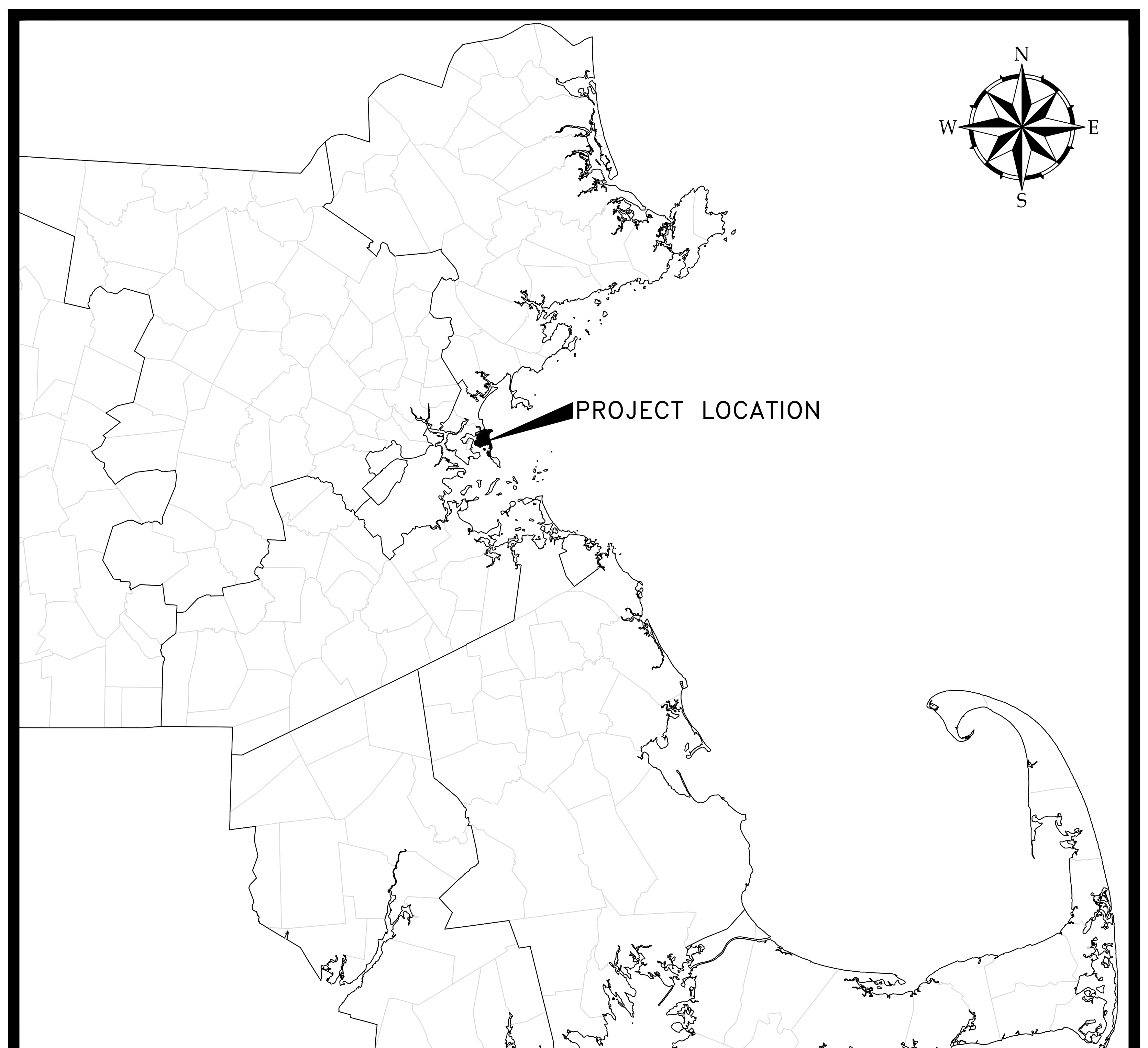
TOWN OF WINTHROP
1 METCALF SQUARE
WINTHROP, MASSACHUSETTS

TOWN CENTER INFRASTRUCTURE AND IMPROVEMENTS

PROJECT NO. 230079
SEPTEMBER 2017

FINAL DESIGN - NOT FOR CONSTRUCTION



PROJECT LOCATION MAP

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SOURCE: USGS TOPOGRAPHIC MAP

SITE LOCATION MAP

SCALE: 1=2,000'

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GENERAL NOTES:

1. EXISTING CONDITIONS SHOWN HEREON HAVE BEEN TAKEN FROM A SITE SURVEY PREPARED BY COUGHLIN ENVIRONMENTAL SERVICES, LLC, PERFORMED ON NOVEMBER 2016 AND SUPPLEMENTED WITH ORTHOIMAGERY TAKEN FROM MASSGIS.
2. COUGHLIN ENVIRONMENTAL SERVICES, LLC IS LOCATED AT THE FOLLOWING ADDRESS:
   62 MONTVALE AVENUE, SUITE H
   STONEHAM, MA 02180-3637
   (781) 832-1002
3. ELEVATIONS REFERENCED TO NORTH AMERICAN VERTICAL DATUM (NAVD) 1988 AND NORTH AMERICAN DATUM (NAD) 1983.
4. EXISTING UTILITIES SHOWN ON THESE PLANS WERE COMPILED FROM A SITE SURVEY PREPARED BY SITEC, INC. THESE PLANS DO NOT NECESSARILY DEPICT THE EXACT LOCATIONS OF ALL UTILITIES, WHICH MAY EXIST AT THE SITE, WITHIN THE SURVEYED LIMITS. THERE MAY BE EXISTING UTILITIES OTHER THAN THOSE INDICATED. THE LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES SHALL BE CONSIDERED APPROXIMATE AND MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY UTILITY CONNECTIONS OR CROSSINGS OF PROPOSED OR EXISTING UTILITIES. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE OWNER IN WRITING. NO COMPENSATION WILL BE CONSIDERED DUE TO ANY VARIANCE BETWEEN THE DATA SHOWN ON THE PLANS AND ACTUAL FIELD CONDITIONS ENCOUNTERED. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING TYPE AND LOCATION OF EXISTING UTILITIES AND TO PROTECTING EXISTING UTILITIES FROM DAMAGE TO FACILITATE THE PROPOSED WORK.
5. LAND OUTSIDE THE PROPOSED LIMIT OF WORK SHALL NOT BE DISTURBED BY THE CONTRACTOR. ANY DISTURBANCE SHALL BE REPAIRED TO OWNERS SATISFACTION AT NO ADDITIONAL EXPENSE.
6. RESTORE ANY AREAS DAMAGED BY EXCAVATION OF THE WORK TO ORIGINAL CONDITION WITH NEW MATERIALS OF EQUAL OR BETTER QUALITY.
7. RESTORE GRASS AREAS DAMAGED BY WORK. PROVIDE MIN. OF 4 INCHES OF LOAM, HYDROSEED AREA AND WATER REGULARLY UNTIL GROWTH IS ESTABLISHED TO OWNER'S SATISFACTION. SEED MIX SHALL BE AS NOTED HEREIN UNLESS OTHERWISE NOTED.
8. REVIEW THE PERMITTED LIMITS OF WORK WITH THE OWNER PRIOR TO BEGINNING WORK.
9. ESTABLISH AND MAINTAIN ALL CONTROL POINTS AND BENCH MARKS NECESSARY FOR THE WORK.
10. CALL "DIG SAFE" AT 888-DIG-SAFE (888-344-7233) AT LEAST 72 HOURS PRIOR TO EXCAVATION IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL SAFETY CODES.
11. COMPLY WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL SAFETY CODES, REGULATIONS, LEGAL REQUIREMENTS, PERMIT CONDITIONS, ETC.
12. PROVIDE PREVENTATIVE MEASURES REQUIRED TO PROTECT SURFACES AND PLANTINGS.
13. PROVIDE ADEQUATE BRACING AND SHORING OF ALL EXCAVATIONS IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
14. SAWCUTS IN EXISTING PAVEMENT SHALL BE SMOOTH AND STRAIGHT.
15. WORK WITHIN PUBLIC RIGHT-OF-WAY SHALL COMPLY WITH APPLICABLE FEDERAL, STATE AND MUNICIPAL REQUIREMENTS.
16. IMPORTED FILL MATERIAL SHALL BE CERTIFIED IN WRITING BY A LICENSED SITE PROFESSIONAL (L.S.P), REGISTERED IN THE STATE OF MASSACHUSETTS, AS SUITABLE MATERIAL FOR THE INTENDED USE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ENVIRONMENTAL TESTING REQUIREMENTS OUTLINED IN THE TECHNICAL SPECIFICATIONS.
17. FURNISH, INSTALL, AND MAINTAIN ALL STORMWATER MANAGEMENT, SOIL EROSION AND SEDIMENT CONTROL FEATURES IN ACCORDANCE WITH THE ORDER OF CONDITIONS (O.O.C), STORMWATER POLLUTION PREVENTION PLAN (SWPPP), PERMIT REQUIREMENTS AND CONTRACT DOCUMENTS. THIS INCLUDES, BUT IS NOT LIMITED TO, SILT FENCE, STABILIZED CONSTRUCTION ENTRANCE, WATER QUALITY STRUCTURE, STORM INLET PROTECTION, SUBSURFACE DRAINAGE PIPES AND LAND GRADING.
18. SUBMIT A TRAFFIC MANAGEMENT PLAN (TMP) MEETING OR EXCEEDING ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS TO THE OWNER AT LEAST 14 CALENDAR DAYS PRIOR TO COMMENCING WORK, FOR REVIEW AND APPROVAL.
19. DUMPSTERS AND ROLL-OFF CONTAINERS SHALL BE COVERED AT THE END OF EACH DAY AND WHEN NOT IN USE. LEGALLY DISPOSE DUMPSTER AND ROLL-OFF CONTAINER MATERIALS ON A REGULAR BASIS.
20. STORE ALL CONSTRUCTION CHEMICALS IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS.

UTILITIES NOTES:

1. PRIOR TO THE START OF CONSTRUCTION, CONTRACTOR SHALL HAND DIG TEST PITS TO VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL EXISTING UTILITIES AT PROPOSED UTILITY CROSSINGS, AND ADVISE THE OWNER IN WRITING OF ANY DISCREPANCIES.
2. ALL PROPOSED UTILITIES (WATER, ELECTRIC, SANITARY, STORM SEWER, ETC.) AND THEIR CONNECTIONS, DISCONNECTION AND RELOCATION OF EXISTING UTILITIES SHALL BE COMPLETED IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY COMPANY HAVING JURISDICTION. ANY COORDINATION WITH THE MUNICIPALITY AND/OR UTILITY COMPANY, PERMITS OR APPROVALS AND ALL FEES REQUIRED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. THE MINIMUM COVER FOR PROPOSED WATER UTILITIES SHALL BE 4 FEET.
4. CONDUIT FOR ELECTRIC LINES SHALL BE WATER-TIGHT AND SHALL CONFORM TO UTILITY COMPANY REQUIREMENTS.
5. TREE STUMPS SHALL BE EXCAVATED AND REMOVED FOR ALL TREES SHOWN TO BE REMOVED AS NECESSARY TO COMPLETE WORK.

LANDSCAPING NOTES:

1. ALL PLANT MATERIAL SHALL BE FIRST QUALITY STOCK. PLANT MATERIAL, SIZE, GRADING AND METHODS OF INSTALLATION SHALL COMPLY TO THE LATEST EDITION OF THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION, AMERICAN STANDARD FOR NURSERY STOCK. REFER TO SECTION 32 90 00 FOR ADDITIONAL LANDSCAPING INFORMATION.
2. ALL TREE PLANTINGS SHALL BE MULCHED WITH 3" OF BROWN MULCH, MULCH SHALL BE CLEAN, NON-DYED, TOXIC FREE, SHREDDED HARDWOOD.
3. PROVIDE 4-INCHES (MIN) OF TOP SOIL FOR ALL DISTURBED AREAS NOT SPECIFIED AS BEING PLANTED WITH TREES, SHRUBS, OR GROUND COVER AND NOT OCCUPIED BY PAVEMENT, CONCRETE, STONE, OR STRUCTURE FOUNDATIONS.
4. PLANTINGS SHALL BE BALLED AND BURLAPPED OR CONTAINER GROWN STOCK, UNLESS OTHERWISE SPECIFIED.
5. CONTRACTOR SHALL USE AN EDGING TOOL TO ENSURE A FINE SEPARATION BETWEEN MULCH AND GRASS.
6. THE FILLING OF SOIL OVER THE ROOTS OF TREES TO BE PRESERVED IS PROHIBITED.

GRADING AND DRAINAGE NOTES:

1. CASTINGS FOR EXISTING STRUCTURES TO REMAIN AND PROPOSED STRUCTURES SHALL BE SET TO THE PROPOSED ELEVATIONS SHOWN ON THE DRAWINGS.
2. UNSUITABLE FILL AND BACKFILL MATERIALS ARE MATERIALS CONTAINING EXCESSIVE AMOUNT OF WATER, PLASTIC, CLAY, VEGETATION, ORGANIC MATTER, DEBRIS, PAVEMENT, STONES OR BOULDERS OVER 6 INCHES IN GREATEST DIMENSION, FROZEN MATERIAL, AND MATERIAL WHICH, IN THE OPINION OF THE OWNER, WILL NOT PROVIDE A SUITABLE FOUNDATION OR SUBGRADE.
3. EXCESS SOILS (SURPLUS) SHALL BE DISPOSED OFF-SITE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.
4. CONTRACTOR SHALL PROVIDE PITCH TO NEWLY GRADED AREAS AS SHOWN ON PLANS TO ALLOW SURFACE DRAINAGE AND TO PREVENT THE ACCUMULATION OF WATER.

CONSTRUCTION PHASING:

GENERAL CONSTRUCTION PHASING IS PROVIDED BELOW. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION AND SHALL SUBMIT PROPOSED SCHEDULING TO OWNER FOR REVIEW AND APPROVAL AT LEAST 21 CALENDAR DAYS PRIOR TO BEGINNING WORK.

1. SURVEY AND LAYOUT LIMITS OF WORK.
2. DIG SAFE SITE AND PERFORM TEST PITS TO VERIFY UTILITY LOCATIONS.
3. INSTALL EROSION AND SEDIMENT CONTROLS IN ACCORDANCE WITH CONTRACT DOCUMENTS PERMIT REQUIREMENTS.
4. INSTALL UTILITIES (WATER, SEWER, DRAINAGE) IN ACCORDING WITH PLANS & CONTRACT DOCUMENTS.
5. INSTALL LANDSCAPING AND FINAL PAVING.
6. COMPLETE SITE RESTORATION, SEEDING, AND STABILIZATION.
7. REMOVE EROSION AND SEDIMENT CONTROLS.
8. COMPLETE FINAL SITE CLEANUP.

ABBREVIATIONS*

AGGR	AGGREGATE
ALT	ALTERNATE
ALUM	ALUMINUM
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX/±	APPROXIMATELY
BC	BOTTOM OF CURB
BIT	BITUMINOUS
BLDG	BUILDING
BOT	BOTTOM
℄	CENTERLINE
CB	CATCH BASIN
CI	CAST IRON
CLDI	CONCRETE LINED DUCTILE IRON
CLR	CLEAR
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
CONC.	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
CRW	CURB RETAINING WALL
CU	COPPER
DI	DUCTILE IRON
DIA/ø	DIAMETER
DMH	DRAIN MANHOLE
DW	DOMESTIC WATER
EA	EACH
EL	ELEVATION
ELEC COND	ELECTRICAL CONDUIT
EOP	EDGE OF PAVEMENT
EQUIP	EQUIPMENT
EXIST/EX.	EXISTING
FDN	FOUNDATION
FE	FIRE EXTINGUISHER
FF/FIN FLR	FINISH FLOOR
F.F.E/FFE	FINISHED FLOOR ELEVATION
FIN	FINISHED
FIN GR	FINISH GRADE
FM	FORCE MAIN
FND	FOUND
FT	FOOT
GAL	GALLON
GALV	GALVANIZED
HDPE	HIGH DENSITY POLYETHYLENE
HP	HIGH PRESSURE
HT	HEIGHT
ID	INSIDE DIAMETER
IN	INCHES
INSUL	INSULATION
INV	INVERT
LP	LOW PRESSURE
LW	LIMIT OF WORK
MAX	MAXIMUM
MECH	MECHANICAL
MFG	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MTL	METAL
NO.	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
REINF	REINFORCED
REQ'D	REQUIRED
RET	RETAINING WALL
R/W	RIGHT OF WAY
SBG	SLOPED BITUMINOUS CURB
SECT	SECTION
SGC	SLOPED GRANITE CURB
SHT	SHEET
SMH	SEWER MANHOLE
SPEC'S	SPECIFICATIONS
SS	STAINLESS STEEL
STD	STANDARD
TBM	TEMPORARY BENCH MARK
TOC	TOP OF CURB
TYP./TYP	TYPICAL
UP	UTILITY POLE
VGC	VERTICAL GRANITE CURB
W/	WITH
W.G./WG	WATER GATE VALVE

* THESE ARE GENERAL ABBREVIATIONS. NOT ALL APPEAR ON THESE DRAWINGS.

LEGEND

EXISTING

- UTILITY POLE WITH TRANSFORMER
- UTILITY POLE WITH RISER
- UTILITY POLE WITH RISER AND TRANSFORMER
- UTILITY POLE WITH LIGHT AND TRANSFORMER
- UTILITY POLE WITH LIGHT, TRANSFORMER, AND RISER
- UTILITY POLE WITH LIGHT AND RISER
- UTILITY POLE WITH LIGHT
- UTILITY POLE
- HANDHOLE
- I-BEAM
- TELEPHONE MANHOLE
- RISER
- MONITORING WELL
- COLUMN
- GROUND LIGHT
- ELECTRIC BOX
- FLAG POLE
- MAILBOX
- TREE
- SHRUB
- VALVE
- CULVERT
- WG WATER GATE
- HYDRANT
- WATER SHUT OFF VALVE
- CATCH BASIN
- SEWER MANHOLE
- DRAIN MANHOLE
- ELECTRIC METER
- NO LABEL MANHOLE
- GG GAS VALVE
- GAS METER
- LIGHT POLE
- PARKING METER
- AIR CONDITIONER UNIT
- SIGN
- HANDICAPPED PARKING
- ELECTRIC HANDHOLE
- WHH WATER HANDHOLE
- RR SPK RAILROAD SPIKE
- IRF IRON ROD FOUND
- SB STONE BOUND FOUND
- CB CONCRETE BOUND FOUND
- SBDH STONE BOUND FOUND WITH DRILL HOLE
- CBDH CONCRETE BOUND FOUND WITH DRILL HOLE
- IPF IRON PIPE FOUND
- DHF DRILL HOLE FOUND
- X WF # WETLAND FLAG

PROPOSED

- LIMIT OF NEW PAVEMENT
- PROPOSED DRAIN MANHOLE
- PROPOSED CATCH BASIN
- PROPOSED SEWER MANHOLE
- PROPOSED WATER GATE VALVE
- PROPOSED HYDRANT
- PROPOSED CURB STOP
- VALVE BOX WITH QUICK COUPLER CONNECTOR
- SITE LIGHTING
- LW LIMIT OF WORK

EXISTING LINETYPES

- ABUTTERS LOT LINE
- PROPERTY LINE
- EASEMENT
- 10 CONTOUR
- WOOD FENCE
- IRON FENCE
- GUARDRAIL
- W WATER LINE
- C CABLE LINE
- T TELEPHONE LINE
- E ELECTRIC LINE
- OHW OVERHEAD WIRE
- D DRAIN LINE
- S SEWER LINE
- G GAS LINE

PROPOSED LINETYPES

- SILT SOCK EROSION CONTROL
- PROPOSED WOOD GUARDRAIL
- PROPOSED DRAIN LINE
- 122 CONTOUR (1' OR 2' INTERVAL)
- 120 CONTOUR (INDEX)
- W WATER LINE
- S SEWER LINE
- CHAIN LINK FENCE

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DRAWN BY: MRM / CTK 230079.01_G-001.dwg

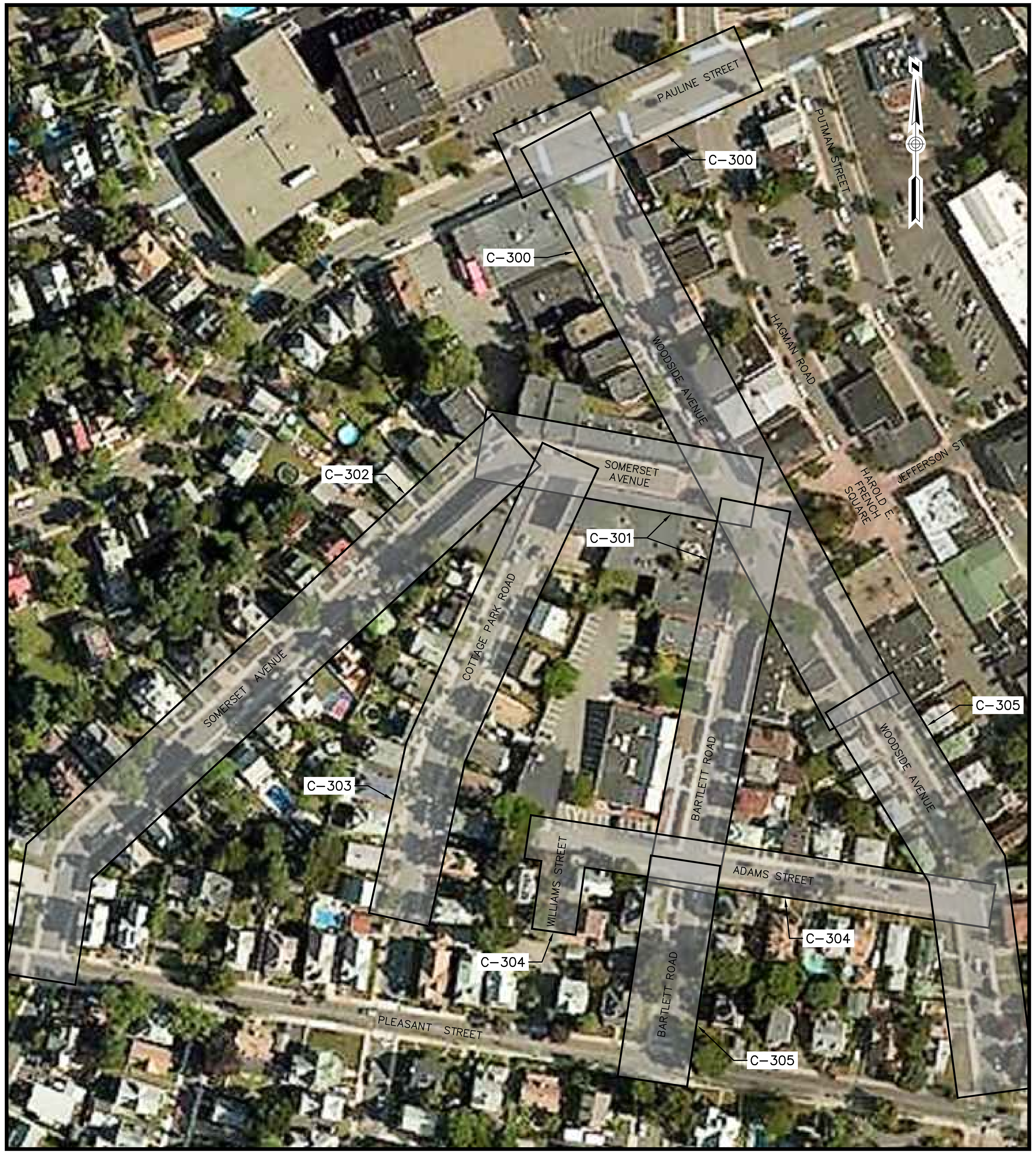
GENERAL NOTES, LEGEND AND ABBREVIATIONS

TOWN OF WINTHROP
1 METCALF SQUARE
WINTHROP, MASSACHUSETTS

WINTHROP TOWN CENTER INFRASTRUCTURE AND IMPROVEMENTS

JOB NO.: 230079.01
DATE: SEPTEMBER 2017
SCALE: AS NOTED

22x34 SHEET
1:1



PROPOSED SEWER KEY PLAN

PROPOSED DRAINAGE KEY PLAN

80' 0 80' 160'
BAR SCALE
1" = 80'
CHECK GRAPHIC SCALE BEFORE USING

AERIAL IMAGERY MAP SOURCE: BING MAPS, ©2017 MICROSOFT CORPORATION ©2017 HERE.

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SITE KEY MAPS

TOWN OF WINTHROP
1 METCALF SQUARE
WINTHROP, MASSACHUSETTS

WINTHROP TOWN CENTER INFRASTRUCTURE AND IMPROVEMENTS

JOB NO.: 230079.01
DATE: SEPTEMBER 2017
SCALE: AS NOTED
SHEET: 3 OF 31

G-002

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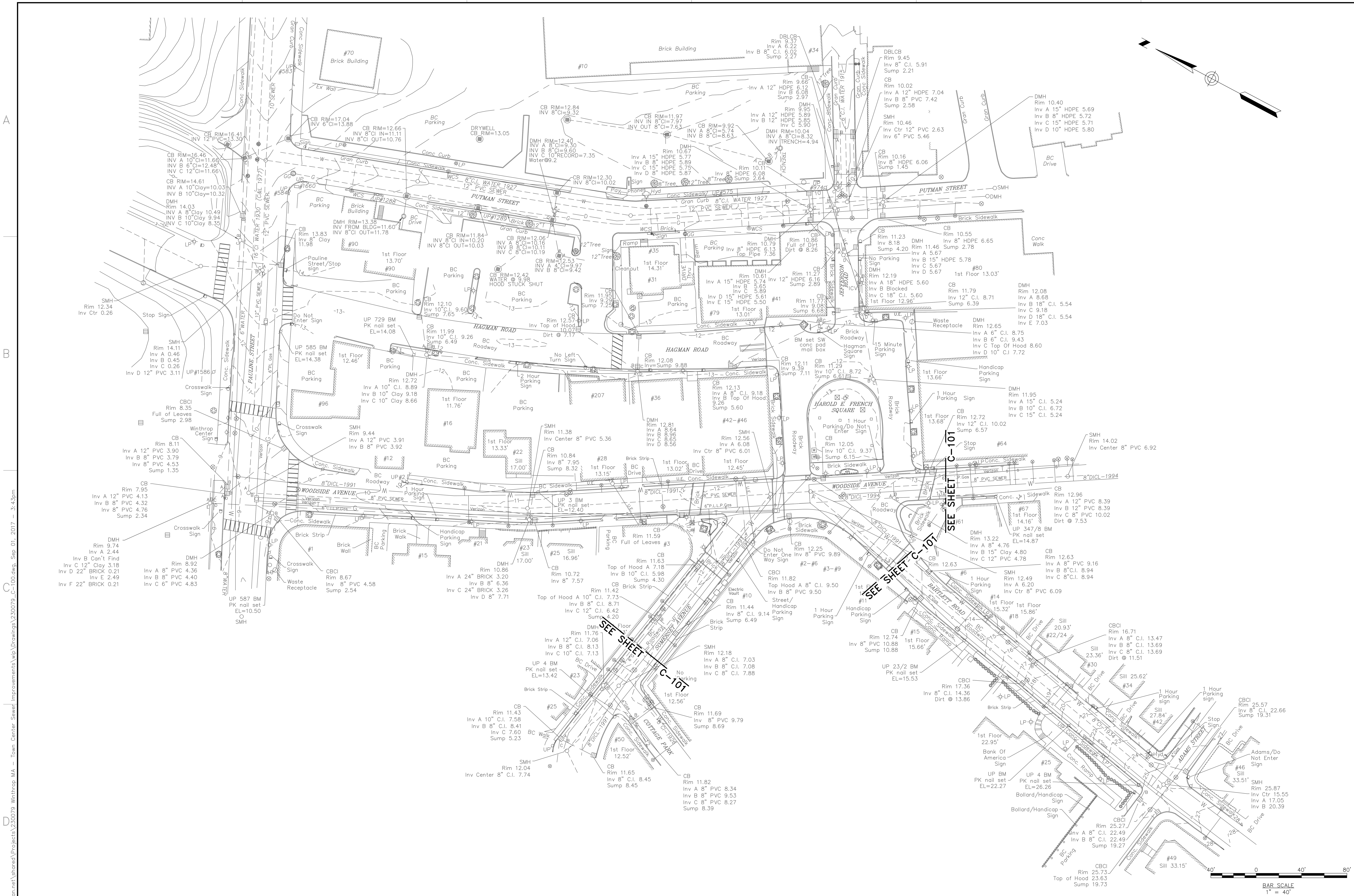

BAR SCALE
1" = 40'
CHECK GRAPHIC SCALE BEFORE USING

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NE EXISTING CONDITIONS PLAN

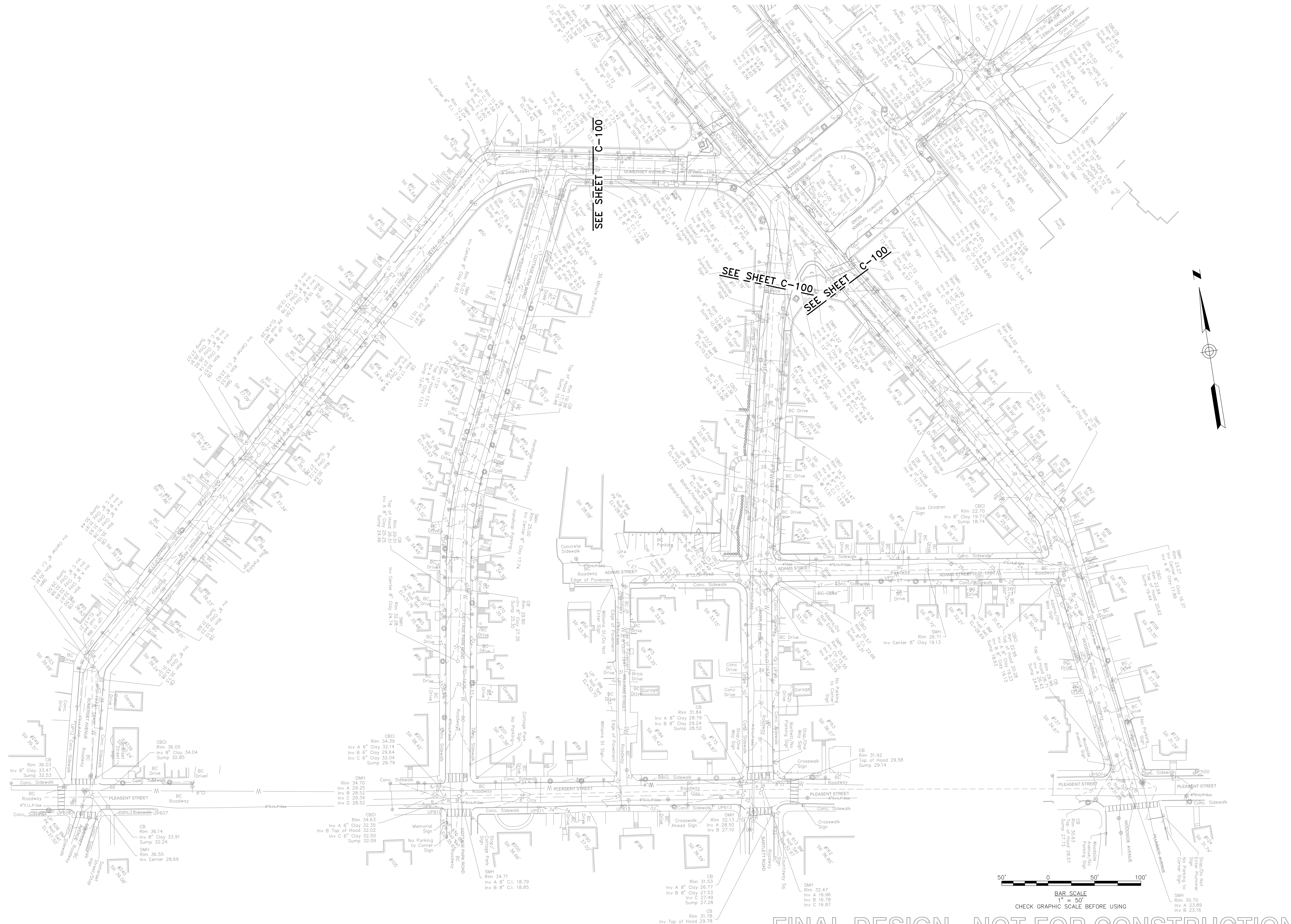
TOWN OF WINTHROP
1 METCALF SQUARE
WINTHROP, MASSACHUSETTS

WINTHROP TOWN CENTER INFRASTRUCTURE AND IMPROVEMENTS

JOB NO.: 230079.01
DATE: SEPTEMBER 2017
SCALE: AS NOTED
SHEET: 4 OF 31

C-100

22x34 SHEET
1:1



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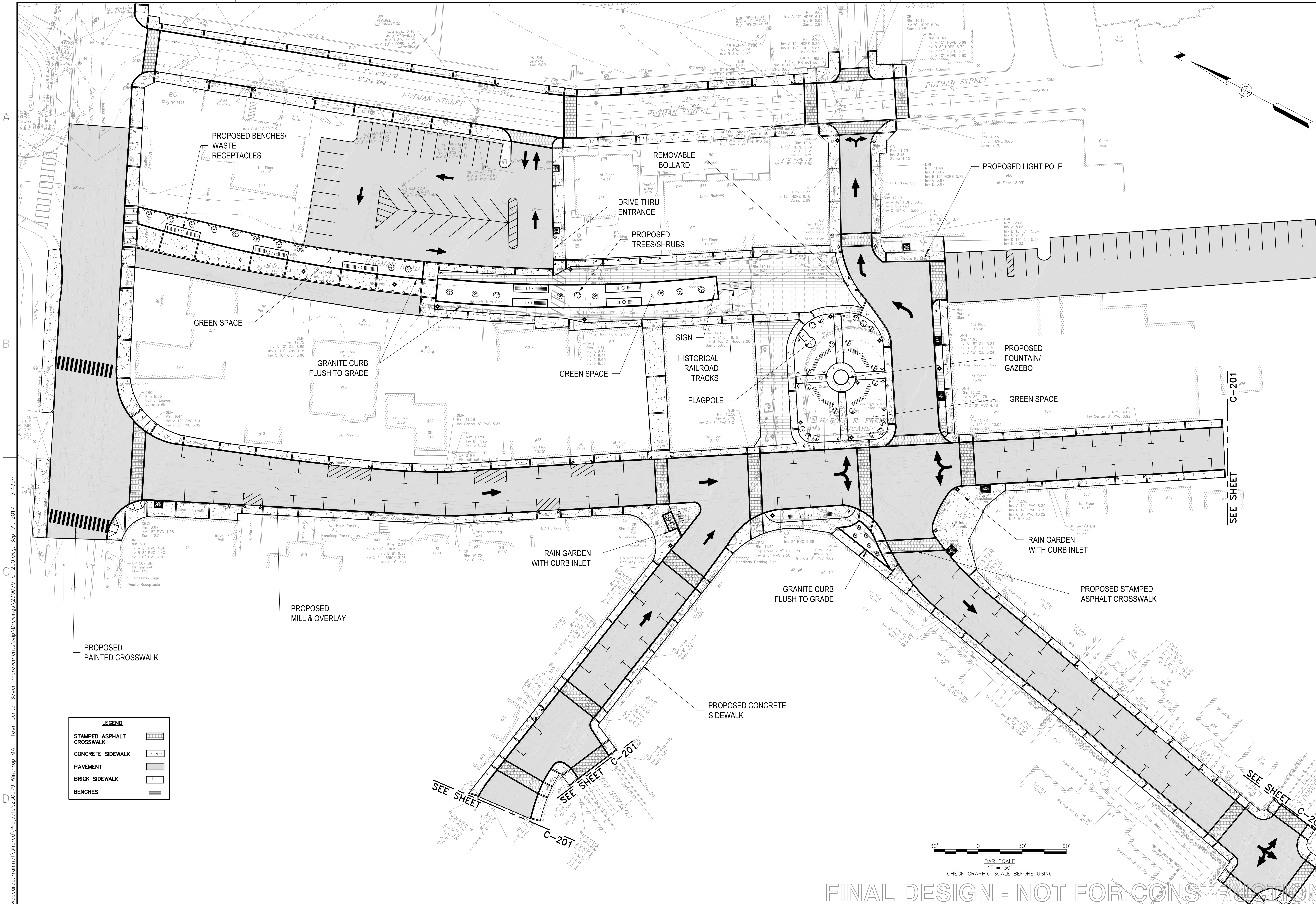
SW EXISTING CONDITIONS PLAN

TOWN OF WINTHROP
1 METCALF SQUARE
WINTHROP, MASSACHUSETTS

WINTHROP TOWN CENTER INFRASTRUCTURE AND IMPROVEMENTS

JOB NO.: 230079.01
DATE: SEPTEMBER 2017
SCALE: AS NOTED
SHEET: 5 OF 31

C-101



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22x34 SHEET
1:1

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NE SITE IMPROVEMENT PLAN

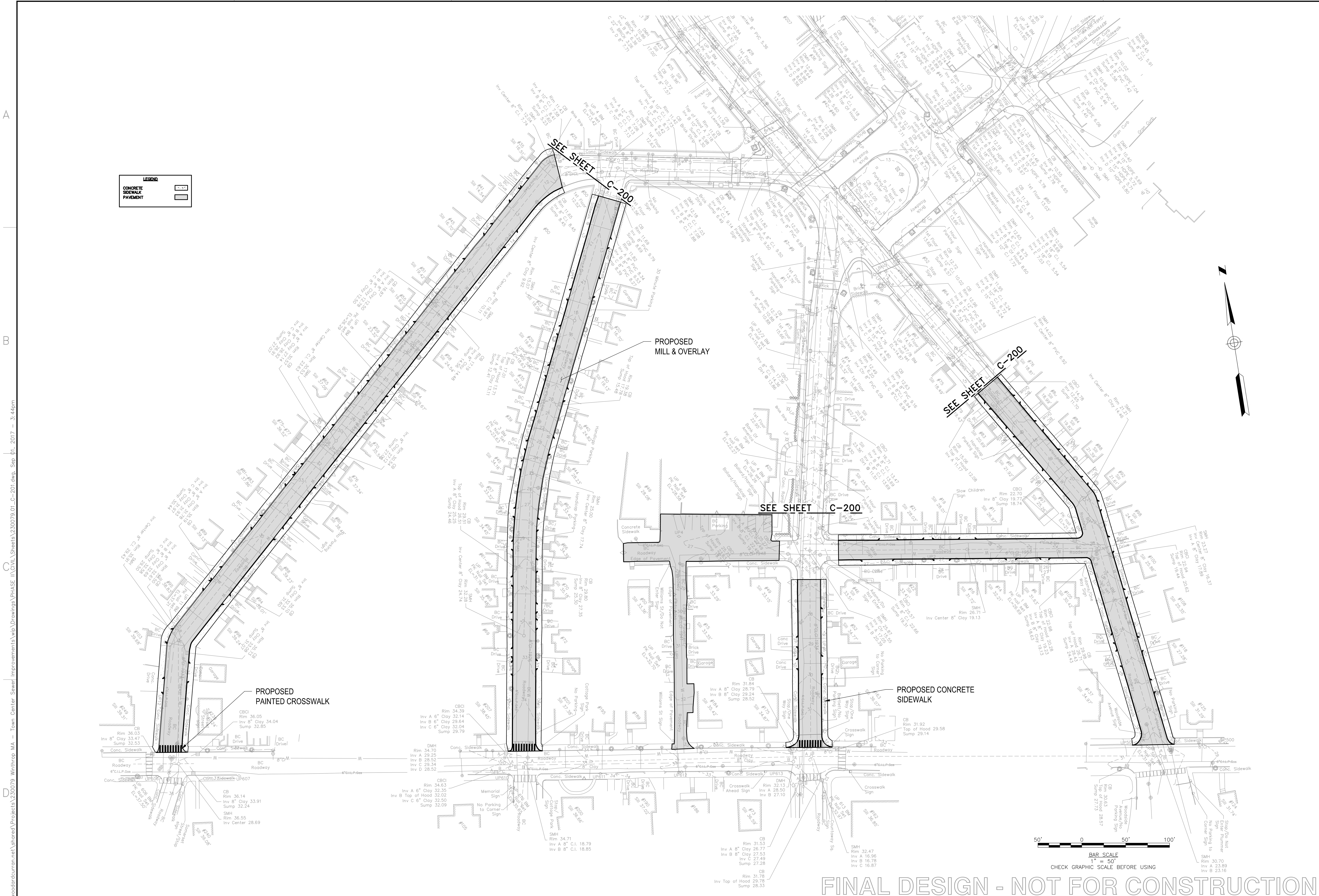
TOWN OF WINTHROP
1 METCALF SQUARE
WINTHROP, MASSACHUSETTS

WINTHROP TOWN CENTER INFRASTRUCTURE AND IMPROVEMENTS

JOB NO.: 230079.01
DATE: SEPTEMBER 2017
SCALE: AS NOTED
SHEET: 6 OF 31

C-200

22x34 SHEET
1:1



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SW SITE IMPROVEMENT PLAN

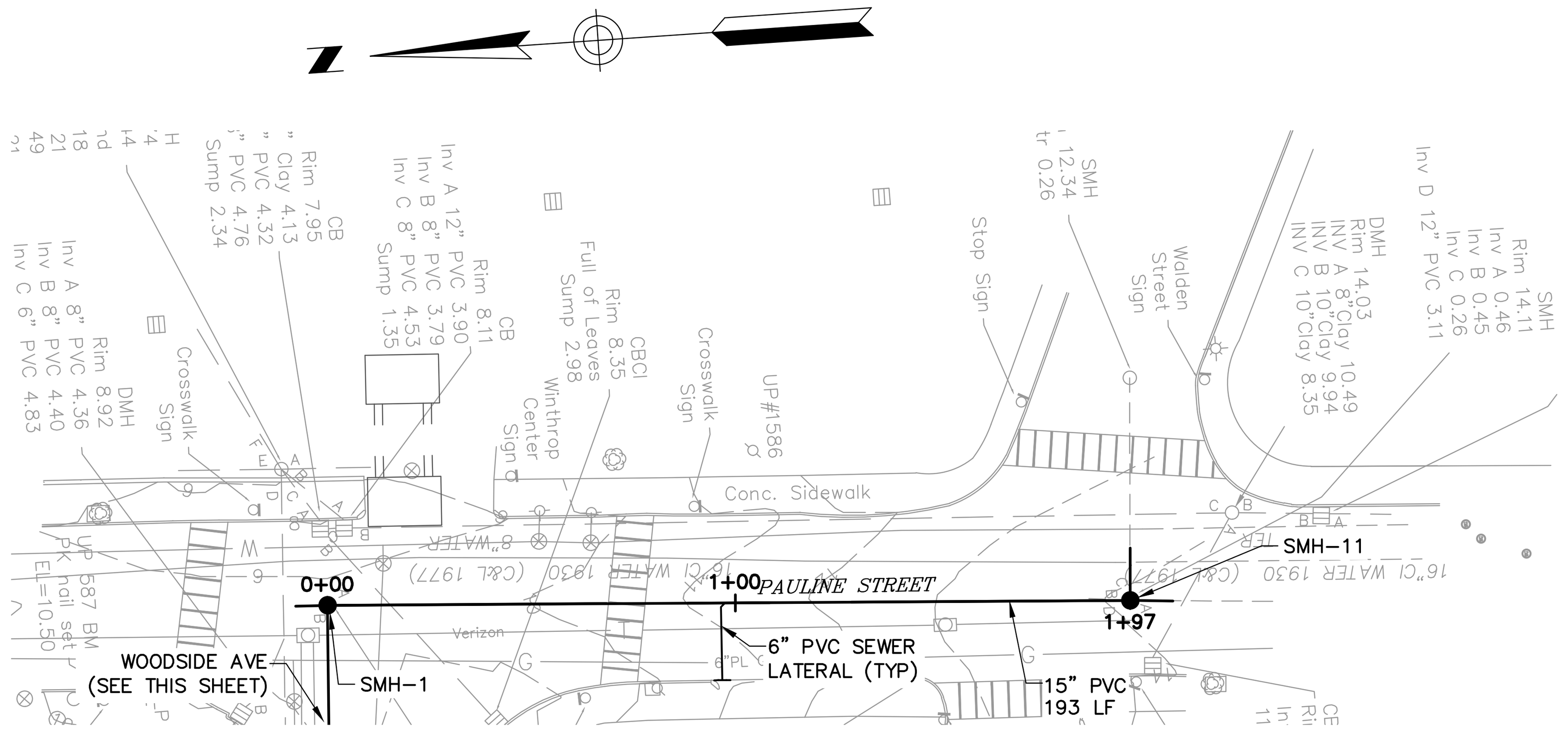
TOWN OF WINTHROP
1 METCALF SQUARE
WINTHROP, MASSACHUSETTS

WINTHROP TOWN CENTER INFRASTRUCTURE AND IMPROVEMENTS

JOB NO.: 230079.01
DATE: SEPTEMBER 2017
SCALE: AS NOTED
SHEET: 7 OF 31

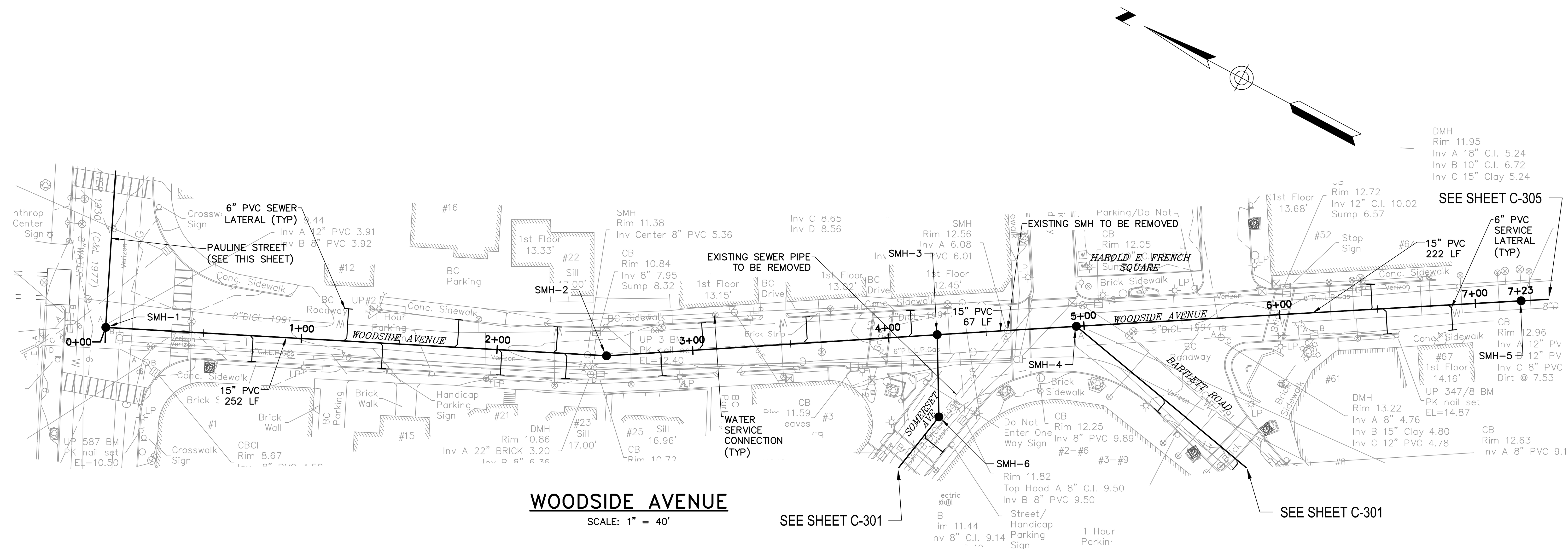
C-201

22x34 SHEET
1:1



PAULINE STREET

SCALE: 1" = 40'

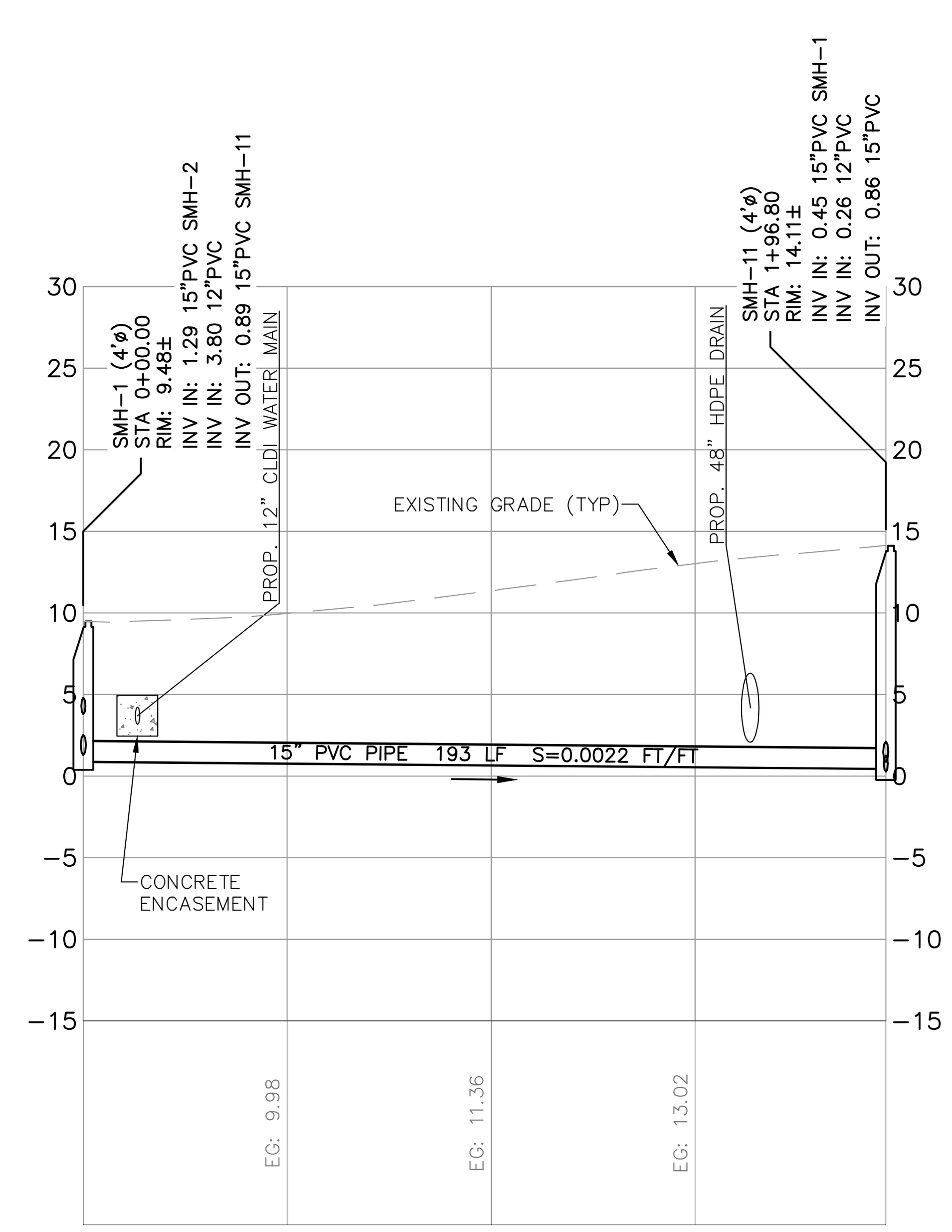


WOODSIDE AVENUE

SCALE: 1" = 40'

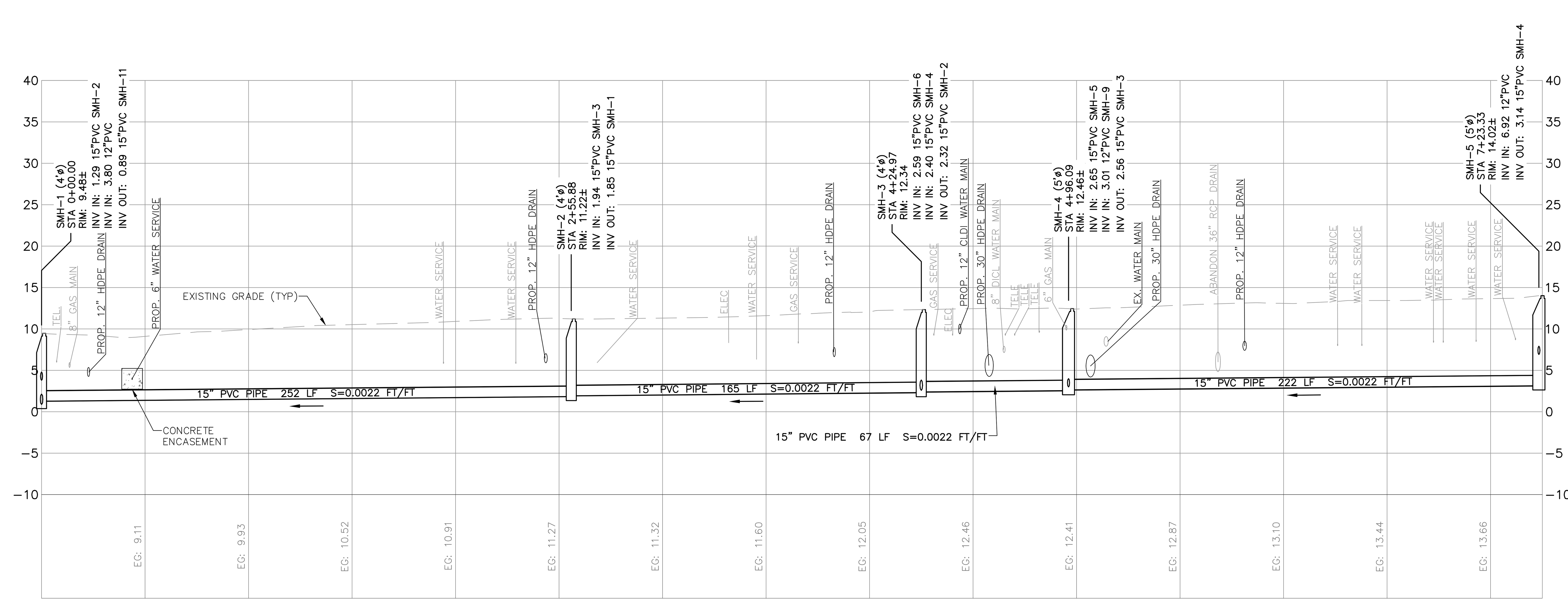
NOTES:

1. REFER TO SHEETS C-307, C-308, AND C-312 FOR DRAINAGE IMPROVEMENTS.
2. REFER TO SHEETS C-313 AND C-314 FOR WATER MAIN IMPROVEMENTS.
3. REFER TO SHEETS C-200 AND C-201 FOR SITE IMPROVEMENTS.



PAULINE STREET – SEWER
PROFILE STA. 0+00 TO STA. 1+97

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 10'



WOODSIDE AVENUE – SEWER I
PROFILE STA. 0+00 TO STA. 7+25

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 10'

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

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PAULINE STREET & WOODSIDE AVENUE SEWER PLAN & PROFILE

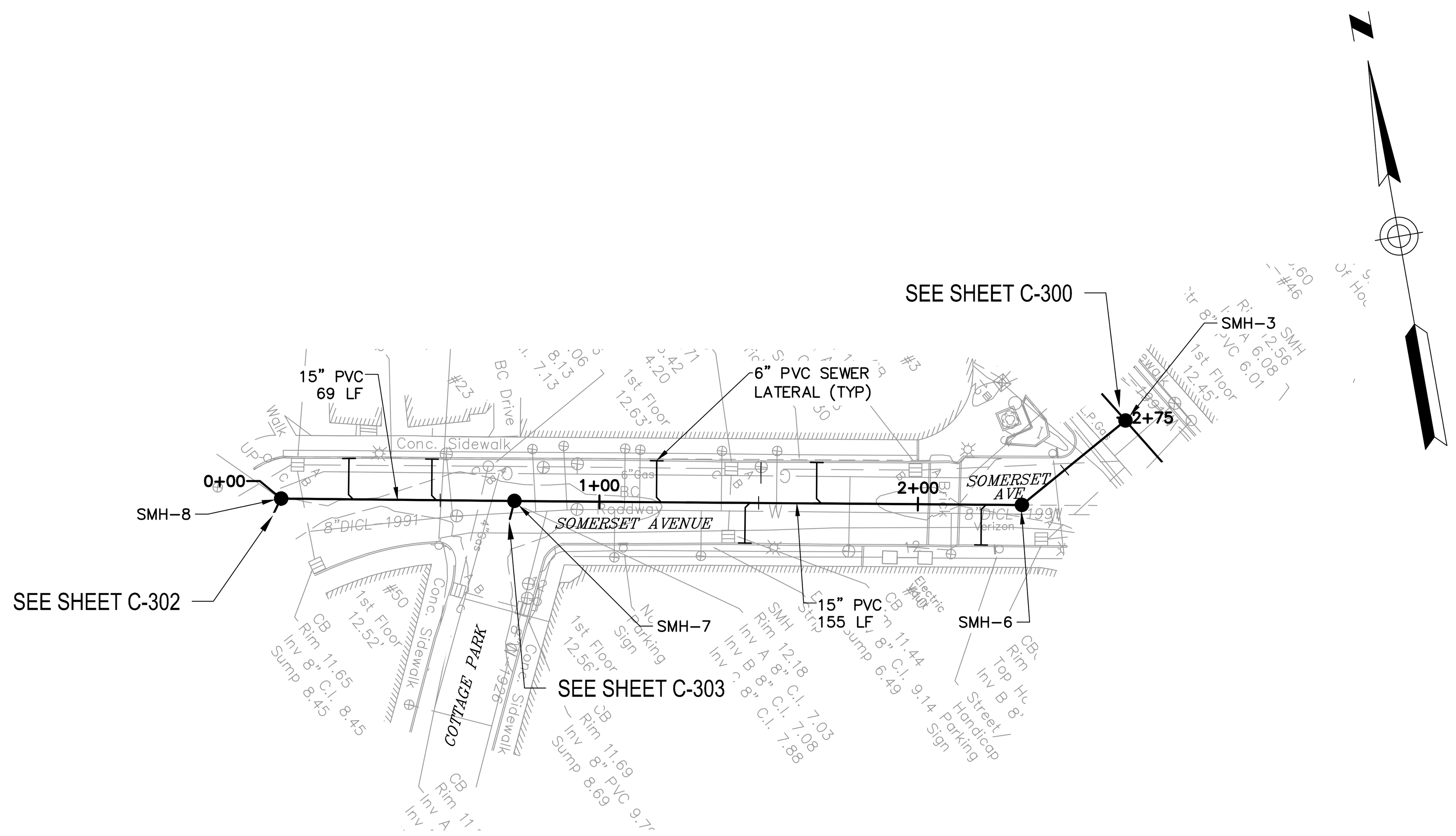
TOWN OF WINTHROP
1 METCALF SQUARE
WINTHROP, MASSACHUSETTS

WINTHROP TOWN CENTER INFRASTRUCTURE AND IMPROVEMENTS

JOB NO.: 230079.01
DATE: SEPTEMBER 2017
SCALE: AS NOTED
SHEET: 8 OF 31

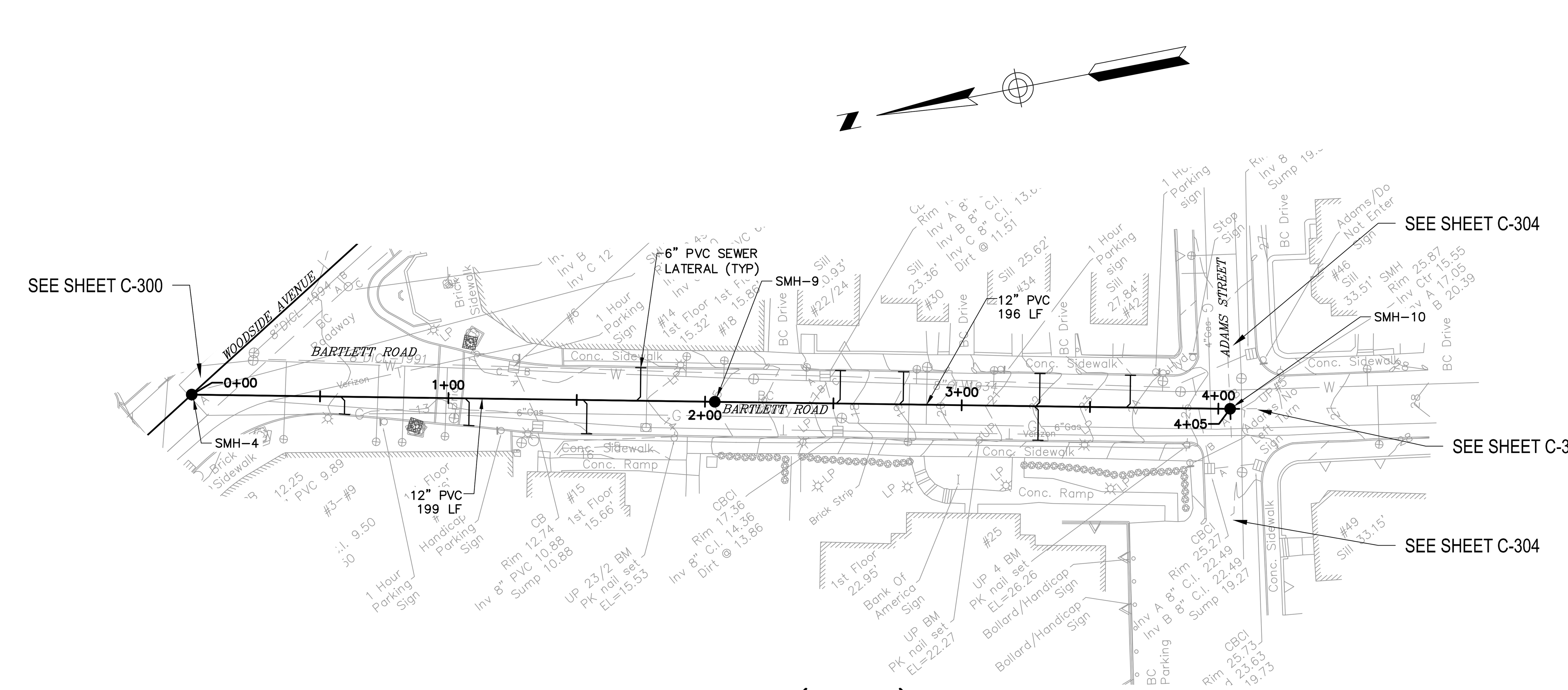
C-300

22x34 SHEET
1:1



SOMERSET AVENUE

SCALE: 1" = 40'

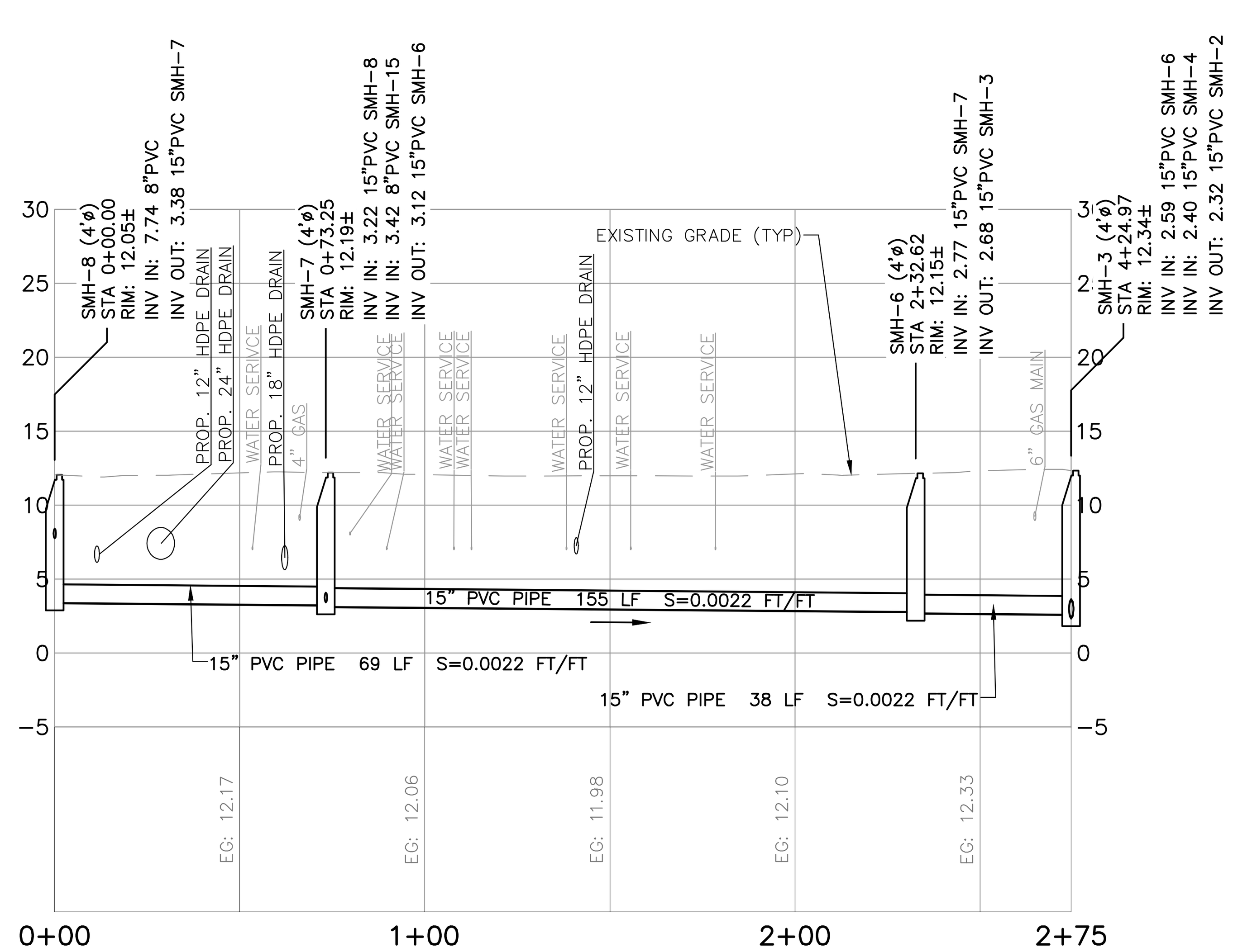


BARTLETT ROAD (NORTH)

SCALE: 1" = 40'

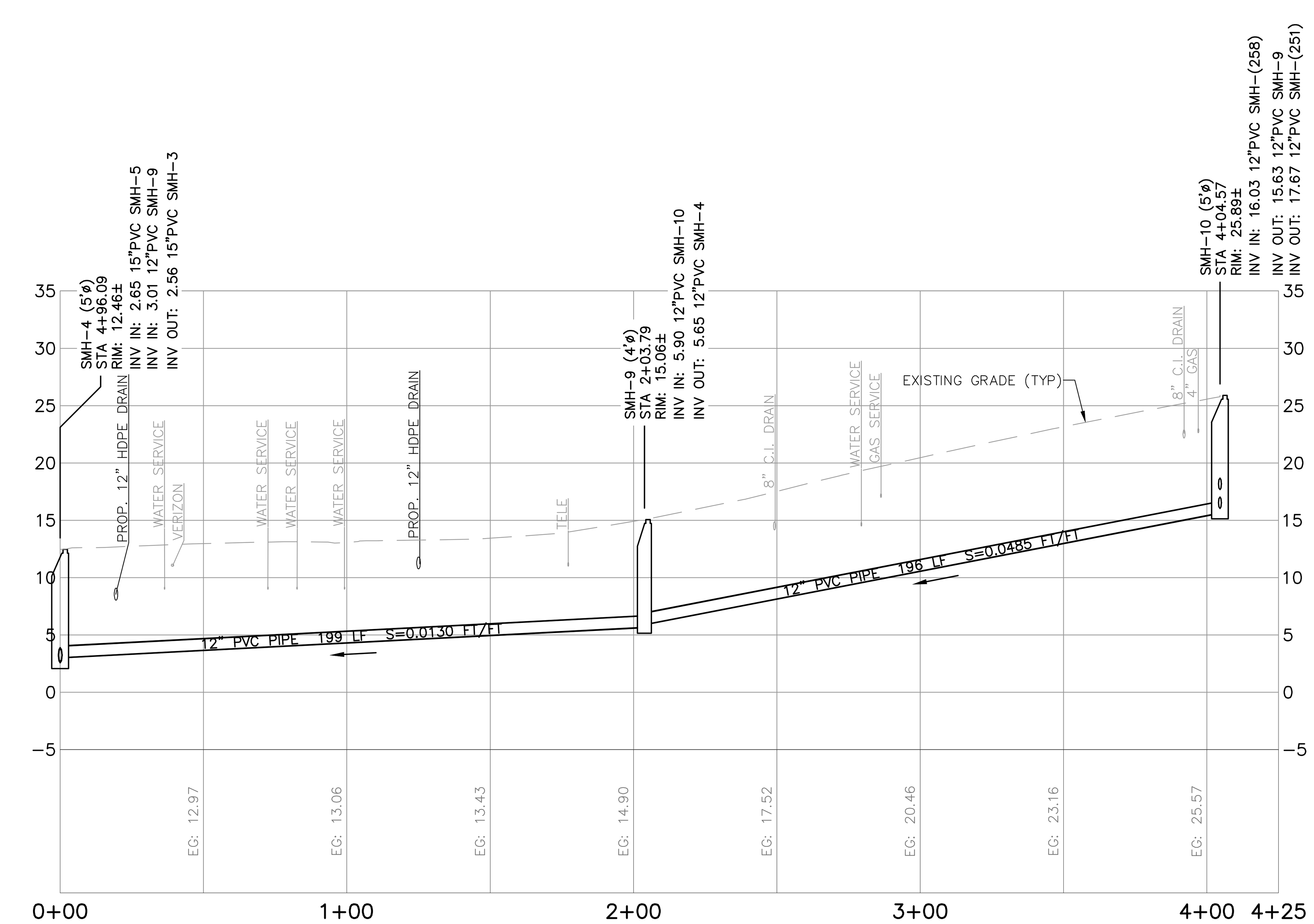
NOTES:

1. REFER TO SHEETS C-308 AND C-311 FOR DRAINAGE IMPROVEMENTS.
2. REFER TO SHEETS C-313 AND C-314 FOR WATER MAIN IMPROVEMENTS.
3. REFER TO SHEETS C-200 AND C-201 FOR SITE IMPROVEMENTS.



SOMERSET AVE – SEWER I
PROFILE STA. 0+00 TO STA. 2+75

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 10'



BARTLETT ROAD – SEWER I
PROFILE STA. 0+00 TO STA. 4+25

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 10'

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

FINAL DESIGN - NOT FOR CONSTRUCTION

WOODARD & CURRAN
40 Shattuck Road, Suite 110
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

REV	DESCRIPTION	DATE

DESIGNED BY: ADL / CTK
CHECKED BY: ADL / MCH
DRAWN BY: CTK
230079_C-300 – C-301.dwg

SOMERSET AVENUE I & BARTLETT RD I
SEWER PLAN & PROFILE

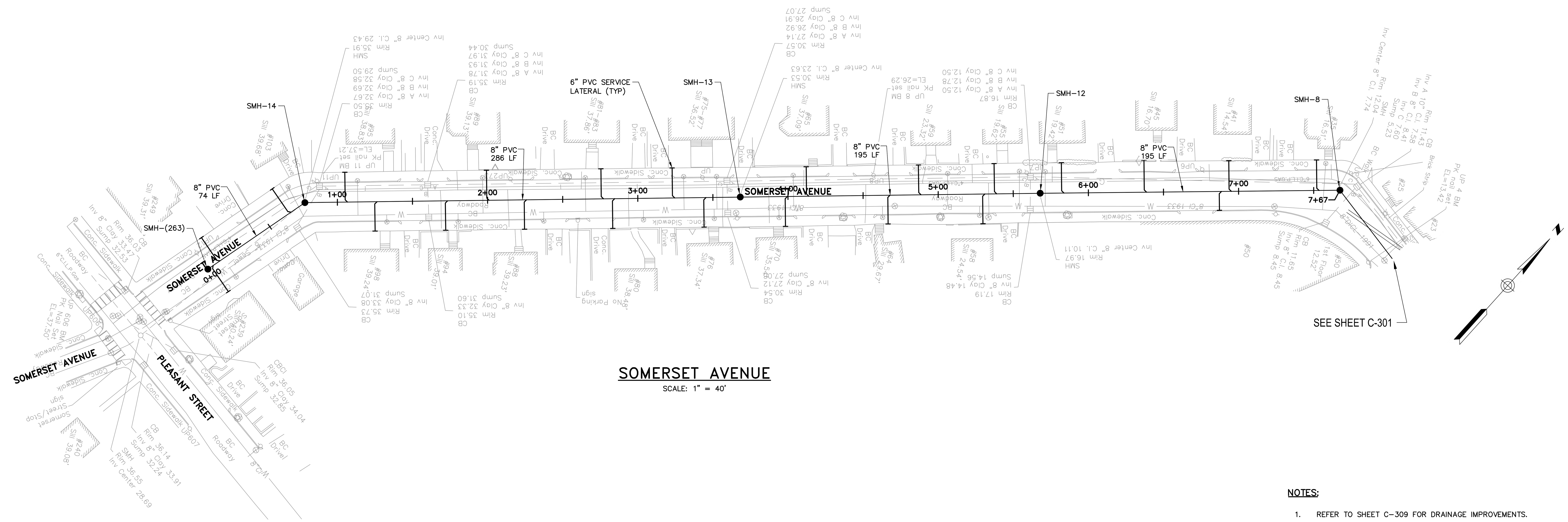
TOWN OF WINTHROP
1 METCALF SQUARE
WINTHROP, MASSACHUSETTS

WINTHROP TOWN CENTER INFRASTRUCTURE AND IMPROVEMENTS

JOB NO.: 230079.01
DATE: SEPTEMBER 2017
SCALE: AS NOTED
SHEET: 9 OF 31

C-301

22x34 SHEET
1:1

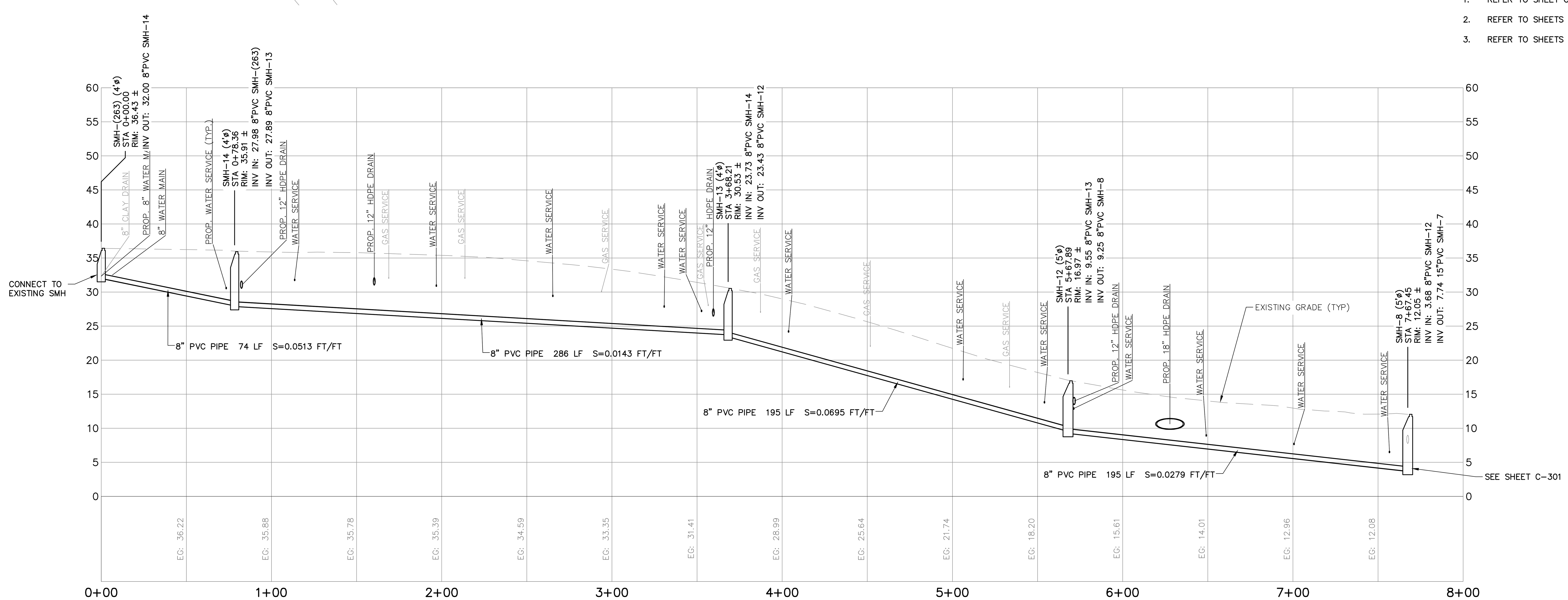


SOMERSET AVENUE

SCALE: 1" = 40'

NOTES:

1. REFER TO SHEET C-309 FOR DRAINAGE IMPROVEMENTS.
2. REFER TO SHEETS C-313 AND C-314 FOR WATER MAIN IMPROVEMENTS.
3. REFER TO SHEETS C-200 AND C-201 FOR SITE IMPROVEMENTS.



SOMERSET AVE – SEWER II
PROFILE STA. 0+00 TO STA. 8+00

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 10'

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

FINAL DESIGN - NOT FOR CONSTRUCTION

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Andover, Massachusetts 01810
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COMMITMENT & INTEGRITY DRIVE RESULTS

REV	DESCRIPTION	DATE

DESIGNED BY: ADL / CTK | CHECKED BY: ADL / MCH
DRAWN BY: MRM / CTK | 230079.01_C-300S II.dwg

SOMERSET AVENUE II
SEWER PLAN & PROFILE

TOWN OF WINTHROP
1 METCALF SQUARE
WINTHROP, MASSACHUSETTS

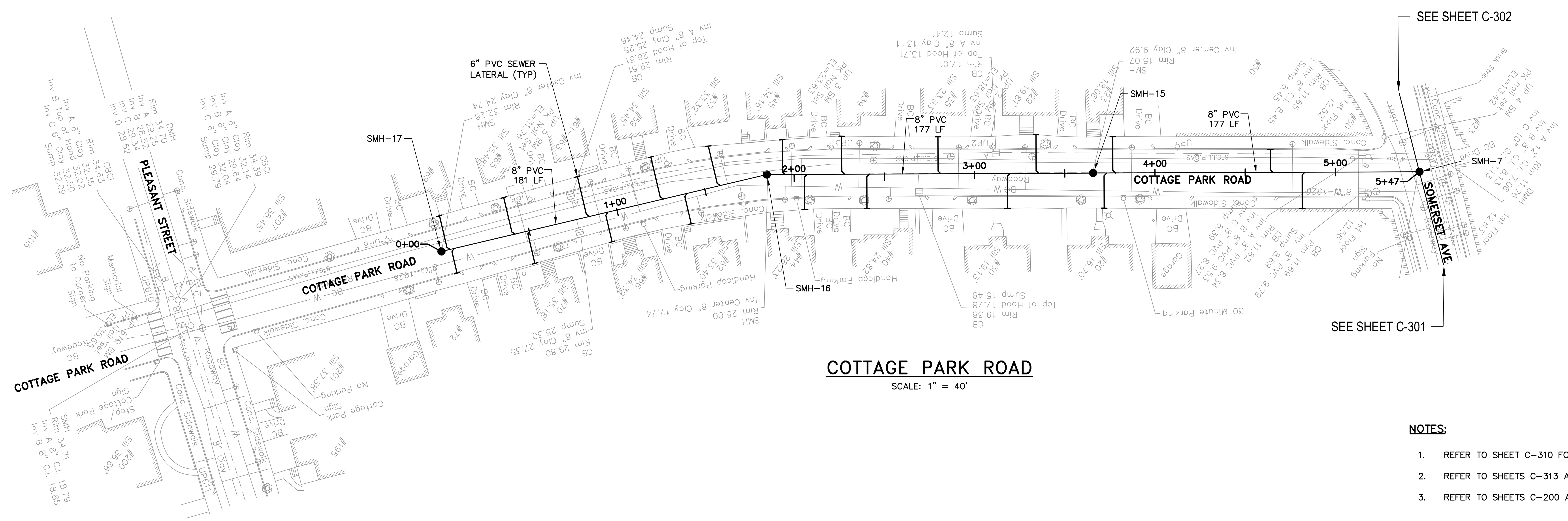
WINTHROP TOWN CENTER INFRASTRUCTURE AND IMPROVEMENTS

JOB NO.: 230079.01
DATE: SEPTEMBER 2017
SCALE: AS NOTED
SHEET: 17 OF 31

C-302

\\woodardcurran.net\shared\Projects\230079 Winthrop MA - Town Center Sewer Improvements\wip\Drawings\PHASE II\CIVIL\Sheets\230079.01_C-300s II.dwg, Sep 01, 2017 - 3:45pm

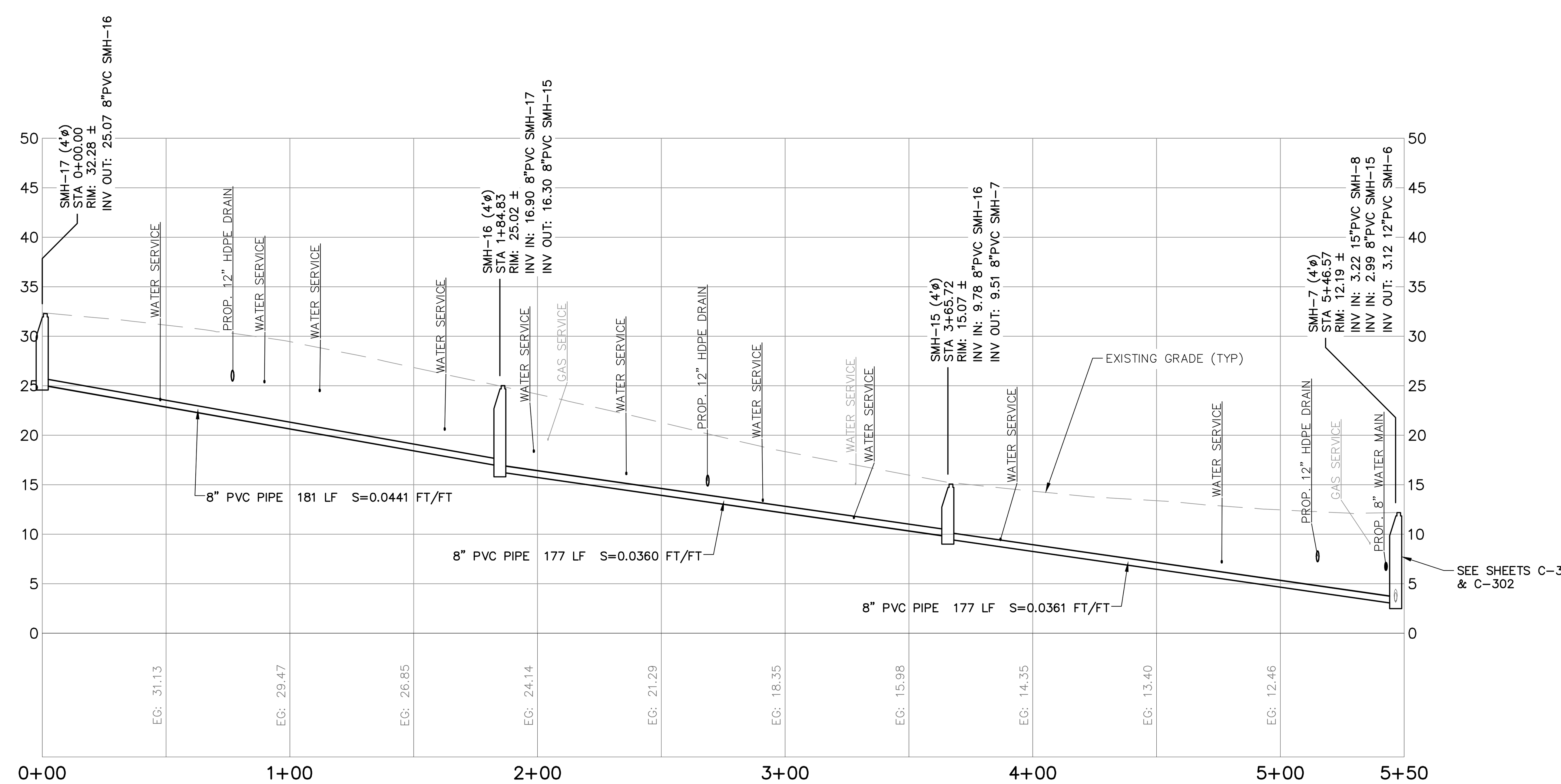
22x34 SHEET
1:1



COTTAGE PARK ROAD
SCALE: 1" = 40'

NOTES:

1. REFER TO SHEET C-310 FOR DRAINAGE IMPROVEMENTS.
2. REFER TO SHEETS C-313 AND C-314 FOR WATER MAIN IMPROVEMENTS.
3. REFER TO SHEETS C-200 AND C-201 FOR SITE IMPROVEMENTS.



COTTAGE PARK ROAD – SEWER PROFILE STA. 0+00 TO STA. 5+50
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 10'

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

FINAL DESIGN - NOT FOR CONSTRUCTION

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COMMITMENT & INTEGRITY DRIVE RESULTS

REV	DESCRIPTION	DATE

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CHECKED BY: ADL / MCH
DRAWN BY: MRM / CTK
230079.01_C-300S II.dwg

COTTAGE PARK ROAD SEWER PLAN & PROFILE

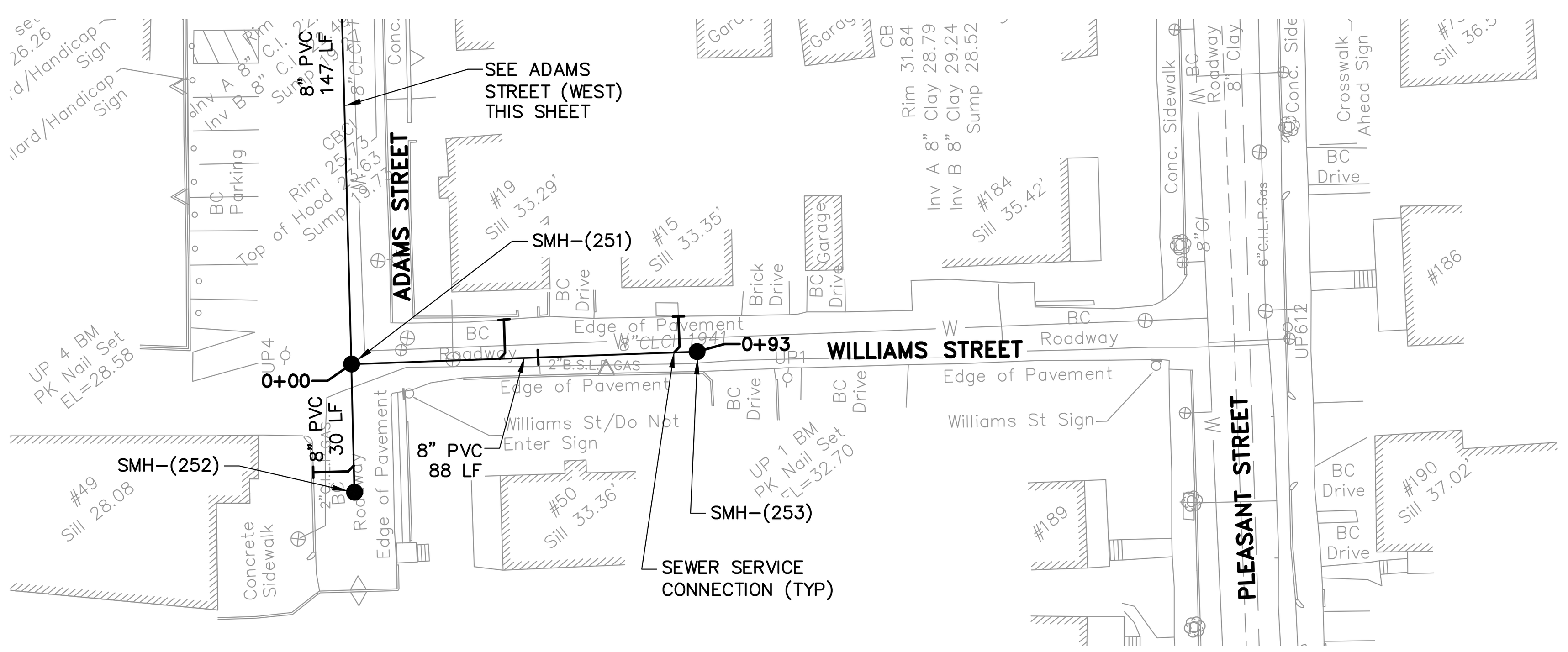
TOWN OF WINTHROP
1 METCALF SQUARE
WINTHROP, MASSACHUSETTS

WINTHROP TOWN CENTER INFRASTRUCTURE AND IMPROVEMENTS

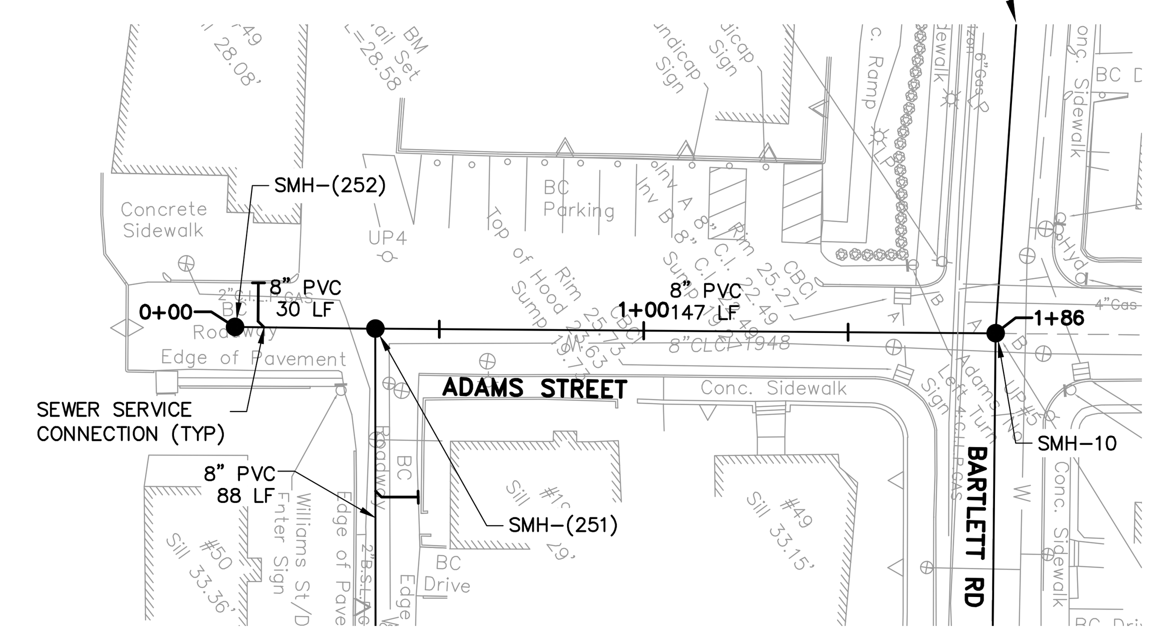
JOB NO.: 230079.01
DATE: SEPTEMBER 2017
SCALE: AS NOTED
SHEET: 18 OF 31

C-303

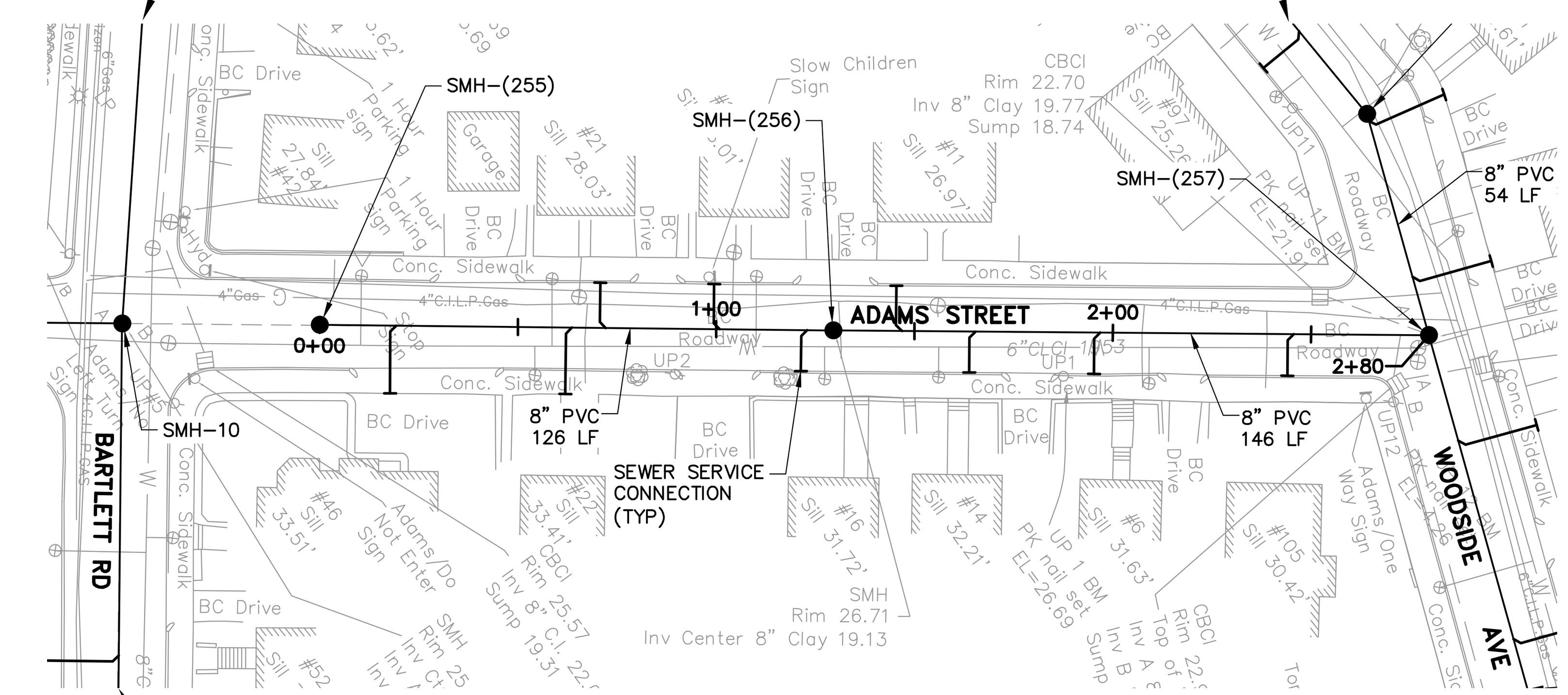
\\woodardcurran.net\shared\Projects\230079 Winthrop MA - Town Center Sewer Improvements\wip\Drawings\PHASE II\CIVIL\Sheets\230079.01_C-300s II.dwg, Sep 01, 2017 - 3:45pm



WILLIAMS STREET
SCALE: 1" = 40'



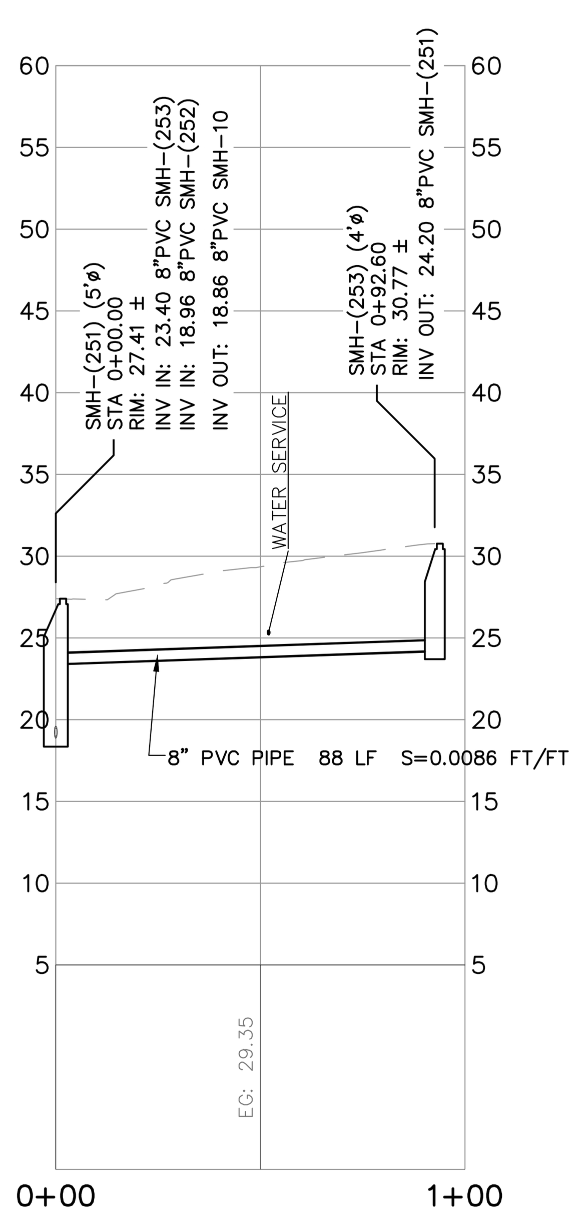
ADAMS STREET (WEST)
SCALE: 1" = 40'



ADAMS STREET (EAST)
SCALE: 1" = 40'

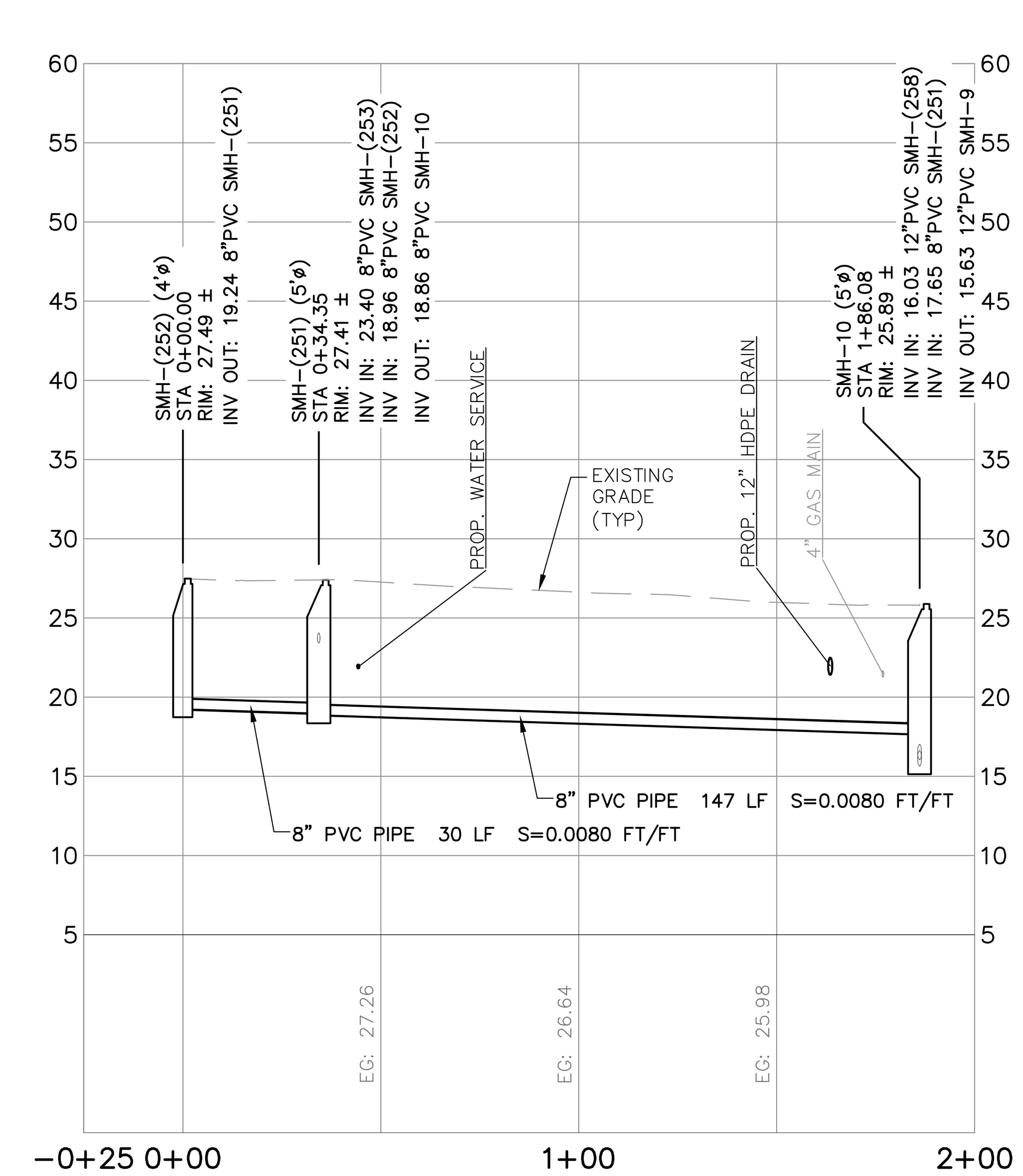
NOTES:

1. REFER TO SHEET C-311 FOR DRAINAGE IMPROVEMENTS.
2. REFER TO SHEETS C-313 AND C-314 FOR WATER MAIN IMPROVEMENTS.
3. REFER TO SHEETS C-200 AND C-201 FOR SITE IMPROVEMENTS.

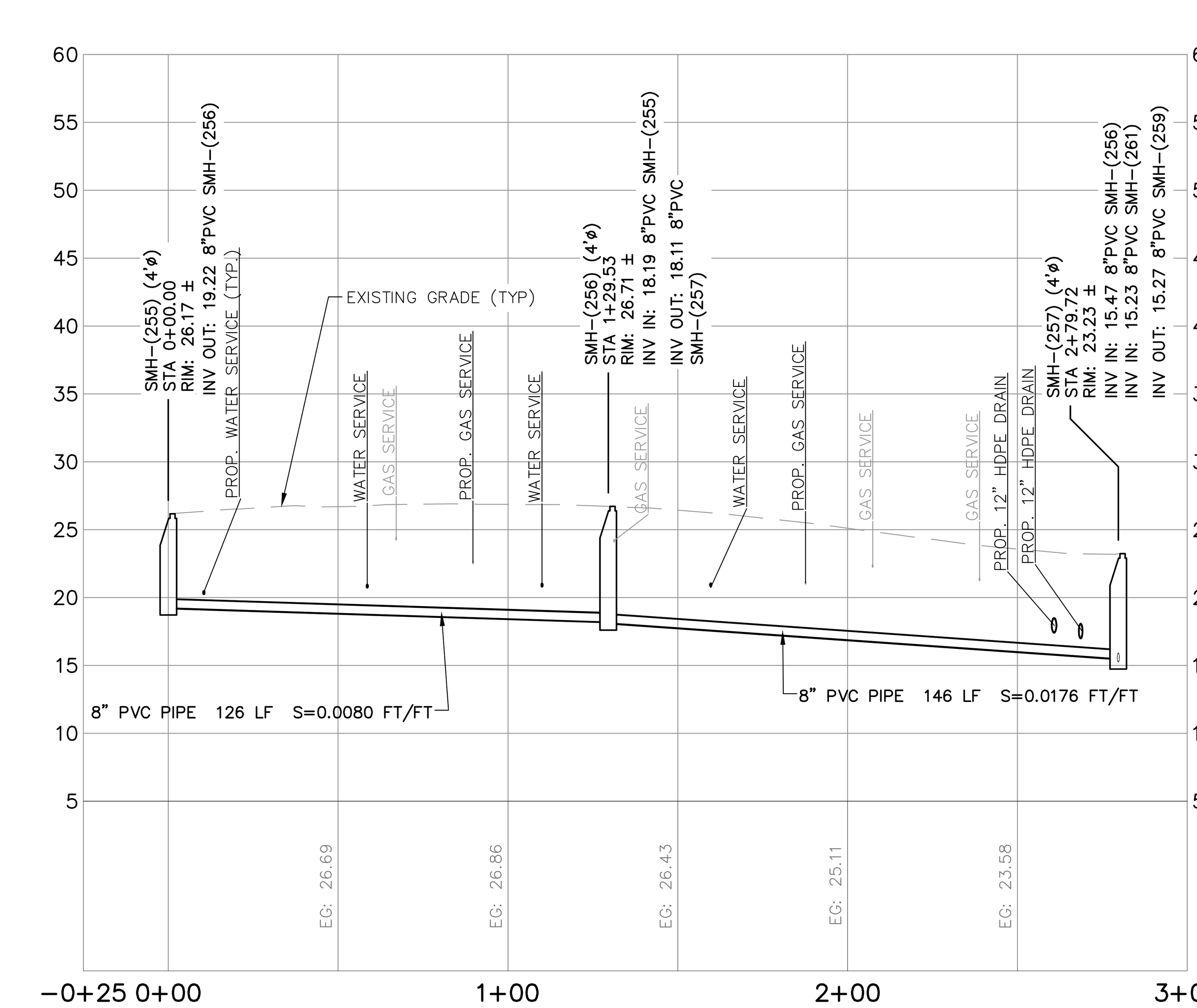


WILLIAMS STREET – SEWER PROFILE STA. 0+00 TO STA. 1+00
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 10'

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



ADAMS STREET – SEWER (WEST) PROFILE STA. -0+25 TO STA. 2+00
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 10'



ADAMS STREET – SEWER (EAST) PROFILE STA. -0+25 TO STA. 3+00
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 10'

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WILLIAMS STREET & ADAMS STREET SEWER PLAN & PROFILE

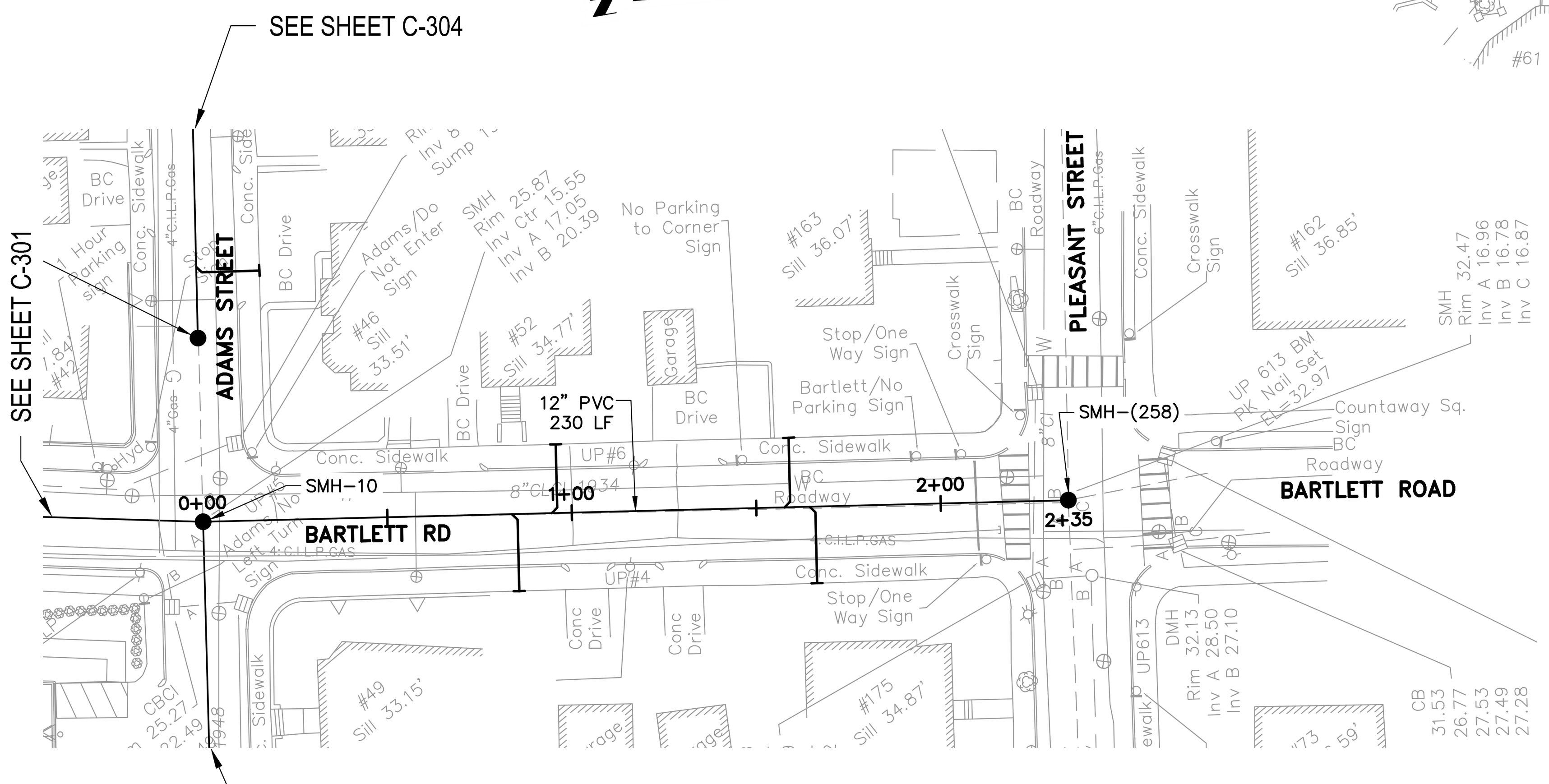
TOWN OF WINTHROP
1 METCALF SQUARE
WINTHROP, MASSACHUSETTS

WINTHROP TOWN CENTER INFRASTRUCTURE AND IMPROVEMENTS

DESIGNED BY: ADL / CTK CHECKED BY: ADL / MCH
DRAWN BY: MRM / CTK 230079.01_C-300S II.dwg

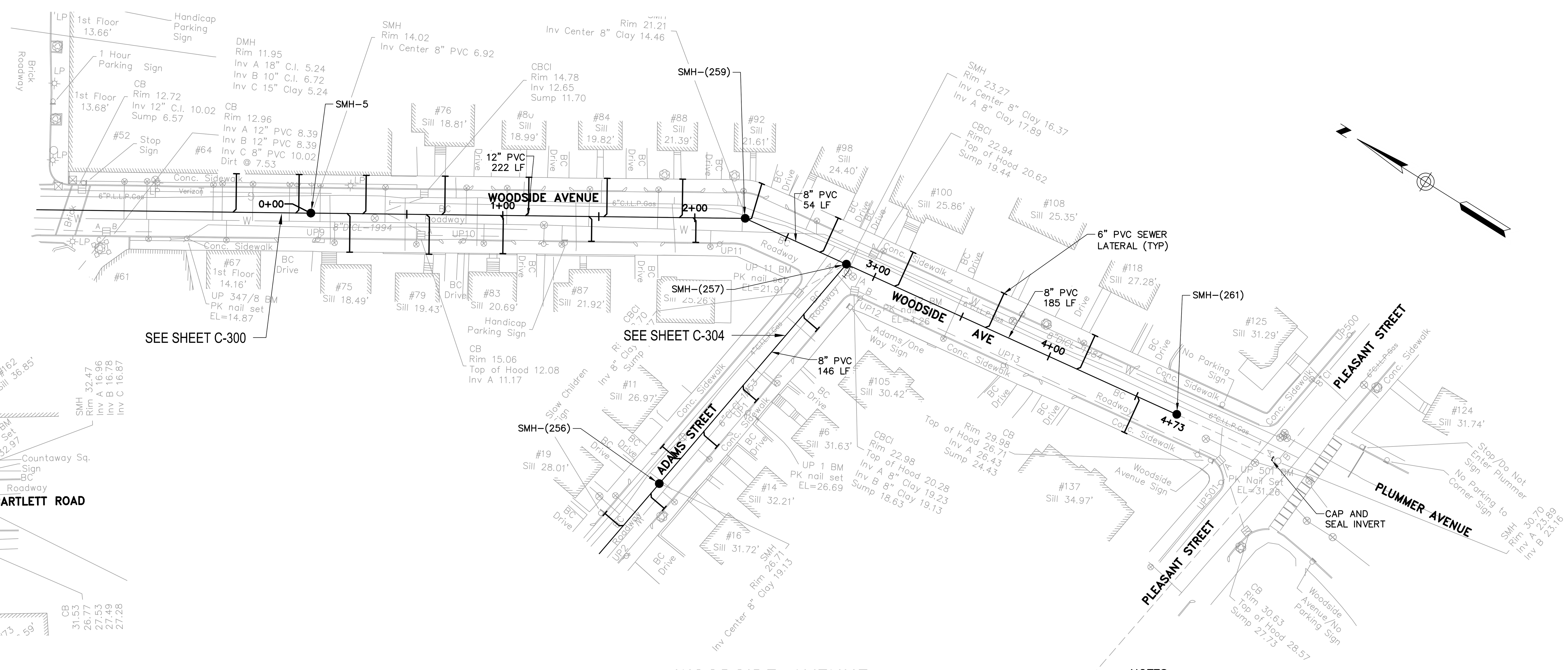
JOB NO.: 230079.01
DATE: SEPTEMBER 2017
SCALE: AS NOTED
SHEET: 18 OF 31

C-304



BARTLETT ROAD (SOUTH)

SCALE: 1" = 40'

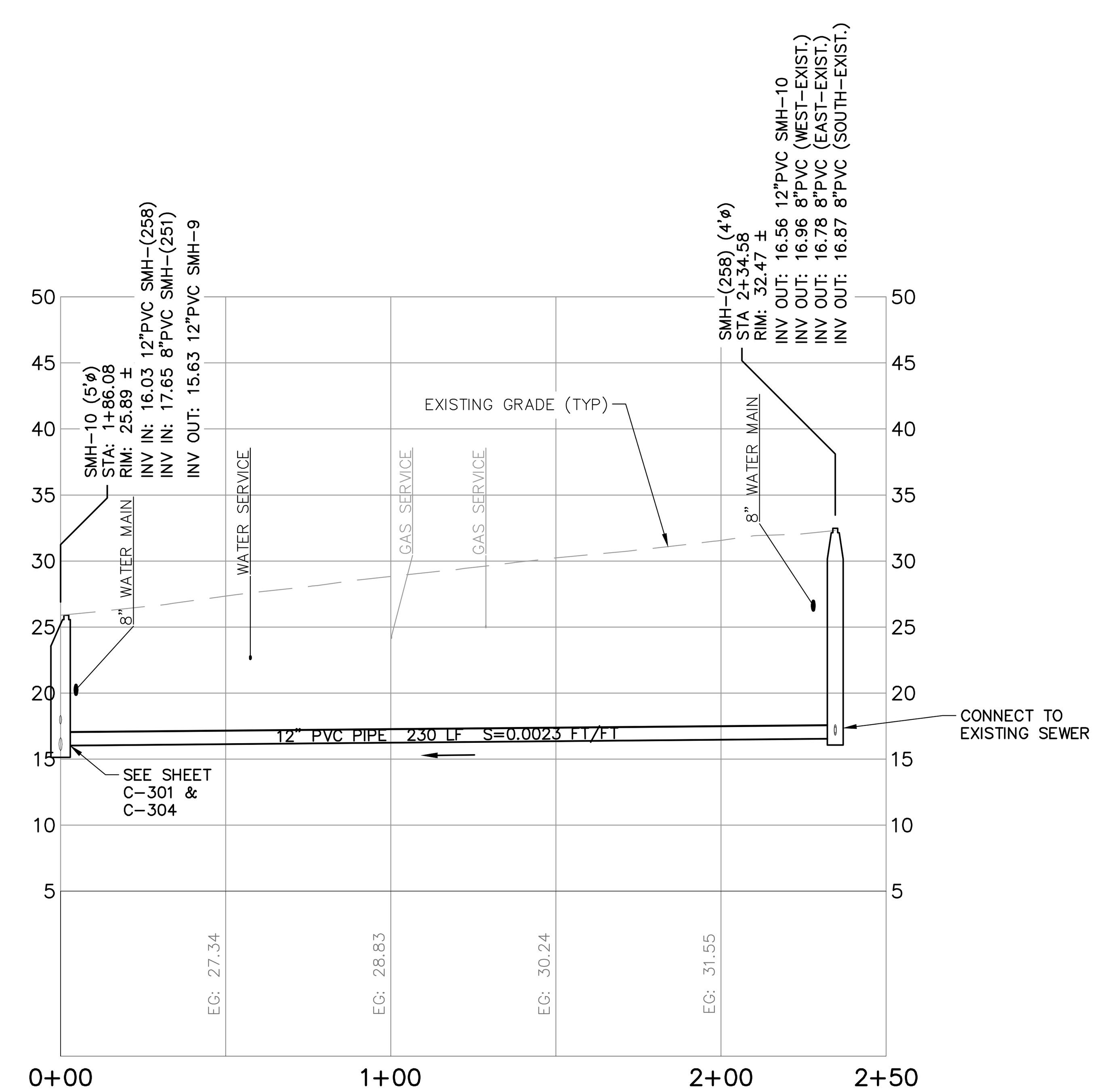


WOODSIDE AVENUE

SCALE: 1" = 40'

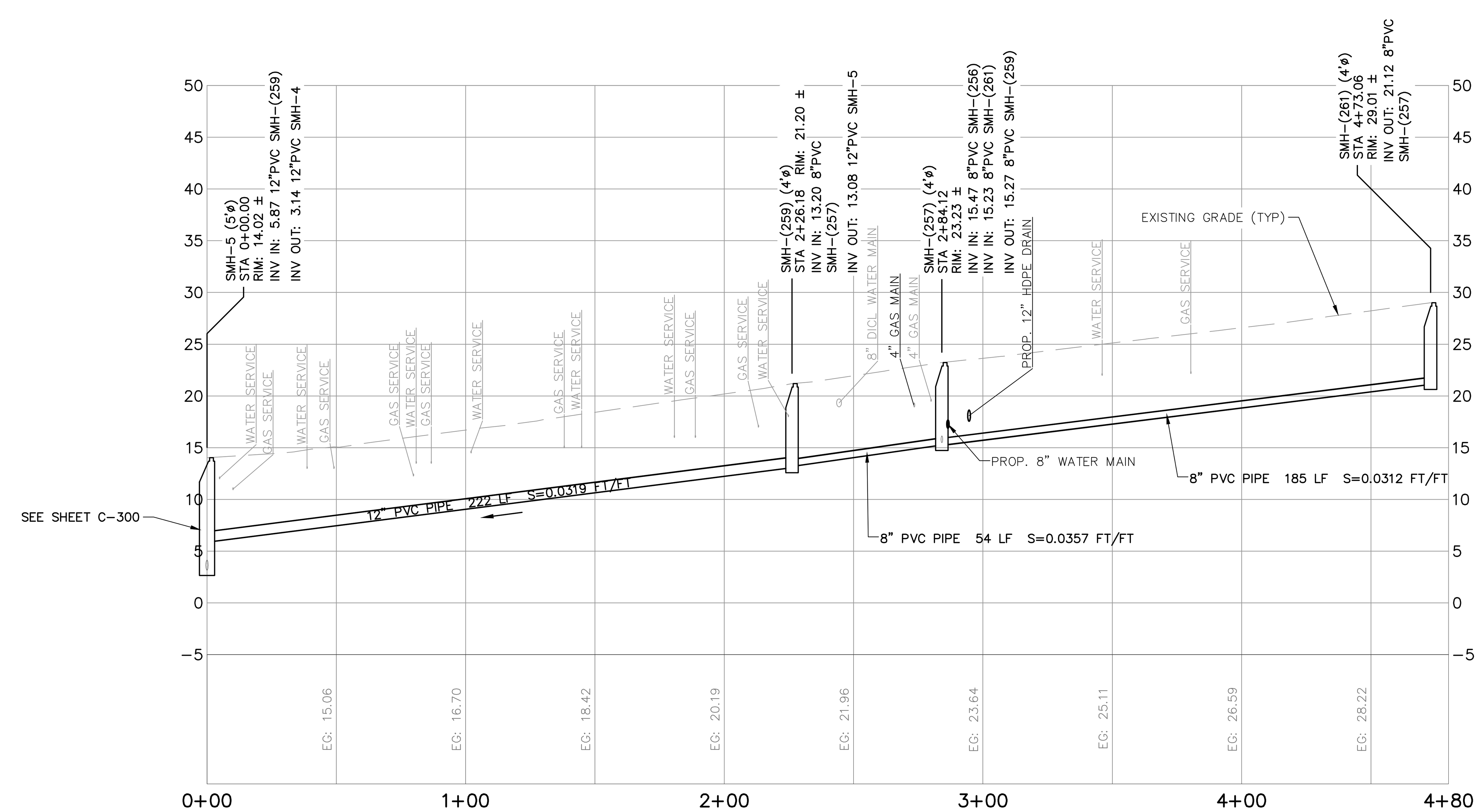
NOTES:

1. REFER TO SHEET C-312 FOR DRAINAGE IMPROVEMENTS.
2. REFER TO SHEETS C-313 AND C-314 FOR WATER MAIN IMPROVEMENTS.
3. REFER TO SHEETS C-200 AND C-201 FOR SITE IMPROVEMENTS.



BARTLETT ROAD – SEWER II
PROFILE STA. 0+00 TO STA. 2+50

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 10'



WOODSIDE AVE – SEWER II
PROFILE STA. 0+00 TO STA. 4+80

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 10'

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

FINAL DESIGN - NOT FOR CONSTRUCTION

22x34 SHEET
1:1

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COMMITMENT & INTEGRITY DRIVE RESULTS

REV	DESCRIPTION	DATE

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DRAWN BY: MRM / CTK | 230079.01_C-300S II.dwg

BARTLETT RD II & WOODSIDE AVE
SEWER PLAN & PROFILE

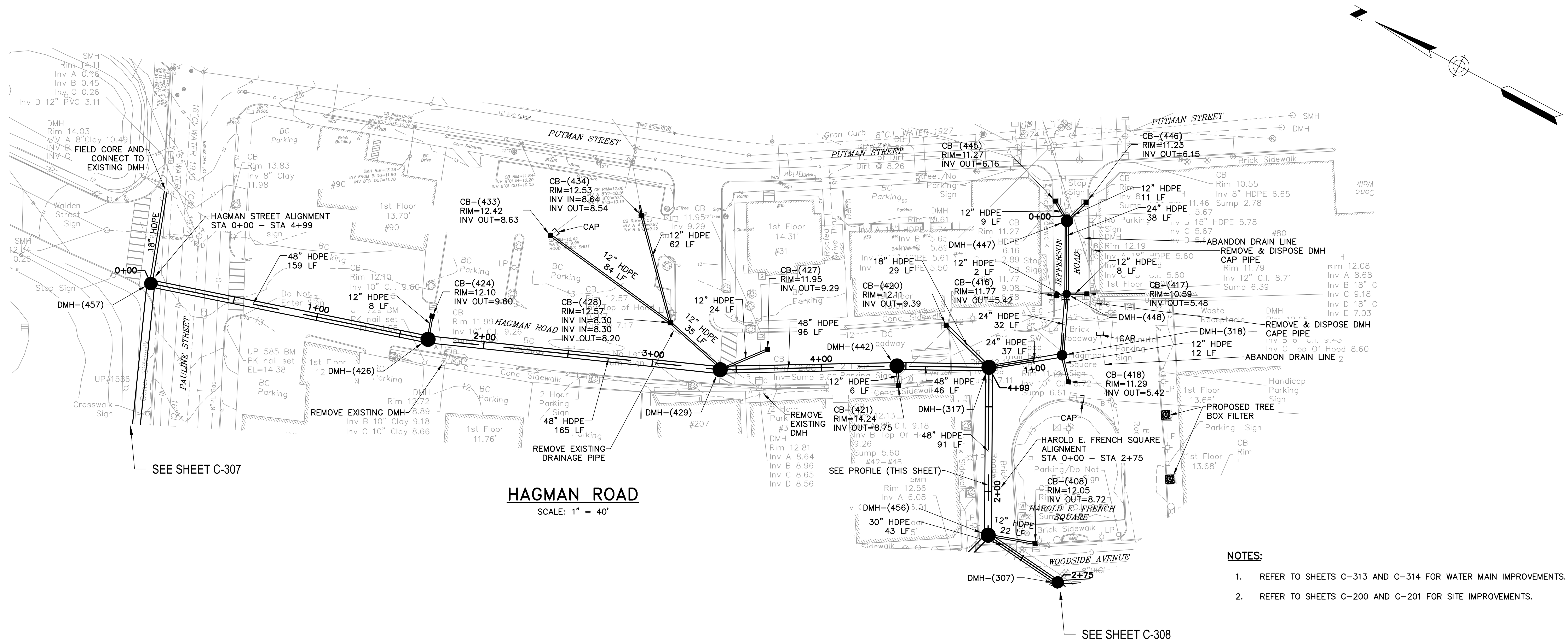
TOWN OF WINTHROP
1 METCALF SQUARE
WINTHROP, MASSACHUSETTS

WINTHROP TOWN CENTER
INFRASTRUCTURE AND
IMPROVEMENTS

JOB NO.: 230079.01
DATE: SEPTEMBER 2017
SCALE: AS NOTED
SHEET: 20 OF 31

C-305

22x34 SHEET
1:1

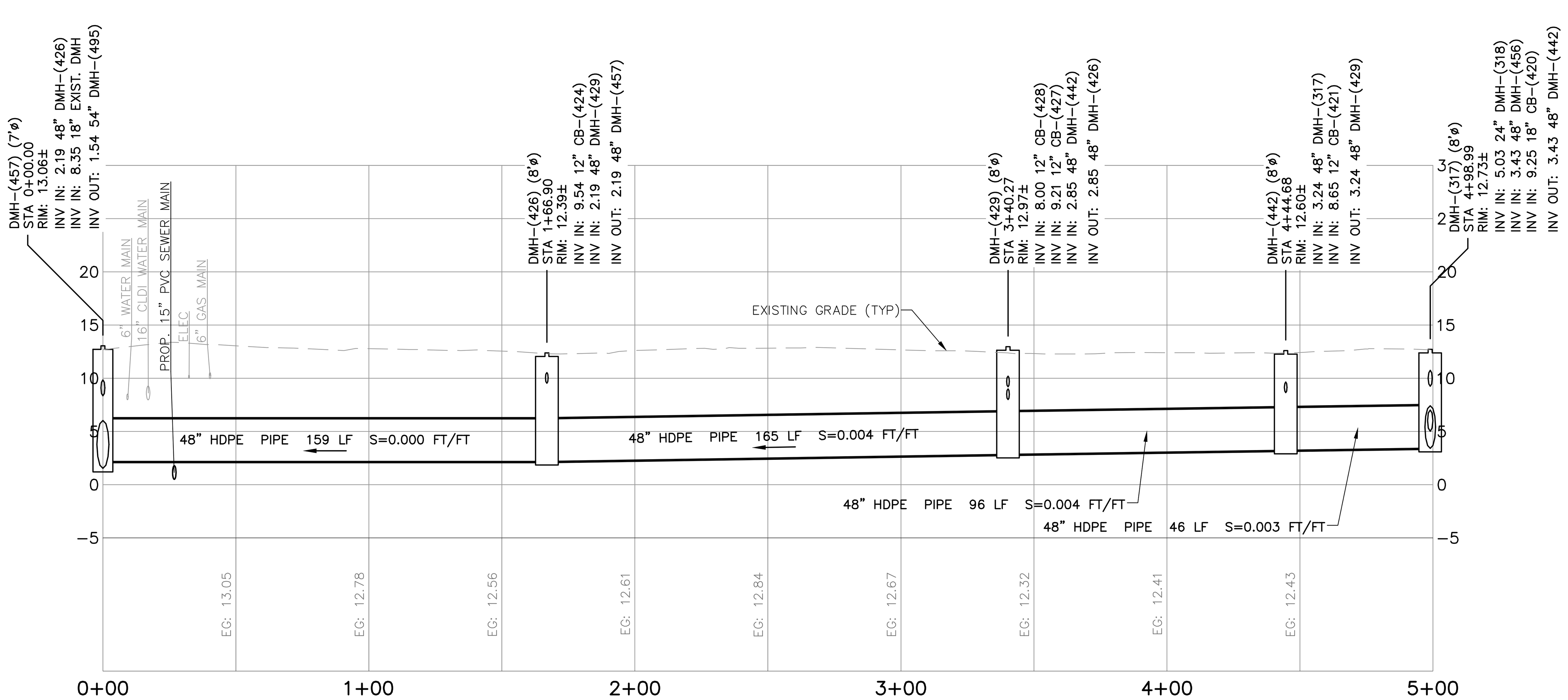


HAGMAN ROAD

SCALE: 1" = 40'

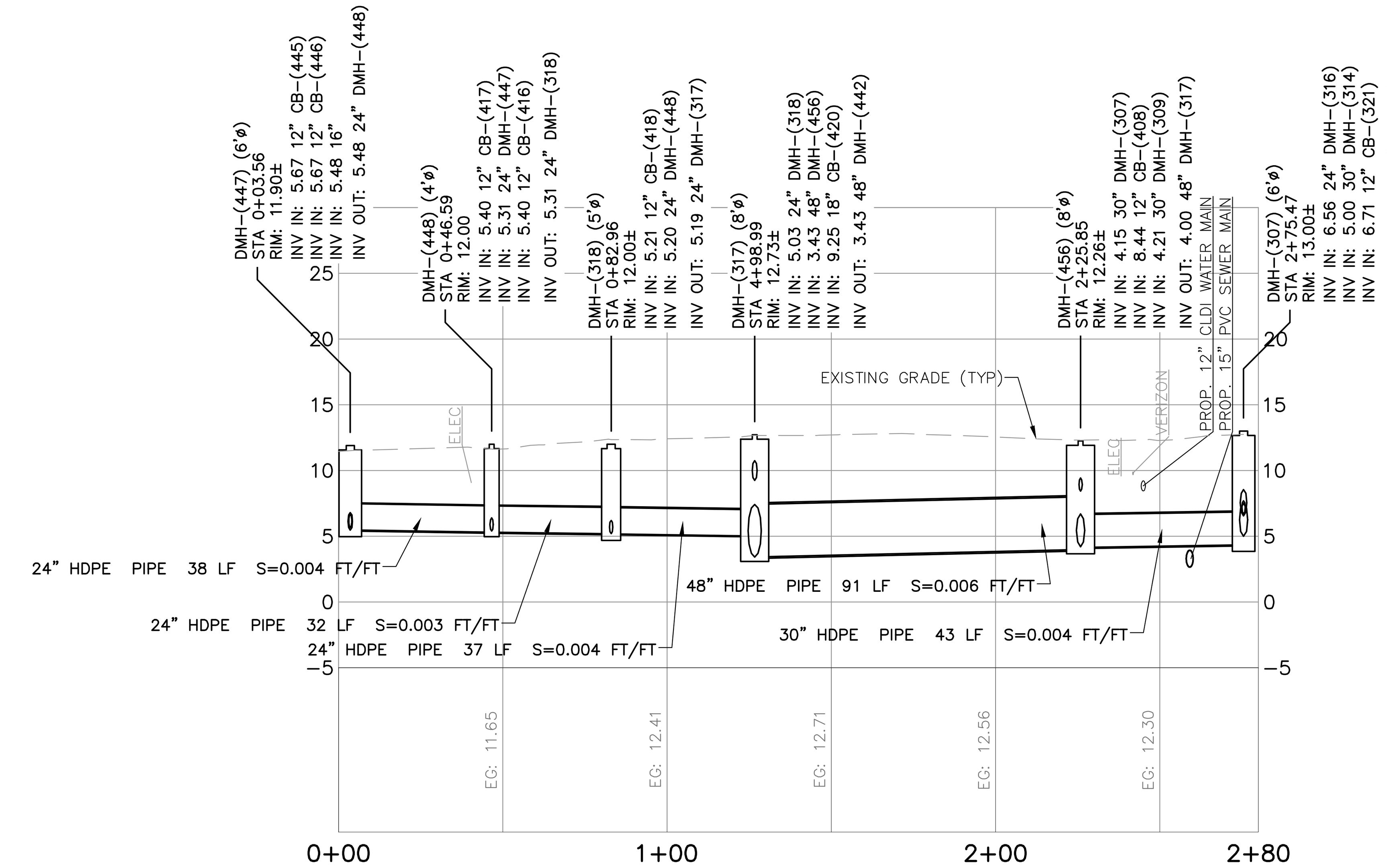
NOTES:

1. REFER TO SHEETS C-313 AND C-314 FOR WATER MAIN IMPROVEMENTS.
2. REFER TO SHEETS C-200 AND C-201 FOR SITE IMPROVEMENTS.



HAGMAN STREET – DRAINAGE PROFILE STA. 0+00 TO STA. 5+00

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 10'



HAROLD E. FRENCH SQUARE – DRAINAGE PROFILE STA. 0+00 TO STA. 2+80

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 10'

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

FINAL DESIGN - NOT FOR CONSTRUCTION

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Andover, Massachusetts 01810
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COMMITMENT & INTEGRITY DRIVE RESULTS

REV	DESCRIPTION	DATE

DESIGNED BY: ADL/MAH/CTK | CHECKED BY: ADL / MCH
DRAWN BY: MRM / CTK | 230079_C-300S 1.dwg

HAGMAN ROAD & HAROLD E. FRENCH SQUARE DRAINAGE PLAN & PROFILE

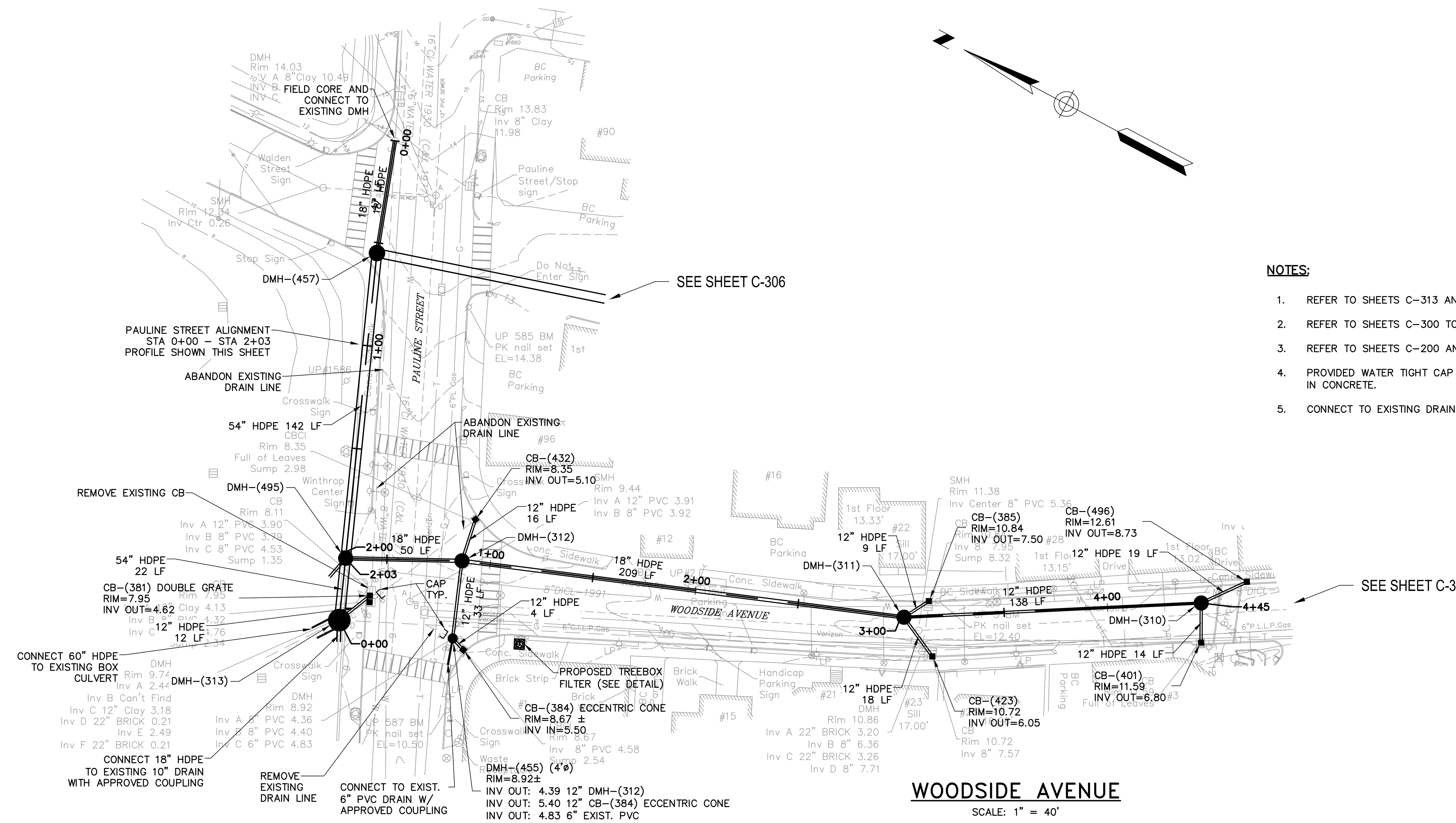
TOWN OF WINTHROP
1 METCALF SQUARE
WINTHROP, MASSACHUSETTS

WINTHROP TOWN CENTER INFRASTRUCTURE AND IMPROVEMENTS

JOB NO.: 230079.01
DATE: SEPTEMBER 2017
SCALE: AS NOTED
SHEET: 14 OF 31

C-306

22x34 SHEET
1:1

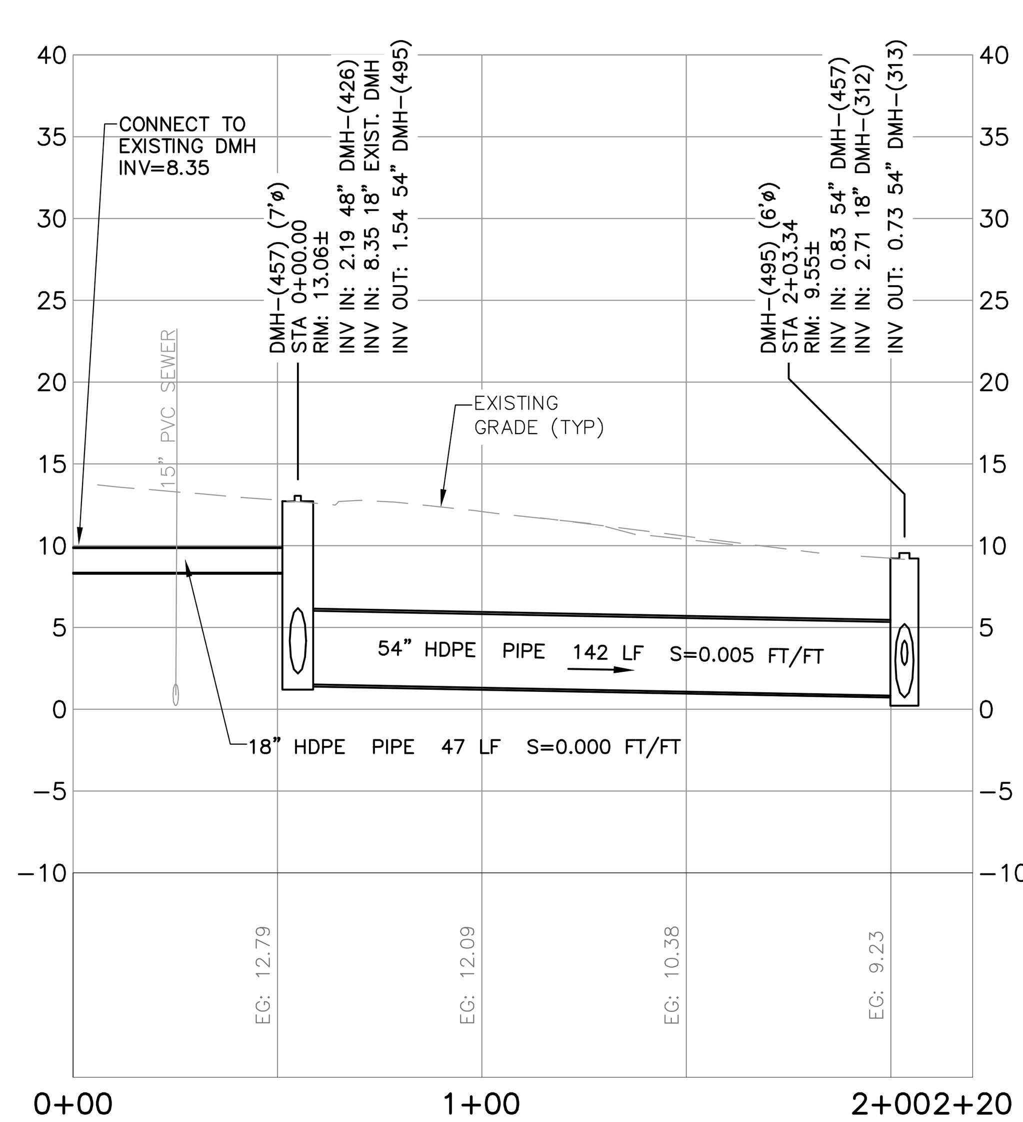


WOODSIDE AVENUE

SCALE: 1" = 40'

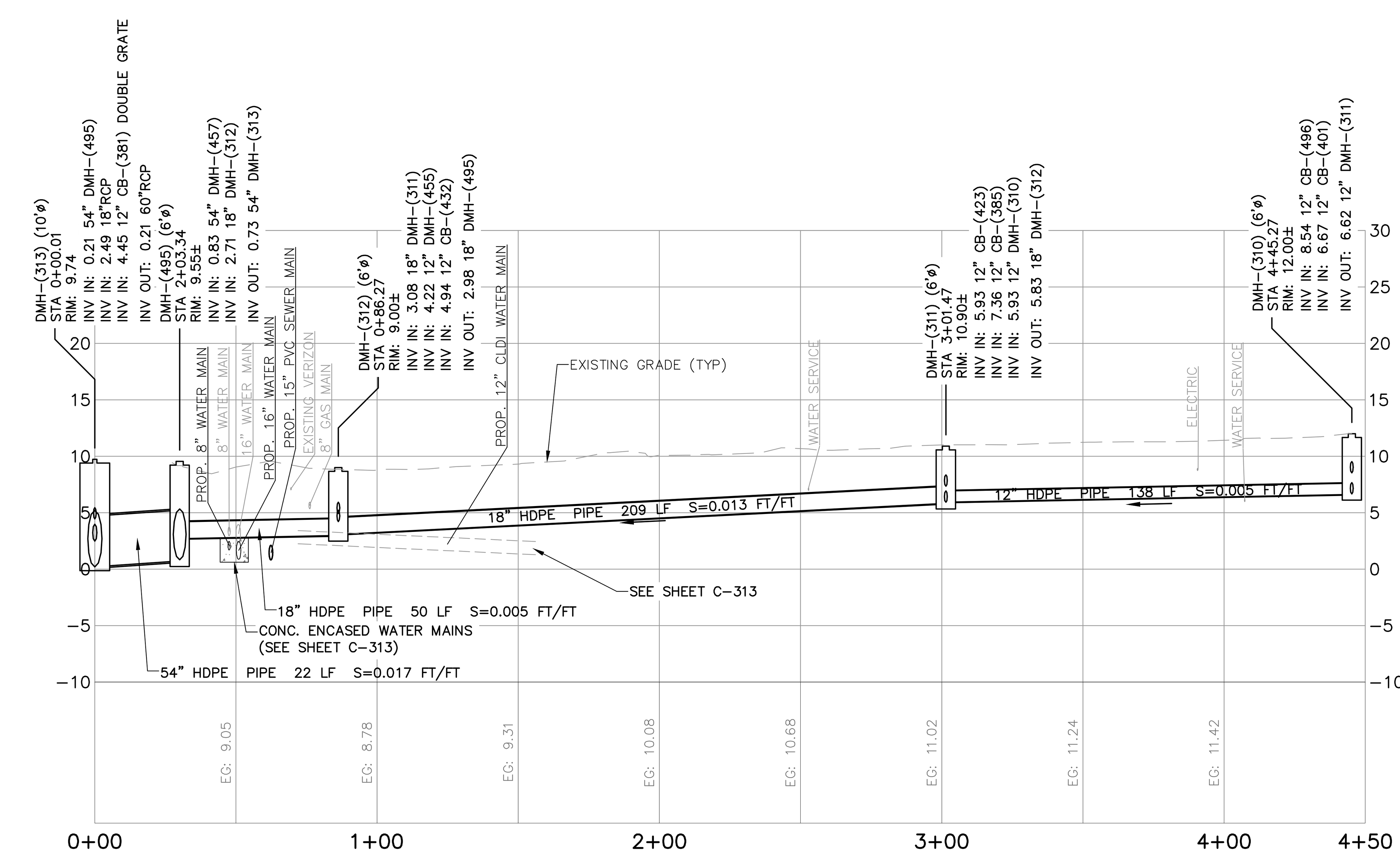
NOTES:

1. REFER TO SHEETS C-313 AND C-314 FOR WATER MAIN IMPROVEMENTS.
2. REFER TO SHEETS C-300 TO C-305 FOR SEWER MAIN IMPROVEMENTS.
3. REFER TO SHEETS C-200 AND C-201 FOR SITE IMPROVEMENTS.
4. PROVIDED WATER TIGHT CAP FOR DRAIN PIPE ABANDONED. ENCASE CAP IN CONCRETE.
5. CONNECT TO EXISTING DRAIN PIPE WITH APPROVED COUPLINGS.



PAULINE STREET – DRAINAGE PROFILE STA. 0+00 TO STA. 2+20

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 10'



WOODSIDE AVENUE – DRAINAGE I PROFILE STA. 0+00 TO STA. 4+50

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 10'

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

FINAL DESIGN - NOT FOR CONSTRUCTION

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COMMITMENT & INTEGRITY DRIVE RESULTS

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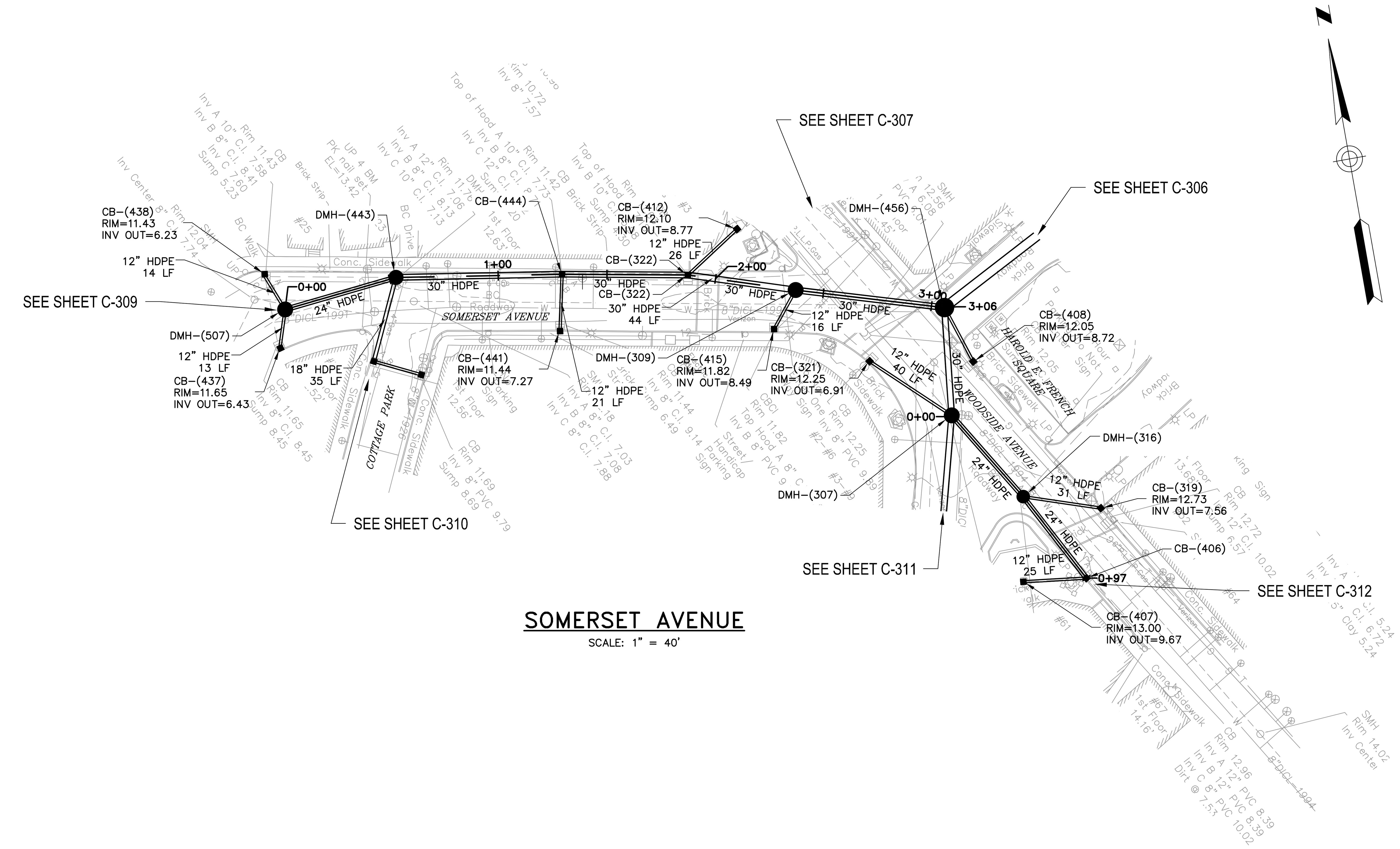
WOODSIDE AVENUE I & PAULINE STREET DRAINAGE PLAN & PROFILE

TOWN OF WINTHROP
1 METCALF SQUARE
WINTHROP, MASSACHUSETTS

WINTHROP TOWN CENTER INFRASTRUCTURE AND IMPROVEMENTS

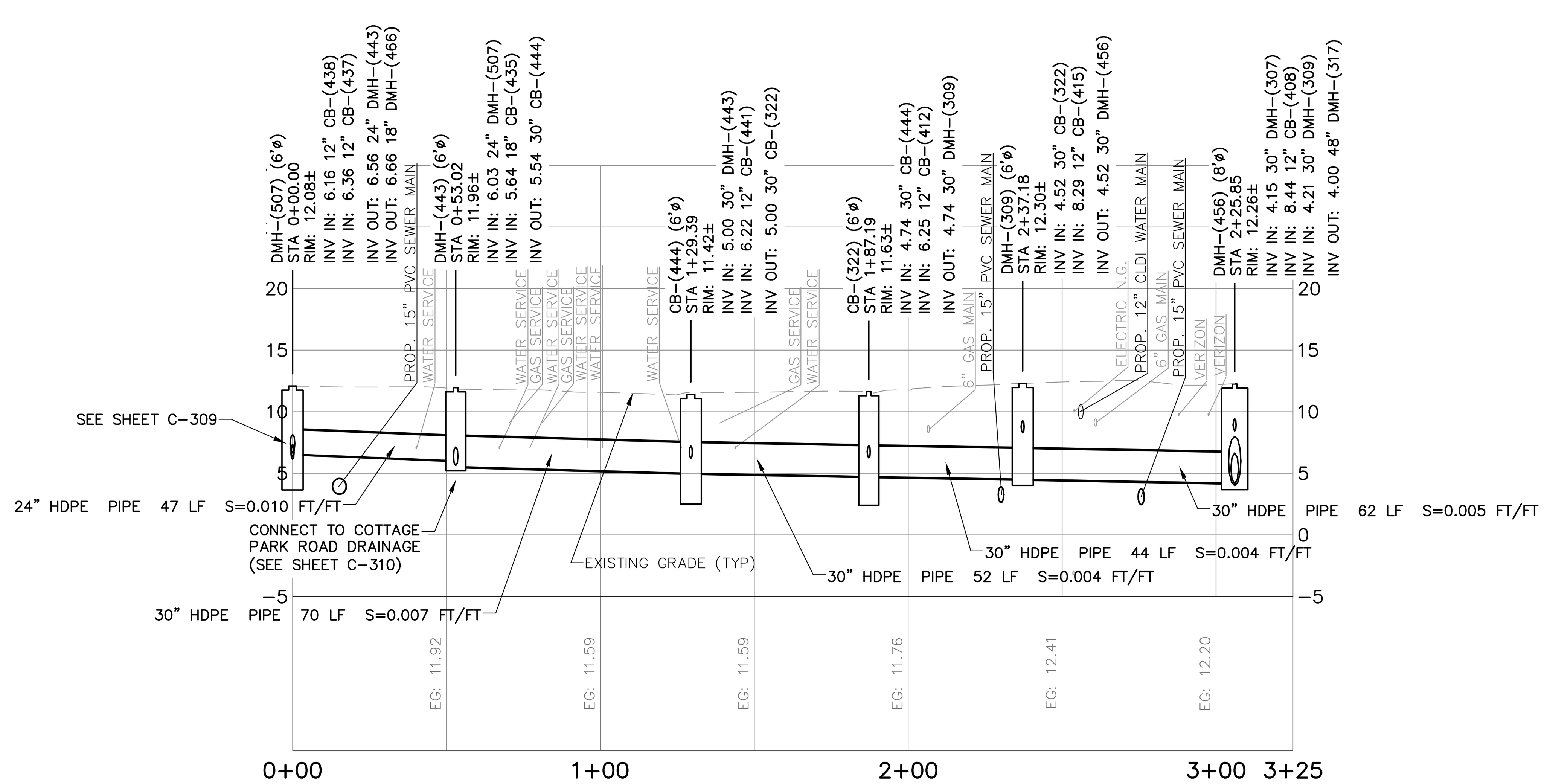
JOB NO.: 230079.01
DATE: SEPTEMBER 2017
SCALE: AS NOTED
SHEET: 15 OF 31

C-307



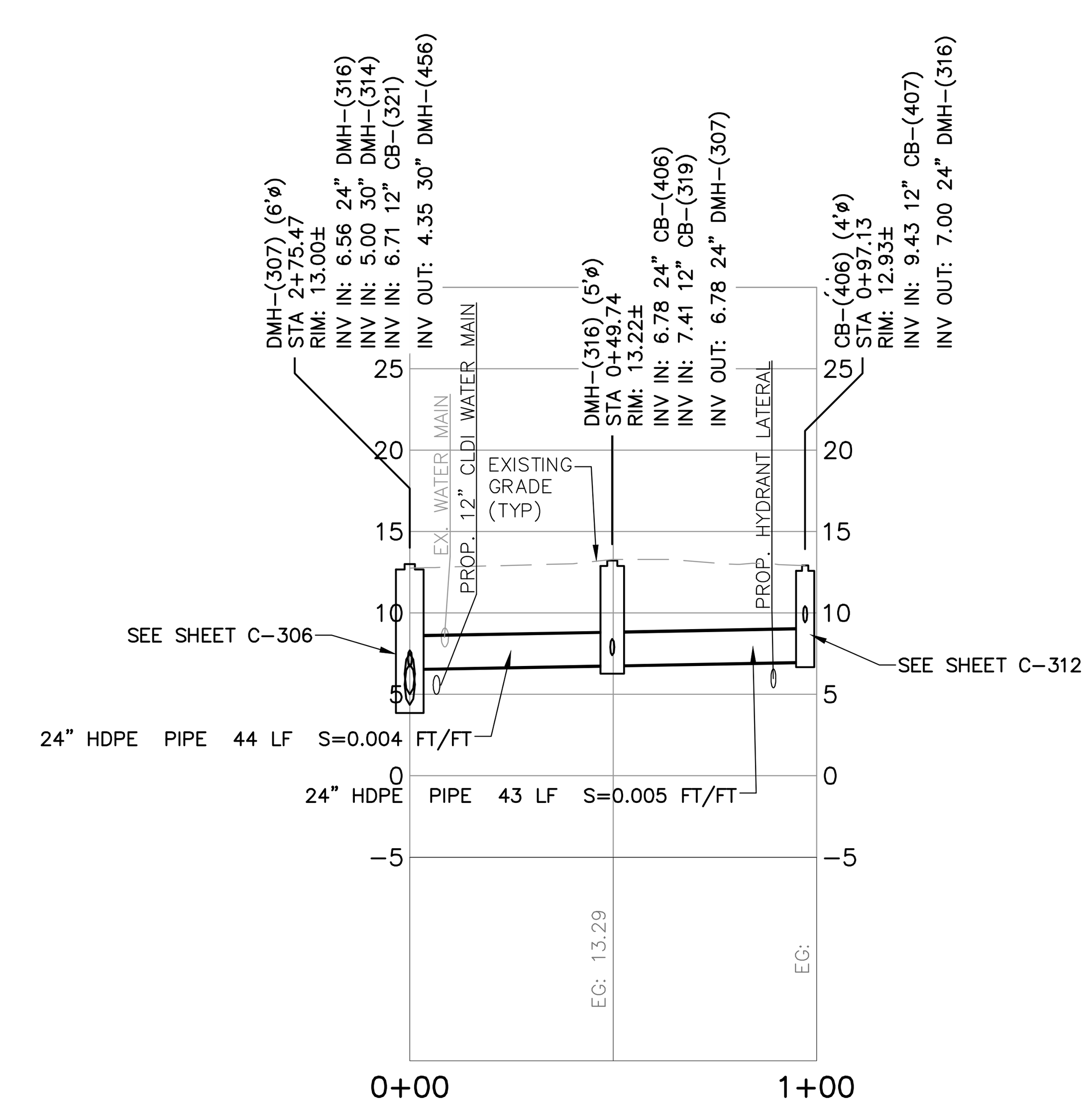
SOMERSET AVENUE

SCALE: 1" = 40'



SOMERSET AVE – DRAINAGE I
PROFILE STA. 0+00 TO STA. 3+25

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 10'



WOODSIDE AVE & BARTLETT RD – DRAINAGE
PROFILE STA. 0+00 TO STA. 1+00

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 10'

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

FINAL DESIGN - NOT FOR CONSTRUCTION

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COMMITMENT & INTEGRITY DRIVE RESULTS
40 Shattuck Road, Suite 110
Andover, Massachusetts 01810
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REV	DESCRIPTION	DATE

DESIGNED BY: ADL/MAH/CTK | CHECKED BY: ADL / MCH
DRAWN BY: MRM / CTK | 230079_C-300S I.dwg

SOMERSET AVE I,
WOODSIDE AVE & BARTLETT
DRAINAGE PLAN & PROFILE

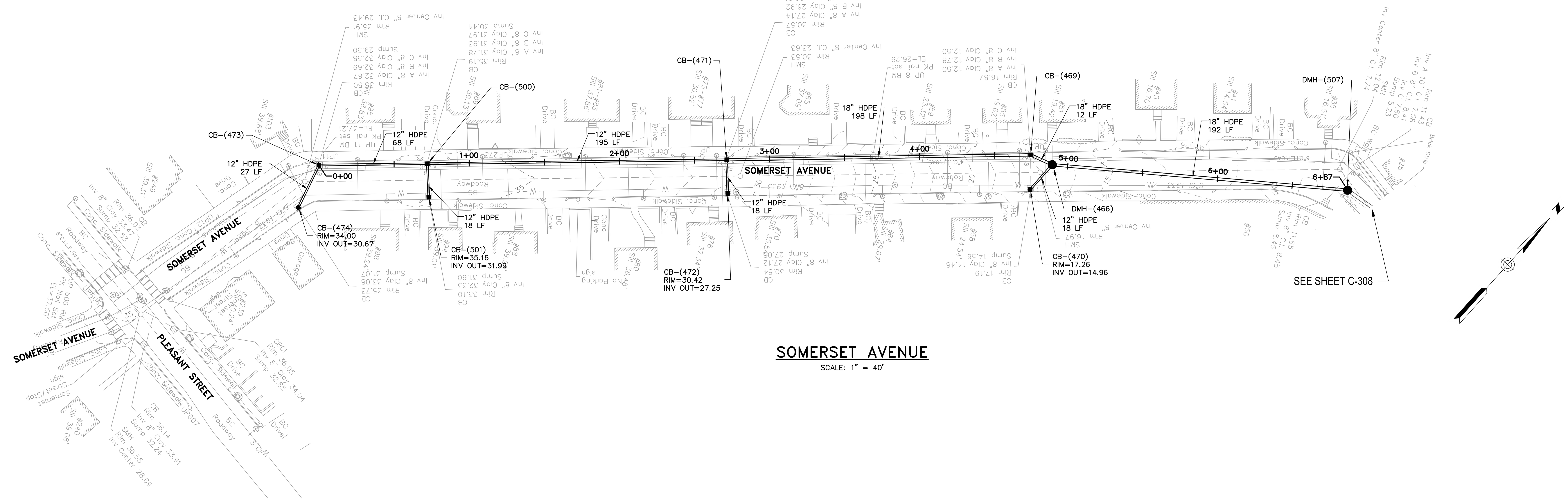
TOWN OF WINTHROP
1 METCALF SQUARE
WINTHROP, MASSACHUSETTS

WINTHROP TOWN CENTER
INFRASTRUCTURE AND
IMPROVEMENTS

JOB NO.: 230079.01
DATE: SEPTEMBER 2017
SCALE: AS NOTED
SHEET: 16 OF 31

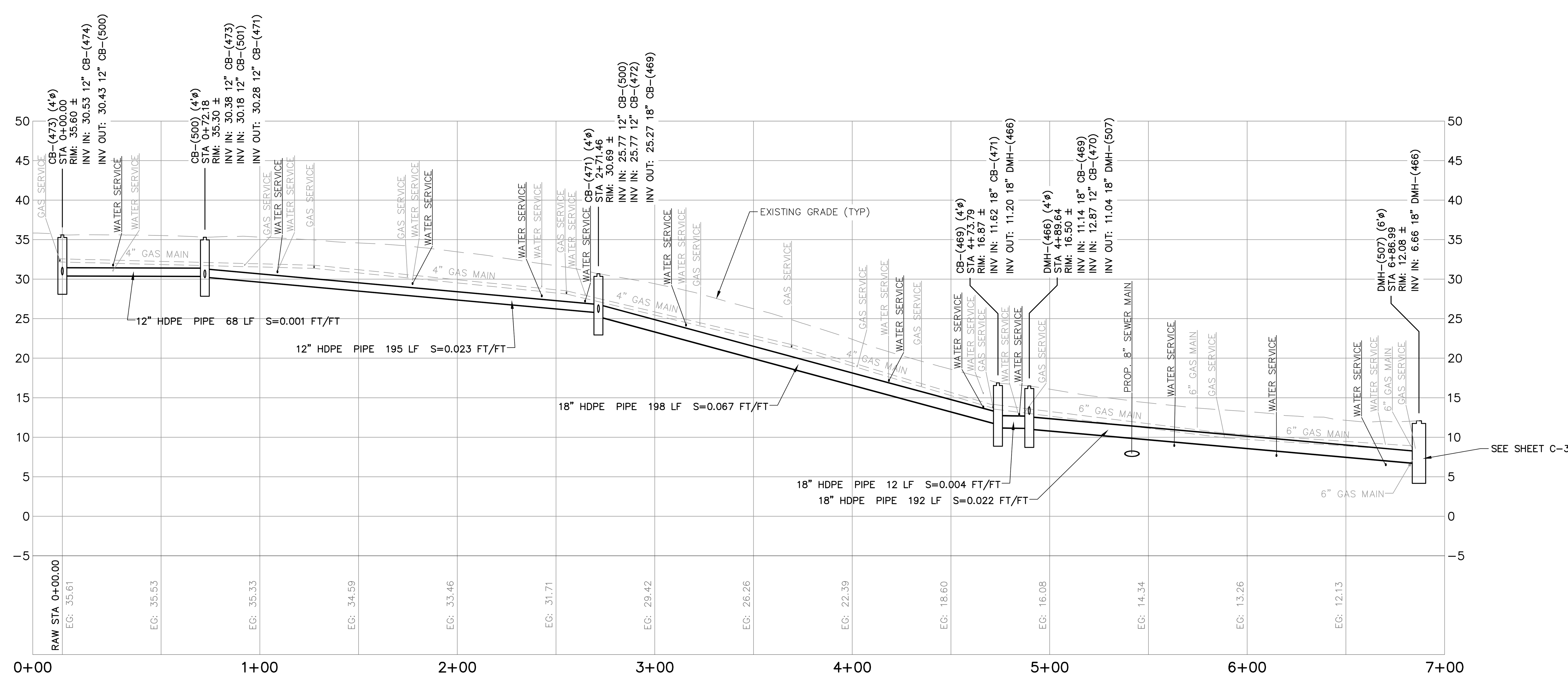
C-308

22x34 SHEET
1:1



SOMERSET AVENUE

SCALE: 1" = 40'



SOMERSET AVE – DRAINAGE II
PROFILE STA. 0+00 TO STA. 7+00

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 10'

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

FINAL DESIGN - NOT FOR CONSTRUCTION

WOODARD & CURRAN
40 Shattuck Road, Suite 110
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

REV	DESCRIPTION	DATE

DESIGNED BY: ADL / CTK | CHECKED BY: ADL / MCH
DRAWN BY: MRM / CTK | 230079.01_C-300S II.dwg

SOMERSET AVENUE II
DRAINAGE PLAN & PROFILE

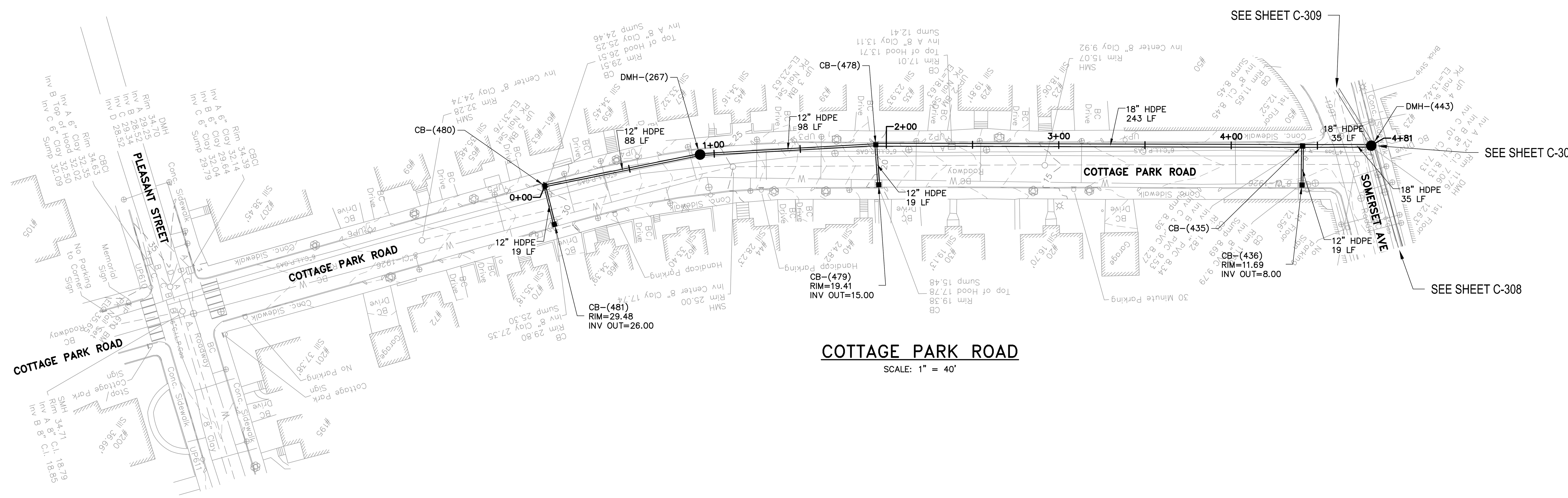
TOWN OF WINTHROP
1 METCALF SQUARE
WINTHROP, MASSACHUSETTS

WINTHROP TOWN CENTER INFRASTRUCTURE AND IMPROVEMENTS

JOB NO.: 230079.01
DATE: SEPTEMBER 2017
SCALE: AS NOTED
SHEET: 17 OF 31

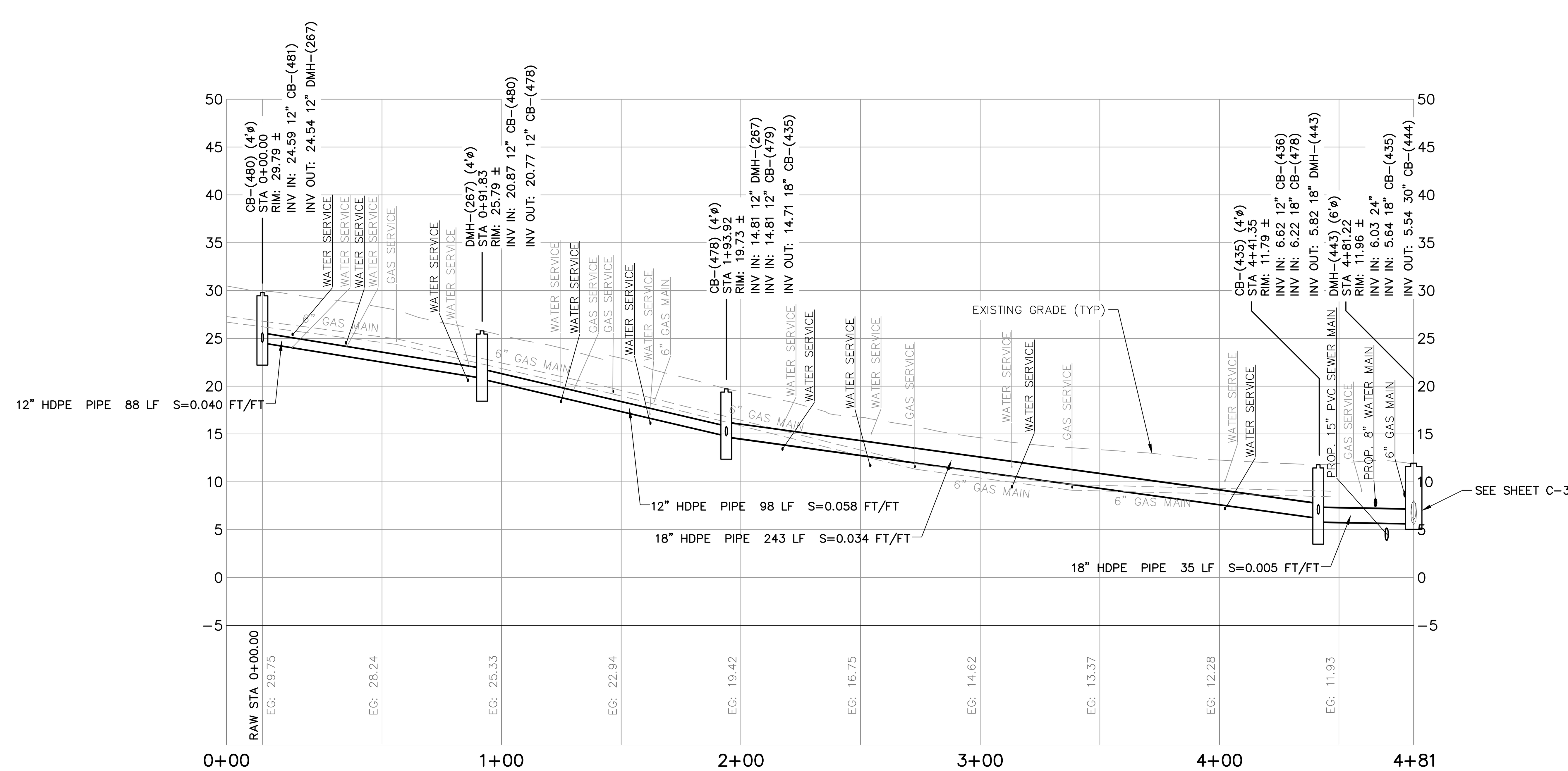
C-309

22x34 SHEET
1:1



COTTAGE PARK ROAD

SCALE: 1" = 40'



COTTAGE PARK ROAD – DRAINAGE PROFILE STA. 0+00 TO STA. 4+81

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 10'

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

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REV	DESCRIPTION	DATE

DESIGNED BY: ADL / CTK CHECKED BY: ADL / MCH
DRAWN BY: MRM / CTK 230079.01_C-300S II.dwg

COTTAGE PARK ROAD DRAINAGE PLAN & PROFILE

TOWN OF WINTHROP
1 METCALF SQUARE
WINTHROP, MASSACHUSETTS

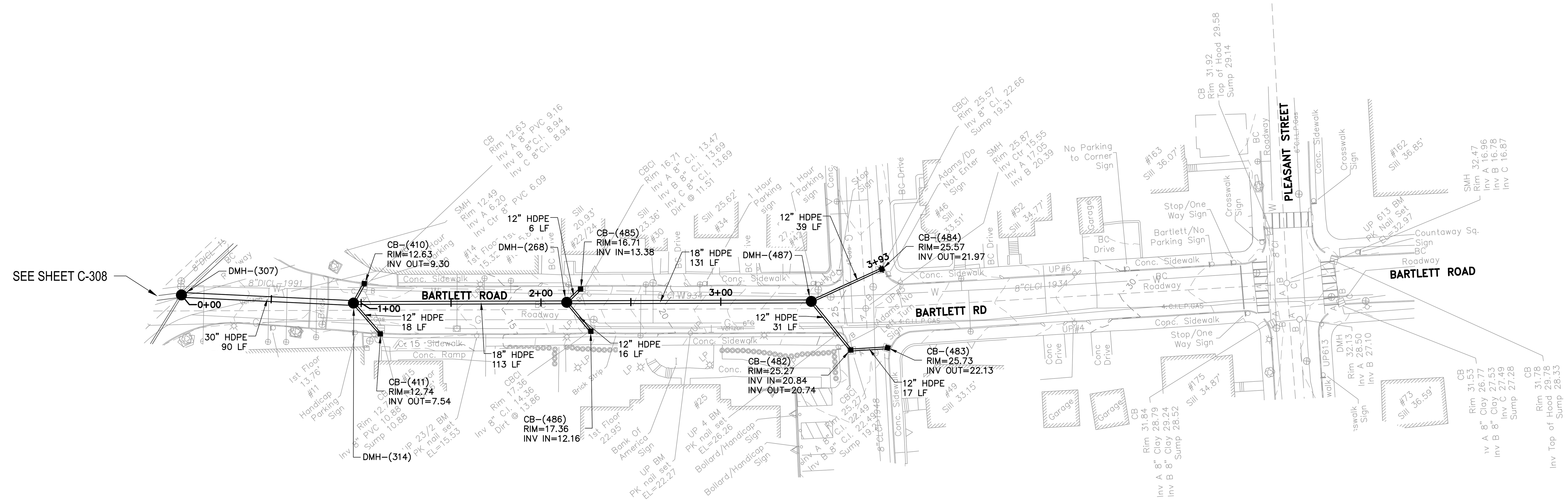
WINTHROP TOWN CENTER INFRASTRUCTURE AND IMPROVEMENTS

JOB NO.: 230079.01
DATE: SEPTEMBER 2017
SCALE: AS NOTED
SHEET: 18 OF 31

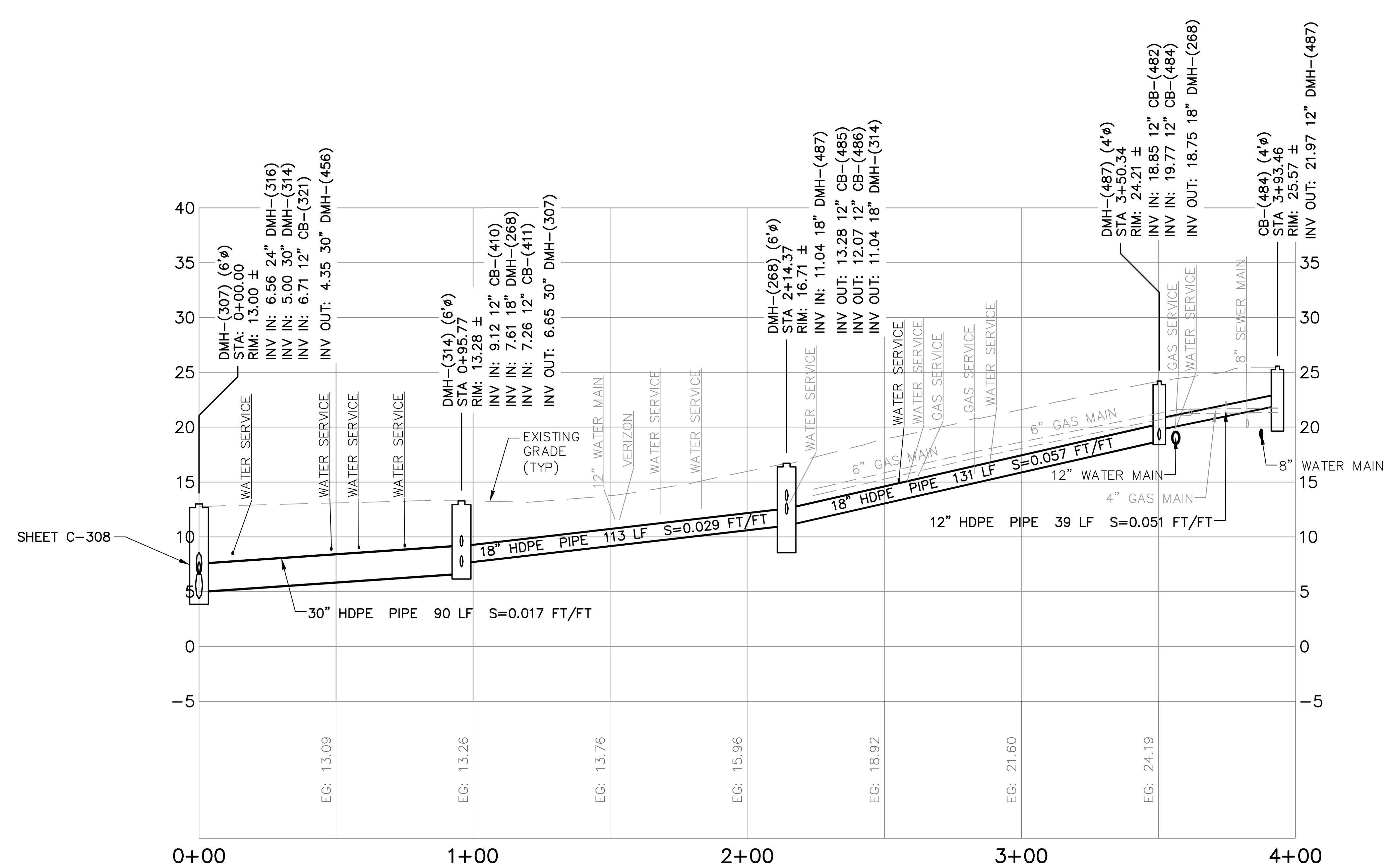
C-310

FINAL DESIGN - NOT FOR CONSTRUCTION

22x34 SHEET
1:1



BARTLETT ROAD
SCALE: 1" = 40'



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

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

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BARTLETT ROAD
DRAINAGE PLAN &
PROFILE

TOWN OF WINTHROP
1 METCALF SQUARE
WINTHROP, MASSACHUSETTS

WINTHROP TOWN CENTER
INFRASTRUCTURE AND
IMPROVEMENTS

JOB NO.: 230079.01
DATE: SEPTEMBER 2017
SCALE: AS NOTED
SHEET: 19 OF 31

C-311

FINAL DESIGN - NOT FOR CONSTRUCTION

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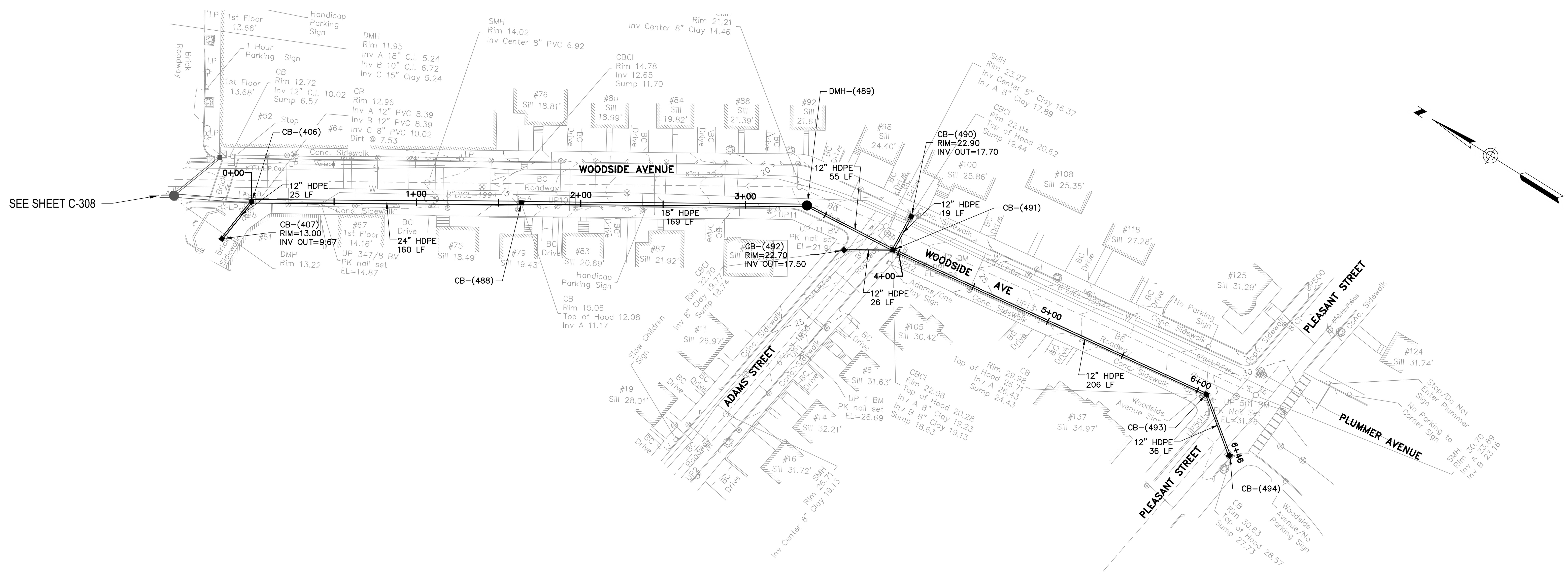
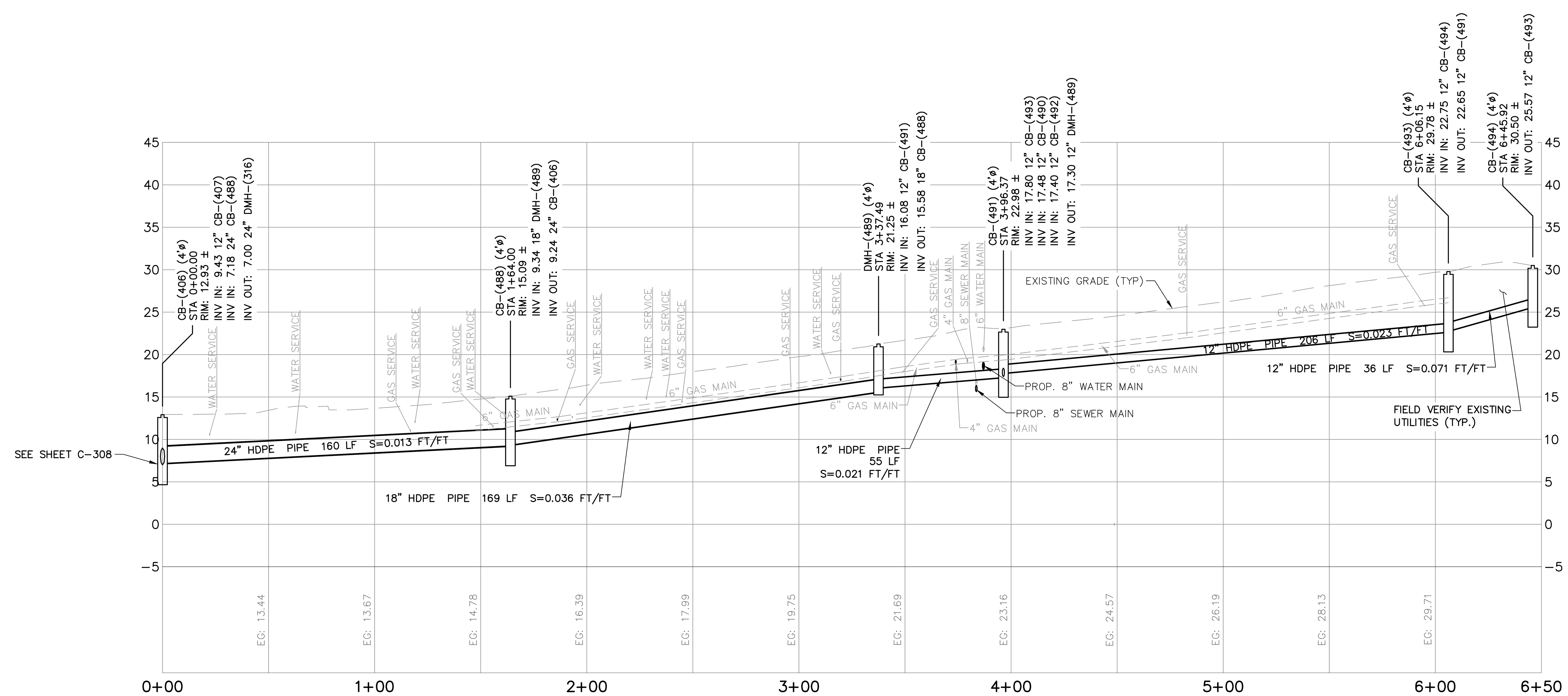


WOODSIDE AVENUE

SCALE: 1" = 40'



WOODSIDE AVE – DRAINAGE II
PROFILE STA. 0+00 TO STA. 6+50

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 10'

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

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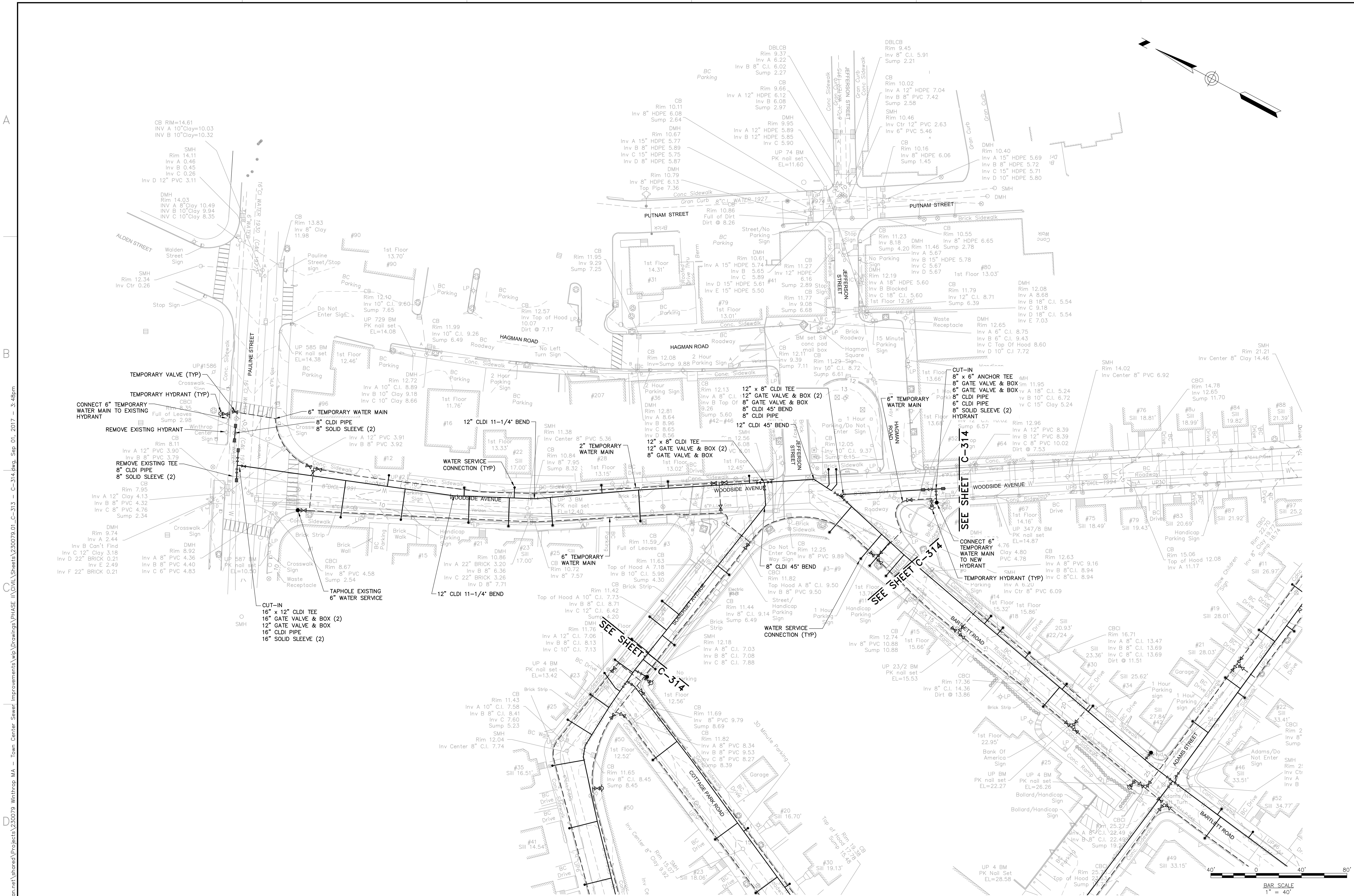
WOODSIDE AVENUE II
DRAINAGE PLAN & PROFILE

TOWN OF WINTHROP
1 METCALF SQUARE
WINTHROP, MASSACHUSETTS

WINTHROP TOWN CENTER INFRASTRUCTURE AND IMPROVEMENTS

JOB NO.: 230079.01
DATE: SEPTEMBER 2017
SCALE: AS NOTED
SHEET: 20 OF 31

C-312



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NE PROPOSED WATER UTILITIES

TOWN OF WINTHROP
1 METCALF SQUARE
WINTHROP, MASSACHUSETTS

WINTHROP TOWN CENTER INFRASTRUCTURE AND IMPROVEMENTS

JOB NO.: 230079.01
DATE: SEPTEMBER 2017
SCALE: AS NOTED
SHEET: 21 OF 31

C-313

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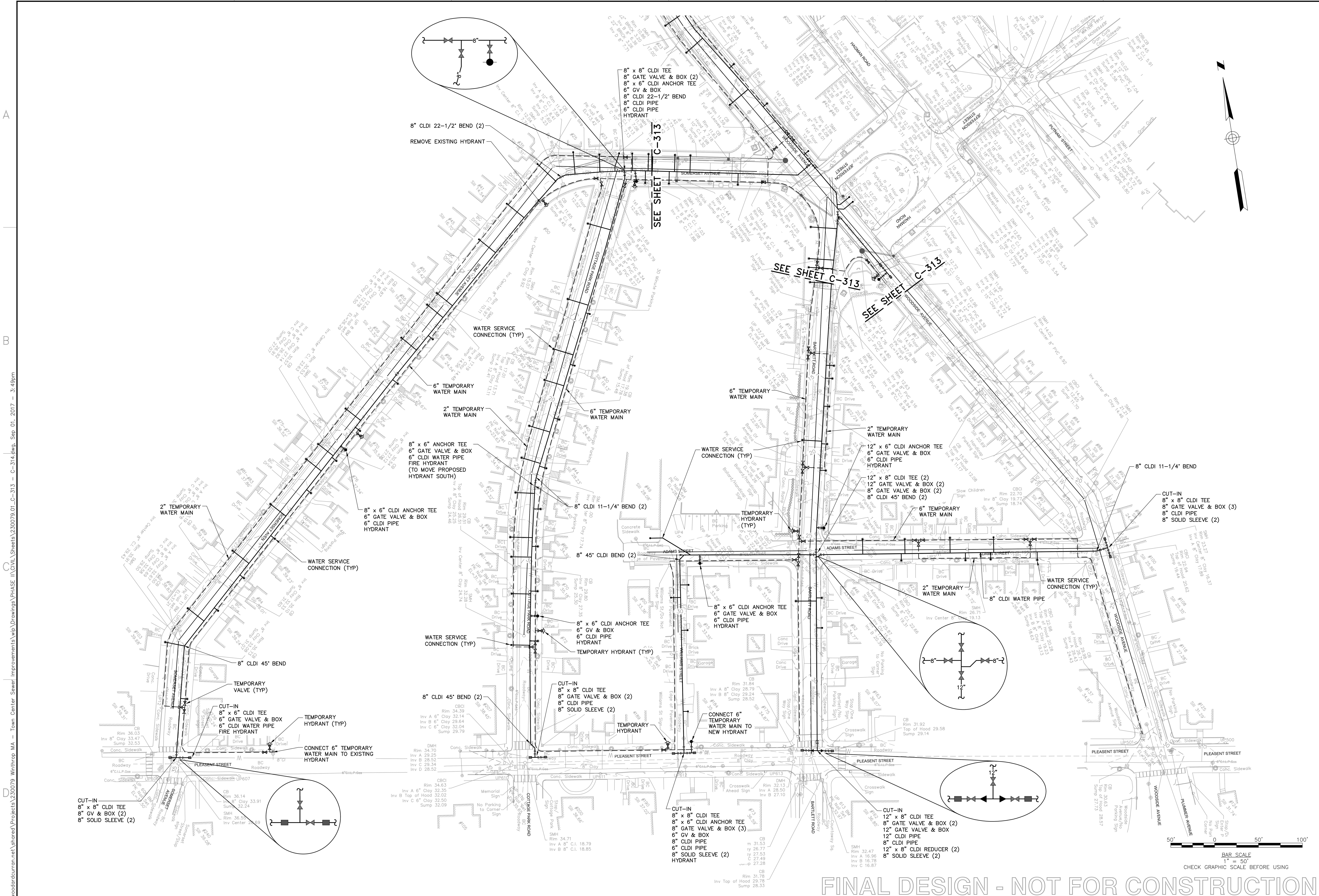

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SW PROPOSED WATER UTILITIES

TOWN OF WINTHROP
1 METCALF SQUARE
WINTHROP, MASSACHUSETTS

WINTHROP TOWN CENTER INFRASTRUCTURE AND IMPROVEMENTS

JOB NO.: 230079.01
DATE: SEPTEMBER 2017
SCALE: AS NOTED
SHEET: 22 OF 31

C-314

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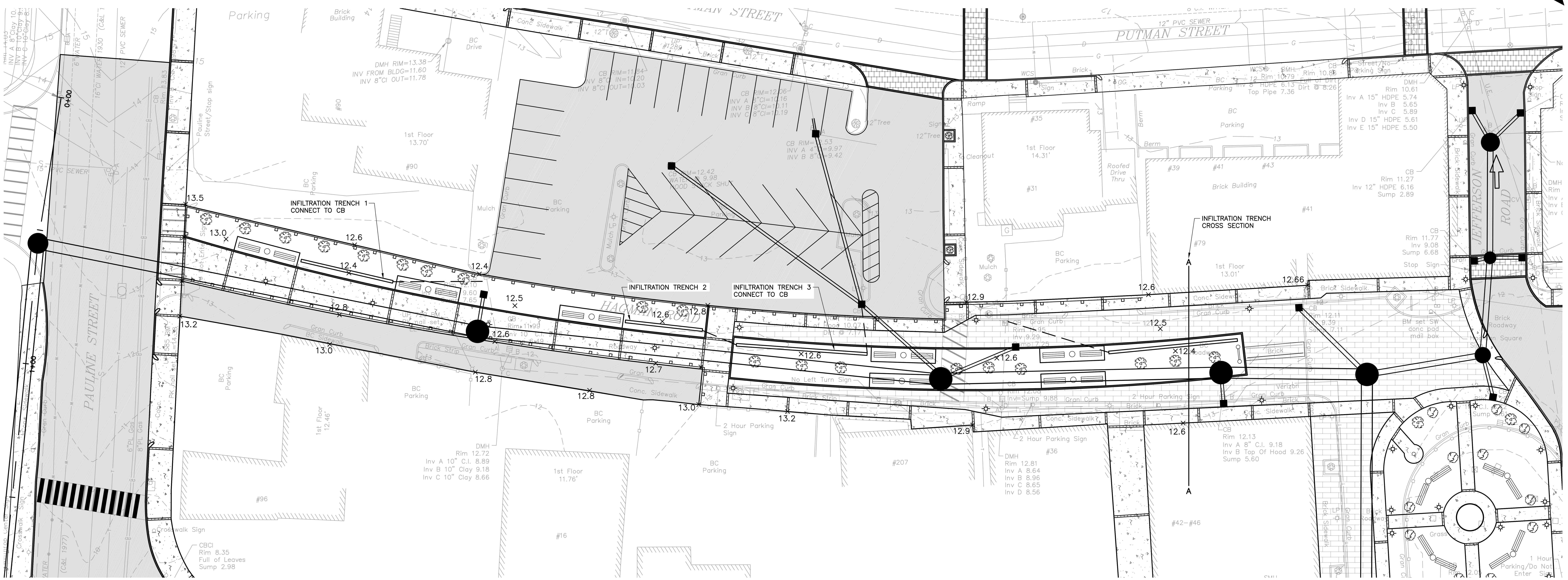
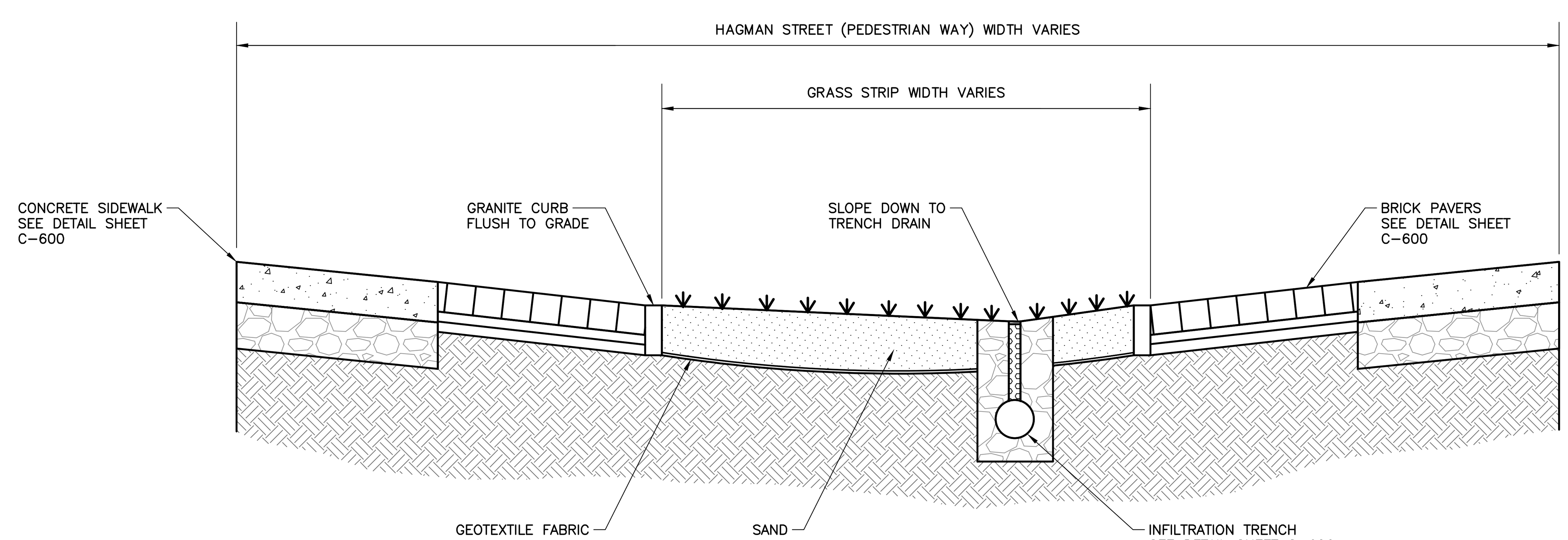


20' 0 20' 40'
BAR SCALE
1" = 20'
CHECK GRAPHIC SCALE BEFORE USING



INFILTRATION TRENCH CROSS SECTION

NOT TO SCALE

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GRADING PLAN AT HAGMAN ROAD

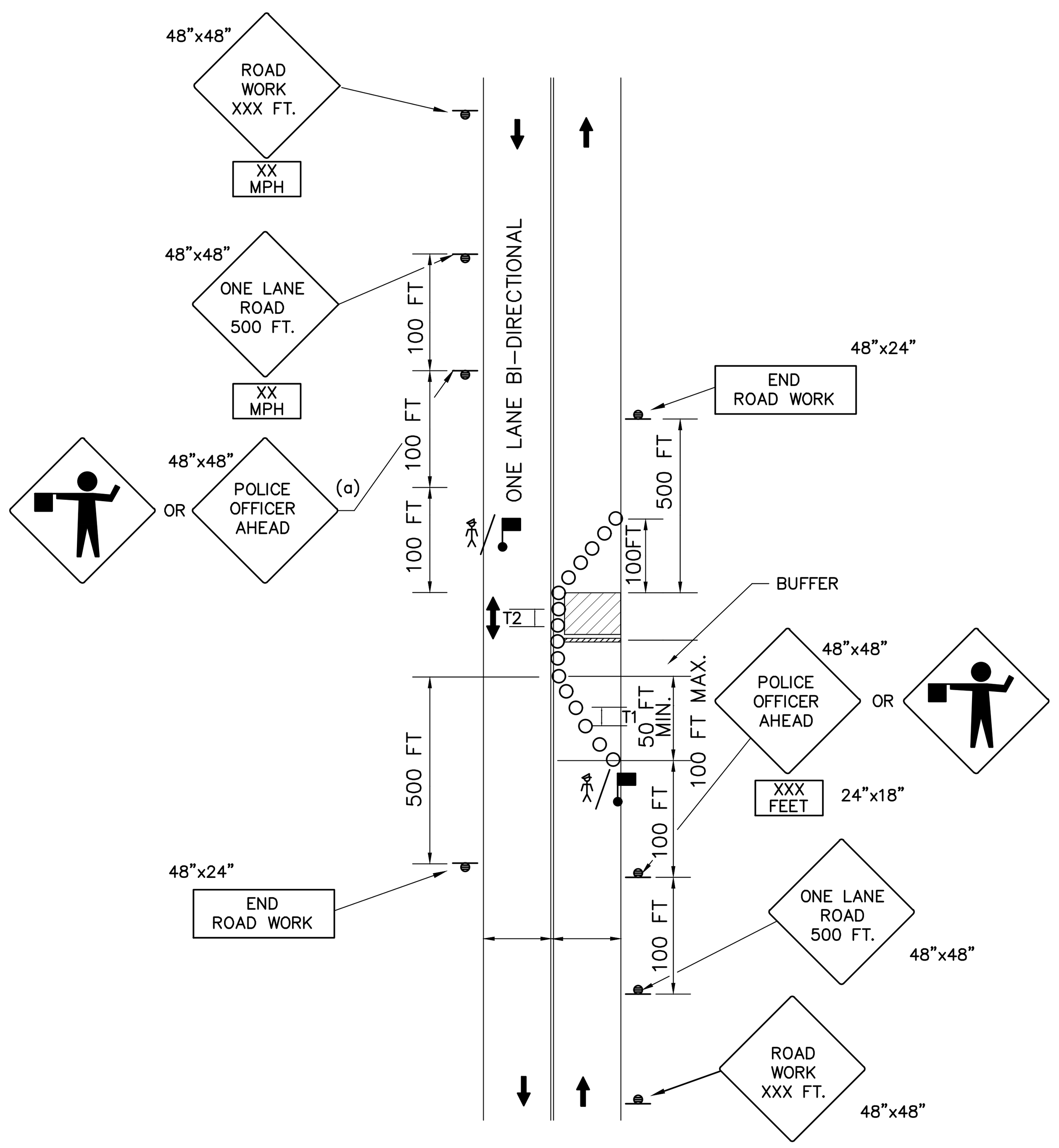
TOWN OF WINTHROP
1 METCALF SQUARE
WINTHROP, MASSACHUSETTS

WINTHROP TOWN CENTER INFRASTRUCTURE AND IMPROVEMENTS

JOB NO.: 230079.01
DATE: SEPTEMBER 2017
SCALE: AS NOTED
SHEET: 23 OF 31

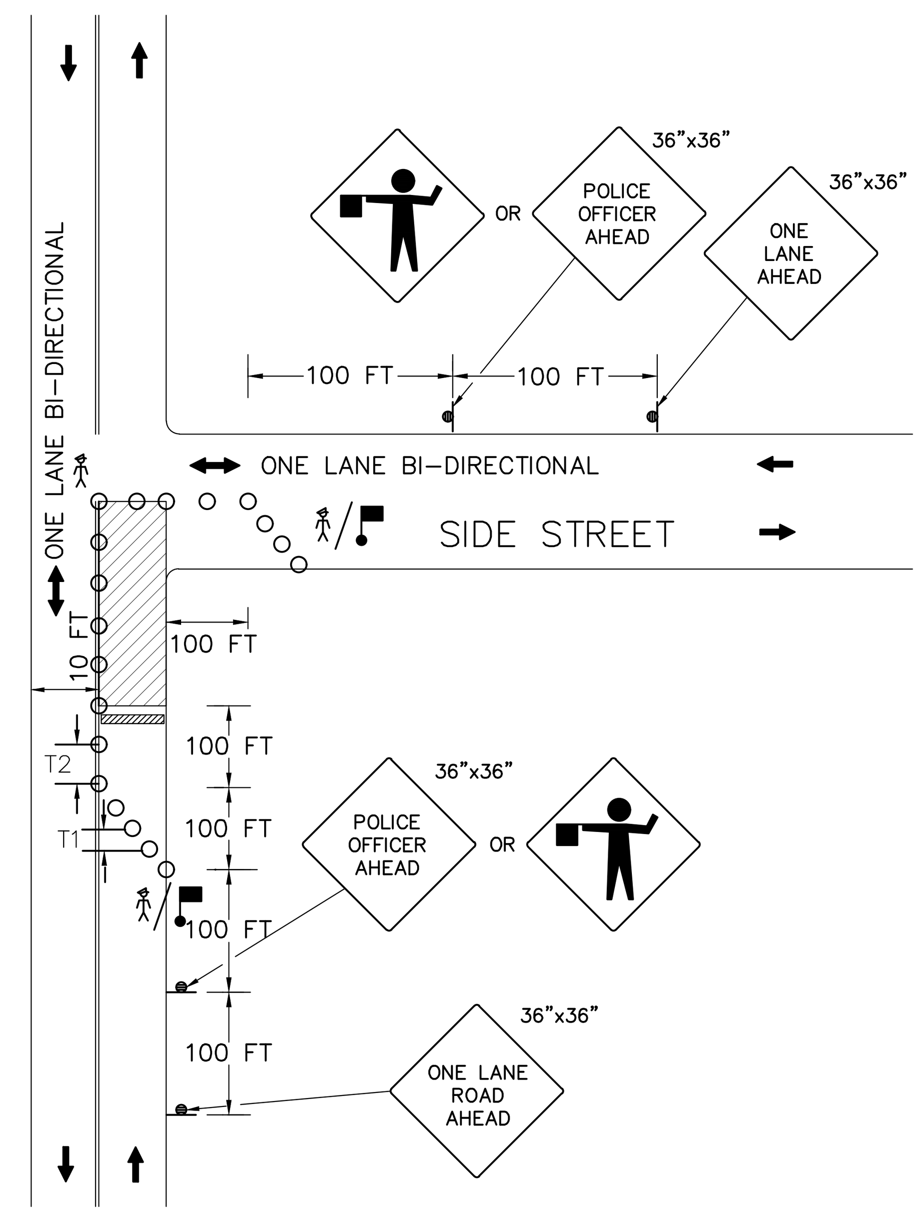
C-400

22x34 SHEET
1:1



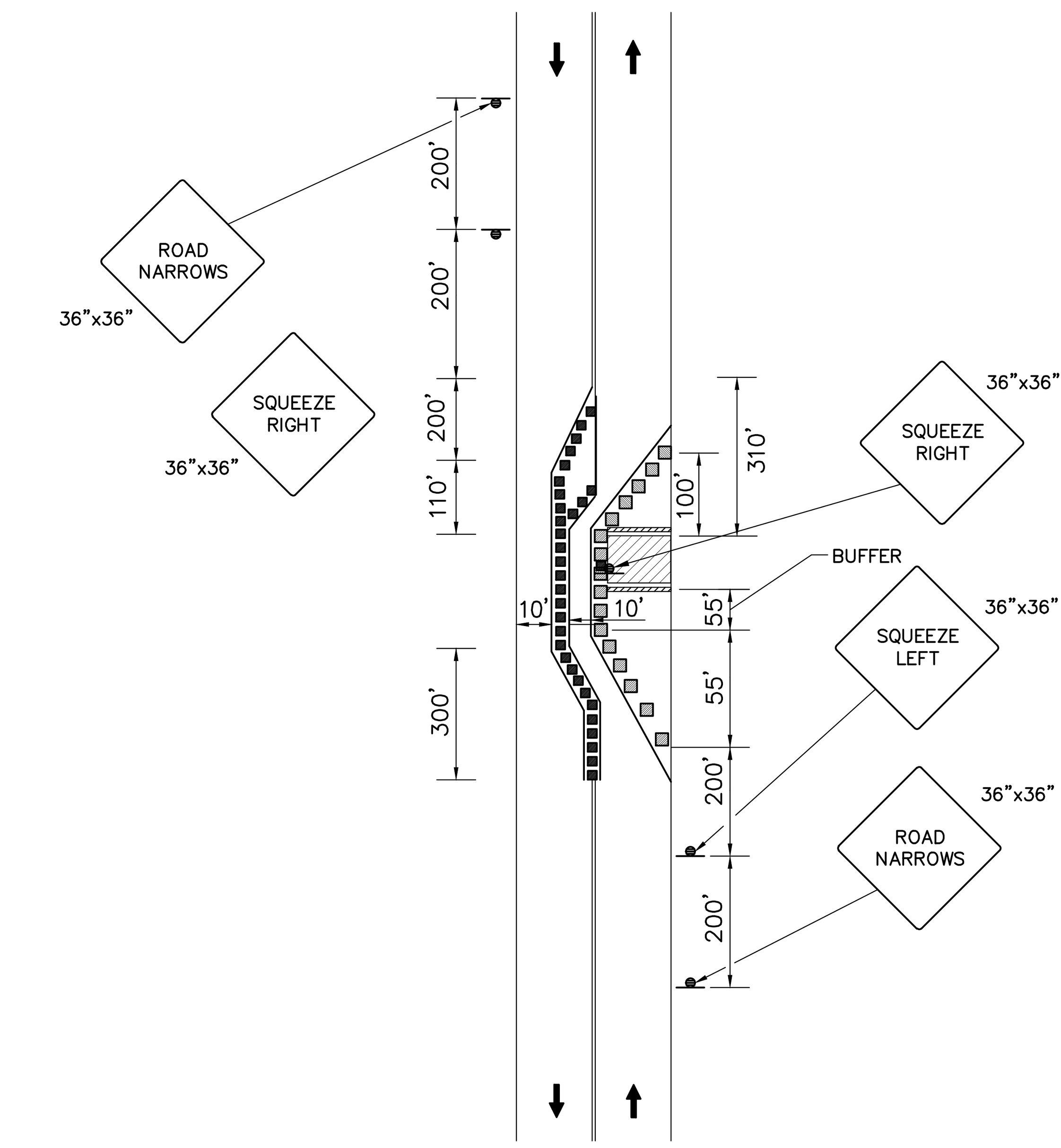
TYPICAL TRAFFIC CONTROL PLAN
2 LANE ROAD W/ALTERNATING ONE-WAY

NOT TO SCALE



TYPICAL TRAFFIC CONTROL PLAN
FOR 3 STREET INTERSECTION
(BI-DIRECTIONAL)

NOT TO SCALE



TYPICAL TRAFFIC CONTROL PLAN
FOR TWO-WAY OPERATION

NOT TO SCALE

TABLE 1
ADVANCED WARNING SIGN PLACEMENT

ROAD TYPE	DISTANCE BETWEEN SIGNS		
	A	B	C
URBAN (LOW SPEED)	100	100	100
URBAN (HIGH SPEED)	350	350	350
RURAL	500	500	500

FORMULAS FOR L **

SPEED	FORMULA
40 mph or less	$L = \frac{WS^2}{60}$
45 mph or greater	$L = W \times S$

* SPEED CATEGORY TO BE DETERMINED BY LOCAL JURISDICTIONS.
** L = TAPER LENGTH IN METERS.
W = WIDTH OF OFFSET IN METERS.
S = POSTED SPEED, THE OFF-PEAK 85TH PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED IN KPH.

* POSTED SPEED, OFF-PEAK 85TH PERCENTILE

TABLE 2
BUFFER LENGTHS

SPEED* (mph)	LENGTH (ft)
25	55
30	65
35	120
40	170
45	220

* POSTED SPEED, OFF-PEAK 85TH PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED IN MPH.

KEY

- ■ CHANNELIZING DEVICES
- WORK ZONE
- SIGN
- TYPE III BARRICADES W/ORANGE FLAGS OR WARNING LIGHTS
- POLICE OFFICER
- ← DIRECTION OF TRAVEL
- ○ RELECTORIZED DRUM
- FLAGGER

NOTES

1. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS.
2. ALL SIGN LEGENDS, BORDERS, AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD.
3. TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
4. TEMPORARY CONSTRUCTION SIGNING, BARRICADES, AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM THE HIGHWAY OR COVERED WHEN THEY ARE NOT REQUIRED FOR CONTROL OF TRAFFIC.
5. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY, AND REFLECTORIZED PLASTIC DRUMS WITH LIGHTING DEVICES MOUNTED ON THEM MUST PASS THE CRITERIA SET FORTH IN NCHRP REPORT 350, "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES."
6. CONTRACTOR SHALL PROVIDE MAINTAINED ACCESS TO DRIVEWAYS AND STREETS THROUGHOUT CONSTRUCTION.
7. IF ACCESS CAN NOT BE MAINTAINED, 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.
8. THE FIRST THREE (3) DRUMS OF A TAPER MAY BE MOUNTED WITH TYPE A LIGHTS.
9. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
10. MINIMUM LANE WIDTH TO BE 11 FEET UNLESS OTHERWISE SHOWN. MINIMUM LANE WIDTH TO BE MEASURED FROM THE EDGE OF DRUMS OR MEDIAN BARRIER.
11. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.
12. WORK IS PLANNED BETWEEN THE HOURS OF 7AM AND 4PM.
13. TEMPORARY TRAFFIC CONTROL EXCEPT AT INTERSECTIONS SHALL BE PROVIDED AS SHOWN ON 2 LANE ROAD W/ALTERNATIVE ONE-WAY OR TWO WAY OPERATION DETAIL.
14. TEMPORARY TRAFFIC CONTROL WILL MOVE AS WORK PROGRESSES ALONG FISH ROAD.
15. AT ALL INTERSECTIONS TEMPORARY TRAFFIC CONTROL SHALL BE PROVIDED AS SHOWN ON 3 STREET INTERSECTION (BI-DIRECTIONAL) DETAIL.

CONSTRUCTION PHASING:

1. ALL BYPASS INSTALLATION ALONG WOODSIDE AVENUE AND AT THE INTERSECTION OF PAULINE STREET IS TO BE COMPLETED FIRST.
2. BEGIN CONSTRUCTION AT PUALINE STREET AND CONTINUE TO WOODSIDE AVENUE.
3. ALL ADJACENT UTILITY WORK (DRAINAGE, SEWER ETC) TO BE DONE AT THE SAME TIME AS BYPASS.
4. THE BYPASS VORTECH STROMWATER TREATMENT DEVICE TO BE CONNECTED IN.
5. SERVICE CONNECTIONS TO BE DONE NEXT (WATER, SEWER ETC.).
6. FILL MATERIAL AND COMPACTION
7. GRANITE CURB TO BE INSTALLED
8. PAVING AND SIDEWALK INSTALLATION.
9. BRICK STAMPED ASPHALT AREAS AND CROSS WALKS TO BE COMPLETED.
10. LINE STRIPING OF NO PARKING AREAS AND PARALLEL PARKING
11. LANDSCAPE AREAS AND PROPOSED TREES TO BE PLANTS
12. PHASE 1 WILL COMMENCE IN ABOUT THE MIDDLE OF SUMMER 2017.

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TRAFFIC MANAGEMENT PLAN

TOWN OF WINTHROP
1 METCALF SQUARE
WINTHROP, MASSACHUSETTS

WINTHROP TOWN CENTER INFRASTRUCTURE AND IMPROVEMENTS

JOB NO.: 230079.01
DATE: SEPTEMBER 2017
SCALE: AS NOTED
SHEET: 24 OF 31

C-500

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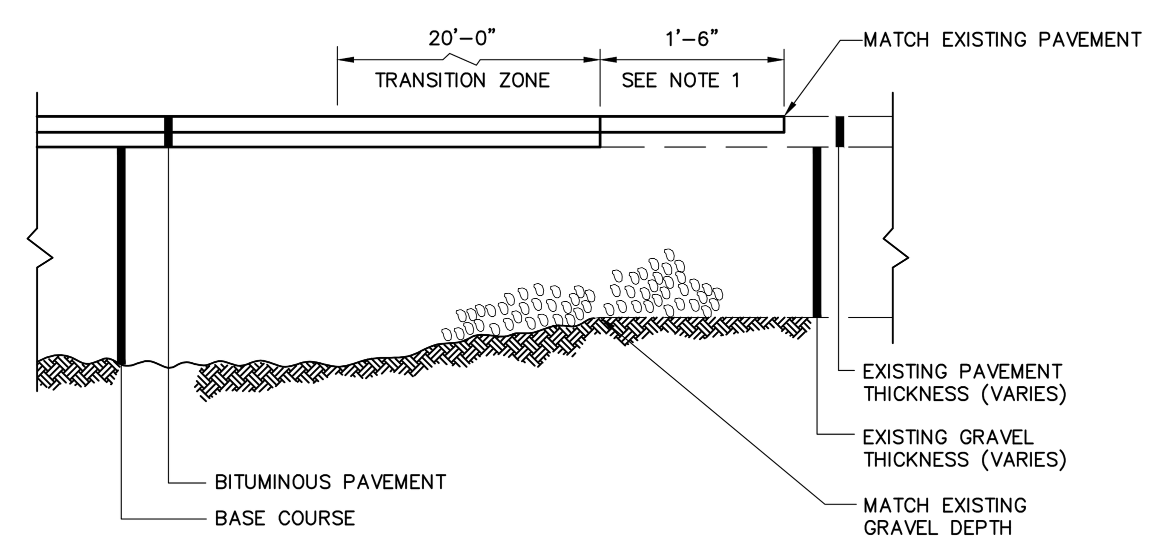
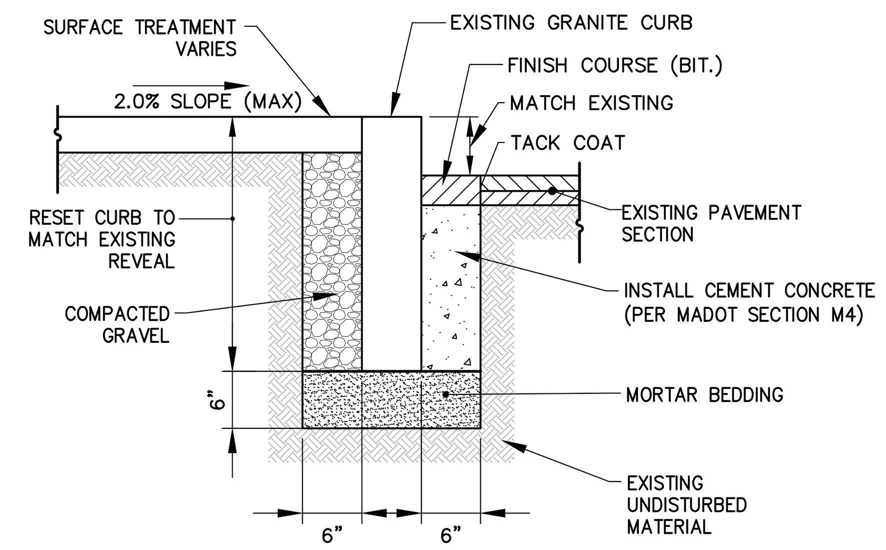


NOTE:

1. GRIND EXISTING PAVEMENT, DEPTH EQUAL TO NEW SURFACE COURSE.

PAVEMENT BUTT JOINT DETAIL

NOT TO SCALE

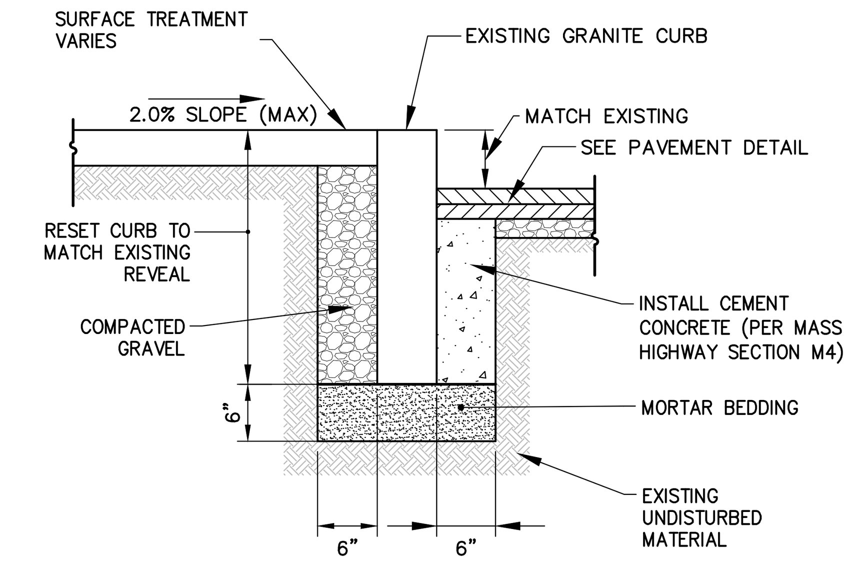


NOTE:

1. THIS PROCEDURE IS APPLICABLE ONLY IF CURB IS TO BE SET AFTER BASE AND/OR BINDER ARE IN PLACE, OR SET IN EXISTING PAVEMENT.
2. SAWCUT NEAT LINE 6" FROM CURB LINE AND REMOVE BINDER, BASE AND GRAVEL, REPLACE WITH CEMENT CONCRETE.
3. ANY DESIGNATED CEMENT CONCRETE THAT IS ACCEPTABLE UNDER SECTION M4 OF THE MASS HIGHWAY STANDARD SPECIFICATIONS MAY BE USED; ALL TEST REQUIREMENTS ARE WAVED. HOT MIX ASPHALT SHALL NOT BE USED AS A SUBSTITUTE.
4. PAYMENT PER FOOT OF CURB IS INCLUSIVE OF ALL ITEMS OF WORK REQUIRED TO COMPLETE PROPER INSTALLATION OF THE CURB.

SET GRANITE CURB (INSTALLATION IN EXISTING PAVEMENT)

NOT TO SCALE

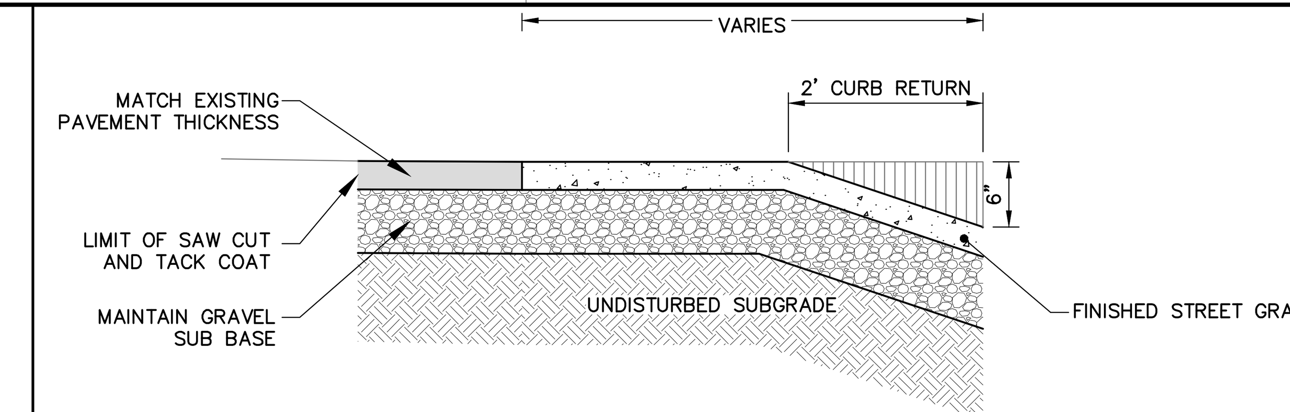


NOTE:

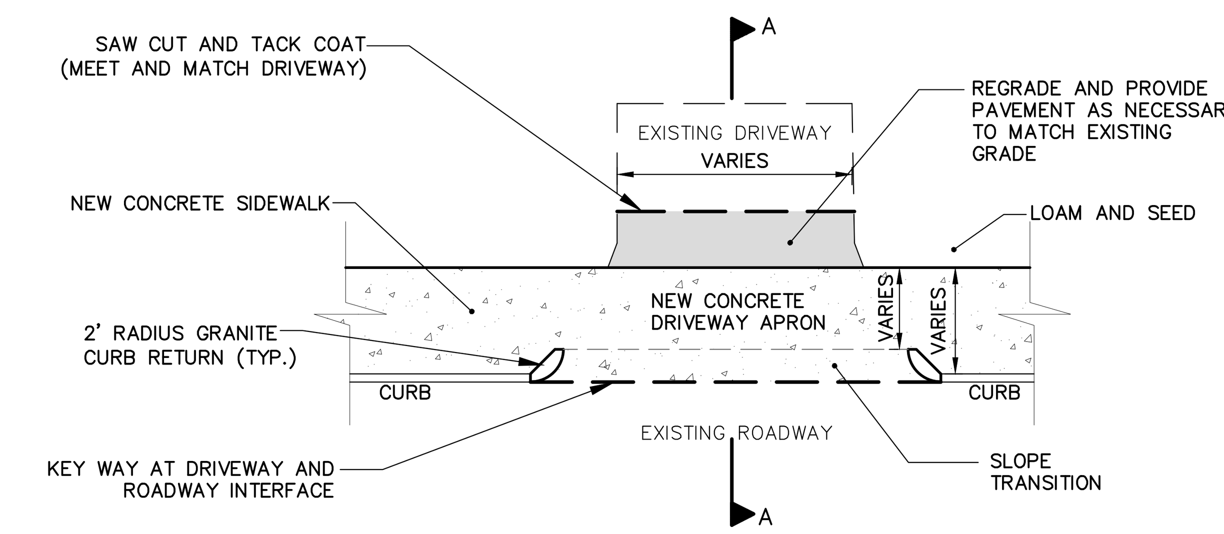
1. ANY DESIGNATED CEMENT CONCRETE THAT IS ACCEPTABLE UNDER SECTION M4 OF THE MASS HIGHWAY STANDARD SPECIFICATIONS MAY BE USED; ALL TEST REQUIREMENTS ARE WAVED. HOT MIX ASPHALT SHALL NOT BE USED AS A SUBSTITUTE.
2. PAYMENT PER FOOT OF CURB IS INCLUSIVE OF ALL ITEMS OF WORK REQUIRED TO COMPLETE PROPER INSTALLATION OF THE CURB.

RESET EXISTING GRANITE CURB (INSTALLATION IN NEW PAVEMENT)

NOT TO SCALE



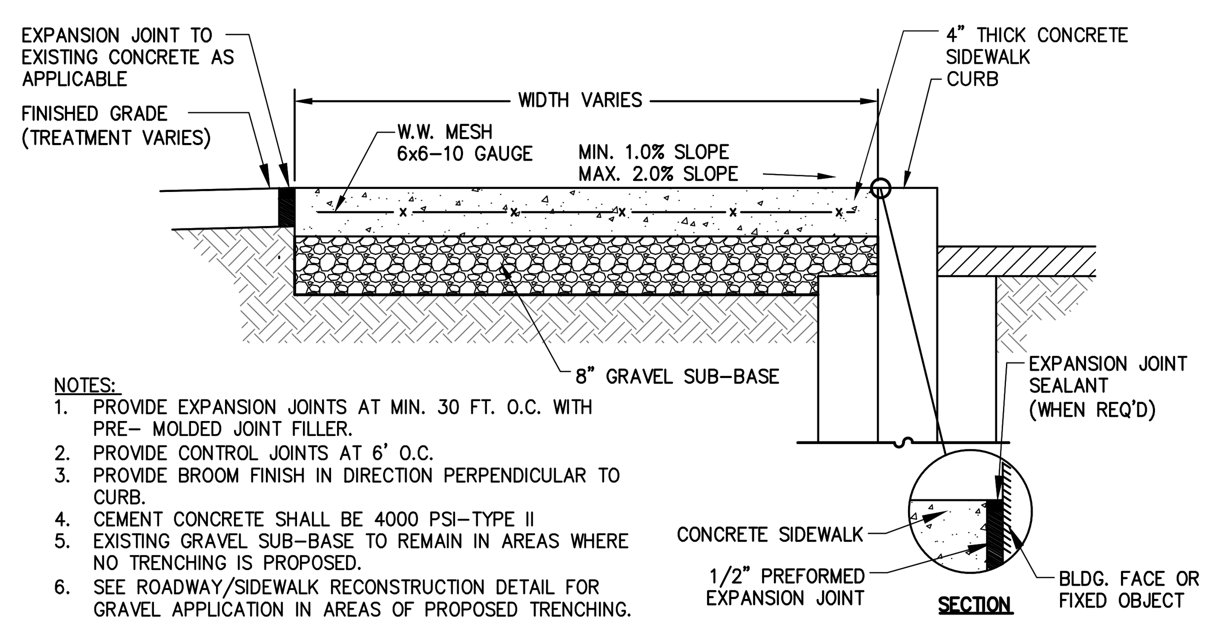
SECTION A-A



PLAN VIEW

RECONSTRUCT PAVEMENT (DRIVEWAY)

NOT TO SCALE

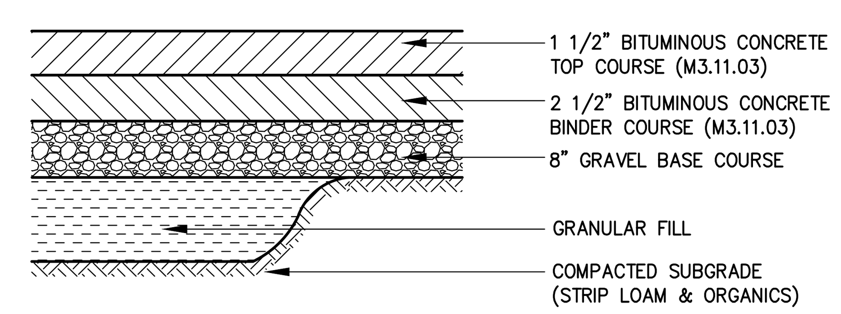


NOTES:

1. PROVIDE EXPANSION JOINTS AT MIN. 30 FT. O.C. WITH PRE- MOLDED JOINT FILLER.
2. PROVIDE CONTROL JOINTS AT 6' O.C.
3. PROVIDE BROOM FINISH IN DIRECTION PERPENDICULAR TO CURB.
4. CEMENT CONCRETE SHALL BE 4000 PSI-TYPE II
5. EXISTING GRAVEL SUB-BASE TO REMAIN IN AREAS WHERE NO TRENCHING IS PROPOSED.
6. SEE ROADWAY/SIDEWALK RECONSTRUCTION DETAIL FOR GRAVEL APPLICATION IN AREAS OF PROPOSED TRENCHING.

TYPICAL CEMENT CONCRETE SIDEWALK DETAIL

NOT TO SCALE

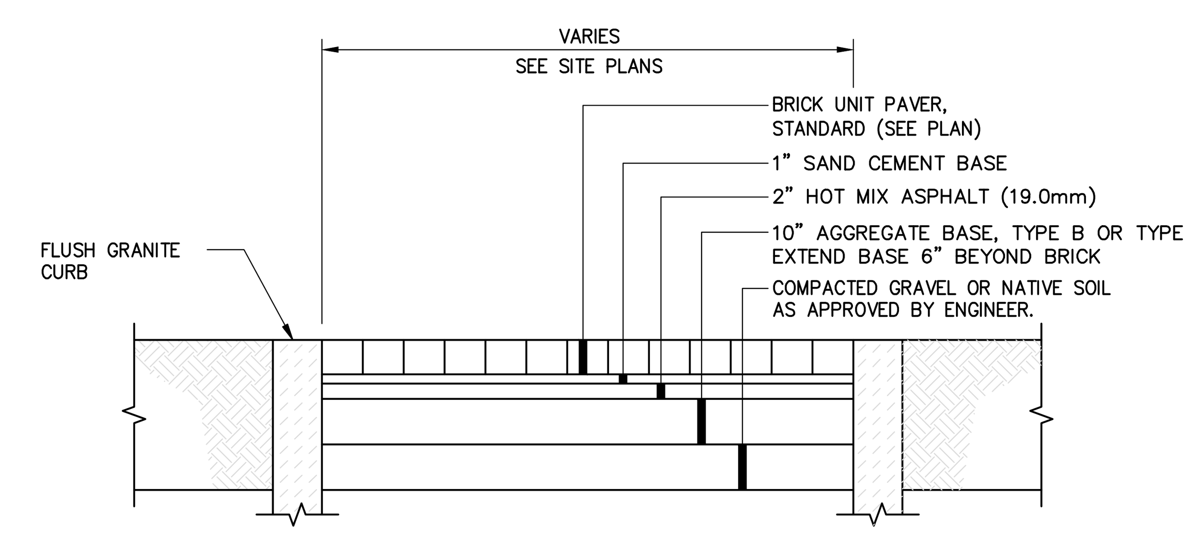


NOTE:

UNLESS OTHERWISE NOTED, BITUMINOUS CONCRETE SHALL MEET THE SPECIFICATIONS OUTLINED IN SECTION M3 OF MASSACHUSETTS HIGHWAY DEPARTMENT 1995 STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGES.

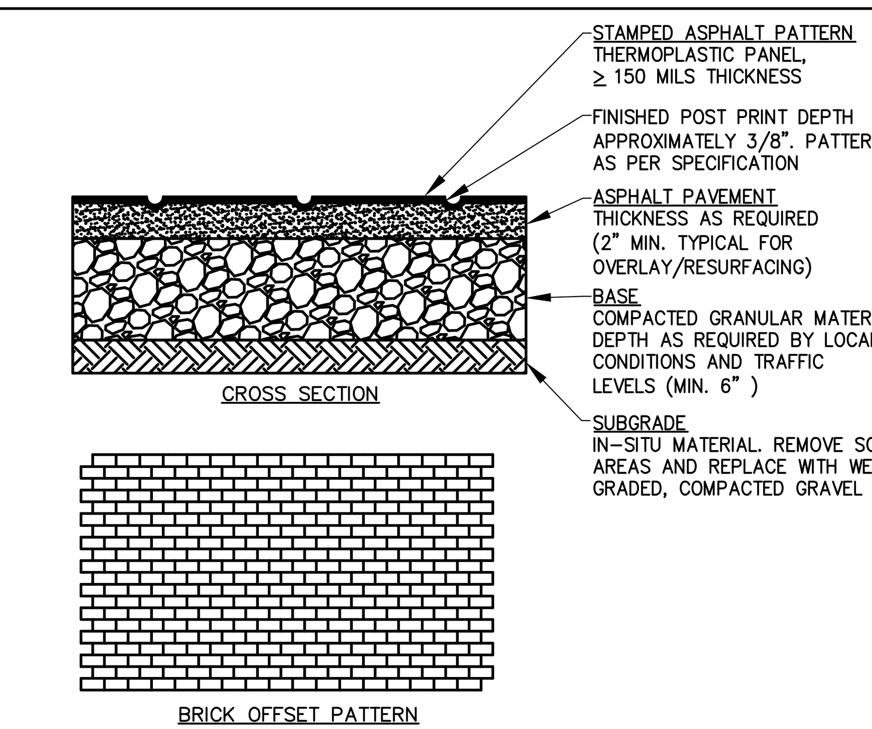
TYPICAL BITUMINOUS CONCRETE PAVEMENT PARKING LOT/ACCESS ROAD DETAIL

NOT TO SCALE



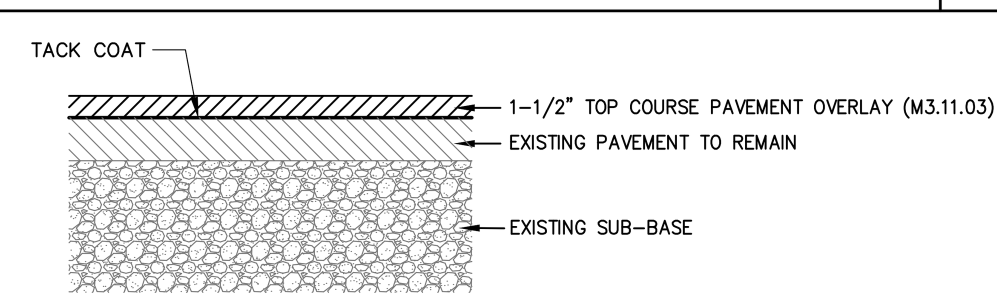
BRICK PAVER SIDEWALK DETAIL

N.T.S.



STAMPED ASPHALT DETAIL

NOT TO SCALE

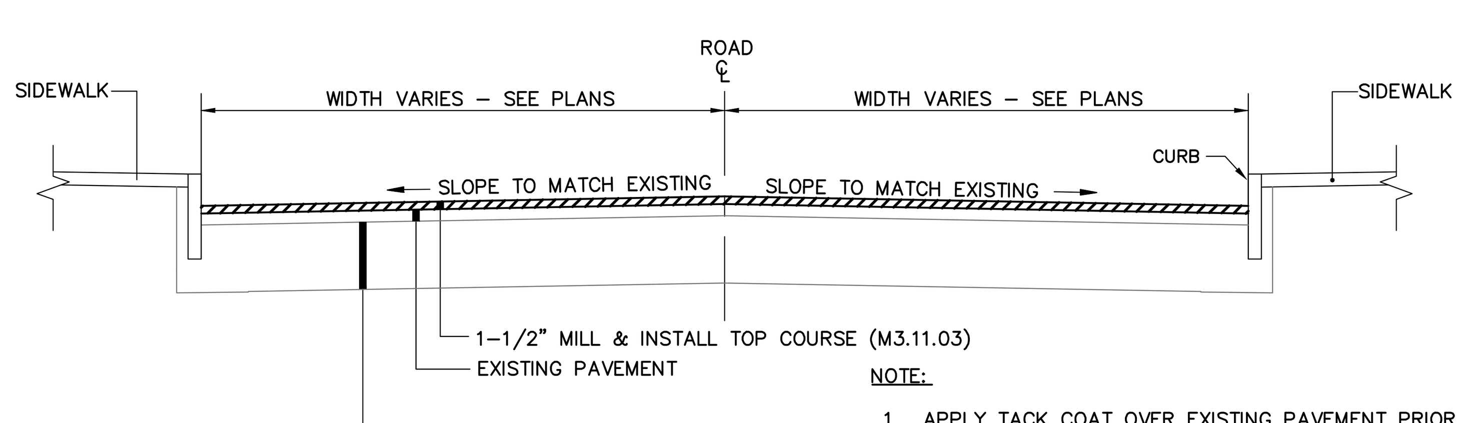


NOTE:

1. SEE PAVEMENT BUTT JOINT DETAIL FOR TRANSITION TO EXISTING PAVEMENT.
2. RAISE ALL STRUCTURES AND BOXES TO MEET NEW DEPTH.

PAVEMENT OVERLAY SECTION

NOT TO SCALE

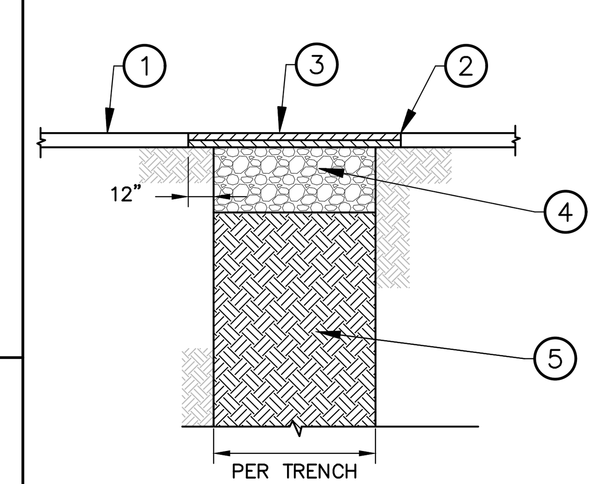


NOTE:

1. APPLY TACK COAT OVER EXISTING PAVEMENT PRIOR TO INSTALLING NEW 1-1/2" PAVEMENT.
2. CONTRACTOR SHALL OVERLAY ADDITIONAL PAVEMENT TO PROVIDE MAXIMUM 7" CURB REVEAL FOR FOREST AVE. AND CLIFTON AVE. ONLY.
3. PROTECT OR RE-SET ALL STRUCTURES & BOXES.

MILL AND OVERLAY SECTION

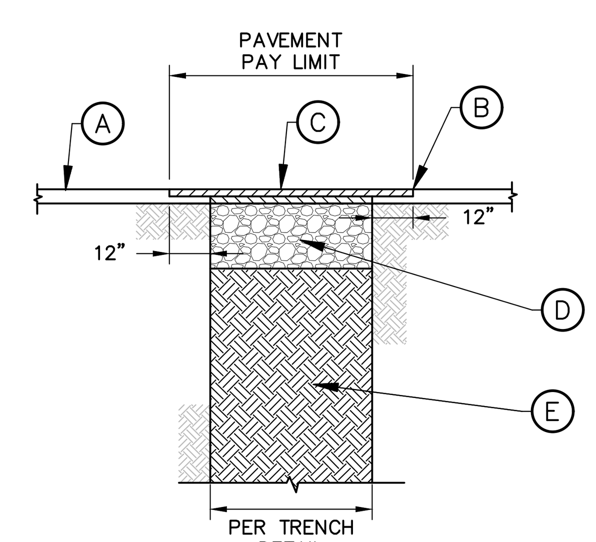
NOT TO SCALE



TEMPORARY

NOTES:

1. EXISTING PAVEMENT
2. SAWCUT, TACK COAT EDGES (TYP)
3. 4" BINDER COURSE (2-½" AND 1-½" LIFTS)
4. 12" GRAVEL BORROW
5. FINAL BACKFILL PER TRENCH DETAIL



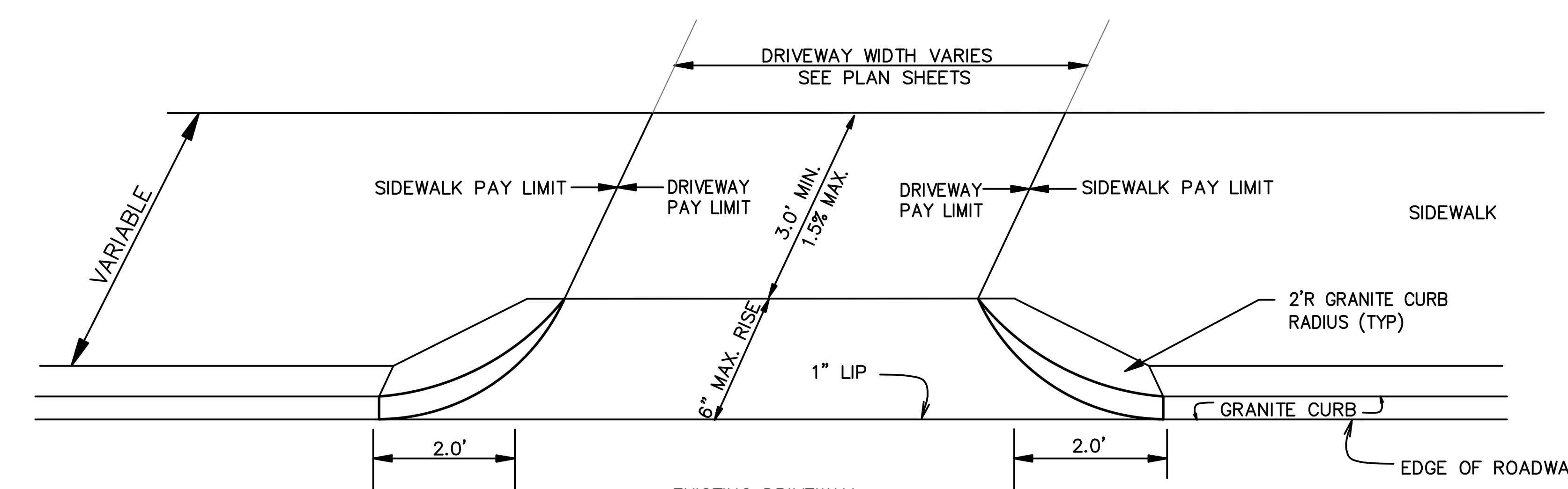
PERMANENT

NOTES:

- A EXISTING PAVEMENT
- B SAWCUT, TACK COAT EDGES (TYP) SEAL JOINTS BY INFRARED TECHNIQUES
- C 1 1/2" BIT. CONC. TOP COURSE 2 1/2" BIT. CONC. BINDER COURSE OR MATCH EXISTING PAVEMENT SECTION IF > 4".
- D 12" GRAVEL BORROW
- E FINAL BACKFILL PER TRENCH DETAIL

PAVEMENT DETAIL

NOT TO SCALE



NOTE:

SEE TYPICAL CEMENT CONCRETE SIDEWALK DETAIL FOR SUB-BASE MATERIAL REQUIREMENTS

TYPICAL CONCRETE DRIVEWAY DETAIL

NOT TO SCALE

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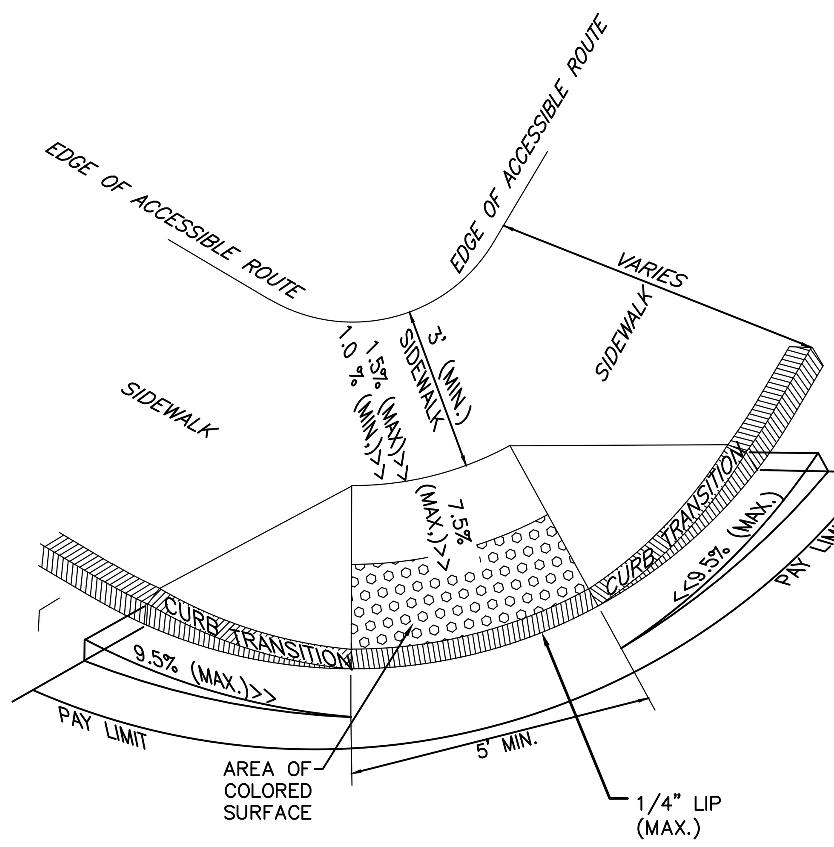
CIVIL DETAILS I

TOWN OF WINTHROP
1 METCALF SQUARE
WINTHROP, MASSACHUSETTS

WINTHROP TOWN CENTER INFRASTRUCTURE AND IMPROVEMENTS

JOB NO.: 230079.01
DATE: SEPTEMBER 2017
SCALE: AS NOTED
SHEET: 25 OF 31

C-600



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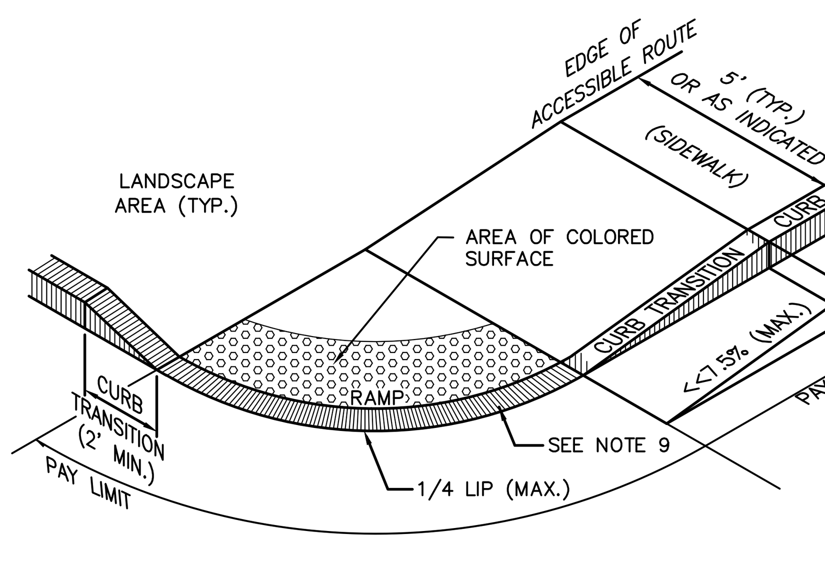

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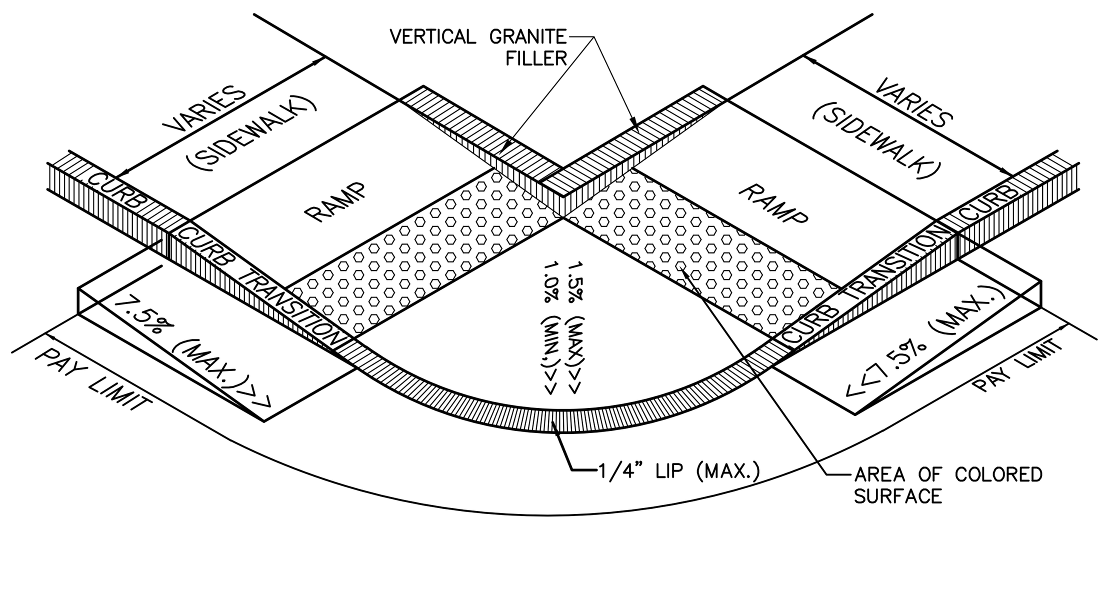
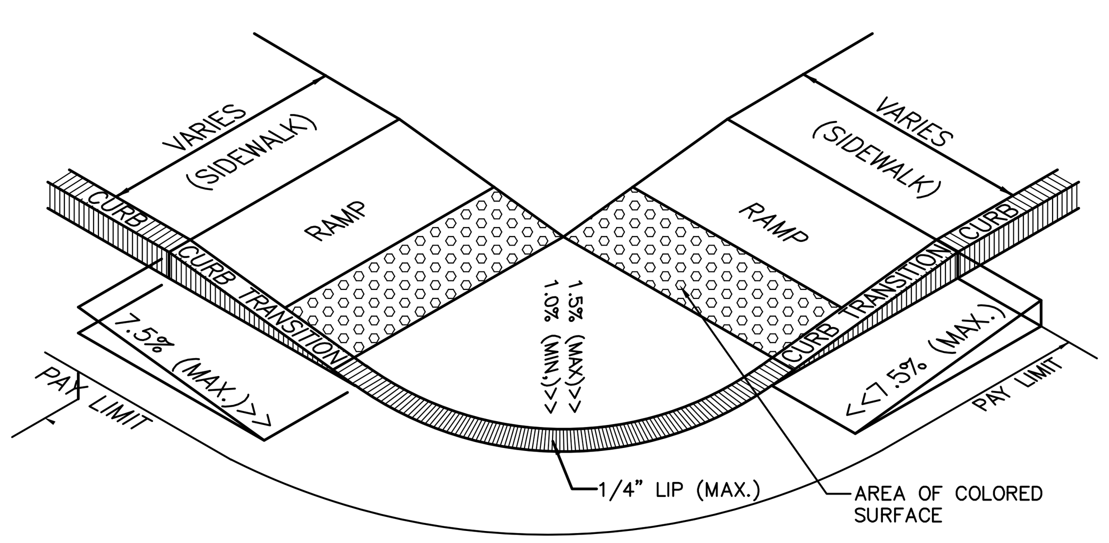


TYPE 'C'



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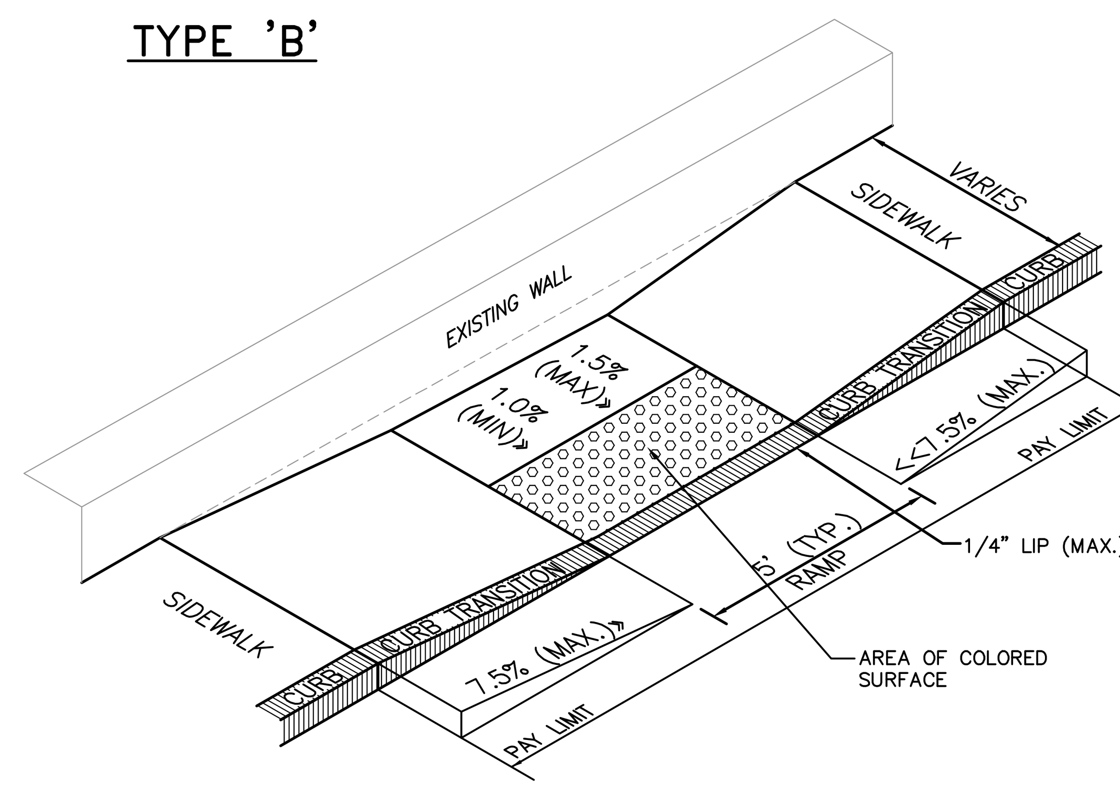


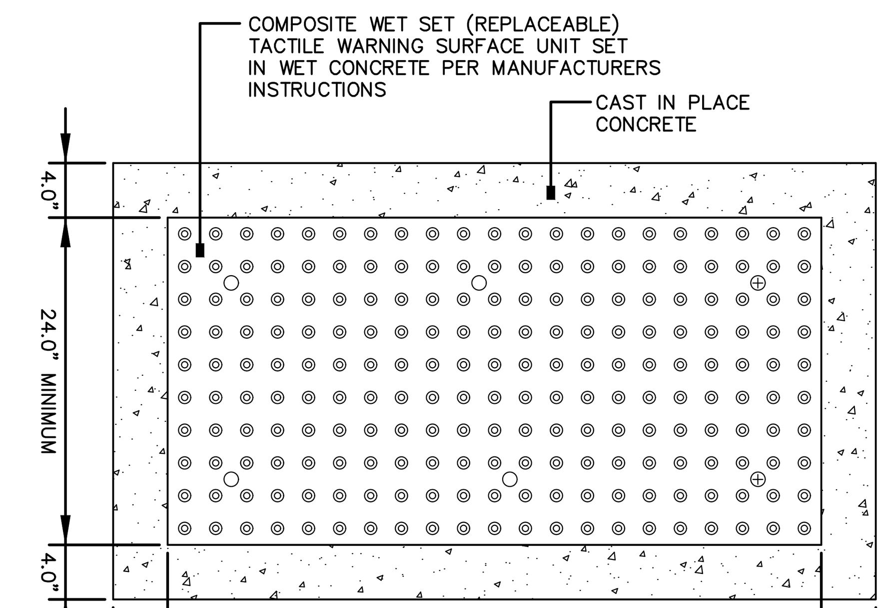
TYPE 'E'

NOTES:

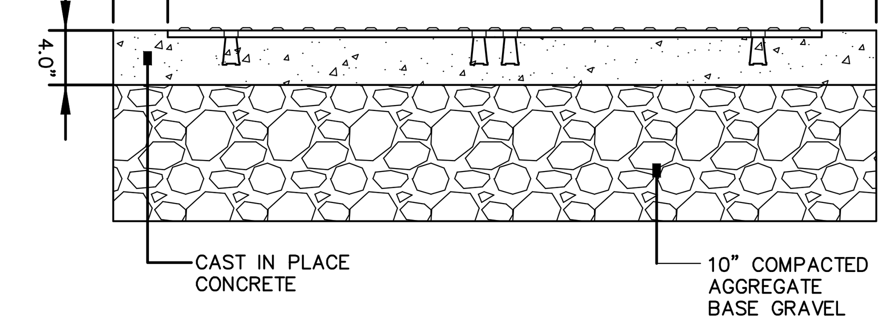
1. THE MAXIMUM ALLOWABLE SIDEWALK AND CURB RAMP CROSS SLOPES SHALL BE 1.5% (1% MIN.)
2. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE 5%.
3. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE CURB RAMPS SHALL BE 7.5%.
4. A MINIMUM OF 3 FEET CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (I.E. HYDRANTS, UTILITY POLES, TREE, SIGNS, ETC.)
5. BASE OF RAMP SHALL BE GRADED TO PREVENT PONDING.
6. SEE TYPICAL SIDEWALK SECTION FOR RAMP CONSTRUCTION.
7. WHERE ACCESSIBLE ROUTES ARE LESS THAN 5' IN WIDTH (EXCLUDING CURBING) A 5'x5' PASSING AREA SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 200 FEET.
8. ELIMINATE ALL CURBING AT RAMP (OTHER THAN VERTICAL CURBING, WHICH SHALL BE SET FLUSH) WHERE IT ABUTS ROADWAY OR OTHERWISE INDICATED.
9. DETECTABLE WARNING SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES.
10. TRUNCATED DOMES AND ALL RELATED INSTALLED SURFACES TO BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS. ALL DETECTABLE WARNING SURFACE INSTALLATIONS SHALL BE AT A MINIMUM AT LEAST AS NON SKID AS THE SURROUNDING PEDESTRIAN SURFACES.
11. ACR PAY LIMIT INCLUDES VGC.

ACCESSIBLE CURB RAMPS (ACR)

NOT TO SCALE



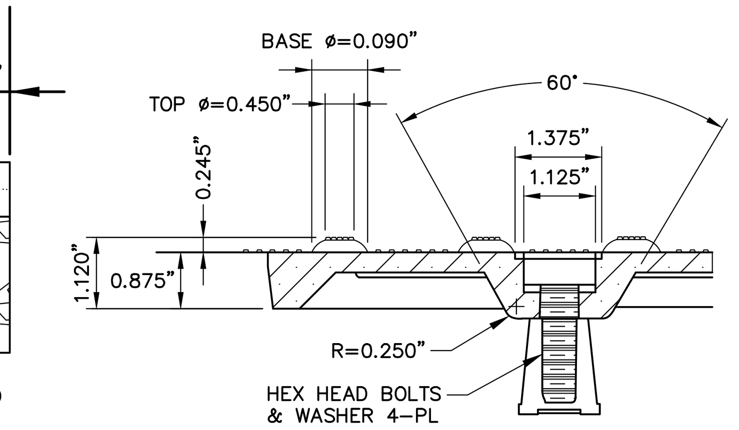
PLAN VIEW



SECTION VIEW

NOTES:

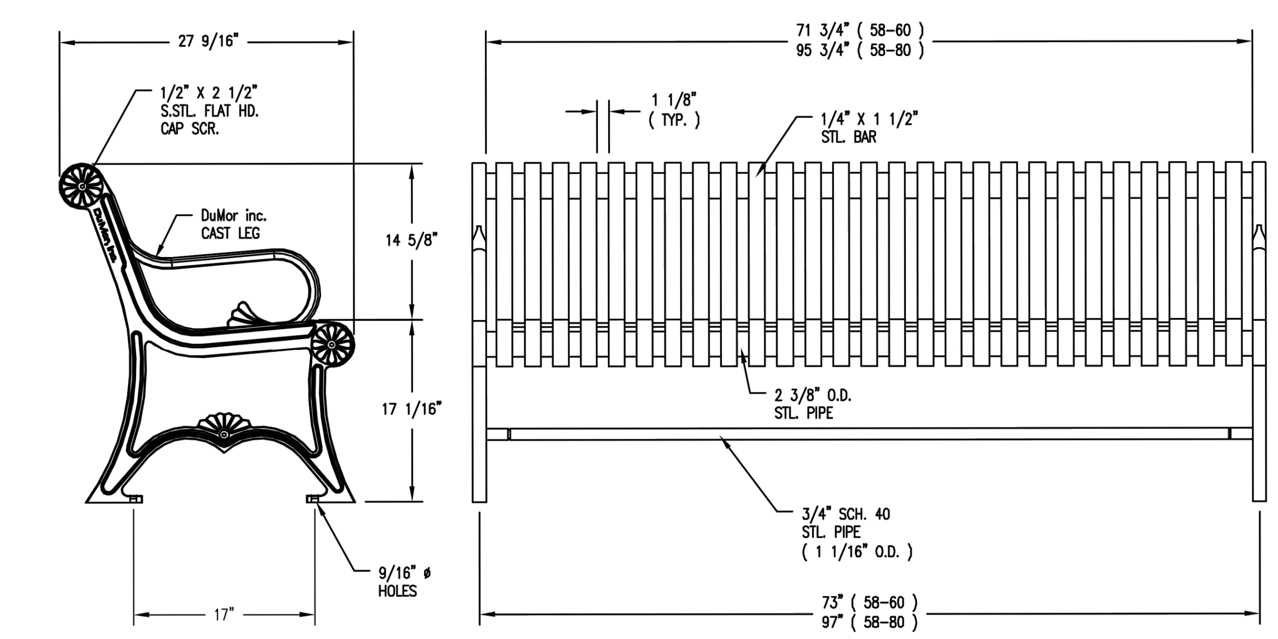
1. COMPOSITE WET SET (REPLACEABLE) TACTILE WARNING SURFACE UNITS SHALL BE AS MANUFACTURED BY ADA SOLUTIONS, INC. (WWW.ADATILE.COM), OR APPROVED EQUAL.
2. CAST IN PLACE CONCRETE SHALL MEET SPECIFICATIONS FOR MADOT CLASS A STRUCTURAL CONCRETE, MINIMUM COMPRESSIVE STRENGTH 4,000 PSI. THE CONCRETE SHALL BE SEALED PRIOR TO SETTING PANELS. THE EXPOSED CONCRETE BORDER SHALL RECEIVE A GROOVED EDGE BETWEEN THE TILE AND CONCRETE, ALONG WITH A UNIFORM BROOM FINISH PERPENDICULAR TO THE FLOW OF PEDESTRIAN TRAFFIC.
3. TRUNCATED DOMES SHALL BE ALIGNED IN ROWS, PARALLEL AND PERPENDICULAR TO THE PREDOMINANT DIRECTION OF TRAVEL. TRUNCATED DOME BRICKS AND GRANITE PAVERS ARE NOT ALLOWED.
4. FOR ALL SIDEWALK RAMPS MADE OF CONCRETE OR ASPHALT, BRICK RED COLORED TILES SHALL BE USED. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION.

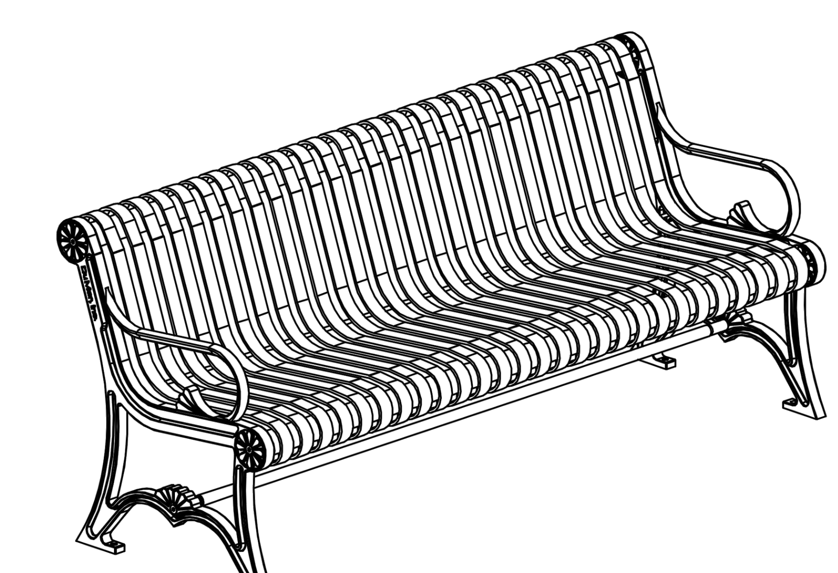


BOLT DETAIL

CURB RAMP DETECTABLE WARNING FIELD

NOT TO SCALE



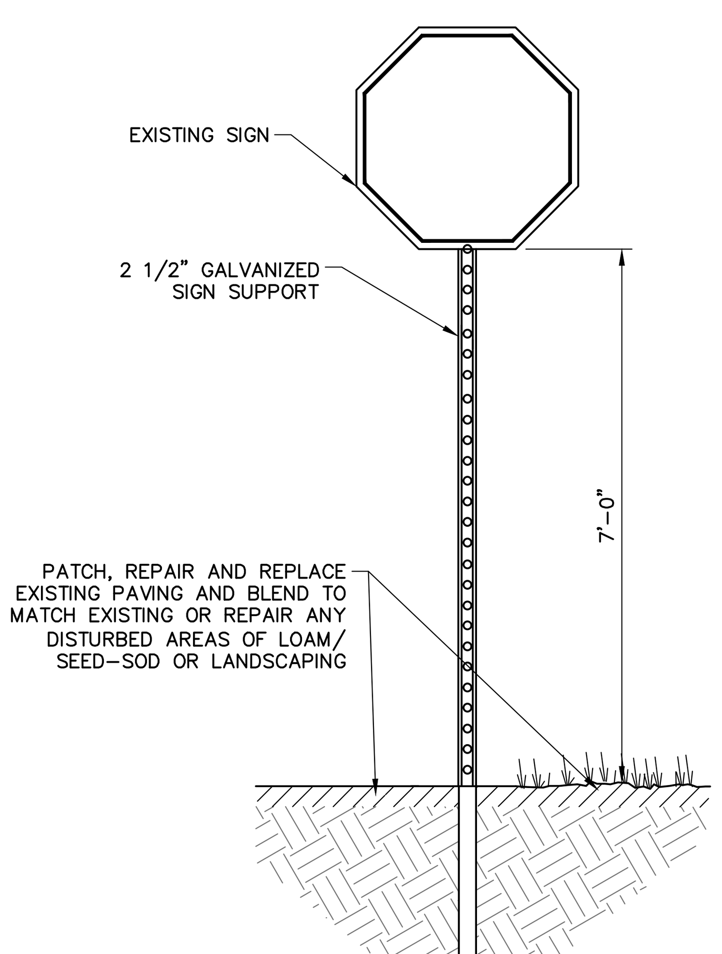


NOTES:

1. ALL STEEL MEMBERS COATED WITH ZINC RICH EPOXY THEN FINISHED WITH POLYESTER POWDER COATING.
2. $\frac{1}{2}$" x 3 $\frac{3}{4}$" EXPANSION ANCHOR BOLTS PROVIDED.
3. CUSTON LETTING AVAILABLE FOR RECESSED SIDE PANELS (TOTAL OF 37 SPACES).
5. 3 $\frac{1}{2}$" x 12" INSERT FOR PLAGUE.
6. THERE ARE TWO LENGTH OPTIONS, 6' AND 8' FOR THIS BENCH MODEL. THE 6' IS THE ONLY BENCH LENGTH TO BE USED.

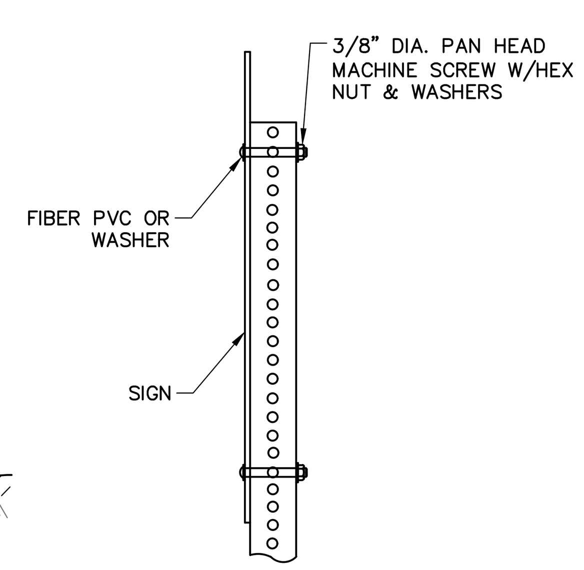
BENCH

NOT TO SCALE

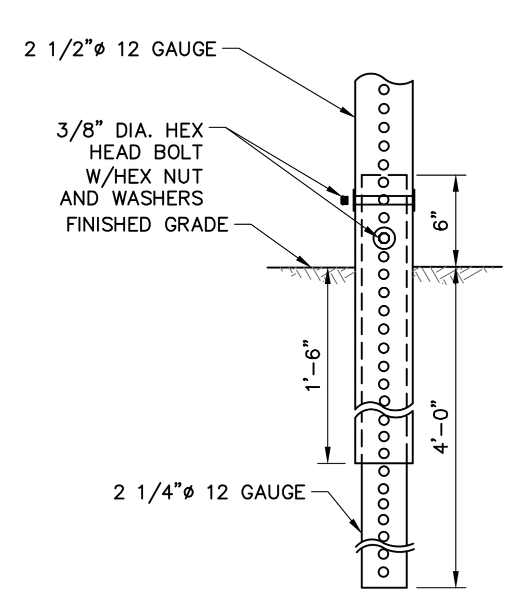


NOTE:

REPLACE ALL SIGN POSTS WITHIN LIMITS OF SIDEWALK WORK



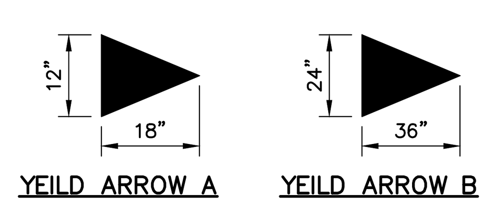
SIGN PANEL ATTACHMENT



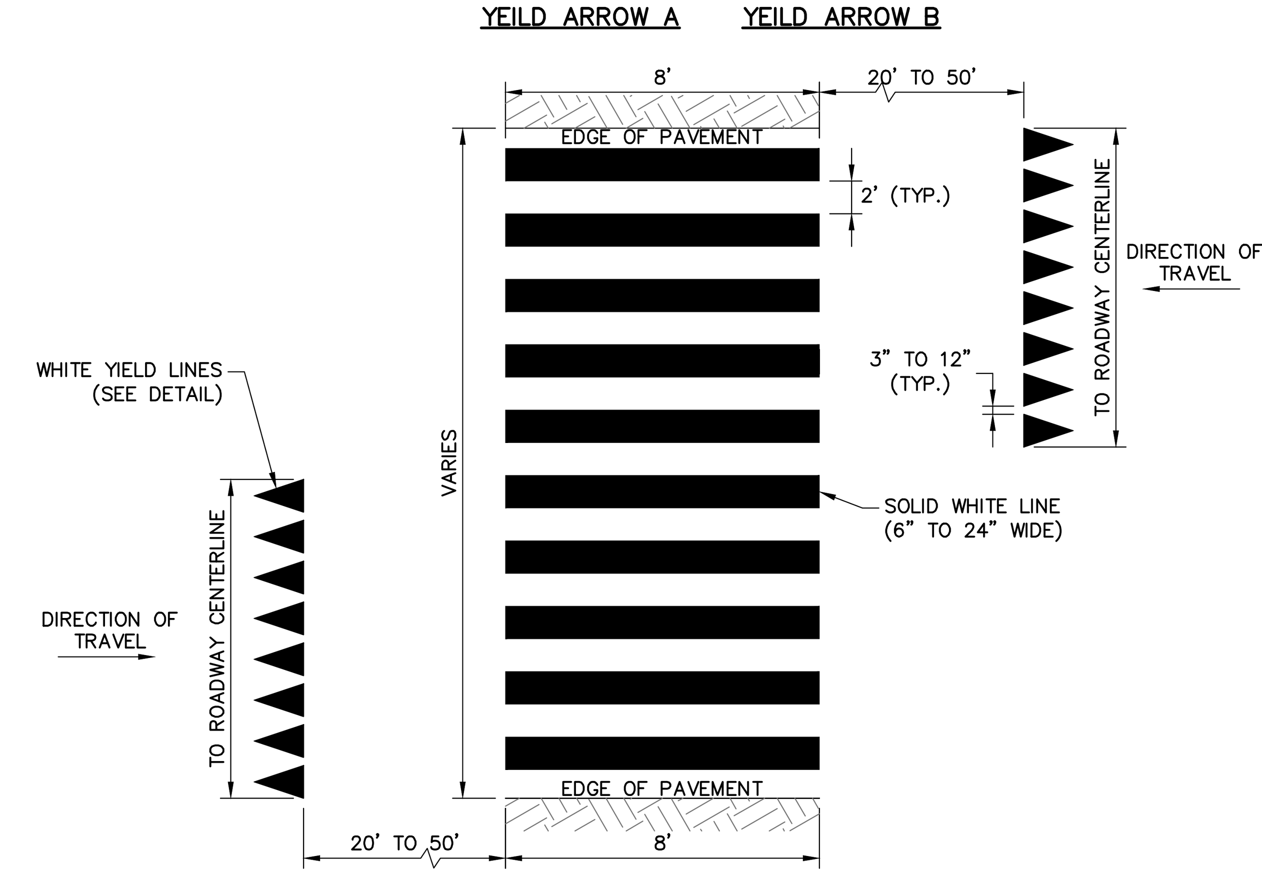
BREAK AWAY DETAIL

TRAFFIC SIGN POST

NOT TO SCALE



YEILD ARROW A   YEILD ARROW B



NOTES:

1. YEILD ARROW A SHALL BE USED FOR TRAVEL LANES UNDER TWELVE (12) FEET. YEILD ARROW B SHALL BE USED FOR TRAVEL LANES TWELVE (12) FEET OR GREATER

CROSSWALK PAVEMENT MARKINGS

NOT TO SCALE

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40 Shattuck Road, Suite 110
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866.702.6371 | www.woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

REV	DESCRIPTION	DATE

DESIGNED BY: ADL/MAH/CTK | CHECKED BY: ADL / MCH
DRAWN BY: CTK | 230079_C-600 – C-605.dwg

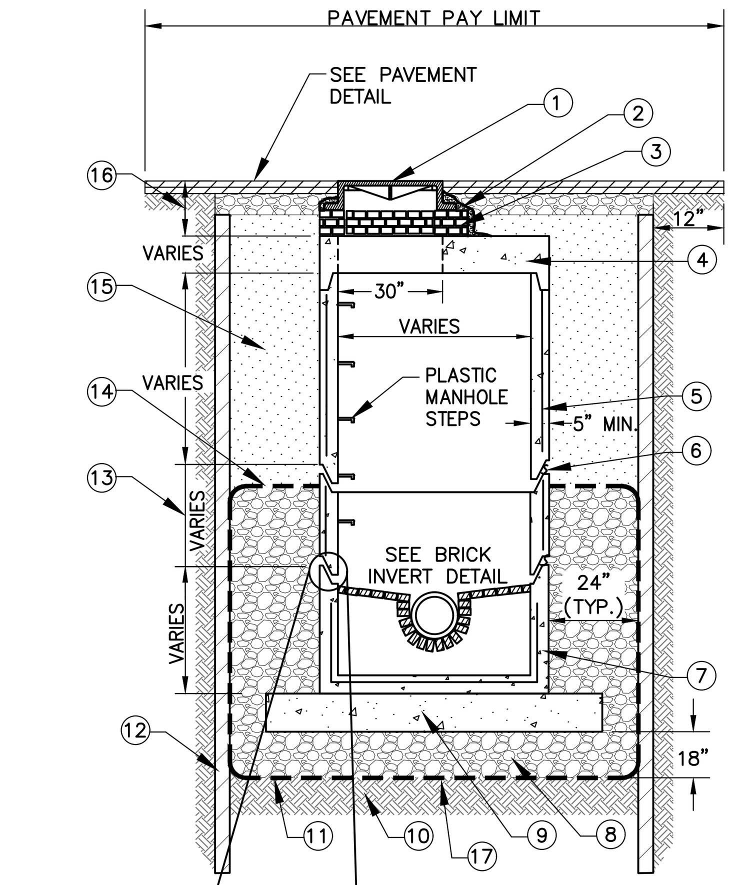
CIVIL DETAILS II

TOWN OF WINTHROP
1 METCALF SQUARE
WINTHROP, MASSACHUSETTS

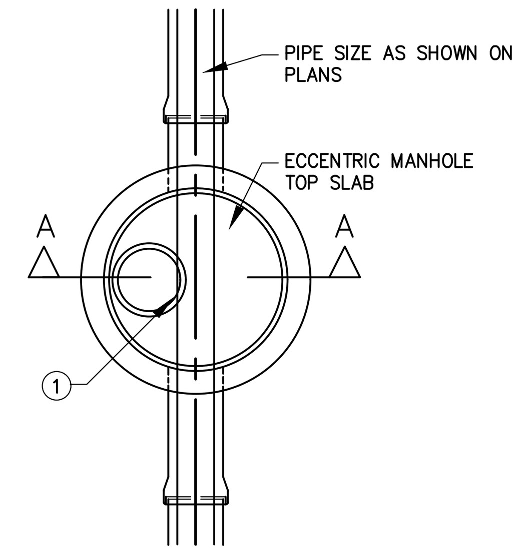
WINTHROP TOWN CENTER INFRASTRUCTURE AND IMPROVEMENTS

JOB NO.: 230079.01
DATE: SEPTEMBER 2017
SCALE: AS NOTED
SHEET: 26 OF 31

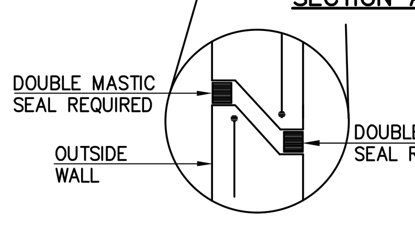
C-601



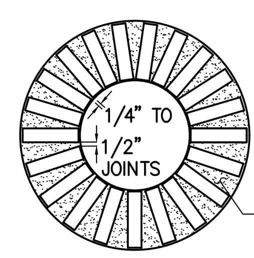
SECTION A-A'



PLAN



JOINT/MASTIC



NOTE:
JOINTS SHALL BE STAGGERED FOR EACH COURSE
JOINTS SHALL BE COMPLETELY FILLED WITH MORTAR

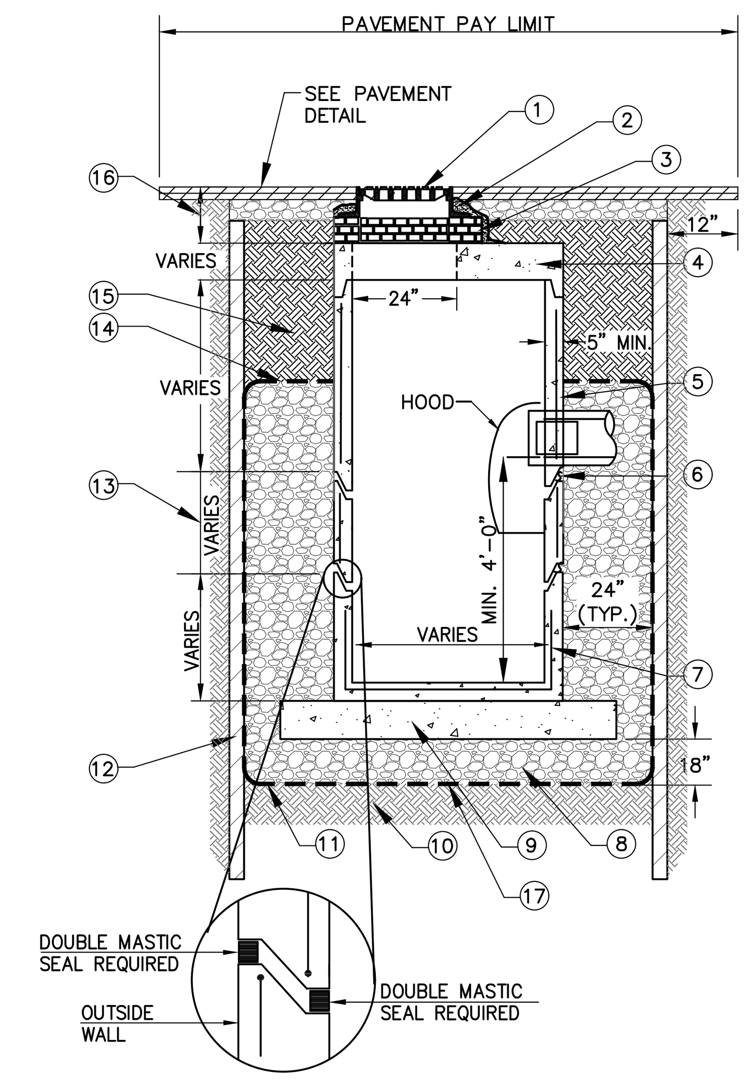
BRICK JOINT

1. CAST IRON MANHOLE FRAME AND COVER (AS SPECIFIED)
2. PORTLAND CEMENT MORTAR PARGING
3. ADJUST TO GRADE WITH BRICK
4. TOP SLAB
5. PRECAST REINFORCED CONCRETE MANHOLE TOP SECTION
6. PRE-MOLDED JOINT FILLER OR BIT. MASTIC SEAL
7. PRECAST CONCRETE BOTTOM SECTION WITH PIPE OPENINGS PROVIDED AS REQUIRED
8. COMPACTED 3/4" CRUSHED STONE
9. ANTI-FLOATATION SLAB
10. COMPACTED SUBGRADE OR SUITABLE BACKFILL
11. WRAP BEDDING IN STABILIZATION FABRIC. STABILIZATION FABRIC MAY BE OMITTED, AS DIRECTED BY ENGINEER, IN INSTANCE WHERE EXISTING SOILS AT THE TRENCH BOTTOM AND SIDEWALLS ARE SUITABLE GRANULAR MATERIAL.
12. SUPPORT EXCAVATION (CONTRACTOR DESIGNED)
13. PRECAST REINFORCED CONCRETE BARREL SECTION. MATCH 1'-" TO 4'-0" LENGTH TO MEET FIELD CONDITIONS
14. COMPACTED 3/4" CRUSHED STONE TO EXTEND TO 6" ABOVE TOP OF PIPE
15. COMPACTED PIPE AND STRUCTURE BACKFILL MATERIAL
16. 24" UNLESS OTHERWISE DIRECTED BY ENGINEER
17. EXCAVATION PAY LIMIT

EXCAVATION PAY LIMITS	
MANHOLE SIZE (FEET)	MAXIMUM
4'	8' X 8'
5'	9' X 9'
6'	10' X 10'
7'	11' X 11'
8'	12' X 12'
9'	13' X 13'

PRECAST CONCRETE MANHOLE

NOT TO SCALE



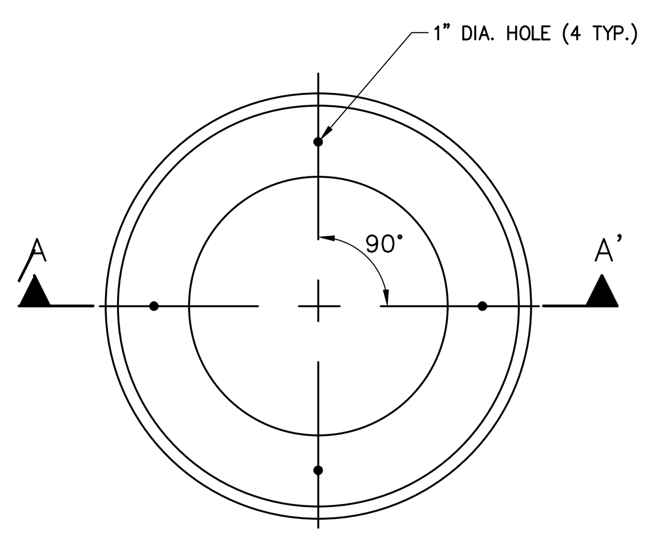
1. CAST IRON FRAME AND GRATE (AS SPECIFIED)
2. PORTLAND CEMENT MORTAR PARGING
3. ADJUST TO GRADE WITH BRICK
4. TOP SLAB
5. PRECAST REINFORCED CONCRETE MANHOLE TOP SECTION WITH PIPE OPENING AS REQUIRED
6. PRE-MOLDED JOINT FILLER OR BIT. MASTIC SEAL
7. PRECAST CONCRETE BOTTOM SECTION WITH PIPE OPENINGS PROVIDED AS REQUIRED
8. COMPACTED 3/4" CRUSHED STONE
9. ANTI-FLOATATION SLAB
10. COMPACTED SUBGRADE OR SUITABLE BACKFILL
11. WRAP BEDDING IN STABILIZATION FABRIC. STABILIZATION FABRIC MAY BE OMITTED, AS DIRECTED BY ENGINEER, IN INSTANCE WHERE EXISTING SOILS AT THE TRENCH BOTTOM AND SIDEWALLS ARE SUITABLE GRANULAR MATERIAL.
12. SUPPORT EXCAVATION (CONTRACTOR DESIGNED)
13. PRECAST REINFORCED CONCRETE BARREL SECTION. MATCH 1'-" TO 4'-0" LENGTH TO MEET FIELD CONDITIONS
14. COMPACTED 3/4" CRUSHED STONE TO EXTEND 6" ABOVE TOP OF PIPE
15. COMPACTED PIPE AND STRUCTURE BACKFILL MATERIAL
16. 24" UNLESS OTHERWISE DIRECTED BY ENGINEER
17. EXCAVATION PAY LIMIT

PRECAST CONCRETE DEEP SUMP CATCH BASIN

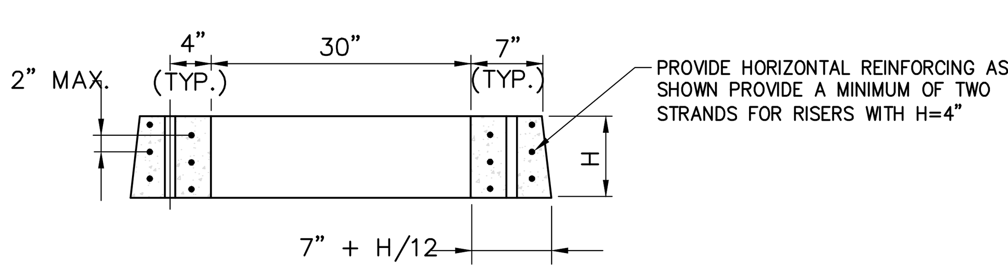
NOT TO SCALE

GENERAL NOTES FOR MANHOLES AND CATCH BASINS

1. ALL CONCRETE SHALL BE CLASS "A" AND HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 4000 PSI AT THE END OF 28 DAYS, UNLESS OTHERWISE NOTED.
2. CASTINGS SHALL CONFORM TO ASTM DESIGNATION A48-CLASS 35. ALL PARTS OF CASTINGS, EXCEPT FINISHED SURFACE, SHALL RECEIVE A COAT OF COAL TAR PITCH VARNISH OR ASPHALTUM PAINT WHICH SHALL BE SMOOTH AND TOUGH BUT NOT BRITTLE, AND APPLIED AT THE SHOP. FIELD COATING WILL BE REJECTED.
3. MANHOLES SHALL BE CONSTRUCTED OF PRECAST REINFORCED CONCRETE.
4. PRECAST REINFORCED BARREL MANUFACTURED PER ASTM SPEC. C-478-67
5. CONTRACTOR SHALL SUBMIT ANTI-FLOATATION CALCULATIONS FOR ALL MANHOLE, CATCH BASIN, AND T-BASE STRUCTURES.
6. ALL PRECAST MANHOLES AND CATCH BASINS SHALL BE IDENTIFIED BY STATION, OFFSET, AND STRUCTURE ID PAINTED ON THE SIDE OF THE STRUCTURE BY THE MANUFACTURER.
7. STORM MANHOLES SHALL HAVE SOLID COVERS WITH ONE DRILLED PICK HOLE, AND MARKED DRAIN.
8. EXISTING MANHOLES, CATCH BASINS, FRAMES, AND COVERS SHALL BE SALVAGED BY THE CONTRACTOR, AND SHALL REMAIN THE PROPERTY OF THE CITY OF SALEM.
9. WHEN THE FLOW CHANGES DIRECTION IN A MANHOLE, THE CHANNEL ALIGNMENT SHALL FOLLOW A SMOOTH RADIUS. CHANNELS SHALL BE FORMED TO ACCEPT ALL INLET PIPES.
10. ON STORM DRAIN MANHOLES, THE SHELF AND CHANNEL SHALL BE FORMED BY BRICK SET IN CEMENT MORTAR OR BY FACTORY PRE-CAST CONCRETE. SUCH PRE-CAST CONCRETE SHALL BE EPOXY COATED AND THE SHELF SHALL HAVE A PERMANENT NON-SKID SURFACE.
11. UNLESS OTHERWISE STATED BY MANUFACTURER. INSTALL STORMWATER TREATMENT DEVICES IN ACCORDANCE WITH STANDARD MANHOLE DETAIL.



PLAN



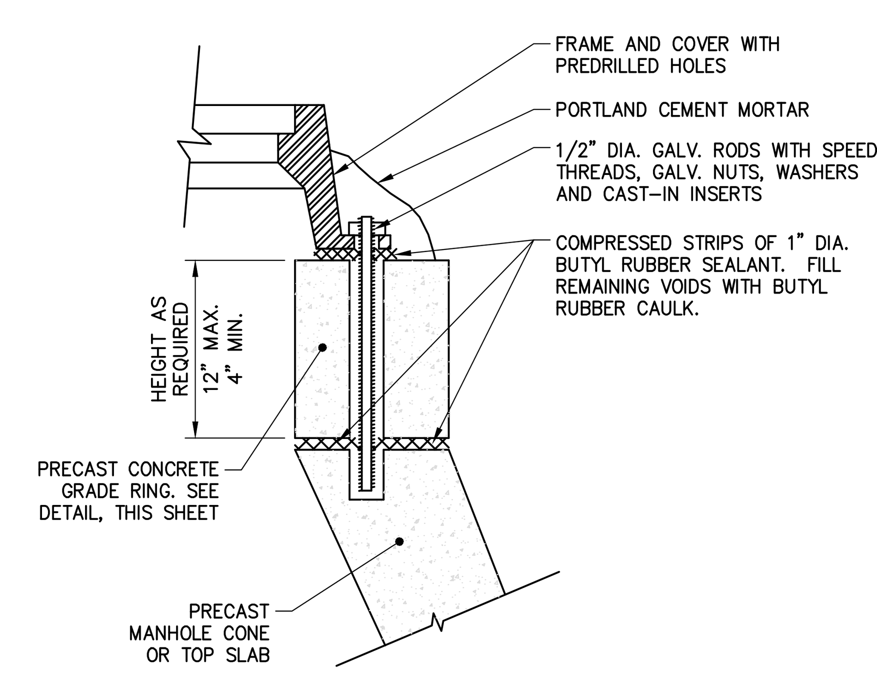
SECTION A-A'

NOTES:

1. PROVIDE CAST-IN INSERTS IN PRECAST MANHOLE CONES AND FLAT TOPS. LOCATIONS TO MATCH HOLES IN GRADE RING.
2. PROVIDE H OF 4" MIN. TO 12" MAX. AS REQUIRED TO BRING FRAME TO FINAL GRADE.
3. FOR FRAME ADJUSTMENTS OF LESS THAN 4" USE APPROVED ALTERNATE MANHOLE FRAME AND/OR ATTACH FRAME DIRECTLY TO PRECAST MANHOLE CONE.
4. CONTRACTOR MAY USE BRICKS TO BRING MANHOLE TO GRADE.

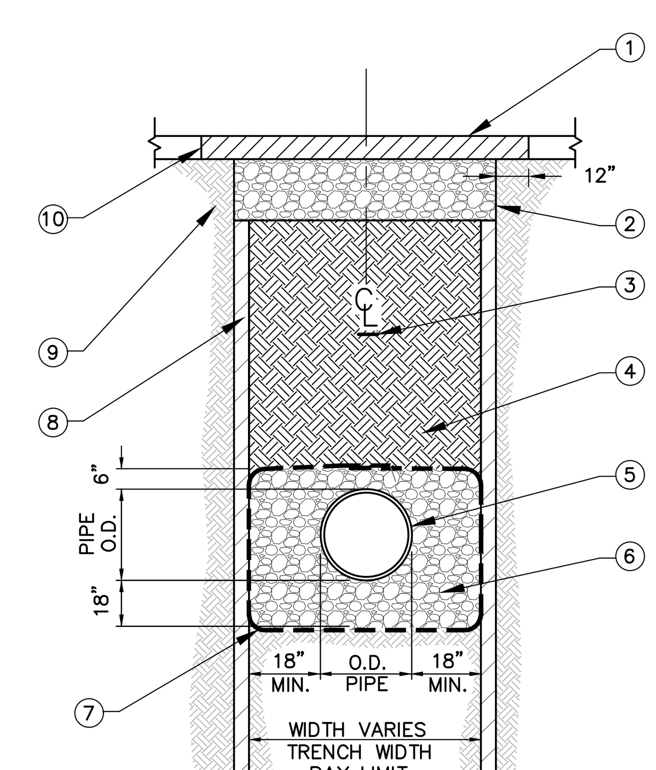
PRECAST CONCRETE GRADE RING

NOT TO SCALE



MANHOLE FRAME FASTENING DETAIL

NOT TO SCALE



NOTES:

1. WRAP BEDDING IN STABILIZATION FABRIC. STABILIZATION FABRIC MAY BE OMITTED, AS DIRECTED BY ENGINEER, IN INSTANCE WHERE EXISTING SOILS AT THE TRENCH BOTTOM AND SIDEWALLS ARE SUITABLE GRANULAR MATERIAL.
2. MAINTAIN UNIFORM TRENCH WIDTH TO 6" ABOVE TOP OF PIPE.
3. BRACING AND SHEETING OR OTHER TRENCH PROTECTION TO BE PROVIDED TO MEET APPLICABLE O.S.H.A. SAFETY REGULATIONS. ALL SUCH TRENCH PROTECTION TO BE RESPONSIBILITY OF CONTRACTOR. CONTRACTOR TO PROVIDE SHOP DRAWINGS OF TRENCH SUPPORT SYSTEMS ENDORSED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MASSACHUSETTS.

1. SEE PAVEMENT DETAIL
2. EXCAVATION PAY LIMIT
3. WARNING TAPE CENTERED ON PIPE 18"-24" ABOVE PIPE
4. COMPACTED PIPE AND STRUCTURE BACKFILL MATERIAL
5. PIPE SIZES AS SHOWN ON PLANS
6. 3/4" COMPACTED CRUSHED STONE
7. STABILIZATION FABRIC (SEE NOTE 1)
8. SUPPORT OF EXCAVATION (CONTRACTOR DESIGNED)
9. EXISTING UNDISTURBED MATERIAL
10. SAWCUT AND TACK COAT (TYP.)

TRENCH WIDTHS (a)	
PIPE SIZE (INCHES)	MAX. (ONE PIPE) (b)
6"	4.0'
8"	4.0'
10"	4.0'
12"	4.0'
15"	4.0'
18"	5.0'
24"	5.5'
30"	6.0'
36"	7.0'
48"	8.0'
60"	10.0'

a. REPRESENTS TRENCH WIDTH PAY LIMIT
b. FOR ROCK EXCAVATION SUBTRACT 1'-0"

SEWER AND STORM DRAIN TRENCH

NOT TO SCALE

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REV	DESCRIPTION	DATE

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DRAWN BY: CTK | 230079_C-600 - C-605.dwg

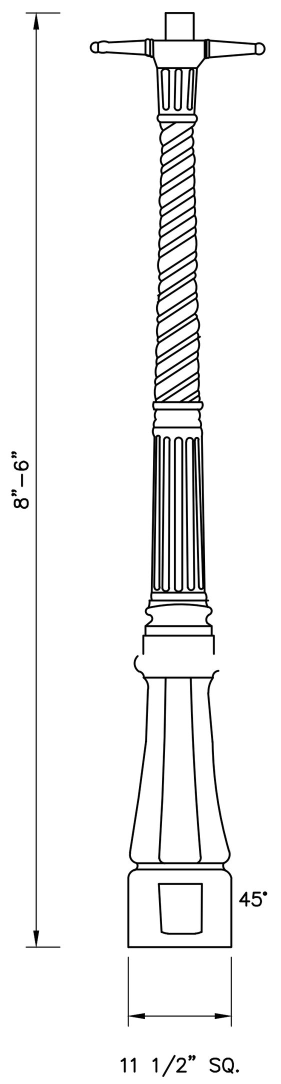
CIVIL DETAILS III

TOWN OF WINTHROP
1 METCALF SQUARE
WINTHROP, MASSACHUSETTS

WINTHROP TOWN CENTER INFRASTRUCTURE AND IMPROVEMENTS

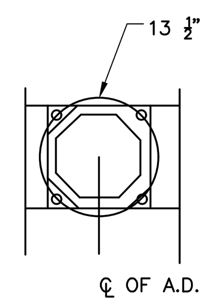
JOB NO.: 230079.01
DATE: SEPTEMBER 2017
SCALE: AS NOTED
SHEET: 27 OF 31

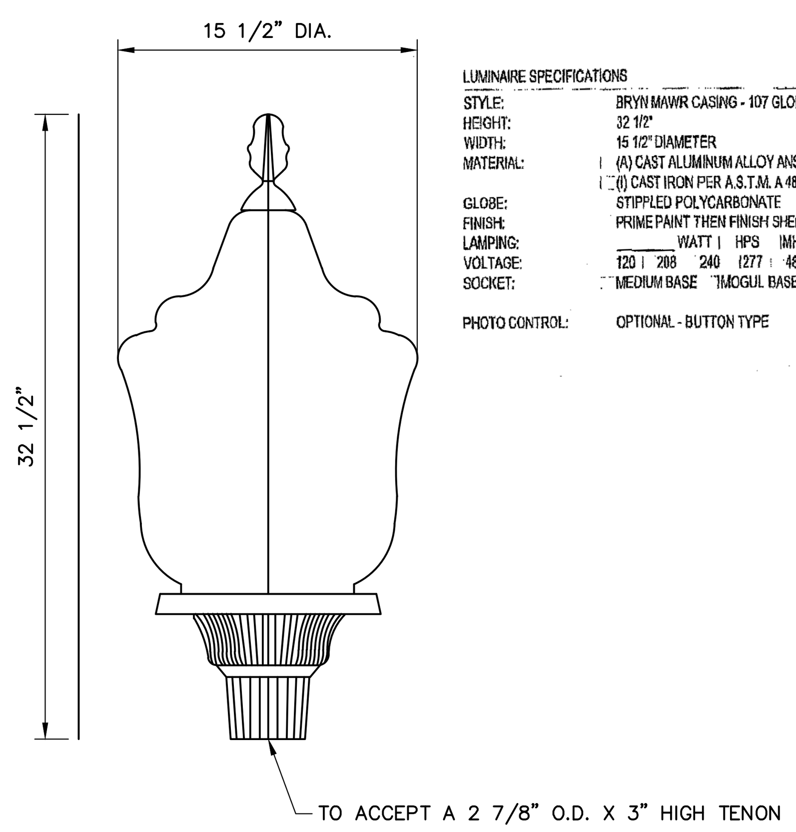
C-602



LAMP POST SPECIFICATIONS

STYLE:	BOROUGH-EXT WITH LADDER REST
HEIGHT:	8'-6"
BASE:	11 1/2" SQUARE
MATERIAL:	(A) 1 PIECE, CAST ALUMINUM ALLOY ANSI 356 PER A.S.T.M. B26-95 (I) 1 PIECE, CAST IRON PER A.S.T.M. A48-83 CLASS 30 (D) 1 PIECE, CAST DUCTILE IRON PER A536-84 GRADE 65-45-12
FINISH:	PRIME PAINT THEN FINISH SHERWIN WILLIAMS ACROLON - PLEASE ADVISE COLOR
ACCESS DOOR:	LOCATED IN BASE SECURED WITH TAMPER PROOF HEX SOCKET SECURITY MACHINE SCREWS
GROUND STUD PROVISIONS:	DRILL AND TAP INSIDE WALL OF BASE OPPOSITE ACCESS DOOR TO ACCOMMODATE A 1/4"-20 GROUND STUD (STUD SUPPLIED BY OTHERS)
ANCHOR BOLTS:	(4) 3/4" DIA. X 24" LONG + 3" HOOK (FULLY GALVANIZED WITH 1 GALVANIZED NUT AND 1 GALVANIZED WASHER PER BOLT)
BOLT PROJECTION:	3" REQUIRED
TENON:	____" DIA. X ____" HIGH



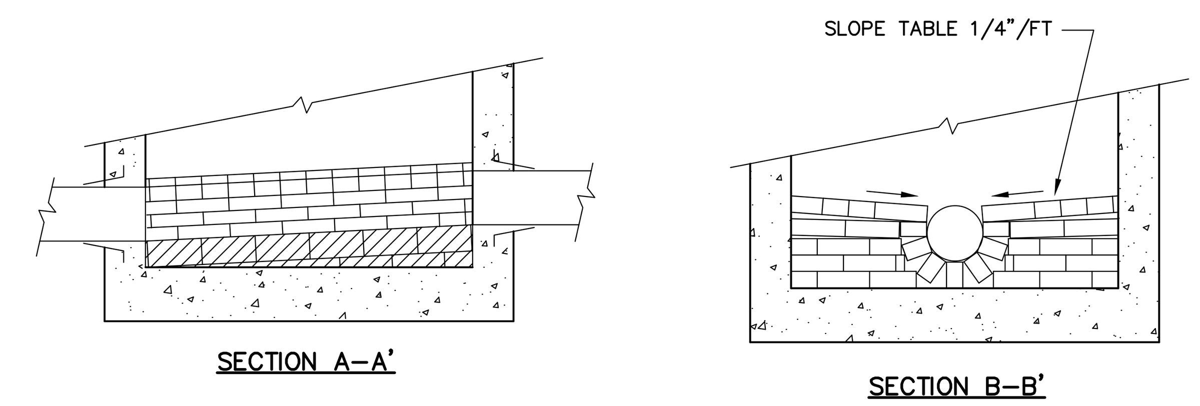


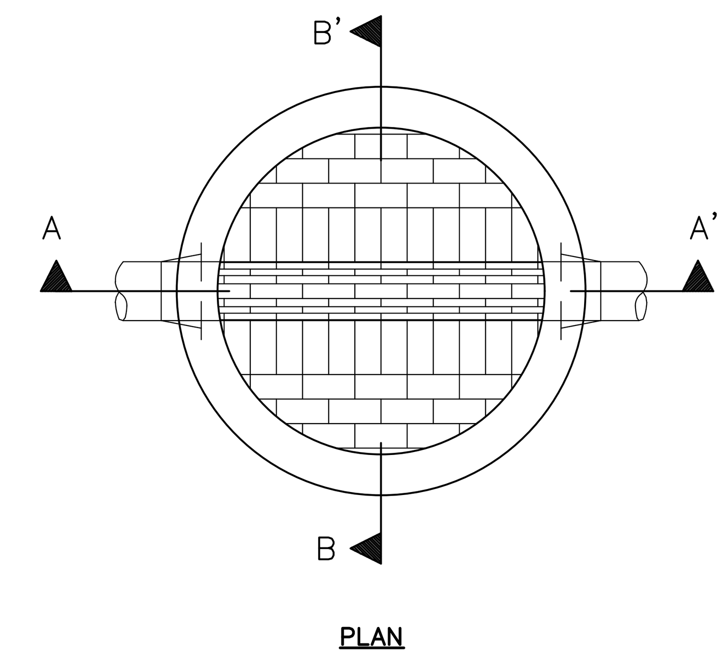
LUMINAIRE SPECIFICATIONS

STYLE:	BRYN MAWR CASING - 107 GLOBE WITH FINIAL
HEIGHT:	32 1/2"
WIDTH:	15 1/2" DIAMETER
MATERIAL:	(A) CAST ALUMINUM ALLOY ANSI 356 PER A.S.T.M. B26-95 (I) CAST IRON PER A.S.T.M. A 48-83 CLASS 30
GLOBE:	STIPPLED POLYCARBONATE
FINISH:	PRIME PAINT THEN FINISH SHERWIN WILLIAMS ACROLON - PLEASE ADVISE COLOR
LAMPING:	______ WATT | HPS | MH | MV | INC | OTHER______
VOLTAGE:	120 | 208 | 240 | 277 | 480 | QUAD
SOCKET:	MEDIUM BASE MOGUL BASE OTHER______
PHOTO CONTROL:	OPTIONAL - BUTTON TYPE

LIGHT FIXTURE DETAIL

NOT TO SCALE



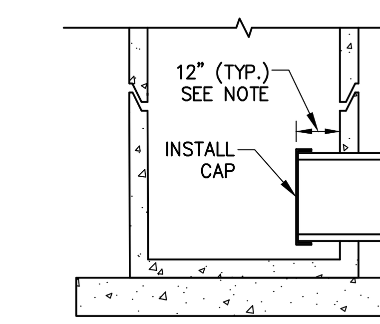


NOTES:

1. TOOL ALL JOINTS IN CHANNEL AND ON TABLES.
2. FILL UNDER TABLE WITH MORTAR–BEDDED BRICK.
3. SLOPE CHANNEL DOWN FROM INLET TO OUTLET.
4. MAKE CHANGES IN FLOW DIRECTION BY CIRCULAR CHANNEL CONSTRUCTION WITH MAXIMUM RADIUS POSSIBLE.
5. FOR DEAD–END MANHOLES, BUILD CHANNEL AS DIRECTED BY ENGINEER.
6. OMIT BRICK INVERT AT STRUCTURES WHERE PVC PLUG IS SPECIFIED.

BRICK INVERT

NOT TO SCALE

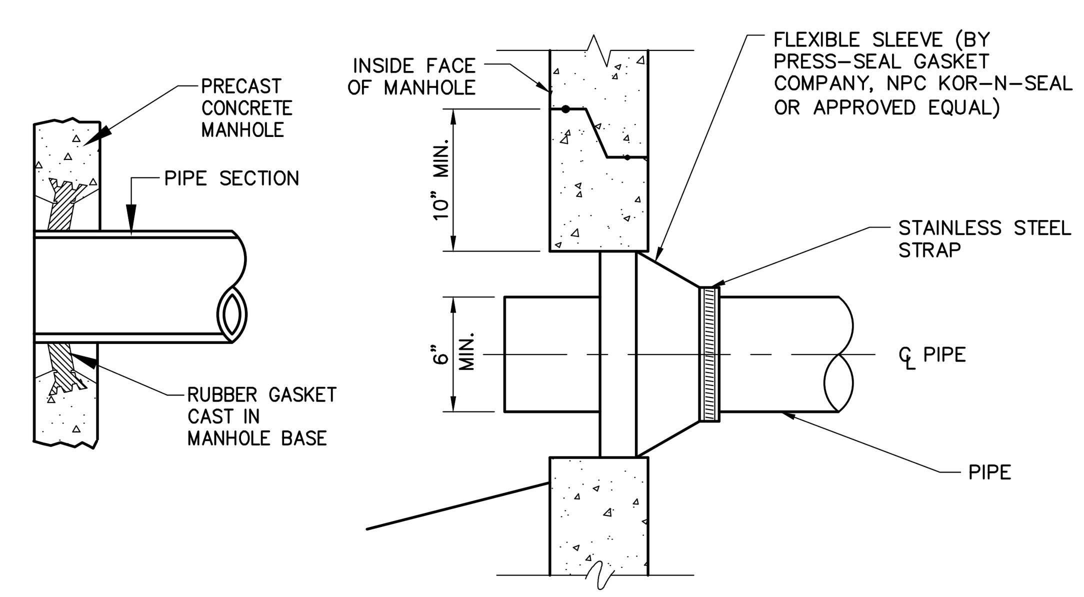


NOTES:

1. EXTEND PIPE PAY LIMIT 12" BEYOND INSIDE WALL OF MANHOLE/CATCH BASIN AT LOCATIONS WHERE PLUG IS SPECIFIED.
2. OMIT BRICK INVERT AT STRUCTURES WHERE PVC PLUG IS SPECIFIED.

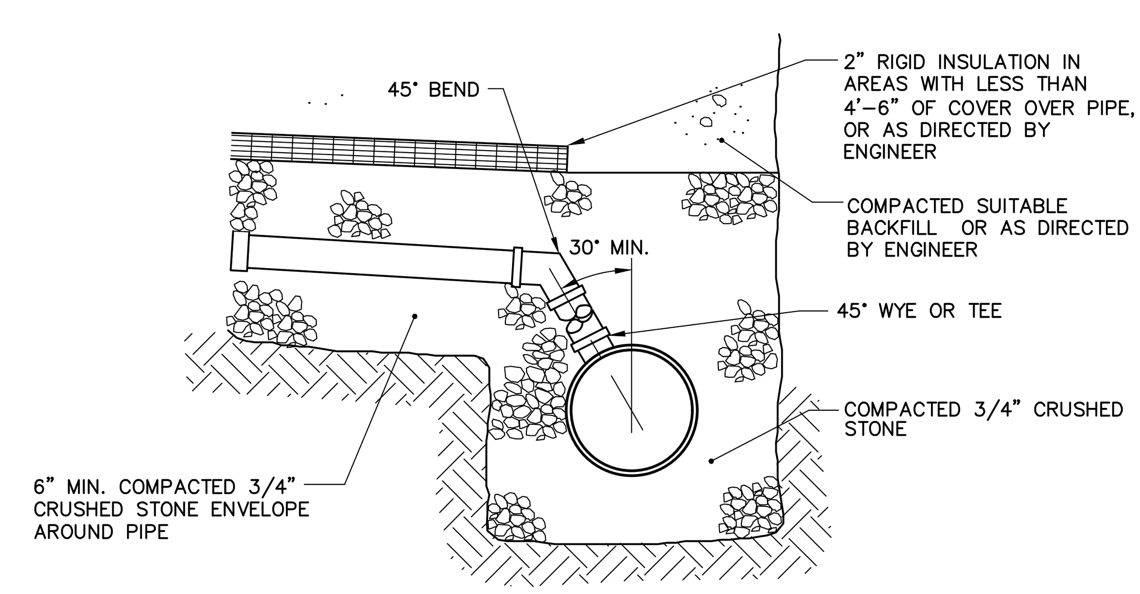
PVC PIPE PLUG

NOT TO SCALE



MH, CB, AND TREATMENT DEVICE SEALS

NOT TO SCALE

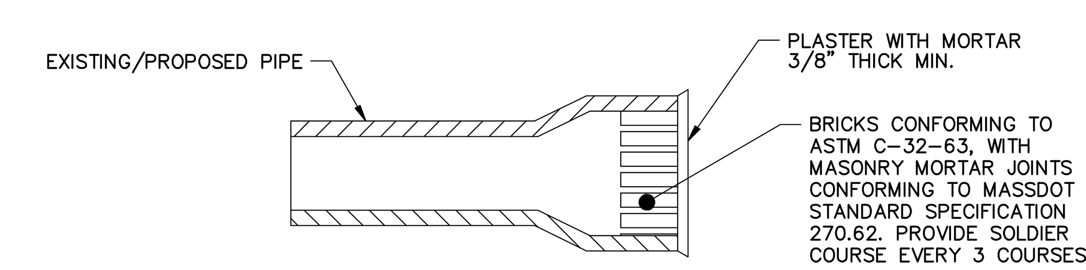


NOTES:

- PIPE DIAMETERS MAY VARY, SEE TYPICAL PIPE TRENCH DETAIL, THIS SHEET.
- WHERE 30° MINIMUM ANGLE BETWEEN SEWER CONNECTION AT THE SEWER MAIN AND THE VERTICAL CANNOT BE MAINTAINED, PROVIDE A PRECAST SEWER CHIMNEY.
- IF STAKE IS CUT OFF FLUSH OR SLIGHTLY BELOW GRADE, PROVIDE MIN. OF TWO 16d. GALV. SPIKES DRIVEN INTO TOP OF 2" x 4" TO PROVIDE METAL DETECTABILITY.

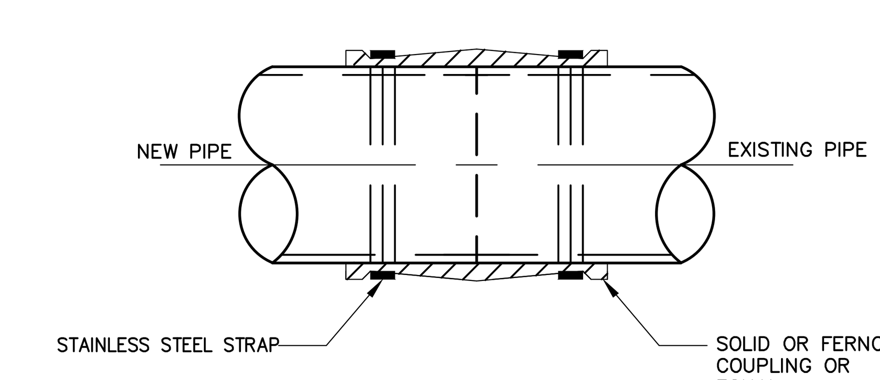
HORIZONTAL SEWER CONNECTION

N.T.S.



MASONRY PLUG

NOT TO SCALE



NEW PIPE TO EXISTING DRAIN OR SEWER PIPE CONNECTION

NOT TO SCALE

FINAL DESIGN - NOT FOR CONSTRUCTION

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REV	DESCRIPTION	DATE

DESIGNED BY: ADL/MAH/CTK CHECKED BY: ADL / MCH
DRAWN BY: CTK 230079_C-600 – C-605.dwg

CIVIL DETAILS IV

TOWN OF WINTHROP
1 METCALF SQUARE
WINTHROP, MASSACHUSETTS

WINTHROP TOWN CENTER INFRASTRUCTURE AND IMPROVEMENTS

JOB NO.: 230079.01
DATE: SEPTEMBER 2017
SCALE: AS NOTED
SHEET: 28 OF 31

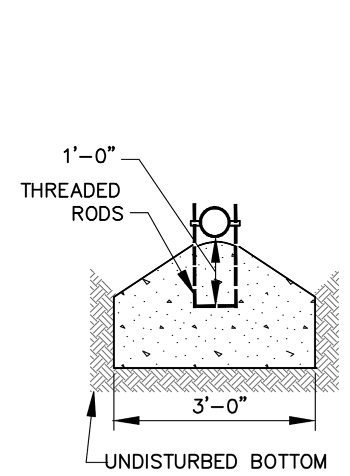
C-603

TYPICAL THRUST BLOCK

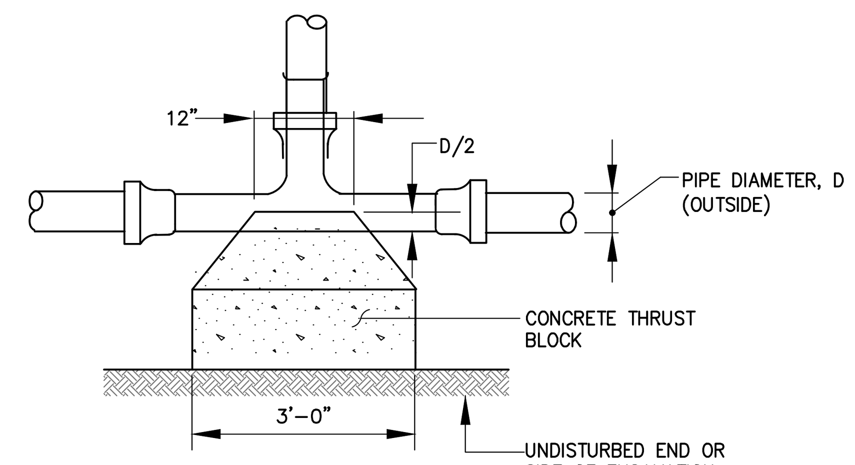
Required Length of Restrained Joint

Horizontal Bend					Vertical Bends (Symentrical - See Detail 5 Sheet C-602)					
Pipe Size (in)	11-1/4	22-1/2	45	90	11-1/4 Upper Bend	11-1/4 Lower Bend	22-1/2 Upper Bend	22-1/2 Lower Bend	45 Upper Bend	45 Lower Bend
30	5	10	20	48	9	5	18	10	37	20

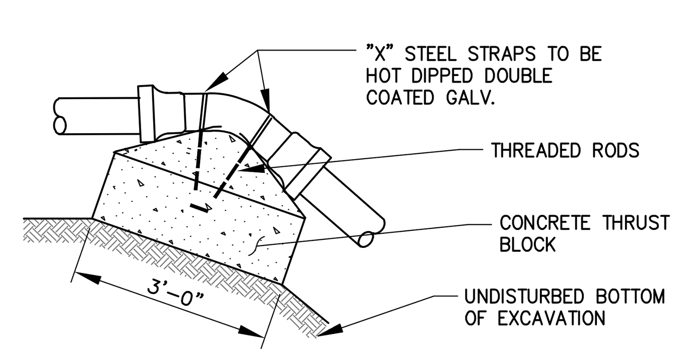
Required lenghts above calculated with the following information:
Pipe Material - Ductile Iron
Soil Type - SP
Safety Factor - 1.5 to 1
Trench Type - 3
Depth of Bury - 5
Test Pressure (PSI) - 150



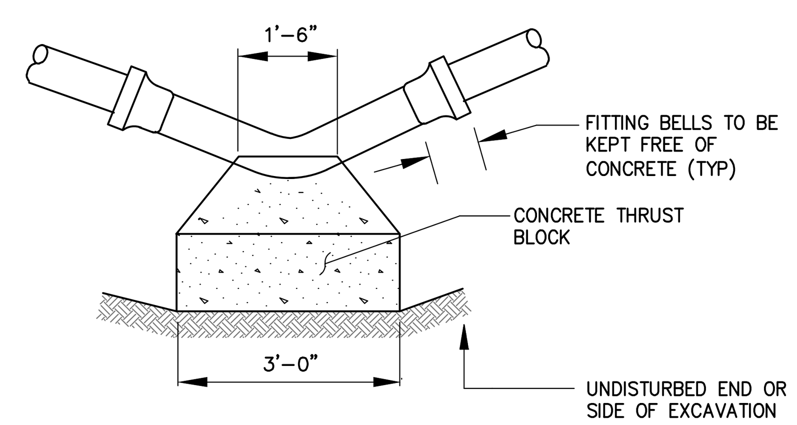
VERTICAL BEND SECTION



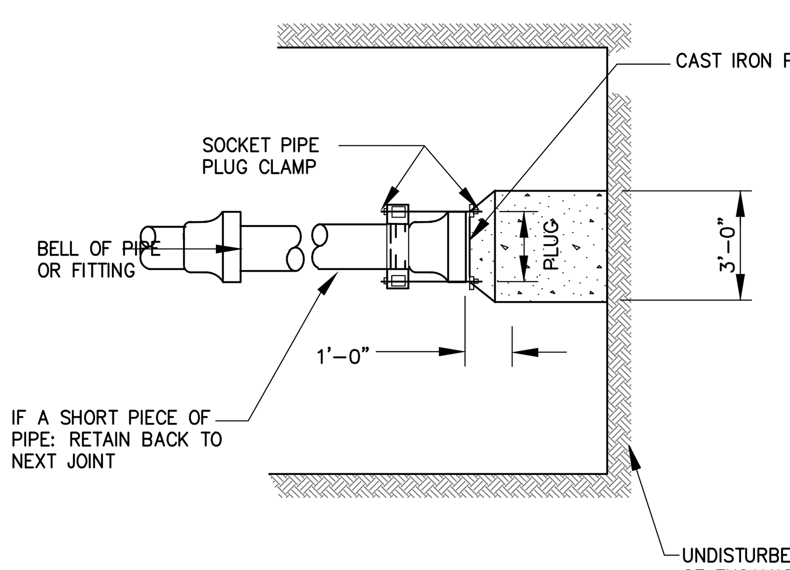
TEE PLAN



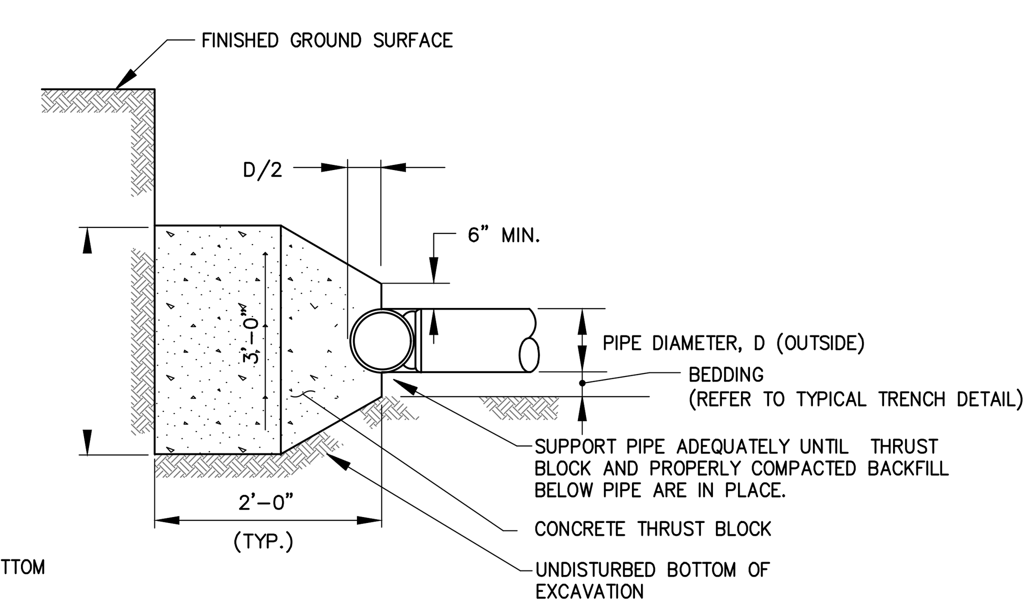
VERTICAL BEND PLAN VIEW



HORIZONTAL BEND PLAN VIEW



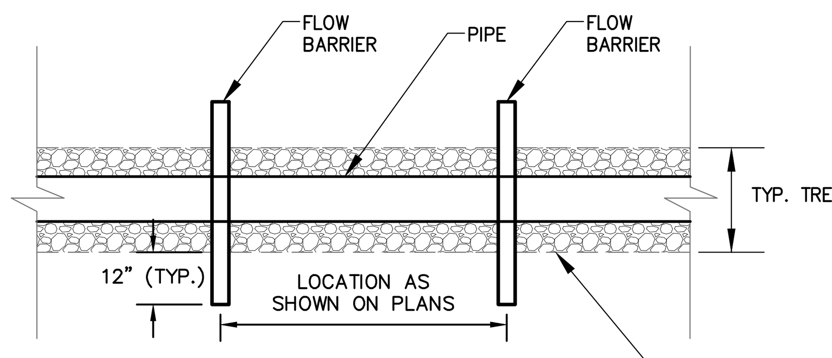
DEAD END PLAN VIEW



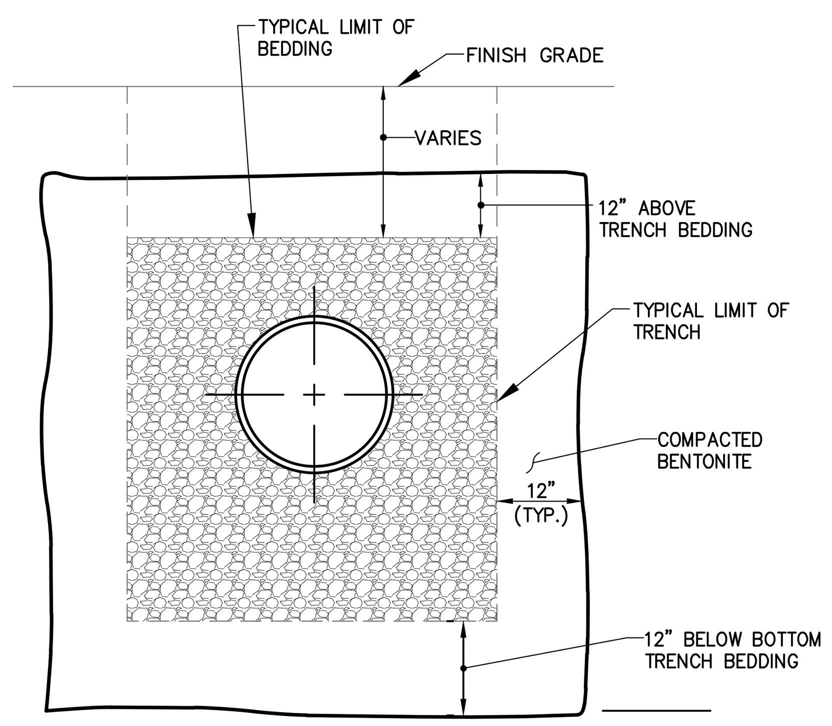
TYPICAL SECTION FOR TEES, BENDS AND DEAD ENDS

NOTES:
1. ALL FITTINGS SHALL BE ANCHORED BY MECHANICAL MEANS OR BY CONCRETE THRUST BLOCKS, OR BOTH.
2. ALL EXPOSED METAL SHALL BE PAINTED OR COATED.
3. CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRESS OF 3000 P.S.I. AT 28 DAYS.
4. THESE ARE TYPICAL THRUST BLOCK INSTALLATIONS. ACTUAL METHOD OF RESTRAINT MUST BE DETERMINED BY FIELD CONDITIONS. SUBJECT TO REVIEW AND APPROVAL BY THE ENGINEER.

TYPICAL THRUST BLOCK
NOT TO SCALE

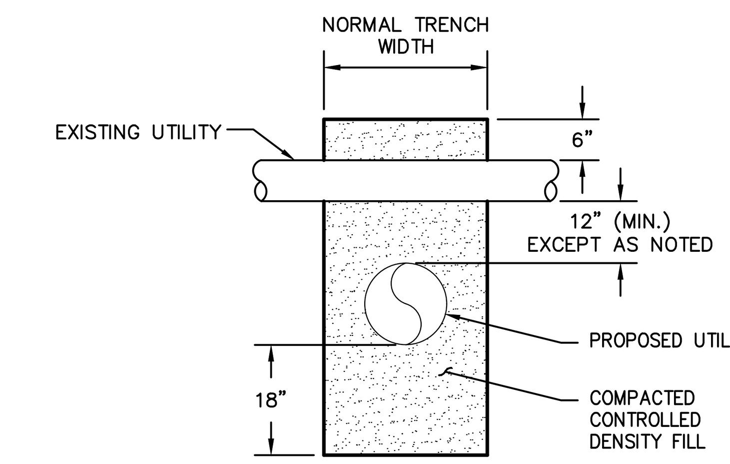


ELEVATION



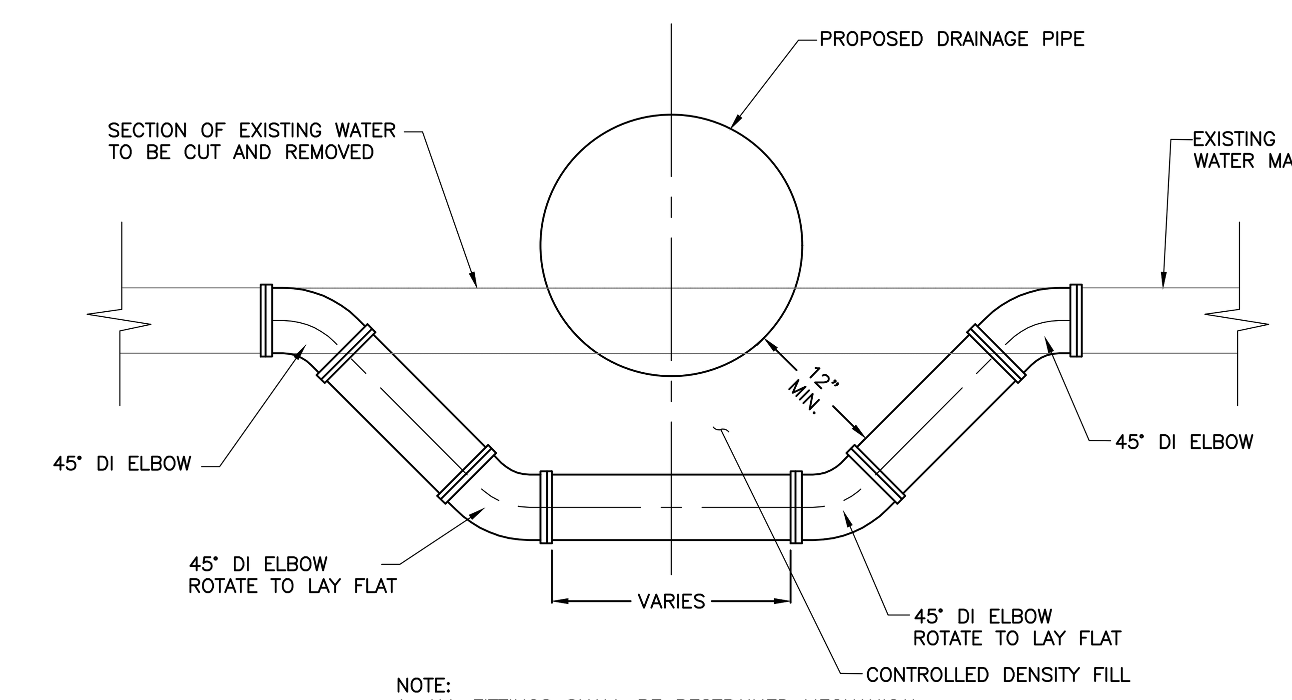
PLAN

FLOW BARRIER
NOT TO SCALE



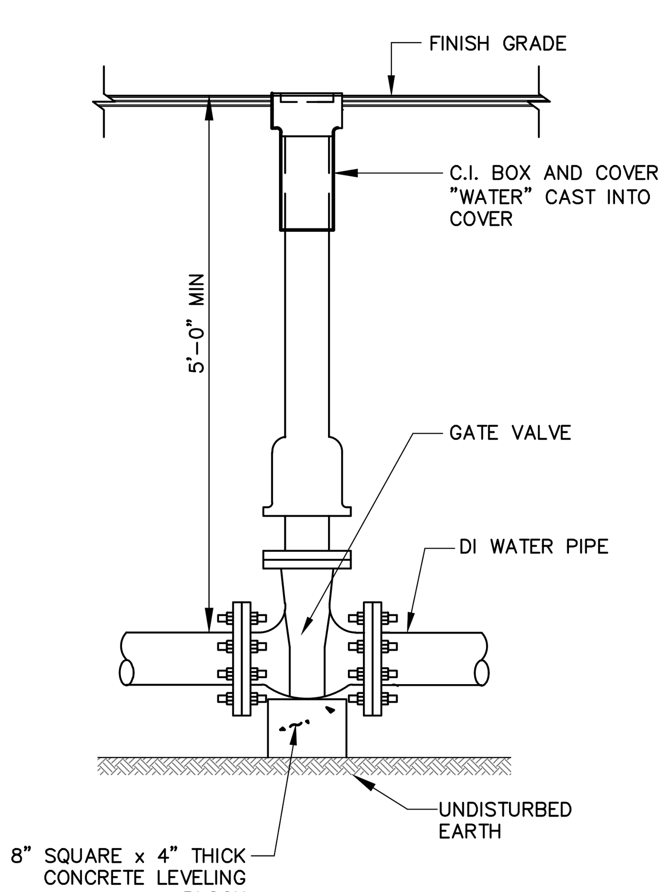
NOTE:
THIS DETAIL TYP. FOR ALL PIPE

UTILITY CROSSING
NOT TO SCALE

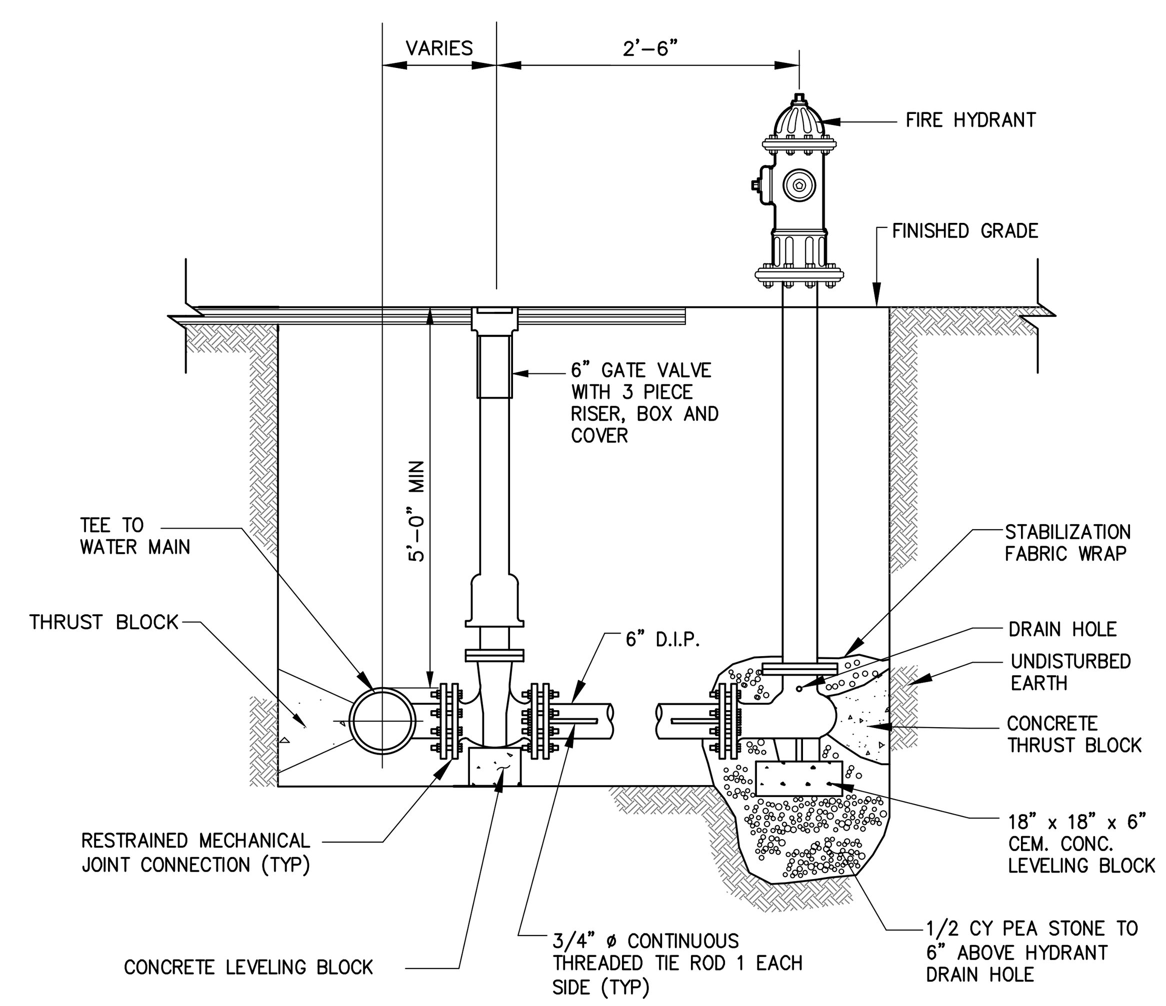


NOTE:
1. ALL FITTINGS SHALL BE RESTRAINED MECHANICAL JOINTS.
2. RESTRAIN EXISTING PIPE BEYOND CROSSING.

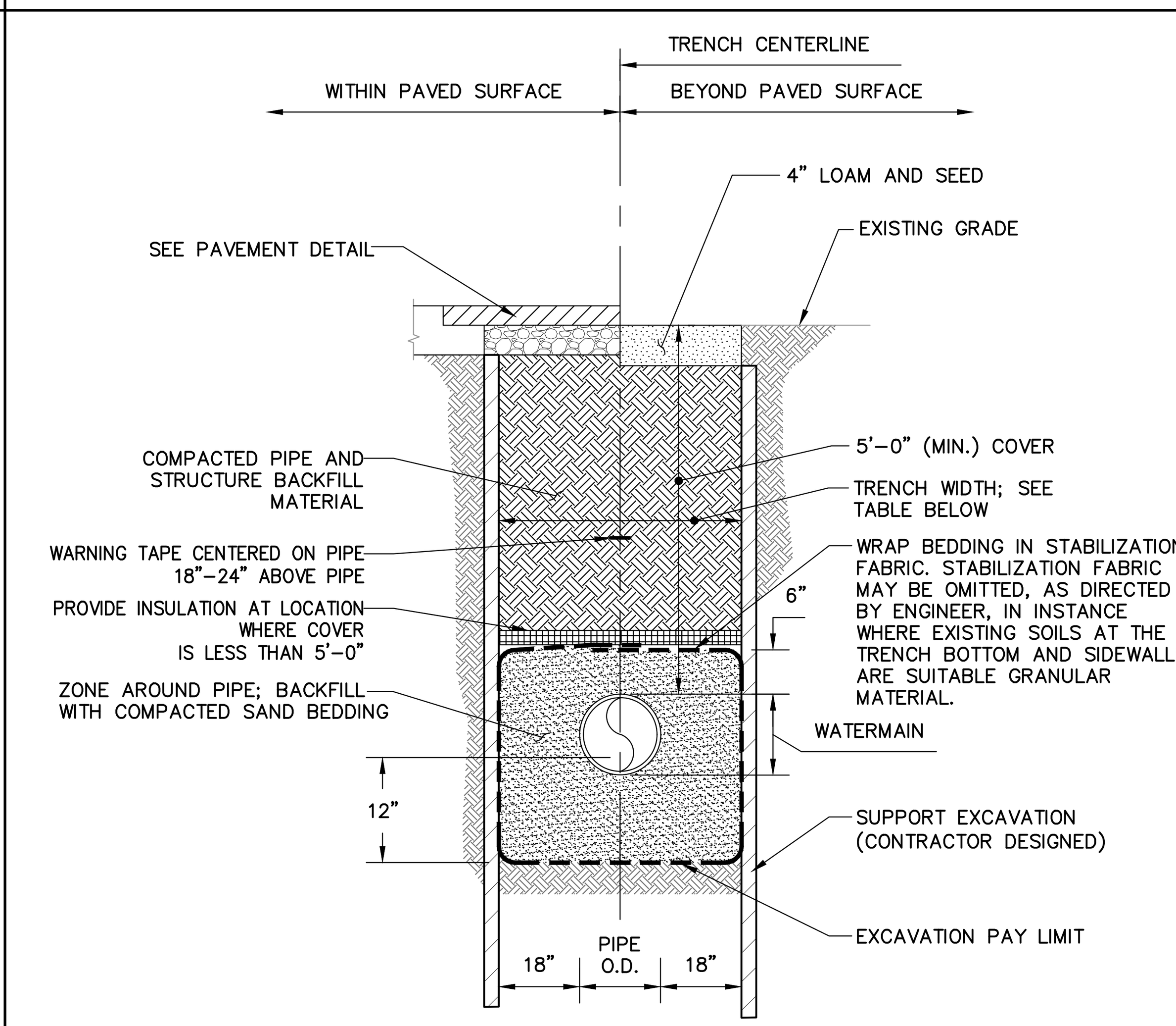
WATER LINE CROSSING
NOT TO SCALE



GATE VALVE
NOT TO SCALE



FIRE HYDRANT CONNECTION
NOT TO SCALE

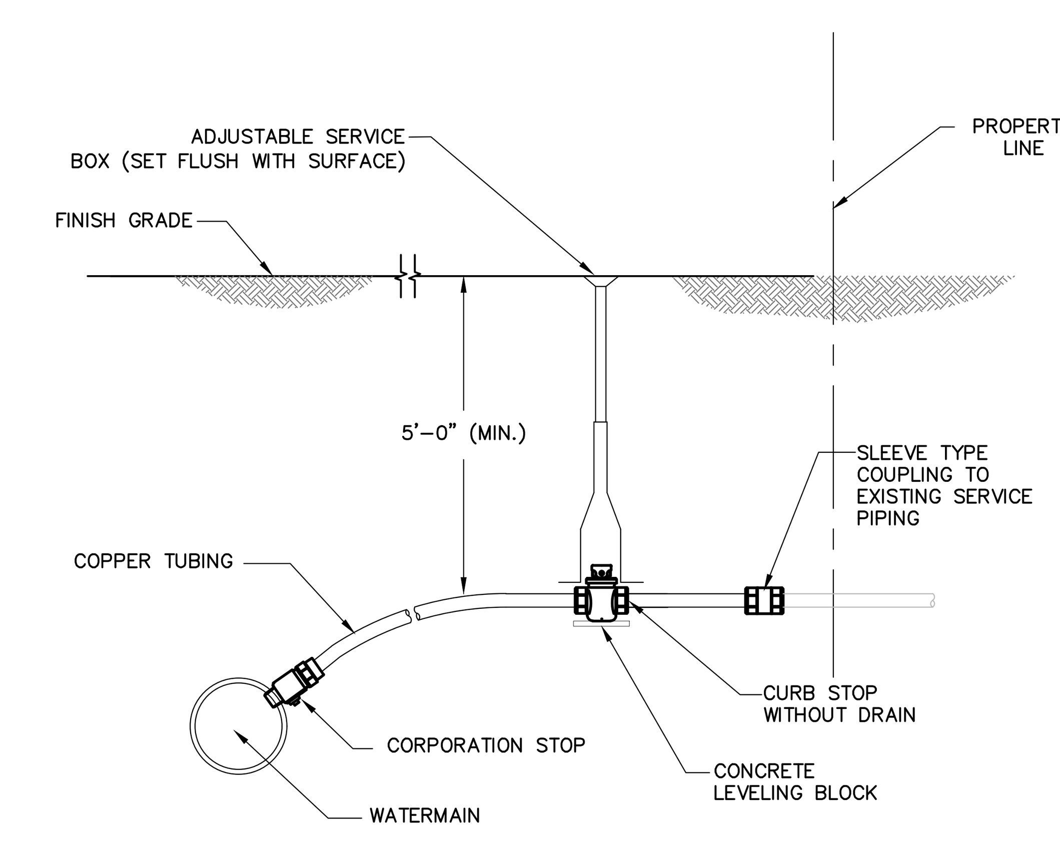


TRENCH WIDTH TABLE(a)

PIPE DIA.	12" & UNDER	16"	30"
TRENCH WIDTH	4'-0"	4'-4"	5'-6"

(a) REPRESENTS TRENCH WIDTH PAY LIMIT

WATERMAIN & FORCEMAIN TRENCH
NOT TO SCALE



NOTES:
1. ALL JOINTS SHALL BE COMPRESSION TYPE.
2. COPPER TUBING SHALL BE BACKFILLED WITH SAND BY HAND TO 6" ABOVE COPPER TUBING AT 98% COMPACTION.
3. CORPORATION STOP LARGER THAN ONE INCH SHALL HAVE A SADDLE.

WATER SERVICE CONNECTION
NOT TO SCALE

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REV	DESCRIPTION	DATE

DESIGNED BY: ADL/MAH/CTK | CHECKED BY: ADL / MCH
DRAWN BY: CTK | 230079_C-600 - C-605.dwg

CIVIL DETAILS V

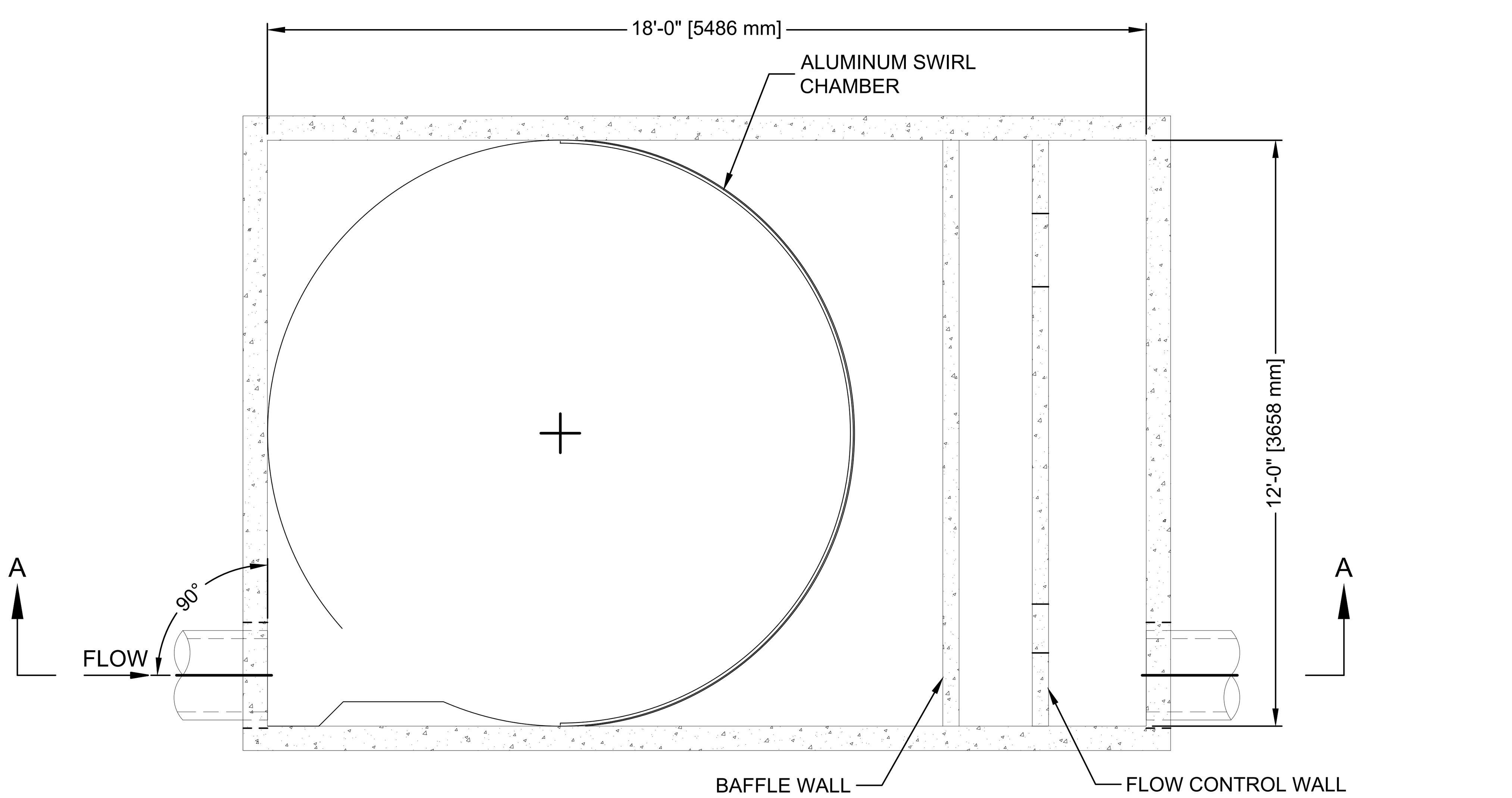
TOWN OF WINTHROP
1 METCALF SQUARE
WINTHROP, MASSACHUSETTS

WINTHROP TOWN CENTER INFRASTRUCTURE AND IMPROVEMENTS

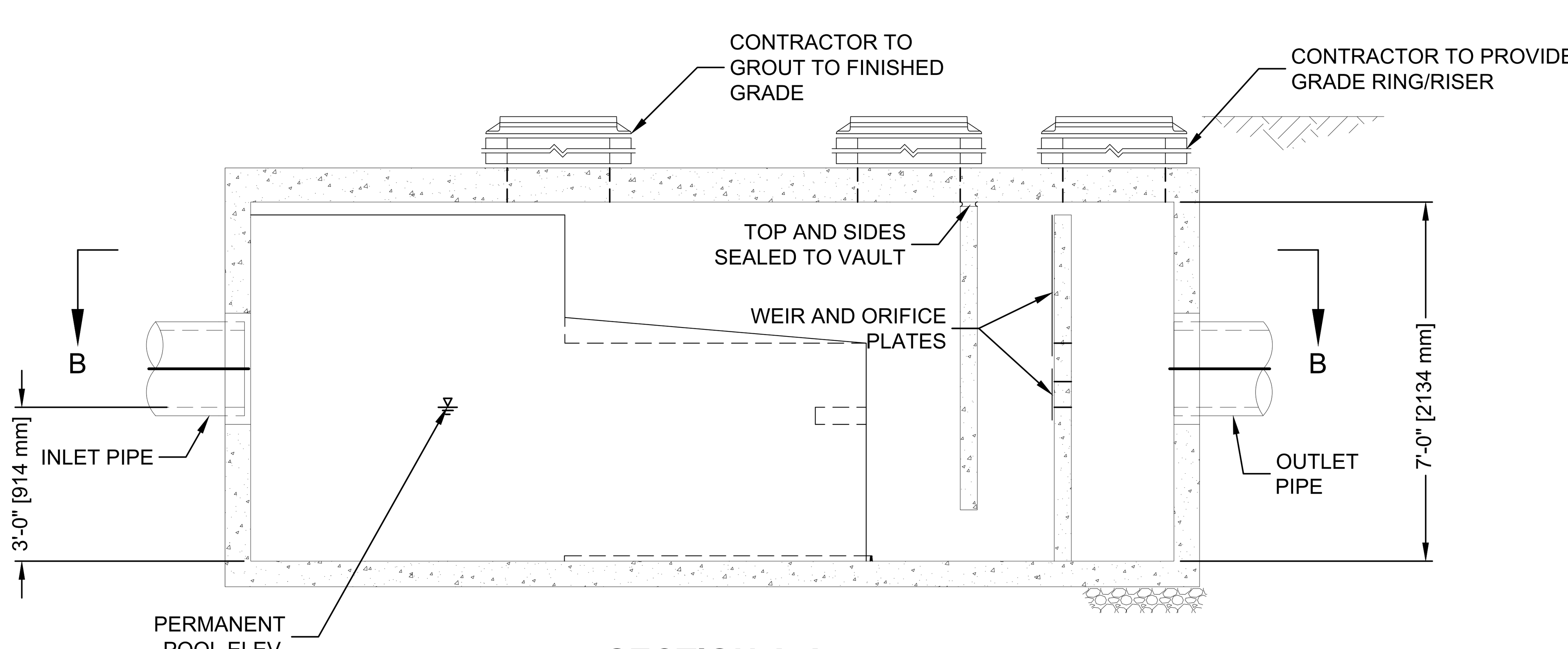
JOB NO.: 230079.01
DATE: SEPTEMBER 2017
SCALE: AS NOTED
SHEET: 29 OF 31

C-604

22x34 SHEET
1:1

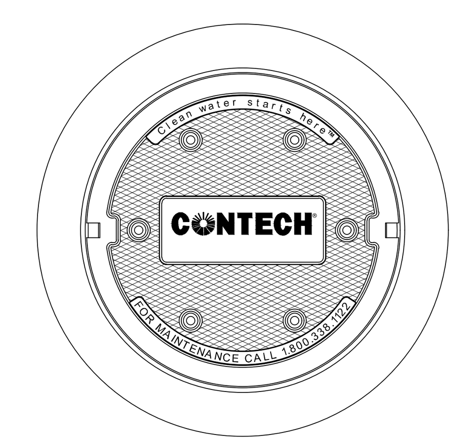


SECTION B-B

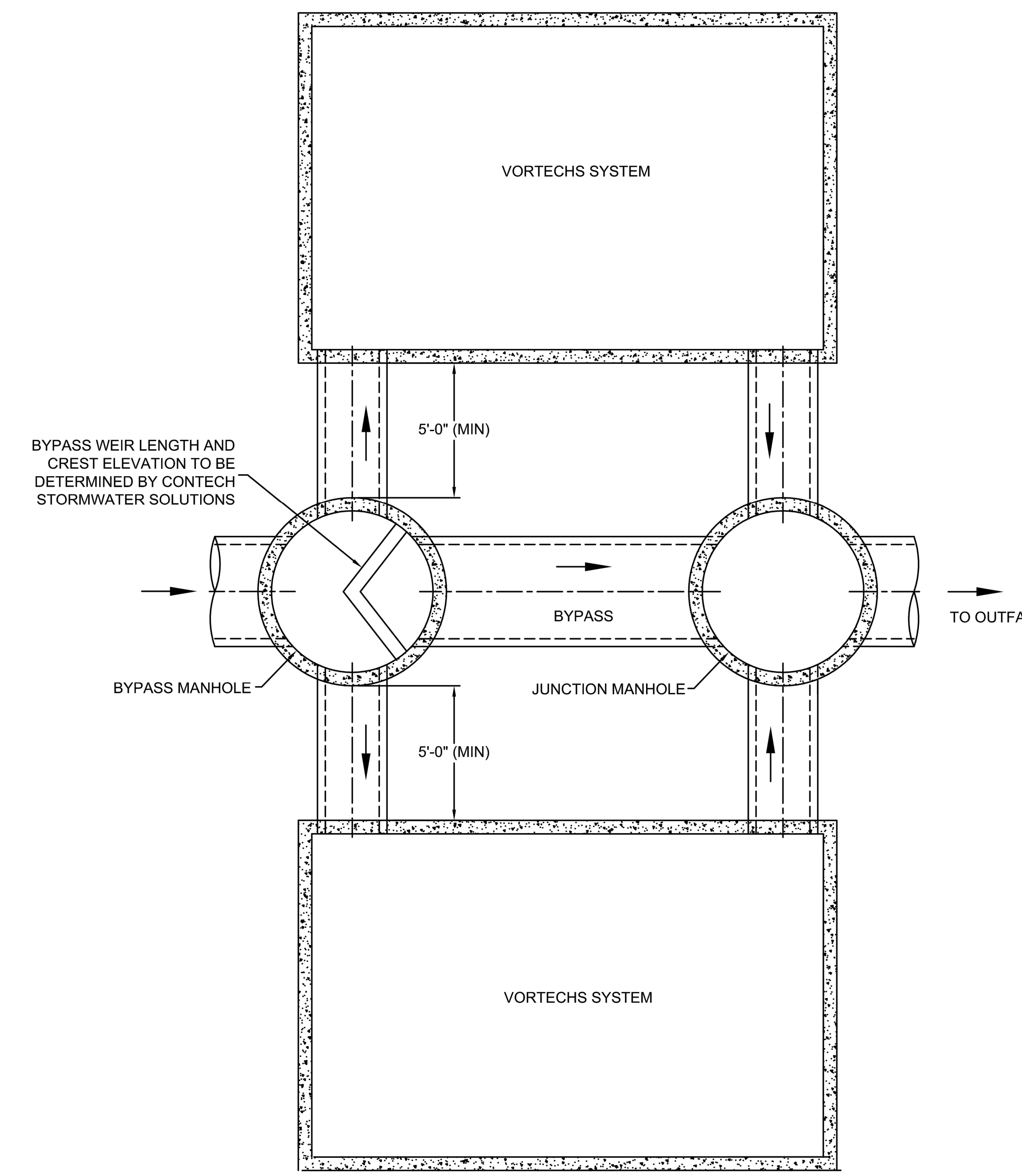


SECTION A-A

STORMWATER TREATMENT DEVICE – 1
NOT TO SCALE



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.



ACTUAL ORIENTATION AND LAYOUT MAY VARY DUE TO SITE SPECIFIC CONSIDERATIONS

STORMWATER TREATMENT DEVICE – 2
NOT TO SCALE

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CIVIL DETAILS VI

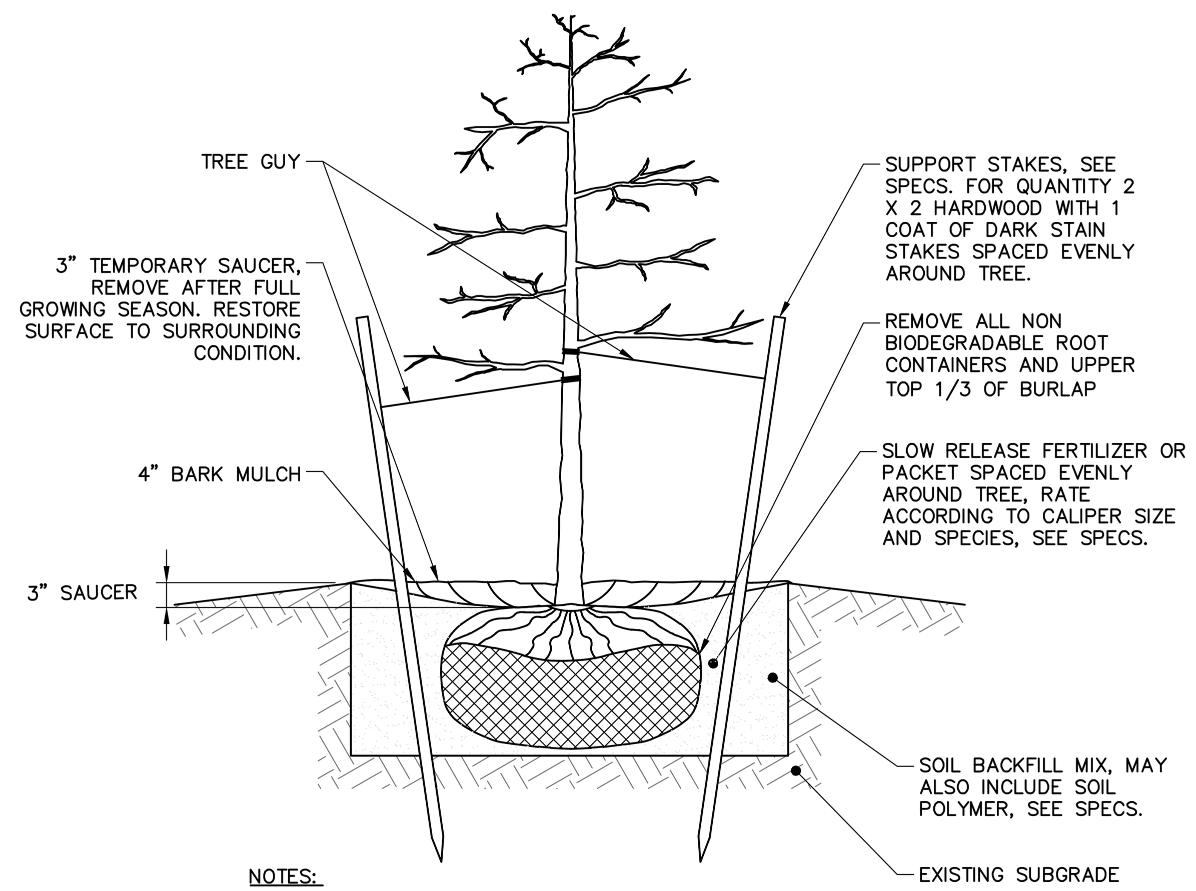
TOWN OF WINTHROP
1 METCALF SQUARE
WINTHROP, MASSACHUSETTS

WINTHROP TOWN CENTER INFRASTRUCTURE AND IMPROVEMENTS

JOB NO.: 230079.01
DATE: SEPTEMBER 2017
SCALE: AS NOTED
SHEET: 30 OF 31

C-605

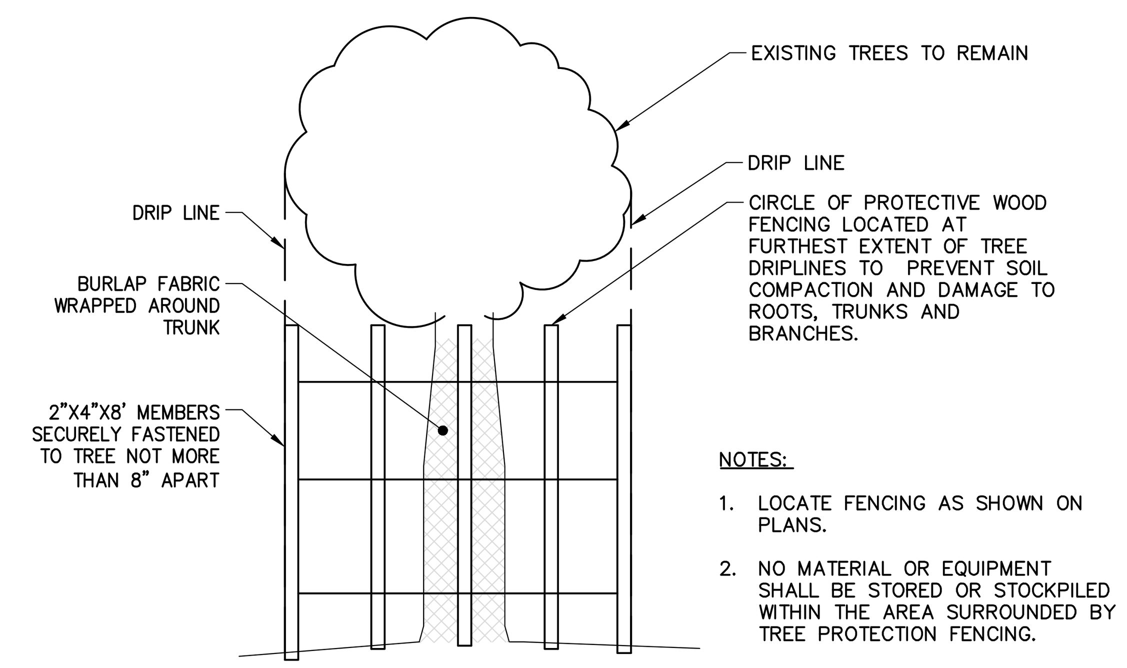
22x34 SHEET
1:1



NOTES:

1. NEVER CUT OUT CENTRAL LEADER. PRUNE OUT BROKEN, DEAD, OR CONFLICTING BRANCHES.
2. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
3. TREE GUYS SHALL BE GUYING CHAIN, WEB STRAPPING OR TIE WIRE, RUBBER HOSE AND TURNBUCKLES.

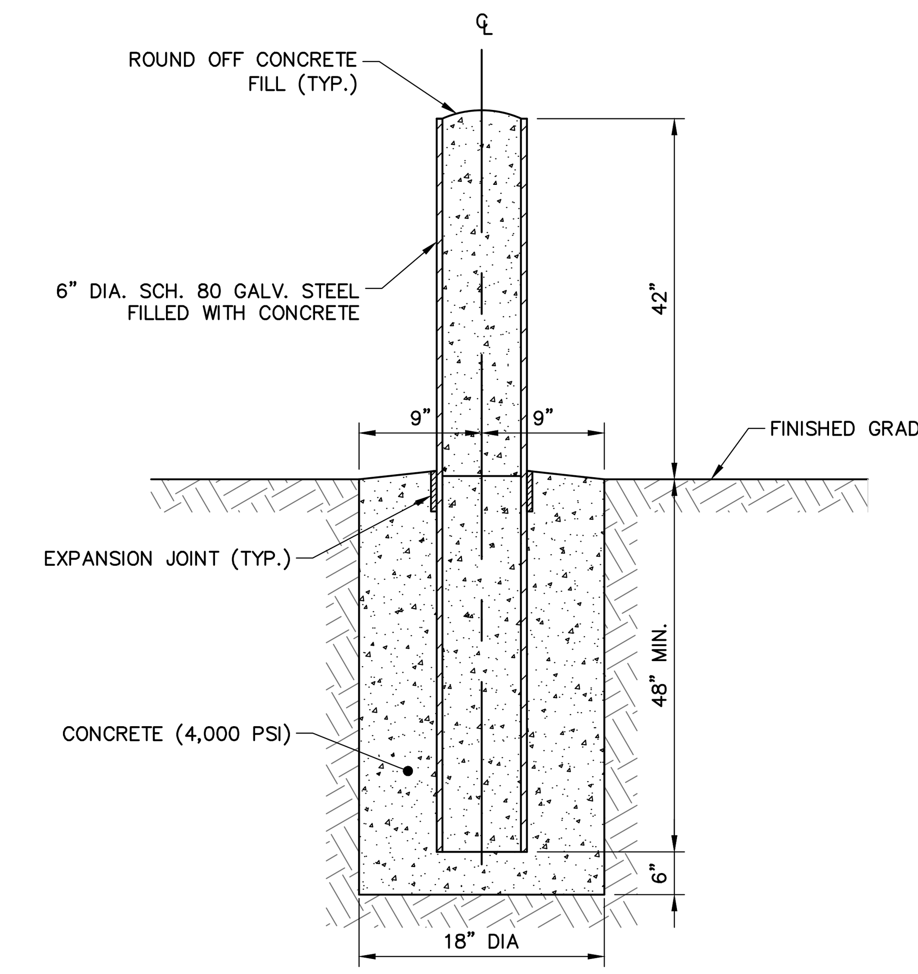
TREE PLANTING AND STAKING
NOT TO SCALE



NOTES:

1. LOCATE FENCING AS SHOWN ON PLANS.
2. NO MATERIAL OR EQUIPMENT SHALL BE STORED OR STOCKPILED WITHIN THE AREA SURROUNDED BY TREE PROTECTION FENCING.
3. FENCE MUST REMAIN AND BE MAINTAINED THROUGHOUT ENTIRE BUILDING PHASES DURING WHICH CONSTRUCTION MAY AFFECT TREES.

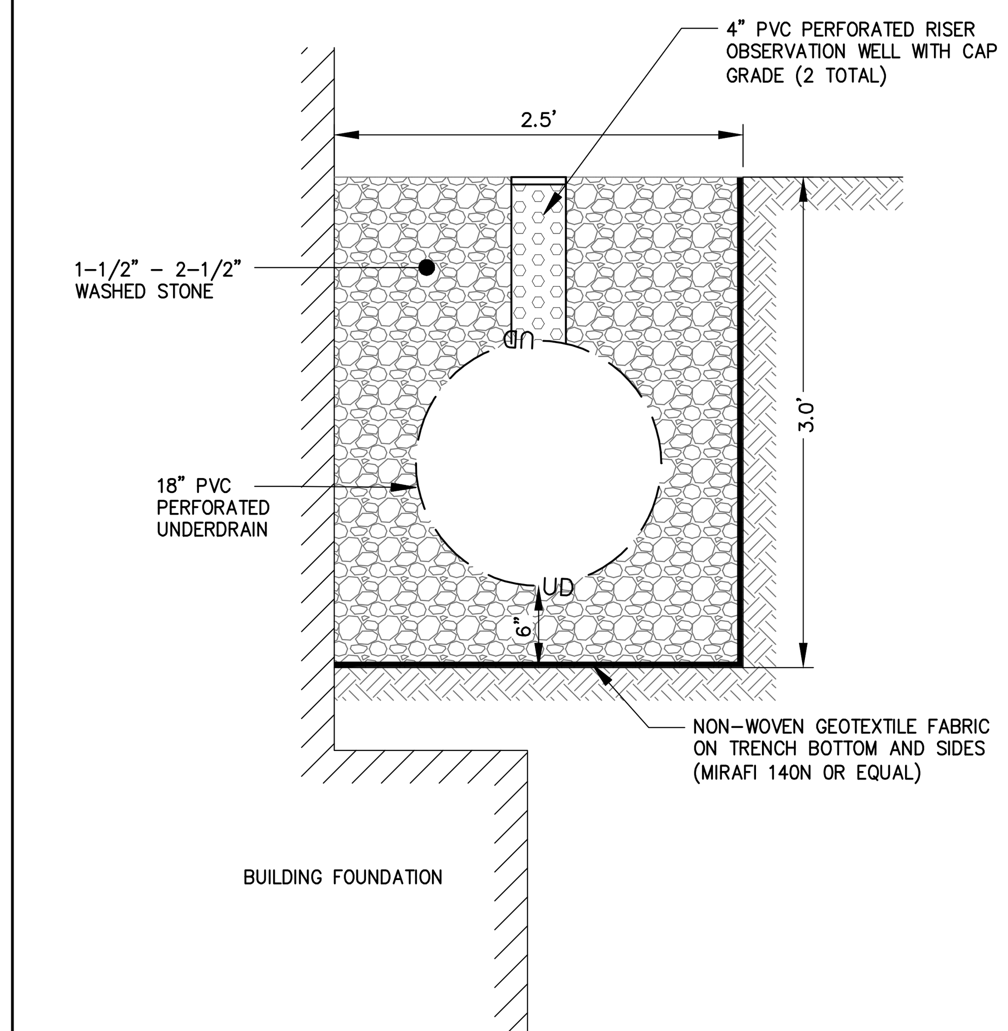
TREE PROTECTION
NOT TO SCALE



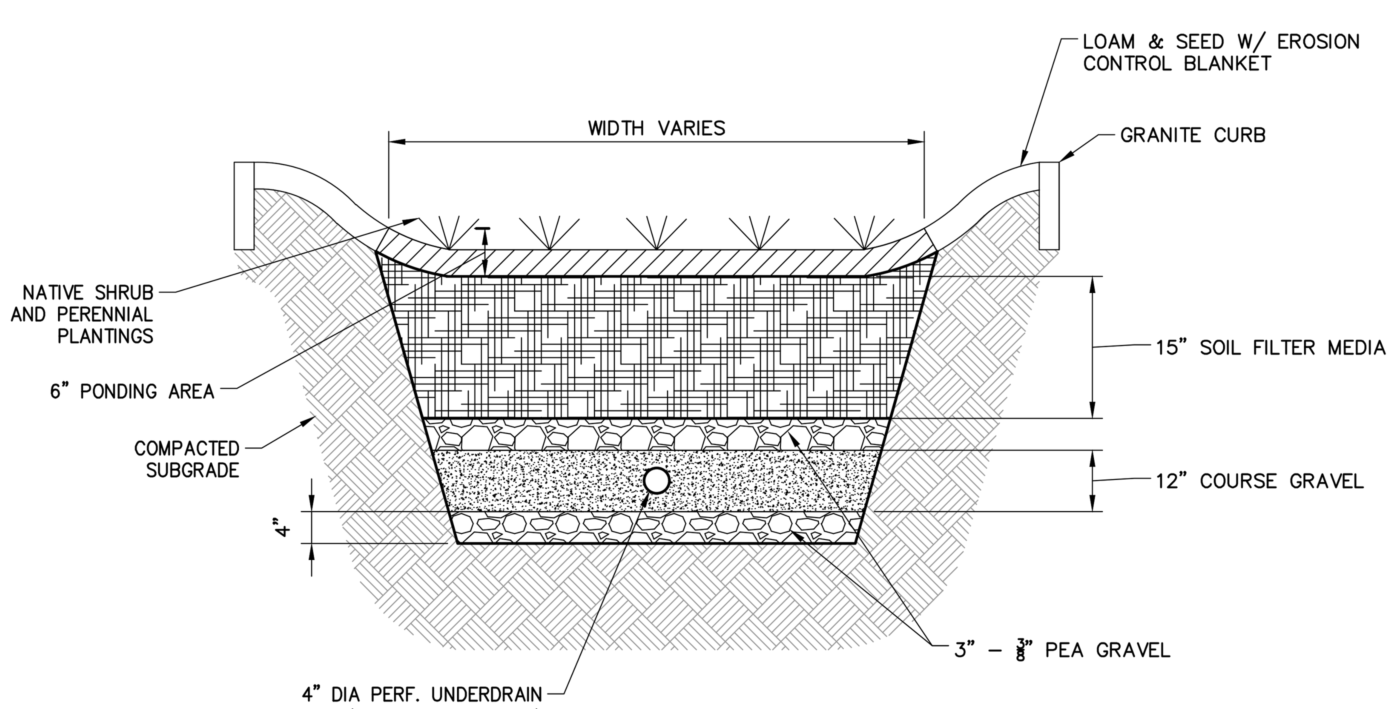
NOTE:

1. ALL BOLLARDS SHALL BE PAINTED. COLOR SELECTED BY OWNER.

6" DIA. BOLLARD (IN PAVEMENT)
NOT TO SCALE



INFILTRATION TRENCH DETAIL
NOT TO SCALE

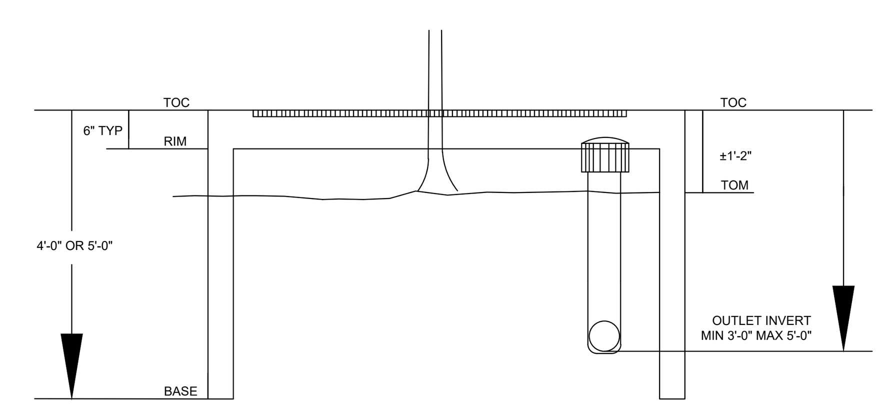


NOTES:

FILTER MEDIA SHALL CONSIST (BY VOLUME) OF:

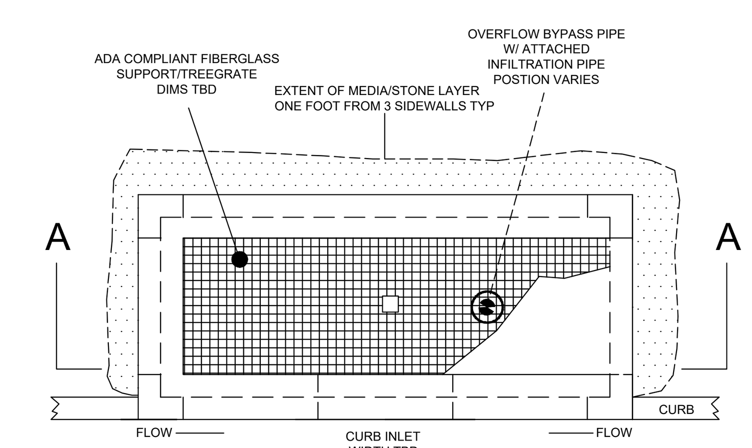
- 50% TO 55% SAND (ASTM C-33 CONCRETE SAND)
- 20% TO 30% LOAMY SAND TOPSOIL WITH 15% TO 25% PASSING THE #200 SIEVE AND
- 20% TO 30% MODERATELY FINE SHREDDED BARK MULCH OR WOOD FIBER MULCH WITH LESS THAN 5% PASSING THE #200 SIEVE

RAIN GARDEN DETAIL
NOT TO SCALE

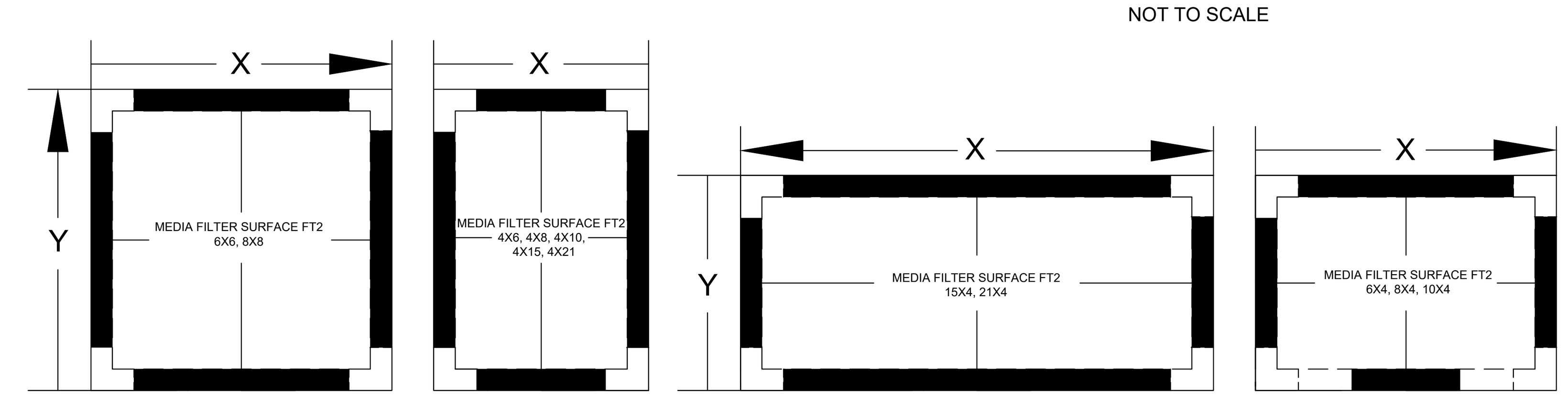


TOC: TOP OF CONCRETE
TOM: TOP OF MEDIA

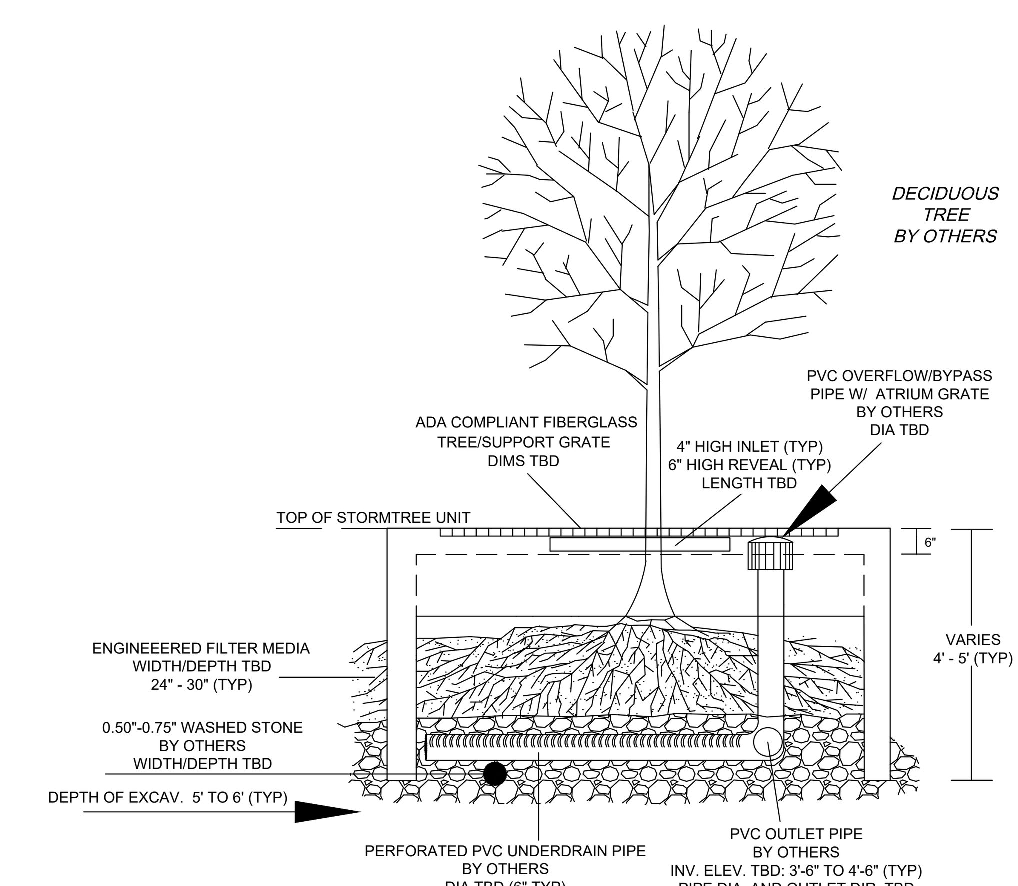
RIM/TOC/INVERT ELEVS
NOT TO SCALE



PLAN VIEW
NOT TO SCALE



CONFIGURATIONS/SIZING



SECTION A-A
NOT TO SCALE

TREEBOX FILTER DETAIL
NOT TO SCALE

FINAL DESIGN - NOT FOR CONSTRUCTION

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CIVIL DETAILS VII

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WINTHROP, MASSACHUSETTS

WINTHROP TOWN CENTER INFRASTRUCTURE AND IMPROVEMENTS

JOB NO.: 230079.01
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C-606