







DECEMBER 2023, REVISED JULY 2024

Centralville Sewer Separation Revised Preliminary Design Report (Humphrey's Brook Revised PDR) Volume 2 of 2 (Appendices)

Prepared for:

Lowell Regional Wastewater Utility

Appendix A: MassDEP Comments Letter received on March 5, 2024

Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
Northeast Regional Office • 150 Presidential Way Woburn, MA 01801 • 978-694-3200

Maura T. Healey
Governor

Kimberley Driscoll
Lieutenant Governor

Rebecca L. Tepper
Secretary

Bonnie Heiple
Commissioner

March 5, 2024

Aaron Fox
Executive Director
Lowell Regional Wastewater Utility
451 First Street Blvd.
Lowell, MA 01850

Re: Centralville Sewer Separation Preliminary Design Report
Civil Action No. 1:24-cv10290

Dear Mr. Fox:

The Massachusetts Department of Environmental Protection (MassDEP) has received and reviewed the Centralville Sewer Separation Preliminary Design Report (PDR), prepared by CDM Smith on behalf of the Lowell Regional Wastewater Utility. The PDR was dated December 31, 2023 and submitted pursuant to Civil Action No. 1:24-cv-10290. The PDR will form the basis for removing Humphrey's and Billings Brooks, and other inflow sources from the City of Lowell's (City) sewer system.

After reviewing the document, MassDEP finds that the PDR is well-written, and clearly identifies the scope of the work, the many critical design factors, and the array of engineering and permitting challenges. Further, the two alternatives being carried forward are well-supported based on the information in the PDR; and, in the case of the Aiken Street outfall, provides a means to facilitate efficient sewer separation of adjacent Area 40. However, there are a number of areas where additional technical information must be compiled and assessed to finalize the PDR and move on to final design. Some of this work is acknowledged in the "Next Steps" listing in the PDR. MassDEP and the Environmental Protection Agency (EPA) provide the following comments, which should also be addressed in completing the PDR work:

1. The PDR indicated that the City deploys level monitors in the sewer system at some locations to provide real-time information on system surcharging. The City should include a map showing the locations of the level monitors.
2. The PDR mentions potential "green solutions" without any detail on locations where use of green infrastructure could be effective. The Final PDR should include an assessment

This information is available in alternate format. Please contact Melixza Esenyie at 617-626-1282.
TTY# MassRelay Service 1-800-439-2370
MassDEP Website: www.mass.gov/dep

Printed on Recycled Paper

for incorporating these elements into the design plan. It appears there may be some city-owned sites in the project area that may hold potential for such projects.

3. The PDR includes a figure showing measured versus modeled Humphrey's Brook flows (fig 4.3) while, as noted in the PDR, no consistent bias is clear, and there are some substantial discrepancies in the measured versus modeled flows, which raises some concerns. The Final PDR should include a discussion of the model calibration, and use of 2023 flow data, which has been cited as a potential issue.
4. Estimate of CSO abatement: The central goal of the sewer separation work is to mitigate CSO discharges from the City's combined sewer system. The Final PDR must include an estimate of the projected CSO abatement benefits to be achieved upon completion of the Centralville Sewer Separation work. Where some of these benefits can be achieved incrementally, those benefits should be described in the Final PDR, with the work phased to optimize water quality benefits.
5. Upper Jewett/Hampshire Street area:
    a. CDM should indicate if use of a regulator structure to divert (surcharged) flows from a potential new drain system to the existing combined sewer was considered as a means to address any risk of street flooding, which is expressed as a major concern. This could further maximize sewer separation in the project area, and reduce risk of street flooding.
    b. The City is recommending exclusion of this 32-acre area from the sewer separation work, and has indicated that a design including a new stormwater outfall on Aiken Street will afford the opportunity for an even larger area to be separated (Area 40), which could offset the impact of this exclusion. However, it does not appear that the City is committing to the Area 40 sewer separation work, deferring any recommendations in that Area until the successive Phase 3 Sewer Separation PDR, which is more focused in scope on the City's combined sewer system south of the River.
    c. The PDR has no estimate of the incremental increase in CSO activations and volumes, which may occur by excluding the Upper Jewett/Hampshire Street area. This information needs to be provided.
    d. For the PDR to be approvable by MassDEP, it must either include a plan to separate the 32 acres in the Upper Jewett/Hampshire Street area (by making modifications to the current plan to divert surcharged flows to the existing combined sewer, if feasible) or a commitment to complete Area 40 sewer separation work as part of the Centralville Sewer Separation project (i.e., not delay it to Phase 3 Sewer Separation).
6. The cost estimate carries $20-$27 million for sewer separation in area 40, depending on which of the two alternatives is selected. CDM should clarify if this represents partial or full sewer separation in that area.
7. Final Recommended Sewer Separation Plan and Schedule: the Final PDR must include a listing and schedule of design and construction work, identifying all key deadlines to complete the recommended work in accordance with the provisions of the Consent Decree. That listing must include, at a minimum:
    a. The scope and plan to complete work to incorporate infiltration/inflow removal, including private inflow removal, into the design of the sewer separation work;

b. Completion dates and sequencing for the permitting, design and construction work; and,
c. Cost estimates for each phase of the work.

MassDEP looks forward to continuing to work with the City to complete this important CSO abatement work. If you have any questions regarding these comments, please contact Susannah King at Susannah.King@mass.gov or (857) 300-3294.

Sincerely,

Kristin L. Divris 3/5/2024

Kristin L. Divris
Deputy Regional Director
Bureau of Water Resources

Ecc: I. Andrew Goldberg, Assistant Attorney General/EPD
Heidi Zisch, MassDEP Regional Counsel
Toni Bandrowicz, EPA Counsel
Doug Koopman, EPA Water Technical Unit
James Drake, CDM Smith

Appendix B: Lowell 2023 Sewer Separation – Model Calibration

Memorandum

To: *FILE*

From: *Lauren Dwyre, Mitch Heineman, and Scott Craig*

Date: *July 25, 2024*

Subject: *Lowell 2023 Sewer Separation – Model Calibration*

Introduction

This document describes CSO model updates and expansion conducted as part of the 2023 Sewer Separation Program and Consent Decree Compliance project. Model updates were completed to represent existing conditions and recalibrate sanitary, hydrology, and hydraulic components. The revised model will be used for assessing CSO and planning system improvements.

Previous Work

The updates and expansion to the model build on previous updates done for the 2014 Phase 2 Long-Term Control Plan (LTCP) completed by CDM Smith, and for the 2019 Integrated Capital Plan completed by Hazen. Model updates for the 2014 LTCP involved expanding the model, recalibrating sanitary flow, hydrology, and hydraulic components to existing conditions at 24 temporary flow meters, updating control rules at the diversion stations, and refining subcatchment delineations. The updates completed for the 2019 Integrated Plan involved recalibrating the model to 26 temporary flow meters deployed from April to August 2018, updating control rules at the diversion stations, and addition of the North Bank Control Station to the model subsequent to its 2018 construction.

Model Overview

Duck Island Wastewater Treatment Facility (WWTF) serves combined areas in Lowell, separated areas in Lowell, Chelmsford, Dracut, Tewksbury, and Tyngsborough, and drainage from Hovey wetland, Billings wetland, and Humphrey's Brook in Dracut and Lowell. The updated model has 600 nodes, 330 subcatchments, 600 conduits (primarily 12-inch and larger pipes), and a single downstream boundary in the Merrimack River at Hunts Falls. **Figure 1** shows the model subcatchments; **Figure 2** shows the modeled conduits and nodes.

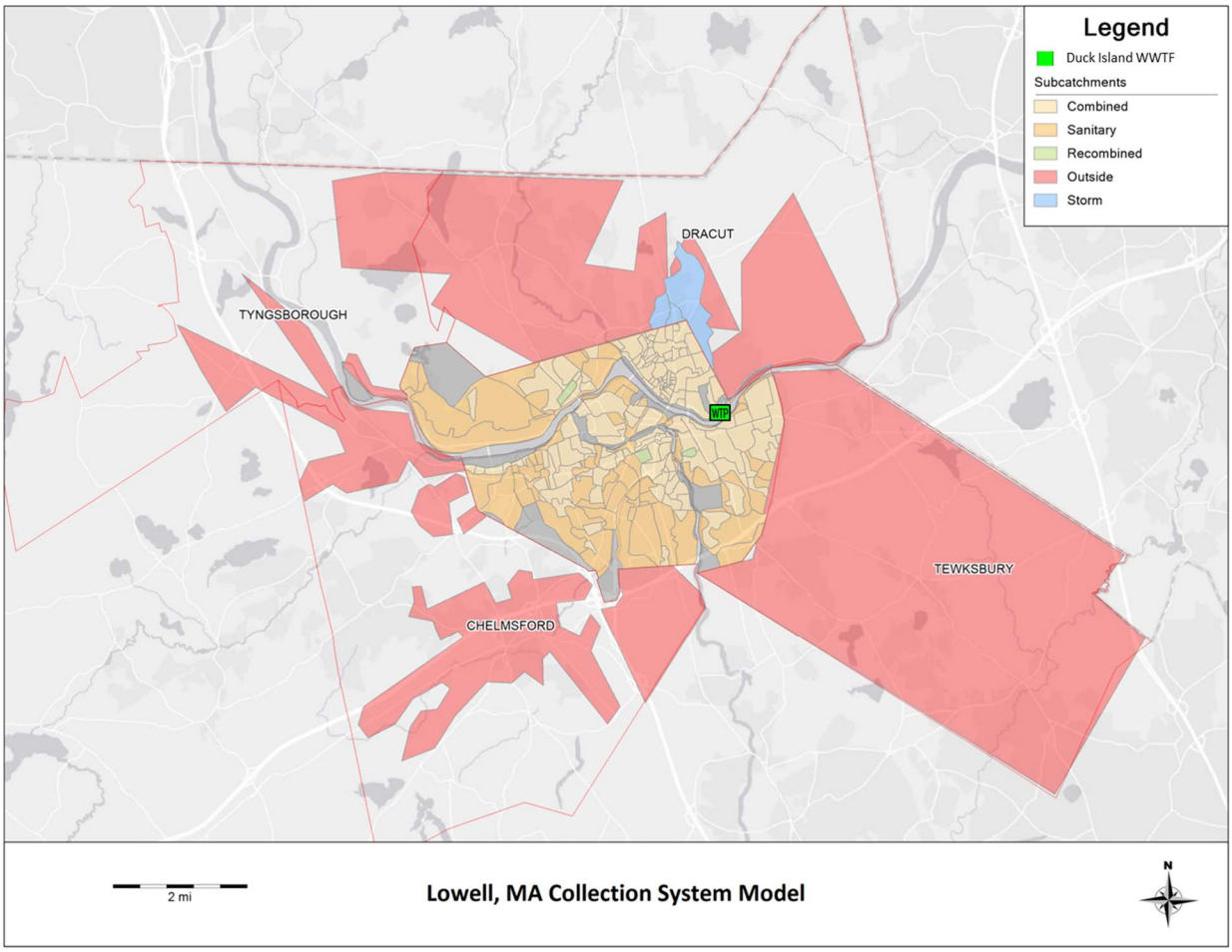


Figure 1: Lowell collection system model subcatchments

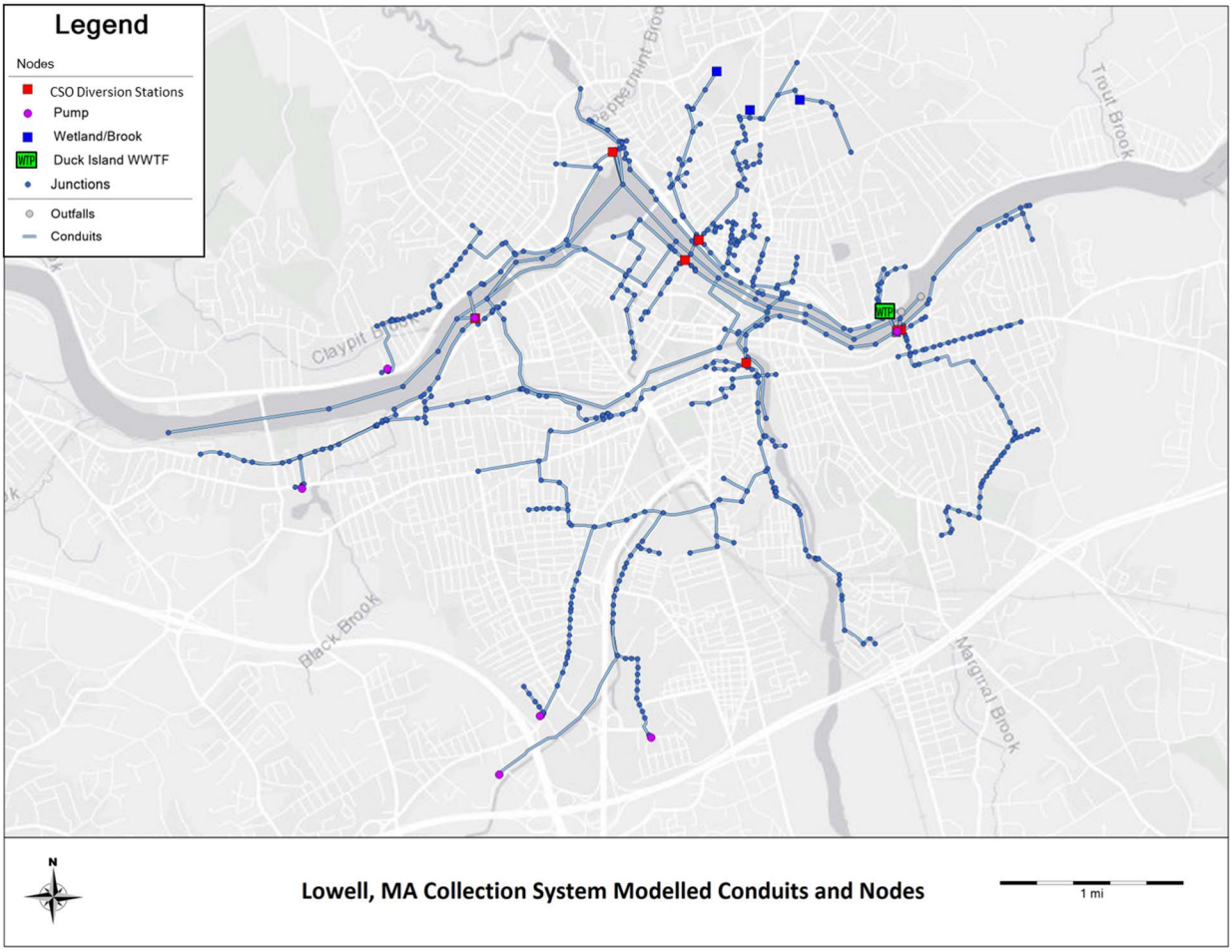


Figure 2: Lowell collection system model conduits and nodes

Nine SCADA-controlled CSO diversion stations and the North Bank Control Station together maintain a peak hourly flow of 105 mgd to Duck Island through storage and diversion. Walker Street, Beaver Brook, West Street, Read Street, and First Street serve the 96-inch North Bank Interceptor; Warren Street, Tilden Street, Barasford Avenue, and Merrimack CSO diversion stations serve the 120-inch South Bank Interceptor. First Street is offline and is not included in current modeling. The North Bank Control Station, constructed in 2018 upstream of Read Street station, helps maximize wet weather storage in the North Bank interceptor.

Merrimack River, Beaver Brook, and Concord River are represented with upstream flow boundaries based on USGS gage 01100000 on the Merrimack below the Concord River confluence. Measured flow timeseries for the gage are apportioned among the three rivers. The downstream boundary condition on the Merrimack River is hydraulically controlled by Hunts Falls. The falls is represented as a weir that simulates local hydraulic conditions.

Centralville Overview

The Centralville area is shown in **Figure 3**. Centralville is part of the North Bank Interceptor system that drains directly to the West Street CSO diversion station. It incorporates 485 acres of combined area in

Lowell plus flow from Hovey wetland, Billings wetland, Humphrey's Brook, and separated sewers serving part of Dracut.

The Centralville portion of the model was calibrating independently of the full system model based on two upstream flow conditions and downstream levels at the North Bank Control Station. The upstream flows to the Centralville collection system are outflow from the Beaver Brook CSO diversion station and sanitary flow from Dracut. Simulated flow from Beaver Brook CSO diversion station based on pre-2023 modeling was already matched well to observed 2023 SCADA measurements. Flow from Dracut was calibrated to the revenue meter located at Book Street at the Lowell/Dracut border. Gate settings at the North Bank Control Station were updated to be representative of the 2023 High Flow Management Plan.

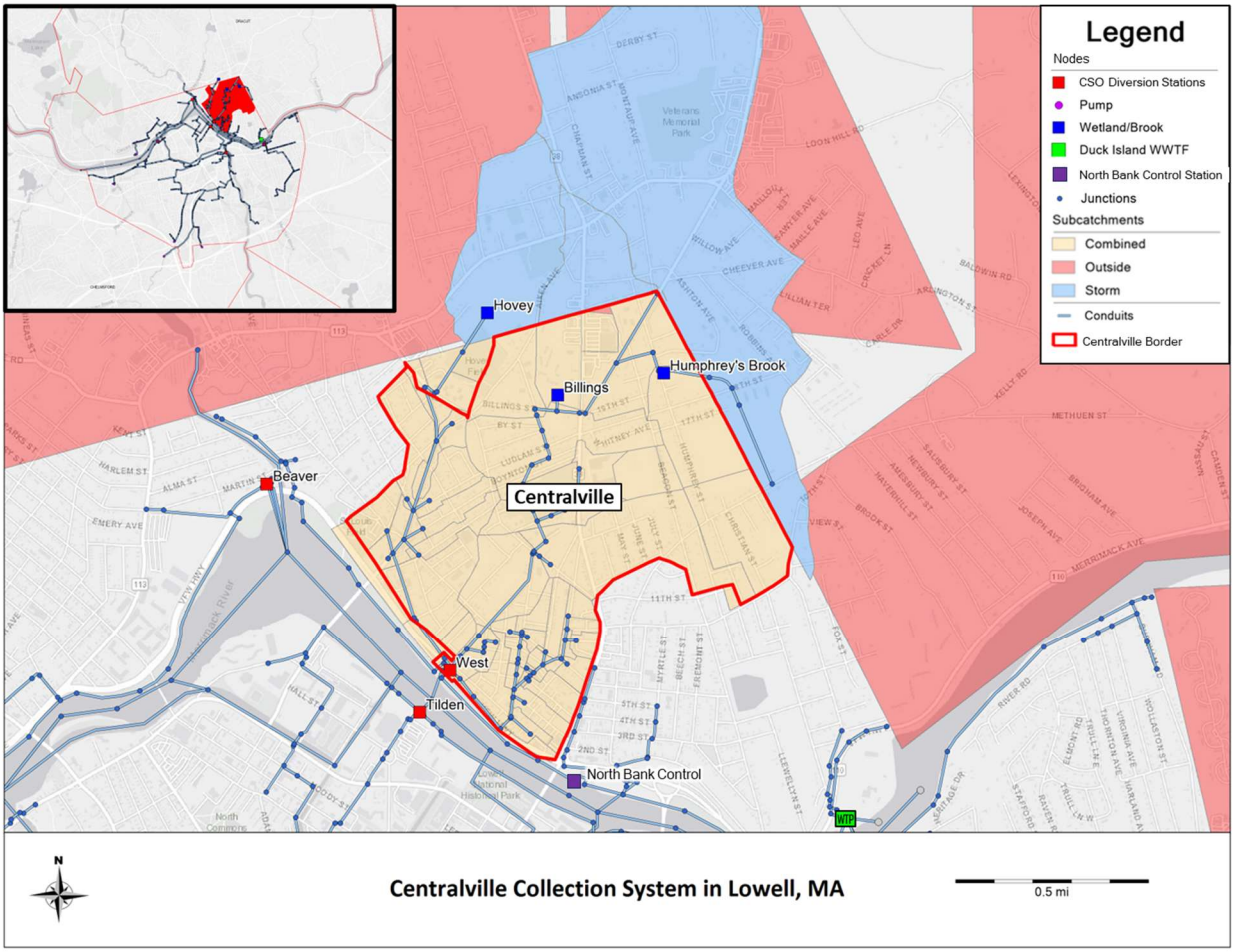


Figure 3: Centralville location and modeled collection system

Flow from the upstream boundary conditions and from Centralville drain directly to West Street CSO diversion station. West Street station has a control gate that remains half open to allow controlled flow to drain downstream to the North Bank Control Station. West Street station also has a diversion gate that opens when depth in the interceptor reaches 8 feet; the gate modulates to maintain interceptor depth at 7.5 feet. The diversion gate closes when interceptor depth falls below 6 feet. Controlled flow from West Street CSO diversion station drains to the North Bank Control Station, where the gate is held at 15 percent open during dry weather conditions and modulates during wet weather based on flow from

Merrimack Station in the South Bank Interceptor system to maintain a flow of 105 mgd to the treatment plant.

Model Updates

PCSWMM, a stormwater modeling software that uses the EPA SWMM computational engine, was used to update and run the model. Updates were made to ensure the model represents current conditions and includes more details in high priority areas such as Centralville. These updates include:

- Model expansion
- Sanitary flow rate adjustments
- Control station hydraulics
- Humphrey's Brook inflow representation
- Inlet constraint representation
- Radar rainfall application

Sanitary Flow Rate Adjustments

Sanitary flow rates were updated system-wide to reflect 2020 census population per subcatchment. Previously, the model relied on flow values estimated from dry weather flow metering. Using population data allows for a better estimation of sanitary flow for unmetered areas. The 2020 Census blocks for Lowell were intersected using GIS with the model subcatchment areas and the population per subcatchment was added to the model. To determine the sanitary flow from each subcatchment, a gallon per capita-day (gpcd) of 56 was applied system-wide. This value was determined based on other collection system models serving similar population sizes in urban areas. The gpcd value is multiplied by each subcatchment's population to determine the sanitary flow draining to the system. An updated hourly diurnal pattern was created based on the diurnal pattern observed at Duck Island using 15-min effluent SCADA data. This pattern was applied system-wide to the sanitary flow.

Control Station Updates

The configuration of the North Bank Control Station was updated to be more representative of the structure. Additionally, the control rules were updated to better match the dry and wet weather operations as described in the 2023 High Flow Management Plan and the SCADA depth data.

Model Expansion

The model was expanded and further delineated in multiple areas in Centralville including Hovey wetland and the Coburn and Jewett Street area. These areas are shown in Figure 4. For Hovey wetland, the model was expanded from Aiken Street/Lakeview Avenue to Hildreth Street. A storage node was added to represent Hovey wetland and a drain was added to connect the wetland to the system at Hildreth Street. The subcatchments along this added segment were delineated to add more detail. Manhole nodes in low-lying areas near Aiken Street at Lakeview Avenue were added. In the Coburn Street and Jewett Street area, the model was expanded from VFW Highway to Coburn Street at West 6th Street and up to Jewett Street and Hampshire Street. Subcatchments in this area were further delineated to add more detail. Manhole nodes at low-lying areas were also added.

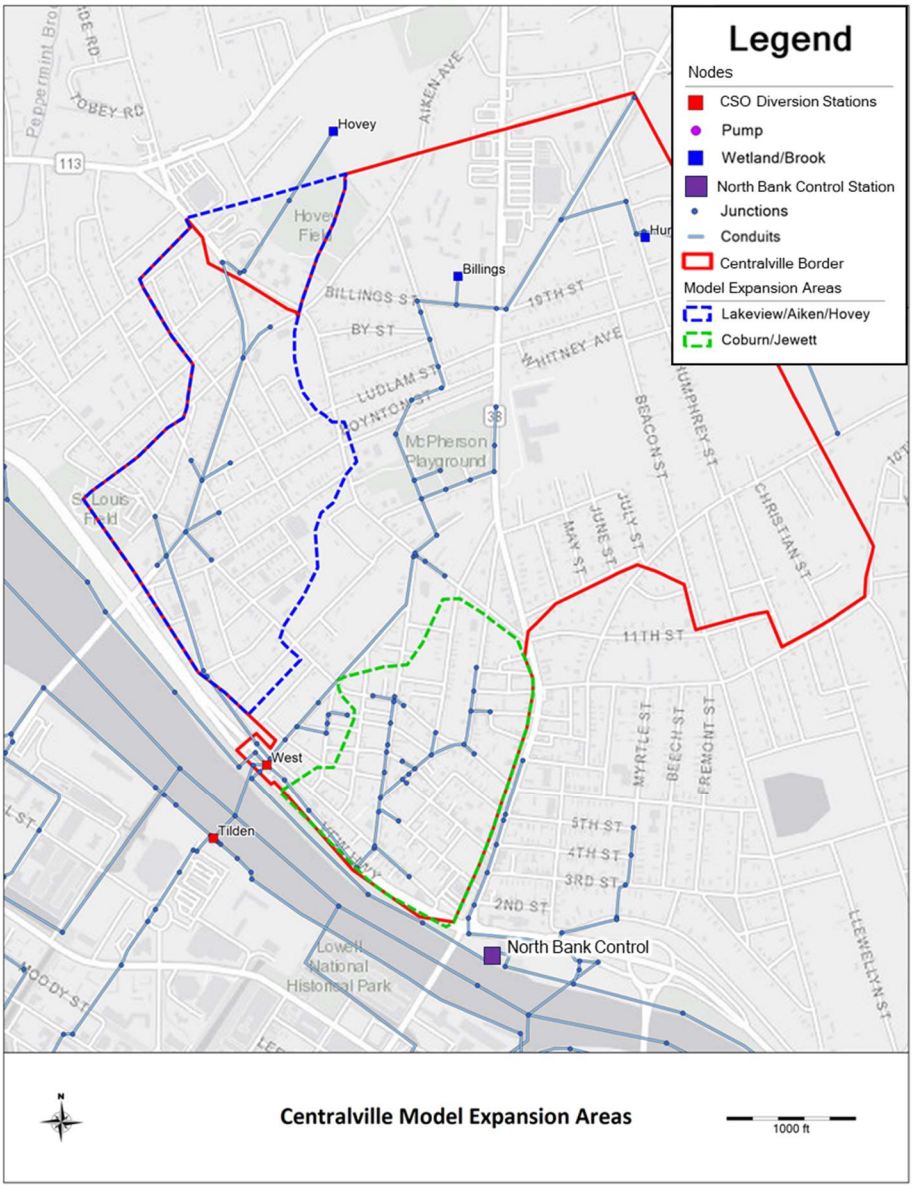


Figure 4: Centralville model expansion areas at Lakeview Avenue, Aiken Street, and Hovey, and in Coburn Street and Jewett areas.

Humphrey's Brook Inflow Representation

Previous model versions had the Humphrey's Brook flow from a subcatchment drain directly into the system. To better represent the Humphrey's Brook inflow, a storage node was added where the subcatchment was routed to. The storage node was connected to the system via a 36-inch pipe at Humphrey Street.

Inlet Constraint Representation

LID controls were implemented to replicate the effects of inlet constraints on the system. During short-duration, high-intensity storm events, the model would flood in areas where the LRWWU had no reported flooding. The LID controls were applied such that the low intensity storms were not affected

but the peak flow entering the system during the short-duration high intensity storms were damped. This inlet constraint application reduced or eliminated flooding in areas of no reported flooding.

Radar Rainfall Application

NOAA's hourly gridded 1-km Multi-Radar Multi-Sensor quantitative precipitation estimation (MRMS QPE) data was utilized for Lowell and surrounding areas (Dracut, Chelmsford, Tyngsborough, and Tewksbury) for 2023. The QPE data was intersected with the subcatchments, allowing each one to have its own rainfall timeseries using a stochastic method. The hourly timeseries were then synthetically disaggregated to 15-minute intervals. The QPE data provided a more representative rainfall across the model, especially during the highly spatially variable summer storms.

Metering Data

The extensive metering data available from different sources for Lowell was utilized for both dry weather and wet weather calibration. Location of the meters used to calibrate the model are shown in **Figure 5**.

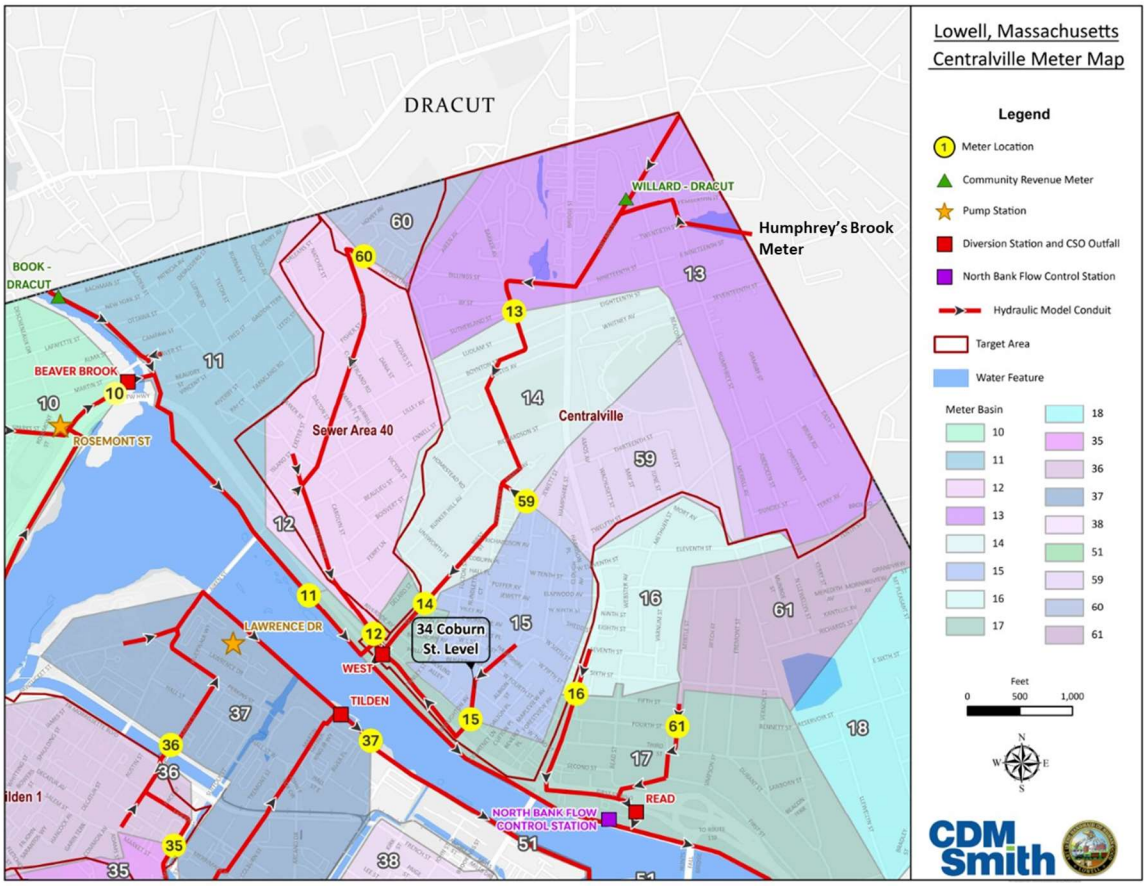


Figure 5: Meter locations in Centralville used for 2023 Calibration.

Spring 2023 I/I Program

From March to June 2023, 63 temporary flow meters were installed throughout the system by ADS for Kleinfelder's infiltration and inflow (I/I) program. Of the 63 meters installed, 7 meters were within Centralville and are described in **Table 1**. ADS also installed a rain gage at Sheehy Park. This rain gage

was used for rainfall analysis in addition to the rain gages maintained by LRWWU at Warren CSO Diversion Station, Rivers Edge, and Duck Island. Data analysis after meter removal revealed flow imbalances (e.g., upstream meters had higher flow than downstream meters, etc.). ADS adjusted measurements at selected locations to attain balanced flowrates. As the flow updates did not include corresponding adjustments to velocity, calibration to depth and flow was prioritized.

Table 1: ADS Meter Locations

Meter Site	Location	Pipe Size
11	Merrimack Walking Path upstream of West Station	96”
12	427 Lakeview Avenue upstream of West Station	54”
13	Barker Avenue at Sutherland Street	48”
14	54 West Street upstream of West Station	60”
15	Coburn Street and Lakeview Avenue upstream of West Station	41”
59	85 Hildreth Street	38”
60	George Avenue downstream of Hovey wetland	24”

LRWWU SCADA

The LRWWU SCADA system collects 15-minute depth and gate position data at all CSO Diversion Stations and Duck Island. Depth measurements are used to calculate approximate CSO and flow to the interceptor system. The following datasets were used to support Centralville calibration and validation:

- Beaver Brook Diversion Station
  - gravity diversion flow, gravity gate position, controlled flow, control gate position
- West Street CSO Diversion station
  - interceptor depth, gravity diversion flow, gravity diversion gate position, control gate position
- North Bank Control Station
  - interceptor depth and gate position
- Duck Island WWTF
  - effluent flow

2008 Brook Metering

Flow Assessment Services conducted flow metering for Hovey wetland, Billings wetland, and Humphrey’s Brook from September 2007 to September 2008 to measure flow from these areas into Lowell’s collection system. Due to data quality issues, the Billings wetland meter was not used for calibration. The Hovey wetland meter was used to help characterize flow for Hovey and Billings wetlands. The Humphrey’s Brook meter was used to characterize the flow for Humphrey’s Brook.

Humphrey's Brook Meter

In November 2022, a Hach flow and depth meter was installed at Humphrey's Brook inlet. This meter continuously collects 30-minute data. The meter was implemented to determine the amount of flow entering the combined system directly from the brook.

34 Coburn Street SSO Level Meter

Lowell has multiple level sensors installed throughout the system to monitor SSOs at low-lying areas. The 34 Coburn level meter is located downstream of two converging pipes at a low elevation manhole and collects continuous 5-minute depth data. Sanitary Sewer Overflows (SSO) at this location occur when the metered depth reaches 9.5 feet. There were no observed SSOs at this location in 2023. Due to a meter outage from March to May 2023, it was not included in the Spring Calibration.

Dracut Willard Street Sewer

A revenue meter on Willard Street, at the Lowell/Dracut border, measures flow from Dracut to Centralville. This meter collects 5-minute depth and velocity data of sewer drainage since May 2016. Most of the flow at this location is separated sanitary flow with some I/I during wet weather events.

Dry Weather Calibration

Dry weather flow includes diurnally varied sanitary flow with groundwater infiltration. This section describes the methodology and results of the calibration to ADS meters during a dry weather period in May 2023.

Methodology

Dry weather calibration aims to match the simulated flow with the observed meter data during a selected dry period at each meter location while maintaining a flow balance at the WWTF. SWMM groundwater module simulates groundwater levels and estimates pipe infiltration using input parameters such as water table elevation and depth, and initial soil moisture. These parameters were updated system-wide to refine the groundwater infiltration estimates. Moreover, where simulated dry weather flow was significantly lower than observed data, baseflow adjustments were made by introducing additional I/I or commercial flows upstream of those meters. Finally, minor adjustments to sanitary flows were implemented as needed.

Prior to depth calibration, GIS data of the system was reviewed to verify pipe invert elevations and slope. Additionally, sediment was added to the pipes based on ADS meter install logs. Manning's N coefficient was primarily adjusted to calibrate simulated depths against measured depths at the meters. Most pipes started with a Manning's N coefficient of 0.013. This coefficient was increased incrementally downstream of meters if the depth in the model was too low until the simulated depth was at or slightly higher than the observed depth at the meter. The maximum Manning's N coefficient value assigned was 0.017. 2

Selected Period

Dry weather calibration requires a period of at least a week with no precipitation during and immediately before the start of the period. To effectively capture diurnal patterns, the period should encompass both weekdays and weekends. For all ADS meters across the system, the optimal dry weather calibration period was identified as May 7 to May 18, 2023. This selection is based on the absence of precipitation during this timeframe, with the preceding significant storm on May 2.

Results

Overall, simulated flows and depth closely follow the observed data at all meter locations in Centralville. **Figure 6** shows a timeseries of simulated and observed flow at Meter 15 during the dry weather period. Meter 15 was located on a 40-inch pipe on Coburn Street upstream of West Street CSO diversion station. The simulated depths matched the observed depths at all meter locations except for Meter 14. At this location, the modeled depth was lower than the observed by about 4 inches. This depth difference could be due to a blockage in the pipe downstream of the meter that was not noted in the install logs. The dry weather calibration achieved a flow balance with the simulated dry weather effluent at Duck Island closely matching the SCADA effluent data. Calibration plots for the remaining ADS meters during the dry weather period are found in **Attachment 1.**

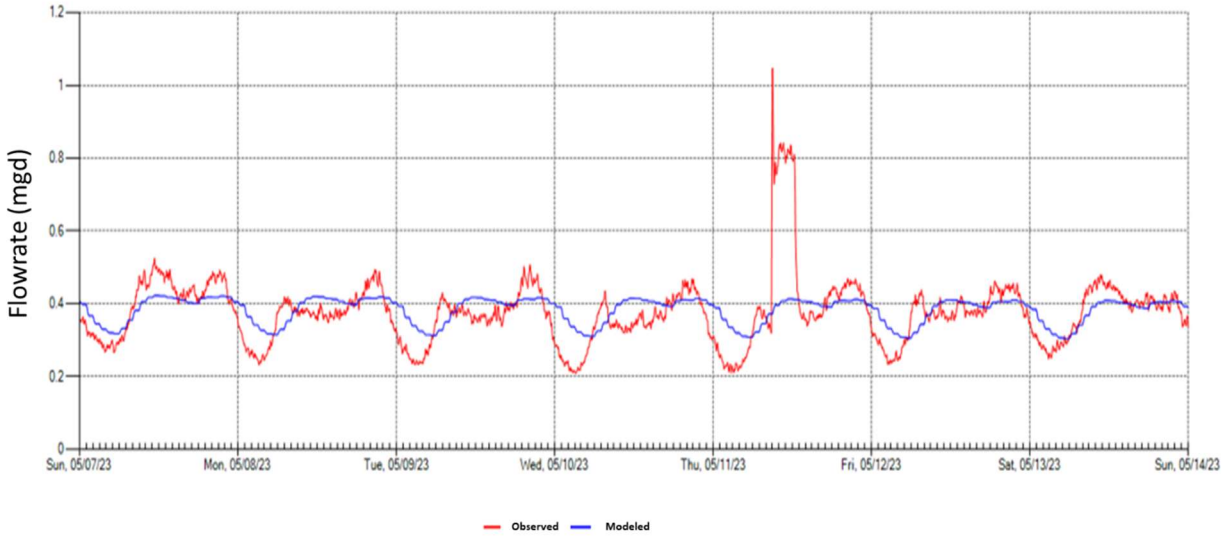


Figure 6: Simulated and Observed Flow at Meter 15 during Dry Weather Period

Wet Weather Calibration

In Centralville, the model accounts for various wet weather contributions to the system including drainage from combined areas, I/I from sewered areas in Dracut, and drainage from Hovey wetland, Billings wetland, and Humphrey's Brook.

Methodology

Wet weather calibration followed the guidance provided by The UK Chartered Institution of Water and Environmental Management (CHIWEM), summarized in **Table 2**. This guidance recommends that the model should meet the criteria outlined in Table 2 for at least 2 storms out of 3 principal storm events.

Table 2: Summary of CHIWEM guidance for wet weather model calibration

Parameter	General	Critical Locations	Comments
Shape	Good match (NSEC if used >0.5)	Good match (NSEC if used >0.5)	An evaluation technique may be used to compare the shape such as the Nash-Sutcliffe Efficiency Coefficient (NSEC) together with a visual check.
Time of peaks and troughs	±0.5 hour	±0.5 hour	Timing of peaks and troughs should be similar having regard to the duration of the event
Peak depth (unsurcharged)	Greater of ±0.3 ft or ±10%	±0.3 ft	
Peak depth (surcharged)	+1.5 to –0.3 ft	±0.3 ft	Relaxation may be appropriate in deep sewers.
Peak flow	+25% to -15%	±10%	
Flow volume	+20% to -10%	±10%	Excluding poor / missing data

The wet weather calibration was supported by NetSTORM, a CDM Smith software, for rainfall analysis and model output processing. The two main parameters that were adjusted in the model to match the hydrograph shape and peak included subcatchment width and percent routed. To achieve a closer match between simulated and observed depths, adjustments were made to Manning's N coefficients when necessary.

2023 Rainfall Characterization

Lowell experienced significantly above-average rainfall in 2023 compared to historical data. During the spring of 2023, ADS metering period, however, storms were typically small-scale where the largest storm in the spring had an annual recurrence interval (ARI) of 6 months on a 24-hour duration. 5 spring storm events, detailed in **Table 3**, were used for Spring Calibration.

Table 3: 2023 Spring Storms for calibration summary at Warren rain gage

	Depth (in.) at duration (h)			ARI at duration (h)		
Date	1	6	24	1	6	24
23-Apr	0.34	1.11	2.07	1-mo	3-mo	6-mo
29-Apr	0.29	0.7	1.94	<1-mo	1-mo	5-mo
30-Apr	0.42	1.17		2-mo	3-mo	
2-May	0.23	0.37	0.44	<1-mo	<1-mo	<1-mo
20-May	0.35	0.98	1.52	1-mo	2-mo	2-mo

During the summer of 2023, there were multiple high-intensity, short-duration, spatially variable storm events in Lowell. These summer storms contributed to a cumulative total of approximately 25 inches of rain between June and August 2023, as illustrated in **Figure 7**. Moreover, these summer storms had high spatial variability resulting in some areas in Lowell having a greater than 5-year ARI for a summer storm event while another area experiencing a less than 1-year ARI for the same event and duration. At the Warren rain gage, there were 5 events in the summer that had a 1-year, 1-hour, or greater ARI. The summer storms are detailed in **Table 4**.

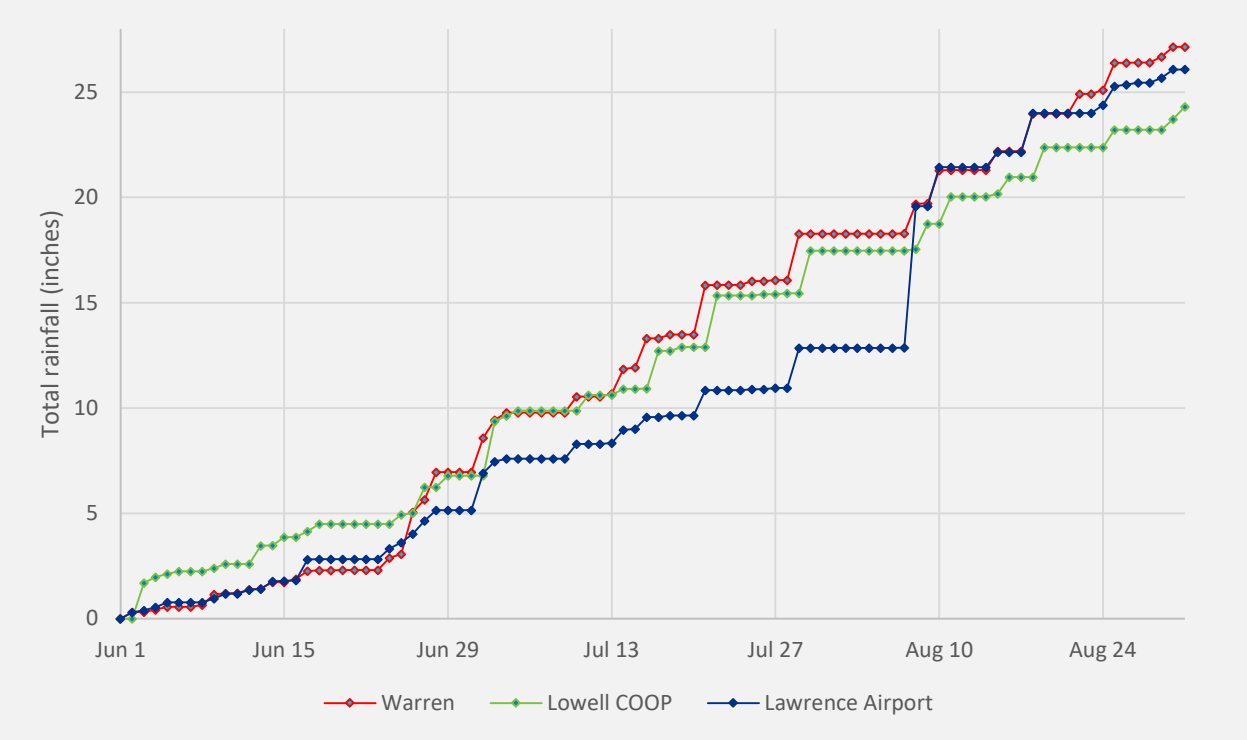


Figure 7: Cumulative rainfall at multiple gages for summer 2023

Table 4: 2023 Summer Storm Summary at Warren CSO rain gage

	Rainfall (inches)			ARI		
Date	1-h	6-h	24-h	1-h	6-h	24-h
26-Jun	1.4	1.95	2.57	5-yr	2-yr	1-yr
28-Jun	0.89	1.24	1.31	11-mo	4-mo	2-mo
21-Jul	1.92	2.34	2.34	25-yr	3-yr	10-mo
29-Jul	1.24	2.19	2.21	4-yr	3-yr	8-mo
8-Aug	0.66	1.28	1.43	4-mo	4-mo	2-mo
10-Aug	0.91	1.58	1.58	1-yr	9-mo	3-mo
15-Aug	0.22	0.84	0.89	<1-mo	2-mo	<1-mo
18-Aug	0.8	1.21	1.78	8-mo	4-mo	4-mo
22-Aug	0.95	0.95	0.95	1-yr	2-mo	<1-mo
24-Aug	0.43	0.83	1.47	2-mo	2-mo	2-mo

Spring 2023

The 5 storm events in **Table 3** were chosen for spring calibration because they yielded a wet weather response at all ADS meters. The Warren rain gage, which is maintained by LRWWU and is about a mile from Centralville, was used for spring wet weather calibration of Centralville. The percent impervious was updated for all subcatchments based on the MassGIS 2016 Impervious Area dataset. Width and percent routed were updated for multiple subcatchments upstream of the meters, including the Humphrey's Brook, Billings wetland, and Hovey wetland. To better represent the brook inflow and timing, the width and percent routed were significantly decreased for the Humphrey's Brook subcatchment to better match the flow at the Hach meter. Based on US Soils maps, Hovey wetland includes highly impervious soils, leading to high runoff during storm events when the soils are saturated. The soil parameters were updated accordingly to better match peak flow runoff from Hovey wetland. Once the width and percent routed parameters were adjusted, Manning's N coefficient was adjusted to match depth at meter locations. To ensure that the calibration of upstream meters was not affected by incorrect control rules at the CSO stations, gate position timeseries from the SCADA were brought into the model for Beaver Brook, West Street CSO diversion station, North Bank Control Station, and Merrimack CSO diversion station. After initial calibration with the gate settings timeseries was completed, the control rules were applied and adjusted to match the SCADA timeseries.

Figure 8 shows the simulated and observed depth, velocity, and flowrate timeseries of Meter 15 for the 10-day period where the April 23, April 29, April 30, and May 2, 2023 storm events occurred. Additionally, **Figure 9** shows the simulated flow at the WWTF compared to the SCADA for the same period. The calibration plots for the rest of the meters during this period are in **Attachment 2**. Overall, peak discharge and peak depth of the meters in Centralville were calibrated for at least 3 of the storm events to satisfy CHIWEM standards described in **Table 2**. To assess model performance, scatterplots, including CHIWEM bounds, were created for the 5 spring storm events, comparing simulated data (total volume, peak discharge, peak depth, and peak velocity) against the observed data. **Figure 10** shows the scatterplots for Meter 15. The scatterplots for the rest of the meters are in **Attachment 3**.



Figure 8: Simulated and Observed Flow at Meter 15 during April 23 – May 3, 2023 Wet Weather Period

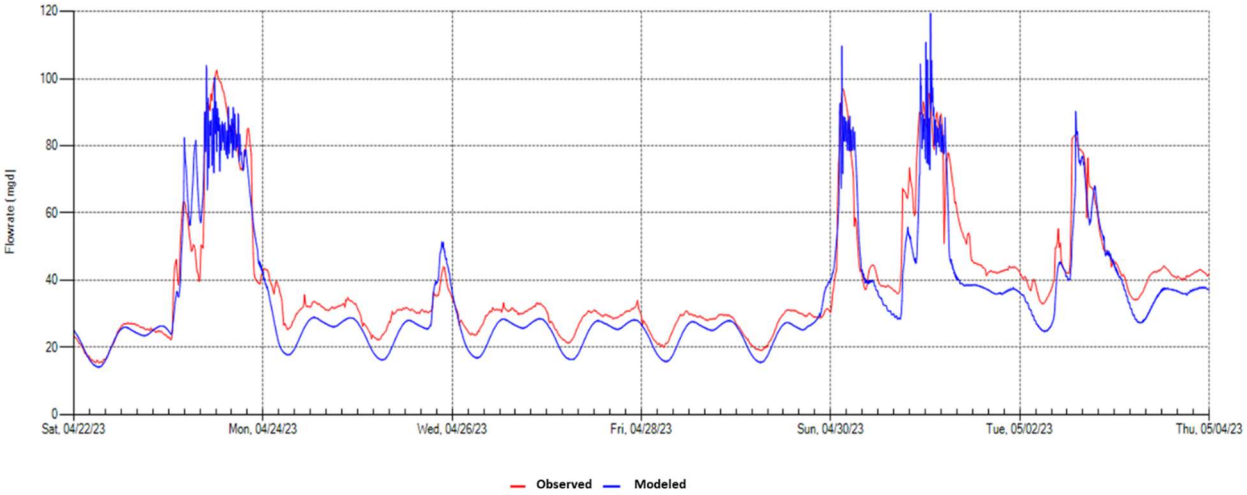


Figure 9: Simulated and Observed Flow at Duck Island WWTF during April 23 – May 3, 2023 Wet Weather Period

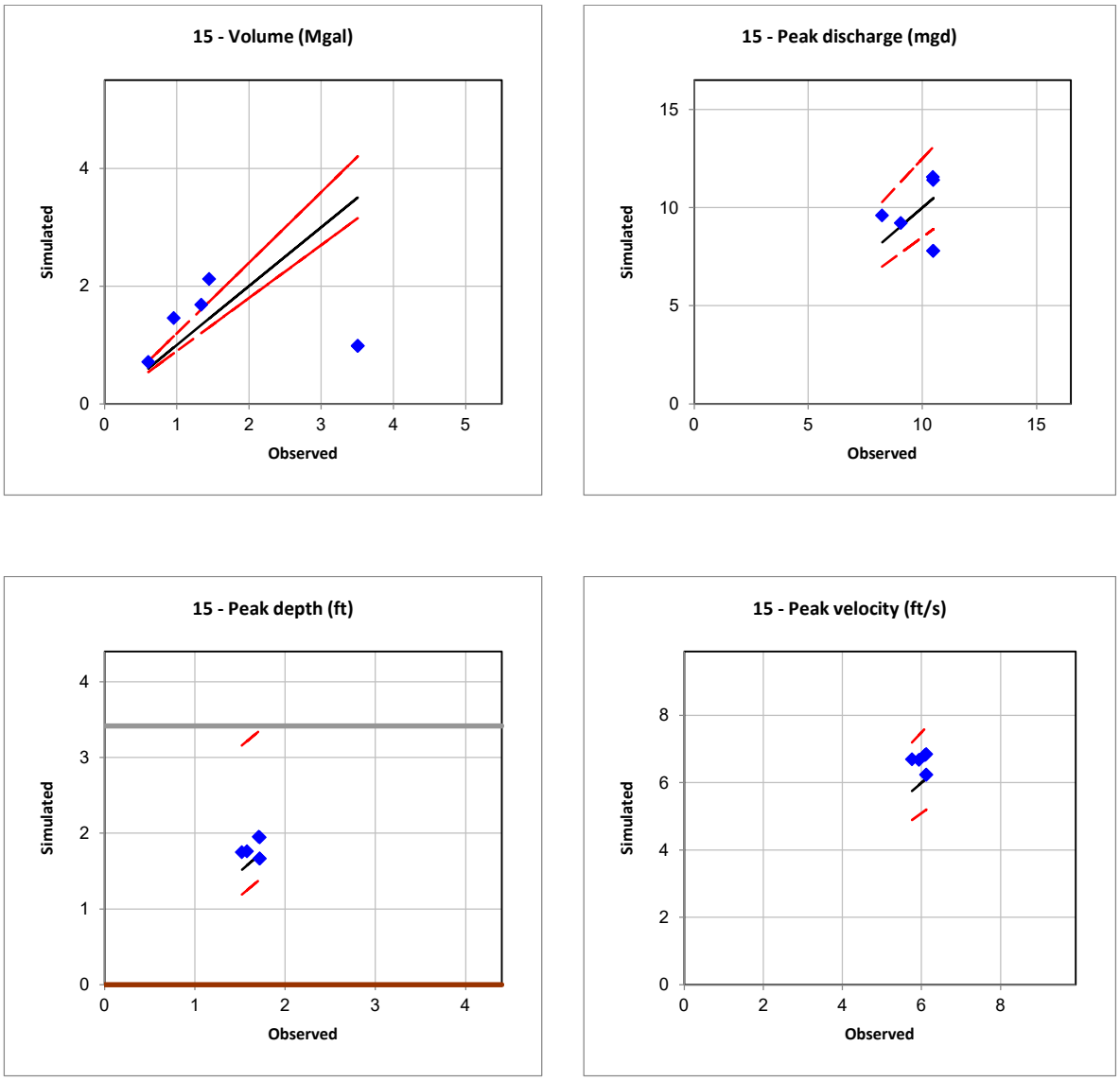


Figure 10: Simulated vs. Observed Scatter Plots for Peak Flow, Depth, Velocity, and Total Volume at Meter 15.

Summer 2023

Additional calibration was performed to adjust model parameters as needed to reflect system response in the high-intensity summer storms experienced in 2023 as well as the lower intensity spring events. Since the ADS meters were removed at the end of June prior to the larger storm events, the model was calibrated to the West Street CSO diversion station and North Bank Control Station SCADA data, the Humphrey's Brook Hach meter, and the 34 Coburn Street SSO level meter. Due to the spatial variability of the summer storms, 15-minute disaggregated QPE rainfall data was used for this calibration.

At West Street CSO diversion station and North Bank Control Station, discharge coefficients of the gates were increased to reduce the head at West Street interceptor to better match the SCADA depth. The control rules at these two stations were also adjusted to be more representative of the 2023 High Flow Management Plan and the SCADA data. Control rules were configured so that the West Street

interceptor depth is maintained at 7.5 feet during wet weather events by modulating the gravity diversion gate while keeping the control gate at 50%.

Humphrey's Brooks' width and percent routed were adjusted to calibrate to the shape of the hydrograph and timing of the peak for these high-intensity storms. **Figure 11** shows the simulated and observed flowrate at Humphrey's Brook for a week-long period from June 25 to July 3, 2023, where multiple storm events occurred. This period includes a 5-year, 1-hour storm on June 26, 2023.

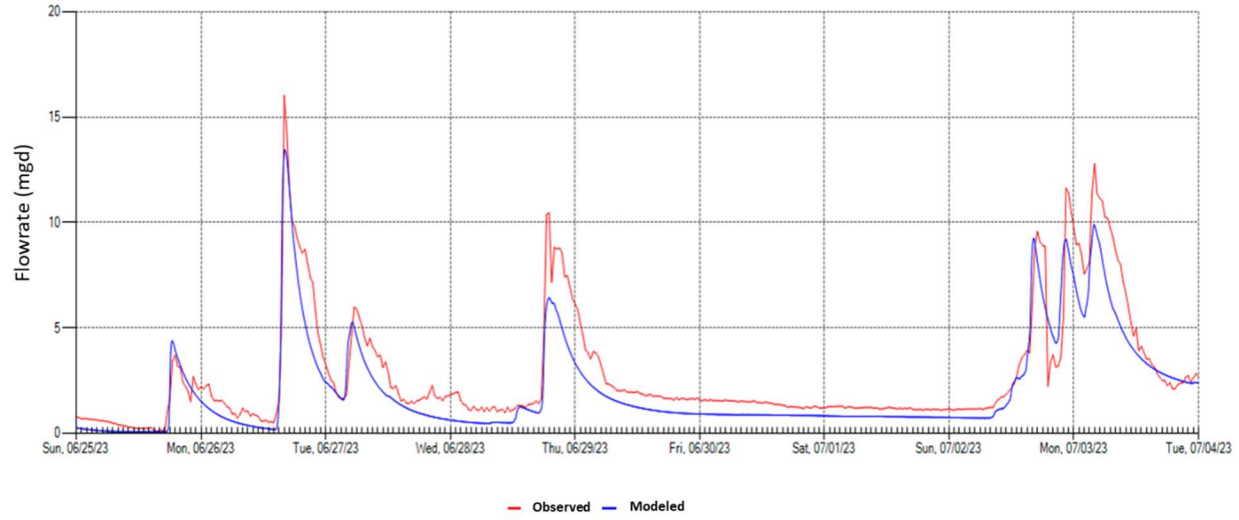


Figure 11: Simulated and Observed Flow at Humphrey's Brook for June 25 – July 3, 2023

The 34 Coburn Street SSO level meter is immediately upstream of where Meter 15 was located. This meter was used to ensure that the model was not producing depths of 9.5 feet or greater during the high intensity storms. Small adjustments were made to reduce the depth such that the peak depth at this location remained below the SSO level and that there was minimal flooding upstream. The simulated and observed depths at 34 Coburn Street for June 25 to July 3, 2023 are shown in **Figure 12**.

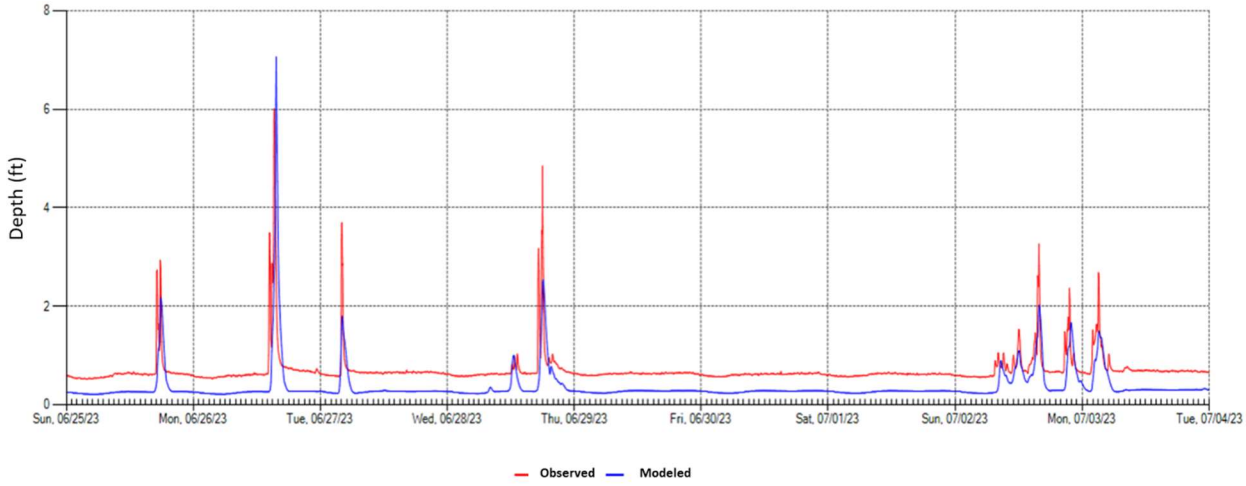


Figure 12: Simulated and Observed Flow at 34 Coburn Street for June 25 – July 3, 2023

The West Street gravity diversion simulated flow was compared to the SCADA observed flow. Calibration at this location was to ensure that the model replicates the recorded CSO events and the simulated peak CSO flow matches the peaks from the SCADA on average. The simulated and observed CSO flows at West Street Diversion Station for June 25 to July 3, 2023 are shown in **Figure 13**. Additionally, the SCADA effluent data from Duck Island was compared to the simulated effluent and is shown in **Figure 14**.

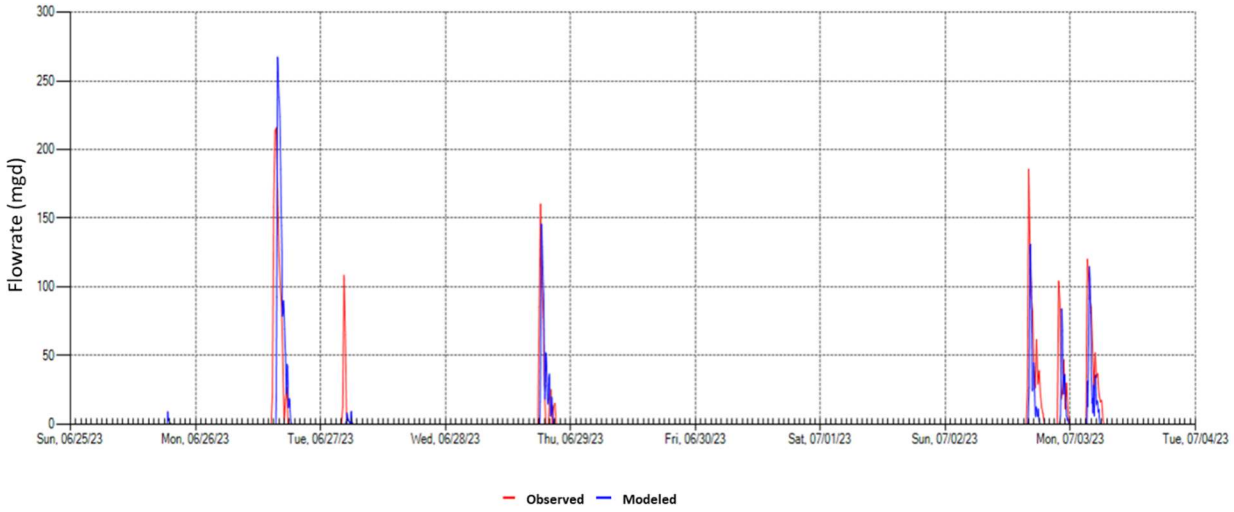


Figure 13: Simulated and Observed CSO at West Street CSO Diversion Station for June 25 – July 3, 2023

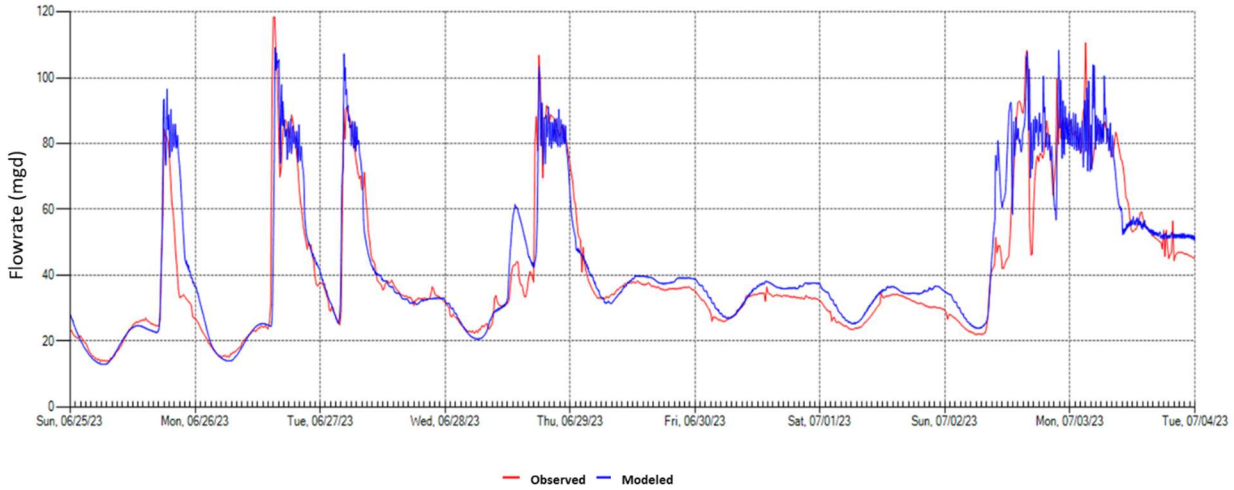


Figure 14: Simulated and Observed Flow at Duck Island WWTF for June 25 – July 3, 2023

2008 Brook Metering Comparison

The calibrated model was run from September 2007 – October 2008 to compare the Humphrey's Brook and Hovey wetland to the observed data. The Lawrence Airport hourly rain gage was used for this simulation. Since the rain gage was hourly and located about 15 miles from Lowell, the simulated peak flows do not always align with the observed data. During some storm events, the simulated peak flow was higher than the observed. Conversely, during other storm events, the simulated peak flow was lower than the observed. On average, the simulated peak flows and shape of the hydrographs for Humphrey's Brook matched well to the observed throughout the simulation period. **Figure 15** shows

simulated and observed flows at Humphrey's Brook for a summer storm in July of 2008. Additionally, Hovey wetland simulated peak flow that on average throughout the simulation period matched well to the observed. The simulated and observed flow for the same storm event as Figure 12 for Hovey wetland is shown in **Figure 16**.

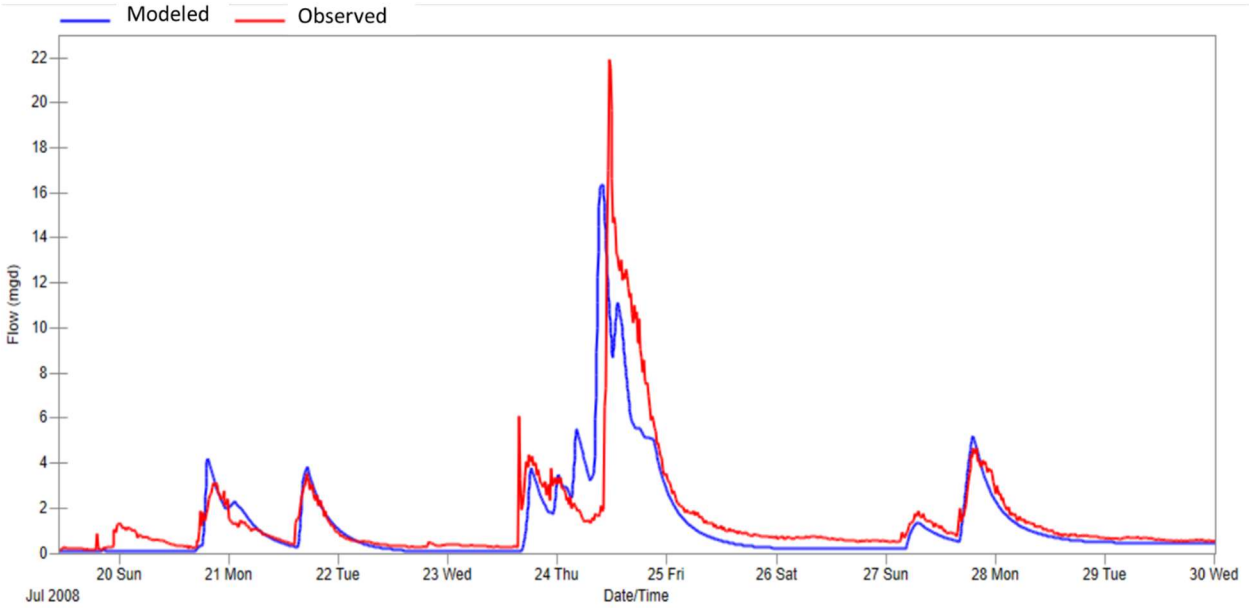


Figure 15: Simulated and Observed Flow at Humphrey's Brook during a wet weather event in the 2008 metering period.

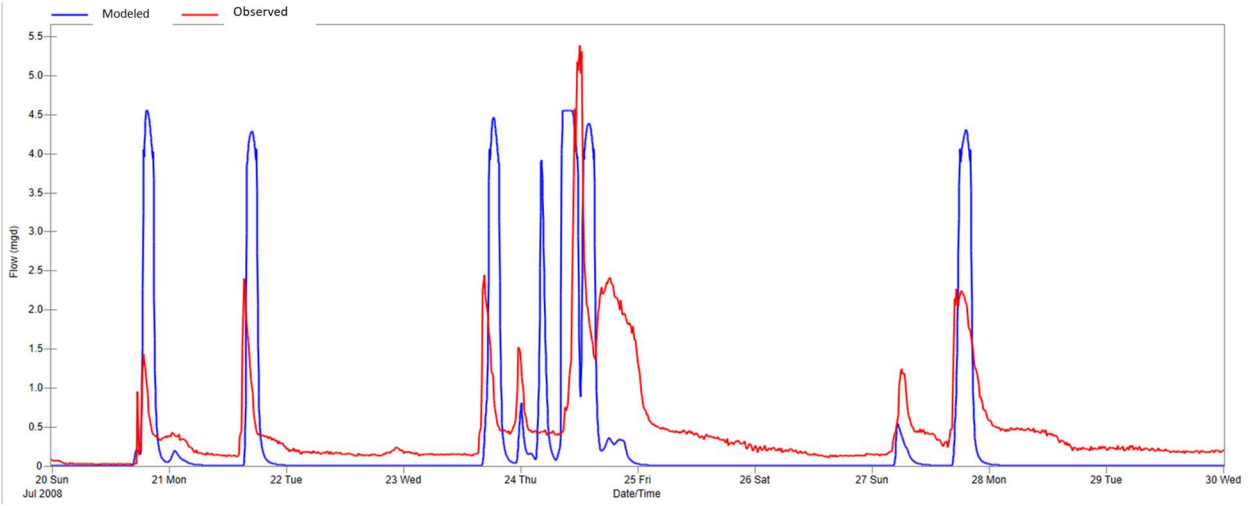


Figure 16: Simulated and Observed Flow at Hovey Wetland during a wet weather event in the 2008 metering period.

Full-Year 2023 Simulation

The model was run from January 1 – December 31, 2023 using the QPE precipitation data to compare the annual CSO at West Street CSO diversion station in the model to the observed CSO from the SCADA. This simulation was used to validate the Centralville portion of the model for CSO at West Street CSO diversion station. The volume of CSO, number of events, and the duration of overflows were compared.

The model predicted 29 CSO events with a duration of 288 hours and total volume of 208 mgal while the SCADA reported 31 events with 134 hours duration and 268 mgal total volume. The model values reasonably match the observed data.

Model Calibration Summary

During model calibration, sanitary flows, groundwater variables, imperviousness, widths, and routing coefficients were the primary parameters that were adjusted for subcatchments upstream of meter locations. Total population, total groundwater infiltration and baseflow, the spatial average of percent impervious and routing coefficients are summarized by metershed in **Table 5**.

Table 5: Centralville Model Parameter Summary by Metershed

Metershed	Sanitary	2023 Groundwater Inflow (MG)	2023 Baseflow (MG)	Imperviousness (%)	Routing Coefficient (%)
12	3175 people	160.6	87.6	76.6	22.9
13	3394 people	2080.5	94.9	29.9	27.2
14	1979 people	361.4	1.4	52.2	48
15	1879 people	62.1	87.6	80.2	19.8
59	1078 people	164.3	1.1	56.3	43.7
60	184 people	222.7	0	29.7	70.3

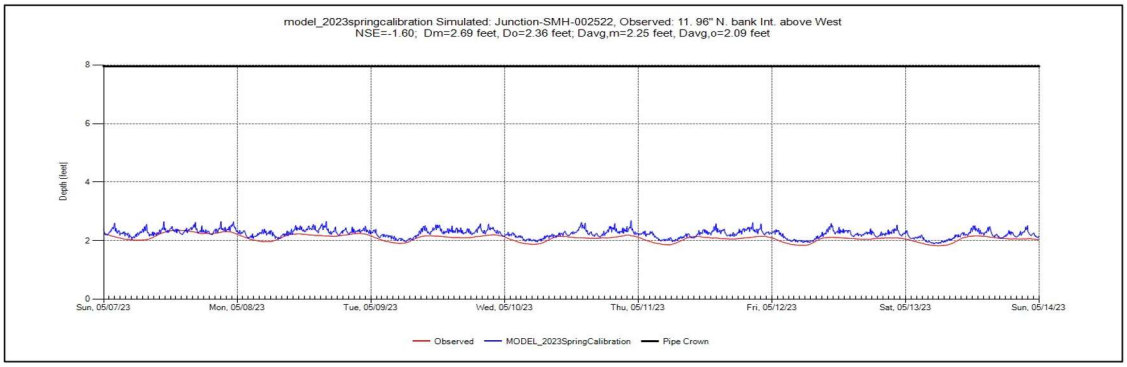
The model calibration and validation to multiple data sources and varying conditions show that the model is well suited for system analysis in support of sewer separation in the Centralville area.

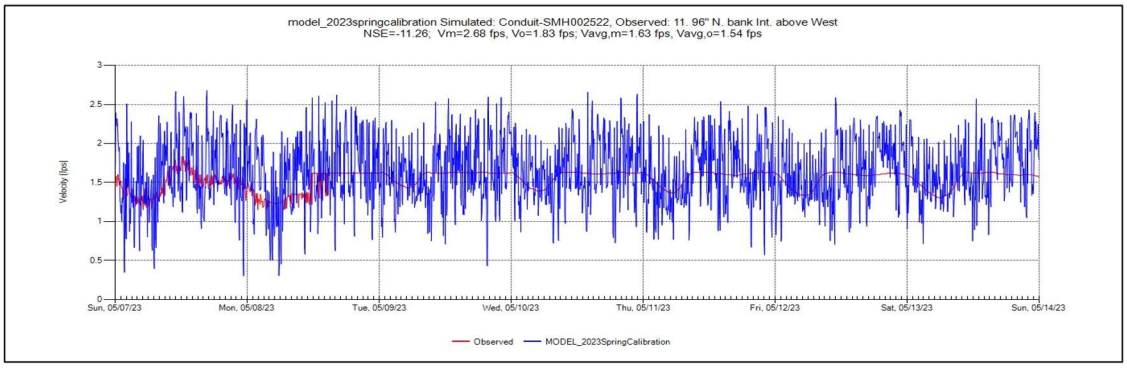
Attachment 1

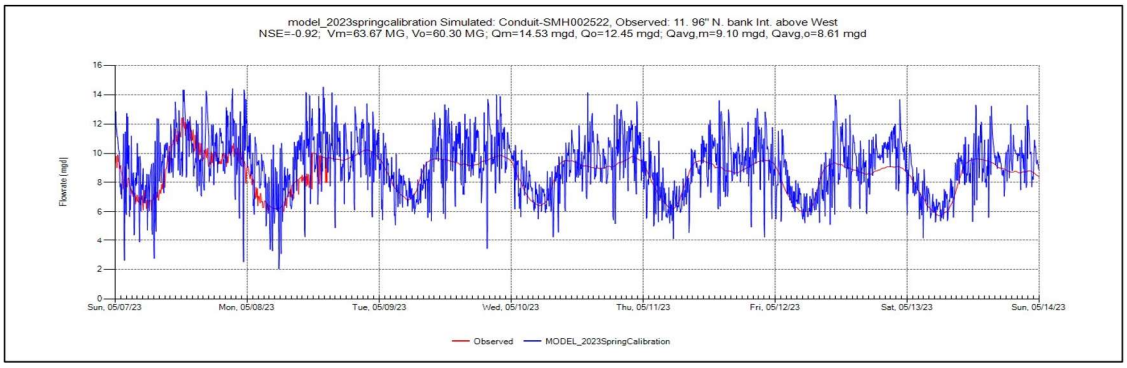
Dry Weather Flow Calibration Plots

Simulated Versus Observed Flow at Flow Meter Sites

11-Dry Period

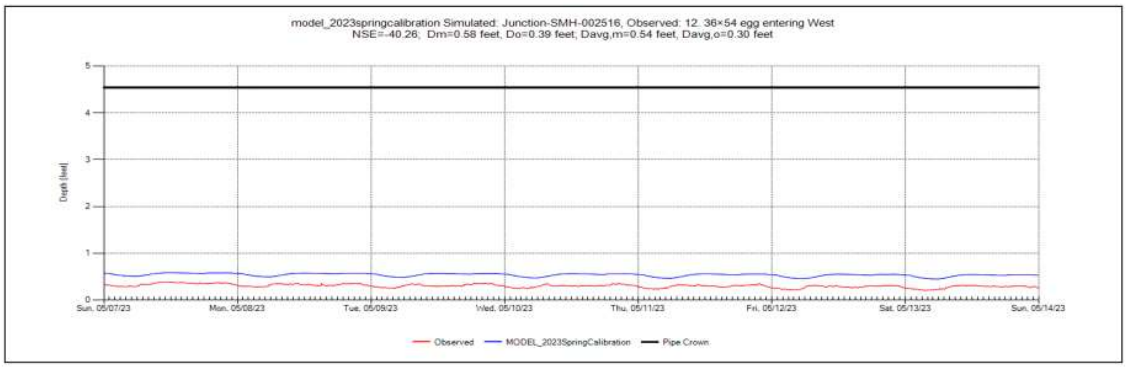


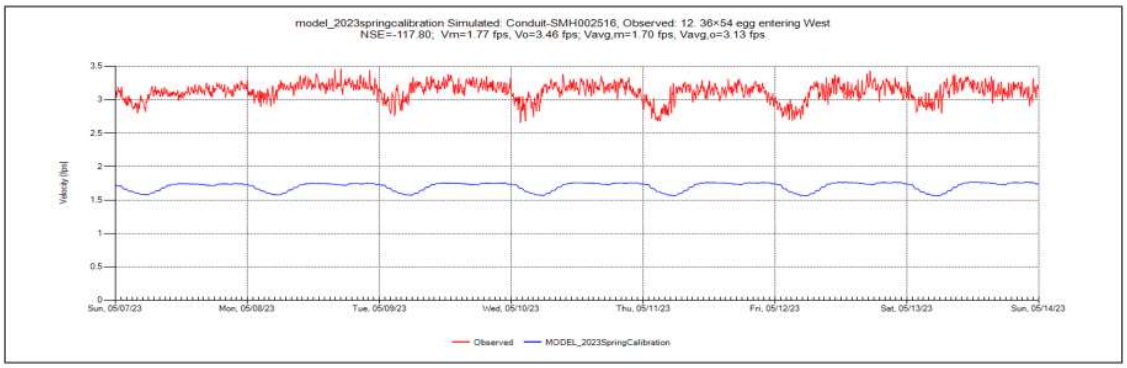


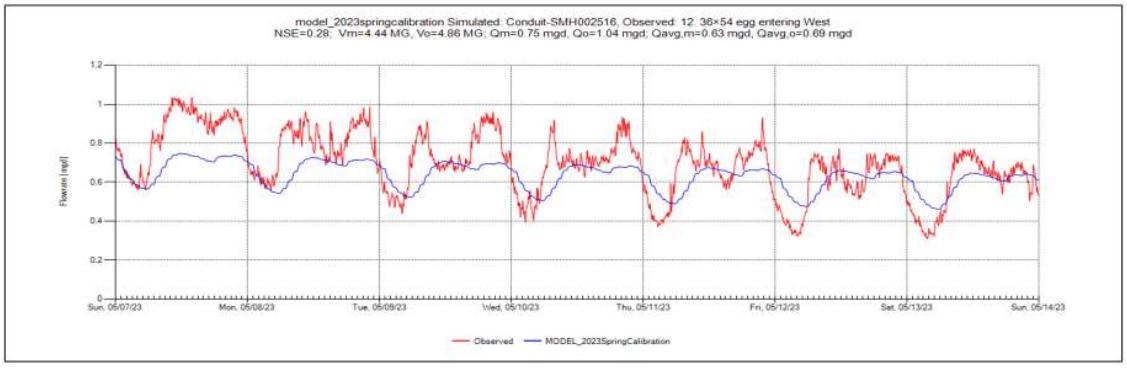


Simulated Versus Observed Flow at Flow Meter Sites

12-Dry Period

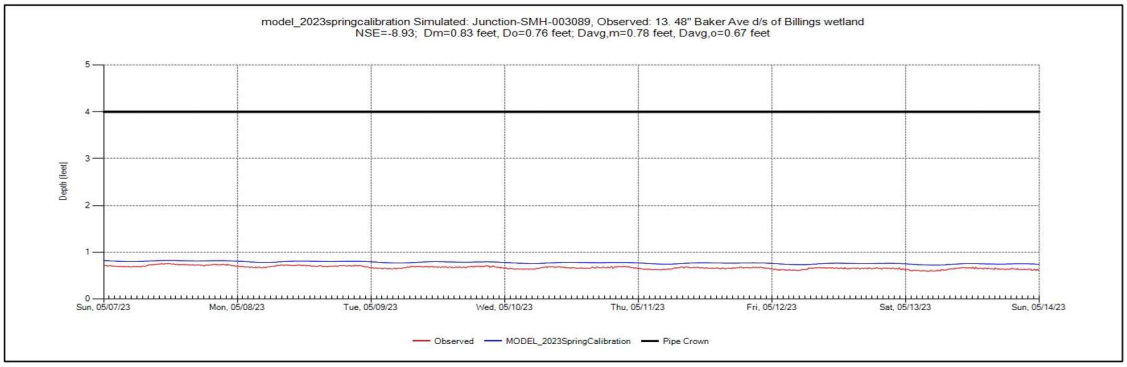


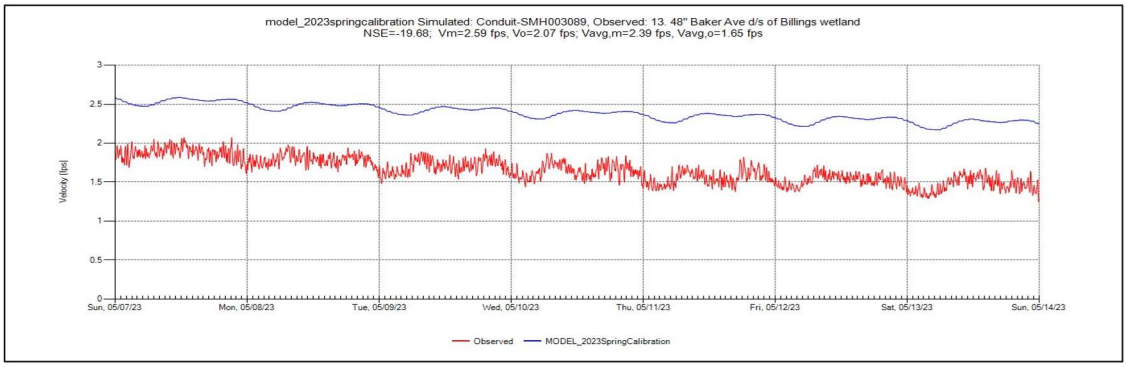


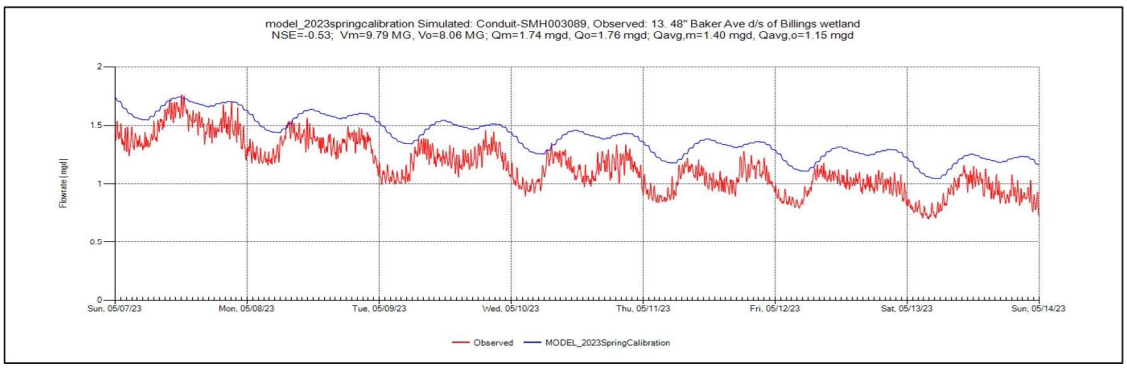


Simulated Versus Observed Flow at Flow Meter Sites

13-Dry Period

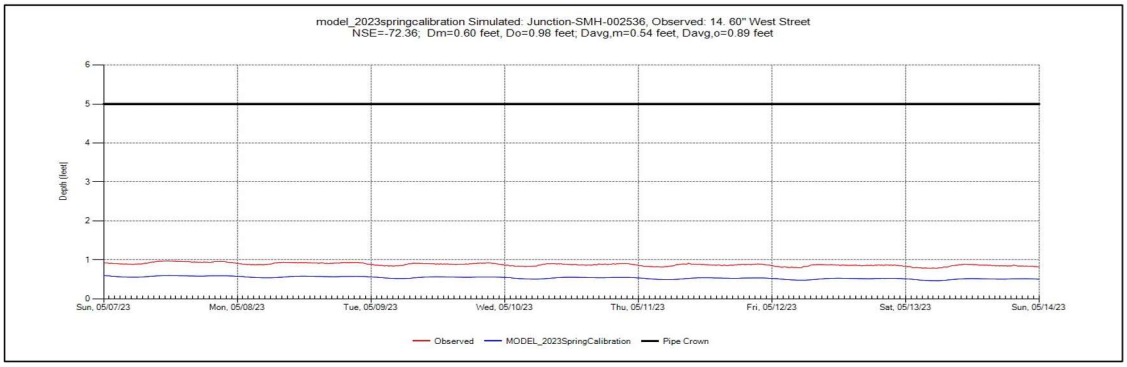


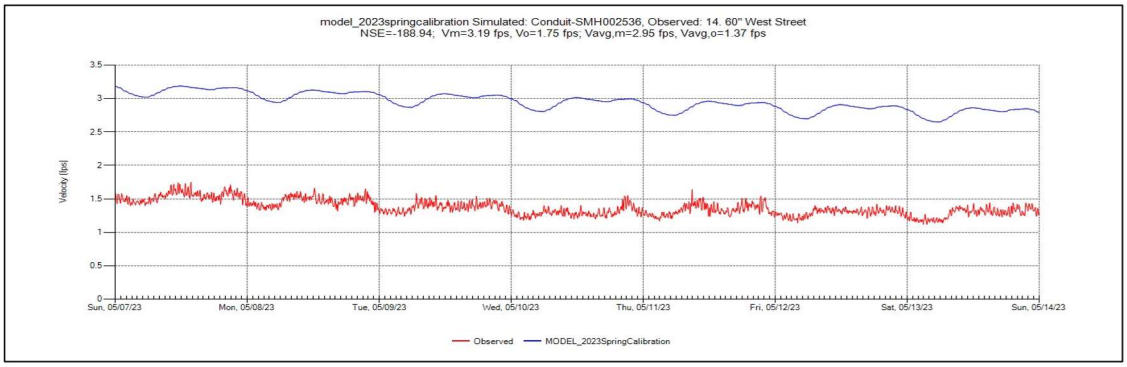


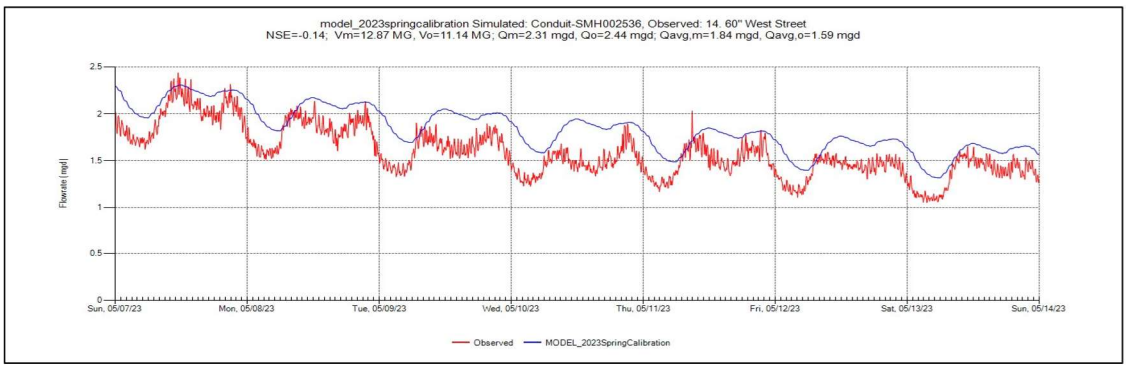


Simulated Versus Observed Flow at Flow Meter Sites

14-Dry Period

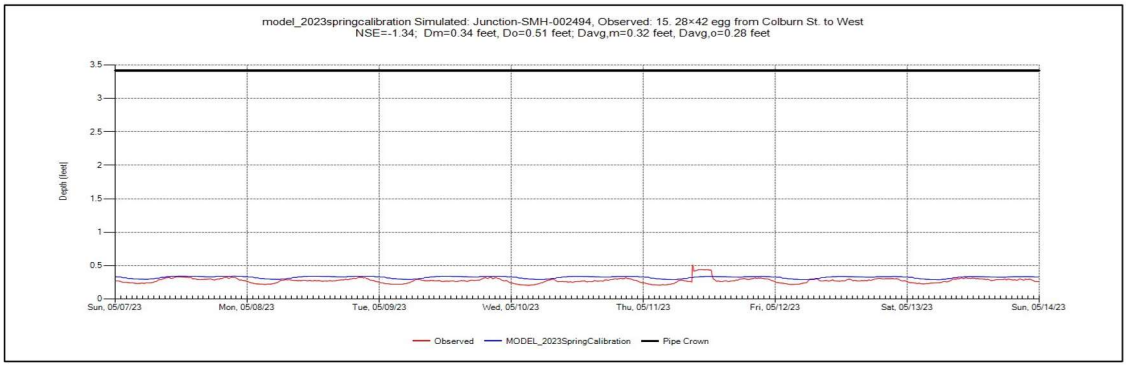


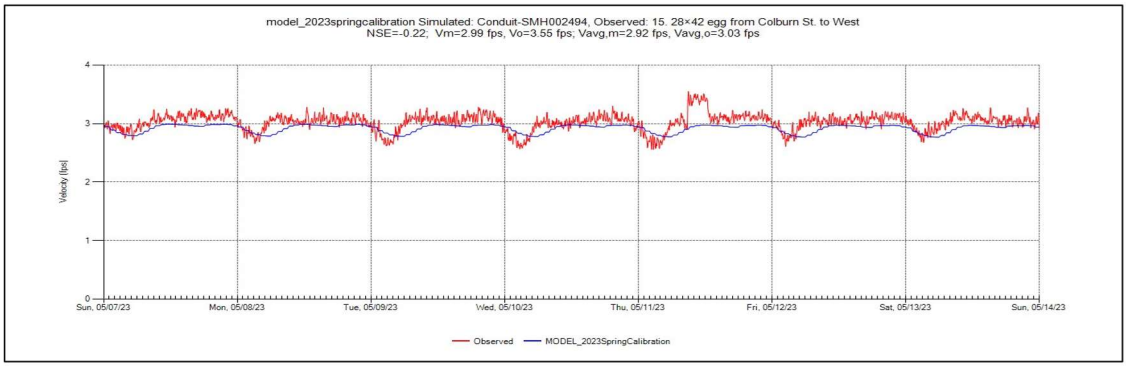


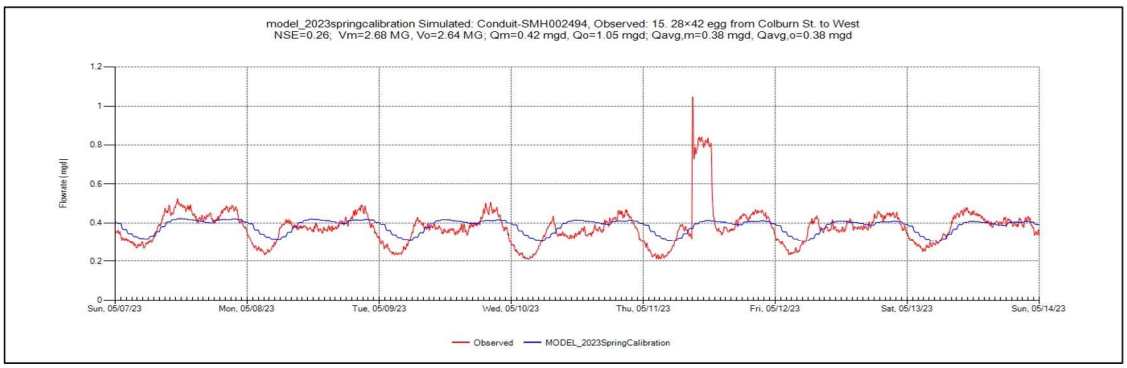


Simulated Versus Observed Flow at Flow Meter Sites

15-Dry Period

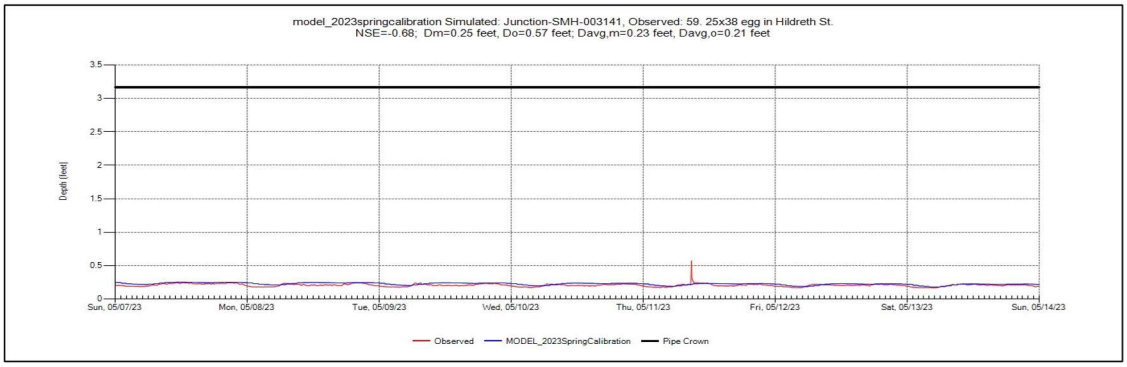


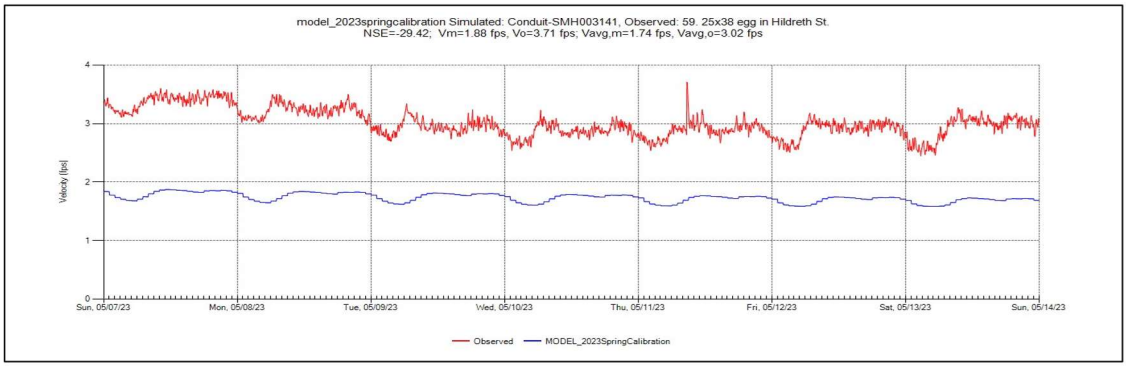


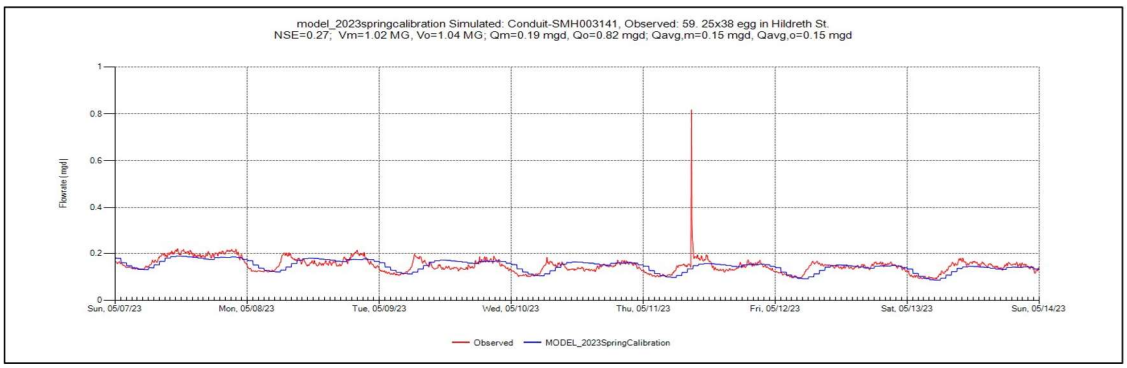


Simulated Versus Observed Flow at Flow Meter Sites

59-Dry Period

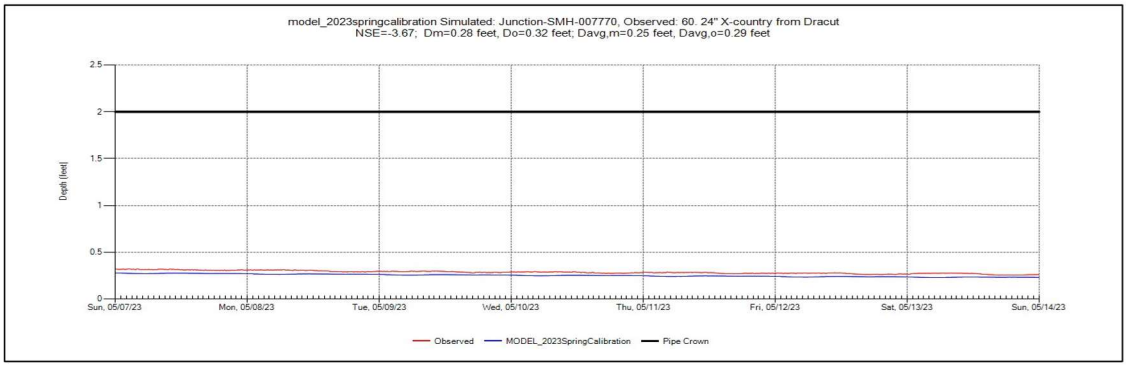


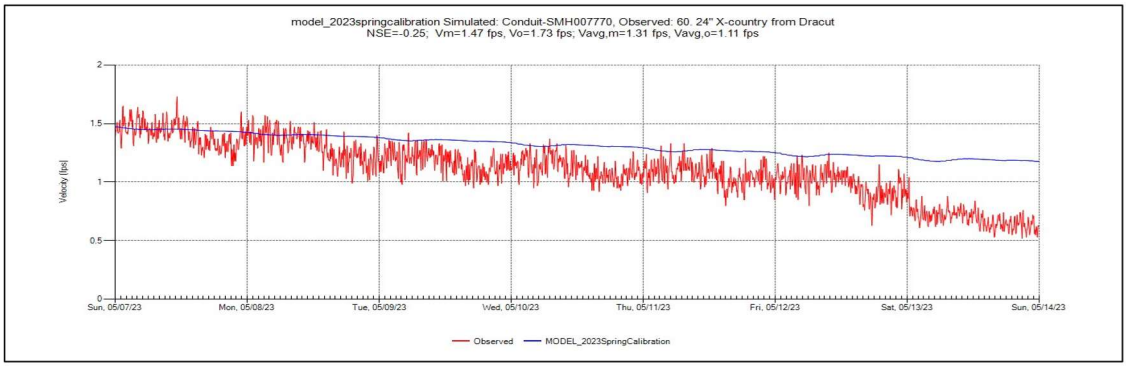


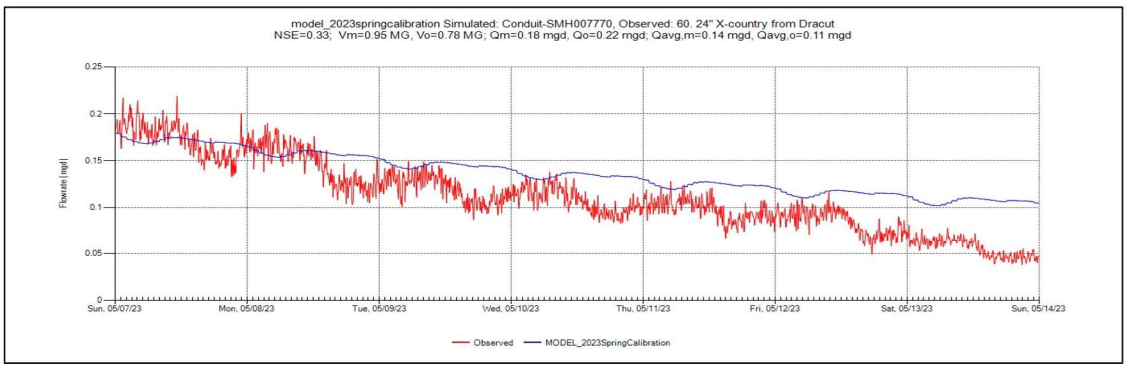


Simulated Versus Observed Flow at Flow Meter Sites

60-Dry Period





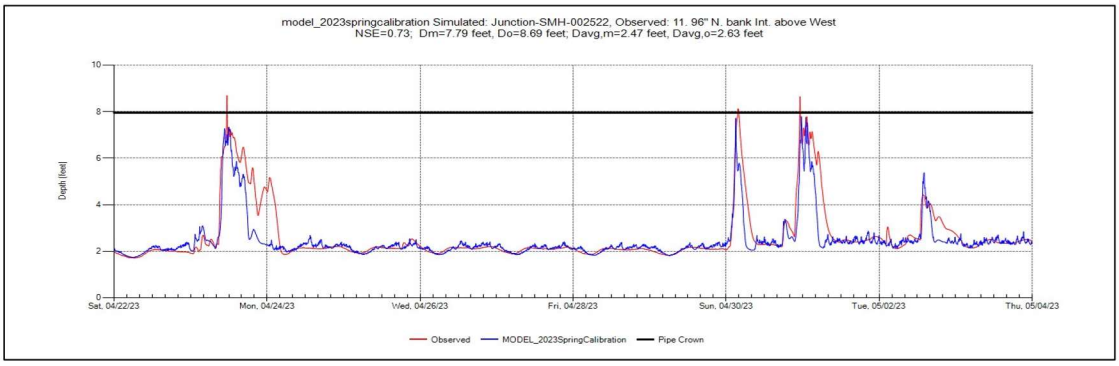


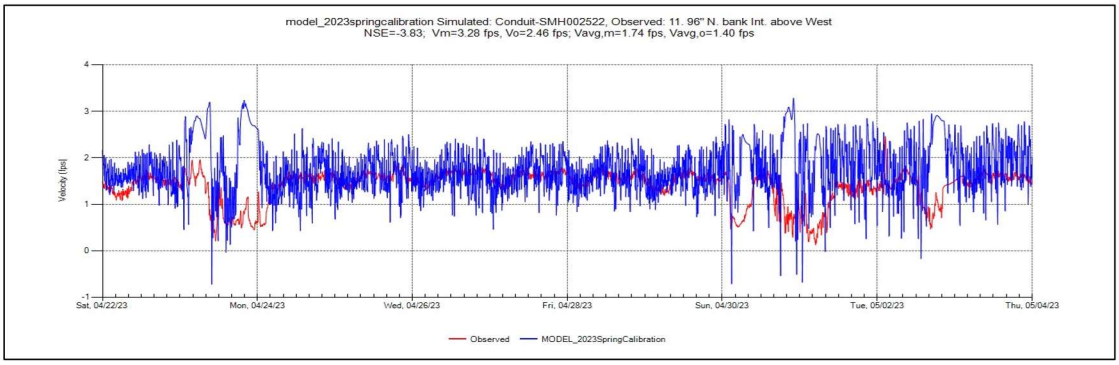
Attachment 2

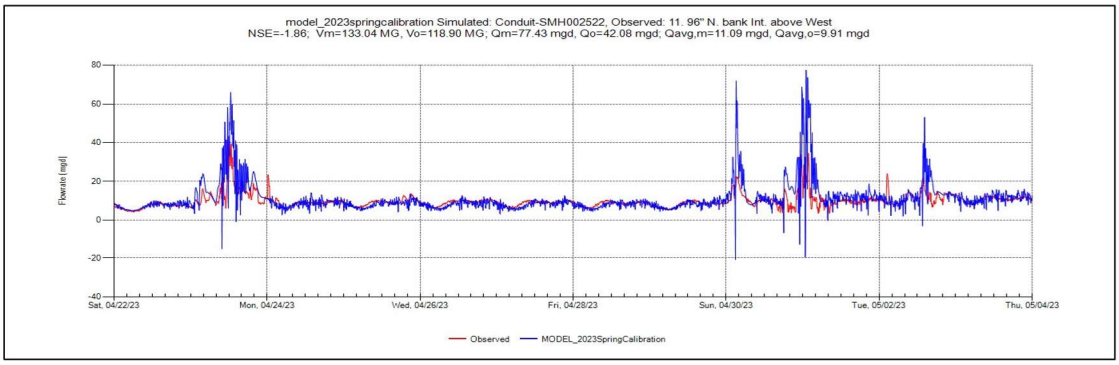
Spring Wet Weather Calibration Plots

Simulated Versus Observed Flow at Flow Meter Sites

11-April-May Storms

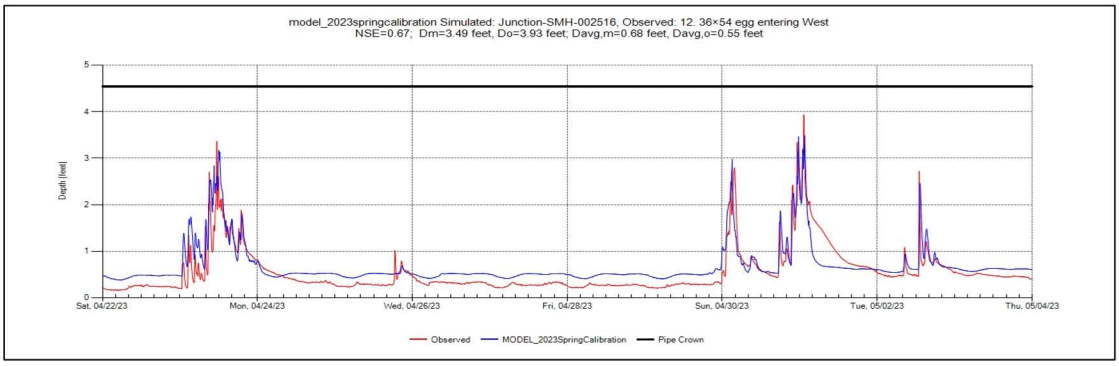


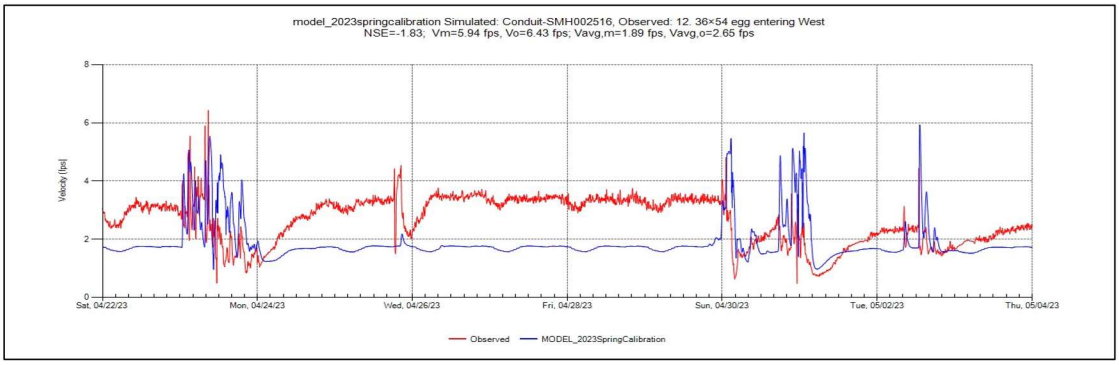


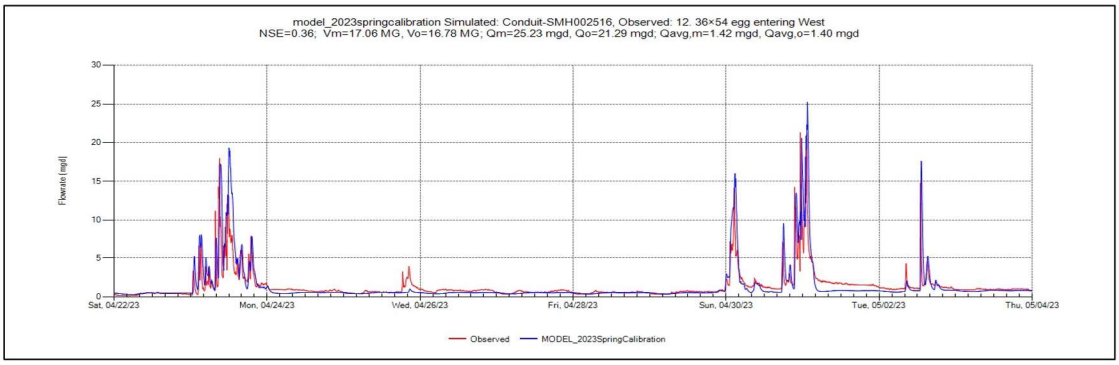


Simulated Versus Observed Flow at Flow Meter Sites

12-April-May Storms

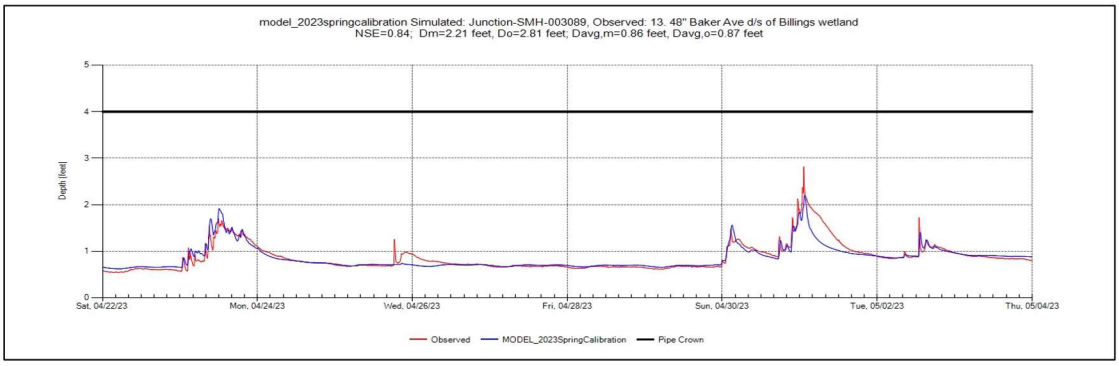


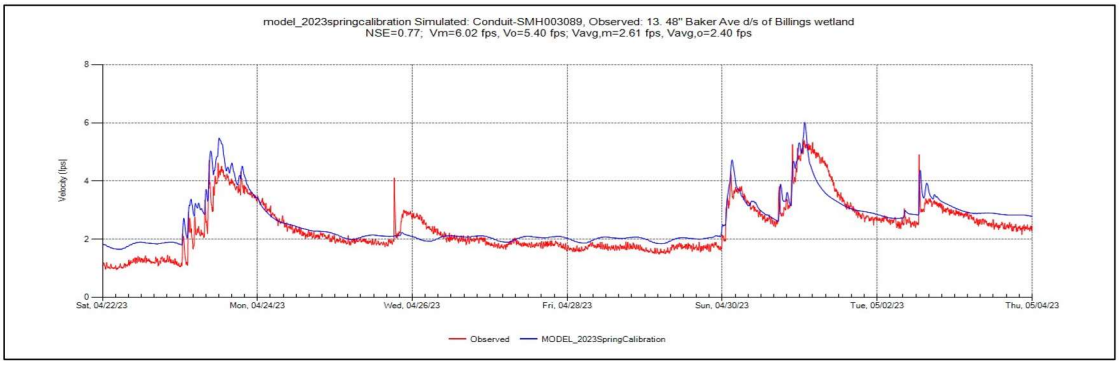


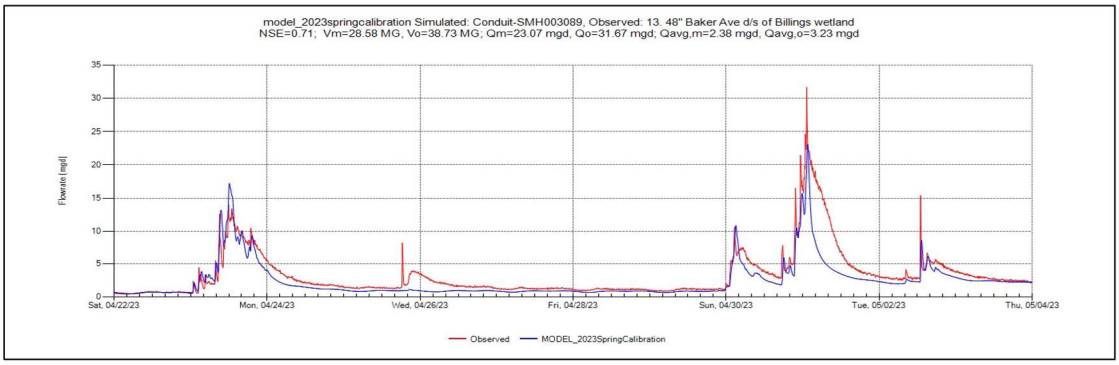


Simulated Versus Observed Flow at Flow Meter Sites

13-April-May Storms

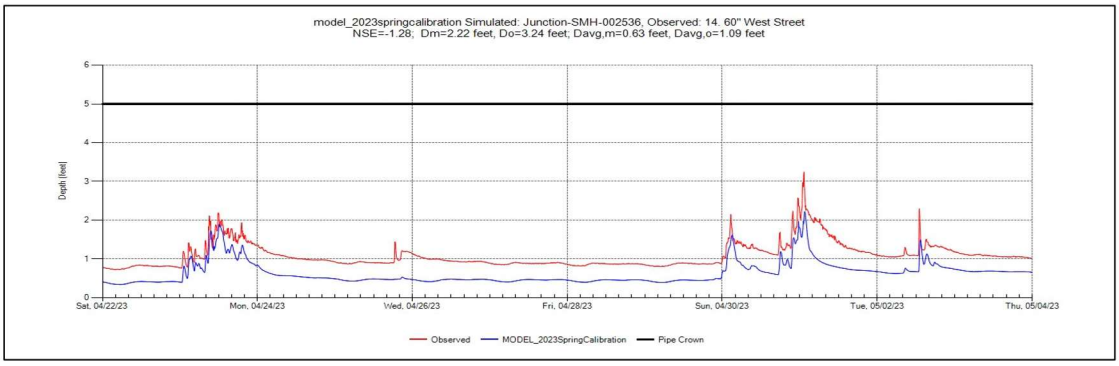


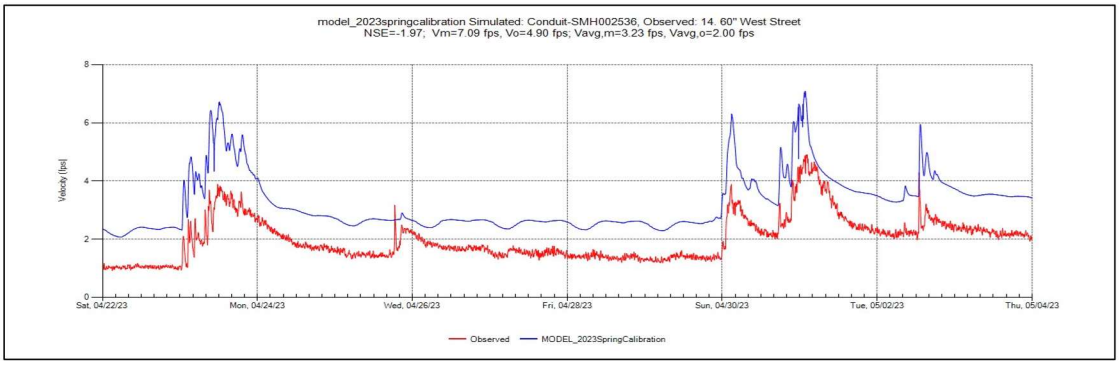


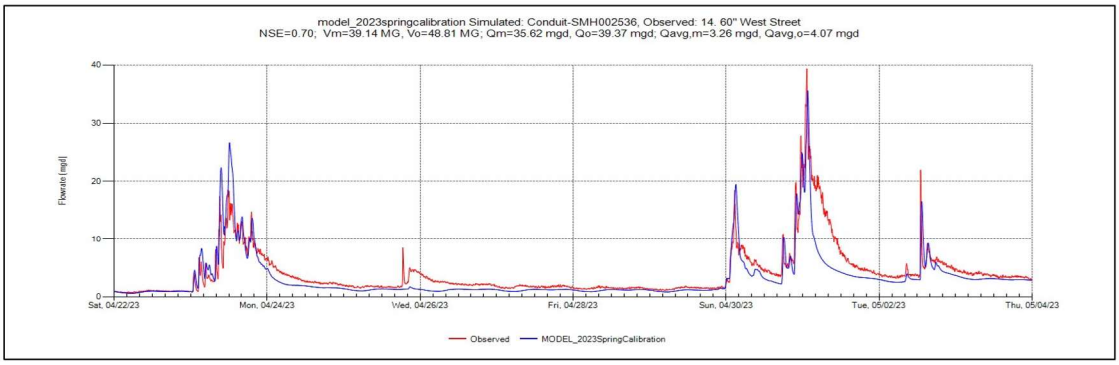


Simulated Versus Observed Flow at Flow Meter Sites

14-April-May Storms

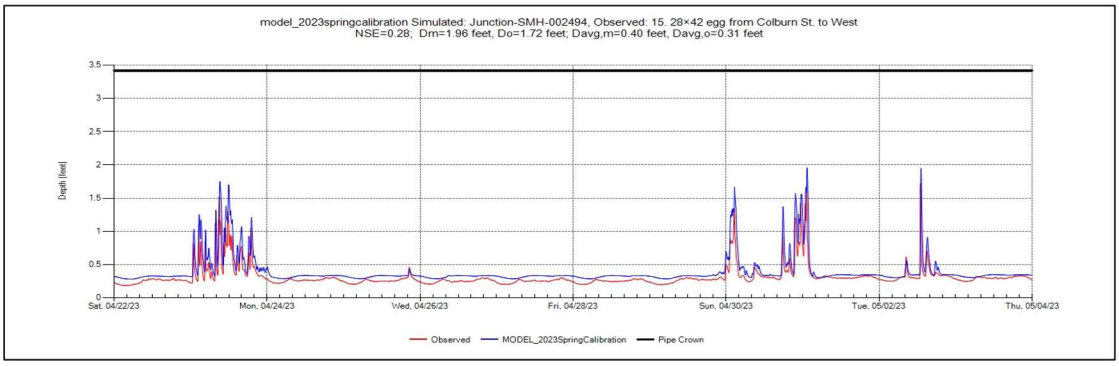


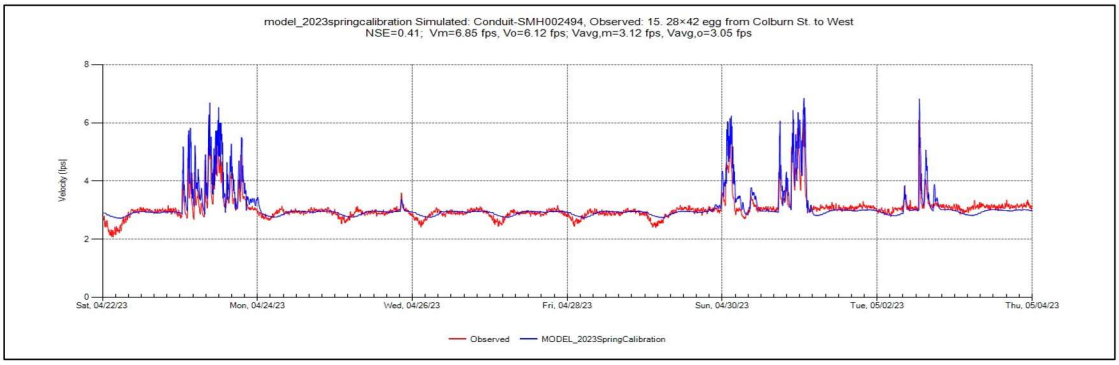


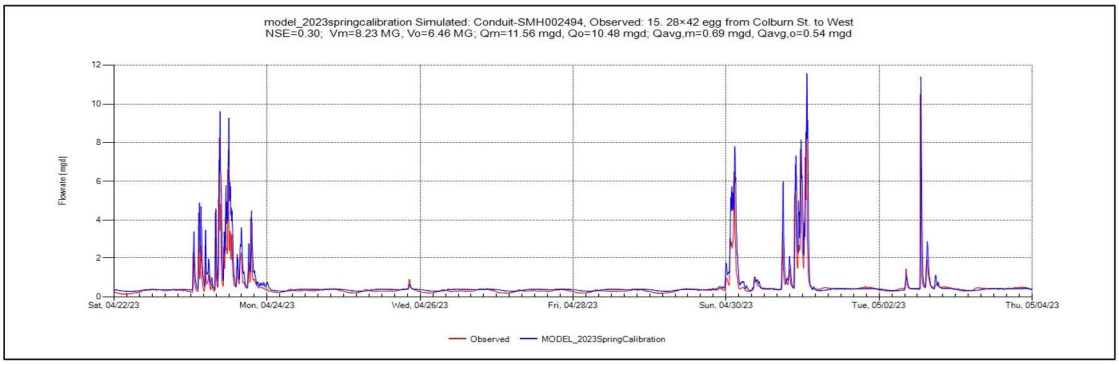


Simulated Versus Observed Flow at Flow Meter Sites

15-April-May Storms

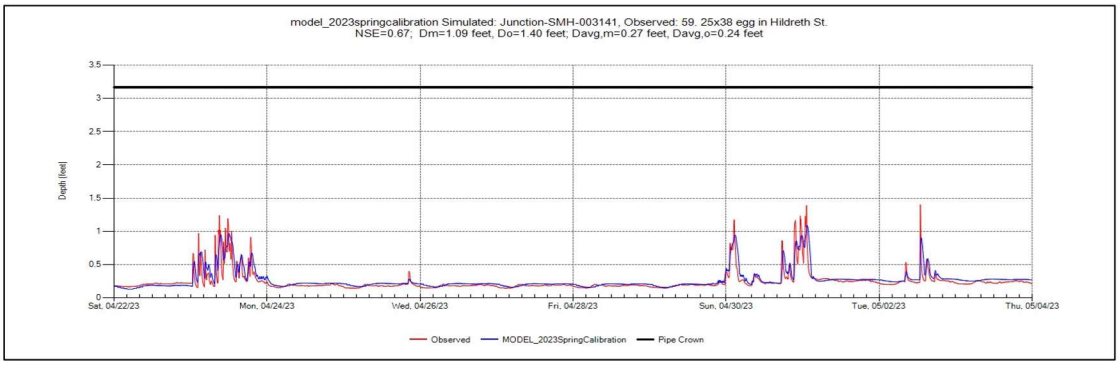


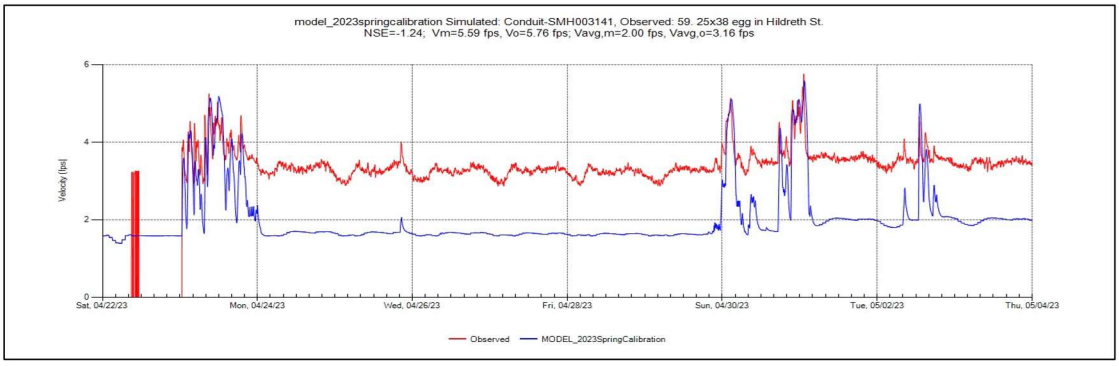


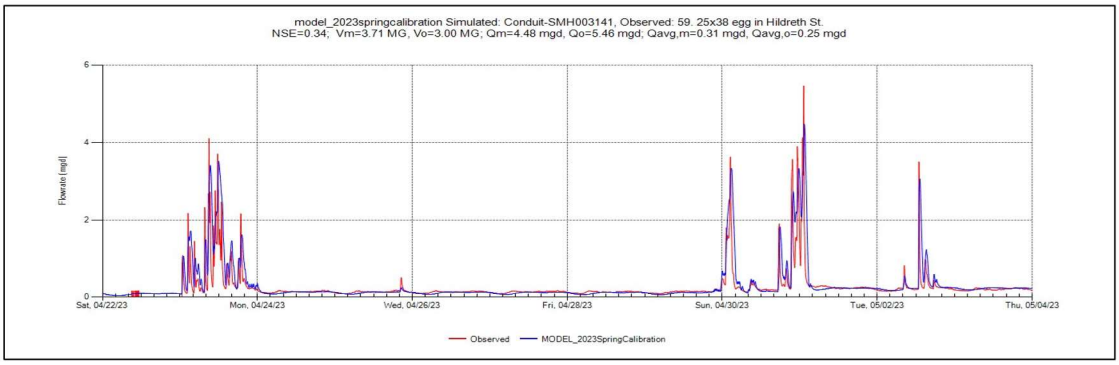


Simulated Versus Observed Flow at Flow Meter Sites

59-April-May Storms

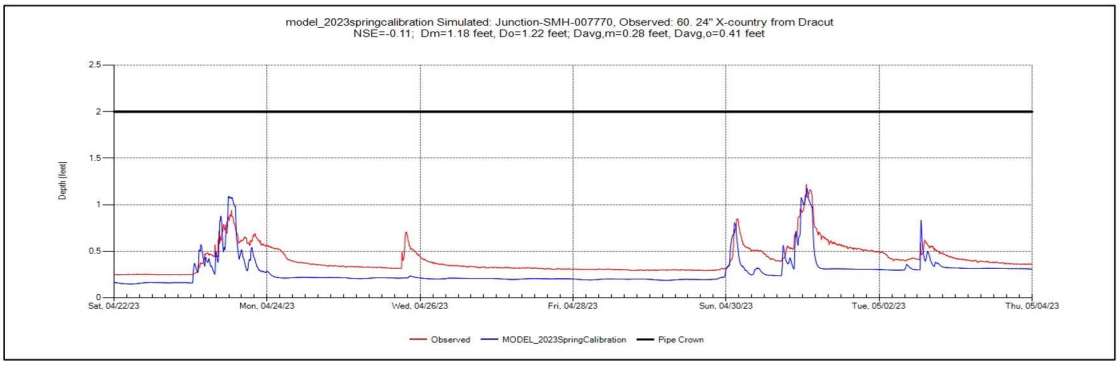


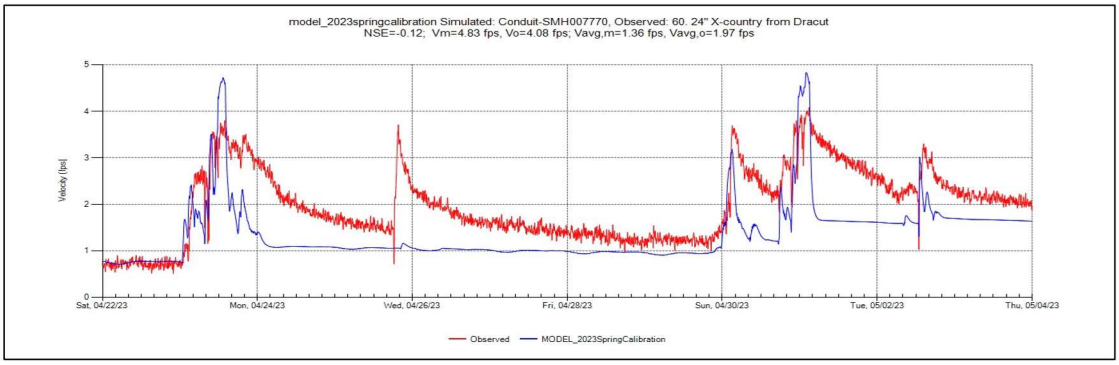


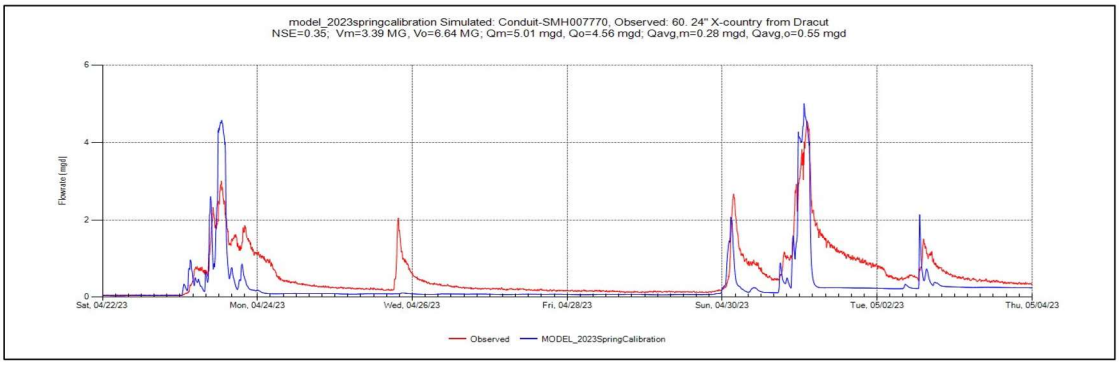


Simulated Versus Observed Flow at Flow Meter Sites

60-April-May Storms

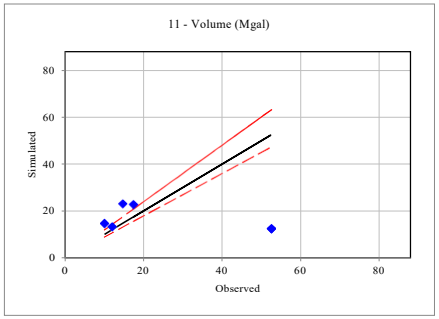


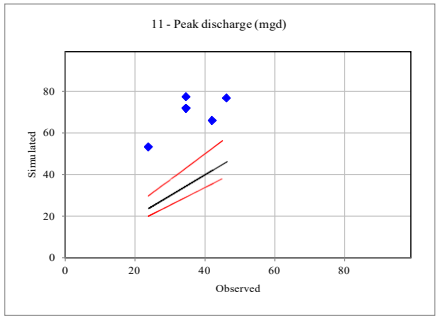


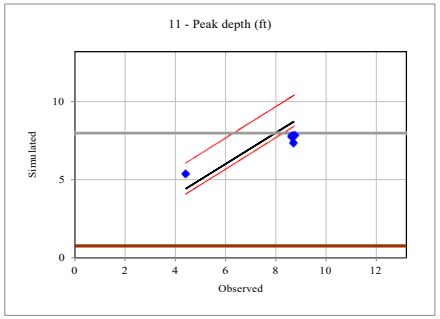


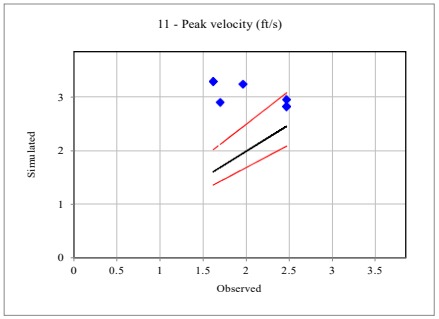
Attachment 3

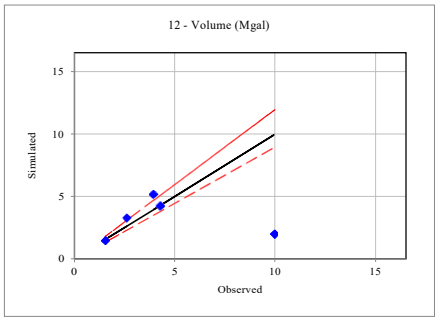
Scatterplots

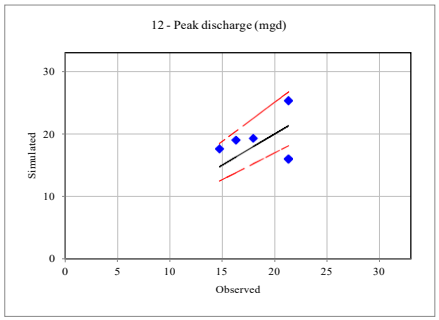

11 - Volume (Mgal)
Simulated
Observed

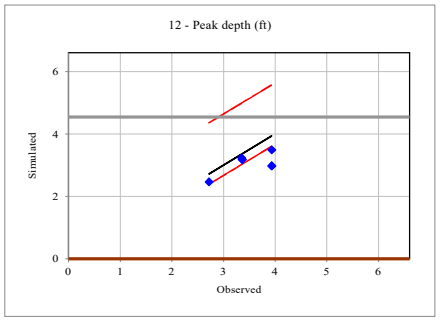

11 - Peak discharge (mgd)
Simulated
Observed

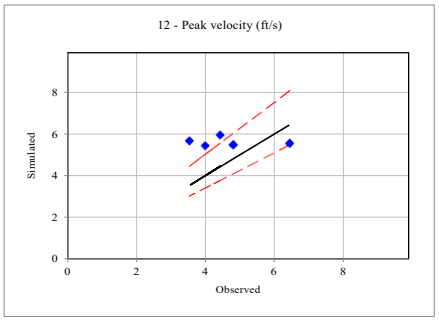

11 - Peak depth (ft)
Simulated
Observed

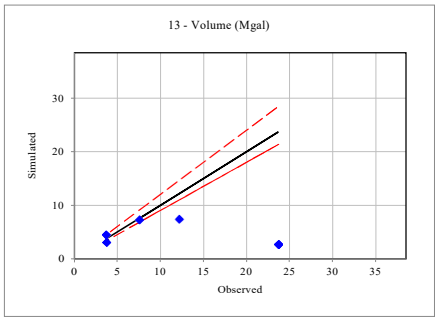

11 - Peak velocity (ft/s)
Simulated
Observed

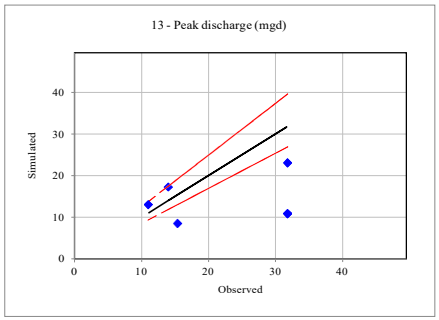

12 - Volume (Mgal)
Simulated
Observed

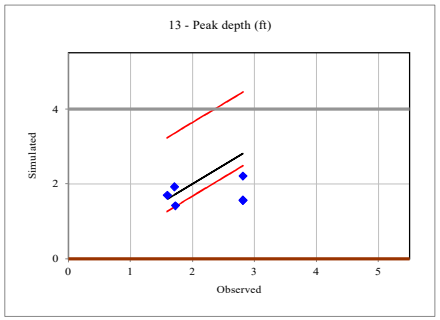

12 - Peak discharge (mgd)
Simulated
Observed

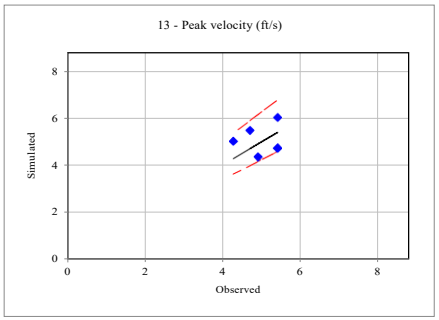

12 - Peak depth (ft)
Simulated
Observed

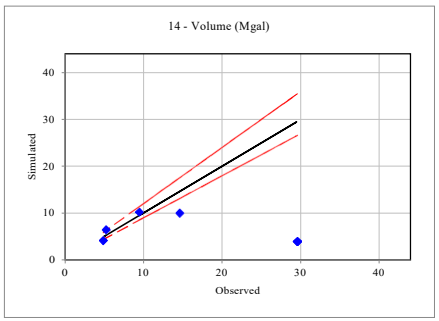

12 - Peak velocity (ft/s)
Simulated
Observed

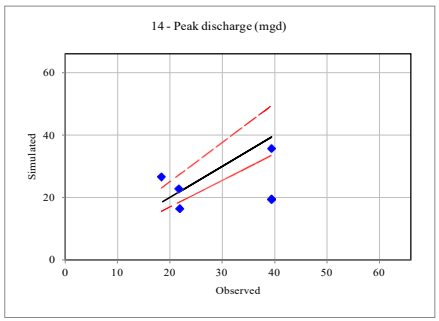

13 - Volume (Mgal)
Simulated
Observed

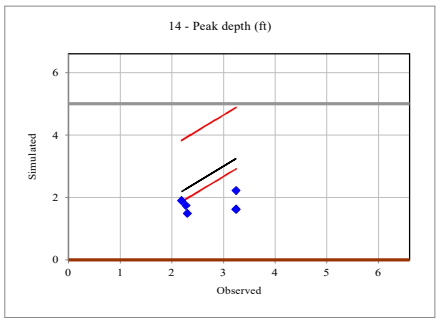

13 - Peak discharge (mgd)
Simulated
Observed

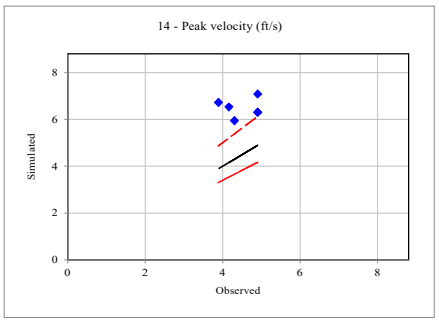

13 - Peak depth (ft)
Simulated
Observed

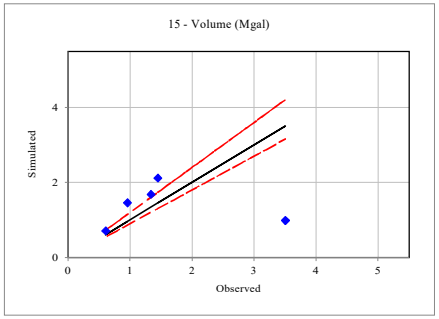

13 - Peak velocity (ft/s)
Simulated
Observed

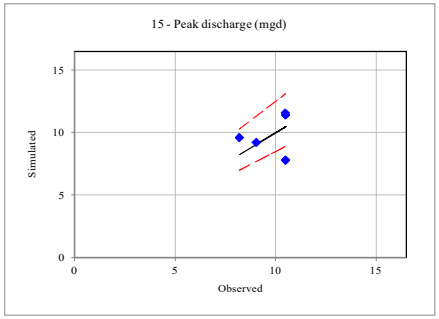

14 - Volume (Mgal)
Simulated
Observed

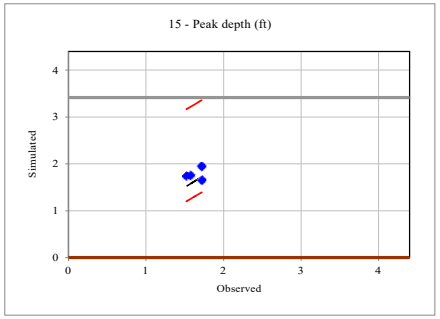

14 - Peak discharge (mgd)
Simulated
Observed

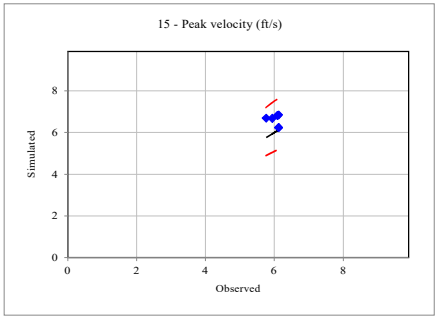

14 - Peak depth (ft)
Simulated
Observed

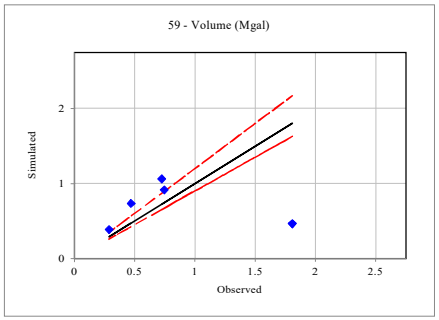

14 - Peak velocity (ft/s)
Simulated
Observed

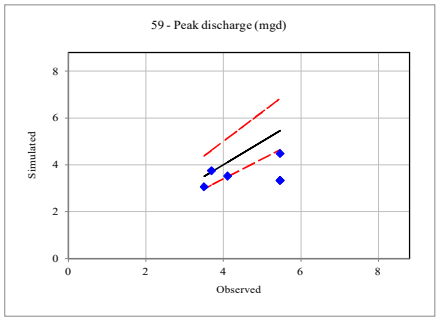

15 - Volume (Mgal)
Simulated
Observed

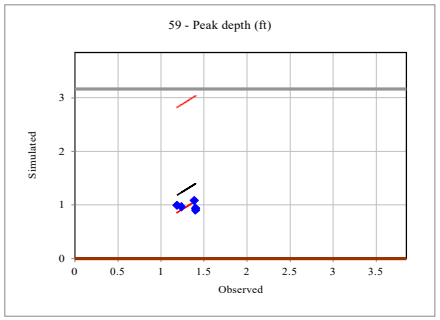

15 - Peak discharge (mgd)
Simulated
Observed

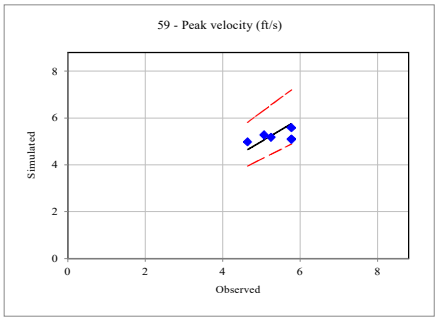

15 - Peak depth (ft)
Simulated
Observed

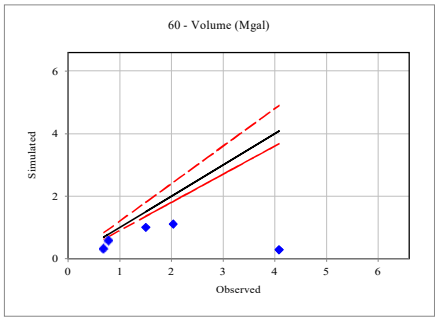

15 - Peak velocity (ft/s)
Simulated
Observed

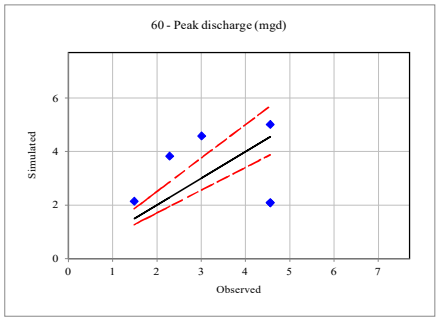

59 - Volume (Mgal)
Simulated
Observed

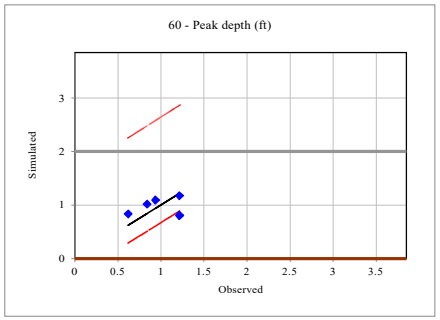

59 - Peak discharge (mgd)
Simulated
Observed

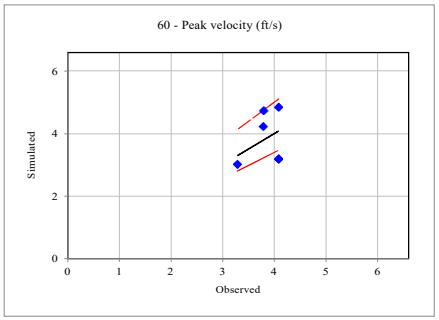

59 - Peak depth (ft)
Simulated
Observed


59 - Peak velocity (ft/s)
Simulated
Observed


60 - Volume (Mgal)
Simulated
Observed


60 - Peak discharge (mgd)
Simulated
Observed


60 - Peak depth (ft)
Simulated
Observed


60 - Peak velocity (ft/s)
Simulated
Observed

Appendix C Drawings: Alternative 1 – Main Conduit to Bunker Hill Avenue Outfall (Phase 1) and Phase 2 Branches

LOWELL REGIONAL WASTEWATER UTILITY (LRWWU)

COPY NO. ____

CITY OF LOWELL, MASSACHUSETTS
CSO SEWER SEPARATION PROGRAM

ALTERNATIVE 1 - MAIN CONDUIT TO BUNKER HILL AVENUE OUTFALL (PHASE1)

PRELIMINARY DESIGN DRAFT

LOWELL CITY MANAGER

THOMAS A. GOLDEN, JR.

LOWELL CITY COUNCILORS

SOKHARY CHAU, MAYOR
JOHN DRINKWATER
ERIK GITSCHIER
WAYNE JENNESS
JOHN J. LEAHY
RITA MERCIER
VESNA NUON
COREY ROBINSON
DANIEL ROURKE
KIMBERLY SCOTT
PAUL RATHA YEM

LRWWU EXECUTIVE DIRECTOR

AARON FOX

LRWWU ENGINEERING MANAGER

EVAN WALSH



1" = 800'
400 0 800

LOCATION PLAN

30% DRAWINGS
NOT FOR CONSTRUCTION
DECEMBER 2023

These drawing packages are for the purpose of identifying preliminary routing for mainline and lateral pipes. Not all sizes shown reflect the results of hydraulic modeling and are subject to change. Sizing is to be updated and finalized during final design.

CDM Smith

MANCHESTER, NEW HAMPSHIRE

Water *Environment* *Transportation* *Energy* *Facilities*

ALT. PHASE 1 & 2

SHEET NUMBER	SHEET TITLE	SHEET NUMBER	SHEET TITLE
C-1	BUNKER HILL AVE.	C-28	HAMPSHIRE ST.
C-2	BUNKER HILL AVE.	C-29	W NINTH & SHEDD ST.
C-3	BUNKER HILL AVE.	C-30	W TENTH & W ELEVENTH ST.
C-4	BUNKER HILL AVE.	C-31	BRIDGE ST.
C-5	HILDRETH ST.	C-32	THIRTEENTH ST.
C-6	HILDRETH ST.	C-33	WACHUSETT ST.
C-7	LUDLAM ST.	C-34	JULY ST.
C-8	LUDLAM ST. & BARKER AVE.	C-35	BEACON ST.
C-9	BARKER AVE.	C-36	BEACON ST.
C-10	BILLINGS ST.	C-37	METHUEN ST.
C-11	WILLARD ST.	C-38	METHUEN ST.
C-12	WILLARD ST. & BEACON ST.	C-39	HUMPHREY ST.
C-13	BEACON ST.	C-40	ABERDEEN ST.
C-14	TWENTIETH ST.	C-41	ABERDEEN ST.
C-1A	WEST ST.	C-42	CHRSTIAN ST.
C-2A	WEST ST.	C-43	TERRY ST.
C-3A	WEST ST.	C-44	BRIAN RD.
C-4A	COBURN ST.	C-46	RICHARDSON ST.
C-5A	HILDRETH ST.	C-47	RICHARDSON ST.
C-6A	HILDRETH ST.	C-48	BRIDGE ST.
C-7A	BRIDGE ST.	C-49	EUSTIS AVE.
C-8A	TWELTH ST.	C-50	EUSTIS AVE.
C-9A	TWELTH ST.	C-51	BOYNTON ST.
C-10A	METHUEN ST.	C-52	BOYNTON ST.
C-1B	LAKEVIEW AVE.	C-53	LUDLAM ST.
C-2B	LAKEVIEW AVE.	C-54	LUDLAM ST. & EIGHTNEETH ST.
C-3B	COBURN ST.	C-55	WHITNEY AVE.
C-4B	JEWETT ST.	C-56	SUTEHRLAND ST.
C-5B	W SIXTH ST.	C-57	BY ST.
C-15	STANLEY ST.	C-58	BARKER AVE.
C-16	W SIXTH ST.	C-59	BRIDGE ST.
C-17	FULTON ST.	C-60	NINTEENTH ST.
C-18	FULTON ST.	C-61	HILDRETH ST.
C-19	COBURN ST.	C-62	HILDRETH ST.
C-20	COBURN ST.	C-63	HILDRETH ST.
C-21	W THIRD ST.	C-64	BEACON ST.
C-22	ALBION ST.	C-65	BEACON ST.
C-23	W FIFTH ST.	C-66	HUMPHREY ST.
C-24	JEWETT ST.	C-67	HUMPHREY ST.
C-25	JEWETT ST.	C-68	WILLARD ST.
C-26	W SIXTH ST.	C-69	W FOURTH ST.
C-27	HAMPSHIRE ST.		



XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP003ST_EX GAS LINE, CWZ003PP_CWIL 3D WORKING MODEL_Trunk Mains, CEP001ST_BASEMAP HUMPHREYS] Images: []
Last saved by: GANJIV Time: 12/27/2023 9:30:11 PM
C:\pw_pif\GANJIV\d3611167\G008INDX.dwg
© 2022 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

KEY PLAN

PROJECT NO. 0552-282899
FILE NAME: G008INDX.DWG

SHEET NO.
G-8

30% SUBMITTAL - NOT FOR CONSTRUCTION

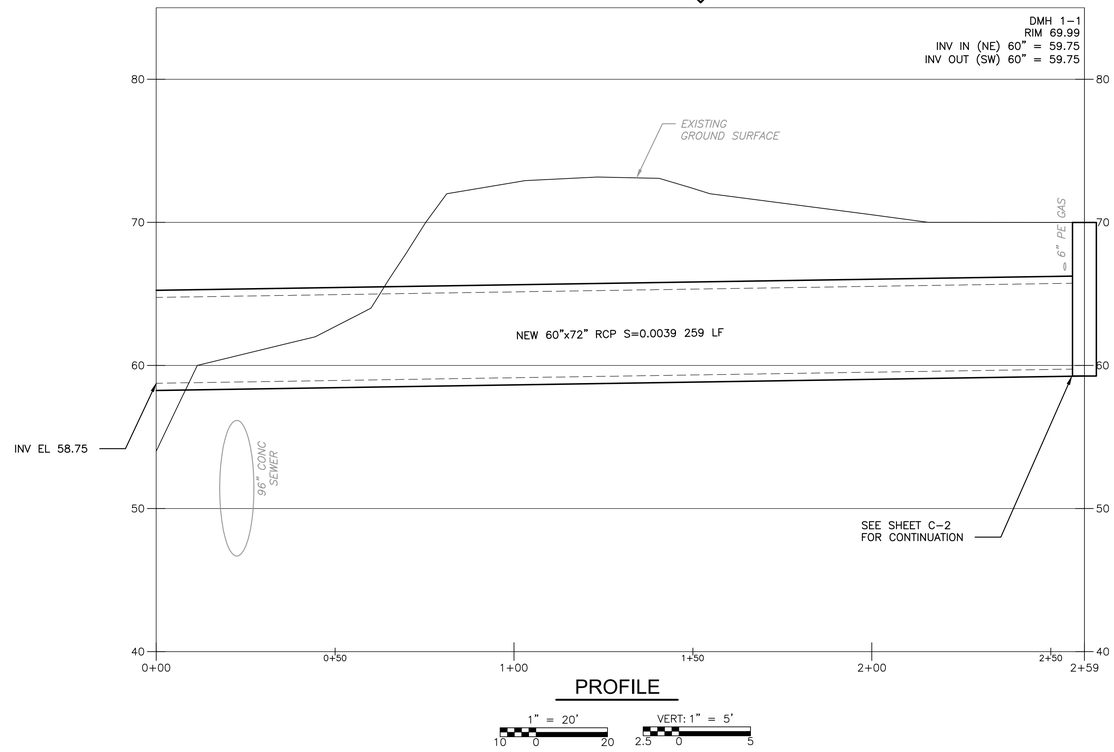


PLAN

1" = 20'

10 0 20

N



PROFILE

1" = 20'

10 0 20

VERT: 1" = 5'

2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

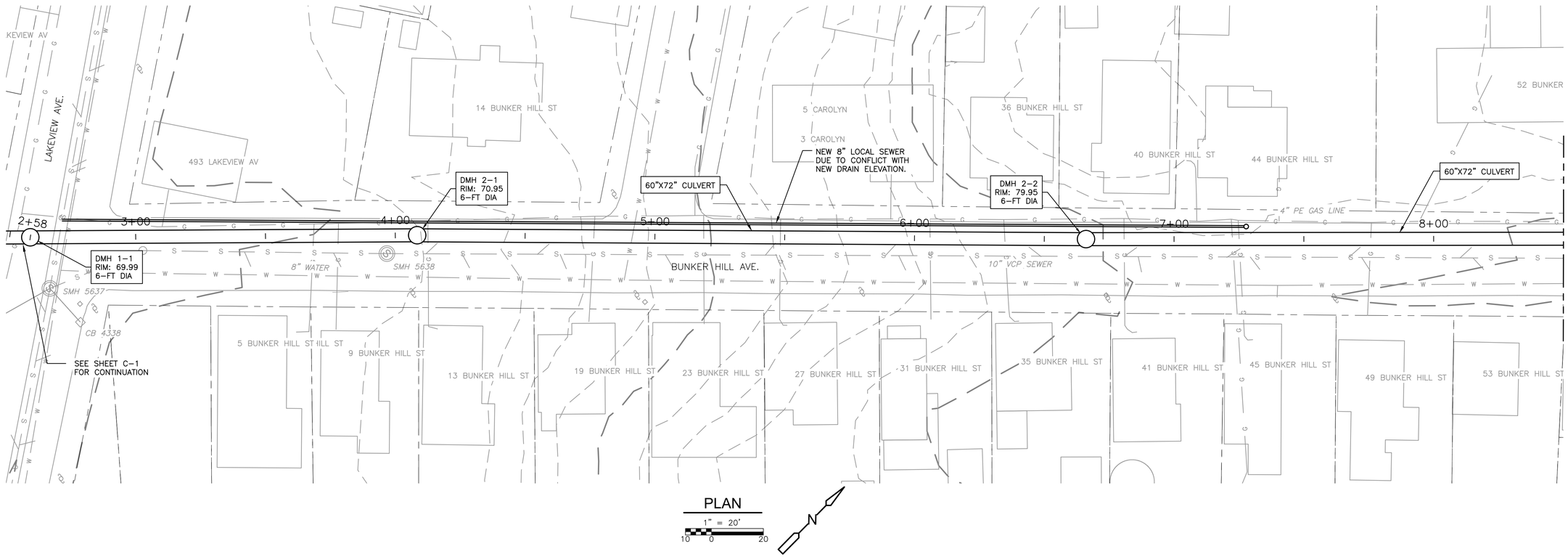
BUNKER HILL AVE

PROJECT NO. 0552-282899
FILE NAME: C001PLPR.DWG

SHEET NO.
C-1

30% SUBMITTAL - NOT FOR CONSTRUCTION

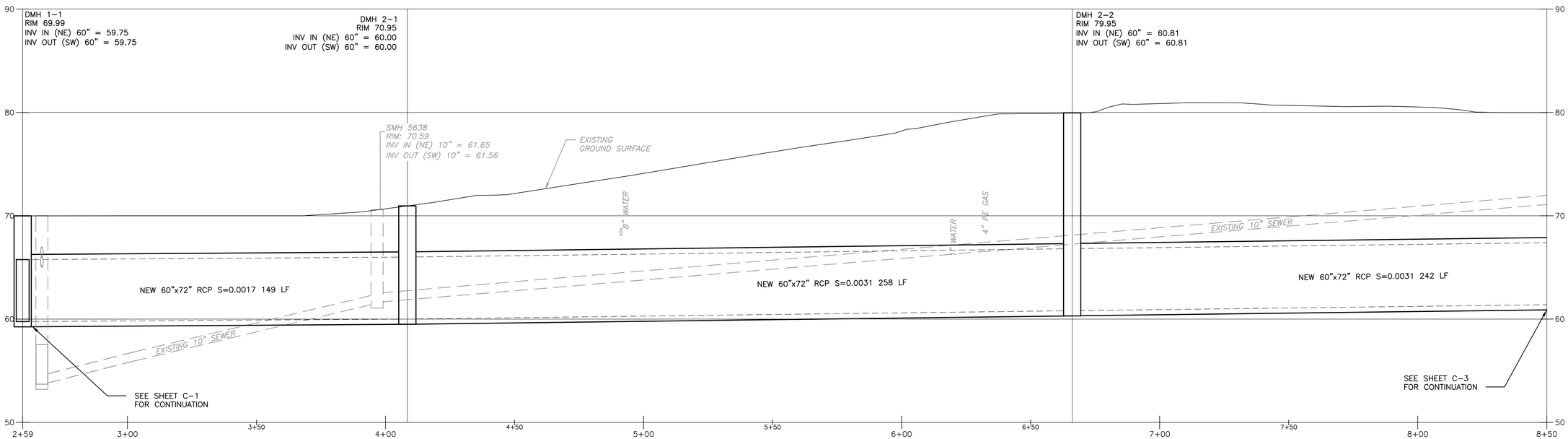
XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] [images: []
Last saved by: GANJV Time: 12/27/2023 2:42:03 PM
C:\pw_pp11\GANJV\d3611175\C001PLPR_Trunk Main.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20'

10 0 20

VERT: 1" = 5'

2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

BUNKER HILL AVE

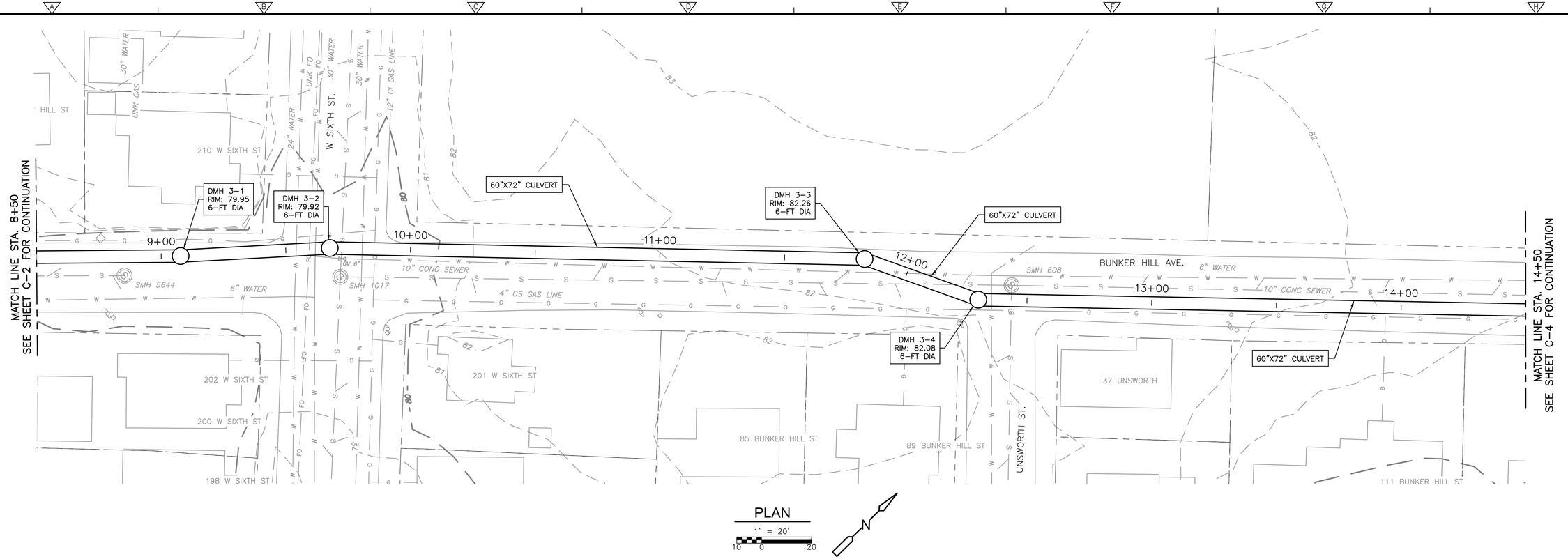
PROJECT NO. 0552-282899
FILE NAME: C002PLPR.DWG

SHEET NO.
C-2

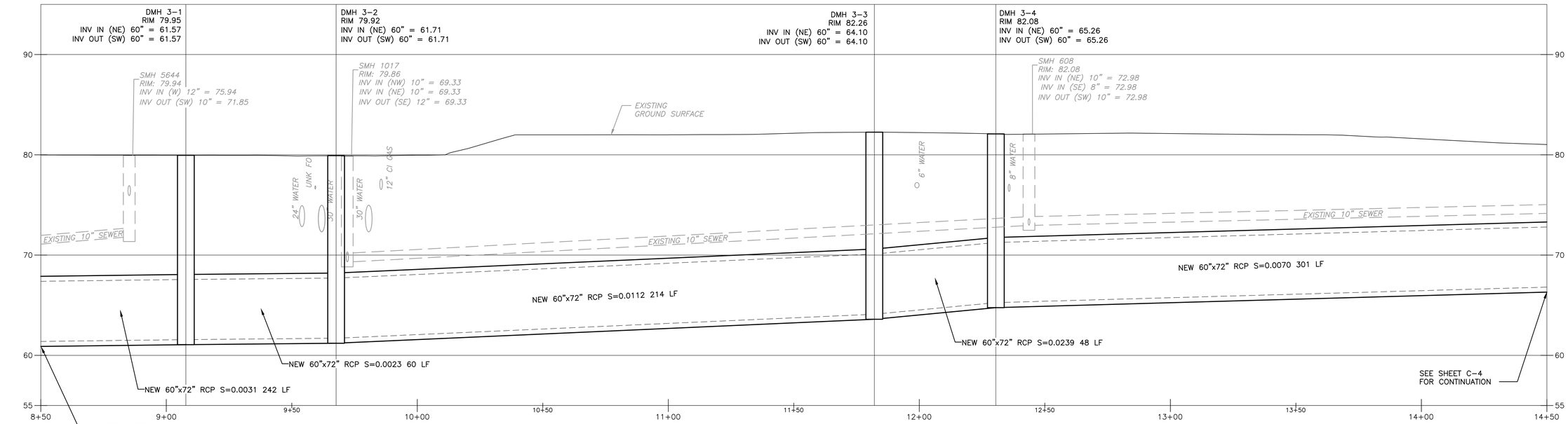
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436_CWZ003PP_CIVIL_3D_WORKING_MODEL_CEP005PP_EX_SEWER, CEP004PP_EX_WATER, CEP002ST_EX_DRAIN, CEP007PP_EX_CULVERTS, CEP001ST_BASEMAP_HUMPHREYS, CEP003ST_EX_GAS_LINE, CEP009PP-STREET_LIGHT_AND_NATIONAL_GRID_POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL_3D_WORKING_MODEL_Trunk_Mains] Images: []
Last saved by: GANJIV Time: 12/27/2023 4:08:39 PM
C:\pw_p11\GANJIV\d3611175\C001PLPR_Trunk Main.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] [Images: []
Last saved by: GANJV Time: 12/26/2023 6:54:36 PM
C:\pw_p11\GANJV\d3611175\C001PLPR_Trunk Main.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN
1" = 20'



PROFILE
1" = 20'
VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

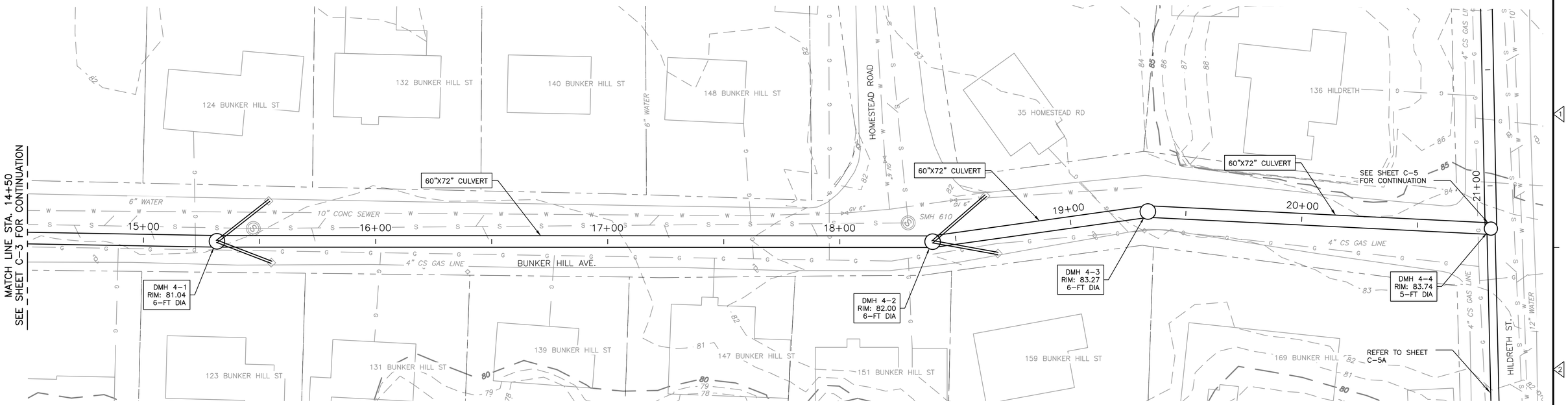
LOWELL, MA

HUMPHREY'S BROOK

BUNKER HILL AVE

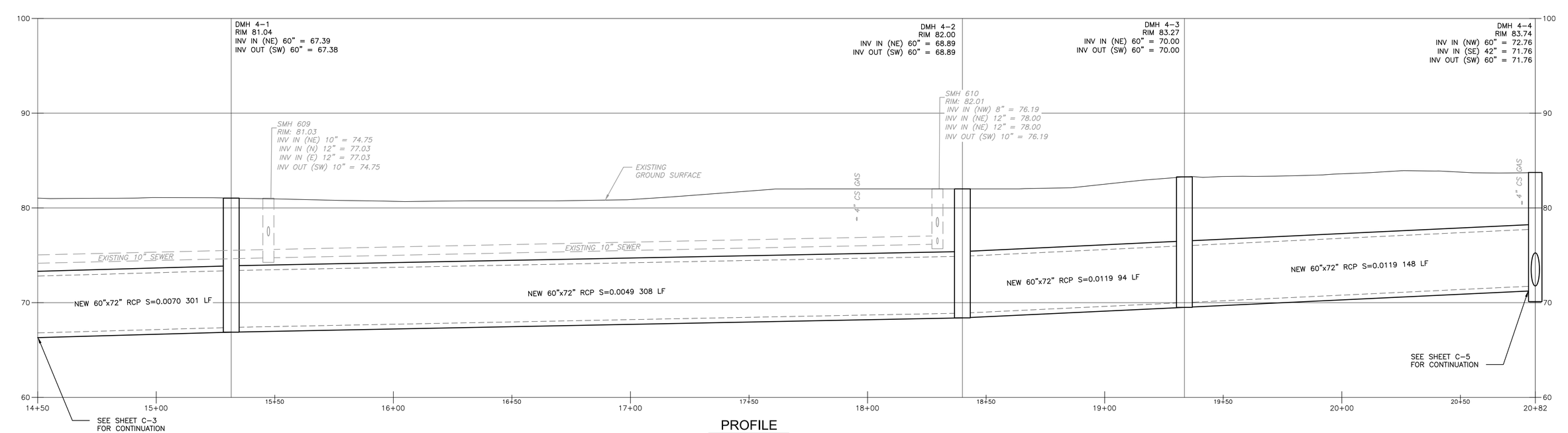
PROJECT NO. 0552-282899
FILE NAME: C003PLPR.DWG
SHEET NO.
C-3

30% SUBMITTAL - NOT FOR CONSTRUCTION



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

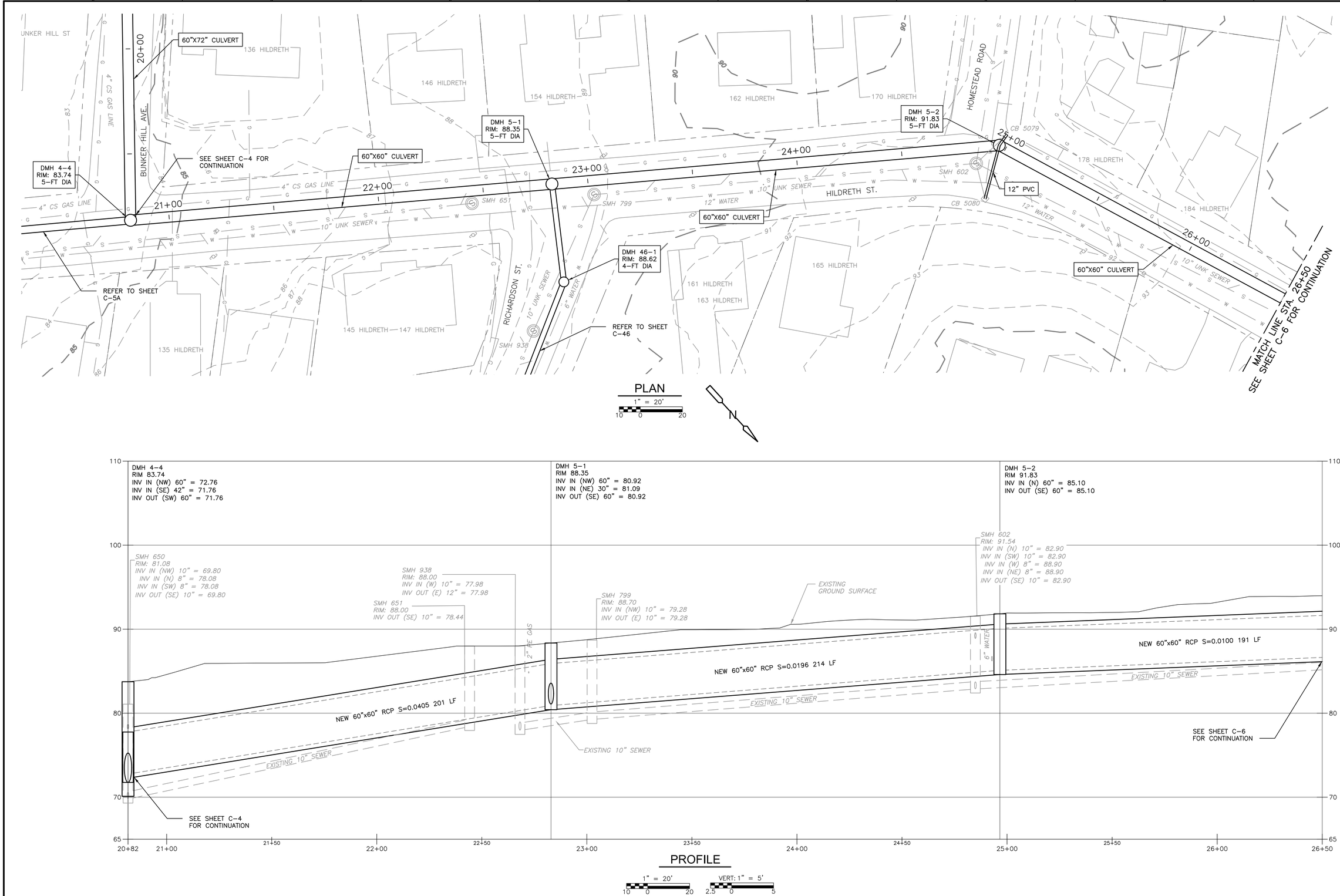
BUNKER HILL AVE

PROJECT NO. 0552-282899
FILE NAME: C004PLPR.DWG

SHEET NO.
C-4

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJV Time: 11/12/2023 7:23:43 PM
C:\pw_pp11\GANJV\d3611175\C001PLPR_Trunk Main.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

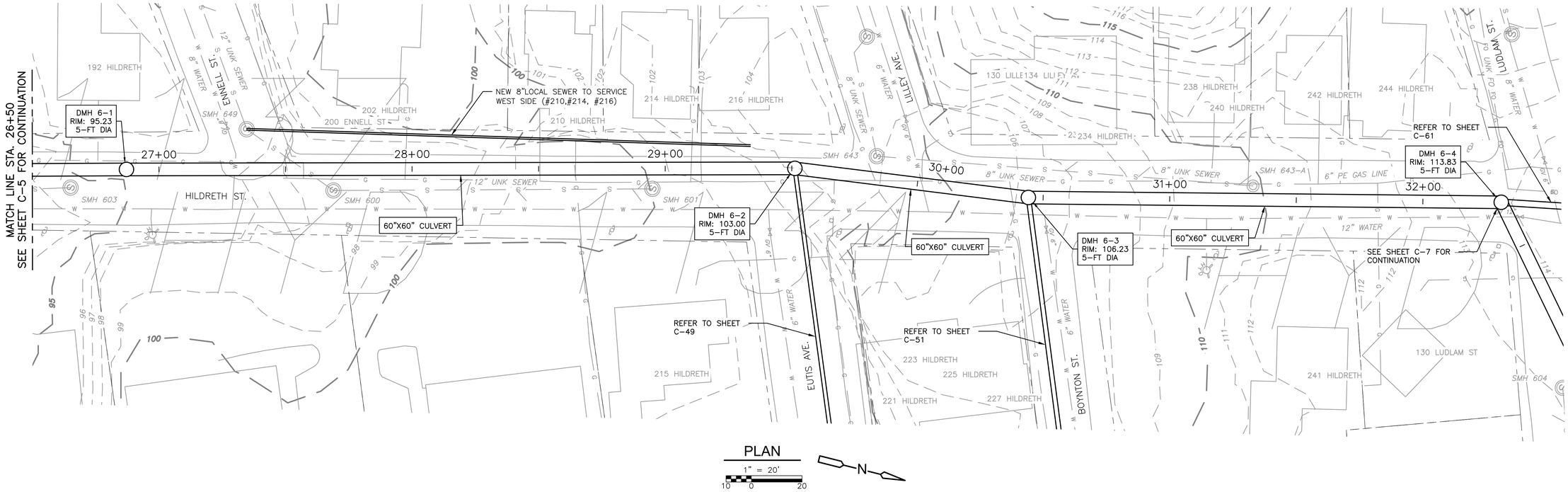
HILDRETH ST

PROJECT NO. 0552-282899
FILE NAME: C005PLPR.DWG

SHEET NO.
C-5

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436_CWZ003PP_CIVIL_3D WORKING MODEL_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL_3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJIV Time: 11/12/2023 7:27:18 PM
C:\pw_p11\GANJIV\d3611175\C001PLPR_Trunk Main.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

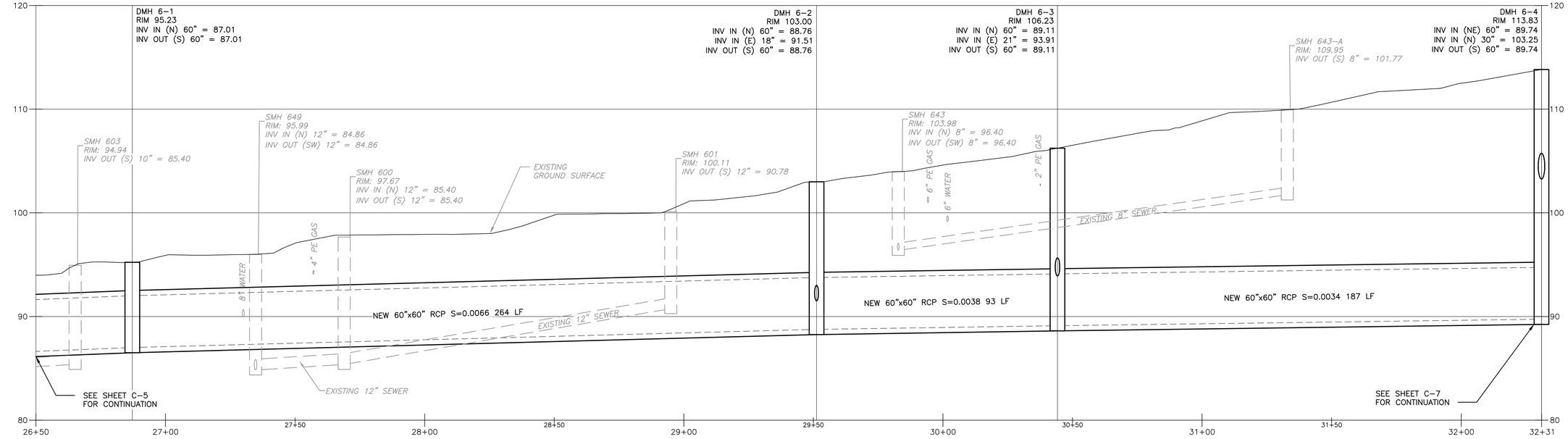


PLAN

1" = 20'

10 0 20

N



PROFILE

1" = 20'

10 0 20

VERT: 1" = 5'

2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

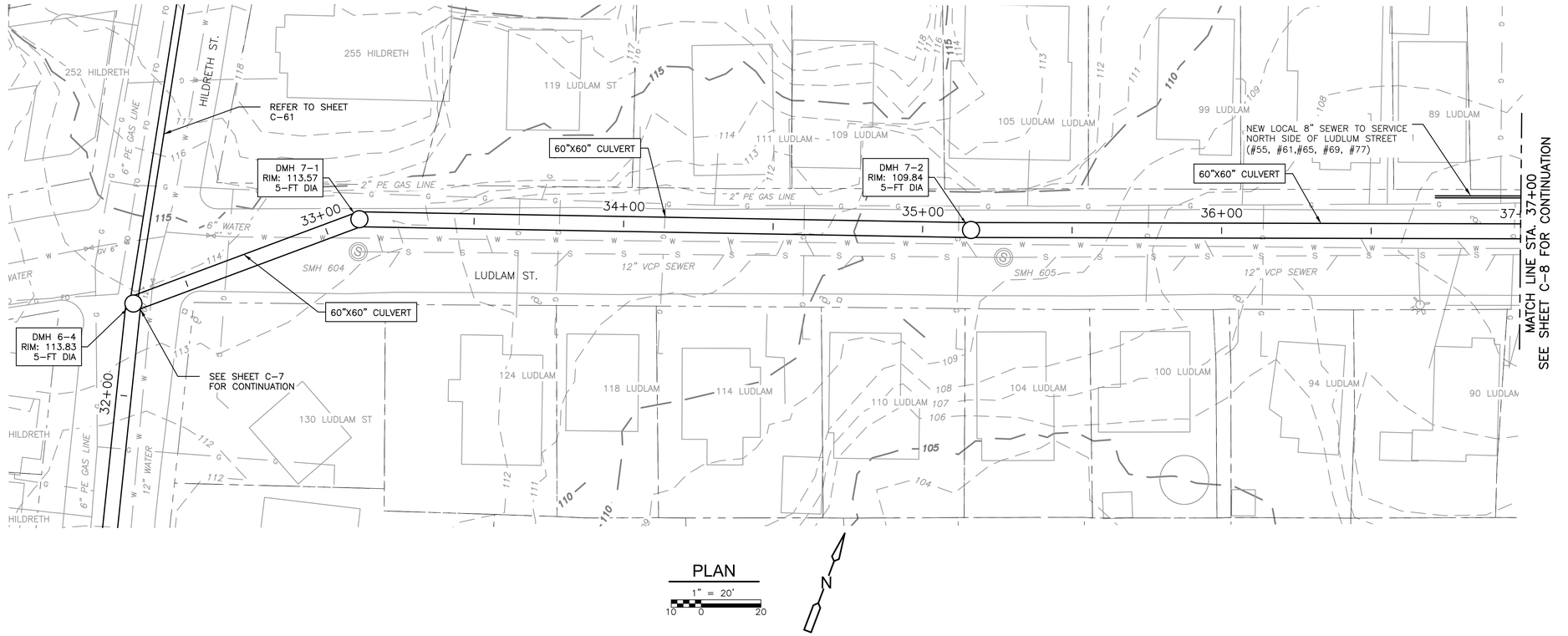
HILDRETH ST

PROJECT NO. 0552-282899
FILE NAME: C006PLPR.DWG

SHEET NO.
C-6

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJV Time: 11/12/2023 7:31:38 PM
C:\pw_p11\GANJV\d3611175\C001PLPR_Trunk Main.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

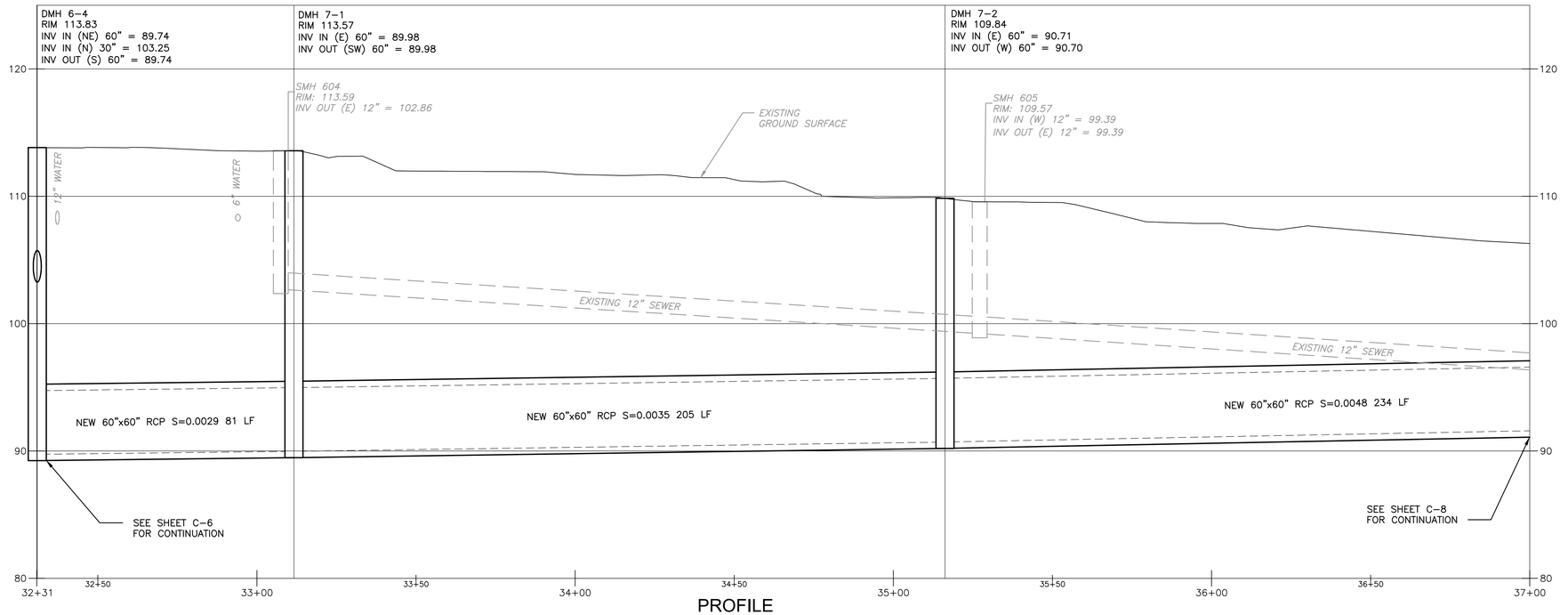


PLAN

1" = 20'

10 0 20

N



PROFILE

1" = 20' VERT: 1" = 5'

10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

LUDLAM ST

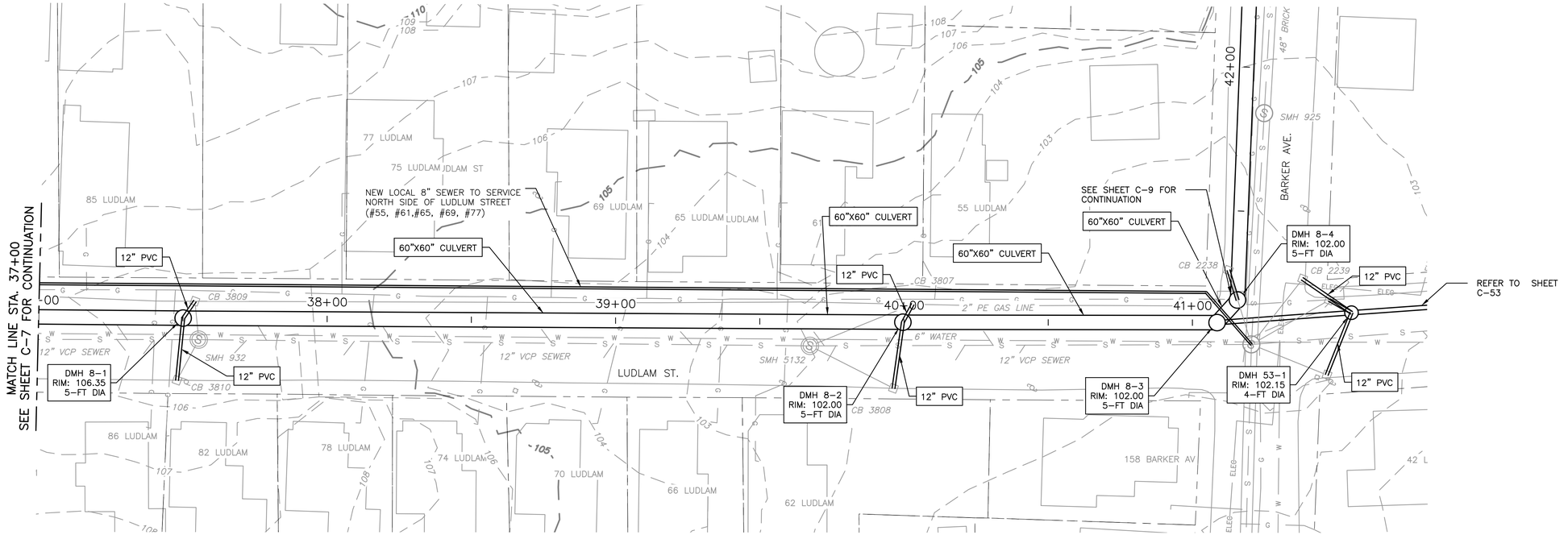
PROJECT NO. 0552-282899
FILE NAME: C007PLPR.DWG

SHEET NO.
C-7

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436_CWZ003PP_CIVIL_3D WORKING MODEL_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP CWZ003PP_CIVIL_3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJIV Time: 11/12/2023 7:33:52 PM
C:\pw_p11\GANJIV.d3611175\C001PLPR_Trunk Main.dwg
© 2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

XREFs: [CDMS_2436_CWZ003PP_CIVIL_3D WORKING MODEL_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP CWZ003PP_CIVIL_3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJIV Time: 11/12/2023 7:39:30 PM
C:\pw_p11\GANJIV.d3611175\C001PLPR_Trunk Main.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

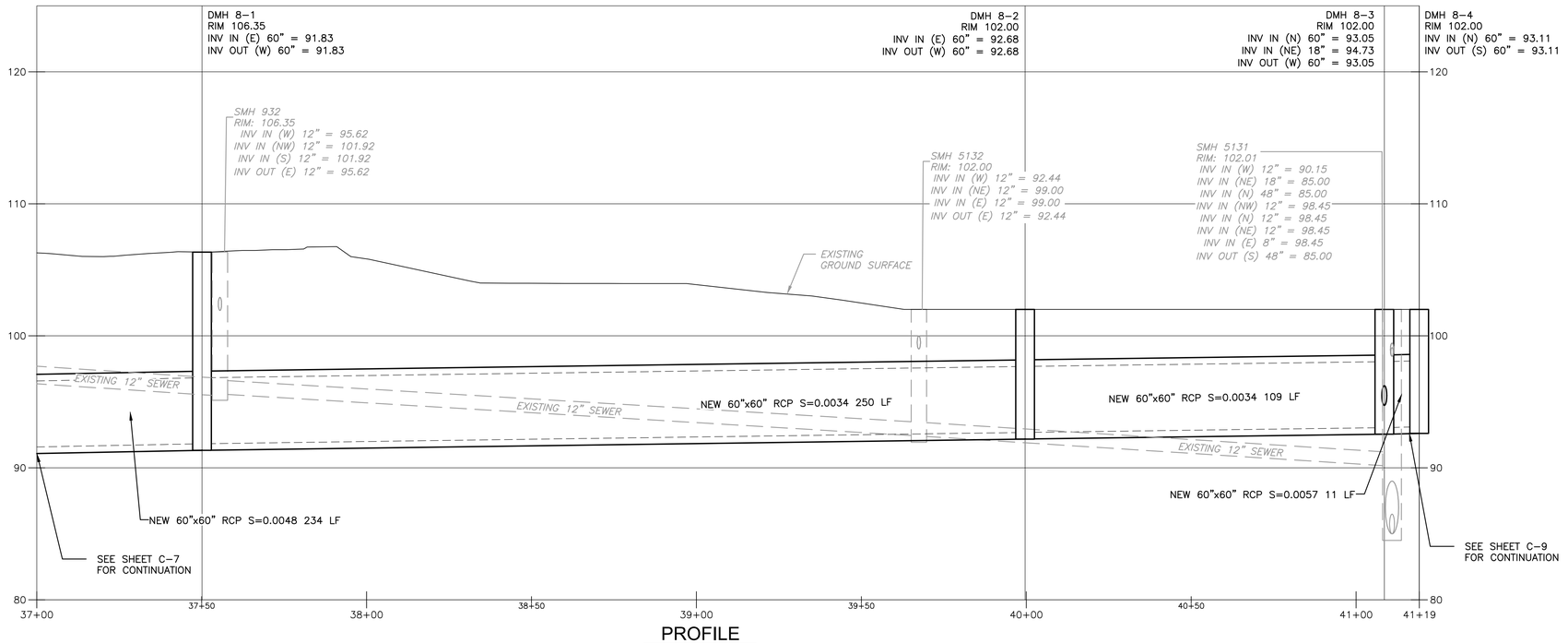


PLAN

1" = 20'

10 0 20

N



PROFILE

1" = 20'

10 0 20

VERT: 1" = 5'

2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

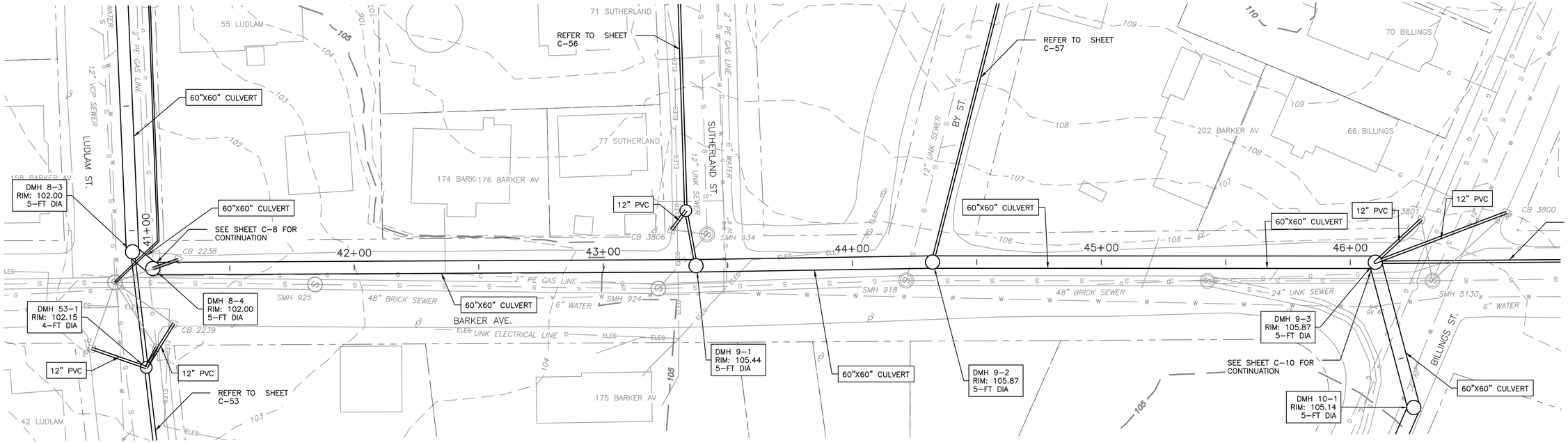
HUMPHREY'S BROOK

LUDLAM ST & BARKER AVE

PROJECT NO. 0552-282899
FILE NAME: C008PLPR.DWG

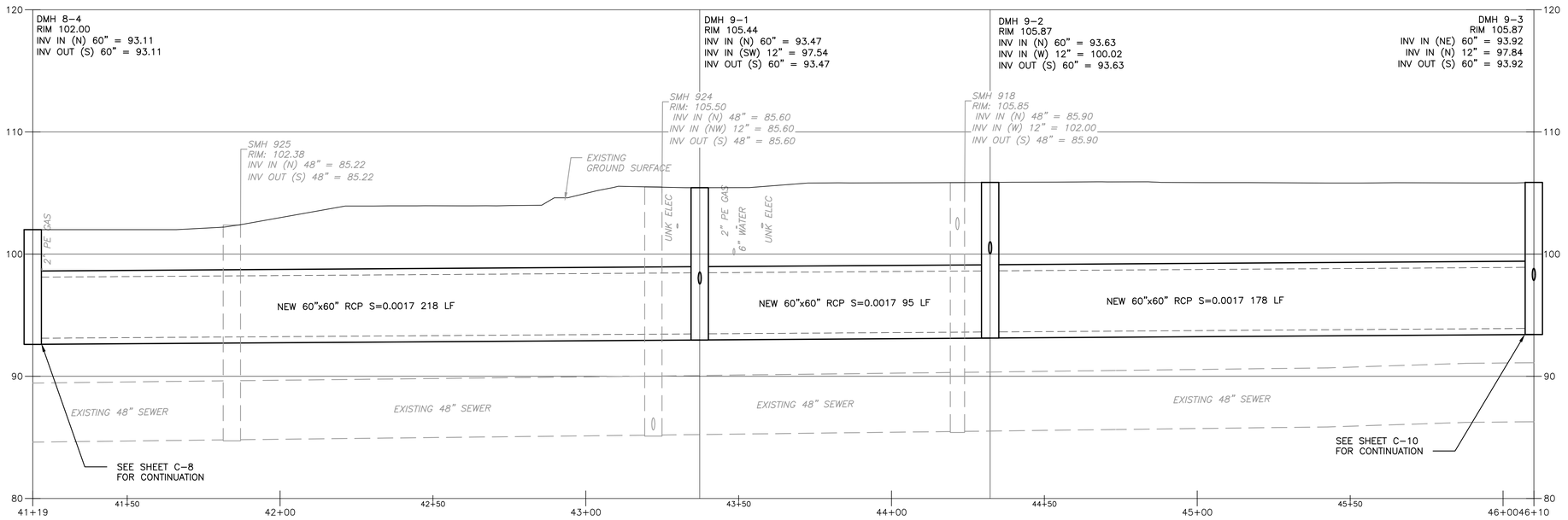
SHEET NO.
C-8

30% SUBMITTAL - NOT FOR CONSTRUCTION



PLAN

1" = 20'



PROFILE

1" = 20' VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

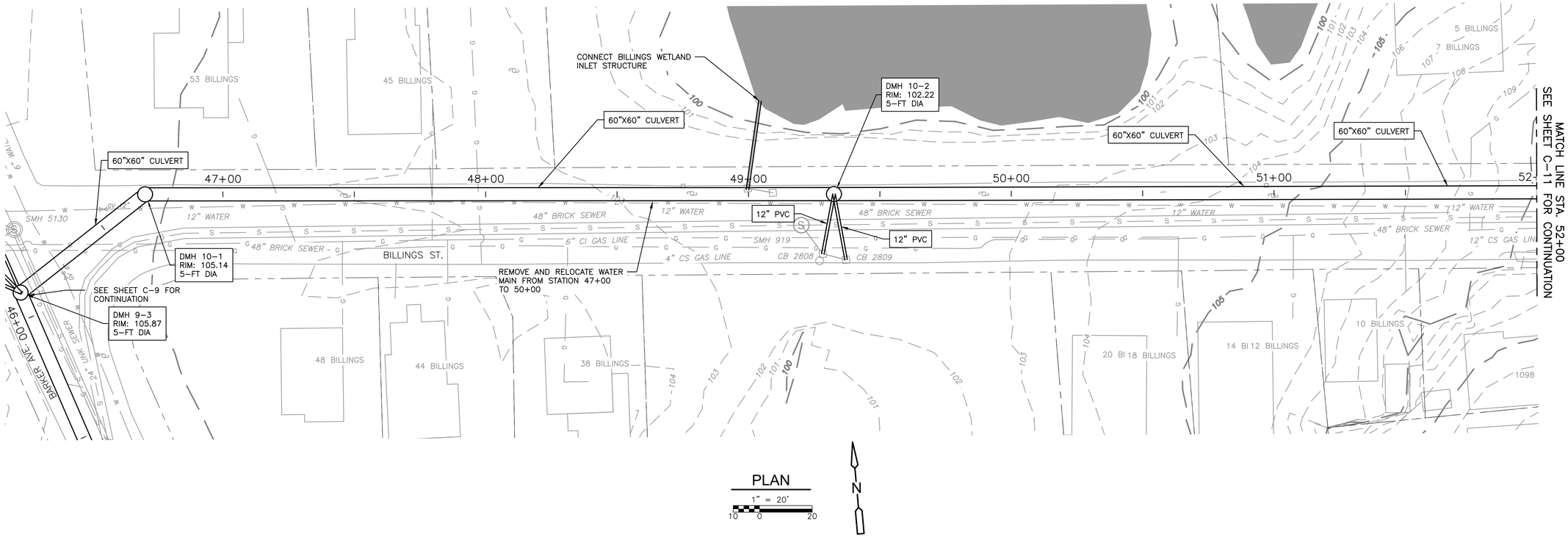
BARKER AVE

PROJECT NO. 0552-282899
FILE NAME: C009PLPR.DWG

SHEET NO.
C-9

30% SUBMITTAL - NOT FOR CONSTRUCTION

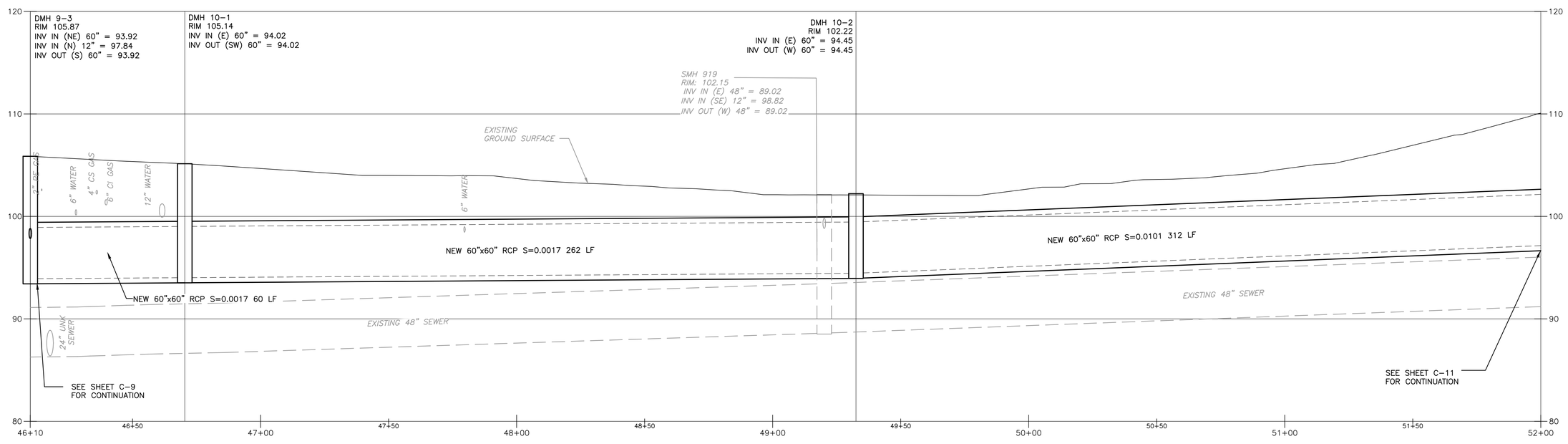
XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] [images: []
Last saved by: GANJV Time: 12/22/2023 11:19:51 AM
pw:\\cdmsmith-az02-pw.bentley.com:pw_p11\0552\282899\04 Design Services NM_10ft\02 Civil\10 BIM_CADD\C001PLPR_Trunk Main.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20' VERT: 1" = 5'

10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

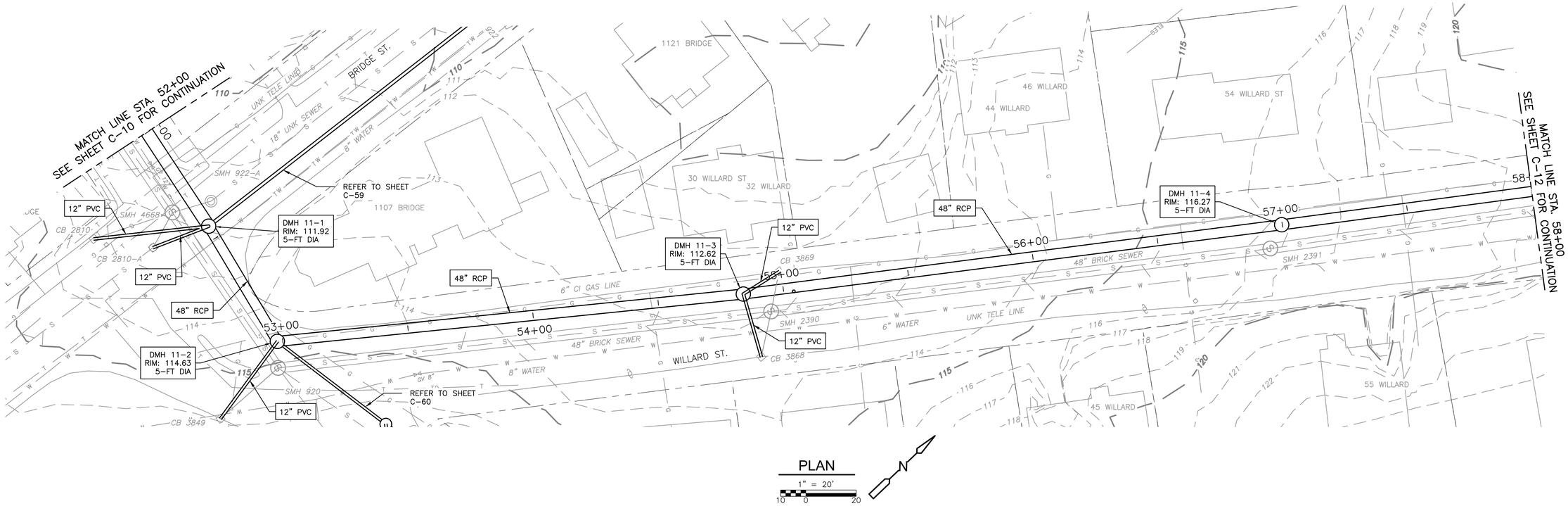
BILLINGS ST

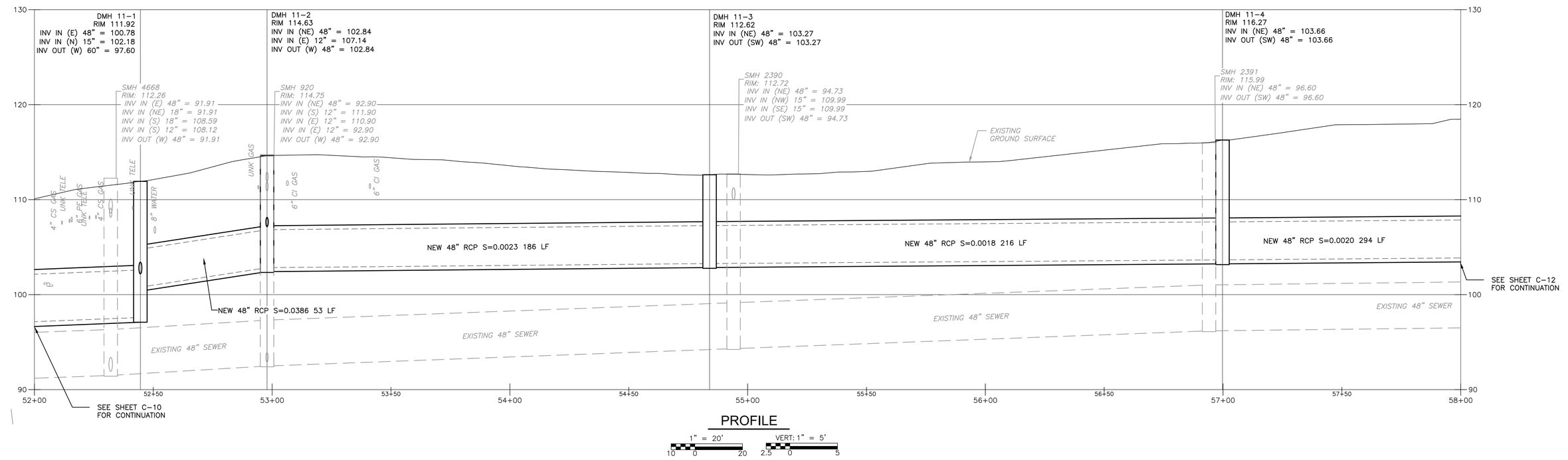
PROJECT NO. 0552-282899
FILE NAME: C01OPLPR.DWG

SHEET NO.
C-10

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] [images: []
Last saved by: GANJV Time: 11/12/2023 7:52:54 PM
C:\pw_p11\GANJV\d3611175\C001PLPR_Trunk Main.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.





PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

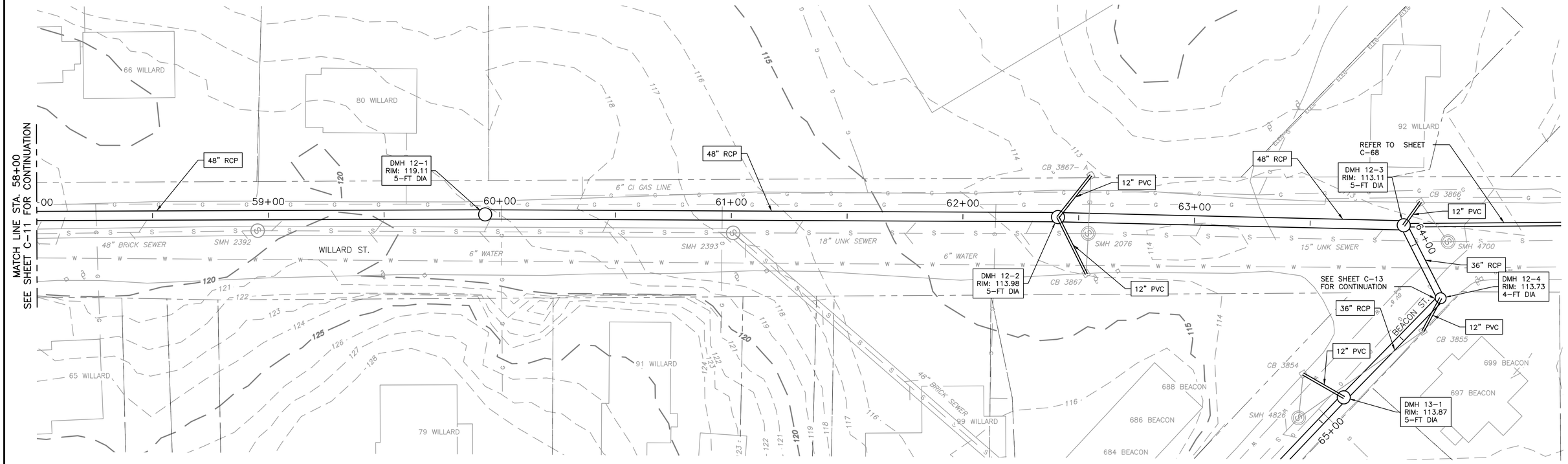
WILLARD ST

PROJECT NO. 0552-282899
FILE NAME: C011PLPR.DWG

SHEET NO.
C-11

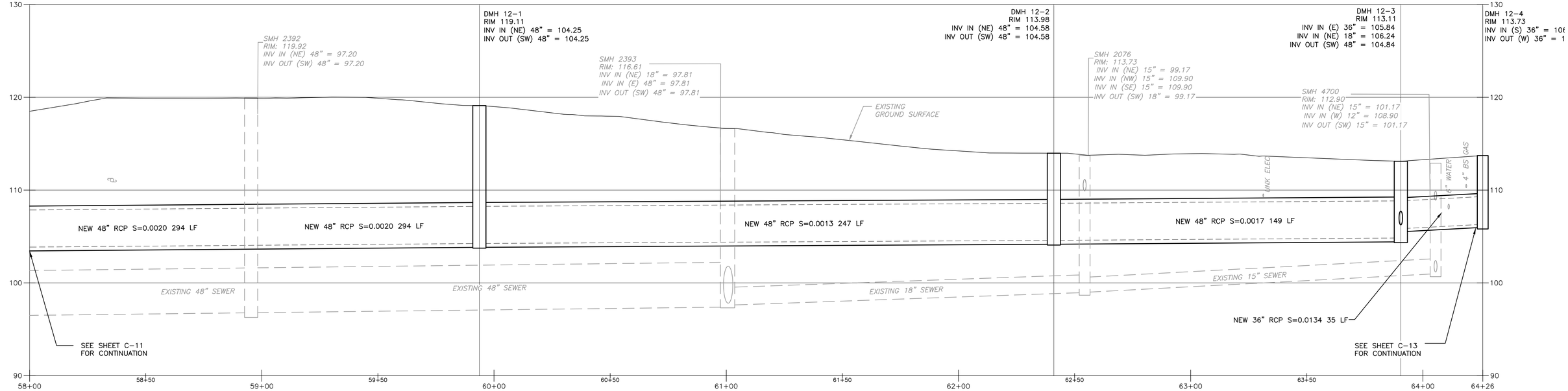
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP_STREET LIGHT AND NATIONAL GRID POLE, CEP008PP_EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] [Images: []
Last saved by: GANJV Time: 11/12/2023 7:58:16 PM
C:\pw_p11\GANJV\d3611175\C001PLPR_Trunk Main.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'



PROFILE

1" = 20' VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

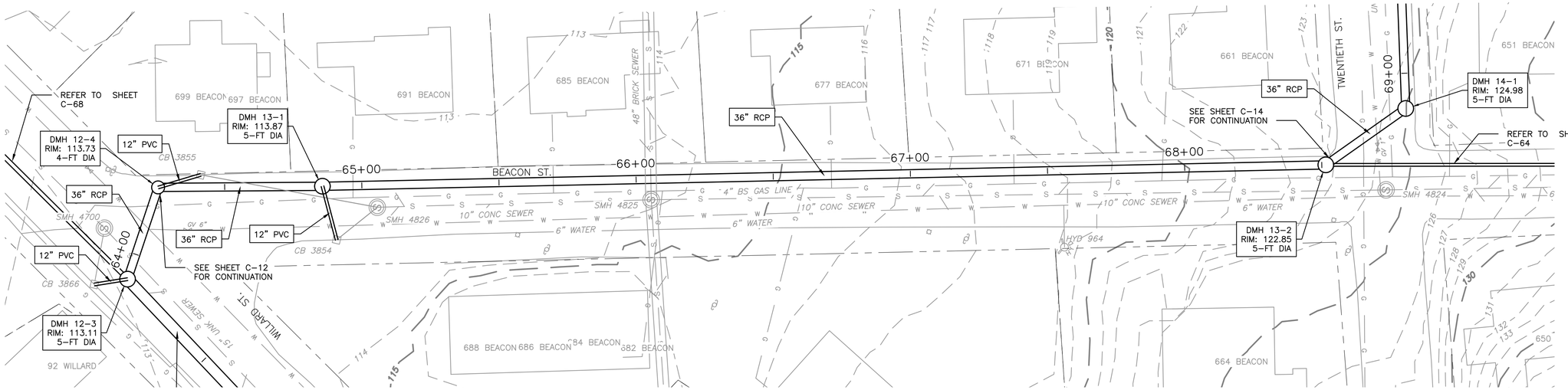
WILLARD ST & BEACON ST

PROJECT NO. 0552-282899
FILE NAME: C012PLPR.DWG

SHEET NO.
C-12

30% SUBMITTAL - NOT FOR CONSTRUCTION

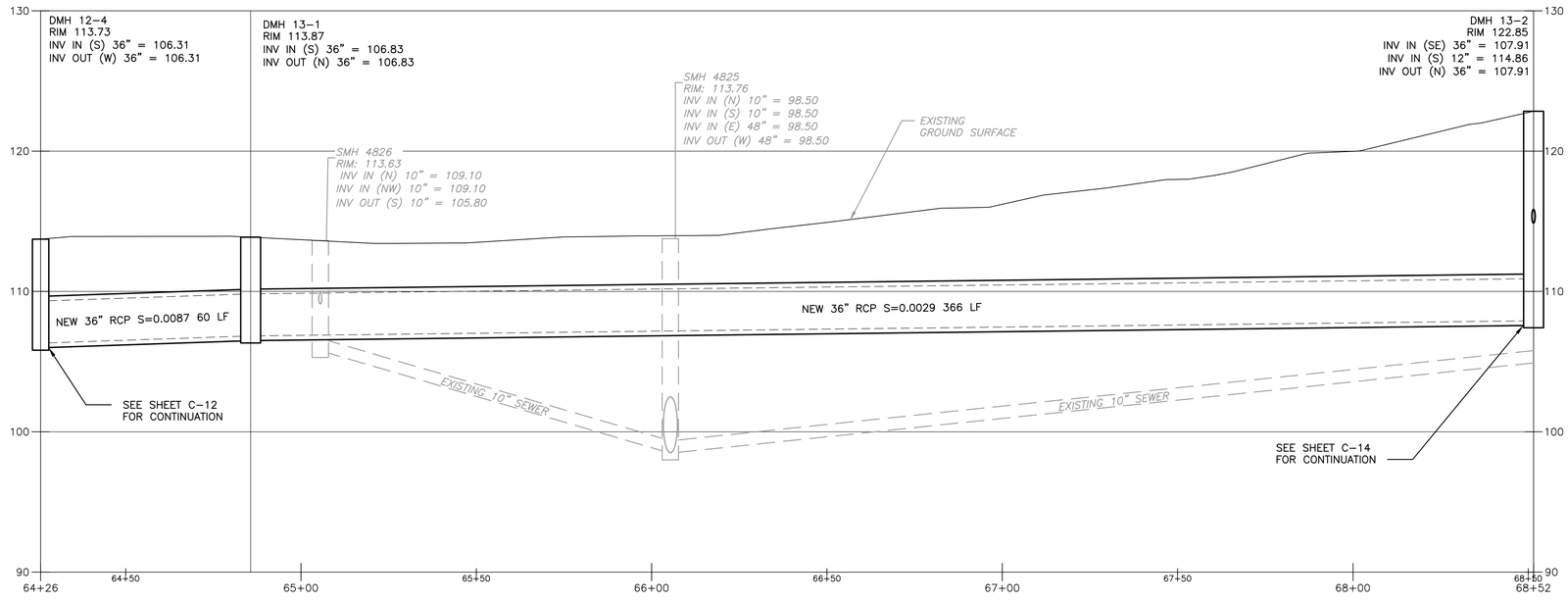
XREFs: [CDMS_2436, CW2003PP_CIVIL 3D WORKING MODEL_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CW2003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJIV Time: 11/12/2023 8:02:17 PM
C:\pw_pl1\GANJIV\d3611175\C001PLPR_Trunk Main.dwg
© 2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20' VERT: 1" = 5'

10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

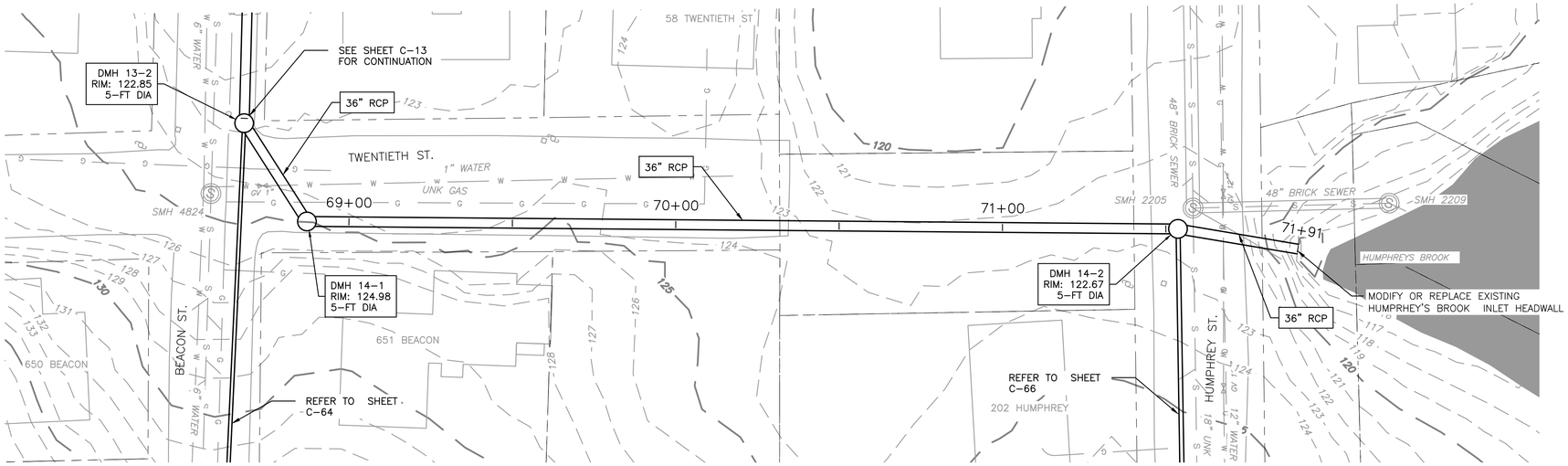
BEACON ST

PROJECT NO. 0552-282899
FILE NAME: C013PLPR.DWG

SHEET NO.
C-13

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJV Time: 12/27/2023 1:16:48 PM
C:\pw_p11\GANJV\d3611175\C001PLPR_Trunk Main.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

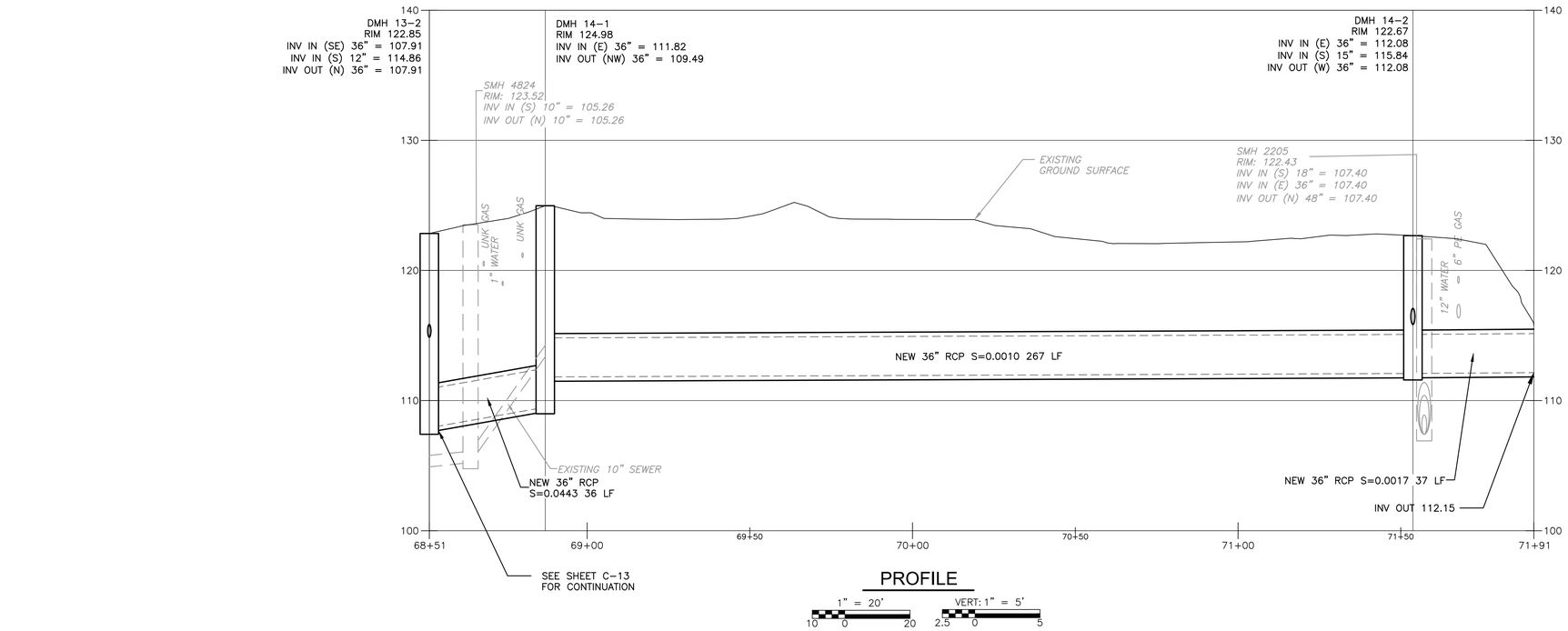


PLAN

1" = 20'

10 0 20

N



PROFILE

1" = 20' VERT: 1" = 5'

10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

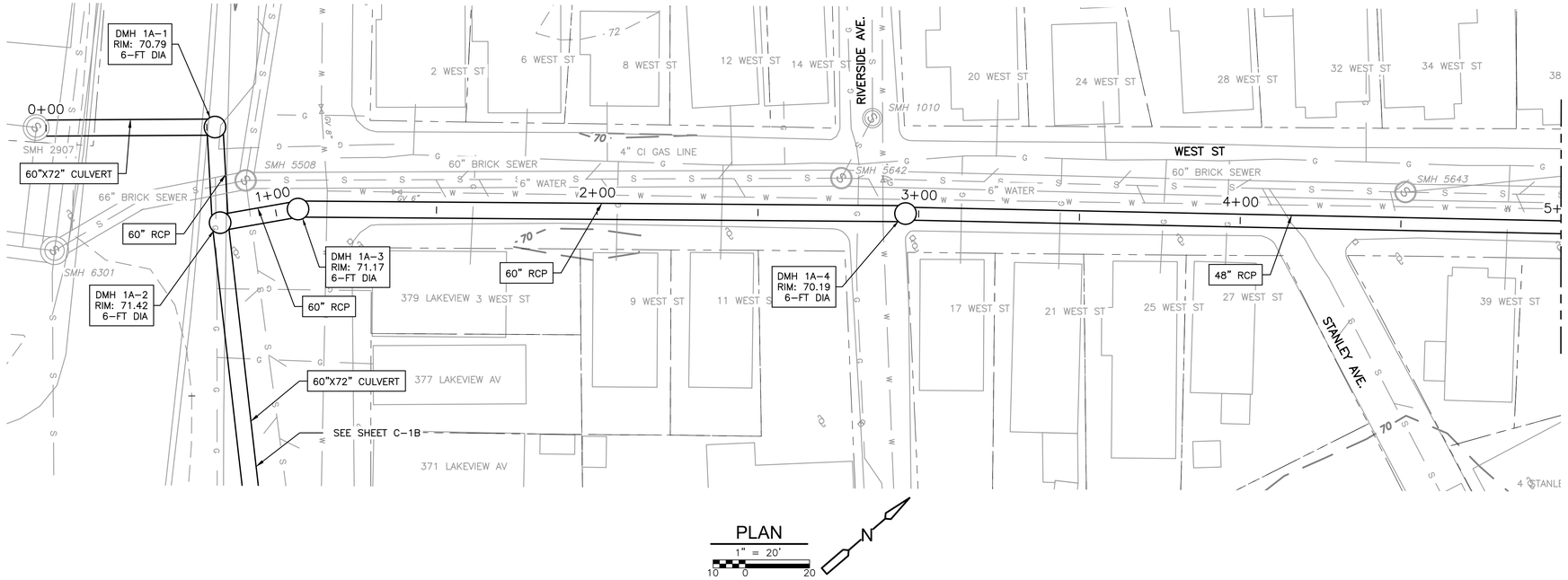
TWENTIETH ST

PROJECT NO. 0552-282899
FILE NAME: C014PLPR.DWG

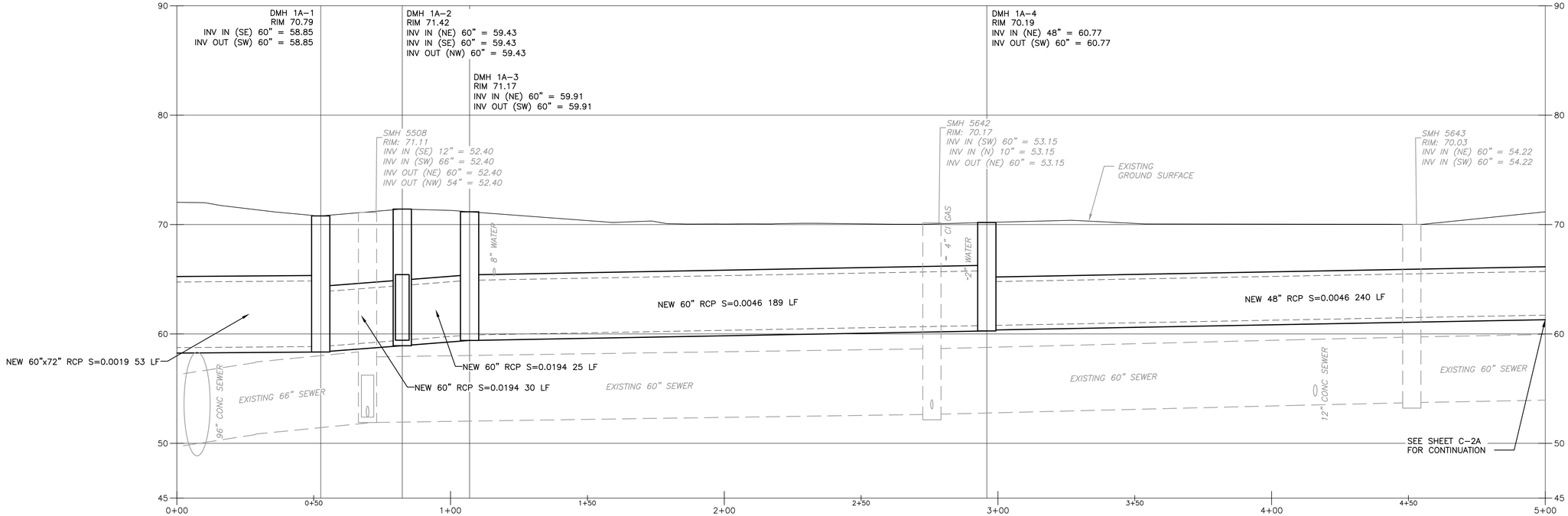
SHEET NO.
C-14

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] [Images: []
Last saved by: GANJV Time: 12/27/2023 12:51:22 PM
C:\pw_p11\GANJV\d3611175\C001PLPR_Trunk Main.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN
1" = 20'



PROFILE
1" = 20'
VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

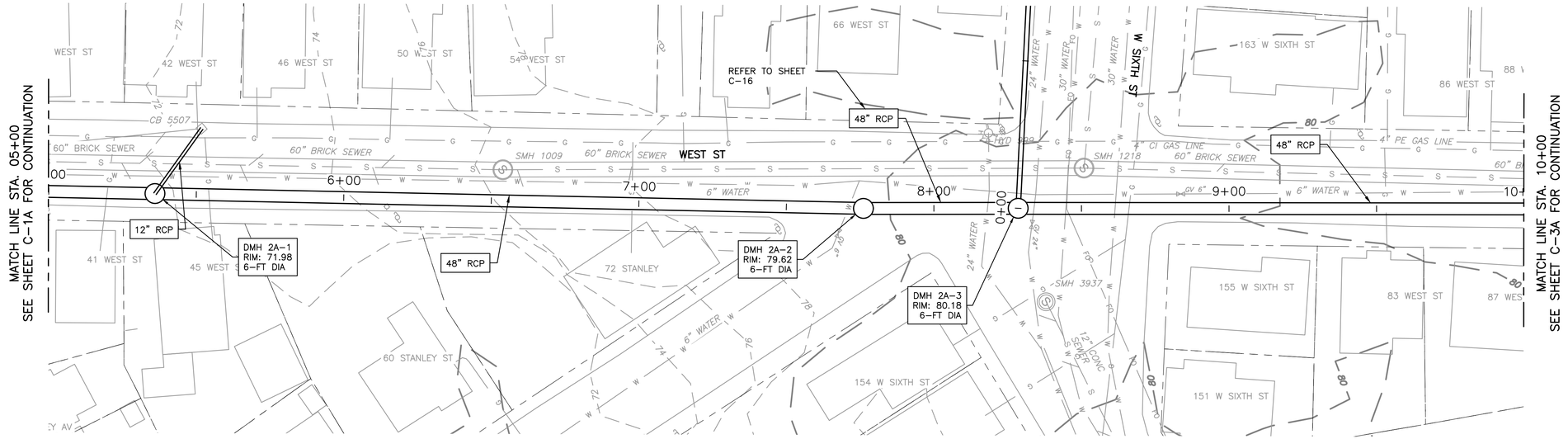
WEST ST

PROJECT NO. 0552-282899
FILE NAME: C001APLPR.DWG

SHEET NO.
C-1A

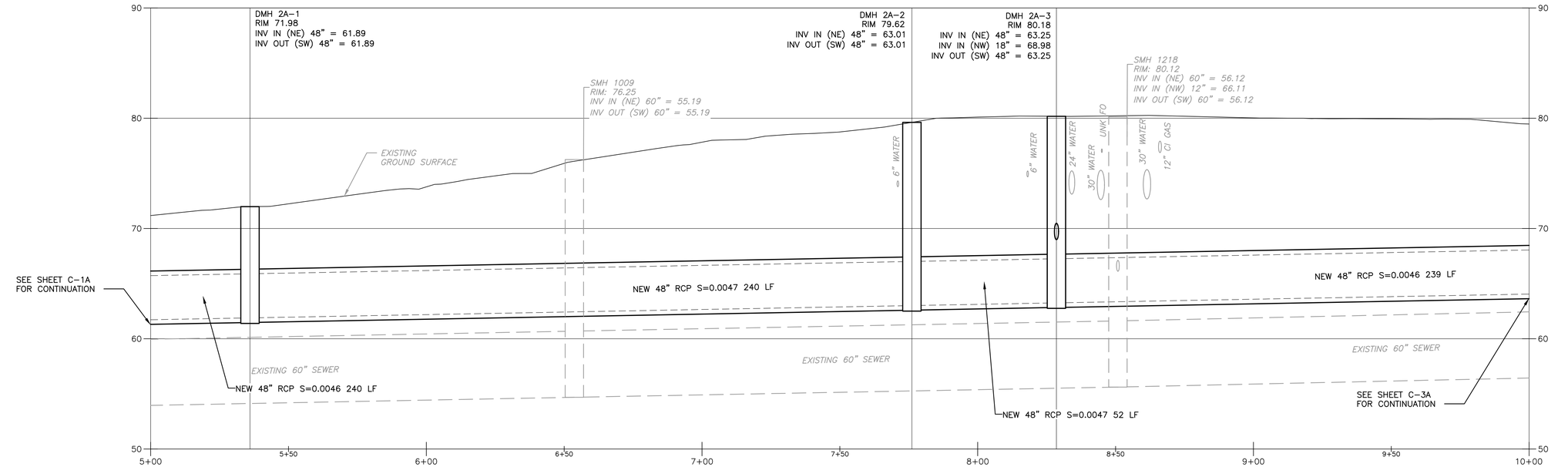
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREY'S, CEP003ST_EX GAS LINE, CEP008PP-EXTENET, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJIV Time: 11/13/2023 12:04:47 AM
C:\pw_p11\GANJIV\d3611175\C001PLPR_TRUNK MAIN 2.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

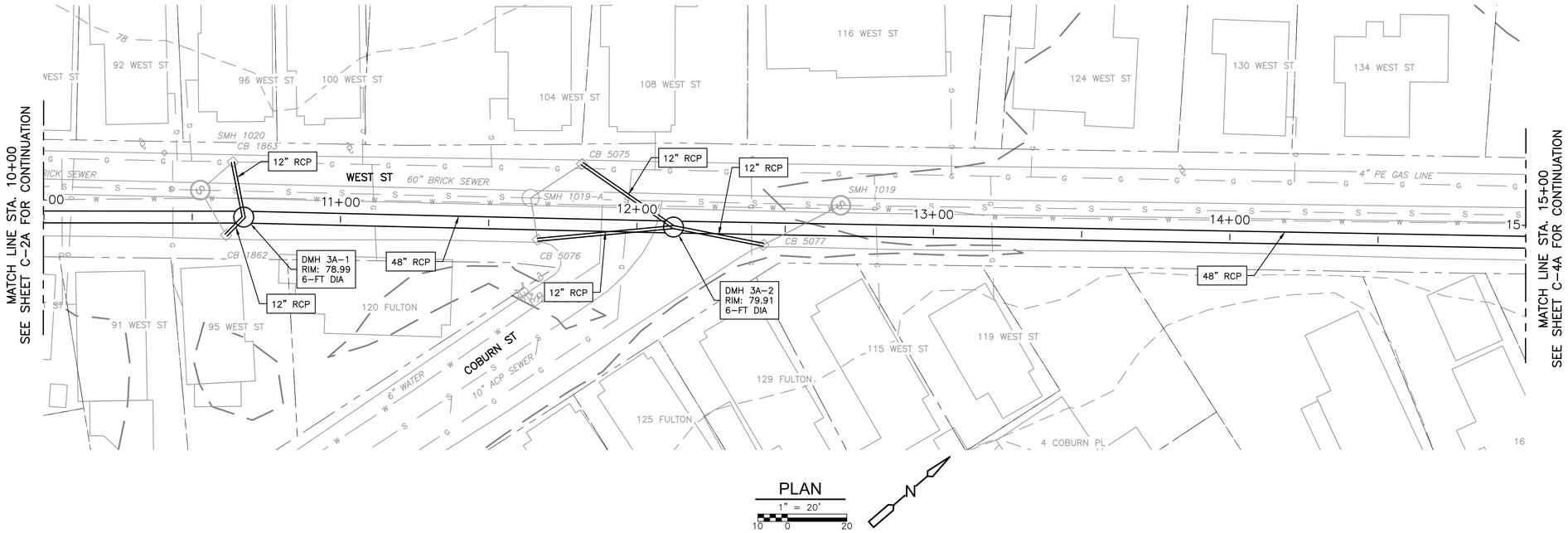
WEST ST

PROJECT NO. 0552-282899
FILE NAME: C002APLPR.DWG

SHEET NO.
C-2A

30% SUBMITTAL - NOT FOR CONSTRUCTION

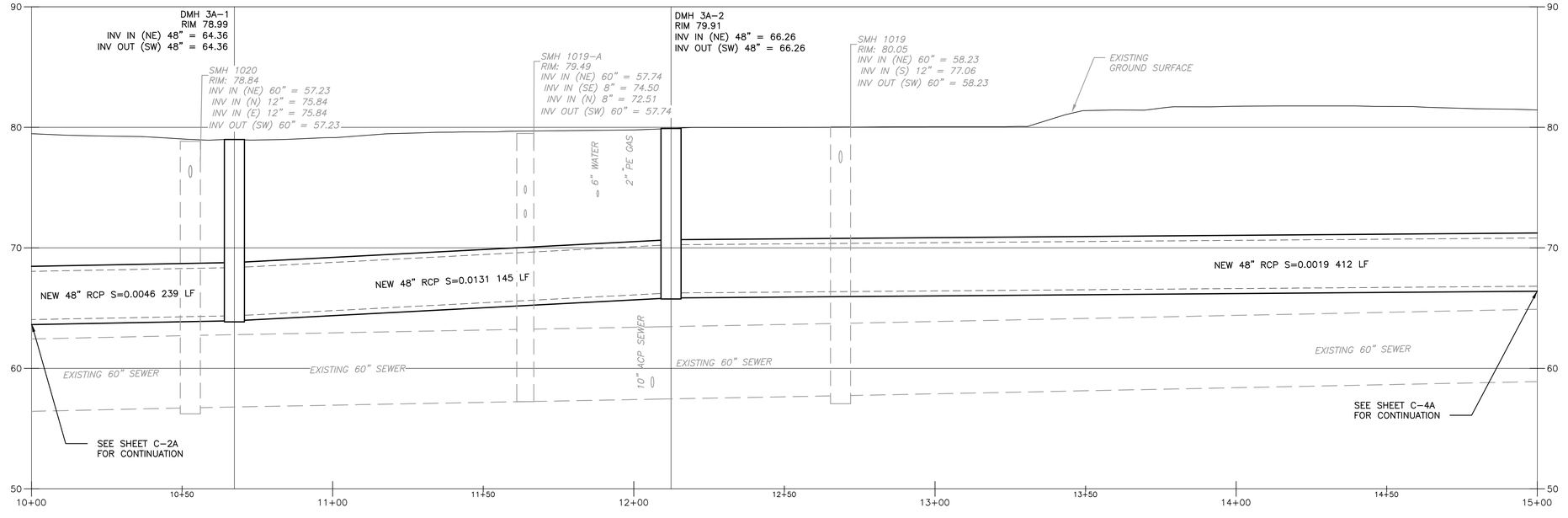
XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP008PP-EXTENET, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJIV Time: 11/13/2023 12:12:46 AM
C:\pw_p11\GANJIV\d3611175\C001PLPR_TRUNK MAIN 2.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20' VERT: 1" = 5'

10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

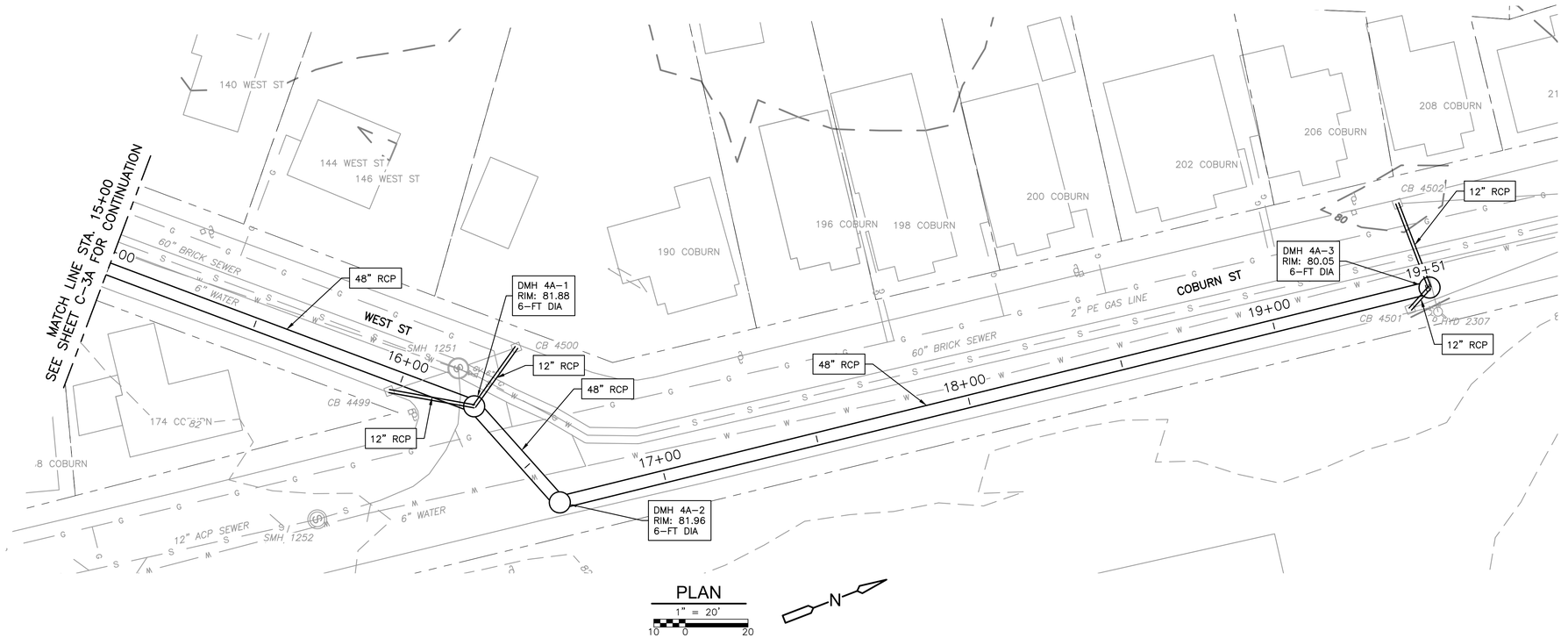
WEST ST

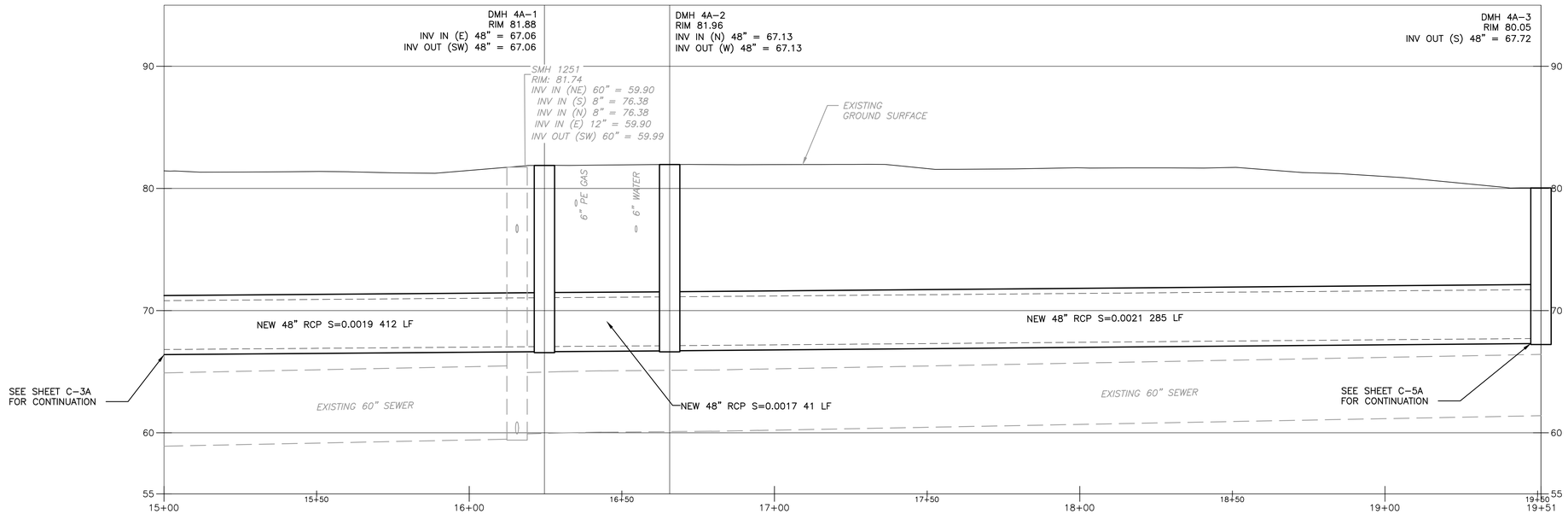
PROJECT NO. 0552-282899
FILE NAME: C003APLPR.DWG

SHEET NO.
C-3A

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREY'S, CEP003ST_EX GAS LINE, CEP008PP-EXTENET, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJIV Time: 11/13/2023 12:17:00 AM
C:\pw_p11\GANJIV\d3611175\C001PLPR_TRUNK MAIN 2.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.





PROFILE

1" = 20'
10 0 20

VERT: 1" = 5'
2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

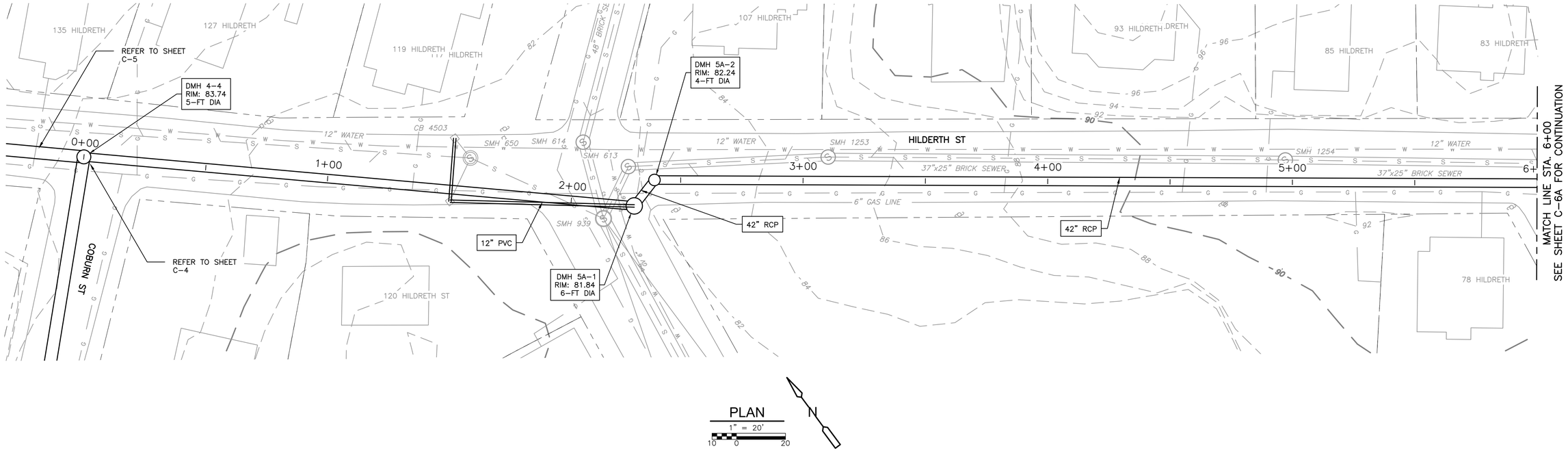
WEST ST AND COBURN ST

PROJECT NO. 0552-282899
FILE NAME: C04APLPR.DWG

SHEET NO.
C-4A

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP008PP-EXTENET, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJIV Time: 11/13/2023 12:19:14 AM
C:\pw_pi1\GANJIV\d3611175\C001PLPR_TRUNK MAIN 2.dwg
© 2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

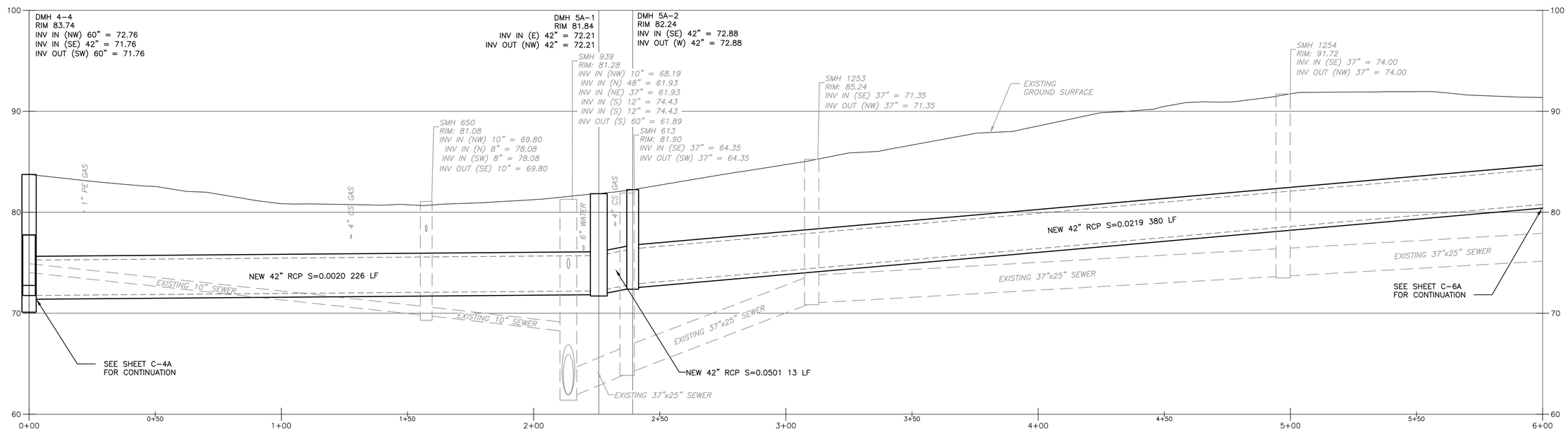


PLAN

1" = 20'

10 0 20

N



PROFILE

1" = 20' 10 0 20

VERT: 1" = 5' 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

HILDRETH ST

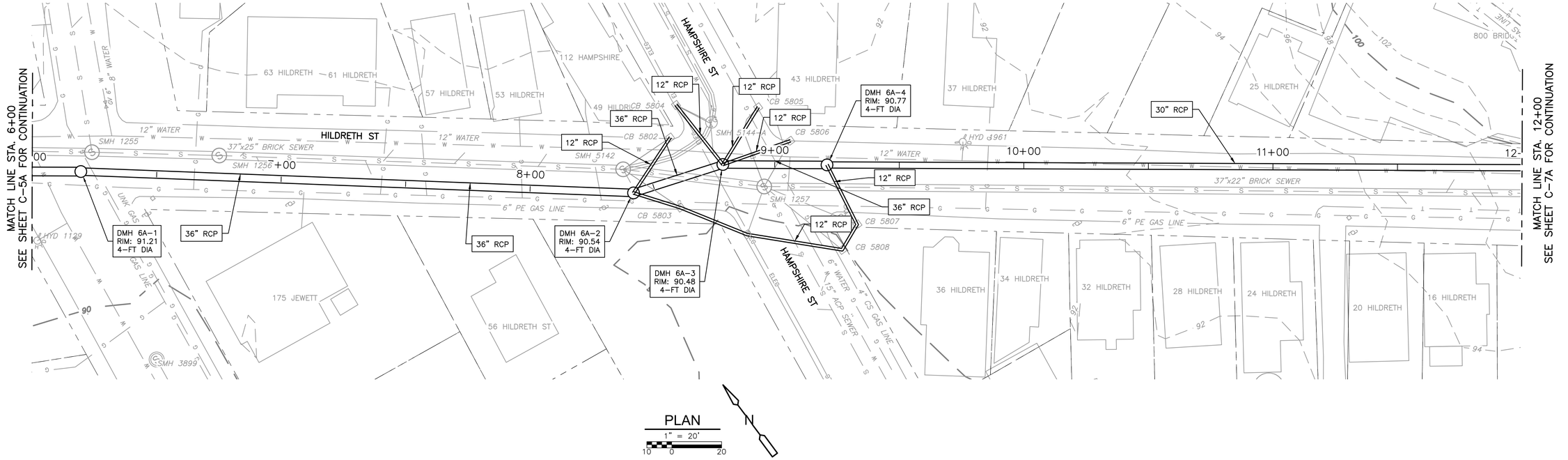
PROJECT NO. 0552-282899
FILE NAME: C005APLPR.DWG

SHEET NO.
C-5A

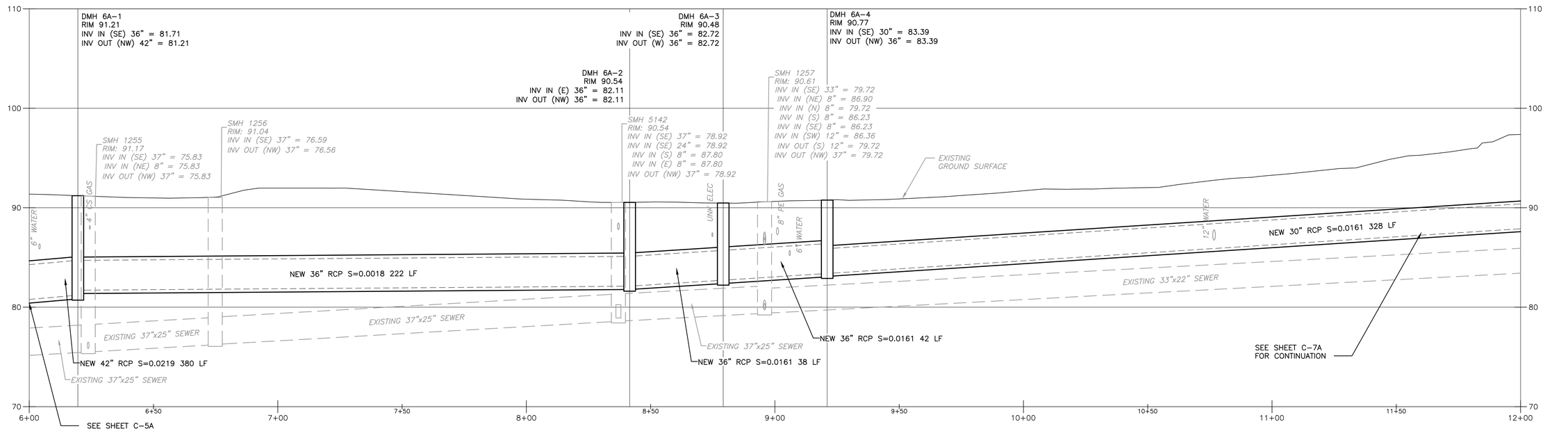
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP008PP-EXTENET, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJIV Time: 11/13/2023 12:26:49 AM
C:\pw_p11\GANJIV\d3611175\C001PLPR_TRUNK MAIN 2.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP008PP-EXTENET, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJV Time: 11/13/2023 12:30:32 AM
C:\pw_pl1\GANJV\d3611175\C001PLPR_TRUNK MAIN 2.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN
1" = 20'
10 0 20



PROFILE
1" = 20' VERT: 1" = 5'
10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

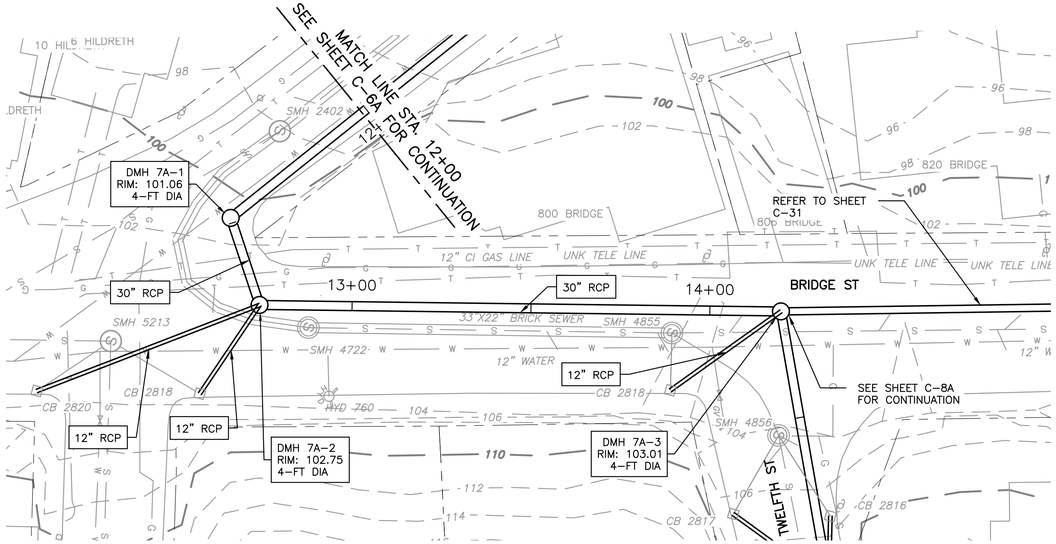
HUMPHREY'S BROOK

HILDRETH ST

PROJECT NO. 0552-282899
FILE NAME: C006APLPR.DWG

SHEET NO.
C-6A

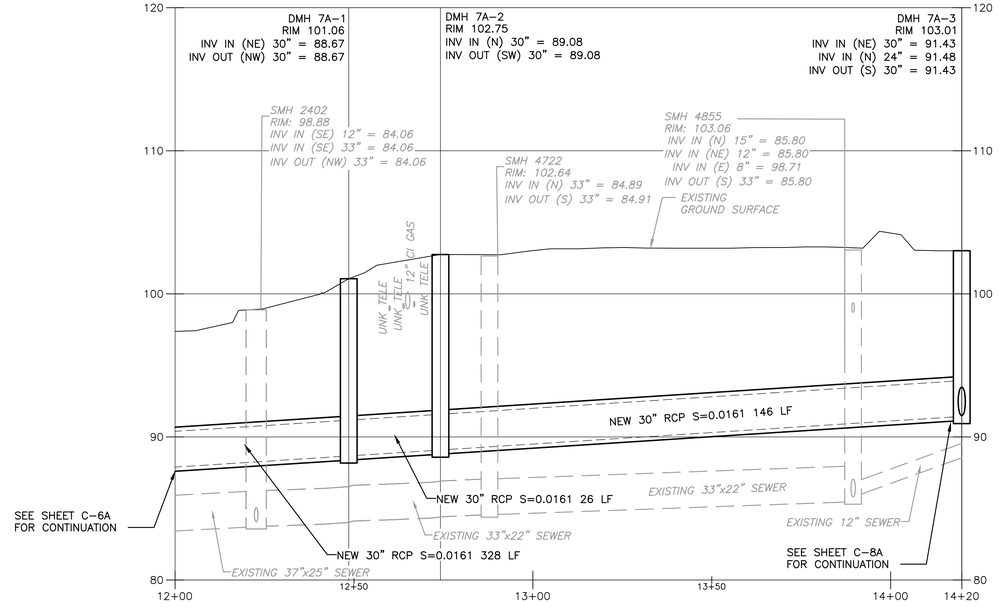
30% SUBMITTAL - NOT FOR CONSTRUCTION



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20' VERT: 1" = 5'

10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHK'D	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

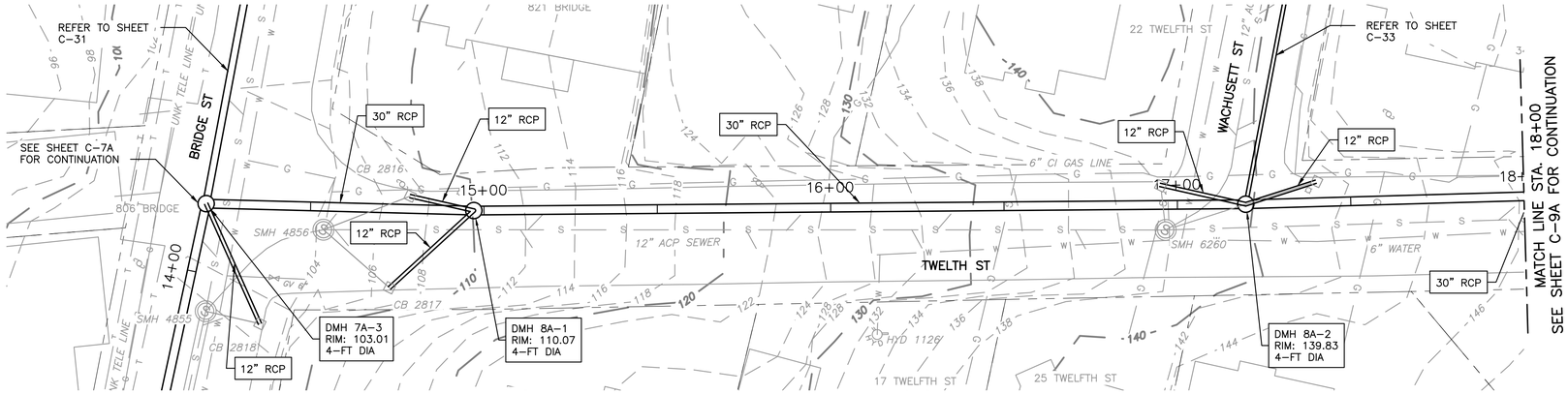
BRIDGE ST

PROJECT NO. 0552-282899
FILE NAME: C007APLPR.DWG

SHEET NO.
C-7A

30% SUBMITTAL - NOT FOR CONSTRUCTION

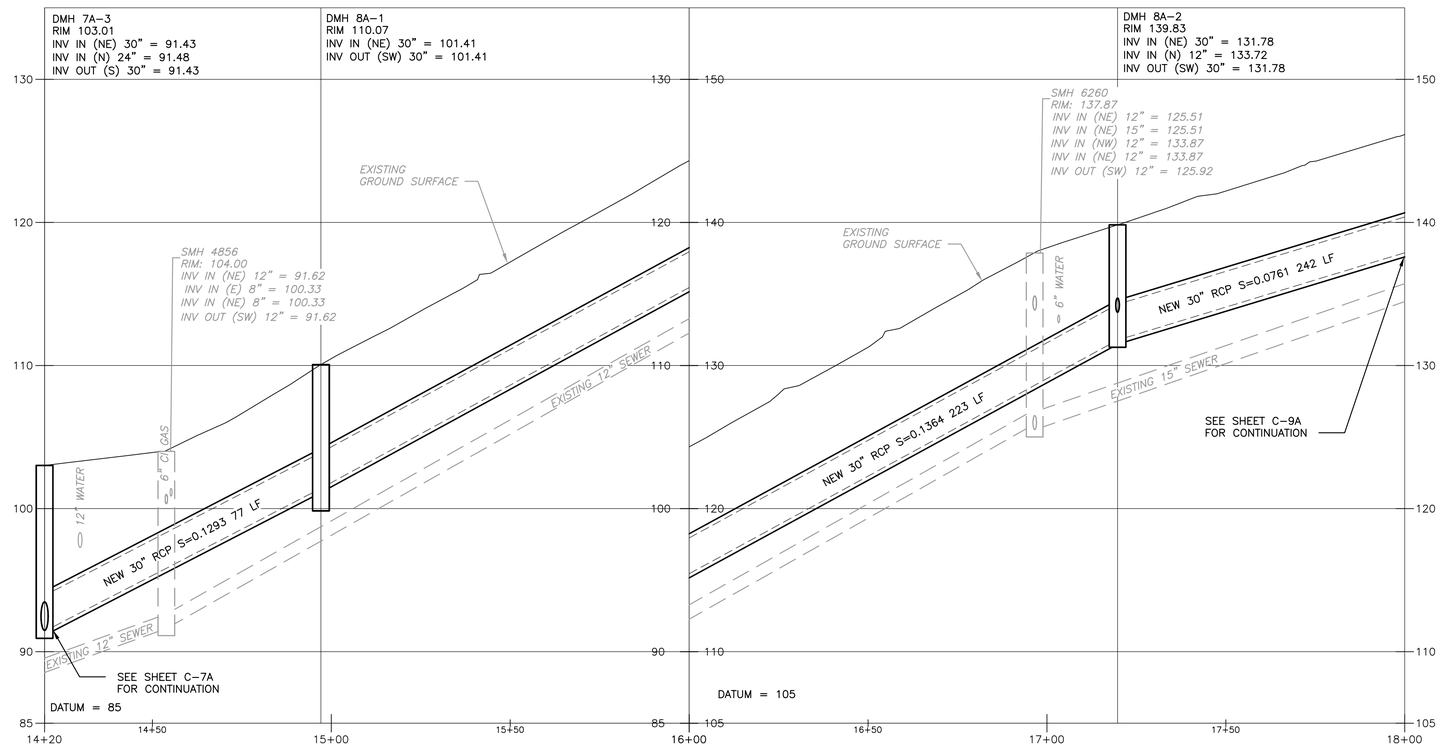
XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREY'S, CEP003ST_EX GAS LINE, CEP008PP-EXTENET, CEP009PP--STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJIV Time: 11/13/2023 12:32:46 AM
C:\pw_p11\GANJIV\d3611175\C001PLPR_TRUNK MAIN 2.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20' VERT: 1" = 5'

10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

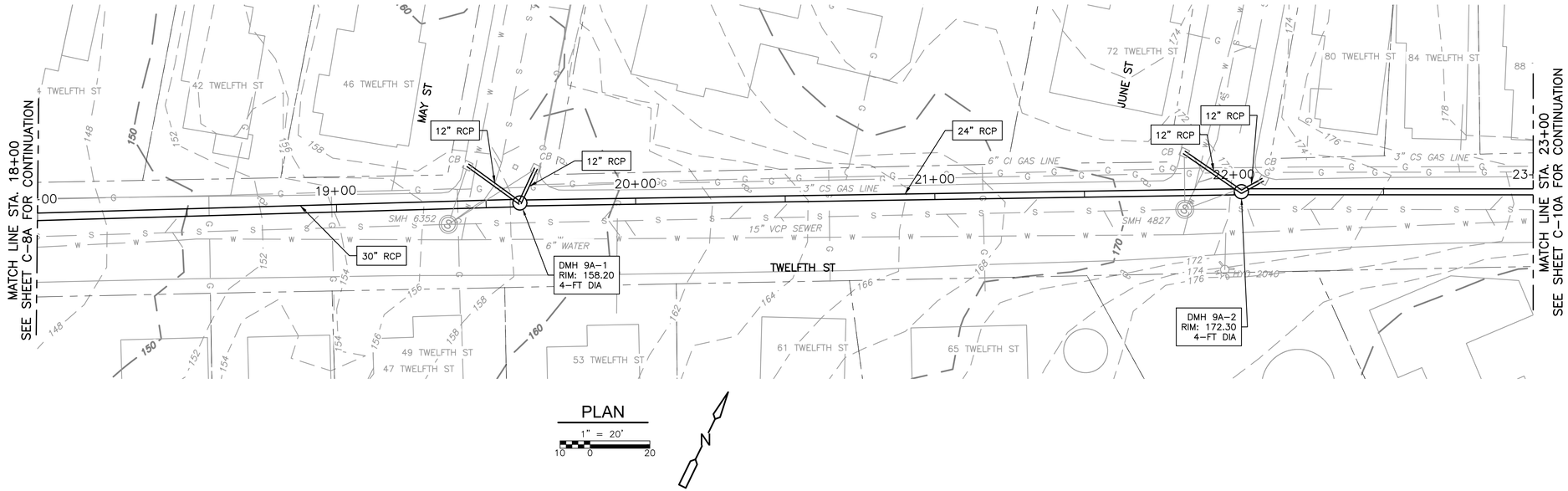
TWELFTH ST

PROJECT NO. 0552-282899
FILE NAME: C008APLPR.DWG

SHEET NO.
C-8A

30% SUBMITTAL - NOT FOR CONSTRUCTION

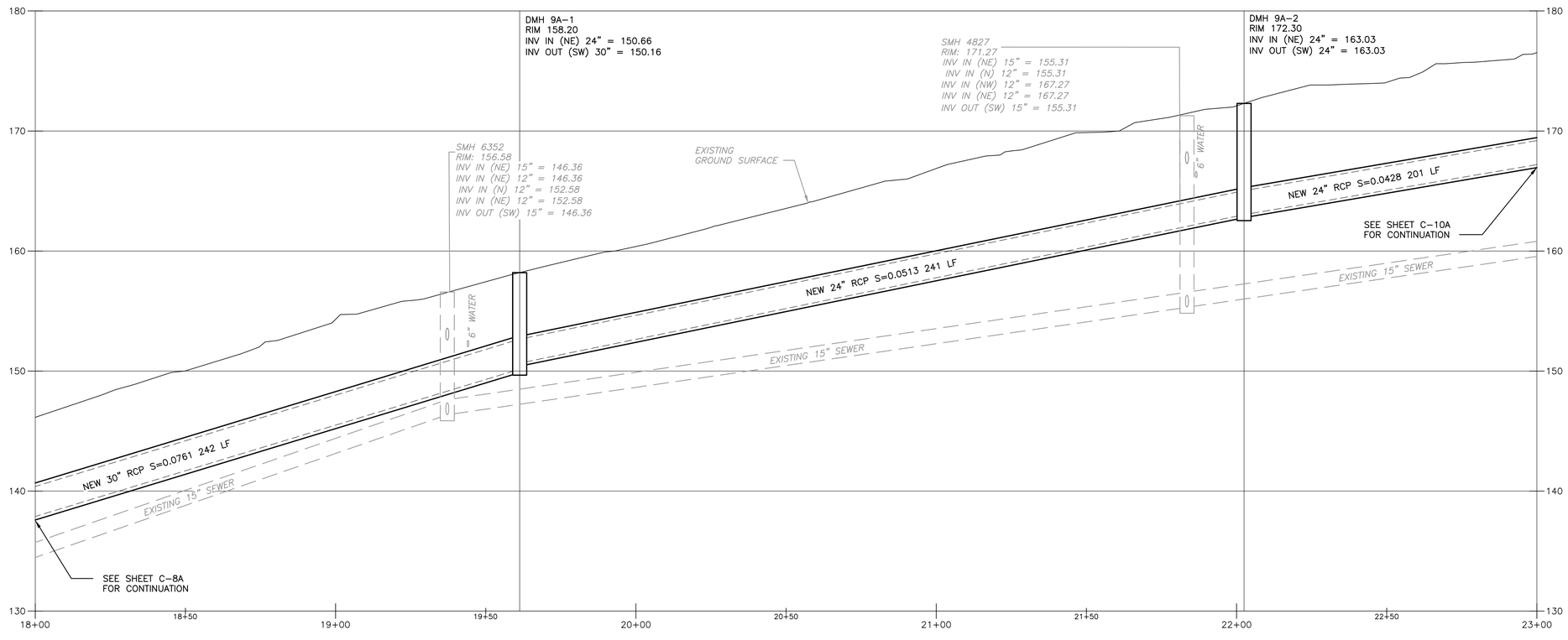
XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP008PP-EXTENET, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJIV Time: 11/13/2023 12:39:16 AM
C:\pw_pl1\GANJIV.d3611175\C001PLPR_TRUNK MAIN 2.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20' VERT: 1" = 5'

10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

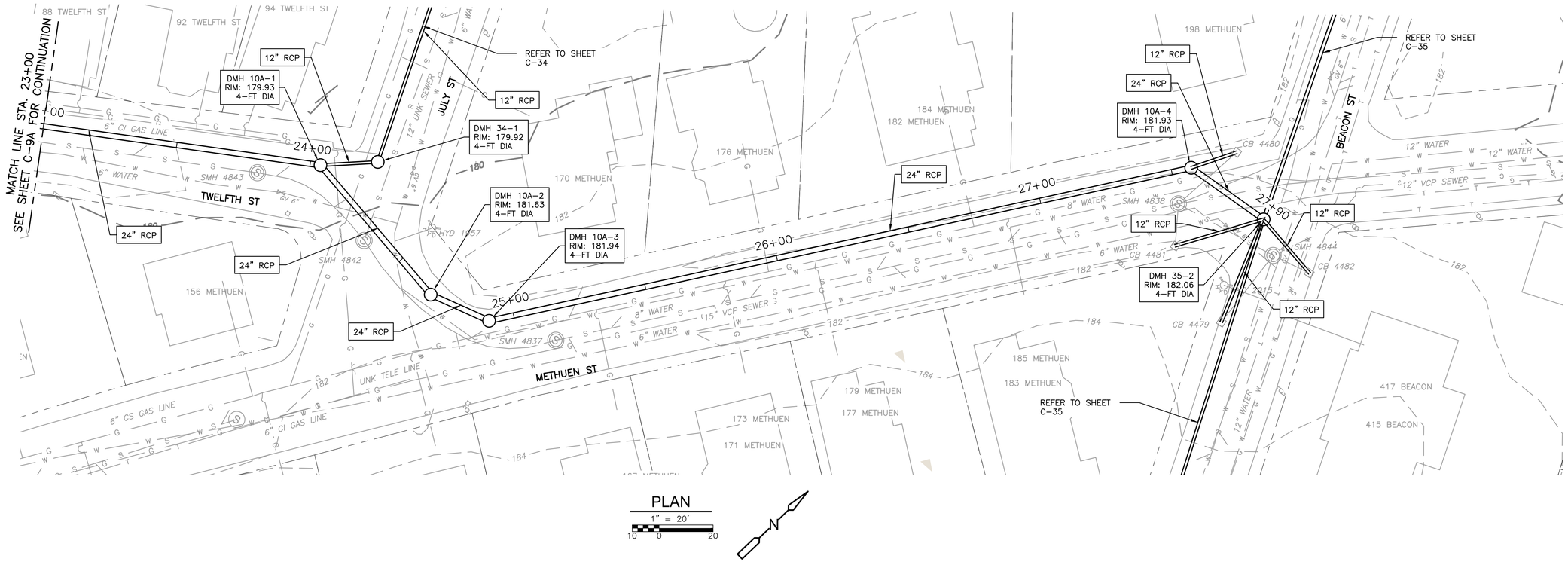
TWELFTH ST

PROJECT NO. 0552-282899
FILE NAME: C009APLPR.DWG

SHEET NO.
C-9A

30% SUBMITTAL - NOT FOR CONSTRUCTION

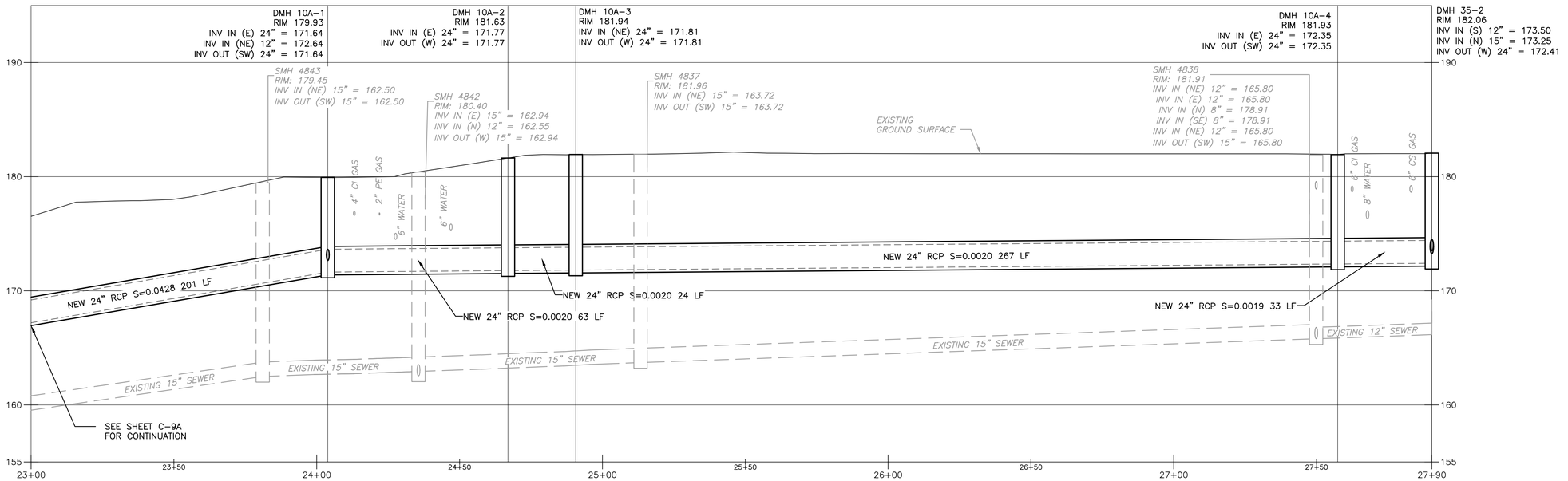
XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREY'S, CEP003ST_EX GAS LINE, CEP008PP-EXTENET, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: SIDANALESS Time: 11/1/2023 9:32:27 PM
C:\pw_p11\SIDANALESS\d3611175\C001PLPR_TRUNK MAIN 2.dwg
© 2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20'

10 0 20

VERT: 1" = 5'

2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

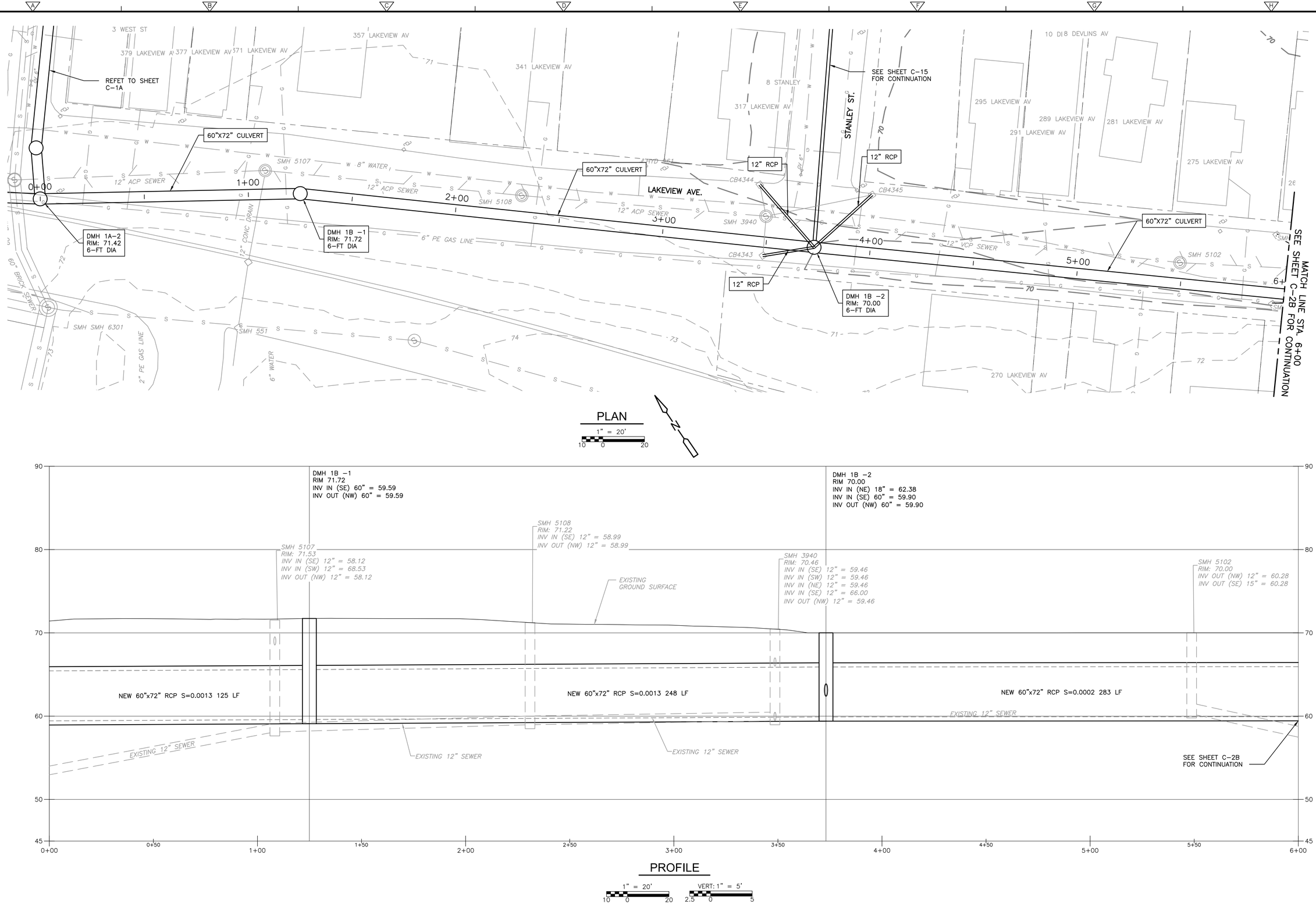
TWELFTH ST & METHUEN ST

PROJECT NO. 0552-282899
FILE NAME: C010APLPR.DWG

SHEET NO.
C-10A

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP008PP-EXTENET, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJV Time: 12/22/2023 12:18:38 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_p1\0552\282899\04 Design Services NM_10#\02 Civil\10 BIM_CADD\C001PLPR_TRUNK MAIN 2.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

PROFILE

1" = 20' VERT: 1" = 5'

XREFs: [CDMS_2436, CWZ003PP_CIVIL_3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREY'S, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CEP002ST_EX DRAIN, CWZ003PP_CIVIL_3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJV Time: 11/13/2023 1:17:34 AM
C:\pw_p11\GANJV\d3611175\C015PLPR_Trunk Main 3.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

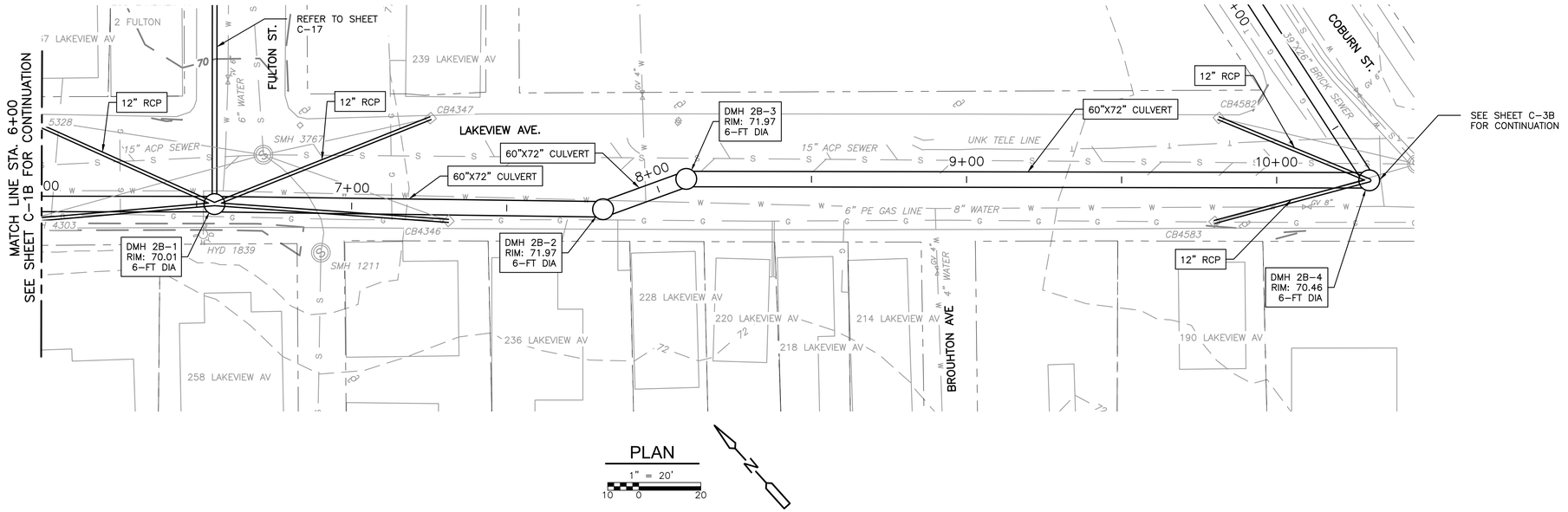
HUMPHREY'S BROOK

LAKEVIEW AVE.

PROJECT NO. 0552-282899
FILE NAME: C01BPLPR

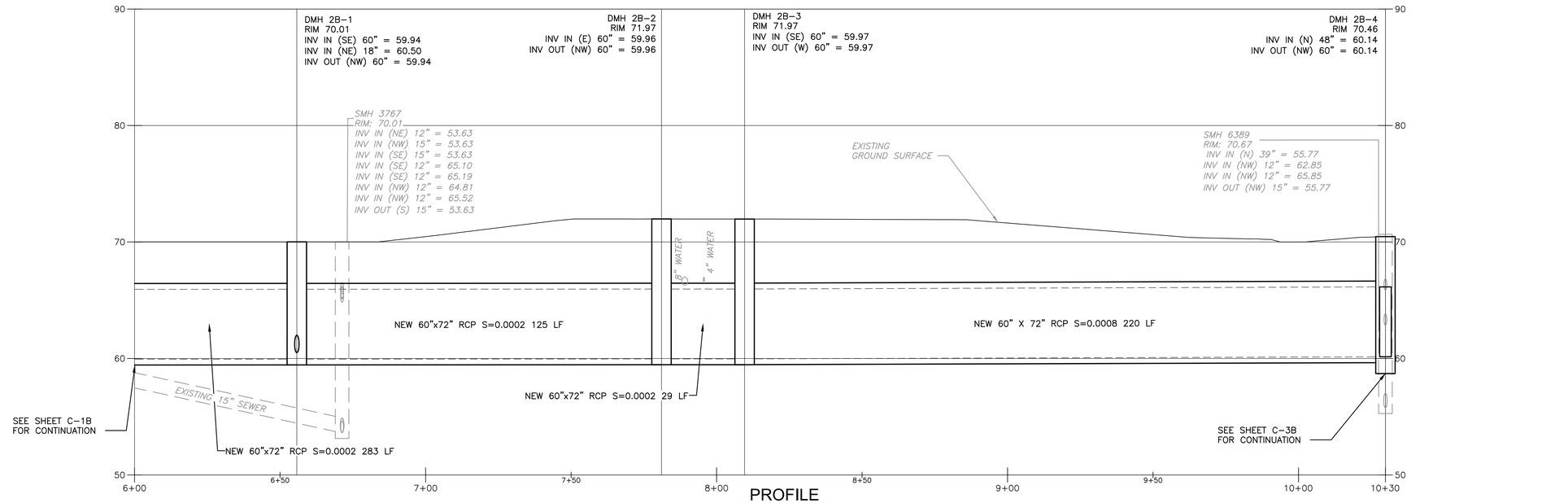
SHEET NO.
C-1B

30% SUBMITTAL - NOT FOR CONSTRUCTION



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

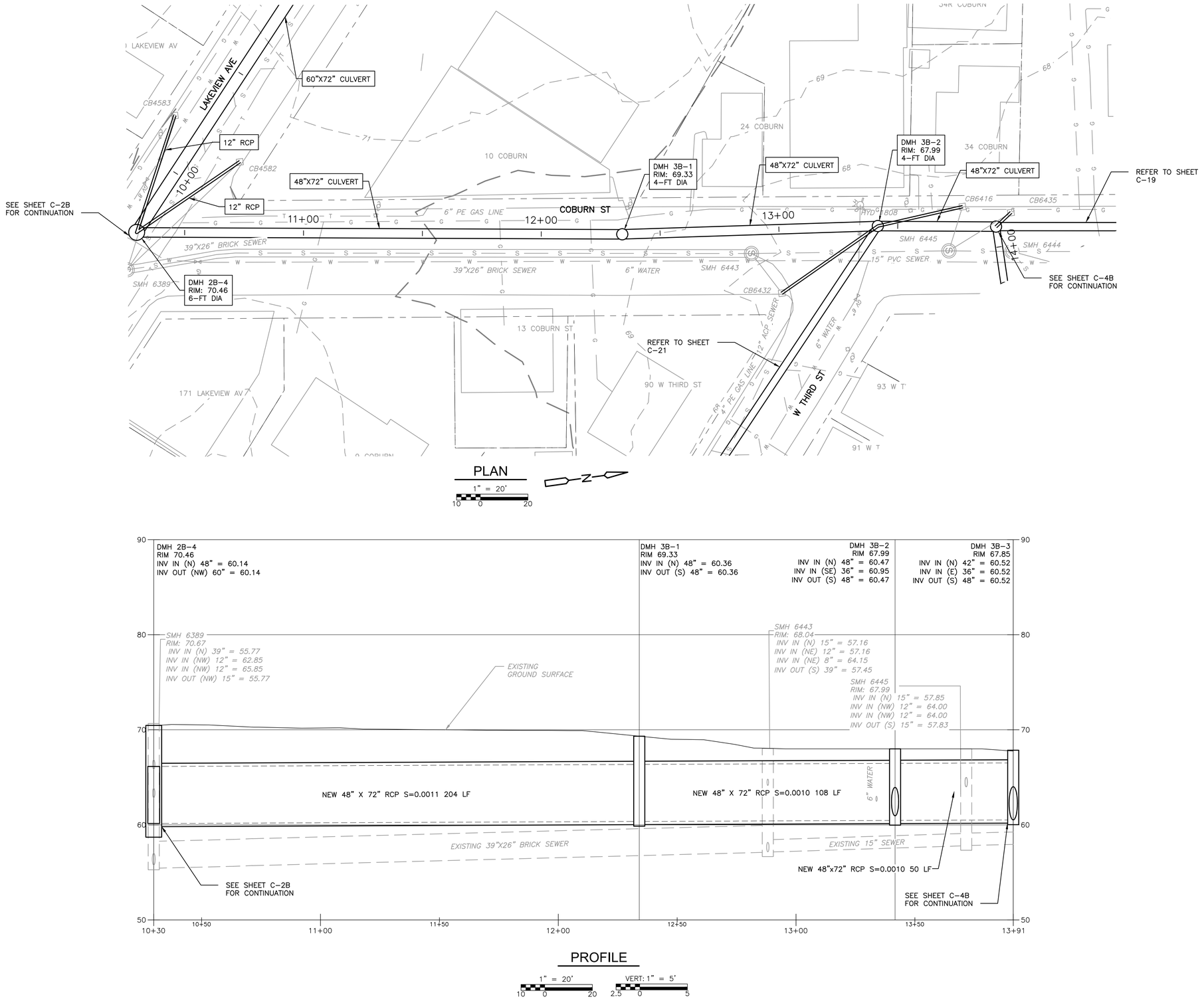
LAKEVIEW AVE

PROJECT NO. 0552-282899
FILE NAME: C2BPLPR

SHEET NO.
C-2B

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436_CWZ003PP_CIVIL 3D WORKING MODEL_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREY'S, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CEP002ST_EX DRAIN, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJV Time: 11/13/2023 1:21:14 AM
C:\pw_p11\GANJV\d3611175\C015PLPR_Trunk Main 3.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PROFILE

1" = 20'
10 0 20

VERT: 1" = 5'
2.5 0 5

XREFs: [CDMS_2436_CWZ003PP_CIVIL 3D WORKING MODEL_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREY'S, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CEP002ST_EX DRAIN, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJV Time: 11/13/2023 2:40:17 AM
C:\pw_p11\GANJV\d3611175\C015PLPR_Trunk Main 3.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

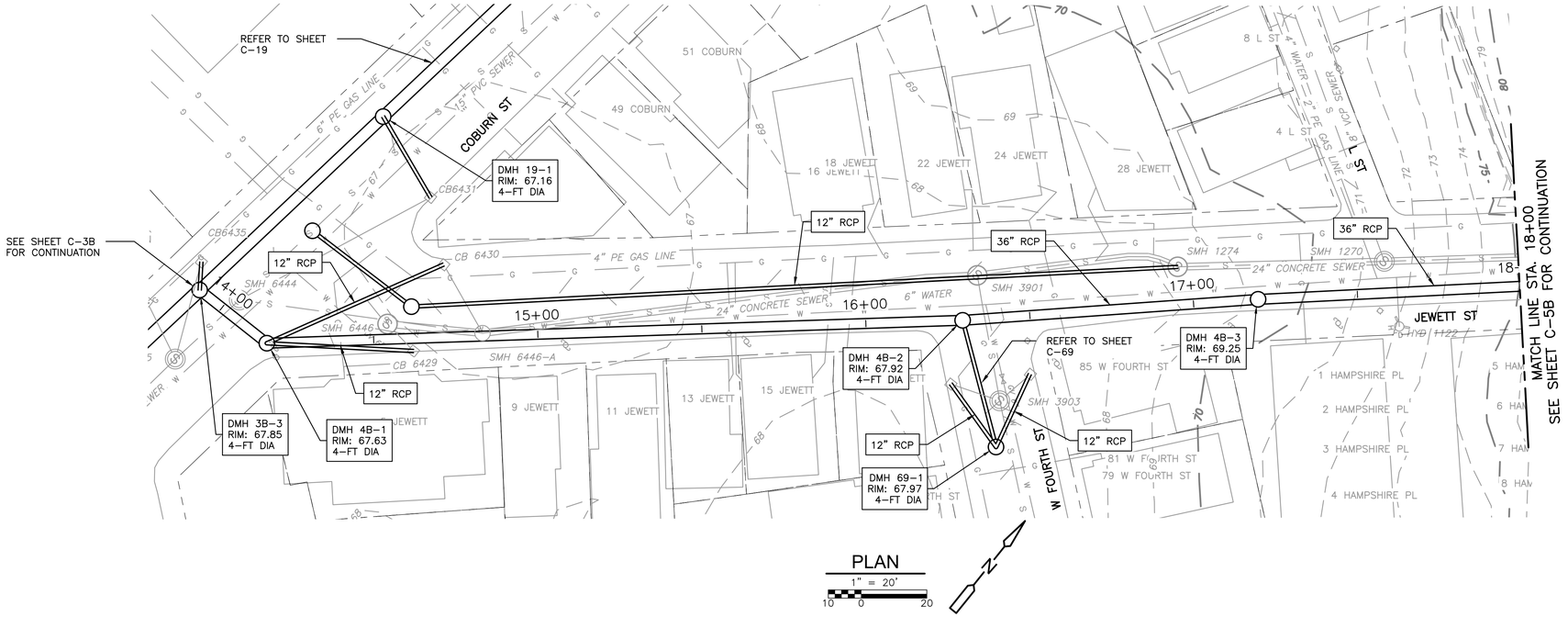
HUMPHREY'S BROOK

COBURN ST

PROJECT NO. 0552-282899
FILE NAME: C03BPLPR

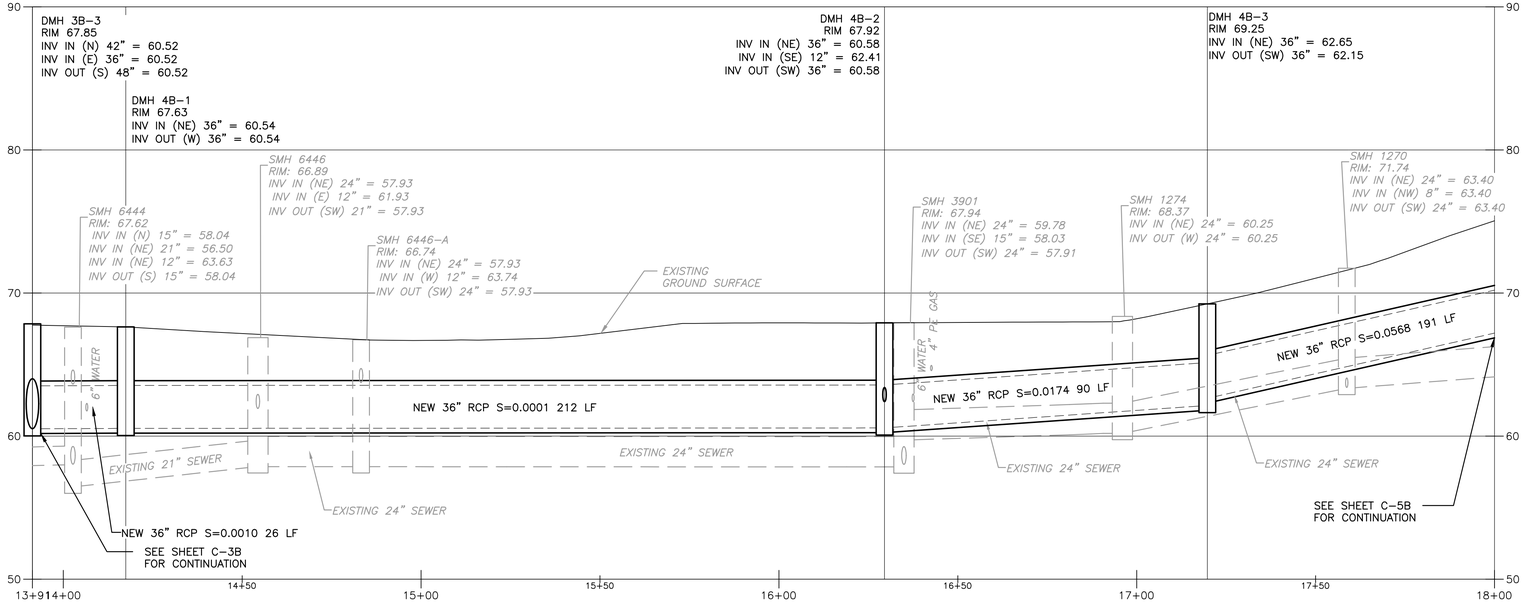
SHEET NO.
C-3B

30% SUBMITTAL - NOT FOR CONSTRUCTION



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

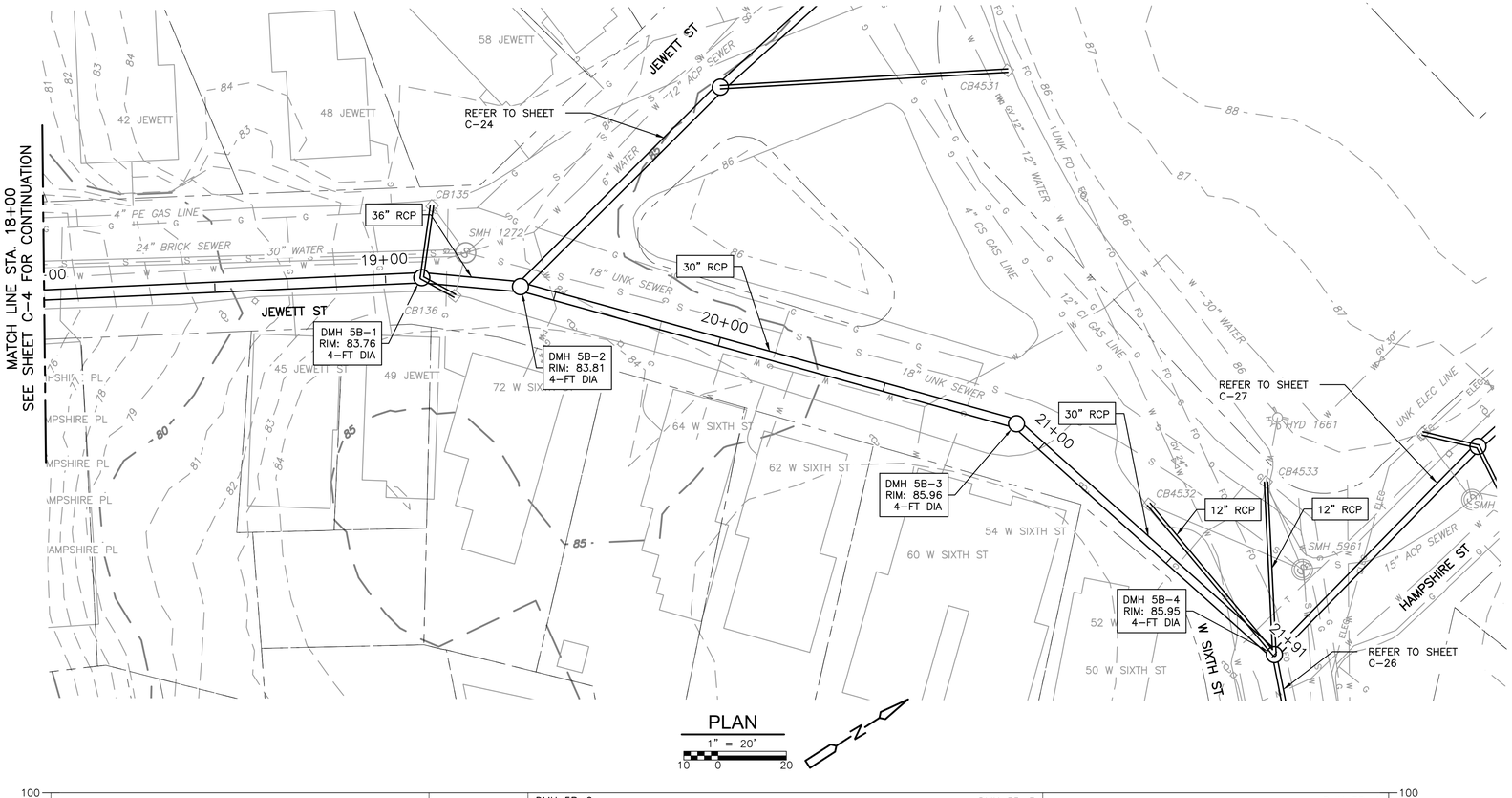
JEWETT ST

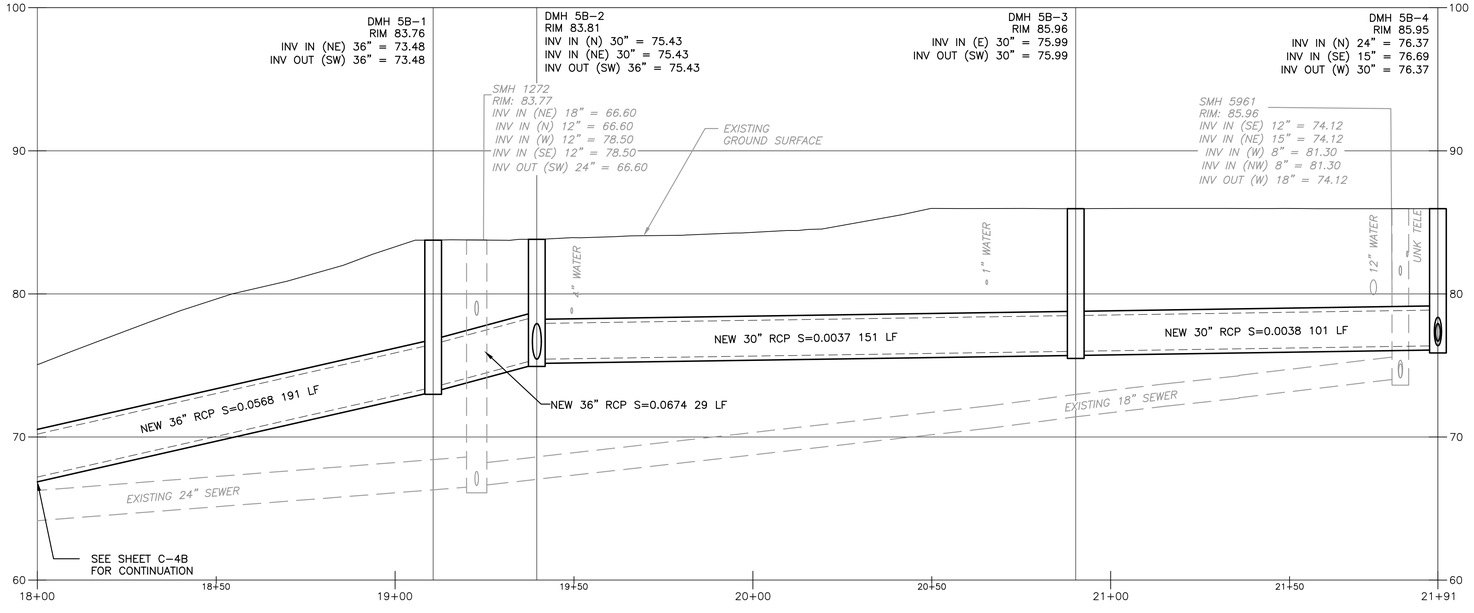
PROJECT NO. 0552-282899
FILE NAME: C04BPLPR

SHEET NO.
C-4B

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CEP002ST_EX DRAIN, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJIV Time: 11/13/2023 2:08:03 AM
C:\pw_pi1\GANJIV\d3611175\C015PLPR_Trunk Main 3.dwg
© 2022 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.





PROFILE

1" = 20'
VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

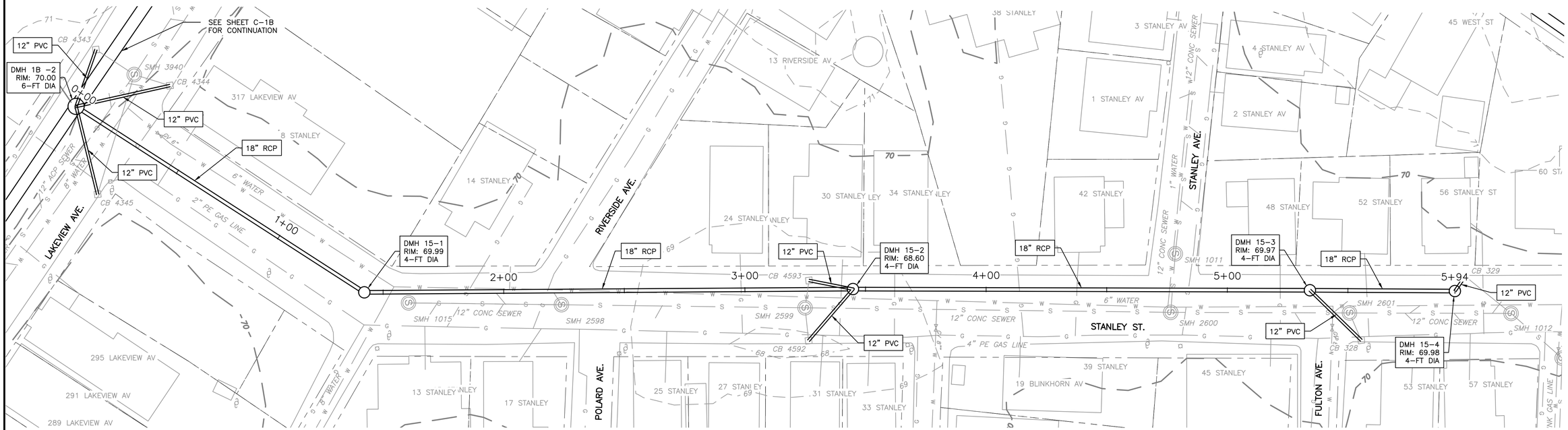
JEWETT ST & W SIXTH ST

PROJECT NO. 0552-282899
FILE NAME: C05BPLPR

SHEET NO.
C-5B

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436_CWZ003PP_CIVIL_3D WORKING MODEL_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CEP002ST_EX DRAIN, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJIV Time: 12/22/2023 12:38:27 PM
pw:\\cdmsmith-eu02-pw.bentley.com:pw_p11\0552_282899\04 Design Services NM_102%\02 Civil\10 BIM_CADD\C015PLPR_Trunk Main 3.dwg
© 2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

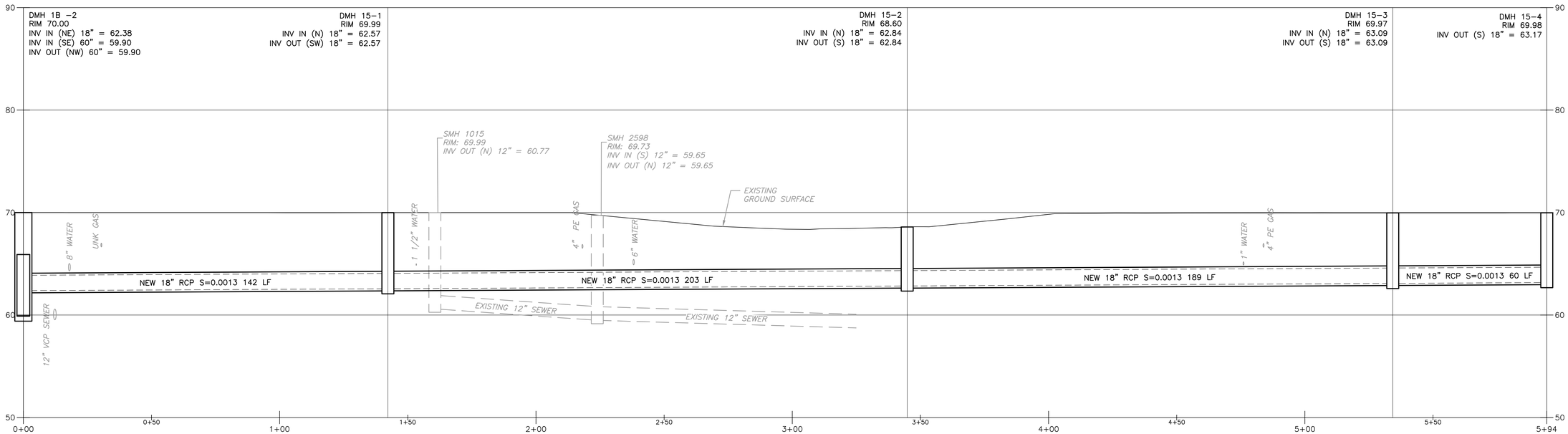


PLAN

1" = 20'

10 0 20

N



PROFILE

1" = 20'

10 0 20

VERT: 1" = 5'

2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

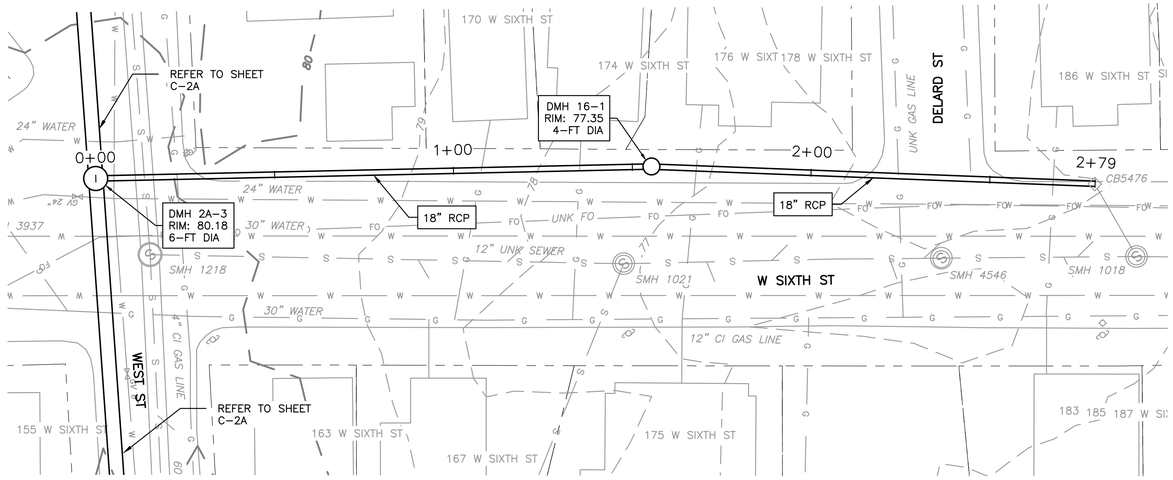
STANLEY ST

PROJECT NO. 0552-282899
FILE NAME: C015PLPR.DWG

SHEET NO.
C-15

30% SUBMITTAL - NOT FOR CONSTRUCTION

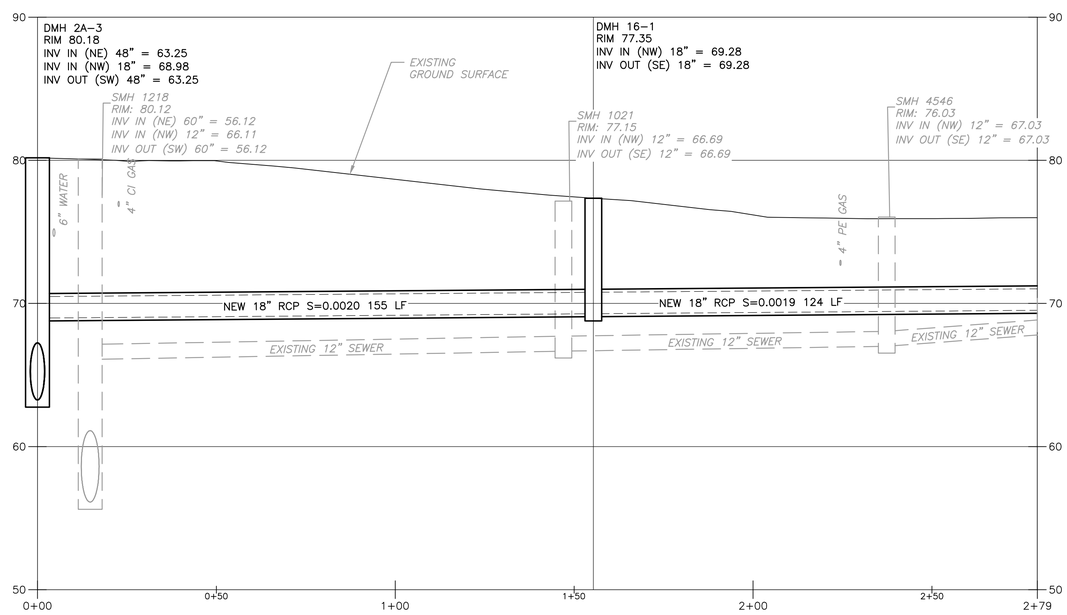
XREFs: [CDMS_2436_CWZ003PP_CIVIL 3D WORKING MODEL_CEP0005PP_EX SEWER, CEP0004PP_EX WATER, CEP0002ST_EX DRAIN, CEP0007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP0009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP0008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJIV Time: 11/12/2023 11:41:33 AM
C:\pw_p11\GANJIV\d3611175\C001PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20'

10 0 20

VERT: 1" = 5'

2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

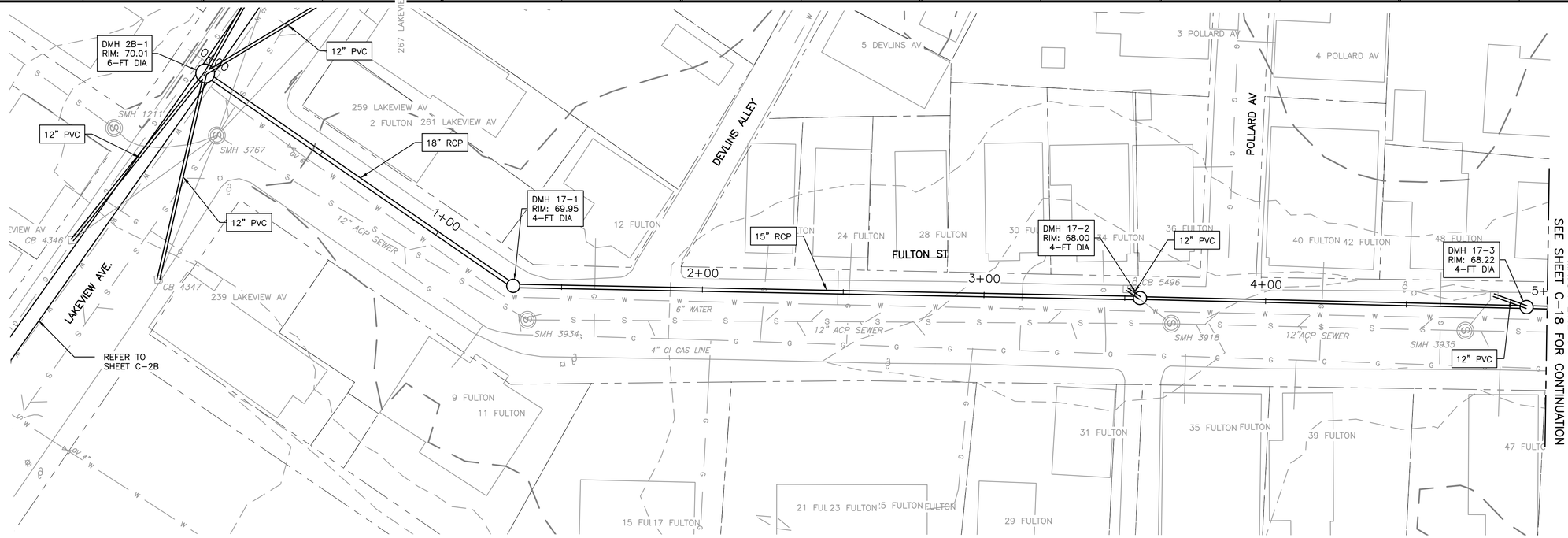
W SIXTH ST

PROJECT NO. 0552-282899
FILE NAME: C016PLPR.DWG

SHEET NO.
C-16

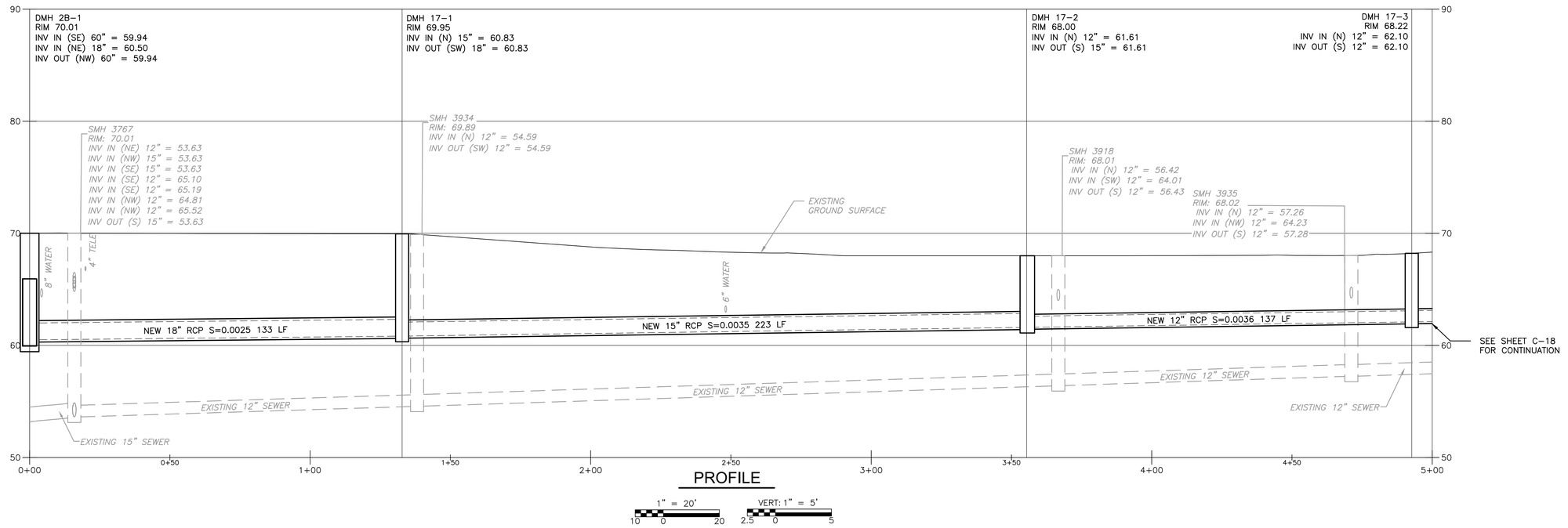
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] [Images: []
Last saved by: GANJV Time: 11/12/2023 11:49:25 AM
C:\pw_p11\GANJV\d3611175\C001PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

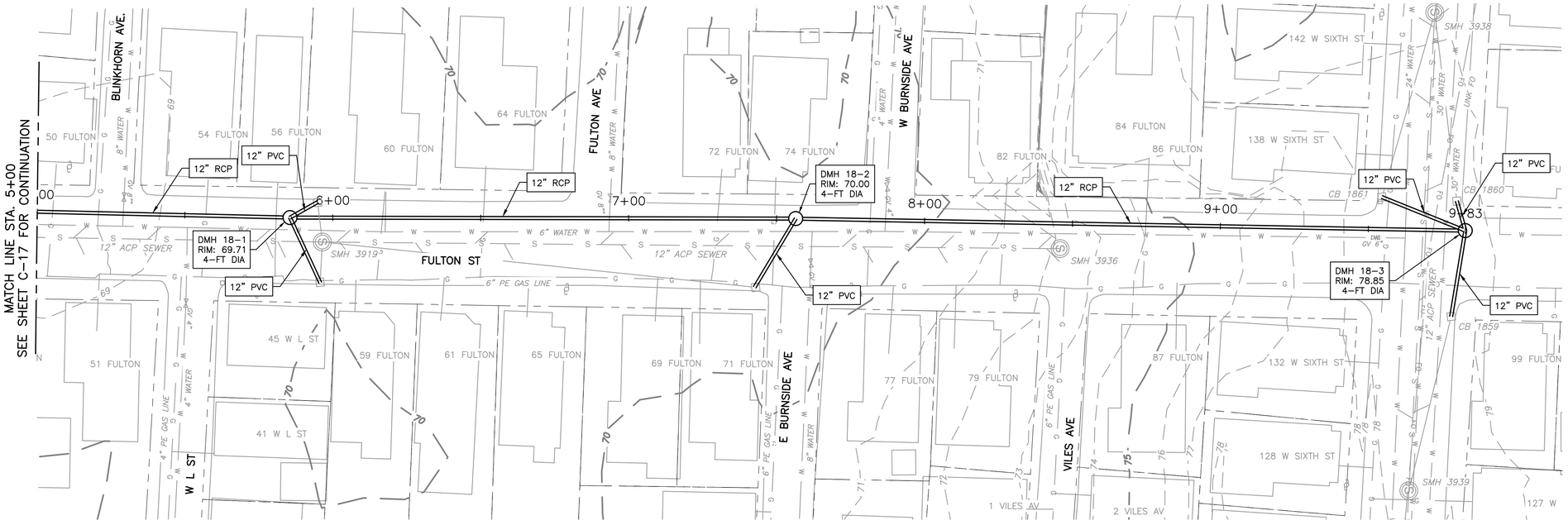
FULTON ST

PROJECT NO. 0552–282899
FILE NAME: C017PLPR.DWG

SHEET NO.
C-17

30% SUBMITTAL - NOT FOR CONSTRUCTION

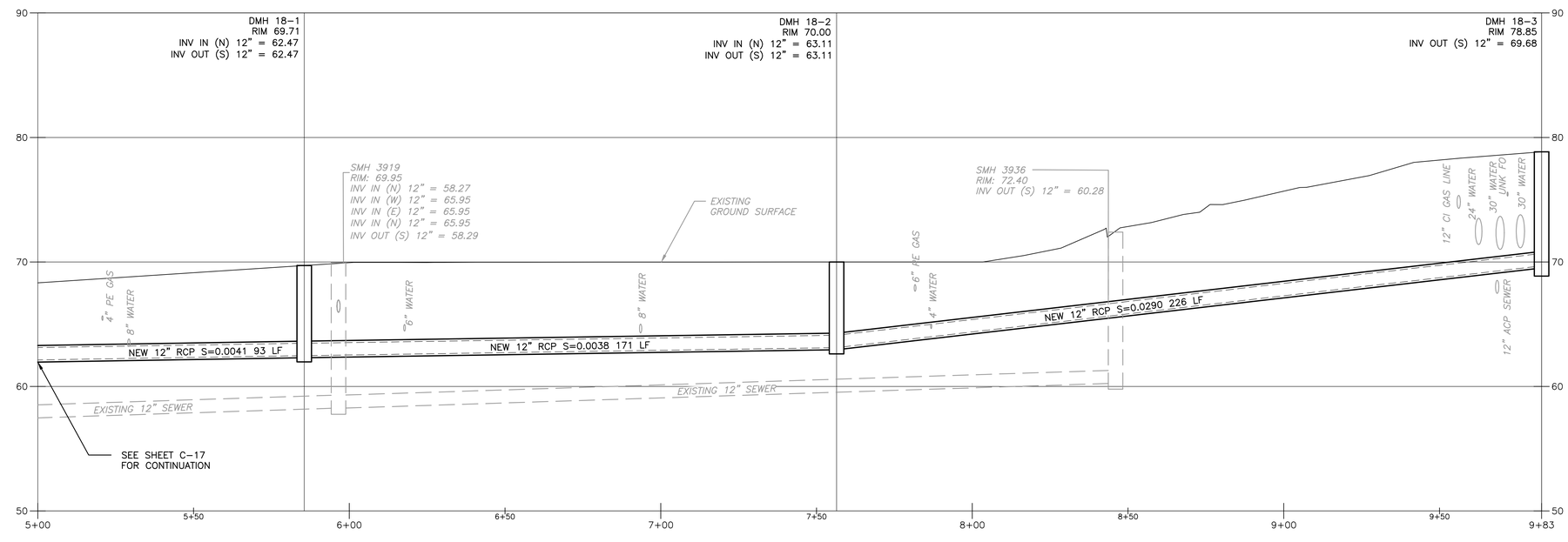
XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP–STREET LIGHT AND NATIONAL GRID POLE, CEP008PP–EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] [Images: []
Last saved by: GANJV Time: 11/12/2023 12:02:30 PM
C:\pw_p11\GANJV\d3611175\C001PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20' VERT: 1" = 5'

10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

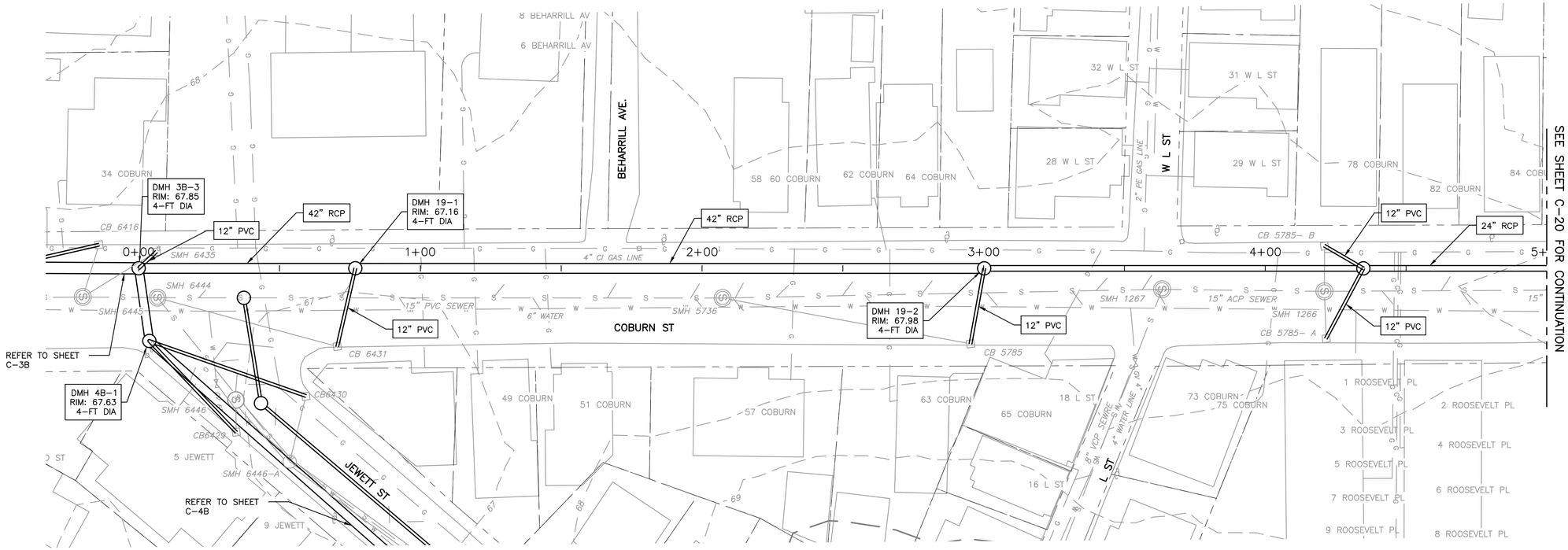
FULTON ST

PROJECT NO. 0552-282899
FILE NAME: C018PLPR.DWG

SHEET NO.
C-18

30% SUBMITTAL - NOT FOR CONSTRUCTION

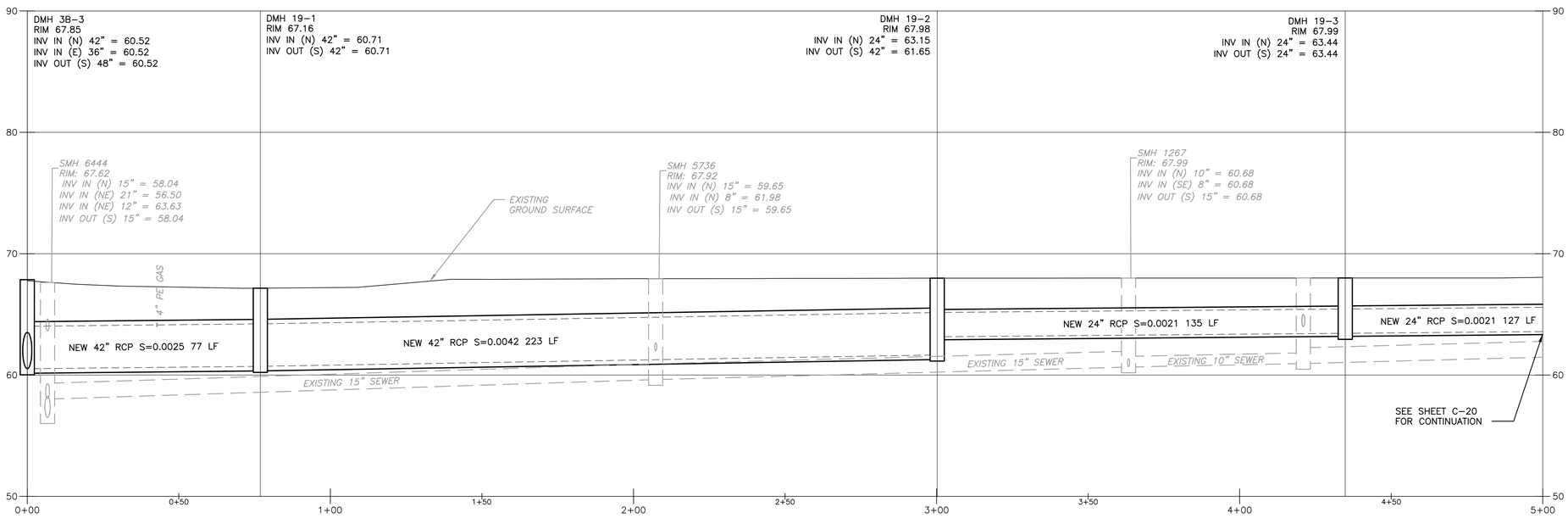
XREFs: [CDMS_2436_CWZ003PP_CIVIL_3D WORKING MODEL_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP CWZ003PP_CIVIL_3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJIV Time: 11/12/2023 12:16:54 PM
C:\pw_p11\GANJIV\d3611175\C001PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20' VERT: 1" = 5'

10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

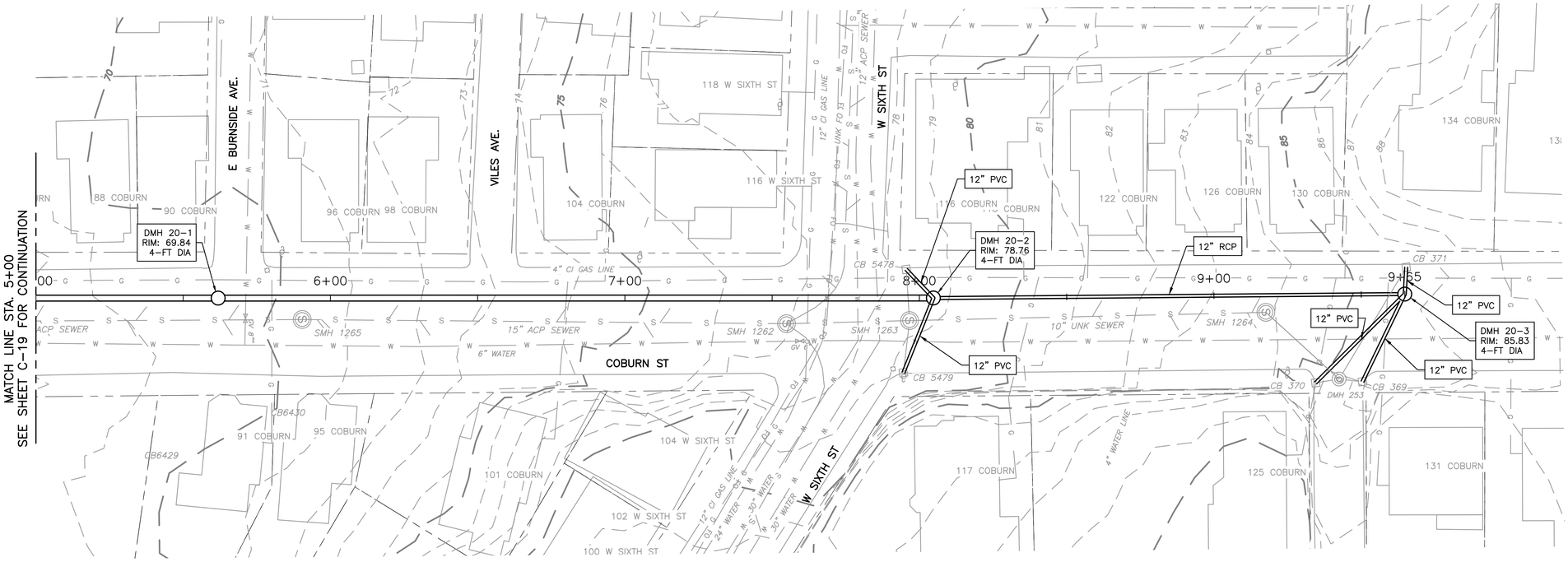
HUMPHREY'S BROOK

COBURN ST

PROJECT NO. 0552-282899
FILE NAME: C019PLPR.DWG
SHEET NO.
C-19

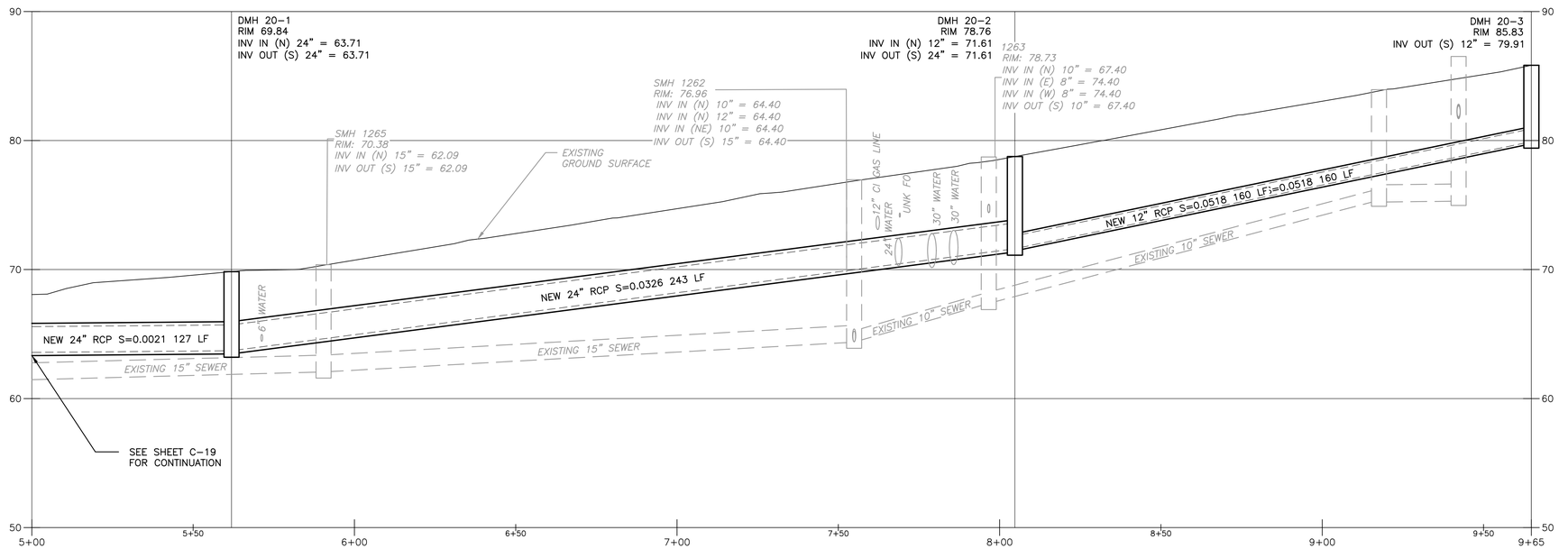
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] [Images: []
Last saved by: GANJV Time: 11/12/2023 12:22:26 PM
C:\pw_p11\GANJV\d3611175\C001PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

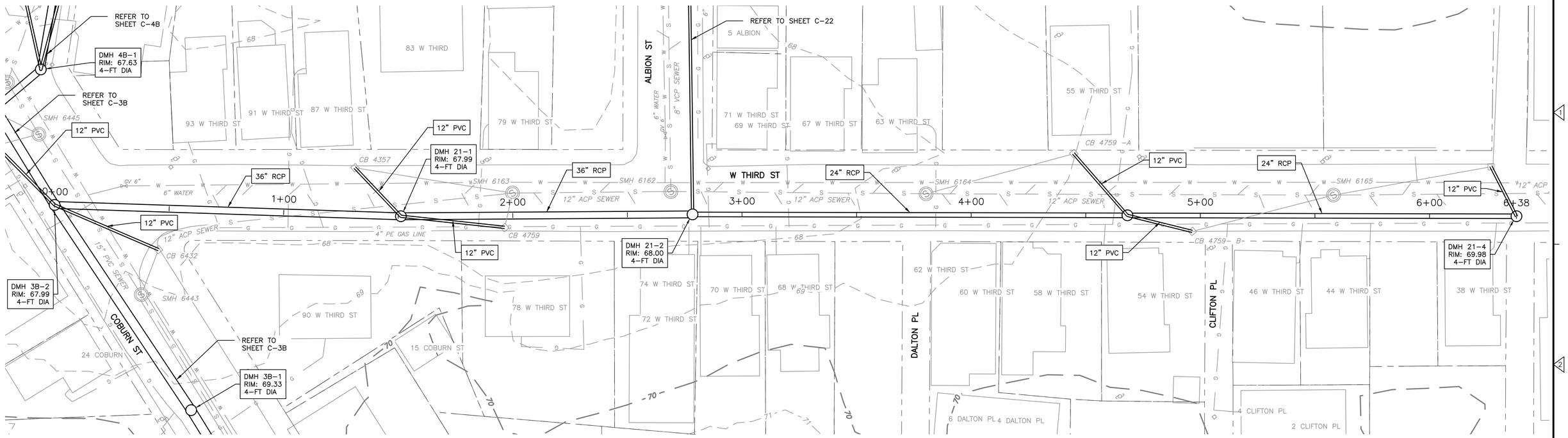
COBURN ST

PROJECT NO. 0552-282899
FILE NAME: C02OPLPR.DWG

SHEET NO.
C-20

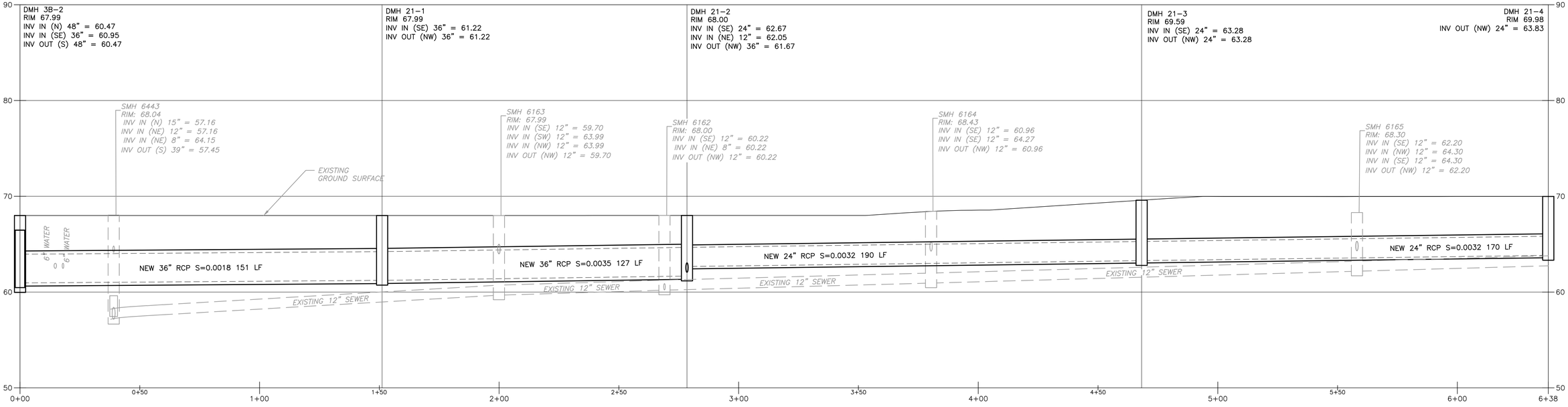
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] [Images: []
Last saved by: GANJV Time: 11/12/2023 12:47:12 PM
C:\pw_p11\GANJV\d3611175\C001PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

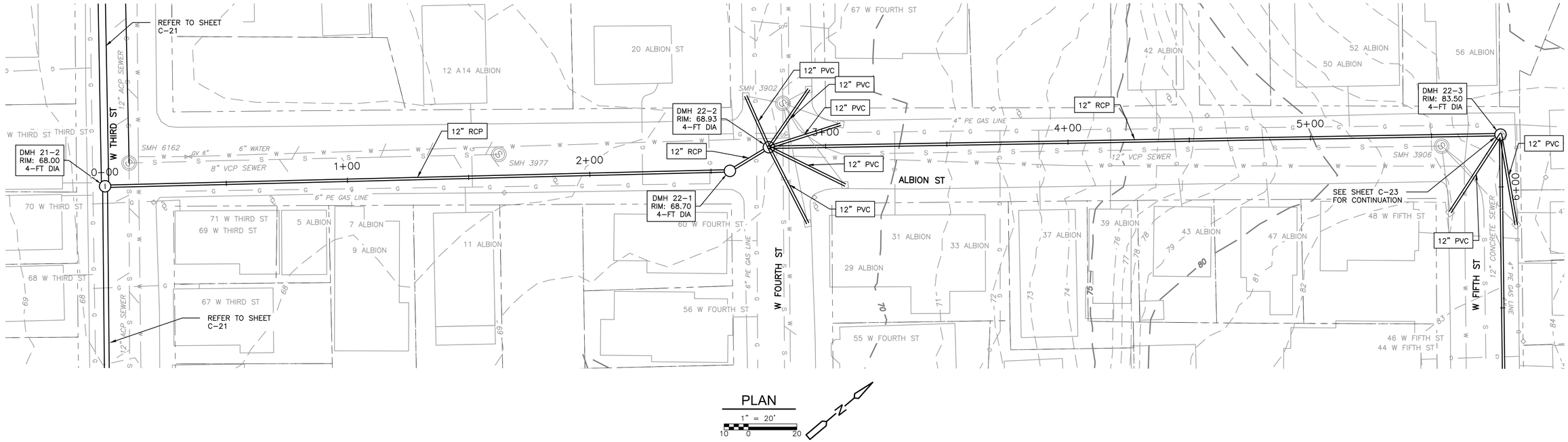
W THIRD ST

PROJECT NO. 0552-282899
FILE NAME: C021PLPR.DWG

SHEET NO.
C-21

30% SUBMITTAL - NOT FOR CONSTRUCTION

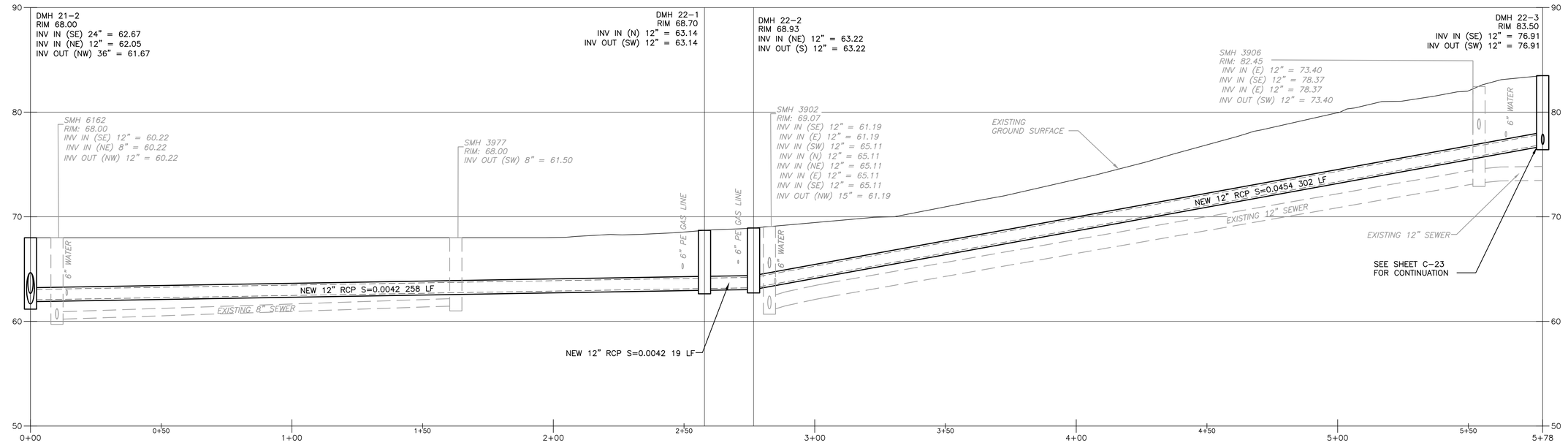
XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJV Time: 11/12/2023 12:53:05 PM
C:\pw_p11\GANJV\d3611175\C021PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20' VERT: 1" = 5'

10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

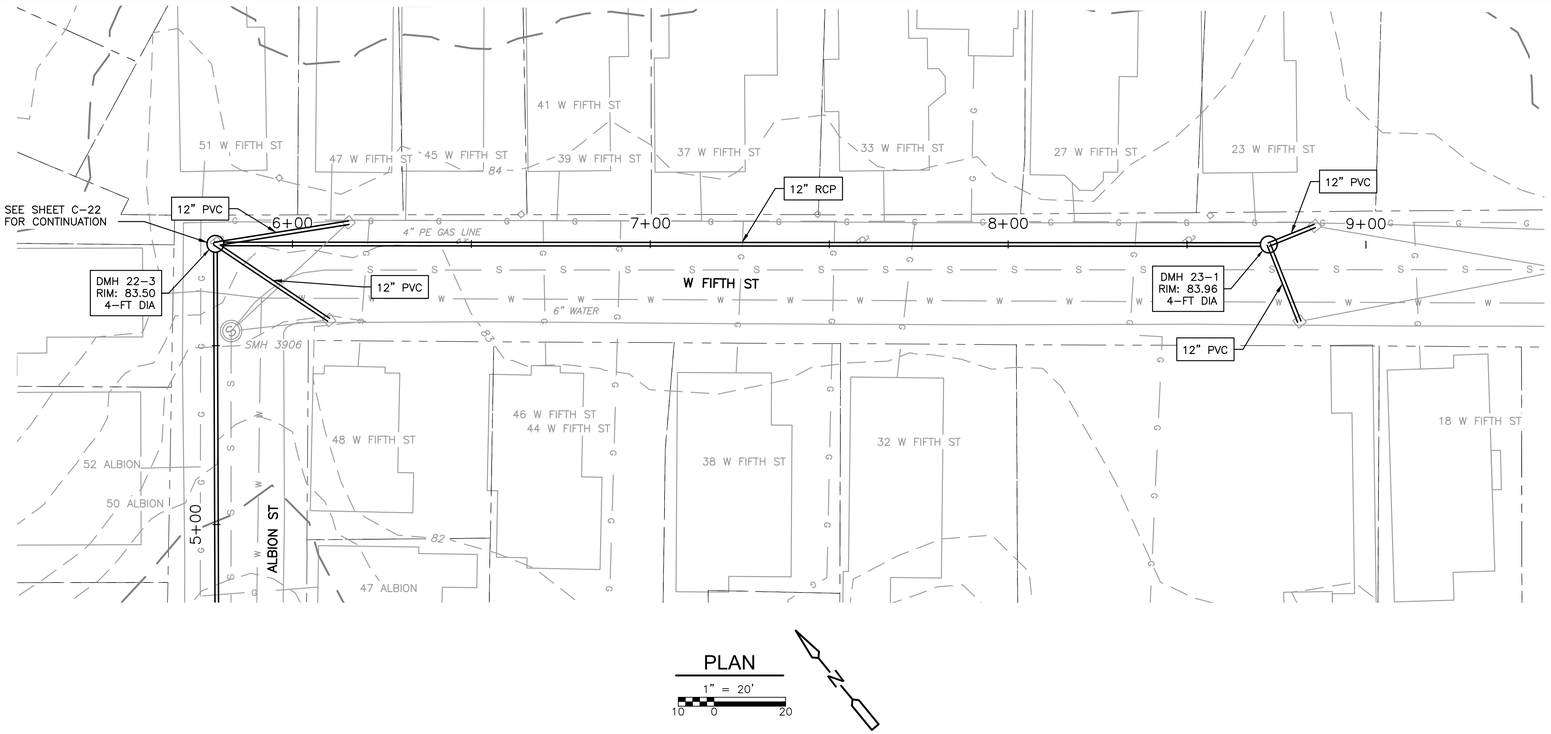
ALBION ST

PROJECT NO. 0552-282899
FILE NAME: C022PLPR.DWG

SHEET NO.
C-22

30% SUBMITTAL - NOT FOR CONSTRUCTION

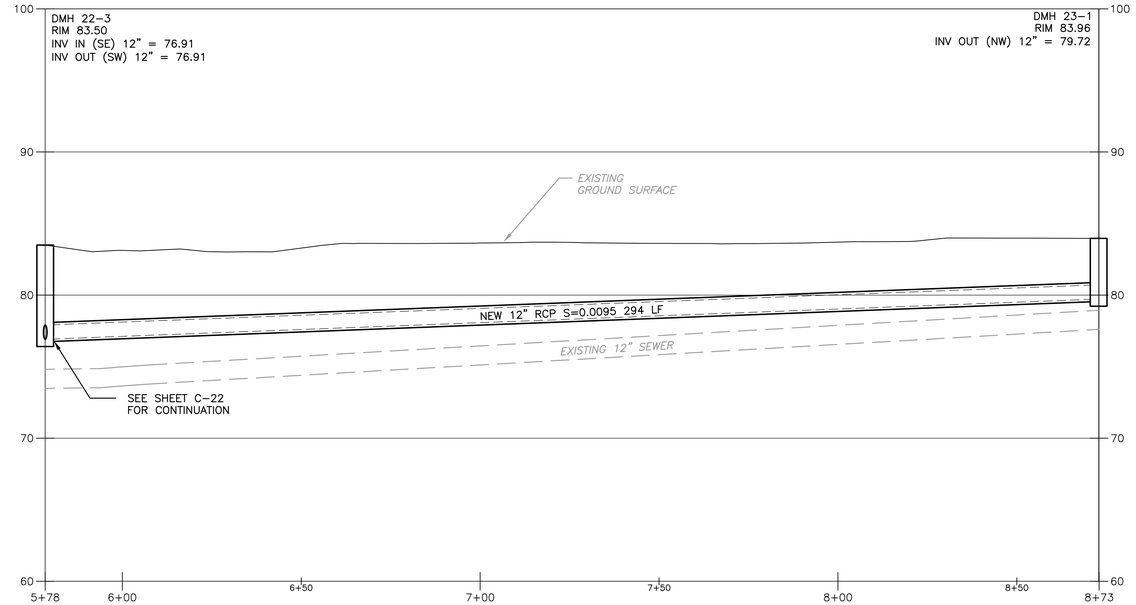
XREFs: [CDMS_2436_CWZ003PP_CIVIL_3D WORKING MODEL_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL_3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJV Time: 11/12/2023 1:10:13 PM
C:\pw_pl1\GANJV\d3611175\C001PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20' VERT: 1" = 5'

10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

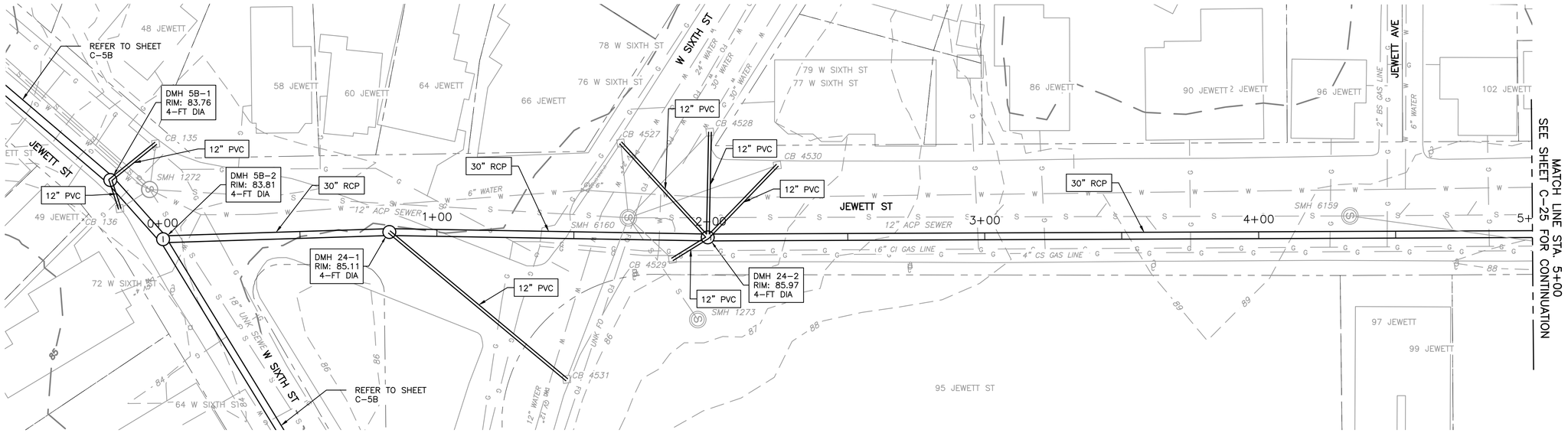
W FIFTH ST

PROJECT NO. 0552-282899
FILE NAME: C023PLPR.DWG

SHEET NO.
C-23

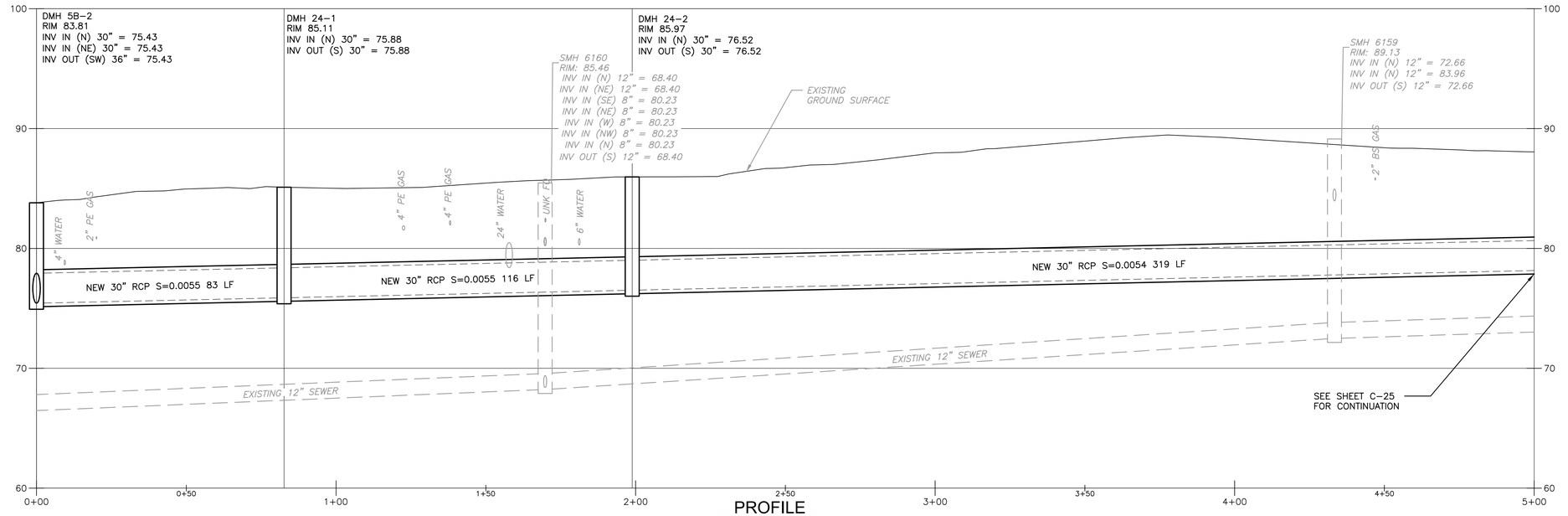
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436_CWZ003PP_CIVIL 3D WORKING MODEL_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJV Time: 11/12/2023 1:15:53 PM
C:\pw_p11\GANJV\d3611175\C001PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

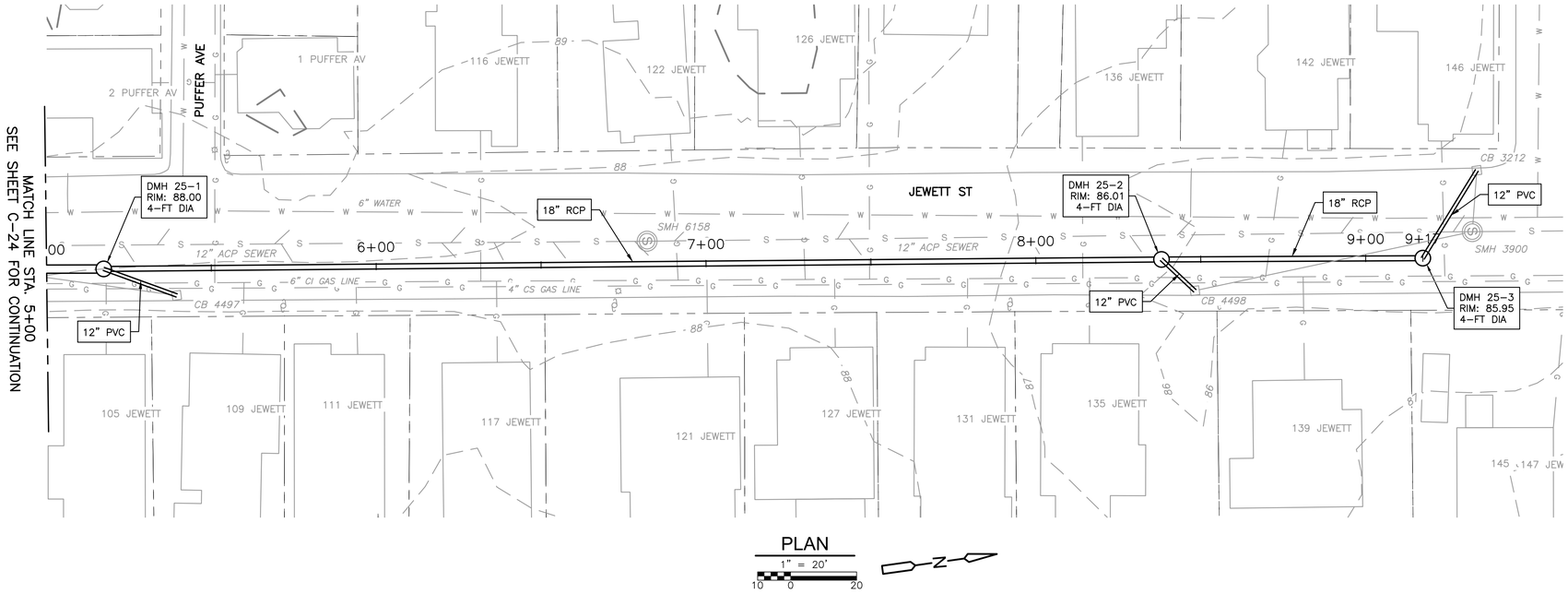
JEWETT ST

PROJECT NO. 0552-282899
FILE NAME: C024PLPR.DWG

SHEET NO.
C-24

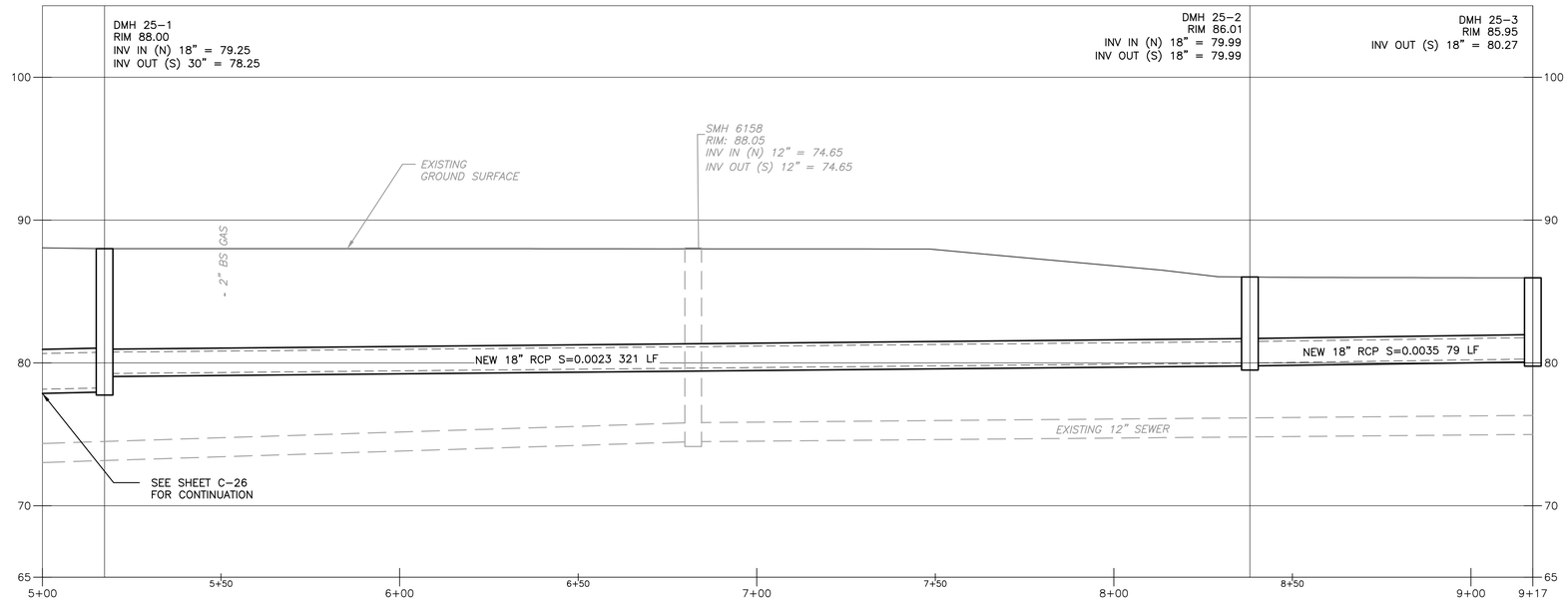
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] [Images: []
Last saved by: GANJV Time: 11/12/2023 1:24:08 PM
C:\pw_p11\GANJV\d3611175\C001PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

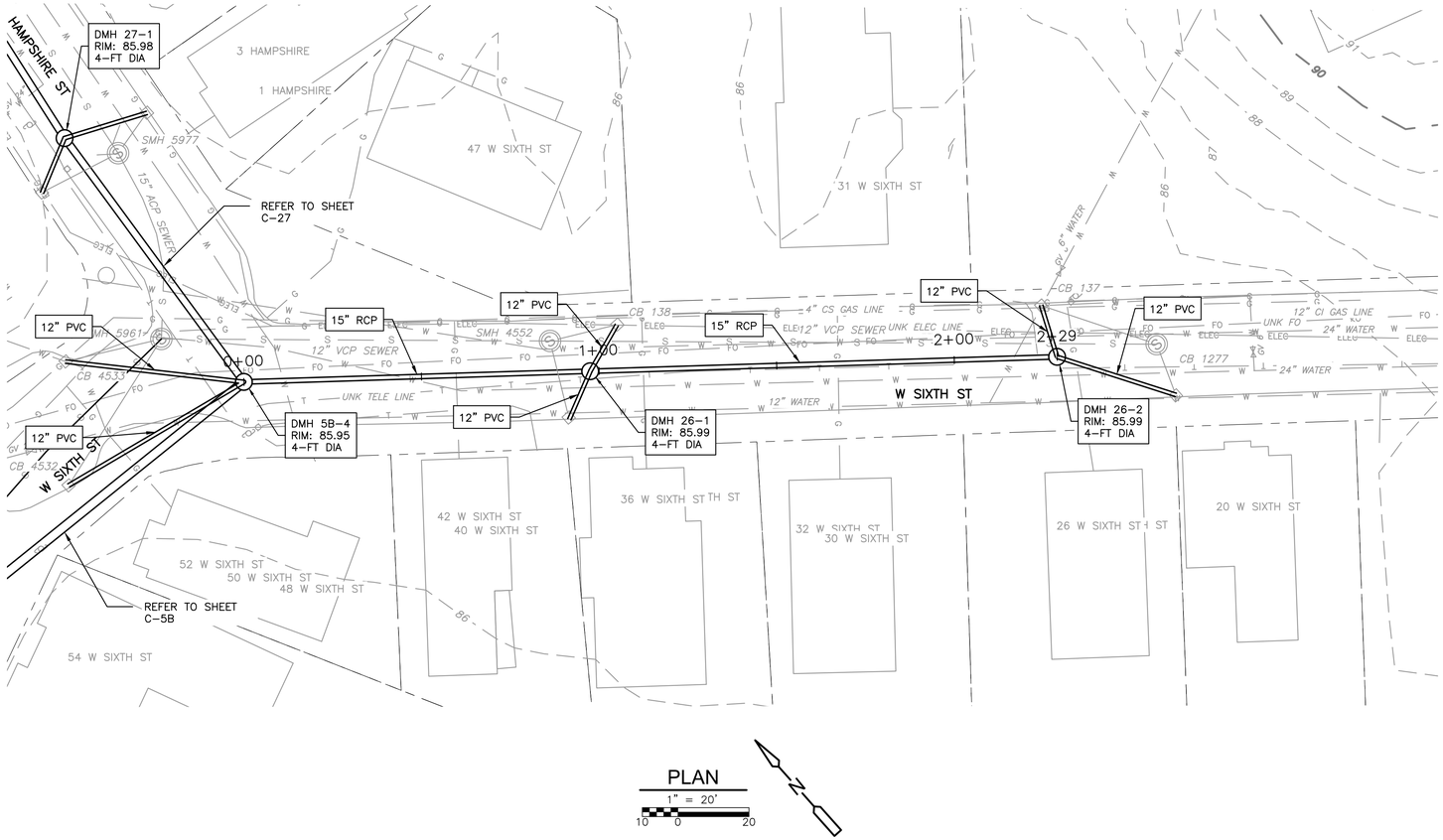
JEWETT ST

PROJECT NO. 0552-282899
FILE NAME: C025PLPR.DWG

SHEET NO.
C-25

30% SUBMITTAL - NOT FOR CONSTRUCTION

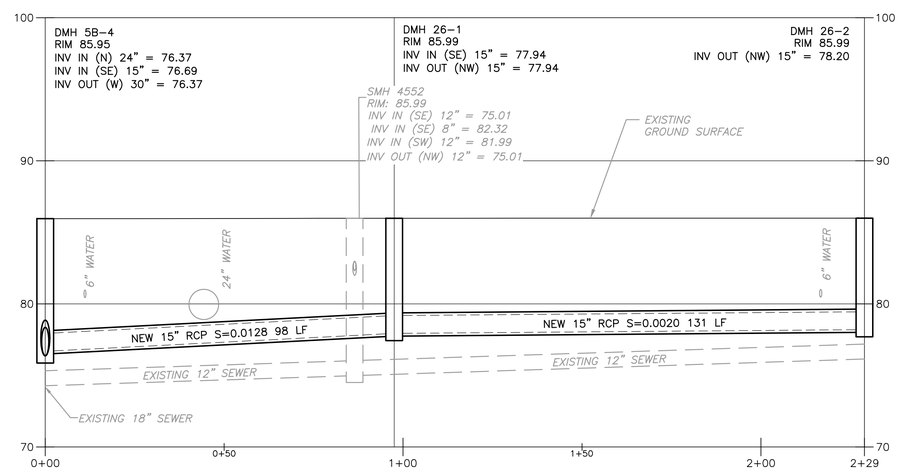
XREFs: [CDMS_2436_CWZ003PP_CIVIL_3D_WORKING MODEL_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL_3D_WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJV Time: 11/12/2023 1:35:01 PM
C:\pw_p11\GANJV\d3611175\C001PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20'

10 0 20

VERT: 1" = 5'

2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

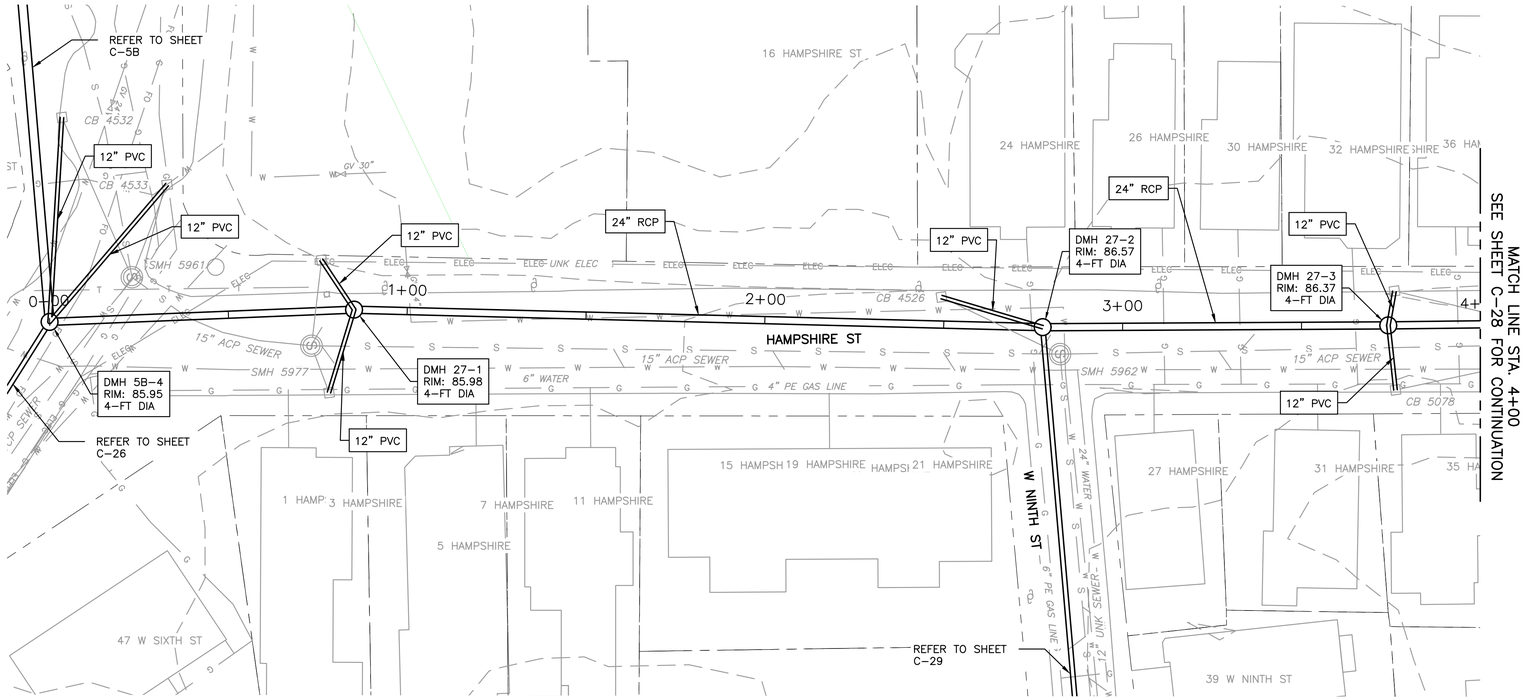
W SIXTH ST

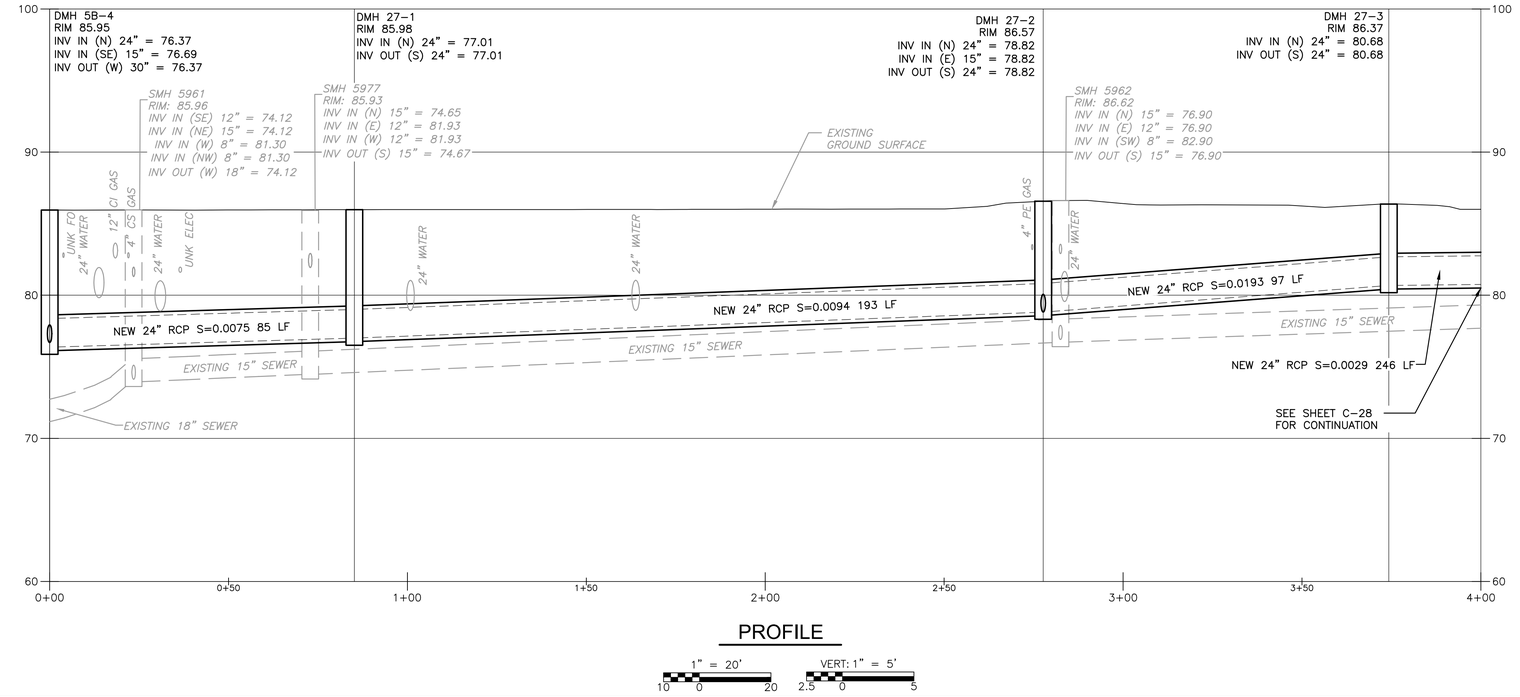
PROJECT NO. 0552-282899
FILE NAME: C026PLPR.DWG

SHEET NO.
C-26

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436_CWZ003PP_CIVIL_3D WORKING MODEL_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL_3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJV Time: 11/12/2023 1:54:04 PM
C:\pw_p11\GANJV\d3611175\C001PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.





PROFILE

1" = 20' VERT: 1" = 5'

10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

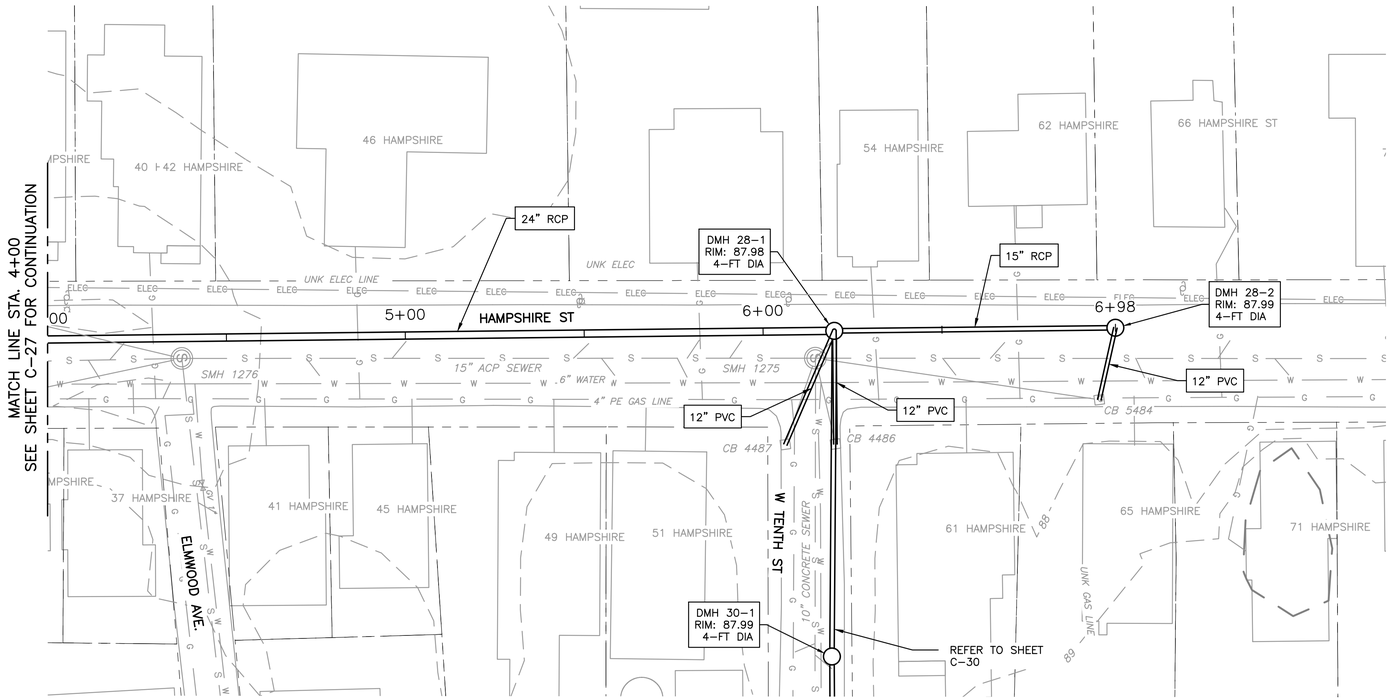
HAMPSHIRE ST

PROJECT NO. 0552-282899
FILE NAME: C027PLPR.DWG

SHEET NO.
C-27

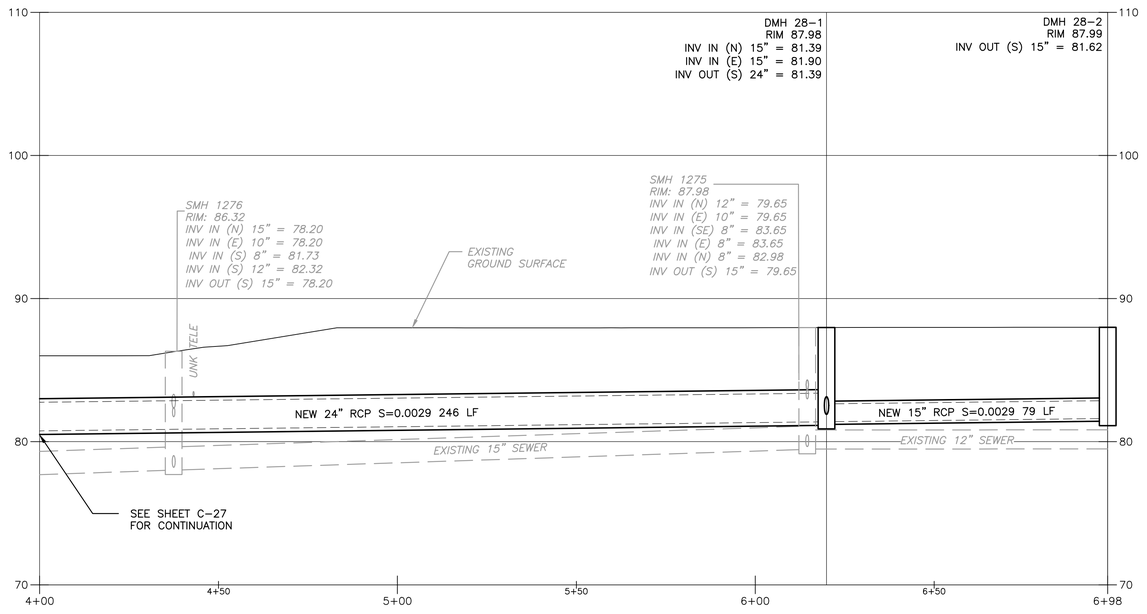
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJV Time: 11/12/2023 2:04:21 PM
C:\pw_pp11\GANJV\d3611175\C001PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

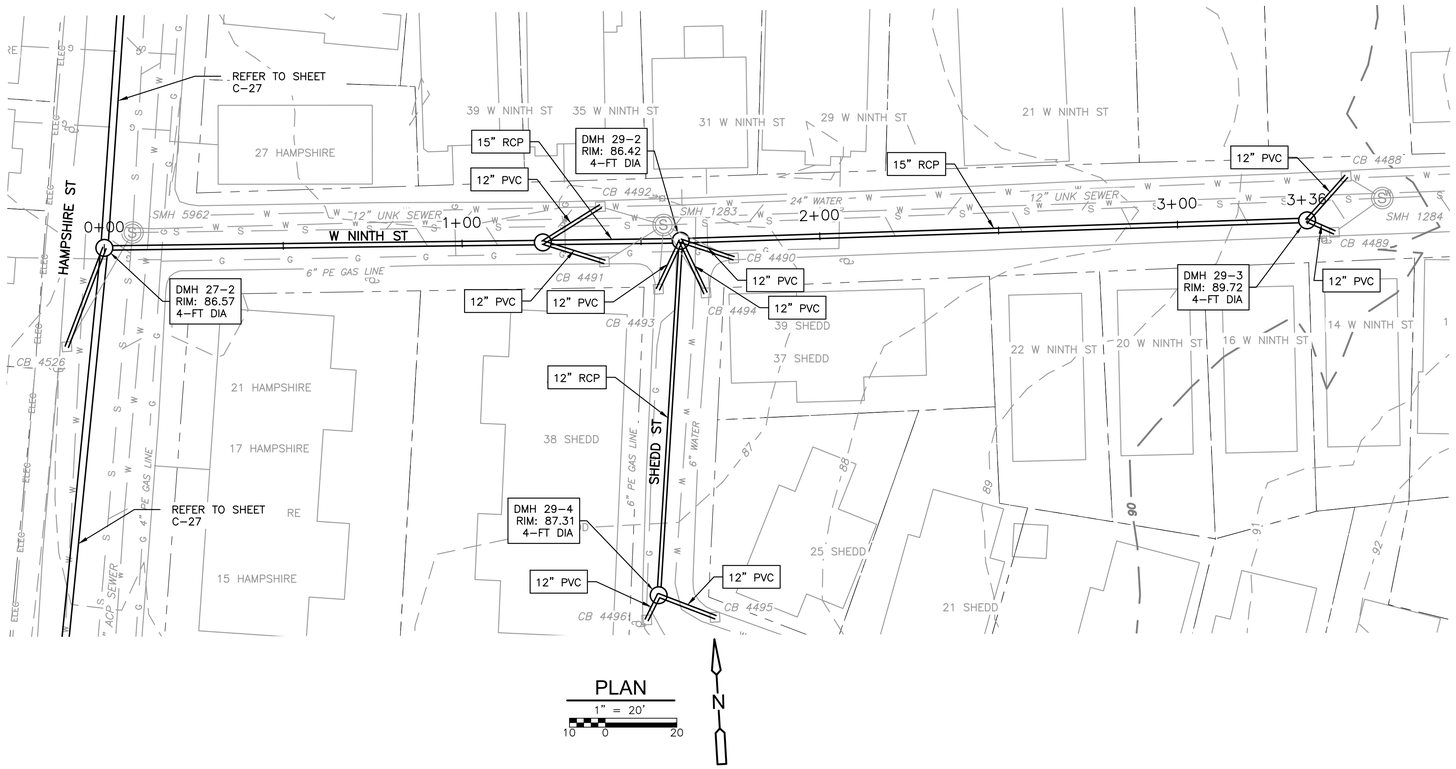
HAMPSHIRE ST

PROJECT NO. 0552-282899
FILE NAME: C028PLPR.DWG

SHEET NO.
C-28

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] [Images: []
Last saved by: GANJV Time: 11/12/2023 2:09:14 PM
C:\pw_p11\GANJV\d3611175\C001PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

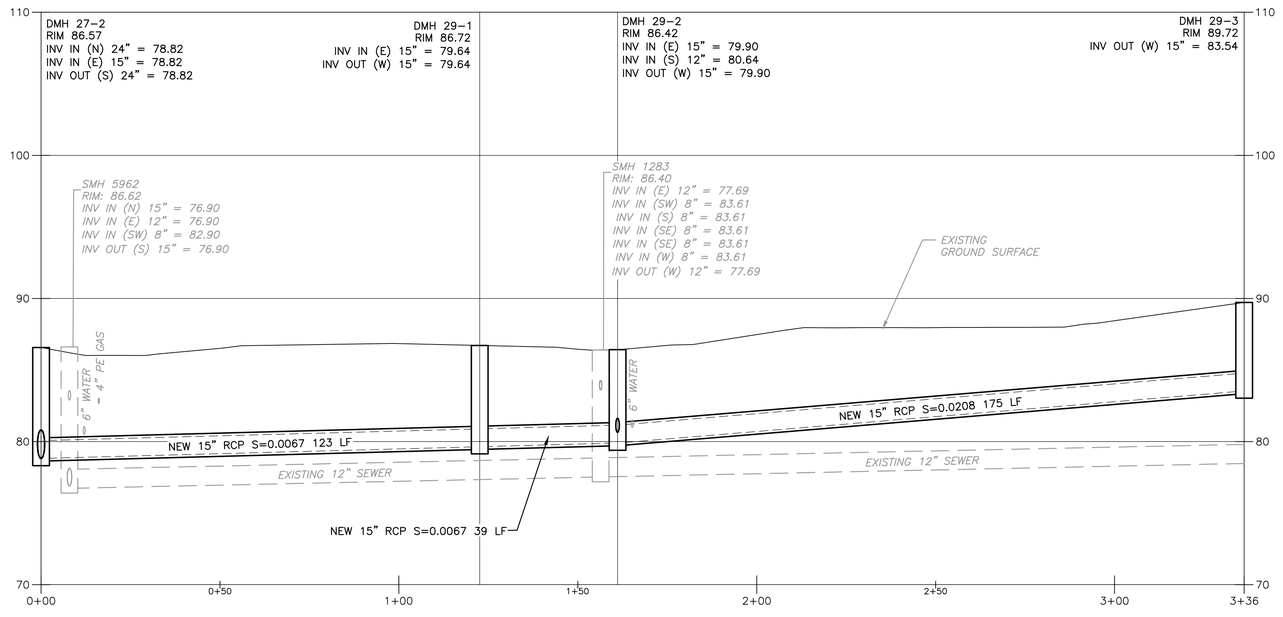


PLAN

1" = 20'

10 0 20

N



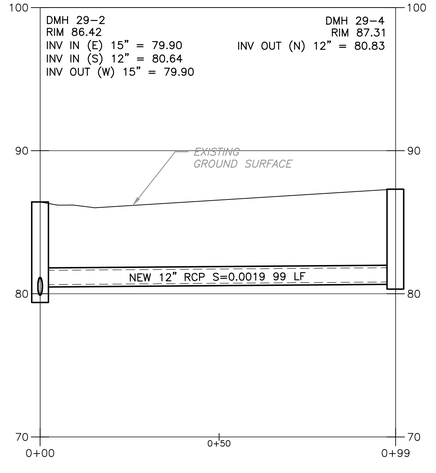
PROFILE

1" = 20'

10 0 20

VERT: 1" = 5'

2.5 0 5



PROFILE

1" = 20'

10 0 20

VERT: 1" = 5'

2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:

DRAWN BY: S. SIDANALE

SHEET CHK'D BY:

CROSS CHK'D BY:

APPROVED BY:

DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

W NINTH ST & SHEDD ST

PROJECT NO. 0552-282899

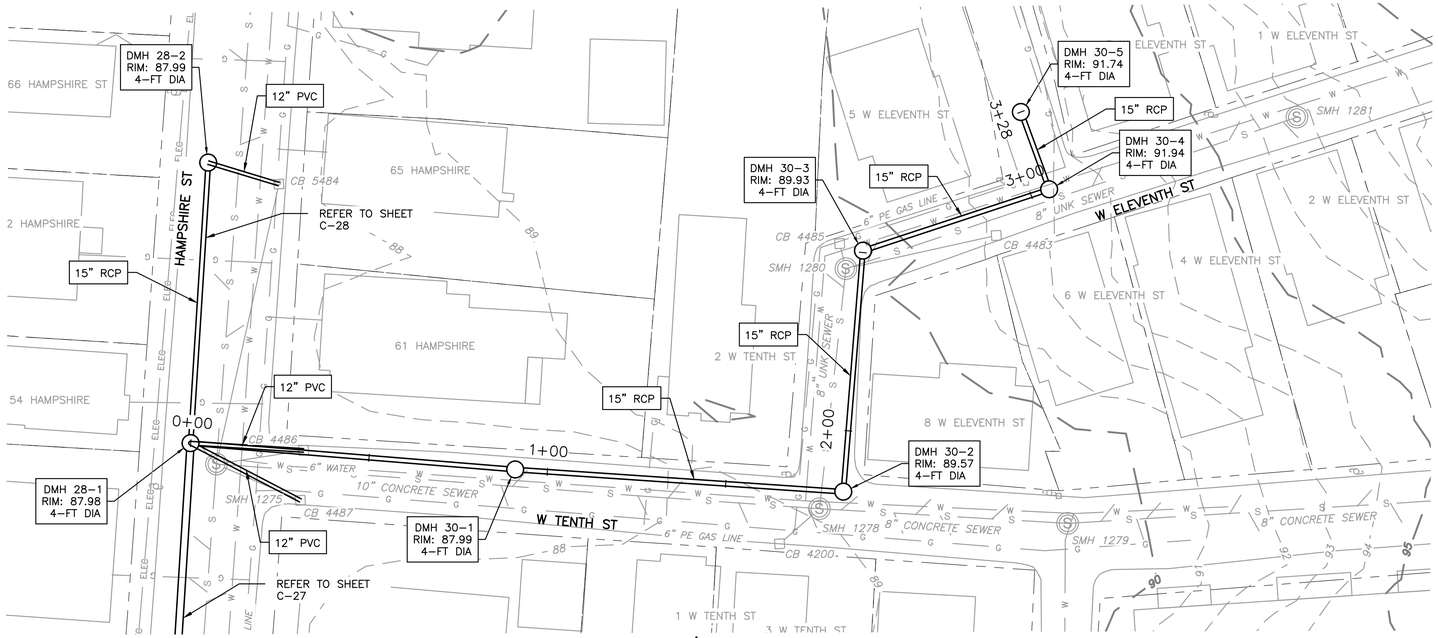
FILE NAME: C029PLPR.DWG

SHEET NO.

C-29

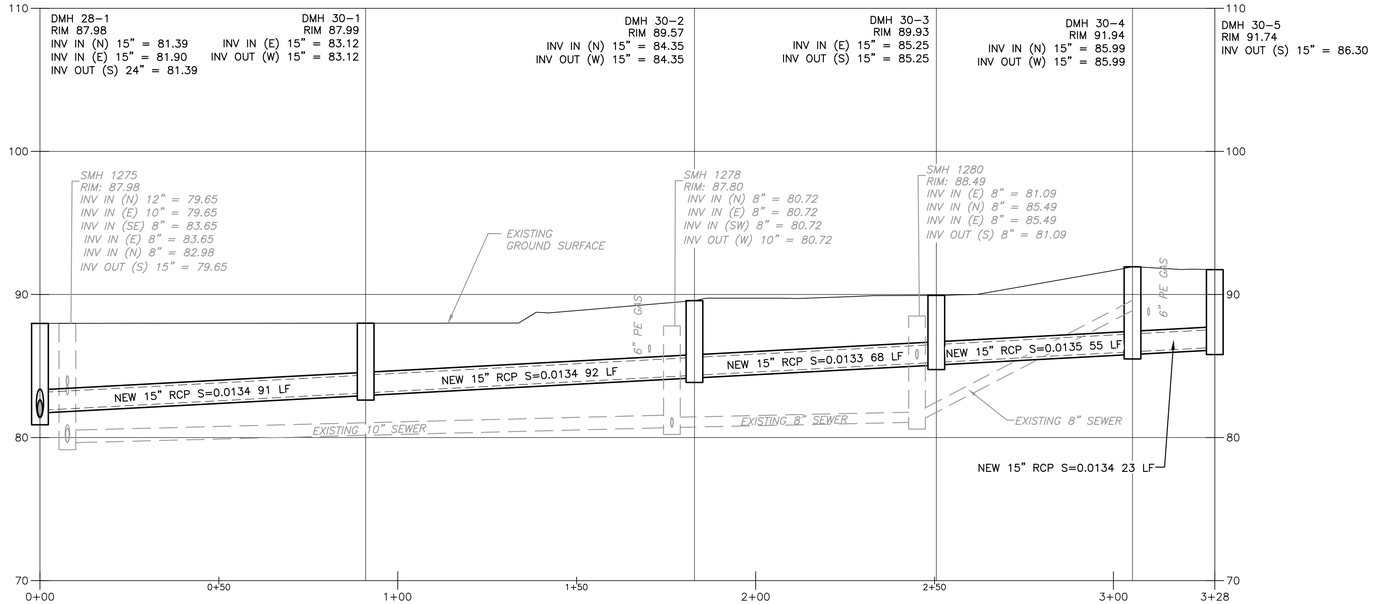
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436_CWZ003PP_CIVIL_3D WORKING MODEL_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP CWZ003PP_CIVIL_3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJIV Time: 11/12/2023 2:15:33 PM
C:\pw_p11\GANJIV\d3611175\C001PLPR.dwg
© 2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

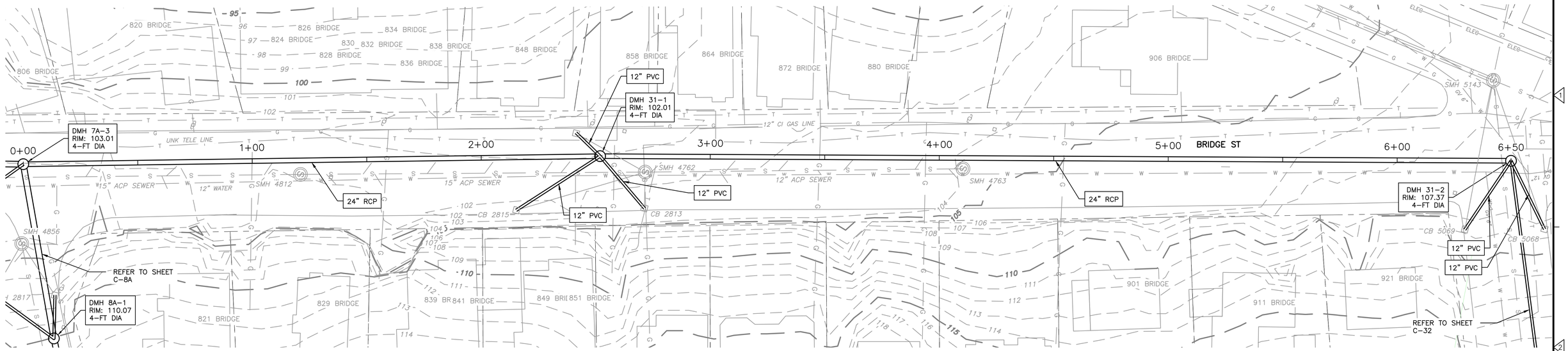
W NINTH ST & SHEDD ST

PROJECT NO. 0552-282899
FILE NAME: C030PLPR.DWG

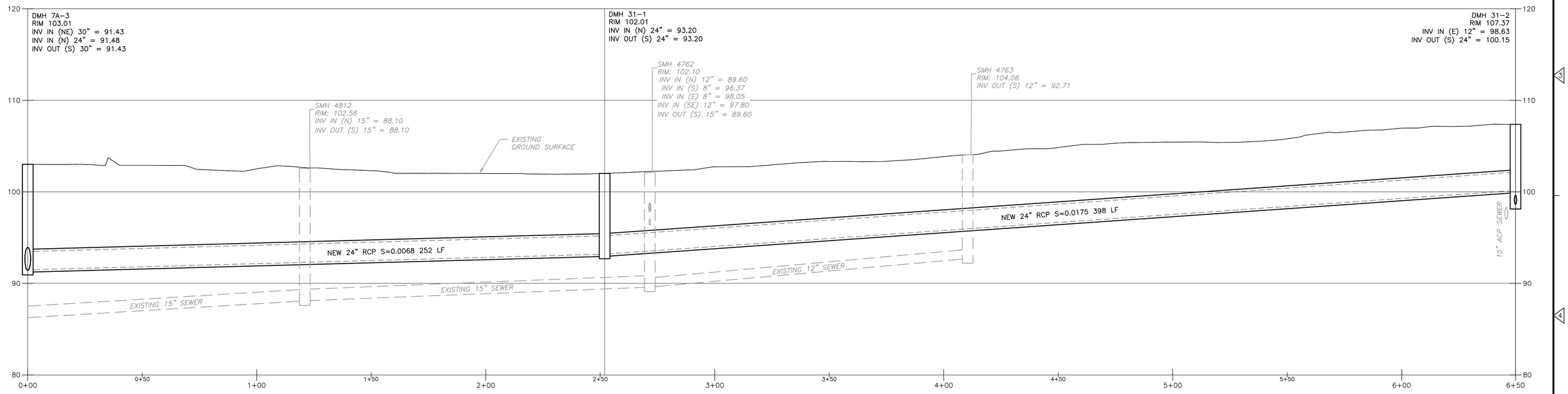
SHEET NO.
C-30

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436_CWZ003PP_CIVIL_3D_WORKING_MODEL_CEP005PP_EX_SEWER, CEP004PP_EX_WATER, CEP002ST_EX_DRAIN, CEP007PP_EX_CULVERTS, CEP001ST_BASEMAP_HUMPHREYS, CEP003ST_EX_GAS_LINE, CEP009PP-STREET_LIGHT_AND_NATIONAL_GRID_POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL_3D_WORKING_MODEL_Trunk_Mains] Images: []
Last saved by: GANJV Time: 11/12/2023 2:26:15 PM
C:\pw_pl1\GANJV\d3611175\C001PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN
1" = 20'



PROFILE
1" = 20'
VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

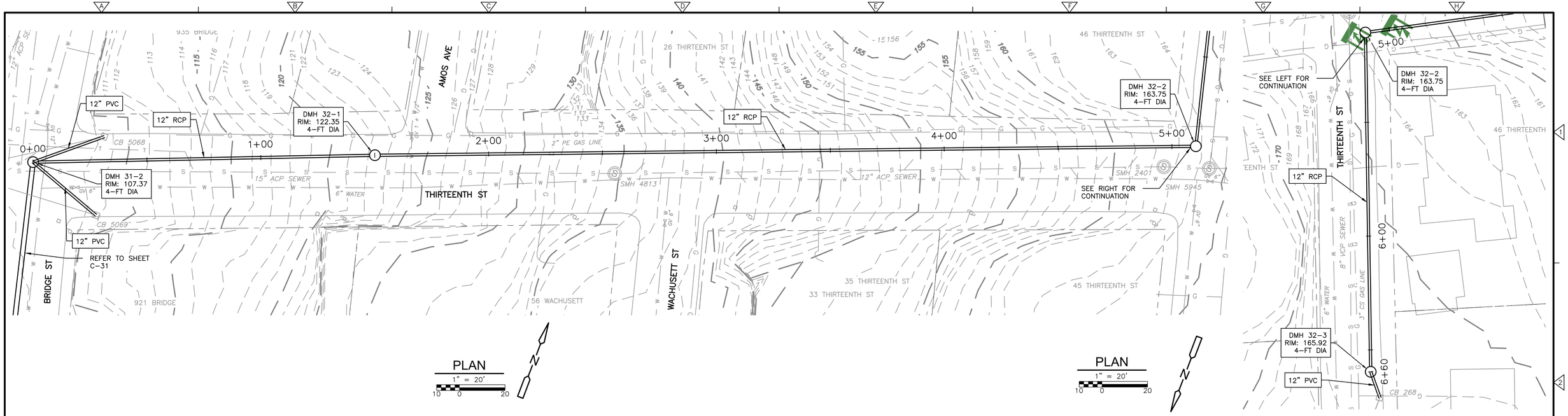
HUMPHREY'S BROOK

BRIDGE ST

PROJECT NO. 0552-282899
FILE NAME: C031PLPR.DWG
SHEET NO.
C-31

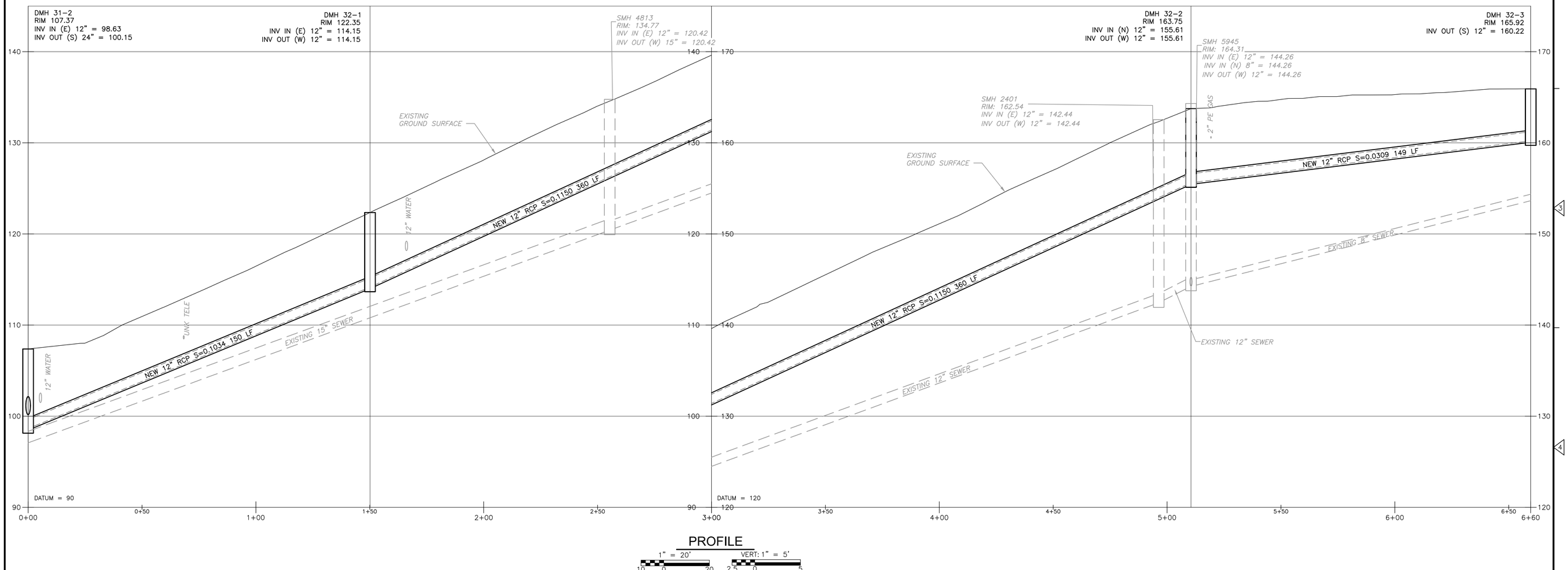
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] [Images: []
Last saved by: GANJV Time: 11/12/2023 2:29:44 PM
C:\pw_pp11\GANJV\d3611175\C001PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN
1" = 20'
10 0 20

PLAN
1" = 20'
10 0 20



PROFILE
1" = 20'
VERT: 1" = 5'
10 0 20
2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

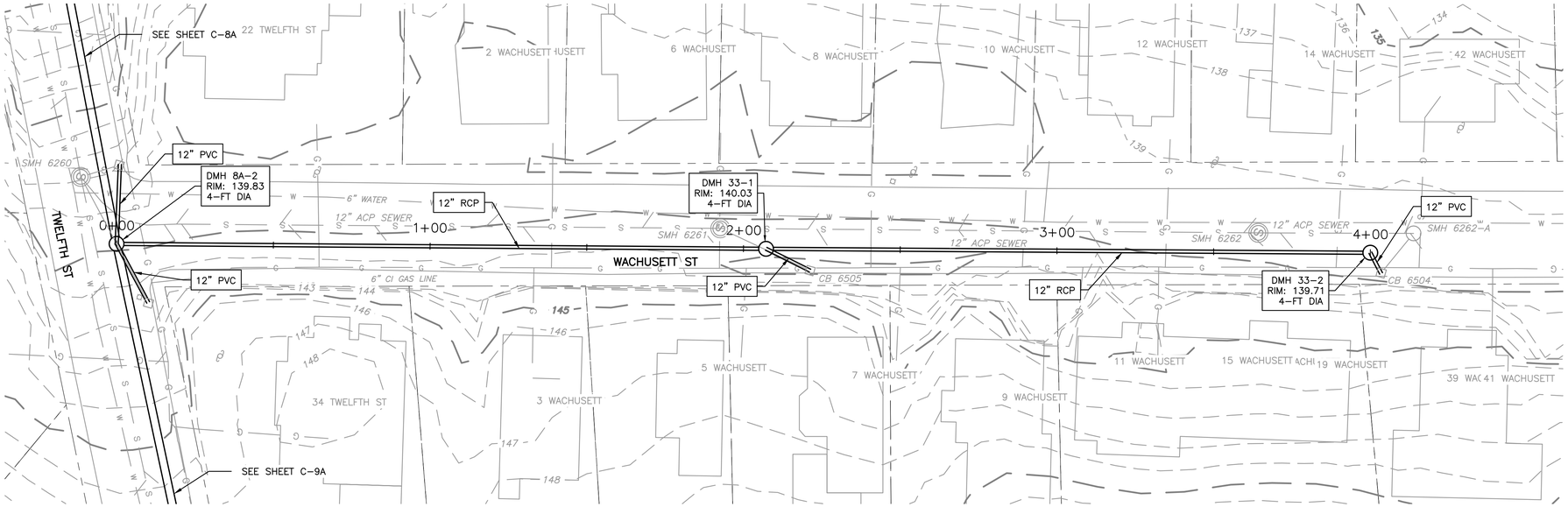
THIRTEENTH ST

PROJECT NO. 0552-282899
FILE NAME: C032PLPR.DWG

SHEET NO.
C-32

30% SUBMITTAL - NOT FOR CONSTRUCTION

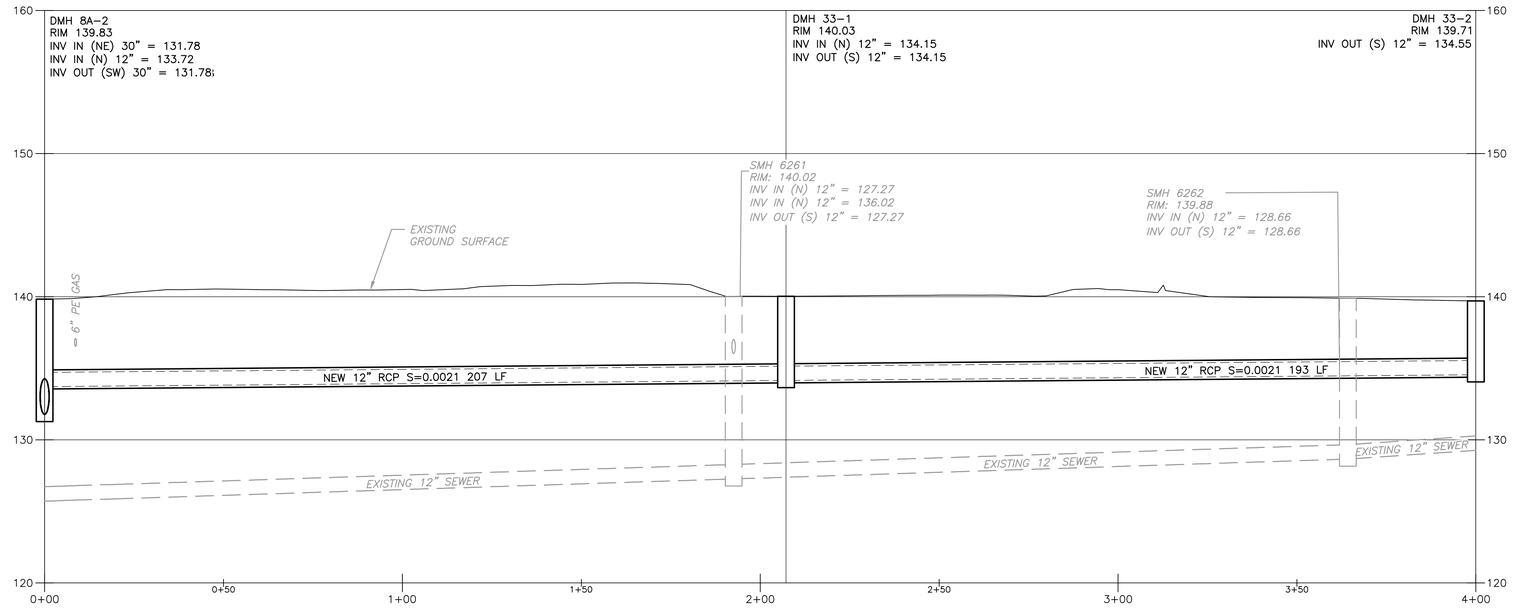
XREFs: [CDMS_2436_CWZ003PP_CIVIL_3D WORKING MODEL_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL_3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJIV Time: 11/12/2023 2:36:05 PM
C:\pw_plt\GANJIV\d3611175\C001PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20' VERT: 1" = 5'

10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

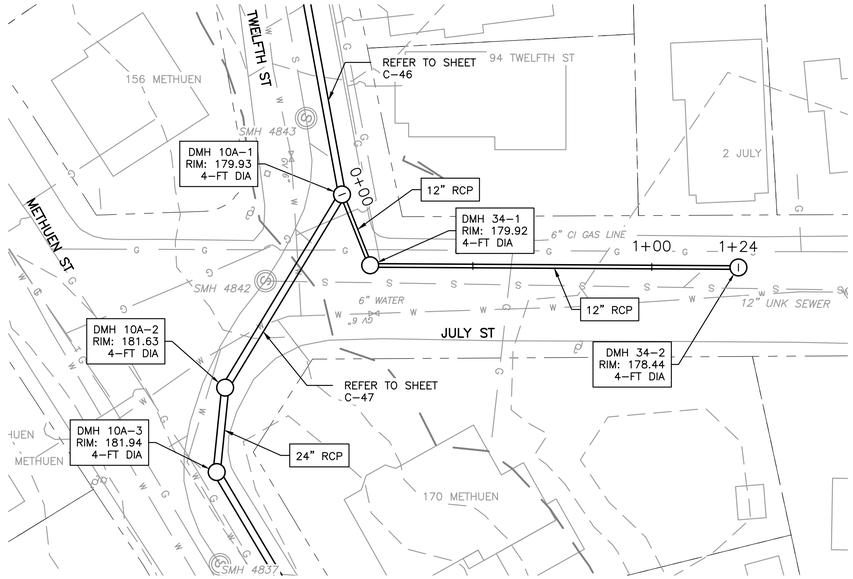
WACHUSETT ST

PROJECT NO. 0552-282899
FILE NAME: C033PLPR.DWG

SHEET NO.
C-33

30% SUBMITTAL - NOT FOR CONSTRUCTION

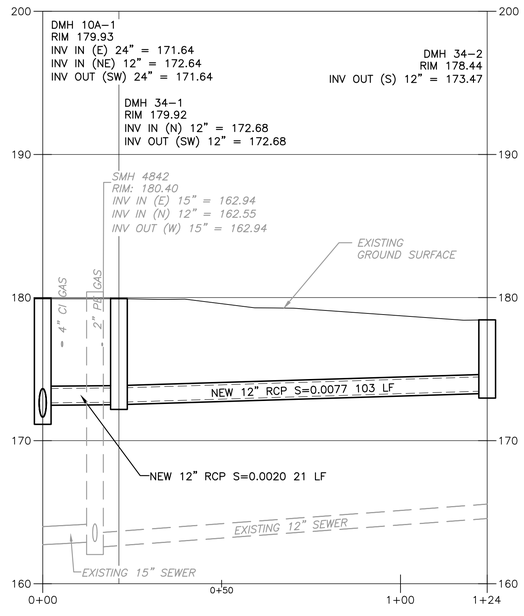
XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJV Time: 11/12/2023 2:42:27 PM
C:\pw_p11\GANJV\d3611175\C001PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20' VERT: 1" = 5'

10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

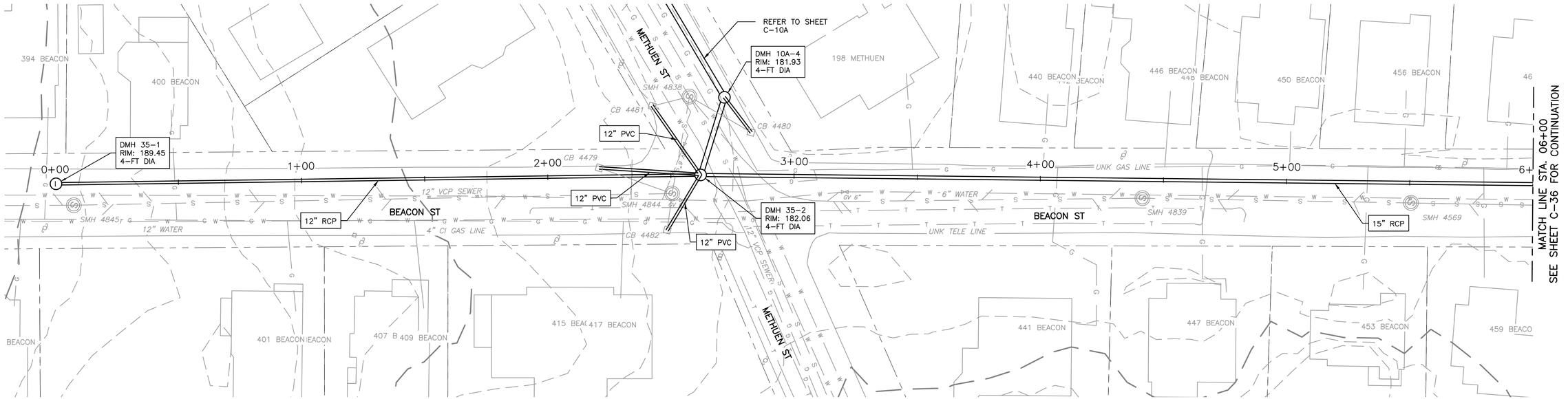
JULY ST

PROJECT NO. 0552-282899
FILE NAME: C034PLPR.DWG

SHEET NO.
C-34

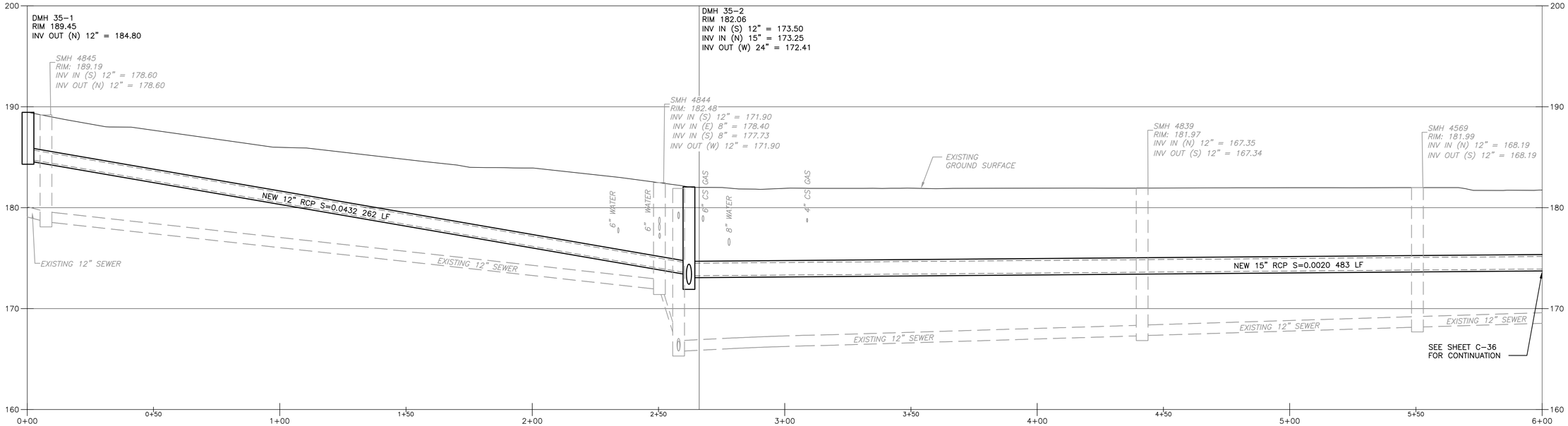
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] [Images: []
Last saved by: GANJV Time: 11/12/2023 2:46:07 PM
C:\pw_pp11\GANJV\d3611175\C001PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

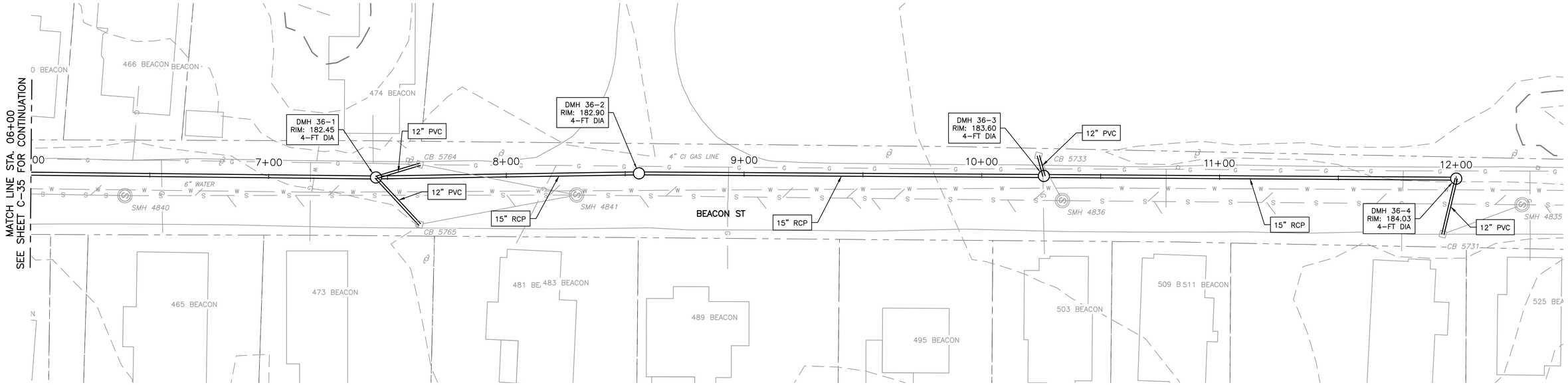
BEACON ST

PROJECT NO. 0552-282899
FILE NAME: C035PLPR.DWG

SHEET NO.
C-35

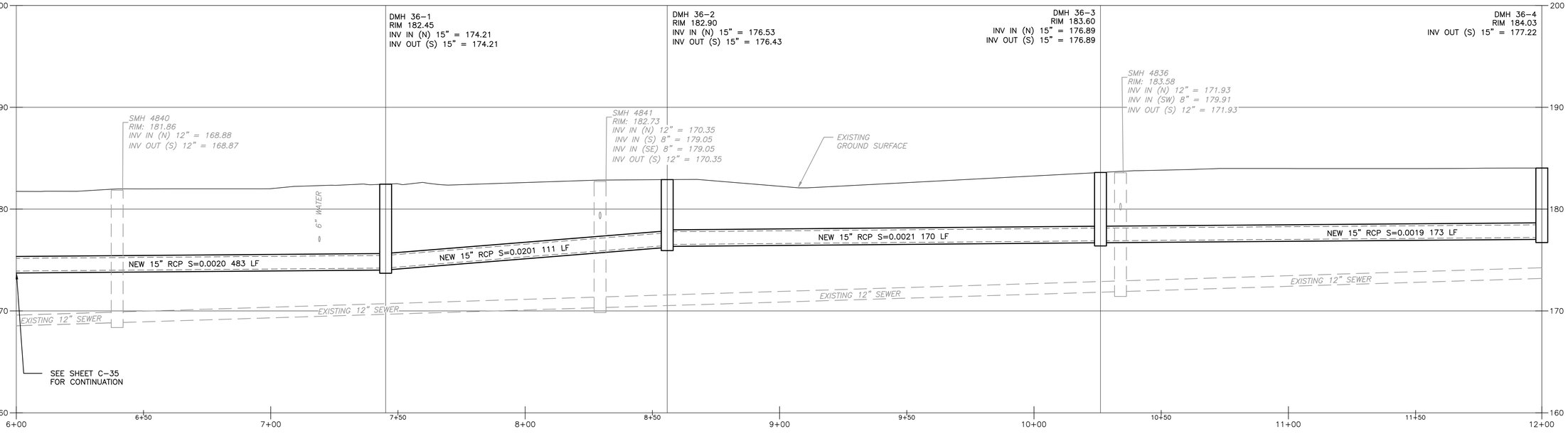
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJV Time: 11/12/2023 2:56:47 PM
C:\pw_p11\GANJV\d3611175\C001PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:

DRAWN BY: S. SIDANALE

SHEET CHK'D BY:

CROSS CHK'D BY:

APPROVED BY:

DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

BEACON ST

PROJECT NO. 0552-282899

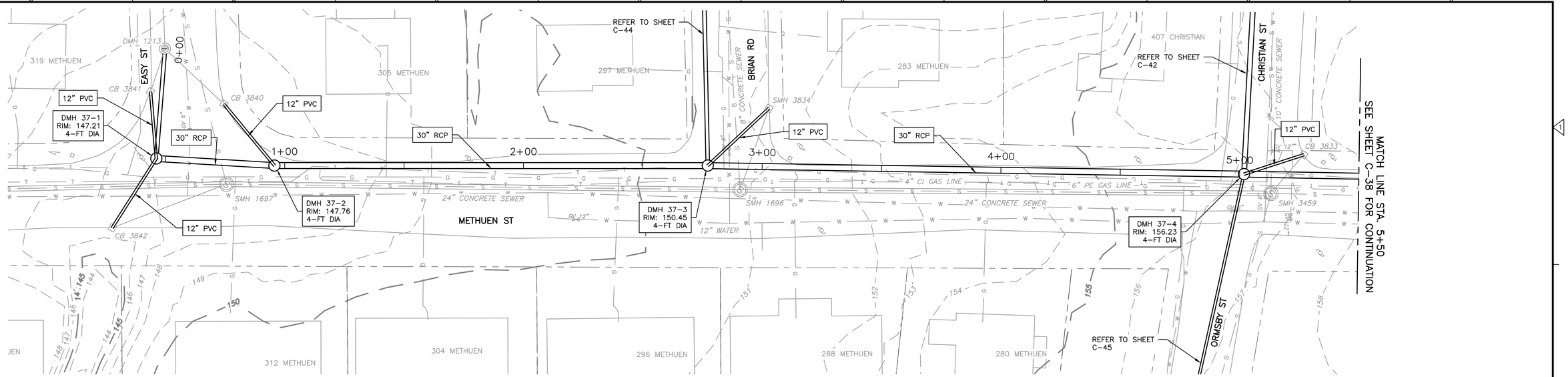
FILE NAME: C036PLPR.DWG

SHEET NO.

C-36

30% SUBMITTAL - NOT FOR CONSTRUCTION

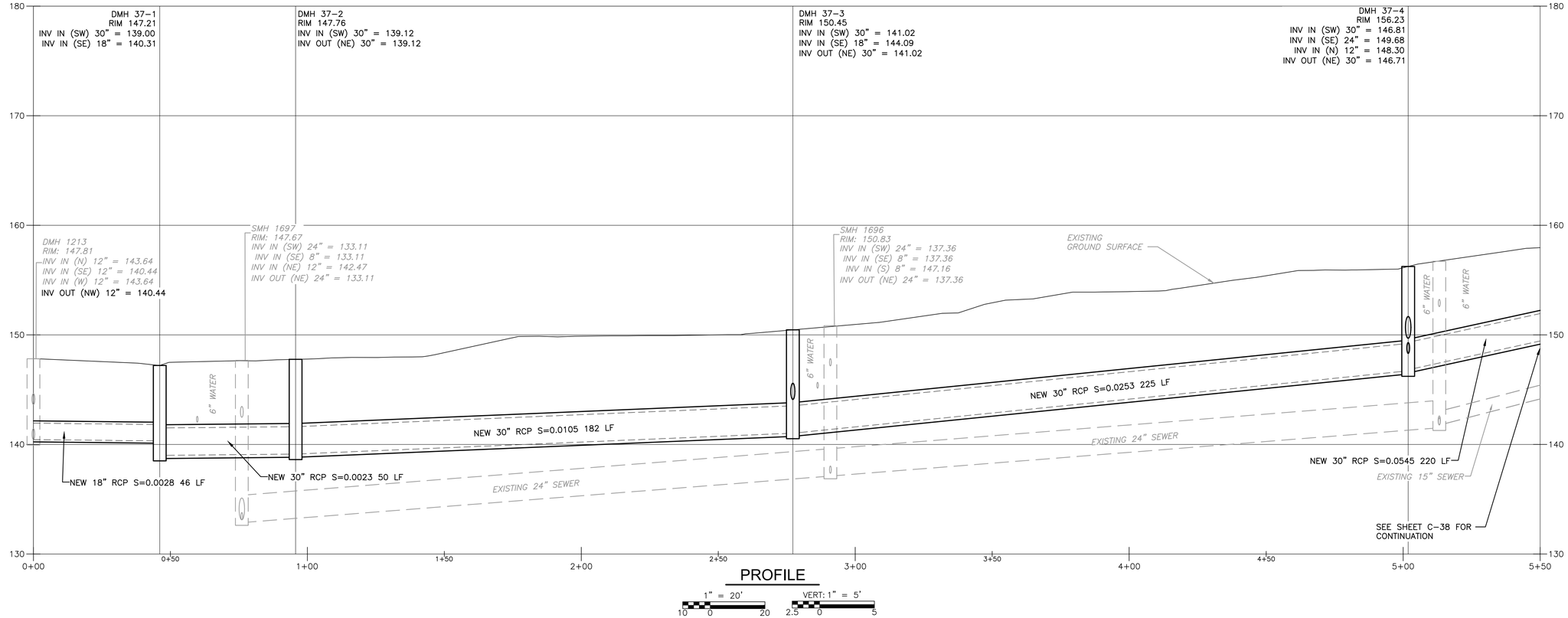
XREFs: [CDMS_2436_CWZ003PP_CIVIL_3D WORKING MODEL_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP CWZ003PP_CIVIL_3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJIV Time: 11/12/2023 2:59:09 PM
C:\pw_pl1\GANJIV\d3611175\C001PLPR.dwg
© 2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20' VERT: 1" = 5'

10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

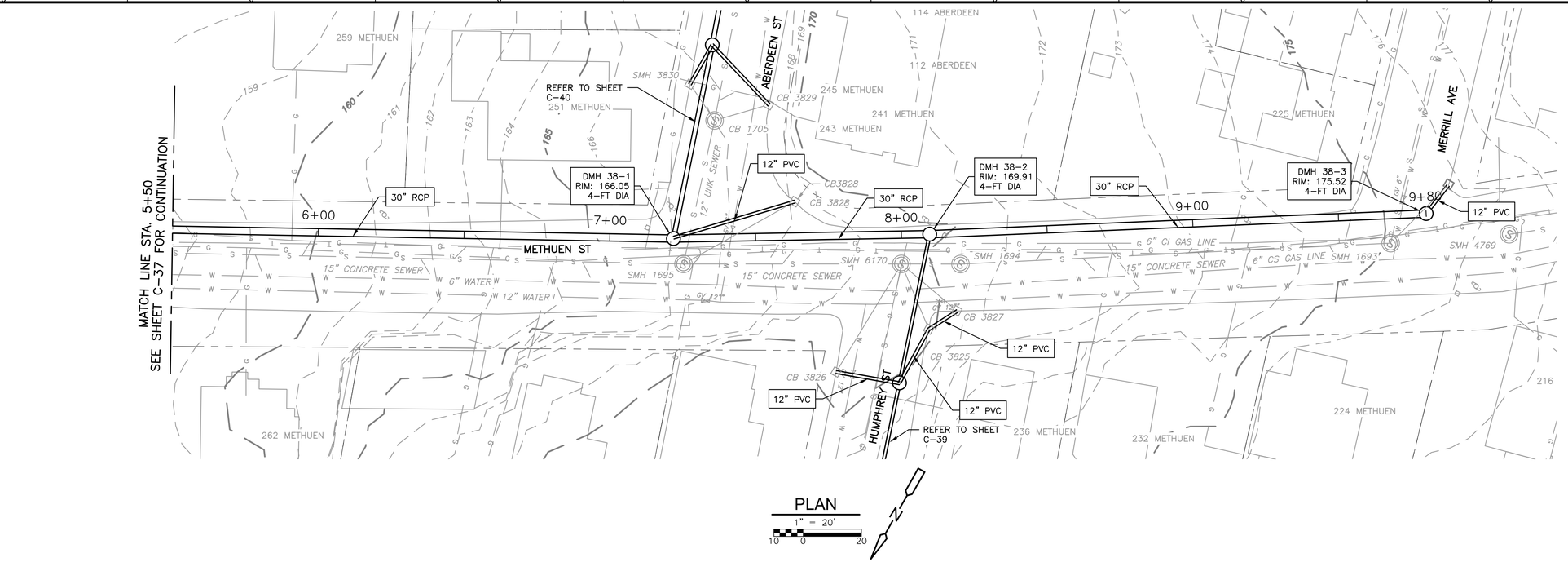
METHUEN ST

PROJECT NO. 0552-282899
FILE NAME: C037PLPR.DWG

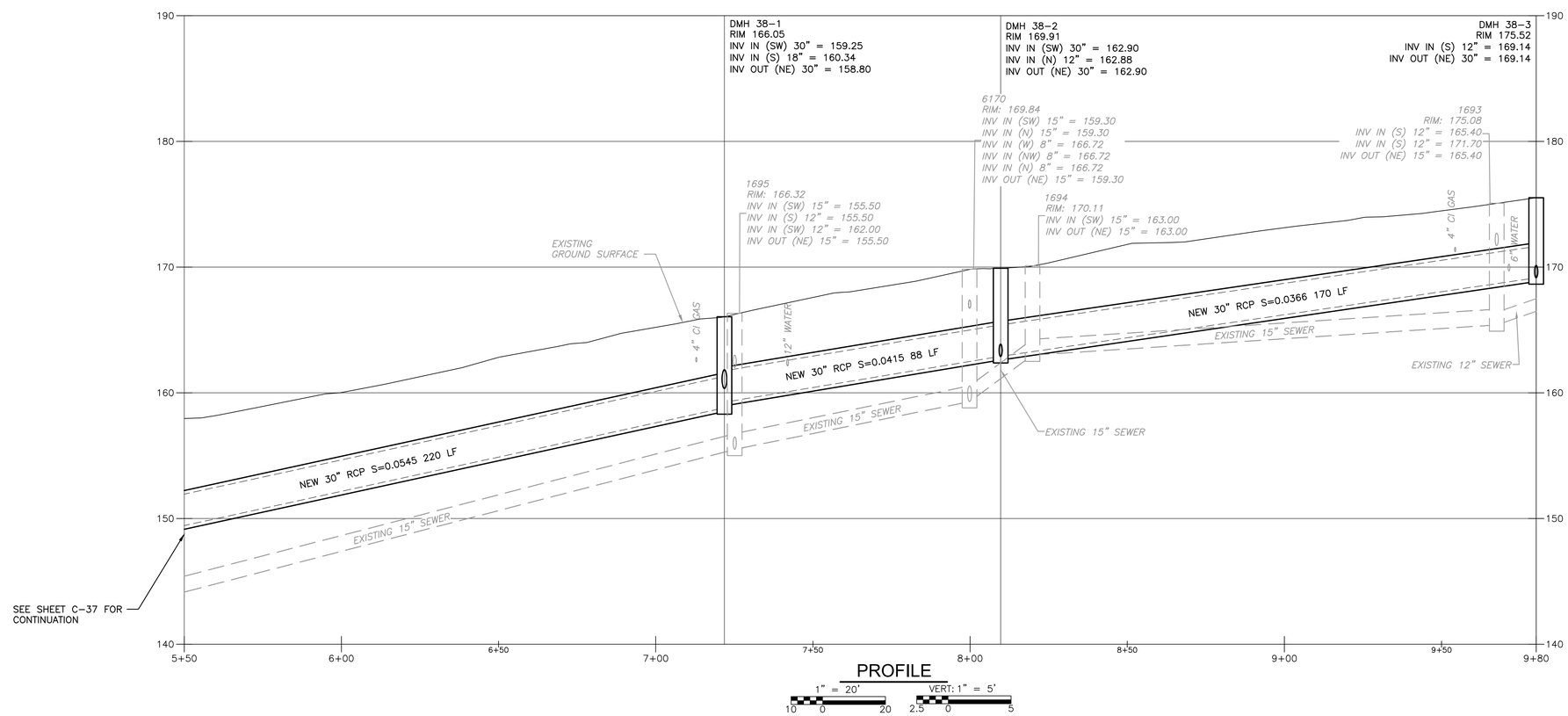
SHEET NO.
C-37

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJV Time: 11/12/2023 3:02:09 PM
C:\pw_p11\GANJV\d3611175\C001PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN
1" = 20'
10 0 20



PROFILE
1" = 20' VERT: 1" = 5'
10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

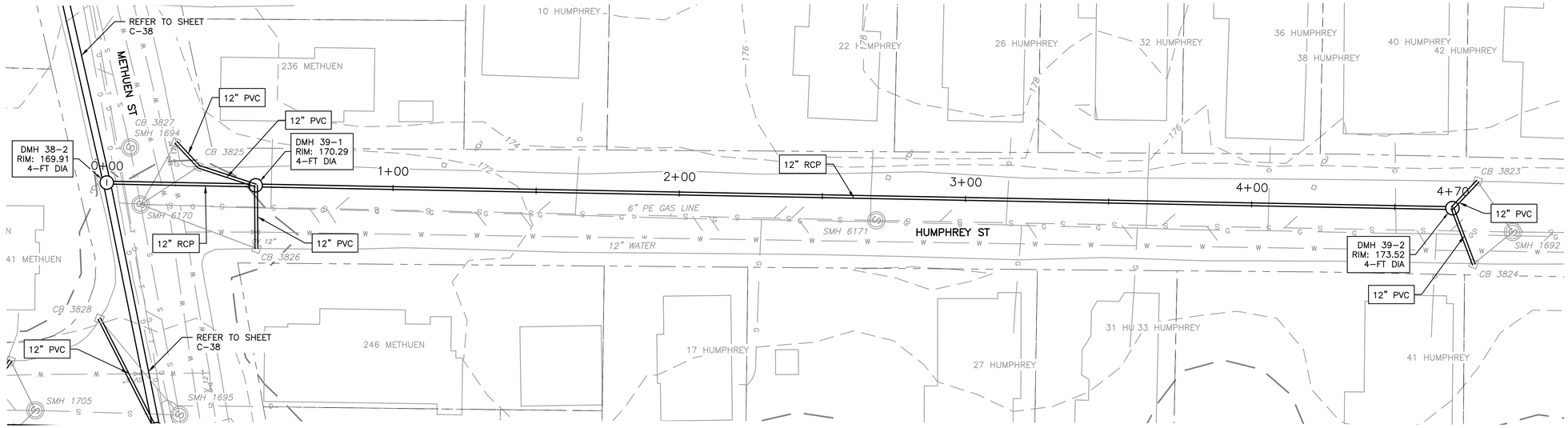
METHUEN ST

PROJECT NO. 0552-282899
FILE NAME: C038PLPR.DWG

SHEET NO.
C-38

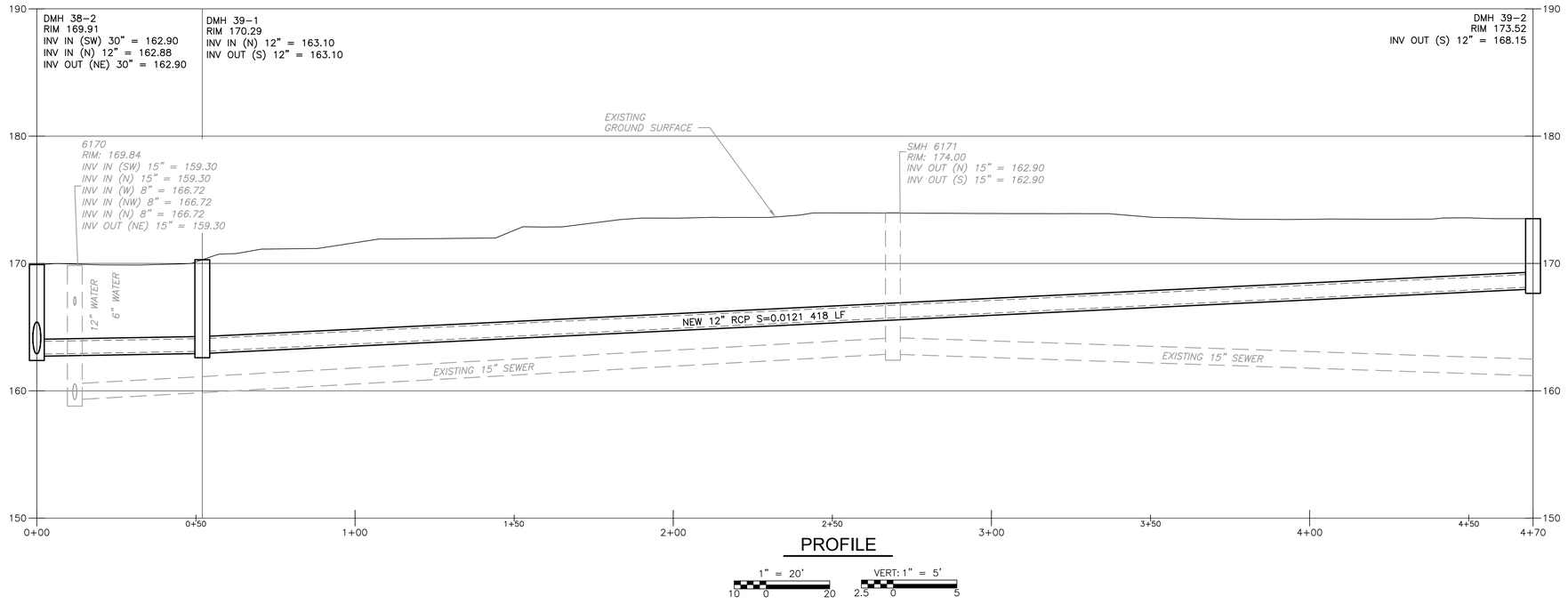
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CW2003PP_CIVIL 3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CW2003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJIV Time: 11/12/2023 3:30:43 PM
C:\pw_pr1\GANJIV\d3611175\C001PLPR.dwg
© 2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

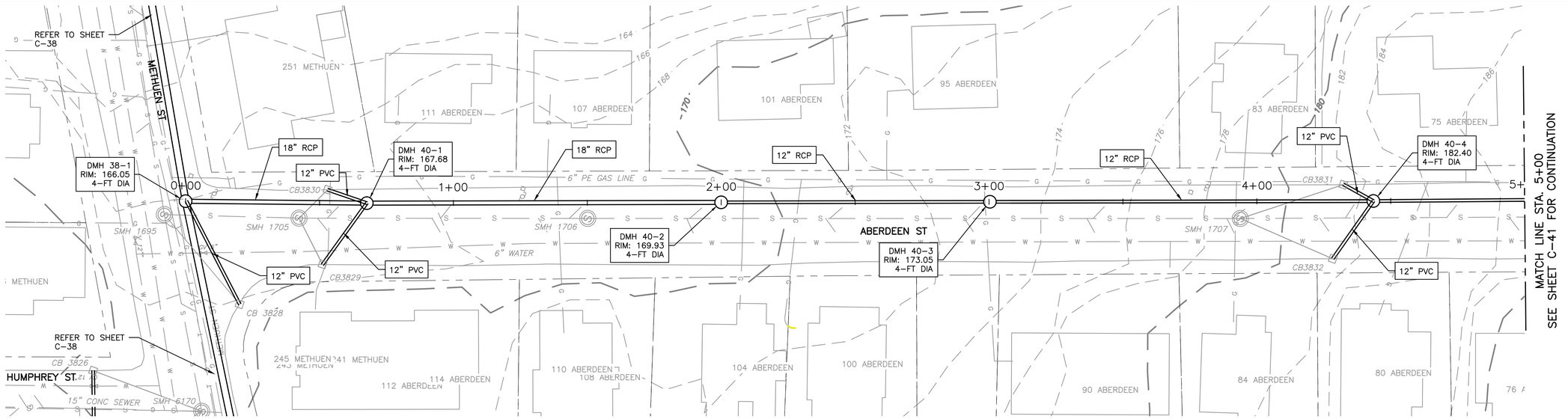
HUMPHREY ST

PROJECT NO. 0552-282899
FILE NAME: C039PLPR.DWG

SHEET NO.
C-39

30% SUBMITTAL - NOT FOR CONSTRUCTION

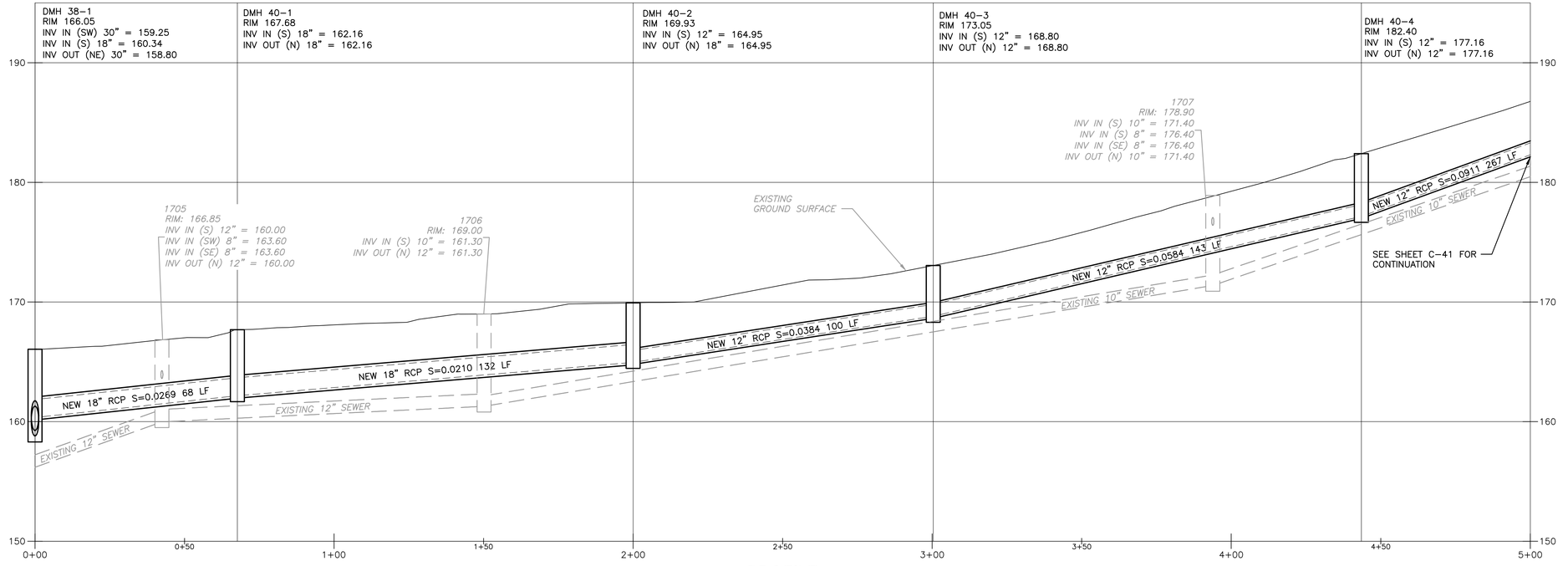
XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP008PP-EXTENET, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] [Images: []
Last saved by: GANJV Time: 11/12/2023 4:45:59 PM
C:\pw_p11\GANJV\d3611175\C038PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20'

10 0 20

VERT: 1" = 5'

2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

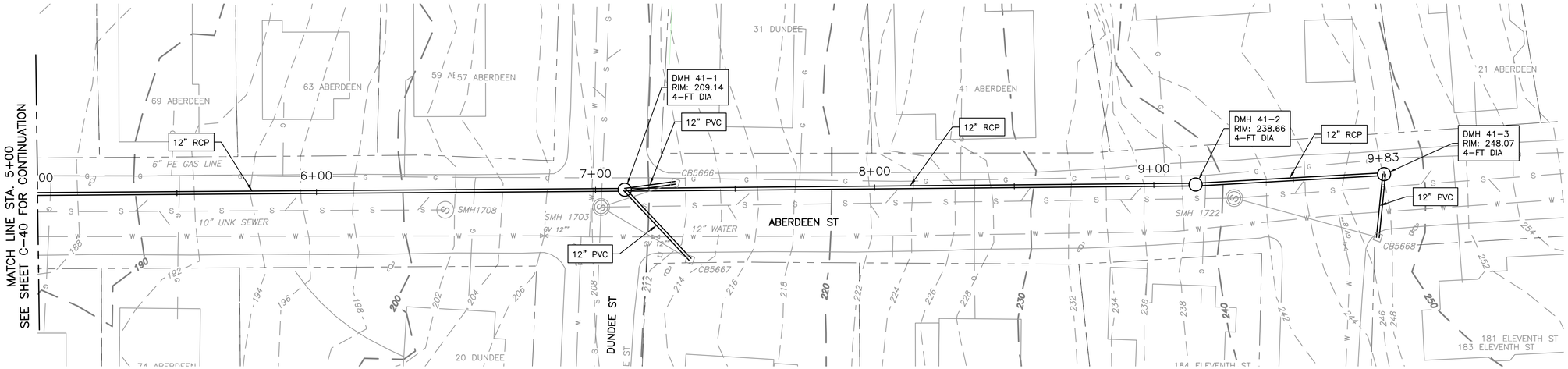
ABERDEEN ST

PROJECT NO. 0552-282899
FILE NAME: C040PLPR.DWG

SHEET NO.
C-40

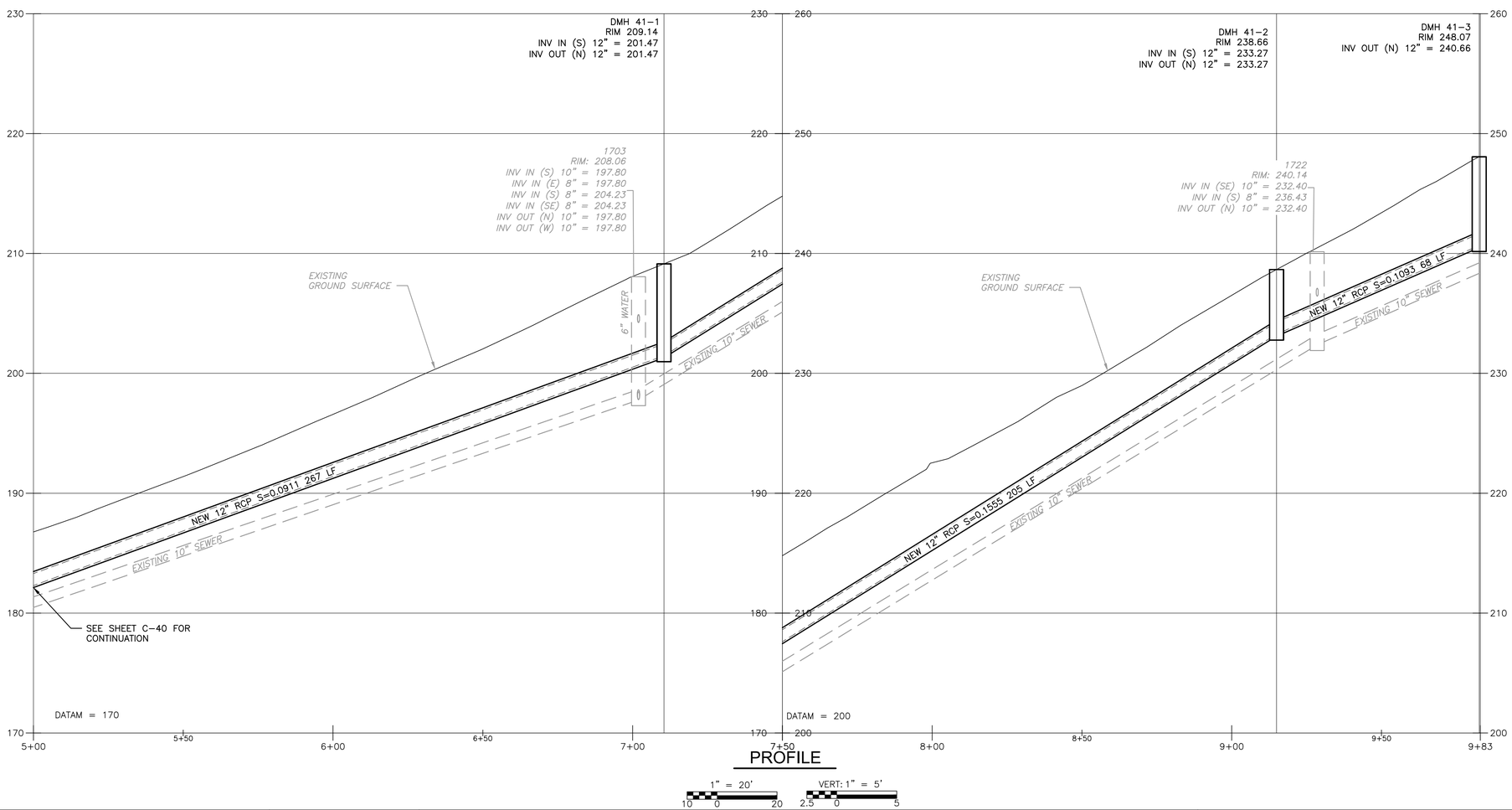
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436_CWZ003PP_CIVIL_3D WORKING MODEL_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP CWZ003PP_CIVIL_3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJIV Time: 11/12/2023 4:49:26 PM
C:\pw_pl1\GANJIV\d3611175\C038PLPR.dwg
© 2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

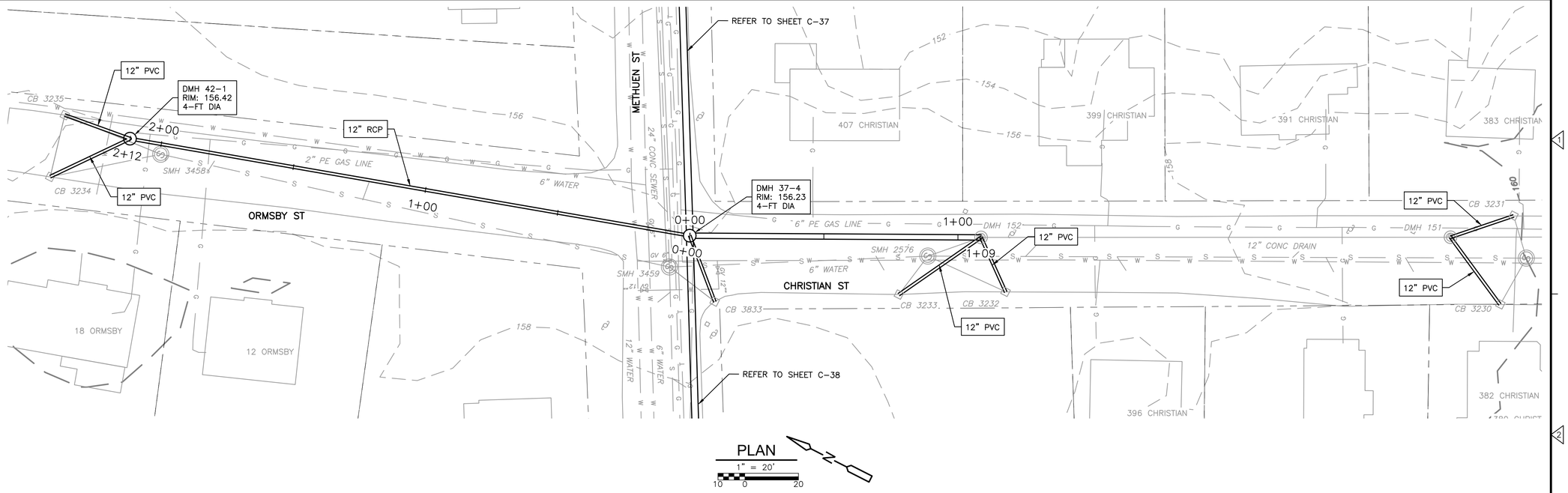
ABERDEEN ST

PROJECT NO. 0552-282899
FILE NAME: C041PLPR.DWG

SHEET NO.
C-41

30% SUBMITTAL - NOT FOR CONSTRUCTION

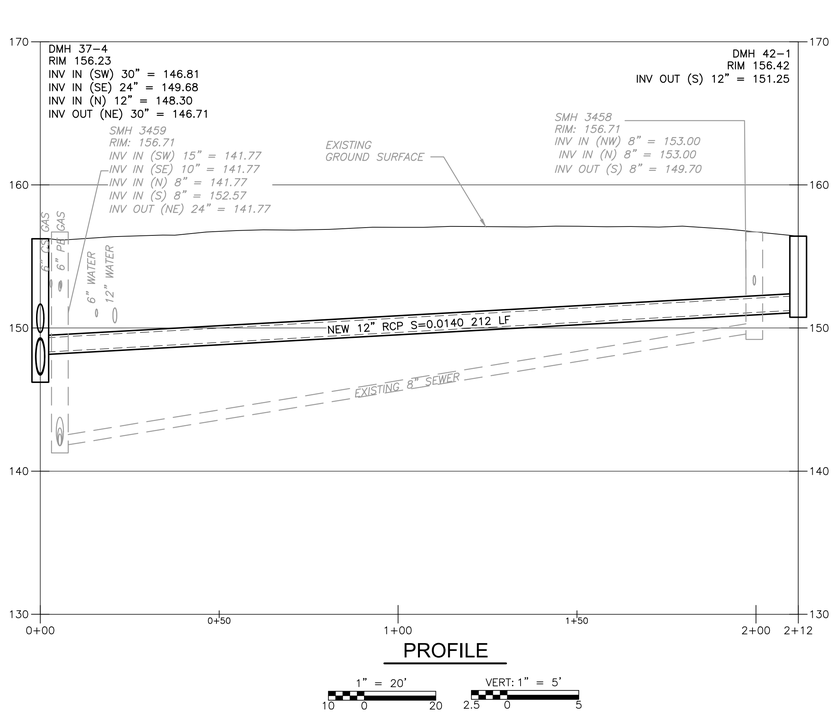
XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP008PP-EXTENET, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJIV Time: 11/12/2023 4:52:17 PM
C:\pw_pr1\GANJIV\d3611175\C038PLPR.dwg
© 2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



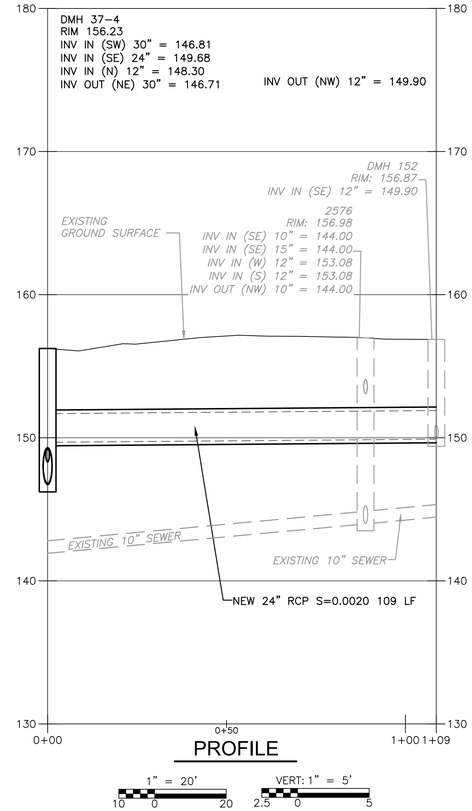
PROFILE

1" = 20'

10 0 20

VERT: 1" = 5'

2.5 0 5



PROFILE

1" = 20'

10 0 20

VERT: 1" = 5'

2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

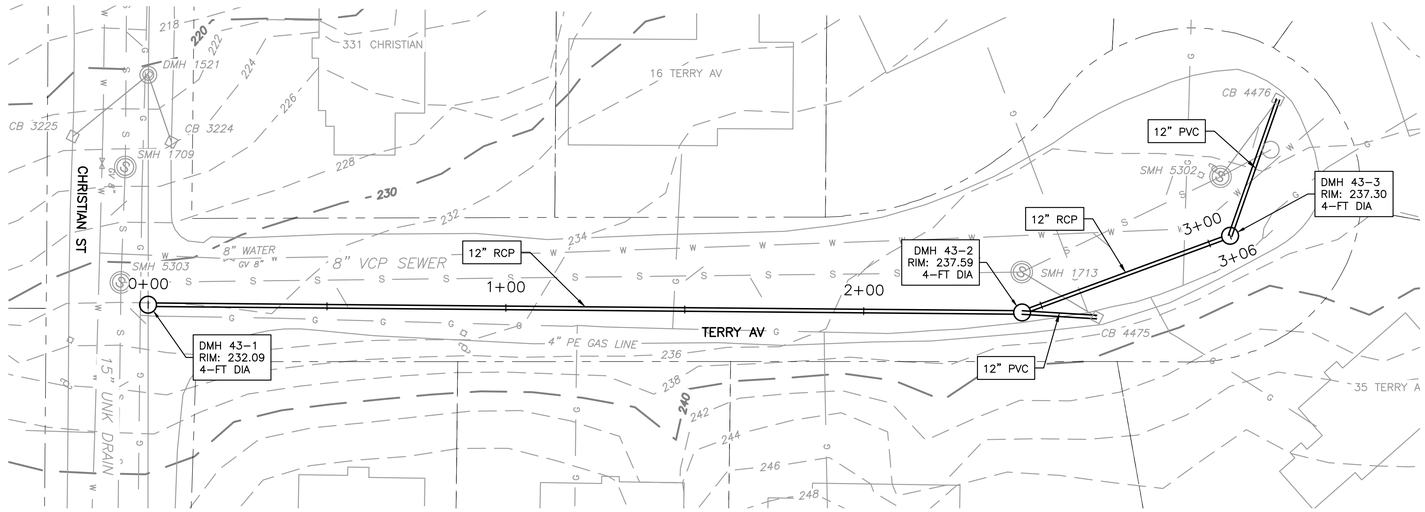
CHRISTIAN ST

PROJECT NO. 0552-282899
FILE NAME: C042PLPR.DWG

SHEET NO.
C-42

30% SUBMITTAL - NOT FOR CONSTRUCTION

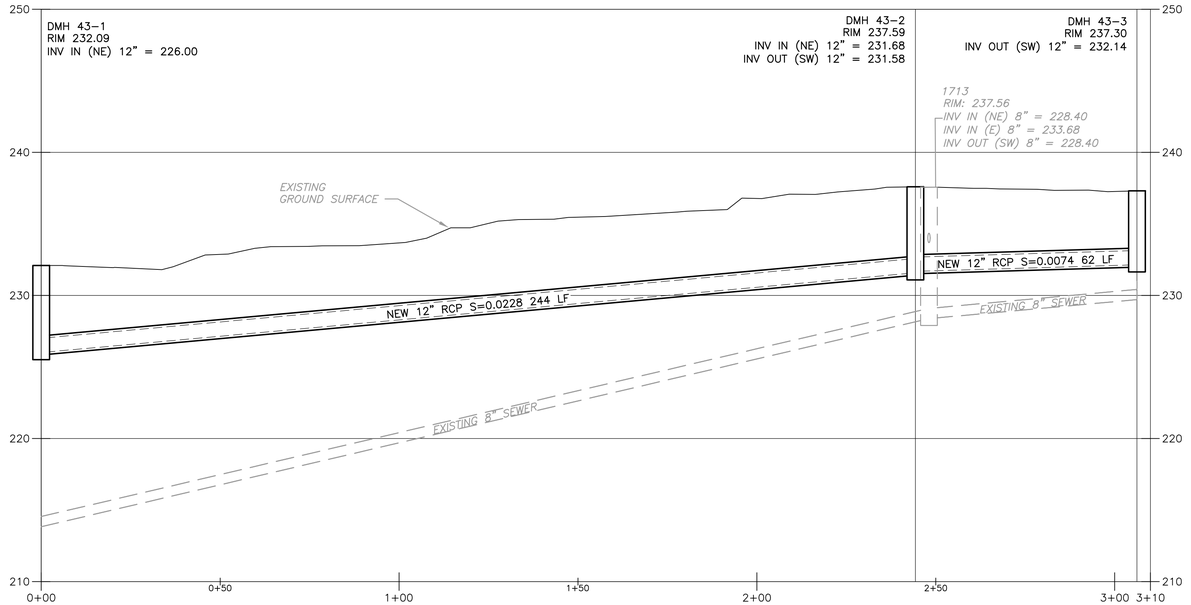
XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP008PP-EXTENET, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] [Images: []
Last saved by: GANJV Time: 11/12/2023 4:55:15 PM
C:\pw_pd1\GANJV\d3611175\C042PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20'

10 0 20

VERT: 1" = 5'

2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

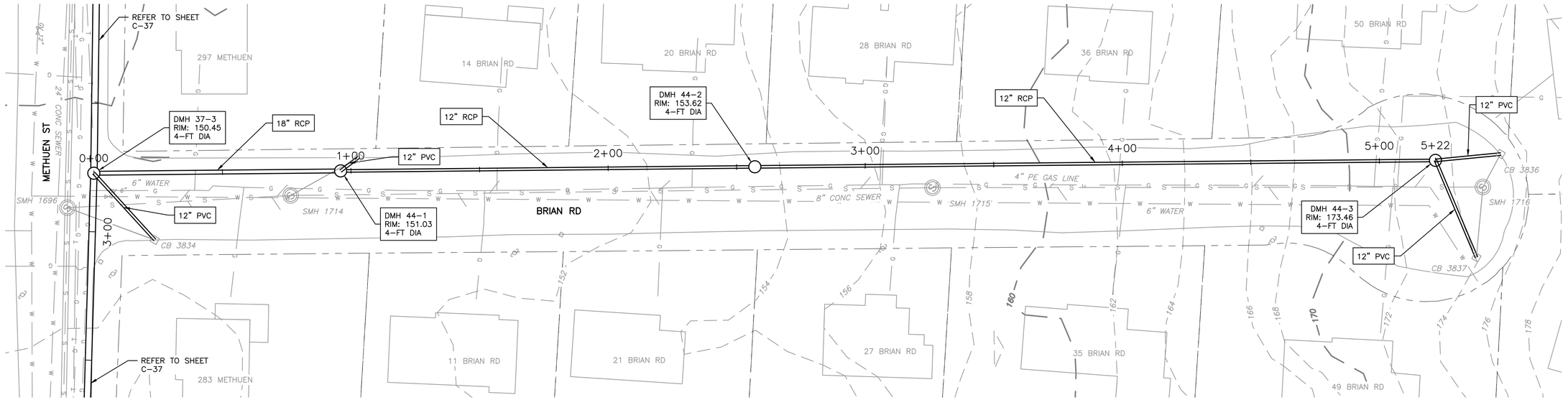
TERRY AVE.

PROJECT NO. 0552-282899
FILE NAME: C043PLPR.DWG

SHEET NO.
C-43

30% SUBMITTAL - NOT FOR CONSTRUCTION

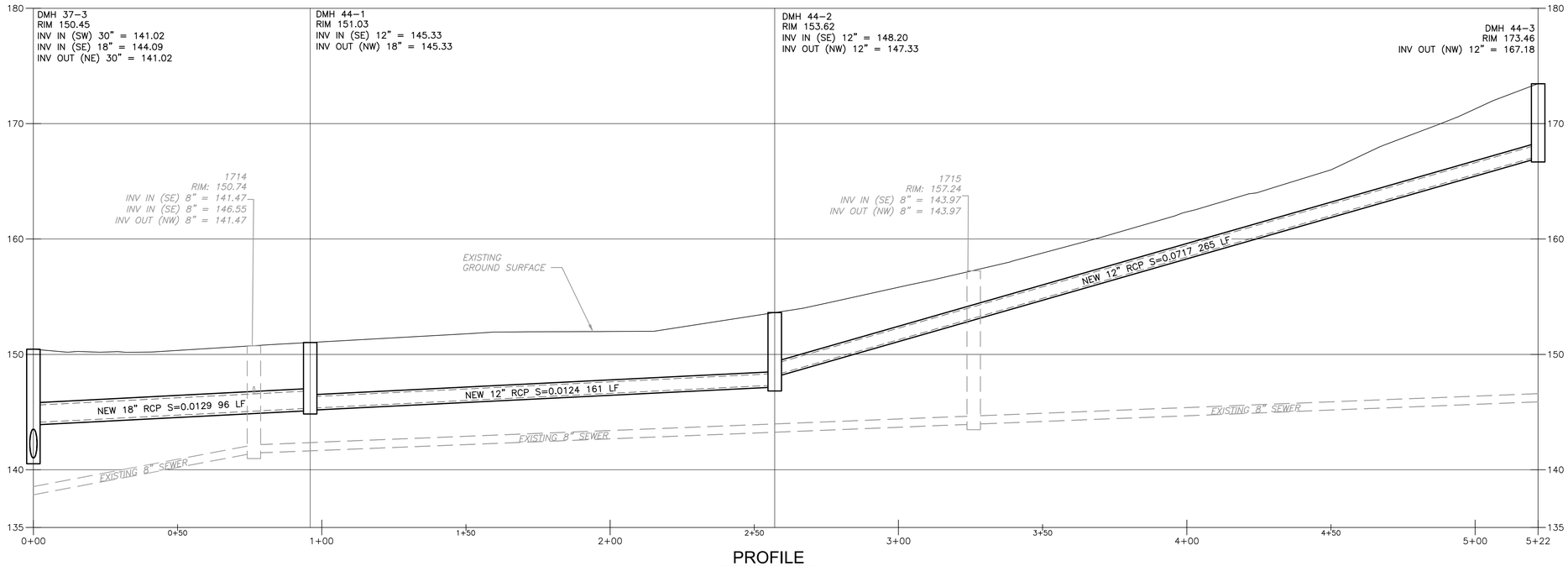
XREFs: [CDMS_2436_CWZ003PP_CIVIL_3D WORKING MODEL_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP008PP-EXTENET, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL_3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJIV Time: 11/12/2023 4:58:56 PM
C:\pw_p11\GANJIV\d3611175\C038PLPR.dwg
© 2023 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20' VERT: 1" = 5'

10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

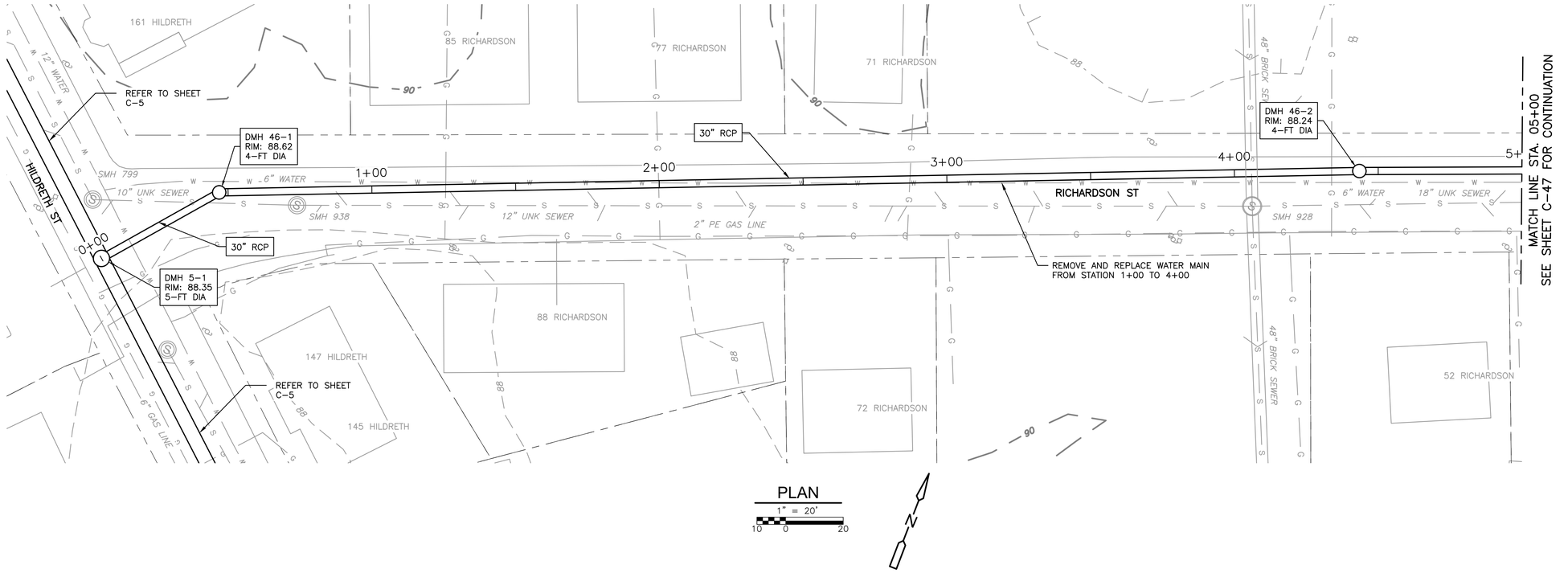
BRIAN RD

PROJECT NO. 0552-282899
FILE NAME: C044PLPR.DWG

SHEET NO.
C-44

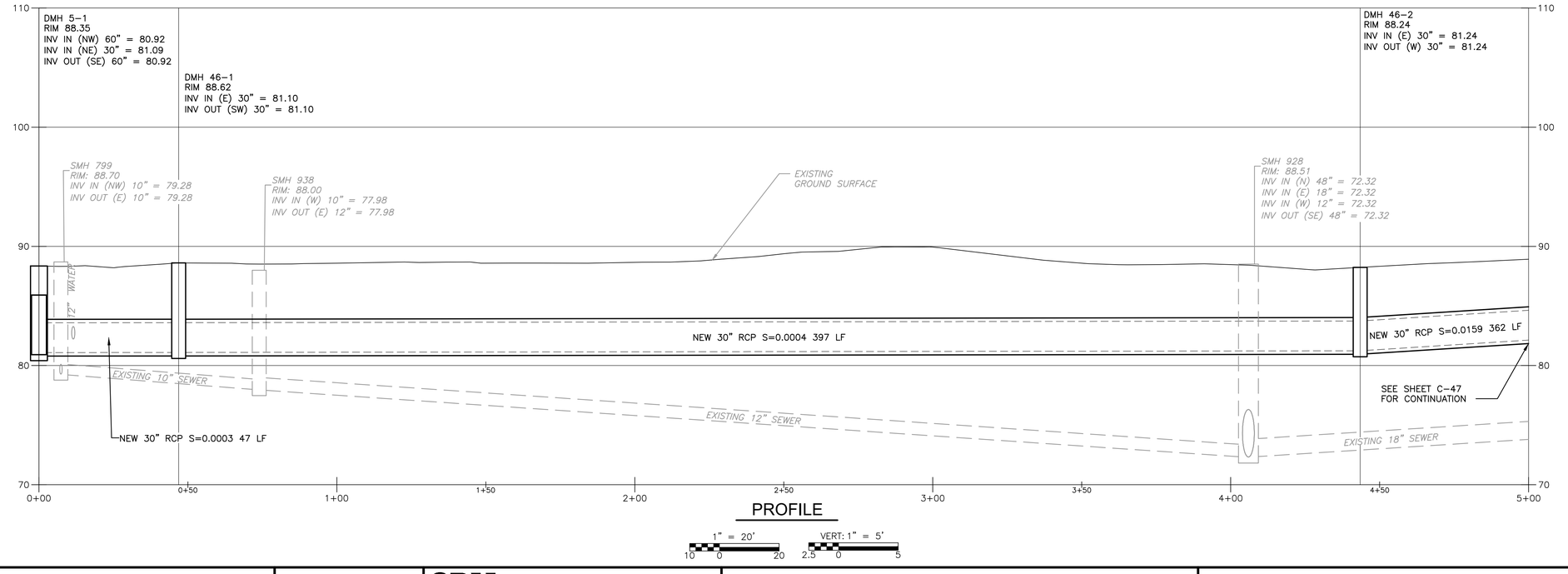
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436_CWZ003PP_CIVIL_3D WORKING MODEL_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP CWZ003PP_CIVIL_3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJIV Time: 11/12/2023 5:10:21 PM
C:\pw_pl1\GANJIV\d3611175\C038PLPR.dwg
© 2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

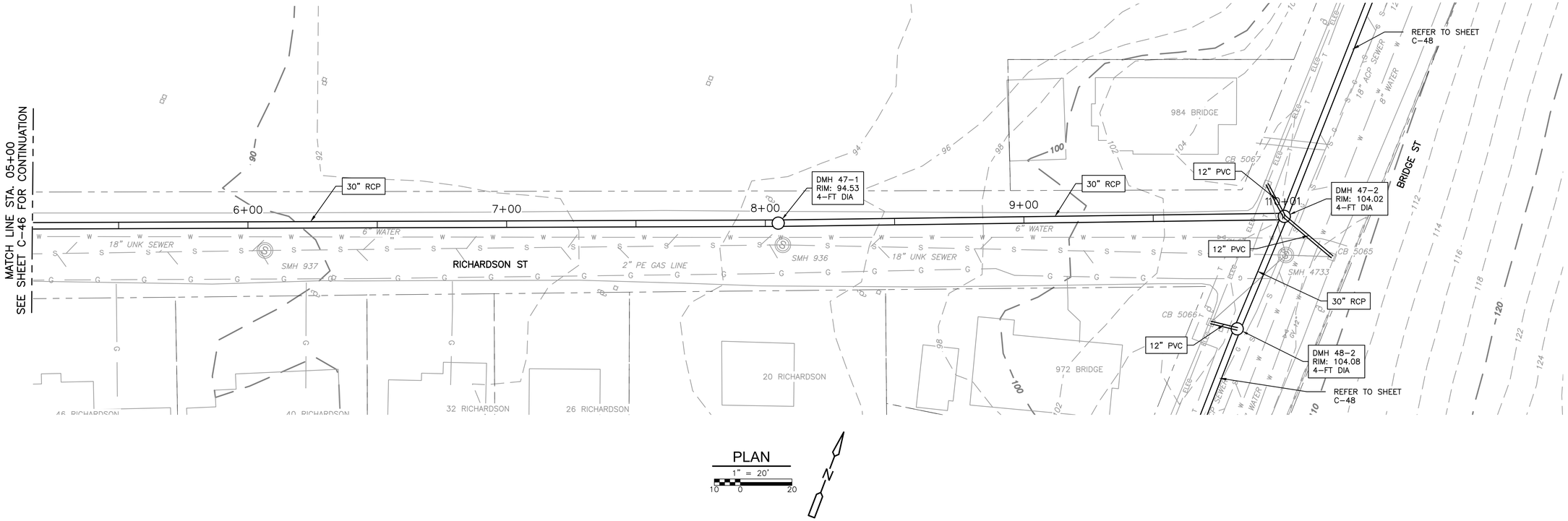
RICHARDSON ST

PROJECT NO. 0552-282899
FILE NAME: C046PLPR.DWG

SHEET NO.
C-46

30% SUBMITTAL - NOT FOR CONSTRUCTION

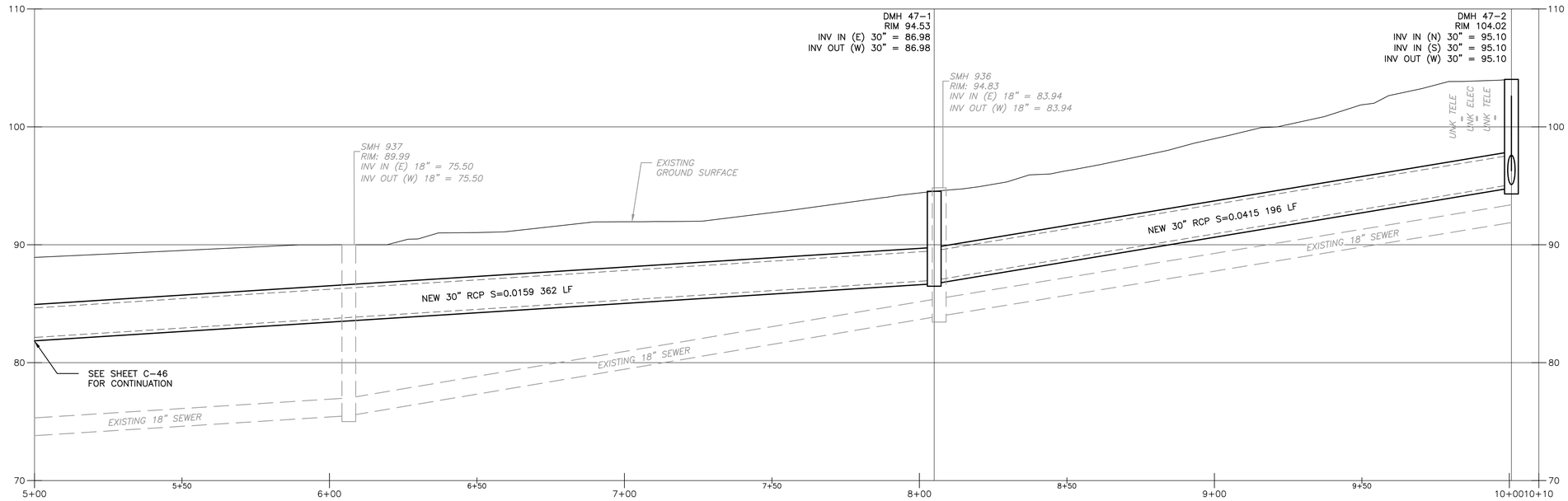
XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP008PP-EXTENET, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJV Time: 11/12/2023 5:13:52 PM
C:\pw_p11\GANJV\d3611175\C038PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20' 10 0 20

VERT: 1" = 5' 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

RICHARDSON ST

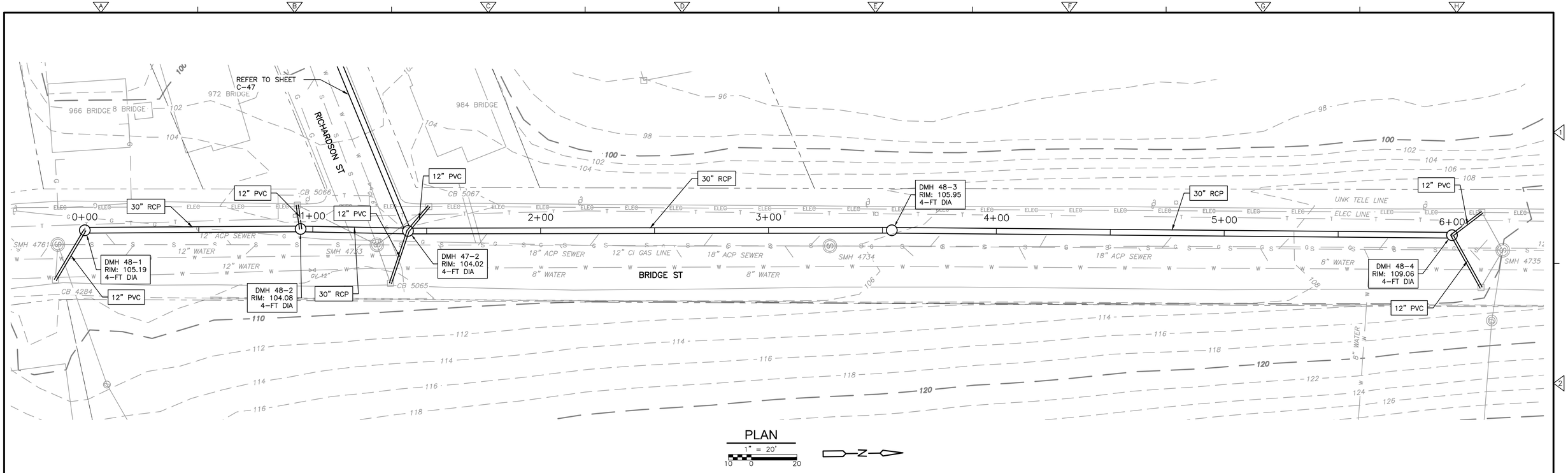
PROJECT NO. 0552-282899
FILE NAME: C047PLPR.DWG

SHEET NO.
C-47

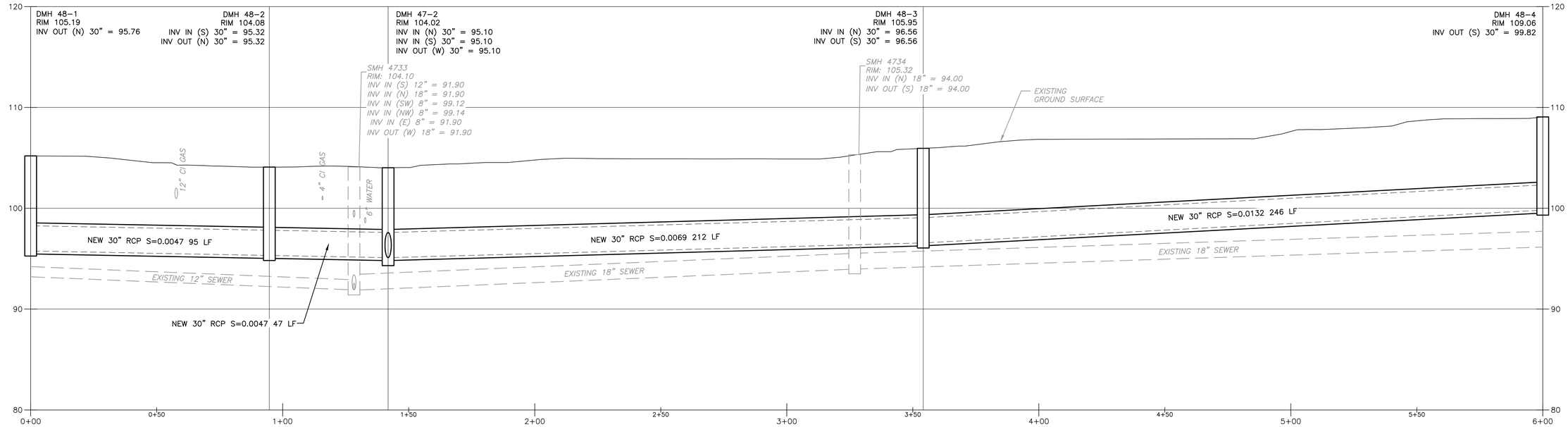
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP008PP-EXTENET, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] [Images: []
Last saved by: GANJV Time: 11/12/2023 5:16:16 PM
C:\pw_pd1\GANJV\d3611175\C038PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP008PP-EXTENET, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] [Images: []
Last saved by: GANJV Time: 12/22/2023 4:22:03 PM
C:\pw_p11\GANJV\d3611175\C038PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN
1" = 20'



PROFILE
1" = 20'
VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

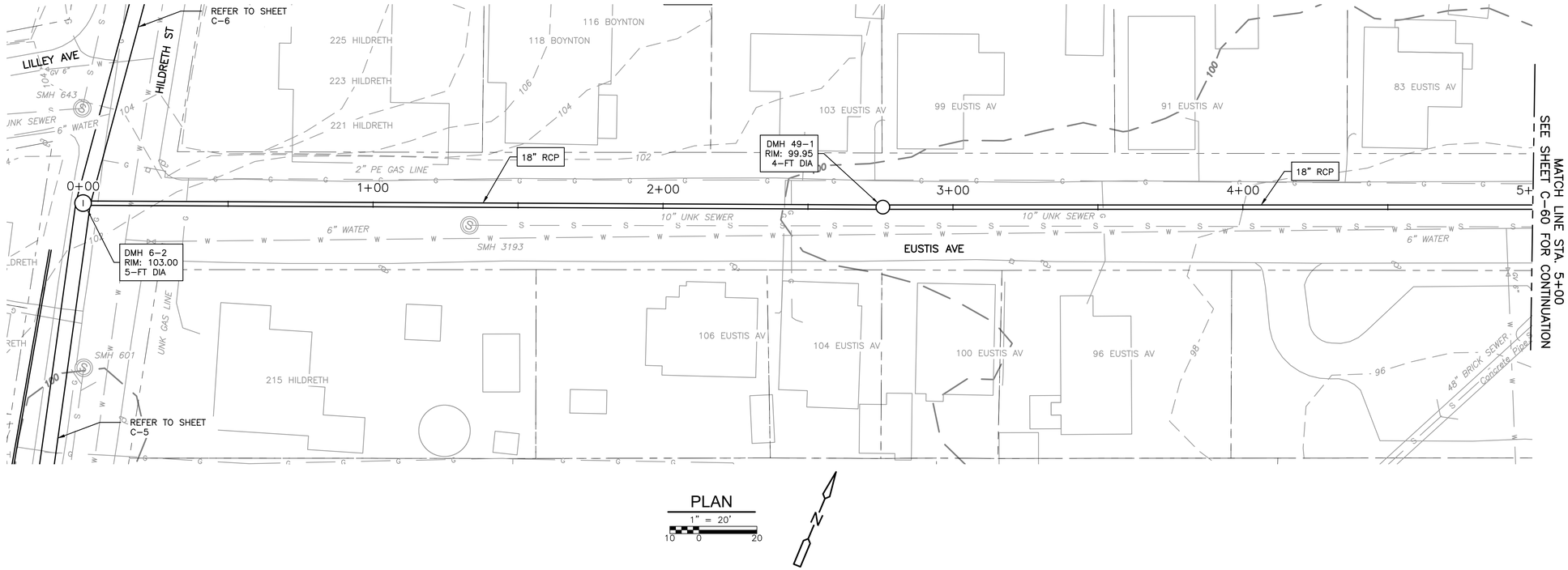
HUMPHREY'S BROOK

BRIDGE ST

PROJECT NO. 0552-282899
FILE NAME: C048PLPR.DWG

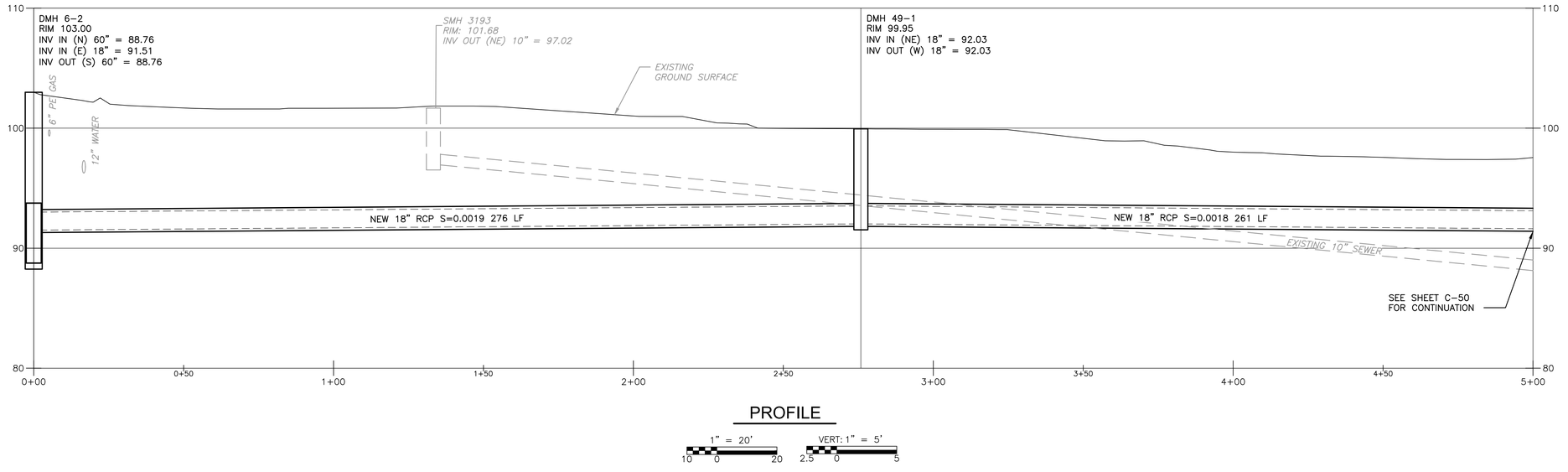
SHEET NO.
C-48

30% SUBMITTAL - NOT FOR CONSTRUCTION



PLAN

1" = 20'



PROFILE

1" = 20' VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

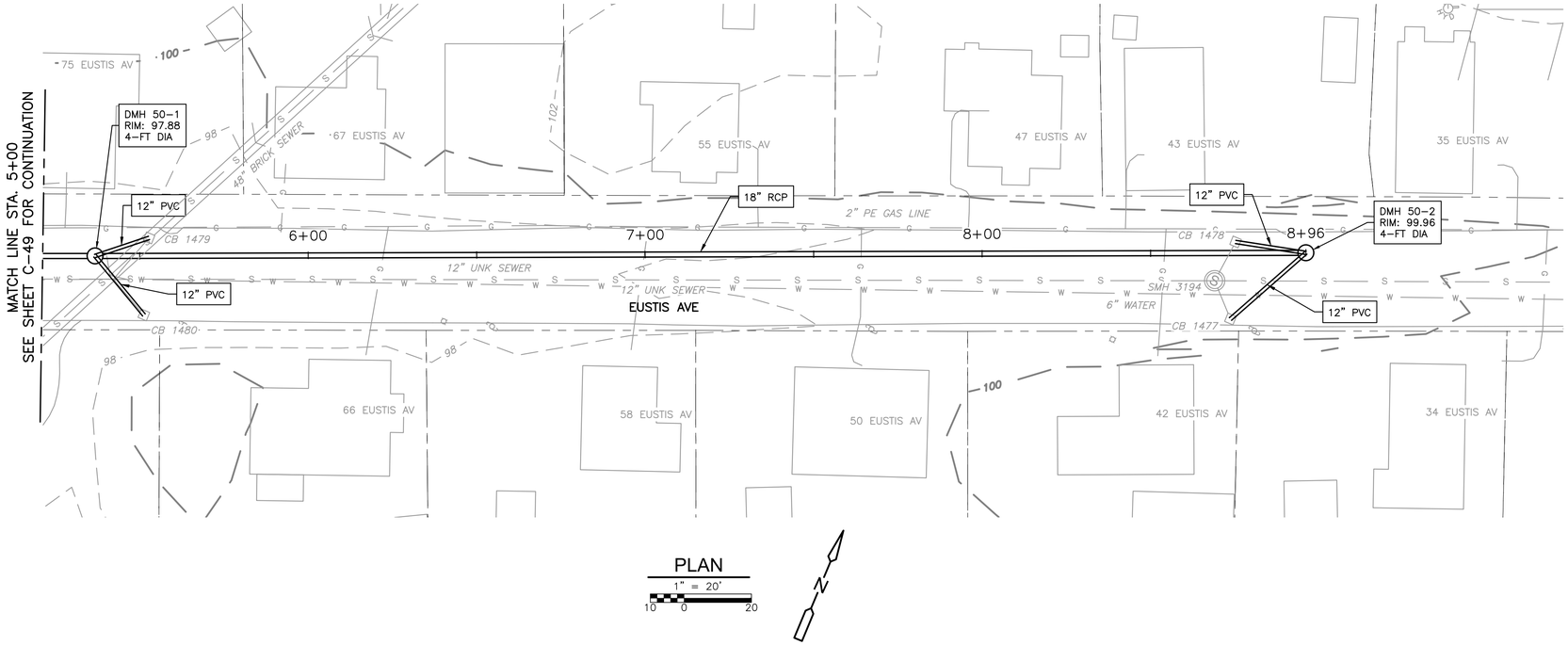
EUSTIS AVE

PROJECT NO. 0552-282899
FILE NAME: C049PLPR.DWG

SHEET NO.
C-49

30% SUBMITTAL - NOT FOR CONSTRUCTION

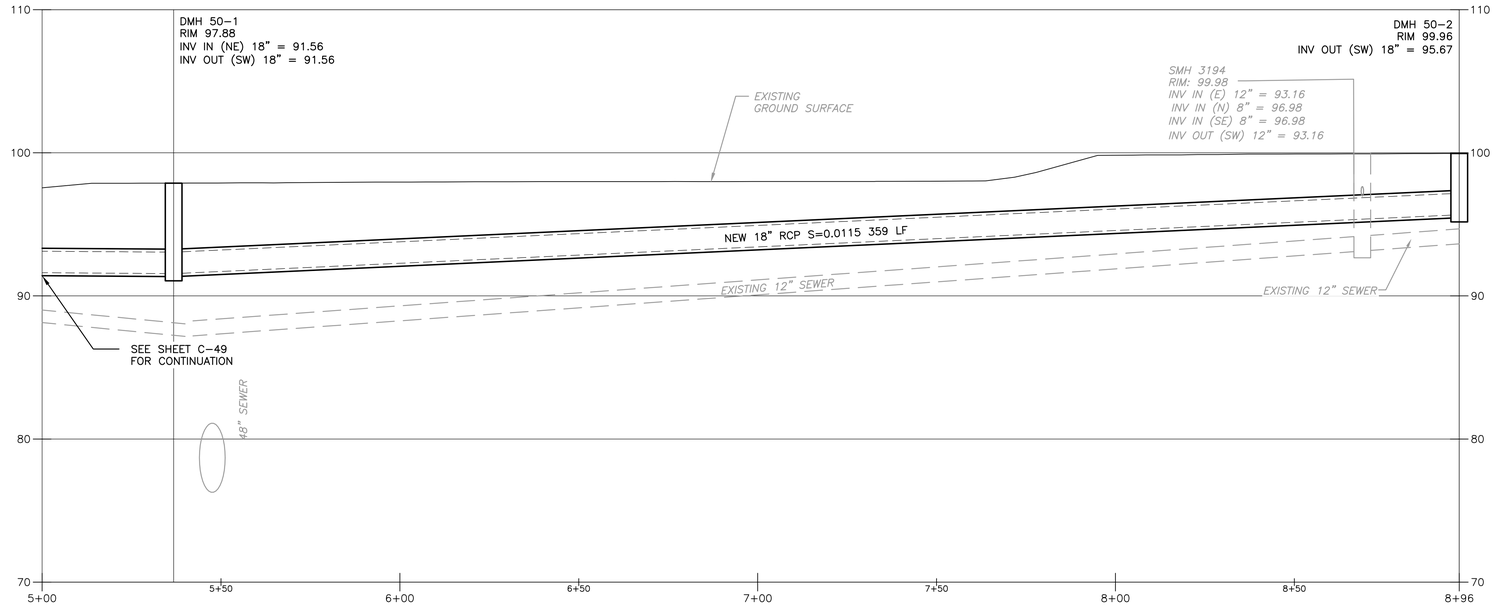
XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJV Time: 11/12/2023 5:40:20 PM
C:\pw_p11\GANJV\d3611175\C059PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20'

10 0 20

VERT: 1" = 5'

2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

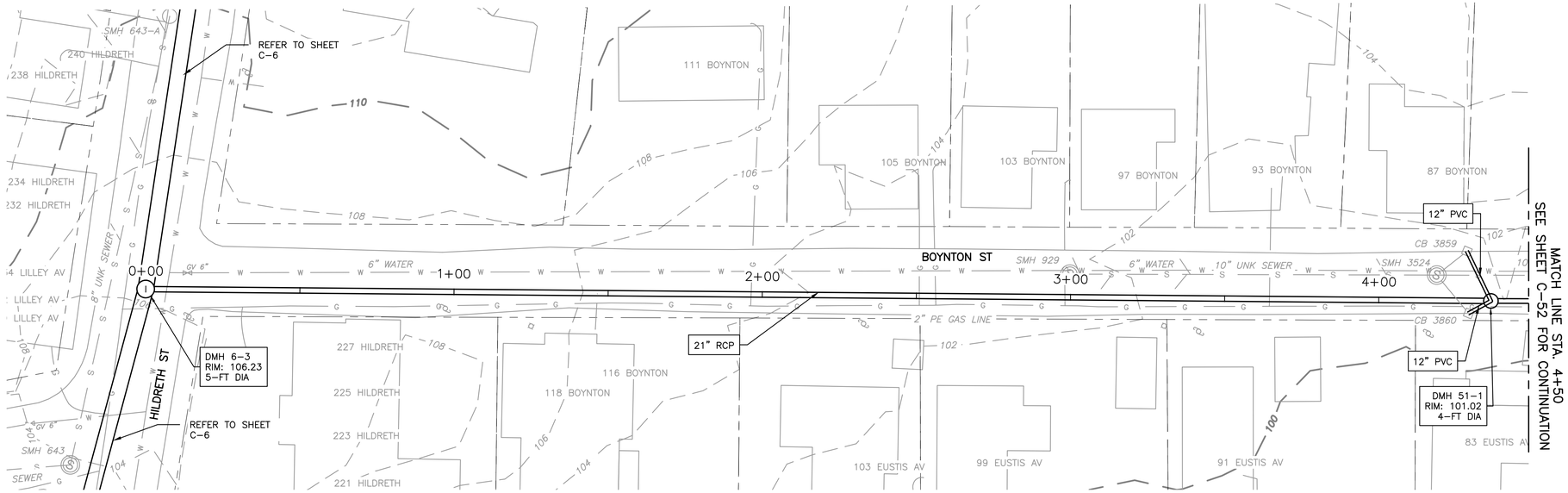
EUSTIS AVE

PROJECT NO. 0552-282899
FILE NAME: C050PLPR.DWG

SHEET NO.
C-50

30% SUBMITTAL - NOT FOR CONSTRUCTION

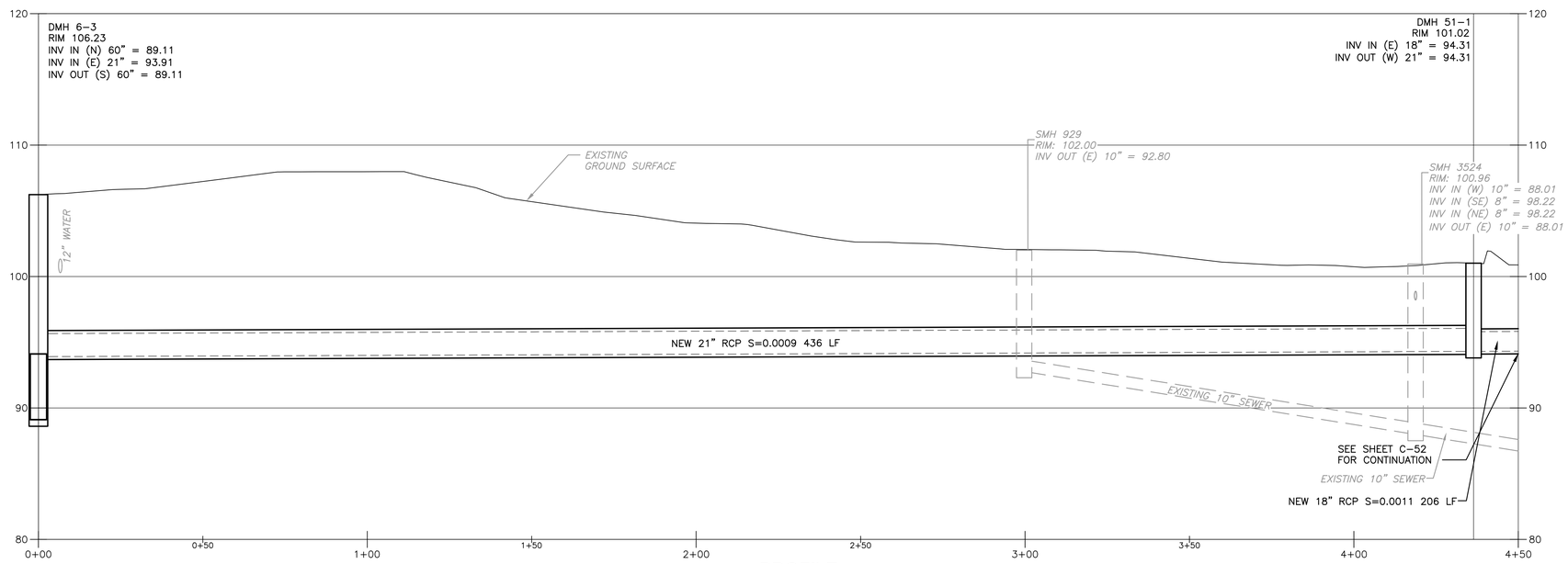
XREFs: [CDMS_2436_CWZ003PP_CIVIL 3D WORKING MODEL_CEP005PP_EX SEWER_CEP004PP_EX WATER_CEP002ST_EX DRAIN_CEP007PP_EX CULVERTS_CEP001ST_BASEMAP HUMPHREYS_CEP009PP-STREET LIGHT AND NATIONAL GRID POLE_CEP008PP-EXTENET_CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJV Time: 11/12/2023 5:45:45 PM
C:\pw_pl1\GANJV\d3611175\C059PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20' VERT: 1" = 5'

10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

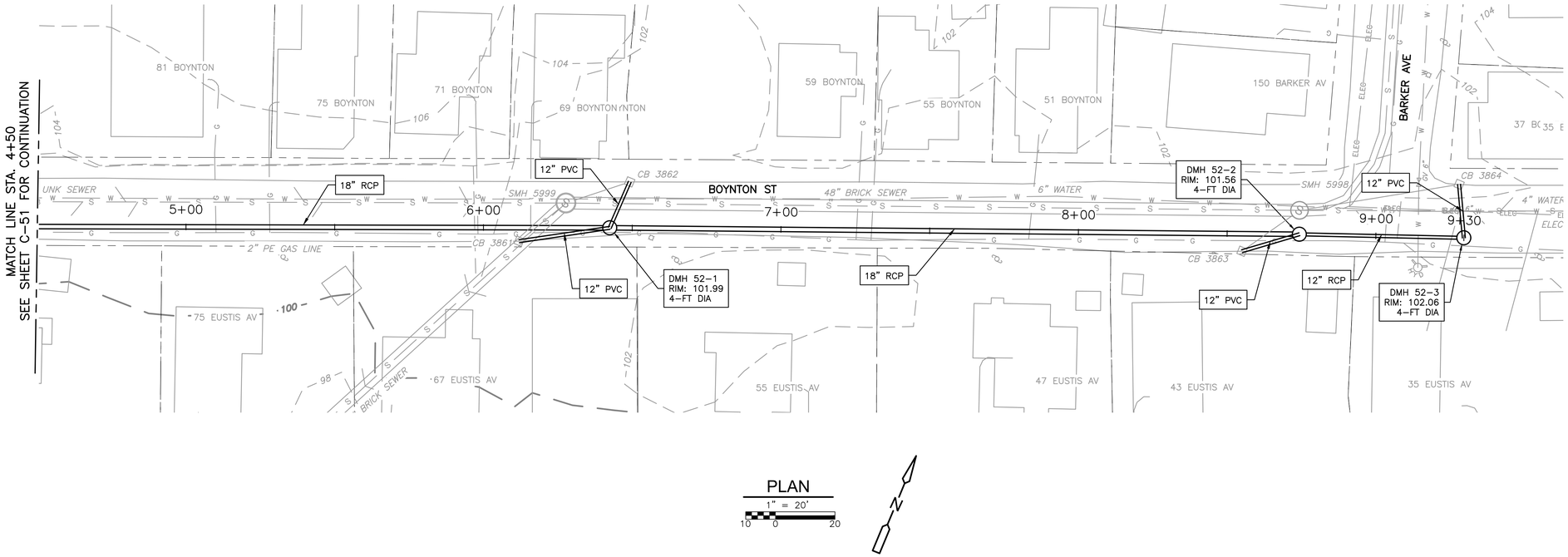
BOYNTON ST

PROJECT NO. 0552-282899
FILE NAME: C051PLPR.DWG

SHEET NO.
C-51

30% SUBMITTAL - NOT FOR CONSTRUCTION

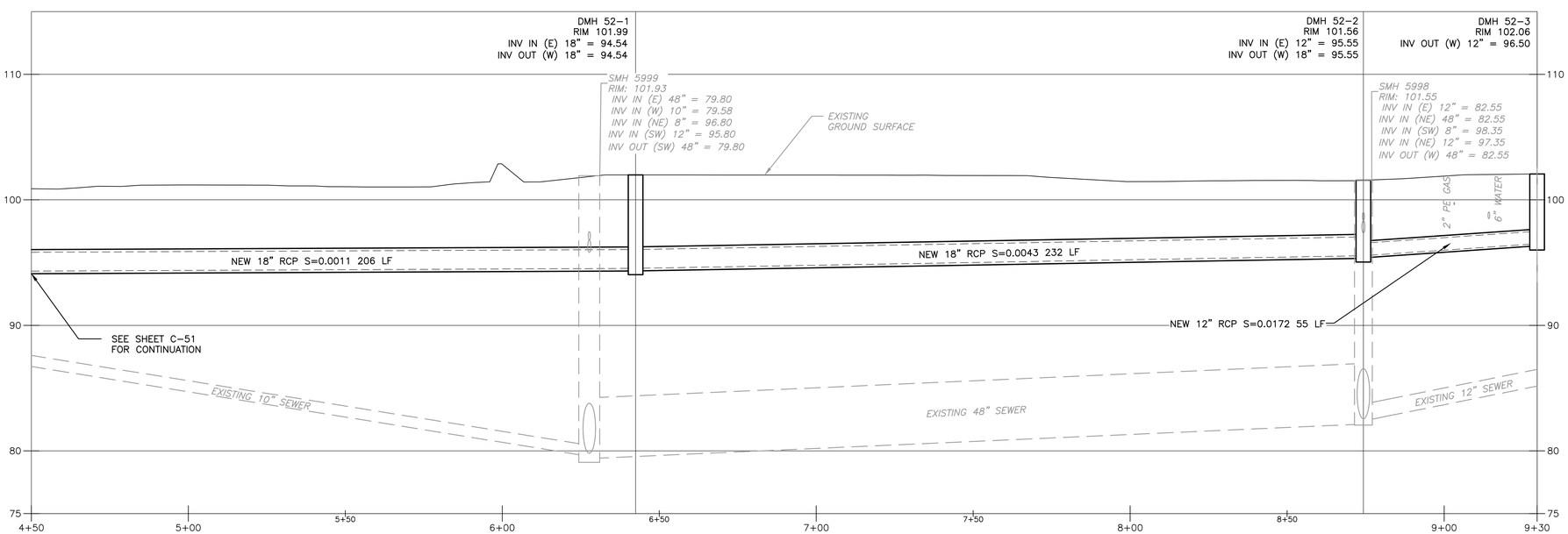
XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJV Time: 11/12/2023 5:47:45 PM
C:\pw_pp11\GANJV\d3611175\C051PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20' VERT: 1" = 5'

10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

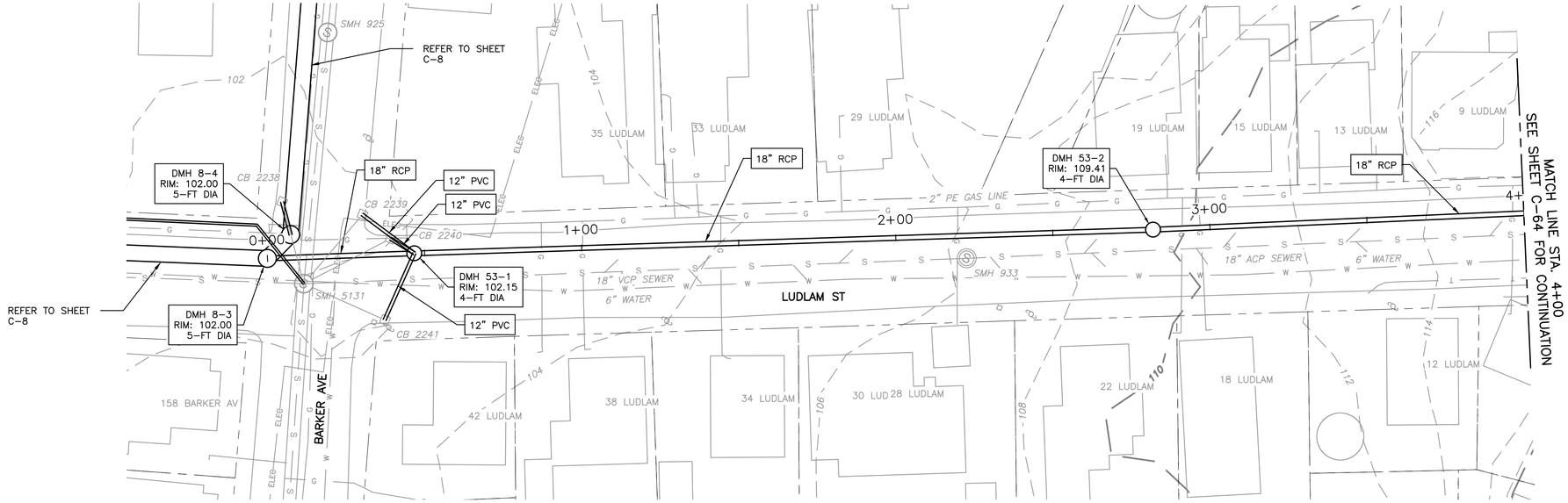
BOYNTON ST

PROJECT NO. 0552-282899
FILE NAME: C052LPR.DWG

SHEET NO.
C-52

30% SUBMITTAL - NOT FOR CONSTRUCTION

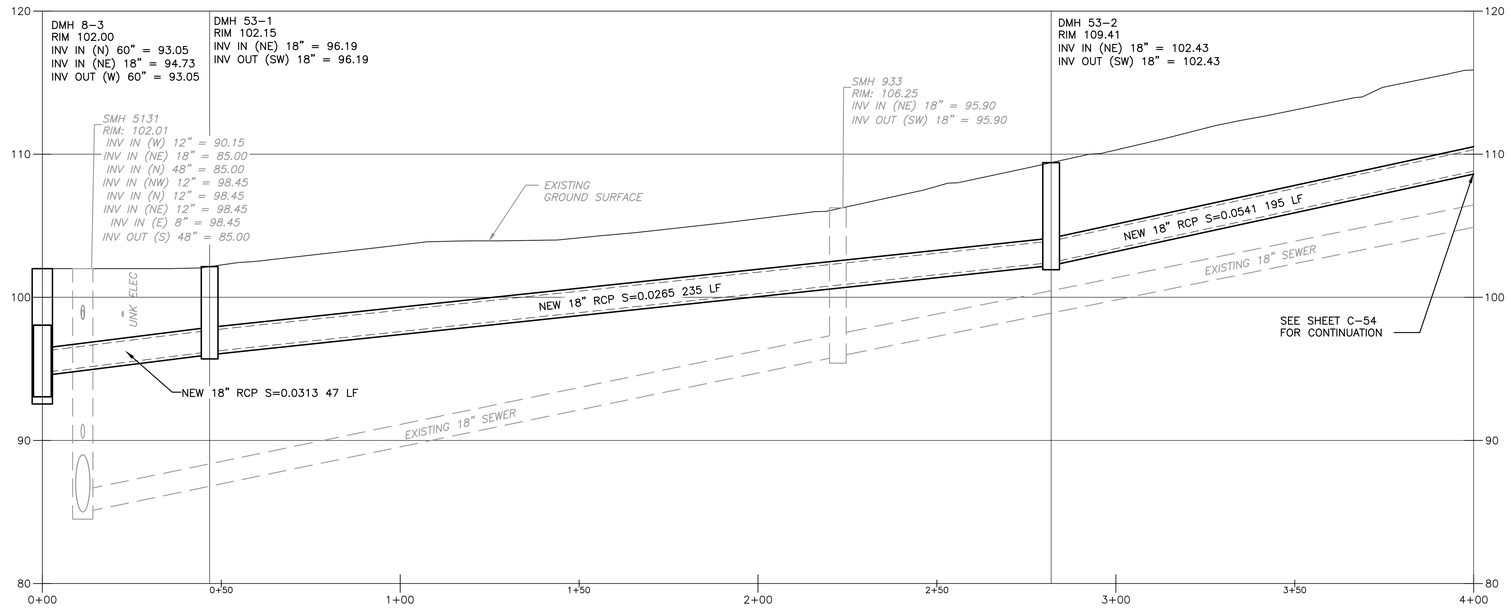
XREFs: [CDMS_2436_CWZ003PP_CIVIL 3D WORKING MODEL_CEP005PP_EX SEWER_CEP004PP_EX WATER_CEP002ST_EX DRAIN_CEP007PP_EX CULVERTS_CEP001ST_BASEMAP HUMPHREYS_CEP009PP-STREET LIGHT AND NATIONAL GRID POLE_CEP008PP-EXTENET_CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] [images: []
Last saved by: GANJV Time: 11/12/2023 5:51:24 PM
C:\pw_pl1\GANJV\d3611175\C059LPLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20' VERT: 1" = 5'

10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

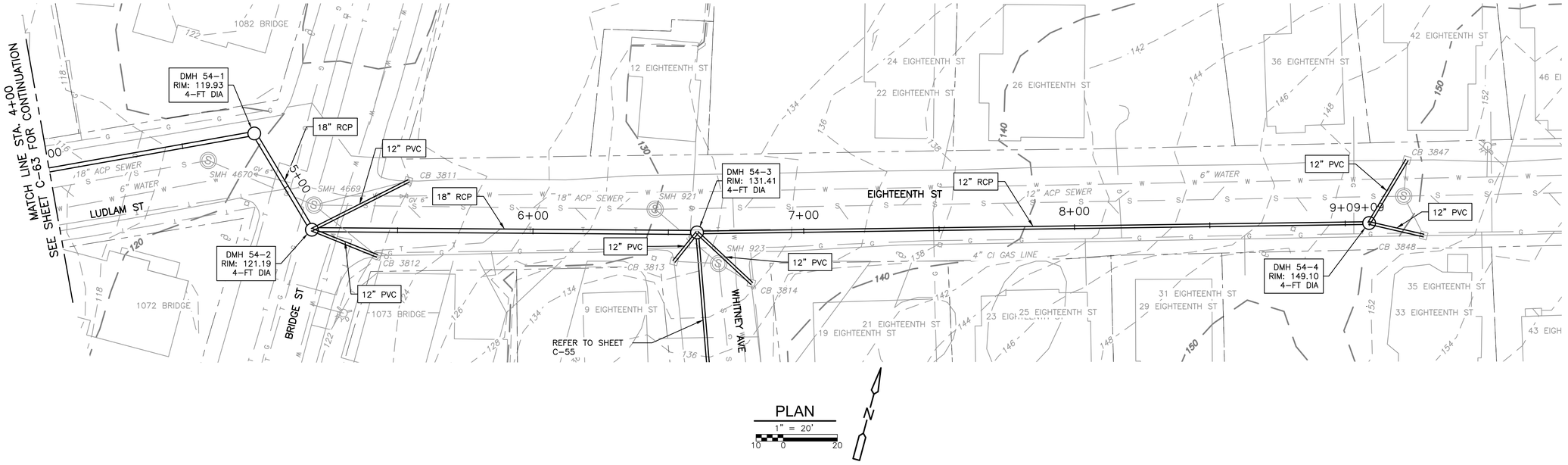
LUDLAM ST

PROJECT NO. 0552-282899
FILE NAME: C053PLPR.DWG

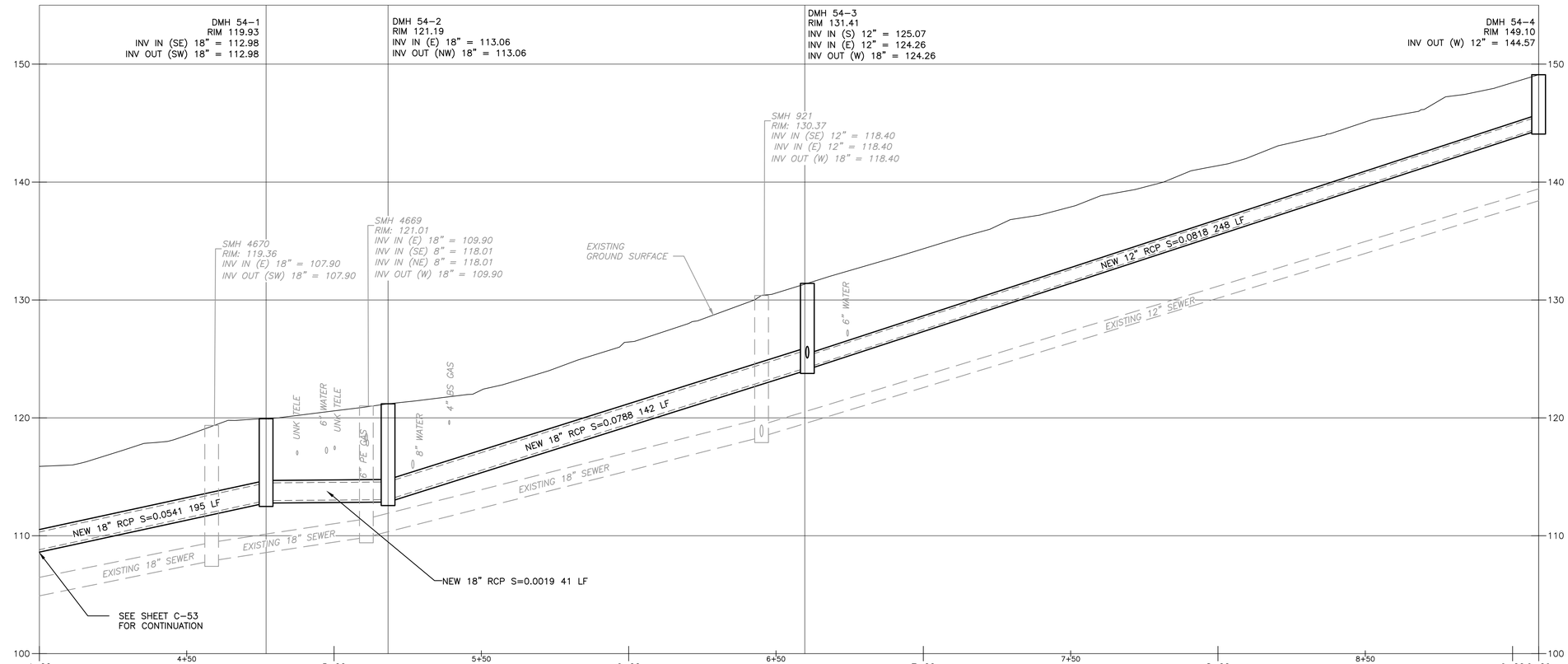
SHEET NO.
C-53

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJV Time: 11/12/2023 5:53:56 PM
C:\pw_p11\GANJV\d3611175\C059PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN
1" = 20'



PROFILE
1" = 20'
VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

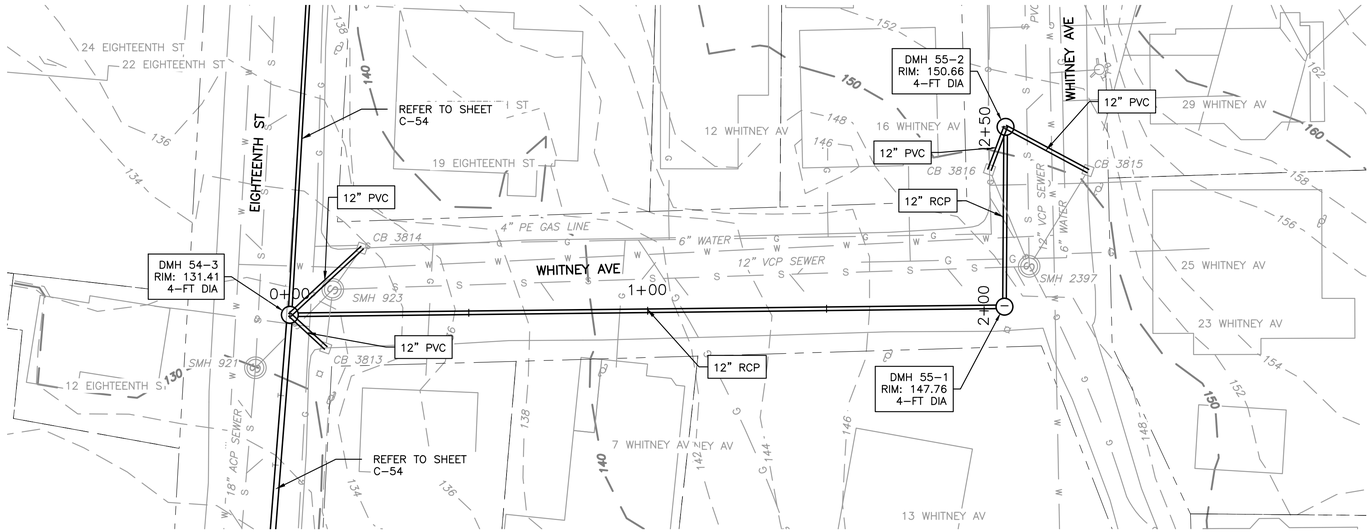
LUDLAM ST & EIGHTEENTH ST

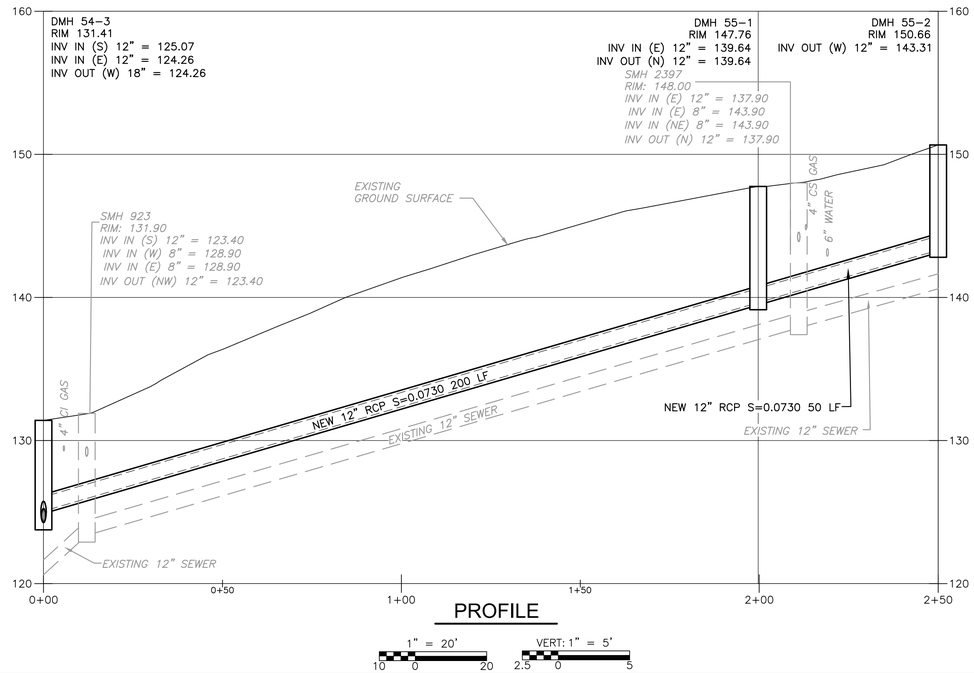
PROJECT NO. 0552-282899
FILE NAME: C054PLPR.DWG

SHEET NO.
C-54

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CWZ003PP_CIVIL_3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENT, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJV Time: 11/12/2023 5:56:36 PM
C:\pw_p11\GANJV\d3611175\C059PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.





REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

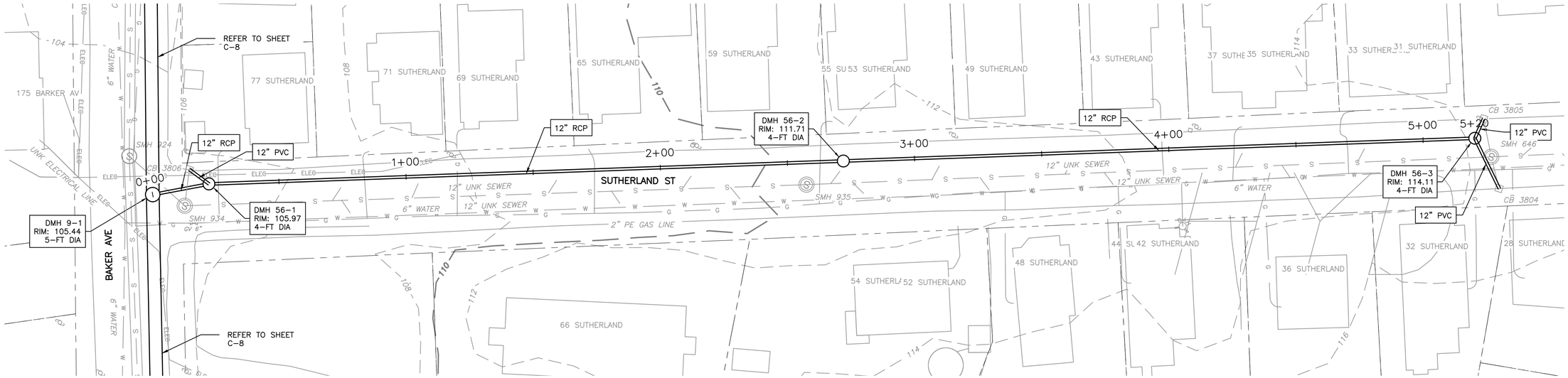
WHITNEY AVE

PROJECT NO. 0552-282899
FILE NAME: C055PLPR.DWG

SHEET NO.
C-55

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJV Time: 11/12/2023 6:00:02 PM
C:\pw_p11\GANJV\d3611175\C055PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

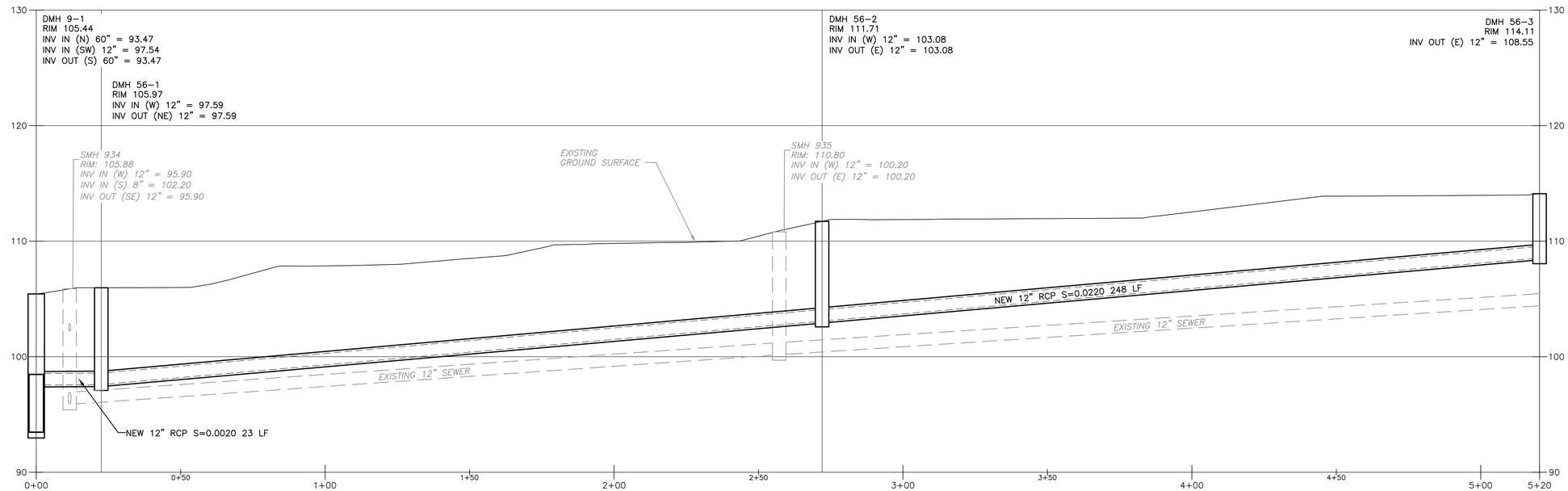


PLAN

1" = 20'

10 0 20

N



PROFILE

1" = 20'

10 0 20

VERT: 1" = 5'

2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:

DRAWN BY: S. SIDANALE

SHEET CHK'D BY:

CROSS CHK'D BY:

APPROVED BY:

DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

SUTHERLAND ST

PROJECT NO. 0552-282899

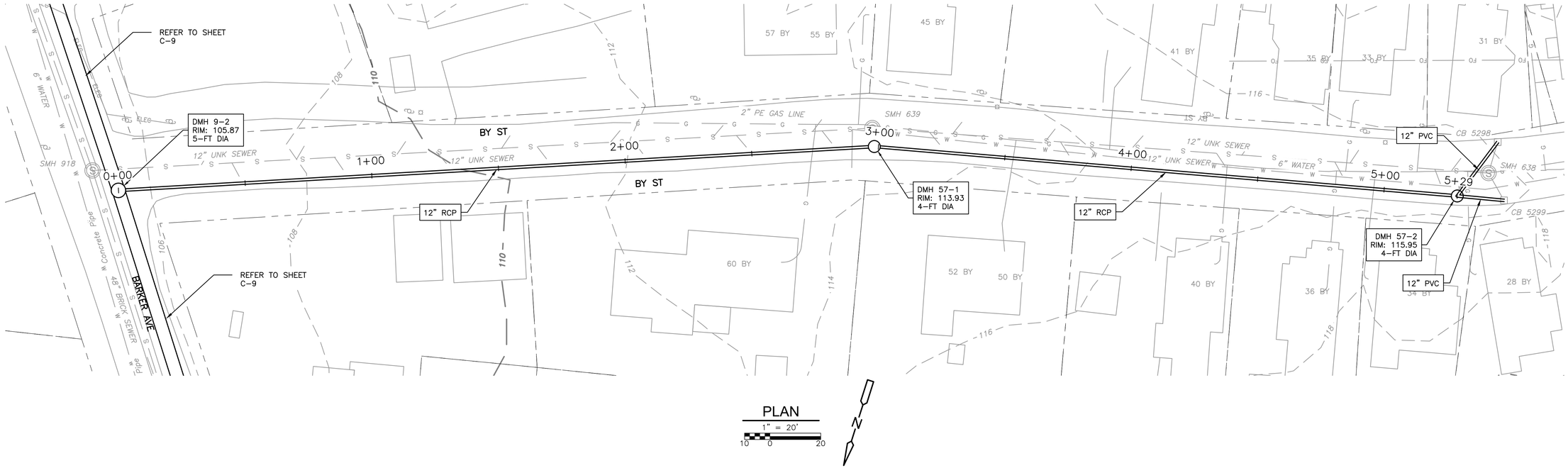
FILE NAME: C056PLPR.DWG

SHEET NO.

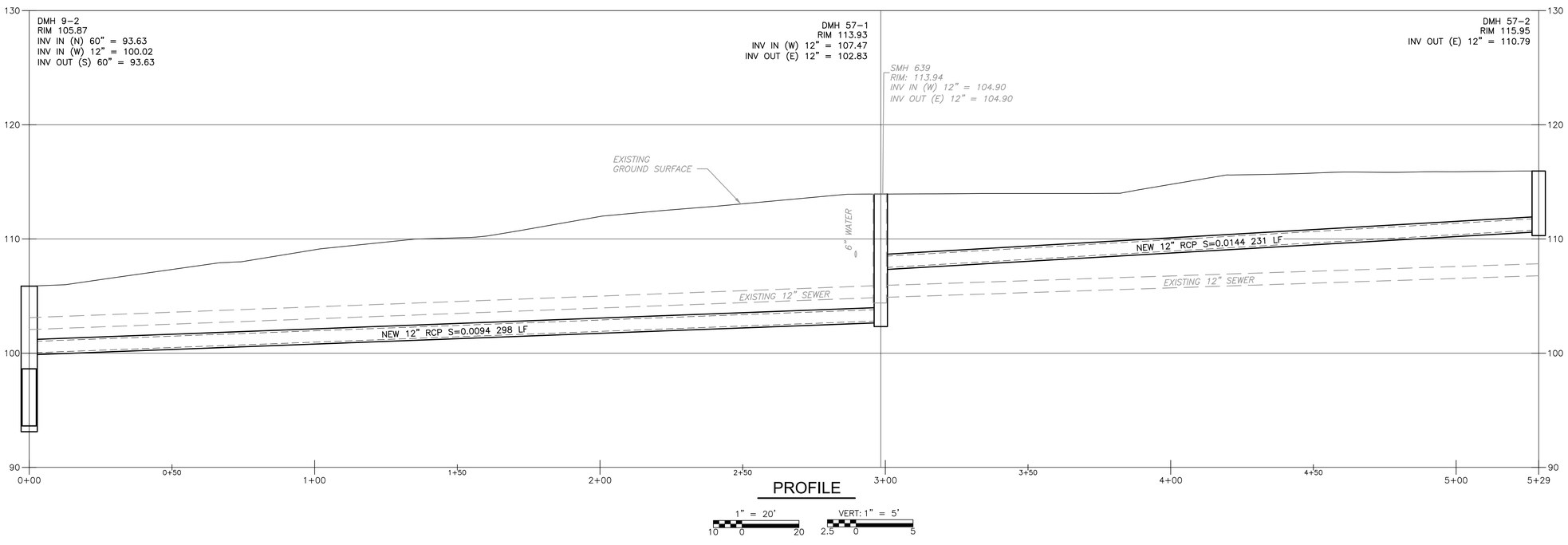
C-56

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CWZ003PP_CIVIL_3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJV Time: 11/12/2023 6:03:15 PM
C:\pw_p11\GANJV\d3611175\C059PLPR.dwg
© 2023 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN
1" = 20'
10 0 20



PROFILE
1" = 20'
10 0 20
VERT: 1" = 5'
2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

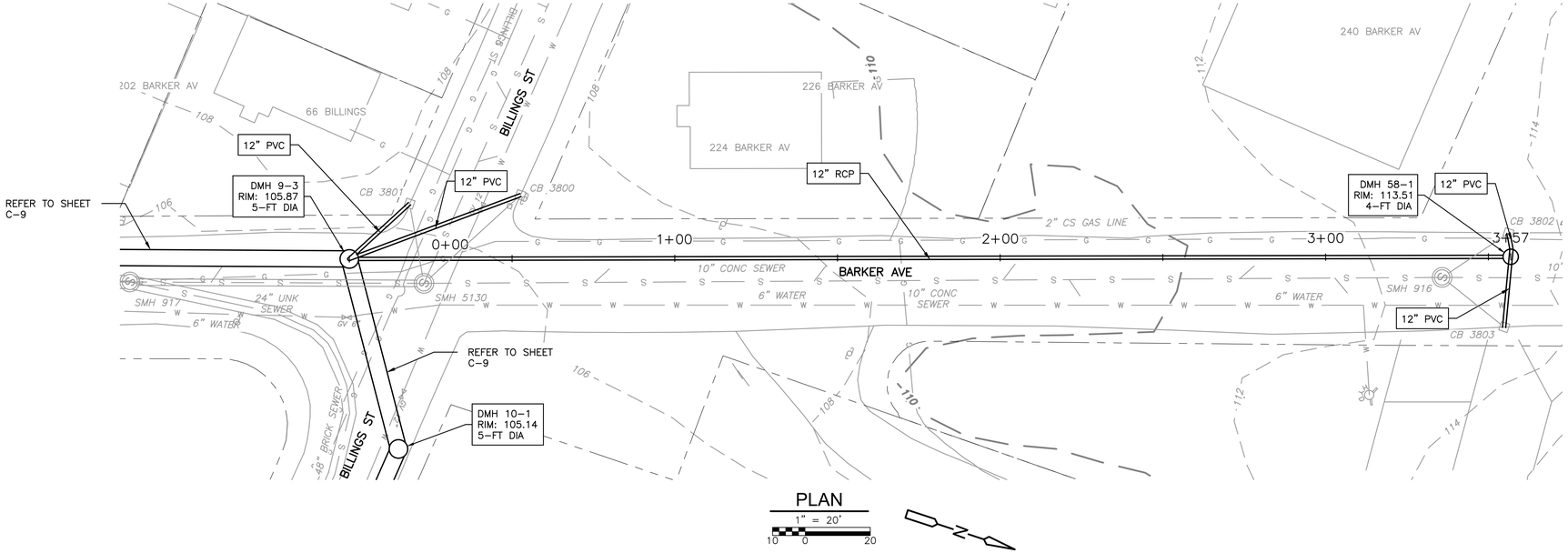
BY ST

PROJECT NO. 0552-282899
FILE NAME: C057PLPR.DWG

SHEET NO.
C-57

30% SUBMITTAL - NOT FOR CONSTRUCTION

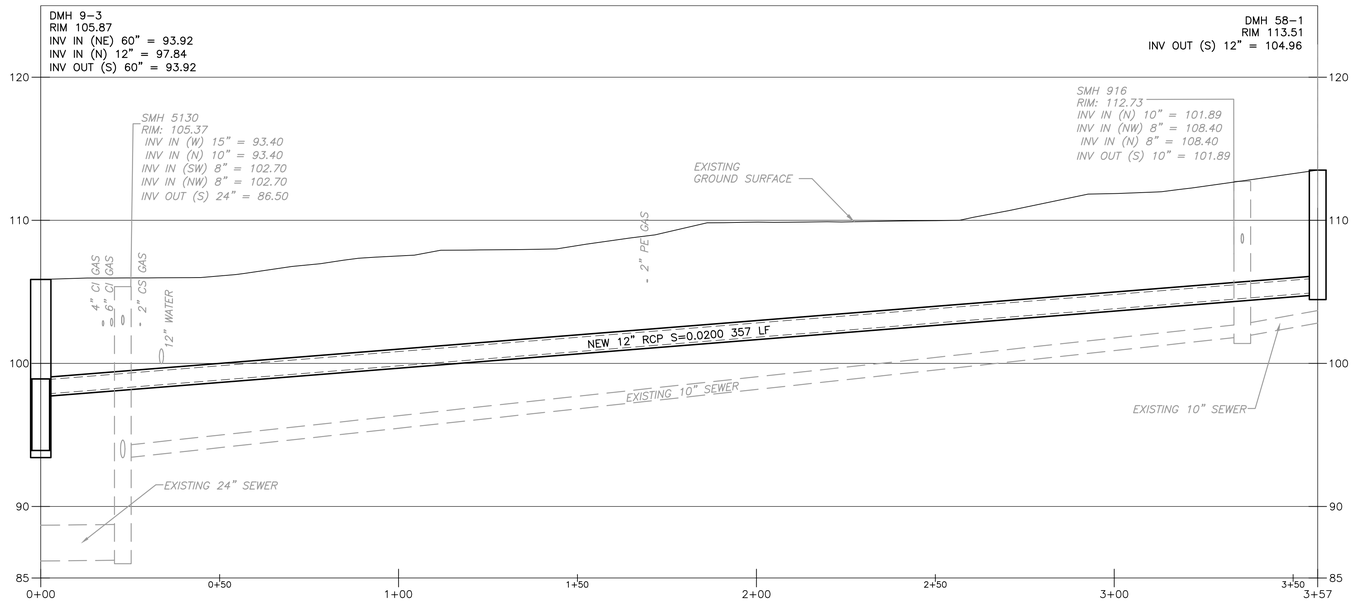
XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJV Time: 11/12/2023 6:05:10 PM
C:\pw_p11\GANJV\d3611175\C057PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20' VERT: 1" = 5'

10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

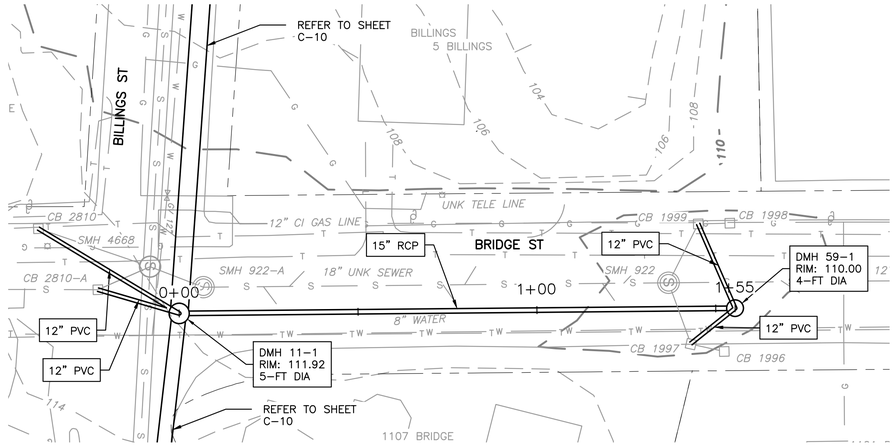
BARKER AVE

PROJECT NO. 0552-282899
FILE NAME: C058PLPR.DWG

SHEET NO.
C-58

30% SUBMITTAL - NOT FOR CONSTRUCTION

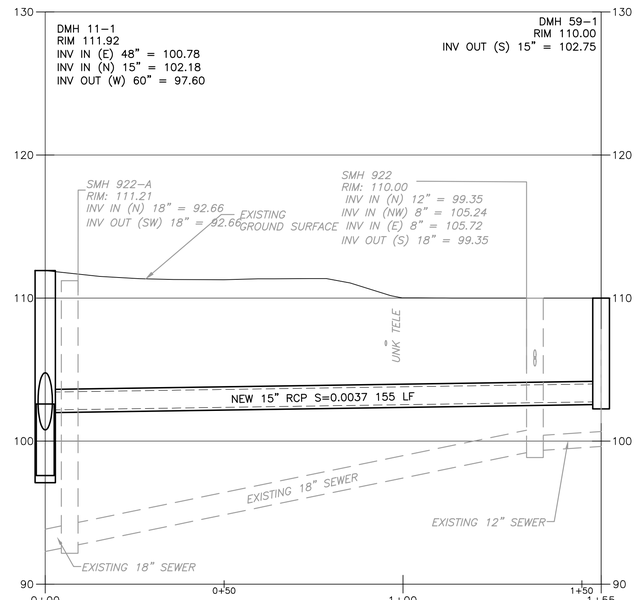
XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJIV Time: 11/12/2023 6:07:38 PM
C:\pw_p11\GANJIV\d3611175\C059PLPR.dwg
© 2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20' VERT: 1" = 5'

10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

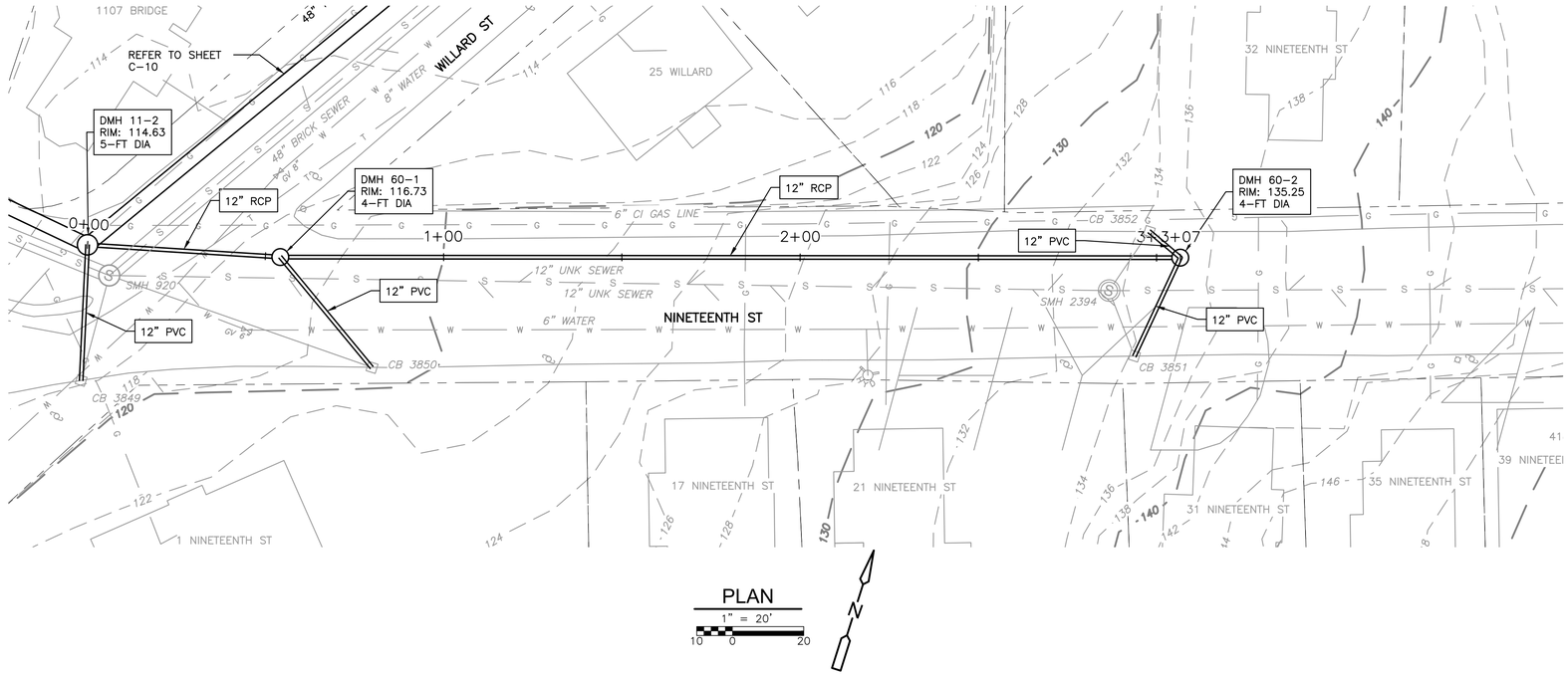
BRIDGE ST

PROJECT NO. 0552-282899
FILE NAME: C059PLPR.DWG

SHEET NO.
C-59

30% SUBMITTAL - NOT FOR CONSTRUCTION

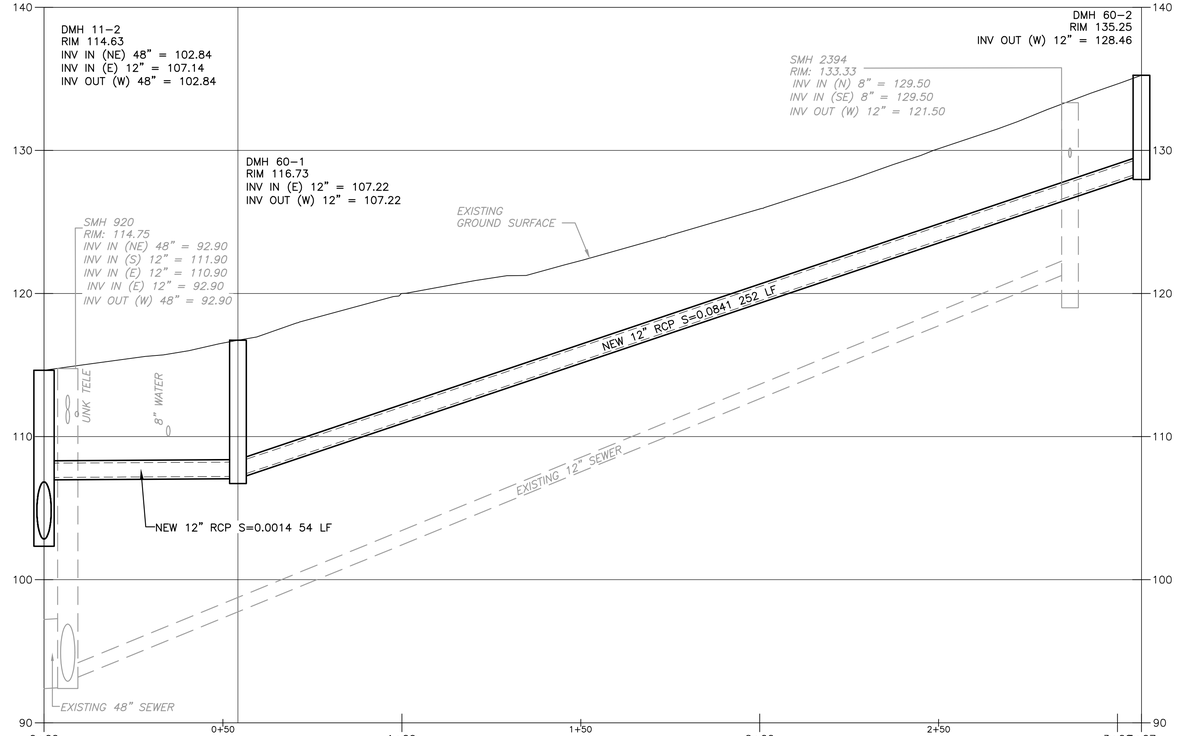
XREFs: [CDMS_2436_CWZ003PP_CIVIL 3D WORKING MODEL_CEP005PP_EX SEWER_CEP004PP_EX WATER_CEP002ST_EX DRAIN_CEP007PP_EX CULVERTS_CEP001ST_BASEMAP HUMPHREYS_CEP009PP-STREET LIGHT AND NATIONAL GRID POLE_CEP008PP-EXTENET_CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJV Time: 11/12/2023 6:17:33 PM
C:\pw_pl1\GANJV\d3611175\C059PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20'

10 0 20

VERT: 1" = 5'

2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

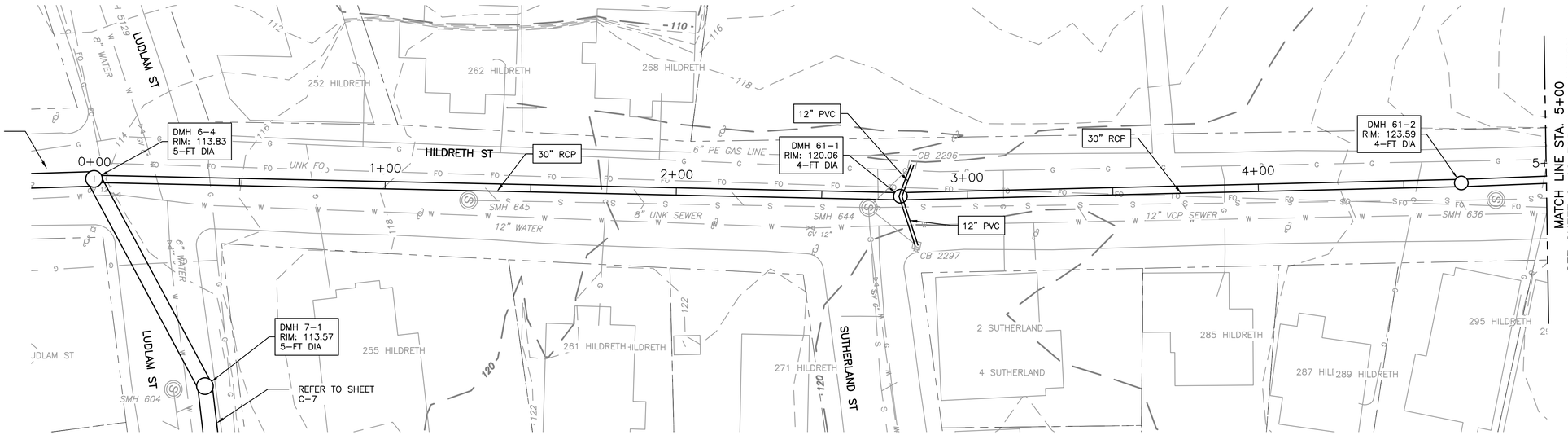
NINETEENTH ST

PROJECT NO. 0552-282899
FILE NAME: C060PLPR.DWG

SHEET NO.
C-60

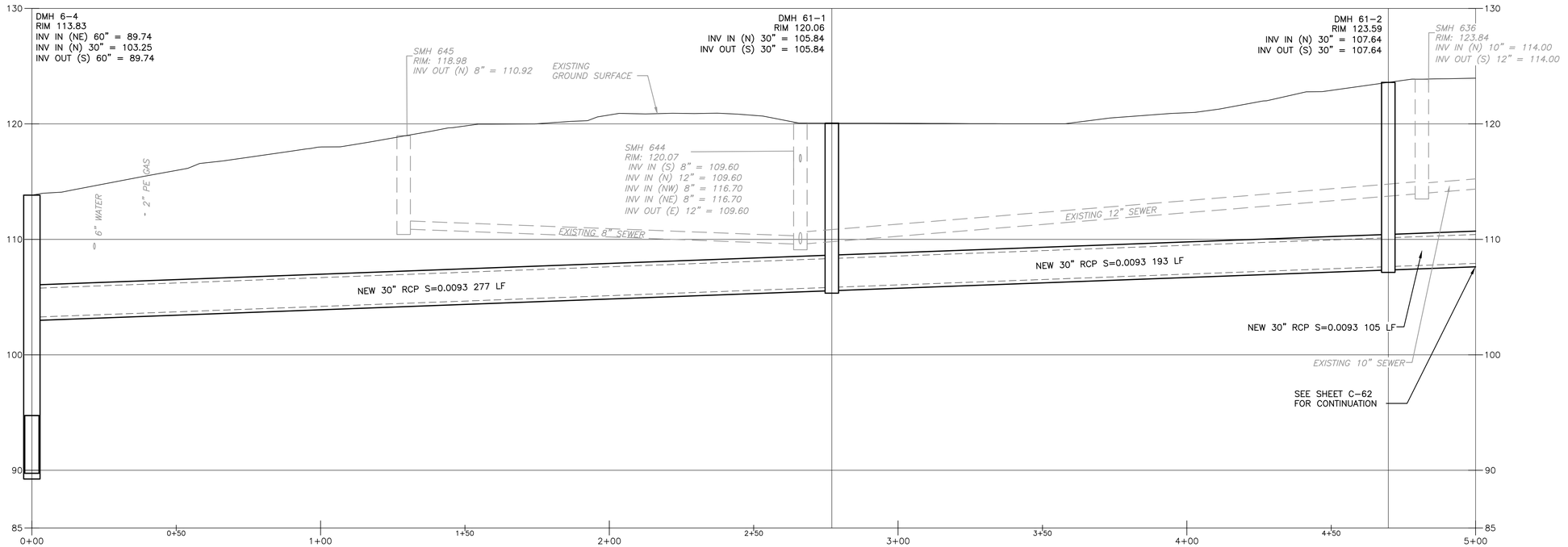
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CWZ003PP_CIVIL_3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJV Time: 11/12/2023 6:26:16 PM
C:\pw_p11\GANJV\d3611175\C059PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

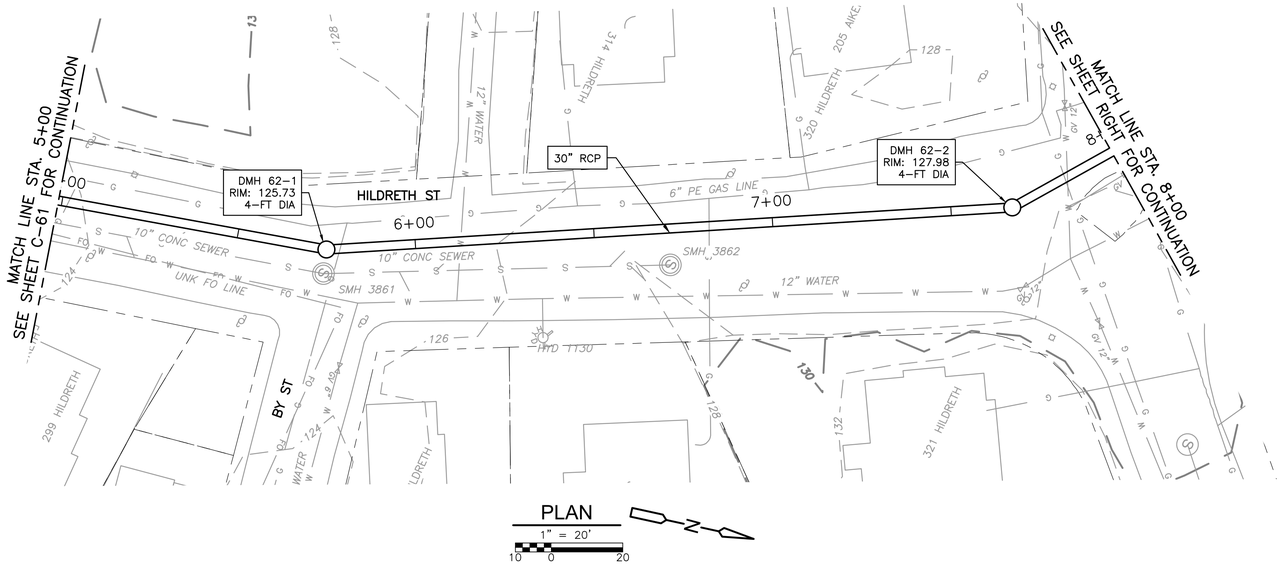
HILDRETH ST

PROJECT NO. 0552-282899
FILE NAME: C061PLPR.DWG

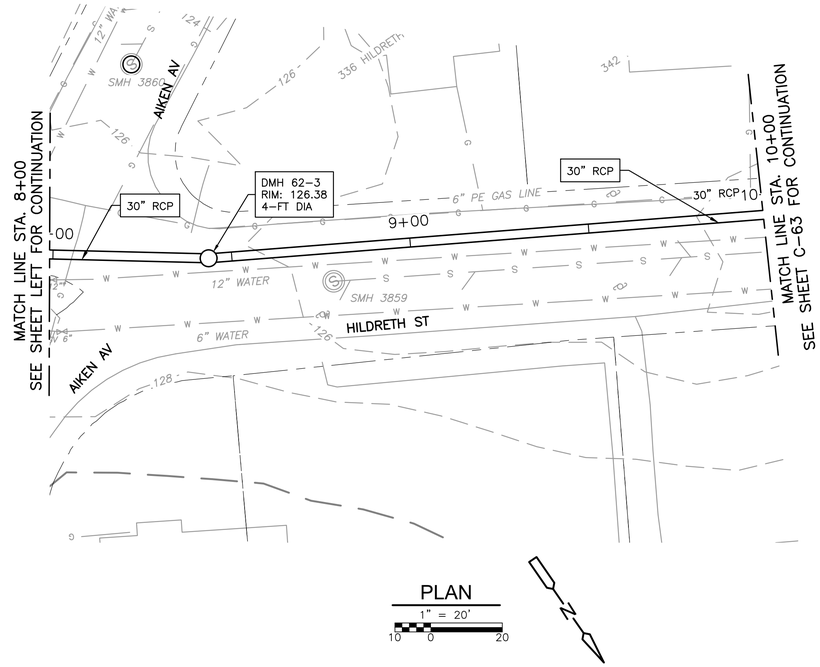
SHEET NO.
C-61

30% SUBMITTAL - NOT FOR CONSTRUCTION

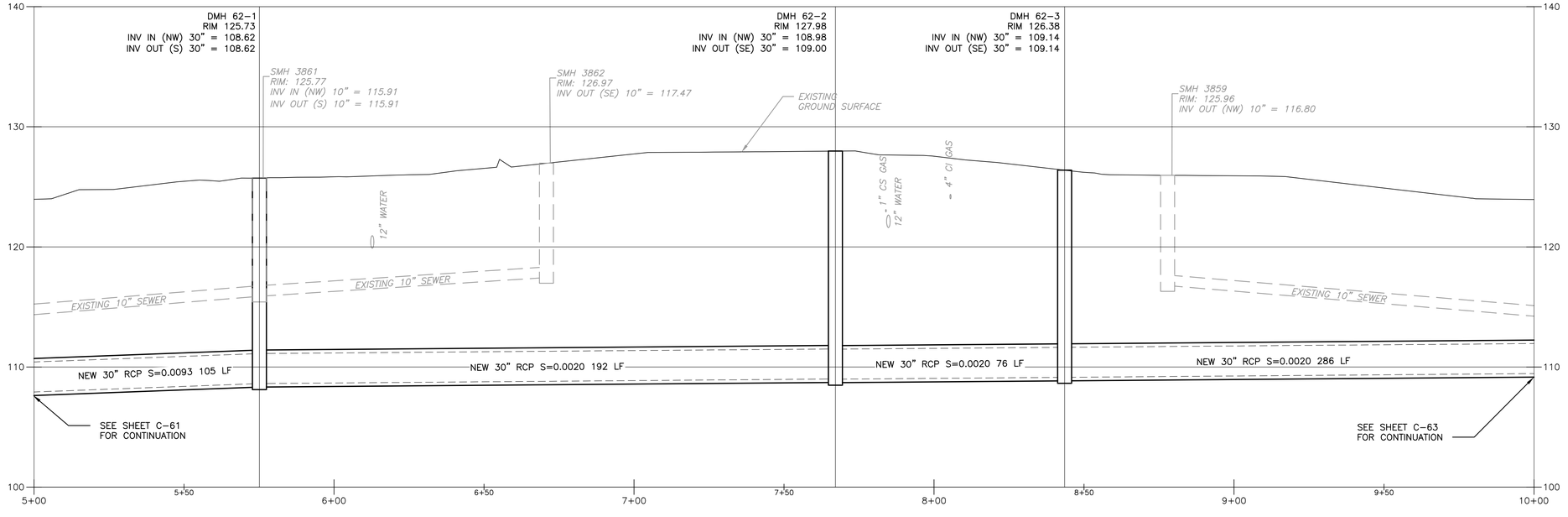
XREFs: [CDMS_2436, CWZ003PP_CIVIL_3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJV Time: 11/12/2023 6:30:54 PM
C:\pw_p11\GANJV\d3611175\C059PLPR.dwg
© 2023 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN
1" = 20'
10 0 20



PLAN
1" = 20'
10 0 20



PROFILE
1" = 20'
10 0 20
VERT: 1" = 5'
2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

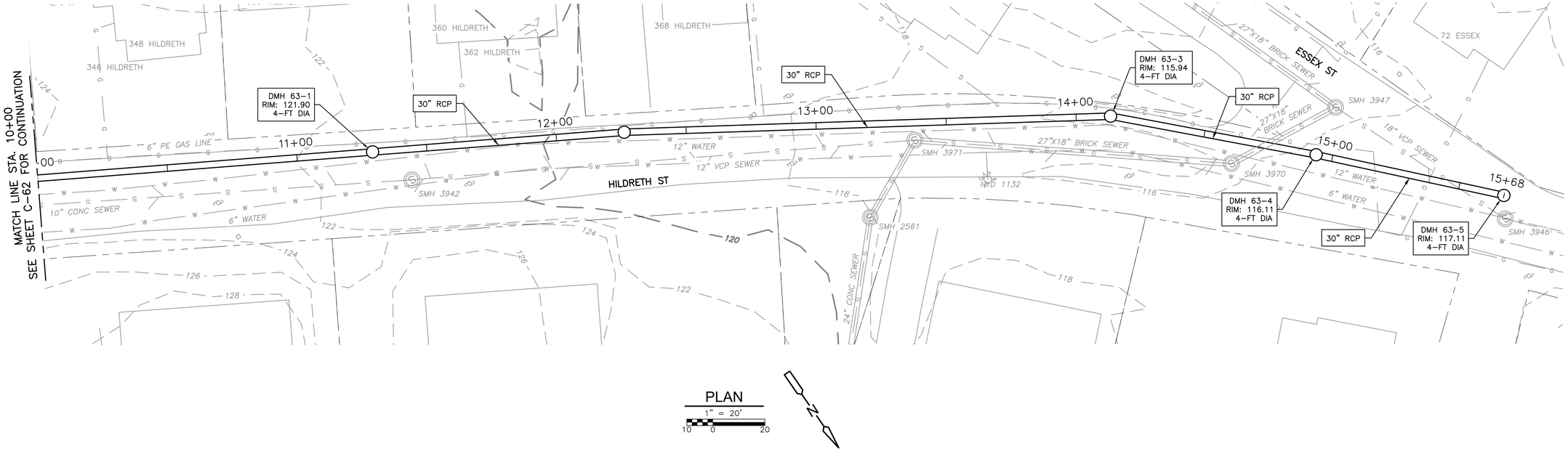
HILDRETH ST

PROJECT NO. 0552-282899
FILE NAME: C062PLPR.DWG

SHEET NO.
C-62

30% SUBMITTAL - NOT FOR CONSTRUCTION

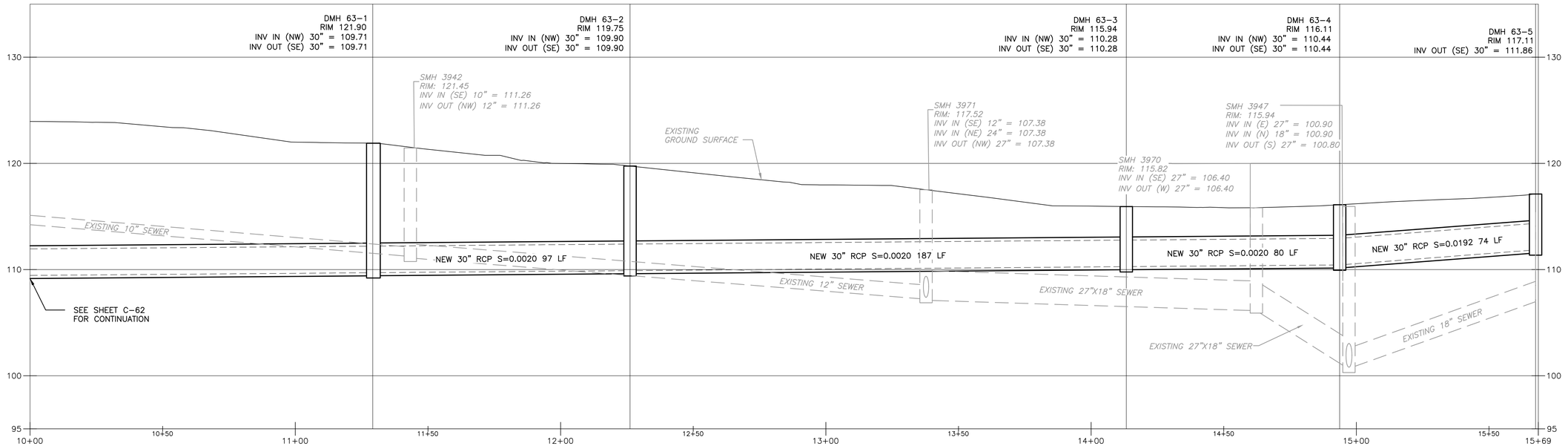
XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJIV Time: 11/12/2023 11:54:24 PM
C:\pw_p11\GANJIV\d3611175\C067PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20'

10 0 20

VERT: 1" = 5'

2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

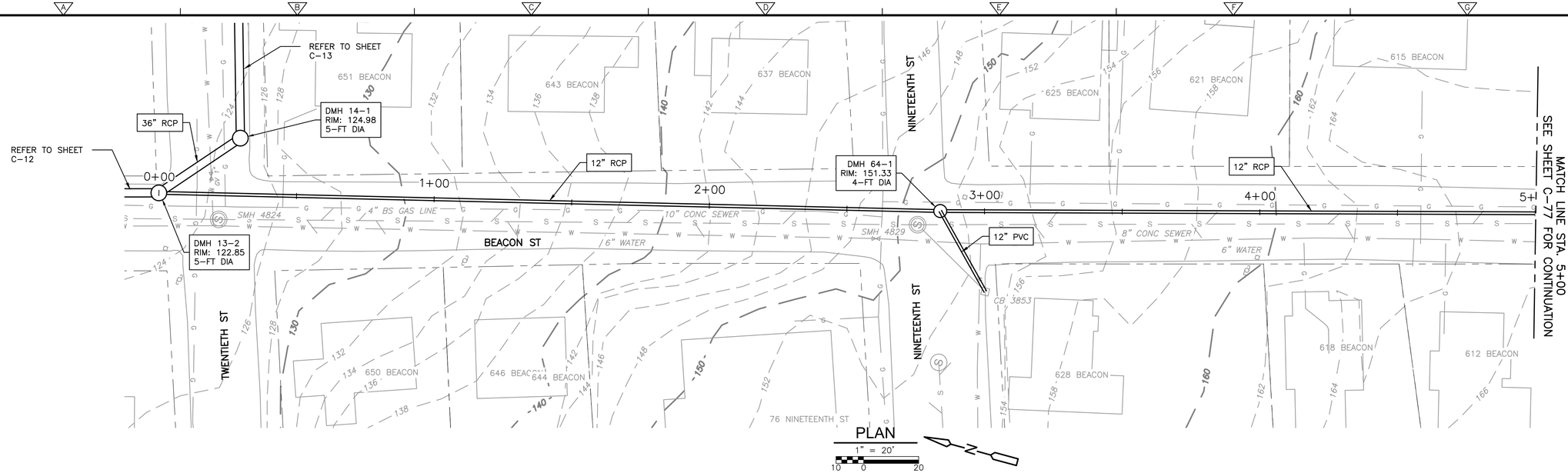
HILDRETH ST

PROJECT NO. 0552-282899
FILE NAME: C063PLPR.DWG

SHEET NO.
C-63

30% SUBMITTAL - NOT FOR CONSTRUCTION

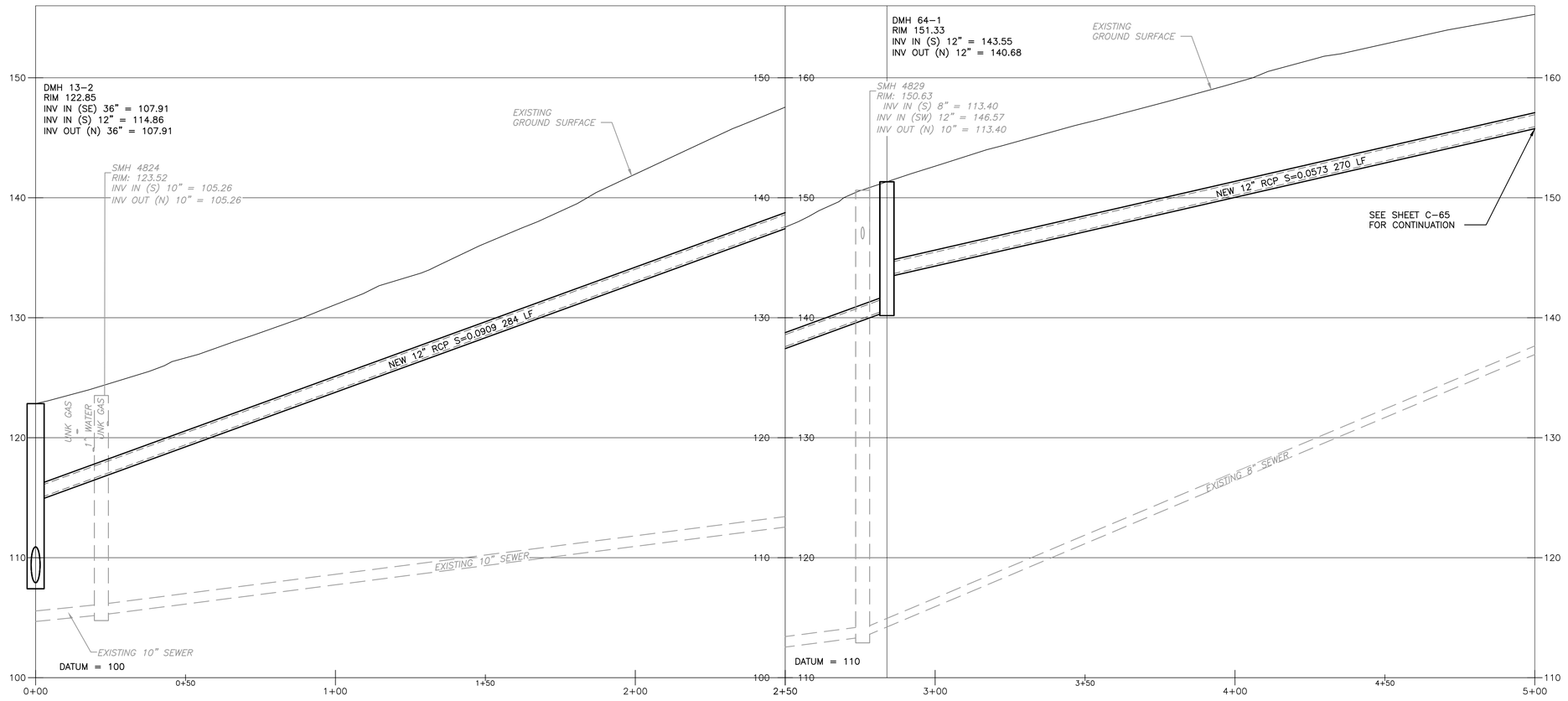
XREFs: [CDMS_2436, CWZ003PP_CIVIL_3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENT, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJV Time: 12/22/2023 4:29:19 PM
C:\pw_pl1\GANJV\d3611175\C067PLPR.dwg
© 2023 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20' VERT: 1" = 5'

10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

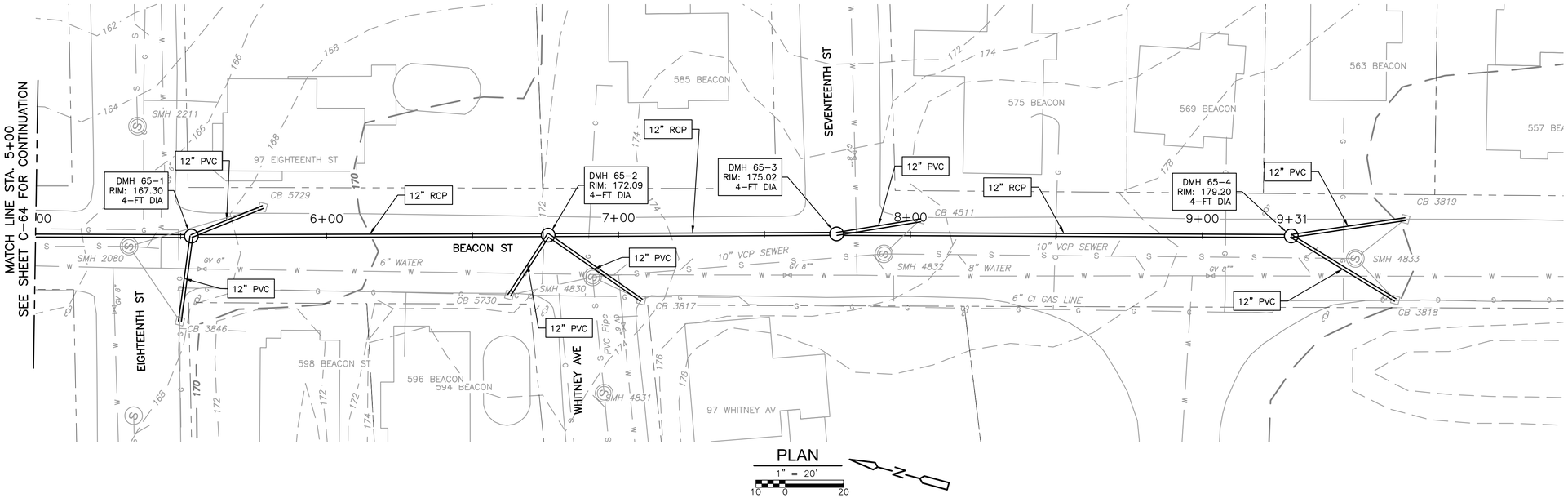
BEACON ST

PROJECT NO. 0552-282899
FILE NAME: C064PLPR.DWG

SHEET NO.
C-64

30% SUBMITTAL - NOT FOR CONSTRUCTION

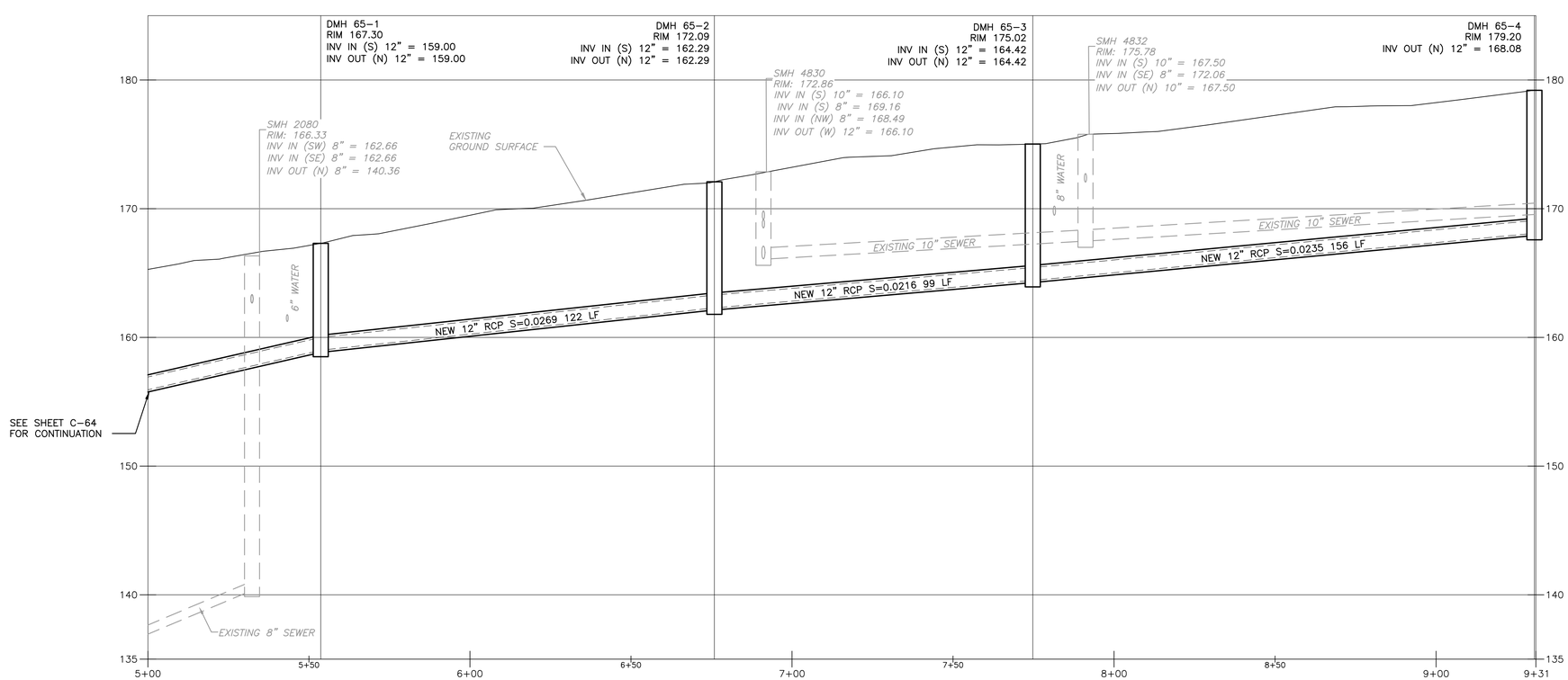
XREFs: [CDMS_2436_CWZ003PP_CIVIL 3D WORKING MODEL CEP006PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJIV Time: 11/12/2023 6:33:22 PM
C:\pw_pl1\GANJIV\d3611175\C059PLPR.dwg
© 2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20' VERT: 1" = 5'

10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

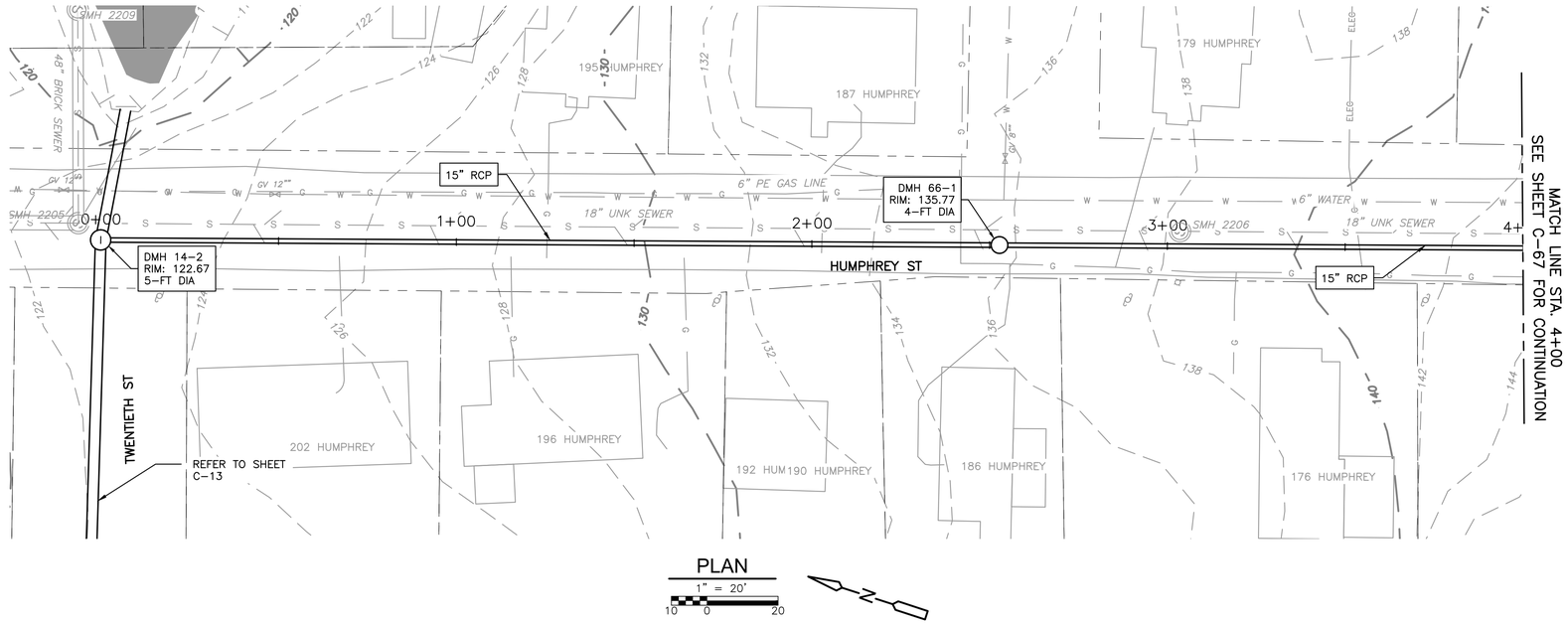
BEACON ST

PROJECT NO. 0552-282899
FILE NAME: C065PLPR.DWG

SHEET NO.
C-65

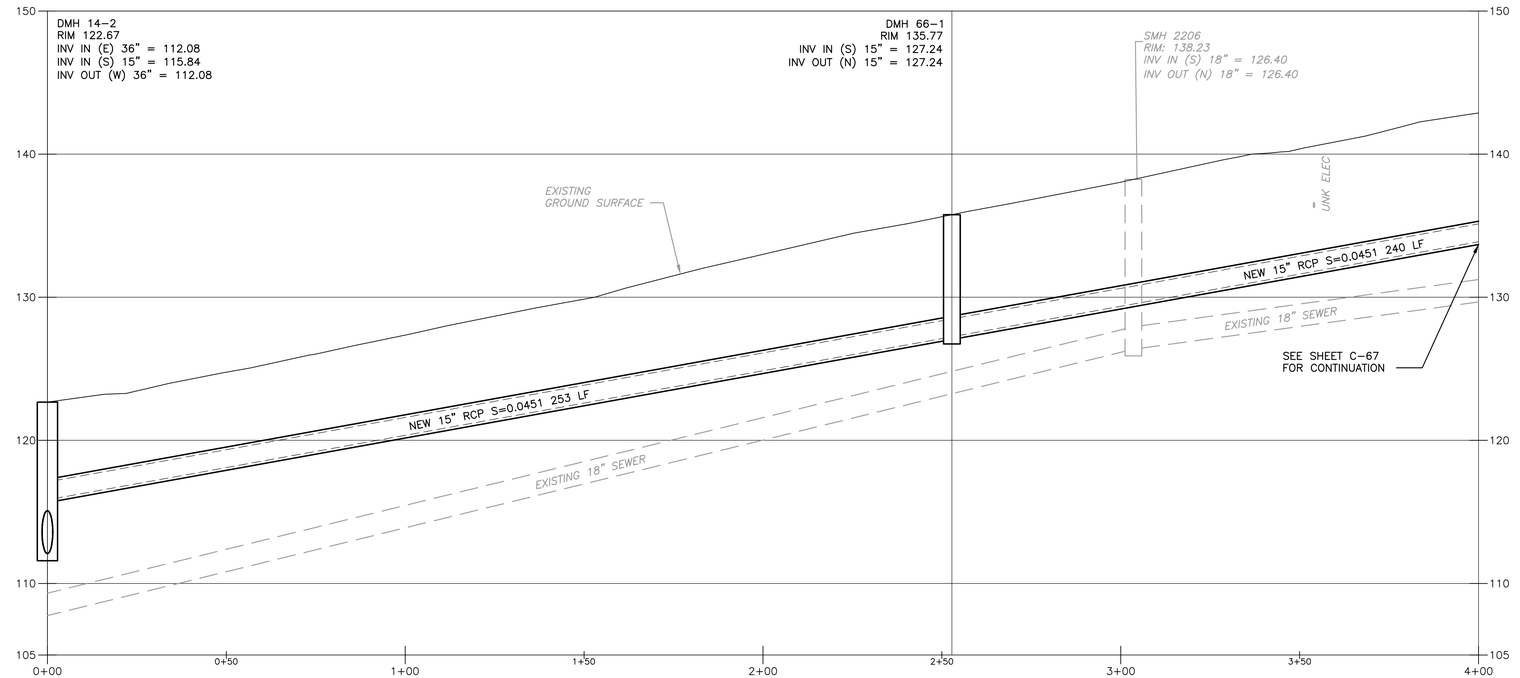
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CW2003PP_CIVIL 3D WORKING MODEL, CEP0065PP_EX SEWER, CEP0004PP_EX WATER, CEP0025T_EX DRAIN, CEP0079P_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP0039PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CW2003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJIV Time: 11/12/2023 6:35:18 PM
C:\pw_pf1\GANJIV\d3611175\C059PLPR.dwg
© 2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

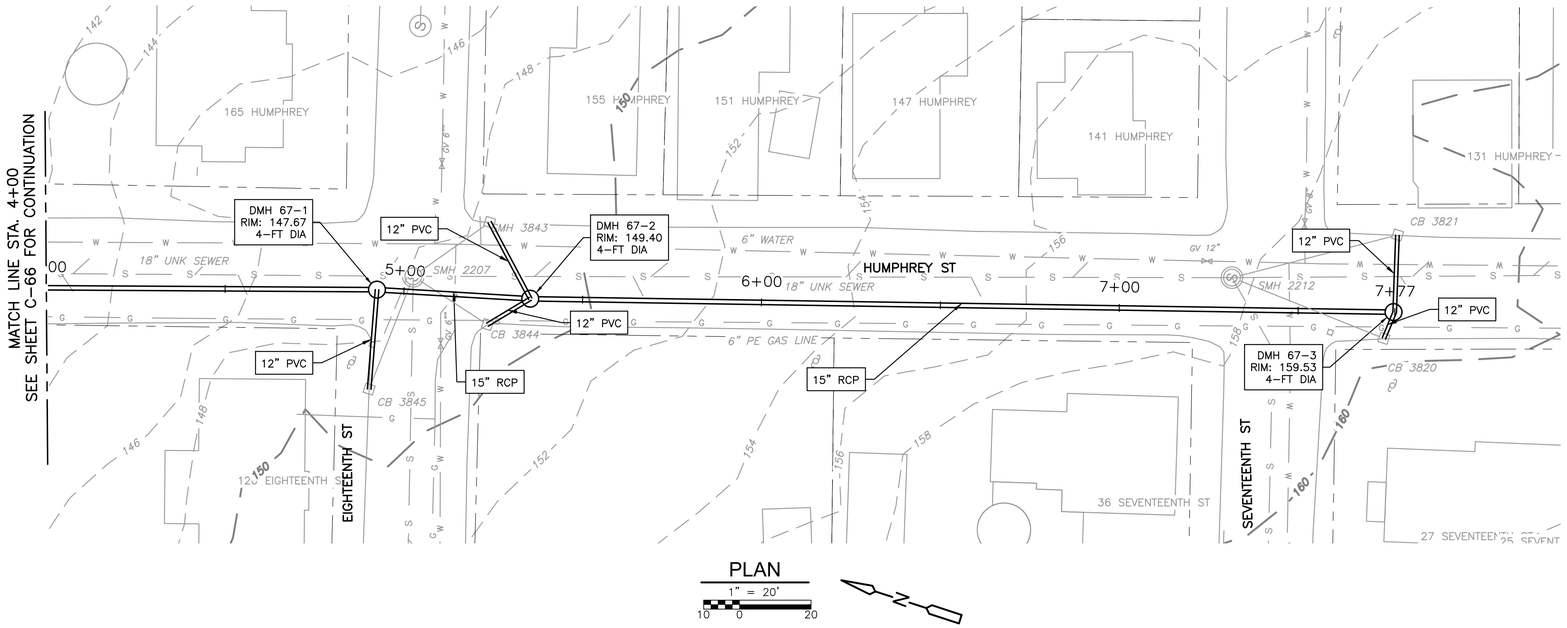
HUMPHREY ST

PROJECT NO. 0552-282899
FILE NAME: C066PLPR.DWG

SHEET NO.
C-66

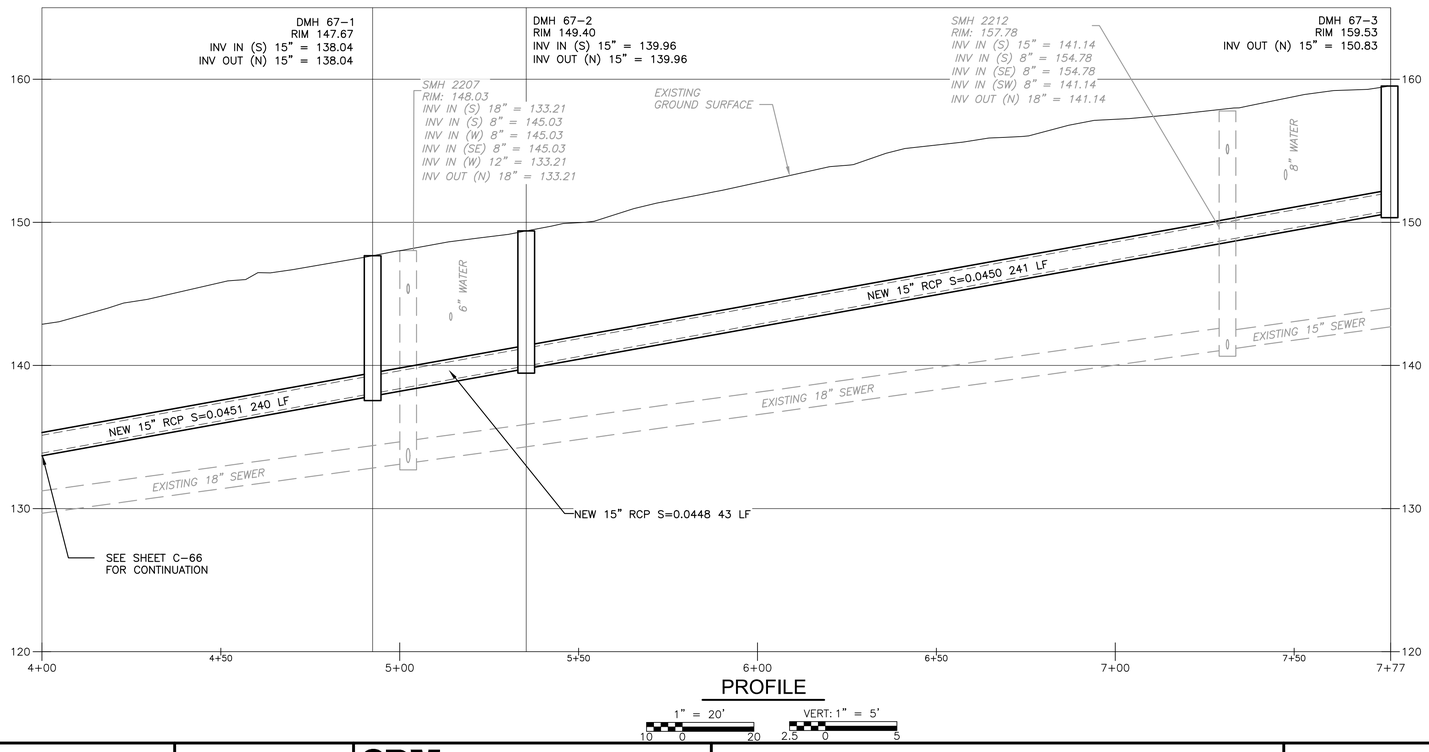
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436_CWZ003PP_CIVIL_3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENT]
Last saved by: GANJV Time: 9/1/2023 11:56:15 AM
pw:\\cdmsmith-az02-pw.bentley.com:pw_p1\0552\282899\04 Design Services NM_10%\02 Civil\10 BIM_CADD\C056PLPR.dwg
Images: []
©2023 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

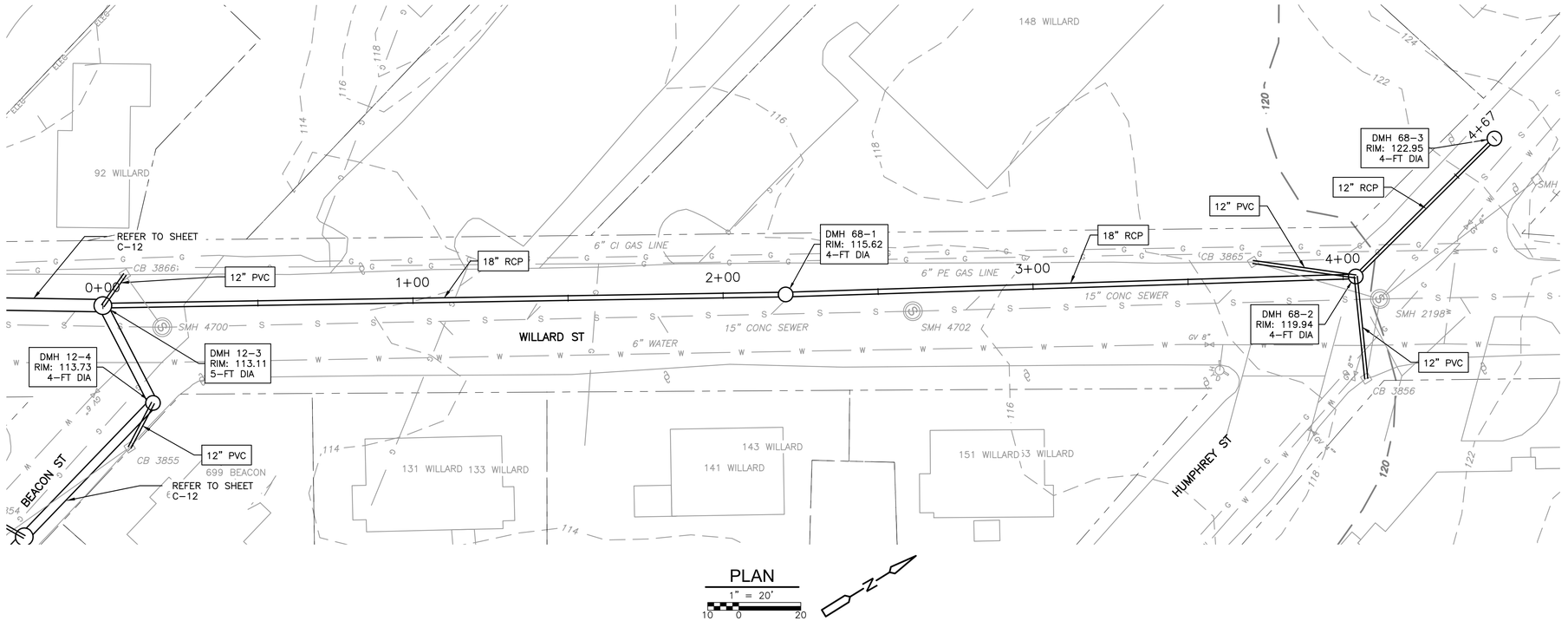
HUMPHREY ST

PROJECT NO. 0552-282899
FILE NAME: C067PLPR.DWG

SHEET NO.
C-67

30% SUBMITTAL - NOT FOR CONSTRUCTION

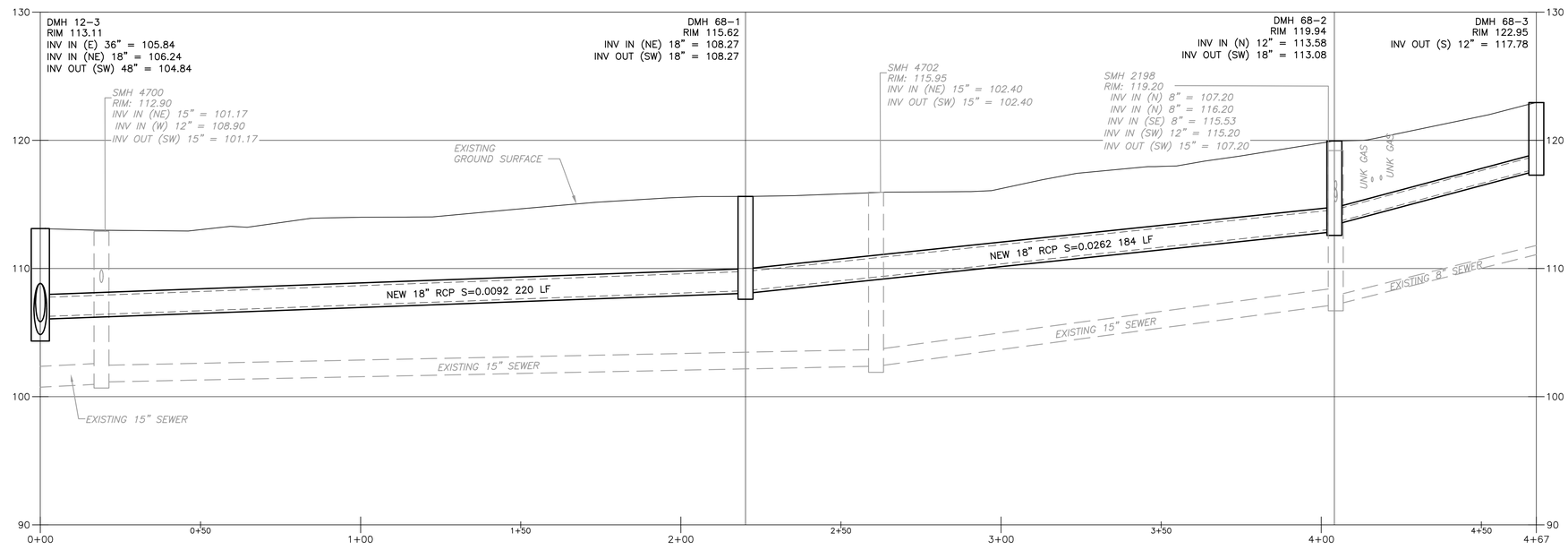
XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJIV Time: 11/12/2023 6:44:06 PM
C:\pw_p11\GANJIV\d3611175\C059PLPR.dwg
© 2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20'

10 0 20

VERT: 1" = 5'

2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

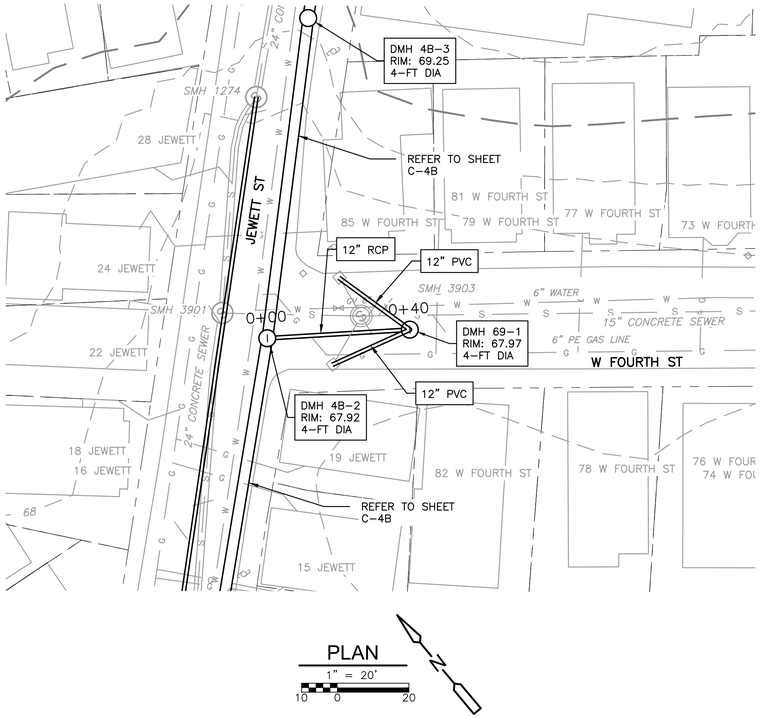
WILLARD ST

PROJECT NO. 0552-282899
FILE NAME: C068PLPR.DWG

SHEET NO.
C-68

30% SUBMITTAL - NOT FOR CONSTRUCTION

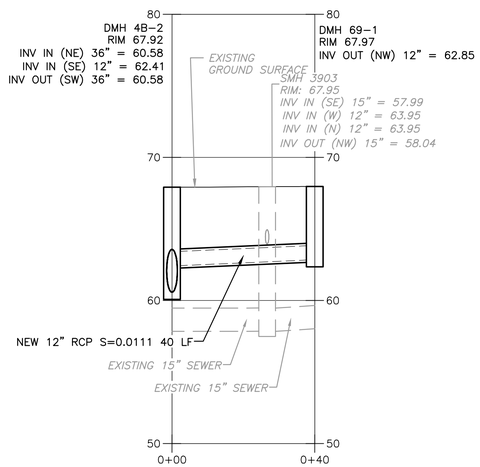
XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJV Time: 12/22/2023 4:21:33 PM
C:\pw_p11\GANJV\d3611175\C059PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20' VERT: 1" = 5'

10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

W FOURTH ST

PROJECT NO. 0552-282899
FILE NAME: C069PLPR.DWG

SHEET NO.
C-69

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CWZ003PP_CIVIL 3D WORKING MODEL, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains] Images: []
Last saved by: GANJV Time: 12/22/2023 3:15:09 PM
C:\pw_p11\GANJV\d3611175\C001PLPR.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

Appendix D Drawings: Alternative 2 – Main Conduit to Aiken Street Outfall (Phase 1)

LOWELL REGIONAL WASTEWATER UTILITY (LRWWU)

COPY NO. ____

CITY OF LOWELL, MASSACHUSETTS
CSO SEWER SEPARATION PROGRAM

ALTERNATIVE 2 - MAIN CONDUIT TO AIKEN STREET OUTFALL (PHASE1)

PRELIMINARY DESIGN DRAFT

LOWELL CITY MANAGER

THOMAS A. GOLDEN, JR.

LOWELL CITY COUNCILORS

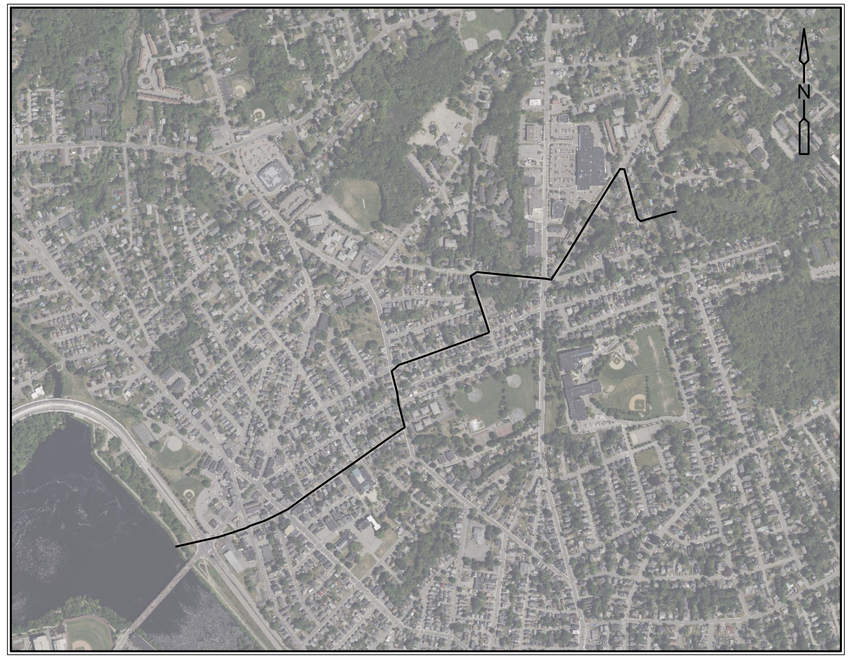
SOKHARY CHAU, MAYOR
JOHN DRINKWATER
ERIK GITSCHIER
WAYNE JENNESS
JOHN J. LEAHY
RITA MERCIER
VESNA NUON
COREY ROBINSON
DANIEL ROURKE
KIMBERLY SCOTT
PAUL RATHA YEM

LRWWU EXECUTIVE DIRECTOR

AARON FOX

LRWWU ENGINEERING MANAGER

EVAN WALSH



1" = 600'
300 0 600

LOCATION PLAN

30% DRAWINGS
NOT FOR CONSTRUCTION
DECEMBER 2023

These drawing packages are for the purpose of identifying preliminary routing for mainline and lateral pipes. Not all sizes shown reflect the results of hydraulic modeling and are subject to change. Sizing is to be updated and finalized during final design.

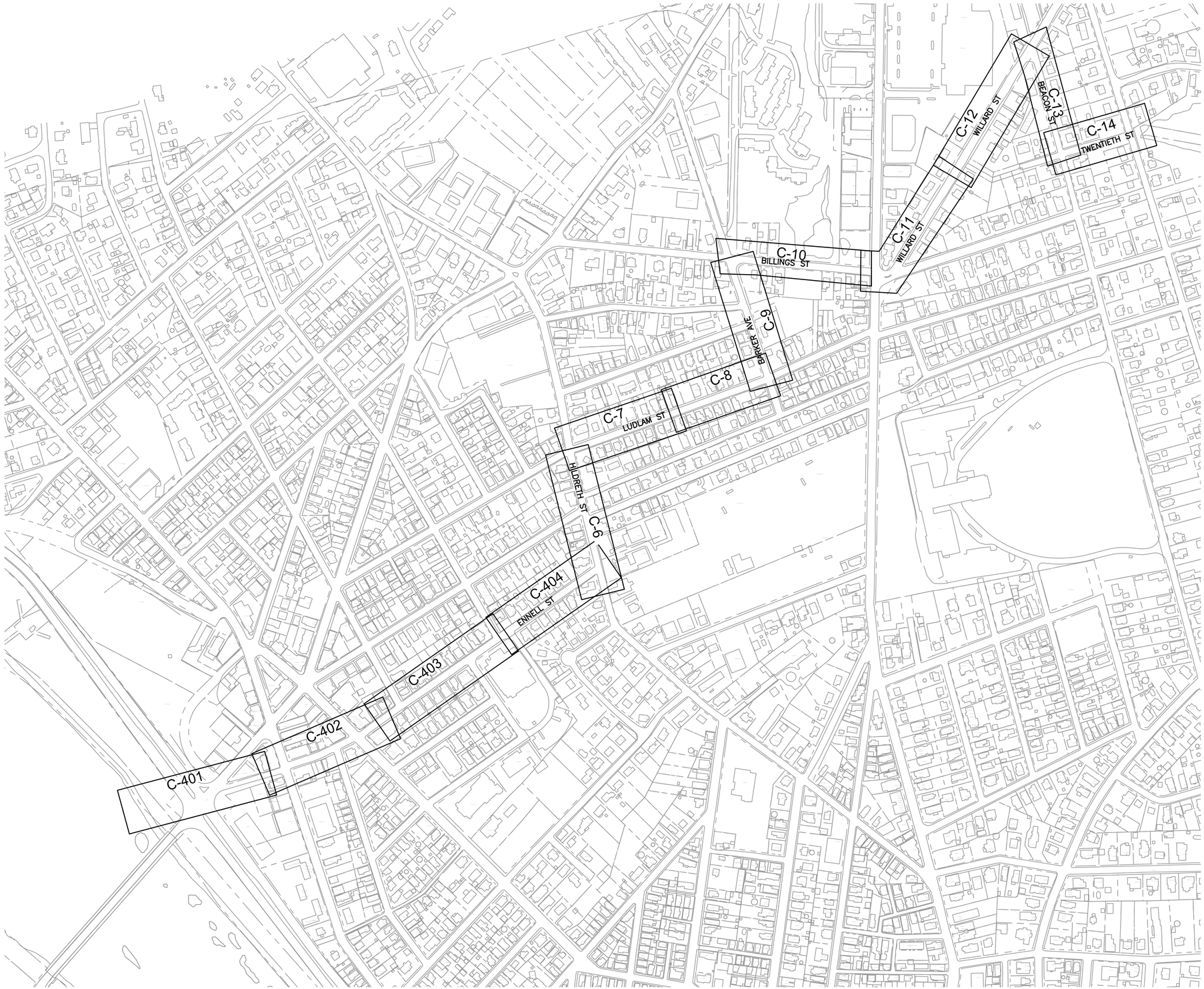
CDM Smith

MANCHESTER, NEW HAMPSHIRE

Water *Environment* *Transportation* *Energy* *Facilities*

ALTERNATIVE 2, PHASE1

ALTERNATIVE 2, PHASE 1	
SHEET NUMBER	SHEET TITLE
C-401	ENNELL ST
C-402	ENNELL ST
C-403	ENNELL ST
C-404	ENNELL ST
C-6	HILDRETH ST
C-7	LUDLAM ST
C-8	LUDLAM ST
C-9	BARKER AVE
C-10	BILLINGS ST
C-11	WILLARD ST
C-12	WILLARD ST
C-13	BEACON ST
C-14	TWENTIETH ST



XREFs: [CDMS_24-36, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP003ST_EX GAS LINE, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains, BASEMAP, CWZ003PP_CIVIL 3D WORKING MODEL_AREA 40] Images: []
Last saved by: GANJV Time: 11/22/2023 4:14:30 PM
C:\pw_p11\GANJV\d3611167\G009INDX.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

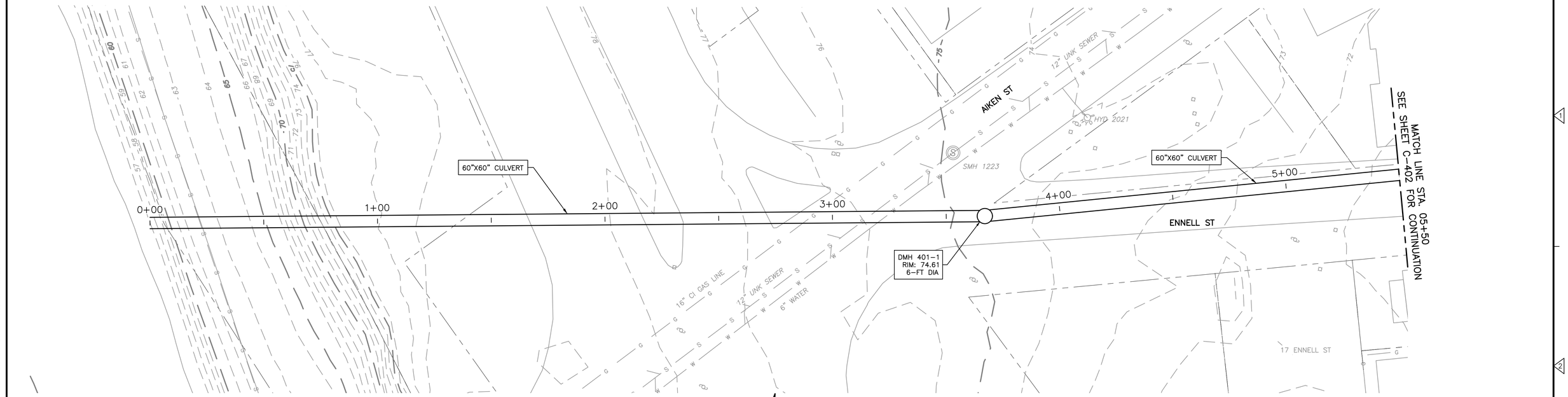
HUMPHREY'S BROOK

KEY PLAN

PROJECT NO. 0552-282899
FILE NAME: G009INDX.DWG

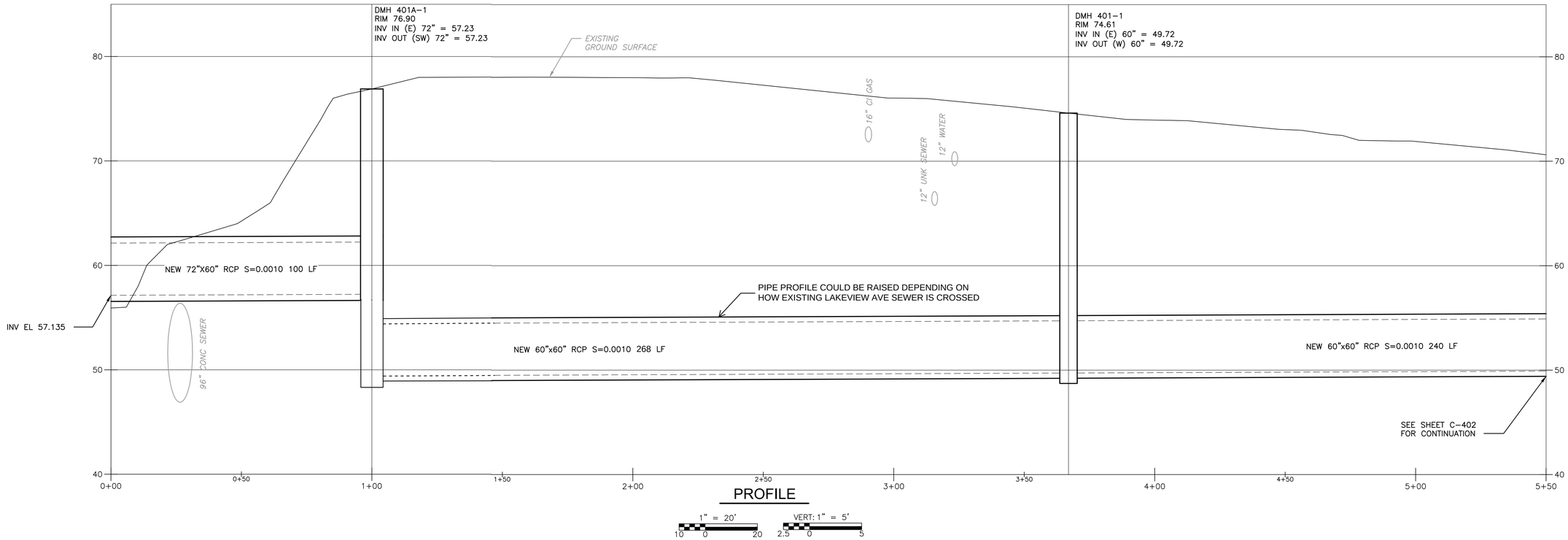
SHEET NO.
G-9A

30% SUBMITTAL - NOT FOR CONSTRUCTION



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:

DRAWN BY: S. SIDANALE

SHEET CHK'D BY:

CROSS CHK'D BY:

APPROVED BY:

DATE: JULY 2024

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

ENNELL ST

PROJECT NO. 0552-282899

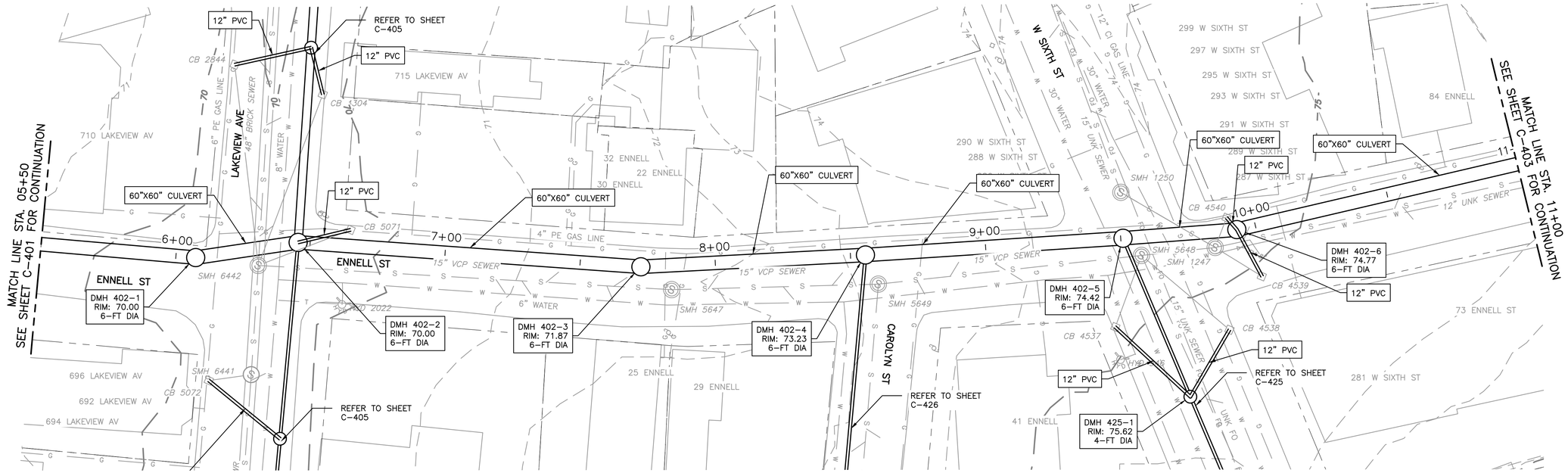
FILE NAME: C401PLPR

SHEET NO.

C-401

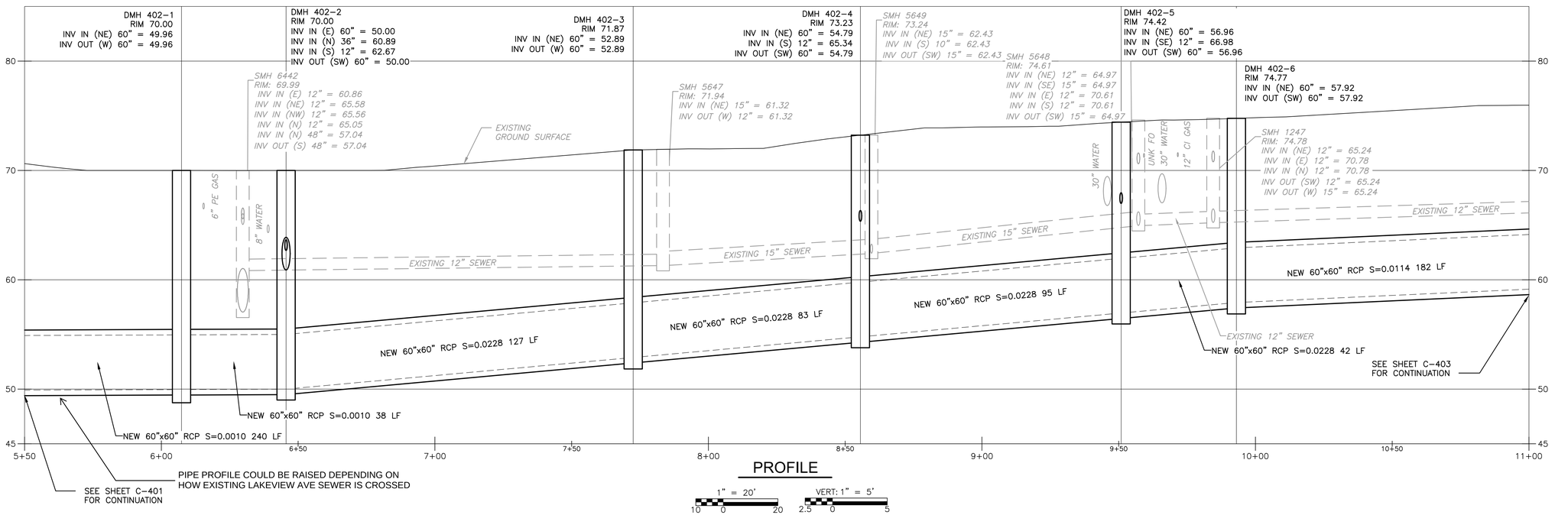
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREY'S, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_OP2, CWZ003PP_CIVIL 3D WORKING MODEL_AREA 40, BASEMAP]
Images: []
Last saved by: GANJV Time: 11/24/2023 1:47:03 PM
C:\pw_p11\GANJV\d3611175\C001PLPR_OPTION4.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

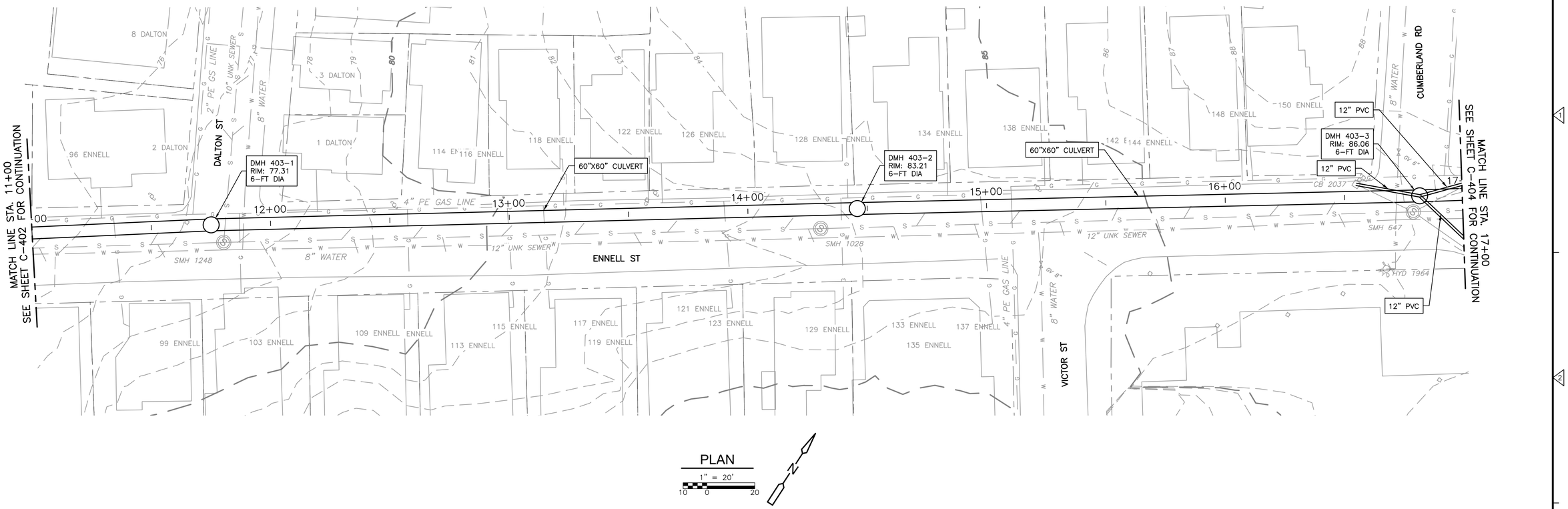
ENNELL ST

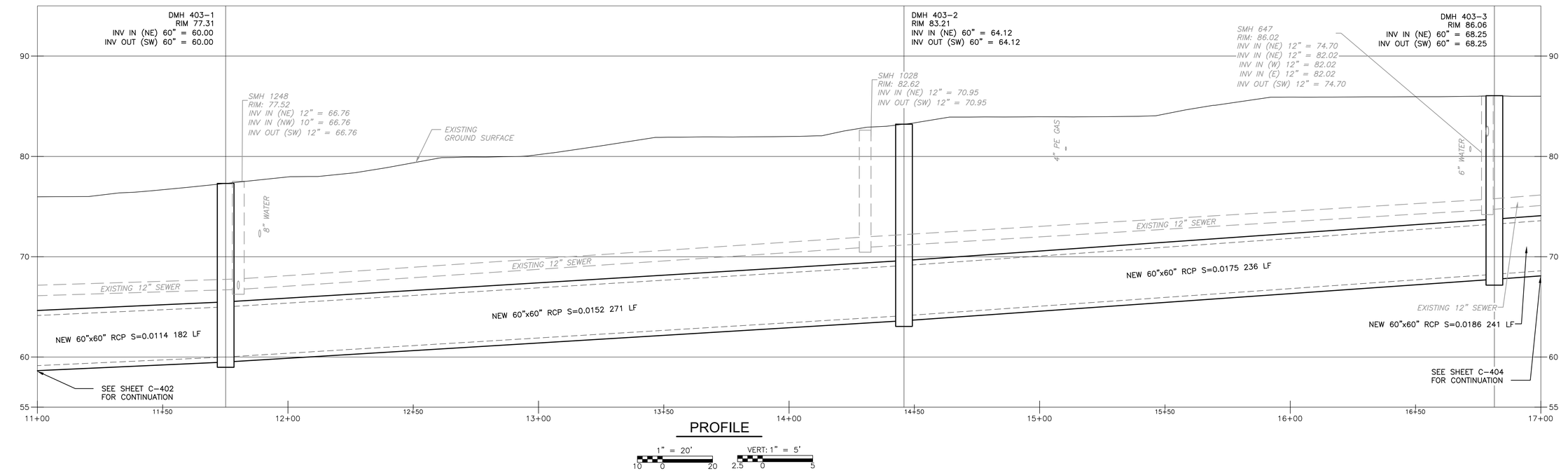
PROJECT NO. 0552-282899
FILE NAME: C402PLPR

SHEET NO.
C-402

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREY'S, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_OP2, CWZ003PP_CIVIL 3D WORKING MODEL_AREA 40, BASEMAP]
Images: []
Last saved by: GANJIV Time: 11/24/2023 1:51:33 PM
C:\pw_p11\GANJIV\d3611175\C001PLPR_OPTION4.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.





REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

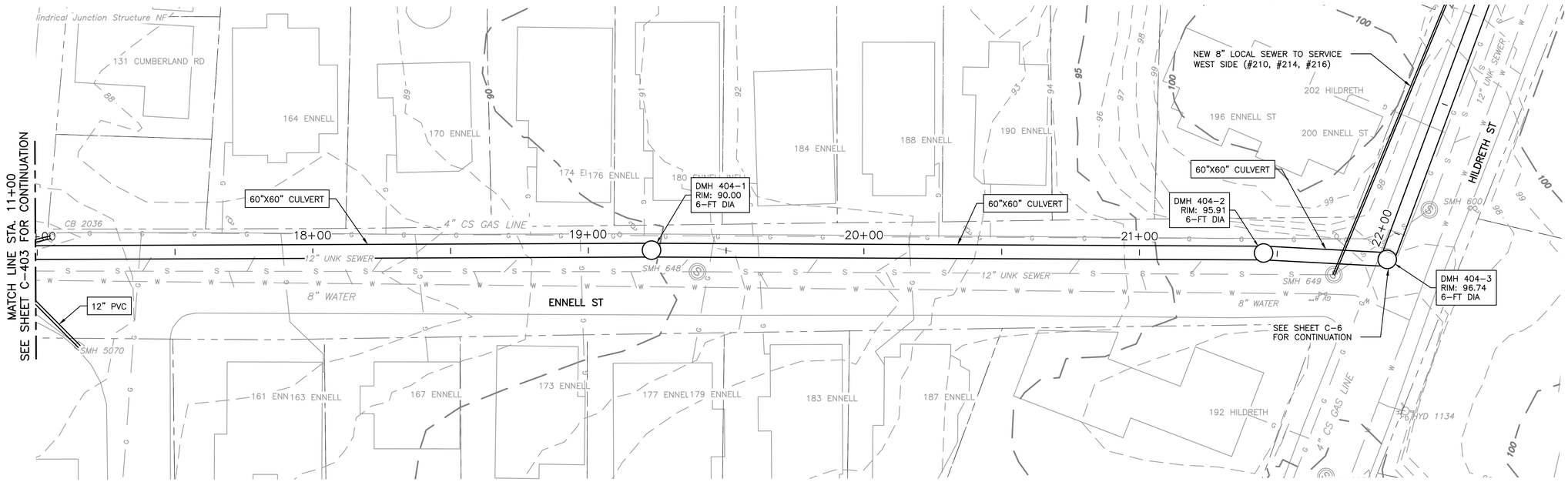
ENNELL ST

PROJECT NO. 0552-282899
FILE NAME: C403PLPR

SHEET NO.
C-403

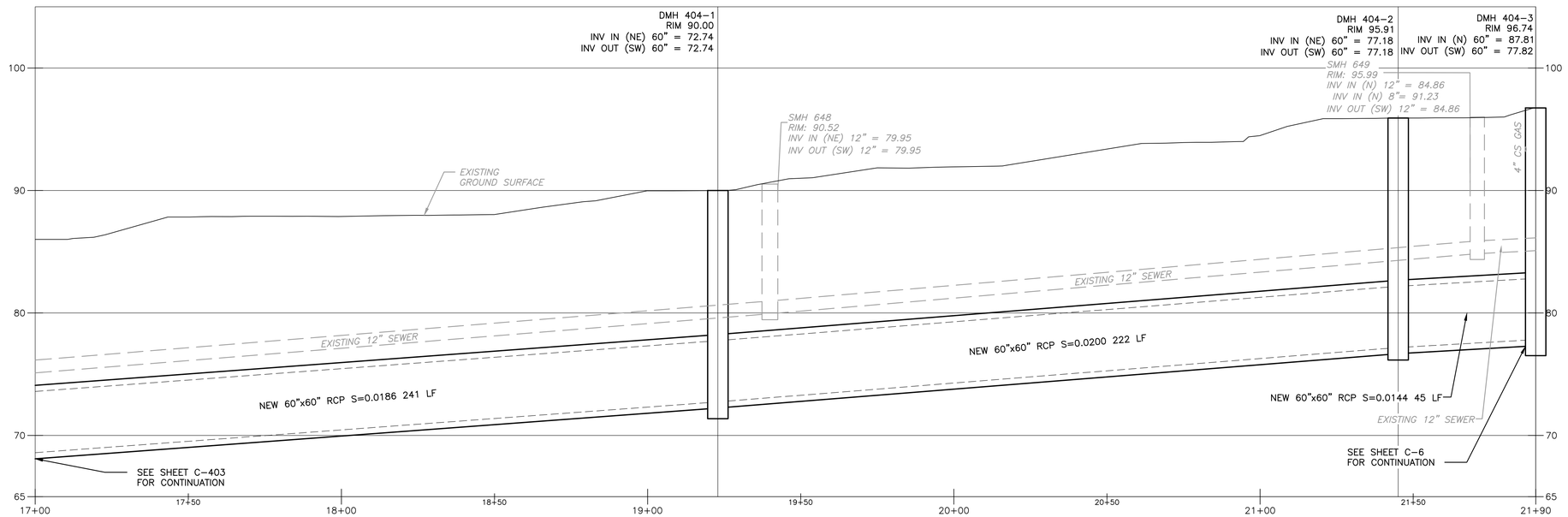
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREY'S, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_OP2, CWZ003PP_CIVIL_3D WORKING MODEL_AREA 40, BASEMAP]
Last saved by: GANJIV Time: 11/24/2023 2:39:15 PM
C:\pw_p11\GANJIV\d3611175\C001PLPR_OPTION4.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.
Images: []



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

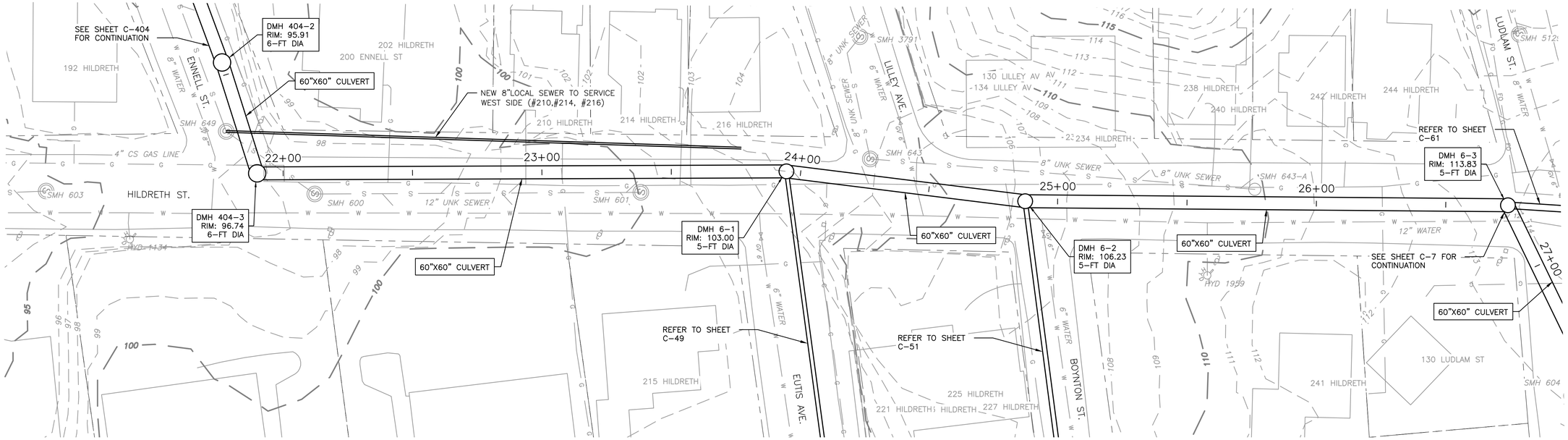
ENNELL ST

PROJECT NO. 0552-282899
FILE NAME: C404PLPR

SHEET NO.
C-404

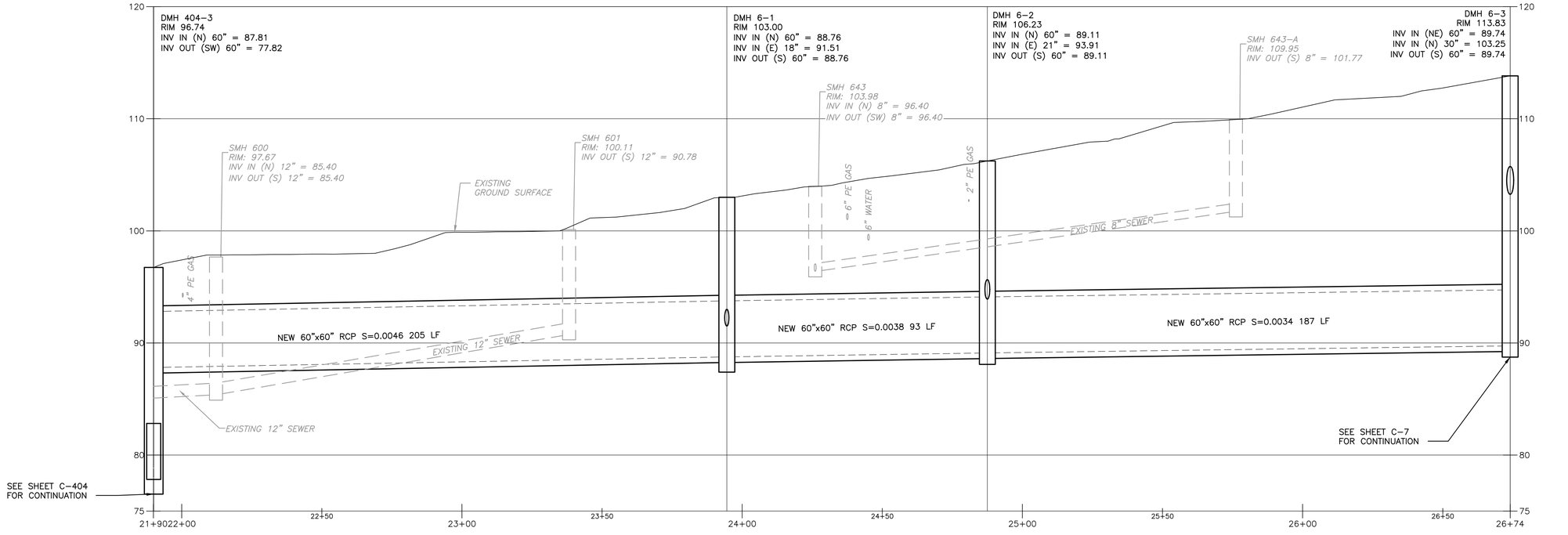
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREY'S, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_OP2, CWZ003PP_CIVIL 3D WORKING MODEL_AREA 4D, BASEMAP]
Images: []
Last saved by: GANJIV Time: 11/24/2023 2:44:52 PM
C:\pw_p11\GANJIV\d3611175\C001PLPR_OPTION4.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

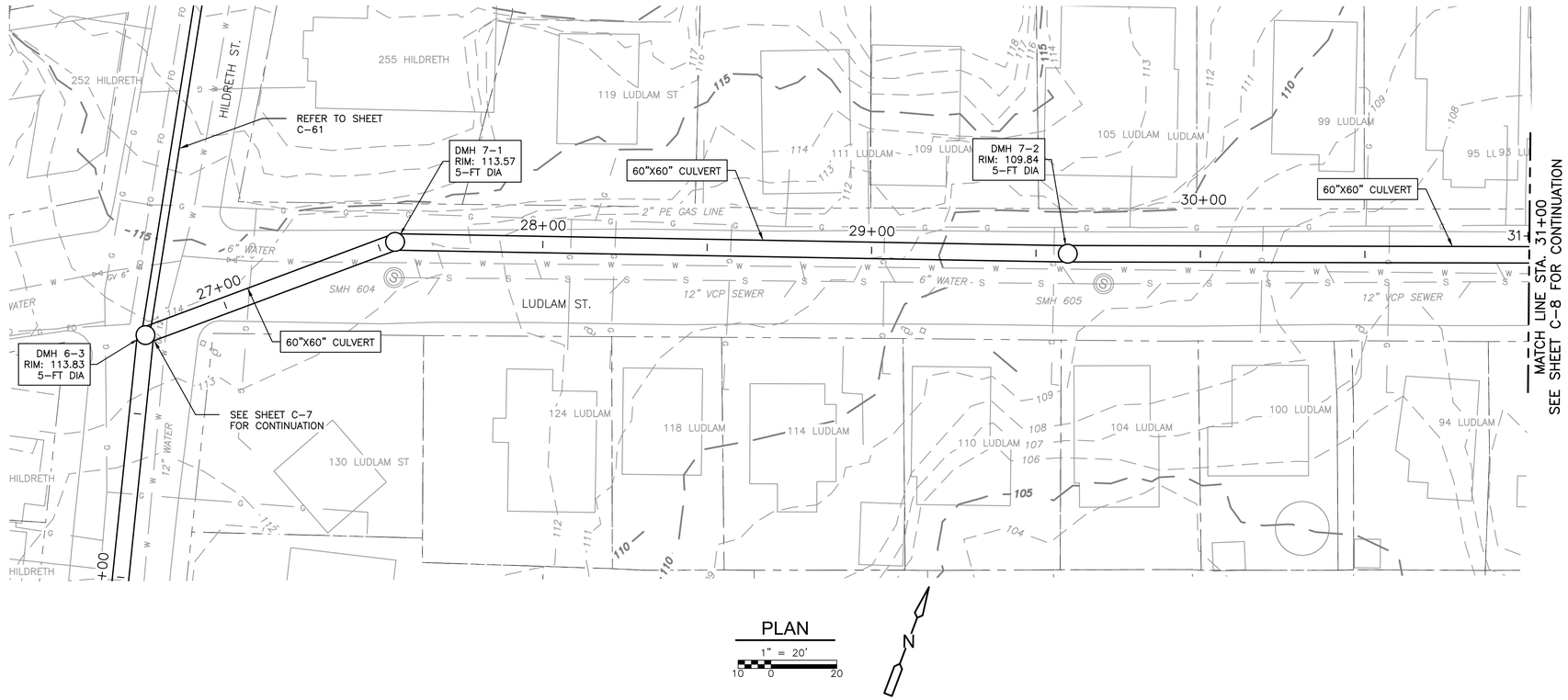
HILDRETH ST

PROJECT NO. 0552-282899
FILE NAME: C006PLPR

SHEET NO.
C-6

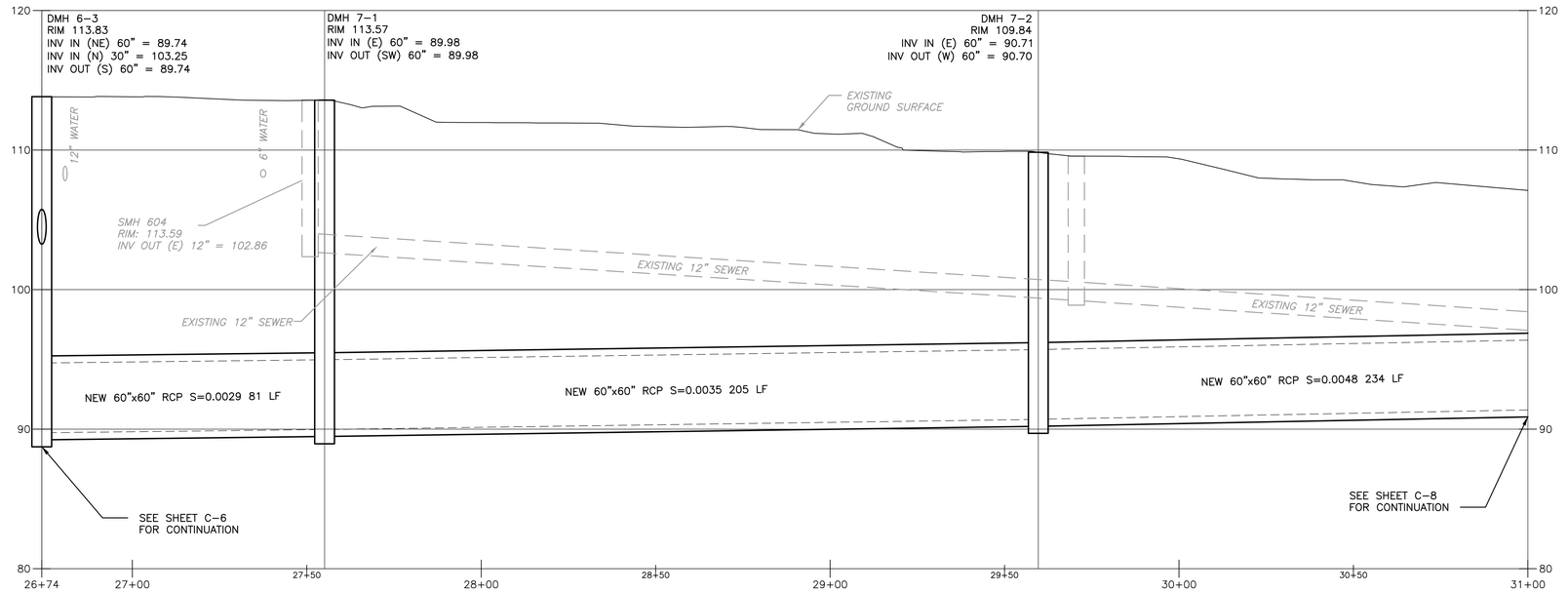
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP_CIVIL 3D WORKING MODEL_AREA 40, BASEMAP]
CWZ003PP_CIVIL 3D WORKING MODEL_OP2, Images: []
Last saved by: SIDANALESS Time: 12/27/2023 5:51:09 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_p11\0552\282899\04 Design Services NML_10%\02 Civil\10 BIM_CADD\C001PLPR_OPTION5.dwg
© 2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

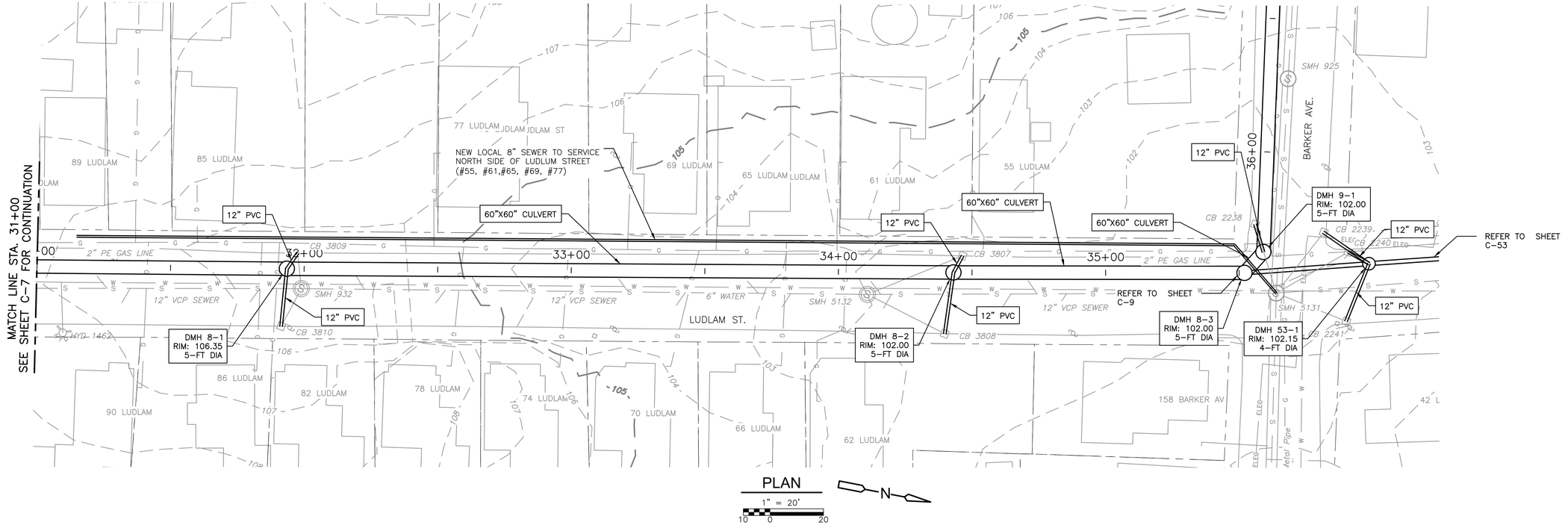
LUDLAM ST

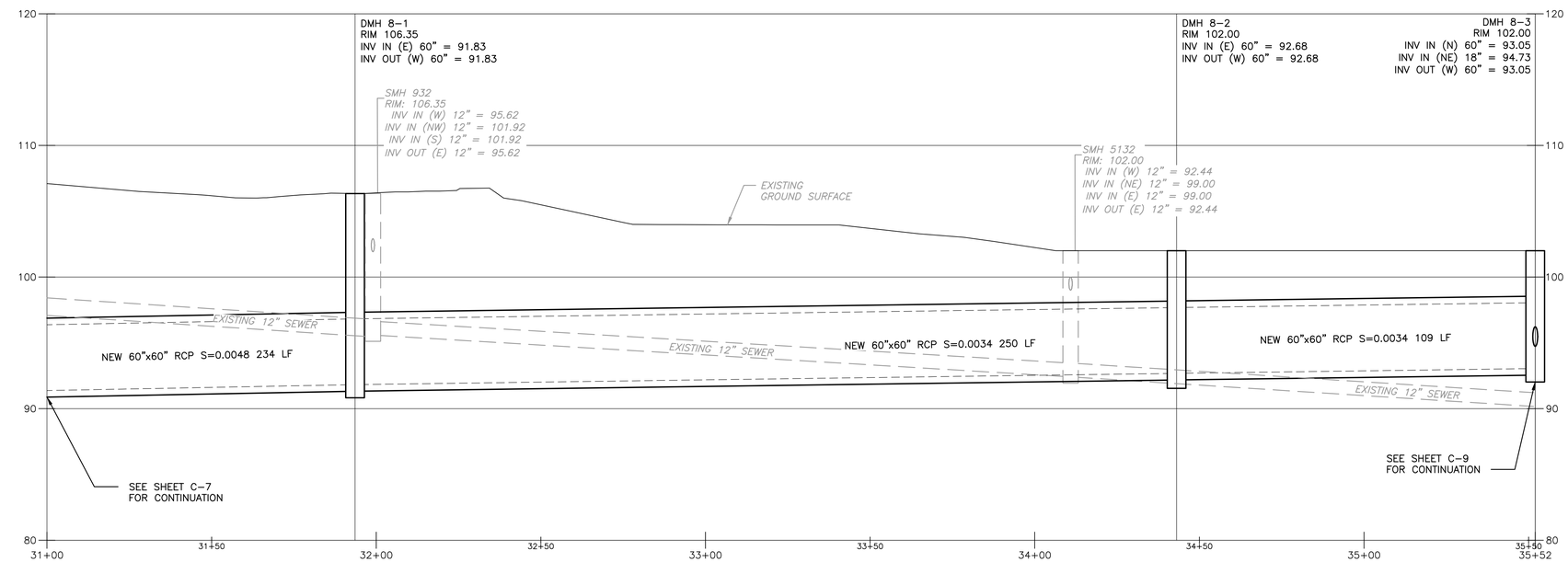
PROJECT NO. 0552-282899
FILE NAME: C007PLPR

SHEET NO.
C-7

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREY'S, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_OP2, CWZ003PP_CIVIL 3D WORKING MODEL_AREA 40, BASEMAP] Images: []
Last saved by: SIDANALESS Time: 12/27/2023 6:26:35 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_pl1\0552\282899\04 Design Services NM_10ft\02 Civil\10 BIM_CADD\C001PLPR_OPTION5.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.





PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

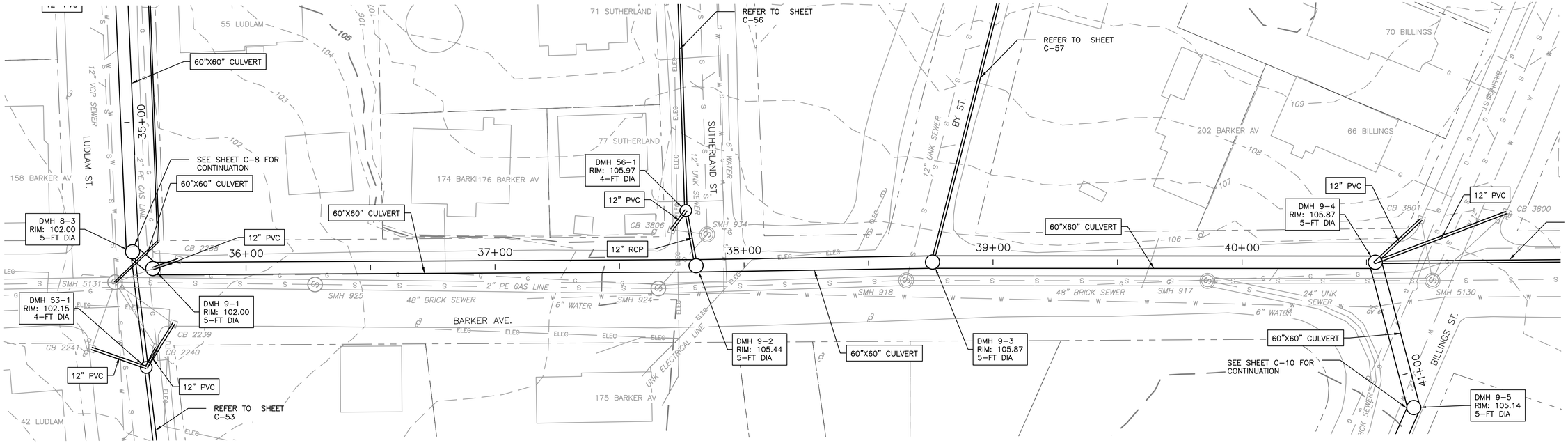
LUDLAM ST

PROJECT NO. 0552-282899
FILE NAME: C008PLPR

SHEET NO.
C-8

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREY'S, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_OP2, CWZ003PP_CIVIL 3D WORKING MODEL_AREA 40, BASEMAP] Images: []
Last saved by: SIDANALESS Time: 12/27/2023 6:54:19 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_p11\0552\282899\04 Design Services NM_108%\02 Civil\10 BIM_CADD\C001PLPR_OPTION5.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

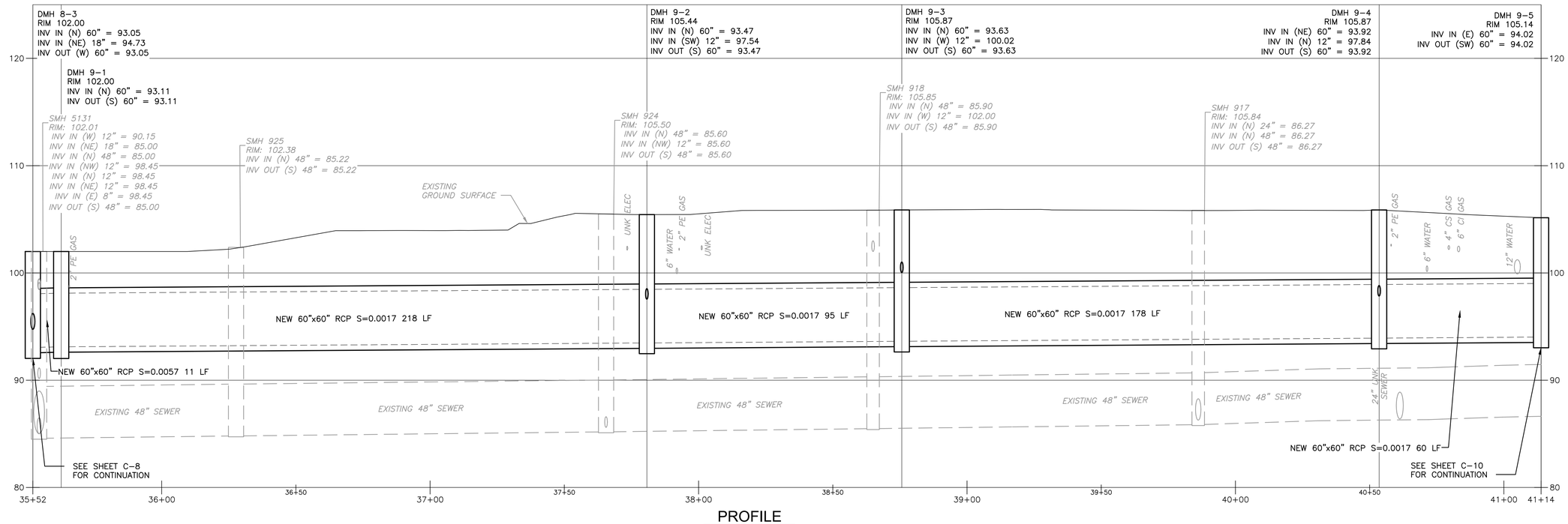


PLAN

1" = 20'

10 0 20

N



PROFILE

1" = 20' VERT: 1" = 5'

10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

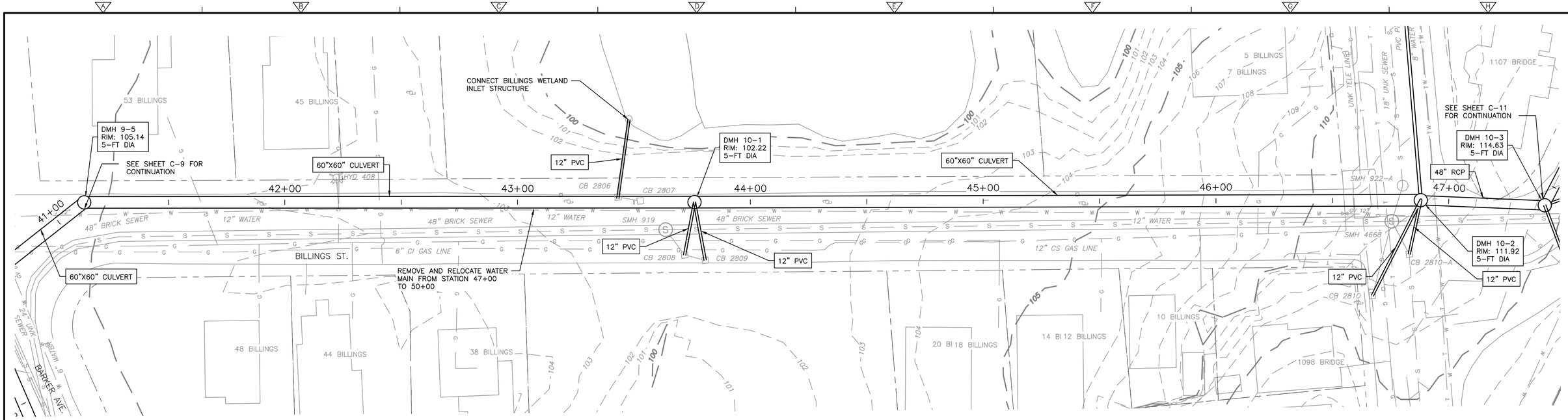
BARKER AVE

PROJECT NO. 0552-282899
FILE NAME: C009PLPR

SHEET NO.
C-9

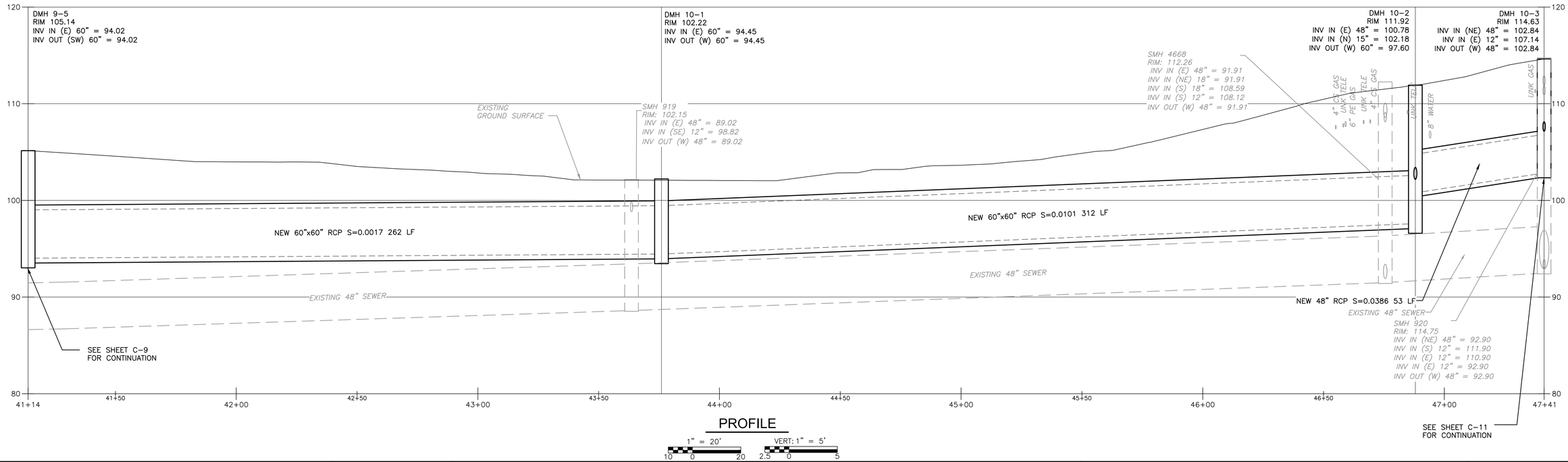
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREY'S, CEP003ST_EX GAS LINE, CWZ003PP_CIVIL 3D WORKING MODEL_AREA 40, BASEMAP] Images: []
Last saved by: GANJIV Time: 11/23/2023 2:53:46 PM
C:\pw_p11\GANJIV\d3611175\C001PLPR_OPTION4.dwg
© 2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN
1" = 20'
10 0 20

N



PROFILE
1" = 20' VERT: 1" = 5'
10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

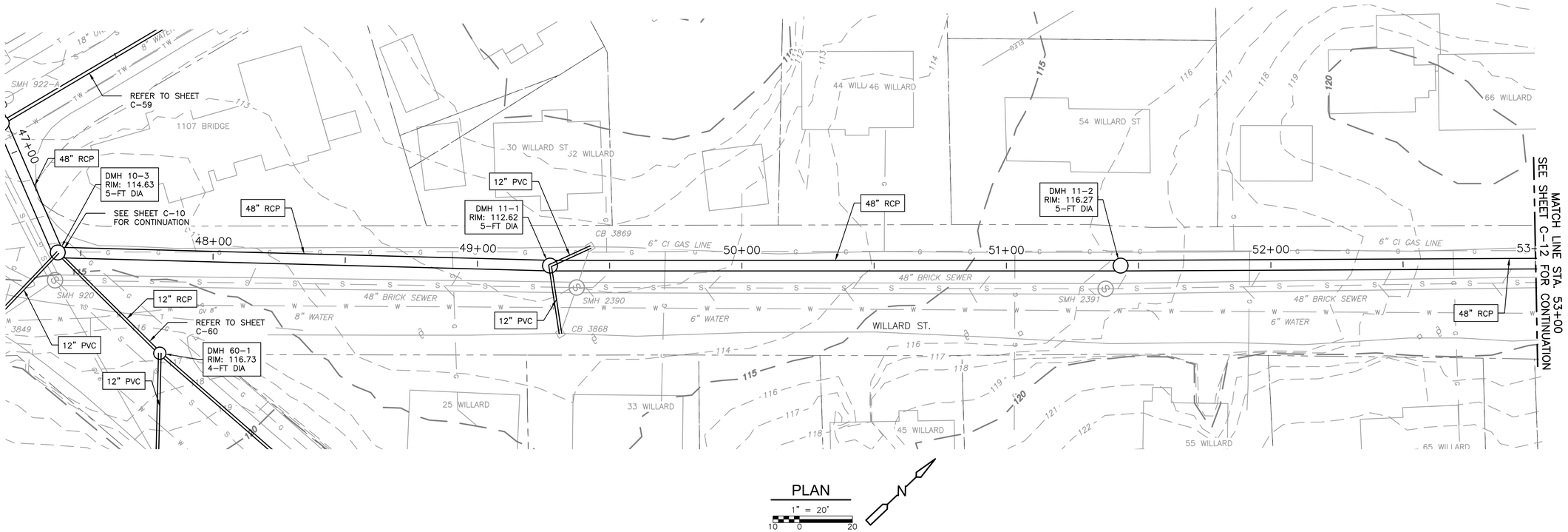
BILLINGS ST

PROJECT NO. 0552-282899
FILE NAME: C010PLPR

SHEET NO.
C-10

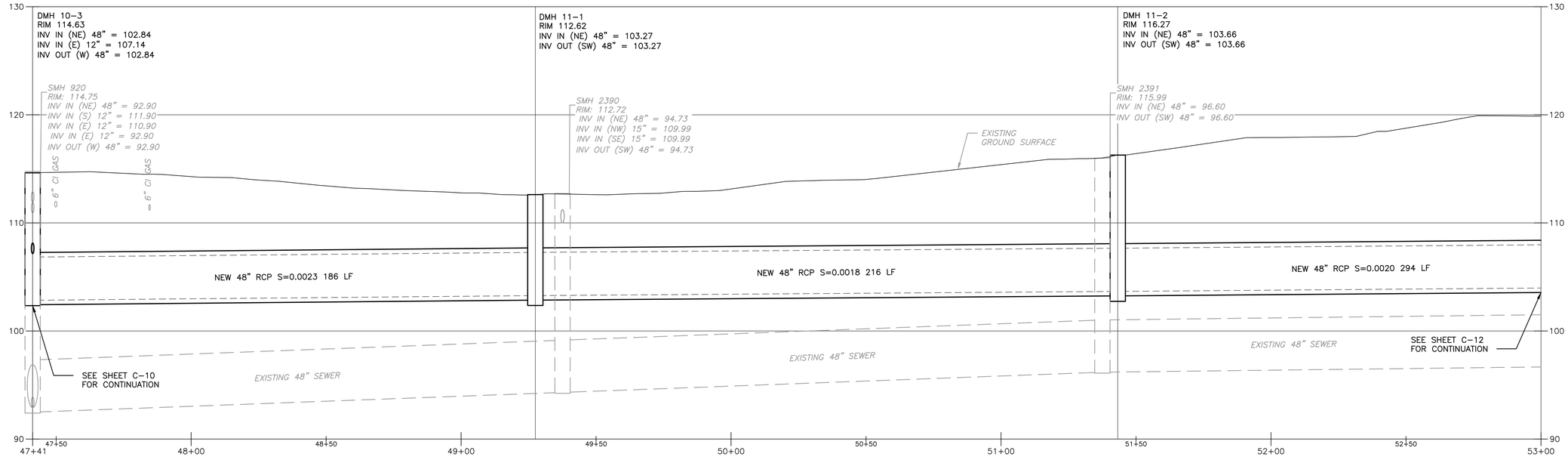
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_OP2, CWZ003PP_CIVIL 3D WORKING MODEL_AREA 40, BASEMAP] Images: []
Last saved by: SIDANALESS Time: 12/27/2023 7:09:15 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_p11\0552\282899\04 Design Services NM_10ft\02 Civil\10 BIM_CADD\C001PLPR_OPTION5.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

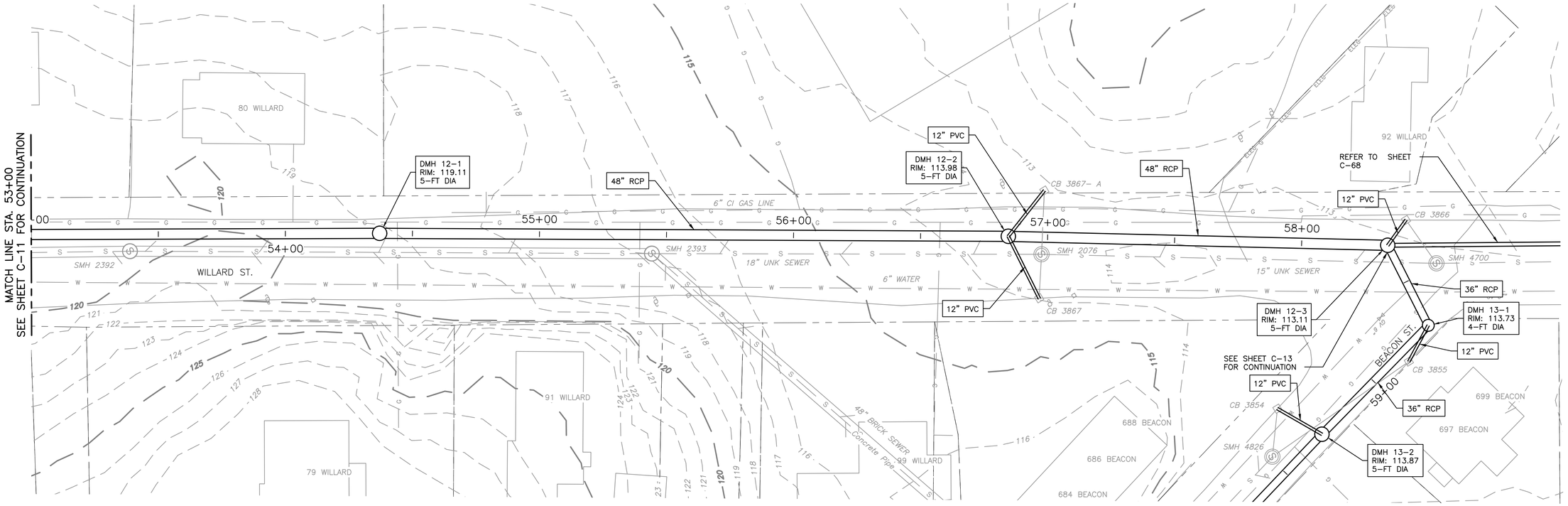
WILLARD ST

PROJECT NO. 0552-282899
FILE NAME: C011PLPR

SHEET NO.
C-11

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_OP2, CWZ003PP_CIVIL 3D WORKING MODEL_AREA 40, BASEMAP] Images: []
Last saved by: SIDANALESS Time: 12/27/2023 7:37:26 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_p11\0552\282899\04 Design Services NM_108\02 Civil\10 BIM_CADD\C001PLPR_OPTION5.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

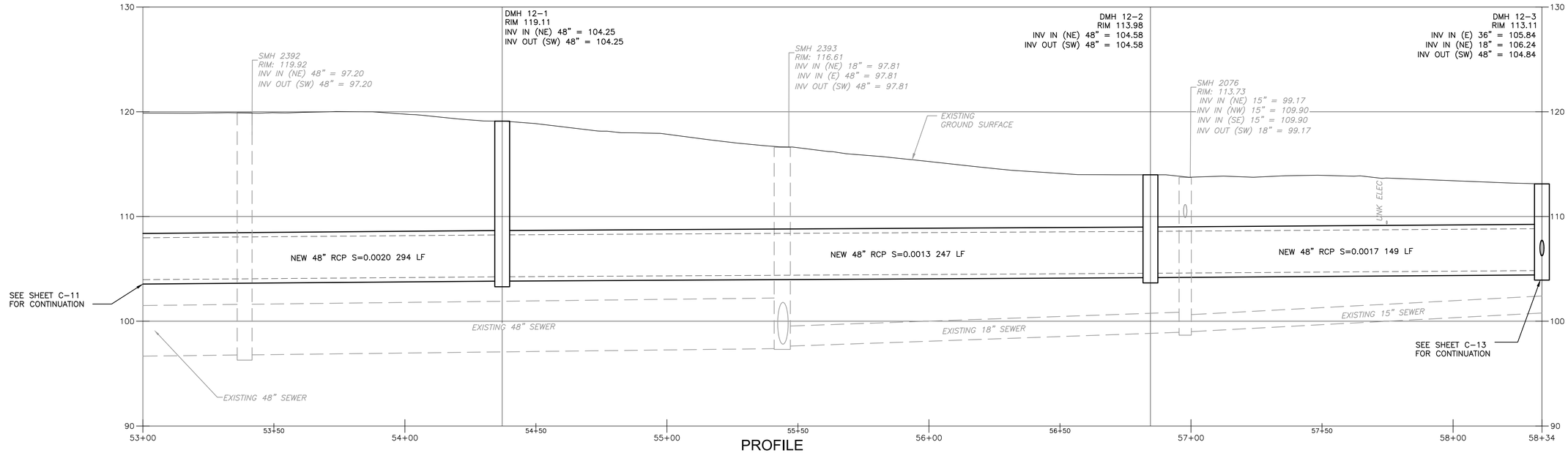


PLAN

1" = 20'

10 0 20

N



PROFILE

1" = 20' VERT: 1" = 5'

10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

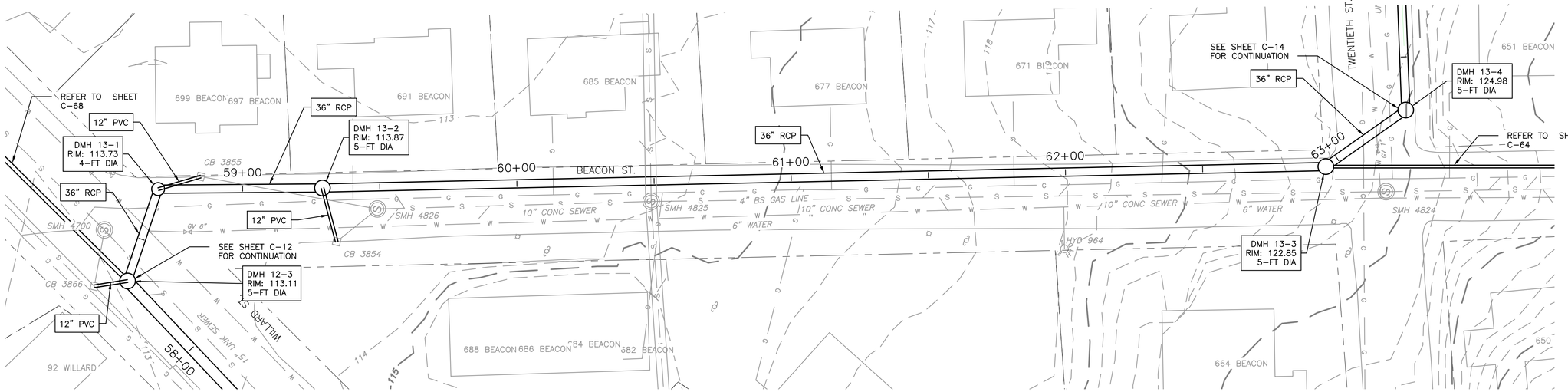
WILLARD ST

PROJECT NO. 0552-282899
FILE NAME: C012PLPR

SHEET NO.
C-12

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_OP2, CWZ003PP_CIVIL 3D WORKING MODEL_AREA 40, BASEMAP] Images: []
Last saved by: SIDANALESS Time: 12/27/2023 7:46:17 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_p11\0552\282899\04 Design Services NM_10%\02 Civil\10 BIM_CADD\COOPLPR_OPTION5.dwg
© 2023 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

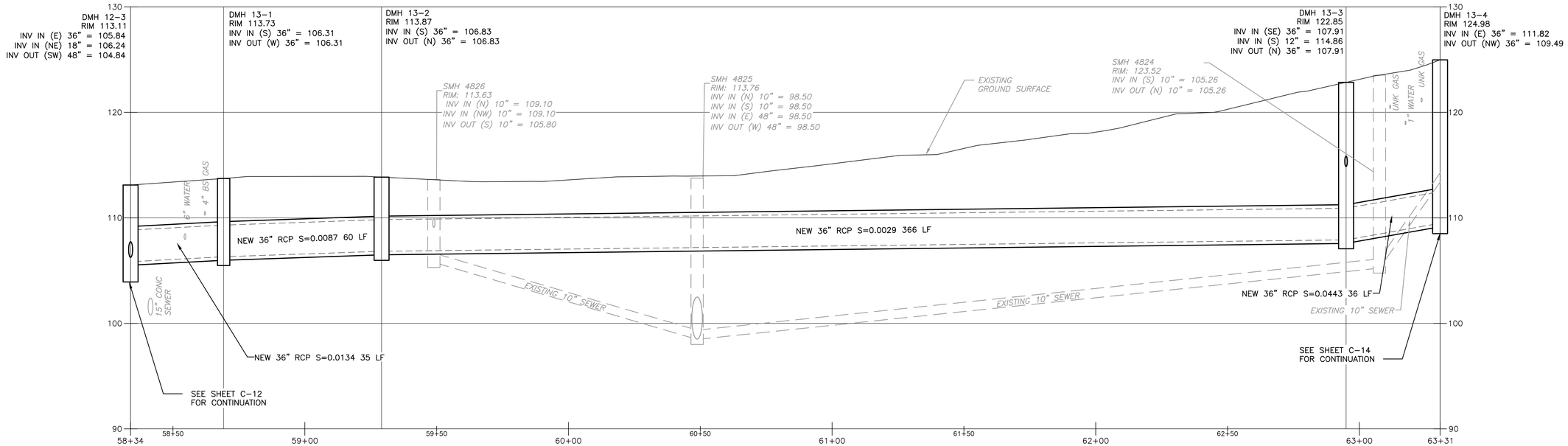


PLAN

1" = 20'

10 0 20

N



PROFILE

1" = 20'

10 0 20

VERT: 1" = 5'

2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

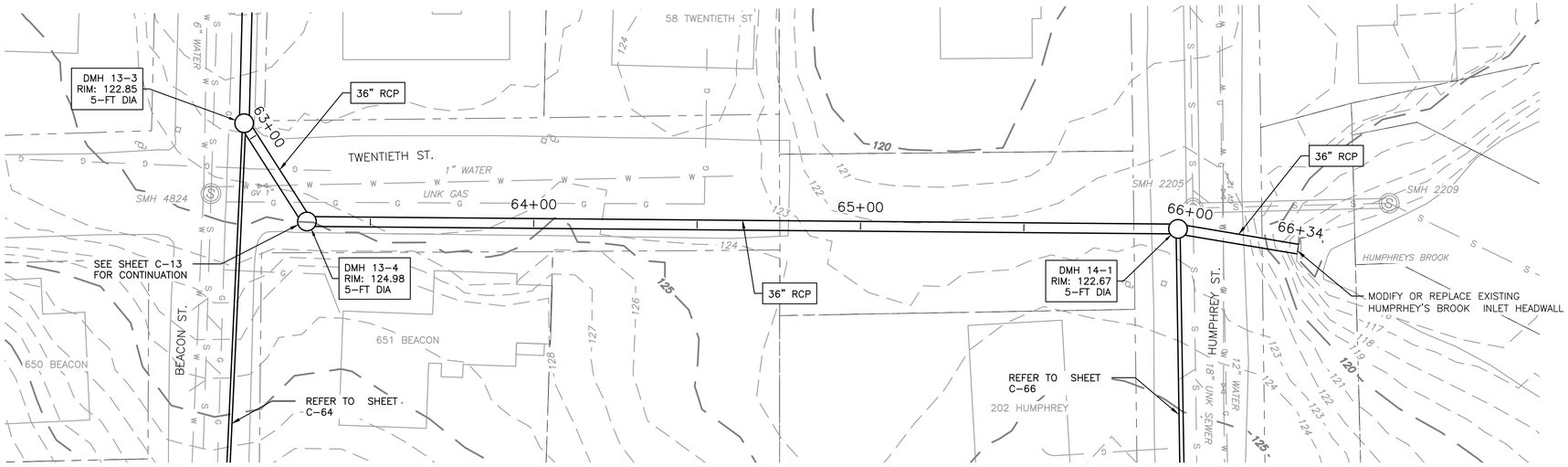
BEACON ST

PROJECT NO. 0552-282899
FILE NAME: C013PLPR

SHEET NO.
C-13

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREY'S, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_OP2, CWZ003PP_CIVIL 3D WORKING MODEL_AREA 40, BASEMAP]
Images: []
Last saved by: SIDANALESS Time: 12/27/2023 8:14:32 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_p11\0552\282899\04 Design Services NM_10#\02 Civil\10 BIM_CADD\C001PLPR_OPTION5.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

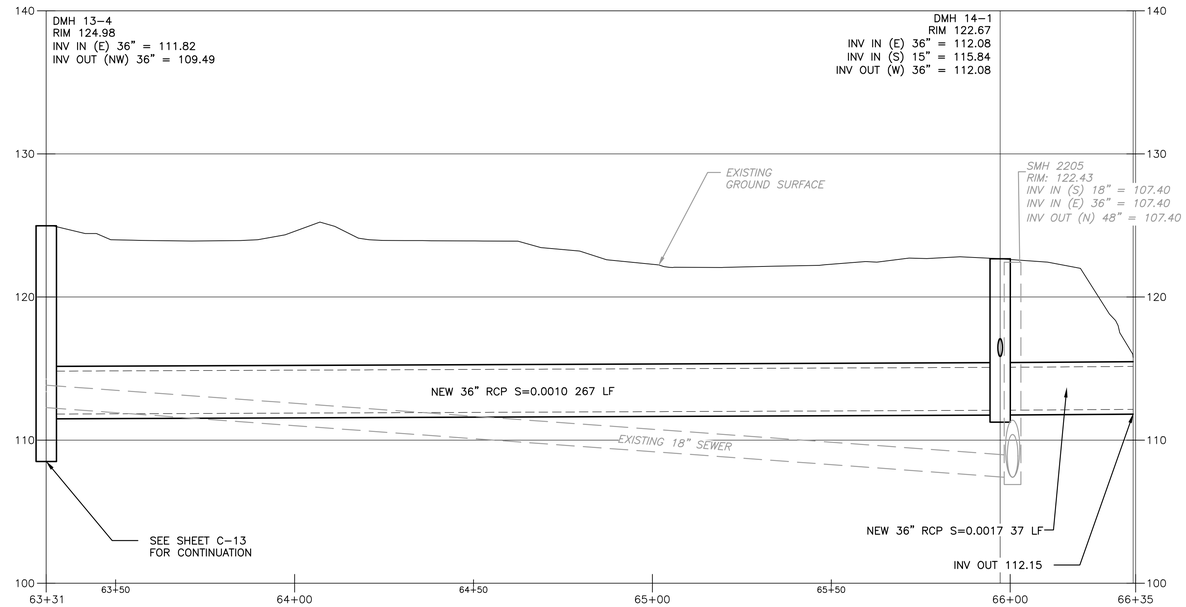


PLAN

1" = 20'

10 0 20

N



PROFILE

1" = 20' VERT: 1" = 5'

10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: DECEMBER 2023

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

TWENTIETH ST

PROJECT NO. 0552-282899
FILE NAME: C014PLPR

SHEET NO.
C-14

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREY'S, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CEP008PP-EXTENET, CWZ003PP_CIVIL 3D WORKING MODEL_OP2, CWZ003PP_CIVIL 3D WORKING MODEL_AREA 40, BASEMAP] Images: []
Last saved by: SIDANALESS Time: 12/27/2023 3:56:39 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_pl1\0552\282899\04 Design Services NM_10ft\02 Civil\10 BIM_CADD\C001PLPR_OPTION4.dwg
©2023 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

Appendix E Drawings: Phase 2 – Sewer Area 40 Separation Branches

LOWELL REGIONAL WASTEWATER UTILITY (LRWWU)

COPY NO. ____

CITY OF LOWELL, MASSACHUSETTS
CSO SEWER SEPARATION PROGRAM

PHASE 2A - SEWER AREA 40 SEPARATION BRANCHES

PRELIMINARY DESIGN DRAFT

LOWELL CITY MANAGER

THOMAS A. GOLDEN, JR.

LOWELL CITY COUNCILORS

SOKHARY CHAU, MAYOR
JOHN DRINKWATER
ERIK GITSCHIER
WAYNE JENNESS
JOHN J. LEAHY
RITA MERCIER
VESNA NUON
COREY ROBINSON
DANIEL ROURKE
KIMBERLY SCOTT
PAUL RATHA YEM

LRWWU EXECUTIVE DIRECTOR

AARON FOX

LRWWU ENGINEERING MANAGER

EVAN WALSH



LOCATION PLAN

30% DRAWINGS
NOT FOR CONSTRUCTION
JULY 2024

THESE DRAWING PACKAGES ARE FOR THE PURPOSE OF IDENTIFYING PRELIMINARY ROUTING FOR MAINLINE AND LATERAL PIPES. NOT ALL SIZES SHOWN REFLECT THE RESULTS OF HYDRAULIC MODELING AND ARE SUBJECT TO CHANGE. SIZING IS TO BE UPDATED AND FINALIZED DURING FINAL DESIGN.

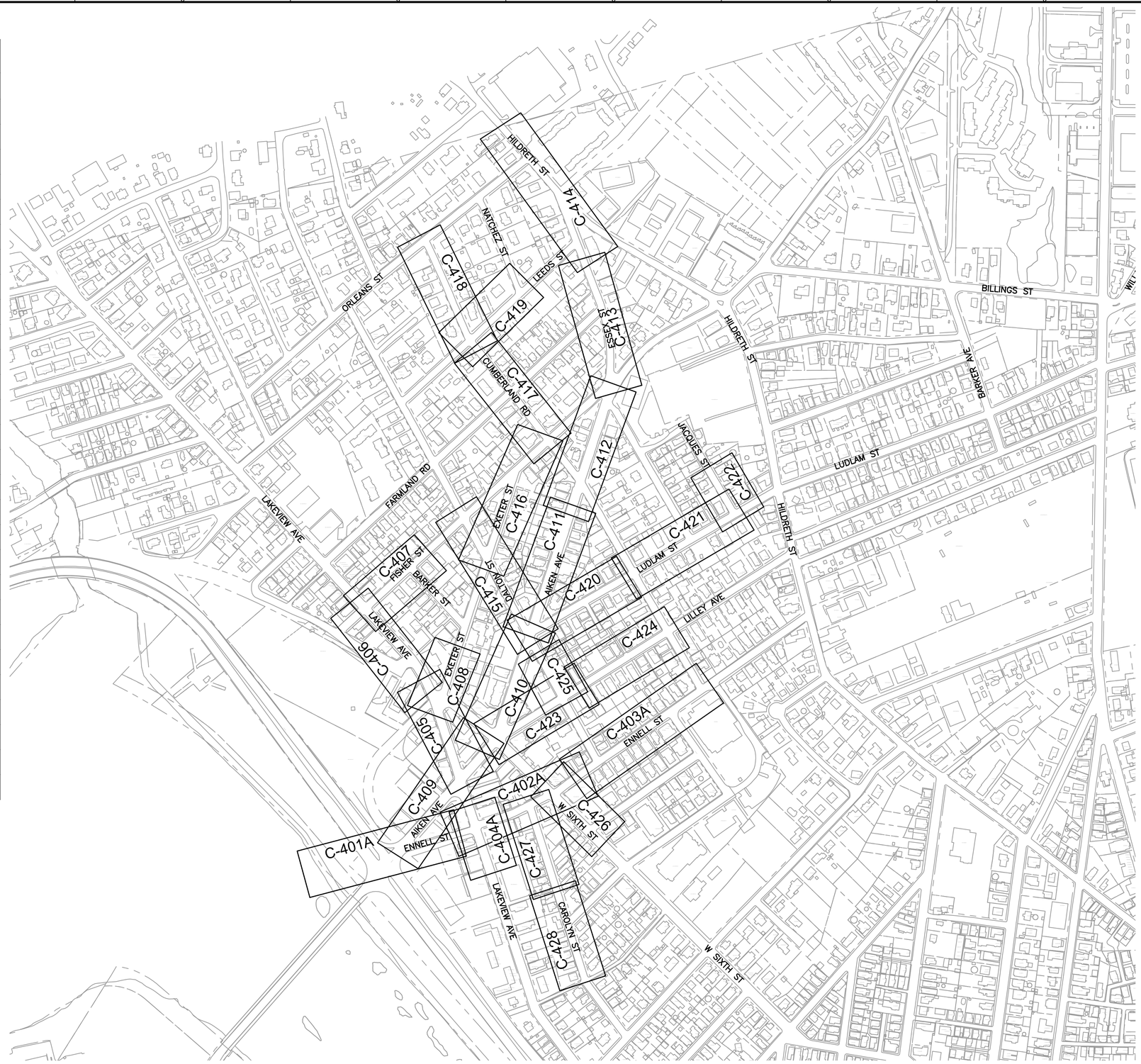
CDM Smith

MANCHESTER, NEW HAMPSHIRE

Water *Environment* *Transportation* *Energy* *Facilities*

PHASE 2A: AREA 40 EXCEPT MAINLINE

PHASE 2A	
SHEET NUMBER	SHEET TITLE
C–401A	ENNELL ST
C–402A	ENNELL ST
C–403A	ENNELL ST
C–404A	LAKEVIEW AVE.
C–405	LAKEVIEW AVE.
C–406	LAKEVIEW AVE.
C–407	FISHER ST
C–408	EXETER ST
C–409	AIKEN AVE
C–410	AIKEN AVE
C–411	AIKEN AVE
C–412	AIKEN AVE
C–413	ESSEX ST
C–414	HILDRETH ST
C–415	DALTON ST
C–416	EXTER ST & FISHER ST
C–417	CUMBERLAND ST
C–418	CUMBERLAND ST
C–419	LEEDS ST
C–420	LUDLAM ST
C–421	LUDLAM ST
C–422	JACQUES ST
C–423	LILLEY AVE.
C–424	LILLEY AVE.
C–425	DALTON ST
C–426	W SIXTH ST
C–427	CAROLYN ST
C–428	CAROLYN ST



REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: JULY 2024

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

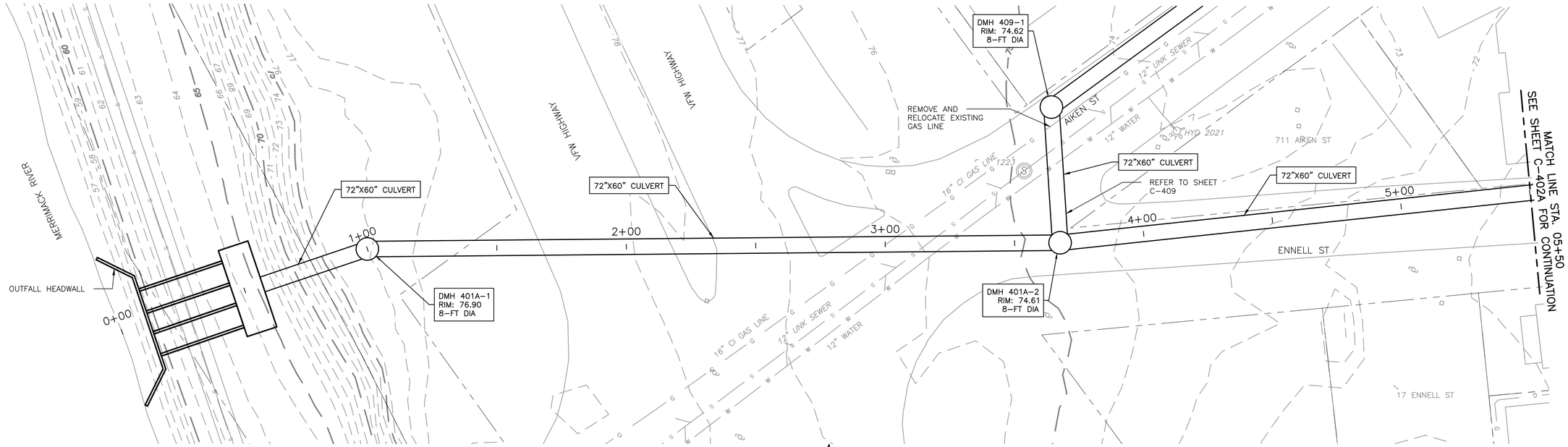
KEY PLAN

PROJECT NO. 0552–282899
FILE NAME: G009INDX.DWG

SHEET NO.
G-9

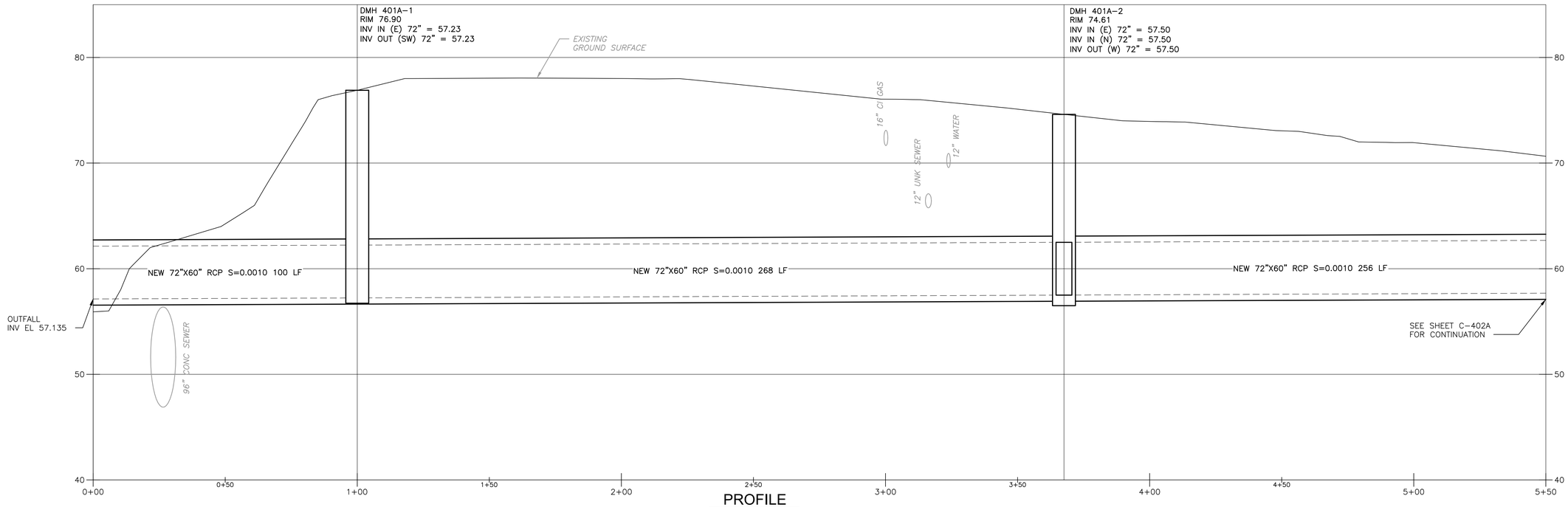
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP003ST_EX GAS LINE, CWZ003PP_CIVIL 3D WORKING MODEL_Trunk Mains, BASEMAP, CWZ003PP_CIVIL 3D WORKING MODEL_AREA 40] Images: []
Last saved by: GANJV Time: 6/14/2024 8:22:17 PM
pw:\\cdmsmith-ac02-pw.bentley.com:pw_p1\0552\282899\04 Design Services NM_10ft\01 General\10 BIM_CADD\G009INDX.dwg
©2024 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: JULY 2024

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

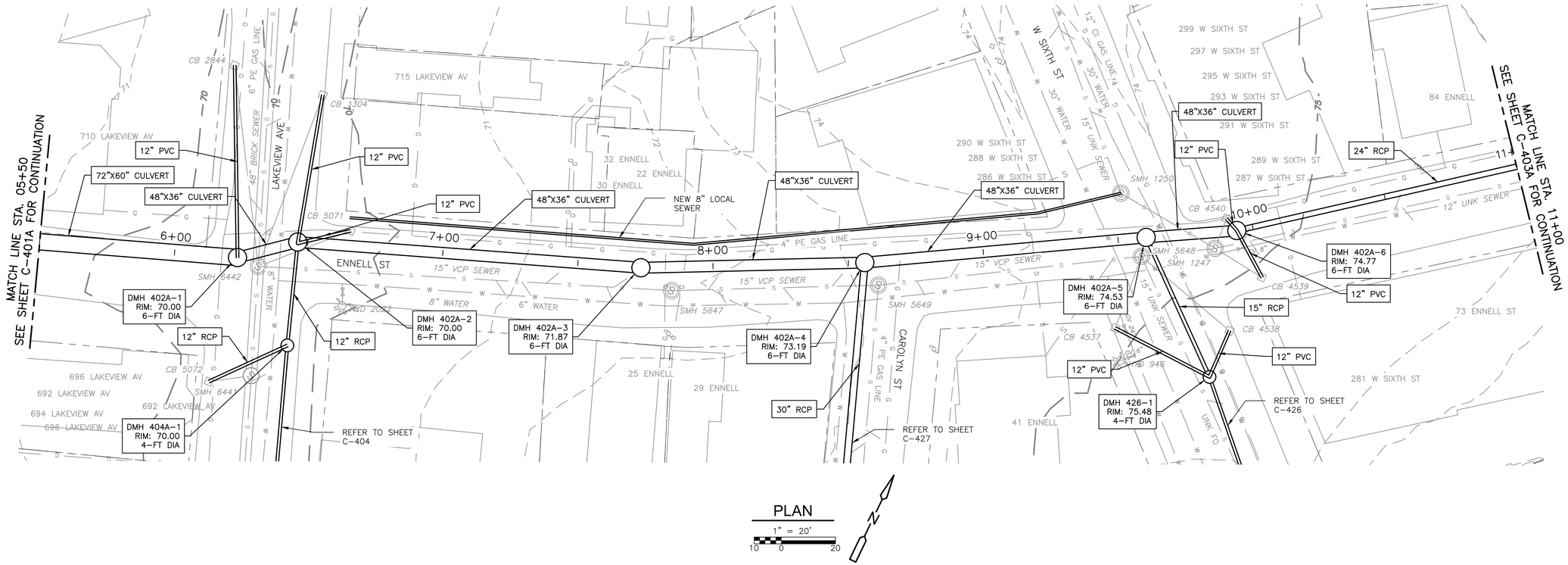
ENNELL ST

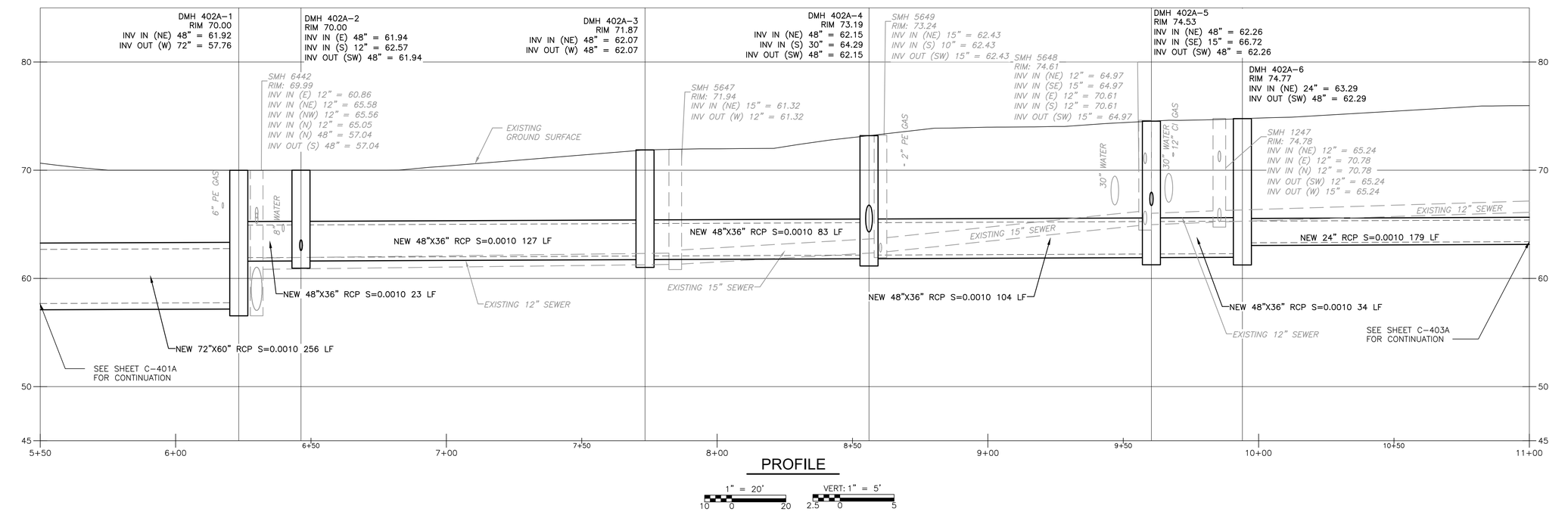
PROJECT NO. 0552-282899
FILE NAME: C401APLPR.DWG

SHEET NO.
C-401A

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_AREA 40, BASEMAP, CEP003ST_EX GAS LINE_Area 40, CWP001ST] Images: []
Last saved by: GANJIV Time: 6/28/2024 7:15:58 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_p110552\282899\04 Design Services NM_10%\02 Civil\10 BIM_CADD\C401PLPR to C413PLPR.dwg
© 2024 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.





REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: JULY 2024

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

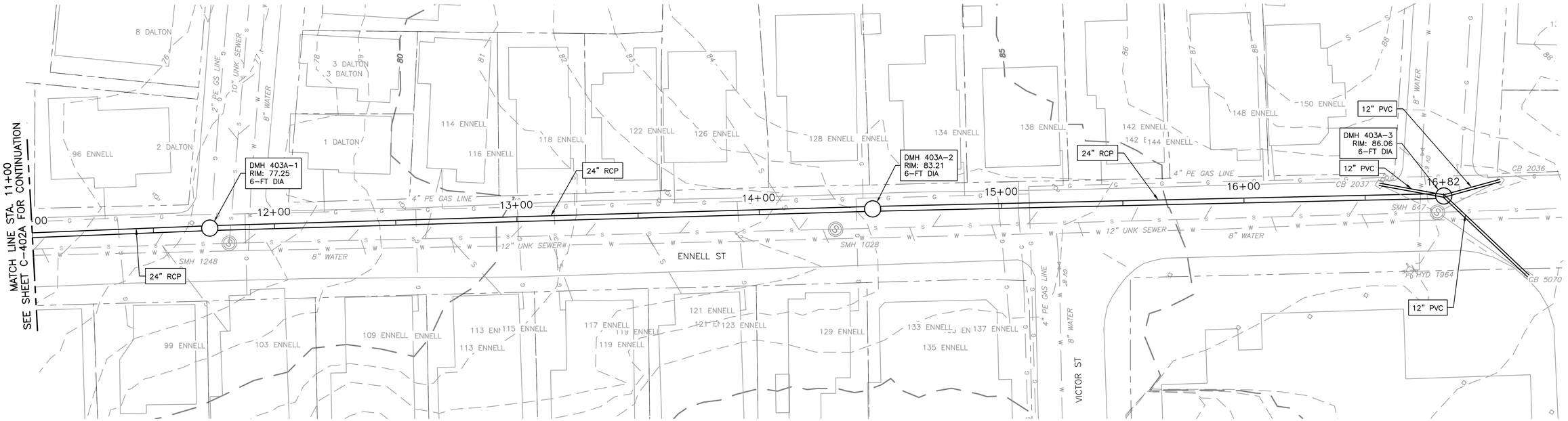
ENNELL ST

PROJECT NO. 0552-282899
FILE NAME: C402APLPR.DWG

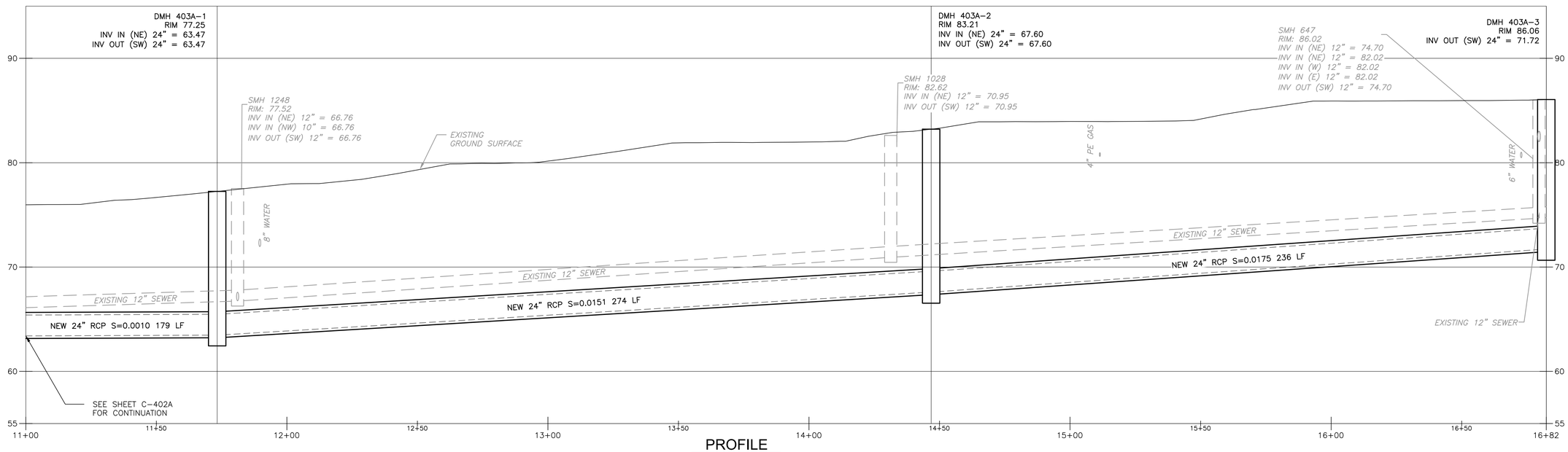
SHEET NO.
C-402A

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_AREA 40, BASEMAP, CEP003ST_EX GAS LINE_Area 40, CWP001ST] Images: []
Last saved by: GANJV Time: 6/28/2024 7:23:28 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_pi\10552\282899\04 Design Services NM_10%\02 Civil\10 BIM_CADD\C401PLPR to C413PLPR.dwg
© 2024 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN
1" = 20'



PROFILE
1" = 20'
VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: JULY 2024

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

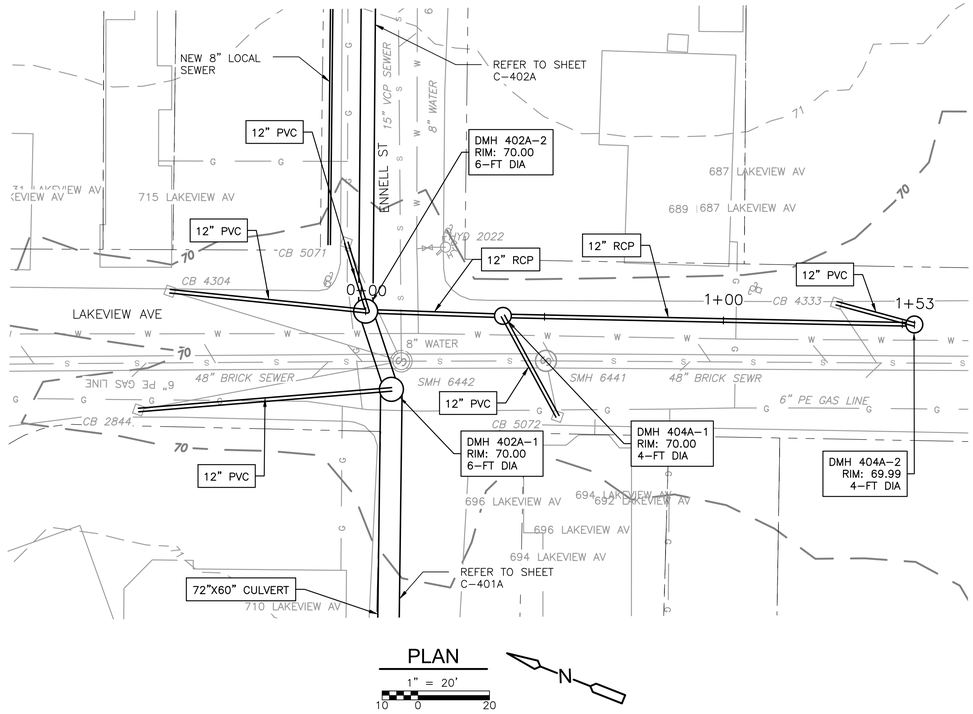
ENNELL ST

PROJECT NO. 0552-282899
FILE NAME: C403APLPR.DWG

SHEET NO.
C-403A

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_AREA 40, BASEMAP, CEP003ST_EX GAS LINE_Area 40] Images: []
Last saved by: SIDANALESS Time: 6/26/2024 6:52:05 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_p11\0552\282899\04 Design Services NM_10ft\02 Civil\10 BIM_CADD\C40 PLPR to C413PLPR.dwg
© 2024 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

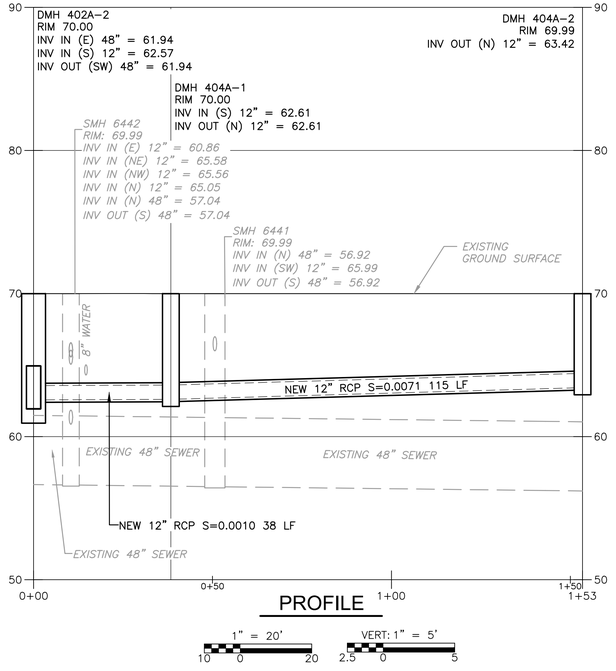


PLAN

1" = 20'

10 0 20

N



PROFILE

1" = 20'

10 0 20

VERT: 1" = 5'

2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: JULY 2024

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

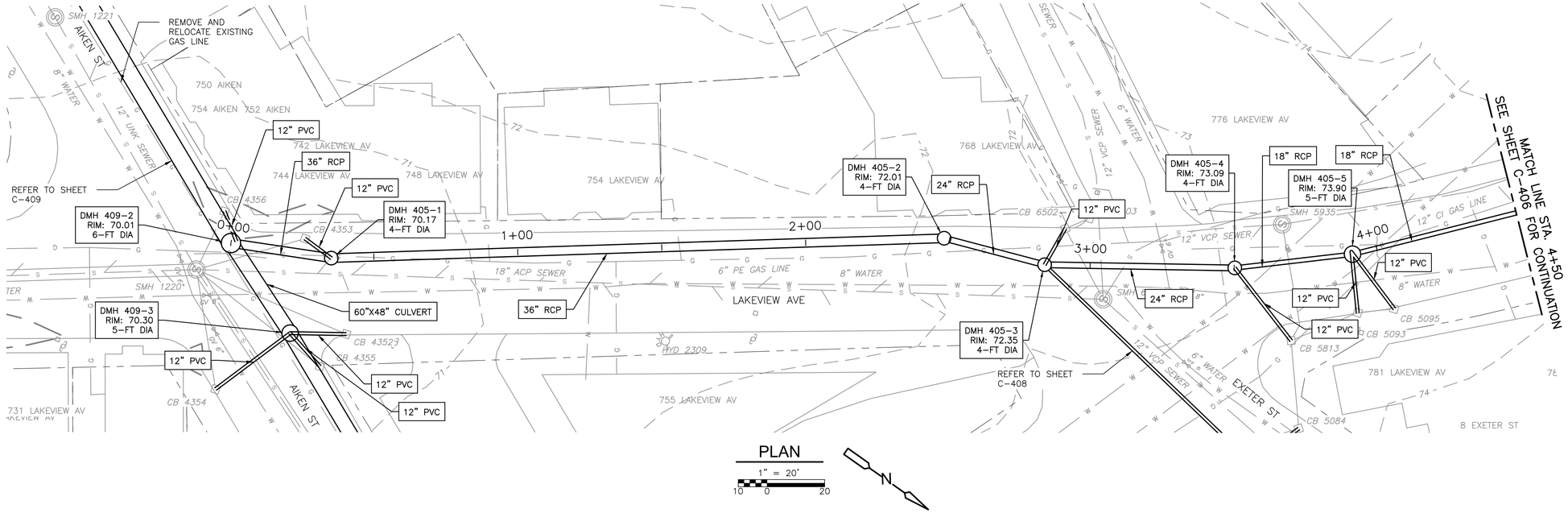
LAKEVIEW AVE

PROJECT NO. 0552-282899
FILE NAME: C404APLPR.DWG

SHEET NO.
C-404A

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_AREA 40, BASEMAP, CEP003ST_EX GAS LINE_Area 40] Images: []
Last saved by: SIDANALESS Time: 6/26/2024 4:13:18 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_p11\0552\282899\04 Design Services NM_10%\02 Civil\10 BIM_CADD\C40 PLPR to C413PLPR.dwg
© 2024 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

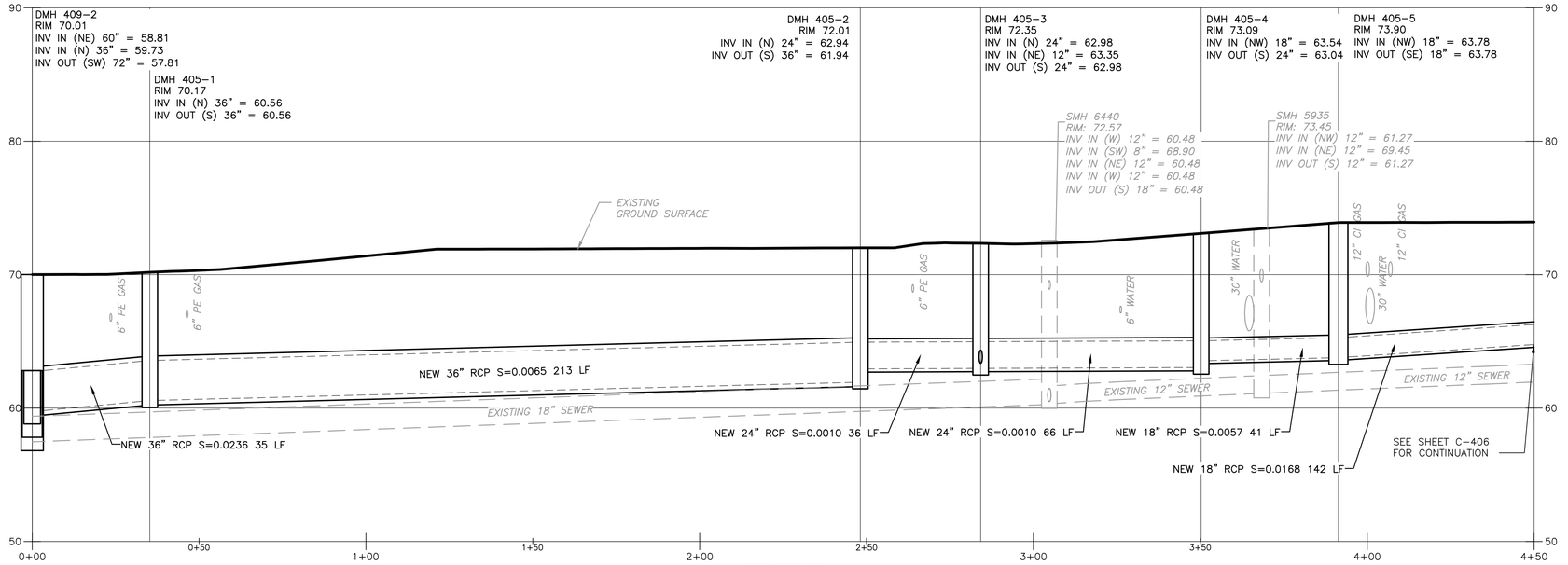


PLAN

1" = 20'

10 0 20

N



PROFILE

1" = 20'

10 0 20

VERT: 1" = 5'

2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: JULY 2024

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

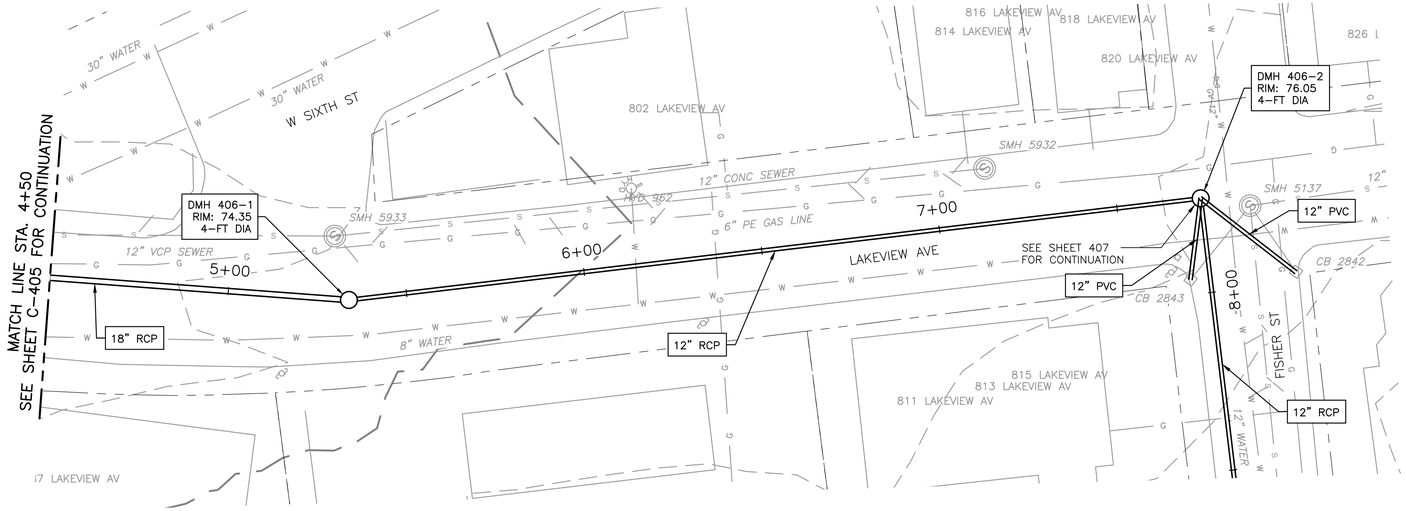
LAKEVIEW AVE

PROJECT NO. 0552-282899
FILE NAME: C405PLPR.DWG

SHEET NO.
C-405

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_AREA 40, BASEMAP, CEP003ST_EX GAS LINE_Area 40, CWP001ST] Images: []
Last saved by: GANJV Time: 6/28/2024 5:48:16 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_pi\10552\282899\04 Design Services NM_10%\02 Civil\10 BIM_CADD\C401PLPR to C413PLPR.dwg
© 2024 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

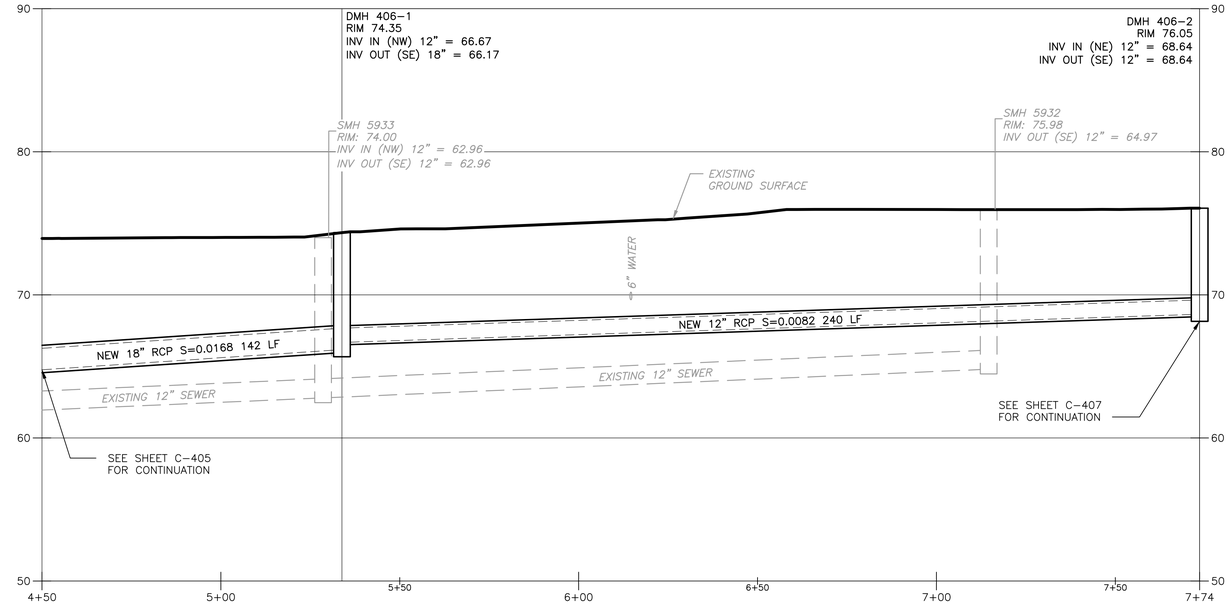


PLAN

1" = 20'

10 0 20

N



PROFILE

1" = 20'

10 0 20

VERT: 1" = 5'

2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: JULY 2024

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

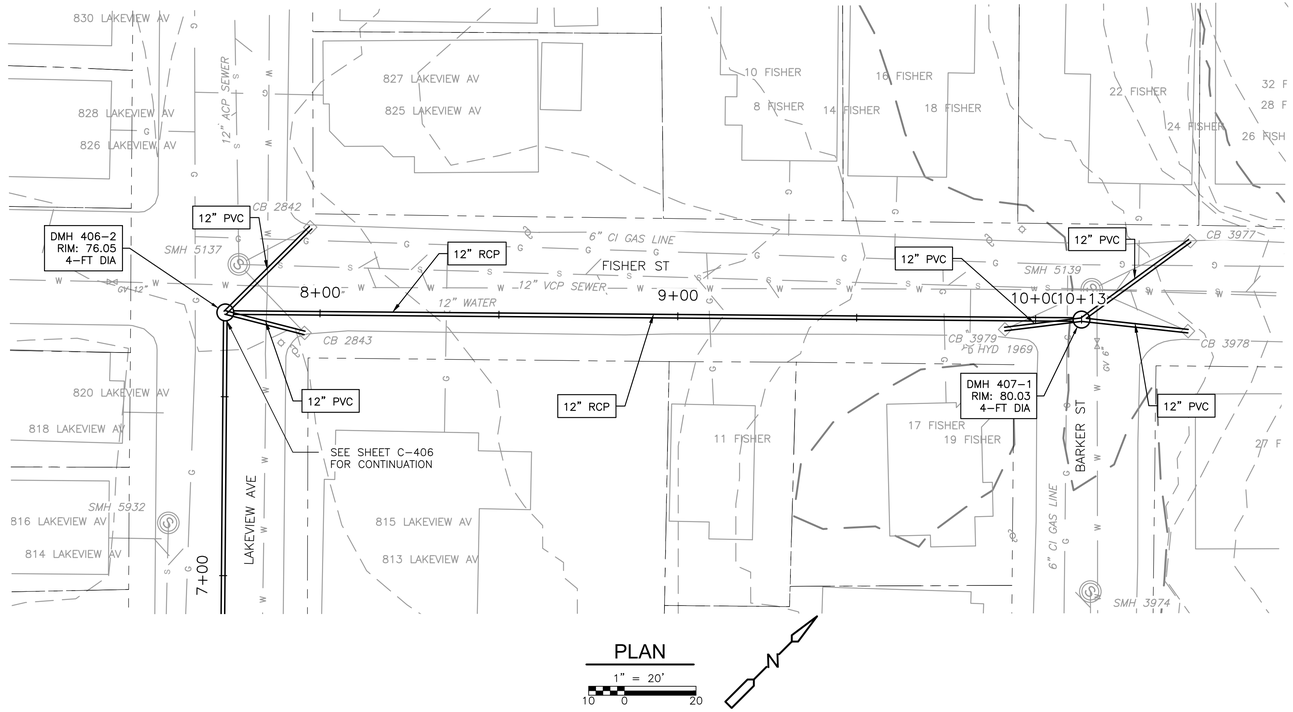
LAKEVIEW AVE

PROJECT NO. 0552-282899
FILE NAME: C406PLPR.DWG

SHEET NO.
C-406

30% SUBMITTAL - NOT FOR CONSTRUCTION

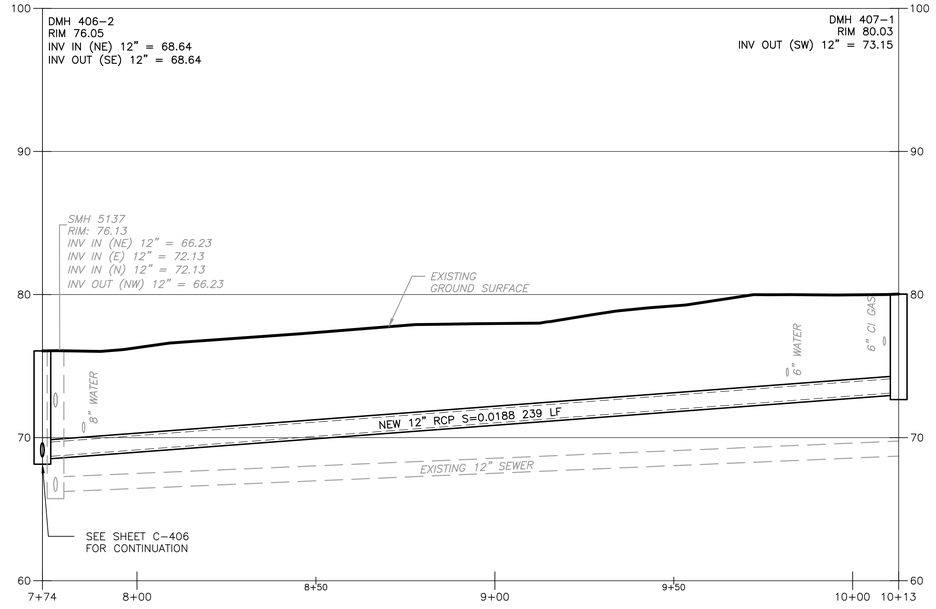
XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREY'S, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_AREA 40, BASEMAP, CEP003ST_EX GAS LINE_Area 40] Images: []
Last saved by: GANJV Time: 6/14/2024 7:11:39 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_pl1\0552\282899\04 Design Services NM_108\02 Civil\10 BIM_CADD\C001PLPR_OPTION4.dwg
©2024 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20'

10 0 20

VERT: 1" = 5'

2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: JULY 2024

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

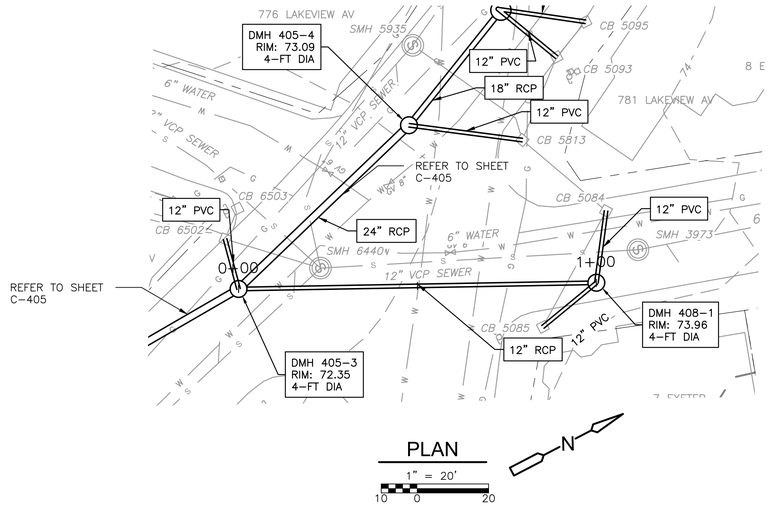
FISHER ST

PROJECT NO. 0552-282899
FILE NAME: C407PLPR.DWG

SHEET NO.
C-407

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_AREA 40, BASEMAP, CEP003ST_EX GAS LINE_Area 40, CWP001ST] Images: []
Last saved by: GANJV Time: 6/28/2024 6:02:44 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_pi\10552\282899\04 Design Services NM_10%\02 Civil\10 BIM_CADD\C401PLPR to C413PLPR.dwg
© 2024 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

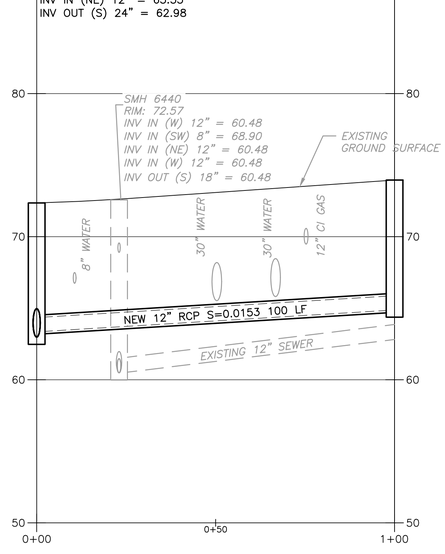


PLAN

1" = 20'

10 0 20

N



PROFILE

1" = 20'

10 0 20

VERT: 1" = 5'

2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: JULY 2024

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

EXETER ST

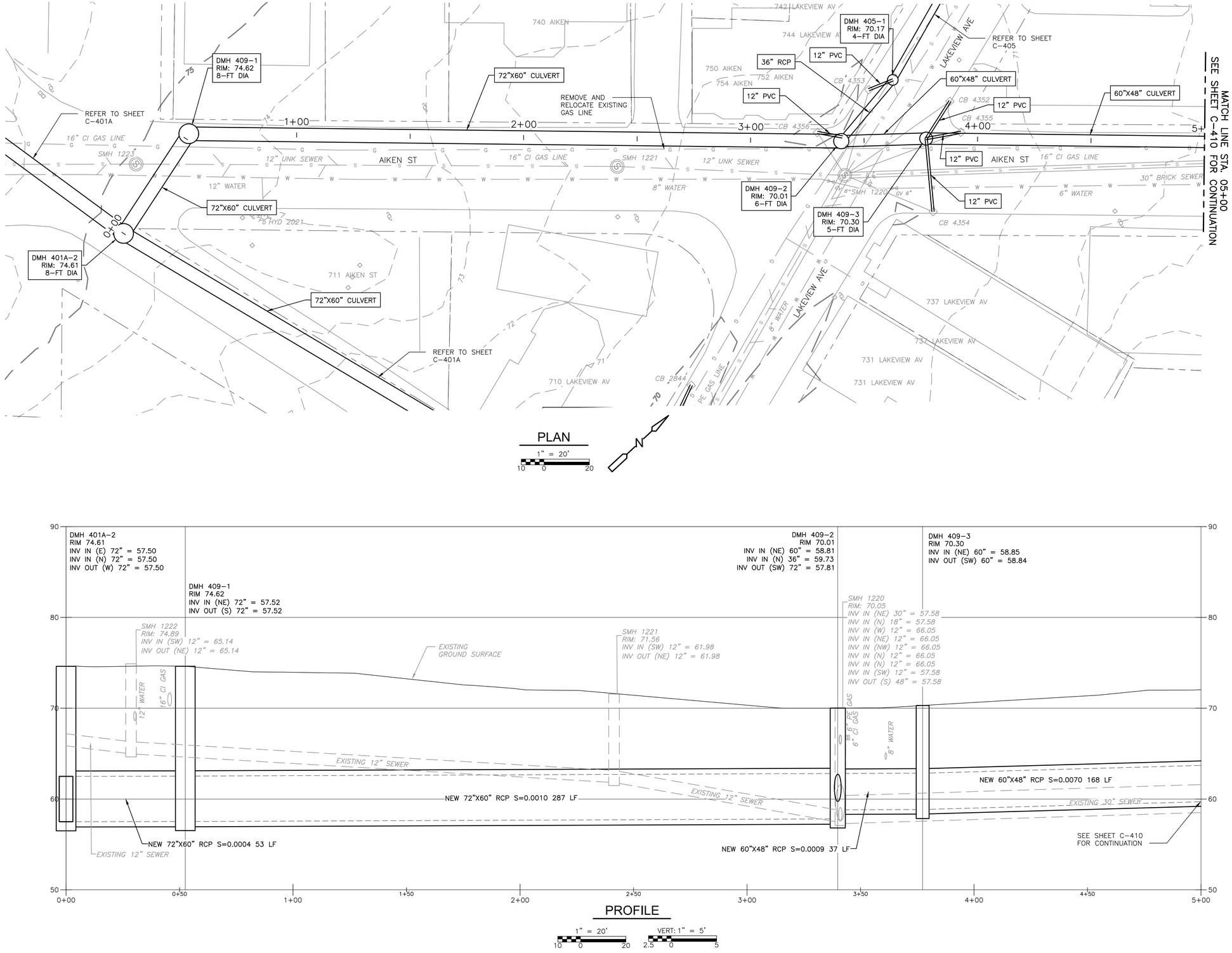
PROJECT NO. 0552-282899
FILE NAME: C408PLPR.DWG

SHEET NO.
C-408

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436_CEP005PP_EX SEWER, CEP005PP, EX WATER, CEP002ST_EX DRAIN, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_AREA 40, BASEMAP, CEP003ST_EX GAS LINE_Area 40, CWP001ST] Images: []
Last saved by: GANJV Time: 6/28/2024 6:11:01 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_pi\10552\28289904 Design Services NM_10%\02 Civil\10 BIM_CADD\C401PLPR to C413PLPR.dwg
© 2024 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_AREA 40, BASEMAP, CEP003ST_EX GAS LINE_Area 40, CWP001ST] Images: []
Last saved by: GANJV Time: 6/28/2024 6:11:01 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_pi\10552\282899\04 Design Services NM_10%\02 Civil\10 BIM_CADD\C401PLPR to C413PLPR.dwg
© 2024 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20

N

PROFILE

1" = 20' VERT: 1" = 5'

10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: JULY 2024

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

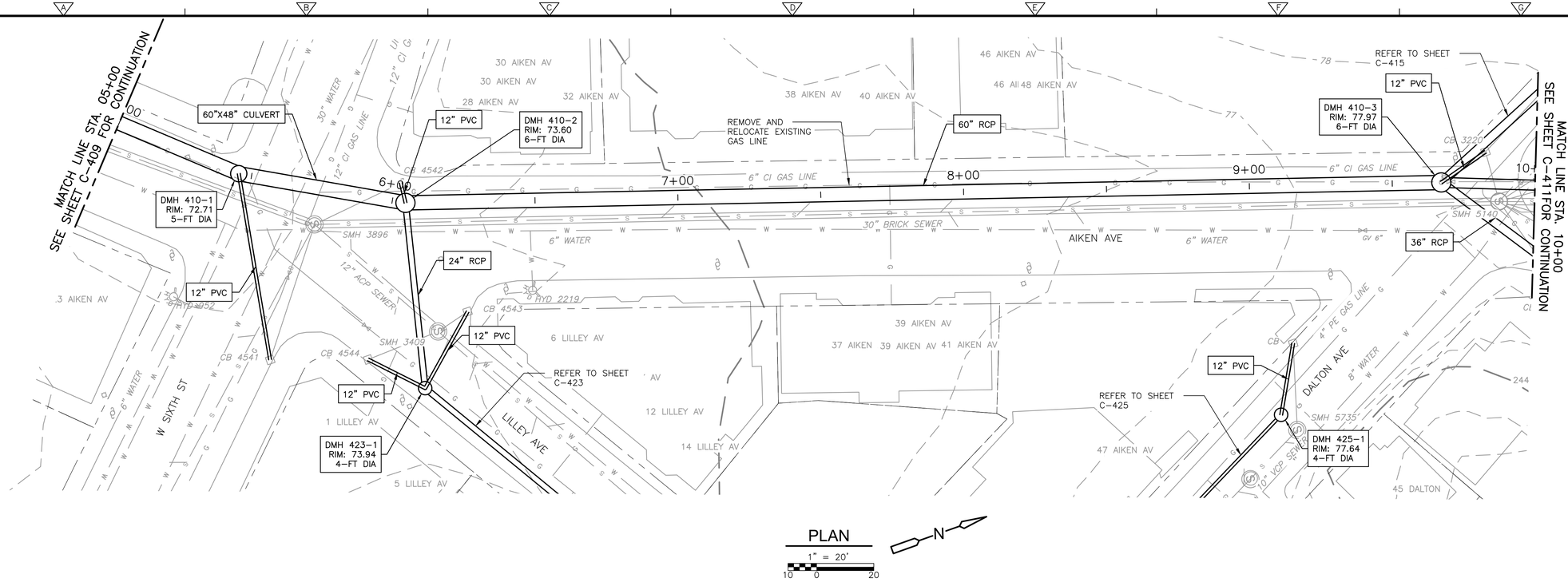
AIKEN ST

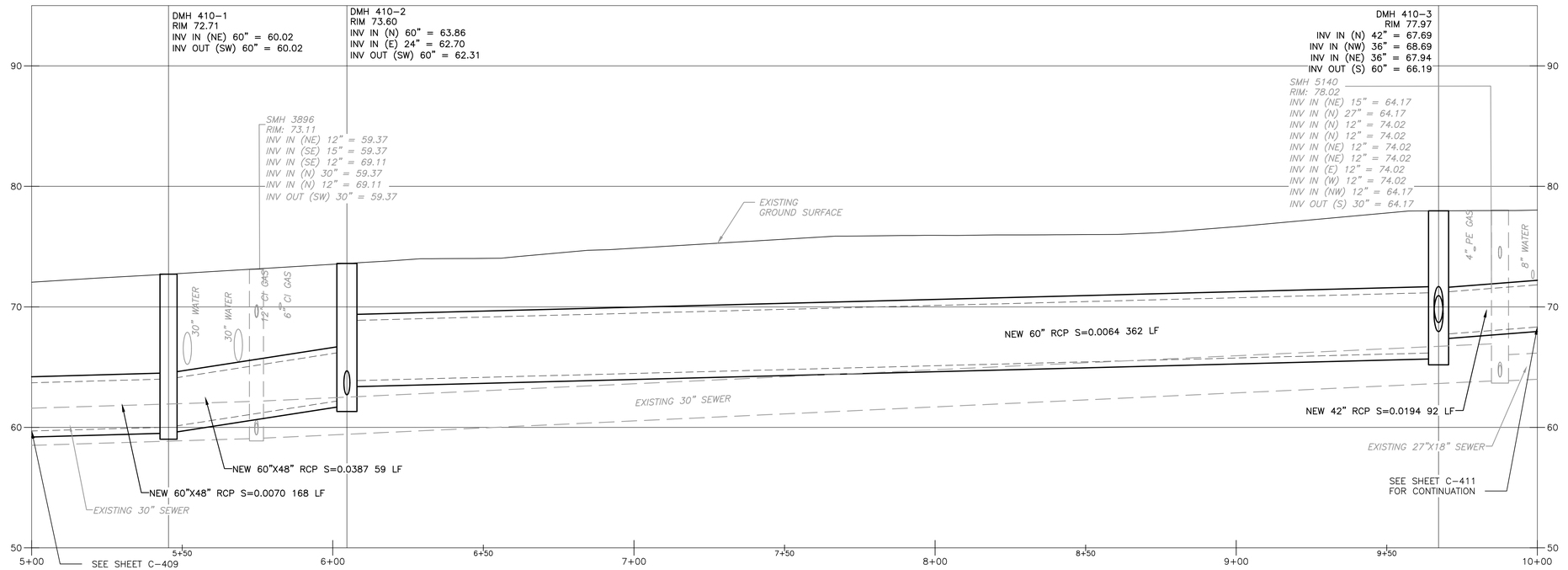
PROJECT NO. 0552–282899
FILE NAME: C409PLPR.DWG

SHEET NO.
C-409

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_AREA 40, BASEMAP, CEP003ST_EX GAS LINE_Area 40, CWP001ST] Images: []
Last saved by: GANJV Time: 6/28/2024 6:29:22 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_pl\10552\282899\04 Design Services NM_10%\02 Civil\10 BIM_CADD\C401PLPR to C413PLPR.dwg
© 2024 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.





REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: JULY 2024

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

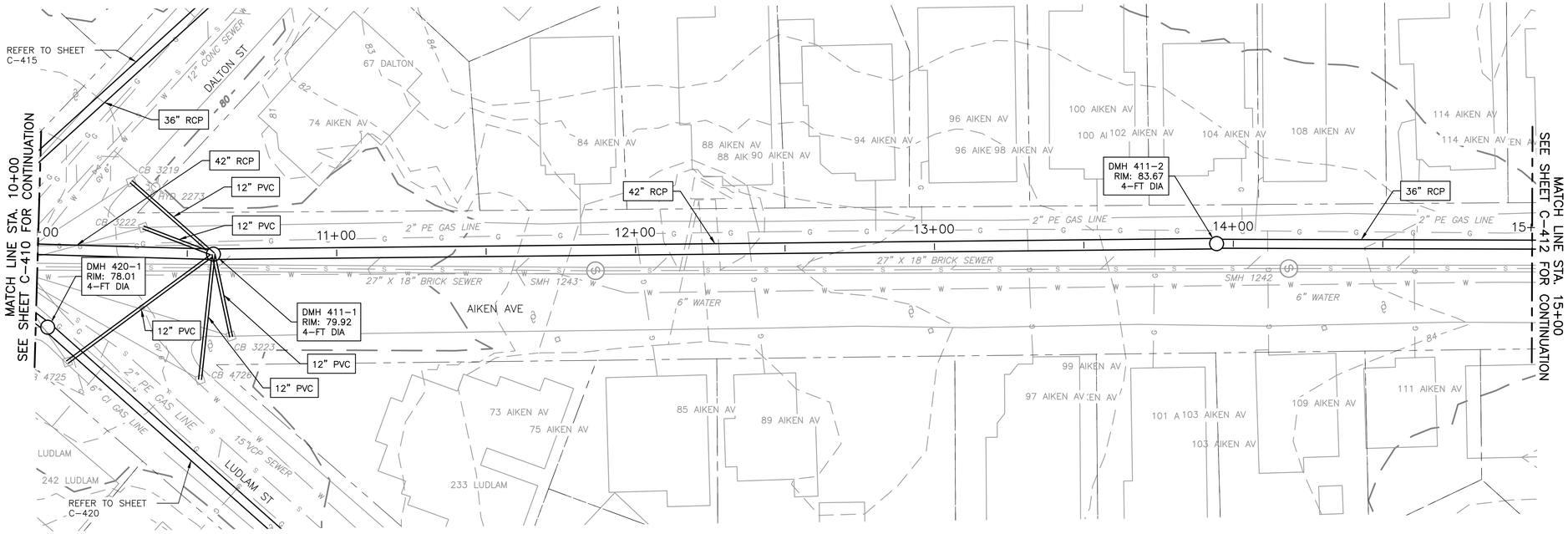
AIKEN AVE

PROJECT NO. 0552-282899
FILE NAME: C410PLPR.DWG

SHEET NO.
C-410

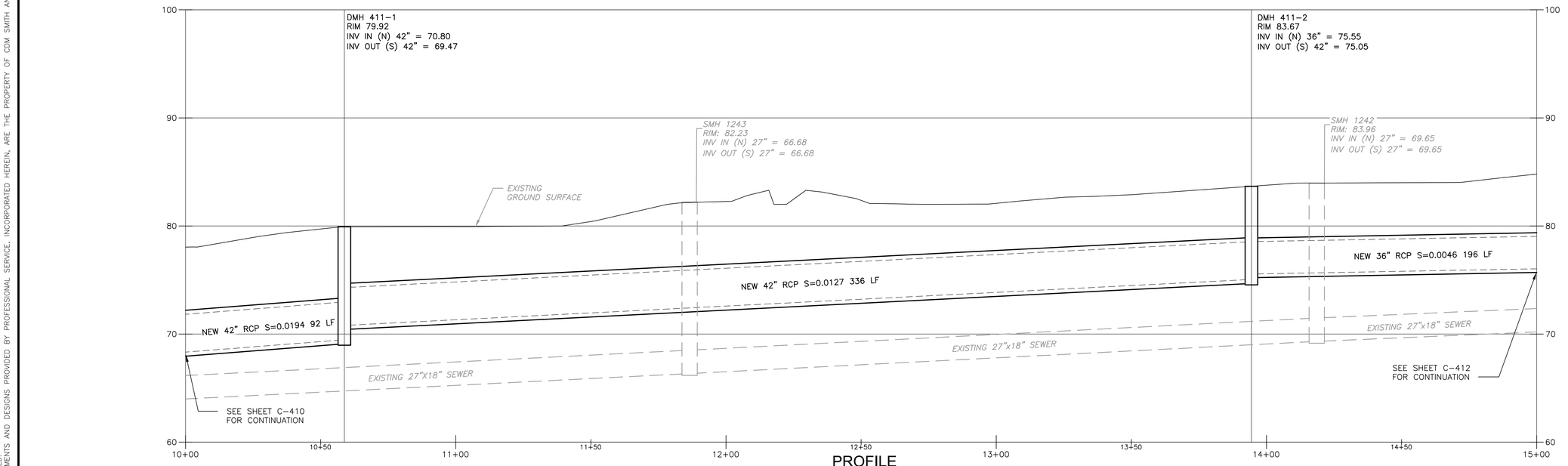
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CVZ003PP_CIVIL 3D WORKING MODEL_AREA 40, BASEMAP, CEP003ST_EX GAS LINE_Area 40, CWP001ST] Images: []
Last saved by: GANJV Time: 6/28/2024 8:36:15 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_pi\10552\282899\04 Design Services NM_10%\02 Civil\10 BIM_CADD\C401PLPR to C413PLPR.dwg
© 2024 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: JULY 2024

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

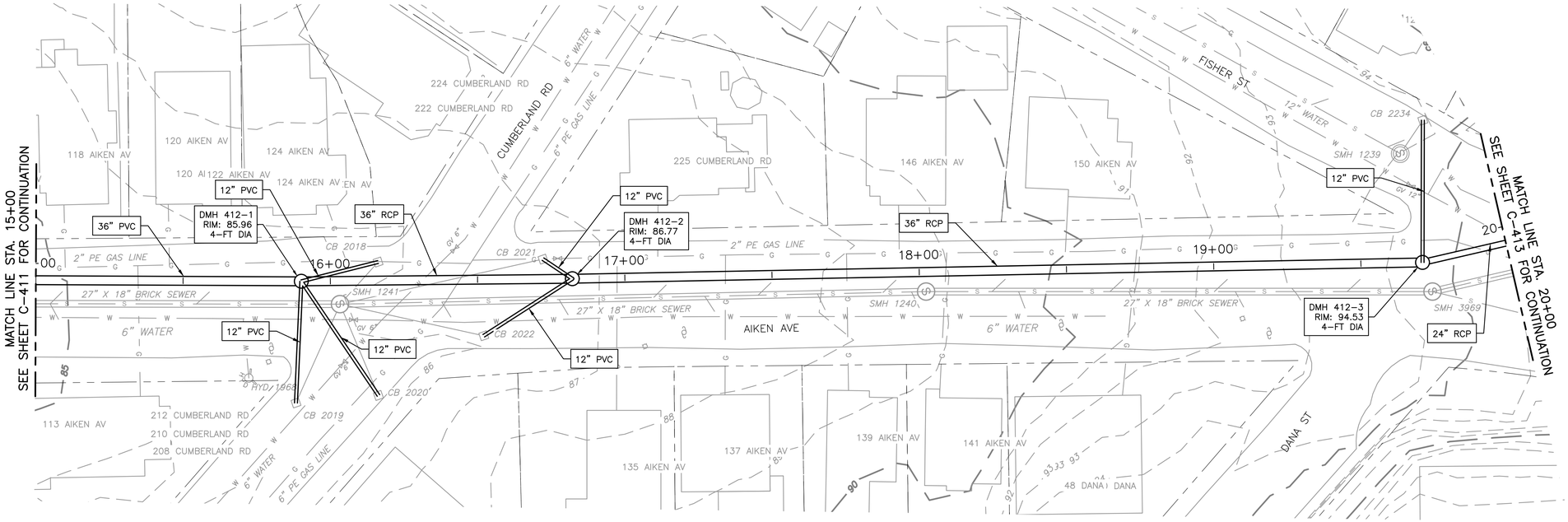
HUMPHREY'S BROOK

AIKEN AVE

PROJECT NO. 0552-282899
FILE NAME: C411PLPR.DWG

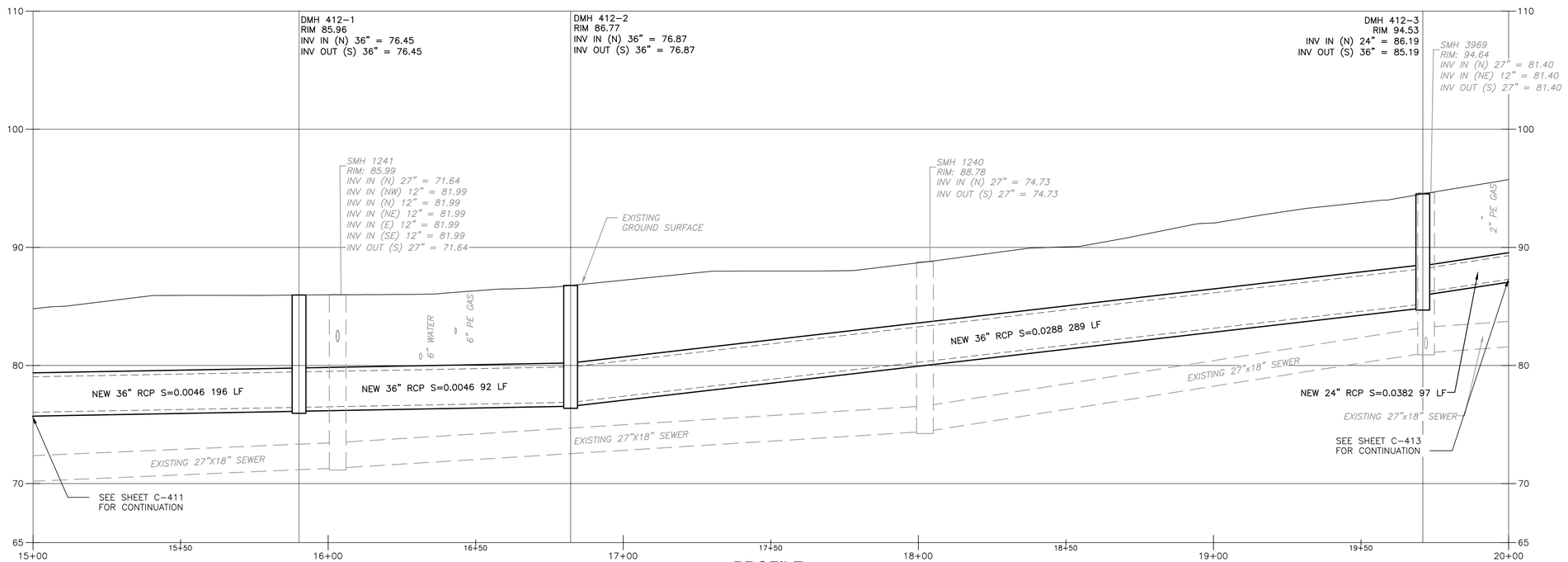
SHEET NO.
C-411

30% SUBMITTAL - NOT FOR CONSTRUCTION



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: JULY 2024

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

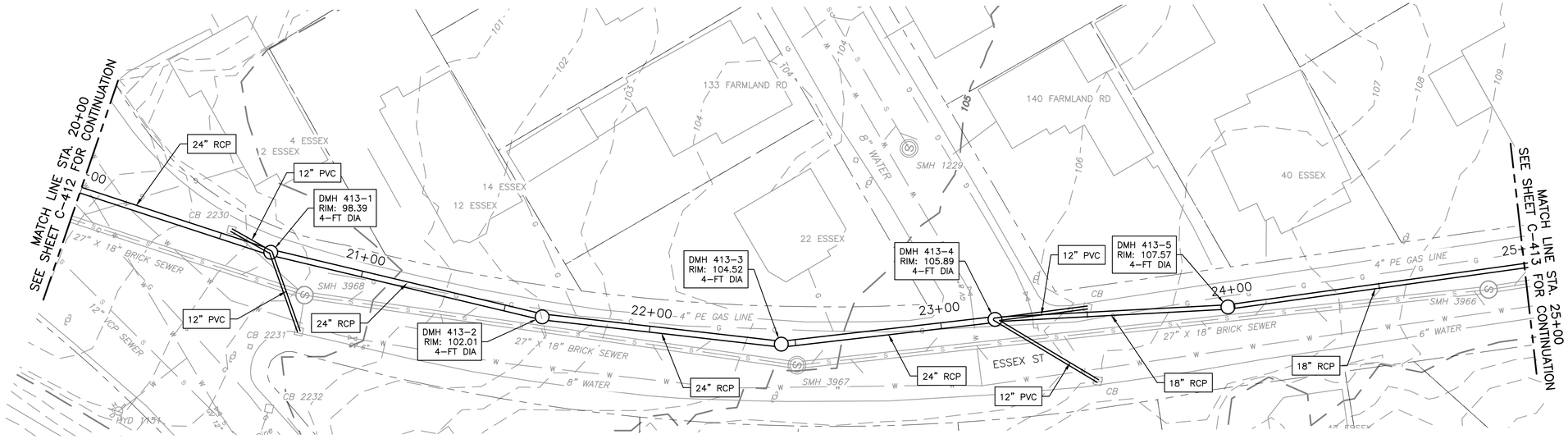
AIKEN AVE & ESSEX ST

PROJECT NO. 0552-282899
FILE NAME: C412PLPR.DWG

SHEET NO.
C-412

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_AREA 40, BASEMAP, CEP001ST_EX GAS LINE_Area 40, CWP001ST] Images: []
Last saved by: GANJV Time: 6/28/2024 6:39:13 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_pl\10552\282899\04 Design Services NM_10%\02 Civil\10 BIM_CADD\C401PLPR to C413PLPR.dwg
© 2024 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

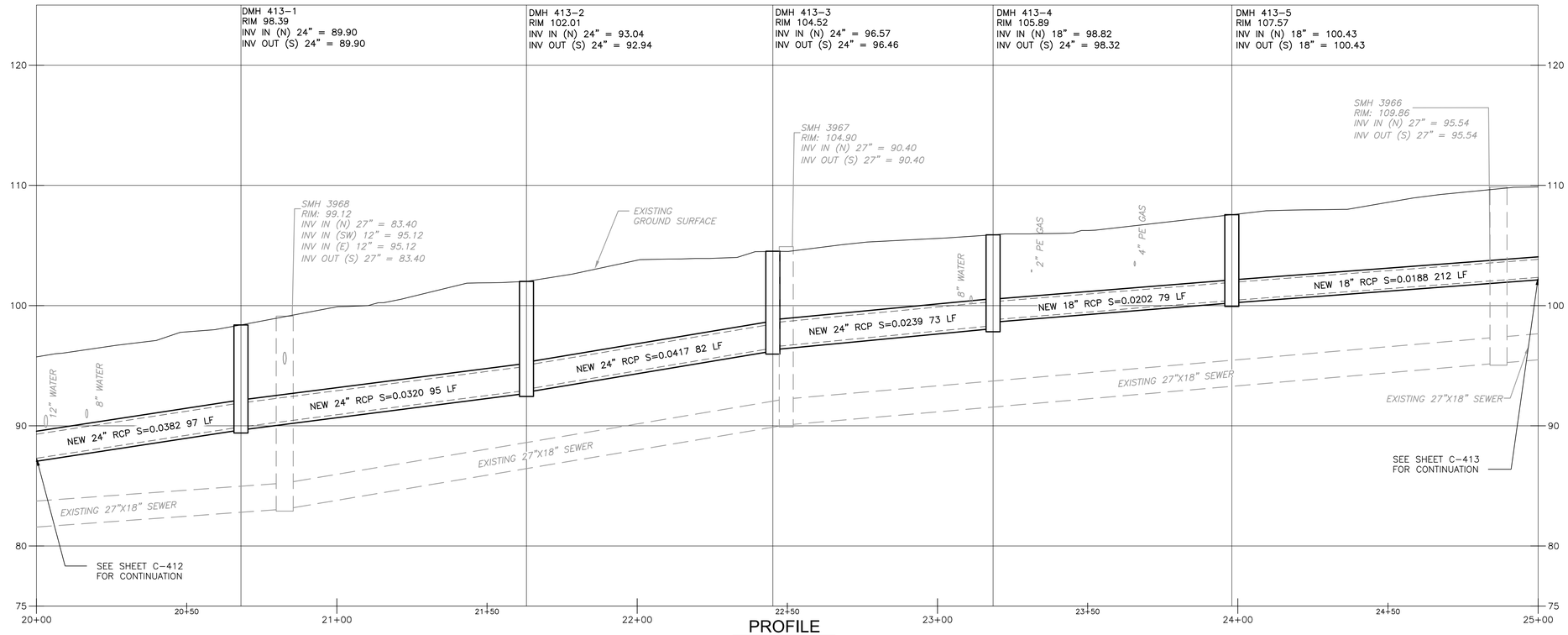


PLAN

1" = 20'

10 0 20

N



PROFILE

1" = 20' VERT: 1" = 5'

10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: JULY 2024

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

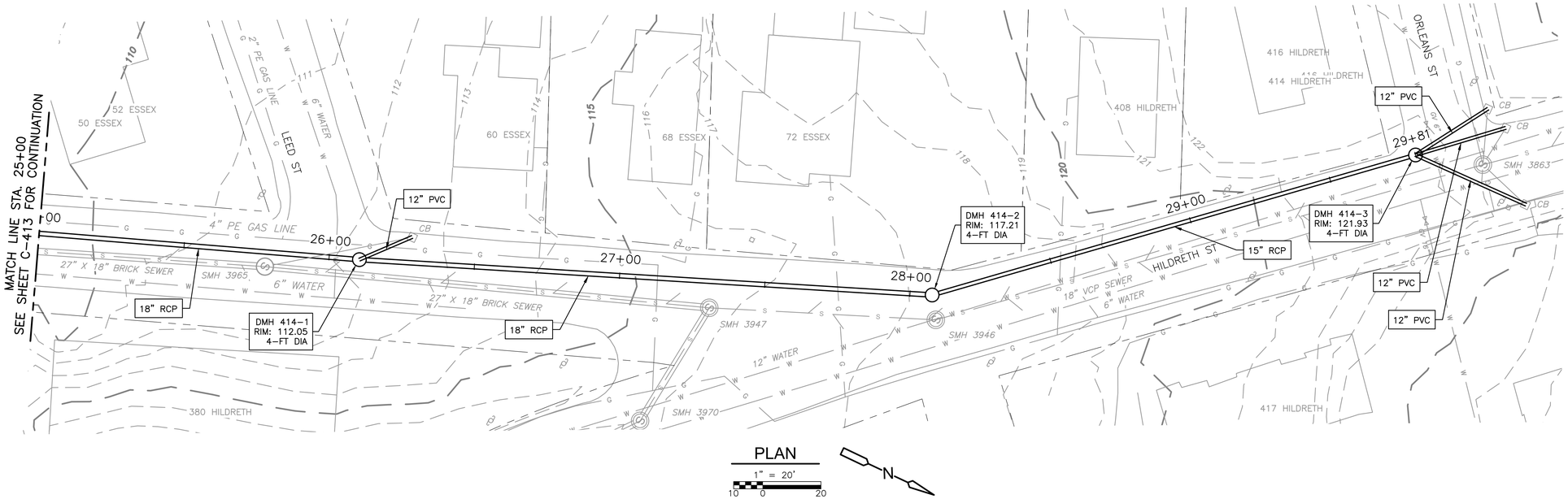
ESSEX ST

PROJECT NO. 0552-282899
FILE NAME: C413PLPR.DWG

SHEET NO.
C-413

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_AREA 40, BASEMAP, CEP003ST_EX GAS LINE_Area 40, CWP001ST] Images: []
Last saved by: GANJV Time: 6/28/2024 6:42:12 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_pi\10552028899\04 Design Services NM_10%\02 Civil\10 BIM_CADD\C401PLPR to C413PLPR.dwg
© 2024 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

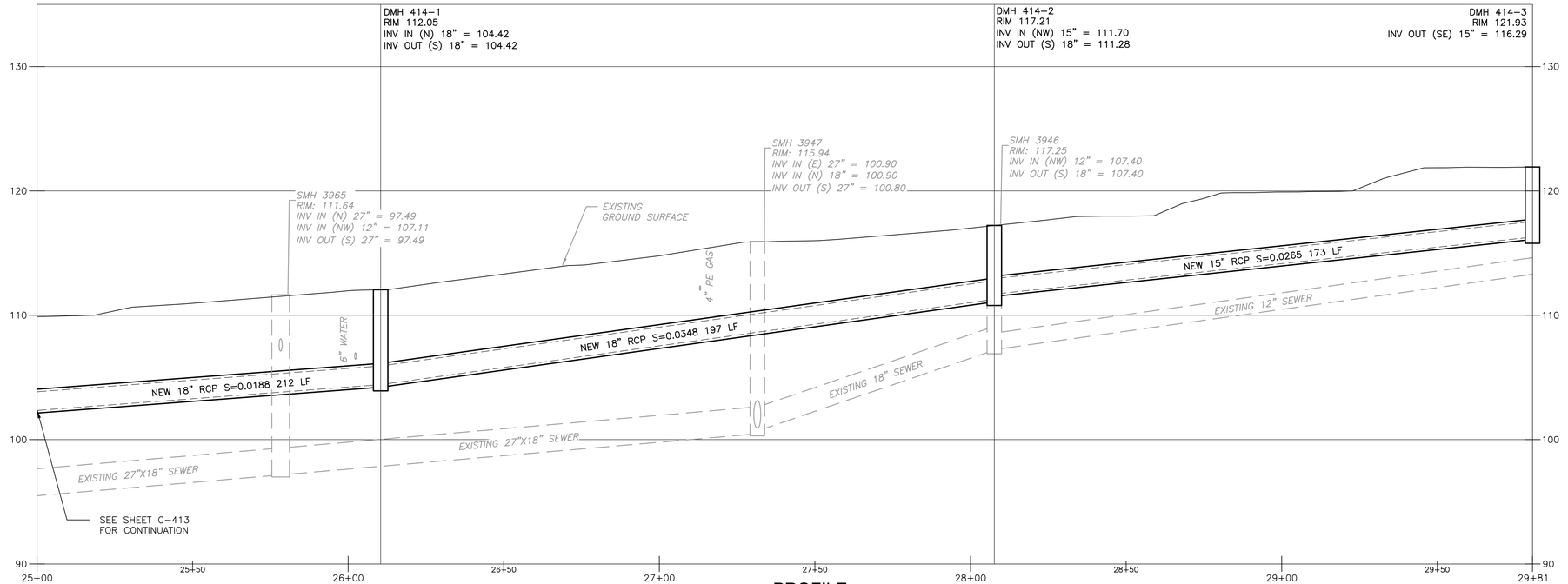


PLAN

1" = 20'

10 0 20

N



PROFILE

1" = 20' VERT: 1" = 5'

10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: JULY 2024

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

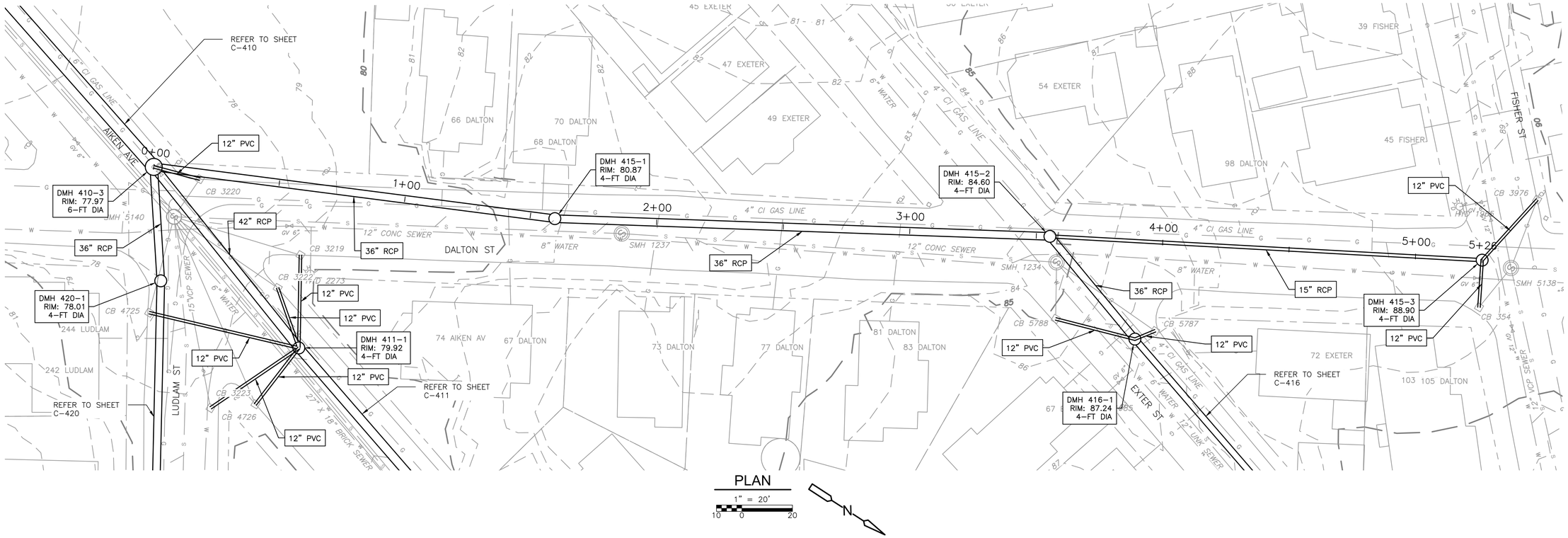
ESSEX ST & HILDRETH ST

PROJECT NO. 0552-282899
FILE NAME: C414PLPR.DWG

SHEET NO.
C-414

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_AREA 40, BASEMAP, C]
Last saved by: GANJIV Time: 6/28/2024 6:49:03 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_pt110522/282899/04 Design Services NM_10%\02 Civil\10 BIM_CADD\C40\PLPR to C413PLPR.dwg
© 2024 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

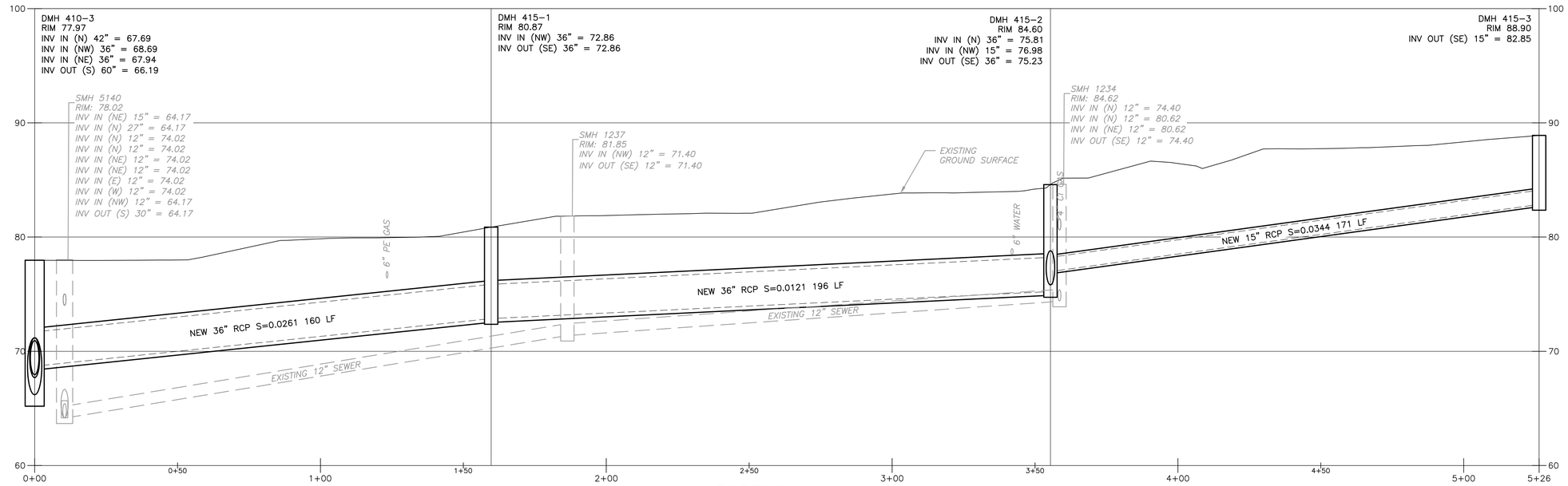


PLAN

1" = 20'

10 0 20

N



PROFILE

1" = 20'

10 0 20

VERT: 1" = 5'

2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: JULY 2024

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

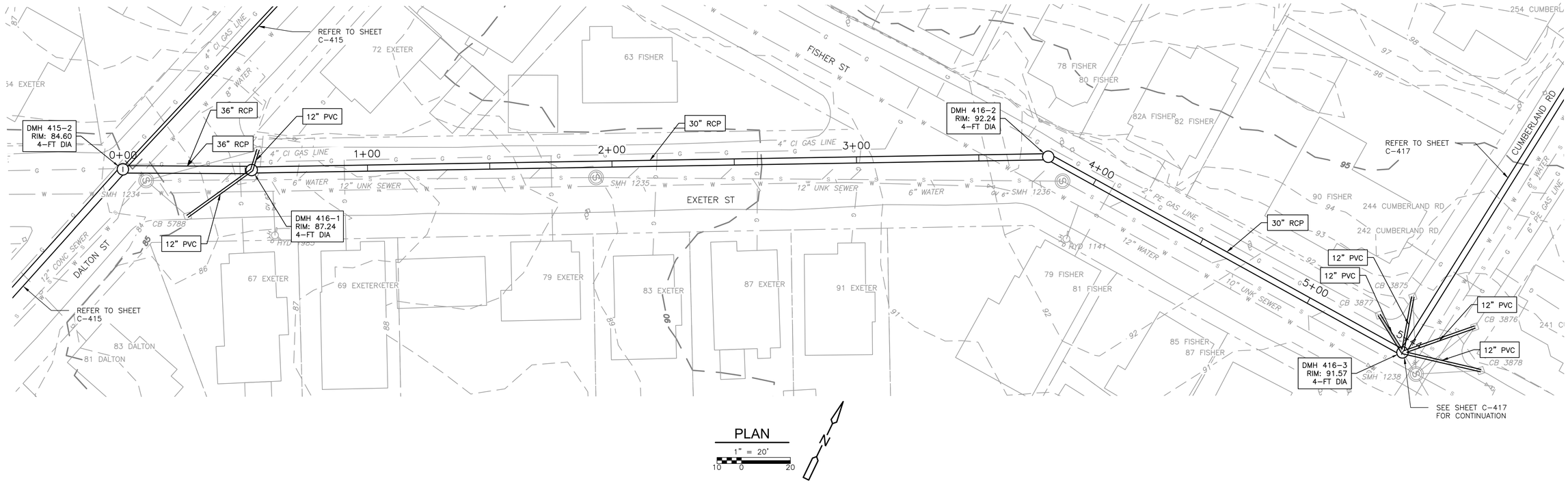
DALTON ST

PROJECT NO. 0552-282899
FILE NAME: C415PLPR.DWG

SHEET NO.
C-415

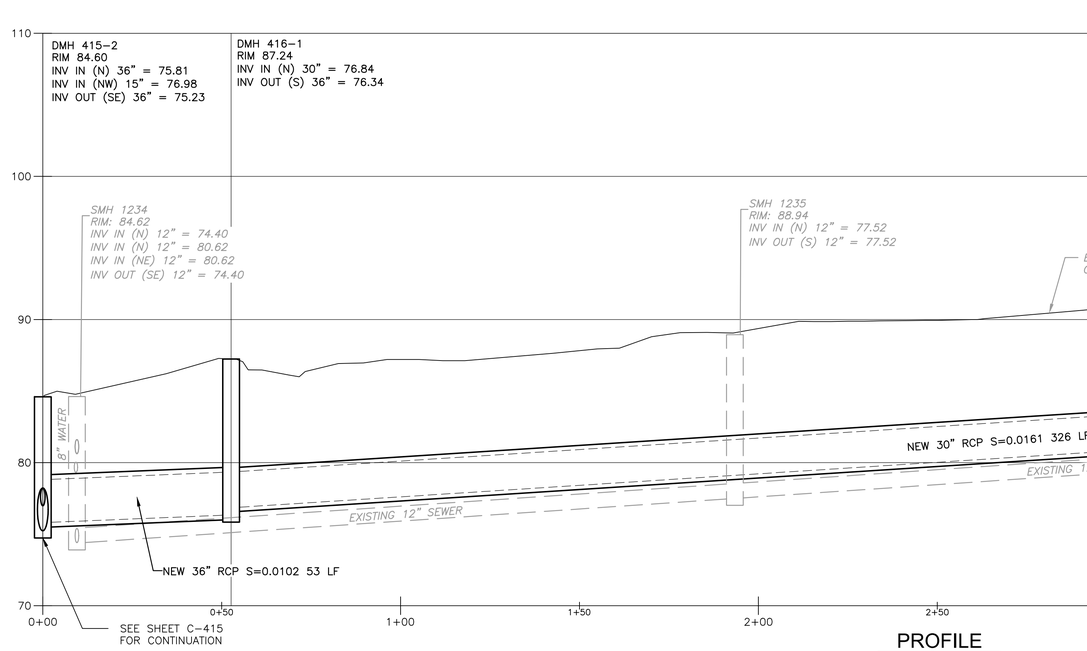
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_AREA 40, BASEMAP, CEP003ST_EX GAS LINE_Area 40, CWP001ST] Images: []
Last saved by: SIDANALESS Time: 6/28/2024 4:50:06 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_p11\0552\282899\04 Design Services NM_10%\02 Civil\10 BIM_CADD\C414PLPR to C428PLPR.dwg
©2024 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: JULY 2024

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

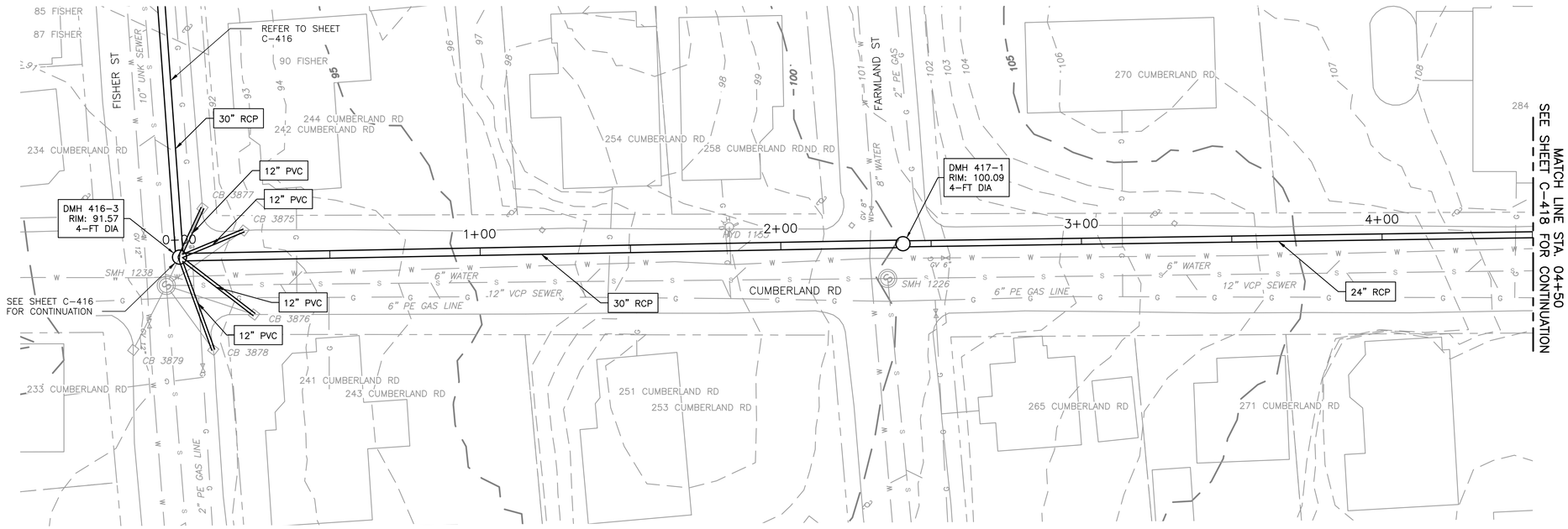
EXETER ST & FISHER ST

PROJECT NO. 0552-282899
FILE NAME: C416PLPR.DWG

SHEET NO.
C-416

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREY'S, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_AREA 40, BASEMAP, CEP003ST_EX GAS LINE_Area 40] Images: []
Last saved by: GANJV Time: 6/27/2024 3:19:39 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_pl1\0552\282899\04 Design Services NM_10#\02 Civil\10 BIM_CADD\C414PLPR to C428PLPR.dwg
©2024 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

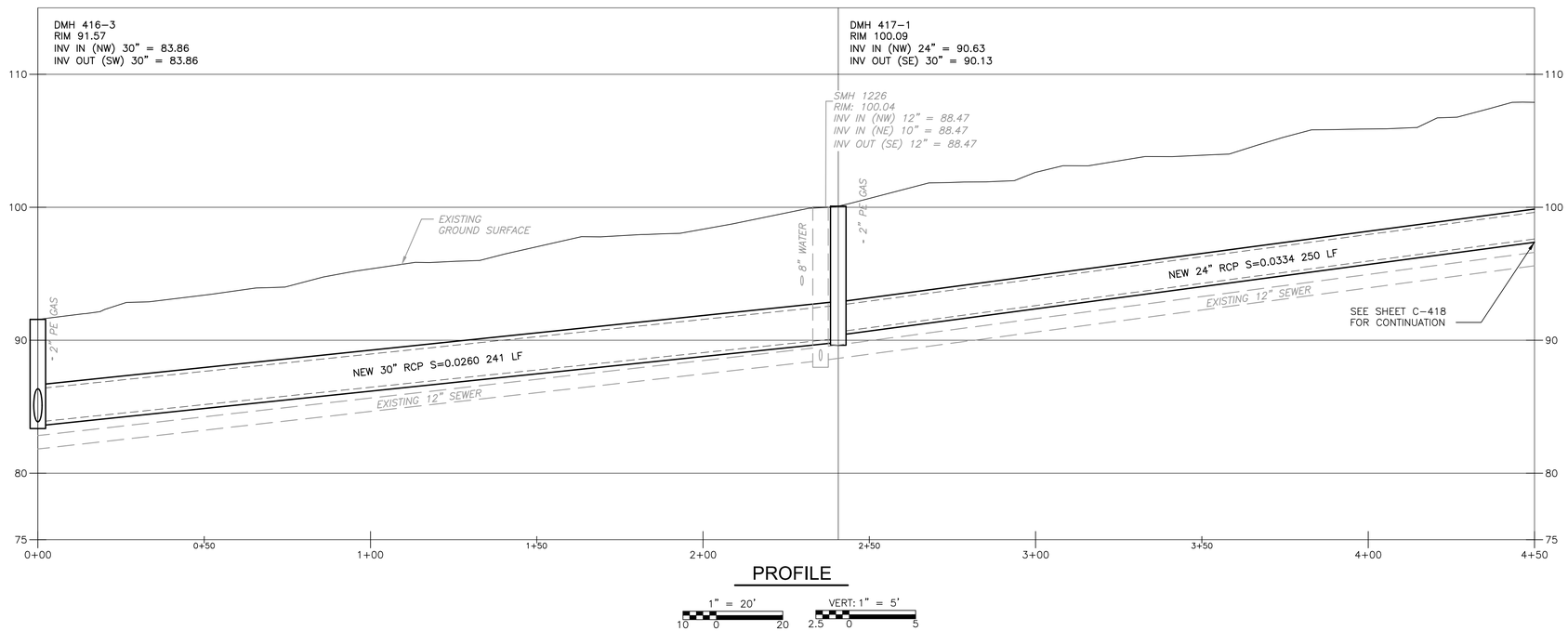


PLAN

1" = 20'

10 0 20

N



PROFILE

1" = 20'

10 0 20

VERT: 1" = 5'

2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: JULY 2024

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

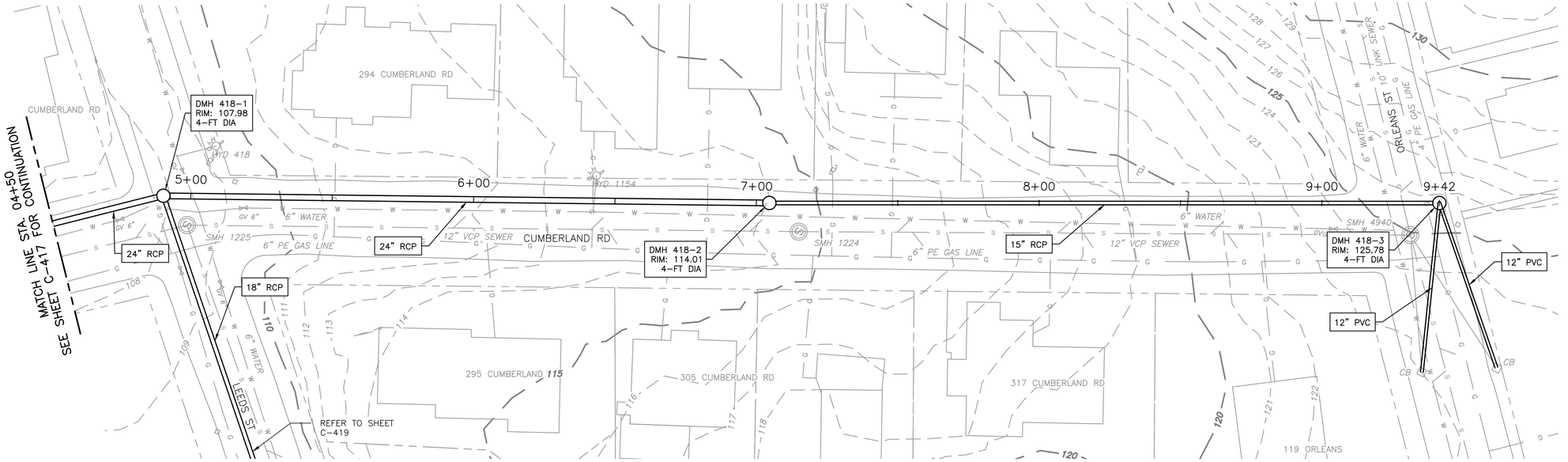
CUMBERLAND RD

PROJECT NO. 0552-282899
FILE NAME: C417PLPR.DWG

SHEET NO.
C-417

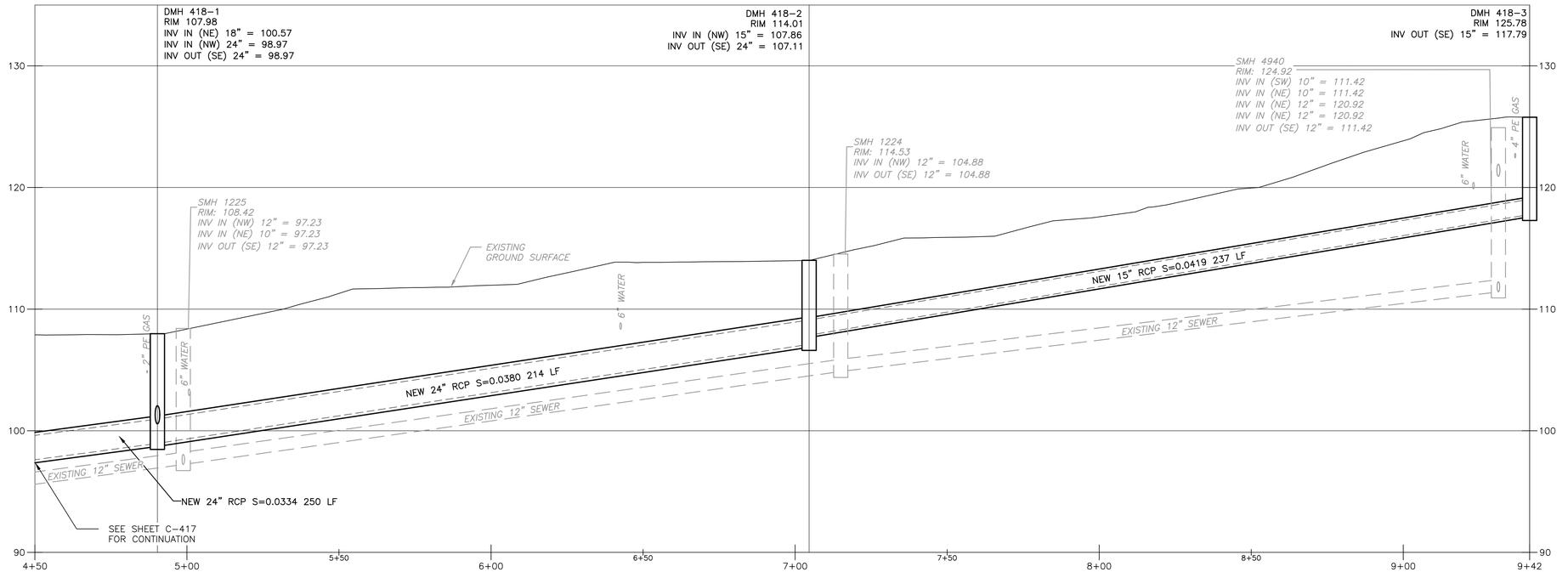
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREY'S, CEP003ST_EX GAS LINE, CEP003ST_EX GAS LINE_Area 40] Images: []
Last saved by: GANJV Time: 6/27/2024 3:24:54 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_pl1\0552\282899\04 Design Services NM_10ft\02 Civil\10 BIM_CADD\C414PLPR to C428PLPR.dwg
©2024 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: JULY 2024

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

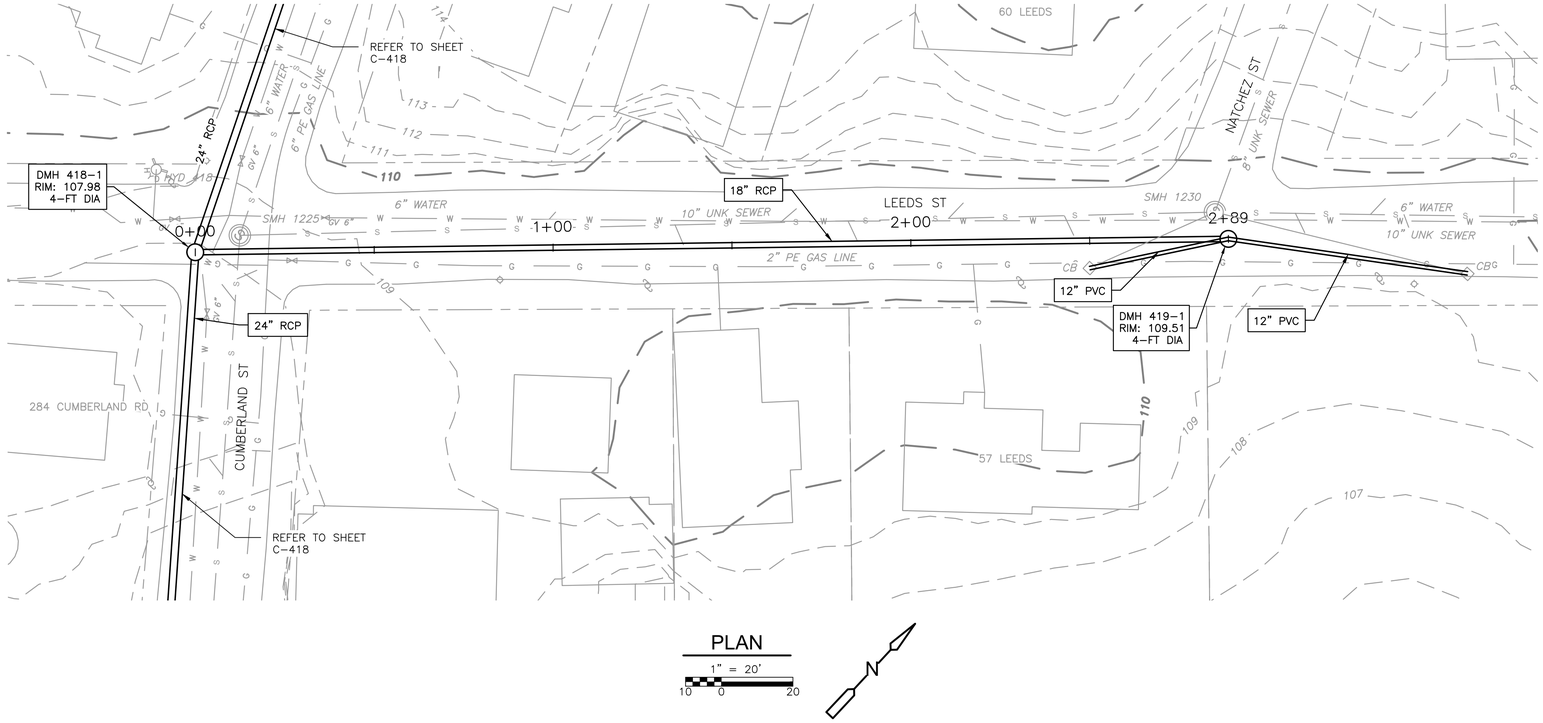
CUMBERLAND RD

PROJECT NO. 0552-282899
FILE NAME: C418PLPR.DWG

SHEET NO.
C-418

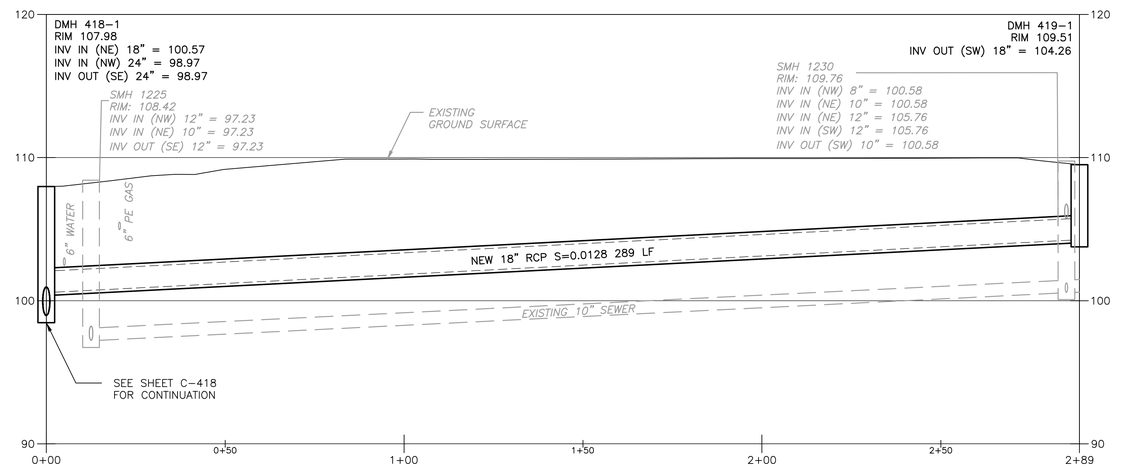
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREY'S, CEP003ST_EX GAS LINE, CEP003ST_EX GAS LINE_Area 40] Images: []
Last saved by: GANJV Time: 6/27/2024 1:00:18 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_pi1\0552\282899\04 Design Services NM_10%\02 Civil\10 BIM_CADD\C414PLPR to C428PLPR.dwg
©2024 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: JULY 2024

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

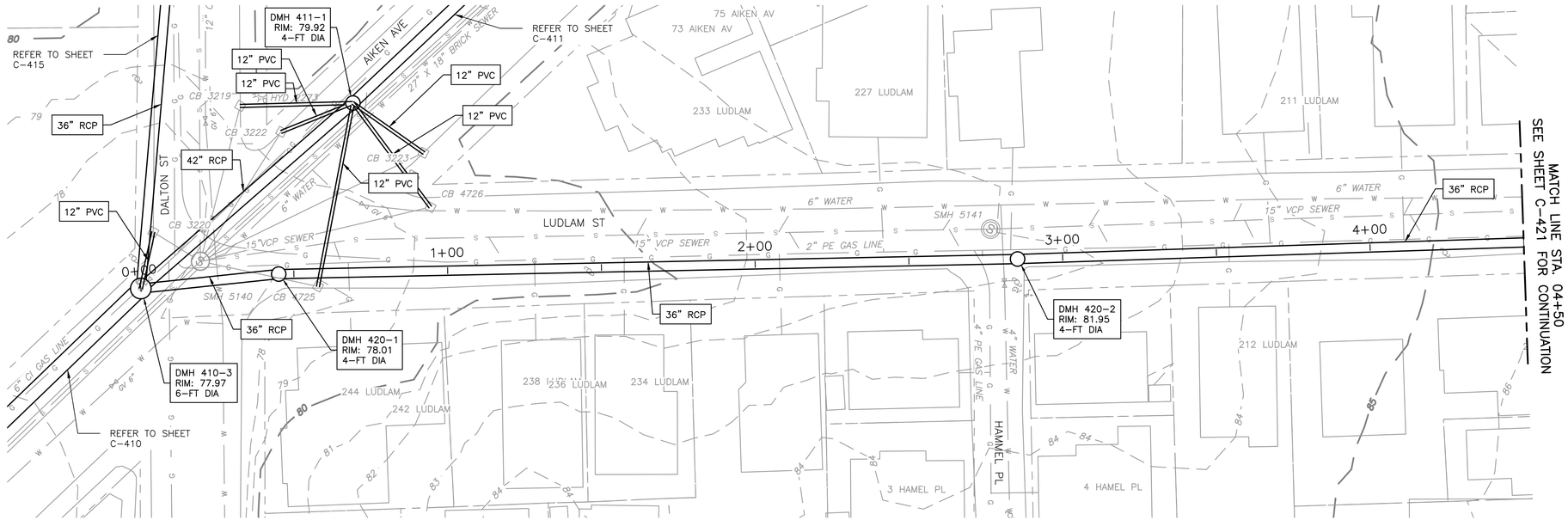
LEEDS ST

PROJECT NO. 0552-282899
FILE NAME: C419PLPR.DWG

SHEET NO.
C-419

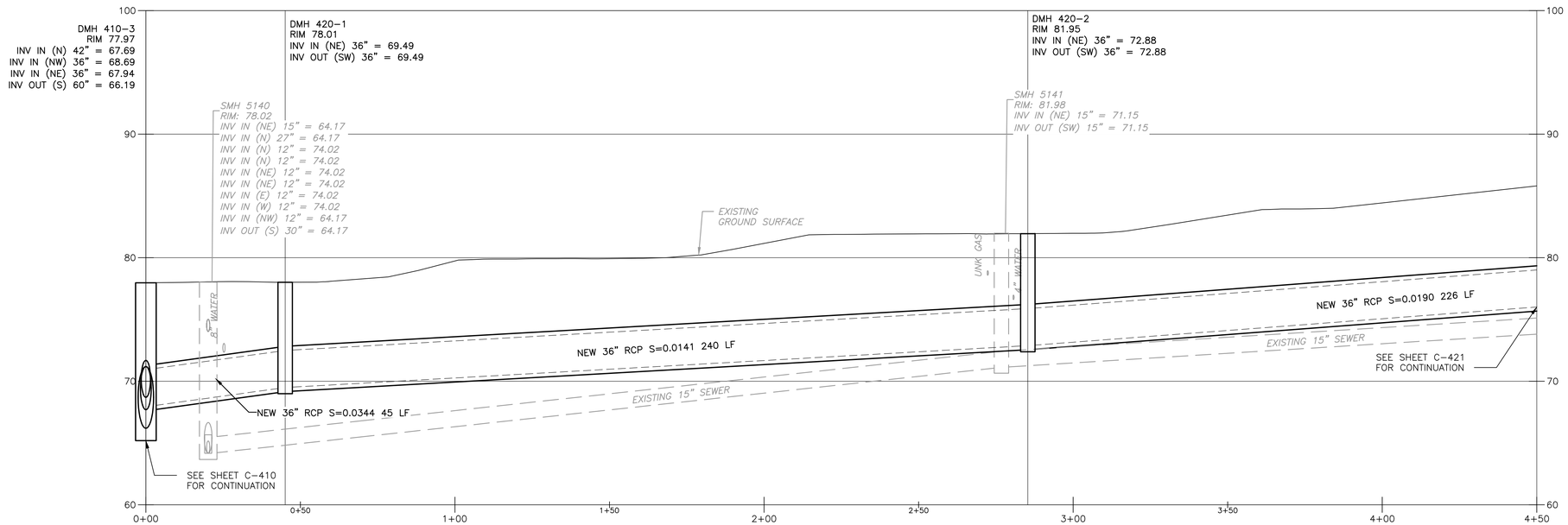
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREY'S, CEP003ST_EX GAS LINE, CEP003ST_EX GAS LINE_Area 40] Images: []
Last saved by: GANJV Time: 6/27/2024 5:16:57 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_pl1\0552\282899\04 Design Services NM_108\02 Civil\10 BIM_CADD\C414PLPR to C428PLPR.dwg
©2024 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: JULY 2024

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

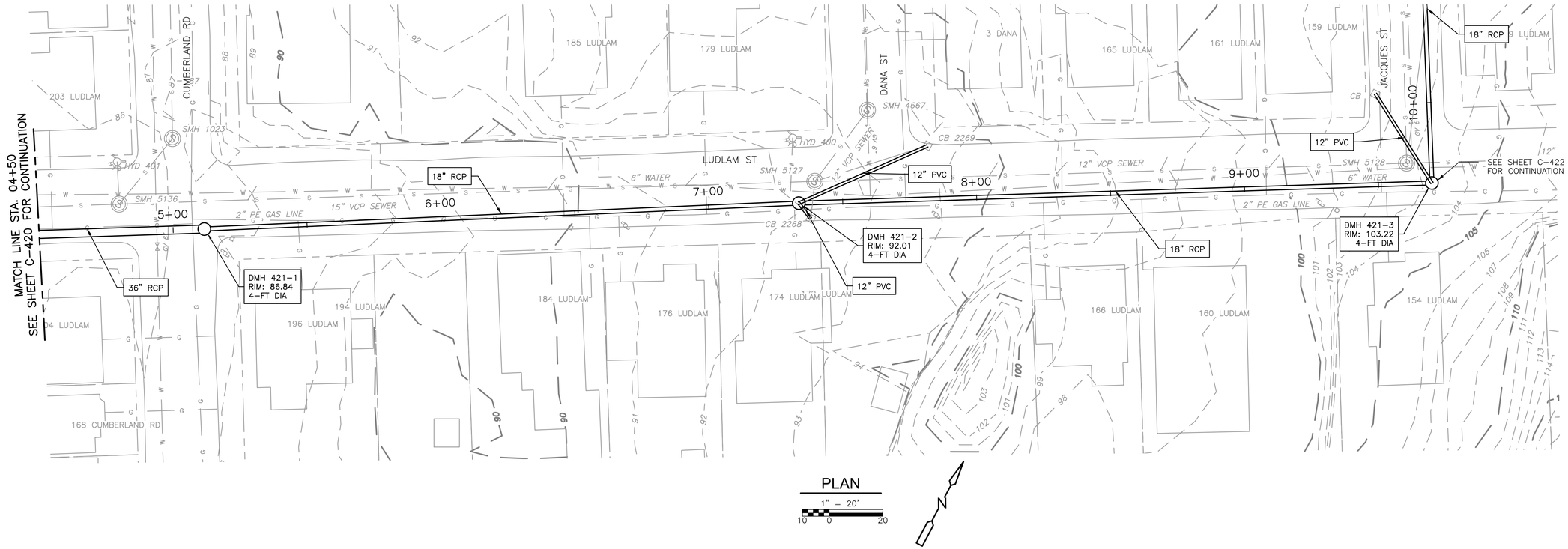
LUDLAM ST

PROJECT NO. 0552-282899
FILE NAME: C420PLPR.DWG

SHEET NO.
C-420

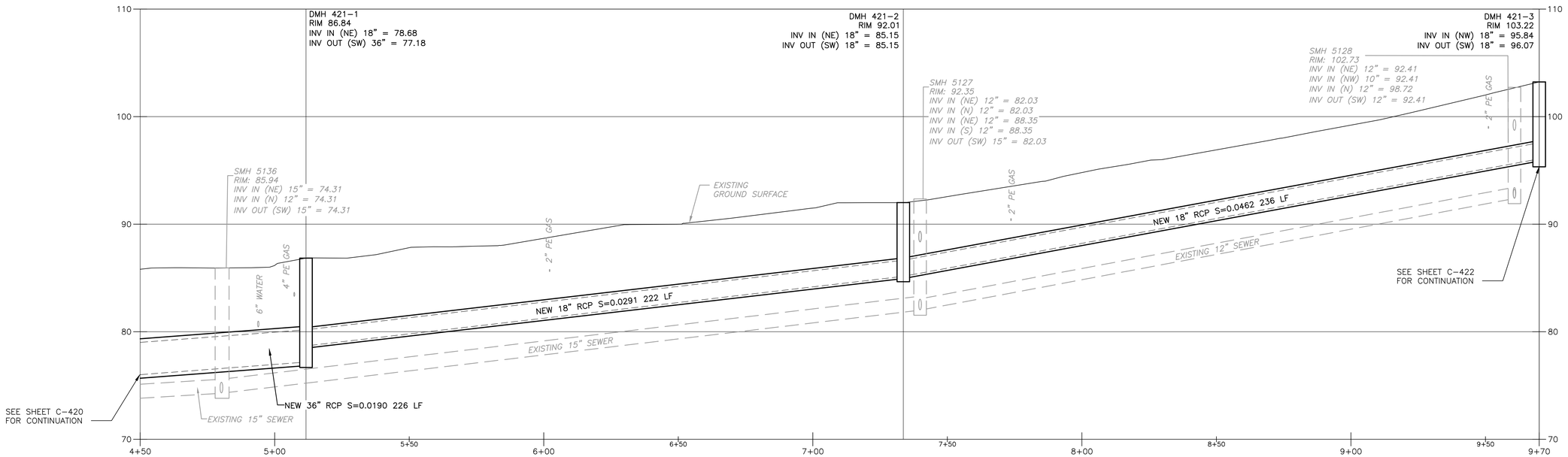
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREY'S, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_AREA 40, BASEMAP, CEP003ST_EX GAS LINE_Area 40] Images: []
Last saved by: GANJV Time: 6/27/2024 1:24:21 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_pl1\0552\282899\04 Design Services NM_10#\02 Civil\10 BIM_CADD\C414PLPR to C428PLPR.dwg
©2024 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: JULY 2024

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

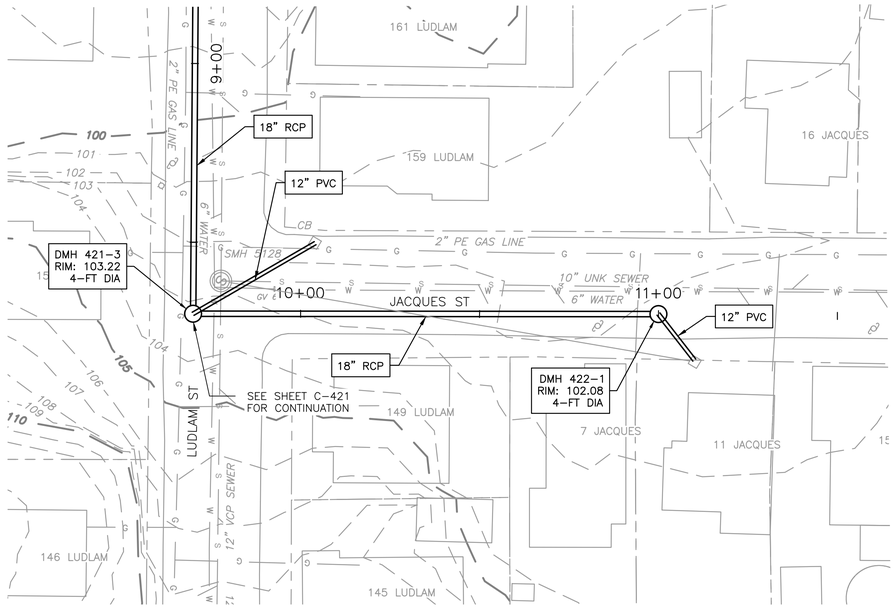
LUDLAM ST

PROJECT NO. 0552-282899
FILE NAME: C421PLPR.DWG

SHEET NO.
C-421

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREY'S, CEP003ST_EX GAS LINE, CEP003ST_EX GAS LINE_Area 40] Images: []
Last saved by: GANJV Time: 6/27/2024 1:37:53 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_pl1\0552\282899\04 Design Services NM_10#\02 Civil\10 BIM_CADD\C414PLPR to C428PLPR.dwg
©2024 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.

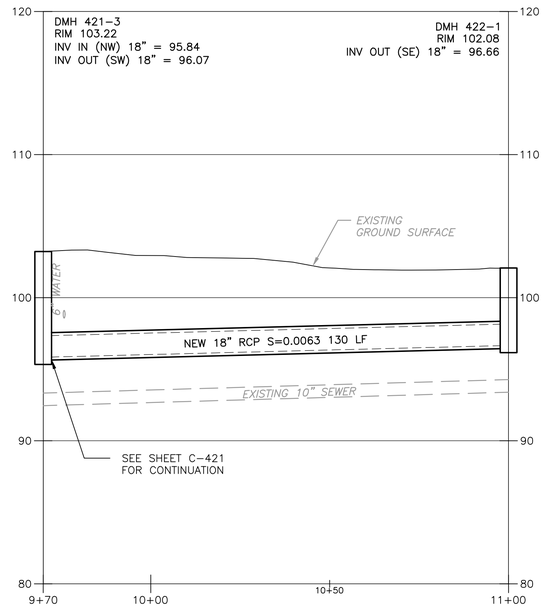


PLAN

1" = 20'

10 0 20

N



PROFILE

1" = 20' VERT: 1" = 5'

10 0 20 2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: JULY 2024

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

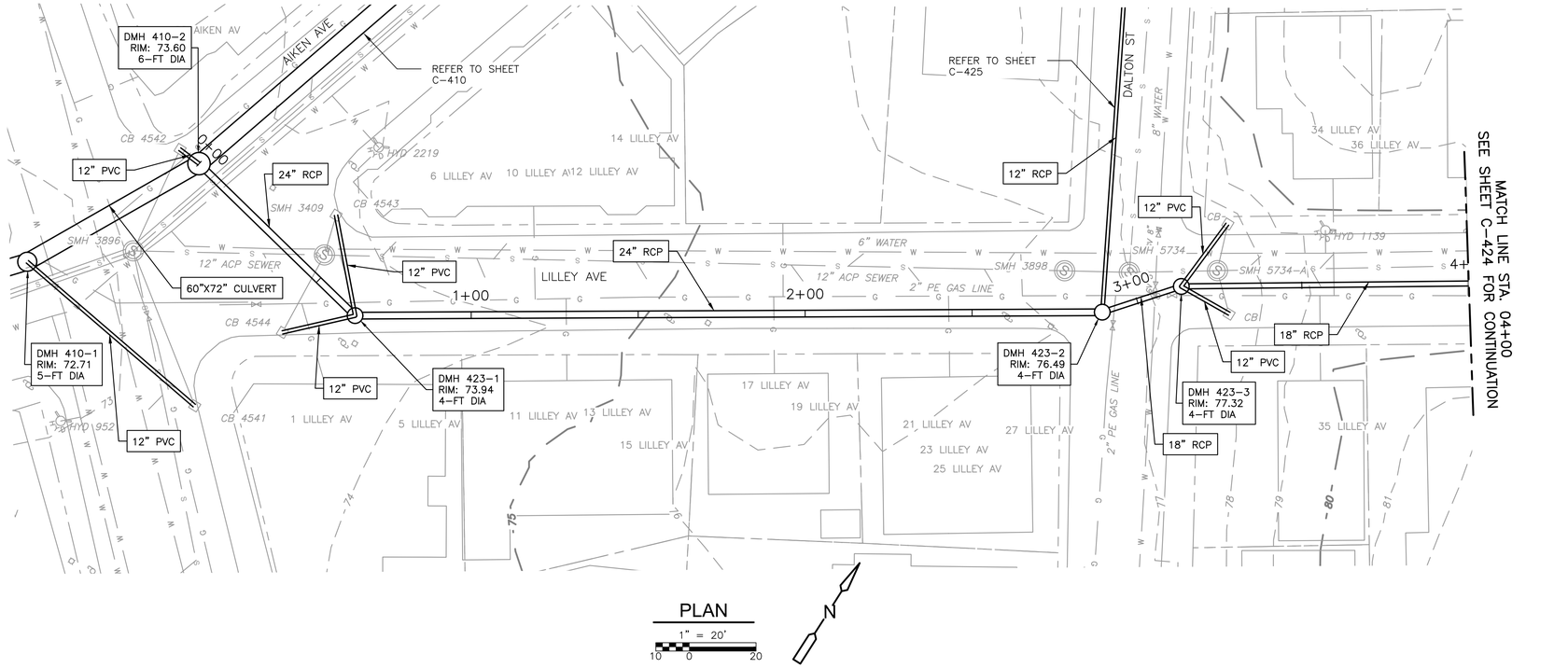
JACQUES ST

PROJECT NO. 0552-282899
FILE NAME: C422PLPR.DWG

SHEET NO.
C-422

30% SUBMITTAL - NOT FOR CONSTRUCTION

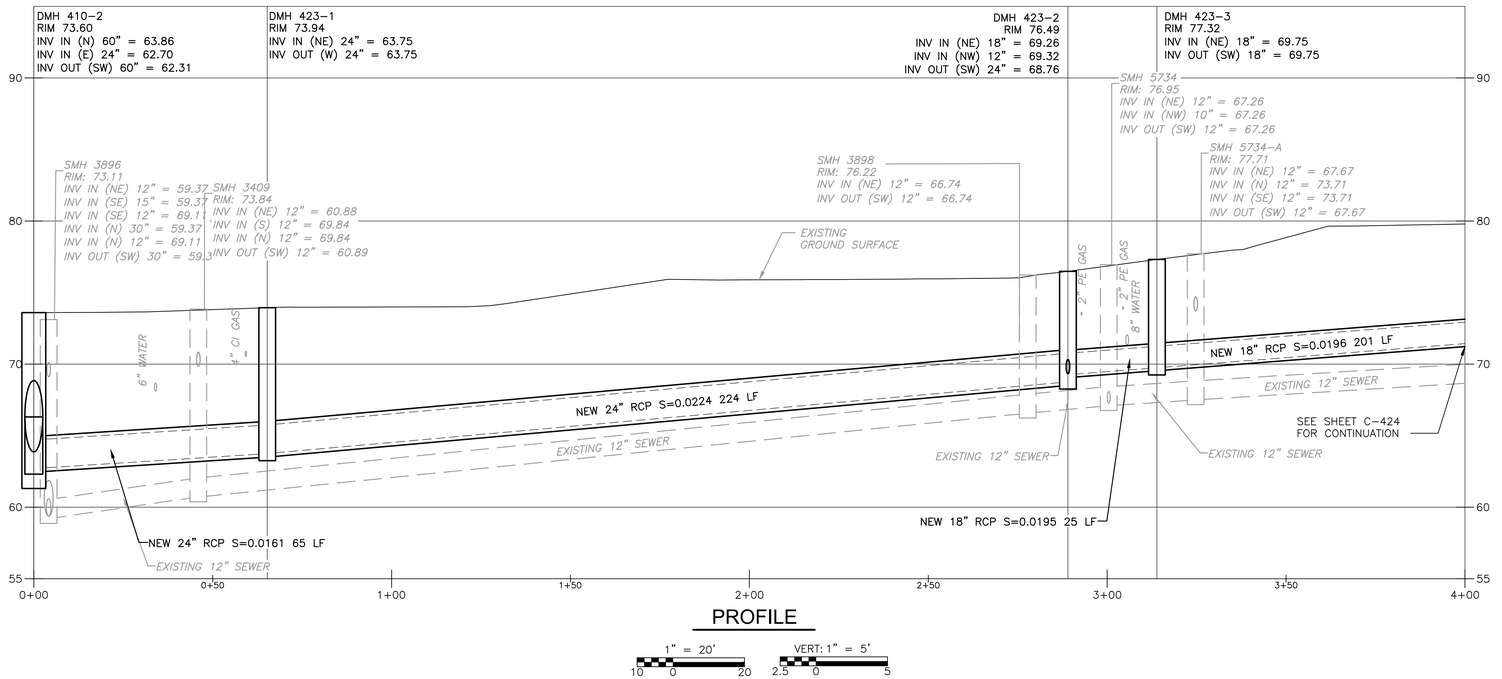
XREFs: [CDMS_2436_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREY'S, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_AREA 40, BASEMAP, CEP003ST_EX GAS LINE_Area 40] Images: []
Last saved by: GANJV Time: 6/27/2024 1:42:11 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_pi1\0552\282899\04 Design Services NM_10#\02 Civil\10 BIM_CADD\C414PLPR to C428PLPR.dwg
©2024 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20'

10 0 20

VERT: 1" = 5'

2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: JULY 2024

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

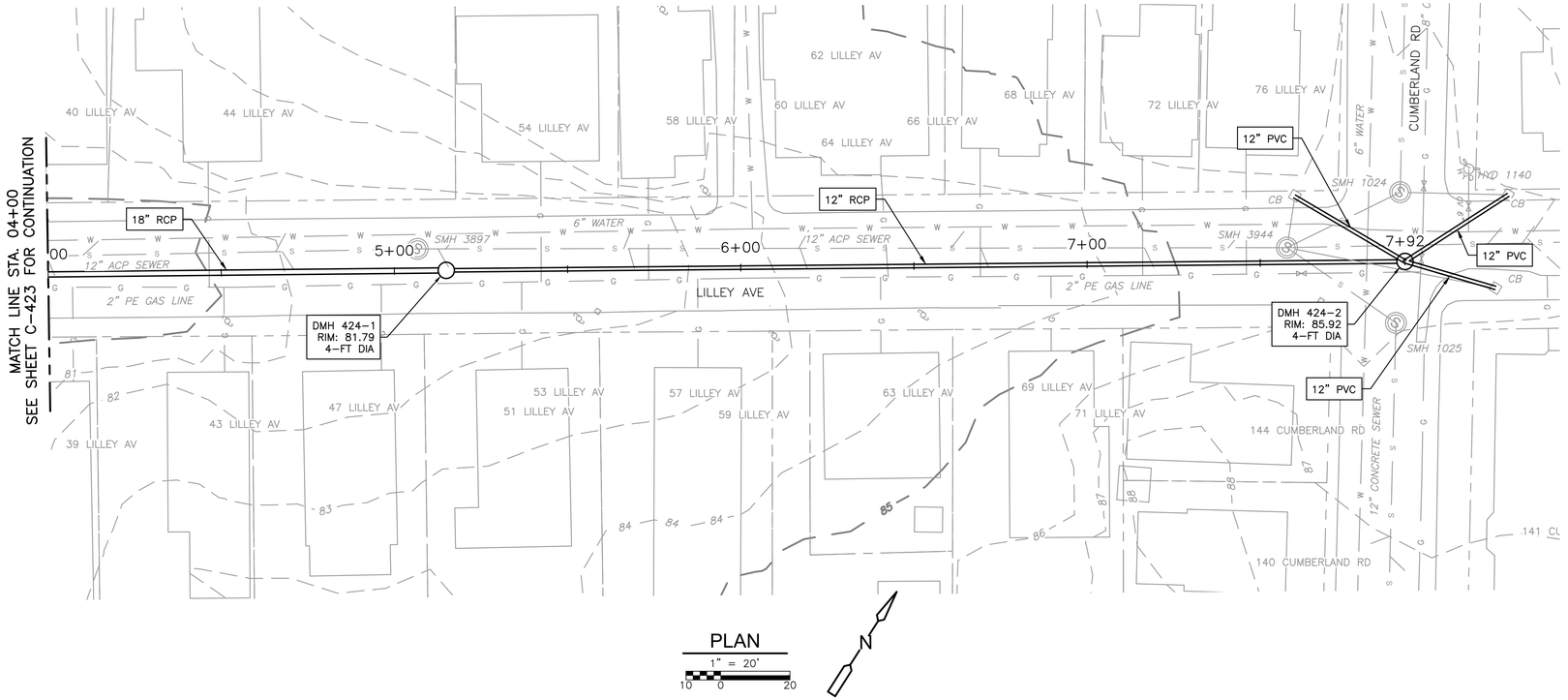
LILLEY AVE

PROJECT NO. 0552-282899
FILE NAME: C423PLPR.DWG

SHEET NO.
C-423

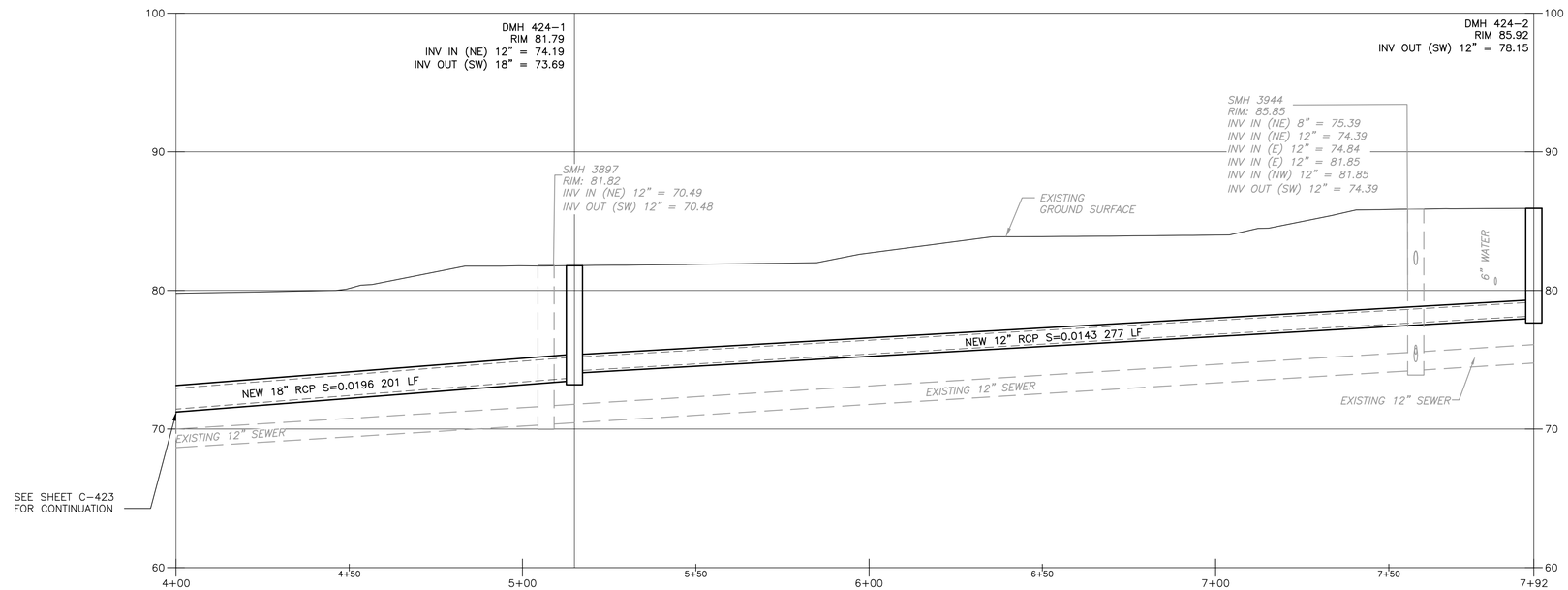
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREY'S, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_AREA 40, BASEMAP, CEP003ST_EX GAS LINE_Area 40] Images: []
Last saved by: GANJV Time: 6/27/2024 1:50:15 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_p11\0552\282899\04 Design Services NM_10#\02 Civil\10 BIM_CADD\C414PLPR to C428PLPR.dwg
©2024 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: JULY 2024

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

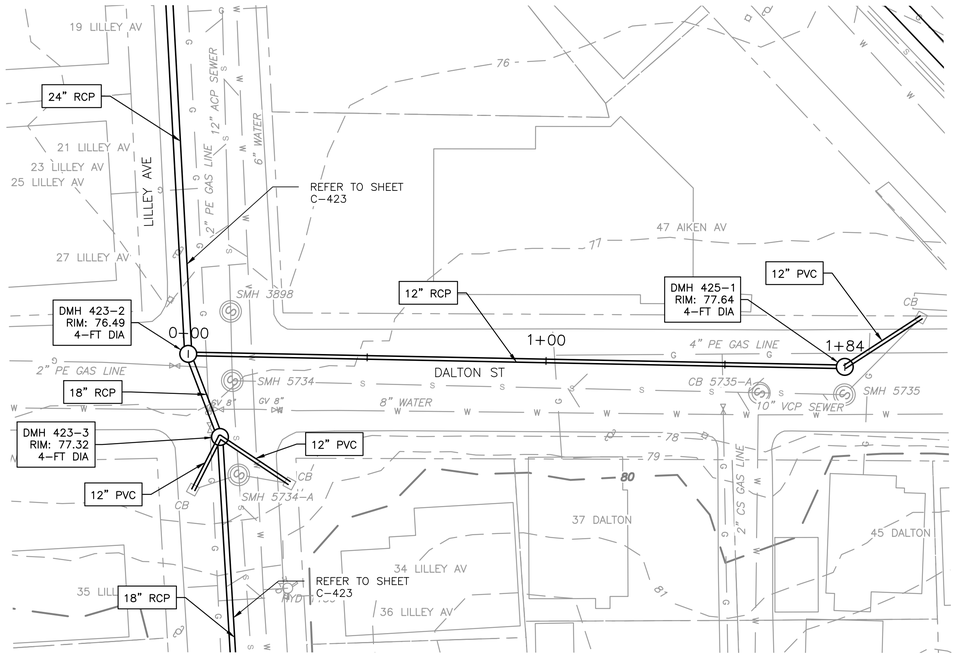
LILLEY AVE

PROJECT NO. 0552-282899
FILE NAME: C424PLPR.DWG

SHEET NO.
C-424

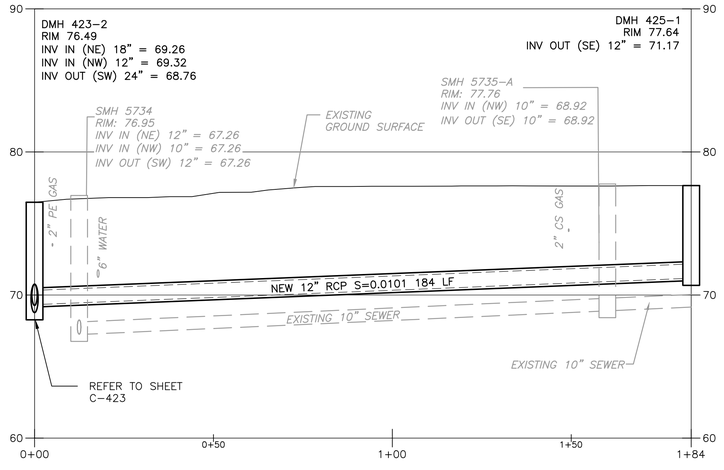
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREY'S, CEP003ST_EX GAS LINE, CEP003ST_EX GAS LINE_Area 40] Images: []
Last saved by: GANJV Time: 6/27/2024 2:43:52 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_p11\0552\282899\04 Design Services NM_10#\02 Civil\10 BIM_CADD\C414PLPR to C428PLPR.dwg
©2024 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: JULY 2024

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel. (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

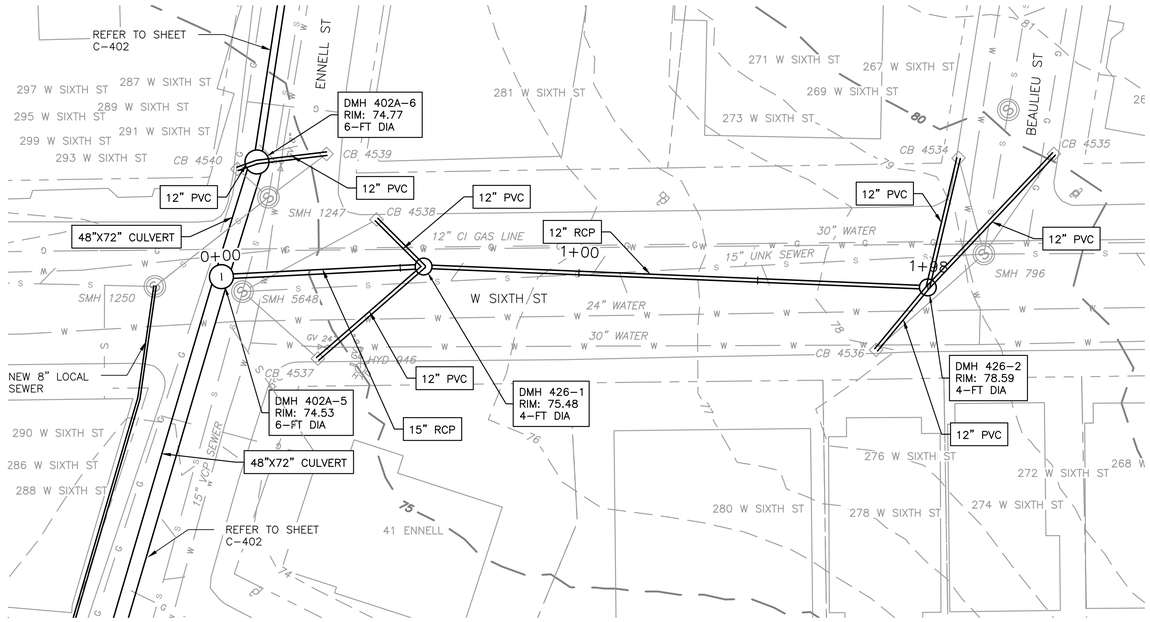
DALTON ST

PROJECT NO. 0552-282899
FILE NAME: C425PLPR.DWG

SHEET NO.
C-425

30% SUBMITTAL - NOT FOR CONSTRUCTION

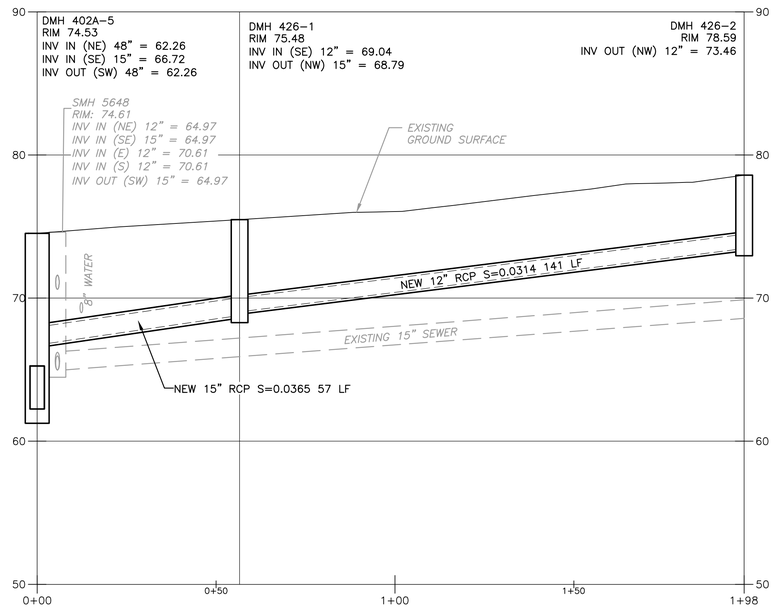
XREFs: [CDMS_2436_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREYS, CEP003ST_EX GAS LINE, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_AREA 40, BASEMAP, CEP002ST_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP009PP-STREET LIGHT AND NATIONAL GRID POLE, CWZ003PP_CIVIL 3D WORKING MODEL_AREA 40, BASEMAP, CEP003ST_EX GAS LINE_Area 40, CWPP01ST] Images: []
Last: [illegible]
pw:\\[illegible]\C425PLPR.dwg
© 2024 CDM SMITH ALL RIGHTS RESERVED.
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'

10 0 20



PROFILE

1" = 20'

10 0 20

VERT: 1" = 5'

2.5 0 5

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: JULY 2024

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

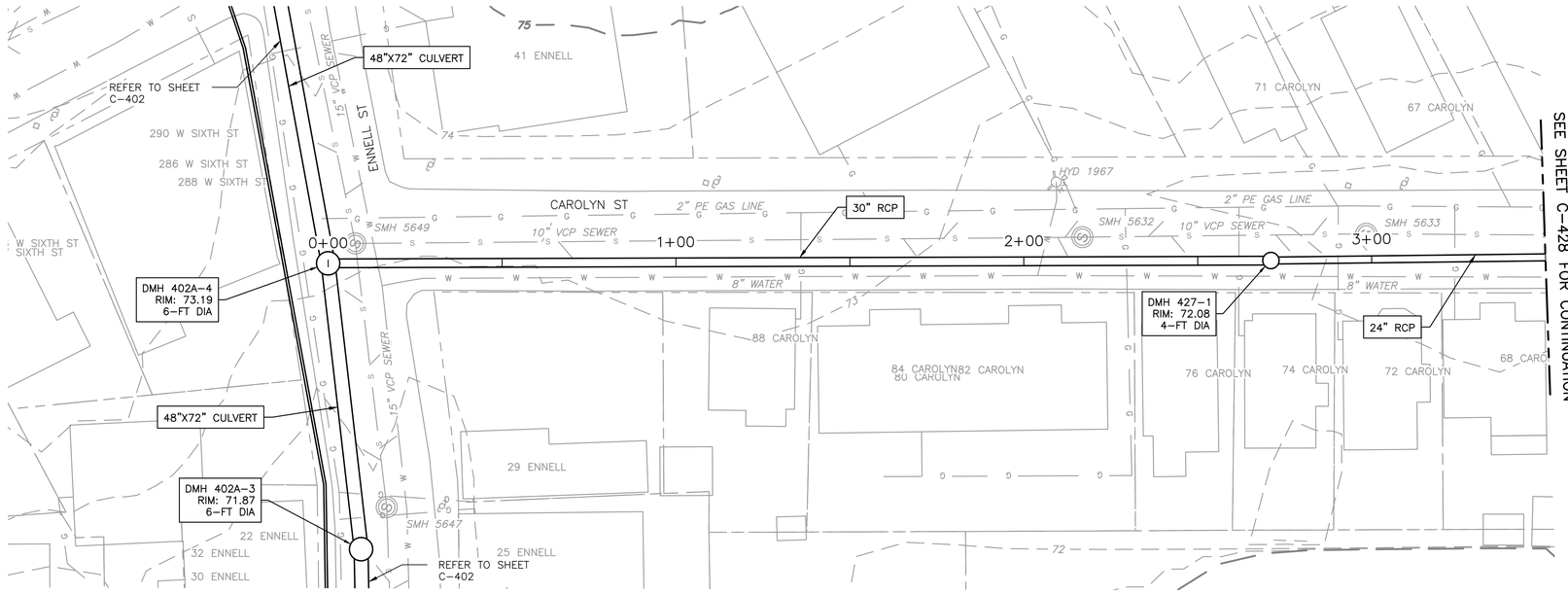
W SIXTH ST

PROJECT NO. 0552-282899
FILE NAME: C426PLPR.DWG

SHEET NO.
C-426

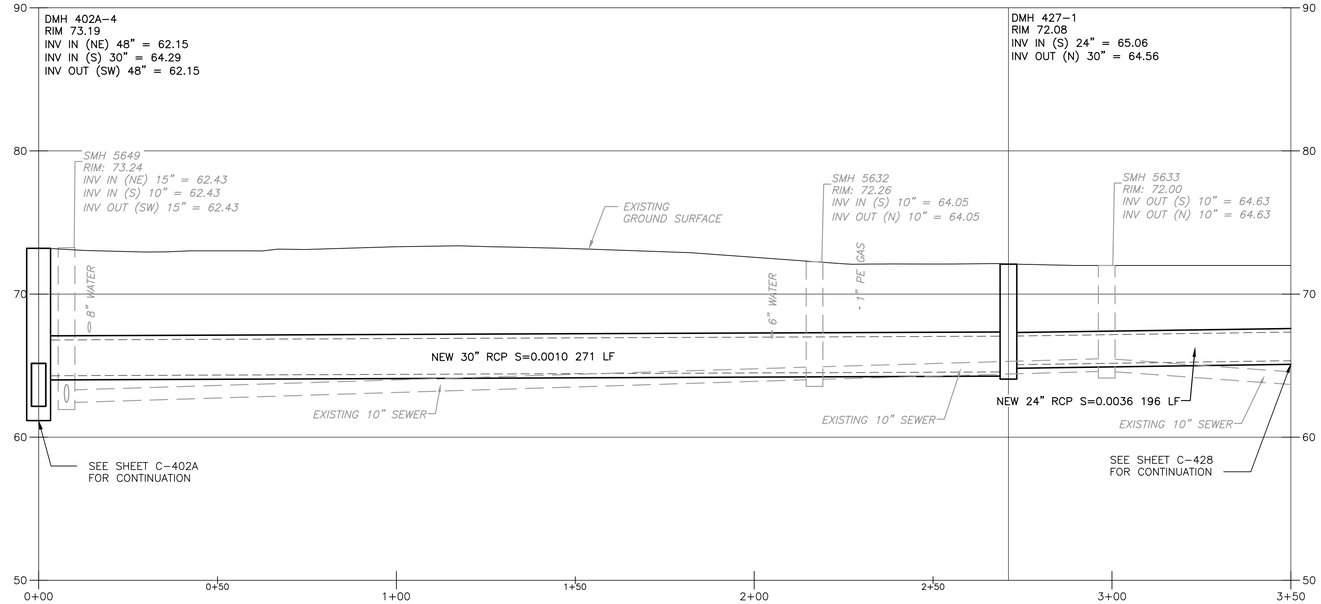
30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436, CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREY'S, CEP003ST_EX GAS LINE, CEP003ST_EX GAS LINE_Area 40] Images: []
Last saved by: GANJV Time: 6/27/2024 3:00:39 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_pl1\0552\282899\04 Design Services NM_10#\02 Civil\10 BIM_CADD\C414PLPR to C428PLPR.dwg
©2024 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.



PLAN

1" = 20'



PROFILE

1" = 20'

VERT: 1" = 5'

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: JULY 2024

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

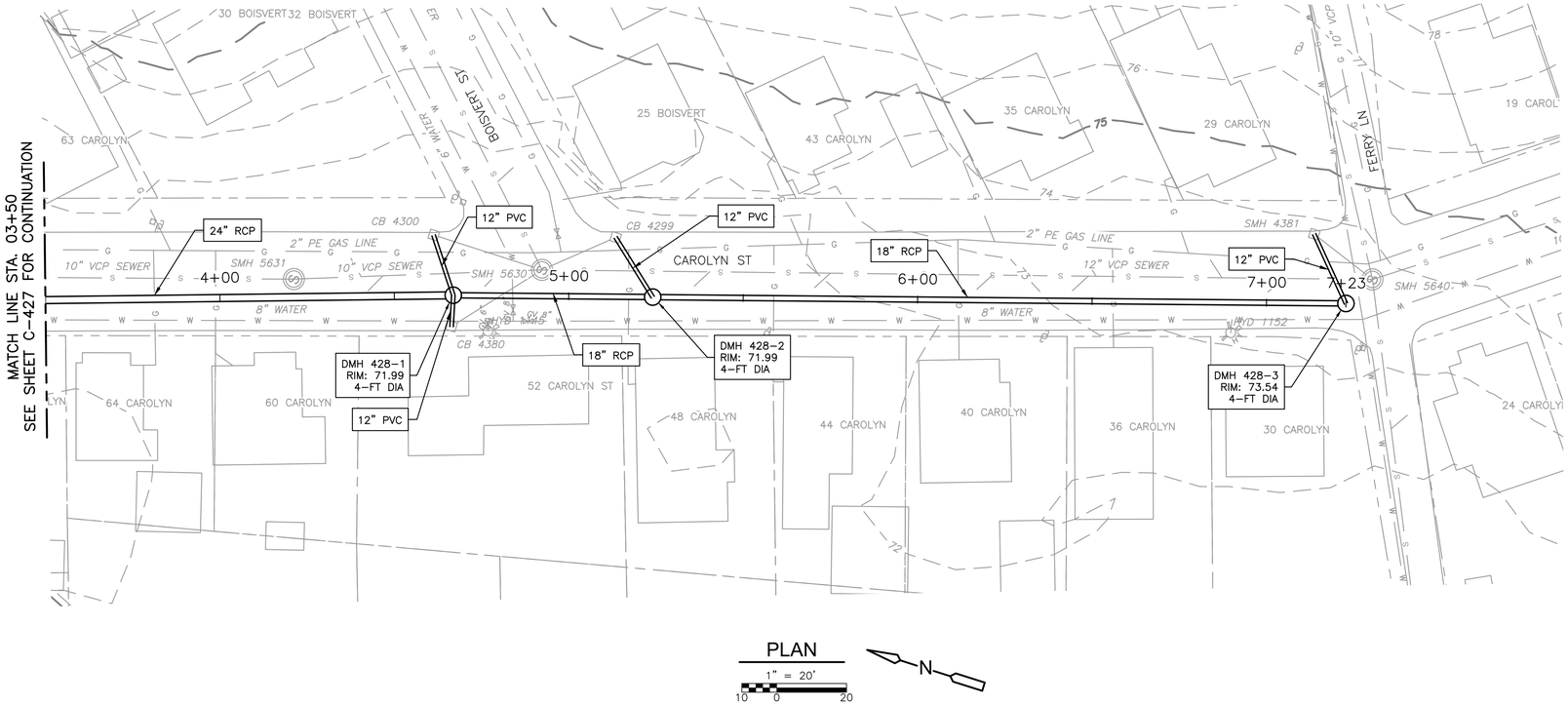
CAROLYN ST

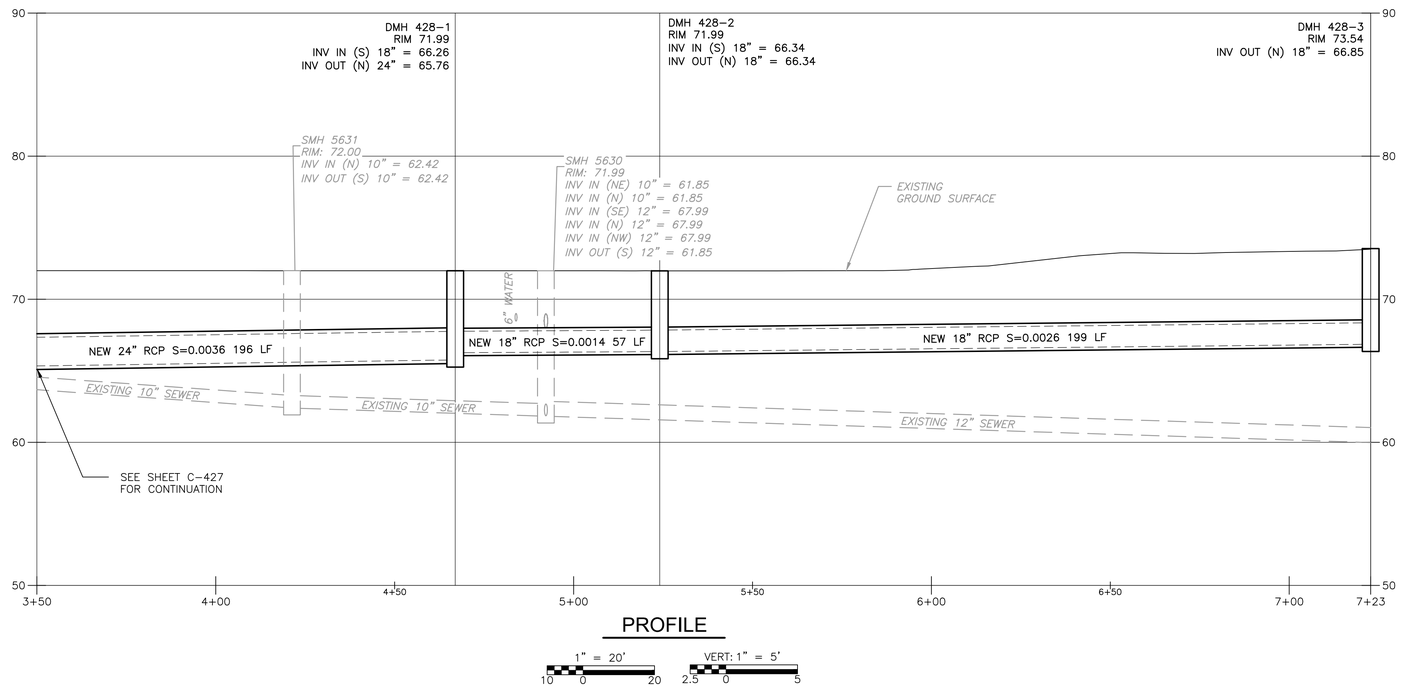
PROJECT NO. 0552-282899
FILE NAME: C427PLPR.DWG

SHEET NO.
C-427

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREY'S, CEP003ST_EX GAS LINE, CEP003ST_EX GAS LINE_Area 40] Images: []
Last saved by: GANJV Time: 6/27/2024 3:04:42 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_pi1\0552\282899\04 Design Services NM_10#\02 Civil\10 BIM_CADD\C414PLPR to C428PLPR.dwg
©2024 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.





REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:
DRAWN BY: S. SIDANALE
SHEET CHK'D BY:
CROSS CHK'D BY:
APPROVED BY:
DATE: JULY 2024

CDM Smith
670 North Commercial Street,
Manchester, NH 03101
Tel: (603) 222-8300

LOWELL, MA

HUMPHREY'S BROOK

CAROLYN ST

PROJECT NO. 0552-282899
FILE NAME: C428PLPR.DWG

SHEET NO.
C-428

30% SUBMITTAL - NOT FOR CONSTRUCTION

XREFs: [CDMS_2436_CEP005PP_EX SEWER, CEP004PP_EX WATER, CEP002ST_EX DRAIN, CEP007PP_EX CULVERTS, CEP001ST_BASEMAP HUMPHREY'S, CEP003ST_EX GAS LINE_Area 40] [Images: []
Last saved by: GANJV Time: 6/27/2024 3:09:23 PM
pw:\\cdmsmith-az02-pw.bentley.com:pw_pl1\0552\282899\04 Design Services NM_10#\02 Civil\10 BIM_CADD\C414PLPR to C428PLPR.dwg
©2024 CDM SMITH ALL RIGHTS RESERVED
REUSE OF DOCUMENTS: THESE DOCUMENTS AND DESIGNS PROVIDED BY PROFESSIONAL SERVICE, INCORPORATED HEREIN, ARE THE PROPERTY OF CDM SMITH AND ARE NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CDM SMITH.