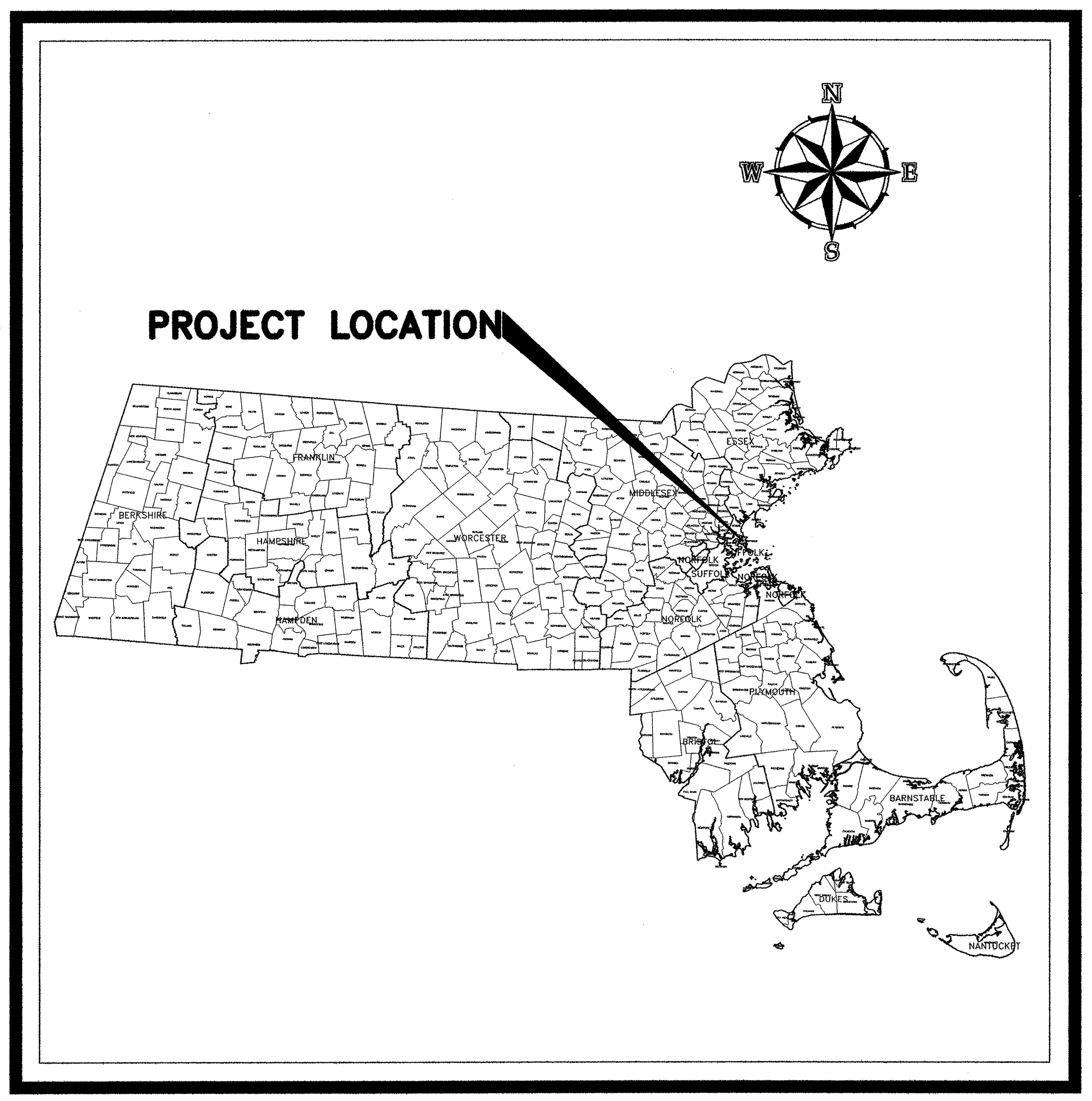
DEPARTMENT OF PUBLIC WORKS
WINTHROP, MASSACHUSETTS

SEWER, WATER, AND
DRAIN IMPROVEMENTS
PHASE 1



PROJECT LOCATION MAP

50 0 50 100
scale mile

CONTRACT 3
PROJECT NO. 223703

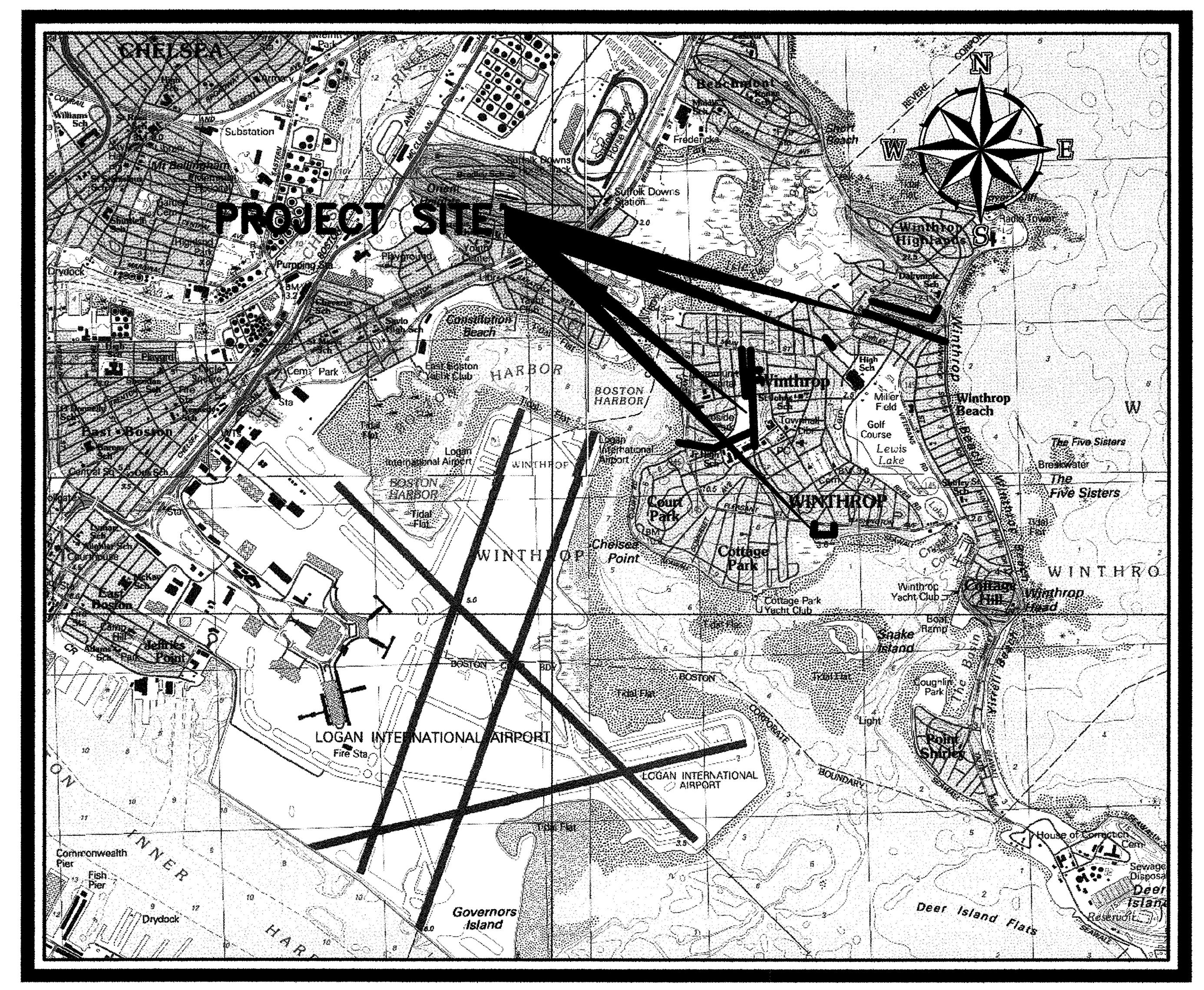
JUNE 2012

COMMONWEALTH OF MASSACHUSETTS
ARTHUR D. LEVENTIS
CIVIL
No. 45470
REGISTERED
PROFESSIONAL ENGINEER

WOODARD & CURRAN

35 New England Business Center | Andover Massachusetts 01810
866.702.6371 | www.woodardcurran.com

COMMITMENT & INTEGRITY DRIVE RESULTS



SITE LOCATION MAP
SCALE: 1:31250

SOURCE
U.S.G.S. QUADRANGLE, WINTHROP, MA,
PHOTO REVISED 1987, 15 MINUTE SERIES

\\Andover\projects\223703 Winthrop MA - Contract 3 Sewer & Water Main\wip\REBID\DRAWINGS\223703 COVER.dwg, Jun 05, 2012 - 4:17pm

GENERAL NOTES

1. PROVIDE ALL MATERIALS AND LABOR AS REQUIRED TO PERFORM THE WORK INDICATED ON THE DRAWINGS AND IN THE SPECIFICATIONS. ALL WORK TO BE COMPLETED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL CODES.
2. SURVEY INFORMATION PROVIDED BY COUGHLIN ENVIRONMENTAL SERVICES, LLC, DATED FEBRUARY 6, 2012. HORIZONTAL DATUM IS MASSACHUSETTS STATE PLANE COORDINATE SYSTEM NAD 83 AND VERTICAL DATUM IS NORTH GEODETIC VERTICAL DATUM OF 1929, BOTH AS REFERENCED BY MASSACHUSETTS GEODETIC SURVEY DISCS STAMPED 48B, 48D, & 48E WITH MASSHIGHWAY GEODETIC DATA SHEET POINT ID#S 7489, 3418, 3419.
3. FLOOD LIMITS SHOWN ON PLANS ARE APPROXIMATE. ACTUAL FLOOD LIMITS ARE DISPLAYED ON NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAPS INCLUDED AS APPENDIX E.
4. THE LOCATION, TYPE AND SIZE OF EXISTING PIPES, DUCTS, CONDUITS, UTILITIES AND UNDERGROUND STRUCTURES SHOWN ON THE DRAWINGS ARE NOT WARRANTED TO BE EXACT, NOR IS IT WARRANTED THAT ALL UNDERGROUND STRUCTURES ARE SHOWN. CONTRACTOR SHALL FIELD VERIFY ALL LOCATIONS, SIZES AND DEPTHS.
5. COORDINATE CONSTRUCTION ACTIVITIES WITH THE DEPARTMENT OF PUBLIC WORKS (DPW), POLICE DEPARTMENT, FIRE DEPARTMENT, SCHOOL DEPARTMENT, UTILITY COMPANIES, AND THE ENGINEER.
6. AT A MINIMUM, RESTORE ALL AREAS DISTURBED BY CONTRACTOR'S OPERATIONS TO ORIGINAL CONDITION UNLESS NOTED OTHERWISE (GRAVEL, CONCRETE, PAVEMENT, GRASS, ETC.).
7. ALL NEW BURIED WATER MAIN SHALL HAVE MINIMUM 5 FEET OF COVER UNLESS NOTED OTHERWISE OR APPROVED BY THE ENGINEER. BURIED WATER MAIN WITH LESS THAN 4 FEET OF COVER SHALL HAVE A MINIMUM OF 4" OF RIGID INSULATION WITH AN R-VALUE OF R-20 INSTALLED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
8. PROTECT PROPERTY IRONS AND PROPERTY MONUMENTS FROM DAMAGE. IF DISTURBED, PROPERTY IRONS AND PROPERTY MONUMENTS SHALL BE RESET BY A REGISTERED LAND SURVEYOR APPROVED BY THE OWNER AT THE CONTRACTOR'S EXPENSE.
9. TAKE ALL NECESSARY PRECAUTIONS TO PREVENT EQUIPMENT FLUIDS FROM REACHING ANY WATER RESOURCE AREA. FLUID DISCHARGED INADVERTENTLY SHALL BE IMMEDIATELY CLEANED USING WHATEVER MEANS REQUIRED, AS DETERMINED BY AN ENGINEER APPROVED BY OWNER.
10. SUPPORT ALL PIPING AS DETAILED OR SPECIFIED INCLUDING SMALL DIAMETER PIPE, TUBING AND CONDUIT.
11. LOCATION OF EXISTING UTILITIES, BUILDINGS, AND EQUIPMENT LAYOUTS ARE BASED ON BEST INFORMATION AVAILABLE. INFORMATION INCLUDES PLANS PROVIDED BY OWNER AND UTILITY COMPANIES AND SURVEY INFORMATION.
12. FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO ORDERING MATERIALS, MANUFACTURING COMPONENTS, OR STARTING CONSTRUCTION.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO STRUCTURES AND EQUIPMENT NOT SCHEDULED FOR REMOVAL.
14. PROVIDE A DETAILED CONSTRUCTION SCHEDULE TO THE ENGINEER FOR REVIEW AND APPROVAL BY OWNER.
15. UNLESS OTHERWISE NOTED, EXISTING FACILITIES (I.E. FENCES, GUARDRAILS, TREES, POLES, SIGNS, LIGHT POLES, MAIL BOXES, ETC.) SHALL BE REMOVED AND REPLACED IN KIND, IN ACCORDANCE WITH LOCAL AND STATE REQUIREMENTS, OR PROTECTED AS REQUIRED DURING CONSTRUCTION. THE ASSOCIATED COSTS ARE CONSIDERED INCIDENTAL TO THE PROJECT.
16. MAINTAIN ONE LANE (MINIMUM) OF CONTINUOUS TRAFFIC FLOW THROUGH CONSTRUCTION ZONE UNLESS ROAD CLOSURE IS REQUIRED TO MAINTAIN PUBLIC SAFETY. IN THE EVENT ROAD CLOSURE IS REQUIRED, PROVIDE TRAFFIC MANAGEMENT PLAN TO ENGINEER FOR REVIEW AND APPROVAL BY OWNER, DETAILING, AT A MINIMUM, LOCATION, TYPE, AND NUMBER OF TRAFFIC CONTROL DEVICES, SIGNS, AND DETOURS, AND THE DURATION OF CLOSURE. TRAFFIC MANAGEMENT PLAN SHALL BE SUBMITTED AT LEAST 21 CALENDAR DAYS PRIOR TO ANTICIPATED ROAD CLOSURE DATE.
17. CURB THAT IS NOT SPECIFICALLY NOTED TO BE REPLACED IN CONTRACT DOCUMENTS, BUT THAT IS DAMAGED BY CONSTRUCTION ACTIVITIES, SHALL BE REPLACED, IN KIND, AT NO COST TO OWNER, AND SHALL CONFORM TO MASSDOT SPECIFICATIONS.
18. LOOP DETECTORS DAMAGED DURING CONSTRUCTION SHALL BE REPLACED IN KIND AND SHALL CONFORM TO MASSDOT SPECIFICATIONS. THE ASSOCIATED COSTS SHALL BE CONSIDERED INCIDENTAL TO THE WORK.
19. COMPACT TRENCHES IN ACCORDANCE WITH REQUIREMENTS OF SECTION 02200 OF THE SPECIFICATIONS.
20. CONTRACTOR SHALL APPLY AND PAY FOR LOCAL, STATE, AND FEDERAL PERMITS NECESSARY TO COMPLETE THE WORK.
21. CONTRACTOR SHALL COMPLY WITH REQUIREMENTS OF LOCAL, STATE, AND FEDERAL PERMITS REQUIRED TO COMPLETE THE WORK.
22. WHERE NEW WATER MAINS OR APPURTENANCES ARE TO BE CONNECTED TO EXISTING PIPE, CONTRACTOR SHALL CUT AND REMOVE THE EXISTING PIPE AS NECESSARY TO INSTALL THE NEW WORK. TEST PIT LOCATIONS WHERE NEW MAINS CONNECT TO EXISTING MAINS TO VERIFY PIPE DIAMETER AND MATERIAL TYPE.
23. FINAL LOCATIONS FOR NEW WATER MAINS, HYDRANTS, VALVES AND FITTINGS SHALL BE REVIEWED IN THE FIELD WITH THE OWNER AND OWNER'S REPRESENTATIVE PRIOR TO BEGINNING CONSTRUCTION.
24. CONTRACTOR IS RESPONSIBLE TO NOTIFY THE DEPARTMENT OF PUBLIC WORKS AND UTILITY COMPANIES PRIOR TO COMMENCING WORK TO ALLOW SUFFICIENT TIME TO LOCATE AND MARK THE LOCATION OF ALL BURIED UTILITIES. CONTRACTOR SHALL ALSO CONTACT "DIG SAFE", TELEPHONE NO. 888-344-7233, AT LEAST 72 HOURS PRIOR TO CONSTRUCTION. REPAIR OF ANY DAMAGED UTILITY WILL BE INCIDENTAL TO THE CONTRACT.
25. BRACING OF UTILITY POLES, WHERE REQUIRED, SHALL BE CONSIDERED INCIDENTAL TO THE INSTALLATION OF THE WORK. NO SEPARATE PAYMENT SHALL BE MADE.
26. EXCAVATE TEST PITS TO DETERMINE LOCATION, DEPTH, AND DIAMETER OF EXISTING UTILITIES WHERE REQUESTED.
27. TOOLS, VEHICLES, MATERIALS, SUPPLIES, OR EQUIPMENT SHALL NOTE BE STORED ON DRAINAGE STRUCTURES OR WITHIN 100 FEET OF WETLANDS OR RESOURCE AREAS.
28. THE CONTRACTOR SHALL NOT OPERATE EXISTING VALVES OR HYDRANTS IN THE DISTRIBUTION SYSTEM.
29. OWNER WILL OPERATE EXISTING VALVES AND HYDRANTS TO ISOLATE SECTIONS OF THE WORK. PROVIDE A MINIMUM 3 WORK DAYS ADVANCE NOTICE TO DPW WHEN REQUESTING OPERATION OF EXISTING VALVES AND HYDRANTS.
30. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE WRITTEN NOTIFICATION TO ANY PROPERTY THAT WILL BE WITHOUT WATER DUE TO A SCHEDULED SHUTDOWN. CONTRACTOR SHALL DELIVER WRITTEN NOTIFICATION TO EACH PROPERTY AT LEAST 72 HOURS IN ADVANCE OF A SCHEDULED SHUTDOWN. A DRAFT OF WRITTEN NOTIFICATION SHALL BE PROVIDED TO OWNER FOR REVIEW PRIOR TO DISTRIBUTION. NOTIFICATION SHALL BE CONSIDERED INCIDENTAL TO THE WORK.
31. SAWCUT ALL DRIVEWAYS, WALKWAYS, AND SIDEWALKS AT EDGE OF RIGHT OF WAY TO TRANSITION EXISTING GRADE TO FINISH GRADE.
32. RESTORE SIDEWALKS DAMAGED BY CONSTRUCTION ACTIVITIES. MATCH EXISTING GRADES, DIMENSIONS AND MATERIALS. IF DAMAGE OCCURS, REPLACE FULL SIDEWALK PANEL.
33. SIDEWALK DAMAGE DUE TO CONTRACTOR'S NEGLIGENCE SHALL NOT BE CONSIDERED FOR PAYMENT.
34. ALL SIDEWALK RESTORATION SHALL BE CONSTRUCTED TO THE SPECIFICATIONS SET FORTH IN THE COMMONWEALTH OF MASSACHUSETTS EXECUTIVE OFFICE OF PUBLIC SAFETY, AAB, "RULES AND REGULATIONS" WHICH APPEAR IN THE CODE OF MA REG (C) 521 LMR 1.00.
35. PLUG ANY EXISTING SEWER DRAINS OR WATER PIPE REQUIRED TO BE ABANDONED BY THE WORK WITH CONCRETE SUFFICIENT TO PREVENT INFILTRATION OF WATER OR SETTLEMENT OF SURROUNDING SOIL TO SATISFACTION OF OWNER. PLUGGING OF ABANDONED PIPE SHALL BE CONSIDERED INCIDENTAL TO THE WORK.
36. REMOVE AND DISPOSE OF MANHOLES NOTED OR REPLACED BY WORK. REMOVAL AND DISPOSAL OF MANHOLES SHALL BE CONSIDERED INCIDENTAL TO THE WORK.

SHEET INDEX

ABBREVIATIONS

@	AT
ADJ.	ADJUSTABLE
ALUM.	ALUMINUM
APA	AMERICAN PLYWOOD ASSOCIATION
APPROX.	APPROXIMATE
ASS'Y	ASSEMBLY
ASTM	AMERICAN SOCIETY OF TESTING MATERIALS
B	BEAM
B	BORING
BLDG.	BUILDING
BOT	BOTTOM
BV	BUTTERFLY VALVE
C	COLUMN
C.E.	CONTINUOUS END
CB	CATCH BASIN
CJ	CONTROL JOINT
CK.	CHECKED
CLR.	CLEAR
CLF	CHAIN LINK FENCE
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
COL.	COLUMN
CONC.	CONCRETE
CONT.	CONTINUOUS
COR	CORNER
CORR.	CORRUGATED
CPE	CORRUGATED POLYETHYLENE
CU	COPPER
D	DIAMETER
D.E.	DISCONTINUOUS END
D.I.	DUCTILE IRON
DES.	DESIGNED
DIA.	DIAMETER
DIAG.	DIAGONALLY
DISCONT.	DISCONTINUOUS
DR.	DRAWN
DRI	DOUBLE RING INFILTROMETER
DRWGS.	DRAWINGS
E	EASTING
EA.	EACH
EFFL.	EFFLUENT
EL.	ELEVATION
ELECT.	ELECTRICAL
ELEV.	ELEVATION
EMBED.	EMBEDDMENT
EQ.	EQUALIZATION
EXP.	EXPANSION
F	FOOTING
FD	FLOOR DRAIN
FF	FINISH FLOOR
FIN	FINISH
FIN. FLR.	FINISH FLOOR
FL.	FLANGE
FM	FORCE MAIN
FRP	FIBERGLASS REINFORCED PLASTIC
FT.	FOOT
FTG.	FOOTING
FTG.	FITTING
G	GAS
GALV.	GALVANIZED
GV	GATE VALVE
H	HATCH
H	HEIGHT
HOR.	HORIZONTAL
HORIZ.	HORIZONTAL
HP	HIGH POINT
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
IMFO	INTEGRALLY MOLDED FLANGED OPENING
INV.	INVERT
L	LENGTH
L.L.V.	LONG LEG VERTICAL
LB	POUND
LG.	LONG
LP	LOW POINT
M.O.	MASONRY OPENING
MAX.	MAXIMUM
MECH.	MECHANICAL
MH	MANHOLE
MIN.	MINIMUM
MPH	MILES PER HOUR
MR	MONORAIL
MW	MONITORING WELL
N	NORTHING
NIC	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
#	NUMBER
NO.	NUMBER
NOM.	NOMINAL
O.C.	ON CENTER
O.C.E.F.	ON CENTER EACH FACE
O.C.E.W.	ON CENTER EACH WAY
O.D.	OUTSIDE DIAMETER
O.I.T.	OPERATOR INTERFACE TERMINAL
OZ.	OUNCE
PL	PLATE
PL	PROPERTY LINE
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVE
PCF	PER CUBIC FOOT
PE	POLYETHYLENE
PIC	POST INDICATOR VALVE
PRC	POINT OF REVERSE CURVE
PSI	PER SQUARE INCH
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
PZ	PIEZOMETER
RCP	REINFORCED CONCRETE PIPE
REINF.	REINFORCEMENT
RIBS	RAPID INFILTRATION BASINS
S	SEWER
S	SLOPE
S.S.	STAINLESS STEEL
SCH.	SCHEDULE
SECT	SECTION
SHLDR.	SHOULDER
SHT.	SHEET
SP. AL.	SPECIAL ALUMINUM
SQ.	SQUARE
SUP.	SUPPORT
TEMP.	TEMPERATURE
THD.	THREADED
TMB	TEMPORARY BENCH MARK
TOC	TOP OF CONCRETE
TP	TEST PIT
TYP.	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
UGE	UNDERGROUND ELECTRIC
UGT	UNDERGROUND TELEPHONE
UV	ULTRAVIOLET
V	VELOCITY
VERT.	VERTICAL
W	WATER
W	WIDE
W/	WITH
YR.	YEAR

CIVIL SYMBOLS

DESCRIPTION	EXISTING	PROPOSED
SANITARY SEWER MANHOLE		
SANITARY SEWER SERVICE CLEANOUT	CO	CO
STORM DRAIN MANHOLE		
CATCH BASIN		
TELECOMM MANHOLE		
TELECOMM SERVICE BOX	T	
ELECTRIC MANHOLE		
TRANSFORMER		
UTILITY POLE W/GUY		
UTILITY POLE		
LIGHTPOST		
GAS METER BOX	G	G
GAS VENT		
GAS GATE		
REDUCER		
WATER VALVE		
CURB STOP		
HYDRANT		
TEMPORARY GATE VALVE		
TEMPORARY HYDRANT		
WATER WELL	W	W
WATER METER BOX		W
SIGN		
MAILBOX		
FLAGPOLE	FP	
WETLAND HATCHING		
CONIFEROUS TREE		
DECIDUOUS TREE		
STONE CHECK DAM	SCD	SCD
SURVEY STATION		
TEMPORARY BENCH MARK		
IRON PIN	IPF	IPS
MONUMENTS	MF	MS
SPOT ELEVATION	XXX.XX	XXX.XX
TEST PIT & NUMBER	TP-X	
BORING WITH SAMPLING & NUMBER	B-X	B-P
BORING WITHOUT SAMPLING & NUMBER	B-X	B-P
SURFACE WATER MONITORING LOC.		
MONITORING WELL	MW-X	MW-P
PIEZOMETER	P-X	P-P

EXISTING LINETYPES

CONTOUR (1' OR 2' INTERVAL)	122
SANITARY SEWER	S
FORCE MAIN	FM
STORM DRAIN	SD
WATER MAIN	W
UNDERGROUND ELECTRIC	E
UNDERGROUND TELEPHONE	T
UNDERGROUND TELEVISION	TV
GAS LINE	G
OVERHEAD ELECTRIC	OE
CULVERT	INV. IN. EL. XXX.XX / INV. OUT EL. XXX.XX
PROPERTY LINE	PL
RIGHT OF WAY	R/W
EASEMENT	
EDGE OF VEGETATION	
FENCE	X
CENTERLINE	CL
RETAINING WALL	
STONEWALL	
CURB	
EDGE OF PAVEMENT	
EDGE OF GRAVEL	
GUARDRAIL	
RAILROAD TRACKS	
DRAINAGE DITCH / SWALE	
EXTENT OF WETLANDS	
RIVERFRONT 25FT BUFFER	RIVERFRONT
TOP OF BANK	TOP OF BANK
WETLAND 100FT BUFFER	
LIMITS OF FLOOD ZONE	FLOOD

PROPOSED LINETYPES

CONTOUR (1' OR 2' INTERVAL)	122
CONTOUR (INDEX)	120
SANITARY SEWER	S
FORCE MAIN	FM
STORM DRAIN	SD
DRAIN	D
WATER MAIN	
TEMPORARY WATER MAIN	
UNDERGROUND ELECTRIC	E
UNDERGROUND TELEPHONE	T
UNDERGROUND TELEVISION	TV
GAS LINE	G
OVERHEAD ELECTRIC	OE
CULVERT	INV. IN. EL. XXX.XX / INV. OUT EL. XXX.XX
HOUSE SERVICE / LATERAL	
PROPERTY LINE	PL
RIGHT OF WAY	R/W
EASEMENT	
EDGE OF VEGETATION	
FENCE	X
CENTERLINE	CL
RETAINING WALL	
STONEWALL	
CURB	
EDGE OF PAVEMENT	
EDGE OF GRAVEL	
GUARDRAIL	
DRAINAGE DITCH / SWALE	
SILT FENCE	

WOODARD & CURRAN
35 New England Business Center
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

COMMONWEALTH OF MASSACHUSETTS
ARTHUR D. LEVENTIS
CIVIL
No. 45470
REGISTERED PROFESSIONAL ENGINEER

REV	DESCRIPTION	DATE

DESIGNED BY: TRP
DRAWN BY: TRP
CHECKED BY: ADL

SITE INDEX, GENERAL NOTES, LEGEND, AND ABBREVIATIONS

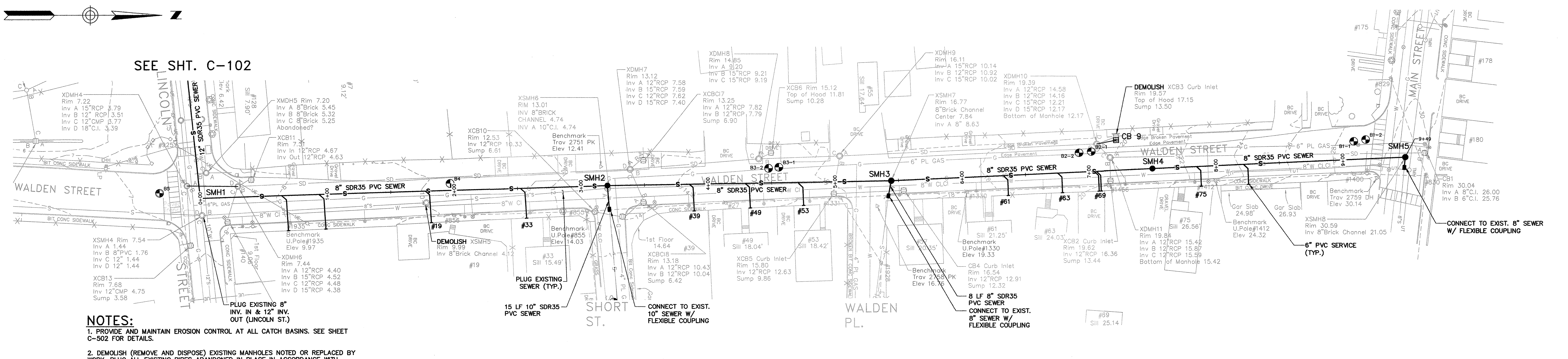
TOWN OF WINTHROP
DEPARTMENT OF PUBLIC WORKS
WINTHROP, MASSACHUSETTS

CONTRACT 3 - SEWER, WATER AND DRAIN IMPROVEMENTS
PHASE 1

JOB NO.: 223703
DATE: JUNE 2012
SCALE: N.T.S.
SHEET: 1 OF 14

G-101

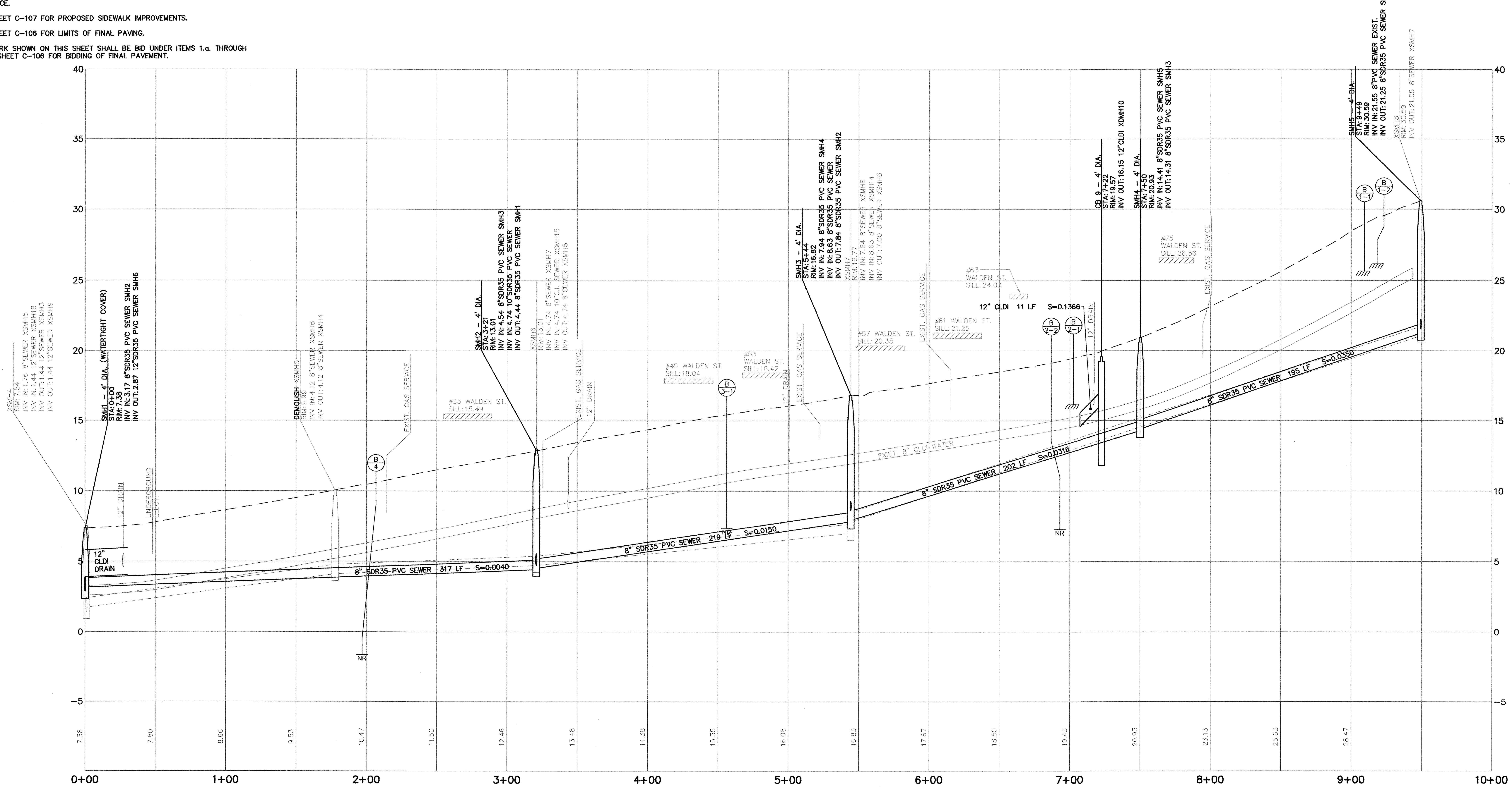
24x36 SHEET
1:1



NOTES:

1. PROVIDE AND MAINTAIN EROSION CONTROL AT ALL CATCH BASINS. SEE SHEET C-502 FOR DETAILS.
2. DEMOLISH (REMOVE AND DISPOSE) EXISTING MANHOLES NOTED OR REPLACED BY WORK. PLUG ALL EXISTING PIPES ABANDONED IN PLACE IN ACCORDANCE WITH GENERAL NOTES SHEET G-101.
3. CONFIRM LOCATION OF EXISTING SEWER SERVICE PRIOR TO SETTING WYE FOR NEW SERVICE.
4. SEE SHEET C-107 FOR PROPOSED SIDEWALK IMPROVEMENTS.
5. SEE SHEET C-106 FOR LIMITS OF FINAL PAVING.
6. ALL WORK SHOWN ON THIS SHEET SHALL BE BID UNDER ITEMS 1.a. THROUGH 21. SEE SHEET C-106 FOR BIDDING OF FINAL PAVEMENT.

WALDEN ST. PLAN
SCALE: 1"=40'



PROFILE STA. 0+00 TO STA. 10+00
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

BAR SCALE 1" = 40'
CHECK GRAPHIC SCALE BEFORE USING

35 New England Business Center
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS
WOODARD & CURRAN

REV	DESCRIPTION	DATE

DESIGNED BY: ADL CHECKED BY: ADL
DRAWN BY: BCM 223703 C-101-103.DWG

WALDEN ST. SEWER PLAN & PROFILE STA. 0+00 – STA. 10+00

TOWN OF WINTHROP
DEPARTMENT OF PUBLIC WORKS
WINTHROP, MASSACHUSETTS

CONTRACT 3 – SEWER, WATER AND DRAIN IMPROVEMENTS – PHASE 1

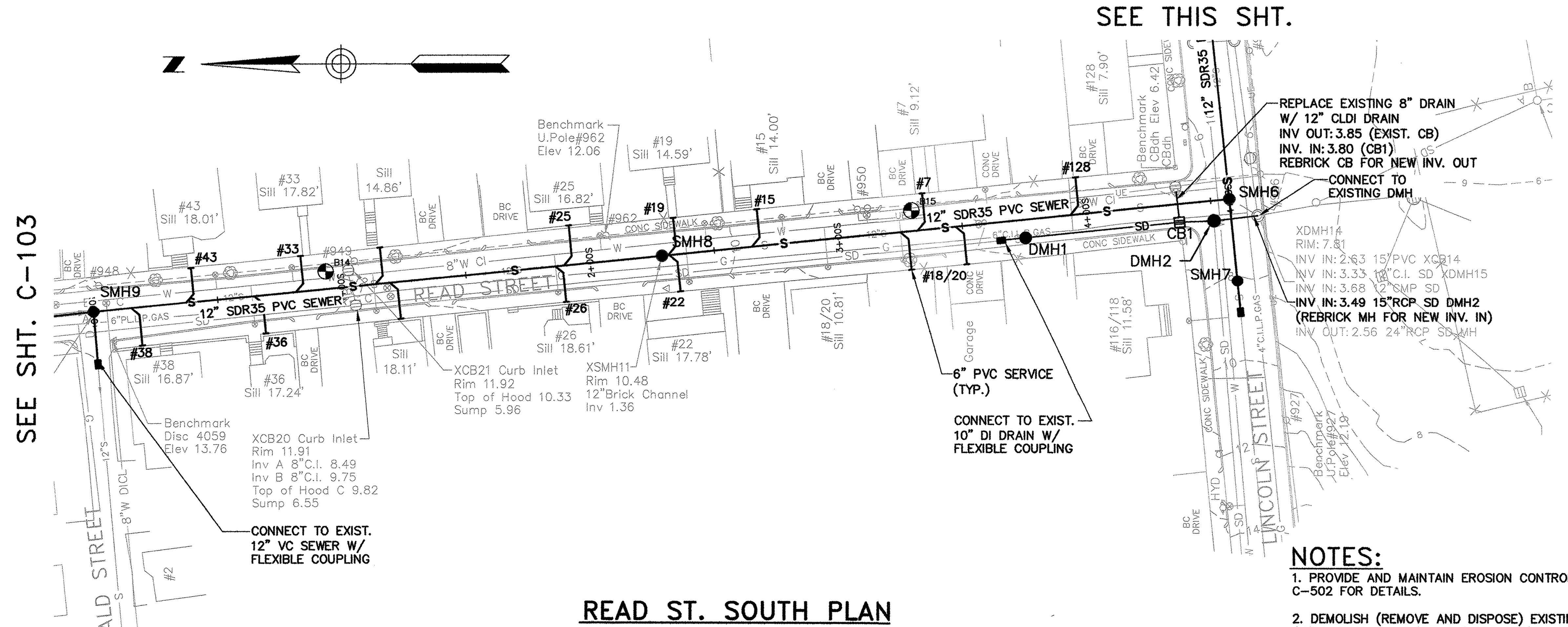
JOB NO.: 223703
DATE: JUNE 2012
SCALE: 1"=40'
SHEET: 2 OF 14

C-101

24x36 SHEET
1:1

SEE THIS SHT.

SEE SHT. C-103

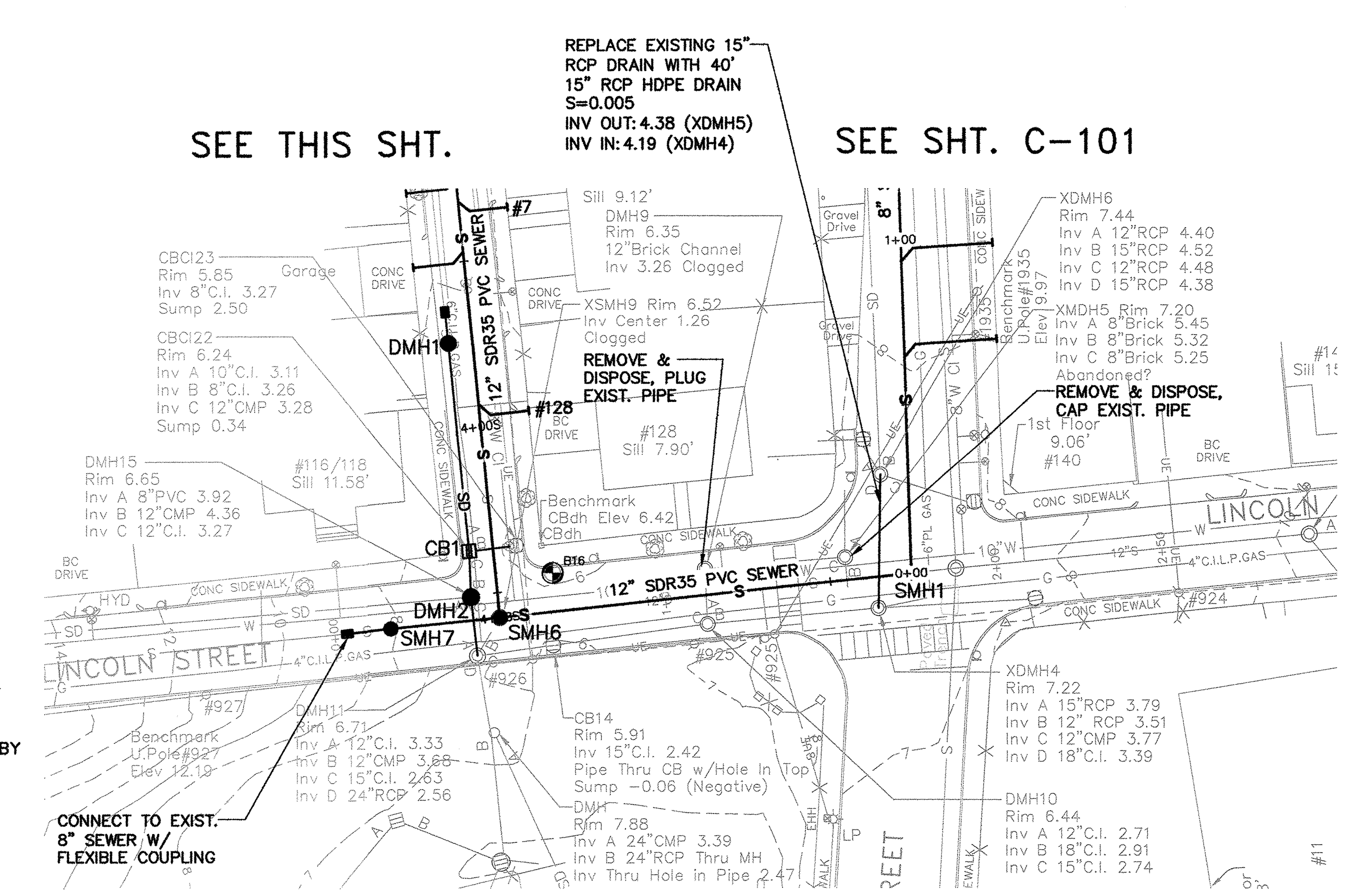


READ ST. SOUTH PLAN
SCALE: 1"=40'

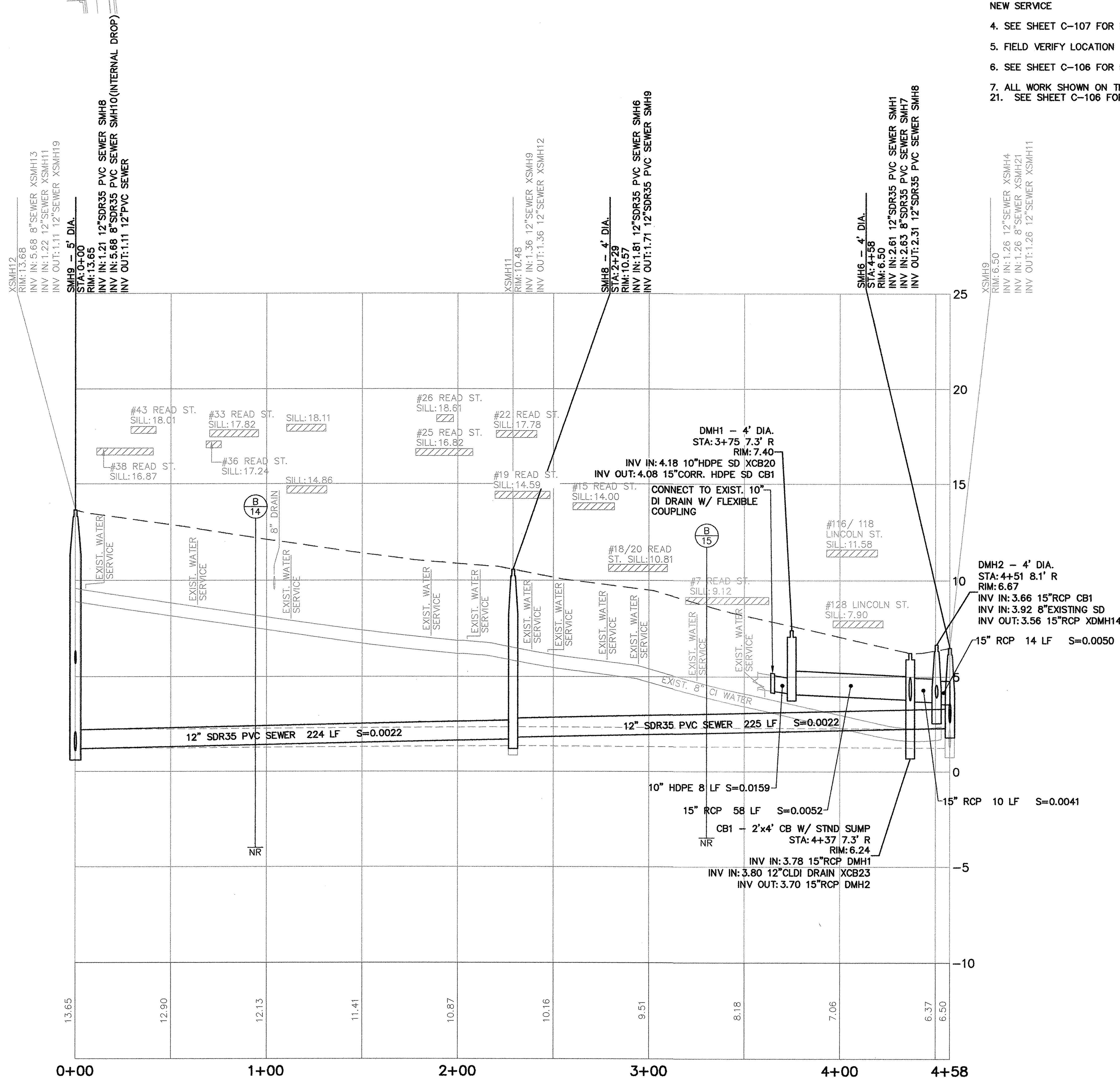
NOTES:

1. PROVIDE AND MAINTAIN EROSION CONTROL AT ALL CATCH BASINS. SEE SHEET C-502 FOR DETAILS.
2. DEMOLISH (REMOVE AND DISPOSE) EXISTING MANHOLES NOTED OR REPLACED BY WORK. PLUG ALL EXISTING PIPES ABANDONED IN PLACE IN ACCORDANCE WITH GENERAL NOTES SHEET G-101.
3. CONFIRM LOCATION OF EXISTING SEWER SERVICE PRIOR TO SETTING WYE FOR NEW SERVICE
4. SEE SHEET C-107 FOR PROPOSED SIDEWALK IMPROVEMENTS.
5. FIELD VERIFY LOCATION OF CHIMNEYS WITH ENGINEER.
6. SEE SHEET C-106 FOR LIMITS OF FINAL PAVING.
7. ALL WORK SHOWN ON THIS SHEET SHALL BE BID UNDER ITEMS 1.a. THROUGH 21. SEE SHEET C-106 FOR BIDDING OF FINAL PAVEMENT.

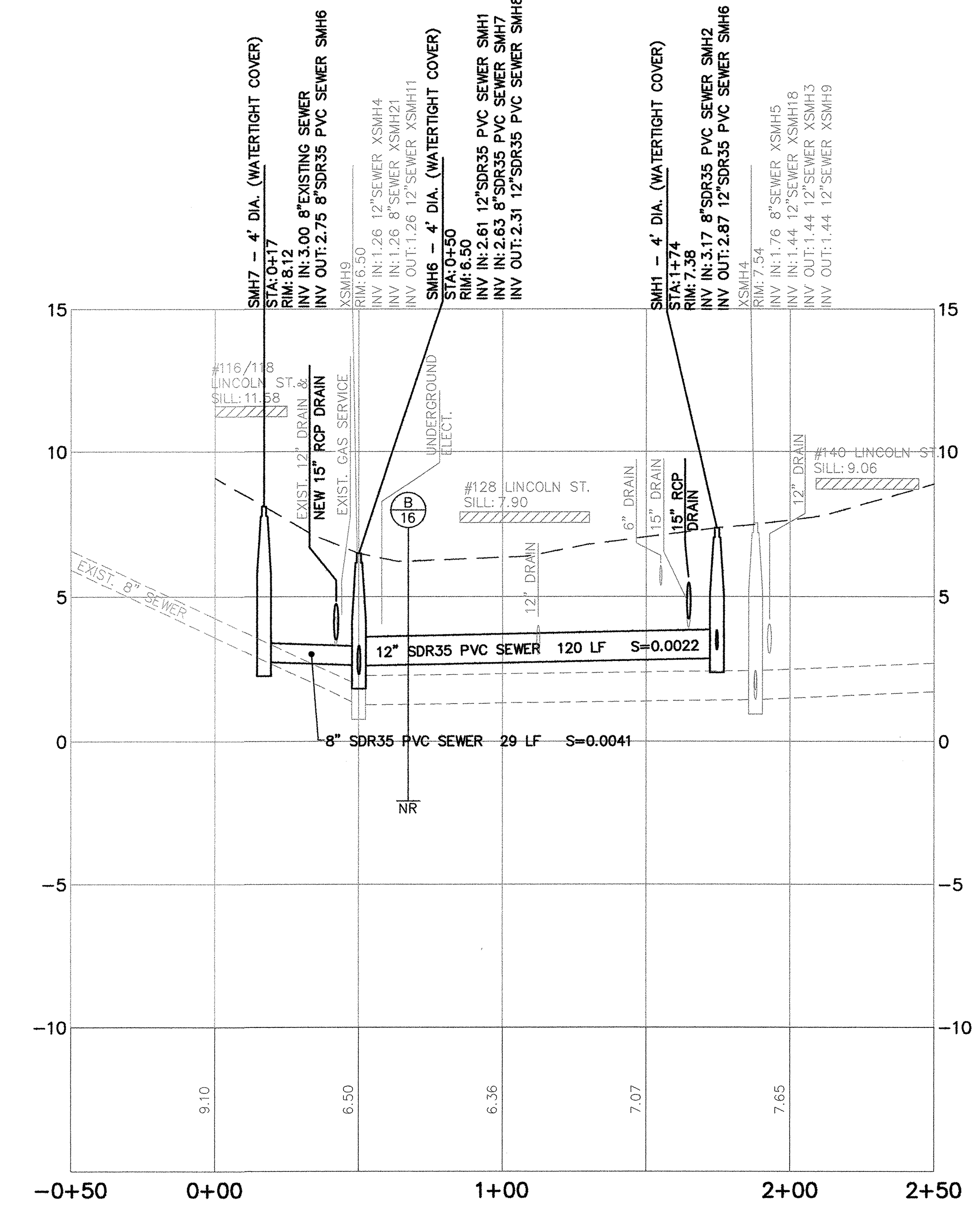
SEE THIS SHT. SEE SHT. C-101



LINCOLN ST. PLAN
SCALE: 1"=40'



PROFILE STA. 0+00 TO STA. 4+58
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'



PROFILE STA. -0+50 TO STA. 2+50
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

BAR SCALE
1" = 40'
CHECK GRAPHIC SCALE BEFORE USING

\\Andover\projects\223703 Winthrop MA - Contract 3 Sewer & Water Main\wip\REBID\DRAWINGS\223703 C-101-103.dwg, Jun 05, 2012 - 4:18pm

35 New England Business Center
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS
WOODARD & CURRAN

REV	DESCRIPTION	DATE

DESIGNED BY: ADL | CHECKED BY: ADL
DRAWN BY: BCM | 223703 C-101-103.DWG

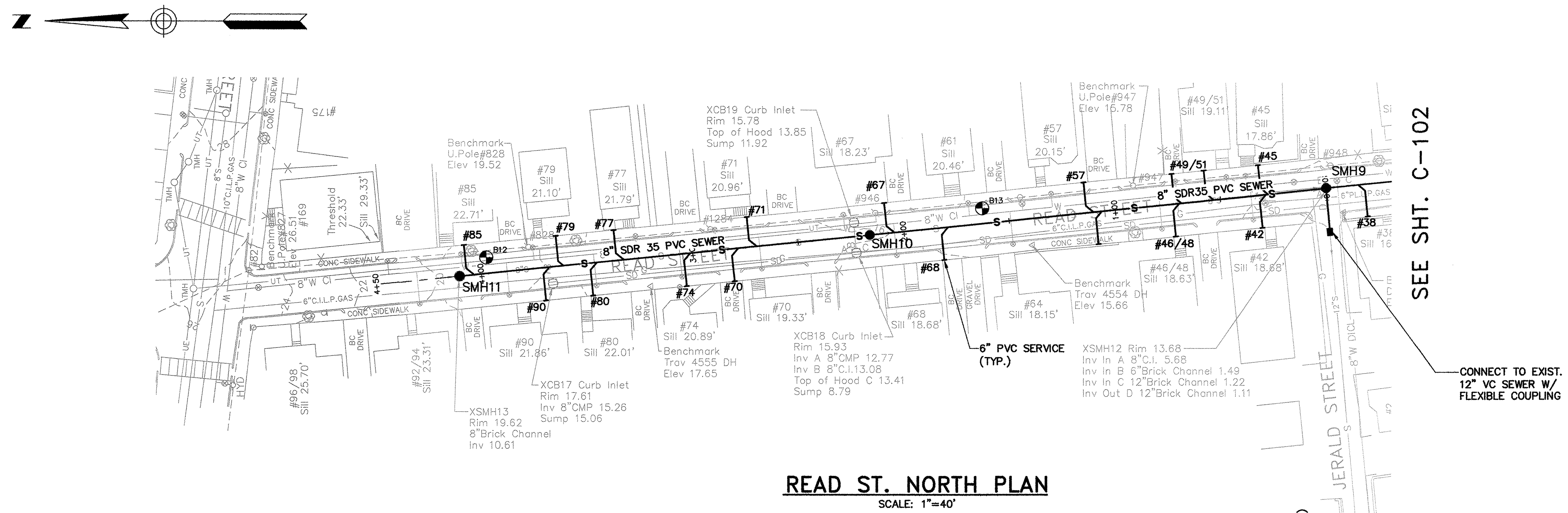
READ ST. SOUTH SEWER PLAN & PROFILE STA. 0+00 TO STA. 4+58 AND LINCOLN ST. SEWER PLAN & PROFILE STA. -0+50 TO STA. 2+50

TOWN OF WINTHROP
DEPARTMENT OF PUBLIC WORKS
WINTHROP, MASSACHUSETTS

CONTRACT 3 - SEWER, WATER AND DRAIN IMPROVEMENTS - PHASE 1

JOB NO.: 223703
DATE: JUNE 2012
SCALE: 1"=40'
SHEET: 3 OF 14

C-102

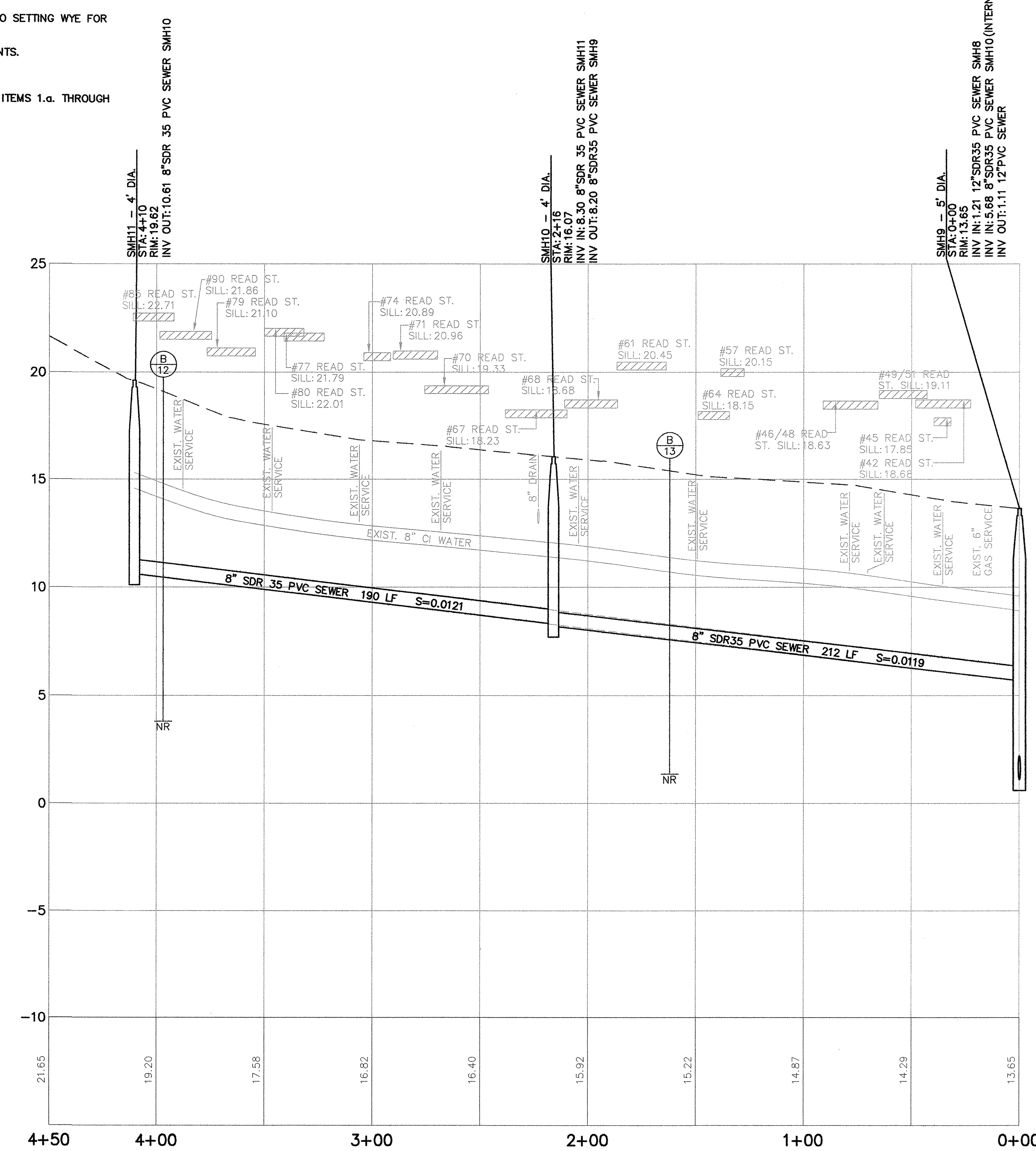


READ ST. NORTH PLAN

SCALE: 1"=40'

NOTES:

1. PROVIDE AND MAINTAIN EROSION CONTROL AT ALL CATCH BASINS. SEE SHEET C–502 FOR DETAILS.
2. CONFIRM LOCATION OF EXISTING SEWER SERVICE PRIOR TO SETTING WYE FOR NEW SERVICE.
3. SEE SHEET C–107 FOR PROPOSED SIDEWALK IMPROVEMENTS.
4. SEE SHEET C–106 FOR LIMITS OF FINAL PAVING.
5. ALL WORK SHOWN ON THIS SHEET SHALL BE BID UNDER ITEMS 1.a. THROUGH 21. SEE SHEET C–106 FOR BIDDING OF FINAL PAVING.



PROFILE STA. 0+00 TO STA. 4+50

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

BAR SCALE
1" = 40'
CHECK GRAPHIC SCALE BEFORE USING

WOODARD & CURRAN
35 New England Business Center
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

COMMONWEALTH OF MASSACHUSETTS
ARTHUR D. LEVENTIS
CIVIL
No. 45470
REGISTERED PROFESSIONAL ENGINEER

REV	DESCRIPTION	DATE

DESIGNED BY: ADL | CHECKED BY: ADL
DRAWN BY: BCM | 225703 C-101-103.DWG

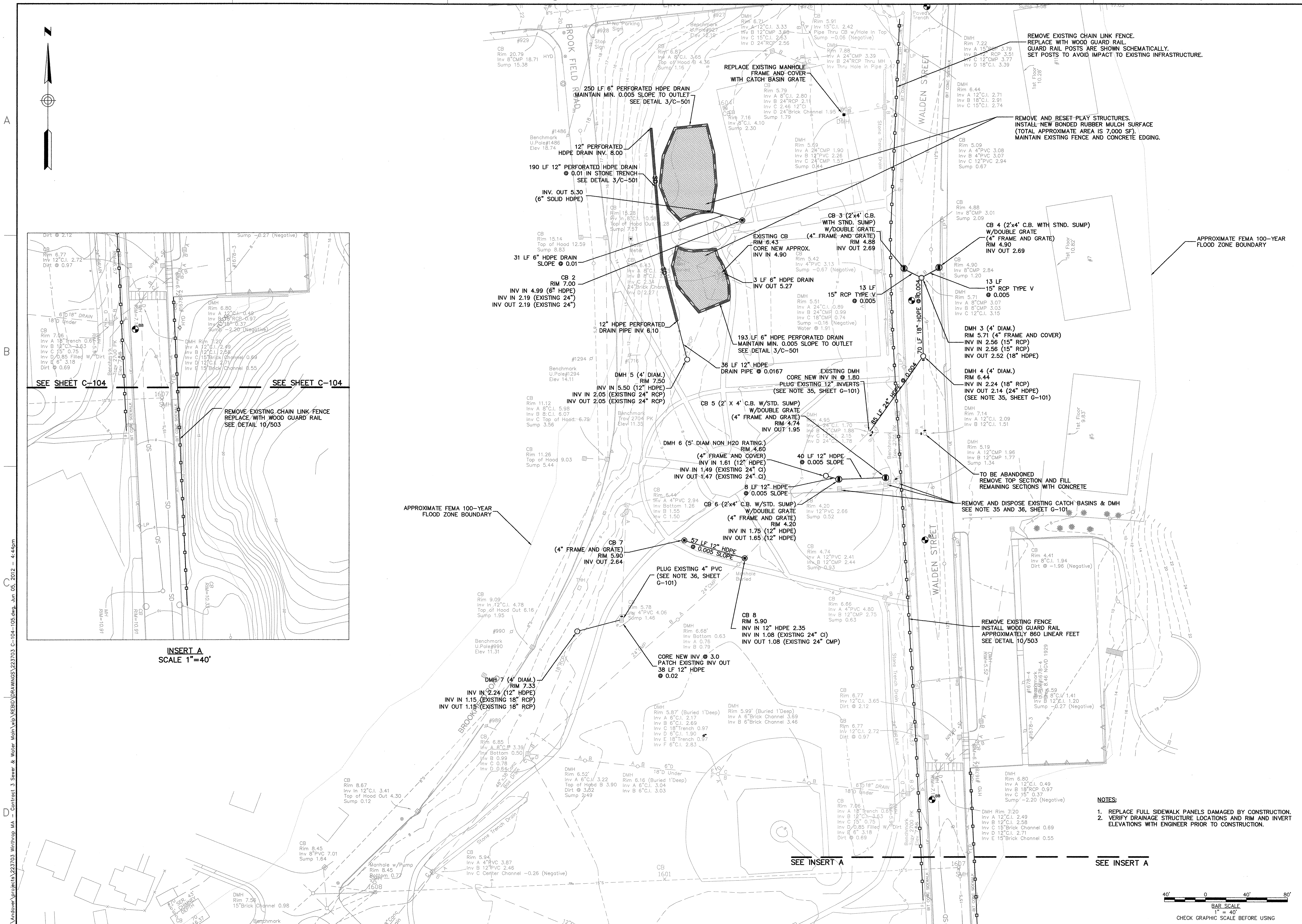
READ ST. NORTH SEWER PLAN & PROFILE STA. 0+00 TO STA. 4+50

TOWN OF WINTHROP
DEPARTMENT OF PUBLIC WORKS
WINTHROP, MASSACHUSETTS

CONTRACT 3 – SEWER, WATER AND DRAIN IMPROVEMENTS – PHASE 1

JOB NO.: 223703
DATE: JUNE 2012
SCALE: 1"=40'
SHEET: 4 OF 14

C-103



NOTES:

1. REPLACE FULL SIDEWALK PANELS DAMAGED BY CONSTRUCTION.
2. VERIFY DRAINAGE STRUCTURE LOCATIONS AND RIM AND INVERT ELEVATIONS WITH ENGINEER PRIOR TO CONSTRUCTION.

24x36 SHEET 1:1

WOODARD & CURRAN
35 New England Business Center
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

REV	DESCRIPTION	DATE
DESIGNED BY: BDM	CHECKED BY: JJB	
DRAWN BY: BDM	223703 C-104-105.DWG	

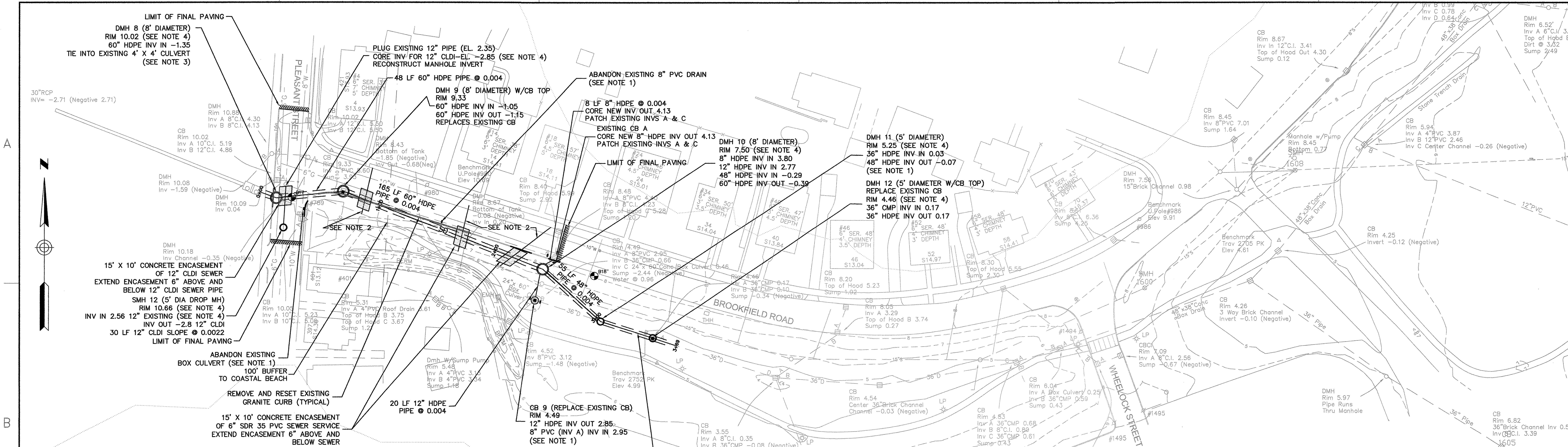
DRAINAGE AND SITE IMPROVEMENTS 1

TOWN OF WINTHROP
DEPARTMENT OF PUBLIC WORKS
WINTHROP, MASSACHUSETTS

CONTRACT 3 - SEWER, WATER AND DRAIN IMPROVEMENTS PHASE 1

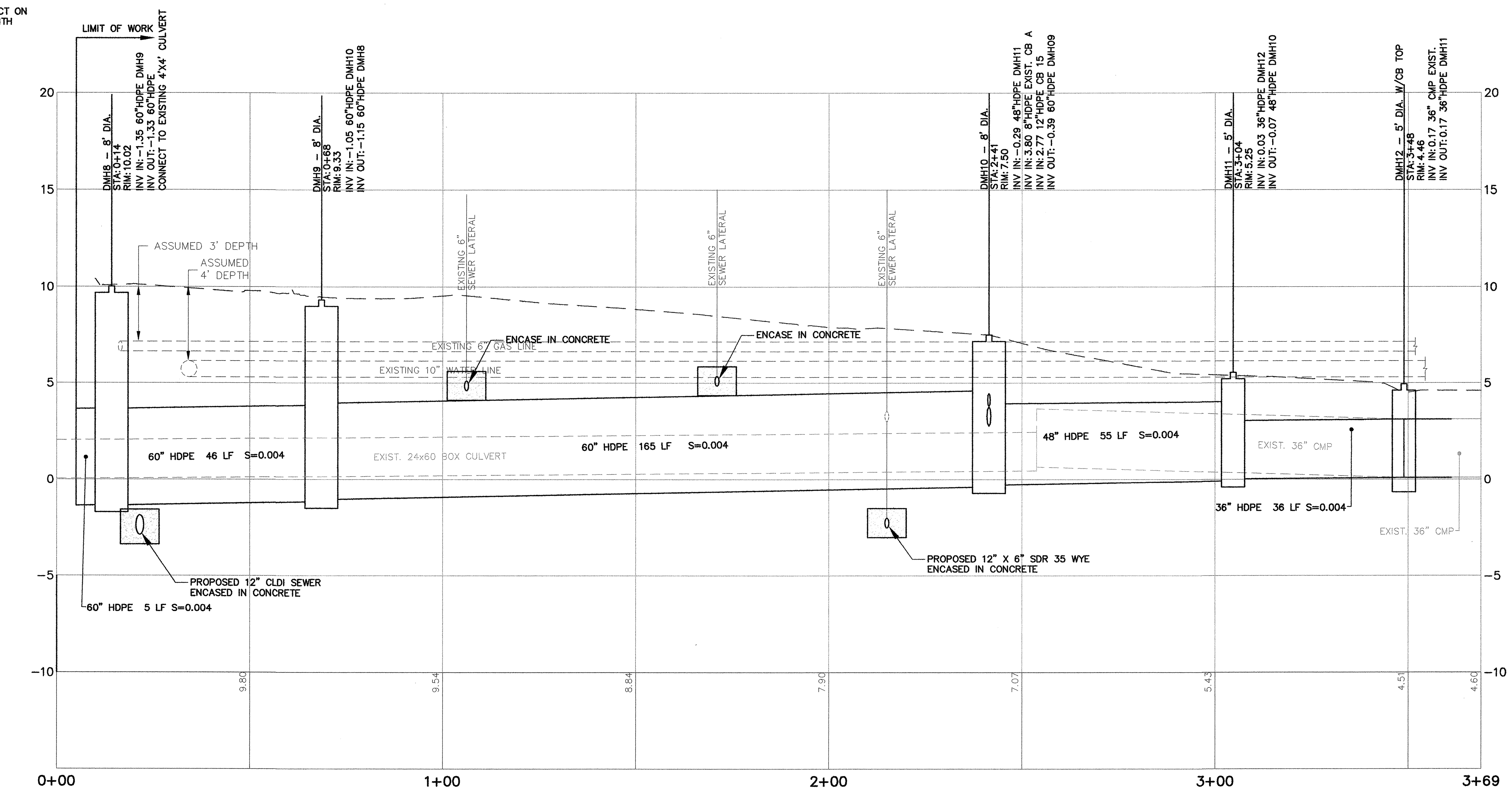
JOB NO.: 223703
DATE: JUNE 2012
SCALE: 1" = 40'
SHEET: 5 OF 14

C-104



NOTES:

1. PLUG ENDS OF CULVERTS AND PIPE ABANDONED BY WORK. SEE NOTE 35, SHEET G-101.
2. REPLACE EXISTING SEWER SERVICES TO LIMITS SHOWN WITH 6" SDR35 PVC. CONCRETE ENCASE AT PROPOSED DRAIN.
3. REMOVE AND RESET GRANITE CURB. REPLACE FULL SIDEWALK PANELS DAMAGED BY CONSTRUCTION.
4. VERIFY ALL RIM AND INVERT ELEVATION WITH ENGINEER PRIOR TO CONSTRUCTION.
5. PROPOSED SEWER WORK SHALL BE BID UNDER ITEMS 1.a. THROUGH 21. PROPOSED DRAIN WORK SHALL BE BID UNDER ITEMS 38.a. THROUGH 52. FINAL PAVING SHALL BE BID UNDER ITEMS 53 THROUGH 68.
6. PROVIDE 15' x 10' CONCRETE ENCASEMENT FOR EXISTING SEWER LATERAL FOR #4 BROOKFIELD ROAD AT APPROXIMATE STA. 0+87.
7. PROVIDE 15' x 10' CONCRETE ENCASEMENT FOR EXISTING SEWER MAIN AT APPROXIMATE STA. 2+69.
8. WORK WILL BE PERMITTED ON PLEASANT STREET FROM 7 AM TO 4 PM. BIDDERS ARE RESPONSIBLE FOR SUBMITTING TRAFFIC MANAGEMENT PLANS TO OWNER FOR REVIEW AND APPROVAL IN ACCORDANCE WITH THE SPECIFICATIONS PRIOR TO BEGINNING ANY WORK.
9. THE OWNER HAS CONTACTED THE GAS UTILITY REGARDING AN ANTICIPATED UTILITY CONFLICT ON PLEASANT STREET. BIDDERS ARE RESPONSIBLE FOR COORDINATING WORK IN THIS AREA WITH THE OWNER AND THE GAS UTILITY.



PROFILE STA. 0+00 TO STA. 3+69
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 4'

35 New England Business Center
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com

COMMITMENT & INTEGRITY DRIVE RESULTS

WOODARD & CURRAN

REV	DESCRIPTION	DATE
DESIGNED BY: BDM	CHECKED BY: JJB	
DRAWN BY: BDM	223703 C-104-105.DWG	

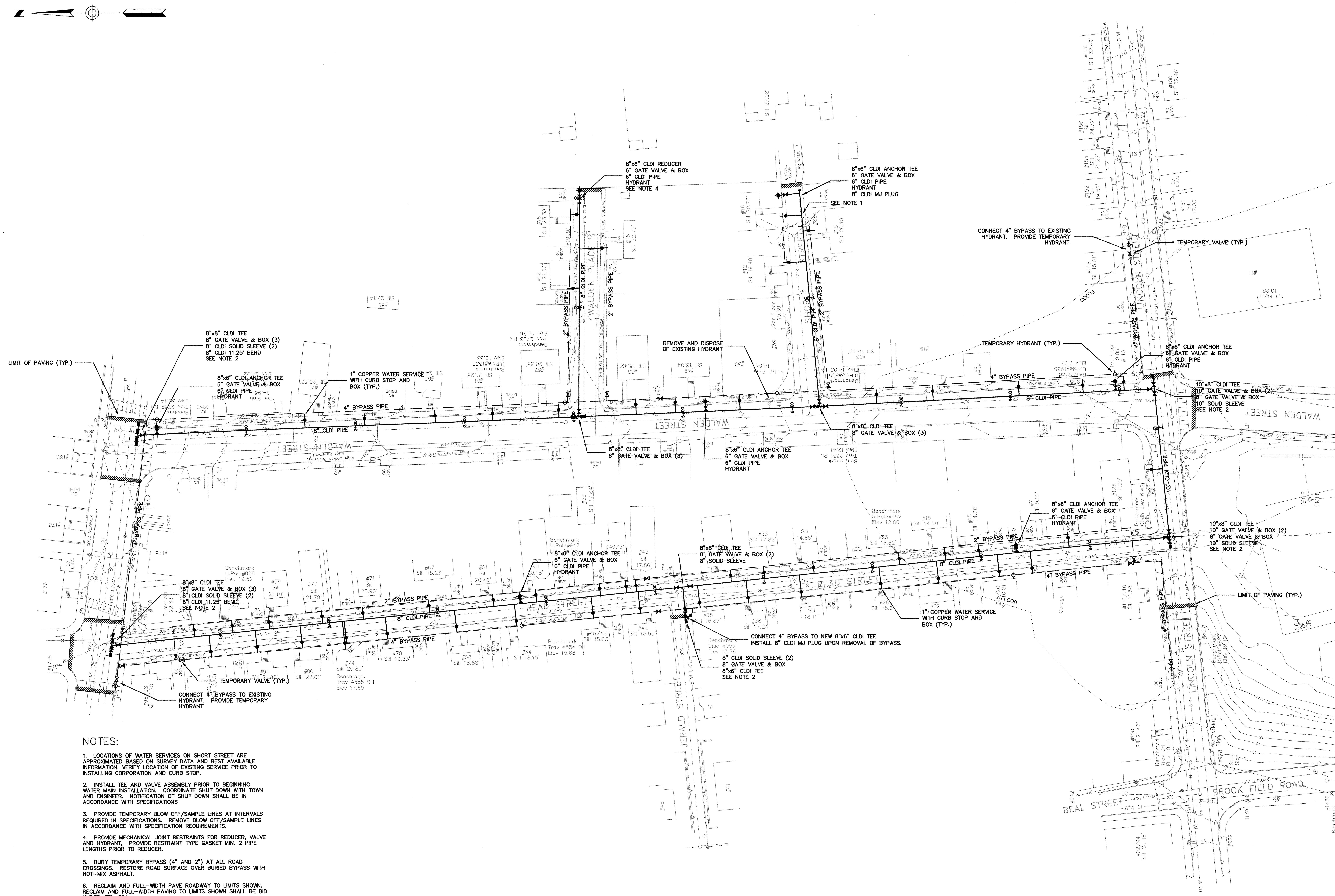
DRAINAGE IMPROVEMENTS 2

TOWN OF WINTHROP
DEPARTMENT OF PUBLIC WORKS
WINTHROP, MASSACHUSETTS

CONTRACT 3 – SEWER, WATER AND DRAIN IMPROVEMENTS PHASE 1

JOB NO.: 223703
DATE: JUNE 2012
SCALE: AS NOTED
SHEET: 6 OF 14

C-105



NOTES:

1. LOCATIONS OF WATER SERVICES ON SHORT STREET ARE APPROXIMATED BASED ON SURVEY DATA AND BEST AVAILABLE INFORMATION. VERIFY LOCATION OF EXISTING SERVICE PRIOR TO INSTALLING CORPORATION AND CURB STOP.

2. INSTALL TEE AND VALVE ASSEMBLY PRIOR TO BEGINNING WATER MAIN INSTALLATION. COORDINATE SHUT DOWN WITH TOWN AND ENGINEER. NOTIFICATION OF SHUT DOWN SHALL BE IN ACCORDANCE WITH SPECIFICATIONS

3. PROVIDE TEMPORARY BLOW OFF/SAMPLE LINES AT INTERVALS REQUIRED IN SPECIFICATIONS. REMOVE BLOW OFF/SAMPLE LINES IN ACCORDANCE WITH SPECIFICATION REQUIREMENTS.

4. PROVIDE MECHANICAL JOINT RESTRAINTS FOR REDUCER, VALVE AND HYDRANT, PROVIDE RESTRAINT TYPE GASKET MIN. 2 PIPE LENGTHS PRIOR TO REDUCER.

5. BURY TEMPORARY BYPASS (4" AND 2") AT ALL ROAD CROSSINGS. RESTORE ROAD SURFACE OVER BURIED BYPASS WITH HOT-MIX ASPHALT.

6. RECLAIM AND FULL-WIDTH PAVE ROADWAY TO LIMITS SHOWN. RECLAIM AND FULL-WIDTH PAVING TO LIMITS SHOWN SHALL BE BID UNDER ITEM 30.b.

7. ALL WORK SHOWN ON SHEET C-106, INCLUDING FINAL PAVING, SHALL BE BID UNDER ITEMS 22.a. THROUGH 37.

WOODARD & CURRAN
35 New England Business Center
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

COMMONWEALTH OF MASSACHUSETTS
ARTHUR D. LEVENTIS
CIVIL
No. 45470
REGISTERED PROFESSIONAL ENGINEER

REV	DESCRIPTION	DATE
DESIGNED BY: TRP	CHECKED BY: ADL	
DRAWN BY: TRP	223703 C-106.dwg	

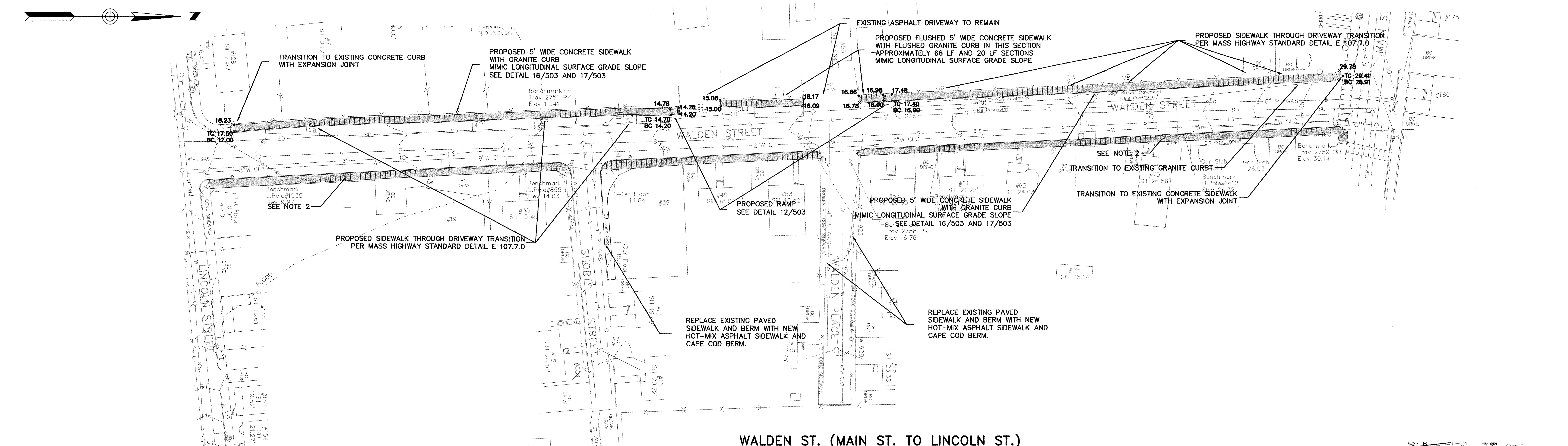
WATER MAIN IMPROVEMENTS

TOWN OF WINTHROP
DEPARTMENT OF PUBLIC WORKS
WINTHROP, MASSACHUSETTS

CONTRACT 3 – SEWER, WATER AND DRAIN IMPROVEMENTS – PHASE 1

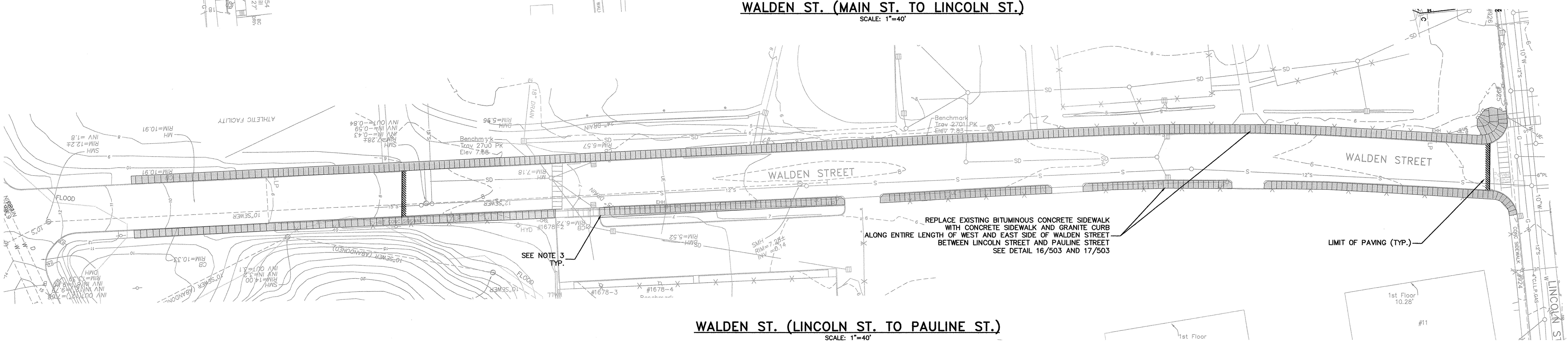
JOB NO.: 223703
DATE: JUNE 2012
SCALE: 1"=40'
SHEET: 7 OF 14

C-106



WALDEN ST. (MAIN ST. TO LINCOLN ST.)

SCALE: 1"=40'



WALDEN ST. (LINCOLN ST. TO PAULINE ST.)

SCALE: 1"=40'

NOTES

1. PROVIDE EXPANSION JOINT AT ALL EXISTING UTILITY POLE, STREET SIGNS, AND LIGHT POLES WITHIN EXTENT OF PROPOSED AND REPLACED SIDEWALK.

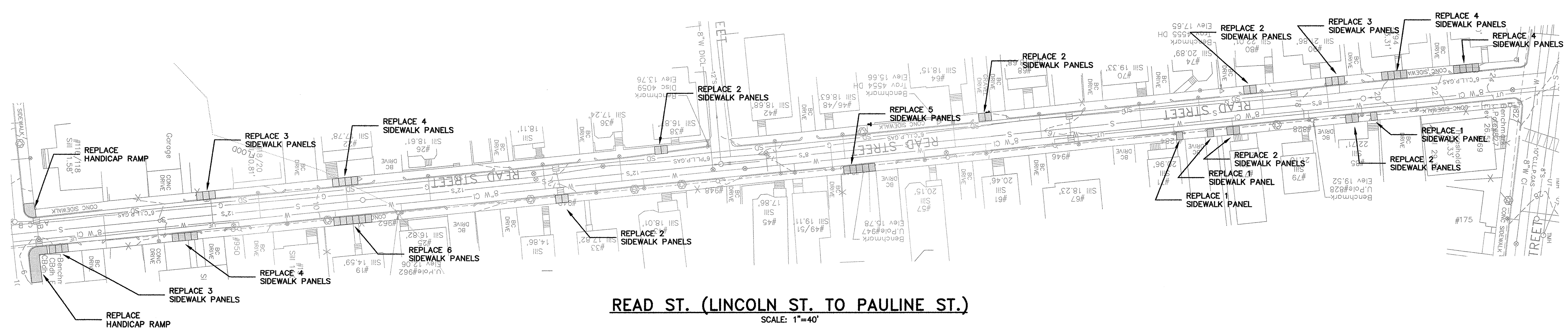
2. REPLACE EXISTING CONCRETE SIDEWALK ON EAST SIDE OF WALDEN STREET FROM LINCOLN STREET TO MAIN STREET. REMOVE AND RESET APPROXIMATELY 500 LINEAR FEET OF GRANITE CURB ON EAST SIDE OF WALDEN STREET AS DIRECTED BY OWNER.

3. REPLACE EXISTING RAMPS ALONG SIDEWALK REPLACEMENT SECTIONS WITH ADA COMPLIANT CONCRETE RAMPS IN ACCORDANCE WITH MASS HIGHWAY SPECIFICATIONS AND STANDARD DETAILS.

4. SIDEWALK WORK SHOWN ON THIS SHEET SHALL BE BID UNDER ITEMS 63.a. THROUGH 63.c. RECLAIM AND FULL-WIDTH PAVING FOR WALDEN STREET (LINCOLN STREET TO PAULINE STREET) TO LIMITS SHOWN SHALL BE BID UNDER ITEMS 59 THROUGH 60.d.

5. SEE SHEET C-106 FOR ADDITIONAL LIMITS OF PAVING..

6. ALL WORK SHOWN ON SHEET C-107 SHALL BE BID UNDER ITEMS 53 THROUGH 68.



READ ST. (LINCOLN ST. TO PAULINE ST.)

SCALE: 1"=40'

BAR SCALE 1" = 40'
CHECK GRAPHIC SCALE BEFORE USING

WOODARD & CURRAN
35 New England Business Center
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

REV	DESCRIPTION	DATE
DESIGNED BY: BDM	CHECKED BY: ADL	
DRAWN BY: BDM	223703 C-107.DWG	

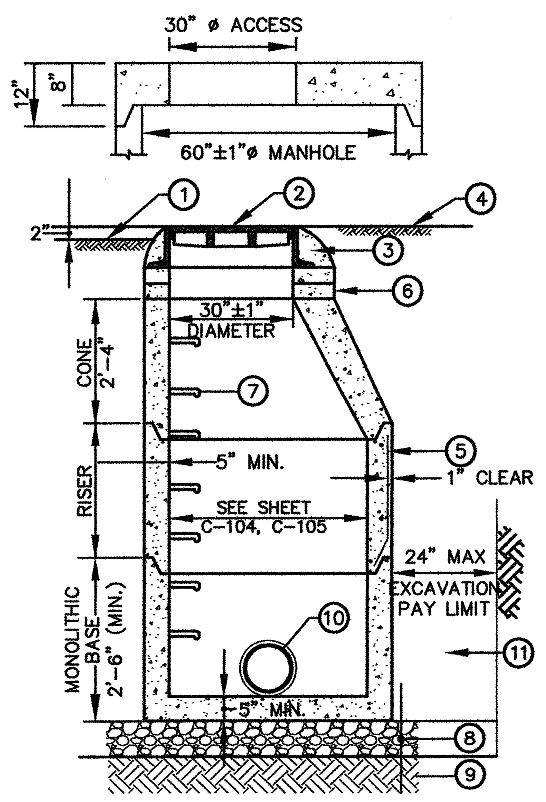
SIDEWALK IMPROVEMENTS

TOWN OF WINTHROP
DEPARTMENT OF PUBLIC WORKS
WINTHROP, MASSACHUSETTS

CONTRACT 3 – SEWER, WATER AND DRAIN IMPROVEMENTS – PHASE 1

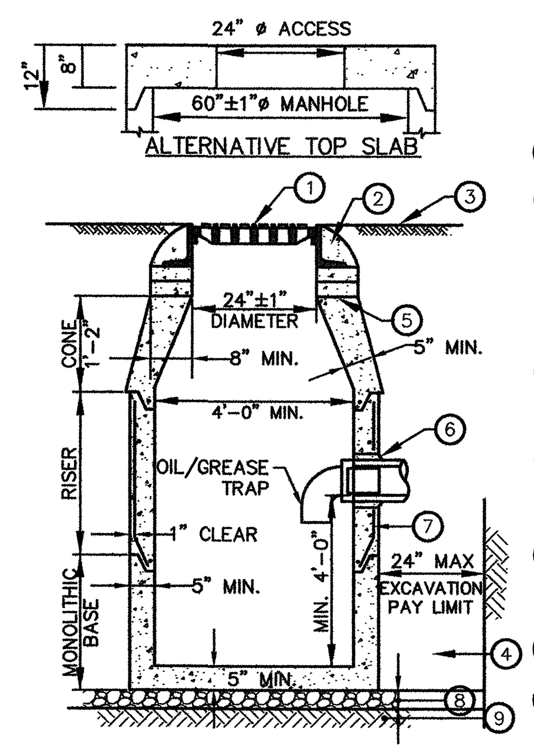
JOB NO.:	223703
DATE:	JUNE 2012
SCALE:	1"=40'
SHEET:	8 OF 14

C-107



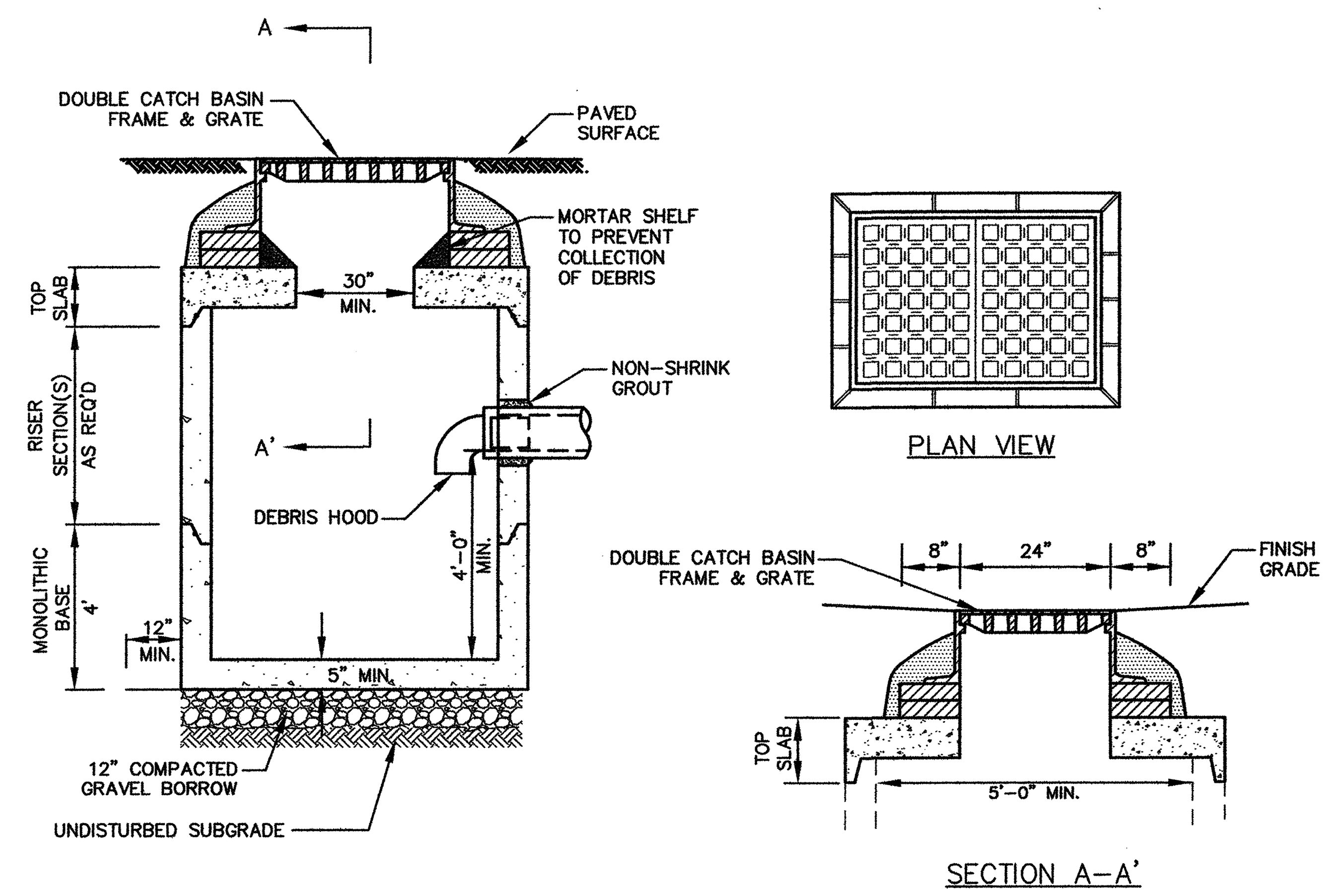
1. UNPAVED SURFACE, 2" REVEAL UNLESS OTHERWISE REQUESTED BY OWNER
2. MANHOLE FRAME & COVER
3. FRAME TO BE SET IN FULL BED OF MORTAR
4. PAVED SURFACE
5. MIN. 0.12 SQ. IN. STEEL PER VERTICAL FOOT, PLACED ACCORDING TO ASTM C-478
6. ADJUST TO GRADE WITH BRICK OR PRECAST CONCRETE RINGS: MAX. 8" ADJUSTMENT
7. MANHOLE STEP @ 12" O.C. (TYP)
8. 12" LAYER OF ¾" CRUSHED STONE BEDDING
9. UNDISTURBED SUBGRADE OR SUITABLE COMPACTED FILL
10. PROVIDE "V" OPENINGS (WITH 2" CLEARANCE TO OUTSIDE PIPE). MORTAR PIPE JOINTS
11. COMPACTED GRAVEL BORROW BACKFILL

1 (C-501) TYPICAL PRECAST CONCRETE DRAIN MANHOLE
NOT TO SCALE

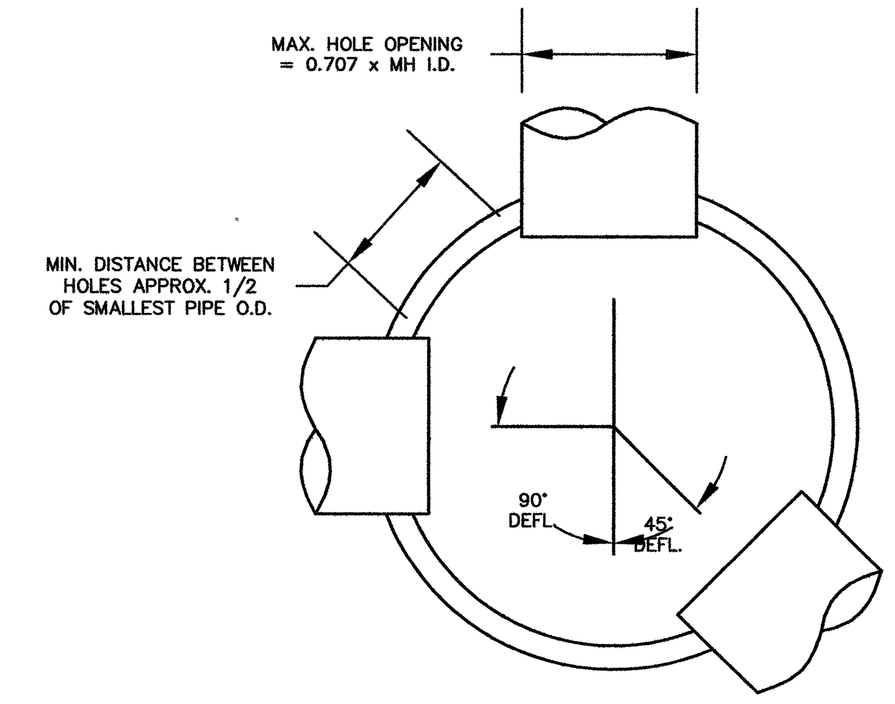


1. FRAME AND GRATE
2. FRAME TO BE SET IN FULL BED OF MORTAR
3. PAVED SURFACE
4. COMPACTED GRAVEL BORROW BACKFILL
5. ADJUST TO GRADE WITH BRICK OR PRECAST CONCRETE RINGS: MAX. 8" ADJUSTMENT
6. PROVIDE "V" OPENINGS (WITH 2" CLEARANCE TO OUTSIDE PIPE). MORTAR PIPE JOINTS
7. MIN. 0.12 SQ. IN. STEEL PER VERTICAL FOOT, PLACED ACCORDING TO ASTM C-478
8. 12" LAYER OF 3/4" CRUSHED STONE BEDDING
9. UNDISTURBED SUBGRADE OR SUITABLE COMPACTED BACKFILL

2 (C-501) TYPICAL PRECAST CONCRETE CATCH BASIN WITH TRAP
NOT TO SCALE



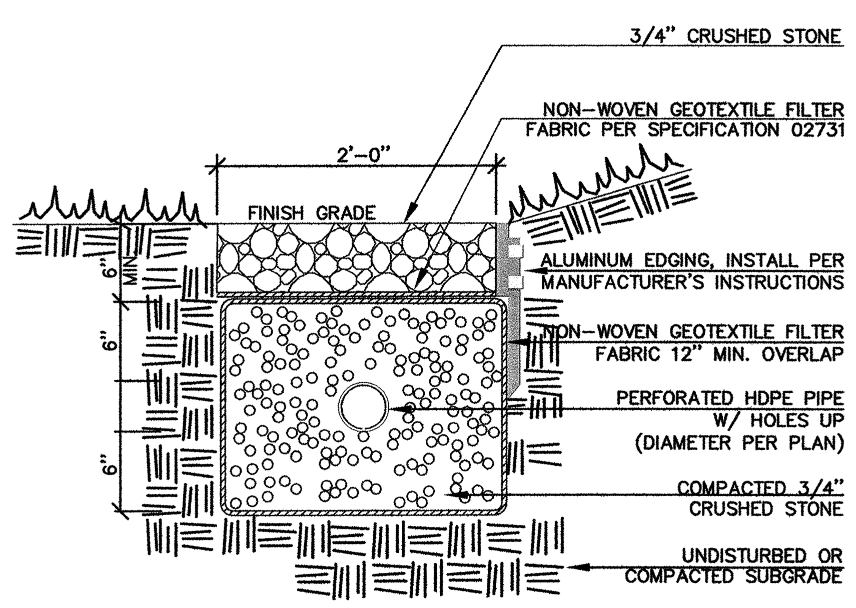
3 (C-501) DOUBLE GRATE CATCH BASIN
NOT TO SCALE



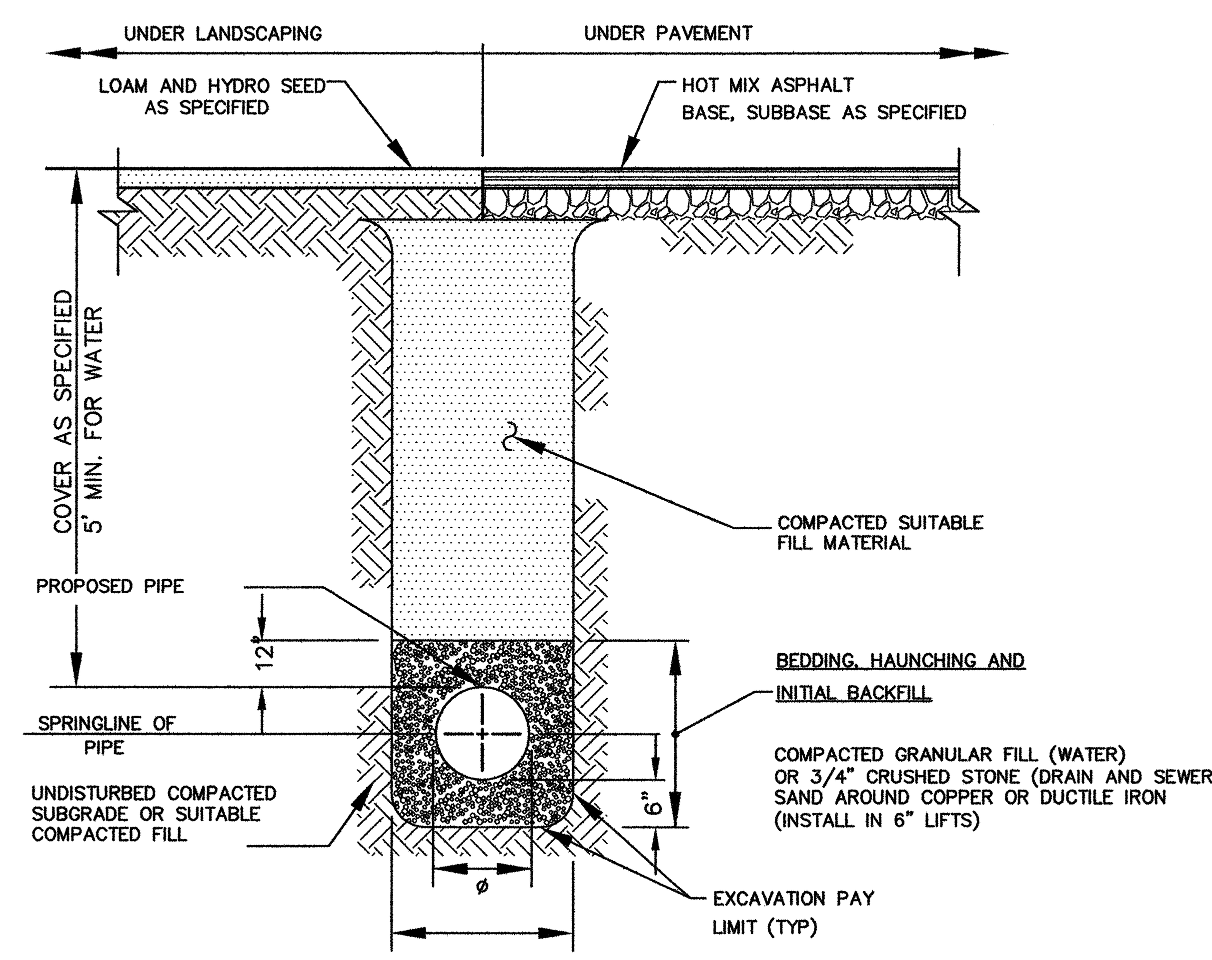
4 (C-501) PLAN VIEW OF MANHOLE
NOT TO SCALE

NOTES (DETAILS 1, 2, 3):

1. PRECAST CONCRETE STRUCTURES AND CASTINGS SHALL BE SUITABLE FOR HS20 LOADINGS.
2. PRECAST CONCRETE STRUCTURES SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM-C-478.
3. ALTERNATE SLAB TOP MAY BE USED AS DICTATED BY DESIGN AND/OR FIELD CONDITIONS.
4. UNLESS OTHERWISE NOTED, MANHOLES SHALL BE 48" I.D.
5. USE ECCENTRIC CONE AS REQUIRED BY FIELD CONDITIONS AND APPROVED BY SUBMITTAL



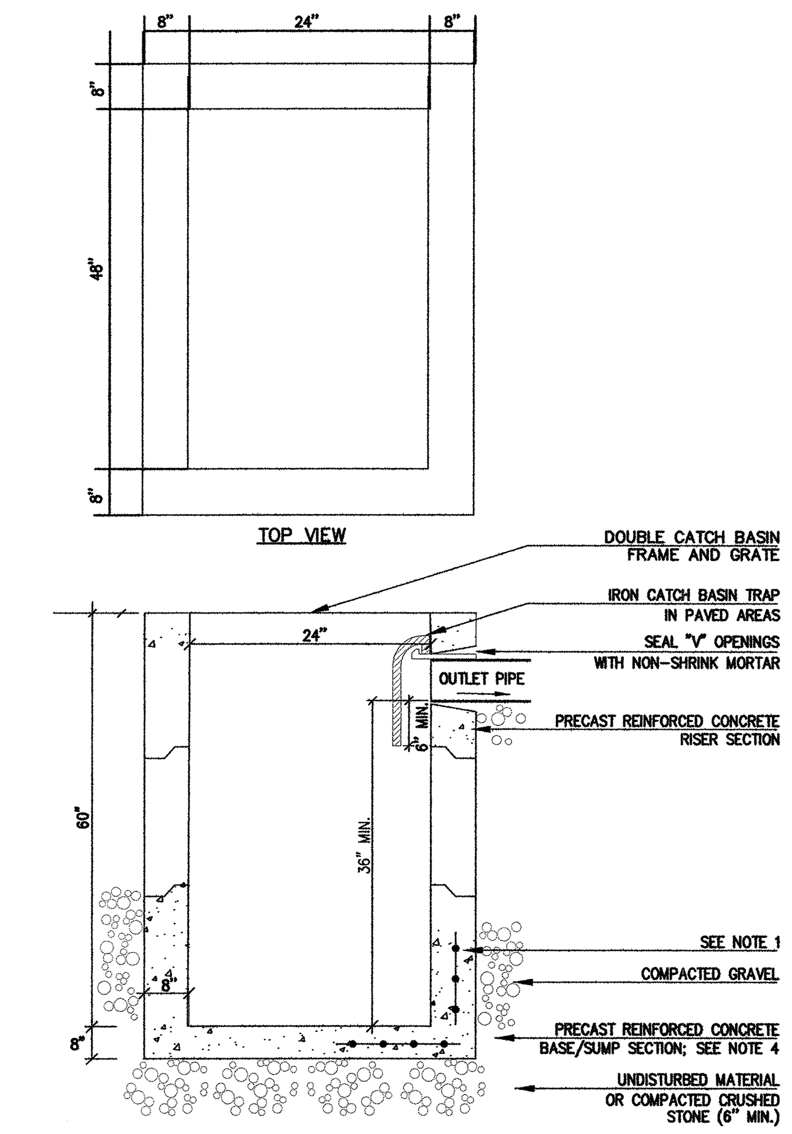
5 (C-501) PERFORATED DRAIN IN STONE TRENCH
NOT TO SCALE



NOTES:

1. BEDDING, HAUNCHING AND BACKFILL SHALL BE COMPACTED IN ACCORDANCE WITH THE SPECIFICATIONS.
2. FILTER FABRIC SHALL BE INSTALLED AGAINST THE TRENCH WALLS IN THE BEDDING AND HAUNCHING ZONES WHEN FINE SANDS, SILT, CLAY OR ORGANIC MATERIALS ARE ENCOUNTERED AT THE TRENCH BOTTOM.

6 (C-501) TYPICAL TRENCH DETAIL
NOT TO SCALE



NOTES:

1. REINFORCING STEEL CONFORMS TO LATEST ASTM A615 GRADE 60 SPEC.
2. CONCRETE COMPRESSIVE STRENGTH – 4,000 PSI MINIMUM.
3. MANHOLE DESIGN SPECIFICATIONS CONFORM TO LATEST ASTM C478 SPEC. FOR "PRECAST REINFORCED CONCRETE MANHOLE.
4. ONE POUR MONOLITHIC BASE SECTION REINFORCED TO MEET OR EXCEED HS20 LOADING AND SUPERIMPOSED DEAD LOAD.

7 (C-501) PRECAST 2'x4' CATCH BASIN
NOT TO SCALE

WOODARD & CURRAN
35 New England Business Center
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

COMMONWEALTH OF MASSACHUSETTS — ARTHUR D. LEVENTIS — CIVIL

REV	DESCRIPTION	DATE

DESIGNED BY: BOM
DRAWN BY: BOM
CHECKED BY: JJB
223703 C-501-503BP.DWG

CONSTRUCTION DETAILS 1

TOWN OF WINTHROP
DEPARTMENT OF PUBLIC WORKS
WINTHROP, MASSACHUSETTS

CONTRACT 3 – SEWER, WATER AND DRAIN IMPROVEMENTS PHASE 1

JOB NO.: 223703
DATE: JUNE 2012
SCALE: AS SHOWN
SHEET: 9 OF 14

C-501

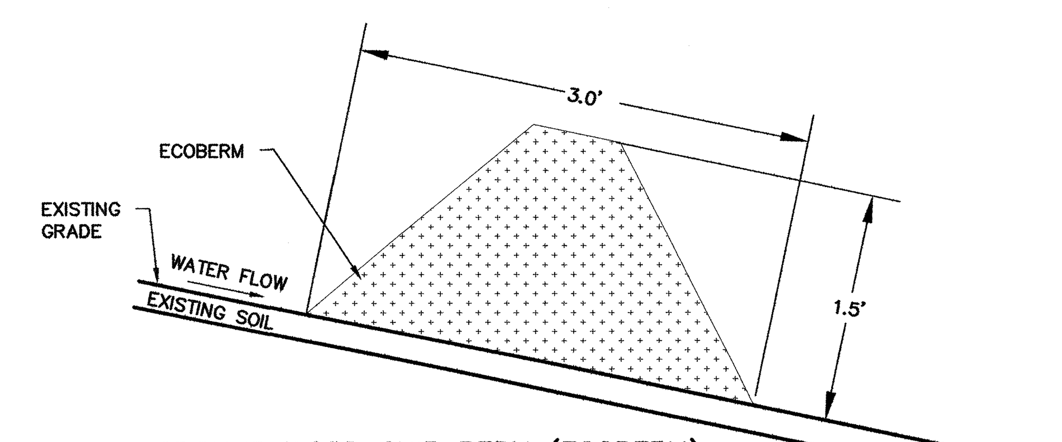
TEMPORARY EROSION CONTROL

MEASURE	DATES FOR USE	TIMING, ACTIVITY, AND LOCATION
SILT FENCE	ALL	BEFORE SITE CLEARING AND SOIL DISTURBANCE INSTALL DOWNHILL OF DISTURBED AREAS.
EROSION CONTROL BARRIERS	ALL	BEFORE SITE CLEARING AND SOIL DISTURBANCE NEARBY PROTECTED NATURAL RESOURCES (WETLAND), INSTALL DOWNHILL OF DISTURBED AREAS.
HAY BALES	ALL	TO ADD SUPPORT TO SILT FENCES IF NECESSARY.
DUST CONTROL	ALL	DURING DRY WEATHER, APPLY WATER TO CONTROL DUST.
EROSION CONTROL BLANKET	ALL	INSTALL EROSION CONTROL BLANKET AS A SUBSTITUTE FOR MULCH FOLLOWING SEEDING ON ALL DISTURBED AREAS. BLANKET SHALL BE INSTALLED PARALLEL TO SLOPE AND IN THE DIRECTION OF STORMWATER FLOW.
TEMPORARY SEEDING	ALL	ON ALL AREAS OF EXPOSED SOIL WHICH WILL NOT BE DISTRUBED AGAIN WITHIN 60 DAYS.
HAY MULCH	ALL	ON ALL AREAS OF EXPOSED SOIL WHICH WILL NOT BE DISTURBED AGAIN WITHIN 60 DAYS, APPLY 90 POUNDS MULCH (2 BALES) PER 1,000 SQ. FT. WITHIN A 14 DAY PERIOD. MULCH MUST BE ANCHORED WITH MULCH NETTING PER THE MANUFACTURERS RECOMMENDATIONS. EROSION CONTROL BLANKET MAY BE USED AS A SUBSTITUTE FOR MULCH.
CONSTRUCTION ENTRANCE	ALL	PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES, ALL CONSTRUCTION ENTRANCES WILL BE CONSTRUCTED. UPON COMPLETION OF CONSTRUCTION ACTIVITIES, ALL CONSTRUCTION ENTRANCES SHALL BE REMOVED BY THE CONTRACTOR AND REPLACED IN KIND WITH SURROUNDING MATERIAL.
INSPECTIONS	UNTIL SITE IS PERMANENTLY STABILIZED	INSPECT THE EROSION AND SEDIMENT CONTROL MEASURES AT LEAST ONCE EVERY 14 DAYS AND WITHIN 24 HOURS AFTER SIGNIFICANT STORM EVENTS (.05 INCHES OR MORE OF RAIN IN 24 HOURS OR LESS).
INLET SEDIMENT CONTROL	ALL	BEFORE SITE CLEARING AND SOIL DISTURBANCE INSTALL IN CATCH BASINS DOWNHILL OF DISTURBED AREAS.

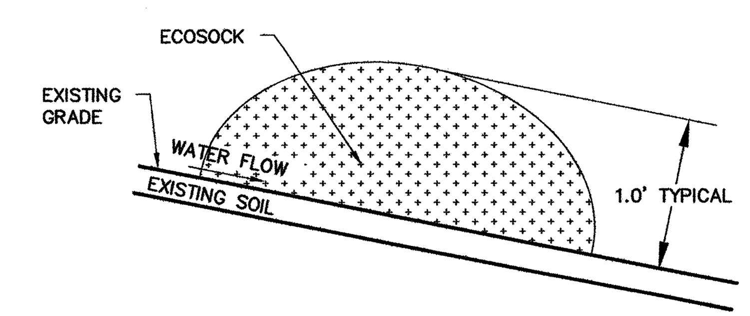
PERMANENT EROSION CONTROL

MEASURE	DATES FOR USE	TIMING, ACTIVITY, AND LOCATION
PERMANENT SEEDING	APRIL 1 TO JUNE 15, AUGUST 15 TO SEPTEMBER 30	ON FINAL GRADED AREAS, WITHIN 7 DAYS OF GRADE PREPARATION, PREPARE TOPSOIL, FOLLOWED WITH SEEDING AND MULCH APPLICATION. IF SEEDING CAN NOT BE DONE DURING THE DATES SPECIFIED, USE TEMPORARY MULCHING TO PROTECT THE SITE AND DELAY SEEDING UNTIL THE NEXT RECOMMENDED SEEDING PERIOD.

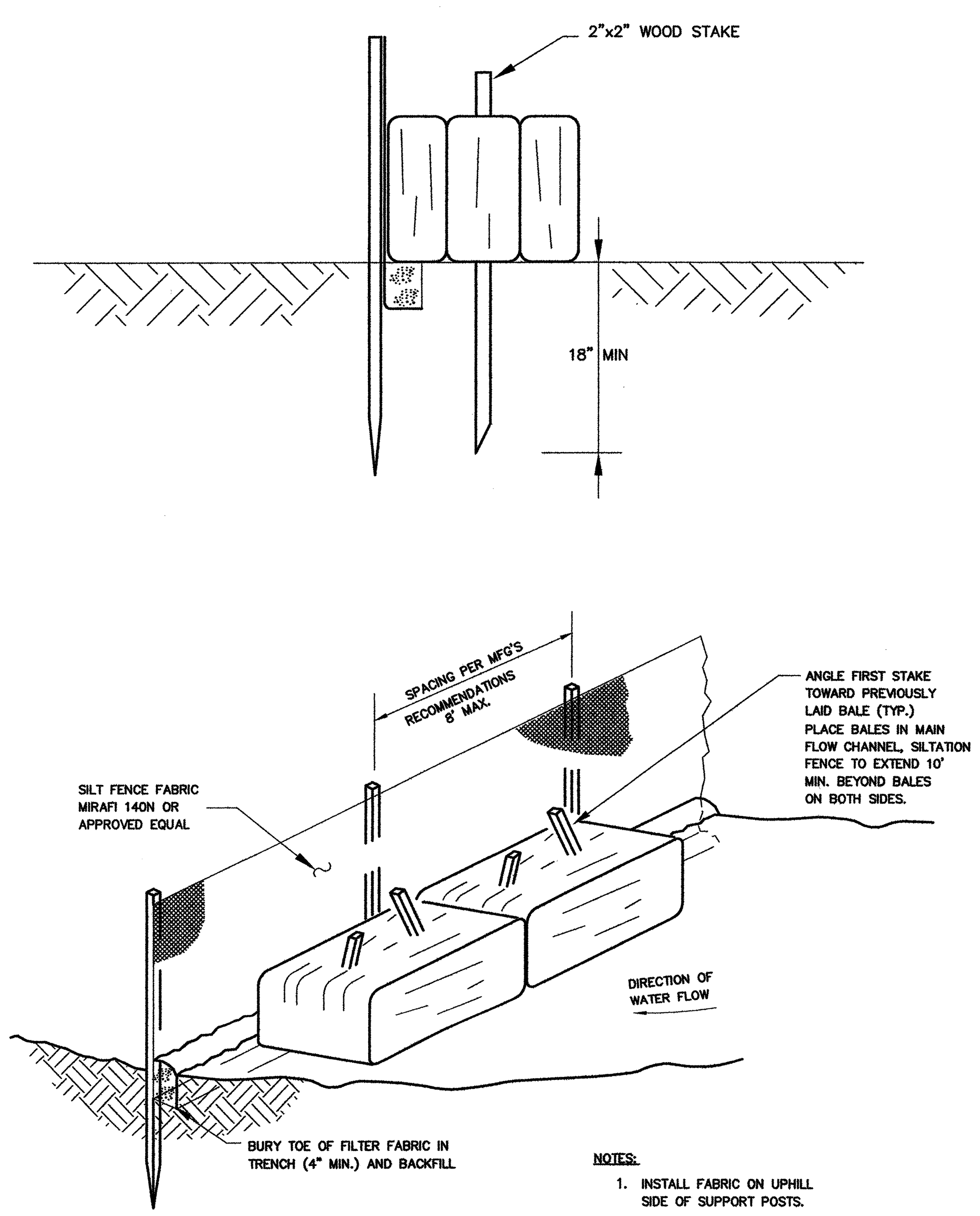
NOTE:
THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE, IMPLEMENT AND MAINTAIN ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES, AS SPECIFIED AND AS SUMMARIZED.



GROUND WOOD CHIP BERM (ECOBERM) CROSS SECTION DETAIL



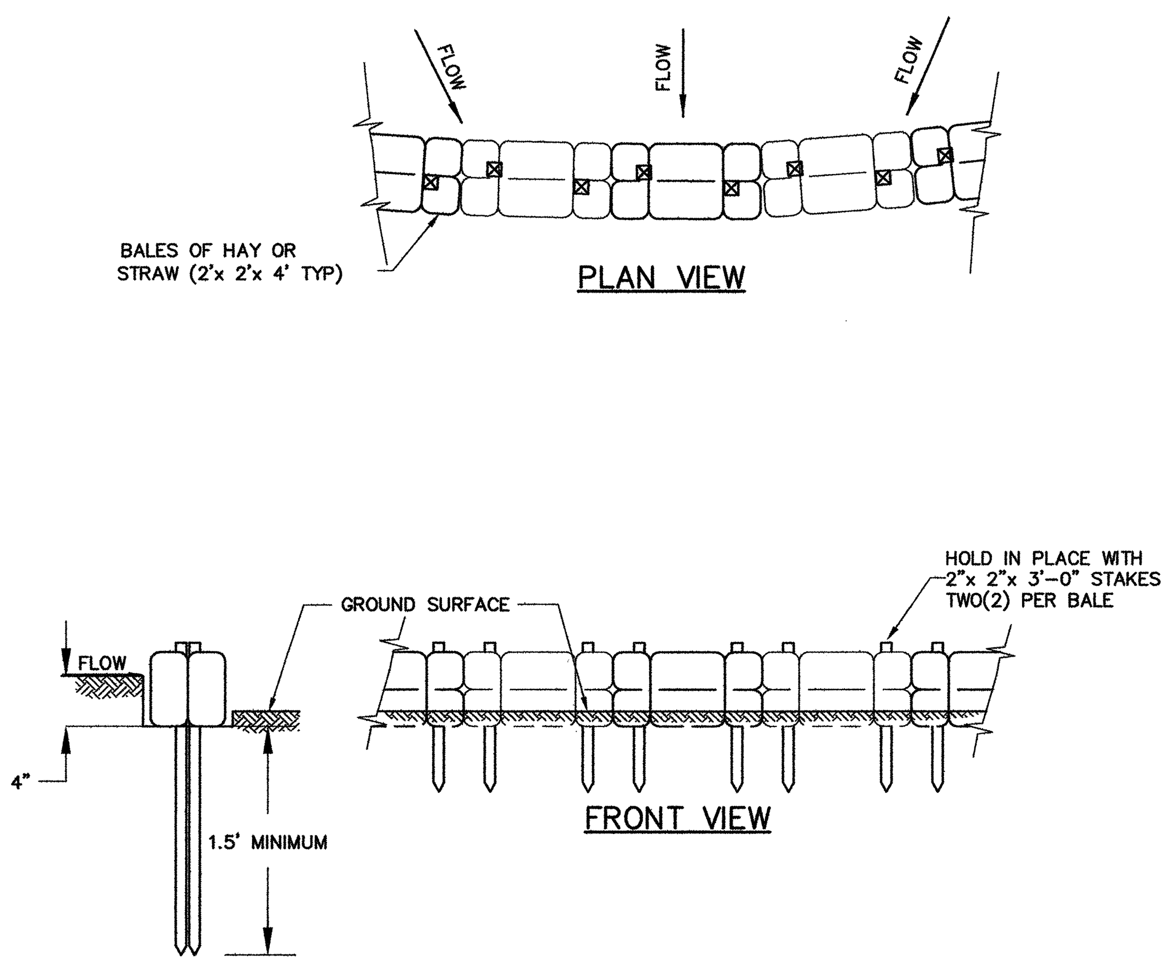
COMPOST-MULCH SOCK (FILTREXX FILTER SOCK) CROSS SECTION DETAIL



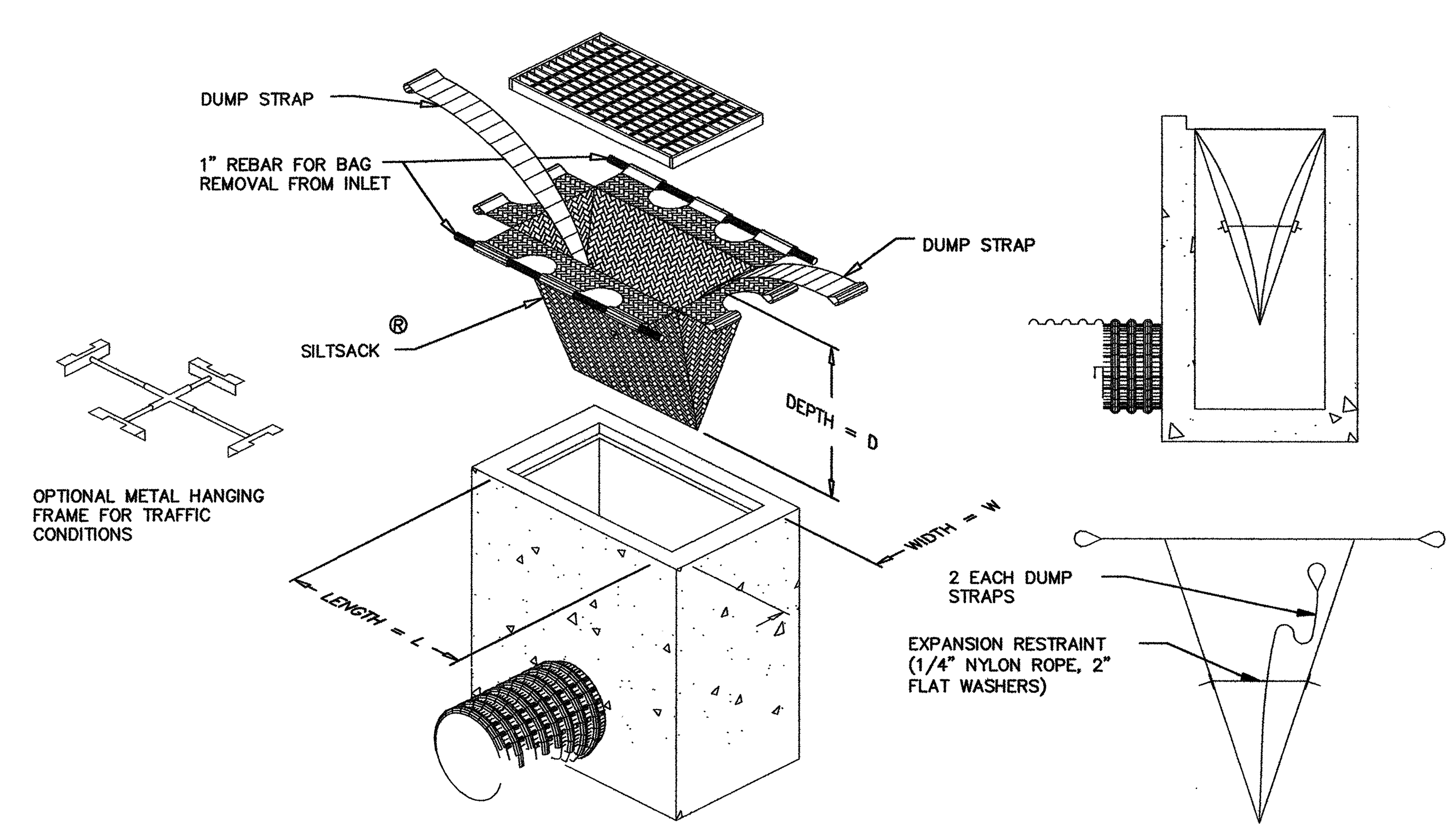
NOTES:

1. INSTALL FABRIC ON UPHILL SIDE OF SUPPORT POSTS.
2. SILT FENCE WILL NOT BE USED IN DRAINAGE WAYS.
3. CONTRACTOR TO REMOVE SILT AS NECESSARY TO MAINTAIN FABRIC EFFECTIVENESS.

SILT FENCE & HAY BALE DETAIL



8 C-502 EROSION CONTROL BARRIERS
NOT TO SCALE



INLET SEDIMENT CONTROL DEVICE (SILT SACK)

NOTE:

1. CONTRACTOR TO INSTALL WHERE NECESSARY OR AS DIRECTED BY THE ENGINEER.
2. CONTRACTOR MAY SELECT ANY OF THESE EROSION CONTROL BARRIERS.

WOODARD & CURRAN
35 New England Business Center
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

COMMONWEALTH OF MASSACHUSETTS ARTHUR D. LEVENTIS CIVIL No. 45470 REGISTERED PROFESSIONAL ENGINEER

REV	DESCRIPTION	DATE

DESIGNED BY: BDM | CHECKED BY: JJB
DRAWN BY: BDM | 223703 C-501-503BP.DWG

CONSTRUCTION DETAILS 2

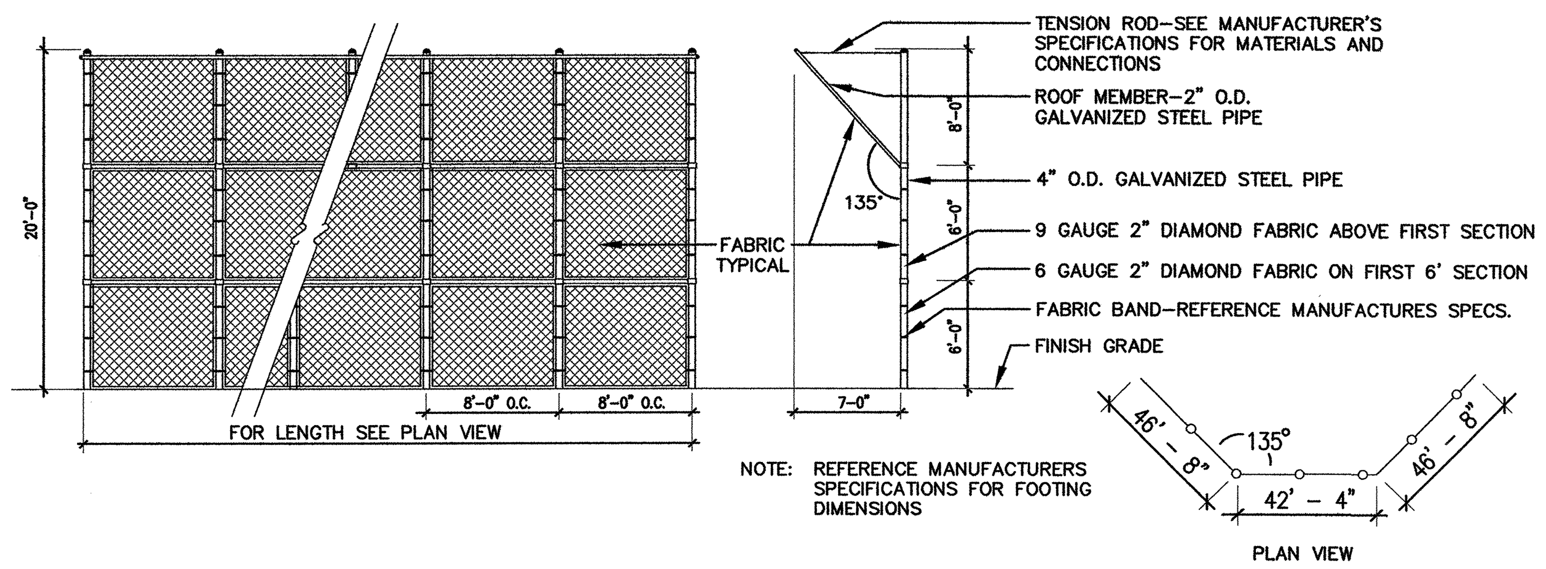
TOWN OF WINTHROP
DEPARTMENT OF PUBLIC WORKS
WINTHROP, MASSACHUSETTS

CONTRACT 3 - SEWER, WATER AND DRAIN IMPROVEMENTS PHASE 1

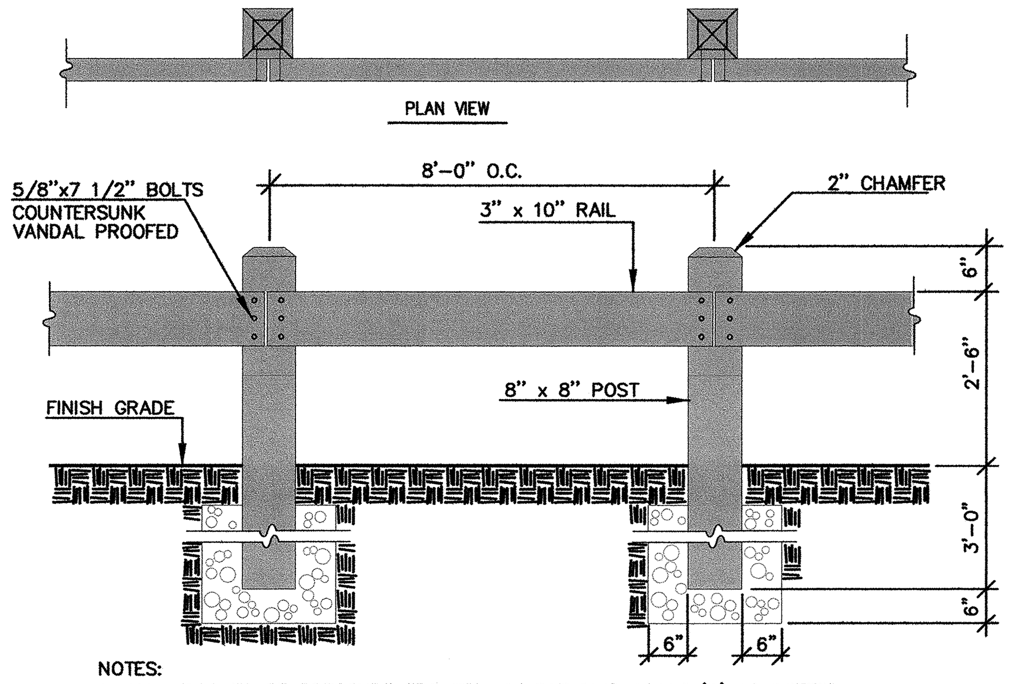
JOB NO.: 223703
DATE: JUNE 2012
SCALE: AS SHOWN
SHEET: 10 OF 14

C-502

24x36 SHEET
1:1

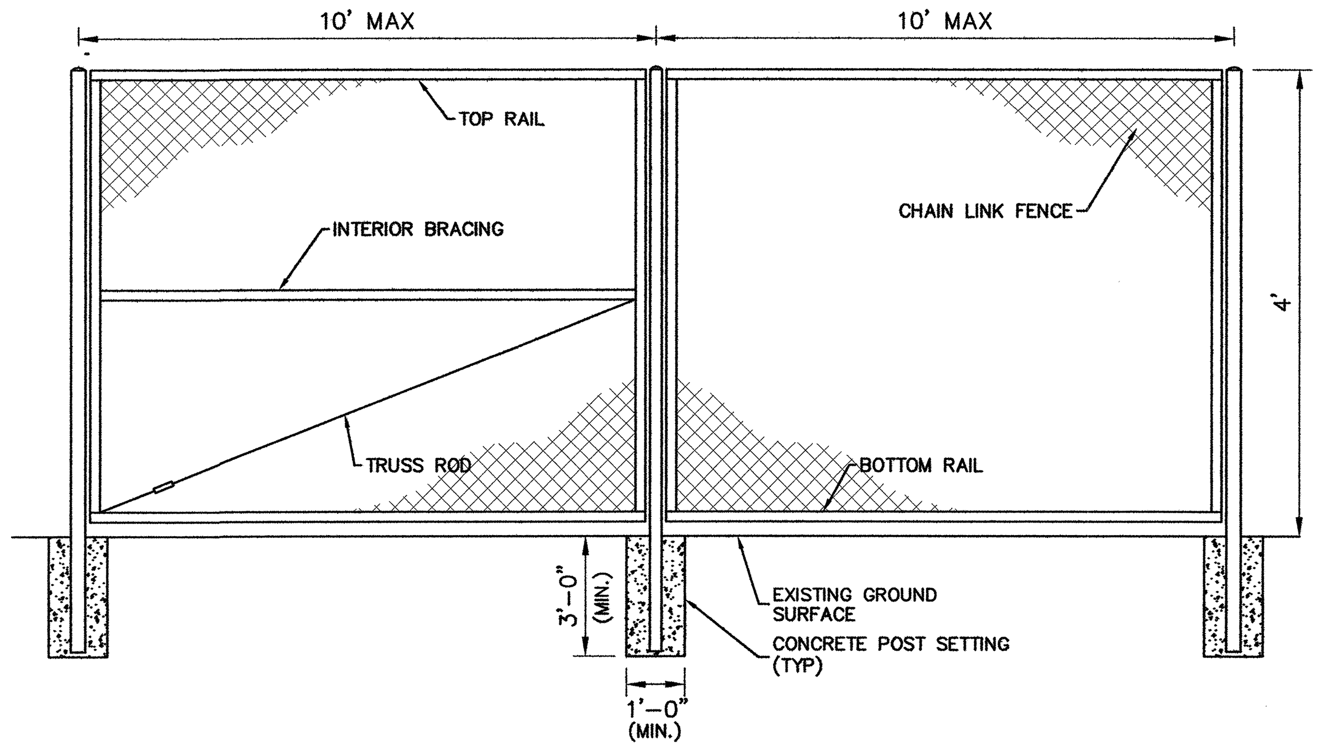


9 / C-503 **FUSION BOND CHAIN LINK BACKSTOP WITH OVERHANG**
NOT TO SCALE

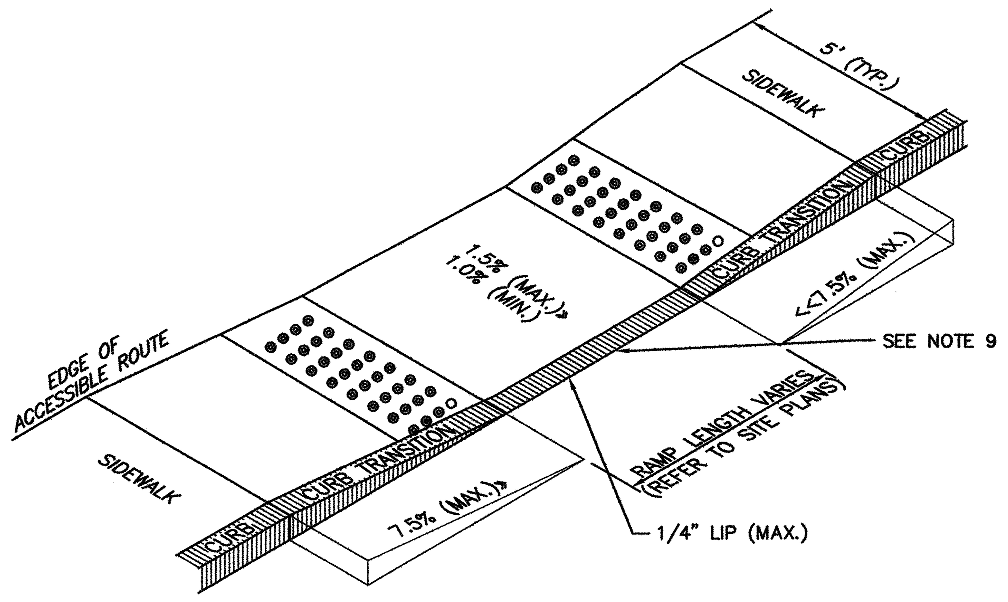


NOTES:
1. ALL WOOD TO BE PRESSURE TREATED, SELECT PINE GRADE 'B' OR BETTER
2. ALL HARDWARE TO BE GALVANIZED
3. SET POSTS 3' - 6" DEEP IN WELL-TAMPED GRAVEL BACKFILL

10 / C-503 **WOOD GUARDRAIL**
NOT TO SCALE



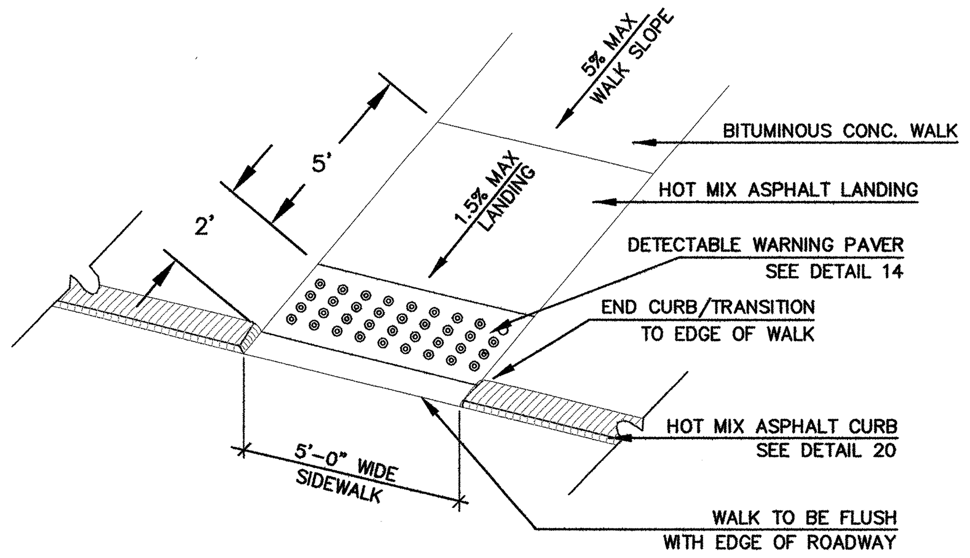
11 / C-503 **CHAIN LINK FENCE**
NOT TO SCALE



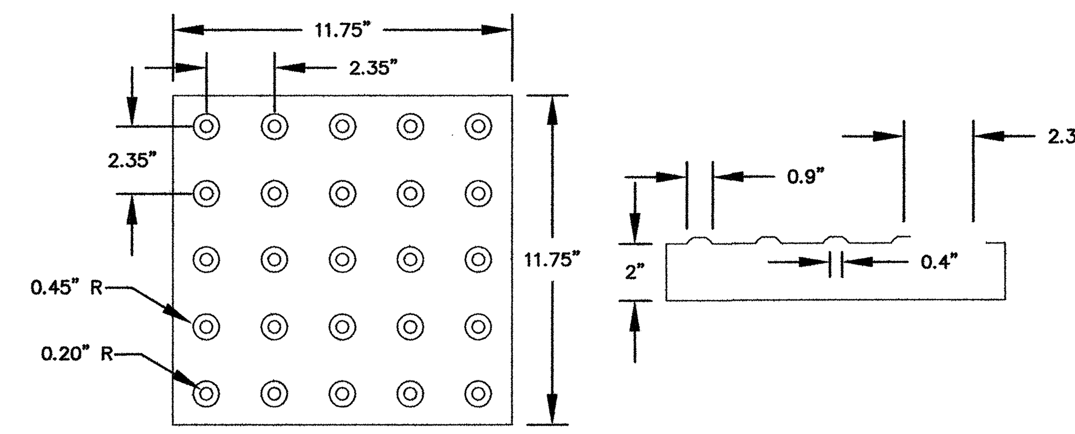
ACCESSIBLE CURB RAMP NOTES:

1. THE MAXIMUM ALLOWABLE SIDEWALK AND CURB RAMP CROSS SLOPES SHALL BE 1.5% (1% MIN.).
2. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE 5%.
3. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE CURB RAMPS SHALL BE 7.5%.
4. A MINIMUM OF 3 FEET CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (I.E., HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS, ETC.)
5. CURB TREATMENT VARIES, SEE PLANS FOR CURB TYPE.
6. BASE OF RAMP SHALL BE GRADED TO PREVENT PONDING.
7. SEE TYPICAL SIDEWALK SECTION FOR RAMP CONSTRUCTION.
8. WHERE ACCESSIBLE ROUTES ARE LESS THAN 5' IN WIDTH (EXCLUDING CURBING) A 5' x 5' PASSING AREA SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 200 FEET.
9. ELIMINATE ALL CURBING AT RAMP (OTHER THAN VERTICAL CURBING, WHICH SHALL BE SET FLUSH) WHERE IT ABUTS ROADWAY.

12 / C-503 **ACCESSIBLE CURB RAMP**
NOT TO SCALE

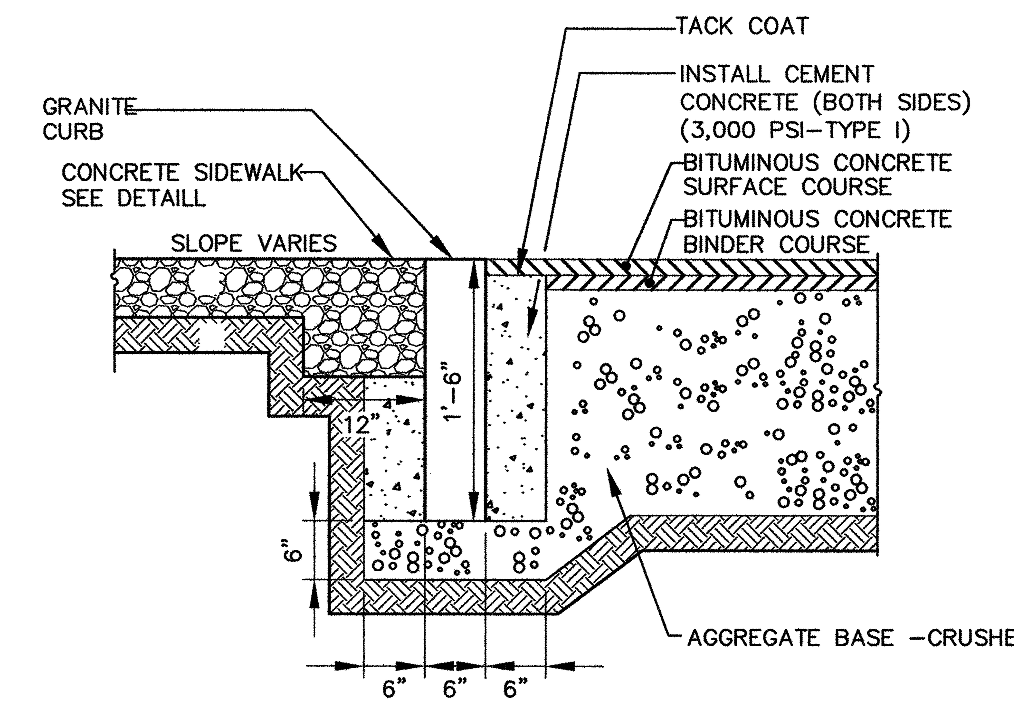


13 / C-503 **SIDEWALK TRANSITION**
NOT TO SCALE

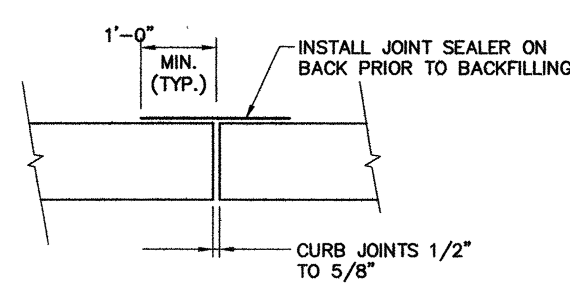


NOTES:
1. THIS DETAIL PROVIDES THE DIMENSIONS OF THE TRUNCATED DOMES. PLEASE NOTE THAT THE STANDARD THICKNESS OF THE PAVER DOES NOT INCLUDE THE HEIGHT OF THE DOME. A PAVER WHICH IS ORDERD AT A 2" THICKNESS WILL ACTUALLY MEASURE 2.20" FROM THE BOTTOM OF THE PAVER TO THE TOP OF THE DOME.

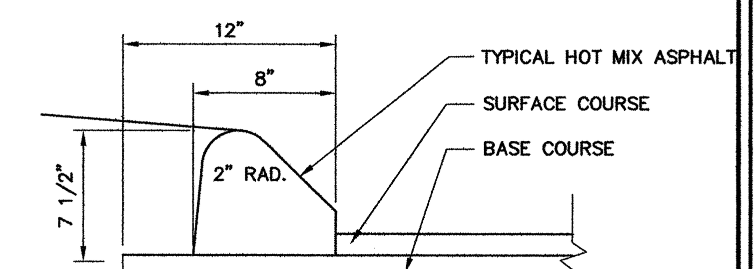
14 / C-503 **DETECTABLE WARNING PAVER**
NOT TO SCALE



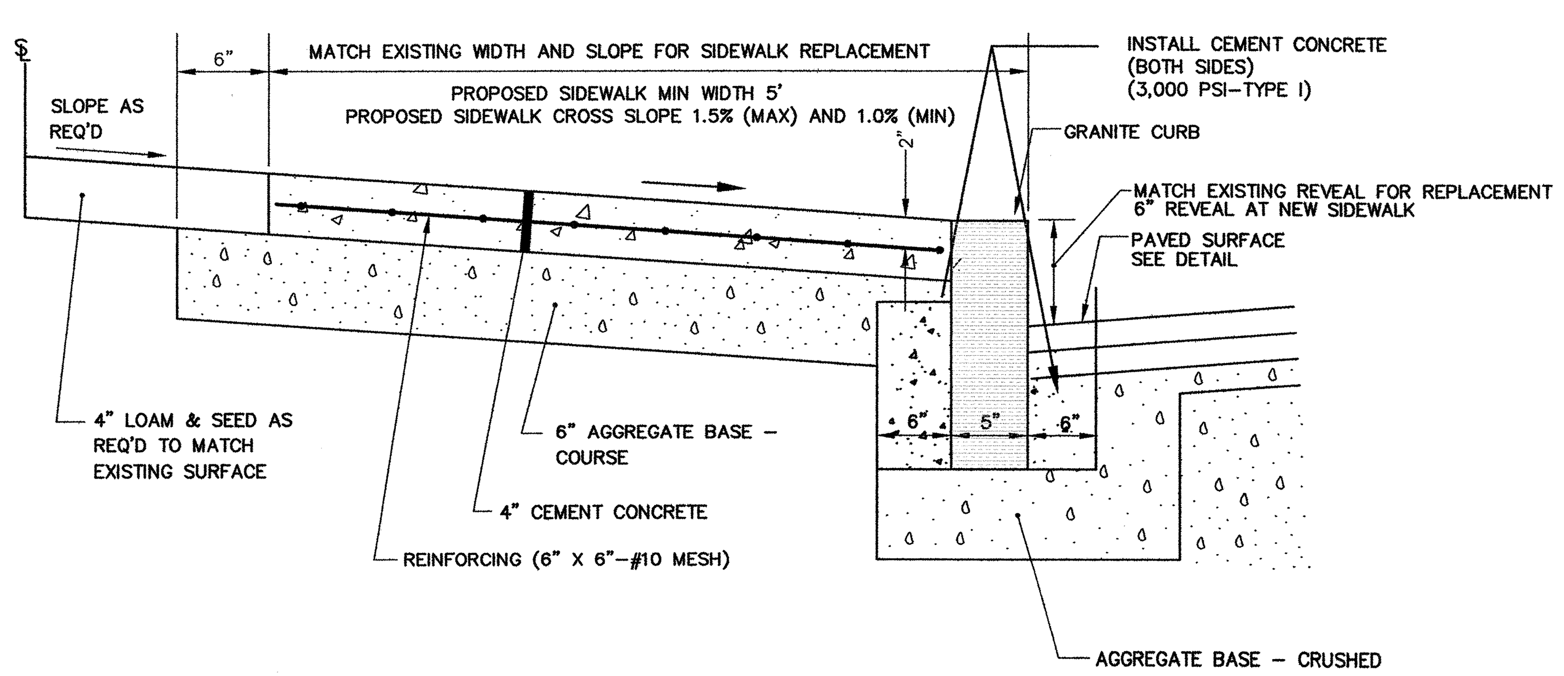
15 / C-503 **FLUSH GRANITE CURB**
NOT TO SCALE



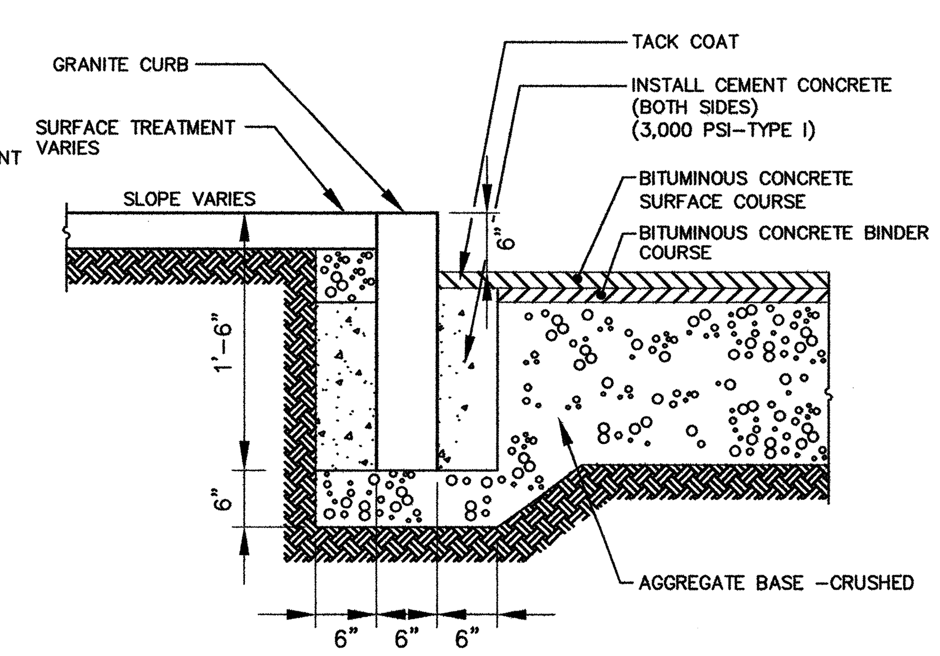
PLAN



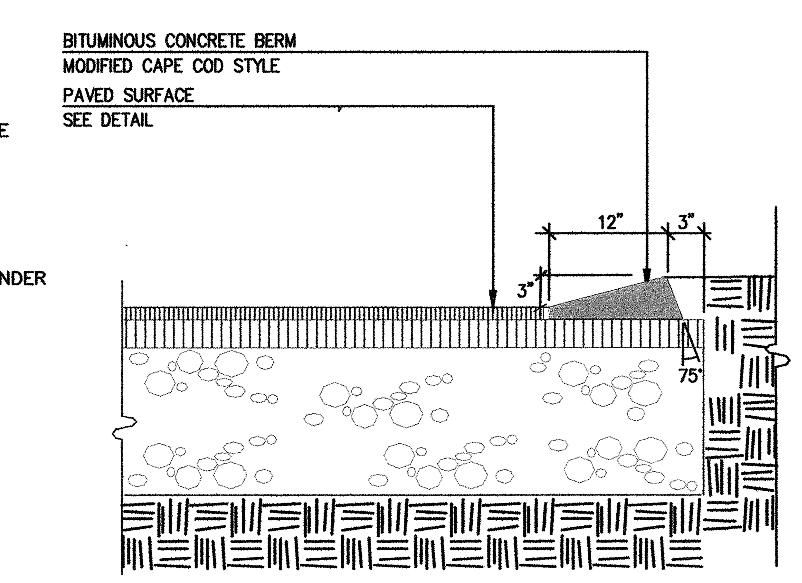
20 / C-503 **TYPICAL HOT MIX ASPHALT CURB**
NOT TO SCALE



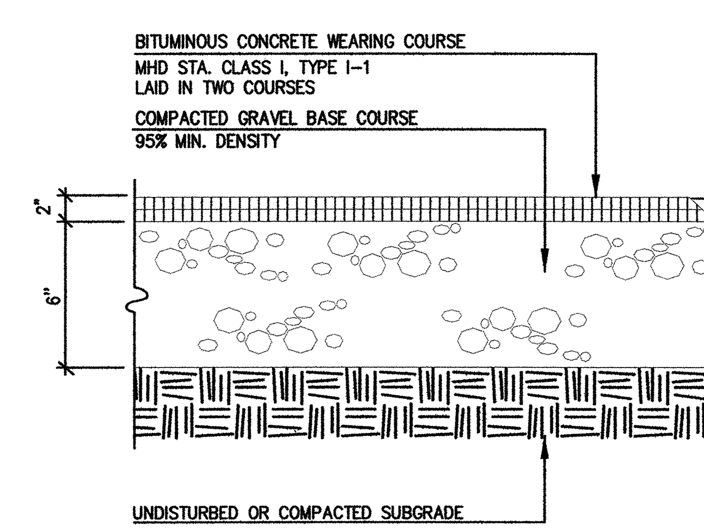
16 / C-503 **CONCRETE SIDEWALK DETAIL**
NOT TO SCALE



17 / C-503 **GRANITE CURB INSTALLATION**
NOT TO SCALE



18 / C-503 **CAPE COD BERM**
NOT TO SCALE



NOTE: IF UNSUITABLE CONDITIONS ARE ENCOUNTERED, DEPTH OF BASE MATERIAL MAY BE INCREASED IN THE FIELD.

19 / C-503 **BITUMINOUS CONCRETE SIDEWALK**
NOT TO SCALE

WOODARD & CURRAN
35 New England Business Center
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

COMMONWEALTH OF MASSACHUSETTS ARTHUR D. LEVENS No. 45422 CIVIL REGISTERED PROFESSIONAL ENGINEER

REV	DESCRIPTION	DATE

DESIGNED BY: BDM | CHECKED BY: JJB
DRAWN BY: BDM | 223703 C-501-503BP.DWG

CONSTRUCTION DETAILS 3

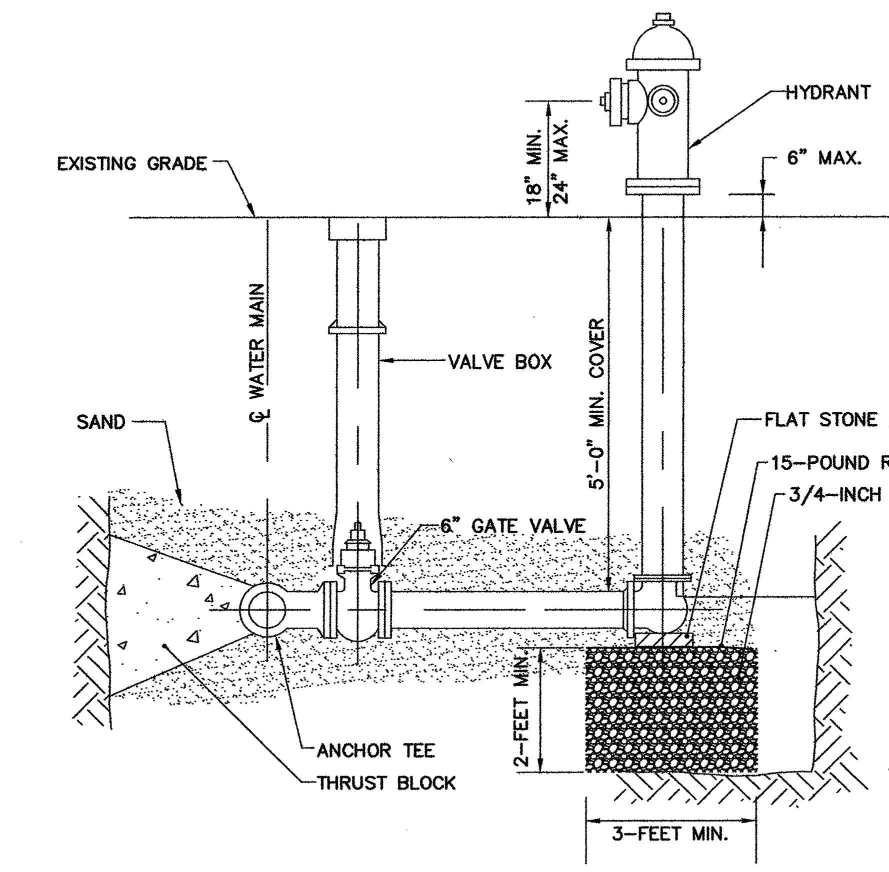
TOWN OF WINTHROP
DEPARTMENT OF PUBLIC WORKS
WINTHROP, MASSACHUSETTS

CONTRACT 3 – SEWER, WATER AND DRAIN IMPROVEMENTS
PHASE 1

JOB NO.: 223703
DATE: JUNE 2012
SCALE: AS SHOWN
SHEET: 11 OF 14

C-503

\\Andover\projects\223703 Winthrop MA – Contract 3 Sewer & Water Main\wip\REBID\DRAWINGS\223703 C-501-503BP.dwg Jun 05, 2012 - 4:20pm

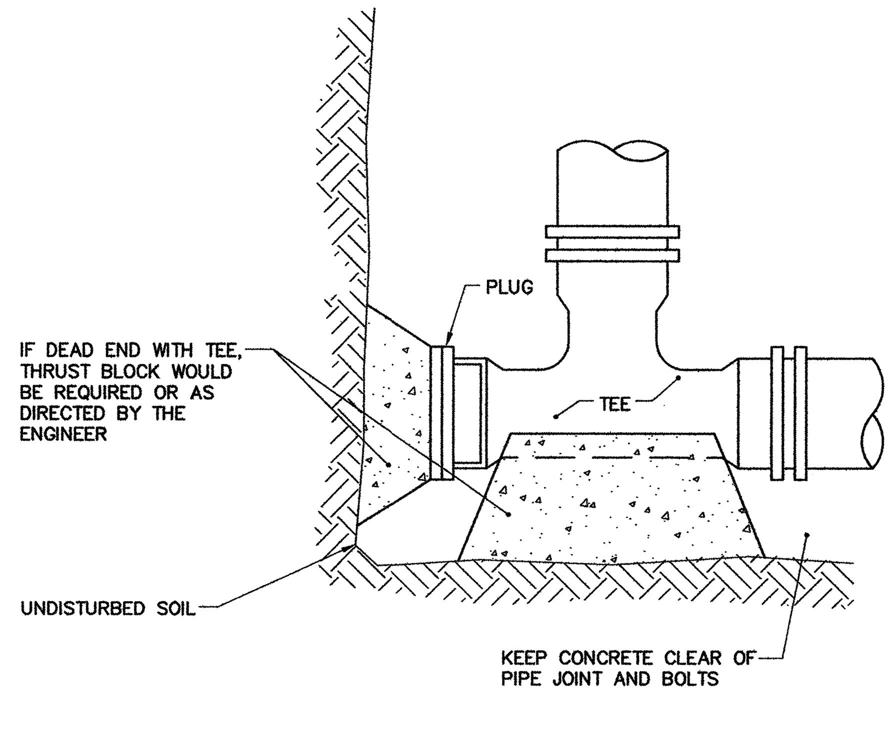


ELEVATION

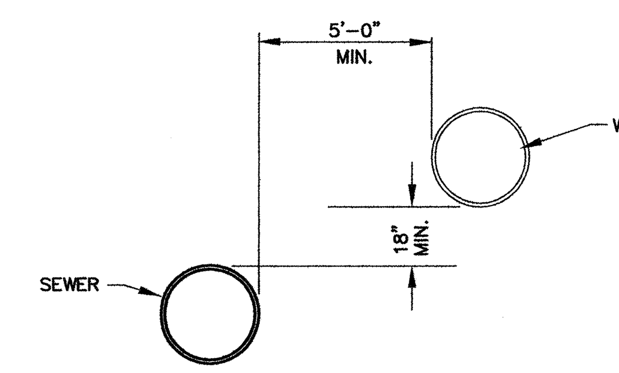
21 HYDRANT DETAIL
C-504 NOT TO SCALE

NOTES:

- ALL JOINTS FOR HYDRANT INSTALLATION SHALL BE APPROVED RETAINER GLANDS.
- HYDRANT LATERALS SHALL BE CONSTRUCTED FROM ONE CONTINUOUS PIPE LINK. HYDRANT LATERALS WITH BELL JOINTS AND COUPLINGS WILL NOT BE ACCEPTED.
- CONTRACTOR SHALL CONSTRUCT A HYDRANT DRAINING SUMP TO EITHER SIDE OF THE HYDRANT. THE HYDRANT DRAINING SUMP SHALL BE 3-FEET WIDE BY 2-FEET IN DEPTH. THE SUMP SHALL CONSIST OF 3/4-INCH GRAVEL STONE WITH 15-POUND ROOFING FELT LAID OVER THE 3/4-INCH GRAVEL STONE.



22 STANDARD TEE BLOCKING
C-504 NOT TO SCALE



UNUSUAL CONDITION
PARALLEL INSTALLATION

NOTES:

THE SEPARATION OF WATER MAINS AND SEWERS SHALL COMPLY WITH THE FOLLOWING GENERAL REQUIREMENTS.

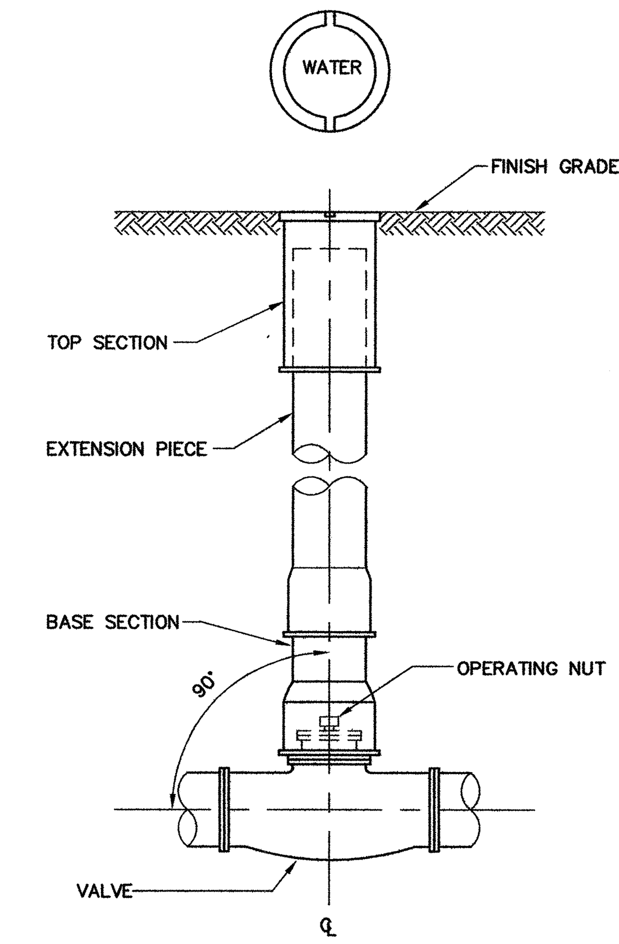
A. PARALLEL INSTALLATION:

1. NORMAL CONDITIONS: THE INSIDE EDGE OF A WATER MAIN SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM THE INSIDE EDGE OF ANY SANITARY SEWER, STORM SEWER OR SEWER MANHOLE.
2. UNUSUAL CONDITIONS: WHEN LOCAL CONDITIONS PREVENT A HORIZONTAL SEPARATION OF 10 FEET, THE INSIDE EDGE OF A WATER MAIN MAY BE LAID A MINIMUM OF 5 FEET FROM THE INSIDE EDGE OF A SEWER PROVIDED THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES HIGHER THAN THE TOP OF THE SEWER (SEE DETAIL).

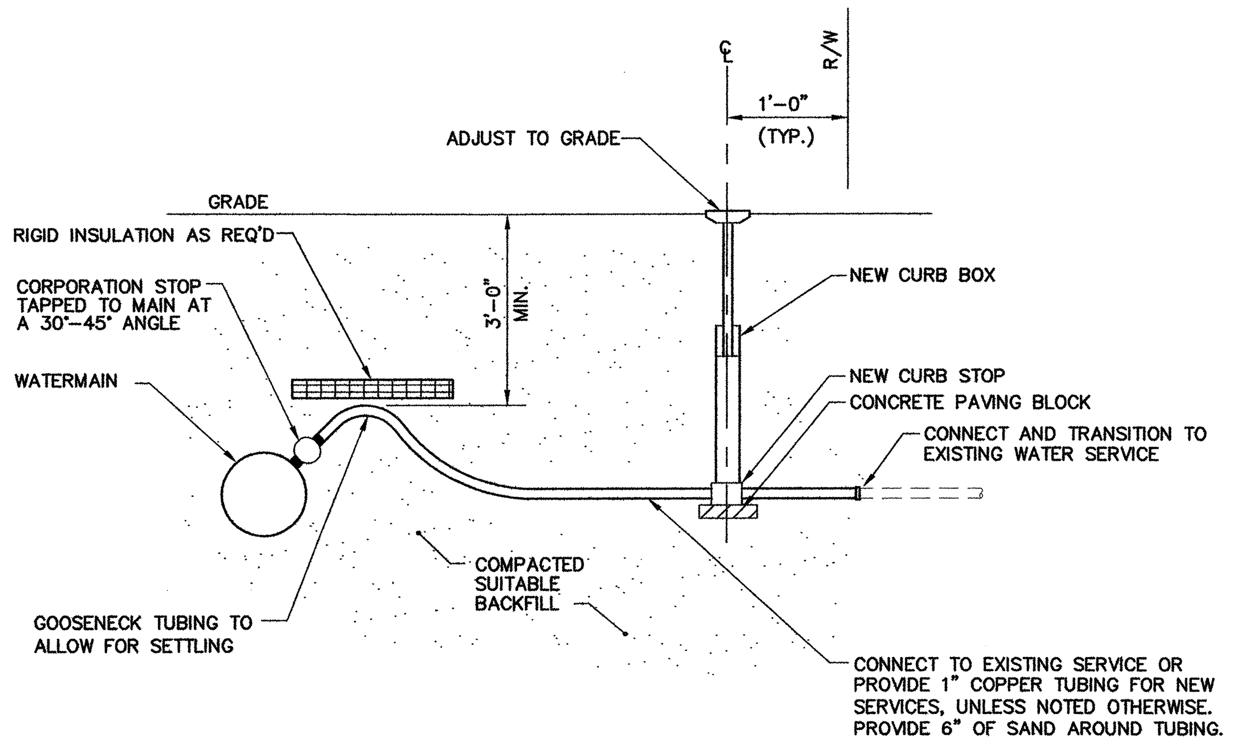
B. CROSSINGS:

1. NORMAL CONDITIONS: WHENEVER POSSIBLE, THE BOTTOM OF THE WATER MAIN SHALL BE AT LEAST 18 INCHES HIGHER THAN THE TOP OF THE SEWER.
2. UNUSUAL CONDITIONS: IF A WATER MAIN MUST CROSS UNDER A SEWER, THE TOP OF THE WATER MAIN SHALL BE AT LEAST 18 INCHES LOWER THAN THE BOTTOM OF THE SEWER, THE WATER MAIN PIPE SHALL BE CENTERED AT THE CROSSING SO THAT THE JOINTS ARE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE SEWER, AND ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO PREVENT EXCESSIVE DEFLECTION OF THE SEWER AT THE CROSSING.

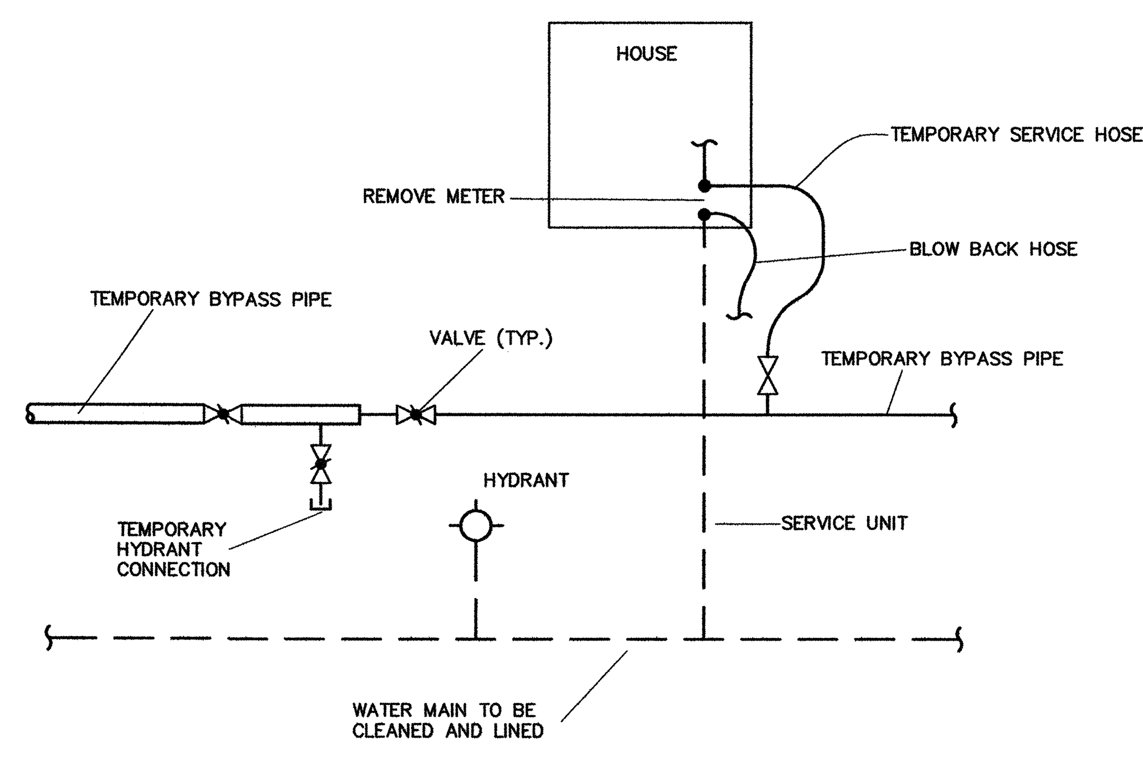
23 STANDARD TEE BLOCKING
C-504 NOT TO SCALE



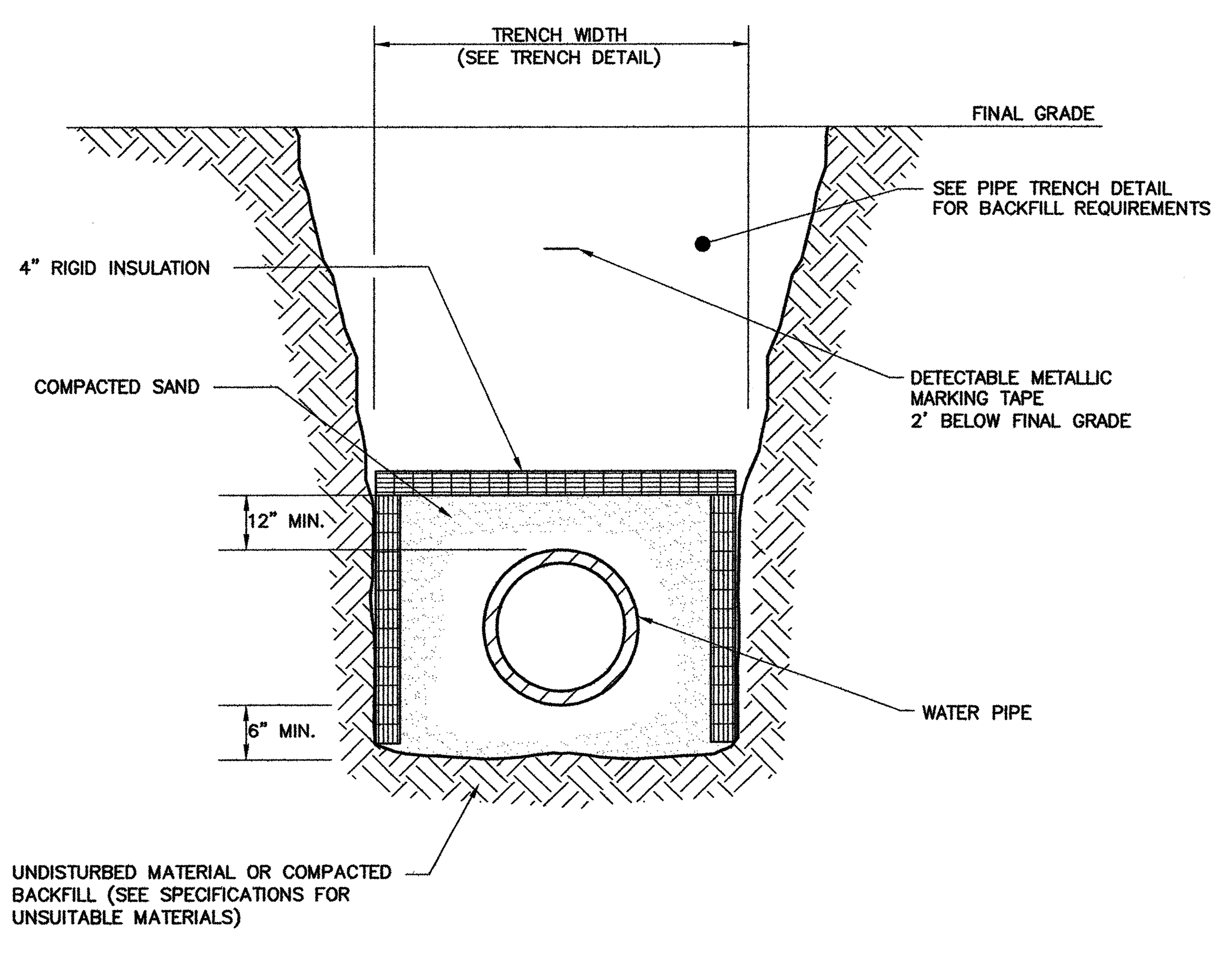
24 GATE VALVE AND BOX
C-504 NOT TO SCALE



25 TYPICAL WATER SERVICE DETAIL
C-504 NOT TO SCALE

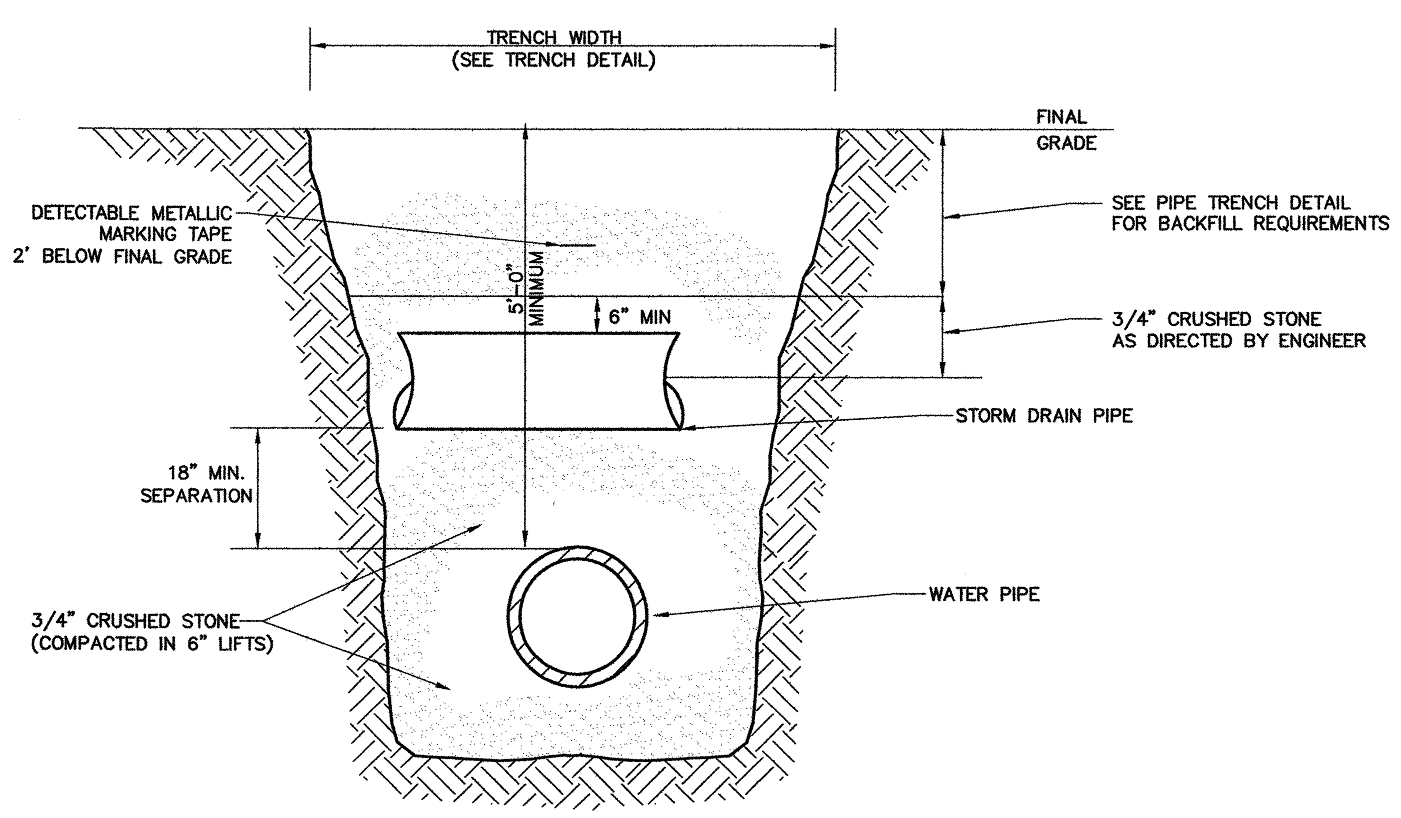


26 TYPICAL SERVICE PIPE DETAIL
C-504 NOT TO SCALE



NOTES:
1. THIS DETAIL SHALL BE USED FOR ANY PORTION OF THE WATER PIPE THAT WILL BE LESS THAN 4' BELOW FINAL GRADE.

27 TRENCH DETAIL FOR WATER PIPE INSULATION
C-504 NOT TO SCALE



NOTES:
1. JOINTS FOR EACH PIPE TO BE AS FAR FROM INTERSECTION AS POSSIBLE.
2. PROVIDE 18" MINIMUM SEPARATION WHEREVER POSSIBLE. WHERE 18" SEPARATION CANNOT BE MAINTAINED, REFER TO SPECIFICATIONS.

28 PIPE CROSSING DETAIL
C-504 NOT TO SCALE

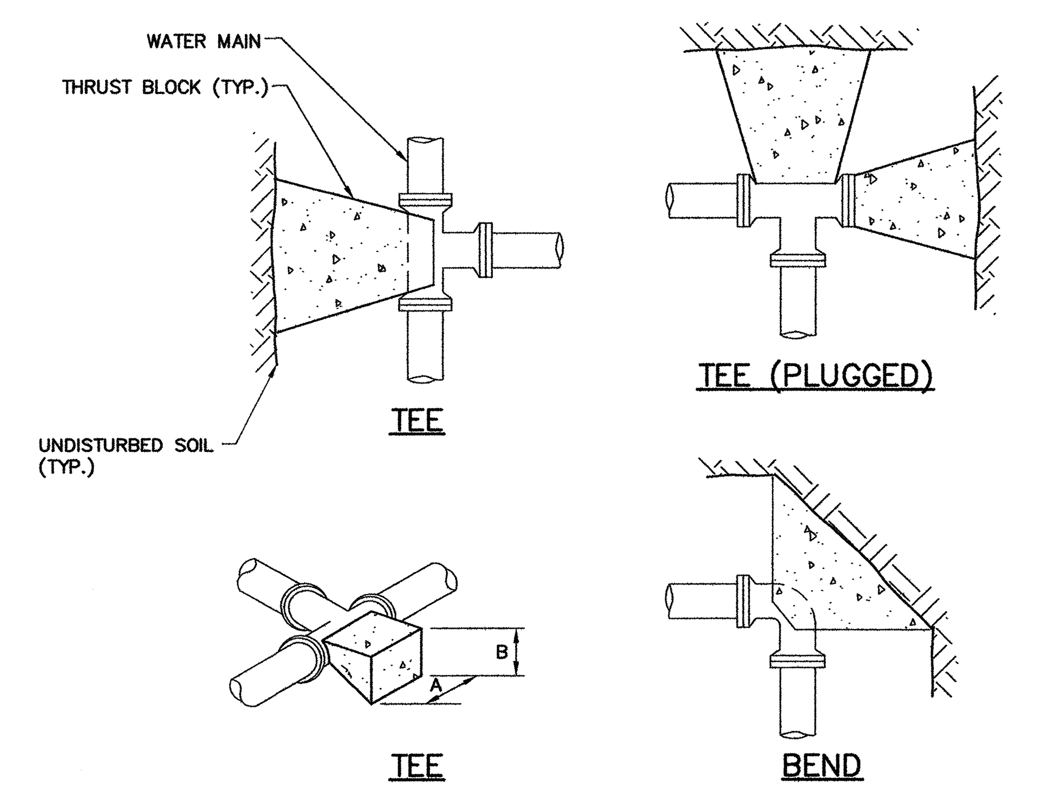


TABLE 1: 4" THRU 10" FITTINGS				
SOIL TYPE	TEES		BENDS	
	A	B	A	B
SOFT CLAY	48"	24"	48"	24"
SAND	24"	24"	24"	24"
GRAVEL	24"	18"	24"	18"

TABLE 2: 12" THRU 16" FITTINGS				
SOIL TYPE	TEES		BENDS	
	A	B	A	B
SOFT CLAY	60"	36"	72"	36"
SAND	36"	30"	48"	30"
GRAVEL	30"	24"	40"	24"

NOTES:

1. CONCRETE FOR ALL THRUST BLOCKS TO BE MINIMUM 3,000 PSI., 28 DAY STRENGTH, TYPE I CEMENT, 3/4" STONE.
2. WHERE POSSIBLE, CONSTRUCT THRUST BLOCKS AGAINST UNDISTURBED SOIL. WHERE NOT POSSIBLE, PLACE FILL BETWEEN THE THRUST BLOCK AND THE UNDISTURBED SOIL COMPACTED TO 90% STANDARD PROCTOR DENSITY.
3. WRAP FITTINGS WITH POLYETHYLENE PRIOR TO CONSTRUCTING THRUST BLOCKS. NO JOINTS SHALL BE COVERED WITH CONCRETE.
4. THRUST BLOCK DIMENSIONS ARE BASED ON A MAXIMUM WATER MAIN PRESSURE OF 150 PSI.

29 TYPICAL THRUST BLOCK DETAIL
C-504 NOT TO SCALE

35 New England Business Center
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS
WOODARD & CURRAN

REV	DESCRIPTION	DATE

DESIGNED BY: TRP | CHECKED BY: ADL
DRAWN BY: TRP | 223703 C-504.dwg

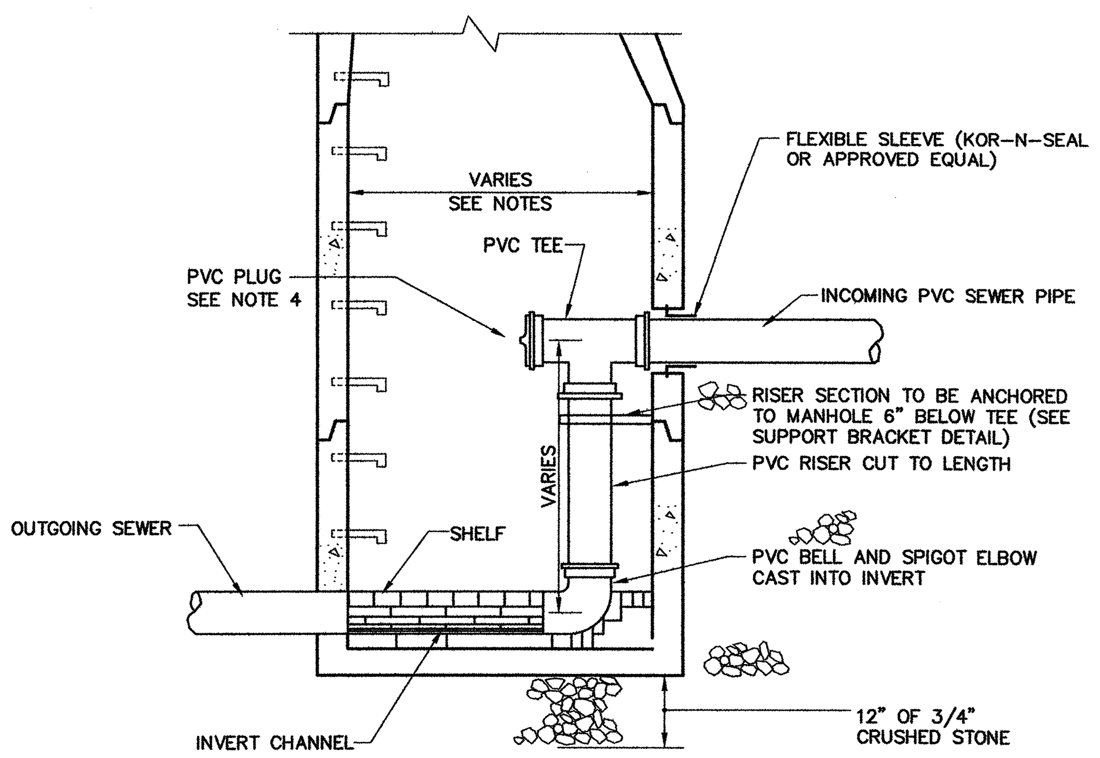
CONSTRUCTION DETIALS 4

TOWN OF WINTHROP
DEPARTMENT OF PUBLIC WORKS
WINTHROP, MASSACHUSETTS

CONTRACT 3 - SEWER, WATER AND DRAIN IMPROVEMENTS - PHASE 1

JOB NO.: 223703
DATE: JUNE 2012
SCALE:
SHEET: 12 OF 14

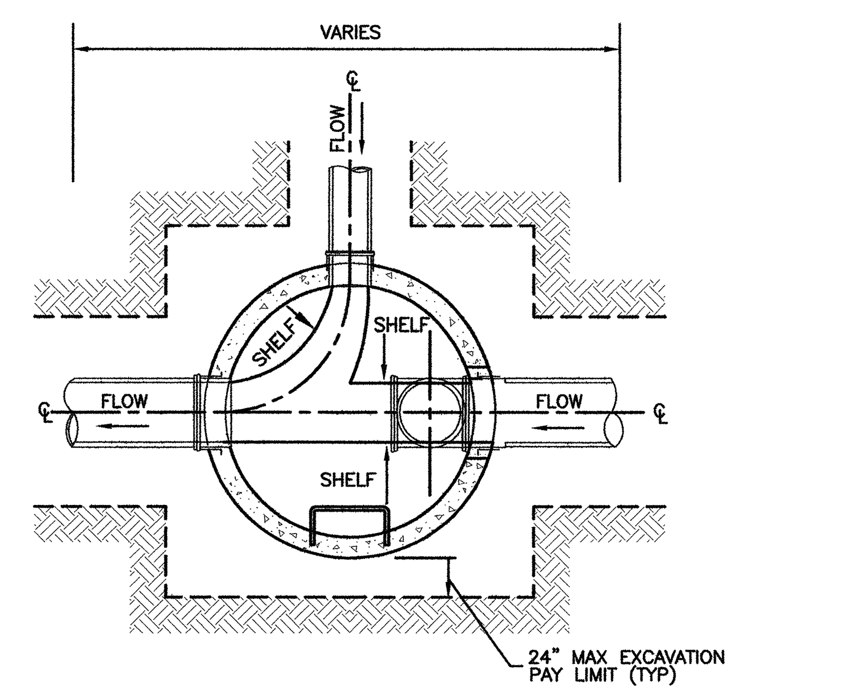
C-504



NOTES:

1. USE 5'-0" I.D. MANHOLE FOR ALL DROP MANHOLES
2. MINIMUM HEIGHT OF DROP IS 2'-0"
3. DROP REQUIRED WHEN INVERT ELEVATIONS DIFFER BY 2'-0" OR MORE
4. CUT OFF TOP 1/3 OF PIPE PLUG

30 C-505 PRECAST DROP MANHOLE
NOT TO SCALE

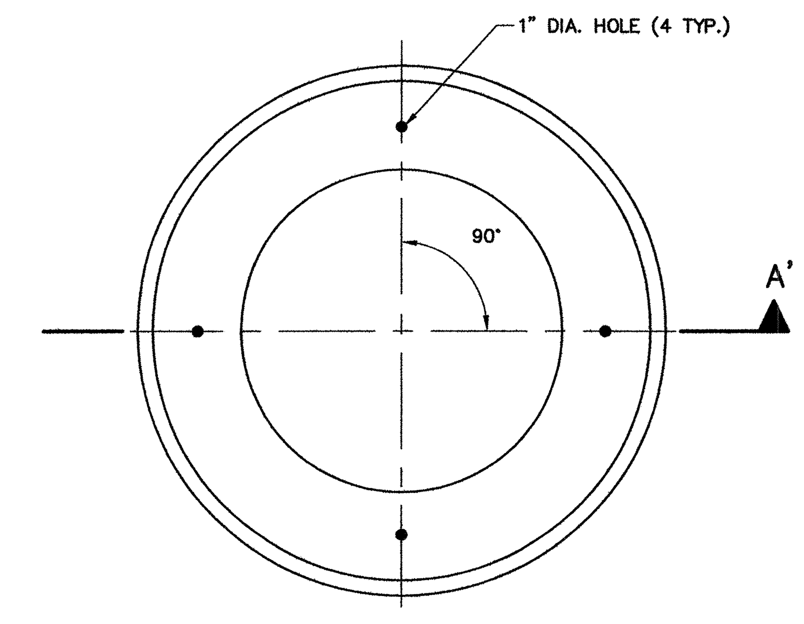


PLAN

NOTES

1. INTERIOR DROP SHALL BE PROVIDED WHEREVER THE CONNECTION TO THE MANHOLE IS MORE THAN TWO FEET ABOVE THE INVERT.
2. UNLESS OTHERWISE NOTED USE 2'-0" (MIN.) LENGTH OF PIPE STUBS AND CAP AT ALL MANHOLES FOR PVC PIPE. USE 4'-0" MAX. LENGTHS OF PIPE STUBS AND CAP AT ALL MANHOLES FOR DI PIPE. MINIMUM SLOPE OF ALL STUBS SHALL BE 0.02 FEET/FOOT.
3. ALL DROP MANHOLES 5' DIA. UNLESS OTHERWISE INDICATED

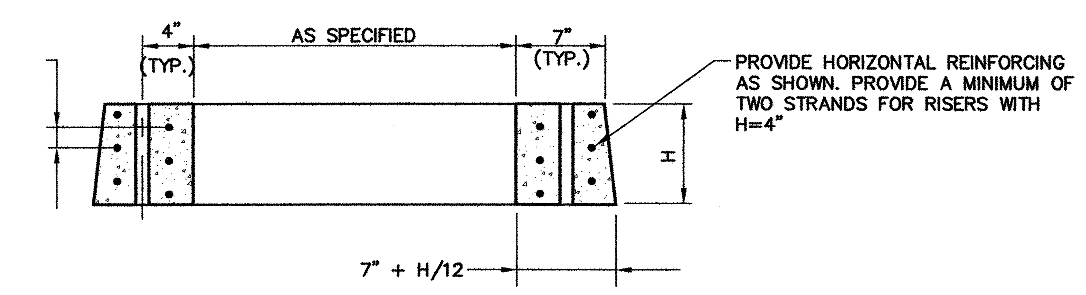
31 C-505 TYPICAL PRECAST SEWER DROP MANHOLE
NOT TO SCALE



NOTES:

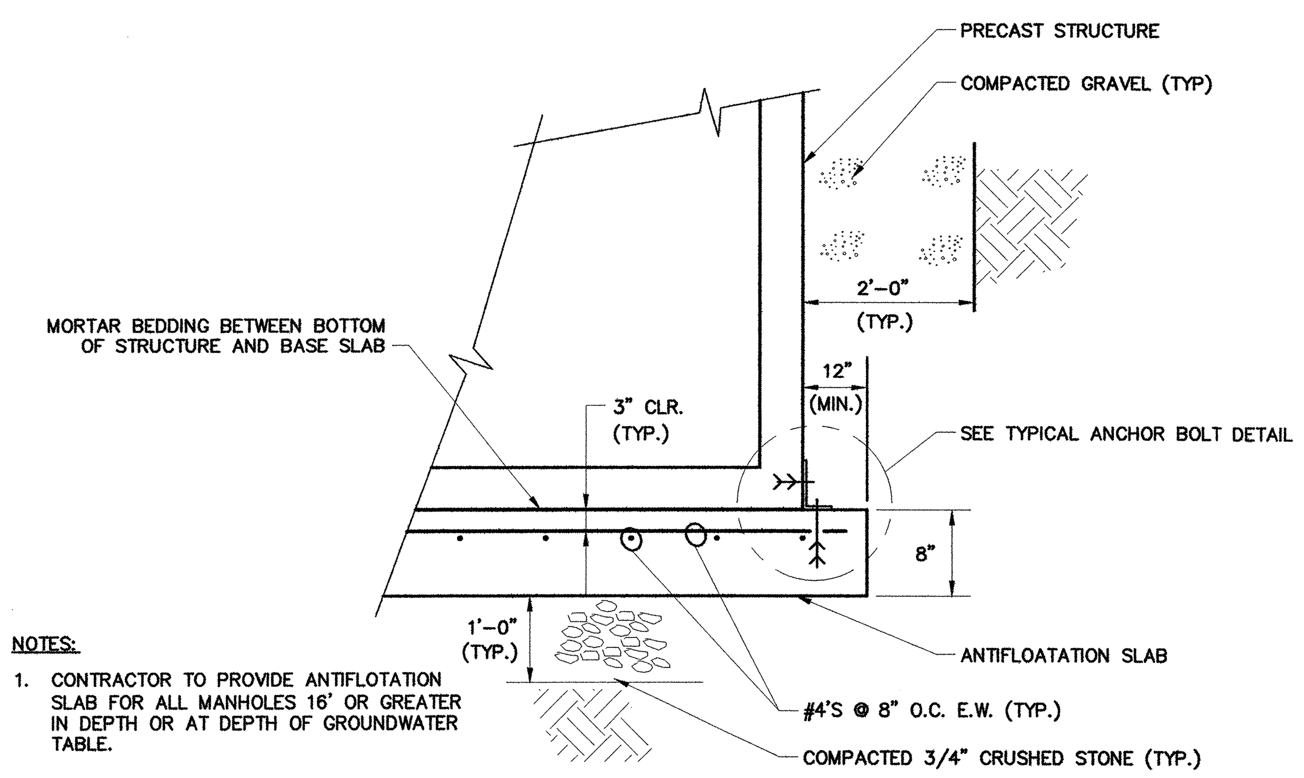
- PROVIDE CAST-IN INSERTS IN PRECAST MANHOLE CONES & FLAT TOPS. LOCATIONS TO MATCH HOLES IN GRADE RING.
- PROVIDE H OF 4" MIN. TO 8" MAX. AS REQUIRED TO BRING FRAME TO FINAL GRADE.
- FOR FRAME ADJUSTMENTS OF LESS THAN 4" USE APPROVED ALTERNATE MANHOLE FRAME AND/OR ATTACH FRAME DIRECTLY TO PRECAST MANHOLE CONE.
- CONTRACTOR MAY USE BRICKS TO BRING MANHOLE TO GRADE.
- SIZE TO MATCH SEWER MANHOLE AND CATCHBASIN DIAMETER.

PLAN



SECTION A-A'

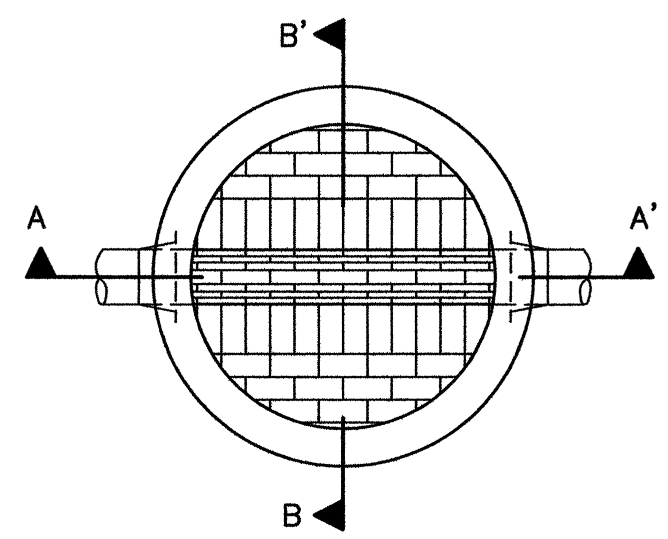
32 C-505 PRECAST CONCRETE GRADE RING
NOT TO SCALE



NOTES:

1. CONTRACTOR TO PROVIDE ANTIFLOTATION SLAB FOR ALL MANHOLES 16' OR GREATER IN DEPTH OR AT DEPTH OF GROUNDWATER TABLE.

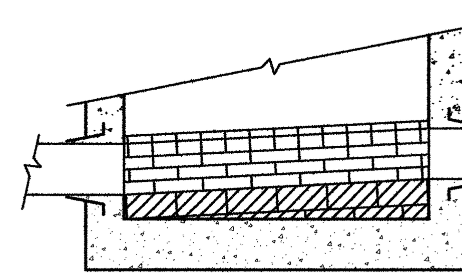
33 C-505 ANTIFLOTATION SLAB DETAIL
NOT TO SCALE



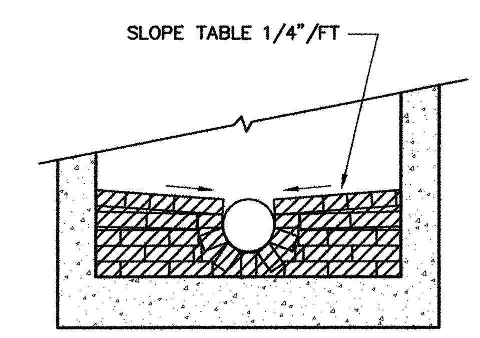
PLAN

NOTES:

- TOOL ALL JOINTS IN CHANNEL AND ON TABLES.
- FILL UNDER TABLE WITH MORTAR-BEDDED BRICK.
- SLOPE CHANNEL DOWN FROM INLET TO OUTLET.
- MAKE CHANGES IN FLOW DIRECTION BY CIRCULAR CHANNEL CONSTRUCTION WITH MAXIMUM RADIUS POSSIBLE.
- FOR DEAD-END MANHOLES, BUILD CHANNEL AS DIRECTED BY ENGINEER.

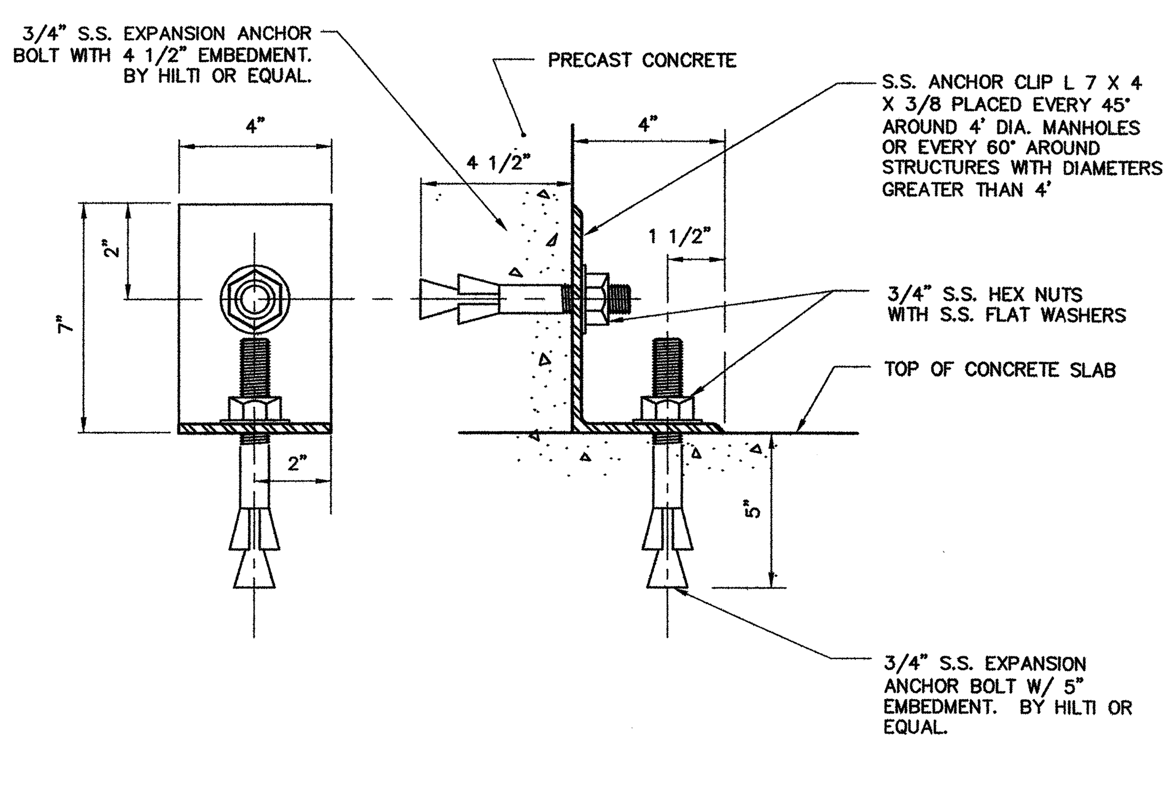


SECTION A-A'

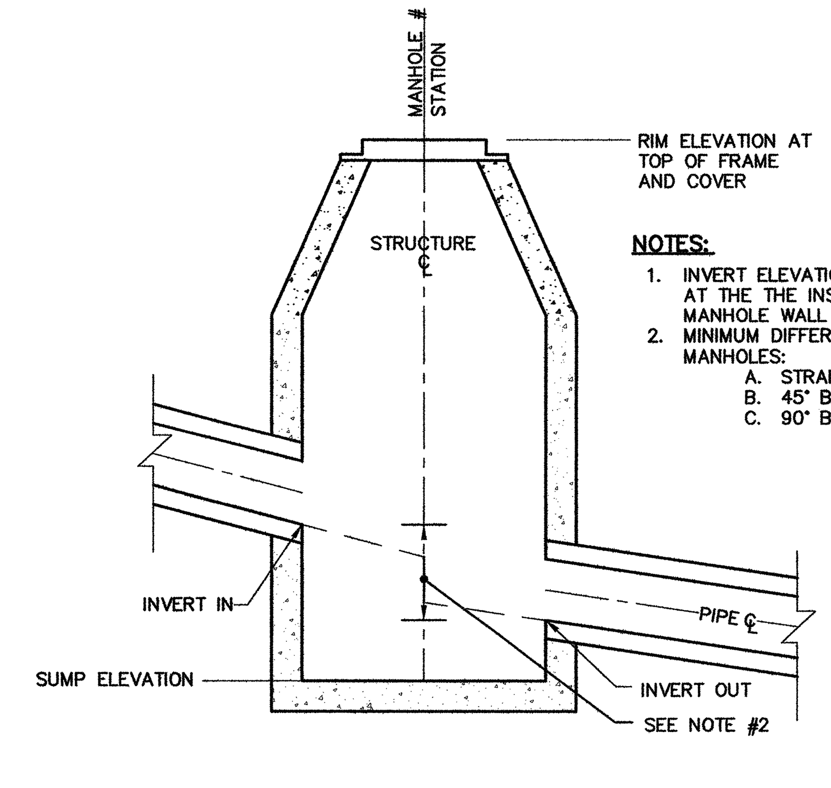


SECTION B-B'

34 C-505 BRICK INVERT
NOT TO SCALE



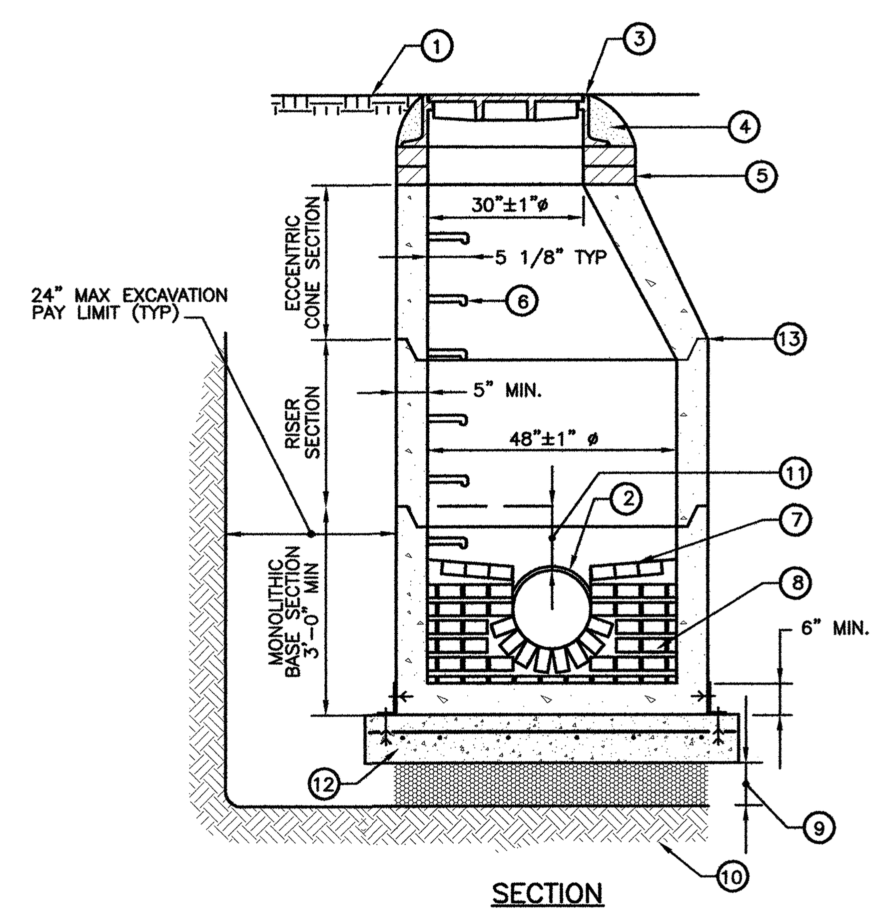
35 C-505 ANCHOR BOLT DETAIL
NOT TO SCALE



NOTES:

1. INVERT ELEVATIONS ARE MEASURED AT THE THE INSIDE FACE OF THE MANHOLE WALL
2. MINIMUM DIFFERENCE IN ELEVATION @ MANHOLES:
   A. STRAIGHT THRU – 0.10-FT
   B. 45° BEND – 0.20-FT
   C. 90° BEND – 0.30-FT

36 C-505 MANHOLE INVERT MEASUREMENT PARAMETERS
NOT TO SCALE

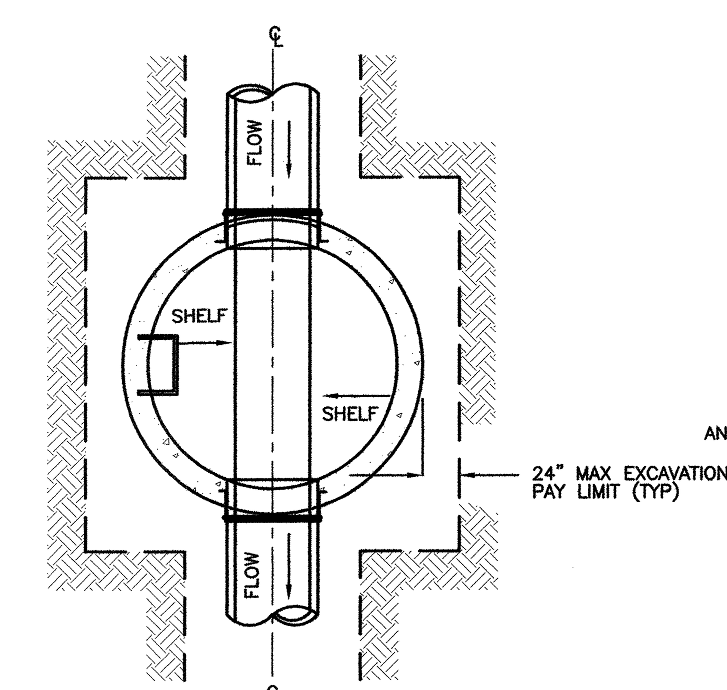


SECTION

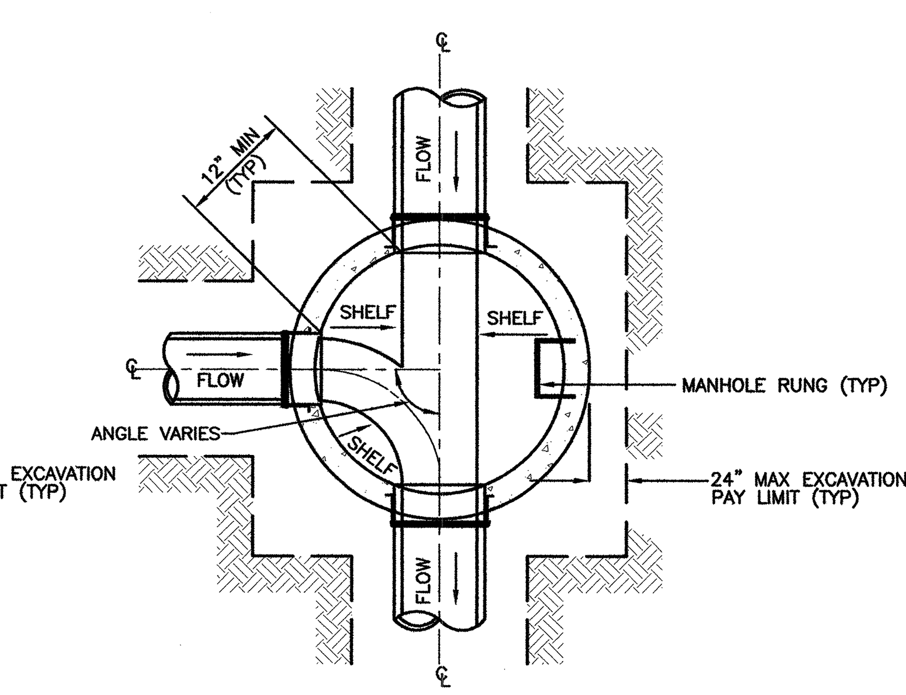
1. FINISHED GRADE PER PLAN
2. PIPE CONNECTION W/ FLEXIBLE BOOT JOINT
3. CAST IRON MANHOLE FRAME & COVER TO BE SET IN FULL BED OF MORTAR WITH 30"ø CLEAR OPENING
4. FRAME TO BE SET IN FULL MORTAR BED
5. ADJUST TO GRADE WITH BRICK OR PRECAST CONCRETE RINGS: MAX. 8" ADJUSTMENT
6. MANHOLE RUNGS @ 12" O.C. (TYP)
7. BRICK SHELF ELEVATION SAME AS CROWN OF HIGHEST PIPE (SHELF SLOPE 1/4"/FT)
8. BRICK
9. 12" – 3/4"CRUSHED STONE BEDDING
10. UNDISTURBED SUBGRADE OR COMPACTED SUITABLE BACKFILL
11. 12" (MINIMUM) ABOVE HIGHEST CROWN
12. ANTIFLOTATION SLAB WHEN SPECIFIED, SEE DETAIL THIS SHEET
13. BUTYL RUBBER SEALANT

NOTES:

1. SEE SPECIFICATIONS FOR REQUIREMENTS.



PLAN PIPE THROUGH



PLAN AT JUNCTION

37 C-505 TYPICAL PRECAST SEWER MANHOLE
NOT TO SCALE

WOODARD & CURRAN
35 New England Business Center
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

COMMONWEALTH OF MASSACHUSETTS ARTHUR D. LEVENTIS CIVIL No. 45470 REGISTERED PROFESSIONAL ENGINEER

REV	DESCRIPTION	DATE
DESIGNED BY: TRP	CHECKED BY: ADL	
DRAWN BY: TRP	223703 C-505-506.dwg	

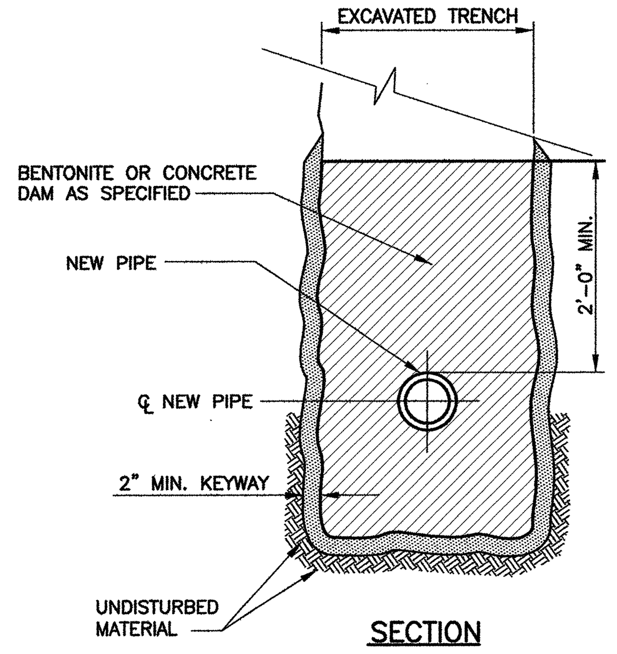
CONSTRUCTION DETAILS 5

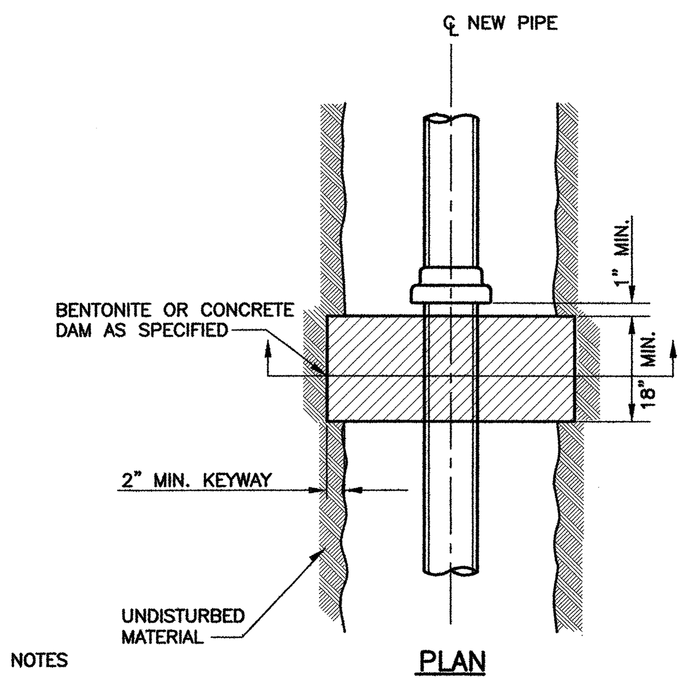
TOWN OF WINTHROP
DEPARTMENT OF PUBLIC WORKS
WINTHROP, MASSACHUSETTS

CONTRACT 3 – SEWER, WATER AND DRAIN IMPROVEMENTS – PHASE 1

JOB NO.:	223703
DATE:	JUNE 2012
SCALE:	
SHEET:	13 OF 14

C-505

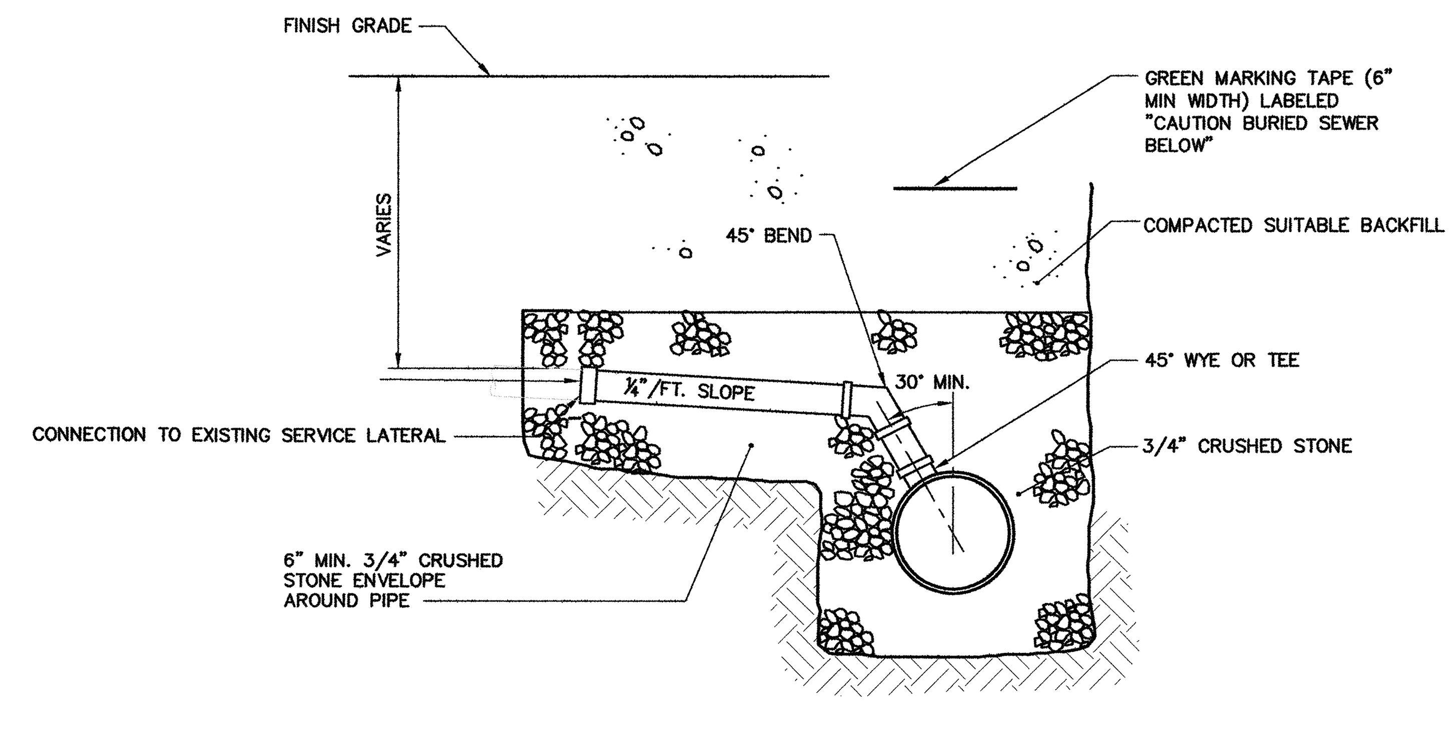




NOTES

1. CLAY DAM MUST BE INSTALLED DOWNSTREAM OF ALL WATERWAY AND WETLAND CROSSINGS.
2. CLAY DAM SHALL BE CONSIDERED EVERY 300 LINEAR FEET, AS DIRECTED BY THE ENGINEER, TO CONTROL GROUNDWATER WITHIN THE PIPE BEDDING MATERIAL WHEN:
   A. NATIVE MATERIAL IS CONSIDERABLY LESS PERVIOUS THAN THE PIPE BEDDING MATERIAL AND/OR;
   B. PIPE BEDDING PRODUCES HYDRAULIC HEAD OF 25 FEET ON PIPE GASKETS AND JOINTS AT HIGH GROUNDWATER FLOW

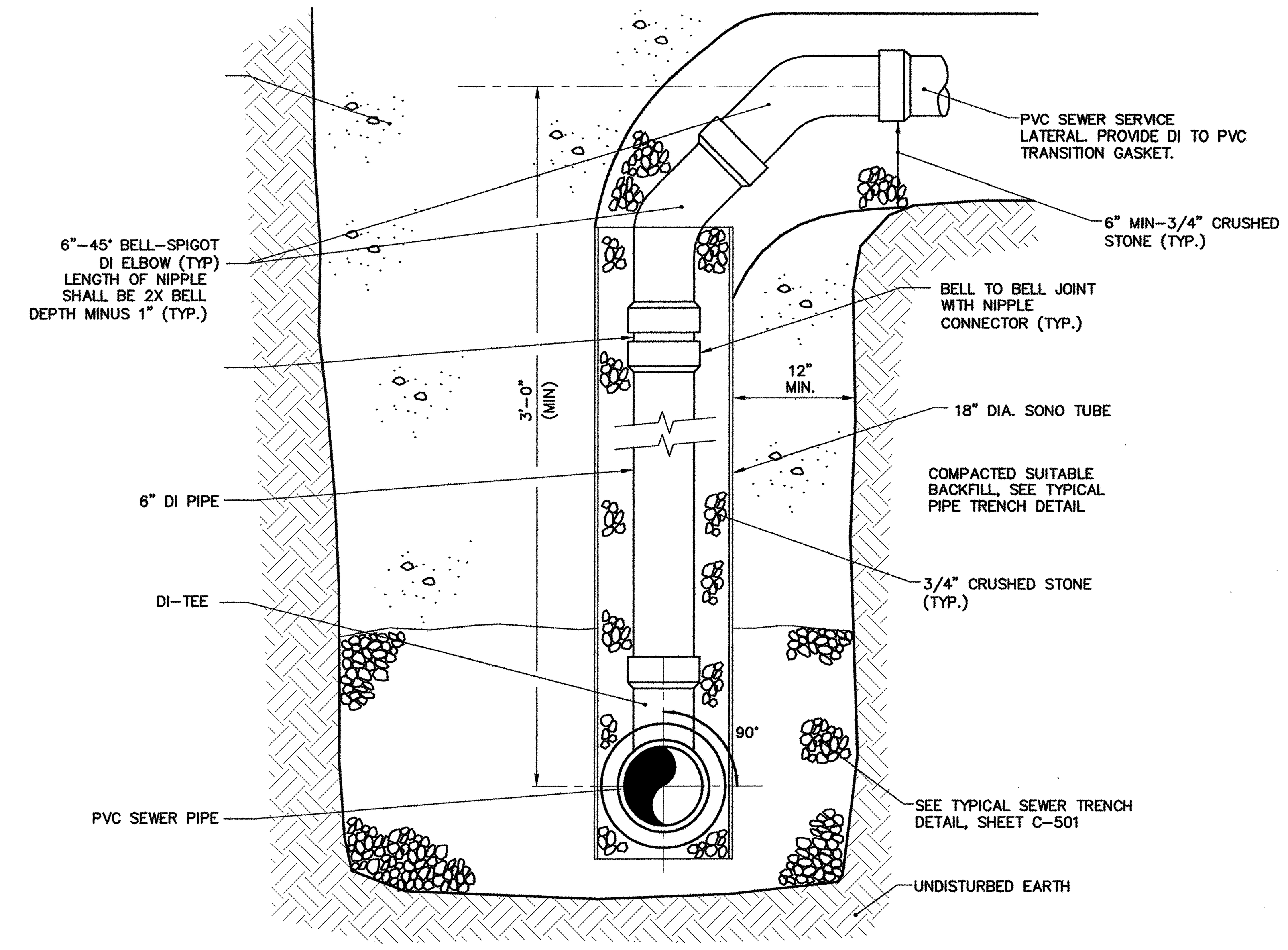
38 C-506 **TYPICAL CLAY DAM DETAIL**
NOT TO SCALE



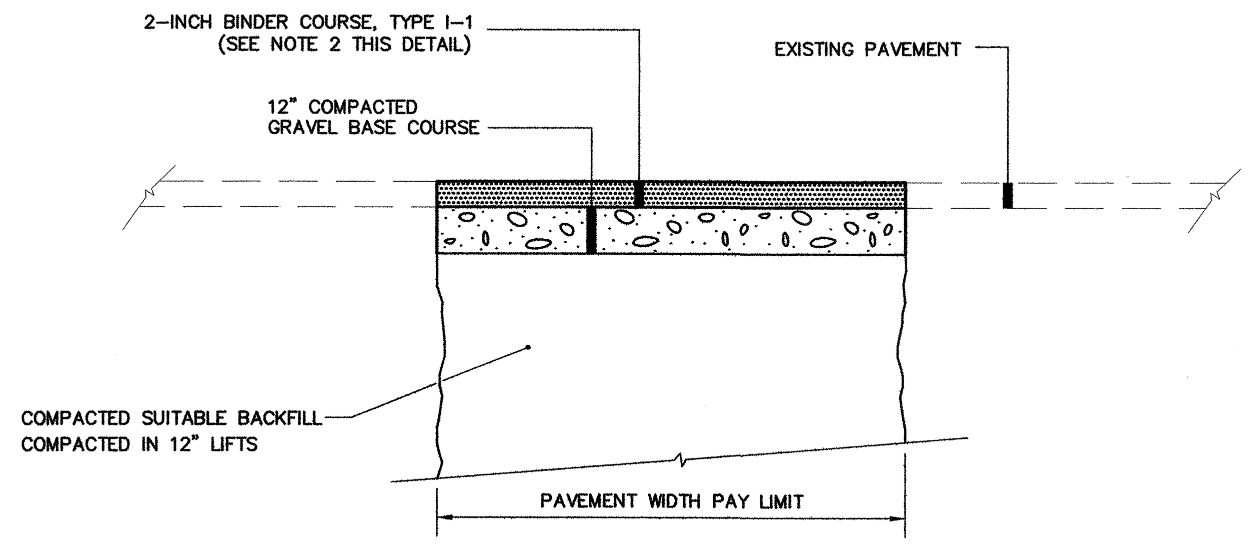
NOTES:

- PIPE DIAMETERS MAY VARY, SEE TYPICAL PIPE TRENCH DETAIL
- A 2" RIGID INSULATION WILL BE REQUIRED IN AREAS WHERE LESS THAN 4'-0" OF COVER OVER TOP OF PIPE OR WHERE REQUIRED BY ENGINEER.

39 C-506 **HORIZONTAL SEWER SERVICE CONNECTION**
NOT TO SCALE



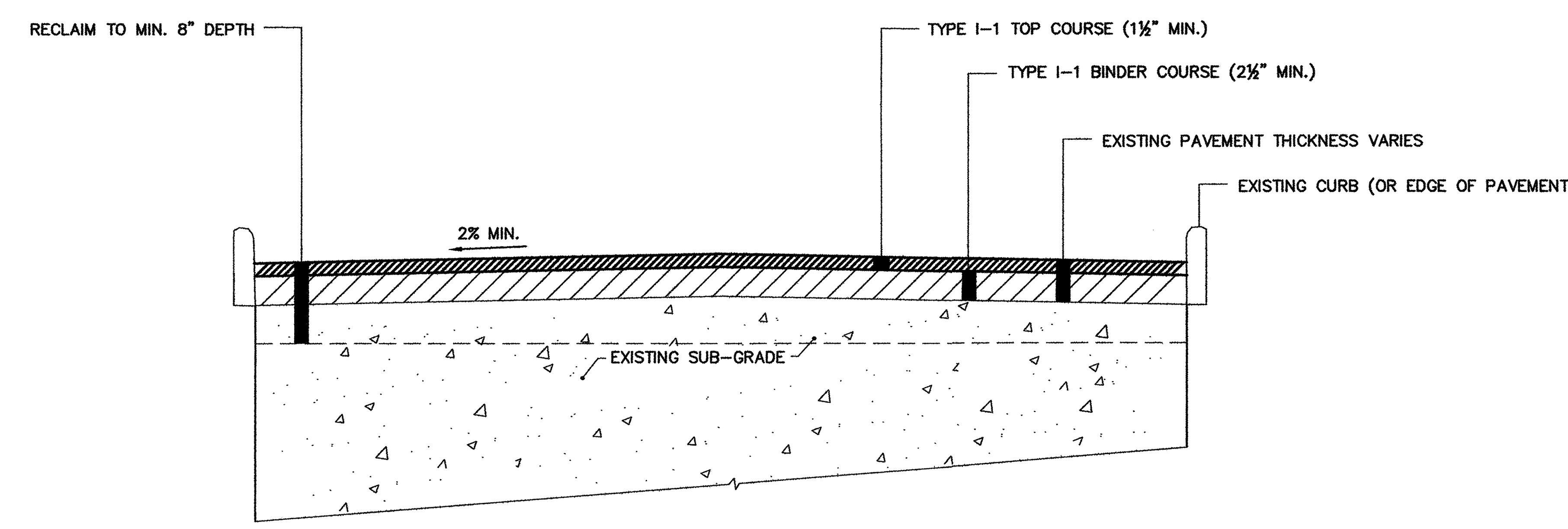
40 C-506 **SEWER CHIMNEY DETAIL**
NOT TO SCALE



NOTES:

1. PROVIDE 12-INCHES OF GRAVEL BASE COMPACTED IN 6" LIFTS.
2. PROVIDE 2-INCH (COMPACTED THICKNESS) TYPE I-1 BINDER COURSE TEMPORARY TRENCH PAVEMENT

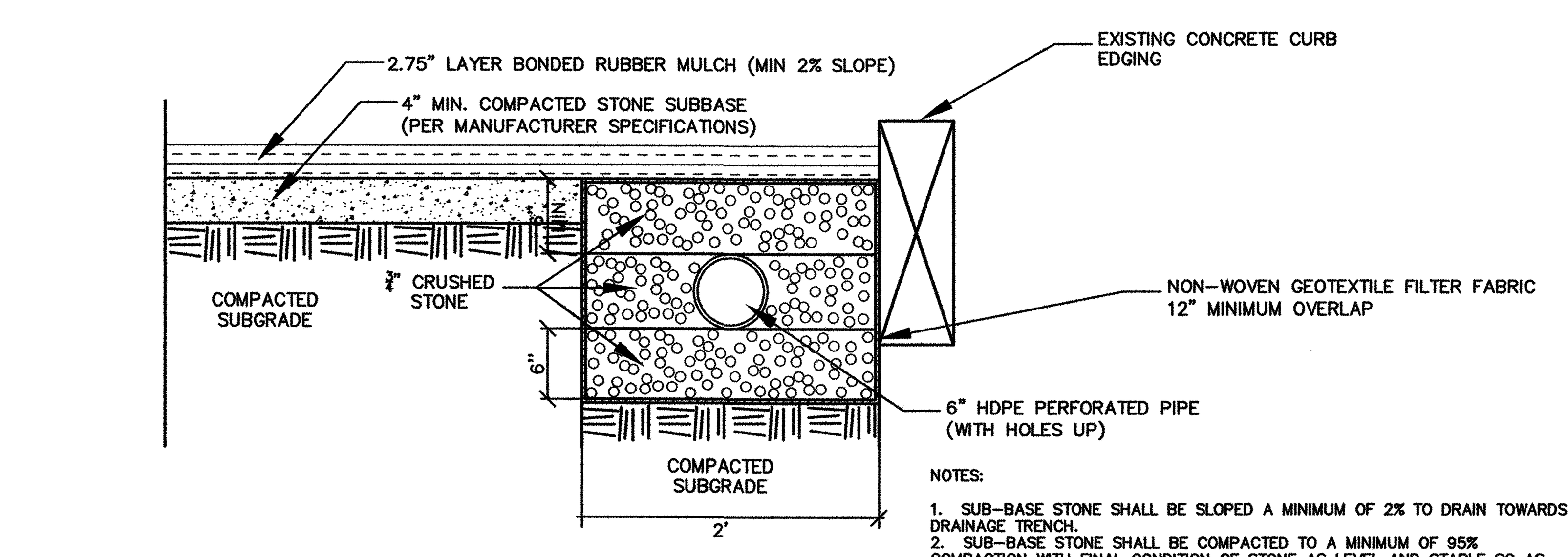
41 C-506 **TEMPORARY TRENCH PAVEMENT SECTION**
NOT TO SCALE



NOTES:

1. RECLAIM EXISTING PAVEMENT AND PAVE SUB-GRADE TO MIN. 8" DEPTH
   GRADE RECLAIMED AREA TO ESTABLISH MIN. 2% CROWN. COMPACT IN ACCORDANCE WITH SPECIFICATIONS.
2. REMOVE ROADWAY CASTINGS AND PROTECT STRUCTURES FROM DEBRIS
   RESET CASTINGS TO BASE COURSE AND FINISHED GRADES PER SPECIFICATIONS
3. PAVEMENT SHALL BE MAINTAINED FOR DURATION OF WARRANTY PERIOD

42 C-506 **RECLAIM AND FULL WIDTH OVERLAY PAVEMENT DETAIL**
NOT TO SCALE



NOTES:

1. SUB-BASE STONE SHALL BE SLOPED A MINIMUM OF 2% TO DRAIN TOWARDS DRAINAGE TRENCH.
2. SUB-BASE STONE SHALL BE COMPACTED TO A MINIMUM OF 95% COMPACTION WITH FINAL CONDITION OF STONE AS LEVEL AND STABLE SO AS NOT TO SHIFT WHEN TRAVELED ON OR DURING SURFACE INSTALLATION PROCESS.
3. SUB-BASE STONE SHALL MAINTAIN POROSITY FOR DIRECT DRAINAGE. CARE MUST BE TAKEN NOT TO CHOKE OFF POROSITY.
4. POSITIVE DRAINAGE IN ALL AREAS IS REQUIRED.
5. IT IS CRITICAL THAT THE USE OF DIFFERENT STONE SIZES DESCRIBED BELOW IS STRICTLY ADHERED TO. SUB-BASE STONE SHALL BE UNIFORMLY MIXED IN AN APPROVING PUGMILL OR ON A MIXING TABLE OR BY OTHER MECHANICAL MEANS (SUCH AS QUARRY BLENDING OPERATIONS) PRIOR TO PLACEMENT ON THE SUBGRADE. TEST SAMPLES WILL BE TAKEN AFTER MIXING, AND THE MATERIAL SHALL CONFORM TO SPECIFIED REQUIREMENTS PRIOR TO PLACEMENT ON THE SUBGRADE. THE MATERIAL SHALL BE WETTED DURING MIXING OPERATIONS IF NECESSARY FOR PROPER BLENDING. SUB-BASE STONE SHALL MEET THE FOLLOWING GRADATION:

U.S. SIEVE	PERCENT PASSING
1"	100
3/4"	90 - 100
NO. 4	35 - 60
NO. 30	10 - 30
NO. 200	2 - 9

43 C-506 **PLAYGROUND RESURFACING DETAIL**
NOT TO SCALE

MAXIMUM PAY LIMITS (WATER)

TRENCH DEPTH	NOMINAL PIPE DIAMETER (D)	TEMPORARY TRENCH PAVEMENT	"ROCK" EXCAVATION
0'-12'	0-24"	4'-0"	6'-0"

MAXIMUM PAY LIMITS (SEWER AND DRAIN)

TRENCH DEPTH	NOMINAL PIPE DIAMETER (D)	TEMPORARY TRENCH PAVEMENT	"ROCK" EXCAVATION
0'-12'	0-24"	5'-0"	7'-0"
0'-12'	GREATER THAN 24"	D + 3'-0"	D + 5'-0"
>12' TO 20'	0-24"	7'-0"	9'-0"
>12' TO 20'	GREATER THAN 24"	D + 5'-0"	D + 7'-0"

44 C-506 **MAXIMUM PAY LIMITS**
N.T.S.

WOODARD & CURRAN
35 New England Business Center
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

COMMONWEALTH OF MASSACHUSETTS — ARTHUR D. DEVENTIS — CIVIL — No. 45470 — REGISTERED PROFESSIONAL ENGINEER

REV	DESCRIPTION	DATE

DESIGNED BY: TRP | CHECKED BY: ADL
DRAWN BY: TRP | 223703 C-505-506.dwg

CONSTRUCTION DETAILS 6

TOWN OF WINTHROP
DEPARTMENT OF PUBLIC WORKS
WINTHROP, MASSACHUSETTS

CONTRACT 3 - SEWER, WATER AND DRAIN IMPROVEMENTS - PHASE 1

JOB NO.: 223703
DATE: JUNE 2012
SCALE:
SHEET: 14 OF 14

C-506

\\Andover\projects\223703 Winthrop MA - Contract 3 Sewer & Water Main\wip\REBID\DRAWINGS\223703 C-505-506.dwg, Jun 05, 2012 - 4:21pm