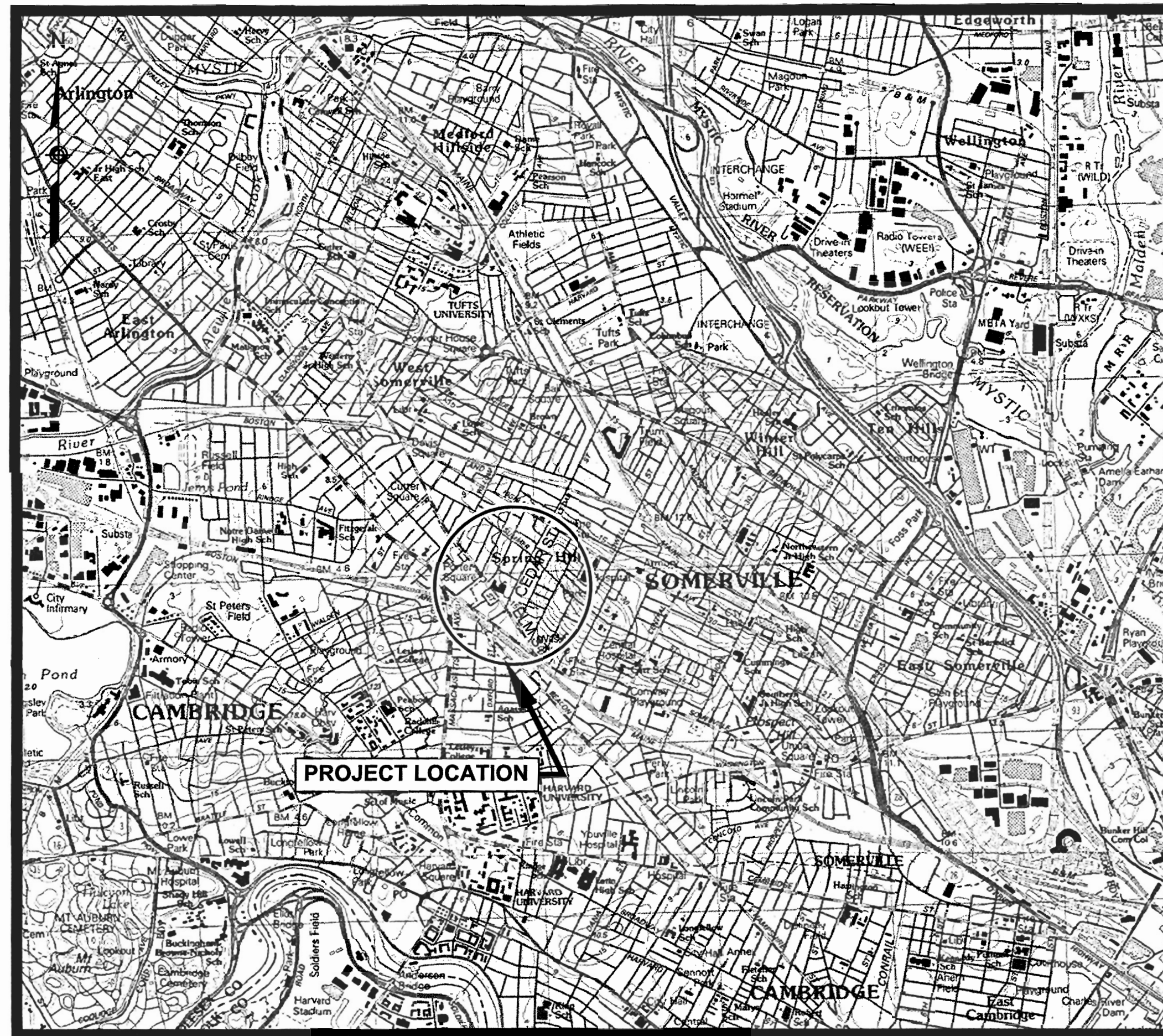


CITY OF SOMERVILLE, MASSACHUSETTS

**DEPARTMENT OF PUBLIC WORKS
1 FRANEY ROAD,
SOMERVILLE, MA 02145**

**CEDAR STREET
SEWER SEPARATION PROJECT
100% DESIGN SUBMITTAL**

JOSEPH CURTATONE, MAYOR



LOCUS MAP
NOT TO SCALE

DRAWING INDEX

<u>SHEET NO.</u>	<u>TITLE</u>
1	COVER SHEET
A-1	ABBREVIATIONS, LEGEND AND GENERAL NOTES
S-1 TO S-3	UTILITY PLAN AND PROFILE - ELM STREET
S-4 TO S-7	UTILITY PLAN AND PROFILE - CEDAR STREET
S-8	UTILITY PLAN AND PROFILE - CEDAR AVENUE & HALL STREET
S-9	UTILITY PLAN - LINDEN AVENUE & PORTER STREET
S-10	UTILITY PLAN - WATER MAIN
C-1 TO C-5	ROADWAY CONSTRUCTION PLAN & PROFILE
D-1 TO D-6	TYPICAL SECTIONS AND DETAILS
G-1 TO G-2	CURB TIE AND GRADING PLAN
T-1 TO T-2	SIGNS AND PAVEMENT MARKING PLAN
T-3	SIGN SUMMARY
T-4	SIGNAL PLAN
T-5	TRAFFIC SIGNAL SEQUENCE & TIMING
T-6	TRAFFIC MANAGEMENT PLAN
T-7	TRAFFIC MANAGEMENT PLAN - HIGHLAND
T-7	TRAFFIC MANAGEMENT PLAN - DETOUR PLAN

UNLESS OTHERWISE STATED HEREIN, THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 1988, AS AMENDED, THE SUPPLEMENTAL SPECIFICATIONS DATED JUNE 15, 2012, THE JUNE 2014 CONSTRUCTION STANDARD DETAILS, THE 1996 CONSTRUCTION AND TRAFFIC STANDARD DETAILS (AS RELATES TO TRAFFIC STANDARD DETAILS ONLY), THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS WITH MASSACHUSETTS AMENDMENTS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, WILL GOVERN.

JUNE 2015

Weston&Sampson®

Five Centennial Drive, Peabody, Massachusetts 01960-7985

File No. —
COPYRIGHT 2015 WESTON & SAMPSON

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
JB	JB	JERSEY BARRIER ON BRIDGE OR JERSEY BARRIER
CS	CB	CATCH BASIN
FP	FP	CATCH BASIN CURB INLET
GP	GP	FLAG POLE
MB	MB	GAS PUMP
	MB	MAIL BOX
	□	POST SQUARE
○	○	POST CIRCULAR
○	○	WELL
○	○	ELECTRIC HANDHOLE
○	○	FENCE GATE POST
○	○	GAS GATE
○	○	BORING HOLE / PROBE
○	○	MONITORING WELL
○	○	TEST PIT
○	○	HYDRANT
○	○	LIGHT POLE
○	○	COUNTY BOUND
○	○	GPS POINT
○	○	CABLE MANHOLE
○	○	DRAINAGE MANHOLE
○	○	ELECTRIC MANHOLE
○	○	GAS MANHOLE
○	○	MISC MANHOLE
○	○	SEWER MANHOLE
○	○	TELEPHONE MANHOLE
○	○	WATER MANHOLE
○	○	MASSACHUSETTS HIGHWAY BOUND
○	○	MONUMENT
○	○	STONE BOUND
○	○	TOWN OR CITY BOUND
○	○	TRAVERSE OR TRIANGULATION STATION
○	○	TROLLEY POLE OR GUY POLE
○	○	TRANSMISSION POLE
○	○	UTILITY POLE W/ FIREBOX
○	○	UTILITY POLE WITH DOUBLE LIGHT
○	○	UTILITY POLE W/ 1 LIGHT
○	○	UTILITY POLE
○	○	BUSH
○	○	TREE
○	○	STUMP
○	○	SWAMP / MARSH
○	○	WATER GATE
○	○	PARKING METER
○	○	OVERHEAD CABLE/WIRE
○	○	CURBING
○	○	CONTOURS
○	○	UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)
○	○	UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER)
○	○	UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER)
○	○	UNDERGROUND SEWER MAIN (DOUBLE LINE)
○	○	UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER)
○	○	UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER)
○	○	BALANCE STONE WALL
○	○	GUARD RAIL - STEEL POSTS
○	○	GUARD RAIL - WOOD POSTS
○	○	CHAIN LINK OR METAL FENCE
○	○	WOOD FENCE
○	○	HAY BALES/SILT FENCE
○	○	TREE LINE OR LIMIT OF CLEARING AND GRUBBING
○	○	SAWCUT LINE
○	○	TOP OR BOTTOM OF SLOPE
○	○	LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY
○	○	BANK OF RIVER OR STREAM
○	○	BORDER OF WETLAND
○	○	100 FT WETLAND BUFFER
○	○	200 FT RIVERFRONT BUFFER
○	○	STATE HIGHWAY LAYOUT
○	○	TOWN OR CITY LAYOUT
○	○	COUNTY LAYOUT
○	○	RAILROAD SIDELINE
○	○	TOWN OR CITY BOUNDARY LINE
○	○	PROPERTY LINE OR APPROXIMATE PROPERTY LINE
○	○	EASEMENT
○	○	LOAD CENTER ASSEMBLY
○	○	PULL BOX 12"X12" (OR AS NOTED)
○	○	TRAFFIC SIGNAL CONDUIT

ABBREVIATIONS

GENERAL	DESCRIPTION
AADT	ANNUAL AVERAGE DAILY TRAFFIC
ABAN	ABANDON
ADJ	ADJUST
APPROX.	APPROXIMATE
A.C.	ASPHALT CONCRETE
ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE
BIT.	BITUMINOUS
BC	BOTTOM OF CURB
BD.	BOUND
BL	BASELINE
BLDG	BUILDING
BM	BENCHMARK
BO	BY OTHERS
BOS	BOTTOM OF SLOPE
BR.	BRIDGE
CB	CATCH BASIN
CBCI	CATCH BASIN WITH CURB INLET
CC	CEMENT CONCRETE
CCM	CEMENT CONCRETE MASONRY
CEM	CEMENT
CI	CURB INLET
CIP	CAST IRON PIPE
CLF	CHAIN LINK FENCE
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CSP	CORRUGATED STEEL PIPE
CO.	COUNTY
CONC	CONCRETE
CONT	CONTINUOUS
CONST	CONSTRUCTION
DI	DROP INLET
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DWY	DRIVEWAY
ELEV (or EL.)	ELEVATION
EOP	EDGE OF PAVEMENT
EXIST (or EX)	EXISTING
EXC	EXCAVATION
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FDN.	FOUNDATION
FLDSTN	FIELDSTONE
GD	GROUND
GG	GAS GATE
GI	GUTTER INLET
GIP	GALVANIZED IRON PIPE
GRAN	GRANITE
GRAV	GRAVEL
GRD	GRAD
HMA	HOT MIX ASPHALT
HOR	HORIZONTAL
HYD	HYDRANT
INV	INVERT
JCT	JUNCTION
L	LENGTH OF CURVE
LB	LEACH BASIN
LP	LIGHT POLE
LT	LEFT
MAX	MAXIMUM
MB	MAILBOX
MH	MANHOLE
MHB	MASSACHUSETTS HIGHWAY BOUND
MIN	MINIMUM
NIC	NOT IN CONTRACT
NO.	NUMBER
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
P.G.L.	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
POC	POINT ON CURVE
POT	POINT ON TANGENT
PRC	POINT OF REVERSE CURVATURE
PROJ	PROJECT
PROP	PROPOSED
PSB	PLANTABLE SOIL BORROW
PT	POINT OF TANGENCY
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
PVMT	PAVEMENT
PWW	PAVED WATER WAY
R	RADIUS OF CURVATURE
R&D	REMOVE AND DISPOSE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RDWY	ROADWAY
REM	REMOVE
RET	RETAIN
RET WALL	RETAINING WALL
ROW	RIGHT OF WAY

ABBREVIATIONS (cont.)

GENERAL	DESCRIPTION
RR	RAILROAD
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
RT	RIGHT
SB	STONE BOUND
SHLD	SHOULDER
SMH	SEWER MANHOLE
ST	STREET
STA	STATION
SSD	STOPPING SIGHT DISTANCE
SHLO	STATE HIGHWAY LAYOUT LINE
SW	SIDEWALK
T	TANGENT DISTANCE OF CURVE/TRUCK %
TAN	TANGENT
TEMP	TEMPORARY
TC	TOP OF CURB
TOS	TOP OF SLOPE
TYP	TYPICAL
UP	UTILITY POLE
VAR	VARIES
VERT	VERTICAL
VC	VERTICAL CURVE
WCR	WHEEL CHAIR RAMP
WG	WATER GATE
WIP	WROUGHT IRON PIPE
WM	WATER METER/WATER MAIN
X-SECT	CROSS SECTION

PAVEMENT MARKINGS & TRAFFIC SYMBOLS

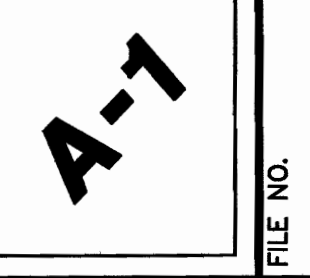
EXISTING	PROPOSED	DESCRIPTION
↖	↖	PAVEMENT ARROW - WHITE
↖	ONLY	LEGEND "ONLY" - WHITE
—	—	STOP LINE
	CW	CROSSWALK
—	SWL	SOLID WHITE LINE
—	SWEL	SOLID WHITE EDGE LINE
—	SYL	SOLID YELLOW LINE
—	BWL	BROKEN WHITE LINE
—	BYL	BROKEN YELLOW LINE
—	DWL	DOTTED WHITE LINE
—	DYL	DOTTED YELLOW LINE
—	DWLEx	DOTTED WHITE LINE EXTENSION
—	DYLEx	DOTTED YELLOW LINE EXTENSION
—	DBWL	DOUBLE WHITE LINE
—	DBYL	DOUBLE YELLOW LINE
□	□	WIRE LOOP DETECTOR (6' X 6' TYP UNLESS OTHERWISE SPECIFIED)
○	○	PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE
*	*	EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT
←	←	VEHICULAR SIGNAL HEAD
←	←	VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED
←	←	PEDESTRIAN SIGNAL HEAD, (TYPE AS NOTED OR AS SPECIFIED)
○	○	SIGNAL POST AND BASE (ALPHA NUMERIC DESIGNATION NOTED)

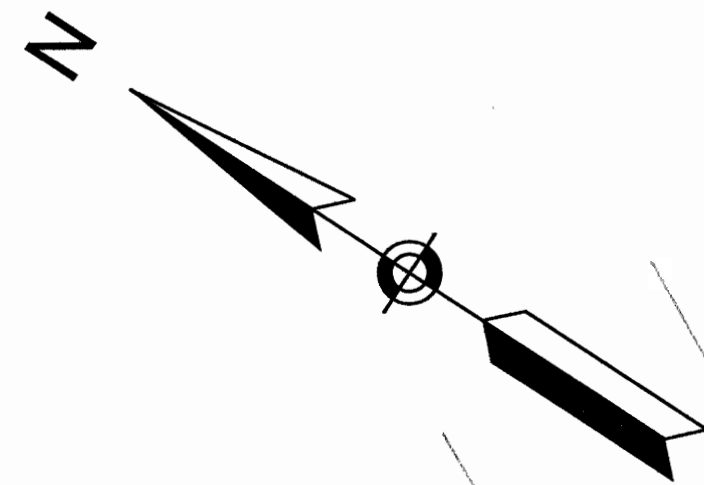
GENERAL NOTES:

1. THE CONTRACTOR SHALL CALL DIGSAFE AT 811 OR 1-888-344-7233 AT LEAST 72 HOURS, SATURDAYS, SUNDAYS, AND HOLIDAYS EXCLUDED, PRIOR TO EXCAVATING AT ANY LOCATION. A COPY OF THE DIGSAFE PROJECT REFERENCE NUMBER(S) SHALL BE GIVEN TO THE OWNER PRIOR TO EXCAVATION.
2. ROAD ROW CORRESPONDS TO EXISTING PROPERTY LINES UNLESS OTHERWISE INDICATED
3. LOCATIONS OF EXISTING PIPES, CONDUITS, UTILITIES, FOUNDATIONS AND OTHER UNDERGROUND OBJECTS ARE NOT WARRANTED TO BE CORRECT AND THE CONTRACTOR SHALL HAVE NO CLAIM ON THAT ACCOUNT SHOULD THEY BE OTHER THAN SHOWN.
4. TEST PITS TO LOCATE EXISTING UTILITIES MAY BE ORDERED BY THE ENGINEER TO VERIFY EXISTING UTILITY LOCATION, SIZE, AND TYPE.
5. STONE WALLS, FENCES, MAIL BOXES, SIGNS, CURBS, LIGHT POLES, ETC. SHALL BE REMOVED AND REPLACED AS NECESSARY TO PERFORM THE WORK. UNLESS OTHERWISE INDICATED, ALL SUCH WORK SHALL BE INCIDENTAL TO CONSTRUCTION OF THE PROJECT.
6. ALL PAVEMENT DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED IN ACCORDANCE WITH THE SPECIFICATIONS AND AS SHOWN ON THE DRAWINGS.
7. ROCK EXCAVATION QUANTITIES ARE ESTIMATED ASSUMING TOP OF LEDGE BEGINS AT BORING REFUSAL. BORING LOCATIONS ARE INDICATED ON THE PLANS AND BORING LOGS ARE INCLUDED IN THE SPECIFICATIONS.
8. ALL AREAS DISTURBED BY THE CONTRACTOR BEYOND PAYMENT LIMITS SHALL BE RESTORED AT NO ADDITIONAL COST TO THE OWNER.
9. ALL EXCAVATIONS ON ELM STREET SHALL BE COMPLETELY CLOSED AT THE END OF EACH WORKING DAY BY BACKFILLING OR COVERING WITH STEEL PLATES. ALL EXCAVATIONS IN CEDAR STREET WORK ZONES MUST BE CLOSED AT THE END OF EACH WORKDAY BY COVERING WITH PLATES. CONTRACTOR MUST MAINTAIN ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES.
10. UNLESS OTHERWISE INDICATED, CONCRETE USED FOR PIPE ANCHOR BLOCKS, BACKING, PIPE CRADLES, ARCHES, AND FILL SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS.
11. MASSDOT STANDARDS APPLY TO ALL ASPECTS OF THE PROJECT, UNLESS SPECIFIED OTHERWISE.
12. APPROVED JOINT RESTRAINT METHODS SHALL BE PROVIDED FOR FORCE MAINS OR WATER MAINS, WHERE ANY BENDS, TEES, PLUGS, OR WYES ARE INSTALLED. CONCRETE THRUST BLOCKS, ANCHOR BLOCKS, AND TIE RODS MAY BE USED FOR 6-INCH AND 8-INCH PIPE WHERE JOINT RESTRAINT IS NOT FEASIBLE. FOR THRUST BLOCK DETAILS AND MINIMUM BLOCK BEARING AREAS, SEE DETAILS AND SPECIFICATIONS.
13. EXISTING UTILITY AND LOCATIONS OF EXISTING ABOVE GROUND STRUCTURES WERE TAKEN FROM AS-BUILT PLANS AND THE TOPOGRAPHIC SURVEY PREPARED BY WESTON & SAMPSON.
14. INSTALLATION OF OVERHEAD ELECTRIC SERVICE TO BE PROVIDED BY OTHERS.
15. CONTRACTOR SHALL BE AWARE THAT THE EXISTING STORM DRAIN AND SANITARY SEWER SYSTEMS ARE COMBINED SYSTEMS AND RAPID INCREASES IN FLOW WILL OCCUR DURING AND AFTER A WET WEATHER EVENT. THE 10-YEAR STORM EVENT PRODUCES FLOW RATES UP TO 125 CFS ON CEDAR STREET AND 174 CFS ON ELM STREET. THE EXISTING DRAIN AND SEWER SYSTEMS SHALL BE RECONNECTED TO THE PROPOSED DRAIN AND SEWER SYSTEM AT THE END OF EACH WORKDAY AND AS REQUIRED TO EFFECTIVELY HANDLE WET WEATHER FLOWS.
16. CONTRACTOR SHALL MAINTAIN EXISTING FLOWS IN THE SYSTEM, BYPASSING AS NECESSARY TO PREVENT SURCHARGING, AS DETERMINED BY THE ENGINEER.
17. MANHOLE COVERS SHALL BE SET FLUSH WITH THE EXISTING GRADE, OR AS SHOWN ON THE DRAWINGS, OR AS DETERMINED BY THE ENGINEER.
18. CONTRACTOR SHALL NOT ALLOW SAND, SILT OR OTHER SITE RUNOFF TO ENTER CATCH BASINS.
19. WATER SERVICE CONNECTIONS AND GAS SERVICE CONNECTIONS HAVE NOT BEEN INCLUDED ON THE PLAN VIEWS OR PROFILE VIEWS. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE LOCATION OF WATER SERVICE CONNECTIONS AND GAS SERVICE CONNECTIONS AS NECESSARY TO PERFORM THE WORK.
20. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF MASSACHUSETTS GENERAL LAW CHAPTER 82A, TRENCH EXCAVATION AND SAFETY REQUIREMENTS, TO PREVENT THE GENERAL PUBLIC FROM UNAUTHORIZED ACCESS TO UNATTENDED TRENCHES.
21. THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND DISPOSAL OF ALL PIPE AND MANHOLES AS SHOWN ON THE DRAWINGS.
22. CONTRACTOR SHALL REMOVE AND RESET ALL EXISTING VERTICAL GRANITE CURBING AS INDICATED ON PLANS. ADDITIONAL VERTICAL GRANITE CURBING SHALL SUPPLEMENT ALL BROKEN OR UNUSABLE PIECES.
23. WHERE PROPOSED PAVEMENT SURFACE MEETS EXISTING PAVEMENT SURFACE, CONTRACTOR SHALL SAWCUT EXISTING PAVEMENT AND SPRAY WITH RS-1 SOLUTION PRIOR TO ADDING NEW PAVEMENT.
24. STREET FLOODING OCCURS ON CEDAR STREET AT HALL STREET DURING WET WEATHER EVENTS.
25. EXISTING SUBSURFACE CONDITIONS ARE DESCRIBED IN THE GEOTECHNICAL INVESTIGATIONS AND RECOMMENDATIONS REPORT INCLUDED IN APPENDIX B.

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

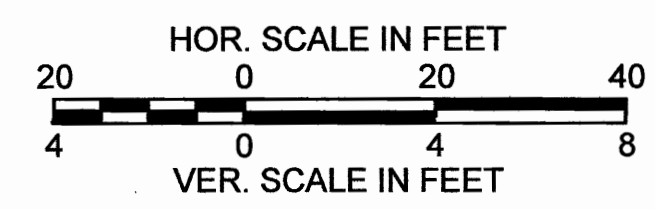
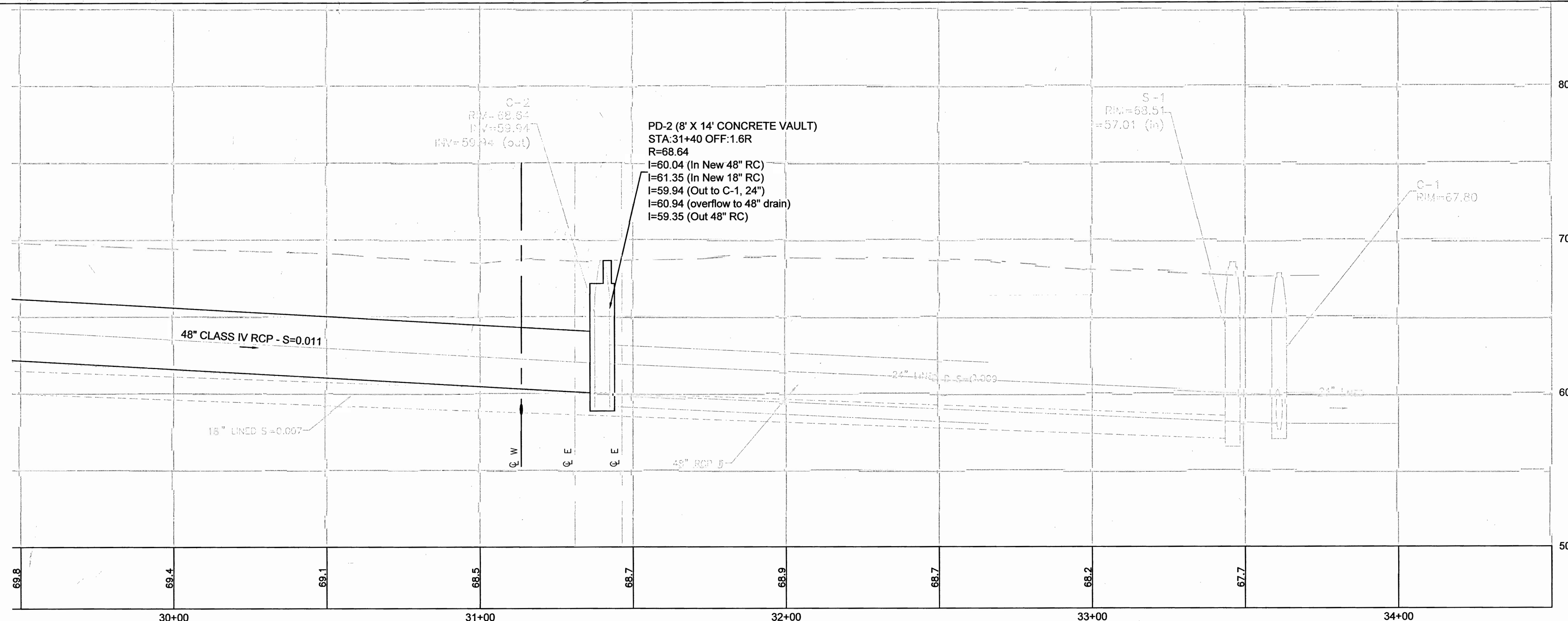
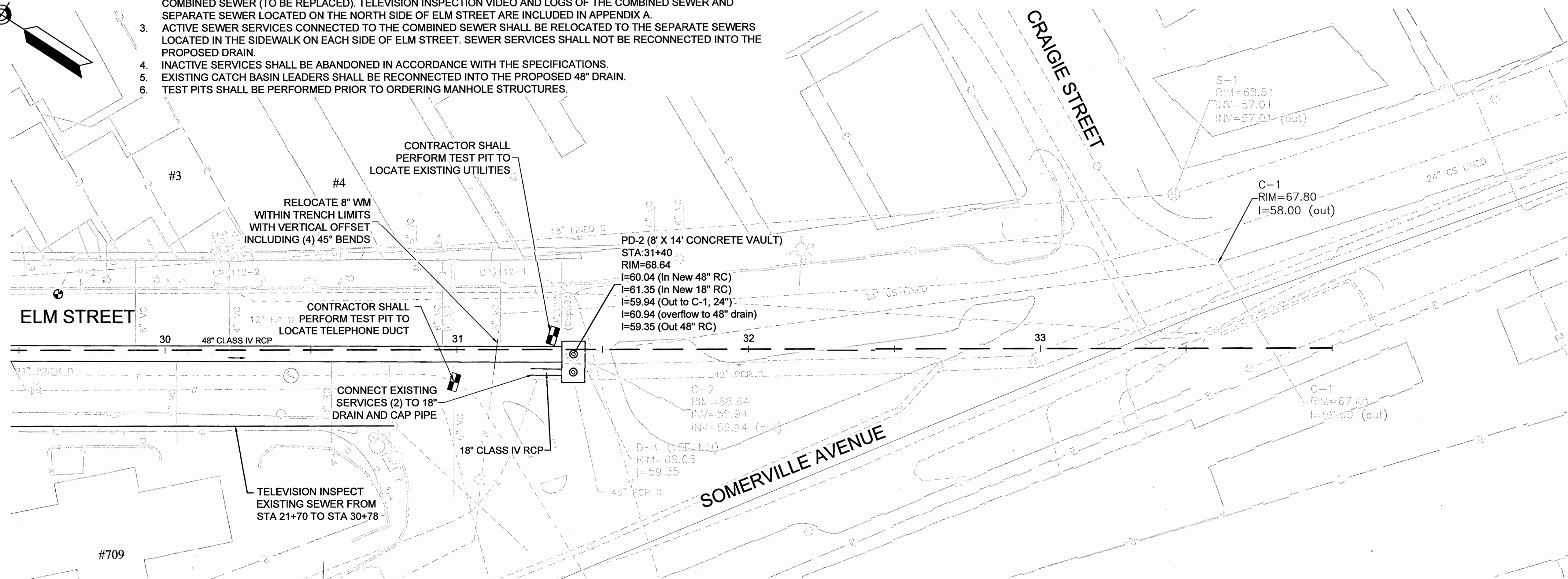
CITY OF SOMERVILLE, MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
CEDAR STREET SEWER SEPARATION PROJECT
ABBREVIATIONS, LEGEND AND GENERAL NOTES
CADD NO. _____ SCALE: AS NOTED CONTRACT: _____ JOB NO. 2130636 DR. BY _____ DSN BY _____ CHK BY _____ APP. BY _____
REGISTERED PROFESSIONAL ENGINEER





- NOTES:
1. PRIOR TO INSTALLATION OF 48" DRAIN CONTRACTOR SHALL VERIFY ALL ACTIVE SERVICE CONNECTION LOCATIONS IN THE COMBINED SEWER AND SEPARATE SEWERS (2) THROUGH TELEVISION INSPECTION AND DYE TESTING.
 2. PRIOR TO INSTALLATION OF 48" DRAIN CONTRACTOR SHALL TELEVISION INSPECT THE SEPARATE SEWER LOCATED IN THE SOUTH SIDEWALK TO DETERMINE WHETHER THE BUILDINGS ARE CONNECTED TO THE SEPARATE SEWER OR THE COMBINED SEWER (TO BE REPLACED). TELEVISION INSPECTION VIDEO AND LOGS OF THE COMBINED SEWER AND SEPARATE SEWER LOCATED ON THE NORTH SIDE OF ELM STREET ARE INCLUDED IN APPENDIX A.
 3. ACTIVE SEWER SERVICES CONNECTED TO THE COMBINED SEWER SHALL BE RELOCATED TO THE SEPARATE SEWERS LOCATED IN THE SIDEWALK ON EACH SIDE OF ELM STREET. SEWER SERVICES SHALL NOT BE RECONNECTED INTO THE PROPOSED DRAIN.
 4. INACTIVE SERVICES SHALL BE ABANDONED IN ACCORDANCE WITH THE SPECIFICATIONS.
 5. EXISTING CATCH BASIN LEADERS SHALL BE RECONNECTED INTO THE PROPOSED 48" DRAIN.
 6. TEST PITS SHALL BE PERFORMED PRIOR TO ORDERING MANHOLE STRUCTURES.

CONTINUED ON SHEET NO. 32



2. (Banner-Project) Somerville 2130636 - Cedar Street Sewer Separation (CAD) Design (Vista Utility Pipe Network-Cedar St.dwg

Weston & Sampson
Five Centennial Drive, Peabody, MA 01960
(978) 532-1900 (800) 545PSON
www.westonandsampson.com

No.	Date	Dr. By	Ck. By	App. By	Description

CITY OF SOMERVILLE, MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
CEDAR STREET SEWER SEPARATION PROJECT

**ELM STREET
UTILITY PLAN AND PROFILE**

FILE NO. _____

CADD NO. _____

SCALE: AS NOTED

CONTRACT: 2130636

DR. BY: _____

DSN. BY: _____

CHK. BY: _____

APP. BY: _____

REGISTERED PROFESSIONAL ENGINEER _____ DATE _____

S-1

SHEET 3 OF 33

No.	Date	Dr. By	Ck. By	App. By	Description

REGISTERED PROFESSIONAL ENGINEER _____ DATE _____

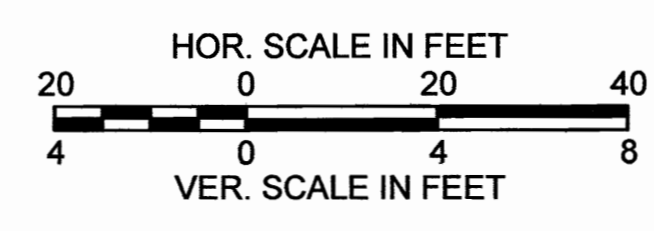
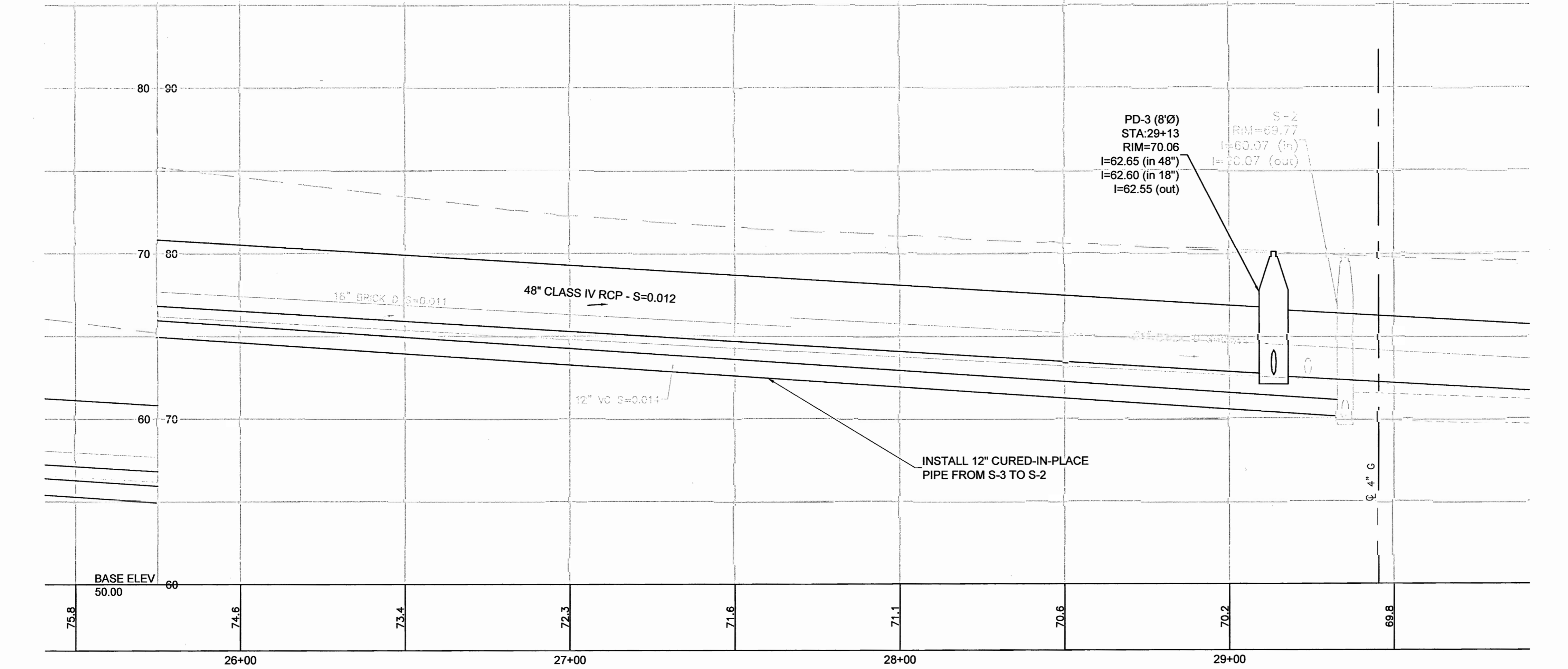
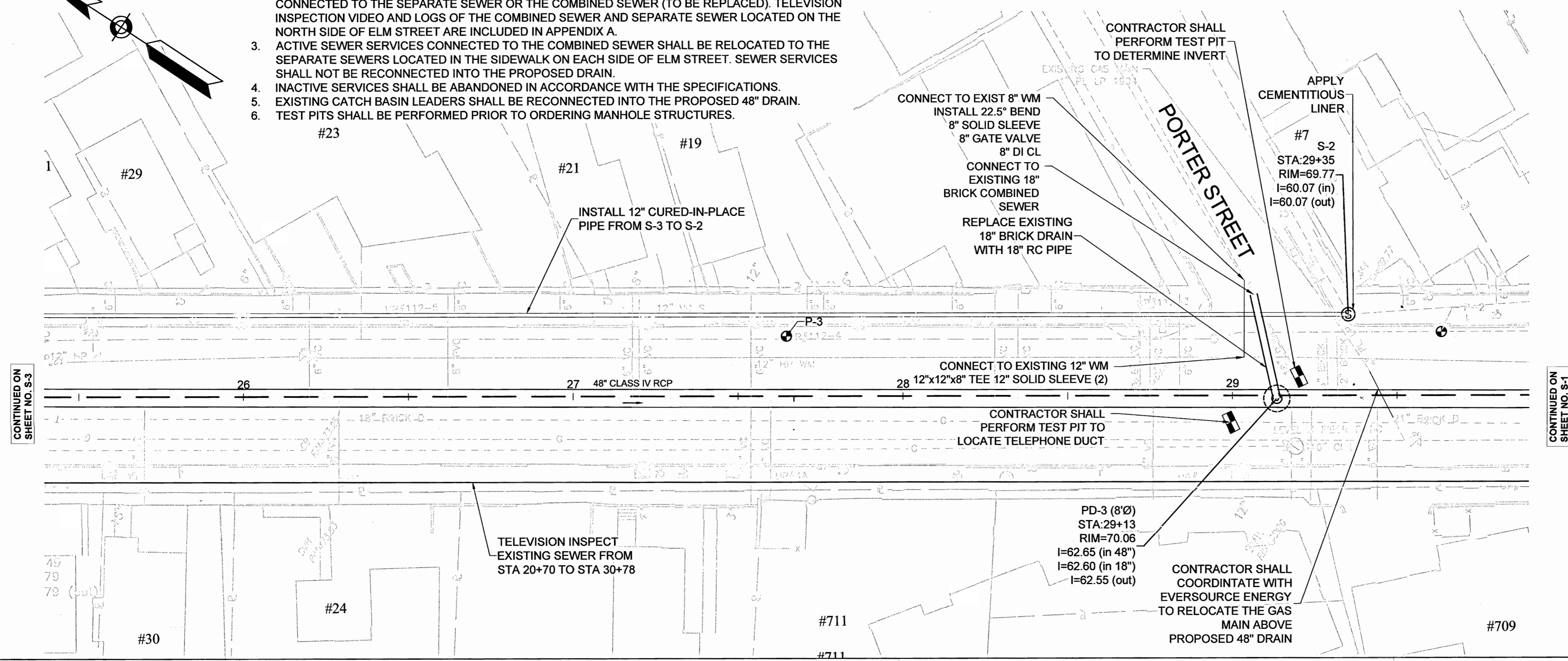
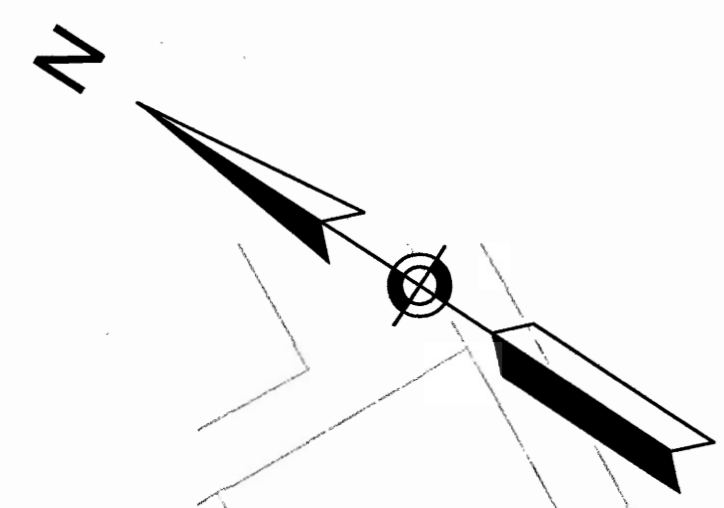
CITY OF SOMERVILLE, MASSACHUSETTS
 DEPARTMENT OF PUBLIC WORKS

CEDAR STREET SEWER SEPARATION PROJECT
ELM STREET
UTILITY PLAN AND PROFILE

SCALE: AS NOTED
 CONTRACT: 21-30636
 JOB NO. 21-30636
 DR. BY: _____
 PDSN. BY: _____
 CHK. BY: _____
 APP. BY: _____

FILE NO. **S-2**
 SHEET 4 OF 33

- NOTES:
1. PRIOR TO INSTALLATION OF 48" DRAIN CONTRACTOR SHALL VERIFY ALL ACTIVE SERVICE CONNECTION LOCATIONS IN THE COMBINED SEWER AND SEPARATE SEWERS (2) THROUGH TELEVISION INSPECTION AND DYE TESTING.
 2. PRIOR TO INSTALLATION OF 48" DRAIN CONTRACTOR SHALL TELEVISION INSPECT THE SEPARATE SEWER LOCATED IN THE SOUTH SIDEWALK TO DETERMINE WHETHER THE BUILDINGS ARE CONNECTED TO THE SEPARATE SEWER OR THE COMBINED SEWER (TO BE REPLACED). TELEVISION INSPECTION VIDEO AND LOGS OF THE COMBINED SEWER AND SEPARATE SEWER LOCATED ON THE NORTH SIDE OF ELM STREET ARE INCLUDED IN APPENDIX A.
 3. ACTIVE SEWER SERVICES CONNECTED TO THE COMBINED SEWER SHALL BE RELOCATED TO THE SEPARATE SEWERS LOCATED IN THE SIDEWALK ON EACH SIDE OF ELM STREET. SEWER SERVICES SHALL NOT BE RECONNECTED INTO THE PROPOSED DRAIN.
 4. INACTIVE SERVICES SHALL BE ABANDONED IN ACCORDANCE WITH THE SPECIFICATIONS.
 5. EXISTING CATCH BASIN LEADERS SHALL BE RECONNECTED INTO THE PROPOSED 48" DRAIN.
 6. TEST PITS SHALL BE PERFORMED PRIOR TO ORDERING MANHOLE STRUCTURES.



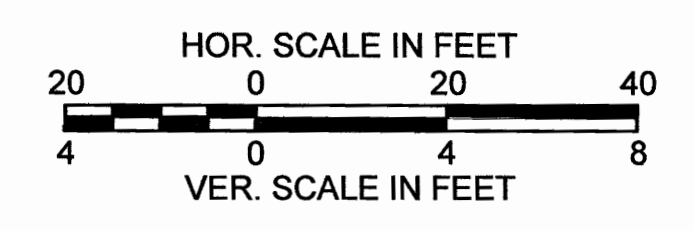
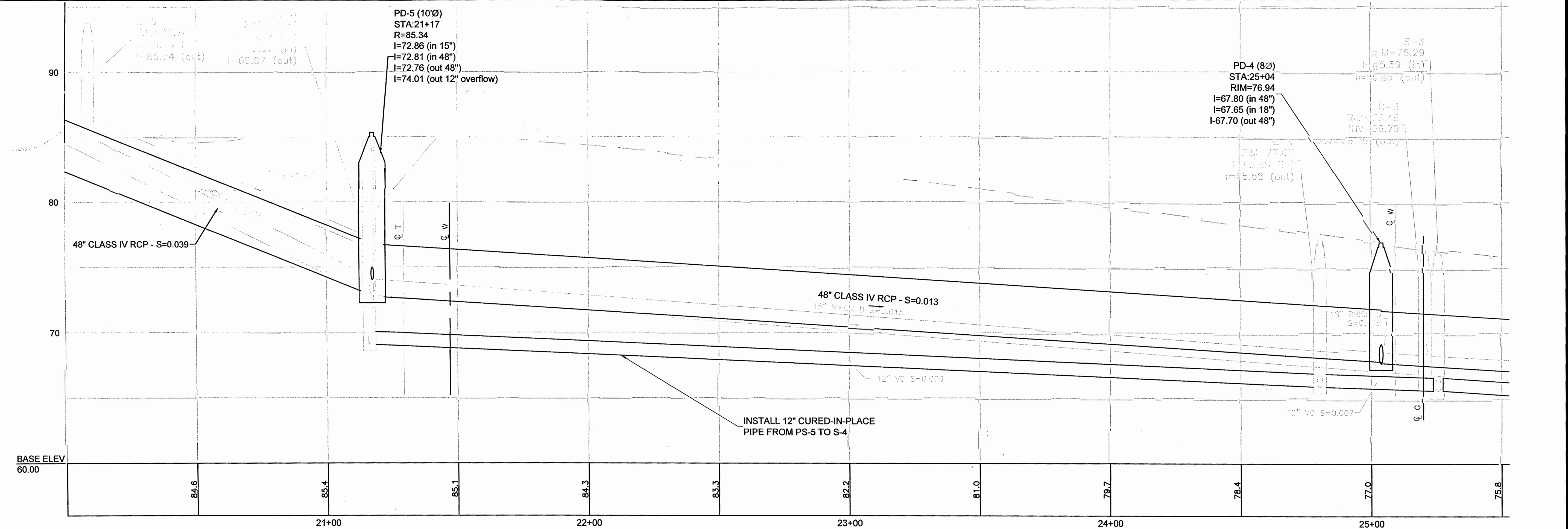
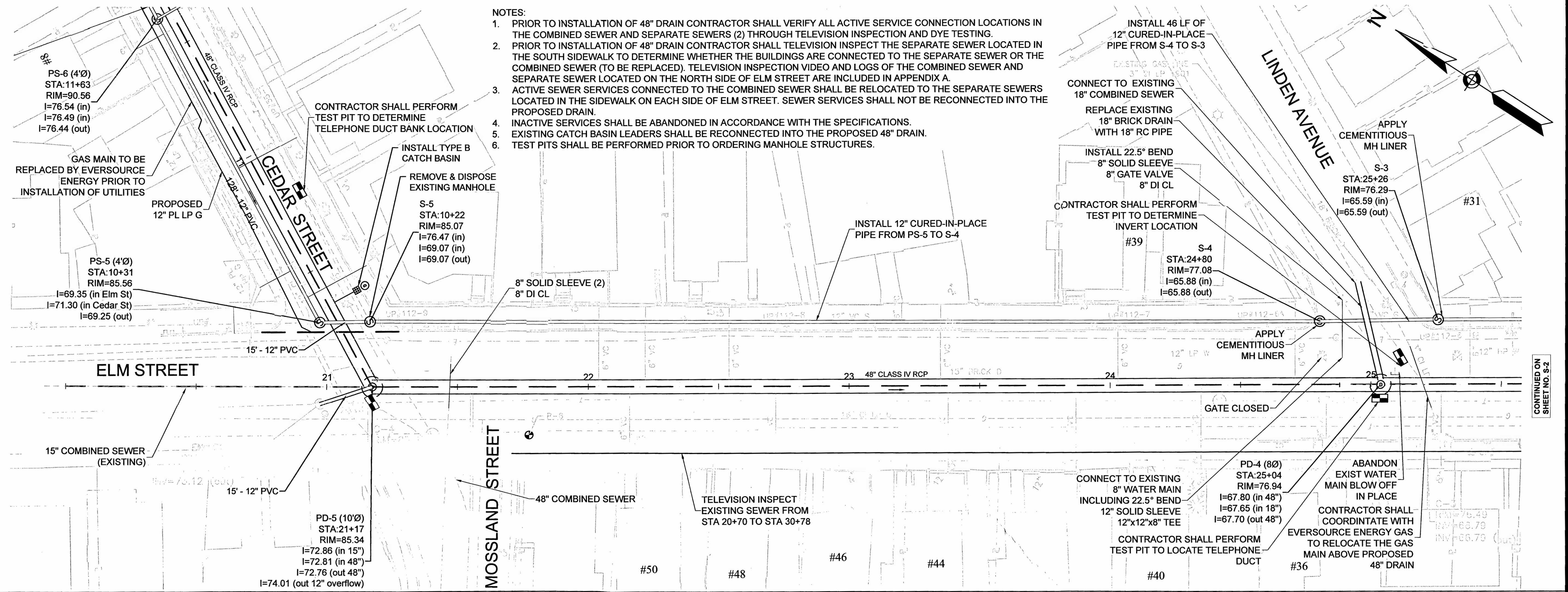
2. S:\Shared-Projects\Somerville\21-30636 - Cedar Street Sewer Separation\CAD\Design\Plan\Utility Pipe Network-Cedar St.dwg

No.	Date	Dr. By	Ck. By	App. By	Description

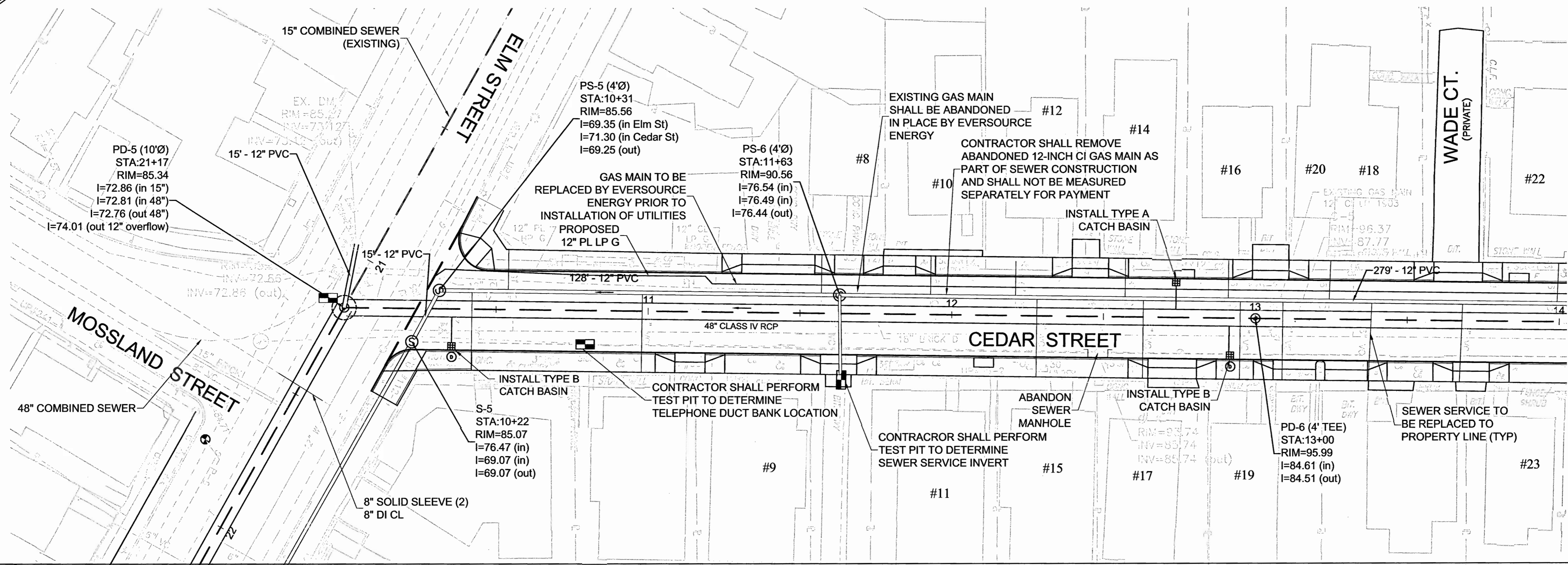
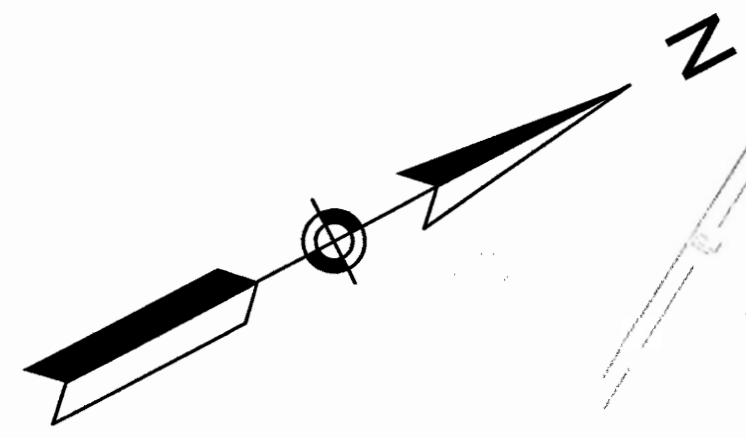
REGISTERED PROFESSIONAL ENGINEER
 DATE _____

CITY OF SOMERVILLE, MASSACHUSETTS
 DEPARTMENT OF PUBLIC WORKS
 CEDAR STREET SEWER SEPARATION PROJECT
**ELM STREET
 UTILITY PLAN AND PROFILE**
 CADD NO. _____ JOB NO. 2130636 DR. BY _____ CHK. BY _____
 SCALE: AS NOTED CONTRACT: 2130636

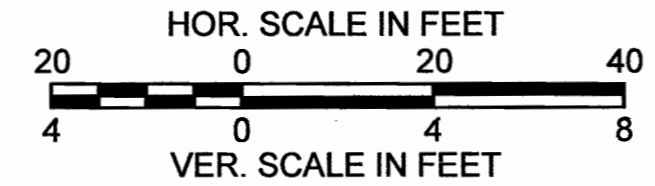
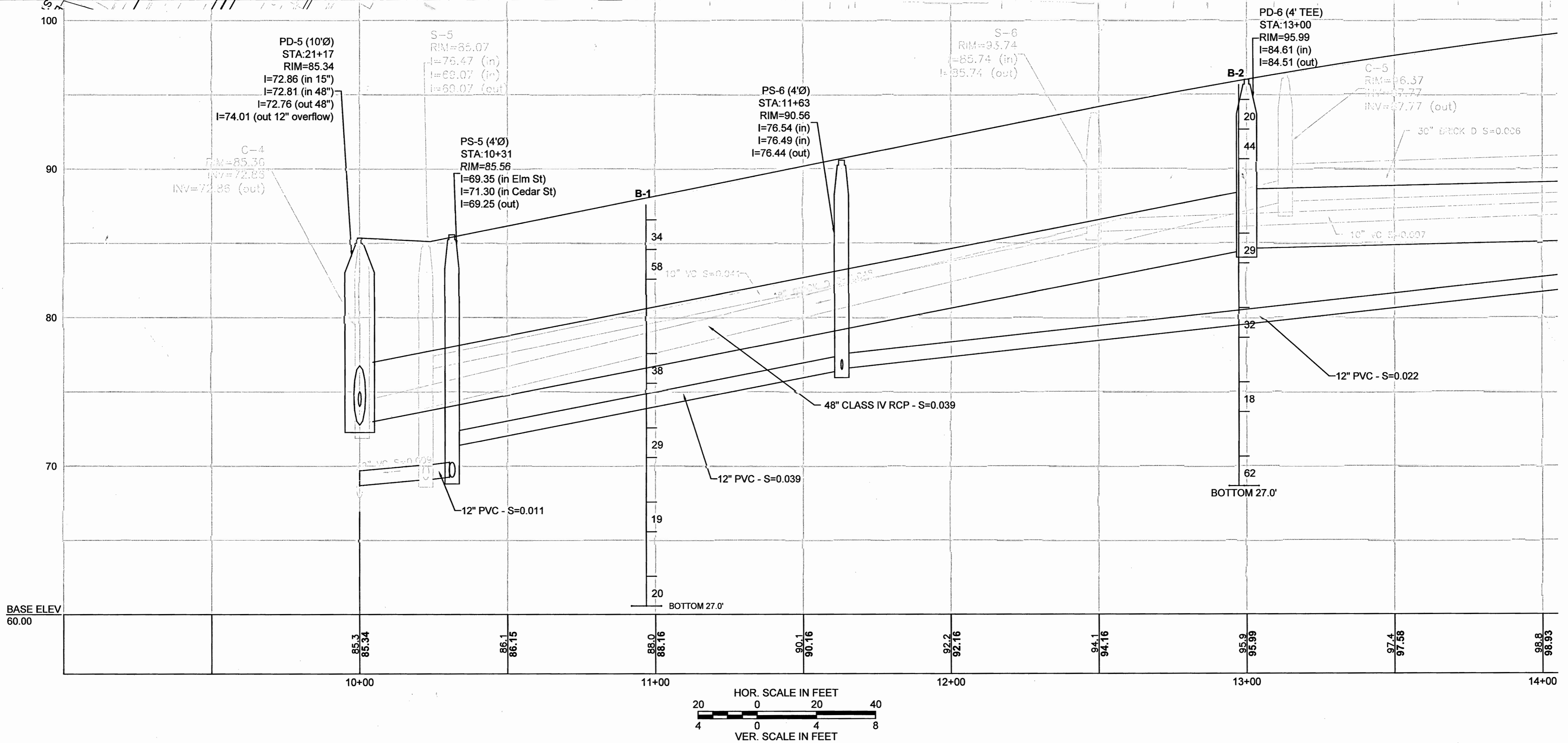
- NOTES:
1. PRIOR TO INSTALLATION OF 48" DRAIN CONTRACTOR SHALL VERIFY ALL ACTIVE SERVICE CONNECTION LOCATIONS IN THE COMBINED SEWER AND SEPARATE SEWERS (2) THROUGH TELEVISION INSPECTION AND DYE TESTING.
 2. PRIOR TO INSTALLATION OF 48" DRAIN CONTRACTOR SHALL TELEVISION INSPECT THE SEPARATE SEWER LOCATED IN THE SOUTH SIDEWALK TO DETERMINE WHETHER THE BUILDINGS ARE CONNECTED TO THE SEPARATE SEWER OR THE COMBINED SEWER (TO BE REPLACED). TELEVISION INSPECTION VIDEO AND LOGS OF THE COMBINED SEWER AND SEPARATE SEWER LOCATED ON THE NORTH SIDE OF ELM STREET ARE INCLUDED IN APPENDIX A.
 3. ACTIVE SEWER SERVICES CONNECTED TO THE COMBINED SEWER SHALL BE RELOCATED TO THE SEPARATE SEWERS LOCATED IN THE SIDEWALK ON EACH SIDE OF ELM STREET. SEWER SERVICES SHALL NOT BE RECONNECTED INTO THE PROPOSED DRAIN.
 4. INACTIVE SERVICES SHALL BE ABANDONED IN ACCORDANCE WITH THE SPECIFICATIONS.
 5. EXISTING CATCH BASIN LEADERS SHALL BE RECONNECTED INTO THE PROPOSED 48" DRAIN.
 6. TEST PITS SHALL BE PERFORMED PRIOR TO ORDERING MANHOLE STRUCTURES.



2. Shared-Project\Somerville\Somerville\2130636 - Cedar Street Sewer Separation\CAD\Design\Work\Utility Pipe Network-Cedar Street.dwg



CONTINUED ON SHEET NO. S-5



Z:\Shared-Projects\Somerville\2130636 - Cedar Street Sewer Separation\CAD\Design\Utility\Pipe Network-Cedar-Station

Weston & Sampson
 Five Centennial Drive, Peabody, MA 01960
 (978) 532-1900 (800) 545PSON
 www.westonandsampson.com

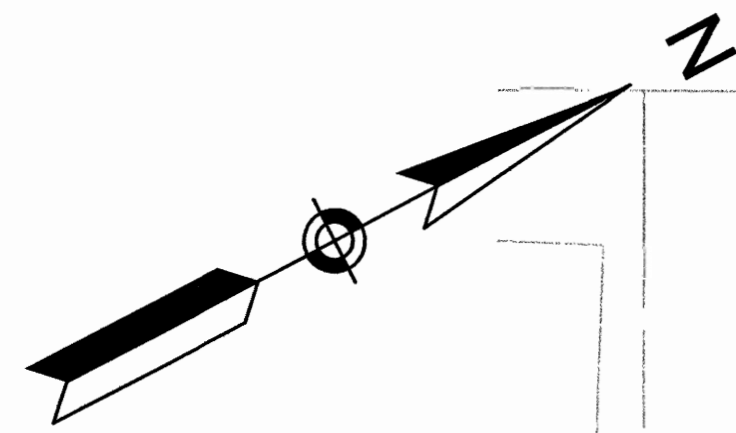
No.	Date	Dr. By	Ck. By	App. By	Description

REGISTERED PROFESSIONAL ENGINEER _____ DATE _____

CITY OF SOMERVILLE, MASSACHUSETTS
 DEPARTMENT OF PUBLIC WORKS

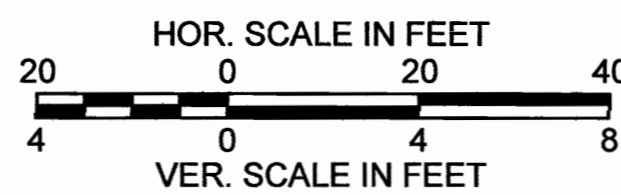
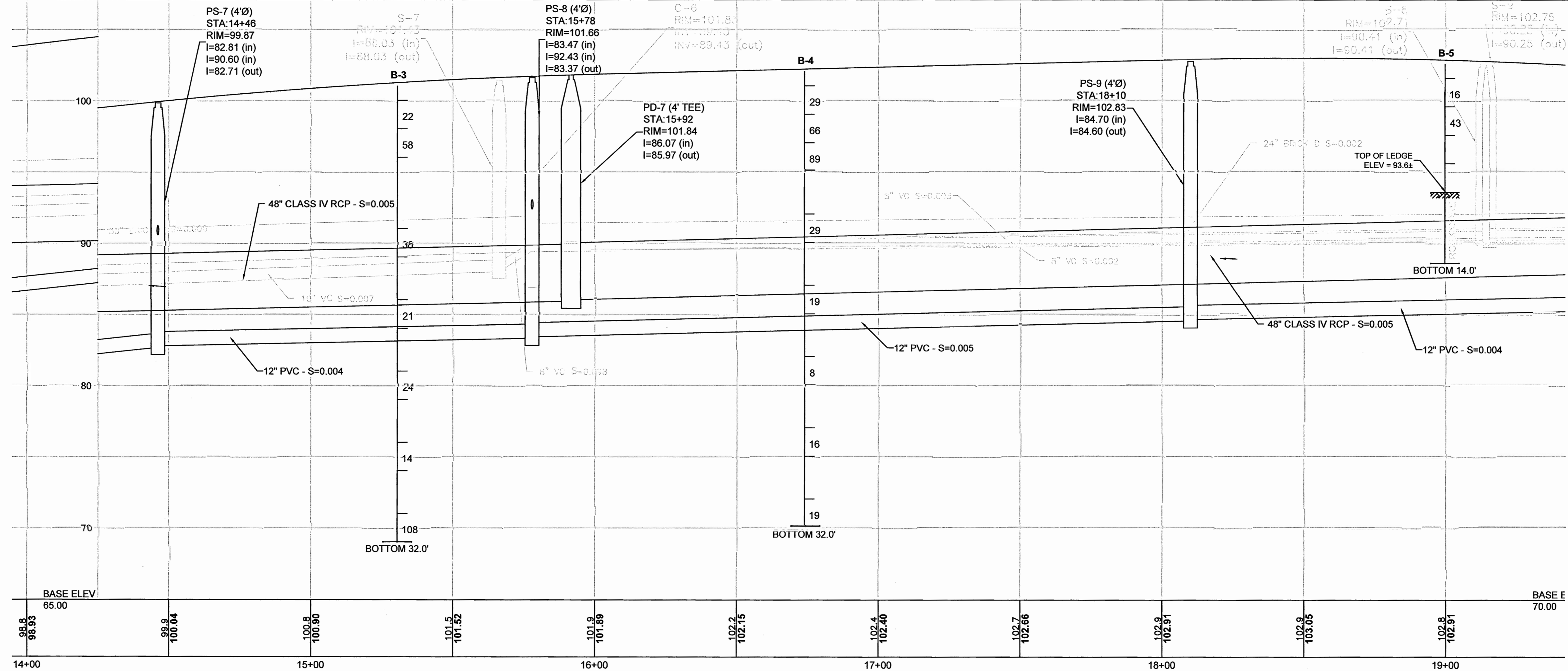
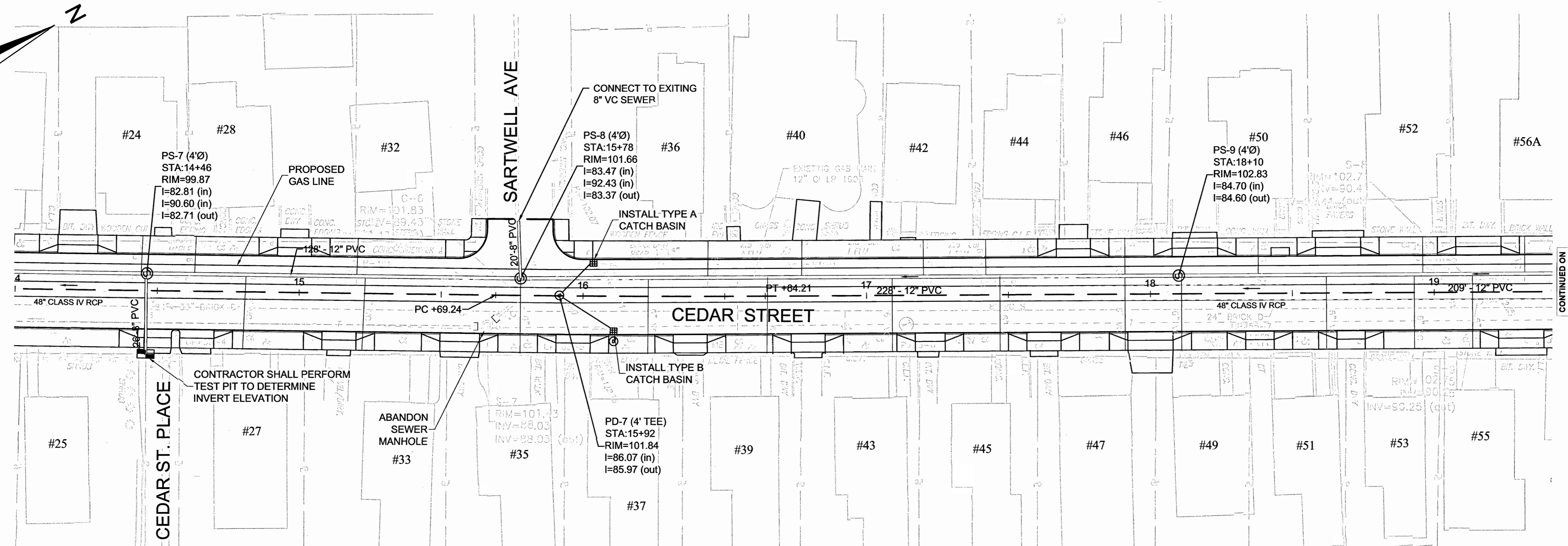
CEDAR STREET SEWER SEPARATION PROJECT
CEDAR STREET
UTILITY PLAN AND PROFILE

CADD NO. _____ SCALE: AS NOTED
 CONTRACT: _____ JOB NO. _____ DR. BY: _____ DS. BY: _____ CHK. BY: _____ APP. BY: _____
 FILE NO. _____



CONTINUED ON
SHEET NO. S-4

CONTINUED ON
SHEET NO. S-6



Z:\Share-Projects\Somerville\2130636 - Cedar Street Sewer Separation\CAD\Design\Utility Pipe Network-Cedar St.dwg

Weston & Sampson
Five Centennial Drive, Peabody, MA 01960
(978) 532-1900 (800) 545PSON
www.westonandsampson.com

DATE _____

No.	Date	Dr. By	App. By	Description

REGISTERED PROFESSIONAL ENGINEER

DATE _____

CITY OF SOMERVILLE, MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
CEDAR STREET SEWER SEPARATION PROJECT

FILE NO. _____

CEDAR STREET
UTILITY PLAN AND PROFILE

CONTRACT: _____

SCALE: AS NOTED

JOB NO. 2130636

CADD NO. _____

DR. BY _____

SCALE: AS NOTED

DSN BY _____

SCALE: AS NOTED

CHK. BY _____

SCALE: AS NOTED

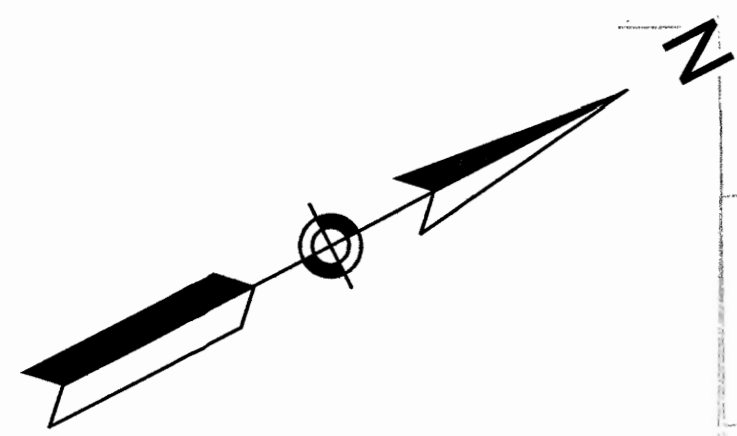
APP. BY _____

SCALE: AS NOTED

DATE _____

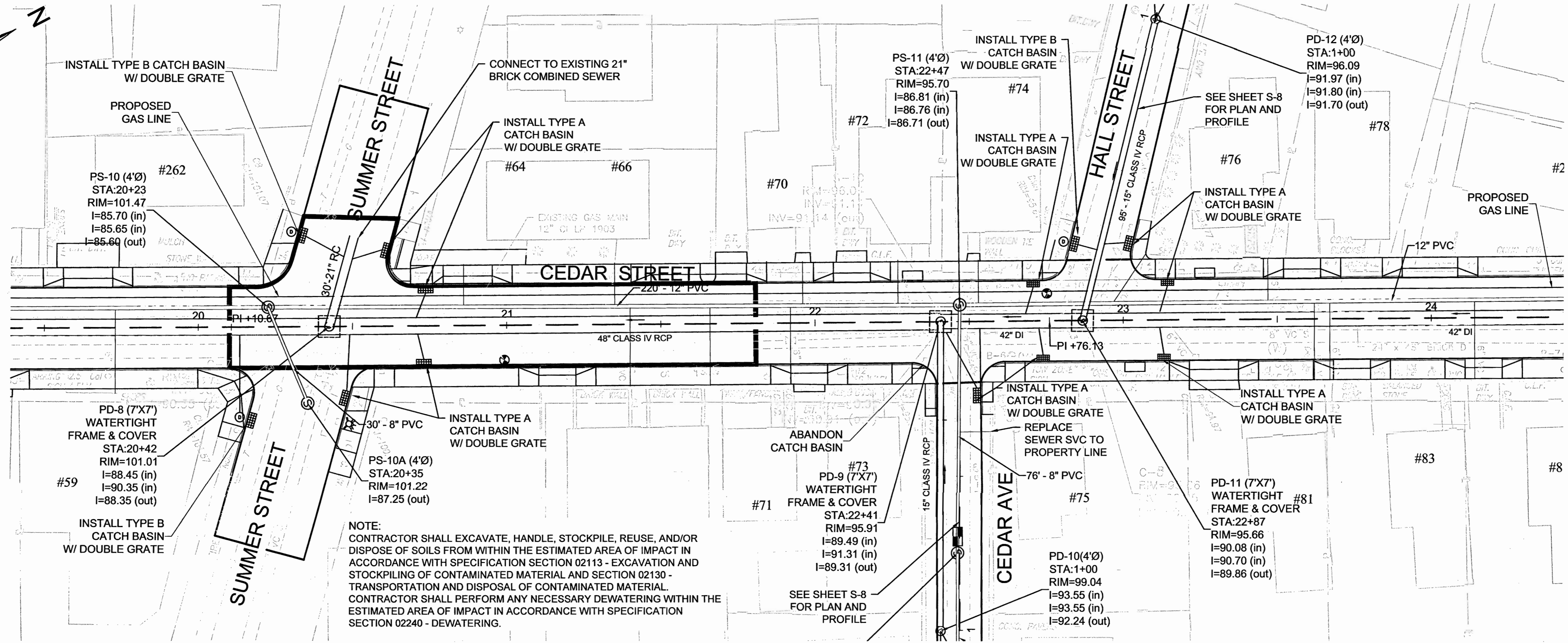
S-5

SHEET 7 OF 33



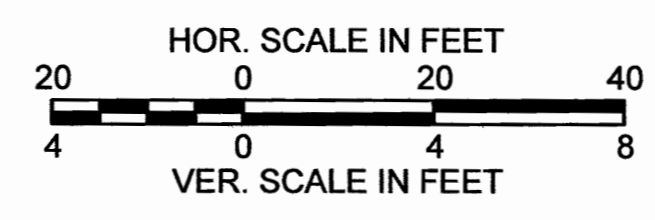
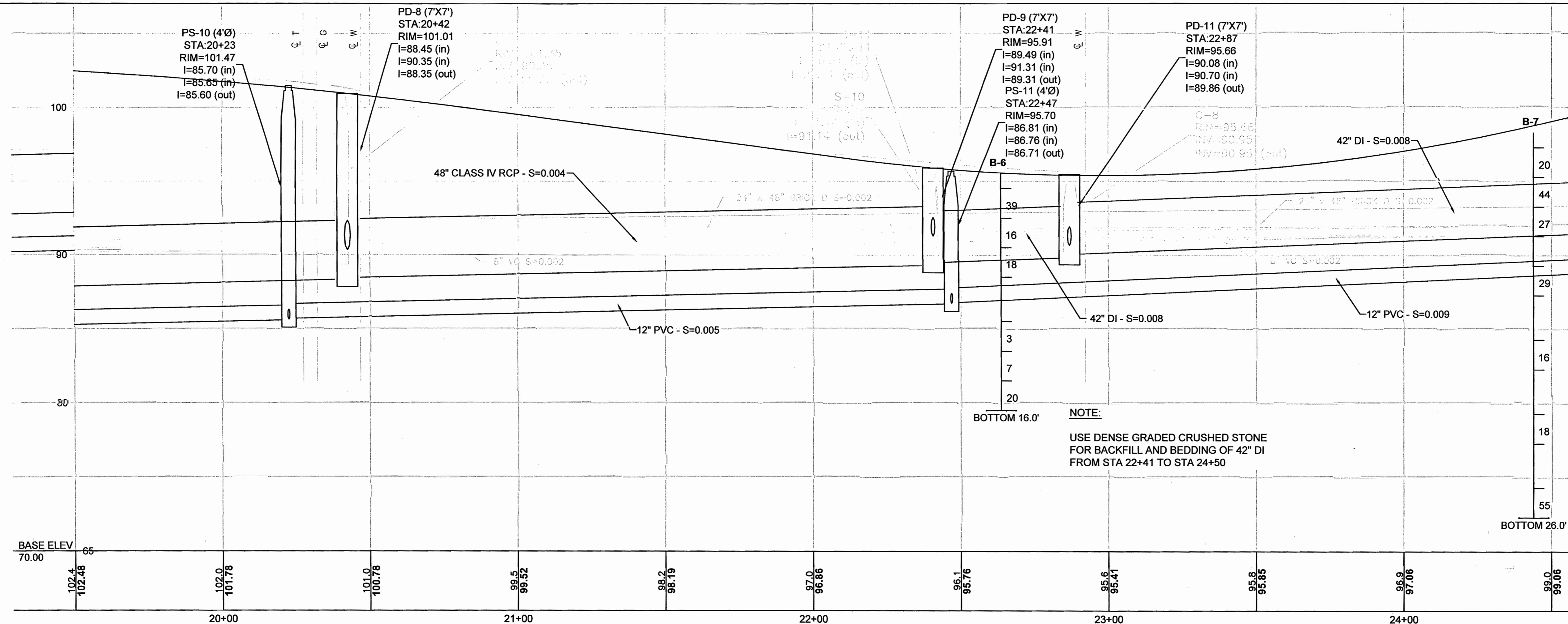
CONTINUED ON
SHEET NO. S-5

CONTINUED ON
SHEET NO. S-7



ESTIMATED AREA OF IMPACT

NOTE:
CONTRACTOR SHALL EXCAVATE, HANDLE, STOCKPILE, REUSE, AND/OR DISPOSE OF SOILS FROM WITHIN THE ESTIMATED AREA OF IMPACT IN ACCORDANCE WITH SPECIFICATION SECTION 02113 - EXCAVATION AND STOCKPILING OF CONTAMINATED MATERIAL AND SECTION 02130 - TRANSPORTATION AND DISPOSAL OF CONTAMINATED MATERIAL. CONTRACTOR SHALL PERFORM ANY NECESSARY DEWATERING WITHIN THE ESTIMATED AREA OF IMPACT IN ACCORDANCE WITH SPECIFICATION SECTION 02240 - DEWATERING.



NOTE:
USE DENSE GRADED CRUSHED STONE FOR BACKFILL AND BEDDING OF 42\"/>

S-6 - Cedar Street Sewer Separation (CAD) Design (Works/Utility Pipe Network-Cedar St.dwg

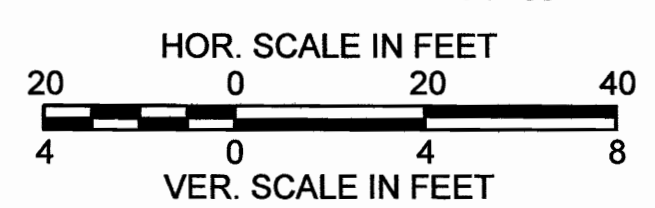
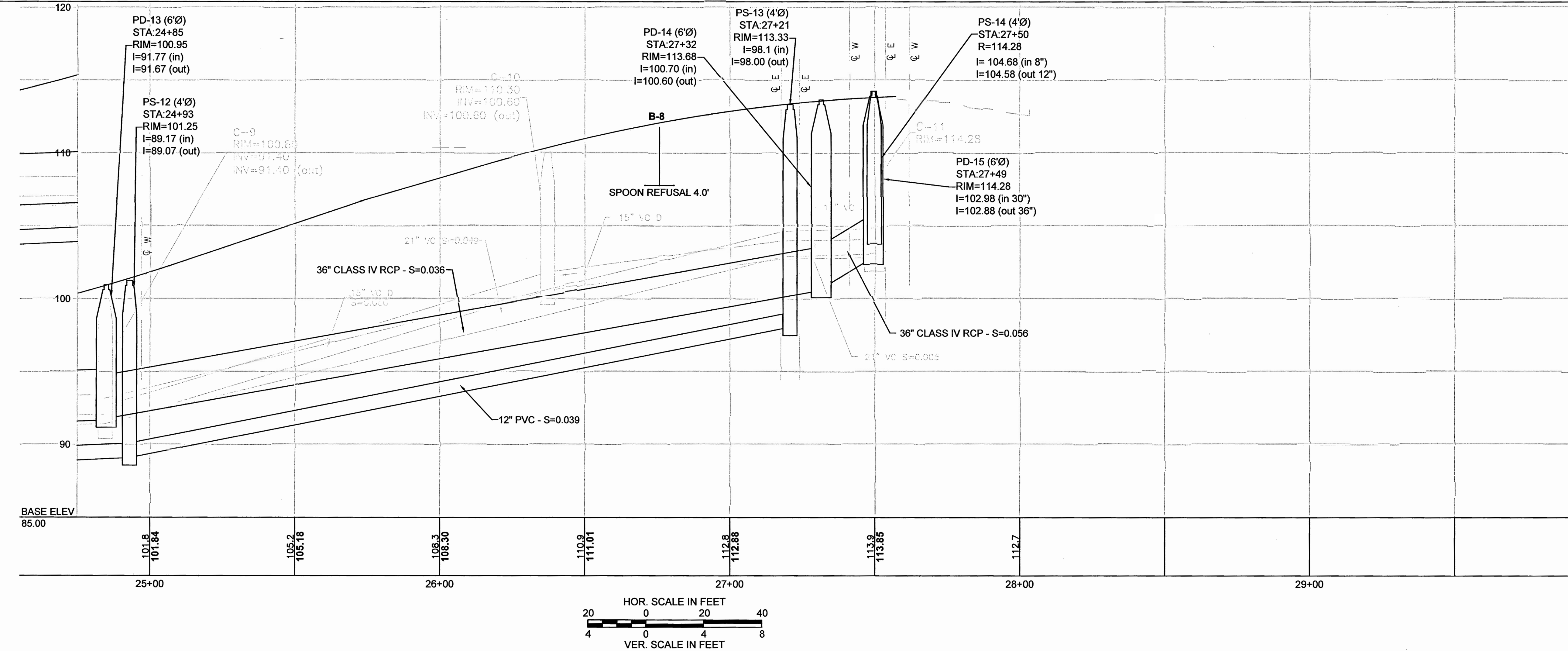
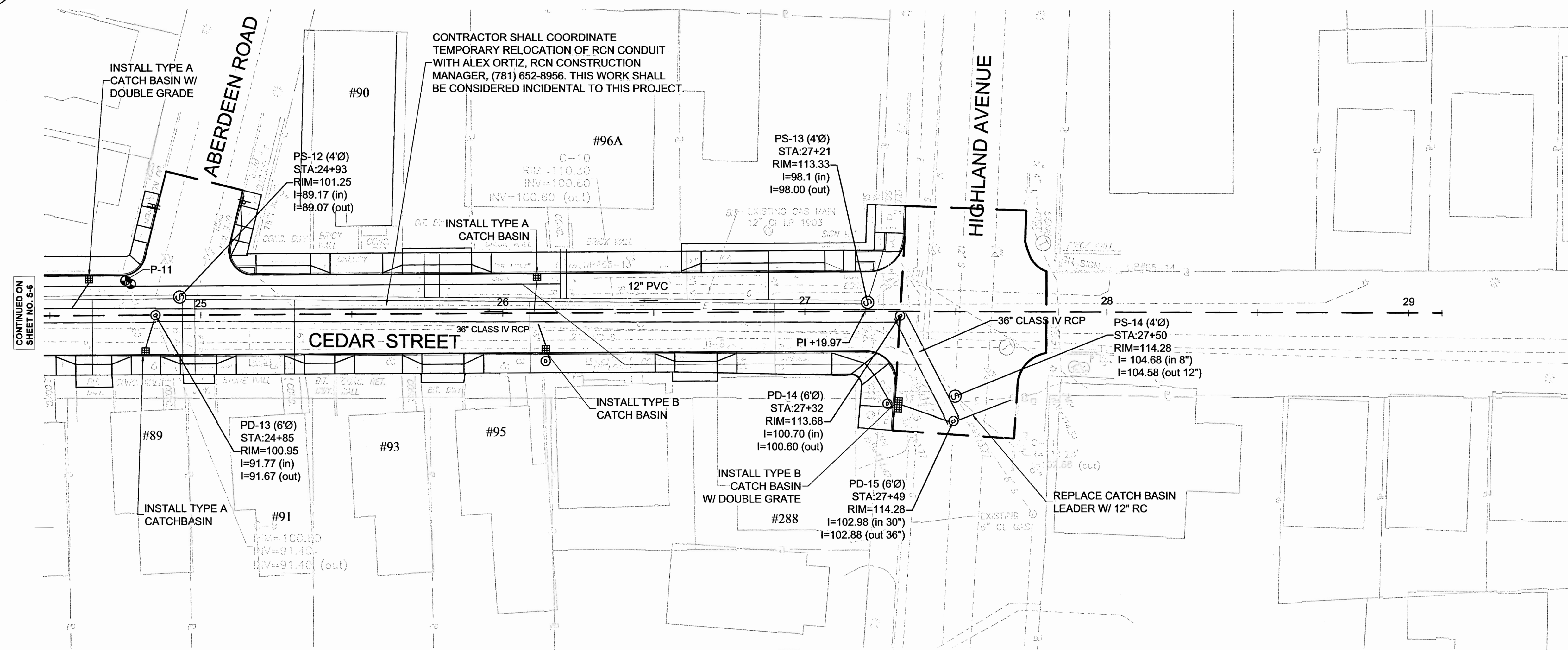
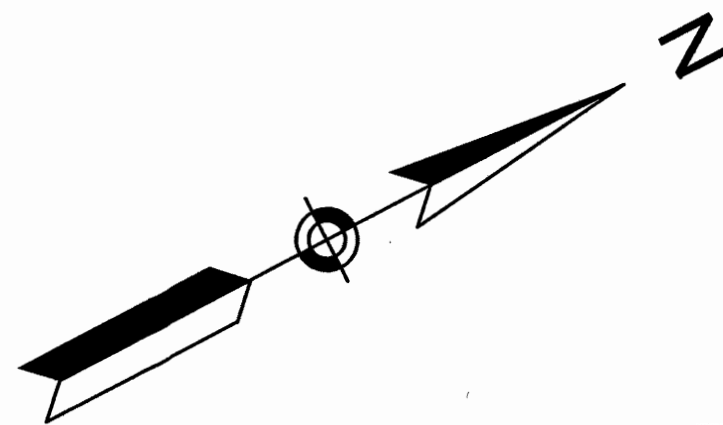
Weston & Sampson
Five Centennial Drive, Peabody, MA 01960
(978) 532-1900 (800) 344PSON
www.westonandsampson.com

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

REGISTERED PROFESSIONAL ENGINEER _____ DATE _____

CITY OF SOMERVILLE, MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
CEDAR STREET SEWER SEPARATION PROJECT
**CEDAR STREET
UTILITY PLAN AND PROFILE**
CADD NO. _____ SCALE: AS NOTED
CONTRACT: 2130636
DR. BY: _____ DSN. BY: _____ CHK. BY: _____ APP. BY: _____

S-6
SHEET 8 OF 33



Weston & Sampson
 Five Centennial Drive, Peabody, MA 01960
 (978) 532-1900 (800) 545PSON
 www.westonsampson.com

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

REGISTERED PROFESSIONAL ENGINEER

DATE _____

CITY OF SOMERVILLE, MASSACHUSETTS
 DEPARTMENT OF PUBLIC WORKS
 CEDAR STREET SEWER SEPARATION PROJECT

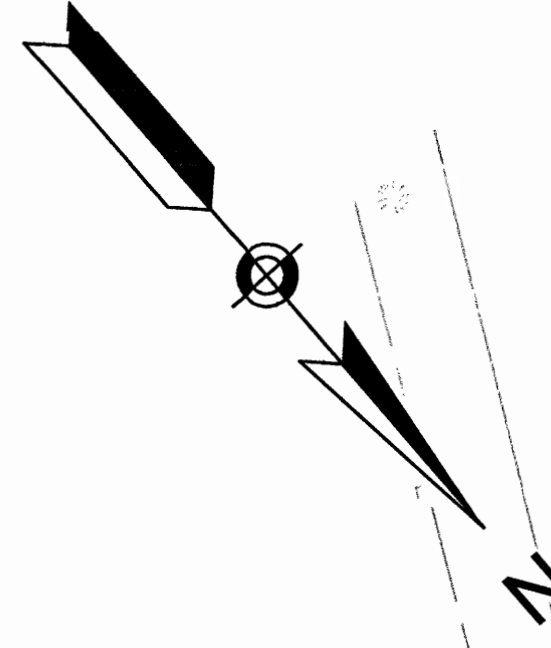
CEDAR STREET
 UTILITY PLAN AND PROFILE

SCALE: AS NOTED CONTRACT: 2130636 DR. BY: [] DSN. BY: [] CHK. BY: [] APP. BY: []

S-1

FILE NO. _____

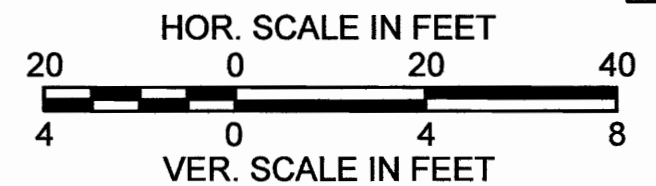
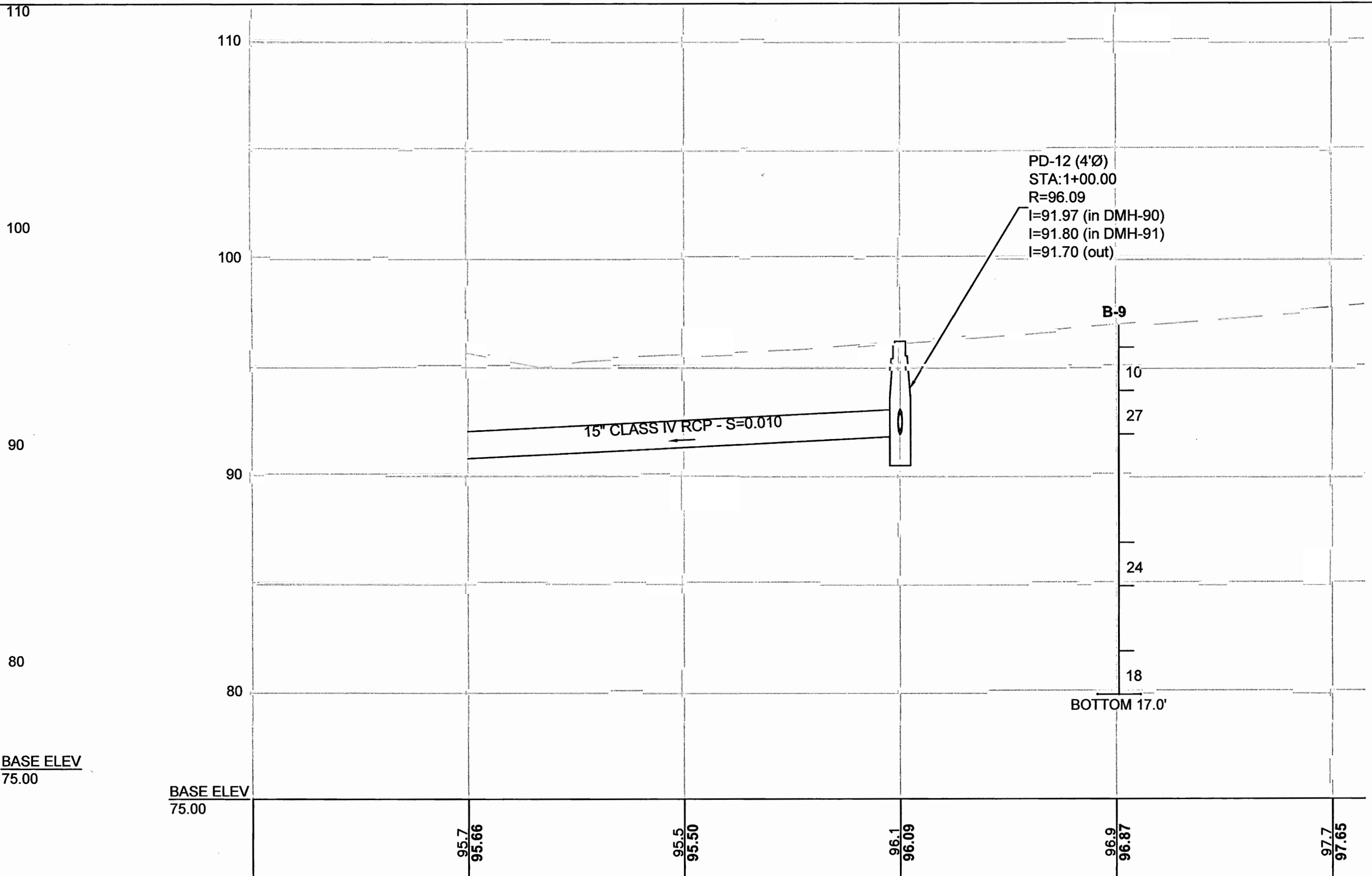
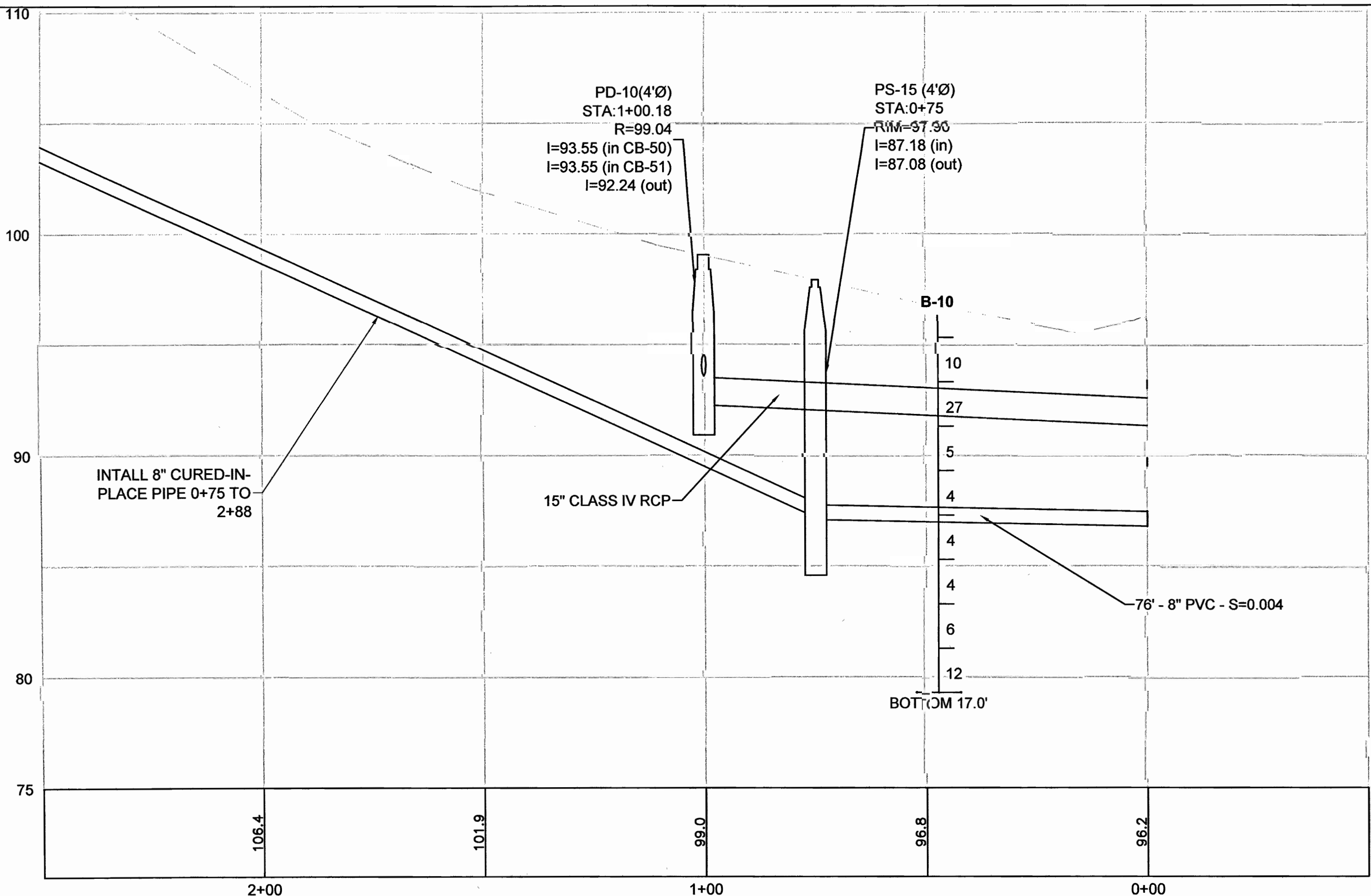
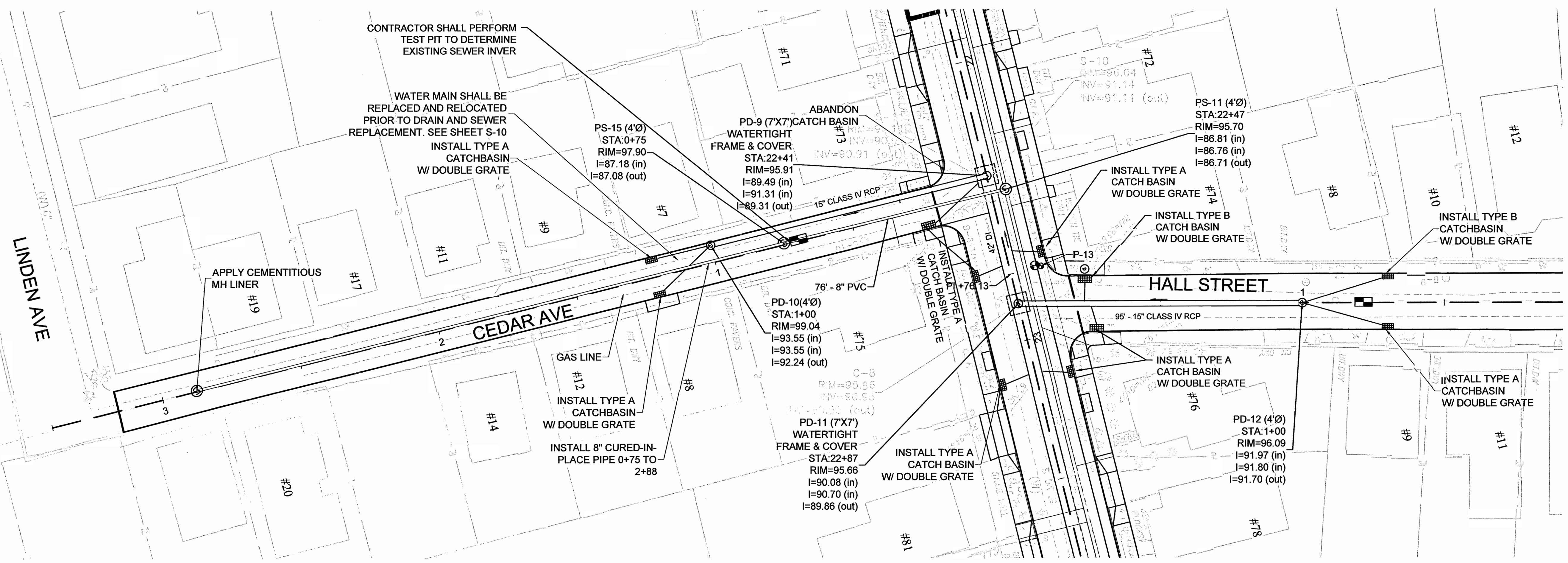
SHEET 9 OF 33



LINDEN AVE

CEDAR AVE

HALL STREET



Z:\Urban-Projects\Somerville\210009 - Cedar Street Sewer Separation\00 Design\Plan\Utility Pipe Network-Cedar St.dwg

Weston & Sampson
 Five Centennial Drive, Peabody, MA 01960
 (978) 532-1900 (800) 541-5500
 www.westonandsampson.com

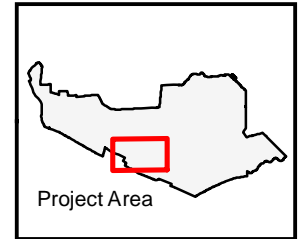
No.	Date	Dr. By	Chk. By	App. By	Description

REGISTERED PROFESSIONAL ENGINEER _____ DATE _____

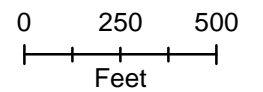
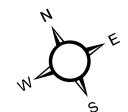
CITY OF SOMERVILLE, MASSACHUSETTS
 DEPARTMENT OF PUBLIC WORKS
 CEDAR STREET SEWER SEPARATION PROJECT
**CEDAR AVENUE & HALL STREET
 UTILITY PLAN AND PROFILE**
 CADD NO. _____ SCALE: AS NOTED
 CONTRACT: 2130636
 JOB NO. _____
 DR. BY _____ DSN. BY _____
 CHK. BY _____ APP. BY _____

S-8
 FILE NO. _____
 SHEET 10 OF 33

CEDAR ST & ELM ST WATER, SEWER & DRAINAGE IMPROVEMENT PROJECT



- Parcels
- Hospital
- Open Space
- Public Building



WSE Job No. 2130636
6/12/2015
ENGINEER'S COST ESTIMATE

DONE BY: Paul Greco
CHECKED BY: David Elmer

**CITY OF SOMERVILLE, MASSACHUSETTS
CEDAR STREET SEWER SEPARATION PROJECT**

ITEM #	QUANTITY	UNIT	DESCRIPTION	UNIT COST	TOTAL AMOUNT
ROADWAY RECONSTRUCTION ITEMS					
102.51	13	EA	Individual tree protection	\$220.00	\$2,860.00
102.52	2	EA	Remove & reset tree	\$500.00	\$1,000.00
103.	12	EA	Tree removed - diameter under 24 inches	\$850.00	\$10,200.00
104.	4	EA	Tree removed - diameter 24 inches and over	\$2,000.00	\$8,000.00
120.1	2610	CY	Unclassified excavation	\$30.00	\$78,300.00
129.	1250	SY	Pavement milling	\$50.00	\$62,500.00
151.	2320	CY	Gravel borrow	\$32.00	\$74,240.00
153.	190	CY	Controlled density fill - Excavatable	\$130.00	\$24,700.00
170.	8350	SY	Fine grading and compacting	\$2.00	\$16,700.00
402.	310	CY	Dense graded crushed stone for sub-base	\$54.00	\$16,740.00
403.	5600	SY	Reclaimed pavement for base course and/or sub-base	\$7.00	\$39,200.00

ITEM #	QUANTITY	UNIT	DESCRIPTION	UNIT COST	TOTAL AMOUNT
403.1	420	TON	Crushed stone for blending	\$19.00	\$7,980.00
420.	1250	TON	HMA base course	\$70.00	\$87,500.00
440.	5600	LBS	Calcium chloride for roadway dust control	\$0.40	\$2,240.00
443.	20	MGL	Water for roadway dust control	\$50.00	\$1,000.00
450.21	970	TON	HMA surface course - modified top	\$115.00	\$111,550.00
451.	1150	TON	HMA for patching	\$175.00	\$201,250.00
452.	610	GAL	Asphalt emulsion for tack coat	\$8.00	\$4,880.00
464.5	3800	FT	Hot poured rubberized asphalt sealer	\$4.00	\$15,200.00
472.	83	TON	Hot mix asphalt for miscellaneous work	\$175.00	\$14,525.00
482.3	650	FT	Sawing asphalt pavement	\$2.50	\$1,625.00
482.4	110	FT	Sawing concrete pavement	\$3.00	\$330.00
504.	100	FT	Granite curbType VA3 - straight	\$45.00	\$4,500.00
504.1	3	FT	Granite curb Type VA3 - curved	\$50.00	\$150.00
509.	830	FT	Granite transition curb for wheelchair ramps - straight	\$40.00	\$33,200.00

ITEM #	QUANTITY	UNIT	DESCRIPTION	UNIT COST	TOTAL AMOUNT
509.1	230	FT	Granite transition curb for wheelchair ramps - curved	\$45.00	\$10,350.00
514.	14	EA	Granite curb inlet - straight	\$300.00	\$4,200.00
580.	2010	FT	Curb removed and reset	\$20.00	\$40,200.00
670.	49	FT	Fence removed and reset	\$42.00	\$2,058.00
697.1	64	EA	Silt sack	\$140.00	\$8,960.00
701.	1310	SY	Cement concrete sidewalk	\$53.00	\$69,430.00
701.2	240	SY	Cement concrete sidewalk wheelchair ramps	\$75.00	\$18,000.00
703.	70	TON	Hot mix asphalt driveway	\$175.00	\$12,250.00
715.1	1	EA	Mailbox removed and reset	\$200.00	\$200.00
751.	2	CY	Loam borrow	\$40.00	\$80.00
765.	15	SY	Seeding	\$1.50	\$22.50
776.	5	EA	Karpick Red Maple	\$675.00	\$3,375.00
804.3	250	FT	3-inch electrical conduit Type NM - Plastic (UL)	\$32.52	\$8,130.00
813.81	1	EA	Service connection (underground)	\$3,000.00	\$3,000.00

ITEM #	QUANTITY	UNIT	DESCRIPTION	UNIT COST	TOTAL AMOUNT
815.1	1	LS	Traffic control signal - Summer Street	\$150,000.00	\$150,000.00
816.80	1	LS	Traffic control signal removed & stacked	\$6,000.00	\$6,000.00
832.	35	SF	Warning-regulatory and route marker - alum. Panel (Type A)	\$10.00	\$350.00
847.1	5	EA	Sign support and route marker w/breakaway post assembly - steel	\$100.00	\$500.00
851.1	340	DAY	Traffic cones for traffic management	\$140.00	\$47,600.00
852.	150	SF	Safety signing for traffic management	\$20.00	\$3,000.00
853.1	2	EA	Portable breakaway barricade - Type III	\$130.00	\$260.00
854.016	2000	FT	Temporary paving markings - 6-inch (painted)	\$0.25	\$500.00
856.	340	DAY	Arrow board	\$11.00	\$3,740.00
856.12	140	DAY	Portable changeable message sign	\$22.00	\$3,080.00
859.	3400	DRUM-DAYS	Reflectorized drum	\$0.25	\$850.00
864.041	120	SF	Pavement arrows and legends reflectorized white (epoxy)	\$4.00	\$480.00
868.04	1950	FT	4 inch reflectorized white line (epoxy)	\$1.00	\$1,950.00
868.06	3170	FT	6 inch reflectorized white line (epoxy)	\$4.00	\$12,680.00

ITEM #	QUANTITY	UNIT	DESCRIPTION	UNIT COST	TOTAL AMOUNT
868.12	710	FT	12 inch reflectorized white line (epoxy)	\$2.50	\$1,775.00
868.3	55	SF	Bicycle symbol white (epoxy)	\$4.00	\$220.00
869.06	100	FT	6 inch reflectorized yellow line (epoxy)	\$1.50	\$150.00
869.1	9000	SF	Green paint for bike lanes (epoxy)	\$3.00	\$27,000.00
874.2	28	EA	Traffic sign removed and reset	\$91.00	\$2,548.00
874.21	1	EA	Miscellaneous sign removed and reset	\$150.00	\$150.00
				SUBTOTAL	\$1,263,458.50

ITEM #	QUANTITY	UNIT	DESCRIPTION	UNIT COST	TOTAL AMOUNT
1			DRAINS COMPLETE IN PLACE		
1a	200	LF	15-inch Class IV RCP drains	\$200.00	\$40,000.00
1b	87	LF	18-inch Class IV RCP drains	\$250.00	\$21,750.00
1c	30	LF	21-inch Class IV RCP drains	\$300.00	\$9,000.00
1d	32	LF	36-inch Class IV RCP drains, 5' to 10' deep	\$325.00	\$10,400.00
1e	254	LF	36-inch Class IV RCP drains, 10' to 15' deep	\$475.00	\$120,650.00
1f	244	LF	42-inch DI drains	\$300.00	\$73,200.00
1g	805	LF	48-inch Class IV RCP drains, 5' to 10' deep	\$350.00	\$281,750.00
1h	1459	LF	48-inch Class IV RCP drains, 10' to 15' deep	\$500.00	\$729,500.00
1i	575	LF	12-inch catch basin lateral	\$100.00	\$57,500.00
				SUBTOTAL	\$1,343,750.00

ITEM #	QUANTITY	UNIT	DESCRIPTION	UNIT COST	TOTAL AMOUNT
2			SEWERS COMPLETE IN PLACE		
2a	153	LF	8-inch PVC pipe	\$200.00	\$30,600.00
2b	35	LF	8-inch DI pipe	\$250.00	\$8,750.00
2c	273	LF	12-inch PVC pipe, 5' to 10' deep	\$200.00	\$54,600.00
2d	503	LF	12-inch PVC pipe, 10' to 15' deep	\$250.00	\$125,750.00
2e	948	LF	12-inch PVC pipe, 15' to 20' deep	\$350.00	\$331,800.00
				SUBTOTAL	\$551,500.00
3			BUILDING CONNECTION SYSTEMS		
3a	62	EA	12X6 wye or tee branches	\$500.00	\$31,000.00
3b	1	EA	8X6 wye or tee branches	\$500.00	\$500.00
3c	165	VF	Chimney	\$100.00	\$16,500.00
3d	1380	LF	6-inch building connections	\$100.00	\$138,000.00
3e	84	EA	Push camera inspection of existing building connection	\$500.00	\$42,000.00
3f	46	EA	Dye testing of existing building connection	\$500.00	\$23,000.00
3g	19	EA	Relocate Elm Street sewer service to separate sewer	\$5,000.00	\$95,000.00
				SUBTOTAL	\$346,000.00

ITEM #	QUANTITY	UNIT	DESCRIPTION	UNIT COST	TOTAL AMOUNT
4			MANHOLES AND CATCH BASINS		
4a	14	EA	4' diameter precast concrete manhole base	\$2,500.00	\$35,000.00
4b	183	VF	4' diameter precast concrete manhole walls & cones	\$550.00	\$100,650.00
4c	3	EA	6' diameter precast concrete manhole base	\$3,000.00	\$9,000.00
4d	34	VF	6' diameter precast concrete manhole walls & cones	\$795.00	\$27,030.00
4e	2	EA	8' diameter precast concrete manhole base	\$5,000.00	\$10,000.00
4f	17	VF	8' diameter precast concrete manhole walls & cones	\$1,335.00	\$22,695.00
4g	1	EA	10' diameter precast concrete manhole base	\$7,500.00	\$7,500.00
4h	13	VF	10' diameter precast concrete manhole walls & cones	\$961.00	\$12,493.00
4i	2	EA	4' tee precast concrete manhole base	\$890.00	\$1,780.00
4j	27	VF	4' tee precast concrete manhole walls & cones	\$890.00	\$24,030.00
4k	3	VF	7' x 7' precast box manhole base	\$10,000.00	\$30,000.00
4l	25	VF	7' x 7' precast box manhole walls and top slab	\$1,000.00	\$25,000.00
4m	1	LS	Furnish & install 14' x 8' precast concrete vault complete	\$100,000.00	\$100,000.00
4n	5	EA	Precast concrete catch basin (TYPE A) with single frame & cascade grate	\$5,000.00	\$25,000.00

ITEM #	QUANTITY	UNIT	DESCRIPTION	UNIT COST	TOTAL AMOUNT
4o	15	EA	Precast concrete catch basin (TYPE A) with double frame & cascade grate	\$5,000.00	\$75,000.00
4p	4	EA	Precast concrete catch basin (TYPE B) with single frame & cascade grate	\$7,500.00	\$30,000.00
4q	7	EA	Precast concrete catch basin (TYPE B) with double frame & cascade grate	\$7,500.00	\$52,500.00
4r	21	EA	Furnish & install manhole frame and cover	\$1,200.00	\$25,200.00
4s	4	EA	Furnish & install bolted & gasketed watertight frame and cover	\$2,000.00	\$8,000.00
4t	3	EA	Abandon manhole or catch basin	\$1,000.00	\$3,000.00
4u	42	VF	Cementitious lining of manholes	\$150.00	\$6,300.00
				SUBTOTAL	\$630,178.00
5	CLEANING AND INSPECTION OF SEWERS				
5a	910	LF	Cleaning and inspection of 8-inch to 12-inch sewers	\$4.00	\$3,640.00
				SUBTOTAL	\$3,640.00
6	CURED-IN-PLACE PIPE				
6a	213	LF	8-inch cured-in-place pipe	\$60.00	\$12,780.00
6b	838	LF	12-inch cured-in-place pipe	\$80.00	\$67,040.00
6c	10	EA	Grout reinstated service connections	\$600.00	\$6,000.00
				SUBTOTAL	\$85,820.00

ITEM #	QUANTITY	UNIT	DESCRIPTION	UNIT COST	TOTAL AMOUNT
7			WATER MAINS AND FITTINGS		
7a	35	LF	6-inch ductile iron pipe & fittings	\$100.00	\$3,500.00
7b	482	LF	8-inch ductile iron pipe & fittings	\$140.00	\$67,480.00
7c	2493	LF	12-inch ductile iron pipe & fittings	\$140.00	\$349,020.00
7d	2000	LBS	Additional fittings	\$10.00	\$20,000.00
				SUBTOTAL	\$440,000.00
8			POLYETHYLENE ENCASEMENT		
8a	3010	LF	Polyethylene encasement	\$2.00	\$6,020.00
				SUBTOTAL	\$6,020.00

ITEM #	QUANTITY	UNIT	DESCRIPTION	UNIT COST	TOTAL AMOUNT
9			HYDRANTS AND VALVES		
9a	6	EA	Hydrant assembly	\$5,000.00	\$30,000.00
9b	6	EA	Remove existing hydrant	\$500.00	\$3,000.00
9c	1	EA	6-inch gate valve	\$2,500.00	\$2,500.00
9d	7	EA	8-inch gate valve	\$2,500.00	\$17,500.00
9e	11	EA	12-inch gate valve	\$3,500.00	\$38,500.00
9f	1	LS	Furnish & Install Check Valve Manhole	\$25,000.00	\$25,000.00
				SUBTOTAL	\$116,500.00
10			WATER SERVICE CONNECTIONS		
10a	77	EA	3/4" corporation stops	\$1,000.00	\$77,000.00
10b	77	EA	3/4" curb stops	\$300.00	\$23,100.00
10c	1482	LF	3/4" copper piping and fittings	\$35.00	\$51,870.00
				SUBTOTAL	\$151,970.00

ITEM #	QUANTITY	UNIT	DESCRIPTION	UNIT COST	TOTAL AMOUNT
11			TEMPORARY SERVICE PIPING		
11a	2382	LF	2-inch temporary service main	\$15.00	\$35,730.00
11b	1742	LF	4-inch temporary service main	\$15.00	\$26,130.00
				SUBTOTAL	\$61,860.00
12			MISCELLANEOUS EARTHWORK		
12a	12900	CY	Excavation and backfill of unsuitable material above normal grade	\$12.00	\$154,800.00
12b	600	CY	Excavation and backfill of unsuitable material below normal grade	\$18.00	\$10,800.00
12c	490	TON	Removal and disposal of Group A contaminated Material	\$45.00	\$22,050.00
12d	120	TON	Removal and off-site treatment/recycling of Group B contaminated material	\$60.00	\$7,200.00
12e	500	CY	Test pits	\$100.00	\$50,000.00
12f	50	CY	Bentonite clay dams	\$500.00	\$25,000.00
12g	100	CY	Additional crushed stone	\$10.00	\$1,000.00
12h	100	CY	Additional concrete encasement	\$30.00	\$3,000.00
				SUBTOTAL	\$273,850.00

ITEM #	QUANTITY	UNIT	DESCRIPTION	UNIT COST	TOTAL AMOUNT
13			ROCK EXCAVATION AND DISPOSAL		
13a	575	CY	Rock excavation and disposal (min)	\$100.00	\$57,500.00
13b	575	CY	Rock excavation and disposal (add'l)	\$50.00	\$28,750.00
				SUBTOTAL	\$86,250.00
14			SEWER, WATER, AND DRAIN RECONSTRUCTION		
14a	18	EA	Sewer, water, and drain reconstruction within trench limits	\$1,200.00	\$21,600.00
				SUBTOTAL	\$21,600.00
15			TEMPORARY BYPASS PUMPING SYSTEM		
15a	1	LS	Temporary bypass pumping system	\$25,000.00	\$25,000.00
				SUBTOTAL	\$25,000.00
16			RODENT CONTROL		
16a	1	LS	Rodent control, lump sum	\$5,000.00	\$5,000.00
				SUBTOTAL	\$5,000.00
17			MOBILIZATION		
17a	1	LS	Mobilization	\$268,984.38	\$284,069.04
				SUBTOTAL	\$284,069.04

ITEM #	QUANTITY	UNIT	DESCRIPTION	UNIT COST	TOTAL AMOUNT
18			PRICE ADJUSTMENTS		
18a	3702	GALLONS	Price Adjustment for Diesel fuel used in excavation and borrow work, where price variance is five (5) percent or greater	\$0.23	\$851.46
18b	2931	GALLONS	Price Adjustment for Gasoline used in excavation and borrow work, where price variance is five (5) percent or greater	\$0.21	\$615.51
18c	9019	GALLONS	Price Adjustment for Diesel fuel used in surfacing work (paving), where price variance is five (5) percent or greater	\$0.23	\$2,074.37
18d	171	TONS	Price Adjustment for Liquid Asphalt used in hot mix asphalt mixtures, where price variance is five (5) percent or greater	\$54.25	\$9,276.75
				SUBTOTAL	\$12,818.09
				SUBTOTAL	\$5,709,283.63
				CONTINGENCY: 5%	\$285,464.18
				TOTAL	\$5,994,747.82