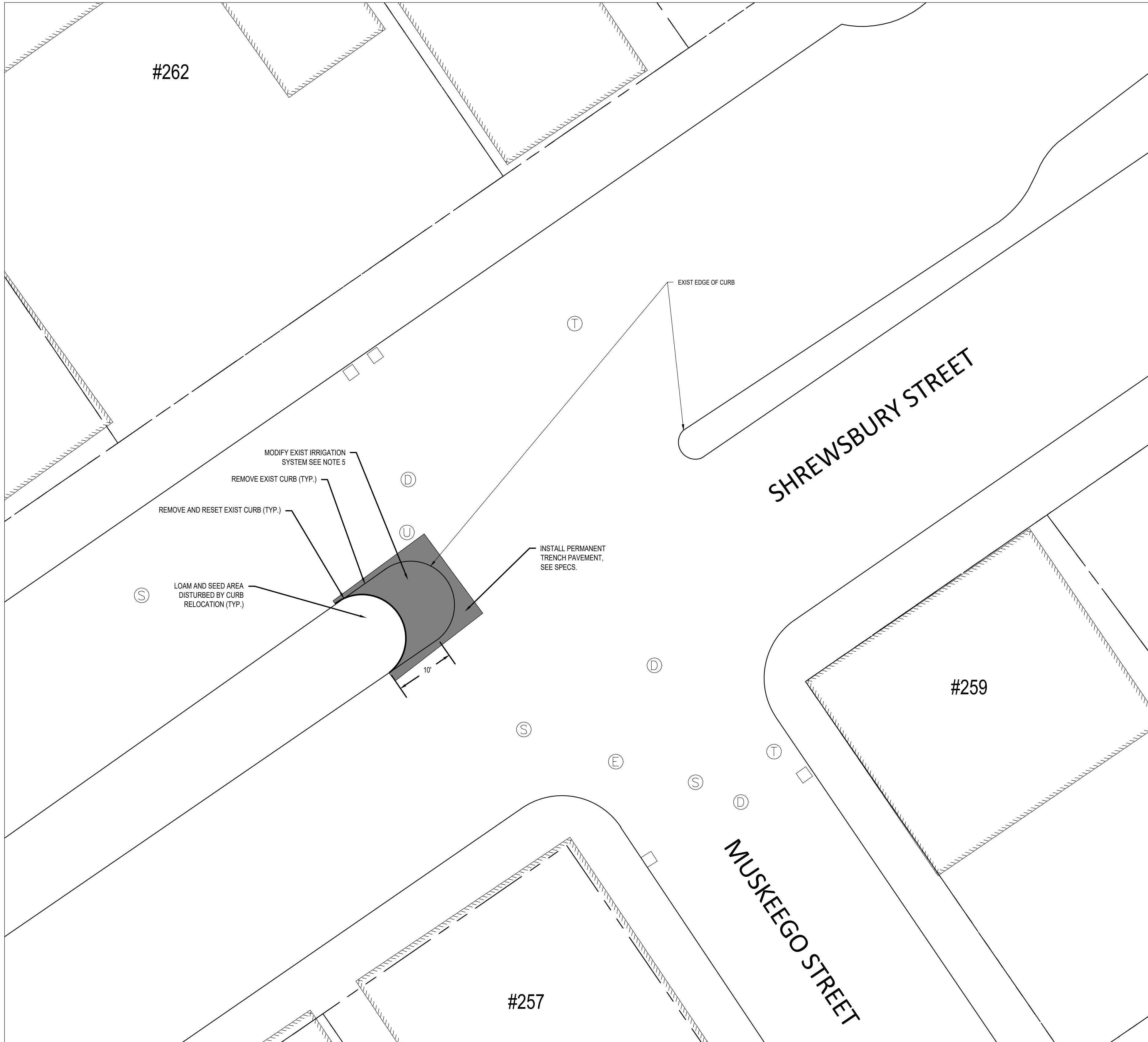
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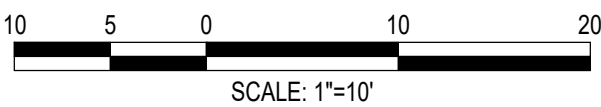
SEE PATH

CONSTRUCTION
DETAILS I


C501



- NOTES:
1. CONTRACTOR SHALL CONFORM TO CITY OF WORCESTER STANDARD CONSTRUCTION SPECIFICATIONS AND DETAILS FOR PROPER CURB INSTALLATION.
 2. REMOVED CURBING SHALL BE PROPERLY STACKED AT THE WORCESTER DEPARTMENT OF PUBLIC WORKS AND PARKS (1065 MILLBURY STREET) AS SPECIFIED IN THE CITY OF WORCESTER STANDARD CONSTRUCTION SPECIFICATIONS AND DETAILS.
 3. THE LOCATIONS OF EXISTING CURB, MANHOLES, BUILDINGS, AND PROPERTY LINES ARE APPROXIMATE AND WERE ESTIMATED USING AVAILABLE GIS DATA AND AERIAL IMAGERY. THE CONTRACTOR SHALL VERIFY LOCATIONS/DIMENSIONS OF EXISTING UTILITY STRUCTURES, CURBING AND OTHER NECESSARY ITEMS AS REQUIRED TO PERFORM THE WORK.
 4. THE CONTRACTOR SHALL RESTORE PAVEMENT MARKINGS DISTURBED BY THE PROPOSED CURB RELOCATION AND PAVING TO CONFORM WITH THE NEW CURB LAYOUT AT NO ADDITIONAL COST TO THE OWNER.
 5. DURING THE CURB RELOCATION, THE CONTRACTOR SHALL CUT ENCOUNTERED EXIST IRRIGATION LINES TO MEET THE PROP CURB LOCATION, INSTALL NEW IRRIGATION HEADS AND ASSOCIATED PIPING (UP TO 4 HEADS), AND ALIGN THE IRRIGATION HEADS FOR OPTIMAL WATER DISCHARGE ON THE GRASSED MEDIAN SURROUNDING THE IRRIGATION SYSTEM. THE CONTRACTOR SHALL ALSO PERFORM ALL NECESSARY TESTING TO INSURE THAT THERE ARE NO LEAKS IN THE IRRIGATION SYSTEM AS A RESULT OF THE PROPOSED MODIFICATIONS.



Project:
CITY OF WORCESTER,
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
AND PARKS



SHREWSBURY STREET SEWER
REHABILITATION PROJECT
CONTRACT S24-1-ARPA

Weston & Sampson
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Worcester, MA 01608
978.532.1900 800.SAMPSON
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Consultants:

Revisions:		
No.	Date	Description

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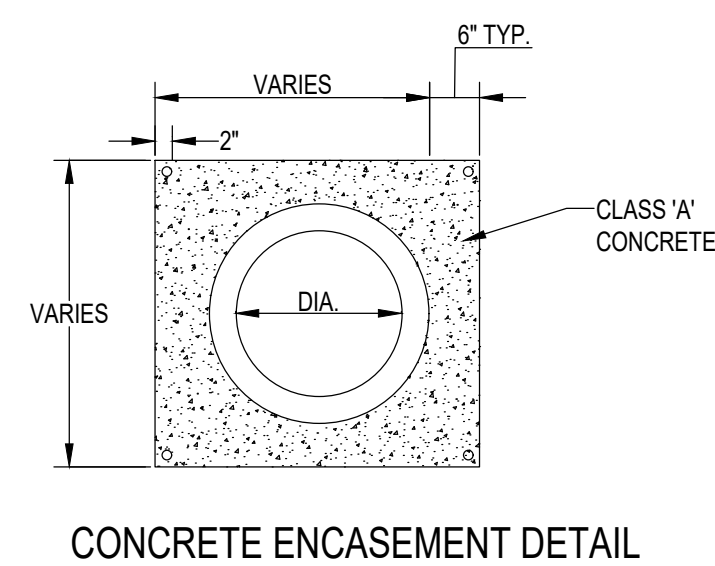
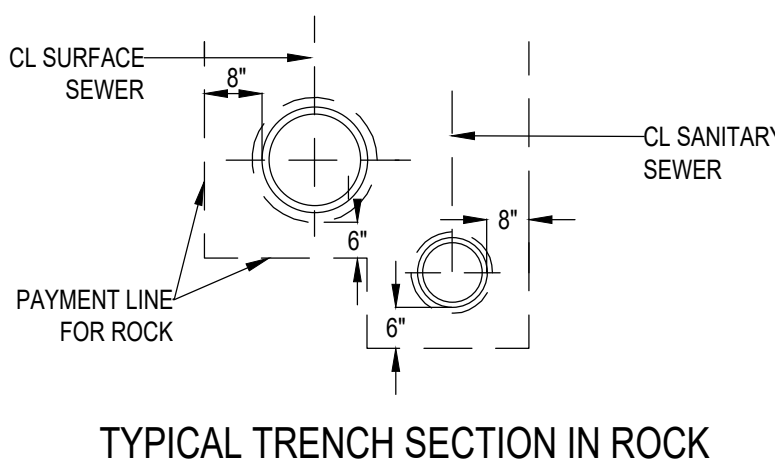
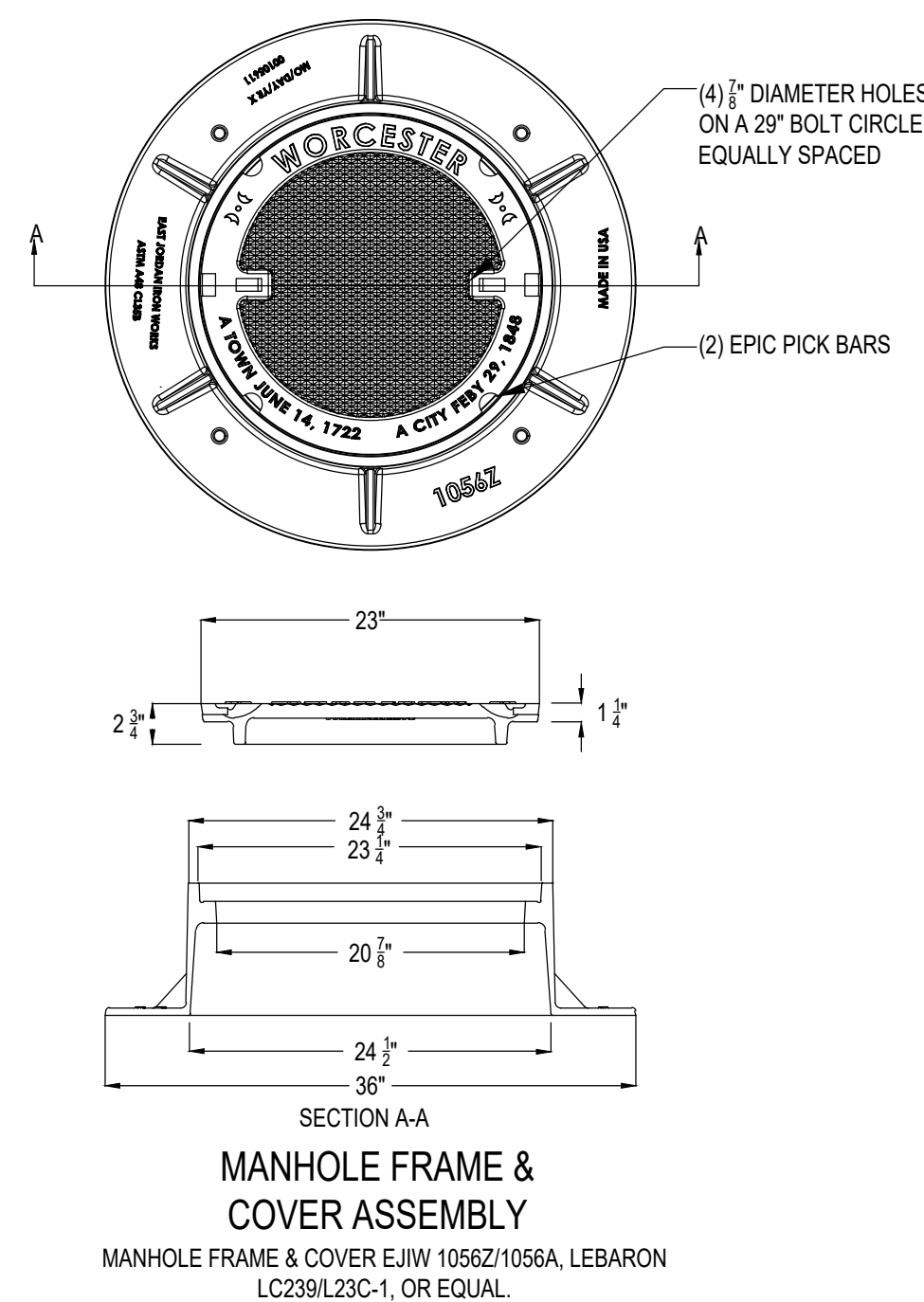
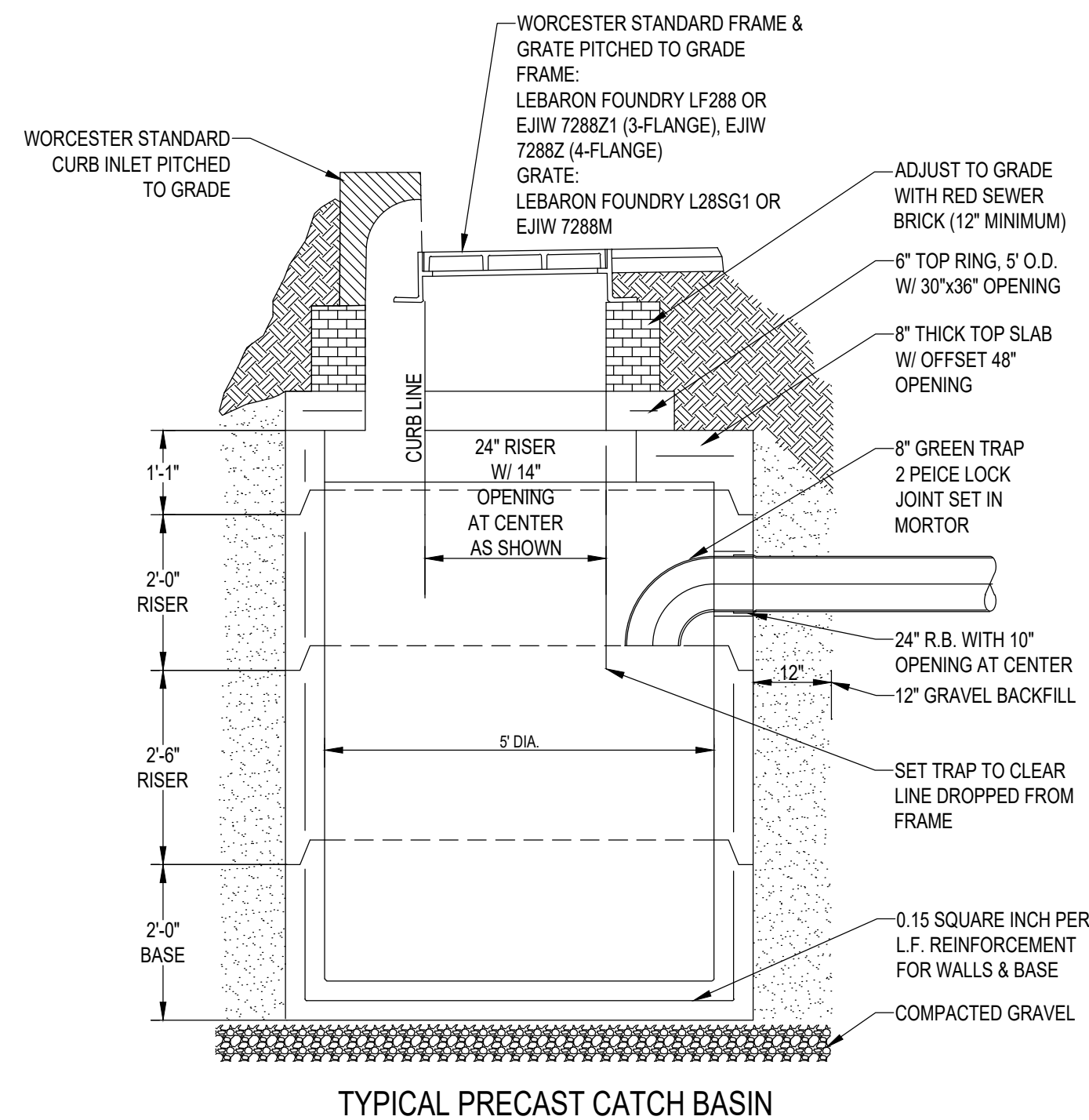
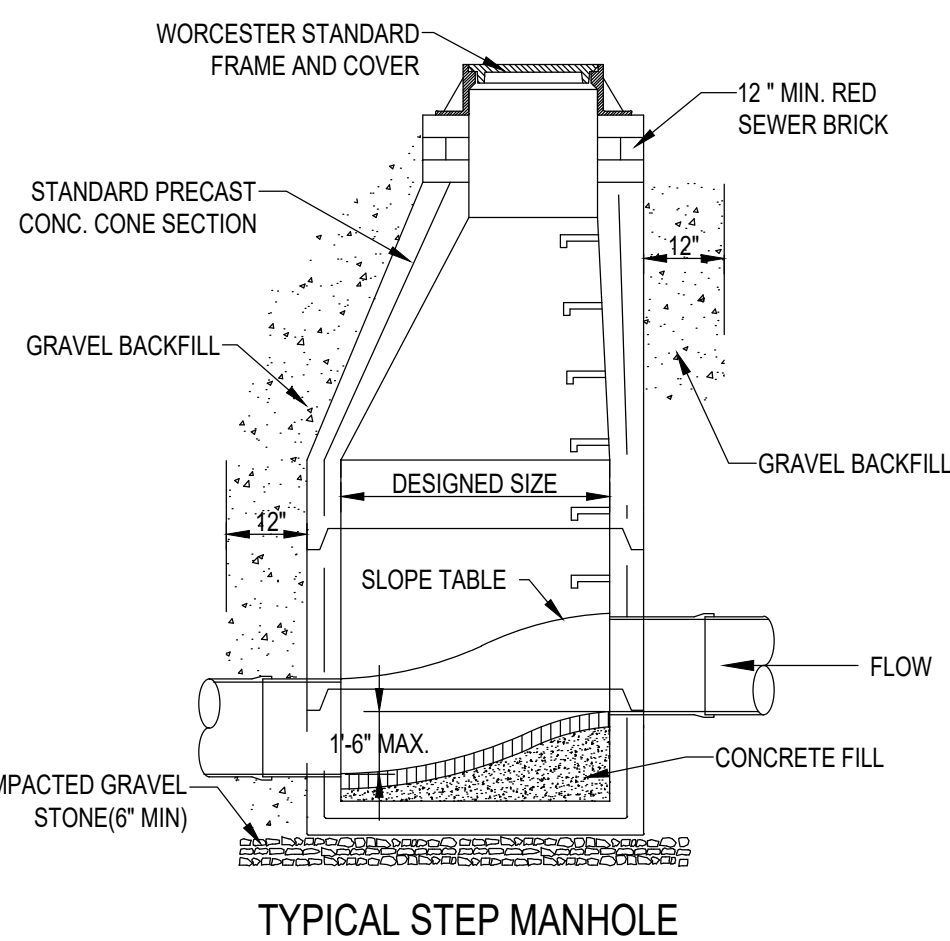
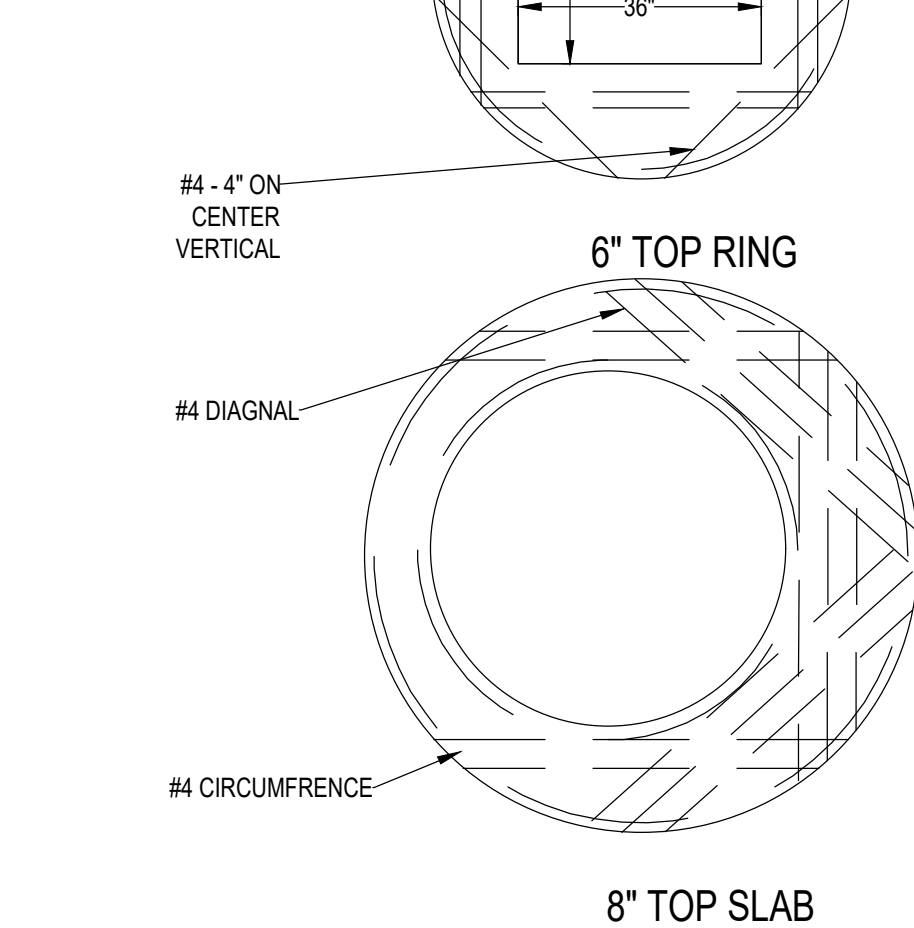
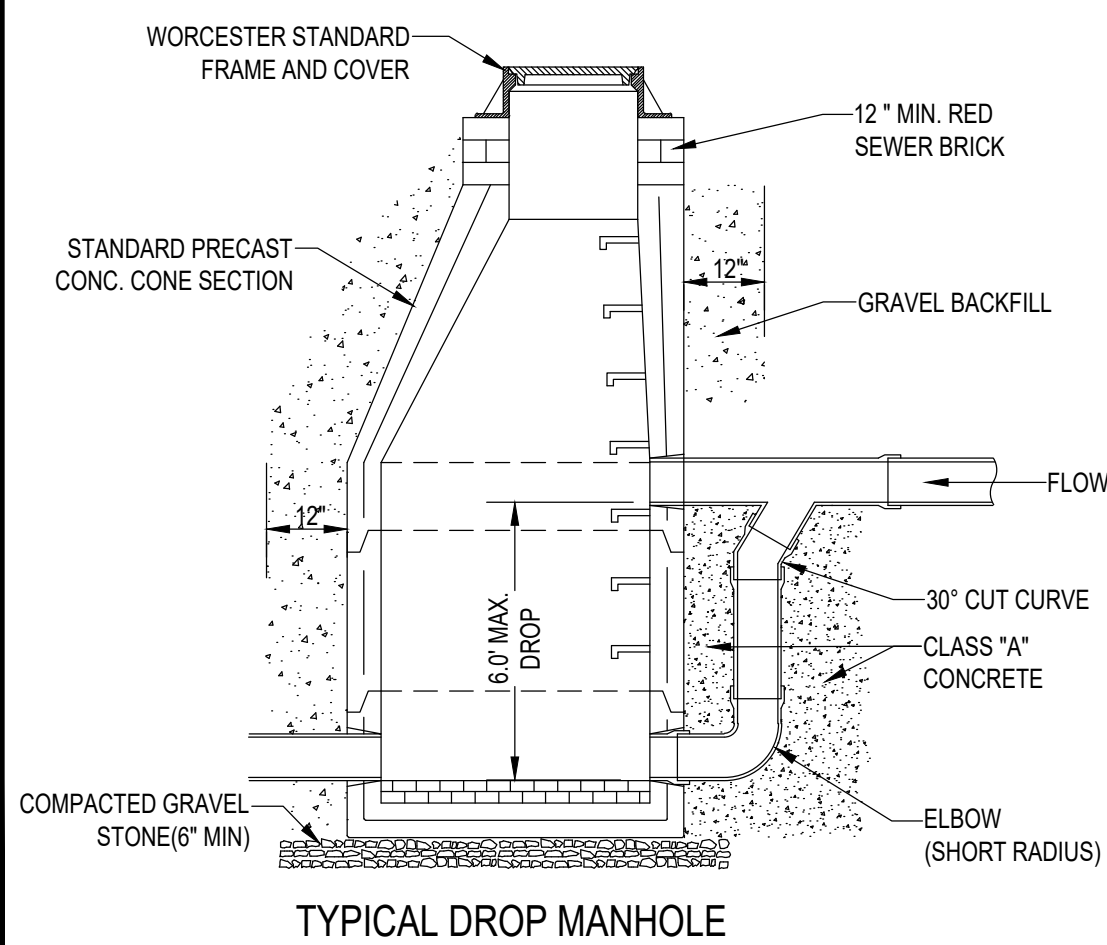
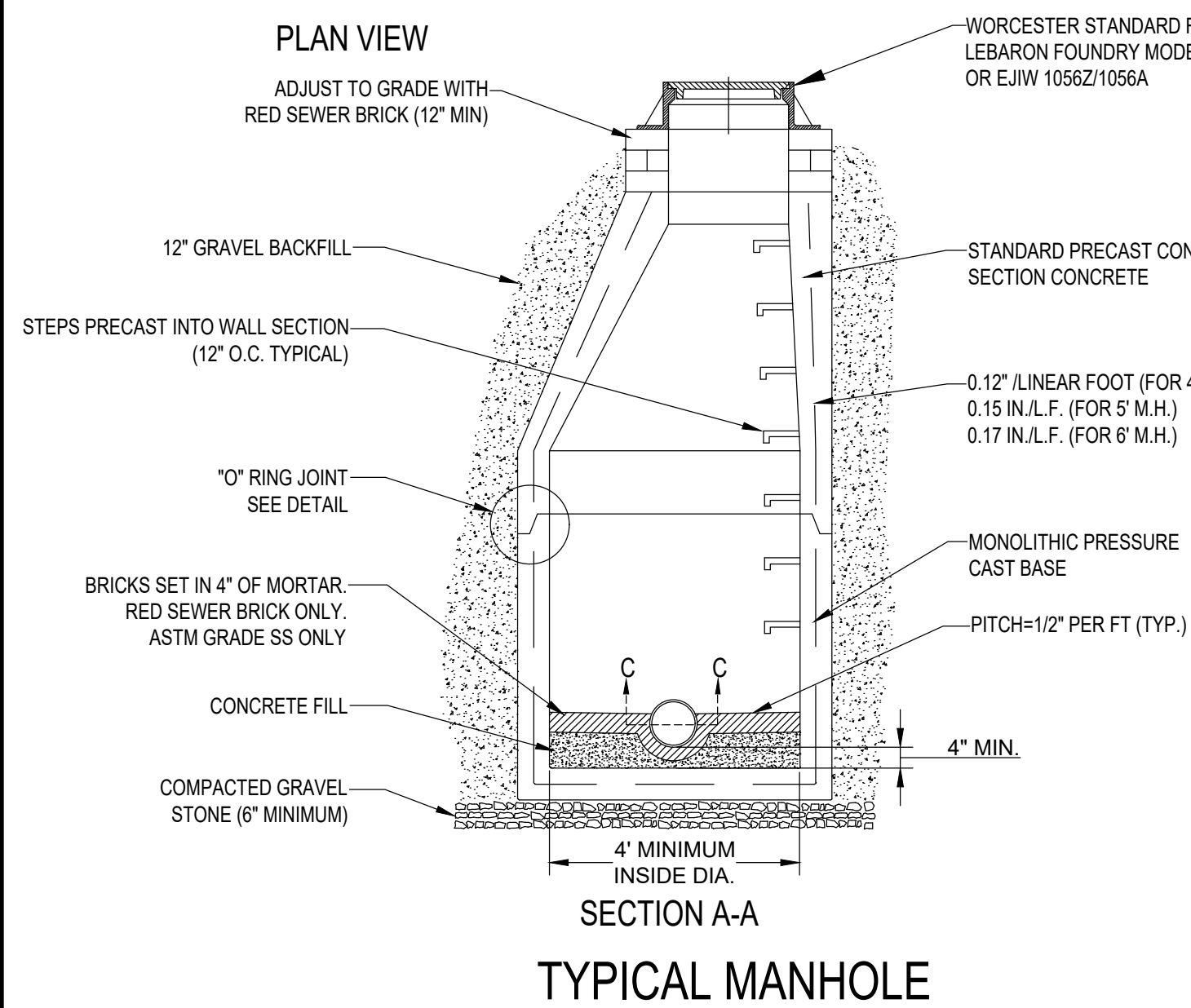
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Reviewed By: KDK
Approved By: FEO
W&S Project No.: ENG21-1342
W&S File No.: SEE PATH

Drawing Title:
**SHREWSBURY
STREET-MUSKEEGO
STREET INTERSECTION
CURB RELOCATION**

Sheet Number:
C502



- GENERAL NOTES:**
1. THE CITY OF WORCESTER IS NOT RESPONSIBLE FOR JOB SAFETY OR SUPERVISION. THE CONTRACTOR IS TO PROCEED WITH THE DEMOLITION IN A SYSTEMATIC AND SAFE MANNER, FOLLOWING ALL THE OSHA REQUIREMENTS, TO ENSURE PUBLIC AND CONTRACTOR SAFETY.
 2. THE LOCATION OF ALL EXISTING AND PROPOSED SERVICES ARE APPROXIMATE AND MUST BE CONFIRMED INDEPENDENTLY WITH LOCAL UTILITY COMPANIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION OR EXCAVATION. SANITARY SEWER AND ALL OTHER UTILITY SERVICE CONNECTIONS POINTS SHALL BE CONFIRMED INDEPENDENTLY BY THE CONTRACTOR IN THE FIELD PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. ALL DISCREPANCIES SHALL BE REPORTED IMMEDIATELY IN WRITING TO THE CITY OF WORCESTER DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION. 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.
 3. ALL UTILITIES AND SERVICES INCLUDING BUT NOT LIMITED TO GAS, WATER, ELECTRIC, SANITARY AND STORM SEWER, TELEPHONE, FIBER OPTICS, ETC. WITHIN THE LIMITS OF DISTURBANCE SHALL BE VERTICALLY AND HORIZONTALLY LOCATED. THE CONTRACTOR SHALL USE AND COMPLY WITH THE REQUIREMENTS OF THE APPLICABLE UTILITY NOTIFICATION SYSTEM TO LOCATE ALL THE EXISTING UNDERGROUND UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRS OF DAMAGE TO ANY EXISTING UTILITIES DURING CONSTRUCTION AT NO COST TO THE CITY.
 4. DEFINE AND LOCATE VERTICALLY AND HORIZONTALLY ALL ACTIVE UTILITY AND/OR SERVICE SYSTEMS THAT ARE TO BE REMOVED. THE CONTRACTOR IS RESPONSIBLE TO PROTECT AND MAINTAIN ALL ACTIVE SYSTEMS THAT ARE NOT BEING REMOVED/RELOCATED DURING CONSTRUCTION ACTIVITY.
 5. ALL DEMOLITION ACTIVITIES ARE TO BE PERFORMED IN ACCORDANCE WITH THESE PLANS, SPECIFICATIONS AND CONTRACT DOCUMENTS AS WELL AS FEDERAL, STATE AND CITY REGULATIONS. ANY DISCREPANCIES OR DEVIATIONS SHALL BE IDENTIFIED BY THE CONTRACTOR TO THE CITY OF WORCESTER IN WRITING FOR RESOLUTION PRIOR TO INITIATION OF SITE ACTIVITY.
 6. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE DONE IN ACCORDANCE WITH ALL FEDERAL, STATE AND CITY REGULATIONS.
 7. THE CONTRACTOR SHALL COMPLY WITH THE LATEST OSHA STANDARDS AND REGULATIONS, OR ANY OTHER AGENCY HAVING JURISDICTION FOR EXCAVATION AND TRENCHING PROCEDURES. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE "MEANS AND METHODS" REQUIRED TO MEET THE INTENT AND PERFORMANCE CRITERIA OF OSHA, AS WELL AS ANY OTHER ENTITY THAT HAS JURISDICTION FOR EXCAVATION AND/OR TRENCHING PROCEDURES.
 8. EXPLOSIVES SHALL NOT BE USED WITHOUT WRITTEN CONSENT OF ALL APPLICABLE GOVERNING AUTHORITIES. ALL THE REQUIRED PERMITS AND EXPLOSIVE CONTROL MEASURES THAT ARE REQUIRED BY THE FEDERAL, STATE, AND LOCAL GOVERNMENTS SHALL BE IN PLACE PRIOR TO STARTING AND EXPLOSIVE PROGRAM. THE CONTRACTOR IS ALSO RESPONSIBLE FOR ALL INSPECTION AND SEISMIC VIBRATION TESTING THAT IS REQUIRED TO MONITOR THE EFFECTS ON ALL LOCAL STRUCTURES.
 9. ALL ELEVATIONS SHOWN ARE IN REFERENCE TO THE SURVEYOR'S BENCHMARK AND MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO GROUND BREAK.
 10. THE CONTRACTOR SHALL BE FAMILIAR AND RESPONSIBLE FOR ANY/ALL CERTIFICATIONS, INSPECTIONS, ETC. REQUIRED BY ALL GOVERNING JURISDICTIONAL AGENCIES DURING AND AFTER CONSTRUCTION FOR SIGN-OFF, INCLUDING BUT NOT LIMITED TO PROCUREMENT OF SERVICES, SCHEDULING OF FIELD OBSERVATIONS AND COORDINATION WITH REPRESENTATIVES OF THE APPROPRIATE PARTIES.
 11. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE REQUIREMENTS AND STANDARDS OF THE LOCAL GOVERNING AUTHORITY.
 12. THESE PLANS ARE BASED ON INFORMATION PROVIDED TO THE CITY OF WORCESTER DEPARTMENT OF PUBLIC WORKS AND PARKS ENGINEERING DIVISION AT THE TIME OF PLAN PREPARATION. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY THE CITY OF WORCESTER DEPARTMENT OF PUBLIC WORKS AND PARKS ENGINEERING DIVISION IN WRITING IF ACTUAL SITE CONDITIONS DIFFER FROM THOSE SHOWN ON THE PLANS. OR IF THE PROPOSED WORK WOULD BE INHIBITED BY ANY OTHER SITE FEATURES. NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR WORK HAVING TO BE REDONE DUE DISCREPANCIES BETWEEN THE PLANS AND EXISTING CONDITIONS IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.
 13. DEBRIS SHALL NOT BE BURIED ON-SITE AND ALL UNSUITABLE EXCAVATED MATERIAL AND DEBRIS (SOLID WASTE) SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL CITY, COUNTY, STATE AND FEDERAL LAWS AND APPLICABLE CODES.
 14. CONTRACTOR IS RESPONSIBLE FOR ALL SHORING REQUIRED DURING EXCAVATION (TO BE PERFORMED IN ACCORDANCE WITH CURRENT OSHA STANDARDS) AND ANY ADDITIONAL PROVISIONS TO ASSURE STABILITY OF STRUCTURES, AS FIELD CONDITIONS DICTATE.
 15. IF THE CONTRACTOR DEVIATES FROM THE PLANS AND SPECIFICATIONS, INCLUDING THE NOTES CONTAINED THEREON, WITHOUT FIRST OBTAINING WRITTEN AUTHORIZATION FOR SUCH DEVIATIONS FROM THE CITY OF WORCESTER DEPARTMENT OF PUBLIC WORKS AND PARKS, ENGINEERING DIVISION, IT SHALL BE RESPONSIBLE FOR THE PAYMENT OF ALL COSTS TO CORRECT ANY WORK DONE, ALL FINES OR PENALTIES ASSESSED WITH RESPECT THERETO AND ALL COMPENSATORY OR PUNITIVE DAMAGES RESULTING THEREFROM. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE CITY OF WORCESTER HARMLESS FROM ALL SUCH COSTS TO CORRECT ANY SUCH WORK AND FROM ALL SUCH FINES AND PENALTIES, COMPENSATION AND PUNITIVE DAMAGES AND COSTS OF ANY NATURE RESULTING THEREFROM.

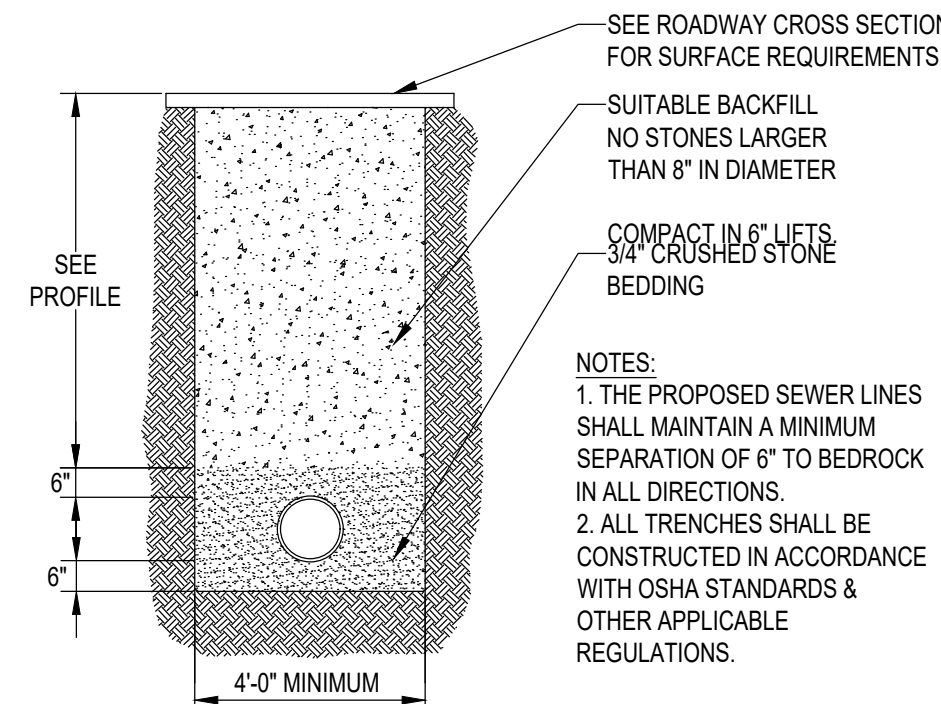
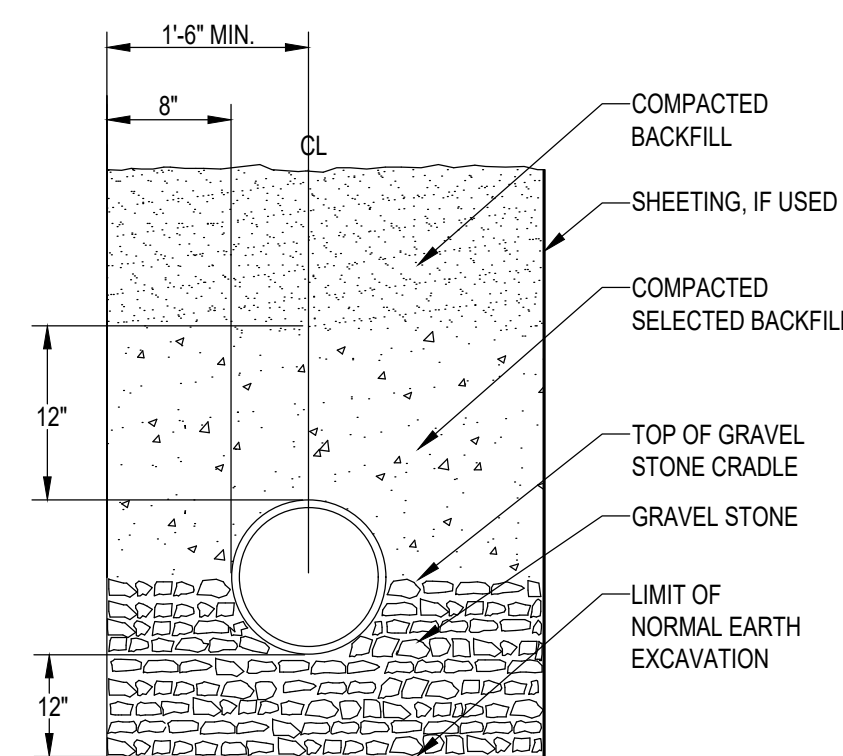
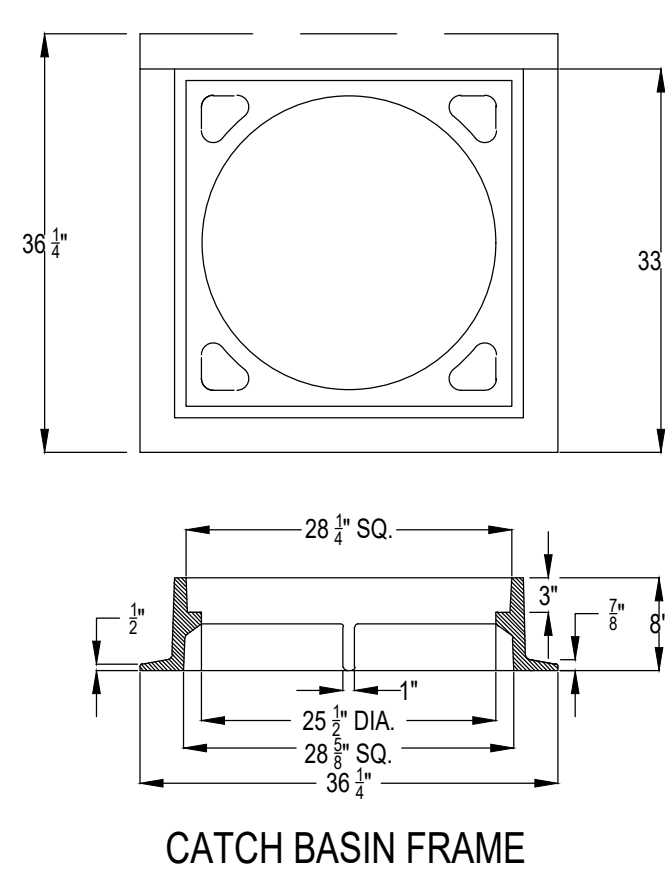
LIMITS OF NORMAL EXCAVATION

THE LIMITS OF NORMAL WIDTH AND DEPTH OF EXCAVATION SHALL BE AS DESCRIBED BELOW UNLESS OTHER LIMITS ARE INDICATED ON THE DRAWINGS AS SPECIFIED.

FOR PIPES IN TRENCH, THE NORMAL WIDTH OF THE TRENCH SHALL BE MEASURED BETWEEN VERTICAL PLANES WHICH ARE AT A DISTANCE APART EQUAL TO THE SUM OF 18" PLUS $1\frac{1}{2}$ TIMES THE NOMINAL INSIDE DIAMETER OF THE PIPE. IF THE WIDTH SO COMPUTED IS LESS THAN 3 FEET, A WIDTH OF 3 FEET SHALL BE TAKEN AS THE NORMAL WIDTH OF PAYMENT. THE NORMAL DEPTH SHALL BE MEASURED TO A DISTANCE OF 0.5 FEET BELOW THE BOTTOM OF THE OUTSIDE OF THE PIPE IN EARTH AND IN ROCK UNLESS THERE BE A CRADLE UNDERNEATH THE PIPE, IN WHICH CASE THE NORMAL DEPTH SHALL BE MEASURED TO THE UNDERSIDE OF THE CRADLE. THE WIDTH OF THE TRENCH FOR THE CRADLE SHALL BE ASSUMED TO BE THAT ABOVE SPECIFIED FOR PIPES IN TRENCH.

NO ALLOWANCE WILL BE MADE FOR ADDITIONAL WIDTH OR DEPTH OF TRENCH FOR BELL HOLES OR AT THE MANHOLES


FOR OTHER STRUCTURES, THE NORMAL WIDTH SHALL BE MEASURED BETWEEN VERTICAL PLANES 1 FOOT OUTSIDE THE NEAT LINES OF THE SEVERAL PARTS OF THE STRUCTURE, EXCEPT THAT THE WIDTH AT ANY ELEVATION SHALL BE MEASURED AT NOT LESS THAN THE WIDTH AT A LOWER ELEVATION. THE NORMAL DEPTH SHALL BE MEASURED TO THE UNDERSIDE OF THAT PART OF THE STRUCTURE FOR WHICH THE EXCAVATION IS MADE.



NOTES:
1. THE PROPOSED SEWER LINE SHALL MAINTAIN A MINIMUM SEPARATION OF 6" TO BEDROCK IN ALL DIRECTIONS.
2. ALL TRENCHES SHALL BE CONSTRUCTED IN ACCORDANCE WITH OSHA STANDARDS & OTHER APPLICABLE REGULATIONS.

Project:

CITY OF WORCESTER,
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
AND PARKS



SHREWSBURY STREET SEWER
REHABILITATION PROJECT
CONTRACT S24-1-ARPA

Weston & Sampson

Weston & Sampson Engineers, Inc.
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Worcester, MA 01608
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Consultants

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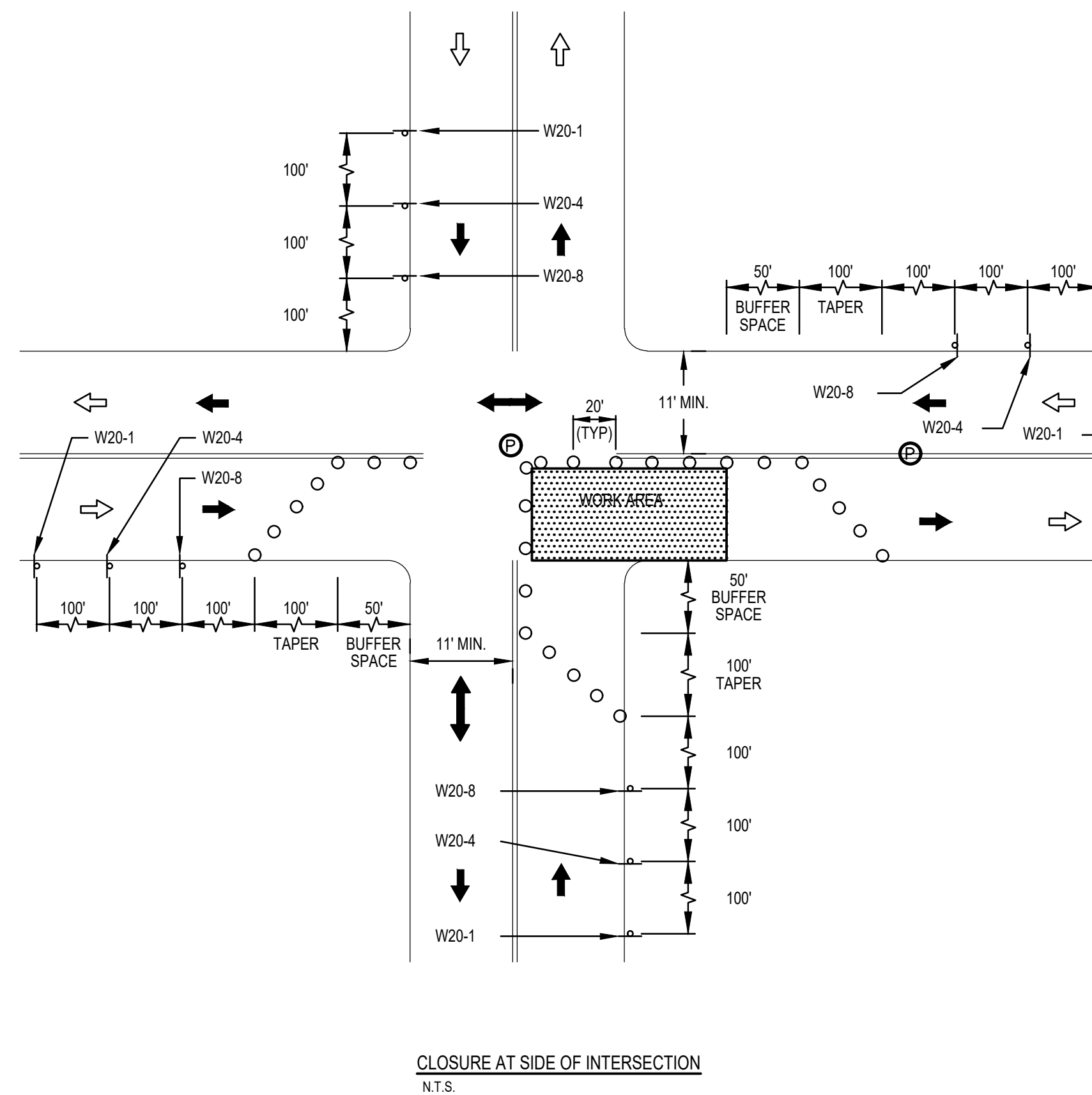
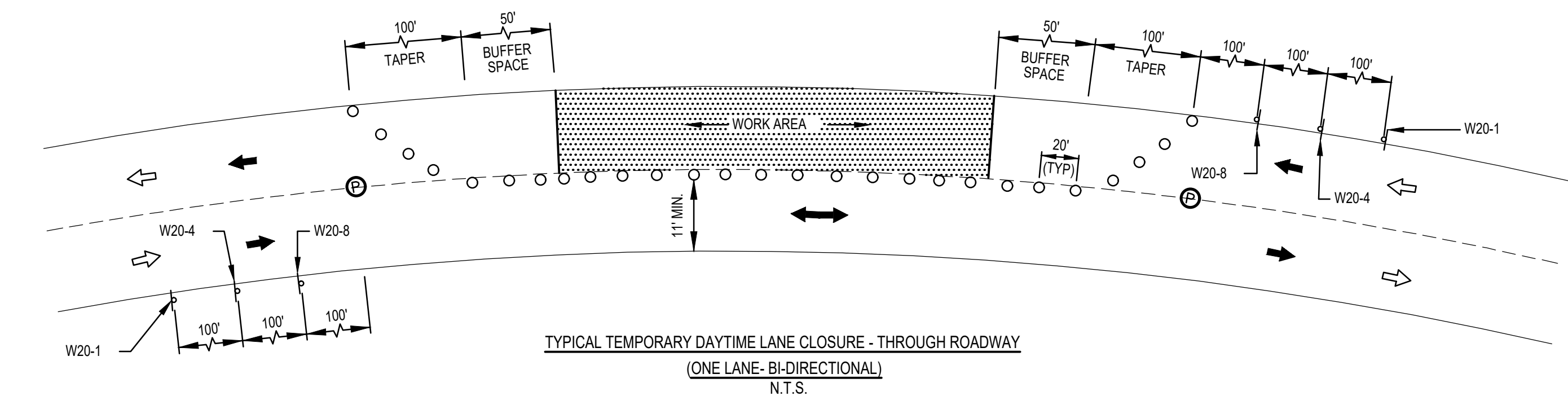
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W&S File No.: SEE PATH

Drawing Title:

WORCESTER
STANDARD
CONSTRUCTION
DETAILS

Sheet Number

C504



1. 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.
2. ADVANCE WARNING SIGN PLACEMENT AND TAPER LENGTH TO BE ADJUSTED ACCORDINGS TO STREET CONDITIONS AND DRIVEWAY OPENINGS.
3. ALL DRUMS SHALL BE APPROXIMATELY PLACED AND MOVED AS NECESSARY TO MAINTAIN ADEQUATE ABUTTER ACCESS AT ALL TIMES.
4. THE CONTRACTOR SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT AND SIMILAR OPERATIONS.
5. NONESSENTIAL TRAFFIC CONTROL DEVICES SHALL BE COVERED OR REMOVED DURING NON-WORKING HOURS.
6. PEDESTRIANS SHALL BE PROVIDED WITH ACCESS AND SAFE PASSAGE THROUGH THE TEMPORARY TRAFFIC CONTROL ZONE AT ALL TIMES.
7. 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.
8. ADVISORY SPEED PLATES (W13-1 - SEE CURRENT EDITION OF MUTCD) SHALL BE USED IF APPLICABLE AND AS REQUIRED BY THE ENGINEER.
9. NO DIFFERENCE IN ROADWAY LANE ELEVATION WILL BE ALLOWED AT THE END OF THE WORK DAY.
10. 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.
11. DASHED LINES SHOW LANE DESIGNATIONS TO BE USED DURING CONSTRUCTION.
12. THE CONTRACTOR SHALL SUBMIT ANY REVISIONS TO THE CONSTRUCTION ZONE SAFETY PLAN TO THE ENGINEER FOR APPROVAL.
13. THIS CONSTRUCTION ZONE SAFETY PLAN SHALL NOT RELIEVE THE CONTRACTOR OF HIS SOLE RESPONSIBILITY FOR CONSTRUCTION SITE SAFETY.