SITE DEMOLITION WORK

Demolition Bid Price shall include all necessary work as detailed on the Demolition Plans and as required to construct and install all new work as detailed on the New Work Site Plan and Site Grading Plan Sheets.

Demolition Work to include but not limited to the following items:

Existing Concrete and Asphalt Paving Removal
Existing Concrete Sidewalk Removal
Existing Storm Structure Retrofitting
Existing Meter/Utility Box Adjustments
Existing Retaining Wall Demolition
Existing Concrete Stair/Steps Demolition
Existing Concrete Curb & Gutter Demolition
Existing Granite Curbing Removal and Stored for Macon-Bibb Public Works pick up
Existing Chain-link Fence Removal
Existing Tree(s) Removal
Existing Driveway Demolition
Existing Street Markings Eradication, including removal of existing stop signs/posts
Existing Light Pole/Wiring Demolition/Removal

NEW SITE WORK

New Work Streetscape Improvements Bid Price shall include all necessary work as required to complete the construction of all new streetscape improvements as detailed on the New Work Site Plan and Site Grading Plan Sheets. All new construction shall include grading complete with required clearing and grubbing and sub-surface ground proof-rolling preparation for new improvements.

New Work to include but not limited to the followings items:

New Concrete and Asphalt Paving Replacement
New Concrete Sidewalk Installation
New Storm Drain Structures
New Storm Drain Pipes
New Concrete Curb & Gutter
New Chain-link Fence
New Driveway Pans
New Street Markings (Thermoplastic) Including Stop Sign/Posts
New Light Pole/Power Wiring
Grading Complete
Erosion Control BMP's Complete

NEW RETAINING WALLS – CONCRETE STAIRS/STEPS/LANDINGS

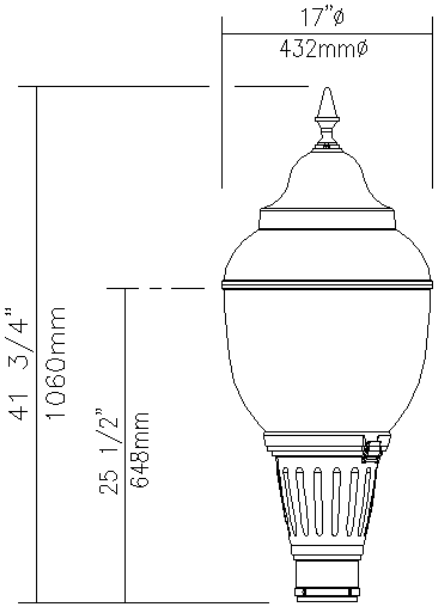
New Retaining Wall Bid Price shall include all necessary work as required to complete the construction of all new proposed retaining walls and associated concrete stairs/steps/landings as detailed on the New Work Site Plan and Site Grading Plan Sheets. Contractor Bid Price shall be based upon the reinforced concrete retaining wall detail shown on detail sheets, with Alternate Deduct Bid Price for Modular Retaining Wall, with Contractor responsible for structural design of modular walls.

New Work to include but not limited to the followings items:

New Retaining Walls, including required earthwork grading complete
New Concrete Stairs/Steps/Landings, including required earthwork grading complete

MACON-BIBB

LEDGINE



EPA: 2.17 sq ft / weight: 60 lb (27.3 kg)
Note: 3D image may not represent color or option selected.
Logos above include link, click to access.

Qty	Luminaire	**S56-80W48LED4K-R-GL-LE3-UNIV-CLO-DMG-SFX-FN10-[RCD7-003]-BKTX**

Description of Components:

Finial: Decorative cast 356 aluminum, mechanically assembled.

Hood: (GL), One-piece, seamless, pressure-molded colorless borosilicate glass globe having internal prisms with smooth external self-cleaning surface, permanently assembled to the globe.

Access-Mechanism: A cast A360.1 aluminum technical ring with latch and hinge. The mechanism shall offer tool-free access to the inside of the luminaire. An embedded memory-retentive gasket shall ensure weatherproofness.

Heat Sink: Made of cast aluminum optimising the LEDs efficiency and life. Product does not use any cooling device with moving parts (only passive cooling device)

Globe: (GL), One-piece, seamless, pressure-molded colorless borosilicate glass globe having internal glare softening prisms with smooth external self-cleaning surface. The globe is permanently sealed onto the access-mechanism.

Lamp: LED Module (Included), LED type Philips Lumileds LUXEON R. Composed of 48 high-performance white LEDs. Color temperature of 4000 Kelvin nominal, 70 CRI. Operating lifespan based on TM-21 extrapolation to get results after which 50% of LEDs still emits over 70% (L70) of its original lumen output. Use of metal core board ensures greater heat transfer and longer lifespan of the light engine. The LED circuit board is included with a quick disconnect wiring connection for ease of replacement.

Optical System: (LE3), IES type III (asymmetrical). Composed of high-performance optical grade PMMA acrylic refractor lenses to achieve desired distribution optimized to get maximum spacing, target lumens and a superior lighting uniformity.

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Optical system is rated IP66. Performance shall be tested per LM-63, LM-79 and TM-15 (IESNA) certifying its photometric performance. Street side indicated.

Driver: High power factor of 95%. Electronic driver, operating range 50/60 Hz. **Auto-adjusting universal voltage input from 120 to 277 VAC rated for both application line to line or line to neutral, Class I**, THD of 20% max. Maximum ambient operating temperature from -40F(-40C) to 130F(55C) degrees. Certified in compliance to UL1310 cULus requirement. Dry and damp location. Assembled on a unitized removable tray with Tyco quick disconnect plug resisting to 221F(105C) degrees.

The current supplying the LEDs will be reduced by the driver if the driver experiences internal overheating as a protection to the LEDs and the electrical components. Output is protected from short circuits, voltage overload and current overload. Automatic recovery after correction. Standard built-in driver surge protection of 2.5kV (min).

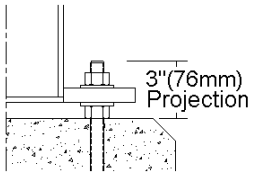
Driver Options: (DMG), Dimming compatible 0-10 volts. For applicable warranty, certification and operation guide see *"Philips Lumec dimmable luminaire specification document for unapproved device installed by other*". To get document, click on this link: Specification document or go on web site on this address: http://www.lumec.com/Lumec3DV2/PdfWebLink/Philips Lumec dimmable luminaire specification document for unapproved device installed by other.pdf

Surge Protector: Surge protector tested in accordance with ANSI/IEEE C62.45 per ANSI/IEEE C62.41.2 Scenario I Category C High Exposure 10kV/10kA waveforms for Line-Ground, Line-Neutral and Neutral-Ground, and in accordance with U.S. DOE (Department of Energy) MSSLC (Municipal Solid-State Street Lighting Consortium) model specification for LED roadway luminaires electrical immunity requirements for High Test Level 10kV / 10kA.

Fitter: Cast aluminum A360.1 c/w 4 set screws 3/8-16 UNC. Fits on a 4"(102mm) outside diameter by 4"(102mm) long tenon.

Luminaire Options: Receptacle with 7 pins enabling dimming and with two extra connections for future use (these connections are capped off at the factory requires connections to be made in the field), can be used with a photoelectric cell or a shorting cap. **Cannot be used with twist lock Starsense.** Use of photocell or shorting cap is required to ensure proper illumination.

Base & Bolts Information



Comes with 4 steel anchor bolts, 3/4" X 17" + 3" J Type Bolts, 8 nuts and 8 washers. Important: Do not obstruct space between anchor plate and concrete base.

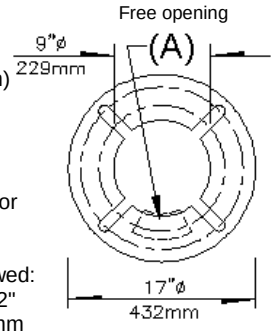
Anchor Plate

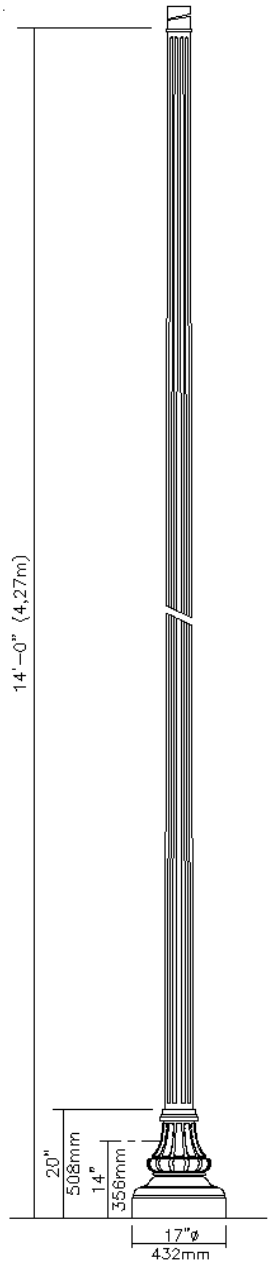
-Bolt Circle:
10 1/2" (267mm)

- Material:
Cast Aluminum

- (A)= Access door

- NOTE:
Bolt Circle Allowed:
10 1/2" to 12 1/2"
267mm to 318mm





Qty	Pole	**RTA40F-14-GFII-BKTX**

Description of Components:

Pole Shaft: Shall be made from a mandrel-formed aluminum tapered shaft, 12 fluted round, having a 0.125" (3.2mm) wall thickness, welded to the pole base

Joint Cover: One-piece round joint cover made from cast 356 aluminum, mechanically fastened with stainless steel screws.

Pole Base: Shall be made from a round fluted cast 356-T6 aluminum base having a 0.375" (9.5mm) wall thickness, complete with a cast-in anchor plate.

Maintenance Opening: The pole shall have a 2 7/8" to 6" wide x 5 1/2" long (73mm x 152mm x 140mm) maintenance opening centered 14" (356mm) from the bottom of the anchor plate, complete with a weatherproof cast 356 aluminum cover and a copper ground lug.

Pole Options: (GFI) Duplex receptacle, WR Weather Resistant, 120 volts, ground fault interrupter, **complete with an in-use weatherproof aluminum painted cover**. Possibility of padlock (Padlock not included). **15 amp., NEMA 5-15R.**

Note: A tenon will be provided when the luminaire or bracket does not fit directly on pole shaft. Tenon not shown on the drawing.

IMPORTANT: Philips Lumec strongly recommends the installation of the complete lighting assembly with all of its accessories upon the anchoring of the pole. This will ensure that the structural integrity of the product is maintained throughout its lifetime.

Pole Weight: 44 lbs (20 kg)

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Miscellaneous

Description of Components:

Wiring: Gauge (#14) TEW/AWM 1015 or 1230 wires, 6" (152mm) minimum exceeding from luminaire.

Hardware: All exposed screws shall be complete with Ceramic primer-seal basecoat to reduce seizing of the parts and offers a high resistance to corrosion. All seals and sealing devices are made and/or lined with EPDM and/or silicone and/or rubber.

Finish: Color to be **black textured RAL9005TX (BKTX)** and in accordance with the AAMA 2603 standard. Application of polyester powder coat paint (4 mils/100 microns) with ± 1 mils/24 microns of tolerance. The Thermosetting resins provides a discoloration resistant finish in accordance with the ASTM D2244 standard, as well as luster retention in keeping with the ASTM D523 standard and humidity proof in accordance with the ASTM D2247 standard.

The surface treatment achieves a minimum of 2000 hours for salt spray resistant finish in accordance with testing performed and per ASTM B117 standard.

Warning: IMPORTANT 120 volt line needed on site for (GFI).

LED products manufacturing standard: The electronic components sensitive to electrostatic discharge (ESD) such as light emitting diodes (LEDs) are assembled in compliance with IEC61340-5-1 and ANSI/ESD S20.20 standards so as to eliminate ESD events that could decrease the useful life of the product.

Quality Control: The manufacturer must provide a written confirmation of its ISO 9001-2008 and ISO 14001-2004 International Quality Standards Certification.

Web site information details: Click on any specific information details you need:

Paint finish / Warranties / ISO 9001-2008 Certification / ISO 14001-2004 Certification / CSA Pole Certification

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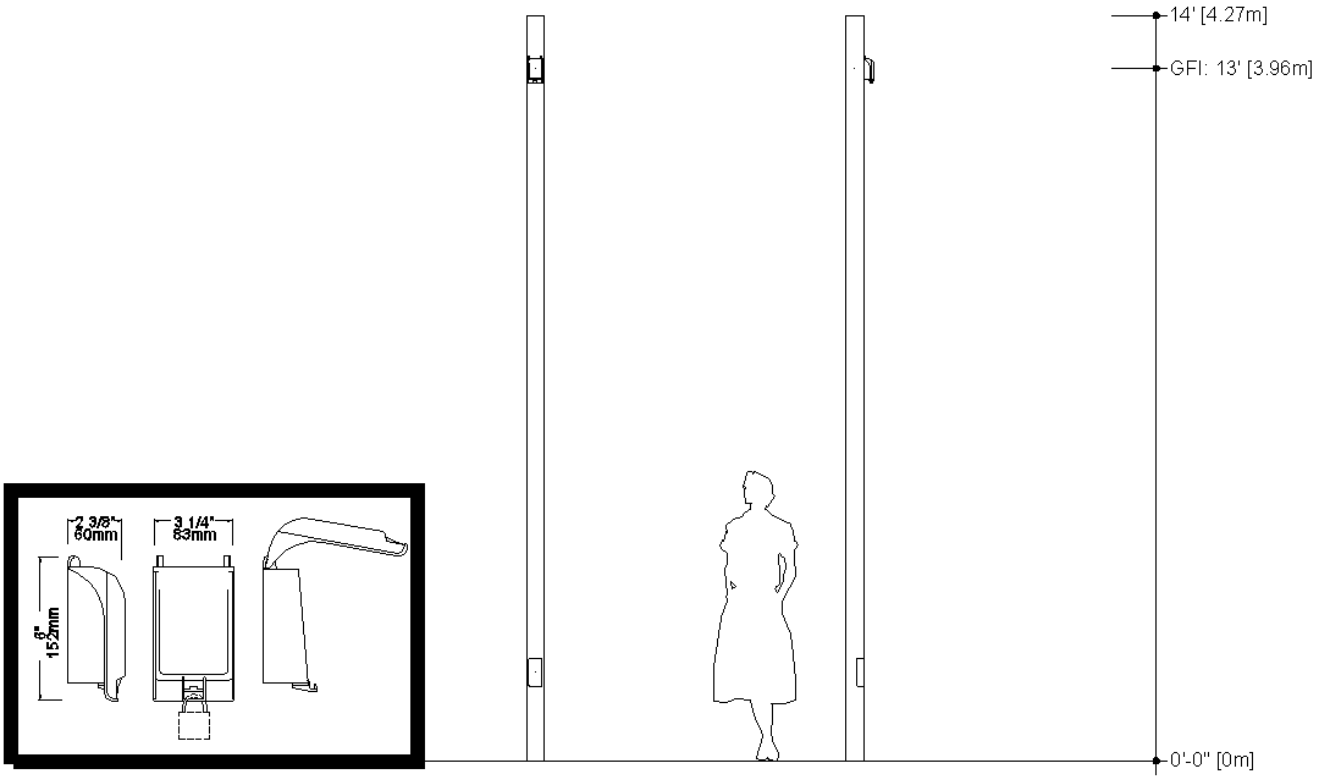
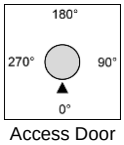
LUMEC

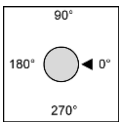
Parametric Options Illustration

(schematic pole shown, for actual pole representation please refer to previous pages)





Access Door



Access Door

PHILIPS LUMEC

LED light engine technical information for S55 S56 S55C1 S56C1 S55C2 S56C2

LED = Philips Lumileds Luxeon R, CRI = 70, CCT = 4000K (+/- 350K)

System (LED + driver) rated life = 100,000 hrs [1]

Lamp	Typical delivered lumens	Typical system wattage [2] (W)	Typical current @ 120 V (A)	Typical current @ 208 V (A)	Typical current @ 240 V (A)	Typical current @ 277 V (A)	LED current (mA)	HID equivalent [3]	Luminaire Efficacy Rating (Lm/W)	BUG rating
35W32LED4K-R-LE2	3468	36	0.29	0.17	0.16	0.15	350	70 -100	96.3	B1-U2-G1
35W32LED4K-R-LE3	3439	36	0.29	0.17	0.16	0.15	350	70 -100	95.5	B1-U2-G2
35W32LED4K-R-LE4	3520	36	0.29	0.17	0.16	0.15	350	70 -100	97.8	B1-U2-G1
35W32LED4K-R-LE5	3694	36	0.29	0.17	0.16	0.15	350	70 -100	102.6	B3-U2-G1
55W32LED4K-R-LE2	4916	53	0.40	0.23	0.21	0.19	530	100 - 150	92.8	B1-U3-G1
55W32LED4K-R-LE3	4880	53	0.40	0.23	0.21	0.19	530	100 - 150	92.1	B1-U3-G2
55W32LED4K-R-LE4	4984	53	0.40	0.23	0.21	0.19	530	100 - 150	94.0	B1-U3-G2
55W32LED4K-R-LE5	5232	53	0.40	0.23	0.21	0.19	530	100 - 150	98.7	B3-U3-G1
55W48LED4K-R-LE2	5105	55	0.38	0.22	0.23	0.21	350	100 - 150	92.8	B2-U3-G2
55W48LED4K-R-LE3	5064	55	0.38	0.22	0.23	0.21	350	100 - 150	92.1	B2-U3-G2
55W48LED4K-R-LE4	5172	55	0.38	0.22	0.23	0.21	350	100 - 150	94.0	B1-U3-G2
55W48LED4K-R-LE5	5429	55	0.38	0.22	0.23	0.21	350	100 - 150	98.7	B3-U3-G1
80W48LED4K-R-LE2	7192	79	0.63	0.36	0.34	0.31	530	150 - 175	91.0	B2-U3-G2
80W48LED4K-R-LE3	7132	79	0.63	0.36	0.34	0.31	530	150 - 175	90.3	B2-U3-G2
80W48LED4K-R-LE4	7287	79	0.63	0.36	0.34	0.31	530	150 - 175	92.2	B2-U3-G2
80W48LED4K-R-LE5	7649	79	0.63	0.36	0.34	0.31	530	150 - 175	96.8	B3-U3-G2

[1] L70 = 100,000 hrs (at ambient temperature = 25°C

[2] System wattage includes the lamp and the LED driver.

[3] Equivalence should always be confirmed by a photometric layout

Note : Due to rapid and continuous advances in LED technology, LED luminaire data is subject to change without notice and at the discretion of Philips.

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SITE CONSTRUCTION DRAWINGS FOR

BEALL'S HILL NEIGHBORHOOD REVITALIZATION PROJECT

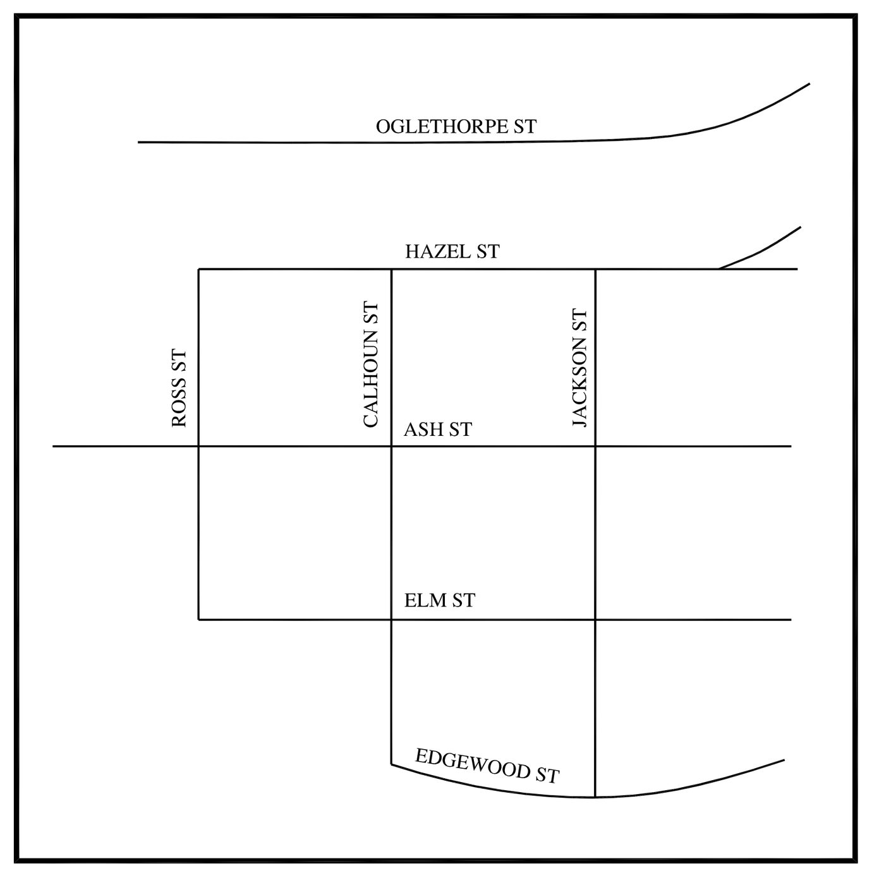
(STREET SCAPES IMPROVEMENTS)
MACON, GEORGIA 31201
SEPTEMBER 27, 2016

CALL BEFORE YOU DIG:
Call '811' or 1-800-282-7411 48 hours before you dig to be in full compliance with the law, all contractors, homeowners, excavators, before you blast-bore-dig-demolish-drill-or trench.

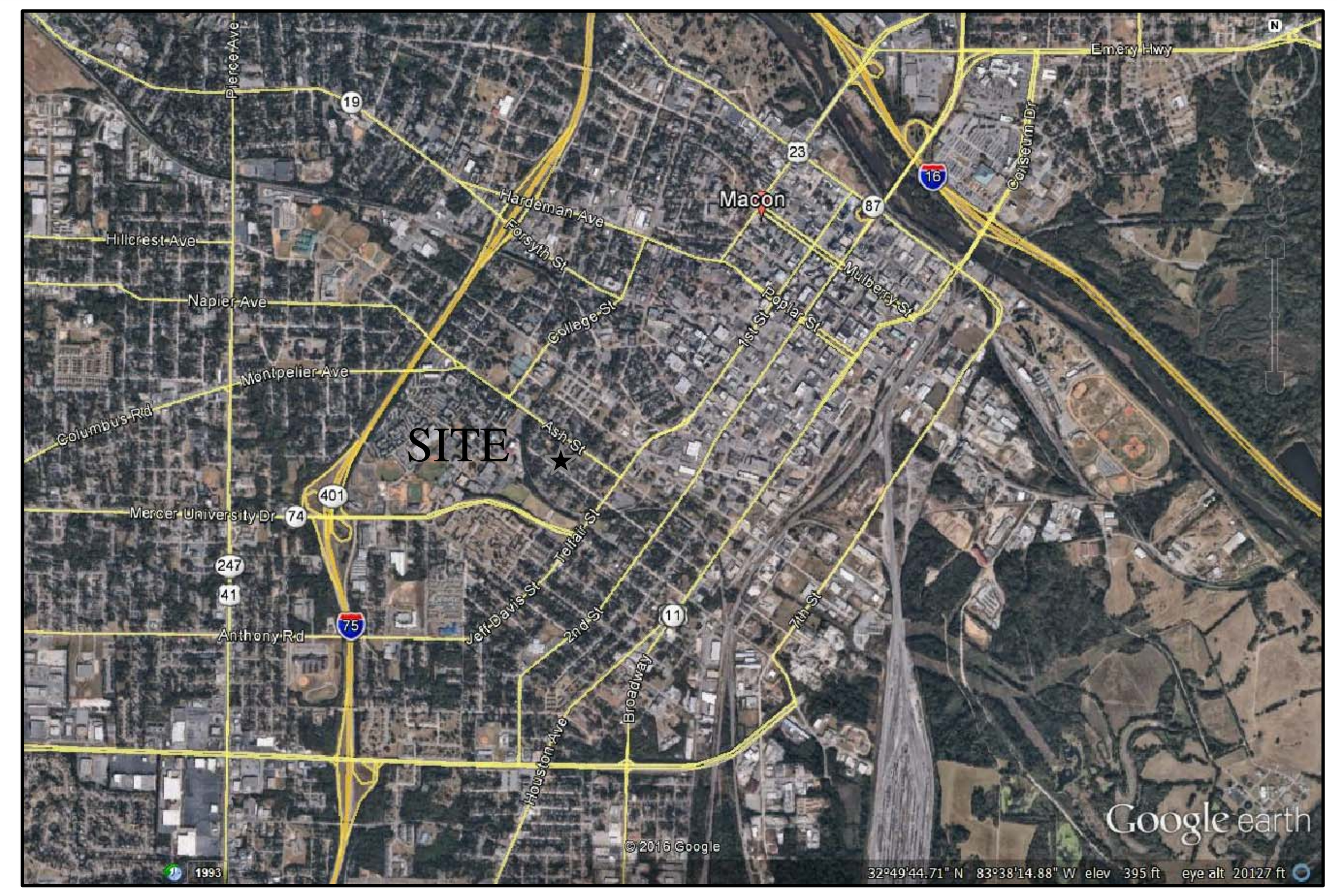
To view the complete Georgia Utility Facility Protection Act, visit the Utilities Protection Center web site at: www.gaupc.com

GEORGIA 811 Utilities Protection Center, Inc.

KEY PLAN



VICINITY MAP



PROJECT OVERVIEW

The Proposed Street Scape Improvements Project for the Beall's Hills Residential Neighborhood Community will include the following Street Sections/Designated Road Number and is provided with detailed maps on the Civil Site Plans:

Oglethorpe Street - Street Number 1
Limits defined between Telfair Street and Columbus Street
Hazel Street (Street Number 2)
Limits defined between Telfair Street and Ross Street
Ash Street (Street Number 3)
Limits defined between Telfair Street and Mercer University New Campus Entrance
Elm Street (Street Number 4)
Limits defined between Telfair Street and Ross Street
Edgewood Street (Street Number 5)
Limits defined between Telfair Street and Calhoun Street
Ross Street (Street Number 6)
Limits defined between Hazel Street and Elm Street
Calhoun Street (Street Number 7)
Limits defined between Hazel Street and Edgewood Street
Jackson Street (Street Number 8)
Limits defined between Hazel Street and Edgewood Street

PROPOSED GENERAL PROJECT DESCRIPTION:

The Proposed Project consists of providing Street-Scape Improvements to the Beal's Hills Historic Residential Neighborhood Community. The Project Scope pertains to providing construction improvements generically as follows:

- Pedestrian cross-walks with HC Ramps at the street intersections
- Adding new pedestrian sidewalks along portions of various streets where sidewalks do not currently exist
- Replacing portions of existing sidewalk in deteriorated conditions
- Adding on-street parking for multiple street sections
- Replacement and or repairs to various road paving deterioration
- Adding new residential street lighting
- Providing limited demolition to several existing retaining walls/steps and replacing with new in same location
- Providing new pavement striping specific to centerline striping, cross-walks, stop bars and street parking striping
- Providing new Stop Signs and relocating existing stop signs with new posts
- Demolition of existing curb and gutter with replacement of new curb and gutter will be provided as "bump-outs" at many of the street intersections in order to provide landscaped islands for the on-street parking spaces
- Demolition and replacement of existing storm drain curb inlets will be included for a small portion of the intersection improvements
- General site grading will be required for many of the intersection corners, with seed and mulch required for all disturbed areas
- Re-adjust and or relocated existing Utility Meters/Boxes in coordination with new sidewalk construction/installation

OWNER/PRIMARY PERMITTEE

HISTORIC HILL & HEIGHTS DEVELOPMENT CORPORATION
ETHIEL GARLINGTON
P.O. BOX 13358
MACON, GEORGIA 31201

24-HOUR CONTACT

MR. BILL CAUSEY
MACON, GEORGIA 31201
PHONE: (478) 737-7285 (CELL)
bcausey327@gmail.com

ENGINEER

CUNNINGHAM & COMPANY ENGINEERS, LLC
CLEVE CUNNINGHAM
435 SECOND STREET
MACON, GEORGIA 31201
(478) 808-9005

SURVEYOR

WELLSTON ASSOCIATES LAND SURVEYORS, LLC
MR. SPENCER JOHNSON
506 OSIGIAN BOULEVARD
SUITE 2
WARNER ROBINS, GA. 31088
(478) 971-3382

LAND LOT/DISTRICT/COUNTY

LAND LOT DISTRICT/ BIBB COUNTY, GA

FLOOD ZONE INFORMATION

PER FEMA FLOOD MAP, PANEL, THIS PROJECT DOES NOT CONTAIN A FLOODPLAIN (ZONE X)
PANEL NUMBER: 13021C0134F EFFECTIVE DATE: APRIL 2, 2007

STATE WATERS STATEMENT

THERE ARE NOT STATE WATERS AND WETLANDS LOCATED WITHIN 200 FEET OF THE PROJECT SITE.

DEVELOPMENT DATA

TRAFFIC ENGINEERING
CONTACT: NIGEL FLOYD
ADDRESS: 415 HEMLOCK STREET
MACON, GEORGIA 31201
PHONE: 478-464-5700
FAX: 478-476-5710

FIRE DEPARTMENT
CONTACT: WILLIE JOHNSON
ADDRESS: 1111 FIRST STREET
MACON, GEORGIA 31216
PHONE: 478-784-8010
FAX: 478-784-8021

ENVIRONMENTAL HEALTH DEPARTMENT
CONTACT: JAMES BOECKE
ADDRESS: 171 EMORY HIGHWAY, ROOM 439
MACON, GEORGIA 31217
PHONE: 478-749-0106
FAX: 478-749-0128

BIBB COUNTY ENGINEER
CONTACT: DAVE FORTSON
ADDRESS: 780 THIRD STREET
MACON, GEORGIA 31201-3282
PHONE: 478-621-6660

PLANNING AND ZONING
CONTACT: RANDI DOVETON
ADDRESS: 682 CHERRY STREET
8TH FLOOR, SUITE 100
MACON, GEORGIA 31201
PHONE: 478-751-7449
FAX: 478-751-7448

WATER
MACON WATER AUTHORITY
CONTACT: ALGENON WALLACE
ADDRESS: 790 SECOND STREET
P. O. BOX 108
MACON, GEORGIA 31202-0108
PHONE: 478-464.5662
FAX: 478-741-1239

NPDES CERTIFICATIONS

(1) I CERTIFY THAT THE PERMITEE'S EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN PROVIDES FOR AN APPROPRIATE AND COMPREHENSIVE SYSTEM OF BEST MANAGEMENT PRACTICES REQUIRED BY THE GEORGIA WATER QUALITY CONTROL ACT AND DOCUMENT "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA," (MANUAL) PUBLISHED BY THE STATE SOIL AND WATER CONSERVATION COMMISSION AS OF JANUARY 1 OF THE YEAR IN WHICH THE LAND DISTURBING ACTIVITY WAS PERMITTED, PROVIDES FOR THE SAMPLING OF THE RECEIVING WATER(S) OR THE SAMPLING OF THE STORM WATER OUTFALLS. AND THAT THE DESIGNED SYSTEM OF BEST MANAGEMENT PRACTICES AND SAMPLING METHODS IS EXPECTED TO MEET THE REQUIREMENTS CONTAINED IN THE GENERAL NPDES PERMIT NO. GAR 100001."

(2) "I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY MYSELF OR MY AUTHORIZED AGENT, UNDER MY DIRECT SUPERVISION."

(3) "I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT CERTIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED UPON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS."

GSWCC LEVEL II DESIGN PROFESSIONAL (ROBERT C. CUNNINGHAM, PE) CERTIFICATION # DATE

ENGINEEER'S CERTIFICATIONS

INDEX TO DRAWINGS

FIRST SUBMITTAL 9-27-16

BEALL'S HILL NEIGHBORHOOD
REVITALIZATION PROJECT
MACON, GEORGIA
FOR
BEALL'S HILL NEIGHBORHOOD

Cunningham & Co. Engineers
CIVIL ENGINEERING - CONSULTING - PROJECT MANAGEMENT
435 SECOND STREET, SUITE 201
MACON, GEORGIA 31201
OFFICE 478.742.3616
FAX 478.742.3569

REVISIONS

DATE: 9-27-16
PROJ NO: 1604
DRAWN BY: RCC

GEORGIA REGISTERED No. 20569 PROFESSIONAL ENGINEER ROBERT C. CUNNINGHAM
THIS SEAL IS VALID ONLY IF SIGNED AND DATED BY THE LICENSED PROFESSIONAL SHOWN.

COVER SHEET

C-1.0

GENERAL DEMOLITION NOTES:

Street Scape Improvements will require site demolition work, which are reflected on the Demolition Plans for each street section. General Demolition Items include but are not limited to the following:

CURB & GUTTER DEMOLITION:

1. Removal of existing curb and gutter, some including concrete and some including granite header curb.
2. All existing granite curbing shall be carefully removed and stockpiled in pre-determined place, for Macon-Bibb County Public Works to pick up.
3. Contractor shall saw cut neat line between existing road paving and edge of existing concrete gutter as required for concrete curb and gutter demolition.
4. Contractor shall saw cut neat line of existing road paving 18-Inches parallel with face of granite curb as required for granite curb demolition and partial road paving demolition as required to install new 24-Inch concrete curb and gutter shown on New Work Site Plan Drawings. Contractor shall note that the existing road paving surface material consists of concrete and asphalt.

ROAD PAVING DEMOLITION:

1. Remove portions of existing road paving (asphalt and or concrete) as required to install new landscaped islands and new intersection bump-outs for ADA Cross-walks.
2. Demolition of road paving shall be saw cut with neat line along edge where proposed 24-Inch concrete curb and gutter is proposed to be installed, as shown on New Site Plan Drawings.
3. Remove and replace portions of deteriorated and broken road paving sections (asphalt and or concrete) and replace with new repair of like kind.

SIDEWALK DEMOLITION:

1. Remove existing concrete sidewalks as shown on demolition plans and or as shown on New Work Site Plans, where new concrete sidewalks are proposed to replace existing sidewalk sections.
2. Contractor shall be responsible to relocated and or re-adjust existing Utility Boxes/Meters/Valves/Manhole Tops, etc. that are located within the sidewalk demolition limits.

RETAINING WALLS - STAIRS/STEPS - LANDINGS DEMOLITION:

1. Contractor shall coordinate with Project Manager, Bill Causey, prior to demolition work, regarding removal of existing retaining walls, stairs/steps/landings, as shown on demolition plans. Project Manager shall confirm that the private residential owners of the retaining walls have provided approval for removal and replacement of these items.
2. Contractor shall be responsible to field verify existing site conditions regarding demolition of these items.
3. Contractor shall coordinate with Utility Companies regarding any and all existing utility temporary disconnection of utilities and or relocation/lowering of existing utilities as required for demolition work.

FENCE DEMOLITION:

1. Contractor shall coordinate with Project Manager, Bill Causey, prior to demolition of private residential fencing, as required for new sidewalk installation.
2. Contactor shall replace demolition fence with new fence of same material.
3. Coordinate with Bill Causey regarding new final alignment of new fence replacement, if required to be in different location. Project Manager shall confirm that the private residential owners of the existing fencing, have provided approval for removal and replacement of these items.

TREE REMOVAL DEMOLITION:

1. Contractor shall coordinate with Project Manager, Bill Causey, prior to beginning work, regarding removal of existing tree(s) required for New Street Scape Improvements. Project Manager shall confirm that the residential owner is in agreement with the proposed tree(s) removal.
2. Contractor shall be responsible to demo/remove existing tree(s) safely without causing damage to property and shall include removal of tree stump(s).

SITE CLEARING & GRUBBING & GRADING:

1. Contractor shall be responsible to clear and grub all existing ground surface areas associated with the new street scape improvements.
2. Contractor shall be responsible to provided associated site grading with uniform grade slopes as required for preparation for installation of new sidewalks, as shown on New Work Site and Grading Plans.

EROSION CONTROL BMP'S:

1. Contractor shall be responsible to install limited silt fencing, Type "C" or equivalent equal and drain inlet box inlet protection in areas that require site grading earthwork.
2. Contractor shall be responsible to control and eliminate mud and dirt onto the public roadways.
3. Contractor shall be responsible to provide seed and mulch ground cover over all disturbed exposed soils, which will not receive impervious surfaces.

STREET MARKING STRIPING ERADICATION:

1. Contractor shall be responsible to eradicate existing roadway-street painted lines and markings including stop bars, centerline striping and cross-walks. Contractor shall coordinate with Project Manager, Bill Causey, and Macon-Bibb Traffic Engineering, prior to removal of existing street markings, regarding to the time-line for eradication of street markings during the course of this project.

STOP SIGNS REMOVAL:

1. Contractor shall remove existing stop signs with sign posts and turn over to Macon-Bibb County Public Works. See New Work Site Plans for new stop sign locations.
2. Contractor shall be responsible to relocate any and all existing signs/posts to avoid conflict with new sidewalk installation layouts.

STORM DRAIN STRUCTURES DEMOLITION:

1. Contractor shall remove and or retrofit existing curb inlets/drain inlets, as required for new sidewalk/streetscape improvements.
2. Coordinate with Project Manager, Bill Causey, regarding all existing storm drain box demolition/retrofit, to confirm if retrofit will be Junction Box with accessible Manhole Top flush with finished surface or if blind junction box concealed with new concrete top is acceptable.
3. NOTE: Existing Cast Iron Curb Inlet Top, located at the intersection corner of Elm Street and Jackson Street, shall be removed and relocated for the proposed curb inlet retrofit located at the intersection corner of Elm Street and Ross Street, as noted and detailed on the Demolition and New Work Site Plans.

GENERAL NEW SITE WORK NOTES:

Streetscape Improvements New Site Work Requirements are shown on the Site Plan and Site Grading Plan Sheets and include, but are not limited, to the following:

NEW CONCRETE SIDEWALKS:

1. Contractor shall install new concrete sidewalks (typically 5-feet wide by 4-inches thick) alongside existing streets.
2. Contractor shall be responsible to provide sidewalk "bump-outs/offsets" around existing power poles and or guy wires, where applicable to maintain 5-feet wide sidewalk path.
3. Contractor shall provide re-adjustment/resetting of existing utility meter boxes, valves, manhole lid tops, etc. where new sidewalks are proposed in order to ensure that these utility tops are "flush" with the finished impervious surfaces. Contractor shall coordinate with Utility Companies and Project Manager, Bill Causey, specific to each respective utility within new sidewalk path.
4. Contractor shall be responsible to provide earthwork grading as required to install new sidewalks on uniform grade slopes acceptable for pedestrian traffic.

NEW STREET INTERSECTIONS - ADA RAMPS/SIDEWALK/C&G:

1. Contractor shall provide new construction improvements at each street intersection as shown on Site Plan and Site Grading Plan Sheets.
2. Contractor shall construct new ADA Sidewalk Ramps with truncated domes-matting for each proposed cross-walk.
3. Proposed cross-walks shall be 8-feet wide for all eight (8) main street crossings and shall be 5-feet wide for each "Street Lane" (ie. Ross Street Lane, Calhoun Street Lane, Jackson Street Lane).
4. Contractor shall construct new concrete sidewalks pedestrian walkway at each street intersection and ensure storm water sheet flows positively into the roadway, with no ponding of water within the new sidewalk ramps/walkways.
5. Contractor shall construct new 24-inch concrete curb and gutter for each respective street intersection improvements as shown on Site Plan Sheets. Contractor shall be responsible to provide ADA Ramps to conform to GDOT ADA Ramp Details, including four (4) types.
6. Contractor shall provide 6" to 30" raised concrete header curbs along the backside of proposed concrete sidewalks, where high ground/grades abut back edge of new sidewalk, in lieu of providing small retaining walls.
7. Contractor shall be responsible to provide earthwork grading as required to construct new sidewalk improvement at each respective street intersection.
8. 15-feet street radius is proposed at all new improved street intersections/bump-outs.

NEW CROSS-WALKS - STRIPING - SIGNS:

1. Contractor shall install new pedestrian cross-walks, 24-inch white stop bars, new 36"x36" stop signs with concrete anchored posts and 5-inch double yellow line street markings at each street intersection.
2. Cross-walks shall be 8-feet wide at all "Main Street" Intersections (Streets 1-8).
3. Cross-walks shall be 5-feet wide at all "Street Lane" Intersections (ie. Ross Street Lane, Calhoun Street Lane, Jackson Street Lane).
4. Base bid price for all Street Markings shall be thermoplastic material in conformance with GDOT Standards.
5. De-duct Alternate Price for all Street Markings shall be painted material.

NEW ON-STREET PARKING / LANDSCAPE ISLANDS:

1. New on-street parking with landscaped islands are proposed for all streets, except for Edgewood Street, Ross Street and Calhoun Street, as shown on Site Plan Sheets.
2. All vehicle parking spaces shall be 7-feet wide by 20-feet long, and shall be provided with 4-inch white painted parking striping as shown on the Site Plan Sheets.

NEW STREET PAVING REPLACEMENT SECTIONS:

1. Contractor shall install new asphalt paving to replace specified demolition asphalt paved areas as shown on Site Plan Sheets. New asphalt paved replacement sections shall be prepared with over-excavation of sub-grade, 98% compacted sub-grade, and shall include 8-inches of compacted GABC, with 3-inches of 12.5MM Super-pave.
2. Contractor shall install new concrete paving to replace specified demolition concrete paved areas as shown on Site Plan Sheets. New concrete paved replacement sections shall be prepared with over-excavation of sub-grad, 98% compacted sub-grade, and shall include 8-inches of compacted GABC, with 6-inches fiber-mesh reinforced concrete at 4,000 PSI.

NEW RETAINING WALL - STAIRS - LANDINGS:

1. Contractor shall be responsible to construct and install new retaining walls and or concrete stairs with concrete landings, replacing proposed demolition walls/stairs/landings, as shown on the Demolition and New Work Site Plan Sheets.
2. Contractor shall be responsible to field verify existing wall heights and lengths as well as location and size of existing concrete stairs/landings, that are proposed to be replaced with like kind in same location, as shown on Demolition and New Work Site Plan Sheets.
3. Reinforced concrete retaining wall detail is provided on the detail sheets; contractor shall provide deduct pricing for replacing with modular retaining walls and shall be responsible for modular retaining wall structural design.
4. Contractor shall be responsible to provide Utility Locate prior to construction/demolition and new installation of retaining walls and associated stairs/landings, and shall coordinate with respective utility company pertaining to any existing utilities requiring relocation/lowering/modifications, in order to avoid conflicts.
5. Prices for demo/new wall installation shall include required clearing/tree removal/earthwork grading.

NEW RESIDENTIAL FENCE:

1. Contractor shall install new residential chain link fence to replace required demolition fence. Contractor shall be responsible to replace with new fencing to match existing fencing height and material.
2. Contractor shall coordinated new fence work/installation with Project Manager, Bill Causey, prior to installation and confirm the new fence location is acceptable with property owner.

UTILITY METER BOXES - VALVES - MANHOLES:

1. Contractor shall relocate/reset existing utility meter boxes-valves-manhole tops, etc. to be flush with new finished surfaces for streetscape improvements.
2. Contractor shall relocate/reset existing utility meter boxes-valves-manhole tops, etc. to avoid conflict with new 24-inch concrete curb and gutter sections and concrete sidewalk sections.
3. Contractor shall re-adjust existing manhole frame and cover to be set flush with the existing pavement surface, located near the intersection corner of Ash and Calhoun Street Lane, as shown on Demolition and New Work Site Plan Sheets.

NEW STORM DRAIN INLETS - RCP STORM PIPES:

1. Contactor shall provide new storm drain curb inlets and RCP storm pipes as shown on the New Work Site Grading Plan Sheets.
2. Contractor shall be responsible to set drain inlets rim and throat elevations based upon field conditions to ensure surface storm water run-off drains into each respective inlet.
3. Contractor shall be responsible to adjust invert/bottoms of new storm drain inlet boxes based on field conditions, as required to install new RCP storm pipe from new drainage structure into existing retrofit drainage structure, with minimum of 1 percent pipe slope.
4. Contractor shall provide Macon Standard Curb Inlets where possible for all new storm drainage structures; GDOT 1019E curb inlets are acceptable where Macon Inlets conflict with pedestrian walkways.
5. Contractor shall be responsible to include base bid all required work associated with new storm inlets and retrofitting of existing storm structures, specific to any additional roadway paving demolition and new pavement/curb & gutter replacements, resulting from drainage structure retrofit and or new drain box installations.

EARTHWORK GRADING:

1. Contractor shall be responsible to provide earthwork grading at all street intersections where existing ground is elevated as required to install new sidewalks. Grading shall be performed to result in uniform gentle grade slopes. The same is applicable for linear sidewalk improvements where existing ground requires grading for uniform sidewalk slopes to match street slopes.

EROSION CONTROL - BMP'S:

1. Contactor shall provide and install silt fencing, Type "C", along downhill side of where earthwork grading is required for streetscape improvements.
2. Contractor shall provide seed and mulch over all disturbed areas that do not receive impervious cover.
3. Contractor shall provide drain inlet protections for all drain inlets located downstream of the earth grading operations.
4. Contactor shall be required to inspect and maintain daily all erosion control bmp's during the course of construction.
5. Contractor shall be responsible to avoid mud and sediment entering into the public roadway.

TRAFFIC CONTROLS:

1. Contractor shall provide uniform traffic controls in accordance with Macon-Bibb Traffic Engineering Standards and Specification Requirements.

TREE NOTE:

Prior to any tree pruning/removal required for street scape improvements, contractor shall confirm with Project Manager.

LANDSCAPE NOTES:

Landscape Construction for Beall's Hill Improvement Project

Landscape construction for this project will include the installation of street trees and the seeding of all disturbed areas throughout the project.

Street Trees: The installation of seventy five (75) - 2 ½ "caliper hardwood trees throughout the project area. Tree varieties will be mixed based on availability. The mixture shall consist of Oak, Elm, Maple and Sycamore as examples. Tree locations will be flagged close to the time for installation. Gator bags shall be included for each tree.

Grassing: All disturbed areas throughout the project will be seeded and mulched. Grass seed shall be an equal mixture of winter rye grass and unhulled Bermuda. Seed shall be installed at a rate of 2 lbs per 1000 square feet. All seed areas will be mulched with wheat straw to cover.

Fertilizer: Contractor shall install fertilizer as needed to insure grass coverage

Water: Contractor will be responsible for watering grass and trees for a period of four (4) weeks from the time of installation completion for the entire project.

BEALL'S HILL NEIGHBORHOOD
REVITALIZATION PROJECT
MACON, GEORGIA
FOR
BEALL'S HILL NEIGHBORHOOD

Cunningham & Co. Engineers
CIVIL ENGINEERING - CONSULTING - PROJECT MANAGEMENT
435 SECOND STREET, SUITE 201
MACON, GEORGIA 31201
OFFICE 478.742.3616
FAX 478.742.3569

REVISIONS

DATE: 9-27-16
PROJ NO: 1604
DRAWN BY: RCC

GEORGIA REGISTERED PROFESSIONAL ENGINEER ROBERT C. CUNNINGHAM

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GENERAL SITE NOTES

C-0.2

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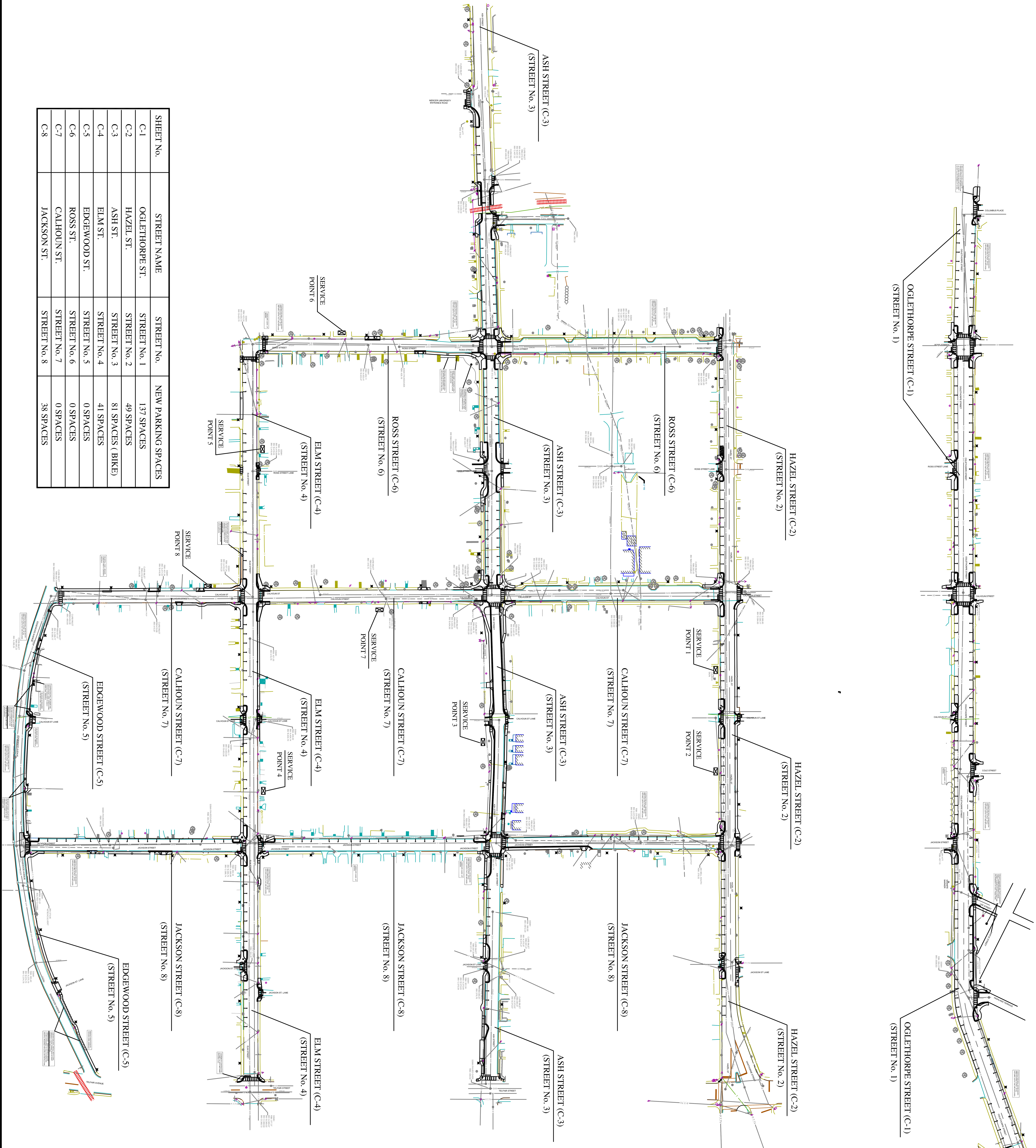

SHEET No.	STREET NAME	STREET No.	NEW PARKING SPACES
C-1	OGLETHORPE ST.	STREET No. 1	137 SPACES
C-2	HAZEL ST.	STREET No. 2	49 SPACES
C-3	ASH ST.	STREET No. 3	81 SPACES (BIKE)
C-4	ELM ST.	STREET No. 4	41 SPACES
C-5	EDGEWOOD ST.	STREET No. 5	0 SPACES
C-6	ROSS ST.	STREET No. 6	0 SPACES
C-7	CALHOUN ST.	STREET No. 7	0 SPACES
C-8	JACKSON ST.	STREET No. 8	38 SPACES

LANDSCAPE NOTES:

Landscape Construction for Beall's Hill Improvement Project

Landscape construction for this project will include the installation of street trees and the seeding of all disturbed areas throughout the project.

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Fertilizer: Contractor shall install fertilizer as needed to insure grass coverage

Water: Contractor will be responsible for watering grass and trees for a period of four (4) weeks from the time of installation completion for the entire project.

ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA
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LEVEL II CERTIFIED DESIGN PROFESSIONAL GSWCC
CERTIFICATION NO. 0000002977
ISSUED: 12/07/2008 EXPIRES: 12/07/2017

GEORGIA 811 Utilities Protection Center, Inc.

"ALL UTILITIES, WATER, FIRE, SANITARY, GAS AND ELECTRICAL LINES MUST BE MARKED WITH LOCATOR WIRE AND DETECTOR TAPE".

GRAPHIC SCALE
100 0 50 100 200 400
(IN FEET)
1 inch = 100 ft.

C-0.3

OVERALL KEY PLAN

THIS SEAL IS VALID ONLY IF SIGNED AND DATED BY THE LICENSED PROFESSIONAL SHOWN.

GEORGIA REGISTERED No. 20508 PROFESSIONAL ENGINEER ROBERT C. CUNNINGHAM

DATE: 9-27-16
PROJ NO: 1604
DRAWN BY: RCC

REVISIONS

Cunningham & Co. Engineers
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BEALL'S HILL NEIGHBORHOOD
REVITALIZATION PROJECT
MACON, GEORGIA
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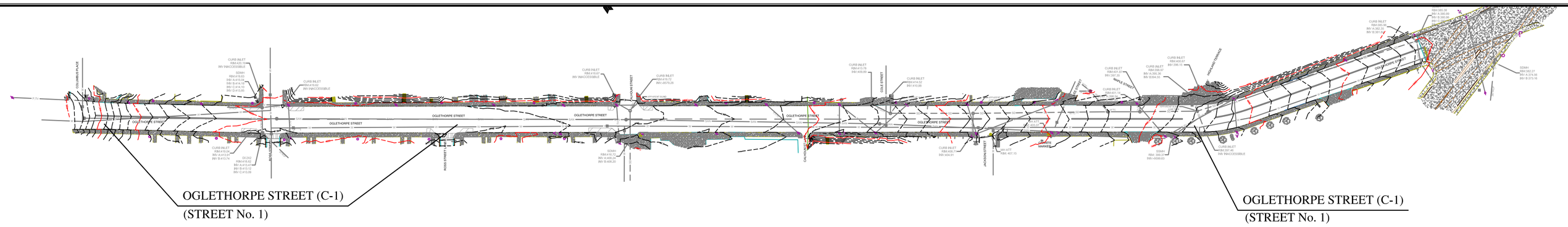

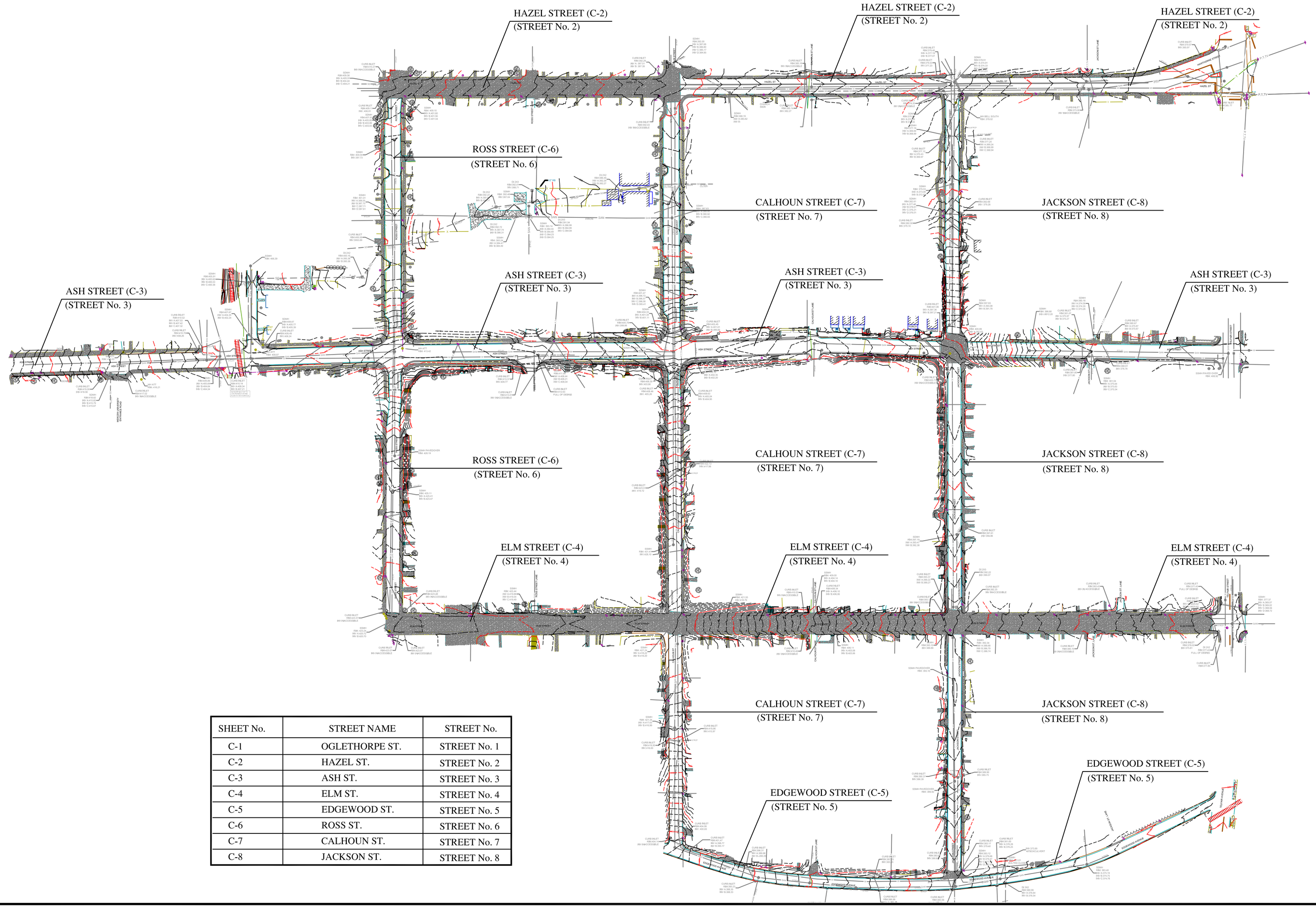

SHEET No.	STREET NAME	STREET No.
C-1	OGLETHORPE ST.	STREET No. 1
C-2	HAZEL ST.	STREET No. 2
C-3	ASH ST.	STREET No. 3
C-4	ELM ST.	STREET No. 4
C-5	EDGEWOOD ST.	STREET No. 5
C-6	ROSS ST.	STREET No. 6
C-7	CALHOUN ST.	STREET No. 7
C-8	JACKSON ST.	STREET No. 8

NORTH

ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA

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GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

BEALL'S HILL NEIGHBORHOOD
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DRAWN BY: RCC

GEORGIA REGISTERED PROFESSIONAL ENGINEER ROBERT C. CUNNINGHAM

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OVERALL EXISTING CONDITIONS

C-0.4

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MATCHLINE

CURB INLET
RIM:413.78
INV:409.89
RETROFIT EXIST. C.I. INTO JUNCTION BOX

COLE STREET

18"CLAY

CURB INLET
RIM:414.52
INV:410.88

APPARENT BLIND JUNCTION

OGLETHORPE STREET

420

410

CURB INLET
RIM:408.71
INV:404.91
RETROFIT EXIST. C.I. INTO JUNCTION BOX

DEMO EXISTING PAVEMENT BEYOND NEW LANDSCAPE ISLAND & NEW PAVEMENT TO REDIRECT PAVEMENT SHEET FLOW BACK ONTO STREET AND NOT TRAP WATER IN C & G.

TYPICAL STREET PAVING DEMOLITION

JACKSON STREET

407

APPARENT BLIND JUNCTION

MH ATT
RIM: 407.15

MH ATT
RIM: 405.07

GRANITE MARKER

TYPICAL STREET PAVING DEMOLITION

18"TC

LEE STREET

COORDINATE WITH PROJECT MANAGER, BILL CAUSEY, AND NIGEL FLOYD WITH MACON - BIBB COUNTY TRAFFIC REGARDING LANE CLOSURE OF MAPLE STREET PRIOR TO DEMOLITION.

CURB INLET
RIM:401.87
INV:397.35

MAPLE STREET

CURB INLET
RIM:401.14
INV A:398.54
INV B:397.85

12"RCP

RETROFIT EXIST. C.I. INTO DROP INLET GRATE TOP.

CURB INLET
RIM:398.97
INV A:395.36
INV B394.55

RETROFIT EXIST. C.I. INTO BLIND BOX.

CURB INLET
RIM:400.67
INV:396.15

APPARENT BLIND JUNCTION

405

400

HIGHLAND TERRACE

CURB INLET
RIM:397.46
INV INACCESSIBLE

SSMH
RIM: 399.37
INV:-9599.63

GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.
20 0 10 20 40 80

MATCHLINE

MATCHLINE

CURB INLET
RIM:385.96
INV A:382.35
INV B:381.84

SDMH
RIM:385.38
INV A:380.89
INV B:380.86
INV C:380.56
INV D:380.37

SDMH
RIM:382.35
INV A:376.46
INV B:375.04
INV C:374.66

SDMH
RIM:382.27
INV A:374.56
INV B:373.16

SDMH
RIM:381.58
INV A:375.89
INV B:375.83

OGLETHORPE STREET

12"RCP

24"RCP

36"RCP

CURB INLET
RIM:386.22
INV:381.64

CURB INLET
RIM:386.22
INV:381.64

ROSS ST
CALHOUN ST
JACKSON ST
ELM ST
ASH ST
HAZEL ST
EDGEWOOD ST
OGLETHORPE ST

NORTH

"ALL UTILITIES, WATER, FIRE, SANITARY, GAS AND ELECTRICAL LINES MUST BE MARKED WITH LOCATOR WIRE AND DETECTOR TAPE".

GEORGIA811 Utilities Protection Center, Inc.

ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA
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CERTIFICATION NO. 00000002977
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ROBERT C. CUNNINGHAM 20508 REGISTERED PROFESSIONAL ENGINEER GEORGIA

C-1.10

DEMOLITION PLAN

DATE: 8-15-16
PROJ NO: 1604
DRAWN BY: RCC

REVISIONS

Cunningham & Co. Engineers
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BEALL'S HILL NEIGHBORHOOD
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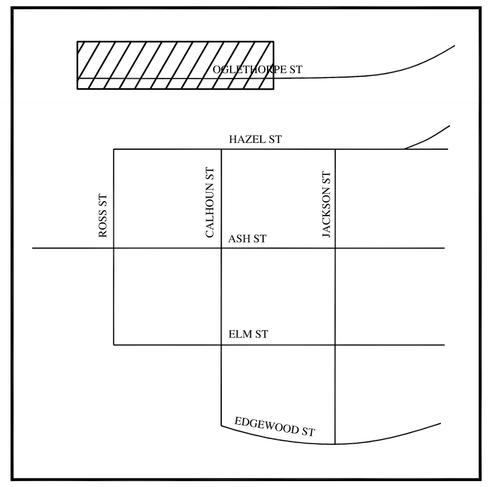

MATCHLINE

RETROFIT EXIST. C.I. INTO JUNCTION BOX

CURB INLET
RIM:418.67
INV INACCESSIBLE

CURB INLET
RIM:419.72
INV:-9579.28

APPARENT BLIND JUNCTION

CALHOUN STREET

12"CO

P.I.V.

OGLETHORPE STREET

OGLETHORPE STREET

OGLETHORPE STREET

ROSS STREET LANE

CALHOUN ST LANE

SDMH
RIM:416.72
INV A:408.24
INV B:408.20

DEMO EXISTING PAVEMENT BEYOND NEW LANDSCAPE ISLAND TO ALLOW NEW PAVEMENT WARPING INTO STREET AND NOT TRAP ANY STORM WATER IN CURB & GUTTER.

MATCHLINE

DEMO EXISTING PAVEMENT BEYOND NEW LANDSCAPE ISLAND TO RE-DIRECT PAVEMENT SHEET FLOW BACK ONTO STREET AND NOT TRAP WATER IN C & G.

COLUMBUS PLACE

CURB INLET
RIM:420.19
INV INACCESSIBLE

SDMH
RIM:419.63
INV A:415.04
INV B:414.18
INV C:414.10
INV D:413.85

CURB INLET
RIM:419.62
INV INACCESSIBLE

24"RCP

12"PVC

P.I.V.

OGLETHORPE STREET

OGLETHORPE STREET

15"RCP

24"RCP

ROSS STREET

24"RCP

CURB INLET
RIM:419.04
INV A:413.91
INV B:413.74
RETROFIT EXIST. C.I. INTO JUNCTION BOX

DI 2X2
RIM:418.62
INV A:413.47
INV B:413.12
INV C:413.09
RETROFIT EXIST. C.I. INTO JUNCTION BOX

ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA

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GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

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BEALL'S HILL NEIGHBORHOOD
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MACON, GEORGIA
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Cunningham & Co. Engineers
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REVISIONS

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PROJ NO: 1604
DRAWN BY: RCC

GEORGIA REGISTERED PROFESSIONAL ENGINEER ROBERT C. CUNNINGHAM

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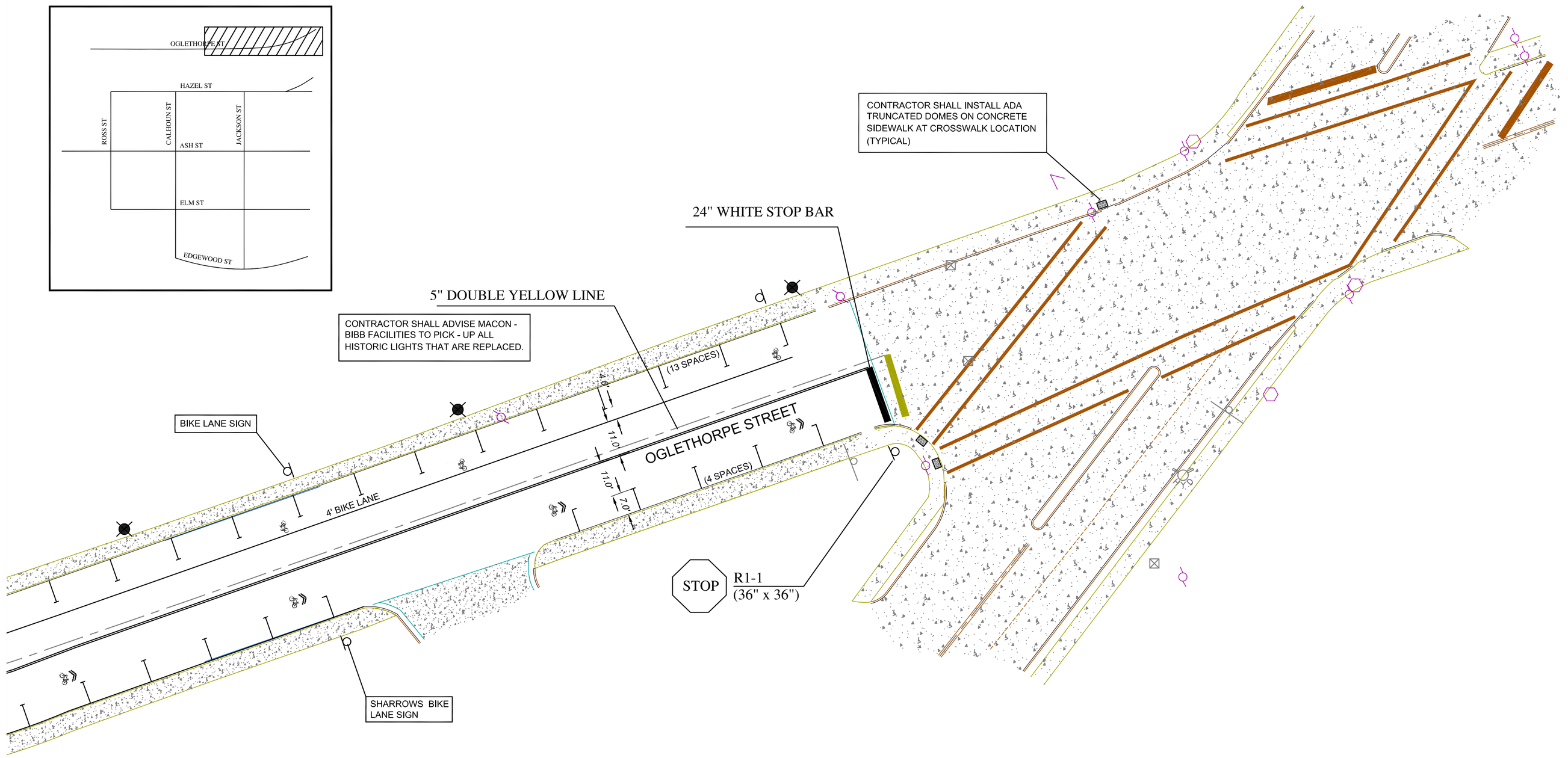
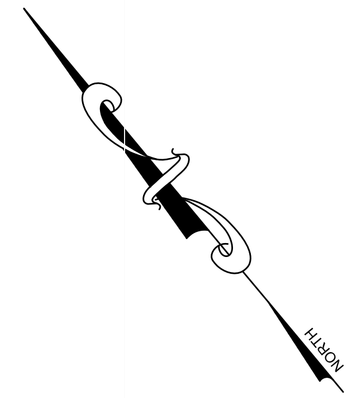
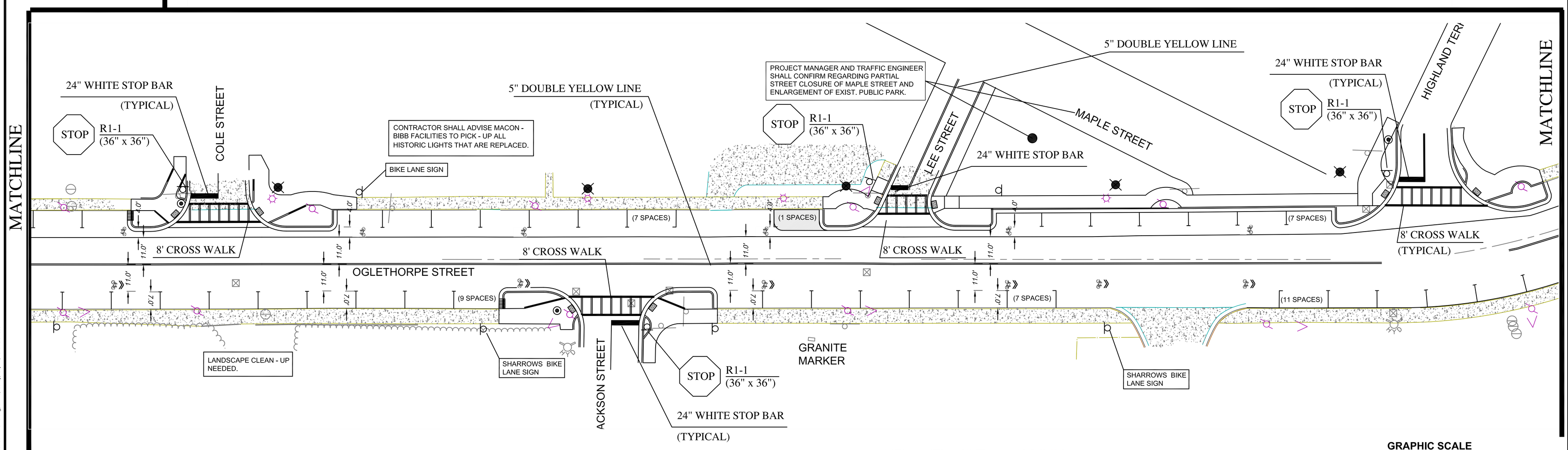
DEMOLITION PLAN

C-1.11

MATCHLINE







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REVISIONS

DATE:	9-27-16
PROJ NO:	1604
DRAWN BY:	RCC

GEORGIA REGISTERED PROFESSIONAL ENGINEER ROBERT C. CUNNINGHAM

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SITE PLAN

C-1.20

ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA

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CERTIFICATION NO. 0000002977
ISSUED: 12/07/2008 EXPIRES: 12/07/2017

GEORGIA811 Utilities Protection Center, Inc.

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GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

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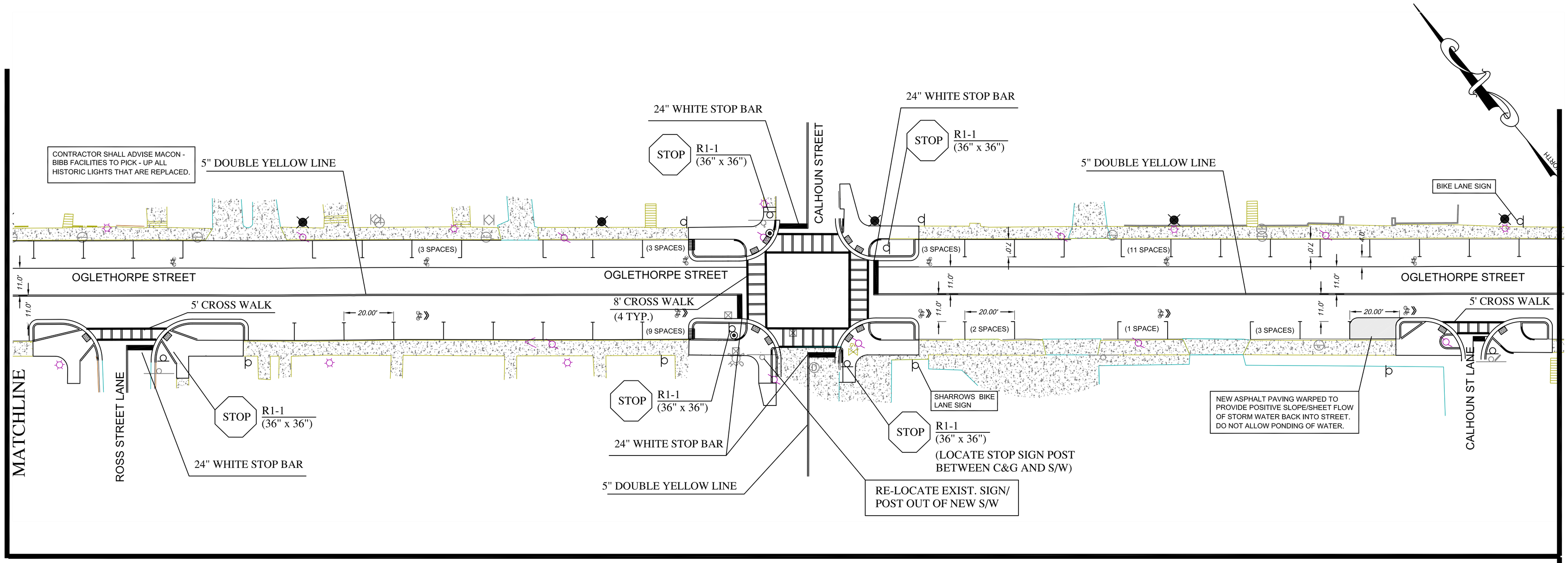

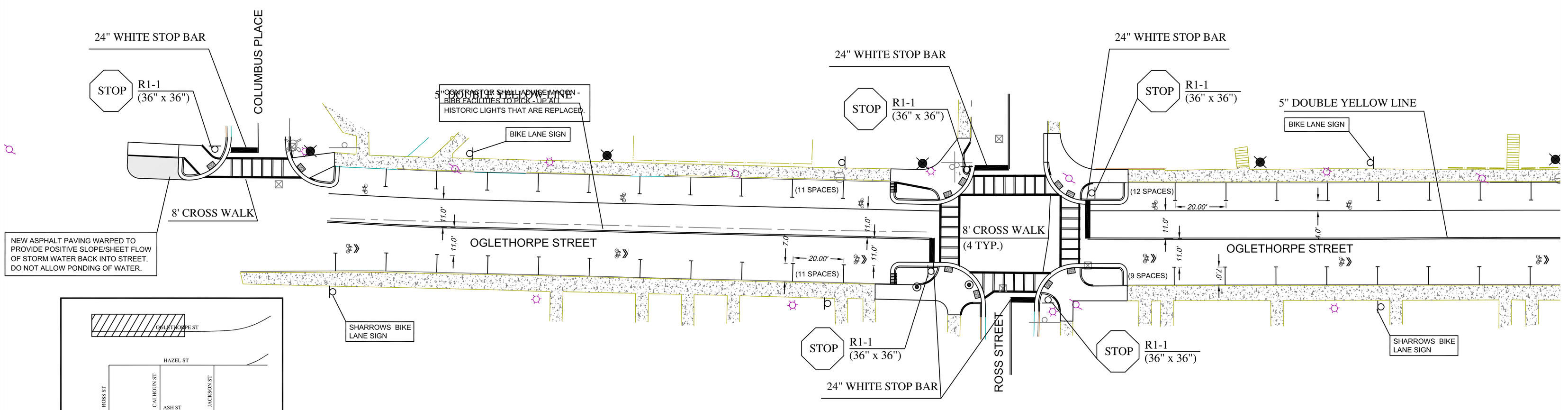

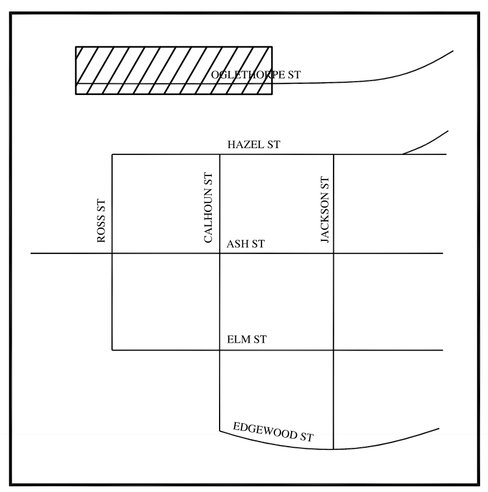

ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA

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LEVEL II CERTIFIED DESIGN PROFESSIONAL GSWCC
CERTIFICATION NO. 0000002977
ISSUED: 12/07/2008 EXPIRES: 12/07/2017

GEORGIA811 Utilities Protection Center, Inc.

"ALL UTILITIES, WATER, FIRE, SANITARY, GAS AND ELECTRICAL LINES MUST BE MARKED WITH LOCATOR WIRE AND DETECTOR TAPE".

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

BEALL'S HILL NEIGHBORHOOD
REVITALIZATION PROJECT
MACON, GEORGIA
FOR
BEALL'S HILL NEIGHBORHOOD

Cunningham & Co. Engineers
CIVIL ENGINEERING - CONSULTING - PROJECT MANAGEMENT
435 SECOND STREET, SUITE 201
MACON, GEORGIA 31201
OFFICE 478.742.3616
FAX 478.742.3569

REVISIONS

DATE:	9-27-16
PROJ NO:	1604
DRAWN BY:	RCC

GEORGIA REGISTERED No. 20508 PROFESSIONAL ENGINEER ROBERT C. CUNNINGHAM

THIS SEAL IS VALID ONLY IF SIGNED AND DATED BY THE LICENSED PROFESSIONAL SHOWN.

SITE PLAN

C-1.21

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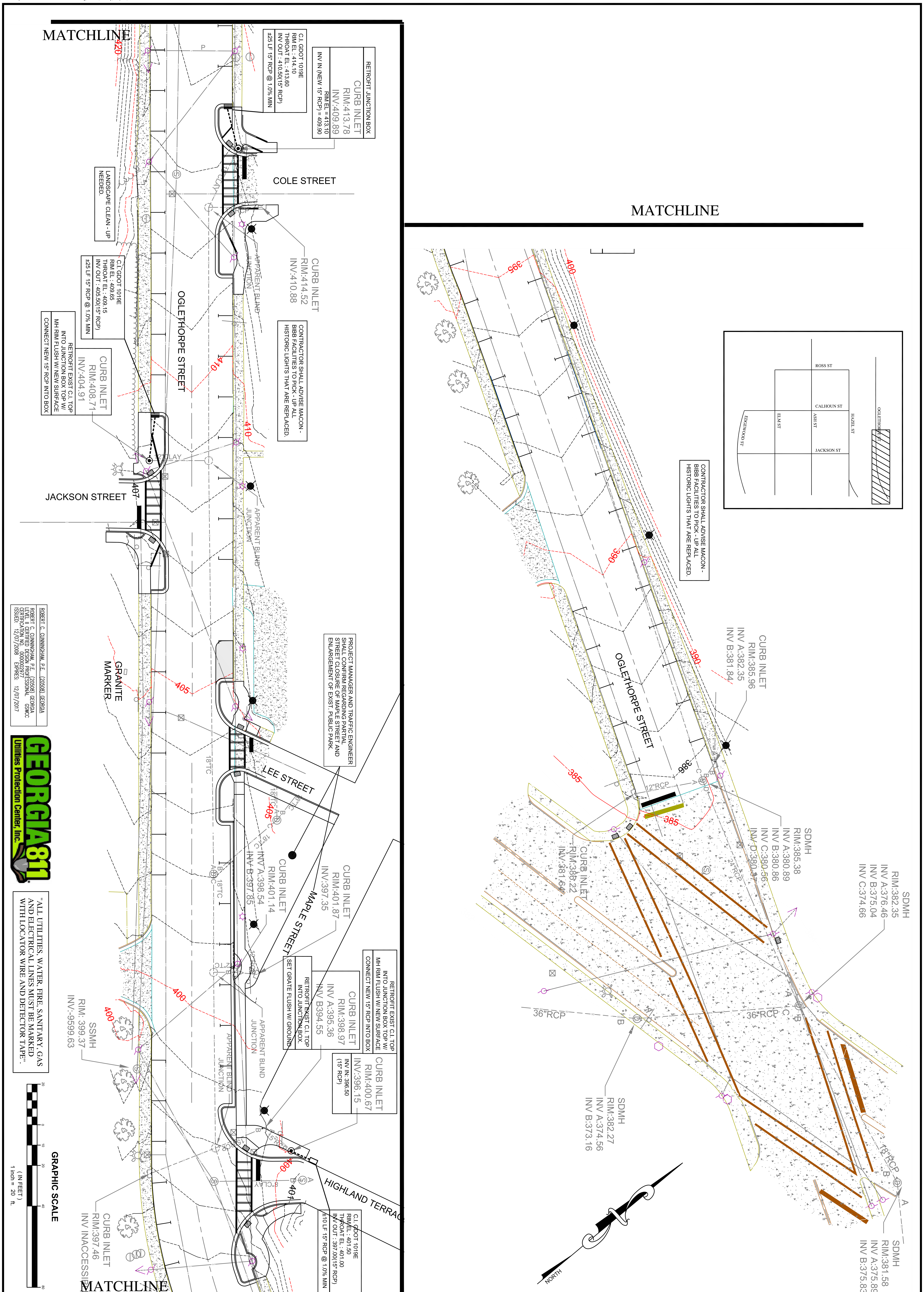

MATCHLINE
RETROFIT JUNCTION BOX
CURB INLET
RIM:413.78
INV:409.89
RIM EL = 413.10
INV IN (NEW 15" RCP) = 409.90
C.I. GDOT 1019E
RIM EL : 414.10
THROAT EL : 413.60
INV OUT : 410.50(15" RCP)
±25 LF 15" RCP @ 1.0% MIN
COLE STREET
LANDSCAPE CLEAN - UP NEEDED.
CURB INLET
RIM:414.52
INV:410.88
APPARENT BLIND JUNCTION
C.I. GDOT 1019E
RIM EL : 409.65
THROAT EL : 409.15
INV OUT : 405.50(15" RCP)
±25 LF 15" RCP @ 1.0% MIN
OGLETHORPE STREET
CONTRACTOR SHALL ADVISE MACON - BIBB FACILITIES TO PICK - UP ALL HISTORIC LIGHTS THAT ARE REPLACED.
RETROFIT EXIST C.I. TOP INTO JUNCTION BOX TOP W/ MH RIM FLUSH W/ NEW SURFACE CONNECT NEW 15" RCP INTO BOX
CURB INLET
RIM:408.71
INV:404.91
12"CLAY
JACKSON STREET
APPARENT BLIND JUNCTION
ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA
ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA
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GRANITE MARKER
GEORGIA 811 Utilities Protection Center, Inc.
PROJECT MANAGER AND TRAFFIC ENGINEER SHALL CONFIRM REGARDING PARTIAL STREET CLOSURE OF MAPLE STREET AND ENLARGEMENT OF EXIST. PUBLIC PARK.
LEE STREET
18"TC
CURB INLET
RIM:401.14
INV A:398.54
INV B:397.85
CURB INLET
RIM:401.87
INV:397.35
MAPLE STREET
"ALL UTILITIES, WATER, FIRE, SANITARY, GAS AND ELECTRICAL LINES MUST BE MARKED WITH LOCATOR WIRE AND DETECTOR TAPE".
SET GRATE FLUSH W/ GROUND
RETROFIT EXIST C.I. TOP INTO JUNCTION BOX.
CURB INLET
RIM:398.97
INV A:395.36
INV B394.55
RETROFIT EXIST C.I. TOP INTO JUNCTION BOX TOP W/ MH RIM FLUSH W/ NEW SURFACE CONNECT NEW 15" RCP INTO BOX
CURB INLET
RIM:400.67
INV:396.15
INV IN: 396.50 (15" RCP)
SSMH
RIM: 399.37
INV:-9599.63
APPARENT BLIND JUNCTION
GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.
HIGHLAND TERRACE
C.I. GDOT 1019E
RIM EL : 401.50
THROAT EL : 401.00
INV OUT : 397.00(15" RCP)
±10 LF 15" RCP @ 1.0% MIN
CURB INLET
RIM:397.46
INV INACCESSIBLE
MATCHLINE
MATCHLINE
ROSS ST
CALHOUN ST
JACKSON ST
EDGEWOOD ST
ELM ST
ASH ST
HAZEL ST
OGLETHORPE ST
CONTRACTOR SHALL ADVISE MACON - BIBB FACILITIES TO PICK - UP ALL HISTORIC LIGHTS THAT ARE REPLACED.
OGLETHORPE STREET
CURB INLET
RIM:385.96
INV A:382.35
INV B:381.84
12"RCP
SDMH
RIM:385.38
INV A:380.89
INV B:380.86
INV C:380.56
INV D:380.37
24"RCP
CURB INLET
RIM:386.22
INV:381.64
SDMH
RIM:382.35
INV A:376.46
INV B:375.04
INV C:374.66
36"RCP
36"RCP
SDMH
RIM:382.27
INV A:374.56
INV B:373.16
18"RCP
SDMH
RIM:381.58
INV A:375.89
INV B:375.83
NORTH

REVISIONS		
DATE:	9-27-16	
PROJ NO:	1604	
DRAWN BY:	RCC	

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GRADING PLAN

C-1.30

Cunningham & Co. Engineers

CIVIL ENGINEERING - CONSULTING - PROJECT MANAGEMENT

435 SECOND STREET, SUITE 201
MACON, GEORGIA 31201

OFFICE 478.742.3616
FAX 478.742.3569

BEALL'S HILL NEIGHBORHOOD
REVITALIZATION PROJECT
MACON, GEORGIA
FOR
BEALL'S HILL NEIGHBORHOOD

P:\Projects\1604-Bealls Hills\1604-BASE-3.dwg, C-1.31, rodney, Sep 27, 2016 - 9:48:52am

MATCHLINE

NEW ASPHALT PAVING WARPED TO PROVIDE POSITIVE SLOPE/SHEET FLOW OF STORM WATER BACK INTO STREET. DO NOT ALLOW PONDING OF WATER.

COLUMBUS PLACE

OGLETHORPE STREET

CONTRACTOR SHALL ADVISE MACON - BIBB FACILITIES TO PICK - UP ALL HISTORIC LIGHTS THAT ARE REPLACED.

GDOT 1019 E
THROAT: FLUSH W/ PVMT.
INV = ±414.00

JUNCTION BOX
RIM = ± 418.60
INV = 413.80
INV OUT =
ADJUST INVERT OUT TO AVOID CONFLICT W/ EXIST. UTILITIES

±35 LF 15" RCP @ 0.5% MIN

SDMH
RIM:416.72
INV A:408.24
INV B:408.20
INV IN (NEW 15") = ±412.00
ADJUST PIPE INVERT TO AVOID CONFLICT WITH EXIST. UTILITIES

C.I. GDOT 1019E
RIM EL : ± 420.40
THROAT EL : ± 419.90
CONSTRUCT NEW DRAIN BOX OVER TOP OF EXIST. 24" RCP

C.I. GDOT 1019E
RIM EL : ± 419.50
THROAT EL : ± 419.00
INV OUT : 416.00(15" RCP)
±10 LF 15" RCP @ 1.0% MIN

ADJUST MANHOLE TOP TOP TO BE FLUSH W/ NEW SURFACE.

SDMH
RIM:419.63
INV A:415.04
INV B:414.18
INV C:414.10
INV D:413.85

CURB INLET
RIM:420.19
INV INACCESSIBLE

CURB INLET
RIM:419.04
INV A:413.91
INV B:413.74

RETROFIT EXIST C.I. TOP INTO JUNCTION BOX TOP W/ MH RIM FLUSH W/ NEW SURFACE
CONNECT NEW 15" RCP INTO BOX

DI 2X2
RIM:418.62
INV A:413.47
INV B:413.12
INV C:413.09

READJUST DRAIN BOX TOP TO BE FLUSH W/ NEW SURFACE.

ROSS STREET

CURB INLET
RIM:420.19
INV INACCESSIBLE

CURB INLET
RIM:419.62
INV INACCESSIBLE

OGLETHORPE STREET

ROSS STREET LANE

OGLETHORPE STREET

CONTRACTOR SHALL ADVISE MACON - BIBB FACILITIES TO PICK - UP ALL HISTORIC LIGHTS THAT ARE REPLACED.

CURB INLET
RIM:418.67
INV INACCESSIBLE

RETROFIT EXIST C.I. TOP INTO JUNCTION BOX TOP W/ MH RIM FLUSH W/ NEW SURFACE
CONNECT NEW 15" RCP INTO BOX

C.I. GDOT 1019E
RIM EL :
THROAT EL : FLUSH W. PAVMT
INV OUT : 416.50(15" RCP)
±35 LF 15" RCP @ 1.0% MIN

OGLETHORPE STREET
±18 LF 15" RCP @ 0.5% MIN

CALHOUN STREET

SAW CUT EXIST. STREET PAVING AS REQUIRED TO INSTALL 15" RCP
REPLACE WITH NEW CONC. PAVING AS SHOWN ON DETAIL SHEET.

APPARENT BLIND JUNCTION

CURB INLET
RIM:419.72
INV:-9579.28

CALHOUN ST LANE

OGLETHORPE STREET

MATCHLINE

MATCHLINE

ROSS ST
CALHOUN ST
HAZEL ST
OGLETHORPE ST
ELM ST
ASH ST
EDGEWOOD ST
JACKSON ST

GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.

NORTH

"ALL UTILITIES, WATER, FIRE, SANITARY, GAS AND ELECTRICAL LINES MUST BE MARKED WITH LOCATOR WIRE AND DETECTOR TAPE".

GEORGIA 811 Utilities Protection Center, Inc.

ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA
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LEVEL II CERTIFIED DESIGN PROFESSIONAL GSMCC
CERTIFICATION NO. 00000002977
ISSUED: 12/07/2008 EXPIRES: 12/07/2017

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C-1.31

GRADING PLAN

DATE: 9-27-16
PROJ NO: 1604
DRAWN BY: RCC

REVISIONS

Cunningham & Co. Engineers
CIVIL ENGINEERING - CONSULTING - PROJECT MANAGEMENT
435 SECOND STREET, SUITE 201
MACON, GEORGIA 31201
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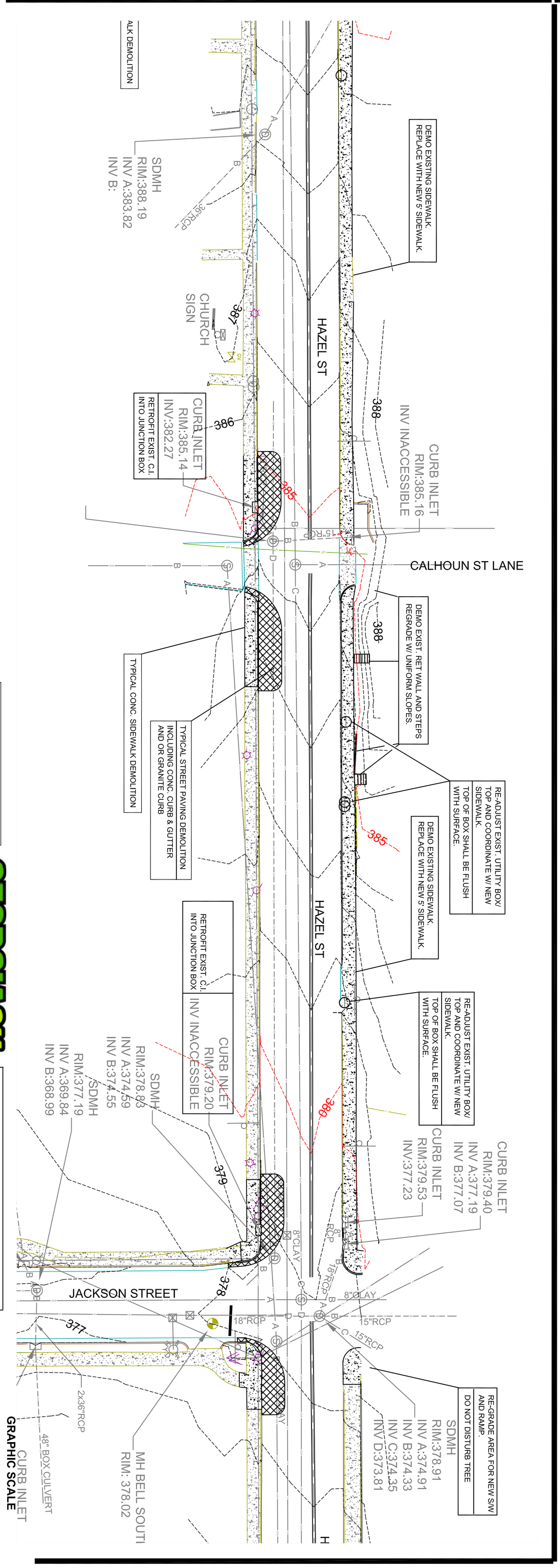
FAX 478.742.3569

BEALL'S HILL NEIGHBORHOOD
REVITALIZATION PROJECT
MACON, GEORGIA
FOR
BEALL'S HILL NEIGHBORHOOD

MATCHLINE



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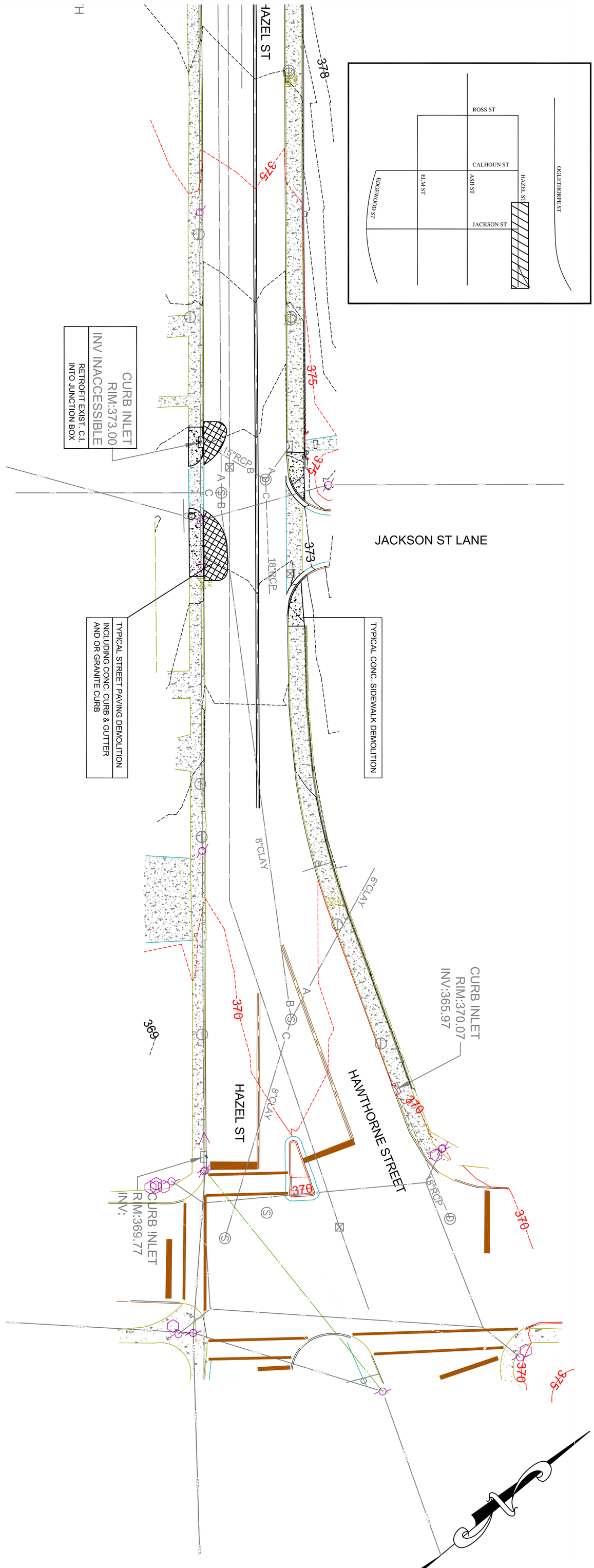

MATCHLINE

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C-2.10

DEMOLITION PLAN

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GEORGIA REGISTERED PROFESSIONAL ENGINEER ROBERT C. CUNNINGHAM

DATE: 8-15-16
PROJ NO: 1604
DRAWN BY: RCC

REVISIONS

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BEALL'S HILL NEIGHBORHOOD
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MACON, GEORGIA
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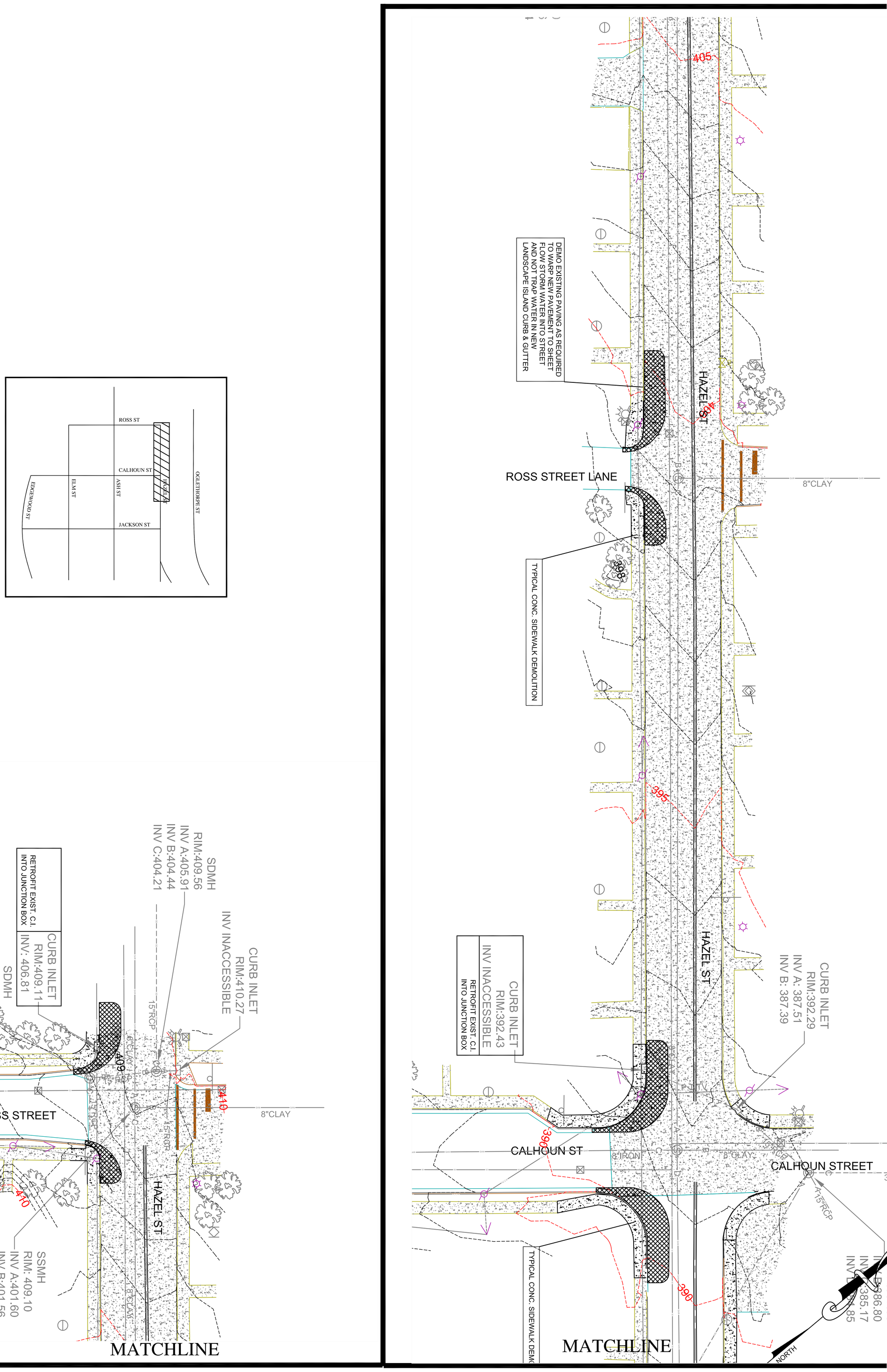
BEALL'S HILL NEIGHBORHOOD

MATCHLINE



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GEORGIA 811 Utilities Protection Center, Inc.

ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA	
ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA LEVEL II CERTIFIED DESIGN PROFESSIONAL GSWCC CERTIFICATION NO. 0000002977 ISSUED: 12/07/2008 EXPIRES: 12/07/2017	

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DATE:	8-15-16
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REVISIONS

C-2.11

DEMOLITION PLAN

Cunningham & Co. Engineers
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MACON, GEORGIA 31201
OFFICE 478.742.3616
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BEALL'S HILL NEIGHBORHOOD
REVITALIZATION PROJECT
MACON, GEORGIA
FOR
BEALL'S HILL NEIGHBORHOOD

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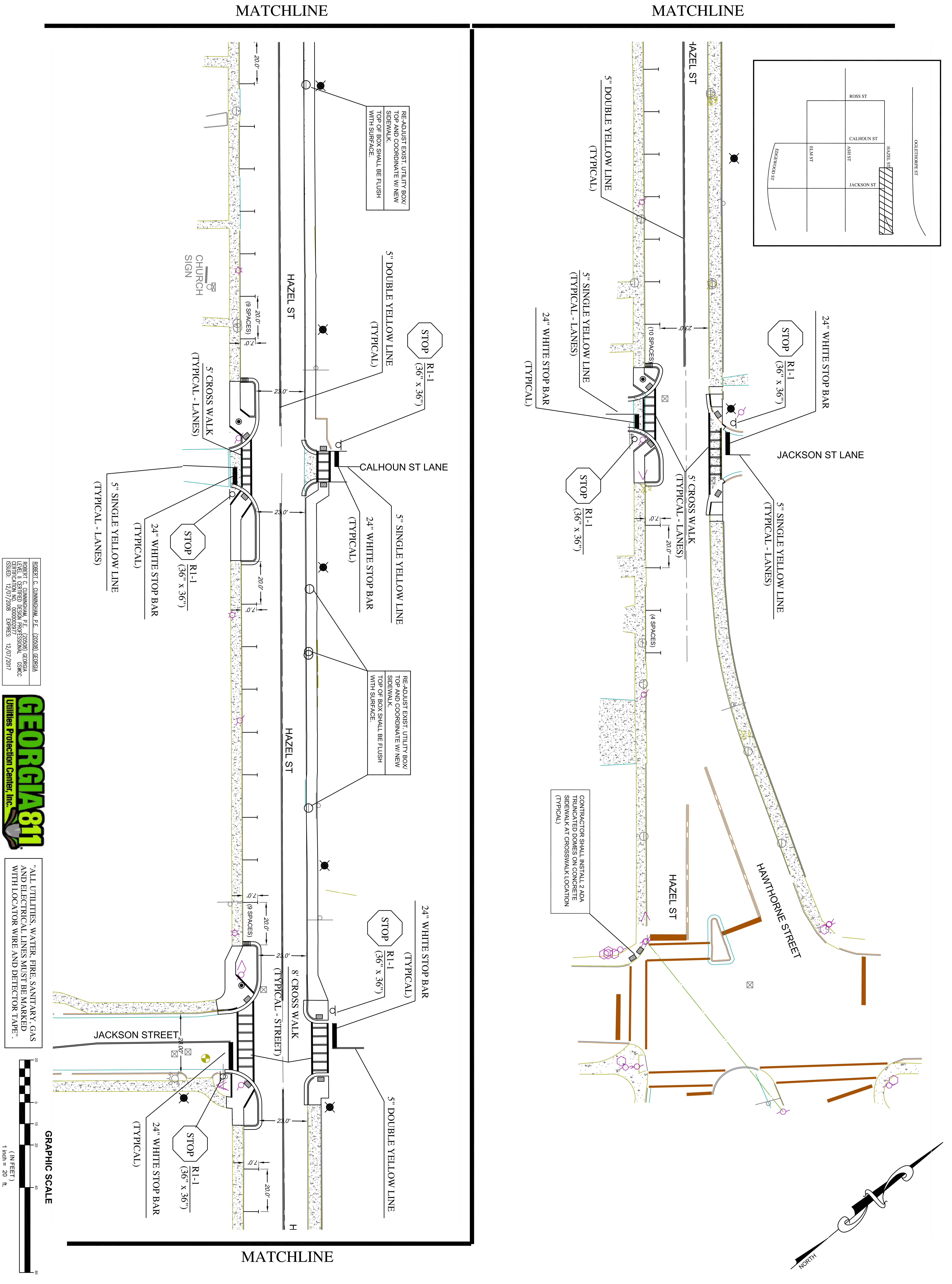
MATCHLINE
MATCHLINE
MATCHLINE
HAZEL ST
HAZEL ST
HAZEL ST
HAZEL ST
CHURCH SIGN
RE-ADJUST EXIST. UTILITY BOX/ TOP AND COORDINATE W/ NEW SIDEWALK. TOP OF BOX SHALL BE FLUSH WITH SURFACE.
5" DOUBLE YELLOW LINE (TYPICAL)
STOP
R1-1 (36" x 36")
5' CROSS WALK (TYPICAL - LANES)
CALHOUN ST LANE
5" SINGLE YELLOW LINE
24" WHITE STOP BAR (TYPICAL)
5" SINGLE YELLOW LINE (TYPICAL - LANES)
(9 SPACES)
(10 SPACES)
(4 SPACES)
20.0'
7.0'
23.0'
28.00'
8' CROSS WALK (TYPICAL - STREET)
JACKSON STREET
5" DOUBLE YELLOW LINE
24" WHITE STOP BAR
JACKSON ST LANE
5" SINGLE YELLOW LINE (TYPICAL - LANES)
CONTRACTOR SHALL INSTALL 2 ADA TRUNCATED DOMES ON CONCRETE SIDEWALK AT CROSSWALK LOCATION (TYPICAL)
HAWTHORNE STREET
ROSS ST
CALHOUN ST
JACKSON ST
EDGEWOOD ST
ELM ST
ASH ST
HAZEL ST
OGLETHORPE ST
NORTH
ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA
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LEVEL II CERTIFIED DESIGN PROFESSIONAL GSWCC
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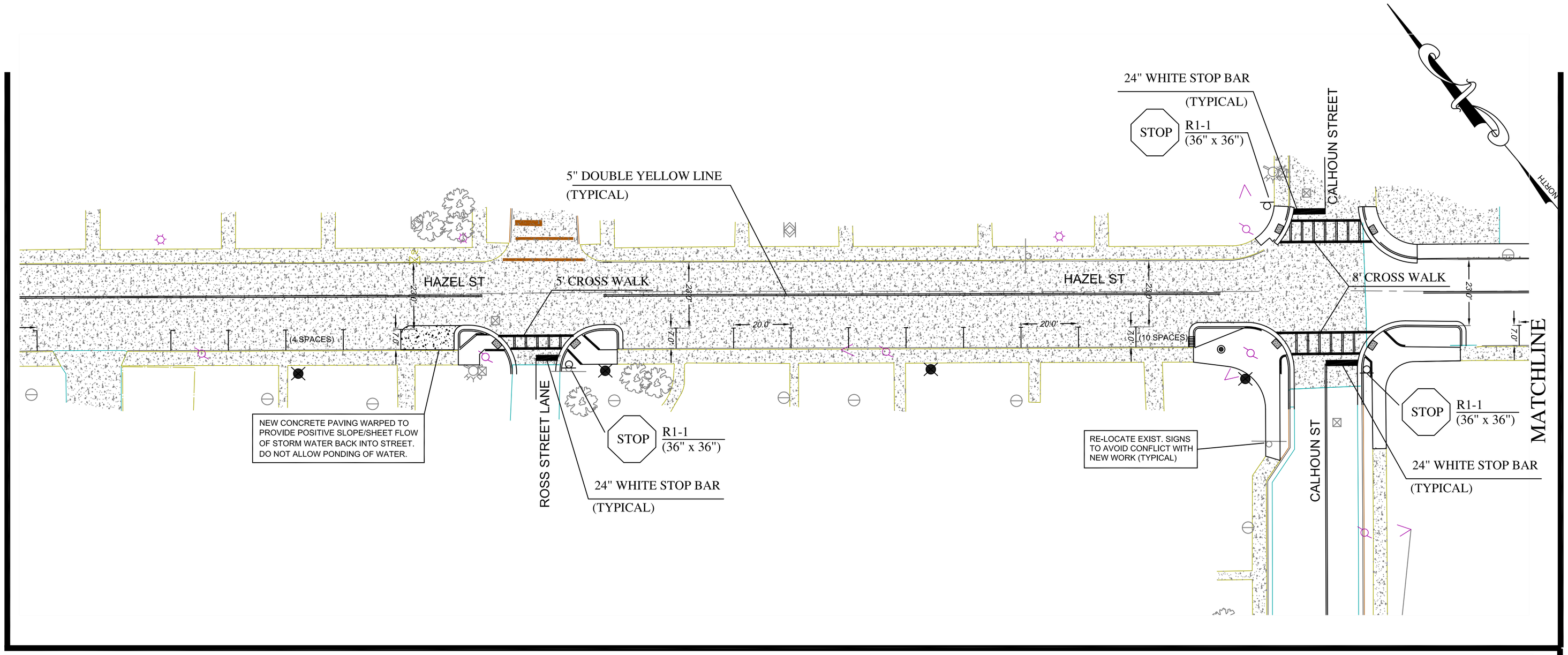
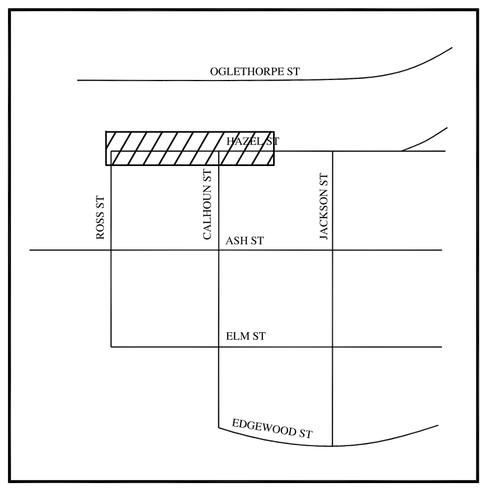
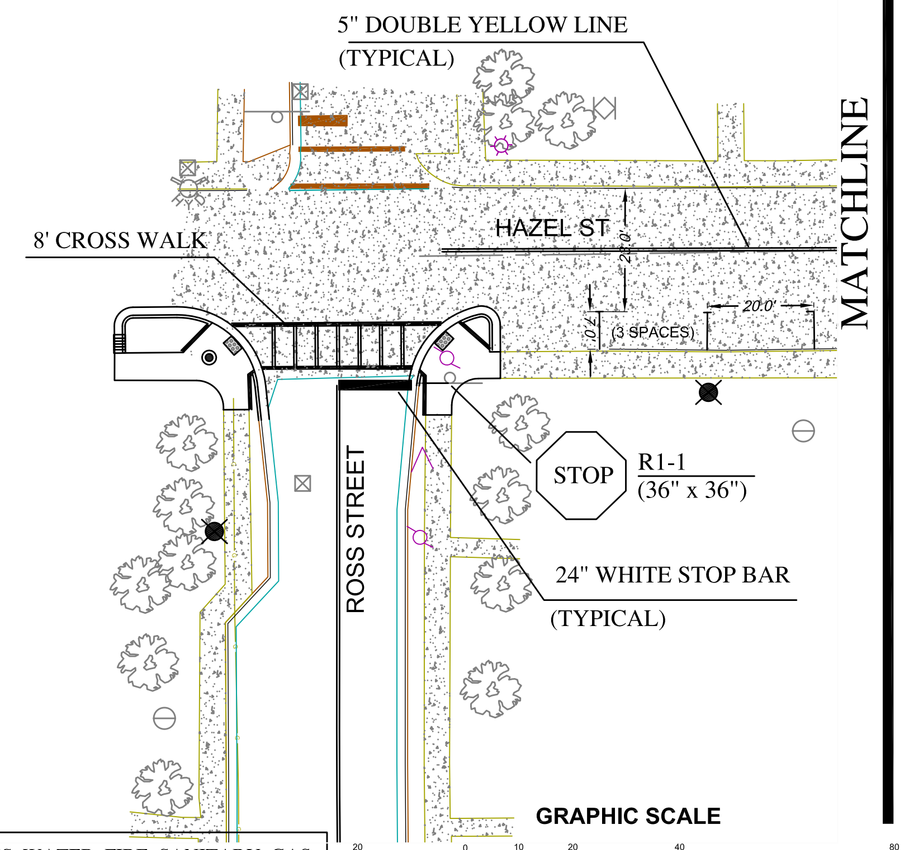
GEORGIA 811
Utilities Protection Center, Inc.
"ALL UTILITIES, WATER, FIRE, SANITARY, GAS AND ELECTRICAL LINES MUST BE MARKED WITH LOCATOR WIRE AND DETECTOR TAPE".
GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

C-2.20	SITE PLAN	THIS SEAL IS VALID ONLY IF SIGNED AND DATED BY THE LICENSED PROFESSIONAL SHOWN.	DATE: 9-27-16 PROJ NO: 1604 DRAWN BY: RCC	REVISIONS	Cunningham & Co. Engineers CIVIL ENGINEERING - CONSULTING - PROJECT MANAGEMENT 435 SECOND STREET, SUITE 201 MACON, GEORGIA 31201 OFFICE 478.742.3616 FAX 478.742.3569	BEALL'S HILL NEIGHBORHOOD REVITALIZATION PROJECT MACON, GEORGIA FOR BEALL'S HILL NEIGHBORHOOD







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REVISIONS

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GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 20508 ROBERT C. CUNNINGHAM

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SITE PLAN

C-2.21

P:\Projects\1604-Bealls Hills\1604-BASE-3.dwg, C-2.21, rodney, Sep 27, 2016 - 9:45:57am

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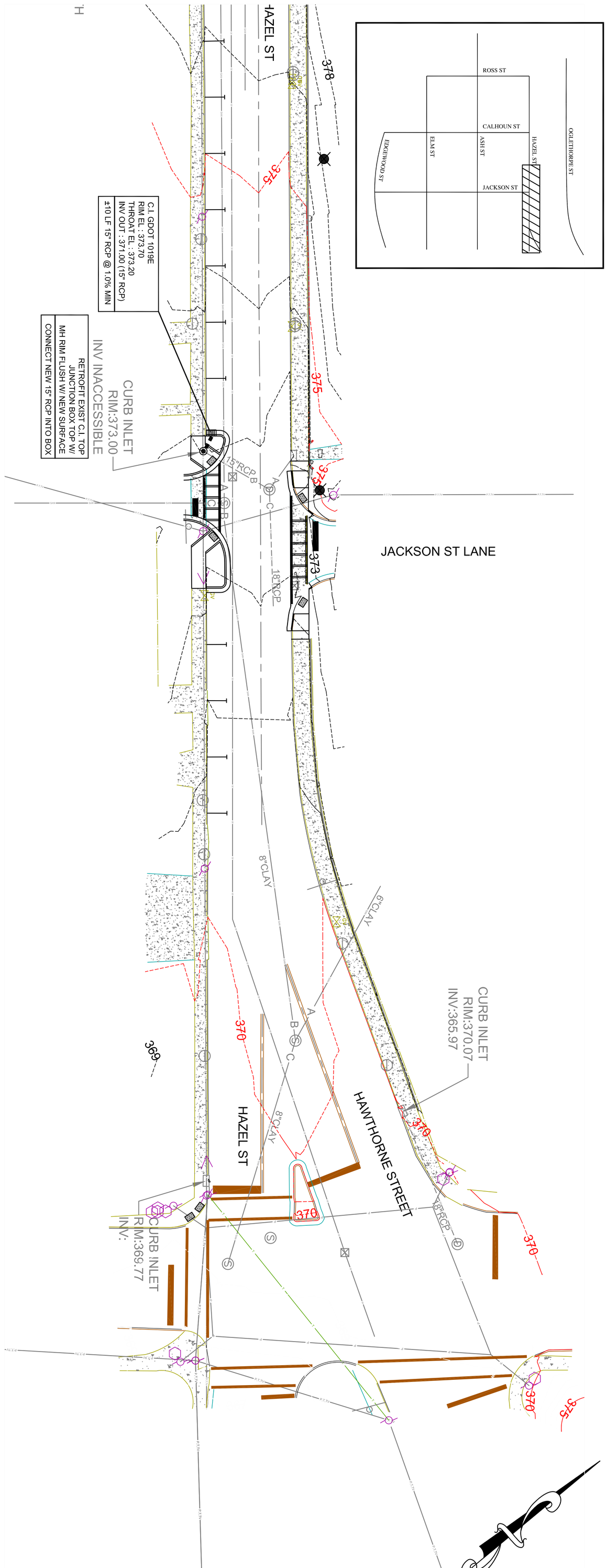

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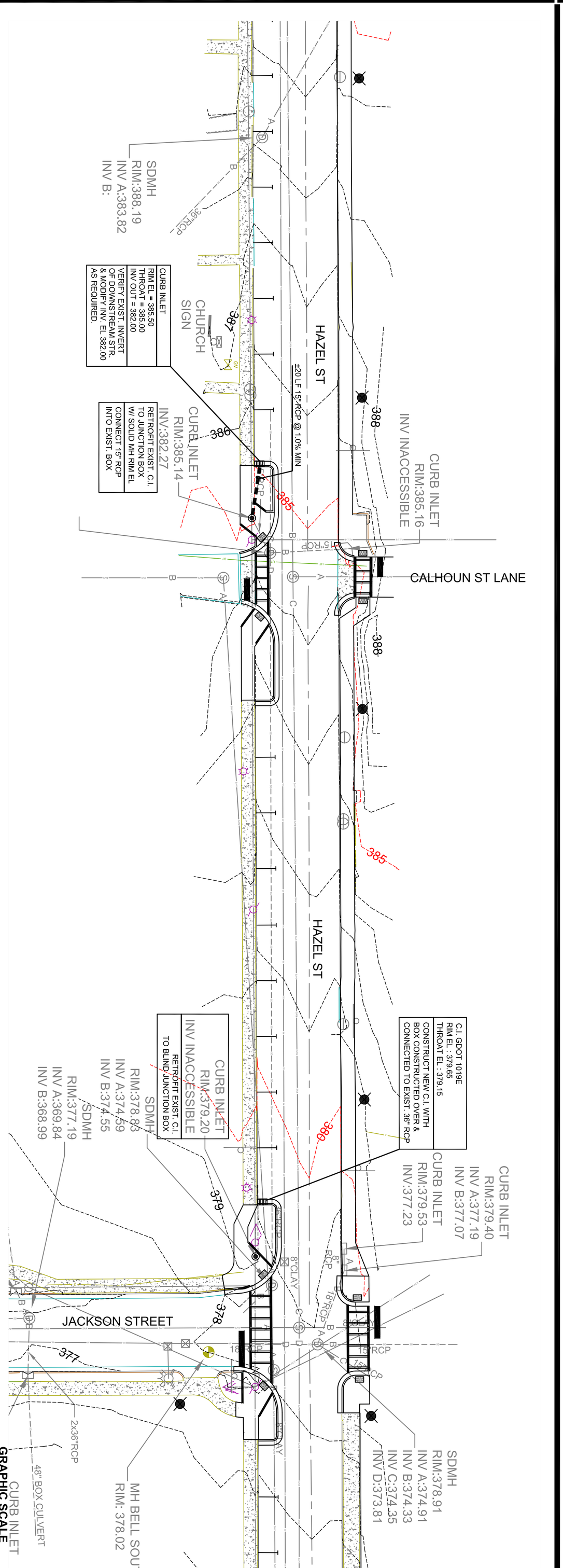

MATCHLINE

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C-2.30

GRADING PLAN

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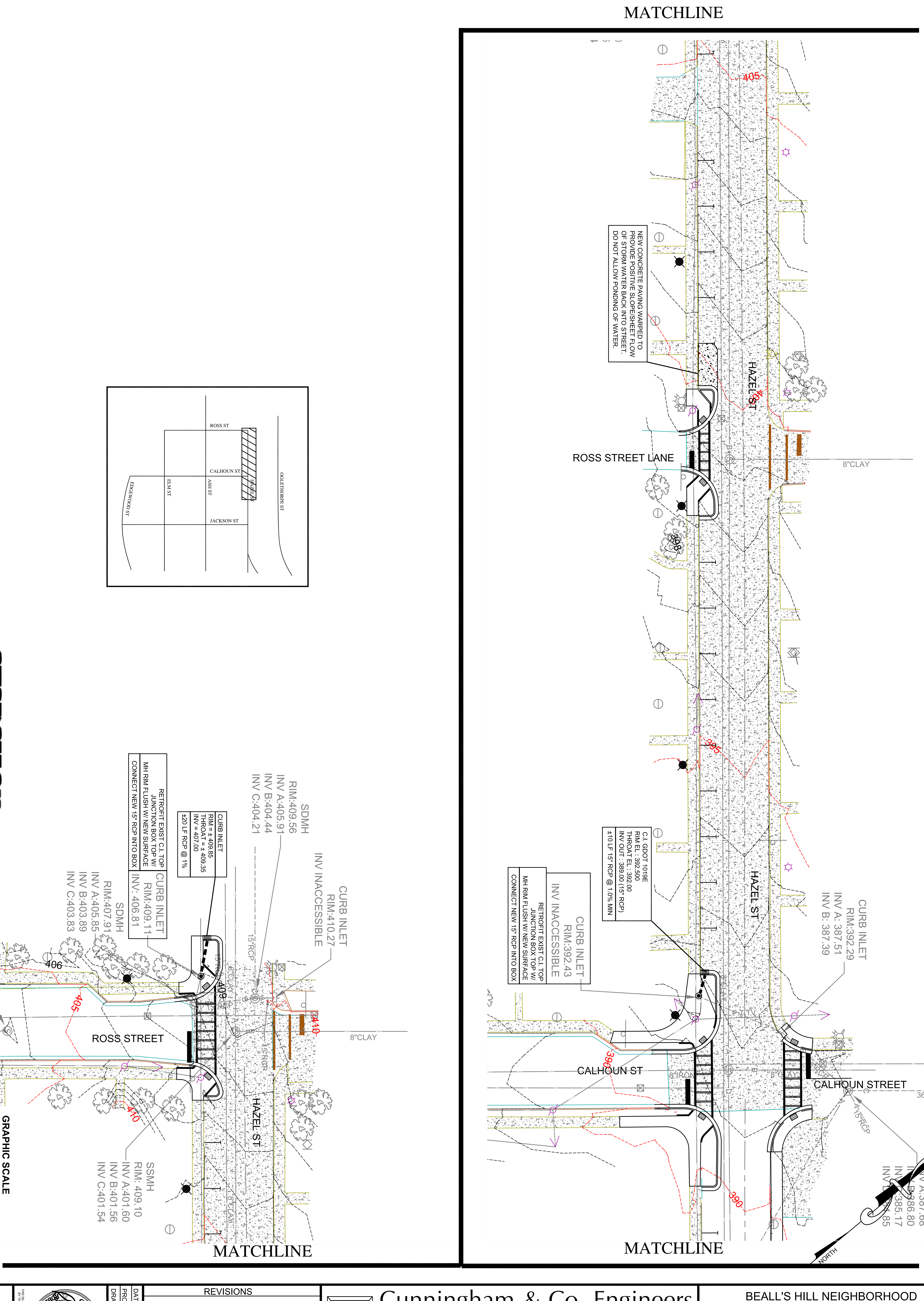

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GRAPHIC SCALE
0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

DATE:	9-27-16
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BEALL'S HILL NEIGHBORHOOD

GRADING PLAN

C-2.31

P:\Projects\1604-Bealls Hills\1604-BASE-3.dwg, C-3.10, rodney, Aug 23, 2016 - 1:41:59pm

MATCHLINE

MATCHLINE

CURB INLET
RIM:401.06
INV A:397.36
INV B:397.21

PORCH

RETROFIT EXIST. C.I. INTO BLIND BOX.

CURB INLET
RIM:402.71
ACCESSIBLE

JACKSON STREET

15"RCP

8"CLAY

DEMO EXIST. RETAINING WALL AND STEPS.

SSMH
RIM: 400.89
INV A:397.63
INV B:397.59

MH ATT
RIM: 401.78

ASH STREET

DEMO EXIST. STEPS. RE-GRADE AREA W/ UNIFORM SLOPES.

RELOCATE/READJUST & CAP EXIST. UTILITY BOX/METER

TYPICAL STREET PAVING DEMOLITION

SDMH
RIM:397.83
INV A:393.08
INV B:391.78

SSMH
RIM: 386.80
INV:-9612.20

CURB INLET
RIM:381.07
INV A:375.97
INV B:375.27

SDMH
RIM:380.18
INV A:374.56
INV B:374.35
INV C:373.26

CURB INLET
RIM:381.60
INV:377.80

RETROFIT EXIST. C.I. INTO BLIND BOX.

JACKSON ST LANE

24"RCP

SSMH
RIM: 381.04
INV A:375.64
INV B:375.63
INV C:375.54

CURB INLET
RIM:380.81
INV:376.76

CURB INLET
RIM:380.67
INV A:375.87
INV B:375.67

ROSS ST
CALHOUN ST
ASH ST
ELM ST
HAZEL ST
EDGEWOOD ST
JACKSON ST
OGLETHORPE ST

SSMH PAVED OVER
RIM: 408.92

TELFAIR STREET

NORTH

CURB INLET
RIM:401.47
INV A:396.72
INV B:396.57
INV C:396.08
INV D:395.41

SDMH
RIM:404.33
INV A:401.34
INV B:401.11

ADJUST TOP TO BE FLUSH W/ NEW CONC.

CURB INLET
RIM:405.78
INV:399.06

SDMH PAVED OVER
RIM:405.56

REMOVE EXIST. STEPS & SIDE RET. WALLS

CURB INLET
RIM:406.39
INV:403.90

CURB INLET
RIM:408.46
INV: 405.26

CALHOUN ST

18"RCP

15"RCP

ASH STREET

CURB INLET
RIM:405.49
INV A:401.61
INV B:399.00

CURB INLET
RIM:406.15
INV A:402.35
INV B:402.20

CURB INLET
RIM:408.63

DEMO EXIST. ROLL OVER CURB & GUTTER (TYP)

DEMO EXIST. ROLL OVER CURB & GUTTER (TYP)

TYPICAL STREET PAVING DEMOLITION

EXIST. C.I. BOXES SHALL BE DEMO. AND REPLACED WITH NEW MACON STANDARD C.I.

RETROFIT EXIST.SSMH RIM TO BE FLUSH W/ PAVEMENT SURFACE

FOUNTAIN

8"CLAY

CALHOUN ST LANE

DEMO EXIST. RET WALL AND REGRADE W/ UNIFORM SLOPES.

DEMO EXIST. RET WALL AND REPLACE W/ NEW BRICK WALL.

REMOVE PARTIAL STEPS AS REQUIRED TO CONSTRUCT AND INSTALL NEW 5' CONC. SIDEWALK. PROVIDE NEW STAIR LANDING W/ NEW STEPS DOWN ALONG NEW SIDEWALK.

DEMO EXIST. RETAINING WALL AND STEPS.

RE-ADJUST EXIST. UTILITY BOX/ TOP AND COORDINATE W/ NEW SIDEWALK & CURB & GUTTER/ HEADER CURB.

DEMO EXIST. CURB & GUTTER

RE-ADJUST EXIST. UTILITY BOX/ TOP AND COORDINATE W/ NEW SIDEWALK & CURB & GUTTER/ HEADER CURB.

DEMO EXIST. RET WALL AND STEPS REGRADE W/ UNIFORM SLOPES.

PORCH

ASH STREET

GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.

MATCHLINE

"ALL UTILITIES, WATER, FIRE, SANITARY, GAS AND ELECTRICAL LINES MUST BE MARKED WITH LOCATOR WIRE AND DETECTOR TAPE".

GEORGIA 811 Utilities Protection Center, Inc.

ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA
LEVEL II CERTIFIED DESIGN PROFESSIONAL GSWCC
CERTIFICATION NO. 00000029??
ISSUED: 12/07/2008 EXPIRES: 12/07/2017

THE SEAL IS VALID ONLY IF SIGNED AND DATED BY THE LICENSED PROFESSIONAL SHOWN.

DEMOLITION PLAN

C-3.10

DATE: 8-15-16
PROJ NO: 1604
DRAWN BY: RCC

REVISIONS

Cunningham & Co. Engineers
CIVIL ENGINEERING - CONSULTING - PROJECT MANAGEMENT
435 SECOND STREET, SUITE 201
MACON, GEORGIA 31201
OFFICE 478.742.3616
FAX 478.742.3569

BEALL'S HILL NEIGHBORHOOD
REVITALIZATION PROJECT
MACON, GEORGIA
FOR
BEALL'S HILL NEIGHBORHOOD

MATCHLINE

ROSS STREET

8"IRON

405

410

411

TYPICAL STREET PAVING DEMOLITION

TYPICAL CURB & GUTTER DEMOLITION

407

ASH STREET

MH ATT
RIM: 413.42

8"CLAY

412

415

420

427

416

425

TYPICAL SIDEWALK DEMOLITION

MODIFY EXIST. STEPS/RET. WALL AS REQUIRED TO PROVIDE PEDESTRIAN ACCESS TO NEW SIDEWALK

CURB INLET
RIM:413.37
INV:409.77
RETROFIT EXIST. C.I. INTO JUNCTION BOX.

CURB INLET
RIM:413.01
INV INACCESSIBLE
RETROFIT EXIST. C.I. INTO BLIND BOX.

15"CLAY

18"RCP

421

ROSS STREET LANE

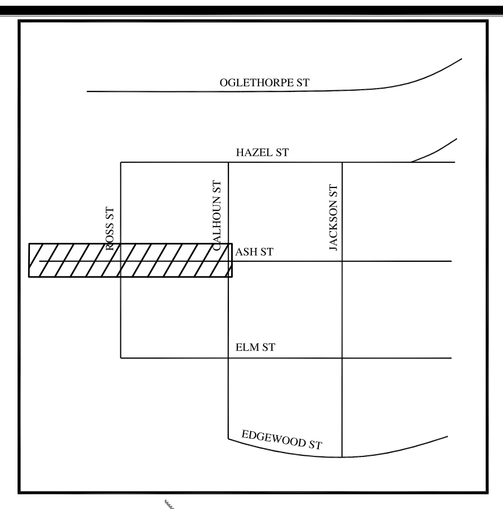
414

SDMH
RIM:411.99
INV A:408.44
INV B:408.21
INV C:408.04

CURB INLET
RIM:412.63
FULL OF DEBRIS
RETROFIT EXIST. C.I. INTO BLIND BOX.

REMOVE EXIST. STEPS & RET. WALLS

MATCHLINE



SIGN

MH ATT
RIM: 418.03

ASH STREET

429

430

425

420

415

413

15"RCP

18"RCP

CURB INLET
RIM:419.50
INV:416.56

SDMH
RIM:418.82
INV A:415.82
INV B:415.79

DEMO EXIST. C & G AND SIDEWALKS

CURB INLET
RIM:417.52
INV INACCESSIBLE

MH ATT
RIM: 416.21

RE-ADJUST EXIST. UTILITY BOX/ TOP AND COORDINATE W/ NEW SIDEWALK.
TOP OF BOX SHALL BE FLUSH WITH SURFACE.

CURB INLET
RIM:410.52
INV A:407.53
INV B:407.42
INV C:407.32

CURB INLET
RIM:410.76
INV:408.26

SDMH
RIM:407.67
INV A:404.35
INV B:402.24

SDMH
RIM:409.89
INV A:405.64
INV B:404.64
INV C:404.54

VENT PIPE

SDMH
RIM:408.67
INV A:405.77
INV B:405.39

CURB INLET
RIM:409.49
INV:406.24

RIM: 408.87

COMM BOX

CURB INLET
RIM:410.14
INV A:408.34
INV B:407.21
RETROFIT BOX TOP TO JUNCTION BOX MH RIM FLUSH W/ NEW SURFACE

COORDINATE WITH PROJECT MANAGER BILL CAUSEY, REGARDING TERMINATION POINT OF NEW CONC. CURB & GUTTER & NEW 5' WIDE CONC. SIDEWALK ADJACENT TO RAILROAD TRACKS/RIGHT OF WAY. (TYPICAL BOTH SIDES OF TRACK & ROAD)

MATCHLINE

ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA

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LEVEL II CERTIFIED DESIGN PROFESSIONAL GSWCC
CERTIFICATION NO. 0000002977
ISSUED: 12/07/2008 EXPIRES: 12/07/2017

GEORGIA811 Utilities Protection Center, Inc.

"ALL UTILITIES, WATER, FIRE, SANITARY, GAS AND ELECTRICAL LINES MUST BE MARKED WITH LOCATOR WIRE AND DETECTOR TAPE".

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

BEALL'S HILL NEIGHBORHOOD
REVITALIZATION PROJECT
MACON, GEORGIA
FOR
BEALL'S HILL NEIGHBORHOOD

Cunningham & Co. Engineers
CIVIL ENGINEERING - CONSULTING - PROJECT MANAGEMENT
435 SECOND STREET, SUITE 201
MACON, GEORGIA 31201
OFFICE 478.742.3616
FAX 478.742.3569

REVISIONS

DATE:	8-15-16
PROJ NO:	1604
DRAWN BY:	RCC

GEORGIA REGISTERED PROFESSIONAL ENGINEER ROBERT C. CUNNINGHAM

THIS SEAL IS VALID ONLY IF SIGNED AND DATED BY THE LICENSED PROFESSIONAL SHOWN.

DEMOLITION PLAN

C-3.11

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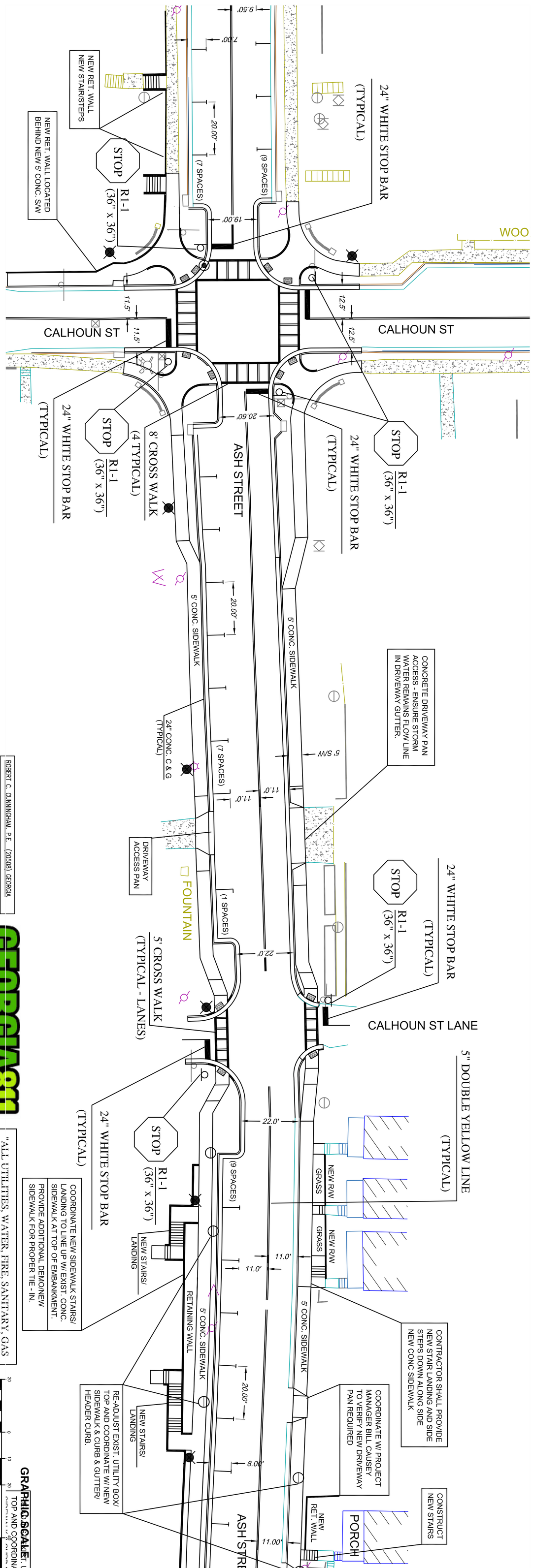

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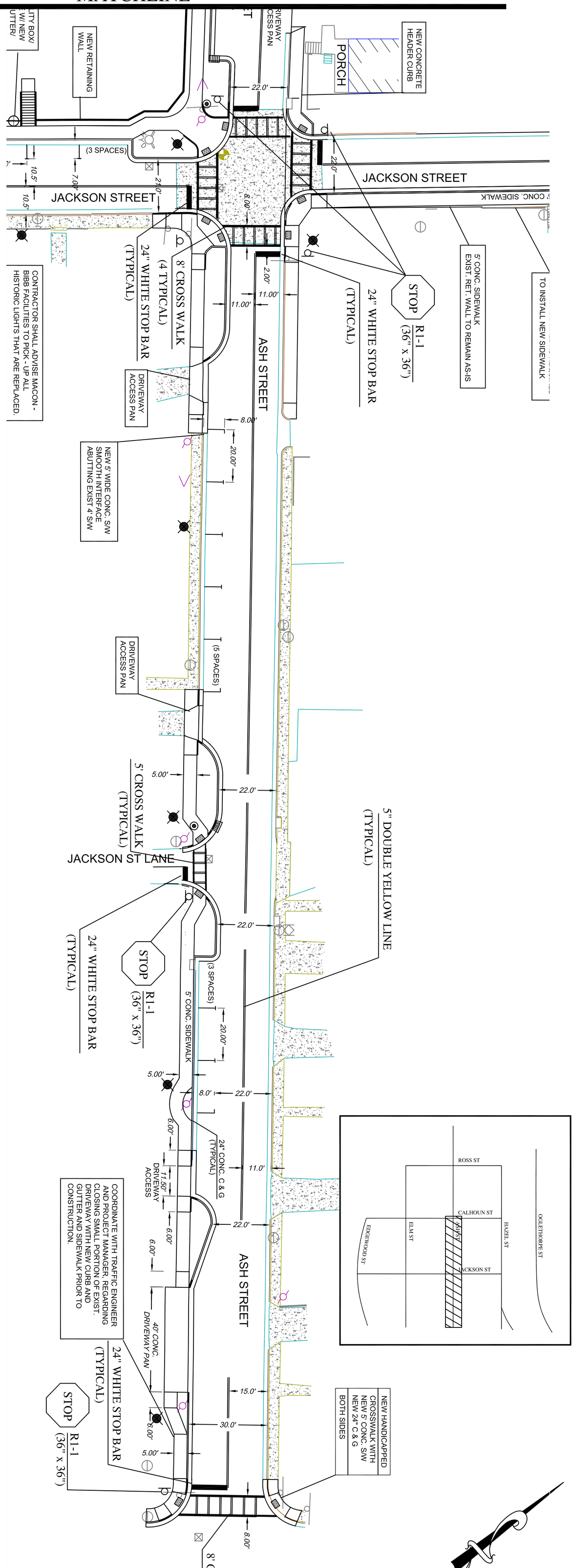

MATCHLINE

ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA
LEVEL II CERTIFIED DESIGN PROFESSIONAL GSMCC
CERTIFICATION NO. 00000002977
ISSUED: 12/07/2008 EXPIRES: 12/07/2017

GEORGIA811 Utilities Protection Center, Inc.

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REVISIONS

DATE: 9-27-16
PROJ NO: 1604
DRAWN BY: RCC

SITE PLAN

C-3.20

Cunningham & Co. Engineers
CIVIL ENGINEERING - CONSULTING - PROJECT MANAGEMENT
435 SECOND STREET, SUITE 201
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BEALL'S HILL NEIGHBORHOOD
REVITALIZATION PROJECT
MACON, GEORGIA
FOR
BEALL'S HILL NEIGHBORHOOD

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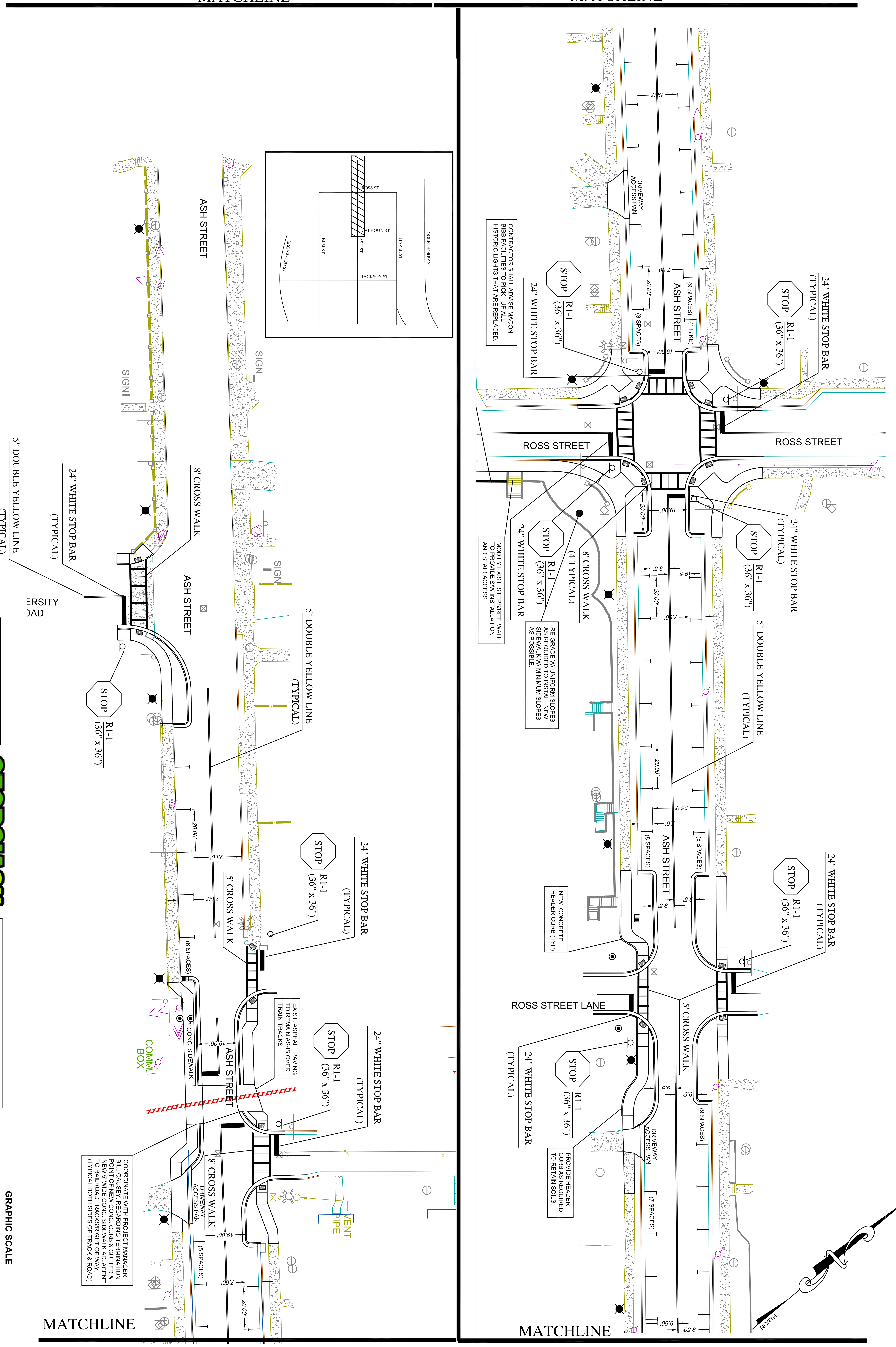

ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA
ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA LEVEL II CERTIFIED DESIGN PROFESSIONAL GSWCC CERTIFICATION NO. 0000002977
ISSUED: 12/07/2008 EXPIRES: 12/07/2017

GEORGIA 811 Utilities Protection Center, Inc.

"ALL UTILITIES, WATER, FIRE, SANITARY, GAS AND ELECTRICAL LINES MUST BE MARKED WITH LOCATOR WIRE AND DETECTOR TAPE".

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

DATE:	9-27-16
PROJ NO:	1604
DRAWN BY:	RCC

REVISIONS

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GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 20508 ROBERT C. CUNNINGHAM

SITE PLAN

C-3.21

Cunningham & Co. Engineers
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435 SECOND STREET, SUITE 201
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BEALL'S HILL NEIGHBORHOOD REVITALIZATION PROJECT
MACON, GEORGIA
FOR
BEALL'S HILL NEIGHBORHOOD

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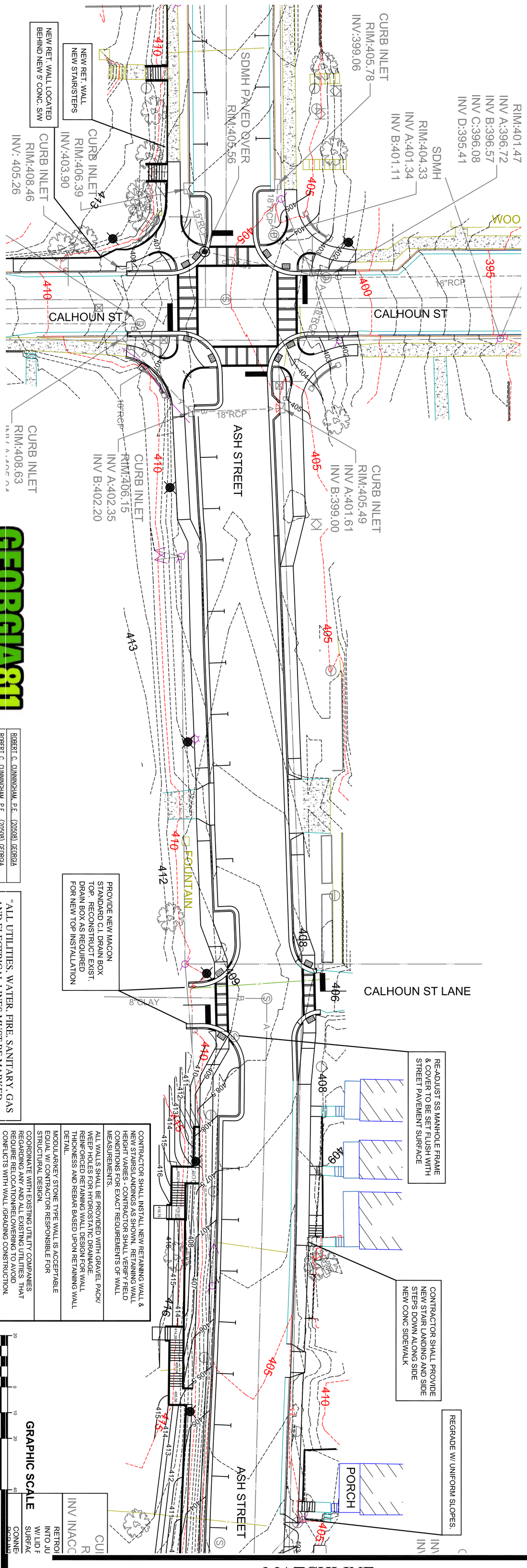

"ALL UTILITIES, WATER, FIRE, SANITARY, GAS AND ELECTRICAL LINES MUST BE MARKED WITH LOCATOR WIRE AND DETECTOR TAPE".

CONTRACTOR SHALL INSTALL NEW RETAINING WALL & NEW STAIRS/LANDINGS AS SHOWN. RETAINING WALL HEIGHT VARIES - CONTRACTOR SHALL VERIFY FIELD CONDITIONS FOR EXACT REQUIREMENTS OF WALL MEASUREMENTS.

ALL WALLS SHALL BE PROVIDED WITH GRAVEL PACK/ WEEP HOLES FOR HYDROSTATIC DRAINAGE. REINFORCED RETAINING WALL DESIGN FOR WALL THICKNESS AND REBAR BASED UPON RETAINING WALL DETAIL.

MODULAR/KEY STONE TYPE WALL IS ACCEPTABLE EQUAL W/ CONTRACTOR RESPONSIBLE FOR STRUCTURAL DESIGN.

COORDINATE WITH EXISTING UTILITY COMPANIES REGARDING ANY AND ALL EXISTING UTILITIES THAT REQUIRE RELOCATION/RELOWERING TO AVOID CONFLICTS WITH WALL/GRADING CONSTRUCTION.

NEW STAIR LANDINGS SHALL MATCH UP WITH EXISTING AND PROVIDE NEW RUN-OUTS AS REQUIRED FOR UNIFORM CONNECTION.

GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.

MATCHLINE

GEORGIA811 Utilities Protection Center, Inc.

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LEVEL II CERTIFIED DESIGN PROFESSIONAL GSMCC
CERTIFICATION NO. 00000002977
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ROBERT C. CUNNINGHAM PROFESSIONAL ENGINEER GEORGIA

DATE: 9-27-16
PROJ NO: 1604
DRAWN BY: RCC

REVISIONS

C-3.30

GRADING PLAN

Cunningham & Co. Engineers
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BEALL'S HILL NEIGHBORHOOD
REVITALIZATION PROJECT
MACON, GEORGIA
FOR
BEALL'S HILL NEIGHBORHOOD

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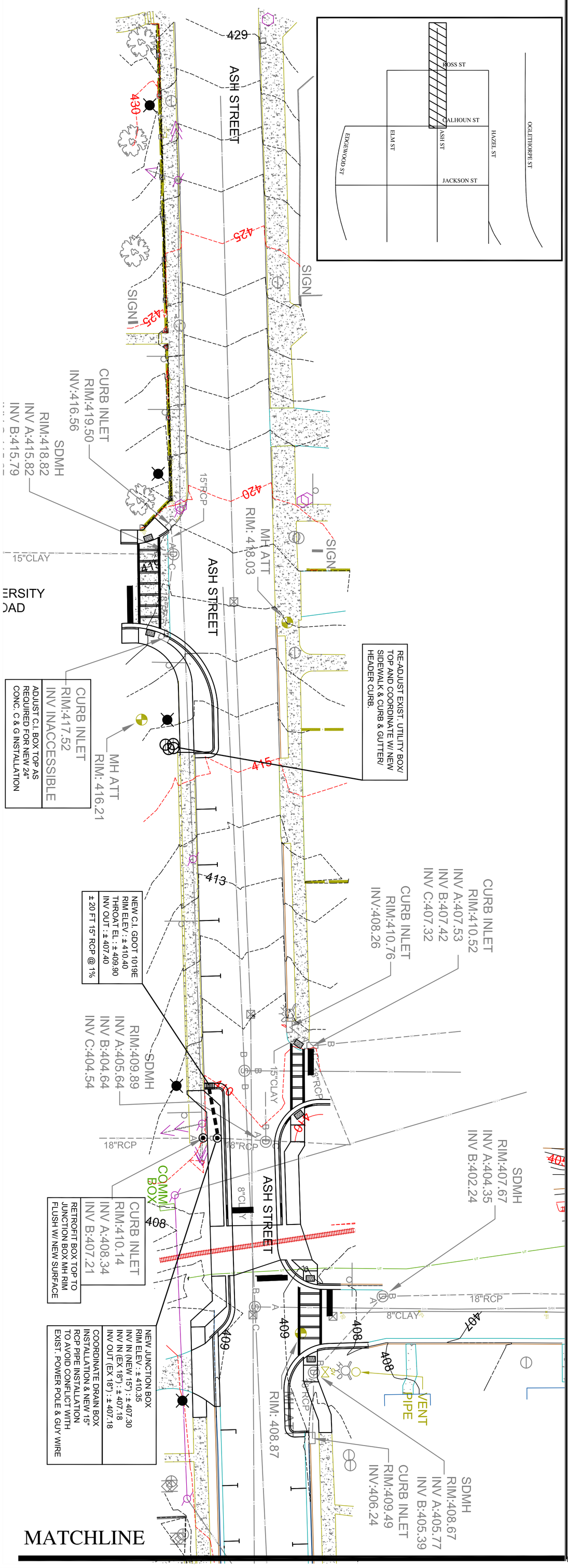
MATCHLINE

MATCHLINE



ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA
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LEVEL II CERTIFIED DESIGN PROFESSIONAL GSMCC
CERTIFICATION NO. 00000002977
ISSUED: 12/07/2008 EXPIRES: 12/07/2017

GEORGIA 811 Utilities Protection Center, Inc.

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GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.

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GEORGIA REGISTERED ROBERT C. CUNNINGHAM 20508 PROFESSIONAL ENGINEER

C-3.31

GRADING PLAN

DATE:	9-27-16
PROJ NO:	1604
DRAWN BY:	RCC

REVISIONS

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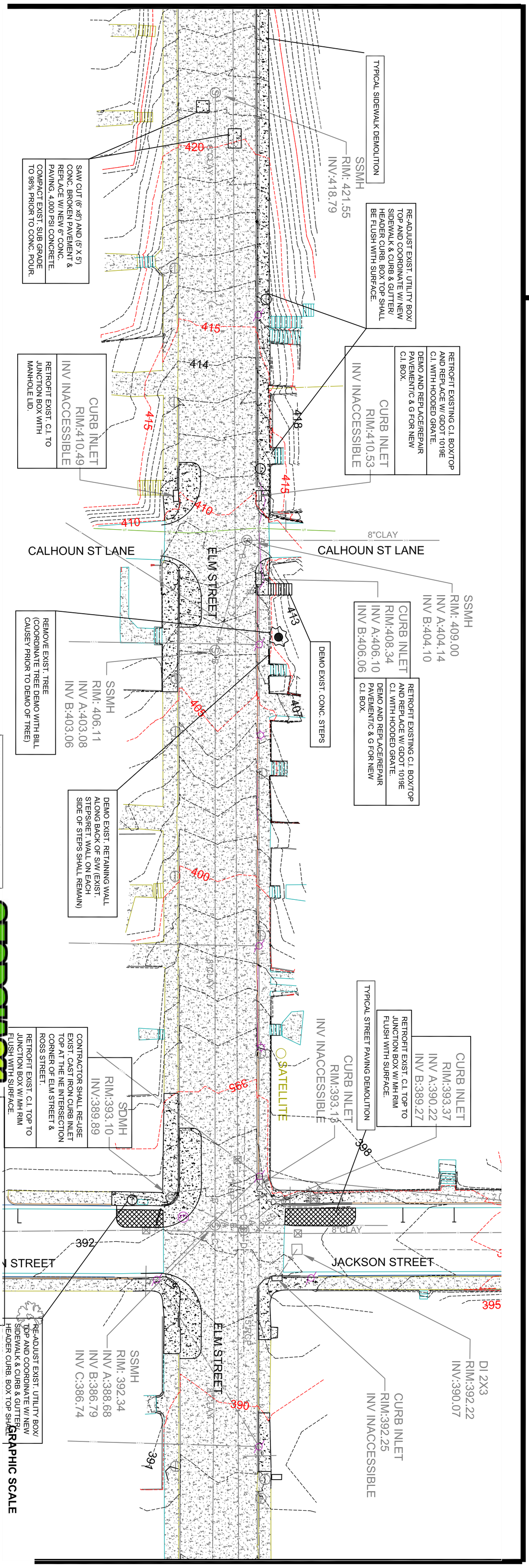
BEALL'S HILL NEIGHBORHOOD REVITALIZATION PROJECT
MACON, GEORGIA
FOR
BEALL'S HILL NEIGHBORHOOD

MATCHLINE



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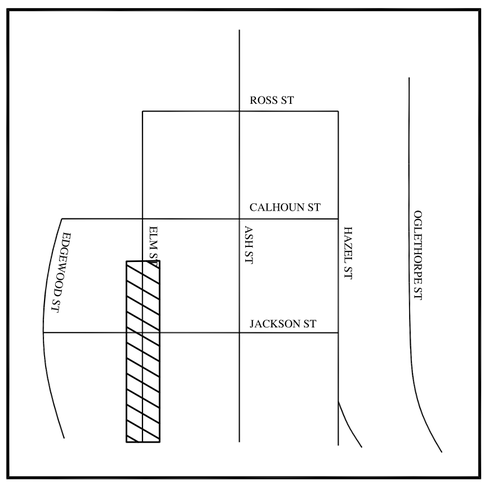

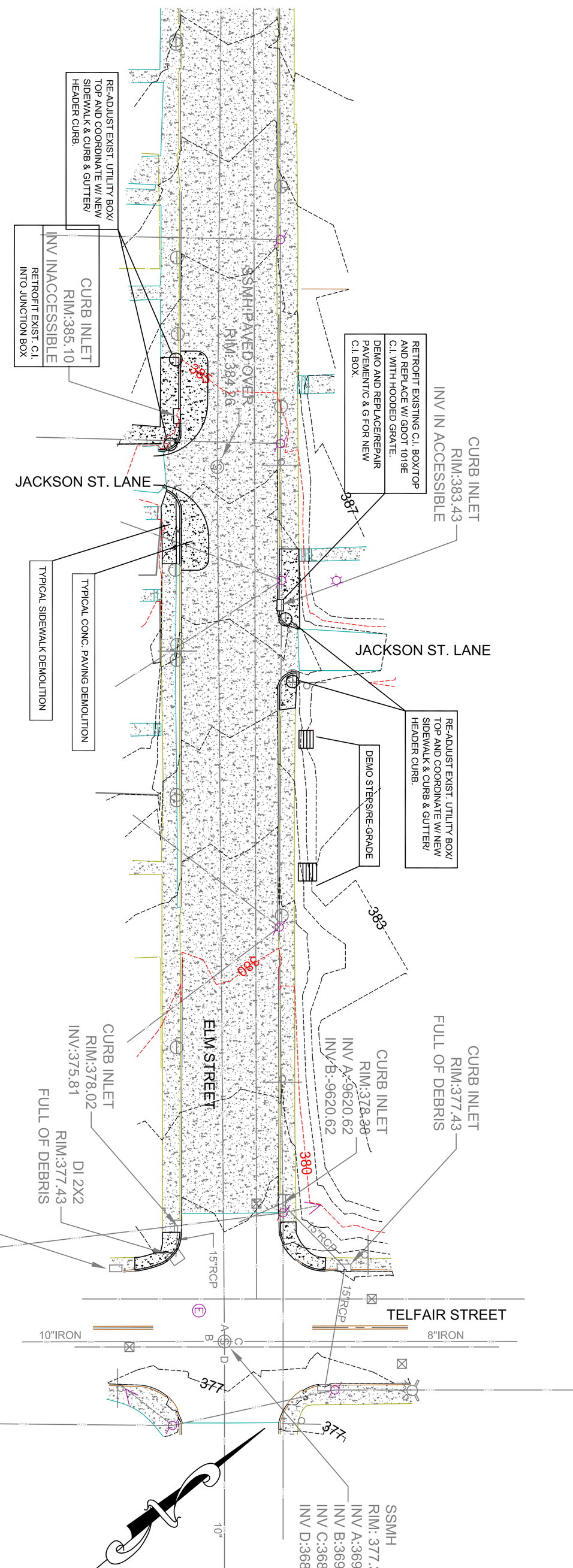

MATCHLINE

"ALL UTILITIES, WATER, FIRE, SANITARY, GAS AND ELECTRICAL LINES MUST BE MARKED WITH LOCATOR WIRE AND DETECTOR TAPE".

GEORGIA 811 Utilities Protection Center, Inc.

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LEVEL II CERTIFIED DESIGN PROFESSIONAL GSMCC
CERTIFICATION NO. 00000002977
ISSUED: 12/07/2008 EXPIRES: 12/07/2017

C-4.10

DEMOLITION PLAN

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GEORGIA REGISTERED PROFESSIONAL ENGINEER ROBERT C. CUNNINGHAM

DATE: 8-15-16
PROJ NO: 1604
DRAWN BY: RCC

REVISIONS

Cunningham & Co. Engineers
CIVIL ENGINEERING - CONSULTING - PROJECT MANAGEMENT
435 SECOND STREET, SUITE 201
MACON, GEORGIA 31201
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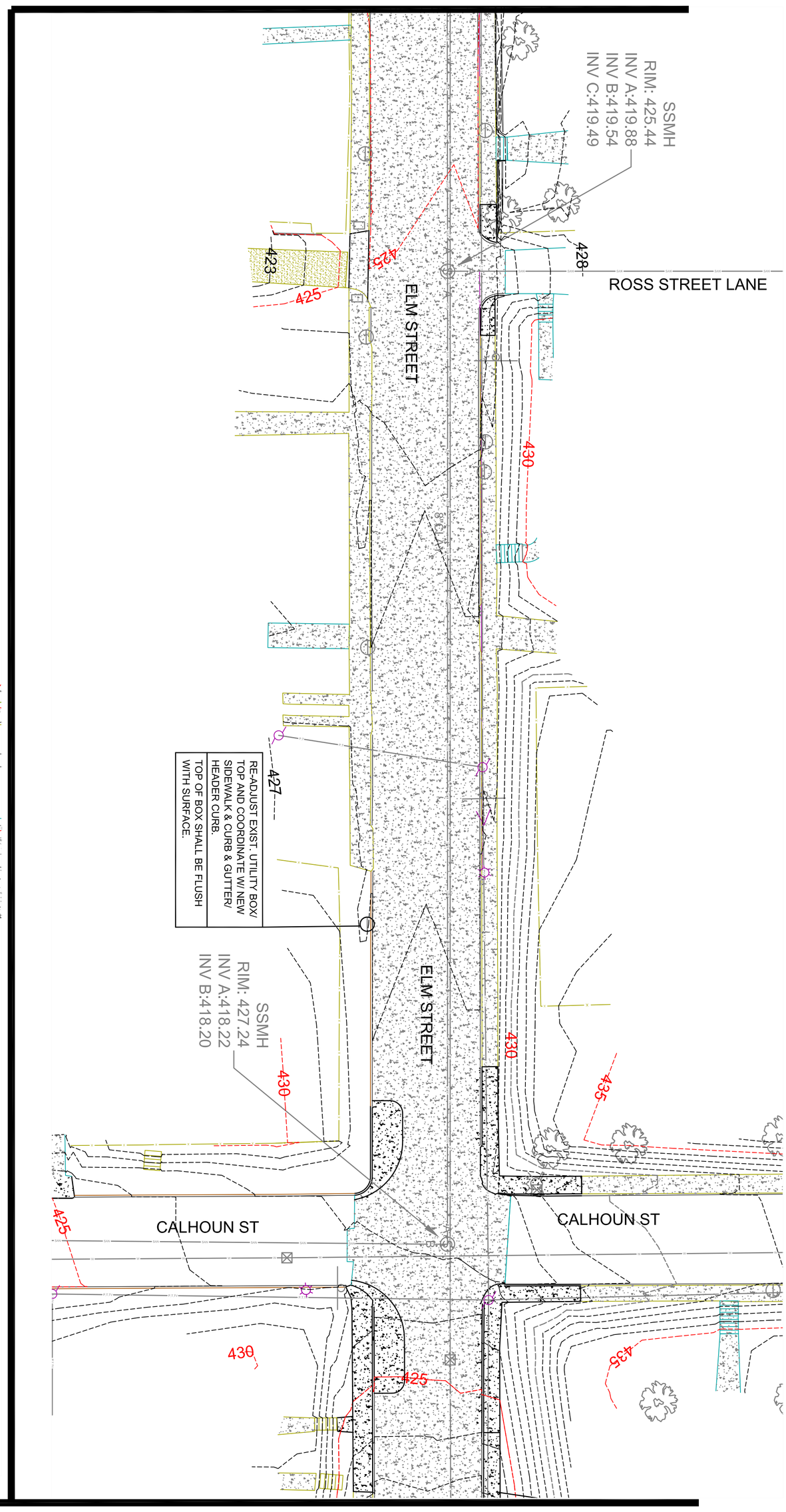
BEALL'S HILL NEIGHBORHOOD REVITALIZATION PROJECT
MACON, GEORGIA
FOR
BEALL'S HILL NEIGHBORHOOD

MATCHLINE



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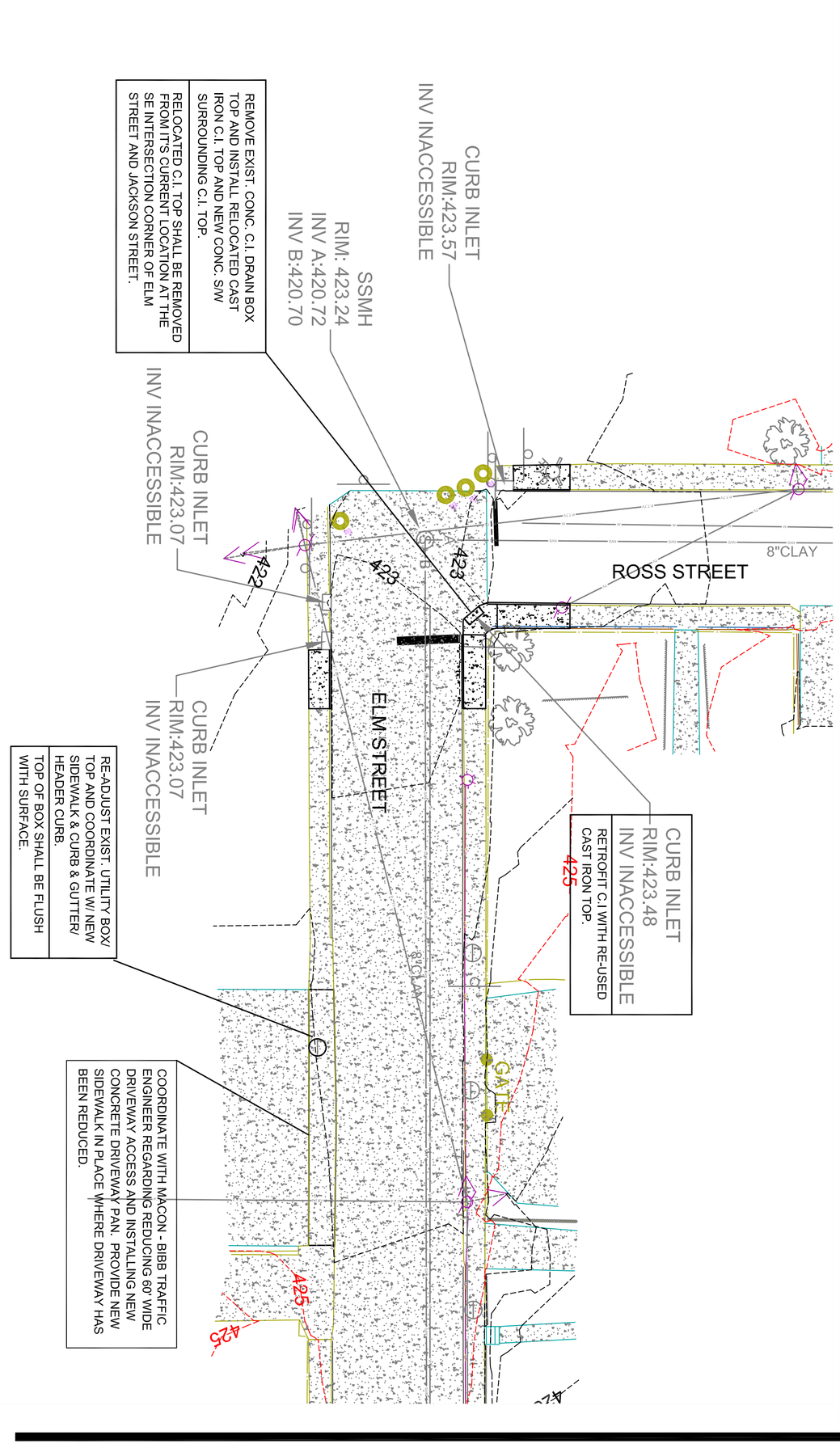

MATCHLINE

ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA
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LEVEL II CERTIFIED DESIGN PROFESSIONAL GSWCC
CERTIFICATION NO. 0000002977
ISSUED: 12/07/2008 EXPIRES: 12/07/2017

GEORGIA 811
Utilities Protection Center, Inc.

"ALL UTILITIES, WATER, FIRE, SANITARY, GAS AND ELECTRICAL LINES MUST BE MARKED WITH LOCATOR WIRE AND DETECTOR TAPE".

GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.
20 0 10 20 40 80

DEMOLITION PLAN

C-4.11

THIS SEAL IS VALID ONLY IF SIGNED AND DATED BY THE LICENSED PROFESSIONAL SHOWN.

GEORGIA REGISTERED PROFESSIONAL ENGINEER C. C. CUNNINGHAM

DATE: 8-15-16
PROJ NO: 1604
DRAWN BY: RCC

REVISIONS

Cunningham & Co. Engineers
CIVIL ENGINEERING - CONSULTING - PROJECT MANAGEMENT
435 SECOND STREET, SUITE 201
MACON, GEORGIA 31201
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BEALL'S HILL NEIGHBORHOOD
REVITALIZATION PROJECT
MACON, GEORGIA
FOR
BEALL'S HILL NEIGHBORHOOD

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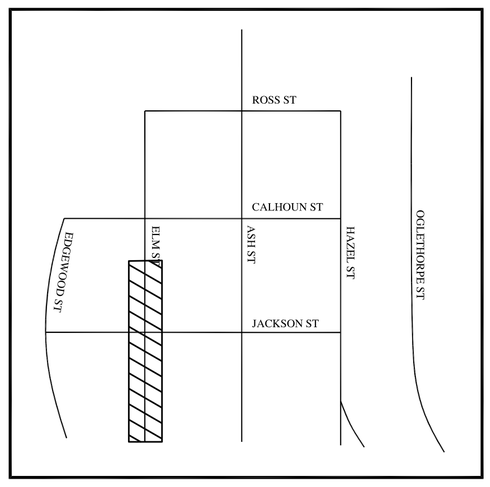
MATCHLINE



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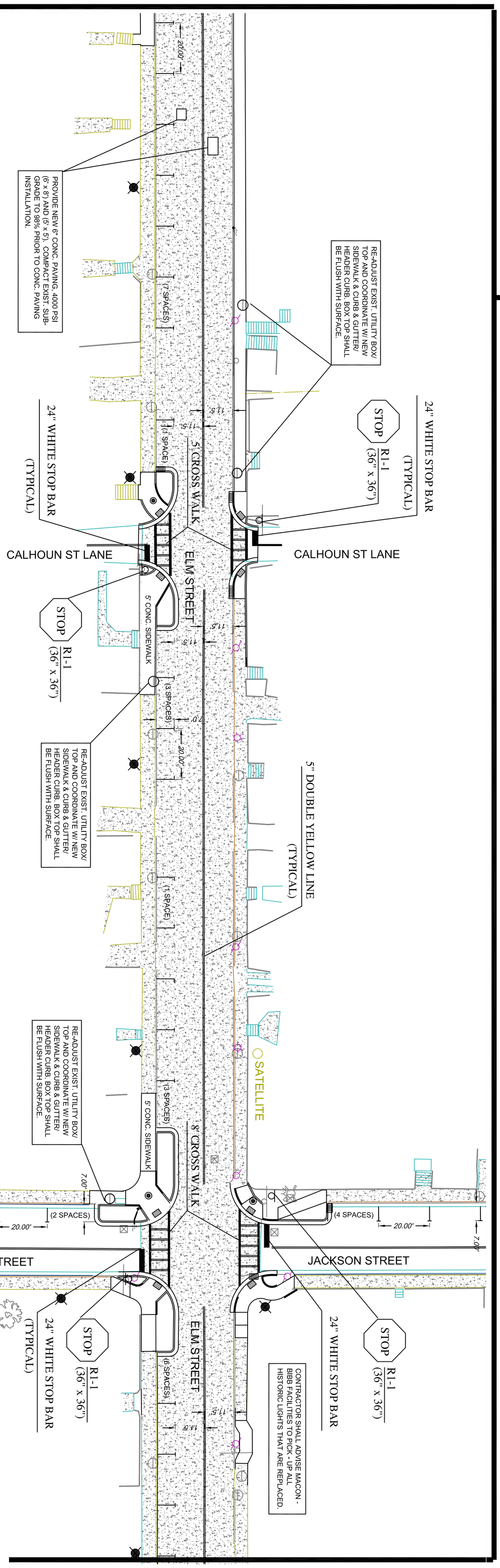

MATCHLINE

ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA

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LEVEL II CERTIFIED DESIGN PROFESSIONAL GSMCC
CERTIFICATION NO. 00000029??
ISSUED: 12/07/2008 EXPIRES: 12/07/2017

GEORGIA 811 Utilities Protection Center, Inc.

"ALL UTILITIES, WATER, FIRE, SANITARY, GAS AND ELECTRICAL LINES MUST BE MARKED WITH LOCATOR WIRE AND DETECTOR TAPE".

GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.

C-4.20

SITE PLAN

THIS SEAL IS VALID ONLY IF SIGNED AND DATED BY THE LICENSED PROFESSIONAL SHOWN.

DATE:	9-27-16
PROJ NO:	1604
DRAWN BY:	RCC

REVISIONS

Cunningham & Co. Engineers
CIVIL ENGINEERING - CONSULTING - PROJECT MANAGEMENT
435 SECOND STREET, SUITE 201
MACON, GEORGIA 31201
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BEALL'S HILL NEIGHBORHOOD
REVITALIZATION PROJECT
MACON, GEORGIA
FOR
BEALL'S HILL NEIGHBORHOOD

MATCHLINE

24" WHITE STOP BAR (TYPICAL)

STOP R1-1 (36" x 36")

5' CROSS WALK

EXISTING HC MATS. REMAIN AS - IS

(3 SPACES)

ROSS STREET LANE

5" SINGLE YELLOW LINE (TYPICAL - LANES)

PROVIDE CONC. HEADER CURB ON BACKSIDE OF SIDEWALK WHERE EXISTING GRADES ARE HIGHER (TYP.)

ELM STREET

5" DOUBLE YELLOW LINE (TYPICAL)

(3 SPACES)

RE-ADJUST EXIST. UTILITY BOX/ TOP AND COORDINATE W/ NEW SIDEWALK & CURB & GUTTER/ HEADER CURB.

TOP OF BOX SHALL BE FLUSH WITH SURFACE.

PROVIDE CONC. HEADER CURB ON BACKSIDE OF SIDEWALK WHERE EXISTING GRADES ARE HIGHER (TYP.)

24" WHITE STOP BAR (TYPICAL)

STOP R1-1 (36" x 36")

PROVIDE CONC. HEADER CURB ON BACKSIDE OF SIDEWALK WHERE EXISTING GRADES ARE HIGHER (TYP.)

(1 SPACE)

5' CONC. SIDEWALK

20.00'

11.5'

ELM STREET

(3 SPACES)

24" WHITE STOP BAR (TYPICAL)

5' CONC. SIDEWALK

CALHOUN ST

8' CROSS WALK

5' CONC. SIDEWALK

STOP R1-1 (36" x 36")

RE-ADJUST EXIST. UTILITY BOX/ TOP AND COORDINATE W/ NEW SIDEWALK & CURB & GUTTER/ HEADER CURB.

TOP OF BOX SHALL BE FLUSH WITH SURFACE.

CALHOUN ST

5" DOUBLE YELLOW LINE

MATCHLINE

ROSS ST

CALHOUN ST

HAZEL ST

ASH ST

JACKSON ST

OGLETHORPE ST

EDGEWOOD ST

ELM ST

5" DOUBLE YELLOW LINE (TYPICAL)

CONTRACTOR SHALL ADVISE MACON - BIBB FACILITIES TO PICK - UP ALL HISTORIC LIGHTS THAT ARE REPLACED.

LANDSCAPE CLEAN - UP NEEDED.

STOP R1-1 (36" x 36")

8' CROSS WALK

ROSS STREET

24" WHITE STOP BAR (TYPICAL)

STOP R1-1 (36" x 36")

ELM STREET

(3 SPACES)

11.5'

20.00'

RE-ADJUST EXIST. UTILITY BOX/ TOP AND COORDINATE W/ NEW SIDEWALK & CURB & GUTTER/ HEADER CURB.

TOP OF BOX SHALL BE FLUSH WITH SURFACE.

5" DOUBLE YELLOW LINE (TYPICAL)

GATE

COORDINATE WITH MACON - BIBB TRAFFIC ENGINEER REGARDING REDUCING 60' WIDE DRIVEWAY ACCESS AND INSTALLING NEW CONCRETE DRIVEWAY PAN. PROVIDE NEW SIDEWALK IN PLACE WHERE DRIVEWAY HAS BEEN REDUCED.

"ALL UTILITIES, WATER, FIRE, SANITARY, GAS AND ELECTRICAL LINES MUST BE MARKED WITH LOCATOR WIRE AND DETECTOR TAPE".

GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.

NORTH

MATCHLINE

ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA

ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA
LEVEL II CERTIFIED DESIGN PROFESSIONAL GSMCC
CERTIFICATION NO. 00000002977
ISSUED: 12/07/2008 EXPIRES: 12/07/2017

GEORGIA811 Utilities Protection Center, Inc.

THIS SEAL IS VALID ONLY IF SIGNED AND DATED BY THE LICENSED PROFESSIONAL SHOWN.

GEORGIA REGISTERED PROFESSIONAL ENGINEER ROBERT C. CUNNINGHAM

C-4.21

SITE PLAN

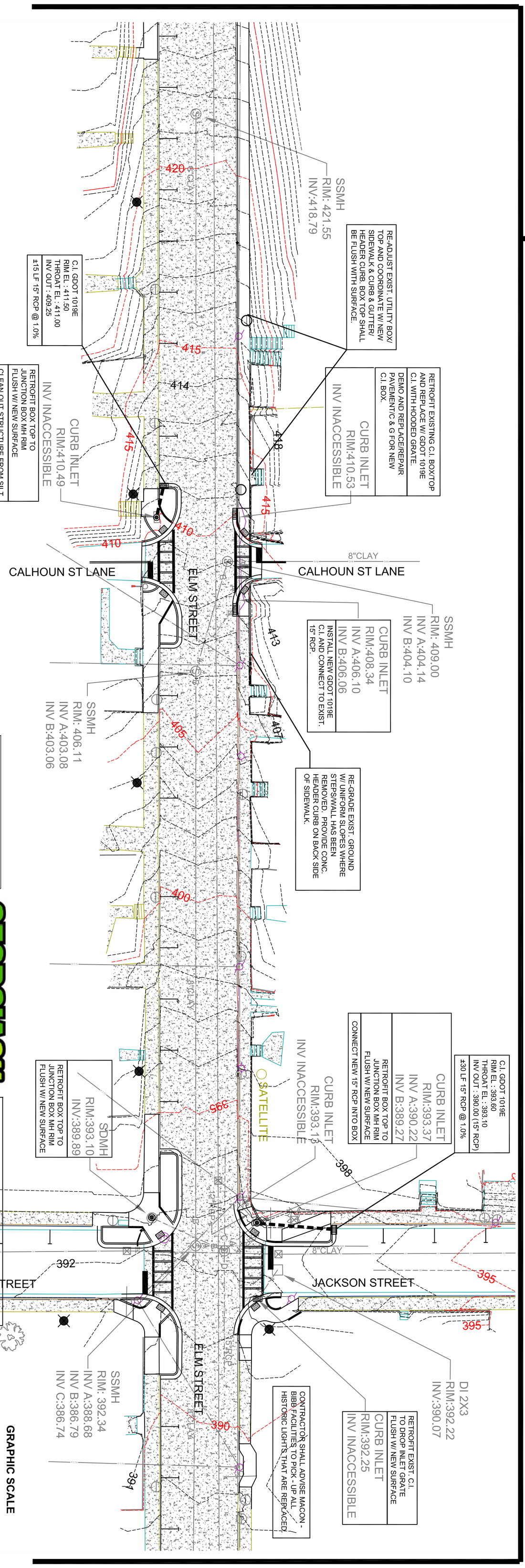
DATE: 9-27-16
PROJ NO: 1604
DRAWN BY: RCC

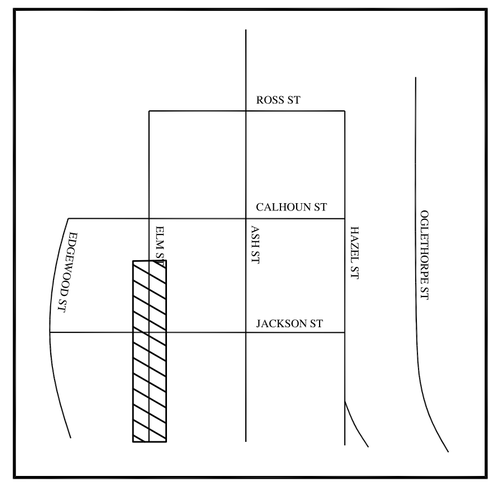
REVISIONS

Cunningham & Co. Engineers
CIVIL ENGINEERING - CONSULTING - PROJECT MANAGEMENT
435 SECOND STREET, SUITE 201
MACON, GEORGIA 31201
OFFICE 478.742.3616
FAX 478.742.3569

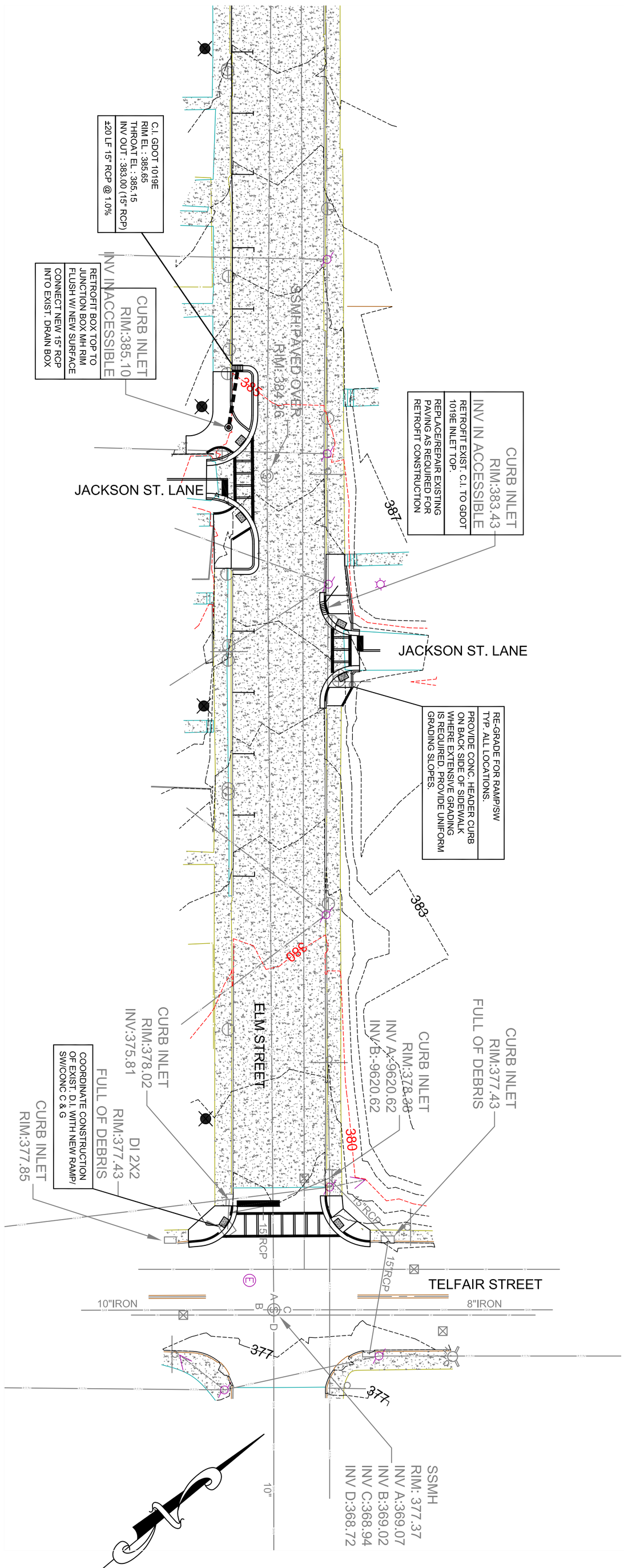
BEALL'S HILL NEIGHBORHOOD
REVITALIZATION PROJECT
MACON, GEORGIA
FOR
BEALL'S HILL NEIGHBORHOOD

MATCHLINE





MATCHLINE



ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA
LEVEL II CERTIFIED DESIGN PROFESSIONAL GSMCC
CERTIFICATION NO. 00000297
ISSUED: 12/07/2008 EXPIRES: 12/07/2017

ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA

THIS SEAL IS VALID ONLY IF SIGNED AND DATED BY THE LICENSED PROFESSIONAL SHOWN.

C-4.30

GRADING PLAN

DATE: 9-27-16
PROJ NO: 1604
DRAWN BY: RCC

REVISIONS

Cunningham & Co. Engineers
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435 SECOND STREET, SUITE 201
MACON, GEORGIA 31201
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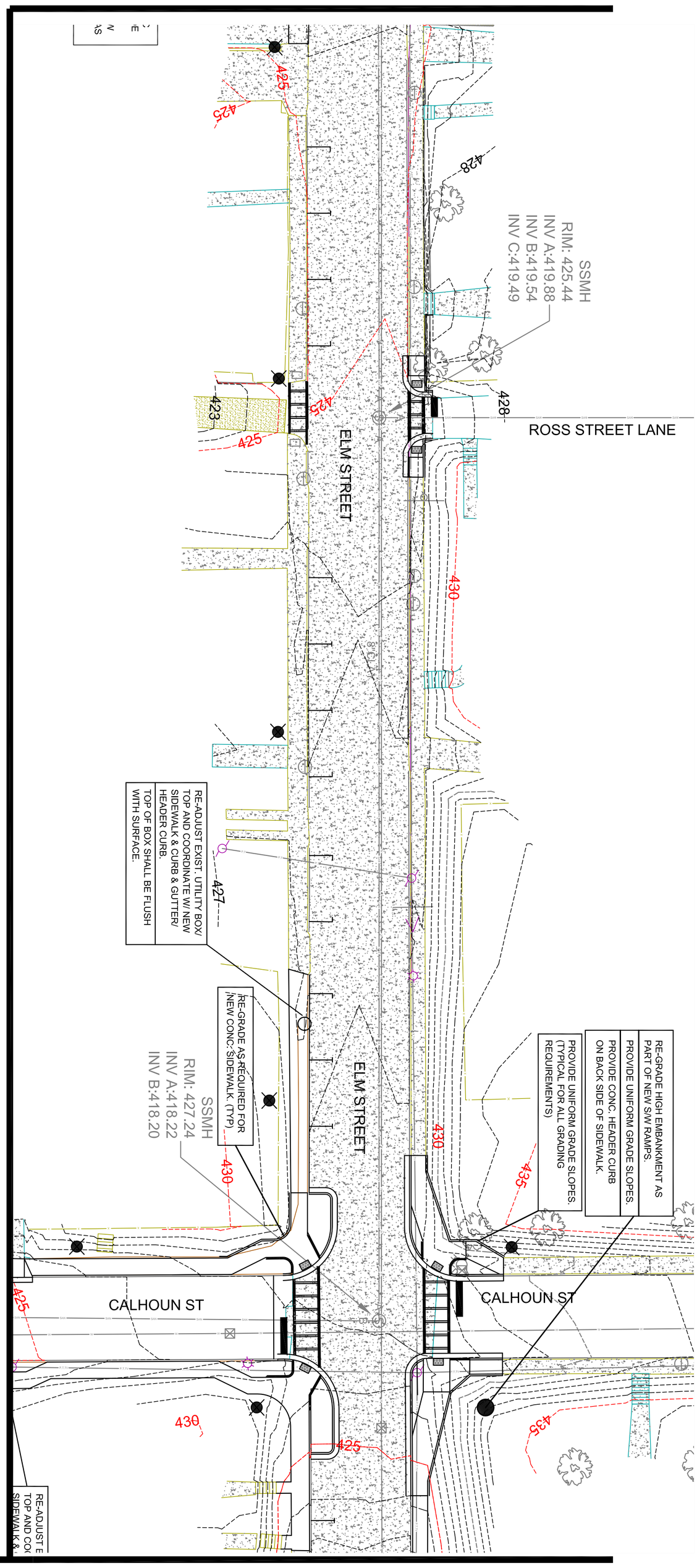
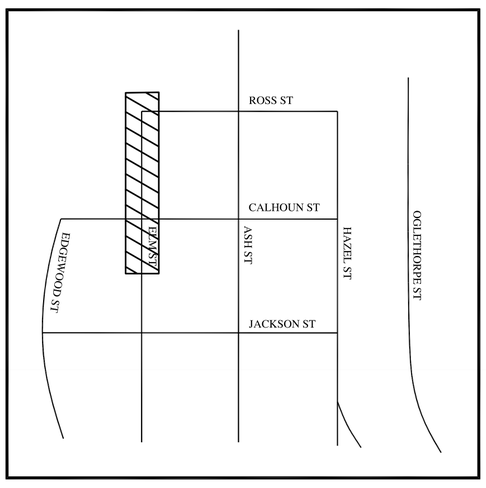
BEALL'S HILL NEIGHBORHOOD
REVITALIZATION PROJECT
MACON, GEORGIA
FOR
BEALL'S HILL NEIGHBORHOOD

MATCHLINE





MATCHLINE

MATCHLINE

"ALL UTILITIES, WATER, FIRE, SANITARY, GAS AND ELECTRICAL LINES MUST BE MARKED WITH LOCATOR WIRE AND DETECTOR TAPE".

GEORGIA811 Utilities Protection Center, Inc.

GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.
20 0 10 20 40 80

NORTH

ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA
LEVEL II CERTIFIED DESIGN PROFESSIONAL GSMCC
CERTIFICATION NO. 00000297
ISSUED: 12/07/2008 EXPIRES: 12/07/2017

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GEORGIA REGISTERED PROFESSIONAL ENGINEER ROBERT C. CUNNINGHAM

C-4.31

GRADING PLAN

DATE: 9-27-16
PROJ NO: 1604
DRAWN BY: RCC

REVISIONS

Cunningham & Co. Engineers
CIVIL ENGINEERING - CONSULTING - PROJECT MANAGEMENT
435 SECOND STREET, SUITE 201
MACON, GEORGIA 31201
OFFICE 478.742.3616
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BEALL'S HILL NEIGHBORHOOD
REVITALIZATION PROJECT
MACON, GEORGIA
FOR
BEALL'S HILL NEIGHBORHOOD

MATCHLINE

DEMO EXIST. RET WALL AND REGRADE W/ UNIFORM SLOPES.

DEMO EXIST. CONCRETE PAVING AND REPLACE W/ ASPHALT PAVING.

CURB INLET
RIM:383.60
INV:380.60
RETROFIT EXIST. C.I. INTO JUNCTION BOX

JACKSON STREET

CURB INLET
RIM:383.17
INV:379.40

SDMH
RIM:383.12
INV A:379.68
INV B:379.47
INV C:377.97
INV D:377.91

CURB INLET
RIM:381.00
INV A:376.28
INV B:376.25

RE-ADJUST EXIST. UTILITY BOX/ TOP AND COORDINATE W/ NEW SIDEWALK & CURB & GUTTER/ HEADER CURB.
TOP OF BOX SHALL BE FLUSH WITH SURFACE.

INV:373.95
48"BOXCULVERT

SSMH
RIM: 381.01
BOLTED CLOSED

SAVE EXIST. TREE

DEMO EXISTING WATER METER AND RELOCATE METER BOX BEYOND NEW SIDEWALK.

DEMO EXISTING DRIVEWAYS

DEMO EXISTING CONCRETE ROLL-OVER CURB & GUTTER REQUIRED FOR NEW CONCRETE DRIVEWAY PAN.

JACKSON ST. LANE

CONTRACTOR SHALL REMOVE EXIST. TREES/SHRUBS/OVERGROWTH AND CLEAR & GRUB DEMO AREA AS REQUIRED TO INSTALL 5' WIDE CONC. SIDEWALK ABUTTING BACK OF CURB.

EDGEWOOD AVENUE

TELFAIR AVEN

SSMH
RIM: 383.40
INV A:375.19
INV B:374.75
INV C:374.78

REMOVE EXIST. RETAINING WALL. INSTALL NEW RET. WALL AND NEW STEPS TO PROVIDE ACCESS TO NEW 5' CONC. SIDEWALK.

DEMO EXIST. DRIVEWAYS THAT SERVE VACATED HOMES/LOTS.
ALL EXIST. DRIVEWAYS SERVING EXIST. HOUSES SHALL BE PROVIDED WITH CONC. SIDEWALK RAMPS ONLY WHERE NEW CONC. SIDEWALKS ARE PROPOSED TO BE INSTALLED AS NEW & OR REPLACING DEMO SIDEWALK.

DI 3X2
RIM:380.99
INV A:376.64
INV B:376.54

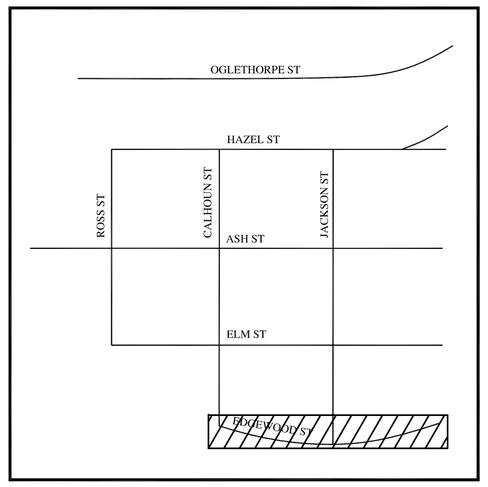
CURB INLET
RIM:383.56
INV A:380.41
INV B:390.36
INV C:379.83

RETROFIT EXIST. DROP INLET DRAIN BOX INTO BLIND JUNCTION BOX W/ SOLID CONCRETE TOP BELOW NEW PAVING.

DEMO EXIST. ASPHALT OVERLAY AND REPLACE W/ ASPHALT PAVING.

CURB INLET
RIM:381.12
INV:377.28

INV:378.16
60"CULVERT



NORTH

CURB INLET
RIM:404.08
INV: 400.83

CALHOUN ST

CURB INLET
RIM:404.14
INV INACCESSIBLE

RETROFIT EXIST. C.I. INTO JUNCTION BOX

CURB INLET
RIM:401.47
INV A:398.77
INV B:395.17

REMOVE/DEMO EXIST. WALL AND INSTALL NEW WALL DIRECTLY BEHIND NEW 5' CONC. SIDEWALK.
PROVIDE NEW CHAIN-LINK FENCE TO REPLACE EXIST. FENCING REQUIRING DEMOLITION FOR WALL INSTALL.

CURB INLET
RIM:396.31
INV A:389.96
INV B:-390.29

RETROFIT EXIST. C.I. AND CONC. CURB AND GUTTER AS REQUIRED TO INSTALL NEW C.I. GDOT 1019E WITH LARGER BOX TO RECEIVE 18" RCP INTO BOX & DISCHARGE OUT OF BOX W/ 18" RCP.

CALHOUN ST LANE

DEMO EXIST. FENCE AS REQIURED TO INSTALL NEW S/W. RESET FENCE BEHIND NEW S/W.

CURB INLET
RIM:387.25
INV:383.45

CURB INLET
RIM:383.60
INV:380.60
RETROFIT EXIST. C.I. INTO JUNCTION BOX

DEMO/REMOVE PARTIAL BROKEN WALL.
RE-GRADE WITH UNIFORM SLOPES.

EDGEWOOD AVENUE

CURB INLET
RIM:395.23
INV A:388.35
INV B:388.33

DEMO EXIST. S/W AND STAIRS. RE-BUILD CONC. STEPS AFTER NEW S/W INSTALLATION.

RE-ADJUST EXIST. UTILITY BOX/ TOP AND COORDINATE W/ NEW SIDEWALK & CURB & GUTTER/ HEADER CURB.
TOP OF BOX SHALL BE FLUSH WITH SURFACE.

CURB INLET
RIM:389.22
INV INACCESSIBLE

CURB INLET
RIM:386.98
INV A:383.46
INV B:381.00
INV C:380.98

RE-ADJUST EXIST. UTILITY BOX/ TOP AND COORDINATE W/ NEW SIDEWALK & CURB & GUTTER/ HEADER CURB.
TOP OF BOX SHALL BE FLUSH WITH SURFACE.

CURB INL
RIM:383
INV A:380.4
INV B:390.3
INV C:379.8

MATCHLINE

ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA

ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA
LEVEL II CERTIFIED DESIGN PROFESSIONAL GSWCC
CERTIFICATION NO. 0000002977
ISSUED: 12/07/2008 EXPIRES: 12/07/2017

GEORGIA811 Utilities Protection Center, Inc.

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GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

BEALL'S HILL NEIGHBORHOOD
REVITALIZATION PROJECT
MACON, GEORGIA
FOR
BEALL'S HILL NEIGHBORHOOD

Cunningham & Co. Engineers
CIVIL ENGINEERING - CONSULTING - PROJECT MANAGEMENT
435 SECOND STREET, SUITE 201
MACON, GEORGIA 31201
OFFICE 478.742.3616
FAX 478.742.3569

REVISIONS

DATE: 8-15-16
PROJ NO: 1604
DRAWN BY: RCC

GEORGIA REGISTERED PROFESSIONAL ENGINEER ROBERT C. CUNNINGHAM
No. 20508

THIS SEAL IS VALID ONLY IF SIGNED AND DATED BY THE LICENSED PROFESSIONAL SHOWN.

DEMOLITION PLAN

C-5.10

P:\Projects\1604-Bealls Hill\1604-BASE-3.dwg, C-5.10, rodney, Aug 17, 2016 - 3:55:09pm

MATCHLINE

SIDEWALK & CURB & GUTTER/ HEADER CURB. BOX TOP SHALL BE FLUSH WITH SURFACE.

CONTRACTOR SHALL ADVISE MACON - BIBB FACILITIES TO PICK - UP ALL HISTORIC LIGHTS THAT ARE REPLACED.

(4 SPACES)

5" DOUBLE YELLOW LINE

JACKSON STREET

10.5' 10.5' 7.0'

GRADE AND EPS & CONC. NEW 5' ADD ADDITIONAL CONC. LANDING.

24" WHITE STOP BAR (TYPICAL)

8' CROSS WALK

5' CONC. SIDEWALK

EDGEWOOD AVENUE

11.5' 11.5'

STOP R1-1 (36" x 36")

PROVIDE 98% COMPACTION OF EXIST. SUB-GRADE. PROVIDE 8" GABC, PROVIDE 3" ASPHALT (12.5 MM SUPER PAVE)

NEW ASPHALT BASE & PAVING

PROVIDE NEW FINE GRADING TO ENSURE POSITIVE SHEET FLOW. ADJUST ALL EXIST. RIM ELEVATIONS OF EXIST. UTILITIES.

5" DOUBLE YELLOW LINE (TYPICAL)

5' CONC. SIDEWALK

EDGEWOOD AVENUE

20' WIDE CONC. DRIVEWAY PAN

JACKSON ST. LANE

20.0'

CONTRACTOR SHALL MEET WITH & COORDINATE WITH LIGHT POLE DESIGNER/CONTRACTOR/ POWER COMPANY PRIOR TO CONSTRUCTION IN ORDER TO ELIMINATE ANY POTENTIAL CONFLICTS DURING CONSTRUCTION (TYP)

CONTRACTOR SHALL COORDINATE SIDEWALK ALIGNMENT TO AVOID EXIST. POWER POLES FROM BEING LOCATED WITHIN NEW CONCRETE SIDEWALK PATH (TYP.)

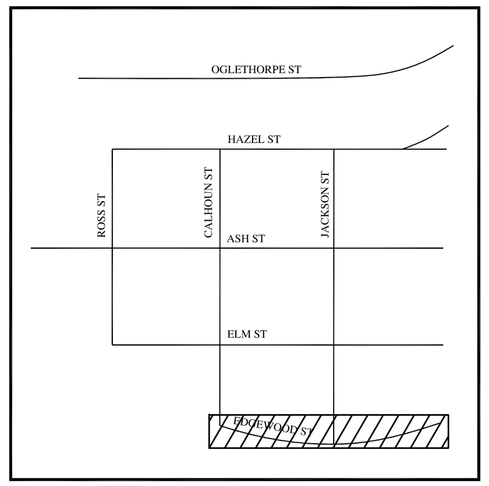
REMOVE VEGETATION FILL FOR NEW CONC. SIDEWALK

5' CONC. SIDEWALK

TELFAIR AVENUE

CONTRACTOR SHALL INSTALL NEW 5' CONC. SIDEWALK TYPICAL AGAINST BACK OF EXIST. ROADWAY CURB AND GUTTER.

REMOVE EXIST. TREES & SHRUBS & GROUND COVER AS REQUIRED TO HAUL IN COMPACTED BACKFILL REQUIRED FOR LEVEL S/W INSTALLATION.



NORTH

STOP R1-1 (36" x 36")

CALHOUN ST

24" WHITE STOP BAR (TYPICAL)

8' CROSS WALK

5' CONC. SIDEWALK

11.5' 11.5'

EDGEWOOD AVENUE

CONTRACTOR SHALL ADVISE MACON - BIBB FACILITIES TO PICK - UP ALL HISTORIC LIGHTS THAT ARE REPLACED.

NEW CONCRETE DRIVEWAY PAN WITH SIDEWALK RAMP/TAPER

5" DOUBLE YELLOW LINE (TYPICAL)

PROVIDE NEW RETAINING WALL LOCATED BEHIND NEW SIDEWALK. RESET AND OR INSTALL NEW FENCE AND TIE-IN TO EXISTING FENCE.

CONTRACTOR SHALL RE-GRADE AND REPLACE EXIST. CONC. STEPS & CONC. RUN-OUT FROM STEPS TO NEW 5' WIDE CONC. SIDEWALK.

RE-GRADE AS REQUIRED FOR NEW CONC. SIDEWALK

24" WHITE STOP BAR

STOP R1-1 (36" x 36")

CALHOUN ST LANE

5' CROSS WALK

RE-GRADE AS REQUIRED FOR NEW CONC. SIDEWALK

RE-ADJUST EXIST. UTILITY BOX/ TOP AND COORDINATE W/ NEW SIDEWALK & CURB & GUTTER/ HEADER CURB.

TOP OF BOX SHALL BE FLUSH WITH SURFACE.

CONTRACTOR SHALL ADVISE MACON - BIBB FACILITIES TO PICK - UP ALL HISTORIC LIGHTS THAT ARE REPLACED.

REPLACE DEMO FENCE WITH NEW FENCE TO AVOID CONFLICT WITH NEW SIDEWALK.

CONTRACTOR SHALL RE-GRADE AND REPLACE EXIST. CONC. STEPS & CONC. RUN-OUT FROM STEPS TO NEW 5' WIDE CONC. SIDEWALK.. ADD ADDITIONAL STEPS AS REQUIRED FOR CONC. LANDING.

5' CONC. SIDEWALK

11.5' 11.5'

EDGEWOOD AVENUE

RE-ADJUST EXIST. UTILITY BOX/ TOP AND COORDINATE W/ NEW SIDEWALK & CURB & GUTTER/ HEADER CURB.

TOP OF BOX SHALL BE FLUSH WITH SURFACE.

MATCHLINE

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA

ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA
LEVEL II CERTIFIED DESIGN PROFESSIONAL GSWCC
CERTIFICATION NO. 0000002977
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BEALL'S HILL NEIGHBORHOOD
REVITALIZATION PROJECT
MACON, GEORGIA
FOR
BEALL'S HILL NEIGHBORHOOD

Cunningham & Co. Engineers
CIVIL ENGINEERING - CONSULTING - PROJECT MANAGEMENT
435 SECOND STREET, SUITE 201
MACON, GEORGIA 31201
OFFICE 478.742.3616
FAX 478.742.3569

REVISIONS

DATE: 9-27-16
PROJ NO: 1604
DRAWN BY: RCC

GEORGIA REGISTERED PROFESSIONAL ENGINEER ROBERT C. CUNNINGHAM

THIS SEAL IS VALID ONLY IF SIGNED AND DATED BY THE LICENSED PROFESSIONAL SHOWN.

SITE PLAN

C-5.20

P:\Projects\1604-Beall's Hill\1604-BASE-3.dwg, C-5.20, rodney, Sep 27, 2016 - 9:33:30am

MATCHLINE

RE-GRADE FOR AS REQUIRED FOR S/W INSTALLATIONS (TYP)

CONTRACTOR SHALL ADVISE MACON - BIBB FACILITIES TO PICK - UP ALL HISTORIC LIGHTS THAT ARE REPLACED.

B INLET
/:383.60
380.60
RB INLET TO
X MH RIM
V GRADE
N 15" RCP

JACKSON STREET

CURB INLET
RIM:383.17
INV:379.40

SDMH
RIM:383.12
INV A:379.68
INV B:379.47
INV C:377.97
INV D:377.91

CURB INLET
RIM:381.00
INV A:376.28
INV B:376.25

INV:373.95
48"BOXCULVERT

SSMH
RIM: 381.01
BOLTED CLOSED

EDGEWOOD AVENUE

JACKSON ST. LANE

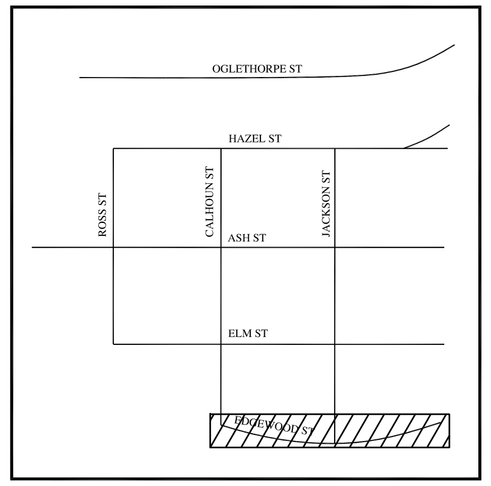
SSMH
RIM: 383.40
INV A:375.19
INV B:374.75
INV C:374.78

REMOVE VEGETATION FILL FOR NEW CONC. SIDEWALK

TELFAIR AVENUE

CONTRACTOR SHALL INSTALL NEW 5' CONC. SIDEWALK TYPICAL AGAINST BACK OF EXIST. ROADWAY CURB AND GUTTER.

REMOVE EXIST. TREES & SHRUBS & GROUND COVER AS REQUIRED TO HAUL IN COMPACTED BACKFILL REQUIRED FOR LEVEL S/W INSTALLATION.



NORTH

URB INLET
RIM:383.56
A:380.41

PROVIDE RE-GRADED PAVEMENT SLOPES TO ENSURE POSITIVE SHEET FLOW WITH NO PONDING OF RAIN WATER.

DI 3X2
RIM:380.99
INV A:376.64
INV B:376.54

RE-GRADE EXIST. GROUND WITH UNIFORM SLOPES AS REQUIRED TO INSTALL NEW 5' WIDE CONC. SIDEWALK.

CALHOUN ST

CURB INLET
RIM:404.08
INV: 400.83

RETROFIT C.I. INTO BLIND BOX W/ SOLID CONC. TOP BENEATH CONC. SIDEWALK

CURB INLET
RIM:401.47
INV A:398.77
INV B:395.17

CURB INLET
RIM:404.14
INV INACCESSIBLE

EDGEWOOD AVENUE

CONTRACTOR SHALL ADVISE MACON - BIBB FACILITIES TO PICK - UP ALL HISTORIC LIGHTS THAT ARE REPLACED.

CURB INLET
RIM:395.23
INV A:388.35
INV B:388.33

CURB INLET
RIM:396.31
INV A:389.96
INV B:-390.29

CONTRACTOR SHALL RE-GRADE AND REPLACE EXIST. CONC. STEPS & CONC. RUN-OUT FROM STEPS TO NEW 5' WIDE CONC. SIDEWALK.

RE-GRADE AS REQUIRED FOR NEW CONC. SIDEWALK

CALHOUN ST LANE

RE-GRADE AS REQUIRED FOR NEW CONC. SIDEWALK

RE-ADJUST EXIST. UTILITY BOX/ TOP AND COORDINATE W/ NEW SIDEWALK & CURB & GUTTER/ HEADER CURB.

TOP OF BOX SHALL BE FLUSH WITH SURFACE.

CURB INLET
RIM:389.22

CONTRACTOR SHALL RE-GRADE AND REPLACE EXIST. CONC. STEPS & CONC. RUN-OUT FROM STEPS TO NEW 5' WIDE CONC. SIDEWALK.

CONTRACTOR SHALL ADVISE MACON - BIBB FACILITIES TO PICK - UP ALL HISTORIC LIGHTS THAT ARE REPLACED.

CURB INLET
RIM:387.25
INV:383.45

CURB INLET (GDOT 1019E)
RIM EL : 384.00
THROAT EL : 383.50
INV OUT : 380.80 (15" RCP)
± 20 LF 15" RCP @ 1.0% MIN

CURB INLET
RIM:383.60
INV:380.60

RETROFIT CURB INLET TO JUNCTION BOX MH RIM FLUSH W/ NEW GRADE
CONNECT NEW 15" RCP

RE-ADJUST EXIST. UTILITY BOX/ TOP AND COORDINATE W/ NEW SIDEWALK & CURB & GUTTER/ HEADER CURB.

TOP OF BOX SHALL BE FLUSH WITH SURFACE.

CURB INLET
RIM:386.98
INV A:383.46
INV B:381.00

CURB INLET
RIM:383.56
INV A:380.41
INV B:390.36

MATCHLINE

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA

ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA
LEVEL II CERTIFIED DESIGN PROFESSIONAL GSWCC
CERTIFICATION NO. 00000029777
ISSUED: 12/07/2008 EXPIRES: 12/07/2017

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435 SECOND STREET, SUITE 201
MACON, GEORGIA 31201
OFFICE 478.742.3616
FAX 478.742.3569

REVISIONS

DATE: 9-27-16
PROJ NO: 1604
DRAWN BY: RCC

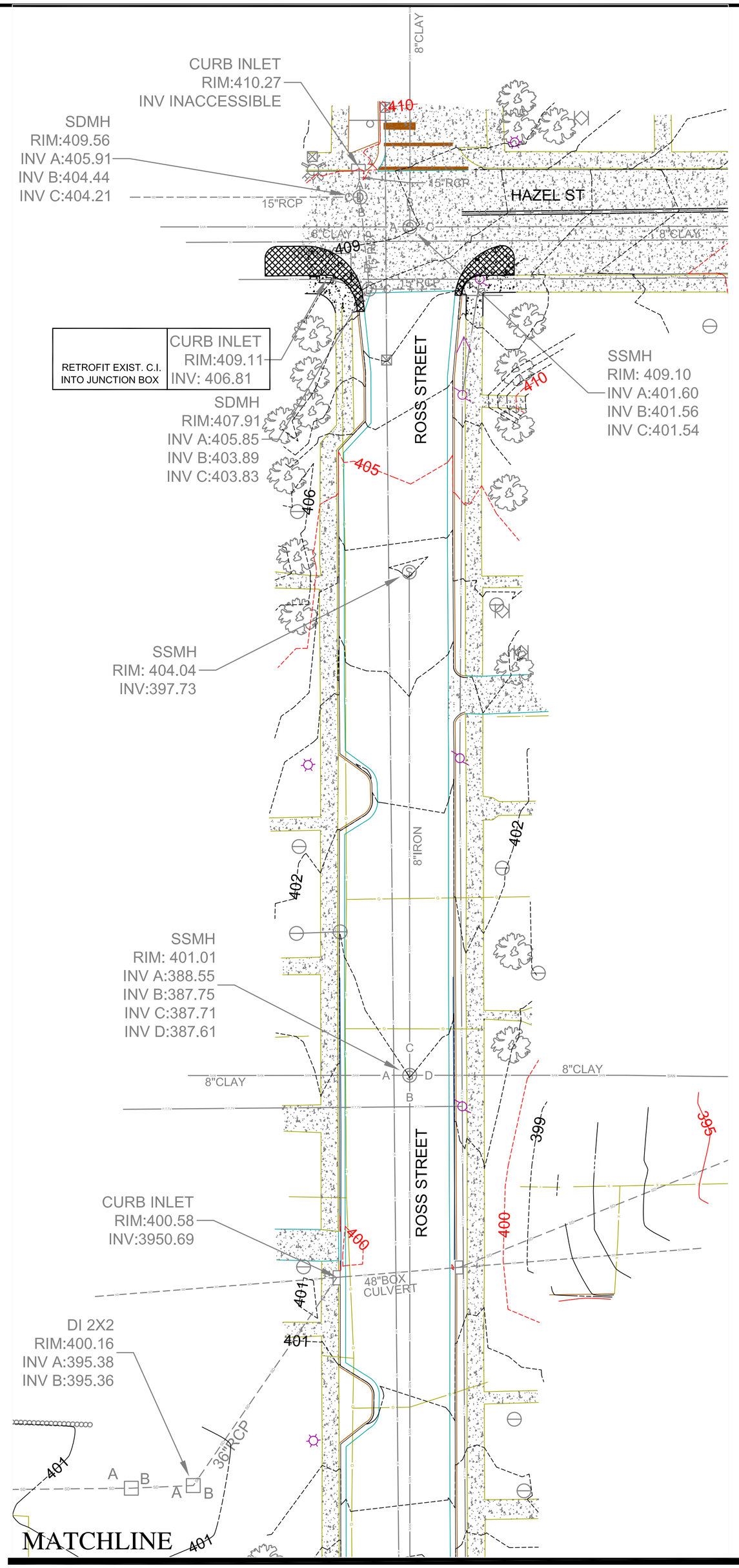
GEORGIA REGISTERED PROFESSIONAL ENGINEER ROBERT C. CUNNINGHAM

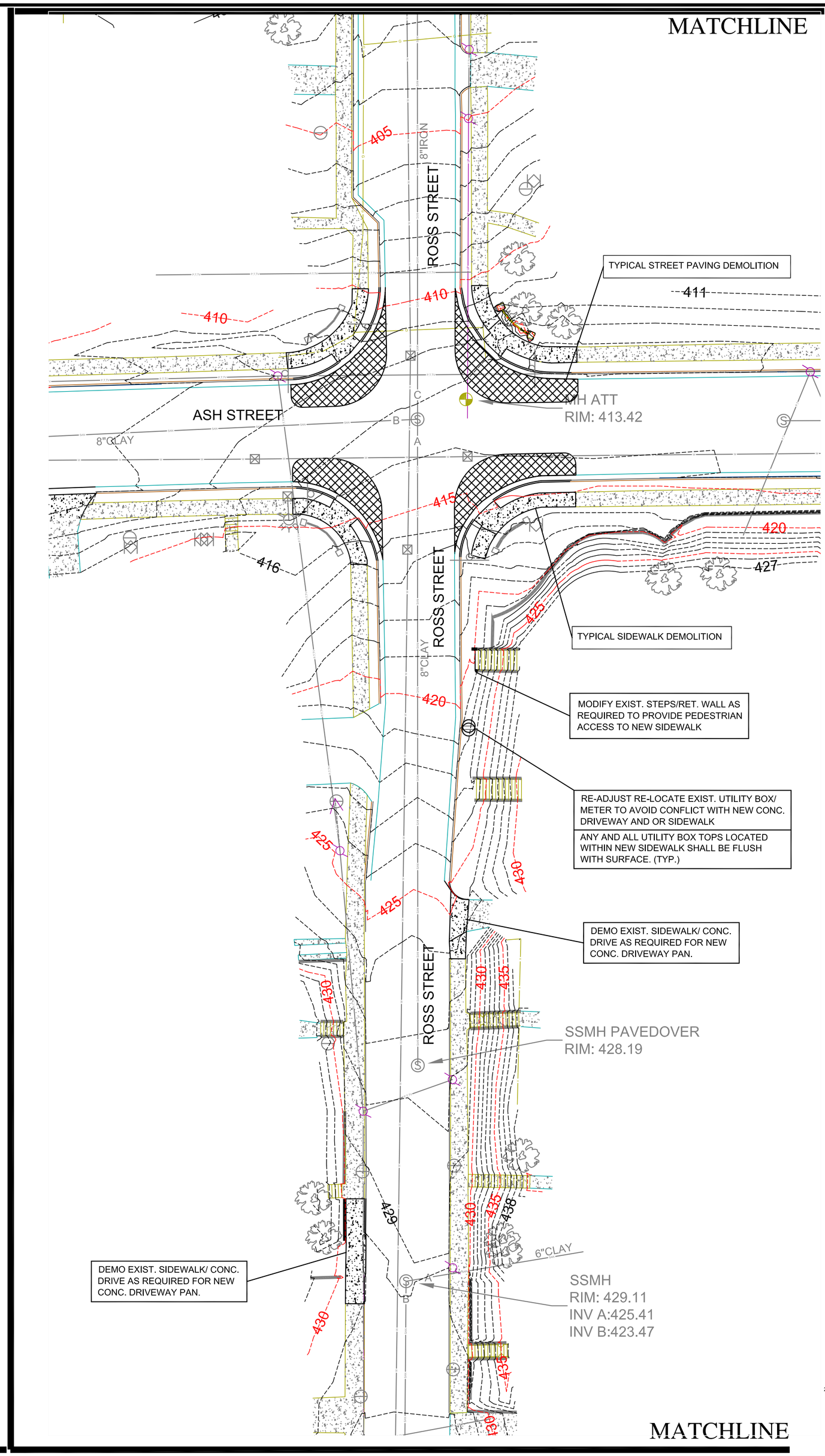
THIS SEAL IS VALID ONLY IF SIGNED AND DATED BY THE LICENSED PROFESSIONAL SHOWN.

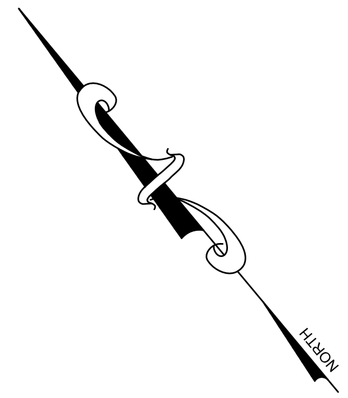
GRADING PLAN

C-5.30

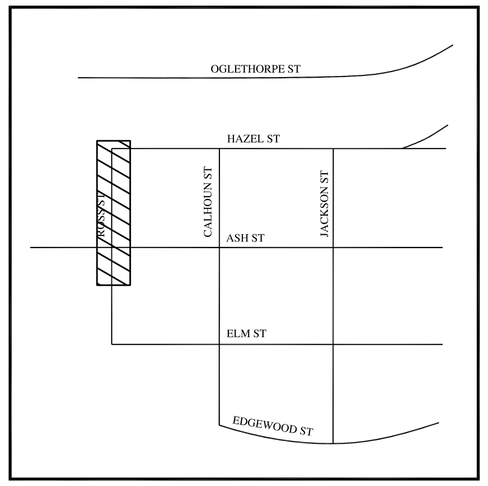
P:\Projects\1604-Bealls Hill\1604-BASE-3.dwg, C-5.30, rodney, Sep 27, 2016 - 9:32:43am







BEALL'S HILL NEIGHBORHOOD
REVITALIZATION PROJECT
MACON, GEORGIA
FOR
BEALL'S HILL NEIGHBORHOOD



ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA

ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA
LEVEL II CERTIFIED DESIGN PROFESSIONAL GSWCC
CERTIFICATION NO. 0000002977
ISSUED: 12/07/2008 EXPIRES: 12/07/2017

GEORGIA811 Utilities Protection Center, Inc.

"ALL UTILITIES, WATER, FIRE, SANITARY, GAS AND ELECTRICAL LINES MUST BE MARKED WITH LOCATOR WIRE AND DETECTOR TAPE".

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

Cunningham & Co. Engineers
CIVIL ENGINEERING - CONSULTING - PROJECT MANAGEMENT
435 SECOND STREET, SUITE 201
MACON, GEORGIA 31201
OFFICE 478.742.3616
FAX 478.742.3569

REVISIONS

DATE:	8-15-16
PROJ NO:	1604
DRAWN BY:	RCC

GEORGIA REGISTERED PROFESSIONAL ENGINEER ROBERT C. CUNNINGHAM

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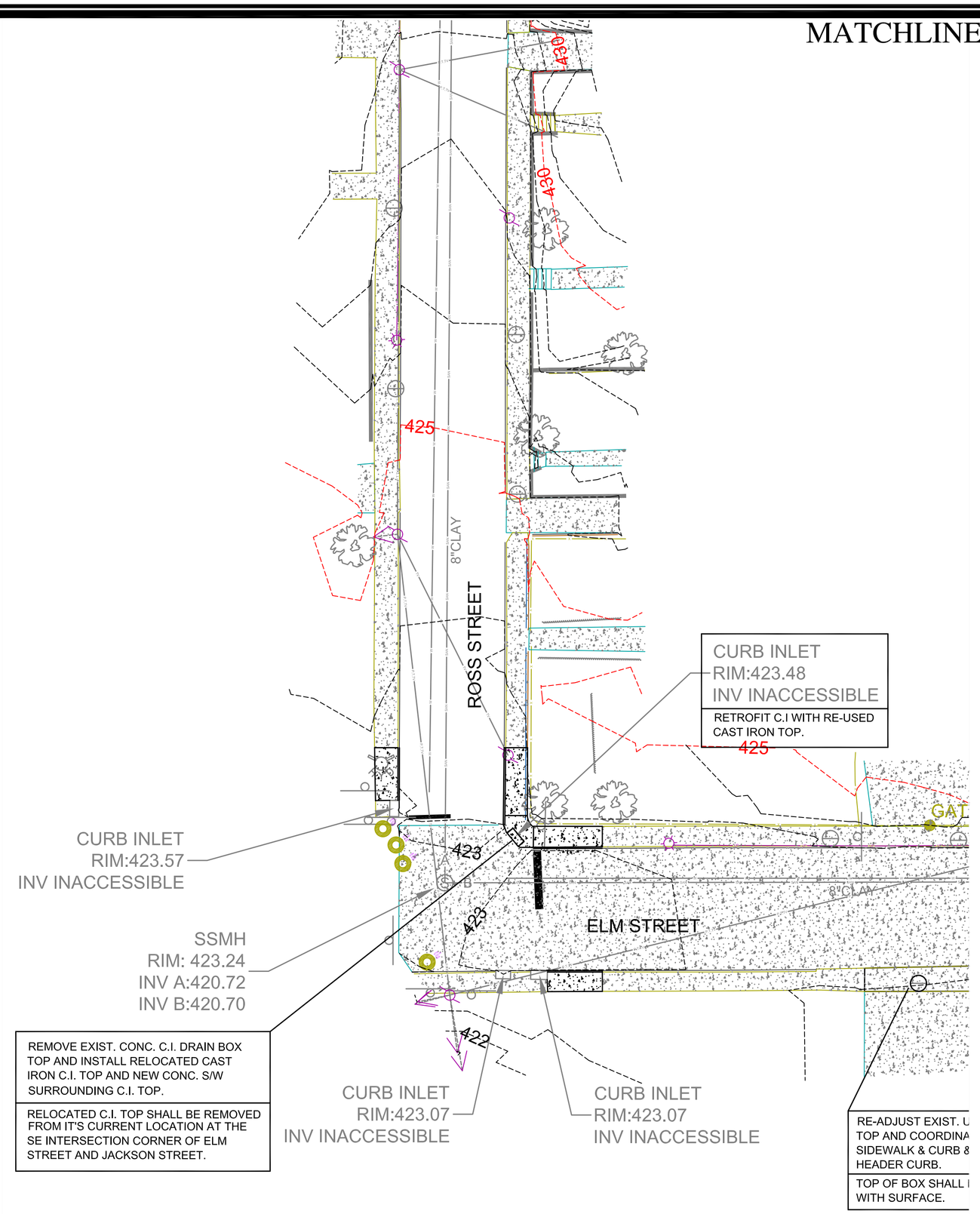
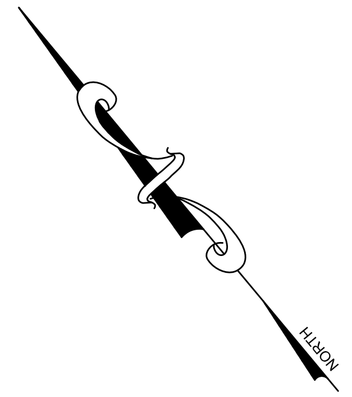
DEMOLITION PLAN

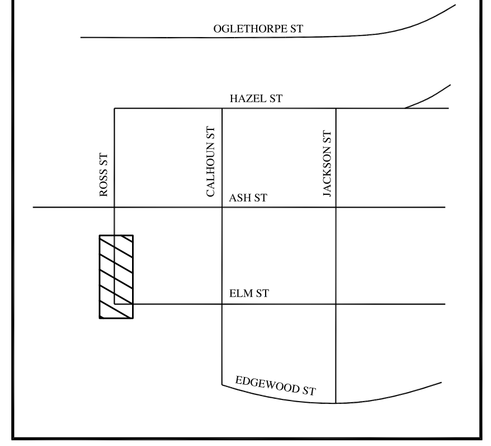
C-6.10

P:\Projects\1604-Bealls HB\1604BASE-3.dwg, C-6.10, rodney, Aug 17, 2016 - 3:24:39pm





BEALL'S HILL NEIGHBORHOOD
REVITALIZATION PROJECT
MACON, GEORGIA
FOR
BEALL'S HILL NEIGHBORHOOD



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GEORGIA
Not Valid Without
PROFESSIONAL
ENGINEER
ROBERT C. CUNNINGHAM

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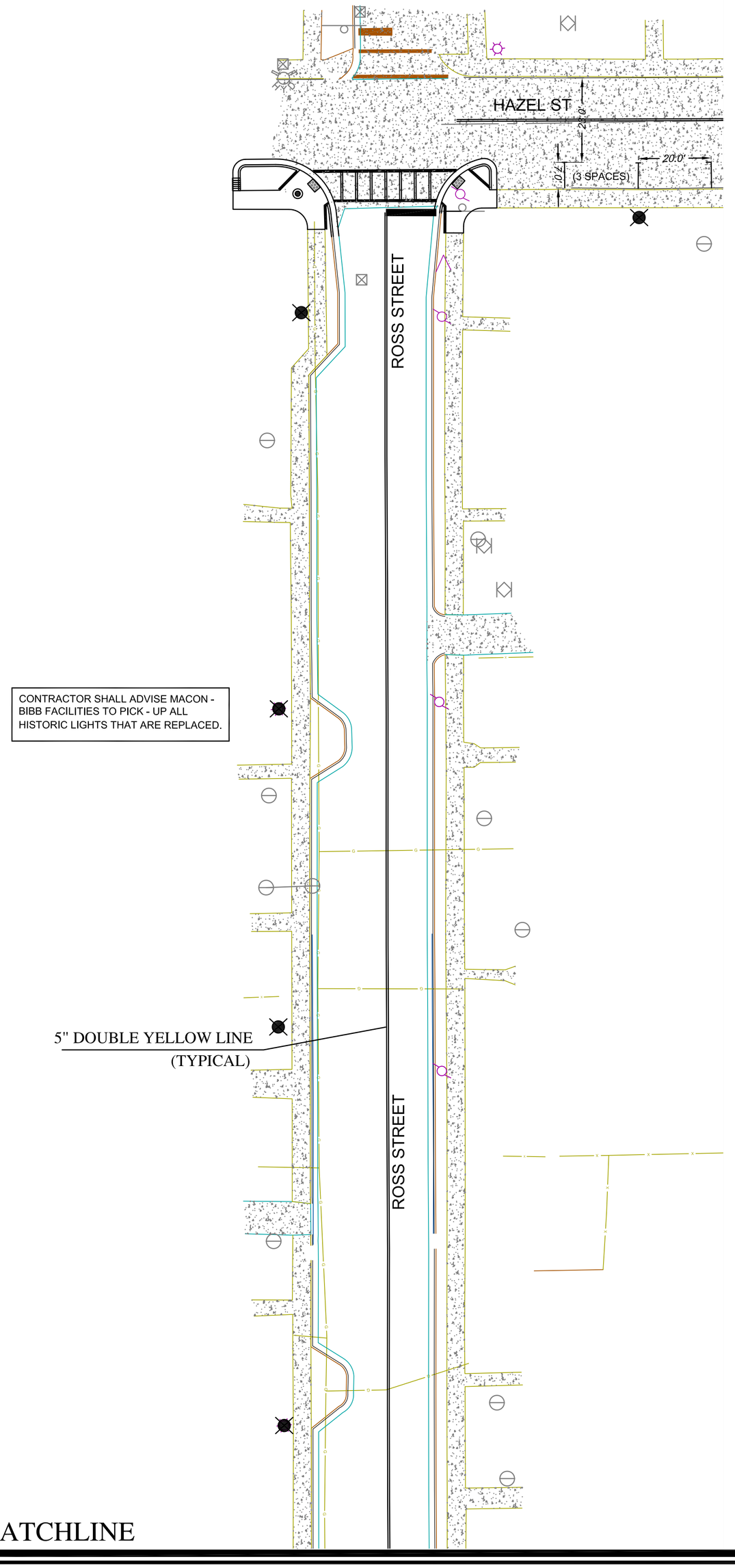
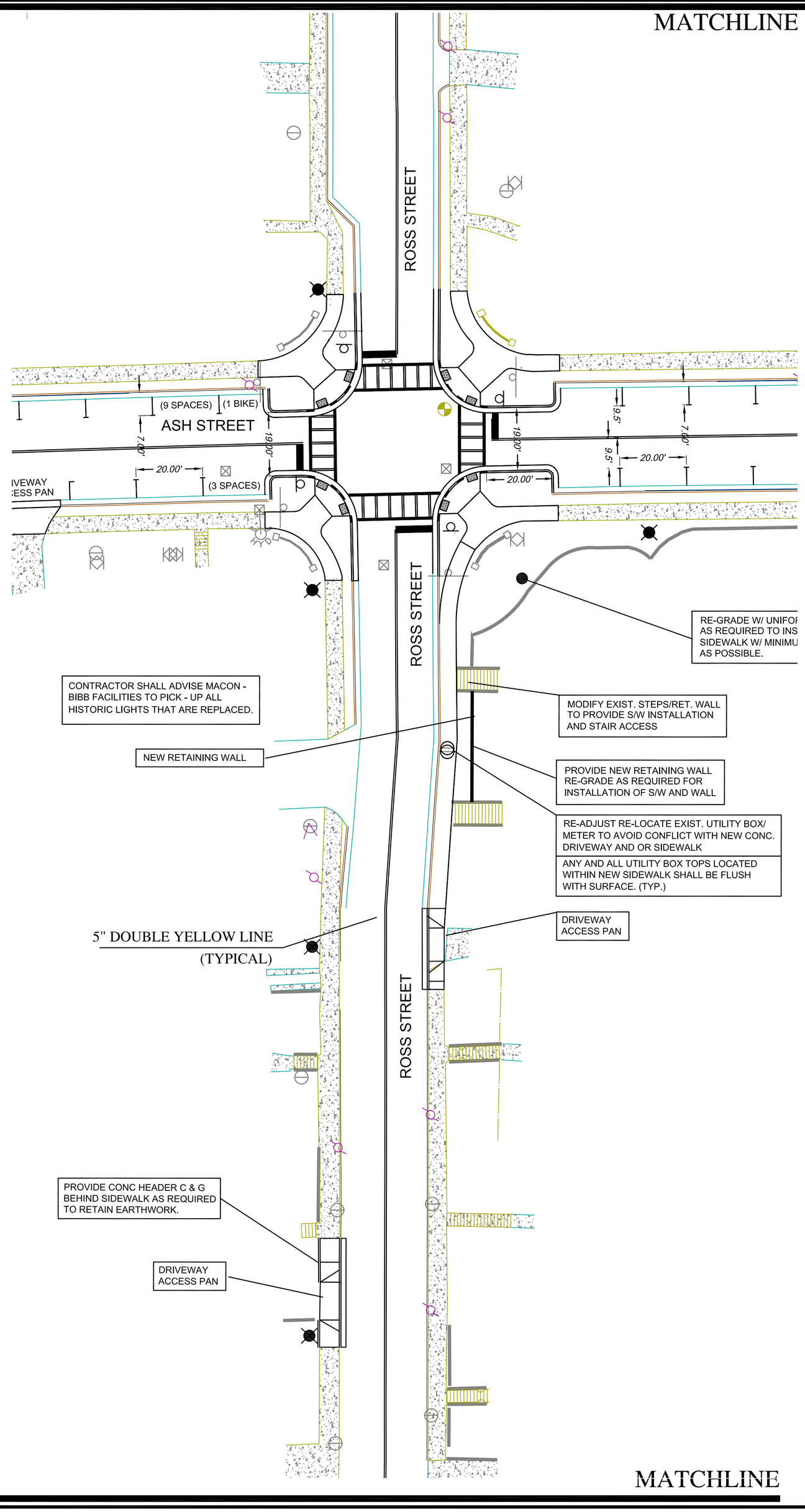
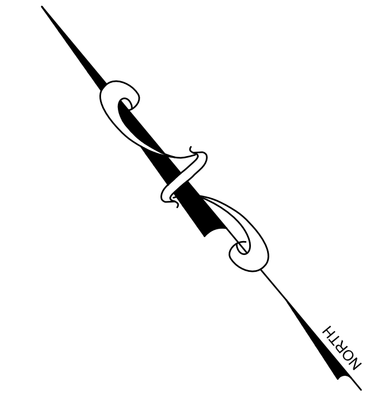
DEMOLITION PLAN

C-6.11







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REVITALIZATION PROJECT
MACON, GEORGIA
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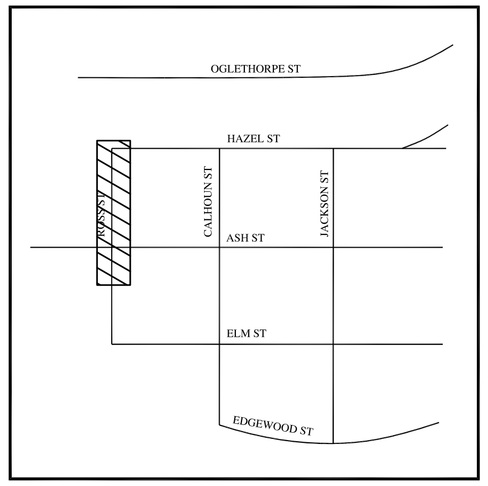

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REVISIONS

DATE:	9-27-16
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GEORGIA REGISTERED PROFESSIONAL ENGINEER ROBERT C. CUNNINGHAM No. 20508

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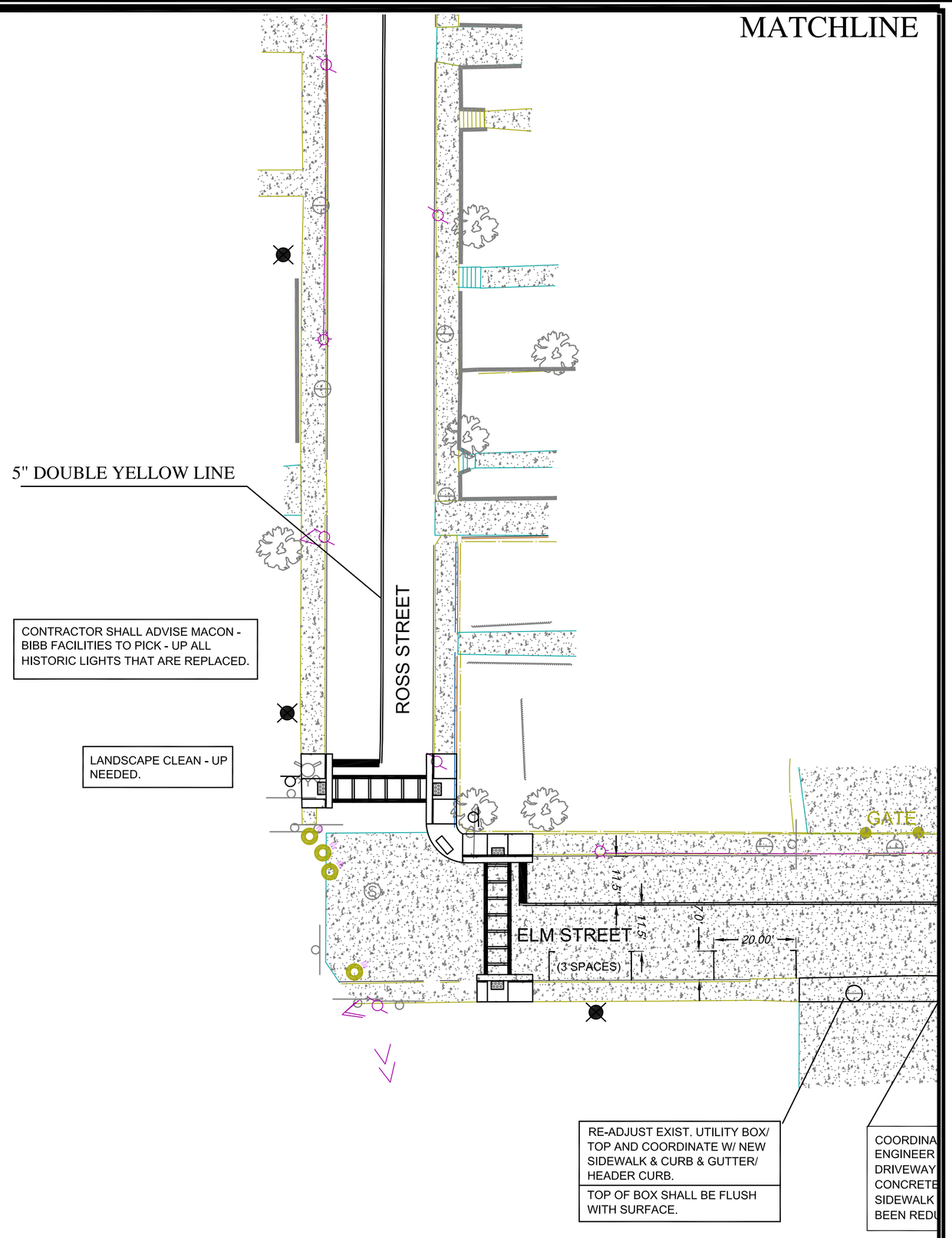
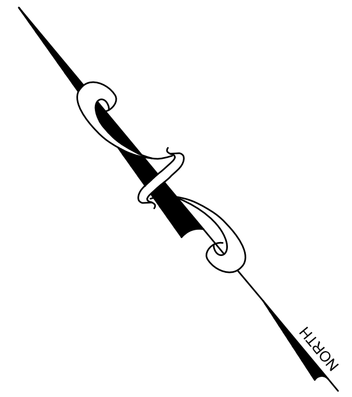
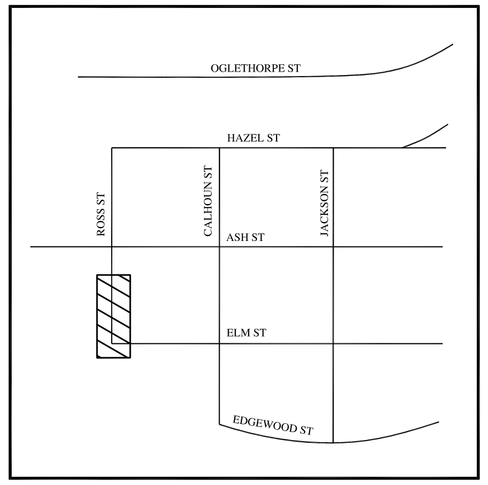
SITE PLAN

C-6.20

P:\Projects\1604-Bealls Hill\1604-BASE-3.dwg, C-6.20, rcohey, Sep 27, 2016 - 9:31:53am







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435 SECOND STREET, SUITE 201
MACON, GEORGIA 31201
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FAX 478.742.3569

REVISIONS

DATE: 9-27-16
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GEORGIA REGISTERED PROFESSIONAL ENGINEER ROBERT C. CUNNINGHAM

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SITE PLAN

C-6.21

CURB INLET
RIM:410.27
INV INACCESSIBLE

SDMH
RIM:409.56
INV A:405.91
INV B:404.44
INV C:404.21

8"CLAY

15"RCP

HAZEL ST

CURB INLET
RIM = ± 409.85
THROAT = ± 409.35
INV = 407.00
±20 LF RCP @ 1%

RETROFIT EXIST C.I. TOP
JUNCTION BOX TOP W/
RIM FLUSH W/ NEW SURFACE
NNECT NEW 15" RCP INTO BOX

CURB INLET
RIM:409.11
INV: 406.81

SSMH
RIM: 409.10
INV A:401.60
INV B:401.56
INV C:401.54

ROSS STREET

SDMH
RIM:407.91
INV A:405.85
INV B:403.89
INV C:403.83

SSMH
RIM: 404.04
INV:397.73

CONTRACTOR SHALL ADVISE MACON - BIBB FACILITIES TO PICK - UP ALL HISTORIC LIGHTS THAT ARE REPLACED.

8"IRON

SSMH
RIM: 401.01
INV A:388.55
INV B:387.75
INV C:387.71
INV D:387.61

8"CLAY

CURB INLET
RIM:400.58
INV:3950.69

48"BOX CULVERT

DI 2X2
RIM:400.16
INV A:395.38
INV B:395.36

36"RCP

MATCHLINE

MATCHLINE

ASH STREET

ROSS STREET

8"IRON

8"CLAY

RH ATT
RIM: 413.42

RE-GRADE W/ UN
AS REQUIRED TO
SIDEWALK W/ MIN
AS POSSIBLE.

CONTRACTOR SHALL ADVISE MACON - BIBB FACILITIES TO PICK - UP ALL HISTORIC LIGHTS THAT ARE REPLACED.

MODIFY EXIST. STEPS/RET. WALL TO PROVIDE S/W INSTALLATION AND STAIR ACCESS

PROVIDE NEW RETAINING WALL RE-GRADE AS REQUIRED FOR INSTALLATION OF S/W AND WALL

RE-ADJUST RE-LOCATE EXIST. UTILITY BOX/ METER TO AVOID CONFLICT WITH NEW CONC. DRIVEWAY AND OR SIDEWALK

ANY AND ALL UTILITY BOX TOPS LOCATED WITHIN NEW SIDEWALK SHALL BE FLUSH WITH SURFACE. (TYP.)

SSMH PAVEDOVER
RIM: 428.19

6"CLAY

SSMH
RIM: 429.11
INV A:425.41
INV B:423.47

NORTH

OGLETHORPE ST
HAZEL ST
CALHOUN ST
JACKSON ST
ASH ST
ELM ST
EDGEWOOD ST

ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA

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GRADING PLAN

C-6.30

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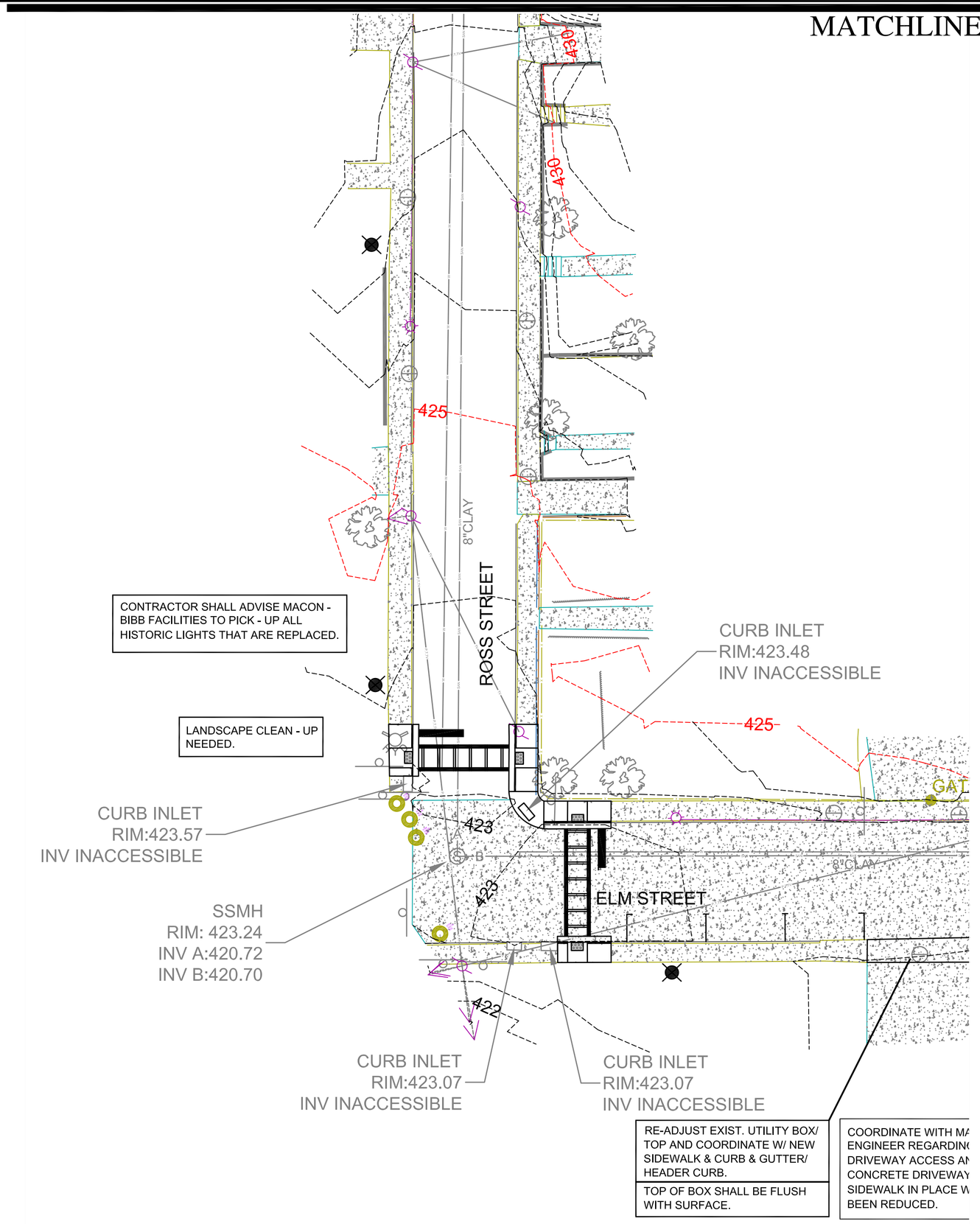

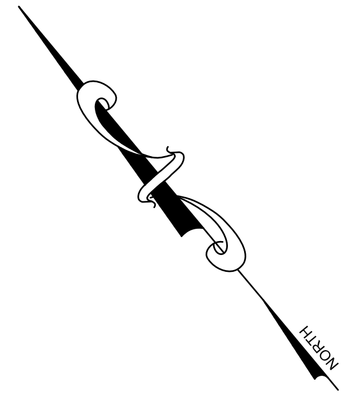

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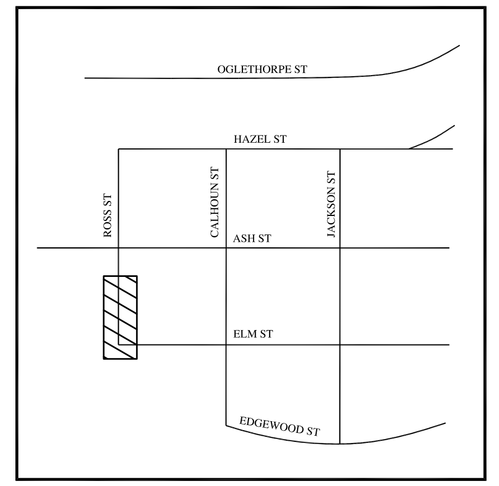

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REVISIONS

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GRADING PLAN

C-6.31

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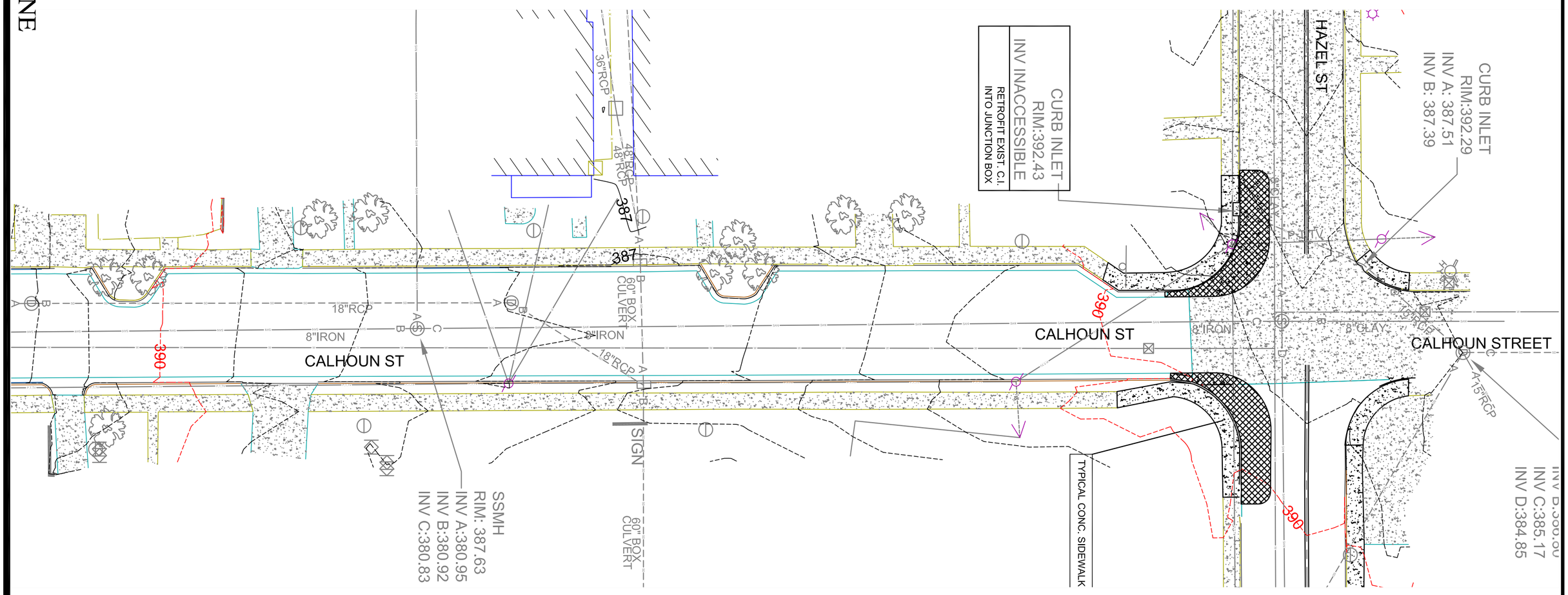

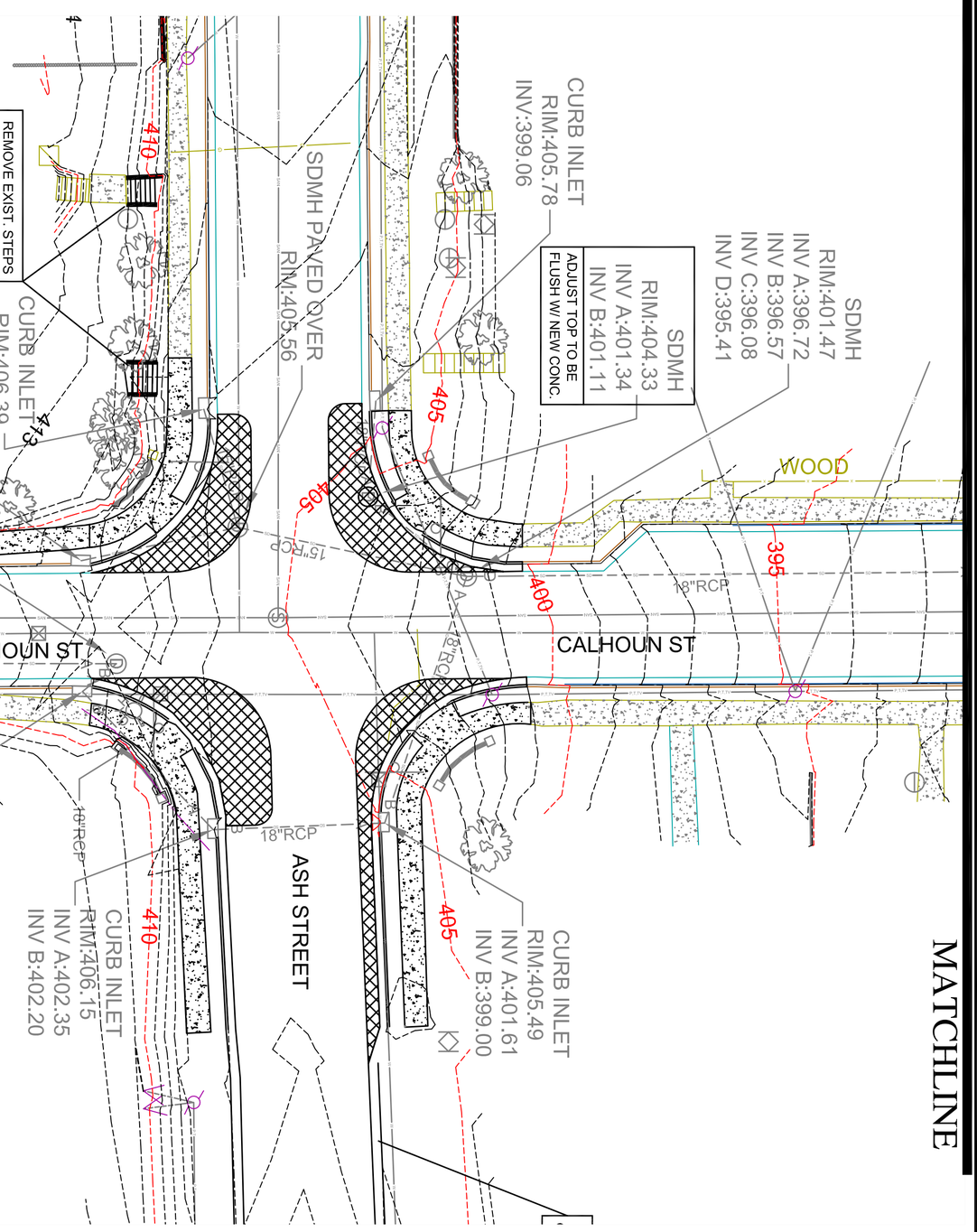

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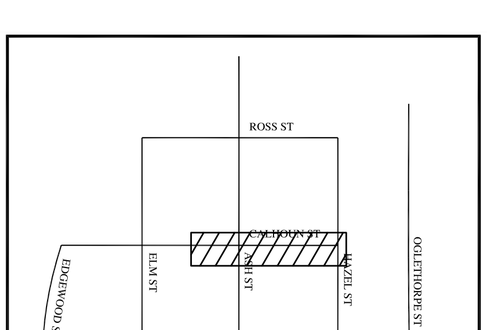

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NORTH

C-7.10

DEMOLITION PLAN

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GEORGIA REGISTERED ROBERT C. CUNNINGHAM PROFESSIONAL ENGINEER
No. 20508

DATE: 8-15-16
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DRAWN BY: RCC

REVISIONS

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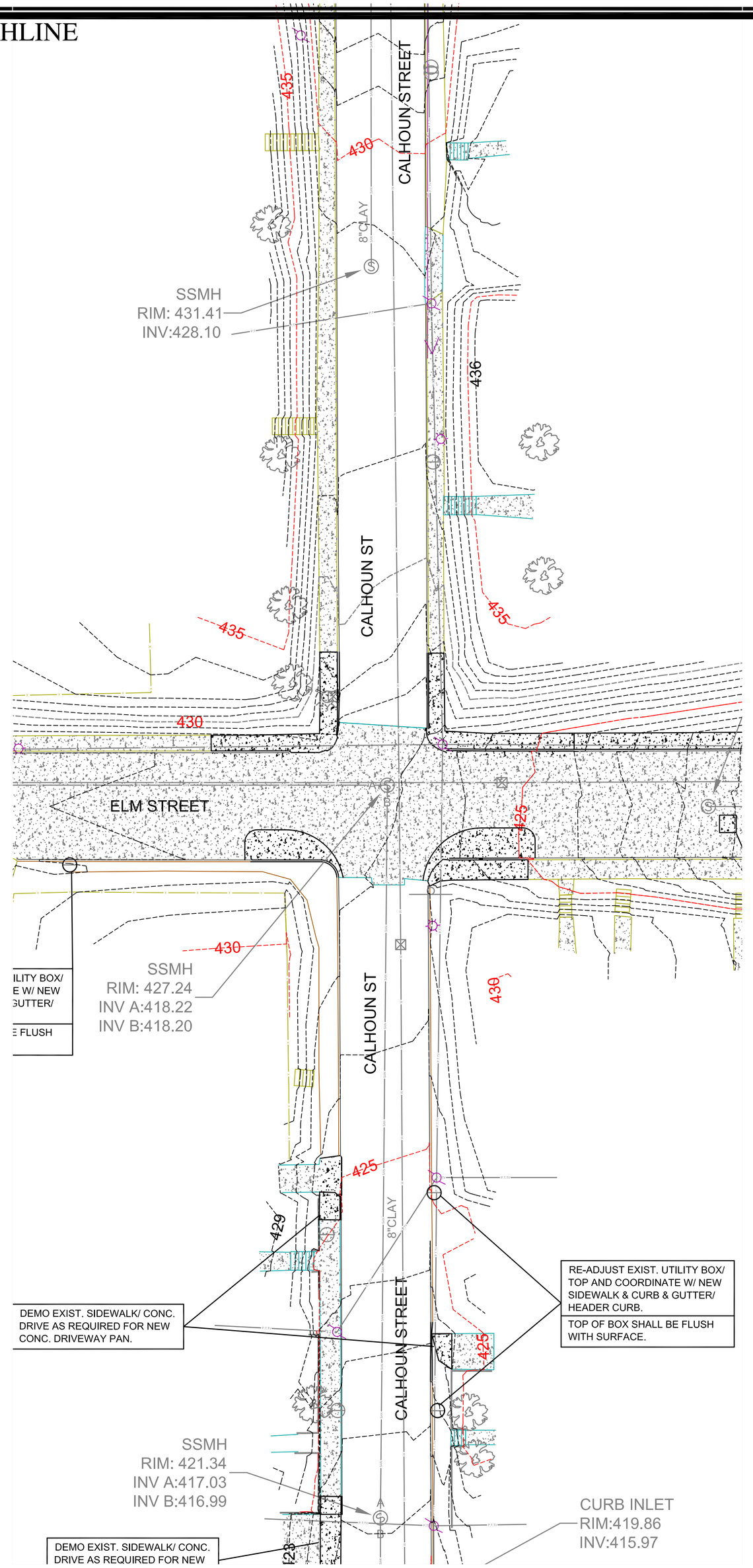
REVITALIZATION PROJECT
MACON, GEORGIA
FOR
BEALL'S HILL NEIGHBORHOOD

MATCHLINE



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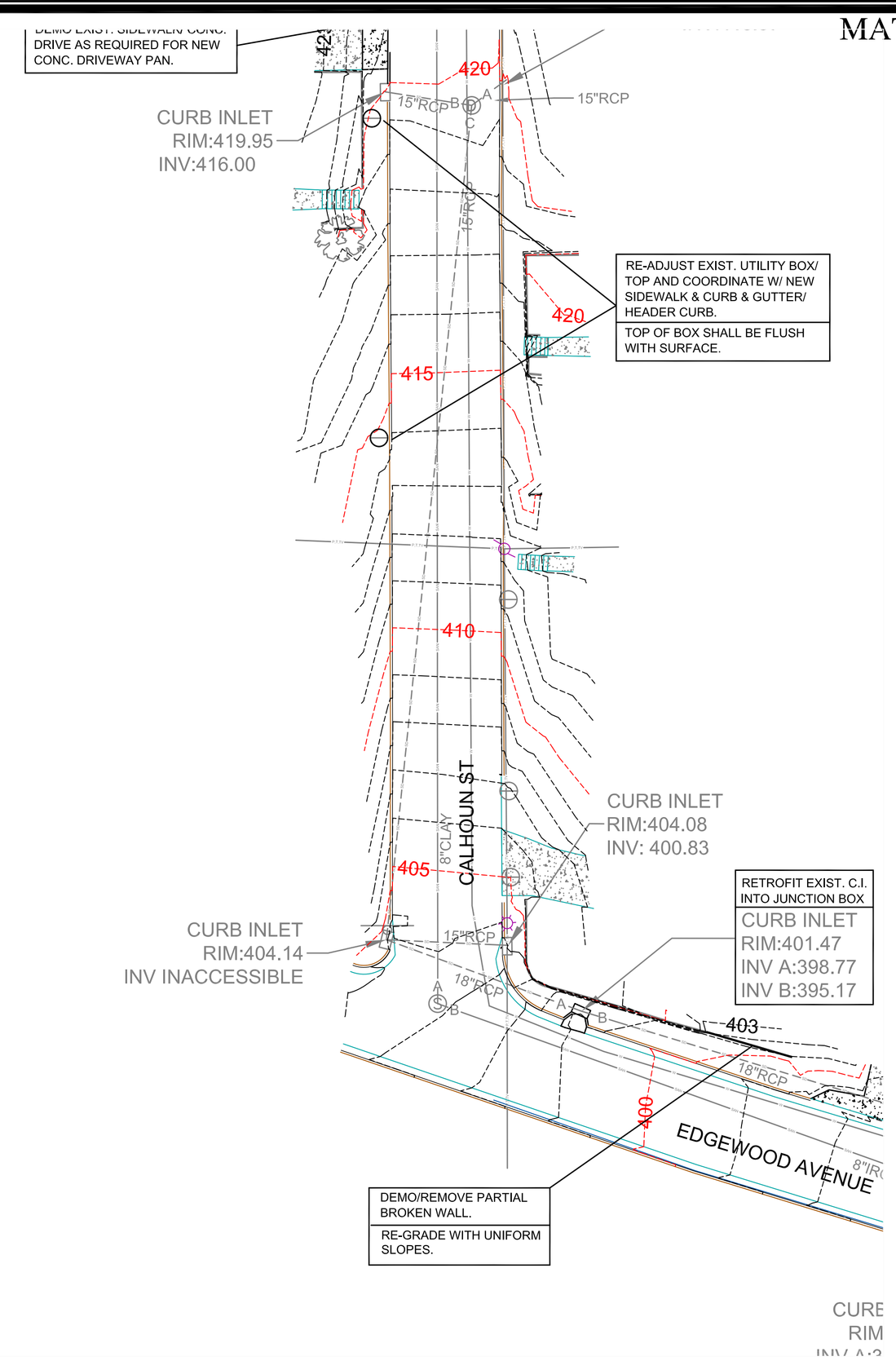

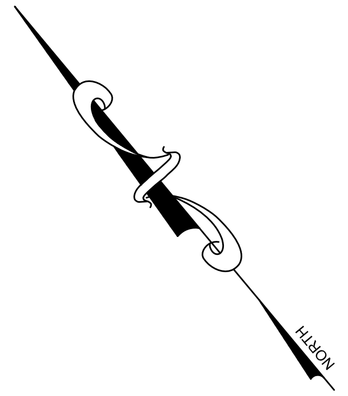

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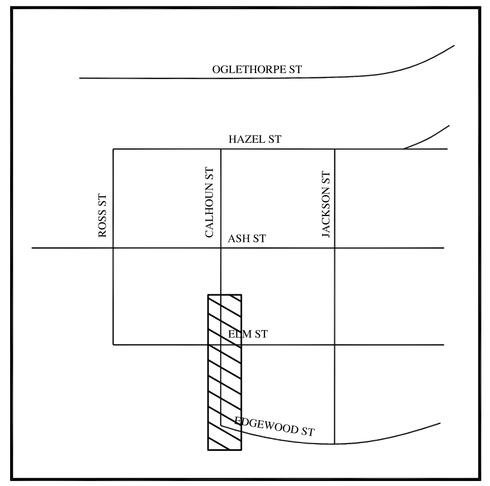

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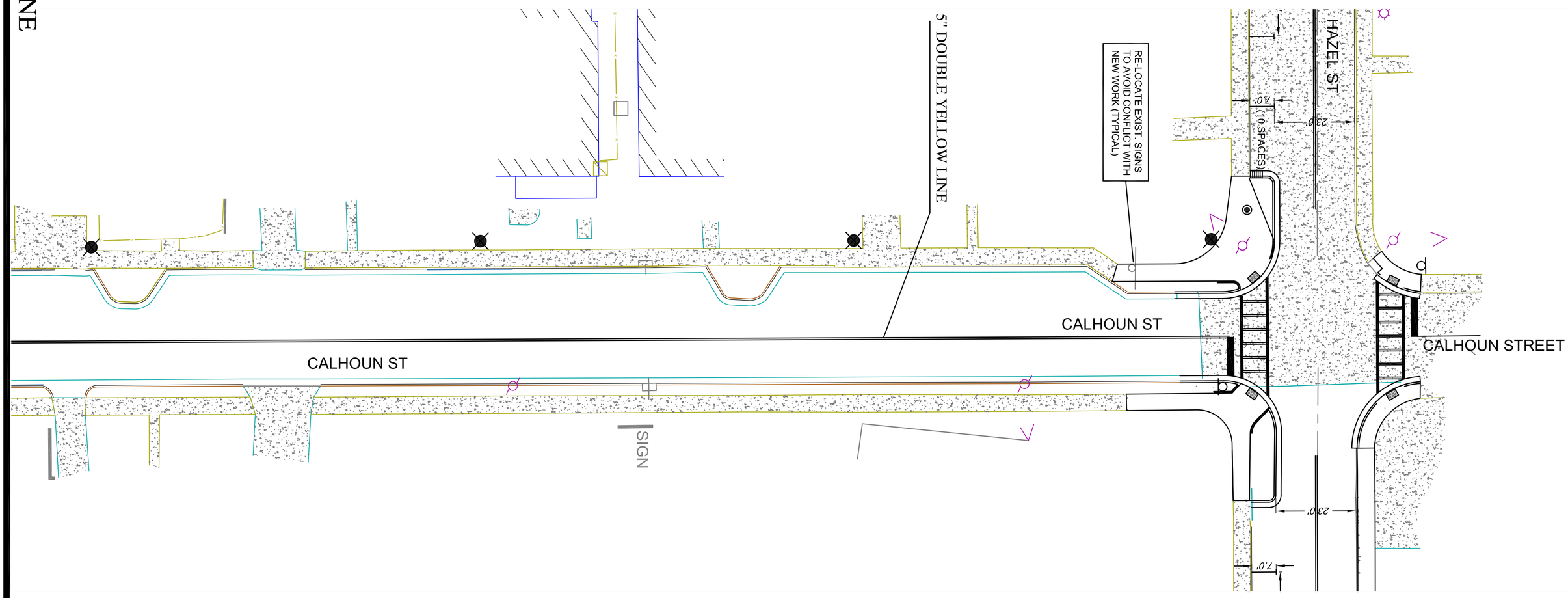
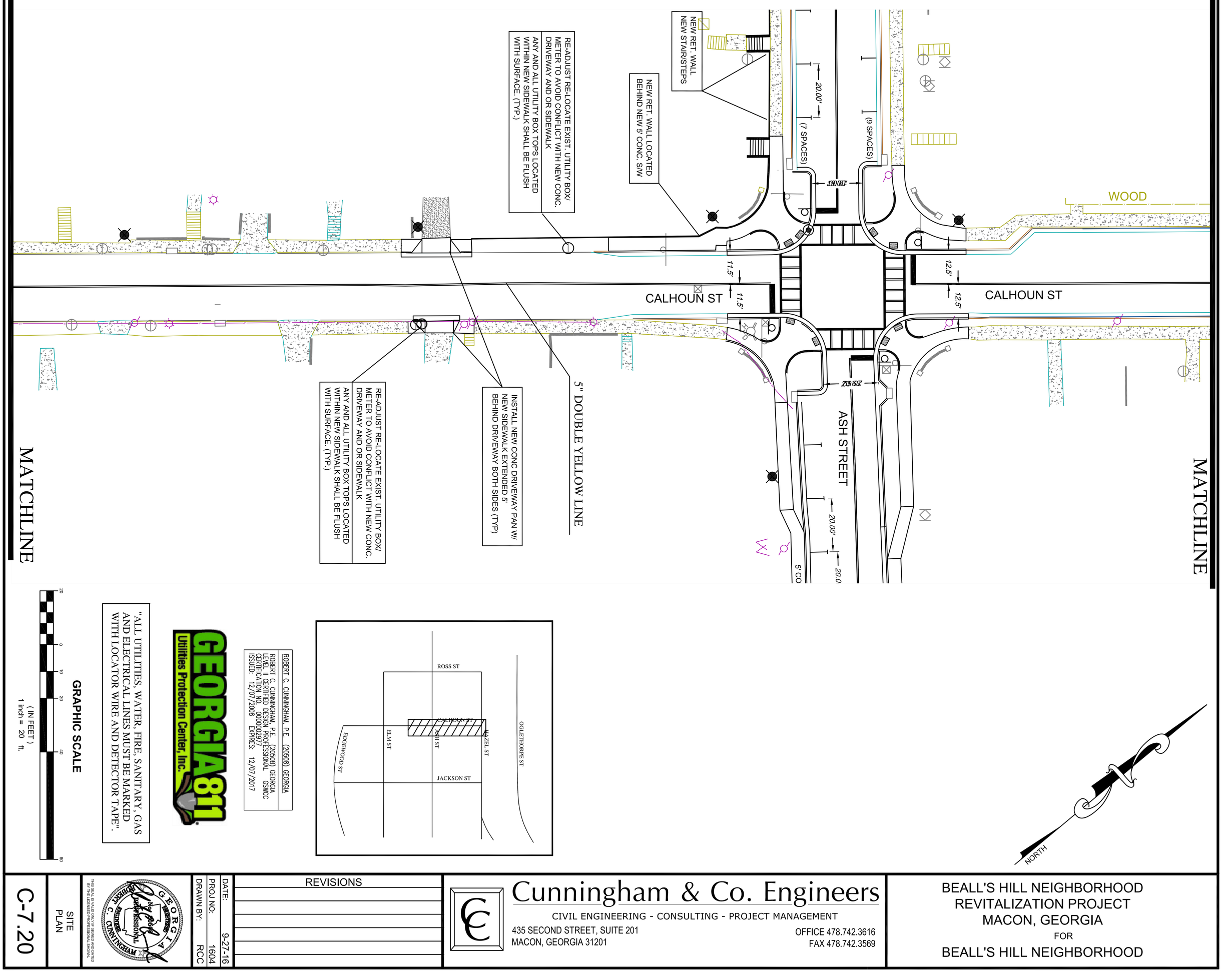
C-7.11

P:\Projects\1604-Bealls Hill\1604-BASE-3.dwg, C-7.11, rodney, Aug 16, 2016 - 5:21:46pm

MATCHLINE





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NORTH

C-7.20

SITE PLAN

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GEORGIA REGISTERED PROFESSIONAL ENGINEER ROBERT C. CUNNINGHAM

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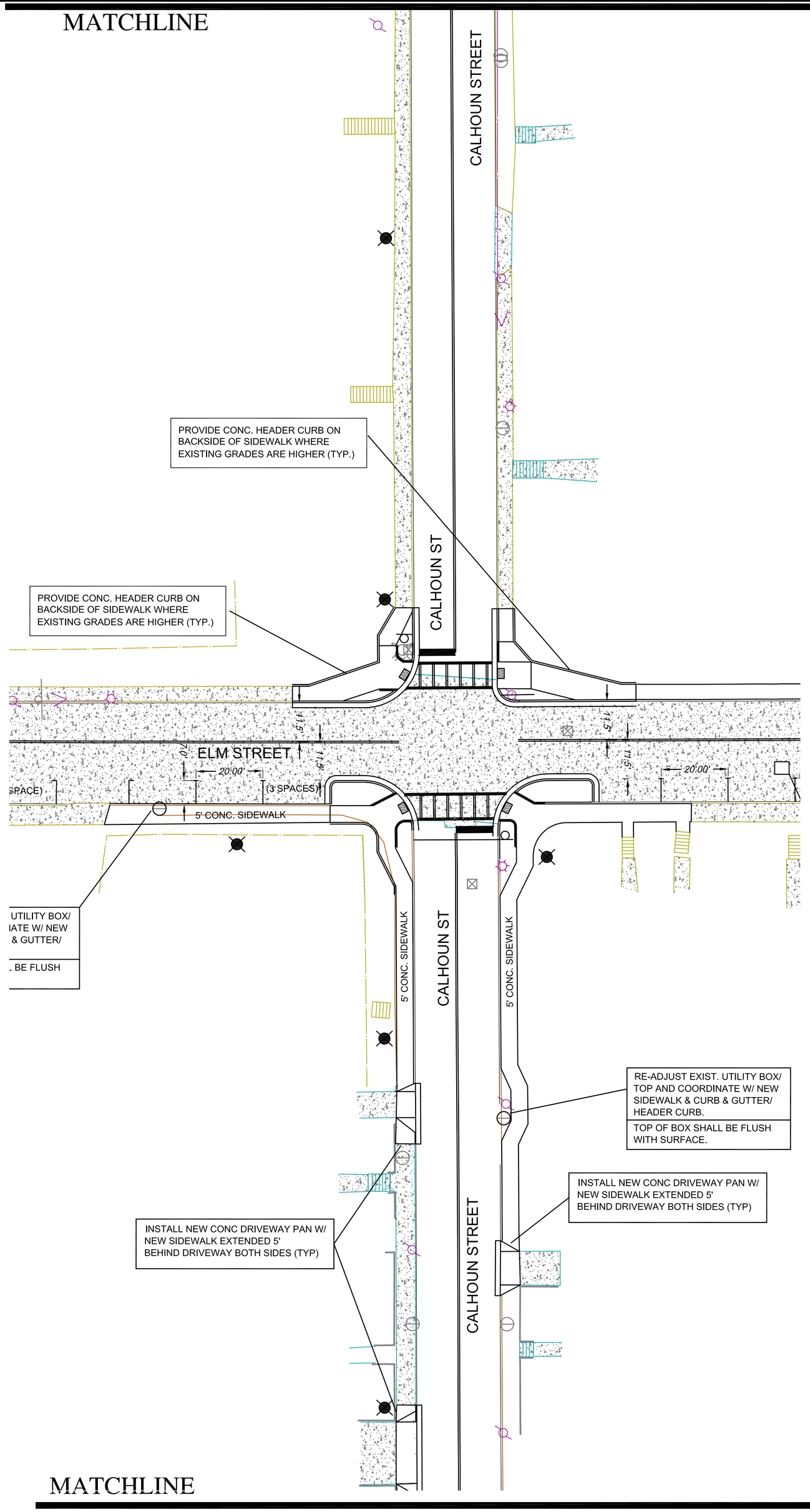

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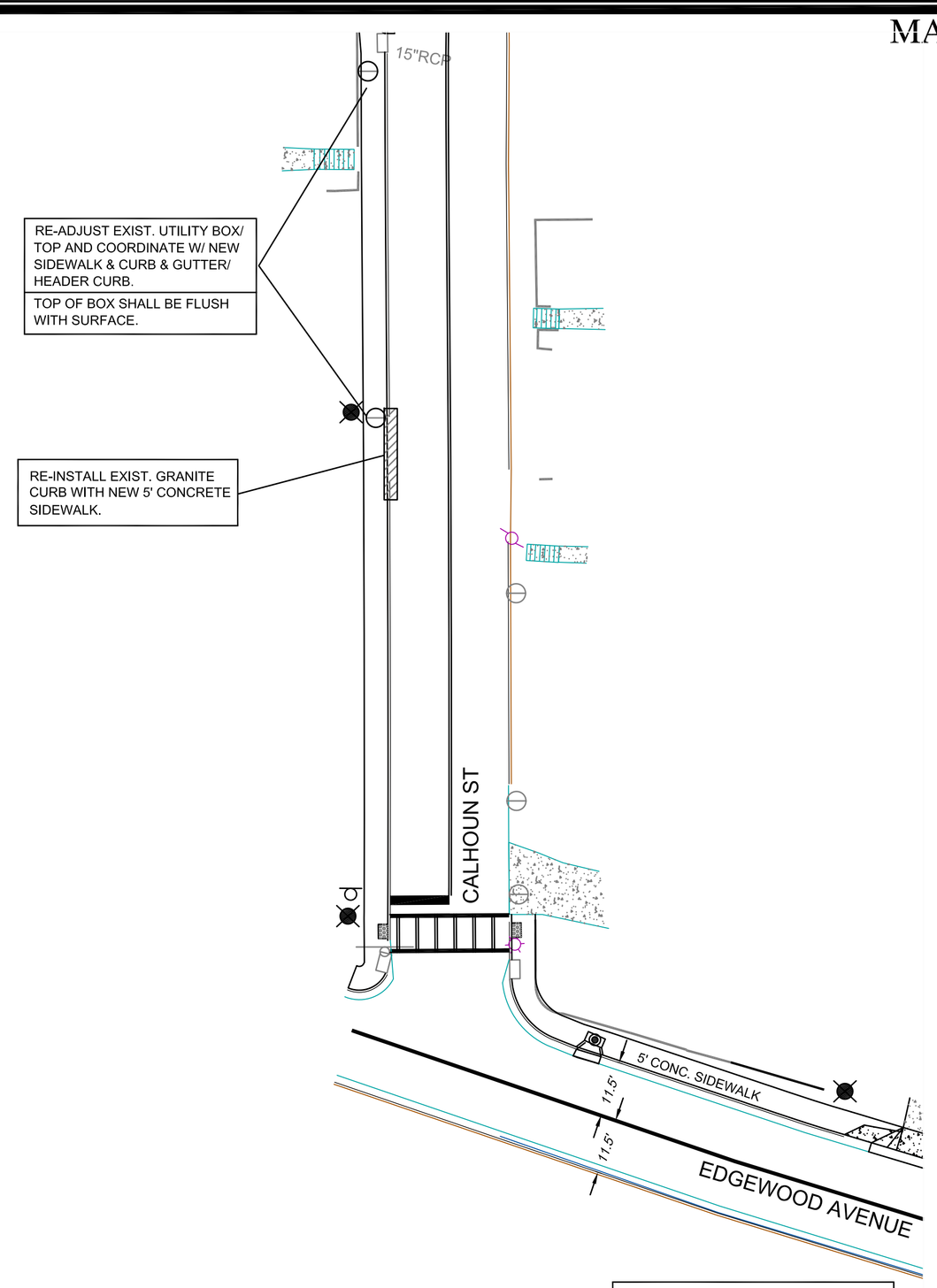

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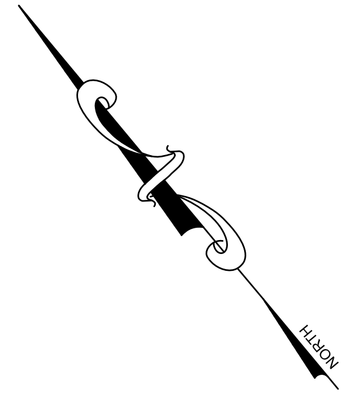

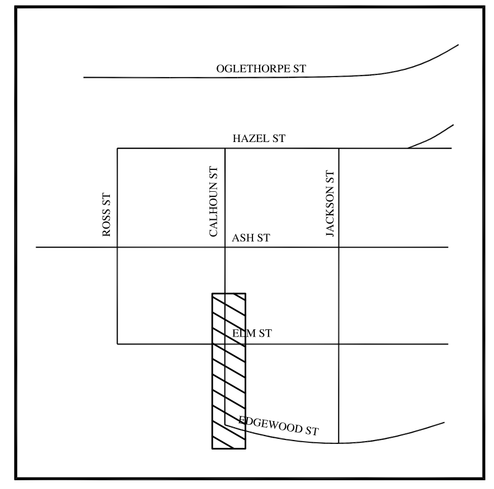

ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA

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LEVEL II CERTIFIED DESIGN PROFESSIONAL GSWCC
CERTIFICATION NO. 0000002977
ISSUED: 12/07/2008 EXPIRES: 12/07/2017

GEORGIA811 Utilities Protection Center, Inc.

"ALL UTILITIES, WATER, FIRE, SANITARY, GAS AND ELECTRICAL LINES MUST BE MARKED WITH LOCATOR WIRE AND DETECTOR TAPE".

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

BEALL'S HILL NEIGHBORHOOD
REVITALIZATION PROJECT
MACON, GEORGIA
FOR
BEALL'S HILL NEIGHBORHOOD

Cunningham & Co. Engineers
CIVIL ENGINEERING - CONSULTING - PROJECT MANAGEMENT
435 SECOND STREET, SUITE 201
MACON, GEORGIA 31201
OFFICE 478.742.3616
FAX 478.742.3569

REVISIONS

DATE: 9-27-16
PROJ NO: 1604
DRAWN BY: RCC

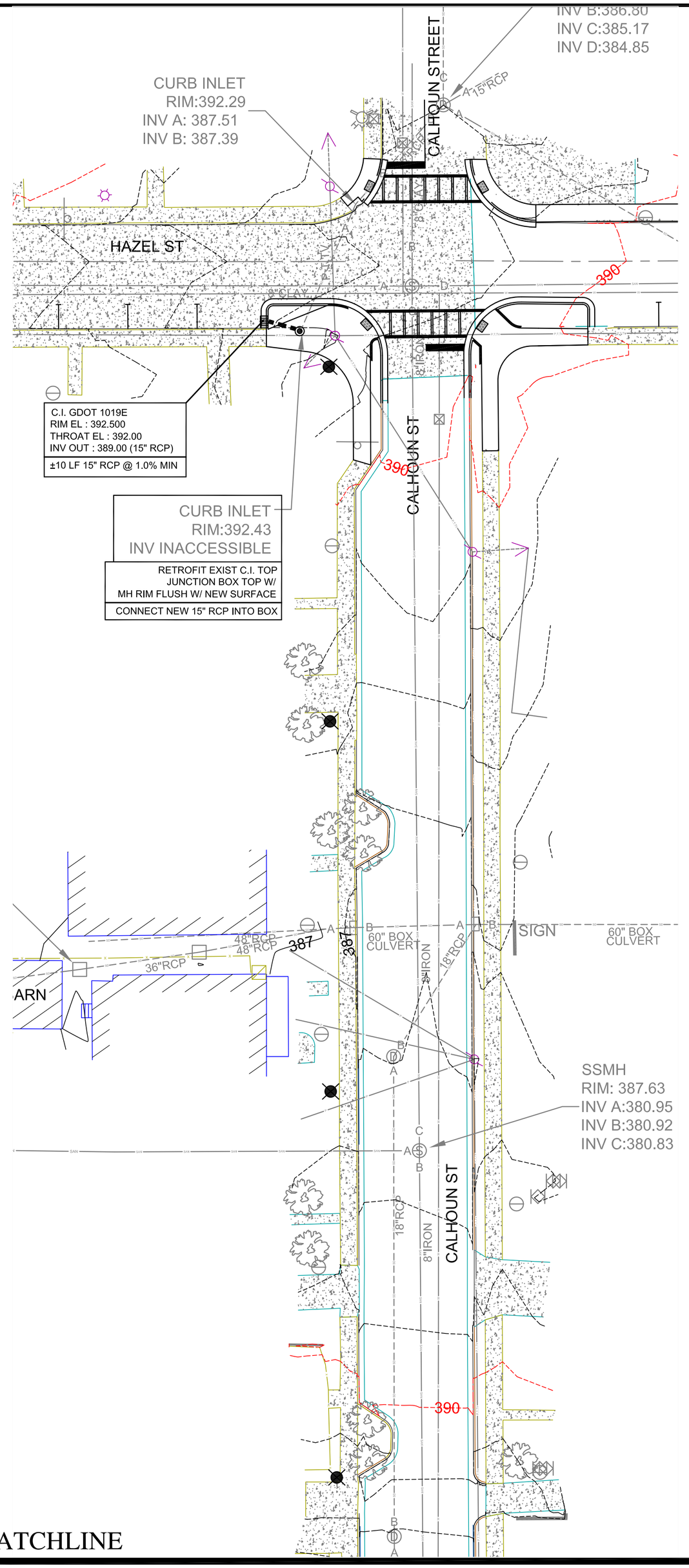
GEORGIA REGISTERED PROFESSIONAL ENGINEER ROBERT C. CUNNINGHAM
No. 20508

THIS SEAL IS VALID ONLY IF SIGNED AND DATED BY THE LICENSED PROFESSIONAL SHOWN.

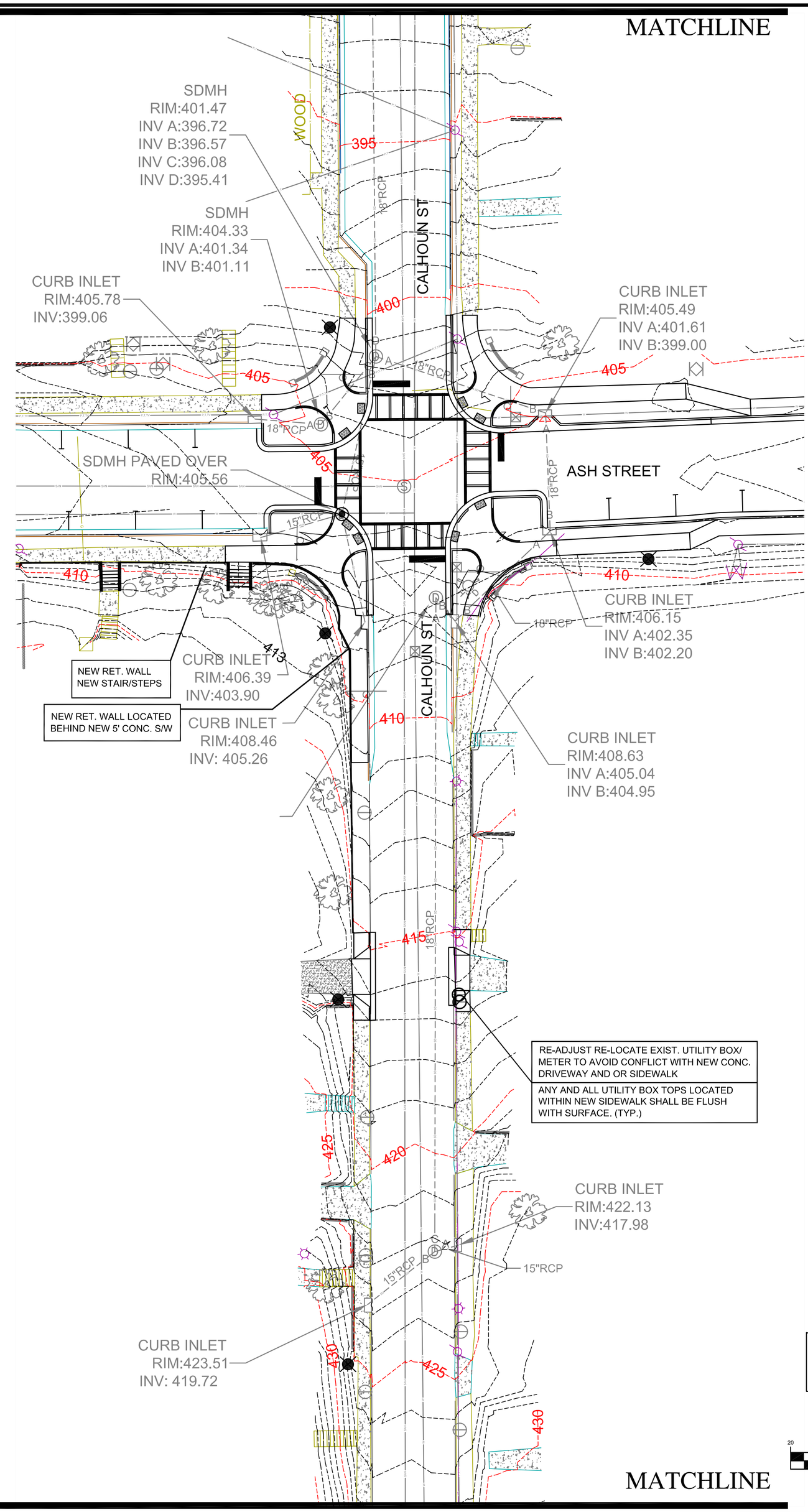
SITE PLAN

C-7.21

P:\Projects\1604-Bealls Hills\1604-BASE-3.dwg, C-7.21, rodney, Sep 27, 2016 - 9:25:06am



MATCHLINE



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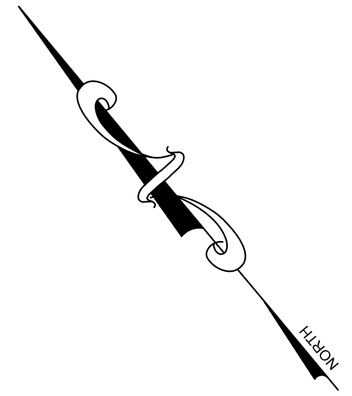

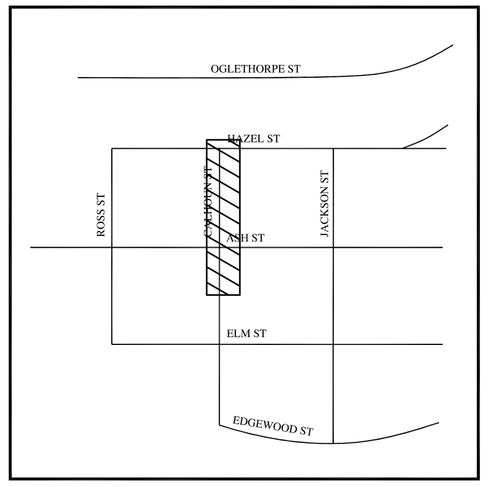

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GRAPHIC SCALE

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(IN FEET)
1 inch = 20 ft.

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REVISIONS

DATE:	9-27-16
PROJ NO:	1604
DRAWN BY:	RCC

GEORGIA REGISTERED PROFESSIONAL ENGINEER ROBERT C. CUNNINGHAM

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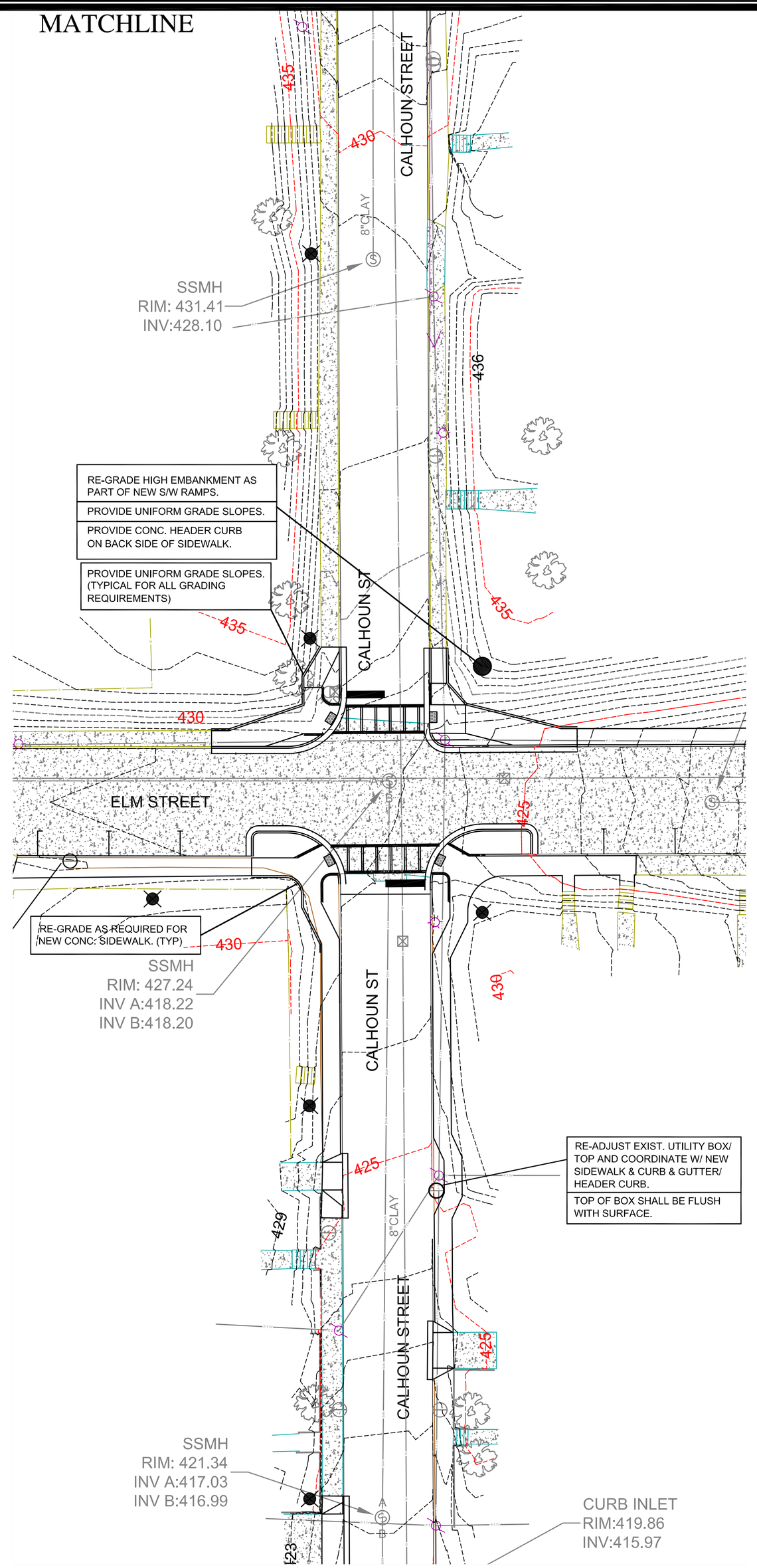
GRADING PLAN

C-7.30

P:\Projects\1604-Bealls Hill\1604-BASE-3.dwg, Cr7.20, rodney, Sep 27, 2016 - 9:25:01am

MATCHLINE



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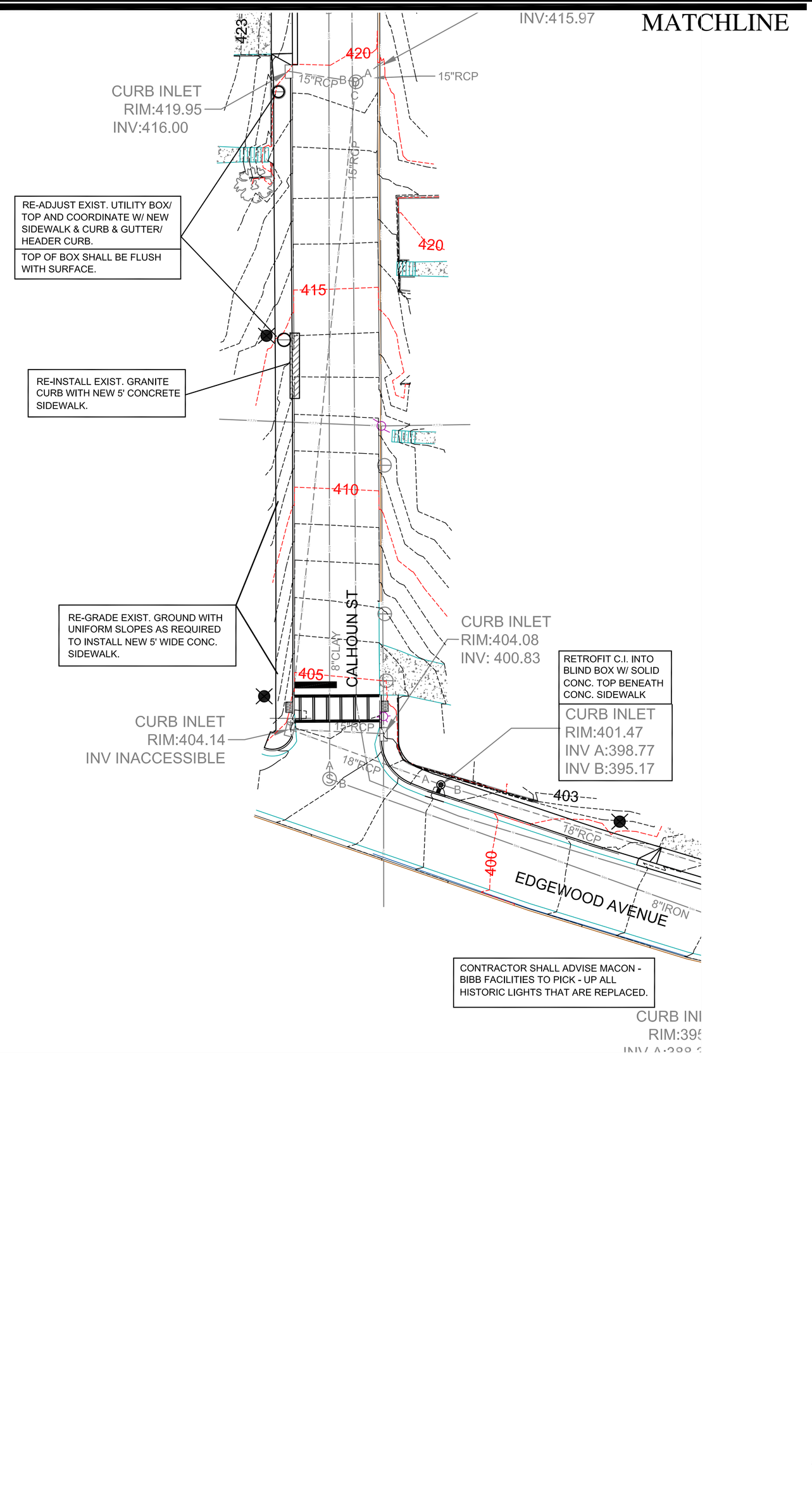

NORTH

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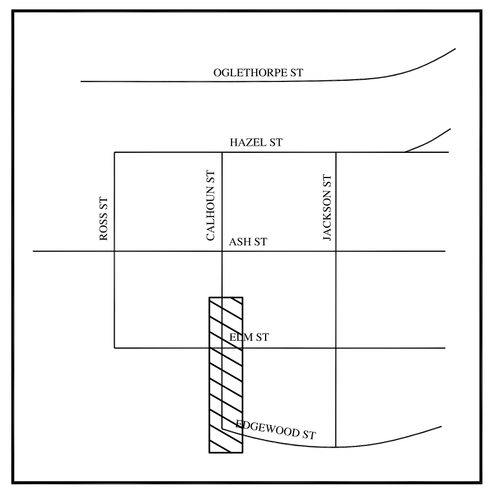

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GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

REVISIONS

DATE:	9-27-16
PROJ NO:	1604
DRAWN BY:	RCC

GEORGIA REGISTERED PROFESSIONAL ENGINEER ROBERT C. CUNNINGHAM

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GRADING PLAN

C-7.31

P:\Projects\1604-Bealls Hill\1604-BASE-3.dwg, C-7.31, rodney, Sep 27, 2016 - 9:23:56am

CURB INLET
RIM:379.40
INV A:377.19
INV B:377.07

RE-ADJUST EXIST. UTILITY BOX/ TOP AND COORDINATE W/ NEW SIDEWALK.
TOP OF BOX SHALL BE FLUSH WITH SURFACE.

CURB INLET
RIM:379.53
INV:377.23

RE-GRADE AREA FOR NEW S/W AND RAMP.
DO NOT DISTURB TREE

SDMH
RIM:378.91
INV A:374.91
INV B:374.33
INV C:374.35
INV D:373.81

HAZEL

CURB INLET
RIM:379.20
INV INACCESSIBLE

SDMH
RIM:378.83
INV A:374.59
INV B:374.55

SDMH
RIM:377.19
INV A:369.84
INV B:368.99

MH BELL SOUTH
RIM: 378.02

JACKSON STREET

2x36"RCP

48" BOX CULVERT

48" RCP

CURB INLET
RIM:377.24
INV A:369.24
INV B:368.99
INV C:368.94

CURB INLET
RIM:377.12
INV A:370.43
INV B:369.97

RAMP

SSMH
RIM: 379.53
INV A:373.08
INV B:372.93

SDMH
RIM:382.61
INV A:377.46
INV B:376.61
INV C:376.21
INV D:376.01

CURB INLET
RIM:382.68
INV: 379.28

CURB INLET
RIM:382.50
INV:379.10

8"IRON

MATCHLINE

MATCHLINE

DEMO EXIST. RET WALL AND STEPS REGRADE W/ UNIFORM SLOPES.

CURB INLET
RIM:401.06
INV A:397.36
INV B:397.21

PORCH

PORCH

ASH STREET

JACKSON STREET

TYPICAL STREET PAVING DEMOLITION

SDMH
RIM:397.83
INV A:393.08
INV B:391.78

DEMO EXIST. STEPS. RE-GRADE AREA W/ UNIFORM SLOPES.

RELOCATE/READJUST & CAP EXIST. UTILITY BOX/METER

SSMH
RIM: 400.89
INV A:397.63
INV B:397.59

MH ATT
RIM: 401.78

ASH STREET

RE-ADJUST EXIST. UTILITY BOX/ TOP AND COORDINATE W/ NEW SIDEWALK & CURB & GUTTER/ HEADER CURB.

CURB INLET
RIM:402.71
INV INACCESSIBLE

RETROFIT EXIST. C.I. INTO BLIND BOX.

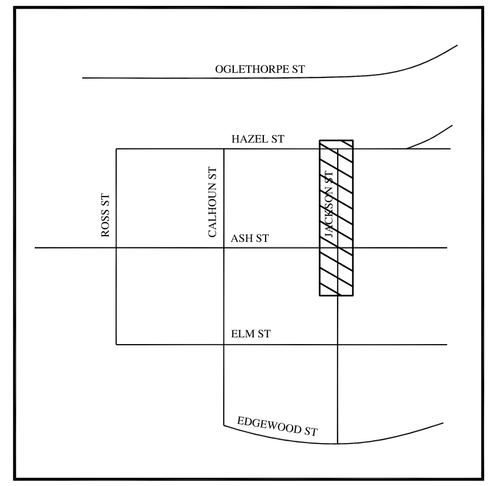
JACKSON STREET

DEMO EXIST. RETAINING WALL AND STEPS.

RE-ADJUST EXIST. UTILITY BOX/ TOP AND COORDINATE W/ NEW SIDEWALK & CURB & GUTTER/ HEADER CURB.

MATCHLINE

NORTH



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GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

BEALL'S HILL NEIGHBORHOOD
REVITALIZATION PROJECT
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FOR
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435 SECOND STREET, SUITE 201
MACON, GEORGIA 31201
OFFICE 478.742.3616
FAX 478.742.3569

REVISIONS

DATE: 8-15-16
PROJ NO: 1604
DRAWN BY: RCC

GEORGIA REGISTERED PROFESSIONAL ENGINEER ROBERT C. CUNNINGHAM

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DEMOLITION PLAN

C-8.10

P:\Projects\1604-Bealls Hill\1604-BASE-3.dwg, C-8.10, rodney, Aug 17, 2016 - 3:59:32pm

P:\Projects\1604-Bealls Hills\1604-BASE-3.dwg, C-8.11, rodney, Aug 17, 2016 - 4:05:50pm

MATCHLINE

MATCHLINE

SSMH PAVEDOVER
RIM: 393.10

CONTRACTOR SHALL RE-USE EXIST. CAST IRON CURB INLET TOP AT THE NE INTERSECTION CORNER OF ELM STREET & ROSS STREET.

RETROFIT EXIST. C.I. TOP TO JUNCTION BOX W/ MH RIM FLUSH WITH SURFACE.

SDMH
RIM:393.10
INV:389.89

SATELLITE

CURB INLET
RIM:393.13
INV INACCESSIBLE

TYPICAL STREET PAVING DEMOLITION

RETROFIT EXIST. C.I. TOP TO JUNCTION BOX W/ MH RIM FLUSH WITH SURFACE.

CURB INLET
RIM:393.37
INV A:390.22
INV B:389.27

SDMH
RIM:397.19
INV A:393.47
INV B:392.38

8"CLAY

12"RCP

15"RCP

JACKSON STREET

JACKSON STREET

JACKSON STRE

395

400

392

393

RE-ADJUST EXIST. UTILITY BOX/ TOP AND COORDINATE W/ NEW SIDEWALK & CURB & GUTTER/ HEADER CURB. BOX TOP SHALL BE FLUSH WITH SURFACE.

DEMO EXISTING CONC. C & G AND SIDEWALK AS REQUIRED FOR NEW CONCRETE DRIVEWAY PAN.

RE-ADJUST EXIST. UTILITY BOX/ TOP AND COORDINATE W/ NEW SIDEWALK & CURB & GUTTER/ HEADER CURB. BOX TOP SHALL BE FLUSH WITH SURFACE.

RE-ADJUST EXIST. UTILITY BOX/ TOP AND COORDINATE W/ NEW SIDEWALK & CURB & GUTTER/ HEADER CURB. BOX TOP SHALL BE FLUSH WITH SURFACE.

SSMH
RIM: 392.34
INV A:388.68
INV B:386.79
INV C:386.74

ELM STREET

8"CLAY

390

394

CURB INLET
RIM:392.25
INV INACCESSIBLE

DI 2X3
RIM:392.22
INV:390.07

CURB INLET
RIM:397.61
INV:394.86

MATCHLINE

DEMO EXIST. FENCE AS REQUIRED TO INSTALL NEW S/W. RESET FENCE BEHIND NEW S/W.

RETROFIT EXIST. C.I. INTO JUNCTION BOX

CURB INLET
RIM:383.60
INV:380.60

RE-ADJUST EXIST. UTILITY BOX/ TOP AND COORDINATE W/ NEW SIDEWALK & CURB & GUTTER/ HEADER CURB.

TOP OF BOX SHALL BE FLUSH WITH SURFACE.

CURB INLET
RIM:383.56
INV A:380.41
INV B:390.36
INV C:379.83

SSMH PAVEDOVER
RIM: 389.82

CURB INLET
RIM:390.37
INV:386.39

JACKSON STREET

JACKSON STREET

8"IRON

15"RCP

10"IRON

18"RCP

EDGEWOOD AVENUE

DEMO EXIST. ASPHALT OVERLAY AND REPLACE W/ ASPHALT PAVING.

RETROFIT EXIST. DROP INLET DRAIN BOX INTO BLIND JUNCTION BOX W/ SOLID CONCRETE TOP BELOW NEW PAVING.

DEMO EXIST. CONCRETE PAVING AND REPLACE W/ ASPHALT PAVING.

DEMO EXIST. RET WALL AND REGRADE W/ UNIFORM SLOPES.

CURB INLET
RIM:383.17
INV:379.40

SDMH
RIM:383.12
INV A:379.68
INV B:379.47
INV C:377.97
INV D:377.91

CURB INLET
RIM:389.90
INV:385.75

RE-ADJUST EXIST. UTILITY BOX/ TOP AND COORDINATE W/ NEW SIDEWALK & CURB & GUTTER/ HEADER CURB. BOX TOP SHALL BE FLUSH WITH SURFACE.

385

390

395

380

392

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GEORGIA811 Utilities Protection Center, Inc.

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LEVEL II CERTIFIED DESIGN PROFESSIONAL GSMCC
CERTIFICATION NO. 00000002977
ISSUED: 12/07/2008 EXPIRES: 12/07/2017

ROSS ST
CALHOUN ST
JACKSON ST
ELM ST
ASH ST
HAZEL ST
EDGEWOOD ST
OGLETHORPE ST

NORTH

GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.
20 0 10 20 40 80

REVISIONS

DATE: 8-15-16
PROJ NO: 1604
DRAWN BY: RCC

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GEORGIA REGISTERED PROFESSIONAL ENGINEER ROBERT C. CUNNINGHAM

DEMOLITION PLAN

C-8.11

Cunningham & Co. Engineers
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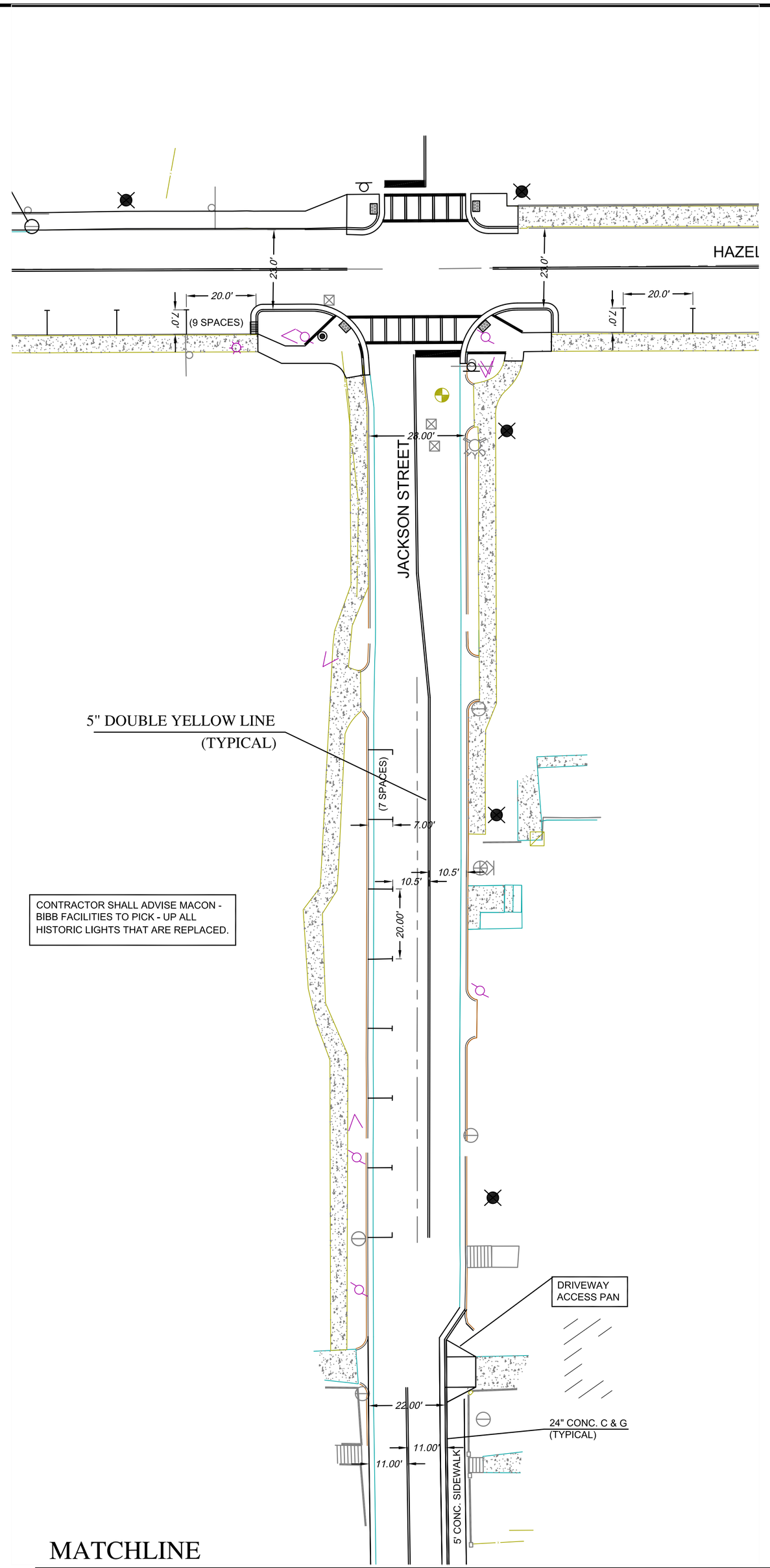

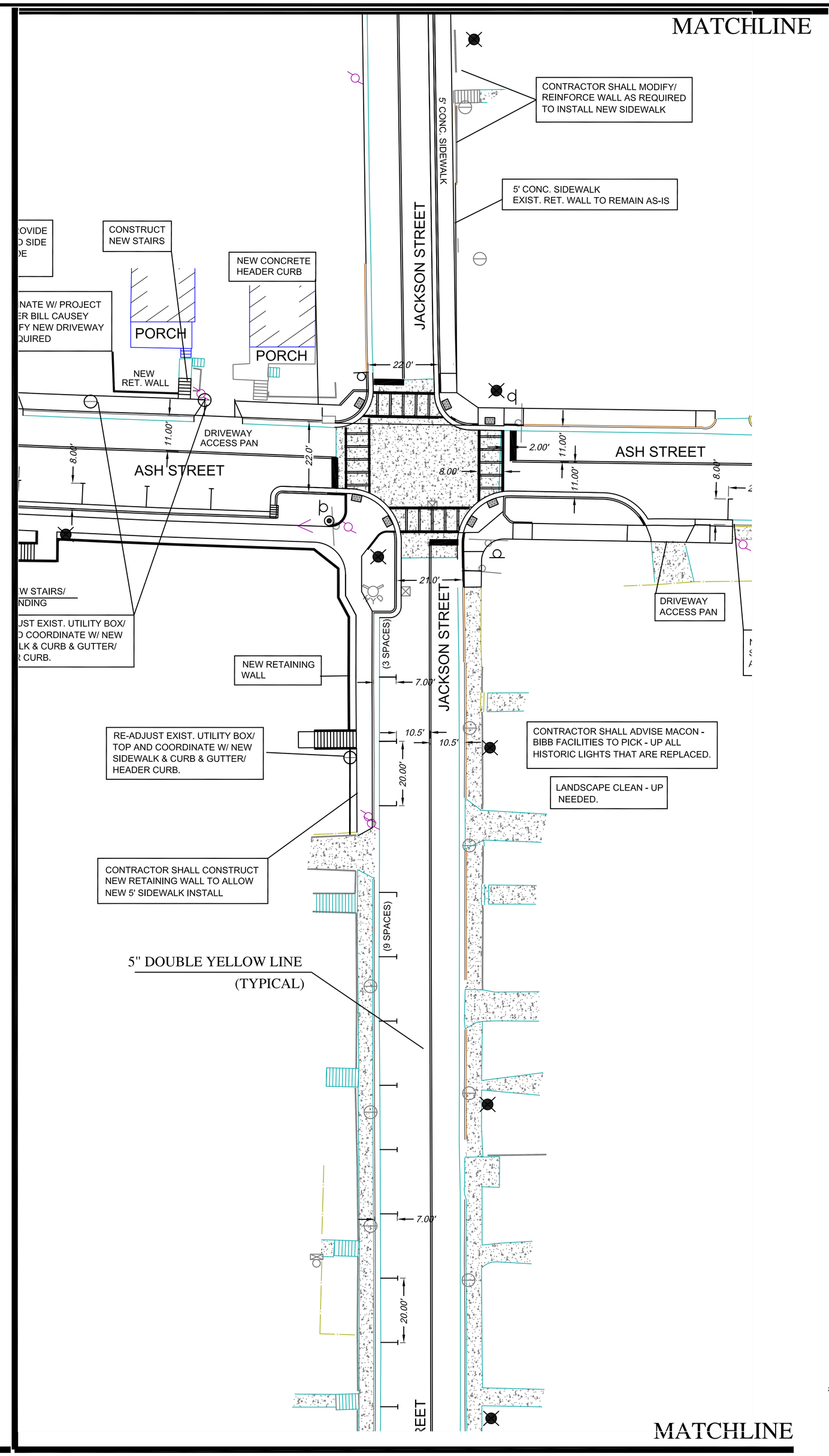

NORTH

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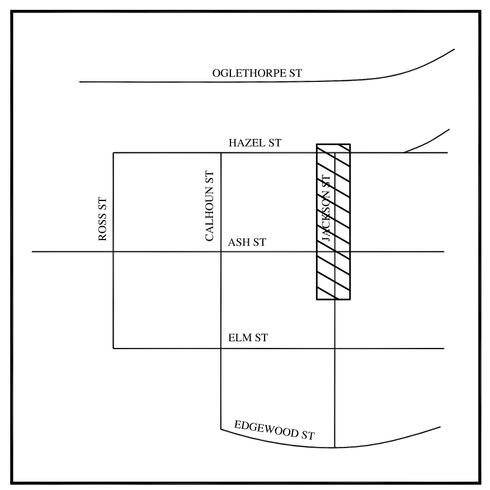

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SITE PLAN

C-8.20

P:\Projects\1604-Beall's Hill\1604-BASE-3.dwg, C-8.20, rodney, Sep 27, 2016 - 9:22:51am

P:\Projects\1604-Bealls Hills\1604-BASE-3.dwg, C-8.21, rodney, Sep 27, 2016 - 9:22:00am

MATCHLINE

RE-ADJUST EXIST. UTILITY BOX/ TOP AND COORDINATE W/ NEW SIDEWALK & CURB & GUTTER/ HEADER CURB. BOX TOP SHALL BE FLUSH WITH SURFACE.

5' CONC. SIDEWALK

(3 SPACES)

7.00'

SATELLITE

(1 SPACE)

(1 SPACE)

(2 SPACES)

20.00'

JACKSON STREET

JACKSON STREET

ELM STREET

11.5'

11.5'

(6 SPACES)

RE-ADJUST EXIST. UTILITY BOX/ TOP AND COORDINATE W/ NEW SIDEWALK & CURB & GUTTER/ HEADER CURB. BOX TOP SHALL BE FLUSH WITH SURFACE.

RE-ADJUST EXIST. UTILITY BOX/ TOP AND COORDINATE W/ NEW SIDEWALK & CURB & GUTTER/ HEADER CURB. BOX TOP SHALL BE FLUSH WITH SURFACE.

CONTRACTOR SHALL ADVISE MACON - BIBB FACILITIES TO PICK - UP ALL HISTORIC LIGHTS THAT ARE REPLAC

5" DOUBLE YELLOW LINE

(4 SPACES)

20.00'

7.00'

(1 SPACE)

JACKSON STRE

JACKSON STREET

LANDSCAPE CLEAN - UP NEEDED.

MATCHLINE

RE-ADJUST EXIST. UTILITY BOX/ TOP AND COORDINATE W/ NEW SIDEWALK & CURB & GUTTER/ HEADER CURB. BOX TOP SHALL BE FLUSH WITH SURFACE.

5' CONC. SIDEWALK

CONTRACTOR SHALL RE-GRADE AND REPLACE EXIST. CONC. STEPS & CONC. RUN-OUT FROM STEPS TO NEW 5' WIDE CONC. SIDEWALK.. ADD ADDITIONAL STEPS AS REQUIRED FOR CONC. LANDING.

5" DOUBLE YELLOW LINE

11.5'

11.5'

7.0'

(4 SPACES)

(4 SPACES)

(2 SPACES)

JACKSON STREET

10.5'

10.5'

10.5'

10.5'

JACKSON STREET

EDGEWOOD AVENUE

5' CONC. SIDEWALK

10.5'

10.5'

CONTRACTOR SHALL ADVISE MACON - BIBB FACILITIES TO PICK - UP ALL HISTORIC LIGHTS THAT ARE REPLACED.

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PROVIDE 98% COMPACTION OF EXIST. SUB-GRADE.. PROVIDE 8" GABC.

PROVIDE 3" ASPHALT (12.5 MM SUPER PAV

NEW ASPHALT BASE & PAVING

PROVIDE NEW FINE GRADING TO ENSURE POSITIVE SHEET FLOW. ADJUST ALL EXIST RIM ELEVATIONS OF EXIST. UTILITIES.

MATCHLINE

NORTH

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)

1 inch = 20 ft.

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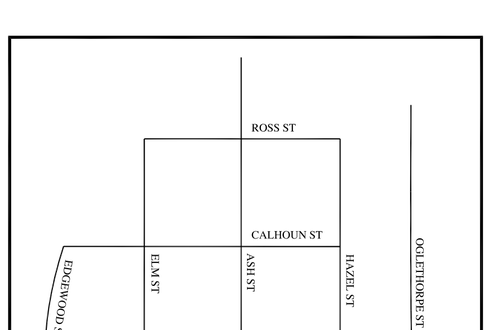

SITE PLAN

C-8.21

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CURB INLET
RIM:379.40
INV A:377.19
INV B:377.07

C.I. GDOT 1019E
RIM EL : 379.65
THROAT EL : 379.15
CONSTRUCT NEW C.I. WITH BOX CONSTRUCTED OVER & CONNECTED TO EXIST. 36" RCP

CURB INLET
RIM:379.53
INV:377.23

SDMH
RIM:378.91
INV A:374.91
INV B:374.33
INV C:374.35
INV D:373.81

HAZEL

CURB INLET
RIM:379.20
INV INACCESSIBLE
RETROFIT EXIST. C.I. TO BLIND JUNCTION BOX

SDMH
RIM:378.83
INV A:374.59
INV B:374.55

MH BELL SOUTH
RIM: 378.02

SDMH
RIM:377.19
INV A:369.84
INV B:368.99

JACKSON STREET

2x36"RCP

48" BOX CULVERT

48" RCP

CURB INLET
RIM:377.24
INV A:369.24
INV B:368.99
INV C:368.94

CURB INLET
RIM:377.12
INV A:370.43
INV B:369.97

CONTRACTOR SHALL ADVISE MACON - BIBB FACILITIES TO PICK - UP ALL HISTORIC LIGHTS THAT ARE REPLACED.

RAMP

SSMH
RIM: 379.53
INV A:373.08
INV B:372.93

SDMH
RIM:382.61
INV A:377.46
INV B:376.61
INV C:376.21
INV D:376.01

CURB INLET
RIM:382.68
INV: 379.28

CURB INLET
RIM:382.50
INV:379.10

8" IRON

MATCHLINE

MATCHLINE

REGRADE W/ UNIFORM SLOPES.

CURB INLET
RIM:401.06
INV A:397.36
INV B:397.21

PORCH

PORCH

JACKSON STREET

SDMH
RIM:397.83
INV A:393.08
INV B:391.78

RE-GRADE AS REQUIRED FOR NEW CONC. SIDEWALK

SSMH
RIM: 400.89
INV A:397.63
INV B:397.59

ASH STREET

MH ATT
RIM: 401.78

ASH STREET

RE-GRADE FOR NEW S/W INSTALLATION

CURB INLET
RIM:402.71
INV INACCESSIBLE
RETROFIT EXIST. C.I. INTO JUNCTION BOX W/ LID FLUSH WITH' SURFACE.
CONNECT NEW 15" RCP INTO BOX.

C.I. GDOT 1019E
RIM EL : 403.00
THROAT EL : 402.50
INV OUT : 399.00
±15 LF 15" RCP @ 1.0%

CONTRACTOR SHALL ADVISE MACON - BIBB FACILITIES TO PICK - UP ALL HISTORIC LIGHTS THAT ARE REPLACED.

LANDSCAPE CLEAN - UP NEEDED.

RE-ADJUST EXIST. UTILITY BOX/ TOP AND COORDINATE W/ NEW SIDEWALK & CURB & GUTTER/ HEADER CURB.

CONTRACTOR SHALL CONSTRUCT NEW RETAINING WALL TO ALLOW NEW 5' SIDEWALK INSTALL

JACKSON STREET

NORTH

OGLETHORPE ST
HAZEL ST
ROSS ST
CALHOUN ST
JACKSON ST
ASH ST
ELM ST
EDGEWOOD ST

ROBERT C. CUNNINGHAM, P.E. (20508) GEORGIA

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LEVEL II CERTIFIED DESIGN PROFESSIONAL GSWCC
CERTIFICATION NO. 0000002977
ISSUED: 12/07/2008 EXPIRES: 12/07/2017

GEORGIA811
Utilities Protection Center, Inc.

"ALL UTILITIES, WATER, FIRE, SANITARY, GAS AND ELECTRICAL LINES MUST BE MARKED WITH LOCATOR WIRE AND DETECTOR TAPE".

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

BEALL'S HILL NEIGHBORHOOD
REVITALIZATION PROJECT
MACON, GEORGIA
FOR
BEALL'S HILL NEIGHBORHOOD

Cunningham & Co. Engineers
CIVIL ENGINEERING - CONSULTING - PROJECT MANAGEMENT
435 SECOND STREET, SUITE 201
MACON, GEORGIA 31201
OFFICE 478.742.3616
FAX 478.742.3569

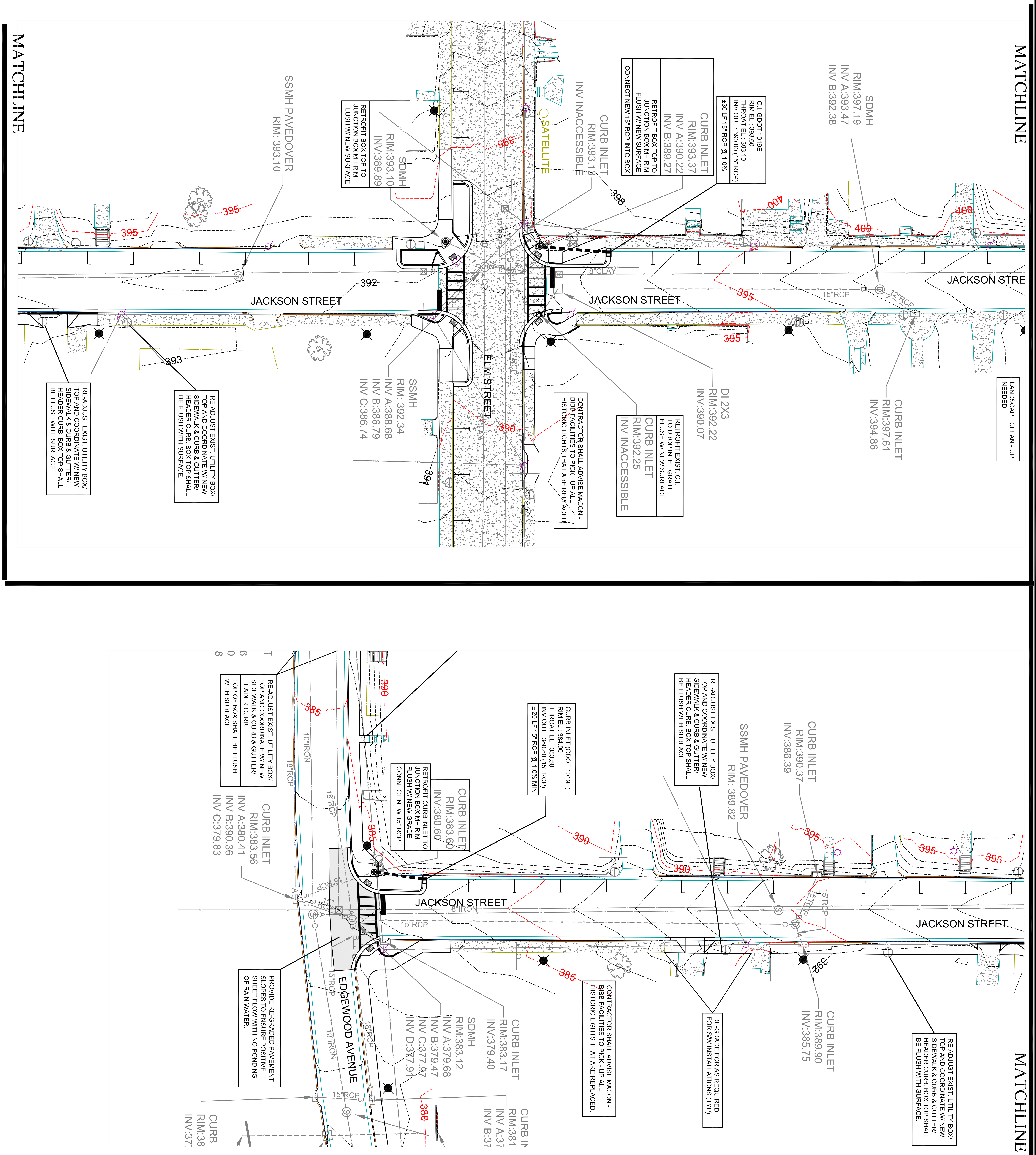
REVISIONS

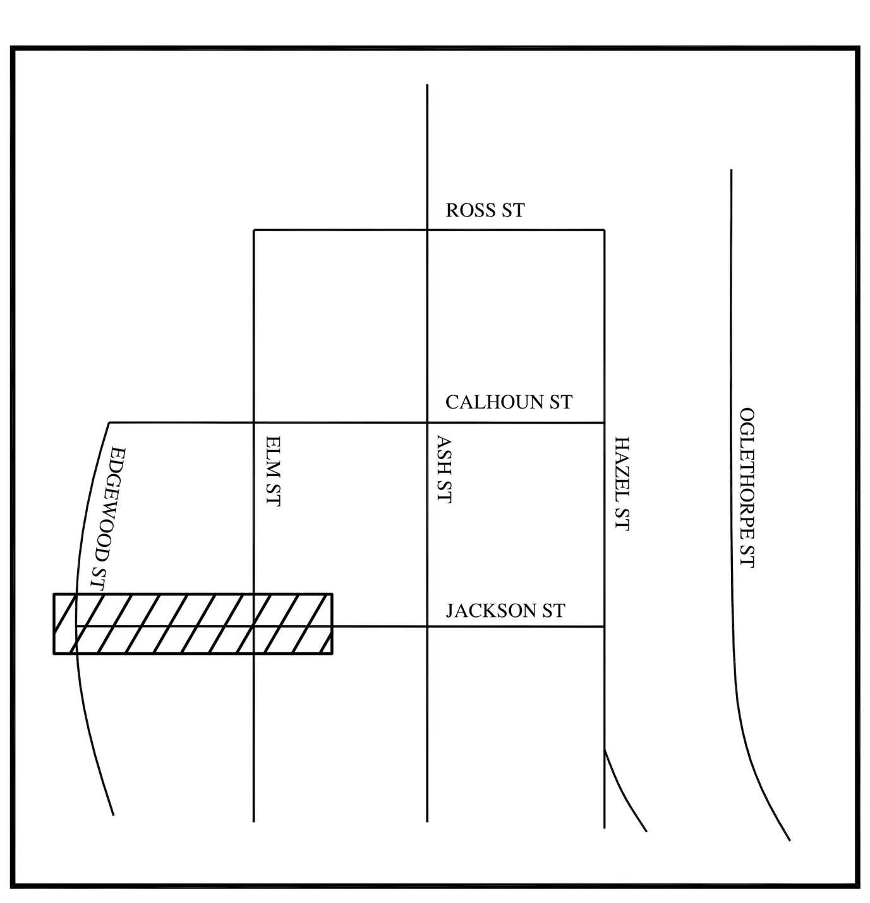
DATE: 9-27-16
PROJ NO: 1604
DRAWN BY: RCC

GEORGIA REGISTERED PROFESSIONAL ENGINEER ROBERT C. CUNNINGHAM
THIS SEAL IS VALID ONLY IF SIGNED AND DATED BY THE LICENSED PROFESSIONAL SHOWN.

GRADING PLAN

C-8.30


MATCHLINE
SSMH PAVEDOVER
RIM: 393.10
SDMH
RIM:393.10
INV:389.89
RETROFIT BOX TOP TO JUNCTION BOX MH RIM FLUSH W/ NEW SURFACE
8"CLAY
SATELLITE
INV INACCESSIBLE
CURB INLET
RIM:393.13
CURB INLET
RIM:393.37
INV A:390.22
INV B:389.27
RETROFIT BOX TOP TO JUNCTION BOX MH RIM FLUSH W/ NEW SURFACE
CONNECT NEW 15" RCP INTO BOX
C.I. GDOT 1019E
RIM EL : 393.60
THROAT EL : 393.10
INV OUT : 390.00 (15" RCP)
±30 LF 15" RCP @ 1.0%
SDMH
RIM:397.19
INV A:393.47
INV B:392.38
MATCHLINE
395
398
400
392
393
390
JACKSON STREET
JACKSON STREET
JACKSON STRE
8"CLAY
15"RCP
12"RCP
ELM STREET
RE-ADJUST EXIST. UTILITY BOX/ TOP AND COORDINATE W/ NEW SIDEWALK & CURB & GUTTER/ HEADER CURB. BOX TOP SHALL BE FLUSH WITH SURFACE.
RE-ADJUST EXIST. UTILITY BOX/ TOP AND COORDINATE W/ NEW SIDEWALK & CURB & GUTTER/ HEADER CURB. BOX TOP SHALL BE FLUSH WITH SURFACE.
SSMH
RIM: 392.34
INV A:388.68
INV B:386.79
INV C:386.74
CONTRACTOR SHALL ADVISE MACON - BIBB FACILITIES TO PICK - UP ALL HISTORIC LIGHTS THAT ARE REPLACED.
RETROFIT EXIST. C.I. TO DROP INLET GRATE FLUSH W/ NEW SURFACE
CURB INLET
RIM:392.25
INV INACCESSIBLE
DI 2X3
RIM:392.22
INV:390.07
CURB INLET
RIM:397.61
INV:394.86
LANDSCAPE CLEAN - UP NEEDED.
RE-ADJUST EXIST. UTILITY BOX/ TOP AND COORDINATE W/ NEW SIDEWALK & CURB & GUTTER/ HEADER CURB.
TOP OF BOX SHALL BE FLUSH WITH SURFACE.
T
6
0
8
385
10"IRON
18"RCP
CURB INLET
RIM:383.56
INV A:380.41
INV B:390.36
INV C:379.83
CURB INLET
RIM:383.60
INV:380.60
RETROFIT CURB INLET TO JUNCTION BOX MH RIM FLUSH W/ NEW GRADE
CONNECT NEW 15" RCP
CURB INLET (GDOT 1019E)
RIM EL : 384.00
THROAT EL : 383.50
INV OUT : 380.80 (15" RCP)
± 20 LF 15" RCP @ 1.0% MIN
RE-ADJUST EXIST. UTILITY BOX/ TOP AND COORDINATE W/ NEW SIDEWALK & CURB & GUTTER/ HEADER CURB. BOX TOP SHALL BE FLUSH WITH SURFACE.
SSMH PAVEDOVER
RIM: 389.82
CURB INLET
RIM:390.37
INV:386.39
8"IRON
15"RCP
PROVIDE RE-GRADED PAVEMENT SLOPES TO ENSURE POSITIVE SHEET FLOW WITH NO PONDING OF RAIN WATER.
EDGEWOOD AVENUE
CURB INLET
RIM:383.17
INV:379.40
SDMH
RIM:383.12
INV A:379.68
INV B:379.47
INV C:377.97
INV D:377.91
380
CURB IN
RIM:381
INV A:37
INV B:37
CURB
RIM:38
INV:37
CONTRACTOR SHALL ADVISE MACON - BIBB FACILITIES TO PICK - UP ALL HISTORIC LIGHTS THAT ARE REPLACED.
RE-GRADE FOR AS REQUIRED FOR S/W INSTALLATIONS (TYP)
CURB INLET
RIM:389.90
INV:385.75
RE-ADJUST EXIST. UTILITY BOX/ TOP AND COORDINATE W/ NEW SIDEWALK & CURB & GUTTER/ HEADER CURB. BOX TOP SHALL BE FLUSH WITH SURFACE.
MATCHLINE
NORTH



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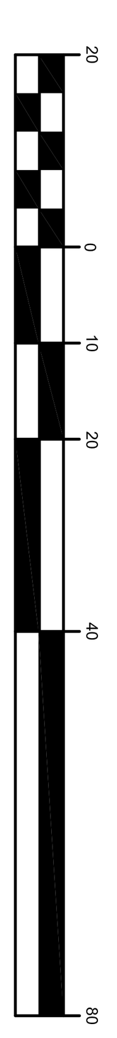

GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.

DATE:	9-27-16
PROJ NO:	1604
DRAWN BY:	RCC

REVISIONS

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GEORGIA REGISTERED No. 20508 PROFESSIONAL ENGINEER ROBERT C. CUNNINGHAM

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BEALL'S HILL NEIGHBORHOOD
REVITALIZATION PROJECT
MACON, GEORGIA
FOR
BEALL'S HILL NEIGHBORHOOD

GRADING PLAN

C-8.31

Ds1 Disturbed Area Stabilization (With Mulching Only)

REQUIREMENT FOR REGULATORY COMPLIANCE

Mulch or temporary grassing shall be applied to all exposed areas within 14 days of disturbance. Mulch can be used as a singular erosion control device for up to six months, but it shall be applied at the appropriate depth, depending on the material used, anchored, and have a continuous 90% cover or greater of the soil surface. Maintenance shall be required to maintain appropriate depth and 90% cover. Temporary vegetation may be employed instead of mulch if the area will remain undisturbed for less than six months. If an area will remain undisturbed for greater than six months, permanent vegetative techniques shall be employed. **Refer to Ds2 -Disturbed Area Stabilization (With Temporary Seeding)**, **Ds3 - Disturbed Area Stabilization (With Permanent Seeding)**, and **Ds4 - Disturbed Area Stabilization (With Sodding)**.

SPECIFICATIONS MULCHING WITHOUT SEEDING

This standard applies to grades or cleared areas where seedings may not have a suitable growing season to produce an erosion retardant cover, but can be stabilized with a mulch cover.

Site Preparation

1. Grade to permit the use of equipment for applying and anchoring mulch.
2. Install needed erosion control measures as required such as dikes, diversions, berms, terraces and sediment barriers.
3. Loosen compact soil to a minimum depth of 3 inches.

Mulching Materials

Select one of the following materials and apply at the depth indicated:
1. Dry straw or hay shall be applied at a depth of 2 to 4 inches providing complete soil coverage. One advantage of this material is easy application.
2. Wood waste (chips, sawdust or bark) shall be applied at a depth of 2 to 3 inches. Organic material from the clearing stage of development should remain on site, be chipped, and applied as mulch. This method of mulching can greatly reduce erosion control costs.
3. Cutback asphalt (slow curing) shall be applied at 1200 gallons per acre (or 1/4 gallon per sq. yd.).
4. Polyethylene film shall be secured over banks or stockpiled soil material for temporary protection. This material can be salvaged and reused.

Applying Mulch

When mulch is used without seeding, mulch shall be applied to provide full coverage of the exposed area.
1. Dry straw or hay mulch and wood chips shall be applied uniformly by hand or by mechanical equipment.
2. If the area will eventually be covered with perennial vegetation, 20-30 pounds of nitrogen per acre in addition to the normal amount shall be applied to offset the uptake of nitrogen caused by the decomposition of the organic mulches.
3. Cutback asphalt shall be applied uniformly. Care should be taken in areas of pedestrian traffic due to problems of "tracking in" or damage to shoes, clothing, etc.
4. Apply polyethylene film on exposed areas.

Anchoring Mulch

1. Straw or hay mulch can be pressed into the soil with a disk harrow with the disk set straight or with a special "packer disk." Disks may be smooth or serrated and should be 20 inches or more in diameter and 8 to 12 inches apart. The edges of the disk should be dull enough not to cut the mulch but to press it into the soil leaving much of it in an erect position. Straw or hay mulch shall be anchored immediately after application. Straw or hay mulch spread with special blower-type equipment may be anchored with emulsified asphalt (Grade AE-5 or SS-1). The asphalt emulsion shall be sprayed onto the mulch as it is ejected from the machine. Use 100 gallons of emulsified asphalt and 100 gallons of water per ton of mulch. Tackifers and binders can be substituted for emulsified asphalt. Please refer to specification Tb - Tackifers and Binders. Plastic mesh or netting with mesh no larger than one inch by one inch shall be installed according to manufacturer's specifications.
2. Netting of the appropriate size shall be used to anchor wood waste. Openings of the netting shall not be larger than the average size of the wood waste chips.
3. Polyethylene film shall be anchor trenched at the top as well as incrementally as necesRCCy.

Du Dust Control on Disturbed Areas

METHOD AND MATERIALS

A. TEMPORARY METHODS

Mulches. See standard **Ds1– Disturbed Area Stabilization (With Mulching Only).** Synthetic resins may be used instead of asphalt to bind mulch material. Refer to standard **Tb–Tackifiers and Binders.**
Resins such as Curasol or Terratack should be used according to manufacturer's recommendations.

Vegetative Cover. See standard **Ds2– Disturbed Area Stabilization (With Temporary Seeding).**

Spray–on Adhesives. These are used on mineral soils (not effective on muck soils). Keep traffic off these areas. Refer to standard **Tb–Tackifiers and Binders.**

Tillage. This practice is designed to roughen and bring clods to the surface. It is an emergency measure which should be used before wind erosion starts. Begin plowing on windward side of site. Chisel-type
plows spaced about 12 inches apart, spring-toothed harrows, and similar plows are examples of equipment which may produce the desired effect.

Irrigation. This is generally done as an emergency treatment. Site is sprinkled with water until the surface is wet. Repeat as needed.

Barriers. Solid board fences, snowfences, burlap fences, crate walls, bales of hay and similar material can be used to control air currents and soil blowing. Barriers placed at right angles to prevailing currents at intervals of about 15 times their height are effective in controlling wind erosion.

Calcium Chloride. Apply at rate that will keep surface moist. May need treatment.

B. PERMANENT METHODS.

Permanent Vegetation. See standard **Ds3–Disturbed Area Stabilization (With Permanent Vegetation).** Existing trees and large shrubs may afford valuable protection if left in place.

Topsoiling. This entails covering the surface with less erosive soil material. See standard **Tp– Topsoiling.**

Stone. Cover surface with crushed stone or coarse gravel. See standard **Cr–Construction Road Stabilization.**

Co Construction Exit

CONSTRUCTION SPECIFICATIONS

It is recommended that the entrance area be excavated to a depth of 3 inches and be cleared of all vegetation and roots.

Diversion Ridge
On sites where the grade toward the paved area is greater than 2%, a diversion ridge 6 to 8 inches high with 3:1 side slopes shall be constructed across the foundation approximately 15 feet above the road.

Geotextile
The geotextile underliner must be placed the full length and width of the entrance. Geotextile selection shall be based on AASHTO M288-98 specification:
1. For subgrades with a CBR greater than or equal to 3 or shear strength greater than 90 kPa, geotextile must meet requirements of section AASHTO M288-96 Section 7.3, Separation Requirements.
2. For subgrades with a CBR between 1 and 3 or sheer strength between 30 and 90 kPa, geotextile must meet requirements of section AASHTO M288-96 Section 7.4, Stabilization Requirements.

MAINTENANCE

The exit shall be maintained in a condition which will prevent tracking or flow of mud onto public rights-ofway. This may require periodic top dressing with 1.5-3.5 inch stone, as conditions demand, and repair and/or cleanout of any structures to trap sediment. All materials spilled, dropped, washed, or tracked from vehicles or site onto roadways or into storm drains must be removed immediately.

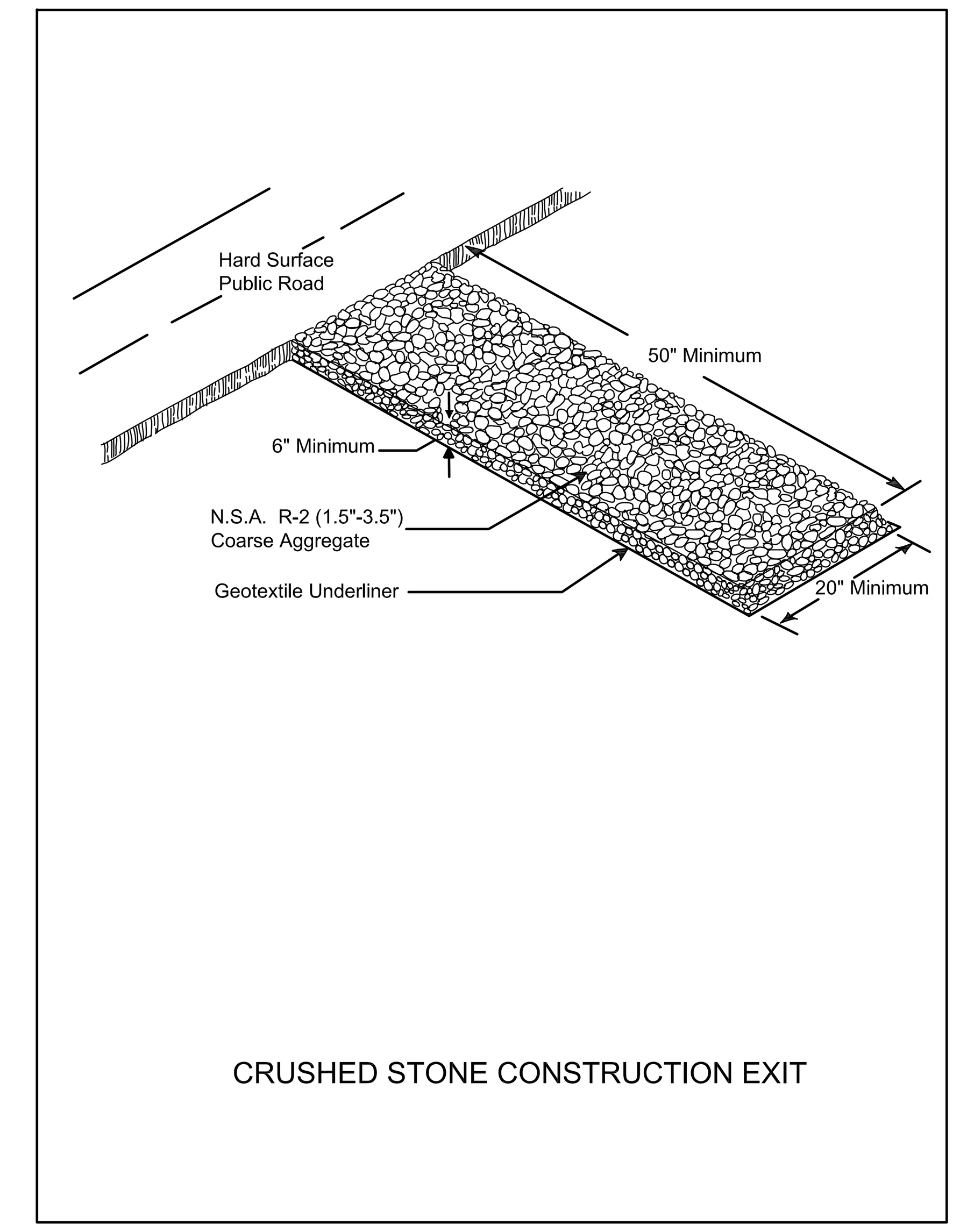


Figure 6-11.1

Ds2 Disturbed Area Stabilization (With Mulching Only)

REQUIREMENT FOR REGULATORY COMPLIANCE

Mulch or temporary grassing shall be applied to all exposed areas within 14 days of disturbance. Temporary grassing, instead of mulch, can be applied to rough graded areas that will be exposed for less than six months. If an area is expected to be undisturbed for longer than six months, permanent perennial vegetation shall be used. If optimum planting conditions for temporary grassing is lacking, mulch can be used as a singular erosion control device for up to six months but it shall be applied at the appropriate depth, anchored, and have a continuous 90% cover or greater of the soil
surface. Refer to specification **Ds1-Disturbed Area Stabilization (With Temporary Seeding).**

CONDITIONS

Temporary vegetative measures should be coordinated with permanent measures to assure economical and effective stabilization. Most types of temporary vegetation are ideal to use as companion crops until the permanent vegetation is established.
Note: Some species of temporary vegetation are not appropriate for companion crop plantings because of their potential to out-compete the desired species (e.g. annual ryegrass). Contact NRCS or the local SWCD for more information.

SPECIFICATIONS

Grading and Shaping
Excessive water run-off shall be reduced by properly designed and installed erosion control practices such as closed drains, ditches, dikes, diversions, sediment barriers and others. No shaping or grading is required if slopes can be stabilized by hand-seeded vegetation or if hydraulic seeding equipment is to be used.
Seedbed Preparation
When a hydraulic seeder is used, seedbed preparation is not required. When using conventional or handseeding, seedbed preparation is not required if the soil material is loose and not sealed by rainfall. When soil has been sealed by rainfall or consists of smooth cut slopes, the soil shall be pitted, trenched or otherwise scarified to provide a place for seed to lodge and germinate.

Lime and Fertilizer
Agricultural lime is required unless soil tests indicate otherwise. Apply agricultural lime at a rate of one ton per acre. Graded areas require lime application. Soils can be tested to determine if fertilizer is needed. On reasonably fertile soils or soil material, fertilizer is not required. For soils with very low fertility, 500 to 700 pounds of 10-10-10 fertilizer or the equivalent per acre (12-16 lbs./1000 sq.ft.) shall be applied. Fertilizer should be applied before land preparation
and incorporated with a disk, ripper or chisel.

Seeding
Select a grass or grass-legume mixture suitable to the area and season of the year. Seed shall be applied uniformly by hand, cyclone seeder, drill, culti-packer-seeder, or hydraulic seeder (slurry including
seed and fertilizer). Drill or cultipacker seeders should normally place seed one-quarter to one-half inch deep. Appropriate depth of planting is ten times the seed diameter. Soil should be"raked" lightly to cover
seed with soil if seeded by hand.

Mulching
Temporary vegetation can, in most cases, be established without the use of mulch. Mulch without seeding should be considered for short term protection. Refer to **Ds1– Disturbed Area Stabilization (With Mulching Only).**

Irrigation
During times of drought, water shall be applied at a rate not causing runoff and erosion. The soil shall be thoroughly wetted to a depth that will insure germination of the seed. Subsequent applications should be made when needed.

Table 6-4.1 - Temporary Cover or Companion Crops 1/

PLANT, PLANTING RATES, AND PLANTING DATED FOR TEMPORARY COVER OR COMPANION CROPS 1/

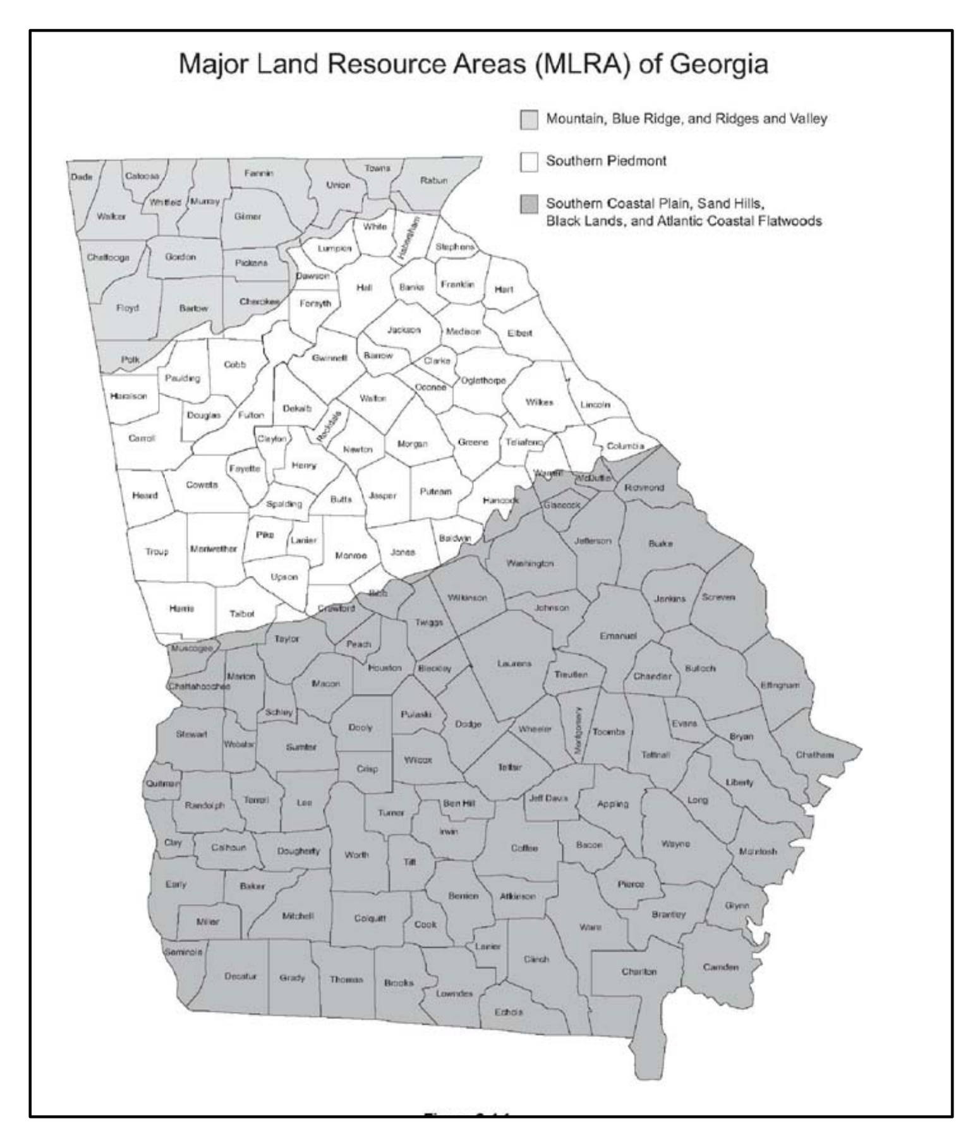
Species	Broadcast Rates 2/ - PLS 3/ Per Acre	Per 1000 sq. ft.	Resource Area 4/	Planting Dates by Resource Areas (Solid lines indicate optimum dates, dotted lines indicate permissible but marginal dates.) J F M A M J J A S O N D	Remarks
BARLEY (Horduem vulgare)		C	M-L, P		14,000 seed per pound. Winterhardy. Use on productive soils.
alone	3 bu. (144 lbs.)	3.3 lb.			
in mixture	1/2 bu. (24 lbs.)	0.6 lb.			
LESPEDEZA, ANNUAL (Lespedeza striata)			M-L, P, C		200,000 seed per pound. May volunteer for several years. Use inoculant EL.
alone	40 lbs.	0.9 lb.			
in mixtures	10 lbs.	0.2 lb.			
LOVEGRASS, WEEPING (Eragrostis curvula)			M-L, P, C		1,500,000 seed per pound. May last for several years. Mix with Sericea lespedeza.
alone	4 lbs.	0.1 lb.			
in mixtures	2 lbs.	0.05 lb.			
MILLET, BROWNTOP (Panicum fasciculatum)		C	M-L, P		137,000 seed per pound. Quick dense cover. Will provide too much competition in mixtures if seeded at high rates.
alone	40 lbs.	0.9 lb.			
in mixtures	10 lbs.	0.2 lb.			
MILLET, PEARL (Pennesetum glaucum)			M-L, P, C		88,000 seed per pound. Quick dense cover. May reach 5 feet in height. Not recommended for mixtures.
alone	50 lbs.	1.1 lb.			
OATS (Avena sativa)			M-L, P, C		13,000 seed per pound. Use on productive soils. Not as winterhardy as rye or barley.
alone	4 bu. (128 lbs.)	2.9 lb.			
in mixtures	1 bu. (32 lbs.)	0.7 lb.			
RYE (Secale cereale)			M-L, P, C		18,000 seed per pound. Quick cover. Drought tolerant and winterhardy.
alone	3 bu. (168 lbs.)	3.9 lb.			
in mixture	1/2 bu. (28 lbs.)	0.6 lb.			
RYEGRASS, ANNUAL (Lolium temulentum)		C	M-L, P		227,000 seed per pound. Dense cover. Very competitive and is not to be used in mixtures.
alone	40 lbs.	0.9 lb.			
SUDANGRASS (Sorghum Sudanese)			M-L, P, C		55,000 seed per pound. Good on droughty sites. Not recommended for mixtures.
alone	60 lbs.	1.4 lb			

Table 6-4.1 - Temporary Cover or Companion Crops 1/ - continued

PLANT, PLANTING RATES, AND PLANTING DATED FOR TEMPORARY COVER OR COMPANION CROPS 1/

Species	Broadcast Rates 2/ - PLS 3/ Per Acre	Per 1000 sq. ft.	Resource Area 4/	Planting Dates by Resource Areas (Solid lines indicate optimum dates, dotted lines indicate permissible but marginal dates.) J F M A M J J A S O N D	Remarks
TRITICALE (X-Triticosecale)			C		Use on lower part of Southern Coastal Plain and in Atlantic Coastal Flatwoods only.
alone	3 bu. (144 lbs.)	3.3 lb.			
in mixtures	1/2 bu. (24 lbs.)	0.6 lb.			
WHEAT (Triticum Aestivum)			M-L, P, C		15,000 seed per pound.
alone	3 bu. (180 lbs.)	4.1 lb.			
in mixtures	1/2 bu. (30 lbs.)	0.7 lb.			

1/ Temporary cover crops are very competitive and will crown out perennials if seeded too heavily.
2/ Reduce seeding rates by 50% when drilled.
3/ PLS is an abbreviation for Pure Live Seed.
4/ M-L represents the Mountain; Blue Ridge; and Ridges and Valleys MLRAs
P represents the Southern Piedmont MLRA
C represents Southern Coastal Plain; Sand Hills; Black Lands; and Atlantic Coast Flatwoods MLRAs
(See Figure 6-4.1, p. 6-40).



Pm Polyacrylamides

PLANNING CONSIDERATIONS

Anionic PAM is available in emulsions, powders, and gel bars or logs. It is required that other Best Management Practices be used in combination with anionic PAM. The use of seed and mulch for additional erosion protection beyond the life of the anionic PAM is recommended. Repeat application if disturbance occurs to target area. The following are additional recommendations relating to design which may enhance the use of or avoid problems with the practice:
1. Use setbacks when applying anionic PAM near natural waterbodies.
2. Consider that decreased performance can occur due to ultra-violet light and time after mixing when applying anionic PAM.
3. In flow concentration channels, the effectiveness of anionic PAM for stabilization decreases.
4. Mulch to protect seed, if seed is applied with anionic PAM.
5. Never add water to PAM, add PAM slowly to water. If water is added to PAM, "globs" can form which can clog dispensers. This signifies incomplete dissolving of the PAM and therefore increases the risk of under-application.
6. NOT ALL POLYMERS ARE PAM.

CRITERIA

Application rates shall conform to manufacturer's guidelines for application.
1. Only the anionic form of PAM shall be used. Cationic PAM is toxic and shall NOT be used.
2. PAM and PAM mixtures shall be environmentally benign, harmless to fish, wildlife, and plants. PAM and PAM mixtures shall be noncombustible.
3. Anionic PAM, in pure form, shall have less than or equal to 0.05% acrylamide monomer by weight, as established by the Food and Drug Administration and the Environmental Protection Agency.
4. To maintain less than or equal to 0.05% of acrylamide monomer, **the maximum application rate of PAM, in pure form, shall not exceed 200 pounds/acre/year**. Do not over apply PAM. Excessive application of PAM can lower infiltration rate or suspend solids in water, rather than promoting settling.
5. Users of anionic PAM shall obtain and follow all Material Safety Data Sheet requirements and manufacturer's recommendations.
6. Additives such as fertilizers, solubility promoters or inhibitors, etc. to PAM shall be non-toxic.
7. The manufacturer or supplier shall provide written application methods for PAM and PAM mixtures. The application method shall insure uniform coverage to the target and avoid drift to non-target areas including waters of the state. The manufacturer or supplier shall also provide written instructions to insure proper safety, storage, and mixing of the product.
8. Gel bars or logs of anionic PAM mixtures may be used in ditch systems. This application shall meet the same testing requirement as anionic PAM emulsions and powders.
9. To prevent exceeding the acrylamide monomer limit in the event of a spill, the anionic PAM in pure form shall not exceed 200 pounds/batch at 0.05% acrylamide monomer (AMD) or 400 pounds/batch at 0.025% AMD.

OPERATION AND MAINTENANCE

Maintenance will consist of reapplying anionic PAM to disturbed areas including high use traffic areas which interfere in the performance of this practice.

GEORGIA 811 Utilities Protection Center, Inc.

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REVISIONS

DATE:	9-27-16
PROJ NO:	1604
DRAWN BY:	RCC

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 20508 ROBERT C. CUNNINGHAM

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ESPCP-BMP DETAILS

C-9.0

Ds3 Disturbed Area Stabilization (With Permanent Vegetation)

REQUIREMENT FOR REGULATORY COMPLIANCE

This practice shall be applied immediately to rough graded areas that will be undisturbed for longer than six months. This practice or sodding shall be applied immediately to all areas at final grade. **Final Stabilization** means that all soil disturbing activities at the site have been completed, and that for unpaved areas and areas not covered by permanent structures, at least 70% of the soil surface is uniformly covered in permanent vegetation or equivalent permanent stabilization measures (such as the use of rip rap, gabions, permanent mulches or geotextiles) have been employed. Permanent vegetation shall consist of: planted trees, shrubs, perennial vines; a crop of perennial vegetation appropriate for the region, such that within the growing season a 70% coverage by perennial vegetation shall be achieved. Final stabilization applies to each phase of construction. For linear construction projects on land used for agricultural or silvicultural purposes, final stabilization may be accomplished by stabilizing the disturbed land for its agricultural or silvicultural use. Until this standard is satisfied and permanent control measures and facilities are operational, interim stabilization measures and temporary erosion and sedimentation control measures shall not be removed.

CONDITIONS

Permanent perennial vegetation is used to provide a protective cover for exposed areas including cuts, fills, dams, and other denuded areas.

PLANNING CONSIDERATIONS

1. Use conventional planting methods where possible.
2. When mixed plantings are done during marginal planting periods, companion crops shall be used.
3. No-till planting is effective when planting is done following a summer or winter annual cover crop. Sericea lespedeza planted no-till into stands of rye is an excellent procedure.
4. Block sod provides immediate cover. It is especially effective in controlling erosion adjacent to concrete flumes and other structures. Refer to Specification **Ds4-Disturbed Area Stabilization (With Sodding)**.
5. Irrigation should be used when the soil is dry or when summer plantings are done.
6. Low maintenance plants, as well as natives, should be used to ensure long-lasting erosion control.
7. Mowing should not be performed during the quail nesting season (May to September).
8. Wildlife plantings should be included in critical area plantings.

Wildlife Plantings

Commercially available plants beneficial to wildlife species include the following:

Mast Bearing Trees
Beech, Black Cherry, Blackgum, Chestnut, Chinkapin, Hackberry, Hickory, Honey Locust, Native Oak, Persimmon, Sawtooth Oak and Sweetgum.
All trees that produce nuts or fruits are favored by many game species. Hickory provides nuts used mainly by squirrels and bear.

Shrubs and Small Trees
Bayberry, Bicolor Lespedeza, Crabapple, Dogwood, Huckleberry or Native Blueberry, Mountain Laurel, Native Holly, Red Cedar, Red Mulberry, Sumac, Wax Myrtle, Wild Plum and Blackberry. Plant in patches without tall trees to develop stable shrub communities.

All produce fruits used by many kinds of wildlife, except for lespedeza which produces seeds used by quail and songbirds.

Grasses, Legumes, Vines and Temporary Cover
Bahiagrass, Bermudagrass, Grass-Legume mixtures, Partridge Pea, Annual Lespedeza, Orchardgrass (for mountains), Browntop Millet (for temporary cover), and Native grapes.
Provides herbaceous cover in clearings for a game bird brood-rearing habitat. Appropriate legumes such as vetches, clovers, and lespedezas may be mixed with grass, but they may die out after a few years.

CONSTRUCTION SPECIFICATIONS

Grading and Shaping

Grading and shaping may not be required where hydraulic seeding and fertilizing equipment is to be used. Vertical banks shall be sloped to enable plant establishment. When conventional seeding and fertilizing are to be done, grade and shape where feasible and practical, so that equipment can be used safely and efficiently during seedbed preparation, seeding, mulching and maintenance of the vegetation. Concentrations of water that will cause excessive soil erosion shall be diverted to a safe outlet. Diversions and other treatment practices shall conform with the appropriate standards and specifications.

Lime and Fertilizer Rates and Analysis

Agricultural lime is required at the rate of one to two tons per acre unless soil tests indicate otherwise. Graded areas require lime application. If lime is applied within six months of planting permanent perennial vegetation, additional lime is not required. Agricultural lime shall be within the specifications of the Georgia Department of Agriculture.
Lime spread by conventional equipment shall be "ground limestone." Ground limestone is calcitic or dolomitic limestone ground so that 90 percent of the material will pass through a 10-mesh sieve, not less than 50 percent will pass through a 50-mesh sieve and not less than 25 percent will pass through a 100-mesh sieve. Agricultural lime spread by hydraulic seeding equipment shall be "finely ground limestone." Finely ground limestone is calcitic or dolomitic limestone ground so that 98 percent of the material will pass through a 20-mesh sieve and not less than 70 percent will pass through a 100-mesh sieve. It is desirable to use dolomitic limestone in the Sand Hills, Southern Coastal Plain and Atlantic Coast Flatwoods MLRAs. (See Figure 6-4.1)
Agricultural lime is generally not required where only trees are planted. Initial fertilization, nitrogen, topdressing, and maintenance fertilizer requirements for each species or combination of species are listed in Table 6-5.1.

Lime and Fertilizer Application

When hydraulic seeding equipment is used, the initial fertilizer shall be mixed with seed, innoculant (if needed), and wood cellulose or wood pulp fiber mulch and applied in a slurry. The innoculant, if needed, shall be mixed with the seed prior to being placed into the hydraulic seeder. The slurry mixture will be agitated during application to keep the ingredients thoroughly mixed. The mixture will be spread uniformly over the area within one hour after being placed in the hydroseeder. Finely ground limestone will be mixed with water and applied immediately after mulching is completed or in combination with the top dressing. When conventional planting is to be done, lime and fertilizer shall be applied uniformly in one of the following ways:
1. Apply before land preparation so that it will be mixed with the soil during seedbed preparation.
2. Mix with the soil used to fill the holes, distribute in furrows.
3. Broadcast after steep surfaces are scarified, pitted or trenched.
4. A fertilizer pellet shall be placed at root depth in the closing hole beside each pine tree seedling

Plant Selection

Refer to Tables 6-4.1, 6-5.2, 6-5.3 and 6-5.4 for approved species. Species not listed shall be approved by the State Resource Conservationist of the Natural Resources Conservation Service before they are used. Plants shall be selected on the basis of species characteristics, site and soil conditions, planned use and maintenance of the area; time of year of planting, method of planting; and the needs and desires of the land user. Some perennial species are easily established and can be planted alone. Examples of these are Common Bermuda, Tall Fescue, and Weeping Lovegrass. Other perennials, such as Bahia Grass and Sericea Lespedeza, are slow to become established and should be planted with another perennial species. The additional species will provide quick cover and ample soil protection until the target perennial species become established.
For example, Common seeding combinations are
1) Weeping Lovegrass with Sericea Lespedeza (scarified) and
2) Tall Fescue with Sericea Lespedeza (unscarified).

Plant selection may also include annual companion crops. Annual companion crops should be used only when the perennial species are not planted during their optimum planting period. A common mixture is Brown Top Millet with Common Bermuda in mid-summer. Care should be taken in selecting companion crop species and seeding rates because annual crops will compete with perennial species for water, nutrients, and growing space. A high seeding rate of the companion crop may prevent the establishment of perennial species. **Ryegrass shall not be used in any seeding mixtures containing perennial species due to its ability to out-compete desired species chosen for permanent perennial cover.**

Seed Quality

The term "pure live seed" is used to express the quality of seed and is not shown on the label. Pure live seed, PLS, is expressed as a percentage of the seeds that are pure and will germinate. Information on percent germination and purity can be found on seed tags. PLS is determined by multiplying the percent of pure seed with the percent of germination; i.e.,
(PLS = % germination x % purity)

EXAMPLE:
Common bermuda seed
70% germination, 80% purity
PLS = 70% germination x 80% purity
PLS = 56%

The percent of PLS helps you determine the amount of seed you need. If the seeding rate is 10 pounds PLS and the bulk seed is 56 % PLS, the bulk seeding rate is:

10 lbs. PLS/acre = 17.9 lbs/acre
56% PLS

You would need to plant 17.9 lbs/acre to provide 10 lbs/acre of pure live seed.

Seedbed Preparation

Seedbed preparation may not be required where hydraulic seeding and fertilizing equipment is to be used. When conventional seeding is to be used, seedbed preparation will be done as follows:

Broadcast plantings
1. Tillage at a minimum, shall adequately loosen the soil to a depth of 4 to 6 inches; alleviate compaction; incorporate lime and fertilizer; smooth and firm the soil; allow for the proper placement of seed, sprigs, or plants; and allow for the anchoring of straw or hay mulch if a disk is to be used.
2. Tillage may be done with any suitable equipment.
3. Tillage should be done on the contour where feasible.
4. On slopes too steep for the safe operation of tillage equipment, the soil surface shall be pitted or trenched across the slope with appropriate hand tools to provide two places 6 to 8 inches apart in which seed may lodge and germinate. Hydraulic seeding may also be used.

Individual Plants
1. Where individual plants are to be set, the soil shall be prepared by excavating holes, opening furrows, or dibble planting.
2. For nursery stock plants, holes shall be large enough to accommo9-14-15 roots without crowding.
3. Where pine seedlings are to be planted, subsoil under the row 36 inches deep on the contour four to six months prior to planting.
Subsoiling should be done when the soil is dry, preferably in August or September.

Innoculants

All legume seed shall be inoculated with appropriate nitrogen-fixing bacteria. The innoculant shall be a pure culture prepared specifically for the seed species and used within the 9-14-15s on the container. A mixing medium recommended by the manufacturer shall be used to bond the innoculant to the seed. For conventional seeding, use twice the amount of innoculant recommended by the manufacturer. For hydraulic seeding, four times the amount of innoculant recommended by the manufacturer shall be used.
All inoculated seed shall be protected from the sun and high temperatures and shall be planted the same day inoculated. No inoculated seed shall remain in the hydroseeder longer than one hour.

Planting

Hydraulic Seeding

Mix the seed (innoculated if needed), fertilizer, and wood cellulose or wood pulp fiber mulch with water and apply in a slurry uniformly over the area to be treated. Apply within one hour after the mixture is made.
Conventional Seeding Seeding will be done on a freshly prepared and firmed seedbed. For broadcast planting, use a culti-packerseeder, drill, rotary seeder, other mechanical seeder, or hand seeding to distribute the seed uniformly over the area to be treated. Cover the seed lightly with 1/8 to 1/4 inch of soil for small seed and 1/2 to 1 inch for large seed when using a cultipacker or other suitable equipment.

No-Till Seeding

No-till seeding is permissible into annual cover crops when planting is done following maturity of the cover crop or if the temporary cover stand is sparse enough to allow adequate growth of the permanent (perennial) species. No-till seeding shall be done with appropriate no-till seeding equipment. The seed must be uniformly distributed and planted at the proper depth.

Individual Plants

Shrubs, vines and sprigs may be planted with appropriate planters or hand tools. Pine trees shall be planted manually in the subsoil furrow. Each plant shall be set in a manner that will avoid crowding the roots. Nursery stock plants shall be planted at the same depth or slightly deeper than they grew at the nursery. The tips of vines and sprigs must be at or slightly above the ground surface. Where individual holes are dug, fertilizer shall be placed in the bottom of the hole, two inches of soil shall be added and the plant shall be set in the hole.

Mulching

Mulch is required for all permanent vegetation applications. Mulch applied to seeded areas shall achieve 75% soil cover. Select the mulching material from the following and apply as indicated:
1. Dry straw or dry hay of good quality and free of weed seeds can be used. Dry straw shall be applied at the rate of 2 tons per acre. Dry hay shall be applied at a rate of 2 1/2 tons per acre.
2. Wood cellulose mulch or wood pulp fiber shall be used with hydraulic seeding. It shall be applied at the rate of 500 pounds per acre. Dry straw or dry hay shall be applied (at the rate indicated above) after hydraulic seeding.
3. One thousand pounds of wood cellulose or wood pulp fiber, which includes a tackifier, shall be used with hydraulic seeding on slopes 3/4:1 or steeper.
4. Sericea lespedeza hay containing mature seed shall be applied at a rate of three tons per acre.
5. Pine straw or pine bark shall be applied at a thickness of 3 inches for bedding purposes. Other suitable materials in sufficient quantity may be used where ornamentals or other ground covers are planted. This is not appropriate for seeded areas.
6. When using temporary erosion control blankets or block sod, mulch is not required.
7. Bituminous treated roving may be applied on planted areas on slopes, in ditches or dry waterways to prevent erosion. Bituminous treated roving shall be applied within 24 hours after an area has been planted. Application rates and materials must meet Georgia Department of Transportation specifications.
Wood cellulose and wood pulp fibers shall not contain germination or growth inhibiting factors. They shall be evenly dispersed when agitated in water. The fibers shall contain a dye to allow visual metering and aid in uniform application during seeding.

Applying Mulch

Straw or hay mulch will be spread uniformly within 24 hours after seeding and/or planting. The mulch may be spread by blower-type spreading equipment, other spreading equipment or by hand. Mulch shall be applied to cover 75% of the soil surface. Wood cellulose or wood fiber mulch shall be applied uniformly with hydraulic seeding equipment.

Anchoring Mulch

Anchor straw or hay mulch immediately after application by one of the following methods:
1. Emulsified asphalt can be (a) sprayed uniformly onto the mulch as it is ejected from the blower machine or (b) sprayed on the mulch immediately following mulch application when straw or hay is spread by methods other than special blower equipment. The combination of asphalt emulsion and water shall consist of a homogeneous mixture satisfactory for spraying. The mixture shall consist of 100 gallons of grade SS-1h or CSS-1h emulsified asphalt and 100 gallons of water per ton of mulch.
Care shall be taken at all times to protect state waters, the public, adjacent property, pavements, curbs, sidewalks, and all other structures from asphalt discoloration.
2. Hay and straw mulch shall be pressed into the soil immediately after the mulch is spread. A special "packer disk"' or disk harrow with the disks set straight may be used. The disks may be smooth or serrated and should be 20 inches or more in diameter and 8 to 12 inches apart. The edges of the disks shall be dull enough to press the mulch into the ground without cutting it, leaving much of it in an erect position. Mulch shall not be plowed into the soil.
3. Synthetic tackifiers or binders approved by GDOT shall be applied in conjunction with or immediately after the mulch is spread. Synthetic tackifiers shall be mixed and applied according to manufacturer's specifications. Refer to **Tb - Tackifiers and Binders**.
4. Rye or wheat can be included with Fall and Winter plantings to stabilize the mulch. They shall be applied at a rate of one-quarter to onehalf bushel per acre.
5. Plastic mesh or netting with mesh no larger than one inch by one inch may be needed to anchor straw or hay mulch on unstable soils and concentrated flow areas. These materials shall be installed and anchored according to manufacturer's specifications.

Bedding Material

Mulch is used as a bedding material to conserve moisture and control weeds in nurseries, ornamental beds, around shrubs, and on bare areas on lawns.

Material Depth

Grain straw 4" to 6"
Grass Hay 4" to 6"
Pine needles 3" to 5"
Wood waste 4" to 6"

Irrigation

Irrigation will be applied at a rate that will not cause runoff.

Topdressing

Topdressing will be applied on all temporary and permanent (perennial) species planted alone or in mixtures with other species. Recommended rates of application are listed in Table 6-5.1.

Second Year and Maintenance Fertilization

Second year fertilizer rates and maintenance fertilizer rates are listed in Table 6-5.1.

Lime Maintenance Application

Apply one ton of agricultural lime every 4 to 6 years or as indicated by soil tests. Soil tests can be conducted to determine more accurate requirements if desired.

Use and Management

Mow Sericea lespedeza only after frost to ensure that the seeds are mature. Mow between November and March. Bermudagrass, Bahiagrass and Tall Fescue may be mowed as desired. Maintain at least 6 inches of top growth under any use and management. Moderate use of top growth is beneficial after establishment. Exclude traffic until the plants are well established.
Because of the quail nesting season, mowing should not take place between May and September.

Table 6-5.1. Fertilizer Requirements

TYPE OF SPECIES	YEAR	ANALYSIS OR EQUIVALENT N-P-K	RATE	N TOP DRESSING RATE
1. Cool season grasses	First Second Maintenance	6-12-12 6-12-12 10-10-10	1500 lbs./ac. 1000 lbs./ac. 400 lbs./ac.	50-100 lbs./ac. 1/2/ — 30
2. Cool season grasses and legumes	First Second Maintenance	6-12-12 0-10-10 0-10-10	1500 lbs./ac. 1000 lbs./ac. 400 lbs./ac.	0-50 lbs./ac. 1/ — —
3. Ground covers	First Second Maintenance	10-10-10 10-10-10 10-10-10	1300 lbs./ac. 3/ 1300 lbs./ac. 3/ 1100 lbs./ac.	— — —
4. Pine seedlings	First	20-10-5	one 21-gram pellet per seedling placed in the closing hole	—
5. Shrub Lespedeza	First Maintenance	0-10-10 0-10-10	700 lbs./ac. 700 lbs./ac. 4/	—
6. Temporary cover crops seeded alone	First	10-10-10	500 lbs./ac.	30 lbs./ac. 5/
7. Warm season grasses	First Second Maintenance	6-12-12 6-12-12 10-10-10	1500 lbs./ac. 800 lbs./ac. 400 lbs./ac.	50-100 lbs./ac. 2/6/ 50-100 lbs./ac. 2/ 30 lbs./ac.
8. Warm season grasses and legumes	First Second Maintenance	6-12-12 0-10-10 0-10-10	1500 lbs./ac. 1000 lbs./ac. 400 lbs./ac.	50 lbs./ac./6/

1/ Apply in spring following seeding.
2/ Apply in split applications when high rates are used.
3/ Apply in 3 split applications.
4/ Apply when plants are pruned.
5/ Apply to grass species only.
6/ Apply when plants grow to a height of 2 to 4 inches.

Table 6-5.3. Durable Shrubs and Ground Covers for Permanent Cover

Common Name	Scientific Name	Mature Height	Plant Spacing	Comments
Cherokee Rose	Rosa laevigata	2 ft.	5 ft.	Rampant grower. Not for restricted spaces. State flower.
Memoria Rose	Rosa weuchuriana	2 ft.	5 ft.	Rampant grower.
St. Johnswort	Hypericum calycenum	8-12 in.	3 ft.	Semi-shade.
Anthony Waterer Spirea	Spirea bumalda	3-4 ft.	5 ft.	Sun.
Thunberg Spirea	Spirea thinbergii	3-4 ft.	5 ft.	Sun.

Table 6-5.4. Trees for Erosion Control

SITE	SOIL MATERIAL	COMMON SOILS	PLANTING TREE SPECIES 1/	SPACING	PLANTING DATES 3/
Borrow areas, graded areas, and spoil material	Sandy	Lakeland, Troup	Loblolly pine (Pinus taeda) Longleaf pine (Pinus palustris)	2/	M-L,P 12/1-3/15 C 12/1-3/1
	Loamy	Orangeburg, Tifton	Loblolly pine Slash pine	2/	M-L,P 12/1-3/15 C 12/1-3/1
	Clay	Cecil, Faceville	Loblolly pine Slash pine Virginia pine (Pinus virginiana)	2/	M-L,P 12/1-3/15 C 12/1-3/1
Streambanks			Willows 4/ (Salix species)	2 ft x 2 ft	ALL 11/15-3/15

1/Other trees and shrubs listed on Table 6-5.3 may be interplanted with the pines for improved wildlife benefits.

2/Type of Planting — Tree Spacing — No. of Trees Per Acre
Trees alone — 4 ft. x 4 ft. — 2722
Trees in combination with grasses and/ or other plants — 6 ft. x 6 ft. — 1210

3/M-L represents the Mountains; Blue Ridge; and Ridges and Valleys MLRAs
P represents the Southern Piedmont MLRA
C represents the Southern Coastal Plain; Sand Hills; Black Lands; and Atlantic Coast Flatwoods MLRAs (See Figure 6-4.1).
4/Fertilization of companion crop is ample for this species.

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LEVEL II CERTIFIED DESIGN PROFESSIONAL GSWCC
CERTIFICATION NO. 0000002977
ISSUED: 12/07/2008 EXPIRES: 12/07/2017

GEORGIA 811 Utilities Protection Center, Inc.

BEALL'S HILL NEIGHBORHOOD REVITALIZATION PROJECT
MACON, GEORGIA
FOR
BEALL'S HILL NEIGHBORHOOD

Cunningham & Co. Engineers
CIVIL ENGINEERING - CONSULTING - PROJECT MANAGEMENT
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ESPCP-BMP DETAILS

C-9.1

Ds3 Disturbed Area Stabilization (With Permanent Vegetation)

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Table 6-5.2 - Permanent Cover

PLANTS, PLANTING RATES, AND PLANTING DATES FOR PERMANENT COVER

Species	Broadcast Rates 1/ - PLS 2/ Per Acre	Per 1000 sq. ft.	Resource Area 3/	Planting Dates by Resource Areas (Solid lines indicate optimum dates, dotted lines indicate permissible but marginal dates.) J F M A M J J A S O N D	Remarks
BAHIA, PENSACOLA (Paspalum notatum)			P C		166,000 seed per pund. Low growing. Sod forming. Slow to establish. Plant with a companion crop. Will spread into bermuda pastures and lawns. Mix with Sericea lespedeza or weeping lovegrass.
alone or with temporary cover	60 lbs.	1.4 lb.			
with other perennials	30 lbs.	0.7 lb.			
BAHIA, WILMINGTON (Paspalum notatum)			M-L P		Same as above.
alone or with temporary cover	60 lbs.	1.4 lb.			
with other perennials	30 lbs.	0.7 lb.			
BERMUDA, COMMON (Cynodon dactylon) Hulled seed			P C		1,787,000 seed per pound. Quick cover. Low growing and sod forming. Full sun. Good for athletic fields.
alone	10 lbs.	0.2 lb.			
with other perennials	6 lbs.	0.1 lb.			
BERMUDA, COMMON (Cynodon dactylon) Unhulled seed			P C		
with temporary cover	10 lbs.	0.2 lb.			Plant with winter annuals.
with other perennials	6 lbs.	0.1 lb.			Plant with tall fescue.
BERMUDA SPRIGS (Cynodon dactylon)	40 cu. ft. or sod plugs 3' x 3'	0.9 cu. ft.	M-L		A cubic foot contains approximately 650 sprigs. A bushel contains 1.25 cubic feet or approximately 800 sprigs.
Coastal, Common, Midland, or Tift 44					
Coastal, Common, or Tift 44			P C		Same as above.
Tift 78			C		Southern Coastal Plain only.
CENTIPEDE (Eremochloa ophiuroides)	Block sod only		P C		Drought tolerant. Full sun or partial shade. Effective adjacent to concrete and in concentrated flow areas. Irrigation is needed until fully established. Do not plant near pastures. Winterhardy as far north as Athens and Atlanta.
CROWNVETECH (Coronilla varia)					100,000 seed per pound. Dense growth. Drought tolerant and fire resistant. Attractive rose, pink, and white blossoms spring to late fall. Mix with 30 pounds of Tall fescue or 15 pounds of rye. Inoculate seed with M inoculant. Use from North Atlanta and Northward.
with winter annuals or cool season grasses	15 lbs.	0.3 lb.	M-L P		
FESCUE, TALL (Festuca arundinacea)					227,000 seed per pound. Use alone only on better sites. Not for droughty soils. Mix with perennial lespedezas or crownvetch. Apply topdressing in spring following fall plantings. Not for heavy use areas or athletic fields.
alone	50 lbs.	1.1 lbs.	M-L P		
with other perennials	30 lbs.	0.7 lb.			
KUDZU (Pueraria thumbergiana)					Rapid and vigorous growth. Excellent in gully erosion control. Will climb. Good livestock forage.
plants or crowns	3' - 7' apart		ALL		
LESPEDEZA, SERICEA (Lespedeza cuneata)					
scarified	60 lbs.	1.4 lbs.	M-L P C		350,000 seed per pound. Widely adapted. Low maintenance. Mix with weeping lovegrass, common bermuda, bahia, or tall fescue. Takes 2 to 3 years to become fully established. Excellent on roadbanks. Inoculate seed with EL inoculant.
unscarified	75 lbs.	1.7 lb.	M-L P C		Mix with Tall fescue or winter annuals.
seed-bearing hay	3 tons	138lb.	M-L P C		Cut when seed is mature, but before it shatters. Add Tall fescue or winter annuals.
LESPEDEZA Ambro virgata (Lespedeza virgata DC) or Appalow (Lespedeza cuneata [Dumont] G. Don)					300,000 seed per pound. Height of growth is 18 to 24 inches. Advantageous in urban areas. Spreading-type growth has bronze coloration. Mix with Weeping lovegrass, Common bermuda, bahia, tall fescue or winter annuals. Do not mix with Sericea lespedeza. Slow to develop solid stands. Inoculate seed with EL inoculate.
scarified	60 lbs.	1.4 lb.	M-L P C		
unscarified	75 lbs.	1.7 lb.	M-L P C		
LESPEDEZA, SHRUB (Lespedeza bicolor) (Lespedeza thumbergii)			M-L P C		Provide wildlife food and cover.
plants	3' x 3'				
LOVEGRASS, WEEPING (Eragrostis curvula)			M-L P C		1,500,000 seed per pound. Quick cover. Drought tolerant. Grows well with Sericea lespedeza on roadbanks.
alone	4 lbs.	0.1 lb.			
with other perennials	2 lbs.	0.05 lb.			
MAIDENCANE (Panicum hemitomon)					For very wet sites. May clog channels. Dig sprigs from local sources. Use along river banks and shorelines.
sprigs	2' x 3' spacing		ALL		
PANICGRASS, ATLANTIC COASTAL (Panicum amarum var. amarulum)	20 lbs.	0.5 lb.	P C		Grows well on coastal sand dunes, borrow areas, and gravel pits. Provides winter cover for wildlife. Mix with Sericea lespedeza except on sand dunes.
REED CANARY GRASS (Phalaris arundinacea)					Grows similar to tall fescue.
alone	50 lbs.	1.1 lb.	M-L P		
with other perennials	30 lbs.	0.7 lb.			
SUNFLOWER, 'AZTEC' MAXIMILLIAM (Helianthus maximiliani)	10 lbs.	0.2 lb.	M-L P C		227,000 seed per pound. Mix with weeping lovegrass or other low-growing grasses or legumes.

Table 6-5.3. Durable Shrubs and Ground Covers for Permanent Cover

Ground covers include a wide range of low-growing plants planted together in considerable numbers to cover large areas of the landscape. Ground covers grow slower than grasses. Weeds are likely to compete, especially the first year. Maintenance is needed to insure survival. These ground covers will not be used unless proper maintenance is planned. Maintain mulch at three-inch thickness until plants provide adequate cover.

Fall planting is encouraged because the need for constant watering is reduced and plants have time to establish new roots before hot weather.

Common Name	Scientific Name	Mature Height	Plant Spacing	Comments
Albelia	Abelia grandiflora	3-4 ft.	5 ft.	Also a prostrate form 2 feet high. Sun, semi-shade. Semi-evergreen.
Carolina Yellow Jessamine	Gelsemium sempervirens	low	3 ft.	Vine. Yellow, trumpet-like flowers. Hardy, one of best vines. Ever-green. Native to Georgia.
Carpet Blue	Ajuga reptans	2-4 in.	3 ft.	Needs good drainage, partial shade. Blue or white flowers. Evergreen.
Bearberry Cotoneaster	Cotoneaster dammeri	2-4 ft.	5 ft.	White flowers, red fruit. Sun. Evergreen.
Ground Cover Cotoneaster	Cotoneaster salicifoluis 'Repens'	1-2 ft.	5 ft.	White flowers, red fruit. Sun. Evergreen.
Rock Cotoneaster	Cotoneaster horizontalis	1-2 ft.	5 ft.	Semi-evergreen. Sun.
Virginia Creeper	Parthenocissue quinquefolia	low	3 ft.	Red in fall. Vine. Deciduous. Native to Georgia.
Daylily	Hemerocallis spp.	2-3 ft.	2 ft.	Many flower colors. Full sun. Very hardy.
English Ivy	Hedera helix	low	3 ft.	Shade only. Climbs.
Compacta Holly	Ilex crenata 'Compacta'	3-4 ft.	5 ft.	Sun, semi-shade.
Chinese Holly	Ilex cornuta 'Rotunda'	3-4 ft.	5 ft.	Very durable. Sun, semi-shade.
Dwarf Burford Holly	Ilex burfordii 'Nana'	5-8 ft.	8 ft.	
Dwarf Yaupon Holly	Ilex vomitoria 'Nana'	3-4 ft.	5 ft.	Very durable, sun, semi-shade.

GaSWCC (Amended - 2000)

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Table 6-5.3. Durable Shrubs and Ground Covers for Permanent Cover

Common Name	Scientific Name	Mature Height	Plant Spacing	Comments
Repandens Holly	Ilex crenata 'Repandens'	2-3 ft.	5 ft.	Sun, semi-shade.
Andorra Juniper	Juniperus horizontalis 'Plumosa'	2-3 ft.	5 ft.	Excellent for slopes. Sun.
Andorra Compacta Juniper	Juniperus horizontalis 'Plumosa com-pacta'	1-2 ft.	5 ft.	More compact than andora.
Blue Chip Juniper	Juniperus horizontalis 'Blue Chip'	8-10 in.	4 ft.	
Blue Rug Juniper	Juniperus horizontalis 'Wiltonii'	4-6 in.	3 ft.	Very low. Sun.
Parsons Juniper	Juniperus davurica 'Expansa' (Squamata Parsoni)	18-24 in.	5 ft.	One of the best, good winter cover.
Pfitzer Juniper	Juniperus chinensis 'Pfitzerana'	6-8 ft.	6 ft.	Needs room.
Prince of Wales Juniper	Juniperus horizontalis 'Prince of Wales'	8-10 in.	4 ft.	Feathery appearance.
Sargent Juniper	Juniperus chinensis 'Sargentii'	1-2 ft.	5 ft.	Full sun. Needs good drainage. Good winter color.
Shore Juniper	Juniperus conferta	2-3 ft.	5 ft.	Emerald Sea or Blue Pacific cultivars are good.
Liriope	Liriope muscari	8-10 in.	3 ft.	
Creeping Liriope	Liriope spicata	10-12 in.	1 ft.	Spreads by runners.
Big Leaf Periwinkle	Vinca major	12-15 in.	4 ft.	Lilac flowers in spring. Semi-shade.
Common Periwinkle	Vinca minor	5-6 in.	4 ft.	Lavender-blue flowers in spring. Semi-shade

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CERTIFICATION NO. 0000002977
ISSUED: 12/07/2008 EXPIRES: 12/07/2017

BEALL'S HILL NEIGHBORHOOD REVITALIZATION PROJECT
MACON, GEORGIA
FOR
BEALL'S HILL NEIGHBORHOOD

Cunningham & Co. Engineers
CIVIL ENGINEERING - CONSULTING - PROJECT MANAGEMENT
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Ds4 Disturbed Area Stabilization (With Sodding)

CONSTRUCTION SPECIFICATIONS INSTALLATION

Soil Preparation
Bring soil surface to final grade. Clear surface of trash, woody debris, stones and clods larger than 1". Apply sod to soil surfaces only and not frozen surfaces, or gravel type soils. Topsoil properly applied will help guarantee a stand. Don't use topsoil recently treated with herbicides or soil sterilants. Mix fertilizer into soil surface. Fertilize based on soil tests or Table 6-6.1.

Table 6-6.1. Fertilizer Requirements for Soil Surface Application Fertilizer

Fertilizer Type	Fertilizer Rate (lbs/acre)	Fertilizer Rate (lbs /sq ft)	Season
10-10-10	1000	.025	Fall

Agricultural lime should be applied based on soil tests or at a rate of 1 to 2 tons per acre.

Installation
Lay sod with tight joints and in straight lines. Don't overlap joints. Stagger joints and do not stretch sod (See Figure 6-6.2)

On slopes steeper than 3:1, sod should be anchored with pins or other approved methods. Installed sod should be rolled or tamped to provide good contact between sod and soil. Irrigate sod and soil to a depth of 4" immediately after installation. Sod should not be cut or spread in extremely wet or dry weather. Irrigation should be used to supplement rainfall for a minimum of 2-3 weeks.

MATERIALS

Sod selected should be certified. Sod grown in the general area of the project is desirable.
1. Sod should be machine cut and contain 3/4" (+ or -1/4") of soil, not including shoots or thatch.
2. Sod should be cut to the desired size within + or -5%. Torn or uneven pads should be rejected.
3. Sod should be cut and installed within 36 hours of digging.
4. Avoid planting when subject to frost heave or hot weather if irrigation is not available.
5. The sod type should be shown on the plans or installed according to Table 6-6.2. See Figure 6-4.1 for your Resource Area.

Table 6-6.2. Sod Planting Requirements

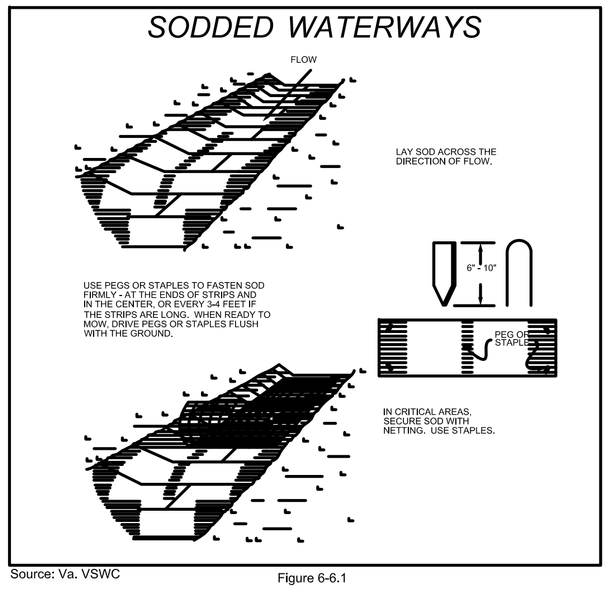
Grass	Varieties	Resource Area	Growing Season
Bermudagrass	Common Tifway Tifgreen Tiflawn	M-L,P,C P,C P,C P,C	Warm Weather
Bahiagrass	Pensacola	P,C	Warm Weather
Centipede	-	P,C	Warm Weather
St. Augustine	Common Bitterblue Raleigh	C	Warm Weather
Zoysia	Emerald Myer	P,C	Warm Weather
Tall Fescue	Kentucky	M-L,P	Cool Weather

MAINTENANCE

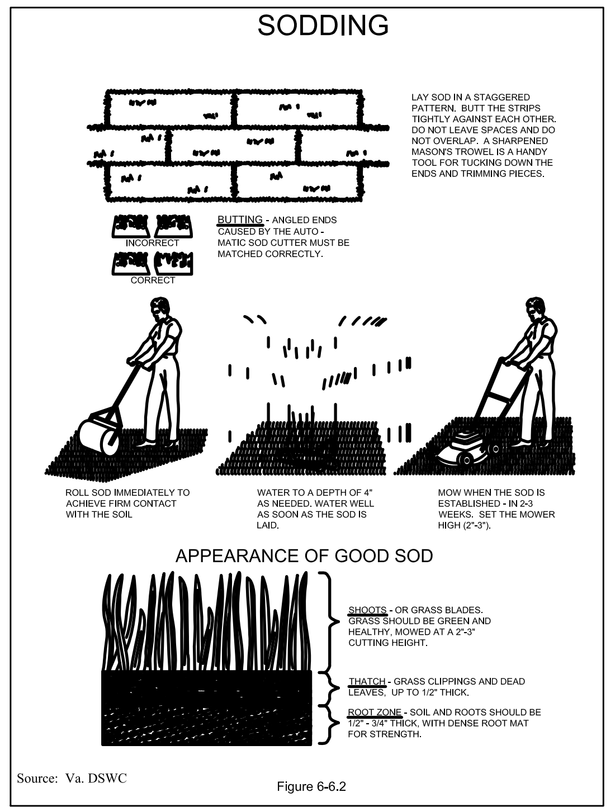
Re-sod areas where an adequate stand of sod is not obtained. New sod should be mowed sparingly. Grass height should not be cut less than 2"-3" or as specified
(See Figure 6-6.2). Apply one ton of agricultural lime as indicated by soil test or every 4-6 years. Fertilize grasses in accordance with soil tests or Table 6-6.3.

Table 6-6.3. Fertilizer Requirements for Sod

Types of Species	Planting Year	Fertilizer (N-P-K)	Rate (lbs./acre)	Nitrogen Top Dressing Rate (lbs./acre)
Cool season grasses	First Second Maintenance	6-12-12 6-12-12 10-10-10	1500 1000 400	50-100 - 30
Warm season grasses	First Second Maintenance	6-12-12 6-12-12 10-10-10	1500 500 400	50-100 50-100 30



Source: Va. VSWC
Figure 6-6.1



Source: Va. DSWC
Figure 6-6.2

Mb Matting and Blankets

PLANNING CONSIDERATIONS

Care must be taken to choose the type of blanket or matting which is most appropriate for the specific needs of a project. Two general types of blankets and mats are discussed within this specification. Due to the abundance of erosion control matting and blanket products available, all of the advantages, disadvantages, and specifications of all manufactured products will not be discussed in this manual. Manufacturer's instructions and recommendations, as well as a site visit by designer and plan reviewer is highly recommended to determine a product's appropriateness.

Temporary Erosion Control Blankets
This includes **temporary** "combination" blankets (rolled erosion control blankets - RECB) consisting of a plastic netting which covers and is intertwined with a natural organic or manmade mulch; or, a jute mesh which is typically homogeneous in design and can act alone as a soil stabilization blanket. Temporary blankets as a minimum shall be used to stabilize concentrated flow areas with a velocity less than 5 ft/sec and slopes 2.5:1 or steeper with a height of 10 feet or greater. Because temporary blankets will deteriorate in a short period of time, they provide no enduring reduction in erosion protection.

Benefits of using erosion control blankets include the following:

Materials
All blanket and matting materials shall be on the Georgia Department of Transportation Qualified Products List (QPL # 62 for blankets, QPL # 49 for matting). All blankets shall be nontoxic to vegetation and to the germination of seed and shall not be injurious to the unprotected skin of humans. At a minimum, the plastic netting shall be intertwined with the mulching material/fiber to maximize strength and provide for ease of handling.

Temporary Blankets
Machine produced **temporary** combination blankets shall have a consistent thickness with the organic material evenly distributed over the entire blanket area. All combination blankets shall have a minimum width of 48 inches. Machine produced combination blankets include the following:

a. **Straw blankets** are combination blankets that consist of weed-free straw from agricultural crops formed into a blanket. Blankets with a top side of photodegradable plastic mesh with a maximum mesh size of 5/16 x 5/16 inch and sewn to the straw with biodegradable thread is appropriate for slopes. The blanket shall have a minimum thickness of 3/8 Inch and minimum dry weight of 0.5 pounds per square yard.

b. **Excelsior blankets** are combination blankets that consist of curled wood excelsior (80% of fibers are six inches or longer) formed into a blanket. The blanket shall have clear markings indicating the top side of the blanket and be smolder resistant. Blankets shall have photodegradable plastic mesh having a maximum mesh size of 1 1/2 x 3 inches. The blanket shall have a minimum thickness of 1/4 of an inch and
a minimum dry weight of 0.8 pounds per square yard. Slopes require excelsior matting with the top side of the blanket covered in the plastic mesh, and for waterways, both sides of the blanket require plastic mesh.

c. **Coconut fiber** blankets are combination blankets that consist of 100% coconut fiber formed into a blanket. The minimum thickness of the blanket shall be 1/4 of an inch with a minimum dry weight of 0.5 pounds per square yard. Blankets shall have photodegradable plastic mesh, with a maximum mesh size of 5/8 x 5/8 inch and sewn to the fiber with a breakdown resistant synthetic yarn. Plastic mesh is required on both sides of the blanket if used in waterways. A maximum of two inches is allowable for the stitch pattern and row spacing.

d. **Wood fiber** blankets are combination blankets that consist of reprocessed wood fibers that do not possess or contain any growth or germination inhibiting factors. The blanket shall have a photodegradable plastic mesh, with a maximum mesh size of 5/8 x 3/4 inch, securely bonded to the top of the mat. The blanket shall have a minimum dry weight of 0.35 pounds per square yard. A maximum of two inches is allowable for the stitch pattern and row spacing. This practice shall be applied only to slopes.

e. **Jute Mesh** can be applied to slopes. Jute mesh with a 48 inch width shall show between 76 and 80 warpings and a one yard length shall show between 39 to 43 weftings. The woven mesh shall be at least 45 inches wide. Yarn shall have a unit weight of at least 0.9 pounds per square yard, but not more than 1.5 pounds per square yard.

Permanent Matting

Permanent matting shall consist of a lofty web of mechanically or melt bonded polymer nettings, monofilaments or fibers which are entangled to form
a strong and dimensionally stable matrix. Polymer welding, thermal or polymer fusion, or the placement of fibers between two high strength, biaxially oriented nets bound securely together by parallel lock stitching with polyolefin, nylon or polyester threads are all appropriate bonding methods. Mats shall maintain their shape before, during, and after installation, under dry or water saturated conditions. Mats must be stabilized against ultraviolet degradation and shall be inert to chemicals normally encountered in a natural soil environment. The mat shall conform to the following physical properties:

Property	Minimum Value
Thickness	0.5 inch
Weight	0.6 PSY
Roll Width	38 inches
Tensile Strength	
Length (50% elongation)	15 lbs./in.
Length (ultimate)	20 lbs./in.
Width (50% elongation)	5 lbs./in.
Width (ultimate)	10 lbs./in.
(ASTM D 1682 - 6" strip)	
Ultraviolet Stability	80%

(1000 hrs. in an Atlas ARC Weatherometer, ASTM G 23, Type D in accordance with ASTM D 822)

Site Preparation
After the site has been shaped and graded to the approved design, prepare a friable seedbed relatively free from clods and rocks more than one inch in diameter, and any foreign material that will prevent contact of the soil stabilization mat with the soil surface. Surface must be smooth to ensure proper contact of blankets or matting to the soil surafce. If necesRCCy, redirect any runoff from the ditch or slope during installation.

Staples
The following are considered appropriate stapling and staking materials.

Temporary Blankets
This includes straw, excelsior, coconut fiber, and wood fiber blankets. Staples shall be used to anchor temporary blankets. U-shaped wire (11 gauge or greater) staples with legs at least 6 inches in length and a crown of one inch or appropriate biodegradable
staples can be used. Staples shall be of sufficient thickness for soil penetration without undue distortion.

Permanent Matting
Sound wood stakes, 1 x 3 inches stock sawn in a triangular shape, shall be used. Depending on the compaction of the soil, select stakes with a length from 12 to 18 inches. U-shaped staples shall be 11 gauge steel or greater, with legs at a minimum of 8 inches length with a 2 inch crown.

Planting

Lime, fertilizer and seed shall be applied in accordance with seeding or other type of planting plan completed prior to installation of temporary combination blankets or jute mesh. For permanent mats, the area must be brought to final grade, plowed, limed, and fertilized. After the permanent mat has been installed and backfilled, the entire area shall be grassed. Refer to specification **Ds3 – Disturbed Area Stabilization (With Permanent Vegetation).**

Installation

See Figure 6-7.1 for typical installation guidelines. Follow manufacturer's recommendations for laying and stapling.

Maintenance

All erosion control blankets and matting should be inspected periodically following installation, particularly after rainstorms to check for erosion and undermining. Any dislocation or failure should be repaired immediately. If washouts or breakage occurs, reinstall the material after repairing damage to the slope or ditch. Continue to monitor these areas until they become permanently stabilized.

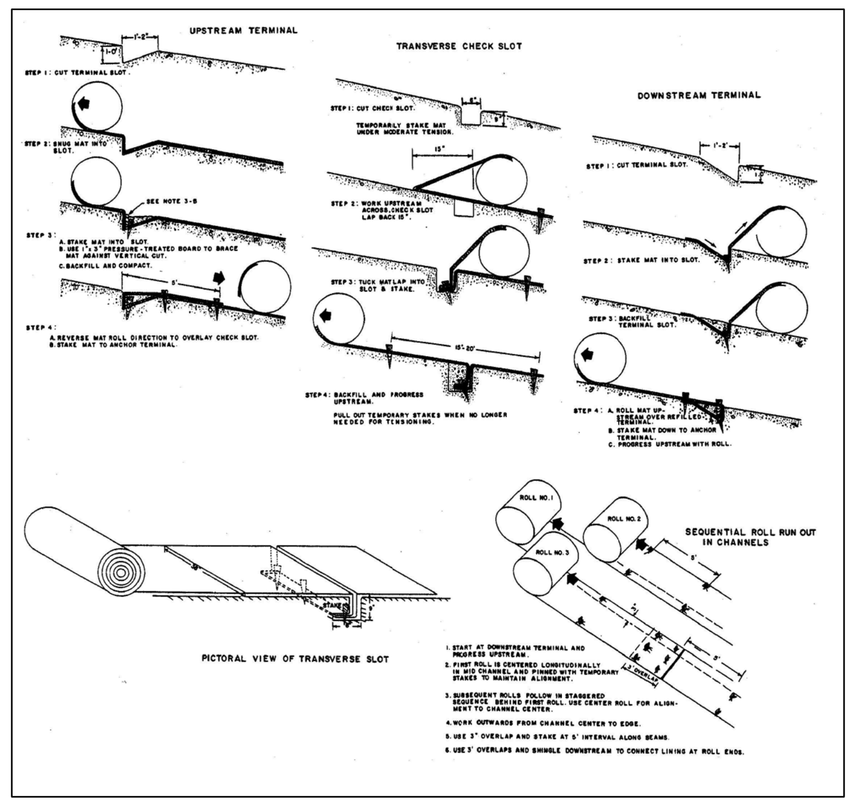


Figure 6-7.1 - Typical Installation Guidelines for Matting and Blankets

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C-9.3

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Cd Check Dam

CONSTRUCTION SPECIFICATIONS

The following types of check dams are used for this standard:

Stone Check Dams (Cd-S)

Stone check dams should be constructed of graded size 2-10 inch stone. (See Figure 6-10.2) Mechanical or hand placement shall be required to insure complete coverage of entire width of ditch or swale and that center of dam is lower than edges.

Haybale Check Dams (Cd-Hb)

Staked and embedded hay-bales may be used as temporary check dams in concentrated flow areas while vegetation is becoming established. They should not be used where the drainage area exceeds one acre. Haybales should be embedded a minimum of 4 inches. (See Figure 6-10.3)

MAINTENANCE

Periodic inspection and required maintenance must be provided. Sediment shall be removed when it reaches a depth of one-half the original dam height or before. If the area is to be mowed, check dams shall be removed once final stabilization has occurred. Otherwise, check dams may remain in place permanently. After removal, the area beneath the dam shall be seeded and mulched immediately.

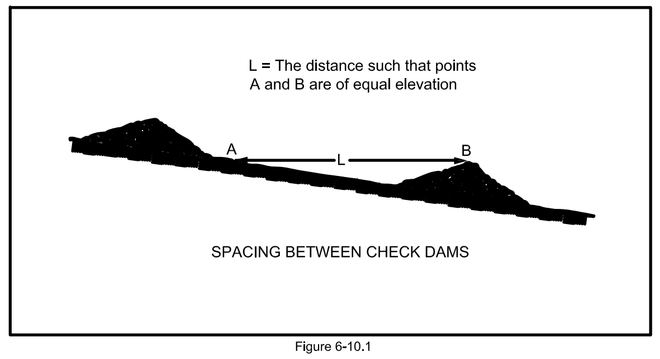


Figure 6-10.1

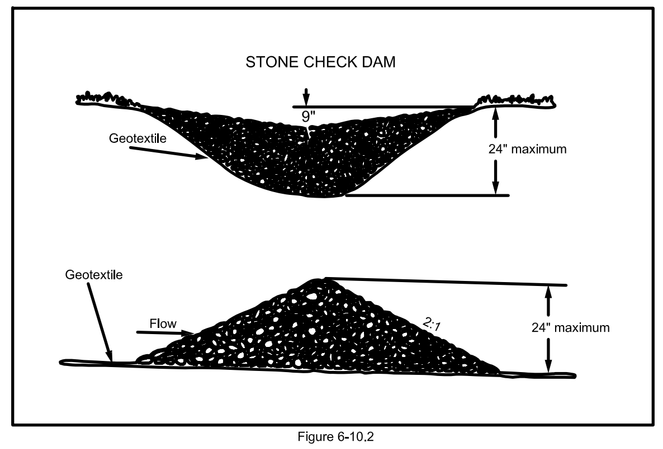


Figure 6-10.2

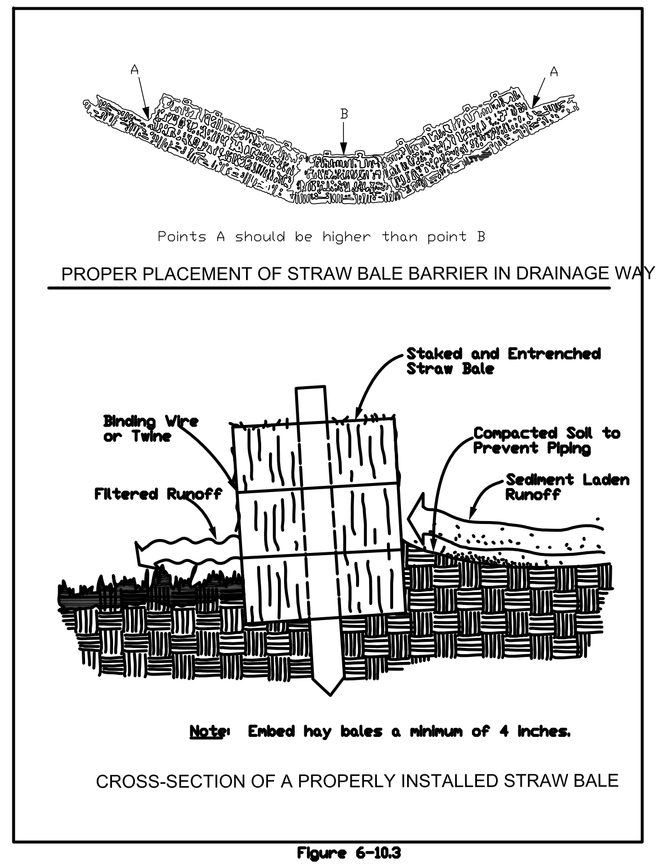


Figure 6-10.3

Ch Channel Stabilization

CONSTRUCTION SPECIFICATIONS

1. Where needed, all trees, brush, stumps and other objectionable materials shall be removed so they will not interfere with the construction or proper functioning of the channel.
2. Where possible, trees will be left standing, and stumps will not be removed.
3. Excavation shall be at the locations and grades shown on the drawings. The lining shall not compromise the capacity of the channel, e.g. the emergency spillway shall be over-excavated so that the lining will be flush with the slope surface.
4. The geotextile shall be placed on a smooth graded surface. The geotextile shall be placed in such a manner that it will not excessively stretch or tear upon placement of the overlying materials. Care should be taken to place the geotextile in intimate contact with the soil such that no void spaces exist between the underlying soil and the geotextile.
5. Construction plans will specifically detail the location and handling of spoils. Spoil material resulting from clearing, grubbing and channel excavation shall be disposed of in a manner which will:
a. not cause an increase in flood stage,
b. minimize overbank wash,
c. not cause an adverse effect on the environmental integrity of the area,
d. provide for the free flow of water between the channel and flood plain unless the valley routing and water surface profile are based on continuous dikes being installed,
e. leave the right-of-way in the best condition feasible, and
f. improve the aesthetic appearance of the site to the extent feasible.
6. Channel linings shall be established or installed immediately after construction or as soon as weather conditions permit.
7. Structures shall be installed according to lines and grades shown on the plan. The foundation for structures shall be cleared of all undesirable materials prior to the installation of the structures.
8. Materials used in construction shall be of permanency commensurate with the design frequency and life expectancy of the facility.
9. Earthfill, when used as a part of the structures, shall be placed according to the installation requirements for sediment basin embankments.
10. Construction operations shall be carried out in such a manner that erosion and air and water pollution will be minimized. State and local laws concerning pollution abatement shall be complied with.
11. Vegetation shall be established on all disturbed areas immediately after construction. If weather conditions cause a delay in establishing vegetation, the area shall be mulched in accordance with the standard for mulching. Refer to specification **Ds1 - Disturbed Area Stabilization (With Mulching Only)**. Seeding, fertilizing and mulching shall conform to the standard for permanent vegetative cover. Refer to specification **Ds3-Disturbed Area Stabilization (With Permanent Vegetation)**.
12. All temporary access roads or travelways shall be appropriately closed to exclude traffic.
13. Trees and other fallen natural vegetation not causing a deterrent to stream flow should be left for the purpose of habitat.

SYMBOLS

Channel Stabilization - Vegetation (Ch-V)

Channel Stabilization - Rip-Rap (Ch-Rp)

Channel Stabilization - Concrete (Ch-C)

Sd-1 Sediment Barrier

CONSTRUCTION SPECIFICATIONS

Sandbags - Sd1-S
(if approved by local issuing authority)
Should be installed so that flow under or between bags is minimal. Anchoring with steel rods may be required if structure height exceeds two bags.

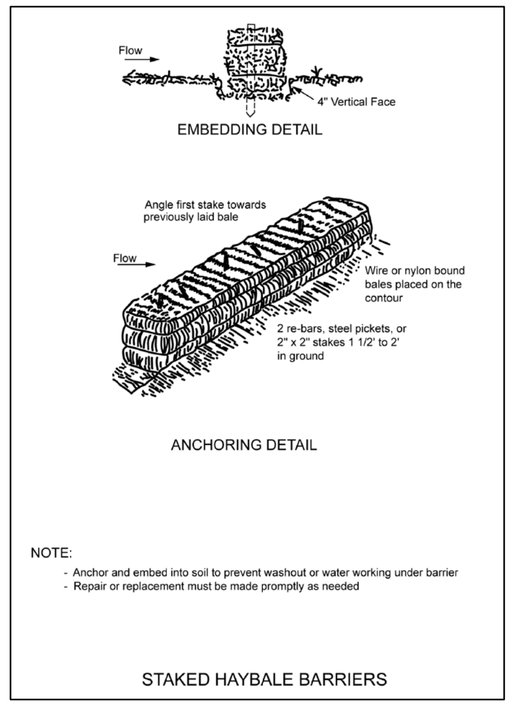
Hay or Straw Bales - Sd1-Hb
(if approved by local issuing authority)
Bales will be placed in a single row, lengthwise, on the contour and embedded in the soil to a depth of 4 inches. Bales must be securely anchored in place by stakes or bars driven through the bales or by other acceptable means to prevent displacement. See Figures 6-20.1 and 6-20.2 for installation requirements.

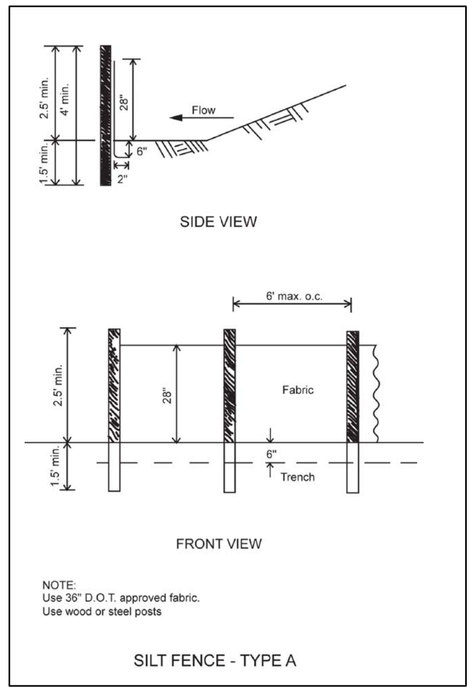
Brush Barrier - Sd1-Bb
(only during timber clearing operations)
Brush obtained from clearing and grubbing operations may be piled in a row along the perimeter of disturbance at the time of clearing and grubbing. Brush barriers should not be used in developed areas or locations where aesthetics are a concern. Brush should be wind-rowed on the contour as nearly as possible and may require compaction. Construction equipment may be utilized to satisfy this requirement. The minimum base width of the brush barrier shall be 5 feet and should be no wider than 10 feet. The height of the brush barrier should be between 3 and 5 feet. If a greater filtering capacity is required, a commercially available filter fabric may be placed on the side of the brush barrier receiving the sediment-laden runoff. The lower edge of the fabric must be buried in a 6-inch deep trench immediately uphill from the barrier. The upper edge must be stapled, tied or otherwise fastened to the brush barrier. Edges of adjacent fabric pieces must overlap each other. See Figure 6-20.3.

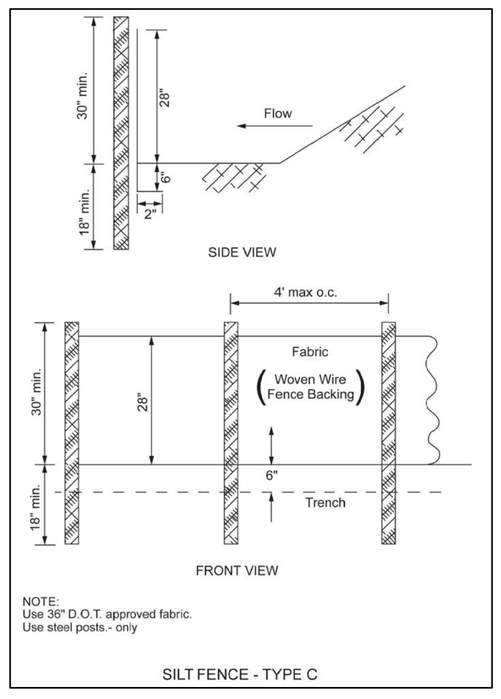
Silt Fence
The manufacturer shall have either an approved color mark yarn in the fabric or label the fabricated silt fence with both the manufacturer and fabric name every 100 feet. The temporary silt fence shall be installed according to this specification, as shown on the plans or as directed by the engineer. For installation of the fabric, see Figures 6-20.4, 6-20.5, and 6-20.6 respectively. Post installation shall start at the center of the lowpoint (if applicable) with remaining posts spaced 6 feet apart for Type A and B silt fences and 4 feet apart for Type C silt fence. While Type A and B silt fences can be used with both wood and steel posts, only steel posts shall be used with Type C silt fence. For post size requirements, see Table 6-20.3. Fasteners for wood posts are listed in Table 6-20.4. Along stream buffers and other sensitive areas, two rows of Type C silt fence or one row of Type C silt fence backed by haybales shall be used.

MAINTENANCE

Sediment shall be removed once it has accumulated to one-half the original height of the barrier. Filter fabric shall be replaced whenever it has deteriorated to such an extent that the effectiveness of the fabric is reduced (approximately six months). Temporary sediment barriers shall remain in place until disturbed areas have been permanently stabilized. All sediment accumulated at the barrier shall be removed and properly disposed of before the barrier is removed.







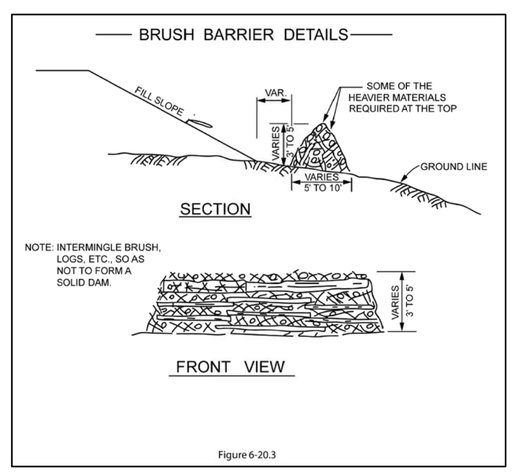
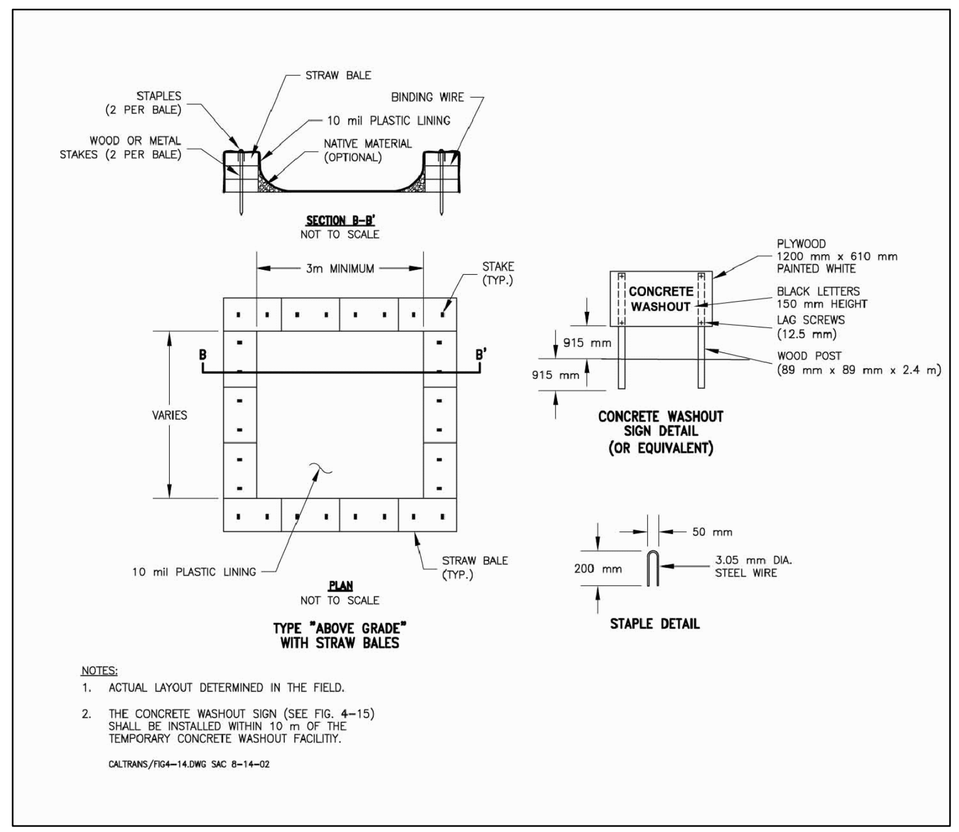


Figure 6-20.3

Concrete Washout Area



NOTES:
1. ACTUAL LAYOUT DETERMINED IN THE FIELD.
2. THE CONCRETE WASHOUT SIGN (SEE FIG. 4-15) SHALL BE INSTALLED WITHIN 10 m OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

CALTRANS/TIG4-14.DWG SAC 8-14-02

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C-9.4

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Sd-2 Inlet Sediment Trap

CONSTRUCTION SPECIFICATIONS

Sediment traps may be constructed on natural ground surface, on an excavated surface, or on machine compacted
fill provided they have a non-erodible outlet.

Filter Fabric with Supporting Frame (Sd2-F)

This method of inlet protection is applicable where the inlet drains a relatively flat area (slope no greater than 5%) and shall not apply to inlets receiving concentrated flows, such as in street or highway medians. As shown in Figure 6-21.1, Type C silt fence supported by steel posts shall be used. The stakes shall be spaced evenly around the perimeter of the inlet a maximum of 3 feet apart, and securely driven into the ground, approximately 18 inches deep. The fabric shall be entrenched 12 inches and backfilled with crushed stone or compacted soil. Fabric and wire shall be securely
fastened to the posts, and fabric ends must be overlapped a minimum of 18 inches or wrapped together around a post to provide a continuous fabric barrier around the inlet.

Baffle Box (Sd2-B)

For inlets receiving runoff with a higher volume or velocity, a baffle box inlet sediment trap should be used. As shown in Figure 6-21.2, the baffle box shall be constructed of 2" x 4" boards spaced a maximum of 1 inch
apart or of plywood with weep holes 2 inches in diameter. The weep holes shall be placed approximately 6 inches on center vertically and horizontally. Gravel shall be placed outside the box, all around the inlet, to a depth
of 2 to 4 inches. The entire box is wrapped in Type C filter fabric that shall be entrenched 12 inches and backfilled.

Block and Gravel Drop Inlet Protection (Sd2-Bg)

This method of inlet protection is applicable where heavy flows are expected and where an overflow capacity is necesRCCy to prevent excessive pondlng around the structure. As shown In Figure 6-21.3, one block is placed on each side of the structure on its side in the bottom row to allow pool drainage. The foundation should be excavated at least 2 inches below the crest of the storm drain. The bottom row of blocks are placed against the edge of the storm drain for lateral support and to avoid washouts when overflow occurs. If needed, lateral support may be given to subsequent rows by placing 2" x 4" wood studs through block openings. Hardware cloth or comparable wire mesh with 1/2 inch openings shall be fitted over all block openings to hold gravel in place. Clean gravel should be placed 2 inches below
the top of the block on a 2:1 slope or flatter and smoothed to an even grade. DOT #57 washed stone is recommended

Gravel Drop Inlet Protection (Sd2-G)

This method of inlet protection is applicable where heavy concentrated flows are expected. As shown in Figure 6-21.4, stone and gravel are used to trap sediment. The slope toward the inlet shall be no steeper than 3:1. A minimum 1 foot wide level stone area shall be left between the structure and around the inlet to prevent gravel from entering the inlet. On the slope toward the inlet, stone 3 inches in diameter and larger should be used. On the slope away from the inlet, 1/2 to 3/4 inch gravel (#57 washed stone) should be used at a minimum thickness of 1 foot.

Sod Inlet Protection (Sd2-S)

This method of inlet protection is applicable only at the time of permanent seeding, to protect the inlet from sediment and mulch material until permanent vegetation has become established. As shown in Figure 6-21.6, the sod shall be placed to form a turf mat covering the soil for a distance of 4 feet from each side of the inlet structure. Sod strips shall be staggered so that adjacent strip ends are not aligned.

Excavated Inlet Sediment Trap

The sediment trap shall be placed immediately around the inlet. The excavation shall be constructed immediately outside of the sediment trap and provide a minimum depth of 1.5 feet for sediment storage.

Curb Inlet Protection (Sd2-P)

Once pavement has been installed, a curb inlet filter shall be installed on inlets receiving runoff from disturbed areas. **This method of inlet protection shall be removed if a safety hazard is created.** One method of curb inlet protection uses "pigs-in-ablanket" - 8-inch concrete blocks wrapped in filter fabric. See Figure 6-21.5. Another method uses gravel bags constructed by wrapping DOT #57 stone with filter fabric, wire, plastic mesh, or equivalent material. A gap of approximately 4 inches shall be left between the inlet filter and the inlet to allow for overflow and prevent hazardous ponding in the roadway. Proper installation and maintenance are crucial due to possible ponding in the roadway, resulting in a hazardous condition. Several other methods are available to prevent the entry of sediment into storm drain inlets. Figure 6-21.7 shows of one of these alternative methods.

MAINTENANCE

The trap shall be inspected daily and after each rain and repairs made as needed. Sediment shall be removed when the sediment has accumulated to one-half the height of the trap. Sediment shall be removed from curb inlet protection immediately. For excavated inlet sediment traps, sediment shall be removed when one-half of the sediment storage capacity has been lost to sediment accumulation. Sod inlet protection shall be maintained as specified in **Ds4 - Disturbed Area Stabilization (With Sodding)**. **Sediment shall not be washed into the inlet.** It shall be removed from the sediment trap and disposed of and stabilized so that it will not enter the inlet, again. When the contributing drainage area has been permanently stabilized, all materials and any sediment shall be removed, and either salvaged or disposed of properly. The disturbed area shall be brought to proper grade, then smoothed and compacted. Appropriately stabilize all disturbed areas around the inlet.

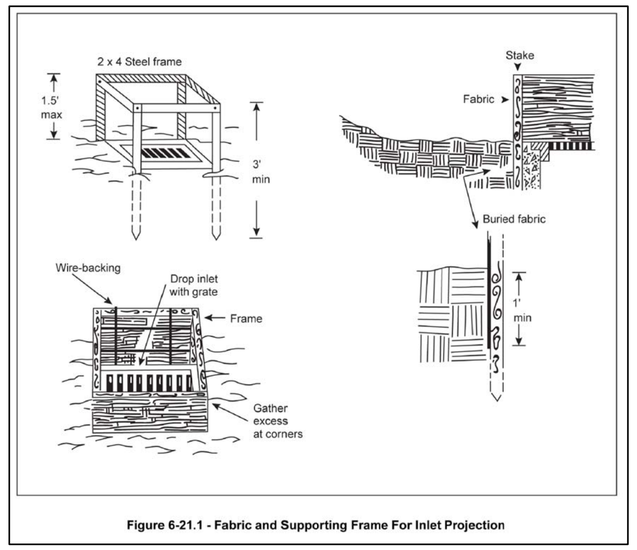


Figure 6-21.1 - Fabric and Supporting Frame For Inlet Projection

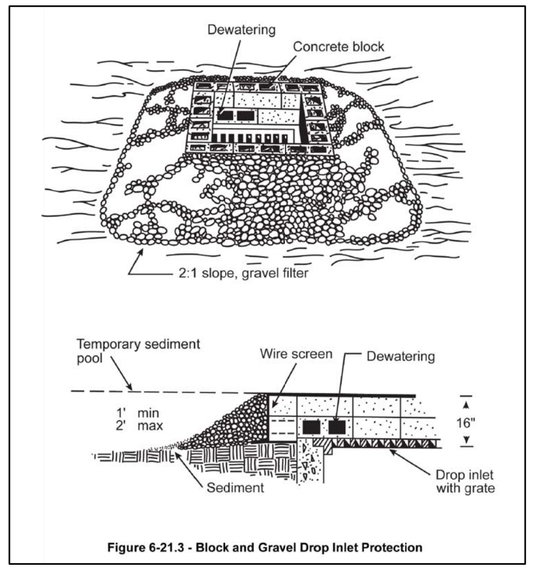
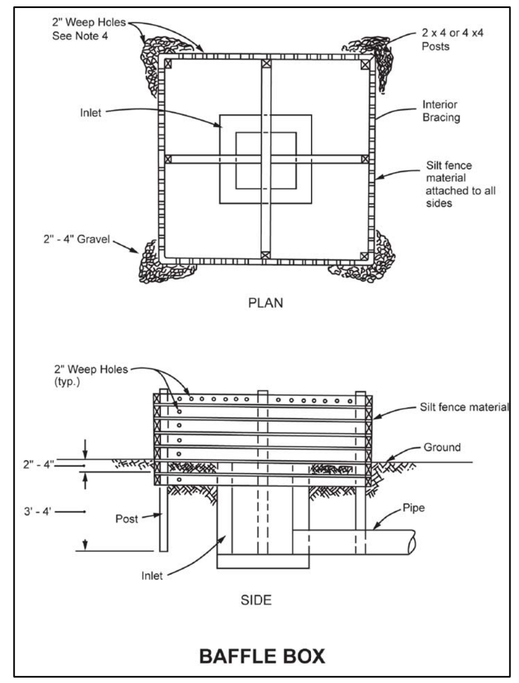
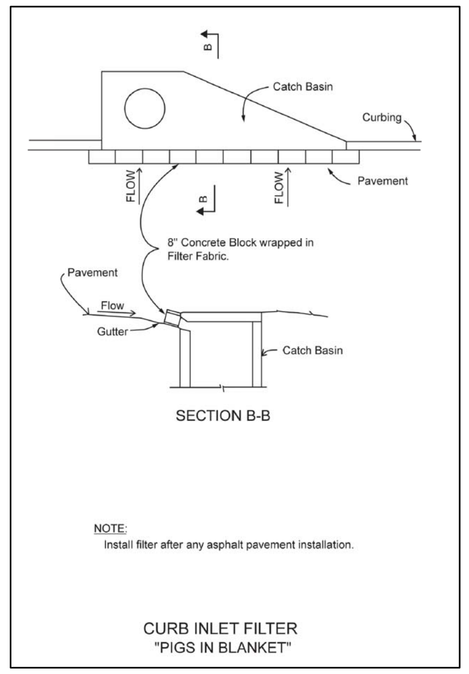


Figure 6-21.3 - Block and Gravel Drop Inlet Protection





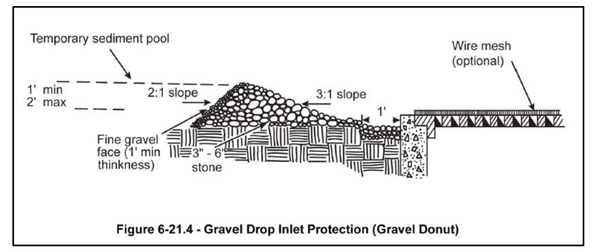


Figure 6-21.4 - Gravel Drop Inlet Protection (Gravel Donut)

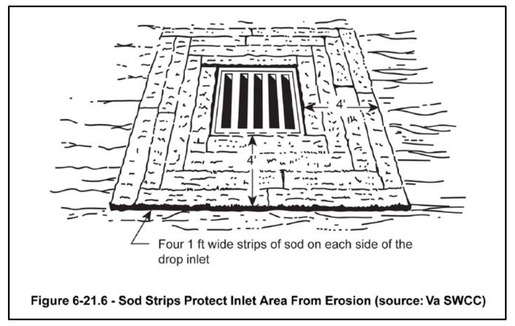


Figure 6-21.6 - Sod Strips Protect Inlet Area From Erosion (source: Va SWCC)

St Storm Drain Outlet Protection

CONSTRUCTION SPECIFICATIONS

1. Ensure that the subgrade for the filter and riprap follows the required lines and grades shown in the plan. Compact any fill required in the subgrade to the density of the surrounding undisturbed material. Low areas in the subgrade on undisturbed soil may also be filled by increasing
the riprap thickness.
2. The riprap and gravel filter must conform to the specified grading limits shown on the plans.
3. Geotextile must meet design requirements and be properly protected from punching or tearing during installation. Repair any damage by removing the riprap and placing another piece of filter fabric over the damaged area. All connecting joints should overlap a minimum of 1 ft. If the damage is extensive, replace the entire filter fabric.
4. Riprap may be placed by equipment, but take care to avoid damaging the filter.
5. The minimum thickness of the riprap should be 1.5 times the maximum stone diameter.
6. Construct the apron on zero grade with no overfall at the end. Make the top of the riprap at the downstream end level with the receiving area or slightly below it.
7. Ensure that the apron is properly aligned with the receiving stream and preferably straight throughout its length. If a curve is needed to fit site conditions, place it in the upper section of the apron.
8. Immediately after construction, stabilize all disturbed areas with vegetation.
9. Stone quality - Select stone for riprap from field stone or quarry stone. The stone should be hard, angular, and highly weather-resistant. The specific gravity of the individual stones should be at least 2.5.
10. Filter - Install a filter to prevent soil movement through the openings in the riprap. The filter should consist of a graded gravel layer or a synthetic filter cloth. See Appendix C; p. C-1.

MAINTENANCE

Inspect riprap outlet structures after heavy rains to see if any erosion around or below the riprap has taken place or if stones have been dislodged. Immediately make all needed repairs to prevent further damage.

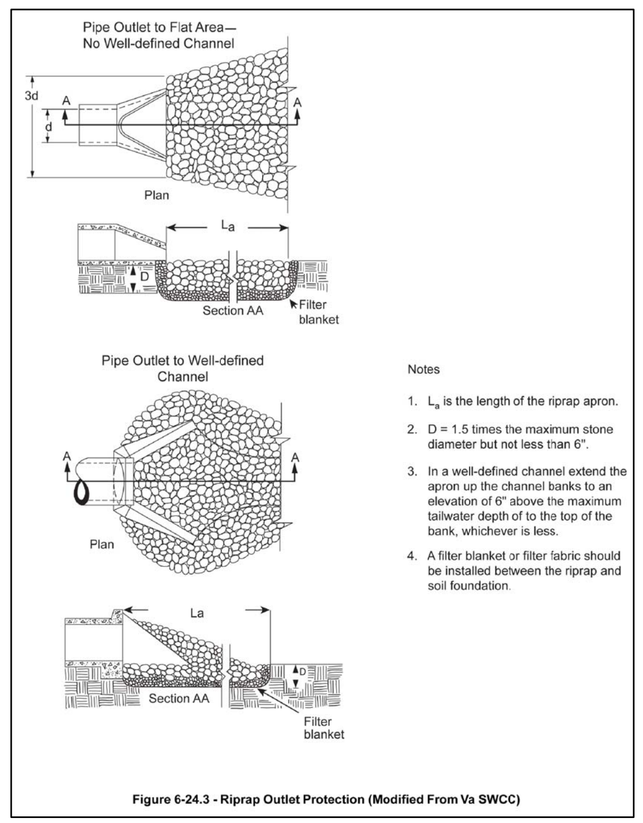


Figure 6-24.3 - Riprap Outlet Protection (Modified From Va SWCC)

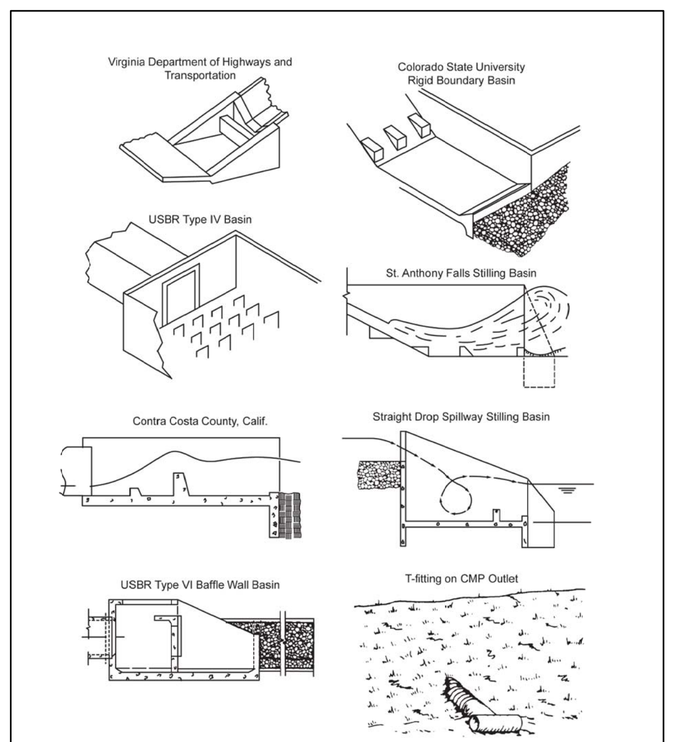


Figure 6-24.4 - Alternative Structures For Energy Dissipation at an Outlet (Modified From Goldman, Jackson, and Bursztynsky)

Tp Topsoiling

CONSTRUCTION SPECIFICATIONS

Materials - Topsoil should be friable and loamy, free of debris, objectionable weeds and stones and contain no toxic substance that may be harmful to plant growth. A pH range of 5.0-7.5 is acceptable. Soluble salts should not exceed 500 ppm.

Testing - Field exploration should be made to determine whether the quantity and quality of surface soil justifies stripping.

Stripping - Stripping should be confined to the immediate construction area. A 4 to 6 inch stripping depth is common, but may vary depending on the particular soil.

Topsoil pH - If pH value is less than 6.0, lime shall be applied and incorporated with the topsoil to adjust the pH to 6.5 or higher. Topsoils containing soluble salts greater than 500 parts per million shall not be used.

Stockpiles - The location of topsoil stockpiles should not obstruct natural drainage or cause off-site environmental damage.

Stabilization - Stockpiles shall be contained by sediment barriers to prevent sedimentation on adjacent areas. Stockpiles shall be stabilized in accordance with specifications **Ds1** and **Ds2 - Disturbed Area Stabilization (With Mulching)** and **(With Temporary Grassing)**, respectively, or **Pm - Polyacrylamide** or **Tb - Tackifiers and Binders**.

Site Preparation (Where topsoil is to be added)
Topsoiling - When topsoiling, maintain needed erosion control practices such as diversions, grade stabilization structures, berms, dikes, level spreaders, waterways, sediment basins, etc. Grading - Grades on the areas to be topsoiled which have been previously established shall be maintained.
Liming - Soil tests should be used to determine the pH of the soil. Where the pH of the subsoil is 5.0 or less or composed of heavy clays, agricultural limestone shall be spread at the rate of 100 pounds per 1,000 square feet. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedure.

Bonding - Use one of the following methods to insure bonding of topsoil and subsoil:
1. Tilling - After the areas to be topsoiled have been brought to grade, and immediately prior to dumping and spreading the topsoil, the subgrade shall be loosened by discing or scarifying to a depth of at least 3 inches to permit bonding of the topsoil to the subsoil.
2. Tracking - Passing a bulldozer over the entire surface area of the slope to leave horizontal depressions.
Applying Topsoil
1. Topsoil should be handled only when it is dry enough to work without damaging soil structure.
2. A uniform application of 5 inches (unsettled) is recommended, but may be adjusted at the discretion of the engineer or landscape architect.
Table 6-26.1. Cubic Yards Of Topsoil Required For
Application To Various Depths

Table 6-26.1. Cubic Yards Of Topsoil Required For Application To Various Depths

Depth (Inches)	Per 1,000 Square Feet	Per Acre
1	3.1	134
2	6.2	268
3	9.3	403
4	12.4	537
5	15.5	672
6	18.6	806

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LEVEL II CERTIFIED DESIGN PROFESSIONAL GSWCC
CERTIFICATION NO. 0000002977
ISSUED: 12/07/2008 EXPIRES: 12/07/2017

BEALL'S HILL NEIGHBORHOOD
REVITALIZATION PROJECT
MACON, GEORGIA
FOR
BEALL'S HILL NEIGHBORHOOD

Cunningham & Co. Engineers
CIVIL ENGINEERING - CONSULTING - PROJECT MANAGEMENT
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REVISIONS

DATE: 9-27-16
PROJ NO: 1604
DRAWN BY: RCC

GEORGIA REGISTERED PROFESSIONAL ENGINEER ROBERT C. CUNNINGHAM No. 20508

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ESPCP-BMP DETAILS

C-9.5

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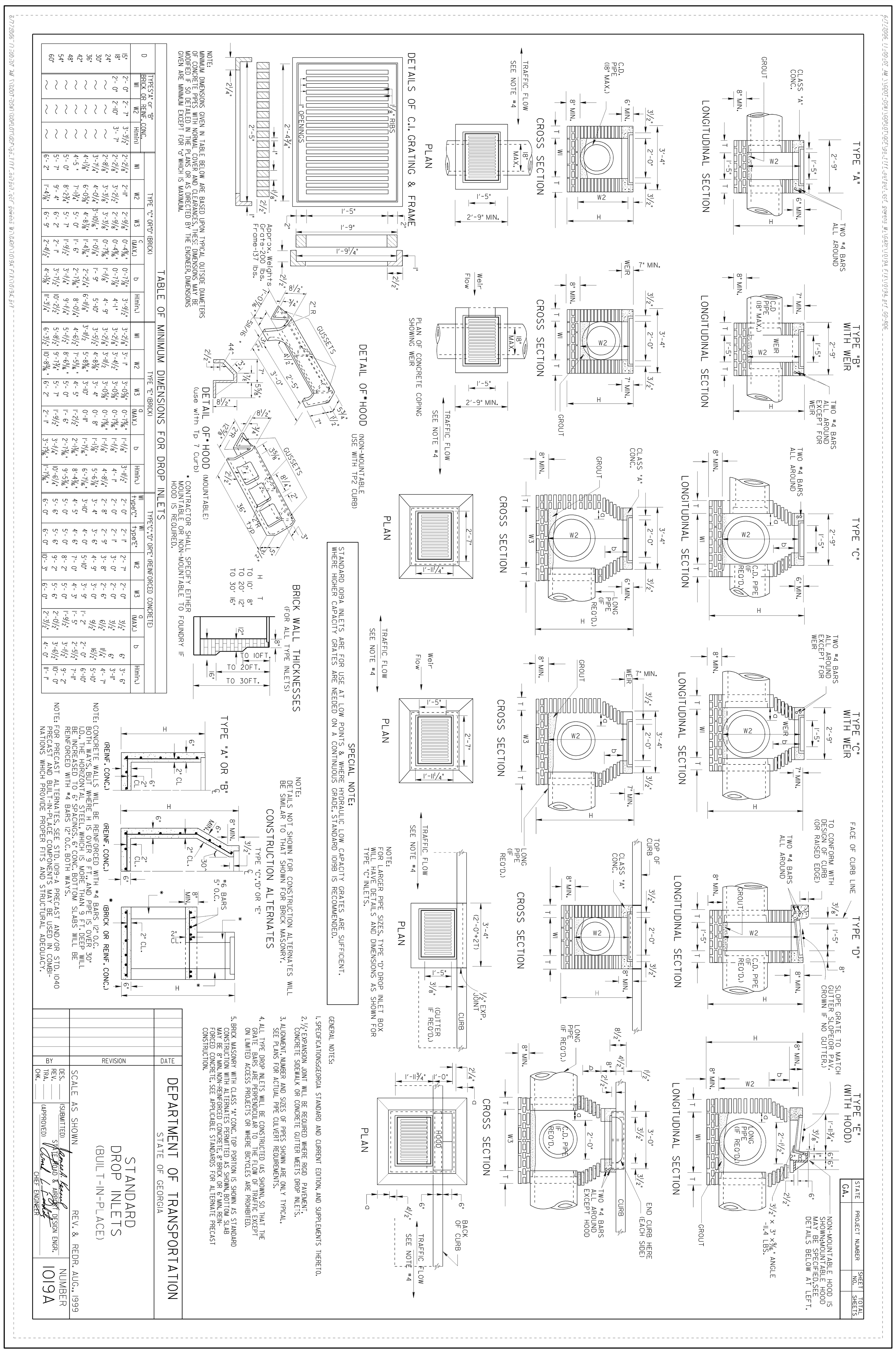


NOTE: MINIMUM DIMENSIONS GIVEN IN TABLE BELOW ARE BASED UPON TYPICAL OUTSIDE DIAMETERS OF CONCRETE PIPES WITH NORMAL COVER AND CLEARANCES. THESE DIMENSIONS MAY BE MODIFIED IF SO DETAILED IN THE PLANS OR AS DIRECTED BY THE ENGINEER. DIMENSIONS GIVEN ARE MINIMUM EXCEPT FOR "a" WHICH IS MAXIMUM.

TABLE OF MINIMUM DIMENSIONS FOR DROP INLETS

D	TYPES "A" or "B" BRICK OR REINF. CONC. W1	W2	H(min)	TYPE "C" OR "D" (BRICK) W1	W2	W3	c (MAX.)	b	H(min.)	TYPE "E" (BRICK) W1	W2	W3	a (MAX.)	b	H(min.)	TYPE "C","D" OR "E" (REINFORCED CONCRETE) W1 type "C"	W1 type "E"	W2	W3	a (MAX.)	b	H(min.)
15"	2'-0"	2'-7"	3'-3½"	2'-2⅛"	2'-11"	2'-9⅛"	0'-4⁹⁄₁₆"	0'-7⅞"	3'-9½"	3'-2⅛"	3'-1"	3'-0⅝"	0'-7⁹⁄₁₆"	1'-1⅛"	3'-11½"	2'-0"	2'-1"	2'-7"	2'-0"	3½"	6"	3'-6"
18"	2'-0"	2'-10"	3'-7"	2'-2⅛"	3'-2½"	2'-9⅛"	0'-4⁹⁄₁₆"	0'-7⅞"	4'-1"	3'-2⅛"	3'-4½"	3'-0⅝"	0'-7⁹⁄₁₆"	1'-1⅛"	4'-1"	2'-0"	2'-1"	3'-0"	2'-0"	3½"	6"	3'-11"
24"	~	~	~	2'-8⅛"	3'-3⅜"	3'-3⅜"	0'-7⁹⁄₁₆"	1'-1⅛"	4'-9"	3'-2⅛"	3'-11½"	3'-0⅝"	0'-7⁹⁄₁₆"	1'-1⅛"	4'-8¼"	2'-8"	2'-9"	3'-8"	2'-6"	6½"	11¼"	4'-7"
30"	~	~	~	3'-7¼"	4'-0¼"	3'-10⁵⁄₁₆"	1'-0⅛"	1'-9"	5'-10"	3'-5½"	4'-8⅜"	3'-4"	0'-8"	1'-1⅞"	5'-6⅞"	3'-4"	3'-6"	4'-9"	3'-0"	9½"	16½"	5'-10"
36"	~	~	~	4'-1⅛"	6'-0⅝"	4'-8⅞"	1'-4⁷⁄₁₆"	2'-2¼"	6'-11⅛"	3'-11½	5'-8⁹⁄₁₆"	3'-10"	0'-11"	1'-7⁷⁄₁₆"	6'-7⁷⁄₁₆"	3'-10"	4'-0"	5'-10"	3'-9"	1'-2"	2'-0"	6'-10"
42"	~	~	~	4'-5"	7'-1¾"	5'-0"	1'-6"	2'-7³⁄₁₆"	8'-0¼"	4'-6½"	7'-5¹¹⁄₁₆"	4'-5"	1'-2½"	2'-1³⁄₁₆"	8'-4³⁄₁₆"	4'-5"	4'-6"	7'-0"	4'-3"	1'-5"	2'-5½"	7'-11"
48"	~	~	~	5'-0"	8'-2¾"	5'-7"	1'-9½"	3'-1¼"	9'-1¼"	5'-1½"	8'-6¹¹⁄₁₆"	5'-0"	1'-6"	2'-7³⁄₁₆"	9'-5³⁄₁₆"	5'-0"	5'-0"	8'-2"	5'-0"	1'-9½"	3'-1½"	9'-2"
54"	~	~	~	5'-7"	9'-4"	6'-2"	2'-1"	3'-7½"	10'-2½"	5'-8½"	9'-7¾"	5'-7"	1'-9½"	3'-1¼"	10'-6¼"	5'-6"	5'-6"	9'-2"	5'-6"	2'-0½"	3'-6½"	10'-0"
60"	~	~	~	6'-2"	1'-4⅞"	6'-9"	2'-4½"	4'-1⅜"	11'-3¼"	6'-3½"	10'-8¹³⁄₁₆"	6'-2"	2'-1"	3'-7⁵⁄₁₆"	11'-7⁵⁄₁₆"	6'-0"	6'-0"	10'-3"	6'-0"	2'-3½"	4'-0"	11'-1"

NOTE: CONCRETE WALLS WILL BE REINFORCED WITH #4 BARS 12" O.C. BOTH WAYS, BUT WHERE H IS OVER 9 FT., AND PIPE IS OVER 30" I.D., THE HORIZONTAL STEEL, WHICH IS MORE THAN 9 FT. DEEP WILL BE INCREASED TO 6" SPACINGS. 6" CONC. BOTTOM SLABS WILL BE REINFORCED WITH #4 BARS 12" O.C. BOTH WAYS.

NOTE: FOR PRECAST ALTERNATES, SEE STD. 1019-A PRECAST AND/OR STD. 1040 PRECAST AND BUILT-IN-PLACE COMPONENTS MAY BE USED IN COMBINATIONS WHICH PROVIDE PROPER FITS AND STRUCTURAL ADEQUACY.

NOTE: DETAILS NOT SHOWN FOR CONSTRUCTION ALTERNATES WILL BE SIMILAR TO THAT SHOWN FOR BRICK MASONRY.

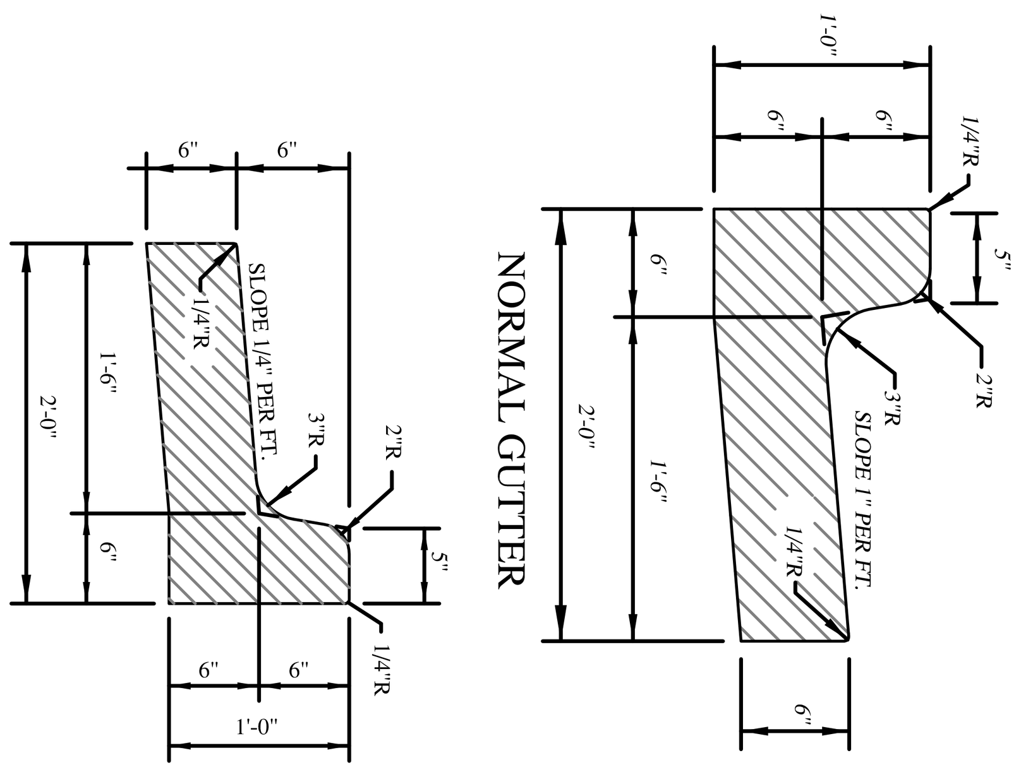
SPECIAL NOTE: STANDARD 1019A INLETS ARE FOR USE AT LOW POINTS & WHERE HYDRAULIC LOW CAPACITY GRATES ARE SUFFICIENT. WHERE HIGHER CAPACITY GRATES ARE NEEDED ON A CONTINUOUS GRADE, STANDARD 1019B IS RECOMMENDED.

NOTE: FOR LARGER PIPE SIZES, TYPE "D" DROP INLET BOX WILL HAVE DETAILS AND DIMENSIONS AS SHOWN FOR TYPE "C" INLETS.

GENERAL NOTES:

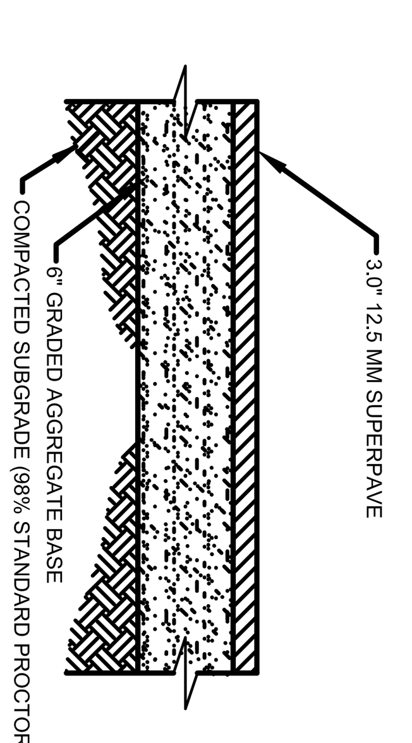
1. SPECIFICATIONS: GEORGIA STANDARD AND CURRENT EDITION, AND SUPPLEMENTS THERETO.
2. ½" EXPANSION JOINT WILL BE REQUIRED WHERE RIGID PAVEMENT, CONCRETE SIDEWALK OR CONCRETE GUTTER MEETS DROP INLETS.
3. ALIGNMENT, NUMBER AND SIZES OF PIPES SHOWN ARE ONLY TYPICAL. SEE PLANS FOR ACTUAL PIPE CULVERT REQUIREMENTS.
4. ALL TYPE DROP INLETS WILL BE CONSTRUCTED (AS SHOWN), SO THAT THE GRATE BARS ARE PERPENDICULAR TO THE FLOW OF TRAFFIC EXCEPT ON LIMITED ACCESS PROJECTS OR WHERE BICYCLES ARE PROHIBITED.
5. BRICK MASONRY WITH CLASS "A" CONC. TOP PORTION IS SHOWN AS STANDARD CONSTRUCTION WITH ALTERNATES PERMITTED AS SHOWN. BOTTOM SLAB MAY BE 8" MIN. NON-REINFORCED CONCRETE, 8" BRICK OR 6" MIN. REINFORCED CONCRETE. SEE APPLICABLE STANDARDS FOR ALTERNATE PRECAST CONSTRUCTION.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
STANDARD DROP INLETS (BUILT-IN-PLACE)
SCALE AS SHOWN — REV. & REDR. AUG., 1999 — NUMBER 1019A



24" CONCRETE CURB & GUTTER

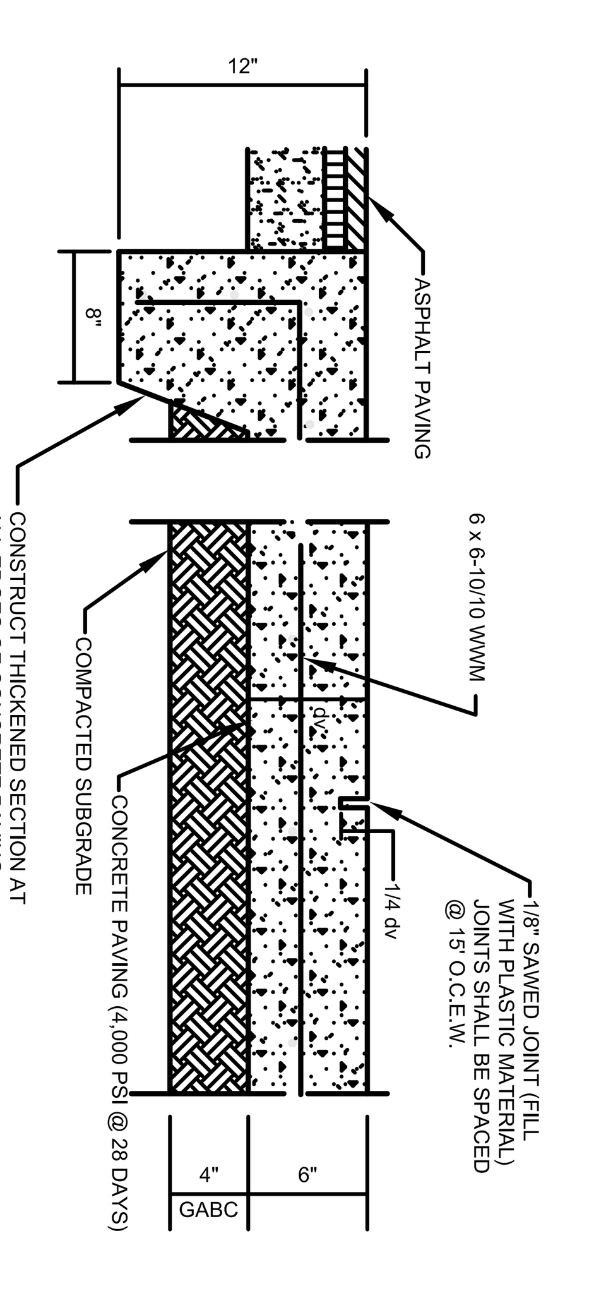
N.T.S.



TYPICAL ASPHALT PAVING DETAIL

N.T.S.

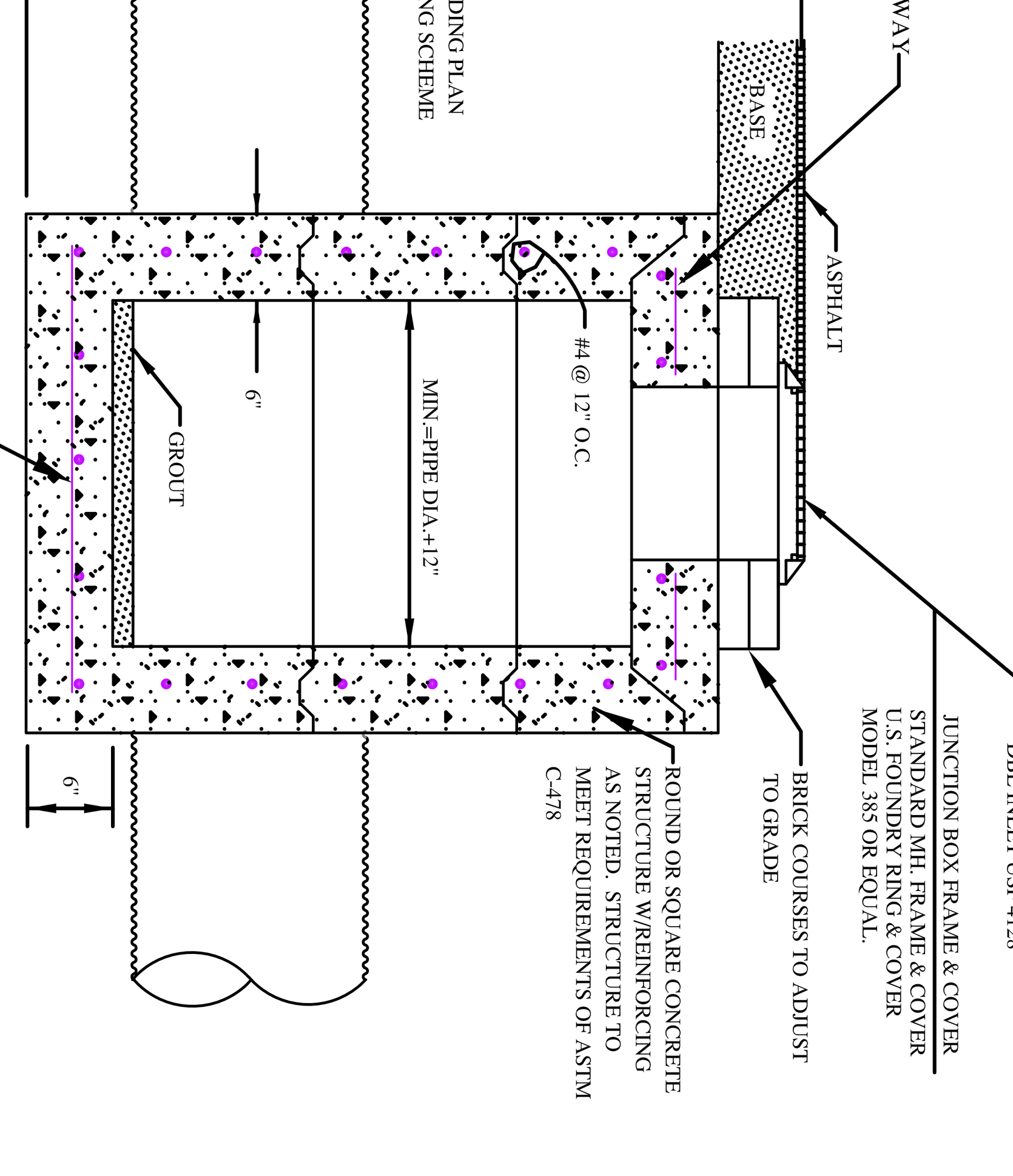
NOTE: EXIST. ASPHALT REPLACEMENT SHALL BE SAME AS NEW ASPHALT PAVING DETAIL.



TYPICAL CONCRETE PAVING

N.T.S.

NOTE: EXIST. CONCRETE REPLACEMENT SHALL BE SAME AS NEW CONCRETE PAVING DETAIL.



DROP INLET / JUNCTION BOX

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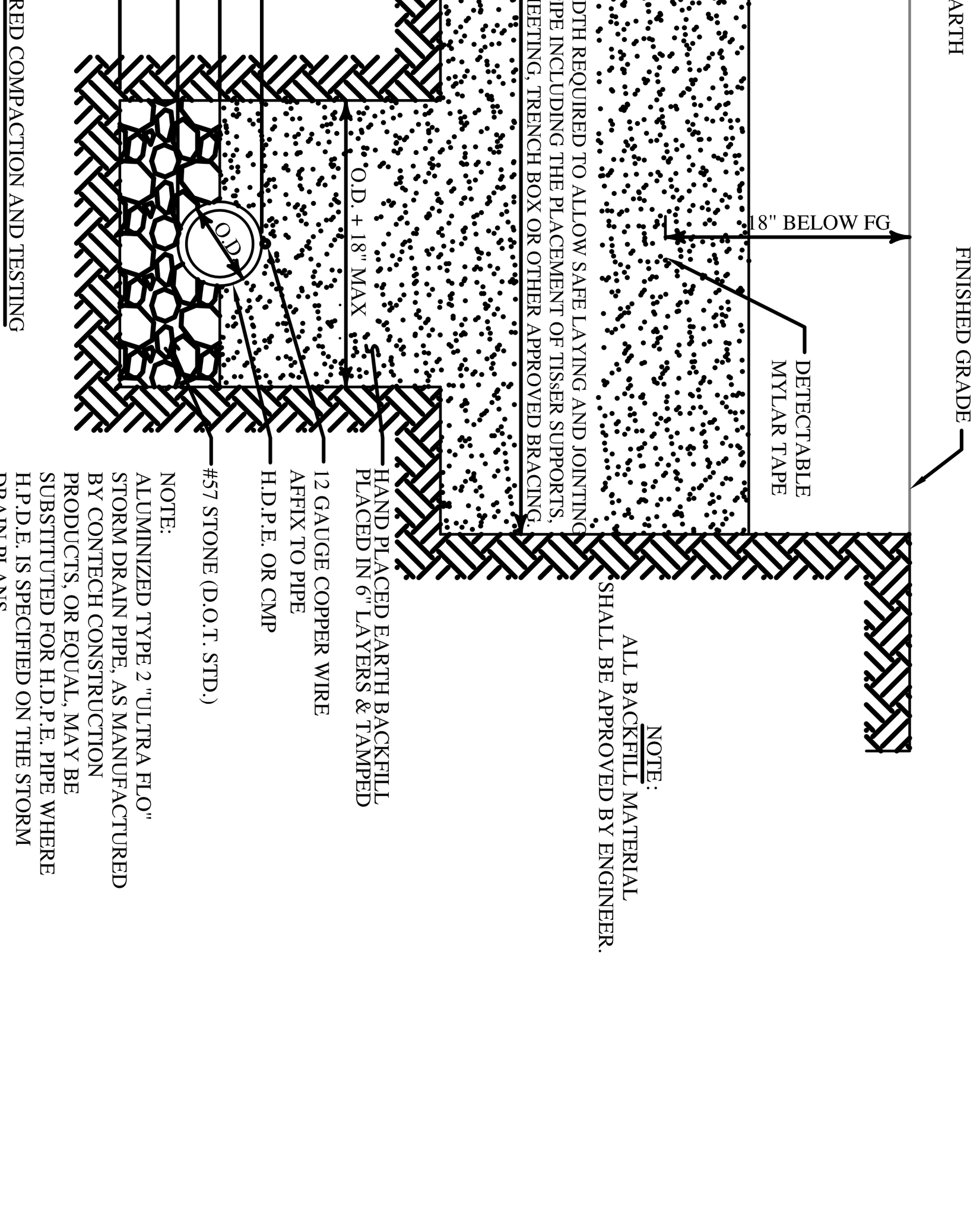
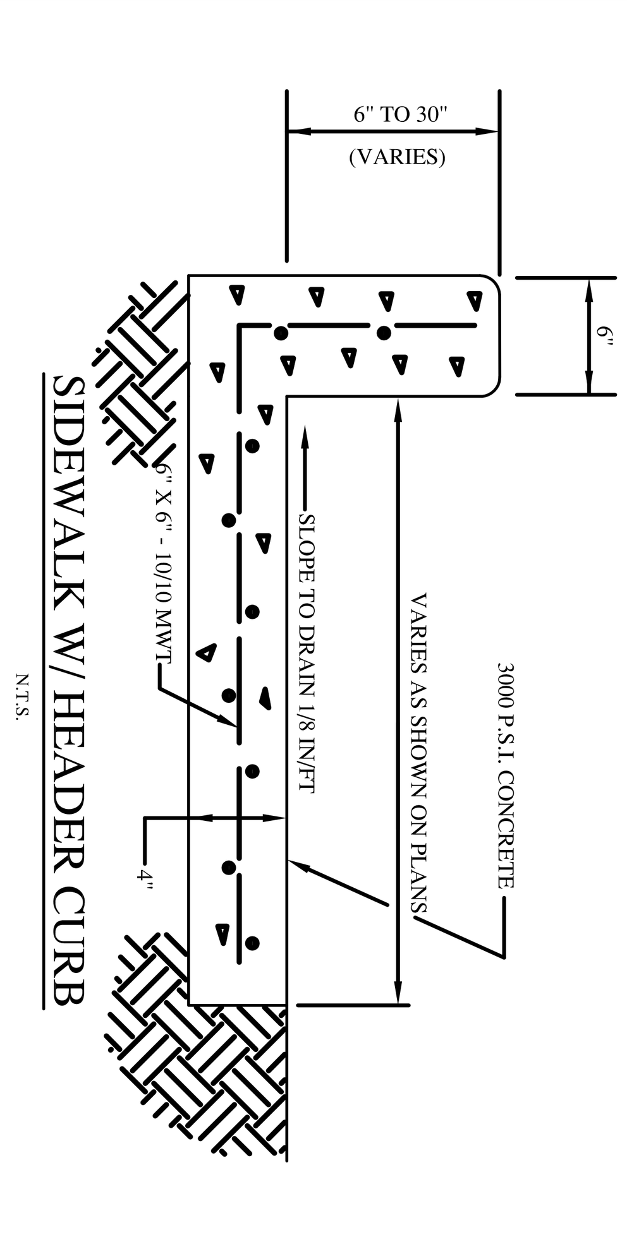


REQUIRED COMPACTION AND TESTING

1. OUTSIDE OF PAVED OR PROPOSED PAVED AREAS, COMPACTED TO 95% STANDARD PROCTOR.
2. UNDER PAVED OR PROPOSED PAVED AREAS, COMPACTED TO 100% STANDARD PROCTOR.
3. UNDER D.O.T. ROADWAYS OR PROPOSED D.O.T. ROADWAYS, COMPACTED TO 100% STANDARD PROCTOR.
4. ALL COMPACTION TESTING SHALL BE CONDUCTED BY AN APPROVED SOILS TESTING FIRM.

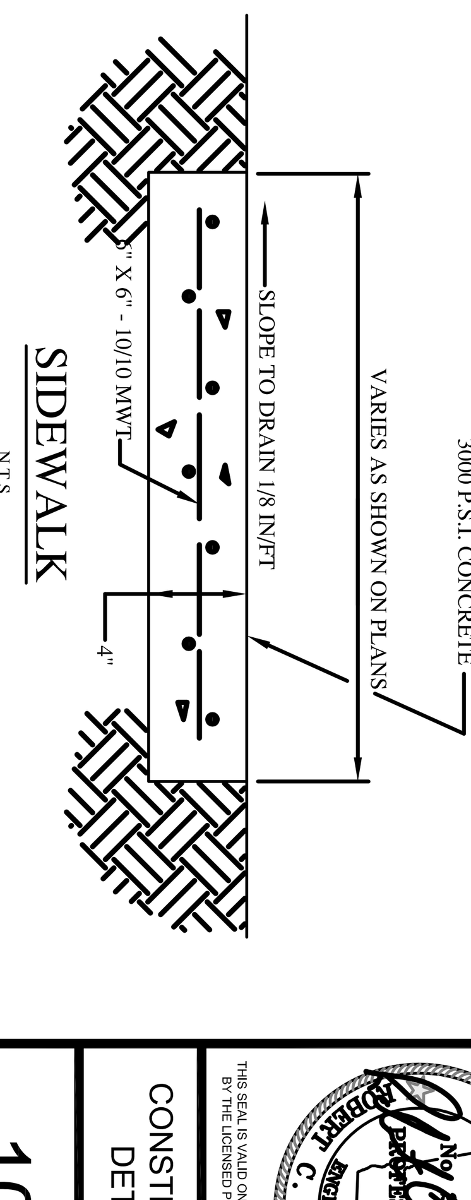
SECTION- STORM DRAIN BEDDING

N.T.S.



SIDEWALK W/ HEADER CURB

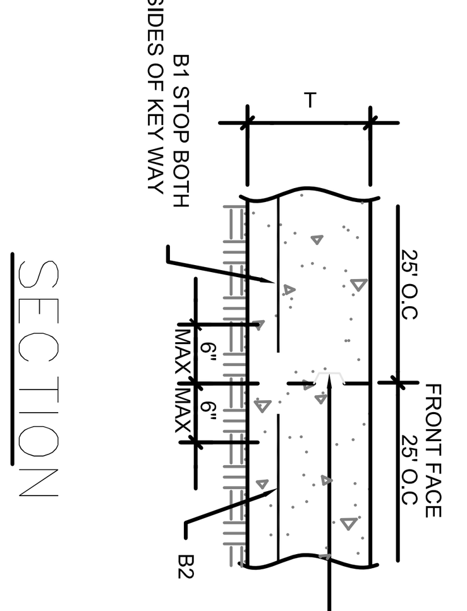
N.T.S.



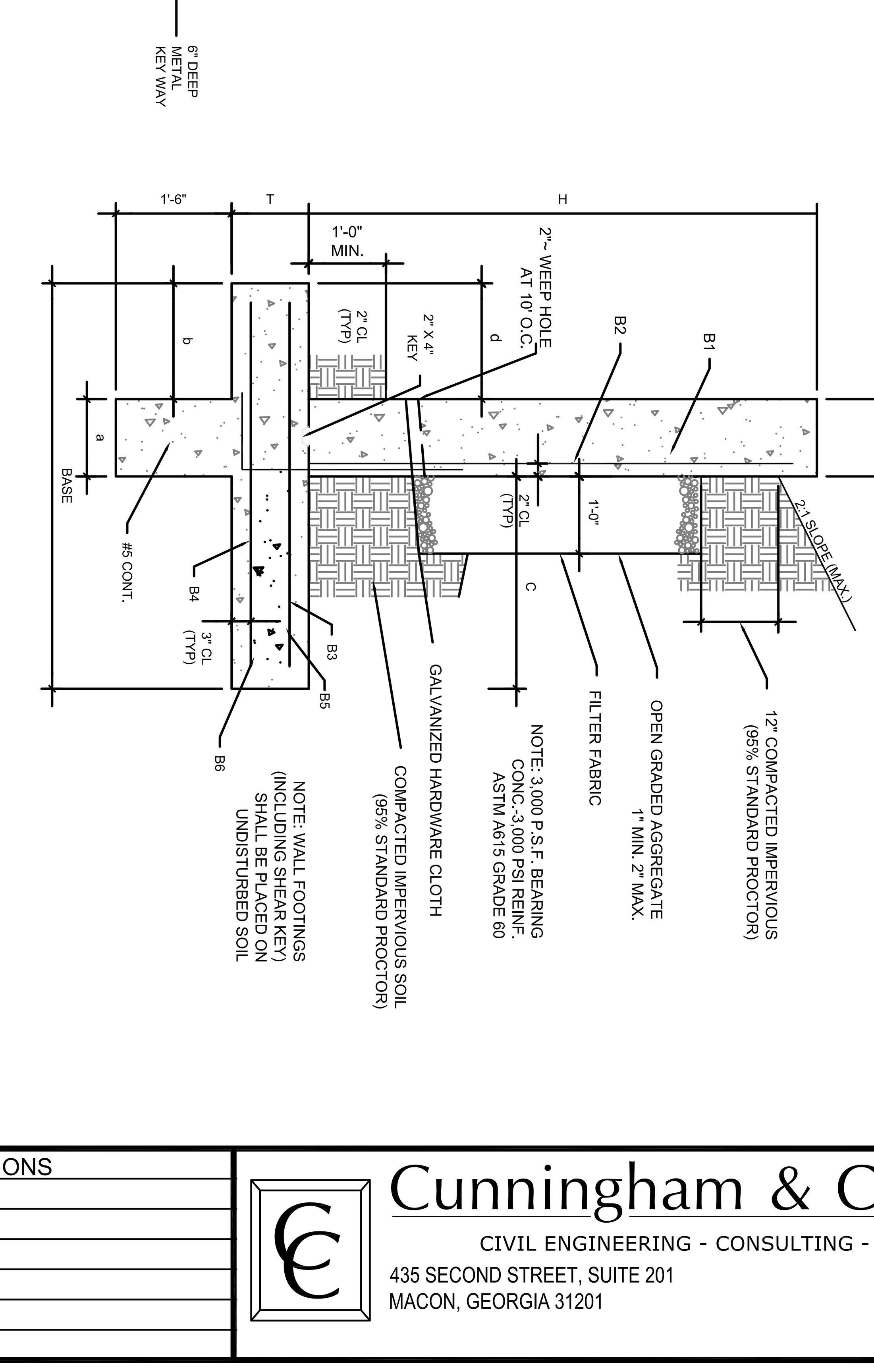
SIDEWALK

N.T.S.

PROVIDE EXPANSION JOINTS EVERY 20' W/ 5' CONSTRUCTION JOINTS.



SECTION



RETAINING WALL DETAIL

H	DIMENSIONS a	b	c	d	T	BASE	BAR SIZE & SPACING B1	B2	B3	B4	B5	B6
2'-3'			1'-0"	8"	1'-0"	2'-8"	#5@16"	#5@16"	#5@16"	#5@16"	#5@24"	#5@24"
3'-5'			2'-0"	1'-0"	1'-0"	4'-0"	#5@16"	#5@16"	#5@16"	#5@16"	#5@24"	#5@24"
5'-7'			2'-9"	1'-6"	1'-0"	5'-3"	#5@16"	#5@12"	#5@16"	#5@16"	#5@24"	#5@24"
7'-9'			3'-8"	2'-0"	1'-0"	6'-8"	#5@16"	#5@10"	#5@12"	#5@12"	#5@24"	#5@24"
9'-11'			4'-2"	2'-6"	1'-4"	8'-0"	#6@12"	#6@10"	#6@12"	#6@12"	#6@24"	#6@24"
11'-13'	1'-4"	3'-0"	5'-0"	3'-0"	1'-6"	9'-6"	#6@10"	#6@7"	#6@12"	#6@12"	#6@20"	#6@20"
13'-15'	1'-6"	3'-6"	5'-10"	3'-6"	1'-8"	11'-0"	#7@12"	#7@7"	#7@12"	#6@12"	#7@24"	#7@24"

SHEET	10.0
TITLE	CONSTRUCTION DETAILS
DATE:	9-27-16
PROJ NO:	1604
DRAWN BY:	RCC

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MACON, GEORGIA 31201
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