



Purchasing Department

209 Water Street
Johnson City, TN 37601
(423) 975-2716

ADDENDUM

TO: All Prospective Vendors

FROM: Debbie Dillon, 
Director of Purchasing

SUBJECT: Addendum No. 3 –ITB #6076
King Creek Basin

DATE: October 7, 2016

Consider this addendum an integral part of the above referenced Invitation to Bid:

See attached 25 page addendum. Note Bid forms have been revised and are so marked.

All other requirements remain the same. **Vendor shall acknowledge receipt of this addendum by initialing and returning the addendum notice with the return solicitation package or via e-mail if it has already been submitted.** Your un-opened response envelope can be returned to you for re-submittal upon request. Any questions regarding addendum submittal please contact this office or Jennifer Salyer at Barge, Waggoner, Sumner and Cannon, Inc.

/dd

ADDENDUM NO. 3

October 7, 2016

PROJECT: King Creek Basin

JOB NUMBER: 36057-01

OWNER: City of Johnson City

ARCHITECT: BARGE, WAGGONER, SUMNER & CANNON, INC.
4 SHERIDAN SQUARE, SUITE 100
KINGSPORT, TENNESSEE 37660

BID DATE: October 12, 2016 at 2:00 p.m.

ALL BIDS SHALL CONFORM TO THIS ADDENDUM:

The following items covering changes in the bidding requirements shall apply to and become a part of the requirements thereof.

Receipt of this Addendum shall be acknowledged by inserting this number and date in the space provided on the Bid Form. Failure to do so may result in disqualification of the Bidder. This addendum consists of 3 pages with the following attachments:

SPECIFICATIONS

- ITEM 1. **Refer to Section 1 – Bid Form (pg. 1-11 thru 1-16):** The attached Bid Form has been modified as follows.
- Item 35 – Electrical trenching & backfill: quantity revised to 1,000 LF
 - Item 42 – Shrubs: quantity revised to 1,088
 - Item 43 – Groundcover/Perennials: quantity revised to 1,713
- ITEM 2. **Refer to Section 033700 – Specialty Placed Concrete:** Part 2 has been modified to include a surface retarder.

DRAWINGS

- ITEM 3. **Refer to Drawing V1.01:** General Note #2 is added to this drawing stating the following. “The boundary and topographic survey of subject property used as the basis for design was prepared by the City of Johnson City.”
- ITEM 4. **Refer to Drawing C1.01 and C1.02:** General Note #1 has been modified as follows. “The boundary and topographic survey of subject property used as the basis for design was prepared by the City of Johnson City.”
- ITEM 5. **Refer to Drawing C1.01:** General Note #2 has been deleted.
- ITEM 6. **Refer to Drawing C1.02:** All glow stones are to be Ultra Super-Luminosity Glow Stones by Ambient Glow Technology (www.ambientglowtechnology.com) Telephone: 877-248-8641

Sidewalk application:

Aqua Blue @ 50% of distribution – ½” aggregate

Sky Blue @ 30% of distribution – ½” aggregate

Purple @ 20% of distribution – ¼” aggregate

Application Rate for ½” aggregates to be 10 pounds per 100 square feet of surface.

Application Rate for ¼” aggregates to be 2 pounds per 100 square feet of surface.

Flume Application:

Sky Blue @ 100% of distribution – ½” aggregate

Application Rate to be 5.5 pounds per 100 square feet of surface.

- ITEM 7. **Refer to Drawing C2.01:** Spot elevations have been revised as noted on the attached revised C2.01 drawing.
- ITEM 8. **Refer to Drawing C7.02:** Detail 2 – Bank Stabilization: Coir logs shall be vegetated with Soft Rush (*Juncus effusus*) using plugs on a 9” spacing. Approximate quantity is 2,700. These plantings are to be included in the line item cost for Bid Item #24 (Coir Logs w/ plantings) on the Bid Form.

- ITEM 9. **Refer to Drawing L4.01:** The Plant Schedule is modified with the following plant spacings.
- Inkberry (IGD) – 3' O.C.
Juncus (JEF) – 24" O.C.
Coreopsis (CAN) – 15" O.C.
- ITEM 10. **Refer to Drawing E0.01:** Contractor is responsible for conduit and wiring (3/4"C, 2#12, 1#12 Gnd) from panelboard "LA" to Irrigation Control Panel if Irrigation Alternate is awarded.
- ITEM 11. **Refer to Drawing E0.01:** Legend "JOHNSON CITY SUPPLIED FIXTURE" should read "JOHNSON CITY OR CONTRACTOR SUPPLIED FIXTURE AS NOTED."
- ITEM 12. **Refer to Drawing E0.01:** "G" fixtures have been eliminated; "D" fixtures are noted only within the general park area, and Keyed Note #11 has been removed.
- ITEM 13. **Refer to Drawing S1.02:** Flume details have been modified to include a curb edge per the attached revised drawing.

END OF ADDENDUM NO. 3

BID FORM
KING CREEK BASIN
CITY OF JOHNSON CITY, TENNESSEE
BID NO. ITB# 6076

Proposal of _____
 (hereinafter called "Bidder"), of _____
(County and State)

To: City of Johnson City
 (hereinafter called "Owner")

Gentlemen:

The Bidder, in compliance with your Advertisement for Bids for the **KING CREEK BASIN**, having examined the drawings and specifications with related documents and the site of the proposed work, and being familiar with all of the conditions surrounding the construction of the proposed project (including the availability of materials and labor), hereby proposes to furnish all labor, materials, and supplies to construct the project in accordance with the contract documents within the time set forth therein and at the unit prices stated below. These prices are to cover all expenses incurred in performing the work required under the bidding instruments, of which this proposal is a part.

The undersigned Bidder does hereby declare and stipulate that this proposal is made in good faith, without collusion or connection with any other person or persons bidding for the same work, and that it is made in pursuance of and subject to all the terms and conditions of the construction contract, the detailed specifications, and the drawings pertaining to the work to be done, all of which have been examined by the undersigned.

The Bidder hereby agrees to commence work under this contract on or before a date to be specified in a written "Notice to Proceed" and to complete the project fully within 180 calendar days from that specified date. The Bidder further agrees to pay, as liquidated damages, the sum of \$1,000.00 for each consecutive calendar day that expires after the time specified for completion until the Project is fully complete.

The Bidder agrees to furnish all labor, materials, equipment, and incidentals necessary for the construction and testing of the work, all in accordance with the drawings and specifications, for the following UNIT PRICES:

BASE BID

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL PRICE
1	Fine Grading	1	AL		
2	Imported Topsoil	1,480	CY		
3	Topsoil place and spread	1,480	CY		
4	Bio-Retention Subsoil	150	CY		
5	Concrete Sidewalks	26,200	SF		
6	Concrete Pavers @ McClure Street	775	SF		

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL PRICE
7	Header Curb @ Pavers	35	LF		
8	Concrete Pavers @ Mural Wall	500	SF		
9	Glowing Aggregate Pathway	4,250	SF		
10	Concrete Flumes (w/ partial glowing aggregate)	2,725	SF		
11	Concrete Flumes Header Curb	665	LF		
12	Precast Crossing Slabs	200	SF		
13	Crossing Abutment Walls	25	LF		
14	Concrete Closed Flumes (@ Parking Edge)	2	EA		
15	Demolish Existing Culvert Roofs	2,470	SF		
16	Demolish Existing Culvert Walls	400	SF		
17	Disposal of Demolition Material	107	CY		
18	Replace Culvert Roofs	2,050	SF		
19	Construction Exit	1	EA		
20	Filter Socks	2,140	LF		
21	Stone Check Dams	10	EA		
22	Inlet Protection	3	EA		
23	Geo-grid	1,335	SY		
24	Coir Logs w/plantings	2,140	LF		
25	Bio-Retention - 6" Pipe	95	LF		
26	Bio-Retention - 8" Pipe	85	LF		
27	Bio-Retention - 10" Pipe	125	LF		
28	Bio-Retention Overflow	1	LS		

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL PRICE
28	Boulder Headwalls	1	LS		
29	24" RCP	108	LF		
30	30" RCP	57	LF		
31	Catch Basin	3	EA		
32	LED Pedestrian Lights	5	EA		
33	LED Bollards	32	EA		
34	Wall Lighting	1	LS		
35	Electrical trenching and backfill by contractor	1,000	LF		
36	Electrical distribution	1	LS		
37	Seat Walls	230	LF		
38	Headwalls	440	LF		
39	Railings	1	AL	\$120,000.00	\$120,000.00
40	Canopy Trees	36	EA		
41	Ornamental Trees	11	EA		
42	Shrubs	1,088	EA		
43	Groundcover/Perennials	1,713	EA		
44	Sod	72,000	SF		
45	Boulders	1	AL	\$15,500.00	\$15,500.00
46	Trash Receptacles	6	EA		
47	Benches (w/ Back)	10	EA		
48	Park Signage	2	EA		
49	Irrigation Sleeving	1	LS		

SUBTOTAL: \$ _____

ADD 10% FOR CONTINGENCY: \$ _____

BASE BID TOTAL: \$ _____

BASE BID TOTAL AMOUNT IN WORDS

 _____ (Words)

ADD ALTERNATE NO. 1 – Irrigation

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL PRICE
50	Irrigation	1	AL		
51	2" Irrigation Tap Fee & Meter	1	AL		
52	Backflow Preventer (Irrigation)	1	EA		
53	Hot Box	1	AL		

SUBTOTAL: \$ _____

ADD 10% FOR CONTINGENCY: \$ _____

ADD ALTERNATE NO. 1 TOTAL: \$ _____

ADD ALTERNATE NO. 1 TOTAL AMOUNT IN WORDS

 _____ (Words)

The Bidder understands that the Owner reserves the right to reject any or all bids and to waive any informality in the bidding.

The Bidder agrees that this bid shall be good and may not be withdrawn for a period of sixty (60) calendar days after the scheduled closing time for receiving bids.

Upon receipt of written notice of the acceptance of this bid, the Bidder will execute the formal contract attached within ten (10) days.

BID MUST BE SIGNED TO BE VALID

(Sign this Bid on one of the following Signature Pages)

SUBMITTED ON: _____.
(Date)

IF BIDDER IS:

AN INDIVIDUAL

By: _____
(Individual's Name)

Doing business as: _____

Business Address: _____

Phone No.: _____

A PARTNERSHIP

By: _____
(Firm Name)

(General Partner)

Business address: _____

Phone No.: _____

BID MUST BE SIGNED TO BE VALID

A CORPORATION

By: _____
(Corporation name)

(State of incorporation)

By: _____
(Name of person authorized to sign)

(Title)

(Corporate Seal)

Attest _____

Business address: _____

Phone No.: _____

A JOINT VENTURE

By: _____
(Name)

Address: _____

By: _____
(Name)

Address: _____

(Each Party of the Joint Venture must sign. The manner of signing for each individual, partnership and corporation that is a party to the Joint Venture should be in the manner indicated above.)

BID MUST BE SIGNED TO BE VALID

PART 1. GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SUMMARY OF WORK:

- A. This Section includes exterior special mix cement concrete pavement.
- B. Extent of special mix cement concrete pavement is indicated on Drawings.
- C. Pavement work includes, but is not limited to, the following:
 - 1. Concrete walks.

1.3 QUALITY ASSURANCE:

- A. Industry Reference Standards: Refer to Division 1 References Section.
 - 1. Tennessee Department of Transportation Standard Specifications Construction of Roads and Bridges (TDOT), Current edition.
 - 2. American Concrete Institute (ACI):
 - ACI 117 - 90 Specification for Tolerances for Concrete Construction and Materials.
 - ACI 211.1 - 91 Standard Practice for Selecting Proportions for Normal, Heavyweight and Mass Concrete.
 - ACI 304R - 89 Guide for Measuring, Mixing, Transporting and Placing Concrete.
 - ACI 305R - 91 Hot Weather Concreting
 - ACI 306.1 - 90 Standard Specification for Cold Weather Concreting.
 - ACI 309R - 96 Guide for Consolidation of Concrete.
 - 3. American Society for Testing and Materials (ASTM):
 - A 185 - 97 Specification for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement.
 - C 33 - 99 Specification for Concrete Aggregates.
 - C 94 - 00 Specification for Ready-Mixed concrete.
 - C 150 - 99a Specification for Portland Cement.
 - C 171 - 97a Specification for sheet materials for curing concrete.
 - C 260 - 00 Specification for Air Entraining Admixtures for concrete.
 - C 309 - 98a Specification for Liquid-Membrane-Forming Compounds for curing concrete.

C 494 - 99a Specification for Chemical Admixtures for Concrete.C 618 – 99 Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete.

4. Concrete Reinforcing Steel Institute (CRSI):
Manual of Standard Practice, 26th edition, 1997.
5. American Association of State Highway and Transportation Officials (AASHTO):
M 248 – 91 Specification for Ready-Mixed White and Yellow Traffic Paints.

B. Qualifications:

1. Installer Qualifications: Engage a firm specializing in concrete paving installation. Installer shall have successfully completed at least ten (10) pavement installation projects of the same materials, design and of similar size and scope of work to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
2. Concrete Manufacturer Qualifications: Manufacturer of ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment.

C. Testing and Inspection:

1. Testing and Inspection Services: Owner will engage testing and inspection services, to include testing soil materials proposed for use during paving operations.
2. Field tests will be performed in conjunction with a proof rolling inspection of the prepared subgrade to verify that existing subgrade conditions are similar to those assumed in the design and therefore adequate for support of the pavement system.

D. Field Constructed Mockup: Prior to installing concrete pavement, furnish and install a 100 square foot sample of pavement indicated with proposed materials, and workmanship to be expected in completed work. Build mock-up to comply with the following requirements; using materials, joints, edges and finish, as indicated for final unit of Work.

1. Locate mockup on site in location indicated; or if not indicated as directed by Landscape Architect.
2. Obtain Landscape Architect's acceptance of qualities of sample before start of final unit of Work.
3. Replace unsatisfactory mockup work; as directed, until acceptable to Landscape Architect.
4. Maintain approved mockup during construction in undisturbed condition as a standard for judging completed Work. Do not alter, move or destroy mock-up until work is completed. The approved sample in undisturbed condition at Date of Substantial Completion, may become part of completed unit of Work.

1.4 SUBMITTALS:

- A. Section Cross Reference: Refer to Division 1 Submittals Section for general requirements.

- B. Product Data: Manufacturer's product data, for information only, for each type of manufactured material and product indicated.
- C. Mix Designs: For each concrete pavement mix. Include alternate mix designs when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
- D. Mix Samples:
 - 1. Submit one sample 24 inch x 24 inch for specified finish of aggregate color and/or texture.
 - 2. Submit two aggregate samples (1 pound each).
- E. Written Notification 72 hours before commencement of work to coordinate observation and approval of initial staking and installation.
- F. Material Certificates: Signed by manufacturers certifying that each of the following materials complies with requirements.
 - 1. Fiber reinforcement.
 - 2. Admixtures.
 - 3. Curing compounds
- G. Installer Certification: Submit written documentation certifying that Installer complies with requirements of "Installer Qualifications " above.

PART 2. PRODUCTS

2.1 SOURCE QUALITY CONTROL:

- A. Single Source Responsibility: Obtain primary materials, accessories and joint materials from a single source.

2.2 SUBBASE MATERIALS:

- A. Subbase Course Materials: Refer to Division 32, Aggregate Base Section, for requirements.

2.3 FORMS:

- A. Form Materials: Plywood, metal, or other suitable material of size to provide full-depth and strength to resist movement during placement and to retain horizontal and vertical alignment until removal. Use forms, free of distortion and defects to provide straight, smooth exposed surfaces.
- B. Use flexible or curved forms to form radius bends as required.

- C. Form Release Agent: Commercially formulated form-release agent with a maximum of 350 g/L volatile organic compounds (VOCs) that will not bond with, stain or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces. Use single source for all forms.

2.4 CONCRETE MATERIALS:

- A. Portland Cement: ASTM C 150, Type I.
 - 1. Fly Ash: ASTM C 618, Class F
 - 2. Ground Granulated Blast - Furnace Slag: ASTM C 989, Grade 100.
 - 3. Cement Color: Gray
 - 4. Use one brand of cement throughout Project unless otherwise acceptable to Landscape Architect.
- B. Supplement Portland Cement with the following, serving as replacement for 50 percent of Portland cement.
- C. Normal-weight Aggregate: ASTM C 33, uniformly graded, from a single source with coarse aggregate as follows:
 - 1. Class: 4S
 - 2. Nominal Maximum Aggregate Size: 3/4 inch.
 - 3. Do not use fine or coarse aggregates that contain substances that cause spalling.
 - 4. Local aggregates not complying with ASTM C 33 that have been shown to produce concrete of adequate strength and durability by special tests or actual service may be used when acceptable to Landscape Architect.
- D. Water: ASTM C 94

2.5 FIBER REINFORCEMENT:

- A. Synthetic Fiber: Fibrillated polypropylene fibers engineered and designed for use in concrete pavement, complying with ASTM C 116, Type III, 1/2 to 1 inch long.

2.6 SPECIAL MIX CONCRETE MATERIALS:

- A. Sand: ASTM C 33, for fine aggregate.
- B. Surface Treatment:
 - 1. Photo luminescent natural stone aggregate mix
 - a. Product: Glow Stones
Manufactured By: Ambient Glow Technology
www.ambientglowtechnology.com

- b. Refer to Drawings for application mix.

2.7 ADMIXTURES:

- A. General: Admixtures certified by manufacturer to contain not more than 0.1 percent water soluble-chloride ions by mass of cement and to be compatible with other admixtures.
- B. Air-Entraining Admixture: ASTM C 260.
- C. Water-Reducing Admixture: ASTM C 494, Type A.
- D. Water-Reducing and Retarding Admixture: ASTM C 494, Type D.

2.8 CURING MATERIALS:

- A. Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd., complying with AASHTO M 182, Class 2.
- B. Moisture-Retaining Cover: One of the following, complying with ASTM C 171.
 - 1. Waterproof paper.
 - 2. Polyethylene film.
 - 3. White burlap-polyethylene sheet.
- C. Clear Waterborne Membrane-Forming Curing Compound: ASTM C 309, Type I, Class B.
- D. Evaporation Retarder: Waterborne, monomolecular film forming compound applied to exposed concrete slab surfaces for temporary protection from rapid moisture loss.

2.9 SURFACE RETARDER

- A. General: sprayer applied surface retarder used to expose the specialty aggregates after paving operations have ceased. Application to be per manufacturer's recommendations.
 - 1. Top-Cast Surface Retarder as manufactured by W.R. Grace & Co.
 - a. 05 Yellow – Sandblast Finish
 - 2. Owner approved equal.
- B. Surface Retarder must be included in all sample construction.

2.10 RELATED MATERIALS:

- A. Isolation Joint Materials: Refer to Division 32, Concrete Paving Joint Sealants Section, for requirements and the following:
 - 1. Pre-molded Isolation Joint Filler: 1/2 inch wide x full depth, compatible with sealant. Joint filler to be left a minimum 1/2 inch, but no more than one inch below finish surface where joint sealant is indicated.
 - 2. Joint Sealant: Color to be approved by Landscape Architect.
- B. Epoxy Bonding Adhesive: ASTM C 881, two component epoxy resin, capable of humid curing and bonding to damp surfaces, of class and grade to suit requirements, and as follows:
 - 1. Type: Class IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.
- C. Chemical Surface Retarder: Water soluble, liquid set retarder with color dye, for horizontal concrete surface application, capable of temporarily delaying final hardening of concrete to a depth of 1/8 to 1/4 inch (3 to 6 mm).

2.11 CONCRETE MIXTURES:

- A. Concrete Design: Refers to Division 03, Cast-In-Place Concrete Section for concrete mixture design, sampling and testing, and quality control.
- B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:
 - 1. Fly Ash: 50 percent
 - 2. Ground Granulated Blast - Furnace Slag: 50 percent.
- C. Proportion mixtures to provide normal-weight concrete with the following properties:
 - 1. Compressive Strength (28-Day): 4000 psi.
 - 2. Maximum Water-Cement Ratio at Point of Placement: 0.45
 - 3. Slump Limit: 3-4 inches.
- D. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having an air content as follows with a tolerance of plus or minus 1.5 percent:
 - 1. Air Content: 5.0 percent for 3/4 inch maximum aggregate.
 - 2. Air Content: 6.0 percent for 1/2 inch maximum aggregate.
- E. Synthetic Fiber: Uniformly disperse in concrete mix at manufacturer's recommended rate, but not less than 1.0 lb/cu. yd.

2.12 CONCRETE MIXING:

- A. Ready-Mixed Concrete: Comply with requirements and with ASTM C 94.
 - 1. When air temperature is between 85 deg F (30 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

PART 3. EXECUTION

3.1 PREPARATION:

- A. Proof-roll prepared subbase surface to check for unstable areas and verify need for additional compaction. Do not begin paving work until such conditions have been corrected and are ready to receive paving.
- B. Remove loose material from compacted subbase surface immediately before placing concrete.

3.2 EDGE FORMS AND SCREED CONSTRUCTION:

- A. Set, brace, and secure edge forms, bulkheads, intermediate screed guides for paving to required lines, grades, and elevations. Install forms to allow continuous progress of work and so that forms can remain in place at least 24 hours after concrete placement.
- B. Check completed formwork and screeds for grade and alignment to following tolerances:
 - 1. Top of Forms: Not more than 1/8 inch in 10 feet.
 - 2. Vertical Face on Longitudinal Axis: Not more than 1/4 inch in 10 feet.
- C. Clean forms after each use and coat with form release agent as required to ensure separation from concrete without damage.

3.3 FIBER REINFORCEMENT:

- A. Reinforcement: Refer to Division 32, Concrete Sidewalks for fiber reinforcement, for requirements. Locate and place reinforcement according to the Drawings.

3.4 JOINTS:

- A. General: Construct contraction, construction, isolation joints and tool edges true to line with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to the centerline, unless indicated otherwise. Joint types and locations are indicated on the Drawings.
 - 1. When joining existing paving, place transverse joints to align with previously placed joints, unless indicated otherwise.

- B. Contraction Joints: Provide weakened-plane contraction joints, sectioning concrete into areas as indicated on Drawings. Construct contraction joints for a depth equal to at least 1/4 of the concrete thickness, as follows:
1. Tooled Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint with groover tool to the following radius. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover marks on concrete surfaces.
 - a. Radius: 1/4 inch (6 mm).
 2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/4 inch wide joints into hardened concrete when cutting action will not tear, abrade, or otherwise damage surface and before development of random contraction cracks.
- C. Construction Joints: Set construction joints at side and end terminations of pavement and at locations where pavement operations are stopped for more than 1/2 hour, unless pavement terminates at isolation/expansion joints.
1. Provide pre-formed galvanized steel or plastic keyway - section forms or bulkhead forms with keys, unless indicated otherwise. Embed keys at least 1 1/2 inches into concrete.
 2. Continue reinforcement across construction joints unless indicated otherwise. Do not continue reinforcement through sides of strip paving unless indicated.
 3. Use bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
- D. Isolation Joints: Form isolation joints of preformed joint filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, walks, other fixed objects, and where indicated.
1. Extend joint fillers full width and depth of joint.
 2. Terminate joint filler not less than 1/2 inch or more than 1 inch below finished surface where joint sealant is indicated.
 3. Place top of joint filler flush with finished concrete surface when no joint sealant is required.
 4. Furnish joint fillers in one-piece lengths for full width being placed wherever possible. Where more than one length is required, lace or clip joint filler sections together.
 5. Protect top edge of joint filler during concrete placement with metal, plastic or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.
 6. Caulk exposed joint with self-leveling sealant manufactured for such an application. Color of sealant to match adjacent pavement.
- E. Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt-coat one half of dowel length to prevent concrete bonding to one side of joint.

F. Edging: Tool edges of pavement and joints in concrete after initial floating with an edging tool to the following radius. Repeat tooling of edges after applying surface finishes. Eliminated tool marks on concrete surfaces.

1. Radius: 1/4 inch (6mm).

3.5 CONCRETE PLACEMENT:

A. Concrete Placement: Refer to Division 03 Cast-In-Place Concrete Section, for requirements.

B. General: Comply with requirements and with ACI 304, "Guide for Measuring, Mixing, Transporting, and Placing Concrete."

C. Moisten subbase or subgrade to provide a uniform dampened condition at the time concrete is placed. Do not place concrete around manholes or other structures until they are at the required finish elevation and alignment.

D. Deposit and spread concrete pavement in a continuous operation between construction joints. Do not push or drag concrete into place or use vibrators to move concrete into place.

1. Consolidate concrete during placement operations so that concrete is thoroughly worked around reinforcement, other embedded items and into corners.
2. When concrete placing is interrupted for more than 1/2 hour, place a construction joint.

E. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

F. Consolidate concrete by mechanical vibrating equipment supplemented by hand-spading, rodding, or tamping. Use equipment and procedures to consolidate concrete complying with ACI 309R.

1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand-spreading and consolidation. Consolidate with care to prevent dislocating reinforcing, dowels, and joint devices.

G. Screed paved surfaces with a straightedge and strike off. Use bull floats or darbies to form a smooth surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces prior to beginning finishing operations.

H. Cold-Weather Placement: Comply with provisions of ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

1. When air temperature has fallen to or is expected to fall below 40 deg F (4 deg C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F (10 deg C) and not more than 80 deg F (27 deg C) at point of placement.
2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on a subgrade containing frozen materials.
3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise accepted in mix designs.

I. Hot-Weather Placement: Place concrete complying with ACI 305R and as specified when hot weather conditions exist.

1. Cool ingredients before mixing to maintain concrete temperature at time of placement to below 90 deg F (32 deg C). Mixing water may be chilled or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Fog spray forms, reinforcing steel, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

3.6 CONCRETE FINISHING:

- A. General: Wetting of concrete surfaces during screeding, initial floating or finishing operations is prohibited.
- B. Float Finish: Begin floating when bleed water sheen has disappeared and the concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats, or by hand-floating if area is small or inaccessible to power units. Finish surfaces to true planes within a tolerance of 1/4 inch in 10 feet as determined by a 10-foot-long straightedge placed anywhere on the surface in any direction. Cut down high spots and fill low spots. Refloat surface immediately to a uniform granular texture.
- C. Seed special aggregate mix per Part 3.7 Special Finishes within this Section.
- D. Final Tooling: Tool edges of paving, gutters, curbs, and joints formed in fresh concrete with a jointing tool to the following radius. Repeat tooling of edges and joints after applying surface finishes. Eliminate tool marks on concrete surfaces.
 1. Radius: 1/4 inch.

3.7 SPECIAL FINISHES:

- A. Seeded Exposed Aggregate Finish: Immediately after floating, broadcast a single layer of aggregate uniformly onto the pavement surface. Tamp seeded aggregate into plastic concrete, and float to entirely embed aggregate with mortar cover of 1/16 inch (1.6 mm).
 1. Spray apply chemical surface retarder to pavement according to manufacturer's written instructions.

2. Without dislodging aggregate, remove excess mortar by lightly brushing surface with a diamond-laden polishing pads mounted on either hand-held polishers or heavy-duty concrete floor polishing machines.
3. Fine spray surface with water and brush. Repeat water flushing and brushing cycle until cement film is removed from aggregate surfaces to depth required.

3.8 CONCRETE CURING AND PROTECTION:

- A. Concrete Curing: Refer to Division 03, Cast-In-Place Concrete Section, for requirements.
- B. Evaporation Control: In hot, dry, and windy weather, protect concrete from rapid moisture loss before and during finishing operations with an evaporation-control material. Apply according to manufacturer's instructions after screeding and bull floating, but before final floating and finishing.
- C. Start curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting; keep continuously moist for not less than seven (7) days.
- D. Curing Methods: Cure concrete by curing compound, by moist curing, by moisture-retaining cover curing, or by combining these methods, as specified.
 1. Provide moisture curing by the following methods:
 - a. Keep concrete surface continuously wet by covering with water.
 - b. Use continuous water-fog spray.
 - c. Cover concrete surface with specified absorptive cover, thoroughly saturate cover with water, and keep continuously wet. Place absorptive cover to provide coverage of concrete surfaces and edges, with a twelve (12) inch lap over adjacent absorptive covers.
 2. Provide moisture-retaining cover curing as follows:
 - a. Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width with sides and ends lapped at least twelve (12) inches and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
 3. Apply curing compound on exposed exterior slabs, walks, and curbs as follows:
 - a. Apply curing compound to concrete slabs as soon as final finishing operations are complete (within two (2) hours and after surface water sheen has disappeared). Apply uniformly in continuous operation by power spray or roller according to manufacturer's directions. Recoat areas subjected to heavy rainfall within three (3) hours after initial application. Maintain continuity of coating and repair damage during curing period.

- b. Use membrane curing compounds that will not affect surfaces to be covered with finish materials applied directly to concrete.

3.9 PAVEMENT TOLERANCES:

A. Comply with tolerances of ACI 117 and as follows:

- 1. Elevations: 1/4 inch (6 mm).
- 2. Thickness: Plus 3/8 inch (9mm), minus 1/4 inch (6 mm).
- 3. Surface: Gap below 10 foot (3 m) long, unlevelled straightedge not to exceed 1/4 inch (6 mm).
- 4. Lateral Alignment and Spacing of Tie Bars and Dowels: 1 inch (25 mm).
- 5. Vertical Alignment of Tie Bars and Dowels: 1/4 inch (6 mm).
- 6. Joint Spacing: 3 inches (75 mm).
- 7. Contraction Joint Depth: Plus 1/4 inch (6mm), no minus.
- 8. Joint Width: Plus 1/8 inch (3 mm), no minus.

3.10 FIELD QUALITY CONTROL TESTING:

- A. Testing Agency: Contractor is to engage a qualified independent testing and inspection agency to sample materials, perform tests, and submit test reports during concrete placement according to requirements specified in this Article.
- B. Testing Services: Testing shall be performed according to the following requirements:
 - 1. Sampling Fresh Concrete: ASTM C 172, except modified for slump to comply with ASTM C 94.
 - 2. Slump: ASTM C 143; one test at point of placement for each compressive-strength test but no less than one test for each day's pour of each type of concrete. Additional tests will be required when concrete consistency changes.
 - 3. Air Content: ASTM C 231; pressure method; one test for each compressive-strength test but no less than one test for each day's pour of each type of air-entrained concrete.
 - 4. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F (4 deg C) and below and when 80 deg F (27 deg C) and above, and one test for each set of compressive-strength specimens.
 - 5. Compression Test Specimens: ASTM C 31; one set of three standard cylinders for each compressive-strength test, unless directed otherwise. Mold and store cylinders for laboratory-cured test specimens except when field-cured test specimens are required.
 - 6. Compressive-Strength Tests: ASTM C 39; one set for each day's pour of each concrete class exceeding 5 cu. yd. but less than 25 cu. yd., plus one set for each additional 50 cu. yd. Test one specimen at 7 days, test one specimen at 28 days, and retain one specimen in reserve for later testing if required.
 - 7. When frequency of testing will provide fewer than five strength tests for a given class of concrete, conduct testing from at least five randomly selected batches or from each batch if fewer than five are used.

- C. Test results will be reported in writing to Landscape Architect, concrete manufacturer, and Contractor within 24 hours of testing. Reports of compressive strength tests shall contain the Project identification name and number, date of concrete placement, name of concrete testing agency, concrete type and class, location of concrete batch in paving, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7-day and 28-day tests.
- D. Additional Tests: The testing agency will make additional tests of the concrete when test results indicate slump, air entrainment, concrete strengths, or other requirements have not been met, as directed by Landscape Architect. Testing agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42, or by other methods as directed.

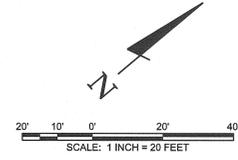
3.11 REPAIRS, CLEANING AND PROTECTION:

- A. Remove and replace pavement which is broken, defective or otherwise damaged. Provide new pavement, install as specified to eliminate evidence of replacement.
- B. Remove all surplus materials, rubbish, cartons, and other debris resultant from work of this Section and haul off site. Repair damage resulting from pavement operations. Leave entire work in broom-clean condition.
- C. Protect concrete from damage. Exclude traffic from pavement for at least 10 days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.
- D. Provide final protection and maintain conditions in a manner acceptable to Installer, which ensures pavement being without stains, discoloration, damage or deterioration during subsequent construction and until Date of Substantial Completion.

END OF SECTION



GRADING AND DRAINAGE PLAN
 CITY OF JOHNSON CITY
 KING CREEK BASIN
 JOHNSON CITY, TENNESSEE

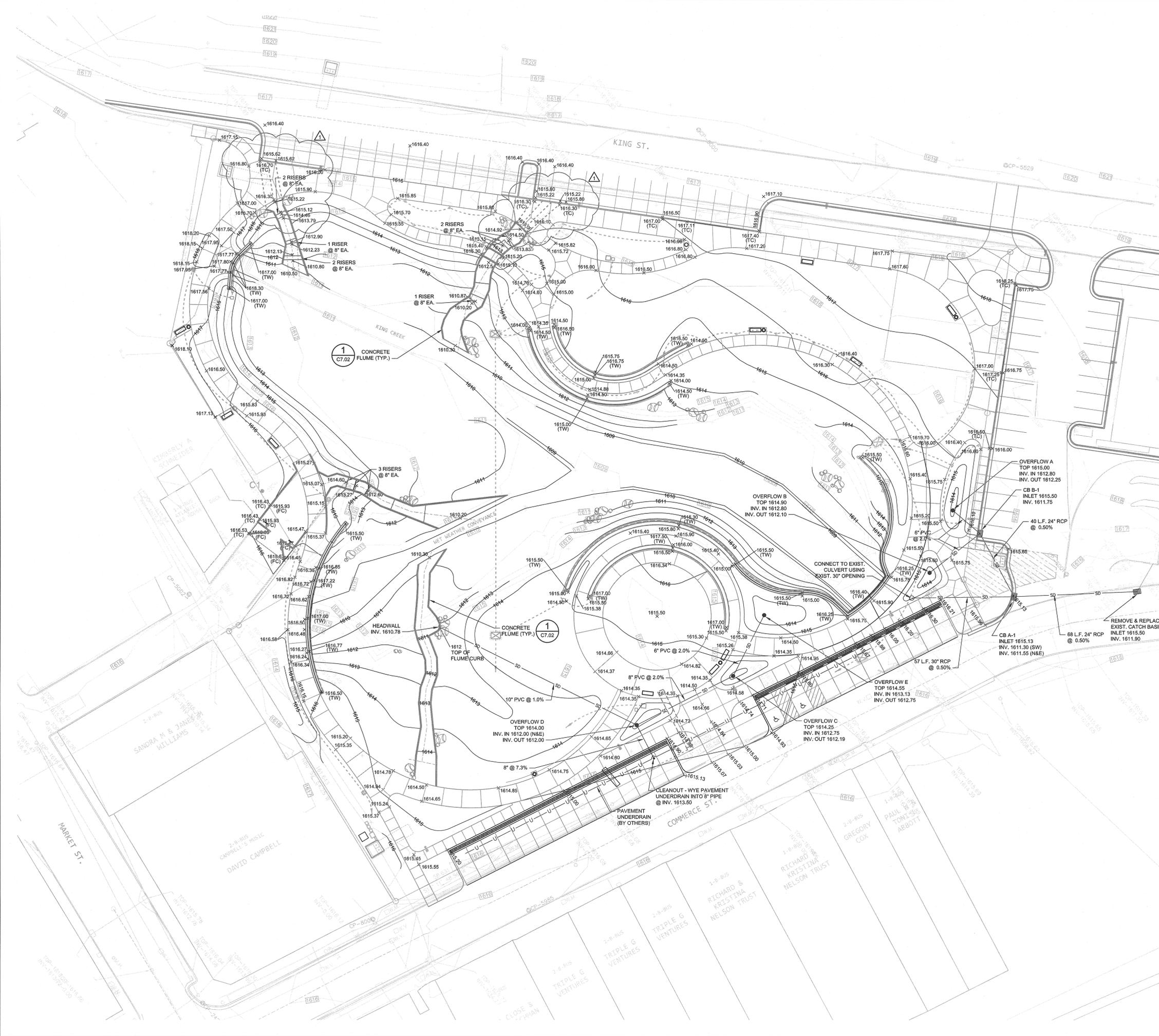


LEGEND:

- PROPOSED R.O.W.
- 881- PROPOSED MINOR CONTOUR
- 880- PROPOSED MAJOR CONTOUR
- X- 8" SECURITY FENCE
- XX-X- SECURITY FENCE
- x 1615.50 PROPOSED SPOT ELEVATION

GRADING & DRAINAGE NOTES:

1. TOP OF WALL (TW) ELEVATIONS ARE TO TOP OF WALL CAP.



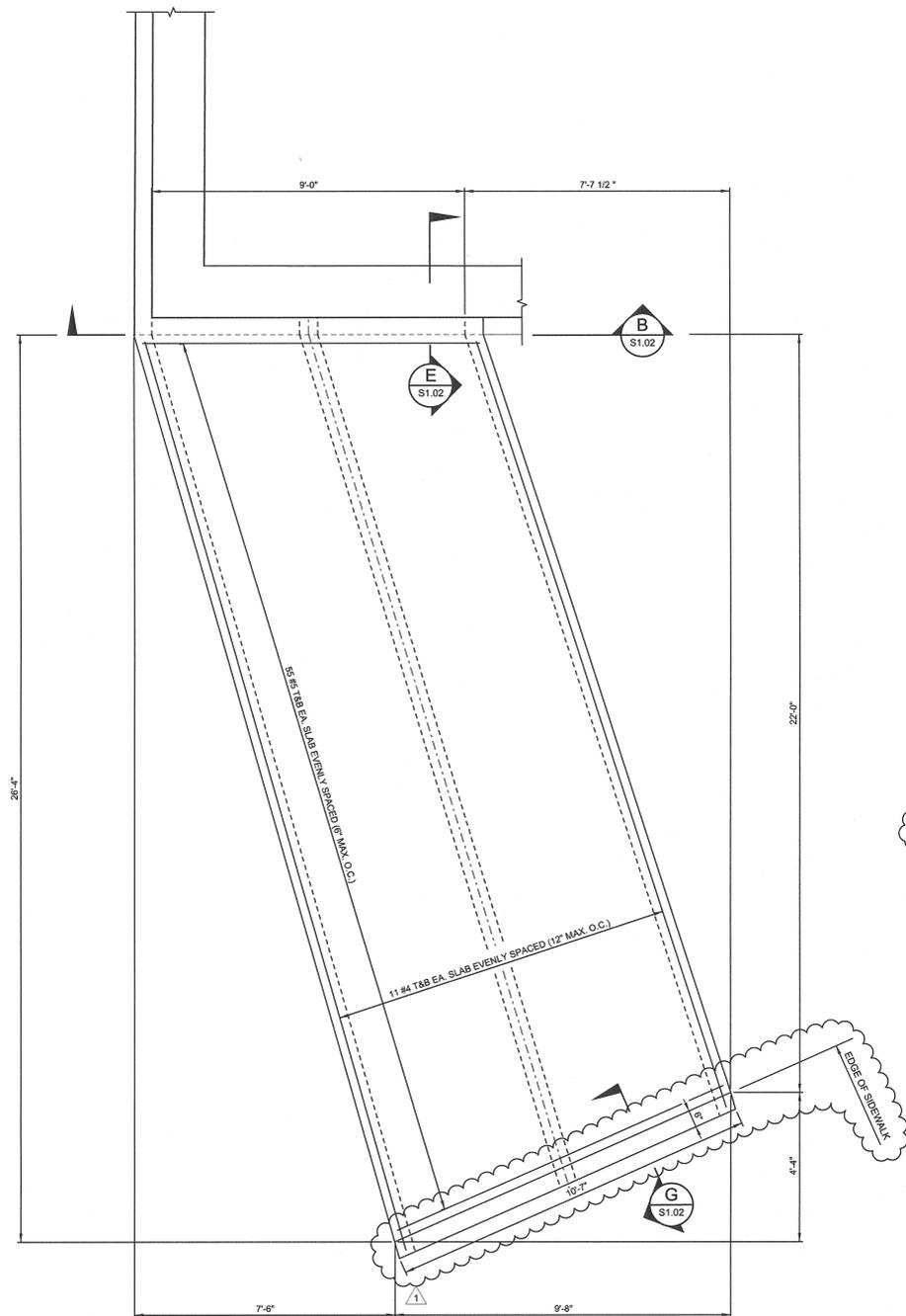
811 Know what's below
 Call before you dig.
 811
 www.call811.com

REV.	DATE	DESCRIPTION
0	10-20-18	ISSUED FOR CONSTRUCTION
1	10-20-18	ISSUED FOR CONSTRUCTION

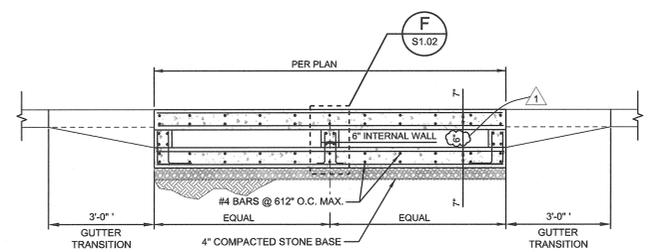
C2.01
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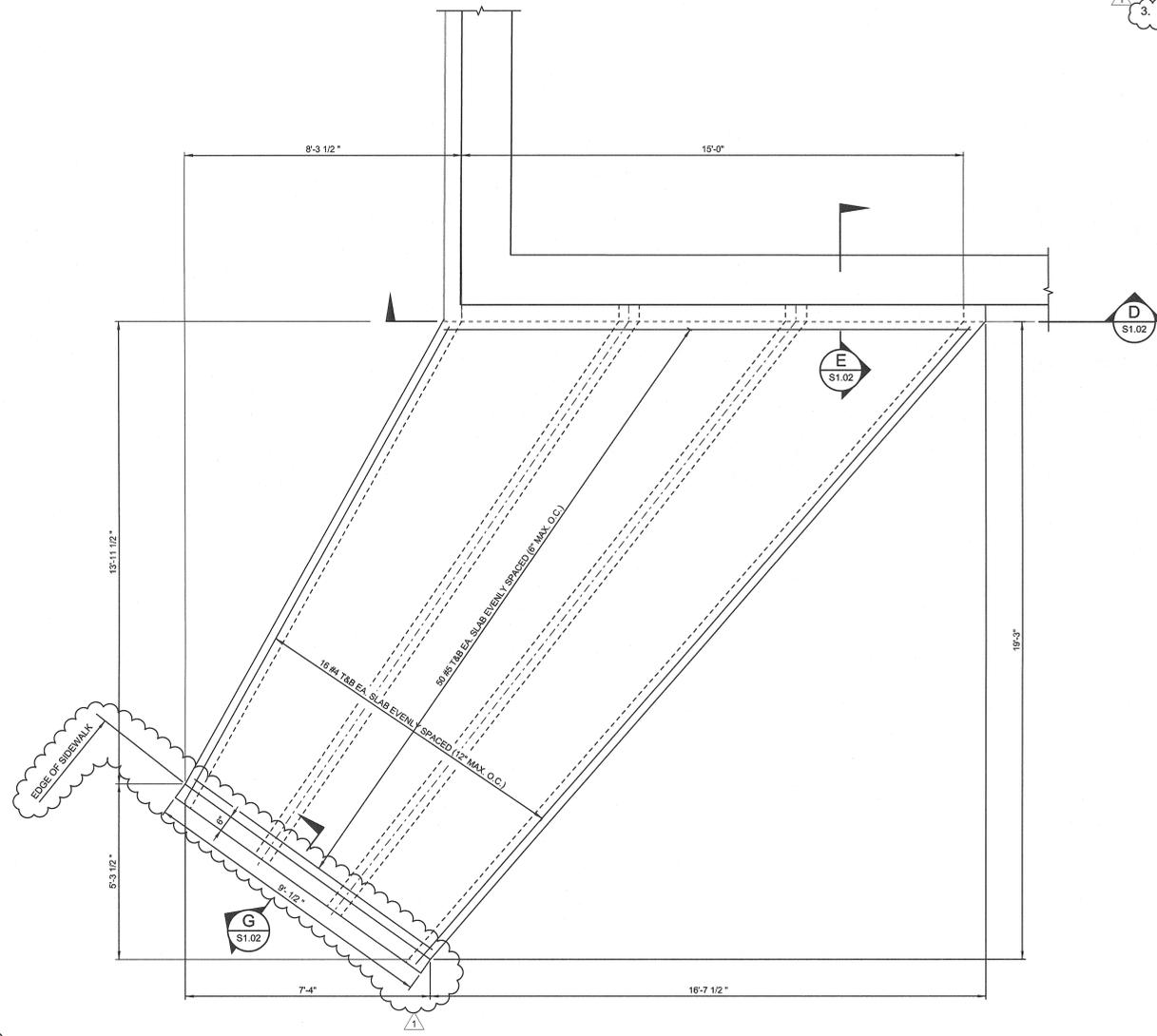
- NOTES:
- SEE S1.01 FOR GENERAL NOTES.
 - SEE C1.02 FOR LOCATIONS OF CLOSED FLUMES.
 - SEE C3.03 FOR SPOT ELEVATIONS.



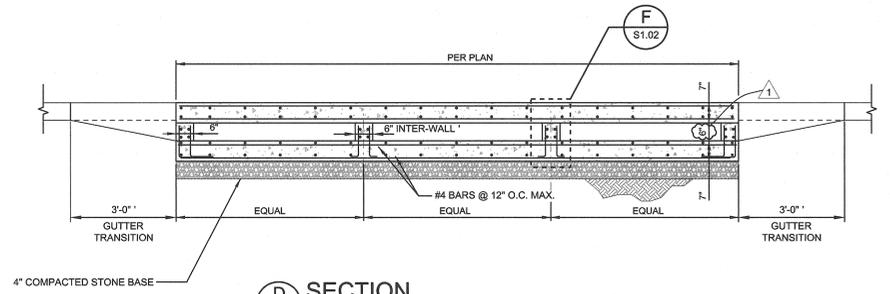
A DOUBLE BARREL FLUME CROSSING UNDER SIDEWALK
 S1.02 SCALE: 1/2" = 1'-0"



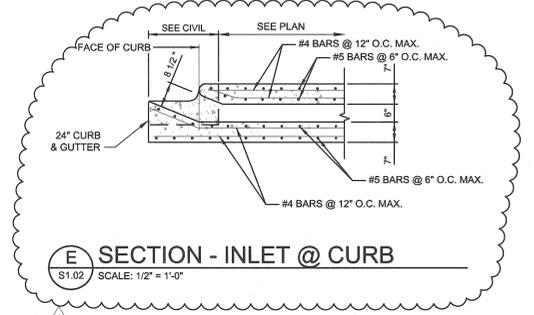
B SECTION
 S1.02 SCALE: 1/2" = 1'-0"



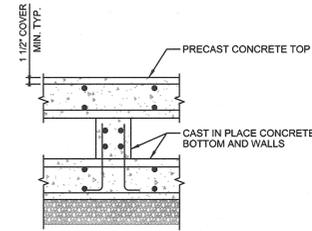
C TRIPLE BARREL FLUME CROSSING UNDER SIDEWALK
 S1.02 SCALE: 1/2" = 1'-0"



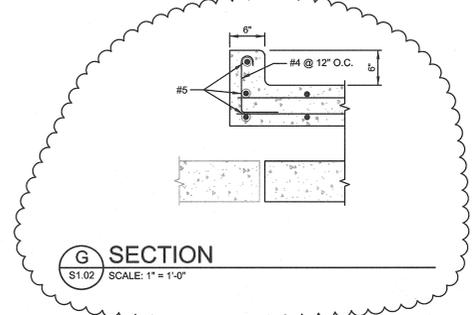
D SECTION
 S1.02 SCALE: 1/2" = 1'-0"



E SECTION - INLET @ CURB
 S1.02 SCALE: 1/2" = 1'-0"

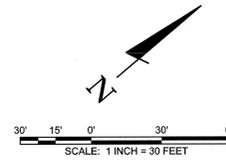


F DETAIL
 S1.02 SCALE: 1" = 1'-0"



G SECTION
 S1.02 SCALE: 1" = 1'-0"

REV.	DATE	DESCRIPTION
1	03/07/2018	ISSUED FOR CONSTRUCTION
2	03/07/2018	ADDRESS CHANGE

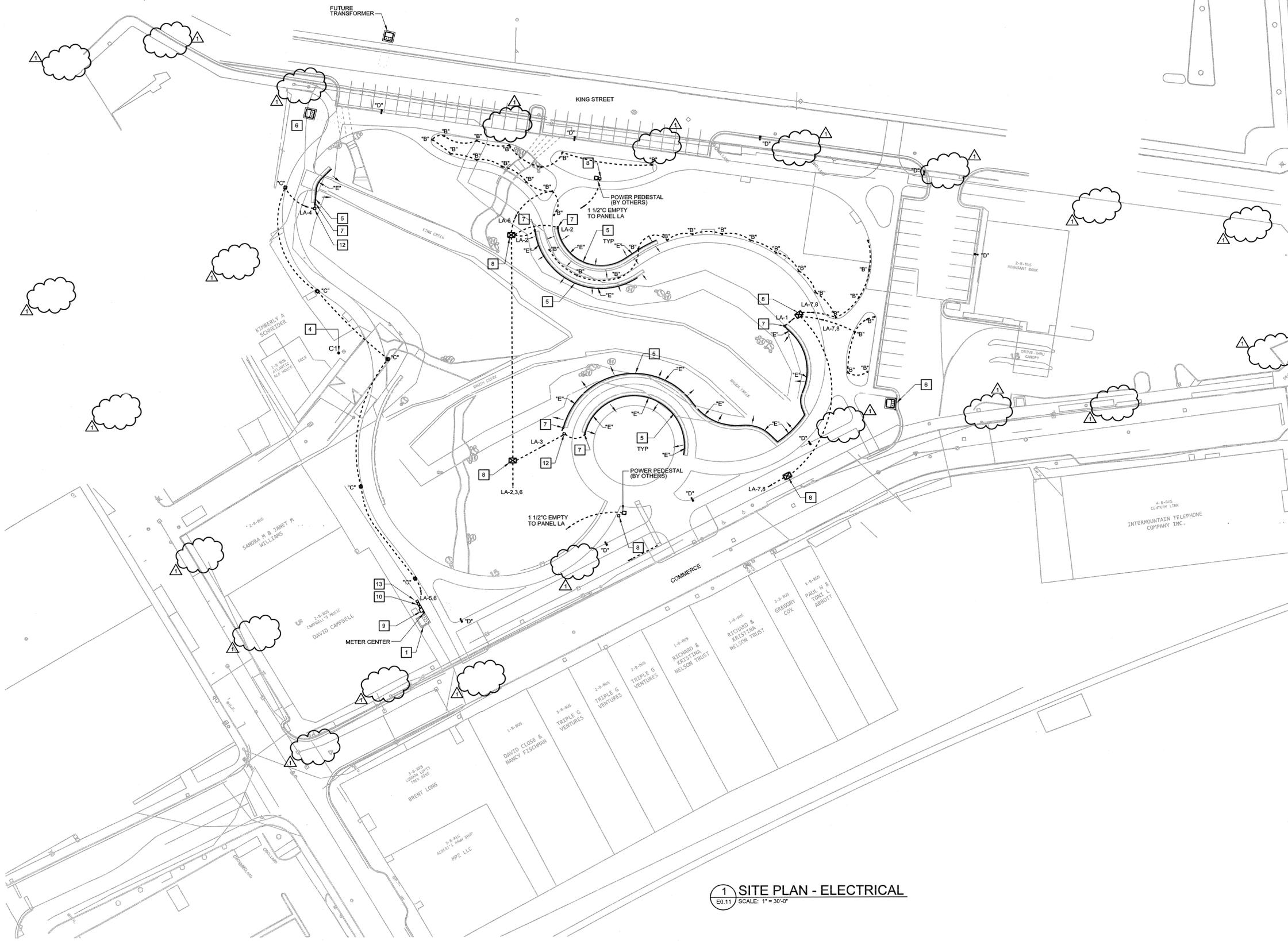


KEYED NOTES:

- 1 EXISTING 3-PHASE TRANSFORMER TO REMAIN.
- 2 HOLOPHANE WASHINGTON POSTLITE LED FURNISHED BY JOHNSON CITY. LOCATIONS FOR REFERENCE ONLY.
- 3 HOLOPHANE GRANVILLE II LED POST TOP FIXTURE ON 12 FOOT POLE.
- 4 EXISTING HOLOPHANE WASHINGTON POSTLITE LED FIXTURE TO REMAIN.
- 5 LED LIGHTING BENEATH CAP STONE OF SEATING WALL. FIXTURES ARE CONTINUOUS AND ARE TO BE DIRECTED AS SHOWN BY ARROWS.
- 6 PAD MOUNTED TRANSFORMER BY JOHNSON CITY POWER BOARD.
- 7 Q-VAULT 5 WITH LED POWER SUPPLY BY SEAT LIGHTING VENDOR. TYPICAL DIMENSIONS 9.5'x16.5'x12" DEEP.
- 8 POWER OR LIGHTING PULLBOX, QUAZITE BOX. TYPICAL DIMENSIONS 20"x13"x18" DEEP.
- 9 POWER, LIGHTING AND IRRIGATION SYSTEM PULLBOXES, QUAZITE BOXES. NOMINAL SIZE OF BOX 17"Wx30" LONGx26" DEEP.
- 10 SEE 2/E0.01 RISER DIAGRAM FOR EQUIPMENT SPACING.
- 11 NOT USED
- 12 Q-VAULT 5 LED LIGHTING PULLBOX, QUAZITE BOX TYPICAL DIMENSIONS 12'X12'X12"
- 13 STUB (6) 1" CONDUITS FROM IRRIGATION CONTROL PANEL 1 TO 17'X30" LONG X 26" DEEP QUAZITE BOX FOR IRRIGATION WIRING. COORDINATE WITH IRRIGATION DRAWINGS.

GENERAL NOTES:

1. STREET LIGHTS DESIGNATED BY G# AND D# FURNISHED AND INSTALLED BY JOHNSON CITY POWER BOARD. POLES, FIXTURES, POLE BASES, POWER AND POWER WIRING, CONTROLS AND CONTROL WIRING BY JOHNSON CITY POWER BOARD.
2. LIGHTS DESIGNATED BY G# AND D# ALONG KING STREET AND COMMERCE STREET AND ASSOCIATED AREAS ARE FOR REFERENCE ONLY. LIGHTING DESIGN BY OTHERS.
3. ALL SINGLE CKT. LIGHTING CONDUITS 1" UNLESS OTHERWISE NOTED. MULTIPLE CK. SHALL BE 2" UNLESS OTHERWISE NOTED.
4. CKT. LESS THAN 300 L.F. SHALL BE 2#8, 1#8 G
 CKT. 300' TO 500' SHALL BE 2#6, 1#8 G
 CKT. OVER 500' SHALL BE 2#4, 1#8 G
5. TYPE D' LIGHT FIXTURES ARE FURNISHED AND INSTALLED BY OTHERS.
6. FURNISHING AND INSTALLING TYPE B, C AND E' LIGHT FIXTURES ARE INCLUDED IN THE CONTRACTOR'S WORK FOR THIS PROJECT



1 SITE PLAN - ELECTRICAL
 E0.11 SCALE: 1" = 30'-0"



REV.	DATE	DESCRIPTION
0	10/03/2016	ADDITIONAL NOTES FOR CONSTRUCTION
1	10/02/2016	ADDITIONAL NOTES FOR CONSTRUCTION

E0.11

FILE NO. 36057-01

10/02/2016
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