CITY COUNCIL AGENDA ITEM COVER MEMO

Agenda Item Number_____

Meeting Type: Regular

Meeting Date: 11/15/12

Action Requested By:
Engineering

Agenda Item Type
Resolution

Subject Matter:

Agreement with Miller & Miller, Inc.

Exact Wording for the Agenda:

Resolution authorizing the Mayor to enter into an agreement with the low bidder, Miller & Miller, Inc., for Holmes Avenue & Washington Street Streetscape Improvements, Options No. 1, No. 3, No. 4, No. 5, and No. 6, Project No. 65-12-SP31

Note: If amendment, please state title and number of the original

Item to be considered for: Action

Unanimous Consent Required: No

Briefly state why the action is required; why it is recommended; what Council action will provide, allow
and accomplish and; any other information that might be helpful.

This agreement is for the streetscape improvements along Washington Street from Holmes Avenue to Monroe Street, including Option No. 1: $1,099,245.00; Option No. 3: $6,405.00; Option No. 4: $19,104.00; Option No. 5: $20,405.00; and Option No. 6: $23,002.00 for a total contract amount of $1,168,161.00. Account No. 23-6300-0811-8506

Associated Cost:

Budgeted Item: Select...

MAYOR RECOMMENDS OR CONCURS: Select...

Department Head:

Date: 11/1/12

revised 3/12/2012

ROUTING SLIP
CONTRACTS AND AGREEMENTS

Originating Department: **Engineering** Council Meeting Date: 11/15/12

Department Contact: **Lynn Majors** Phone # **256-427-5201**

Contract or Agreement: **Construction Contract**

Document Name: **Miller & Miller-Washington St Streetscape-Project No.** 65-12-SP31

City Obligation Amount: **$1,168,161.00**

Total Project Budget: **$3,426,716.00**

Uncommitted Account Balance: **0**

Account Number: **23-6300-0811-8506**

Procurement Agreements

Title 39	Competitive

Grant-Funded Agreements

Not Applicable	Grant Name:

Department	Signature	Date
1) Originating		11/1/12
2) Legal		11/2/12
3) Finance		11/6/12
4) Originating		
5) Copy Distribution		
a. Mayor's office (1 copies)		
b. Clerk-Treasurer (Original & 2 copies)		

RESOLUTION NO. 12-_____

BE IT RESOLVED by the City Council of the City of Huntsville, Alabama, that the Mayor be, and is hereby authorized, to enter into a contract with the low bidder, Miller & Miller, Inc., in the amount of ONE MILLION ONE HUNDRED SIXTY-EIGHT THOUSAND ONE HUNDRED SIXTY-ONE AND NO/100 DOLLARS ($1,168,161.00) for Holmes Avenue and Washington Street Streetscape Improvements, Options No. 1, No. 3, No. 4, No. 5, and No. 6, Project No. 65-12-SP31, in Huntsville, Alabama, on behalf of the City of Huntsville, a municipal corporation in the State of Alabama, which said agreement is substantially in words and figures similar to that document attached hereto and identified as "Contract between City of Huntsville and Miller and Miller, Inc. for Holmes Avenue and Washington Street Streetscape Improvements, Options No. 1, No. 3, No. 4, No. 5, and No. 6, Project No. 65-12-SP31" consisting of a total of one (1) page plus one hundred ninety-two (192) additional pages consisting of Attachments A1-I, Supplement to General Requirements for Construction of Public Improvements and all Addenda, "Certification of Compliance with Title 39, Code of Alabama", and "E-Verify Statement", and the date of November 15, 2012, appearing on the margin of the first page, together with the signature of the President or President Pro Tem of the City Council, and an executed copy of said document being permanently kept on file in the Office of the City Clerk of the City of Huntsville, Alabama.

ADOPTED this the 15th day of November, 2012.

_____
President of the City Council of the City of Huntsville, Alabama

APPROVED this the 15th day of November, 2012.

_____
Mayor of the City of Huntsville, Alabama

CONTRACT BETWEEN CITY OF HUNTSVILLE
AND
MILLER & MILLER, INC.
FOR
HOLMES AVENUE AND WASHINGTON STREET STREETSCAPE IMPROVEMENTS, OPTIONS No. 1, No. 3, No. 4, No. 5, AND No. 6
PROJECT NO. 65-12-SP31

STATE OF ALABAMA}
MADISON COUNTY}

THIS CONTRACT, made and entered into this 15th day of November, 2012, between the CITY OF HUNTSVILLE, ALABAMA, a Municipal Corporation, sometimes referred to herein as City, and MILLER AND MILLER, INC., sometimes referred to herein as Contractor.

-WITNESSETH-

WHEREAS, the City desires to install, construct or make certain improvements known as Holmes Avenue and Washington Street Streetscape Improvements, Options No. 1, No. 3, No. 4, No. 5, and No. 6, Project No. 65-12-SP31, in the City of Huntsville, Madison County, Alabama, all in accordance with details, specifications, surveys and general requirements prepared by the City of Huntsville Urban Development Department - Engineering Division, which are on file in the Office of the City Engineer of the City of Huntsville, Alabama, all of which details, specifications, surveys and general requirements are made a part of this contract, and

NOW, THEREFORE, it is agreed that the Contractor promises and agrees to make such improvements for the party of the first part for the considerations hereinafter set out. The Contractor promises and agrees to furnish all necessary labor, materials and equipment for the doing of the same, all to be done in accordance with such details, plans, specifications and general requirements hereto attached and made a part of this contract.

FOR THE PERFORMANCE of such work, the City agrees to pay the Contractor as follows per Attachment "A1".

Miller & Miller, Inc.

BY:

Tommy Battle, Mayor

ATTEST: Mary Hollingsworth

Charles E. Hagood
City Clerk Treasurer

Mark Russell
City Council President

DATE: November 15, 2012

HOLMES AVENUE & WASHINGTON STREET STREETSCAPE IMPROVEMENTS
PROJECT NO. 65-12-SP31

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ATTACHMENT "A1"

6/18/2012

Holmes Avenue and Washington Street Streetscape
COH Project # 65-12-SP31

UNIT BID SHEET

ITEM NO.	DESCRIPTION	BID QTY	BID UNIT	BID UNIT PRICE	BID AMOUNT
1	HOLMES AVENUE AND WASHINGTON STREET STREETSCAPE IMPROVEMENTS, TO INCLUDE DEMOLITION, CLEARING AND GRUBBING, SITE WORK, CONCRETE WALKS, FENCE, IRRIGATION SYSTEM, LIGHTING, ALL BELOW GROUND VEHICULAR AND PEDESTRIAN SIGNAL WORK, INCLUDING JUNCTION BOXES (EXCLUDING POLES, FOOTINGS, SIGNS, SIGNALS AND WIRING) AS SHOWN ON SHEETS T1, T2, T3 AND T5, TEMPORARY VEHICULAR AND PEDESTRIAN TRAFFIC CONTROL, AND LANDSCAPING ALL AS DETAILED AND SHOWN ON PLANS, SPECIFICATIONS AND SPECIAL PROVISIONS, COMPLETE IN PLACE. INCLUDES ALL NECESSARY EQUIPMENT, LABOR AND MATERIALS.	1	LS	[redacted]	2,126,125 ~~$2,538,813.00~~
2	PLANE (MILL) 0-2" THICK OF EXISTING PAVING AS SHOWN ON SHEET C11B.	2,000	SY	[redacted]	$12,500.00
3	8" THICK DENSE GRADED AGGREGATE BASE COURSE, ALDOT 825 TYPE B. (TWO (2) 4" COMPACTED LIFTS)	100	CY	[redacted]	$7,000.00
4	3" THICK (APPROXIMATELY 350 LBS/SY) ALDOT 424 B-651, SUPERPAVE BITUMINOUS CONCRETE UPPER BINDER LAYER 1" MAXIMUM AGGREGATE SIZE MIX (LIMESTONE MIX), ESAL RANGE C/D. MAY USE UP TO 15% RAP. TACK COAT IS TO BE APPLIED AT .07 LBS/SY. (NO RAP ON MILLED SURFACE BEFORE TACKING)	525	TON	[redacted]	$39,375.00

ATTACHMENT "A1"

6/18/2012

Holmes Avenue and Washington Street Streetscape
COH Project # 65-12-SP31

UNIT BID SHEET

5	1 1/2" THICK (APPROXIMATELY 165 LBS/SY) ALDOT 424 A-356, SUPERPAVE BITUMINOUS CONCRETE WEARING SURFACE LAYER, 3/8" MAXIMUM AGGREGATE SIZE MIX (LIMESTONE MIX), ESAL RANGE C/D. MAY USE UP TO 15% RAP. TACK COAT IS TO BE APPLIED AT .07 LBS/SY. (NO RAP ON MILLED SURFACE BEFORE TACKING)	250	TON	[redacted]	$25,750.00
6	TRAFFIC POLE FOUNDATION F-1, PER SPECIAL PROVISION 8000, FIGURE 1, TO INCLUDE EXCAVATION, CONCRETE AND STEEL, WHERE DIRECTED BY ENGINEER.	~~3~~ 0 no	EA	[redacted] 0 no	~~$2,550.00~~ 0 no
7	TRAFFIC POLE FOUNDATION F-2, PER SPECIAL PROVISION 8000, FIGURE 1, TO INCLUDE EXCAVATION, CONCRETE AND STEEL, WHERE DIRECTED BY ENGINEER.	~~5~~ 0 no	EA	[redacted] 0 no	$4,625.00 0 no
8	TRAFFIC POLE FOUNDATION F-3, PER SPECIAL PROVISION 8000, FIGURE 1, TO INCLUDE EXCAVATION, CONCRETE AND STEEL, WHERE DIRECTED BY ENGINEER.	~~3~~ 0 no	EA	[redacted] 0 no	~~$2,925.00~~ 0 no
9	ADDITIONAL TRAFFIC POLE FOUNDATION CONCRETE TO INCLUDE EXCAVATION AND PLACEMENT, COMPLETE, WHERE DIRECTED BY ENGINEER.	~~10~~ 0 no	CY	[redacted]	~~$3,250.00~~ 0 no
10	ADDITIONAL TRAFFIC POLE FOUNDATION, REINFORCING STEEL, PER SPECIAL PROVISION 8000 FIGURE 1, POLE FOUNDATION DETAILS, TO INCLUDE PLACEMENT IN EXCAVATION, WHERE DIRECTED BY ENGINEER.	~~1,080~~ 0 no	LB	[redacted] 0 no	~~$980.00~~ 0 no
11	#78 STONE LEVELING COURSE BENEATH SIDEWALKS, IN PLACE, COMPLETE.	240	CY	[redacted]	$10,080.00
12	INSTALL, COMPLETE IN PLACE (LABOR ONLY) NEW WATER METER BOXES.	17	EA	[redacted]	$2,125.00
13	INSTALL, COMPLETE IN PLACE (LABOR ONLY) NEW GAS VALVE BOXES.	8	EA	[redacted]	$1,000.00

	ATTACHMENT "A1"				6/18/2012
	Holmes Avenue and Washington Street Streetscape				
	COH Project # 65-12-SP31				
	UNIT BID SHEET				
14	INSTALL, COMPLETE IN PLACE (LABOR ONLY) NEW SANITARY SERVICE CLEAN-OUT BOX, TO INCLUDE CUTTING OFF PIPE STUB-UP.	8	EA	[redacted]	$1,000.00
15	REPAIR / REPLACE 1" WATER SERVICE LINE TO INCLUDE EXCAVATION AND BACKFILL, COMPLETE.	200	LF	[redacted]	$22,000.00
16	ADDITIONAL UNCLASSIFIED EXCAVATION OF UNDERCUT, WHERE DIRECTED BY ENGINEER TO INCLUDE HAUL OFF AND DISPOSAL	~~400~~ Ø not	CY	[redacted]	~~$4,000.00~~ Ø not
17	ADDITIONAL DENSE GRADED BASE INSTALLED WHERE DIRECTED BY ENGINEER, IN 8" THICK COMPACTED LIFTS, COMPLETE IN PLACE	~~400~~ Ø not	CY	[redacted]	~~$27,600.00~~ Ø not
18	ADDITIONAL 24" WIDE CONCRETE CURB AND GUTTER INSTALLED WHERE DIRECTED BY ENGINEER TO INCLUDE EXCAVATION AND BACKFILL	~~100~~ Ø not	LF	[redacted]	~~$1,700.00~~ Ø not
19	ADDITIONAL REMOVAL OF EXISTING CURB AND GUTTER WHERE DIRECTED BY ENGINEER TO INCLUDE SAW CUTS, HAUL OFF AND DISPOSAL	~~100~~ Ø not	LF	[redacted]	~~$500.00~~ Ø not

	ATTACHMENT "A1"				6/18/2012
	Holmes Avenue and Washington Street Streetscape				
	COH Project # 65-12-SP31				
	UNIT BID SHEET				
20	ADDITIONAL 4" THICK, CONCRETE SIDEWALK, INSTALLED WHERE DIRECTED BY ENGINEER TO INCLUDE FORMING, TOOLED PATTERN, AND FINISHING, COMPLETE IN PLACE	~~200~~ Ø MS	SY	[illegible]	~~$7,000.00~~ Ø MS
21	ADDITIONAL REMOVAL OF EXISTING SIDEWALK WHERE DIRECTED BY ENGINEER TO INCLUDE ALL TRAFFIC CONTROL, SAWCUTS, HAUL OFF AND DISPOSAL	~~200~~ Ø MS	SY	[illegible]	~~$1,000.00~~ Ø MS
22	ADDITIONAL BRICK DOUBLE HEADER COURSE IN CONCRETE SIDEWALK WHERE DIRECTED BY ENGINEER TO INCLUDE FORMING, BRICK, MORTAR, AND CONCRETE TURNDOWN	~~400~~ Ø MS	LF	[illegible]	~~$10,000.00~~ Ø MS
23	ADDITIONAL SINGLE BRICK HEADER COURSE IN CONCRETE SIDEWALK WHERE DIRECTED BY ENGINEER TO INCLUDE FORMING, BRICK, MORTAR, AND CONCRETE TURNDOWN	~~100~~ Ø MS	LF	[illegible]	~~$1,500.00~~ Ø MS
24	ADDITIONAL SELECT, OFF-SITE BORROW TO BE INSTALLED WHERE DIRECTED BY ENGINEER IN UNDERCUT AREAS	~~400~~ Ø MS	CY	$10.00 Ø MS	~~$4,000.00~~ Ø MS
25	ADDITIONAL 2" PVC ELECTRICAL CONDUIT INSTALLED IN ROAD CASING PIPE, WHERE DIRECTED BY ENGINEER	~~140~~ Ø MS	LF	[illegible] Ø MS	~~$6,440.00~~ Ø MS
26	ADDITIONAL 6" DIAMETER SDR 11, HDPE CASING PIPE, INSTALLED BY DIRECTIONAL BORE, WHERE DIRECTED BY ENGINEER.	~~70~~ Ø MS	LF	[illegible] Ø MS	~~$4,130.00~~ Ø MS
27	ADDITIONAL, ELECTRICAL JUNCTION BOX, PER DETAILS, SHEET T5, IN PLACE, WHERE DIRECTED BY ENGINEER.	~~4~~ Ø MS	EA	[illegible] Ø MS	~~$1,900.00~~ Ø MS

	ATTACHMENT "A1"				6/18/2012
	Holmes Avenue and Washington Street Streetscape COH Project # 65-12-SP31				
	UNIT BID SHEET				
28	ADDITIONAL, 1" CLASS 200 PVC IRRIGATION PIPE, IN PLACE, TO INCLUDE EXCAVATION, GLUE AND BACKFILL, WHERE DIRECTED BY ENGINEER.	~~100~~ Ø MO	LF	[redacted]	~~$500.00~~ MO
29	ADDITIONAL IRRIGATION 2 WIRE, BY-WIRE, IN PLACE, TO INCLUDE 1-1/2" CONDUIT, EXCAVATION AND BACKFILL, WHERE DIRECTED BY ENGINEER.	~~200~~ Ø MO	LF	[redacted]	~~$3,000.00~~ MO
30	ADDITIONAL IRRIGATION, DIRECTIONAL BORE WITH 6" HDPE CASING PIPE, WHERE DIRECTED BY ENGINEER	~~75~~ Ø MO	LF	[redacted]	~~$4,575.00~~ MO
31	ADDITIONAL OFF-SITE TOPSOIL BORROW, WHERE DIRECTED BY ENGINEER TO BE PLACED, LIGHTLY COMPACTED AND FINISH GRADED.	50	CY	[redacted]	$1,000.00
32	CONCRETE BACKFILL PER KEYNOTE 38, SHEET C8	40	CY	[redacted]	$5,000.00
33	6" THICK (TWO (2) SEPARATE COMPACTED LIFTS) ALDOT 424C, MAX 1" AGGREGATE SIZE. TO BE USED FOR UPPER 6" OF ALL TRENCH CUTS IN ROAD, TO INCLUDE UTILITIY TRENCHES.	~~150~~ Ø MO	TONS	[redacted]	~~$20,550.00~~ MO
34	#78 STONE, TO BE PLACED IN ROAD TRENCH CUTS UP TO PAVEMENT SUBGRADE.	~~200~~ Ø MO	CY	[redacted]	~~$6,600.00~~ MO
	TOTAL BASE BID				~~$2,785,000.00~~ 2,258,555.00
	Option No. 1				

	ATTACHMENT "A1"				6/18/2012
	Holmes Avenue and Washington Street Streetscape **COH Project # 65-12-SP31**				
	UNIT BID SHEET				
1-1	HOLMES AVENUE AND WASHINGTON STREET STREETSCAPE IMPROVEMENTS, TO INCLUDE DEMOLITION, CLEARING AND GRUBBING, SITE WORK, CONCRETE WALKS, IRRIGATION SYSTEM, LIGHTING, ALL ABOVE AND BELOW GROUND SIGNAL WORK AS SHOWN ON SHEET T4, TEMPORARY VEHICULAR AND PEDESTRIAN TRAFFIC CONTROL, AND LANDSCAPING ALL AS DETAILED AND SHOWN ON PLANS, SPECIFICATIONS AND SPECIAL PROVISIONS, COMPLETE IN PLACE. INCLUDES ALL NECESSARY EQUIPMENT, LABOR AND MATERIALS.	1	LS	[redacted] MS	1,019,495.00 MS ✓ ~~$1,220,000.00~~
1-2	PLANE (MILL) 0-2" THICK OF EXISTING PAVING AS SHOWN ON SHEET C11B.	3,000	SY	[redacted]	$18,750.00 ✓
1-3	8" THICK DENSE GRADED AGGREGATE BASE COURSE, ALDOT 825 TYPE B. (TWO (2) 4" COMPACTED LIFTS)	150	CY	[redacted]	$10,350.00 ✓
1-4	3" THICK (APPROXIMATELY 350 LBS/SY) ALDOT 424 B-651, SUPERPAVE BITUMINOUS CONCRETE UPPER BINDER LAYER 1" MAXIMUM AGGREGATE SIZE MIX (LIMESTONE MIX), ESAL RANGE C/D. MAY USE UP TO 15% RAP. TACK COAT IS TO BE APPLIED AT .07 LBS/SY. (NO RAP ON MILLED SURFACE BEFORE TACKING)	250	TON	[redacted]	$18,750.00 ✓
1-5	1 1/2" THICK (APPROXIMATELY 165 LBS/SY) ALDOT 424 A-356, SUPERPAVE BITUMINOUS CONCRETE WEARING SURFACE LAYER, 3/8" MAXIMUM AGGREGATE SIZE MIX (LIMESTONE MIX), ESAL RANGE C/D. MAY USE UP TO 15% RAP. TACK COAT IS TO BE APPLIED AT .07 LBS/SY. (NO RAP ON MILLED SURFACE BEFORE TACKING)	300	TON	[redacted]	$30,900.00 ✓
1-6	INSTALL, COMPLETE IN PLACE (LABOR ONLY) NEW WATER METER BOXES.	1	EA	[redacted]	$125.00 ✓
1-7	INSTALL, COMPLETE IN PLACE (LABOR ONLY) NEW GAS VALVE BOXES.	2	EA	[redacted]	$250.00 ✓

	ATTACHMENT "A1"				6/18/2012
	Holmes Avenue and Washington Street Streetscape COH Project # 65-12-SP31				
	UNIT BID SHEET				
1-8	INSTALL, COMPLETE IN PLACE (LABOR ONLY) NEW SANITARY SERVICE CLEAN-OUT BOX, TO INCLUDE CUTTING OFF PIPE STUB-UP.	5	EA	[redacted]	$625.00
	TOTAL Option No. 1				~~$1,300,000.00~~ 1,099,245.00 MS
	Option No. 2				
2-1	TRAFFIC SIGNAL POLES, TRAFFIC SIGNALS AND SIGNS, INCLUDING WIRING, AS SHOWN ON SHEETS T1, T2, T3, AND T5, IN PLACE COMPLETE.	1	LS	[redacted]	$123,437.00
	TOTAL Option No. 2				$123,437.00
	Option No. 3				
3-1	400 WATT, PSMH HOLOPHANE, WASHINGTON FIXTURE TO BE MOUNTED ON TRAFFIC POLE, TO INCLUDE WIRING POWER TO FIXTURE.	3	EA	[redacted]	$8,405.00
	TOTAL Option No. 3				$8,405.00
	Option No. 4				
4-1	PROVIDE AND INSTALL LED LIGHTING PER LUMINAIRE SCHEDULE NOTE #12, SHEET E3	1	LS	[redacted]	$19,104.00
	TOTAL Option No. 4				$19,104.00

	ATTACHMENT "A1"				6/18/2012
	Holmes Avenue and Washington Street Streetscape COH Project # 65-12-SP31				
	UNIT BID SHEET				
	Option No. 5				
5-1	BASE BID AREA: RAINBIRD 2-WIRE IRRIGATION SYSTEM PER GENERAL IRRIGATION NOTE # 18, SHEET C25. WITH ESP-LXD CONTROLLER, PBC-LXD BACKUP CARTRIDGE. THIS OPTION INCLUDES SUBMITTAL OF MANUFACTURER PRODUCT DATA AND STANDARD INSTALLATION DETAILS OF ALL PRODUCTS, INCLUDING GROUNDING AND WIRE SPLICES.	1	LS	[redacted]	$20,405.00
	TOTAL Option No. 5				$20,405.00
	Option No. 6				
6-1	OPTION NO. 1 AREA: RAINBIRD 2-WIRE IRRIGATION SYSTEM PER GENERAL IRRIGATION NOTE #18, SHEET C25. THIS OPTION INCLUDES SUBMITTAL OF MANUFACTURER PRODUCT DATA AND STANDARD INSTALLATION DETAILS OF ALL PRODUCTS, INCLUDING GROUNDING AND WIRE SPLICES.	1	LS	[redacted]	$23,002.00
	TOTAL Option No. 6				$23,002.00
	Option No. 7				
7-1	BASE BID AREA: BASELINE 2-WIRE IRRIGATION SYSTEM PER GENERAL IRRIGATION NOTE #18, SHEET C25 WITH BASESTATION 3200 CONTROLLER, BL-3200-X-ETHERNET. THIS OPTION INCLUDES SUBMITTAL OF MANUFACTURER PRODUCT DATA AND STANDARD INSTALLATION DETAILS OF ALL PRODUCTS, INCLUDING GROUNDING AND WIRE SPLICES.	1	LS	[redacted]	$28,408.00
	TOTAL Option No. 7				$28,408.00

	ATTACHMENT "A1"				6/18/2012
	Holmes Avenue and Washington Street Streetscape COH Project # 65-12-SP31				
	UNIT BID SHEET				
	Option No. 8				
8-1	OPTION NO. 1 AREA: BASELINE 2-WIRE IRRIGATION SYSTEM PER GENERAL IRRIGATION NOTE #18, SHEET C25. THIS OPTION INCLUDES SUBMITTAL OF MANUFACTURER PRODUCT DATA AND STANDARD INSTALLATION DETAILS OF ALL PRODUCTS, INCLUDING GROUNDING AND WIRE SPLICES.	1	LS	[redacted]	$30,210.00 ✓
	TOTAL Option No. 8				$30,210.00 ✓
	ALL ITEMS SHALL BE CONSIDERED IN-PLACE. PRICES SHALL INCLUDE ALL LABOR, EQUIPMENT,MATERIALS, AND REMOVALS AS REQUIRED FOR CONSTRUCTION OF THE REQUIRED WORK.				
	COMPANY Miller & Miller Inc SIGNATURE [illegible] DATE 6/18/12				
	The Apparent Low Bidder will be required to submit, within two (2) business days after the bid opening, a detailed "balanced" breakdown of Bid Items #1, 1-1, and 2-1 indicating quantities and unit prices. Such unit prices will be the basis for additive and deductive change orders.				

7/25/12

Washington Streetscape Improvements

Cost Reduction Items (Base Bid)

Item	Description	Changes		Amount of Savings
VE1(C)	Street Intersection Paver Underdrain	3" Pipe under drain under Brick intersection to remain, Brick pavers to remain.	$	-
VE2(b)	Traffic Control	City to Provide construciton signs for M&M to install and maintain	$	4,000.00
VE3	Temp Lights	Mount lights on side of Parking Garage and top of Belk Hudson Building. Power to be supplied by others.	$	10,000.00
VE4	Flowable Fill	Use flowable fill in Street cut areas in lieu of asphalt patches.	$	25,850.00
VE5	Nyloplast Junc Boxes	Reduction of the number of Nyoplast boxes	$	19,203.00
VE6	Topsoil	Miller to find another topsoil source	$	2,000.00
VE7(a)	Demo adjcent to building	Eliminate the amount of flush cuts adjacent to buildings edges. Retain existing concrete bands, Belk to demo around around each column base.	$	97,250.00
VE8	Fire Hydrant	Omit Fire Hydrant relocation requirement. Huntsville Utilities to relocate.	$	3,500.00
VE9(b)	Dump Site and City Hauling	City to Provide all trucking for debris removals. City to be responsible for proper disposal	$	45,085.00
VE10	Unit Price Items	Omit unit price items termed additional in base contract. We do not forsee that these items will be required. However, we recommend keeping the water line item	$	86,695.00
VE11	Ped control	Reuse of ped control devices from Courthouse square. (i.e. used rails fencing etc.)	$	7,500.00

VE12	Prime and Subcontractor Reductions	Price reductions by Miller & Miller and various subcontractors provide the contract time is extended to an appropriate amount to limit the number of overtime and weekend work.	$	119,000.00
VE13	CU Soil / Aeration Pipe Reductions / Topsoil Changes / Box Changes	Reductions to the volume of CU soil and the associated length of aeration pipe reductions	$	96,000.00
VE14(b)	Irrigation Changes	Add Sleeves / Changes to irrigaiton plans. No road bores and controls to remain as bid	$	(10,250.00)
VE15	Ped Control / building protection / Traffic Control	Easier pedestrian control due to 18" inch bands and CU soil excavation	$	8,100.00
VE16	Flashing on Bldgs	No Flashing on bldgs required	$	4,500.00
VE17©	175 watt MH Light	Mount 175 Watt MH Light at the NE Corner of Randolph and Washington. Fixture to be mounted on the proposed pedestrian light fixure. Price includes conduit run and wiring.	$	(1,200.00)
VE18	Traffic Pole Foundations	Unit Price Items 6,7,and 8 of the Base Bid to be performed by others.	$	10,100.00
		Total Value of Savings	$	527,333.00
		Original Base Bid	$	2,785,888.00
		Revised and Proposed Base Bid	$	2,258,555.00

Contract time to be revised 330 days for base bid.

7/25/12

Washington Streetscape Improvements

Cost Reduction Items (Alternate Bid)

Item	Description	Changes		Amount of Savings
AVE1(b)	Hauling	City to provide all hauling and removal of debris	$	53,500.00
AVE2	Tree Demo	M&M to perform all tree removal	$	1,000.00
AVE3	Traffic Control	City to provide traffic control signs. M&M to install and maintain.	$	4,510.00
AVE4	H/C Ramps	Better pricing of H/C ADA tactile pavers	$	1,000.00
AVE5	C&G	Curb and Gutter (Slip form vs. Hand Form portions)	$	1,150.00
AVE6	D/W Concrete	D/W Concrete Price reduction	$	1,025.00
AVE7	Topsoil	M&M to get topsoil from other source	$	2,000.00
AVE8	Prime and Subcontractor Reductions	Price reductions by Miller & Miller and various subcontractors provide the contract time is extended to an appropriate amount to limit the number of overtime and weekend work.	$	60,500.00
AVE9(b)	Reductions to CU/ Soil / Topsoil / aeration lines	Reductions to the volume of CU soil and the associated length of aeration pipe reductions	$	21,250.00
AVE10	Irrigation Changes	Add Sleeves / Changes to irrigation plans	$	(6,100.00)

AVE11	Demo of Sidewalk against building / 18" bands / assoicated non-removals	Elimination of 18" bands and associated non-removal adjacent to buildings	$	22,050.00
AVE12(b)	Tree Reduction	Reduction of 10 Elm trees North of Monroe Ave	$	22,470.00
AVE13(b)	Reduction of Brick	Eliminate single brick header course on Sidewalks North of Monroe	$	25,400.00

Total Value of Savings	$	209,755.00
Original Base Bid	$	1,309,000.00
Revised and Proposed Base Bid	$	1,099,245.00

Contract time for Alternate shall be revised to 180 Days

REVISED

ATTACHMENT "B"
PROPOSAL

TO: THE CITY OF HUNTSVILLE

Public Services Building
320 Fountain Circle
Huntsville, Alabama

PROPOSAL OF Miller & Miller, Inc.
(NAME)
2106 Miller Ferry Way, Huntsville, AL 35801
(ADDRESS)

TO MAKE CERTAIN IMPROVEMENTS ENTITLED:

HOLMES AVENUE & WASHINGTON STREET STREETSCAPE IMPROVEMENTS
PROJECT NO. 65-12-SP31

FOR THE CITY OF HUNTSVILLE, ALABAMA.

GENTLEMEN:
The undersigned bidder has carefully examined the drawings or plans, bid documents, the specifications, the general requirements, the supplement to general requirements, the general terms and conditions, this proposal, the agreement, together with any addenda thereto, and agrees to furnish and deliver all the materials, and to do and perform all the work and labor required to be furnished and delivered, done and performed in and about the improvements as described above and in accordance with certain specifications prepared and approved by the OWNER (City of Huntsville, Alabama). It is ANDATORY that any and all addenda be acknowledged by the undersigned bidder, either on page 2 of the Proposal, Attachment "B" or on the outside of the envelope, otherwise, bid shall be rejected.

The undersigned bidder understands that when unit prices are called for, the quantities shown herein are approximate only and are subject to increase or decrease, and offers to do the work whether the quantities are increased, or decreased, at the unit prices stated in the following schedule. The undersigned bidder also understands that when lump sum bids are called for, he will be required to furnish all equipment, labor, materials and other items or cost to construct a complete facility. The undersigned bidder further understands that any deletions or additions designated on the outside of the bid envelope, must indicate the particular bid item relative to the deletion or addition, even if the deletion or addition references to deduct or add to the Total Base Bid.

Contractors are authorized to download quantities, Attachment "A", or quantity revisions from COH Engineering website and paste to 3-½" floppy disk or CD of their choice; one or the other must be submitted with the original bid packet. In addition, two hard copies must be signed and submitted with original bid packet.

Certificates of insurance are required naming the City as the Certificate Holder. Also, the name of the project and project number should be included on the certificate. The Certificates should reflect the insurance coverage required herein. In addition, a copy of the policy may be requested upon award. The Certificates are to be signed by a person authorized by the insurer to bind coverage on its behalf and must indicate coverage will not be canceled or non-renewed except after thirty (30) days prior written notice to the City at the following address: City of Huntsville, P.O. Box 308, Huntsville, Alabama 35804 ATTN: Penny Kelly.

The undersigned bidder understands that the Contract Time for completion of all work is 180 calendar days; however, if Option #1 is awarded, an additional 120 calendar days will be added making the total 300 calendar days. The Base Bid sub-areas BB 1 and BB 2, as shown on Sheet PP1, and described in Special Provision 2000, sub-section 1.2(B), have a Substantial Completion delivery date of October 5, 2012.

HOLMES AVENUE & WASHINGTON STREET STREETSCAPE IMPROVEMENTS
PROJECT NO. 65-12-SP31

THE UNDERSIGNED BIDDER ALSO AGREES AS FOLLOWS:
All bonds must be approved by the Mayor and the Clerk-Treasurer of the City of Huntsville. Within fifteen (15) days after the date of acceptance of this proposal by City Council action, the contractor shall execute the contract and furnish to the OWNER a payment (labor and material) bond and a performance bond, each in the amount of 100% of the contract amount. No contract extension will be allowed for delays in the issuance of the notice to proceed that are a result of the contractor failing to submit the required items within the 15 days.

It is further understood and agreed that the Contractor shall commence work to be performed under this contract within fifteen (15) days from the date of this contract, unless otherwise instructed in writing by the OWNER. All work shall be carried on continuously to completion.

Accompanying this proposal is a certified check or bid bond in the amount of not less than five percent (5%) of the total amount shown on the schedule of prices not exceeding $10,000.00 payable to the City of Huntsville, Alabama, which is to be forfeited, as liquidated damages, if, in the event that his proposal is accepted, the undersigned shall fail to execute the contract and furnish a satisfactory contract bond under the conditions and within the time specified in this proposal; otherwise, said certified check or bid bond is to be returned to the undersigned.

DATED: June 18, **20** 12.

(IF AN INDIVIDUAL, PARTNERSHIP, OR NON-INCORPORATED ORGANIZATION)

SIGNATURE OF BIDDER _____

BY _____

ADDRESS OF BIDDER _____

NAMES AND ADDRESSES OF MEMBERS OF THE FIRM:

_____ _____

_____ _____

OUR CONTRACTOR'S STATE LICENSE NO. IS 4166

(IF A CORPORATION)
SIGNATURE OF BIDDER Miller & Miller, Inc.

BY MOS Mark O. Seeley, Secretary

BUSINESS ADDRESS 2106 Miller Ferry Way, Huntsville, AL 35801

INCORPORATED UNDER THE LAWS OF THE STATE OF Alabama

NAMES **PRESIDENT** C. E. Miller

OF **SECRETARY** Mark O. Seeley

OFFICERS **TREASURER** Mark E. Miller

MANDATORY ACKNOWLEDGEMENT OF ADDENDA: **Addenda will only be faxed to those bidders who attend and have signed in at the mandatory pre-bid meeting. It is the responsibility of all bidders to refer to the website for any updates.**

1 2 _____ _____ _____ _____

REVISED

ATTACHMENT "C"

HOLMES AVENUE & WASHINGTON STREET STREETSCAPE IMPROVEMENTS
PROJECT NO. 65-12-SP31

SUBCONTRACTOR'S LISTING

All subcontractors must be approved in writing by Owner. The Contractor will be notified in the Notice to Proceed of acceptance of subcontractors. If subcontractors are not approved, Contractor will be notified prior to approval of contract by City Council. Any additional subcontractors needed during the contract period shall be approved by written letter from the Owner. Contractor shall **Immediately** notify Mary Hollingsworth via email at mary.hollingsworth@huntsvilleal.gov of any changes to subcontractor list for the duration of the project.

TASKS TO BE PERFORMED	SUBCONTRACTOR NAME	LICENSE NO.	ADDRESS	ITEM #'S OF WORK TO BE PERFORMED
Surveying/Layout				
Permitting				
Clearing & Grubbing				
Erosion Control				
Traffic Control				
Excavation				
Concrete				
Storm Drainage				
Sanitary Sewer	Weaver Environmental Svcs	16700	7142 Wall Triana Hwy 35757	14
Shoring/Monitoring				
Retaining Walls				
Bridges				
Railroads				
Traffic (signals, loops)	Tecorp Inc		3214 7th Ave 35805	6-10
Street Lights				
Electrical	Stewart Electric Inc	12256	1003A Cleaner Way 35805	25-27
Water	Weaver Environmental Svcs	16700	7142 Wall Triana Hwy 35757	15
Asphalt	Reed Contracting Svcs Inc	20545	2512 Triana Blvd 35805	2-5, 17
Landscaping (Trees, grassing)	Grounds Control of Hsv	S-27130	113 Spacegate Dr 35806	1 (Partial)
Irrigation	Water Water Everywhere	S-23259	214 Lenwood Rd Decatur 35603	28-30
Striping	J C Cheek Contractor Inc	11303	PO Drawer 1138 39090	1 (Partial)
Sewer Testing				
Guardrails				
Handrails				
Painting				
Special (fencing, benches, dewatering etc.)				
Mechanical				
SCADA				
CU Structural Soil Mix				
Concrete Pavers	Bulldog Construction		813 Cornelia Dr 35802	1 (Partial)

ATTACHMENT "D"

HOLMES AVENUE & WASHINGTON STREET STREETSCAPE IMPROVEMENTS
PROJECT NO. 65-12-SP31

Contractor shall provide at least five (5) references including NAME OF PROJECT, Owner Name, address, phone number and contact name that demonstrates contractor's ability on similar projects.

1. Courthouse Square Improvements, Project #65-07-SP03, City of Huntsville, PO Box 308, Huntsville, AL 35804, 256-427-5300, Shane Davis

2. Big Spring Park Canal Extension, EDA Project #04-01-05418, City of Huntsville, PO Box 308, Huntsville, AL 35804, 256-427-5300, Shane Davis

3. Rotary Plaza at Big Spring Park, City of Huntsville, PO Box 308, Huntsville, AL 35804, 256-427-5281, Chris O'Neil

4. UAH Applied Sciences Building, ABC Project #2004390, UAHuntsville, 301 Sparkman Dr, Huntsville, AL 35899, 256-824-2542, Mike Finnegan

5. UAH Residence Hall 2010 & Dining Hall, ABC Project #2009127, UAHuntsville, 301 Sparkman Dr, Huntsville, AL 35899, 256-824-2542, Mike Finnegan

ATTACHMENT "E"

MANDATORY Pre-bid meeting to be held on Tuesday, June 12, 2012 at 9:30 am, in the 1st Floor Conference Room at 320 Fountain Circle, Huntsville, AL 35801.

NOTICE TO CONTRACTORS

WANTED: Sealed bids in duplicate for the construction of: Holmes Avenue and Washington Street Streetscape Improvements, more particularly known as Project No. 65-12-SP31

Description of Project: Renovation of Washington Street from Courthouse Square to Monroe Street and Holmes Avenue (south side) between Washington and Green Streets

The attention of all bidders is called to Code of Alabama §§ 34-8-1 and 34-8-2 (1975) and 34-8-1, 34-8-2, 34-8-4, 34-8-6, 34-8-7, 34-8-8 and 34-8-9(amended 1996) setting forth the definition of general contractor and the licensing procedures and requirements for state licensing. A copy of the above Codes may be obtained from the OWNER (City of Huntsville). No one is entitled to bid and no contract may be awarded to anyone who does not possess a valid general contractor's license and the required classification for the municipal type work to be performed. The general contractor's license and classification must appear on the outside of the bid envelope along with the general contractors name and address, project name and number and date and time of bid opening. Section 39-3-5 Code of Alabama has been amended as follows:

"In awarding the Contract, preference will be given to Alabama resident contractors and a nonresident bidder domiciled in a state having laws granting preference to local contractors shall be awarded the Contract only on the same basis as the nonresident bidder's state awards contracts to Alabama contractors bidding under similar circumstances."

This project, Holmes Avenue and Washington Street Streetscape Improvements, more particularly known as Project No. 65-12-SP31, requires the contractor to possess a State of Alabama Classification of (MU) Municipal & Utility or MU-(S) Specialty Construction.

After proposals are opened and read, they will be compared on the basis of the summation of the products or approximate quantities shown in Attachment "A", multiplied by the unit bid prices. In the event of a discrepancy between unit bid prices and extensions, the unit bid price shall govern. A proposal will not be considered unless signed by the bidder or his authorized agent and accompanied by cashier's check or properly signed bid bond, as required by law.

In determining the successful bidder, the Owner will consider in addition to the bid prices, such responsibility factors as characteristics and responsibility, skill, experience, record of integrity in business, and of performance offered and past record of performance on Owner contracts on other similar projects. Any other factors not specifically mentioned or provided for herein, in addition to that of the bid price which would affect the final cost of the Owner, will be taken into consideration in making award of contract. The right is reserved to reject any bid where investigation of the business and technical organization of the bidder available for the contemplated work, including financial resources, equipment, and experience on similar projects does not satisfy the Owner that such bidder is qualified to perform the work. The City Council of the City of Huntsville reserves the right to reject any and all bids and to waive informalities.

Separate sealed bids for the construction of this project will be received at the City of Huntsville Public Services Building, 320 Fountain Circle, in the 1st Floor in the Conference Room, on the 18th day of June, 2012, until 9:00 am. Each bid shall be accompanied by an original signed, dated and sealed Bid Bond in the amount of not less than five percent (5%) of the total shown on the schedule of prices, but not exceeding $10,000.00. Quantities are known as Attachment "A". No bidder may withdraw his bid within ninety (90) days after the actual date of opening.

These Addenda, Special Provisions, Plans, the Supplement to General Requirements for Construction of Public Improvements City of Huntsville Specifications, Standard Specifications for Construction of Public Improvements Contract Projects and all supplementary documents are essential parts of the contract, and a requirement occurring in one is as binding as though occurring in all. They are intended to be complimentary and to describe and provide for a complete work. In case of discrepancy, calculated dimensions, unless obviously incorrect, shall govern over scaled dimensions. Plans shall govern over Supplemental Specifications, Supplemental Specifications shall govern over the Standard Specifications for Construction of Public Improvements Contract Projects. Special Provisions shall govern over Standard Specifications for Construction of Public Improvements Contract Projects, Supplemental Specifications. Standard Specifications for Construction of Public Improvements Contract Projects and Engineering Standards are available at no charge by downloading from the City Engineering website: www.huntsvilleal.gov/engineering Plans and proposals can be downloaded from our website at no cost: www. huntsvilleal.gov/engineering/bidlist.html Contractors will be responsible for costs of duplicating their own plans and can choose photocopying facility of their choice. Additionally, Contractors are responsible for checking website for any revisions/updates. Contractor is required to submit pricing provided by the COH (Attachment "A") on either a 3-½" floppy disk or CD in the Excel format and made available for download from the Engineering website. The bid disk or the CD must be in working condition and included with original bid packet and reflect the correct revision, along with two signed hard copies. Failure to do so shall be cause for rejection of bid. If a price discrepancy is found on bid disk or CD, printed hard copy prices submitted with original bid documents, with Contractor signature, will prevail.

E-VERIFY – NOTICE

The Beason-Hammon Alabama Taxpayer and Citizen Protection Act, Act No. 2011-535, *Code of Alabama (1975) § 31-13-1 through 31-13-30"* (also known as and hereinafter referred to as " the Alabama Immigration Act") is applicable to contracts with the City of Huntsville. As a condition for the award of a contract and as a term and condition of the contract with the City of Huntsville, in accordance with § 31-13-9 (a) of the Alabama Immigration Act, any business entity or employer that employs one or more employees shall not knowingly employ, hire for employment, or continue to employ an unauthorized alien and shall attest to such by sworn affidavit signed before a notary. Such business entity or employer shall provide a copy of such affidavit to the City of Huntsville as part of its bid or proposal for the contract along with a copy of the Memorandum of Understanding as documentation establishing that the business entity or employer is enrolled in the E-Verify program. The required affidavit forms for the contractor and for subcontractors are included in the project specifications.

During the performance of the contract, such business entity or employer shall participate in the E-Verify program and shall verify every employee that is required to be verified according to the applicable federal rules and regulations. The business entity or employer shall assure that these requirements are required of every subcontractor in accordance with §31-13-9(c) and shall maintain records that are available upon request by the City, state authorities or law enforcement to verify compliance with the requirements of the Alabama Immigration Act. Failure to comply with these requirements may result in breach of contract, termination of the contract or subcontract, and possibly suspension or revocation of business licenses and permits in accordance with §31-13-9 (e) (1) & (2) or in the case of a subcontractor, in accordance with §31-13- 9 (f) (1) & (2).

ALABAMA IMMIGRATION ACT (Beason-Hammon Alabama Taxpayer and Citizen Protection Act, Act No. 2011-535, Code of Alabama (1975) Compliance with the requirements of the (Beason-Hammon Alabama Taxpayer and Citizen Protection Act, Act No. 2011-535, Code of Alabama (1975) § 31-13-1 through 31-13-30), commonly referred to as the Alabama Immigration Law, is required for City of Huntsville, Alabama contracts as a condition of the contract performance. The Contractor shall submit in the bid package, with the requested information included on the form, the "City of Huntsville, Alabama Report of Ownership Form". The bidder selected for award of the contract may be required to complete additional forms relating to citizenship or alien status of the bidder and its employees, including e-verify information, prior to award of a contract.

ATTACHMENT "F"

SAMPLE

REQUEST FOR PAYMENT
CITY OF HUNTSVILLE ENGINEERING DIVISION

PROJECT NAME AND NUMBER:

ESTIMATE NUMBER: ONE (1) PERIOD FROM: 03/11/05 TO _____

CONTRACT DURATION 0 DAYS
START DATE: 03/11/05 END DATE: 3/11/05 TOTAL CONTRACT TIME (3) 0 DAYS

REFER TO COH SUPPLEMENT
TO GENERAL REQUIREMENTS
CHANGE ORDERS - CHANGE
TO CONTRACT TIME

TIME C.O. # 1 DAYS ADDED 0
TIME C.O. # 2 DAYS ADDED 0 CONTRACT DAYS REMAINING 0

TOTAL CONTRACT AMOUNT (1) AS AWARDED $ 200,000.00 CURRENT $ 200,000.00

C.O. # 1 $ -
C.O. # 2 $ -

TOTAL AMOUNT EARNED TO DATE LESS STORED MATERIALS (2): $ -

MATERIAL STORED (INVOICE ATTACHED) $ -

RETAINAGE (5%) OF 50% OF CONTRACT $ -

Amount is in accordance with ALDOT and COH specifications and is based on the contract amount before change orders.

AMOUNT EARNED AFTER RETAINAGE $ -

LIQUIDATED DAMAGES PER DAY 300

LIQUIDATED DAMAGES ASSESSED TO DATE: -

FOR QUESTIONS RELATED TO PAYMENT CALCULATIONS, LIQUIDATED DAMAGES, AND CHANGE ORDER REQUIREMENTS, PLEASE REFERENCE YOUR CONTRACT SUPPLEMENT TO GENERAL REQUIREMENTS SECTION,
4. CHANGE ORDERS.
12. PAYMENT.
13. LIQUIDATED DAMAGES

Damages, if applicable, will automatically be calculated by subtracting the contract end date from the invoice period end date and multiplying the days by the daily damages amount. Damages will automatically be deducted from amounts otherwise due.

TOTAL AMOUNT PREVIOUSLY APPROVED TO DATE: $ -

AMOUNT DUE THIS ESTIMATE WITHOUT LIQUIDATED DAMAGES $ -

A: % OF TIME ELAPSED: TIME ELASPED TO DATE _____ DAYS =
TOTAL CONTRACT TIME (3) 0 DAYS

B: PROJECT COMPLETION: TOTAL EARNED TO DATE (2) - = 0%
TOTAL CONTRACT AMOUNT 200,000.00

C: PROGRESS OF WORK: B - A: =

CONTRACTORS CERTIFICATE

I, _____ the duly qualified, acting and authorized agent for the contractor _____ on the above project, do hereby certify that we have performed all of the work set forth in strict accordance with the plans, specifications, laws and ordinances applicable thereto, and do further certify that all materials, labor, and equipment listed herein have been paid for in full as allowed on all prior estimates and if requested to do so, we will show evidence of payment for the same in writing before the final payment of this estimate. We further certify that the amount received hereunder is considered compensation and final payment in full for all work performed under the contract, including any amendments thereto and, upon payment of said sum, hereby release the Owner, its employees, agents, and representatives in accordance with said contract. We further certify that we fully guarantee all work performed hereunder for a period of twelve months from the date of payment of the final estimate (in accordance with the terms of our original contract and all amendments thereto), during which time all terms and conditions of the original contract document shall remain in full force and effect, including the insurance requirements, Hold Harmless Agreement, and Indemnifying Agreement as contained in said contract documents.

CERTIFIED FOR PAYMENT ON THIS THE _____ DAY OF _____

BY: _____ CONTRACTOR: _____

TITLE: _____

SIGNED: _____ WITNESS: _____
SIGNATURE

We have checked the quantities and extensions to this estimate, and to the best of our knowledge, the estimate is true and correct.

APPROVED FOR PAYMENT

BY: _____
CONSTRUCTION INSPECTOR

BY: _____
PROJECT ENGINEER

BY: _____
SHANE DAVIS, CITY ENGINEER
OR RON ADAMS, DEPUTY CITY ENGINEER
OR LYNN MAJORS, ADMINISTRATIVE OFFICER

IF FINAL ESTIMATE, DATE WORK WAS COMPLETED: _____

ATTACHMENT "G"

All vendors/contractors are required to submit a Federal Tax Form W-9 to City of Huntsville at the time a contract is awarded, unless vendor/contractor is already registered and doing business with the City. No payments of invoices can be made until this W-9 Tax Form has been properly submitted. A copy of the W-9 Tax Form can be obtained at the following website: www.irs.ustreas.gov/pub/irs-pdf/fw9.pdf

ATTACHMENT "H"

CITY OF HUNTSVILLE, ALABAMA REPORT OF OWNERSHIP FORM

A. **General Information.** Please provide the following information:

- Legal name(s) (include "doing business as", if applicable): Miller & Miller, Inc.
- City of Huntsville current taxpayer identification number (if available): 29355
  (Please note that if this number has been assigned by the City and if you are renewing your business license, the number should be listed on the renewal form.)

B. **Type of Ownership.** Please complete the un-shaded portions of the following chart by checking the appropriate box below and entering the appropriate Entity I.D. Number, if applicable (for an explanation of what an entity number is, please see paragraph C below):

Type of Ownership (*check appropriate box*)	Entity I. D. Number & Applicable State
☐ Individual or Sole Proprietorship	Not Applicable
☐ General Partnership	Not Applicable
☐ Limited Partnership (LP)	Number & State:
☐ Limited Liability Partnership (LLP)	Number & State:
☐ Limited Liability Company (LLC) (Single Member)	Number & State:
☐ LLC (Multi-Member)	Number & State:
☒ Corporation	Number & State: 012-680 Alabama
☐ Other, please explain:	Number & State (if a filing entity under state law):

C. **Entity I.D. Numbers.** If an Entity I.D. Number is required and if the business entity is registered in this state, the number is available through the website of Alabama's Secretary of State at: www.sos.state.al.us/, under "Government Records". If a foreign entity is not registered in this state please provide the Entity I.D. number (or other similar number by whatever named called) assigned by the state of formation along with the name of the state.

D. **Formation Documents.** Please note that, with regard to entities, the entity's formation documents, including articles or certificates of incorporation, organization, or other applicable formation documents, as recorded in the probate records of the applicable county and state of formation, ***are not required unless:*** (1) specifically requested by the City, or (2) an Entity I.D. Number is required and one has not been assigned or provided.

Please date and sign this form in the space provided below and either write legibly or type your name under your signature. If you are signing on behalf of an entity please insert your title as well.

Signature: _____ Title (if applicable): Secretary

Type or legibly write name: Mark O. Seeley Date: 6/18/12

E-Verify

Company ID Number: 311572

THE E-VERIFY PROGRAM FOR EMPLOYMENT VERIFICATION MEMORANDUM OF UNDERSTANDING

ARTICLE I

PURPOSE AND AUTHORITY

This Memorandum of Understanding (MOU) sets forth the points of agreement between the Department of Homeland Security (DHS) and **Miller & Miller, Inc.** (Employer) regarding the Employer's participation in the Employment Eligibility Verification Program (E-Verify). This MOU explains certain features of the E-Verify program and enumerates specific responsibilities of DHS, the Social Security Administration (SSA), and the Employer. E-Verify is a program that electronically confirms an employee's eligibility to work in the United States after completion of the Employment Eligibility Verification Form (Form I-9). For covered government contractors, E-Verify is used to verify the employment eligibility of all newly hired employees and all existing employees assigned to Federal contracts.

Authority for the E-Verify program is found in Title IV, Subtitle A, of the Illegal Immigration Reform and Immigrant Responsibility Act of 1996 (IIRIRA), Pub. L. 104-208, 110 Stat. 3009, as amended (8 U.S.C. § 1324a note). Authority for use of the E-Verify program by Federal contractors and subcontractors covered by the terms of Subpart 22.18, "Employment Eligibility Verification", of the Federal Acquisition Regulation (FAR) (hereinafter referred to in this MOU as a "Federal contractor") to verify the employment eligibility of certain employees working on Federal contracts is also found in Subpart 22.18 and in Executive Order 12989, as amended.

ARTICLE II

FUNCTIONS TO BE PERFORMED

A. RESPONSIBILITIES OF SSA

1. SSA agrees to provide the Employer with available information that allows the Employer to confirm the accuracy of Social Security Numbers provided by all employees verified under this MOU and the employment authorization of U.S. citizens.

2. SSA agrees to provide to the Employer appropriate assistance with operational problems that may arise during the Employer's participation in the E-Verify program. SSA agrees to provide the Employer with names, titles, addresses, and telephone numbers of SSA representatives to be contacted during the E-Verify process.

3. SSA agrees to safeguard the information provided by the Employer through the E-Verify program procedures, and to limit access to such information, as is appropriate by law, to individuals responsible for the verification of Social Security Numbers and for evaluation of the E-Verify program or such other persons or entities who may be authorized by SSA as governed by the Privacy Act (5 U.S.C. § 552a), the Social Security Act (42 U.S.C. 1306(a)), and SSA regulations (20 CFR Part 401).

4. SSA agrees to provide a means of automated verification that is designed (in conjunction with DHS's automated system if necessary) to provide confirmation or tentative nonconfirmation of U.S. citizens' employment eligibility within 3 Federal Government work days of the initial inquiry.

5. SSA agrees to provide a means of secondary verification (including updating SSA records as may be necessary) for employees who contest SSA tentative nonconfirmations that is designed to provide final confirmation or nonconfirmation of U.S. citizens' employment eligibility and accuracy of SSA records for both citizens and aliens within 10 Federal Government work days of the date of referral to SSA, unless SSA determines that more than 10 days may be necessary. In such cases, SSA will provide additional verification instructions.

B. RESPONSIBILITIES OF DHS

1. After SSA verifies the accuracy of SSA records for aliens through E-Verify, DHS agrees to provide the Employer access to selected data from DHS's database to enable the Employer to conduct, to the extent authorized by this MOU:

- Automated verification checks on alien employees by electronic means, and
- Photo verification checks (when available) on employees.

2. DHS agrees to provide to the Employer appropriate assistance with operational problems that may arise during the Employer's participation in the E-Verify program. DHS agrees to provide the Employer names, titles, addresses, and telephone numbers of DHS representatives to be contacted during the E-Verify process.

3. DHS agrees to provide to the Employer a manual (the E-Verify User Manual) containing instructions on E-Verify policies, procedures and requirements for both SSA and DHS, including restrictions on the use of E-Verify. DHS agrees to provide training materials on E-Verify.

4. DHS agrees to provide to the Employer a notice, which indicates the Employer's participation in the E-Verify program. DHS also agrees to provide to the Employer anti-discrimination notices issued by the Office of Special Counsel for Immigration-Related Unfair Employment Practices (OSC), Civil Rights Division, U.S. Department of Justice.

5. DHS agrees to issue the Employer a user identification number and password that permits the Employer to verify information provided by alien employees with DHS's database.

6. DHS agrees to safeguard the information provided to DHS by the Employer, and to limit access to such information to individuals responsible for the verification of alien employment eligibility and for evaluation of the E-Verify program, or to such other persons or entities as may be authorized by applicable law. Information will be used only to verify the accuracy of Social Security Numbers and employment eligibility, to enforce the Immigration and Nationality Act (INA) and Federal criminal laws, and to administer Federal contracting requirements.

7. DHS agrees to provide a means of automated verification that is designed (in conjunction with SSA verification procedures) to provide confirmation or tentative

nonconfirmation of employees' employment eligibility within 3 Federal Government work days of the initial inquiry.

8. DHS agrees to provide a means of secondary verification (including updating DHS records as may be necessary) for employees who contest DHS tentative nonconfirmations and photo non-match tentative nonconfirmations that is designed to provide final confirmation or nonconfirmation of the employees' employment eligibility within 10 Federal Government work days of the date of referral to DHS, unless DHS determines that more than 10 days may be necessary. In such cases, DHS will provide additional verification instructions.

C. RESPONSIBILITIES OF THE EMPLOYER

1. The Employer agrees to display the notices supplied by DHS in a prominent place that is clearly visible to prospective employees and all employees who are to be verified through the system.

2. The Employer agrees to provide to the SSA and DHS the names, titles, addresses, and telephone numbers of the Employer representatives to be contacted regarding E-Verify.

3. The Employer agrees to become familiar with and comply with the most recent version of the E-Verify User Manual.

4. The Employer agrees that any Employer Representative who will perform employment verification queries will complete the E-Verify Tutorial before that individual initiates any queries.

   A. The Employer agrees that all Employer representatives will take the refresher tutorials initiated by the E-Verify program as a condition of continued use of E-Verify, including any tutorials for Federal contractors if the Employer is a Federal contractor.

   B. Failure to complete a refresher tutorial will prevent the Employer from continued use of the program.

5. The Employer agrees to comply with current Form I-9 procedures, with two exceptions:

- If an employee presents a "List B" identity document, the Employer agrees to only accept "List B" documents that contain a photo. (List B documents identified in 8 C.F.R. § 274a.2(b)(1)(B)) can be presented during the Form I-9 process to establish identity.) If an employee objects to the photo requirement for religious reasons, the Employer should contact E-Verify at 888-464-4218.
- If an employee presents a DHS Form I-551 (Permanent Resident Card) or Form I-766 (Employment Authorization Document) to complete the Form I-9, the Employer agrees to make a photocopy of the document and to retain the photocopy with the employee's Form I-9. The employer will use the photocopy to verify the photo and to assist DHS with its review of photo non-matches that are contested by employees. Note that employees retain the right to present any List A, or List B and List C, documentation to complete the Form I-9. DHS may in the future designate other documents that activate the photo screening tool.

Company ID Number: 311572

6. The Employer understands that participation in E-Verify does not exempt the Employer from the responsibility to complete, retain, and make available for inspection Forms I-9 that relate to its employees, or from other requirements of applicable regulations or laws, including the obligation to comply with the antidiscrimination requirements of section 274B of the INA with respect to Form I-9 procedures, except for the following modified requirements applicable by reason of the Employer's participation in E-Verify: (1) identity documents must have photos, as described in paragraph 5 above; (2) a rebuttable presumption is established that the Employer has not violated section 274A(a)(1)(A) of the Immigration and Nationality Act (INA) with respect to the hiring of any individual if it obtains confirmation of the identity and employment eligibility of the individual in compliance with the terms and conditions of E-Verify; (3) the Employer must notify DHS if it continues to employ any employee after receiving a final nonconfirmation, and is subject to a civil money penalty between $550 and $1,100 for each failure to notify DHS of continued employment following a final nonconfirmation; (4) the Employer is subject to a rebuttable presumption that it has knowingly employed an unauthorized alien in violation of section 274A(a)(1)(A) if the Employer continues to employ an employee after receiving a final nonconfirmation; and (5) no person or entity participating in E-Verify is civilly or criminally liable under any law for any action taken in good faith based on information provided through the confirmation system. DHS reserves the right to conduct Form I-9 compliance inspections during the course of E-Verify, as well as to conduct any other enforcement activity authorized by law.

7. The Employer agrees to initiate E-Verify verification procedures for new employees within 3 Employer business days after each employee has been hired (but after both sections 1 and 2 of the Form I-9 have been completed), and to complete as many (but only as many) steps of the E-Verify process as are necessary according to the E-Verify User Manual. The Employer is prohibited from initiating verification procedures before the employee has been hired and the Form I-9 completed. If the automated system to be queried is temporarily unavailable, the 3-day time period is extended until it is again operational in order to accommodate the Employer's attempting, in good faith, to make inquiries during the period of unavailability. In all cases, the Employer must use the SSA verification procedures first, and use DHS verification procedures and photo screening tool only after the SSA verification response has been given. Employers may initiate verification by notating the Form I-9 in circumstances where the employee has applied for a Social Security Number (SSN) from the SSA and is waiting to receive the SSN, provided that the Employer performs an E-Verify employment verification query using the employee's SSN as soon as the SSN becomes available.

8. The Employer agrees not to use E-Verify procedures for pre-employment screening of job applicants, in support of any unlawful employment practice, or for any other use not authorized by this MOU. Employers must use E-Verify for all new employees, unless an Employer is a Federal contractor that qualifies for the exceptions described in Article II.D.1.c. Except as provided in Article II.D, the Employer will not verify selectively and will not verify employees hired before the effective date of this MOU. The Employer understands that if the Employer uses E-Verify procedures for any purpose other than as authorized by this MOU, the Employer may be subject to appropriate legal action and termination of its access to SSA and DHS information pursuant to this MOU.

9. The Employer agrees to follow appropriate procedures (see Article III. below) regarding tentative nonconfirmations, including notifying employees of the finding, providing written referral instructions to employees, allowing employees to contest the finding, and not taking

adverse action against employees if they choose to contest the finding. Further, when employees contest a tentative nonconfirmation based upon a photo non-match, the Employer is required to take affirmative steps (see Article III.B. below) to contact DHS with information necessary to resolve the challenge.

10. The Employer agrees not to take any adverse action against an employee based upon the employee's perceived employment eligibility status while SSA or DHS is processing the verification request unless the Employer obtains knowledge (as defined in 8 C.F.R. § 274a.1(l)) that the employee is not work authorized. The Employer understands that an initial inability of the SSA or DHS automated verification system to verify work authorization, a tentative nonconfirmation, a case in continuance (indicating the need for additional time for the government to resolve a case), or the finding of a photo non-match, does not establish, and should not be interpreted as evidence, that the employee is not work authorized. In any of the cases listed above, the employee must be provided a full and fair opportunity to contest the finding, and if he or she does so, the employee may not be terminated or suffer any adverse employment consequences based upon the employee's perceived employment eligibility status (including denying, reducing, or extending work hours, delaying or preventing training, requiring an employee to work in poorer conditions, refusing to assign the employee to a Federal contract or other assignment, or otherwise subjecting an employee to any assumption that he or she is unauthorized to work) until and unless secondary verification by SSA or DHS has been completed and a final nonconfirmation has been issued. If the employee does not choose to contest a tentative nonconfirmation or a photo non-match or if a secondary verification is completed and a final nonconfirmation is issued, then the Employer can find the employee is not work authorized and terminate the employee's employment. Employers or employees with questions about a final nonconfirmation may call E-Verify at 1-888-464-4218 or OSC at 1-800-255-8155 or 1-800-237-2515 (TDD).

11. The Employer agrees to comply with Title VII of the Civil Rights Act of 1964 and section 274B of the INA by not discriminating unlawfully against any individual in hiring, firing, or recruitment or referral practices because of his or her national origin or, in the case of a protected individual as defined in section 274B(a)(3) of the INA, because of his or her citizenship status. The Employer understands that such illegal practices can include selective verification or use of E-Verify except as provided in part D below, or discharging or refusing to hire employees because they appear or sound "foreign" or have received tentative nonconfirmations. The Employer further understands that any violation of the unfair immigration-related employment practices provisions in section 274B of the INA could subject the Employer to civil penalties, back pay awards, and other sanctions, and violations of Title VII could subject the Employer to back pay awards, compensatory and punitive damages. Violations of either section 274B of the INA or Title VII may also lead to the termination of its participation in E-Verify. If the Employer has any questions relating to the anti-discrimination provision, it should contact OSC at 1-800-255-8155 or 1-800-237-2515 (TDD).

12. The Employer agrees to record the case verification number on the employee's Form I-9 or to print the screen containing the case verification number and attach it to the employee's Form I-9.

13. The Employer agrees that it will use the information it receives from SSA or DHS pursuant to E-Verify and this MOU only to confirm the employment eligibility of employees as

authorized by this MOU. The Employer agrees that it will safeguard this information, and means of access to it (such as PINS and passwords) to ensure that it is not used for any other purpose and as necessary to protect its confidentiality, including ensuring that it is not disseminated to any person other than employees of the Employer who are authorized to perform the Employer's responsibilities under this MOU, except for such dissemination as may be authorized in advance by SSA or DHS for legitimate purposes.

14. The Employer acknowledges that the information which it receives from SSA is governed by the Privacy Act (5 U.S.C. § 552a(i)(1) and (3)) and the Social Security Act (42 U.S.C. 1306(a)), and that any person who obtains this information under false pretenses or uses it for any purpose other than as provided for in this MOU may be subject to criminal penalties.

15. The Employer agrees to cooperate with DHS and SSA in their compliance monitoring and evaluation of E-Verify, including by permitting DHS and SSA, upon reasonable notice, to review Forms I-9 and other employment records and to interview it and its employees regarding the Employer's use of E-Verify, and to respond in a timely and accurate manner to DHS requests for information relating to their participation in E-Verify.

D. RESPONSIBILITIES OF FEDERAL CONTRACTORS

1. The Employer understands that if it is a Federal contractor subject to the employment verification terms in Subpart 22.18 of the FAR it must verify the employment eligibility of any "employee assigned to the contract" (as defined in FAR 22.1801) in addition to verifying the employment eligibility of all other employees required to be verified under the FAR. Once an employee has been verified through E-Verify by the Employer, the Employer may not reverify the employee through E-Verify.

a. Federal contractors not enrolled at the time of contract award: An Employer that is not enrolled in E-Verify as a Federal contractor at the time of a contract award must enroll as a Federal contractor in the E-Verify program within 30 calendar days of contract award and, within 90 days of enrollment, begin to use E-Verify to initiate verification of employment eligibility of new hires of the Employer who are working in the United States, whether or not assigned to the contract. Once the Employer begins verifying new hires, such verification of new hires must be initiated within 3 business days after the date of hire. Once enrolled in E-Verify as a Federal contractor, the Employer must initiate verification of employees assigned to the contract within 90 calendar days after the date of enrollment or within 30 days of an employee's assignment to the contract, whichever date is later.

b. Federal contractors already enrolled at the time of a contract award: Employers enrolled in E-Verify as a Federal contractor for 90 days or more at the time of a contract award must use E-Verify to initiate verification of employment eligibility for new hires of the Employer who are working in the United States, whether or not assigned to the contract, within 3 business days after the date of hire. If the Employer is enrolled in E-Verify as a Federal contractor for 90 calendar days or less at the time of contract award, the Employer must, within 90 days of enrollment, begin to use E-Verify to initiate verification of new hires of the contractor who are working in the United States, whether or not assigned to the contract. Such verification of new hires must be initiated within 3 business days after the date of hire. An Employer enrolled as a Federal contractor in E-Verify must initiate verification of each employee assigned to the

contract within 90 calendar days after date of contract award or within 30 days after assignment to the contract, whichever is later.

c. Institutions of higher education, State, local and tribal governments and sureties: Federal contractors that are institutions of higher education (as defined at 20 U.S.C. 1001(a)), State or local governments, governments of Federally recognized Indian tribes, or sureties performing under a takeover agreement entered into with a Federal agency pursuant to a performance bond may choose to only verify new and existing employees assigned to the Federal contract. Such Federal contractors may, however, elect to verify all new hires, and/or all existing employees hired after November 6, 1986. The provisions of Article II.D, paragraphs 1.a and 1.b of this MOU providing timeframes for initiating employment verification of employees assigned to a contract apply to such institutions of higher education, State, local and tribal governments, and sureties.

d. Verification of all employees: Upon enrollment, Employers who are Federal contractors may elect to verify employment eligibility of all existing employees working in the United States who were hired after November 6, 1986, instead of verifying only those employees assigned to a covered Federal contract. After enrollment, Employers must elect to do so only in the manner designated by DHS and initiate E-Verify verification of all existing employees within 180 days after the election.

e. Form I-9 procedures for Federal contractors: The Employer may use a previously completed Form I-9 as the basis for initiating E-Verify verification of an employee assigned to a contract as long as that Form I-9 is complete (including the SSN), complies with Article II.C.5, the employee's work authorization has not expired, and the Employer has reviewed the information reflected in the Form I-9 either in person or in communications with the employee to ensure that the employee's stated basis in section 1 of the Form I-9 for work authorization has not changed (including, but not limited to, a lawful permanent resident alien having become a naturalized U.S. citizen). If the Employer is unable to determine that the Form I-9 complies with Article II.C.5, if the employee's basis for work authorization as attested in section 1 has expired or changed, or if the Form I-9 contains no SSN or is otherwise incomplete, the Employer shall complete a new I-9 consistent with Article II.C.5, or update the previous I-9 to provide the necessary information. If section 1 of the Form I-9 is otherwise valid and up-to-date and the form otherwise complies with Article II.C.5, but reflects documentation (such as a U.S. passport or Form I-551) that expired subsequent to completion of the Form I-9, the Employer shall not require the production of additional documentation, or use the photo screening tool described in Article II.C.5, subject to any additional or superseding instructions that may be provided on this subject in the E-Verify User Manual. Nothing in this section shall be construed to require a second verification using E-Verify of any assigned employee who has previously been verified as a newly hired employee under this MOU, or to authorize verification of any existing employee by any Employer that is not a Federal contractor.

2. The Employer understands that if it is a Federal contractor, its compliance with this MOU is a performance requirement under the terms of the Federal contract or subcontract, and the Employer consents to the release of information relating to compliance with its verification responsibilities under this MOU to contracting officers or other officials authorized to review the Employer's compliance with Federal contracting requirements.

Company ID Number: 311572

ARTICLE III

REFERRAL OF INDIVIDUALS TO SSA AND DHS

A. REFERRAL TO SSA

1. If the Employer receives a tentative nonconfirmation issued by SSA, the Employer must print the tentative nonconfirmation notice as directed by the automated system and provide it to the employee so that the employee may determine whether he or she will contest the tentative nonconfirmation.

2. The Employer will refer employees to SSA field offices only as directed by the automated system based on a tentative nonconfirmation, and only after the Employer records the case verification number, reviews the input to detect any transaction errors, and determines that the employee contests the tentative nonconfirmation. The Employer will transmit the Social Security Number to SSA for verification again if this review indicates a need to do so. The Employer will determine whether the employee contests the tentative nonconfirmation as soon as possible after the Employer receives it.

3. If the employee contests an SSA tentative nonconfirmation, the Employer will provide the employee with a system-generated referral letter and instruct the employee to visit an SSA office within 8 Federal Government work days. SSA will electronically transmit the result of the referral to the Employer within 10 Federal Government work days of the referral unless it determines that more than 10 days is necessary. The Employer agrees to check the E-Verify system regularly for case updates.

4. The Employer agrees not to ask the employee to obtain a printout from the Social Security Number database (the Numident) or other written verification of the Social Security Number from the SSA.

B. REFERRAL TO DHS

1. If the Employer receives a tentative nonconfirmation issued by DHS, the Employer must print the tentative nonconfirmation notice as directed by the automated system and provide it to the employee so that the employee may determine whether he or she will contest the tentative nonconfirmation.

2. If the Employer finds a photo non-match for an employee who provides a document for which the automated system has transmitted a photo, the employer must print the photo non-match tentative nonconfirmation notice as directed by the automated system and provide it to the employee so that the employee may determine whether he or she will contest the finding.

3. The Employer agrees to refer individuals to DHS only when the employee chooses to contest a tentative nonconfirmation received from DHS automated verification process or when the Employer issues a tentative nonconfirmation based upon a photo non-match. The Employer will determine whether the employee contests the tentative nonconfirmation as soon as possible

after the Employer receives it.

4. If the employee contests a tentative nonconfirmation issued by DHS, the Employer will provide the employee with a referral letter and instruct the employee to contact DHS through its toll-free hotline (as found on the referral letter) within 8 Federal Government work days.

5. If the employee contests a tentative nonconfirmation based upon a photo non-match, the Employer will provide the employee with a referral letter to DHS. DHS will electronically transmit the result of the referral to the Employer within 10 Federal Government work days of the referral unless it determines that more than 10 days is necessary. The Employer agrees to check the E-Verify system regularly for case updates.

6. The Employer agrees that if an employee contests a tentative nonconfirmation based upon a photo non-match, the Employer will send a copy of the employee's Form I-551 or Form I-766 to DHS for review by:

- Scanning and uploading the document, or
- Sending a photocopy of the document by an express mail account (furnished and paid for by DHS).

7. The Employer understands that if it cannot determine whether there is a photo match/non-match, the Employer is required to forward the employee's documentation to DHS by scanning and uploading, or by sending the document as described in the preceding paragraph, and resolving the case as specified by the Immigration Services Verifier at DHS who will determine the photo match or non-match.

ARTICLE IV

SERVICE PROVISIONS

SSA and DHS will not charge the Employer for verification services performed under this MOU. The Employer is responsible for providing equipment needed to make inquiries. To access the E-Verify System, an Employer will need a personal computer with Internet access.

ARTICLE V

PARTIES

A. This MOU is effective upon the signature of all parties, and shall continue in effect for as long as the SSA and DHS conduct the E-Verify program unless modified in writing by the mutual consent of all parties, or terminated by any party upon 30 days prior written notice to the others. Any and all system enhancements to the E-Verify program by DHS or SSA, including but not limited to the E-Verify checking against additional data sources and instituting new verification procedures, will be covered under this MOU and will not cause the need for a supplemental MOU that outlines these changes. DHS agrees to train employers on all changes made to E-Verify through the use of mandatory refresher tutorials and updates to the E-Verify User Manual. Even without changes to E-Verify, DHS reserves the right to require employers to take

mandatory refresher tutorials. An Employer that is a Federal contractor may terminate this MOU when the Federal contract that requires its participation in E-Verify is terminated or completed. In such a circumstance, the Federal contractor must provide written notice to DHS. If an Employer that is a Federal contractor fails to provide such notice, that Employer will remain a participant in the E-Verify program, will remain bound by the terms of this MOU that apply to non-Federal contractor participants, and will be required to use the E-Verify procedures to verify the employment eligibility of all newly hired employees.

B. Notwithstanding Article V, part A of this MOU, DHS may terminate this MOU if deemed necessary because of the requirements of law or policy, or upon a determination by SSA or DHS that there has been a breach of system integrity or security by the Employer, or a failure on the part of the Employer to comply with established procedures or legal requirements. The Employer understands that if it is a Federal contractor, termination of this MOU by any party for any reason may negatively affect its performance of its contractual responsibilities.

C. Some or all SSA and DHS responsibilities under this MOU may be performed by contractor(s), and SSA and DHS may adjust verification responsibilities between each other as they may determine necessary. By separate agreement with DHS, SSA has agreed to perform its responsibilities as described in this MOU.

D. Nothing in this MOU is intended, or should be construed, to create any right or benefit, substantive or procedural, enforceable at law by any third party against the United States, its agencies, officers, or employees, or against the Employer, its agents, officers, or employees.

E. Each party shall be solely responsible for defending any claim or action against it arising out of or related to E-Verify or this MOU, whether civil or criminal, and for any liability wherefrom, including (but not limited to) any dispute between the Employer and any other person or entity regarding the applicability of Section 403(d) of IIRIRA to any action taken or allegedly taken by the Employer.

F. The Employer understands that the fact of its participation in E-Verify is not confidential information and may be disclosed as authorized or required by law and DHS or SSA policy, including but not limited to, Congressional oversight, E-Verify publicity and media inquiries, determinations of compliance with Federal contractual requirements, and responses to inquiries under the Freedom of Information Act (FOIA).

G. The foregoing constitutes the full agreement on this subject between DHS and the Employer.

H. The individuals whose signatures appear below represent that they are authorized to enter into this MOU on behalf of the Employer and DHS respectively.

E-Verify

Company ID Number: 311572

To be accepted as a participant in E-Verify, you should only sign the Employer's Section of the signature page. If you have any questions, contact E-Verify at 888-464-4218.

Employer Miller & Miller, Inc.

Mary E Pruitt
Name (Please Type or Print)

Title

Electronically Signed
Signature

03/15/2010
Date

Department of Homeland Security – Verification Division

USCIS Verification Division
Name (Please Type or Print)

Title

Electronically Signed
Signature

03/15/2010
Date

E-Verify

Company ID Number: 311572

Information Required for the E-Verify Program

Information relating to your Company:

Company Name: Miller & Miller, Inc.

Company Facility Address: 2106 Miller Ferry Way
Huntsville, AL 35801

Company Alternate Address:

County or Parish: MADISON

Employer Identification Number: 630434945

North American Industry Classification Systems Code: 238

Parent Company:

Number of Employees: 20 to 99

Number of Sites Verified for: 1

Are you verifying for more than 1 site? If yes, please provide the number of sites verified for in each State:

- ALABAMA 1 site(s)

E-Verify

Company ID Number: 311572

Information relating to the Program Administrator(s) for your Company on policy questions or operational problems:

Name:	**Mark E Miller**		
Telephone Number:	**(256) 882 - 6200**	Fax Number:	**(256) 882 - 2864**
E-mail Address:	**mmiller@miller-miller-inc.com**		

ATTACHMENT "I"

E-VERIFY – NOTICE

The Beason-Hammon Alabama Taxpayer and Citizen Protection Act, Act No. 2011-535, Code of Alabama (1975) § 31-13-1 through 31-13-30 (also known as and hereinafter referred to as " the Alabama Immigration Act") as amended by Act No. 2012-491 on May 16, 2012 is applicable to all competitively bid contracts with the City of Huntsville. As a condition for the award of a contract and as a term and condition of the contract with the City of Huntsville, in accordance with § 31-13-9 (a) of the Alabama Immigration Act, as amended, any business entity or employer that employs one or more employees shall not knowingly employ, hire for employment, or continue to employ an unauthorized alien within the State of Alabama.

During the performance of the contract, such business entity or employer shall participate in the E-Verify program and shall verify every employee that is required to be verified according to the applicable federal rules and regulations. The business entity or employer shall assure that these requirements are included in each subcontract in accordance with §31-13-9(c). Failure to comply with these requirements may result in breach of contract, termination of the contract or subcontract, and possibly suspension or revocation of business licenses and permits in accordance with §31-13-9 (e) (1) & (2).

Code of Alabama (1975) § 31-13-9 (k) requires that the following clause be included in all City of Huntsville contracts that have been competitively bid and is hereby made a part of this contract:

"By signing this contract the contracting parties affirm, for the duration of the agreement, that they will not violate federal immigration law or knowingly employ, hire for employment, or continue to employ an unauthorized alien within the State of Alabama. Furthermore, a contracting party found to be in violation of this provision shall be deemed in breach of the agreement and shall be responsible for all damages resulting therefrom."

Contractor's E-Verify Memorandum of Understanding shall be a part of the contract bid documents and shall be submitted with the bid package.

SPECIAL PROVISION 2000
VEHICLE, BICYCLE AND PEDESTRIAN CONTROL DURING PROJECT

PART 1 GENERAL

1.1 OBJECTIVES

A. The Contractor shall provide for safe movement of vehicular, bicycle and pedestrian traffic, including persons with disabilities in accordance with Manual on Uniform Traffic Control Devices (MUTCD) and Americans with Disabilities Act (ADA), through and around construction operations. The contractor shall be solely responsible for providing all protective measures necessary. No one standard sequence of signs or control devices for vehicular, bicyclist and pedestrian control will suit all conditions, which may result from construction operations. Even for the same work, the conditions may vary from hour to hour, requiring adjustment and revision of vehicular, bicyclist and pedestrian control program in effect.

B. Contractor shall provide and maintain, as conditions require, temporary pedestrian access to each doorway, step or stoop of each building structure during construction to ADA standards

C. Contractor shall maintain, at minimum, existing roadway and pedestrian sidewalk lighting illumination levels during construction.

D. Contractor shall maintain, in-place, all traffic signalization at each intersection until such time as new signalization is in place and functioning to City of Huntsville Traffic Engineer's satisfaction. Contractor shall coordinate new construction activities with new signalization construction. Co-ordinate with requirements of traffic control plans.

E. The requirements specified herein are intended to establish general principles to be observed in the control and regulation of vehicular, pedestrian and bicyclist traffic through and around construction operations anticipated for this project. All pedestrian, bicyclist and vehicular detours are subject to review by the City of Huntsville (COH) Project Engineer, COH Traffic Engineer, Police Department and Fire Department.

F. Clean up site each day after completing work and remove all hazards. Traffic control measures shall continue until cleanup activities have been satisfactorily completed.

1.2 DESCRIPTION OF WORK

A. The schedule of construction by Contractor shall be such that the eastern side of Washington Street of the Base Bid Area (this is to include sub-areas BB 1, BB 2, BB 3, BB 4, and BB 5) shall be constructed to substantial completion prior to work on the western side of Washington Street.

B. Base bid Sub-area 1 (BB1) will be available to Contractor on July 24, 2012. Base bid Sub-area 2 (BB2) will be available to Contractor on August 13, 2012. Contractor is required to have BB1 and BB2 substantially complete by September 15, 2012. Substantially complete for this purpose shall mean curb and gutter, drive turnouts, concrete loading zone on Holmes Avenue, driveway/sidewalk crossing, concrete sidewalks, brick headers, light pole foundations, storm drainage system, curb ramps and finished grading of lawn areas is in place and ready for public use.

C. The sequence of construction shall be such that no more than one sub-area within the project area shall be under construction simultaneously unless prior approved by Project Engineer. The Contractor shall sequence construction on the project in numerical sub-area order. Beginning with BB 1 (Base Bid Area 1) and continuing through BB 8 as shown on Base Bid Performance Plan. Should City of Huntsville (COH) choose to accept Alternate One, then this construction sequence will change by mutual agreement between COH and Contractor.

D. The contractor shall establish and maintain pedestrian detours and conduct his construction operations in such a manner as to minimize hazard, inconvenience and disruption to the public and adjoining business operations. The contractor shall provide for the protection of pedestrians and separation of pedestrians from construction operations at all times by barricades and/or fencing. In any event, safe and adequate passage for vehicular, bicyclist and pedestrian traffic through, around and adjacent to all construction operations by use of detours, backfilling, temporary paving, traffic barriers of other prior approved means shall be required.

1.3 REFERENCES

A. City of Huntsville Standard Specifications for Construction of Public Improvements, latest edition.

B. Manual of Uniform Traffic Control (MUTCD), latest edition.

C. Americans with Disability Act (ADA)

1.3 SUBMITTALS

A. Vehicular, bicyclist and pedestrian temporary traffic control plans (TTCP)

1. Submit for approval to Engineer, prior to work in any area, scaled drawings and details for each situation anticipated to be encountered, i.e. intersections, access to each doorway, stoop or steps of each structure in project. Plans shall be submitted for working hours (9:00am through 4:00pm Monday thru Friday) as well as non-working hours.

2. All plans shall conform to MUTCD and ADA.

3. The plans shall show a detailed approach to each situation including any temporary materials such as bridging and any other materials to be used for any sidewalk or paving surfaces and pedestrian entrances into structures.

PART 2 EXECUTION

2.1 DIVERTING PEDESTRIANS

A. Whenever construction operations obstruct the flow of pedestrian traffic or present a hazard to pedestrians, the Contractor shall take appropriate action to protect and separate pedestrians form the work area and to direct pedestrians to alternate routes. In no event shall pedestrian access to any pedestrian entrance of a structure be obstructed without prior approval of project engineer and minimum 24 hour notification to affected tenant, business.

B. Such action may include placement of barricades between pedestrians and work areas, placement of warning signs, and provision of personnel as required to protect pedestrians as conditions warrant. Temporary bridgework for pedestrian use shall be included.

C. All work shall conform to MUTCD and ADA requirements.

2.2 DIVERTING BICYCLISTS & VEHICLES

A. Whenever construction operations obstruct the flow of bicycle or vehicular traffic or present a hazard to either operating in the vicinity of construction operations, the Contractor shall take appropriate action to warn, detour and otherwise protect approaching bicyclists and vehicles.

2.3 TRAFFIC CONTROL DEVICES

A. GENERAL:

1. Provide traffic control devices in sufficient quantities and types as required to provide safe and adequate traffic control for pedestrian, bicycle and vehicle traffic.

2. During hours of darkness approved lights shall be included, in proper working order, to illuminate signs and hazards and alert approaching traffic.

3. Provide and maintain barricades along all open trenches in contact with traffic.

4. Contractor shall pay special attention to use of bridging devices (steel plate or equal) in sidewalk areas open for public use, any such devices shall be ADA compliant.

5. No work may begin or end on any day or at any time before traffic control devices have been placed, test driven (and) or walked with engineer, and if, required, adjusted and revised.

B. PLACEMENT:

1. Place all traffic control devices in accordance with the MUTCD and Specifications, and approved Traffic Control Plan.

2. Adjust locations of devices to suit the conditions and circumstances of each situation. In all cases, place signs to most effectively convey their messages to approaching traffic.

3. The Contractor shall adjust and revise all traffic control devices if determined to be required by the Engineer, Police Department or Fire Department.

4. The Contractor shall provide additional traffic control devices, if required, to maintain the safe flow of traffic during construction operation.

C. MAINTENANCE OF DEVICES:

1. The Contractor shall maintain all traffic control devices, at proper locations and in proper working order, at all times during construction operations and whenever a hazard resulting from Contractor's operations exists.

2. The Contractor shall adjust and revise traffic control devices, placement, etc., to suit changing conditions around construction operations.

D. REMOVAL OF DEVICES:

1. Traffic control devices shall remain in place at all times required to alert approaching traffic of upcoming hazards.

2. After hazard has been removed, remove all traffic control devices. Remove signs or completely cover their messages.

2.4 FLAGGERS

A. GENERAL: The Contractor shall employ flaggers:

1. As required for each specific detour.

2. At all locations on a construction site where barricades and warning signs cannot control the moving traffic.

B. PLACEMENT:

Where flaggers are required, they shall be logically placed in relation to the equipment or operation so as to give adequate warning and shall be placed in accordance with the MUTCD and the approved Traffic Control Plan.

C. WARNING SIGNS:

1. Place warning signs ahead of the flagger in accordance with the MUTCD and the approved Traffic Control Plan. The distance between signs and the flagger shall be based on the posted traffic approach speed.

2. During hours of darkness, illuminate flagger stations such that the flagger will be clearly visible to approaching traffic. Lights for illuminating the flagger station shall comply with the MUTCD and the approved Traffic Control Plan.

D. EQUIPMENT:

1. Provide flaggers with high-visibility safety apparel in accordance with the MUTCD at all times.

2. Provide flaggers with hand signs in accordance with the MUTCD.

3. Provide flaggers with two-way radios for communication when necessary.

2.5 NOTICE TO AGENCIES

A. The Contractor shall notify all agencies having jurisdiction at least fourty-eight hours, excluding holidays and weekends, prior to instituting any lane closure or detour. At the end of each day's work, the Contractor shall inform the Engineer, HEMSI, police and fire departments of the status of all detours and/or lane closures that will be in effect after the next day.

B. List of Agencies:

1. City of Huntsville (COH) Engineer.
2. Fire Department
3. Police Department
4. Shuttle bus service.
5. HEMSI
6. Sheriffs Dept.

2.6 VEHICLE ACCESS

A. During construction in or adjacent to roadways in the project site, Contractor shall maintain at least one lane open of the road to allow vehicle access for public, police, fire, and HEMSI to the project vicinity. This requirement will be waived for prior approved and coordinated weekend road closures for "paver" installation at Holmes Avenue and Clinton Street intersections. Approved and coordinated road closure, shall mean, listed agencies in sub-section 2.5 (B) and affected Washington Street merchants /tenants have received, at minimum, 7 days prior notice of road closure.

B. Street detours and road closures for weekend paver installation shall be between the hours/days of 3:00 A.M. Saturday through 7:00 A.M. the following Monday.

C. When temporary traffic control is provided by flaggers they shall be instructed to give immediate passage to emergency vehicles with active lights or sirens.

2.7 DELIVERY VEHICLE ACCESS

A. During construction of improvements on any block in the project site, contractor shall maintain at least one pull-off area (temporary, permanent or existing) open to allow delivery vehicles access for deliveries to businesses on that block.

B. Contractor shall post temporary, approved "parking for delivery vehicles only" signs at 3 locations in each pull-off delivery area where directed by Engineer.

C. Pull off areas shall have at minimum, dimensions of 8' wide x 50' long with adequate tapers at each end for easy access. Additionally, surfacing shall be all weather, minimum. 4" thick stone over compacted subgrade. Contractor shall maintain stone and signs as required or directed during duration of pull-off use.

2.8 ACCESS TO PRIVATE PROPERTY

A. General: The Contractor shall schedule operations to minimize disruption of pedestrian access to doorways, stoops or steps at each building entrance.

B. Notice to Residents: Prior to blocking access to any doorway, stoop or step entrance, the Contractor shall give minimum 24 hour notice to the engineer, resident, business owner or tenant. Closure shall not exceed more than 30 minutes in any 24 hour period. Additionally, Contractor shall have on hand emergency bridging devices for immediate lay down for access to or from structure during this time period. In no event shall Contractor schedule closures or block pedestrian access to restaurants during breakfast, lunch or supper hours, all to be coordinated with each individual restaurant operator with Engineer in attendance.

C. During working or non-working hours, no stoop, steps or doorway shall be denied access to public sidewalk (temporary, existing or new) without prior approval of resident, business owner or tenant. All notices to resident, business owner or tenant shall be witnessed by Project Engineer and planned to allow 24 hours minimum notice to affected parties.

2.9 DETOURS DURING NON-WORKING HOURS

A. General: The Contractor shall not be permitted to maintain any lane closure or road closure during non-working hours without first obtaining written approval of the Engineer. Coordinate with provisions of sub-section 2.6.

B. Restoration of Pavement:

1. During non-working hours the Contractor shall restore roadway travel lanes to their original alignment and configuration by means of backfilling and temporary pavement or bridging in accordance with City Standards and approved by the Engineer.

2. The Contractor shall place signs conforming to the MUTCD at uneven temporary sidewalks, pavement or bridging.

3.0 PARKING RESTRICTIONS

A. General: The Contractor shall post temporary, approved "NO PARKING CONSTRUCTION TOW-AWAY ZONE" signs at all locations necessary to establish work areas and detour vehicular traffic.

B. Signs:

1. Signs shall read: 'NO PARKING - CONSTRUCTION TOW-AWAY ZONE".

2. Signs shall be placed at least 24 hours in advance of restriction.

3.1 BRIDGING OVER TRENCHES, EXCAVATIONS, AND INTERSECTIONS

A. General: Bridging shall be placed across all trenches and excavations and uneven surfaces in intersections, streets and at sidewalks when work is not in progress. Bridging shall be in accordance with the Specifications and the MUTCD and approved by the Engineer.

B. Design of Bridging

1. Bridging shall be of sufficient width to accommodate the required number of travel lanes, and sidewalk widths.

2. Bridging shall be designed to support H-20 vehicular traffic for roadways, pedestrian loads determined by engineer for sidewalks.

3. All bridging shall be set flush with travel surface or a satisfactory transition from travel surface to top of bridging shall be provided.

a. A satisfactory transition shall mean a change in elevation between the levels of not less than twelve (20) inches horizontal to one (1) inch vertical.

b. Transition may be accomplished by means of temporary pavement, or approved stone. If pedestrian access is provided through any area, contractor shall pay special attention to size of stone used and maintenance of surface for ADA accessability.

3.2 STAGING AREAS

A. The Contractor shall provide his own staging areas.

3.3 DEFINITIONS

A. Complete State:

All improvements to pedestrian and vehicular surfaces, curb and gutter, pavements, curb ramps and sidewalks are complete for safe movement of vehicular, bicycle and pedestrian traffic, including persons with disabilities in accordance with ADA. All new sight lighting in project area shall be operational. Curb and gutter, trenches, sidewalks and planting beds are backfilled. All exposed ground surfaces if not completely finished with landscaping shall have at minimum a covering of temporary mulch (maintained by Contractor) until such time as permanent plants or sod as shown on Plans is installed.

B. TRAFFIC:

Any vehicle licensed to operate on local roads, bicycles and pedestrians.

END OF SECTION

SPECIAL PROVISION 3000

Jack R. Morgan Engineering, Inc.
71 Thunderbird Lane
Gadsden, Alabama 35904

Phone: 256-413-7717
Fax 256-413-7789

Project: Holmes Avenue and Washington Street
Streetscape Improvements
Architect: Land Design Solutions
JRM Engineering, Inc. Project Number: 3135JC

DIVISION	SECTION TITLE
16000	BASIC ELECTRICAL REQUIREMENTS
16060	GROUNDING AND BONDING
16075	ELECTRICAL IDENTIFICATION
16120	CONDUCTORS AND CABLES
16130	RACEWAYS AND BOXES
16140	WIRING DEVICES
16442	PANELBOARDS
16521	EXTERIOR LIGHTING

SECTION 16000 – BASIC ELECTRICAL REQUIREMENTS

PART 1 - GENERAL REQUIREMENTS

1.1 RELATED DOCUMENTS

A. The following codes and standards are referenced in this document.
   1. NFPA 70, National Electrical Code, 2011
   2. NFPA 72, National Fire Alarm Code, 2008
   3. NFPA 101, Life Safety Code, 2008
   4. International Fire Code (IFC) 2009
   5. International Building Code (IBC) 2009
   6. Americans with Disabilities Act Accessibility Guidelines (ADAAG) 2010
   7. ANSI/ASHRAE/IESNA Standard 90.1-2007 Energy Standard for Buildings except Low Rise Residential

B. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division1 Specification Sections, apply to this Section.

1.2 SCOPE OF WORK

A. Furnish and install complete electrical light and power systems as shown on the plans.

B. Connect all meters, switchboards, panelboards, circuit breakers, power outlets, convenience outlets, switches and/or other equipment forming part of the system.

C. Furnish and install complete system of outlet boxes, blank faceplates, conduit raceways, etc. for auxiliary systems as shown on the plans..

D. Connect all electrical equipment noted in this Section or noted on Drawings, whether furnished by Electrical Contractor or by others.

E. The electrical contractor shall review <u>all</u> sections of the contract documents (Plans and Specifications) and shall endeavor to determine all equipment requiring electrical power whether shown on the electrical plans or not. Notify the Electrical Engineer in writing prior to the bid with any discrepancies with mechanical and/or plumbing plans. Include in bid price all required materials and labor required for a full functioning system/building.

F. Connect all mechanical and plumbing equipment as required to provide a full functioning system as specified by the Mechanical Engineer. Verify locations for all dampers, circulating pumps, and other loads with the <u>mechanical and plumbing plans</u> prior to bidding.

G. Install all starters as shown on plans or as called for in these Specifications. All starters shall be NEMA rated.

H. Furnish and install all disconnect switches.

I. Furnish and install power wiring and connection for starters and motors. Furnish and install all control wiring specifically shown on drawings or as required to make the system operational as designed.

J. Furnish and install Auxiliary Systems as shown on the Drawings and as required.

K. Procure and pay for permits and certificates as required by local and state ordinances and Fire Underwriters Certificate of Inspection.

L. Submit to Architect, a certificate of Final Inspection from local inspection department.

SECTION 16000 – BASIC ELECTRICAL REQUIREMENTS

1.3 DRAWINGS AND SPECIFICATIONS

A. Electrical work is shown on drawings inclusive. Follow any supplementary drawings as though listed above.

B. Drawings and Specifications are complementary. Work called for by one is binding as if called for by both.

C. Drawings show general run of circuits and approximate location of equipment. Right is reserved to change location of equipment and devices and routing of conduits to a reasonable extent, without extra cost to Owner.

D. Refer conflicts between drawings and specifications describing electrical work and work under other Sections to Architect for remedial action.

E. Use dimensions in figures in preference to scaled dimensions. Do not scale drawings for exact sizes or locations.

F. Execution of Contract is evidence that Contractor has examined all drawings and specifications related to work, and is informed to extent and character of work. Later claims for labor and materials required due to difficulties encountered, which should have been foreseen had examination been made, will not be recognized.

1.4 PROJECT COORDINATION MEETINGS

A. Promptly after award of the Contract, and prior to commencing any project related activities. The Successful Electrical Contractor shall contact the Electrical Engineer to schedule an acceptable date and time for the initial project coordination meeting. This meeting will be held at the scheduled time and location to discuss any/all issues related to the electrical aspects of the Project. The Contractor, as well as the contractor's job foreman for the project is required to attend this meeting. The contractor shall furnish a complete set of Plans and Specifications at this meeting.

1.5 EXISTING CONDITIONS

A. The Contractor shall visit the site and determine all conditions which affect this Contract. Contractor shall include in bid price cost of relocating any electrical or auxiliary lines and/or equipment as required whether shown or not. Failure to do so will in no way relieve Contractor of his/her responsibility under this contract.

1.6 DEMOLITION

A. Where electrical work to remain is damaged or disturbed in the course of the Work, remove damaged portions and install new products of equal capacity, quality, and functionality.

B. Accessible Work Indicated to Be Demolished: Remove exposed electrical installation in its entirety.

C. Abandoned Work: Cut and remove buried raceway and wiring indicated to be abandoned in place, 2 inches below the surface of adjacent construction. Cap and patch surface to match existing finish.

D. Removal: All electrical equipment not specifically noted for re-use/connection shall remain property of the Owner. Store as directed by Architect/Owner.

E. Temporary Disconnection: Remove, store, clean, reinstall, reconnect, and make operational components indicated for relocation.

SECTION 16000 – BASIC ELECTRICAL REQUIREMENTS

1.7 ELECTRICAL SERVICE INTERRUPTION

A. The contractor shall perform all required service interruptions during non-business hours. Contractor to include in bid price premium labor charges for accommodating owner's operating schedule. All outages shall be limited to 6 hours.

B. It shall be the responsibility of the electrical contractor to visit the site prior to submitting bid and thoroughly review all existing conditions affecting the necessary electrical service(s) reconfiguration.

1.8 CONTRACTOR QUALIFICATIONS

A. Qualified electrical contractors shall have been in business as an electrical contractor five (5) years prior to date of opening bids. Employees of a general contractor will not be acceptable for this Section of Work.

B. If the electrical contractor proposes to use any other subcontractor for the installation of any auxiliary system, etc., these Subcontractors shall be a factory authorized distributor of the specified system and shall also meet the above qualifications before bid is acceptable.

C. If the electrical contractor's office is located more than 75 miles from job site, he shall submit for approval the name of the service company within a 20 mile radius of the job site, who will be responsible through him for service required during the warranty period.

D. All electrical contractors whose submitting bids for this project shall be licensed as an electrical sub-contractor in accordance with the State of Alabama Licensing Board for General Contractors.

E. The Electrical Contractor shall be properly licensed (before the bid date) to bid and perform the project. This includes being a properly licensed general Contractor in the State of Alabama, such as having a State of Alabama General contractors License with the Major Classifications "Building Construction" (BC) and "Municipal & Utility" (MU), or a General Contractors License in "Specialty Construction" – Electrical (E), as applicable

F. The Electrical Contractor shall use State of Alabama licensed masters, journeymen, and apprentices that are professional craftsmen in the applicable field and provide documentation.

G. The Electrical Contractor shall possess and provide proof of insurance with coverage and limits meeting or exceeding those prescribed under the laws of the State of Alabama for Liability and Workers' Compensation.

H. The Electrical Contractor and his/her sub-contractors shall have been in business (under the same name and principal control) for five (5) years prior to date of opening bids and shall have past experience in the types of work involved in this project, and be regularly engaged in all the applicable types of work. Documentation shall be provided on past projects with references for at least three projects or similar type, size and scope.

I. Qualification Data: For testing agency and factory-authorized service representatives for all equipment installed this project.

1.9 INSURANCE

A. This contractor shall carry Workmen's Compensation Insurance, Public Liability Insurance and shall save Owner free from all damage from suits arising out of the performance of this Contract.

1.10 QUALITY ASSURANCE

SECTION 16000 – BASIC ELECTRICAL REQUIREMENTS

A. All work shall be in accordance with the NFPA 70 National Electrical Code NEC 2008 and the rules and regulations of the local bodies having jurisdiction.

B. The published standards and requirements of the National Electrical Manufacturers Association, the American National Standard Institute, the Institute of Electrical and Electronic Engineers, and the American Society of Testing Materials, are made a part of these specifications and shall apply wherever applicable.

C. Work under this Section shall be first class with emphasis on neatness and workmanship.

D. Install work using competent mechanics under supervision of foreman, all duly certified by local authorities. Installation subject to Architect's constant observation, final approval, and acceptance. Architect may reject unsuitable work.

E. Furnish Architect written guarantee, stating that if workmanship and/or material executed under this Section is proven defective within one (1) year after final acceptance, such defects and other work damaged will be repaired and/or replaced.

F. Listing and Labeling: Provide products specified in this Section that are listed and labeled. The Terms "Listed and Labeled": As defined in the National Electrical Code, Article 100.

1.11 ON-SITE OBSERVATIONS AND DEMONSTRATION OF FUNCTIONALITY

A. Contractor shall notify Engineer at least two (2) days prior to covering any underground feeders, pouring slab, installing ceiling systems in order to allow time for on-site observations.

B. At all observations of work, open panel covers, junction box covers, pull box covers, device covers, and other equipment with removable plates for check. Provide sufficient personnel to expedite cover removal and replacement.

C. Contractor to assist Architect in demonstration of operation of new systems to satisfaction of Owner. Contractor to have manufacturer available for demonstration of systems where requested by Owner or as called for in other sections of this specification. Contractor shall notify Engineer and Architect two (2) weeks prior to demonstration of systems where manufacturer assistance is required.

D. Perform test required by Architect to indicate compliance with specifications, drawings and applicable codes. Provide instruments, labor and materials for tests.

1.12 PROTECTIONOF PERSONS AND PROPERTY DURING CONSTRUCTION

A. Take all precautions to provide safety and protection to persons and protection of materials and property as necessary, including protection from injury from rotating or moving equipment, tools, hot surfaces, holes, shafts, falling objects, electrical energy and all other potential hazards. Erect sign, barricades, warning lights, instruct workmen and others who may be subject to construction hazards.

B. Protect items of equipment from stain, corrosion, scratches and any other damage or dirt, whether in storage at job site or installed. No damaged or dirty equipment, lenses or reflectors will be accepted.

1.13 CHANGES ORDERS AND ADDITONAL WORK

A. No change shall be made from the work as called for by these specifications and drawings except on written order of the Architect. Deviations from drawings and specifications shall be made in submittal form and shall include all information for approval including drawings where required. No change for extra work will be allowed unless such extra work has been duly authorized by a written order of the Architect stating the change to be made.

SECTION 16000 – BASIC ELECTRICAL REQUIREMENTS

1.14 SEQUENCING AND SCHEDULING

A. Coordinate electrical equipment installation with other building components.

B. Sequence, coordinate, and integrate installing electrical materials and equipment for efficient flow of the Work. Coordinate installing large equipment requiring positioning prior to closing in the building.

C. Coordinate connecting electrical service to components furnished under other Sections.

D. Coordinate connecting electrical systems with exterior underground and overhead utilities and services. Comply with requirements of governing regulations, franchised service companies, and controlling agencies.

E. Coordinate installing electrical identification after completion of finishing where identification is applied to field-finished surfaces.

F. Coordinate installing electrical identifying devices and markings prior to installing acoustical ceilings and similar finishes that conceal such items.

1.15 AS-BUILT DRAWINGS

A. Contractor to provide to owner at project completion the following:
   1. Two (2) compact disc/DVD volumes with color pdf files showing any/all deviations to the contract documents.
   2. One each set of electrical plans on reproducible media indicating any/all deviations to contract documents.
   3. Two each sets of electrical plans (blue prints) indicating any/all deviations to contract documents.
   4. There will be a $100 service charge for electronic drawings. Submit your request in writing and include a check payable to Jack R. Morgan Engineering, Inc.

1.16 COORDINATION WITH OTHER TRADES

A. Review all specification sections and drawings including HVAC, plumbing and other equipment drawings and other divisions of the specifications for equipment requiring electrical service. Provide service to and make connections to all such equipment requiring electrical service.

B. Contractor to coordinate all aspects of mechanical equipment furnished and installed by others with approved equipment submittals prior to any roughing. It is the responsibility of this contractor to coordinate phase, voltage, minimum circuit amps and maximum over-current protective devices with approved submittals prior to roughing. Coordinate exact connection locations with the mechanical contractor prior to any roughing. Notify engineer in writing of discrepancies between the plans and the approved equipment data.

C. Contractor to coordinate all aspects of plumbing equipment furnished and installed by others with approved equipment submittals prior to any roughing. It is the responsibility of this contractor to coordinate phase, voltage, minimum circuit amps and maximum over-current protective devices with approved equipment submittals prior to roughing. Coordinate exact connection locations with plumbing contractor prior to any roughing. Notify engineer in writing of discrepancies between the plans and the approved equipment data.

PART 2 - ELECTRICAL PRODUCT REQUIREMENTS

2.1 SUBMITTALS AND MATERIALS DATA

SECTION 16000 – BASIC ELECTRICAL REQUIREMENTS

A. The approval of shop drawing shall not be interpreted as a complete check, but will indicate only that the general design is satisfactory. Approval of such drawings does not relieve the contractor of responsibility of coordination of components, auxiliary equipment, accessories or special conditions required for satisfactory operation of the completed system.

B. Any materials and equipment listed which are not in accordance with specification requirements may be rejected.

C. All shop drawings for a specific item shall be made in one submittal. No submittals will be checked until all required submittals are received by the Engineer.

D. The electrical contractor shall check all suppliers' submittals regarding measurements, capacity, performance and details to satisfy him/herself that they conform to the intent of the contract drawings and specifications. Shop drawings and submittals shall bear the stamp of approval of the Contractor as evidence that the drawings have been checked by him. Drawings submitted without this stamp of approval will not be considered and will be returned for contractor approval and stamp. A minimum of ten (10) working days shall be allowed for checking for submittals.

E. All submittals shall clearly identify the item submitted. Standard catalog sheets shall be marked, in ink, so as to identify which item is to be considered. All drawings submitted must be by factory as field drawings will not be accepted.

F. All submittals must be approved prior to commencing any work on this project.

2.2 ELECTRICAL PRODUCT SUBSTITIONS

A. Any proposed substitution of equipment or materials from that specified must be submitted in writing to the Engineer within ten (10) days prior to the bid date. The Engineer will respond in writing as to the acceptance/rejection of the proposed product. Faxed transmittals, e-mails and verbal requests will not be considered.

B. All proposed substitutions shall clearly identify the item submitted as well as the technical information which is called for in other portions of the Electrical Divisions of this Specification. Standard catalog sheets shall be marked, in ink, so as to identify which item is to be considered. All drawings submitted must be by factory as field drawings will not be accepted.

C. Responses to proposed substitutions will be in writing and delivered U.S. mail. Include return mailing address in substitution request package.

PART 3 - EXECUTION

3.1 NOT APPLICABLE

END OF SECTION 16000

SECTION 16060 - GROUNDING AND BONDING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes: Grounding systems and equipment.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

1.4 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with UL 467 for grounding and bonding materials and equipment.

PART 2 - PRODUCTS

2.1 CONDUCTORS

A. Insulated Conductors: Copper or tinned-copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.

B. Bare Copper Conductors:
1. Solid Conductors: ASTM B 3.
2. Stranded Conductors: ASTM B 8.
3. Tinned Conductors: ASTM B 33.
4. Bonding Cable: 28 kcmil, 14 strands of No. 17 AWG conductor, 1/4 inch in diameter.
5. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.
6. Bonding Jumper: Copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches wide and 1/16 inch thick.
7. Tinned Bonding Jumper: Tinned-copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches wide and 1/16 inch thick.

C. Grounding Bus: Predrilled rectangular bars of annealed copper, 1/4 by 4 inches in cross section, with 9/32-inch holes spaced 1-1/8 inches apart. Stand-off insulators for mounting shall comply with UL 891 for use in switchboards, 600 V. Lexan or PVC, impulse tested at 5000 V.

2.2 CONNECTORS

A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction for applications in which used and for specific types, sizes, and combinations of conductors and other items connected.

B. Bus-bar Connectors: Mechanical type, cast silicon bronze, solderless compression-type wire terminals, and long-barrel, two-bolt connection to ground bus bar.

SECTION 16060 - GROUNDING AND BONDING

PART 3 - EXECUTION

3.1 APPLICATIONS

A. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger unless otherwise indicated.

B. Grounding Bus: Install in electrical and telephone equipment rooms, in rooms housing service equipment, and elsewhere as indicated.
   1. Install bus on insulated spacers 2 inches minimum from wall, 6 inches above finished floor unless otherwise indicated.
   2. Where indicated on both sides of doorways, route bus up to top of door frame, across top of doorway, and down to specified height above floor; connect to horizontal bus.

C. Conductor Terminations and Connections:
   1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.
   2. Underground Connections: Welded connectors except at test wells and as otherwise indicated.
   3. Connections to Ground Rods at Test Wells: Bolted connectors.
   4. Connections to Structural Steel: Welded connectors.

3.2 EQUIPMENT GROUNDING

A. Install insulated equipment grounding conductors with all feeders and branch circuits.

B. Install insulated equipment grounding conductors with the following items, in addition to those required by NFPA 70:
   1. Feeders and branch circuits.
   2. Lighting circuits.
   3. Receptacle circuits.
   4. Single-phase motor and appliance branch circuits.
   5. Three-phase motor and appliance branch circuits.
   6. Flexible raceway runs.
   7. Armored and metal-clad cable runs.
   8. Computer and Rack-Mounted Electronic Equipment Circuits: Install insulated equipment grounding conductor in branch-circuit runs from equipment-area power panels and power-distribution units.

C. Air-Duct Equipment Circuits: Install insulated equipment grounding conductor to duct-mounted electrical devices operating at 120 V and more, including air cleaners, heaters, dampers, humidifiers, and other duct electrical equipment. Bond conductor to each unit and to air duct and connected metallic piping.

D. Signal and Communication Equipment: In addition to grounding and bonding required by NFPA 70, provide a separate grounding system complying with requirements in TIA/ATIS J-STD-607-A.
   1. For telephone, alarm, voice and data, and other communication equipment, provide No. 4 AWG minimum insulated grounding conductor in raceway from grounding electrode system to each service location, terminal cabinet, wiring closet, and central equipment location. Install ground bus at TR location connect as required.
   2. Service and Central Equipment Locations and Wiring Closets: Terminate grounding conductor on a 1/4-by-4-by-12-inch grounding bus.
   3. Terminal Cabinets: Terminate grounding conductor on cabinet grounding terminal.

SECTION 16060 - GROUNDING AND BONDING

3.3 INSTALLATION

A. Grounding Conductors: Route along shortest and straightest paths possible unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

B. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance except where routed through short lengths of conduit.
   1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.
   2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install bonding so vibration is not transmitted to rigidly mounted equipment.
   3. Use exothermic-welded connectors for outdoor locations; if a disconnect-type connection is required, use a bolted clamp.

C. Bonding Interior Metal Ducts: Bond metal air ducts to equipment grounding conductors of associated fans, blowers, electric heaters, and air cleaners. Install bonding jumper to bond across flexible duct connections to achieve continuity.

3.4 LABELING

A. Comply with requirements in Section 16075 "Electrical Identification" for instruction signs. The label or its text shall be green.

B. Install labels at the telecommunications bonding conductor and grounding equalizer and at the grounding electrode conductor where exposed.
   1. Label Text: "If this connector or cable is loose or if it must be removed for any reason, notify the facility manager."

3.5 FIELD QUALITY CONTROL

A. Perform tests and inspections.

B. Tests and Inspections:
   1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.
   2. Inspect physical and mechanical condition. Verify tightness of accessible, bolted, electrical connections with a calibrated torque wrench according to manufacturer's written instructions.

C. Grounding system will be considered defective if it does not pass tests and inspections.

D. Prepare test and inspection reports.

END OF SECTION 16060

SECTION 16075 - ELECTRICAL IDENTIFICATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
1. Identification for raceways.
2. Identification for conductors.
3. Warning labels and signs.
4. Instruction signs.
5. Equipment identification labels.
6. Miscellaneous identification products.

1.3 ACTION SUBMITTALS

A. Product Data: For each electrical identification product indicated.

B. Samples: For each type of label and sign to illustrate size, colors, lettering style, mounting provisions, and graphic features of identification products.

C. Identification Schedule: An index of nomenclature of electrical equipment and system components used in identification signs and labels.

1.4 QUALITY ASSURANCE

A. Comply with ANSI A13.1 and IEEE C2.

B. Comply with NFPA 70.

C. Comply with 29 CFR 1910.144 and 29 CFR 1910.145.

D. Comply with ANSI Z535.4 for safety signs and labels.

E. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.

1.5 COORDINATION

A. Coordinate identification names, abbreviations, colors, and other features with requirements in other Sections requiring identification applications, Drawings, Shop Drawings, manufacturer's wiring diagrams, and the Operation and Maintenance Manual; and with those required by codes, standards, and 29 CFR 1910.145. Use consistent designations throughout Project.

B. Coordinate installation of identifying devices with completion of covering and painting of surfaces where devices are to be applied.

C. Coordinate installation of identifying devices with location of access panels and doors.

D. Install identifying devices before installing acoustical ceilings and similar concealment.

SECTION 16075 - ELECTRICAL IDENTIFICATION

PART 2 - PRODUCTS

2.1 CONDUCTOR IDENTIFICATION MATERIALS

A. Color-Coding Conductor Tape: Colored, self-adhesive vinyl tape not less than 3 mils thick by 1 to 2 inches wide.

2.2 FLOOR MARKING TAPE

A. 2-inch- wide, 5-mil pressure-sensitive vinyl tape, with yellow and black stripes and clear vinyl overlay.

2.3 WARNING LABELS AND SIGNS

A. Comply with NFPA 70 and 29 CFR 1910.145.

B. Baked-Enamel Warning Signs:
1. Preprinted aluminum signs, punched or drilled for fasteners, with colors, legend, and size required for application.
2. 1/4-inch grommets in corners for mounting.
3. Nominal size, 7 by 10 inches.

2.4 EQUIPMENT IDENTIFICATION LABELS

A. Engraved, Laminated Acrylic or Melamine Label: Punched or drilled for screw mounting. Minimum letter height shall be 3/8 inch.

B. Nameplate color and information required on nameplate as shown on the Plans.

2.5 CABLE TIES

A. General-Purpose Cable Ties: Fungus inert, self extinguishing, one piece, self locking, Type 6/6 nylon.
1. Minimum Width: 3/16 inch.
2. Tensile Strength at 73 deg F, According to ASTM D 638: 12,000 psi.
3. Temperature Range: Minus 40 to plus 185 deg F.
4. Color: Black except where used for color-coding.

2.6 MISCELLANEOUS IDENTIFICATION PRODUCTS

A. Paint: Comply with requirements in painting Sections for paint materials and application requirements. Select paint system applicable for surface material and location (exterior or interior).

B. Fasteners for Labels and Signs: Self-tapping, stainless-steel screws or stainless-steel machine screws with nuts and flat and lock washers.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Verify identity of each item before installing identification products.

B. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.

C. Apply identification devices to surfaces that require finish after completing finish work.

D. Self-Adhesive Identification Products: Clean surfaces before application, using materials and methods recommended by manufacturer of identification device.

E. Attach signs and plastic labels that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.

3.2 IDENTIFICATION SCHEDULE

A. Accessible Raceways and Metal-Clad Cables, 600 V or Less, for Service, Feeder, and Branch Circuits More Than 30 A, and 120 V to ground: Identify with self-adhesive vinyl tape applied in bands. Install labels at 10-foot maximum intervals.

B. Accessible Raceways and Cables within Buildings: Identify the covers of each junction and pull box of the following systems with self-adhesive vinyl labels with the wiring system legend and system voltage. System legends shall be as follows:
   1. Emergency Power.
   2. Fire Alarm System.
   3. Power.
   4. UPS.

C. Power-Circuit Conductor Identification, 600 V or Less: For conductors in vaults, pull and junction boxes, manholes, and handholes, use color-coding conductor tape to identify the phase.
   1. Color-Coding for Phase and Voltage Level Identification, 600 V or Less: Use colors listed below for ungrounded service feeder, and branch-circuit conductors.
      a. Color shall be factory applied or field applied for sizes larger than No. 8 AWG, if authorities having jurisdiction permit.
      b. Colors for 208/120-V Circuits:
         1) Phase A: Black.
         2) Phase B: Red.
         3) Phase C: Blue.
         4) Neutral A: White with Black stripes.
         5) Neutral B: White with Red stripes.
         6) Neutral C: White with Blue stripes.
         7) Ground: Green
      c. Colors for 480/277-V Circuits:
         1) Phase A: Brown.
         2) Phase B: Orange
         3) Phase C: Yellow.
         4) Neutral A: White or Gray with Brown stripes.
         5) Neutral B: White or Gray with Orange stripes.
         6) Neutral C: White or Gray with Yellow stripes.
         7) Ground: Green
      d. Colors for ungrounded system conductors (isolated power systems):
         1) Phase A: Orange.
         2) Phase B: Black.
         3) Ground: Green
      e. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches from terminal points and in boxes where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding. Locate bands to avoid obscuring factory cable markings.

D. Install instructional sign including the color-code for grounded and ungrounded conductors using adhesive-film-type labels.

E. Control-Circuit Conductor Identification: For conductors and cables in pull and junction boxes, manholes, and handholes, use self-adhesive vinyl labels with the conductor or cable designation, origin, and destination.

F. Control-Circuit Conductor Termination Identification: For identification at terminations provide self-adhesive vinyl labels with the conductor designation.

G. Operating Instruction Signs: Install instruction signs to facilitate proper operation and maintenance of electrical systems and items to which they connect. Install instruction signs with approved legend where instructions are needed for system or equipment operation.

H. Equipment Identification Labels: On each unit of equipment, install unique designation label that is consistent with wiring diagrams, schedules, and the Operation and Maintenance Manual. Apply labels to disconnect switches and protection equipment, central or master units, control panels, control stations, terminal cabinets, and racks of each system. Systems include power, lighting, control, communication, signal, monitoring, and alarm systems unless equipment is provided with its own identification.

1. Labeling Instructions:
   a. Indoor Equipment (in equipment rooms): Engraved, laminated acrylic or melamine label, screw fastened. Unless otherwise indicated, provide and install nameplates with equipment name, voltage, and phase – nameplate colors unique to system voltage.
   b. Indoor Equipment (in finished spaces): Engraved, laminated acrylic or melamine label, secured to inside of door. Unless otherwise indicated, provide and install nameplates with equipment name, voltage, and phase – nameplate colors unique to system voltage.
   c. Outdoor Equipment: Engraved, laminated acrylic or melamine label, screw fastened. Unless otherwise indicated, provide and install nameplates with equipment name, voltage, and phase – nameplate colors unique to system voltage
   d. Elevated Components: Increase sizes of labels and letters to those appropriate for viewing from the floor.
   e. Unless provided with self-adhesive means of attachment, fasten labels with appropriate mechanical fasteners that do not change the NEMA or NRTL rating of the enclosure.
2. Equipment to Be Labeled:
   a. Panelboards: Typewritten directory of circuits in the location provided by panelboard manufacturer. Panelboard identification shall be engraved, laminated acrylic or melamine label.
   b. Emergency system boxes and enclosures.
   c. Enclosed switches.
   d. Enclosed circuit breakers.
   e. Push-button stations.
   f. Contactors.
   g. Remote-controlled switches, dimmer modules, and control devices.
   h. Disconnect Switches
   i. Motor Starters
   j. Transformers
   k. Dimmers
   l. ATS
   m. UPS

END OF SECTION 16075

SECTION 16120 – CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
1. Building wires and cables rated 600 V and less.
2. Connectors, splices, and terminations rated 600 V and less.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 CONDUCTORS AND CABLES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Alcan Products Corporation; Alcan Cable Division.
2. Encore Wire Corporation.
3. General Cable Technologies Corporation.
4. Southwire Incorporated.

B. Copper Conductors: Comply with NEMA WC 70/ICEA S-95-658.

C. Conductor Insulation: Comply with NEMA WC 70/ICEA S-95-658 for Type THHN-2-THWN-2, Type XHHW-2, and Type SO.

D. Multi-conductor Cable: Comply with NEMA WC 70/ICEA S-95-658 for armored cable, Type AC metal-clad cable, Type MC and Type SO with ground wire.

2.2 CONNECTORS AND SPLICES

A. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.

B. Splices for conductors #8 and larger shall be solid copper barrel compression type. Use appropriate hydraulic compression tool to provide correct pressure for compression connectors. Use tools and dies recommended by connector manufacturer .Provide embossing die code or other standard method to make a visible identification that the connector has be adequately compressed on the conductor. Insulate splices with 600 volt "Heat Shrink" or "Cold Shrink" covers, tape and Phase Color tape. Splice only where approved in writing.

2.3 SYSTEM DESCRIPTION

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with NFPA 70.

SECTION 16120 – CONDUCTORS AND CABLES

PART 3 - EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

A. Feeders: Copper - Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.

B. Branch Circuits: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger, except VFC cable, which shall be extra flexible stranded.

3.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

A. Feeders Concealed in Ceilings, Walls, Partitions, and Crawlspaces: Type XHHW-2, RHW, THWN-2, single conductors in raceway.

B. Exposed Branch Circuits, Including in Crawlspaces: Type THHN-2-THWN-2, single conductors in raceway.

C. Branch Circuits above accessible ceilings: Type THHN-2, THWN-2, single conductors in raceway.

D. Branch Circuits Concealed in Walls, and Partitions: Type THHN-2-THWN-2, single conductors in raceway.

3.3 INSTALLATION OF CONDUCTORS AND CABLES

A. Conceal cables in finished walls, ceilings, and floors unless otherwise indicated.

B. Install exposed cables, parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.

C. Complete raceway installation between conductor and cable termination points according to Section 16130 "Raceways and Boxes" prior to pulling conductors and cables.

D. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.

E. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.

F. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.

G. Support cables according to Section 16073 "Hangers and Supports for Electrical Systems."

H. Mark all branch circuit conductors at panel terminations including neutrals with pressure sensitive numbers to correspond to circuit numbers connected.

3.4 CONNECTIONS

A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.

B. Make splices, terminations, and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.

C. Splices for conductors #8 and larger shall be solid copper barrel compression type. Use appropriate hydraulic compression tool to provide correct pressure for compression connectors. Use tools and dies recommended by connector manufacturer .Provide embossing die code or other standard method to make a visible identification that the connector has be adequately compressed on the conductor. Insulate splices with 600 volt "Heat Shrink" or "Cold Shrink" covers, tape and Phase Color tape. Splice only where approved in writing.

D. Lugs: Solid plated copper long barrel , compression type connector, applied with the appropriate hydraulic tool.

E. Provide lugs where not furnished as part of equipment – Furnish as specified above to connect all conductors.

F. Wiring at Outlets: Install conductor at each outlet, with at least 12 inches of slack.

3.5 IDENTIFICATION

A. Identify and color-code conductors and cables according to Section 16075 "Electrical Identification."

B. Identify each spare conductor at each end with identity number and location of other end of conductor, and identify as spare conductor.

3.6 FIRESTOPPING

A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly according to Section 07841 "Through-Penetration Firestop Systems."

3.7 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.

B. Perform the following tests and inspections:
1. Insulation – Use 1000VDC insulation tester (0-500meohm full-scale), equivalent to "Megger"as manufactured by Biddle Company. Test conductors and busses of all systems including feeders, main service busway, branches, motors, devices, etc. Test branch circuits for one minute, test feeders, bus ducts, busses, etc for 15 minutes with readings at one minute intervals. Provide test report containing test results with close-out documents.
2. After installing conductors and cables and before electrical circuitry has been energized, test service entrance conductors, and all panelboard feeder conductors for compliance with requirements.
3. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.

C. Test and Inspection Reports: Prepare a written report to record the following:
1. Procedures used.
2. Results that comply with requirements.
3. Results that do not comply with requirements and corrective action taken to achieve compliance with requirements.

D. Cables will be considered defective if they do not pass tests and inspections.

END OF SECTION 16120

SECTION 16130 - RACEWAYS AND BOXES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
1. Metal conduits, tubing, and fittings.

1.3 DEFINITIONS

A. ARC: Aluminum rigid conduit.

B. GRC: Galvanized rigid steel conduit.

C. IMC: Intermediate metal conduit.

1.4 ACTION SUBMITTALS

A. Product Data: For surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.

1.5 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Conduit routing plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of items involved:
1. Structural members in paths of conduit groups with common supports.
2. HVAC and plumbing items and architectural features in paths of conduit groups with common supports.

B. Source quality-control reports.

PART 2 - PRODUCTS

2.1 METAL CONDUITS, TUBING, AND FITTINGS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. AFC Cable Systems, Inc.
2. Allied Tube & Conduit; a Tyco International Ltd. Co.
3. Anamet Electrical, Inc.
4. Electri-Flex Company.
5. O-Z/Gedney; a brand of EGS Electrical Group.
6. Picoma Industries, a subsidiary of Mueller Water Products, Inc.
7. Republic Conduit.
8. Robroy Industries.
9. Southwire Company.
10. Thomas & Betts Corporation.
11. Western Tube and Conduit Corporation.
12. Wheatland Tube Company; a division of John Maneely Company.

B. Listing and Labeling: Metal conduits, tubing, and fittings shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

C. GRC: Comply with ANSI C80.1 and UL 6.

D. ARC: Comply with ANSI C80.5 and UL 6A.

E. IMC: Comply with ANSI C80.6 and UL 1242.

F. EMT: Comply with ANSI C80.3 and UL 797.

G. FMC: Comply with UL 1; aluminum.

H. LFMC: Flexible steel conduit with PVC jacket and complying with UL 360.

I. Fittings for Metal Conduit: Comply with NEMA FB 1 and UL 514B.
   1. Fittings for EMT:
      a. Material: Steel.
      b. Type: Setscrew or compression.
   2. Expansion Fittings: PVC or steel to match conduit type, complying with UL 651, rated for environmental conditions where installed, and including flexible external bonding jumper.

J. Joint Compound for IMC, GRC, or ARC: Approved, as defined in NFPA 70, by authorities having jurisdiction for use in conduit assemblies, and compounded for use to lubricate and protect threaded conduit joints from corrosion and to enhance their conductivity.

2.2 BOXES, ENCLOSURES, AND CABINETS

A. General Requirements for Boxes, Enclosures, and Cabinets: Boxes, enclosures, and cabinets installed in wet locations shall be listed for use in wet locations.

B. Sheet Metal Outlet and Device Boxes: Comply with NEMA OS 1 and UL 514A.

C. Cast-Metal Outlet and Device Boxes: Comply with NEMA FB 1, ferrous alloy, Type FD, with gasketed cover.

D. Metal Floor Boxes:
   1. Material: sheet metal.
   2. Type: Fully adjustable. Poke-Thru
   3. Shape: Rectangular.
   4. Listing and Labeling: Metal floor boxes shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

E. Luminaire Outlet Boxes: Nonadjustable, designed for attachment of luminaire weighing 50 lb. Outlet boxes designed for attachment of luminaires weighing more than 50 lb shall be listed and marked for the maximum allowable weight.

F. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.

G. Box extensions used to accommodate new building finishes shall be of same material as recessed box.

H. Device Box Dimensions: 4 inches square by 2-1/8 inches deep.

SECTION 16130 - RACEWAYS AND BOXES

PART 3 - EXECUTION

3.1 RACEWAY APPLICATION

A. Outdoors: Apply raceway products as specified below unless otherwise indicated:
1. Exposed, GRC or IMC.
2. Concealed, GRC or IMC.
3. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.
4. Underground, GRC or IMC unless shown as RNC.

B. Indoors: Apply raceway products as specified below unless otherwise indicated:
1. Exposed, Not Subject to Physical Damage: EMT.
2. Exposed, Not Subject to Severe Physical Damage: EMT.
3. Exposed and Subject to Severe Physical Damage: GRC. Raceway locations include the following:
   a. Loading dock.
   b. Corridors used for traffic of mechanized carts, forklifts, and pallet-handling units.
   c. Mechanical rooms.
   d. Gymnasiums.
4. Concealed in Ceilings and Interior Walls and Partitions: EMT.
5. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.
6. Damp or Wet Locations: GRC.

C. Boxes and Enclosures: NEMA 250, Type 1, except use NEMA 250, Type 4 stainless steel in institutional and commercial kitchens and damp or wet locationsMinimum Raceway Size: 1/2-inch trade size.

D. Raceway Fittings: Compatible with raceways and suitable for use and location.
1. EMT: Use setscrew or compression, steel fittings. Comply with NEMA FB 2.10.
2. Flexible Conduit: Use only fittings listed for use with flexible conduit. Comply with NEMA FB 2.20.

E. Do not install aluminum conduits, boxes, or fittings in contact with concrete or earth.

F. Install surface raceways only where indicated on Drawings.

G. Do not install nonmetallic conduit above grade.

3.2 INSTALLATION

A. Comply with NECA 1 and NECA 101 for installation requirements except where requirements on Drawings or in this article are stricter. Comply with NECA 102 for aluminum conduits. Comply with NFPA 70 limitations for types of raceways allowed in specific occupancies and number of floors.

B. Keep raceways at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.

C. Complete raceway installation before starting conductor installation.

D. Comply with requirements in Section 16073 "Hangers and Supports for Electrical Systems" for hangers and supports.

E. Install no more than the equivalent of three 90-degree bends in any conduit run except for control wiring conduits, for which fewer bends are allowed. Support within 12 inches of changes in direction.

F. Set poke thru type floor boxes level and flush with finished floor surface.

G. Conceal conduits and boxes within finished walls, ceilings, and floors unless otherwise indicated. Install conduits parallel or perpendicular to building lines.

H. Support conduit within 12 inches of enclosures to which attached.

I. Stub-ups to Above Recessed Ceilings:
   1. Use EMT, IMC, or RMC for raceways.
   2. Use a conduit bushing or insulated fitting to terminate stub-ups not terminated in hubs or in an enclosure.

J. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors including conductors smaller than No. 4 AWG.

K. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install bushings on conduits up to 1-1/4-inch trade size and insulated throat metal bushings on 1-1/2-inch trade size and larger conduits terminated with locknuts. Install insulated throat metal grounding bushings on service conduits.

L. Install raceways square to the enclosure and terminate at enclosures with locknuts. Install locknuts hand tight plus 1/4 turn more.

M. Do not rely on locknuts to penetrate nonconductive coatings on enclosures. Remove coatings in the locknut area prior to assembling conduit to enclosure to assure a continuous ground path.

N. Cut conduit perpendicular to the length. For conduits 2-inch trade size and larger, use roll cutter or a guide to make cut straight and perpendicular to the length.

O. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb tensile strength. Leave at least 12 inches of slack at each end of pull wire. Cap underground raceways designated as spare above grade alongside raceways in use.

P. Flexible Conduit Connections: Comply with NEMA RV 3. Use a maximum of 72 inches of flexible conduit for recessed and semirecessed luminaires, equipment subject to vibration, noise transmission, or movement; and for transformers and motors.
   1. Use LFMC in damp or wet locations subject to severe physical damage.
   2. Use LFMC or LFNC in damp or wet locations not subject to severe physical damage.

Q. Mount boxes at heights indicated on Drawings. If mounting heights of boxes are not individually indicated, give priority to ADA requirements. Install boxes with height measured to bottom of box unless otherwise indicated.

R. Recessed Boxes in Masonry Walls: Saw-cut opening for box in center of cell of masonry block, and install box flush with surface of wall. Prepare block surfaces to provide a flat surface for a raintight connection between box and cover plate or supported equipment and box.

S. Horizontally separate boxes mounted on opposite sides of walls so they are not in the same vertical channel.

T. Locate boxes so that cover or plate will not span different building finishes.

U. Support boxes of three gangs or more from more than one side by spanning two framing members or mounting on brackets specifically designed for the purpose.

V. Provide ground bushings for all conduits 1 ¼" and larger and bond full size ground wire to bushings and from bushing to box or cabinet. Bond with self-tapping screw and appropriate lug. In smaller conduits, bond to outlet and junction boxes with self-tapping screw lug.

W. Fasten junction and pull boxes to or support from building structure. Do not support boxes by conduits.

3.3 FIRESTOPPING

A. Install firestopping at penetrations of fire-rated floor and wall assemblies. Comply with requirements in Section 07841 "Through-Penetration Firestop Systems."

3.4 PROTECTION

A. Protect coatings, finishes, and cabinets from damage and deterioration.
   1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
   2. Repair damage to PVC coatings or paint finishes with matching touchup coating recommended by manufacturer.

END OF SECTION 16130

SECTION 16140 - WIRING DEVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
1. Receptacles, receptacles with integral GFCI, and associated device plates.
2. Twist-locking receptacles.
3. Receptacles with integral surge-suppression units.
4. Tamper-resistant receptacles.
5. Weather-resistant receptacles.
6. Snap switches and wall-box dimmers.
7. Communications outlets.
8. Cord and plug sets.
9. Floor service outlets, poke-through assemblies, service poles, and multioutlet assemblies.

1.3 DEFINITIONS

A. EMI: Electromagnetic interference.

B. GFCI: Ground-fault circuit interrupter.

C. Pigtail: Short lead used to connect a device to a branch-circuit conductor.

D. RFI: Radio-frequency interference.

E. TVSS: Transient voltage surge suppressor.

F. UTP: Unshielded twisted pair.

1.4 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
1. Receptacles for Owner-Furnished Equipment: Match plug configurations.
2. Cord and Plug Sets: Match equipment requirements.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: List of legends and description of materials and process used for premarking wall plates.

C. Samples: One for each type of device and wall plate specified, in each color specified.

1.6 INFORMATIONAL SUBMITTALS

A. Field quality-control reports.

SECTION 16140 - WIRING DEVICES

1.7 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For wiring devices to include in all manufacturers' packing-label warnings and instruction manuals that include labeling conditions.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers' Names: Shortened versions (shown in parentheses) of the following manufacturers' names are used in other Part 2 articles:
1. Cooper Wiring Devices; Division of Cooper Industries, Inc. (Cooper).
2. Hubbell Incorporated; Wiring Device-Kellems (Hubbell).
3. Leviton Mfg. Company Inc. (Leviton).
4. Pass & Seymour/Legrand (Pass & Seymour).

B. Source Limitations: Obtain each type of wiring device and associated wall plate from single source from single manufacturer.

2.2 GENERAL WIRING-DEVICE REQUIREMENTS

A. Wiring Devices, Components, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with NFPA 70.

C. Devices that are manufactured for use with modular plug-in connectors may be substituted under the following conditions:
1. Connectors shall comply with UL 2459 and shall be made with stranding building wire.
2. Devices shall comply with the requirements in this Section.

2.3 STRAIGHT-BLADE RECEPTACLES

A. Convenience Receptacles, 125 V, 20 A: Hospital Grade 5-20R.
1. Products: Subject to compliance with requirements, provide one of the following:
a. Cooper; 5351 (single), CR5362 (duplex).
b. Hubbell; HBL5351 (single), HBL5352 (duplex).
c. Leviton; 5891 (single), 5352 (duplex).
d. Pass & Seymour; 5361 (single), 5362 (duplex).

2.4 GFCI RECEPTACLES

A. General Description:
1. Straight blade, feed-through type.
2. Comply with NEMA WD 1, NEMA WD 6, UL 498, UL 943 Class A, and FS W-C-596.
3. Include indicator light that shows when the GFCI has malfunctioned and no longer provides proper GFCI protection.

B. Duplex GFCI Convenience Receptacles, 125 V, 20 A:
1. Products: Subject to compliance with requirements, provide one of the following:
a. Cooper; VGF20.
b. Hubbell; GFR5352L.
c. Pass & Seymour; 2095.
d. Leviton; 7590.

SECTION 16140 - WIRING DEVICES

2.5 CORD AND PLUG SETS

A. Description:
1. Match voltage and current ratings and number of conductors to requirements of equipment being connected.
2. Cord: Rubber-insulated, stranded-copper conductors, with Type SOW-A jacket; with green-insulated grounding conductor and ampacity of at least 130 percent of the equipment rating.
3. Plug: Nylon body and integral cable-clamping jaws. Match cord and receptacle type for connection.

2.6 WALL BOX DIMMERS

A. Basis of design product – Wall dimmers shall be 2000W, single-pole, three-way with matching plate – equal to Hubbell model #AS203.

2.7 TOGGLE SWITCHES

A. Comply with NEMA WD 1, UL 20, and FS W-S-896.

B. Switches, 120/277 V, 20 A, with ground screw:
1. Products: Subject to compliance with requirements, provide one of the following:
a. Single Pole:
1) Cooper; AH1221.
2) Hubbell; HBL1221.
3) Leviton; 1221-2.
4) Pass & Seymour; CSB20AC1.
b. Two Pole:
1) Cooper; AH1222.
2) Hubbell; HBL1222.
3) Leviton; 1222-2.
4) Pass & Seymour; CSB20AC2.
c. Three Way:
1) Cooper; AH1223.
2) Hubbell; HBL1223.
3) Leviton; 1223-2.
4) Pass & Seymour; CSB20AC3.
d. Four Way:
1) Cooper; AH1224.
2) Hubbell; HBL1224.
3) Leviton; 1224-2.
4) Pass & Seymour; CSB20AC4.

C. Single-Pole, Double-Throw, Momentary-Contact, Center-off Switches: 120/277 V, 20 A; for use with mechanically held lighting contactors.
1. Products: Subject to compliance with requirements, provide one of the following:
a. Cooper; 1995.
b. Hubbell; HBL1557.
c. Leviton; 1257.
d. Pass & Seymour; 1251.

2.8 WALL PLATES

A. Single and combination types shall match corresponding wiring devices.
1. Plate-Securing Screws: Metal with head color to match plate finish.
2. Material for Finished Spaces: 0.035-inch- thick, satin-finished, Type 302 JUMBO stainless steel.

3. Material for Unfinished Spaces: Galvanized steel.
4. Material for Damp Locations: Cast aluminum with spring-loaded lift cover, and listed and labeled for use in wet and damp locations.

B. Wet-Location, Weatherproof Cover Plates: NEMA 250, complying with Type 3R, weather-resistant, die-cast aluminum with lockable cover.

2.9 FINISHES

A. Device Color:
1. Wiring Devices Connected to Normal Power System: As selected by Architect unless otherwise indicated or required by NFPA 70 or device listing.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with NECA 1, including mounting heights listed in that standard, unless otherwise indicated.

B. Coordination with Other Trades:
1. Protect installed devices and their boxes. Do not place wall finish materials over device boxes and do not cut holes for boxes with routers that are guided by riding against outside of boxes.
2. Keep outlet boxes free of plaster, drywall joint compound, mortar, cement, concrete, dust, paint, and other material that may contaminate the raceway system, conductors, and cables.
3. Install device boxes in brick or block walls so that the cover plate does not cross a joint unless the joint is troweled flush with the face of the wall.
4. Install wiring devices after all wall preparation, including painting, is complete.

C. Conductors:
1. Do not strip insulation from conductors until right before they are spliced or terminated on devices.
2. Strip insulation evenly around the conductor using tools designed for the purpose. Avoid scoring or nicking of solid wire or cutting strands from stranded wire.
3. The length of free conductors at outlets for devices shall meet provisions of NFPA 70, Article 300, without pigtails.
4. Existing Conductors:
   a. Cut back and pigtail, or replace all damaged conductors.
   b. Straighten conductors that remain and remove corrosion and foreign matter.
   c. Pigtailing existing conductors is permitted, provided the outlet box is large enough.

D. Device Installation:
1. Replace devices that have been in temporary use during construction and that were installed before building finishing operations were complete.
2. Keep each wiring device in its package or otherwise protected until it is time to connect conductors.
3. Do not remove surface protection, such as plastic film and smudge covers, until the last possible moment.
4. Connect devices to branch circuits using pigtails that are not less than 6 inches in length.
5. When there is a choice, use side wiring with binding-head screw terminals. Wrap solid conductor tightly clockwise, two-thirds to three-fourths of the way around terminal screw.
6. Use a torque screwdriver when a torque is recommended or required by manufacturer.
7. When conductors larger than No. 12 AWG are installed on 15- or 20-A circuits, splice No. 12 AWG pigtails for device connections.
8. Tighten unused terminal screws on the device.

9. When mounting into metal boxes, remove the fiber or plastic washers used to hold device-mounting screws in yokes, allowing metal-to-metal contact.

E. Receptacle Orientation:
1. Install ground pin of vertically mounted receptacles up, and on horizontally mounted receptacles to the left.

F. Device Plates: Repair wall finishes and remount outlet boxes when standard device plates do not fit flush or do not cover rough wall opening.

G. Arrangement of Devices: Unless otherwise indicated, mount flush, with long dimension vertical and with grounding terminal of receptacles on top. Group adjacent switches under single, multigang wall plates.

3.2 GFCI RECEPTACLES

A. Install non-feed-through-type GFCI receptacles where protection of downstream receptacles is not required.

3.3 IDENTIFICATION

A. Comply with Section 16075 "Electrical Identification."

B. Identify each receptacle with panelboard identification and circuit number. Use hot, stamped, or engraved machine printing with black-filled lettering on face of plate, and durable wire markers or tags inside outlet boxes.

C. All receptacles and switches connected to emergency power source shall be red.

3.4 FIELD QUALITY CONTROL

A. Perform the following tests and inspections:
1. Test Instruments: Use instruments that comply with UL 1436.
2. Test Instrument for Convenience Receptacles: Digital wiring analyzer with digital readout or illuminated digital-display indicators of measurement.

B. Tests for Convenience Receptacles:
1. Line Voltage: Acceptable range is 105 to 132 V.
2. Percent Voltage Drop under 15-A Load: A value of 6 percent or higher is unacceptable.
3. Ground Impedance: Values of up to 2 ohms are acceptable.
4. GFCI Trip: Test for tripping values specified in UL 1436 and UL 943.
5. Using the test plug, verify that the device and its outlet box are securely mounted.
6. Tests shall be diagnostic, indicating damaged conductors, high resistance at the circuit breaker, poor connections, inadequate fault current path, defective devices, or similar problems. Correct circuit conditions, remove malfunctioning units and replace with new ones, and retest as specified above.
7. In patient care and critical care areas all receptacles shall be tested per NFPA 99 for new construction. Provide test report.

C. Wiring device will be considered defective if it does not pass tests and inspections.

D. Prepare test and inspection reports.

END OF SECTION 16140

SECTION 16442 - PANELBOARDS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
1. Lighting and appliance branch-circuit panelboards.

1.3 DEFINITIONS

A. SVR: Suppressed voltage rating.

B. SPD: Surge Protective Device.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of panelboard, switching and overcurrent protective device, panel mounted surge protective device, accessory, and component indicated. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.

B. Shop Drawings: For each panelboard and related equipment.
1. Include dimensioned plans, elevations, sections, and details. Show tabulations of installed devices, equipment features, and ratings.
2. Detail enclosure types and details for types other than NEMA 250, Type 1.
3. Detail bus configuration, current, and voltage ratings.
4. Short-circuit current rating of panelboards and overcurrent protective devices.
5. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.
6. Include wiring diagrams for power, signal, and control wiring.
7. Include time-current coordination curves for each type and rating of overcurrent protective device included in panelboards. Submit on translucent log-log graft paper; include selectable ranges for each type of overcurrent protective device.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified testing agency.

B. Field Quality-Control Reports:
1. Test procedures used.
2. Test results that comply with requirements.
3. Results of failed tests and corrective action taken to achieve test results that comply with requirements.

C. Panelboard directory cards: For installation in panelboards.

1.6 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For panelboards and components to include in emergency, operation, and maintenance manuals. In addition to items specified in Section 01782 "Operation and Maintenance Data," include the following:

1. Manufacturer's written instructions for testing and adjusting overcurrent protective devices.
2. Time-current curves, including selectable ranges for each type of overcurrent protective device that allows adjustments.

1.7 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Keys: Two spares for each type of panelboard cabinet lock.
   2. Circuit Breakers as called for in the panel schedule.
   3. Fuses for Fused Switches: Equal to 10 percent of quantity installed for each size and type, but no fewer than three of each size and type.
   4. Fuses for Fused Power-Circuit Devices: Equal to 10 percent of quantity installed for each size and type, but no fewer than three of each size and type.

1.8 QUALITY ASSURANCE

A. Source Limitations: Obtain panelboards, overcurrent protective devices, components, and accessories from single source from single manufacturer.

B. Product Dimensions: Drawings indicate maximum dimensions for panelboards including clearances between panelboards and adjacent surfaces and other items. Comply with indicated maximum dimensions.

C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

D. Comply with NEMA PB 1.

E. Comply with NFPA 70.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Remove loose packing and flammable materials from inside panelboards; install temporary electric heating (250 W per panelboard) to prevent condensation.

B. Handle and prepare panelboards for installation according to NECA 407 and NEMA PB 1.

1.10 PROJECT CONDITIONS

A. Interruption of Existing Electric Service: Do not interrupt electric service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electric service according to requirements indicated:
   1. Notify Architect and Owner no fewer than ten (10) days in advance of proposed interruption of electric service.
   2. Do not proceed with interruption of electric service without Architect's and Owner's written permission.
   3. Comply with NFPA 70E.

1.11 COORDINATION

A. Coordinate layout and installation of panelboards and components with other construction that penetrates walls or is supported by them, including electrical and other types of equipment, raceways, piping, encumbrances to workspace clearance requirements, and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.

SECTION 16442 - PANELBOARDS

1.12 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace transient voltage suppression devices that fail in materials or workmanship within specified warranty period.
   1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS FOR PANELBOARDS

A. Enclosures: Flush- and/or surface-mounted cabinets as shown on the plans.
   1. Rated for environmental conditions at installed location.
      a. Indoor Dry and Clean Locations: NEMA 250, Type 1.
      b. Outdoor Locations: NEMA 250, Type 3R.
   2. Hinged Front Cover: Entire front trim hinged to box and with standard door within hinged trim cover.
   3. Finishes:
      a. Panels and Trim: Steel, factory finished immediately after cleaning and pre-treating with manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat.
      b. Back Boxes: Galvanized steel.
      c. Fungus Proofing: Permanent fungicidal treatment for overcurrent protective devices and other components.
   4. Directory Card: Inside panelboard door, mounted in metal frame with transparent protective cover.

B. Incoming Mains Location: As required – coordinate prior to providing panelboard approval submittals.

C. Phase, Neutral, and Ground Buses:
   1. Material: Hard-drawn copper, 98 percent conductivity.
   2. Equipment Ground Bus: Adequate for feeder and branch-circuit equipment grounding conductors; bonded to box.
   3. Isolated Ground Bus: Adequate for branch-circuit isolated ground conductors; insulated from box.
   4. Extra-Capacity Neutral Bus: Neutral bus rated 200 percent of phase bus and UL listed as suitable for nonlinear loads (where called for on the plans).
   5. Split Bus: Vertical buses divided into individual vertical sections (where called for on the plans).

D. Conductor Connectors: Suitable for use with conductor material and sizes.
   1. Material: Hard-drawn copper, 98 percent conductivity.
   2. Main and Neutral Lugs: Mechanical type.
   3. Ground Lugs and Bus-Configured Terminators: Compression type.
   4. Feed-Through Lugs (where indicated in panel schedule): Compression type, suitable for use with conductor material. Locate at opposite end of bus from incoming lugs or main device.
   5. Subfeed (Double) Lugs (where indicated in panel schedule): Compression type suitable for use with conductor material. Locate at same end of bus as incoming lugs or main device.
   6. Gutter-Tap Lugs: Compression type suitable for use with conductor material. Locate at same end of bus as incoming lugs or main device.
   7. Extra-Capacity Neutral Lugs (where indicated in the panel schedule): Rated 200 percent of phase lugs mounted on extra-capacity neutral bus.

E. Service Equipment Label: NRTL labeled for use as service equipment for panelboards or load centers with one or more main service disconnecting and overcurrent protective devices.

F. Future Devices: Mounting brackets, bus connections, filler plates, and necessary appurtenances required for future installation of devices.

G. Panelboard Short-Circuit Current Rating: Fully rated to interrupt symmetrical short-circuit current available at terminals.

2.2 LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. General Electric Company; GE Consumer & Industrial - Electrical Distribution.
2. Siemens Energy & Automation, Inc.
3. Square D; a brand of Schneider Electric.

B. Panelboards: NEMA PB 1, lighting and appliance branch-circuit type.

C. Branch Overcurrent Protective Devices: Bolt-on circuit breakers, replaceable without disturbing adjacent units.

D. Doors: Full hinged trim (door-in door construction); secured with flush latch with steel tumbler lock; keyed alike.

2.3 DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. General Electric Company; GE Consumer & Industrial - Electrical Distribution.
2. Siemens Energy & Automation, Inc.
3. Square D; a brand of Schneider Electric.

B. Molded-Case Circuit Breaker (MCCB): Comply with UL 489, with interrupting capacity to meet available fault currents.
1. Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads, and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.
2. Adjustable Instantaneous-Trip Circuit Breakers: Magnetic trip element with front-mounted, field-adjustable trip setting.
3. GFCI Circuit Breakers: Single- and two-pole configurations with Class A ground-fault protection (6-mA trip).
4. Ground-Fault Equipment Protection (GFEP) Circuit Breakers: Class B ground-fault protection (30-mA trip).
5. Molded-Case Circuit-Breaker (MCCB) Features and Accessories:
   a. Standard frame sizes, trip ratings, and number of poles.
   b. Lugs: Mechanical style, suitable for number, size, trip ratings, and conductor materials.
   c. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HID for feeding fluorescent and high-intensity discharge (HID) lighting circuits.
   d. Ground-Fault Protection: Integrally mounted relay and trip unit with adjustable pickup and time-delay settings, push-to-test feature, and ground-fault indicator.
   e. Shunt Trip: 24-V trip coil energized from separate circuit, set to trip at 75 percent of rated voltage.
   f. Auxiliary Contacts: One SPDT switch with "a" and "b" contacts; "a" contacts mimic circuit-breaker contacts and "b" contacts operate in reverse of circuit-breaker contacts.
   g. Handle Padlocking Device: Fixed attachment, for locking circuit-breaker handle in the position indicated on the plans.

SECTION 16442 - PANELBOARDS

PART 3 - EXECUTION

3.1 EXAMINATION

A. Receive, inspect, handle, and store panelboards according to NECA 407 and/or NEMA PB 1.1.

B. Examine panelboards before installation. Reject panelboards that are damaged or rusted or have been subjected to water saturation.

C. Examine elements and surfaces to receive panelboards for compliance with installation tolerances and other conditions affecting performance of the Work.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install panelboards and accessories according to NECA 407 and/or NEMA PB 1.1.

B. Mount such that the top-most switch or circuit breaker (in the panel) is not higher than 79 inches above finished floor or grade. Align adjacent panels for a neat appearance.

C. Mount panelboard cabinet plumb and rigid without distortion of box. Mount recessed panelboards with fronts uniformly flush with wall finish and mating with back box.

D. Install overcurrent protective devices and controllers not already factory installed.
   1. Set field-adjustable, circuit-breaker trip ranges.

E. Install filler plates in unused spaces.

F. Stub four 1-inch empty conduits from panelboard into accessible ceiling space or space designated to be ceiling space in the future. Stub four 1-inch empty conduits into raised floor space or below slab not on grade.

G. Comply with NECA 1.

3.3 IDENTIFICATION

A. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs complying with Section 16075 "Electrical Identification."

B. Create a directory to indicate installed circuit loads; incorporate Owner's final room designations. Obtain approval before installing. Use a computer or typewriter to create directory; handwritten directories are not acceptable.

C. Panelboard Nameplates: Label each panelboard with an engraved nameplate complying with requirements for identification specified in Section 16075 "Electrical Identification.". Refer to Detail on drawing.

D. Device Nameplates: Label each branch circuit device in distribution panelboards with a nameplate complying with requirements for identification specified in Section 16075 "Electrical Identification."

3.4 FIELD QUALITY CONTROL

A. Tests and Inspections:

1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.

B. Panelboards will be considered defective if they do not pass tests and inspections.

C. Prepare test and inspection reports, including a certified report that identifies panelboards included and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

3.5 ADJUSTING

A. Adjust moving parts and operable component to function smoothly, and lubricate as recommended by manufacturer.

END OF SECTION 16442

SECTION 16521 EXTERIOR LIGHTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Exterior luminaires with lamps and ballasts.
2. Luminaire-mounted photoelectric relays.
3. Poles and accessories.

B. Related Sections:

1. Section 16511 "Interior Lighting" for exterior luminaires normally mounted on exterior surfaces of buildings.

1.3 DEFINITIONS

A. CCT: Correlated color temperature.

B. CRI: Color-rendering index.

C. HID: High-intensity discharge.

D. LER: Luminaire efficacy rating.

E. Luminaire: Complete lighting fixture, including ballast housing if provided.

F. Pole: Luminaire support structure, including tower used for large area illumination.

G. Standard: Same definition as "Pole" above.

H. Wind Load: Pressure of wind on pole and luminaire and banners and banner arms, calculated and applied as stated in AASHTO LTS-4-M.

1. Basic wind speed for calculating wind load for poles 50 feet high or less is 90 mph.

a. Wind Importance Factor: 1.0.
b. Minimum Design Life: 25 years.

1.4 ACTION SUBMITTALS

A. Product Data: For each luminaire, pole, and support component, arranged in order of lighting unit designation. Include data on features, accessories, finishes, and the following:

1. Physical description of luminaire, including materials, dimensions, effective projected area, and verification of indicated parameters.
2. Details of attaching luminaires and accessories.

3. Details of installation and construction.
4. Luminaire materials.
5. Photometric data based on laboratory tests of each luminaire type, complete with indicated lamps, ballasts, and accessories.
6. Photoelectric relays.
7. Ballasts, including energy-efficiency data.
8. Lamps, including life, output, CCT, CRI, lumens, and energy-efficiency data.
9. Materials, dimensions, and finishes of poles.
10. Means of attaching luminaires to supports, and indication that attachment is suitable for components involved.
11. Anchor bolts for poles.
12. Manufactured pole foundations.

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.

1. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
2. Anchor-bolt templates keyed to specific poles and certified by manufacturer.
3. Design calculations, certified by a qualified professional engineer, indicating strength of screw foundations and soil conditions on which they are based.
4. Wiring Diagrams: For power, signal, and control wiring.

C. Samples: For products designated for sample submission in the Exterior Lighting Device Schedule. Each Sample shall include lamps and ballasts.

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Lamps: One for every 100 of each type and rating installed. Furnish at least one of each type.
2. Glass and Plastic Lenses, Covers, and Other Optical Parts: One for every 100 of each type and rating installed. Furnish at least one of each type.
3. Ballasts: One for every 100 of each type and rating installed. Furnish at least one of each type.
4. Globes and Guards: One for every 20 of each type and rating installed. Furnish at least one of each type.

1.6 QUALITY ASSURANCE

A. Luminaire Photometric Data Testing Laboratory Qualifications: Provided by manufacturers' laboratories that are accredited under the National Volunteer Laboratory Accreditation Program for Energy Efficient Lighting Products.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

C. Comply with IEEE C2, "National Electrical Safety Code."

D. Comply with NFPA 70.

SECTION 16521 EXTERIOR LIGHTING

1.7 DELIVERY, STORAGE, AND HANDLING

A. Package aluminum poles for shipping according to ASTM B 660.

B. Store poles on decay-resistant-treated skids at least 12 inches above grade and vegetation. Support poles to prevent distortion and arrange to provide free air circulation.

C. Retain factory-applied pole wrappings on fiberglass and laminated wood poles until right before pole installation. Handle poles with web fabric straps.

D. Retain factory-applied pole wrappings on metal poles until right before pole installation. For poles with nonmetallic finishes, handle with web fabric straps.

1.8 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace products that fail in materials or workmanship; that corrode; or that fade, stain, perforate, erode, or chalk due to effects of weather or solar radiation within specified warranty period. Manufacturer may exclude lightning damage, hail damage, vandalism, abuse, or unauthorized repairs or alterations from special warranty coverage.

1. Warranty Period for Luminaires: Five years from date of Substantial Completion.
2. Warranty Period for Metal Corrosion: Five years from date of Substantial Completion.
3. Warranty Period for Color Retention: Five years from date of Substantial Completion.
4. Warranty Period for Poles: Repair or replace lighting poles and standards that fail in finish, materials, and workmanship within manufacturer's standard warranty period, but not less than FIVE years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS FOR LUMINAIRES

A. Luminaires shall comply with UL 1598 and be listed and labeled for installation in wet locations by an NRTL acceptable to authorities having jurisdiction.

1. LER Tests Incandescent Fixtures: Where LER is specified, test according to NEMA LE 5A.
2. LER Tests Fluorescent Fixtures: Where LER is specified, test according to NEMA LE 5 and NEMA LE 5A as applicable.
3. LER Tests HID Fixtures: Where LER is specified, test according to NEMA LE 5B.

B. Lateral Light Distribution Patterns: Comply with IESNA RP-8 for parameters of lateral light distribution patterns indicated for luminaires.

C. Metal Parts: Free of burrs and sharp corners and edges.

D. Sheet Metal Components: Corrosion-resistant aluminum unless otherwise indicated. Form and support to prevent warping and sagging.

E. Housings: Rigidly formed, weather- and light-tight enclosures that will not warp, sag, or deform in use. Provide filter/breather for enclosed luminaires.

F. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during

relamping and when secured in operating position. Doors shall be removable for cleaning or replacing lenses. Designed to disconnect ballast when door opens.

G. Exposed Hardware Material: Stainless steel.

H. Plastic Parts: High resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.

I. Light Shields: Metal baffles, factory installed and field adjustable, arranged to block light distribution to indicated portion of normally illuminated area or field.

J. Reflecting surfaces shall have minimum reflectance as follows unless otherwise indicated:

1. White Surfaces: 85 percent.
2. Specular Surfaces: 83 percent.
3. Diffusing Specular Surfaces: 75 percent.

K. Lenses and Refractors Gaskets: Use heat- and aging-resistant resilient gaskets to seal and cushion lenses and refractors in luminaire doors.

L. Luminaire Finish: Manufacturer's standard paint applied to factory-assembled and -tested luminaire before shipping. Where indicated, match finish process and color of pole or support materials.

M. Factory-Applied Finish for Steel Luminaires: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

1. Surface Preparation: Clean surfaces to comply with SSPC-SP 1, "Solvent Cleaning," to remove dirt, oil, grease, and other contaminants that could impair paint bond. Grind welds and polish surfaces to a smooth, even finish. Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 5/NACE No. 1, "White Metal Blast Cleaning," or SSPC-SP 8, "Pickling."
2. Exterior Surfaces: Manufacturer's standard finish consisting of one or more coats of primer and two finish coats of high-gloss, high-build polyurethane enamel.
   a. Color: As selected by Architect from manufacturer's full range.

N. Factory-Applied Labels: Comply with UL 1598. Include recommended lamps and ballasts. Labels shall be located where they will be readily visible to service personnel, but not seen from normal viewing angles when lamps are in place.

1. Label shall include the following lamp and ballast characteristics:

   a. "USES ONLY" and include specific lamp type.
   b. Lamp diameter code (T-4, T-5, T-8, T-12), tube configuration (twin, quad, triple), base type, and nominal wattage for fluorescent and compact fluorescent luminaires.
   c. Lamp type, wattage, bulb type (ED17, BD56, etc.) and coating (clear or coated) for HID luminaires.
   d. Start type (preheat, rapid start, instant start) for fluorescent and compact fluorescent luminaires.
   e. ANSI ballast type (M98, M57, etc.) for HID luminaires.
   f. CCT and CRI for all luminaires.

2.2 FLUORESCENT BALLASTS AND LAMPS

A. Ballasts for Low-Temperature Environments:

1. Temperatures 0 Deg F and Higher: Electronic type rated for 0 deg F starting and operating temperature with indicated lamp types.
2. Temperatures Minus 20 Deg F and Higher: Electromagnetic type designed for use with indicated lamp types.

B. Ballast Characteristics:

1. Power Factor: 90 percent, minimum.
2. Sound Rating: Class A.
3. Total Harmonic Distortion Rating: Less than 10 percent.
4. Electromagnetic Ballasts: Comply with ANSI C82.1, energy-saving, high power factor, Class P, automatic-reset thermal protection.
5. Case Temperature for Compact Lamp Ballasts: 65 deg C, maximum.
6. Transient-Voltage Protection: Comply with IEEE C62.41.1 and IEEE C62.41.2, Category A or better.

C. Low-Temperature Lamp Capability: Rated for reliable starting and operation with ballast provided at temperatures 0 deg F and higher.

2.3 BALLASTS FOR HID LAMPS

A. Comply with ANSI C82.4 and UL 1029 and capable of open-circuit operation without reduction of average lamp life. Include the following features unless otherwise indicated:

1. Ballast Circuit: Constant-wattage autotransformer or regulating high-power-factor type.
2. Minimum Starting Temperature: Minus 22 deg F.
3. Normal Ambient Operating Temperature: 104 deg F.
4. Ballast Fuses: One in each ungrounded power supply conductor. Voltage and current ratings as recommended by ballast manufacturer.

2.4 HID LAMPS

A. Ceramic Pulse-Start, Metal-Halide Lamps: Minimum CRI 90, and CCT color temperature 4200 K.

2.5 GENERAL REQUIREMENTS FOR POLES AND SUPPORT COMPONENTS

A. Structural Characteristics: Comply with AASHTO LTS-4-M.

1. Wind-Load Strength of Poles: Adequate at indicated heights above grade without failure, permanent deflection, or whipping in steady winds of speed indicated in "Structural Analysis Criteria for Pole Selection" Article.
2. Strength Analysis: For each pole, multiply the actual equivalent projected area of luminaires and brackets by a factor of 1.1 to obtain the equivalent projected area to be used in pole selection strength analysis.

B. Luminaire Attachment Provisions: Comply with luminaire manufacturers' mounting requirements. Use stainless-steel fasteners and mounting bolts unless otherwise indicated.

C. Mountings, Fasteners, and Appurtenances: Corrosion-resistant items compatible with support components.

1. Materials: Shall not cause galvanic action at contact points.
2. Anchor Bolts, Leveling Nuts, Bolt Caps, and Washers: Hot-dip galvanized after fabrication unless otherwise indicated.
3. Anchor-Bolt Template: Plywood or steel.

D. Concrete Pole Foundations: Cast in place, with anchor bolts to match pole-base flange. Concrete, reinforcement, and formwork are specified in Section 03300 "Cast-in-Place Concrete."

2.6 STEEL POLES

A. Poles: Comply with ASTM A 500, Grade B, carbon steel with a minimum yield of 46,000 psig; one-piece construction up to 40 feet in height with access handhole in pole wall.

1. Shape: AS SHOWN ON PLANS
2. Mounting Provisions: Butt flange for bolted mounting on foundation or breakaway support.

B. Brackets for Luminaires: Detachable, cantilever, without underbrace.

1. Adapter fitting welded to pole, allowing the bracket to be bolted to the pole mounted adapter, then bolted together with stainless-steel bolts.
2. Cross Section: Tapered oval, with straight tubular end section to accommodate luminaire.
3. Match pole material and finish.

C. Grounding and Bonding Lugs: Welded 1/2-inch threaded lug, complying with requirements in Section 16060 "Grounding and Bonding," listed for attaching grounding and bonding conductors of type and size listed in that Section, and accessible through handhole.

D. Cable Support Grip: Wire-mesh type with rotating attachment eye, sized for diameter of cable and rated for a minimum load equal to weight of supported cable times a 5.0 safety factor.

E. Prime-Coat Finish: Manufacturer's standard prime-coat finish ready for field painting.

F. Factory-Painted Finish: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

1. Surface Preparation: Clean surfaces to comply with SSPC-SP 1, "Solvent Cleaning," to remove dirt, oil, grease, and other contaminants that could impair paint bond. Grind welds and polish surfaces to a smooth, even finish. Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 5/NACE No. 1, "White Metal Blast Cleaning," or with SSPC-SP 8, "Pickling."
2. Interior Surfaces of Pole: One coat of bituminous paint, or otherwise treat for equal corrosion protection.
3. Exterior Surfaces: Manufacturer's standard finish consisting of one or more coats of primer and two finish coats of high-gloss, high-build polyurethane enamel.

   a. Color: As selected by Architect from manufacturer's full range.

2.7 POLE ACCESSORIES

A. Duplex Receptacle: 120 V, 20 A in a weatherproof assembly complying with Section 16140 "Wiring Devices" for ground-fault circuit-interrupter type.

1. **[Surface mounted] [Recessed], [12 inches] <Insert dimension>** above finished grade.
2. Nonmetallic polycarbonate plastic or reinforced fiberglass, weatherproof in use, cover, **<Insert color to match pole,>** that when mounted results in NEMA 250, **[Type 3R] [Type 4X]** enclosure.
3. With cord opening.
4. With lockable hasp and latch that complies with OSHA lockout and tag-out requirements.

B. Base Covers: Manufacturers' standard metal units, arranged to cover pole's mounting bolts and nuts. Finish same as pole.

C. Decorative accessories, supplied by decorative pole manufacturer, include the following:

1. Banner Arms: AS SCHEDULED>.

PART 3 - EXECUTION

3.1 LUMINAIRE INSTALLATION

A. Install lamps in each luminaire.

B. Fasten luminaire to indicated structural supports.

1. Use fastening methods and materials selected to resist seismic forces defined for the application and approved by manufacturer.

3.2 POLE INSTALLATION

A. Alignment: Align pole foundations and poles for optimum directional alignment of luminaires and their mounting provisions on the pole.

B. Clearances: Maintain the following minimum horizontal distances of poles from surface and underground features unless otherwise indicated on Drawings:

1. Fire Hydrants and Storm Drainage Piping: 60 inches.
2. Water, Gas, Electric, Communication, and Sewer Lines: 10 feet.
3. Trees: 15 feet from tree trunk.

C. Concrete Pole Foundations: Set anchor bolts according to anchor-bolt templates furnished by pole manufacturer. Concrete materials, installation, and finishing requirements are specified in Section 03300 "Cast-in-Place Concrete."

D. Foundation-Mounted Poles: Mount pole with leveling nuts, and tighten top nuts to torque level recommended by pole manufacturer.

1. Use anchor bolts and nuts selected to resist seismic forces defined for the application and approved by manufacturer.
2. Grout void between pole base and foundation. Use nonshrink or expanding concrete grout firmly packed to fill space.
3. Install base covers unless otherwise indicated.
4. Use a short piece of 1/2-inch- diameter pipe to make a drain hole through grout. Arrange to drain condensation from interior of pole.

E. Poles and Pole Foundations Set in Concrete Paved Areas: Install poles with minimum of 6-inch- wide, unpaved gap between the pole or pole foundation and the edge of adjacent concrete slab. Fill unpaved ring with pea gravel to a level 1 inch below top of concrete slab.

F. Raise and set poles using web fabric slings (not chain or cable).

3.3 INSTALLATION OF INDIVIDUAL GROUND-MOUNTING LUMINAIRES

A. Install on concrete base with top 4 inches above finished grade or surface at luminaire location. Cast conduit into base, and finish by troweling and rubbing smooth. Concrete materials, installation, and finishing are specified in Section 03300 "Cast-in-Place Concrete."

3.4 CORROSION PREVENTION

A. Aluminum: Do not use in contact with earth or concrete. When in direct contact with a dissimilar metal, protect aluminum by insulating fittings or treatment.

B. Steel Conduits: Comply with Section 16130 "Raceways and Boxes." In concrete foundations, wrap conduit with 0.010-inch- thick, pipe-wrapping plastic tape applied with a 50 percent overlap.

3.5 GROUNDING

A. Ground metal poles and support structures according to Section 16060 "Grounding and Bonding."

1. Install grounding electrode for each pole unless otherwise indicated.
2. Install grounding conductor pigtail in the base for connecting luminaire to grounding system.

B. Ground nonmetallic poles and support structures according to Section 16060 "Grounding and Bonding."

1. Install grounding electrode for each pole.
2. Install grounding conductor and conductor protector.
3. Ground metallic components of pole accessories and foundations.

3.6 FIELD QUALITY CONTROL

A. Inspect each installed fixture for damage. Replace damaged fixtures and components.

B. Illumination Observations: Verify normal operation of lighting units after installing luminaires and energizing circuits with normal power source.

C. Illumination Tests:

1. Measure light intensities at night. Use photometers with calibration referenced to NIST standards. Comply with the following IESNA testing guide(s):
   a. IESNA LM-64, "Photometric Measurements of Parking Areas."

D. Prepare a written report of tests, inspections, observations, and verifications indicating and interpreting results. If adjustments are made to lighting system, retest to demonstrate compliance with standards.

3.7 DEMONSTRATION

A. Train Owner's maintenance personnel to adjust, operate, and maintain luminaire lowering devices.

SECTION 16521 EXTERIOR LIGHTING

END OF SECTION 16521

SPECIAL PROVISION 4000

LANDSCAPE WORK

PART 1 - GENERAL

1.01 Related Drawings

Drawings and general provisions of the contract, including General and/or Supplementary Conditions and Division 1 Specification Sections, apply to the work of all technical sections.

1.02 Description of Work

A. Extent of the landscape work is shown on drawings and in schedule.

B. Provide and furnish all labor, materials and equipment required or inferred from drawings and specifications to complete the work of this section.

1.03 Quality Assurance

A. Reference Standards

1. Standardized Plant Names, latest edition by the American Joint Committee on Horticultural Nomenclature.

2. American Standard for Nursery Stock, latest edition, by the American Association of Nurserymen.

B. Source Quality Control

1. General: Only plant material grown in a recognized nursery in accordance with good horticultural practice will be accepted. Location source of trees shown on plans. Provide healthy, vigorous stock, free of disease, insects, eggs, larvae and defects such as knots, included bark, injuries, abrasions or disfigurement.

2. Inspection of plant material prior to digging: no later than 30 days after award of contract to General Contractor, the contractor shall locate all plant material for the job and inform the landscape architect in writing of the supplying nursery, contact name, and phone number. Within 30 days of receipt of plant material sources, the landscape architect and the owner, will select and tag 100% of the plant materials required for the job at the contractor's sources. Any deposits required by nurseries shall be paid by contractor, promptly direct to supplying nursery. In the event plant

material is found to be unacceptable, the contractor will pursue other listed sources until acceptable plant material is found at no additional cost to the owner. Approval at the plant source does not impair the right of inspection and rejection during progress of the work.

3. Ship the landscape materials with certificates of inspection required by governing authorities. Inspection by federal and/or state governments at the grower does not preclude rejection of plants at the site by the landscape architect. Comply with regulations applicable to landscape materials. Prepare plants for shipment to prevent damage to the plants.

C. Do not make substitutions: If specified landscape material is not obtainable, submit to the landscape architect proof of non-availability and proposal for use of equivalent material. For proof of non-availability submit a written statement from listed nurseries that the plant in question is not available from them.

D. Analysis and Standards: Package standard products with manufacturer's certified analysis. For other materials, provide analysis by recognized laboratory made in accordance with methods established by the Association of Official Agriculture Chemists, wherever applicable.

E. Topsoil: Before delivery of topsoil (approval of topsoil required prior to delivery), furnish the landscape architect with written reports, samples and statements giving location of properties from which topsoil is to be Obtained, depth to be stripped, and crops grown during past 2 years.

F. Soil Report: The contractor shall engage a reputable soils laboratory to include testing and analysis of new offsite topsoil. In the report, list fertilization and soil amendment recommendations to insure vigorous growth for all plants specified. Also include PH of soil samples and *any* lime requirements.

G. Approval and Selection of Materials and Work: The selection of all materials and the execution of all operations required under the specifications and drawings are subject to the approval of the landscape architect and the owner. They have the right to reject *any* and all materials and *any* and all work which, in their opinion, does not meet the requirements of the contract documents at *any* stage of the operations. The contractor shall remove rejected work and/or materials from the job site and replace promptly.

1.04 Submittals

A. Certification: Prior to acceptance of materials, submit certificates of inspection as required by government authorities and manufacturer's or vendor's certified analysis for soil amendments and fertilizer materials. Submit other data substantiating that materials comply with specified requirements.

B. Planting Schedule: Submit planting schedule showing scheduled dates for each type of planting in each area of site prior to beginning of the work.

C. Maintenance Instructions: Upon completion of the installation, submit typewritten recommendations for maintenance of all portions of the landscape.

D. Topsoil Sample: Submit 1 cubic foot sample of offsite topsoil

E. Soil Report: Submit results of laboratory soil tests one month prior to beginning of the work.

F. Approval: Obtain approval from the landscape architect for all submittals prior to beginning of work unless otherwise noted.

1.05 Delivery, Storage and Handling

A. Packaged Materials: Deliver packaged materials in containers showing weight, analysis and name of manufacturer. Protect materials from deterioration during delivery and while stored at site. (Plants shall not be transported in temperatures below 20°F).

B. Sod: Time the delivery so that sod will be placed within 24 hours after cutting. Protect sod against drying and breaking of strips. .

C. Trees, Shrubs and Ground Cover: Do not prune prior to delivery. Do not bend or bind-tie trees or shrubs in such a manner as to damage bark, break branches or destroy natural shape. Provide protective covering during shipment.

D. Deliver trees, shrubs and ground cover after preparations for planting have been completed and plant immediately. If planting is delayed more than 6 hours after delivery, set trees, shrubs and ground cover in shade, protect from weather and mechanical damage, heal in with mulch and keep moist.

E. Do not remove container grown stock from containers until planting time.

F. Do not remove labels attached to plant material by the landscape architect until directed to do so.

1.06 Job Conditions

A. Proceed with and complete the landscape work as rapidly as portions of site become available, working within seasonal limitation for each kind of landscape work required.

B. Existing Utilities: Determine location of underground utilities. Perform work in a manner which will avoid possible damage. Excavate as required. Maintain grade stakes set by others unless removal is mutually agreed upon by parties concerned. All damage to utilities resulting from work covered in these specifications will be repaired at the contractor's expense.

C. Excavation: If conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage conditions, or obstructions, notify the landscape architect in writing before planting. Contractor, shall include In base bid all additional off-site topsoil necessary for planting on this site.

D. Planting Time: Plant or install materials during suitable weather conditions.

E. Planting Schedule: Prepare a proposed planting schedule. Schedule dates for each type of landscape work during contract period. Coordinate schedule with the General Contractor. No planting of trees shall be allowed between March 1 and July 1. Planting of trees between July 1 and October 30, shall be by special permission from Landscape Architect, and only allowed if Contractor has forces on site every day watering and monitoring moisture levels in the tree balls.

F. Coordination with Lawns: Plant trees and shrubs after final grades are established and prior to planting of lawns, unless otherwise acceptable to the landscape architect. If planting of trees and shrubs occurs after lawn work, protect lawn areas and promptly repair damage to lawns resulting from planting operations.

1.07 Warranty

A. Warranty all trees, shrubs, groundcover, and areas for a period of 1 year after date of final acceptance, against all defects, including death and unsatisfactory growth, in the opinion of the landscape architect and or the owner, except for defects resulting from incidents which are beyond the landscape contractor's control.

B. Remove immediately and replace all trees, shrubs, groundcovers and lawn or other plants found to be dead or in unhealthy condition during the guarantee period as determined by the landscape architect or the owner. Make replacements as soon as weather conditions permit.

C. Replacements: Match (height, spread and caliper) adjacent specimens of the same species. Replacements are subject to all requirements stated in this specification and subject to inspection by the landscape architect prior to digging.

D. Repair grades, lawn areas, paving and any other damage resulting from replacement planting operations at no additional cost to the owner.

E. Inspect job site monthly during the guarantee period to determine what changes, if any, should be made in the maintenance program. Submit all recommended changes in writing to the landscape architect and the owner.

PART 2 - PRODUCTS

2.01 Topsoil

Provide off site topsoil which is free of purple nut sedge, fertile, friable, natural loam, surface soil, free of subsoil, clay lumps, brush, weeds and other litter and free of roots, stumps, stones larger than 1/2" in any dimension, and other extraneous or toxic material harmful to plant growth. Topsoil shall be screened/shredded prior to delivery to site. Obtain topsoil only from naturally, well-drained sites where topsoil occurs in a depth of not less than 4"; do not obtain from bogs or marshes.

2.02 Soil Amendments

A. Lime: Natural limestone containing not less than 85% of total carbonates, ground so that not less than 90% passes a 10 mesh sieve and not less than 50% passes a 100 mesh sieve.

B. Commercial Fertilizer: Complete fertilizer of neutral character, with some elements derived from organic sources and containing the following percentages of available plant nutrients:

1. For trees and shrubs, provide fertilizer with not less than 10% available phosphoric acid and from 3% to 5% total nitrogen and from 3% to 5% soluble potash.

2. For lawns, provide fertilizer with not less than 4% phosphoric acid and not less than 2% potassium and a percentage of nitrogen required to provide not less than 1 pound of actual nitrogen per 1,000 square feet of lawn area. Provide nitrogen in a form that will be available to lawn during initial period of growth.

2.03 Planting Soil

See Plan

2.04 Plant Materials

A. General

1. Provide plants true to species and variety, complying with recommendations of ANSI Z60.1 Standard for Nursery Stock.

2. Specific requirements concerning plant material and the manner in which it is to be supplied are shown on the drawings and plant list.

3. Acclimatization: Plant must have grown under climatic conditions (temperature extremes similar to those of the locality of the project site for a minimum of 1 year immediately prior to being planted on the job.

B. Quality and Size

1. Trees shall be of the size and kind designated by the plans, have a straight trunk with a well-branched, symmetrical top and with leader intact. Trees shall have no fresh cuts of limbs over *3/4* inch which have not completely callused over, no cut back trees and no abrasions of the bark. Trees with co-dominant leaders, narrow crotches with included bark, split bark with In-rolled callus, dead, broken or flush cut branches will not be accepted. All trees shall be straight trunk, with full heads and symmetrical branches around trunk. For multi-stemmed trees no division of the trunk more than 6 inches from the ground level shall be considered as a stem. Trees injured in transit or delivered in an unsatisfactory manner will be rejected. Trees must have good fibrous root systems. All root cuts must be cleanly cut.

2. Balled and burlaped trees (B&B) shall be adequately balled with firm, natural balls of Size in accordance with the American Standards for Nursery Stock (current edition). Balls shall be firmly wrapped with burlap.

3. Balled and burlaped in wire basket trees (W.B., B&B) shall have a machine dug ball. The size and condition of the ball shall be as provided for balled and burlaped trees. The ball shall be dug with a tree spade and placed in a burlap lined wire basket in one operation. The wire basket shall then be crimped around the sides and firmly tied and laced across the top of the burlap covered ball securing the ball and wire basket neatly together. A lifting strap shall then be laced and integrally tied into the wire basket prior to moving the tree from the growing field. Additionally, the trunk of the tree shall be protected by a stem guard installed at time of digging ball which shall be burlap, cardboard, etc., wrapped around the trunk or canes of the tree from the top of the root ball to the first tree branches or 36".

4. Shrubs shall be of the size and kind designated by the plans. Balled and burlaped shrubs shall be vigorous, well furnished plants of uniform size, shape and quality and must have fibrous root systems. Balls shall be firm, of size in accordance with American Standard for Nursery Stock (current edition), tied with twine or other satisfactory material. No balled shrub will be acceptable if cracked or broken before or during the process of

planting and no plant will be acceptable which is handled by the plant top itself and not the ball. Container shrubs shall have a strong fibrous root system established in container soil mix. Plants with root mass circled around inside of container exhibiting a root-bound condition will be rejected.

5. Vines and perennials shall be of the size and kind designated by the plans. Bare-root vines shall be vigorous, well furnished plants with good vigorous root systems, protected by an acceptable method from drying out. Pot-grown plants (P.G.) shall be vigorous well-developed plants, well established in pots with sufficient roots to hold the earth together intact after removal from containers and at the same time not to be root bound. Upon permission of the engineer due to lateness of planting in the spring season causing a hold-over of the planting of vines to the next season, the contractor may furnish and plant potted plants or the kinds of vines designated as bare-root, provided the potted plants are at least one year old, the pots *2-1/2* inch minimum diameter, and 2 plants for the one ordered are furnished and planted in the same pocket holes or beds as specified. The 2 plants will be at no additional cost to the owner. Balled and burlaped vines shall be vigorous, well-developed plants. Perennials shall be field grown unless otherwise provided.
6. Grass Sod: Provide fresh, clean, new crop sod complying with tolerance for purity and established by Official Seed Analysts of North America.

2.05 Miscellaneous Landscape Materials

A. Anchors: No.6 rebar.

B. Arbortie system, color green. Submit manufacturer data for approval.

PART 3 - EXECUTION

3.01 Preparation

General

1. The contractor shall examine conditions under which planting is to be installed. Review applicable architectural and engineering drawings and be familiar with alignment of underground utilities before digging.

2. Planting Time: See Subsection 1.06(E).

3. Layout individual tree and shrub locations and areas for multiple plantings. Stake locations and outline areas and secure the landscape architects' acceptance before start of excavation for planting work. Make adjustments as *may* be requested.

4. Notify the landscape architect of adverse subsurface drainage or soil conditions.

3.02 Excavation

A. Excavation for Trees and Shrubs:

1. Excavate pits, beds and trenches with vertical sides as specified and as shown on the drawings.

2. For balled and burlaped (B&B or B&BIWB) trees, make excavation as shown on details.

3. For container grown stock, excavate as detailed.

3.03 Preparation of Planting Soil

A. Before mixing, clean topsoil of roots, plants, sods, stones, clay lumps, and other extraneous materials harmful or toxic to plant growth.

B. Mix lime and fertilizers with topsoil at rates specified. Delay mixing of fertilizer if planting will not follow placing of planting soil within a few days.

C. For pit and trench type backfill, mix planting soil prior to backfilling.

D. For planting beds, mix planting soil either prior to planting or apply to surface of topsoil and mix thoroughly before planting.

1. Mix lime, if required, with dry soil prior to mixing of fertilizer.

2. Apply phosphoric acid fertilizer (other than that constituting a portion of complete fertilizers) directly to the sub grade before applying planting soil and tilling.

E. Loosen sub grade to a minimum depth of 8". Remove stones over 1" in any dimension and sticks, roots, rubbish and other extraneous matter. Limit preparation to areas which will be planted promptly after preparation.

F. Place approximately *1/2* of total amount of new topsoil required. Work into top of loosened sub grade to create a transition layer and then place remainder of the planting soil mixture to a minimum depth required to meet lines, grades and elevations shown, after light rolling and natural settlement.

G. Allow for sod thickness in areas to be sodded.

H. Grade areas to a smooth even surface with loose, uniformly fine texture. Roll and rake and remove ridges and fill depressions as required to meet finish grades. Limit fine grading to areas which can be planted immediately after grading.

I. Fertilize and lime prior to start of grassing operation. Apply ground limestone at the rate recommended by soil test analysis and work into top 6" of soil. Apply fertilizer at the rate of 1,200 pounds per acre and work into top 2" of soil.

3.04 Planting Trees and Shrubs

A. Set ball and burlaped (B&B or B&BIWB) and container stock, plumb and in center of pit or trench with top of ball 2" to 3" above the finish grade (or as shown in details) and also 2" to 3" above the grade they bore to natural grades before transplanting. Remove burlap from top of balls. Remove all synthetic ropes from root ball. Use planting soil mixture to backfill plant pits. When plants are set, place additional backfill around base and sides of ball, and work each layer to settle backfill and eliminate voids and air pockets. When excavation is approximately 213 full, water thoroughly before placing remainder of backfill. Repeat watering until no more is absorbed. Water again after placing final layer of backfill.

B. Form Shallow saucers to the finished grade outside the tree pit (trees not in planting beds or in tree grates) approximately 3" height capable of holding water around each plant by placing a mound of topsoil around the edge of each filled in pit.

C. If trees or shrubs are moved in full leaf, spray with anti-desiccant at nursery before moving and again after planting as per manufacturers recommendations. Plants shall be hardened off under mist at nursery prior to delivery. Use only if plants are transplanted from June through September. If planting in full leaf, contractor shall seek approval of landscape architect prior to any work.

D. Mulching: Immediately after planting work has been completed, mulch pits, trenches and planting beds.

E. Water: Soak all plants immediately after planting, continue watering thereafter as necessary or as directed until acceptance of the work in total.

F. Smooth planting areas to conform to specified grades after full settlement has occurred and mulch has been applied.

F. Shovel edge required between all planting beds and lawn areas.

3.05 Staking, Guying and Pruning

A. Stake and guy trees immediately after planting. Plants shall be plumb after staking or guying. Maintain stakes, wires and guys until acceptance of the work in total.

B. Staking trees of 1" to 4 *1/2"* caliper: Drive stakes securely into ground and fasten to tree with arbortie. Adhere to staking details unless alternate detail has been approved by the landscape architect prior to beginning of planting operation.

C. Pruning: Unless otherwise directed by the Architect, do not cut tree leaders and remove only injured or dead branches from trees, if any. Prune shrubs at the direction of the landscape architect.

D. Remove and replace promptly any plants misformed resulting from improper pruning.

3.06 Sowing Turf Grass

All soding & ground preparation shall conform to Alabama Department of Transportation Standard Specifications for Highway Construction, 2006 Edition, Sections 651,652, and 654.

3.07 Maintenance

A. Begin maintenance immediately after planting.

B. Maintain trees and shrubs until provisional acceptance of the work in total.

C. Maintain trees and shrubs by water, pruning, cultivating, weeding and re-mulching as required for healthy growth. Restore planting saucers. Tighten and repair stake and guy supports and reset trees and shrubs to proper grades or vertical position as required. Spray as required to keep trees and shrubs free of insects and disease.

D. Maintain lawns until provisional acceptance of the work in total.

E. Maintain lawns by watering, weeding, mowing, repair of eroded areas and re-sodding as necessary to establish a uniform stand of the specified grasses.

3.08 Clean Up and Protection

A. During landscape work, keep pavements clean and work area in an orderly condition.

B. Upon completion of work, clear grounds of debris superfluous materials and all equipment. Remove from site to satisfaction of the landscape architect and the owner.

C. Protect landscape work and materials from damage due to landscape operations, operations by other contractors and trades and trespassers. Maintain protection during installation and maintenance periods. Treat, repair or replace damaged landscape work as directed at no additional cost to the owner.

3.09 Inspection and Acceptance

A. Upon completion of work, notify the landscape architect and the owner at least 10 days prior to requested date of inspection for provisional acceptance. Where inspected landscape work does not comply with requirements, replace rejected work and continue specified maintenance until re-inspected by the landscape architect and found to be acceptable. Remove rejected plants and materials promptly from project site.

B. Final acceptance: *One* year after provisional acceptance of the work in total the landscape architect and the owner shall inspect the work for final acceptance.

C. All planting and plant material required in these specifications shall be in satisfactory condition and accepted by the owner when the contractor applies for final payment.

END OF SECTION

SPECIAL PROVISION 5000
CU-STRUCTUAL SOIL SPECIFICATIONS

PART 1 - DESCRIPTION AND SPECIFICATION

1.1 GENERAL

A. The work of this section consists of all Structural Soil work and related items as indicated on the drawings or as specified herein and includes, but is not limited to, the following:

CU-Soil™ is a proprietary material patented by Cornell University (US Patent #5,849,069) and marketed under the registered trademark, CU-Structural Soil®. Only licensed companies are authorized to produce this material, meeting the specifications described in this text. For a list of licensed CU-Soil™ producers, call AMEREQ, INC. at 800-832-8788.

1.2 REFERENCES AND STANDARDS

A. The following references are used herein and shall mean:

ASTM: American Society of Testing Materials
USDA: United States Department of Agriculture
AASHTO: American Association of State Highway and Transportation Officials
Standard Specifications: Regional or Municipal Standard Specifications Documentation for the location of proposed usage
AOAC: Association of Official Agricultural Chemists

1.3 SAMPLES AND SUBMITTALS

A. At least 30 days prior to ordering materials, the installing contractor shall submit to the engineer representative samples, certificates, manufacturer's literature and test results for materials specified below. No materials shall be ordered until the required samples, certificates, manufacturer's literature, producer's current license and test results have been reviewed and approved by the landscape architect and/or engineer. The engineer reserves the right to reject any material that does not meet CU-Structural Soil® specifications. Delivered materials shall closely match the approved samples.

B. Submit from licensed producer, $^1/_2$ cubic foot representative sample of clay loam, one cubic foot representative sample of crushed stone, and one cubic foot representative sample of CU-Structural Soil® mix for approval. In the event of multiple source fields for clay loam, submit a minimum of one set of samples per source field or stockpile. The samples of all clay loam, crushed stone, and CU-Structural Soil® shall be submitted to the engineer as a record of the soil color and texture.

C. Submit soil test analysis reports for sample of clay loam from an independent soil-testing laboratory. The testing laboratory for particle size and chemical analysis may include a public agricultural extension service agency.

1. Submit a mechanical analysis of the clay loam sample and particle size analysis including the following gradient of mineral content:

USDA Designation	Size in mm.
Gravel	+2 mm
Sand	0.05 – 2 mm
Silt	0.002-0.05 mm
Clay	minus 0.002 mm

Sieve analysis shall be performed and compared to USDA Soil Classification System.

Sieve analysis shall be done by a combined hydrometer and wet sieving using sodium hexametaphosphate as a dispersant in compliance with ASTM D422 after destruction of organic matter by hydrogen peroxide.

2. Submit a chemical analysis, performed in accordance with current AOAC Standards, including the following:
   a. pH and buffer pH.
   b. Percent organic matter as determined by the loss of ignition of oven dried samples. Test samples shall be oven dried to a constant weight at a temperature of 230 degrees F, plus or minus 9 degrees.
   c. Analysis for nutrient levels by parts per million.
   d. Soluble salt by electrical conductivity of a 1:2 soil/water sample measured in Millimho per cm.
   e. Cation Exchange Capacity (CEC).
   f. Carbon/Nitrogen Ratio.

D. Submit one cubic foot sample of crushed stone which will be used in production of CU-Soil™.

1. Provide particle size analysis:

USDA Designation	Size in mm.
3"	+76 mm
$2^1/_2$"	63-76 mm
2"	50-63 mm
$1^1/_2$"	37-50 mm
1"	25-37 mm
¾"	19-25 mm
Fine gravel	2-19 mm

2. Provide the manufacturers analysis of the loose and rodded unit weight
3. Losses from LA Abrasion tests- not to exceed 40%
4. Minimum 90% with 2 or more fractured faces
5. Percent pore space analysis

E. At the engineer's discretion, the sample of CU-Structural Soil® may be tested for the following:

1. Compaction in accordance with ASTM D698/AASHTO T99 without removing oversize aggregate
2. California Bearing Ratio in accordance with ASTM D1883- soaked CBR shall equal or exceed a value of 50
3. Measured dry-weight percentage of stone in the mixture

F. The approved CU-Structural Soil® sample shall be the standard.

G. Any deviation from the specified crushed stone and clay loam specifications shall be approved by Amereq, Inc.

1.4 DELIVERY, STORAGE AND HANDLING

A. Delivered CU-Structural Soil® shall be at or near optimum compaction moisture content as determined by AASHTO T 99 (ASTM D 698) and should not be placed in frozen, wet or muddy sites.

B. Protect CU-Structural Soil® from exposure to excess water and from erosion at all times. Do not store CU-Soil™ unprotected. Do not allow excess water to enter site prior to compaction. If water is introduced into the CU-Soil™ after grading, allow water to drain to optimum compaction moisture content.

1.5 EXAMINATION OF CONDITIONS

A. All areas to receive CU-Structural Soil® shall be inspected by the installing contractor before starting work and all defects such as incorrect grading, compaction, and inadequate drainage shall be reported to the engineer prior to beginning this work.

1.6 QUALITY ASSURANCE

A. Qualifications of installing contractor: The work of this section should be performed by a contracting firm which has a minimum of five years experience. Proof of this experience shall be submitted as per paragraph, SAMPLES and SUBMITTALS, of this section.

PART 2 - MATERIALS

2.1 CLAY LOAM

A. Soil shall be a "loam" with a minimum clay content of 20% or a "clay loam" based on the "USDA classification system" as determined by mechanical analysis (ASTM D-422) and it shall be of uniform composition, without admixture of subsoil. It shall be free of stones, lumps, plants and their roots, debris and other extraneous matter. It shall not contain toxic substances harmful to plant growth. Clay loam shall contain not less than 2% or more than 5% organic matter as determined by the loss on ignition of oven-dried samples. Test samples shall be oven-dried to a constant weight at a temperature of 230 degrees F., plus or minus 9 degrees.

B. Mechanical analysis for the loam or clay loam shall be as follows:

Textural Class	% of Total Weight
Gravel	less than 5%
Sand	20-45%
Silt	20-50%
Clay	20-40%

C. Chemical analysis: Meet, or be amended to meet the following criteria:

1. pH between 5.5 to 6.5
2. Percent organic matter 2% - 5% by dry weight

3. Adequate nutrient levels
4. Soluble salt less than 1.0 mmho/cm
5. Cation Exchange Capacity (CEC) greater than 10
6. Carbon/Nitrogen ratio less than 33:1

D. Loam or clay loam shall not come from USDA - classified prime farmland.

2.2 FERTILIZER (if needed)

A. Should nutrient analysis suggest that the loam or clay loam need additional nutrients, it shall be amended by Amereq's licensed producer.

2.3 SULFUR (if needed)

A. Sulfur shall be a commercial granular, 96% pure sulfur, with material and analysis appearing on the labeled container.

B. Sulfur used to lower pH shall be a ferrous sulfate formulation.

C. Application rates shall be dependent on soil test results.

2.4 LIME (if needed)

A. Agricultural lime containing a minimum of 85% carbonates.

B. Application rates shall be dependent on soil test results.

2.5 CRUSHED STONE

A. The size of the crushed stone shall be 0.75 inches to 1.5 inches allowing for up to 10% being greater than 1.5 inches, and up to 10% less than 0.75 inches.

B. Acceptable aggregate dimensions will not exceed 2.5:1.0 for any two dimensions.

C. Minimum 90% with two or more fractured faces.

D. Results of Aggregate Soundness Loss test shall not exceed 18%.

E. Losses from LA Abrasion tests shall not exceed 40%.

2.6 HYDROGEL

A. Hydrogel shall be a coated potassium propenoate-propenamide copolymer (Gelscape® Hydrogel Tackifier) as manufactured by Amereq, Inc. 800-832-8788.

2.7 WATER

A. The installing contractor shall be responsible to furnish his own supply of water (if needed) free of impurities, to the site.

2.8 CU-STRUCTURAL SOIL®

A. A uniformly blended urban tree mixture of crushed stone, clay loam and Gelscape® Hydrogel Tackifier, as produced by an Amereq-licensed company, mixed in the following proportion:

Material	Unit of Weight
specified crushed Stone	100 units dry weight
specified clay loam	20 – 25 units (to achieve minimum CBR of 50)
Gelscape® Hydrogel Tackifier	0.035 units dry weight
moisture	ASTM D698/AASHTO T-99 optimum moisture

PART 3 - PRODUCTION AND INSTALLATION GUIDELINES

3.1 CU-SOIL™ MIXING AND QUALITY CONTROL TESTING

A. All CU-Structural Soil® mixing shall be performed in the presence of City of Huntsville Engineer, at the licensed producer's yard (or prior approved, off project site location) using appropriate soil measuring, mixing and shredding equipment of sufficient capacity and capability to assure proper quality control and consistent mix ratios. No mixing of CU-Structural Soil® at the project site shall be permitted.

Maintain adequate moisture content during the mixing process. Soils and mix components shall easily shred and break down without clumping. Soil clods shall easily break down into a fine crumbly texture. Soils shall not be overly wet or dry. The licensed producer shall measure and monitor the amount of soil moisture at the mixing site periodically during the mixing process.

B. Raw materials shall be mixed off-site, only at the licensed producer's facility (or prior approved, off project site location), on a flat asphalt or concrete paved surface to avoid soil contamination.

C. Should the independent laboratory test results of the clay loam reveal a need to amend it, to meet specifications, the amending materials should be added to the clay loam following the rates and recommendations provided by Amereq.

3.2 UNDERGROUND UTILITIES AND SUBSURFACE CONDITIONS

A. The installing contractor shall notify the engineer of any subsurface conditions which will affect the contractor's ability to install the CU-Soil™.

B. The installing contractor shall locate and confirm the location of all underground utility lines and structures prior to the start of any excavation.

C. The installing contractor shall repair any underground utilities or foundations damaged during the progress of this work.

3.3 SITE PREPARATION

A. Do not proceed with the installation of the CU-Structural Soil® material until all walls, curb footings and utility work in the area have been installed. For site elements dependent on CU-Structural Soil® for foundation support, postpone installation of such elements until

immediately after the installation of CU-Structural Soil®.

B. Install subsurface drain lines as shown on the plan drawings prior to installation of CU-Structural Soil® material.

C. Excavate and compact the proposed subgrade to depths, slopes and widths as shown on the drawings. Maintain all required angles of repose of the adjacent materials. Do not over excavate compacted subgrades of adjacent pavement or structures.

D. Confirm that the subgrade is at the proper elevation and compacted as required. Subgrade elevations shall slope parallel to the finished grade and/or toward the subsurface drain lines as shown on the drawings.

E. Clear the excavation of all construction debris, trash, rubble and any foreign material. In the event that fuels, oils, concrete washout silts or other material harmful to plants have been spilled into the subgrade material, excavate the soil sufficiently to remove the harmful material. Fill any over excavation with approved fill and compact to the required subgrade compaction.

F. Do not proceed with the installation of CU-Structural Soil® until all utility work in the area has been installed. All subsurface drainage systems shall be operational prior to installation of CU-Structural Soil®.

G. Protect adjacent walls, walks and utilities from damage. Use ½" plywood and/or plastic sheeting as directed to cover existing concrete, metal and masonry work and other items as directed during the progress of the work.

   1. Clean up all trash and any soil or dirt spilled on any paved surface at the end of each working day.

   2. Any damage to the paving or architectural work caused by the installing contractor shall be repaired, as directed by the engineer.

H. Maintain all silt and sediment control devices required by applicable regulations. Provide adequate methods to assure that trucks and other equipment do not track soil from the site onto adjacent property and the public right of way.

3.4 INSTALLATION OF CU-STRUCTURAL SOIL® MATERIAL

A. Install CU-Structural Soil® in 6 inch lifts and compact each lift.

B. Compact all materials to at least 95% Proctor Density from a standard compaction curve AASHTO T 99 (ASTM D 698). No compaction shall occur when moisture content exceeds maximum as listed herein. Delay compaction if moisture content exceeds maximum allowable and protect CU-Structural Soil® during delays in compaction with plastic or plywood.

C. Bring CU-Structural Soil® to finished grades as shown on the drawings. Immediately protect the CU-Structural Soil® from contamination by toxic materials, trash, debris, water containing cement, clay, silt or materials that will alter the particle size distribution of the mix with plastic or plywood.

D. The engineer may periodically check the material being delivered, prior to installation for color and texture consistency with the approved sample provided by the installing contractor as part of the submittal for CU-Structural Soil®. If the engineer determines that the delivered CU-Soil™ varies significantly from the approved samples, the engineer shall stop the work and

contact the licensed producer. Should any delivered or installed CU-Structural Soil material be found to be unacceptable, contractor shall immediately remove from site and replace with acceptable material.

E. Engineer shall ensure that the delivered structural soil was produced by the approved CU-Soil™ licensee by inspecting weight tickets showing source of material.

F. CU-Soil™ should not be stockpiled long-term. Any CU-Soil™ not installed immediately should be protected by a tarp or other waterproof covering.

3.5 FINE GRADING

A. After the initial placement and rough grading of the CU-Structural Soil® but prior to the start of fine grading, the installing contractor shall request review of the rough grading by the engineer. The installing contractor shall set sufficient grade stakes for checking the finished grades.

B. Adjust the finish grades to meet field conditions as directed.

Provide smooth transitions between slopes of different gradients and direction.
Fill all dips with CU-Soil™ and remove any bumps in the overall plane of the slope.

a. The tolerance for dips and bumps in CU-Structural Soil® areas shall be a 3" deviation from the plane in 10'.

All fine grading shall be inspected and approved by the engineer prior to the installation of other items to be placed on the CU-Structural Soil®.

C. The engineer will inspect the work upon the request of the installing contractor. Request for inspection shall be received by the engineer at least 10 days before the anticipated date of inspection.

3.6 ACCEPTANCE STANDARDS

A. The engineer will inspect the work upon the request of the installing contractor. Request for inspection shall be received by the engineer at least 24 hours before the anticipated date of inspection.

3.7 CLEAN-UP

Upon completion of the CU-Structural Soil® installation operations, clean areas within the contract limits. Remove all excess fills, soils and mix stockpiles and legally dispose of all waste materials, trash and debris. Remove all tools and equipment and provide a clean, clear site. Sweep, do not wash, all paving and other exposed surfaces of dirt and mud until the paving has been installed over the CU-Structural Soil® material. Do no washing until finished materials covering CU-Structural Soil® material are in place.

END OF SECTION

SPECIAL PROVISION 6000
INTERLOCKING CONCRETE PAVERS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Interlocking Concrete Paver Units manually installed.
   2. Bedding and Joint Sand.
   3. Edge Restraints.
   4. Cleaner, Sealers, and Joint sand stabilizers.

1.02 REFERENCES

A. American Society for Testing and Materials (ASTM):
   1. ASTM C 33, Standard Specification for Concrete Aggregates.
   2. ASTM C 136, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
   3. ASTM C 140, Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units.
   4. ASTM C 144, Standard Specification for Aggregate for Masonry Mortar.
   5. ASTM C 936, Standard Specification for Solid Concrete Interlocking Paving Units.
   6. ASTM C 979, Standard Specification for Pigments for Integrally Colored Concrete.
   7. ASTM D 698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,000 ft-lbf/ft^3 (600 kN-m/m^3)).
   8. ASTM D 1557, Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft^3 (2,700 kN-m/m^3)).
   9. ASTM C 1645, Standard Test Method for Freeze-thaw and De-icing Durability of Solid Concrete Interlocking Paving Units.
   10. ASTM D 2940, Specification for Graded Aggregate Material for Bases or Sub-bases for Highways or Airports.

B. Interlocking Concrete Pavement Institute (ICPI):
   1. ICPI Tech Spec Technical Bulletins

1.03 SUBMITTALS

A. In accordance with Conditions of the Contract and Submittal Procedures.

B. Sieve analysis per ASTM C 136 for grading of bedding and joint sand.

C. Concrete pavers:

   1. [Four] representative full-size samples of each paver type, thickness, color, finish that indicate the range of color variation and texture expected in the finished installation. Color(s) selected by Landscape Architect and Owner. Custom colors required from manufacturer.
   2. Accepted samples become the standard of acceptance for the work.
   3. Test results from an independent testing laboratory for compliance of concrete pavers with ASTM C 936 requirements for compressive strength, absorption and freeze thaw only.
   4. Manufacturer's catalog product data, installation instructions, and material safety data sheets for the safe handling of the specified materials and products.

D. Paver Installation Subcontractor:
   1. A copy of Subcontractor's current certificate from the Interlocking Concrete Pavement Institute Concrete Paver Installer Certification program.
   2. Job references from projects of a similar size and complexity. Provide Owner/Client/General Contractor names, postal address, phone, fax, and email address.

1.04 QUALITY ASSURANCE

A. Paving Subcontractor Qualifications:
   1. An installer having successfully completed concrete paver installation similar in design, material, and extent indicated on this project.
   2. An installer holding a current certificate from the Interlocking Concrete Pavement Institute Concrete Paver Installer Certification program.

B. Mock-Ups:
   1. Install a 7 ft x 7 ft paver area.
   2. Use this area to determine surcharge of the bedding sand layer, joint sizes, lines, laying pattern(s), color(s) and texture of the job.
   3. This area will be used as the standard by which the work will be judged.
   4. Subject to acceptance by owner, mock-up may be retained as part of finished work.
   5. If mock-up is not retained, remove and properly dispose of mock-up.

1.05 DELIVERY, STORAGE & HANDLING

A. General: Comply with Division 1 Product Requirement Section.

B. Comply with manufacturer's ordering instructions and lead-time requirements to avoid construction delays.

C. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers packaging with identification labels intact.
   1. Coordinate delivery and paving schedule to minimize interference with normal use of buildings adjacent to paving.
   2. Deliver concrete pavers to the site in steel banded, plastic banded or plastic wrapped packaging capable of transfer by forklift or clamp lift.
   3. Unload pavers at job site in such a manner that no damage occurs to the product.

D. Storage and Protection: Store materials protected such that they are kept free from mud, dirt, and other foreign materials. Store concrete paver cleaners and sealers per manufacturer's instructions.
   1. Cover bedding sand and joint sand with waterproof covering if needed to prevent exposure to rainfall or removal by wind. Secure the covering in place.

1.06 PROJECT/SITE CONDITIONS

A. Environmental Requirements:
   1. Do not install sand or pavers during heavy rain or snowfall.
   2. Do not install sand and pavers over frozen base materials.
   3. Do not install concrete pavers on frozen or saturated sand.

1.07 MAINTENANCE

A. Extra Materials: Provide minimum, 50 pieces (of each type and color paver) of additional material for use by owner for maintenance and repair.

B. Pavers shall be from the same production run as installed materials.

PART 2 PRODUCTS

2.01 INTERLOCKING CONCRETE PAVERS

A. Manufacturer: Pavestone Company 800-245-7283
   1. Contact: Jason Autry, 770-306-9691.

B. Interlocking Concrete Pavers:
1. Paver Type: See plans.
   a. Material Standard: Comply with material standards set forth in ASTM C 936
   b. Color and finish: Owner and Landscape Architect shall select custom colors and standard finishes.
   c. Color Pigment Material Standard: Comply with ASTM C 979.
   d. Size: All pavers shall be 31/8 inch thick.
   e. Average Compressive Strength (C140): 8000 psi (55 MPa) with no individual unit under 7200 psi (50 MPa) per ASTM C 140.
   f. Average Water Absorption (ASTM C 140): 5% with no unit greater than 7%.
   g. Freeze/Thaw Resistance (ASTM C 1645): 25 freeze-thaw cycles with no greater loss than 200 g/m^2 of paver surface area or no greater loss than 500 g/m^2 of paver surface area after 50 freeze-thaw cycles. Freeze-thaw testing requirements shall be waived for applications not exposed to freezing conditions.

2.02 PRODUCT SUBSTITUTIONS

A. Product Substitutions: No substitutions shall be submitted.

2.03 BEDDING AND JOINT SAND

A. Provide bedding and joint sand as follows:
1. Washed, clean, non-plastic, free from deleterious or foreign matter, symmetrically shaped, natural or manufactured from crushed rock.
2. Do not use limestone screenings, stone dust, or sand for the bedding sand material that does not conform to conform to the grading requirements of ASTM C 33.
3. Do not use mason sand or sand conforming to ASTM C 144 for the bedding sand.
4. Where concrete pavers are subject to vehicular traffic, utilize sands that are as hard As practically available.
5. Sieve according to ASTM C 136.
6. Bedding Sand Material Requirements: Conform to the grading requirements of ASTM C 33 with modifications as shown in Table 1.

Table 1
Grading Requirements for Bedding Sand
ASTM C 33

Sieve Size	Percent Passing
3/8 in.(9.5 mm)	100
No. 4 (4.75 mm)	95 to 100
No. 8 (2.36 mm)	85 to 100
No. 16 (1.18 mm)	50 to 85
No. 30 (0.600 mm)	25 to 60
No. 50 (0.300 mm)	10 to 30
No. 100 (0.150 mm)	2 to 10
No. 200 (0.075 mm)	0 to 1

7. Joint Sand Material Requirements: Techniseal, HP2 Polymeric jointing sand as Provided by Techniseal, 1-800-465-7325. Color selected by Landscape Architect.

2.04 EDGE RESTRAINTS

A. Provide concrete edge restraints installed around the perimeter of all interlocking concrete paving units.

2.05 ACCESSORIES

A. Provide accessory materials as follows:
   1. Geotextile Fabric: Amoco or equal.
   2. Cleaners: As found acceptable to paver manufacturer.

PART 3 EXECUTION

3.01 ACCEPTABLE INSTALLERS

A. ICPI certified Installer with acceptable references and project experience of similar size projects.

3.02 EXAMINATION

A. Acceptance of Site Verification of Conditions:
   1. General Contractor shall inspect, accept and certify in writing to the paver installation subcontractor that site conditions meet specifications for the following items prior to installation of interlocking concrete pavers.
      a. Verify that sub-slab elevations conform to specified requirements.
      b. Verify that geotextiles, if applicable, have been placed according to drawings and specifications.
      c. Verify that surface tolerances and elevations conform to specified requirements.
   2. Do not proceed with installation of bedding sand and interlocking concrete pavers until Sub-slab conditions are corrected by the General Contractor or designated subcontractor.

3.03 PREPARATION

A. Verify that sub-slab and geotextile is ready to support sand, and pavers and imposed loads.

B. Edge Restraint Preparation:
   1. Verify edge restraints are per the drawings at the indicated elevations.

3.04 INSTALLATION

A. Spread bedding sand evenly over the sub-slab and screed to a nominal 1 in. thickness, not exceeding 1 1/2 in. thickness. Spread bedding sand evenly over the sub-slab and screed rails, using the rails and/or edge restraints to produce a nominal 1 in. thickness, allowing for specified variation in the surface.
   1. Do not disturb screeded sand.
   2. Screeded area shall not substantially exceed that which is covered by pavers in one day.
   3. Do not use bedding sand to fill depressions in the surface.

B. Lay pavers in pattern(s) shown on drawings. Place units hand tight without using hammers. Make horizontal adjustments to placement of laid pavers with rubber hammers and pry bars as required.

C. No more than 5% of the joints shall exceed 1/4 in. wide to achieve straight bond lines.

D. Joint lines shall not deviate more than ±1/2 in. over 50 ft. from string lines.

E. Fill gaps at the edges of the paved area with cut pavers or edge units.

F. Cut pavers to be placed along the edge with a double blade paver splitter or a masonry saw.

G. Adjust bond pattern at pavement edges such that cutting of edge pavers is minimized. All cut pavers

exposed to vehicular tires shall be no smaller than one-third of a whole paver.

H. Keep skid steer and forklift equipment off newly laid pavers that have not received initial compaction and joint sand

I. Use a low-amplitude plate compactor capable of at least minimum of 4,000 lbf at a frequency of 75 to 100 Hz to vibrate the pavers into the sand. Remove any cracked or damaged pavers and replace with new units.

J. Simultaneously spread, sweep and compact dry joint sand into joints continuously until full. This will require at least 4 to 6 passes with a plate compactor. Do not compact within 6 ft of unrestrained edges of paving units.

K. All work within 6 ft. of the laying face must be left fully compacted with sand-filled joints at the end of each day or compacted upon acceptance of the work. Cover the laying face or any incomplete areas with plastic sheets overnight if not closed with cut and compacted pavers with joint sand to prevent exposed bedding sand from becoming saturated from rainfall.

L. Remove excess sand from surface when installation is complete.

3.05 FIELD QUALITY CONTROL

A. The final surface tolerance from grade elevations shall not deviate more than ±3/8 in. (±10 mm) under a 10 ft straightedge.

B. Check final surface elevations for conformance to drawings.

C. Lippage: No greater than 1/8 in. difference in height between adjacent pavers.

3.06 [CLEANING] [SEALING] [JOINT SAND STABILIZATION]

A. Clean concrete pavers in accordance with the manufacturer's written recommendations.

3.07 PROTECTION

A. After work in this section is complete, the General Contractor shall be responsible for protecting work from damage due to subsequent construction activity on the site.

END OF SECTION

SPECIAL PROVISION 7000
CITY OF HUNTSVILLE
IRRIGATION SPECIFICATIONS
NON MAXICOM

GENERAL

PURPOSE

The objective of these specifications is to provide, assemble and install a sprinkler system which will operate in an efficient and satisfactory manner so that the finished system shall efficiently irrigate all areas to be covered and shall prove satisfactory in all aspects to the owner. The specifications, design details, irrigation designs and quotation are to be considered a part of the sprinkler system contract, and it is expected that the chosen contractor will follow specifications with due perseverance.

SCOPE OF WORK

The work required by these specifications consists of all labor, material, equipment, and services required for a complete functioning irrigation system.

The plans and specifications are intended to include everything obviously requisite and necessary to the proper installation of the work whether each necessary item is mentioned herein or not, unless otherwise specified, and the contractor is expected to provide for the same.

All work herein specified or called for on the drawings or in the detail drawings shall be executed in accordance with all governing ordinances, laws and regulations and shall meet all local conditions and any changes and/or additions in work necessary to meet ordinances, laws, regulations and/or conditions will be made without additional expense to the owner, but such changes shall have the prior written approval of the owner.

DEFINITION OF THE INTENT OF DOCUMENTS

The contract agreement, drawings, specifications and quotation constitute the contract documents, and all modifications thereof incorporated in the documents before their execution. What is called for in one document shall be as binding as if called for by all. The intent of documents is to include, unless otherwise stated, all labor and equipment for the completion of the work required for a complete irrigation system in a workmanlike and proper manner.

EXAMINATION AND VERIFICATION OF DRAWINGS AND JOB SITE

Prior to submitting a proposal for this project, each bidder has the responsibility to examine the premises and satisfy himself as to the condition under which he will be obligated to operate in installing the irrigation system under this contract.

All plot dimensions on the irrigation design are approximate. Prior to proceeding with the work, the contractor shall carefully check and verify all dimensions and shall report all variations from those indicated in the irrigation plan to the owner in writing. If changes are to be made, they will be made in accordance with previous provisions.

GUARANTEES

The work included under this contract shall be guaranteed by the contractor against all defects and malfunctions due to faulty workmanship for a period of one year from the date of final acceptance by the owner. Upon being informed by the owner of any defects or malfunctions in workmanship, the contractor shall effect all necessary repairs and/or replacements in a reasonably expedient manner at no additional cost to the owner.

Emergency repairs, when necessary, may be made by the owner without relieving the contractor of his guarantee obligation.

The contractor shall be obligated to repair any settling of backfilled trenches which may occur during the guarantee. The contractor is also obligated to restore any and all damaged planting, paving or improvements within the year period. If the contractor does not respond to the owner's request for repair work within a period of two days, the owner may proceed with such necessary repairs and charge the contractor for all expenses incurred in the repair work.

EQUIPMENT, TOOLS, AND LABOR

The contractor shall provide and pay for all equipment, tools and labor required for the completion of this project. All irrigation meters and backflow preventers, including taps and boxes are by Huntsville Utilities; bidder shall include all fees and costs (material and labor) for same in his lump sum bid price for irrigation.

The contractor shall provide and keep up-to-date a complete set of as-built drawings which shall be corrected daily to show changes in sprinkler locations, controller location, piping locations and other deviations from the original irrigation design drawing as provided to him. All isolation valve locations shall be shown with actual measurements to reference points so they may be located easily in the field. Upon completion of the work, the contractor shall furnish the owner with a complete set of as-built drawings showing the sprinkler system as installed. This is the responsibility of the contractor and shall not be construed to be the responsibility of any other party.

TRAINING OF PERSONNEL

Upon completion of work and acceptance by the owner, the contractor shall be responsible for the training of personnel in the operation, maintenance, and repair of the system. The contractor shall furnish copies of all available parts lists, trouble shooting lists, specification sheets, and catalog sheets to the owner prior to final payment.

The contractor shall set the initial watering schedules and programming of the automatic controllers in accordance with the specifications, irrigation plan or as directed. Changes in the schedules and programming and instruction on how to make such changes shall be the responsibility of the designer or landscape architect of the system.

PROTECTION OF WORK AND PROPERTY

The contractor shall continuously maintain adequate protection of all his work from damage and shall protect the owner's property from injury or loss arising in connection with work on this contract. The contractor shall take care to avoid damage to any existing buildings, equipment, piping, pipe coverings, electrical systems, sewers, sidewalks, landscaping grounds, above ground or underground installations or structures of any kind, and shall be held liable for any damage that does occur. Damage includes not only mechanical damage but from leaks in the irrigation system being installed by the contractor, whether through negligence or otherwise. The contractor shall adequately protect adjacent property as provided by law and shall provide and maintain all passageways, guard fences, lights and other facilities for protection required by the Public Authority for local conditions. The contractor shall securely cover all openings into the section of the system he is working on and components of the system as it is being installed to prevent obstructions in the pipe and the breakage, misuse or disfigurement of the equipment.

HANDLING OF MATERIALS

The contractor shall be responsible for correct procedures in on-site loading, unloading, stacking, transporting, and handling all materials to be used in the system. The contractor shall avoid rough handling which could affect the useful life of equipment. Pipe shall be handled in accordance with the manufacturer's recommendation on loading, unloading, and storage.

CLEANING PREMISES

The contractor shall continuously keep a neat and orderly area in which he is installing the system. Disposal of rubbish and waste material resulting from the installation shall be continual. There shall be NO waste materials or trash allowed in trenches.

MATERIALS

All materials are to be furnished as specified on drawings or in specifications.

SOLVENT CEMENT AND PRIMER

Solvent shall be IPS-721 or pre-approved equal.
Solvent shall be IPS-727 or pre-approved equal, **When temperatures are below 40 Fahrenheit.**

NOTE: In temperature below 32° Fahrenheit contractor shall not glue any pipe together.

Primer shall be IPS-70 or pre-approved equal.

ELECTRIC REMOTE CONTROL VALVE
See plans.

ELECTRIC REMOTE CONTROL VALVE FOR DRIP
See plans.

SPRINKLERS
See plans.

RAIN GAUGE
W.R.C. Wireless Rain Sensor Combo, installed in a lock box.

LOCATION WIRE

Permanently mark all of your irrigation lines (in turf or planting beds only) with **TRACE – SAFE** water blocking tracer wire (Color Blue). Begin at the control valve and continue to the end of that line for every control valve. Also mark in the same manner beginning at the backflow vault and run in all main line trenches including any wire trenches that may be separate from the main line. **See detail sheet.**

If you have to start a new roll of wire or wire is broken, it must be repaired with a muletape wire connector (trace-safe water blocking) number T-S 19IL, T-S 19, T-S 12-19IL T-S 12-19 TS-19-LC and covered with an econo valve box or 10 inch if needed. You will also need to use them at the start of a run; main line and each lateral line. There will be no exceptions to this stipulation.

If you are irrigating a sports field you do not have to run Trace – Safe Wire on the fields.

CONTROL VALVE WIRE SPLICES

These splices will only be made by using **3M-DBY's;** all splices will either be made in a control valve box or a 6 inch econo box **only**.

INSTALLATION AND INSPECTION

INSPECTION OF WORK IN PROGRESS

The owner's authorized representative shall be responsible for inspection of the contractor's work which is in progress. A representative may bring to the attention of the contractor any work which does not meet the specifications of this contract and the contractor shall correct such work as brought to his attention.

STAKING OF SPRINKLER LOCATION

Staking of sprinkler locations shall be done by the contractor and approved by the owner's representative.

EXCAVATION

All excavation shall be unclassified and shall include all materials encountered.

It shall be the responsibility of the contractor to provide suitable backfill materials. This backfill material shall be free from the rocks, large stones and other unsuitable substances which could damage the pipe or create unusual settling problems. The minimum depth of cover over piping 6" and larger shall be 24". The minimum depth of cover over piping 4" and smaller shall be 18". Backfilling will be done in 6" layers and tamped after each layer is put in to prevent excessive settling **in all lines.**

The contractor shall exercise reasonable care to avoid causing damage to any and all underground utilities and structures.

The owner shall advise the contractor of any underground utilities or structure of which he is aware. Utility locating services shall be called upon to pinpoint location of any underground utilities on site of the project by the contractor.

INSTALLATION OF SYSTEM MAIN

Installation of the system main shall be in accordance with the manufacturer's instructions and shall proceed from the point of connection of supply for the system. Concrete thrust blocks shall be installed at any directional change or tee in the pipeline in accordance with the pipe manufacturer's instruction.

INSTALLATION OF LATERAL LINES

Lateral lines may be installed by standard trenching techniques or by "pulling in" pipe. If the pull-in method is used, the pipe "plow shall be a vibratory type and equipped with a turf roller device to prevent tearing of the "turf". The "Mole" or "Bullet" which precedes the pipe and is used to form the opening for the pipe shall be not less than 1" larger in diameter than the outside diameter of the pipe. Starting and finishing holes shall not exceed a two foot square opening, which the sod removed from such holes is to be preserved and replaced.

Lateral pipes and fittings shall be installed in accordance with the manufacturer's recommendations, including the shaking-in of PVC pipe to prevent excessive strain when contracting in cold weather.

SPRINKLER HEADS

All sprinklers shall be installed on swing joints as shown in detailed drawings. When funny pipe is used for spray heads be sure and use a marlex ell and a barb ell as a swing joint directly below sprinkler head. The sprinkler head shall be installed so that the top is slightly below the finished grade level. If finished grade has not been established, the sprinkler will be extended a minimum of 4" above existing level and marked with a stake to prevent damage by equipment. Back fill around the swing joint and sprinkler shall be free of large rocks, roots, or foreign debris. Hand tamp around heads, so heads do not move.

When finished grade has been established the contractor shall set heads with top slightly below the finished grade level, below sod or sprigs.

NOTICE OF COMPLETION

When the contractor is satisfied that the system is operating properly, that it is balanced and adjusted, that all work and cleanup is completed, he shall issue the notice of completion to the owner's authorized representative. The notice of completion shall include the required for final inspection with date and time given.

FINAL INSPECTION WITH OWNER'S REPRESENTATIVE

The owner's representative will respond to the notice of completion by the contractor and shall appear at the given time for a tour of the project with the purpose of making it the final inspection. Any inconsistencies to the specifications shall be noted by the owner's representative and a written copy of corrections shall be given to the contractor.

ACCEPTANCE OF THE SYSTEM

The owner may accept the system even though the corrections on the final inspection have not been made by the contractor. In such a case, there will be deductions for the uncompleted or uncorrected work based on previous provisions of these specifications. Such deductions shall be made from the final payment.

AS-BUILT PLAN ACCEPTANCE

Acceptance of the system is based on the furnishing by the contractor of two sets of completed as-built plans which is acceptable to the owner or owner's representative.

TRAINING OF MAINTENANCE PERSONNEL IN OPERATION AND MAINTENANCE OF SYSTEM

The contractor's responsibility of training maintenance personnel in the operation and maintenance of the system, as outlined in a previous section of these specifications, shall not be waived due to acceptance of the system. If this responsibility is not fulfilled, the cost of obtaining this training by the owner shall be shown as deduction in the final payment.

WARRANTY AND GUARANTEE CERTIFICATES

The contractor shall furnish a certificate of warranty registration and a guarantee of work for a one year period from date of final acceptance of the system. Depending on the time of completion the contractor will need to winterize the system and start it back up in the spring. Final payment for the system shall not be made unless this certification is presented to the owner.

SPECIAL PROVISION 8000

LIGHTPOLE FOUNDATIONS

GEO SOLUTIONS, L.L.C.

Geotechnical Engineering and Materials Testing Services

April 16, 2012

Land Design Solutions
6996 Linda Street
Huntsville, Alabama 35811

ATTENTION: Mr. Mike Donnelly

SUBJECT: Light Pole Foundation Details
Proposed Washington Street
Street Scape Improvements
Huntsville, Alabama
Project No. 12-151

Dear Mr. Donnelly:

As requested, GEO Solutions has prepared the foundation details for the new light poles for the proposed Washington Street, Street Scape Improvements in Huntsville, Alabama. These foundations were designed based on the soil data contained in our Geotechnical Engineering Evaluation report dated April 13, 2012, and information provided by the pole manufacturer and other team members. We have prepared the following foundation schedule for the proposed light poles as well as the attached foundation details.

FOUNDATION SCHEDULE	
Pole Location and Designation	**Foundation Type**
Washington Street at Randolph Avenue	
Pole #1	F-2
Washington Street at Clinton Avenue	
Pole #1	F-1
Pole #2	F-3
Pole #3	F-3
Pole #4	F-3
Pole #5	F-2
Washington Street at Holmes Avenue	
Pole #1	F-2
Pole #2	F-2
Pole #3	F-1
Pole #4	F-2
Pole #5	F-1
Washington Street at Monroe Street	
Pole #1	F-2
Pole #2	F-2
Pole #3	F-2
Pole #4	F-2

7201 Opportunity Boulevard • Huntsville, AL 35810 • 256-837-6708 • Fax 256-837-6702

A minimum compressive strength of 3,000 pounds per square inch (psi) is required for the foundation concrete. All reinforcing steel should be grade 60 steel. A minimum lap splice length of 48 bar diameters is required. A minimum clear cover of 3 inches is required for all reinforcing steel in contact with earth. The anchor bolts should be installed as specified by the pole manufacturer. Foundation excavations should be dewatered as necessary just prior to concrete placement. In addition, temporary casing may also be required. A representative of GEO Solutions should review the pole foundations prior to the placement of concrete to observe their conformance with the design details.

We appreciate this opportunity to be of service to you. If you have any questions please call.

Respectfully submitted,
GEO Solutions, L.L.C.

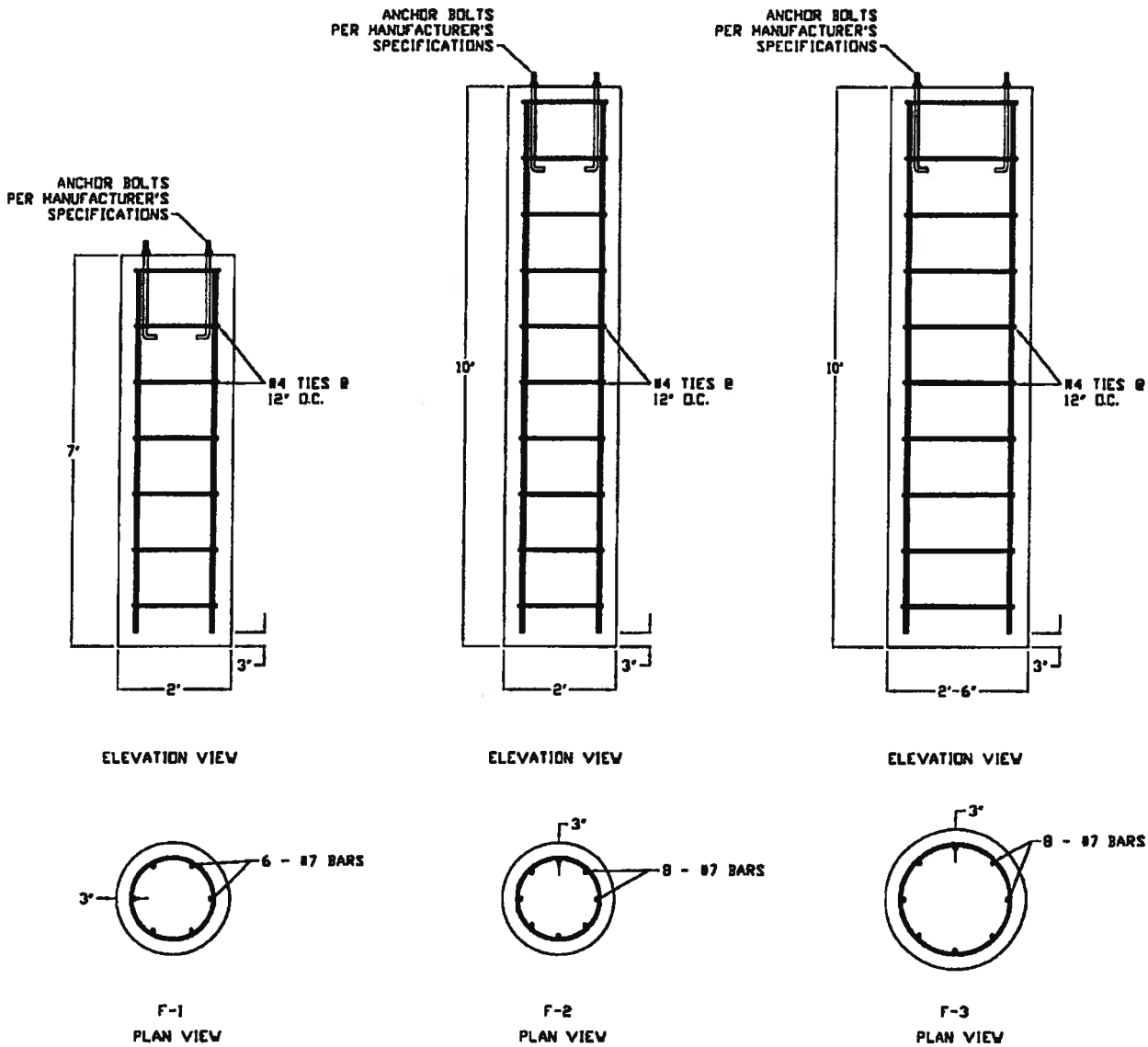
Jason M. Phillips, P.E.
Project Engineer

William T. Kennard, P.E.
Partner

ALABAMA REGISTERED PROFESSIONAL ENGINEER WILLIAM T. KENNARD

Attachments: Light Pole Foundation Details

Distribution: (1) Addressee



GENERAL NOTES:

1) MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI FOR FOUNDATION CONCRETE
2) ALL REINFORCING STEEL SHALL BE GRADE 60 STEEL
3) MINIMUM 48 BAR DIAMETER LAP SPLICE REQUIRED
4) 3 INCH CLEAR COVER REQUIRED FOR ALL REINFORCING STEEL
5) ANCHOR BOLTS SHALL BE INSTALLED PER THE POLE MANUFACTURER'S SPECIFICATIONS

WASHINGTON STREET IMPROVEMENTS HUNTSVILLE, ALABAMA FIGURE 1 POLE FOUNDATION DETAILS	GEO SOLUTIONS, LLC Geotechnical Engineering and Materials Testing Services 7201 Opportunity Boulevard Huntsville, Alabama 35810 PH (256)837-6708 FX (256)837-6702	SCALE: 1"=3' PROJ: 12-151 DATE: 4/16/2012 # 1 OF 1

SUPPLEMENT TO GENERAL REQUIREMENTS

FOR

CONSTRUCTION OF PUBLIC IMPROVEMENTS

HOLMES AVENUE & WASHINGTON STREET STREETSCAPE IMPROVEMENTS

PROJECT NO. 65-12-SP31

CITY OF HUNTSVILLE, ALABAMA

SUPPLEMENT TO GENERAL REQUIREMENTS

1. GENERAL

The attention of all bidders is called to Code of Alabama §§ 34-8-1 and 34-8-2 (1975) AND 34-8-1, 34-8-2, 34-8-4, 34-8-6, 34-8-7, 34-8-8 AND 34-8-9 (AMENDED 1996) setting forth the definition of general contractor and the licensing procedures and requirements for state licensing. No one is entitled to bid and no contract may be awarded to anyone who does not possess a valid general contractor's license and the required classification for the municipal type work to be performed. The general contractor's State of Alabama license and classification must appear on the outside of the bid envelope along with the general contractor's name and address, project name and number and date and time of bid opening. Failure to provide this will be cause to reject the bid.

In determining the successful bidder, the Owner will consider in addition to the bid prices, such responsibility factors as characteristics and responsibility, skill, experience, record of integrity in business, and of performance offered and past record of performance on Owner contracts on other similar projects. Any other factors not specifically mentioned or provided for herein, in addition to that of the bid price which would affect the final cost to the Owner, will be taken into consideration in making award of contract. The right is reserved to reject any bid where investigation of the business and technical organization of the bidder available for the contemplated work, including financial resources, equipment, and experience on similar projects does not satisfy the Owner that such bidder is qualified to perform the work. The City Council of the City of Huntsville reserves the right to reject any and all bids and to waive informalities.

Separate sealed bids for the construction of this project shall be accompanied by Bid Bond in the amount of five percent (5%) of the amount of the bid not to exceed $10,000.00. Quantities are known as Attachment "A". No bidder may withdraw his bid within ninety (90) days after the actual date of opening. These specifications, the supplemental specifications, the plans, special provisions and all supplementary documents are essential parts of the contract, and a requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete work. In case of discrepancy, calculated dimensions, unless obviously incorrect, shall govern over scaled dimensions. Supplemental Specifications shall govern over the Standard Specifications for Construction of Public Improvements Contract Projects. Plans shall govern over Standard Specifications for Construction of Public Improvements Contract Projects. Special Provisions shall govern over Standard Specifications for Construction of Public Improvements Contract Projects, Supplemental Specifications, and Plans. All bid openings and any scheduled pre-bid conferences are open to the public and will be held in the Public Services Conference Room on the 1st Floor at 320 Fountain Circle, Huntsville, Alabama, unless otherwise noted.

All references to OWNER shall mean City of Huntsville, Alabama. All references to City Engineer shall mean OWNER.

2. PROPOSAL PREPARATION

(A) Proposal Form. The bidder's proposal must be submitted on the complete original proposal form furnished him by the City. Unless otherwise provided in the proposal, joint venturers may submit a proposal for a joint venture of qualified bidders on a proposal form issued to one of them, provided each venturer has taken out a proposal and provided the proposal is signed by each co-venturer.

(B) Details. On the proposal form, the bidder shall enter in numbers a unit price and the extended amount bid (unit price x quantity) in the appropriate column for each bid item, exclusive of those items for which a fixed contract unit price and extension amount are shown. On lump sum items an entry shall be shown in the amount bid column. If a bidder wishes to bid an item free, then he shall enter 0 (zero) in both the unit price column and amount bid column. After all extensions are made, the bidder shall total the extended amounts of the bid items and show his total bid amount in the appropriate place on the proposal form. All figures shall be legibly shown in ink or typed. Any interlineation, erasure or other alteration of a figure shall be initialed by the signer of the proposal. The City will check the extension of each item given in the proposal and correct all errors and discrepancies. In case of a discrepancy between a unit bid price and the extension amount, the unit price shall govern. The sum of the extension amounts will be the contract bid price. The undersigned bidder further understands that any deletions or additions designated on the outside of the bid envelope, must indicate the particular bid item relative to the deletion or addition, even if the deletion or addition references to deduct or add to the Total Base Bid.

(C) Signing. The bidder's proposal must be signed with ink by the individual, by one or more members of the partnership, by one or more members or officers of each firm representing a joint venture, or by one or more officers of a corporation or by an agent of the Contractor legally qualified and acceptable to the City. If the proposal is made by an individual, his name and post office address must be shown; by a partnership, the name and post office address of each partnership member must be shown; as a joint venture, the name and post office address of each member or officer of the firms represented by the joint venture must be shown; by a corporation, the name of the corporation and the business address of its corporate officials must be shown. The proposal bid bond, if bid bond is tendered, shall be properly signed by the bidder and the surety.

(D) Irregular Proposals. Proposals will be considered irregular and will be rejected if they contain any omissions, alteration of form, additions not called for, incomplete bids (includes failure to enter a unit bid price on a bid item or, in the case of an alternate, the alternate being bid by the Contractor), interlineations, erasures or alterations not initialed by the person signing the proposal, or other irregularities of any kind.

Bids that are not signed will be considered non-responsive and will be rejected. No proposal will be opened that does not contain the contractor's Alabama State license number. Proposals may be rejected at any time prior to the execution of the contract. Any bidder using the same or different names for submitting more than one proposal upon any project will be disqualified from further consideration on that project.

(E) Delivery of Proposals. Each proposal for each contract shall be placed, together with the proposal guaranty, in a sealed envelope on the outside of which is written in large letters "Proposals for Work" and so marked as to indicate the project name, project number, bidder name, and State license number. Proposals will be received by the OWNER or his representative unless otherwise provided until the hour and date set in the notice to Contractors for the opening thereof. No proposal will be considered which has not been received prior to the hour and date set for the opening of bids. Proposals received after that time will be returned. No proposal will be opened that does not contain the contractor's Alabama State license number.

3. QUANTITIES

The undersigned bidder understands that when unit prices are called for, the quantities shown herein are approximate only and are subject to increase or decrease, and offers to do the work whether the quantities are increased, or decreased, at the unit prices stated in the proposal. Any substantial changes requiring an increase must be approved by change order prior to work and authorized by City Council Action. The undersigned bidder also understands that when lump sum bids are called for, he will be required to furnish all equipment, labor, material and other items or cost to construct a complete facility. See Attachment "A" - Bid Quantities or revised Attachment if quantities have changed after pre-bid meeting.

4. CHANGE ORDERS

(A) Changes in the Work

Without invalidating the agreement, the owner may, at any time or from time to time, order additions, deletions or revisions in the work; these will be authorized by change orders. Upon receipt of a change order, the contractor will proceed with the work involved. All such work shall be executed under the applicable conditions of the contract documents. A change order signed by the contractor indicates his agreement.

The OWNER may authorize minor changes or alterations in the work not involving extra cost and not inconsistent with the overall intent of the contract documents. These may be accomplished by a field order.

Additional work performed by the contractor without authorization of a change order will not entitle him to an increase in the contract price or an extension of the contact time, except in the case of an emergency.

The owner will execute appropriate change orders prepared by the engineer covering changes in the work to be performed and work performed in an emergency and any other claim of the contractor for a change in the contract time or the contract price which shall be approved by the OWNER.

It is the contractor's responsibility to notify his surety of any changes affecting the general scope of the work or change in the contract price and the amount of the applicable bonds shall be adjusted accordingly. The contractor will furnish proof of such adjustment to the owner.

(B) Change of Contract Price.

The contract price may only be changed by a change order. Any claim for additional compensation shall be based on written notice delivered to the Owner and Engineer within ten days of the occurrence of the event giving rise to the claim. Notice of the extent of the claim with supporting data shall be delivered within forty-five days of such occurrence unless OWNER allows an additional period of time to ascertain more accurate data. The contract price constitutes the total compensation payable to the contractor for performing the work. All duties, responsibilities and obligations assigned to or undertaken by the contractor shall be at his expense without changing the contract price. The owner may at any time without notice to the sureties, by written order designated or indicated to be a change order, make any change in the work within the general scope of the contract, including but not limited to changes: (1) in the specifications (including drawings and designs); (2) in the method or manner of performance of the work; (3) in the owner-furnished facilities, equipment, materials, services, or site; or (4) directing acceleration in the performance of the work. Any other written order or an oral order from the owner which causes any such change, shall be treated as a change order under this clause, provided that the contractor gives the owner written notice stating the date, circumstances, and source of the order and that the contractor regards the order as a change order.

(C) Change in the Contract Time.

The contract time may only be changed by a change order. Any claim for an extension in the contract time shall be based on written notice delivered to the owner and engineer within ten days of the occurrence of the event giving rise to the claim. Notice of the extent of the claim with supporting data shall be delivered within forty-five days of such occurrence unless OWNER allows an additional period of time to ascertain more accurate data. All claims for adjustment in the contract time shall be determined by OWNER if owner and contractor cannot otherwise agree. Any change in the contract time resulting from any such claim shall be incorporated in a change order.

The contract time will be extended in an amount equal to time lost due to delays beyond the control of contractor if he makes a claim as provided above. Such delays shall include, but not be restricted to, acts or neglect by any separate contractor employed by owner, fires, floods, labor disputes, epidemics, abnormal weather conditions, or acts of God.

All time limits stated in the contract documents are of the essence of the agreement. The provisions shall not exclude recovery for damages (including compensation for additional professional services) for delay by either party. No claim for delay shall be allowed because of failure to furnish drawings until two weeks after demand for such drawings and not then unless such claim be reasonable.

(D) Time extension for abnormal weather conditions

In order for the owner to award a time extension for abnormal weather, the following conditions must be satisfied:

1. The weather experienced at the project site during the contract period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location during any given month.

2. The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without fault or negligence of the contractor.

The following table of monthly anticipated adverse weather delays is based on National Oceanic and Atmospheric Administration (NOAA) and similar data for the project location and will constitute the base line for monthly weather time evaluations. The Contractors normal progress schedule must reflect these anticipated adverse weather delays in all weather dependent activities. The contractor's bid shall include the impact of the anticipated lost days in his quotation for the time he is to be on site.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
11	8	6	4	4	5	6	4	4	3	4	8

Actual adverse weather delay days must prevent work on critical activities for 50% or more of the contractors scheduled work day before it is considered a weather delay day.

5. **MAINTAIN OFFICE**

The successful contractor shall establish an office in Huntsville, Alabama, with telephone service, and shall maintain close liaison with the OWNER.

6. **SUBCONTRACTORS**

The prime contractor shall be responsible for all work covered under the executed contract; therefore, this responsibility cannot be shifted by subcontracting the work to others. All subcontractors shall be approved by the OWNER and shall be properly licensed as required by Alabama State Law. (Code of Alabama §§ 34-8-1 and 34-8-2 (1975) AND 34-8-1, 34-8-2, 34-8-4, 34-8-6, 34-8-7, 34-8-8 AND 34-8-9 (AMENDED 1996)) A list of all subcontractors proposed for use on the project shall be provided to the OWNER at the time that bids are received. This document will be known as ATTACHMENT "C". Lien waivers will be required from all subcontractors at the time of submittal of the final payment request. Contractor shall keep the "Subcontractor's Listing" updated throughout the project duration and submit a copy of the listing with the request for final payment. Noncompliance with this request may cause delay in payment to the Contractor.

All subcontractors must be approved in writing by Owner. If the subs listed on Attachment "C' are approved by the Owner, you will be notified in your notice to proceed. Any additional subcontractors needed during the contract period shall be approved by written letter from the owner. If subcontractors are not approved, you will be notified prior to approval of contract by City Council. See Section 39 for Correction to City of Huntsville Standards Specifications for Construction.

7. **BID BOND**

Accompanying this proposal is a certified check or original signed, dated and sealed bid bond in the amount of not less than five percent (5%) of the total amount shown on the schedule of prices, not exceeding $10,000.00 dollars, payable to the City of Huntsville, Alabama, which is to be forfeited, as liquidated damages, if, in the event that his proposal is accepted, the undersigned shall fail to execute the contract and furnish a satisfactory contract bond under the conditions and within the time specified in this proposal; otherwise, said certified check or bid bond is to be returned to the undersigned.

8. **N/A**

9. **LIABILITY INSURANCE (SEE ALSO ATTACHED INSURANCE FOR CONTRACTORS, WHICH IS SHOWN AS SECTION 24.)**

The Contractor shall provide and maintain comprehensive general public liability insurance protecting the Contractor and the City against claims arising out of or resulting from the Contractor's operation under his contract for personal injury or property damage with minimum combined single limits of $1,000,000, whether such operations are performed by himself, or by anyone directly or indirectly employed by them. In addition, a copy of the policy may be requested upon award. Certificates of insurance acceptable to the City shall be filed with the City prior to commencement of work and said certificate shall provide that policies will not be altered or canceled until at least 30 days prior written notice has been given to the City.

The Contractor shall indemnify and hold the OWNER, its officers and employees harmless from any suits, claims, demands, damages, liabilities, costs and expenses including reasonable attorney's fees, arising out of or resulting from the performance of the work. Certificates of Insurance are required naming the City as the Certificate Holder. The Certificates should reflect the insurance coverage required herein. The Certificates are to be signed by a person authorized by the Insurer to bind coverage on its behalf and must be an original signature. Certificates signed using digital signatures will not be accepted. The Certificates must indicate coverage will not be canceled or non-renewed except after thirty (30) days prior written notice to the City at the following address: City of Huntsville, P.O. Box 308, Huntsville, Alabama 35804, Attention: Penny Kelly.

10. **LICENSES AND CLASSIFICATIONS**

In order to receive the award of this contract, the Contractor shall be required to possess a valid general contractor's license in accordance with Code of Alabama §§34-8-2 (1975) and (1996 amended) Code of Alabama as stated in Section 1 above. This general contractor's license shall be a State of Alabama general contractor's license and shall be maintained throughout the term of this contract. A valid City of Huntsville license shall also be maintained throughout the term of this contract.

The required classification for this project is stated in the Notice to Contractors also known as Attachment "E".

11. **PERMITS**

Additionally, the contractor shall be required to obtain and pay for all other federal, state or local permits, licenses, and fees which may be necessary or required in order to perform the work detailed herein. A City of Huntsville Contractor's License must be obtained from the City of Huntsville Inspection Department at the time signatures are obtained on contracts. A copy of City of Huntsville license shall be provided to the OWNER at the time the contract is executed.

12. **PAYMENT**

The OWNER agrees to pay the contractor as follows: Once each month per project, the OWNER shall make partial payment to the Contractor on the basis of duly certified and approved estimates of the work performed during the preceding month by the Contractor, less five percent (5%) of the amount of such estimate, which is to be retained by the City until all of the work has been performed. Owner reserves the right to withhold payments for, but not limited to: a) defective work not remedied or defective materials not removed from site; b) claims filed, or reasonable evidence indicating imminent filing of claims against the Contractor; c) failure of the Contractor to make payments properly to subcontractors for labor, materials and equipment; d) a reasonable doubt that the Contract can be completed for the balance then unpaid; e) damage to another Contractor; f) performance of work in violation of the terms of the Contract; g) expiration of Contract time. Liquidated damages will be deducted from all invoices when the invoice estimate period end date is later than the contract completion date. All pay requests will be submitted by hard copy and on disk. The hard copy will be printed from the disk. A sample copy of the invoice is attached as Attachment "F". The OWNER will provide the disk to the contractor. Two originals and two copies of the invoices are required before payment will be made. The disk should be submitted each month, along with the originals and copies, to the Administrative Officer in the Engineering Department. No further retainage will be held after fifty percent (50%) of the contract is complete. All payments to contractor will be made as soon as practical after the approval and finance processes have been completed. SEE SECTION 32 FOR INFORMATION ON FINAL PAYMENT.

13. **N/A**

14. **EXAMINATION OF PLANS, SPECIFICATIONS, SPECIAL PROVISIONS, and SITE WORK**

Before submitting a proposal, bidders shall examine carefully the site of the proposed work, the general and local conditions, the proposal form, standard specifications, supplemental specifications, special provisions, and the bid bond form, and it is mutually agreed that the submission of a proposal shall be prima facie evidence that the bidder has made such examination and has judged for and satisfied himself as to the conditions to be encountered in performing the work, and to the requirements of plans, standard specifications, supplemental specifications, special provisions, contract, and bonds. No adjustments or compensation will be allowed for losses caused by failure to comply with this requirement. Boring logs and other records of subsurface investigations may be available for inspection by bidders. Bidders shall request such records if they are not otherwise provided with bid documents. If available, it is understood that such information was obtained and is intended for the City of Huntsville's design and estimating purposes only. It is made available to bidders that they may have access to identical subsurface information available to the City, and is not intended as a substitute for personal investigation, interpretations and judgment of the bidders.

Bidders are advised that the City disclaims responsibility for any opinions, conclusions, interpretations, or deductions that may be expressed or implied in any of the information presented or made available to bidders; it being expressly understood that the making of deductions, interpretations, and conclusions from all of the accessible factual information is the bidder's sole responsibility.

The Contractor shall have a continuing duty to read, carefully study and compare each of the Contract Documents, the Shop Drawings, and the Product Data and shall give written notice to the Owner of any inconsistency, ambiguity, or error omission which the Contractor may discover with respect to these documents before proceeding with the affected work. The issuance or the express or implied approval by the Owner or the Engineer of the Contract Documents, Shop Drawings, or Product Data shall not relieve the Contractor of the continuing duties imposed hereby, nor shall any such approval be evidence of the Contractor's compliance with this Contract. The Owner has requested the Engineer to only prepare documents for the Project, including drawings and specs for the project which are accurate, adequate, consistent, coordinated and sufficient for construction. HOWEVER, the OWNER MAKES NO REPRESENTATION OR WARRANTY OF ANY NATURE WHATSOEVER TO THE CONTRACTOR CONCERNING SUCH DOCUMENTS. By the execution hereof, the contractor acknowledges and represents that it has received, reviewed, and carefully examined such documents, has found them to be complete, accurate, adequate, consistent, coordinated and sufficient for construction, and that the Contractor has not, does not, and will not, rely upon any representation or warranties by the Owner concerning such documents as no such representation or warranties have been or are hereby made.

15. INCLUSIONS TO CONTRACT

The parties further agree that the advertisement for bids, instructions to bidders, contractor's proposal, plans and specifications, general requirements, supplement to general requirements and general terms and conditions, together with any addenda thereto, made prior to submission of the contractor's proposal and all modifications agreed to by the parties and issued after the execution of this contract are a part of this contract as if fully set out herein.

16. COMMENCEMENT OF WORK

It is further understood and agreed that the Contractor shall commence work to be performed under this contract within fifteen (15) days from the date of this contract, unless otherwise instructed in writing by the OWNER. All work shall be carried on continuously to completion.

17. CONTRACT TIME

All work is to be completed within the allotted time of the original contract, which is stated in the bid proposal documents, unless a valid change order has been issued which alters the contract time period.

18. LIQUIDATED DAMAGES

It is further understood and agreed by and between the parties to this contract, that in the event the work to be performed under this contract is not completed at the expiration of the contract time, then, and in that event, the Contractor shall pay to the City the amounts per calendar day by the schedule shown in the schedule in the City of Huntsville Standard Specifications, Section 80.11 – "Schedule of Liquidated Damages" for each day thereafter until such work is completed. The City will deduct said sum or sums from any money due the Contractor under this contract for any and all invoices submitted after the contract due date. (See Section 12.). Attachment "F" – Sample of Request for Payment with Liquidated Damages shall become a part of the contract documents. Liquidated damages will be deducted from all invoices when the invoice estimate period end date is later than the contract completion date.

Section 80.11 – "Schedule of Liquidated Damages" has been amended as follows effective 2/1/11 and revised in COH specifications 3/7/11:

Original Contract Amount		Liquidated Damages Daily Charge	
More Than	To and Including	Calendar Day or Fixed Date	Work Day
$ 0	$ 100,000	$ 200	$ 400
$ 100,000	$ 500,000	$ 550	$ 1,100
$ 500,000	$ 1,000,000	$ 900	$ 1,800
$ 1,000,000	$ 2,000,000	$ 1,350	$ 2,700
$ 2,000,000	.....	$ 1,550	$ 3,100

When the contract time is on the calendar day or date basis, the schedule for calendar days shall be used. When the contract time is on a work day basis, the schedule for work days shall be used.

Amounts in accordance with ALDOT and COH specifications and is based on contract amount before Change Orders.

19. STORAGE OF MATERIALS

The Contractor shall not permit the storage of materials on or use of any property outside the right-of-way easement or property identified as the project site.

20. TRAFFIC FLOW

The Contractor shall be responsible for the uninterrupted, orderly and safe flow of traffic around, on, over or across the project site.

21. TERMINATION FOR CONVENIENCE

A. The City may for any reason whatever terminate performance under this Contract by the Contractor for convenience. The City shall give written notice of such termination to the Contractor specifying when the termination becomes effective.

B. The Contractor shall incur no further obligations in connection with the Work and the Contractor shall stop Work when such termination becomes effective. The Contractor shall also terminate outstanding orders and subcontracts. The Contractor shall settle the liabilities and claims arising out of their termination of subcontracts and orders. The City may direct the Contractor to assign the contractor's right, title and interest under terminated orders or subcontracts to the City or its designee.

C. The Contractor shall transfer title and deliver to the Owner such completed Work and materials, equipment, parts, fixtures, information and Contract rights as the Contractor has.

D. (1) The Contractor shall submit a termination claim to the City specifying the amounts due because of the termination for convenience together with costs, pricing or other data required by the City. If the Contractor fails to file a termination claim within six (6) months from the effective date of termination, the owner shall pay the Contractor, an amount derived in accordance with subparagraph (3) below.

(2) The City and the contractor may agree to the compensation, if any, due to the Contractor hereunder.

(3) Absent agreement to the amount due to the Contractor, the City shall pay the Contractor the following amounts:

(a) Contract prices for labor, materials, equipment and other services accepted under this Contract.

(b) Reasonable costs incurred in preparing to perform and in performing the terminated portion of the Work, and in terminating the Contractor's performance, plus a fair and reasonable allowance for overhead and profit thereon (such profit shall not include anticipated profit or consequential damages); provided, however, that if it appears that the Contractor would not have profited or would have sustained a loss if the entire Contract would have been completed, no profit shall be allowed or included and the amount of compensation shall be reduced to reflect the anticipated rate of loss, if any. Costs incurred in performing the terminated portion of the work must have been incurred prior to the effective date of the termination.

(c) Reasonable costs of settling and paying claims arising out of the termination of subcontracts or orders pursuant to Paragraph B of this clause. These costs shall not include amounts paid in accordance with other provisions hereof.

The Total sum to be paid the Contractor under this clause shall not exceed the total Contract Price, as properly adjusted, reduced by the amount of payments otherwise made, and shall in no event include duplication of payment.

22. TERMINATION FOR CAUSE

A. If the Contractor persistently or repeatedly refuses or fails to prosecute the work in a timely manner, supply enough properly skilled workers, supervisory personnel or proper equipment or material, or if it fails to make prompt payment to Subcontractors or for materials or labor, or persistently disregards laws, ordinances, rules, regulations, or orders of any public authority having jurisdiction, or otherwise is guilty of a substantial violation of a material provision of this Contract, then the Owner may, by written notice to the Contractor, without prejudice to any other right or remedy, terminate the employment of the Contractor and take possession of the site and of all

materials, equipment, tools, construction equipment, and machinery thereon owned by the Contractor and may finish the Work by whatever methods it may deem expedient. In such case, the Contractor shall not be entitled or receive any further payment until the Work is finished.

B. If the unpaid balance of the Contract Price exceeds the cost of finishing the work, including compensation for the additional professional services and expenses made necessary thereby, such excess shall be paid to the Contractor. If such costs exceed the unpaid balance, the Contractor shall pay the difference to the City. This obligation for payment shall survive the termination of the Contract.

C. In the event the employment of the Contractor is terminated by the City for cause pursuant to Paragraph A and it is subsequently determined by a court of competent jurisdiction that such termination was without cause, such termination shall thereupon be deemed a Termination for Convenience and the provisions of the Termination for Convenience clause shall apply.

23. UNBALANCED BIDS

The City may reject a bid as nonresponsive if the prices bid are materially unbalanced between line items. A bid is materially unbalanced when it is based on prices which are significantly overstated or understated in relation to cost for other work, and if there is a reasonable doubt that the bid will result in the lowest overall cost to the City even though it may be the low evaluated bid.

24. ADDITIONAL INSURANCE REQUIREMENTS

The Contractor shall carry insurance of the following kinds and amounts in addition to any other forms of insurance or bonds required under the terms of the contract specifications. The Contractor shall procure and maintain for the duration of the job until final acceptance by the Owner, or as later indicated, insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Contractor, his agents, representatives, employees or subcontractors.

A. MINIMUM SCOPE OF INSURANCE

1. General Liability

Insurance will be written on an occurrence basis. Claims-made coverage will be accepted only on an exception basis after the Owner's approval. General Liability Coverage and Owners Contractors Protective Insurance should be written by this same insurance company.

Commercial General Liability

Products and Completed Operations
Contractual
Personal Injury
Explosion, Collapse and Underground
Broad Form Property Damage

2. Professional Liability

N/A

3. Automobile Liability

Business Automobile Liability providing coverage for all owned, hired and non-owned autos. Coverage for loading and unloading shall be provided under either automobile liability or general liability policy forms.

4. Worker's Compensation Insurance

Statutory protection against bodily injury, sickness or disease or death sustained by employee in the scope of employment. Protection shall be provided by a commercial insurance company or a recognized self-insurance fund authorized before the State of Alabama Industrial Board of Relations.

5. Employers Liability Insurance

Covering common law claims of injured employees made in lieu of or in addition to a worker's compensation claim.

B. MINIMUM LIMITS OF INSURANCE

1. General Liability

Commercial General Liability on an occurrence form for bodily injury and property damage:

$2,000,000	General Aggregate Limit
$2,000,000	Products - Completed Operations Aggregate
$1,000,000	Personal and Advertising Injury
$1,000,000	Each Occurrence

2. Professional Liability

N/A

3. Automobile Liability

$1,000,000 Combined Single Limit per accident for bodily injury and property damage.

4. Worker's Compensation

As required by the State of Alabama Statute.

5. Employers Liability

$100,000	Bodily Injury
$500,000	Policy Limit by Disease

C. OTHER INSURANCE PROVISIONS

The Owner is hereby authorized to adjust the requirements set forth in this document in the event it is determined that such adjustment is in the Owner's best interest. If the insurance requirements are not adjusted by the Owner prior to the Owner's release of specifications with regard to the project in questions, then the minimum limits shall apply.

The policies are to contain, or be endorsed to contain, the following provisions:

1. General Liability and Automobile Liability Coverages Only:

a. The Owner, its officers, employees, agents and specified volunteers are to be covered as Additional Insureds, as their interest may appear, as respects: liability arising out of activities performed by or on behalf of the contractor, architect, engineer, land surveyor or consulting firm for products used by and completed operations of the Contractor, or automobiles owned, leased, hired or borrowed by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to the Owner, its officers, employees, agents or specified volunteers.

b. The Contractor's insurance coverage shall be primary insurance as respects the Owner, its officers, employees, agents, and specified volunteers, as their interest may appear. Any insurance or self-insurance maintained by the Owner, its officers, officials, employees, agents or specified volunteers shall be excess of the Contractor's insurance and shall not contribute to it.

c. The Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

2. All Coverages

a. The Contractor is responsible to pay all deductibles. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, canceled by either party, reduced in coverage or in limits except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to the Owner. Cancellation of coverage for non-payment of premium will require ten (10) day's written notice to the Owner.

b. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the Owner, its officers, employees, agents or specified volunteers.

D. ACCEPTABILITY OF INSURERS

Insurance is to be placed with insurers with an A. M. Best's rating of no less than B + V.

E. **VERIFICATION OF COVERAGE**

The Owner shall be indicated as a Certificate Holder and the Contractor shall furnish the Owner with Certificates of Insurance reflecting the coverage required by this document. The A.M. Best Rating and deductibles, if applicable, shall be indicated on the Certificate of Insurance for each insurance policy. The certificates for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. All certificates are to be received and approved by the Owner before work commences. The Owner reserves the right to require complete, certified copies of all required insurance policies at any time.

F. **SUBCONTRACTOR WORKING FOR GENERAL CONTRACTOR, OR ARCHITECT, ENGINEERS, LAND SURVEYORS OR CONSULTING FIRMS WORKING FOR THE ENGINEER OF RECORD**

The Contractor shall include all subcontractors as insured under its policies or shall furnish separate certificates and/or endorsements for each subcontractor. The Engineer of Record shall include all architects, engineers, land surveyors or consulting firms as insured under its policies other than professional liability, or shall furnish separate certificates and/or endorsements for each architect, engineer, land surveyor or consulting firm. Subcontractors working for the contractor or architects, engineers, land surveyors, or consulting firms working for the Engineer or Record shall be required to carry insurance.

G. **HOLD HARMLESS AGREEMENT**

1. Other Than Professional Liability Exposures

The Contractor, architect, engineer, land surveyor or consulting firm, to the fullest extent permitted by law, shall indemnify and hold harmless the City of Huntsville, its elected and appointed officials, employees, agents and specified volunteers against all claims, damages, losses and expenses, including, but not limited to, attorney's fees, arising out of or resulting from the performance of the work, provided that any such claim, damage, loss or expense (1) is attributable to personal injury, including bodily injury, sickness, disease or death, or to injury to or destruction of tangible property, including loss of use resulting therefrom and (2) is caused by any negligent act or omission of the contractor, architect, engineer, land surveyor or consulting firm, or any of their subcontractors, subconsultants, or anyone directly or indirectly employed by any of them or anyone for whose acts they are legally liable. Such obligation should not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this paragraph.

2. The architect, engineer, land surveyor or consulting firm agrees that as respects to negligent acts, errors, or omissions in the performance of professional services, to indemnify and hold harmless the City of Huntsville, its officers, agents, employees, and specified volunteers from and against any and all claims, demands, losses and expenses including, but not limited to attorney's fees, liability, or consequential damages of any kind or nature resulting from any such negligent acts, errors, or omissions of the architect, engineer, land surveyor or consulting firm or any of their subconsultants, or anyone directly or indirectly employed by any of them or anyone for whose acts they are legally liable.

25. **DOMESTIC PREFERENCES**

In the performance of this contract, the contractor shall comply with Ala Code (1975) §§ 39-3-1 through 39-3-5 in supplying steel, materials, supplies, other products, and labor. Failure to comply with these requirements shall subject the contractor to the penalties set forth in the sections of the Alabama Code set forth above.

26. **TIME IS OF THE ESSENCE**

Time is of the essence in the performance of this contract.

27. **NO DAMAGES FOR DELAYS**

In the event that the Contractor is delayed in the performance of the work for the reasons set forth in § 80.09 of the City of Huntsville's Standard Specifications for the Construction of Public Improvements, Contract Projects, 1991, then the Contractor's recovery for such delay shall be limited to the extensions of time in contract performance in accordance with the provisions of §80.09 and in §4(c) "Changes in Contract Time" as set forth in the Request for Bids.

In such circumstances, time extensions are the sole remedy provided to the Contractor. The Contractor shall make no claim for extra compensation due to delays of the project beyond his control. Such delays may include those caused by an act of neglect on the part of the owner or the engineer, or by an employee of either, or by any separate contractor employed by the Owner, or by any changes ordered in the work, or by labor disputes, fire, unusual delays in transportation, adverse weather condition not reasonably anticipatable, unavoidable casualties, or by delay specifically authorized by the owner in writing pending the resolution of any disputes, or by any other cause which the Owner determines may justify delay.

28. CONTRACTOR RESPONSIBLE FOR LOCATING UTILITIES PRIOR TO CONSTRUCTION INITIATION

The Contractor's attention is specifically directed to §50.07 -Cooperation with Utilities and Non-Highway Public Facilities of the City of Huntsville's Standard Specifications for the Construction of Public Improvements, Contract Projects, 1991. In addition to the responsibilities placed on the Contractor by that clause, the Contractor shall be responsible for having existing utilities located prior to excavations. The existence and location of any underground utility pipes or structures shown on these drawings have been obtained by a search of the available records. The City assumes no responsibility as to completeness or accuracy of the depicted location on these drawings. The Contractor shall be responsible for taking precautionary measures to protect the utility lines shown and all other lines not of record or not shown on these drawings by verification of their location in the field prior to the initiation of the work.

29. CORRECTION TO CITY OF HUNTSVILLE'S STANDARD SPECIFICATIONS FOR THE CONSTRUCTION OF PUBLIC IMPROVEMENTS, CONTRACT PROJECTS, 1991

§80.09 (b) 2.of the City of Huntsville's Standard Specifications for the Construction of Public Improvements, Contract Projects, 1991 refers to the definition of recovery time as being set forth in Section 10.01. Inasmuch as this definition was omitted from §10.01, the following definition shall be incorporated :

Recovery Time. Recovery time is defined as the time required, after the controlling item or items of work have been substantially damaged as a result of conditions and causes beyond the control of the Contractor and not due to his negligence of fault, to restore the work to the condition existing prior to such damage so that normal operations can be resumed on the contract pay items. Recovery time shall be the number of days required by the Contractor, working with normal forces, to restore the work as described above.

30. WARRANTIES

Contractor shall provide a minimum of one year warranty of all materials and services from date of final completion. Additionally, all manufacturer's warranties on materials used in providing the services shall be provided to the owner with the final payment request. Separate warranty bonds may be required on specialty items as determined by the Owner and will be shown as a separate line item in the quantities prior to bidding.

31. COORDINATION WITH OTHER CONTRACTORS

It shall be the responsibility of the contractor to coordinate with other separate contractors who may be working on the site or an adjacent site with regards to access to the site, storage of materials and working on a non-interference basis.

32. W-9 TAXPAYER FORM

All vendors/contractors are required to submit a Federal Tax Form W-9 to City of Huntsville at the time a contract is awarded, unless vendor/contractor is already registered and doing business with the City. No payments of invoices can be made until this W-9 Tax Form has been properly submitted. A copy of the W-9 Tax Form can be obtained at the following website: www.irs.ustreas.gov/pub/irs-pdf/fw9.pdf

33. FINAL PAYMENT

Final payment to construction contractor will be made after contractor provides the following: advertising of completion for four (4) consecutive weeks, lien waivers have been provided from all subcontractors, Record Drawings (As-Builts) have been submitted to the OWNER by construction contractor, all property pins have been reset by a licensed land surveyor hired by the construction contractor to meet "Standards of Practice for Surveying in the State of Alabama" as required by the Alabama Board of Registration for Engineering and Land Surveyors, and all construction signs have been removed. This final payment will be retainage only. All work shall be complete prior to advertisement of completion. Advertisement of completion shall be in a Huntsville local newspaper. The final payment request of retainage only shall be submitted along with two (2) original, certified copies (with raised notary seal) of the advertisement of completion, warranties, lien waivers and Record Drawings. The advertisement of completion must read as follows:

LEGAL NOTICE (Header)

___(company name)____ hereby gives Legal Notice of Completion of Contract with ____(project name)____, ____(project no.(s)____located in the City of Huntsville, Alabama. All claims should be filed at ____(company address)_____during this period of advertisement, i.e. June 17, 24, July 1, 8, 2011 (example of dates).

34. PROJECT COMPLETION DATE

The project completion date will be a date mutually agreed upon by the OWNER and Contractor. This date will be after all items have been completed. Therefore, all work will be complete before any advertisement of completion is made. The completion date will always be before the first advertisement date. This final project completion date will be the date used to determine the one year warranty for all work and materials, unless a separate warranty bond has been called for as a line item prior to bidding.

35. RECORD DRAWINGS

POLICY FOR RECORD DRAWINGS

The purpose of this policy is to document procedures for the preparation and delivery of Record Drawings. Record Drawings shall include all changes in the plans, including those issued as Change Orders, Plan Clarification, Addenda, Notice to Bidders, responses to Requests for Information, Jobsite Memos, and any additional details needed for the construction of the project, but not shown on the plans. After completion of all construction and before final acceptance is made, the Contractor shall submit one set of full size record drawings with dimensioned changes shown in red pencil, and one digital copy of record drawings using the criteria listed below.

City Construction Projects:
The Contractor shall be responsible for field surveying upon substantial completion of construction (to be performed by a registered land surveyor in Alabama). Contractor is responsible for providing digital record drawings showing all info specified below, as applicable. Record drawings shall be maintained by the Contractor at the work site and shall be updated based on job progress to reflect all changes. Record drawings shall be made available for review on a monthly basis at the job site. A monthly review of record drawings will be part of the monthly monetary progress review. Progress payments may be withheld if the Record Drawings are not kept up-to-date. A late review could result in a delay of payment.

Format Requirements for all record drawing submittals:
All drawings shall be prepared in Micro Station .DGN format, unless otherwise approved by the City Engineer. Transmittal letters shall consist of a list of files being submitted, a description of the data in each file, and a level/layer schematic of each design file. DGN design files should have working units as follows: master units in feet, no sub-units, and 1,000 positional units. All data submitted shall use NAD 1983 Alabama East Zone coordinates as described in The Code of Alabama (1975), section 35-2-1 and NGVD 1929. Digital files shall be submitted on 4-3/4" CD ROM, 100 MB zip drive, 3 and ½ inch floppy disk, or to the City of Huntsville F.T. P. Site. Contractor is required to certify that record drawings are in the correct format upon submittal. Record Drawings shall be prepared and provided to the OWNER in the manner required and described below in Level Symbology.

Record Drawing Criteria, unless otherwise noted by City Engineer:

1. **Roadways:**
   a. Any changes during construction of roadway/intersections that differ from plan drawings.

2. **Sanitary Sewers:**
   a. Gravity Line
      i. Horizontal Location of Manholes – Northing and easting Coordinates
      ii. Vertical Location of Manholes – Lid elevation and Invert elevation.
      iii. Changes in location of clean outs, or end of service lateral.
      iv. Changes in length, slope, size, or material of lines.
   b. Force Mains
      i. Horizontal Location of Air Relief/Vacuum/Isolation Valves – Northing and easting Coordinates
      ii. Horizontal and Vertical Location of Fittings/Bends
      iii. Changes in length, size, depth or material of lines
      iv. Changes in restraint types
   c. Pump Stations
      i. Changes in Structural Requirements – (length, width, thickness, cover, laps, bar size, spacing, materials, material strengths, etc.)
      ii. Changes in Site Development and/or Landscaping
      iii. Changes in Equipment

3. **Storm Drainage:**
   a. Structures (boxes, inlets, end treatments, etc.):
      i. Horizontal locations of Features – Northing and easting coordinates
      ii. Vertical location of Features – Tops and Inverts
      iii. Changes in type, size, or material of feature.
   b. Pipes / Culverts:
      i. Document length

ii. Document slope
iii. Document size
iv. Document invert elevation
v. Changes in material of structure

c. Flumes, Ditches, and/or Swales/Berms: (the following are minimum requirements).
i. Horizontal location (to verify location within described easements)

For easement widths less than 15- feet	At 100-foot intervals along the centerline of feature.
For easement widths 15-feet or Greater	At 200-foot intervals along the centerline of feature.

ii. Vertical location (to verify positive drainage)

For slopes less than 0.5%	At 50-foot intervals along the centerline of feature.
For slopes 0.5% or greater	At 100-foot intervals along the centerline of feature.

iii. Changes in width or material of feature.
iv. Changes in location and type of geotechnical fabric used.
v. Changes in overall grading of site topography.

d. Detention / Retention Facility:
i. Changes in size, location, or material of facility.
ii. Changes in location and type of geotechnical fabric used.
iii. Where applicable, copy of maintenance agreement.

Checklist for review of record drawings:

a. Changes in sidewalk location or size.
b. Changes in shoulder widths.
c. Changes in grades at intersections. (also to include changes in island location)
d. Changes in location of driveway aprons.
e. Changes in pavement section, to be supported by adequate documentation.
f. Changes in gutter flow line elevation. (could be substituted in 3b) versus edge of pavement).
g. Geotechnical fabric locations, to include vertical elevation.
h. Changes in Traffic Engineering related items such as signals, signage and markings, etc.

Any other changes that may have occurred during construction.

LEVEL SYMBOLOGY

DESIGN LEVEL	CONTENTS	LINE CODE	COLOR	WEIGHT	TEXT SIZE	FONT	CELL NAME
1	State Plane Coordinate Grid	0	0	0	20	0	
2	Benchmarks	0	0	0			
3	Street Text	0	3	0	20	0	
4	Street R/W	7	0	0			
5	Street Centerline	7	0	0			
6	Street Pavement	0	3	0			
6	Proposed Street Pavement	3	16	0			
7	Parking Lots	1	3	1			
8	Secondary Roads	2	3	0			
8	Trails	3	3	0			
9	Secondary Roads/Trails Text	0	3	0	20	0	
10	Sidewalks	5	3	0			
11	Bridges/Culverts	0	0	0			
12	Hydrology - Major	6	1	0			
12	Hydrology - Minor, Ditches	7	1	0			
13	Hydrology - Text	0	1	0	25	23	

14	Tailings & Quarries, Athletic Fields/Text, misc. areas	0	1	0			
15	City Limits/County Line	1	0	3			
16	City /limit text	0	0	1	30	0	
17	Railroad Tracks (Patterned)	0	2	0			RR
18	Railroad Text	0	2	0	25	0	
19	Railroad R/W	2	2	0			
20	Utility Poles (Cell)	0	5	0			P POLE
21	Utility Easements	3	5	0			
22	Utility Text	0	5	1			
23	Geographic Names	0	3	1			
24	Building Structures	0	0	0			
	Pools and Text	0	1	0	10	1	
24	Future Site of Structures	2	0	0			STRUCT
	Existing Structures (exact location and shape unknown)	2	0	0			STRCEX
25	Property Lines	6	6	1			
26	Cadastral Polygons	6	6	0			
27	Ownership Text	0	6	1			
28	Cemeteries/Text	4	6	0	10	1	
29	Lot Numbers				25	0	
30	Block Numbers				30	0	
31	Addition Names	0	0	0	35	0	
32	Open						
33	Lot Ticks						
34	Lot Lines/Property Lines	6	6	0			
35	Trees/Hedge Rows	0	6	0	AS=1		TREES
36	GPS Monuments	0	5	0	15	0	GPS
37	2' Topo Contour						
38	5' Topo Contour	0	7	0			
39	25' Major Topo Contour	0	7	0			
40	X Spot Elevation	0	7	0			
41	FEMA Monuments/Labels	0	3/0	0	18	1	GPSPNT
42	Quarter Sections						
43	Section Lines	0	5	0			
44	Features	0	2	0			
44	Cell Towers	0	12	0	AS=1		CELTWR
45	Fences (Pattern)	0	8	0	AS=1		FENCE
46	Format/Legend	0	0	0			Limleg Madleg
47	Mass Points	0	7	2			
48	Break Lines	0	7	2			
49	Open						
50	Signs						
51	Open						
52	Open						
53	Open						
54	Open						
55	Open						
56	Property Address	0	1	0			
57	Text Tag for Buildings	0	1	0	10-20	1	
58	Open						
59	Open						
60	Open						
61	Open						

62	Monuments for Setup (point cell)						
63	Open						

36. **LIEN WAIVERS**

Lien waivers will be required from all subcontractors working for the contractor. These lien waivers shall be included with your final payment package. The contractor is responsible for obtaining signatures from his subcontractors. If no subcontractors are used, contractor must provide a statement indicating such.

37. **LOWEST RESPONSIBLE BIDDER**

For the purpose of determining the lowest responsible bidder, the OWNER shall consider the base bid amount together with any options set forth in the Request for Bids. In the event that the City does not have sufficient funds to award both the base bid and all options, then the City reserves the right to determine the lowest responsible bidder on the base bid only or the base bid and the number of options affordable considering the funds available to the City for the procurement. This method for determining the low bidder is for the purpose of allowing the City to procure the most advantageous bid for the OWNER. City of Huntsville reserves the right to award any and/or all options at any time during the life of the contract.

38. **NON-RESIDENT BIDDERS**

"In awarding the Contract, preference will be given to Alabama resident contractors and a nonresident bidder domiciled in a state having laws granting preference to local contractors shall be awarded the Contract only on the same basis as the nonresident bidder's state awards contracts to Alabama contractors bidding under similar circumstances."

39. **CORRECTION TO SECTION 80.08(C) of The City of Huntsville "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF PUBLIC IMPROVEMENTS"** is revised as shown:

(C) DAYS WORK NOT PERMITTED: The Contractor shall not permit work on any pay item to be done on Sundays and the following holidays: New Year's Day, Martin Luther King's Birthday as nationally observed, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day and Christmas Day, except with permission of the Director.

40. **CORRECTION TO SECTION 80 – PROSECUTION AND PROGRESS 80.01 Subletting and Contract. (a) LIMITATIONS**

The Contractor shall not sublet the contract or any portion thereof, or of his right, title, or interest therein, without written consent of the DIRECTOR. If such consent is given, the Contractor will be permitted to sublet a portion of the work, but shall perform with his own organization, work amounting to <u>not less than 30 percent</u> of the total contract cost. Any items designated in the contract as "specialty items" may be performed by sub-contract and the cost of such specialty items performed by sub-contract may be deducted from the total cost before computing the amount of work required to be performed by the contractor with his own organization. No sub-contracts, or transfer of contract, shall relieve the Contractor of his liability under the contract and bonds. The Department reserves the right to disapprove a request for permission to sublet when the proposed Subcontractor has been disqualified from bidding for those reasons listed in Subarticle 20.02(b) and Article 30.03.

41. **CORRECTION TO SECTION 80 – PROSECUTION AND PROGRESS 80.03 Progress Schedule of Operations**

A critical path schedule is required within thirty (30) days after award. The critical path schedule must be submitted in Microsoft Projects format (electronic format and hard copy), with the critical path highlighted. The critical path schedule shall show information on the task or tasks that must be finished on schedule for the project to finish on schedule. Task dependencies, constraints, and relationships shall be shown on the schedule. **If the progress report (critical path) is not received, YOUR first pay estimate will NOT BE PROCESSED UNTIL IT IS RECEIVED).** See section 80.03 and 80.04 for additional requirements.

42. **CORRECTION TO SECTION 80 – PROSECUTION AND PROGRESS 80.09 (b) Contracts on a Calendar Day or Calendar Date Basis**

§80.09 (b) first paragraph reads: "When the notice to proceed is delayed more than 10 calendar days after execution of the contract, the date of completion will be extended . . ." Shall be amended to read "When the notice to proceed is delayed more than <u>15</u> calendar days after execution of the contract, the date of completion will be extended . . ."

Section 80.09(B) is revised to remove the last sentence of the first paragraph: ("Also where the total cost of the completed work exceeds the total cost shown on the proposal, an extension in calendar days will be granted the Contractor, as provided in Section 80.09(a)1.") It is replaced by: "Where the scope of work is increased, an extension of time commensurate with the scope of the change may be granted by the OWNER, when in his judgment, the facts justify an extension.

The contractor shall provide justification substantiated to the satisfaction of the OWNER with any requests for time extensions. Justification shall include, but not be limited to, a revised schedule showing the impact to critical path tasks. "

43. CORRECTION TO SECTION 105 – EXCAVATION AND EMBANKMENT 105.04 (a) Method of Measurement

Section 105.04 will remain as stated when estimated borrow material is less than 2500 C.Y.

When estimated borrow material is more than 2500 C.Y., Section 105.04 is revised to remove the last paragraph: "Borrow material will be measured at the point of delivery, inside the delivery truck less 30 percent for shrinkage."

44. CORRECTION TO SECTION 847 – PIPE CULVERT JOINT SEALERS

Section 847 is deleted and replaced with Section 846 – Pipe Culvert Joint Sealers, ALDOT Specifications for Highway Construction, Current Edition.

45. NPDES CONSTRUCTION REQUIREMENTS

For areas of this project meeting the Alabama Department Of Environmental Management (ADEM) definition of a "Construction Site", the Contractor shall prepare and apply for, pay the necessary fees, post the required registration at the jobsite prior to commencing work, and maintain the worksite and records in accordance with the ADEM requirements for National Pollutant Discharge Elimination System (NPDES) registration. Off site borrow pits utilized in the construction of this project are included in the requirement. NPDES Construction Site is construction that disturbs 1 acre or greater or will disturb less than 1 acre but is part of a larger common plan of development or sale whose total land disturbing activities total 1 acre or greater. An NPDES construction site also includes construction sites, irrespective of size, whose stormwater discharges have a reasonable potential to be a significant contributor of pollutants to a water of the State, or whose stormwater discharges have a reasonable potential to cause or contribute to a violation of an applicable Alabama water quality standard as determined by the Department. The Contractor is referred to the "Alabama Department Of Environmental Management Field Operations Division – Water Quality Program - Division 335 – 6" for complete definitions and requirements. The Contractor is also referred to Item 11 of these General Requirements, sections 50.15, 50.16, and 70.02 of the City of Huntsville Standard Specifications For Construction Of Public Improvements, Contract Projects (Specifications)

Contractor violations of the permit by rule which results in enforcement actions from ADEM including fines and/or work stoppage shall be the responsibility of the Contractor. Fines assessed to the Contractor or the OWNER because of Contractor action shall be paid by the Contractor. No extension of contract time shall be considered as a result of enforcement. Enforcement history will also be considered by the OWNER in its decision to issue future proposals or award future contracts in accordance with disqualification provisions of Section 20.02(b) of the Specifications.

46. DELETION OF SECTION 50.01 – Authority of the Engineer of Record

This section is deleted.

47. SHOP DRAWINGS

The approval of shop drawings by the Engineer will cover only the features of the design and in no case shall this approval be considered to cover error or omissions in shop details or a check of any dimensions. The Contractor shall be responsible for the accuracy of the shop drawings, the fabrication of materials and the fit of all connections; and he shall bear the cost of all extra work in erection caused by errors in shop drawings or in fabrication, inaccurate workmanship, misfits of connections or for any changes in fabrication necessary. No work shall be done on the material before the shop drawings have been approved. Any material that the Contractor orders prior to the approval shall be at the Contractor's risk.

Substitutions or changes whether indicated or implied on shop drawings will not be considered as changes regardless of the Engineer's approval of shop drawings unless the change has been previously submitted and approved as a change order per the requirements for changes in the contract.

After a shop drawing has been approved, no changes shall be made unless directed in writing to the Owner and acceptance by the Owner of said changes. Any acceptance of change by the Owner does not constitute a change to the contract unless that change has been approved and directed in writing per change order. Compensation for preparing and furnishing all shop and working drawings shall be included in the contract unit prices for the various pay items of work.

48. E-VERIFY – NOTICE

The Beason-Hammon Alabama Taxpayer and Citizen Protection Act, Act No. 2011-535, Code of Alabama (1975) § 31-13-1 through 31-13-30 (also known as and hereinafter referred to as " the Alabama Immigration Act") as amended by Act No. 2012-491 on May 16, 2012 is applicable to all competitively bid contracts with the City of Huntsville. As a condition for the award of a contract and as a term and condition of the contract with the City of Huntsville, in accordance with § 31-13-9 (a) of the Alabama Immigration Act, as amended, any business entity or employer that employs one or more employees shall not knowingly employ, hire for employment, or continue to employ an unauthorized alien within the State of Alabama.

During the performance of the contract, such business entity or employer shall participate in the E-Verify program and shall verify every employee that is required to be verified according to the applicable federal rules and regulations. The business entity or employer shall assure that these requirements are included in each subcontract in accordance with §31-13-9(c). Failure to comply with these requirements may result in breach of contract, termination of the contract or subcontract, and possibly suspension or revocation of business licenses and permits in accordance with §31-13-9 (e) (1) & (2).

Code of Alabama (1975) § 31-13-9 (k) requires that the following clause be included in all City of Huntsville contracts that have been competitively bid and is hereby made a part of this contract:

"By signing this contract the contracting parties affirm, for the duration of the agreement, that they will not violate federal immigration law or knowingly employ, hire for employment, or continue to employ an unauthorized alien within the State of Alabama. Furthermore, a contracting party found to be in violation of this provision shall be deemed in breach of the agreement and shall be responsible for all damages resulting therefrom."

Contractor's E-Verify Memorandum of Understanding shall be a part of the contract bid documents and shall be submitted with the bid package.

49. CITY OF HUNTSVILLE'S TRAFFIC ENGINEERING DEPARTMENT CONSTRUCTION REQUIREMENTS

For areas of this project that require removal of traffic loops, striping, markings, rpm's and ceramic markers, the following shall apply:

1. **TRAFFIC SIGNAL LOOP REPAIRS** – All vehicular and bicycle detector loop replacements shall be in accordance with the Alabama Department of Transportation Standard Specifications for Highway Construction, current edition. Unless otherwise specified, traffic signal loops shall be replaced exactly as existed prior to any paving or resurfacing work. The general contractor will be responsible for documenting location of loops, location of any associated items for loop operation and assuring that loops are replaced exactly as existed prior to paving. All vehicular and bicycle loop repairs shall be replaced within fourteen (14) calendar days after paving work.

2. **TRAFFIC SIGNAL STRIPING, MARKINGS, RAISED PAVEMENT MARKERS AND CERAMIC MARKERS FOR GUIDANCE** - All traffic striping, markings, raised pavement markers and ceramic markers for guidance shall be in accordance with the Alabama Department of Transportation Standard Specifications for Highway Construction, current edition. Unless otherwise specified, traffic striping, markings, raised pavement markers and ceramic markers for guidance shall be replaced exactly as traffic striping, markings, raised pavement markers and ceramic markers for guidance existed prior to any paving or resurfacing work. The general contractor will be responsible for documenting location of all striping, markings, raised pavement markers and ceramic markers for guidance and assuring that all are replaced exactly as existed prior to paving. All traffic striping, markings, raised pavement markers and ceramic markers for guidance shall be reflectorized. All resurfaced areas shall be marked with temporary striping and markings for traffic usage by nightfall each day, 7 days a week, in accordance with State of Alabama regulations. All permanent striping, markings, raised pavement markers and ceramic markers for guidance shall be replaced within thirty (30) calendar days after paving work.

50. SURVIVABILITY OF CONTRACT PROVISIONS

Termination of this Contract by either party shall not affect the rights and obligations of the parties that accrued prior to the effective date of the termination. Terms and conditions of the contract that survive termination include, but are not necessarily limited to, provisions regarding payments, insurance, termination, warranty, governing law of the contract, liquidated damages, bonding requirements, notice procedures, waiver, and other requirements necessary and appropriate for the proper resolution of disputes, claims, and enforcement of the rights of the parties.

51. SURETY BONDS

The Contractor shall furnish separate performance and payment bonds to the Owner within fifteen (15) days after the date of acceptance of this proposal by City Council action. Each bond shall set forth a penal sum in an amount not less than the Contract Price. Each bond furnished by the Contractor shall incorporate by reference the terms of this Contract as fully as though they were set forth verbatim in such bonds. In the event the Contract Price is adjusted by Change Order executed by the Contractor, the penal sum of both the performance bond and the payment bond shall be deemed increased by like amount. The performance and payment bonds furnished by the Contractor shall be in forms suitable to the Owner, in conformance with all the requirements of the Code of Alabama (1975), §39, and shall be executed by a surety, or sureties, reasonably suitable to the Owner. All bonds must be approved by the Mayor and the Clerk-Treasurer of the City of Huntsville.

52. GOVERNING LAW

The Contract shall be governed by the laws of the State of Alabama.

53. **ALABAMA IMMIGRATION ACT (Beason-Hammon Alabama Taxpayer and Citizen Protection Act, Act No. 2011-535, Code of Alabama (1975)**

Compliance with the requirements of the (Beason-Hammon Alabama Taxpayer and Citizen Protection Act, Act No. 2011-535, Code of Alabama (1975) § 31-13-1 through 31-13-30, commonly referred to as the Alabama Immigration Law, is required for City of Huntsville, Alabama contracts as a condition of the contract performance. The Contractor shall submit in the bid package, with the requested information included on the form, the "City of Huntsville, Alabama Report of Ownership Form" listed in this document as Attachment "H". The bidder selected for award of the contract may be required to complete additional forms relating to citizenship or alien status of the bidder and its employees, including e-verify information, prior to award of a contract.

54. **SUCCESSORS AND ASSIGNS**

The Owner and Contractor bind themselves, their successors and assigns to the other party hereto and to successors and assigns of such other party in respect to covenants, agreements, and obligations contained in this Contract. The Contractor shall not assign this Contract without written consent of the Owner. In no event shall a contract be assigned to an unsuccessful bidder whose bid was rejected because he or she was not a responsible or responsive bidder.

55. **WRITTEN NOTICE**

Written notice shall be deemed to have been duly served if delivered in person to the individual or a member of the firm or entity or to an officer of the corporation for which it was intended, or if delivered at or sent by registered or certified mail to the last business address known to the party giving notice.

56. **RIGHTS AND REMEDIES**

Duties and obligations imposed by the Contract Documents and rights and remedies available there under shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

No action or failure to act by the Owner, Engineer, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach there under, except as may be specifically agreed in writing.

57. **ENTIRE AGREEMENT**

This Contract represents the entire agreement between the Owner and the Contractor and supersedes all prior communications, negotiations, representations or agreements, either written or oral. This agreement may be amended only by written instrument signed by both Owner and Contractor.

HUNTSVILLE

Shane Davis, P.E.
Director of Urban Development
City Engineer

Urban Development Department
Engineering Division

HOLMES AVENUE & WASHINGTON STREET
STREETSCAPE IMPROVEMENTS
Project No. 65-12-SP31
June 14, 2012

Addendum #1

THE BID OPENING IS POSTPONED UNTIL MONDAY, JUNE 18, 2012 AT 3:00 P.M. IN THE 1ST FLOOR CONFERENCE ROOM AT 320 FOUNTAIN CIRCLE, HUNTSVILLE, AL 35801.

All addenda and attachments for the above-referenced project will become part of the contract documents. All addenda must be acknowledged either on the outside of the bid envelope or on the third page of your bid proposal known as Attachment "B".

END OF ADDENDUM #1

The Star of Alabama

P. O. Box 308 · Huntsville, AL 35804-0308 · Phone 256-427-5300 · FAX 256-427-5325
www.huntsvilleal.gov

HUNTSVILLE

Shane Davis, P.E.
Director of Urban Development
City Engineer

Urban Development Department
Engineering Division

HOLMES AVENUE & WASHINGTON STREET STREETSCAPE IMPROVEMENTS

Project No. 65-12-SP31
June 15, 2012

Addendum #2

The attached pre-bid meeting minutes, all addenda, and attachments for the above-referenced project will become part of the contract documents.

Attachment A is amended as follows:
Replace bid quantities with "replacement", **Attachment "A1".** Contractors are authorized to download revised quantities from website and paste to floppy disk or CD of their choice; one or the other must be submitted with the original bid packet. **Bid must be submitted on Attachment "A1".** In addition, two hard copies must be submitted and signed with original bid packet. Contractors should be mindful of making changes to formatting already established in column for Bid Unit Price, as it may affect the outcome of their bid. In order to verify calculations are correct, Contractor may choose to manually multiply those unit costs x bid quantities to ensure extensions are correct, prior to printing and submitting with bid packet. If a price discrepancy is found on bid disk or CD, printed hard copy prices submitted with original bid documents, with Contractor signature, will prevail. However, calculations must be accurate and will be verified manually.

- Any bidder who designates a change on the outside of the envelope understands that any deletions or additions designated, bidder must further indicate the particular bid item relative to the deletion or addition, even if the deletion or addition references to deduct or add to the Total Base Bid.

Revisions to Specifications:

1-The following statement is added to the paragraph on the first page of Att "B" – Proposal regarding contract time: (See revised replacement attachment to be included in bid package)

The Base Bid sub-areas BB 1 and BB 2, as shown on Sheet PP1, and described in Special Provision 2000, sub-section 1.2(B), have a Substantial Completion delivery date of October 5, 2012.

2-The following tasks are added to Att "C" – Subcontractor's Listing:
a. CU Structural Soil Mix
b. Concrete Pavers
(See revised replacement attachment to be included in bid package)

Additions to Quantities:

32	CONCRETE BACKFILL PER KEYNOTE 38, SHEET C8	40	CY
33	6" THICK (TWO (2) SEPARATE COMPACTED LIFTS) ALDOT 424C, MAX 1" AGGREGATE SIZE. TO BE USED FOR UPPER 6" OF ALL TRENCH CUTS IN ROAD, TO INCLUDE UTILITY TRENCHES.	150	TONS
34	#78 STONE, TO BE PLACED IN ROAD TRENCH CUTS UP TO PAVEMENT SUBGRADE.	300	CY

-	-	**Option No. 4**	-	-
-	**4-1**	**PROVIDE AND INSTALL LED LIGHTING PER LUMINAIRE SCHEDULE NOTE #12, SHEET E3.**	**1**	**LS**
-	-	**TOTAL Option No. 4**	-	-
-	-	-	-	-
-	-	**Option No. 5**	-	-
-	**5-1**	**BASE BID AREA: RAINBIRD 2-WIRE IRRIGATION SYSTEM PER GENERAL IRRIGATION NOTE # 18, SHEET C25. WITH ESP-LXD CONTROLLER, PBC-LXD BACKUP CARTRIDGE. THIS OPTION INCLUDES SUBMITTAL OF MANUFACTURER PRODUCT DATA AND STANDARD INSTALLATION DETAILS OF ALL PRODUCTS, INCLUDING GROUNDING AND SPLICES.**	**1**	**LS**
-	-	**TOTAL Option No. 5**	-	-

-	-	**Option No. 6**	-	-
-	**6-1**	**OPTION NO. 1 AREA: RAINBIRD 2-WIRE IRRIGATION SYSTEM PER GENERAL IRRIGATION NOTE # 18, SHEET C25. THIS OPTION INCLUDES SUBMITTAL OF MANUFACTURER PRODUCT DATA AND STANDARD INSTALLATION DETAILS OF ALL PRODUCTS, INCLUDING GROUNDING AND SPLICES.**	**1**	**LS**
-	-	**TOTAL Option No. 6**	-	-
-	-	-	-	-
-	-	**Option No. 7**	-	-
-	**7-1**	**BASE BID AREA: BASELINE 2-WIRE IRRIGATION SYSTEM PER GENERAL IRRIGATION NOTE #18, SHEET C25 WITH BASE STATION 3200 CONTROLLER, BL-3200-X-ETHERNET. THIS OPTION INCLUDES SUBMITTAL OF MANUFACTURER PRODUCT DATA AND STANDARD INSTALLATION DETAILS OF ALL PRODUCTS, INCLUDING GROUNDING AND WIRE SPLICES.**	**1**	**LS**
-	-	**TOTAL Option No. 7**	-	-
-	-	-	-	-
-	-	**Option No. 8**	-	-
-	**8-1**	**OPTION NO. 1 AREA: BASELINE 2-WIRE IRRIGATION SYSTEM PER GENERAL IRRIGATION NOTE #18, SHEET C25. THIS OPTION INCLUDES SUBMITTAL OF MANUFACTURER PRODUCT DATA AND STANDARD INSTALLATION DETAILS OF ALL PRODUCTS, INCLUDING GROUNDING AND SPLICES.**	**1**	**LS**
-	-	**TOTAL Option No. 8**	-	-

Revisions/Clarifications/Additions to the Drawings and Specifications:

Please see Attachment to this Addenda titled: "Addendum No. 2 to the Drawings and Specifications of Holmes Avenue and Washington Street Streetscape, COH Project No. 65-12-SP31" with drawings included

E-VERIFY – NOTICE

The Beason-Hammon Alabama Taxpayer and Citizen Protection Act, Act No. 2011-535, *Code of Alabama (1975) § 31-13-1 through 31-13-30"* (also known as and hereinafter referred to as " the Alabama Immigration Act") is applicable to contracts with the City of Huntsville. As a condition for the award of a contract and as a term and condition of the contract with the City of Huntsville, in accordance with § 31-13-9 (a) of the Alabama Immigration Act, any business entity or employer that employs one or more employees shall not knowingly employ, hire for employment, or continue to employ an unauthorized alien and shall attest to such by sworn affidavit signed before a notary.

Such business entity or employer shall provide a copy of such affidavit to the City of Huntsville as part of its bid or proposal for the contract along with a copy of the Memorandum of Understanding as documentation establishing that the business entity or employer is enrolled in the E-Verify program. The required affidavit forms for the contractor and for subcontractors are included in the project specifications.

During the performance of the contract, such business entity or employer shall participate in the E-Verify program and shall verify every employee that is required to be verified according to the applicable federal rules and regulations. The business entity or employer shall assure that these requirements are required of every subcontractor in accordance with §31-13-9(c) and shall maintain records that are available upon request by the City, state authorities or law enforcement to verify compliance with the requirements of the Alabama Immigration Act. Failure to comply with these requirements may result in breach of contract, termination of the contract or subcontract, and possibly suspension or revocation of business licenses and permits in accordance with §31-13-9 (e) (1) & (2) or in the case of a subcontractor, in accordance with §31-13- 9 (f) (1) & (2).

- Bidders' attention is directed to the following new item (#53) in the "Supplement to General Requirements for Construction of Public Improvements" document as posted on the COH website for this project:

53. ALABAMA IMMIGRATION ACT (Beason-Hammon Alabama Taxpayer and Citizen Protection Act, Act No. 2011-535, Code of Alabama (1975)

Compliance with the requirements of the (Beason-Hammon Alabama Taxpayer and Citizen Protection Act, Act No. 2011-535, Code of Alabama (1975) § 31-13-1 through 31-13-30, as amended by Alabama Act 2012-241, commonly referred to as the Alabama Immigration Law, is required for City of Huntsville, Alabama contracts that are competitively bid as a condition of the contract performance. The Contractor shall submit in the bid package, with the requested information included on the form, the "City of Huntsville, Alabama Report of Ownership Form" listed in this document as Attachment "H". The bidder selected for award of the contract may be required to complete additional forms relating to citizenship or alien status of the bidder and its employees, including e-verify information, prior to award of a contract.

All addenda must be acknowledged either on the outside of the bid envelope or on the third page of your bid proposal known as Attachment "B".

Attachments: **Revised Quantities – Attachment "A1"**
Pre-Bid Minutes
Revised Attachment "B"
Revised Attachment "C"
Addendum No. 2 to the Drawings and Specifications
Revised Drawings

END OF ADDENDUM #2

6/15/2012

Holmes Avenue and Washington Street Streetscape
COH Project # 65-12-SP31

UNIT BID SHEET

ITEM NO.	DESCRIPTION	BID QTY	BID UNIT	BID UNIT PRICE	BID AMOUNT
1	HOLMES AVENUE AND WASHINGTON STREET STREETSCAPE IMPROVEMENTS, TO INCLUDE DEMOLITION, CLEARING AND GRUBBING, SITE WORK, CONCRETE WALKS, FENCE, IRRIGATION SYSTEM, LIGHTING, ALL BELOW GROUND VEHICULAR AND PEDESTRIAN SIGNAL WORK, INCLUDING JUNCTION BOXES (EXCLUDING POLES, FOOTINGS, SIGNS, SIGNALS AND WIRING) AS SHOWN ON SHEETS T1, T2, T3 AND T5, TEMPORARY VEHICULAR AND PEDESTRIAN TRAFFIC CONTROL, AND LANDSCAPING ALL AS DETAILED AND SHOWN ON PLANS, SPECIFICATIONS AND SPECIAL PROVISIONS, COMPLETE IN PLACE. INCLUDES ALL NECESSARY EQUIPMENT, LABOR AND MATERIALS.	1	LS		$0.00
2	PLANE (MILL) 0-2" THICK OF EXISTING PAVING AS SHOWN ON SHEET C11B.	2,000	SY		$0.00
3	8" THICK DENSE GRADED AGGREGATE BASE COURSE, ALDOT 825 TYPE B. (TWO (2) 4" COMPACTED LIFTS)	100	CY		$0.00
4	3" THICK (APPROXIMATELY 350 LBS/SY) ALDOT 424 B-651, SUPERPAVE BITUMINOUS CONCRETE UPPER BINDER LAYER 1" MAXIMUM AGGREGATE SIZE MIX (LIMESTONE MIX), ESAL RANGE C/D. MAY USE UP TO 15% RAP. TACK COAT IS TO BE APPLIED AT .07 LBS/SY. (NO RAP ON MILLED SURFACE BEFORE TACKING)	525	TON		$0.00

Holmes Avenue and Washington Street Streetscape
COH Project # 65-12-SP31

UNIT BID SHEET

6/15/2012

5	1 1/2" THICK (APPROXIMATELY 165 LBS/SY) ALDOT 424 A-356, SUPERPAVE BITUMINOUS CONCRETE WEARING SURFACE LAYER, 3/8" MAXIMUM AGGREGATE SIZE MIX (LIMESTONE MIX), ESAL RANGE C/D. MAY USE UP TO 15% RAP. TACK COAT IS TO BE APPLIED AT .07 LBS/SY. (NO RAP ON MILLED SURFACE BEFORE TACKING)	250	TON		$0.00
6	TRAFFIC POLE FOUNDATION F-1, PER SPECIAL PROVISION 8000, FIGURE 1, TO INCLUDE EXCAVATION, CONCRETE AND STEEL, WHERE DIRECTED BY ENGINEER.	3	EA		$0.00
7	TRAFFIC POLE FOUNDATION F-2, PER SPECIAL PROVISION 8000, FIGURE 1, TO INCLUDE EXCAVATION, CONCRETE AND STEEL, WHERE DIRECTED BY ENGINEER.	5	EA		$0.00
8	TRAFFIC POLE FOUNDATION F-3, PER SPECIAL PROVISION 8000, FIGURE 1, TO INCLUDE EXCAVATION, CONCRETE AND STEEL, WHERE DIRECTED BY ENGINEER.	3	EA		$0.00
9	ADDITIONAL TRAFFIC POLE FOUNDATION CONCRETE TO INCLUDE EXCAVATION AND PLACEMENT, COMPLETE, WHERE DIRECTED BY ENGINEER.	10	CY		$0.00
10	ADDITIONAL TRAFFIC POLE FOUNDATION, REINFORCING STEEL, PER SPECIAL PROVISION 8000 FIGURE 1, POLE FOUNDATION DETAILS, TO INCLUDE PLACEMENT IN EXCAVATION, WHERE DIRECTED BY ENGINEER.	1,000	LB		$0.00
11	#78 STONE LEVELING COURSE BENEATH SIDEWALKS, IN PLACE, COMPLETE.	240	CY		$0.00
12	INSTALL, COMPLETE IN PLACE (LABOR ONLY) NEW WATER METER BOXES.	17	EA		$0.00
13	INSTALL, COMPLETE IN PLACE (LABOR ONLY) NEW GAS VALVE BOXES.	8	EA		$0.00

Holmes Avenue and Washington Street Streetscape
COH Project # 65-12-SP31

UNIT BID SHEET

6/15/2012

14	INSTALL, COMPLETE IN PLACE (LABOR ONLY) NEW SANITARY SERVICE CLEAN-OUT BOX, TO INCLUDE CUTTING OFF PIPE STUB-UP.	8	EA		**$0.00**
15	REPAIR / REPLACE 1" WATER SERVICE LINE TO INCLUDE EXCAVATION AND BACKFILL, COMPLETE.	200	LF		**$0.00**
16	ADDITIONAL UNCLASSIFIED EXCAVATION OF UNDERCUT, WHERE DIRECTED BY ENGINEER TO INCLUDE HAUL OFF AND DISPOSAL	400	CY		**$0.00**
17	ADDITIONAL DENSE GRADED BASE INSTALLED WHERE DIRECTED BY ENGINEER, IN 8" THICK COMPACTED LIFTS, COMPLETE IN PLACE	400	CY		**$0.00**
18	ADDITIONAL 24" WIDE CONCRETE CURB AND GUTTER INSTALLED WHERE DIRECTED BY ENGINEER TO INCLUDE EXCAVATION AND BACKFILL	100	LF		**$0.00**
19	ADDITIONAL REMOVAL OF EXISTING CURB AND GUTTER WHERE DIRECTED BY ENGINEER TO INCLUDE SAW CUTS, HAUL OFF AND DISPOSAL.	100	LF		**$0.00**

Holmes Avenue and Washington Street Streetscape
COH Project # 65-12-SP31

UNIT BID SHEET

6/15/2012

20	ADDITIONAL 4" THICK, CONCRETE SIDEWALK, INSTALLED WHERE DIRECTED BY ENGINEER TO INCLUDE FORMING, TOOLED PATTERN, AND FINISHING, COMPLETE IN PLACE	200	SY		**$0.00**
21	ADDITIONAL REMOVAL OF EXISTING SIDEWALK WHERE DIRECTED BY ENGINEER TO INCLUDE ALL TRAFFIC CONTROL, SAWCUTS, HAUL OFF AND DISPOSAL	200	SY		**$0.00**
22	ADDITIONAL BRICK DOUBLE HEADER COURSE IN CONCRETE SIDEWALK WHERE DIRECTED BY ENGINEER TO INCLUDE FORMING, BRICK, MORTAR, AND CONCRETE TURNDOWN	400	LF		**$0.00**
23	ADDITIONAL SINGLE BRICK HEADER COURSE IN CONCRETE SIDEWALK WHERE DIRECTED BY ENGINEER TO INCLUDE FORMING, BRICK, MORTAR, AND CONCRETE TURNDOWN	100	LF		**$0.00**
24	ADDITIONAL SELECT, OFF-SITE BORROW TO BE INSTALLED WHERE DIRECTED BY ENGINEER IN UNDERCUT AREAS	400	CY		**$0.00**
25	ADDITIONAL 2" PVC ELECTRICAL CONDUIT INSTALLED IN ROAD CASING PIPE, WHERE DIRECTED BY ENGINEER	140	LF		**$0.00**
26	ADDITIONAL 6" DIAMETER SDR 11, HDPE CASING PIPE, INSTALLED BY DIRECTIONAL BORE, WHERE DIRECTED BY ENGINEER.	70	LF		**$0.00**
27	ADDITIONAL, ELECTRICAL JUNCTION BOX, PER DETAILS, SHEET T5, IN PLACE, WHERE DIRECTED BY ENGINEER.	4	EA		**$0.00**

Holmes Avenue and Washington Street Streetscape
COH Project # 65-12-SP31

UNIT BID SHEET

6/15/2012

28	ADDITIONAL, 1" CLASS 200 PVC IRRIGATION PIPE, IN PLACE, TO INCLUDE EXCAVATION, GLUE AND BACKFILL, WHERE DIRECTED BY ENGINEER.	100	LF		$0.00
29	ADDITIONAL IRRIGATION 2 WIRE, BY-WIRE, IN PLACE, TO INCLUDE 1-1/2" CONDUIT, EXCAVATION AND BACKFILL, WHERE DIRECTED BY ENGINEER.	200	LF		$0.00
30	ADDITIONAL IRRIGATION, DIRECTIONAL BORE WITH 6" HDPE CASING PIPE, WHERE DIRECTED BY ENGINEER.	75	LF		$0.00
31	ADDITIONAL OFF-SITE TOPSOIL BORROW, WHERE DIRECTED BY ENGINEER TO BE PLACED, LIGHTLY COMPACTED AND FINISH GRADED.	50	CY		$0.00
32	CONCRETE BACKFILL PER KEYNOTE 38, SHEET C8	40	CY		$0.00
33	6" THICK (TWO (2) SEPARATE COMPACTED LIFTS) ALDOT 424C, MAX 1" AGGREGATE SIZE. TO BE USED FOR UPPER 6" OF ALL TRENCH CUTS IN ROAD, TO INCLUDE UTILITIY TRENCHES.	150	TONS		$0.00
34	#78 STONE, TO BE PLACED IN ROAD TRENCH CUTS UP TO PAVEMENT SUBGRADE.	300	CY		$0.00
	TOTAL BASE BID				**$0.00**
	Option No. 1				

Holmes Avenue and Washington Street Streetscape
COH Project # 65-12-SP31

UNIT BID SHEET

6/15/2012

1-1	HOLMES AVENUE AND WASHINGTON STREET STREETSCAPE IMPROVEMENTS, TO INCLUDE DEMOLITION, CLEARING AND GRUBBING, SITE WORK, CONCRETE WALKS, IRRIGATION SYSTEM, LIGHTING, ALL ABOVE AND BELOW GROUND SIGNAL WORK AS SHOWN ON SHEET T4, TEMPORARY VEHICULAR AND PEDESTRIAN TRAFFIC CONTROL, AND LANDSCAPING ALL AS DETAILED AND SHOWN ON PLANS, SPECIFICATIONS AND SPECIAL PROVISIONS, COMPLETE IN PLACE. INCLUDES ALL NECESSARY EQUIPMENT, LABOR AND MATERIALS.	1	LS		$0.00
1-2	PLANE (MILL) 0-2" THICK OF EXISTING PAVING AS SHOWN ON SHEET C11B.	3,000	SY		$0.00
1-3	8" THICK DENSE GRADED AGGREGATE BASE COURSE, ALDOT 825 TYPE B. (TWO (2) 4" COMPACTED LIFTS)	150	CY		$0.00
1-4	3" THICK (APPROXIMATELY 350 LBS/SY) ALDOT 424 B-651, SUPERPAVE BITUMINOUS CONCRETE UPPER BINDER LAYER 1" MAXIMUM AGGREGATE SIZE MIX (LIMESTONE MIX), ESAL RANGE C/D. MAY USE UP TO 15% RAP. TACK COAT IS TO BE APPLIED AT .07 LBS/SY. (NO RAP ON MILLED SURFACE BEFORE TACKING)	250	TON		$0.00
1-5	1 1/2" THICK (APPROXIMATELY 165 LBS/SY) ALDOT 424 A-356, SUPERPAVE BITUMINOUS CONCRETE WEARING SURFACE LAYER, 3/8" MAXIMUM AGGREGATE SIZE MIX (LIMESTONE MIX), ESAL RANGE C/D. MAY USE UP TO 15% RAP. TACK COAT IS TO BE APPLIED AT .07 LBS/SY. (NO RAP ON MILLED SURFACE BEFORE TACKING)	300	TON		$0.00
1-6	INSTALL, COMPLETE IN PLACE (LABOR ONLY) NEW WATER METER BOXES.	1	EA		$0.00
1-7	INSTALL, COMPLETE IN PLACE (LABOR ONLY) NEW GAS VALVE BOXES.	2	EA		$0.00

6/15/2012

Holmes Avenue and Washington Street Streetscape
COH Project # 65-12-SP31

UNIT BID SHEET

1-8	INSTALL, COMPLETE IN PLACE (LABOR ONLY) NEW SANITARY SERVICE CLEAN-OUT BOX, TO INCLUDE CUTTING OFF PIPE STUB-UP.	5	EA		**$0.00**
	TOTAL Option No. 1				**$0.00**
	Option No. 2				
2-1	TRAFFIC SIGNAL POLES, TRAFFIC SIGNALS AND SIGNS, INCLUDING WIRING, AS SHOWN ON SHEETS T1, T2, T3, AND T5, IN PLACE COMPLETE.	1	LS		**$0.00**
	TOTAL Option No. 2				**$0.00**
	Option No. 3				
3-1	400 WATT, PSMH HOLOPHANE, WASHINGTON FIXTURE TO BE MOUNTED ON TRAFFIC POLE, TO INCLUDE WIRING POWER TO FIXTURE.	3	EA		**$0.00**
	TOTAL Option No. 3				**$0.00**
	Option No. 4				
4-1	PROVIDE AND INSTALL LED LIGHTING PER LUMINAIRE SCHEDULE NOTE #12, SHEET E3	1	LS		**$0.00**
	TOTAL Option No. 4				**$0.00**

6/15/2012

Holmes Avenue and Washington Street Streetscape
COH Project # 65-12-SP31

UNIT BID SHEET

	Option No. 5				
5-1	BASE BID AREA: RAINBIRD 2-WIRE IRRIGATION SYSTEM PER GENERAL IRRIGATION NOTE # 18, SHEET C25. WITH ESP-LXD CONTROLLER, PBC-LXD BACKUP CARTRIDGE. THIS OPTION INCLUDES SUBMITTAL OF MANUFACTURER PRODUCT DATA AND STANDARD INSTALLATION DETAILS OF ALL PRODUCTS, INCLUDING GROUNDING AND WIRE SPLICES.	1	LS		**$0.00**
	TOTAL Option No. 5				**$0.00**
	Option No. 6				
6-1	OPTION NO. 1 AREA: RAINBIRD 2-WIRE IRRIGATION SYSTEM PER GENERAL IRRIGATION NOTE #18, SHEET C25. THIS OPTION INCLUDES SUBMITTAL OF MANUFACTURER PRODUCT DATA AND STANDARD INSTALLATION DETAILS OF ALL PRODUCTS, INCLUDING GROUNDING AND WIRE SPLICES.	1	LS		**$0.00**
	TOTAL Option No. 6				**$0.00**
	Option No. 7				
7-1	BASE BID AREA: BASELINE 2-WIRE IRRIGATION SYSTEM PER GENERAL IRRIGATION NOTE #18, SHEET C25 WITH BASESTATION 3200 CONTROLLER, BL-3200-X-ETHERNET. THIS OPTION INCLUDES SUBMITTAL OF MANUFACTURER PRODUCT DATA AND STANDARD INSTALLATION DETAILS OF ALL PRODUCTS, INCLUDING GROUNDING AND WIRE SPLICES.	1	LS		**$0.00**
	TOTAL Option No. 7				**$0.00**

6/15/2012

Holmes Avenue and Washington Street Streetscape
COH Project # 65-12-SP31

UNIT BID SHEET

	Option No. 8				
8-1	OPTION NO. 1 AREA: BASELINE 2-WIRE IRRIGATION SYSTEM PER GENERAL IRRIGATION NOTE #18, SHEET C25. THIS OPTION INCLUDES SUBMITTAL OF MANUFACTURER PRODUCT DATA AND STANDARD INSTALLATION DETAILS OF ALL PRODUCTS, INCLUDING GROUNDING AND WIRE SPLICES.	1	LS		**$0.00**
	TOTAL Option No. 8				**$0.00**

ALL ITEMS SHALL BE CONSIDERED IN-PLACE. PRICES SHALL INCLUDE ALL LABOR, EQUIPMENT,MATERIALS, AND REMOVALS AS REQUIRED FOR CONSTRUCTION OF THE REQUIRED WORK.

COMPANY_____
SIGNATURE_____
DATE_____

The Apparent Low Bidder will be required to submit, within two (2) business days after the bid opening, a detailed "balanced" breakdown of Bid Items #1, 1-1, and 2-1 indicating quantities and unit prices. Such unit prices will be the basis for additive and deductive change orders.

MANDATORY
PRE-BID MEETING

PROJECT NAME: Holmes Avenue & Washington Street Streetscape Improvements

PROJECT #: 65-12-SP31

DATE: June 12, 2012

PROJECT ENGINEER: Robbie Stewart

The following people were in attendance at the Pre-Bid Meeting:

Mark Seeley	Miller & Miller
Mike Douglas	Smith Engineering
Patrick Greenwell	WaterWaterEverywhere
Steven Edees	SJ&L
Josh Chandler	SJ&L
Bill Thomas	Garver
William Tynes	Golden Construction
Charles Sealy	Owner-Belk Hudson Loft
Scott Schoel	Schoel Arch
Scott Curtis	Holophane
Floyd Curtis	Holophane
Bret Thornton	APAC
Jerry Wall	APAC
Jerald Abernathy	McDonald Brothers
Justin L. York	H.U. Water
Joel Perry	H.U. Gas
Eddie Desouza	PSA Inc.
Mike Donnelly	Land Design Solutions, Inc.
Mark Huber	COH
Robbie Stewart	COH
Mary Hollingsworth	COH
Penny Kelly	COH
Jim Poff	COH

1. Introduction of all persons present, their roles, chain of command, importance of submittals to Project Engineer.
   - Robbie Stewart – COH Project Engineer
   - Mike Donnelly-Design Landscape Architect
   - Michael Thomas – COH Inspector

2. Project Engineer gave a brief description of work.

   Renovation of Washington Street from Courthouse Square to Monroe Street and Holmes Avenue (south side) between Washington and Greene Streets

3. Progress Schedule of Operations were discussed, as well as erosion control plan, disposal of debris from clearing and grubbing, plan for control of concrete temperature during hot/cold weather, etc. **If the progress report (critical path) is not received, YOUR first pay estimate will NOT BE PROCESSED UNTIL IT IS RECEIVED).**
   - **Contractors are to submit to project engineer a schedule of operations from start date to finish date.**
   - **Erosion Control must be in place prior to commencement of work.**

4. Discussed all Permits.
   - All general permits must be in possession
   - No ALDOT or ADEM permits required.

5. Utility Project Notification – Utility company representatives gave a description of their utility conflicts. Any problems the utility representative anticipates were explained so that Project Engineer and Contractor can plan to include in the project. Each utility representative should provide Contractor with a name and phone number to contact for conflict assistance. Contractor is responsible for locating all utilities.
   - HSV Water – water in conflict and water meters to be reset.
   - HSV Gas – meters to be reset
   - HSV Sewer – new laterals to be set with cleanouts. Boxes to be set. Are doing a pipe bursting and will redo the laterals to the buildings. They will set a cleanout, stub it up. Contractor will need to lop it off and set a new box for the cleanout to sit in.
   - AT&T - Manhole lids to be adjusted by them.
   - HSV Electric – conflicts undetermined. Contractor to adjust manholes.
   - There is a good possibility that the water line along Washington will be in conflict with the street trees. Will have to get with Hsv Water to get the best method and timing to get the new water line laid or cut it out as needed as trees are set. Per HSV Water the water line will be relocated between Holmes & Randolph. They just need to find somewhere to put it.

6. Discuss Submittal of Shop Drawings, working drawings, material submittals, job-mix formulas in accordance with the time limits in the contract.
   - Bidders should pay particular attention to the Shop Drawing section of the contract covering working drawings, material submittals, job-mix formulas, time limits in the contract, etc. Shop drawings are required per city contract to include but not limited to: storm boxes, pipe, headwalls, etc.

7. Any right-of-way issues were discussed. Detail whether all property has been acquired to complete project and if not, when expected.
   NO issues

8. Any other projects that may conflict should have their project engineer, contractor and representatives in attendance to discuss.
   a. Belk Hudson Lofts are under construction at this time; will have to coordinate with the contractors.

9. Contractor is required to submit pricing (Attachment "A") on either a 3- ½" floppy disk or CD in the Excel format made available for download from the Engineering website. The bid disk or the CD must be in working condition and included with original bid packet and reflect the correct revision, along with two signed hard copies. Failure to do so shall be cause for rejection of bid. If a price discrepancy is found on bid disk or CD, printed hard copy prices submitted with original bid documents, with Contractor signature, will prevail.

10. PAYMENT

The OWNER agrees to pay the contractor as follows: Once each month per project the OWNER shall make partial payment to the Contractor on the basis of duly certified and approved estimates of the work performed during the preceding month by the Contractor, less five per cent (5%) of the amount of such estimate, which is to be retained by the City until all of the work has been performed. Liquidated damages will be deducted from all invoices when the invoice estimate period end date is later than the contract completion date. All pay requests will be submitted by hard copy and on a disk. The hard copy will be printed from the disk. The OWNER will provide the disk to the contractor.

Two originals and two copies of the invoices are required before payment will be made. The disk should be submitted each month, along with the originals and copies, to Odessa Sales in the Engineering Department. No further retainage will be held after fifty percent of the contract is complete. All payments to contractor will be made as soon as practical after the approval and finance processes have been completed.

11. Project Engineer discussed plans, specs and special provisions.

a. A review of the plans was made with emphasis placed on unusual construction features and special drawings. (See notes below)

1. Many businesses are located along the street frontages of the project that receive deliveries, customers, etc. Bid Package contains Special Provision 2000 that states all businesses should have access to all structures and doorways at all times, as well as handicap ramps.
2. Road closures will be allowable for installation of concrete pavers at Holmes Avenue and Clinton Street intersections for weekend work only. Coordinate with requirements as detailed in Special Provision 2000.
3. The schedule of construction by contractor shall be such that the eastern side of Washington Street of the Base Bid Area shall be constructed to substantial completion prior to work on the western side of Washington Street. Base Bid sub-area BB 1 will be available to contractor on August 13, 2012. Base Bid sub-area BB 2 will be available to contractor on September 3, 2012. Contractor is required to have BB 1 & BB 2 substantially complete by October 5, 2012. This is the Belk Hudson Loft area. They are projecting their opening date to be in late September. The August 13 date that COH is allowed to turn Contractor loose, every day that Belk Hudson is late will be tacked on to the end of the October 5, 2012 date.
4. COH is incorporating additional parallel parking along the new alignment of Washington Street.
5. Contractor should coordinate with COH Inspector on-site concerning trees to be transplanted by City of Huntsville, Landscape Management.
6. One (1) existing bus shelter will be demolished. Foundations for another bus shelter (north of Clinton Street Intersection) will need to be removed; this shelter was recently demolished down to sidewalk.
7. Additional items have been marked that will remain in COH possession. Coordination with COH Project Inspector is required with these specific items.
8. Illumination levels of streets and sidewalks are to remain (via existing lighting) at current levels due to businesses open to public at night, and general safety of the public.
9. Project is required to work block by block. Electricity is to remain to existing lights in order to keep them active until new ones have been put in place.

10. Some Underground Utilities have been located and marked.
    i. Before any digging occurs, be aware of what is in the area in order for no businesses to be disturbed.
11. Provision in bid documents referring to replacements and repairs of 1" waterlines. In an event that something does happens, it is the awarded contractor's responsibility to coordinate with COH Engineering for compensation.
12. Traffic Control: Special Provision 2000 – Each doorway must keep handicap accessibility at all times during the progression of the project. Remarks were made that in the event that any existing doorway is not handicap accessible at the time of construction, this requirement is waived for that particular doorway.
    i. Agencies, business owners, emergency responders, etc. will require the coordination of specific events of the project.
13. Special Provision 2000 & Performance Plan:
    i. Construction Sequencing has been set up; see document for specifics.
    ii. Signalization must be kept in-place until new signalization is up and operational.
    iii. Temporary Traffic Control Plan:
        1. Tentatively, the contract will go to council on June 28, 2012. Awarded contractor will work with Project Engineer during this time until NTP date to get the TCP plan together.
    iv. Traffic Control that is not in use must to be bagged or removed during project.
    v. Notice to Agencies / Press Releases should be coordinated with Project Engineer and will be done in-house.

b. Each pay item of the contract should be read out and any questions concerning the method of measurement or payment discussed.

c. When a contractor is new to COH contracts, the standard specifications should be discussed with emphasis on time charges, extra work, materials, etc.

d. State of Alabama classification required shall be stated. (MU) Municipal & Utility or MU-(S) Specialty Construction.

e. There are 180 Calendar days to complete project; however, if Option #1 is awarded, an additional 120 calendar days will be added making the total 300 calendar days. The Base Bid sub-areas BB 1, and BB 2, as shown on sheet PP1, and described in Special Provision 2000, sub-section 1.2(B), have a Substantial Completion delivery date of October 5, 2012. Substantial completion for that area includes curb and gutter, drive turn-outs, concrete loading zone on Holmes Avenue, driveway and sidewalk crossings, concrete sidewalks, brick headers, light pole foundations, storm drainage system, curb ramps and finished grading of lawn areas all in place and ready for public use. We anticipate tree grates and the planting of the trees will come at a later date, as well as setting the light poles.

We understand that this is hurry up type of thing around the building, but Mr. Sealy wants to occupy the building and have an opening by the end of September. Would like for the construction zone to be substantially complete prior to that point. There will be a lag from the Notice to Proceed date to when Contractor can occupy the site; that does not mean the Contractor cannot go to work and get started in other areas.

It was asked during pre-bid meeting if there was any concern that contract cannot be completed within contract time specified. Primary concern is utility conflicts.

Council: 6/28; Anticipated NTP: no later than 7/13 and completion date: 1/9/13; if Option #1 is awarded, completion date will be 5/9/13. Base Bid sub-areas BB 1, and BB 2 have a Substantial Completion delivery date of October 5, 2012.

f. No construction trailer or as-builts are required.

On the Holmes Street side, there are some old stairwell openings that come up in the sidewalk. This contract will require filling those with concrete. We will have to set up a unit price for concrete for that application. This will be an addendum item. Note on the plans that one of the stairwell openings appears to be physically in the way of a tree grate and tree location. That is described on the plans as required to be saw cut, removing that portion of stairwell in conflict with new work out of the way.

g. Introduction and explanation of any revisions to Supplement to General Requirements – specifically detail the following:

46. SHOP DRAWINGS

The approval of shop drawings by the Engineer will cover only the features of the design and in no case shall this approval be considered to cover error or omissions in shop details or a check of any dimensions. The Contractor shall be responsible for the accuracy of the shop drawings, the fabrication of materials and the fit of all connections; and he shall bear the cost of all extra work in erection caused by errors in shop drawings or in fabrication, inaccurate workmanship, misfits of connections or for any changes in fabrication necessary. No work shall be done on the material before the shop drawings have been approved. Any material that the Contractor orders prior to the approval shall be at the Contractor's risk.

Substitutions or changes whether indicated or implied on shop drawings will not be considered as changes regardless of the Engineer's approval of shop drawings unless the change has been previously submitted and approved as a change order per the requirements for changes in the contract.

After a shop drawing has been approved, no changes shall be made unless directed in writing to the Owner and acceptance by the Owner of said changes. Any acceptance of change by the Owner does not constitute a change to the contract unless that change has been approved and directed in writing per change order. Compensation for preparing and furnishing all shop and working drawings shall be included in the contract unit prices for the various pay items of work.

15. LIQUIDATED DAMAGES

It is further understood and agreed by and between the parties to this contract, that in the event the work to be performed under this contract is not completed at the expiration of the contract time, then, and in that event, the Contractor shall pay to the City the amounts per calendar day by the schedule shown in the schedule in the City of Huntsville Standard Specifications, Section 80.11 – "Schedule of Liquidated Damages" for each day thereafter until such work is completed. The City will deduct said sum or sums from any money due the Contractor under this contract for any and all invoices submitted after the contract due date. Liquidated damages will be deducted from all invoices when the invoice estimate period end date is later than the contract completion date.

Section 80.11 – "Schedule of Liquidated Damages" has been amended as follows effective 3/7/11:

Original Contract Amount		Liquidated Damages Daily Charge	
More Than	**To and Including**	**Calendar Day or Fixed Date**	**Work Day**
$ 0	$ 100,000	$ 200	$ 400
$ 100,000	$ 500,000	$ 550	$ 1,100
$ 500,000	$ 1,000,000	$ 900	$ 1,800
$ 1,000,000	$ 2,000,000	$ 1,350	$ 2,700
$ 2,000,000	.....	$ 1,550	$ 3,100

When the contract time is on the calendar day or date basis, the schedule for calendar days shall be used. When the contract time is on a work day basis, the schedule for work days shall be used.

Amounts in accordance with ALDOT and COH specifications and is based on contract amount before Change Orders.

12. Sequence of Construction and Traffic Control with the contractor made aware of his/her responsibility to handle traffic safely through the work zone. The method of payment for traffic control shall be discussed and clearly understood.

13. For any trench cuts within existing roadways, Contractor is required to patch area with asphalt mix within the same day, unless otherwise specified by the Engineer. (Dense graded Base is no longer an acceptable means of traffic control within existing roadway cuts.) Will be adding a quantity for cold mix.

14. Any subcontractors present were given the opportunity ask questions or discuss items with which they are concerned. The Prime Contractor should be advised that no work by a subcontractor will be permitted unless approved by contract or in writing. Attachment "C" – "Subcontractor's Listing" in the Supplement to General Requirements for Construction of Public Improvements, City of Huntsville, Alabama has been revised and bidders are advised to pay special attention to the text and instructions listed on the attachment.

Contractor shall keep the "Subcontractor's Listing" updated throughout the project duration and submit a copy of the listing with the request for final payment. Noncompliance with this request may cause delay in payment to the Contractor.

15. Anyone working for the Contractor, whether equipment and/or personnel, which are not the Prime Contractors and are not covered by subcontract, then it shall be understood that the Prime Contractor will be required to furnish a rental agreement for the equipment and carry personnel performing such work on his/her labor payroll.

E-VERIFY – NOTICE

The Beason-Hammon Alabama Taxpayer and Citizen Protection Act, Act No. 2011-535, Code of Alabama (1975) § 31-13-1 through 31-13-30 (also known as and hereinafter referred to as " the Alabama Immigration Act") as amended by Act No. 2012-491 on May 16, 2012 is applicable to all competitively bid contracts with the City of Huntsville. As a condition for the award of a contract and as a term and condition of the contract with the City of Huntsville, in accordance with § 31-13-9 (a) of the Alabama Immigration Act, as amended, any business entity or employer that employs one or more employees shall not knowingly employ, hire for employment, or continue to employ an unauthorized alien within the State of Alabama.

During the performance of the contract, such business entity or employer shall participate in the E-Verify program and shall verify every employee that is required to be verified according to the applicable federal rules and regulations. The business entity or employer shall assure that these requirements are included in each subcontract in accordance with §31-13-9(c). Failure to comply with these requirements may result in breach of contract, termination of the contract or subcontract, and possibly suspension or revocation of business licenses and permits in accordance with §31-13-9 (e) (1) & (2). Code of Alabama (1975) § 31-13-9 (k) requires that the following clause be included in all City of Huntsville contracts that have been competitively bid and is hereby made a part of this contract:

"By signing this contract the contracting parties affirm, for the duration of the agreement, that they will not violate federal immigration law or knowingly employ, hire for employment, or continue to employ an unauthorized alien within the State of Alabama. Furthermore, a contracting party found to be in violation of this provision shall be deemed in breach of the agreement and shall be responsible for all damages resulting therefrom."

Contractor's E-Verify Memorandum of Understanding shall be a part of the contract bid documents and shall be submitted with the bid package.

- Bidders' attention is directed to the following item (#53) in the "Supplement to General Requirements for Construction of Public Improvements" document as posted on the COH website for this project:

53. ALABAMA IMMIGRATION ACT (Beason-Hammon Alabama Taxpayer and Citizen Protection Act, Act No. 2011-535, Code of Alabama (1975)

Compliance with the requirements of the (Beason-Hammon Alabama Taxpayer and Citizen Protection Act, Act No. 2011-535, Code of Alabama (1975) § 31-13-1 through 31-13-30, commonly referred to as the Alabama Immigration Law, is required for City of Huntsville, Alabama contracts as a condition of the contract performance. The Contractor shall submit in the bid package, with the requested information included on the form, the "City of Huntsville, Alabama Report of Ownership Form" listed in this document as Attachment "H". The bidder selected for award of the contract may be required to complete additional forms relating to citizenship or alien status of the bidder and its employees, including e-verify information, prior to award of a contract.

17. It was asked if there are any further questions.

Q: On the traffic signal pole foundations, items 6,7,8, they are per Provision 8000. Item 9, additional traffic signal pole foundation including excavation, is that just for the excavation itself?

A: Bid items 9 and 10 are for additional foundations beyond what is shown on the plans.

Q: What detail are those two (2) items? Is it F-1, 2 or 3, or per unit or all? Depending on the diameter will determine what equipment is required.

A: The utility of 9 and 10 are if we choose to change, or causes a change to where additional concrete and obviously steel may be required. Will need to look at that. The biggest question to the contractor will be the excavation, what type of equipment will be needed to make the excavation.

Q: On pay items 12 and 13, there are water boxes. What are the size and types of those?

A: The sizes should be similar to what is out there on the ground. Huntsville Utilities addressed this issue. It is the same boxes that were used up on the Courthouse.

Q: On pay items 28, 29, and 30, where exactly are those? Will the excavation be digging out with a shovel; digging out with a trencher? Are they going across the road? In order to be able to price it, the Contractor needs to know what it is.

A: Will provide clarification as to the condition of the excavation and the backfill material.

Q: What is item 26 for? Where is that perceived as being needed? Is it a sleeve for irrigation/electrical?

A: It is traffic/signal work related. The detail can be found on the plans. It can be found on the Traffic plans. It is the casing diameter and material that has been specified.

Q: All of that will have to be inspected by Huntsville Utilities?
A: No, Mike should have stated that it is traffic signalization related. Obviously anything subject to inspection on the project by anyone the City of Huntsville deems appropriate for that particular item is intended to be related to the signalizations.

Q: On the islands the plans mention erosion control. It is not specific to any item, is contractor to assume that it is located in a lump sum item?
A: Yes. Erosion control is specific on the plans. What is vague?
Q: Is it required around each inlet? Is contractor required to use Best Management Practices per ADEM regulations?
A: The City of Huntsville Stormwater Management Manual is applicable.

Q: On the traffic control, same thing. Is contractor to go by the current manual for Uniform Traffic Control devices?
A: Yes, the MUTCD, latest edition is what applies. It states this in the Special Provision 2000.

Q: Are any message boards, arrow boards, etc. envisioned for the project?
A: That is left up to the Contractor's discretion to come up with the traffic control plan.

Q: All electrical stuff is to be done by others; primarily the transformers and pads will be done before Contractor gets on site?
A: The only transformers are related to the Belk Hudson Lofts to be installed by the Owner's contractor. The transformer will be set by Huntsville Utilities. The pad is already in place. Contractor is waiting on Huntsville Utilities as to when the transformer will be there. Contractor believes it will be early July.

Q: Will AT&T be adjusting their manholes?
A: That is what COH has been told, unless Robbie can talk AT&T into letting the awarded Contractor adjust it. That's what he'd like to do.

Q: There are several AT&T manholes that will be adjusted to grade. Contractor is not to adjust them. Will the bid need to reflect the contractor adjusting the manholes?
A: Go ahead and give a price on adjusting the AT&T manholes.

Q: Does COH know the underground telephone size? Any indication as to what it is?
A: Robbie will find out. He assumes it is clay. Terracotta Pipe approximately 12"x18".

Q: Same thing for underground electric. What is the fiber encased in?
A: Huntsville Utilities' are encased in concrete. Robbie is not sure about the fiber. The electrical conduit is approximately 70" deep on Holmes Avenue.

Q: The storm drain line that drains the area to the northeast corner of Belk Hudson and goes underneath the electric lines; do we know if there is a conflict with that grade? That is one of the first things that will have to be done if the contractor is to meet the schedule.

A: Robbie is going to request Richard go out there and pothole right there. The land is already shut down.

Q: The limits of the work on SD1A, is anything being done on Greene?

A: No. Project is stopping prior to Greene.

Q: What is the thickness of the handicap ramps?

A: The plans show 6".

Will not be doing any pavers for the ADA truncated domes; will be using mats. An addendum will go out that will give Contractors information on what is called a wet pre-fabricated truncated dome panel. This will be used both for radius conditions and for the straight ramps. This particular manufactures' product is manufactured in a radius so the Contractor will be able to stick it in place with very little cutting. It is set for being cut with that type of application. The supplier is ADA Solutions, Inc., 1-800-372-0519.

There will be a handful of items that will be on the addendum. There will be a reissue of the irrigation sheets. There has been a change from the conventional system to what's called a two-wire system. The change is in the controller and the wiring. There will be adjustments to what is called the hanging basket zones on the plans. These will be the only adjustments to the way the zones are designed at the moment. <u>The irrigation plan should be out no later than Thursday as an addendum.</u>

Q: Street lights are to be maintained. Before the street lights can be taken down, there has to be some sort of temporary lighting provided for the pedestrians so that the whole street doesn't go dark. Is that correct?

A: Contractor will be on one side of the road. The other side will have their lights on, one side will be taken down the other side will have to remain hot. Once the lights are up, they'll be hot. Contractor may need to coordinate with Huntsville Utilities. If it comes to the point where there has to be some sort of temporary power involved, it needs to be part of the project. Contractor cannot let the street go dark.

The existing traffic signal poles will be left in place during construction, but the same issues remain for the signal poles too, in terms of having them functioning through the project until the new ones are up.

Q: On the CU Soil, all the areas have been noted. On the limits of the CU soil there are 30" the entire depth and the entire width is 7', right?

A: It varies in width, but in general, dimensions are correct.

Q: Contractor will have to deal with gas lines, water lines, electric lines, and sewer lines that entire distance. It sounds like the sewer has done a pretty good job going in there pipe-bursting. What about the gas, electric and water? Any idea what's current, what's old? Contractor will be able to find the lines, but will not know whether to cut it or not. Will someone from the utilities be able to meet and say yes or no before the line is cut?

A: The discussions with gas in particular, as to whether there would be any removal or abandonment of any of the lines, the response was no. The lines will be kept in place for any foreseeable need now or in the future. It is the understanding that there are some conflicts shown on the plans based on the information that is available. It is Mike's understanding that the gas will be working with the Contractor during the excavation phases of the project for any relocations that need to happen. The excavation of the soil mix-everybody anticipates that if there is anything underground, the Contractor will have to work with it or around it to the best of their abilities. The utilities understand the process by the previous project around the Courthouse and will be available to help in that regard.

Q: There are a couple of notes where project is extended beyond the Right-of-Way, into the building edges. Will the Contractor have to work with those owners?

A: Everyone was made aware of the project when design started. Robbie met with everyone who wanted to meet with him on the project. He's taking it that if the owner didn't show up to talk about the project, that they are ok with it.

Q: Will there be any relocation of the gate controllers?

A: No. If you look on the layout plan, Contractor is asked to align with the existing openings. The intention is to utilize, or leave in place, those foundations that they are sitting on.

Q: It looks like all the asphalt paving is on a per ton basis regardless, is that correct?

A: Yes. Not the concrete.

Q: All the asphalt buildup and getting up to finish grade will be done per the grading plans; contractor will not be supplied any other plan profile sheets.

A: Will need some clarification for everyone's edification. Looking at the project as not a road construction project, but as a streetscape project in the sense that we are trying to work with what is out there, even though we are putting the road on a new alignment, the intent is to utilize as much of the existing pavement as possible. Looking on the pavement plans shows the designation of that part of the existing roadway horizontal alignment that's left in place. By and large with the new alignment being straight generally between the building faces where crossing over that old center line in a couple of locations. The intent is in any places where the new finished grade is showing a fill above existing pavement, it is the intent to fill that out with asphalt leveling. That is why the quantities have been set up to be determined onsite. Obviously there are triangular areas of new pavement section, which is set up on unit prices. Anything that is related to the asphalt, whether

leveling, building up to the new finished grade, or new pavement sections, those are paid in unit prices and shown that way on the unit bid sheet.

Q: Contractor has to provide traffic control which includes temporary striping to any lanes. Correct?

A: On the east half of the construction of Washington Street, when constructing as it stands now, the east side of Washington Street, the lane closure is running the center line of the existing road as it is proposed right now. Whatever striping is involved in that would be fairly minimal. Once the Contractor moves to the west side of Washington Street, there may be in fact some striping needed or necessary. By that time, the contractor has already established a new lane, the new curb and gutter, and essentially the new lane on the east side of the road where traffic is being moved to.

Q: On the temporary, where Contractor does have to move traffic, is there any kind of lane width that the Contractor needs to maintain?

A: The asphalt lanes are 11'. Mike would assume the contractor would keep that during construction. There will be one choke point at the north side of Monroe, where a new island is being constructed at Veterans Park. Contractor may be down to 10' lanes right there. That will all be dependent on how much area the contractor will want to utilize for construction beyond the face of the gutter that will be put in.

Q: No bike racks are shown on the plans.

A: They are referenced in a key note. There are none at this point-in-time.

Q: Is there enough time set up for the job?

A: It will be addressed on the agenda. From a Contractor, if the utilities cleared there shouldn't be a problem. If the utilities are not cleared, 180 days may not be enough. COH will look at utility conflicts as they occur. If the COH finds the utility in conflict with the work and no other work can be performed, then time will be suspended until that utility is relocated.

Q: Mentioning pedestrian controls that handicap means ADA bare minimum of all-weather surface, minimum of 60"?

A: Correct. Contractor has to keep accessibility. Some of the doors have steps; if they're not accessible when the project starts, the contractor does not have to make the provision during the work.

Q: Should Contractor record anything they think will help them?

A: Yes, it would be incumbent on all to do that.

Q: On the buildings where it looks like some of the 12" concrete band goes right up to the building, is the Contractor to saw cut so they don't damage any of the bricks on the building?

A: Yes, Robbie would prefer they do that. We will look at the concrete band location on a case-by-case basis. We will install the new concrete band everywhere we can. Contractor will have to work it out in the field, in coordination with the Project Engineer. Robbie said the building at the beginning of the project, on the southern-most part of the project, there is some flashing on that one building. That is the only one that Robbie knows that has some type of special material. Contractor will need to make sure they pay particular attention to that building. That owner wants to make sure that flashing stays there. It was some sort of waterproofing mechanism that was put in.

Q: Besides the two (2) Japanese Maple trees, the City will be taking up trash cans and some other hardware. Everything else is the contractor's to take up, is that correct?

A: Yes.

Q: Did Mike receive the drawing that Belk Hudson Contractors sent on the HVAC return grills that have to be in two (2) of those existing live wells?

A: Yes, it was forwarded to Robbie. Robbie said we have looked at it and we have determined that it may be best that when the Contractor is in there working around that, that Belk Hudson contractors set it or coordinate with them simultaneously; we would prefer not to be putting an L-bracket or whatever is going to be on the actual slab of the building. The bracket will not be on the slab of the building, it will be around the edges. The detail specifically shows an L-bracket and it is bolted to the slab of the first floor. Robbie feels like it would be better for the contractor for Belk Hudson contractors to be on hand and that their hands are involved at the same time. Robbie wants coordination between awarded contractor and Belk Hudson contractors to set that one section.

The box that Belk Hudson has blocked up-Mike has looked at it since there has been some substantial rainfall and water has already leached through those blocks.

Q: Does Belk Hudson contractors plan on waterproofing on the outside of those blocks?

A: If there are any issues, Belk Hudson contractors will waterproof them.

Q: Is the COH doing the E-Verify for subcontractors? ****see revision below

A: We are currently requiring it for the Prime Contractor only to be submitted with the contract documents. Subcontractor information should be on file at Prime Contractor's office in case the City requests it. The direct subcontractor forms will not be in the specs any longer. We are still requiring the Memorandum of Understanding to be submitted with the bid package.

Q: Brick pavers- is there a requirement for polymeric sand?

A: There is requirement for polymeric sand. There is a special provision for the pavers, Special Provision 6000. It addresses the requirements.

18. All questions will be answered and all clarifications made by addendum. Last day for questions concerning this project before the bid will be **Thursday, June 14, 2012 until 12:00 p.m.** via fax (256) 427-5325 or email to: penny.kelly@huntsvilleal.gov. Response to contractor questions will be **Friday, June 15, 2012, until 5:00 p.m.** **Bids open: Monday, June 18, 2012 at 9:00 a.m.** in the 1st Floor Conference Room, 320 Fountain Circle, Huntsville, AL. The pre-bid notes and all addenda shall become a part of the contract documents.

****Revision to Question/Answer:

Q. Is the COH doing the E-Verify for subcontractors?

A. Based on a recent amendment to the E-Verify legislation, contractors are no longer required to submit the E-Verify Affidavits (contractor nor subcontractor) as a part of the bid package. We are still requiring the Memorandum of Understanding to be submitted with the bid package.

REVISED

ATTACHMENT "B"
PROPOSAL

TO: THE CITY OF HUNTSVILLE

Public Services Building
320 Fountain Circle
Huntsville, Alabama

PROPOSAL OF _____
(NAME)

_____
(ADDRESS)

TO MAKE CERTAIN IMPROVEMENTS ENTITLED:

HOLMES AVENUE & WASHINGTON STREET STREETSCAPE IMPROVEMENTS
PROJECT NO. 65-12-SP31

FOR THE CITY OF HUNTSVILLE, ALABAMA.

GENTLEMEN:
The undersigned bidder has carefully examined the drawings or plans, bid documents, the specifications, the general requirements, the supplement to general requirements, the general terms and conditions, this proposal, the agreement, together with any addenda thereto, and agrees to furnish and deliver all the materials, and to do and perform all the work and labor required to be furnished and delivered, done and performed in and about the improvements as described above and in accordance with certain specifications prepared and approved by the OWNER (City of Huntsville, Alabama). It is MANDATORY that any and all addenda be acknowledged by the undersigned bidder, either on page 2 of the Proposal, Attachment "B" or on the outside of the envelope, otherwise, bid shall be rejected.

The undersigned bidder understands that when unit prices are called for, the quantities shown herein are approximate only and are subject to increase or decrease, and offers to do the work whether the quantities are increased, or decreased, at the unit prices stated in the following schedule. The undersigned bidder also understands that when lump sum bids are called for, he will be required to furnish all equipment, labor, materials and other items or cost to construct a complete facility. The undersigned bidder further understands that any deletions or additions designated on the outside of the bid envelope, must indicate the particular bid item relative to the deletion or addition, even if the deletion or addition references to deduct or add to the Total Base Bid.

Contractors are authorized to download quantities, Attachment "A", or quantity revisions from COH Engineering website and paste to 3-½" floppy disk or CD of their choice; one or the other must be submitted with the original bid packet. In addition, two hard copies must be signed and submitted with original bid packet.

Certificates of Insurance are required naming the City as the Certificate Holder. Also, the name of the project and project number should be included on the certificate. The Certificates should reflect the insurance coverage required herein. In addition, a copy of the policy may be requested upon award. The Certificates are to be signed by a person authorized by the insurer to bind coverage on its behalf and must indicate coverage will not be canceled or non-renewed except after thirty (30) days prior written notice to the City at the following address: City of Huntsville, P.O. Box 308, Huntsville, Alabama 35804 ATTN: Penny Kelly.

The undersigned bidder understands that the Contract Time for completion of all work is 180 calendar days; however, if Option #1 is awarded, an additional 120 calendar days will be added making the total 300 calendar days. The Base Bid sub-areas BB 1 and BB 2, as shown on Sheet PP1, and described in Special Provision 2000, sub-section 1.2(B), have a Substantial Completion delivery date of October 5, 2012.

HOLMES AVENUE & WASHINGTON STREET STREETSCAPE IMPROVEMENTS
PROJECT NO. 65-12-SP31

THE UNDERSIGNED BIDDER ALSO AGREES AS FOLLOWS:
All bonds must be approved by the Mayor and the Clerk-Treasurer of the City of Huntsville. Within fifteen (15) days after the date of acceptance of this proposal by City Council action, the contractor shall execute the contract and furnish to the OWNER a payment (labor and material) bond and a performance bond, each in the amount of 100% of the contract amount. No contract extension will be allowed for delays in the issuance of the notice to proceed that are a result of the contractor failing to submit the required items within the 15 days.

It is further understood and agreed that the Contractor shall commence work to be performed under this contract within fifteen (15) days from the date of this contract, unless otherwise instructed in writing by the OWNER. All work shall be carried on continuously to completion.

Accompanying this proposal is a certified check or bid bond in the amount of not less than five percent (5%) of the total amount shown on the schedule of prices not exceeding $10,000.00 payable to the City of Huntsville, Alabama, which is to be forfeited, as liquidated damages, if, in the event that his proposal is accepted, the undersigned shall fail to execute the contract and furnish a satisfactory contract bond under the conditions and within the time specified in this proposal; otherwise, said certified check or bid bond is to be returned to the undersigned.

DATED: _____, 20 ___.

(IF AN INDIVIDUAL, PARTNERSHIP, OR NON-INCORPORATED ORGANIZATION)

SIGNATURE OF BIDDER _____

BY _____

ADDRESS OF BIDDER _____

NAMES AND ADDRESSES OF MEMBERS OF THE FIRM:

_____ _____

_____ _____

OUR CONTRACTOR'S STATE LICENSE NO. IS _____

(IF A CORPORATION)
SIGNATURE OF BIDDER _____

BY _____

BUSINESS ADDRESS _____

INCORPORATED UNDER THE LAWS OF THE STATE OF _____

NAMES **PRESIDENT _____**

OF **SECRETARY _____**

OFFICERS **TREASURER _____**

MANDATORY ACKNOWLEDGEMENT OF ADDENDA: Addenda will only be faxed to those bidders who attend and have signed in at the mandatory pre-bid meeting. It is the responsibility of all bidders to refer to the website for any updates.

REVISED

ATTACHMENT "C"

HOLMES AVENUE & WASHINGTON STREET STREETSCAPE IMPROVEMENTS
PROJECT NO. 65-12-SP31

SUBCONTRACTOR'S LISTING

All subcontractors must be approved in writing by Owner. The Contractor will be notified in the Notice to Proceed of acceptance of subcontractors. If subcontractors are not approved, Contractor will be notified prior to approval of contract by City Council. Any additional subcontractors needed during the contract period shall be approved by written letter from the Owner. Contractor shall **immediately** notify Mary Hollingsworth via email at mary.hollingsworth@huntsvilleal.gov of any changes to subcontractor list for the duration of the project.

TASKS TO BE PERFORMED	SUBCONTRACTOR NAME	LICENSE NO.	ADDRESS	ITEM #'S OF WORK TO BE PERFORMED
Surveying/Layout				
Permitting				
Clearing & Grubbing				
Erosion Control				
Traffic Control				
Excavation				
Concrete				
Storm Drainage				
Sanitary Sewer				
Shoring/Monitoring				
Retaining Walls				
Bridges				
Railroads				
Traffic (signals, loops)				
Street Lights				
Electrical				
Water				
Asphalt				
Landscaping (Trees, grassing)				
Irrigation				
Striping				
Sewer Testing				
Guardrails				
Handrails				
Painting				
Special (fencing, benches, dewatering etc.)				
Mechanical				
SCADA				
CU Structural Soil Mix				
Concrete Pavers				

June 15, 2012

ADDENDUM NO. 2

To the Drawings and Specifications of
Holmes Avenue and Washington Street Streetscape
COH Project #65-12-SP31

PART 1 GENERAL

1.1 The following additions, deletions, clarifications and/or changes to the drawings and specifications shall be fully incorporated therein and becomes a binding part thereof.

1.2 Bidder shall be responsible for information contained herein and no allowance will be made for lack of knowledge concerning all addenda issued for this project.

PART 2 THE PLANS

2.1 Cover Sheet,
A. Change spelling of words located in rectangular box from: WHERE EVER to WHEREVER.

B. Index of Drawings (Base Bid)
Add sheet A-SW1, a copy of which is attached hereto. This sheet, A-SW1 is provided as information only (not to be regarded as a contract construction plan) for coordination with the Belk Hudson Lofts general contractor (GC). The City of Huntsville Contractor shall coordinate his work with the Lofts GC installation of any grate, grate frame or forming for these items within the new sidewalk.

2.2 Sheet C8, Keynote Plan Holmes Ave / Washington St
A. Keynote # 15, delete as written and replace with the following:
Req, d. H.C. stall striping (Typ), Blue Thermoplastic, paint curb adjacent to spaces blue, universal handicap sign (12"x18") reqd., post for sign shall be located per detail "Q" sheet C23.

B. Keynote 39, add the following statement:
Note, there are 3 existing (VS) Victor Stanley S-35 trash receptacles (no existing footings) in project area. Contractor is required to place the 3 existing VS trash receptacles on new concrete footings, as shown in details, wherever keynote 39 and plans show a required trash receptacle. Any remaining, required VS trash receptacle locations as shown by keynote 39 and plans shall receive new VS S-35 trash receptacles and footings. Note, contractor shall remove the three existing trash receptacles off site and protect during construction, and install at end of project.

C. Keynote 42, add the following statement:
Contractor shall supply and install 4 bike racks at unit price bid, to include footings as required by manufacturer. Locations of bike racks to be determined by owner.

D. Keynote 74, delete as written and replace with the following:
Reqd. install decorative 42" hgt. post with (12"x18") No Parking / Loading Zone sign (by others) per detail "Q" sheet C23, submit shop drawing of sign for approval. Match exist. sign attachment (by others) method as installed at Court House Square.

E. Keynote 91, add keynote 91, to read as follows:
Existing Trash Receptacle and footing to remain. Contractor shall remove trash receptacle off site during construction and protect and re-install on existing footing at end of project.

F. Keynote 92, add keynote 92, to read as follows:
Required 6" TK, 3000 PSI, concrete paved area with 6x6 10/10 WWM over 4" TK dense graded base course, compacted to 100% proctor density. Match adjoining, existing, concrete for finish and joint tooling requirements.

2.3 Sheet C12, Grading Plan Holmes Avenue / Washington St
Change grading, West side, Station 14+00 to Station 14+56, per partial plan view, a copy of which is attached hereto.

2.4 Sheet C20, Landscape Plan Holmes Ave / Washington ST
A. Change Plant Schedule as follows:

1) Change Common Name,
Now reads: Red leaf Nuttall Oak
Change to read: Sangria, Red Leaf Nuttall Oak

2) Remove NC, Natchez Crapemyrtle from Plant Schedule.

3) Add Palatial Dawn Redwood to the Plant List (to be installed in former location of NC) as follows:
Key: DR; Scientific Name: Metasequoia glyptostrobodies '1042'; Common Name: Palatial Dawn Redwood; Size: 4 1/2"' CAL.; Condition: B&B/ WB; Notes: Full & Matched.

4) Change Common Name,
Now reads: Needle Point
Change to read: Needle Point Holly

5) Change Common Name,
Now reads: Dwarf Yaufon
Change to read: Dwarf Yaupon Holly

6) Change size of European Fastigate Hornbeam
Now reads: 15"-18" Spread
Change to read: 3 ½" CAL.

B. Change Note 12 as follows:

1) Remove the word Treflan and replace with the word Snapshot.

2) Add the following statement: Soil surface shall be settled by irrigation or other watering method prior to application. Follow manufacturer's recommended application rates.

C. Change Note 13 as follows:

1) Change the word "supplier" to "grower". For clarification of this item, The City of Huntsville does not wish to engage, nor have the contractor purchase plants from plant brokers.

2) Remove Cherry Lake Farms from list.

D. Landscape Keynote Legend

1) Item "A", Reqd. Solid Sod. Add the following:
Should any existing sod, weeds or other plant growth be existing in reqd. sod areas at time of soding, contractor shall apply Round Up Herbicide at recommended rates to the existing vegetation and observe for death of vegetation (over a period of days), reapplication may be required. In any event, all existing vegetation, including any dead vegetation shall be removed and areas shall receive ground preparation per specifications and finish grading, until approval, prior to sod installation. All areas where new sod meets existing sidewalks, curbs, driveways, etc...shall have the subgrade adjusted so as to have a smooth, even transition from sod soil surface to surrounding surface or edge. Cut any existing, adjoining lawn edge to smooth straight lines where they abut new sod. All work shall be subject to review and approval at all times.

E) Add Planting Details, a copy of which are attached hereto.

2.5 Sheet C22, Details 1

A. Revise Detail "A" per attachment, attached hereto.

B. Revise Detail "B" per attachment, attached hereto.

C. Add note to Detail "C" to read as follows:
Note: Add additional 3' of concrete pad width at end of bench where handicap pad is shown on plan, for a total end width of 4'.

D. Add Notes to Lower right corner of sheet to read as follows:
Notes:

1) All fill beneath concrete sidewalks, brick headers and ramps shall be with #78 leveling stone at unit price bid.

2) Any and all locations where expansion joint is installed shall include installation of approved, non sag urethane sealant (color to match, selected by owner) to upper ½" of joint, flush with surface, per manufacturer recommendations.

2.6 Sheets C23, Details 2

A. Revise Detail H, Add 4" TK course of dense graded base course beneath full width of 4' wide, concrete cross drain. Materials and compaction (including subgrade compaction) is equal to requirements as shown in detail "G" this sheet.

B. Revise Detail J, Change statement in detail:
Now Reads: Typ. PVC irrigation line in N-12 sleeve.
Change to Read: Typ. Irrigation line in N-12 sleeve.

C. Revise Detail N,
1) Item 3, Change thickness of compacted lifts; base shall be compacted in two separate 4" Tk lifts.
2) Item 4, Change compaction of top 6" of subgrade to 100%.

D. Revise Detail "O" per attachment, attached hereto.

E. Revise Detail "P" per attachment, attached hereto.

F. Add Notes to Lower right corner of sheet to read as follows:
Notes:
1) All fill beneath concrete sidewalks, brick headers and ramps shall be with #78 leveling stone at unit price bid.

2) Any and all locations where expansion joint is installed shall include installation of approved, non sag urethane sealant (color to match, selected by owner) to upper ½" of joint, flush with surface, per manufacturer recommendations.

2.7 Sheet C24, Details 2

Revise Detail D, Change statements about detectable Tiles and Supplier to:
West set ADA replaceable tactile warning surface unit (color by owner), supplied by ADA Solutions, Inc. 800-372-0519. Install per mfg. recc.

2.8 Sheet C25, General Irrigation Notes

A. Add note #18 to read as follows:
18. Bidder / contractor shall offer where shown on bid form alternates for a complete functioning 2 wire controlled irrigation system. The intent is to discontinue and remove existing ESP-24SAT controller for owners use and install new manufacturers 2 wire controller (at location of 24SAT) in mounted, exterior metal cabinet and associated decoders, lightning arrestors, grounding, surge protection, wire, wire splice kits, flow sensors (at each water meter), include manufacturers product(s) for program backup. All software, modules and upgrades shall be included in price to have a fully functioning system capable of learning flows for system and zones, and diagnosing high and low problems for operator.

B. Add note #19 to read as follows:
19. Should two wire option be chosen by owner, all 2-wire shall be enclosed in 1 ¼" conduit from box to box. Including an EXTRA separate 2 wire cable.

C. Add note #20 to read as follows:
20. All irrigation piping beneath sidewalks from box to box shall be polyethylene. The The intent is to be able to replace pipe should this be required. Exempt from requirement, are any areas where PVC pipe can easily be replaced by standard practices in the opinion of the project designer.

2.9 Sheet E3, Electrical Plan Holmes Avenue
A. Change Luminare Schedule and Luminaire Schedule Notes, a copy of which is attached hereto.

2.10 Sheets T1, T2 & T3.
Add the following note in lower right corner of each sheet:
Note:
Conduits installed under roadways and other areas exposed to vehicle traffic shall be installed by open trench. The depth of bury and encasement of conduits under roadways and other areas exposed to vehicle traffic shall be as per Alabama Department of Transportation Special and Standard Drawing T.S.D.-730-14, 2012 Edition. Open trenches under roadways and other areas exposed to vehicle traffic shall be backfilled with materials and methods as required by the Owner.

Conduits under sidewalks and other paved areas not exposed to vehicle traffic shall be installed by open trench. The depth of bury of conduits under sidewalks and other paved areas not exposed to vehicle traffic shall be as per Alabama Department of Transportation Special and Standard Drawing T.S.D.-730-13, 2012 Edition. Open trenches under sidewalks and other paved areas not exposed to vehicle traffic shall be backfilled with crushed stone and compacted using materials and methods as required by the Owner.

Conduits under unpaved areas not exposed to vehicle traffic shall be installed as per the detail shown on Sheet T5 of the plans.

Required post top finials on traffic signal poles shall be cast aluminum Holophane MBF, finished to match the pole.

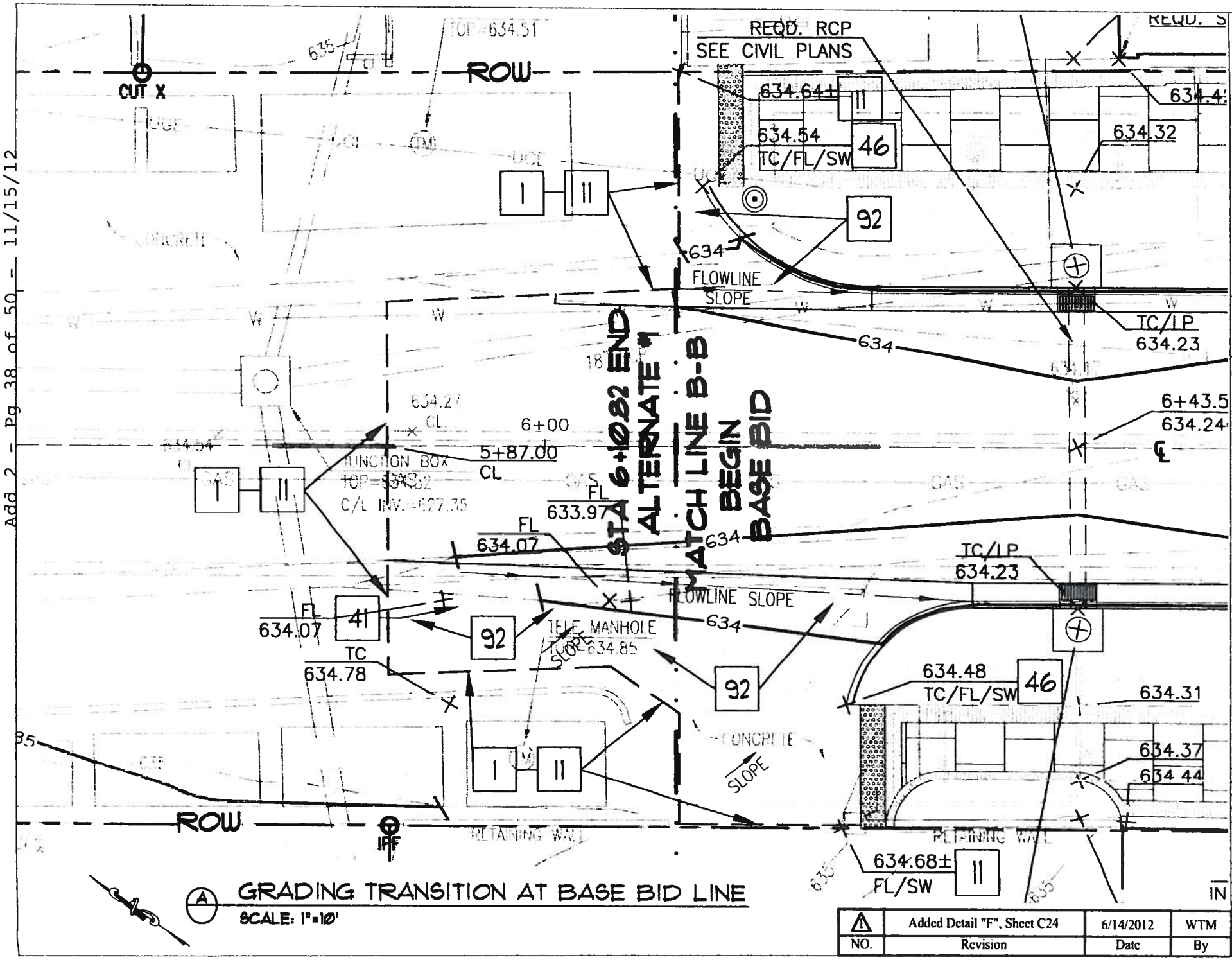
PART 3 SPECIFICATIONS

3.1 Special Provision 2000, subsection 1.2 (B)
Change dates:
BB1 will be available to contractor on August 13, 2012.
BB2 will be available to contractor on September 3, 2012.
Substantial completion of BB! & BB2 by October 5, 2012.

PART 4 BID FORM

Change bid form, a copy of which is attached hereto.

END ADDENDUM NO. 1



GRADING TRANSITION AT BASE BID LINE

SCALE: 1"=10'

NO.	Revision	Date	By
1	Added Detail "F", Sheet C24	6/14/2012	WTM

LAND DESIGN SOLUTIONS

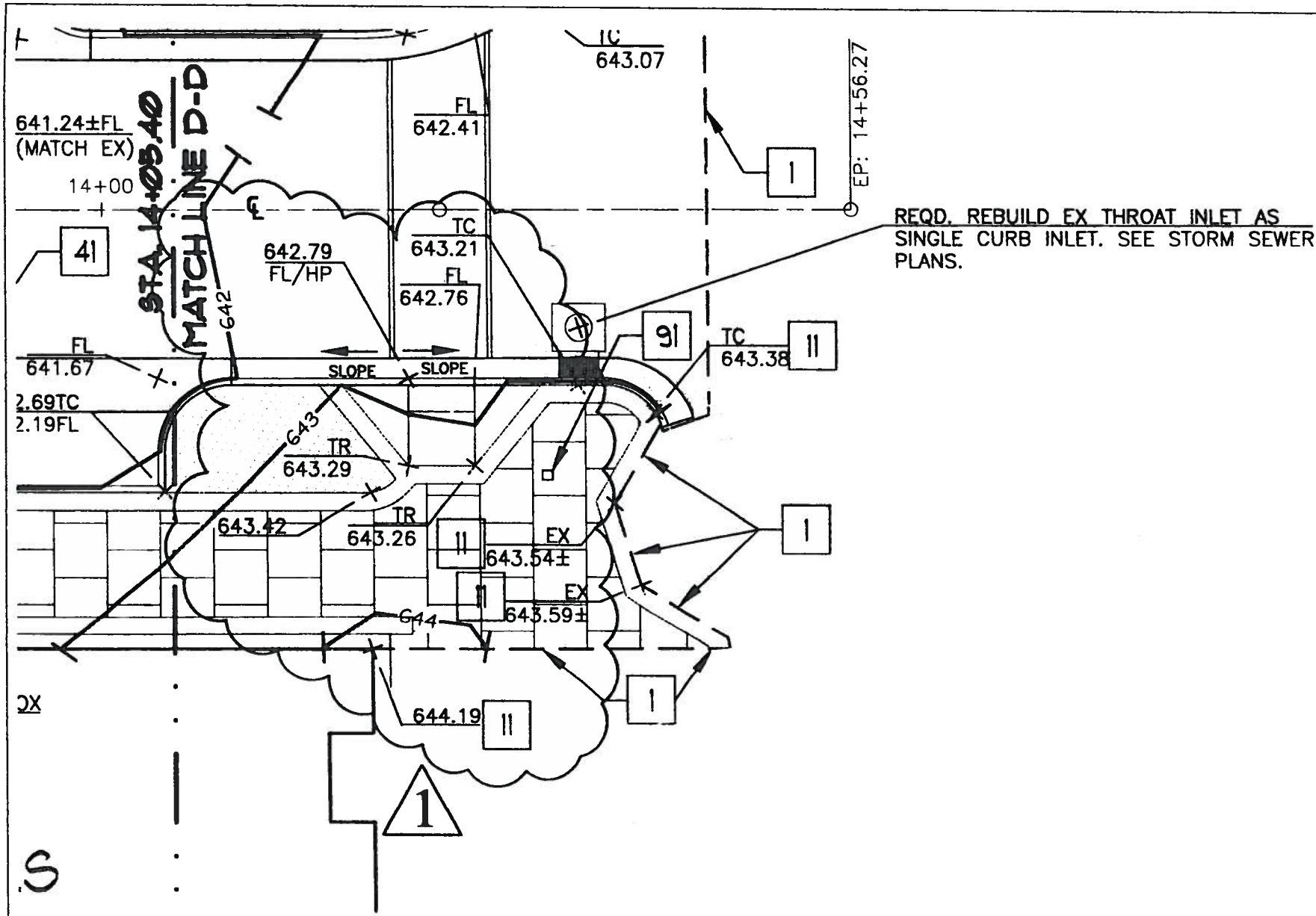
DETAIL "F", SHEET C24

Holmes Avenue and Washington Street Streetscape Improvements
CITY OF HUNTSVILLE
HUNTSVILLE, AL

DATE: JUNE 14 2012

PROJECT #65-11-5P26

1 OF 1



PLAN VIEW WASHINGTON ST. STREETSCAPE
FROM STA. 14+00 TO STA. 14+56

SCALE: 1"=10'

NO.	Revision	Date	By
1	Revised Grading	6/6/2012	WTM

LAND DESIGN SOLUTIONS

PARTIAL PLAN OF GRADING PLAN, SHEET C12

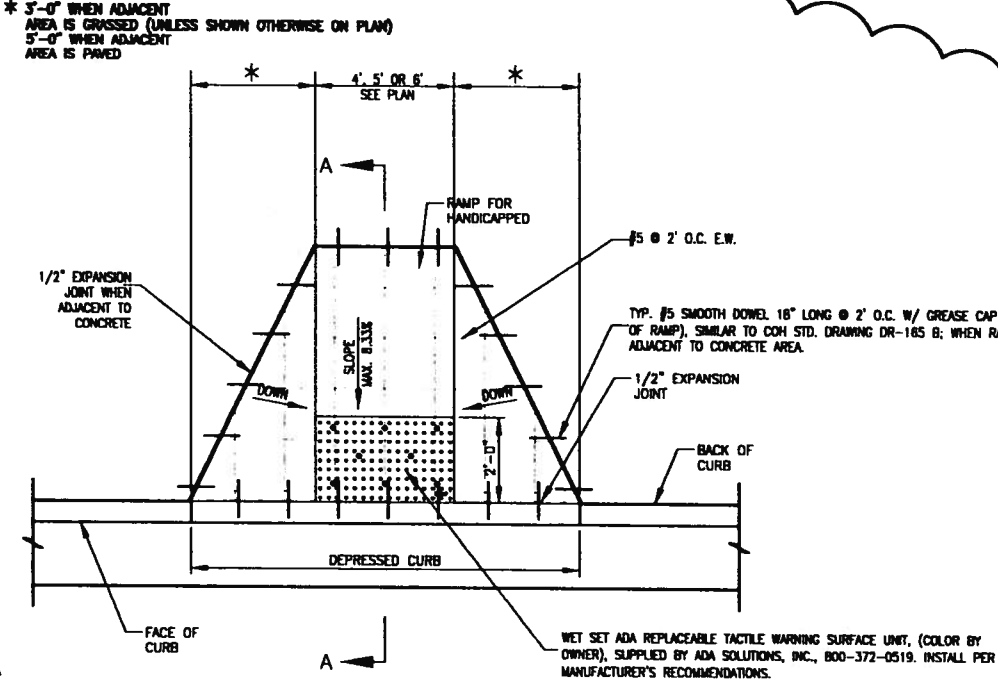
Holmes Avenue and Washington Street Streetscape Improvements
CITY OF HUNTSVILLE
HUNTSVILLE, AL

DATE: JUNE 14, 2012

1 OF 1

NOTES: RAMP FOR THE HANDICAPPED

1. THE EXPANSION JOINT IS TO BE REPLACED WHERE THE NEW RAMP OR SIDEWALK JOINS EXISTING PAVEMENT STRUCTURE.
2. EXPANSION JOINT MATERIAL PER DETAILS.
3. THE SUBGRADE SHALL BE FREE OF ALL ROOTS AND OTHER UNDESIRABLE MATERIALS WITH THE ROOTS CUT BACK ONE (1) FOOT FROM FACE OF SIDEWALK.
4. HANDICAP RAMPS SHALL BE CONSTRUCTED AS DETAILED HEREON.
5. EXPANSION JOINTS SHALL BE PROVIDED IN THE CURB RAMP AS EXTENSIONS OF WALK JOINTS FOR A NEW CONCRETE WALK. A 1/2" EXPANSION JOINT FILLER SHALL BE PROVIDED AROUND THE EDGE OF RAMPS BUILT IN EXISTING CONCRETE WALKS. LINES SHOWN ON THIS DRAWING INDICATE THE RAMP EDGE AND SLOPE CHANGES AND ARE NOT NECESSARILY JOINT LINES.



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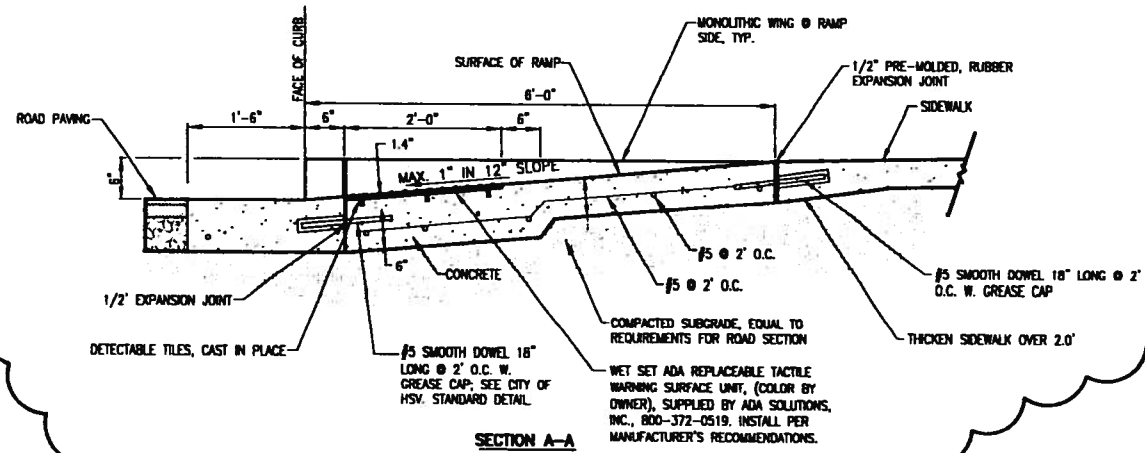
PLAN VIEW



SECTION A-A

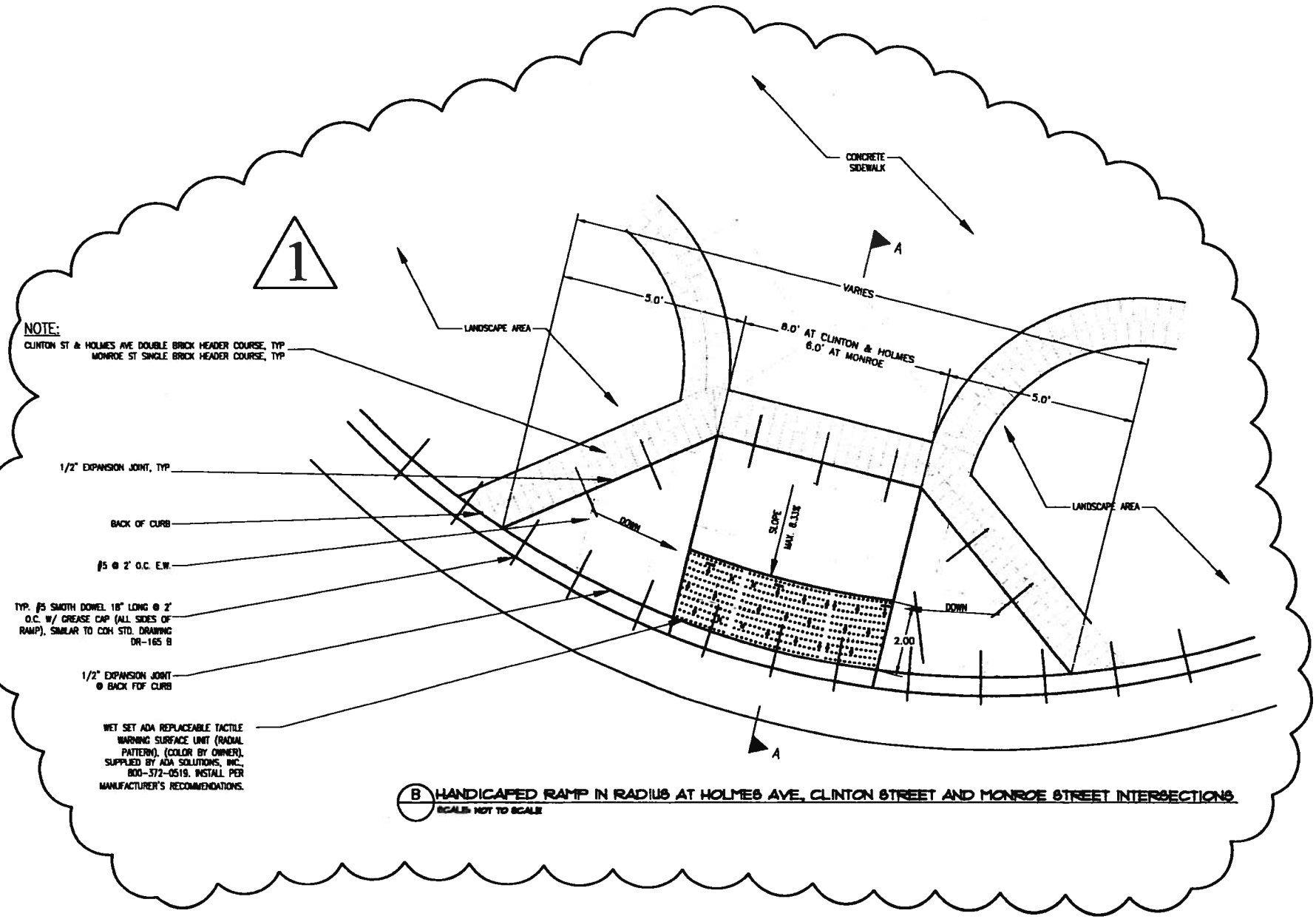
A HANDICAPED RAMP (NO RADIUS)
NOT TO SCALE

NO.	Revision	Date	By
1	Changed Detail "A"	6/14/2012	WTM

LAND DESIGN SOLUTIONS
4996 LINDA STREET
HUNTSVILLE, ALABAMA 35811
PH 256 714 1470

REVISED DETAIL "A", SHEET C22
Holmes Avenue and Washington Street Streetscape Improvements
CITY OF HUNTSVILLE
HUNTSVILLE, AL
DATE: JUNE 14, 2012
PROJECT #65-11-8P26

1 OF 1



B HANDICAPED RAMP IN RADIUS AT HOLMES AVE, CLINTON STREET AND MONROE STREET INTERSECTIONS
SCALE: NOT TO SCALE

NO.	Revision	Date	By
1	Changed Detail "B"	6/14/2012	WTM

LAND DESIGN SOLUTIONS

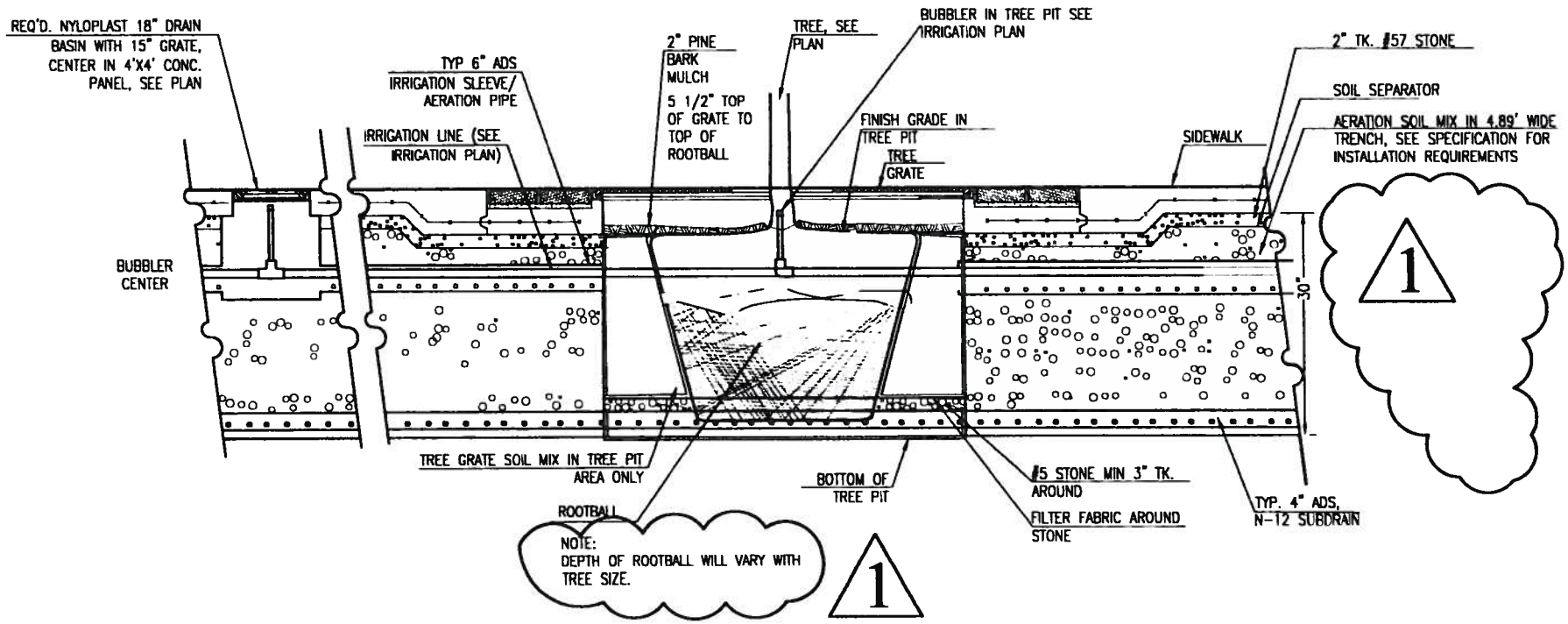
REVISED DETAIL "B", SHEET C22

Holmes Avenue and Washington Street Streetscape Improvements
CITY OF HUNTSVILLE
HUNTSVILLE, AL

DATE JUNE 14, 2012

PROJECT #65-1-SP26

1 OF 1



L LONGITUDINAL SECTION THROUGH TREE PIT

NOT TO SCALE

NO.	Revision	Date	By
1	Removed Text	6/14/2012	WTM

LAND DESIGN SOLUTIONS

REVISED DETAIL "L", SHEET C22

Holmes Avenue and Washington Street Streetscape Improvements

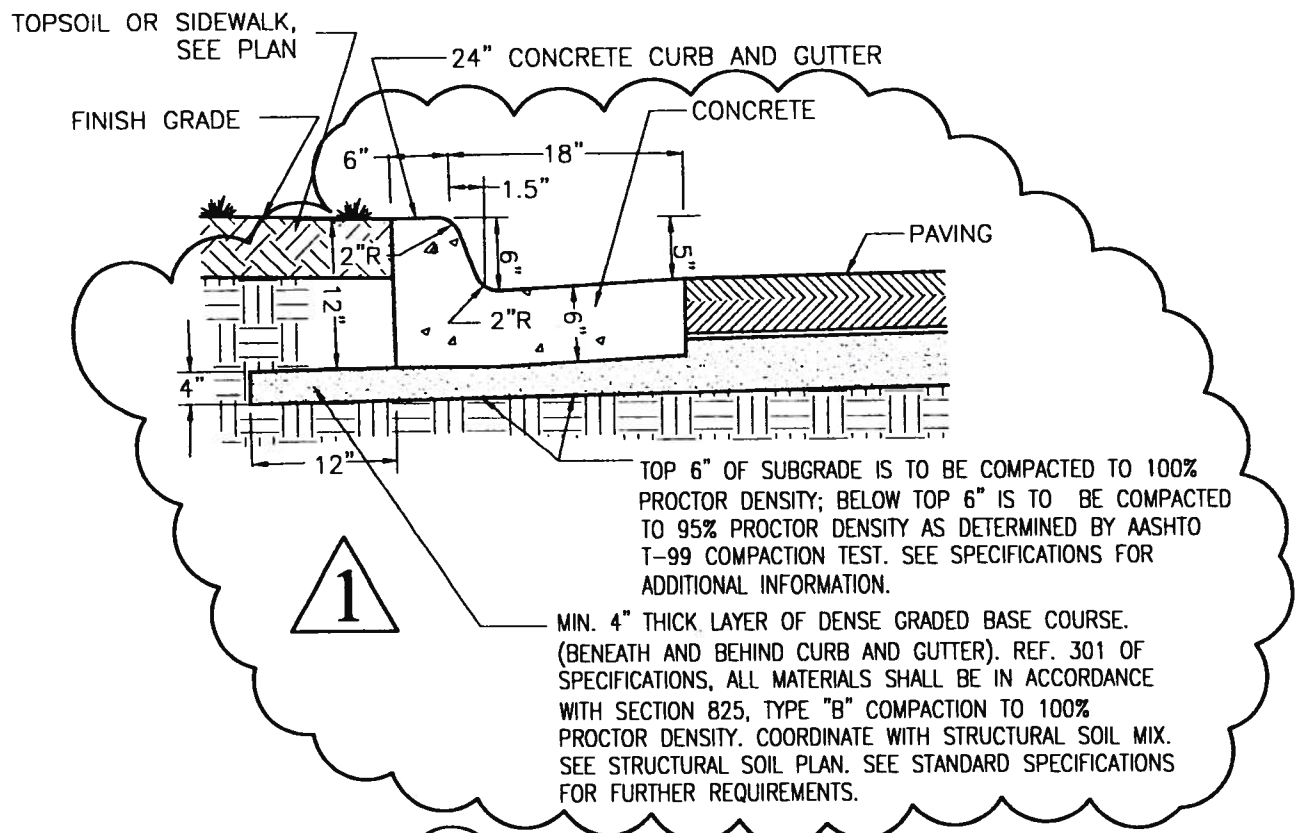
CITY OF HUNTSVILLE

HUNTSVILLE, AL

DATE: JUNE 14, 2012

PROJECT #85-11-SP76

1 OF 1



O TYP. 24" CURB & GUTTER

NOT TO SCALE

NO.	Revision	Date	By
1	Revised Detail "O"	6/14/2012	WTM

LAND DESIGN SOLUTIONS

REVISED DETAIL "O", SHEET C23

Holmes Avenue and Washington Street Streetscape Improvements

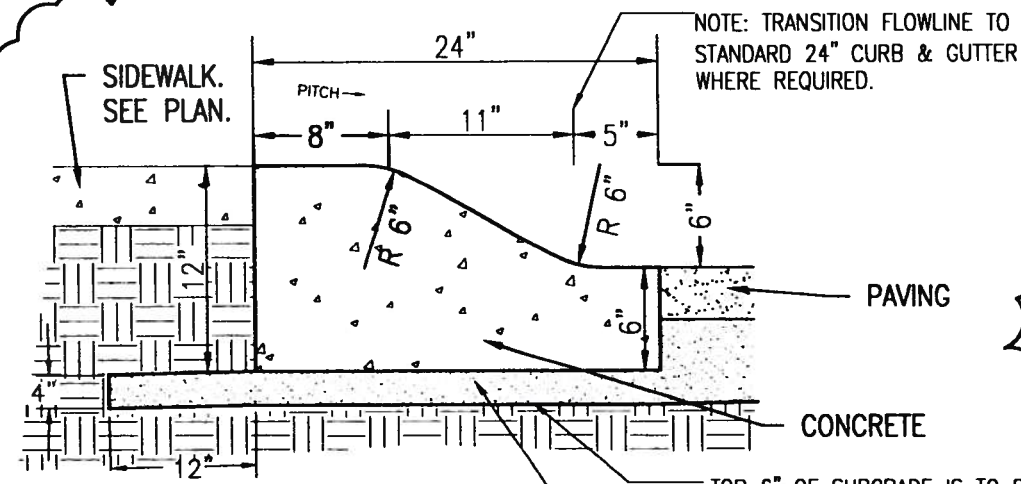
CITY OF HUNTSVILLE

HUNTSVILLE, AL

DATE: JUNE 14 2012

PROJECT #65-11-5P26

1 OF 1



NOTE: TRANSITION FLOWLINE TO STANDARD 24" CURB & GUTTER WHERE REQUIRED.

MIN. 4" THICK LAYER OF DENSE GRADED BASE COURSE. (BENEATH AND BEHIND CURB AND GUTTER). REF. 301 OF SPECIFICATIONS, ALL MATERIALS SHALL BE IN ACCORDANCE WITH SECTION 825, TYPE "B" COMPACTION TO 100% PROCTOR DENSITY. COORDINATE WITH STRUCTURAL SOIL MIX. SEE STRUCTURAL SOIL PLAN. SEE STANDARD SPECIFICATIONS FOR FURTHER REQUIREMENTS.

TOP 6" OF SUBGRADE IS TO BE COMPACTED TO 100% PROCTOR DENSITY; BELOW TOP 6" IS TO BE COMPACTED TO 95% PROCTOR DENSITY AS DETERMINED BY AASHTO T-99 COMPACTION TEST. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

TYPE "H" SLOPING CURB
(ALDOT SPECIAL NO. 623-XY)

P TYP. 24" MOUNTABLE CURB & GUTTER

NOT TO SCALE

1

NO.	Revision	Date	By
1	Revised Detail "P"	6/14/2012	WTM

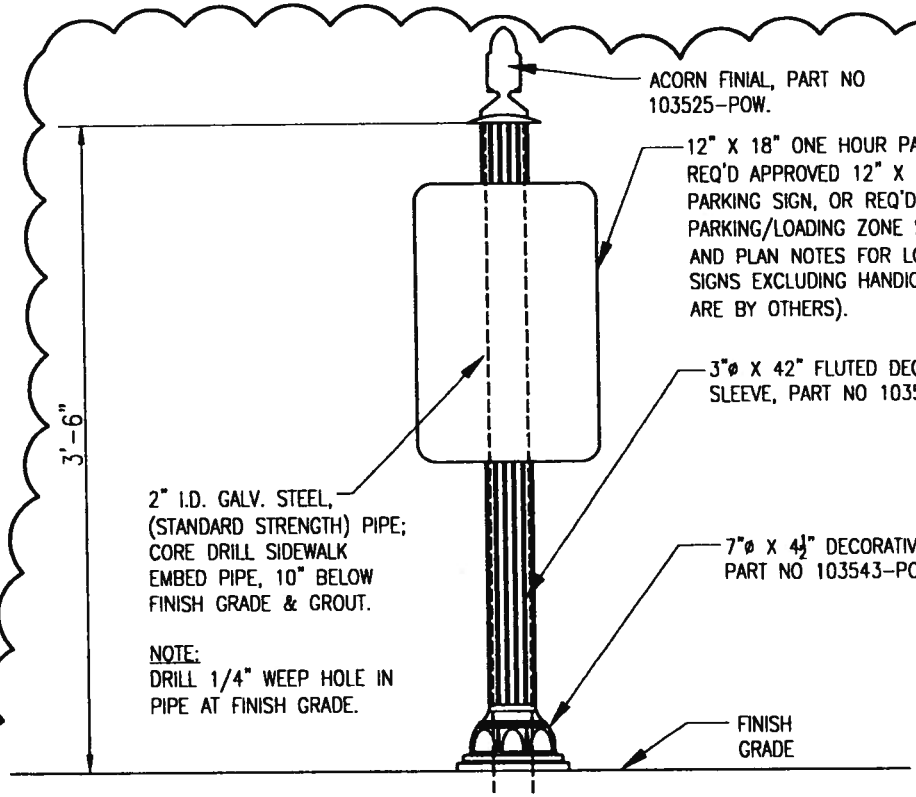
LAND DESIGN SOLUTIONS

REVISED DETAIL "P", SHEET C23

Holmes Avenue and Washington Street Streetscape Improvements
CITY OF HUNTSVILLE
HUNTSVILLE, AL

DATE: JUNE 14 2012

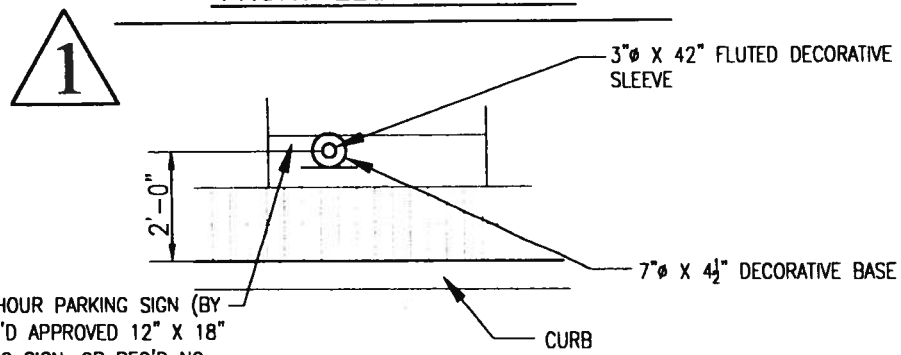
1 OF 1



FRONT ELEVATION VIEW

NOTE:

- CUSTOM COLOR REQ'D RAL-6015; INSTALL PER MANUFACTURER'S RECOMMENDATIONS. ACORN FINIAL, DECORATIVE SLEEVE AND DECORATIVE BASE AS SUPPLIED BY POM, INC. CONTACT: AMY ADKINSON, 1-800-331-7275
- 25 POSTS AND ASSEMBLIES REQ'D IN BASE BID AREA
- 14 POSTS AND ASSEMBLIES REQ'D IN ALTERNATE ONE AREA



PLAN VIEW

Q DECORATIVE 42" HEIGHT POST AND SIGN

NOT TO SCALE

NO.	Revision	Date	By
1	Added Detail "Q"	6/14/2012	WTM

LAND DESIGN SOLUTIONS

ADD DETAIL "Q", SHEET C23

Holmes Avenue and Washington Street Streetscape Improvements
CITY OF HUNTSVILLE
HUNTSVILLE, AL

DATE: JUNE 14 2012

PROJECT #5-11-5P76

1 OF 1

LUMINAIRE SCHEDULE NOTES

1. LAMP TYPES AND DESCRIPTION:
   a. PULSE START METAL HALIDE – CLEAR OR FROSTED AS RECOMMENDED BY MANUFACTURER.

2. FURNISH PROPER LAMP FOR REFLECTOR ASSEMBLY SPECIFIED AS RECOMMENDED BY LUMINAIRE MANUFACTURER.

3. FURNISH ALL RAPID START LAMPED LUMINAIRES WITH ENERGY EFFICIENT LAMPS AND ELECTRONIC BALLAST.

   a. FURNISH SOLID STATE HIGH FREQUENCY RAPID START BALLAST FOR FLUORESCENT LUMINAIRES. BALLAST SHALL HAVE MINIMUM THREE YEAR MANUFACTURER'S WARRANTY.

   b. BALLAST SHALL BE HIGH FREQUENCY (20 KHz OR GREATER), OPERATE WITHOUT DETECTABLE FLICKER, AND SHALL PROVIDE FULL LIGHT OUTPUT. BALLAST SHALL BE U.L. CLASS P RATED FOR THERMAL PROTECTION AND RATED AT 50 DEGREES F STARTING TEMPERATURE. BALLAST SHALL NOT CONTAIN PCB TYPE MATERIAL.

   c. BALLAST SHALL COMPLY WITH FCC AND NEMA LIMITS GOVERNING EMI AND RFI AND SHALL NOT INTERFERE WITH OPERATION OF OTHER NORMAL ELECTRICAL EQUIPMENT. TOTAL HARMONIC DISTORTION SHALL BE LESS THAN 20%. BALLAST SHALL BE SOUND RATED A, AND SHALL HAVE A CREST FACTOR OF 1.7 OR LESS.

   ACCEPTABLE LAMP MANUFACTURER: GE, SYLVANIA, PHILIPS (UNLESS SPECIFICALLY NOTED OTHERWISE)

   ACCEPTABLE BALLAST MANUFACTURER: ADVANCE MARK V, EBT, MOTOROLA MAGNETEK TRIAD HP

4. FURNISH PLASTER FRAMES FOR ALL RECESSED LUMINAIRES IN PLASTER CEILINGS.

5. CONTRACTOR SHALL VERIFY EXACT TYPE CEILINGS BEING FURNISHED AND SUPPLY BASIC LUMINAIRES SPECIFIED IN APPROPRIATE CONFIGURATION FOR CEILING TO BE FURNISHED.

6. FURNISH FLUORESCENT LUMINAIRES WITH JOINING PLATES, END CAPS, CANOPIES, MOUNTING HARDWARE, ETC., AS REQUIRED FOR COMPLETE INSTALLATION.

7. LUMINAIRE MOUNTING AND SUSPENSION SHALL BE AS APPROVED BY ENGINEER AND NO COMBUSTIBLE MATERIALS SHALL BE USED.

8. PROVIDE DEVICES FOR SECURING LUMINAIRE TO CEILING GRID TO COMPLY WITH ARTICLE 410–16C OF THE 1990 NATIONAL ELECTRICAL CODE FOR ALL LAY–IN TYPE LUMINAIRES. BENT TAB TYPE NOT ACCEPTABLE.

9. FURNISH LUMINAIRES IN CONTINUOUS ROWS OR PATTERNS AS SHOWN ON DRAWINGS. PROVIDE CORNERS AND ANGLES WITH MOUNTING HARDWARE. FURNISH FACTORY PAINTED COLOR SELECTED BY ARCHITECT.

10. FURNISH COMPLETE WITH SWIVEL HANGER STEMS, LENGTH AS REQUIRED TO MOUNT BELOW PIPING, DUCT, CABLE RACKS, ETC., MINIMUM 7'–6"H. MAINTAIN UNIFORM MOUNTING HEIGHT OF ALL LUMINAIRES THROUGHOUT EACH AREA.

11. PROVIDE UNSWITCHED HOT TO EMERGENCY BATTERY. BATTERY SHALL OPERATE ONLY DURING LOSS OF POWER TO UNSWITCHED HOT.

1

12. THE ELECTRICAL CONTRACTOR SHALL PROVIDE AN ALTERNATE PRICE TO REPLACE ALL FIXTURE TYPE "A" AND "A1" UTILITY GRANVILLE METAL HALIDE LUMINAIRE HEADS WITH INDICATED GRANVILLE II LED LUMINAIRE HEADS. NORTH YORKSHIRE POLES SPECIFIED WITH FIXTURE TYPE "A1" REMAIN.

13. PROVIDE POLE BASE PER DETAIL "F–1" IN SPECIAL PROVISION 8000.

NO.	Revision	Date	By
1	Change Notes	6/14/2012	-

CHANGE NOTES SHEET E3

Holmes Avenue and Washington Street Streetscape Improvements
CITY OF HUNTSVILLE
HUNTSVILLE, AL

PROJECT 95-1-8P26 DATE: JUNE 14, 2012

LAND DESIGN SOLUTIONS
6906 LINDA STREET
HUNTSVILLE, ALABAMA 35811
PH 256 714 1470

1 OF 1

LUMINAIRE SCHEDULE

MARK	LAMPS-SEE NOTES NO.	WATTS	TYPE	DESCRIPTION
A	1	175	a	POLE MOUNTED METAL HALIDE LUMINAIRE, SINGLE HEAD, TYPE III DISTRIBUITION, UTILITY GRANVILLE LEAF HOUSING, NO RIBS AND BANDS, PAINTED CAST ALUMINUM STANDARD FINIAL, TIGER DRYLAC COLOR, NEMA TWISTLOCK PHOTOCONTROL RECEPTACLE, 120V; NOTE 13 HOLOPHANE NO. GVL-175PM-12-RAL6015-3-N-S-RAL6015-H-S-64319.
A1	1	175	a	POLE MOUNTED METAL HALIDE LUMINAIRE, SINGLE HEAD, TYPE III DISTRIBUITION, UTILITY GRANVILLE LEAF HOUSING, NO RIBS AND BANDS, PAINTED CAST ALUMINUM STANDARD FINIAL, TIGER DRYLAC COLOR, NEMA TWISTLOCK PHOTOCONTROL RECEPTACLE, MOUNTED ON NORTH YORKSHIRE ALUMINUM POLE, 17" BASE, 12'-0" HEIGHT, 3 X 3 TENON, ANCHOR BOLTS, GALVANIZED STEEL, WEATHERPROOF RECEPTACLE WITH IN-USE WET LOCATION COVER, CAST ALUMINUM BANNER ARM, (2) BOLT ON PLANTER ARMS @ 180°, 24", HALF SPHERE, 1" DIAMETER WITH EYEBOLT AND IRRIGATION HOLES, CUSTOM COLOR RAL6015, 120V; NOTE 13 HOLOPHANE NO. GVL-175PM-12-RAL6015-3-N-S-RAL6015-H-S-64319. HOLOPHANE POLE NO. NYA-12-F4C-17-P07-ABG-TDC-R132C-S120B-S120D-FGIUS-STDC-2PBA-24-H-4-RAL6015.
B	1	400	a	POLE MOUNTED METAL HALIDE LUMINAIRE, SINGLE HEAD, TYPE IV DISTRIBUITION, VERTICAL LAMP, HOLOPHANE RAL6015 POLYESTER POWDER COAT FINISH, SPIKE FINIAL, NEMA TWIST LOCK PHOTOCELL, U.L. LISTED WET LOCATION, MOUNTED ON 18'-0" TALL DECORATIVE FLUTED POLE AND BASE PROVIDED BY OTHERS, COORDINATE POLE WITH TRAFFIC SIGNAL PLANS, 120V; HOLOPHANE NO. WE-400PM-MA-RAL6015-4-RAL6015-4-H-S-64321.
LED	(WITH UNIT)			POLE MOUNTED LED LUMINAIRE, SINGLE HEAD, TYPE III DISTRIBUTION, LEAF STYLE - SWING OPEN DESIGN, NO TRIM, PAINTED CAST ALUMINUM STANDARD FINIAL, TIGER DRYLAC COLOR, 4000 SERIES CCT, 80W 400Ma DRIVER, NEMA TWISTLOCK PHOTOCONTROL RECEPTACLE, 120V; NOTE 12 HOLOPHANE NO. GVD-80-4K-AS-T-RAL6015-3-N-S-RAL6015-H.

NO.	Revision	Date	By
1	Change Schedule	6/14/2012	-

LAND DESIGN SOLUTIONS

CHANGE SCHEDULE SHEET E3

Holmes Avenue and Washington Street Streetscape Improvements

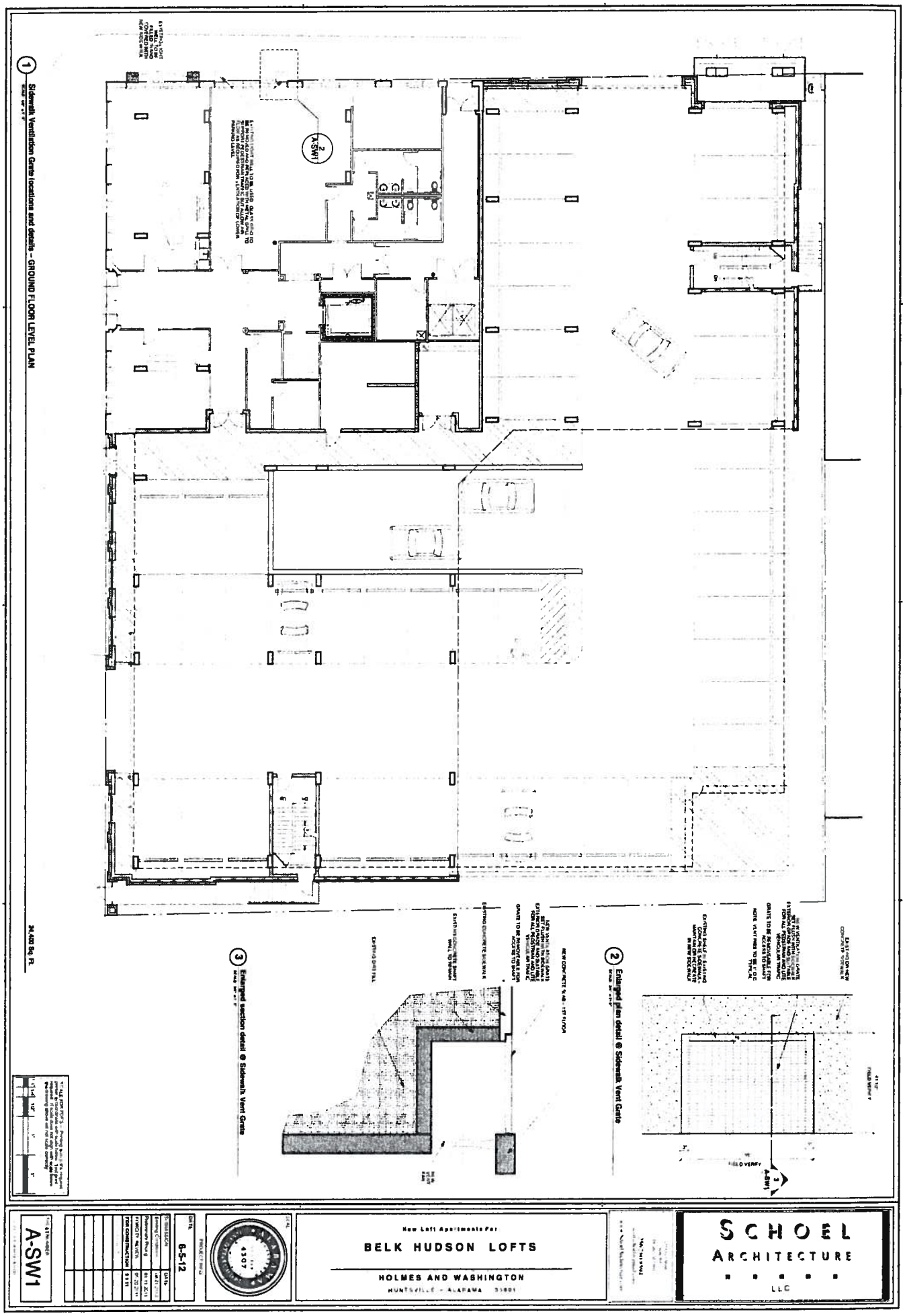
CITY OF HUNTSVILLE

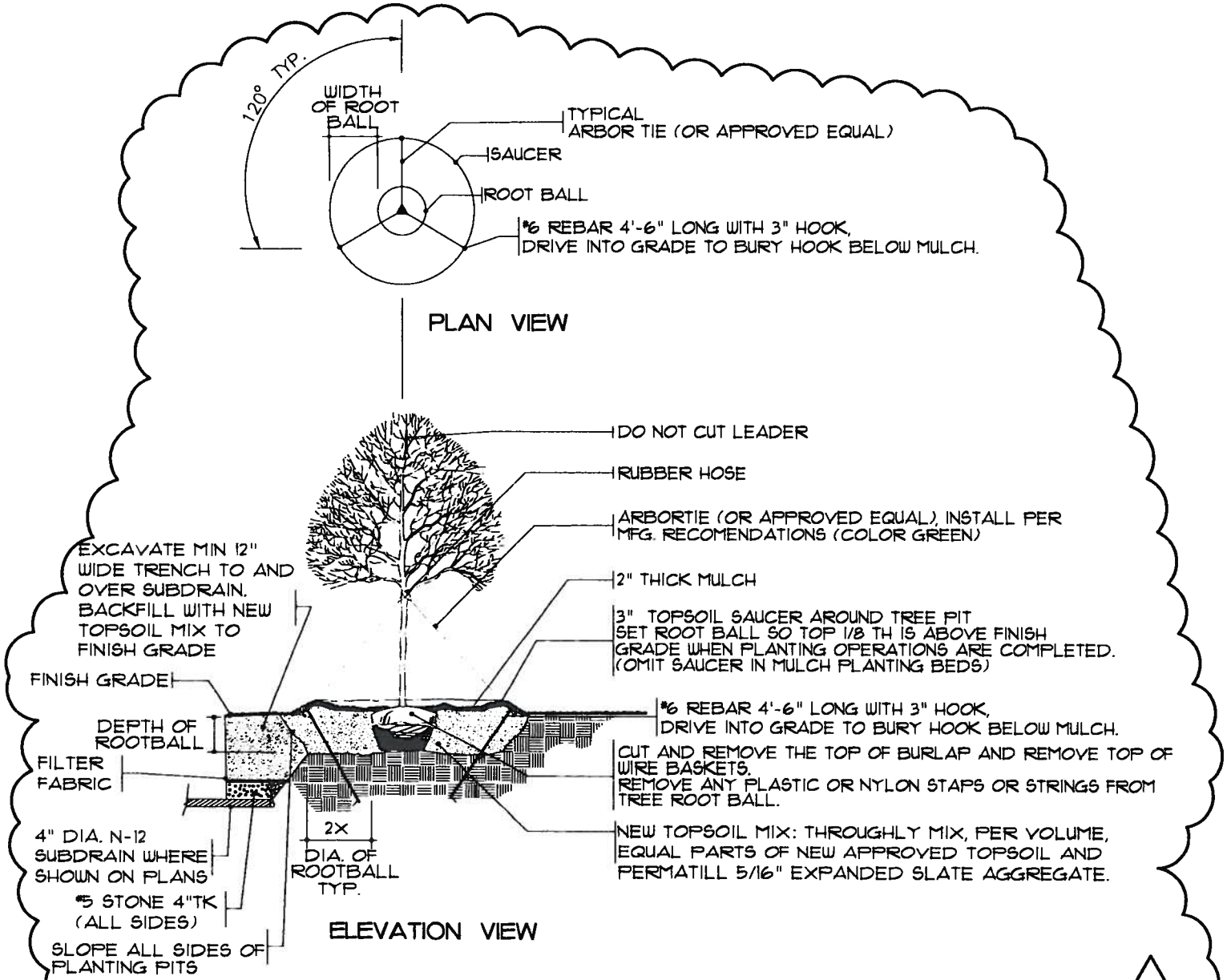
HUNTSVILLE, AL

DATE: JUNE 14, 2012

PROJECT #65-1-SP26

1 OF 1


1 Sidewalk Ventilation Grate locations and details - GROUND FLOOR LEVEL PLAN
24,400 Sq. Ft.
2 Enlarged plan detail @ Sidewalk Vent Grate
3 Enlarged section detail @ Sidewalk Vent Grate
A-SW1
New Loft Apartments For
BELK HUDSON LOFTS
HOLMES AND WASHINGTON
HUNTSVILLE - ALABAMA 35801
SCHOEL
ARCHITECTURE
LLC
DATE 6-5-12
A-SW1



B TREE PLANTING DETAILS (LAWN AND BED AREA) 1

NOT TO SCALE

NO.	Revision	Date	By
1	Added Detail "B", Sheet C20	6/14/2012	WTM

LAND DESIGN SOLUTIONS

DETAIL "B", SHEET C20

Holmes Avenue and Washington Street Streetscape Improvements

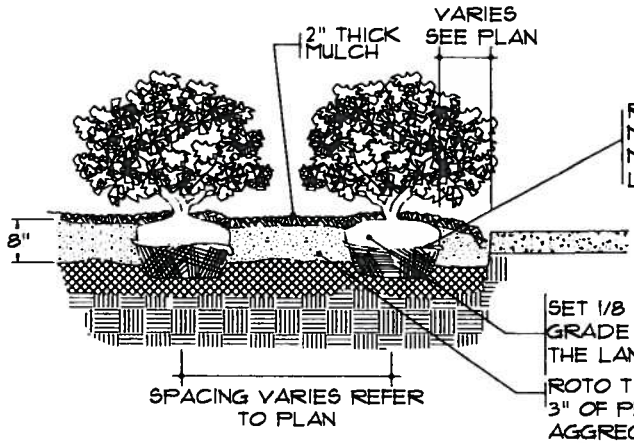
CITY OF HUNTSVILLE

HUNTSVILLE, AL

DATE JUNE 14, 2012

PROJECT #63-11-SP26

1 OF 1



REMOVE BURLAP FROM TOP 1/3 OF B&B MATERIAL. FOR CONTAINER MATERIAL MASSAGE ROOTBALL TO LIGHTLY LOOSEN OUTSIDE LAYER OF ROOTS.

SET 1/8 OF ROOT BALL ABOVE FINISH GRADE UNLESS OTHERWISE DIRECTED BY THE LANDSCAPE ARCHITECT

ROTO TILL EXISTING SOILTO A DEPTH OF 8". PLACE 3" OF PERMATILL 5/16" EXPANDED SLATE AGGREGATE OVER THE ROTO TILLED AREA. COMPLETELY ROTO TILL IN THE PERMATILL 5/16" EXPANDED SLATE AGGREGATE TO AN 8" DEPTH. FINISH GRADE AS PER GRADING PLAN. RAKE SURFACE SMOOTH AND INSTALL PLANTS AS SPECIFIED.

1

A
-

SHRUB PLANTING DETAIL

NOT TO SCALE

STALITE PERMATILL HORTICULTURAL AGGREGATES
(877)-737-6284
205 KLUMAC ROAD
SALIBURY, NC 28145
WWW.PERMATILL.COM

NO.	Revision	Date	By
1	Added Detail "A", Sheet C20	6/14/2012	WTM

LAND DESIGN SOLUTIONS

DETAIL "A", SHEET C20

Holmes Avenue and Washington Street Streetscape Improvements
CITY OF HUNTSVILLE
HUNTSVILLE, AL

PROJECT #63-11-SP26

DATE: JUNE 14, 2012

1 OF 1

CERTIFICATION OF COMPLIANCE WITH TITLE 39, CODE OF ALABAMA

In accordance with Code of Alabama (1975) §39-5-1(b), I hereby certify that the contract with Miller and Miller, Inc., in the amount of ONE MILLION ONE HUNDRED SIXTY-EIGHT THOUSAND ONE HUNDRED SIXTY-ONE AND NO/100 DOLLARS ($1,168,161.00), for Holmes Avenue and Washington Street Streetscape Improvements, Options No. 1, No. 3, No. 4, No. 5, and No. 6, Project No. 65-12-SP31, which is being submitted to the City Council of the City of Huntsville for approval on this the 15th day of November, 2012, has been let in accordance with Code of Alabama, Title 39 and all other applicable provisions.

Shane Davis
Director of City Engineering/Urban Development
City of Huntsville

E-VERIFY – NOTICE

The Beason-Hammon Alabama Taxpayer and Citizen Protection Act, Act No. 2011-535, Code of Alabama (1975) § 31-13-1 through 31-13-30 (also known as and hereinafter referred to as " the Alabama Immigration Act") as amended by Act No. 2012-491 on May 16, 2012, is applicable to all competitively bid contracts with the City of Huntsville. As a condition for the award of a contract and as a term and condition of the contract with the City of Huntsville, in accordance with § 31-13-9 (a) of the Alabama Immigration Act, as amended, any business entity or employer that employs one or more employees shall not knowingly employ, hire for employment, or continue to employ an unauthorized alien within the State of Alabama.

During the performance of the contract, such business entity or employer shall participate in the E-Verify program and shall verify every employee that is required to be verified according to the applicable federal rules and regulations. The business entity or employer shall assure that these requirements are included in each subcontract in accordance with §31-13-9(c). Failure to comply with these requirements may result in breach of contract, termination of the contract or subcontract, and possibly suspension or revocation of business licenses and permits in accordance with §31-13-9 (e) (1) & (2).

Code of Alabama (1975) § 31-13-9 (k) requires that the following clause be included in all City of Huntsville contracts that have been competitively bid and is hereby made a part of this contract:

"By signing this contract the contracting parties affirm, for the duration of the agreement, that they will not violate federal immigration law or knowingly employ, hire for employment, or continue to employ an unauthorized alien within the State of Alabama. Furthermore, a contracting party found to be in violation of this provision shall be deemed in breach of the agreement and shall be responsible for all damages resulting therefrom."

Miller & Miller, Inc.
(Company)

BY:
(Authorized Representative)