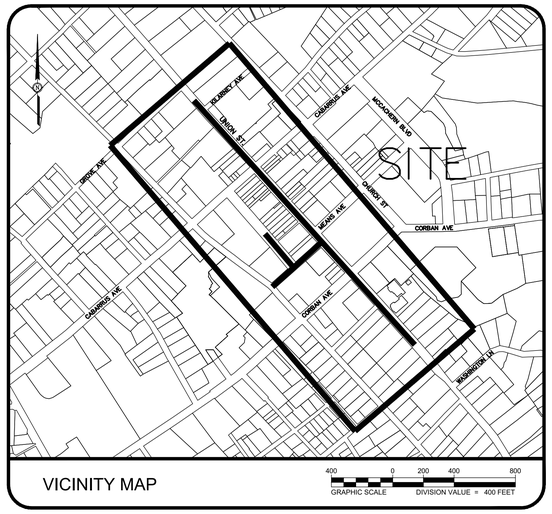
UNION STREET IMPROVEMENTS

CITY OF CONCORD

CABARRUS COUNTY, NORTH CAROLINA



VICINITY MAP

JULY 2021

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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 615 CARRIE CRANWELL 7/22/2021

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT SEAL 041598 ENGINEER MATTHEW A. OESTING 7/22/2021

NORTH CAROLINA PROFESSIONAL SEAL 036640 ENGINEER NICHOLAS C. HUFFMAN 7-22-21

Concord NORTH CAROLINA

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19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS

GENERAL NOTES:

1. EXISTING CONDITIONS AND TOPOGRAPHIC INFORMATION PROVIDED BY SURVEY NORSTAR LAND SURVEYING INC. DATED MAY 2, 2019.

2. CONTRACTOR SHALL REPAIR ALL DISTURBED AREAS TO EQUAL OR BETTER CONDITION THAN THE ORIGINAL SITE OR AS NOTED.

3. LOCATIONS OF EXISTING UTILITIES AS SHOWN ARE APPROXIMATE ONLY. EXACT LOCATIONS ARE TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR. AT LEAST THREE DAYS PRIOR TO CONSTRUCTION CONTRACTOR MUST NOTIFY EXISTING UTILITY OWNERS. CALL BEFORE YOU DIG, NORTH CAROLINA ONE CALL (1-800-632-4949).

4. ALL WORK NEAR AND AROUND WATERWAYS MUST CONFORM TO THE RULES OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY.

5. CONTRACTOR MUST PROVIDE EROSION CONTROL DEVICES TO CONTROL RUNOFF FROM THE CONSTRUCTION SITE. CONTRACTOR WILL BE RESPONSIBLE FOR ANY FINES THAT MAY BE LEVIED DUE TO POLLUTION CREATED DURING CONSTRUCTION.

6. CONTRACTOR SHALL FOLLOW ALL FEDERAL, STATE, AND LOCAL REGULATIONS PERTAINING TO CONSTRUCTION OPERATIONS.

7. CONTRACTOR SHALL NOTIFY THE PROPER LOCAL AUTHORITIES 24 HOURS PRIOR TO ANY ROAD BEING CLOSED FOR CONSTRUCTION, INCLUDING BUT NOT LIMITED TO THE LOCAL NEWSPAPER, RADIO STATION, FIRE DEPARTMENT, COUNTY SHERIFF'S DEPARTMENT, AMBULANCE, AND THE COUNTY EMERGENCY MANAGEMENT AGENCY. ALL TRAFFIC CONTROL SHALL CONFORM TO THE REQUIREMENTS OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION.

8. ALL FENCES DAMAGED DURING CONSTRUCTION SHALL BE REPLACED WITH LIKE MATERIAL IN A WORKMANLIKE MANNER AND IN ACCORDANCE WITH STANDARD FENCE CONSTRUCTION PRACTICES AT THE CONTRACTOR'S EXPENSE.

9. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING ROADS DURING CONSTRUCTION AND SHALL REPAIR ROADS PER REQUIREMENTS OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION. NO OPEN CUTS OF EXISTING ROADS SHALL BE ALLOWED EXCEPT WHERE INDICATED ON THE DRAWINGS OR WHERE SPECIFIC PERMISSION IS GRANTED BY THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION. SAND OR A SIMILAR MATERIAL APPROVED BY THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION SHALL BE PLACED AS A PROTECTIVE BARRIER BETWEEN TRACK EQUIPMENT AND THE ROAD AND CLEANED UP PROPERLY AFTER CONSTRUCTION.

10. THE PROJECT SITE IS NOT IN A FLOOD ZONE.

11. ANY DISCREPANCIES FOUND IN THE FIELD SHALL BE CALLED TO THE ATTENTION OF THE OWNER/ENGINEER/DESIGNER PRIOR TO PROCEEDING WITH ANY WORK.

12. HATCHING OF HARD SURFACE MATERIALS SUCH AS CONCRETE ARE FOR GENERAL INFORMATION PURPOSES. IN NO INSTANCE IS A UTILITY LID, COVER OR ACCESS POINT TO BE COVERED OVER AND CONCEALED BY THE PROPOSED SURFACE MATERIAL. ANY HIDDEN UTILITY BOXES, COVERS, ETC DISCOVERED DURING CONSTRUCTION SHALL BE ADJUSTED TO MATCH PROPOSED GRADE ELEVATIONS.

13. THE ENGINEER MAY MAKE MINOR GRADE CHANGES AS REQUIRED IN THE FIELD WITHOUT EFFECTING THE LUMP SUM PRICE FOR UNCLASSIFIED EXCAVATION.

14. UNLESS OTHERWISE STATED, ALL FILL AREAS SHALL BE CONSTRUCTED IN LAYERS OF 8" MAXIMUM THICKNESS WITH WATER ADDED OR SOIL CONDITIONED TO THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY THE ENGINEER AND COMPACTED WITH A SHEEP'S FOOT ROLLER TO A COMPACTION EQUAL TO OR GREATER THAN 95% OF THE DENSITY OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH THE STANDARD PROCTOR METHOD OF MOISTURE DENSITY RELATIONSHIP TEST, ASTM D698 OR AASHTO-99 UNLESS SPECIFIED IN OTHER SPECIFICATIONS.

15. ENTIRE AREA TO BE GRADED SHALL BE CLEARED AND GRUBBED. NO FILL SHALL BE PLACED ON ANY AREA NOT CLEARED OR GRUBBED.

16. ALL SOIL EROSION CONTROL MEASURES REQUIRED BY THE GRADING PLAN SHALL BE INSTALLED PRIOR TO GRADING, CLEARING OR GRUBBING. ALL EROSION CONTROL DEVICES SUCH AS SILT FENCES, ETC., SHALL BE MAINTAINED IN WORKABLE CONDITION FOR THE LIFE OF THE PROJECT AND SHALL BE REMOVED AT THE COMPLETION OF THE PROJECT ONLY ON THE ENGINEER'S APPROVAL. PAYMENT SHALL BE CONSIDERED INCIDENTAL TO CLEARING AND GRUBBING. IF DURING THE LIFE OF THE PROJECT, A STORM CAUSES SOIL EROSION WHICH CHANGES FINISH GRADES OR CREATES "GULLIES" AND "WASHED AREAS", THESE SHALL BE REPAIRED AT NO ADDITIONAL COST AND ALL SILT WASHED OFF OF THE PROJECT SITE ONTO ADJACENT PROPERTY SHALL BE REMOVED AS DIRECTED BY THE ENGINEER AT NO EXTRA COST. THE CONTRACTOR SHALL ADHERE TO ANY APPROVED EROSION CONTROL PLANS WHETHER INDICATED IN THE CONSTRUCTION PLANS OR UNDER SEPARATE COVER.

17. DISPOSABLE MATERIAL

A. CLEARING AND GRUBBING WASTES SHALL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF BY THE CONTRACTOR AT HIS EXPENSE, UNLESS SPECIFIED OTHERWISE.

B. SOLID WASTES TO BE REMOVED, SUCH AS SIDEWALKS, CURBS, PAVEMENT, ETC., MUST BE DISPOSED OF OFF SITE AND IN A RESPONSIBLE MANNER AND IN ACCORDANCE WITH ALL APPLICABLE LAWS, BY THE CONTRACTOR. THE CONTRACTOR SHALL REMOVE THIS WASTE FROM THE SITE AND PROPERLY DISPOSE OF IT AT THEIR OWN EXPENSE.

C. ABANDONED UTILITIES SUCH AS CULVERTS, WATER PIPE, HYDRANTS, CASTINGS, PIPE APPURTENANCES, UTILITY POLES, ETC., SHALL BE THE PROPERTY OF THE SPECIFIED UTILITY AGENCY, OR COMPANY HAVING JURISDICTION. BEFORE THE CONTRACTOR CAN REMOVE, DESTROY, SALVAGE, REUSE, SELL OR STORE FOR HIS OWN USE ANY ABANDONED UTILITY, HE MUST PRESENT TO THE OWNER WRITTEN PERMISSION FROM THE UTILITY INVOLVED.

18. IN THE EVENT EXCESSIVE GROUNDWATER OR SPRINGS ARE ENCOUNTERED WITHIN THE LIMITS OF CONSTRUCTION, THE CONTRACTOR SHALL INSTALL NECESSARY UNDER DRAINS AND STONE AS DIRECTED BY THE ENGINEER, ALL WORK SHALL BE PAID BASED UPON UNIT BIDS UNLESS SPECIFIED OTHERWISE. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF ADJUSTMENT OF ALL UTILITY SURFACE ACCESSES WHETHER HE PERFORMS THE WORK OR A UTILITY COMPANY PERFORMS THE WORK.

19. THE CONTRACTOR SHALL CONTROL ALL "DUST" BY PERIODIC WATERING AND SHALL PROVIDE ACCESS AT ALL TIMES FOR PROPERTY OWNERS WITHIN THE PROJECT AREA AND FOR EMERGENCY VEHICLES. ALL OPEN DITCHES AND HAZARDOUS AREAS SHALL BE CLEARLY MARKED IN ACCORDANCE WITH THE SPECIFICATIONS.

20. ALL DISTURBED AREAS TO RECEIVE PERMANENT SEEDING. FINISHED SURFACES SHALL BE TO GRADE AND SMOOTH, FREE OF ALL ROCKS LARGER THAN 2", EQUIPMENT TRACKS, DIRT CLODS, BUMPS, RIDGES AND GOUGES PRIOR TO SEEDING. THE SURFACE SHALL BE LOOSENED TO A DEPTH OF ±2"-3" TO ACCEPT SEED. THE CONTRACTOR SHALL NOT PROCEED WITH SEEDING OPERATIONS WITHOUT FIRST OBTAINING THE ENGINEER'S APPROVAL OF THE GRADED SURFACE.

21. ALL IMPROVEMENTS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH NORTH CAROLINA STATE STANDARDS. ALL IMPROVEMENTS SHALL COMPLY WITH THE CITY OF CONCORD DEVELOPMENT STANDARDS.

22. THE GENERAL CONTRACTOR SHALL CONTACT ALL OWNERS OF EASEMENTS, UTILITIES AND RIGHT OF WAYS, PUBLIC OR PRIVATE, PRIOR TO WORKING IN THESE AREAS.

23. ALL UTILITIES OR STRUCTURES NOT DESIGNATED FOR REMOVAL OR MODIFICATION ARE TO REMAIN AND SHALL BE PROTECTED BY THE CONTRACTOR DURING CONSTRUCTION AND REMAIN IN WORKING ORDER.

24. ALL DEMOLITION WORK SHALL BE PERFORMED WITH "DUE CARE AND DILIGENCE" SO AS TO PREVENT THE ARBITRARY DESTRUCTION OR INTERRUPTION OF CONCEALED UTILITIES WHICH ARE INTENDED TO REMAIN IN USE AND THE ROUTING OF WHICH COULD NOT BE DETERMINED UNTIL DEMOLITION WAS STARTED. ALL SUCH DISCOVERIES OF UTILITIES DURING THE DEMOLITION PROCESS WHICH ARE IN A LOCATION DIFFERENT FROM THAT INDICATED, OR ARE UNIDENTIFIED, SHALL BE REPORTED TO THE ENGINEER BEFORE REMOVAL.

25. ANY EXISTING ASPHALT, DESIGNATED TO REMAIN, THAT IS DAMAGED DURING DEMOLITION AND CONSTRUCTION SHALL BE REPAIRED AT NO COST TO THE OWNER.

26. ANY NOTE, OR REFERENCE TO AN ELEMENT, WHICH DOES NOT SPECIFY ACTION BY THE CONTRACTOR SHALL BE CONSTRUED AS INFORMATION ONLY.

27. THE GENERAL CONTRACTOR IS TO CONTACT AND COORDINATE WITH ALL APPROPRIATE PUBLIC AND PRIVATE UTILITY COMPANIES PRIOR TO ANY DEMOLITION OR RELOCATION OF EXISTING UTILITIES. IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL UTILITIES HAVE BEEN PROPERLY CAPPED OFF OR RELOCATED.

28. PROTECT ALL ADJACENT PROPERTIES, THE GENERAL PUBLIC, AND ALL THE OWNER'S FACILITIES FROM DAMAGE. THE CONTRACTOR SHALL REPAIR ANY DAMAGE IMMEDIATELY AND SHALL MAKE REPAIRS AT THE CONTRACTOR'S EXPENSE.

29. CONTRACTOR SHALL HOLD HARMLESS THE OWNER FOR DAMAGES OR OTHER ACCIDENTS WHICH OCCUR DURING THESE CONSTRUCTION ACTIVITIES.

30. TREES AND LANDSCAPING NOT DESIGNATED FOR REMOVAL SHALL BE PROTECTED DURING CONSTRUCTION.

31. CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING AND COORDINATION OF ALL ILLUSTRATED CONSTRUCTION ACTIVITIES AT THE JOB SITE.

32. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE RULES AND REGULATIONS GOVERNING THE CONSTRUCTION INDUSTRY, INCLUDING BUT NOT LIMITED TOO THOSE PERTAINING TO TRAVELING OPERATIONS AND OSHA.

33. CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ENGINEER PRIOR TO ANY LOCATION/ADJUSTMENTS OF EXISTING VAULTS (REGARDLESS OF FUNCTION), METER BOXES, FIRE HYDRANTS, CLEAN OUTS, MANHOLES, ETC.

34. UNDER ABSOLUTELY NO CIRCUMSTANCES SHALL ANY UNMANNED EXCAVATION BE LEFT OPEN OR UNPROTECTED DURING NON-WORKING HOURS. UTILIZE SIGNS, BARRICADES, ETC. TO ENSURE THE SAFETY OF THE GENERAL PUBLIC.

NORTH CAROLINA LAND QUALITY SECTION
EROSION CONTROL NOTES

GENERAL: ALL EROSION CONTROL MEASURES ARE TO BE PERFORMED IN STRICT ACCORDANCE WITH REQUIREMENTS OF THE NORTH CAROLINA DIVISION OF ENERGY, MINERAL, AND LAND RESOURCES (NCDEMLR). THE FOLLOWING CONSTRUCTION SEQUENCE SHALL BE COMPLIED WITH FOR ALL WORK.

1. CONTRACTOR SHALL ATTEND THE PRE-CONSTRUCTION MEETING WITH THE CIVIL ENGINEER (OR LOCAL JURISDICTION) PRIOR TO BEGINNING CONSTRUCTION.

2. IDENTIFY WORK LIMITS BEFORE CONSTRUCTION ACTIVITY BEGINS.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ALL RECORDS REQUIRED BY NCDEMLR FOR THE INSTALLATION AND MAINTENANCE OF THE SITE EROSION CONTROL.

4. INSTALL EROSION CONTROL MEASURES PER THE PLAN AND AS AS REQUIRED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF ENERGY, MINERAL AND LAND RESOURCES, LAND QUALITY SECTION.

5. CONTRACTOR TO UTILIZE MUD MATS FOR CONSTRUCTION ENTRANCE(S) AND ADJUST AS ACTIVE CONSTRUCTION AREAS SHIFT.

6. CONTRACTOR TO INSTALL SILT SAKS ON THE FIRST RECEIVING DOWNSTREAM INLET STRUCTURES OUTSIDE OF THE PROJECT AREA. CONTRACTOR TO INSTALL WATTLES AROUND ACTIVE CONSTRUCTION AREAS AND ENSURE ALL STORMWATER LEAVING THE CONSTRUCTION SITE PASSES THROUGH AN EROSION CONTROL DEVICE. ANY PUMPING OF WATER FROM UTILITY TRENCHES MUST PASS THROUGH AN EROSION CONTROL DEVICE. DEWATERING BAGS/SEDIMENT FILTER BAGS MAY BE USED TO FILTER STORMWATER FROM TRENCHING ACTIVITIES.

7. PROCEED WITH CONSTRUCTION AS GUIDED BY THE CONSTRUCTION SEQUENCE.

LEGEND

- R/W – RIGHT OF WAY
- CP – CALCULATED POINT
- TC – TERRA COTTA
- – LIGHT POLE
- – SIGNAL BOX
- – ELECTRIC MANHOLE
- – ELECTRIC BOX
- – TELEPHONE MANHOLE
- – WATER VALVE
- – WATER METER
- – FIRE HYDRANT
- – WATER VAULT
- – IRRIGATION CONTROL VALVE
- – SANITARY SEWER MANHOLE
- – SANITARY SEWER CLEANOUT
- – STORM MANHOLE
- – YARD INLET
- – CATCH BASIN
- – DROP INLET
- – MAILBOX
- ——W——W—— APPROXIMATE LOCATION OF EXISTING WATER LINES
- ——S——S—— APPROXIMATE LOCATION OF EXISTING SEWER LINES
- ——G——G—— APPROXIMATE LOCATION OF EXISTING GAS LINES
- ——FO——FO—— APPROXIMATE LOCATION OF UNDERGROUND FIBER OPTIC CABLE LINE

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

SECTION E: GROUND STABILIZATION

	Site Area Description	Required Ground Stabilization Timeframes: Stabilize within this many calendar days after ceasing land disturbance	Timeframe variations
(a)	Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b)	High Quality Water (HQW) Zones	7	None
(c)	Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d)	Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e)	Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
• Temporary grass seed covered with straw or other mulches and tackifiers • Hydroseeding • Rolled erosion control products with or without temporary grass seed • Appropriately applied straw or other mulch • Plastic sheeting	• Permanent grass seed covered with straw or other mulches and tackifiers • Geotextile fabrics such as permanent soil reinforcement matting • Hydroseeding • Shrubs or other permanent plantings covered with mulch • Uniform and evenly distributed ground cover sufficient to restrain erosion • Structural methods such as concrete, asphalt or retaining walls • Rolled erosion control products with grass seed

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

1. Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
2. Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
3. Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
4. Provide ponding area for containment of treated Stormwater before discharging offsite.
5. Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

EQUIPMENT AND VEHICLE MAINTENANCE

1. Maintain vehicles and equipment to prevent discharge of fluids.
2. Provide drip pans under any stored equipment.
3. Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
4. Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
5. Remove leaking vehicles and construction equipment from service until the problem has been corrected.
6. Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
8. Dispose waste off-site at an approved disposal facility.
9. On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

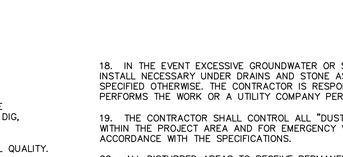
1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, sized and placed appropriately for the needs of site.
5. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

PORTABLE TOILETS

1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

EARTHEN STOCKPILE MANAGEMENT

1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
2. Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
3. Provide stable stone access point when feasible.
4. Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.



CONCRETE WASHOUTS

1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
4. Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
5. Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
6. Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
7. Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
8. Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
9. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
10. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

HERBICIDES, PESTICIDES AND RODENTICIDES

1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
3. Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
4. Do not stockpile these materials onsite.

HAZARDOUS AND TOXIC WASTE

1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.
3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING | EFFECTIVE: 04/01/19

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those un-attended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part II, Section C, item (2)(a) of this permit of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be documented in the manner described:

Item to Document	Documentation Requirements
(a) Each E&SC Measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC Plan.	Initial and date each E&SC Measure on a copy of the approved E&SC Plan or complete, date and sign an inspection report that lists each E&SC Measure shown on the approved E&SC Plan. This documentation is required upon the initial installation of the E&SC Measures or if the E&SC Measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&SC Plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC Plan.	Initial and date a copy of the approved E&SC Plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&SC Measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&SC Measures.	Initial and date a copy of the approved E&SC Plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

2. Additional Documentation

In addition to the E&SC Plan documents above, the following items shall be kept on the site and available for agency inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

(a) This general permit as well as the certificate of coverage, after it is received.

(b) Records of inspections made during the previous 30 days. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

(c) All data used to complete the Notice of Intent and elder inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that must be reported

Permittees shall report the following occurrences:

(a) Visible sediment deposition in a stream or wetland.

(b) Oil spills if:
- They are 25 gallons or more,
- They are less than 25 gallons but cannot be cleaned up within 24 hours,
- They cause sheen on surface waters (regardless of volume), or
- They are within 100 feet of surface waters (regardless of volume).

(a) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.

(b) Anticipated bypasses and unanticipated bypasses.

(c) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Division's Emergency Response personnel at (800) 662-7956, (800) 858-0368 or (919) 733-3300.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. • If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional measures are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	• ***Within 24 hours***, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	• ***A report at least ten days before the date of the bypass, if possible***. The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment[40 CFR 122.41(l)(7)]	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6). • Division staff may waive the requirement for a written report on a case-by-case basis.

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING | EFFECTIVE: 04/01/19

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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

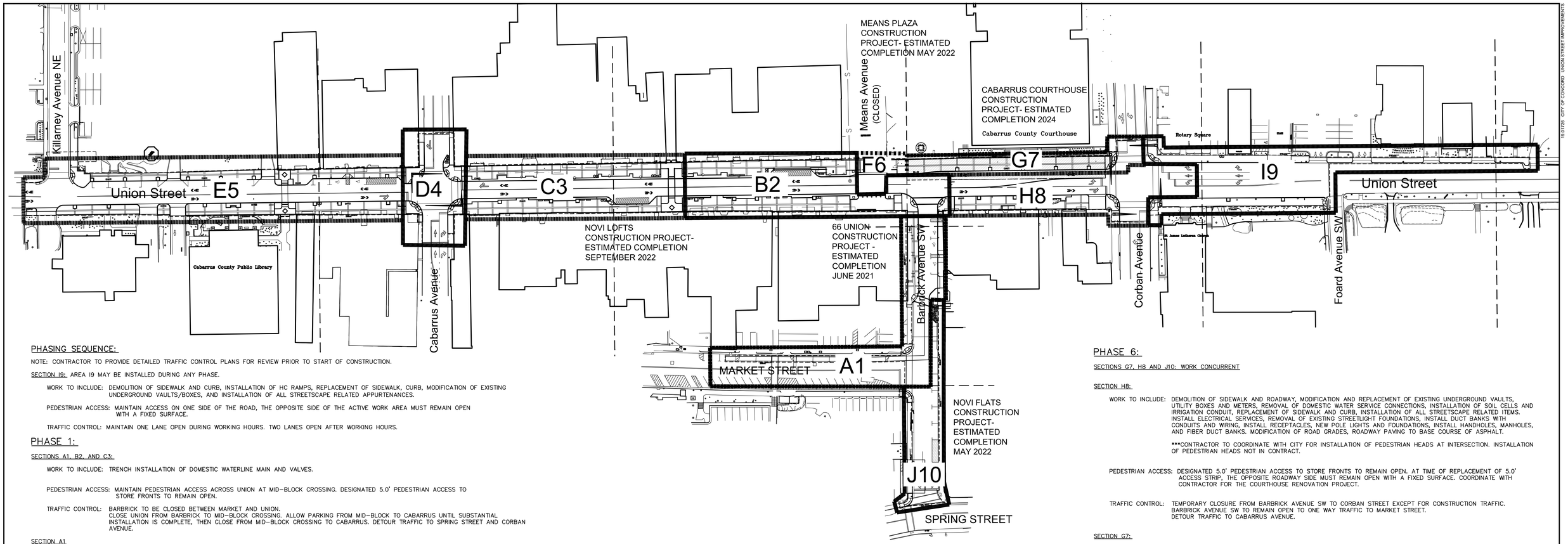
NOT TO SCALE

GENERAL NOTES AND LEGENDS

OFFICE MANAGER	DESIGNER	DATE	PROJECT #	FUNDING #
D.G. CHAPMAN	C.L. CRANWILL	JULY 2021	19.01726	N/A
PROJECT MANAGER	REVIEWER			
M.J. NORRIS	B. ROARK			

SHEET
G-002

P:\2019\19.01726-CONCORDNC-UNION STREETSCAPE PROJECT\DRAWINGS\19.01726 UNION - COVER SHEETS.DWG PLOT DATE 7/22/2021 9:24 AM KURTIS DURBRANT
19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS



PHASING SEQUENCE:

NOTE: CONTRACTOR TO PROVIDE DETAILED TRAFFIC CONTROL PLANS FOR REVIEW PRIOR TO START OF CONSTRUCTION.

SECTION I9: AREA I9 MAY BE INSTALLED DURING ANY PHASE.

WORK TO INCLUDE: DEMOLITION OF SIDEWALK AND CURB, INSTALLATION OF HC RAMPS, REPLACEMENT OF SIDEWALK, CURB, MODIFICATION OF EXISTING UNDERGROUND VAULTS/BOXES, AND INSTALLATION OF ALL STREETSCAPE RELATED APPURTENANCES.

PEDESTRIAN ACCESS: MAINTAIN ACCESS ON ONE SIDE OF THE ROAD, THE OPPOSITE SIDE OF THE ACTIVE WORK AREA MUST REMAIN OPEN WITH A FIXED SURFACE.

TRAFFIC CONTROL: MAINTAIN ONE LANE OPEN DURING WORKING HOURS. TWO LANES OPEN AFTER WORKING HOURS.

PHASE 1:

SECTIONS A1, B2, AND C3:

WORK TO INCLUDE: TRENCH INSTALLATION OF DOMESTIC WATERLINE MAIN AND VALVES.

PEDESTRIAN ACCESS: MAINTAIN PEDESTRIAN ACCESS ACROSS UNION AT MID-BLOCK CROSSING. DESIGNATED 5.0' PEDESTRIAN ACCESS TO STORE FRONTS TO REMAIN OPEN.

TRAFFIC CONTROL: BARBRICK TO BE CLOSED BETWEEN MARKET AND UNION.
CLOSE UNION FROM BARBRICK TO MID-BLOCK CROSSING. ALLOW PARKING FROM MID-BLOCK TO CABARRUS UNTIL SUBSTANTIAL INSTALLATION IS COMPLETE, THEN CLOSE FROM MID-BLOCK CROSSING TO CABARRUS. DETOUR TRAFFIC TO SPRING STREET AND CORBAN AVENUE.

SECTION A1

WORK TO INCLUDE: INSTALLATION OF STORMWATER PIPING. DEMOLITION OF SIDEWALK AND ROADWAY, MODIFICATION AND REPLACEMENT OF EXISTING UNDERGROUND VAULTS, UTILITY BOXES AND METERS, REMOVAL AND REPLACEMENT OF SANITARY SEWER SERVICES, REMOVAL AND REPLACEMENT OF DOMESTIC WATER SERVICE CONNECTIONS, REPLACEMENT OF SIDEWALK, INSTALLATION OF ALL STREETSCAPE RELATED ITEMS, INSTALL DUCT BANKS WITH CONDUITS AND WIRING, INSTALL RECEPTACLES, NEW POLE LIGHTS AND FOUNDATIONS, INSTALL HANDHOLES, AND MANHOLES, MODIFICATION OF ROAD GRADES, AND ROADWAY PAVING TO BASE COURSE OF ASPHALT.

PEDESTRIAN ACCESS: DESIGNATED 5.0' PEDESTRIAN ACCESS TO STORE FRONTS TO REMAIN OPEN. AT TIME OF REPLACEMENT OF 5.0' ACCESS STRIP, THE OPPOSITE SIDE OF ACTIVE WORK AREAS MUST REMAIN OPEN WITH A FIXED SURFACE.

TRAFFIC CONTROL: ONE LANE OF TRAFFIC TO REMAIN OPEN DURING WORK HOURS ON MARKET STREET. NO ON STREET PARKING, UTILIZE AREA TO MAINTAIN TWO WAY TRAFFIC AFTER WORK HOURS. CONTRACTOR TO WORK WITH ADJACENT BUSINESSES TO KEEP ACCESS TO PARKING AREAS.
BARBRICK TO BE CLOSED BETWEEN MARKET AND UNION.

PHASE 2:

SECTIONS D4, E5, AND H8

SECTION D4:

WORK TO INCLUDE: TRENCH INSTALLATION OF WATERLINE MAIN AND VALVES.

TRAFFIC CONTROL: INTERSECTION OF UNION AND CABARRUS TO BE TEMPORARILY CLOSED FOR TRENCHING ACTIVITIES AND REOPENED FOR TRAFFIC.
DETOUR TRAFFIC TO CORBAN AVENUE.

SECTION E5: WORK TO PROCEED AFTER INTERSECTION OF CABARRUS AND UNION IS REOPENED

WORK TO INCLUDE: TRENCH INSTALLATION OF WATERLINE MAIN, SERVICES, AND VALVES.

TRAFFIC CONTROL: UNION STREET FROM KILLARNEY AVENUE NE TO CABARRUS AVENUE TO BE TO BE TEMPORARILY CLOSED FOR TRENCHING ACTIVITIES DURING THE DAY AND REOPENED TO TRAFFIC AFTER WORK HOURS AND WEEKENDS.
DETOUR TRAFFIC TO SPRING STREET AND CHURCH STREET.

SECTION H8: WORK TO PROCEED AFTER INTERSECTION OF CABARRUS AND UNION IS REOPENED

WORK TO INCLUDE: TRENCH INSTALLATION OF WATERLINE MAIN, SERVICES AND VALVES.

TRAFFIC CONTROL: UNION FROM BARBRICK TO WATERLINE CONNECTIONS AT CORBAN INTERSECTION, TO BE CLOSED TO PUBLIC USE AND ONE LANE TO REMAIN OPEN FOR CONSTRUCTION TRAFFIC. DURING WORK HOURS FOR TRENCHING ACTIVITIES DURING THE DAY AND REOPENED TO TRAFFIC AFTER WORK HOURS AND WEEKENDS. TEMPORARY CLOSURE OF UNION AND CORBAN INTERSECTION DURING THE DAY AND REOPENED AFTER WORK HOURS.
DETOUR TRAFFIC TO CABARRUS AVENUE.

PHASE 3:

SECTIONS A1, B2, C3, F6, G7 AND H8:

SECTIONS A1, B2 AND C3:

WORK TO INCLUDE: DEMOLITION OF SIDEWALK AND ROADWAY, MODIFICATION AND REPLACEMENT OF EXISTING UNDERGROUND VAULTS, UTILITY BOXES AND METERS, REMOVAL AND REPLACEMENT OF SANITARY SEWER SERVICES, INSTALLATION AND REMOVAL OF DOMESTIC WATER SERVICE CONNECTIONS, REPLACEMENT OF SIDEWALK AND CURB, INSTALL SOIL CELLS AND IRRIGATION CONDUIT, INSTALLATION OF ALL STREETSCAPE RELATED ITEMS. INSTALL ELECTRICAL SERVICE, REMOVAL OF EXISTING STREETLIGHT FOUNDATIONS, INSTALL DUCT BANKS WITH CONDUITS AND WIRING, INSTALL RECEPTACLES, NEW POLE LIGHTS AND FOUNDATIONS, INSTALL HANDHOLES, MANHOLES, AND FIBER DUCT BANKS. INSTALLATION OF STORM DRAINAGE AFTER WATER MAIN AND ALL PROPOSED SERVICE CONNECTIONS ARE OPERATIONAL AND EXISTING WATERLINES HAVE HAVE BEEN REMOVED, MODIFICATION OF ROAD GRADES, ROADWAY PAVING TO BASE COURSE OF ASPHALT.

SECTIONS F6, G7 AND H8:

WORK TO INCLUDE: COMPLETE INSTALLATION OF STORMWATER PIPING, AFTER PROPOSED WATERLINE AND SERVICES ARE ACTIVE. REMOVAL OF ANY INACTIVE WATERLINES THAT ARE IN CONFLICT WITH THE STORMWATER INSTALLATION.

PEDESTRIAN ACCESS: DESIGNATED 5.0' PEDESTRIAN ACCESS TO STORE FRONTS TO REMAIN OPEN. AT TIME OF REPLACEMENT OF 5.0' ACCESS STRIP, THE OPPOSITE SIDE OF ACTIVE WORK AREAS MUST REMAIN OPEN WITH A FIXED SURFACE. MID BLOCK PEDESTRIAN ACCESS TO REMAIN OPEN AS LONG AS POSSIBLE THEN ROUTE PEDESTRIANS TO INTERSECTIONS FOR UNION STREET AND CABARRUS AVENUE AND UNION STREET AND CORBAN AVENUE FOR CROSSINGS.

TRAFFIC CONTROL: CLOSE UNION FROM BARBRICK TO INTERSECTION OF UNION STREET AND CABARRUS AVENUE. BARBRICK AVENUE SW TO CORBAN AVENUE TO REMAIN OPEN FOR CONSTRUCTION TRAFFIC TO COURTHOUSE
DETOUR TRAFFIC TO SPRING STREET.

PHASE 4:

SECTION D4 AND E5:

SECTION D4:

WORK TO INCLUDE: DEMOLITION OF SIDEWALK AND ROADWAY, MODIFICATION AND REPLACEMENT OF EXISTING UNDERGROUND VAULTS, UTILITY BOXES AND METERS, INSTALLATION OF SANITARY SEWER, REMOVAL AND ABANDONMENT OF EXISTING SANITARY SEWER, REMOVAL OF EXISTING WATER MAINS, REPLACEMENT OF SIDEWALK AND CURB, INSTALL SOIL CELLS AND IRRIGATION CONDUIT, INSTALLATION OF ALL STREETSCAPE RELATED ITEMS. INSTALL ELECTRICAL SERVICE, REMOVAL OF EXISTING STREETLIGHT FOUNDATIONS, INSTALL DUCT BANKS WITH CONDUITS AND WIRING, INSTALL RECEPTACLES, NEW POLE LIGHTS AND FOUNDATIONS, INSTALL HANDHOLES, MANHOLES, AND FIBER DUCT BANKS. INSTALLATION OF STORM DRAINAGE AFTER WATER MAIN AND ALL PROPOSED SERVICE CONNECTIONS ARE OPERATIONAL. MODIFICATION OF ROAD GRADES, ROADWAY PAVING TO BASE COURSE OF ASPHALT.

***CONTRACTOR TO COORDINATE WITH CITY FOR INSTALLATION OF MAST ARM POLE AND PEDESTRIAN HEADS AT INTERSECTION. INSTALLATION OF PEDESTRIAN HEADS NOT IN CONTRACT.

SECTION E5:

WORK TO INCLUDE: INSTALLATION OF STORMWATER PIPES AND STRUCTURES

PEDESTRIAN ACCESS: MAINTAIN ACCESS ON ONE SIDE OF THE ROAD, THE OPPOSITE SIDE OF ACTIVE WORK AREAS MUST REMAIN OPEN WITH A FIXED SURFACE.

TRAFFIC CONTROL: INTERSECTION OF UNION STREET AND CABARRUS AVENUE CLOSED. ALLOW ACCESS FROM KILLARNEY AVENUE NE TO CHURCH DRIVEWAY ENTRANCE.
DETOUR TRAFFIC TO SPRING STREET AND CORBAN AVENUE.

PHASE 5:

SECTION E5:

WORK TO INCLUDE: DEMOLITION OF SIDEWALK AND ROADWAY, MODIFICATION AND REPLACEMENT OF EXISTING UNDERGROUND VAULTS, UTILITY BOXES AND METERS, INSTALLATION OF SOIL CELLS, REPLACEMENT OF SIDEWALK AND CURB, SOIL CELLS, IRRIGATION CONDUIT, INSTALLATION OF ALL STREETSCAPE RELATED ITEMS. INSTALL ELECTRICAL SERVICES, REMOVAL OF STREETLIGHT FOUNDATIONS, INSTALL DUCT BANKS WITH CONDUITS AND WIRING, INSTALL RECEPTACLES, NEW POLE LIGHTS AND FOUNDATIONS, INSTALL HANDHOLES, MANHOLES, AND FIBER DUCT BANKS. INSTALLATION OF STORM DRAINAGE AFTER WATER MAIN AND ALL PROPOSED SERVICE CONNECTIONS ARE OPERATIONAL. MODIFICATION OF ROAD GRADES, ROADWAY PAVING TO BASE COURSE OF ASPHALT.

PEDESTRIAN ACCESS: MAINTAIN ACCESS ON ONE SIDE OF THE ROAD, THE OPPOSITE SIDE OF ACTIVE WORK AREAS MUST REMAIN OPEN WITH A FIXED SURFACE.

TRAFFIC CONTROL: ROAD CLOSURE FROM KILLARNEY AVENUE NE TO CABARRUS AVENUE. DETOUR TRAFFIC TO CABARRUS AVENUE.

PHASE 6:

SECTIONS G7, H8 AND J10: WORK CONCURRENT

SECTION H8:

WORK TO INCLUDE: DEMOLITION OF SIDEWALK AND ROADWAY, MODIFICATION AND REPLACEMENT OF EXISTING UNDERGROUND VAULTS, UTILITY BOXES AND METERS, REMOVAL OF DOMESTIC WATER SERVICE CONNECTIONS, INSTALLATION OF SOIL CELLS AND IRRIGATION CONDUIT, REPLACEMENT OF SIDEWALK AND CURB, INSTALLATION OF ALL STREETSCAPE RELATED ITEMS. INSTALL ELECTRICAL SERVICES, REMOVAL OF EXISTING STREETLIGHT FOUNDATIONS, INSTALL DUCT BANKS WITH CONDUITS AND WIRING, INSTALL RECEPTACLES, NEW POLE LIGHTS AND FOUNDATIONS, INSTALL HANDHOLES, MANHOLES, AND FIBER DUCT BANKS. MODIFICATION OF ROAD GRADES, ROADWAY PAVING TO BASE COURSE OF ASPHALT.

***CONTRACTOR TO COORDINATE WITH CITY FOR INSTALLATION OF PEDESTRIAN HEADS AT INTERSECTION. INSTALLATION OF PEDESTRIAN HEADS NOT IN CONTRACT.

PEDESTRIAN ACCESS: DESIGNATED 5.0' PEDESTRIAN ACCESS TO STORE FRONTS TO REMAIN OPEN. AT TIME OF REPLACEMENT OF 5.0' ACCESS STRIP, THE OPPOSITE ROADWAY SIDE MUST REMAIN OPEN WITH A FIXED SURFACE. COORDINATE WITH CONTRACTOR FOR THE COURTHOUSE RENOVATION PROJECT.

TRAFFIC CONTROL: TEMPORARY CLOSURE FROM BARBRICK AVENUE SW TO CORBAN STREET EXCEPT FOR CONSTRUCTION TRAFFIC.
BARBRICK AVENUE SW TO REMAIN OPEN TO ONE WAY TRAFFIC TO MARKET STREET.
DETOUR TRAFFIC TO CABARRUS AVENUE.

SECTION G7:

WORK TO INCLUDE: MODIFICATION OF ROADWAY GRADES, INSTALLATION OF UNDERGROUND UTILITIES, AND INSTALLATION OF TEMPORARY BASE COURSE OF ASPHALT. ALL OTHER INSTALLATION OF DESIGN FEATURES, EXCEPT UNDERGROUND UTILITIES, TO BE INSTALLED AT END OF COURTHOUSE RENOVATION IN 2024 – NOT IN CONTRACT.

TRAFFIC CONTROL: TEMPORARY CLOSURE FROM BARBRICK AVENUE SW AND CORBAN AVENUE.
DETOUR TRAFFIC TO CABARRUS AVENUE.

SECTION J10:

PHASE TO BE SCHEDULED WHEN NOVI LOFTS HAS COMPLETED CONSTRUCTION AND BARBRICK IS NO LONGER BEING USED FOR CONSTRUCTION ACCESS – EXPECTED COMPLETION MAY 2022.

WORK TO INCLUDE: DEMOLITION OF SIDEWALK, REPLACEMENT OF SIDEWALK, MODIFICATION OF EXISTING UNDERGROUND VAULTS, INSTALLATION OF ALL STREETSCAPE RELATED ITEMS.

PEDESTRIAN ACCESS: MAINTAIN ACCESS ON ONE SIDE OF THE ROAD, THE OPPOSITE SIDE MUST REMAIN OPEN WITH A FIXED SURFACE.

TRAFFIC CONTROL: MAINTAIN ONE LANE OPEN TO FROM MARKET STREET TO SPRING DURING WORKING HOURS. TEMPORARY CLOSURE FOR INSTALLATION OF CROSSWALK PAVERS. OPEN LANES TO SPRING STREET AFTER WORK HOURS.
NO PUBLIC PARKING.

PHASE 7:

SECTION F6:

PHASE TO BE SCHEDULED WHEN MEANS PLAZA IS NO LONGER BEING UTILIZED AS A CONSTRUCTION ENTRANCE FOR THE COURTHOUSE RENOVATION PROJECT. EXPECTED COMPLETION SPRING OF 2022.

WORK TO INCLUDE: DEMOLITION OF SIDEWALK AND ROADWAY, MODIFICATION AND REPLACEMENT OF EXISTING UNDERGROUND VAULTS, UTILITY BOXES AND METERS, INSTALLATION OF SOIL CELLS, IRRIGATION CONDUIT, REPLACEMENT OF SIDEWALK AND CURB, INSTALLATION OF ALL STREETSCAPE RELATED ITEMS. INSTALL ELECTRICAL SERVICE AT REMOVAL OF EXISTING LIGHTING AND FOUNDATIONS ALONG SECTION, INSTALL DUCT BANKS WITH CONDUITS AND WIRING, INSTALL RECEPTACLES, NEW POLE LIGHTS AND FOUNDATIONS, INSTALL HANDHOLES, MANHOLES, AND FIBER DUCT BANKS. INSTALLATION OF STORM DRAINAGE AFTER WATER MAIN AND ALL PROPOSED SERVICE CONNECTIONS ARE OPERATIONAL. MODIFICATION OF ROAD GRADES.

PEDESTRIAN ACCESS: MAINTAIN ACCESS ON ONE SIDE OF THE ROAD, THE OPPOSITE SIDE OF ACTIVE WORK AREA MUST REMAIN OPEN WITH A FIXED SURFACE.

TRAFFIC CONTROL: MAINTAIN ONE LANE OPEN TO MARKET DURING WORKING HOURS. TEMPORARY CLOSURE OF UNION FOR INSTALLATION OF PAVERS.
DETOUR TRAFFIC TO MARKET.

PHASE 8:

ALL SECTIONS:

WORK TO INCLUDE: ROADWAY PAVING FOR SURFACE COURSE OF ASPHALT, STRIPING, LANDSCAPE INSTALLATION, IRRIGATION, SITE FURNITURE, PUNCH LIST, AND FINAL CLEAN UP.

TRAFFIC CONTROL: ONE LANE OPEN DURING WORK HOURS
DETOURS TO BE PROVIDED BY CONTRACTOR DURING PAVING OPERATIONS
TWO LANES OPEN DURING NON WORK HOURS
NO PUBLIC PARKING

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Hickory, NC 28601
828.328.2024
NC Firm License # C-0459
mcgillassociates.com

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 915 CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

NOT TO SCALE

SEQUENCING

OFFICE MANAGER	DESIGNER	DATE	PROJECT #	FUNDING #
D.G. CHAPMAN	C.L. CRANWILL	JULY 2021	19.01726	N/A
PROJECT MANAGER	REVIEWER			
M.J. NORRIS	B. ROARK			

SHEET
G-003

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS

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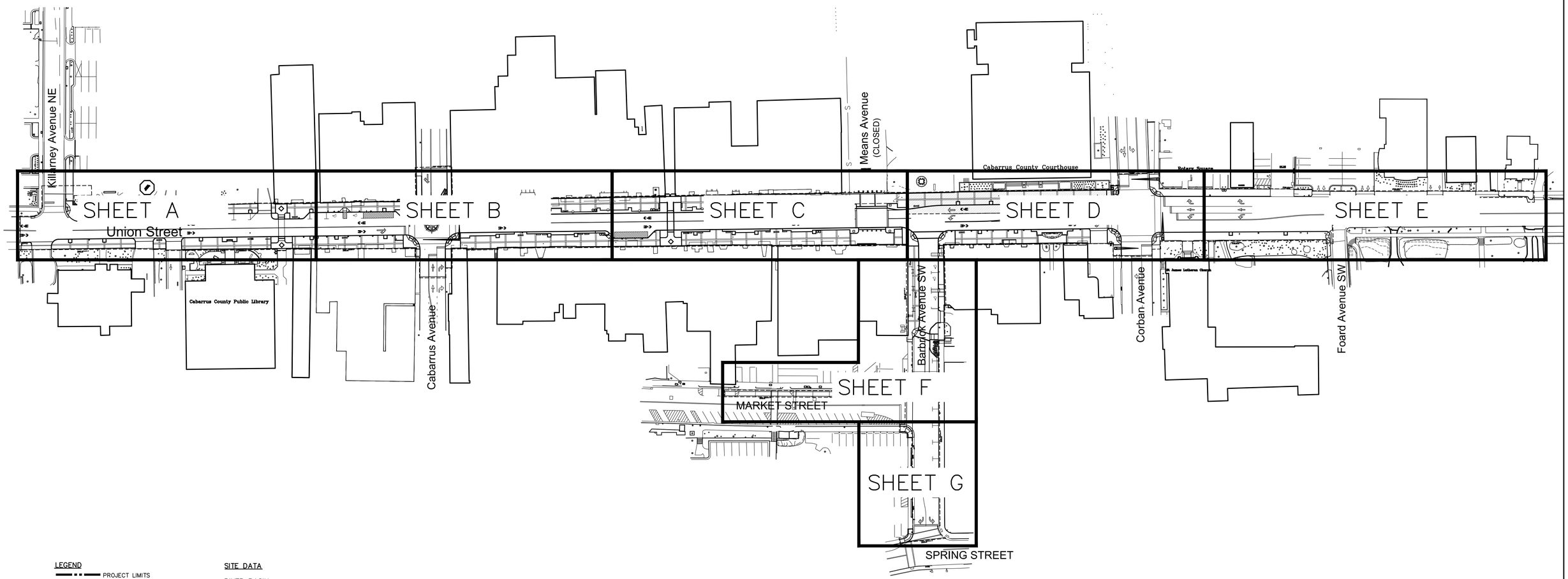

LEGEND

	PROJECT LIMITS
	SEDIMENT WATTLE
	INLET PROTECTION
BC	BOTTOM OF CURB
TC	TOP OF CURB
BW	BOTTOM OF WALL
TW	TOP OF WALL

SITE DATA

RIVER BASIN:
PEE DEE RIVER

OVERALL APPROXIMATE PROJECT LIMITS/DISTURBED ACREAGE: 2.18 ACRES.
PERMITTED DISTURBED AREA 3.5 ACRES.

MUNICIPALITY:
CITY OF CONCORD

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1240 19th Street Lane NW
Hickory, NC 28601
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NC Firm License # C-0459
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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

NOT TO SCALE

OVERALL PROJECT SHEET INDEX

OFFICE MANAGER	DESIGNER	DATE	PROJECT #	FUNDING #
D.G. CHAPMAN	C.L. CRANWILL	JULY 2021	19.01726	N/A
PROJECT MANAGER	REVIEWER			
M.J. NORRIS	B. ROARK			

SHEET
G-004

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS

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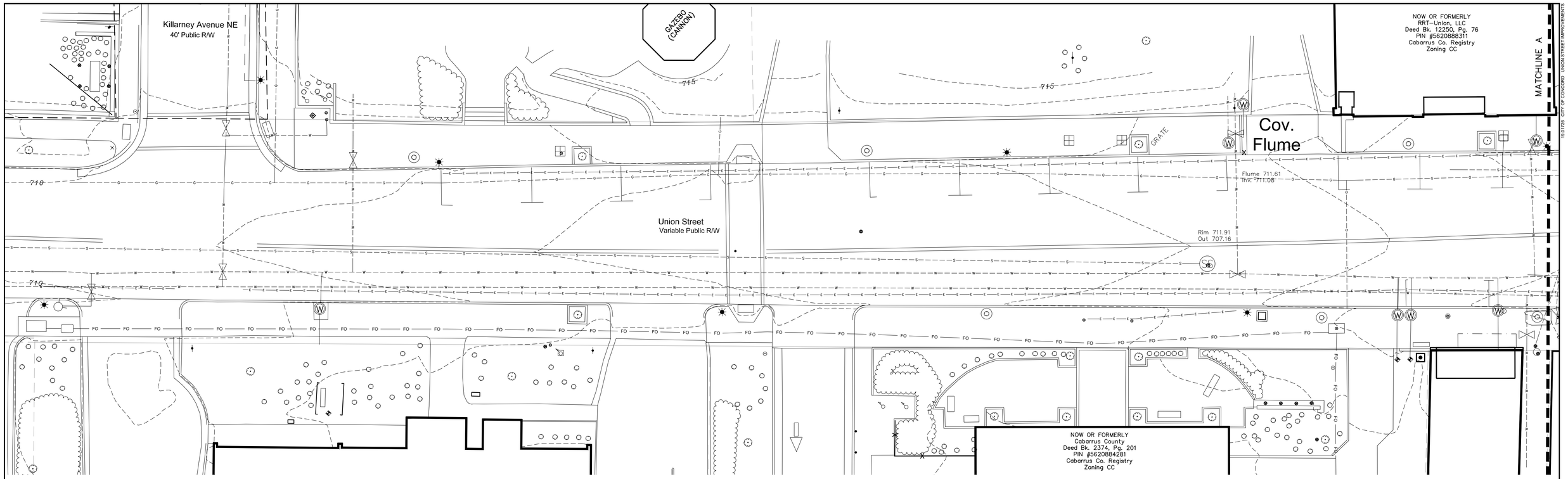


GENERAL NOTES:

1. ALL EXISTING CONDITIONS AND TOPOGRAPHIC INFORMATION WAS OBTAINED FROM NORSTAR LAND SURVEYING, INC. DATED MAY 2, 2019. COURTHOUSE RENOVATION PROJECT STORMWATER OBTAINED FROM DESIGN DRAWINGS FROM KIMLEY HORN.

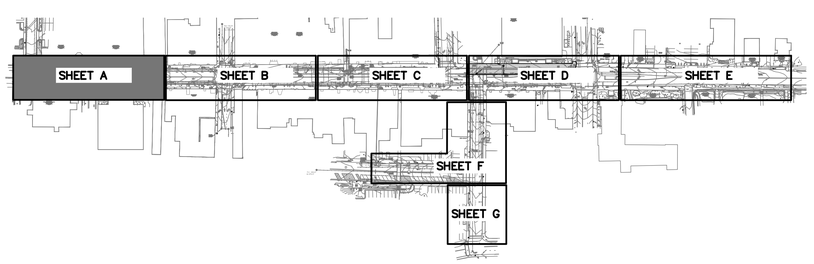
KEY NOTES:

(A) EXISTING STORMWATER FROM DESIGN DRAWINGS BY KIMLEY HORN FOR THE COURTHOUSE REMOVATION PROJECT. CONTRACTOR TO FIELD VERIFY LOCATIONS AND INVERTS. CONTRACTOR TO SALVAGE ALL NEWLY INSTALLED PIPE AND RETURN TO THE CITY ANY BOXES AND PIPING SUITABLE FOR REUSE. COORDINATE WITH CITY FOR TRANSFER TO THE OPERATION CENTER STORAGE YARD.

LEGEND

- R/W – RIGHT OF WAY
- CP – CALCULATED POINT
- TC – TERRA COTTA
- – LIGHT POLE
- – SIGNAL BOX
- – ELECTRIC MANHOLE
- – ELECTRIC BOX
- – TELEPHONE MANHOLE
- – WATER VALVE
- – WATER METER
- – FIRE HYDRANT
- – WATER VAULT
- – IRRIGATION CONTROL VALVE
- – SANITARY SEWER MANHOLE
- – SANITARY SEWER CLEANOUT
- – STORM MANHOLE
- – YARD INLET
- – CATCH BASIN
- – DROP INLET
- – MAILBOX

- APPROXIMATE LOCATION OF EXISTING WATER LINES
- APPROXIMATE LOCATION OF EXISTING SEWER LINES
- APPROXIMATE LOCATION OF EXISTING GAS LINES
- APPROXIMATE LOCATION OF UNDERGROUND FIBER OPTIC CABLE LINE



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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

10 0 5 10 20
GRAPHIC SCALE DIVISION VALUE = 10 FEET

OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	C.L. CRANWILL
PROJECT MANAGER	REVIEWER
M.J. NORRIS	B. ROARK

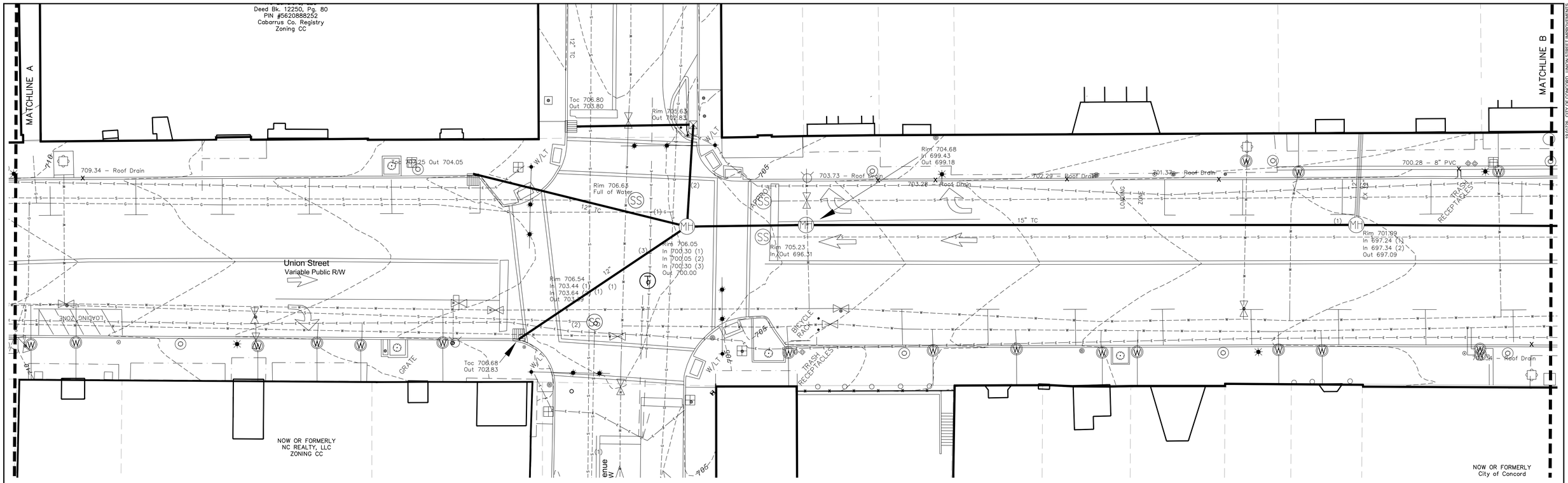
EXISTING CONDITIONS - A

DATE	PROJECT #	FUNDING #
JULY 2021	19.01726	N/A

SHEET
CE-101

P:\2019\19.01726-CONCORDNC-UNION STREETSCAPE PROJECT\DRAWINGS\19.01726 UNION BASE.DWG PLOT DATE: 7/22/2021 10:24 AM KURTIS DURRANT

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS



GENERAL NOTES:

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- APPROXIMATE LOCATION OF EXISTING GAS LINES
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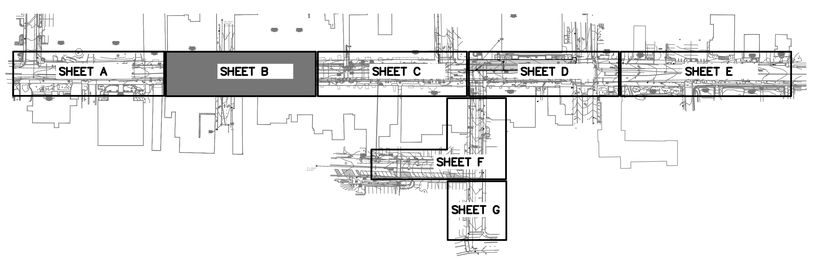

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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWILL

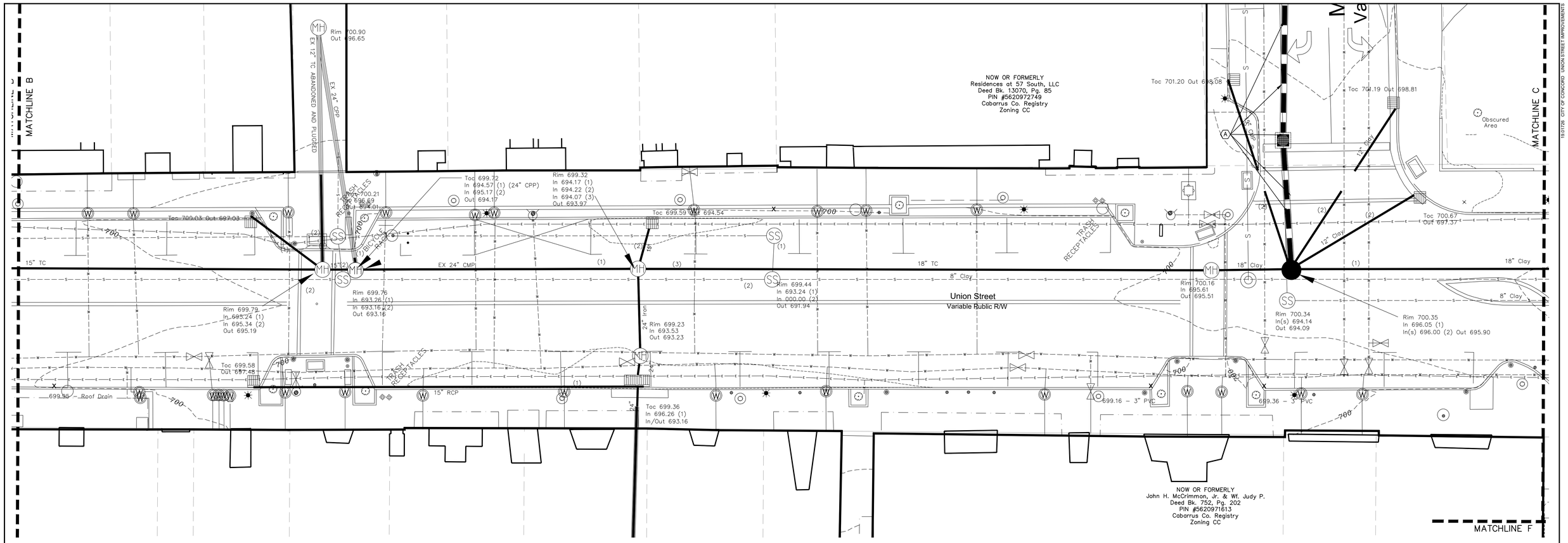
NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	C.L. CRANWILL	EXISTING CONDITIONS - B		SHEET CE-102
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	B. ROARK	JULY 2021	19.01726	N/A

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS
P:\2019\19.01726-CONCORD\NC-UNION STREETSCAPE PROJECT\DRAWINGS\19.01726 UNION BASE.DWG PLOT DATE: 7/22/2021 10:25 AM KURTIS DURRANT



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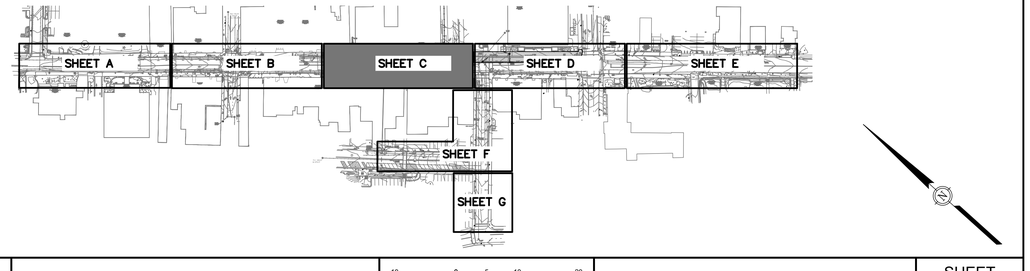

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828.328.2024
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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 DIVISION VALUE = 10 FEET

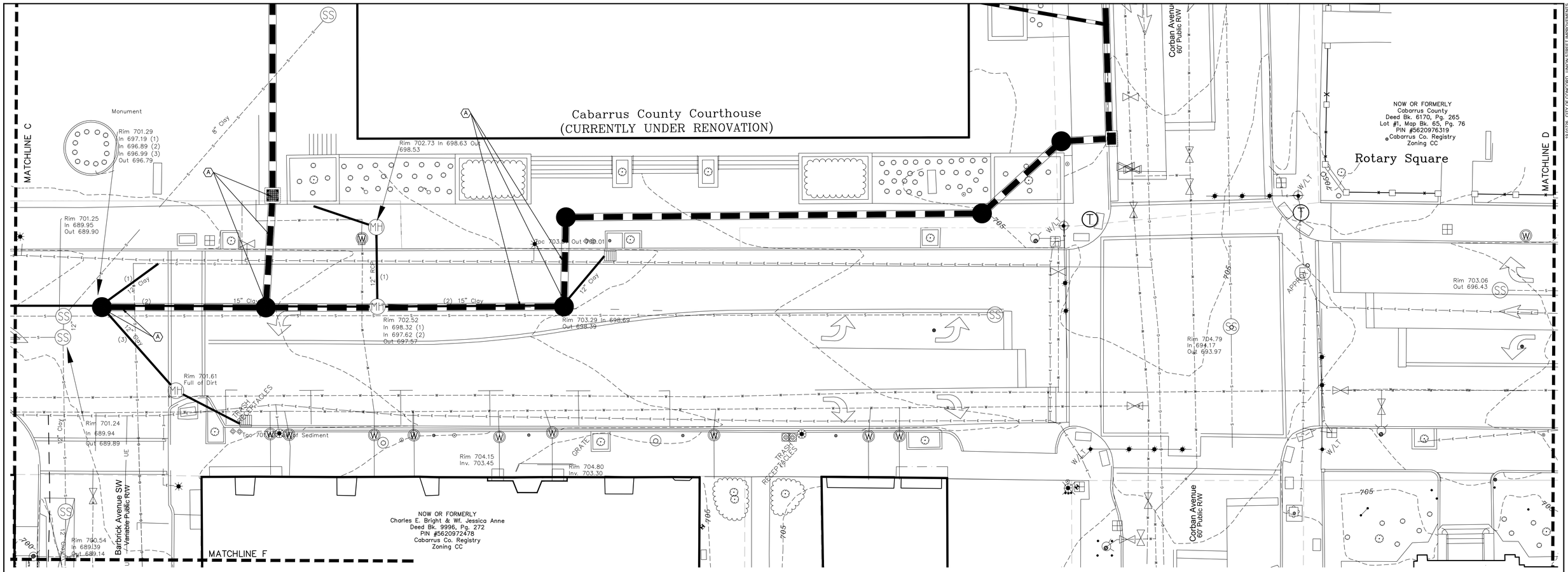
OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	C.L. CRANWILL
PROJECT MANAGER	REVIEWER
M.J. NORRIS	B. ROARK

EXISTING CONDITIONS - C

DATE	PROJECT #	FUNDING #
JULY 2021	19.01726	N/A

SHEET
CE-103

P:\2019\19.01726-CONCORD\NC-UNION STREETS\CAPE PROJECT\DRAWINGS\19\01726 UNION BASE.DWG PLOT DATE 7/22/2021 3:18 PM KURTIS DURRANT



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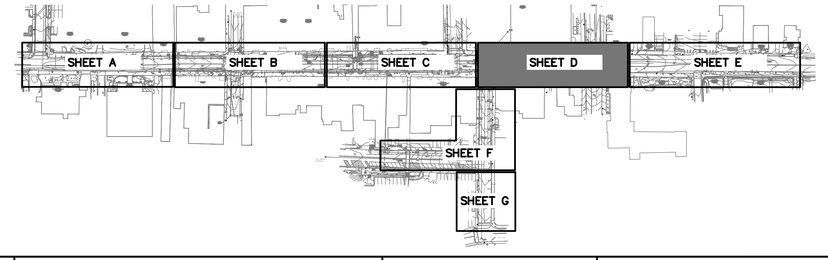

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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 DIVISION VALUE = 10 FEET

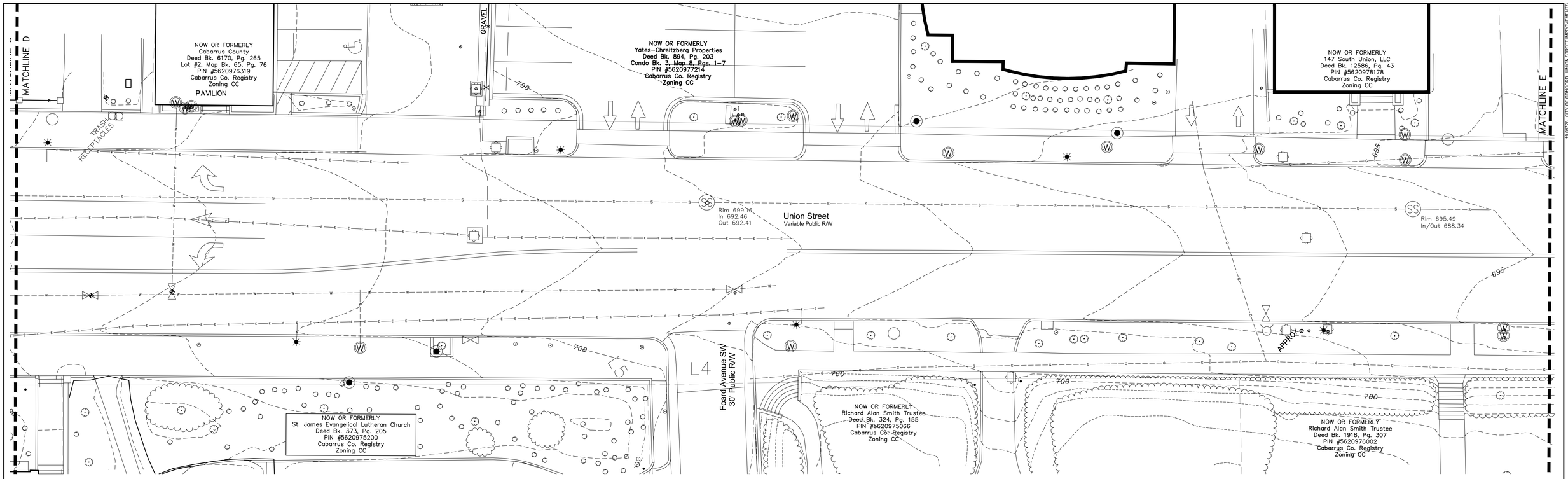
OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	C.L. CRANWILL
PROJECT MANAGER	REVIEWER
M.J. NORRIS	B. ROARK

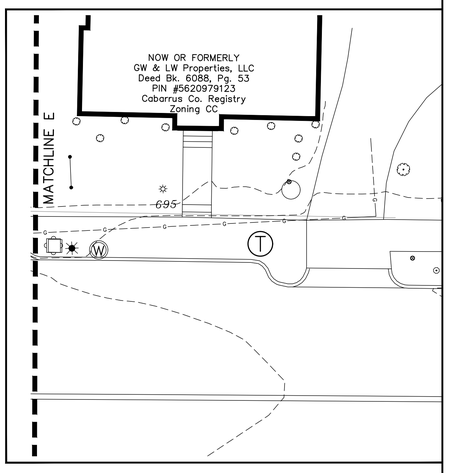
EXISTING CONDITIONS - D

DATE	PROJECT #	FUNDING #
JULY 2021	19.01726	N/A

SHEET
CE-104

P:\2019\19.01726-CONCORD\NC-UNION STREETSCAPE PROJECT\DRAWINGS\1901726 UNION BASE.DWG PLOT DATE 7/22/2021 10:26 AM KURTIS DURRANT
19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS





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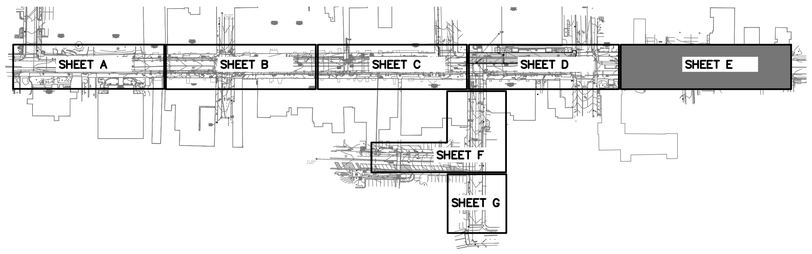

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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 DIVISION VALUE = 10 FEET

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	C.L. CRANWILL	EXISTING CONDITIONS - E		
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	B. ROARK	JULY 2021	19.01726	N/A

SHEET
CE-105

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APPROXIMATE LOCATION OF EXISTING SEWER LINES
APPROXIMATE LOCATION OF EXISTING GAS LINES
APPROXIMATE LOCATION OF UNDERGROUND FIBER OPTIC CABLE LINE

MATCHLINE F

Elec. Vault
Rim 698.68
In 687.98
Out 687.38
698.03 – Roof Drain
COVERED FLUME
Ex. Rim 697.40
Ex. In 687.35
Ex. Out 687.30
NO PARKING
Barbrick Avenue SW
Variable Public R/W
8" Terra Cotta
Ex. Rim 687.25
Ex. In 680.10 (1)
Ex. In 680.00 (2)
Ex. In 679.50 (3)
Ex. Out 679.10
Toc 687.26
Ex. In 680.46
Ex. Rim 687.54
E. Out 686.14
Ex. Toc 687.26
Ex. In 685.01
Ex. Out 679.66
Elec. Vault
Ex. 24" Terra Cotta
690
695
Ex. Rim 694.17
Ex. Out 690.17
Ex. 48" RCP
Ex. Rim 687.85
Ex. In 677.15
Ex. Out 677.05
MARKET STREET
Rim 695.12
Out 683.62
48" RCP
MATCHLINE G

SHEET A | SHEET B | SHEET C | SHEET D | SHEET E | SHEET F | SHEET G

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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	C.L. CRANWILL
PROJECT MANAGER	REVIEWER
M.J. NORRIS	B. ROARK

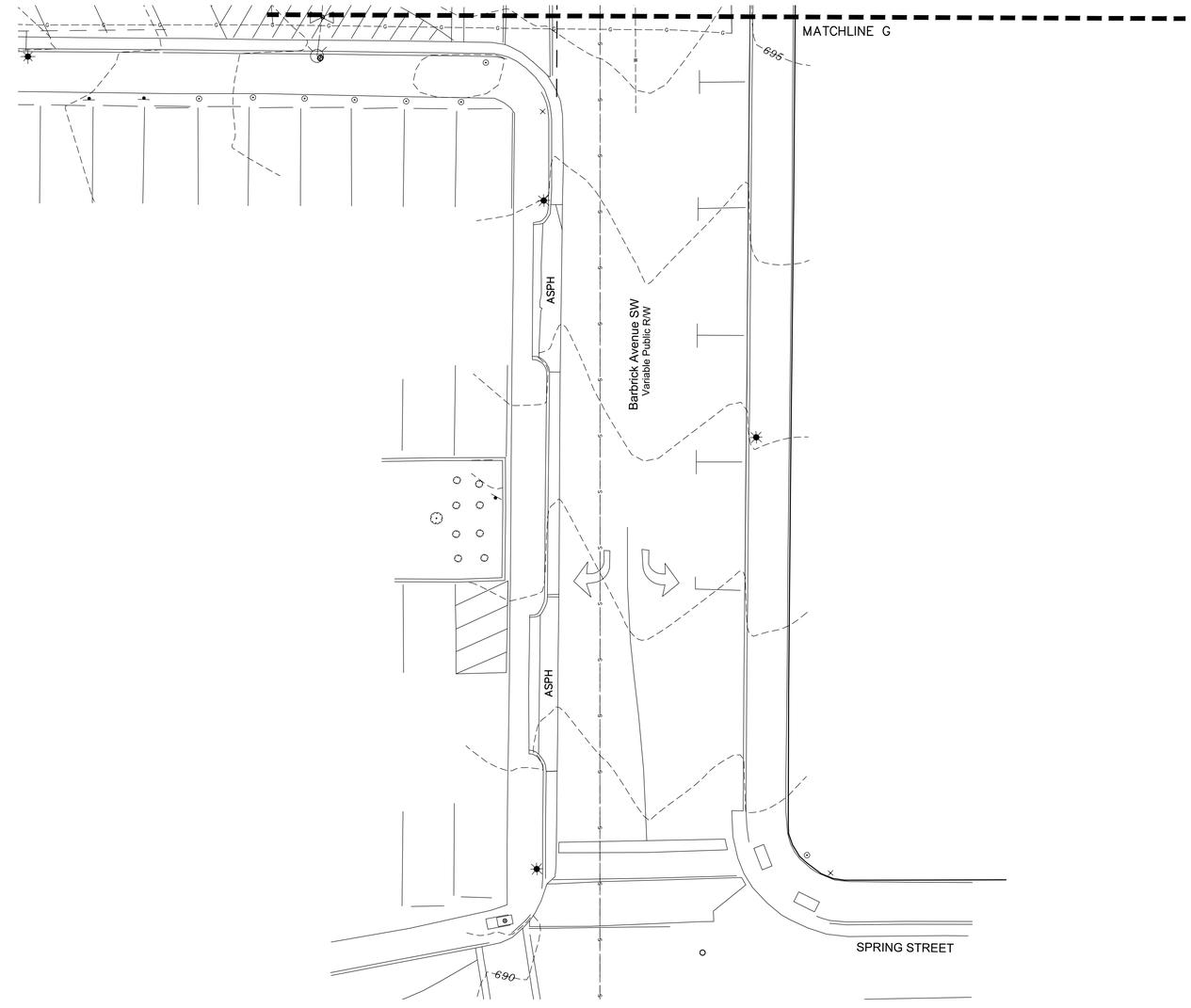
EXISTING CONDITIONS - F

DATE	PROJECT #	FUNDING #
JULY 2021	19.01726	N/A

SHEET
CE-106

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS

P:\2019\19.01726-CONCORD\C-UNION STREETSCAPE PROJECT\DRAWINGS\1901726 UNION BASE.DWG PLOT DATE: 7/22/2021 10:27 AM KURTIS DURRANT



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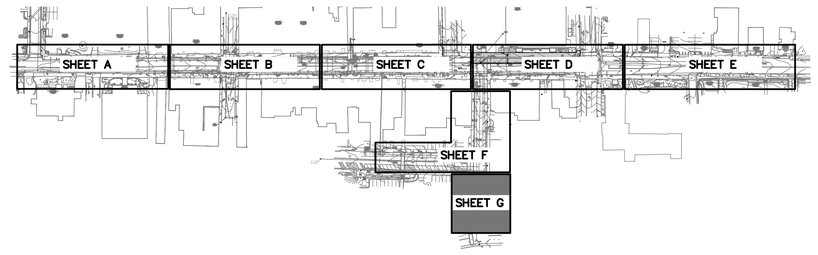
FO FO FO APPROXIMATE LOCATION OF UNDERGROUND FIBER OPTIC CABLE LINE



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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

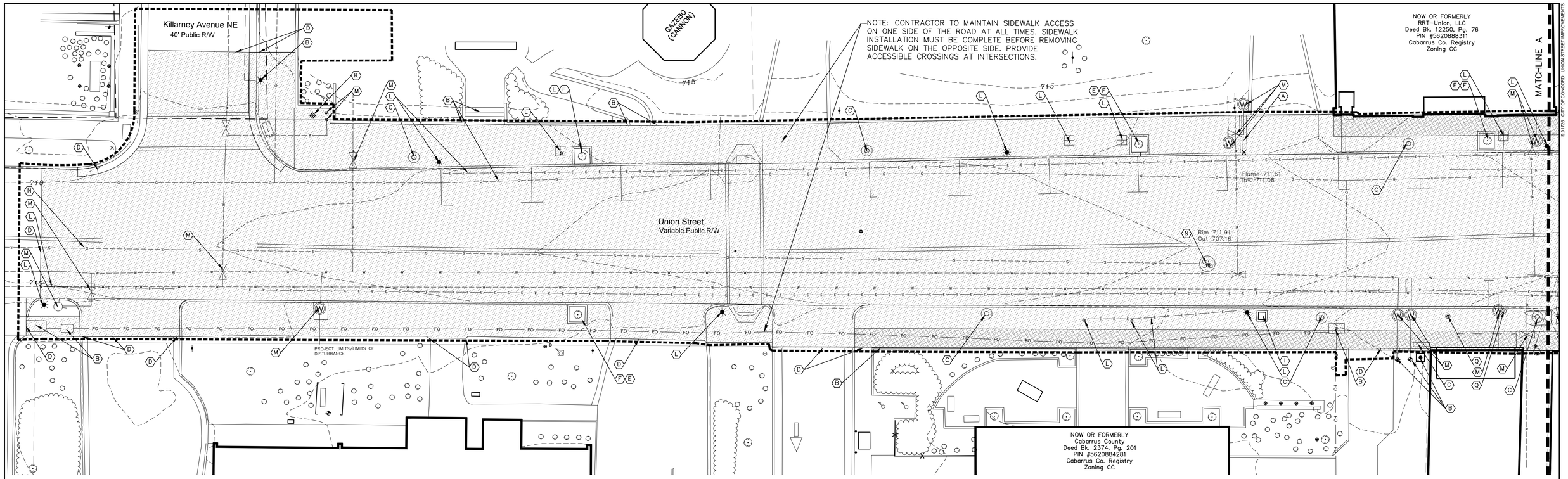
10 0 5 10 20
GRAPHIC SCALE DIVISION VALUE = 10 FEET

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	C.L. CRANWILL	EXISTING CONDITIONS - G		
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	B. ROARK	JULY 2021	19.01726	N/A

SHEET
CE-107

P:\2019\19.01726-CONCORD\CJ-UNION STREETSCAPE PROJECT\DRAWINGS\19017\26 UNION BASE.DWG PLOT DATE 7/22/2021 10:27 AM KURTIS DURRANT

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS



GENERAL NOTES:

1. ALL EXISTING CONDITIONS AND TOPOGRAPHIC INFORMATION WAS OBTAINED FROM NORSTAR LAND SURVEYING, INC. DATED MAY 2, 2019.

2. ALL UTILITIES OR STRUCTURES NOT DESIGNATED FOR REMOVAL OR MODIFICATION ARE TO REMAIN. ALL STRUCTURES/UTILITIES TO REMAIN OR FOR MODIFICATION SHALL BE PROTECTED BY THE CONTRACTOR DURING CONSTRUCTION AND REMAIN IN WORKING ORDER.

3. ALL DEMOLITION WORK SHALL BE PERFORMED WITH "DUE CARE AND DILIGENCE" SO AS TO PREVENT THE ARBITRARY DESTRUCTION OR INTERRUPTION OF CONCEALED UTILITIES WHICH ARE INTENDED TO REMAIN IN USE AND THE ROUTING OF WHICH COULD NOT BE DETERMINED UNTIL DEMOLITION WAS STARTED. ALL SUCH DISCOVERIES OF UTILITIES DURING THE DEMOLITION PROCESS WHICH ARE IN A LOCATION DIFFERENT FROM THAT INDICATED, OR ARE UNIDENTIFIED, SHALL BE REPORTED TO THE ENGINEER BEFORE REMOVAL.

4. ANY EXISTING ASPHALT, DESIGNATED TO REMAIN THAT IS DAMAGED DURING DEMOLITION AND CONSTRUCTION SHALL BE REPAIRED AT NO COST TO THE OWNER.

5. ANY NOTE, OR REFERENCE TO AN ELEMENT, WHICH DOES NOT SPECIFY ACTION BY THE CONTRACTOR SHALL BE CONSTRUED AS INFORMATION ONLY.

6. THE GENERAL CONTRACTOR IS TO CONTACT AND COORDINATE WITH ALL APPROPRIATE PUBLIC AND PRIVATE UTILITY COMPANIES PRIOR TO ANY DEMOLITION OR RELOCATION OF EXISTING UTILITIES. IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL UTILITIES HAVE BEEN PROPERLY CAPPED OFF OR RELOCATED.

7. PROTECT ALL ADJACENT PROPERTIES, THE GENERAL PUBLIC, AND ALL THE OWNER'S FACILITIES FROM DAMAGE. THE CONTRACTOR SHALL REPAIR ANY DAMAGE IMMEDIATELY AND SHALL MAKE REPAIRS AT THE CONTRACTOR'S EXPENSE.

8. CONTRACTOR SHALL HOLD HARMLESS THE OWNER FOR DAMAGES OR OTHER ACCIDENTS WHICH OCCUR DURING THESE CONSTRUCTION ACTIVITIES.

9. TREES AND LANDSCAPING NOT DESIGNATED FOR REMOVAL SHALL BE PROTECTED DURING CONSTRUCTION.

10. CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING AND COORDINATION OF ALL ILLUSTRATED CONSTRUCTION ACTIVITIES AT THE JOB SITE.

11. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE RULES AND REGULATIONS GOVERNING THE CONSTRUCTION INDUSTRY, INCLUDING BUT NOT LIMITED TOO THOSE PERTAINING TO TRAVELING OPERATIONS AND OSHA.

12. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATION/ADJUSTMENTS OF ALL EXISTING VAULTS (REGARDLESS OF FUNCTION), METER BOXES, FIRE HYDRANTS, CLEAN OUTS, MANHOLES, ETC. TO MATCH FINISHED GRADES AND SITE PLAN.

13. UNDER ABSOLUTELY NO CIRCUMSTANCES SHALL ANY UNMANNED EXCAVATION BE LEFT OPEN OR UNPROTECTED DURING NON-WORKING HOURS. UTILIZE SIGNS, BARRICADES, ETC. TO ENSURE THE SAFETY OF THE GENERAL PUBLIC.

14. UNDER NO CIRCUMSTANCES ARE ANY DECORATIVE TILES AT THE EXISTING STORE FRONTS TO BE DAMAGED DURING THE DEMOLITION OF EXISTING SIDEWALKS. ANY DAMAGE MUST BE REPAIRED IMMEDIATELY TO EXISTING OR BETTER CONDITION.

15. NOTE LIMITS OF DISTURBANCE FOR STREETSCAPE WORK AND UTILITY INSTALLATION VARY. SEE EACH SET OF PLAN SHEETS FOR LIMITS OF DISTURBANCE.

16. ENSURE SMOOTH TRANSITION FROM PROPOSED SIDEWALK TO ALL STORE FRONTS.

17. SALVAGED MATERIALS RELINQUISHED TO CITY OF CONCORD SHALL BE TRANSPORTED BY THE CONTRACTOR TO THE CITY'S OPERATION CENTER OR AS DIRECTED BY OWNER.

18. CONTRACTOR TO PROVIDE SAFETY FENCING TO KEEP THE PUBLIC OUT OF ACTIVE CONSTRUCTION AREAS.

EXISTING ASPHALT, CONCRETE, AND CURB AND GUTTER TO BE DEMOLISHED AND REMOVED. EXISTING GRANITE CURB TO BE SALVAGED AND RETURNED TO THE CITY.

VARIABLE ASPHALT MILL

CONTRACTOR TO LEAVE 5.0' OF EXISTING CONCRETE WALK IN PLACE UNTIL WALK IS READY TO BE REPLACED. AS WALK IS REMOVED CONTRACTOR MUST REPLACE EACH SECTION WITH A NON-SLIP ACCESSIBLE SURFACE FOR STORE ACCESS UNTIL NEW WALK IS INSTALLED.

STORMWATER AND UTILITY TRENCH ASPHALT REMOVAL

KEY NOTES:

(A) EXISTING UTILITY/STRUCTURE TO BE REMOVED.

(B) EXISTING UTILITY/STRUCTURE TO REMAIN AND BE PROTECTED.

(C) EXISTING TRASH RECEPTACLES, BENCHES, AND PLANTERS TO BE REMOVED BY THE CITY. NOT IN CONTRACT.

(D) SAWCUT EXISTING PAVEMENT, CONCRETE, SIDEWALK, AND CURB AND GUTTER TO PROVIDE A STRAIGHT AND UNIFORM EDGE.

(E) EXISTING TREE TO BE REMOVED, INCLUDING STUMPS AND ROOTS.

(F) EXISTING TREE GRATES TO BE SALVAGED AND RETURNED TO THE CITY.

(G) EXISTING TREE TO REMAIN AND BE PROTECTED.

(H) EXISTING TRAFFIC SIGNS TO BE SALVAGED AND RETURNED TO THE CITY.

(I) EXISTING USPS/UPS/FEDEX BOX TO BE TEMPORARILY RELOCATED DURING CONSTRUCTION. COORDINATE WITH CITY AND USPS FOR PROPOSED LOCATION.

(J) CONTRACTOR TO FIELD VERIFY IF EXISTING STRUCTURE IS ACTIVE AND IN USE. IF IN USE PROTECT, IF NO LONGER IN USE REMOVE.

(K) EXISTING DRINKING FOUNTAIN TO BE SALVAGED AND RETURNED TO THE CITY. SEE SITE PLAN FOR PROPOSED DRINKING FOUNTAIN.

(L) EXISTING ELECTRICAL TO BE REMOVED, SALVAGED, MODIFIED,OR PROTECTED PER ELECTRICAL PLANS. SEE SHEETS E-001 TO E-601.

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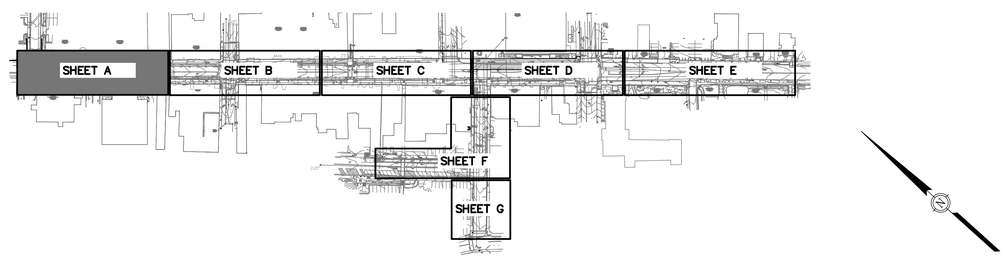

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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

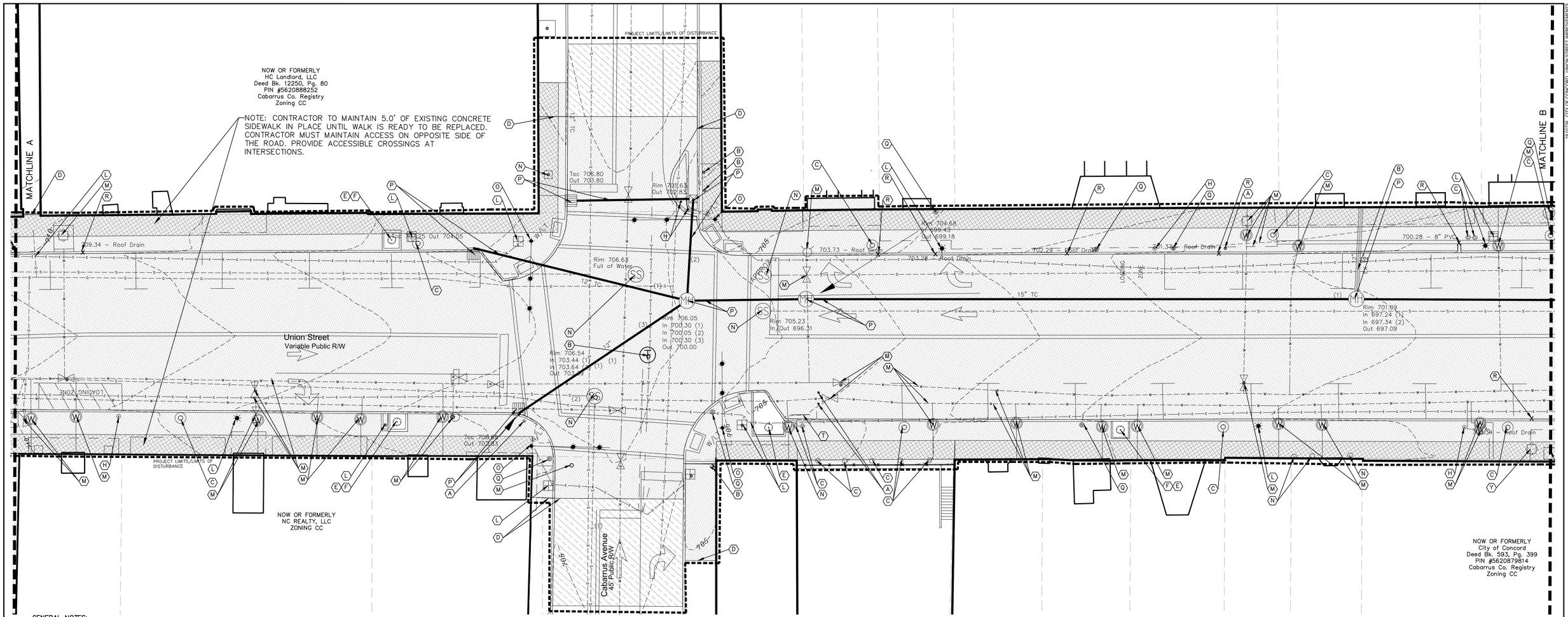
DEMOLITION PLAN - A

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	C.L. CRANWILL			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	B. ROARK	JULY 2021	19.01726	N/A

SHEET
CD-101

P:\2019\19.01726-CONCORDNC-UNION STREETSCAPE PROJECT\DRAWINGS\1901726 UNION BASE.DWG PLOT DATE: 7/2/2021 10:29 AM KURTIS DURRANT

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS



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3. ALL DEMOLITION WORK SHALL BE PERFORMED WITH "DUE CARE AND DILIGENCE" SO AS TO PREVENT THE ARBITRARY DESTRUCTION OR INTERRUPTION OF CONCEALED UTILITIES WHICH ARE INTENDED TO REMAIN IN USE AND THE ROUTING OF WHICH COULD NOT BE DETERMINED UNTIL DEMOLITION WAS STARTED. ALL SUCH DISCOVERIES OF UTILITIES DURING THE DEMOLITION PROCESS WHICH ARE IN A LOCATION DIFFERENT FROM THAT INDICATED, OR ARE UNIDENTIFIED, SHALL BE REPORTED TO THE ENGINEER BEFORE REMOVAL.

4. ANY EXISTING ASPHALT, DESIGNATED TO REMAIN THAT IS DAMAGED DURING DEMOLITION AND CONSTRUCTION SHALL BE REPAIRED AT NO COST TO THE OWNER.

5. ANY NOTE, OR REFERENCE TO AN ELEMENT, WHICH DOES NOT SPECIFY ACTION BY THE CONTRACTOR SHALL BE CONSTRUED AS INFORMATION ONLY.

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7. PROTECT ALL ADJACENT PROPERTIES, THE GENERAL PUBLIC, AND ALL THE OWNER'S FACILITIES FROM DAMAGE. THE CONTRACTOR SHALL REPAIR ANY DAMAGE IMMEDIATELY AND SHALL MAKE REPAIRS AT THE CONTRACTOR'S EXPENSE.

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STORMWATER AND UTILITY TRENCH ASPHALT REMOVAL

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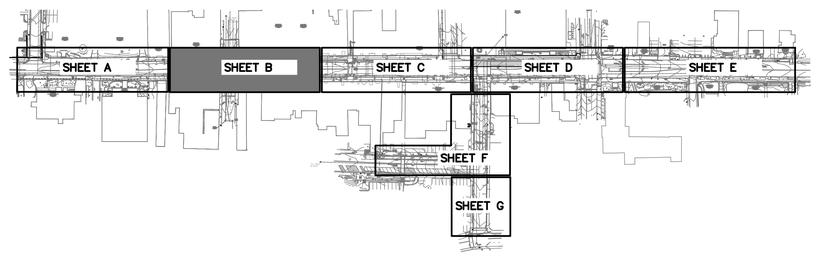

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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	C.L. CRANWILL			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	B. ROARK	JULY 2021	19.01726	N/A

DEMOLITION PLAN - B

SHEET
CD-102

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS

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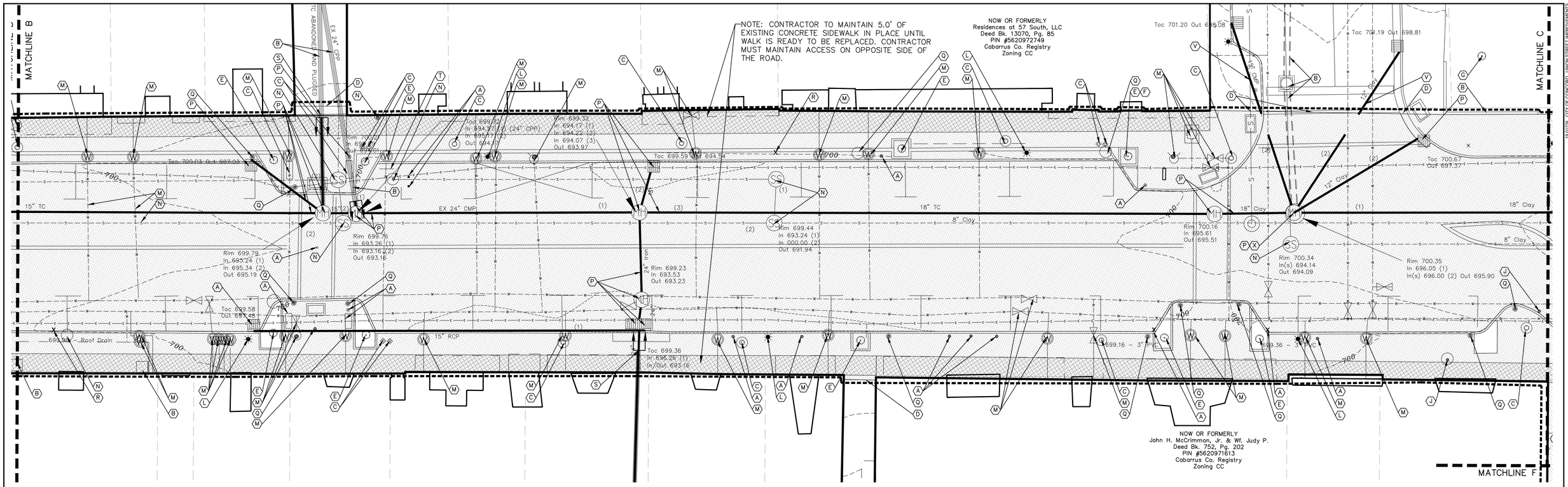

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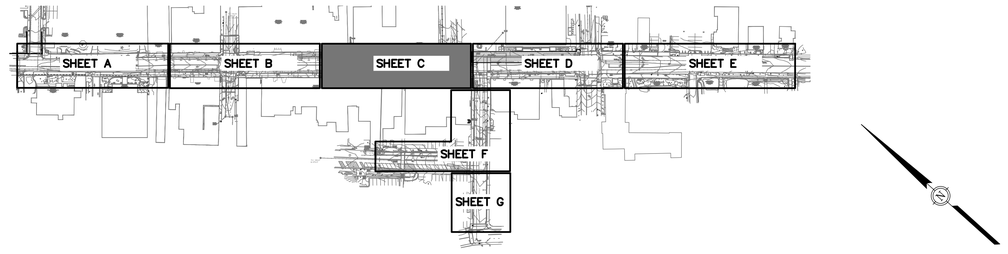

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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWELL

NO.	DATE	BY	DESCRIPTION

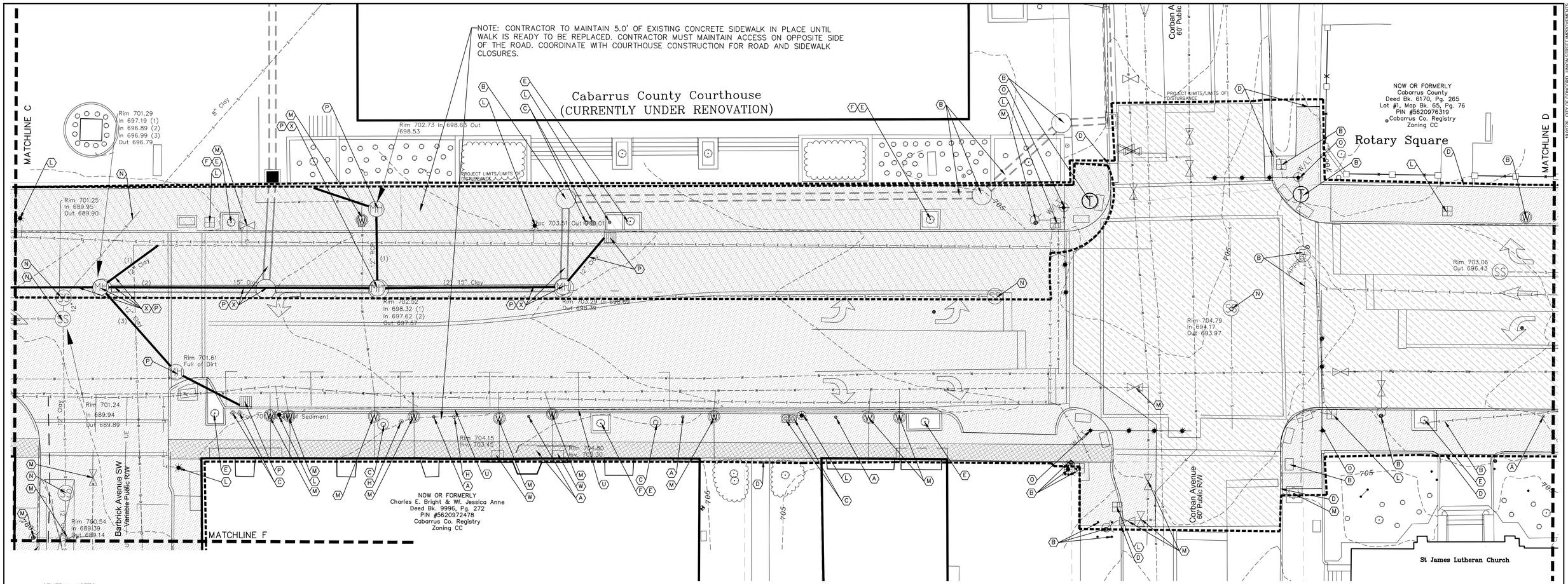
UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

10 0 5 10 20
GRAPHIC SCALE DIVISION VALUE = 10 FEET

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	C.L. CRANWILL	DEMOLITION PLAN - C		SHEET CD-103
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	B. ROARK	JULY 2021	19.01726	N/A

P:\2019\19.01726-CONCORDNC-UNION STREETSCAPE PROJECT\DRAWINGS\19.01726 UNION BASE.DWG PLOT DATE: 7/22/2021 10:30 AM KURTIS DURRANT

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS



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EXISTING ASPHALT, CONCRETE, AND CURB AND GUTTER TO BE DEMOLISHED AND REMOVED. EXISTING GRANITE CURB TO BE SALVAGED AND RETURNED TO THE CITY.

VARIABLE ASPHALT MILL

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STORMWATER AND UTILITY TRENCH ASPHALT REMOVAL

KEY NOTES:

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(Q) EXISTING SANITARY SEWER CLEANOUTS TO BE REMOVED.

(R) EXISTING ROOF DRAIN PIPING TO BE REMOVED TO 1.0' OUTSIDE FACE OF BUILDING AT TIME OF INSTALLATION OF PROPOSED DRAINAGE PIPES. SEE GRADING, DRAINAGE AND EROSIONS CONTROL SHEETS C-201 TO C-208.

(S) EXISTING 24" STORMWATER PIPE TO BE PLUGGED WITH FLOWABLE FILL.

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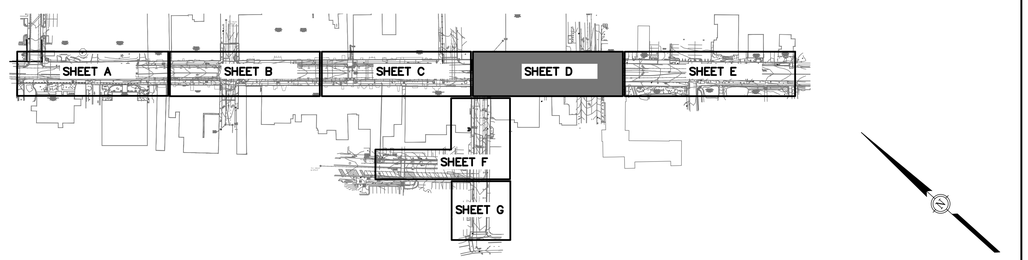

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NC Firm License # C-0459
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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CRAIG CRANWELL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

DEMOLITION PLAN - D

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	C.L. CRANWILL			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	B. ROARK	JULY 2021	19.01726	N/A

SHEET
CD-104

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS

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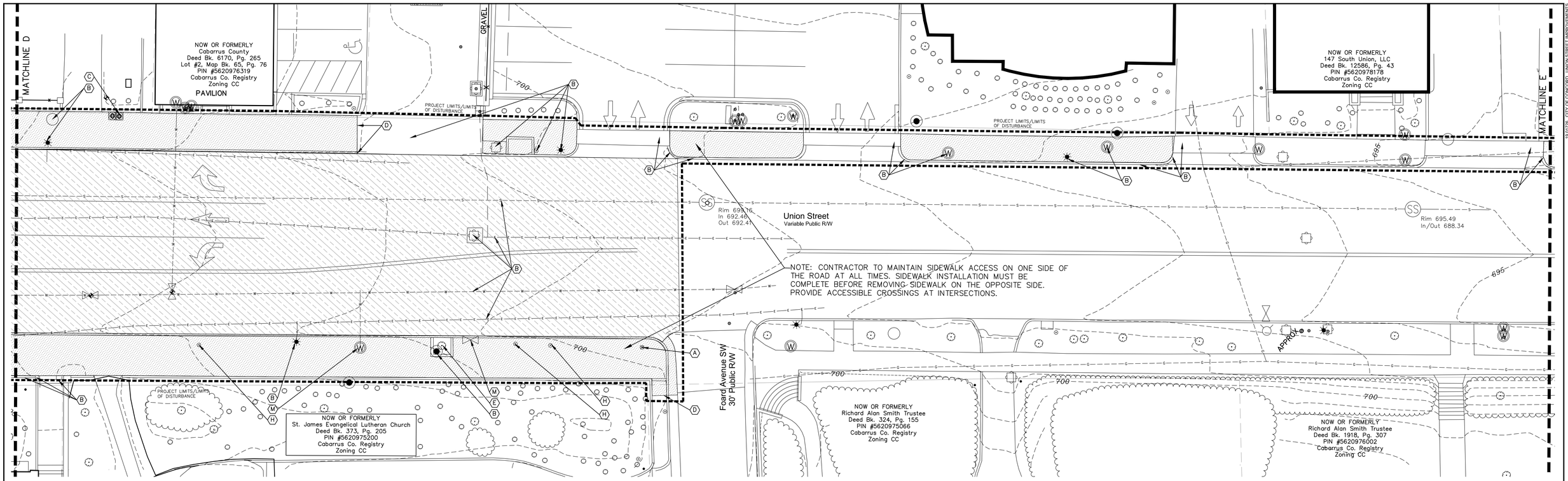

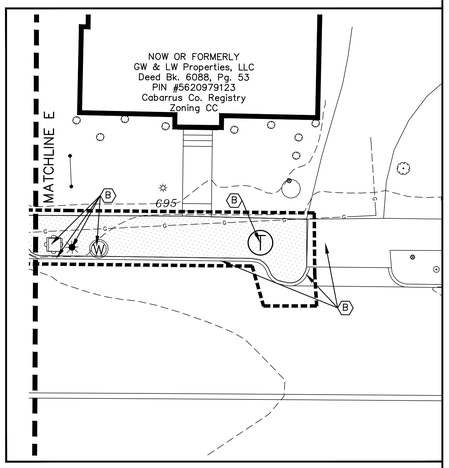

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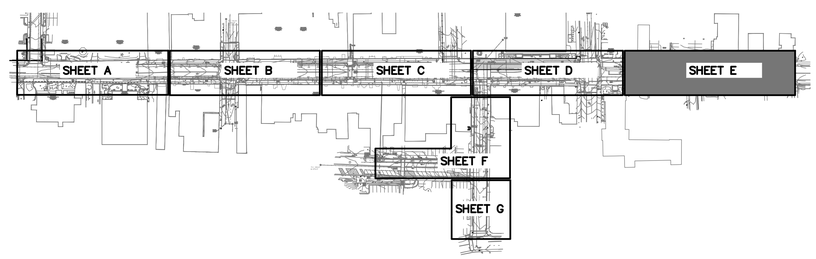

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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

10 0 5 10 20
GRAPHIC SCALE DIVISION VALUE = 10 FEET

DEMOLITION PLAN - E

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	C.L. CRANWILL			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	B. ROARK	JULY 2021	19.01726	N/A

SHEET
CD-105

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19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS

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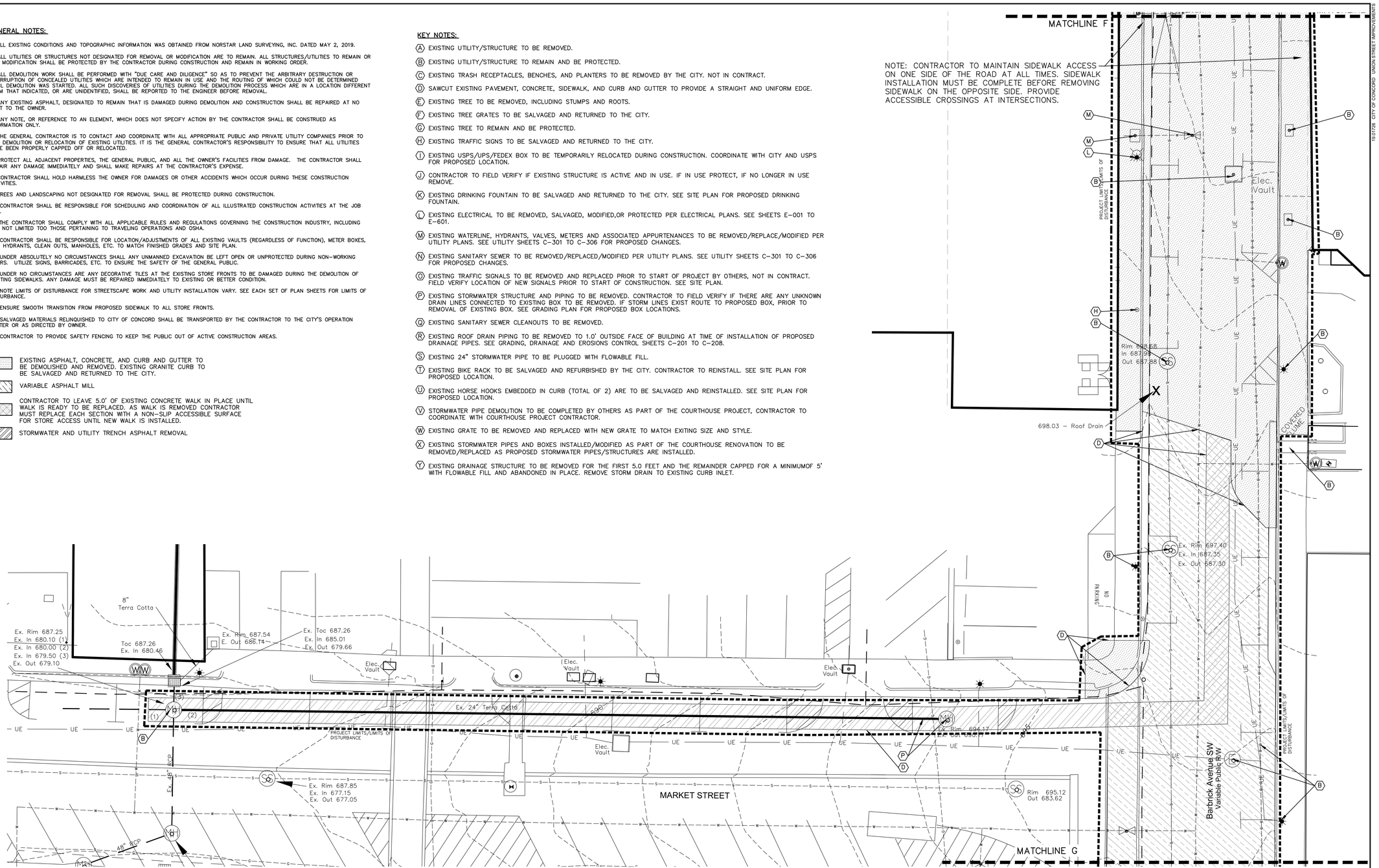

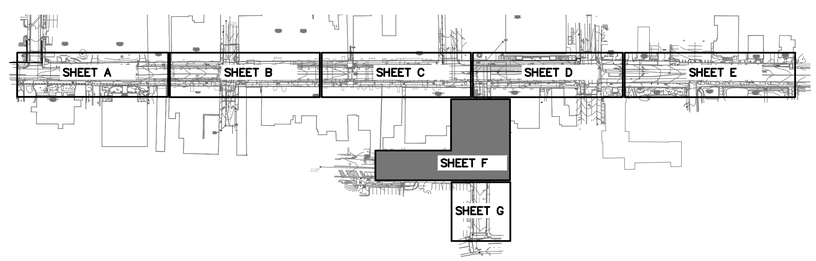

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Hickory, NC 28601
828.328.2024
NC Firm License # C-0459
mcgillassociates.com

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CHRISTIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	C.L. CRANWILL
PROJECT MANAGER	REVIEWER
M.J. NORRIS	B. ROARK

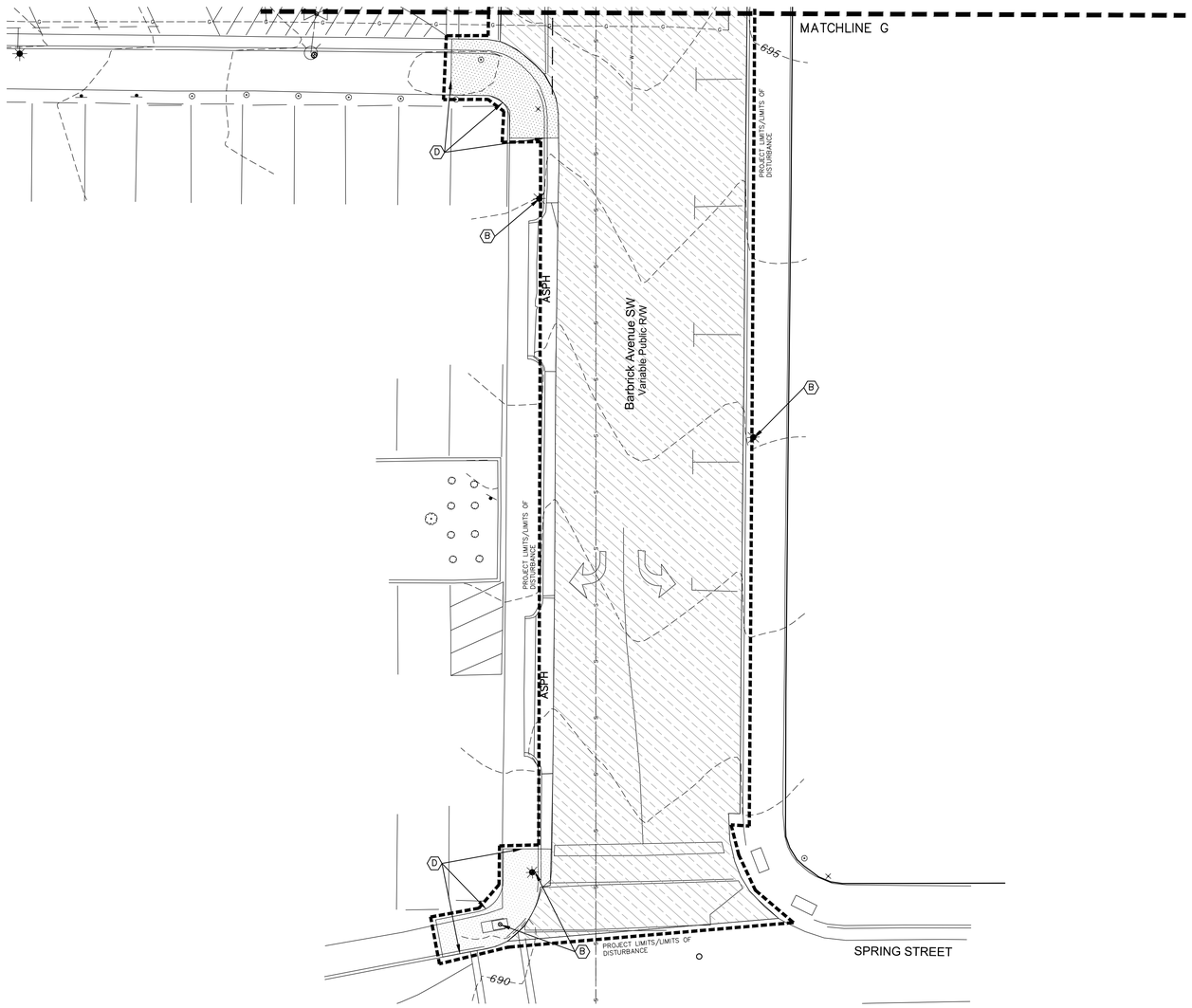
DEMOLITION PLAN - F

DATE	PROJECT #	FUNDING #
JULY 2021	19.01726	N/A

SHEET
CD-106

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS

P:\2019\19.01726-CONCORD\C-UNION STREETSCAPE PROJECT\DRAWINGS\19.01726 UNION BASE.DWG PLOT DATE: 7/22/2021 10:32 AM KURTIS DURRANT



KEY NOTES:

(A) EXISTING UTILITY/STRUCTURE TO BE REMOVED.

(B) EXISTING UTILITY/STRUCTURE TO REMAIN AND BE PROTECTED.

(C) EXISTING TRASH RECEPTACLES, BENCHES, AND PLANTERS TO BE REMOVED BY THE CITY. NOT IN CONTRACT.

(D) SAWCUT EXISTING PAVEMENT, CONCRETE, SIDEWALK, AND CURB AND GUTTER TO PROVIDE A STRAIGHT AND UNIFORM EDGE.

(E) EXISTING TREE TO BE REMOVED, INCLUDING STUMPS AND ROOTS.

(F) EXISTING TREE GRATES TO BE SALVAGED AND RETURNED TO THE CITY.

(G) EXISTING TREE TO REMAIN AND BE PROTECTED.

(H) EXISTING TRAFFIC SIGNS TO BE SALVAGED AND RETURNED TO THE CITY.

(I) EXISTING USPS/UPS/FEDEX BOX TO BE TEMPORARILY RELOCATED DURING CONSTRUCTION. COORDINATE WITH CITY AND USPS FOR PROPOSED LOCATION.

(J) CONTRACTOR TO FIELD VERIFY IF EXISTING STRUCTURE IS ACTIVE AND IN USE. IF IN USE PROTECT, IF NO LONGER IN USE REMOVE.

(K) EXISTING DRINKING FOUNTAIN TO BE SALVAGED AND RETURNED TO THE CITY. SEE SITE PLAN FOR PROPOSED DRINKING FOUNTAIN.

(L) EXISTING ELECTRICAL TO BE REMOVED, SALVAGED, MODIFIED,OR PROTECTED PER ELECTRICAL PLANS. SEE SHEETS E-001 TO E-601.

(M) EXISTING WATERLINE, HYDRANTS, VALVES, METERS AND ASSOCIATED APPURTENANCES TO BE REMOVED/REPLACE/MODIFIED PER UTILITY PLANS. SEE UTILITY SHEETS C-301 TO C-306 FOR PROPOSED CHANGES.

(N) EXISTING SANITARY SEWER TO BE REMOVED/REPLACED/MODIFIED PER UTILITY PLANS. SEE UTILITY SHEETS C-301 TO C-306 FOR PROPOSED CHANGES.

(O) EXISTING TRAFFIC SIGNALS TO BE REMOVED AND REPLACED PRIOR TO START OF PROJECT BY OTHERS, NOT IN CONTRACT. FIELD VERIFY LOCATION OF NEW SIGNALS PRIOR TO START OF CONSTRUCTION. SEE SITE PLAN.

(P) EXISTING STORMWATER STRUCTURE AND PIPING TO BE REMOVED. CONTRACTOR TO FIELD VERIFY IF THERE ARE ANY UNKNOWN DRAIN LINES CONNECTED TO EXISTING BOX TO BE REMOVED. IF STORM LINES EXIST ROUTE TO PROPOSED BOX, PRIOR TO REMOVAL OF EXISTING BOX. SEE GRADING PLAN FOR PROPOSED BOX LOCATIONS.

(Q) EXISTING SANITARY SEWER CLEANOUTS TO BE REMOVED.

(R) EXISTING ROOF DRAIN PIPING TO BE REMOVED TO 1.0' OUTSIDE FACE OF BUILDING AT TIME OF INSTALLATION OF PROPOSED DRAINAGE PIPES. SEE GRADING, DRAINAGE AND EROSIONS CONTROL SHEETS C-201 TO C-208.

(S) EXISTING 24" STORMWATER PIPE TO BE PLUGGED WITH FLOWABLE FILL.

(T) EXISTING BIKE RACK TO BE SALVAGED AND REFURBISHED BY THE CITY. CONTRACTOR TO REINSTALL. SEE SITE PLAN FOR PROPOSED LOCATION.

(U) EXISTING HORSE HOOKS EMBEDDED IN CURB (TOTAL OF 2) ARE TO BE SALVAGED AND REINSTALLED. SEE SITE PLAN FOR PROPOSED LOCATION.

(V) STORMWATER PIPE DEMOLITION TO BE COMPLETED BY OTHERS AS PART OF THE COURTHOUSE PROJECT, CONTRACTOR TO COORDINATE WITH COURTHOUSE PROJECT CONTRACTOR.

(W) EXISTING GRATE TO BE REMOVED AND REPLACED WITH NEW GRATE TO MATCH EXITING SIZE AND STYLE.

(X) EXISTING STORMWATER PIPES AND BOXES INSTALLED/MODIFIED AS PART OF THE COURTHOUSE RENOVATION TO BE REMOVED/REPLACED AS PROPOSED STORMWATER PIPES/STRUCTURES ARE INSTALLED.

(Y) EXISTING DRAINAGE STRUCTURE TO BE REMOVED FOR THE FIRST 5.0 FEET AND THE REMAINDER CAPPED FOR A MINIMUMOF 5' WITH FLOWABLE FILL AND ABANDONED IN PLACE. REMOVE STORM DRAIN TO EXISTING CURB INLET.

GENERAL NOTES:

1. ALL EXISTING CONDITIONS AND TOPOGRAPHIC INFORMATION WAS OBTAINED FROM NORSTAR LAND SURVEYING, INC. DATED MAY 2, 2019.

2. ALL UTILITIES OR STRUCTURES NOT DESIGNATED FOR REMOVAL OR MODIFICATION ARE TO REMAIN. ALL STRUCTURES/UTILITIES TO REMAIN OR FOR MODIFICATION SHALL BE PROTECTED BY THE CONTRACTOR DURING CONSTRUCTION AND REMAIN IN WORKING ORDER.

3. ALL DEMOLITION WORK SHALL BE PERFORMED WITH "DUE CARE AND DILIGENCE" SO AS TO PREVENT THE ARBITRARY DESTRUCTION OR INTERRUPTION OF CONCEALED UTILITIES WHICH ARE INTENDED TO REMAIN IN USE AND THE ROUTING OF WHICH COULD NOT BE DETERMINED UNTIL DEMOLITION WAS STARTED. ALL SUCH DISCOVERIES OF UTILITIES DURING THE DEMOLITION PROCESS WHICH ARE IN A LOCATION DIFFERENT FROM THAT INDICATED, OR ARE UNIDENTIFIED, SHALL BE REPORTED TO THE ENGINEER BEFORE REMOVAL.

4. ANY EXISTING ASPHALT, DESIGNATED TO REMAIN THAT IS DAMAGED DURING DEMOLITION AND CONSTRUCTION SHALL BE REPAIRED AT NO COST TO THE OWNER.

5. ANY NOTE, OR REFERENCE TO AN ELEMENT, WHICH DOES NOT SPECIFY ACTION BY THE CONTRACTOR SHALL BE CONSTRUED AS INFORMATION ONLY.

6. THE GENERAL CONTRACTOR IS TO CONTACT AND COORDINATE WITH ALL APPROPRIATE PUBLIC AND PRIVATE UTILITY COMPANIES PRIOR TO ANY DEMOLITION OR RELOCATION OF EXISTING UTILITIES. IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL UTILITIES HAVE BEEN PROPERLY CAPPED OFF OR RELOCATED.

7. PROTECT ALL ADJACENT PROPERTIES, THE GENERAL PUBLIC, AND ALL THE OWNER'S FACILITIES FROM DAMAGE. THE CONTRACTOR SHALL REPAIR ANY DAMAGE IMMEDIATELY AND SHALL MAKE REPAIRS AT THE CONTRACTOR'S EXPENSE.

8. CONTRACTOR SHALL HOLD HARMLESS THE OWNER FOR DAMAGES OR OTHER ACCIDENTS WHICH OCCUR DURING THESE CONSTRUCTION ACTIVITIES.

9. TREES AND LANDSCAPING NOT DESIGNATED FOR REMOVAL SHALL BE PROTECTED DURING CONSTRUCTION.

10. CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING AND COORDINATION OF ALL ILLUSTRATED CONSTRUCTION ACTIVITIES AT THE JOB SITE.

11. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE RULES AND REGULATIONS GOVERNING THE CONSTRUCTION INDUSTRY, INCLUDING BUT NOT LIMITED TOO THOSE PERTAINING TO TRAVELING OPERATIONS AND OSHA.

12. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATION/ADJUSTMENTS OF ALL EXISTING VAULTS (REGARDLESS OF FUNCTION), METER BOXES, FIRE HYDRANTS, CLEAN OUTS, MANHOLES, ETC. TO MATCH FINISHED GRADES AND SITE PLAN.

13. UNDER ABSOLUTELY NO CIRCUMSTANCES SHALL ANY UNMANNED EXCAVATION BE LEFT OPEN OR UNPROTECTED DURING NON-WORKING HOURS. UTILIZE SIGNS, BARRICADES, ETC. TO ENSURE THE SAFETY OF THE GENERAL PUBLIC.

14. UNDER NO CIRCUMSTANCES ARE ANY DECORATIVE TILES AT THE EXISTING STORE FRONTS TO BE DAMAGED DURING THE DEMOLITION OF EXISTING SIDEWALKS. ANY DAMAGE MUST BE REPAIRED IMMEDIATELY TO EXISTING OR BETTER CONDITION.

15. NOTE LIMITS OF DISTURBANCE FOR STREETSCAPE WORK AND UTILITY INSTALLATION VARY. SEE EACH SET OF PLAN SHEETS FOR LIMITS OF DISTURBANCE.

16. ENSURE SMOOTH TRANSITION FROM PROPOSED SIDEWALK TO ALL STORE FRONTS.

17. SALVAGED MATERIALS RELINQUISHED TO CITY OF CONCORD SHALL BE TRANSPORTED BY THE CONTRACTOR TO THE CITY'S OPERATION CENTER OR AS DIRECTED BY OWNER.

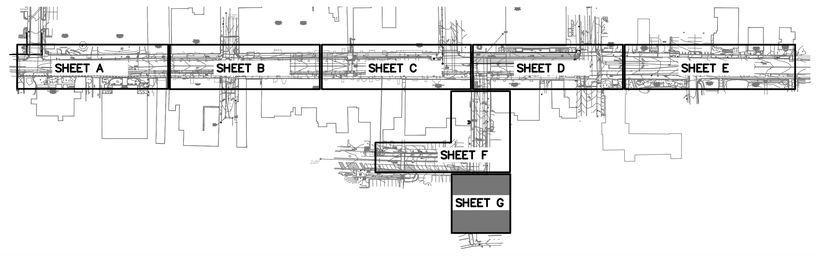
18. CONTRACTOR TO PROVIDE SAFETY FENCING TO KEEP THE PUBLIC OUT OF ACTIVE CONSTRUCTION AREAS.

EXISTING ASPHALT, CONCRETE, AND CURB AND GUTTER TO BE DEMOLISHED AND REMOVED. EXISTING GRANITE CURB TO BE SALVAGED AND RETURNED TO THE CITY.

VARIABLE ASPHALT MILL

CONTRACTOR TO LEAVE 5.0' OF EXISTING CONCRETE WALK IN PLACE UNTIL WALK IS READY TO BE REPLACED. AS WALK IS REMOVED CONTRACTOR MUST REPLACE EACH SECTION WITH A NON-SLIP ACCESSIBLE SURFACE FOR STORE ACCESS UNTIL NEW WALK IS INSTALLED.

STORMWATER AND UTILITY TRENCH ASPHALT REMOVAL



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CITY OF CONCORD
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D.G. CHAPMAN	C.L. CRANWILL
PROJECT MANAGER	REVIEWER
M.J. NORRIS	B. ROARK

DEMOLITION PLAN - G

DATE	PROJECT #	FUNDING #
JULY 2021	19.01726	N/A

SHEET
CD-107

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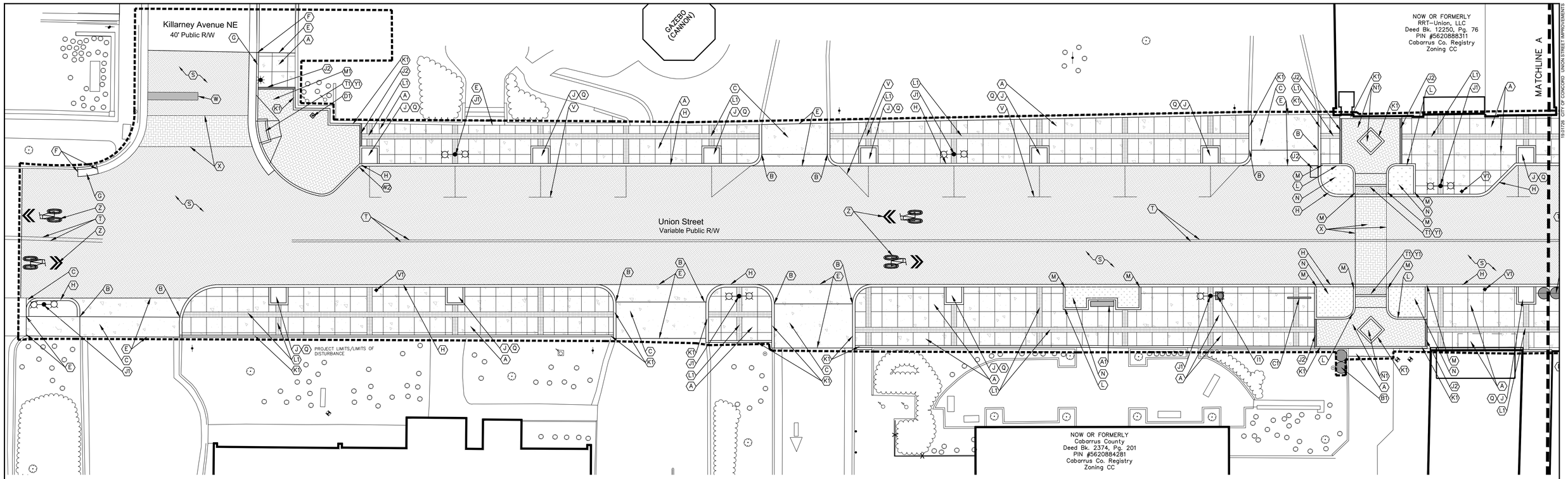


KEY NOTES

(A) 4" THICK CONCRETE SIDEWALK. SEE DETAIL SHEET C-501.

(B) TAPER CURB FLUSH WITH WALK.

(C) CONCRETE DRIVE APRON. GENERAL CONTRACTOR TO MATCH EXISTING ELEVATIONS AND ENSURE SMOOTH TRANSITION TO EXISTING DRIVES AND STREET. SEE CONCRETE SECTION DETAIL SHEET C-501.

(D) METAL AIR VENT GRATES TO MATCH EXISITNG. CONTRACTOR TO FIELD VERIFY DIMENSION OF EXISTING GRATES. PROVID ADA ACCESSIBLE GRATE.

(E) MATCH EXISTING SURFACE WITH SMOOTH TRANSITION, USE ISOLATION JOINT AT INTERFACE OF EXISTING AND PROPOSED SIDEWALKS AND VERTICAL SURFACES.

(F) TIE PROPOSED CURB TO EXISTING CURB AND/OR CURB AND GUTTER WITH SMOOTH TRANSITION. USE CONSTRUCTION JOINT AT INTERFACE OF EXISTING AND PROPOSED. TAPER PROPOSED CURB AS NECESSARY TO MATCH EXISTING TOP OF CURB.

(G) 30" CURB AND GUTTER. NOTE HEIGHT OF CURB VARIES. SEE GRADING PLAN. SEE DETAIL SHEET C-501.

(H) 8" STAND UP CURB. SEE DETAIL SHEET C-501.

(I) TRAFFIC SIGNAL INSTALLED BY OTHERS AFTER SURVEY WAS COMPLETED. CONTRACTOR TO FIELD VERIFY LOCATIONS AND NOTIFY ENGINEER/LANDSCAPE ARCHITECT IF LOCATIONS DIFFER FROM THOSE SHOWN ON PLANS. CONTRACTOR TO COORDINATE WITH CITY FOR INSTALLATION OF PEDESTRIAN HEADS TO BE INSTALLED DURING THE STREETSCAPE CONSTRUCTION..

(J) 4'X4' TREE GRATE AND FRAME WITH CONCRETE EDGE RESTRAINT. SEE DETAIL SHEET C-503.

(K) EXISTING TREE TO BE PROTECTED.

(L) 3" CONCRETE LANDSCAPE EDGE WITH DRAINAGE SLOTS. SEE DETAIL SHEET C-501.

(M) TAPER LANDSCAPE EDGING FLUSH IN 6". ALL LANDSCAPE EDGING ADJOINING CURB AT ROADWAY SHOULD BE TAPERED FLUSH.

(N) LANDSCAPE AREA. SEE LANDSCAPE SHEETS L-101 TO L-106.

(O) ELECTRICAL PANEL AND DIGITAL DISPLAY. SEE ELECTRICAL SHEETS E101-E107.

(P) SEAT WALL. SEE DETAIL SHEET C-501

(Q) SOIL CELLS. SEE SHEETS I-101 TO I-104 AND LANDSCAPE SHEETS L-101 TO L-106 FOR TREE LOCATIONS.

(R) VARIABLE ASPHALT OVERLAY. SEE DETAIL SHEET C-501.

(S) FULL DEPTH ASPHALT PAVING. SEE DETAIL SHEET C-501.

(T) 4" CENTER LINE, YELLOW THERMOPLASTIC PAINT, 120 MILS. SEE DETAIL SHEET C-506.

(U) 4" PAVEMENT STRIPE, WHITE THERMOPLASTIC PAINT, 120 MILS. SEE DETAIL SHEET C-506.

(V) 4" PAVEMENT STRIPE, WHITE THERMOPLASTIC PAINT, 90 MILS (TYPICAL). SEE DETAIL SHEET C-506.

(W) 24" WIDE STOP BAR, WHITE THERMOPLASTIC PAINT, 120 MILS. EXTEND ACROSS LANE WIDTH. SEE DETAIL SHEET C-506.

(X) STAMPED ASPHALT CROSSWALK WITH 8" WHITE THERMOPLASTIC STRIPE, 120 MILS. SEE DETAIL SHEET C-504.

(Y) TRAFFIC ARROWS AND SYMBOLS, WHITE THERMOPLASTIC PAINT, 90 MILS. SEE DETAIL SHEET DETAIL SHEET C-505.

(Z) BICYCLE SHARED LANE MARKINGS, WHITE THERMOPLASTIC PAINT, 90 MILS. SEE DETAIL SHEET C-503.

(A1) BENCH. OWNER TO PROVIDE AND CONTRACTOR TO INSTALL.

(B1) TRASH/RECYCLING RECEPTACLES. OWNER TO PROVIDE AND CONTRACTOR TO INSTALL.

(C1) RELOCATED BIKE RACK.

(D1) DRINKING FOUNTAIN – SEE DETAIL SHEET C-503. COLOR TO BE BLACK.

(E1) CIGARETTE RECEPTACLE. OWNER TO SUPPLY CONTRACTOR TO INSTALL.

(F1) BOLLARDS. SEE DETAIL SHEET C-501.

(G1) BRONZE CAROLINA THREAD TRAIL TRAIL MARKERS. TRAIL MARKERS TO BE MORTARED IN PLACE AND FLUSH WITH PROPOSED CONCRETE SIDEWALK. SEE DETAIL SHEET C-504.

(H1) BRONZE DOWNTOWN GREENWAY LOOP TRAIL MARKERS. TRAIL MARKERS TO BE MORTARED IN PLACE AND FLUSH WITH PROPOSED CONCRETE SIDEWALK. SEE DETAIL SHEET C-504.

(I1) RELOCATED USPS/UPS/FEDEX BOX.

(J1) PROPOSED LIGHT POLE/LIGHTED BOLLARD. SEE ELECTRICAL SHEETS E-001 TO E-107.

(K1) 6" CONCRETE EDGE RESTRAINT, FLUSH WITH WALK. SEE DETAIL SHEET C-502.

(L1) BRICK BAND – PINEHALL BRICK PATHWAY RED. SEE DETAIL SHEET C-502.

(M1) BRICK PAVERS – PINEHALL BRICK PATHWAY AUTUMN, HERRINGBONE PATTERN, HEAVY DUTY. SEE DETAIL SHEET C-502.

(N1) BRICK PAVERS – PINEHALL BRICK PATHWAY AUTUMN, HERRINGBONE PATTERN, LIGHT DUTY. SEE DETAIL SHEET C-502.

(O1) PLAZA PAVERS, PINEHALL BRICK PATHWAY AUTUMN, HERRINGBONE PATTERN STREET SECTION. SEE DETAIL SHEET C-502.

(P1) BRICK PAVER CROSSWALK WITH 8" CONCRETE EDGE RESTRAINT. 8" WHITE THERMOPLASTIC STRIPE, 120 MILS, PAVER TO BE PINEHALL BRICK PATHWAY RED. SEE DETAIL SHEET C-504.

(Q1) 18" CONCRETE GRADE BEAM. SEE DETAIL SHEET C-502.

(R1) HC PARKING. SEE DETAIL SHEET C-503.

(S1) HC PARKING SIGN. SEE DETAIL SHEET C-503.

(T1) HC RAMP, LAYOUT OF RAMPS VARY. SEE DETAIL SHEET C-503.

(U1) WOOD FENCE. SEE DETAILS SHEET C-501.

(V1) FLAG HOLDER, 2" SCHEDULE 40 PVC SLEEVE SET IN CONCRETE. 6" DEPTH. SEE DETAIL SHEET C-506.

(W1) HORSE HOOKS, DECORATIVE HORSESHOES AND GRANITE PLAQUE. HORSESHOES TO BE SET FLUSH WITH PROPOSED CONCRETE SIDEWALK. SEE DETAIL SHEET C-506.

(X1) STORMWATER TRENCH REPAIR. SEE DETAIL SHEET C-504.

(Y1) BRICK RED COMPOSITE DETECTABLE WARNING PLATE, SET IN CONCRETE. 6" CONCRETE BAND AROUND DOME INSET. SEE HANDICAP DETAIL SHEET C-503.

(Z1) CONCRETE STAIR WITH HANDRAIL. SEE DETAIL SHEET C-502.

(A2) CONCRETE STAIR AND RAMP STORE ENTRANCE ACCESS. SEE DETAIL SHEET C-502.

(B2) NO PARKING SIGN. SEE SIGN INSTALLATION DETAIL SHEET C-503.

(C2) RELOCATED WAYFINDING SIGN, SALVAGED REINSTALL. CONTRACTOR TO PROVIDE SIGNED AND SEALED STRUCTURAL DRAWINGS FOR FOOTING AND POLE INSTALLATION.

(D2) STREET SIGN. SEE SIGN INSTALLATION DETAIL SHEET C-503.

(E2) LOADING ZONE SIGN. SEE SIGN INSTALLATION DETAIL SHEET C-503.

(F2) ADOPT A STREET SIGN. SEE SIGN INSTALLATION DETAIL SHEET C-503.

(G2) CONCORD HISTORIC DISTRICT SIGN. SEE SIGN INSTALLATION DETAIL SHEET C-503.

(H2) ORIGINAL CITY LIMIT SIGN. SEE SIGN INSTALLATION DETAIL SHEET C-503.

(I2) HISTORICAL SIGN. SEE SIGN INSTALLATION DETAIL SHEET C-503.

(J2) GRANITE EDGE RESTRAINT FLUSH WITH WALK. OWNER TO SUPPLY GRANITE FOR PROJECT, CONTRACTOR TO INSTALL. SEE DETAIL SHEET C-502.

(K2) GRANITE STORMWATER FLUME. OWNER TO SUPPLY GRANITE FOR PROJECT, CONTRACTOR TO INSTALL. SEE DETAIL SHEET C-504.

(L2) PROPOSED FUTURE CLOCK, CLOCK NOT IN CONTRACT. SEE ELECTRICAL PLANS FOR CONDUIT LOCATIONS.

(M2) MOSAIC LIGHT STRUCTURES. SEE ELECTRICAL PLANS PROVIDED BY THE CITY.

(N2) GRANITE MARKER FOR ORIGINAL SURVEYORS STONE. SEE DETAIL SHEET C-506

(O2) CONCRETE EDGE RESTRAINT TO MATCH LOCATION AND WIDTH OF PROPOSED PLAZA CONCRETE BANDS. VERIFY LOCATION OF BANDS WITH CURRENT SET OF COURTHOUSE RENOVATION PLANS BY KIMLEY HORN. PLANS TO BE PROVIDED BY THE CITY.

(P2) MONOLITHIC RETAINING WALL WITH LANDSCAPE CURB OR METAL RAILING. SEE DETAIL SHEET C-506.

(Q2) THERMOPLASTIC COMPASS SYMBOL, 120 MIL. SEE DETAIL SHEET C-506.

(R2) HC RAMP WITH HANDRAILS. SEE DETAILS SHEET C-503.

(S2) PUBLIC PARKING DIRECTION SIGN. SEE DETAIL SHEET C-503.

(T2) 18" METAL RAILING/TREE GUARD TO BE PROVIDED BY THE OWNER AND CONTRACTOR INSTALLED. SEE DETAIL C-506.

(U2) STORMWATER STRUCTURE. SEE GRADING, DRAINAGE AND EROSION CONTROL PLANS.

(V2) RIGHT TURN PROHIBITED SIGN. SEE DETAIL SHEET C-503.

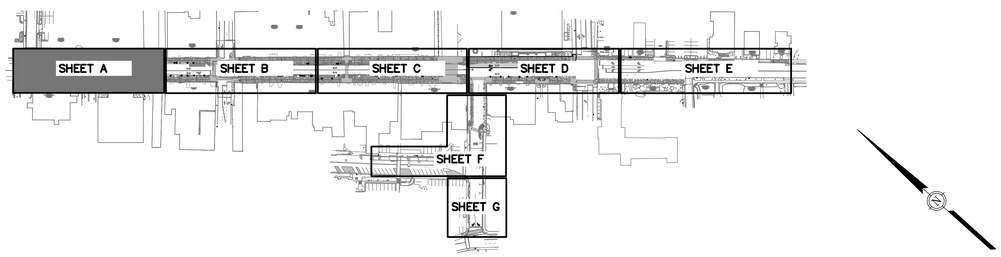
(W2) 6" STAND UP CURB. SEE DETAIL SHEET C-501.

(X2) NCDOT ASPHALT PAVING. SEE DETAIL SHEET C-501.

(Y2) NCDOT 8" STAND UP CURB. SEE DETAIL SHEET C-501.

GENERAL NOTES

1. ALL EXISTING CONDITIONS AND TOPOGRAPHIC INFORMATION WAS OBTAINED FROM SURVEY BY NORSTAR LAND SURVEYING, INC. MAY 2, 2019.
2. ALL DEVELOPMENT SHALL CONFORM WITH THE CITY OF CONCORD DEVELOPMENT ORDINANCE.
3. SITE SIGNAGE SHALL CONFORM WITH APPLICABLE CODES AND ORDINANCES.
4. ALL PAINT STRIPING, PAVEMENT MARKINGS, AND SIGNAGE SHALL CONFORM TO THE LATEST "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND CITY OF CONCORD STANDARDS.
5. ALL DIMENSIONS ARE FACE OF CURB, EDGE OF PAVEMENT AND FACE OF WALL, UNLESS OTHERWISE NOTED.
6. THIS SITE IS NOT LOCATED IN ANY FLOOD ZONE.
7. ALL IMPROVEMENTS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH NORTH CAROLINA STATE STANDARDS. ALL IMPROVEMENTS SHALL COMPLY WITH THE CITY OF CONCORD STANDARDS FOR STORM DRAINAGE, SIGNAGE, LANDSCAPE, PLANTING, UTILITY AND PARKING REQUIREMENTS.
8. ANY DISCREPANCIES FOUND IN THE FIELD SHALL BE CALLED TO THE ATTENTION OF THE OWNER/ENGINEER/DESIGNER PRIOR TO PROCEEDING WITH ANY WORK.
9. THE GENERAL CONTRACTOR SHALL CONTACT ALL OWNERS OF EASEMENTS, UTILITIES AND RIGHT OF WAYS, PUBLIC OR PRIVATE, PRIOR TO WORKING IN THESE AREAS.
10. HATCHING OF HARD SURFACE MATERIALS SUCH AS BRICK AND CONCRETE ARE FOR GENERAL INFORMATION PURPOSES. IN NO INSTANCE IS A UTILITY LID, COVER OR ACCESS POINT TO BE COVERED OVER AND CONCEALED BY THE PROPOSED SURFACE MATERIAL. ANY HIDDEN UTILITY BOXES, COVERS, ETC DISCOVERED DURING CONSTRUCTION SHALL BE ADJUSTED TO MATCH PROPOSED GRADE ELEVATIONS.
11. PROVIDE CONSTRUCTION JOINTS AT ALL INTERFACES BETWEEN PROPOSED AND EXISTING SURFACES/BUILDINGS. ALL CONSTRUCTION JOINTS ARE TO BE SEALED.
12. ENSURE SMOOTH TRANSITION FROM PROPOSED SIDEWALK TO ALL STORE FRONTS
13. ALL UTILITY BOXES AND TREE GRATES ARE TO BE ALIGNED WITH PROPOSED CONCRETE SCORING PATTERN.
14. NOTE LIMITS OF DISTURBANCE FOR STREETSCAPE WORK AND UTILITY INSTALLATION VARY. SEE EACH SET OF PLANS FOR LIMITS OF DISTURBANCE.
15. CONTRACTOR MUST PROVIDE SECURE, NON-SLIP ADA ACCESSIBLE SURFACES/STRUCTURES AND MAINTAIN ACCESS TO BUSINESSES DURING CONSTRUCTION.
16. CONTRACTOR TO PROVIDE MINIMUM OF FOUR PROJECT IDENTIFICATION SIGNS.



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CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

10 0 5 10 20
GRAPHIC SCALE DIVISION VALUE = 10 FEET

SITE PLAN - A

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	C.L. CRANWILL			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	B. ROARK	JULY 2021	19.01726	N/A

SHEET
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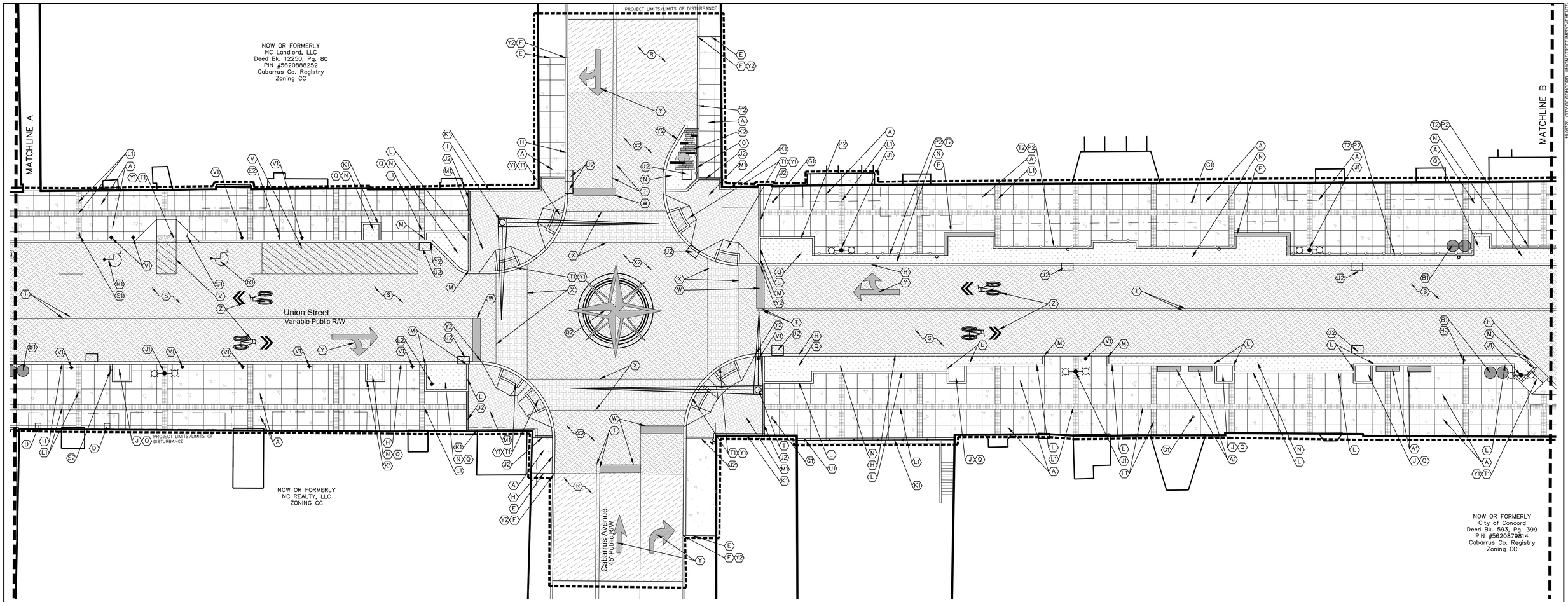

KEY NOTES

- (A) 4" THICK CONCRETE SIDEWALK. SEE DETAIL SHEET C-501.
- (B) TAPER CURB FLUSH WITH WALK.
- (C) CONCRETE DRIVE APRON. GENERAL CONTRACTOR TO MATCH EXISTING ELEVATIONS AND ENSURE SMOOTH TRANSITION TO EXISTING DRIVES AND STREET. SEE CONCRETE SECTION DETAIL SHEET C-501.
- (D) METAL AIR VENT GRATES TO MATCH EXISITNG. CONTRACTOR TO FIELD VERIFY DIMENSION OF EXISTING GRATES. PROVID ADA ACCESSIBLE GRATE.
- (E) MATCH EXISTING SURFACE WITH SMOOTH TRANSITION, USE ISOLATION JOINT AT INTERFACE OF EXISTING AND PROPOSED SIDEWALKS AND VERTICAL SURFACES.
- (F) TIE PROPOSED CURB TO EXISTING CURB AND/OR CURB AND GUTTER WITH SMOOTH TRANSITION. USE CONSTRUCTION JOINT AT INTERFACE OF EXISTING AND PROPOSED. TAPER PROPOSED CURB AS NECESSARY TO MATCH EXISTING TOP OF CURB.
- (G) 30" CURB AND GUTTER. NOTE HEIGHT OF CURB VARIES. SEE GRADING PLAN. SEE DETAIL SHEET C-501.
- (H) 8" STAND UP CURB. SEE DETAIL SHEET C-501.
- (I) TRAFFIC SIGNAL INSTALLED BY OTHERS AFTER SURVEY WAS COMPLETED. CONTRACTOR TO FIELD VERIFY LOCATIONS AND NOTIFY ENGINEER/LANDSCAPE ARCHITECT IF LOCATIONS DIFFER FROM THOSE SHOWN ON PLANS. CONTRACTOR TO COORDINATE WITH CITY FOR INSTALLATION OF PEDESTRIAN HEADS TO BE INSTALLED DURING THE STREETSCAPE CONSTRUCTION..
- (J) 4'X4' TREE GRATE AND FRAME WITH CONCRETE EDGE RESTRAINT. SEE DETAIL SHEET C-503.
- (K) EXISTING TREE TO BE PROTECTED.
- (L) 3" CONCRETE LANDSCAPE EDGE WITH DRAINAGE SLOTS. SEE DETAIL SHEET C-501.
- (M) TAPER LANDSCAPE EDGING FLUSH IN 6". ALL LANDSCAPE EDGING ADJOINING CURB AT ROADWAY SHOULD BE TAPERED FLUSH.
- (N) LANDSCAPE AREA. SEE LANDSCAPE SHEETS L-101 TO L-106.
- (O) ELECTRICAL PANEL AND DIGITAL DISPLAY. SEE ELECTRICAL SHEETS E101-E107.
- (P) SEAT WALL. SEE DETAIL SHEET C-501
- (Q) SOIL CELLS. SEE SHEETS I-101 TO I-104 AND LANDSCAPE SHEETS L-101 TO L-106 FOR TREE LOCATIONS.
- (R) VARIABLE ASPHALT OVERLAY. SEE DETAIL SHEET C-501.
- (S) FULL DEPTH ASPHALT PAVING. SEE DETAIL SHEET C-501.
- (T) 4" CENTER LINE, YELLOW THERMOPLASTIC PAINT, 120 MILS. SEE DETAIL SHEET C-506.
- (U) 4" PAVEMENT STRIPE, WHITE THERMOPLASTIC PAINT, 120 MILS. SEE DETAIL SHEET C-506.
- (V) 4" PAVEMENT STRIPE, WHITE THERMOPLASTIC PAINT, 90 MILS (TYPICAL). SEE DETAIL SHEET C-506.
- (W) 24" WIDE STOP BAR, WHITE THERMOPLASTIC PAINT, 120 MILS. EXTEND ACROSS LANE WIDTH. SEE DETAIL SHEET C-506.
- (X) STAMPED ASPHALT CROSSWALK WITH 8" WHITE THERMOPLASTIC STRIPE, 120 MILS. SEE DETAIL SHEET C-504.
- (Y) TRAFFIC ARROWS AND SYMBOLS, WHITE THERMOPLASTIC PAINT, 90 MILS. SEE DETAIL SHEET DETAIL SHEET C-505.
- (Z) BICYCLE SHARED LANE MARKINGS, WHITE THERMOPLASTIC PAINT, 90 MILS. SEE DETAIL SHEET C-503.
- (A1) BENCH. OWNER TO PROVIDE AND CONTRACTOR TO INSTALL.
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- (C1) RELOCATED BIKE RACK.
- (D1) DRINKING FOUNTAIN – SEE DETAIL SHEET C-503. COLOR TO BE BLACK.
- (E1) CIGARETTE RECEPTACLE. OWNER TO SUPPLY CONTRACTOR TO INSTALL.
- (F1) BOLLARDS. SEE DETAIL SHEET C-501.
- (G1) BRONZE CAROLINA THREAD TRAIL TRAIL MARKERS. TRAIL MARKERS TO BE MORTARED IN PLACE AND FLUSH WITH PROPOSED CONCRETE SIDEWALK. SEE DETAIL SHEET C-504.
- (H1) BRONZE DOWNTOWN GREENWAY LOOP TRAIL MARKERS. TRAIL MARKERS TO BE MORTARED IN PLACE AND FLUSH WITH PROPOSED CONCRETE SIDEWALK. SEE DETAIL SHEET C-504.
- (I1) RELOCATED USPS/UPS/FEDEX BOX.
- (J1) PROPOSED LIGHT POLE/LIGHTED BOLLARD. SEE ELECTRICAL SHEETS E-001 TO E-107.
- (K1) 6" CONCRETE EDGE RESTRAINT, FLUSH WITH WALK. SEE DETAIL SHEET C-502.
- (L1) BRICK BAND – PINEHALL BRICK PATHWAY RED. SEE DETAIL SHEET C-502.
- (M1) BRICK PAVERS – PINEHALL BRICK PATHWAY AUTUMN, HERRINGBONE PATTERN, HEAVY DUTY. SEE DETAIL SHEET C-502.
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- (O1) PLAZA PAVERS, PINEHALL BRICK PATHWAY AUTUMN, HERRINGBONE PATTERN STREET SECTION. SEE DETAIL SHEET C-502.
- (P1) BRICK PAVER CROSSWALK WITH 8" CONCRETE EDGE RESTRAINT. 8" WHITE THERMOPLASTIC STRIPE, 120 MILS, PAVER TO BE PINEHALL BRICK PATHWAY RED. SEE DETAIL SHEET C-504.
- (Q1) 18" CONCRETE GRADE BEAM. SEE DETAIL SHEET C-502.
- (R1) HC PARKING. SEE DETAIL SHEET C-503.
- (S1) HC PARKING SIGN. SEE DETAIL SHEET C-503.
- (T1) HC RAMP, LAYOUT OF RAMPS VARY. SEE DETAIL SHEET C-503.
- (U1) WOOD FENCE. SEE DETAILS SHEET C-501.
- (V1) FLAG HOLDER, 2" SCHEDULE 40 PVC SLEEVE SET IN CONCRETE. 6" DEPTH. SEE DETAIL SHEET C-506.
- (W1) HORSE HOOKS, DECORATIVE HORSESHOES AND GRANITE PLAQUE. HORSESHOES TO BE SET FLUSH WITH PROPOSED CONCRETE SIDEWALK. SEE DETAIL SHEET C-506.
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- (Y1) BRICK RED COMPOSITE DETECTABLE WARNING PLATE, SET IN CONCRETE. 6" CONCRETE BAND AROUND DOME INSET. SEE HANDICAP DETAIL SHEET C-503.
- (Z1) CONCRETE STAIR WITH HANDRAIL. SEE DETAIL SHEET C-502.
- (A2) CONCRETE STAIR AND RAMP STORE ENTRANCE ACCESS. SEE DETAIL SHEET C-502.
- (B2) NO PARKING SIGN. SEE SIGN INSTALLATION DETAIL SHEET C-503.
- (C2) RELOCATED WAYFINDING SIGN, SALVAGED REINSTALL. CONTRACTOR TO PROVIDE SIGNED AND SEALED STRUCTURAL DRAWINGS FOR FOOTING AND POLE INSTALLATION.
- (D2) STREET SIGN. SEE SIGN INSTALLATION DETAIL SHEET C-503.
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- (G2) CONCORD HISTORIC DISTRICT SIGN. SEE SIGN INSTALLATION DETAIL SHEET C-503.
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- (I2) HISTORICAL SIGN. SEE SIGN INSTALLATION DETAIL SHEET C-503.
- (J2) GRANITE EDGE RESTRAINT FLUSH WITH WALK. OWNER TO SUPPLY GRANITE FOR PROJECT, CONTRACTOR TO INSTALL. SEE DETAIL SHEET C-502.
- (K2) GRANITE STORMWATER FLUME. OWNER TO SUPPLY GRANITE FOR PROJECT, CONTRACTOR TO INSTALL. SEE DETAIL SHEET C-504.
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- (M2) MOSAIC LIGHT STRUCTURES. SEE ELECTRICAL PLANS PROVIDED BY THE CITY.
- (N2) GRANITE MARKER FOR ORIGINAL SURVEYORS STONE. SEE DETAIL SHEET C-506
- (O2) CONCRETE EDGE RESTRAINT TO MATCH LOCATION AND WIDTH OF PROPOSED PLAZA CONCRETE BANDS. VERIFY LOCATION OF BANDS WITH CURRENT SET OF COURTHOUSE RENOVATION PLANS BY KIMLEY HORN. PLANS TO BE PROVIDED BY THE CITY.
- (P2) MONOLITHIC RETAINING WALL WITH LANDSCAPE CURB OR METAL RAILING. SEE DETAIL SHEET C-506.
- (Q2) THERMOPLASTIC COMPASS SYMBOL, 120 MIL. SEE DETAIL SHEET C-506.
- (R2) HC RAMP WITH HANDRAILS. SEE DETAILS SHEET C-503.
- (S2) PUBLIC PARKING DIRECTION SIGN. SEE DETAIL SHEET C-503.
- (T2) 18" METAL RAILING/TREE GUARD TO BE PROVIDED BY THE OWNER AND CONTRACTOR INSTALLED. SEE DETAIL C-506.
- (U2) STORMWATER STRUCTURE. SEE GRADING, DRAINAGE AND EROSION CONTROL PLANS.
- (V2) RIGHT TURN PROHIBITED SIGN. SEE DETAIL SHEET C-503.
- (W2) 6" STAND UP CURB. SEE DETAIL SHEET C-501.
- (X2) NCDOT ASPHALT PAVING. SEE DETAIL SHEET C-501.
- (Y2) NCDOT 8" STAND UP CURB. SEE DETAIL SHEET C-501.

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5. ALL DIMENSIONS ARE FACE OF CURB, EDGE OF PAVEMENT AND FACE OF WALL, UNLESS OTHERWISE NOTED.
6. THIS SITE IS NOT LOCATED IN ANY FLOOD ZONE.
7. ALL IMPROVEMENTS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH NORTH CAROLINA STATE STANDARDS. ALL IMPROVEMENTS SHALL COMPLY WITH THE CITY OF CONCORD STANDARDS FOR STORM DRAINAGE, SIGNAGE, LANDSCAPE, PLANTING, UTILITY AND PARKING REQUIREMENTS.
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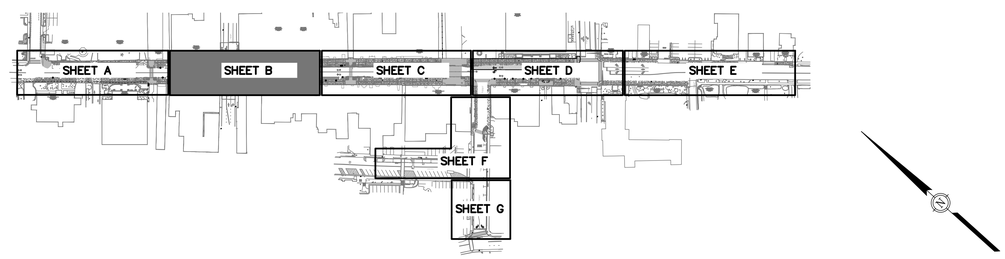
11. PROVIDE CONSTRUCTION JOINTS AT ALL INTERFACES BETWEEN PROPOSED AND EXISTING SURFACES/BUILDINGS. ALL CONSTRUCTION JOINTS ARE TO BE SEALED.
12. ENSURE SMOOTH TRANSITION FROM PROPOSED SIDEWALK TO ALL STORE FRONTS
13. ALL UTILITY BOXES AND TREE GRATES ARE TO BE ALIGNED WITH PROPOSED CONCRETE SCORING PATTERN.
14. NOTE LIMITS OF DISTURBANCE FOR STREETSCAPE WORK AND UTILITY INSTALLATION VARY. SEE EACH SET OF PLANS FOR LIMITS OF DISTURBANCE.
15. CONTRACTOR MUST PROVIDE SECURE, NON-SLIP ADA ACCESSIBLE SURFACES/STRUCTURES AND MAINTAIN ACCESS TO BUSINESSES DURING CONSTRUCTION.
16. CONTRACTOR TO PROVIDE MINIMUM OF FOUR PROJECT IDENTIFICATION SIGNS.



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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CRAIG CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

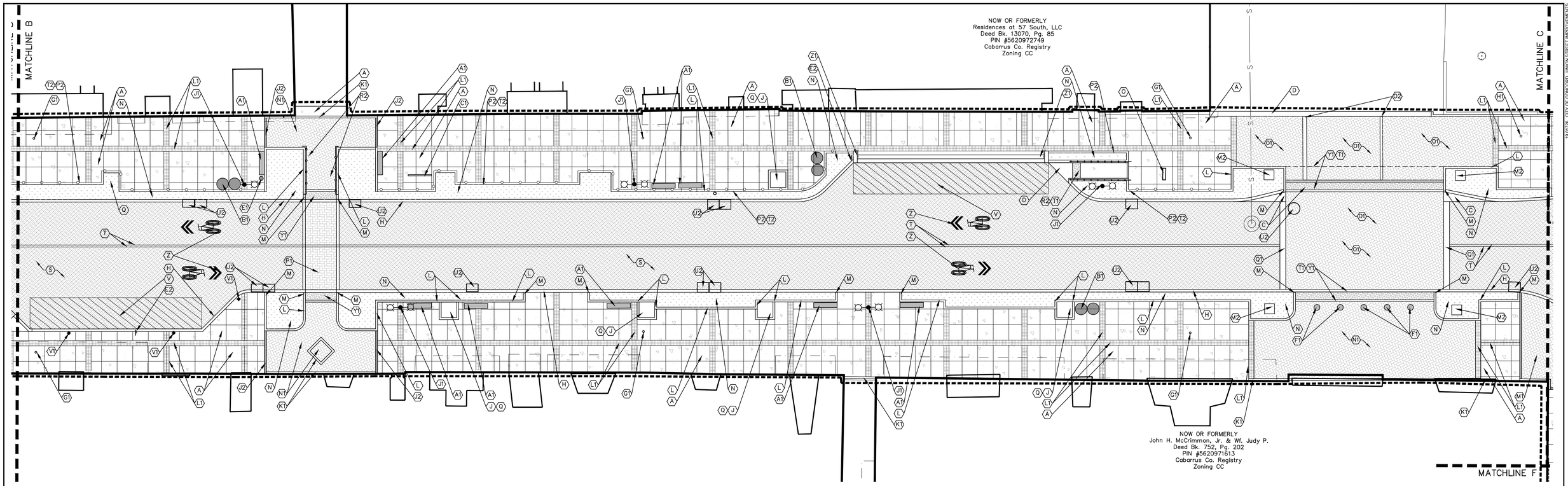
SITE PLAN - B

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	C.L. CRANWILL			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	B. ROARK	JULY 2021	19.01726	N/A

SHEET
C-102

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS

P:\2019\19.01726-CONCORD\C-UNION STREETSCAPE PROJECT\DRAWINGS\19.01726 UNION BASE.DWG PLOT DATE: 7/22/2021 10:54 AM KURTIS DURRANT



KEY NOTES

(A) 4" THICK CONCRETE SIDEWALK. SEE DETAIL SHEET C-501.

(B) TAPER CURB FLUSH WITH WALK.

(C) CONCRETE DRIVE APRON. GENERAL CONTRACTOR TO MATCH EXISTING ELEVATIONS AND ENSURE SMOOTH TRANSITION TO EXISTING DRIVES AND STREET. SEE CONCRETE SECTION DETAIL SHEET C-501.

(D) METAL AIR VENT GRATES TO MATCH EXISITNG. CONTRACTOR TO FIELD VERIFY DIMENSION OF EXISTING GRATES. PROVID ADA ACCESSIBLE GRATE.

(E) MATCH EXISTING SURFACE WITH SMOOTH TRANSITION, USE ISOLATION JOINT AT INTERFACE OF EXISTING AND PROPOSED SIDEWALKS AND VERTICAL SURFACES.

(F) TIE PROPOSED CURB TO EXISTING CURB AND/OR CURB AND GUTTER WITH SMOOTH TRANSITION. USE CONSTRUCTION JOINT AT INTERFACE OF EXISTING AND PROPOSED. TAPER PROPOSED CURB AS NECESSARY TO MATCH EXISTING TOP OF CURB.

(G) 30" CURB AND GUTTER. NOTE HEIGHT OF CURB VARIES. SEE GRADING PLAN. SEE DETAIL SHEET C-501.

(H) 8" STAND UP CURB. SEE DETAIL SHEET C-501.

(I) TRAFFIC SIGNAL INSTALLED BY OTHERS AFTER SURVEY WAS COMPLETED. CONTRACTOR TO FIELD VERIFY LOCATIONS AND NOTIFY ENGINEER/LANDSCAPE ARCHITECT IF LOCATIONS DIFFER FROM THOSE SHOWN ON PLANS. CONTRACTOR TO COORDINATE WITH CITY FOR INSTALLATION OF PEDESTRIAN HEADS TO BE INSTALLED DURING THE STREETSCAPE CONSTRUCTION..

(J) 4'X4' TREE GRATE AND FRAME WITH CONCRETE EDGE RESTRAINT. SEE DETAIL SHEET C-503.

(K) EXISTING TREE TO BE PROTECTED.

(L) 3" CONCRETE LANDSCAPE EDGE WITH DRAINAGE SLOTS. SEE DETAIL SHEET C-501.

(M) TAPER LANDSCAPE EDGING FLUSH IN 6". ALL LANDSCAPE EDGING ADJOINING CURB AT ROADWAY SHOULD BE TAPERED FLUSH.

(N) LANDSCAPE AREA. SEE LANDSCAPE SHEETS L-101 TO L-106.

(O) ELECTRICAL PANEL AND DIGITAL DISPLAY. SEE ELECTRICAL SHEETS E101-E107.

(P) SEAT WALL. SEE DETAIL SHEET C-501

(Q) SOIL CELLS. SEE SHEETS I-101 TO I-104 AND LANDSCAPE SHEETS L-101 TO L-106 FOR TREE LOCATIONS.

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(X) STAMPED ASPHALT CROSSWALK WITH 8" WHITE THERMOPLASTIC STRIPE, 120 MILS. SEE DETAIL SHEET C-504.

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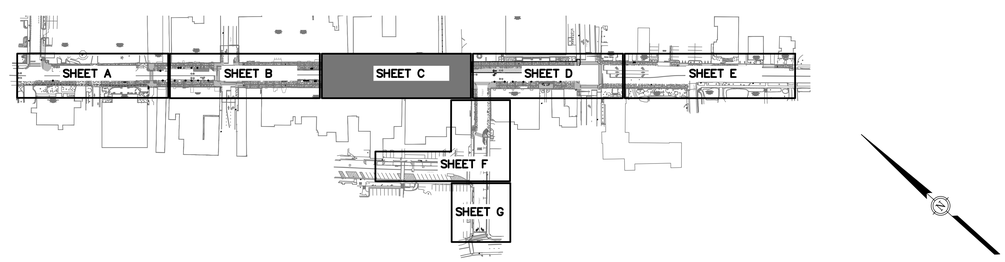

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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CHRISTIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	C.L. CRANWILL
PROJECT MANAGER	REVIEWER
M.J. NORRIS	B. ROARK

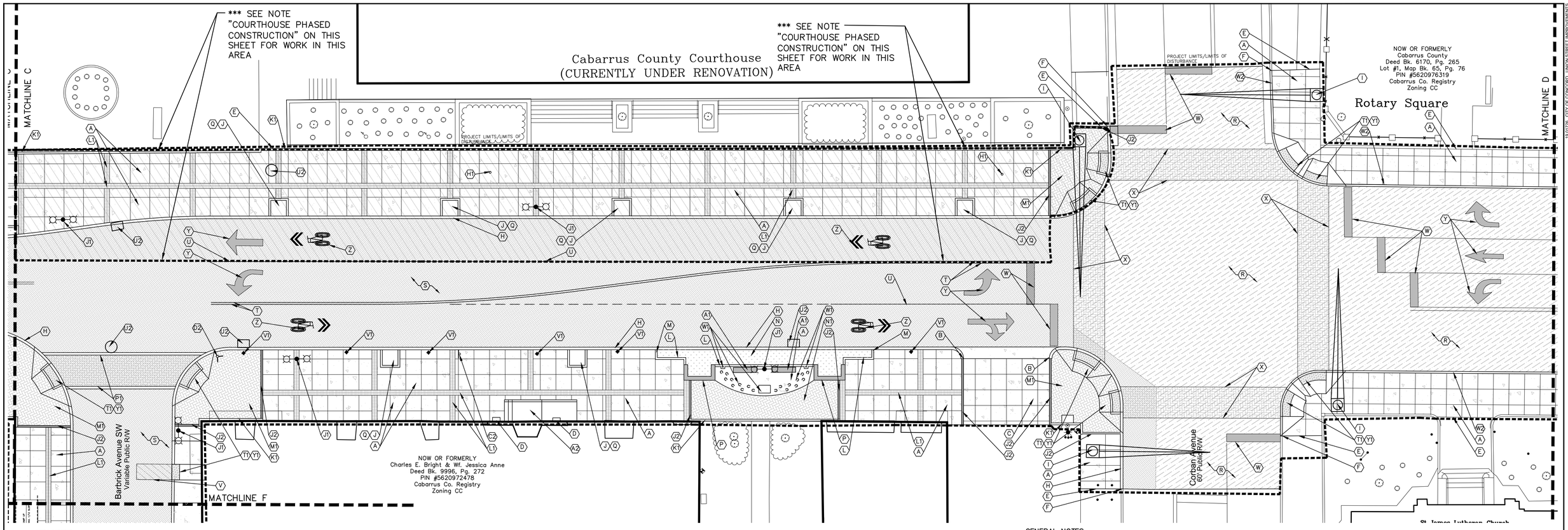
SITE PLAN - C

DATE	PROJECT #	FUNDING #
JULY 2021	19.01726	N/A

SHEET
C-103

P:\2019\19.01726-CONCORDNC-UNION STREETSCAPE PROJECT\DRAWINGS\1901726 UNION BASE.DWG PLOT DATE: 7/22/2021 10:39 AM KURTIS DURRANT

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS



KEY NOTES

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(D) METAL AIR VENT GRATES TO MATCH EXISITNG. CONTRACTOR TO FIELD VERIFY DIMENSION OF EXISTING GRATES. PROVID ADA ACCESSIBLE GRATE.

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(F) TIE PROPOSED CURB TO EXISTING CURB AND/OR CURB AND GUTTER WITH SMOOTH TRANSITION. USE CONSTRUCTION JOINT AT INTERFACE OF EXISTING AND PROPOSED. TAPER PROPOSED CURB AS NECESSARY TO MATCH EXISTING TOP OF CURB.

(G) 30" CURB AND GUTTER. NOTE HEIGHT OF CURB VARIES. SEE GRADING PLAN. SEE DETAIL SHEET C-501.

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(J) 4'X4' TREE GRATE AND FRAME WITH CONCRETE EDGE RESTRAINT. SEE DETAIL SHEET C-503.

(K) EXISTING TREE TO BE PROTECTED.

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(S2) PUBLIC PARKING DIRECTION SIGN. SEE DETAIL SHEET C-503.

(T2) 18" METAL RAILING/TREE GUARD TO BE PROVIDED BY THE OWNER AND CONTRACTOR INSTALLED. SEE DETAIL C-506.

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(V2) RIGHT TURN PROHIBITED SIGN. SEE DETAIL SHEET C-503.

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(Y2) NCDOT 8" STAND UP CURB. SEE DETAIL SHEET C-501.

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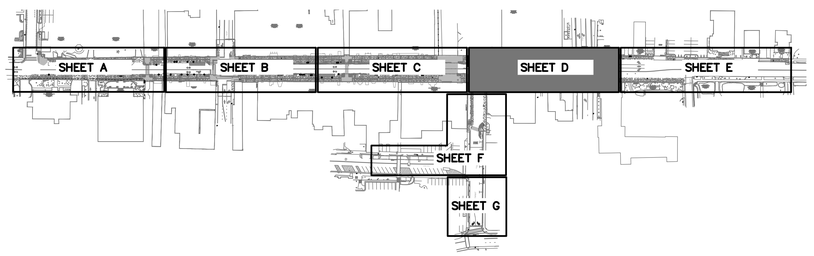
16. CONTRACTOR TO PROVIDE MINIMUM OF FOUR PROJECT IDENTIFICATION SIGNS.

COURTHOUSE PHASED CONSTRUCTION:

DUE TO THE RENOVATION OF THE COURTHOUSE, ONLY PART OF THE ILLUSTRATED CONSTRUCTION ACTIVITIES WILL BE INSTALLED UNDER THIS CONTRACT. THE REMAINING ITEMS WILL BE INSTALLED UNDER SEPARATE CONTRACT AFTER THE COMPLETION OF THE COURTHOUSE RENOVATION IN 2024. ITEMS UNDER THIS CONTRACT INCLUDE: COMPREHENSIVE GRADING, ELECTRICAL DEMOLITION, ASPHALT PAVING, STRIPING, TEMPORARY CONCRETE SIDEWALK, HC RAMPS, TACTILE PLATES, STORMWATER INSTALLATION, AND WATER LINES AS NOTED ON THE UTILITY SHEET. THIS AREA IS TO BE GRADED TO PROPOSED ELEVATIONS AND THE GRADES TAPERED DOWN TO MEET EXISTING ELEVATIONS AT THE COURTHOUSE STEPS. EXISTING DRAINAGE STRUCTURES TO BE UTILIZED FOR DRAINAGE.

FOR TEMPORARY PAVING SEE DETAIL SHEET C-510.



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Hickory, NC 28601
828.328.2024
NC Firm License # C-0459
mcgillassociates.com

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

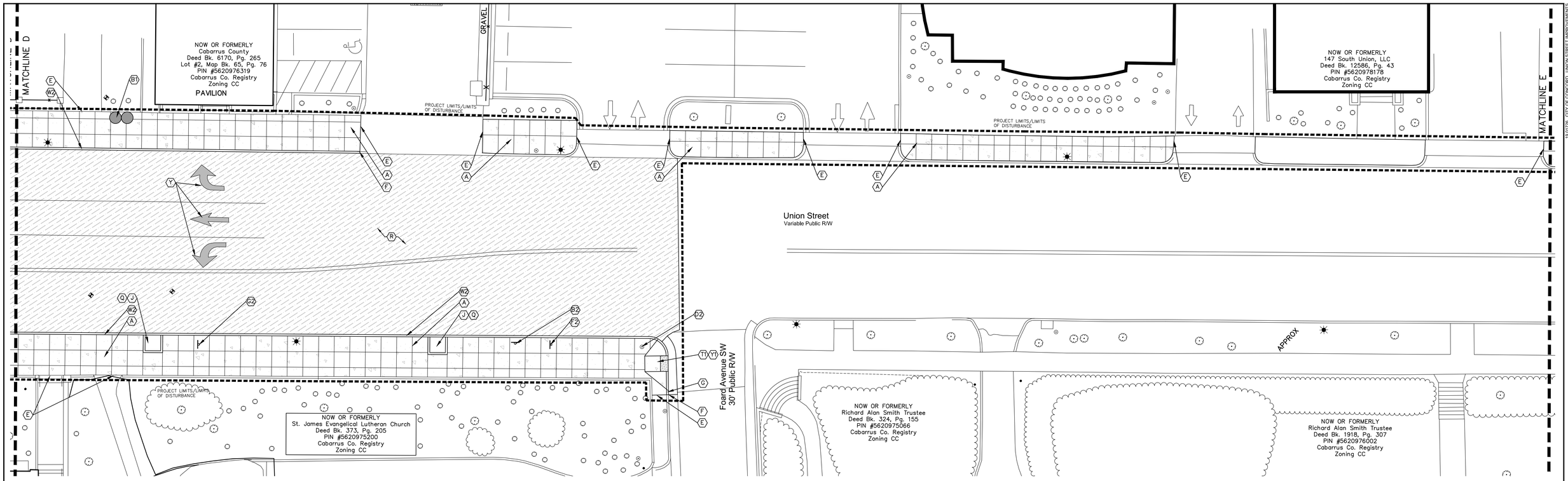
SITE PLAN - D

OFFICE MANAGER	DESIGNER		
D.G. CHAPMAN	C.L. CRANWILL		
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	B. ROARK	JULY 2021	19.01726	N/A

SHEET
C-104

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS

P:\2019\19.01726-CONCORD\C-UNION STREETSCAPE PROJECT\DRAWINGS\19.01726 UNION BASE.DWG PLOT DATE: 7/22/2021 10:39 AM KURTIS DURRANT



KEY NOTES

(A) 4" THICK CONCRETE SIDEWALK. SEE DETAIL SHEET C-501.

(B) TAPER CURB FLUSH WITH WALK.

(C) CONCRETE DRIVE APRON. GENERAL CONTRACTOR TO MATCH EXISTING ELEVATIONS AND ENSURE SMOOTH TRANSITION TO EXISTING DRIVES AND STREET. SEE CONCRETE SECTION DETAIL SHEET C-501.

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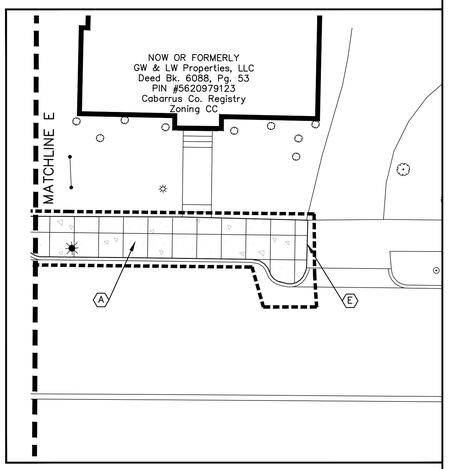

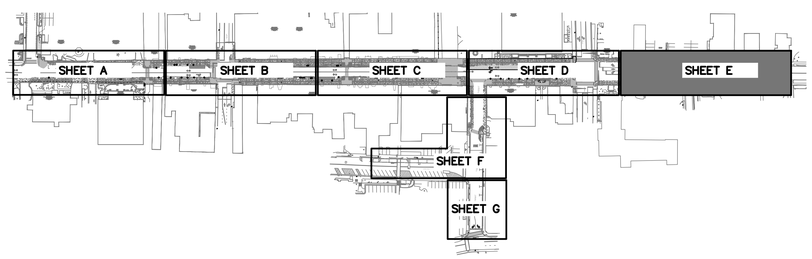

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1240 19th Street Lane NW
Hickory, NC 28601
828.328.2024
NC Firm License # C-0459
mcgillassociates.com

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

SITE PLAN - E

OFFICE MANAGER	DESIGNER	DATE	PROJECT #	FUNDING #
D.G. CHAPMAN	C.L. CRANWILL	JULY 2021	19.01726	N/A
PROJECT MANAGER	REVIEWER			
M.J. NORRIS	B. ROARK			

SHEET
C-105

P:\2019\19.01726-CONCORDNC-UNION STREETSCAPE PROJECT\DRAWINGS\19.01726 UNION BASE ENG PLOT DATE 7/22/2021 10:40 AM KURTIS DURRANT

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS

KEY NOTES

(A) 4" THICK CONCRETE SIDEWALK. SEE DETAIL SHEET C-501.

(B) TAPER CURB FLUSH WITH WALK.

(C) CONCRETE DRIVE APRON. GENERAL CONTRACTOR TO MATCH EXISTING ELEVATIONS AND ENSURE SMOOTH TRANSITION TO EXISTING DRIVES AND STREET. SEE CONCRETE SECTION DETAIL SHEET C-501.

(D) METAL AIR VENT GRATES TO MATCH EXISITNG. CONTRACTOR TO FIELD VERIFY DIMENSION OF EXISTING GRATES. PROVID ADA ACCESSIBLE GRATE.

(E) MATCH EXISTING SURFACE WITH SMOOTH TRANSITION, USE ISOLATION JOINT AT INTERFACE OF EXISTING AND PROPOSED SIDEWALKS AND VERTICAL SURFACES.

(F) TIE PROPOSED CURB TO EXISTING CURB AND/OR CURB AND GUTTER WITH SMOOTH TRANSITION. USE CONSTRUCTION JOINT AT INTERFACE OF EXISTING AND PROPOSED. TAPER PROPOSED CURB AS NECESSARY TO MATCH EXISTING TOP OF CURB.

(G) 30" CURB AND GUTTER. NOTE HEIGHT OF CURB VARIES. SEE GRADING PLAN. SEE DETAIL SHEET C-501.

(H) 8" STAND UP CURB. SEE DETAIL SHEET C-501.

(I) TRAFFIC SIGNAL INSTALLED BY OTHERS AFTER SURVEY WAS COMPLETED. CONTRACTOR TO FIELD VERIFY LOCATIONS AND NOTIFY ENGINEER/LANDSCAPE ARCHITECT IF LOCATIONS DIFFER FROM THOSE SHOWN ON PLANS. CONTRACTOR TO COORDINATE WITH CITY FOR INSTALLATION OF PEDESTRIAN HEADS TO BE INSTALLED DURING THE STREETSCAPE CONSTRUCTION..

(J) 4'X4' TREE GRATE AND FRAME WITH CONCRETE EDGE RESTRAINT. SEE DETAIL SHEET C-503.

(K) EXISTING TREE TO BE PROTECTED.

(L) 3" CONCRETE LANDSCAPE EDGE WITH DRAINAGE SLOTS. SEE DETAIL SHEET C-501.

(M) TAPER LANDSCAPE EDGING FLUSH IN 6". ALL LANDSCAPE EDGING ADJOINING CURB AT ROADWAY SHOULD BE TAPERED FLUSH.

(N) LANDSCAPE AREA. SEE LANDSCAPE SHEETS L-101 TO L-106.

(O) ELECTRICAL PANEL AND DIGITAL DISPLAY. SEE ELECTRICAL SHEETS E101-E107.

(P) SEAT WALL. SEE DETAIL SHEET C-501

(Q) SOIL CELLS. SEE SHEETS I-101 TO I-104 AND LANDSCAPE SHEETS L-101 TO L-106 FOR TREE LOCATIONS.

(R) VARIABLE ASPHALT OVERLAY. SEE DETAIL SHEET C-501.

(S) FULL DEPTH ASPHALT PAVING. SEE DETAIL SHEET C-501.

(T) 4" CENTER LINE, YELLOW THERMOPLASTIC PAINT, 120 MILS. SEE DETAIL SHEET C-506.

(U) 4" PAVEMENT STRIPE, WHITE THERMOPLASTIC PAINT, 120 MILS. SEE DETAIL SHEET C-506.

(V) 4" PAVEMENT STRIPE, WHITE THERMOPLASTIC PAINT, 90 MILS (TYPICAL). SEE DETAIL SHEET C-506.

(W) 24" WIDE STOP BAR, WHITE THERMOPLASTIC PAINT, 120 MILS. EXTEND ACROSS LANE WIDTH. SEE DETAIL SHEET C-506.

(X) STAMPED ASPHALT CROSSWALK WITH 8" WHITE THERMOPLASTIC STRIPE, 120 MILS. SEE DETAIL SHEET C-504.

(Y) TRAFFIC ARROWS AND SYMBOLS, WHITE THERMOPLASTIC PAINT, 90 MILS. SEE DETAIL SHEET DETAIL SHEET C-505.

(Z) BICYCLE SHARED LANE MARKINGS, WHITE THERMOPLASTIC PAINT, 90 MILS. SEE DETAIL SHEET C-503.

(A1) BENCH. OWNER TO PROVIDE AND CONTRACTOR TO INSTALL.

(B1) TRASH/RECYCLING RECEPTACLES. OWNER TO PROVIDE AND CONTRACTOR TO INSTALL.

(C1) RELOCATED BIKE RACK.

(D1) DRINKING FOUNTAIN – SEE DETAIL SHEET C-503. COLOR TO BE BLACK.

(E1) CIGARETTE RECEPTACLE. OWNER TO SUPPLY CONTRACTOR TO INSTALL.

(F1) BOLLARDS. SEE DETAIL SHEET C-501.

(G1) BRONZE CAROLINA THREAD TRAIL TRAIL MARKERS. TRAIL MARKERS TO BE MORTARED IN PLACE AND FLUSH WITH PROPOSED CONCRETE SIDEWALK. SEE DETAIL SHEET C-504.

(H1) BRONZE DOWNTOWN GREENWAY LOOP TRAIL MARKERS. TRAIL MARKERS TO BE MORTARED IN PLACE AND FLUSH WITH PROPOSED CONCRETE SIDEWALK. SEE DETAIL SHEET C-504.

(I1) RELOCATED USPS/UPS/FEDEX BOX.

(J1) PROPOSED LIGHT POLE/LIGHTED BOLLARD. SEE ELECTRICAL SHEETS E-001 TO E-107.

(K1) 6" CONCRETE EDGE RESTRAINT, FLUSH WITH WALK. SEE DETAIL SHEET C-502.

(L1) BRICK BAND – PINEHALL BRICK PATHWAY RED. SEE DETAIL SHEET C-502.

(M1) BRICK PAVERS – PINEHALL BRICK PATHWAY AUTUMN, HERRINGBONE PATTERN, HEAVY DUTY. SEE DETAIL SHEET C-502.

(N1) BRICK PAVERS – PINEHALL BRICK PATHWAY AUTUMN, HERRINGBONE PATTERN, LIGHT DUTY. SEE DETAIL SHEET C-502.

(O1) PLAZA PAVERS, PINEHALL BRICK PATHWAY AUTUMN, HERRINGBONE PATTERN STREET SECTION. SEE DETAIL SHEET C-502.

(P1) BRICK PAVER CROSSWALK WITH 8" CONCRETE EDGE RESTRAINT. 8" WHITE THERMOPLASTIC STRIPE, 120 MILS, PAVER TO BE PINEHALL BRICK PATHWAY RED. SEE DETAIL SHEET C-504.

(Q1) 18" CONCRETE GRADE BEAM. SEE DETAIL SHEET C-502.

(R1) HC PARKING. SEE DETAIL SHEET C-503.

(S1) HC PARKING SIGN. SEE DETAIL SHEET C-503.

(T1) HC RAMP, LAYOUT OF RAMPS VARY. SEE DETAIL SHEET C-503.

(U1) WOOD FENCE. SEE DETAILS SHEET C-501.

(V1) FLAG HOLDER, 2" SCHEDULE 40 PVC SLEEVE SET IN CONCRETE. 6" DEPTH. SEE DETAIL SHEET C-506.

(W1) HORSE HOOKS, DECORATIVE HORSESHOES AND GRANITE PLAQUE. HORSESHOES TO BE SET FLUSH WITH PROPOSED CONCRETE SIDEWALK. SEE DETAIL SHEET C-506.

(X1) STORMWATER TRENCH REPAIR. SEE DETAIL SHEET C-504.

(Y1) BRICK RED COMPOSITE DETECTABLE WARNING PLATE, SET IN CONCRETE. 6" CONCRETE BAND AROUND DOME INSET. SEE HANDICAP DETAIL SHEET C-503.

(Z1) CONCRETE STAIR WITH HANDRAIL. SEE DETAIL SHEET C-502.

(A2) CONCRETE STAIR AND RAMP STORE ENTRANCE ACCESS. SEE DETAIL SHEET C-502.

(B2) NO PARKING SIGN. SEE SIGN INSTALLATION DETAIL SHEET C-503.

(C2) RELOCATED WAYFINDING SIGN, SALVAGED REINSTALL. CONTRACTOR TO PROVIDE SIGNED AND SEALED STRUCTURAL DRAWINGS FOR FOOTING AND POLE INSTALLATION.

(D2) STREET SIGN. SEE SIGN INSTALLATION DETAIL SHEET C-503.

(E2) LOADING ZONE SIGN. SEE SIGN INSTALLATION DETAIL SHEET C-503.

(F2) ADOPT A STREET SIGN. SEE SIGN INSTALLATION DETAIL SHEET C-503.

(G2) CONCORD HISTORIC DISTRICT SIGN. SEE SIGN INSTALLATION DETAIL SHEET C-503.

(H2) ORIGINAL CITY LIMIT SIGN. SEE SIGN INSTALLATION DETAIL SHEET C-503.

(I2) HISTORICAL SIGN. SEE SIGN INSTALLATION DETAIL SHEET C-503.

(J2) GRANITE EDGE RESTRAINT FLUSH WITH WALK. OWNER TO SUPPLY GRANITE FOR PROJECT, CONTRACTOR TO INSTALL. SEE DETAIL SHEET C-502.

(K2) GRANITE STORMWATER FLUME. OWNER TO SUPPLY GRANITE FOR PROJECT, CONTRACTOR TO INSTALL. SEE DETAIL SHEET C-504.

(L2) PROPOSED FUTURE CLOCK, CLOCK NOT IN CONTRACT. SEE ELECTRICAL PLANS FOR CONDUIT LOCATIONS.

(M2) MOSAIC LIGHT STRUCTURES. SEE ELECTRICAL PLANS PROVIDED BY THE CITY.

(N2) GRANITE MARKER FOR ORIGINAL SURVEYORS STONE. SEE DETAIL SHEET C-506

(O2) CONCRETE EDGE RESTRAINT TO MATCH LOCATION AND WIDTH OF PROPOSED PLAZA CONCRETE BANDS. VERIFY LOCATION OF BANDS WITH CURRENT SET OF COURTHOUSE RENOVATION PLANS BY KIMLEY HORN. PLANS TO BE PROVIDED BY THE CITY.

(P2) MONOLITHIC RETAINING WALL WITH LANDSCAPE CURB OR METAL RAILING. SEE DETAIL SHEET C-506.

(Q2) THERMOPLASTIC COMPASS SYMBOL, 120 MIL. SEE DETAIL SHEET C-506.

(R2) HC RAMP WITH HANDRAILS. SEE DETAILS SHEET C-503.

(S2) PUBLIC PARKING DIRECTION SIGN. SEE DETAIL SHEET C-503.

(T2) 18" METAL RAILING/TREE GUARD TO BE PROVIDED BY THE OWNER AND CONTRACTOR INSTALLED. SEE DETAIL C-506.

(U2) STORMWATER STRUCTURE. SEE GRADING, DRAINAGE AND EROSION CONTROL PLANS.

(V2) RIGHT TURN PROHIBITED SIGN. SEE DETAIL SHEET C-503.

(W2) 6" STAND UP CURB. SEE DETAIL SHEET C-501.

(X2) NCDOT ASPHALT PAVING. SEE DETAIL SHEET C-501.

(Y2) NCDOT 8" STAND UP CURB. SEE DETAIL SHEET C-501.

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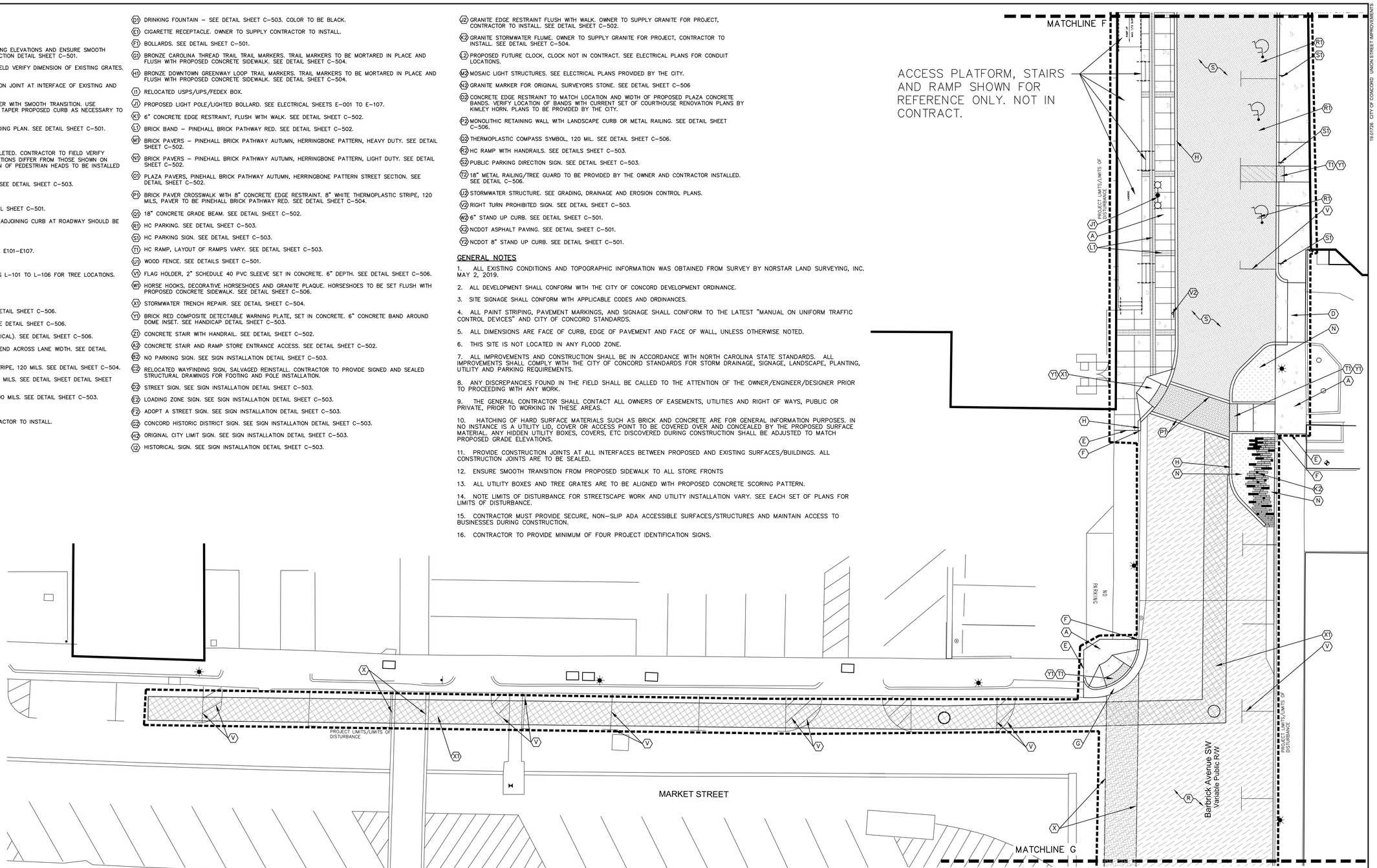
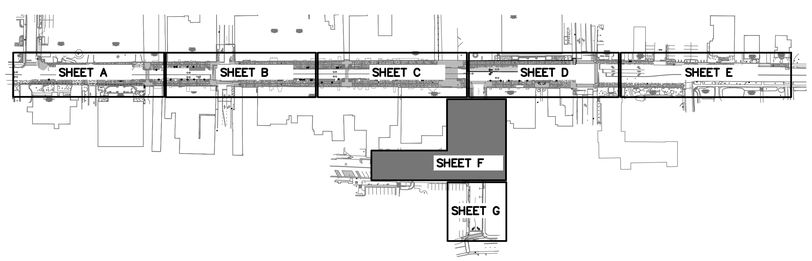
4. ALL PAINT STRIPING, PAVEMENT MARKINGS, AND SIGNAGE SHALL CONFORM TO THE LATEST "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND CITY OF CONCORD STANDARDS.
5. ALL DIMENSIONS ARE FACE OF CURB, EDGE OF PAVEMENT AND FACE OF WALL, UNLESS OTHERWISE NOTED.
6. THIS SITE IS NOT LOCATED IN ANY FLOOD ZONE.
7. ALL IMPROVEMENTS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH NORTH CAROLINA STATE STANDARDS. ALL IMPROVEMENTS SHALL COMPLY WITH THE CITY OF CONCORD STANDARDS FOR STORM DRAINAGE, SIGNAGE, LANDSCAPE, PLANTING, UTILITY AND PARKING REQUIREMENTS.
8. ANY DISCREPANCIES FOUND IN THE FIELD SHALL BE CALLED TO THE ATTENTION OF THE OWNER/ENGINEER/DESIGNER PRIOR TO PROCEEDING WITH ANY WORK.
9. THE GENERAL CONTRACTOR SHALL CONTACT ALL OWNERS OF EASEMENTS, UTILITIES AND RIGHT OF WAYS, PUBLIC OR PRIVATE, PRIOR TO WORKING IN THESE AREAS.
10. HATCHING OF HARD SURFACE MATERIALS SUCH AS BRICK AND CONCRETE ARE FOR GENERAL INFORMATION PURPOSES. IN NO INSTANCE IS A UTILITY LID, COVER OR ACCESS POINT TO BE COVERED OVER AND CONCEALED BY THE PROPOSED SURFACE MATERIAL. ANY HIDDEN UTILITY BOXES, COVERS, ETC DISCOVERED DURING CONSTRUCTION SHALL BE ADJUSTED TO MATCH PROPOSED GRADE ELEVATIONS.
11. PROVIDE CONSTRUCTION JOINTS AT ALL INTERFACES BETWEEN PROPOSED AND EXISTING SURFACES/BUILDINGS. ALL CONSTRUCTION JOINTS ARE TO BE SEALED.
12. ENSURE SMOOTH TRANSITION FROM PROPOSED SIDEWALK TO ALL STORE FRONTS
13. ALL UTILITY BOXES AND TREE GRATES ARE TO BE ALIGNED WITH PROPOSED CONCRETE SCORING PATTERN.
14. NOTE LIMITS OF DISTURBANCE FOR STREETSCAPE WORK AND UTILITY INSTALLATION VARY. SEE EACH SET OF PLANS FOR LIMITS OF DISTURBANCE.
15. CONTRACTOR MUST PROVIDE SECURE, NON-SLIP ADA ACCESSIBLE SURFACES/STRUCTURES AND MAINTAIN ACCESS TO BUSINESSES DURING CONSTRUCTION.
16. CONTRACTOR TO PROVIDE MINIMUM OF FOUR PROJECT IDENTIFICATION SIGNS.





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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CHRISTIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

10 0 5 10 20
GRAPHIC SCALE DIVISION VALUE = 10 FEET

OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	C.L. CRANWILL
PROJECT MANAGER	REVIEWER
M.J. NORRIS	B. ROARK

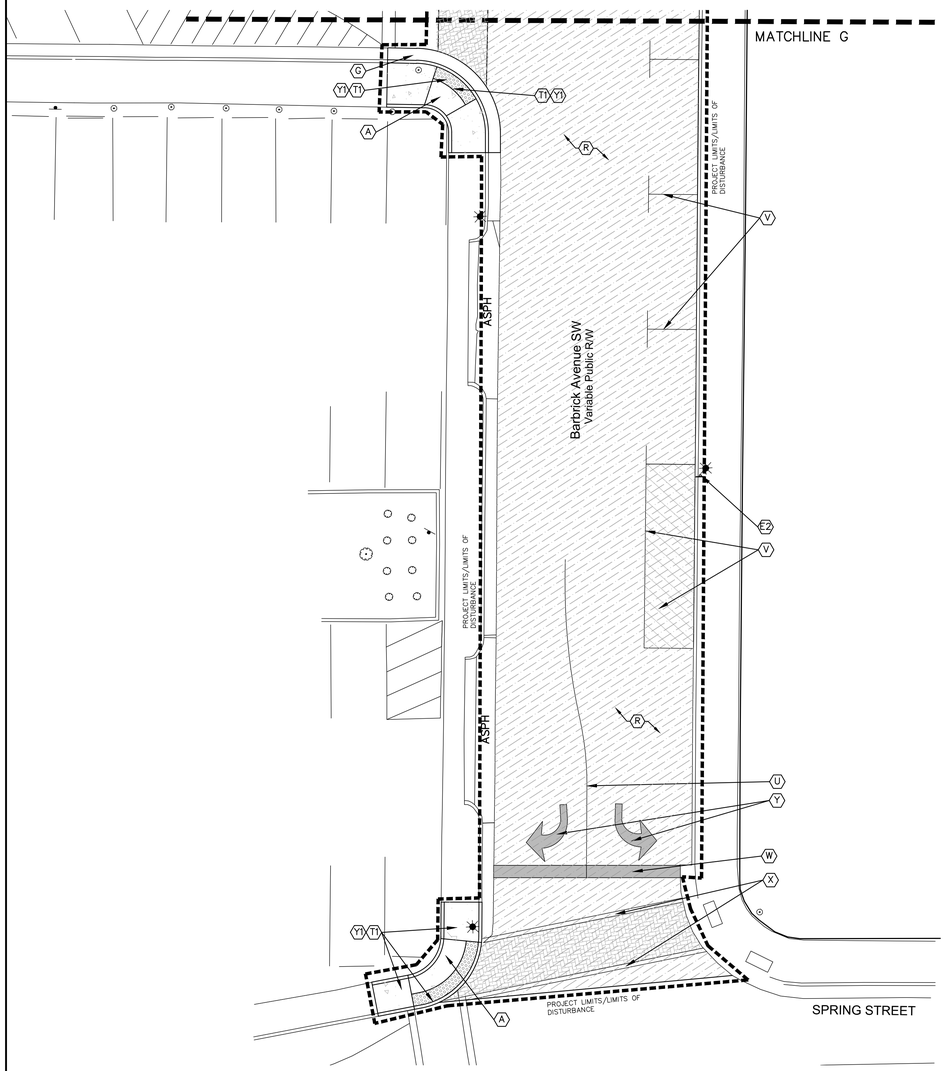
SITE PLAN - F

DATE	PROJECT #	FUNDING #
JULY 2021	19.01726	N/A

SHEET
C-106

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS

P:\2019\19.01726-CONCORD\C-UNION STREETSCAPE PROJECT\DRAWINGS\19.01726 UNION BASE.DWG PLOT DATE: 7/22/2021 3:16 PM NURTIS DURRANT



KEY NOTES

- (A) 4" THICK CONCRETE SIDEWALK. SEE DETAIL SHEET C-501.
- (B) TAPER CURB FLUSH WITH WALK.
- (C) CONCRETE DRIVE APRON. GENERAL CONTRACTOR TO MATCH EXISTING ELEVATIONS AND ENSURE SMOOTH TRANSITION TO EXISTING DRIVES AND STREET. SEE CONCRETE SECTION DETAIL SHEET C-501.
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- (D1) DRINKING FOUNTAIN – SEE DETAIL SHEET C-503. COLOR TO BE BLACK.
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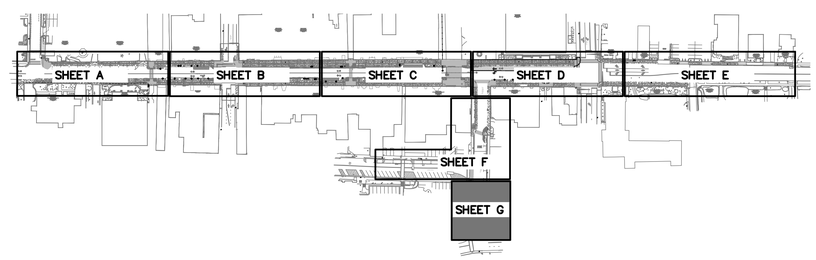

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1240 19th Street Lane NW
Hickory, NC 28601
828.328.2024
NC Firm License # C-0459
mcgillassociates.com

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CHRISTIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

10 0 5 10 20
GRAPHIC SCALE DIVISION VALUE = 10 FEET

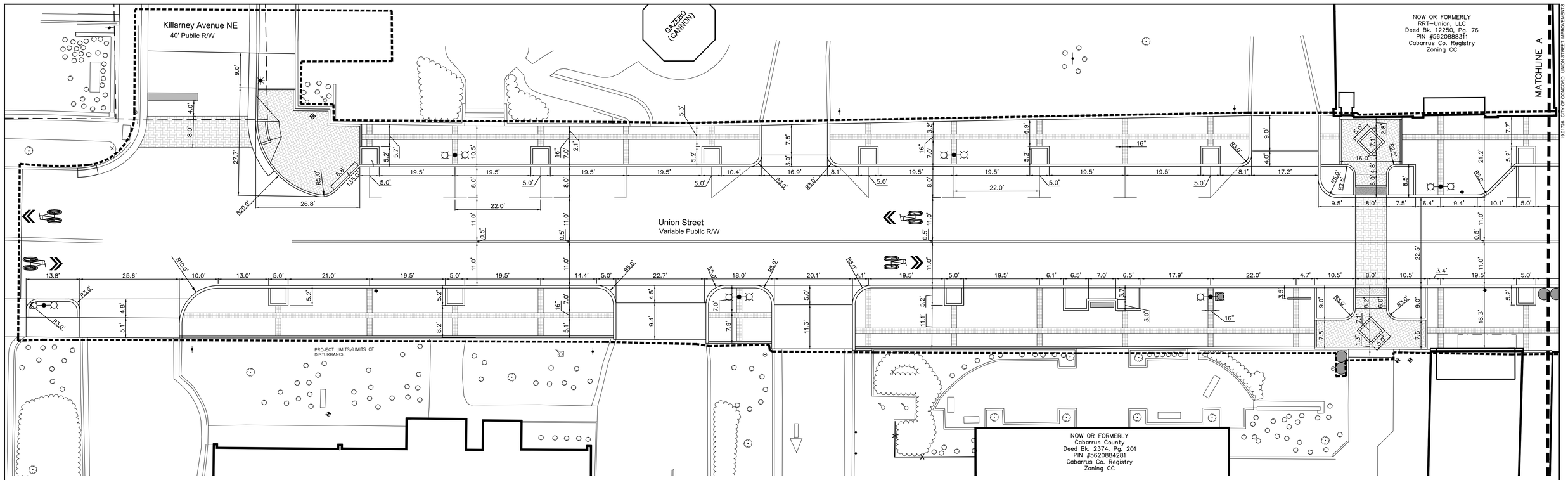
SITE PLAN - G

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	C.L. CRANWILL			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	B. ROARK	JULY 2021	19.01726	N/A

SHEET
C-107

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS

P:\2019\19.01726-CONCORD\C-UNION STREETSCAPE PROJECT\DRAWINGS\19.01726 UNION BASE.DWG PLOT DATE: 7/22/2021 3:16 PM KURTIS DURRANT



GENERAL NOTES

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6. THIS SITE IS NOT LOCATED IN ANY FLOOD ZONE.
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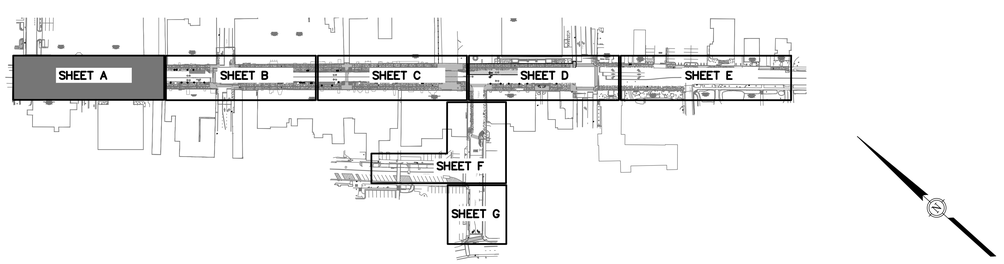

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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

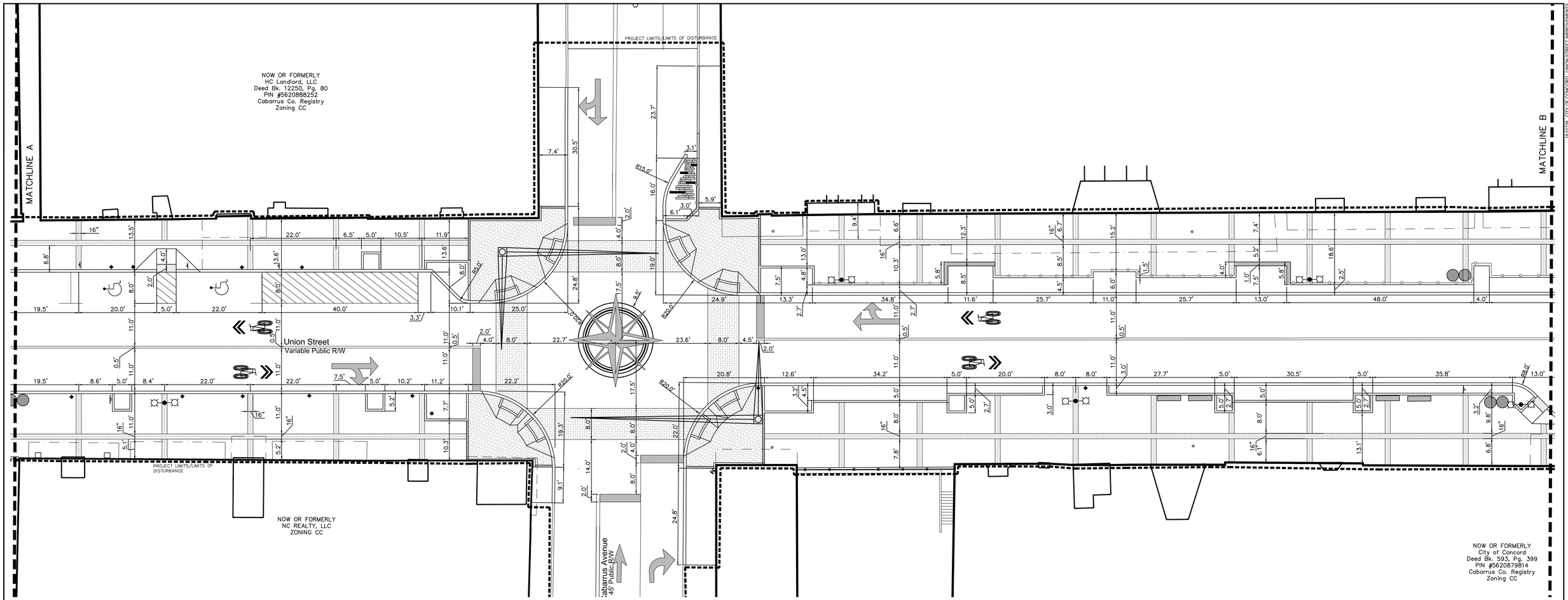
OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	C.L. CRANWILL			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	B. ROARK	JULY 2021	19.01726	N/A

LAYOUT PLAN - A

SHEET
C-108

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS

P:\2019\19.01726-CONCORD\C-UNION STREETSCAPE PROJECT\DRAWINGS\1901726 UNION BASE.DWG PLOT DATE: 7/22/2021 11:13 AM KURTIS DURRANT



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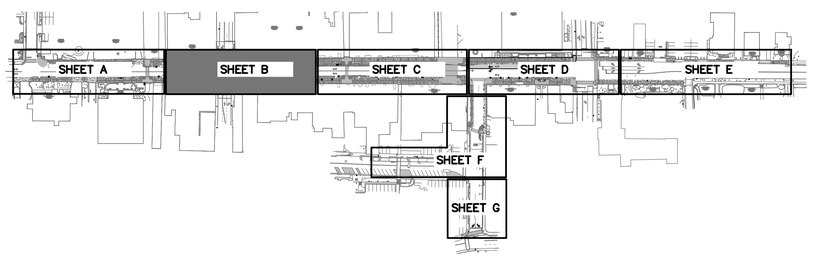

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Hickory, NC 28601
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NC Firm License # C-0459
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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS

CITY OF CONCORD

CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

LAYOUT PLAN - B

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	C.L. CRANWILL			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	B. ROARK	JULY 2021	19.01726	N/A

SHEET C-109

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS

P:\2019\19.01726-CONCORD\C-UNION STREETSCAPE PROJECT\DRAWINGS\190726 UNION BASE.DWG PLOT DATE 7/22/2021 11:13 AM KURTIS DURRANT

MATCHLINE B

MATCHLINE C

NOW OR FORMERLY
Residences at 57 South, LLC
Deed Bk. 13070, Pg. 85
PIN #5620972749
Cabarrus Co. Registry
Zoning CC

NOW OR FORMERLY
John H. McCrimmon, Jr. & Wf. Judy P.
Deed Bk. 752, Pg. 202
PIN #5620971613
Cabarrus Co. Registry
Zoning CC

MATCHLINE F

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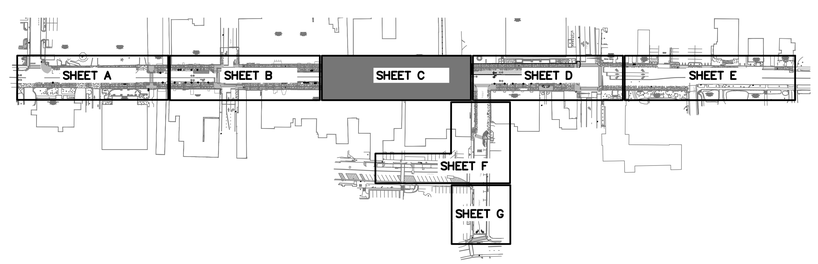

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1240 19th Street Lane NW
Hickory, NC 28601
828.328.2024
NC Firm License # C-0459
mcgillassociates.com

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

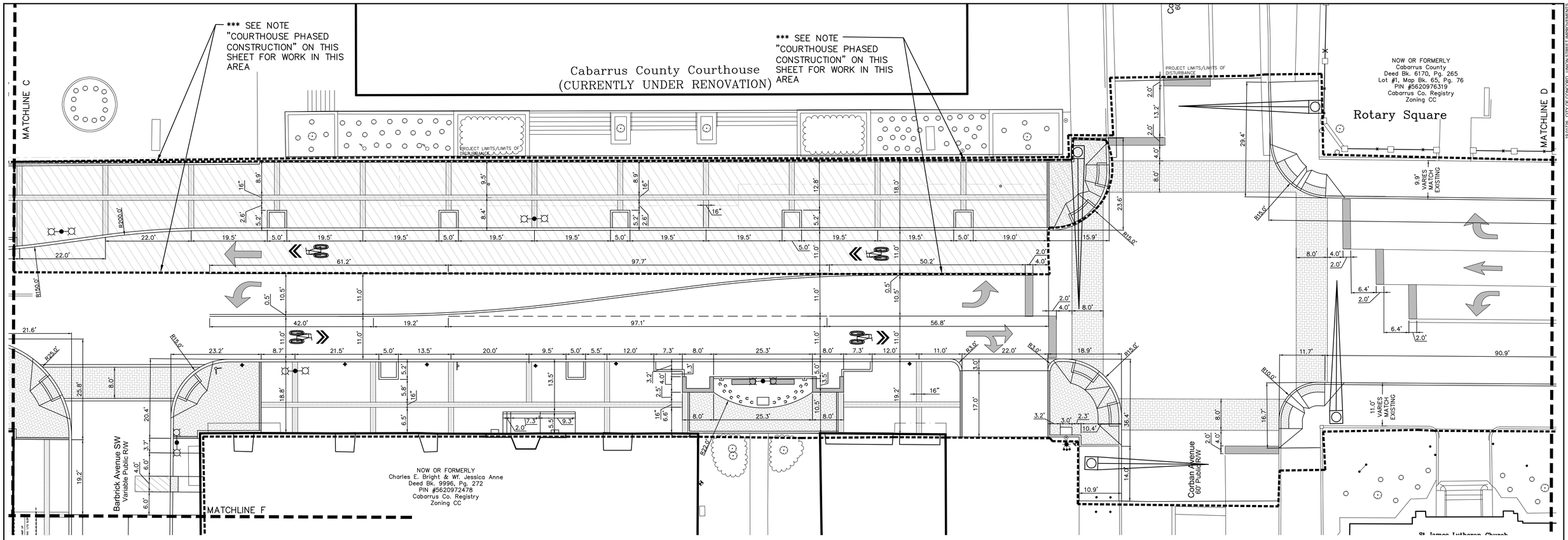
OFFICE MANAGER	DESIGNER				
D.G. CHAPMAN	C.L. CRANWILL				
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #	
M.J. NORRIS	B. ROARK	JULY 2021	19.01726	N/A	

LAYOUT PLAN - C

SHEET
C-110

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS

P:\2019\19.01726-CONCORDNC-UNION STREETSCAPE PROJECT\DRAWINGS\1901726 UNION BASE.DWG PLOT DATE: 7/22/2021 11:14 AM KURTIS DURRANT



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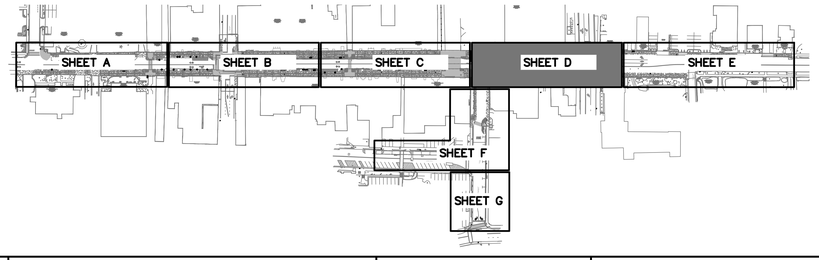
COURTHOUSE PHASED CONSTRUCTION:

DUE TO THE RENOVATION OF THE COURTHOUSE, ONLY PART OF THE ILLUSTRATED CONSTRUCTION ACTIVITIES WILL BE INSTALLED UNDER THIS CONTRACT. THE REMAINING ITEMS WILL BE INSTALLED UNDER SEPARATE CONTRACT AFTER THE COMPLETION OF THE COURTHOUSE RENOVATION IN 2024. ITEMS UNDER THIS CONTRACT INCLUDE:
COMPREHENSIVE GRADING, ELECTRICAL DEMOLITION, ASPHALT PAVING, STRIPING, TEMPORARY CONCRETE SIDEWALK, HC RAMPS, TACTILE PLATES, STORMWATER INSTALLATION, AND WATER LINES AS NOTED ON THE UTILITY SHEET. THIS AREA IS TO BE GRADED TO PROPOSED ELEVATIONS AND THE GRADES TAPERED DOWN TO MEET EXISTING ELEVATIONS AT THE COURTHOUSE STEPS. EXISTING DRAINAGE STRUCTURES TO BE UTILIZED FOR DRAINAGE.

FOR TEMPORARY PAVING SEE DETAIL SHEET C-510.



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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWILL

NO.	DATE	BY	DESCRIPTION

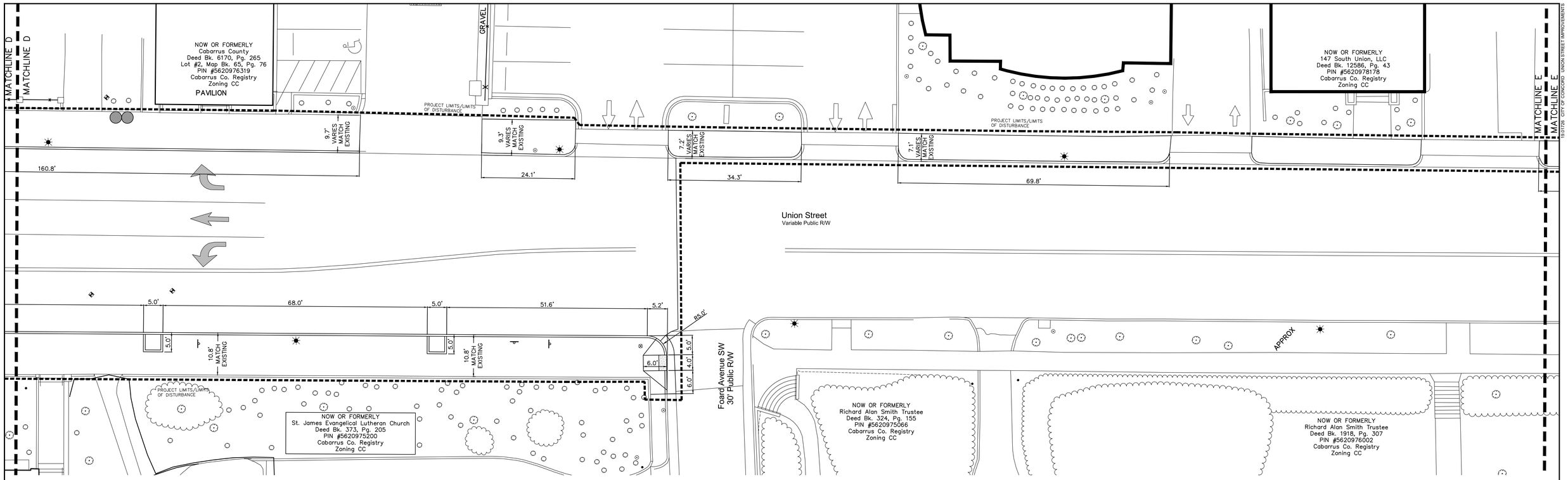
UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

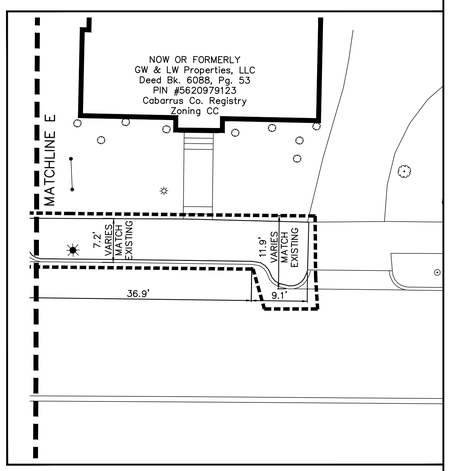
GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	C.L. CRANWILL	LAYOUT PLAN - D		SHEET C-111
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	B. ROARK	JULY 2021	19.01726	N/A

P:\2019\19.01726-CONCORDNC-UNION STREETSCAPE PROJECT\DRAWINGS\190126 UNION BASE.DWG PLOT DATE 7/22/2021 11:14 AM KURTIS DURRANT

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS





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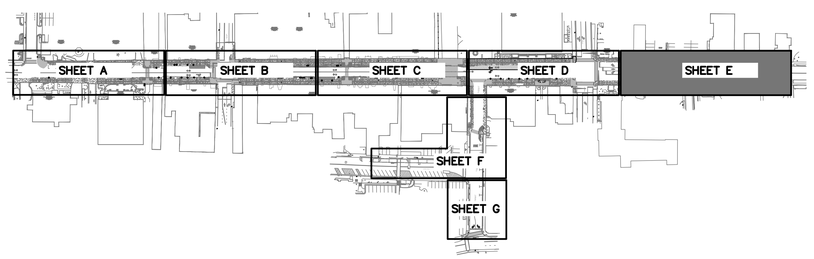

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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS

CITY OF CONCORD

CABARRUS COUNTY, NORTH CAROLINA

10 0 5 10 20
GRAPHIC SCALE DIVISION VALUE = 10 FEET

LAYOUT PLAN - E

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	C.L. CRANWILL			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	B. ROARK	JULY 2021	19.01726	N/A

SHEET
C-112

P:\2019\19.01726-CONCORDNC-UNION STREETSCAPE PROJECT\DRAWINGS\19017126 UNION BASE.DWG PLOT DATE 7/22/2021 11:15 AM KURTIS DURRANT

GENERAL NOTES

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10. HATCHING OF HARD SURFACE MATERIALS SUCH AS BRICK AND CONCRETE ARE FOR GENERAL INFORMATION PURPOSES. IN NO INSTANCE IS A UTILITY LID, COVER OR ACCESS POINT TO BE COVERED OVER AND CONCEALED BY THE PROPOSED SURFACE MATERIAL. ANY HIDDEN UTILITY BOXES, COVERS, ETC DISCOVERED DURING CONSTRUCTION SHALL BE ADJUSTED TO MATCH PROPOSED GRADE ELEVATIONS.

11. PROVIDE CONSTRUCTION JOINTS AT ALL INTERFACES BETWEEN PROPOSED AND EXISTING SURFACES/BUILDINGS. ALL CONSTRUCTION JOINTS ARE TO BE SEALED.

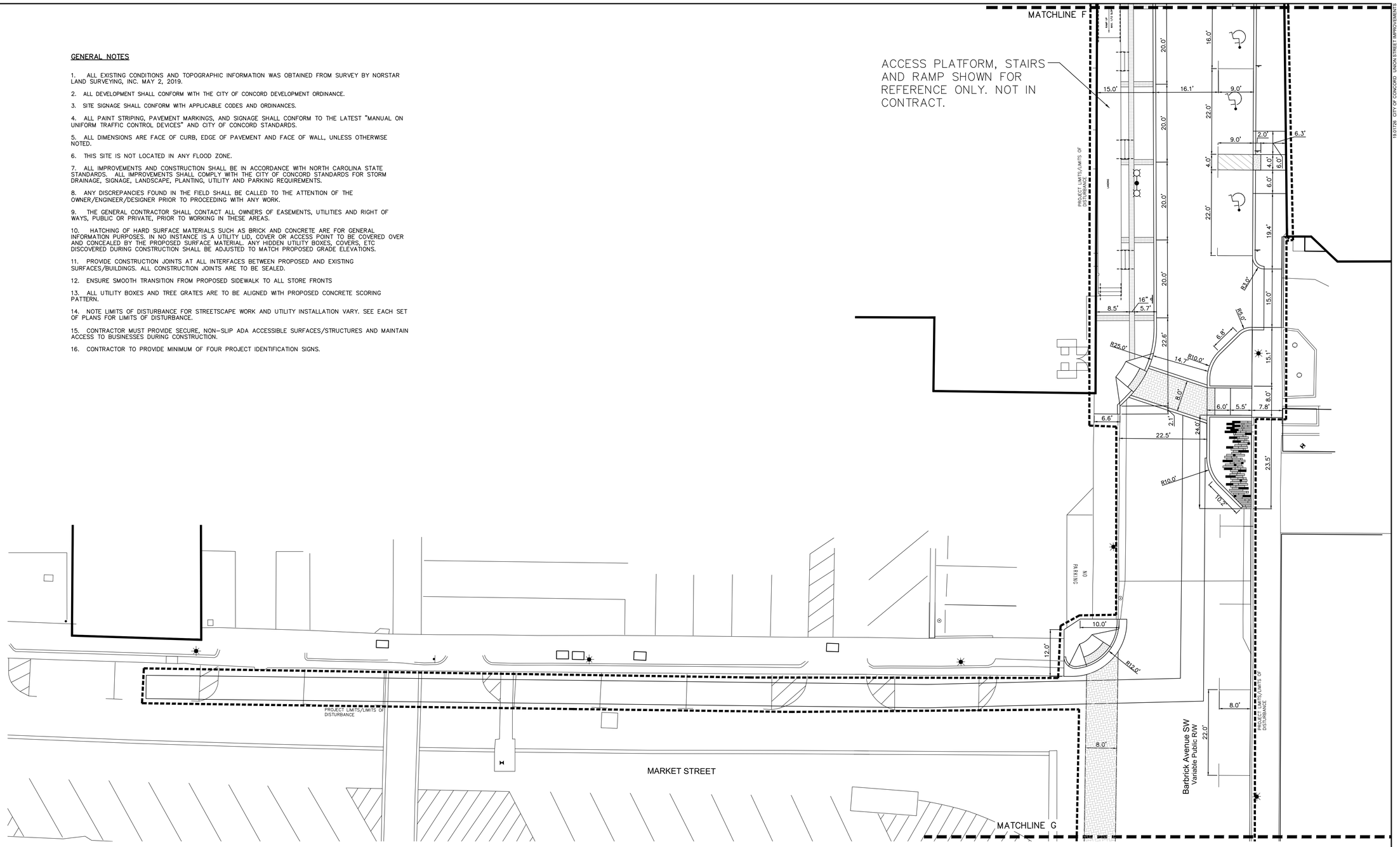
12. ENSURE SMOOTH TRANSITION FROM PROPOSED SIDEWALK TO ALL STORE FRONTS

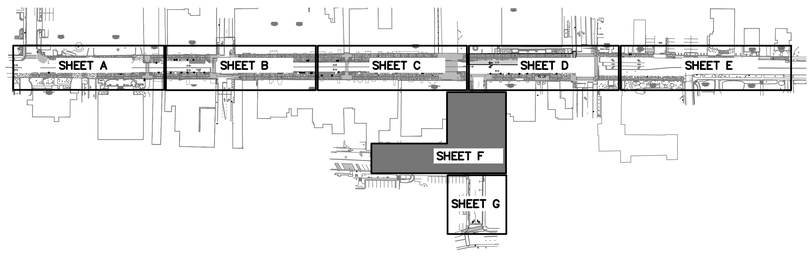
13. ALL UTILITY BOXES AND TREE GRATES ARE TO BE ALIGNED WITH PROPOSED CONCRETE SCORING PATTERN.

14. NOTE LIMITS OF DISTURBANCE FOR STREETSCAPE WORK AND UTILITY INSTALLATION VARY. SEE EACH SET OF PLANS FOR LIMITS OF DISTURBANCE.

15. CONTRACTOR MUST PROVIDE SECURE, NON-SLIP ADA ACCESSIBLE SURFACES/STRUCTURES AND MAINTAIN ACCESS TO BUSINESSES DURING CONSTRUCTION.

16. CONTRACTOR TO PROVIDE MINIMUM OF FOUR PROJECT IDENTIFICATION SIGNS.





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NC Firm License # C-0459
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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS

CITY OF CONCORD

CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

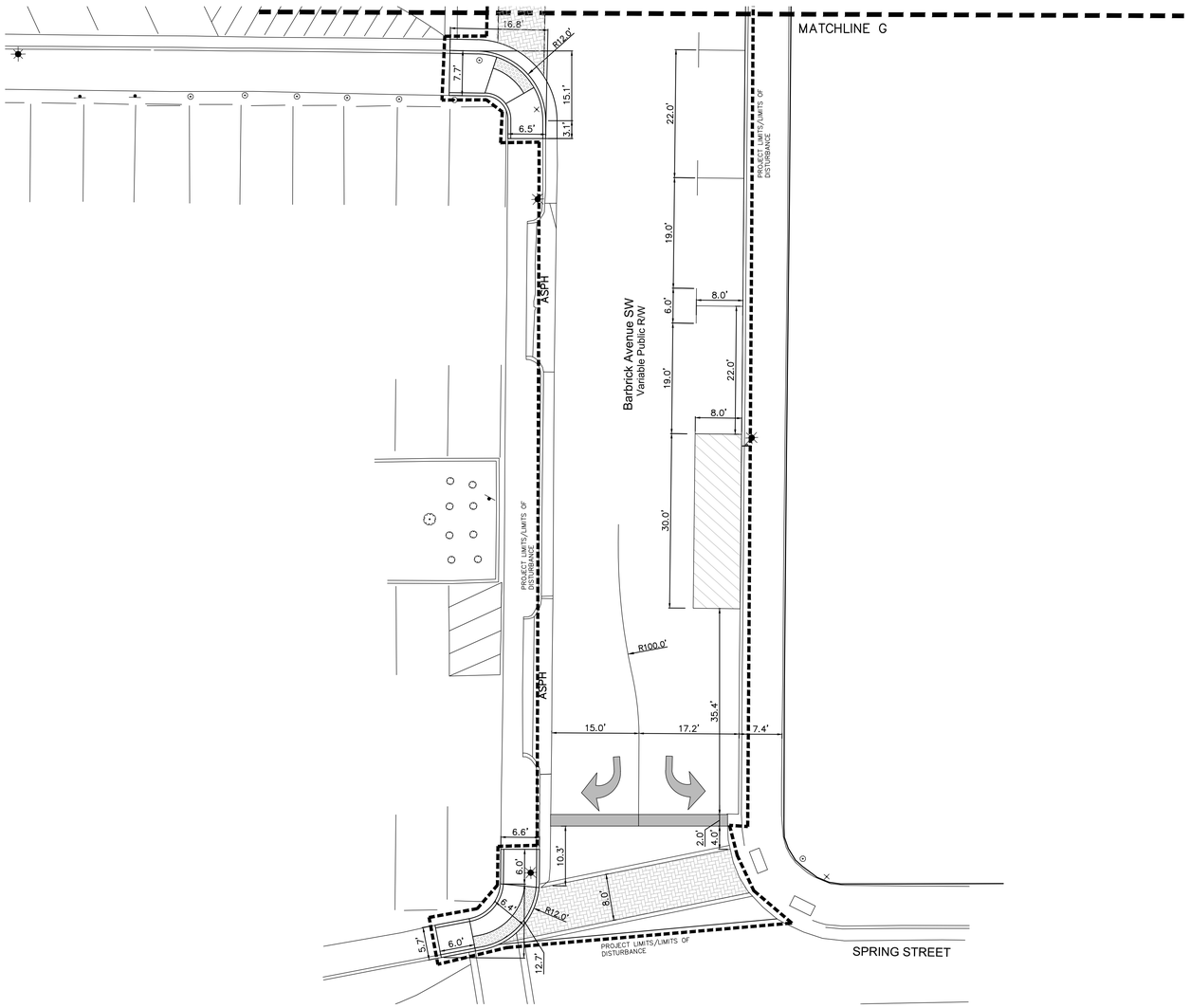
OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	C.L. CRANWILL			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	B. ROARK	JULY 2021	19.01726	N/A

LAYOUT PLAN - F

SHEET C-113

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS

P:\2019\19.01726-CONCORD\C-UNION STREETSCAPE PROJECT\DRAWINGS\19017261 UNION BASE.DWG PLOT DATE: 7/22/2021 3:18 PM KURTIS DURRANT



GENERAL NOTES

1. ALL EXISTING CONDITIONS AND TOPOGRAPHIC INFORMATION WAS OBTAINED FROM SURVEY BY NORSTAR LAND SURVEYING, INC. MAY 2, 2019.
2. ALL DEVELOPMENT SHALL CONFORM WITH THE CITY OF CONCORD DEVELOPMENT ORDINANCE.
3. SITE SIGNAGE SHALL CONFORM WITH APPLICABLE CODES AND ORDINANCES.
4. ALL PAINT STRIPING, PAVEMENT MARKINGS, AND SIGNAGE SHALL CONFORM TO THE LATEST "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND CITY OF CONCORD STANDARDS.
5. ALL DIMENSIONS ARE FACE OF CURB, EDGE OF PAVEMENT AND FACE OF WALL, UNLESS OTHERWISE NOTED.
6. THIS SITE IS NOT LOCATED IN ANY FLOOD ZONE.
7. ALL IMPROVEMENTS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH NORTH CAROLINA STATE STANDARDS. ALL IMPROVEMENTS SHALL COMPLY WITH THE CITY OF CONCORD STANDARDS FOR STORM DRAINAGE, SIGNAGE, LANDSCAPE, PLANTING, UTILITY AND PARKING REQUIREMENTS.
8. ANY DISCREPANCIES FOUND IN THE FIELD SHALL BE CALLED TO THE ATTENTION OF THE OWNER/ENGINEER/DESIGNER PRIOR TO PROCEEDING WITH ANY WORK.
9. THE GENERAL CONTRACTOR SHALL CONTACT ALL OWNERS OF EASEMENTS, UTILITIES AND RIGHT OF WAYS, PUBLIC OR PRIVATE, PRIOR TO WORKING IN THESE AREAS.
10. HATCHING OF HARD SURFACE MATERIALS SUCH AS BRICK AND CONCRETE ARE FOR GENERAL INFORMATION PURPOSES. IN NO INSTANCE IS A UTILITY LID, COVER OR ACCESS POINT TO BE COVERED OVER AND CONCEALED BY THE PROPOSED SURFACE MATERIAL. ANY HIDDEN UTILITY BOXES, COVERS, ETC DISCOVERED DURING CONSTRUCTION SHALL BE ADJUSTED TO MATCH PROPOSED GRADE ELEVATIONS.
11. PROVIDE CONSTRUCTION JOINTS AT ALL INTERFACES BETWEEN PROPOSED AND EXISTING SURFACES/BUILDINGS. ALL CONSTRUCTION JOINTS ARE TO BE SEALED.
12. ENSURE SMOOTH TRANSITION FROM PROPOSED SIDEWALK TO ALL STORE FRONTS
13. ALL UTILITY BOXES AND TREE GRATES ARE TO BE ALIGNED WITH PROPOSED CONCRETE SCORING PATTERN.
14. NOTE LIMITS OF DISTURBANCE FOR STREETSCAPE WORK AND UTILITY INSTALLATION VARY. SEE EACH SET OF PLANS FOR LIMITS OF DISTURBANCE.
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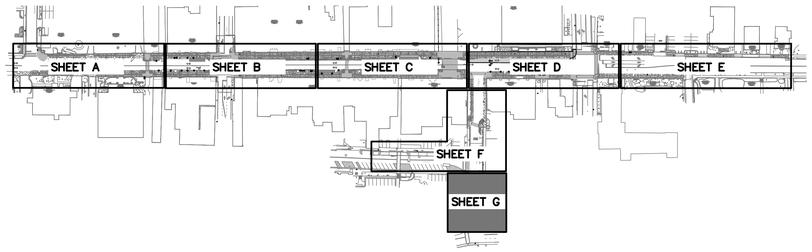

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NC Firm License # C-0459
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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

10 0 5 10 20
GRAPHIC SCALE DIVISION VALUE = 10 FEET

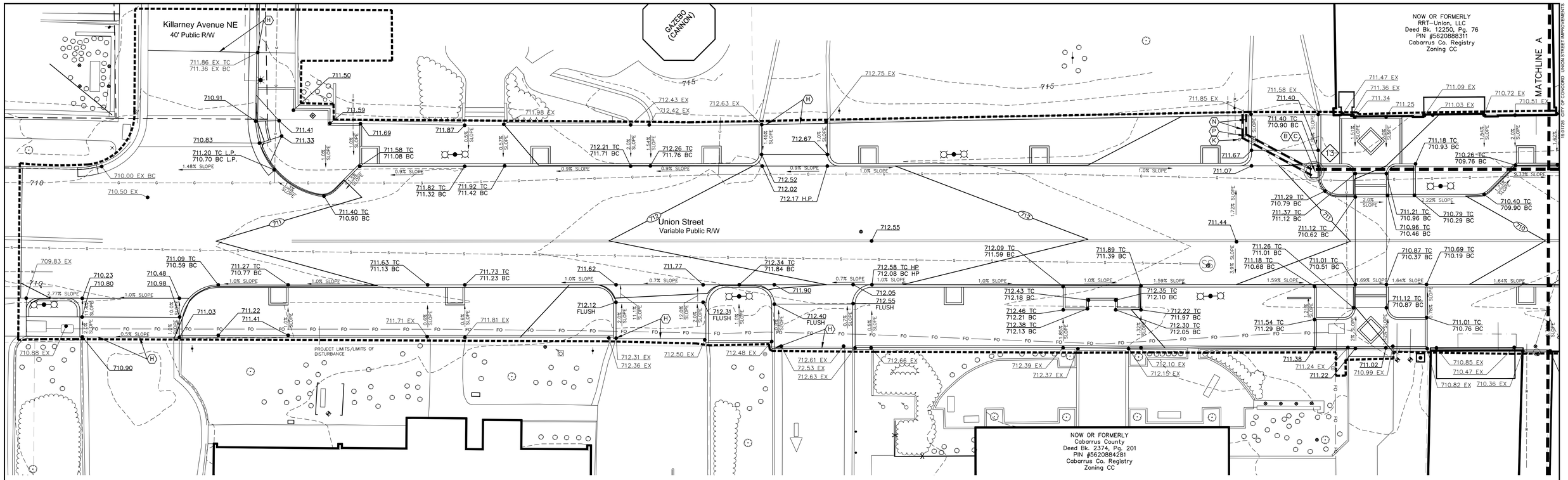
LAYOUT PLAN - G

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	C.L. CRANWILL			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	B. ROARK	JULY 2021	19.01726	N/A

SHEET
C-114

P:\2019\19.01726-CONCORDNC-UNION STREETSCAPE PROJECT\DRAWINGS\19.01726 UNION BASE.DWG PLOT DATE: 7/22/2021 3:19 PM MJRTS DURRANT

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS



STORM DRAINAGE SCHEDULE										
From Structure Number	To Structure Number	Rim/ Grate Elevation	Pipe Data			Pipe Diameter (inches)	Pipe Material		Pipe Slope	Structure Type
			Pipe Length (FT)	Pipe Invert Downstream	Pipe Invert Upstream					
1	EX MH	694.17	195.00	679.50	688.22	42	RCP	CLASS IV	4.47%	MH
2	1	696.40	68.00	688.32	689.12	42	RCP	CLASS IV	1.18%	MH
3	2	700.80	216.00	689.12	691.28	42	RCP	CLASS IV	1.00%	MH
4	3	699.81	34.00	692.28	692.58	30	RCP	CLASS IV	0.88%	CI
5	4	698.81	100.00	692.58	693.37	30	RCP	CLASS IV	0.79%	CI
6	5	698.61	107.00	693.37	694.22	30	RCP	CLASS IV	0.79%	CI
7	6	698.83	64.00	694.22	694.70	30	RCP	CLASS IV	0.75%	CI
8	7	699.08	56.00	694.70	695.00	30	RCP	CLASS IV	0.54%	CI
9	8	700.56	112.00	695.00	696.06	30	RCP	CLASS IV	0.95%	CI
10	9	704.05	150.00	696.06	697.50	30	RCP	CLASS IV	0.96%	CI
11	10	706.80	82.00	697.50	699.78	15	RCP	CLASS IV	2.78%	CI
12	11	707.11	32.00	701.90	703.06	15	RCP	CLASS IV	3.62%	CI
13	12	710.90	166.00	703.16	707.40	15	RCP	CLASS IV	2.55%	CI
14	10	705.09	34.00	700.25	700.90	18	RCP	CLASS IV	1.91%	GI
15	14	705.26	22.00	701.00	702.83	18	RCP	CLASS IV	8.32%	GI
16	15	705.95	32.00	703.08	703.70	15	RCP	CLASS IV	1.94%	CI
17	9	700.53	21.00	696.80	697.20	18	RCP	CLASS IV	1.90%	CI
18	17	701.67	72.00	697.45	698.20	15	RCP	CLASS IV	1.04%	CI
19	3	700.98	32.00	691.65	691.90	36	RCP	CLASS IV	0.78%	CI
20	19	699.51	91.00	691.93	692.39	24	RCP	CLASS IV	0.51%	MH
21	20	699.00	42.00	693.39	693.60	24	RCP	CLASS IV	0.50%	CI
22	21	698.68	107.00	693.60	694.13	24	RCP	CLASS IV	0.50%	CI
23	22	699.79	92.00	694.13	694.59	24	RCP	CLASS IV	0.50%	CI
24	23	699.56	40.00	696.00	696.30	15	RCP	CLASS IV	0.75%	CI
25	19	702.36	41.00	693.00	695.69	24	RCP	CLASS IV	6.56%	MH
26	25	703.73	76.00	696.19	699.66	18	RCP	CLASS IV	4.57%	EX MH
27	3	701.60	34.00	694.80	696.00	15	RCP	CLASS IV	3.53%	CI
28	27	703.95	141.00	696.10	699.00	15	RCP	CLASS IV	2.06%	CI
ALT 29	11	709.32	50.00	701.90	705.82	15	RCP	CLASS IV	7.84%	CI

KEY NOTES

(A) PROPOSED STORMWATER MANHOLE. SEE NCDOT STANDARD DETAIL 840.52 AND 840.54. SEE DETAIL SHEET C-505.

(B) PROPOSED CATCH BASIN WITH FRAME, GRATE, AND HOOD. SEE DETAIL SHEET C-505.

(C) PROVIDE TEMPORARY STANDARD CATCH BASIN INLET PROTECTION. SEE DETAIL SHEET C-504.

(D) PROPOSED DROP INLET WITH FRAME AND GRATE. SEE NCDOT STANDARD DETAIL 840.14 AND 840.16 ON DETAIL SHEET D-506.

(E) PROVIDE TEMPORARY BLOCK AND GRAVEL DROP INLET FILTER. SEE DETAIL SHEET D-504.

(F) TIE PROPOSED PIPE INTO EXISTING BOX. PATCH AND REPAIR AS NECESSARY TO ENSURE SEALED CONNECTION.

(G) SILT SAK. SEE DETAIL SHEET C-504.

(H) MATCH EXISTING GRADE WITH SMOOTH TRANSITION.

(I) PROPOSED 3" SCHEDULE 40 PVC ROOF DRAIN TO DAYLIGHT AT LOCATIONS SHOWN.

(J) CONNECT PROPOSED BOX TO EX. PIPE. VERIFY INVERTS OF EXISTING PIPE PRIOR TO BOX INSTALLATION.

(K) PROPOSED 3" ROOF DRAIN CLEANOUT. SEE DETAIL SHEET C-504.

(L) PROPOSED 8" SCHEDULE 40 PVC ROOF DRAIN TO DAYLIGHT AT WALL LOCATION SHOWN. PROVIDE 2" AIR GAP BETWEEN PIPE EXIT AND TOP OF 10" NYOPLAST DRAIN. CONNECT 10" DROP IN DRAIN TO PROPOSED BOX AS SHOWN, MIN. SLOPE 2%. PROVIDE CLEANOUTS AS SHOWN.

(M) SEDIMENT WATTLE. SEE DETAILS SHEET C-504.

(N) PROPOSED 3" AND 6" SCHEDULE 40 PVC DRAINS FROM EXISTING UTILITY BOX TO TIE TO PROPOSED STORM STRUCTURE.

(O) PROPOSED 3" SCHEDULE 40 PVC ROOF DRAIN TO DAYLIGHT AT WALL LOCATION SHOWN. PROVIDE 2" AIR GAP BETWEEN PIPE EXIT AND TOP OF 6" DROP IN NYOPLAST DRAIN. CONNECT 6" DROP IN DRAINS TO PROPOSED BOX WITH 6" SCHEDULE 40 PVC AS SHOWN, MIN SLOPE 2%. PROVIDE CLEANOUTS AS SHOWN.

(P) PROPOSED 6" ROOF DRAIN CLEANOUT. SEE DETAIL SHEET C-504.

(Q) PROPOSED 8" ROOF DRAIN CLEANOUT. SEE DETAIL SHEET C-504.

(R) PROPOSED 3" SCHEDULE 40 PVC ROOF DRAIN TO DAYLIGHT TO CURB. PROVIDE CLEANOUTS AS SHOWN.

(S) ADD ALTERNATE #1 CATCH BASIN WITH FRAME, GRATE, AND HOOD. SEE DETAIL SHEET C-505.

(T) ADD ALTERNATE #1 15" CLASS IV RCP.

(U) ADD ALTERNATE #1 PROVIDE TEMPORARY STANDARD CATCH BASIN INLET PROTECTION. SEE DETAIL SHEET C-504.

(V) MUD MAT TO BE INSTALLED AS TEMPORARY CONSTRUCTION ENTRANCE AND RELOCATED AS NECESSARY TO ACTIVE CONSTRUCTION AREAS.

GENERAL NOTES:

1. ALL EXISTING CONDITIONS AND TOPOGRAPHIC INFORMATION WAS OBTAINED FROM SURVEY BY NORSTAR LAND SURVEYING, INC. MAY 2, 2019.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL STATE AND LOCAL CODES IN OBSERVING EROSION CONTROL MEASURES BOTH ON AND OFF SITE.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF ALL EROSION CONTROL DEVICES AFTER EACH RAINFALL EVENT OR AS DIRECTED BY LOCAL AUTHORITIES OR THE OWNER.

4. CONTRACTOR SHALL BE FINANCIALLY RESPONSIBLE FOR DISPOSAL OF ALL WASTE MATERIALS OFF SITE. THIS RESPONSIBILITY SHALL INCLUDE ALL REQUIRED APPROVALS AND CONDITIONS DICTATED BY LOCAL OR STATE EROSION CONTROL AUTHORITIES.

5. THE CONTRACTOR SHALL ENGAGE AN INDEPENDENT TESTING LABRATORY (ITL) TO PROVIDE TESTING OF EARTHEN MATERIALS DURING EXCAVATION AND FILL OPERATIONS. ALL FILL MATERIALS SHALL BE APPROVED FOR SUITABILITY BY THE ITL.

6. SEED ALL DISTURBED AREAS UTILIZING A FESCUE BLEND (MIN. 2 REBEL, JAGUAR, FALCON). APPLICATION RATE OF SEED PER AAN STANDARDS. ALL FERTILIZER AND LIME AS RECOMMENDED BY SOIL TEST.

7. ALL SPOT ELEVATIONS AT CURB ARE AT TOP FACE OF CURB. ALL OTHER SPOT ELEVATIONS ARE AT SLAB GRADE OR AS INDICATED.

8. ALL OPEN STORM DRAIN PIPES SHALL BE PROTECTED WITH STONE FILTER PROTECTION AFTER STOPPAGE OF WORK EACH DAY. SEE DETAIL SHEET C-504.

9. CONTRACTOR TO ENSURE POSITIVE DRAINAGE ON ALL SURFACES. NOTIFY ENGINEER/LANDSCAPE ARCHITECT PRIOR TO INSTALLATION OF ANY PAVING/SURFACES IF ON SITE CONDITIONS ARE FIELD DETERMINED NOT TO PROVIDE POSITIVE DRAINAGE.

10. CONTRACTOR TO INSTALL SILK SAK EROSION PROTECTION AS SHOWN ON THE DRAWINGS AND ON THE FIRST DOWNSTREAM INLET STRUCTURES OUTSIDE OF THE PROJECT AREA RECEIVING RUNOFF FROM THE ACTIVE CONSTRUCTION AREA. AS WORK IS PHASED, CONTRACTOR TO UTILIZE WATTLES AS APPLICABLE AROUND THE OPEN WORK AREA TO DISCHARGE THE STORM WATER. DEWATERING BAGS/SEDIMENT FILTER BAGS MAY BE USED TO FILETER STORMWATER FROM TRENCHING ACTIVITIES. UNDER NO CIRCUMSTANCE IS UNTREATED WATER TO BE RELEASED FROM THE WORK AREA WITHOUT PASSING THROUGH AN EROSION CONTROL DEVICE.

11. PROJECT IS BID UNCLASSIFIED.

LEGEND

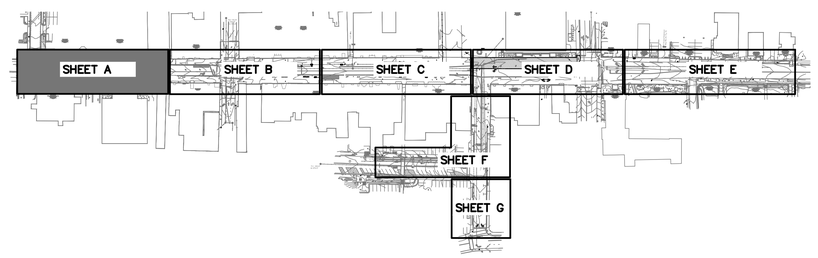
- PROJECT LIMITS
- SEDIMENT WATTLE
- INLET PROTECTION
- BC BOTTOM OF CURB
- TC TOP OF CURB
- BW BOTTOM OF WALL
- TW TOP OF WALL
- 5 STORMWATER STRUCTURE ID

SITE DATA

RIVER BASIN: YADKIN – PEE DEE RIVER
RECEIVING WATER: IRISH BUFFALO CREEK

PROJECT LIMITS/DISTURBED ACREAGE: 3.32 ACRES.
PERMITTED DISTURBED AREA: 3.5 ACRES.

MUNICIPALITY: CITY OF CONCORD



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NC Firm License # C-0459
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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 041598 — 7/22/2021

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

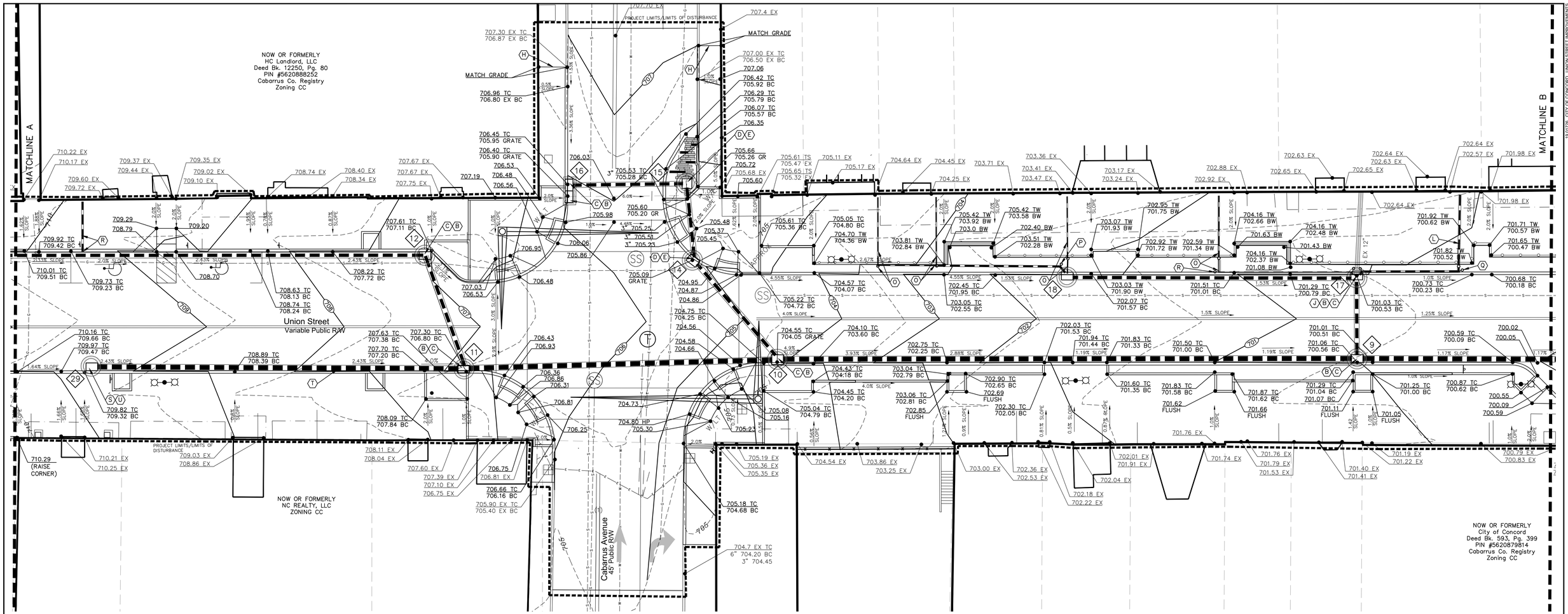
GRAPHIC SCALE: 10 0 5 10 20 — DIVISION VALUE = 10 FEET

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	C.L. CRANWILL			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	B. ROARK	JULY 2021	19.01726	N/A

GRADING, DRAINAGE, & EROSION CONTROL - A

SHEET C-201

P:\2019\19.01726-CONCORD\C-UNION STREETSCAPE PROJECT\DRAWINGS\19017261 UNION BASE.DWG PLOT DATE: 7/22/2021 11:00 AM KURTIS DURRANT



STORM DRAINAGE SCHEDULE										
From Structure Number	To Structure Number	Rim/ Grate Elevation	Pipe Data				Pipe Material		Pipe Slope	Structure Type
			Pipe Length (FT)	Pipe Invert Downstream	Pipe Invert Upstream	Pipe Diameter (inches)				
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2	1	696.40	68.00	688.32	689.12	42	RCP	CLASS IV	1.18%	MH
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ALT 29	11	709.32	50.00	701.90	705.82	15	RCP	CLASS IV	7.84%	CI

KEY NOTES

(A) PROPOSED STORMWATER MANHOLE. SEE NCDOT STANDARD DETAIL 840.52 AND 840.54. SEE DETAIL SHEET C–505.

(B) PROPOSED CATCH BASIN WITH FRAME, GRATE, AND HOOD. SEE DETAIL SHEET C–505.

(C) PROVIDE TEMPORARY STANDARD CATCH BASIN INLET PROTECTION. SEE DETAIL SHEET C–504.

(D) PROPOSED DROP INLET WITH FRAME AND GRATE. SEE NCDOT STANDARD DETAIL 840.14 AND 840.16 ON DETAIL SHEET D–506.

(E) PROVIDE TEMPORARY BLOCK AND GRAVEL DROP INLET FILTER. SEE DETAIL SHEET D–504.

(F) TIE PROPOSED PIPE INTO EXISTING BOX. PATCH AND REPAIR AS NECESSARY TO ENSURE SEALED CONNECTION.

(G) SILT SAK. SEE DETAIL SHEET C–504.

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(I) PROPOSED 3" SCHEDULE 40 PVC ROOF DRAIN TO DAYLIGHT AT LOCATIONS SHOWN.

(J) CONNECT PROPOSED BOX TO EX. PIPE. VERIFY INVERTS OF EXISTING PIPE PRIOR TO BOX INSTALLATION.

(K) PROPOSED 3" ROOF DRAIN CLEANOUT. SEE DETAIL SHEET C–504.

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(M) SEDIMENT WATTLE. SEE DETAILS SHEET C–504.

(N) PROPOSED 3" AND 6" SCHEDULE 40 PVC DRAINS FROM EXISTING UTILITY BOX TO TIE TO PROPOSED STORM STRUCTURE.

(O) PROPOSED 3" SCHEDULE 40 PVC ROOF DRAIN TO DAYLIGHT AT WALL LOCATION SHOWN. PROVIDE 2" AIR GAP BETWEEN PIPE EXIT AND TOP OF 6" DROP IN NYOPLAST DRAIN. CONNECT 6" DROP IN DRAINS TO PROPOSED BOX WITH 6" SCHEDULE 40 PVC AS SHOWN, MIN SLOPE 2%. PROVIDE CLEANOUTS AS SHOWN.

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(R) PROPOSED 3" SCHEDULE 40 PVC ROOF DRAIN TO DAYLIGHT TO CURB. PROVIDE CLEANOUTS AS SHOWN.

(S) ADD ALTERNATE #1 CATCH BASIN WITH FRAME, GRATE, AND HOOD. SEE DETAIL SHEET C–505.

(T) ADD ALTERNATE #1 15" CLASS IV RCP.

(U) ADD ALTERNATE #1 PROVIDE TEMPORARY STANDARD CATCH BASIN INLET PROTECTION. SEE DETAIL SHEET C–504.

(V) MUD MAT TO BE INSTALLED AS TEMPORARY CONSTRUCTION ENTRANCE AND RELOCATED AS NECESSARY TO ACTIVE CONSTRUCTION AREAS.

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4. CONTRACTOR SHALL BE FINANCIALLY RESPONSIBLE FOR DISPOSAL OF ALL WASTE MATERIALS OFF SITE. THIS RESPONSIBILITY SHALL INCLUDE ALL REQUIRED APPROVALS AND CONDITIONS DICTATED BY LOCAL OR STATE EROSION CONTROL AUTHORITIES.
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6. SEED ALL DISTURBED AREAS UTILIZING A FESCUE BLEND (MIN. 2 REBEL, JAGUAR, FALCON). APPLICATION RATE OF SEED PER AAN STANDARDS. ALL FERTILIZER AND LIME AS RECOMMENDED BY SOIL TEST.
7. ALL SPOT ELEVATIONS AT CURB ARE AT TOP FACE OF CURB. ALL OTHER SPOT ELEVATIONS ARE AT SLAB GRADE OR AS INDICATED.
8. ALL OPEN STORM DRAIN PIPES SHALL BE PROTECTED WITH STONE FILTER PROTECTION AFTER STOPPAGE OF WORK EACH DAY. SEE DETAIL SHEET C–504.
9. CONTRACTOR TO ENSURE POSITIVE DRAINAGE ON ALL SURFACES. NOTIFY ENGINEER/LANDSCAPE ARCHITECT PRIOR TO INSTALLATION OF ANY PAVING/SURFACES IF ON SITE CONDITIONS ARE FIELD DETERMINED NOT TO PROVIDE POSITIVE DRAINAGE.
10. CONTRACTOR TO INSTALL SILK SAK EROSION PROTECTION AS SHOWN ON THE DRAWINGS AND ON THE FIRST DOWNSTREAM INLET STRUCTURES OUTSIDE OF THE PROJECT AREA RECEIVING RUNOFF FROM THE ACTIVE CONSTRUCTION AREA. AS WORK IS PHASED, CONTRACTOR TO UTILIZE WATTLES AS APPLICABLE AROUND THE OPEN WORK AREA TO DISCHARGE THE STORM WATER. DEWATERING BAGS/SEDIMENT FILTER BAGS MAY BE USED TO FILETER STORMWATER FROM TRENCHING ACTIVITIES. UNDER NO CIRCUMSTANCE IS UNTREATED WATER TO BE RELEASED FROM THE WORK AREA WITHOUT PASSING THROUGH AN EROSION CONTROL DEVICE.
11. PROJECT IS BID UNCLASSIFIED.

LEGEND

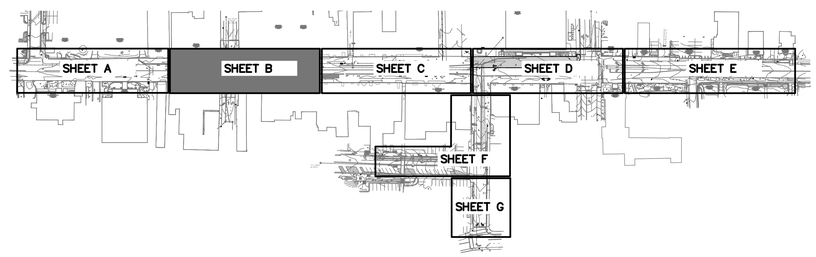
- PROJECT LIMITS
- SEDIMENT WATTLE
- INLET PROTECTION
- BC — BOTTOM OF CURB
- TC — TOP OF CURB
- BW — BOTTOM OF WALL
- TW — TOP OF WALL
- (5) — STORMWATER STRUCTURE ID

SITE DATA

RIVER BASIN: YADKIN – PEE DEE RIVER
RECEIVING WATER: IRISH BUFFALO CREEK

PROJECT LIMITS/DISTURBED ACREAGE: 3.32 ACRES.
PERMITTED DISTURBED AREA: 3.5 ACRES.

MUNICIPALITY: CITY OF CONCORD



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mcgillassociates.com

SEAL 041598 — ENGINEERING — NEW JERSEY — 7/22/2021

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

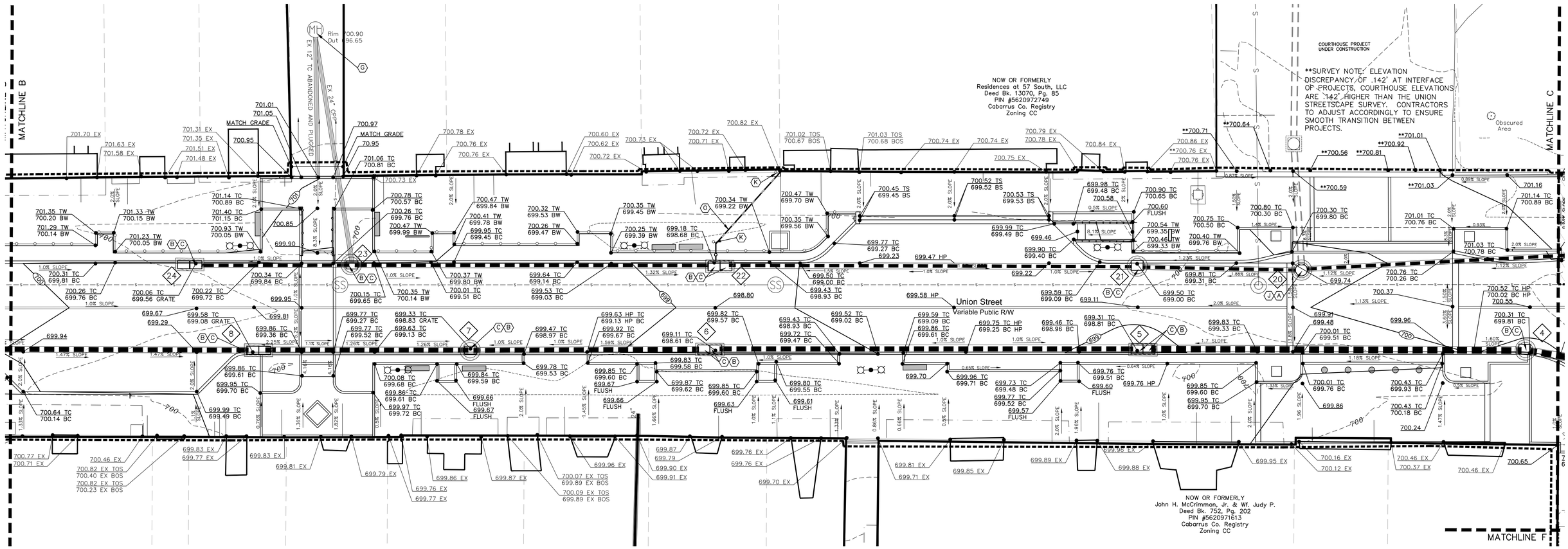
OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	C.L. CRANWILL			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	B. ROARK	JULY 2021	19.01726	N/A

GRADING, DRAINAGE, & EROSION CONTROL - B

SHEET C-202

P:\2019\19.01726-CONCORD-UNION STREETSCAPE PROJECT\DRAWINGS\19.01726 UNION BASE.DWG PLOT DATE: 7/22/2021 11:01 AM KURTIS DURRANT

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS



STORM DRAINAGE SCHEDULE

From Structure Number	To Structure Number	Rim/ Grate Elevation	Pipe Data				Pipe Material		Pipe Slope	Structure Type
			Pipe Length (FT)	Pipe Invert Downstream	Pipe Invert Upstream	Pipe Diameter (inches)				
1	EX MH	694.17	195.00	679.50	688.22	42	RCP	CLASS IV	4.47%	MH
2	1	696.40	68.00	688.32	689.12	42	RCP	CLASS IV	1.18%	MH
3	2	700.80	216.00	689.12	691.28	42	RCP	CLASS IV	1.00%	MH
4	3	699.81	34.00	692.28	692.58	30	RCP	CLASS IV	0.88%	CI
5	4	698.81	100.00	692.58	693.37	30	RCP	CLASS IV	0.79%	CI
6	5	698.61	107.00	693.37	694.22	30	RCP	CLASS IV	0.79%	CI
7	6	698.83	64.00	694.22	694.70	30	RCP	CLASS IV	0.75%	CI
8	7	699.08	56.00	694.70	695.00	30	RCP	CLASS IV	0.54%	CI
9	8	700.56	112.00	695.00	696.06	30	RCP	CLASS IV	0.95%	CI
10	9	704.05	150.00	696.06	697.50	30	RCP	CLASS IV	0.96%	CI
11	10	706.80	82.00	697.50	699.78	15	RCP	CLASS IV	2.78%	CI
12	11	707.11	32.00	701.90	703.06	15	RCP	CLASS IV	3.62%	CI
13	12	710.90	166.00	703.16	707.40	15	RCP	CLASS IV	2.55%	CI
14	10	705.09	34.00	700.25	700.90	18	RCP	CLASS IV	1.91%	GI
15	14	705.26	22.00	701.00	702.83	18	RCP	CLASS IV	8.32%	GI
16	15	705.95	32.00	703.08	703.70	15	RCP	CLASS IV	1.94%	CI
17	9	700.53	21.00	696.80	697.20	18	RCP	CLASS IV	1.90%	CI
18	17	701.67	72.00	697.45	698.20	15	RCP	CLASS IV	1.04%	CI
19	3	700.98	32.00	691.65	691.90	36	RCP	CLASS IV	0.78%	CI
20	19	699.51	91.00	691.93	692.39	24	RCP	CLASS IV	0.51%	MH
21	20	699.00	42.00	693.39	693.60	24	RCP	CLASS IV	0.50%	CI
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25	19	702.36	41.00	693.00	695.69	24	RCP	CLASS IV	6.56%	MH
26	25	703.73	76.00	696.19	699.66	18	RCP	CLASS IV	4.57%	EX MH
27	3	701.60	34.00	694.80	696.00	15	RCP	CLASS IV	3.53%	CI
28	27	703.95	141.00	696.10	699.00	15	RCP	CLASS IV	2.06%	CI
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KEY NOTES

(A) PROPOSED STORMWATER MANHOLE. SEE NCDOT STANDARD DETAIL 840.52 AND 840.54. SEE DETAIL SHEET C–505.

(B) PROPOSED CATCH BASIN WITH FRAME, GRATE, AND HOOD. SEE DETAIL SHEET C–505.

(C) PROVIDE TEMPORARY STANDARD CATCH BASIN INLET PROTECTION. SEE DETAIL SHEET C–504.

(D) PROPOSED DROP INLET WITH FRAME AND GRATE. SEE NCDOT STANDARD DETAIL 840.14 AND 840.16 ON DETAIL SHEET D–506.

(E) PROVIDE TEMPORARY BLOCK AND GRAVEL DROP INLET FILTER. SEE DETAIL SHEET D–504.

(F) TIE PROPOSED PIPE INTO EXISTING BOX. PATCH AND REPAIR AS NECESSARY TO ENSURE SEALED CONNECTION.

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(I) PROPOSED 3" SCHEDULE 40 PVC ROOF DRAIN TO DAYLIGHT AT LOCATIONS SHOWN.

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(L) PROPOSED 8" SCHEDULE 40 PVC ROOF DRAIN TO DAYLIGHT AT WALL LOCATION SHOWN. PROVIDE 2" AIR GAP BETWEEN PIPE EXIT AND TOP OF 10" NYOPLAST DRAIN. CONNECT 10" DROP IN DRAIN TO PROPOSED BOX AS SHOWN, MIN. SLOPE 2%. PROVIDE CLEANOUTS AS SHOWN.

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(R) PROPOSED 3" SCHEDULE 40 PVC ROOF DRAIN TO DAYLIGHT TO CURB. PROVIDE CLEANOUTS AS SHOWN.

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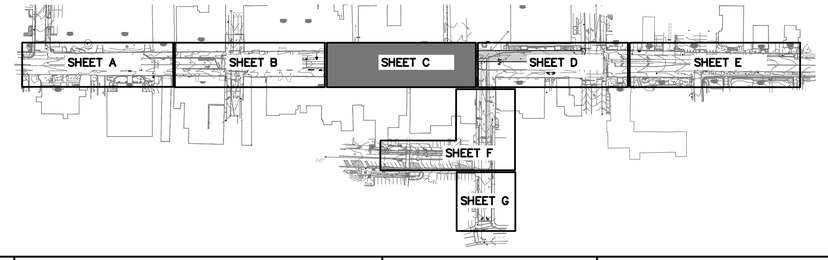

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Hickory, NC 28601
828.328.2024
NC Firm License # C-0459
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NORTH CAROLINA PROFESSIONAL SEAL 041598 ENGINEER MATTHEW J. NORRIS
12-22-2021

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	C.L. CRANWILL
PROJECT MANAGER	REVIEWER
M.J. NORRIS	B. ROARK

GRADING, DRAINAGE, & EROSION CONTROL - C

DATE	PROJECT #	FUNDING #
JULY 2021	19.01726	N/A

SHEET
C-203

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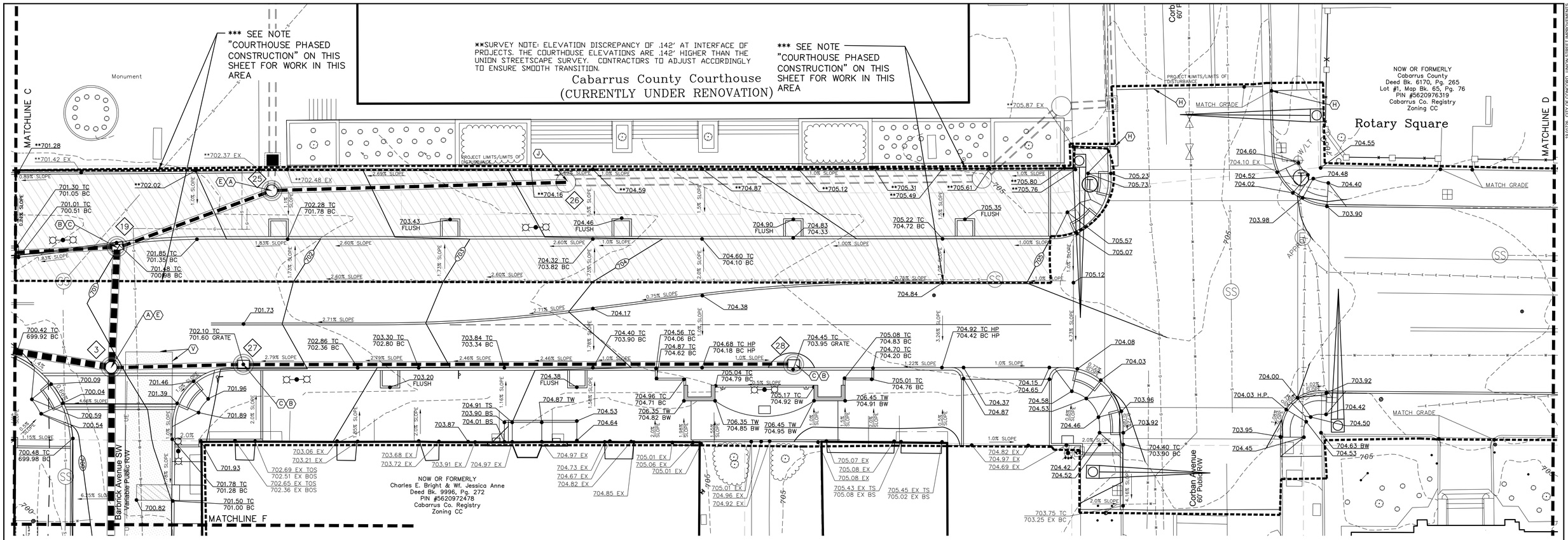
19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS



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			Pipe Length (FT)	Pipe Invert Downstream	Pipe Invert Upstream					
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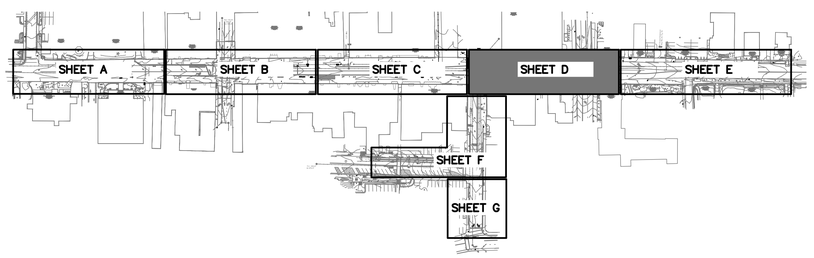
PERMITTED DISTURBED AREA: 3.5 ACRES.

MUNICIPALITY: CITY OF CONCORD

COURTHOUSE PHASED CONSTRUCTION:

DUE TO THE RENOVATION OF THE COURTHOUSE, ONLY PART OF THE ILLUSTRATED CONSTRUCTION ACTIVITIES WILL BE INSTALLED UNDER THIS CONTRACT. THE REMAINING ITEMS WILL BE INSTALLED UNDER SEPARATE CONTRACT AFTER THE COMPLETION OF THE COURTHOUSE RENOVATION IN 2024. ITEMS UNDER THIS CONTRACT INCLUDE: COMPREHENSIVE GRADING, ELECTRICAL DEMOLITION, ASPHALT PAVING, STRIPING, TEMPORARY CONCRETE SIDEWALK, HC RAMPS, TACTILE PLATES, STORMWATER INSTALLATION, AND WATER LINES AS NOTED ON THE UTILITY SHEET. THIS AREA IS TO BE GRADED TO PROPOSED ELEVATIONS AND THE GRADES TAPERED DOWN TO MEET EXISTING ELEVATIONS AT THE COURTHOUSE STEPS. EXISTING DRAINAGE STRUCTURES TO BE UTILIZED FOR DRAINAGE.

FOR TEMPORARY PAVING SEE DETAIL SHEET C-510.



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1240 19th Street Lane NW
Hickory, NC 28601
828.328.2024
NC Firm License # C-0459
mcgillassociates.com

NORTH CAROLINA PROFESSIONAL SEAL 041598 ENGINEER MATTHEW J. NORRIS
7/22/2021

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

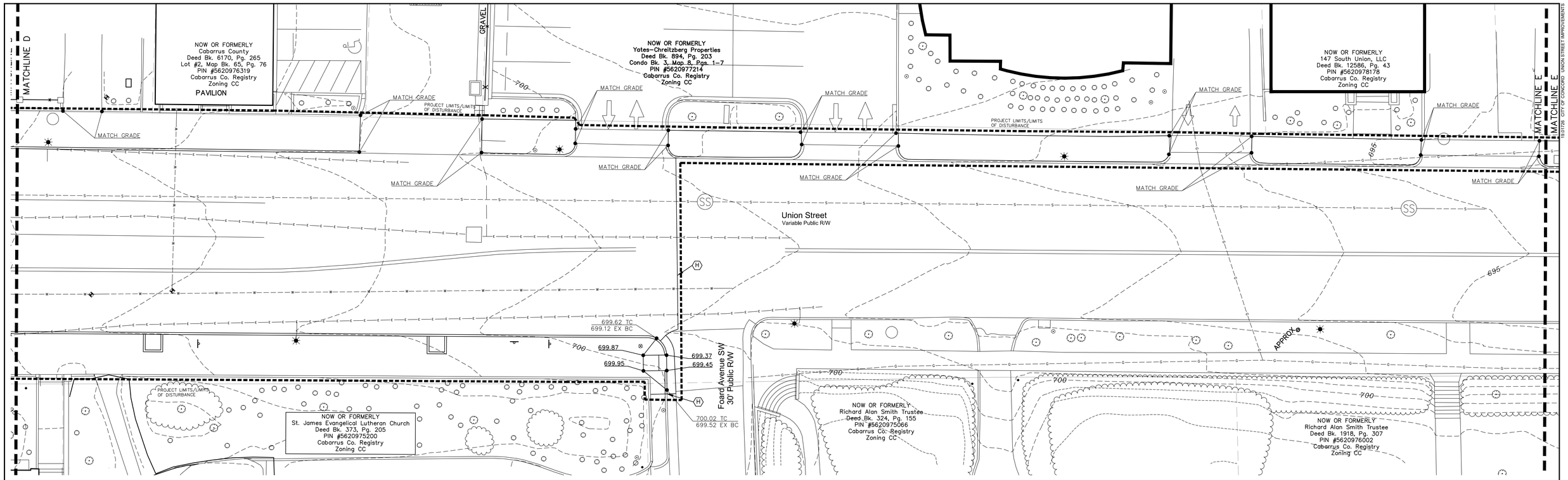
GRADING, DRAINAGE, & EROSION CONTROL - D

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	C.L. CRANWILL			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	B. ROARK	JULY 2021	19.01726	N/A

SHEET
C-204

P:\2019\19.01726-CONCORDNC-UNION STREETSCAPE PROJECT\DRAWINGS\19.01726 UNION BASE DWG PLOT DATE 7/22/2021 11:02 AM KURTIS DURRANT

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS



STORM DRAINAGE SCHEDULE

From Structure Number	To Structure Number	Rim/ Grate Elevation	Pipe Data			Pipe Diameter (inches)	Pipe Material		Pipe Slope	Structure Type
			Pipe Length (FT)	Pipe Invert Downstream	Pipe Invert Upstream					
1	EX MH	694.17	195.00	679.50	688.22	42	RCP	CLASS IV	4.47%	MH
2	1	696.40	68.00	688.32	689.12	42	RCP	CLASS IV	1.18%	MH
3	2	700.80	216.00	689.12	691.28	42	RCP	CLASS IV	1.00%	MH
4	3	699.81	34.00	692.28	692.58	30	RCP	CLASS IV	0.88%	CI
5	4	698.81	100.00	692.58	693.37	30	RCP	CLASS IV	0.79%	CI
6	5	698.61	107.00	693.37	694.22	30	RCP	CLASS IV	0.79%	CI
7	6	698.83	64.00	694.22	694.70	30	RCP	CLASS IV	0.75%	CI
8	7	699.08	56.00	694.70	695.00	30	RCP	CLASS IV	0.54%	CI
9	8	700.56	112.00	695.00	696.06	30	RCP	CLASS IV	0.95%	CI
10	9	704.05	150.00	696.06	697.50	30	RCP	CLASS IV	0.96%	CI
11	10	706.80	82.00	697.50	699.78	15	RCP	CLASS IV	2.78%	CI
12	11	707.11	32.00	701.90	703.06	15	RCP	CLASS IV	3.62%	CI
13	12	710.90	166.00	703.16	707.40	15	RCP	CLASS IV	2.55%	CI
14	10	705.09	34.00	700.25	700.90	18	RCP	CLASS IV	1.91%	GI
15	14	705.26	22.00	701.00	702.83	18	RCP	CLASS IV	8.32%	GI
16	15	705.95	32.00	703.08	703.70	15	RCP	CLASS IV	1.94%	CI
17	9	700.53	21.00	696.80	697.20	18	RCP	CLASS IV	1.90%	CI
18	17	701.67	72.00	697.45	698.20	15	RCP	CLASS IV	1.04%	CI
19	3	700.98	32.00	691.65	691.90	36	RCP	CLASS IV	0.78%	CI
20	19	699.51	91.00	691.93	692.39	24	RCP	CLASS IV	0.51%	MH
21	20	699.00	42.00	693.39	693.60	24	RCP	CLASS IV	0.50%	CI
22	21	698.68	107.00	693.60	694.13	24	RCP	CLASS IV	0.50%	CI
23	22	699.79	92.00	694.13	694.59	24	RCP	CLASS IV	0.50%	CI
24	23	699.56	40.00	696.00	696.30	15	RCP	CLASS IV	0.75%	CI
25	19	702.36	41.00	693.00	695.69	24	RCP	CLASS IV	6.56%	MH
26	25	703.73	76.00	696.19	699.66	18	RCP	CLASS IV	4.57%	EX MH
27	3	701.60	34.00	694.80	696.00	15	RCP	CLASS IV	3.53%	CI
28	27	703.95	141.00	696.10	699.00	15	RCP	CLASS IV	2.06%	CI
ALT 29	11	709.32	50.00	701.90	705.82	15	RCP	CLASS IV	7.84%	CI

KEY NOTES

(A) PROPOSED STORMWATER MANHOLE. SEE NCDOT STANDARD DETAIL 840.52 AND 840.54. SEE DETAIL SHEET C-505.

(B) PROPOSED CATCH BASIN WITH FRAME, GRATE, AND HOOD. SEE DETAIL SHEET C-505.

(C) PROVIDE TEMPORARY STANDARD CATCH BASIN INLET PROTECTION. SEE DETAIL SHEET C-504.

(D) PROPOSED DROP INLET WITH FRAME AND GRATE. SEE NCDOT STANDARD DETAIL 840.14 AND 840.16 ON DETAIL SHEET D-506.

(E) PROVIDE TEMPORARY BLOCK AND GRAVEL DROP INLET FILTER. SEE DETAIL SHEET D-504.

(F) TIE PROPOSED PIPE INTO EXISTING BOX. PATCH AND REPAIR AS NECESSARY TO ENSURE SEALED CONNECTION.

(G) SILT SAK. SEE DETAIL SHEET C-504.

(H) MATCH EXISTING GRADE WITH SMOOTH TRANSITION.

(I) PROPOSED 3" SCHEDULE 40 PVC ROOF DRAIN TO DAYLIGHT AT LOCATIONS SHOWN.

(J) CONNECT PROPOSED BOX TO EX. PIPE. VERIFY INVERTS OF EXISTING PIPE PRIOR TO BOX INSTALLATION.

(K) PROPOSED 3" ROOF DRAIN CLEANOUT. SEE DETAIL SHEET C-504.

(L) PROPOSED 8" SCHEDULE 40 PVC ROOF DRAIN TO DAYLIGHT AT WALL LOCATION SHOWN. PROVIDE 2" AIR GAP BETWEEN PIPE EXIT AND TOP OF 10" NYOPLAST DRAIN. CONNECT 10" DROP IN DRAIN TO PROPOSED BOX AS SHOWN, MIN. SLOPE 2%. PROVIDE CLEANOUTS AS SHOWN.

(M) SEDIMENT WATTLE. SEE DETAILS SHEET C-504.

(N) PROPOSED 3" AND 6" SCHEDULE 40 PVC DRAINS FROM EXISTING UTILITY BOX TO TIE TO PROPOSED STORM STRUCTURE.

(O) PROPOSED 3" SCHEDULE 40 PVC ROOF DRAIN TO DAYLIGHT AT WALL LOCATION SHOWN. PROVIDE 2" AIR GAP BETWEEN PIPE EXIT AND TOP OF 6" DROP IN NYOPLAST DRAIN. CONNECT 6" DROP IN DRAINS TO PROPOSED BOX WITH 6" SCHEDULE 40 PVC AS SHOWN, MIN SLOPE 2%. PROVIDE CLEANOUTS AS SHOWN.

(P) PROPOSED 6" ROOF DRAIN CLEANOUT. SEE DETAIL SHEET C-504.

(Q) PROPOSED 8" ROOF DRAIN CLEANOUT. SEE DETAIL SHEET C-504.

(R) PROPOSED 3" SCHEDULE 40 PVC ROOF DRAIN TO DAYLIGHT TO CURB. PROVIDE CLEANOUTS AS SHOWN.

(S) ADD ALTERNATE #1 CATCH BASIN WITH FRAME, GRATE, AND HOOD. SEE DETAIL SHEET C-505.

(T) ADD ALTERNATE #1 15" CLASS IV RCP.

(U) ADD ALTERNATE #1 PROVIDE TEMPORARY STANDARD CATCH BASIN INLET PROTECTION. SEE DETAIL SHEET C-504.

(V) MUD MAT TO BE INSTALLED AS TEMPORARY CONSTRUCTION ENTRANCE AND RELOCATED AS NECESSARY TO ACTIVE CONSTRUCTION AREAS.

GENERAL NOTES:

1. ALL EXISTING CONDITIONS AND TOPOGRAPHIC INFORMATION WAS OBTAINED FROM SURVEY BY NORSTAR LAND SURVEYING, INC. MAY 2, 2019.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL STATE AND LOCAL CODES IN OBSERVING EROSION CONTROL MEASURES BOTH ON AND OFF SITE.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF ALL EROSION CONTROL DEVICES AFTER EACH RAINFALL EVENT OR AS DIRECTED BY LOCAL AUTHORITIES OR THE OWNER.

4. CONTRACTOR SHALL BE FINANCIALLY RESPONSIBLE FOR DISPOSAL OF ALL WASTE MATERIALS OFF SITE. THIS RESPONSIBILITY SHALL INCLUDE ALL REQUIRED APPROVALS AND CONDITIONS DICTATED BY LOCAL OR STATE EROSION CONTROL AUTHORITIES.

5. THE CONTRACTOR SHALL ENGAGE AN INDEPENDENT TESTING LABRATORY (ITL) TO PROVIDE TESTING OF EARTHEN MATERIALS DURING EXCAVATION AND FILL OPERATIONS. ALL FILL MATERIALS SHALL BE APPROVED FOR SUITABILITY BY THE ITL.

6. SEED ALL DISTURBED AREAS UTILIZING A FESCUE BLEND (MIN. 2 REBEL, JAGUAR, FALCON). APPLICATION RATE OF SEED PER AAN STANDARDS. ALL FERTILIZER AND LIME AS RECOMMENDED BY SOIL TEST.

7. ALL SPOT ELEVATIONS AT CURB ARE AT TOP FACE OF CURB. ALL OTHER SPOT ELEVATIONS ARE AT SLAB GRADE OR AS INDICATED.

8. ALL OPEN STORM DRAIN PIPES SHALL BE PROTECTED WITH STONE FILTER PROTECTION AFTER STOPPAGE OF WORK EACH DAY. SEE DETAIL SHEET C-504.

9. CONTRACTOR TO ENSURE POSITIVE DRAINAGE ON ALL SURFACES. NOTIFY ENGINEER/LANDSCAPE ARCHITECT PRIOR TO INSTALLATION OF ANY PAVING/SURFACES IF ON SITE CONDITIONS ARE FIELD DETERMINED NOT TO PROVIDE POSITIVE DRAINAGE.

10. CONTRACTOR TO INSTALL SILK SAK EROSION PROTECTION AS SHOWN ON THE DRAWINGS AND ON THE FIRST DOWNSTREAM INLET STRUCTURES OUTSIDE OF THE PROJECT AREA RECEIVING RUNOFF FROM THE ACTIVE CONSTRUCTION AREA. AS WORK IS PHASED, CONTRACTOR TO UTILIZE WATTLES AS APPLICABLE AROUND THE OPEN WORK AREA TO DISCHARGE THE STORM WATER. DEWATERING BAGS/SEDIMENT FILTER BAGS MAY BE USED TO FILETER STORMWATER FROM TRENCHING ACTIVITIES. UNDER NO CIRCUMSTANCE IS UNTREATED WATER TO BE RELEASED FROM THE WORK AREA WITHOUT PASSING THROUGH AN EROSION CONTROL DEVICE.

11. PROJECT IS BID UNCLASSIFIED.

LEGEND

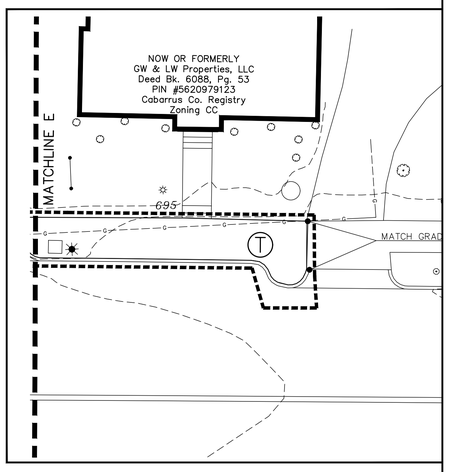
- PROJECT LIMITS
- SEDIMENT WATTLE
- INLET PROTECTION
- BC — BOTTOM OF CURB
- TC — TOP OF CURB
- BW — BOTTOM OF WALL
- TW — TOP OF WALL
- (5) — STORMWATER STRUCTURE ID

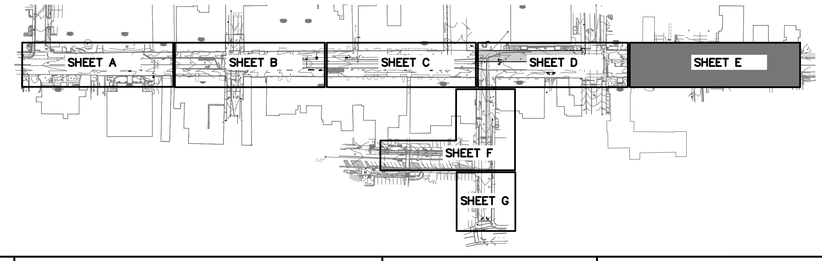
SITE DATA

RIVER BASIN: YADKIN – PEE DEE RIVER
RECEIVING WATER: IRISH BUFFALO CREEK

PROJECT LIMITS/DISTURBED ACREAGE: 3.32 ACRES.
PERMITTED DISTURBED AREA: 3.5 ACRES.

MUNICIPALITY: CITY OF CONCORD





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NC Firm License # C-0459
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NORTH CAROLINA PROFESSIONAL SEAL 041598 ENGINEER MATTHEW D. REARDON
7-22-2021

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

GRADING, DRAINAGE, & EROSION CONTROL - E

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	C.L. CRANWILL			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	B. ROARK	JULY 2021	19.01726	N/A

SHEET
C-205

P:\2019\19.01726-CONCORD\C-UNION STREET\SCAPE PROJECT\DRAWINGS\19017261 UNION BASE.DWG PLOT DATE: 7/22/2021 11:03 AM KURTIS DURRANT

GENERAL NOTES:

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KEY NOTES

(A) PROPOSED STORMWATER MANHOLE. SEE NCDOT STANDARD DETAIL 840.52 AND 840.54. SEE DETAIL SHEET C-505.

(B) PROPOSED CATCH BASIN WITH FRAME, GRATE, AND HOOD. SEE DETAIL SHEET C-505.

(C) PROVIDE TEMPORARY STANDARD CATCH BASIN INLET PROTECTION. SEE DETAIL SHEET C-504.

(D) PROPOSED DROP INLET WITH FRAME AND GRATE. SEE NCDOT STANDARD DETAIL 840.14 AND 840.16 ON DETAIL SHEET D-506.

(E) PROVIDE TEMPORARY BLOCK AND GRAVEL DROP INLET FILTER. SEE DETAIL SHEET D-504.

(F) TIE PROPOSED PIPE INTO EXISTING BOX. PATCH AND REPAIR AS NECESSARY TO ENSURE SEALED CONNECTION.

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(U) ADD ALTERNATE #1 PROVIDE TEMPORARY STANDARD CATCH BASIN INLET PROTECTION. SEE DETAIL SHEET C-504.

(V) MUD MAT TO BE INSTALLED AS TEMPORARY CONSTRUCTION ENTRANCE AND RELOCATED AS NECESSARY TO ACTIVE CONSTRUCTION AREAS.

STORM DRAINAGE SCHEDULE

From Structure Number	To Structure Number	Rim/ Grate Elevation	Pipe Data			Pipe Diameter (inches)	Pipe Material		Pipe Slope	Structure Type
			Pipe Length (FT)	Pipe Invert Downstream	Pipe Invert Upstream					
1	EX MH	694.17	195.00	679.50	688.22	42	RCP	CLASS IV	4.47%	MH
2	1	696.40	68.00	688.32	689.12	42	RCP	CLASS IV	1.18%	MH
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4	3	699.81	34.00	692.28	692.58	30	RCP	CLASS IV	0.88%	CI
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10	9	704.05	150.00	696.06	697.50	30	RCP	CLASS IV	0.96%	CI
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18	17	701.67	72.00	697.45	698.20	15	RCP	CLASS IV	1.04%	CI
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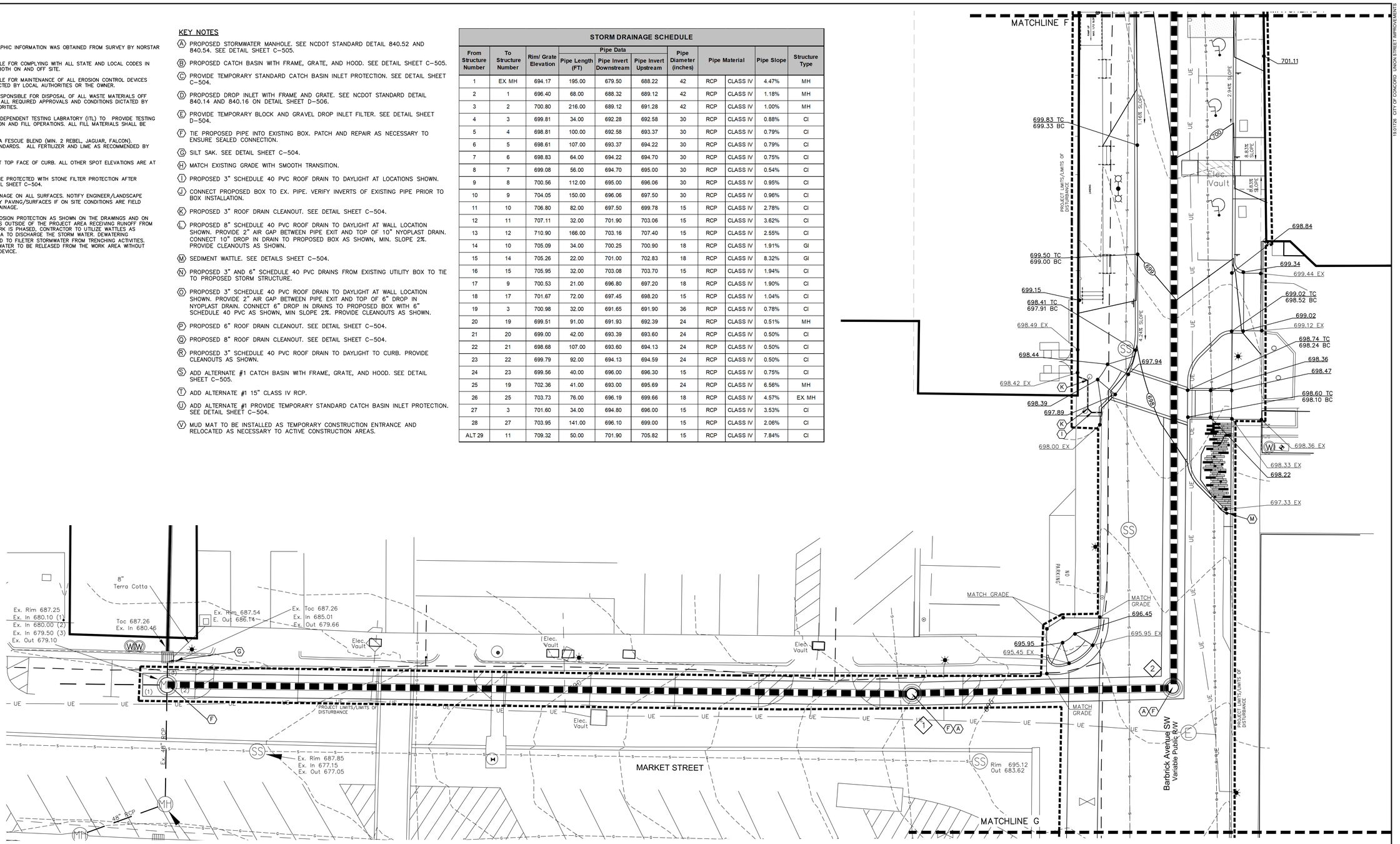


LEGEND

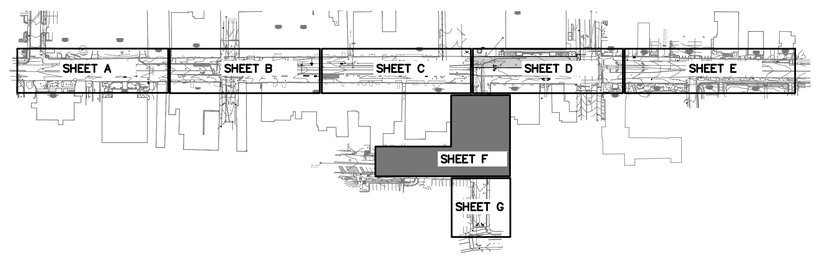
- PROJECT LIMITS
- SEDIMENT WATTLE
- INLET PROTECTION
- BC — BOTTOM OF CURB
- TC — TOP OF CURB
- BW — BOTTOM OF WALL
- TW — TOP OF WALL
- 5 — STORMWATER STRUCTURE ID

SITE DATA

RIVER BASIN: YADKIN – PEE DEE RIVER
RECEIVING WATER: IRISH BUFFALO CREEK

PROJECT LIMITS/DISTURBED ACREAGE: 3.32 ACRES.
PERMITTED DISTURBED AREA: 3.5 ACRES.

MUNICIPALITY: CITY OF CONCORD



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NC Firm License # C-0459
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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 041598 — ENGINEERING — MATTHEW D. GETTING — 7/22/2021

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

10 0 5 10 20
GRAPHIC SCALE — DIVISION VALUE = 10 FEET

OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	C.L. CRANWILL
PROJECT MANAGER	REVIEWER
M.J. NORRIS	B. ROARK

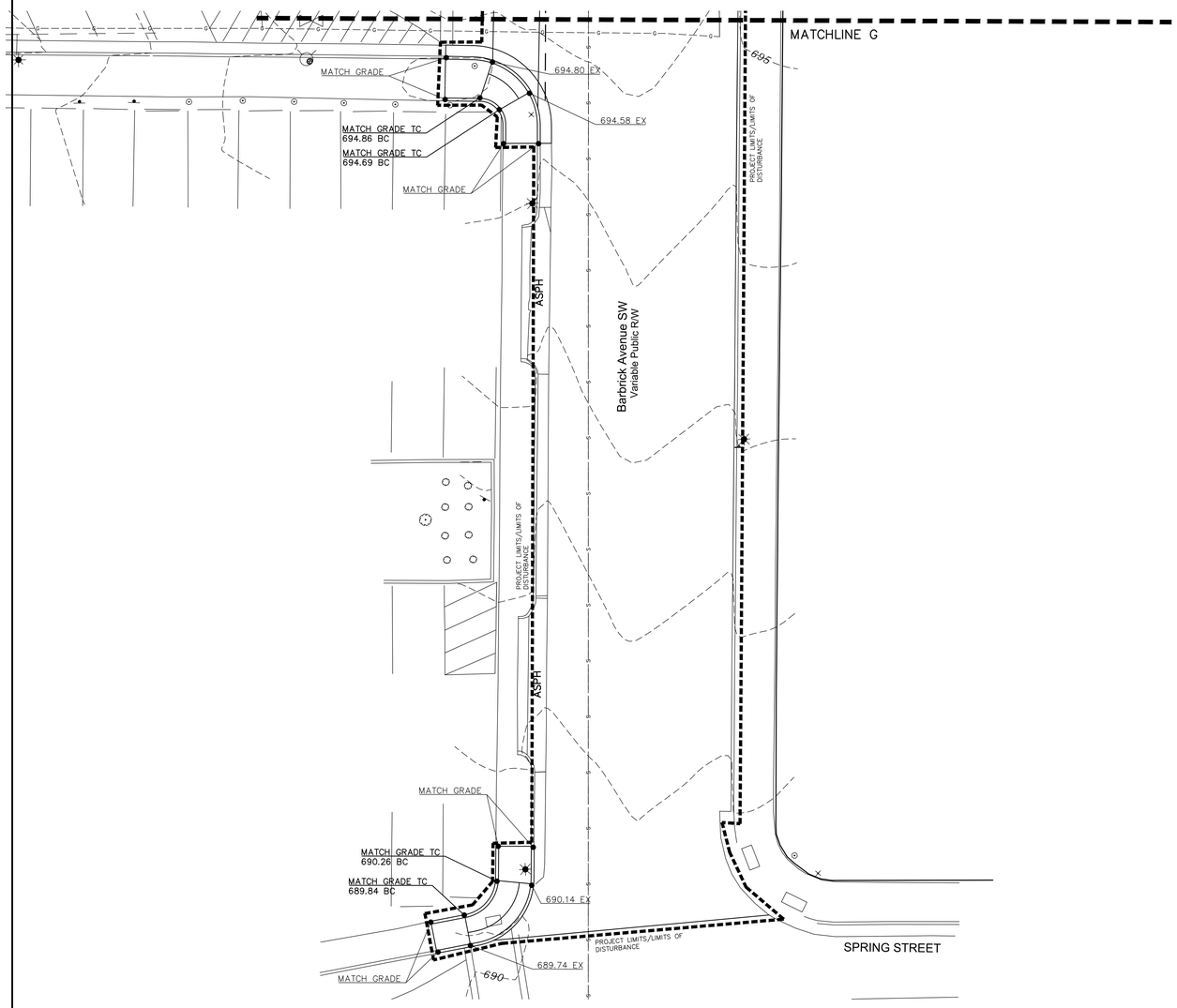
GRADING, DRAINAGE, & EROSION CONTROL - F

DATE	PROJECT #	FUNDING #
JULY 2021	19.01726	N/A

SHEET
C-206

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS

P:\2019\19.01726-CONCORD\C-UNION STREETSCAPE PROJECT\DRAWINGS\19.01726 UNION BASE.DWG PLOT DATE: 7/22/2021 - 1:27 PM BURTIS DURRANT



STORM DRAINAGE SCHEDULE

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			Pipe Length (FT)	Pipe Invert Downstream	Pipe Invert Upstream					
1	EX MH	694.17	195.00	679.50	688.22	42	RCP	CLASS IV	4.47%	MH
2	1	696.40	68.00	688.32	689.12	42	RCP	CLASS IV	1.18%	MH
3	2	700.80	216.00	689.12	691.28	42	RCP	CLASS IV	1.00%	MH
4	3	699.81	34.00	692.28	692.58	30	RCP	CLASS IV	0.88%	CI
5	4	698.81	100.00	692.58	693.37	30	RCP	CLASS IV	0.79%	CI
6	5	698.61	107.00	693.37	694.22	30	RCP	CLASS IV	0.79%	CI
7	6	698.83	64.00	694.22	694.70	30	RCP	CLASS IV	0.75%	CI
8	7	699.08	56.00	694.70	695.00	30	RCP	CLASS IV	0.54%	CI
9	8	700.56	112.00	695.00	696.06	30	RCP	CLASS IV	0.95%	CI
10	9	704.05	150.00	696.06	697.50	30	RCP	CLASS IV	0.96%	CI
11	10	706.80	82.00	697.50	699.78	15	RCP	CLASS IV	2.78%	CI
12	11	707.11	32.00	701.90	703.06	15	RCP	CLASS IV	3.62%	CI
13	12	710.90	166.00	703.16	707.40	15	RCP	CLASS IV	2.55%	CI
14	10	705.09	34.00	700.25	700.90	18	RCP	CLASS IV	1.91%	GI
15	14	705.26	22.00	701.00	702.83	18	RCP	CLASS IV	8.32%	GI
16	15	705.95	32.00	703.08	703.70	15	RCP	CLASS IV	1.94%	CI
17	9	700.53	21.00	696.80	697.20	18	RCP	CLASS IV	1.90%	CI
18	17	701.67	72.00	697.45	698.20	15	RCP	CLASS IV	1.04%	CI
19	3	700.98	32.00	691.65	691.90	36	RCP	CLASS IV	0.78%	CI
20	19	699.51	91.00	691.93	692.39	24	RCP	CLASS IV	0.51%	MH
21	20	699.00	42.00	693.39	693.60	24	RCP	CLASS IV	0.50%	CI
22	21	698.68	107.00	693.60	694.13	24	RCP	CLASS IV	0.50%	CI
23	22	699.79	92.00	694.13	694.59	24	RCP	CLASS IV	0.50%	CI
24	23	699.56	40.00	696.00	696.30	15	RCP	CLASS IV	0.75%	CI
25	19	702.36	41.00	693.00	695.69	24	RCP	CLASS IV	6.56%	MH
26	25	703.73	76.00	696.19	699.66	18	RCP	CLASS IV	4.57%	EX MH
27	3	701.60	34.00	694.80	696.00	15	RCP	CLASS IV	3.53%	CI
28	27	703.95	141.00	696.10	699.00	15	RCP	CLASS IV	2.06%	CI
ALT 29	11	709.32	50.00	701.90	705.82	15	RCP	CLASS IV	7.84%	CI

GENERAL NOTES:

1. ALL EXISTING CONDITIONS AND TOPOGRAPHIC INFORMATION WAS OBTAINED FROM SURVEY BY NORSTAR LAND SURVEYING, INC. MAY 2, 2019.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL STATE AND LOCAL CODES IN OBSERVING EROSION CONTROL MEASURES BOTH ON AND OFF SITE.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF ALL EROSION CONTROL DEVICES AFTER EACH RAINFALL EVENT OR AS DIRECTED BY LOCAL AUTHORITIES OR THE OWNER.

4. CONTRACTOR SHALL BE FINANCIALLY RESPONSIBLE FOR DISPOSAL OF ALL WASTE MATERIALS OFF SITE. THIS RESPONSIBILITY SHALL INCLUDE ALL REQUIRED APPROVALS AND CONDITIONS DICTATED BY LOCAL OR STATE EROSION CONTROL AUTHORITIES.

5. THE CONTRACTOR SHALL ENGAGE AN INDEPENDENT TESTING LABRATORY (ITL) TO PROVIDE TESTING OF EARTHEN MATERIALS DURING EXCAVATION AND FILL OPERATIONS. ALL FILL MATERIALS SHALL BE APPROVED FOR SUITABILITY BY THE ITL.

6. SEED ALL DISTURBED AREAS UTILIZING A FESCUE BLEND (MIN. 2 REBEL, JAGUAR, FALCON). APPLICATION RATE OF SEED PER AAN STANDARDS. ALL FERTILIZER AND LIME AS RECOMMENDED BY SOIL TEST.

7. ALL SPOT ELEVATIONS AT CURB ARE AT TOP FACE OF CURB. ALL OTHER SPOT ELEVATIONS ARE AT SLAB GRADE OR AS INDICATED.

8. ALL OPEN STORM DRAIN PIPES SHALL BE PROTECTED WITH STONE FILTER PROTECTION AFTER STOPPAGE OF WORK EACH DAY. SEE DETAIL SHEET C-504.

9. CONTRACTOR TO ENSURE POSITIVE DRAINAGE ON ALL SURFACES. NOTIFY ENGINEER/LANDSCAPE ARCHITECT PRIOR TO INSTALLATION OF ANY PAVING/SURFACES IF ON SITE CONDITIONS ARE FIELD DETERMINED NOT TO PROVIDE POSITIVE DRAINAGE.

10. CONTRACTOR TO INSTALL SILK SAK EROSION PROTECTION AS SHOWN ON THE DRAWINGS AND ON THE FIRST DOWNSTREAM INLET STRUCTURES OUTSIDE OF THE PROJECT AREA RECEIVING RUNOFF FROM THE ACTIVE CONSTRUCTION AREA. AS WORK IS PHASED, CONTRACTOR TO UTILIZE WATTLES AS APPLICABLE AROUND THE OPEN WORK AREA TO DISCHARGE THE STORM WATER. DEWATERING BAGS/SEDIMENT FILTER BAGS MAY BE USED TO FILETER STORMWATER FROM TRENCHING ACTIVITIES. UNDER NO CIRCUMSTANCE IS UNTREATED WATER TO BE RELEASED FROM THE WORK AREA WITHOUT PASSING THROUGH AN EROSION CONTROL DEVICE.

11. PROJECT IS BID UNCLASSIFIED.

LEGEND

- PROJECT LIMITS
- SEDIMENT WATTLE
- INLET PROTECTION
- BC — BOTTOM OF CURB
- TC — TOP OF CURB
- BW — BOTTOM OF WALL
- TW — TOP OF WALL
- 5 — STORMWATER STRUCTURE ID

SITE DATA

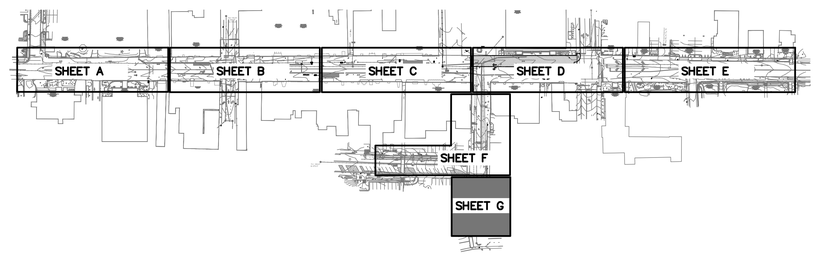
RIVER BASIN: YADKIN – PEE DEE RIVER
RECEIVING WATER: IRISH BUFFALO CREEK

PROJECT LIMITS/DISTURBED ACREAGE: 3.32 ACRES.
PERMITTED DISTURBED AREA: 3.5 ACRES.

MUNICIPALITY: CITY OF CONCORD

KEY NOTES

- (A) PROPOSED STORMWATER MANHOLE. SEE NCDOT STANDARD DETAIL 840.52 AND 840.54. SEE DETAIL SHEET C-505.
- (B) PROPOSED CATCH BASIN WITH FRAME, GRATE, AND HOOD. SEE DETAIL SHEET C-505.
- (C) PROVIDE TEMPORARY STANDARD CATCH BASIN INLET PROTECTION. SEE DETAIL SHEET C-504.
- (D) PROPOSED DROP INLET WITH FRAME AND GRATE. SEE NCDOT STANDARD DETAIL 840.14 AND 840.16 ON DETAIL SHEET D-506.
- (E) PROVIDE TEMPORARY BLOCK AND GRAVEL DROP INLET FILTER. SEE DETAIL SHEET D-504.
- (F) TIE PROPOSED PIPE INTO EXISTING BOX. PATCH AND REPAIR AS NECESSARY TO ENSURE SEALED CONNECTION.
- (G) SILT SAK. SEE DETAIL SHEET C-504.
- (H) MATCH EXISTING GRADE WITH SMOOTH TRANSITION.
- (I) PROPOSED 3" SCHEDULE 40 PVC ROOF DRAIN TO DAYLIGHT AT LOCATIONS SHOWN.
- (J) CONNECT PROPOSED BOX TO EX. PIPE. VERIFY INVERTS OF EXISTING PIPE PRIOR TO BOX INSTALLATION.
- (K) PROPOSED 3" ROOF DRAIN CLEANOUT. SEE DETAIL SHEET C-504.
- (L) PROPOSED 8" SCHEDULE 40 PVC ROOF DRAIN TO DAYLIGHT AT WALL LOCATION SHOWN. PROVIDE 2" AIR GAP BETWEEN PIPE EXIT AND TOP OF 10" NYOPLAST DRAIN. CONNECT 10" DROP IN DRAIN TO PROPOSED BOX AS SHOWN, MIN. SLOPE 2%. PROVIDE CLEANOUTS AS SHOWN.
- (M) SEDIMENT WATTLE. SEE DETAILS SHEET C-504.
- (N) PROPOSED 3" AND 6" SCHEDULE 40 PVC DRAINS FROM EXISTING UTILITY BOX TO TIE TO PROPOSED STORM STRUCTURE.
- (O) PROPOSED 3" SCHEDULE 40 PVC ROOF DRAIN TO DAYLIGHT AT WALL LOCATION SHOWN. PROVIDE 2" AIR GAP BETWEEN PIPE EXIT AND TOP OF 6" DROP IN NYOPLAST DRAIN. CONNECT 6" DROP IN DRAINS TO PROPOSED BOX WITH 6" SCHEDULE 40 PVC AS SHOWN, MIN SLOPE 2%. PROVIDE CLEANOUTS AS SHOWN.
- (P) PROPOSED 6" ROOF DRAIN CLEANOUT. SEE DETAIL SHEET C-504.
- (Q) PROPOSED 8" ROOF DRAIN CLEANOUT. SEE DETAIL SHEET C-504.
- (R) PROPOSED 3" SCHEDULE 40 PVC ROOF DRAIN TO DAYLIGHT TO CURB. PROVIDE CLEANOUTS AS SHOWN.
- (S) ADD ALTERNATE #1 CATCH BASIN WITH FRAME, GRATE, AND HOOD. SEE DETAIL SHEET C-505.
- (T) ADD ALTERNATE #1 15" CLASS IV RCP.
- (U) ADD ALTERNATE #1 PROVIDE TEMPORARY STANDARD CATCH BASIN INLET PROTECTION. SEE DETAIL SHEET C-504.
- (V) MUD MAT TO BE INSTALLED AS TEMPORARY CONSTRUCTION ENTRANCE AND RELOCATED AS NECESSARY TO ACTIVE CONSTRUCTION AREAS.



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SEAL 041598 — 7/22/2021

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

GRADING, DRAINAGE, & EROSION CONTROL - G

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	C.L. CRANWILL			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	B. ROARK	JULY 2021	19.01726	N/A

SHEET
C-207

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS

P:\2019\19.01726-CONCORD\NC-UNION STREETSCAPE PROJECT\DRAWINGS\19001726 UNION BASE.DWG PLOT DATE 7/22/2021 11:18 AM KURTIS DURRANT

GENERAL UTILITY NOTES:

1. LOCATIONS OF EXISTING UTILITIES AS SHOWN ARE APPROXIMATE, AND ARE SHOWN ACCORDING TO A SITE SURVEY PROVIDED BY NORSTAR LAND SURVEYING, INC., UTILITY MAPS PROVIDED BY THE CITY OF CONCORD, AND SEWER TV INSPECTION RECORDS PROVIDED BY THE CITY OF CONCORD. EXACT LOCATIONS SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR. CALL BEFORE YOU DIG, NORTH CAROLINA ONE CALL (1-800-632-4949).

2. ALL PROPOSED DOMESTIC WATER SERVICES SHALL BE 2-INCH TYPE K COPPER UNLESS NOTED OTHERWISE. NEW DOMESTIC WATER SERVICES SHALL BE CONNECTED TO EXISTING SERVICES USING APPROPRIATE COUPLINGS.

3. EXACT LOCATION AND SIZE OF FIRE SPRINKLER SERVICE LINES IS UNKNOWN. THE CONTRACTOR SHALL NOTIFY THE CITY OF CONCORD WATER RESOURCES, ENGINEERING, AND FIRE DEPARTMENTS OF THE LOCATION AND SIZE OF ANY FIRE SPRINKLER LINES DISCOVERED DURING PROJECT EXCAVATION WHICH ARE NOT SHOWN ON THE PLANS AND SHALL COORDINATE TIE-OVER OF EXISTING FIRE SPRINKLER LINES WITH THESE DEPARTMENTS PRIOR TO EXECUTING TIE-OVER WORK. EXISTING FIRE SPRINKLER LINES SHALL BE REPLACED AND CONNECTED TO THE NEW WATER MAIN USING DUCTILE IRON PIPE OF LIKE SIZE AS THE EXISTING FIRE SPRINKLER SERVICE PIPE. ACCORDING TO THE CITY OF CONCORD FIRE DEPARTMENT, THE FOLLOWING PROPERTIES HAVE FIRE SPRINKLER SYSTEMS:
   * 9 NORTH UNION STREET
   * 14 NORTH UNION STREET
   * 30 NORTH UNION STREET
   * 11 SOUTH UNION STREET
   * 30 SOUTH UNION STREET
   * 57 SOUTH UNION STREET

4. NEW AND REPLACEMENT SEWER SERVICE LINES ARE TO BE CONSTRUCTED USING C-900 DR-14 PVC PIPE OF LIKE SIZE AS THE EXISTING SEWER SERVICE LINES, WITH THE MINIMUM SIZE BEING 4" DIAMETER. ALL SEWER LATERAL CLEANOUTS SHALL BE HOUSED IN A TRAFFIC RATED STEEL MINI-MANHOLE (REFER TO DETAIL C-509). CONNECTION TO EXISTING SEWER LATERALS SHALL BE ACCOMPLISHED USING CONNECTION COUPLINGS. NEW SEWER LATERAL CONNECTIONS TO EXISTING SEWER MAINS SHALL BE ACCOMPLISHED USING CAST IRON SADDLE CONNECTORS. NEW SEWER LATERAL CONNECTIONS TO NEW SEWER MAINS SHALL BE ACCOMPLISHED USING SEWER WYE FITTINGS INSTALLED WITH THE MAIN.

5. THE CONTRACTOR SHALL REPORT ANY UNKNOWN WATER AND SEWER SERVICE LINES TO THE CITY OF CONCORD UPON DISCOVERY AND COORDINATE WITH THE CITY OF CONCORD REGARDING REPLACEMENT OR DISCONNECTION/ABANDONMENT/REMOVAL OF UNKNOWN SERVICE LINES.

6. THE CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED MANHOLE TOP ELEVATIONS AND EXISTING MANHOLE INVERTS PRIOR TO CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES. CONTRACTOR SHALL ADJUST ALL PROPOSED SEWER STRUCTURES TO MATCH FINISHED PAVEMENT ELEVATIONS. COSTS OF ADJUSTING STRUCTURE TOPS SHALL BE CONSIDERED INCIDENTAL TO OTHER WORK ON THE PROJECT.

7. UTILITY SERVICE AND FIRE WATER COVERAGE IS TO BE MAINTAINED THROUGHOUT PROJECT CONSTRUCTION EXCEPT FOR BRIEF PERIODS DURING TIE-OVER OF MAINS AND SERVICE LINES. THE CONTRACTOR SHALL PROVIDE TEMPORARY VALVES, FITTINGS, AND CONNECTIONS TO MAINTAIN UTILITY SERVICE AND TO ACCOMMODATE PROJECT PHASING.

8. ALL CONNECTIONS TO EXISTING WATER LINES 4-INCHES AND LARGER SHALL BE ACCOMPLISHED USING MECHANICAL SLEEVES WITH RESTRAINED JOINTS.

9. THE CONTRACTOR SHALL MAINTAIN SEWAGE FLOW IN SEWER SYSTEM AT ALL TIMES AND SHALL PROVIDE BYPASS PUMPING AND/OR PIPING AS REQUIRED. THE CONTRACTOR SHALL SUBMIT A SEWER BYPASS PLAN TO THE CITY ENGINEERING DEPARTMENT FOR APPROVAL PRIOR TO INSTALLATION. NO SANITARY SEWER OVERFLOWS ARE PERMITTED.

10. THE CONTRACTOR SHALL COORDINATE WATER LINE ISOLATION WITH THE DESIGNATED CITY OF CONCORD INSPECTOR.

11. METER BOXES AND METER BOX LIDS SHALL BE INSTALLED FLUSH WITH THE FINAL GRADE.

12. METER VAULTS, METER BOXES, PRV BOXES, AND OTHER WATER RELATED APPURTENANCES SHALL NOT BE INSTALLED IN BRICK PAVER BAND AREAS.

13. THE CONTRACTOR SHALL COORDINATE THE LOCATIONS OF TEMPORARY JUMPER CONNECTION ASSEMBLIES AND BLOW-OFFS WITH THE CITY OF CONCORD DESIGNATED INSPECTOR. THE LOCATION OF THE TEMPORARY JUMPER CONNECTION ASSEMBLIES AND BLOW-OFF ASSEMBLIES MUST NOT IMPEDE VEHICULAR AND PEDESTRIAN TRAFFIC AND OTHER UTILITY RELOCATION WORK. WHERE POSSIBLE, THE PROPOSED HYDRANTS AND/OR EXISTING HYDRANTS SHOULD BE UTILIZED FOR FLUSHING IN LIEU OF TEMPORARY BLOW-OFF ASSEMBLIES. THE CONTRACTOR SHALL ALSO COORDINATE LOCATIONS FOR TEMPORARY JUMPER ASSEMBLIES AND BLOW-OFFS WITHIN CABARRUS ROAD RIGHT OF WAY WITH NCDOT.

14. THE CONTRACTOR SHALL COORDINATE ALL WORK WITHIN 5' OF GAS LINES WITH DOMINION ENERGY PRIOR TO BEGINNING WORK.

15. REFER TO SHEET G-003 FOR SEQUENCING AND TRAFFIC CONTROL INFORMATION. THE CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL PLANS AND COORDINATE TRAFFIC CONTROL WITH THE CITY OF CONCORD AND NCDOT AS APPLICABLE PRIOR TO CLOSING ANY STREET, ROAD, OR SIDEWALK.

16. REFER TO SHEETS G-002 AND SHEETS C-201 THROUGH C-207 FOR PROJECT EROSION CONTROL INFORMATION.

17. THE CONTRACTOR SHALL PREPARE TRAFFIC CONTROL PLANS FOR SUBMISSION TO NCDOT RELATED TO WORK WITHIN NCDOT RIGHT OF WAY.

18. THE CONTRACTOR SHALL PROVIDE SOIL INVESTIGATION, PLANS, DETAILS, DESIGN CALCULATIONS, ETC. FOR TEMPORARY SHORING FOR TRENCHING WITHIN NCDOT RIGHT OF WAY AS REQUIRED BY NCDOT FOR SUBMISSION AND APPROVAL BY NCDOT.

19. THE CONTRACTOR SHALL NOT REMOVE SOIL FROM THE PROJECT WITHOUT APPROVAL FROM THE ENGINEER OR THE CITY'S REPRESENTATIVE. UNSUITABLE SOIL NOT INCORPORATED INTO THE PROJECT WILL BE REMOVED FROM THE JOB SITE AT NO ADDITIONAL COST TO THE CITY.

20. UTILITY TRENCHES SHALL BE CLOSED WITH AN ASPHALT CAP ACCORDING TO THE DETAILS ON C-507 FOR UTILITY TRENCHES IN STREET RECONSTRUCTION AREAS INTENDED TO BE RE-OPENED TO TRAFFIC PRIOR TO COMPLETE PAVEMENT REMOVAL AND IN AREAS WHERE SURFACE MILLING AND OVERLAY ARE SHOWN. CLOSURE OF UTILITY TRENCHES IN AREAS OF STREET RECONSTRUCTION FOLLOWING COMPLETE PAVEMENT REMOVAL DO NOT REQUIRE AN ASPHALT CAP AND SHALL BE ACCOMPLISHED PRIOR TO INSTALLATION OF PERMANENT PAVEMENT.

SPECIAL REQUIREMENTS FOR ASBESTOS CEMENT PIPE

CONSTRUCTION ACTIVITIES WILL REQUIRE CUTTING, MODIFYING, REMOVAL, AND DISPOSAL OF EXISTING ASBESTOS CEMENT (AC) PIPE. WHERE RECORDS ARE AVAILABLE, EXISTING AC PIPE MATERIALS ARE LABELED ON THE PLANS. THE CONTRACTOR SHALL ANTICIPATE ENCOUNTERING AC PIPE THAT MAY NOT BE LABELED. ALL EXISTING AC PIPE SHOWN "TO BE ABANDONED" SHALL BE ABANDONED IN PLACE UNLESS SPECIFICALLY LABELED TO BE REMOVED. AC PIPE TO BE ABANDONED IN PLACE SHALL NOT BE CRUSHED BY MACHINERY. IF AC PIPE IS CRUSHED, THE SITE SHALL BE CONSIDERED A REGULATED ASBESTOS CONTAINING MATERIALS (RACM) SITE AND CONSIDERED AN ACTIVE WASTE DISPOSAL SITE. THE CRUSHED PIPE AND CONTAMINATED SOIL SHALL BE REMOVED, HANDLED, AND DISPOSED BY A LICENSED ASBESTOS REMOVAL CONTRACTOR FOLLOWING REQUIRED PROTOCOLS FOR HANDLING AND DISPOSAL OF ASBESTOS. WHERE EXCAVATIONS OR GRADING REQUIRED FOR CONSTRUCTION EXPOSES EXISTING AC PIPES, THE WORK SITE SHALL BE MARKED WITH SIGNAGE WARNING OF ASBESTOS. EXPOSED PIPE, WHETHER INTACT OR NOT, SHALL BE HANDLED AND DISPOSED OF BY A LICENSED ASBESTOS REMOVAL CONTRACTOR. ALL WORK REQUIRING HANDLING, REMOVAL, OR DISPOSAL OF AC PIPE SHALL BE DONE IN STRICT ACCORDANCE WITH NCGS CHAPTER 130A PUBLIC HEALTH ARTICLE 19: ASBESTOS HAZARD MANAGEMENT PROGRAM.

WORKER TRAINING AND WORKPLACE RULES AND PROCEDURES SHALL MEET THE MINIMUM REQUIREMENTS OF NC AND FEDERAL OSHA RULES.

WHERE THE WORK REQUIRES CONNECTING INTO EXISTING AC PIPING, THE FOLLOWING REQUIREMENTS SHALL APPLY:

A. ALL PERSONNEL INVOLVED IN THE WORK SHALL RECEIVE TRAINING IN PROPER PROCEDURES FOR HANDLING AND WORKING WITH AC PIPE

B. ALL PERSONNEL SHALL BE EQUIPPED WITH APPROVED PERSONAL PROTECTIVE EQUIPMENT (PPE) INCLUDING SHOES, CLOTHING, AND BREATHING EQUIPMENT.

C. THE CONTRACTOR SHALL DESIGNATE A "PERSON IN CHARGE" WHO SHALL BE PRESENT AT ALL TIMES WHEN AC PIPE IS BEING MODIFIED.

D. ALL PIPE CUTTING SHALL BE BY APPROVED "SNAP CUTTERS". THE USE OF SAWS OR GRINDERS EMPLOYING CARBIDE BLADES IS STRICTLY PROHIBITED.

E. COMPRESSED AIR SHALL NEVER BE USED TO BLOW OR CLEAN PIPE CUTS WHERE NEW PIPES ARE TO BE CONNECTED TO EXISTING AC PIPE.

F. MODIFIED WATER CONTAINING SURFACTANTS SHALL BE USED TO LUBRICATE AND WET ALL PIPE CUTS TO MINIMIZE PRODUCTION OF DUST.

G. WORK SITES SHALL BE ROPED OFF AND SIGNS WARNING OF ASBESTOS SHALL BE POSTED.

H. ALL SECTIONS OF AC PIPE CUT FOR CONNECTIONS OF NEW PIPING SHALL BE REMOVED FROM THE EXCAVATION, DOUBLE BAGGED IN HEAVY PLASTIC WRAP, LABELED AS "ASBESTOS" AND PLACED IN A SECURE STORAGE AREA PENDING TRANSPORT AND DISPOSAL TO A LICENSED ASBESTOS DISPOSAL LANDFILL.

I. WHERE THE WORK REQUIRES PREPARING THE CUT END OF AN EXISTING AC PIPE FOR CONNECTION OF A NEW PIPE, ONLY TOOLS APPROVED FOR THIS WORK SHALL BE USED. PIPE SHALL BE CONTINUOUSLY LUBRICATED WITH "MODIFIED WATER" TO LIMIT DUST.

J. CLEAN UP AT WORK SITES SHALL NEVER EMPLOY COMPRESSED AIR, BLOWERS, MECHANICAL BROOMS, OR OTHER DEVICES THAT WILL PRODUCE DUST.

K. AT THE END OF EACH WORK DAY WHERE AC PIPE IS CUT, HANDLED, MODIFIED, OR REMOVED, ALL WORKERS' PERSONAL PROTECTION EQUIPMENT (PPE) SHALL BE STORED AT A SUITABLE LOCATION FOR CLEANING, DECONTAMINATION DISPOSAL, OR FUTURE USE. WORKERS INVOLVED IN CUTTING, REMOVAL, AND DISPOSAL OF AC PIPE SHALL NOT BE ALLOWED TO REMOVE PPE FROM THE WORK SITE.

L. REFER TO PROJECT SPECIFICATIONS AND SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.

CITY OF CONCORD UTILITY NOTES:

1. PER CITY OF CONCORD CODE OF ORDINANCE CHAPTER 62, ARTICLE 3, SECTION 62-98 (2) ALL MATERIALS, EQUIPMENT, LABOR, AND WORKMANSHIP ASSOCIATED WITH PUBLIC WATER AND /OR SEWER EXTENSION AND/OR MODIFICATION SHALL BE IN ACCORDANCE WITH AND SUBJECT TO THE WATER AND SEWER AUTHORITY OF CABARRUS COUNTY'S STANDARD SPECIFICATIONS; THE CITY OF CONCORD'S ORDINANCES, POLICIES, AND STANDARD SPECIFICATIONS, AND THE NORTH CAROLINA ADMINISTRATIVE CODE FOR WASTEWATER COLLECTION AND WATER DISTRIBUTION SYSTEMS. IN THE EVENT OF CONFLICT BETWEEN THE WATER AND SEWER AUTHORITY OF CABARRUS COUNTY'S STANDARD SPECIFICATIONS; THE CITY OF CONCORD'S ORDINANCES, POLICIES, AND STANDARD SPECIFICATIONS, OR THE NORTH CAROLINA ADMINISTRATIVE CODE, THE MORE RESTRICTIVE REQUIREMENTS SHALL APPLY.

2. REVIEW AND APPROVAL OF THE PLANS DOES NOT RELIEVE THE OWNER, CONTRACTOR, OR DEVELOPER FROM MEETING THE REQUIREMENTS OF THE CITY OF CONCORD'S OR CABARRUS COUNTY ORDINANCES, POLICIES, AND STANDARD SPECIFICATIONS, (AS APPLICABLE), CONCORD WATER & SEWER POLICIES AND TECHNICAL SPECIFICATIONS, THE "STANDARD SPECIFICATION FOR WASTEWATER COLLECTION & WASTE DISTRIBUTION FOR CABARRUS COUNTY (WSACC MANUAL) AND ANY OTHER LOCAL, STATE, AND FEDERAL REGULATIONS & APPROVALS.

3. THE CONTRACTOR MUST CONTACT THE CITY OF CONCORD ENGINEERING CONSTRUCTION MANAGER AT 704-920-5425 AT LEAST 24-HOURS PRIOR TO INITIATING ANY CONSTRUCTION ACTIVITY.

4. THE EXISTING WATER MAIN VALVE RIMS AND STEMS AND THE EXISTING SEWER MAIN MANHOLES RIMS ARE TO BE RAISED OR LOWERED TO FINAL GRADE, AS APPLICABLE AND AT LEAST 3-FT OF GROUND COVER IS TO BE MAINTAINED OVER THE EXISTING UTILITIES AT ALL TIMES PER THE CITY OF CONCORD CODE OF ORDINANCE CHAPTER 62, ARTICLE 3, SECTION 62-98.

5. CONCORD CODE OF ORDINANCES CHAPTER 62, ARTICLE II WATER AND SEWER SERVICE, SEC. 62-34(I) – THE CUSTOMER SHALL BE RESPONSIBLE FOR INSTALLING THE NECESSARY APPROVED DEVICE(S) TO MAKE ANY ADJUSTMENTS TO THE WATER PRESSURE SUPPLIED BY CONCORD UTILITIES AND SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL SUCH DEVICES."

6. PER THE CITY OF CONCORD CODE OF ORDINANCE CHAPTER 62, ARTICLE 3, SECTION 62-98- THE FOLLOWING MINIMUM SEPARATIONS MUST BE INDICATED, UNLESS OTHERWISE APPROVED BY THE CITY.
   * A MINIMUM HORIZONTAL SEPARATION OF FIVE FEET SHALL BE MAINTAINED BETWEEN ANY TYPE OF MAINTENANCE OBSTRUCTION AND THE CITY'S WATER DISTRIBUTION LINES, WASTEWATER COLLECTION LINES, AND ASSOCIATED APPURTENANCES, UNLESS AN EXCEPTION IS GRANTED. GREATER SEPARATION DISTANCES MAY BE REQUIRED AS SPECIFIED BY FEDERAL, STATE, OR LOCAL REGULATIONS.
   * A MINIMUM VERTICAL SEPARATION OF TWO FEET SHALL BE MAINTAINED BETWEEN ANY TYPE OF MAINTENANCE OBSTRUCTION, INCLUDING BUT NOT LIMITED TO ANY OTHER UTILITY PROVIDER'S LINES OR EQUIPMENT, AND THE CITY WATER DISTRIBUTION LINES, WASTEWATER COLLECTION LINES, AND ASSOCIATED APPURTENANCES, UNLESS AN EXCEPTION IS GRANTED. IF AN EXCEPTION IS GRANTED, A MINIMUM VERTICAL SEPARATION OF ONE FOOT MUST BE MAINTAINED AND THE CITY WATER DISTRIBUTION LINES, WASTEWATER COLLECTION LINES, AND ASSOCIATED APPURTENANCES SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE OR AN APPROVED FERROUS MATERIAL WITH JOINTS THAT ARE EQUIVALENT TO POTABLE WATER MAIN STANDARDS FOR A DISTANCE OF TEN FEET ON EITHER SIDE OF THE POINT OF CROSSING. GREATER SEPARATION DISTANCES MAY BE REQUIRED AS SPECIFIED BY FEDERAL, STATE, OR LOCAL REGULATIONS.
   * A MINIMUM HORIZONTAL SEPARATION OF TEN FEET SHALL BE MAINTAINED BETWEEN THE CITY WATER DISTRIBUTION SYSTEM AND WASTEWATER COLLECTION LINES, AND ASSOCIATED APPURTENANCES, UNLESS AN EXCEPTION IS GRANTED.

7. CONTRACTOR SHALL OBTAIN REQUIRED PLUMBING PERMITS AND PAY APPLICABLE PLUMBING PERMITTING CHARGES AND FEES; AND COMPLY WITH THE REQUIRED PLUMBING CODE IN ASSOCIATION WITH ESTABLISHING THE WATER AND SEWER SERVICE CONNECTIONS TO THE PUBLIC MAINS.

8. THE DURATION OF ANY SERVICE DISRUPTION SHALL BE MINIMIZED. THE CONTRACTOR SHALL NOTIFY THE CITY OF CONCORD ENGINEERING CONSTRUCTION MANAGER, GARY STANSBURY, AT 704-920-5425 AT LEAST 48 HOURS IN ADVANCE OF ANY SCHEDULED SERVICE DISRUPTION. PROVIDE NOTICE ON A CITY APPROVED FORM TO CITY OF CONCORD CUSTOMERS SPECIFYING THE DAY AND DURATION OF ANY SCHEDULE DISRUPTION, INCLUDE APPROPRIATE CITY CONTACT NUMBERS

9. THE CONTRACTOR SHALL PROVIDE TEMPORARY POTABLE WATER SUPPLIES TO CITY OF CONCORD CUSTOMERS WHEN THE DRUATION OF WATER SERVICE DISRUPTION EXCEEDS 6 HOURS OR AS DIRECTED BY THE DESIGNATED CITY INSPECTOR. THIS PROVISION IS CONSIDERED INCIDENTAL TO THE WATER LINE. NO ADDITIONAL PAYMENT WILL BE MADE.

UTILITIES LEGEND

EXISTING		PROPOSED
SS	SEWER MANHOLE	
	SEWER CLEAN-OUT WITH MINI-MANHOLE (REFER TO DETAIL SHEET C-509)	CO
	FIRE HYDRANT	
	GATE VALVE	
	END CAP	
	MECHANICAL JOINT CONNECTION SLEEVE	
W	2" WATER METER IN POLYMER CONCRETE METER BOX AND LID (REFER TO DETAIL SHEET C-508)	WM
	2" PRESSURE REDUCING VALVE AND SHUT-OFF VALVE IN POLYMER CONCRETE METER BOX AND LID	PRV
	3/4" ABOVE GROUND REDUCED PRESSURE BACKFLOW ASSEMBLY (REFER TO DETAIL SHEET C-510)	RP
	AIR RELEASE VALVE IN POLYMER CONCRETE METER BOX (REFER TO DETAIL SHEET C-508)	ARV
	2" WATER SERVICE GATE VALVE IN VALVE BOX (REFER TO DETAIL SHEET C-508)	
	2" TAPPING SADDLE WITH CORPORATION STOP (REFER TO DETAIL SHEET C-508)	
	IN-GROUND HOSE BIB IN LOCKABLE BOX	
	EXIST. UTILITY TO BE CAPPED AND ABANDONED	
——S——	SEWER LINE	S
——S——	SEWER SERVICE LINE	S
——W——	WATER LINE	W
	RESTRAINED JOINT WATER LINE	W
——W——	DOMESTIC WATER SERVICE LINE	W
——W——	FIRE WATER SERVICE LINE	FW
	EXISTING UTILITY LINE TO BE REMOVED	
	EXIST. UTILITY TO BE PLUGGED, FILLED WITH FLOWABLE FILL, AND ABANDONED	

PUBLIC WATER DISTRIBUTION SYSTEM AND WASTEWATER COLLECTION SYSTEM IMPROVEMENTS SHALL BE CONSTRUCTED ACCORDING TO WATER AND SEWER AUTHORITY OF CABARRUS COUNTY'S (WSACC) "STANDARD SPECIFICATIONS FOR WASTEWATER COLLECTION AND WATER DISTRIBUTION CONSTRUCTION FOR CABARRUS COUNTY," DATED AUGUST 2006 AND THE CITY OF CONCORD DEVELOPMENT ORDINANCE, CODE OF ORDINANCES CHAPTER 62 AND TECHNICAL STANDARDS

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 041598 MATTHEW D. OETTING 7/22/2021

CALL 811 BEFORE YOU DIG 811 SAFE DIGGING PARTNER

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS

CITY OF CONCORD

CABARRUS COUNTY, NORTH CAROLINA

10 0 5 10 20
GRAPHIC SCALE DIVISION VALUE = 10 FEET

OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	M. OETTING
PROJECT MANAGER	REVIEWER
M.J. NORRIS	D.G. CHAPMAN

UTILITY NOTES AND LEGEND

DATE	PROJECT #	FUNDING #
JULY, 2021	19.01726	N/A

SHEET
C-301

P:\2019\19.01726-CONCORDNC-UNION STREETSCAPE PROJECT\DRAWINGS\19.01726 UNION UTILITIES.DWG PLOT DATE 7/22/2021 8:10 AM RUSSELL COX

PLAN

KILLARNEY AVE.

CONC. DEADMAN

16" RJ CAP WITH EXCAVATABLE CONCRETE THRUST BLOCKING

6" RJ CAP WITH EXCAVATABLE CONCRETE THRUST BLOCKING

PROP. 42 LF± 6" D.I. WATER LINE

6"x6" TEE

6" GATE VALVE

PROP. 21 LF± 16" D.I. WATER LINE

FIRE HYDRANT ASSEMBLY

PROP. 12 LF± 6" D.I. WATER LINE

16"x6" TEE

6" GATE VALVE

16" GATE VALVE

8" GATE VALVE

CONNECT TO EXIST. 8" MAIN w/ 8" RJ SLEEVE

REMOVE EXIST. FIRE HYDRANT

STA. 0+30 (2) CONC. DEADMAN

EXIST. 8" AC WATER LINE

EXIST. 8" GATE VALVE APPROX. 566' SW

EXIST. 16" DIP WATER LINE

EXIST. 16" GATE VALVE APPROX. 821' SW

EXIST. 6" CI WATER LINE

TEMP. REMOVE AND REPLACE EXIST. DRINKING FOUNTAIN

EXIST. METER BOX TO REMAIN

CONNECT TO EXIST. 6" MAIN w/ 6" RJ SLEEVE

6" 90° BEND

6" GATE VALVE

REMOVE EXIST. 6" CI WATER LIE

STA. 0+93 16"x6" TEE

STA. 0+77 16" GATE VALVE

PI: 0+73.10 16"x16" TEE

(2) 8" 22.5° VERT. BENDS

PROP. 17 LF± 8" D.I. WATER LINE

STA. 0+56 16"x8" TEE

PI: 0+52.28 16" 90° BEND

STA. 0+45 16" 11.25° VERT. BEND

STA. 0+40 16" GATE VALVE

STA. 0+35 CONNECT TO EXIST. 16" MAIN w/ 16" RJ SLEEVE

REPLACE 20 LF EXIST. 8" VCP SEWER WITH 8" DI CENTERED AT CROSSING (REFER TO C-308) FINISHED SURFACE 710.3 BOTTOM SANITARY 705.2 TOP WATER LINE 703.2

FINISHED SURFACE 710.4 BOTTOM GAS LINE 707.7± TOP WATER LINE 705.7

NO WATER LINE JOINTS WITHIN 10' OF GAS LINE CROSSING AND WATER LINE SHALL BE POLYETHYLENE WRAPPED WITHIN 10' OF GAS LINE CROSSING

3/4" WATER FOUNTAIN SERVICE:
* 3/4" TAPPING SADDLE w/ CORP. STOP
* 3/4" TYPE "K" COPPER WATER LINE
* 3/4" WATER SERVICE GATE VALVE IN VALVE BOX
* CONNECTION TO EXIST. WATER SERVICE LINE WITH TRANSITION AND CONNECTION FITTINGS AS REQUIRED

GAZEBO (CANNON)

CAP AND REMOVE ABANDONED 1" GALVANIZED WATER SERVICE

MAINTAIN 10' HORIZ. SEPARATION BETWEEN WATER AND SEWER MAINS

UNION STREET

EXIST. 8" VCP SEWER TO REMAIN

FINISHED SURFACE 710.8 BOTTOM PROP. DUCT BANK 707.7 TOP WATER LINE 705.7

REMOVE EXIST. 16" DIP WATER LINE

REMOVE EXIST. 8" AC WATER LINE

TYPICAL 2" DOMESTIC WATER SERVICE:
* 2" TAPPING SADDLE w/ CORP. STOP
* 2" TYPE "K" COPPER WATER LINE
* 2" WATER SERVICE GATE VALVE IN VALVE BOX
* 2" WATER METER IN METER BOX
* 2" PRESSURE REDUCING VALVE AND SHUT OFF VALVE IN METER BOX
* CONNECTION TO EXIST. WATER SERVICE LINE WITH TRANSITION AND CONNECTION FITTINGS AS REQUIRED

EXIST. GAS MAIN TO REMAIN

PROP. ELEC. DUCT (REFER TO ELEC.)

AIR RELEASE VALVE IN METER BOX, 3/4" COPPER SERVICE, AND 3/4" TAPPING SADDLE w/ CORP. STOP (REFER TO DETAIL C-508)

PROP. 402 LF± 16" D.I. WATER LINE

PROP. FIBER DUCT (REFER TO ELEC.)

CONNECT TO EXIST. FIRE SPRINKLER SERVICE VALVE

(2) 6" 45° BENDS

6" RJ SLEEVE

FINISHED SURFACE 711.2 BOTTOM PROP. DRAIN LINES 707.7 TOP WATER LINE 706.5

CONNECT DRAIN LINES TO CATCH BASIN

FINISHED SURFACE 710.8 BOTTOM EXIST GAS LINE ±708 TOP WATER LINE 706.2

MAINTAIN 10' HORIZ. SEPARATION BETWEEN WATER AND SEWER MAINS

PROP. 8" D.I. SEWER

STA. 3+64 LT. 16"x6" TEE & 6" GATE VALVE IN VALVE BOX FOR FIRE SPRINKLER CONNECTION (20 LF 6" D.I. LINE) VERIFY SIZE AND LOCATION WITH CITY OF CONCORD

EXIST. BRICK M.H. 211.2155

3/4" TYPE K COPPER WATER SERVICE LINE

2" IRRIGATION WATER SERVICE:
* 2" TAPPING SADDLE w/ CORP. STOP
* 2" TYPE "K" COPPER WATER LINE
* 2" WATER SERVICE GATE VALVE IN VALVE BOX
* 2" WATER METER IN METER BOX
* 3/4" PRESSURE REDUCING VALVE AND SHUT OFF VALVE IN METER BOX
* ABOVE GROUND 2" REDUCED PRESSURE BACKFLOW ASSEMBLY IN HEATED ENCLOSURE (REFER TO DETAIL)

REMOVE EXIST. WATER SERVICE LINE, METER, AND METER BOX (TYPICAL)

ABANDONED 12" WATER LINE

=MATCH LINE STA. 4+39

PROFILE
SCALE: HORIZ. 1"= 10'
VERT. 1"= 2'

PUBLIC WATER DISTRIBUTION SYSTEM AND WASTEWATER COLLECTION SYSTEM IMPROVEMENTS SHALL BE CONSTRUCTED ACCORDING TO WATER AND SEWER AUTHORITY OF CABARRUS COUNTY'S (WSACC) "STANDARD SPECIFICATIONS FOR WASTEWATER COLLECTION AND WATER DISTRIBUTION CONSTRUCTION FOR CABARRUS COUNTY," DATED AUGUST 2006 AND THE CITY OF CONCORD DEVELOPMENT ORDINANCE, CODE OF ORDINANCES CHAPTER 62 AND TECHNICAL STANDARDS

EXIST. GRADE

STA. 0+40 PROP. 16" GATE VALVE

CONTRACTOR SHALL VERIFY DEPTH OF EXIST. 16" WATER LINE PRIOR TO COMMENCING ANY CONSTRUCTION

PROP. CONC. DEADMAN (SEE DETAIL SHEET C-508)

STA. 0+35 CONNECT TO EXIST. WATER LINE WITH 16" RJ SLEEVE

STA. 0+45 PROP. 16" 11.25° VERT. BEND

RESTRAIN ALL JOINTS

MATCH LINE STA. 0+48

EXIST. GRADE

PROP. GRADE

STA. 0+77 PROP. 16" GATE VALVE

EXIST. 6" WATER LINE TO BE REMOVED

PROP. ELEC. DUCT BANK

PROVIDE 24" MIN. CLEARANCE

REPLACE 20 LF EXIST. 8" VCP SEWER WITH 8" DI CENTERED AT CROSSING (REFER TO C-308)

PROVIDE 24" MIN. CLEARANCE

STA. 0+93 PROP. 16"x6" TEE

STA. 0+73 PROP. 16"x16" TEE

STA. 0+68 PROP. 16" 22.5° VERT. BEND

STA. 0+56 PROP. 16"x8" TEE

STA. 0+52 PROP. 16" 90° BEND

RESTRAIN ALL JOINTS

STA. 1+83

PROP. 16" D.I. WATER MAIN

EXIST. WATERSERVICE LINE TO BE REMOVED IF POSSIBLE EXIST. FIRE SPRINKLER (UNKNOWN DEPTH)

PROP. 6" VAULT DRAIN

EXIST. GAS LINE - NO MECHANICAL EXCAVATION WITHIN 5' (UNKNOWN DEPTH-CONTRACTOR SHALL VERIFY)

PROP. WATER SERVICE CONNECTION (TYPICAL)

STA. 3+64 TEE FOR FIRE SPRINKLER SERVICE CONNECTION (CONTRACTOR SHALL VERIFY SIZE AND LOCATION IN FIELD AND WITH THE CITY OF CONCORD)

STA. 3+24

STA. 4+05

RESTRAIN ALL JOINTS

MATCH LINE STA. 4+39

0+00 1+00 2+00 3+00 4+00

710 720 700

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PROFESSIONAL ENGINEER SEAL 041598 MICHAEL R. MCGILL NORTH CAROLINA 7/22/2021

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NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS

CITY OF CONCORD

CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	M. OETTING
PROJECT MANAGER	REVIEWER
M.J. NORRIS	D.G. CHAPMAN

PROPOSED WATER LINE
PLAN - PROFILE
AREA - A

DATE	PROJECT #	FUNDING #
JULY, 2021	19.01726	N/A

SHEET
C-302

P:\2019\19.01726-CONCORD\C-UNION STREET\SCAPE PROJECT\DRAWINGS\1901726 UNION UTILITIES.DWG PLOT DATE: 7/22/2021 8:11 AM RUSSELL COX

DP-
MENT

PLAN

NOTE: ALL PERMANENT UTILITY TRENCH BACKFILL WITHIN CABARRUS AVE. RIGHT OF WAY SHALL BE PERFORMED ACCORDING TO NCDOT UTILITY CUT REPLACEMENT DETAIL, SHEET C-507

TYPICAL 2" DOMESTIC WATER SERVICE:
- 2" TAPPING SADDLE w/ CORP. STOP
- 2" TYPE "K" COPPER WATER LINE
- 2" WATER SERVICE GATE VALVE IN VALVE BOX
- 2" WATER METER IN METER BOX
- 2" PRESSURE REDUCING VALVE AND SHUT OFF VALVE IN METER BOX
- CONNECTION TO EXIST. WATER SERVICE LINE WITH TRANSITION AND CONNECTION FITTINGS AS REQUIRED

MATCH LINE STA. 4+39

STA. 4+98
PROP. 16" GATE VALVE

STA. 4+95 RT.
PROP. 16" x 6" TEE FOR FIRE SPRINKLER CONNECTION (37 LF 6" D.I. LINE) VERIFY SIZE AND LOCATION WITH CITY OF CONCORD

PROP. 22 LF± 4" D.I. WATER LINE

SEE WATER LINE ENLARGEMENT "A" SHEET C-307

EXIST. GAS MAIN TO REMAIN

MAINTAIN 10' HORIZ. SEPARATION BETWEEN WATER AND SEWER MAINS

PROP. FH ASSEMBLY
9 LF± 6" DI WATER LINE
6" GATE VALVE

FINISHED SURFACE 707.1
BOTTOM STORM 702.6
TOP WATER LINE 700.9

EXIST. 12" VCP SEWER TO REMAIN

EXIST. 10" CI WATER LINE TO REMAIN

REMOVE EXIST. 10" WATER MAIN AND REPLACE WITH 12" DIP WATER MAIN (REFER TO C-306)

STA. 5+91
16" 11.25° VERT. BEND

FINISHED SURFACE 706.2
BOTTOM WATER LINE 699.7
TOP SANITARY SEWER 698.2

NCDOT R/W

CABARRUS AVE. (S.R. 1002)

STA. 5+96
PROP. 16"x12" CROSS

STA. 6+30
PROP. 16" GATE VALVE

STA. 6+00
PROP. 16" 45° BEND

STA. 5+61 PROP.
16" GATE VALVE

STA. 5+58 PROP.
16"x6" FH TEE

PROP. 157 LF± 16" D.I. WATER LINE

PROP. 8" D.I. SEWER

STA. 4+73
PROP. 16"x4" TEE

REMOVE EXIST. 8" AC WATER LINE

REMOVE EXIST. 16" DIP WATER LINE

PROP. 6" GATE VALVE

(2) 6" 45° BENDS

CONNECT DOMESTIC SERVICE TO FIRE SPRINKLER SERVICE WITH 2" TAPPING SADDLE w/ CORP. STOP

CONNECT TO EXIST. FIRE SPRINKLER w/ RJ SLEEVE

REMOVE EXIST. F.H. ASSEMBLY

REMOVE EXIST. ABANDONED UTILITY MANHOLE

STA. 30+74
CONNECT TO EXIST. 10" WATER LINE WITH RJ SLEEVE

EXIST. 12" VCP SEWER TO REMAIN

TO EXIST. M.H. 211.2195

EXIST. 10" CI WATER LINE

STA. 6+19 PROP.
16" 45° BEND

FINISHED SURFACE 705.6
BOTTOM GAS LINE ±703
TOP WATER LINE 698.0
NO WATER LINE JOINTS BETWEEN NEAREST FITTINGS TO GAS LINE CROSSING AND WATER LINE SHALL BE POLYETHYLENE WRAPPED WITHIN 10' OF GAS LINE CROSSING

FINISHED SURFACE 704.6
BOTTOM STORM 700.2
TOP WATER LINE 697.7

FINISHED SURFACE 705.8
BOTTOM EXIST. DUCT BANK 700.4
TOP WATER LINE 699.4

REMOVE EXIST. F.H. ASSEMBLY

PROP. FH ASSEMBLY
24 LF± 6" DI WATER LINE
6" GATE VALVE

PROP. ELEC. DUCT (REFER TO ELEC.)

UNION STREET

EXIST. 12" VCP SEWER TO REMAIN

PROP. FIBER DUCT (REFER TO ELEC.)

STA. 6+53
PROP. 16"x6" FH TEE

PROP. 242 LF± 16" D.I. WATER LINE

REMOVE EXIST. 10" DIP WATER LINE

REMOVE EXIST. 8" AC WATER LINE

REMOVE EXIST. WATER SERVICE LINE, METER, AND METER BOX (TYPICAL)

PROP. 60 LF± 4" D.I. WATER LINE

SEE WATER LINE ENLARGEMENT "B" SHEET C-307

STA. 7+36
PROP. 16"x4" TEE

MAINTAIN 10' HORIZ. SEPARATION BETWEEN WATER AND SEWER MAINS

STA. 8+08
PROP. 16"x4" TEE

FINISHED SURFACE 700.7
BOTTOM STORM 696.5
TOP WATER LINE 694.3

MATCH LINE STA. 8+38

PROFILE

SCALE: HORIZ. 1"= 10'
VERT. 1"=2'

NOTE: ALL PERMANENT UTILITY TRENCH BACKFILL WITHIN CABARRUS AVE. RIGHT OF WAY SHALL BE PERFORMED ACCORDING TO NCDOT UTILITY CUT REPLACEMENT DETAIL, SHEET C-507

NCDOT R/W

EXIST. GAS SERVICE LINE (UNKNOWN DEPTH CONTRACTOR SHALL VERIFY)

EXIST. 4" WATER SERVICE TO BE REMOVED (UNKNOWN DEPTH)

EXIST. 10" WATER LINE TO BE REMOVED AND REPLACED (DEPTH UNKNOWN)

EXIST. 2'x2' (+/-) HIGH VOLTAGE ELEC. DUCT BANK (DEPTH UNKNOWN)

EXIST. 4" GAS LINE – NO MECHANICAL EXCAVATION WITHIN 5' (UNKNOWN DEPTH CONTRACTOR SHALL VERIFY)

EXIST. 6" WATER LINE TO BE REMOVED (DEPTH UNKNOWN)

PROP. 18" STORM DRAIN

EXIST. GRADE

PROP. GRADE

720
710
700
690

MATCH LINE STA. 4+39

STA. 4+43

STA. 4+73
PROP. 16"x4" TEE

STA. 4+95
16"x6" TEE FOR FIRE SPRINKLER SERVICE CONNECTION (CONTRACTOR SHALL VERIFY SIZE AND LOCATION IN FIELD AND WITH THE CITY OF CONCORD)

STA. 4+98
PROP. 16" GATE VALVE

PROVIDE 24" MIN. CLEARANCE

PROP. 16" D.I. WATER MAIN

STA. 5+58
PROP. 16"x6" FH TEE

STA. 5+61
PROP. 16" GATE VALVE

PROVIDE 18" MIN. CLEARANCE

EXIST. 12" VCP SEWER

STA. 6+00
PROP. 16" 45° BEND

STA. 6+19
PROP. 16" 45° BEND

STA. 6+30
PROP. 16" GATE VALVE

RESTRAIN ALL JOINTS

EXIST. 12" STORM DRAIN TO BE REMOVED

PROP. FIBER DUCT BANK

PROVIDE 12" MIN. CLEARANCE CONTRACTOR SHALL VERIFY DUCT BANK SIZE, TUNNEL BELOW DUCT BANK USING HAND TOOLS FOR WATER LINE INSTALLATION, AND BACKFILL WITH FLOWABLE FILL

PROP. WATER SERVICE CONNECTION (TYPICAL)

STA. 6+53
PROP. 16"x6" FH TEE

STA. 8+93

STA. 7+06

STA. 7+36
PROP. 16"x4" TEE

STA. 7+66

RESTRAIN ALL JOINTS

PROP. 18" STORM DRAIN

PROVIDE 24" MIN. CLEARANCE

STA. 8+08
PROP. 16"x4" TEE

MATCH LINE STA. 8+38

5+00 6+00 7+00 8+00

PUBLIC WATER DISTRIBUTION SYSTEM AND WASTEWATER COLLECTION SYSTEM IMPROVEMENTS SHALL BE CONSTRUCTED ACCORDING TO WATER AND SEWER AUTHORITY OF CABARRUS COUNTYS (WSACC) "STANDARD SPECIFICATIONS FOR WASTEWATER COLLECTION AND WATER DISTRIBUTION CONSTRUCTION FOR CABARRUS COUNTY," DATED AUGUST 2006 AND THE CITY OF CONCORD DEVELOPMENT ORDINANCE, CODE OF ORDINANCES CHAPTER 62 AND TECHNICAL STANDARDS

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 041598 MATTHEW R. OETTING 7/22/2021

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NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS

CITY OF CONCORD

CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

PROPOSED WATER LINE
PLAN - PROFILE
AREA - B

SHEET
C-303

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	M. OETTING			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	D.G. CHAPMAN	JULY, 2021	19.01726	N/A

P:\2019\19.01726-CONCORDNC-UNION STREET\SCAPE PROJECT\DRAWINGS\1901726 UNION UTILITIES.DWG PLOT DATE: 7/22/2021 8:11 AM RUSSELL COX

PLAN

MAINTAIN 10' HORIZ. SEPARATION BETWEEN WATER AND SEWER MAINS

STA. 8+76
PROP. 16"x6" TEE

STA. 8+88 RT.
16"x6" TEE & 6" GATE VALVE IN VALVE BOX FOR FIRE SPRINKLER CONNECTION (20 LF 6" D.I. LINE) VERIFY SIZE AND LOCATION WITH CITY OF CONCORD

STA. 8+95
PROP. 16"x6" FH TEE

PROP. FH ASSEMBLY
20 LF± 6" DI WATER LINE
6" GATE VALVE

REPLACE 20 LF EXIST. 12" VCP SEWER WITH 12" DI CENTERED AT CROSSING

REMOVE EXIST. F.H. ASSEMBLY

EXIST. BRICK M.H. 211.2190

CAP AND REMOVE EXIST WATER SERVICE LINE

CAP AND REMOVE EXIST WATER SERVICE LINE

CAP AND REMOVE EXIST WATER SERVICE LINE

PROP. ELEC. DUCT (REFER TO ELEC.)

PROP. FIBER DUCT (REFER TO ELEC.)

UNION STREET

STA. 9+88
PROP. 16"x6" FH TEE

PI: 10+28.00

PROP. 390 LF 16" D.I. WATER LINE

EXIST. 12" VCP SEWER TO REMAIN

EXIST. 8" D.I. SEWER

EXIST. 6" WATER LINE TO BE REMOVED (NOT THIS CONTRACT)

EXIST. METER VAULT TO REMAIN

PROP. 34 LF 6" D.I. WATER LINE

REMOVE EXIST. F.H.

6"x6" TEE

CONNECT TO EXIST. 4" SERVICE LINE w/ RJ SLEEVE

MEANS AVE.

EXIST. 10" WATER LINE TO BE REMOVED (NOT THIS CONTRACT)

EXIST. 12" D.I. WATER LINE TO REMAIN

CONC. DEADMAN

PROP. 26 LF 12" D.I. WATER LINE (REFER TO C-306)

6"x4" REDUCER

6" GATE VALVE

FIRE HYDRANT ASSEMBLY

CONNECT TO EXIST. 12" WATER LINE w/ RJ 45° BEND

12" RJ SLEEVE

12" 45° BEND

12" GATE VALVE

REMOVE EXIST. 12" WATER MAIN

PI: 12+27.08

STA. 11+72
16" GATE VALVE

STA. 11+90 LT
16"x12" TEE

STA. 12+08
16" GATE VALVE

REMOVE EXIST. 8" AC WATER LINE

STA. 12+27
16" 45° BEND

REMOVE EXIST. 16" DIP WATER LINE

MATCH LINE STA. 8+38

MATCH LINE STA. 12+28

17.0'

14.7'

21'

8'

9+00

10+00

11+00

12+00

PROP. 25 LF 6" D.I. WATER LINE

SEE WATER LINE ENLARGEMENT "C" ON SHEET C-307

PROP. FH ASSEMBLY
12 LF± 6" DI WATER LINE
6" GATE VALVE

REMOVE EXIST. F.H. ASSEMBLY

REMOVE EXIST. WATER SERVICE LINE, METER, AND METER BOX (TYPICAL)

REMOVE EXIST. 8" AC WATER LINE

REMOVE EXIST. 10" DIP WATER LINE

STA. 10+28 & 10+36
16" 45° BENDS

PROP. ELEC. DUCT (REFER TO ELEC.)

PROP. 25 LF 6" D.I. WATER LINE

CONNECT TO EXIST. FIRE SPRINKLER SERVICE w/ RJ SLEEVE

(2) 6" 45° BENDS

STA. 11+18 RT.
16"x6" TEE & 6" GATE VALVE IN VALVE BOX FOR FIRE SPRINKLER CONNECTION (25 LF 6" D.I. LINE) VERIFY SIZE AND LOCATION WITH CITY OF CONCORD

FINISHED SURFACE 699.5
BOTTOM PROP. DUCT BANK 695.8
TOP WATER LINE 694.8

STA. 11+40 LT
PROP. 16"x6" TEE
6" GATE VALVE

EXIST. SEWER M.H.

TYPICAL 2" DOMESTIC WATER SERVICE:
- 2" TAPPING SADDLE w/ CORP. STOP
- 2" TYPE "K" COPPER WATER LINE
- 2" WATER SERVICE GATE VALVE IN VALVE BOX
- 2" WATER METER IN METER BOX
- 2" PRESSURE REDUCING VALVE AND SHUT OFF VALVE IN METER BOX
- CONNECTION TO EXIST. WATER SERVICE LINE WITH TRANSITION AND CONNECTION FITTINGS AS REQUIRED

PROFILE

SCALE: HORIZ. 1"= 10'
VERT. 1"= 2'

EXIST. 6" WATER LINE TO BE REMOVED (DEPTH UNKNOWN)

EXIST. 24" STORM DRAIN TO BE REMOVED

PROP. GRADE

EXIST. GRADE

PROP. ELEC. DUCT BANK

EXIST. 6" WATER LINE (TO BE REMOVED)

EXIST. 6" WATER LINE (TO BE REMOVED)

EXIST. 10" WATER LINE (TO BE REMOVED)

EXIST. 12" WATER LINE (TO BE REMOVED)

STA. 12+08
PROP. 16" GATE VALVE

710

700

690

MATCH LINE STA. 8+38

MATCH LINE STA. 12+28

REPLACE 20 LF EXIST. 12" VCP SEWER WITH 12" DI CENTERED AT CROSSING (REFER TO C-310)

EXIST. 12" VCP SEWER TO REMAIN (BEHIND WATER LINE)

PROP. WATER SERVICE CONNECTION (TYPICAL)

PROVIDE 12" MIN. CLEARANCE

PROVIDE 24" MIN. CLEARANCE

PROVIDE 18" MIN. CLEARANCE

STA. 10+36
PROP. 16" 45° BEND

STA. 8+55

STA. 8+76
PROP. 16"x4" TEE

STA. 8+88
TEE FOR FIRE SPRINKLER SERVICE CONNECTION (CONTRACTOR SHALL VERIFY SIZE AND LOCATION IN FIELD AND WITH THE CITY OF CONCORD)

STA. 8+95
PROP. 16"x6" FH TEE

RESTRAIN ALL JOINTS

STA. 8+84
EXIST. MH #211.21188
TOP 699.76
INV. IN 693.16
INV. OUT 693.16

STA. 9+36

STA. 9+48

STA. 9+88
PROP. 16"x6" FH TEE

STA. 10+28
PROP. 16" 45° BEND

PROP. 16" D.I. WATER MAIN (IN FRONT OF SEWER)

STA. 10+05
EXIST. MH #211.21190 TOP 699.44
INV. IN 692.24
INV. OUT 691.94

STA. 11+18
16"x6" TEE FOR FIRE SPRINKLER SERVICE CONNECTION (CONTRACTOR SHALL VERIFY SIZE AND LOCATION IN FIELD AND WITH THE CITY OF CONCORD)

RESTRAIN ALL JOINTS

STA. 11+40
PROP. 16"x6" TEE

STA. 11+24
EXIST. MH
INV. IN 690.85
INV. OUT 690.80

STA. 11+72
PROP. 16" GATE VALVE

STA. 11+90
PROP. 16"x12" TEE

9+00

10+00

11+00

12+00

PUBLIC WATER DISTRIBUTION SYSTEM AND WASTEWATER COLLECTION SYSTEM IMPROVEMENTS SHALL BE CONSTRUCTED ACCORDING TO WATER AND SEWER AUTHORITY OF CABARRUS COUNTY'S (WSACC) "STANDARD SPECIFICATIONS FOR WASTEWATER COLLECTION AND WATER DISTRIBUTION CONSTRUCTION FOR CABARRUS COUNTY," DATED AUGUST 2006 AND THE CITY OF CONCORD DEVELOPMENT ORDINANCE, CODE OF ORDINANCES CHAPTER 62 AND TECHNICAL STANDARDS

mcgill
1240 19th Street Lane NW
Hickory, NC 28601
828.328.2024
NC Firm License # C-0459
mcgillassociates.com

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 041598 MATTHEW D. OETTING 11-22-2021

CALL 811 BEFORE YOU DIG SAFE DIGGING PARTNER

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS

CITY OF CONCORD

CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	M. OETTING
PROJECT MANAGER	REVIEWER
M.J. NORRIS	D.G. CHAPMAN

PROPOSED WATER LINE
PLAN - PROFILE
AREA - C

DATE	PROJECT #	FUNDING #
JULY, 2021	19.01726	N/A

SHEET
C-304

P:\2019\19.01726-CONCORD\C-UNION STREETS\CAPE PROJECT\DRAWINGS\19.01726 UNION UTILITIES.DWG PLOT DATE: 7/22/2021 8:12 AM RUSSELL COX

PLAN

Cabarrus County Courthouse
(CURRENTLY UNDER RENOVATION)

REPLACE 20 LF EXIST. 8" VCP SEWER WITH 8" DI CENTERED AT CROSSING

REPLACE 20 LF EXIST. 12" VCP SEWER WITH 12" DI CENTERED AT CROSSING

AIR RELEASE VALVE IN METER BOX, 3/4" COPPER SERVICE, AND 3/4" TAPPING SADDLE w/ CORP. STOP (REFER TO DETAIL C-508)

EXIST. 12" VCP SEWER TO REMAIN

STA. 12+49 RT 16"x8" TEE

STA. 12+53 16" GATE VALVE

FINISHED SURFACE 700.9
BOTTOM WATER LINE 696.2
TOP STORM 694.7

CONTRACTOR SHALL CONNECT NEW SERVICE LINE TO EXISTING WATER METER. NEW SERVICE GATE VALVE, WATER METER, PRV, METER BOXES, RECONNECTION OF SERVICE, AND REMOVAL OF EXISTING METER BOX SHALL BE PERFORMED UNDER A SEPARATE CONTRACT FOLLOWING COURTHOUSE PROJECT COMPLETION.

*** SEE NOTE "COURTHOUSE PHASED CONSTRUCTION" ON THIS SHEET FOR WORK IN THIS AREA

CONTRACTOR SHALL INSTALL NEW FIRE HYDRANT LEG, TEE WITH PLUG AND CONNECTION TO EXISTING FIRE HYDRANT LEG, AND REMOVAL OF EXISTING FIRE HYDRANT LEG TO MAIN. EXISTING FIRE HYDRANT AND VALVE TO REMAIN. NEW FIRE HYDRANT AND GATE VALVE, AND REMOVAL OF EXISTING FIRE HYDRANT AND GATE VALVE SHALL BE PERFORMED UNDER A SEPARATE CONTRACT FOLLOWING COURTHOUSE PROJECT COMPLETION.

EXIST. F.H. ASSEMBLY AND GATE VALVE TO REMAIN UNDER THIS CONTRACT

PROP. FH ASSEMBLY
10 LF ± 6" DI WATER LINE
6" GATE VALVE

EXIST. 16" WATER LINE TO REMAIN

EXIST. 8" GAS MAIN

REMOVE EXIST. 6" WATER LINE

CORBAN AVE. SE

PROP. ELEC. DUCT (REFER TO ELEC.)

FINISHED SURFACE 705.3
BOTTOM FIBER DUCT 701.3
TOP WATER LINE ±693.3

FINISHED SURFACE 704.2
BOTTOM EXIST. DUCT BANK 698.2±
TOP WATER LINE 697.0

CONC. DEADMAN

FINISHED SURFACE 704.9
BOTTOM FIBER DUCT 700.9
TOP SEWER LINE 694.9

FINISHED SURFACE 705.1
BOTTOM GAS LINE ±702
TOP FIBER DUCT 703.8

FINISHED SURFACE 703.9
BOTTOM ELEC. DUCT 700.2
TOP WATER LINE 696.9

STA. 12+58
16" VERT. 11.25° BEND

MAINTAIN 10' HORIZ. SEPARATION BETWEEN WATER AND SEWER MAINS

EXIST. SEWER TO REMAIN

PROP. 30 LF±
6" D.I. WATER LINE

UNION STREET

STA. 15+57
16"x8" TEE

STA. 15+92 RT
16"x6" TEE

STA. 15+96
16" GATE VALVE

CONNECT TO EXIST. 16" MAIN w/ RJ SLEEVE

16" GATE VALVE

STA. 15+31 16" GATE VALVE

STA. 15+37
16" GATE VALVE

STA. 15+92
16" RJ CAP WITH THRUST BLOCKING

15+99.70

FINISHED SURFACE 701.2
BOTTOM GAS MAIN 698.6±
TOP WATER LINE 697.6

STA. 12+63
16" VERT. 11.25° BEND

PROP. FIBER DUCT (REFER TO ELEC.)

PROP. 364 LF±
16" D.I. WATER LINE

STA. 14+94
PROP. 16"x6" FH TEE

FINISHED SURFACE 700.8
BOTTOM WATER LINE 696.3
TOP SEWER LINE 690.9

STA. 12+39
16" 45° BEND

8" 22.5° BEND

FINISHED SURFACE 700.7
BOTTOM WATER LINE 696.1
TOP STORM DRAIN 694.9

STA. 15+34
16"x16" CROSS

16" GATE VALVE

CONC. DEADMAN

8" 90° BEND

EXIST. 8" AC WATER LINE TO REMAIN

CONNECT TO EXIST. 8" MAIN w/ RJ SLEEVE

FIRE HYDRANT ASSEMBLY

REMOVE EXIST. F.H. ASSEMBLY AND PLUG LINE AT CONNECTION TO WATER MAIN

FINISHED SURFACE 703.7
BOTTOM WATER LINE ±700
TOP ELEC. DUCT 698.0

EXIST. 8" GATE VALVE TO REMAIN

CONC. DEADMAN

MATCH LINE STA. 12+28

8" 22.5° BEND

MAINTAIN 5' HORIZ. SEPARATION BETWEEN WATER AND SEWER MAINS

REMOVE EXIST. 8" WATER LINE

FINISHED SURFACE 700.2
BOTTOM ELEC. DUCT 696.5
TOP WATER LINE 693.0

CONNECT w/ 8" RJ SLEEVE

EXIST. GATE VALVE TO REMAIN

CONC. DEADMAN

EXIST. 8" C.I. WATER MAIN

EXIST. GAS MAIN

REMOVE EXIST. 10" DIP WATER LINE

REMOVE EXIST. 8" AC WATER LINE

REMOVE EXIST. WATER SERVICE LINE, METER, AND METER BOX (TYPICAL)

TYPICAL 2" DOMESTIC WATER SERVICE:
* 2" TAPPING SADDLE w/ CORP. STOP
* 2" TYPE "K" COPPER WATER LINE
* 2" WATER SERVICE GATE VALVE IN VALVE BOX
* 2" WATER METER IN METER BOX
* 2" PRESSURE REDUCING VALVE AND SHUT OFF VALVE IN METER BOX
* CONNECTION TO EXIST. WATER SERVICE LINE WITH TRANSITION AND CONNECTION FITTINGS AS REQUIRED

PROP. ELEC. DUCT (REFER TO ELEC.)

FINISHED SURFACE 705.8
BOTTOM GAS LINE ±702
TOP WATER LINE 697.0
NO WATER LINE JOINTS BETWEEN NEAREST FITTINGS TO GAS LINE OR WITHIN 10' OF GAS LINE CROSSING AND WATER LINE SHALL BE POLYETHYLENE WRAPPED WITHIN 10' OF GAS LINE CROSSING

CONNECT TO EXIST. 16" MAIN w/ RJ SLEEVE

FINISHED SURFACE 704.1
BOTTOM GAS LINE ±701.6
TOP ELEC. DUCT 698.9

EXIST. GATE VALVE TO REMAIN

ABANDONED 8" WATER LINE

FINISHED SURFACE 704.8
BOTTOM WATER LINE 698.6
TOP SEWER LINE 694.6

FINISHED SURFACE 704.3
BOTTOM ELEC. DUCT 700.3
TOP WATER LINE ±698.3

FINISHED SURFACE 704.2
BOTTOM ELEC. DUCT 700.2
TOP SEWER LINE 694.4

St James Lutheran Church

MATCH LINE STA. 12+28

PROP. PAVEMENT

EXIST. PAVEMENT

EXIST. R/W (WIDTH VARIES)

BARRICK AVE. SW

SEE WATER LINE ENLARGEMENT "D" SHEET C-307

UE

COURTHOUSE PHASED CONSTRUCTION:

DUE TO THE RENOVATION OF THE COURTHOUSE, ONLY PART OF THE ILLUSTRATED CONSTRUCTION ACTIVITIES WILL BE INSTALLED UNDER THIS CONTRACT. THE REMAINING ITEMS WILL BE INSTALLED UNDER SEPARATE CONTRACT AFTER THE COMPLETION OF THE COURTHOUSE RENOVATION IN 2024.
ITEMS UNDER THIS CONTRACT INCLUDE:
COMPREHENSIVE GRADING, ELECTRICAL DEMOLITION, ASPHALT PAVING, STRIPING, TEMPORARY CONCRETE SIDEWALK, HC RAMPS, TACTILE PLATES, STORMWATER INSTALLATION, AND WATER LINES AS NOTED ON THE UTILITY SHEET. THIS AREA IS TO BE GRADED TO PROPOSED ELEVATIONS AND THE GRADES TAPERED DOWN TO MEET EXISTING ELEVATIONS AT THE COURTHOUSE STEPS. EXISTING DRAINAGE STRUCTURES TO BE UTILIZED FOR DRAINAGE.

FOR TEMPORARY PAVING SEE DETAIL SHEET C-510.

PROFILE
SCALE: HORIZ. 1"= 10'
VERT. 1"= 2'

710

700

690

PROP. GRADE

EXIST. GRADE

EXIST. 6" WATER LINE TO BE REMOVED (UNKNOWN DEPTH)

EXIST. 6" WATER LINE TO BE REMOVED (UNKNOWN DEPTH)

EXIST. 8" GAS LINE – NO MECHANICAL EXCAVATION WITHIN 5' (UNKNOWN DEPTH–CONTRACTOR SHALL VERIFY)

EXIST. HIGH VOLTAGE ELEC. DUCT BANK (SIZE/DEPTH UNKNOWN – CONTRACTOR SHALL VERIFY)

PROP. ELEC. DUCT BANK

STA. 15+31
PROP. 16" GATE VALVE

STA. 15+37
PROP. 16" GATE VALVE

PROP. 16" GATE VALVE

STA. 12+54
PROP. 16" GATE VALVE

EXIST. 4" GAS LINE – NO MECHANICAL EXCAVATION WITHIN 5' (UNKNOWN DEPTH–CONTRACTOR SHALL VERIFY)

NO WATER LINE JOINTS BETWEEN NEAREST FITTINGS TO GAS LINE OR WITHIN 10' OF GAS LINE CROSSING AND WATER LINE SHALL BE POLYETHYLENE WRAPPED WITHIN 10' OF GAS LINE CROSSING

36" MIN. COVER

PROVIDE 12" MIN. CLEARANCE

EXIST. 12" STORM DRAIN TO BE REMOVED (APPROX. LOCATION)

PROVIDE 24" MIN. CLEARANCE

PROVIDE 12" MIN. CLEARANCE
CONTRACTOR SHALL VERIFY DUCT BANK SIZE, TUNNEL BELOW DUCT BANK USING HAND TOOLS FOR WATER LINE INSTALLATION, AND BACKFILL WITH FLOWABLE FILL

STA. 12+92
PROP. R.J. CAP WITH THRUST BLOCKING

MATCH LINE STA. 12+28

STA. 12+39
PROP. 16" 45° BEND

STA. 12+58 & 12+63
16" VERT. 11.25° BEND

PROVIDE 24" MIN. CLEARANCE

PROP. 36" STORM DRAIN

PROP. WATER SERVICE CONNECTION (TYPICAL)

PROP. 16" D.I. WATER MAIN

STA. 14+94
PROP. 16"x6" FH TEE

STA. 15+34
PROP. 16"x16" CROSS

PROVIDE 24" MIN. CLEARANCE

STA. 15+56
PROP. 16"x8" TEE

STA. 15+52
PROP. 16" 11.25° VERT. BEND

STA. 15+46
PROP. 16" 11.25° VERT. BEND

EXIST. 8" SANITARY SEWER

STA. 15+85
PROP. 16"x6" FH TEE

STA. 12+50
PROP. 16"x8" TEE

PROVIDE 18" MIN. CLEARANCE

REPLACE EXIST. 12" VCP SEWER WITH 12" DI

RESTRAIN ALL JOINTS

STA. 13+05

STA. 14+00

RESTRAIN ALL JOINTS

13+00

14+00

15+00

16+00

PUBLIC WATER DISTRIBUTION SYSTEM AND WASTEWATER COLLECTION SYSTEM IMPROVEMENTS SHALL BE CONSTRUCTED ACCORDING TO WATER AND SEWER AUTHORITY OF CABARRUS COUNTY'S (WSACC) "STANDARD SPECIFICATIONS FOR WASTEWATER COLLECTION AND WATER DISTRIBUTION CONSTRUCTION FOR CABARRUS COUNTY," DATED AUGUST 2006 AND THE CITY OF CONCORD DEVELOPMENT ORDINANCE, CODE OF ORDINANCES CHAPTER 62 AND TECHNICAL STANDARDS

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PROFESSIONAL ENGINEER SEAL 041598 NORTH CAROLINA
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY SUPERVISION
7/22/2021

CALL 811 BEFORE YOU DIG
STATE DIGGING PARTNER

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS

CITY OF CONCORD

CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

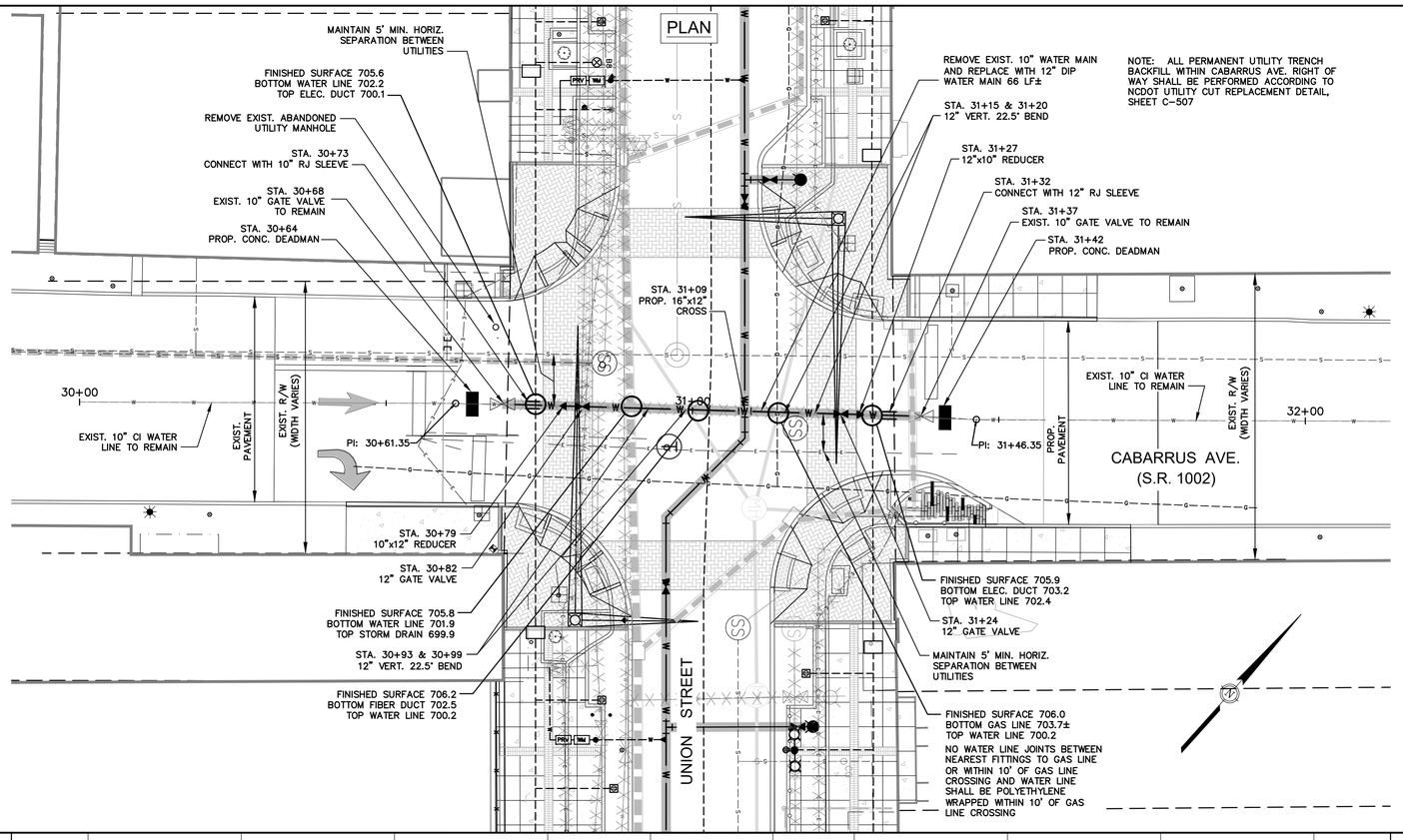
OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	M. OETTING
PROJECT MANAGER	REVIEWER
M.J. NORRIS	D.G. CHAPMAN

PROPOSED WATER LINE
PLAN - PROFILE
AREA - D

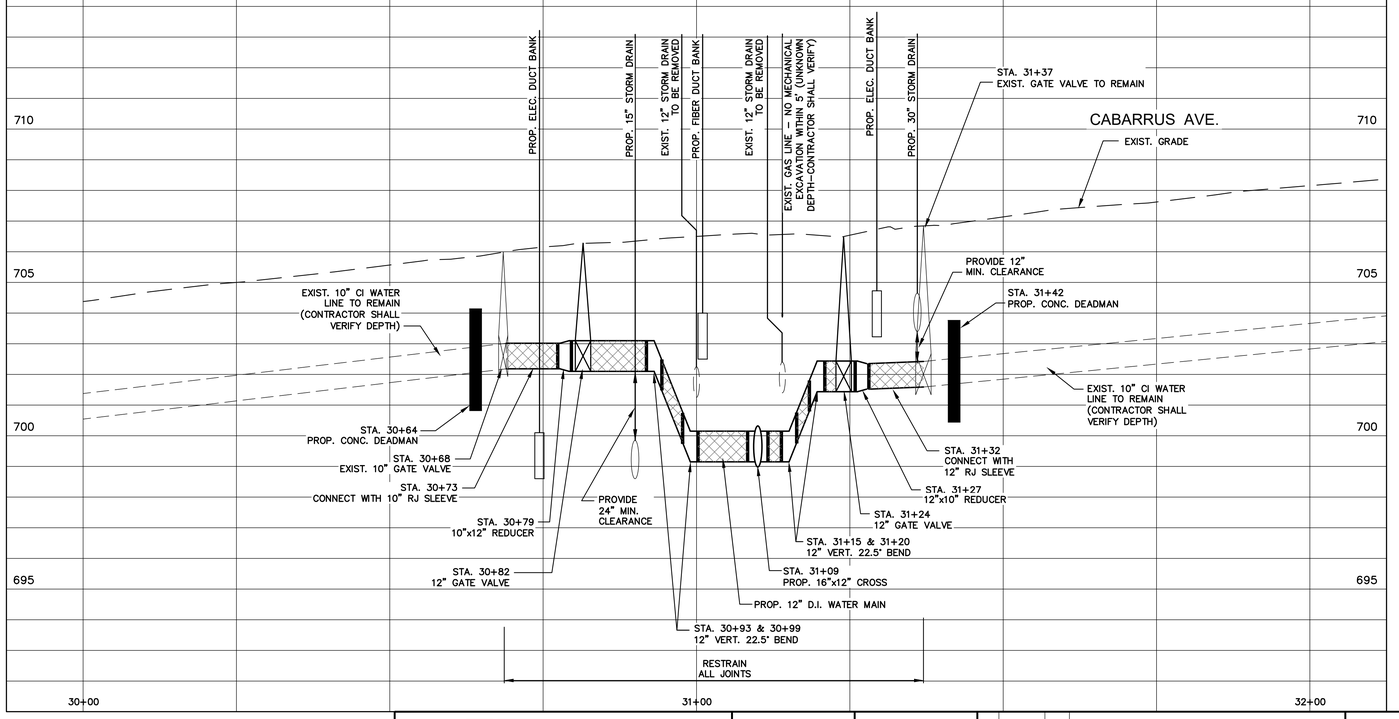
DATE	PROJECT #	FUNDING #
JULY, 2021	19.01726	N/A

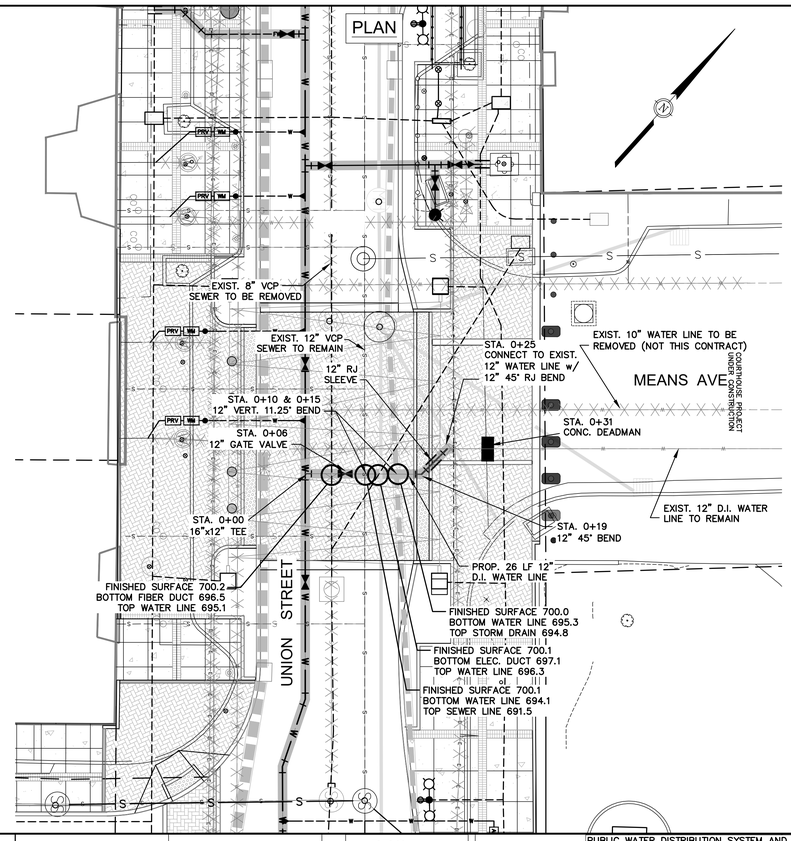
SHEET
C-305

P:\2019\19.01726-CONCORD\C-UNION STREET\SCAPE PROJECT\DRAWINGS\1901726 UNION UTILITIES.DWG PLOT DATE: 7/22/2021 9:18 AM RUSSELL COX

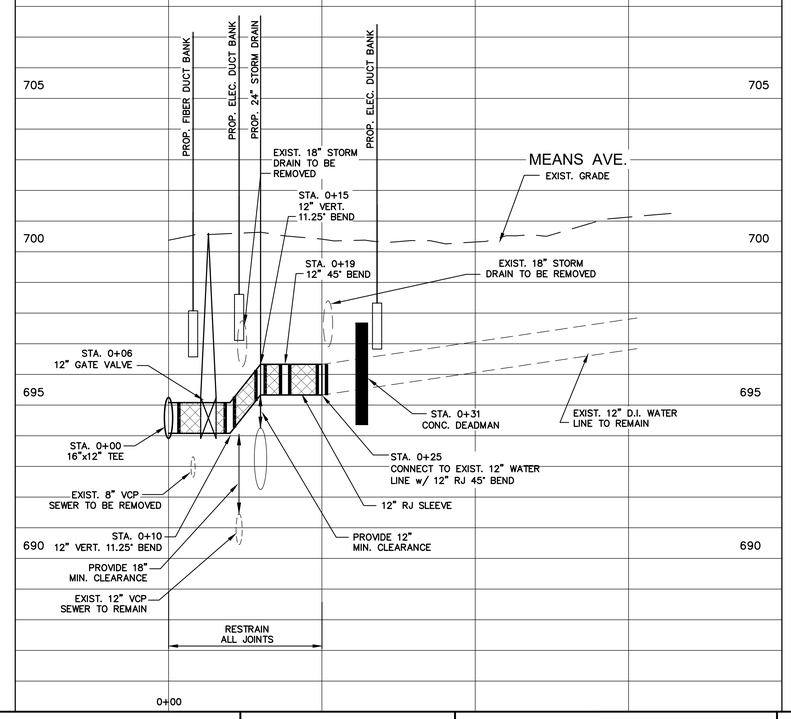


PROFILE
SCALE: HORIZ. 1"= 10'
VERT. 1"= 2'





PROFILE
SCALE: HORIZ. 1"= 10'
VERT. 1"= 2'



PUBLIC WATER DISTRIBUTION SYSTEM AND WASTEWATER COLLECTION SYSTEM IMPROVEMENTS SHALL BE CONSTRUCTED ACCORDING TO WATER AND SEWER AUTHORITY OF CABARRUS COUNTY'S (WSACC) "STANDARD SPECIFICATIONS FOR WASTEWATER COLLECTION AND WATER DISTRIBUTION CONSTRUCTION FOR CABARRUS COUNTY," DATED AUGUST 2006 AND THE CITY OF CONCORD DEVELOPMENT ORDINANCE, CODE OF ORDINANCES CHAPTER 62 AND TECHNICAL STANDARDS

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 041598 MATTHEW D. OETTING
11-22-2021

CALL 811 BEFORE YOU DIG 811 SAFE DIGGING PARTNER

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS

CITY OF CONCORD

CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

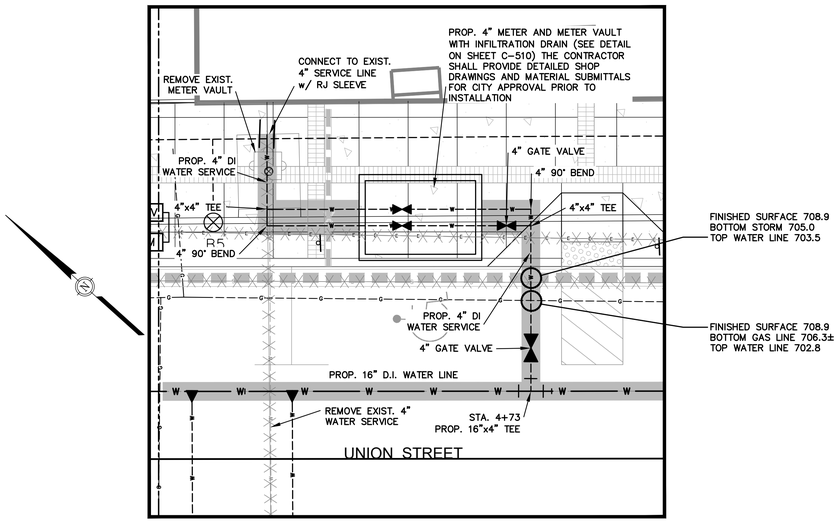
OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	M. OETTING
PROJECT MANAGER	REVIEWER
M.J. NORRIS	D.G. CHAPMAN

PROPOSED WATER LINE
PLAN - PROFILE ALONG
MEANS AVE. AND CABARRUS AVE.

DATE	PROJECT #	FUNDING #
JULY, 2021	19.01726	N/A

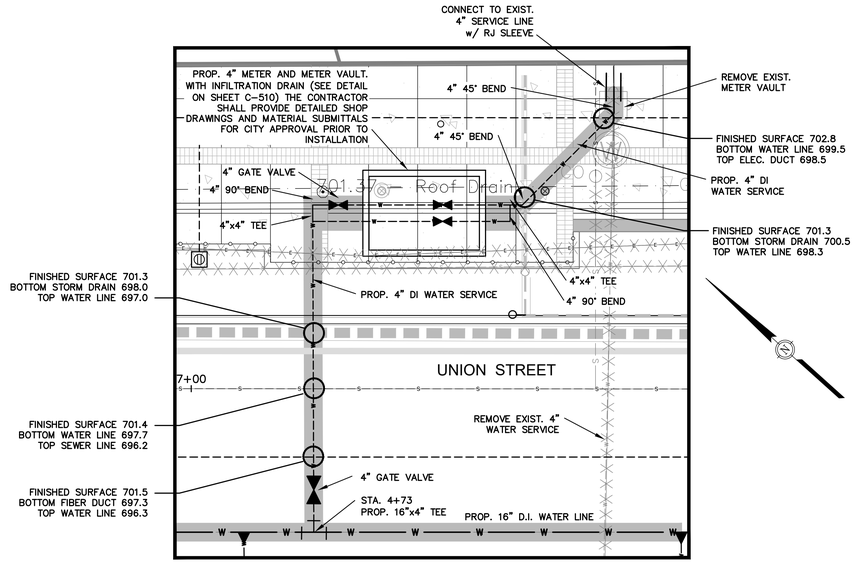
SHEET
C-306

P:\2019\19.01726-CONCORDNC-UNION STREETSCAPE PROJECT\DRAWINGS\19017726 UNION UTILITIES.DWG PLOT DATE 7/22/2021 8:13 AM RUSSELL COX



ENLARGEMENT "A"

10 0 5 10 20
GRAPHIC SCALE DIVISION VALUE = 10 FEET



ENLARGEMENT "B"

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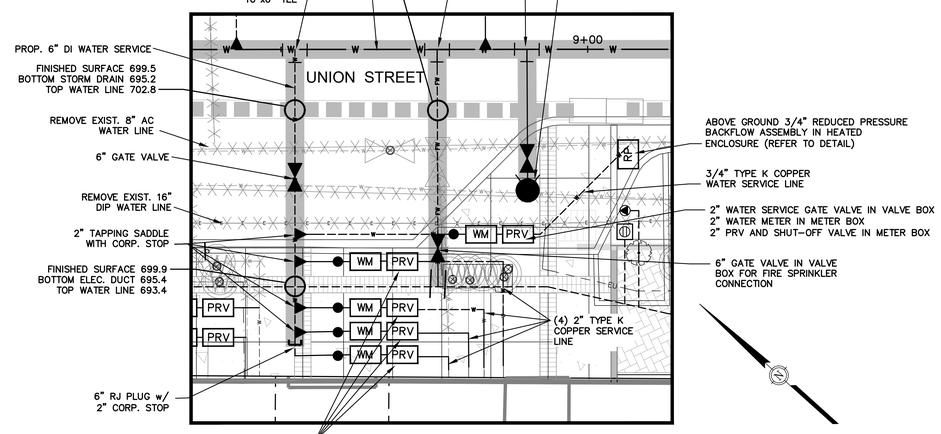
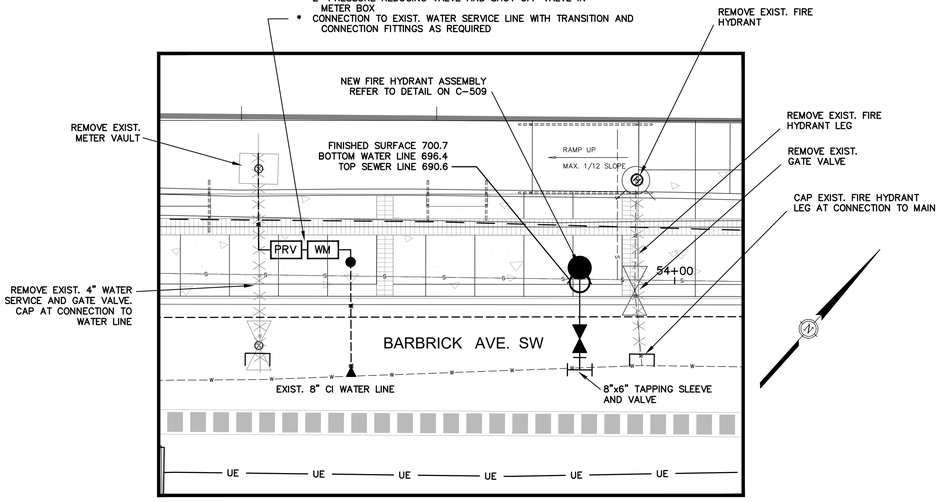
GRAPHIC SCALE DIVISION VALUE = 10 FEET



ENLARGEMENT "C"

10 0 5 10 20
GRAPHIC SCALE DIVISION VALUE = 10 FEET

TYPICAL 2" DOMESTIC WATER SERVICE:
- 2" TAPPING SADDLE w/ CORP. STOP
- 2" TYPE "K" COPPER WATER LINE
- 2" WATER SERVICE GATE VALVE IN VALVE BOX
- 2" WATER METER IN METER BOX
- 2" PRESSURE REDUCING VALVE AND SHUT OFF VALVE IN METER BOX
- CONNECTION TO EXIST. WATER SERVICE LINE WITH TRANSITION AND CONNECTION FITTINGS AS REQUIRED



ENLARGEMENT "D"

10 0 5 10 20
GRAPHIC SCALE DIVISION VALUE = 10 FEET

PUBLIC WATER DISTRIBUTION SYSTEM AND WASTEWATER COLLECTION SYSTEM IMPROVEMENTS SHALL BE CONSTRUCTED ACCORDING TO WATER AND SEWER AUTHORITY OF CABARRUS COUNTY'S (WSACC) "STANDARD SPECIFICATIONS FOR WASTEWATER COLLECTION AND WATER DISTRIBUTION CONSTRUCTION FOR CABARRUS COUNTY," DATED AUGUST 2006 AND THE CITY OF CONCORD DEVELOPMENT ORDINANCE, CODE OF ORDINANCES CHAPTER 62 AND TECHNICAL STANDARDS

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PROFESSIONAL ENGINEER SEAL 041598 MATTHEW D. OETTING 7/22/2021

CALL 811 BEFORE YOU DIG 811 SAFE DIGGING PARTNER

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS

CITY OF CONCORD

CABARRUS COUNTY, NORTH CAROLINA

10 0 5 10 20
GRAPHIC SCALE DIVISION VALUE = 10 FEET

WATER LINE ENLARGEMENTS

SHEET C-307

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	M. OETTING			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	D.G. CHAPMAN	JULY, 2021	19.01726	N/A

P:\2019\19.01726-CONCORDNC-UNION STREETSCAPE PROJECT\DRAWINGS\190126 UNION UTILITIES.DWG PLOT DATE 7/22/2021 8:13 AM RUSSELL COX

PLAN

KILLARNEY AVE.

EXIST. 6" CI WATER LINE

GAZEBO (CANNON)

DISCONNECT, PLUG, AND ABANDON EXIST. 4" SEWER SERVICE

REMOVE 20 LF EXIST. 8" VCP AND REPLACE w/ 20 LF 8" DI CENTERED AT WATER LINE CROSSING

DISCONNECT, PLUG, AND ABANDON EXIST. 4" SEWER SERVICE

EXIST. GAS MAIN TO REMAIN

PROP. 4" CLEAN-OUT w/ MINI-MANHOLE BOX ON EXIST. SERVICE SEWER. (REFER TO DETAIL ON SHEET C-509) (TYPICAL)

DISCONNECT EXIST. 4" SEWER SERVICE FROM EXIST. MAIN AND REPLACE SERVICE FROM CLEAN-OUT TO NEW SEWER MAIN. ADJUST ELEVATION AND SLOPE TO AVOID EXISTING AND PROPOSED UTILITIES. (SEE DETAIL ON SHEET C-509)

MAINTAIN 10' HORIZ. SEPARATION BETWEEN WATER AND SEWER MAINS

PROP. 16" D.I. WATER MAIN

UNION STREET

PROP. FIBER DUCT (REFER TO ELEC.)

DISCONNECT, PLUG, AND ABANDON EXIST. 4" SEWER SERVICE

REMOVE EXIST. 8" VCP SEWER

PROP. 207 LF 8" D.I. SEWER

1+00 2+00 3+00 4+00

EXIST. 8" VCP SEWER TO REMAIN

REMOVE EXIST. 16" DIP WATER LINE

REMOVE EXIST. 8" AC WATER LINE

DISCONNECT, PLUG, AND ABANDON EXIST. 4" SEWER SERVICE

DISCONNECT EXIST. 4" SEWER SERVICE FROM M.H., PLUG HOLE IN M.H. WALL, REMOVE SEWER SERVICE, AND CONSTRUCT NEW SERVICE TIED TO SEWER MAIN

STA. 3+57.39
PROP. 4' DIA. SEWER M.H. #2
N: 608252.35
E: 1528696.10

DISCONNECT EXIST. 4" SEWER SERVICE FROM EXIST. MAIN AND REPLACE SERVICE FROM CLEAN-OUT TO NEW SEWER MAIN. ADJUST ELEVATION AND SLOPE TO AVOID EXISTING AND PROPOSED UTILITIES. (SEE DETAIL ON SHEET C-509)

EXIST. 8" AC WATER LINE

EXIST. 16" DIP WATER LINE

EXIST. BRICK M.H. 211.2155
COORDINATE FINAL RIM ADJUSTMENT WITH PROP. STREET ELEVATION

FINISHED SURFACE 710.9
BOTTOM GAS LINE 708.4±
TOP SEWER LINE 704.5

ABANDONED 12" WATER LINE

=MATCH LINE STA. 4+17

PROFILE

SCALE: HORIZ. 1"= 10'
VERT. 1"= 2'

720

710

700

EXIST. GRADE

PROP. GRADE

REMOVE 20 LF EXIST. 8" VCP AND REPLACE w/ 20 LF 8" DI CENTERED AT WATER LINE CROSSING – CONNECT USING TRANSITION COUPLINGS

EXIST. 8" VCP SEWER @ 0.7% TO REMAIN

PROVIDE 24" MIN. CLEARANCE

PROP. 16" DI WATER MAIN

EXIST. MH #211.2155
TOP 711.91
INV. OUT 707.16

COORDINATE FINAL RIM ADJUSTMENT WITH PROP. STREET ELEVATION

PROP. 4' DIA. SEWER M.H. #2
RIM = 711.00
INV. OUT = 703.95

EXIST. GAS SERVICE LINE (UNKNOWN DEPTH CONTRACTOR SHALL VERIFY)

COORDINATE FINAL RIM ADJUSTMENT WITH PROP. STREET ELEVATION

PROP. 8" D.I. SEWER 207 L.F. @ 3.00%

PROP. SANITARY SERVICE CONNECTION (TYPICAL)

=MATCH LINE STA. 4+17

1+00 2+00 3+00 4+00

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NORTH CAROLINA PROFESSIONAL SEAL 041598 ENGINEER MATTHEW R. OETTING
7/22/2021

CALL 811 BEFORE YOU DIG STATE DIGGING PARTNER

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS

CITY OF CONCORD

CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	M. OETTING
PROJECT MANAGER	REVIEWER
M.J. NORRIS	D.G. CHAPMAN

PROPOSED SANITARY SEWER PLAN - PROFILE AREA - A

DATE	PROJECT #	FUNDING #
JULY, 2021	19.01726	N/A

SHEET C-308

P:\2019\19.01726-CONCORDNC-UNION STREETSCAPE PROJECT\DRAWINGS\1901726 UNION UTILITIES.DWG PLOT DATE 7/22/2021 8:14 AM RUSSELL COX

PLAN

FINISHED SURFACE 708.5
BOTTOM WATER LINE 705.6
TOP SEWER LINE 701.1

DISCONNECT EXIST. 4" SEWER SERVICE FROM EXIST. MAIN AND REPLACE SERVICE FROM CLEAN–OUT TO NEW SEWER MAIN. ADJUST ELEVATION AND SLOPE TO AVOID EXISTING AND PROPOSED UTILITIES. (SEE DETAIL ON SHEET C–509)

REMOVE EXIST. 8" VCP SEWER

FINISHED SURFACE 707.1
BOTTOM STORM 702.1
TOP SEWER LINE 699.4

MAINTAIN 10' HORIZ. SEPARATION BETWEEN WATER AND SEWER MAINS

EXIST. GAS MAIN TO REMAIN

EXIST. 12" VCP SEWER TO REMAIN

EXIST. 10" CI WATER LINE TO REMAIN

REMOVE EXIST. FLUSHING MANHOLE STRUCTURE AND ASSOCIATED PIPING

STA. 5+64.69
PROP. 5' DIA. DOGHOUSE SEWER M.H. #1
N: 608098.43
E: 1528834.95

NCDOT R/W

CABARRUS AVE. (S.R. 1002)

NOTE: ALL PERMANENT UTILITY TRENCH BACKFILL WITHIN CABARRUS AVE. RIGHT OF WAY SHALL BE PERFORMED ACCORDING TO NCDOT UTILITY CUT REPLACEMENT DETAIL, SHEET C–507

EXIST. BRICK M.H. 211.2224
COORDINATE FINAL RIM ADJUSTMENT WITH PROP. STREET ELEVATION

REMOVE EXIST. M.H.

RE–ROUTE EXIST. 4" SEWER SERVICE LINE TO SEWER M.H. 211.2244 AND INSTALL 4" CLEAN OUT WITH MINI–MANHOLE BOX (REFER TO DETAIL SHEET C–509) AT BENDS AND REMOVE EXIST SERVICE LINE. CORE NEW HOLE IN MANHOLE WALL AND RE–SHAPE INVERT TROUGH

FINISHED SURFACE 704.2
BOTTOM WATER 700.1
TOP SEWER 696.9

REPLACE EXIST. 4" SEWER SERVICE FROM CLEAN–OUT TO 12" SEWER MAIN. ADJUST ELEVATION AND SLOPE TO AVOID EXISTING AND PROPOSED UTILITIES (SEE DETAIL ON SHEET C–509)

REMOVE EXIST. 8" VCP SEWER

MAINTAIN 10' HORIZ. SEPARATION BETWEEN WATER AND SEWER MAINS

FINISHED SURFACE 700.7
BOTTOM STORM 697.1
TOP SEWER 695.7

REPLACE EXIST. 4" SEWER SERVICE FROM CLEAN–OUT TO 12" SEWER MAIN. ADJUST ELEVATION AND SLOPE TO AVOID EXISTING AND PROPOSED UTILITIES (SEE DETAIL ON SHEET C–509)

MATCH LINE STA. 4+17

MATCH LINE STA. 8+12

PROP. 16" D.I. WATER MAIN

PROP. 207 LF 8" D.I. SEWER

REMOVE EXIST. 8" VCP SEWER

90°28'42"

89°31'18"

PI 5+64.69

5+00

6+00

7+00

8+00

UNION STREET

EXIST. 12" VCP SEWER TO REMAIN

PROP. 16" D.I. WATER MAIN

UL10 UL12 UL14 UL15 UL16 UL17

REMOVE EXIST. 8" AC WATER LINE

REMOVE EXIST. 16" DIP WATER LINE

DISCONNECT EXIST. 4" SEWER SERVICE FROM EXIST. MAIN AND REPLACE SERVICE FROM CLEAN–OUT TO NEW SEWER MAIN. ADJUST ELEVATION AND SLOPE TO AVOID EXISTING AND PROPOSED UTILITIES. (SEE DETAIL ON SHEET C–509)

FINISHED SURFACE 709.8
BOTTOM GAS LINE 707.3±
TOP SEWER LINE 702.7

REMOVE EXIST. M.H. 211.2185

EXIST. 12" VCP SEWER TO REMAIN

TO EXIST. M.H. 211.2195

EXIST. 10" CI WATER LINE

DISCONNECT, PLUG, AND ABANDON EXIST. 2" SEWER SERVIC. CONTRACTOR SHALL VERIFY w/ CITY OF CONCORD

REMOVE EXIST. 8" AC WATER LINE

REMOVE EXIST. 10" DIP WATER LINE

ABANDON 115 L.F. EXIST. 8" SEWER BETWEEN M.H. 211.2185 AND M.H. 211.2195 BY PLUGGING AT BOTH ENDS AND FILLING WITH FLOWABLE FILL. EXIST. SERVICE LINE 65' DOWNSTREAM OF M.H. 211.2185 SHALL BE RECONNECTED TO EXIST. 12" SEWER PRIOR TO ABANDONMENT OF 8" SEWER. CONTRACTOR SHALL VERIFY THAT NO OTHER ACTIVE SERVICE LINES ARE CONNECTED TO THIS SEWER PRIOR TO ABANDONMENT. PAVEMENT SHALL BE SAW CUT AND REPAIRED ACCORDING TO DETAIL SHEET C–507)

FINISHED SURFACE 701.4
BOTTOM WATER 697.5
TOP SEWER 696.0

PROP. 4" CLEAN–OUT w/ MINI–MANHOLE BOX ON EXIST. SERVICE SEWER. (REFER TO DETAIL ON SHEET C–509) (TYPICAL)

REPLACE EXIST. 4" SEWER SERVICE FROM CLEAN–OUT TO 12" SEWER MAIN. ADJUST ELEVATION AND SLOPE TO AVOID EXISTING AND PROPOSED UTILITIES (SEE DETAIL ON SHEET C–509)

MATCH LINE STA. 4+17

MATCH LINE STA. 8+12

PROFILE

SCALE: HORIZ. 1"= 10'
VERT. 1"= 2'

NOTE: ALL PERMANENT UTILITY TRENCH BACKFILL WITHIN CABARRUS AVE. RIGHT OF WAY SHALL BE PERFORMED ACCORDING TO NCDOT UTILITY CUT REPLACEMENT DETAIL, SHEET C–507

NCDOT R/W

PUBLIC WATER DISTRIBUTION SYSTEM AND WASTEWATER COLLECTION SYSTEM IMPROVEMENTS SHALL BE CONSTRUCTED ACCORDING TO WATER AND SEWER AUTHORITY OF CABARRUS COUNTYS (WSACC) "STANDARD SPECIFICATIONS FOR WASTEWATER COLLECTION AND WATER DISTRIBUTION CONSTRUCTION FOR CABARRUS COUNTY," DATED AUGUST 2006 AND THE CITY OF CONCORD DEVELOPMENT ORDINANCE, CODE OF ORDINANCES CHAPTER 62 AND TECHNICAL STANDARDS

EXIST. GAS SERVICE LINE (UNKNOWN DEPTH CONTRACTOR SHALL VERIFY)

PROP. 6" WATER LINE

PROP. 18" STORM DRAIN

COORDINATE FINAL RIM ADJUSTMENT WITH PROP. STREET ELEVATION

EXIST. ELEC. DUCT BANK (UNKNOWN DEPTH)

COORDINATE FINAL RIM ADJUSTMENT WITH PROP. STREET ELEVATION

PROP. 18" STORM DRAIN

PROP. 6" WATER LINE

PROP. 4" WATER LINE

PROP. 18" STORM DRAIN

720

710

700

690

EXIST. GRADE

PROP. GRADE

PROVIDE 24" MIN. CLEARANCE

PROP. 8" D.I. SEWER 207 L.F. @ 3.00%

PROP. SANITARY SERVICE CONNECTION (TYPICAL)

EXIST. 12" VCP SEWER

PROP. DOGHOUSE SEWER
M.H. #1
RIM = 706.50
INV. IN = 697.75
EXIST. INV. IN = 697.25
EXIST. INV. OUT = 697.20

STA. 6+10
EXIST. MH #211.2224
EXIST. RIM = 705.23
EXIST. INV. OUT = 696.31

EXIST. 12" VCP SEWER @ 1.1% TO REMAIN

PROVIDE 18" MIN. CLEARANCE

PROVIDE 12" MIN. CLEARANCE

PROP. SANITARY SERVICE CONNECTION (TYPICAL)

EXIST. SANITARY SERVICE CONNECTION (TYPICAL)

5+00

6+00

7+00

8+00

mcgill
1240 19th Street Lane NW
Hickory, NC 28601
828.328.2024
NC Firm License # C-0459
mcgillassociates.com

PROFESSIONAL ENGINEER SEAL 041598 — 7/22/2021

CALL 811 BEFORE YOU DIG — STATE DIGGING PARTNER

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS

CITY OF CONCORD

CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

PROPOSED SANITARY SEWER PLAN - PROFILE AREA - B

SHEET C-309

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	M. OETTING			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	D.G. CHAPMAN	JULY, 2021	19.01726	N/A

P:\2019\19.01726-CONCORDNC-UNION STREETSCAPE PROJECT\DRAWINGS\1901726 UNION UTILITIES.DWG PLOT DATE: 7/22/2021 8:14 AM RUSSELL COX

PLAN

RE-ROUTE EXIST. 4" SEWER SERVICE TO 12" SEWER MAIN UPSTREAM OF M.H. 211.2188. ADJUST ELEVATION AND SLOPE TO AVOID EXISTING AND PROPOSED UTILITIES AND INSTALL 4" CLEAN-OUT WITH MINI-MANHOLE BOX AT BENDS. (SEE DETAIL ON SHEET C-509)

MAINTAIN 10' HORIZ. SEPARATION BETWEEN WATER AND SEWER MAINS

REMOVE EXIST. 8" VCP SEWER

REMOVE EXIST. M.H. 211.2225

REPLACE EXIST. 4" SEWER SERVICE FROM CLEAN-OUT TO 12" SEWER MAIN. ADJUST ELEVATION AND SLOPE TO AVOID EXISTING AND PROPOSED UTILITIES (SEE DETAIL ON SHEET C-509)

RE-ROUTE EXIST. 4" SEWER SERVICE FROM CLEAN-OUT TO 12" SEWER MAIN. ADJUST ELEVATION AND SLOPE TO AVOID EXISTING AND PROPOSED UTILITIES AND INSTAL 4" CLEAN-OUT IN MINI-MANHOLE BOX AT BENDS (SEE DETAIL ON SHEET C-509)

REMOVE EXIST. 8" VCP SEWER

RE-ROUTE EXIST. 8" SEWER SERVICE FROM CLEAN-OUT TO 12" SEWER MAIN. ADJUST ELEVATION AND SLOPE TO AVOID EXISTING AND PROPOSED UTILITIES AND INSTAL CLEAN-OUT IN MINI-MANHOLE BOX AT BENDS (SEE DETAIL ON SHEET C-509)

REPLACE EXIST. 4" SEWER SERVICE FROM CLEAN-OUT TO 12" SEWER MAIN. ADJUST ELEVATION AND SLOPE TO AVOID EXISTING AND PROPOSED UTILITIES (SEE DETAIL ON SHEET C-509)

PROP. 8" D.I. SEWER (NOT THIS CONTRACT)

EXIST. 6" WATER LINE TO BE REMOVED (NOT THIS CONTRACT)

EXIST. 10" WATER LINE TO BE REMOVED (NOT THIS CONTRACT)

EXIST. 12" D.I. WATER LINE TO REMAIN

MEANS AVE.

FINISHED SURFACE 700.0
BOTTOM WATER 696.0
TOP SEWER 691.5

REMOVE EXIST. M.H.

EXIST. 12" VCP SEWER TO REMAIN

REMOVE EXIST. SEWER CLEAN-OUT

UNION STREET

REMOVE EXIST. 8" VCP SEWER

PROP. 16" D.I. WATER MAIN

REMOVE EXIST. 8" VCP SEWER

REMOVE EXIST. M.H.

REMOVE EXIST. 8" VCP SEWER

STA. 8+12 — MATCH LINE

STA. 12+05 — MATCH LINE

9+00 — 10+00 — 11+00 — 12+00

PH: 9+85.60 — PH: 9+98.76 — PH: 10+06.29 — PH: 11+28.76

UL19 — UL21 — UL18 — UL20 — UL22 — UL23 — UL24

REMOVE EXIST. 8" AC WATER LINE

REMOVE EXIST. 10" DIP WATER LINE

EXIST. BRICK M.H. 211.2188
CUT, PLUG, AND GROUT INCOMING SEWER TO BE REMOVED OUTSIDE MH, AND RE-SHAPE INVERT TO REMOVE TROUGH FROM ELIMINATED INCOMING SEWER. COORDINATE FINAL RIM ADJUSTMENT WITH PROP. STREET ELEVATION

REPLACE EXIST. 4" SEWER SERVICE FROM CLEAN-OUT TO 12" SEWER MAIN. ADJUST ELEVATION AND SLOPE TO AVOID EXISTING AND PROPOSED UTILITIES (SEE DETAIL ON SHEET C-509)

REPLACE 20 LF EXIST. 12" VCP SEWER WITH 12" DI CENTERED AT CROSSING

FINISHED SURFACE 699.4
BOTTOM SEWER 692.5
TOP WATER 690.5

REPLACE EXIST. 4" SEWER SERVICE FROM CLEAN-OUT TO 12" SEWER MAIN. ADJUST ELEVATION AND SLOPE TO AVOID EXISTING AND PROPOSED UTILITIES (SEE DETAIL ON SHEET C-509)

EXIST. BRICK M.H. 211.2190
CUT, PLUG, AND GROUT INCOMING SEWER TO BE REMOVED OUTSIDE MH, AND RE-SHAPE INVERT TO REMOVE TROUGH FROM ELIMINATED INCOMING SEWER. COORDINATE FINAL RIM ADJUSTMENT WITH PROP. STREET ELEVATION

REPLACE EXIST. 4" SEWER SERVICE FROM CLEAN-OUT TO 12" SEWER MAIN. ADJUST ELEVATION AND SLOPE TO AVOID EXISTING AND PROPOSED UTILITIES (SEE DETAIL ON SHEET C-509)

FINISHED SURFACE 699.2
BOTTOM DUCT BANK 696.1
TOP SEWER 692.0

FINISHED SURFACE 699.3
BOTTOM WATER 695.8
TOP SEWER 691.9

REPLACE EXIST. 4" SEWER SERVICE FROM CLEAN-OUT TO 12" SEWER MAIN. ADJUST ELEVATION AND SLOPE TO AVOID EXISTING AND PROPOSED UTILITIES (SEE DETAIL ON SHEET C-509)

REPLACE EXIST. 4" SEWER SERVICE FROM CLEAN-OUT TO 12" SEWER MAIN. ADJUST ELEVATION AND SLOPE TO AVOID EXISTING AND PROPOSED UTILITIES (SEE DETAIL ON SHEET C-509)

EXIST. SEWER M.H. COORDINATE FINAL RIM ADJUSTMENT WITH PROP. STREET ELEVATION

PROFILE

SCALE: HORIZ. 1"= 10'
VERT. 1"= 2'

PUBLIC WATER DISTRIBUTION SYSTEM AND WASTEWATER COLLECTION SYSTEM IMPROVEMENTS SHALL BE CONSTRUCTED ACCORDING TO WATER AND SEWER AUTHORITY OF CABARRUS COUNTY'S (WSACC) "STANDARD SPECIFICATIONS FOR WASTEWATER COLLECTION AND WATER DISTRIBUTION CONSTRUCTION FOR CABARRUS COUNTY," DATED AUGUST 2006 AND THE CITY OF CONCORD DEVELOPMENT ORDINANCE, CODE OF ORDINANCES CHAPTER 62 AND TECHNICAL STANDARDS

710
700
690

COORDINATE FINAL RIM ADJUSTMENT WITH PROP. STREET ELEVATION

PROP. 6" WATER LINE

COORDINATE FINAL RIM ADJUSTMENT WITH PROP. STREET ELEVATION

EXIST. GRADE

PROP. ELEC. DUCT BANK (REFER TO ELECTRICAL)

PROP. 6" WATER LINE

COORDINATE FINAL RIM ADJUSTMENT WITH PROP. STREET ELEVATION

PROP. 12" WATER LINE

PROP. ELEC. DUCT BANK (REFER TO ELECTRICAL)

PROP. SANITARY SERVICE CONNECTION (TYPICAL)

PROP. GRADE

EXIST. 12" VCP SEWER @ 0.8% TO REMAIN

PROVIDE 24" MIN. CLEARANCE

EXIST. 12" VCP SEWER @ 1.1% TO REMAIN

REPLACE 20 LF EXIST. 12" VCP SEWER WITH 12" DI CENTERED AT CROSSING CONNECT USING TRANSITION COUPLINGS

STA. 8+96
EXIST. MH #211.21188
TOP 699.76
INV. IN 693.16
INV. OUT 693.16

STA. 10+06
EXIST. MH #211.21190
TOP 699.44
INV. IN 692.24
INV. OUT 691.94

STA. 11+28
EXIST. MH
INV. IN 690.85
INV. OUT 690.80

9+00 — 10+00 — 11+00 — 12+00

STA. 8+12 — MATCH LINE

STA. 12+05 — MATCH LINE

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mcgillassociates.com

PROFESSIONAL ENGINEER SEAL 041598 MATTHEW D. OETTING 7/22/2021

CALL 811 BEFORE YOU DIG 811 SAFE DIGGING PARTNER

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS

CITY OF CONCORD

CABARRUS COUNTY, NORTH CAROLINA

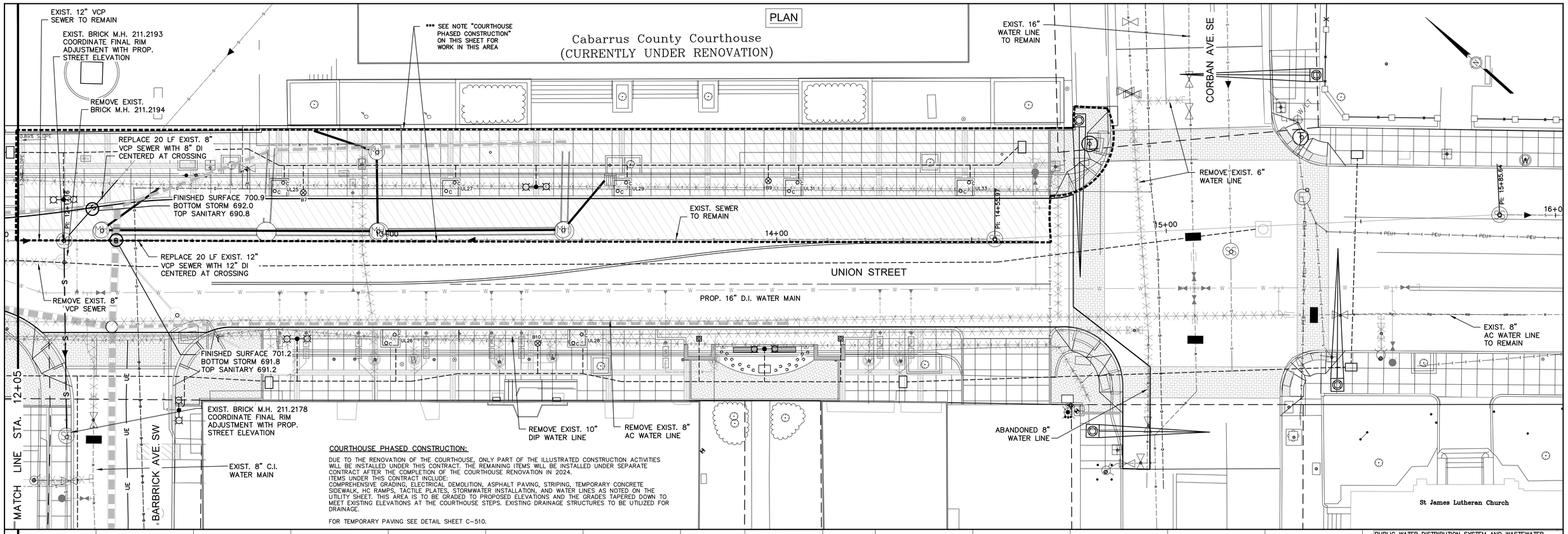
GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

PROPOSED SANITARY SEWER PLAN - PROFILE AREA - C

SHEET C-310

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	M. OETTING			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	D.G. CHAPMAN	JULY, 2021	19.01726	N/A

P:\2019\19.01726-CONCORD\C-UNION STREETS-CAPE PROJECT\DRAWINGS\19012611UNION UTILITIES.DWG PLOT DATE 7/22/2021 8:15 AM RUSSELL COX



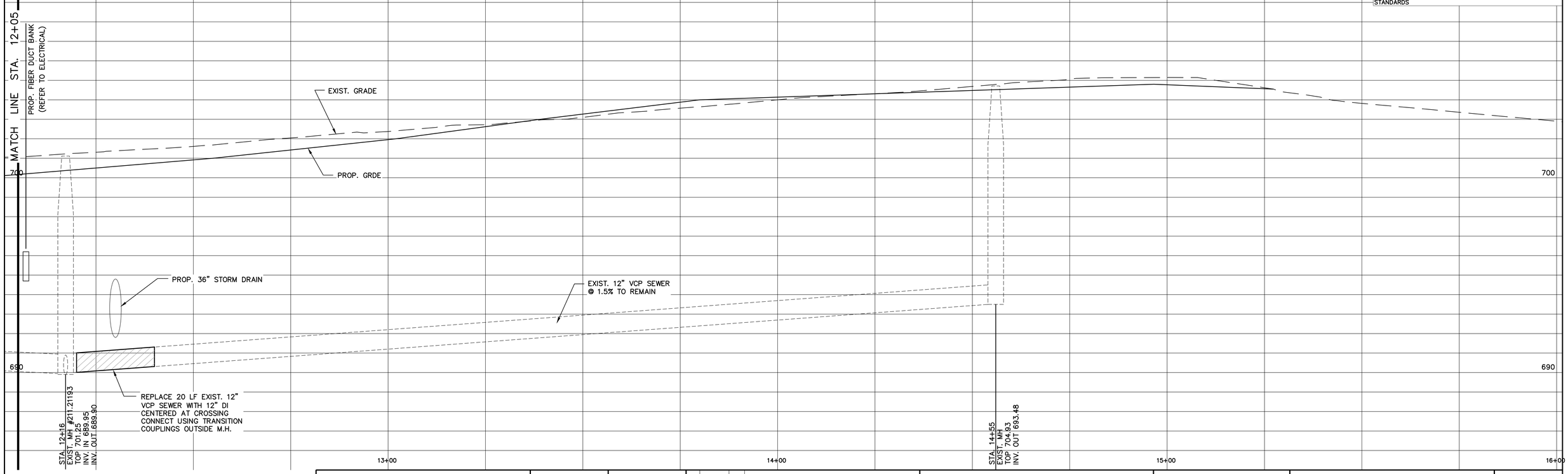
COURTHOUSE PHASED CONSTRUCTION:

DUE TO THE RENOVATION OF THE COURTHOUSE, ONLY PART OF THE ILLUSTRATED CONSTRUCTION ACTIVITIES WILL BE INSTALLED UNDER THIS CONTRACT. THE REMAINING ITEMS WILL BE INSTALLED UNDER SEPARATE CONTRACT AFTER THE COMPLETION OF THE COURTHOUSE RENOVATION IN 2024.
ITEMS UNDER THIS CONTRACT INCLUDE:
COMPREHENSIVE GRADING, ELECTRICAL DEMOLITION, ASPHALT PAVING, STRIPING, TEMPORARY CONCRETE SIDEWALK, HC RAMPS, TACTILE PLATES, STORMWATER INSTALLATION, AND WATER LINES AS NOTED ON THE UTILITY SHEET. THIS AREA IS TO BE GRADED TO PROPOSED ELEVATIONS AND THE GRADES TAPERED DOWN TO MEET EXISTING ELEVATIONS AT THE COURTHOUSE STEPS. EXISTING DRAINAGE STRUCTURES TO BE UTILIZED FOR DRAINAGE.

FOR TEMPORARY PAVING SEE DETAIL SHEET C-510.

PROFILE
SCALE: HORIZ. 1"= 10'
VERT. 1"= 2'

PUBLIC WATER DISTRIBUTION SYSTEM AND WASTEWATER COLLECTION SYSTEM IMPROVEMENTS SHALL BE CONSTRUCTED ACCORDING TO WATER AND SEWER AUTHORITY OF CABARRUS COUNTY'S (WSACC) "STANDARD SPECIFICATIONS FOR WASTEWATER COLLECTION AND WATER DISTRIBUTION CONSTRUCTION FOR CABARRUS COUNTY," DATED AUGUST 2006 AND THE CITY OF CONCORD DEVELOPMENT ORDINANCE, CODE OF ORDINANCES CHAPTER 62 AND TECHNICAL STANDARDS



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PROFESSIONAL ENGINEER SEAL 041598 MATTHEW D. OETTING 7-22-2021

CALL 811 BEFORE YOU DIG SAFE DIGGING PARTNER

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 DIVISION VALUE = 10 FEET

OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	M. OETTING
PROJECT MANAGER	REVIEWER
M.J. NORRIS	D.G. CHAPMAN

PROPOSED SANITARY SEWER
PLAN - PROFILE
AREA - D

DATE	PROJECT #	FUNDING #
JULY, 2021	19.01726	N/A

SHEET
C-311

P:\2019\19.01726-CONCORD\NC-UNION STREETSCAPE PROJECT\DRAWINGS\1901726 UNION UTILITIES.DWG PLOT DATE 7/22/2021 9:19 AM RUSSELL COX

PLAN

BARBRICK AVE. SW

UNION STREET

FINISHED SURFACE 696.1
BOTTOM STORM 689.0
TOP SANITARY 687.9

EXIST. BRICK M.H. 211.4101
COORDINATE FINAL RIM
ADJUSTMENT WITH PROP.
STREET ELEVATION

EXIST. BRICK M.H. 211.2180
COORDINATE FINAL RIM
ADJUSTMENT WITH PROP.
STREET ELEVATION

FINISHED SURFACE 700.7
BOTTOM WATER LINE 696.4
TOP SEWER LINE 690.6

FINISHED SURFACE 700.4
BOTTOM ELEC. DUCT 696.7
TOP SEWER LINE 690.6

REMOVE EXIST.
BRICK M.H. 211.2194

FINISHED SURFACE 700.8
BOTTOM WATER LINE 694.7
TOP SEWER LINE 690.9

FINISHED SURFACE 700.4
BOTTOM STORM DRAIN 692.3
TOP SEWER LINE 690.8

EXIST. BRICK M.H. 211.2193
COORDINATE FINAL RIM
ADJUSTMENT WITH PROP.
STREET ELEVATION

REPLACE 20 LF EXIST. 8"
VCP SEWER WITH 8" DI
CENTERED AT CROSSING

FINISHED SURFACE 700.9
BOTTOM STORM 692.0
TOP SANITARY 690.8

EXIST. 12" VCP SEWER
@ 1.2% TO REMAIN

EXIST. 8" C.I.
WATER MAIN

REPLACE 20 LF EXIST. 12"
VCP SEWER WITH 12" DI
CENTERED AT CROSSING

EXIST. BRICK M.H. 211.2178
COORDINATE FINAL RIM
ADJUSTMENT WITH PROP.
STREET ELEVATION

REPLACE 12" VCP SEWER
WITH 47 LF 12" DI SEWER
@ 1.1%

PROP. 16" WATER MAIN

*** SEE NOTE "COURTHOUSE
PHASED CONSTRUCTION" ON
ALL SHEETS FOR WORK IN
THIS AREA

52+00 | 53+00 | 54+00 | 55+00

PI: 52+61.98 | PI: 53+09.26 | PI: 54+08.34 | PI: 54+33.02 | PI: 54+58.42

3" Gas Vault

Inlet

Curb Inlet

Rim 695.12
Out 683.62

NO PARKING

UE

COURTHOUSE PHASED CONSTRUCTION:

DUE TO THE RENOVATION OF THE COURTHOUSE, ONLY PART OF THE ILLUSTRATED CONSTRUCTION ACTIVITIES WILL BE INSTALLED UNDER THIS CONTRACT. THE REMAINING ITEMS WILL BE INSTALLED UNDER SEPARATE CONTRACT AFTER THE COMPLETION OF THE COURTHOUSE RENOVATION IN 2024.
ITEMS UNDER THIS CONTRACT INCLUDE:
COMPREHENSIVE GRADING, ELECTRICAL DEMOLITION, ASPHALT PAVING, STRIPING, TEMPORARY CONCRETE SIDEWALK, HC RAMPS, TACTILE PLATES, STORMWATER INSTALLATION, AND WATER LINES AS NOTED ON THE UTILITY SHEET. THIS AREA IS TO BE GRADED TO PROPOSED ELEVATIONS AND THE GRADES TAPERED DOWN TO MEET EXISTING ELEVATIONS AT THE COURTHOUSE STEPS. EXISTING DRAINAGE STRUCTURES TO BE UTILIZED FOR DRAINAGE.

FOR TEMPORARY PAVING SEE DETAIL SHEET C-510.

PROFILE
SCALE: HORIZ. 1"= 10'
VERT. 1"= 2'

PUBLIC WATER DISTRIBUTION SYSTEM AND WASTEWATER COLLECTION SYSTEM IMPROVEMENTS SHALL BE CONSTRUCTED ACCORDING TO WATER AND SEWER AUTHORITY OF CABARRUS COUNTY'S (WSACC) "STANDARD SPECIFICATIONS FOR WASTEWATER COLLECTION AND WATER DISTRIBUTION CONSTRUCTION FOR CABARRUS COUNTY," DATED AUGUST 2006 AND THE CITY OF CONCORD DEVELOPMENT ORDINANCE, CODE OF ORDINANCES CHAPTER 62 AND TECHNICAL STANDARDS

700
690
680

PROP. 42" STORM DRAIN
EXIST. GRADE
PROP. 6" WATER LINE
EXIST. 6" WATER LINE (TO BE REMOVED)
PROP. ELEC. DUCT
PROP. 30" STORM DRAIN
PROP. 16" WATER MAIN
EXIST. 18" STORM DRAIN (TO BE REMOVED)
PROP. 24" STORM DRAIN
PROP. FIBER DUCT BANK
REMOVE EXIST. BRICK M.H. 211.2194
CONC. COLLAR POURED AGAINST OUTSIDE OF MANHOLE WALL AND CENTERED AROUND SEWER PIPE (REFER TO DETAIL C-507)

EXIST. 12" VCP SEWER
@ 1.0% TO REMAIN

REPLACE 20 LF EXIST. 12"
VCP SEWER WITH 12" DI
CENTERED AT CROSSING
CONNECT USING TRANSITION
COUPLINGS

EXIST. 12" VCP SEWER
@ 1.2% TO REMAIN

EXIST. 12" VCP SEWER
@ 1.2% TO REMAIN

REPLACE 12" VCP SEWER
WITH 47 LF 12" DI
SEWER @ 1.1%

REPLACE 20 LF EXIST. 8"
VCP SEWER WITH 8" DI
CENTERED AT CROSSING
CONNECT TO EXIST. SEWER
USING TRANSITION
COUPLINGS

STA. 52+62
EXIST. MH
TOP 697.40
INV. IN 687.35
INV. OUT 687.30

STA. 53+09
EXIST. MH
TOP 699.68
INV. IN 687.98
INV. OUT 687.88

STA. 54+08
EXIST. MH
TOP 700.54
INV. IN 689.39
INV. OUT 689.14

STA. 54+58
EXIST. MH
TOP 701.24
INV. IN 689.90
INV. OUT 689.89

STA. 54+53
EXIST. MH
TOP 701.25
INV. IN 689.94
INV. OUT 689.90

52+00 | 53+00 | 54+00

mcgill
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Hickory, NC 28601
828.328.2024
NC Firm License # C-0459
mcgillassociates.com

PROFESSIONAL ENGINEER SEAL 041598 NORTH CAROLINA MATTHEW R. OETTING
7/22/2021

CALL 811 BEFORE YOU DIG SAFE DIGGING PARTNER

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS

CITY OF CONCORD

CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	M. OETTING
PROJECT MANAGER	REVIEWER
M.J. NORRIS	D.G. CHAPMAN

PROPOSED SANITARY SEWER
PLAN - PROFILE
AREA - E

DATE	PROJECT #	FUNDING #
JULY, 2021	19.01726	N/A

SHEET
C-312

P:\2019\19.01726-CONCORD\C-UNION STREETSCAPE PROJECT\DRAWINGS\1901726 UNION UTILITIES.DWG PLOT DATE: 7/22/2021 8:18 AM BUSSELL COX

LIGHTING MOUNTING AS NOTED

SYMBOL	DESCRIPTION
	CEILING MOUNTED FLUORESCENT FIXTURE; LETTER INSIDE OR BESIDE DENOTES FIXTURE TYPE
	CEILING MOUNTED FLUORESCENT LIGHTING FIXTURE, WIRED FOR NORMAL/STANDBY POWER OPERATION; LETTER INSIDE OR BESIDE FIXTURE DENOTES FIXTURE TYPE
	WALL MOUNTED FLUORESCENT FIXTURE
	CEILING MOUNTED INCANDESCENT OR H.I.D. FIXTURE
	WALL MOUNTED INCANDESCENT OR H.I.D. FIXTURE
	POLE STANDARD LIGHT FIXTURE UNIT – SINGLE ARM
	POLE STANDARD LIGHT FIXTURE UNIT – DOUBLE ARM
	POLE LANTERN TYPE LIGHT FIXTURE UNIT
	EXIT SIGN
	EXIT SIGN (DOUBLE FACE)
	EXIT SIGN WITH DIRECTIONAL ARROW
	EMERGENCY BATTERY PACK UNIT
	REMOTE HEAD FOR EMERGENCY BATTERY PACK UNIT

SWITCHING

SYMBOL	MOUNTING	DESCRIPTION
S	48"AFF	SWITCH, SINGLE POLE
S_2	48"AFF	SWITCH, DOUBLE POLE
S_3	48"AFF	SWITCH, 3–WAY
S_4	48"AFF	SWITCH, 4–WAY
S_{DM}	48"AFF	SWITCH, DIMMER
S_P	48"AFF	SWITCH WITH PILOT LIGHT
S_M	48"AFF	SWITCH, MANUAL MOTOR STARTER, RATING AND THERMAL OVERLOADS TO MATCH MOTOR NAME PLATE DATA
S_{MI}	48"AFF	SWITCH, MANUAL MOTOR STARTER WITH IVORY, ILLUMINATED HANDLE
S_{MP}	48"AFF	SWITCH, MANUAL MOTOR STARTER WITH PILOT LIGHT
S_T	48"AFF	MANUAL MOTOR STARTER SWITCH FRACTIONAL HORSEPOWER
	AS NOTED	PHOTOELECTRIC CONTROL
R1	48"AFF	LIGHTING CONTACTOR
		DESIGNATION
LC–1		LIGHTING CONTACTOR REMOTE PUSH–BUTTON "ON–OFF" CONTROL
		REPRESENTS LIGHTING CONTACTOR BEING CONTROLLED
DS	AS NOTED	DOOR SWITCH
MC	AS NOTED	MOTION CONTROL
M	CEILING	MOTION SENSOR
OS	CEILING	OCCUPANCY SENSOR

PANELBOARDS

SYMBOL	MOUNTING	DESCRIPTION
	TOP BREAKER 6'–0"AFF	NEW PANELBOARD – SURFACE MOUNTED
	TOP BREAKER 6'–0"AFF	NEW PANELBOARD – FLUSH MOUNTED
	---	EXISTING PANELBOARD – SURFACE MOUNTED
	---	EXISTING PANELBOARD – FLUSH MOUNTED

DUCTBANK SYMBOL KEY

1 5 7
2 6

NEW CONDUIT, TYP.

EXISTING CONDUIT, TYP.

NOTE: REFER TO DUCTBANK SCHEDULE & PLANS FOR EXACT NUMBER & SIZE OF CONDUITS.

POWER

SYMBOL	MOUNTING	DESCRIPTION
WP C	36"AFF	DUPLEX RECEPTACLE, 20A RATED FOOTNOTE DELINEATES SPECIFIC DEVICE
		DENOTES MOUNTED 6" ABOVE COUNTERTOP
		REQUIREMENT – SEE ABBREVIATIONS
	36"AFF	SPECIAL PURPOSE OUTLET (SIZE INDICATED ON PLANS)
	36"AFF	SINGLE RECEPTACLE, 20A RATED
	36"AFF	DUPLEX RECEPTACLE–FLUSH–WITH GROUND FAULT CIRCUIT INTERRUPTER
	36"AFF	QUADRAPLEX RECEPTACLE, 20A RATED
	18"AFF	DUPLEX RECEPTACLE–FLUSH – SURGE–PROTECTIVE DEVICE (SPD)
	FLOOR	DUPLEX RECEPTACLE– FLOOR BOX–FLUSH
SPD	FLOOR	DUPLEX RECEPTACLE– FLOOR BOX–FLUSH – SURGE–PROTECTIVE DEVICE (SPD)
SPD	FLOOR	COMBINATION DUPLEX RECEPTACLE (SPD)/VOICE OUTLET PORT– (# DESIGNATES NUMBER OF VOICE PORTS) – FLOOR BOX–FLUSH
MSE	48"AFF	COMBINATION DISCONNECT SWITCH/MOTOR STARTER
		DESIGNATION
	AS NOTED	MOTOR (HORSEPOWER INDICATED ON PLANS)
	AS NOTED	JUNCTION BOX
T T–1		TRANSFORMER
		DESIGNATION
CM	AS NOTED	CIRCUIT MONITOR
VR 2	AS NOTED	VOLTAGE REGULATOR
SPD	AS NOTED	SURGE–PROTECTIVE DEVICE
	48"AFF	EMERGENCY POWER SHUT–OFF SWITCH
H	48"AFF	LOCKABLE ON–OFF–AUTO SELECTOR SWITCH W/RED INDICATOR LIGHT
DSA	48"AFF	DISCONNECT SWITCH
		DESIGNATION
480V 50KVA 120V		TRANSFORMER
		SIZE
		VOLTAGES
		SHIELDED ISOLATION TYPE TRANSFORMER
		EQUIPMENT CONNECTION
H		HEAT TRACE CIRCUIT

TYPICAL ANNOTATION

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
1	DRAWING KEYNOTE	CGMDP–701	PROCESS EQUIPMENT TAG
1	DEMOLITION KEYNOTE	SF HW1	HVAC EQUIPMENT TAG
1	REVISION TAG	4X	AREA NEMA DESIGNATION TAG
	REVISION CLOUD		
AAA ###	INSTRUMENTATION TAG		

SAFETY SWITCH DESIGNATOR

240/30/3/15 D.E./1

VOLTAGE
AMPERAGE
#POLES
FUSE SIZE AND TYPE
NF = NON–FUSED
NPL = PER NAMEPLATE OF EQUIPMENT SERVED
NEMA RATING

SAFETY SWITCH

NOTES:
1. INSTALL ALL FUSES SO THAT LABELS ARE RIGHT–SIDE UP AND FACING OUTWARD.
2. INSTALL OXIDATION INHIBITING COMPOUND SUCH AS PENETROX IN ALL FUSE CLIPS OF SAFETY SWITCHES LOCATED OUTDOORS OR IN WET ENVIRONMENTS.

PROPOSED DEMOLITION LEGEND

TO BE DEMOLISHED AND REMOVED

CONDUIT FEEDERS AND BRANCH CIRCUITS

SYMBOL	DESCRIPTION
— E — E —	OVERHEAD ELECTRIC SERVICE
— PE — PE —	OVERHEAD PRIMARY ELECTRIC SERVICE
— SE — SE —	OVERHEAD SECONDARY ELECTRIC SERVICE
— T — T —	OVERHEAD TELEPHONE SERVICE
— FO — FO —	OVERHEAD FIBER OPTIC
— CTV — CTV —	OVERHEAD TELEVISION SERVICE
– – – – – –	CONDUIT – EMBEDDED IN FLOOR OR EARTH
– – – EU – – –	UNDERGROUND ELECTRIC
– – – PEU – – –	UNDERGROUND PRIMARY ELECTRIC SERVICE
– – – SEU – – –	UNDERGROUND SECONDARY ELECTRIC SERVICE
– – – TU – – –	UNDERGROUND TELEPHONE SERVICE
– – – FOU – – –	UNDERGROUND FIBER OPTIC
– – – CTVU – – –	UNDERGROUND TELEVISION SERVICE
	CONDUIT – IN WALL, CEILING OR EXPOSED
— XX — XX —	CONDUIT WITH IDENTIFIER
— G — G —	GROUND GRID
	CONDUIT TURNED UP
	CONDUIT TURNED DOWN
	CONDUIT CAPPED
	BRANCH CIRCUIT WIRING
	CIRCUIT HOME RUN
	IN–LINE HOME RUN
1	CIRCUIT NUMBER
— E — E —	EMERGENCY ONLY CIRCUIT
— NE — NE —	NORMAL EMERGENCY CIRCUIT
— // —	DEVICES ON SAME CIRCUIT, SEPARATELY CONTROLLED
F2	ELECTRIC FEEDER LEGEND INDICATION
	PROPOSED DUCTBANK WIDTH

ABBREVIATIONS

A OR AMP	AMPERE	H.I.D.	HIGH INTENSITY DISCHARGE	P	# OF POLES IN CIRCUIT BREAKER
A.C.	ALTERNATING CURRENT	HP	HORSEPOWER	PH OR ø	PHASE
AF	FRAME AMPERE	H.P.S.	HIGH PRESSURE PUMP STATION	PM	POWER MONITOR
A.F.F.	ABOVE FINISHED FLOOR	HSPS	HIGH SERVICE PUMP STATION	PMT	PAD MOUNTED TRANSFORMER
A.F.G.	ABOVE FINISHED GRADE	HVAC	HEAT–VENT–AIR CONDITIONING	PNL	PANEL
A.I.C.	AMPERE INTERRUPTING CURRENT	I.G.	ISOLATED GROUND	PSI	POUNDS PER SQUARE INCH
AS	AMMETER SELECTOR SWITCH	I.D.	INNER DIAMETER	PT	POTENTIAL TRANSFORMER
AT	TRIP AMPERE	IMC	INTERMEDIATE METAL CONDUIT	PVC	POLYVINYL CHLORIDE
ATL	ACROSS–THE–LINE	IND.	INDUSTRIAL	REPL	REPLACE
A.T.S.	AUTOMATIC TRANSFER SWITCH	JB	JUNCTION BOX	QTY.	QUANTITY
AUTO	AUTOMATIC	J.I.C.	JOINT INDUSTRIAL COUNCIL	RGS	RIGID GALVANIZED STEEL
AWG	AMERICAN WIRE GAUGE	KA	KILOAMPERE	RVSS	REDUCED VOLTAGE SOLID STATE
B.F.G.	BELOW FINISHED GRADE	KCMIL	1000 CIRCULAR MILS	SC	SURGE CAPACITOR
BLDG.	BUILDING	KV	KILOVOLT	SCC	SYSTEM CONTROL CENTER
C OR COND.	CONDUIT	KVA	KILOVOLT AMPERE	SER	SERVICE ENTRANCE RATED
CB	CIRCUIT BREAKER	KW	KILOWATT	SM	SUB–METER
CKT	CIRCUIT	LA	LIGHTNING ARRESTOR	SP	SPARE
CP	CONTROL PANEL	LC	LIGHTING CONTACTOR	SPD	SURGE–PROTECTIVE DEVICE
CPT	CONTROL PANEL TRANSFORMER	LTG	LIGHTING	S.S.	STAINLESS STEEL
CR	CONTROL RELAY	MAX	MAXIMUM	SWBD	SWITCHBOARD
DESIG	DESIGNATION	MCB	MAIN CIRCUIT BREAKER	TBA	TO BE ABANDONED
DIA.	DIAMETER	mA	MILI–AMP	TBR	TO BE REMOVED
DIV.	DIVISION	MC	MANUFACTURER'S CABLE	TCC	TELECOMMUNICATIONS CLOSET
DPDT	DOUBLE POLE, DOUBLE THROW	MCC	MOTOR CONTROL CENTER	TDC	TELECOMMUNICATIONS DISTRIBUTION CLOSET
DS	DISCONNECT SWITCH	MFR	MANUFACTURER	TYP.	TYPICAL
E.C.	ELECTRICAL CONTRACTOR	MIN.	MINIMUM	UE	UNDERGROUND ELECTRIC
EHH	ELECTRIC HANDHOLE	M.L.O.	MAIN LUG ONLY	UH	UNIT HEATER
EMH	ELECTRIC MANHOLE	M.O.D.	MOTOR OPERATED DAMPER	UL	UNDERWRITERS LABORATORY
EP	EXPLOSION PROOF	MS	MOTOR STARTER	U.O.N.	UNLESS OTHERWISE NOTED
EUH	ELECTRIC UNIT HEATER	MTD.	MOUNTED	UT	UNDERGROUND TELEPHONE
E.W.	EACH WAY	N/A	NOT APPLICABLE	UV	ULTRAVIOLET
EX	EXISTING TO REMAIN	N.C.	NORMALLY CLOSED	V	VOLT
EXH	EXHAUST FAN	NEC	NATIONAL ELECTRICAL CODE	VAC	VOLTS ALTERNATING CIRCUIT
FU	FUSE	NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION	VFD	VARIABLE FREQUENCY DRIVE
FRE	FIBERGLASS REINFORCED EPOXY	NID	NETWORK INTERFACE DEVICE (4 POSITION)	VS	VOLTMETER SELECTOR SWITCH
G.C.	GENERAL CONTRACTOR	N.O.	NORMALLY OPEN	W	WIRE
GEN	GENERATOR	NO.	NUMBER	W/	WITH
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	NPT	NOMINAL PIPE THREADS	WP	WEATHERPROOF
GND. OR GRD.	GROUND	OE	OVERHEAD ELECTRIC	XFMR	TRANSFORMER

GENERAL NOTES:

A. DRAWINGS ARE DIAGRAMMATIC IN NATURE, CONTRACTOR SHALL VERIFY DIMENSIONS PRIOR TO INSTALLATION. CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER DIVISION TRADES TO PROVIDE A COMPLETE AND OPERABLE SYSTEM. LOCATE FIXTURES, DEVICES, ETC. IN ORDER TO AVOID INTERFERENCES.

B. ALL WORK SHALL BE PERFORMED AS REQUIRED BY APPLICABLE SECTION OF THE NATIONAL ELECTRICAL CODE, LATEST EDITION, AND ALL GOVERNING LOCAL CODES, LAWS, AND/OR REGULATIONS.

C. SYSTEM AND EQUIPMENT GROUNDING CONTINUITY SHALL BE ASSURED AS REQUIRED BY APPLICABLE SECTIONS OF THE NATIONAL ELECTRICAL CODE.

D. ALL WIRING SHALL BE TYPE "THHN–THWN" U.O.N.; MINIMUM WIRING SHALL BE #12 (POWER WIRE). ALL WIRE SHALL BE COPPER. MINIMUM CONDUIT SIZE FOR METALLIC CONDUIT TO BE 3/4" AND 1" FOR PVC.

E. ALL CIRCUIT PROTECTIVE DEVICES SHALL HAVE THE REQUIRED RATING INTERRUPTING CAPACITY EQUAL TO OR GREATER THAN THE AVAILABLE SHORT–CIRCUIT CURRENT AT ITS SUPPLY TERMINAL; MINIMUM INTERRUPTING CAPACITY. SHALL BE 10,000 AMPS, SYMMETRICAL A.I.C. FOR 120/208V SYSTEMS AND 14,000 AMPS, SYMMETRICAL A.I.C. FOR 277/480V SYSTEMS. REFER TO PANEL SCHEDULES FOR A.I.C. RATINGS.

F. ALL OUTDOOR EXPOSED CONDUIT TO BE RIGID GALVANIZED STEEL. TRANSITION FROM UNDERGROUND TO EXPOSED SHALL BE RIGID GALVANIZED STEEL.

G. ALL UNDERGROUND CONDUITS TO BE SCHEDULE 40 PVC UNLESS OTHERWISE INDICATED. ALL CONDUITS SHALL INCLUDE A NYLON PULL CORD.

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NORTH CAROLINA PROFESSIONAL SEAL 036840 ENGINEER NICHOLAS C. HUFFMAN 7-22-21

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

NOT TO SCALE

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	W. FLEMING			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
N. HUFFMAN	P. FISHER	JULY 2021	19.01726	N/A

ELECTRICAL LEGEND, NOTES, SCHEDULES, AND ABBREVIATIONS

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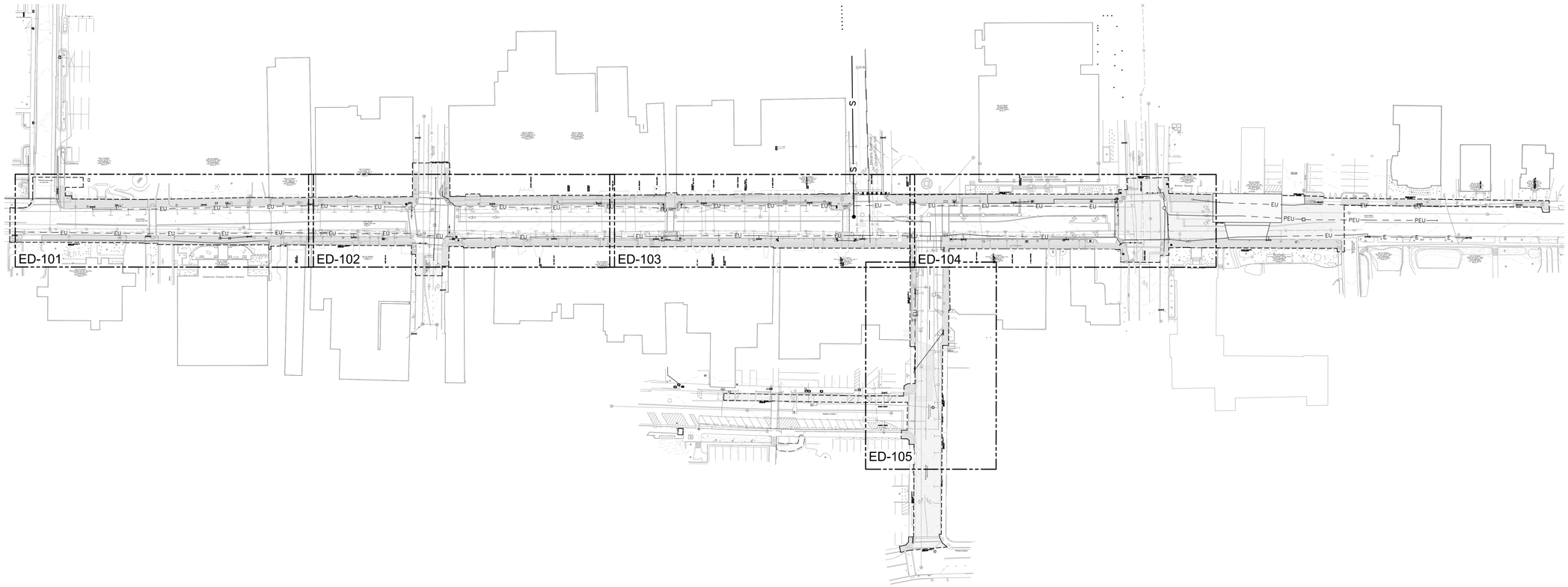

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036840 7-22-21 NICHOLAS C. HUFFMAN

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	W. FLEMING
PROJECT MANAGER	REVIEWER
N. HUFFMAN	P. FISHER

ELECTRICAL DEMOLITION
OVERALL SITE PLAN

DATE	PROJECT #	FUNDING #
JULY 2021	19.01726	N/A

SHEET
ED-100

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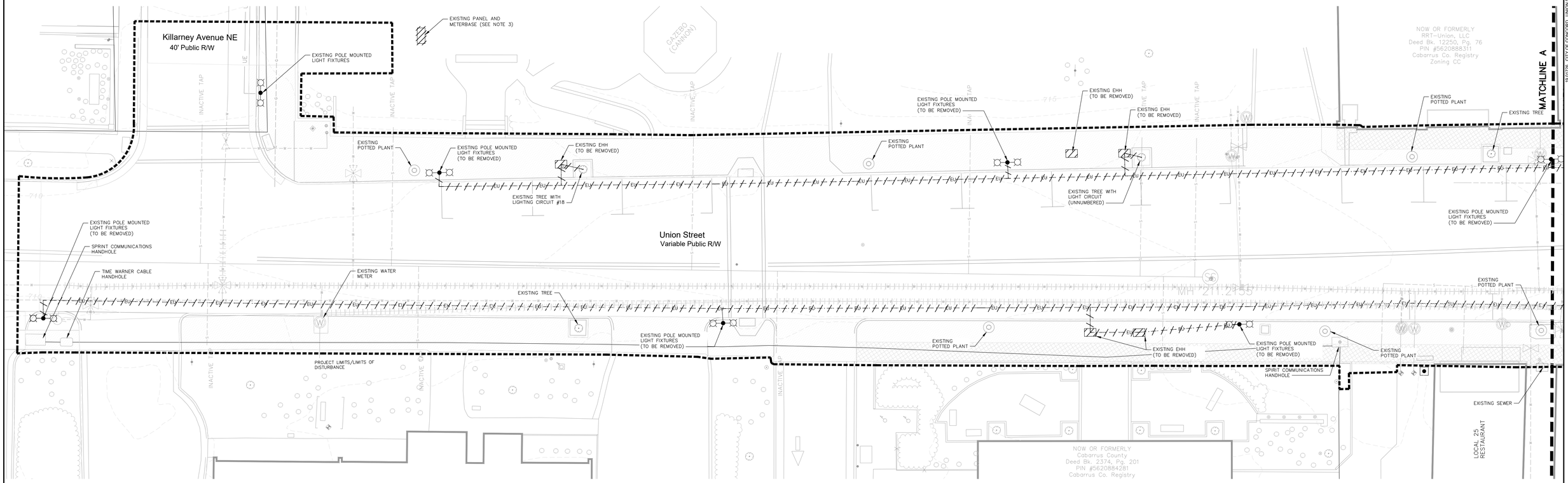

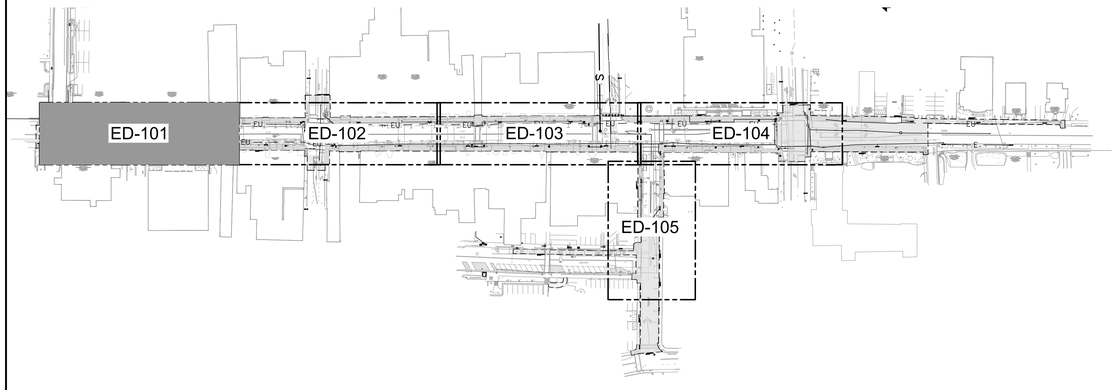

GENERAL NOTES:

1. EXISTING TREE LIGHTS AND STREET LIGHT CIRCUITS ARE SHOWN IN APPROXIMATE LOCATION. CONTRACTOR SHALL FIELD VERIFY EXISTING ROUTING OF CIRCUITS PRIOR TO DEMOLITION OF CIRCUITS.
2. ALL EXISTING LIGHTING CONDUIT AND WIRING SHALL BE REMOVED FROM THE EXISTING TREE LIGHTS AND STREET LIGHTING BEING REPLACED UNDER THE SCOPE OF THIS PROJECT.
3. EXISTING PANEL AND METERBASE TO BE DEMOLISHED. LIGHTING CIRCUITS FOR GAZEBO AND MONUMENT TO BE EXTENDED AND RECONNECTED TO NEW PANEL LP-A. COORDINATE WITH ELECTRIC UTILITY FOR THE REMOVAL OF EXISTING SERVICE CONDUCTORS.
4. LIGHT POLE FIXTURES THAT ARE DESIGNATED TO BE REMOVED SHALL BE REMOVED BY THE CITY ELECTRIC UTILITY. POLE BASES AND CIRCUITS INCLUDING WIRING AND CONDUIT TO BE REMOVED BY CONTRACTOR.
5. CONTRACTOR TO FIELD VERIFY LOCATION OF EXISTING UTILITIES. COORDINATE WITH OTHER UTILITIES.
6. COORDINATE WITH EXISTING UTILITY TO DETERMINE SOURCE OF DEMOLISHED LIGHTING CIRCUITS AND WHERE TO SECURE AND TERMINATE.
7. IT IS THE INTENTION THAT TRAFFIC SIGNAL CIRCUITS SHALL NOT BE INTERRUPTED OR DISTURBED DURING THE DEMOLITION OR CONSTRUCTION PROCESS. CONTRACTOR TO FIELD VERIFY THAT DEMOLISHED CIRCUITS WILL NOT INTERRUPT TRAFFIC SIGNAL OPERATION.
8. ALL ELECTRICAL INSTALLATIONS MUST COMPLY WITH CITY OF CONCORD TECHNICAL STANDARDS MANUAL. COORDINATE ALL ELECTRICAL DEMOLITION AND INSTALLATION WITH CITY ELECTRIC DEPARTMENT.

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NORTH CAROLINA PROFESSIONAL SEAL 036840 ENGINEER NICHOLAS C. HUFFMAN 7-22-21

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	W. FLEMING
PROJECT MANAGER	REVIEWER
N. HUFFMAN	P. FISHER

ELECTRICAL DEMOLITION PLAN - A

DATE	PROJECT #	FUNDING #
JULY 2021	19.01726	N/A

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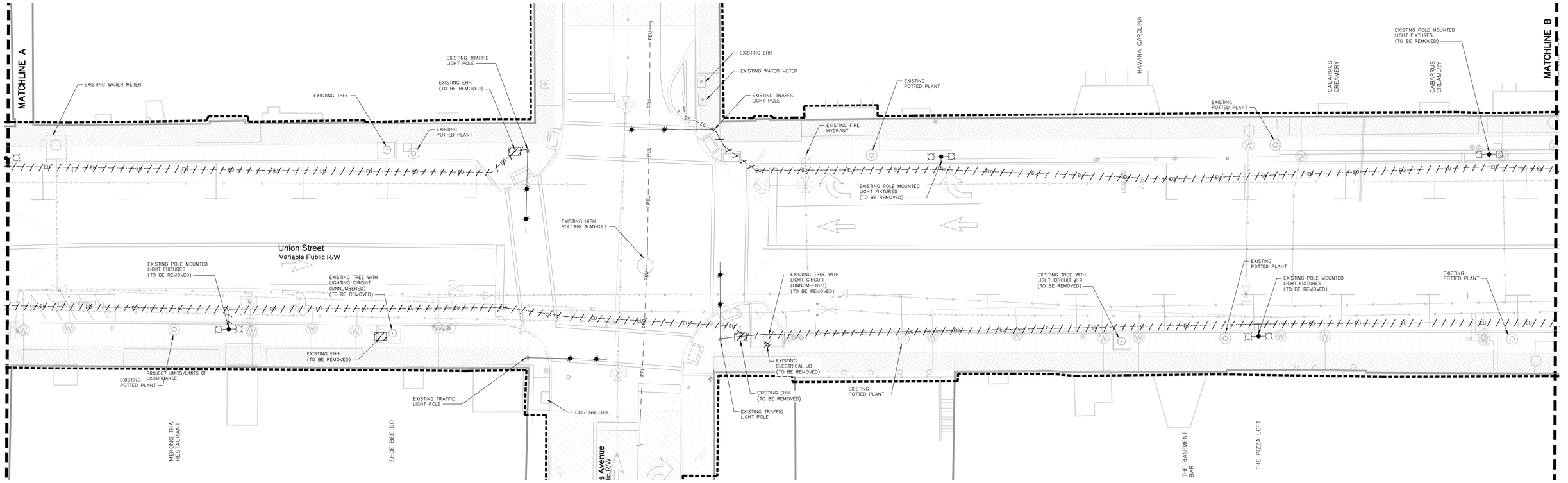

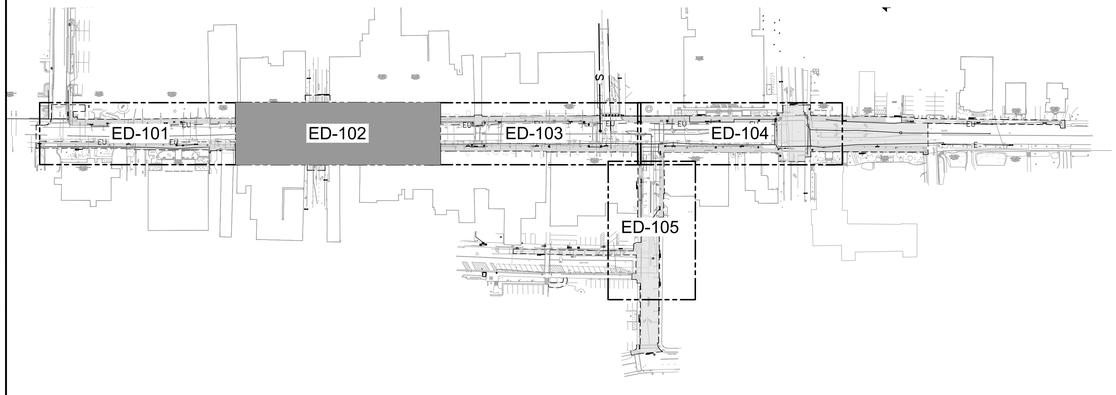

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 038840 NICHOLAS C. HUFFMAN 7-22-21

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS

CITY OF CONCORD

CABARRUS COUNTY, NORTH CAROLINA

ELECTRICAL DEMOLITION PLAN - B

OFFICE MANAGER	DESIGNER	DATE	PROJECT #	FUNDING #
D.G. CHAPMAN	W. FLEMING	JULY 2021	19.01726	N/A
PROJECT MANAGER	REVIEWER			
N. HUFFMAN	P. FISHER			

SHEET

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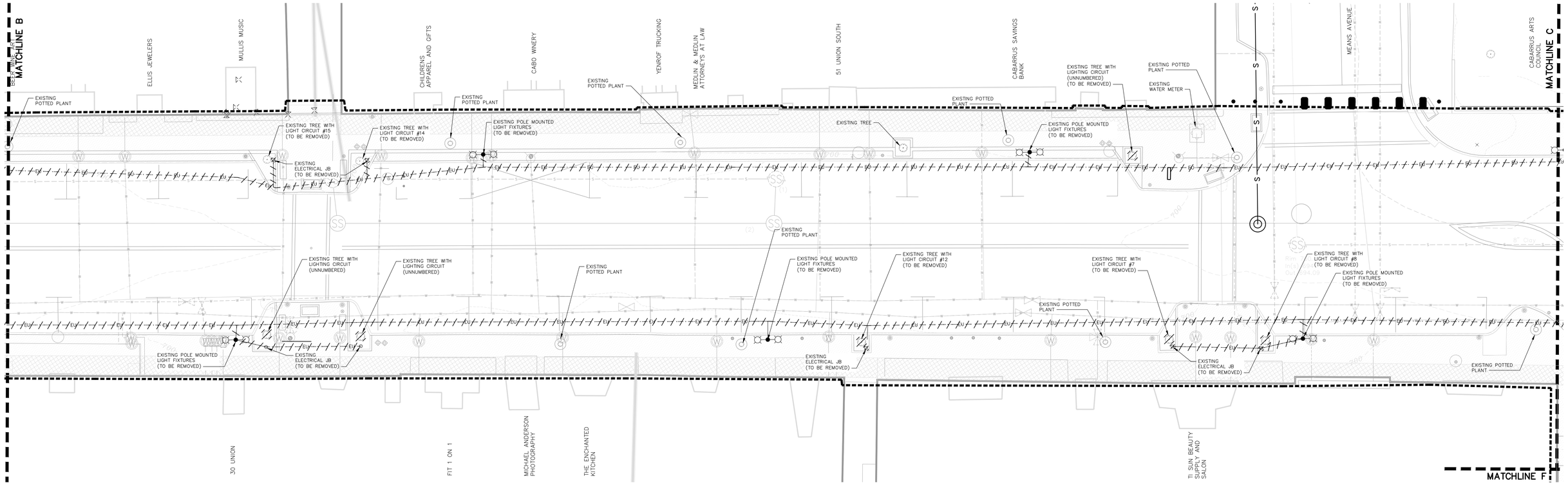

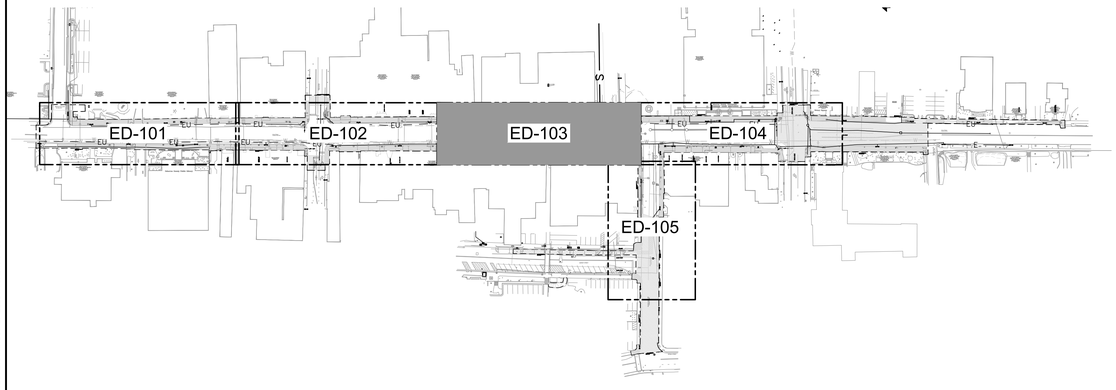

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UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	W. FLEMING
PROJECT MANAGER	REVIEWER
N. HUFFMAN	P. FISHER

ELECTRICAL DEMOLITION PLAN - C

DATE	PROJECT #	FUNDING #
JULY 2021	19.01726	N/A

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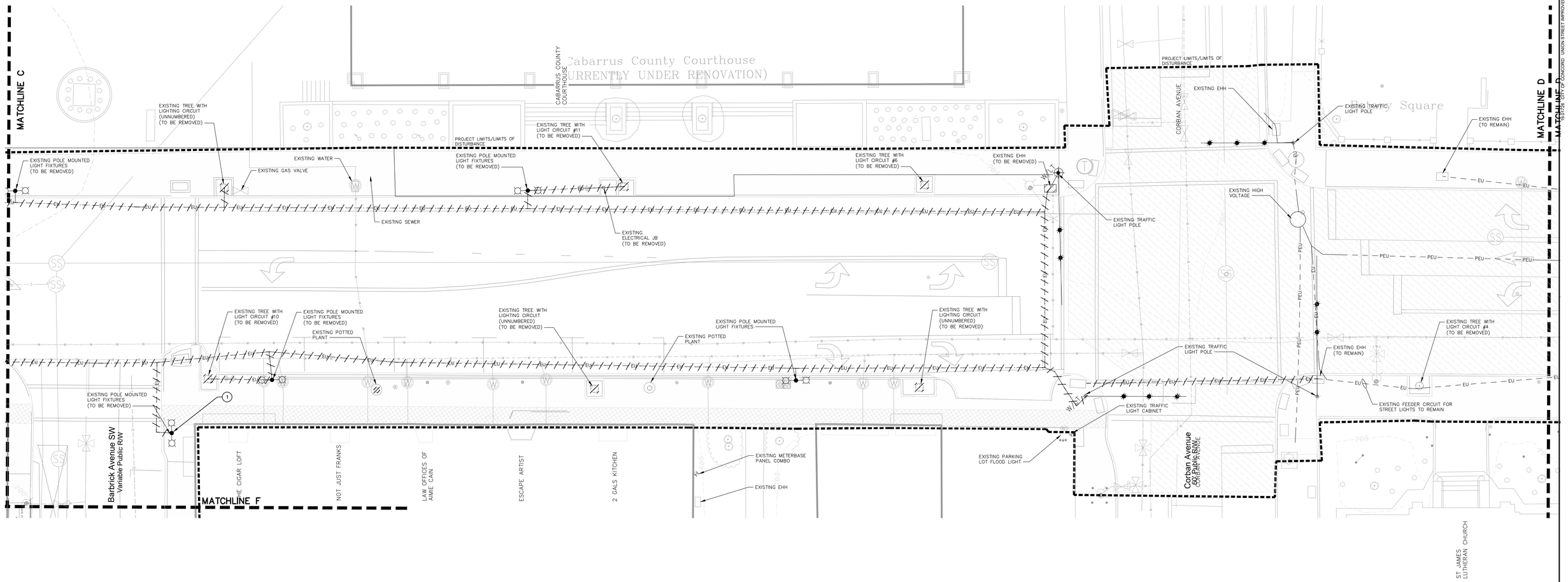

KEYNOTES:

1. THIS LIGHT POLE SHALL BE KEPT IN SERVICE AS LONG AS POSSIBLE. ALL LIGHTING CIRCUITS ON UNION STREET ORIGINATE AT THIS POLE.

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NORTH CAROLINA PROFESSIONAL SEAL 036840 ENGINEER NICHOLAS C. HUFFMAN 7-22-21

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	W. FLEMING
PROJECT MANAGER	REVIEWER
N. HUFFMAN	P. FISHER

ELECTRICAL DEMOLITION PLAN - D

DATE	PROJECT #	FUNDING #
JULY 2021	19.01726	N/A

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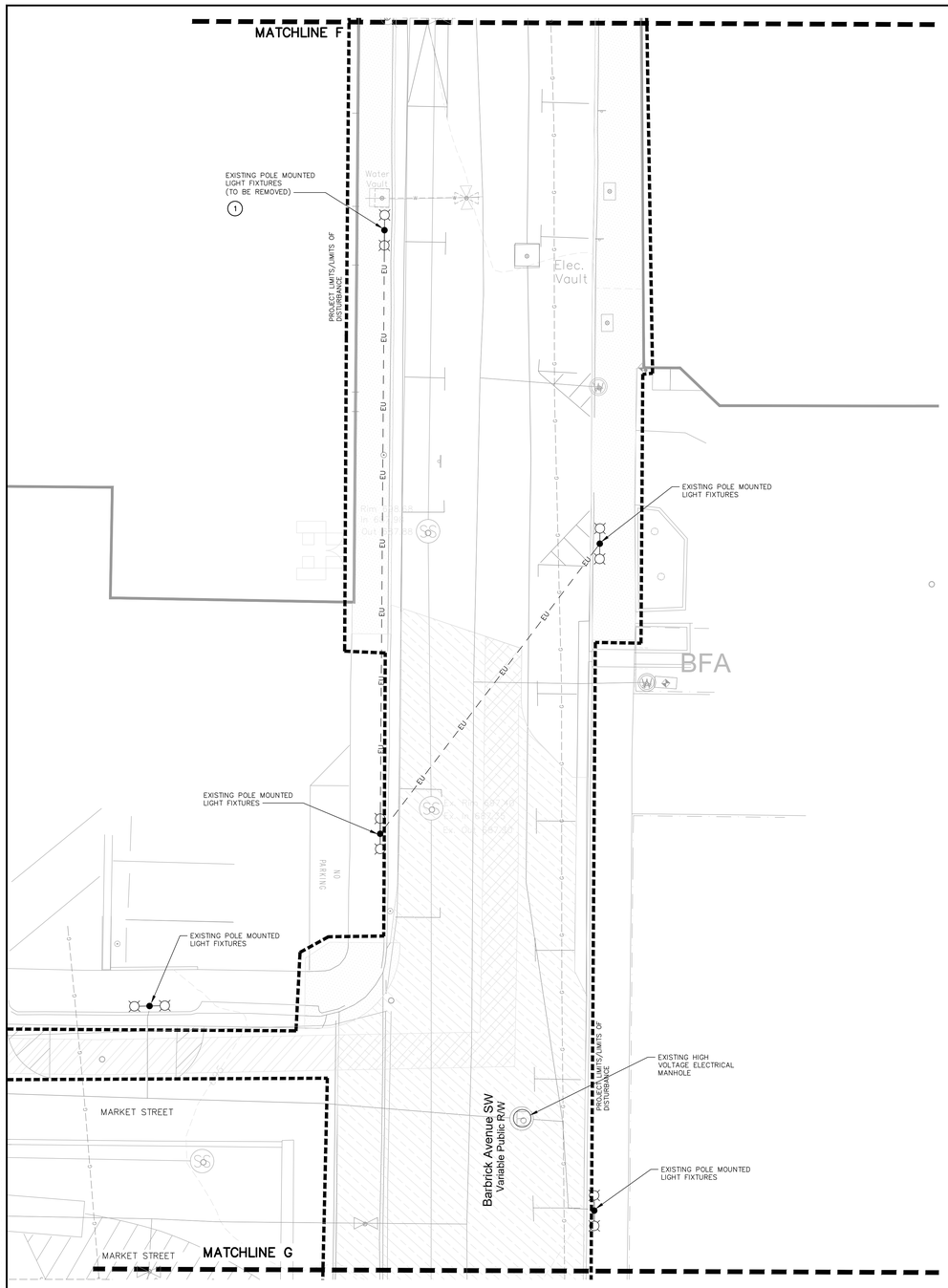

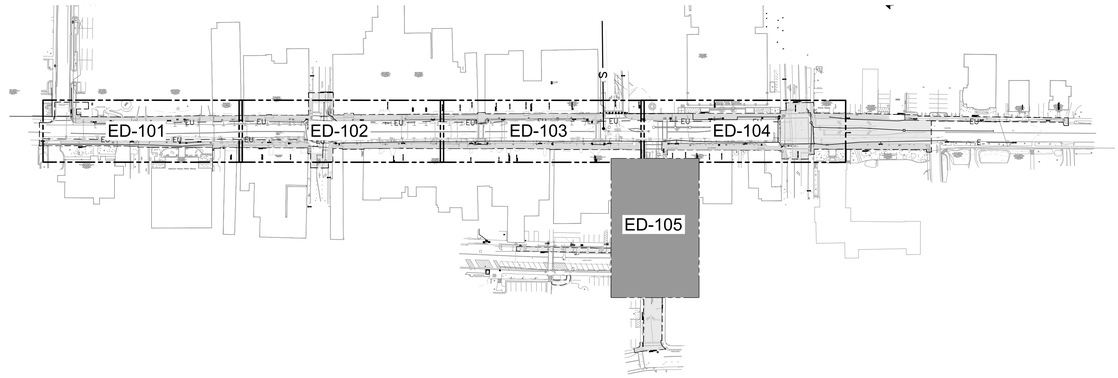

KEYNOTES:

1 THIS LIGHT POLE ALONG WITH POLE BASE WILL BE REMOVED AS A PART OF A SEPARATE PROJECT BEFORE THIS PROJECT BEGINS.

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NORTH CAROLINA PROFESSIONAL SEAL 036940 ENGINEER NICHOLAS C. HUFFMAN
7-22-21

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS

CITY OF CONCORD

CABARRUS COUNTY, NORTH CAROLINA

ELECTRICAL DEMOLITION PLAN - F

OFFICE MANAGER	DESIGNER		
D.G. CHAPMAN	W. FLEMING		
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
N. HUFFMAN	P. FISHER	JULY 2021	19.01726	N/A

SHEET

ED-105

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS

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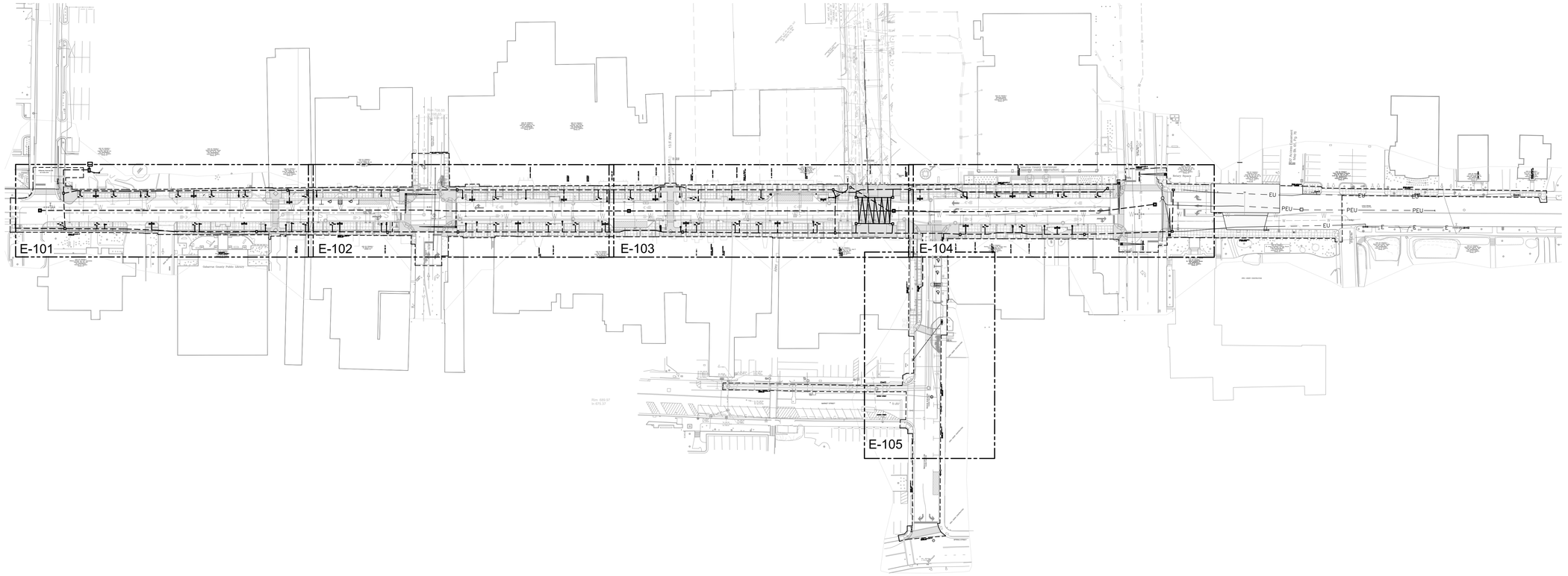

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NORTH CAROLINA PROFESSIONAL SEAL 036840 ENGINEER NICHOLAS C. HUFFMAN
7-22-21

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 DIVISION VALUE = 10 FEET

OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	W. FLEMING
PROJECT MANAGER	REVIEWER
N. HUFFMAN	P. FISHER

ELECTRICAL OVERALL SITE PLAN

DATE	PROJECT #	FUNDING #
JULY 2021	19.01726	N/A

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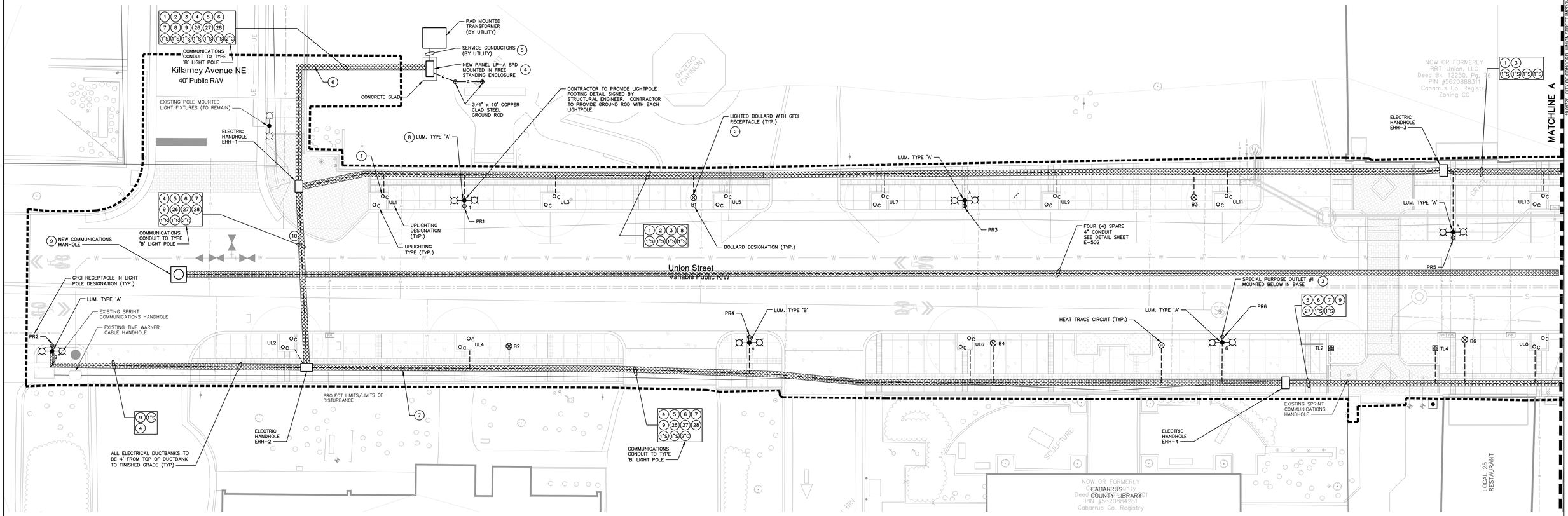
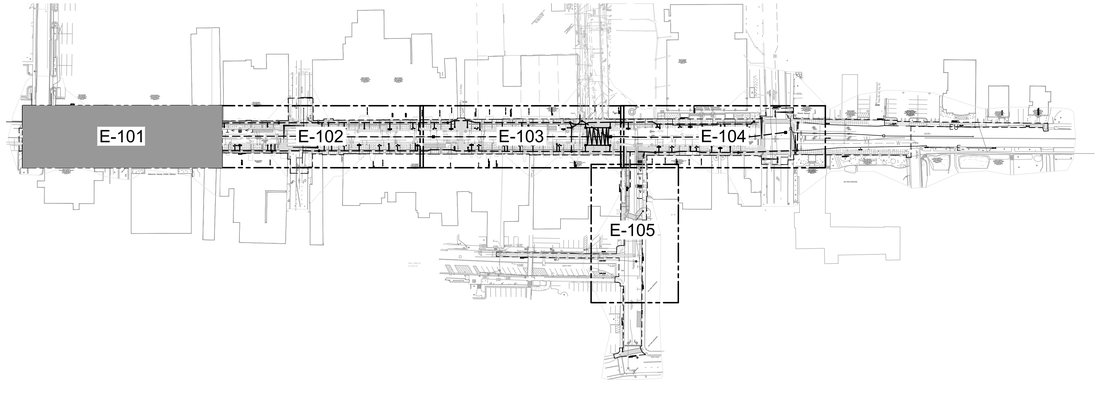
19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS





KEYPLAN
SCALE: 1"=120'-0"

GENERAL NOTES

1. CONTRACTOR SHALL PROVIDE TEMPORARY SIDEWALK LIGHTING FOR AREAS OF SIDEWALK IN WHICH STREETLAMP CIRCUITS ARE DISCONNECTED OR REMOVED. TEMPORARY LIGHTING SHALL BE PROVIDED UNTIL NEW STREETLAMPS ARE FULLY INSTALLED, CONNECTED TO NEW BRANCH CIRCUITS, AND PROVIDING LIGHT. TEMPORARY LIGHTING SHALL BE SOLAR POWERED WITH ABILITY TO CHARGE BATTERIES THROUGH GENERATOR BACKUP. LIGHTING SHALL BE PROVIDED FROM DUSK UNTIL MIDNIGHT SEVEN DAYS A WEEK.
2. SEE PHASING PLAN ON CIVIL SHEETS TO UNDERSTAND PROJECT PHASING AND HOW THE ELECTRICAL FITS INTO THE PHASE OF THE OVERALL PROJECT.
3. ALL ELECTRICAL INSTALLATIONS MUST COMPLY WITH CITY OF CONCORD TECHNICAL STANDARDS MANUAL. COORDINATE ALL ELECTRICAL DEMOLITION AND INSTALLATION WITH CITY ELECTRIC DEPARTMENT.
4. ALL NEW LIGHT POLES SHALL BE LOCATED A MINIMUM OF 3'-0" FROM CENTER OR TO EDGE OF CURB.

KEYNOTES:

1. UPLIGHTING MOUNTED FLUSH IN TREE GRATE. ROUTE CONDUITS AND LIGHTS AROUND SOIL CELLS LOCATED IN AND AROUND TREE GRATES. SEE DETAILS ON E-502.
2. TYPICAL BOLLARD WITH INTEGRAL 120V, 20A GFCI RECEPTACLE WITH LOCKABLE COVER. PROVIDE BEGA MODEL BE99626-99727-RGB16 OR EQUAL. EQUAL MODELS MUST BE APPROVED BY ENGINEER.
3. SPECIAL PURPOSE OUTLET #1 SHALL BE GFCI, WEATHERPROOF, 240V, 50A. OUTLET SHALL BE MOUNTED IN LIGHT POLE BASE WITH LOCKABLE COVER. 50A SPECIAL PURPOSE OUTLETS SHALL BE NEMA STYLE 6-50R.
4. PANEL LP-A SHALL BE MOUNTED IN A FOUNDATION MOUNTED AND BOLTED ENCLOSURE ON CONCRETE HOUSEKEEPING PAD. PROVIDE HAMMOND ENCLOSURE MODEL HN44F3722418516 OR EQUAL. EQUAL MODELS MUST BE APPROVED BY ENGINEER. SEE DETAILS SHEET E-501.
5. CONTRACTOR TO PROVIDE CONDUIT FOR SERVICE CONDUCTORS. COORDINATE WITH UTILITY COMPANY FOR INSTALLATION LOCATION AND CONDUIT SIZE AND QUANTITY.
6. ROUTE DUCTBANK SO AS TO AVOID ROOTS OF EXISTING TREE. EXCAVATE UNDERNEATH WALL AT EDGE OF PARK FOR DUCTBANK INSTALLATION.
7. ALL ELECTRICAL DUCTBANKS TO BE 4' FROM TOP OF DUCTBANK TO FINISHED GRADE. DUCTBANKS TO BE BACKFILLED AND TOPPED OFF WITH 3 INCHES OF COMPACTED ABC-3 AND SHALL BE SUITABLE FOR PEDESTRIAN TRAFFIC.
8. TYPE 'A' AND TYPE 'B' LIGHT POLES TO BE PROVIDED BY THE CITY AND INSTALLED BY CONTRACTOR. CONTRACTOR TO PROVIDE LIGHT POLE BASE. PROVIDE LIGHT POLE BASE DETAIL WITH ALL DIMENSIONS AND REQUIREMENTS SIGNED AND SEALED BY STRUCTURAL ENGINEER.
9. COMMUNICATION MANHOLES SHALL BE 6' X 6' SQUARE AND 6' DEEP WITH A ROUND COVER 30" IN DIAMETER. COVER SHALL WEIGH A MINIMUM OF 100LBS AND SHALL BEAR THE WORD "COMMUNICATIONS". CONTRACTOR TO PROVIDE A COLLAR FOR EACH COMMUNICATION MANHOLE OF SUFFICIENT DEPTH AS TO AVOID OTHER UTILITIES. COMMUNICATIONS MANHOLES SHALL BE TRAFFIC RATED TO MEET AASHTO M306.
10. ALL DUCTBANKS CROSSING OR IN ROADWAYS SHALL BE ENCASED IN CONCRETE.

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Hickory, NC 28601
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NC Firm License # C-0459
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NORTH CAROLINA PROFESSIONAL SEAL 038460 ENGINEER NICHOLAS C. HUFFMAN
7-22-21

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

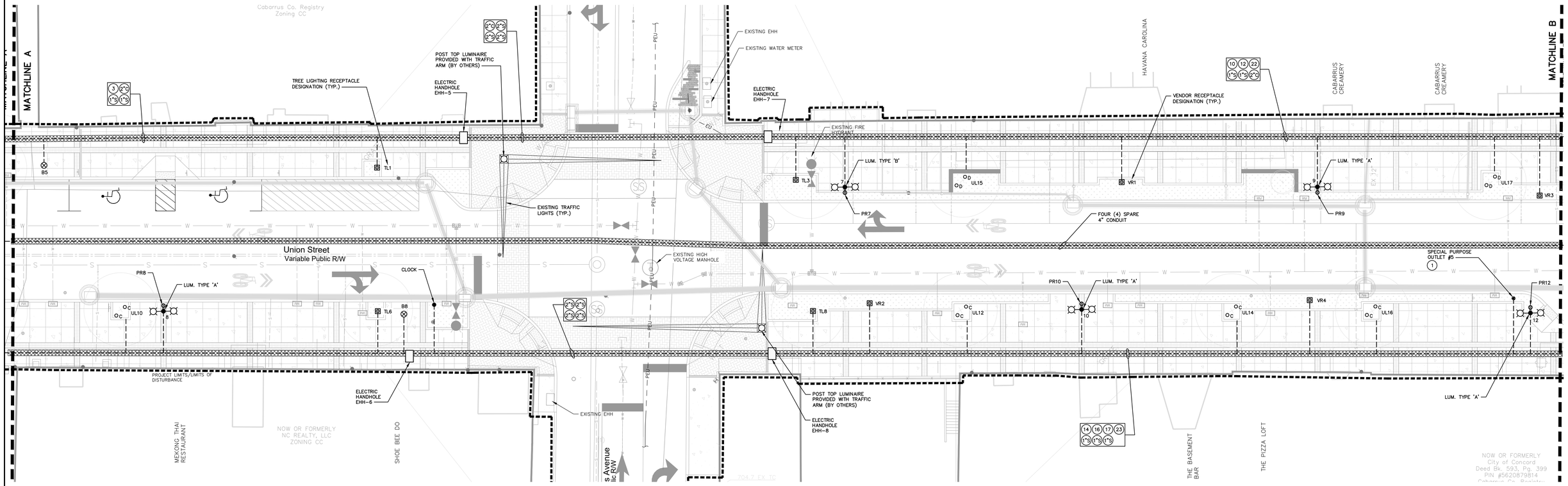
OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	W. FLEMING
PROJECT MANAGER	REVIEWER
N. HUFFMAN	P. FISHER

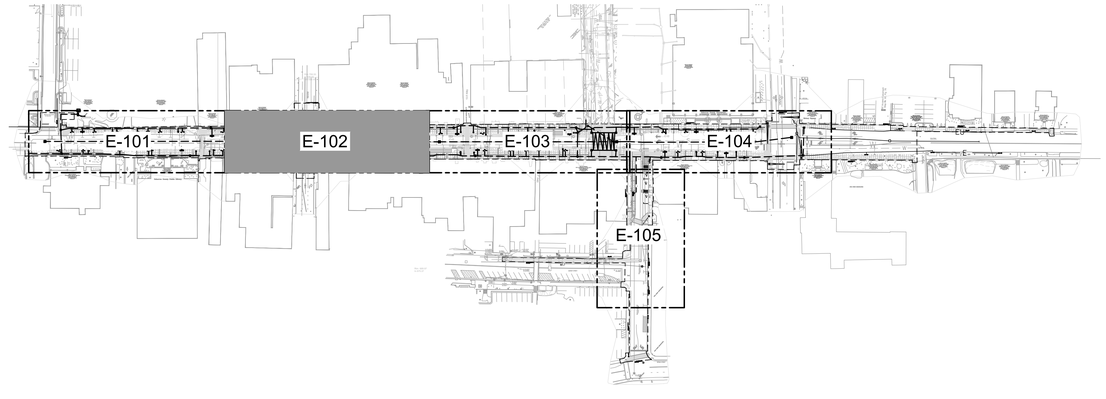
ELECTRICAL SITE PLAN - A

DATE	PROJECT #	FUNDING #
JULY 2021	19.01726	N/A

SHEET
E-101

P:\2019\19.01726-CONCORDNC-UNION STREETSCAPE PROJECT\DRAWINGS\MEP\ELECTRICAL\19.01726 PROPOSED ELECTRICAL SITE PLANS.DWG PLOT DATE: 7/22/2021 11:35 AM SONJA ROBERTS





KEYPLAN
SCALE: 1"=120'-0"

KEYNOTES:

1. SPECIAL PURPOSE OUTLETS SHALL BE GFCI, WEATHERPROOF, 240V, 50A. OUTLET SHALL BE MOUNTED A MINIMUM OF 6" AFG. COORDINATE WITH OWNER FOR ACTUAL INSTALLATION LOCATION.

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NORTH CAROLINA PROFESSIONAL SEAL 036340 ENGINEER NICHOLAS C. HUFFMAN 7-22-21

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 DIVISION VALUE = 10 FEET

OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	W. FLEMING
PROJECT MANAGER	REVIEWER
N. HUFFMAN	P. FISHER

ELECTRICAL SITE PLAN - B

DATE	PROJECT #	FUNDING #
JULY 2021	19.01726	N/A

SHEET
E-102

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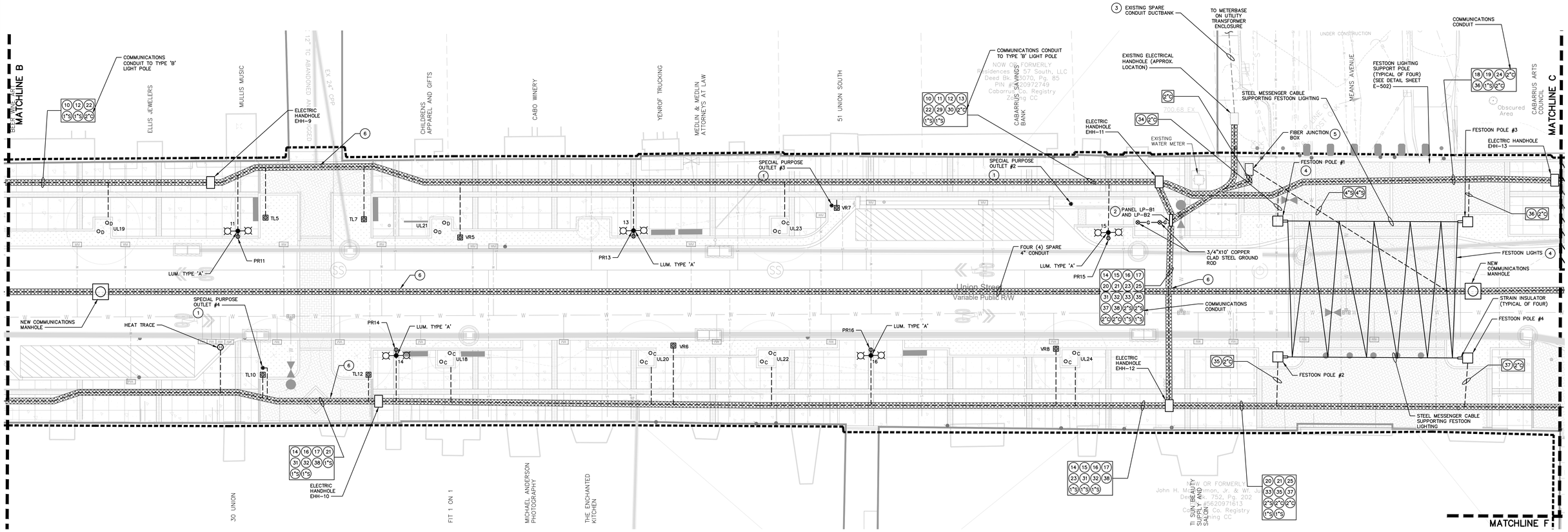
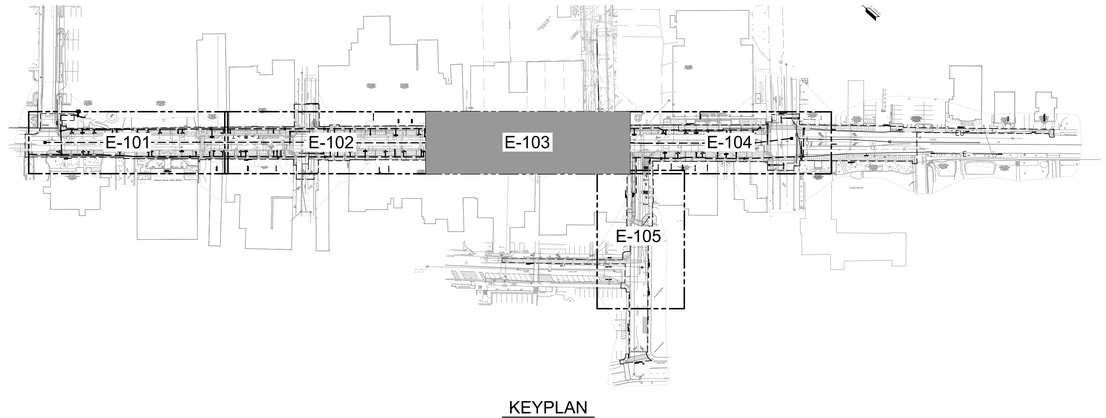
19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS





KEYPLAN
SCALE: 1"=120'-0"

KEYNOTES:

1. SPECIAL PURPOSE OUTLETS SHALL BE GFCI, WEATHERPROOF, 240V, 50A. OUTLET SHALL BE MOUNTED A MINIMUM OF 6" AFG. COORDINATE WITH OWNER FOR ACTUAL INSTALLATION LOCATION.
2. PANEL LP-B1 AND LP-B2 SHALL BE INSTALLED SO AS TO BE HIDDEN FROM PUBLIC VIEW INSIDE OF ANNOUNCEMENT KIOSK (SEE DETAIL SHEET E-501).
3. METERBASE SHALL BE INSTALLED ON UTILITY TRANSFORMER ENCLOSURE. CONTRACTOR TO INSTALL SERVICE CONDUCTORS FROM METERBASE TO EXISTING ELECTRICAL HANDHOLE IN EXISTING SPARE CONDUIT DUCTBANK, AN APPROXIMATE DISTANCE OF 180 FEET.
4. FESTOON POLES AND FESTOON LIGHTING TO BE PROVIDED BY THE CITY AND INSTALLED BY CONTRACTOR.
5. SEE CONTROL CONNECTION DIAGRAM SHEET E-502.
6. ALL DUCTBANKS CROSSING OR IN ROADWAYS SHALL BE ENCASED IN CONCRETE.

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mcgillassociates.com

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036840 7-22-21 NICHOLAS C. HUFFMAN

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 DIVISION VALUE = 10 FEET

OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	W. FLEMING
PROJECT MANAGER	REVIEWER
N. HUFFMAN	P. FISHER

ELECTRICAL SITE PLAN - C

DATE	PROJECT #	FUNDING #
JULY 2021	19.01726	N/A

SHEET
E-103

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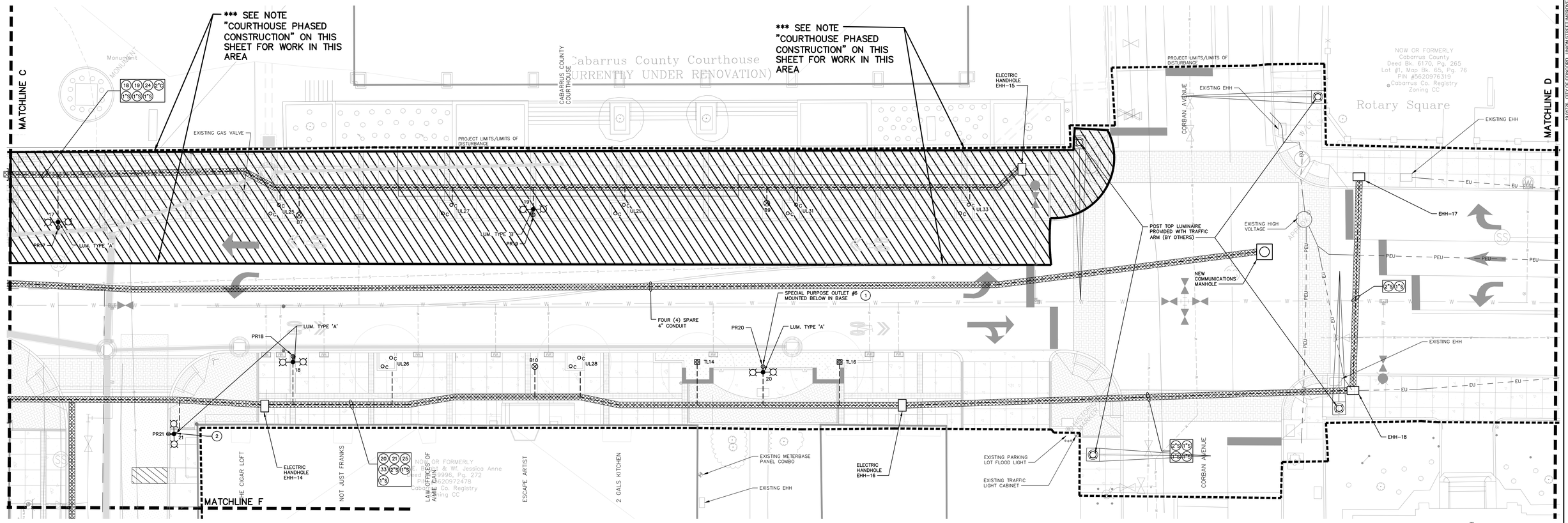
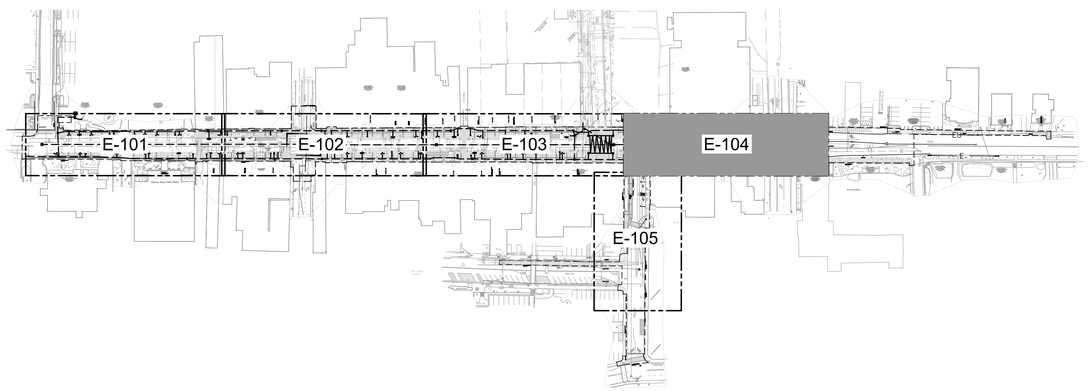
19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS



COURTHOUSE PHASED CONSTRUCTION:

DUE TO THE RENOVATION OF THE COURTHOUSE, ONLY PART OF THE ILLUSTRATED CONSTRUCTION ACTIVITIES WILL BE INSTALLED UNDER THIS CONTRACT. THE REMAINING ITEMS WILL BE INSTALLED UNDER SEPARATE CONTRACT AFTER THE COMPLETION OF THE COURTHOUSE RENOVATION IN 2024. ITEMS UNDER THIS CONTRACT INCLUDE:
COMPREHENSIVE GRADING, ELECTRICAL DEMOLITION, ASPHALT PAVING, STRIPING, TEMPORARY CONCRETE SIDEWALK, HC RAMPS, TACTILE PLATES, STORMWATER INSTALLATION, AND WATER LINES AS NOTED ON THE UTILITY SHEET. THIS AREA IS TO BE GRADED TO PROPOSED ELEVATIONS AND THE GRADES TAPERED DOWN TO MEET EXISTING ELEVATIONS AT THE COURTHOUSE STEPS. EXISTING DRAINAGE STRUCTURES TO BE UTILIZED FOR DRAINAGE.

FOR TEMPORARY PAVING SEE DETAIL SHEET C-510.



KEYPLAN
SCALE: 1"=120'-0"

KEYNOTES:

1. SPECIAL PURPOSE OUTLETS SHALL BE GFCI, WEATHERPROOF, 240V, 50A. OUTLET SHALL BE MOUNTED A MINIMUM OF 6" AFG. COORDINATE WITH OWNER FOR ACTUAL INSTALLATION LOCATION.
2. THIS LIGHT POLE SHALL BE KEPT IN SERVICE AS LONG AS POSSIBLE. ALL LIGHTING CIRCUITS ON UNION STREET ORIGINATE AT THIS POLE.

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mcgillassociates.com

NORTH CAROLINA PROFESSIONAL SEAL 036840 ENGINEER NICHOLAS C. HUFFMAN 7-22-21

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 DIVISION VALUE = 10 FEET

OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	W. FLEMING
PROJECT MANAGER	REVIEWER
N. HUFFMAN	P. FISHER

ELECTRICAL SITE PLAN - D

DATE	PROJECT #	FUNDING #
JULY 2021	19.01726	N/A

SHEET
E-104

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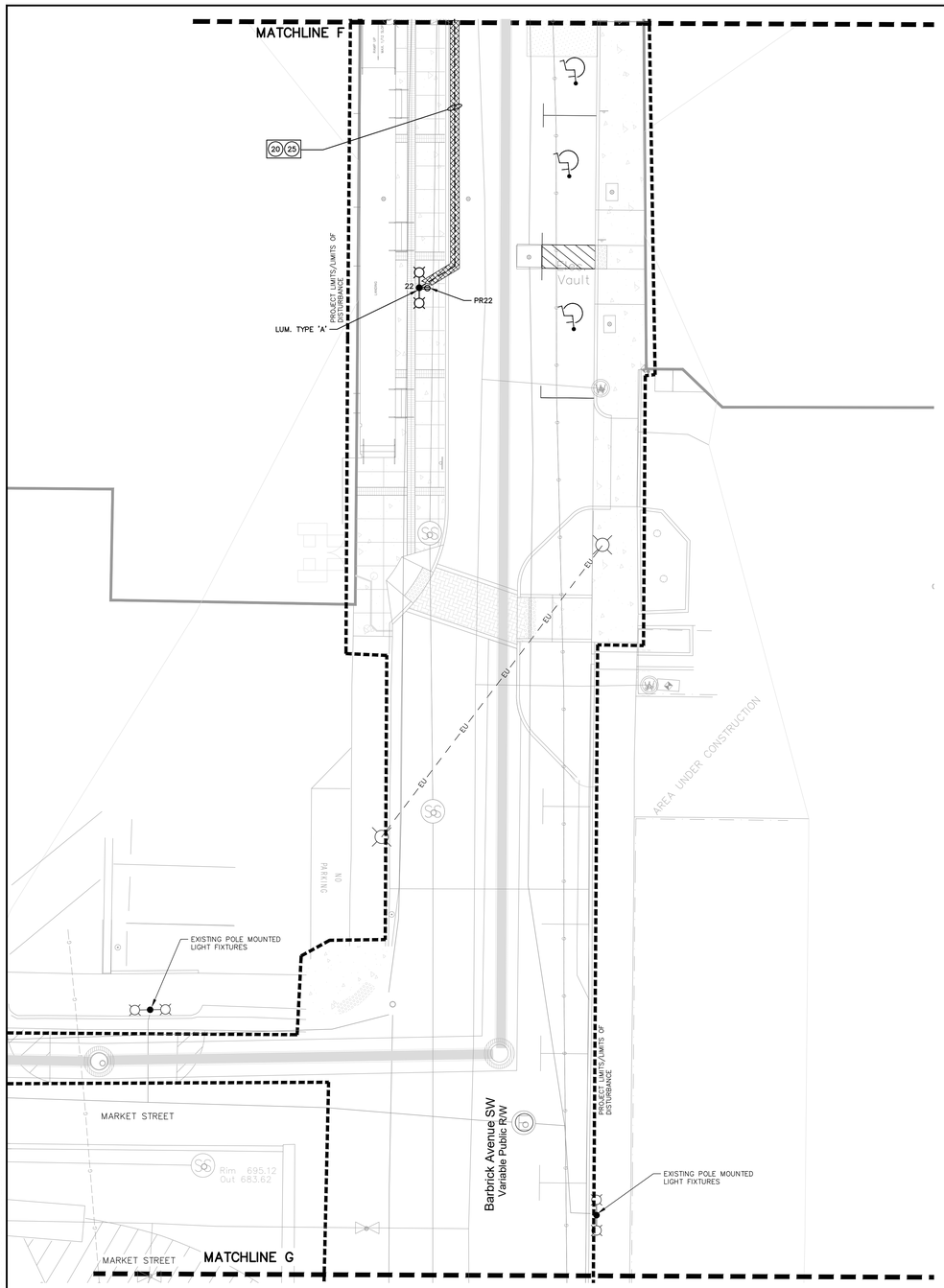
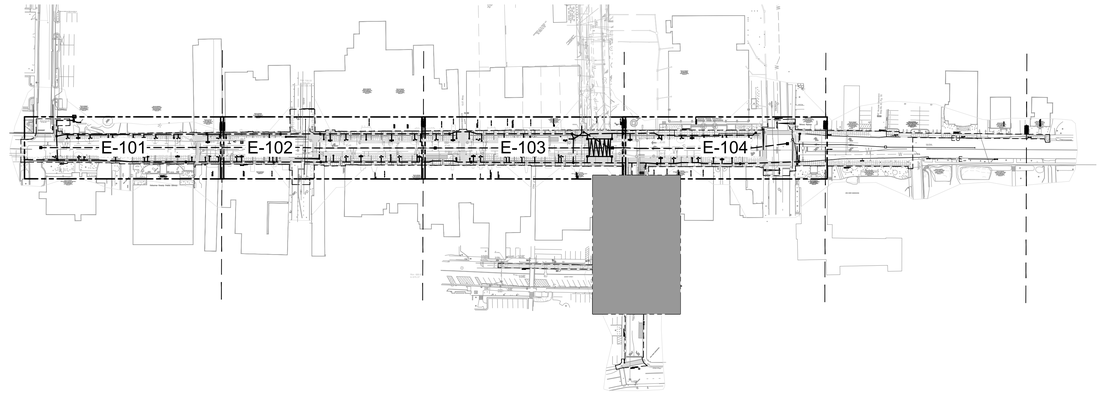
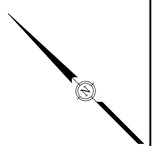
19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS





KEYPLAN
SCALE: 1"=120'-0"



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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036840 7-22-21 NICHOLAS C. HUFFMAN

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 DIVISION VALUE = 10 FEET

OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	W. FLEMING
PROJECT MANAGER	REVIEWER
N. HUFFMAN	P. FISHER

ELECTRICAL SITE PLAN - F

DATE	PROJECT #	FUNDING #
JULY 2021	19.01726	N/A

SHEET
E-105

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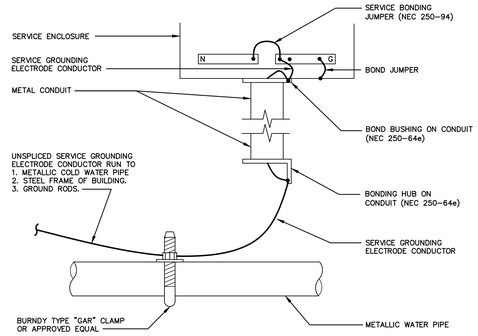
19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS

PANEL "LP-A"
240/120V, 1ø, 3W
INSTALLED XX/XX/2021

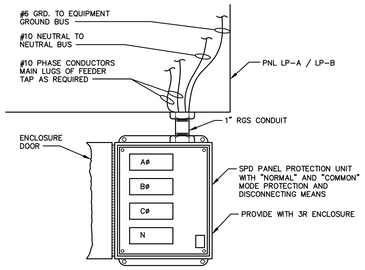
PANEL "LP-B"
240/120V, 1ø, 3W
INSTALLED XX/XX/2021

NOTES:
1. REFER TO SPECIFICATION SECTION 260553 FOR ADDITIONAL INFORMATION.
2. SUBMIT COMPLETE LIST OF PROPOSED NAMEPLATES TO ARCHITECT/ENGINEER FOR APPROVAL PRIOR TO FABRICATION.

E 1 TYPICAL NAME PLATE DETAIL
NOT TO SCALE

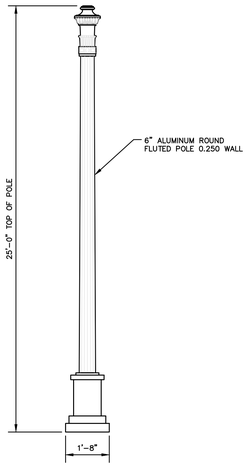


E 2 SERVICE ENTRANCE EQUIPMENT GROUNDING
NOT TO SCALE



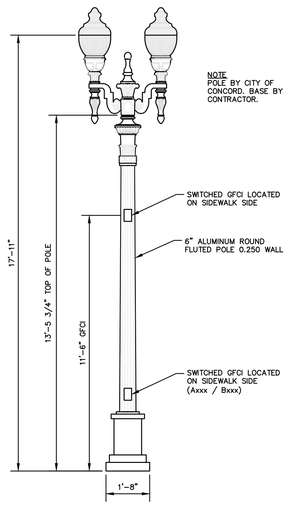
PANELBOARD/ENCLOSED CIRCUIT BREAKER

E 4 SPD DETAIL
NOT TO SCALE

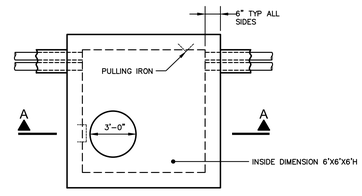


NOTE
POLE BY CITY OF CONCORD. BASE BY CONTRACTOR.

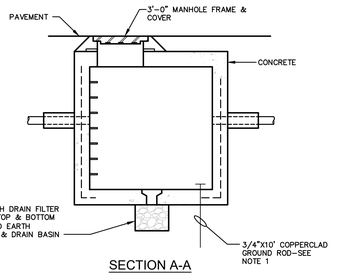
E 10 FESTOON LIGHTING SUPPORT POLE
NOT TO SCALE



E 5 TYPE 'A' POLE AND LIGHT FIXTURE
NOT TO SCALE



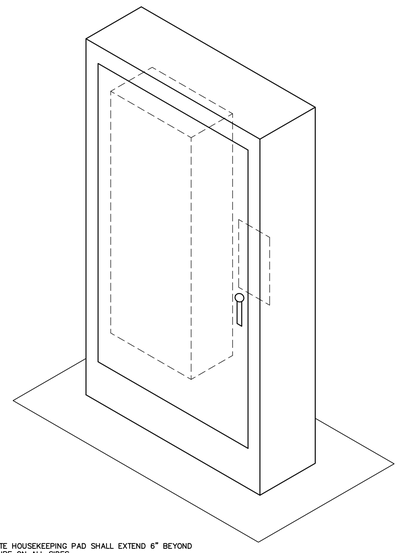
PLAN VIEW



SECTION A-A

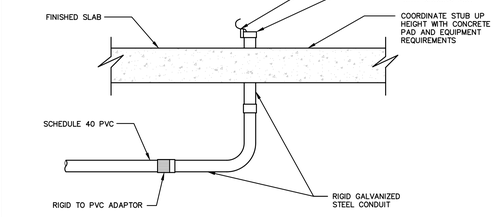
COMMUNICATION MANHOLE NOTES:
1. A 3/4" X 10'-0" GROUND ROD WITH 6" OF THE ROD EXTENDING ABOVE FLOOR OF MANHOLE SHALL BE INSTALLED IN CORNER OF EACH MANHOLE WITH ALL METAL MATERIALS BONDED THERE TO, AND ALL GROUND WIRES BONDED THERE TO.
2. MANHOLE FRAME TO BE BOLTED INTO PLACE WITH TWO 3/4" DIA. BOLTS AND FLAT WASHERS.
3. ALL REINFORCING STEEL SHALL BE #5 AT 12" CENTERS UNLESS OTHERWISE NOTED.
4. FINISHED GRADE SHALL BE FLUSH WITH THE TOP OF THE COVER ON MANHOLE FRAME AND COVER.

E 6 MANHOLE DETAIL
NOT TO SCALE



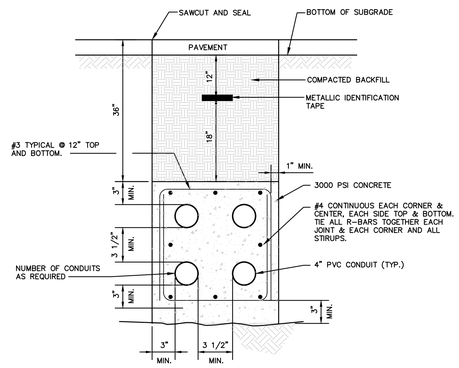
NOTES:
1. CONCRETE HOUSEKEEPING PAD SHALL EXTEND 6" BEYOND ENCLOSURE ON ALL SIDES.
2. ENCLOSURE SHALL BE HAMMOND MODEL HN4FS722418S16 OR EQUAL. EQUAL MODELS MUST BE APPROVED BY ENGINEER IN ADVANCE.

E 7 PANEL MOUNTING DETAIL FOR PANEL LP-A
NOT TO SCALE

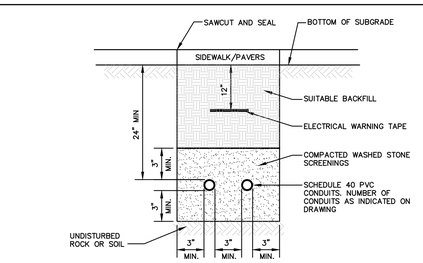


NOTES:
1. THIS DETAIL APPLIES TO ALL UNDERGROUND CONDUITS WHERE PVC IS UTILIZED. PVC SHALL NOT BE EXTENDED ABOVE GRADE UNLESS SPECIFICALLY APPROVED.

E 3 TYPICAL CONDUIT STUB UP
NOT TO SCALE

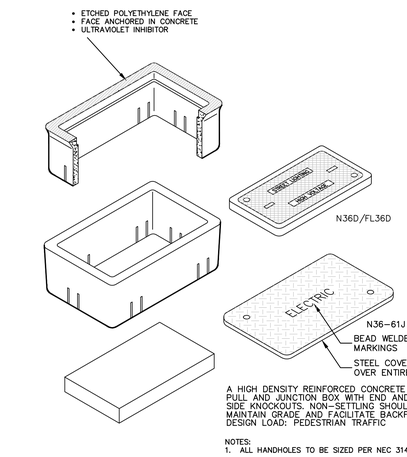


E 8 TYPICAL CONCRETE ENCASED DUCTBANK UNDER PAVEMENT DETAIL
NOT TO SCALE



NOTES:
1. ALL TRENCHING, BEDDING, AND BACKFILLING BY THE SITE CONTRACTOR.
2. ELECTRICAL CONDUIT AND CONDUCTORS SHALL BE INSTALLED BY THE ELECTRICAL CONTRACTOR.
3. CONTRACTOR TO RESTORE SITE TO EXISTING CONDITION.

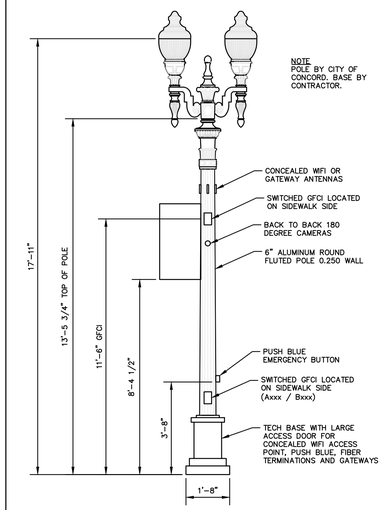
E 16 TYPICAL SITE ELECTRICAL TRENCH DETAIL
NOT TO SCALE



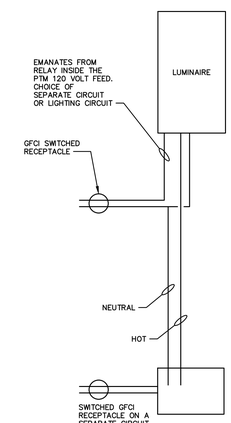
A HIGH DENSITY REINFORCED CONCRETE PULL AND JUNCTION BOX WITH END AND SIDE KNOCKOUTS. NON-SETTLING SHOULDERS MAINTAIN GRADE AND FACILITATE BACKFILLING. DESIGN LOAD: PEDESTRIAN TRAFFIC

NOTES:
1. ALL HANDHOLES TO BE SIZED PER NEC 314.28.

E 9 TYPICAL HANDHOLE DETAIL
NOT TO SCALE

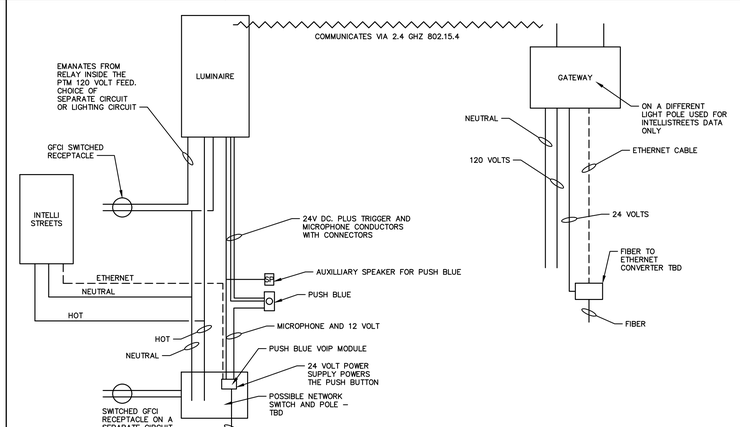


E 11 TYPE 'B' POLE AND LIGHT FIXTURE
NOT TO SCALE



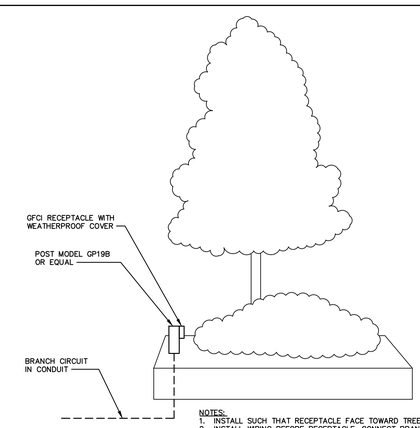
NOTES:
1. REFER TO SPECIFICATION 260526 3.04(D) FOR GROUNDING REQUIREMENTS AT LIGHT POLES.

E 12 TYPE A WIRING DIAGRAM
NOT TO SCALE



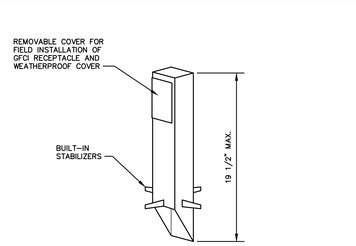
NOTES:
1. REFER TO SPECIFICATION 260526 3.04(D) FOR GROUNDING REQUIREMENTS AT LIGHT POLES.

E 13 TYPE B WIRING DIAGRAM
NOT TO SCALE



NOTES:
1. INSTALL SUCH THAT RECEPTACLE FACE TOWARD TREE.
2. INSTALL WIRING BEFORE RECEPTACLE. CONNECT BRANCH CIRCUIT WIRING TO DEVICES WITH #10 AWG PIGTAILS.

E 14 TYPICAL RECEPTACLE MOUNT IN PLANTER
NOT TO SCALE



NOTES:
1. PROVIDE ARLINGTON GARD-N-POST MODEL GP19B OR EQUAL. EQUALS MUST BE APPROVED BY ENGINEER.
2. POST COLOR SHALL BE BLACK.
3. POST SHALL CONTAIN FOUR BUILT-IN STABILIZERS (NOT LOOSE PARTS).
4. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL GFCI RECEPTACLE AND WEATHERPROOF RECEPTACLE COVER. WEATHERPROOF COVER SHALL BE SMOKY GRAY AND SEMI-TRANSPARENT.

E 15 TYPICAL POST FOR OUTDOOR RECEPTACLE MOUNT IN PLANT BEDS
NOT TO SCALE

mcgill
1240 19th Street Lane NW
Hickory, NC 28601
828.328.2024
NC Firm License # C-0459
mcgillassociates.com

NORTH CAROLINA PROFESSIONAL ENGINEER 038953 NICHOLAS C. HUFFMAN
7-22-21

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

AS NOTED

OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	W. FLEMING
PROJECT MANAGER	REVIEWER
N. HUFFMAN	P. FISHER

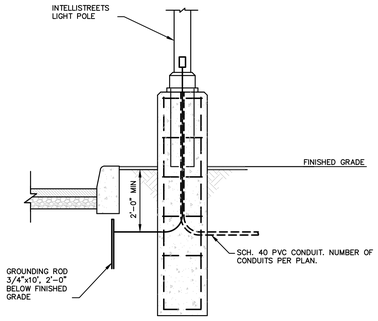
ELECTRICAL DETAILS

DATE	PROJECT #	FUNDING #
JULY 2021	19.01726	N/A

SHEET
E-501

P:\2019\19.01726-CONCORDNC-UNION STREETSCAPE PROJECT\DRAWINGS\MEP\ELECTRICAL\19.01726 ELECTRICAL DETAILS.DWG PLOT DATE: 7/22/2021 11:36 AM SONJA ROBERTS

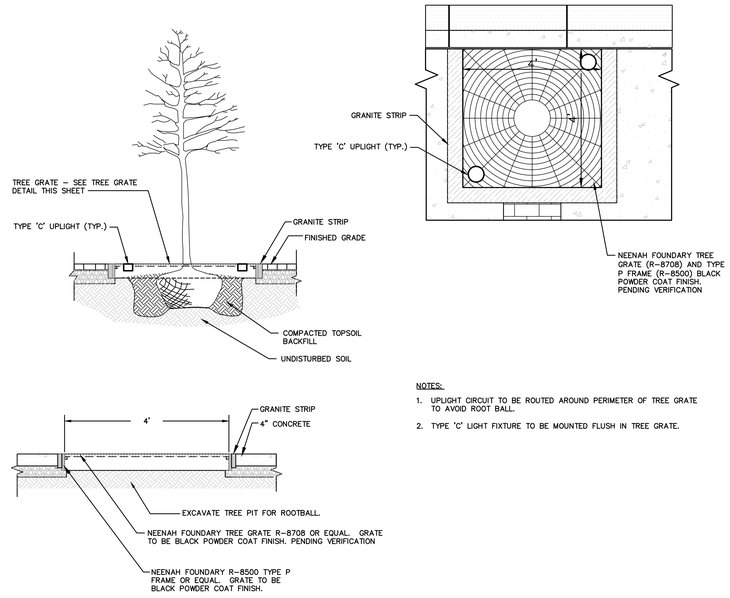
19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS



TYPICAL BASE

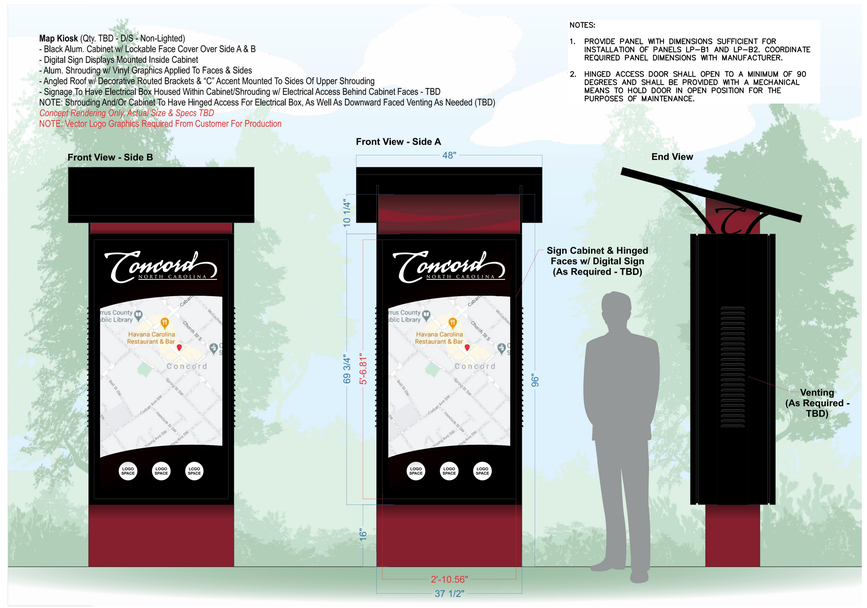
NOTES:
1. CONTRACTOR TO PROVIDE COMPLETE LIGHT POLE BASE DETAIL WITH ALL DIMENSIONS AND REQUIREMENTS SEALED BY STRUCTURAL ENGINEER.
2. EXPOSED CONCRETE AND GROUT SHALL BE PAINTED. COLOR AND PAINT TYPE IS TO BE SELECTED BY THE OWNER.

E 20 TYPICAL LIGHT STANDARD BASE
NOT TO SCALE

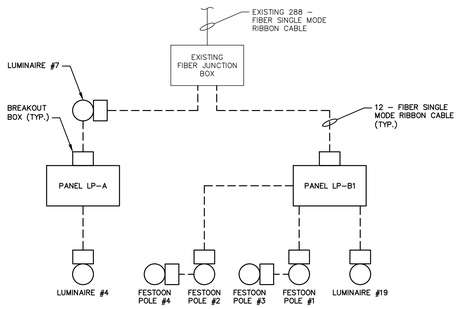


NOTES:
1. UPLIGHT CIRCUIT TO BE ROUTED AROUND PERIMETER OF TREE GRATE TO AVOID ROOT BALL.
2. TYPE 'C' LIGHT FIXTURE TO BE MOUNTED FLUSH IN TREE GRATE.

E 22 TREE GRATE LIGHTING DETAIL
NOT TO SCALE

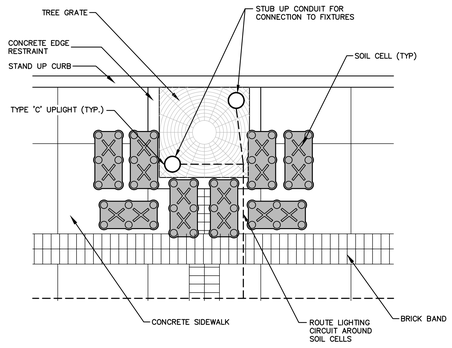


E 23 KIOSK PANEL
NOT TO SCALE

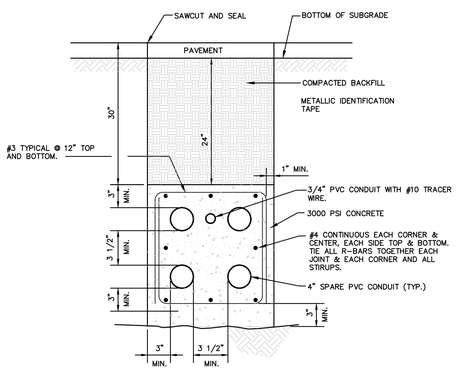


NOTE:
FIBER BREAKOUT BOX SHALL BE NEMA 4 RATED AND INSTALLED ON POLE BASE, ELECTRICAL ENCLOSURE, OR IN A COMMUNICATIONS HANDHOLE.

E 21 CONTROL CONNECTION DIAGRAM
NOT TO SCALE



E 24 SOIL CELLS CONDUIT & LIGHTING DETAL
NOT TO SCALE



FIBER DUCTBANK UNDER PAVEMENT DETAIL
NOT TO SCALE

E 25

mcgill
1240 19th Street Lane NW
Hickory, NC 28601
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NC Firm License # C-0459
mcgillassociates.com

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 038842 NICHOLAS C. HUFFMAN
7-22-21

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

AS NOTED

OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	W. FLEMING
PROJECT MANAGER	REVIEWER
N. HUFFMAN	P. FISHER

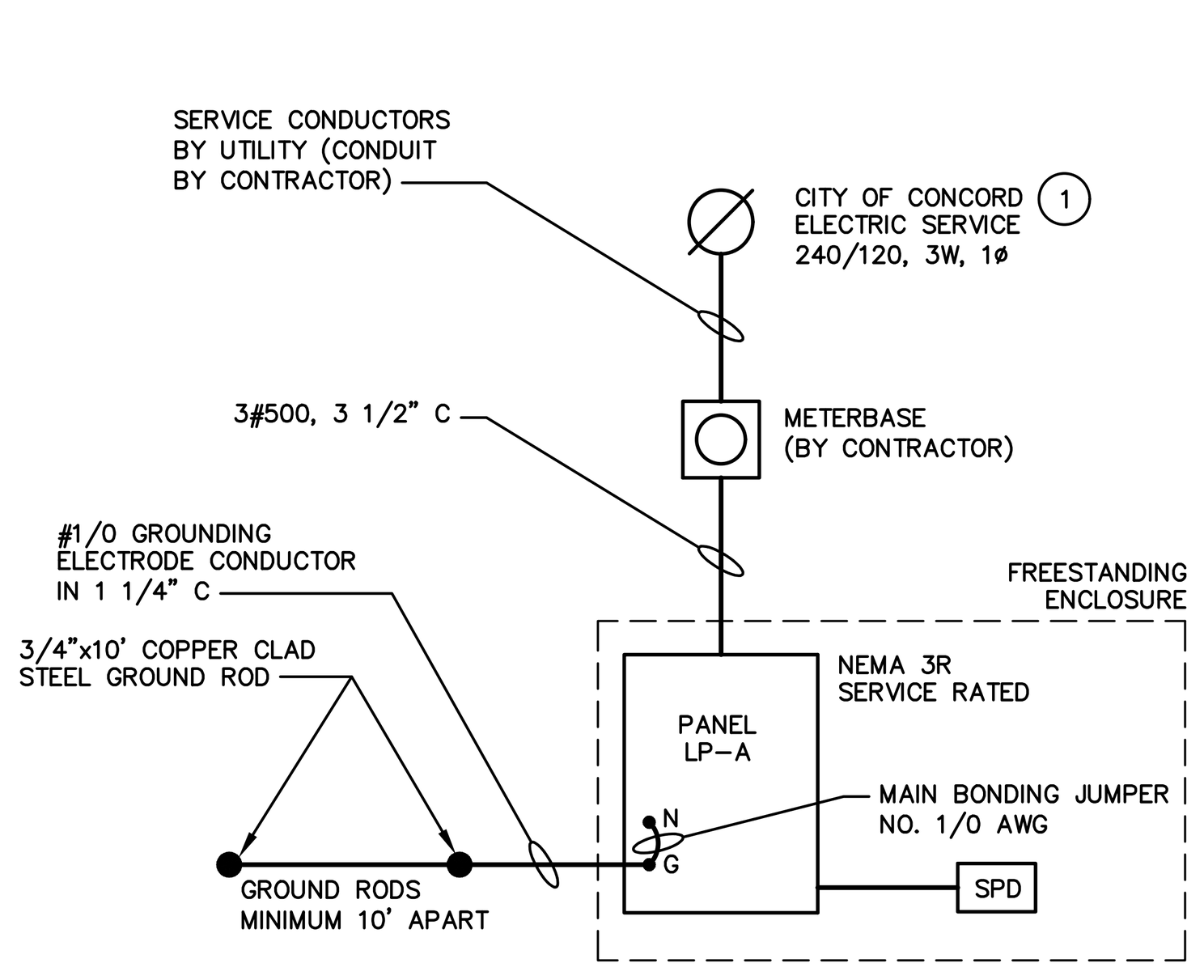
ELECTRICAL DETAILS

DATE	PROJECT #	FUNDING #
JULY 2021	19.01726	N/A

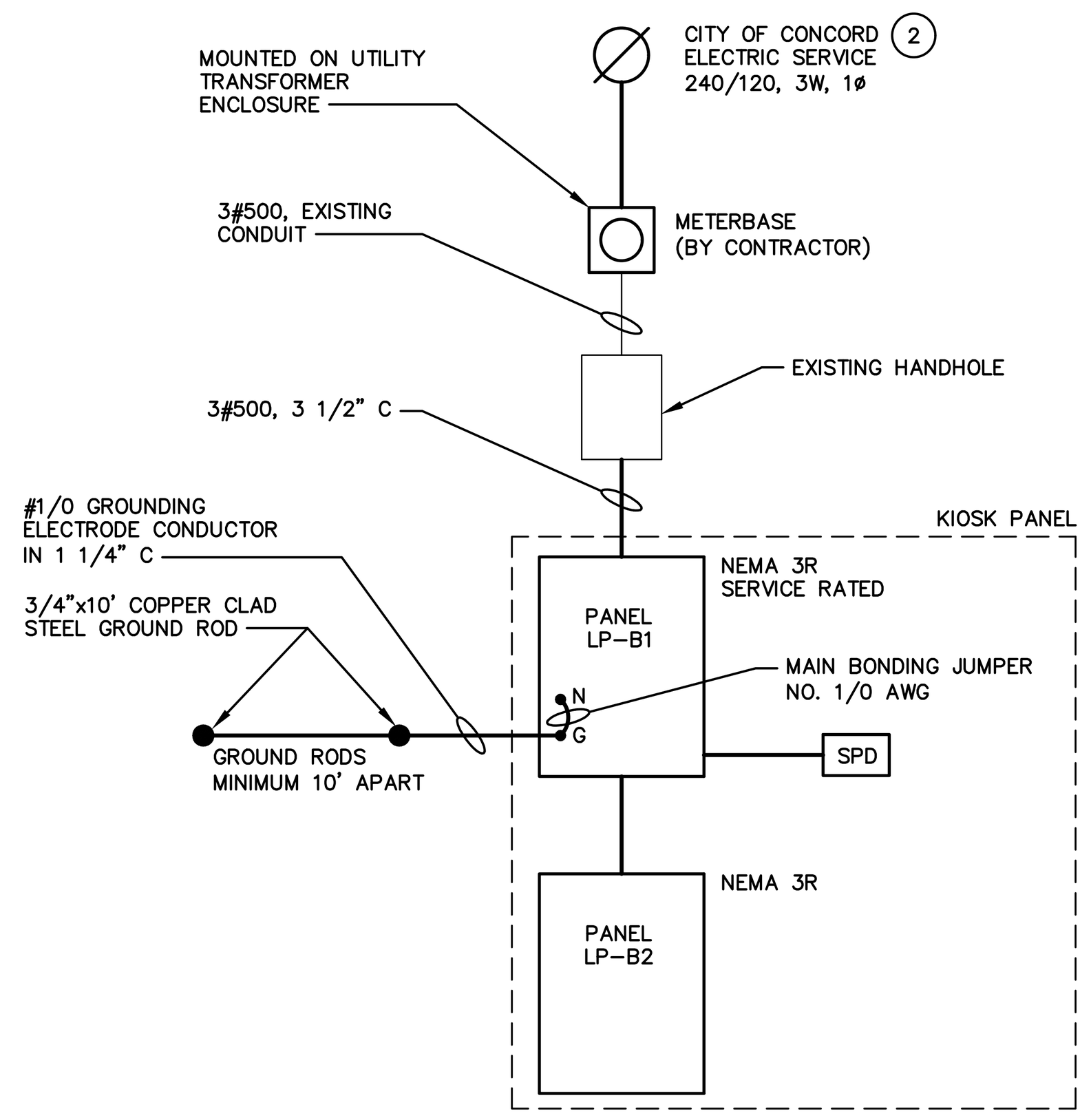
SHEET
E-502

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS

P:\2019\19.01726-CONCORD\C-UNION STREETSCAPE PROJECT\DRAWINGS\MEP\ELECTRICAL\19.01726 ELECTRICAL DETAILS.DWG PLOT DATE: 7/22/2021 11:36 AM SONJA ROBERTS



PROPOSED ONE-LINE-A
NOT TO SCALE



PROPOSED ONE-LINE-B
NOT TO SCALE

LUMINAIRE SCHEDULE

TYPE	MANUFACTURER	CATALOG NUMBER	NO.	LAMPS TYPE	LAMPS WATTS	INPUT WATTS	MT. HEIGHT	REMARKS	VOLTS
A	Illuminating Concepts	A-1130A – 910 Intellistreets 3A-1R-35T MDL-03, A-1130A – 910 Intellistreets 3A-1R-35T MDL-03 SLAVE, IS-SR, 2616P5/GFI, NA	19	LED	40	92	14'	HISTORIC LED MULTI-MEDIA POST TOP LUMINAIRE ASSEMBLY WITH EMBEDDED TECHNOLOGY, HISTORIC LED SLAVE POST TOP LUMINAIRES MATCHING THAT ARE NON- INTELLISTREETS, SWITCHED RECEPTACLE – FOR POLE MOUNTING OF OUTLET – 2 PER POLE, HISTORIC POLE – 14 FOOT TALL 6" DIAMETER STRAIGHT FLUTED, TWIN ARM HISTORIC SIDE MOUNT (OWNER FURNISHED)	240
B	Illuminating Concepts	IS-A-1130 910 with MDL-03 driver-MASTER, A-1130A – 910 Intellistreets 3A-1R-35T MDL-03 SLAVE, IS-PTM – C360, IS -360-C, IS-PB, IS-LED-BAN, IS-Islot, IS-GW, DUAL PORT MANAGED, IS-SR, HP-14,, NA	3	LED	40	657	14'	HISTORIC LED MULTI-MEDIA POST TOP LUMINAIRE ASSEMBLY WITH EMBEDDED TECHNOLOGY, HISTORIC LED SLAVE POST TOP LUMINAIRES MATCHING THAT ARE NON- INTELLISTREETS, INTELLISTREETS MULTI-MEDIA HOUSING WITH TWO 180 DEGREE CAMERAS AND MOUNTING ARM, INSTALL CAMERAS IN I-SLOT, NOTIFICATION BUTTON WITH TWO WAY HANDS FREE TALK AND INTELLISTREETS CONNECTIONS FOR ALERTS, 24" X 48" DOUBLE SIDED LED BANNER WITH 4MM PITCH, AUTO-DIM, CLOUD BASED SOFTWARE, i-SLOT INSERTS INTO POLE FOR CAMERAS, GATEWAYS AND PUSH BLUE,GATEWAY FOR MULTI-MEDIA ECM – 4G – EXCLUDES MODEM, MODEM FOR EITHER MULTI-MEDIA – OR – ON OFF DIM CELLULAR – 4G, SWITCHED RECEPTACLE – FOR POLE MOUNTING OF OUTLET – 2 PER POLE, HISTORIC POLE – 14 FOOT TALL 6" DIAMETER STRAIGHT FLUTED, TWIN ARM HISTORIC SIDE MOUNT (OWNER FURNISHED)	240
C	Targetti We-ef (or Equal)	KPLM-41-HE-FL-L2-40-611-3121		LED		14 18	FLUSH IN TREE GRATE	UP LIGHTING	120
D	Hadco (or Equal)	B9-D-C-A-SP1-19WATT		LED		19	GROUND LEVEL	UP LIGHTING	120

FEEDER SCHEDULE

ID	OCPD RATING (A)	CONDUCTOR RATING (A)	NO. OF PARALLEL SETS	PHASE/ NEUTRAL	GROUND	CONDUIT	VOLTAGE CLASS	CIRCUIT	LOAD	NOTES
1	20	50	1	2#8	#12	1"	600V	LP-A-1	PR1, B1, PR3, B3, PR5, B5	
2	20	35	1	2#10	#12	1"	600V	LP-A-3	UL 1,3,5,7	
3	20	50	1	2#8	#12	1"	600V	LP-A-5	UL 9,11,13, TL1	
4	20	50	1	2#8	#12	1"	600V	LP-A-7	PR2, B2, PR4, B4, PR6	
5	20	65	1	2#6	#12	1"	600V	LP-A-9	B6, PR8, B8	
6	20	50	1	2#8	#12	1"	600V	LP-A-11	UL 2,4,6, TL2,4	
7	20	65	1	2#6	#12	1"	600V	LP-A-13	UL8,10, TL6	
8	20	50	1	2#8	#12	1"	600V	LP-A-2,4	Lights 1,3,5	
9	20	65	1	2#6	#12	1"	600V	LP-A-6,8	Lights 2,4,6,8	
10	20	65	1	2#6	#12	1"	600V	LP-B1-1	PR7, VR1, PR9, VR3, PR11	
11	20	50	1	2#8	#12	1"	600V	LP-B1-3	VR5, PR13, VR7, PR15	
12	20	65	1	2#6	#12	1"	600V	LP-B1-5	TL3, UL15,17,19, TL5	
13	20	35	1	2#10	#12	1"	600V	LP-B1-7	TL7, UL21,23	
14	20	65	1	2#6	#12	1"	600V	LP-B1-9	VR2, PR10, VR4, PR12	
15	20	50	1	2#8	#12	1"	600V	LP-B1-11	PR14, VR6, PR16, VR8	
16	20	65	1	2#6	#12	1"	600V	LP-B1-13	TL8, UL12,14,16, TL10	
17	20	35	1	2#10	#12	1"	600V	LP-B1-15	TL12, UL18,20,22,24	
18	20	50	1	2#8	#12	1"	600V	LP-B1-17	PR17, B7, PR19, B9	
19	20	50	1	2#8	#12	1"	600V	LP-B1-19	UL 25,27,29,31,33	
20	20	65	1	2#6	#12	1"	600V	LP-B1-21	PR22, PR21, PR18, B10, PR20,	
21	20	65	1	2#6	#12	1"	600V	LP-B1-23	UL 26,28, TL 14,16	
22	30	65	1	2#6	#12	1"	600V	LP-B1-2,4	Lights 7,9,11,13,15	
23	20	65	1	2#6	#12	1"	600V	LP-B1-6,8	Lights 10,12,14,16	
24	20	50	1	2#8	#12	1"	600V	LP-B1-10,12	Lights 17,19	
25	20	50	1	2#8	#12	1"	600V	LP-B1-14,16	Lights 18,20,21,22	
26	20	35	1	2#10	#12	1"	600V	LP-A-21	Heat Trace Circuit	
27	20	25	1	2#12	#12	1"	600V	LP-A-19	Clock	
28	50	65	1	3#6	#10	1"	600V	LP-A-10,12	Special Outlet 1	
29	50	65	1	3#6	#10	1"	600V	LP-B2-1,3	Special Outlet 2	
30	50	65	1	3#6	#10	1"	600V	LP-B2-5,7	Special Outlet 3	
31	50	65	1	3#6	#10	1"	600V	LP-B2-9,11	Special Outlet 4	
32	50	65	1	3#6	#10	1"	600V	LP-B2-13,15	Special Outlet 5	
33	50	65	1	3#6	#10	1"	600V	LP-B2-17,19	Special Outlet 6	
34	20	25	1	6#12	#12	1"	600V	LP-B1-18	Festoon Pole #1	THREE CIRCUITS IN SINGLE CONDUIT
	20	25						LP-B1-20	Festoon Pole #1	
	20	25						LP-B1-22	Festoon Pole #1	
35	20	25	1	6#12	#12	1"	600V	LP-B1-24	Festoon Pole #2	THREE CIRCUITS IN SINGLE CONDUIT
	20	25						LP-B1-26	Festoon Pole #2	
	20	25						LP-B1-28	Festoon Pole #2	
36	20	25	1	6#12	#12	1"	600V	LP-B1-30	Festoon Pole #3	THREE CIRCUITS IN SINGLE CONDUIT
	20	25						LP-B1-32	Festoon Pole #3	
	20	25						LP-B1-34	Festoon Pole #3	
37	20	25	1	6#12	#12	1"	600V	LP-B1-36	Festoon Pole #4	THREE CIRCUITS IN SINGLE CONDUIT
	20	25						LP-B1-38	Festoon Pole #4	
	20	25						LP-B1-40	Festoon Pole #4	
38	20	35	1	2#10	#12	1"	600V	LP-B2-2	Heat Trace Circuit	

PANEL LP-A

PANEL LP-A | BUS AMP 400A | MIN. A.I.C. 22,000 | MAIN BREAKER 400A
MOUNTING SURFACE | PHASE 1 | WIRE 3 | VOLTAGE 240/120
LOCATION ELECTRICAL CABINET | NEMA TYPE 3R

CKT	DESCRIPTION	BREAKER AMP	BREAKER POLES	LOAD (KW) A	LOAD (KW) B	WIRE NO	WIRE SIZE	GND. SIZE	COND SIZE	COND SIZE	GND. SIZE	WIRE SIZE	WIRE NO	LOAD (KW) A	LOAD (KW) B	BREAKER POLES	BREAKER AMP	DESCRIPTION	CKT
1	PR1, B1, PR3, B3, PR5, B5	20	1	0.7		2	10	12	1	1	12	10	3	0.8		2	20	LIGHTS 1,3,5	2
3	UL 1,3,5,7	20	1		0.5	2	10	12	1						0.8				4
5	UL 9,11,13, TL1	20	1	0.5		2	10	12	1	1	12	8	3	1.4		2	20	LIGHTS 2,4,6,8	6
7	PR2, B2, PR4, B4, PR6	20	1		0.5	2	10	12	1						1.4				8
9	B6, PR8, B8	20	1	0.4		2	10	12	1	1	10	8	3	1.4		2	50	SPECIAL PURPOSE OUTLET 1	10
11	UL 2,4,6, TL 2,4	20	1		0.5	2	10	12	1						1.4				12
13	UL 8,10 TL6	20	1	0.5		2	12	12	3/4	1				0.4		2	50	SPARE	14
15	GAZEBO LIGHTING *	20	1		-	2	12	12	3/4						0.4				16
17	MONUMENT LIGHTING *	20	1	-		2	12	12	3/4					-		2	20	SPARE	18
19	CLOCK	20	1		0.2	2	12	12	3/4						-				20
21	HEAT TRACE	20	1	-		2	12	12	3/4	1				-		2	20	SPARE	22
23	SPARE	20	1		-										-				24
25	SPARE	20	1	-										-		2	20	SPARE	26
27	SPARE	20	1		-										-				28
29	SPARE	20	1	-										-		2	20	SPARE	30
31	SPARE	20	1		-										-				32
33	SPARE	20	1	-										-		2	20	SPARE	34
35	SPARE	20	1		-										-				36
37	SPARE	20	1	-										-		1	20	SPARE	38
39	SPARE	20	1		-					3/4	10	10	3		-	2	30	TVSS (150kA)	40
41	SPARE	20	1	-										-					42
	SUB-TOTAL LOAD KW			2.1	1.8						SUB-TOTAL LOAD KW			4.1	4.1				
											TOTAL LOAD KW			6.2	5.9				

* INDICATES EXISTING CIRCUIT RECONNECTED IN NEW PANEL. EXTEND CIRCUIT AS NECESSARY.

PANEL LP-B1

PANEL LP-B1 | BUS AMP 400A | MIN. A.I.C. 22,000 | MAIN BREAKER 400A
MOUNTING SURFACE | PHASE 1 | WIRE 3 | VOLTAGE 240/120
LOCATION ELECTRICAL KIOSK | NEMA TYPE 3R

NOTE: FEED-THRU LUGS.

CKT	DESCRIPTION	BREAKER AMP	BREAKER POLES	LOAD (KW) A	LOAD (KW) B	WIRE NO	WIRE SIZE	GND. SIZE	COND SIZE	COND SIZE	GND. SIZE	WIRE SIZE	WIRE NO	LOAD (KW) A	LOAD (KW) B	BREAKER POLES	BREAKER AMP	DESCRIPTION	CKT
1	PR7, VR1, PR9, VR3, PR11	20	1	0.48		2	8	12	1	1	10	6	3	1.8		2	30	Lights 7,9,11,13,15	2
3	VR5, PR13, VR7, PR15	20	1		0.54	2	10	12	1						1.8				4
5	TL3, UL15,17,19, TL5	20	1	1.08		2	10	12	1	1	12	8	3	1.44		2	20	Lights 10,12,14,16	6
7	TL7, UL21,23	20	1		1.08	2	8	12	1						1.44				8
9	VR2, PR10, VR4, PR12	20	1	0.54		2	8	12	1	1	12	10	3	1.08		2	20	Lights 17,19	10
11	PR14, VR6, PR16, VR8	20	1		0.66	2	10	12	1						1.08				12
13	TL8, UL12,14,16, TL10	20	1	1.32		2	10	12	1	1	12	10	3	0.6		2	20	Lights 18,20,21,22	14
15	TL12, UL18,20,22,24	20	1		1.32	2	10	12	1						0.6				16
17	PR17, B7, PR19, B9	20	1	0.48		2	10	12	1		12	12	2	0.36		1	20	FESTOON POLE 1	18
19	UL 25,27,29,31,33	20	1		1.32	2	10	12	1	1	12	12	2		0.36	1	20	FESTOON POLE 1	20
21	PR22, PR21, PR18, B10, PR20,	20	1	0.66		2	8	12	1		12	12	2	0.36		1	20	FESTOON POLE 1	22
23	UL 26,28, TL 14,16	20	1		1.56	2	8	12	1		12	12	2		0.36	1	20	FESTOON POLE 2	24
25	SPARE	30	1	-					1	1	12	12	2	0.36		1	20	FESTOON POLE 2	26
27	SPARE	30	1		-				1		12	12	2		0.36	1	20	FESTOON POLE 2	28
29	SPARE	20	1	-							12	12	2	0.36		1	20	FESTOON POLE 3	30
31	SPARE	20	1		-					1	12	12	2		0.36	1	20	FESTOON POLE 3	32
33	SPARE	20	1	-							12	12	2	0.36		1	20	FESTOON POLE 3	34
35	SPARE	20	2		-						12	12	2		0.36	1	20	FESTOON POLE 4	36
37				-						1	12	12	2	0.36		1	20	FESTOON POLE 4	38
39	TVSS (150kA)	30	2		-	3	10	10	3/4		12	12	2		0.36	1	20	FESTOON POLE 4	40
41				-										-		1	20	SPARE	42
	SUB-TOTAL LOAD KW			4.56	6.48						SUB-TOTAL LOAD KW			7.08	7.08				
											TOTAL LOAD KW			11.6	13.6				

PANEL LP-B2

PANEL LP-B2 | BUS AMP 400A | MIN. A.I.C. 22,000 | MAIN BREAKER MLO
MOUNTING SURFACE | PHASE 1 | WIRE 3 | VOLTAGE 240/120
LOCATION ELECTRICAL KIOSK | NEMA TYPE 3R

CKT	DESCRIPTION	BREAKER AMP	BREAKER POLES	LOAD (KW) A	LOAD (KW) B	WIRE NO	WIRE SIZE	GND. SIZE	COND SIZE	COND SIZE	GND. SIZE	WIRE SIZE	WIRE NO	LOAD (KW) A	LOAD (KW) B	BREAKER POLES	BREAKER AMP	DESCRIPTION	CKT
1	SPECIAL PURPOSE OUTLET 2	50	2	1.4		3	8	10	1	1	12	10	2	-		1	20	HEAT TRACE	2
3					1.4		10		1						-	1	20	SPARE	4
5	SPECIAL PURPOSE OUTLET 3	50	2	1.4		3	10	10	1					-		1	20	SPARE	6
7					1.4		8		1						-	1	20	SPARE	8
9	SPECIAL PURPOSE OUTLET 4	50	2	1.4		3	8	10	1					-		1	20	SPARE	10
11					1.4		10		1						-	1	20	SPARE	12
13	SPECIAL PURPOSE OUTLET 5	50	2	1.4		3	10	10	1					-		1	20	SPARE	14
15					1.4		10		1						-	1	20	SPARE	16
17	SPECIAL PURPOSE OUTLET 6	50	2	1.4		3	10	10	1					-		1	20	SPARE	18
19					1.4		10		1						-	1	20	SPARE	20
21	SPACE – PFFB																	SPACE – PFFB	22
23	SPACE – PFFB																	SPACE – PFFB	24
25	SPACE – PFFB																	SPACE – PFFB	26
27	SPACE – PFFB																	SPACE – PFFB	28
29	SPACE – PFFB																	SPACE – PFFB	30
31	SPACE – PFFB																	SPACE – PFFB	32
33	SPACE – PFFB																	SPACE – PFFB	34
35	SPACE – PFFB																	SPACE – PFFB	36
37	SPACE – PFFB																	SPACE – PFFB	38
39	SPACE – PFFB																	SPACE – PFFB	40
41	SPACE – PFFB																	SPACE – PFFB	42
	SUB-TOTAL LOAD KW			7.2	7.2						SUB-TOTAL LOAD KW			0	0				
											TOTAL LOAD KW			7.2	7.2				

KEYNOTES:

1. COORDINATE ELECTRICAL SERVICE WITH ELECTRIC UTILITY. SERVICE CONDUCTORS BY ELECTRIC UTILITY. CONTRACTOR TO PROVIDE AND INSTALL 3 1/2" CONDUIT WITH PULL CORDS FOR SERVICE CONDUCTORS.
2. COORDINATE ELECTRICAL SERVICE WITH ELECTRIC UTILITY.

mcgill
1240 19th Street Lane NW
Hickory, NC 28601
828.328.2024
NC Firm License # C-0459
mcgillassociates.com

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036840 NICHOLAS C. HUFFMAN 7-22-21

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

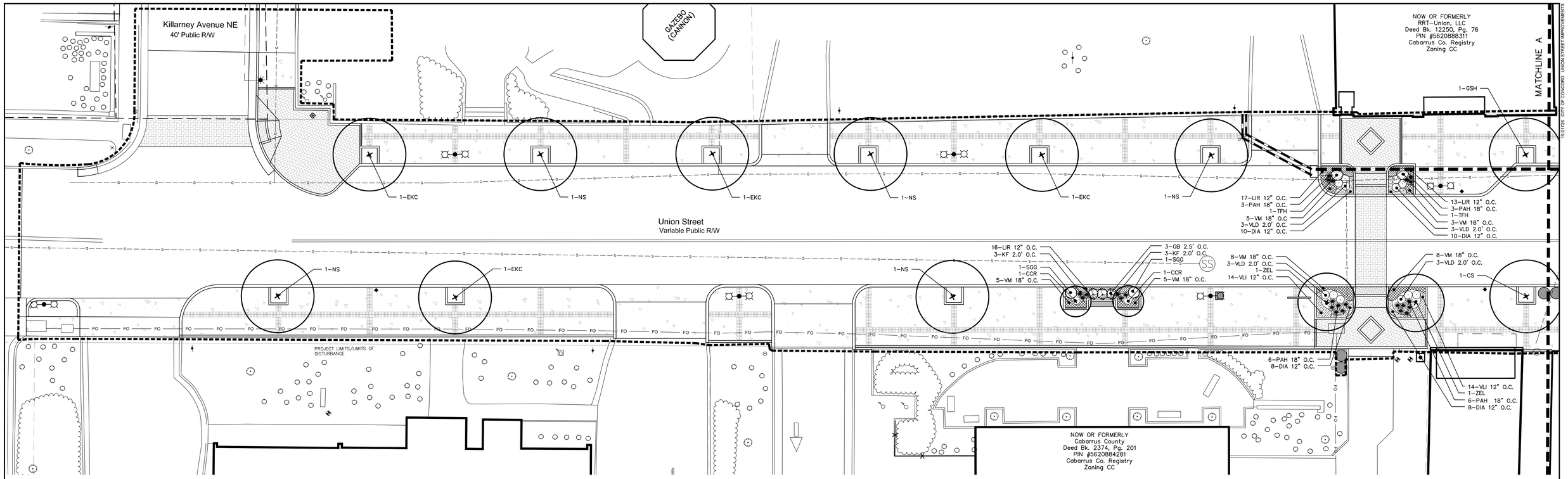
AS NOTED

OFFICE MANAGER	DESIGNER	PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
D.G. CHAPMAN	W. FLEMING	N. HUFFMAN	P. FISHER	JULY 2021	19.01726	N/A

ELECTRICAL SCHEDULES AND DIAGRAMS

SHEET E-601

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS
P:\2019\19.01726-CONCORDNC-UNION STREETSCAPE PROJECT\DRAWINGS\MEP\ELECTRICAL\19.01726 ELECTRICAL SCHEDULES AND DIAGRAMS.DWG PLOT DATE 7/22/2021 11:36 AM SONJA ROBERTS

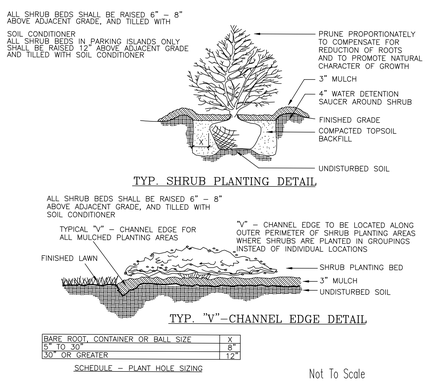


GENERAL NOTES:

1. LANDSCAPE CONTRACTOR TO VISIT THE SITE AND ACCEPT THE CONDITIONS PRIOR TO BIDDING AND PLANT MATERIAL INSTALLATION.
2. LANDSCAPE CONTRACTOR TO VERIFY ALL UNDERGROUND UTILITIES PRIOR TO INSTALLATION OF ANY PLANT MATERIAL. UTILITY LINES SHOWN ON DRAWINGS ARE FOR GENERAL REFERENCE AND MAY NOT BE ALL INCLUSIVE.
3. LANDSCAPE CONTRACTOR TO PROTECT ALL EXISTING STRUCTURES DURING INSTALLATION OF PLANT MATERIAL.
4. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL STONES, GRAVEL, AND ALL EXTRANEOUS DEBRIS INCLUDING ROOTS AND LIMBS FROM TREE PITS PRIOR TO INSTALLATION.
5. ALL PLANT BEDS TO BE COVERED WITH 3" CLEAN TRIPLE SHRED HARDWOOD MULCH IMMEDIATELY AFTER PLANTING.
6. TOP 6" OF ALL BEDS TO BE TILLED AND AMENDED WITH ORGANIC MATTER. TOP 6" OF TREE PITS TO BE AMENDED WITH ORGANIC MATTER AND WORKED INTO BACKFILL.
7. LANDSCAPE CONTRACTOR SHALL FURNISH ALL QUANTITIES NECESSARY TO COMPLETE PLANTINGS AS SHOWN/LOCATED ON DRAWINGS. QUANTITIES SHOWN ON PLANT LIST ARE FOR CONVENIENCE OF CONTRACTORS AND ARE BELIEVED TO BE SUBSTANTIALLY CORRECT, BUT ACCURACY OF QUANTITIES IN LIST IS NOT GUARANTEED.
8. LANDSCAPE CONTRACTOR TO GUARANTEE ALL PLANT MATERIAL AND WORK FOR A PERIOD OF ONE YEAR FROM ACCEPTANCE OF WORK BY OWNER.
9. ANY PLANT MATERIAL SUBSTITUTIONS OR ADJUSTMENTS ARE TO BE REQUESTED IN WRITING TO THE OWNER. NO SUBSTITUTIONS WILL BE PERMITTED WITHOUT WRITTEN NOTICE BY THE OWNER.
10. ALL PLANT MATERIAL TO CONFORM TO THE CURRENT EDITION OF "AMERICAN STANDARD FOR NURSERY STOCK".
11. ALL TREES TO BE LIMBED UP TO 6' MINIMUM CLEAR HEIGHT.
12. ALL TREES SHALL BE SPECIMEN QUALITY AND WELL SHAPED.
13. ALL TREES OF THE SAME VARIETY SHALL MATCH IN SHAPE, FORM AND SIZE WHERE THEY ARE TO BE INSTALLED IN GROUPS, ROWS, OR AS STREET TREES.

PLANTING SCHEDULE

SYM	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	*CALIPER	HEIGHT	NOTES	NATIVE*
		TREES						
CS	11	Quercus x warei 'Long'	Regal Prince Oak	B&B	2.5" MIN.	12' Min.		
ZEL	8	Zelkova serrata 'Musashino'	Japanese Zelkova	B&B	2.5" MIN.	12' Min.		
DJM	2	Acer palmatum 'Red Dragon'	Dwarf Japanese Maple	B&B	2" MIN.	4' Min.		
COR	4	Cercis canadensis 'JN2'	Rising Sun Redbud	B&B	2" MIN.	8' Min.		*
EKC	11	Gymnocladus dioicus 'Espresso'	Espresso Kentucky Coffee Tree	B&B	2" MIN.	12' Min.		*
NS	9	Nyssa sylvatica 'Wildfire'	Black Gum Wildfire	B&B	2" MIN.	12' Min.		*
GSH	4	Gleditsia triacanthus f.inermis 'Skycole'	Skyline Honeylocust	B&B	2.5" MIN.	12' Min.		*
		SHRUBS						
SGG	14	Spiraea betulifolia 'Glow Girl'	Birchleaf Spiraea	3 Gal		15" Min.		*
GB	36	Ilex glabra 'Gem box'	Gem Box Inkberry Holly	1 Gal		10" Min.		*
TAB	55	Thuja occidentalis 'Anna Van Vloten'	Anna's Magic Ball Arborvitae	1 Gal		8" Min.		*
IV	12	Itea Virginica 'Henry's Garnet'	Virginia Sweetspire	1 Gal		8" Min.		*
LPP	6	Loropetalum chinense 'Peack'	Purple Pixie Weeping Loropetalum	3 Gal		8" Min.		
ALM	72	Aronia melonocarpa 'Low scape Mound'	Chokeberry	1 Gal		6" Min.		*
VLD	79	Viburnum cassinoides 'Lil Ditty'	Witherod Viburnum	1 Gal		8" Min.		*
DHC	17	Chamaecyparis obtusa 'Nana Gracilis'	Dwarf Hinoki Cypress	3 Gal		18" Min.		
KD	113	Cornus sericea 'Kelseyi'	Kelsey's Dwarf Red-Osier Dogwood	1 Gal		12" Min.		*
DW	4	Distylium hybrid 'BLDY01'	Jewel Box Distylium	3 Gal		12" Min.		
TFH	9	Hydrangea Paniculata 'Limelight'	Treeform Limelight Hydrangea	7 Gal		48" Min.		
		ORNAMENTAL GRASSES/PERENNIALS/GROUNDCOVERS						
KF	71	Calamagrostis acutiflora 'Karl Foerster'	Feather Reed Grass	1 Gal				
PAH	114	Pennisetum alopecuroides 'Hameln'	Dwarf Fountain Grass	1 Gal				
HP	50	Heuchera micrantha 'Palace Purple'	Heuchera Palace Purple	1 Gal				
CO	75	Coreopsis	Tickseed	Quart				*
DIA	123	Dianthus gratianopolitanus 'Firewitch'	Firewitch Dianthus	Quart				
VLI	109	Liriope muscari 'Variegata'	Variegated Liriope	4"				
LIR	727	Liriope muscari 'Royal Purple'	Liriope	4"				
VM	293	Vinca Minor	Littleleaf Periwinkle	4"				
LSP	115	Liriope spicata	Creeping lilly turf	4"				
61	SF	ANNUALS						



BARE ROOT, CONTAINER OR BALL SIZE	X
5' TO 30'	8"
30" OR GREATER	12"

SCHEDULE – PLANT HOLE SIZING

Not To Scale

CITY OF CONCORD LANDSCAPE NOTES:

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2. ALL WORK SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE ANSI A300 STANDARD FOR TREE, SHRUB, AND OTHER WOODY PLANT MANAGEMENT STANDARD PRACTICES.
3. ALL PLANT STOCK SHALL COMPLY WITH THE CURRENT EDITION OF ANSI Z60.1 AMERICAN STANDARD FOR NURSERY STOCK
4. ALL PLANTING AREAS SHALL MEET THE REQUIREMENTS OF THE CONCORD DEVELOPMENT ORDINANCE ARTICLE 11 AND TECHNICAL STANDARD ARTICLE 7.
5. HEIGHT AND WIDTH OF PLANT MATERIAL SUPERSEDES CONTAINER SIZE.
6. UTILITIES SHALL BE LOCATED BEFORE PLANTING WWW.NC811.ORG
7. PLANTING LOCATIONS WILL BE ADJUSTED TO PROVIDE SUFFICIENT SPACE FOR UTILITIES, EASEMENTS, STREET LIGHTING, TRAFFIC SIGNS, AND SIGHT TRIANGLES. 5' CLEARANCE AROUND ALL SIDES OF FIRE HYDRANTS AND UTILITY APPURTENANCES. NO TREES SHALL BE PLANTED WITHIN 75' OF A STOP SIGN. NO PLANTS OR TREES LOCATED WITHIN SITE TRIANGLES. 15' CLEARANCE FROM ALL STREET LIGHT POLES.
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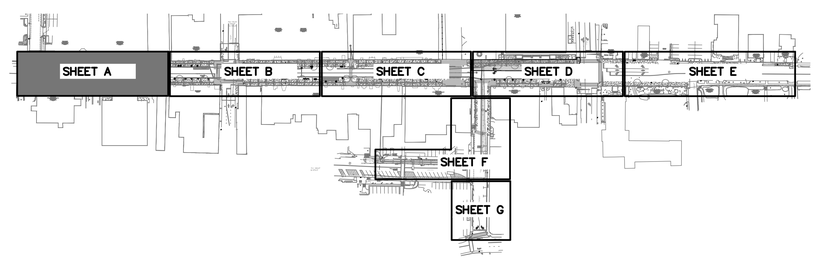
10. ANY PROPOSED PRIVATE IRRIGATION MAY BISECT BUT SHALL NOT RUN PARALLEL WITHIN UTILITY EASEMENTS OR STREET RIGHT OF WAYS, AND SHALL MEET THE REQUIREMENTS OF THE CITY OF CONCORD CODE OF ORDINANCE CHAPTER 62, SECTION 62-164.



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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	C.L. CRANWILL
PROJECT MANAGER	REVIEWER
M.J. NORRIS	B. ROARK

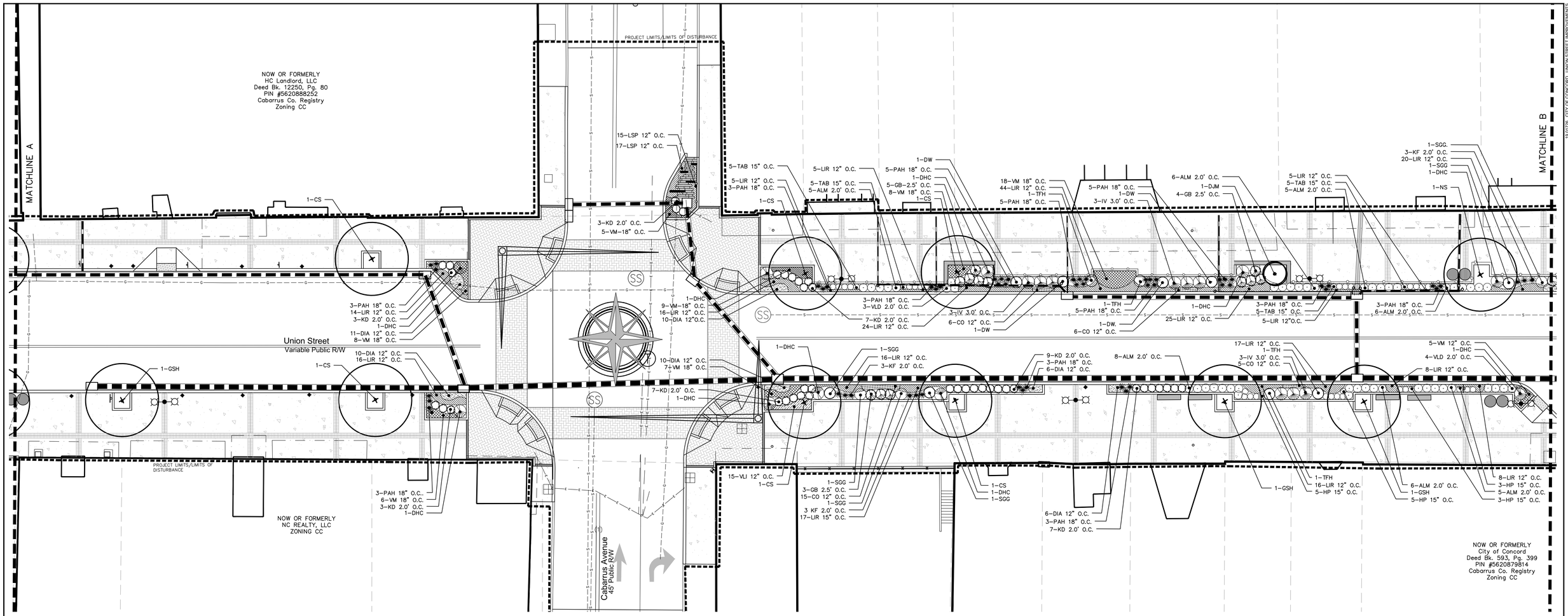
LANDSCAPE PLAN - A

DATE	PROJECT #	FUNDING #
JULY 2021	19.01726	N/A

SHEET
L-101

P:\2019\19.01726-CONCORDNC-UNION STREETSCAPE PROJECT\DRAWINGS\19001726 UNION BASE.DWG PLOT DATE: 7/22/2021 11:20 AM KURTIS DURRANT

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS



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PLANTING SCHEDULE

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CCR	4	Cercis canadensis 'JN2'	Rising Sun Redbud	B&B	2" MIN.	8' Min.		*
EXC	11	Gymnocladus dioicus 'Espresso'	Espresso Kentucky Coffee Tree	B&B	2" MIN.	12' Min.		*
NS	9	Nyssa sylvatica 'Wildfire'	Black Gum Wildfire	B&B	2" MIN.	12' Min.		*
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SGG	14	Spiraea betulifolia 'Glow Girl'	Birchleaf Spiraea	3 Gal		15" Min.		*
GB	36	Ilex glabra 'Gem box'	Gem Box Inkberry Holly	1 Gal		10" Min.		*
TAB	55	Thuja occidentalis 'Anna Van Vloten'	Anna's Magic Ball Arborvitae	1 Gal		8" Min.		*
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LPP	6	Loropetalum chinense 'Peack'	Purple Pixie Weeping Loropetalum	3 Gal		8" Min.		
ALM	72	Aronia melonocarpa 'Low scape Mound'	Chokeberry	1 Gal		6" Min.		*
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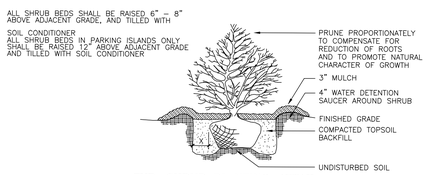
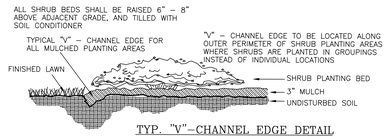


TYP. SHRUB PLANTING DETAIL



TYP. "V"-CHANNEL EDGE DETAIL

BARE ROOT, CONTAINER OR BALL SIZE	X
6" TO 30"	8"
30" OR GREATER	12"

SCHEDULE – PLANT HOLE SIZING

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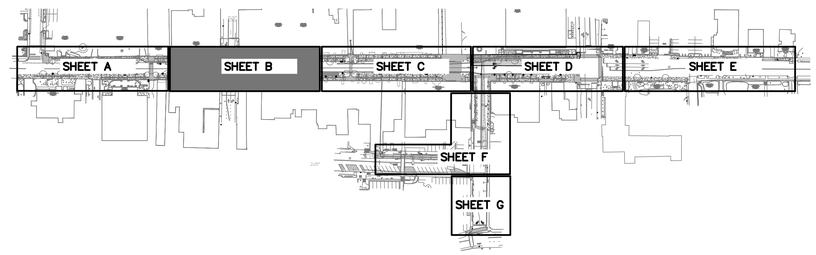
Not To Scale



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1240 19th Street Lane NW
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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

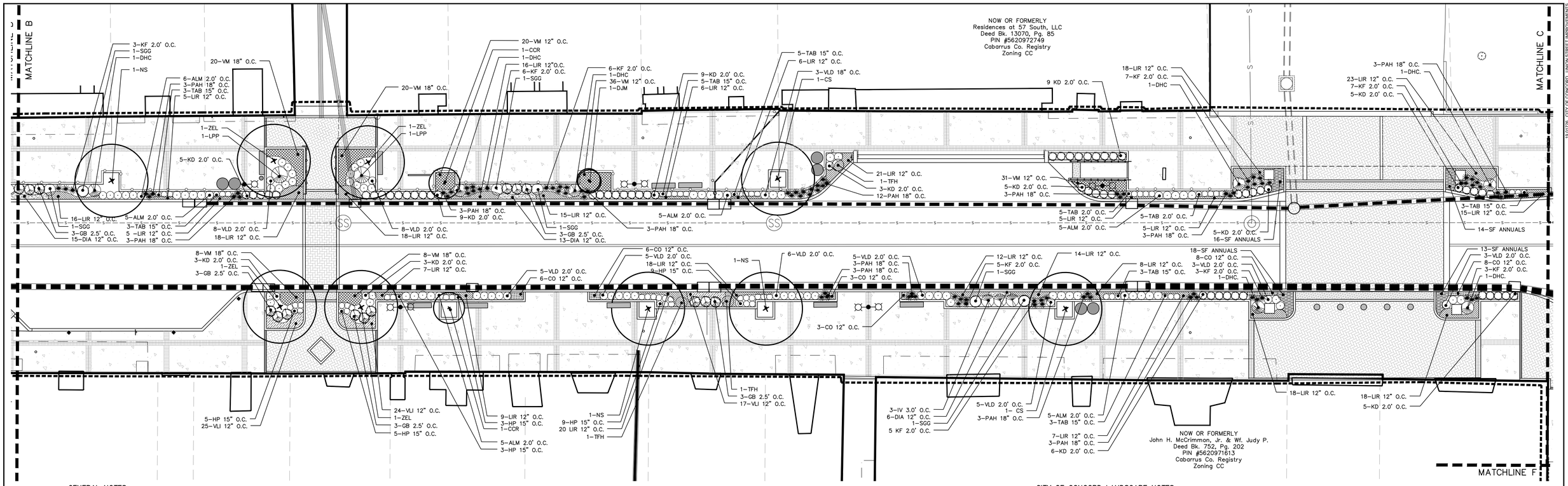
LANDSCAPE PLAN - B

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	C.L. CRANWILL			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	B. ROARK	JULY 2021	19.01726	N/A

SHEET
L-102

P:\2019\19.01726-CONCORD\C-UNION STREETSCAPE PROJECT\DRAWINGS\19.01726 UNION BASE.DWG PLOT DATE: 7/22/2021 11:20 AM KURTIS DURRANT

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS



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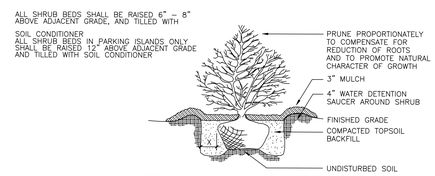
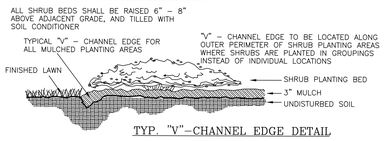
ALM	72	Aronia melonocarpa 'Low scape Mound'	Chokeberry	1 Gal		6" Min.		*
VLD	79	Viburnum cassinoides 'Lil Ditty'	Witherod Viburnum	1 Gal		8" Min.		*
DHC	17	Chamaecyparis obtusa 'Nana Gracilis'	Dwarf Hinoki Cypress	3 Gal		18" Min.		
KD	113	Cornus sericea 'Kelseyi'	Kelsey's Dwarf Red-Osier Dogwood	1 Gal		12" Min.		*
DW	4	Distylium hybrid 'BLDY01'	Jewel Box Distylium	3 Gal		12" Min.		
TFH	9	Hydrangea Paniculata 'Limelight'	Treeform Limelight Hydrangea	7 Gal		48" Min.		
		ORNAMENTAL GRASSES/PERENNIALS/GROUNDCOVERS						
KF	71	Calamagrostis acutiflora 'Karl Foerster'	Feather Reed Grass	1 Gal				
PAH	114	Pennisetum alopecuroides 'Hameln'	Dwarf Fountain Grass	1 Gal				
HP	50	Heuchera micrantha 'Palace Purple'	Heuchera Palace Purple	1 Gal				
CO	75	Coreopsis	Tickseed	Quart				*
DIA	123	Dianthus gratianopolitanus 'Firewitch'	Firewitch Dianthus	Quart				
VLJ	109	Liriope muscari 'Variegata'	Variegated Liriope	4"				
LIR	727	Liriope muscari 'Royal Purple'	Liriope	4"				
VM	293	Vinca Minor	Littleleaf Periwinkle	4"				
LSP	115	Liriope spicata	Creeping lilly turf	4"				
61	SF	ANNUALS						



TYP. SHRUB PLANTING DETAIL



TYP. "V"-CHANNEL EDGE DETAIL

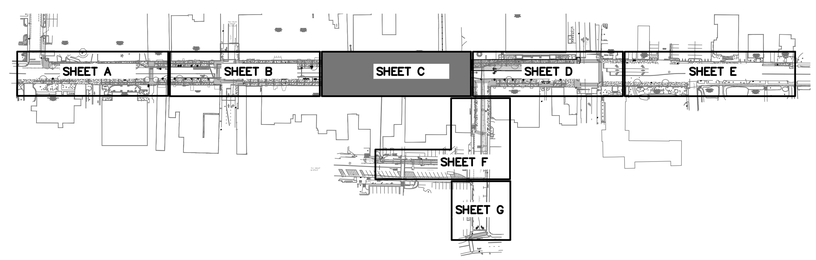
BARE ROOT, CONTAINER OR BALL SIZE	X
5" TO 30"	8"
30" OR GREATER	12"

SCHEDULE – PLANT HOLE SIZING

Not To Scale

CITY OF CONCORD LANDSCAPE NOTES:

1. LANDSCAPE CONTRACTOR SHALL COORDINATE AN ON-SITE MEETING WITH THE CITY ARBORIST BEFORE INSTALLATION OF ANY PLANT MATERIAL.
2. ALL WORK SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE ANSI A300 STANDARD FOR TREE, SHRUB, AND OTHER WOODY PLANT MANAGEMENT STANDARD PRACTICES.
3. ALL PLANT STOCK SHALL COMPLY WITH THE CURRENT EDITION OF ANSI Z60.1 AMERICAN STANDARD FOR NURSERY STOCK
4. ALL PLANTING AREAS SHALL MEET THE REQUIREMENTS OF THE CONCORD DEVELOPMENT ORDINANCE ARTICLE 11 AND TECHNICAL STANDARD ARTICLE 7.
5. HEIGHT AND WIDTH OF PLANT MATERIAL SUPERSEDES CONTAINER SIZE.
6. UTILITIES SHALL BE LOCATED BEFORE PLANTING WWW.NC811.ORG
7. PLANTING LOCATIONS WILL BE ADJUSTED TO PROVIDE SUFFICIENT SPACE FOR UTILITIES, EASEMENTS, STREET LIGHTING, TRAFFIC SIGNS, AND SIGHT TRIANGLES. 5' CLEARANCE AROUND ALL SIDES OF FIRE HYDRANTS AND UTILITY APPURTENANCES. NO TREES SHALL BE PLANTED WITHIN 75' OF A STOP SIGN. NO PLANTS OR TREES LOCATED WITHIN SITE TRIANGLES. 15' CLEARANCE FROM ALL STREET LIGHT POLES.
8. ANY PROPOSED REDESIGN OF THE APPROVED PLANTING PLAN OR PLANT SPECIES SUBSTITUTIONS SHALL BE APPROVED BY THE CITY ARBORIST BEFORE INSTALLATION.
9. ALL TREES AND THEIR PLANTED LOCATION SHALL BE INSPECTED BY CITY STAFF BEFORE APPROVAL. ANY PLANT MATERIAL WHICH HAS DIED, TURNED BROWN, OR DEFOLIATED PRIOR TO INSPECTION SHALL BE REJECTED.
10. ANY PROPOSED PRIVATE IRRIGATION MAY BISECT BUT SHALL NOT RUN PARALLEL WITHIN UTILITY EASEMENTS OR STREET RIGHT OF WAYS, AND SHALL MEET THE REQUIREMENTS OF THE CITY OF CONCORD CODE OF ORDINANCE CHAPTER 62, SECTION 62-164.



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1240 19th Street Lane NW
Hickory, NC 28601
828.328.2024
NC Firm License # C-0459
mcgillassociates.com

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

10 0 5 10 20
GRAPHIC SCALE DIVISION VALUE = 10 FEET

OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	C.L. CRANWILL
PROJECT MANAGER	REVIEWER
M.J. NORRIS	B. ROARK

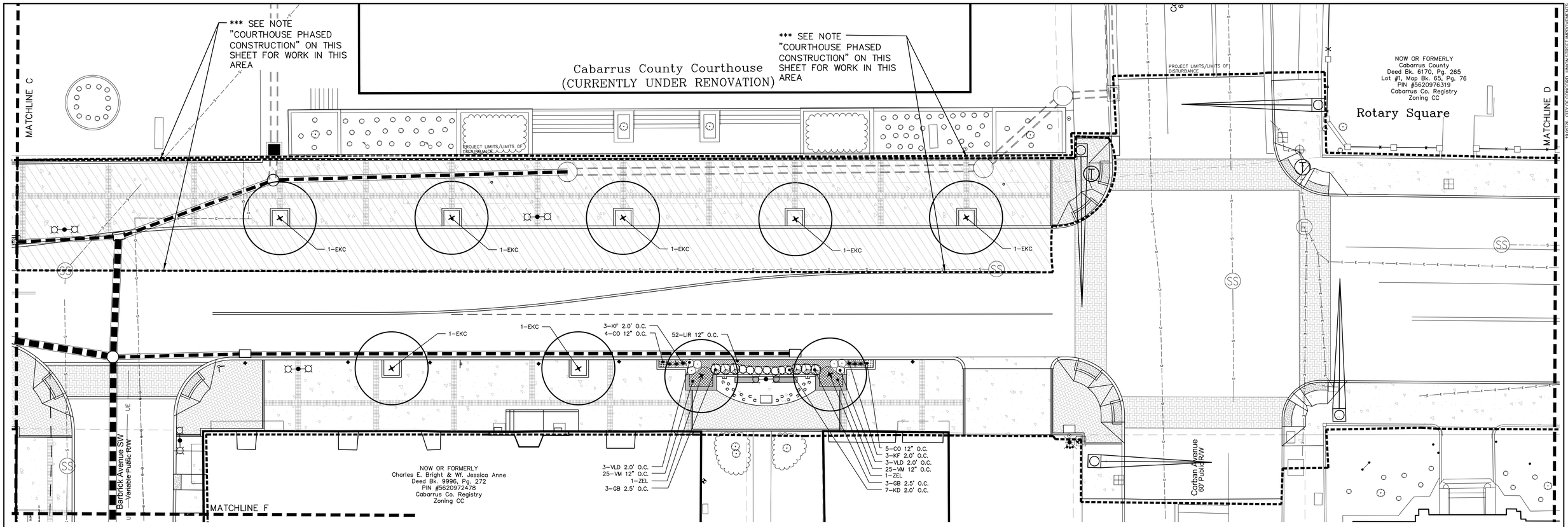
LANDSCAPE PLAN - C

DATE	PROJECT #	FUNDING #
JULY 2021	19.01726	N/A

SHEET
L-103

P:\2019\19.01726-CONCORDNC-UNION STREETSCAPE PROJECT\DRAWINGS\19001726 UNION BASE.DWG PLOT DATE: 7/22/2021 11:21 AM KURTIS DURRANT

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS

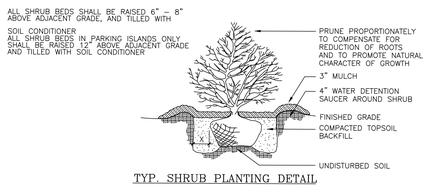


GENERAL NOTES:

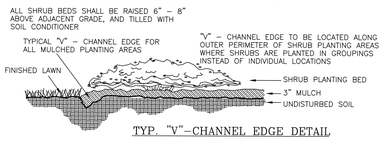
1. LANDSCAPE CONTRACTOR TO VISIT THE SITE AND ACCEPT THE CONDITIONS PRIOR TO BIDDING AND PLANT MATERIAL INSTALLATION.
2. LANDSCAPE CONTRACTOR TO VERIFY ALL UNDERGROUND UTILITIES PRIOR TO INSTALLATION OF ANY PLANT MATERIAL. UTILITY LINES SHOWN ON DRAWINGS ARE FOR GENERAL REFERENCE AND MAY NOT BE ALL INCLUSIVE.
3. LANDSCAPE CONTRACTOR TO PROTECT ALL EXISTING STRUCTURES DURING INSTALLATION OF PLANT MATERIAL.
4. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL STONES, GRAVEL, AND ALL EXTRANEOUS DEBRIS INCLUDING ROOTS AND LIMBS FROM TREE PITS PRIOR TO INSTALLATION.
5. ALL PLANT BEDS TO BE COVERED WITH 3" CLEAN TRIPLE SHRED HARDWOOD MULCH IMMEDIATELY AFTER PLANTING.
6. TOP 6" OF ALL BEDS TO BE TILLED AND AMENDED WITH ORGANIC MATTER. TOP 6" OF TREE PITS TO BE AMENDED WITH ORGANIC MATTER AND WORKED INTO BACKFILL.
7. LANDSCAPE CONTRACTOR SHALL FURNISH ALL QUANTITIES NECESSARY TO COMPLETE PLANTINGS AS SHOWN/LOCATED ON DRAWINGS. QUANTITIES SHOWN ON PLANT LIST ARE FOR CONVENIENCE OF CONTRACTORS AND ARE BELIEVED TO BE SUBSTANTIALLY CORRECT, BUT ACCURACY OF QUANTITIES IN LIST IS NOT GUARANTEED.
8. LANDSCAPE CONTRACTOR TO GUARANTEE ALL PLANT MATERIAL AND WORK FOR A PERIOD OF ONE YEAR FROM ACCEPTANCE OF WORK BY OWNER.
9. ANY PLANT MATERIAL SUBSTITUTIONS OR ADJUSTMENTS ARE TO BE REQUESTED IN WRITING TO THE OWNER. NO SUBSTITUTIONS WILL BE PERMITTED WITHOUT WRITTEN NOTICE BY THE OWNER.
10. ALL PLANT MATERIAL TO CONFORM TO THE CURRENT EDITION OF "AMERICAN STANDARD FOR NURSERY STOCK".
11. ALL TREES TO BE LIMBED UP TO 6' MINIMUM CLEAR HEIGHT.
12. ALL TREES SHALL BE SPECIMEN QUALITY AND WELL SHAPED.
13. ALL TREES OF THE SAME VARIETY SHALL MATCH IN SHAPE, FORM AND SIZE WHERE THEY ARE TO BE INSTALLED IN GROUPS, ROWS, OR AS STREET TREES.

PLANTING SCHEDULE

SYM.	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	CALIPER	HEIGHT	NOTES	NATIVE*
		TREES						
CS	11	Quercus x warei 'Long'	Regal Prince Oak	B&B	2.5" MIN.	12' Min.		
ZEL	8	Zelkova serrata 'Musashino'	Japanese Zelkova	B&B	2.5" MIN.	12' Min.		
DJM	2	Acer palmatum 'Red Dragon'	Dwarf Japanese Maple	B&B	2" MIN.	4' Min.		
CCR	4	Cercis canadensis 'JN2'	Rising Sun Redbud	B&B	2" MIN.	8' Min.		*
EKC	11	Gymnocladus dioicus 'Espresso'	Espresso Kentucky Coffee Tree	B&B	2" MIN.	12' Min.		*
NS	9	Nyssa sylvatica 'Wildfire'	Black Gum Wildfire	B&B	2" MIN.	12' Min.		*
GSH	4	Gleditsia triacanthus f.inermis 'Skycole'	Skyline Honeylocust	B&B	2.5" MIN.	12' Min.		*
		SHRUBS						
SGG	14	Spiraea betulifolia 'Glow Girl'	Birchleaf Spiraea	3 Gal		15" Min.		*
GB	36	Ilex glabra 'Gem box'	Gem Box Inkberry Holly	1 Gal		10" Min.		*
TAB	55	Thuja occidentalis 'Anna Van Vloten'	Anna's Magic Ball Arborvitae	1 Gal		8" Min.		*
IV	12	Itea Virginica 'Henry's Garnet'	Virginia Sweetspire	1 Gal		8" Min.		*
LPP	6	Loropetalum chinense 'Peack'	Purple Pixie Weeping Loropetalum	3 Gal		8" Min.		
ALM	72	Aronia melonocarpa 'Low scape Mound'	Chokeberry	1 Gal		6" Min.		*
VLD	79	Viburnum cassinoides 'Lil Ditty'	Witherod Viburnum	1 Gal		8" Min.		*
DHC	17	Chamaecyparis obtusa 'Nana Gracilis'	Dwarf Hinoiki Cypress	3 Gal		18" Min.		
KD	113	Cornus sericea 'Kelseyi'	Kelsey's Dwarf Red-Osier Dogwood	1 Gal		12" Min.		*
DW	4	Distylium hybrid 'BLDY01'	Jewel Box Distylium	3 Gal		12" Min.		
TFH	9	Hydrangea Paniculata 'Limelight'	Treeform Limelight Hydrangea	7 Gal		48" Min.		
		ORNAMENTAL GRASSES/PERENNIALS/GROUNDCOVERS						
KF	71	Calamagrostis acutiflora 'Karl Foerster'	Feather Reed Grass	1 Gal				
PAH	114	Pennisetum alopecuroides 'Hameln'	Dwarf Fountain Grass	1 Gal				
HP	50	Heuchera micrantha 'Palace Purple'	Heuchera Palace Purple	1 Gal				
CO	75	Coreposis	Tickseed	Quart				*
DIA	123	Dianthus gratianopolitanus 'Firewitch'	Firewitch Dianthus	Quart				
VLI	109	Liriope muscari 'Variegata'	Variegated Liriope	4"				
LIR	727	Liriope muscari 'Royal Purple'	Liriope	4"				
VM	293	Vinca Minor	Littleleaf Periwinkle	4"				
LSP	115	Liriope spicata	Creeping lilly turf	4"				
61	SF ANNUALS							



TYP. SHRUB PLANTING DETAIL



TYP. "V"-CHANNEL EDGE DETAIL

BARE ROOT, CONTAINER OR BALL SIZE	X
6" TO 30"	8"
30" OR GREATER	12"

SCHEDULE – PLANT HOLE SIZING

Not To Scale

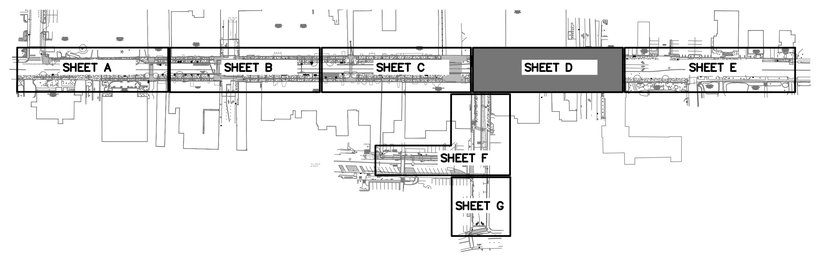
CITY OF CONCORD LANDSCAPE NOTES:

1. LANDSCAPE CONTRACTOR SHALL COORDINATE AN ON-SITE MEETING WITH THE CITY ARBORIST BEFORE INSTALLATION OF ANY PLANT MATERIAL.
2. ALL WORK SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE ANSI A300 STANDARD FOR TREE, SHRUB, AND OTHER WOODY PLANT MANAGEMENT STANDARD PRACTICES.
3. ALL PLANT STOCK SHALL COMPLY WITH THE CURRENT EDITION OF ANSI Z60.1 AMERICAN STANDARD FOR NURSERY STOCK
4. ALL PLANTING AREAS SHALL MEET THE REQUIREMENTS OF THE CONCORD DEVELOPMENT ORDINANCE ARTICLE 11 AND TECHNICAL STANDARD ARTICLE 7.
5. HEIGHT AND WIDTH OF PLANT MATERIAL SUPERSEDES CONTAINER SIZE.
6. UTILITIES SHALL BE LOCATED BEFORE PLANTING WWW.NC811.ORG
7. PLANTING LOCATIONS WILL BE ADJUSTED TO PROVIDE SUFFICIENT SPACE FOR UTILITIES, EASEMENTS, STREET LIGHTING, TRAFFIC SIGNS, AND SIGHT TRIANGLES. 5' CLEARANCE AROUND ALL SIDES OF FIRE HYDRANTS AND UTILITY APPURTENANCES. NO TREES SHALL BE PLANTED WITHIN 75' OF A STOP SIGN. NO PLANTS OR TREES LOCATED WITHIN SITE TRIANGLES. 15' CLEARANCE FROM ALL STREET LIGHT POLES.
8. ANY PROPOSED REDESIGN OF THE APPROVED PLANTING PLAN OR PLANT SPECIES SUBSTITUTIONS SHALL BE APPROVED BY THE CITY ARBORIST BEFORE INSTALLATION.
9. ALL TREES AND THEIR PLANTED LOCATION SHALL BE INSPECTED BY CITY STAFF BEFORE APPROVAL. ANY PLANT MATERIAL WHICH HAS DIED, TURNED BROWN, OR DEFOLIATED PRIOR TO INSPECTION SHALL BE REJECTED.
10. ANY PROPOSED PRIVATE IRRIGATION MAY BISECT BUT SHALL NOT RUN PARALLEL WITHIN UTILITY EASEMENTS OR STREET RIGHT OF WAYS, AND SHALL MEET THE REQUIREMENTS OF THE CITY OF CONCORD CODE OF ORDINANCE CHAPTER 62, SECTION 62-164.

COURTHOUSE PHASED CONSTRUCTION:

DUE TO THE RENOVATION OF THE COURTHOUSE, ONLY PART OF THE ILLUSTRATED CONSTRUCTION ACTIVITIES WILL BE INSTALLED UNDER THIS CONTRACT. THE REMAINING ITEMS WILL BE INSTALLED UNDER SEPARATE CONTRACT AFTER THE COMPLETION OF THE COURTHOUSE RENOVATION IN 2024. ITEMS UNDER THIS CONTRACT INCLUDE:
COMPREHENSIVE GRADING, ELECTRICAL DEMOLITION, ASPHALT PAVING, STRIPING, TEMPORARY CONCRETE SIDEWALK, HC RAMPS, TACTILE PLATES, STORMWATER INSTALLATION, AND WATER LINES AS NOTED ON THE UTILITY SHEET. THIS AREA IS TO BE GRADED TO PROPOSED ELEVATIONS AND THE GRADES TAPERED DOWN TO MEET EXISTING ELEVATIONS AT THE COURTHOUSE STEPS. EXISTING DRAINAGE STRUCTURES TO BE UTILIZED FOR DRAINAGE.

FOR TEMPORARY PAVING SEE DETAIL SHEET C-510.



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1240 19th Street Lane NW
Hickory, NC 28601
828.328.2024
NC Firm License # C-0459
mcgillassociates.com

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CHRISTIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

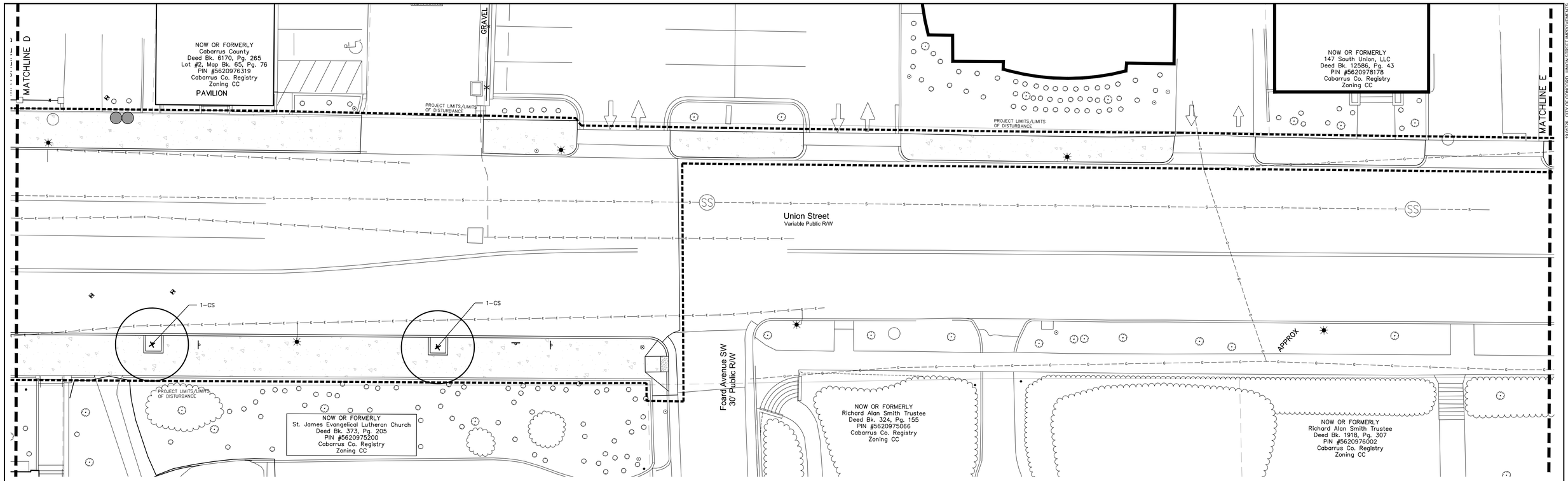
OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	C.L. CRANWILL
PROJECT MANAGER	REVIEWER
M.J. NORRIS	B. ROARK

LANDSCAPE PLAN - D

DATE	PROJECT #	FUNDING #
JULY 2021	19.01726	N/A

SHEET
L-104

P:\2019\19.01726-CONCORD\C-UNION STREETSCAPE PROJECT\DRAWINGS\19.01726 UNION BASE.DWG PLOT DATE: 7/22/2021 3:20 PM KURTIS DURRANT



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PLANTING SCHEDULE

SYM	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	*CALIPER	HEIGHT	NOTES	NATIVE*
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GSH	4	Gleditsia triacanthus f.inermis 'Skycole'	Skyline Honeylocust	B&B	2.5" MIN.	12' Min.		*
		SHRUBS						
SGG	14	Spiraea betulifolia 'Glow Girl'	Birchleaf Spiraea	3 Gal		15" Min.		*
GB	36	Ilex glabra 'Gem box'	Gem Box Inkberry Holly	1 Gal		10" Min.		*
TAB	55	Thuja occidentalis 'Anna Van Voten'	Anna's Magic Ball Arborvitae	1 Gal		8" Min.		*
IV	12	Itea Virginica 'Henry's Garnet'	Virginia Sweetspire	1 Gal		8" Min.		*
LPP	6	Loropetalum chinense 'Peack'	Purple Pixie Weeping Loropetalum	3 Gal		8" Min.		
ALM	72	Aronia melanocarpa 'Low scape Mound'	Chokeberry	1 Gal		6" Min.		*
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DHC	17	Chamaecyparis obtusa 'Nana Gracilis'	Dwarf Hinoki Cypress	3 Gal		18" Min.		
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DIA	123	Dianthus gratianopolitanus 'Firewitch'	Firewitch Dianthus	Quart				
VLI	109	Liriope muscari 'Variegata'	Variegated Liriope	4"				
LIR	727	Liriope muscari 'Royal Purple'	Liriope	4"				
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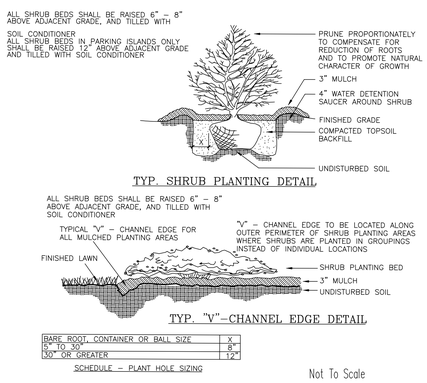
61 SF ANNUALS								



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SCHEDULE – PLANT HOLE SIZING

Not To Scale

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6. UTILITIES SHALL BE LOCATED BEFORE PLANTING WWW.NC811.ORG
7. PLANTING LOCATIONS WILL BE ADJUSTED TO PROVIDE SUFFICIENT SPACE FOR UTILITIES, EASEMENTS, STREET LIGHTING, TRAFFIC SIGNS, AND SIGHT TRIANGLES. 5' CLEARANCE AROUND ALL SIDES OF FIRE HYDRANTS AND UTILITY APPURTENANCES. NO TREES SHALL BE PLANTED WITHIN 75' OF A STOP SIGN. NO PLANTS OR TREES LOCATED WITHIN SITE TRIANGLES. 15' CLEARANCE FROM ALL STREET LIGHT POLES.
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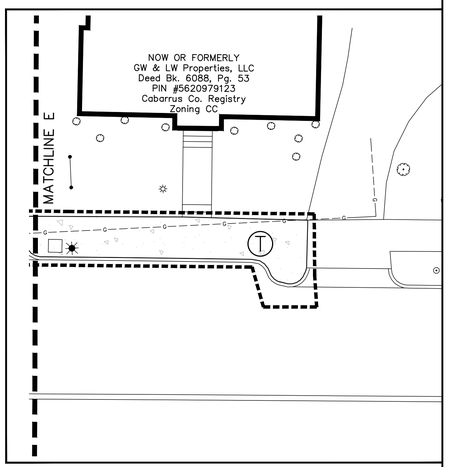

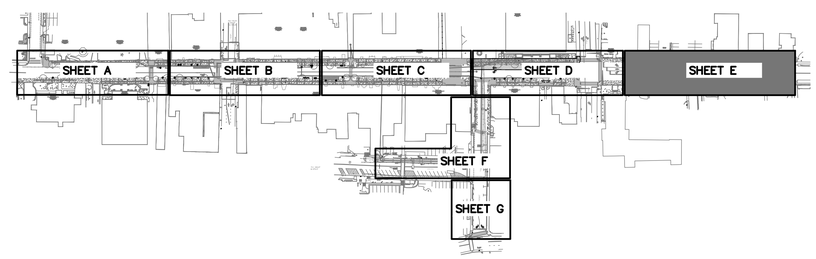

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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

LANDSCAPE PLAN - E

OFFICE MANAGER	DESIGNER				
D.G. CHAPMAN	C.L. CRANWILL				
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #	SHEET
M.J. NORRIS	B. ROARK	JULY 2021	19.01726	N/A	L-105

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19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS

GENERAL NOTES:

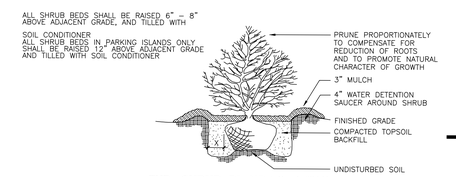
1. LANDSCAPE CONTRACTOR TO VISIT THE SITE AND ACCEPT THE CONDITIONS PRIOR TO BIDDING AND PLANT MATERIAL INSTALLATION.
2. LANDSCAPE CONTRACTOR TO VERIFY ALL UNDERGROUND UTILITIES PRIOR TO INSTALLATION OF ANY PLANT MATERIAL. UTILITY LINES SHOWN ON DRAWINGS ARE FOR GENERAL REFERENCE AND MAY NOT BE ALL INCLUSIVE.
3. LANDSCAPE CONTRACTOR TO PROTECT ALL EXISTING STRUCTURES DURING INSTALLATION OF PLANT MATERIAL.
4. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL STONES, GRAVEL, AND ALL EXTRANEOUS DEBRIS INCLUDING ROOTS AND LIMBS FROM TREE PITS PRIOR TO INSTALLATION.
5. ALL PLANT BEDS TO BE COVERED WITH 3" CLEAN TRIPLE SHRED HARDWOOD MULCH IMMEDIATELY AFTER PLANTING.
6. TOP 6" OF ALL BEDS TO BE TILLED AND AMENDED WITH ORGANIC MATTER. TOP 6" OF TREE PITS TO BE AMENDED WITH ORGANIC MATTER AND WORKED INTO BACKFILL.
7. LANDSCAPE CONTRACTOR SHALL FURNISH ALL QUANTITIES NECESSARY TO COMPLETE PLANTINGS AS SHOWN/LOCATED ON DRAWINGS. QUANTITIES SHOWN ON PLANT LIST ARE FOR CONVENIENCE OF CONTRACTORS AND ARE BELIEVED TO BE SUBSTANTIALLY CORRECT, BUT ACCURACY OF QUANTITIES IN LIST IS NOT GUARANTEED.
8. LANDSCAPE CONTRACTOR TO GUARANTEE ALL PLANT MATERIAL AND WORK FOR A PERIOD OF ONE YEAR FROM ACCEPTANCE OF WORK BY OWNER.
9. ANY PLANT MATERIAL SUBSTITUTIONS OR ADJUSTMENTS ARE TO BE REQUESTED IN WRITING TO THE OWNER. NO SUBSTITUTIONS WILL BE PERMITTED WITHOUT WRITTEN NOTICE BY THE OWNER.
10. ALL PLANT MATERIAL TO CONFORM TO THE CURRENT EDITION OF "AMERICAN STANDARD FOR NURSERY STOCK".
11. ALL TREES TO BE LIMBED UP TO 6' MINIMUM CLEAR HEIGHT.
12. ALL TREES SHALL BE SPECIMEN QUALITY AND WELL SHAPED.
13. ALL TREES OF THE SAME VARIETY SHALL MATCH IN SHAPE, FORM AND SIZE WHERE THEY ARE TO BE INSTALLED IN GROUPS, ROWS, OR AS STREET TREES.

CITY OF CONCORD LANDSCAPE NOTES:

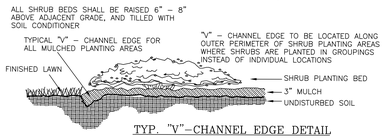
1. LANDSCAPE CONTRACTOR SHALL COORDINATE AN ON-SITE MEETING WITH THE CITY ARBORIST BEFORE INSTALLATION OF ANY PLANT MATERIAL.
2. ALL WORK SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE ANSI A300 STANDARD FOR TREE, SHRUB, AND OTHER WOODY PLANT MANAGEMENT STANDARD PRACTICES.
3. ALL PLANT STOCK SHALL COMPLY WITH THE CURRENT EDITION OF ANSI Z60.1 AMERICAN STANDARD FOR NURSERY STOCK
4. ALL PLANTING AREAS SHALL MEET THE REQUIREMENTS OF THE CONCORD DEVELOPMENT ORDINANCE ARTICLE 11 AND TECHNICAL STANDARD ARTICLE 7.
5. HEIGHT AND WIDTH OF PLANT MATERIAL SUPERSEDES CONTAINER SIZE.
6. UTILITIES SHALL BE LOCATED BEFORE PLANTING WWW.NC811.ORG
7. PLANTING LOCATIONS WILL BE ADJUSTED TO PROVIDE SUFFICIENT SPACE FOR UTILITIES, EASEMENTS, STREET LIGHTING, TRAFFIC SIGNS, AND SIGHT TRIANGLES. 5' CLEARANCE AROUND ALL SIDES OF FIRE HYDRANTS AND UTILITY APPURTENANCES. NO TREES SHALL BE PLANTED WITHIN 75' OF A STOP SIGN. NO PLANTS OR TREES LOCATED WITHIN SITE TRIANGLES. 15' CLEARANCE FROM ALL STREET LIGHT POLES.
8. ANY PROPOSED REDESIGN OF THE APPROVED PLANTING PLAN OR PLANT SPECIES SUBSTITUTIONS SHALL BE APPROVED BY THE CITY ARBORIST BEFORE INSTALLATION.
9. ALL TREES AND THEIR PLANTED LOCATION SHALL BE INSPECTED BY CITY STAFF BEFORE APPROVAL. ANY PLANT MATERIAL WHICH HAS DIED, TURNED BROWN, OR DEFOLIATED PRIOR TO INSPECTION SHALL BE REJECTED.
10. ANY PROPOSED PRIVATE IRRIGATION MAY BISECT BUT SHALL NOT RUN PARALLEL WITHIN UTILITY EASEMENTS OR STREET RIGHT OF WAYS, AND SHALL MEET THE REQUIREMENTS OF THE CITY OF CONCORD CODE OF ORDINANCE CHAPTER 62, SECTION 62-164.

PLANTING SCHEDULE

SYM	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	*CALIPER	HEIGHT	NOTES		NATIVE*
			TREES						
CS	11	Quercus x warei 'Long'	Regal Prince Oak	B&B	2.5" MIN.	12' Min.			
ZEL	8	Zelkova serrata 'Musashino'	Japanese Zelkova	B&B	2.5" MIN.	12' Min.			
DJM	2	Acer palmatum 'Red Dragon'	Dwarf Japanese Maple	B&B	2" MIN.	4' Min.			
CCR	4	Cercis canadensis 'JN2'	Rising Sun Redbud	B&B	2" MIN.	8' Min.			*
EKC	11	Gymnocladus dioicus 'Espresso'	Espresso Kentucky Coffee Tree	B&B	2" MIN.	12' Min.			*
NS	9	Nyssa sylvatica 'Wildfire'	Black Gum Wildfire	B&B	2" MIN.	12' Min.			*
GSH	4	Gleditsia triacanthus f.inermis 'Skycole'	Skyline Honeylocust	B&B	2.5" MIN.	12' Min.			*
			SHRUBS						
SGG	14	Spiraea betulifolia 'Glow Girl'	Birchleaf Spiraea	3 Gal		15" Min.			*
GB	36	Ilex glabra 'Gem box'	Gem Box Inkberry Holly	1 Gal		10" Min.			*
TAB	55	Thuja occidentalis 'Anna Van Vloten'	Anna's Magic Ball Arborvitae	1 Gal		8" Min.			*
IV	12	Itea Virginica 'Henry's Garnet'	Virginia Sweetspire	1 Gal		8" Min.			*
LPP	6	Loropetalum chinense 'Peack'	Purple Pixie Weeping Loropetalum	3 Gal		8" Min.			
ALM	72	Aronia melonocarpa 'Low scape Mound'	Chokeberry	1 Gal		6" Min.			*
VLD	79	Viburnum cassinoides 'LS Ditty'	Witherod Viburnum	1 Gal		8" Min.			*
DHC	17	Chamaecyparis obtusa 'Nana Gracilis'	Dwarf Hinoki Cypress	3 Gal		18" Min.			
KD	113	Cornus sericea 'Kelseyi'	Kelsey's Dwarf Red-Osier Dogwood	1 Gal		12" Min.			*
DW	4	Distylium hybrid 'BLDY01'	Jewel Box Distylium	3 Gal		12" Min.			
TFH	9	Hydrangea Paniculata 'Limelight'	Treeform Limelight Hydrangea	7 Gal		48" Min.			
			ORNAMENTAL GRASSES/PERENNIALS/GROUNDCOVERS						
KF	71	Calamagrostis acutiflora 'Karl Foerster'	Feather Reed Grass	1 Gal					
PAH	114	Pennisetum alopecuroides 'Hameln'	Dwarf Fountain Grass	1 Gal					
HP	50	Heuchera micrantha 'Palace Purple'	Heuchera Palace Purple	1 Gal					
CO	75	Coreopsis	Tickseed	Quart					*
DIA	123	Dianthus gratianopolitanus 'Firewitch'	Firewitch Dianthus	Quart					
VLI	109	Liriope muscari 'Variegata'	Variegated Liriope	4"					
LIR	727	Liriope muscari 'Royal Purple'	Liriope	4"					
VM	293	Vinca Minor	Littleleaf Periwinkle	4"					
LSP	115	Liriope spicata	Creeping lilly turf	4"					
61	SF	ANNUALS							



TYP. SHRUB PLANTING DETAIL

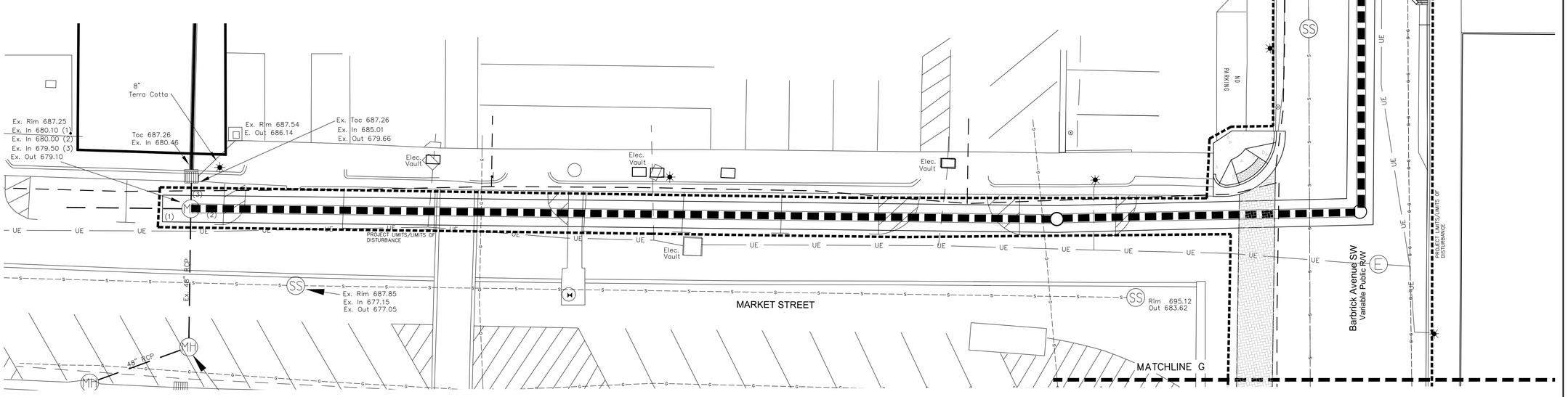


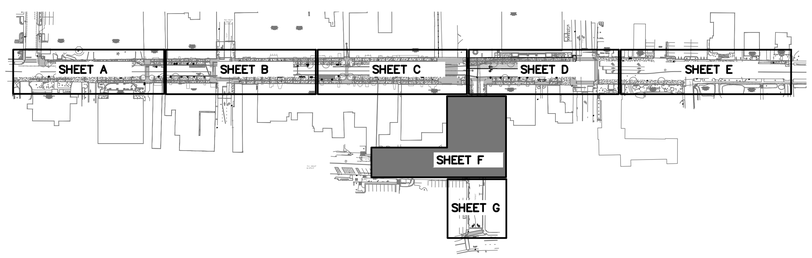
TYP. "V"-CHANNEL EDGE DETAIL

BARE ROOT, CONTAINER OR BALL SIZE	X
5" TO 30"	8"
30" OR GREATER	12"

SCHEDULE – PLANT HOLE SIZING

Not To Scale





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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

10 0 5 10 20
GRAPHIC SCALE DIVISION VALUE = 10 FEET

OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	C.L. CRANWILL
PROJECT MANAGER	REVIEWER
M.J. NORRIS	B. ROARK

LANDSCAPE PLAN - F

DATE	PROJECT #	FUNDING #
JULY 2021	19.01726	N/A

SHEET
L-106

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS

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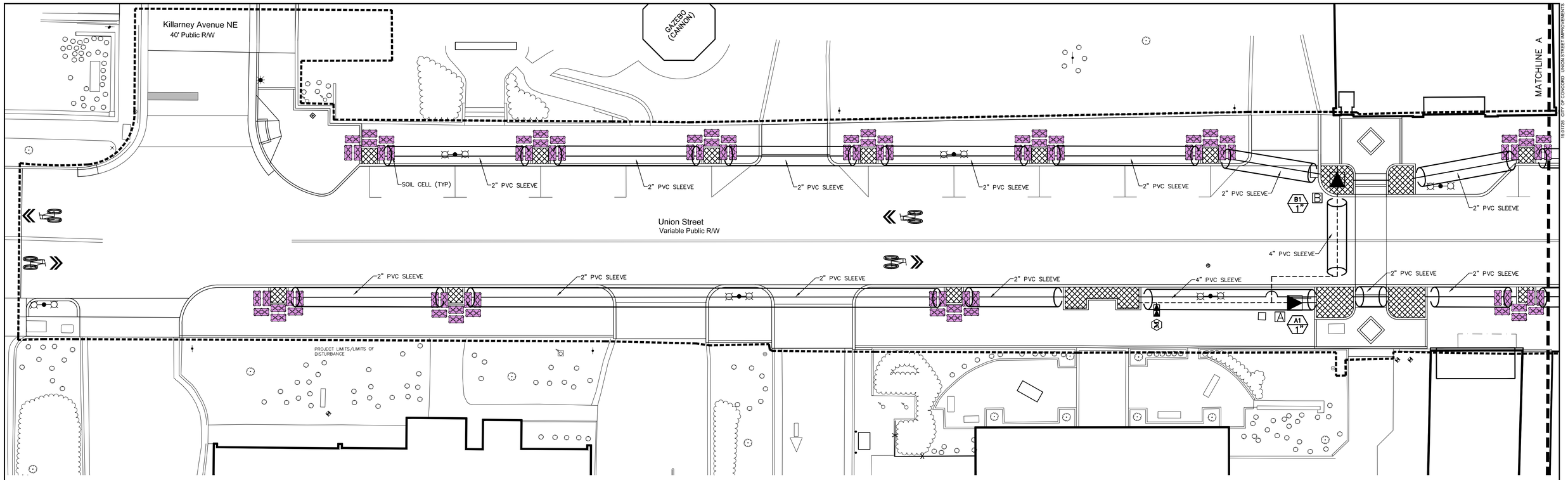


IRRIGATION NOTES & LEGENDS

DRIP IRRIGATION

– LOCATION OF NETAFIM TECHLINE 1/2" P.E. TUBING, 18" EMITTER SPACING INTERVALS AT 1 GPH EMITTERS INLINE. NETAFIM (MODEL# TLCV9–18025) TECHLINE TO BE INSTALLED UNDER MULCH IN LANDSCAPE AREAS AS SHOWN ON THE IRRIGATION PLANS.

– LOCATION OF DRIP VALVE ASSEMBLY WHICH INCLUDES RAINBIRD 100DV SERIES REMOTE CONTROL VALVE WITH PRESSURE–REGULATING DRIP KIT AND FILTER. ALL VALVES SHALL BE INSTALLED IN NDS VALVE BOXES WITH LIDS MOUNTED AT GRADE LEVEL.

PIPE

– DENOTES ROUTE OF PR200 PVC LATERAL PIPING. SIZE OF LATERAL PIPING SHALL BE AS NOTED BELOW. MINIMUM DEPTH OF COVER OVER LATERAL PIPING TO BE 12".

LATERAL PIPING SIZING SCHEDULE

SUMMATION OF GALLONAGE DEMAND ON THE PARTICULAR BRANCHES OF PIPE WITHIN A CONTROL SECTION SHALL BE DETERMINED BY USING THE GPM FOR A NOZZLE BASED ON A 50 PSI BASE OF HEAD PRESSURE AND FULL RADIUS AT THAT PRESSURE AS REPORTED IN THE RAINBIRD 2021 IRRIGATION PRODUCTS CATALOG. PIPE SIZES FOR THE LATERALS SHALL BE AS FOLLOWS:

ZERO TO FIFTEEN GPM ACCUMULATED FLOW USE 1" PR200 PVC PIPE

GREATER THAN FIFTEEN UP TO THIRTY–FIVE GPM USE 1–1/2" PR200 PVC PIPE

FRICTION LOSS ALLOWANCES FOR THIS PROJECT HAVE BEEN DETERMINED USING THE ABOVE FLOW RANGES AND DEMANDS.

– DENOTES ROUTE OF PR200 MAIN LINE PIPING. SIZE OF PIPE TO BE 1–1/2". MINIMUM DEPTH OF COVER OVER MAINLINE PIPING TO BE 18".

– PIPING SHALL BE PR200 SOLVENT WELD PVC PIPE WITH SCHEDULE 40 PVC SOLVENT WELD FITTINGS UNLESS OTHERWISE NOTED.

– ALL PIPING RUNS SHALL BE "SNAKED" IN THE TRENCH DURING INSTALLATION TO PREVENT EXCESSIVE STRAIN DUE TO THERMAL EXPANSION OR CONTRACTION.

– THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO AVOID DAMAGING PLANTINGS (INCLUDING ROOTS) DURING INSTALLATION OF THE IRRIGATION SYSTEM AND SHALL COORDINATE HIS EFFORTS WITH THE LANDSCAPER AND LANDSCAPE ARCHITECT SO AS TO OPTIMIZE THE EFFICIENCY AND THE AESTHETIC QUALITY OF THE INSTALLATION.

HEAD RADII

– THE IRRIGATION CONTRACTOR SHALL ADJUST THE RADIUS AND THROW OF EACH SPRINKLER HEAD TO PROVIDE OPTIMUM COVERAGE WHILE MINIMIZING OVERSPRAY ONTO HARDSCAPES OR BUILDINGS. ADJUST HEADS TO ELIMINATE DRY SPOTS.

– APPROXIMATE ARC AND RADIUS OF INDIVIDUAL SPRINKLER HEAD COVERAGE SHALL BE AS ILLUSTRATED. INDIVIDUAL HEAD OR NOZZLE MODEL NUMBERS MAY BE DEPENDENT UPON THESE SPECIFIC CHARACTERISTICS.

24 VAC CONTROL WIRING

– ALL 24 V.A.C. CONTROL WIRING SHALL BE SINGLE STRAND COPPER WIRE WITH POLYETHYLENE PE DIRECT BURIAL INSULATION RATED FOR 300 V.A.C. VALVE "COMMON" WIRES SHALL HAVE WHITE INSULATION WHILE VALVE "HOT" WIRES SHALL HAVE INSULATION RED IN COLOR. THE "COMMON" WIRES SHALL BE #14 AWG. "HOT" WIRES SHALL BE #14 AWG. VALVE WIRING SHALL FOLLOW MAINLINE PIPING WHERE FEASIBLE AND SHALL BE LAID IN A COMMON TRENCHLINE WITH THE MAINLINE PIPING AND IN THE BOTTOM OF THE TRENCH. WIRING SHALL BE "BUNDLED" AND TAPED AT INTERVALS OF APPROXIMATELY TEN FEET. ALL WIRING SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS.

– WIRE SPLICES SHALL BE KEPT TO AN ABSOLUTE MINIMUM. WHERE MAJOR CONCENTRATIONS OF SPLICES ARE NECESSARY SAID SPLICES SHALL BE PLACED IN A NDS VALVE BOX, WITH AN NDS COVER INSTALLED AT GRADE LEVEL. SPLICES AT VALVE LOCATIONS SHALL BE MADE INSIDE OF THE VALVE BOX. ALL SPLICE LOCATIONS SHALL BE NOTED ON THE AS BUILT PLAN.

– WIRE RUNS SHALL BE INSTALLED WITH ENOUGH SLACK AND/OR OCCASIONAL EXPANSION LOOPS TO PREVENT EXCESSIVE STRAIN DUE TO THERMAL CONTRACTION.

– ALL WIRE SPLICES SHALL BE MADE USING UL APPROVED DIRECT BURIAL CONNECTORS AND WATERPROOFING MATERIALS. ALL ELECTRICAL WORK SHALL BE INSTALLED ACCORDING TO CODE.

CONTROLLER

A B C D E F – LOCATION OF THE IRRIGATION CONTROLLER. THE CONTROLLER SHALL BE RAINBIRD ESP9VI BATTERY OPPERATED CONTROLLER. THE CONTROLLER SHALL BE INSTALLED INTO THE VALVE BOX WITH THE VALVE.

– ALL ELECTRICAL CONNECTIONS AND INSTALLATIONS SHALL BE PERFORMED IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS.

BACKFLOW PREVENTION

– DENOTES THE LOCATION OF REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLY. THE BACKFLOW SHALL BE THE CONTRACTOR'S RESPONSIBILITY. THE BACKFLOW SHALL BE 3/4" IN SIZE. THE BACKFLOW ASSEMBLY SHALL BE INSTALLED DOWNSTREAM OF THE IRRIGATION METER AS SHOWN ON THE LAYOUT. THE UNIT MUST BE INSTALLED IN ACCORDANCE WITH ALL LOCAL AND STATE CODE REQUIREMENTS AND SHALL HAVE APPROVED COVER.

WATER SUPPLY

M – DENOTES THE PROPOSED LOCATION OF THE IRRIGATION METER. THE METER SHALL BE THE GENERAL CONTRACTOR'S RESPONSIBILITY. THE METER SHALL BE 3/4" IN SIZE. SINCE THE WATER SUPPLY FOR THE SYSTEM SHALL BE POTABLE WATER, THE CONTRACTOR WILL BE REQUIRED TO INSTALL BACKFLOW PREVENTION DEVICE WHICH WILL BE LOCATED DOWNSTREAM OF THE IRRIGATION METER AS NOTED ON PLAN.

– THE IRRIGATION SYSTEM SHALL BE CAPABLE OF DELIVERING 30 GPM MAXIMUM WITH ONE STATION OPERATING WITH 50 PSI AT THE BASE OF THE HEAD FOR OPTIMUM PERFORMANCE OF THE IRRIGATION SYSTEM AS DESIGNED AND SPECIFIED.

* NOTE * – IF THE WATER SUPPLY IS NOT CAPABLE OF THE DESIGNED CAPACITY (FLOW AND/OR PRESSURE), THE IRRIGATION SYSTEM WILL NEED TO BE REDESIGNED, WHICH MAY ALTER THE IRRIGATION MATERIAL ESTIMATE.

SLEEVING

– DENOTES LOCATION OF PVC SLEEVES FOR IRRIGATION PIPING. SIZE OF SLEEVES TO BE AS NOTED.

– WHERE IRRIGATION PIPING CROSSES SIDEWALKS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING A SLEEVE 2 SIZES LARGER THAN THE PIPE THAT IS CROSSING.

– THE IRRIGATION CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE IRRIGATION SYSTEM WITH THE LANDSCAPE CONTRACTOR TO INSURE PROPER INSTALLATION OF BOTH THE IRRIGATION SYSTEM WITH THE LANDSCAPE AND HARDSCAPE.

NOTE: THE IRRIGATION SYSTEM IS DISPLAYED SCHEMATIC IN NATURE. THE IRRIGATION CONTRACTOR MAY BE REQUIRED TO MAKE MINOR ADJUSTMENTS IN THE FIELD. THESE MINOR ADJUSTMENTS SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER BUT SHALL BE MADE ONLY AFTER NOTIFICATION IS MADE TO THE OWNER OR HIS REPRESENTATIVE.

– THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE SITE SO THAT HE IS AWARE OF ANY SPECIAL CONDITIONS WHICH EXIST THAT MAY AFFECT HIS BID PROPOSAL AND SHALL THEREAFTER BE RESPONSIBLE FOR ALL COST INCURRED IN RELATION TO THE INSTALLATION.

– THIS DESIGN IS BASED ON THE SITE INFORMATION AND/OR DRAWINGS SUPPLIED BY THE CLIENT OF RECORD WITH DESIGN CRITERIA BEING SET BY THE CLIENT AND/OR PROJECT OWNER (I.E. AREA TO BE IRRIGATED, MANUFACTURER'S EQUIPMENT TO BE EMPLOYED, WATER SOURCE (LOCATION, FLOW & PRESSURE) CAPACITIES, ELECTRICAL POWER AVAILABILITY FOR IRRIGATION SYSTEM USE, ETC.). SMITH TURF & IRRIGATION BEARS NO RESPONSIBILITY OR LIABILITY FOR ANY ERRORS IN DESIGN OR APPLICATION WHICH MIGHT ARISE DUE TO INACCURACIES IN THE ABOVE REFERENCED INFORMATION SUPPLIED TO SMITH TURF & IRRIGATION IN RELATION TO THIS SPECIFIC PROJECT UNLESS OTHERWISE NOTED.

Irrigation Zones		
ZONE	TYPE	GPM
A1	BED	2.74
B1	BED	2.04
C1	BED	7.46
D1	BED	4.7
E1	BED	11.1
F1	BED	3.28
Total		31.32

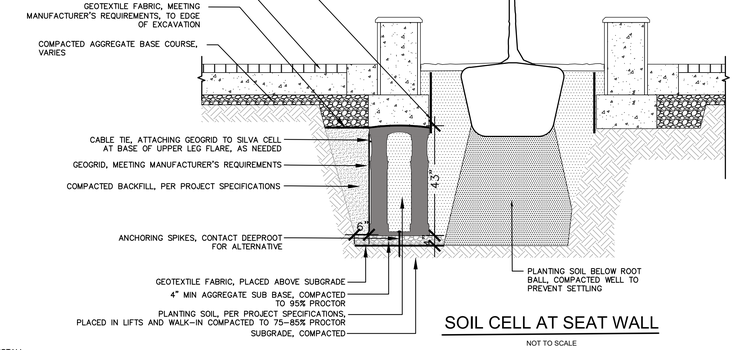
NOTE

MAINLINE/LATERAL SHOWN ON PLAN IS DIAGRAMMATIC FOR CLARITY. ALL MAINLINE, LATERAL AND VALVES SHALL BE FIELD LOCATED OUTSIDE OF HARDSCAPE, FENCES AND OTHER UTILITIES.

NOTE

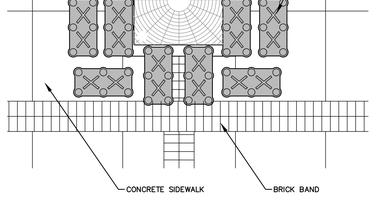
WHERE IRRIGATION MAINLINE/LATERAL LINE CROSSES HARDSCAPE THERE SHALL BE A SLEEVE 2 SIZES BIGGER. NOT ALL SLEEVES ARE SHOWN FOR CLARITY REASONS.

SOIL CELL DETAILS



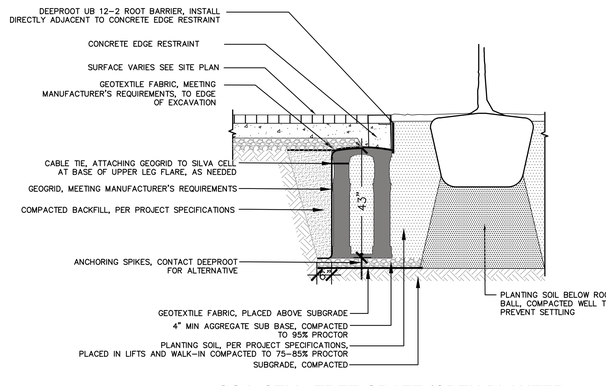
SOIL CELL AT SEAT WALL

NOT TO SCALE



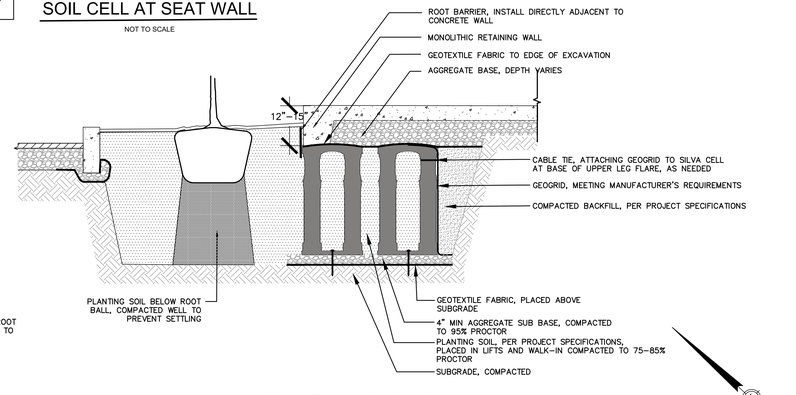
SOIL CELLS

NOT TO SCALE



SOIL CELL: TREE GRATE /OPEN PLANTER

NOT TO SCALE



SOIL CELL AT MONOLITHIC WALL

NOT TO SCALE

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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS

CITY OF CONCORD

CABARRUS COUNTY, NORTH CAROLINA

10 0 5 10 20
GRAPHIC SCALE DIVISION VALUE = 10 FEET

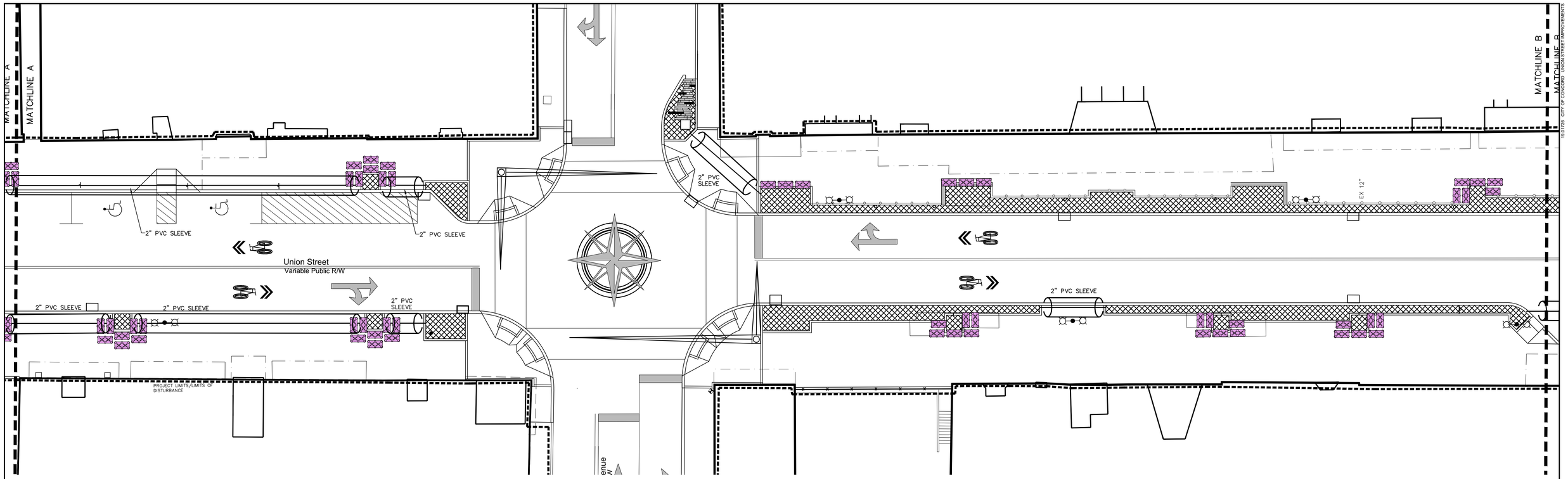
IRRIGATION PLAN - A

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	C.L. CRANWILL			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	B. ROARK	JULY 2021	19.01726	N/A

SHEET
I-101

P:\2019\19.01726-CONCORD\C-UNION STREET\SCAPE PROJECT\DRAWINGS\19017261 UNION - COVER SHEETS.DWG PLOT DATE: 7/22/2021 9:42 AM KURTIS DURRANT

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS



IRRIGATION NOTES & LEGENDS

DRIP IRRIGATION

– LOCATION OF NETAFIM TECHLINE 1/2" P.E. TUBING, 18" EMITTER SPACING INTERVALS AT 1 GPH EMITTERS INLINE. NETAFIM (MODEL# TLCV9–18025) TECHLINE TO BE INSTALLED UNDER MULCH IN LANDSCAPE AREAS AS SHOWN ON THE IRRIGATION PLANS.

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PIPE

– DENOTES ROUTE OF PR200 PVC LATERAL PIPING. SIZE OF LATERAL PIPING SHALL BE AS NOTED BELOW. MINIMUM DEPTH OF COVER OVER LATERAL PIPING TO BE 12".

LATERAL PIPING SIZING SCHEDULE

SUMMATION OF GALLONAGE DEMAND ON THE PARTICULAR BRANCHES OF PIPE WITHIN A CONTROL SECTION SHALL BE DETERMINED BY USING THE GPM FOR A NOZZLE BASED ON A 50 PSI BASE OF HEAD PRESSURE AND FULL RADIUS AT THAT PRESSURE AS REPORTED IN THE RAINBIRD 2021 IRRIGATION PRODUCTS CATALOG. PIPE SIZES FOR THE LATERALS SHALL BE AS FOLLOWS:

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GREATER THAN FIFTEEN UP TO THIRTY–FIVE GPM USE 1–1/2" PR200 PVC PIPE

FRICTION LOSS ALLOWANCES FOR THIS PROJECT HAVE BEEN DETERMINED USING THE ABOVE FLOW RANGES AND DEMANDS.

– DENOTES ROUTE OF PR200 MAIN LINE PIPING. SIZE OF PIPE TO BE 1–1/2". MINIMUM DEPTH OF COVER OVER MAINLINE PIPING TO BE 18".

– PIPING SHALL BE PR200 SOLVENT WELD PVC PIPE WITH SCHEDULE 40 PVC SOLVENT WELD FITTINGS UNLESS OTHERWISE NOTED.

– ALL PIPING RUNS SHALL BE "SNAKED" IN THE TRENCH DURING INSTALLATION TO PREVENT EXCESSIVE STRAIN DUE TO THERMAL EXPANSION OR CONTRACTION.

– THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO AVOID DAMAGING PLANTINGS (INCLUDING ROOTS) DURING INSTALLATION OF THE IRRIGATION SYSTEM AND SHALL COORDINATE HIS EFFORTS WITH THE LANDSCAPER AND LANDSCAPE ARCHITECT SO AS TO OPTIMIZE THE EFFICIENCY AND THE AESTHETIC QUALITY OF THE INSTALLATION.

HEAD RADII

– THE IRRIGATION CONTRACTOR SHALL ADJUST THE RADIUS AND THROW OF EACH SPRINKLER HEAD TO PROVIDE OPTIMUM COVERAGE WHILE MINIMIZING OVERSPRAY ONTO HARDSCAPES OR BUILDINGS. ADJUST HEADS TO ELIMINATE DRY SPOTS.

– APPROXIMATE ARC AND RADIUS OF INDIVIDUAL SPRINKLER HEAD COVERAGE SHALL BE AS ILLUSTRATED. INDIVIDUAL HEAD OR NOZZLE MODEL NUMBERS MAY BE DEPENDENT UPON THESE SPECIFIC CHARACTERISTICS.

24 VAC CONTROL WIRING

– ALL 24 V.A.C. CONTROL WIRING SHALL BE SINGLE STRAND COPPER WIRE WITH POLYETHYLENE PE DIRECT BURIAL INSULATION RATED FOR 300 V.A.C. VALVE "COMMON" WIRES SHALL HAVE WHITE INSULATION WHILE VALVE "HOT" WIRES SHALL HAVE INSULATION RED IN COLOR. THE "COMMON" WIRES SHALL BE #14 AWG. "HOT" WIRES SHALL BE #14 AWG. VALVE WIRING SHALL FOLLOW MAINLINE PIPING WHERE FEASIBLE AND SHALL BE LAID IN A COMMON TRENCHLINE WITH THE MAINLINE PIPING AND IN THE BOTTOM OF THE TRENCH. WIRING SHALL BE "BUNDLED" AND TAPED AT INTERVALS OF APPROXIMATELY TEN FEET. ALL WIRING SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS.

– WIRE SPLICES SHALL BE KEPT TO AN ABSOLUTE MINIMUM. WHERE MAJOR CONCENTRATIONS OF SPLICES ARE NECESSARY SAID SPLICES SHALL BE PLACED IN A NDS VALVE BOX, WITH AN NDS COVER INSTALLED AT GRADE LEVEL. SPLICES AT VALVE LOCATIONS SHALL BE MADE INSIDE OF THE VALVE BOX. ALL SPLICE LOCATIONS SHALL BE NOTED ON THE AS BUILT PLAN.

– WIRE RUNS SHALL BE INSTALLED WITH ENOUGH SLACK AND/OR OCCASIONAL EXPANSION LOOPS TO PREVENT EXCESSIVE STRAIN DUE TO THERMAL CONTRACTION.

– ALL WIRE SPLICES SHALL BE MADE USING UL APPROVED DIRECT BURIAL CONNECTORS AND WATERPROOFING MATERIALS. ALL ELECTRICAL WORK SHALL BE INSTALLED ACCORDING TO CODE.

CONTROLLER

A B C D E F – LOCATION OF THE IRRIGATION CONTROLLER. THE CONTROLLER SHALL BE RAINBIRD ESP9VI BATTERY OPPERATED CONTROLLER. THE CONTROLLER SHALL BE INSTALLED INTO THE VALVE BOX WITH THE VALVE.

– ALL ELECTRICAL CONNECTIONS AND INSTALLATIONS SHALL BE PERFORMED IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS.

BACKFLOW PREVENTION

– DENOTES THE LOCATION OF REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLY. THE BACKFLOW SHALL BE THE CONTRACTOR'S RESPONSIBILITY. THE BACKFLOW SHALL BE 3/4" IN SIZE. THE BACKFLOW ASSEMBLY SHALL BE INSTALLED DOWNSTREAM OF THE IRRIGATION METER AS SHOWN ON THE LAYOUT. THE UNIT MUST BE INSTALLED IN ACCORDANCE WITH ALL LOCAL AND STATE CODE REQUIREMENTS AND SHALL HAVE APPROVED COVER.

WATER SUPPLY

M – DENOTES THE PROPOSED LOCATION OF THE IRRIGATION METER. THE METER SHALL BE THE GENERAL CONTRACTOR'S RESPONSIBILITY. THE METER SHALL BE 3/4" IN SIZE. SINCE THE WATER SUPPLY FOR THE SYSTEM SHALL BE POTABLE WATER, THE CONTRACTOR WILL BE REQUIRED TO INSTALL BACKFLOW PREVENTION DEVICE WHICH WILL BE LOCATED DOWNSTREAM OF THE IRRIGATION METER AS NOTED ON PLAN.

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* NOTE * – IF THE WATER SUPPLY IS NOT CAPABLE OF THE DESIGNED CAPACITY (FLOW AND/OR PRESSURE), THE IRRIGATION SYSTEM WILL NEED TO BE REDESIGNED, WHICH MAY ALTER THE IRRIGATION MATERIAL ESTIMATE.

SLEEVING

– DENOTES LOCATION OF PVC SLEEVES FOR IRRIGATION PIPING. SIZE OF SLEEVES TO BE AS NOTED.

– WHERE IRRIGATION PIPING CROSSES SIDEWALKS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING A SLEEVE 2 SIZES LARGER THAN THE PIPE THAT IS CROSSING,

– THE IRRIGATION CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE IRRIGATION SYSTEM WITH THE LANDSCAPE CONTRACTOR TO INSURE PROPER INSTALLATION OF BOTH THE IRRIGATION SYSTEM WITH THE LANDSCAPE AND HARDSCAPE.

NOTE: THE IRRIGATION SYSTEM IS DISPLAYED SCHEMATIC IN NATURE. THE IRRIGATION CONTRACTOR MAY BE REQUIRED TO MAKE MINOR ADJUSTMENTS IN THE FIELD. THESE MINOR ADJUSTMENTS SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER BUT SHALL BE MADE ONLY AFTER NOTIFICATION IS MADE TO THE OWNER OR HIS REPRESENTATIVE.

– THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE SITE SO THAT HE IS AWARE OF ANY SPECIAL CONDITIONS WHICH EXIST THAT MAY AFFECT HIS BID PROPOSAL AND SHALL THEREAFTER BE RESPONSIBLE FOR ALL COST INCURRED IN RELATION TO THE INSTALLATION.

– THIS DESIGN IS BASED ON THE SITE INFORMATION AND/OR DRAWINGS SUPPLIED BY THE CLIENT OF RECORD WITH DESIGN CRITERIA BEING SET BY THE CLIENT AND/OR PROJECT OWNER (I.E. AREA TO BE IRRIGATED, MANUFACTURER'S EQUIPMENT TO BE EMPLOYED, WATER SOURCE (LOCATION, FLOW & PRESSURE) CAPACITIES, ELECTRICAL POWER AVAILABILITY FOR IRRIGATION SYSTEM USE, ETC.). SMITH TURF & IRRIGATION BEARS NO RESPONSIBILITY OR LIABILITY FOR ANY ERRORS IN DESIGN OR APPLICATION WHICH MIGHT ARISE DUE TO INACCURACIES IN THE ABOVE REFERENCED INFORMATION SUPPLIED TO SMITH TURF & IRRIGATION IN RELATION TO THIS SPECIFIC PROJECT UNLESS OTHERWISE NOTED.

Irrigation Zones		
ZONE	TYPE	GPM
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B1	BED	2.04
C1	BED	7.46
D1	BED	4.7
E1	BED	11.1
F1	BED	3.28
Total		31.32

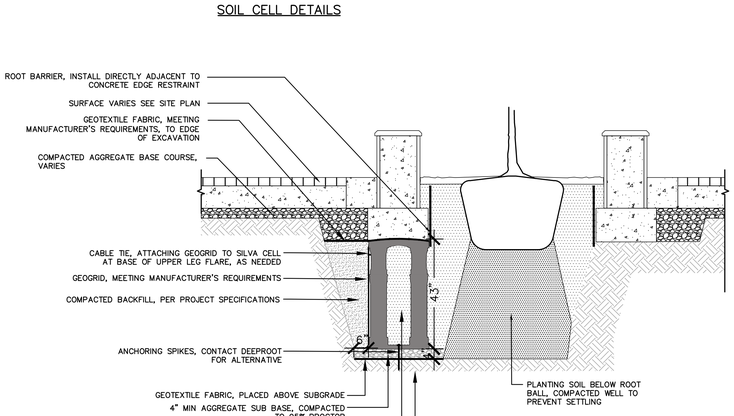
NOTE

MAINLINE/LATERAL SHOWN ON PLAN IS DIAGRAMMATIC FOR CLARITY. ALL MAINLINE, LATERAL AND VALVES SHALL BE FIELD LOCATED OUTSIDE OF HARDSCAPE, FENCES AND OTHER UTILITIES.

NOTE

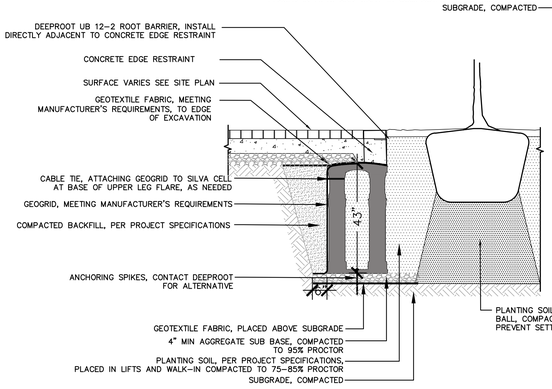
WHERE IRRIGATION MAINLINE/LATERAL LINE CROSSES HARDSCAPE THERE SHALL BE A SLEEVE 2 SIZES BIGGER. NOT ALL SLEEVES ARE SHOWN FOR CLARITY REASONS.

SOIL CELL DETAILS



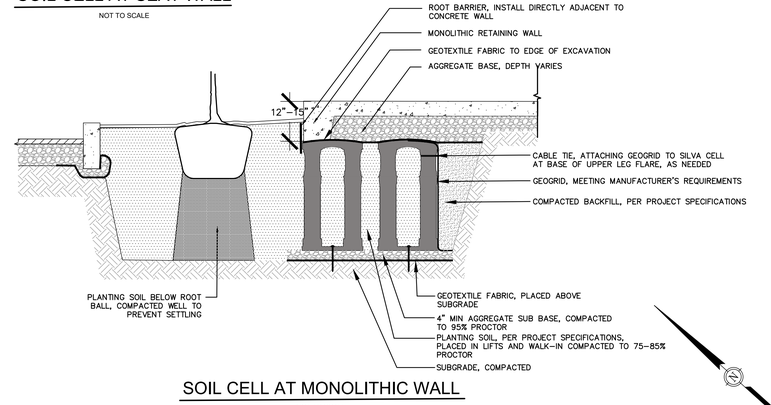
SOIL CELL AT SEAT WALL

NOT TO SCALE



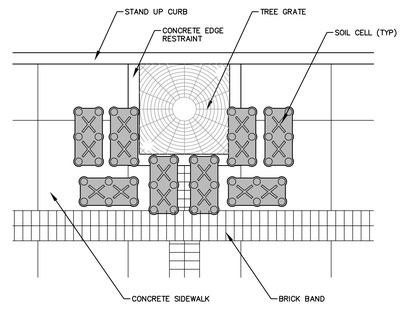
SOIL CELL: TREE GRATE /OPEN PLANTER

NOT TO SCALE



SOIL CELL AT MONOLITHIC WALL

NOT TO SCALE



SOIL CELLS

NOT TO SCALE

mcgill
1240 19th Street Lane NW
Hickory, NC 28601
828.328.2024
NC Firm License # C-0459
mcgillassociates.com

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CHRISTIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS

CITY OF CONCORD

CABARRUS COUNTY, NORTH CAROLINA

10 0 5 10 20
GRAPHIC SCALE DIVISION VALUE = 10 FEET

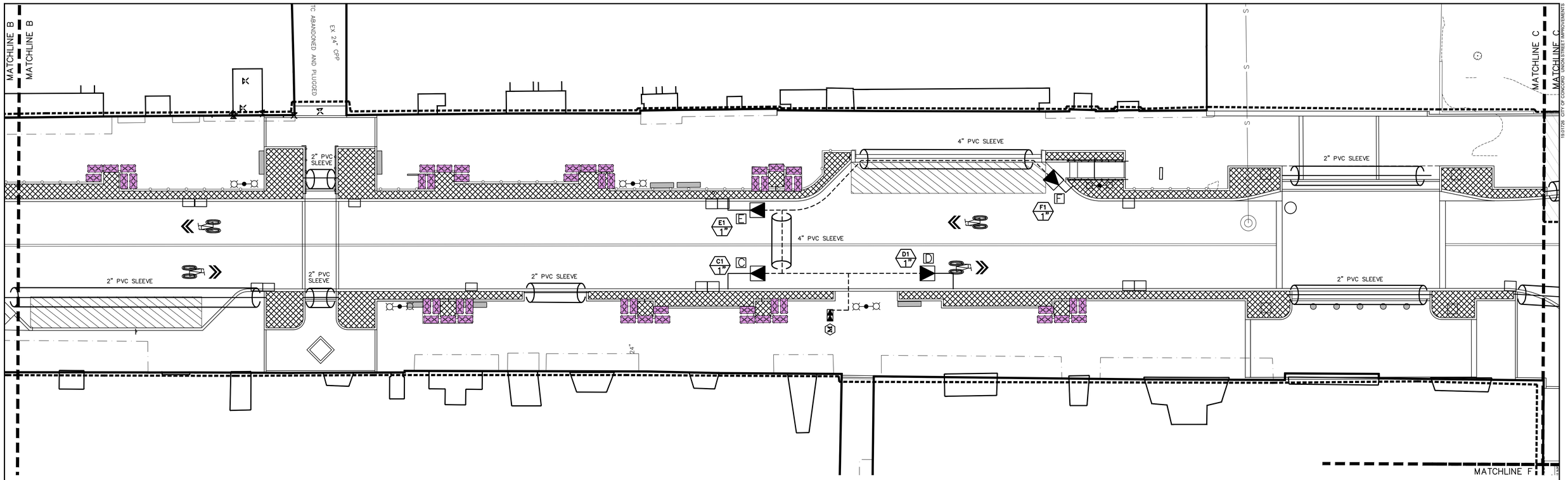
IRRIGATION PLAN - B

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	C.L. CRANWILL			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	B. ROARK	JULY 2021	19.01726	N/A

SHEET

I-102

P:\2019\19.01726-CONCORDNC-UNION STREETSCAPE PROJECT\DRAWINGS\19.01726 UNION - COVER SHEETS.DWG PLOT DATE: 7/22/2021 9:42 AM KURTIS DURRANT



IRRIGATION NOTES & LEGENDS

DRIP IRRIGATION

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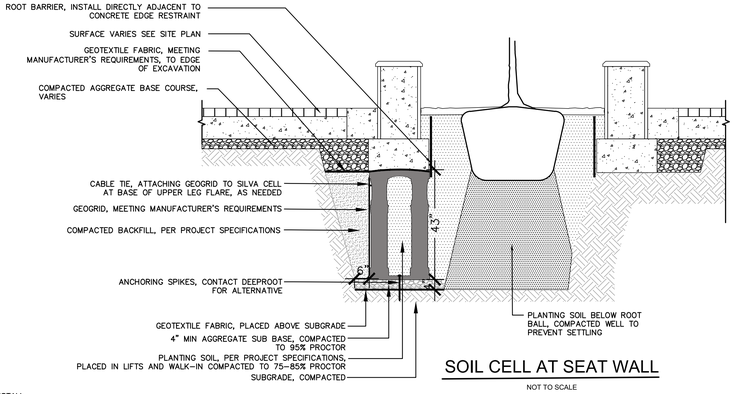
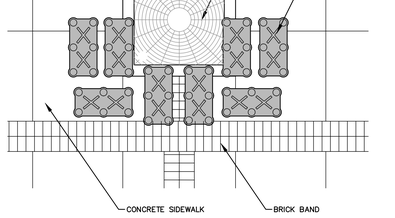
SOIL CELL DETAILS



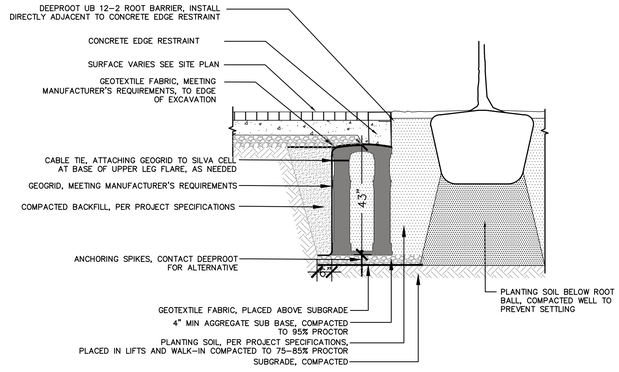
SOIL CELL AT SEAT WALL

NOT TO SCALE



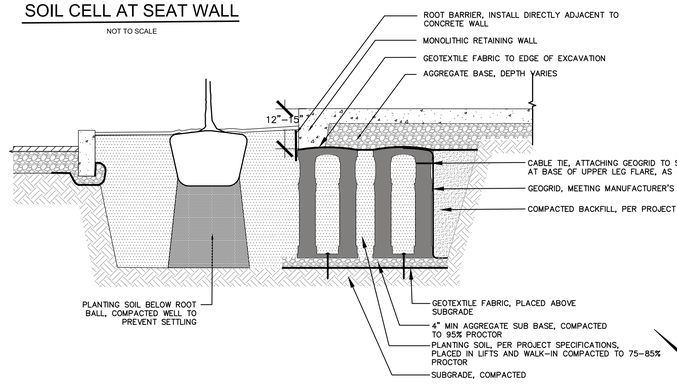
SOIL CELLS

NOT TO SCALE



SOIL CELL: TREE GRATE /OPEN PLANTER

NOT TO SCALE



SOIL CELL AT MONOLITHIC WALL

NOT TO SCALE

mcgill
1240 19th Street Lane NW
Hickory, NC 28601
828.328.2024
NC Firm License # C-0459
mcgillassociates.com

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CHRISTIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

10 0 5 10 20
GRAPHIC SCALE DIVISION VALUE = 10 FEET

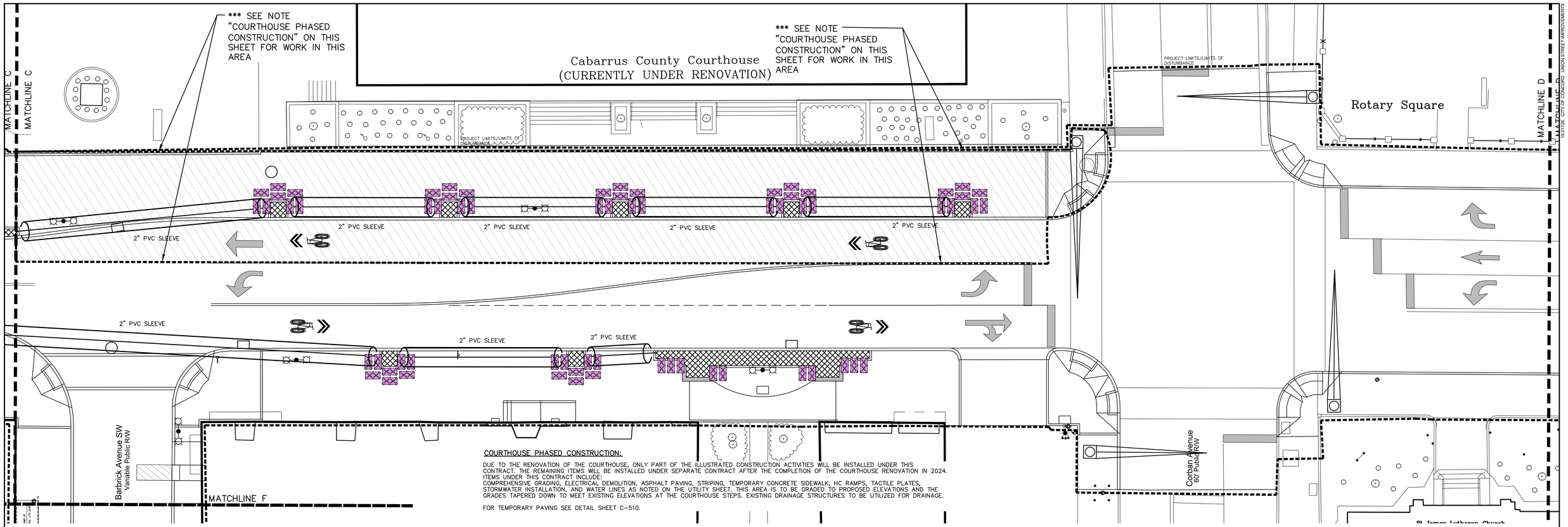
IRRIGATION PLAN - C

SHEET I-103

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	C.L. CRANWILL			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	B. ROARK	JULY 2021	19.01726	N/A

P:\2019\19.01726-CONCORDNC-UNION STREETSCAPE PROJECT\DRAWINGS\19.01726 UNION - COVER SHEETS.DWG PLOT DATE: 7/22/2021 9:43 AM KURTIS DURRANT

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS



COURTHOUSE PHASED CONSTRUCTION:

DUE TO THE RENOVATION OF THE COURTHOUSE, ONLY PART OF THE ILLUSTRATED CONSTRUCTION ACTIVITIES WILL BE INSTALLED UNDER THIS CONTRACT. THE REMAINING ITEMS WILL BE INSTALLED UNDER SEPARATE CONTRACT AFTER THE COMPLETION OF THE COURTHOUSE RENOVATION IN 2024. ITEMS UNDER THIS CONTRACT INCLUDE: COMPREHENSIVE GRADING, ELECTRICAL DEMOLITION, ASPHALT PAVING, STRIPING, TEMPORARY CONCRETE SIDEWALK, HC RAMPS, TACTILE PLATES, STORMWATER INSTALLATION, AND WATER LINES AS NOTED ON THE UTILITY SHEET. THIS AREA IS TO BE GRADED TO PROPOSED ELEVATIONS AND THE GRADES TAPERED DOWN TO MEET EXISTING ELEVATIONS AT THE COURTHOUSE STEPS. EXISTING DRAINAGE STRUCTURES TO BE UTILIZED FOR DRAINAGE.

FOR TEMPORARY PAVING SEE DETAIL SHEET C-510.

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– ALL 24 V.A.C. CONTROL WIRING SHALL BE SINGLE STRAND COPPER WIRE WITH POLYETHYLENE PE DIRECT BURIAL INSULATION RATED FOR 300 V.A.C. VALVE "COMMON" WIRES SHALL HAVE WHITE INSULATION WHILE VALVE "HOT" WIRES SHALL HAVE INSULATION RED IN COLOR. THE "COMMON" WIRES SHALL BE #14 AWG. "HOT" WIRES SHALL BE #14 AWG. VALVE WIRING SHALL FOLLOW MAINLINE PIPING WHERE FEASIBLE AND SHALL BE LAID IN A COMMON TRENCHLINE WITH THE MAINLINE PIPING AND IN THE BOTTOM OF THE TRENCH. WIRING SHALL BE "BUNDLED" AND TAPED AT INTERVALS OF APPROXIMATELY TEN FEET. ALL WIRING SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS.

– WIRE SPLICES SHALL BE KEPT TO AN ABSOLUTE MINIMUM. WHERE MAJOR CONCENTRATIONS OF SPLICES ARE NECESSARY SAID SPLICES SHALL BE PLACED IN A NDS VALVE BOX, WITH AN NDS COVER INSTALLED AT GRADE LEVEL. SPLICES AT VALVE LOCATIONS SHALL BE MADE INSIDE OF THE VALVE BOX. ALL SPLICE LOCATIONS SHALL BE NOTED ON THE AS BUILT PLAN.

– WIRE RUNS SHALL BE INSTALLED WITH ENOUGH SLACK AND/OR OCCASIONAL EXPANSION LOOPS TO PREVENT EXCESSIVE STRAIN DUE TO THERMAL CONTRACTION.

– ALL WIRE SPLICES SHALL BE MADE USING UL APPROVED DIRECT BURIAL CONNECTORS AND WATERPROOFING MATERIALS. ALL ELECTRICAL WORK SHALL BE INSTALLED ACCORDING TO CODE.

CONTROLLER

ⒶⒷⒸⒹⒺⒻ – LOCATION OF THE IRRIGATION CONTROLLER. THE CONTROLLER SHALL BE RAINBIRD ESP9V1 BATTERY OPPERATED CONTROLLER. THE CONTROLLER SHALL BE INSTALLED INTO THE VALVE BOX WITH THE VALVE.

– ALL ELECTRICAL CONNECTIONS AND INSTALLATIONS SHALL BE PERFORMED IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS.

BACKFLOW PREVENTION

▶▶ – DENOTES THE LOCATION OF REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLY. THE BACKFLOW SHALL BE THE CONTRACTOR'S RESPONSIBILITY. THE BACKFLOW SHALL BE 3/4" IN SIZE. THE BACKFLOW ASSEMBLY SHALL BE INSTALLED DOWNSTREAM OF THE IRRIGATION METER AS SHOWN ON THE LAYOUT. THE UNIT MUST BE INSTALLED IN ACCORDANCE WITH ALL LOCAL AND STATE CODE REQUIREMENTS AND SHALL HAVE APPROVED COVER.

WATER SUPPLY

Ⓜ – DENOTES THE PROPOSED LOCATION OF THE IRRIGATION METER. THE METER SHALL BE THE GENERAL CONTRACTOR'S RESPONSIBILITY. THE METER SHALL BE 3/4" IN SIZE. SINCE THE WATER SUPPLY FOR THE SYSTEM SHALL BE POTABLE WATER, THE CONTRACTOR WILL BE REQUIRED TO INSTALL BACKFLOW PREVENTION DEVICE WHICH WILL BE LOCATED DOWNSTREAM OF THE IRRIGATION METER AS NOTED ON PLAN.

– THE IRRIGATION SYSTEM SHALL BE CAPABLE OF DELIVERING 30 GPM MAXIMUM WITH ONE STATION OPERATING WITH 50 PSI AT THE BASE OF THE HEAD FOR OPTIMUM PERFORMANCE OF THE IRRIGATION SYSTEM AS DESIGNED AND SPECIFIED.

* NOTE * – IF THE WATER SUPPLY IS NOT CAPABLE OF THE DESIGNED CAPACITY (FLOW AND/OR PRESSURE), THE IRRIGATION SYSTEM WILL NEED TO BE REDESIGNED, WHICH MAY ALTER THE IRRIGATION MATERIAL ESTIMATE.

SLEEVING

– DENOTES LOCATION OF PVC SLEEVES FOR IRRIGATION PIPING. SIZE OF SLEEVES TO BE AS NOTED.

– WHERE IRRIGATION PIPING CROSSES SIDEWALKS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING A SLEEVE 2 SIZES LARGER THAN THE PIPE THAT IS CROSSING,

– THE IRRIGATION CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE IRRIGATION SYSTEM WITH THE LANDSCAPE CONTRACTOR TO INSURE PROPER INSTALLATION OF BOTH THE IRRIGATION SYSTEM WITH THE LANDSCAPE AND HARDSCAPE.

NOTE: THE IRRIGATION SYSTEM IS DISPLAYED SCHEMATIC IN NATURE. THE IRRIGATION CONTRACTOR MAY BE REQUIRED TO MAKE MINOR ADJUSTMENTS IN THE FIELD. THESE MINOR ADJUSTMENTS SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER BUT SHALL BE MADE ONLY AFTER NOTIFICATION IS MADE TO THE OWNER OR HIS REPRESENTATIVE.

– THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE SITE SO THAT HE IS AWARE OF ANY SPECIAL CONDITIONS WHICH EXIST THAT MAY AFFECT HIS BID PROPOSAL AND SHALL THEREAFTER BE RESPONSIBLE FOR ALL COST INCURRED IN RELATION TO THE INSTALLATION.

– THIS DESIGN IS BASED ON THE SITE INFORMATION AND/OR DRAWINGS SUPPLIED BY THE CLIENT OF RECORD WITH DESIGN CRITERIA BEING SET BY THE CLIENT AND/OR PROJECT OWNER (I.E. AREA TO BE IRRIGATED, MANUFACTURER'S EQUIPMENT TO BE EMPLOYED, WATER SOURCE (LOCATION, FLOW & PRESSURE) CAPACITIES, ELECTRICAL POWER AVAILABILITY FOR IRRIGATION SYSTEM USE, ETC.). SMITH TURF & IRRIGATION BEARS NO RESPONSIBILITY OR LIABILITY FOR ANY ERRORS IN DESIGN OR APPLICATION WHICH MIGHT ARISE DUE TO INACCURACIES IN THE ABOVE REFERENCED INFORMATION SUPPLIED TO SMITH TURF & IRRIGATION IN RELATION TO THIS SPECIFIC PROJECT UNLESS OTHERWISE NOTED.

Irrigation Zones		
ZONE	TYPE	GPM
A1	BED	2.74
B1	BED	2.04
C1	BED	7.46
D1	BED	4.7
E1	BED	11.1
F1	BED	3.28
Total		31.32

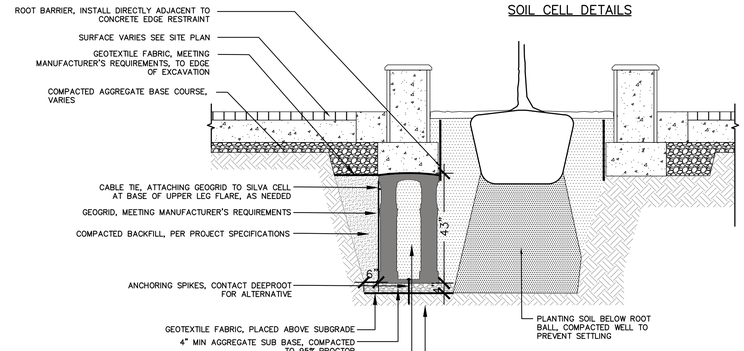
NOTE

MAINLINE/LATERAL SHOWN ON PLAN IS DIAGRAMMATIC FOR CLARITY. ALL MAINLINE, LATERAL AND VALVES SHALL BE FIELD LOCATED OUTSIDE OF HARDSCAPE, FENCES AND OTHER UTILITIES.

NOTE

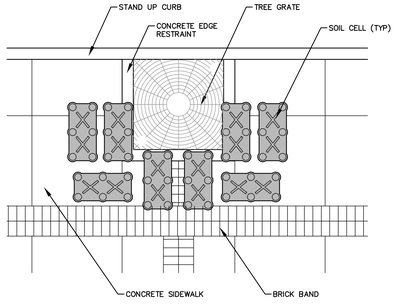
WHERE IRRIGATION MAINLINE/LATERAL LINE CROSSES HARDSCAPE THERE SHALL BE A SLEEVE 2 SIZES BIGGER. NOT ALL SLEEVES ARE SHOWN FOR CLARITY REASONS.

SOIL CELL DETAILS



SOIL CELL: TREE GRATE /OPEN PLANTER

NOT TO SCALE

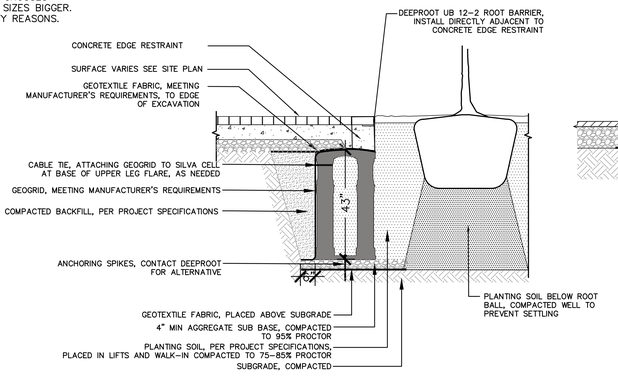


SOIL CELLS

NOT TO SCALE

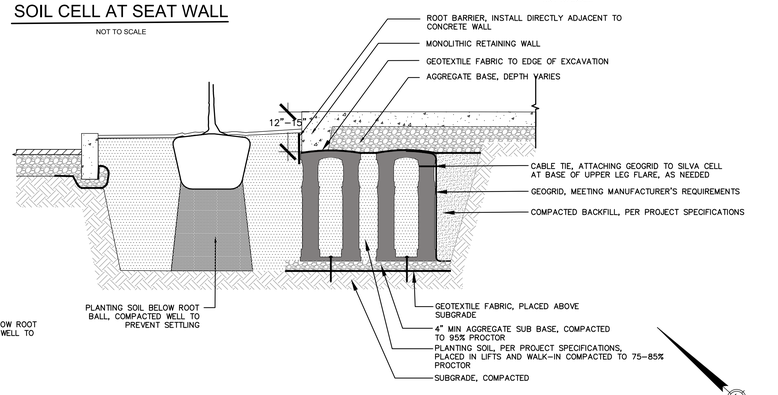
SOIL CELL AT SEAT WALL

NOT TO SCALE



SOIL CELL AT MONOLITHIC WALL

NOT TO SCALE



mcgill
1240 19th Street Lane NW
Hickory, NC 28601
828.328.2024
NC Firm License # C-0459
mcgillassociates.com

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

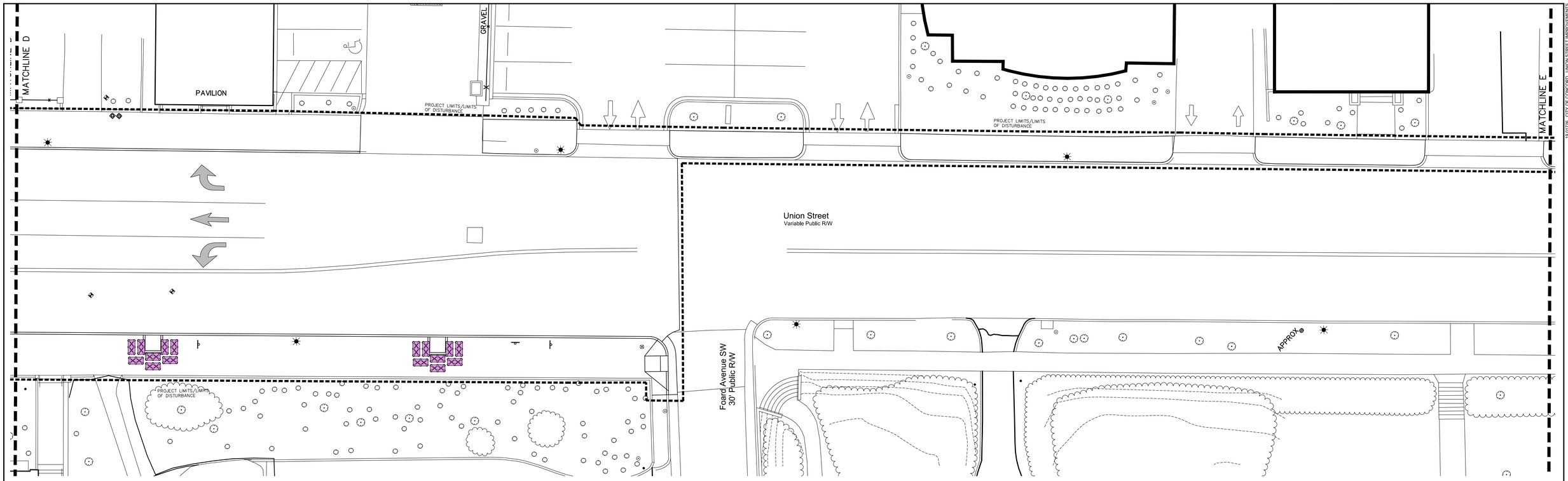
GRAPHIC SCALE 10 0 5 10 20 — DIVISION VALUE = 10 FEET

IRRIGATION PLAN - D

OFFICE MANAGER	DESIGNER		
D.G. CHAPMAN	C.L. CRANWILL		
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	B. ROARK	JULY 2021	19.01726	N/A

SHEET
I-104

P:\2019\19.01726-CONCORD-UNION STREETSCAPE PROJECT\DRAWINGS\19017126 UNION - COVER SHEETS.DWG PLOT DATE: 7/22/2021 9:44 AM KURTIS DURRANT



IRRIGATION NOTES & LEGENDS

DRIP IRRIGATION

– LOCATION OF NETAFIM TECHLINE 1/2" P.E. TUBING, 18" EMITTER SPACING INTERVALS AT 1 GPH EMITTERS INLINE. NETAFIM (MODEL# TLCV9-18025) TECHLINE TO BE INSTALLED UNDER MULCH IN LANDSCAPE AREAS AS SHOWN ON THE IRRIGATION PLANS.

– LOCATION OF DRIP VALVE ASSEMBLY WHICH INCLUDES RAINBIRD 100DV SERIES REMOTE CONTROL VALVE WITH PRESSURE-REGULATING DRIP KIT AND FILTER. ALL VALVES SHALL BE INSTALLED IN NDS VALVE BOXES WITH LIDS MOUNTED AT GRADE LEVEL.

PIPE

– DENOTES ROUTE OF PR200 PVC LATERAL PIPING. SIZE OF LATERAL PIPING SHALL BE AS NOTED BELOW. MINIMUM DEPTH OF COVER OVER LATERAL PIPING TO BE 12".

LATERAL PIPING SIZING SCHEDULE

SUMMATION OF GALLONAGE DEMAND ON THE PARTICULAR BRANCHES OF PIPE WITHIN A CONTROL SECTION SHALL BE DETERMINED BY USING THE GPM FOR A NOZZLE BASED ON A 50 PSI BASE OF HEAD PRESSURE AND FULL RADIUS AT THAT PRESSURE AS REPORTED IN THE RAINBIRD 2021 IRRIGATION PRODUCTS CATALOG. PIPE SIZES FOR THE LATERALS SHALL BE AS FOLLOWS:

ZERO TO FIFTEEN GPM ACCUMULATED FLOW USE 1" PR200 PVC PIPE

GREATER THAN FIFTEEN UP TO THIRTY-FIVE GPM USE 1-1/2" PR200 PVC PIPE

FRICTION LOSS ALLOWANCES FOR THIS PROJECT HAVE BEEN DETERMINED USING THE ABOVE FLOW RANGES AND DEMANDS.

– DENOTES ROUTE OF PR200 MAIN LINE PIPING. SIZE OF PIPE TO BE 1-1/2". MINIMUM DEPTH OF COVER OVER MAINLINE PIPING TO BE 18".

– PIPING SHALL BE PR200 SOLVENT WELD PVC PIPE WITH SCHEDULE 40 PVC SOLVENT WELD FITTINGS UNLESS OTHERWISE NOTED.

– ALL PIPING RUNS SHALL BE "SNAKED" IN THE TRENCH DURING INSTALLATION TO PREVENT EXCESSIVE STRAIN DUE TO THERMAL EXPANSION OR CONTRACTION.

– THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO AVOID DAMAGING PLANTINGS (INCLUDING ROOTS) DURING INSTALLATION OF THE IRRIGATION SYSTEM AND SHALL COORDINATE HIS EFFORTS WITH THE LANDSCAPER AND LANDSCAPE ARCHITECT SO AS TO OPTIMIZE THE EFFICIENCY AND THE AESTHETIC QUALITY OF THE INSTALLATION.

HEAD RADII

– THE IRRIGATION CONTRACTOR SHALL ADJUST THE RADIUS AND THROW OF EACH SPRINKLER HEAD TO PROVIDE OPTIMUM COVERAGE WHILE MINIMIZING OVERSPRAY ONTO HARDSCAPES OR BUILDINGS. ADJUST HEADS TO ELIMINATE DRY SPOTS.

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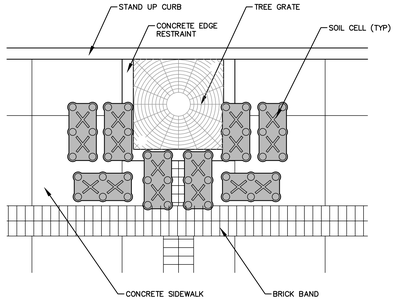
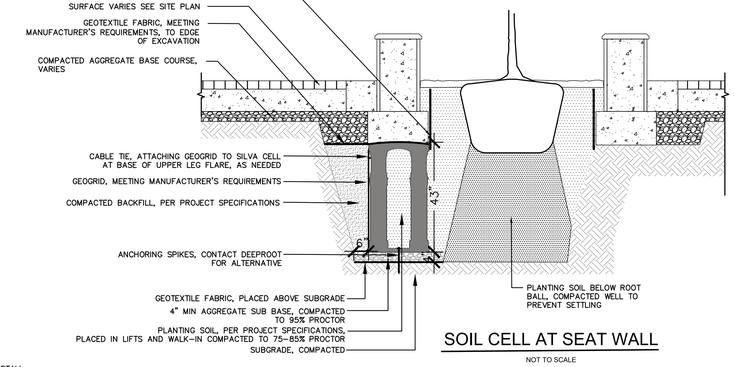
SOIL CELL DETAILS



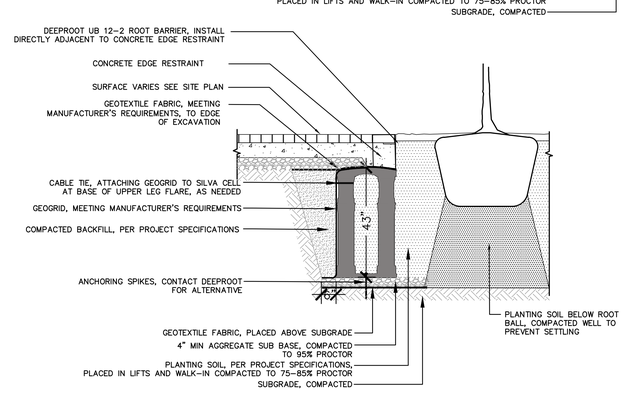
SOIL CELLS

NOT TO SCALE



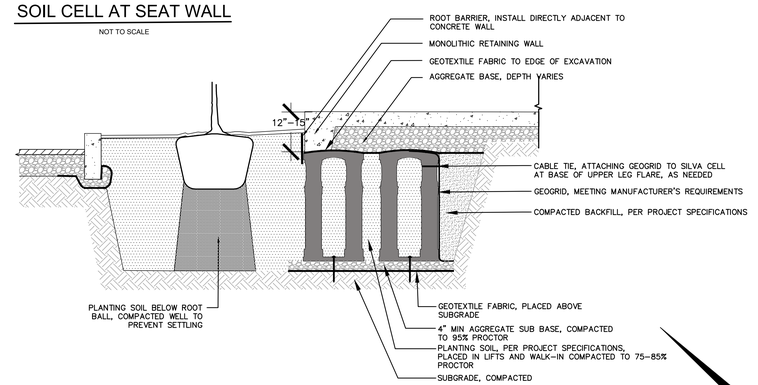
SOIL CELL AT SEAT WALL

NOT TO SCALE



SOIL CELL: TREE GRATE /OPEN PLANTER

NOT TO SCALE



SOIL CELL AT MONOLITHIC WALL

NOT TO SCALE

mcgill
1240 19th Street Lane NW
Hickory, NC 28601
828.328.2024
NC Firm License # C-0459
mcgillassociates.com

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS

CITY OF CONCORD

CABARRUS COUNTY, NORTH CAROLINA

10 0 5 10 20
GRAPHIC SCALE DIVISION VALUE = 10 FEET

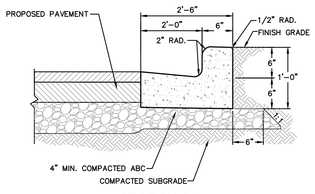
IRRIGATION PLAN - E

OFFICE MANAGER	DESIGNER		
D.G. CHAPMAN	C.L. CRANWILL		
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	B. ROARK	JULY 2021	19.01726	N/A

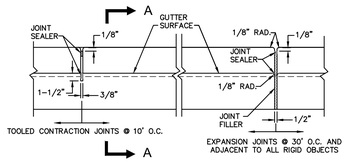
SHEET
I-105

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS

P:\2019\19.01726-CONCORD\C-UNION STREETSCAPE PROJECT\DRAWINGS\19.01726 UNION - COVER SHEETS.DWG PLOT DATE 7/22/2021 9:44 AM KURTIS DURRANT

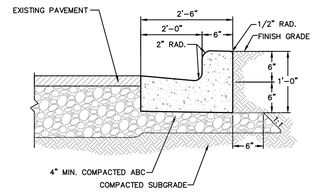


SECTION A-A

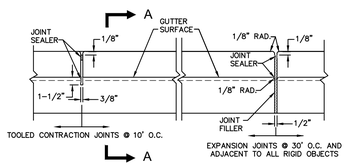


ELEVATION

DETAIL WITH PROPOSED PAVEMENT

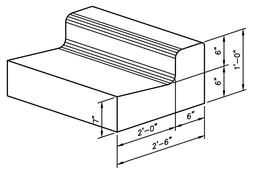


SECTION A-A



ELEVATION

DETAIL WITH EXISTING PAVEMENT

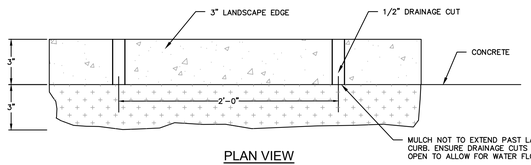


NOTES:

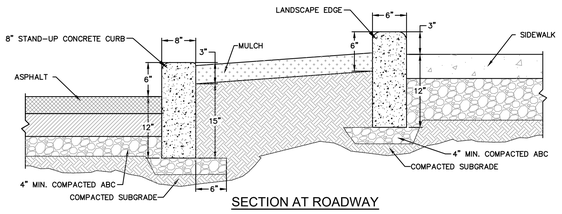
1. CURB SHALL BE CONSTRUCTED WITH 4000 psi CONCRETE.
2. SURFACE SHALL BE GIVEN A LIGHT BROOM FINISH WITH THE BRUSH MARKS PARALLEL TO THE CURB.
3. FILL AND SEAL THE TOP 1/2" OF EXPANSION JOINTS AND TOP 1" OF CONTRACTION JOINTS WITH APPROVED JOINT SEALING COMPOUND.
4. REFERENCE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, SECTION 846-3.

1 CONCRETE CURB & GUTTER (2'-6")

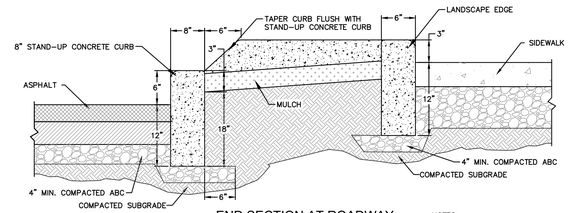
UPDATED MARCH, 2017
NOT TO SCALE



PLAN VIEW



SECTION AT ROADWAY



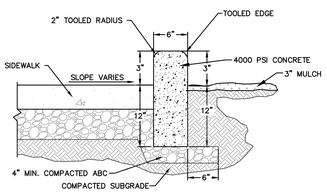
END SECTION AT ROADWAY

NOTES:

1. SOIL SURFACE TO BE 3" BELOW TOP OF CURB.

2 3" CONCRETE LANDSCAPE EDGE

UPDATED MARCH, 2017
NOT TO SCALE



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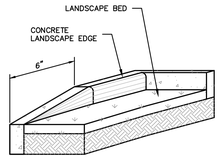
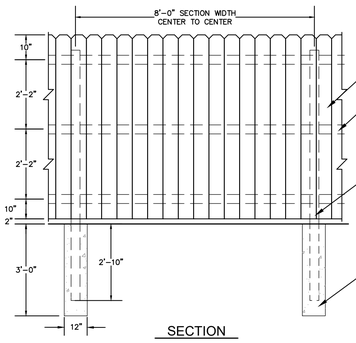
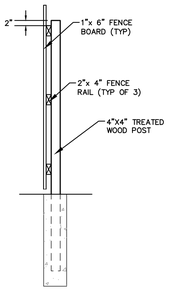




SECTION



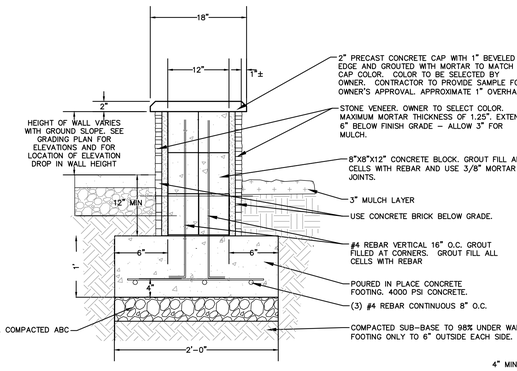
END VIEW

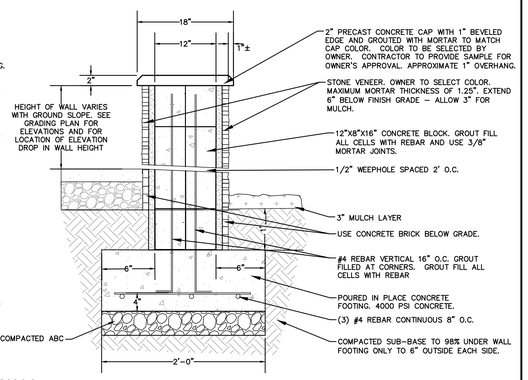
NOTES:

1. ALL WOOD TO BE EXTERIOR GRADE PRESSURE TREATED LUMBER.
2. FENCE RAIL TO BE NAILED TO POSTS WITH 3 1/2" RING SHANK NAILS. FENCE BOARDS TO BE NAILED TO RAILINGS WITH 1 1/2" RING SHANK NAILS. ALL NAILS TO BE EXTERIOR RATED HOT DIPPED GALVANIZED.
3. CONTRACTOR SHALL APPLY TWO (2) COATS OF EXTERIOR GRADE LATEX PAINT TO ENTIRE FENCE.
4. FENCE PAINT COLOR TO BE DETERMINED BY OWNER.

3 WOOD FENCE

REVISED FOR THIS PROJECT
NOT TO SCALE

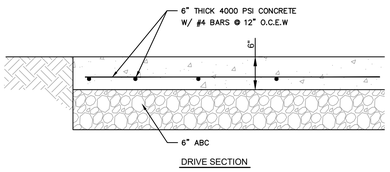




6 SEAT WALL

REVISED FOR THIS PROJECT
NOT TO SCALE

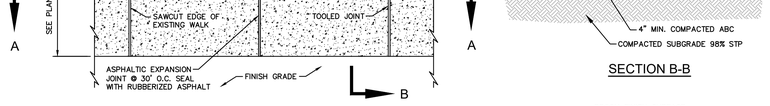




DRIVE SECTION

4 DRIVEWAY APRON

REVISED FOR THIS PROJECT
NOT TO SCALE

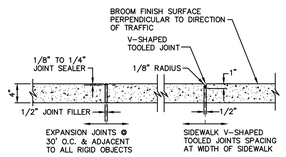


PLAN

NOTES:

1. SIDEWALK SHALL BE CONSTRUCTED WITH 4000 PSI CONCRETE.
2. SIDEWALK SURFACE SHALL BE GIVEN A LIGHT BROOM FINISH WITH THE BRUSH MARKS PERPENDICULAR TO THE TRAFFIC.
3. SCORE JOINTS AS SHOWN ON SITE PLAN (4"X4" PR 5'X5' AS SHOWN).

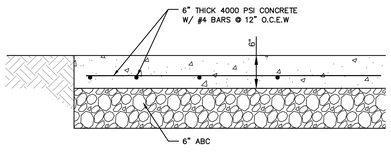
SECTION B-B



SECTION A-A

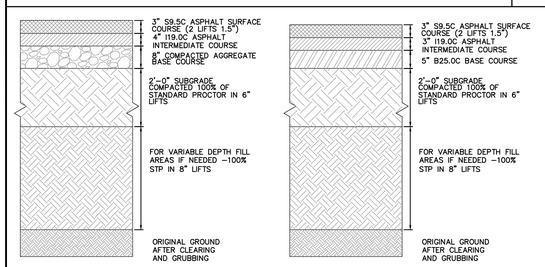
5 CONCRETE SIDEWALK

UPDATED MARCH, 2017
NOT TO SCALE



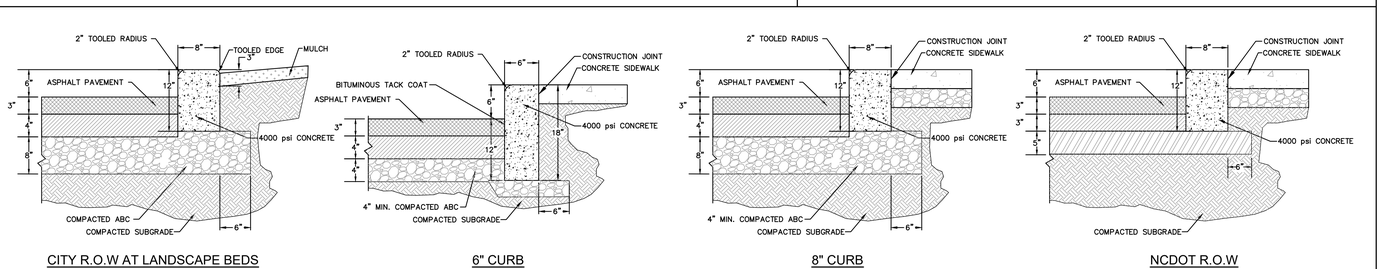
7 6" CONCRETE DRIVE

REVISED FOR THIS PROJECT
NOT TO SCALE



8 ASPHALT PAVEMENT CROSS SECTION

REVISED FOR THIS PROJECT
NOT TO SCALE

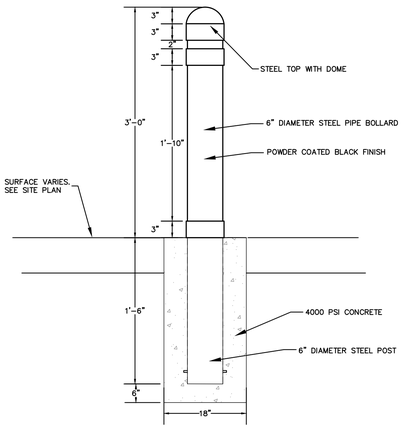


NOTES:

1. EXPANSION JOINTS @ 30' O.C. AND ADJACENT TO ALL RIGID OBJECTS.

9 STAND-UP CONCRETE CURB

UPDATED MARCH, 2017
NOT TO SCALE



NOTES:

1. BOLLARDS TO HAVE A BLACK POWDER COAT FINISH
2. BOLLARDS TO BE ULTRAPLAY ROCKLAND BOLLARD OR APPROVED EQUAL

10 BOLLARD

REVISED FOR THIS PROJECT
NOT TO SCALE

mcgill
1240 19th Street Lane NW
Hickory, NC 28601
828.328.2024
NC Firm License # C-0459
mcgillassociates.com

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

NOT TO SCALE

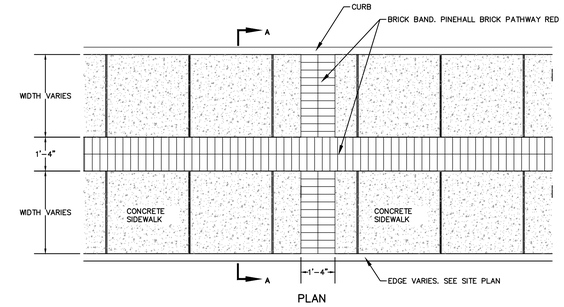
DETAILS

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	C.L. CRANWILL			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
C.L. CRANWILL	M.J. NORRIS	JULY 2021	19.01726	N/A

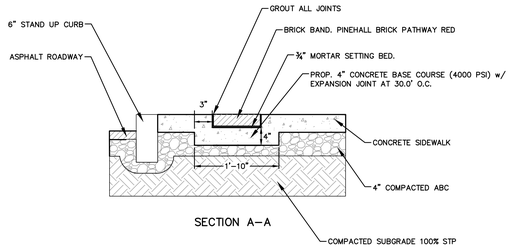
SHEET
C-501

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS

P:\2019\19.01726-CONCORD\C-UNION STREETSCAPE PROJECT\DRAWINGS\19.01726 - UNION ST DETAILS.DWG PLOT DATE: 7/22/2021 9:14 AM KURTIS DURRANT



PLAN



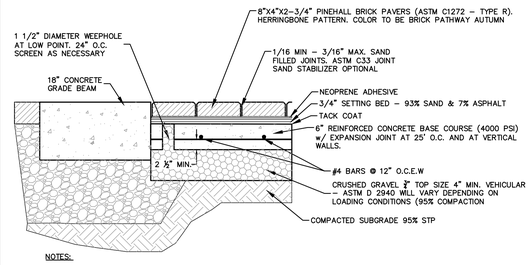
SECTION A–A

NOTES:

1. ANY PAVER SURFACE(S) THAT BECOME STAINED DURING INSTALLATION SHALL BE DISCARDED AND REPLACED WITH NEW PAVER(S).

1 BRICK PAVER BAND

REVISED FOR THIS PROJECT
NOT TO SCALE

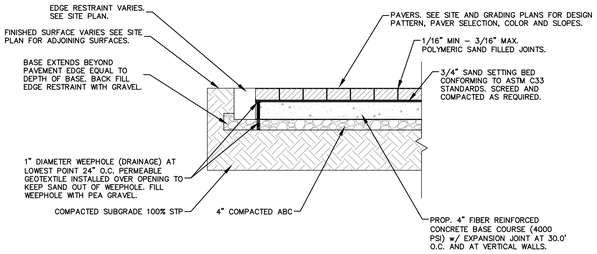


NOTES:

1. PAVERS TO BE INSTALLED PER MANUFACTURERS'S SPECS.
2. ANY PAVER SURFACE(S) THAT BECOME STAINED DURING INSTALLATION SHALL BE DISCARDED AND REPLACED WITH NEW PAVER(S).

2 VEHICULAR PAVERS

REVISED FOR THIS PROJECT
NOT TO SCALE

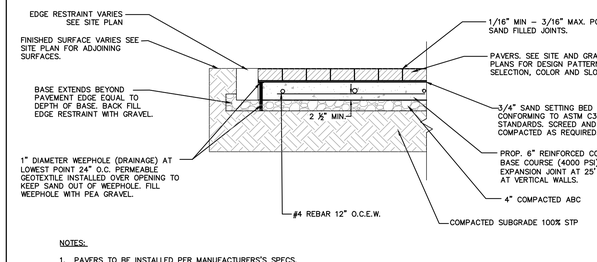


NOTES:

1. PAVERS TO BE INSTALLED PER MANUFACTURERS'S SPECS.
2. ANY PAVER SURFACE(S) THAT BECOME STAINED DURING INSTALLATION SHALL BE DISCARDED AND REPLACED WITH NEW PAVER(S).

3 FLEXIBLE PAVER OVER RIGID BASE - LIGHT DUTY

REVISED FOR THIS PROJECT
NOT TO SCALE

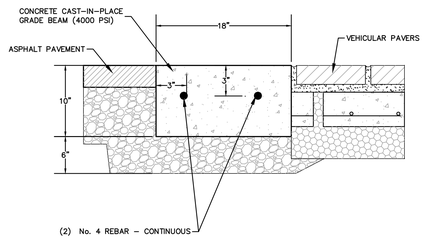


NOTES:

1. PAVERS TO BE INSTALLED PER MANUFACTURERS'S SPECS.
2. ANY PAVER SURFACE(S) THAT BECOME STAINED DURING INSTALLATION SHALL BE DISCARDED AND REPLACED WITH NEW PAVER(S).

4 FLEXIBLE PAVER OVER RIGID BASE - HEAVY DUTY

REVISED FOR THIS PROJECT
NOT TO SCALE

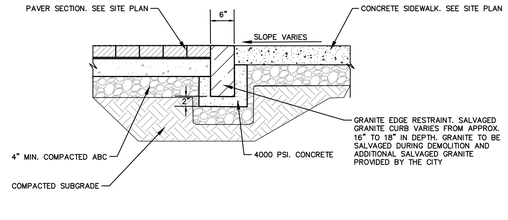


NOTES:

1. EXISTING "ABC" IN ROADWAY MAY BE USED AS BASE COURSE AFTER COMPACTING TO ACHIEVE 100% PROCTOR. LOCALIZED UNDERCUTTING AND REPAIR SHALL BE REQUIRED WHERE PROOFROLLING RESULTS IN PUMPING OR AS DIRECTED BY THE INSPECTOR. TESTING OF SUBGRADE/"CABC" COMPACTION SHALL BE REQUIRED.
2. EXISTING ROADWAY PAVING SHALL BE SAW–CUT TO RECEIVE PLACEMENT OF GRADE BEAMS. A THREE–DAY CURING PERIOD SHALL BE REQUIRED FOR GRADE BEAMS PRIOR TO REMOVAL OF REMAINING BITUMINOUS PAVING. BASE BELOW GRADE BEAMS SHALL BE COMPACTED TO 100% PROCTOR.

5 18" CONCRETE GRADE BEAM

REVISED FOR THIS PROJECT
NOT TO SCALE

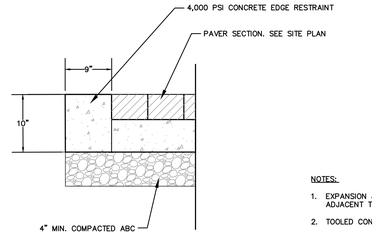


NOTES:

1. GRANITE TO BE SUPPLIED BY THE OWNER.
2. THE GRANITE SHALL BE SOUND AND DURABLE AND FREE FROM SEAMS WHICH COULD IMPAIR THE STRUCTURAL STABILITY. THE EDGE RESTRAINT SHALL BE STRAIGHT FROM END TO END WITH A VARIANCE OF NO MORE THAN 3/16" IN EITHER DIRECTION. QUARRY DRILL HOLES OR OTHER IMPERFECTIONS WILL NOT BE ACCEPTED. THE ENDS SHALL BE PERPENDICULAR TO THE TOP. THE ENDS SHALL ALIGN SO THAT NO SPACE GREATER THAN 1/4" IS CREATED BETWEEN THE ENDS.
3. THE GRANITE EDGE RESTRAINT SHALL BE CLEANED OR PROTECTED FROM CONCRETE SPLASH AT ALL TIMES.

6 GRANITE EDGE RESTRAINT

REVISED FOR THIS PROJECT
NOT TO SCALE

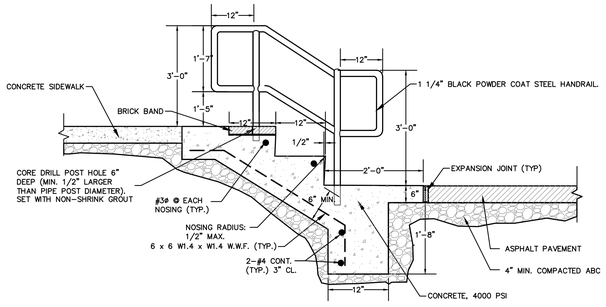


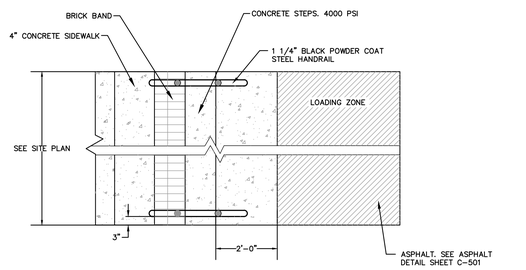
NOTES:

1. EXPANSION JOINTS @ 30' O.C. & ADJACENT TO ALL RIGID OBJECTS.
2. TOOLED CONTRACTION JOINTS 10.0' O.C.

7 CONCRETE EDGE RESTRAINT

NOT TO SCALE
REVISED FOR THIS PROJECT



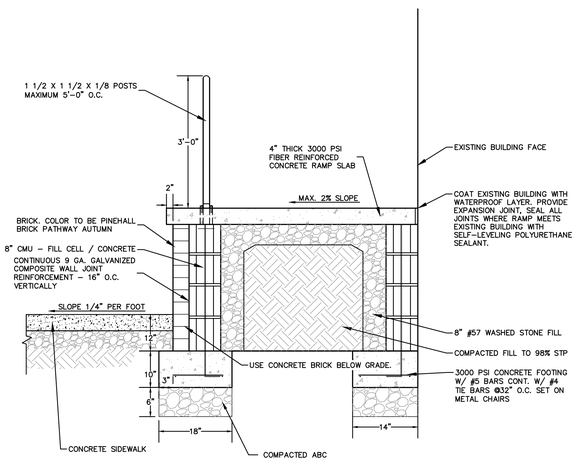


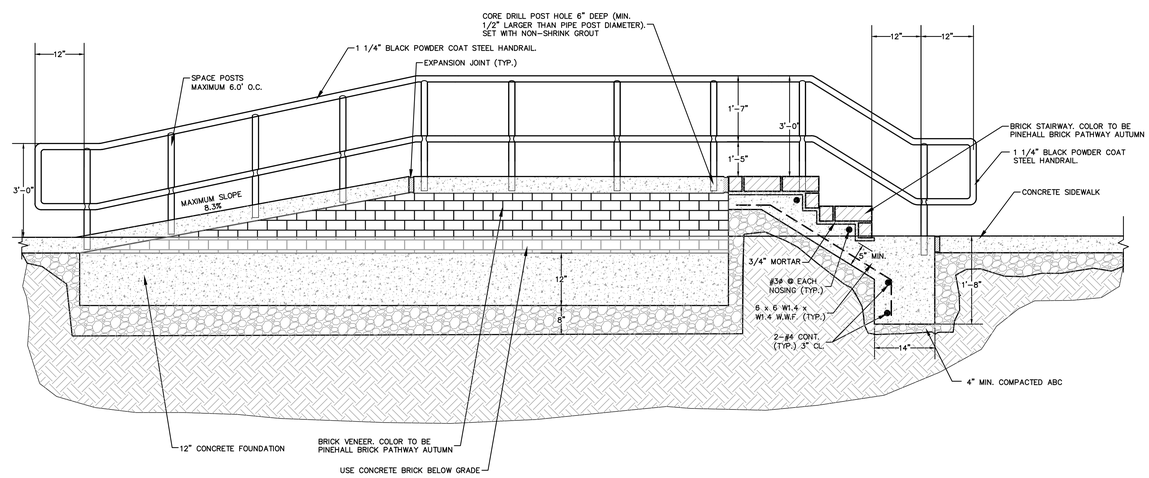
NOTES:

1. STAIR TREADS AND RISERS SHALL BE OF UNIFORM SIZE AND SHAPE. SEE GRADING PLAN FOR RISER HEIGHT. THE TOLERANCE BETWEEN THE LARGEST AND SMALLEST RISER HEIGHT OR BETWEEN THE LARGEST AND SMALLEST TREAD DEPTH SHALL NOT EXCEED 0.375 INCH IN ANY FLIGHT OF STAIRS.
2. CONCRETE SURFACE SHALL BE GIVEN A LIGHT BROOM FINISH WITH THE BRUSH MARKS PARALLEL TO THE CURB.
3. MAX. SLOPE ON TREADS 2.0%

8 CONCRETE STEPS AND PIPE RAILING DETAIL

REVISED FOR THIS PROJECT
NOT TO SCALE





NOTES:

1. STAIR TREADS AND RISERS SHALL BE OF UNIFORM SIZE AND SHAPE. SEE GRADING PLAN FOR RISER HEIGHT. THE TOLERANCE BETWEEN THE LARGEST AND SMALLEST RISER HEIGHT OR BETWEEN THE LARGEST AND SMALLEST TREAD DEPTH SHALL NOT EXCEED 0.375 INCH IN ANY FLIGHT OF STAIRS.
2. CONCRETE SURFACE SHALL BE GIVEN A LIGHT BROOM FINISH WITH THE BRUSH MARKS PERPENDICULAR TO THE CURB.
3. MAX. SLOPE ON TREADS 2.0%

9 CONCRETE STEPS AND RAMP STORE ACCESS

REVISED FOR THIS PROJECT
NOT TO SCALE

mcgill
1240 19th Street Lane NW
Hickory, NC 28601
828.328.2024
NC Firm License # C-0459
mcgillassociates.com

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

NOT TO SCALE

DETAILS

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	C.L. CRANWILL			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
C.L. CRANWILL	M.J. NORRIS	JULY 2021	19.01726	N/A

SHEET
C-502

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS

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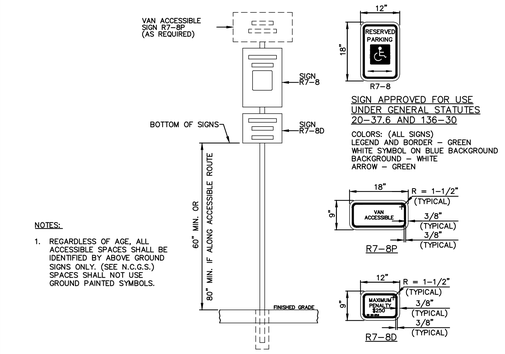
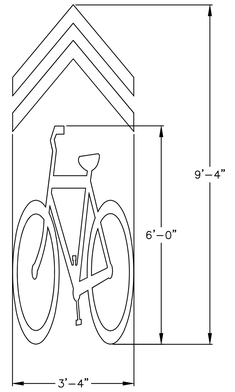


NOTES:

1. REGARDLESS OF AGE, ALL ACCESSIBLE SPACES SHALL BE IDENTIFIED BY ABOVE GROUND SIGNS ONLY. (SEE N.C.G.S.) SPACES SHALL NOT USE GROUND PAINTED SYMBOLS.

1 HANDICAP PARKING SIGNAGE

UPDATED MARCH, 2017
NOT TO SCALE



NOTES:

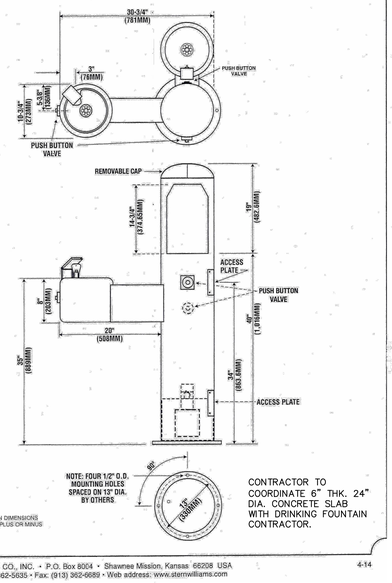
1. IF USED WITH ON-STREET PARALLEL PARKING, SHARED LANE MARKINGS SHOULD BE PLACED SO THAT THE CENTERS OF THE MARKINGS ARE AT LEAST 11 FEET FROM THE FACE OF CURB
2. IF USED WITHOUT ON-STREET PARALLEL PARKING, SHARED LANE MARKINGS SHOULD BE PLACED SO THAT THE CENTERS OF THE MARKINGS ARE AT LEAST 4 FEET FROM THE FACE OF CURB
3. SHARED LANE MARKINGS SHOULD BE PLACED IMMEDIATELY AFTER AN INTERSECTION. SHARED LANE MARKINGS SHOULD BE SPACED AS SHOWN ON SITE PLAN
4. USE WHITE THERMOPLASTIC PAINT, 90 MILS FOR SHARED LANE MARKINGS

2 BICYCLE SHARROW SYMBOL

NOT TO SCALE

STERN WILLIAMS DIMENSIONAL INFORMATION — MODEL 7700-90

MODEL 7700-90
Single Fountain with
Water Bottle Filler Station and Pet Fountain

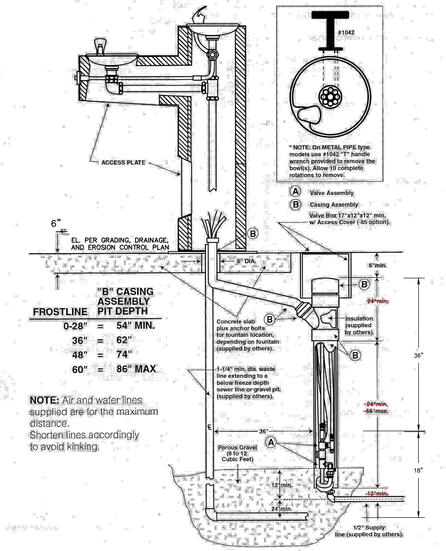


CONTRACTOR TO COORDINATE 6" THK. 24" DIA. CONCRETE SLAB WITH DRINKING FOUNTAIN CONTRACTOR.

STERN-WILLIAMS CO., INC. • P.O. Box 8004 • Shawnee Mission, Kansas 66208 USA
Telephone: (913) 362-5635 • Fax: (913) 362-6689 • Web address: www.sternwilliams.com
4-14

STERN WILLIAMS — STERN-WILLIAMS CO., INC. P.O. Box 8004, Shawnee Mission, KS 66208 USA • 913-362-5635 • FAX 913-362-6689

WATER BOTTLE FILLER STATION SECTION



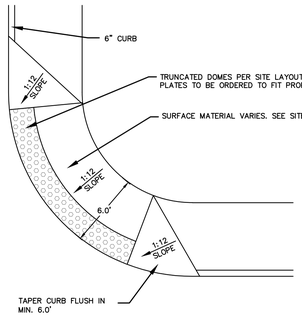
FROSTLINE	ASSEMBLY PIT DEPTH
0-28"	= 54" MIN.
36"	= 62"
48"	= 74"
60"	= 86" MAX

NOTE: Air and water lines supplied are for the maximum distance. Shorten lines accordingly to avoid kinking.

CONTRACTOR TO TRANSITION TO 4" PVC SCH 40 SEWER AND INSTALL CLEANOUT WITH P-TRAP WITHIN 3 FEET OF DRINKING WATER FOUNTAIN

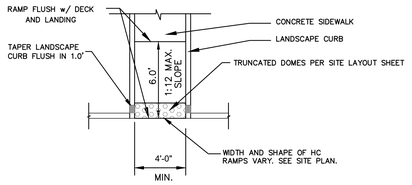
3 DRINKING FOUNTAIN

MODIFIED FOR PROJECT
NOT TO SCALE



HANDICAP RAMP #1

NOT TO SCALE
REVISED FOR THIS PROJECT



HANDICAP RAMP #2

NOT TO SCALE
REVISED FOR THIS PROJECT

NOTES:

A. LOCATION OF HANDICAP RAMPS:

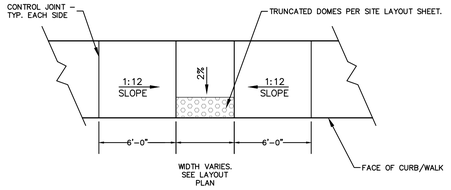
1. ALL ACCESSIBLE RAMPS TO COMPLY WITH CURRENT N.C. BUILDING CODE VOLUME IBC 2015 ACCESSIBILITY CODE.
2. NO SLOPE SHALL EXCEED 1"= 1' (1:12) ON THE RAMPS.
3. IN NO CASE SHALL THE WIDTH OF A WHEELCHAIR RAMPS BE LESS THAN 48" (4'-0"). WIDTHS MAY EXCEED 48" AS SHOWN.
4. A 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE THE CONCRETE WHEELCHAIR RAMP JOINS ANY RIGID PAVEMENT OR STRUCTURE.
5. ALL CONCRETE TO BE 4000 PSI AT 28 DAYS. RAMP TO BE PLACED ON MIN. 4" AGGREGATE BASE COURSE.

CROSS SECTIONS:

1. SEE SITE PLAN FOR SURFACE TREATMENTS AT HC RAMPS AND REFER TO RELATED PAVING DETAILS AS REFERENCED IN KEY NOTES.

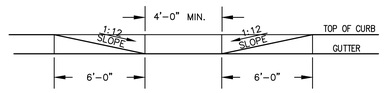
4 ACCESSIBLE RAMPS

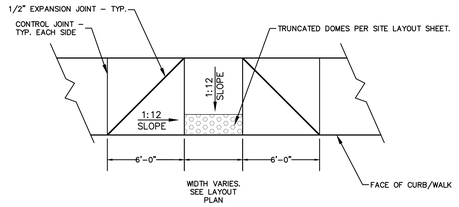
REVISED FOR THIS PROJECT
NOT TO SCALE



HANDICAP RAMP #3

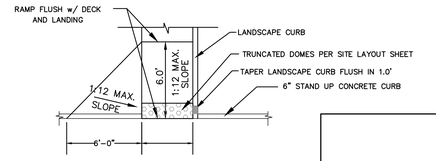
NOT TO SCALE
REVISED FOR THIS PROJECT





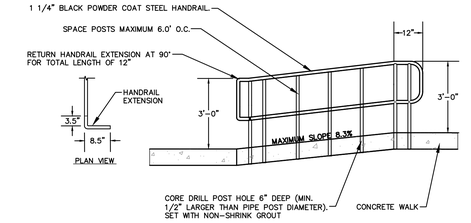
HANDICAP RAMP #4

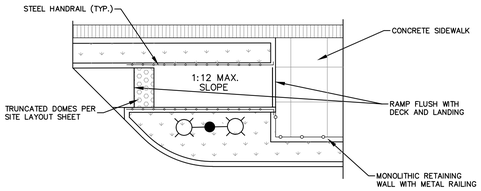
NOT TO SCALE
REVISED FOR THIS PROJECT



HANDICAP RAMP #5

NOT TO SCALE
REVISED FOR THIS PROJECT





HANDICAP RAMP W/ HANDRAIL #1

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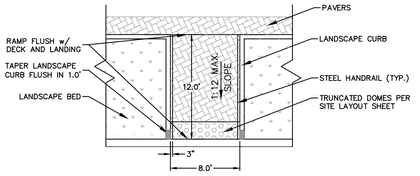

HANDICAP RAMP W/ HANDRAIL #2

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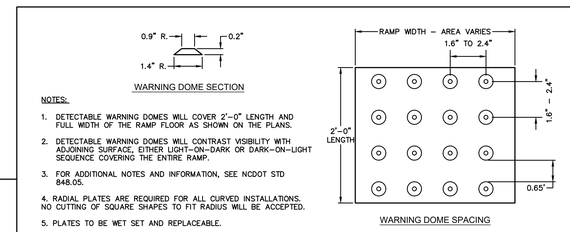
REVISED FOR THIS PROJECT

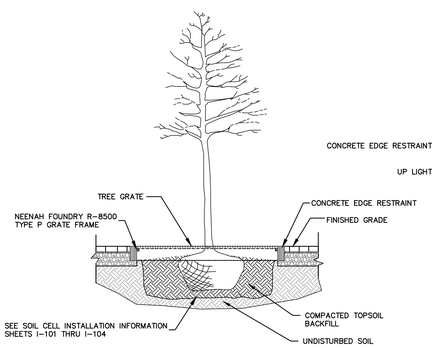


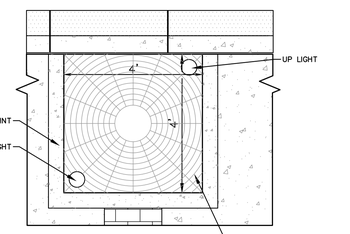
NOTES:

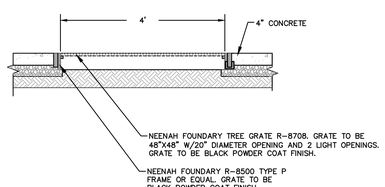
1. DETECTABLE WARNING DOMES WILL COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE PLANS.
2. DETECTABLE WARNING DOMES WILL CONTRAST VISIBILITY WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.
3. FOR ADDITIONAL NOTES AND INFORMATION, SEE NCDOT STD 848.05.
4. RADIAL PLATES ARE REQUIRED FOR ALL CURVED INSTALLATIONS. NO CUTTING OF SQUARE SHAPES TO FIT RADIUS WILL BE ACCEPTED.
5. PLATES TO BE WET SET AND REPLACEABLE.
6. COLOR TO BE BRICK RED.
7. COMPOSITE PLATE MATERIAL PER SPECIFICATIONS.

5 DETECTABLE WARNING PLATE

REVISED FOR THIS PROJECT
NOT TO SCALE







NOTES:

1. EXCAVATE TREE PIT AREA TO DEPTH OF R-8500 TYPE P FRAME.
2. PLACE R-8500 TYPE P FRAME IN EXCAVATION AND SET AT PROPER GRADE PER MANUFACTURER'S RECOMMENDATIONS.
3. PLACE BOTH NEENAH FOUNDARY TREE GRATE R-8708 HALVES WITHIN THE FRAME.
4. CONTRACTOR TO PROVIDE TREE GRATES FOR ALL EXISTING AND PROPOSED TREE WELLS.
5. PLACE SETTING BED AND PAVERS/CONCRETE SIDEWALK.
6. TOP OF ROOTBALL TO BE 2" MAX. FROM BOTTOM OF TREE GRATE.

7 TREE GRATE

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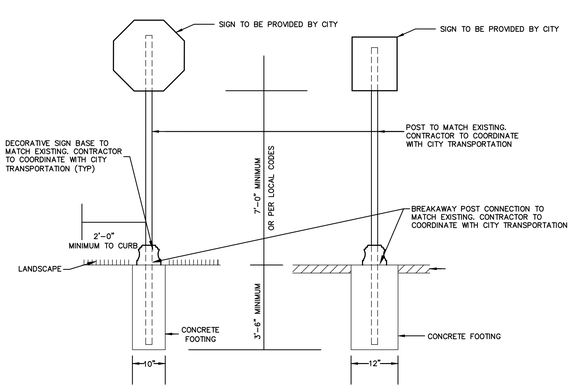
NOT TO SCALE



8 SIGN INSTALLATION

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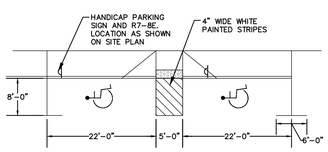

NOTES:

1. REGARDLESS OF AGE, ALL ACCESSIBLE SPACES SHALL BE IDENTIFIED BY ABOVE– GROUND SIGNS ONLY. (SEE N.C.G.S.)
2. GROUND-PAINTED SYMBOLS TO BE WHITE THERMOPLASTIC 90 MIL.
3. ACCESSIBLE SPACES ARE REQUIRED TO BE STRIPED OFF ONLY; BLUE COLORING IS NOT NECESSARY NOR REQUIRED.
4. STRIPING IS WHITE ON DARK PAVEMENT; BLACK ON LIGHT PAVEMENT. (N.C.D.O.T.)
5. SEE GRADING PLAN FOR SLOPE. EXISTING ROAD GRADES VARY.

ACCESSIBLE STRIPING DETAIL FOR HANDICAP PARKING

6

REVISED FOR THIS PROJECT
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mcgill
1240 19th Street Lane NW
Hickory, NC 28601
828.328.2024
NC Firm License # C-0459
mcgillassociates.com

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CAMIE CRANWILL 7/22/2021

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

NOT TO SCALE

OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	C.L. CRANWILL
PROJECT MANAGER	REVIEWER
C.L. CRANWILL	M.J. NORRIS

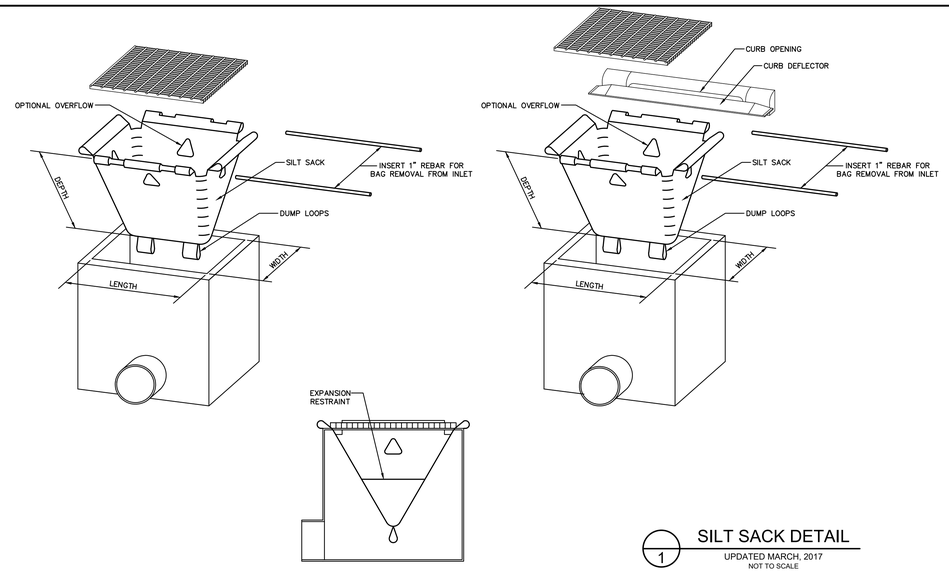
DETAILS

DATE	PROJECT #	FUNDING #
JULY 2021	19.01726	N/A

SHEET
C-503

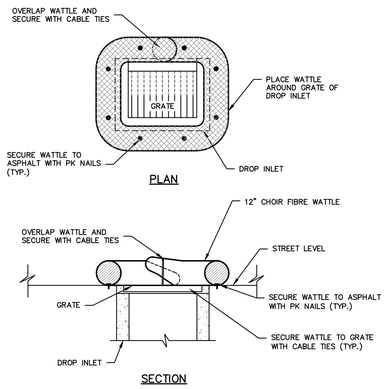
P:\2019\19.01726-CONCORDNC-UNION STREETSCAPE PROJECT\DRAWINGS\19.01726 - UNION ST DETAILS.DWG PLOT DATE: 7/22/2021 9:16 AM KURTIS DURRANT

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS



1 SILT SACK DETAIL

UPDATED MARCH, 2017
NOT TO SCALE

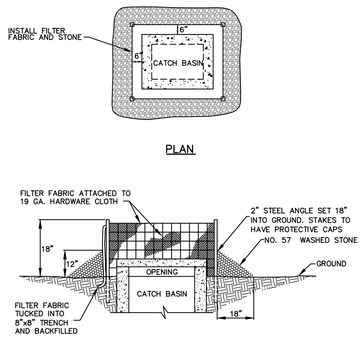


NOTES:

1. WATTLES MUST BE SECURED AS SHOWN, OR PER MANUFACTURER'S RECOMMENDATIONS.
2. ALL MATERIALS INSTALLED WITHIN NCDOT RIGHT-OF-WAY MUST MEET NCDOT STANDARDS.

2 INLET PROTECTION - WATTLE

REVISED FOR THIS PROJECT
NOT TO SCALE



NOTES:

1. ATTACH WIRE AND FABRIC TO POSTS ON OUTSIDE OF FENCE WITH APPROVED FASTENERS.
2. ALL STAKES/POSTS TO HAVE PROTECTIVE CAPS.
3. FILTERS SHALL BE INSPECTED AFTER EVERY RAIN AND REPAIRED AS REQUIRED.
4. SEDIMENT SHALL BE REMOVED AFTER DEPOSITS REACH 1/3 HEIGHT OF BARRIER.

3 CURB INLET PROTECTION

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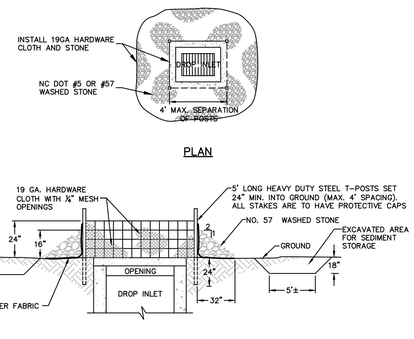
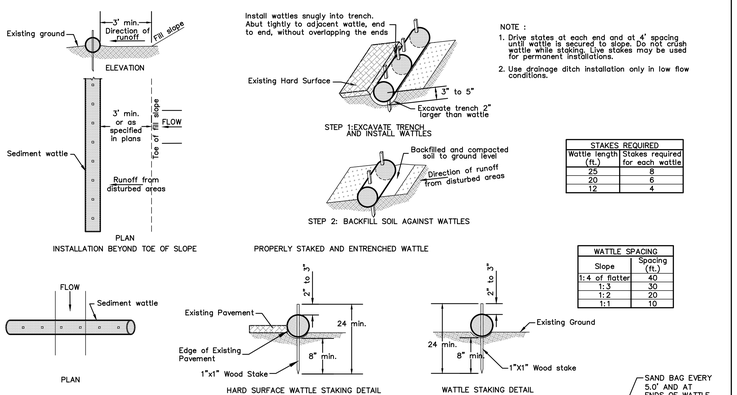


NOTES:

1. ATTACH HARDWARE TO OUTSIDE OF FENCE POSTS WITH APPROVED FASTENERS.
2. FILTERS SHALL BE INSPECTED WEEKLY AND AFTER EVERY RAIN AND REPAIRED AS REQUIRED.
3. SEDIMENT SHALL BE REMOVED AFTER DEPOSITS REACH HEIGHT OF BARRIER.
4. STEEL POSTS SHALL BE MINIMUM 1.25 POUND PER L.F.
5. ALL STAKES/POSTS ARE TO HAVE PROTECTIVE CAPS.

4 DROP INLET PROTECTION

UPDATED MARCH, 2017
NOT TO SCALE



NOTE :
1. Drive stakes at each end and at 4' spacing until wattle is secured to slope. Do not crush wattle while staking. Live stakes may be used for permanent installations.
2. Use drainage ditch installation only in low flow conditions.

STAKES REQUIRED	
Wattle length (ft.)	Stakes required for each wattle
25	8
20	6
12	4

WATTLE SPACING	
Slope	Spacing (ft.)
1:4 of flatter	40
1:3	30
1:2	20
1:1	10

NOTES:

1. STRAW ROLL INSTALLATION REQUIRES PLACEMENT AND SECURE STAKING OF THE ROLL ALONG THE CONTOUR. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND THE ROLL.
2. IF WOODEN STAKES CAN NOT BE USED BECAUSE OF ROCK, THEN RE-BAR MAY BE USED. BE SURE TO REMOVE RE-BAR WHEN WATTLES ARE REMOVED. ALL STAKES ARE TO HAVE PROTECTIVE CAPS.
3. ABUT ADJACENT ROLL TIGHTLY END TO END (DO NOT OVERLAP).
4. DO NOT CRUSH WATTLE WHILE STAKING.
5. REPLACE WATTLE ONCE SATURATED WITH SEDIMENT.

5 SEDIMENT WATTLE DETAIL

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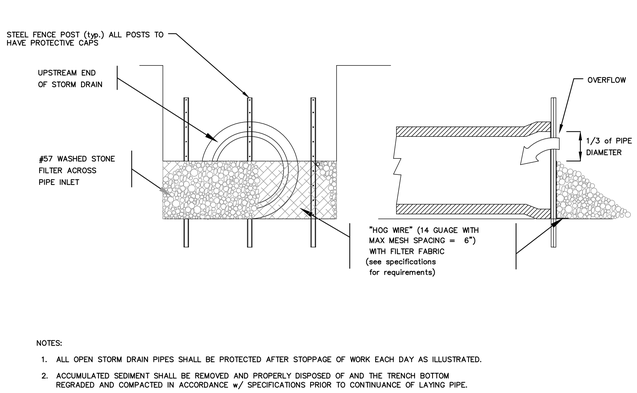

NOTES:

1. ALL OPEN STORM DRAIN PIPES SHALL BE PROTECTED AFTER STOPPAGE OF WORK EACH DAY AS ILLUSTRATED.
2. ACCUMULATED SEDIMENT SHALL BE REMOVED AND PROPERLY DISPOSED OF AND THE TRENCH BOTTOM REGRADED AND COMPACTED IN ACCORDANCE w/ SPECIFICATIONS PRIOR TO CONTINUANCE OF LAYING PIPE.
3. ALL STAKES/POSTS TO HAVE PROTECTIVE CAPS.

6 STONE FILTER INLET PROTECTION FOR STORM DRAIN UNDER CONSTRUCTION

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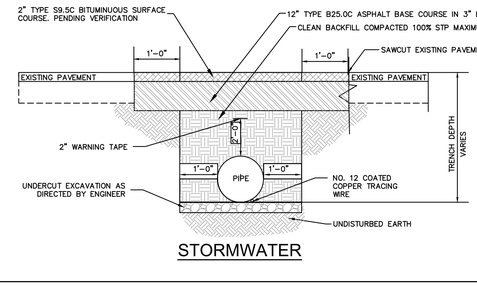

NOTES:

1. EDGE TO BE SAWED WITH A CONCRETE SAW TO A NEAT SQUARED EDGE, BROOMED CLEAN OF DUST BEFORE TACK COAT IS APPLIED.
2. EDGES TO BE TACKED WITH CRS-I OR CRS-II.
3. CONTRACTOR RESPONSIBLE FOR REPLACEMENT OF ANY PAVEMENT MARKINGS DISTURBED OR COVERED BY OVERLAY.
4. UNDERCUT EXCAVATION IN 6" LAYERS TO REACH ACCEPTABLE TRENCH BOTTOM.

7 STORMWATER TRENCH PAVEMENT REPAIRS

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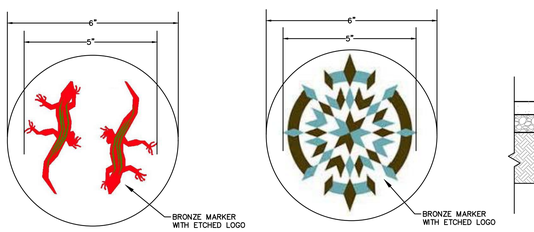

NOTES:

1. MARKER EDGES TO BE FLUSH OR NO MORE THAN ¼" ABOVE SURROUNDING CONCRETE
2. BRONZE TRAIL MARKER IS TO BE COMMERCIAL GRADE BRONZE RATED FOR EXTERIOR APPLICATIONS
3. FINISH TO PROVIDE NON-SLIP SURFACE

8 TRAIL MARKERS

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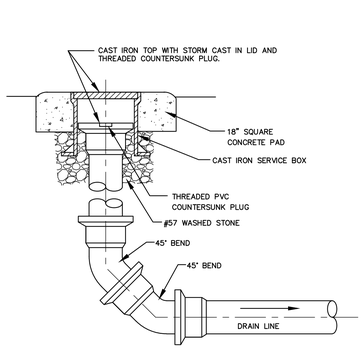

9 ROOF DRAIN CLEANOUT

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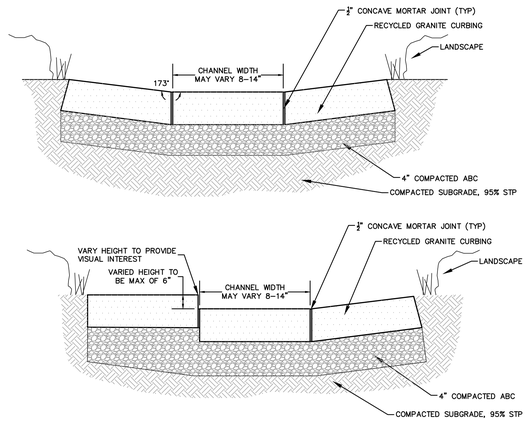

10 GRANITE STORMWATER FLUME

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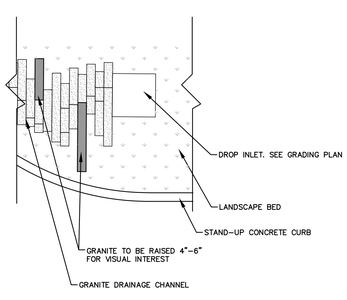

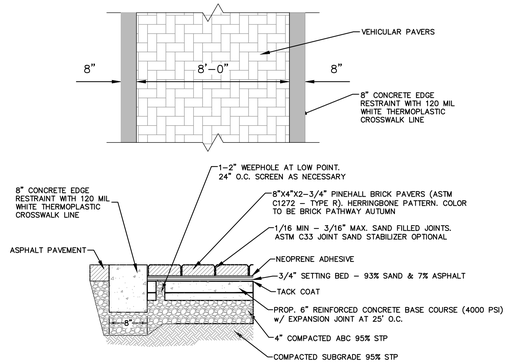

NOTES:

1. PAVERS TO BE INSTALLED PER MANUFACTURER'S SPECS.
2. ANY PAVER SURFACE(S) THAT BECOME STAINED DURING INSTALLATION SHALL BE DISCARDED AND REPLACED WITH NEW PAVER(S).

11 BRICK PAVER CROSSWALK

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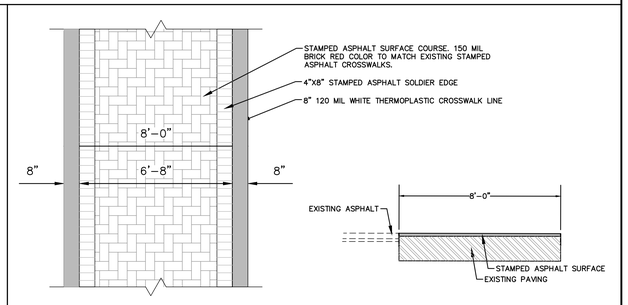

NOTES:

1. STAMPED ASPHALT SURFACE TO HAVE A MINIMUM SKID RESISTANCE VALUE OF 60 BPN WHEN TESTED ACCORDING TO ASTM E 303.
2. STAMPED ASPHALT SURFACE SHALL CONTAIN FACTORY APPLIED ANTI-SKID/ANTI-SLIP ELEMENTS WITH A MINIMUM HARDNESS OF 6 (Mohs SCALE). UPON APPLICATION THE MATERIAL SHALL PROVIDE A MINIMUM STATIC FRICTION OF COEFFICIENT OF 0.6 WHEN TESTED ACCORDING TO ASTM C 1028 (WET AND DRY), AND A MINIMUM STATIC COEFFICIENT OF FRICTION OF0.6 WHEN TESTED ACCORDING TO ASTM D 2047.

12 STAMPED ASPHALT CROSSWALK

REVISED FOR THIS PROJECT
NOT TO SCALE

mcgill
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NC Firm License # C-0459
mcgillassociates.com

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

NOT TO SCALE

DETAILS

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	C.L. CRANWILL			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
C.L. CRANWILL	M.J. NORRIS	JULY 2021	19.01726	N/A

SHEET
C-504

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS

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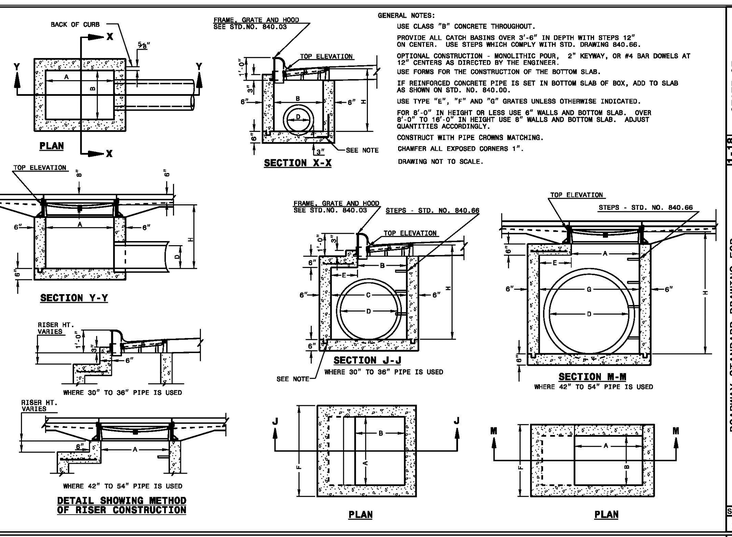


GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.

USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.

FOR 8'-0" IN HEIGHT OR LESS USE 8" WALLS AND BOTTOM SLAB. OVER 8'-0" TO 16'-0" IN HEIGHT USE 8" WALLS AND BOTTOM SLAB. ADJUST QUANTITIES ACCORDINGLY.

CONSTRUCT WITH PIPE CROWNS MATCHING.

CHAMFER ALL EXPOSED CORNERS 1".

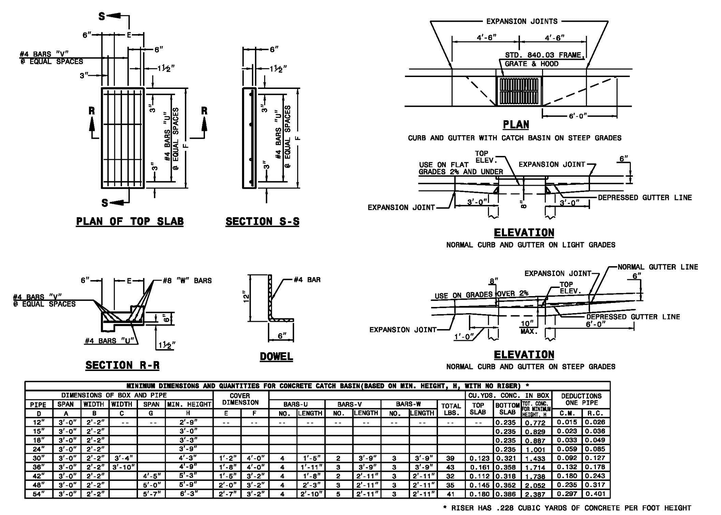
DRAWING NOT TO SCALE.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-18

ROADWAY STANDARD DRAWING FOR
CONCRETE CATCH BASIN
12" THRU 54" PIPE

SHEET 1 OF 2
840.02



MINIMUM DIMENSIONS AND QUANTITIES FOR CONCRETE CATCH BASIN(BASED ON MIN. HEIGHT, H, WITH NO RISER) *

DIMENSIONS OF BOX AND PIPE							COVER DIMENSION		BARS-U		BARS-V		BARS-W			CU.YDS. CONC. IN BOX		DEDUCTIONS ONE PIPE	
PIPE	SPAN	WIDTH	WIDTH	SPAN	MIN. HEIGHT				NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	TOTAL LBS.	TOP SLAB	BOTTOM SLAB	TOT. CONC. FOR MINIMUM HEIGHT *	C.M.	R.C.
D	A	B	C	G	H		E	F												
12"	3'-0"	2'-2"	--	--	2'-9"		--	--	--	--	--	--	--	--	--	--	0.235	0.722	0.015	0.026
15"	3'-0"	2'-2"			3'-0"												0.235	0.829	0.023	0.036
18"	3'-0"	2'-2"			3'-3"												0.235	0.897	0.033	0.049
24"	3'-0"	2'-2"			3'-9"												0.235	1.001	0.059	0.085
30"	3'-0"	2'-2"	3'-4"		4'-3"		1'-2"	4'-0"	4	1'-5"	2	3'-9"	3	3'-9"	39	0.123	0.321	1.433	0.092	0.127
36"	3'-0"	2'-2"	3'-10"		4'-9"		1'-8"	4'-0"	4	1'-11"	3	3'-9"	3	3'-9"	43	0.161	0.358	1.714	0.132	0.178
42"	3'-0"	2'-2"		4'-6"	5'-3"		1'-8"	3'-2"	4	1'-8"	3	2'-11"	3	2'-11"	32	0.112	0.318	1.738	0.180	0.243
48"	3'-0"	2'-2"		5'-0"	5'-9"		2'-0"	3'-2"	4	2'-3"	3	2'-11"	3	2'-11"	35	0.146	0.352	2.052	0.238	0.317
54"	3'-0"	2'-2"		5'-7"	6'-3"		2'-7"	3'-2"	4	2'-10"	5	2'-11"	3	2'-11"	41	0.180	0.386	2.387	0.297	0.401

* RISER HAS .228 CUBIC YARDS OF CONCRETE PER FOOT HEIGHT

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-18

ROADWAY STANDARD DRAWING FOR
CONCRETE CATCH BASIN
12" THRU 54" PIPE

SHEET 2 OF 2
840.02

GENERAL NOTES

USE 4000 PSI MINIMUM COMPRESSIVE STRENGTH CONCRETE.

USE ASTM A615 GRADE 60 REINFORCING STEEL. USE ASTM A1064 WELDED WIRE FABRIC (WWF).

FABRICATE, ASSEMBLE AND DESIGN PRECAST MANHOLE COMPONENTS ACCORDANCE WITH AASHTO M199.

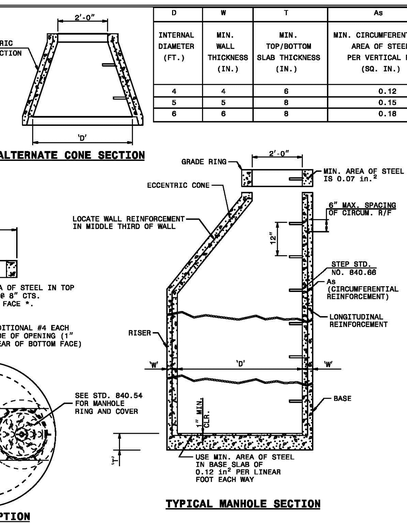
ASSEMBLE RISER AND GRADE RINGS WITH THE STEPS SPACED 12" FROM THE TOP TO THE BOTTOM OF THE MANHOLE.

WHERE THE MANHOLE IS EXPOSED TO ROAD TRAFFIC, CONSTRUCT THE TOP OF THE MANHOLE FLUSH WITH THE GROUND AND A MINIMUM OF 9" ABOVE THE GROUND AT OTHER LOCATIONS.

LIMIT DEPTH OF FILL TO 30'-0" FROM FINISH GRADE TO TOP OF BOTTOM SLAB.

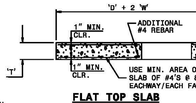
THE MIN. SLAB THICKNESS 'T' IS THE DIMENSION OF THE THINNEST PORTION OF THE TOP/BOTTOM SLAB.

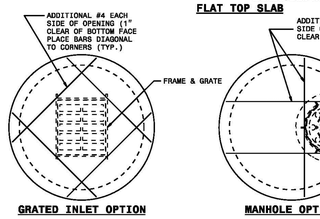
* TOP MAT OF REINFORCEMENT MAY BE NEGLECTED IF TOP SLAB HAS A DISTINGUISHABLE TOP AND BOTTOM.



D	W	T	As
INTERNAL DIAMETER (FT.)	MIN. WALL THICKNESS (IN.)	MIN. TOP/BOTTOM SLAB THICKNESS (IN.)	MIN. CIRCUMFERENTIAL AREA OF STEEL PER VERTICAL FT. (SQ. IN.)
4	4	6	0.12
5	5	8	0.15
6	6	8	0.18

FRAME AND GRATES	STD. NO.
TRAFFIC BEARING	840.37
	840.53
NONTRAFFIC BEARING	840.33
	840.34
	840.35
	840.39
	840.55





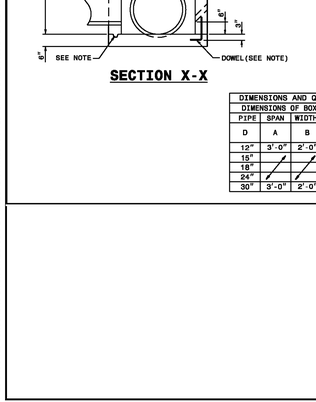
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-18

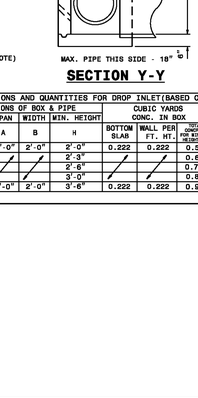
ROADWAY STANDARD DRAWING FOR
PRECAST MANHOLE 4', 5' AND 6' DIAMETER
12" THRU 48" PIPE

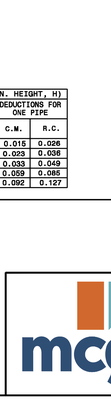
SHEET 1 OF 1
840.52

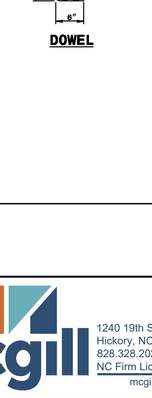
19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS



NOTE: USE TYPE "E", "F" AND "G" GRATE UNLESS OTHERWISE NOTED.





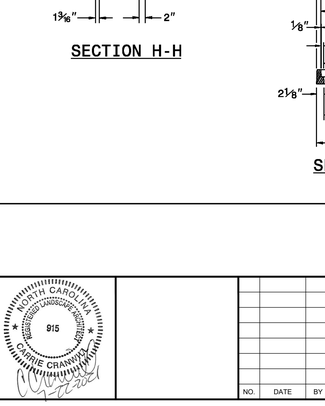


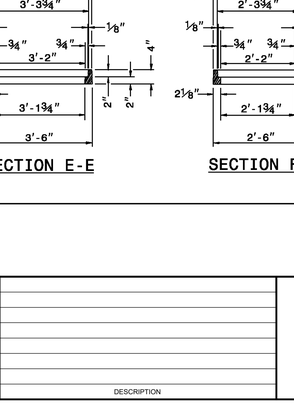
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-18

ROADWAY STANDARD DRAWING FOR
FRAME, GRATES, AND HOOD
FOR USE ON STANDARD CATCH BASIN

SHEET 1 OF 2
840.03



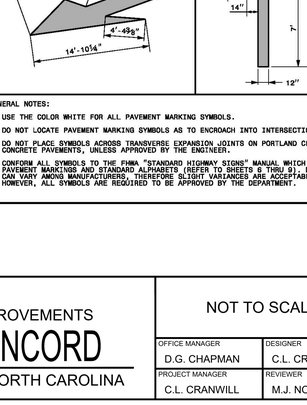


STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

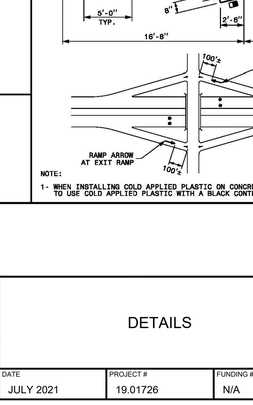
1-18

ROADWAY STANDARD DRAWING FOR
FRAME, GRATES, AND HOOD
FOR USE ON STANDARD CATCH BASIN

SHEET 2 OF 2
840.03



SOLID COVER SHOWN PERFORATED. PERFORATED AVAILABLE IF SPECIFIED.
STATE USE OF SYSTEM ON COVER
(I.E.: SEWER, STORM DRAIN, ELECTRICAL)



MINIMUM WEIGHTS - LBS.
FRAME - 180
COVER - 120
TOTAL - 300

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-18

ROADWAY STANDARD DRAWING FOR
FRAME AND COVER
MANHOLE

SHEET 1 OF 1
840.54

GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE ALL DROP INLETS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

OPTIONAL CONSTRUCTION - MONOLITHIC POUR 2" KEYWAY OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.

CONSTRUCT WITH PIPE CROWNS MATCHING.

SEE STANDARD DRAWING 840.26 FOR ATTACHMENT OF FRAMES AND GRATES NOT SHOWN.

INSTALL 2" WEEPHOLES AS DIRECTED BY THE ENGINEER.

INSTALL STONE DRAINS, OF A MINIMUM OF 1 CUBIC FOOT OF NO. 78M STONE IN A POROUS FABRIC BAG OR WRAP, AT EACH WEEP HOLE OR AS DIRECTED BY THE ENGINEER.

CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.

DIMENSIONS AND QUANTITIES FOR DROP INLET(BASED ON MIN. HEIGHT, H)							
DIMENSIONS OF BOX & PIPE				CUBIC YARDS CONC. IN BOX			DEDUCTIONS FOR ONE PIPE
PIPE	SPAN	WIDTH	MIN. HEIGHT	BOTTOM SLAB	WALL PER FT. HT.	TOTAL CONCRETE FOR MINIMUM HEIGHT BOX	C.M.	R.C.
D	A	B	H					
12"	3'-0"	2'-0"	2'-0"	0.222	0.222	0.592	0.015	0.026
15"	/	/	2'-3"	/	/	0.648	0.023	0.036
18"	/	/	2'-6"	/	/	0.703	0.033	0.049
24"	/	/	3'-0"	/	/	0.814	0.059	0.085
30"	3'-0"	2'-0"	3'-6"	0.222	0.222	0.925	0.092	0.127

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-18

ROADWAY STANDARD DRAWING FOR
CONCRETE DROP INLET
12" THRU 30" PIPE

SHEET 1 OF 1
840.14

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-18

ROADWAY STANDARD DRAWING FOR
DROP INLET FRAME AND GRATES
FOR USE WITH STD. DWG.S 840.14 AND 840.15

SHEET 1 OF 1
840.16

GENERAL NOTES:

1- USE THE COLOR WHITE FOR ALL PAVEMENT MARKING SYMBOLS.

2- DO NOT LOCATE PAVEMENT MARKING SYMBOLS AS TO ENCROACH INTO INTERSECTION AREAS.

3- DO NOT PLACE SYMBOLS ACROSS TRANSVERSE EXPANSION JOINTS ON PORTLAND CEMENT CONCRETE PAVEMENTS, UNLESS APPROVED BY THE ENGINEER.

4- CONFORM ALL SYMBOLS TO THE FHWA "STANDARD HIGHWAY SIGNS" MANUAL WHICH INCLUDES PAVEMENT MARKINGS AND STANDARD ALPHABETS (REFER TO SHEETS 5 THRU 9). DIMENSIONS CAN VARY AMONG MANUFACTURERS, THEREFORE SLIGHT VARIANCES ARE ACCEPTABLE. HOWEVER, ALL SYMBOLS ARE REQUIRED TO BE APPROVED BY THE DEPARTMENT.

NOTE:

1- WHEN INSTALLING COLD APPLIED PLASTIC ON CONCRETE, IT IS RECOMMENDED TO USE COLD APPLIED PLASTIC WITH A BLACK CONTRASTING BOLDER.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-18

ROADWAY STANDARD DRAWING FOR
PAVEMENT MARKINGS
SYMBOLS AND WORD MESSAGES

SHEET 1 OF 9
1205.08

P:\2019\19.01726-CONCORD\C-UNION STREETS\CAPE PROJECT\DRAWINGS\19.01726 - UNION ST DETAILS.DWG PLOT DATE 7/22/2021 9:18 AM KURTIS DURRANT

mcgill
1240 19th Street Lane NW
Hickory, NC 28601
828.328.2024
NC Firm License # C-0459
mcgillassociates.com

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 915 CARRIE CRANWILL 7/22/2021

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

NOT TO SCALE

DETAILS

SHEET
C-505

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	C.L. CRANWILL			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
C.L. CRANWILL	M.J. NORRIS	JULY 2021	19.01726	N/A

CONTINUOUS LINES

EDGE LINE — YELLOW OR WHITE — 4"/6"

LANE LINE — WHITE — 4"/6"

CENTER LINE — YELLOW — 4"/6"

GORE LINE — WHITE — 8"/12"

DIAGONAL LINE — YELLOW OR WHITE — 12" 45 MPH OR HIGHER; 8" LESS THAN 45 MPH

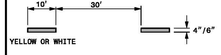
CROSSWALK LINE — WHITE — 8" TRANSVERSE, 24" LONGITUDINAL

RxR LINE — WHITE — 16"

STOP OR TRANSVERSE BAR — WHITE — 24"

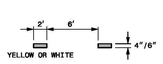
10'-30'/SP SKIP LINE

UNLESS OTHERWISED SHOWN, USE 10'-30'/SP SKIPS FOR SKIP LANE LINES AND SKIP CENTER LINES.



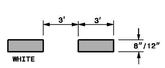
2'-6'/SP MINI-SKIP LINE

UNLESS OTHERWISED SHOWN, USE 2'-6'/SP MINI-SKIPS FOR LANE LINE EXTENSIONS THROUGH INTERSECTIONS, EDGE LINE EXTENSIONS THROUGH INTERSECTIONS AND MINI-SKIPS USED FOR BICYCLE LANE LINES.



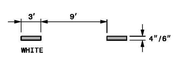
3'-3'/SP MINI-SKIP LINE

UNLESS OTHERWISED SHOWN, USE 3'-3'/SP MINI-SKIPS FOR THE WHITE EDGE LINE EXTENSIONS AT ROUNDABOUTS.



3'-9'/SP MINI-SKIP LINE

UNLESS OTHERWISED SHOWN, USE 3'-9'/SP MINI-SKIPS FOR MINI-SKIP LANE LINES AND LINE EXTENSIONS THROUGH TAPERS.



GENERAL NOTES:

1- USE 6" LANE, EDGE, AND CENTER LINES ON ALL FULL CONTROL OF ACCESS FACILITIES AND OTHER ROUTES AS DIRECTED BY THE ENGINEER.

2- LANE LINES INDICATED AS "WIDE" ON THE ROADWAY STANDARD DRAWINGS SHALL BE AT LEAST TWICE THE WIDTH OF THE NORMAL LINE.

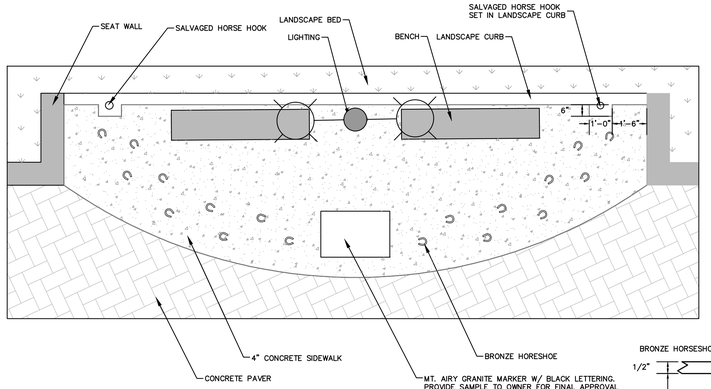
3- GORE LINES SHALL BE TWICE THE WIDTH OF THE NORMAL LINE.

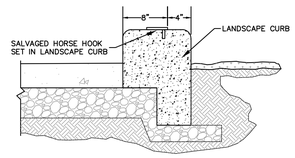
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

T-18

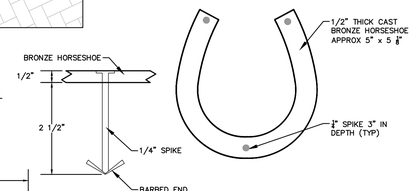
ROADWAY STANDARD DRAWING FOR
PAVEMENT MARKINGS
LINE TYPES AND OFFSETS

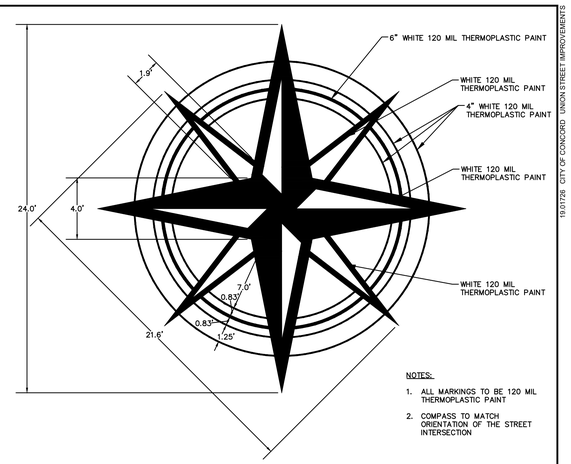
SHEET 1 OF 2
1205.01





HORSE HOOK

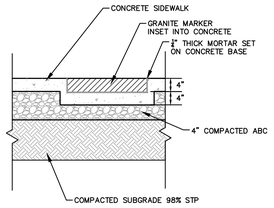


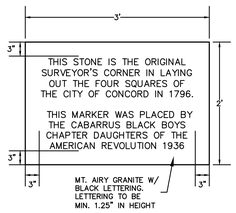


NOTES:

1. ALL MARKINGS TO BE 120 MIL THERMOPLASTIC PAINT
2. COMPASS TO MATCH ORIENTATION OF THE STREET INTERSECTION

3 COMPASS MARKINGS
REVISED FOR THIS PROJECT
NOT TO SCALE

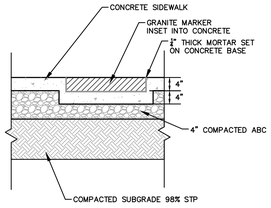


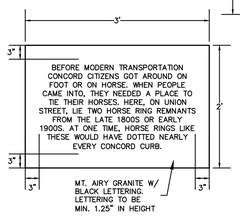


NOTES:

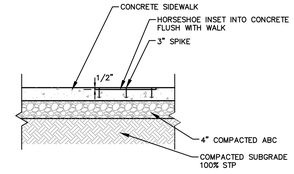
1. MARKER EDGES TO BE FLUSH OR NO MORE THAN 1/8" ABOVE SURROUNDING CONCRETE
2. GRANITE MARKER IS TO BE COMMERCIAL GRADE GRANITE RATED FOR EXTERIOR APPLICATIONS
3. FINISH TO PROVIDE NON-SLIP SURFACE
4. OWNER TO APPROVE FONT SELECTION
5. CONTRACTOR TO PROVIDE COLOR SAMPLE BEFORE GRANITE IS ENGRAVED

1 STONE GRANITE MARKER
REVISED FOR THIS PROJECT
NOT TO SCALE





GRANITE MARKER

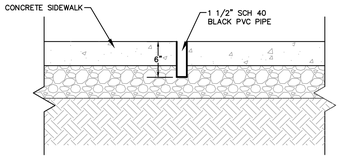


HORSESHOE

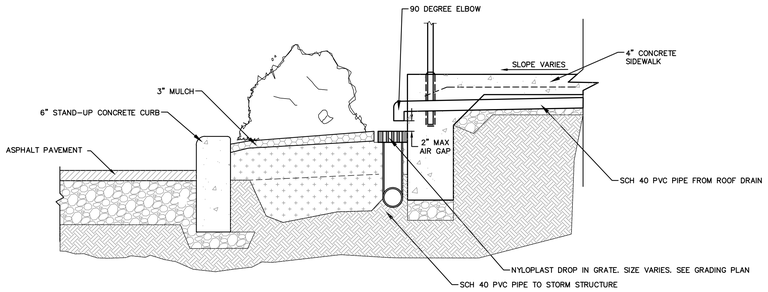
NOTES:

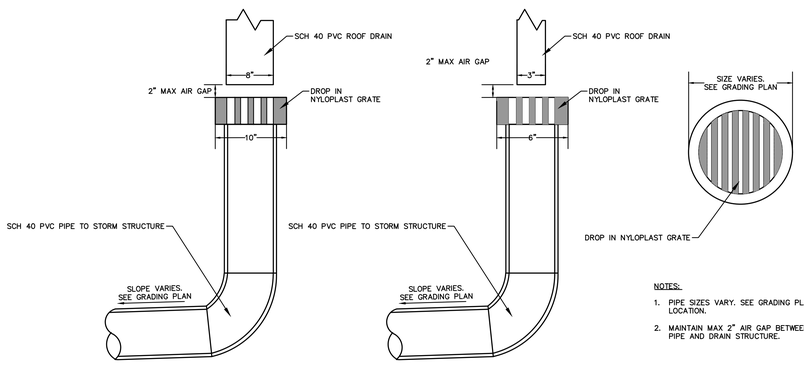
1. MARKER EDGES TO BE FLUSH OR NO MORE THAN 1/8" ABOVE SURROUNDING CONCRETE
2. GRANITE MARKER IS TO BE COMMERCIAL GRADE GRANITE RATED FOR EXTERIOR APPLICATIONS
3. FINISH TO PROVIDE NON-SLIP SURFACE
4. OWNER TO APPROVE FONT SELECTION
5. CONTRACTOR TO PROVIDE COLOR SAMPLE BEFORE GRANITE IS ENGRAVED

2 HORSE HOOKS AND HORSESHOES
REVISED FOR THIS PROJECT
NOT TO SCALE



4 FLAG POLE HOLDER
REVISED FOR THIS PROJECT
NOT TO SCALE

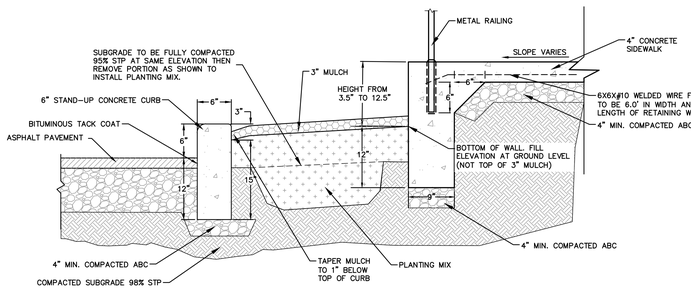




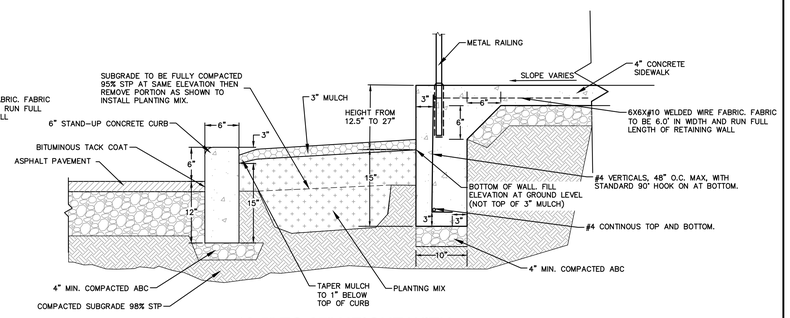
NOTES:

1. PIPE SIZES VARY. SEE GRADING PLAN FOR PIPE SIZE AND LOCATION.
2. MAINTAIN MAX 2" AIR GAP BETWEEN END OF ROOF DRAIN PIPE AND DRAIN STRUCTURE.

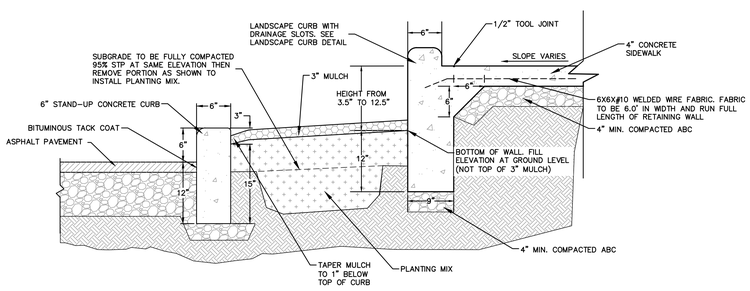
5 NYOPLAST GRATE INLET ROOF DRAIN CONNECTION
MODIFIED FOR PROJECT
NOT TO SCALE



3.5" TO 12.5" HEIGHT WITH RAILING



12.5" TO 27" HEIGHT WITH METAL RAILING

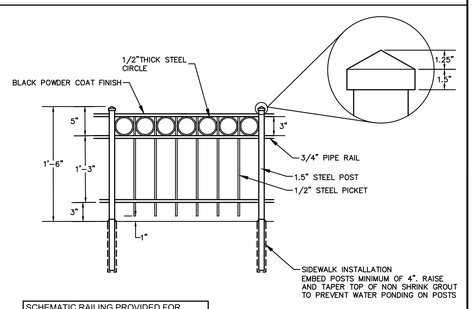


3.5" TO 12.5" HEIGHT WITH LANDSCAPE CURB

NOTES:

1. SIDEWALK SHALL BE CONSTRUCTED WITH 4000 PSI CONCRETE.
2. EXPANSION JOINTS AT 30' O.C. AND ADJACENT TO ALL RIGID OBJECTS.

6 MONOLITHIC RETAINING WALL W/ LANDSCAPE CURB
MODIFIED FOR PROJECT
NOT TO SCALE



SCHEMATIC RAILING PROVIDED FOR REFERENCE. RAILING TO BE PROVIDED BY OWNER. CONTRACTOR TO INSTALL

ORNAMENTAL TREE GUARD FENCE

7 REVISED FOR THIS PROJECT
NOT TO SCALE

mcgill
1240 19th Street Lane NW
Hickory, NC 28601
828.328.2024
NC Firm License # C-0459
mcgillassociates.com

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 915 CARRIE CRANWILL

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

NOT TO SCALE

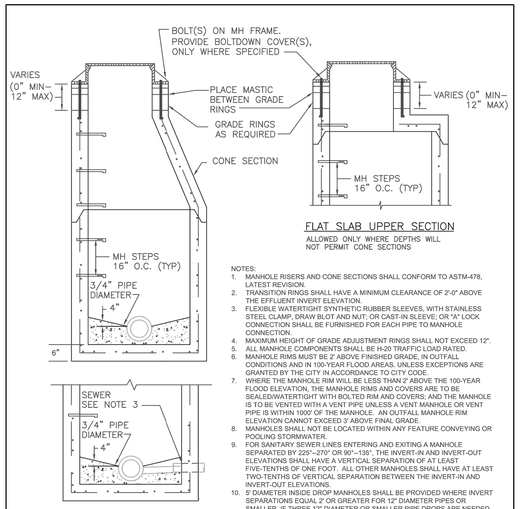
DETAILS

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	C.L. CRANWILL			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
C.L. CRANWILL	M.J. NORRIS	JULY 2021	19.01726	N/A

SHEET
C-506

19.01726 CITY OF CONCORD UNION STREET IMPROVEMENTS

P:\2019\19.01726-CONCORD\C-UNION STREETSCAPE PROJECT\DRAWINGS\19.01726 - UNION ST DETAILS.DWG PLOT DATE: 7/22/2021 9:21 AM KURTIS DURRANT



FLAT SLAB UPPER SECTION

ALLOWED ONLY WHERE DEPTHS WILL NOT PERMIT CONE SECTIONS

NOTES:

1. MANHOLE RISERS AND CONE SECTIONS SHALL CONFORM TO ASTM-478, LATEST REVISION.
2. TRANSITION RINGS SHALL HAVE A MINIMUM CLEARANCE OF 2'-0" ABOVE THE EFFLUENT INVERT ELEVATION.
3. FLEXIBLE WATERTIGHT SYNTHETIC RUBBER SLEEVES, WITH STAINLESS STEEL CLAMP, DRAW BLOT AND NUT; OR CAST-IN SLEEVE; OR "A" LOCK CONNECTION SHALL BE FURNISHED FOR EACH PIPE TO MANHOLE CONNECTION.
4. MAXIMUM HEIGHT OF GRADE ADJUSTMENT RINGS SHALL NOT EXCEED 12".
5. ALL MANHOLE COMPONENTS SHALL BE H-20 TRAFFIC LOAD RATED.
6. MANHOLE RIMS MUST BE 2' ABOVE FINISHED GRADE, IN OUTFALL CONDITIONS AND IN 100-YEAR FLOOD AREAS, UNLESS EXCEPTIONS ARE GRANTED BY THE CITY IN ACCORDANCE TO CITY CODE.
7. WHERE THE MANHOLE RIM WILL BE LESS THAN 2' ABOVE THE 100-YEAR FLOOD ELEVATION, THE MANHOLE RIMS AND COVERS ARE TO BE SEALED/WATERTIGHT WITH BOLTED RIM AND COVERS; AND THE MANHOLE IS TO BE VENTED WITH A VENT PIPE UNLESS A VENT MANHOLE OR VENT PIPE IS WITHIN 1000' OF THE MANHOLE. AN OUTFALL MANHOLE RIM ELEVATION CANNOT EXCEED 3' ABOVE FINAL GRADE.
8. MANHOLES SHALL NOT BE LOCATED WITHIN ANY FEATURE CONVEYING OR POOLING STORMWATER.
9. FOR SANITARY SEWER LINES ENTERING AND EXITING A MANHOLE SEPARATED BY 225°–270° OR 90°–135°, THE INVERT-IN AND INVERT-OUT ELEVATIONS SHALL HAVE A VERTICAL SEPARATION OF AT LEAST FIVE-TENTHS OF ONE FOOT. ALL OTHER MANHOLES SHALL HAVE AT LEAST TWO-TENTHS OF VERTICAL SEPARATION BETWEEN THE INVERT-IN AND INVERT-OUT ELEVATIONS.
10. 5' DIAMETER INSIDE DROP MANHOLES SHALL BE PROVIDED WHERE INVERT SEPARATIONS EQUAL 2' OR GREATER FOR 12" DIAMETER PIPES OR SMALLER. IF THREE 12" DIAMETER OR SMALLER PIPE DROPS ARE NEEDED AT A MANHOLE, A 6' INSIDE DROP MANHOLE SHALL BE PROVIDED. IF THE INVERT SEPARATION IS 2' OR GREATER AND A PIPE DIAMETER LARGER THAN 12", AN OUTSIDE DROP MANHOLE SHALL BE PROVIDED. (SEE DROP MANHOLE DETAIL.)

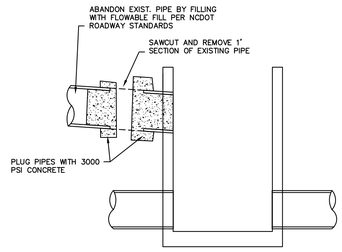
PIPE DIAMETER (INCHES)	MANHOLE DIAMETER (FEET)
8 TO 16	4
18 TO 36	5
39 TO 54	6
54 AND LARGER	8

CITY OF CONCORD STANDARD DETAIL

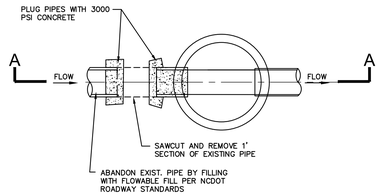
PRECAST CONCRETE MANHOLE

No.	Date	By	REVISION
1	2/27/20	SVM	STEP SPACING

Drawn By:	Checked By:	Approved By:	Date	Sht	of
SVM	CS	MSH	05/11	1	1



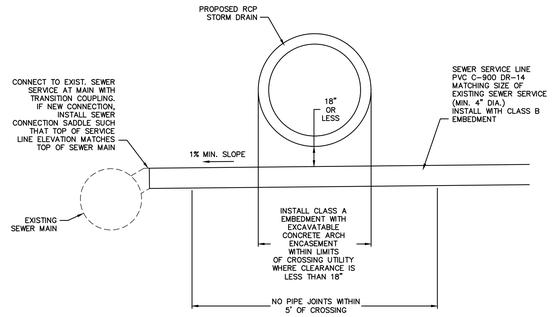
SECTION A-A



PLAN VIEW

SEWER ABANDONMENT AT MANHOLE 211.2195

MODIFIED FOR THIS PROJECT
NOT TO SCALE



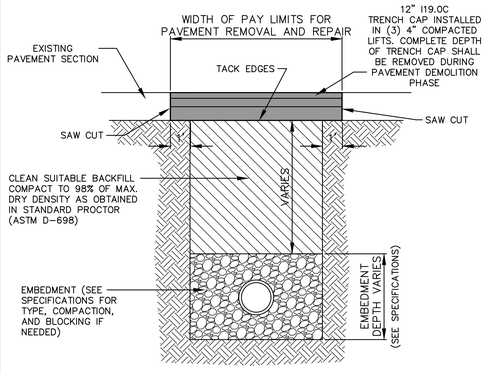
SEWER SERVICES IN CLOSE PROXIMITY TO STORM DRAINS

NOT TO SCALE

NOTES:

1. THE HOLE FOR A SEWER SADDLE SHALL BE MADE WITH A TAPPING MACHINE. THE HOLE SHALL BE CLEANLY MACHINED AND IF NECESSARY WORKED BY HAND WITH A RASP OR SANDED TO ACCOMPLISH A TRUE AND NEAT OPENING FOR THE COLLAR WYE.
2. THE SEWER SADDLE SHALL BE GENECO E40 OR EQUIVALENT.
3. THE CONTRACTOR SHALL KEEP ALL CHIPS, DIRT, EPOXY, MORTAR, AND CONCRETE OUT OF THE SEWER SADDLED AND SHALL PERFORM A CLEANING OF THE REACH SADDLED IF DIRECTED TO DO SO BY THE OWNER.
4. THE CONTRACTOR SHALL REPAIR OR REPLACE ANY DAMAGED PIPE AS DIRECTED BY THE OWNER.

FULL DEPTH PAVEMENT REPLACEMENT AREAS

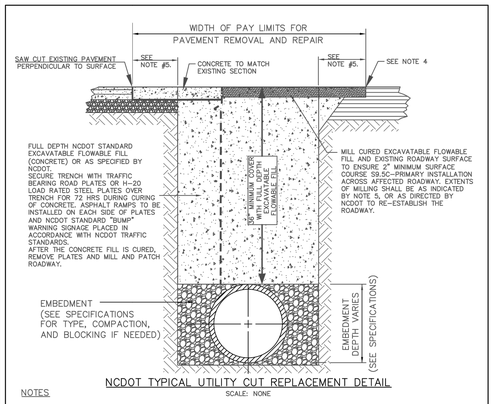


NOTES :

1. NEW PAVEMENT SHALL HAVE SECTION THICKNESS DESIGNED TO NCDOT SUPERPAVE STANDARDS AS PROVIDED BY THE ENGINEER OR MATCH EXISTING CONSTRUCTION, WHICH EVER IS GREATER OR AS SPECIFIED BY THE CONTRACT DOCUMENTS.
2. TRENCH IS TO BE BACKFILLED IN COMPACTED 6" LAYERS BEFORE PAVEMENT REPAIRS ARE MADE.
3. REFER TO EARTHWORK SPECIFICATION FOR EMBEDMENT AND FILL REQUIREMENTS.
4. THIS DETAIL SHOWS ASPHALT PAVEMENT REPLACEMENT. THE WIDTH OF PAY LIMITS SHALL APPLY TO STONE AND CONCRETE PAVEMENT AS WELL.
5. 18" MIN. AROUND PATCHES AND 36" MIN. AT CURB CUTS.

UTILITY CUT REPLACEMENT DETAIL (CITY STREET)

MODIFIED FOR THIS PROJECT
NOT TO SCALE



NCDOT TYPICAL UTILITY CUT REPLACEMENT DETAIL

SCALE: NONE

NOTES

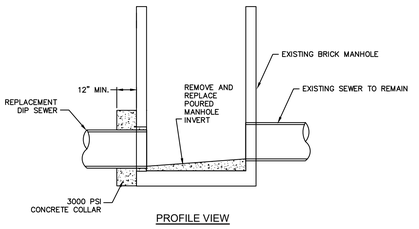
1. NEW PAVEMENT SHALL HAVE SECTION THICKNESS DESIGNED TO THE CURRENT NCDOT SUPERPAVE MANUAL STANDARDS, OR WITH PRIOR APPROVAL BY NCDOT TO MATCH EXISTING CONSTRUCTION, WHICHEVER IS THE MORE RESTRICTIVE OR AS SPECIFIED BY THE CONTRACT DOCUMENTS.
2. REFER TO EARTHWORK SPECIFICATIONS FOR EMBEDMENT AND FILL REQUIREMENTS.
3. THIS DETAIL SHOWS ASPHALT PAVEMENT REPLACEMENT. THE WIDTH OF PAY LIMITS SHALL APPLY TO STONE AND CONCRETE PAVEMENT AS WELL.
4. PAVEMENT TO BE SAW CUT PERPENDICULAR TO SURFACE. FACE TO BE NEAT, CLEAN, & STRAIGHT. AFTER EXCAVATABLE FLOWABLE FILL HAS CURED, THE SURFACE IS TO BE MILLED, CLEANED, AND TACKED PRIOR TO ASPHALT PATCH INSTALLATION PER NCDOT STANDARDS.
5. ROADWAY PATCHES SHALL EXTEND AT LEAST A MINIMUM OF 2 FEET BEYOND THE TRENCH AND 3 FEET BEYOND THE TRENCH AT CURB CUTS, OR AS REQUIRED BY NCDOT.

CITY OF CONCORD STANDARD DETAIL

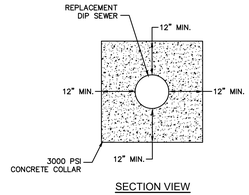
NCDOT UTILITY CUT REPLACEMENT

No.	Date	By	REVISION
1	6/18	SVM	FULL DEPTH EXCAVATABLE FLOWABLE FILL NCDOT 2018 SUPERPAVE MANUAL SCHEDULE

Drawn By:	Checked By:	Approved By:	Date	Sht	of
SVM	MSH		7/11	1	1



PROFILE VIEW



SECTION VIEW

CONCRETE COLLAR AT SEWER MANHOLE

MODIFIED FOR THIS PROJECT
NOT TO SCALE

mcgill
1240 19th Street Lane NW
Hickory, NC 28601
828.328.2024
NC Firm License # C-0459
mcgillassociates.com

NORTH CAROLINA PROFESSIONAL SEAL 041598 ENGINEER MATTHEW S. OETTING 7/22/2021

CALL 811 BEFORE YOU DIG SAFE DIGGING PARTNER

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS

CITY OF CONCORD

CABARRUS COUNTY, NORTH CAROLINA

NOT TO SCALE

STANDARD UTILITY DETAILS

OFFICE MANAGER	DESIGNER	DATE	PROJECT #	FUNDING #
D.G. CHAPMAN	M. OETTING	JULY, 2021	19.01726	N/A
PROJECT MANAGER	REVIEWER			
M.J. NORRIS	D.G. CHAPMAN			

SHEET

C-507

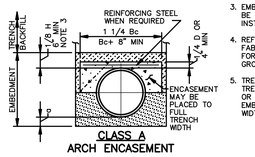
P:\2019\19.01726-CONCORD\C-UNION STREETSCAPE PROJECT\DRAWINGS\19.01726_UTILITY DETAILS.DWG PLOT DATE 7/22/2021 7:47 AM RUSSELL COX

TABLE OF EMBEDMENT DEPTHS BELOW PIPE

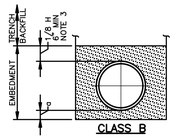
D	a MIN SOIL	a MIN ROCK
27" & SMALLER	6"	6"
30" TO 60"	6"	9"
66" & LARGER	6"	12"

NOTES:

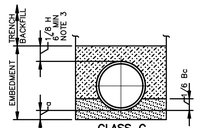
1. GRANULAR EMBEDMENT MATERIAL SHALL BE CRUSHED ROCK, PEA GRAVEL COARSE AGGREGATE SIZE NUMBER 57. EMBEDMENT MATERIAL SHALL BE PLACED IN LAYERS NOT MORE THAN 6" DEEP AND COMPACTED AS SPECIFIED.
2. HAND PLACED EMBEDMENT SHALL BE COMPACTED FINELY DIVIDED MATERIAL FREE FROM DEBRIS AND STONES.
3. EMBEDMENT ABOVE THE TOP OF THE PIPE SHALL BE AN UNCOMPACTED LAYER FOR ALL INSTALLATIONS.
4. REFER TO SPECIFICATIONS FOR GEOTECHNICAL FABRIC OR SPECIAL EMBEDMENT REQUIREMENTS FOR TRENCHES IN FINE SOILS EXTENDING BELOW GROUNDWATER LEVEL.
5. TRENCH OUTLINES DO NOT INDICATE ACTUAL TRENCH EXCAVATION SHAPE, SOIL CONDITIONS, OR PRESENCE OF SHEETING LEFT IN PLACE. EMBEDMENT MATERIAL SHALL EXTEND THE FULL WIDTH OF THE ACTUAL TRENCH EXCAVATION.



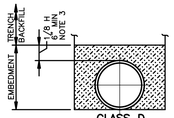
CLASS A
ARCH ENCASEMENT



CLASS B



CLASS C



CLASS D

LEGEND

Bc OUTSIDE DIAMETER OF PIPE
H COVER ABOVE TOP OF PIPE
D NOMINAL PIPE SIZE
a EMBEDMENT BELOW PIPE (SEE TABLE)

HAND PLACED EMBEDMENT

GRANULAR EMBEDMENT

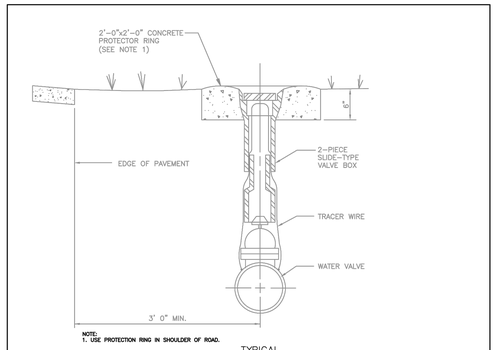
CONCRETE

REVISION NO.	DATE	BY	CHKD

WSACC
WATER AND SEWER AUTHORITY OF CABARRUS COUNTY

EMBEDMENTS FOR MAINS

FILE NAME: WS 1.0 DATE: 8/06



NOTE:
1. USE PROTECTION RING IN SHOULDER OF ROAD.

TYPICAL
VALVE BOX PROTECTION
SCALE: NONE

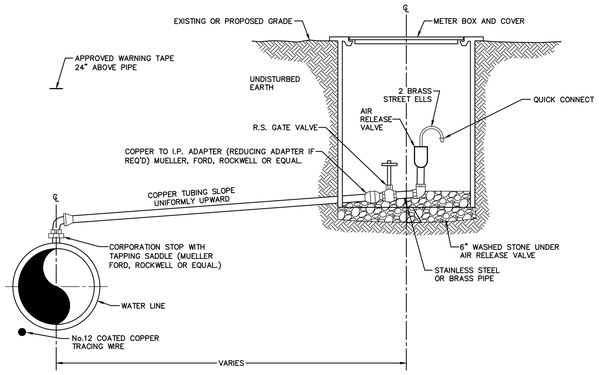
NOTES:

1. EACH BURIED VALVE TO A DEPTH OF 4 FEET OR LESS SHALL BE PROVIDED WITH A CHARLOTTE FOUNDRY VALVE BOX, OR EQUAL. VALVE BOXES SHALL BE CAST IRON, EXTENSION SLEEVE TYPE, FOR THE DEPTH OF COVER REQUIRED BY THE DRAWINGS. NOT MORE THAN ONE EXTENSION WILL BE ALLOWED WITH EACH SLIDE TYPE VALVE BOX. VALVE BOXES SHALL BE NOT LESS THAN 5 INCHES IN INSIDE DIAMETER, SHALL HAVE A MINIMUM THICKNESS AT ANY POINT OF 3/16 INCH, AND SHALL BE PROVIDED WITH SUITABLE CAST IRON BASES AND COVERS.
2. EACH VALVE BURIED TO A DEPTH GREATER THAN 4 FEET SHALL BE PROVIDED WITH A VALVE BOX CONSISTING OF A CAST IRON COVER AND A 6 INCH CAST IRON PIPE SECTION. THE COVER SHALL BE CLAY & BAILEY "NO. 2193" OR TYLER "SERIES 6890-A". THE PIPE SHAFT SHALL BE SIZED TO EXTEND FROM THE VALVE TO 5 INCHES INSIDE THE VALVE BOX COVER.
3. ALL PARTS OF VALVE BOXES, BASES, AND COVERS SHALL BE SHOP COATED BY DIPPING IN ASPHALT VARNISH.
4. VALVES AND VALVE BOXES SHALL BE SET PLUMB. EACH VALVE BOX SHALL BE PLACED DIRECTLY OVER THE VALVE IT SERVES, WITH THE TOP OF THE BOX BROUGHT FLUSH WITH THE FINISHED GRADE. AFTER BEING PLACED IN PROPER POSITION, EARTHFILL SHALL BE PLACED AROUND EACH VALVE BOX AND THOROUGHLY TAMPED ON EACH SIDE OF THE BOX. THE TOP OF THE BOX SHALL BE SET IN A CONCRETE PROTECTOR RING.

No.	Date	By	REVISION

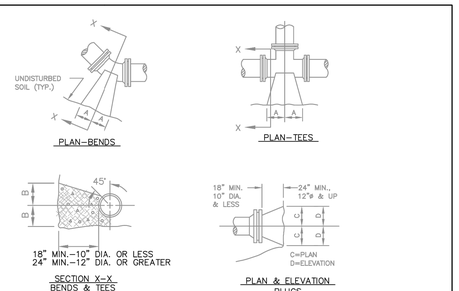
CITY OF CONCORD STANDARD DETAIL
TYPICAL VALVE BOX

Drawn By:	Checked By:	Approved By:	Date	Sht	of
SVM	PK	MSH	05/11	1	1



W 34 OFFSET AIR RELEASE VALVE INSTALLATION

UPDATED FEBRUARY, 2018
NOT TO SCALE



PIPE SIZE	90° BEND		45° BEND		22-1/2° BEND		11-1/4° BEND		TEE		PLUG	
	A	B	A	B	A	B	A	B	A	B	C	D
4"	18"	12"	10"	13"	7"	10"	7"	10"	12"	14"	13"	6"
6"	18"	12"	10"	13"	7"	10"	7"	10"	12"	14"	19"	9"
8"	24"	18"	13"	18"	10"	12"	10"	12"	16"	18"	25"	11"
10"	28"	22"	15"	22"	12"	15"	12"	15"	20"	22"	31"	14"
12"	32"	28"	19"	28"	14"	18"	14"	18"	22"	28"	37"	17"
16"	54"	38"	30"	36"	18"	36"	18"	36"	36"	42"	54"	24"
24"	68"	68"	50"	50"	36"	36"	26"	26"	68"	68"	68"	38"

2000 PSF SOIL (SAND & GRAVEL WITH CLAY)

THRUST BLOCKING DETAIL
NOT TO SCALE

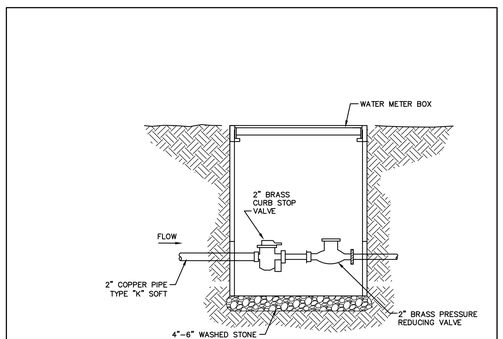
NOTES:

1. BASED ON 200 PSI STATIC PRESSURE PLUS AWWA WATER HAMMER ALLOWANCE.
2. ALL BEARING SURFACES TO BE CARRIED TO UNDISTURBED GROUND.
3. THRUST BLOCKS TO BE USED AT ALL LINES OPERATING UNDER PRESSURE.
4. KEEP ALL PIPING JOINTS CLEAR OF CONCRETE THRUST BLOCKS.

CITY OF CONCORD STANDARD DETAIL
TYPICAL THRUST BLOCK

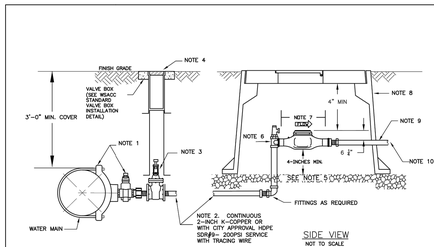
No.	Date	By	REVISION

Drawn By:	Checked By:	Approved By:	Date	Sht	of
SVM	PK	MSH	05/11	1	1



W 16 WATER METER BOX DETAIL

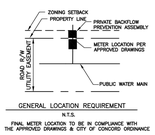
UPDATED MARCH, 2017
NOT TO SCALE



SIDE VIEW
NOT TO SCALE

GENERAL NOTES:

1. PROPOSED CONNECTIONS SHALL BE MADE BY A NORTH CAROLINA REGISTERED AND LICENSED CONTRACTOR UNDER THE SUPERVISION OF AUTHORIZED CITY OF CONCORD STAFF.
   2-INCH TAPPING SADDLE: 2-INCH TAPPING SADDLES SHALL BE BRASS MANUFACTURED BY FORD "S-70", MUELLER "H-134-20", OR EQUAL. 6-INCH TO 12-INCH TAPPING SADDLE SHALL BE DOUBLE STRAP, STAINLESS STEEL, EPOXY OR NYLON COATED; OR SOLID BRASS MANUFACTURED BY SMITH BLAIR "317" OR ROMAC "202N". CORPORATION STOPS SHALL BE HIGH PRESSURE RATED AT 150 PSI BRASS COMPRESSION FITTING TYPE WITH STANDARD THREADS FOR INSERTION INTO THE TAPPING SADDLE AND WITH SERVICE PIPE CONNECTION INCLUDING COUPLING AND GASKET. CORPORATION STOPS MANUFACTURED BY MUELLER "H-25008", FORD, OR EQUIVALENT.
2. 2-INCH DIAMETER K-COPPER PIPE OR WITH CITY APPROVAL HDPE SDR#9 200PSI RATED WITH TRACING WIRE AND WITH EITHER "FRIALEN" ELECTROFUSION COUPLING FITTINGS "2"PS-SDR#9" OR 2"PSX2"PS BRASS WITH PROTECTIVE SLEEVES BY "INDEPENDENT PIPE PRODUCTS" AND 2" BRONZE 90-DEGREE ELBOWS, AS APPLICABLE.
3. GATE VALVE SHALL BE 2-INCH EPOXY COATED CAST IRON RESILIENT WEDGE FIP TO FIP CONNECTION MANUFACTURE AMERICAN FLOW CONTROL, MODEL "3045S", MUELLER, OR AN APPROVED EQUIVALENT.
4. STANDARD VALVE BOX PROTECTION WITH 2'-0" X 2'-0" CONCRETE PROTECTOR RING, CAST IRON IN ACCORDANCE WITH CITY OF CONCORD DETAILS.
5. 4 TO 6-INCHES OF WASHED STONE IN METER BOX BASE AND FOOTINGS.
6. 2-INCH BRASS METER VALVE FLANGE MANUFACTURED BY FORD "BFA13-777W" OR EQUAL.
7. THE 2-INCH AMP METER WITH 2 BOLTS FLANGED ENDS, MANUFACTURED BY MUELLER SYSTEMS, MODEL: MVR160; OR AN APPROVED EQUIVALENT SHALL BE SET AFTER THE APPURTENANCES REQUIRED FOR THE METER INSTALLATION ARE IN PLACE AND DEEMED ACCEPTABLE BY THE CITY OF CONCORD.
8. METER BOX SHALL BE GLASMASTERS UNDERGROUND ENCLOSURE, 17X30 STRAIGHT WALL -OPEN BOTTOM TIER 15 LOAD RATING BOX TIER WITH TWO MOUSE HOLES; AND SHALL HAVE A MINIMUM 18-INCH HEIGHT AND BE GRAY IN COLOR, MODEL NUMBER S173018S20N15-1; OR EQUIVALENT. ADDITIONAL BOX HEIGHT MUST BE AUTHORIZED BY THE CITY.
   METER BOX LID SHALL BE GLASMASTERS UNDERGROUND ENCLOSURES, 17X30 COVER WITH SINGLE AMR MOUNTING HOLE, 2 THRU W/4.125 DIA X 0.25 DEPTH COUNTER BORE, WITH TIER 15 LOAD RATING AND GRAY IN COLOR, MODEL NUMBER S173030H15-1-WAL OR EQUIVALENT. THE METER BOX RIM AND COVER SHALL BE SET FLUSH WITH FINAL GRADE.
9. 12-INCH BRASS NIPPLE PAST BOX
10. REQUIRED BACKFLOW PREVENTION ASSEMBLY IN ACCORDANCE WITH THE CITY OF CONCORD CROSS-CONNECTION CONTROL ORDINANCE.



GENERAL LOCATION REQUIREMENT
N.T.S.

FINAL METER LOCATION TO BE IN COMPLIANCE WITH THE APPROVED DRAWINGS & CITY OF CONCORD ORDINANCE

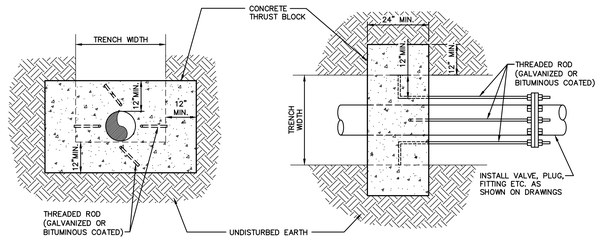
UNION STREETSCAPE WATER METER STANDARD DETAIL

No.	Date	By	REVISION

Drawn By:	Checked By:	Approved By:	Date	Sht	of
			07/21		

ADDITIONAL WATER METER NOTES:

1. LIDS FOR PRESSURE REDUCING AND SHUT-OFF VALVE METER BOXES AND AIR RELEASE VALVE METER BOXES SHALL SHALL BE SOLID WITH NO AUTOMATED READER MOUNTING HOLE.
2. ALL LIDS SHALL INCLUDE A STAMP INDICATING THE LOAD RATING OF THE LID AND BOX.



NOTES:

1. FITTING JOINTS SHALL NOT BE POURED IN CONCRETE OR HAVE CONCRETE SPILLED ON THE BOLTS OR NUTS. THE FITTING SHALL BE WRAPPED IN A LAYER OF POLYETHYLENE PLASTIC PRIOR TO POURING THE THRUST BLOCK.
2. ROD AND EYE BOLT DIAMETER SHALL BE A MINIMUM OF 3/4" AND SHALL MATCH THE SIZE OF THE BOLT PROVIDED WITH THE FITTING.
3. CONTRACTOR SHALL REPLACE FITTING BOLTS WITH THREADED ROD FOR 1/2 OF THE BOLTS SUPPLIED WITH EACH FITTING. RODS SHALL BE EQUALLY SPACED.

W 21 DEADMAN

UPDATED MARCH, 2017
NOT TO SCALE

mcgill
1240 19th Street Lane NW
Hickory, NC 28601
828.328.2024
NC Firm License # C-0459
mcgillassociates.com

PROFESSIONAL ENGINEER SEAL 041598 — 7/22/2021

CALL 811 BEFORE YOU DIG — 811 SAFE DIGGING PARTNER

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS

CITY OF CONCORD

CABARRUS COUNTY, NORTH CAROLINA

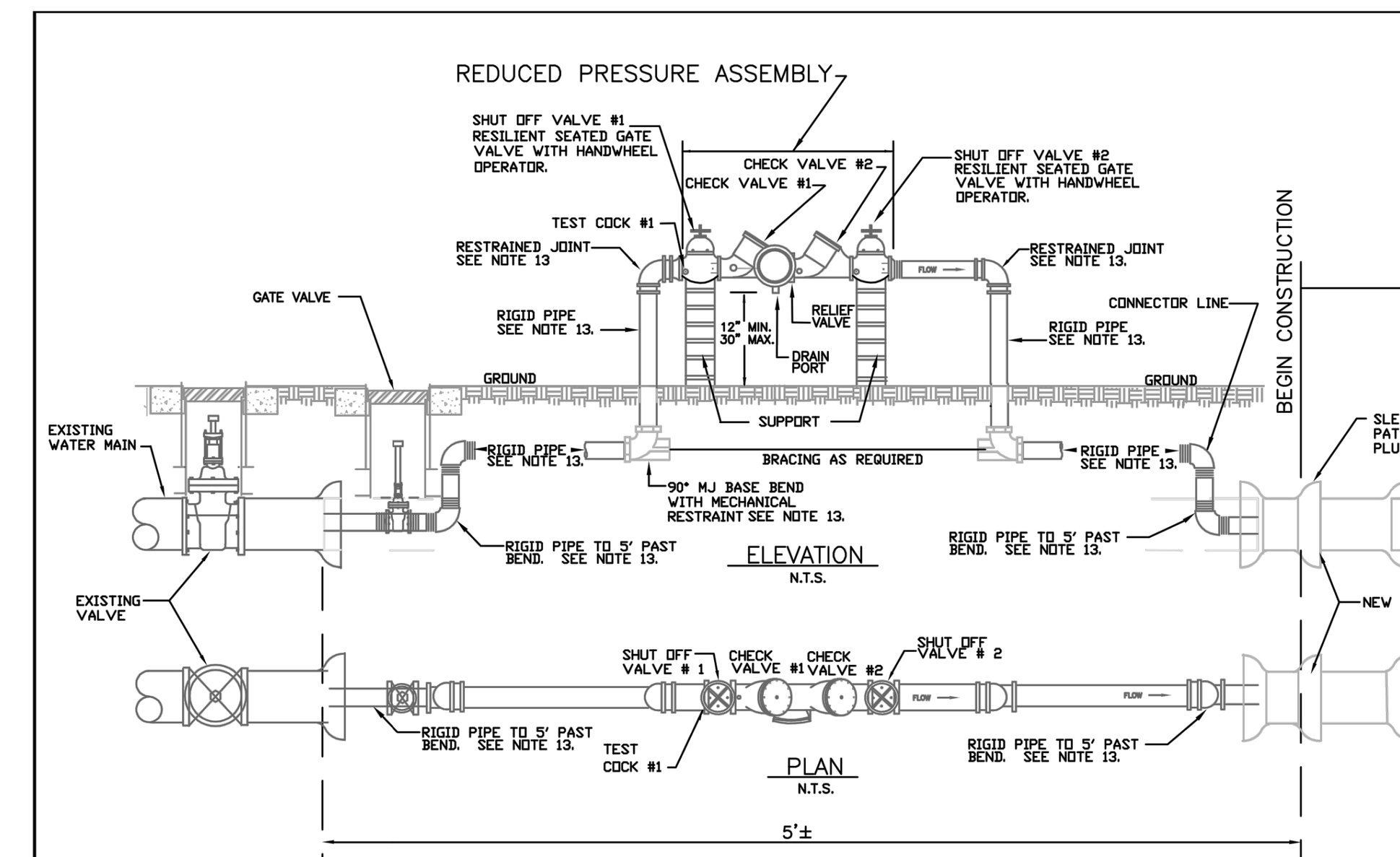
NOT TO SCALE

STANDARD UTILITY DETAILS

OFFICE MANAGER	DESIGNER			
D.G. CHAPMAN	M. OETTING			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M.J. NORRIS	D.G. CHAPMAN	JULY, 2021	19.01726	N/A

SHEET
C-508

P:\2019\19.01726-CONCORDNC-UNION STREETSCAPE PROJECT\DRAWINGS\19.01726_UTILITY DETAILS.DWG PLOT DATE: 7/22/2021 7:48 AM RUSSELL COX



TEMPORARY JUMPER CONNECTION

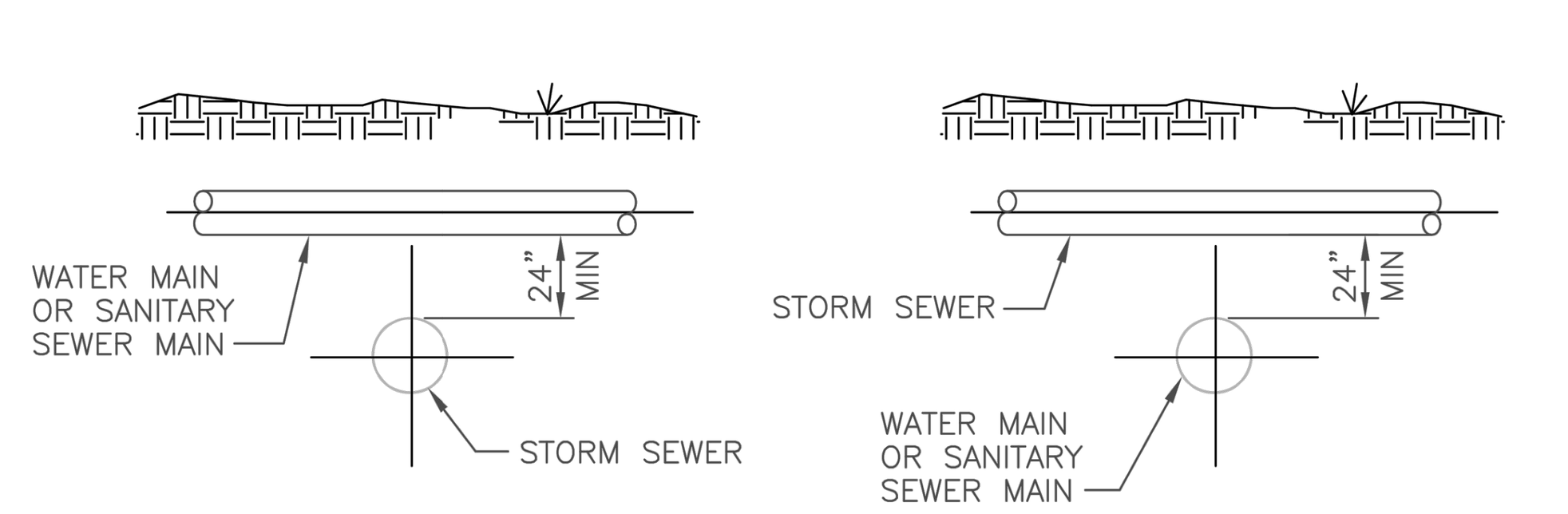
NOTES:
1. INSTALL CONNECTOR LINE FROM EXISTING BLOW-OFF ASSEMBLY TO NEW MAIN FOR FILLING, TESTING, AND STERILIZING NEW MAIN.
2. CONNECTOR LINE TO BE ASSEMBLED WITH CHECK VALVE AND TO BE OPERATED INDEPENDENT OF EXISTING MAIN.
3. BLOCKING ON EXISTING LINE NOT TO BE DISTURBED.
4. FINAL CONNECTION TO EXISTING MAIN TO BE MADE ONLY AFTER TOTAL PROJECT HAS BEEN ACCEPTED BY THE CITY OF CONCORD INSPECTIONS DEPARTMENT.
5. VALVES ON EXISTING SYSTEM TO BE OPERATED BY THE CITY OF CONCORD'S WATER RESOURCES DEPARTMENT STAFF ONLY.
6. ONLY ONE CONNECTION WILL BE ALLOWED BETWEEN THE EXISTING SYSTEM AND THE NEW CONSTRUCTION UNTIL TESTING AND DISINFECTION IS COMPLETE.
7. WATER IN REASONABLE AMOUNTS REQUIRED FOR AN IN CONNECTION WITH THE WORK TO BE PERFORMED WILL BE FURNISHED AT LOCATIONS AS APPROVED BY OWNER AT RATES SPECIFIED BY OWNER AND IN ACCORDANCE WITH THE FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES AND POLICIES.
8. CONTRACTOR SHALL FURNISH NECESSARY PIPE, HOSE, REDUCED PRESSURE ZONE BACK FLOW DEVICE, AS APPROVED BY THE OWNER AND METER APPROVED BY OWNER, NOZZLES, AND TOOLS AND SHALL PERFORM ALL NECESSARY LABOR.
9. CONTRACTOR SHALL ENSURE THAT THE EQUIPMENT HAS BEEN INSPECTED BY AND APPROVED BY THE OWNER AND HAS OBTAINED THE APPLICABLE PERMITS AND CERTIFICATIONS PRIOR TO WATER SYSTEM CONNECTION.
10. CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE OWNER (WHO WILL FIX THE LOCATION, TIME, RATE, AND DURATION OF EACH WITHDRAWAL FROM THE DISTRIBUTION SYSTEM) AS TO THE AMOUNT OF WATER REQUIRED AND THE TIME WHEN THE WATER WILL BE NEEDED. UNNECESSARY WASTE OF WATER WILL NOT BE TOLERATED. IF CONTRACTOR WASTES WATER, AS DETERMINED BY OWNER, CONTRACTOR SHALL BE REQUIRED TO OBTAIN ALL REMAINING WATER NECESSARY FOR COMPLETION OF THE WORK MEASURED THROUGH A METER AND AT THE CONTRACTOR'S EXPENSE.
11. SPECIAL HYDRANT WRENCHES SHALL BE USED FOR OPENING AND CLOSING FIRE HYDRANTS. IN NO CASE SHALL PIPE WRENCHES BE USED FOR THIS PURPOSE.
12. 6" TO 10" RP SHALL BE SUPPORTED WITH ADEQUATE SUPPORT PEDESTAL(S). SUPPORT PEDESTALS SHALL NOT BLOCK RELIEF VALVE OR DRAIN PORT.
13. 2" TO 3" K-COPPER PIPE, 4" TO 10" DIP. RESTRAINED JOINTS SHALL BE MEGA LUG RESTRAINTS OR APPROVED EQUAL.
14. TEST COCK SHALL BE UPSTREAM OF SHUT-OFF VALVE #1 AND IS PART OF THE APPROVED ASSEMBLY.

WATER MAIN SIZE	MIN. BACKFLOW DEVICE SIZE	MIN. END OF LINE BLOWOFF
6" OR 8"	2"	2"
12"	4"	2.5"
16"	6"	4"
24"	8"	6"

CITY OF CONCORD STANDARD DETAIL
TEMPORARY JUMPER CONNECTION

No.	Date	By	REVISION

Drawn By:	Checked By:	Approved By:	Date	Sht	of
SVM	PK	MSH	05/11	1	1



NOTE:

WHEN A WATER MAIN OR SANITARY SEWER MAIN CROSSES OVER OR UNDER A STORM SEWER AND CONDITIONS PREVENT THE REQUIRED 24" MIN VERTICAL SEPARATION, THE WATER MAIN OR SANITARY SEWER MAIN SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A MINIMUM DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING.

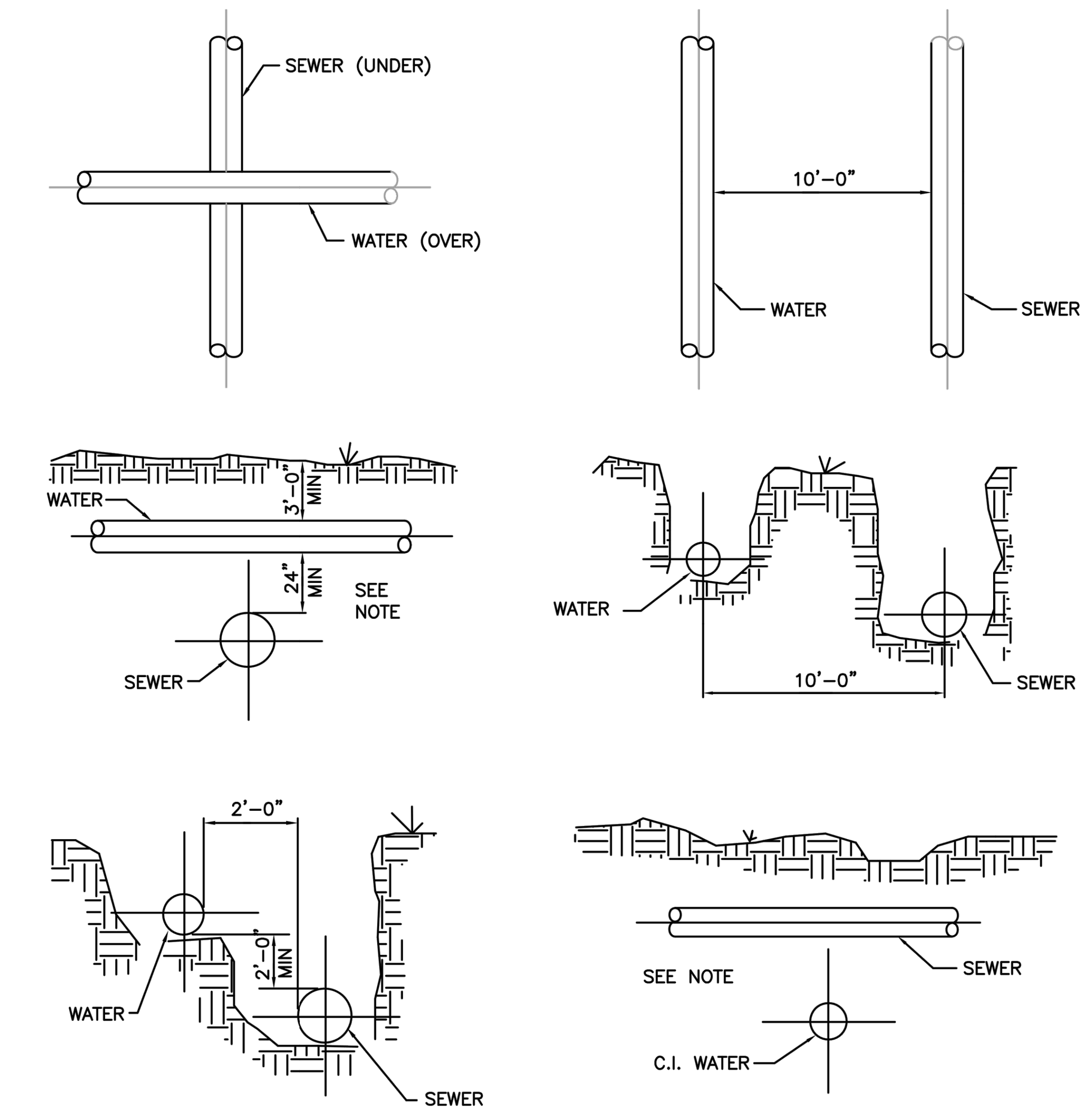
FOR ALL WATER MAINS AT THE PIPE MATERIAL TRANSITIONS FROM C-900 PVC TO DUCTILE IRON (DI) PIPE, RESTRAINED MECHANICAL JOINT SLEEVES SHALL BE UTILIZED TO JOIN THE PIPES.

CITY OF CONCORD STANDARD DETAIL
RELATION OF WATER MAINS AND SEWER MAINS TO STORM SEWER

No.	Date	By	REVISION
1.	3/4/16	By	WATER PIPE TRANSITION BY MJ SLEEVES BY MSH

Drawn By:	Checked By:	Approved By:	Date	Sht	of
SVM	MSH		11/09		

RELATION OF WATER MAINS TO SEWER MAINS

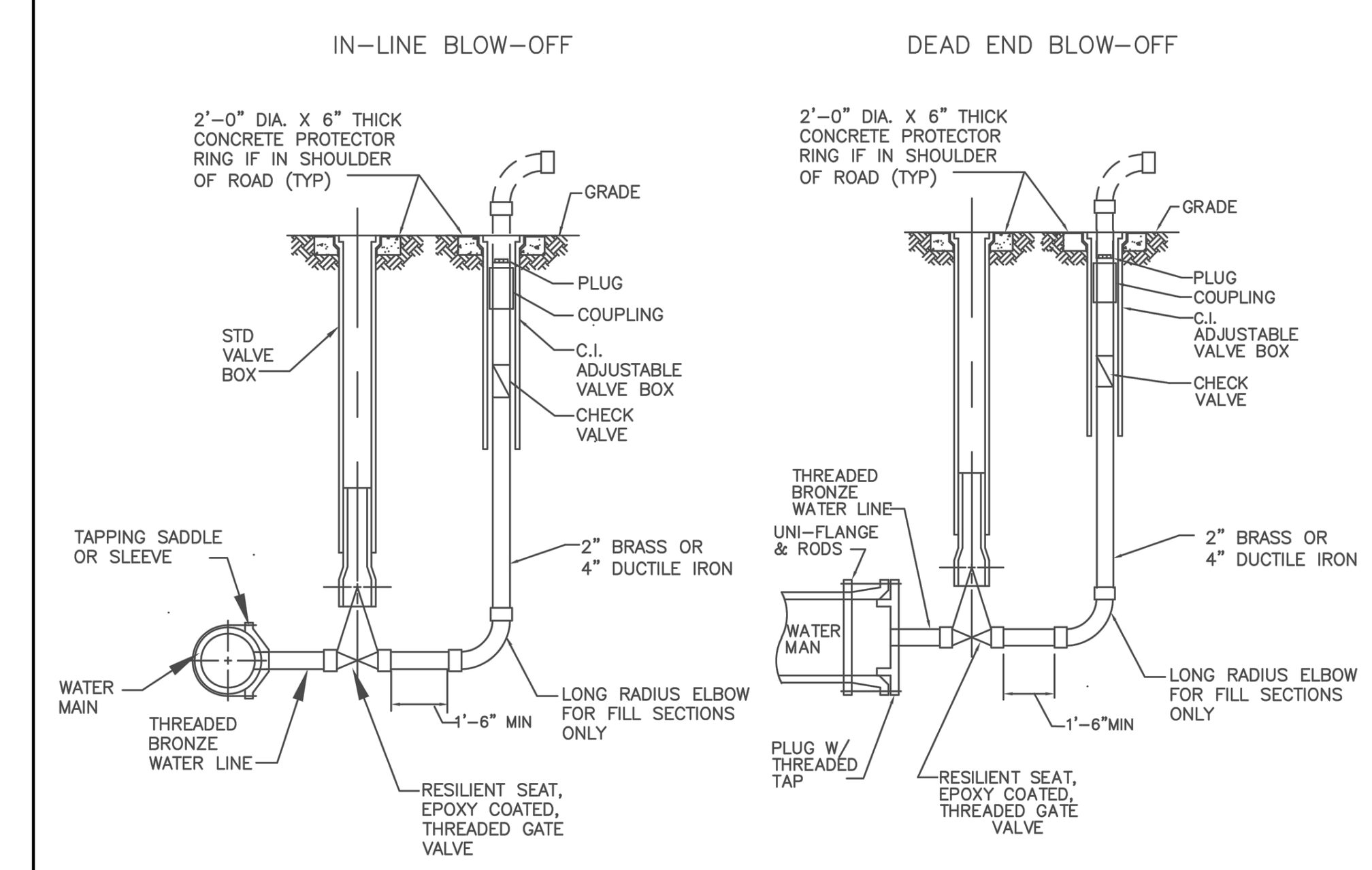


NOTE:
WHEN THE WATER MAIN IS ABOVE THE SEWER, BUT WITH LESS THAN 24" OF VERTICAL CLEARANCE, OR WHEN THE SEWER IS ABOVE THE WATER MAIN; BOTH THE WATER MAIN AND THE SEWER MAIN SHALL BE CONSTRUCTED OF 20 LINEAR FEET OF FERROUS MATERIALS LOCATED ON CENTER TO THE CROSSING WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A MINIMUM LATERAL DISTANCE OF 10 FEET TO EACH SIDE OF THE CROSSING, AS MEASURED AT RIGHT ANGLES TO THE SEWER CROSSING.
FOR ALL WATER MAINS AT THE PIPE MATERIAL TRANSITIONS FROM C-900 PVC TO DUCTILE IRON (DI) PIPE, RESTRAINED MECHANICAL JOINT SLEEVES SHALL BE UTILIZED TO JOIN THE PIPES.

CITY OF CONCORD STANDARD DETAIL
RELATION OF WATER MAINS TO SEWER MAINS

No.	Date	By	REVISION
1.	3/4/16	By	WATER PIPE TRANSITION BY MJ SLEEVES BY MSH

Drawn By:	Checked By:	Approved By:	Date	Sht	of
SVM	GS	MSH	2/10		

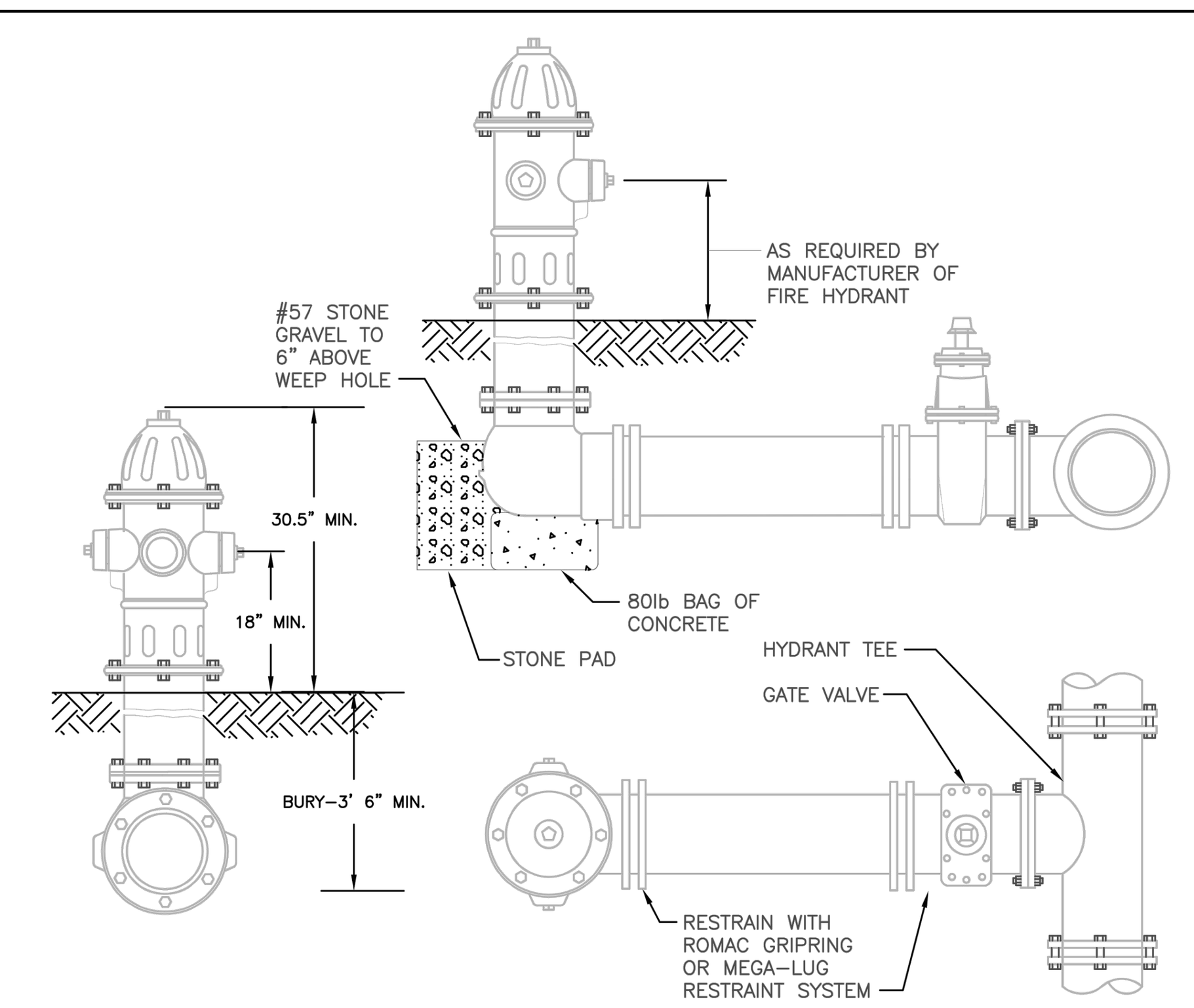


GENERAL NOTES:
1. INSTALL 2" BLOW-OFF ON 2" THRU 18" MAINS.
2. INSTALL 4" BLOW-OFF ON 20" OR LARGER MAIN.
3. IF THE SEPARATION BETWEEN THE CONTROL VALVE AND THE BLOW-OFF DOES NOT ALLOW THE INSTALLATION OF THE CONCRETE PROTECTOR RINGS, A 24" BY 24" BY 6" THICK CONCRETE PAD SHALL BE FORMED AND POURED AROUND THE VALVE BOX. THE EDGE OF THE VALVE BOX RIM MUST BE AT LEAST 8" FROM THE EDGE OF THE CONCRETE PAD.

CITY OF CONCORD STANDARD DETAIL
BLOW-OFF ASSEMBLY

No.	Date	By	REVISION

Drawn By:	Checked By:	Approved By:	Date	Sht	of
SVM	PLK	MSH	03/10		



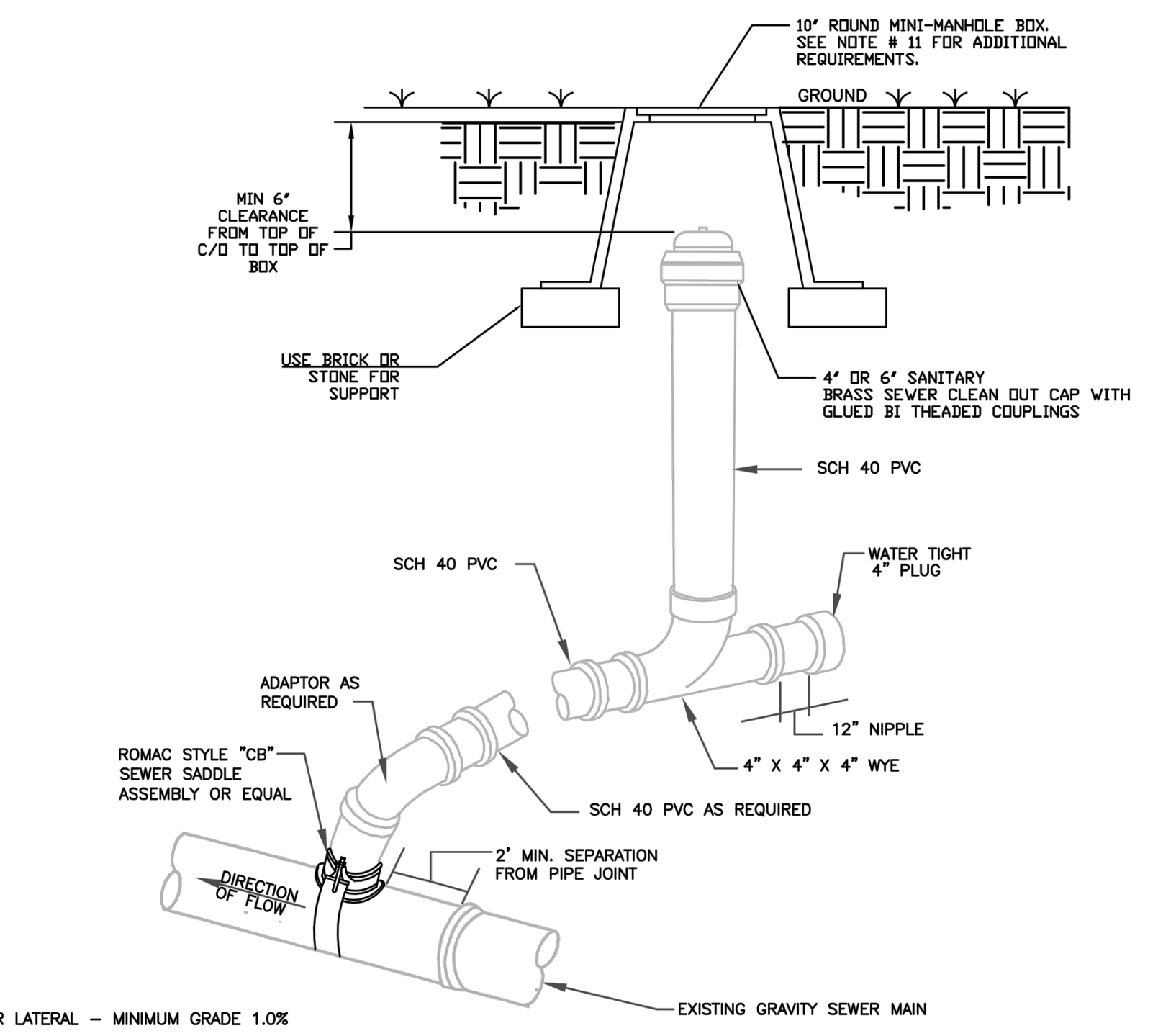
GENERAL NOTES:
1. HYDRANTS SHALL BE MUELLER COMPANY – MODEL: SUPER CENTURION 250; AMERICAN FLOW CONTROL – MODEL 5¼" B-84-B; CLOW VALVE COMPANY – MODEL: MEDALLION; OR EQUAL WITH BLACK PRIMER FINISH.
2. HYDRANT SHALL HAVE INTEGRAL SNAP-TIGHT STYLE STORZ CONNECTION WITH 5¼" VALVE OPENING, OPEN LEFT, 1½" PENTAGON NUTS, TWO-2 ½" NST CONNECTIONS, ONE-5" STORZ CONNECTION, DRAIN HOLES OPEN, AND 6" MJ SHOE.
3. MINIMUM BURY DEPTH OF 3'-6".
4. ALL HYDRANTS SHALL STAND PLUMB. HYDRANTS WITH PUMPER NOZZLES SHALL HAVE HOSE NOZZLES PARALLEL WITH, AND THE PUMPER NOZZLE PERPENDICULAR TO, THE CURB LINE. ALL HYDRANTS SHALL BE ORIENTED SO THAT THE PUMPER NOZZLE FACES THE CURB OR AS DIRECTED BY THE CITY.
5. HYDRANT SHALL BE LOCATED AT LEAST 3' BEHIND THE CURB AND LESS THAN 10' FROM THE EDGE OF THE ROAD PAVEMENT OR AS DIRECTED BY THE CITY.
6. ALL OTHER MATERIALS AND INSTALLATION MUST CONFORM WITH THE TECHNICAL STANDARDS OF WSACC AND CITY OF CONCORD.

FIRE HYDRANT PAINT COLOR CODE REQUIREMENTS:
ALL NEW FIRE HYDRANTS INSTALLED IN THE CITY OF CONCORD SHALL BE PAINTED IN ACCORDANCE WITH THE FOLLOWING COLORS:
1. HYDRANTS ON PUBLIC WATER MAINS SHALL BE PAINTED SAFETY YELLOW, SHERWIN WILLIAMS STEEL MASTER 9500 B56-300 SERIES LRV 30% OR EQUAL.
2. PRIVATE HYDRANTS ON PRIVATE WATER MAINS SHALL BE PAINTED SAFETY RED, SHERWIN WILLIAMS SW4081 LVR 11% OR EQUAL.
FOR ALL FIELD PAINTING, ALL SURFACES SHALL BE SANDBLASTED AND PROPERLY PREPARED ACCORDING TO THE PAINT MANUFACTURER'S RECOMMENDATION PRIOR TO PAINTING. ALL FIRE HYDRANTS AND ANY PORTIONS OF THE HYDRANT ASSEMBLY EXPOSED TO VIEW (ABOVE ADJACENT GROUND ELEVATION) SHALL BE PAINTED WITH TWO (2) OR MORE EVENLY APPLIED COATS OF HYDRANT ENAMEL PAINT. HYDRANTS WILL BE RETOUCHED / REPAINTED AS NECESSARY AFTER INSTALLATION AND PRIOR TO ACCEPTANCE.

CITY OF CONCORD STANDARD DETAIL
FIRE HYDRANT

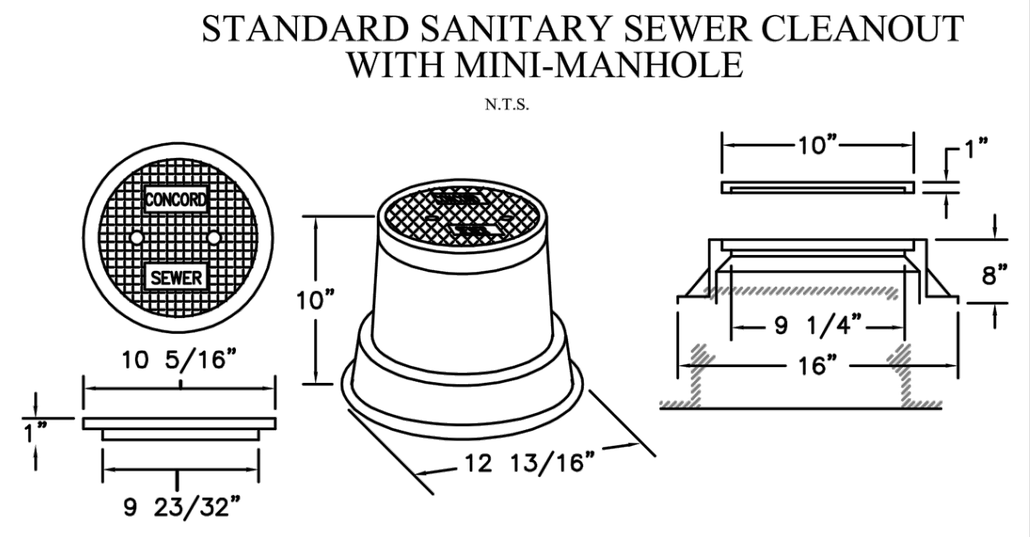
No.	Date	By	REVISION
2	6/9/10	SVM	PUBLIC HYDRANT COLOR REVISION
1	3/31/10	SVM	PRIVATE HYDRANT COLOR REVISION

Drawn By:	Checked By:	Approved By:	Date	Sht	of
SVM	MSH		09/08		



GENERAL NOTES:
1. 4" AND 6" SEWER LATERAL – MINIMUM GRADE 1.0%
2. THE LATERAL SHALL BE A MINIMUM OF 5' BELOW THE EDGE OF PAVEMENT, EXCEPT WHERE DEPTH OF SEWER MAIN WILL NOT PERMIT.
3. DUCTILE IRON PIPE (DIP) MATERIAL SHALL BE USED WHERE LESS THAN 3' BUT NOT LESS THAN 18" OF COVER IS MAINTAINED OVER THE SEWER LATERAL OR WHERE THE LATERAL HAS 18' OR MORE GROUND COVER OVER THE LATERAL.
5. ALL SCHEDULE 40 PVC LATERALS SHALL BE INSTALLED USING CLASS B BEDDING. DIP SERVICE LATERAL SHALL USE CLASS C BEDDING.
6. A ROMAC STYLE "CB" SEWER SADDLE OR EQUAL WITH STAINLESS STEEL STRAP, BOLTS, NUTS, AND WASHERS SHALL BE INSTALLED ACCORDING TO MANUFACTURES RECOMMENDATION ON EXISTING SEWER MAINS. IMPORTANT: THE STRAP IS TO BE TIGHTENED EVENLY TO ENSURE THE SADDLE REMAINS ON CENTER WITH THE SEWER SERVICE HOLE CUT OUT.
7. THE SEWER SADDLE TAP SHALL BE LOCATED ABOVE THE FLOW LINE OF THE SEWER MAIN SUCH THAT THE BRANCH PIPE AXIS FORMS AN ANGLE OF 30-DEGREES WITH THE HORIZONTAL.
6. WHERE THE DEPTH OF THE WYE BRANCH IS MORE THAN 10', A STANDPIPE SHALL BE INSTALLED TO BRING CONNECTIONS WITHIN 8' OF THE GROUND SURFACE, UNLESS A GREATER DEPTH THAN 8' IS REQUIRED TO PROVIDE THE MINIMUM SLOPE IN THE SERVICE.
7. SEWER LATERAL CLEANOUTS SHALL BE LOCATED AT THE EDGE OF THE RIGHT-OF-WAY OR PUBLIC UTILITY EASEMENT. SEWER LATAERALS THAT EXTEND FROM SEWER MAINS LOCATED WITHIN THE ROAD RIGHTS-OF-WAY SHALL BE LOCATED AT THE CENTER OF THE LOT OR AS INDICATED ON THE APPROVED DESIGN DRAWINGS.
8. SEWER LATERAL CLEANOUTS SHALL NOT BE LOCATED WITHIN SIDEWALKS, DRIVEWAYS OR ANY FEATURE CONVEYING OR POOLING STORMWATER.
9. SEWER LATERALS SHOULD TIE TO THE SEWER MAIN, BUT WHEN INDICATED ON THE DRAWINGS, THE SEWER LATERAL CAN BE INSTALLED INTO A MANHOLE. A MAXIMUM OF 3 LATERALS TO A DEADEND MANHOLE AND A MAXIMUM OF 2 LATERALS TO AN IN-LINE MANHOLE.
10. THE SEWER LATERAL MUST NOT EXTEND MORE THAN 6" BEYOND THE MANHOLE WALL AND THE LATERAL INVERT SHALL BE LEVEL WITH THE MANHOLE SHELF AND A CHANNEL SHALL BE BUILT TO PROVIDE SMOOTH FLOW FROM THE LATERAL TO THE MAIN LINE INVERT.
11. THE CLEANOUT SHALL BE HOUSED IN A STANDARD 10" ROUND MINI-MANHOLE. FOR SEWER LATERAL CLEANOUTS LOCATED OUTSIDE OF AREAS SUBJECT TO PEDESTRIAN AND VEHICULAR TRAFFIC, THE MINI-MANHOLE SHALL BE PLASTIC, MANUFACTURED BY DFW PLASTICS, INC OR EQUAL. FOR ALL OTHER LOCATIONS AND/OR AREAS WHERE THE SEWER LATERAL CLEANOUTS WILL BE SUBJECT TO ANY PEDESTRIAN AND VEHICULAR TRAFFIC, THE MINI-MNAHOLES SHALL BE STEEL MANUFACTURED BY EAST JORDAN IRON WORKS, INC. OR EQUAL, AND SHALL BE TRAFFIC RATED.
12. A "S" SHALL BE SCRIBED IN THE FACE OF THE CURB ABOVE THE LOCATION OF INSTALLED SEWER LATERAL.

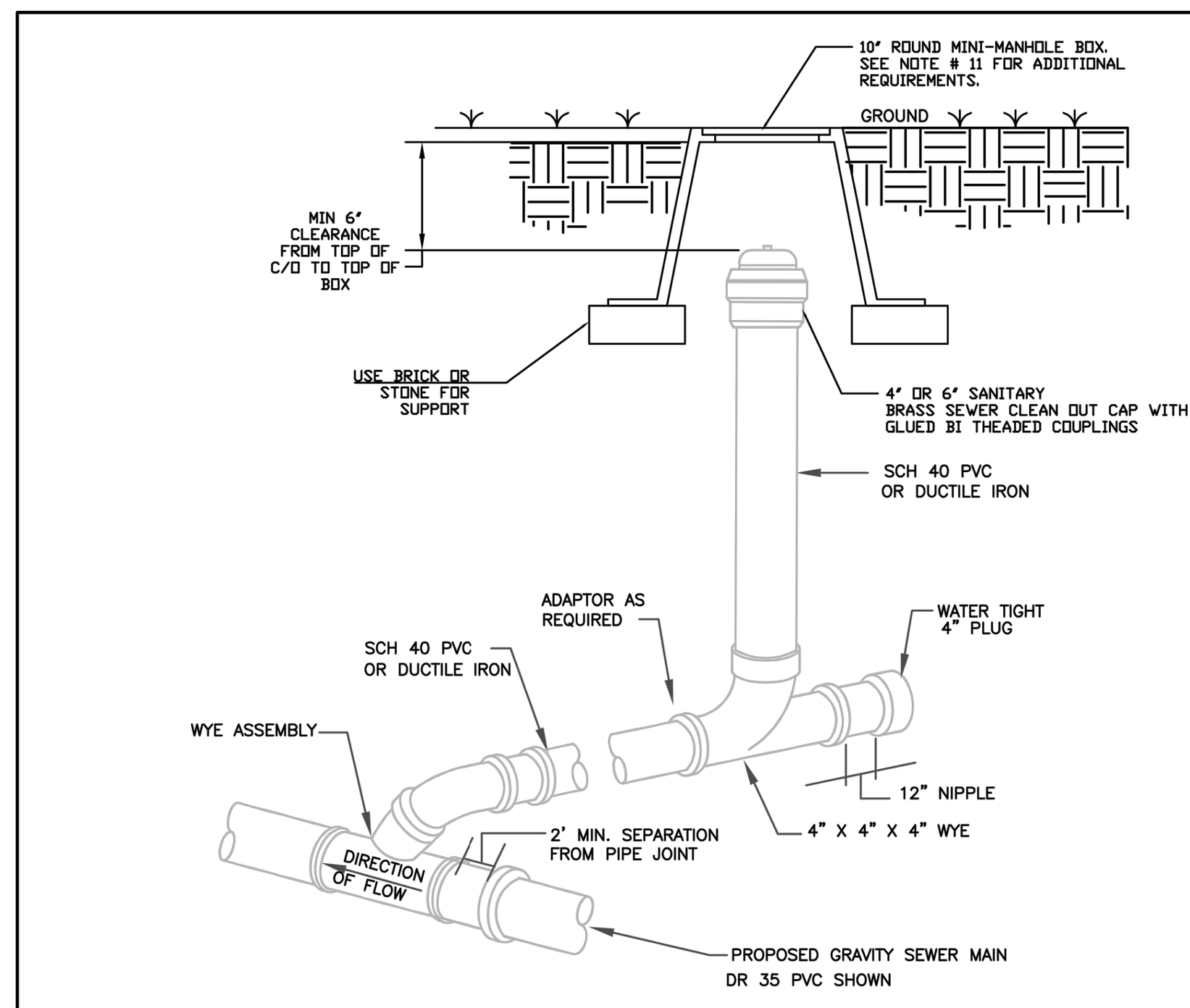
STANDARD SANITARY SEWER CLEANOUT WITH MINI-MANHOLE
N.T.S.



CITY OF CONCORD STANDARD DETAIL
SANITARY SEWER LATERAL INSTALLATION ON EXISTING SEWER MAIN

No.	Date	By	REVISION
1	6/18	SVM	Notes 11-12, Mini-manhole Protection

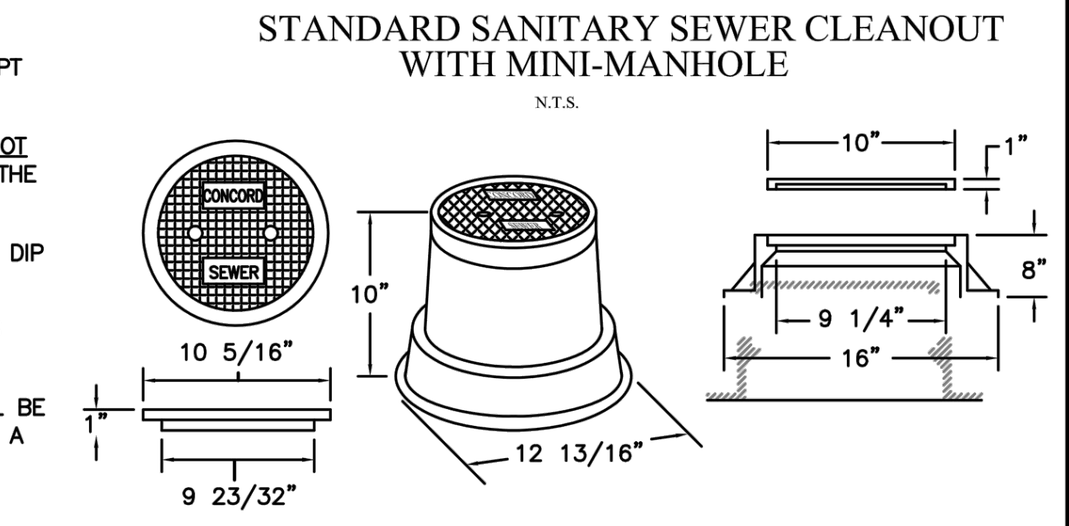
Drawn By:	Checked By:	Approved By:	Date	Sht	of
SVM	PK	MSH	02/11	1	1



STANDARD SANITARY SEWER LATERAL WITH MINI-MANHOLE
N.T.S.

GENERAL NOTES:
1. 4" AND 6" SEWER LATERAL – MINIMUM GRADE 1.0%
2. THE LATERAL SHALL BE A MINIMUM OF 5' BELOW THE EDGE OF PAVEMENT, EXCEPT WHERE DEPTH OF SEWER MAIN WILL NOT PERMIT.
3. DUCTILE IRON PIPE (DIP) MATERIAL SHALL BE USED WHERE LESS THAN 3' BUT NOT LESS THAN 18" OF COVER IS MAINTAINED OVER THE SEWER LATERAL OR WHERE THE LATERAL HAS 18' OR MORE GROUND COVER OVER THE LATERAL.
4. ALL SCHEDULE 40 PVC LATERALS SHALL BE INSTALLED USING CLASS B BEDDING. DIP SEWER LATERAL SHALL USE CLASS C BEDDING.
5. THE SEWER LATERAL WYE SHALL BE LOCATED SUCH THAT THE BRANCH PIPE AXIS FORMS AN ANGLE OF 30-DEGREES WITH THE HORIZONTAL.
6. WHERE THE DEPTH OF THE WYE BRANCH IS MORE THAN 10', A STANDPIPE SHALL BE INSTALLED TO BRING CONNECTIONS WITHIN 8' OF THE GROUND SURFACE, UNLESS A GREATER DEPTH THAN 8' IS REQUIRED TO PROVIDE THE MINIMUM SLOPE IN THE SERVICE.
7. SEWER LATERAL CLEANOUTS SHALL BE LOCATED AT THE EDGE OF THE RIGHT-OF-WAY OR PUBLIC UTILITY EASEMENT. SEWER LATAERALS THAT EXTEND FROM SEWER MAINS LOCATED WITHIN THE ROAD RIGHTS-OF-WAY SHALL BE LOCATED AT THE CENTER OF THE LOT OR AS INDICATED ON THE APPROVED DESIGN DRAWINGS.
8. SEWER LATERAL CLEANOUTS SHALL NOT BE LOCATED WITHIN SIDEWALKS, DRIVEWAYS OR ANY FEATURE CONVEYING OR POOLING STORMWATER.
9. SEWER LATERALS SHOULD TIE TO THE SEWER MAIN, BUT WHEN INDICATED ON THE DRAWINGS, THE SEWER LATERAL CAN BE INSTALLED INTO A MANHOLE. A MAXIMUM OF 3 LATERALS TO A DEADEND MANHOLE AND A MAXIMUM OF 2 LATERALS TO AN IN-LINE MANHOLE.
10. THE SEWER LATERAL MUST NOT EXTEND MORE THAN 6" BEYOND THE MANHOLE WALL AND THE LATERAL INVERT SHALL BE LEVEL WITH THE MANHOLE SHELF AND A CHANNEL SHALL BE BUILT TO PROVIDE SMOOTH FLOW FROM THE LATERAL TO THE MAIN LINE INVERT.
11. THE CLEANOUT SHALL BE HOUSED IN A STANDARD 10" ROUND MINI-MANHOLE. FOR SEWER LATERAL CLEANOUTS LOCATED OUTSIDE OF AREAS SUBJECT TO PEDESTRIAN AND VEHICULAR TRAFFIC, THE MINI-MANHOLE SHALL BE PLASTIC, MANUFACTURED BY DFW PLASTICS, INC OR EQUAL. FOR ALL OTHER LOCATIONS AND/OR AREAS WHERE THE SEWER LATERAL CLEANOUTS WILL BE SUBJECT TO ANY PEDESTRIAN AND VEHICULAR TRAFFIC, THE MINI-MNAHOLES SHALL BE STEEL MANUFACTURED BY EAST JORDAN IRON WORKS, INC. OR EQUAL, AND SHALL BE TRAFFIC RATED.
12. A "S" SHALL BE SCRIBED IN THE FACE OF THE CURB ABOVE THE LOCATION OF INSTALLED SEWER LATERAL.

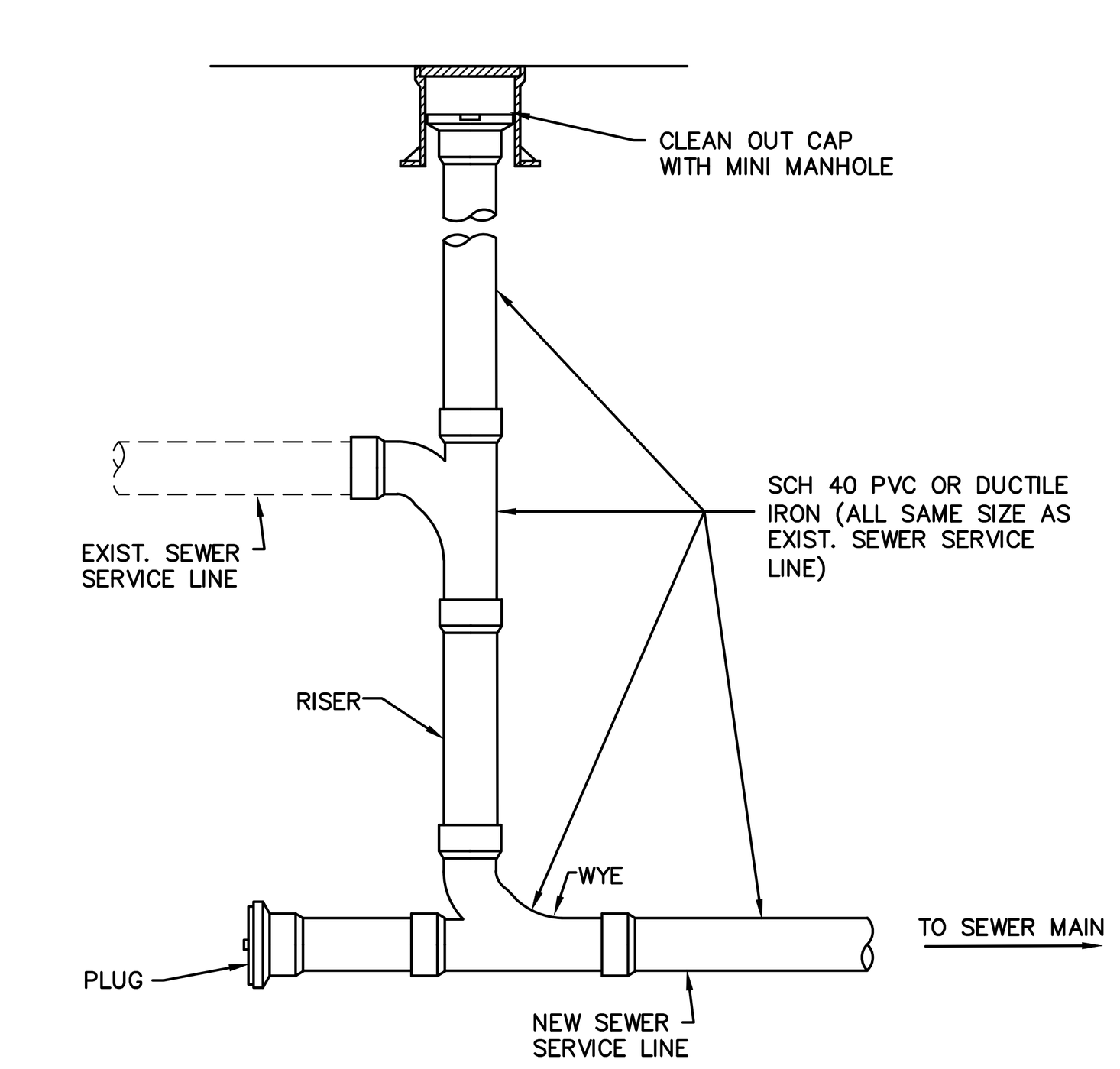
STANDARD SANITARY SEWER CLEANOUT WITH MINI-MANHOLE
N.T.S.



CITY OF CONCORD STANDARD DETAIL
SANITARY SEWER LATERAL INSTALLATION ON PROPOSED SEWER MAIN

No.	Date	By	REVISION

Drawn By:	Checked By:	Approved By:	Date	Sht	of
SVM	JC	MSH	02/16	1	1



SEWER SERVICE LOWERING

NOT TO SCALE

mcgill
1240 19th Street Lane NW
Hickory, NC 28601
828.328.2024
NC Firm License # C-0459
mcgillassociates.com

SEAL 041598 ENGINEER MATTHEW D. OETTING 7-22-2021

CALL 811 BEFORE YOU DIG – SAFE DIGGING PARTNER

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS
CITY OF CONCORD
CABARRUS COUNTY, NORTH CAROLINA

NOT TO SCALE

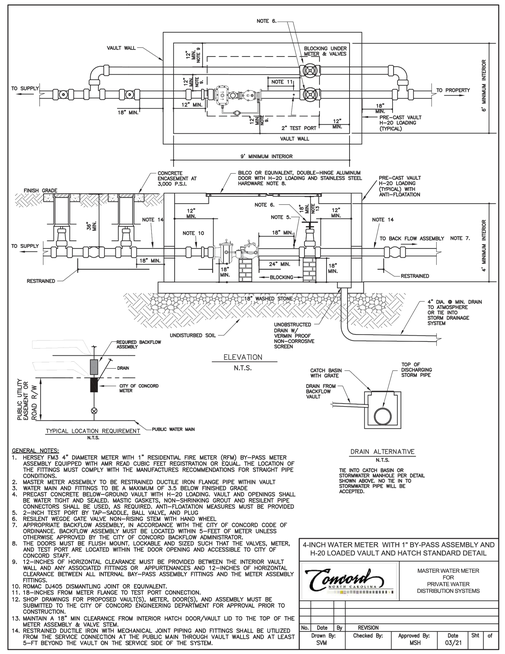
OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	M. OETTING
PROJECT MANAGER	REVIEWER
M.J. NORRIS	D.G. CHAPMAN

STANDARD UTILITY DETAILS

DATE	PROJECT #	FUNDING #
JULY, 2021	19.01726	N/A

SHEET
C-509

P:\2019\19.01726-CONCORDNC-UNION STREETSCAPE PROJECT\DRAWINGS\19.01726_UTILITY DETAILS.DWG PLOT DATE 7/22/2021 7:48 AM RUSSELL COX



GENERAL NOTES:

1. HERSEY FM3 4" DIAMETER METER WITH 1" RESIDENTIAL PIPE METER (RPM) BY-PASS METER ASSEMBLY EQUIPPED WITH AMR READ CUBIC FEET REGISTRATION OR EQUAL. THE LOCATION OF PIPE FITTINGS MUST COMPLY WITH THE MANUFACTURES RECOMMENDATIONS FOR STRAIGHT PIPE CONDITIONS.
2. MASTER METER ASSEMBLY TO BE RESTRAINED DUCTILE IRON FLANGE PIPE WITHIN VAULT
3. WATER MAIN AND FITTINGS TO BE A MAXIMUM OF 3.5 BELOW FINISHED GRADE
4. PRECAST CONCRETE BELOW-GROUND VAULT WITH H-20 LOADING. VAULT AND OPENINGS SHALL BE WATER TIGHT AND SEALED. MASTIC GASKETS, NON-SHRINKING GROUT AND RESILIENT PIPE CONNECTORS SHALL BE USED, AS REQUIRED. ANTI-FLOTATION MEASURES MUST BE PROVIDED
5. 2"-INCH TEST PORT BY TAP-SADDLE, BALL VALVE, AND PLUG
6. 12" MINIMUM CLEARANCE FROM VAULT WALL TO METER WHEEL.
7. APPROPRIATE BACKFLOW ASSEMBLY, IN ACCORDANCE WITH THE CITY OF CONCORD CODE OF ORDINANCE, BACKFLOW ASSEMBLY MUST BE LOCATED WITHIN 5-FEET OF METER UNLESS OTHERWISE APPROVED BY THE CITY OF CONCORD BACKFLOW ADMINISTRATOR.
8. THE DOORS MUST BE FLUSH MOUNT, LOCKABLE AND SIZED SUCH THAT THE VALVES, METER, AND TEST PORT ARE LOCATED WITHIN THE DOOR OPENING AND ACCESSIBLE TO CITY OF CONCORD STAFF.
9. 12-INCHES OF HORIZONTAL CLEARANCE MUST BE PROVIDED BETWEEN THE INTERIOR VAULT WALLS AND ANY ASSOCIATED FITTINGS OR APPURTENANCES AND 12-INCHES OF HORIZONTAL CLEARANCE BETWEEN ALL INTERNAL BAY-PASS ASSEMBLY FITTINGS AND THE METER ASSEMBLY FITTINGS.
10. ROMAC DJ405 DISMANTLING JOINT OR EQUIVALENT.
11. 18-INCHES FROM METER FLANGE TO TEST PORT CONNECTION.
12. SHOP DRAWINGS FOR PROPOSED VAULT(S), METER, DOOR(S), AND ASSEMBLY MUST BE SUBMITTED TO THE CITY OF CONCORD ENGINEERING DEPARTMENT FOR APPROVAL PRIOR TO CONSTRUCTION.
13. MAINTAIN A 18" MIN CLEARANCE FROM INTERIOR HATCH DOOR/VAULT LID TO THE TOP OF THE METER ASSEMBLY & VALVE STEM
14. ALL PIPE AND DUCTILE IRON WITH MECHANICAL JOINT PIPING AND FITTINGS SHALL BE UTILIZED FROM THE SERVICE CONNECTION AT THE PUBLIC MAIN THROUGH VAULT WALLS AND AT LEAST 5-FT BEYOND THE VAULT ON THE SERVICE SIDE OF THE SYSTEM.

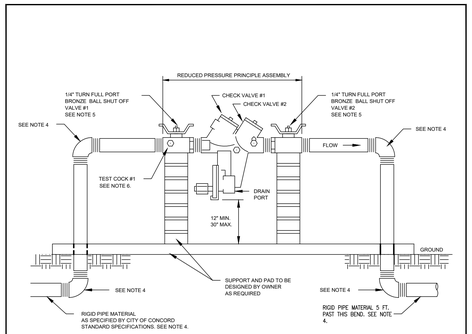
4-INCH WATER METER WITH 1" BY-PASS ASSEMBLY AND H-20 LOADED VAULT AND HATCH STANDARD DETAIL

Concord NORTH CAROLINA "A city rooted in history"

MASTER WATER METER FOR PRIVATE WATER DISTRIBUTION SYSTEMS

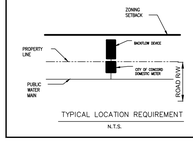
No.	Date	By	REVISION

Drawn By:	Checked By:	Approved By:	Date	Sht	of
SVM		MSH	03/21		



NOTES:

1. REDUCED PRESSURE ASSEMBLIES (RP) MUST CONFORM TO CITY OF CONCORD SPECIFICATIONS.
2. AN AIR GAP DRAIN PORT SHALL BE PROVIDED. SUPPORT PEDESTAL(S) SHALL BE PROVIDED AS NEEDED. SUPPORT PEDESTAL(S) SHALL NOT BLOCK RELIEF VALVE OR DRAIN PORT.
3. PROTECTIVE ENCLOSURE SHALL CONFORM WITH ASSE1060 AND SHALL BE IN ACCORDANCE CITY OF CONCORD SPECIFICATIONS, ORDINANCE, AND BACKFLOW MANUAL.
4. RIGID PIPE AND FITTINGS SHALL BE 3/4" TO 2" BRASS, K-COPPER, OR GALVANIZED PIPE.
5. THE CITY OF CONCORD APPROVED 3/4" TO 2" RP INCLUDES SHUT OFF VALVES #1 AND #2, AS PART OF THE ASSEMBLY. NO SUBSTITUTIONS SHALL BE ACCEPTED.
6. TEST COCK #1 SHALL BE UPSTREAM OF SHUT OFF VALVE #1 AND IS PART OF THE APPROVED ASSEMBLY.



STANDARD DETAIL BACKFLOW PREVENTION

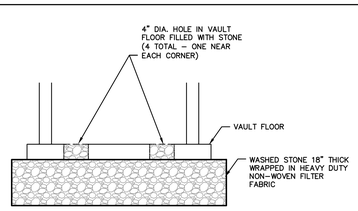
ABOVE GROUND ¾" INCH TO 2 INCH REDUCED PRESSURE ASSEMBLY (RP)

No.	Date	By	REVISION
3	9-13-07	SM	DOMESTIC DETAIL, PIPE EDITS
2	6-30-06	SM	LOCATION DETAIL
1	12-6-96	MP	END.

Drawn By:	Checked By:	Approved By:	Date	Sht	of
MP/SVM			11/94	1	15

ADDITIONAL REDUCED PRESSURE ZONE BACKFLOW PREVENTER NOTES:

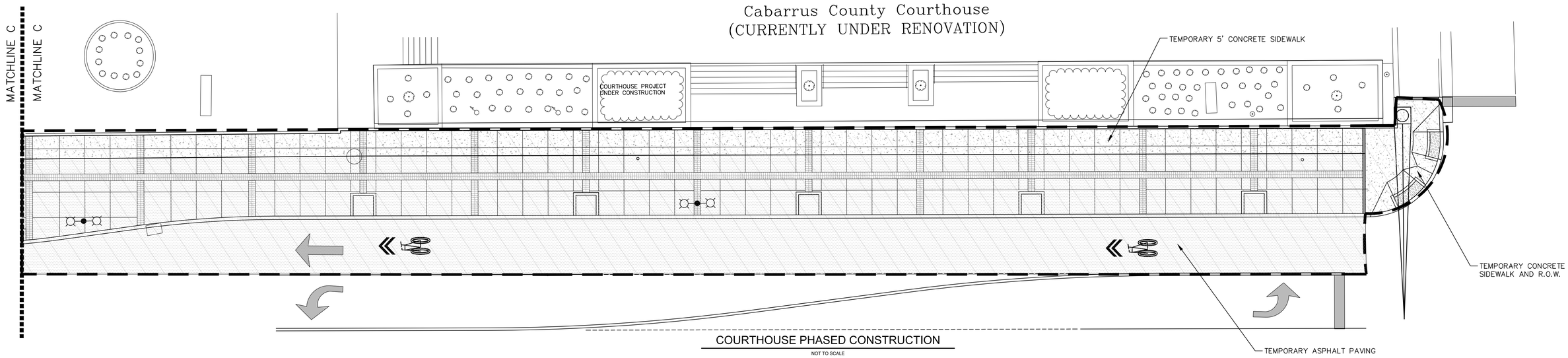
1. PROTECTIVE ENCLOSURE SHALL BE INSULATED FIBERGLASS.
2. HEAT SOURCE SHALL BE PROVIDED TO PROTECT TO -30 DEGREES. HEAT SOURCE MAY BE HEAT TAPE, CABLE, OR HEATER PER MANUFACTURERS STANDARD. HEAT SOURCE SHALL BE RATED FOR USE IN DAMP ENVIRONMENTS PER NATIONAL ELECTRIC CODE.
3. CONTRACTOR SHALL PROVIDE ELECTRICAL SERVICE TO RECEPTACLE INSIDE ENCLOSURE FOR HEAT SOURCE. RECEPTACLE SHALL BE RATED FOR OUTDOOR USE.
4. ENCLOSURE SHALL BE DESIGNED TO BE REMOVED OR OTHERWISE PROVIDE ACCESS FOR NORMAL MAINTENANCE.
5. ENCLOSURE SHALL BE LOCKABLE FOR SECURITY.
6. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF ENCLOSURE AND HEATING DEVICE FOR OWNER APPROVAL.



ALTERNATE METER VAULT INFILTRATION DRAINAGE

NOT TO SCALE

NOTE: THIS ALTERNATE METHOD OF METER VAULT DRAINAGE IS ONLY TO BE USED WHEN NO MEANS OF DAYLIGHTING A DRAINAGE PIPE OR CONNECTION TO CATCH BASIN AS SHOWN ON CITY DETAILS IS AVAILABLE



COURTHOUSE PHASED CONSTRUCTION

NOT TO SCALE

mcgill
1240 19th Street Lane NW
Hickory, NC 28601
828.328.2024
NC Firm License # C-0459
mcgillassociates.com

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 041598 MATTHEW D. OETTING 7/22/2021

CALL 811 BEFORE YOU DIG STATE DIGGING PARTNER

NO.	DATE	BY	DESCRIPTION

UNION STREET IMPROVEMENTS

CITY OF CONCORD

CABARRUS COUNTY, NORTH CAROLINA

NOT TO SCALE

OFFICE MANAGER	DESIGNER
D.G. CHAPMAN	M. OETTING
PROJECT MANAGER	REVIEWER
M.J. NORRIS	D.G. CHAPMAN

STANDARD UTILITY DETAILS

DATE	PROJECT #	FUNDING #
JULY, 2021	19.01726	N/A

SHEET

C-510

P:\2019\19.01726-CONCORDNC-UNION STREETSCAPE PROJECT\DRAWINGS\19.01726_UTILITY DETAILS.DWG PLOT DATE 7/22/2021 7:49 AM RUSSELL.COX