

Solicitation Specifications

The School District of Greenville County

Invitation for Bid (IFB) No.

Elementary School ADA Playground Access

1. **PURPOSE:**

The intent and purpose of this Invitation for Bids is to establish a contract to provide ADA compliant concrete sidewalks to playgrounds and ADA accessibility to playground equipment at Greenville County Elementary Schools. Requirements will be different at each location.

2. **SCOPE OF SERVICE**

A. **WORK INCLUDED:** The contractor shall provide all labor, materials, tools, equipment, supervision, and service required for the complete and satisfactory performance of requested work and services as specified. This work shall include, but not be limited to, removal of non-ADA compliant sidewalks, grading, construction of new ADA compliant sidewalks, ramps, handrails, installation of new playground equipment, and ADA compliant accessible paths around playground equipment, at Elementary Schools on Greenville County Schools owned property. Work to be performed as a complete turn-key and unit price basis as indicated.

B. **QUALITY OF WORKMANSHIP:** All work shall be quality work performed according to the standards of the industry, and to the complete satisfaction of Greenville County Schools. All work performed shall comply with all State and Federal regulations with regards to human safety. Contractor shall strictly adhere to all applicable statutes, laws, regulations, ordinances and guidelines, including, without limitation, those promulgated by ADA, EPA, OSHA, CPSC, State of South Carolina, Greenville County, and City of Greenville authorities. If requested work could violate any of these, submit to the district representative. A written ruling/response will be obtained that the contractor shall follow.

C. **PERSONNEL QUALIFICATIONS:** Personnel used for the performance of this work shall be properly trained and qualified for work of this type. The contractor is required to train their staff in all construction procedures and ADA compliance, prior to starting any work on the school jobsite. Greenville County Schools reserves the right to refuse to accept services from any personnel deemed by GCS to be unqualified, disorderly, or otherwise unable to perform assigned work. Contractor is solely responsible for performance and discipline of its employees.

D. **COMMUNICATION:** Provide management level contact for district representatives to discuss concerns regarding services or performances.

- 1) Each crew or team shall have a foreman or lead. This person must be able to communicate with the school office staff, the school athletic director, and the district's representative, verbally and in writing, in English.
- 2) Contractor is solely responsible for performance and discipline of its employees.
- 3) The Contractor shall inform the school's front office staff of its presence and purpose for any and all visits. Before beginning work at any District site, the Contractor is required to enter the school building by way of the Main/Front Office and shall record the names of the service operators/technicians on the visitor sign-in log. Sign-in and Sign-out shall be done at each school upon entering and leaving District property.

- 4) When requested, the contractor shall cooperate with any ongoing investigation involving economic loss or damage to any district or school personnel property.
 - 5) Notify the district representative of any unsafe condition seen and noted, that is outside of the scope of this specification.
 - 6) No later than five (5) working days prior to work being performed on site, the Contractor will contact the District Representative and provide notice of services. This notification will include the scheduled services, number of employees, starting time, and estimated time on site.
 - 7) The contractor will schedule all work so that noise and equipment operations do not affect teaching of classes, use of outside play or athletic areas, and parking lots.
 - 8) All requested site meetings during the contract period, will be at no cost to GCS.
- E. **SAFETY:** It is the Contractor's responsibility to ensure that all employees and suppliers are trained in proper safety procedures for the type of work to be performed.
- 1) Contractor will direct his employees, and suppliers to notify the owner immediately if they observe any unsafe work practices or conditions.
 - 2) Contractor shall provide his employees with state-of-the-art safety equipment necessary to the work in a safe manner.
 - 3) Ensure that any records, personal equipment, or tools used in the performance of the work are not accessible to any person not associated with this contract.
 - 4) Contractor shall strictly adhere to all applicable statues, laws, regulations, ordinances and guidelines, including, without limitation, those promulgated by ADA, EPA, OSHA, State of South Carolina, Greenville County, and City of Greenville authorities. The Contractor will be responsible for providing all notification signage with required information.
 - 5) The Contractor shall take all precautions for safety of, and shall provide all protection to prevent damage, injury or loss to:
 - a. Persons and Students
 - b. Employees
 - c. Other property at the site or adjacent thereto, such as windows, structures, paved areas, fencing, utilities and vehicles.
 - 6) The Contractor shall give notices and comply with applicable laws, ordinances, rules, regulations and lawful orders of public authorities bearing on safety of persons or property for their protection from damage, injury or loss.
 - 7) Contractor is responsible for providing proper signage, barricades, and other necessary devices to keep the site safe and protect the work being performed.
 - 8) The Contractor shall promptly remedy damage and loss to property caused in whole or in part by the Contractor. This includes performing work with equipment when the ground is wet and causing ruts/unevenness to areas surrounding the schools or playgrounds.
 - 9) The District is not responsible if the Contractor leaves his vehicle or equipment on District property. The District is not responsible for any damages to the Contractor's vehicle or equipment.
 - 10) Leave all work areas in a clean and safe condition. Remove debris from District site on a daily basis and dispose at any approved disposal site.
 - 11) Prior to the commencement of any work or during the work, GCS retains the right to inspect materials, plans, and work methods to ensure proper application.
 - 12) Contractor shall submit to the District Representative and school administrator for each school location, **SDS** forms for all material used.
- F. **PROJECT COMPLETION / WARRANTY:** At the completion of a project, the contractor shall contact the District Representative by phone or by email to inform him of project completion. A follow up meeting may take place on site. Contactor shall warranty products and workmanship for a period of two years minimum. Manufacture shall guarantee the material for two years from date of finished application against chalking, checking, cracking, fading, discoloration, or other adverse effects from ultra-violet rays, from weather moisture, or from weather temperatures.
- G. **INSURANCE:** Insurance required shall be written for not less than any limits of liability specified in the Contract documents (listed below) or required by laws of South Carolina, whichever is greater.

- 1) Workman’s Compensation Insurance – Statutory, required of all contractors regardless of number of employees.
- 2) Comprehensive General Liability shall include: Contractor’s liability, Owner’s and Contractor’s liability, and Contractual Liability, all having limits of not less than:
 - Bodily Injury \$ 500,000 --- per occurrence
\$1,000,000 --- aggregate
 - Property Damage \$ 500,000 --- per occurrence
\$ 500,000 --- aggregate
- 3) Comprehensive Automobile Liability shall include coverage for all owned, non-owned, and hired automotive equipment, all having limits of not less than:
 - Bodily Injury \$ 500,000 --- per person
\$1,000,000 --- per occurrence
 - Property Damage \$ 200,000 --- per occurrence
- 4) Comprehensive Excess (“umbrella”) coverage shall be provided in an amount of not less than \$1,000,000.

Important Note: Please include a copy of the bidder’s certificate of liability insurance and Workman’s Compensation in the sealed bid package.

- H. **INVOICING:** The Contractor shall provide the District with invoices within thirty (30) calendar days of work completion. Contractor shall note the District project location and service provided on each invoice. Contractor shall send all invoices in duplicate to the following address:

The School District of Greenville County
 Coordinator of Athletic Fields & Grounds
 Attn: Tom Vaughan
 2 Space Drive
 Taylors, South Carolina 29687

Or email invoice to the district representative thvaughan@greenville.k12.sc.us

Invoices must be issued by the awarded bidder(s). The district representative will not be responsible for payment of invoices not billed after sixty (60) days of agreed invoice date. Any costs associated with a service older than sixty (60) days are not the responsibility of the location or the District.

Important Note: Invoices shall detail each charge by line item clearly displaying the basis for all charges.

The District does not pay from invoices with incomplete information or from statements.

The District shall not honor any charges for **minimum billings, mobilization charges, or travel/mileage charges**. Any bid or solicitation response which requires a minimum billing per trip, or a minimum billing per school, or a minimum billing per repair will not be considered.

Payment

The District’s customary terms for payment of a problem-free invoice are net thirty (30) calendar days.

3. **ELEMENTARY SCHOOL LOCATIONS TO BE SERVICED**

A site visit is recommended for verifying current conditions, length of sidewalks to be constructed, slopes and grades, and playground areas.

- **Augusta Circle Elementary** – 100 Winyah Street, Greenville 29605
- **Brook Glenn Elementary** – 2003 East Lee Road, Taylors 29687
- **Brushy Creek Elementary** – 1344 Brushy Creek Road, Taylors 29687
- **Fountain Inn Elementary** – 608 Fairview Street, Fountain Inn 29644
- **Gateway Elementary** – 200 Hawkins Road, Travelers Rest 29690
- **Lake Forest Elementary** – 16 Berkshire Avenue, Greenville 29615
- **Robert Cashion Elementary** - 1500 Fork Shoals Road, Greenville 29605
- **Sarah Collins Elementary** – 1200 Parkins Mill Road, Greenville 29607
- **Sterling School/Charles Townes Center** – 99 John McCarroll Way, Greenville 2960
- **Welcome Elementary** – 36 East Welcome Road, Greenville 29611
- **Westcliffe Elementary** – 105 Eastbourne Road, Greenville 29611

4. **GENERAL PLAYGROUND ACCESSIBILITY SPECIFICATIONS**

A. Summary

- 1) Listed Greenville County Schools, Elementary playgrounds, will have ADA compliant sidewalks and ramps (where applicable) from the school building to the designated outdoor play equipment areas. Each designated play area will have ADA compliant surfacing installed around the use zones of play equipment, to ground accessible play structures, the designated ADA transfer platforms, and to the exit areas of equipment, such as but not limited to the exit of slides. Surfacing is to also be placed under each swing. Additional ADA play equipment of designated type will be added to certain locations as listed in this solicitation.
- 2) Designated play areas are defined as play equipment that is surrounded by fall surface containment borders.
- 3) All playground equipment and product installation will adhere to ADA and Consumer Products Safety Commission laws, standards, and guidelines, for playgrounds.
- 4) Material used meets or exceeds all applicable ASTM standards for material quality and critical fall height rating.
- 5) All additional play equipment to be installed will be IPEMA certified and installed by a certified playground installer.
- 6) Playground borders will be a minimum of 9” in height.
- 7) Any playground area borders that are not standard/recommended black plastic 4” wide x minimum 9” tall, shall be replaced with new.
- 8) Every designated stand-alone play area, will have a composite/plastic wheelchair accessible ramp. One is to be installed if not currently in place, or does not meet installed concrete sidewalk. ADA compliant surface mats may be used where playground is bordered by building concrete.
- 9) ADA compliant surface paths in play areas are to be Grassmats® or approved equal.
- 10) All equipment, ramps, and accessible path material is to be installed according to manufactures instructions.
- 11) Add additional engineered wood fiber fall surfacing throughout use zones of play equipment where necessary to meet critical fall heights. Contractor is responsible for playground to be usable in accordance to safety guidelines referenced in this solicitation when project is completed.
- 12) If any fencing is to be removed due to work, Contractor is responsible for removal and reinstallation to previous conditions. Contractor is responsible at own expense to replace any damaged or stolen fence.
- 13) Concrete sidewalks are to be a minimum of five (5’) feet wide.

- 14) Sidewalks and ramps are to meet ADA compliance for accessibility.
- 15) Sidewalk and ramps are to be constructed per the specifications and drawings included in this bid.
- 16) A site visit is also recommended to locate water availability. Not all sites have a water source available in close proximity to the installation of sidewalks, ramps, or equipment. Contractor is responsible for providing own water for any processes needed to complete the work contained within this bid. This may include but not limited to: cleaning/surface prep, mixing materials, or cleaning/preparing of equipment and tools.
- 17) There will be unit pricing for additional ADA compliant play area path surfacing (Grassmats®).
- 18) There will be unit pricing for ADA compliant ground level play components.
- 19) There will be unit pricing for ADA compliant play structures.
- 20) There will be unit pricing for ADA compliant wheelchair platform swing and ADA swing seat.
- 21) All materials to be used will be used in accordance with manufactures recommendations including weather conditions.
- 22) All work to be completed by August 13th.

B. Submittals

- 1) Submit manufacture's product data for each intended product to be used in accordance with enclosed bid. This is to include all preparation, application, and installation instructions along with the type of material the product consists of.
- 2) Fall height rating
- 3) All product literature for playground equipment to install.
- 4) Any layouts, site designs, of playground equipment structures to include use zones.
- 5) Manufacture's certification that materials to be used meet the specified requirements and are suitable for intended application.
- 6) Project references where the submitted products have been used during a five-year period.
- 7) Manufacturer's warranty documentation for each product.
- 8) Verification that each product meets or exceeds ASTM standards pertaining to all ADA and Consumer Products Safety Commission laws, standards, and guidelines, for playgrounds. (critical fall height rating, etc.)
- 9) Provide a timeline of events beginning from the receipt of a purchase order through final project completion on August 13th.
- 10) See Contractor Qualifications
- 11) Others as contained in bid specifications.

C. Contractor Qualifications

- 1) The contractor shall have and submit a listing of related playground construction, repair, and concrete installation, work covering a minimum of five (5) years.
- 2) Contractor shall be approved by the manufacturer of the materials to be used.
- 3) Submit any playground industry professional memberships or certifications currently held.
- 4) Hold current National Playground Safety Institute (NPSI) Certified Playground Safety Inspector certification.
- 5) List any subcontractors and their qualifications that are to be used. Subcontractors are under the liability and responsibilities contained within this bid, under the awarded contractor.

D. Delivery, Handling, and Storage of Materials to be Used

- 1) Contractor is responsible for all logistics to receive and store materials at every location that work is to be performed.
- 2) Contractor is responsible for any damaged materials and is required to remedy all issues to ensure that material to be used is in accordance with manufacture's recommendations if compromised in any way.
- 3) Store and handle materials in accordance with manufacturer's instructions.
- 4) Keep materials in manufacture's original, unopened containers and packaging until application.

- 5) If any materials to be used are considered HAZARDOUS, the contractor is responsible for proper handling and disposal according to applicable regulations. The contractor is to notify the district representative if any material deemed as such is identified.
- 6) Contractor is responsible for any trash receptacles/dumpsters needed for disposal of any refuse or job created waste, along with removal from site after work has been performed, at own expense.

E. Weather Conditions

- 1) Do not apply materials when surface and ambient temperatures are outside the temperature ranges specified by the product manufacture.
- 2) Do not leave newly poured concrete uncovered if rain is forecasted within 10 hours of application.
- 3) Contractor is responsible for any damage that may occur due to weather conditions, and is responsible to remedy and repair any issues or problems to make the repair work whole, according to manufactures recommendations and industry standards.

SECTION A - CONCRETE SIDEWALK AND RAMP SPECIFICATIONS

A. General Summary Sidewalks and Ramps

- 1) Sidewalks are to be constructed according to specifications, included drawings and details.
- 2) Location for new sidewalks and ramps are shown on included site maps of each location.
- 3) All sidewalks are to be a minimum of five (5') feet wide.
- 4) All sidewalks are to meet ADA accessibility requirements for cross slope and running slope.
- 5) Sidewalks, Ramps, and Handrails, are to comply with DOJ ADA Ch.4 & 5 Standards
- 6) To meet grades per construction drawings, soil may need to be excavated or added.
- 7) Proper base material is to be added and compacted to 95%.
- 8) Finished sidewalk surface shall be even/flush with all joints, surrounding surfaces and structures.
- 9) Sidewalk is to be constructed so that it is minimum four (4") inches thick or as shown in attached construction drawings.
- 10) Any slopes or grades requiring erosion control will be seeded with Bermuda grass and have properly staked biodegradable erosion control blanket put in place.
- 11) Sidewalk will have proper measures constructed so as not to negatively affect surface water drainage. Sidewalk will not become a dam.
- 12) All material is to be removed from site. No concrete, base material, spoils, soil, demolished concrete, wire, or trash is to remain on site at project completion.
- 13) If any current sidewalk, manhole, curb, sewer clean-out, utility, irrigation, gate, fencing, or handrail, is to be removed or is damaged, then these are to be repaired or replaced to match current conditions at the expense of the contractor.
- 14) Any damages to existing structures or pavement during this project, is the sole responsibility of the contractor to fix or replace, before project is considered complete. Payment will be for completed project.
- 15) Stamped drawings for verification of ADA compliant sidewalk slopes equal to or less than 4.9% running slope, is required. Contractor is responsible for all costs and work required to meet this specification. Verification drawings are required until all slopes tolerances are met.

B. Earth Moving/Grading

1) This section covers all work associated with excavating, subgrade preparation, filling, backfilling, compaction and disposition of surplus soil materials.

2) DEFINITIONS

Subgrade: Existing, in-situ soil or other material that is remaining after stripping or excavation. The subgrade is always existing material on which fill, or new structures are to be placed.

Excavation: The removal of soil or material to obtain a specified depth or elevation.

Borrow: Material that must be transported to the site. A material that must be developed by others and transported to the site. Not available on site.

Fill: Soil or material placed above the subgrade to the point of new construction such as a sub-base, base course, pavement, foundation, footing, or building component.

Backfill: Fill material used in refilling a cut, trench or other excavation.

Lift: A layer or course of material placed on top of a previously prepared or placed material.

Partially Weathered Rock (PWR): Existing, in situ soil material consisting of very dense silty sand, poorly graded sand with silt and poorly graded sand with gravel with N-values of at least 50 blows per 6-inches. PWR can be excavated with a single tooth ripper drawn by a crawler tractor having a minimum fly wheel power rated not less than 305 horsepower (Caterpillar D-8N or equivalent).

Rock: Solid, homogeneous interlocking crystalline material with firmly cemented, laminated or foliated masses or conglomerate deposits, neither of which can be removed without systematic drilling and blasting, drilling and the use of expansion jacks or feather wedges, or the use of backhoe mounted pneumatic hole punchers or rock breakers; also, large boulders, buried masonry, or concrete other than pavement, exceeding 25 cubic yards in volume. Removal of hard material will not be considered rock excavation because of intermittent drilling and blasting that is performed merely to increase production.

Topsoil: In natural or undisturbed soil formations, the fine grained, weathered material on the surface or directly below any loose or partially decomposed organic matter. Topsoil may be dark-colored, fine, silty or sandy material with a high content of well decomposed organic matter, often containing traces of the parent rock material. The material shall be representative of productive soils in the vicinity.

Unsuitable Material: Existing, in situ soil or other material which can be identified as having insufficient strength characteristics or stability to carry intended loads in fill or embankment without excessive consolidation or loss of stability. Materials classified as PT, OH, or OL by ASTM D 2487 are unsuitable. Unsuitable materials also include man-made fills, refuse, frozen material, uncompacted backfills from previous construction, unsound rock or soil lenses, or other deleterious or objectionable material.

Granular Material: Soils classified as GW, GP, SW or SP by ASTM D 2487. Materials classified as GM and SM will be identified as granular only when fines have a plasticity index of zero.

Compaction: The process of mechanically stabilizing a material by increasing its density at a controlled moisture condition. "Degree of Compaction" is expressed as a percentage of the maximum density obtained by the test procedure described in ASTM D 1557 for general

soil types or ASTM D 4253 or ASTM D 4254 for isolated cohesionless materials, abbreviated in this specification as “___ percent maximum density.”

3) SUBMITTALS

Certifications

1. Material Certifications: Provide manufacturer or supplier certification of compliance indicating conformance to this specification or the referenced standard(s) for the following:

- a. Topsoil
- b. Gravel
- c. Sand

DELIVERY, STORAGE AND HANDLING

Deliver and store materials in a manner to prevent contamination or segregation. Do not stockpile materials in a manner or location that will cause excessive wetting or transporting of materials off-site or into storm drainage collection systems.

REGULATORY REQUIREMENTS

Materials and workmanship specified herein with reference to SC DOT State Standards shall be in accordance with the referenced article or section of the standard except that contractual and payment provisions do not apply. Where the term “State” is used, it shall mean “Owner.”

Comply with federal, state, and local regulations.

CRITERIA FOR BIDDING

The items listed in the proposal shall be considered as sufficient to complete the work in accordance with the plans and specifications. Any portion of the work not specifically listed in the bid form shall be deemed a part of the item with which it is associated and shall be included in the lump sum price. The price shall be full compensation for the removing and replacing of topsoil and all excavating, filling, transporting of material, compaction, shaping, finishing, dressing, disposal of surplus material, testing, staking, construction supervision and all other work required for satisfactory completion of the grading operation. Also included in this price shall be that necessary to complete the grubbing and root raking operation as required by this section and elsewhere. Base bids on the following criteria:

1. Surface elevations as indicated.
2. The utility locations shall be field verified prior to beginning any work.
3. Borrow material in the quantities required are not available on site and must be developed and obtained by the Contractor.

QUALITY ASSURANCE

Materials: The Contractor will furnish the Engineer and Owner a description of all materials before ordering. The Engineer will review the Contractor’s submittals and provide in writing an acceptance or rejection of material.

Manufacturer: Material and equipment shall be the standard products of a manufacturer who has manufactured them for a minimum of 2 years and who provides published data on the quality and performance of the projects.

Subcontractor: A subcontractor for any part of the work must have experience on similar work. At the option of the Engineer, a list of projects and the Owners or Engineers who are familiar with his competence may be required to be submitted to verify experience.

Design: Devices, equipment, structures, and systems not designed by the Engineer that the Contractor wishes to furnish shall be designed by either a registered professional engineer or by someone the Engineer accepts as qualified. Complete design calculations and assumptions shall be furnished to the Engineer or Owner before acceptance.

Testing Agencies: Mill certificates of tests on materials made by the manufacturers will be accepted provided the manufacturer maintains an adequate testing laboratory, makes regularly scheduled tests that are spot checked by an outside laboratory, and furnishes satisfactory certificates with the name of the one making the test. Agencies to be used shall be submitted to the Engineer for review prior to engagement.

PRODUCTS

SOIL MATERIALS

Provide materials free from debris, roots, wood, scrap materials, vegetable matter, refuse or frozen material. Maximum particle size permitted is 3 inches. Use excavated material from the site for the work indicated when material falls within the requirements specified herein. When materials available on site do not meet the quantity required nor the requirements specified herein, the Contractor shall obtain borrow materials from off-site.

1. Common Fill: Provide a soil material from the site or borrow that can be readily compacted to the specified densities. Materials shall be unclassified. Soft, spongy, highly plastic, or otherwise unsuitable material is prohibited. Material shall be unclassified but shall contain sufficient fines to ensure proper compaction.
2. Controlled Fill: Provide materials classified as GW, GP, GC, SW, SP, SM or SC by ASTM D 2487 where indicated. The liquid limit of such material shall not exceed 35 percent when tested in accordance with ASTM D 4318. The plasticity index shall not be greater than 12 percent when tested in accordance with ASTM D 4318, and not more than 35 percent by weight shall be finer than the No. 200 sieve when tested in accordance with ASTM D 1140
3. Granular Fill: A dense, well graded aggregate mixture of sand, gravel or crushed stone mixed individually, in combination with each other, or with suitable binder soil. Granular fill may also consist of poorly graded sands or gravels.
4. Gravel: Clean, coarsely graded natural gravel, crushed stone or a combination thereof classified as GW or GP in accordance with ASTM D 2487 as indicated. The maximum particle size shall not exceed 3 inches
5. Sand: Clean, coarse-grained sand classified as SW or SP by ASTM D 2487 as indicated.
6. Topsoil: Salvaged topsoil from stockpile created during stripping operations. Add necessary soil modifiers to bring material within the ranges specified in Table 1. Furnish additional topsoil meeting the requirements in Table 1 if stockpiled material is insufficient to complete the work indicated.
7. Soil materials shall be free of subsoil, stumps, roots larger than ¾ inch in diameter (with maximum 3 percent retained on the ¼ inch sieve, brush, weeds, toxic substances, and other material or substance detrimental to plant growth.

TABLE 1

DOA SSIR Soil Survey Investigation Report No. 1, Laboratory Test for	Acceptable Limits
Sand Content	20 - 45 percent by weight

Silty Content	25 - 50 percent by weight
Clay Content	10 - 30 percent by weight
Organic Material (Walkley-Block)	5 percent
Ph	5.0 to 7.6
Soluble Salts	600 ppm maximum
Absorption Rate	0.5 inch per hour minimum

GEOTEXTILE FABRICS

Filter Fabric

8. Provide a pervious sheet of polyester, nylon, glass or polypropylene, ultraviolet resistant filaments woven, spun bonded, fused, or otherwise manufactured into a nonraveling fabric with uniform thickness and strength. Fabric shall have the following manufacturer certified minimum average roll properties as determined by ASTM D4759:

TABLE 2: Minimum Average Roll Properties

	Class A	Class B
Grab Tensile Strength ASTM D 4632 Machine And Transversed Direction	min. 180	80 lbs
Grab Elongation ASTM D 4632 Machine And Transverse Direction	min. 15	15 percent
Puncture Resistance ASTM D 4833	min. 80	25 lbs.
Mullen Burst Strength ASTM D 3786	min. 290	130 psi
Trapezoidal Tear ASTM D 4533	min. 50	25 lbs
Apparent Opening Size:	See Criteria Below	
Soil with 50 percent or less particles by weight passing US No. 200 Sieve, AOS less than 0.6 mm (greater than #30 US Std. Sieve)		
Soil with more than 50 percent particles by weight passing US No. 200 Sieve, AOS less than 0.297 mm (greater than #50 US Std. Sieve)		
Permeability ASTM D 4491	k fabric greater than k Soil	
Ultraviolet Degradation ASTM D 4355	70 percent Strength	Retained at 150 hrs

PART 2 - EXECUTION

STRIPPING

Strip topsoil from the site where excavation or grading is indicated and stockpile separately from other excavated material. Material unsuitable for use as topsoil may be used for common fill provided that those requirements are met. Locate topsoil so that material can be used readily for the finished grading. Protect and store in segregated piles until needed.

2.1 EXCAVATIONS

- A. Classified Excavation: Excavation is classified and includes excavation to required subgrade elevations and design invert levels for trenches and foundations. Excavation will be classified as earth excavation or rock excavation as follows:
 - B.
 - 1. Earth excavation includes excavation of pavements and other obstructions visible on the surface; underground structures, utilities, and other items indicated to be demolished and removed; together with soil and other materials encountered that are not classified as rock or unauthorized excavation. No changes in the Contract Sum or the Contract Time will be authorized for earth excavation.
 - a. Intermittent drilling or ripping to increase production and not necessary to permit excavation of material encountered will be classified as earth excavation.
 - 2. Rock Excavation includes removal and disposal of rock material and obstructions encountered that cannot be removed by heavy-duty rock excavating equipment without systematic drilling or blasting. Rock material includes boulders one cubic yard or more in volume and rock in lenses, beds, ledges, unstratified masses, and conglomerate deposits. Changes in the Contract Time may be authorized for rock excavation.
 - a. Massive Rock Excavation: Any material that cannot be excavated with a single tooth ripper drawn by a crawler tractor having a minimum fly wheel power rated not less than 305 horsepower (Caterpillar D-8N or equivalent) and occupying an original volume of at least one cubic yard.
- C. Disposal of Excavated Material
 - 1. Surplus or other soil material not required or suitable for filling, backfilling, or embankment shall be removed from the property. Comply with all federal, state and local laws regarding the transportation and disposal of such material.
 - 2. Dispose of excavated material in such a manner that it will not obstruct the flow of runoff, streams, endanger a partly finished structure, impair the efficiency or appearance of facilities, or be detrimental to any property or work.

PREPARATION OF SUBGRADE

Subgrade Proof Rolling

- 1. After removal of topsoil or other overburden, proof roll the existing subgrade with six passes of a minimum 15 ton pneumatic-tired roller. Operate the roller in a systematic manner to assure the number of passes over all areas, and at speeds between 2.5 and 3.5 miles per hour.
- 2. When proof rolling under structures, one-half of the passes made with the roller shall be in a direction perpendicular to the other passes.

3. Rutting or pumping shall indicate unsuitable material and that material shall be undercut as directed by the Engineer, to a depth of 24 inches, and replaced with the appropriate fill material. Unsuitable material removal shall be done in accordance with the paragraph titled "Excavations."
4. Perform proof rolling only when weather conditions permit. Do not proof roll wet or saturated subgrades. Materials degraded by proof rolling a wet or saturated subgrade shall be replaced by the Contractor as directed by the Engineer at no cost to the Owner.
5. Proof rolling shall be done in the presence of the Engineer. Notify the Engineer 3 days prior to proof rolling.

Preparation of Subgrade

1. Scarify the underlying subgrade surface to a depth of 6 inches before the fill is started. Step, bench, or break up sloped surfaces steeper than one vertical to 4 horizontal so that the fill material will bond with or be securely keyed to the existing material. Scarify existing surface to a minimum depth of 6 inches if subgrade density is less than the degree of compaction specified and recompact.
2. When the subgrade is part fill and part excavation or natural ground, scarify the excavated or natural ground portion to a depth of 12 inches and compact as specified for the adjacent or overlying fill. Compact with equipment well suited to the soil being compacted. Moisten or aerate material as necessary to provide the moisture content that will readily facilitate obtaining the specified compaction with the equipment used.

Compaction of Subgrade

1. The subgrades shall be compacted to the following maximum densities:

Location	Percent Maximum Density
Under sidewalks and grassed areas	90
Under building slabs, foundations, footings, pavements and base courses (Greater than 12 inches below bottom of structure or pavement)	95
Under building slabs, foundations, footings, pavements and base courses (Less than 12 inches below the bottom of structure or pavement)	98

2. Protect subgrade from excessive wheel loading during construction, including concrete trucks and dump trucks.
3. Remove areas of finished subgrade found to have insufficient compaction density to depth necessary and replace in a manner that will comply with compaction requirements by use of a material equal to or better than best subgrade material on site.
4. Surface of subgrade after compaction shall be hard, uniform, smooth, stable, and true to grade and cross section. Maintain subgrade for area to be paved and building pad subgrade, whether previously graded by others and accepted by Contractor or constructed by Contractor. Make adjustments that may be required in accordance with the Specifications at no additional expense to the Owner.

Tolerances

1. Grade to finished grades indicated within 0.10 foot. Grade area to drain water away from structures. Existing grades which are to remain but are disturbed by the Contractor's operations shall be restored to original condition.
2. Finish surface of subgrade to the elevation and cross section indicated. Finished surface shall be smooth and of uniform texture. Lightly scarify or blade the finished surface to bring the finished surface to within 0.10 foot of the indicated grade and to eliminate imprints made by compaction and shaping equipment. Surface shall show no deviations in excess of 1/2 inch when tested with a 10-foot straightedge.
3. Finished subgrade shall be verified to ensure proper elevation for construction above subgrade. Grading of building and pavement areas shall be checked by string line from grade stakes (blue tops) set at not more than 50'

centers. Contractor is to provide engineering and field staking necessary for verification of lines, grades, and elevations.

FILL AND BACKFILL

Place required fill and backfill material adjacent to structures and compact in a manner that prevents wedging action or eccentric loading upon or against the structures.

Step or serrate slopes bounding or within areas to be filled or backfilled to prevent sliding of the fill.

Moisten or aerate material as necessary to provide the moisture content that will readily facilitate obtaining the specified compaction and slopes with the equipment used. Do not place material on surfaces that are muddy, frozen, or contain frost.

Do not use equipment for filling or backfilling operations or for the formation of embankments against structures that will overload the structure. Filling or backfilling against structures will be done only after the structure has attained sufficient strength to withstand the loads anticipated during and after backfilling operations.

Fill and backfill operations shall be performed with the following materials:

1. Common Fill

a. Construct fill backfill and embankment at the locations and to lines and grades indicated. Use only approved materials in constructing fill on the prepared subgrade. Place satisfactory material in horizontal lifts not exceeding 8 inches in loose depth. Do not place material on surfaces that are muddy, frozen, or contain frost. Compact with equipment well suited to the soil being compacted. Moisten or aerate material as necessary to provide the moisture content that will readily facilitate obtaining the specified compaction and slopes with the equipment used. Compact each lift as specified before placing the overlaying lift.

2. Controlled Fill

a. Place controlled fill under footings, concrete slabs not pile supported, structures, pavements and where indicated in maximum loose lifts of 8 inches. Do not place material on surfaces that are muddy, frozen, or contain frost. Compact with equipment well suited to the soil being compacted. Moisten or aerate material as necessary to provide the moisture content that will readily facilitate obtaining the specified compaction and slopes with the equipment used. Compact each lift as specified herein before placing the overlaying lift. Compaction shall be accomplished continuously over the entire area. Sufficient passes shall be made to ensure that specified density is obtained.

3. Granular Fill, Gravel and Sand

a. Granular fill, gravel and sand shall be placed where indicated. Do not dump material, but place in maximum loose 12-inch lifts and compact as indicated.

Compaction of Fill/Backfill

4. Fill and backfill shall be compacted to the following maximum densities:

Location	Percent Maximum Density
Under sidewalks and grassed areas	90

Under building slabs, foundations, footings, pavements and base courses (Greater than 12 inches below bottom of structure or pavement)	95
Under building slabs, foundations, footings, pavements and base courses (Less than 12 inches below the bottom of structure or pavement)	98

5. Protect compacted fill from excessive wheel loading during construction, including concrete trucks and dump trucks. Remove areas of compacted fill found to have insufficient compaction density to depth necessary and replace in a manner that will comply with compaction requirements by use of a material meeting the specifications. Surface of compacted fill after compaction shall be hard, uniform, smooth, stable, and true to grade and cross section. Maintain compacted fill for area to be paved and building pad subgrade, whether previously graded by others and accepted by Contractor or constructed by Contractor. Make adjustments that may be required in accordance with the Specifications at no additional expense to the Owner.

Tolerances

6. Grade to finished grades indicated within 0.10 foot. Grade area to drain water away from structures. Existing grades which are to remain but are disturbed by the Contractor's operations shall be restored to original condition.
7. Finish surface of fill or backfill to the elevation and cross section indicated. Finished surface shall be smooth and of uniform texture. Lightly scarify or blade the finished surface to bring the finished surface to within 0.10 foot of the indicated grade and to eliminate imprints made by compaction and shaping equipment. Surface shall show no deviations in excess of ½ inch when tested with a 10-foot straightedge

TOPSOIL

Clear areas to receive topsoil for the finished surface of materials that would interfere with planting and maintenance operations. Scarify subgrade to a depth of 2 inches. Do not place topsoil when the subgrade or fill is frozen, extremely wet or dry, or in other conditions detrimental to seeding, planting, or grading. Spread topsoil to a uniform depth of 4 inches over the designated areas

PROTECTION

Shoring and Sheeting

8. The Contractor is responsible for the design of all shoring and sheeting systems. Provide shoring, bracing or sheeting where required. In addition to the requirements of this contract, meet the following:
 - a. Prevent the undermining of pavements, foundations and slabs.
 - b. Slope banks where space permits.
 - c. Where shoring and sheeting materials remain in place in completed work to prevent settlements or damage to adjacent structures as directed, backfill the excavation to 3 feet below the finished grade and remove the remaining portion of the shoring before completing the backfill.

Drainage and Dewatering

9. Plan for and provide structures, equipment and construction for the collection and disposal of surface and subsurface water encountered during construction.

a. Drainage

- 1) Dispose of surface water which may accumulate in open excavations, unfinished fills, or other low areas. Remove water by trenching where approved, pumping, or other methods to prevent softening of exposed surfaces.
- 2) Surface dewatering plan shall include rerouting of any storm water runoff or natural drainage if necessary.
- 3) Collect and dispose of surface and subsurface water encountered in the course of construction.

b. Dewatering

- 1) Groundwater flowing toward or into excavations shall be controlled to prevent sloughing or excavation slopes and walls, boils, uplift and heave in the excavation and to eliminate interference with orderly progress of construction.
- 2) French drains, sumps, ditches or trenches will not be permitted within three feet of the foundation of any structure, except with specific written approval, and after specific contractual provisions for restoration of the foundation area have been made.
- 3) Control measures shall be taken by the time the excavation reaches the water level in order to maintain the integrity of the in-situ material. While the excavation is open, the water level shall be maintained continuously, at least one foot below the working level.
- 4) Operate the dewatering system continuously, 24 hours per day, 7 days per week until construction work below existing water levels is complete. Have a back-up pump and system available for immediate use.

Erosion Control

10. Protect existing streams, ditches, and storm drain inlets from water-borne soil by the means indicated on the contract drawings and as required to prevent sedimentation of downstream features.

Existing Utilities

11. Utilities such as service lines or unknown facilities not shown on plans will not relieve the Contractor of his responsibility under this requirement. "Existing Utilities Facilities" means any utility that exists on the project in its original, relocated or newly installed position. The Contractor will be held responsible for the cost of repairs to damaged underground facilities; even when such facilities are not shown on the plans.
12. The Contractor shall contact all utility companies prior to beginning work and request accurate field location of their respective utility lines.
13. Movement of construction machinery and equipment over pipes during construction shall be at the Contractor's risk. Repair or remove and provide new pipe for existing or newly installed pipe that has been displaced or damaged.

Structures and surfaces

14. Graded areas shall be protected from traffic, erosion, settlement, or any washing away that may occur from any cause prior to acceptance.
15. Any repair or reestablishment of final grades shall be made prior to final acceptance.

INSPECTION AND TESTING

Inspections

16. The Engineer will have the right to require that any portion of the work be done in his presence and if the work is covered up after such instruction, it shall be exposed by the Contractor for observation. However, if the Contractor notifies the Engineer that such work is scheduled, and the Engineer fails to appear within 72 hours, the Contractor may proceed without him. All work done, and materials furnished shall be subject to review by the Engineer or the Project Representative, and all improper work shall be reconstructed, and all materials which

do not conform to the requirements of the specifications shall be removed from the work upon notice being received from the Engineer for the rejection of such materials. The Engineer shall have the right to mark rejected materials so as to distinguish them as such.

17. The Contractor shall give the Project Engineer or Project Representative a minimum of 72 hours' notice for all required observations or tests.

Testing

18. All testing shall be made at the Owner's expense. The Engineer shall approve test locations.
19. Test results shall be furnished to the Contractor, Engineer and Owner within 72 hours after field tests are taken.
20. The testing laboratory, Engineer, and Owner shall be given a minimum of 72 hours' notice for all tests.
21. Laboratory testing
 - a. Independent Testing laboratory shall operate in accordance with ASTM E 329 (latest edition) and shall be submitted to the Engineer for approval.
22. Field testing
 - a. Independent Testing Laboratory shall prepare test reports that indicate test location, elevation data, and test results. The Owner, Engineer, and Contractor shall be provided copies of reports within 72 hours of the time the test was performed. In the event that any test performed fails to meet these specifications, the Owner, Engineer and Contractor shall be notified immediately by Independent Testing Laboratory. The Owner reserves the right to employ an Independent Testing Laboratory and to direct any testing that it may deem necessary. The Contractor shall provide free access to the site for testing activities.
 - b. Slope percentages of all sidewalks shall be surveyed and verified to be ADA compliant. Stamped drawing with slopes certified, are required.

Acceptance

23. In the event that a tested material does not meet or exceed the specified requirements, the Contractor shall perform additional testing as directed by the Engineer to adequately define the limits of the material not meeting the specifications. Materials shall be re-tested to the satisfaction of the Engineer until specified requirements are met.
24. All additional testing and work, which is the result of a failed test, shall be performed by the Contractor at no additional cost to the Owner.
 - 1) Some crack repairs may require areas to be spot resurfaced or colored to make aesthetically pleasing. A determination will be made by district representative upon contractor recommendation.
 - 2) Nets are to be removed and then replaced after completion of work by the contractor.
 - 3) Repairs are to be made following manufacture's recommendations for weather conditions.

C. Site Work Concrete

1. - SUMMARY

- 1) This section covers all materials, labor and equipment for portland cement concrete used in sidewalks.

DELIVERY, STORAGE AND HANDLING

- 1) Deliver and store materials in a manner to prevent contamination or segregation. Do not stockpile materials in a manner or location that will cause excessive wetting or transporting of materials off-site or into storm drainage collection systems.

REGULATORY REQUIREMENTS

- 1) Comply with all federal, state and local regulatory requirements.

CRITERIA FOR BIDDING

- 1) Lump Sum Price
 - a. The items listed in the proposal shall be considered as sufficient to complete the work in accordance with the plans and specifications. Any portion of the work not specifically listed in the bid form shall be deemed a part of the item with which it is associated and shall be included in the lump sum price. The price shall be full compensation for the material, compaction, shaping, finishing, dressing, disposal of surplus material, testing construction supervision and all other work required for satisfactory completion of the portland cement concrete sidewalks.

QUALITY ASSURANCE

- 1) Manufacturer: Material and equipment shall be the standard products of a manufacturer who has manufactured them for a minimum of 2 years and who provides published data on the quality and performance of the projects.
- 2) Subcontractor: A subcontractor for any part of the work must have experience on similar work. At the option of the Engineer, a list of projects and the Owners or Engineers who are familiar with his competence may be required to be submitted to verify experience.
- 3) Design: Devices, equipment, structures, and systems not designed by the Engineer or shown on the construction drawings, which the Contractor wishes to furnish shall be designed by either a registered professional engineer or by someone the Engineer accepts as qualified. Complete design calculations and assumptions shall be furnished to the Engineer or Owner before acceptance.
- 4) Environmental Conditions: Concrete shall be mixed and placed only when temperature is at least 40 degrees F and rising.
- 5) Equipment: Shall be well maintained, suited for the intended work and capable of delivering the finished product to the standards shown on drawings and as specified herein.

FIELD CONDITIONS

- 1) Concrete shall be mixed and placed only when temperature is at least 40 degrees F and rising.

2 - PRODUCTS

2.1 CONCRETE

A. Design Mix

Class	Compressive Strength (28 day)	Application
A	3,000 psi	Sidewalks and Ramps

- 1 Cement: ASTM C 150, Type I
- 2 Water: Shall be clean, fresh and potable.
- 3 Aggregates: ASTM C 33
- 4 Admixtures: Where not shown or specified, the use of admixtures is subject to the written approval of the Engineer.
 - a. Air Entraining: ASTM C 260, Use in all portland cement.
 - b. Retarding: ASTM C 494
 - c. Accelerating: ASTM D 98
 - d. Water Reducing: ASTM C 494
 - e. Fly Ash and Pozzolans: ASTM C 618, Types N, F, or C
 - f. Ground Iron Blast Furnace Slag: ASTM C 989, Grade 120

2.2 FORMS

- A. Shall be wood, plywood, metal, or other qualified material and shall be of the grade or type suitable to obtain the finish specified. Forms shall be constructed to the shape, for line, and grade required, and shall be maintained sufficiently rigid to prevent deformation under load.

2.3 REINFORCEMENT

- A. Reinforcing Steel: ASTM A 615, Grade 60.
- B. Mesh Reinforcement: ASTM A 1064, flat sheets.

2.4 JOINT MATERIALS

- A. Blocking Media: Compressible, non-shrinkable, non-reactive with joint sealant and non-absorption type such as plastic rod, free of oils or bitumens. Blocking media shall have water absorption of not more than 5 percent by weight when tested in accordance with ASTM C 509. Blocking media shall be consistent with the joint sealant manufacturer's installation instructions and be at least 25 percent larger in diameter than the width of the joint being sealed.
- B. Preformed Joint Filler: ASTM D 1751 or ASTM D 1752 Type II or III. Filler must be compatible with sealant. filler

C. Liquid Joint Sealant: Silicone joint sealant such as Dow Corning DOWSIL 888 or approved equal.

D. CURING MATERIALS

1. Impervious Sheeting: ASTM C 171 with minimum sheet thickness of 10 mils. Non-reactive with other materials such as curing compound.
2. Liquid Membrane-Forming Compound: ASTM C 309, white pigmented, Type 2, Class B, free of paraffin or petroleum

2.5 ANCHORAGE ITEMS

- A. Slots, inserts, clips, and other devices for anchoring masonry, wood, steel, and mechanical items to concrete shall be of standard manufacture, and of qualified types as required to engage and anchor the work specified under other sections.

3 - EXECUTION

3.1 ON SITE OBSERVATION OF WORK

- A. The Engineer will have the right to require that any portion of the work be done in his presence and if the work is covered up after such instruction, it shall be exposed by the Contractor for observation. However, if the Contractor notifies the Engineer that such work is scheduled, and the Engineer fails to appear within 48 hours, the Contractor may proceed without him. All work done, and materials furnished shall be subject to review by the Engineer or Project Representative and improper work shall be reconstructed, and all materials, which do not conform to the requirements of the specifications, shall be removed from the work upon notice being received from the Engineer for the rejection of such materials. The Engineer shall have the right to mark rejected materials so as to distinguish them as such.
- B. The Contractor shall give the Project Engineer or Project Representative a minimum of 48 hours' notice for all required observations or tests.

3.2 PREPARATION BEFORE PLACING

- A. Water shall be removed from excavations before concrete is deposited. Hardened concrete debris and other foreign materials shall be removed from the interior of forms and from the inside of mixing and conveying equipment. The reinforcement shall be made secure in position and shall be subject to examination and approval.
- B. Prepare surface to receive concrete in accordance with SECTION "EARTH MOVING".

3.3 FORMS

- A. Construct forms to be removable without damaging the concrete.
- B. Coating: Before placing the concrete, coat the contact surfaces of forms, (except existing pavement sections where bonding is required) with a non-staining mineral oil, non-staining form coating compound, or two coats of nitro-cellulose lacquer. When using existing pavement as a form, clean existing concrete and then coat with an asphalt emulsion bondbreaker before concrete is placed.

- C. Grade and Alignment: Check and correct grade elevations and alignment of the forms immediately before placing the concrete.

3.4 REINFORCEMENT

- A. Metal reinforcement shall be free from rust, scale or other coatings, and shall be accurately placed and properly secured in position by concrete blocks or metal chairs and by spacers. Bars shall be bent cold. Exposed bars intended for bonding with fixture extensions shall be protected from corrosion by an accepted covering. Bar chairs shall be hot dipped galvanized where in contact with forms for concrete that is exposed to view.
- B. Concrete Protection over Steel Reinforcement:
 - 1. Concrete deposited against ground: 3 inches.
 - 2. Formed surfaces exposed to weather or ground: 2 inches for bars #6 and larger, 1-1/2 inch for bars less than #6.
- C. Reinforcement used only when shown on drawings.

3.5 MEASURING, MIXING, CONVEYING, AND PLACEMENT CONCRETE

- A. Measuring, mixing and conveying: ASTM C 94.
- B. Concrete mixed at the job site shall be mixed in a batch mixer and in a similar manner subject to approval. Mixing time for stationary mixers over 1 cubic yard in capacity shall be increased 15 seconds for each additional ½ cubic yard or fraction thereof of material mixed.

3.6 PLACING CONCRETE

- A. Concrete having attained initial set or having contained water for more than 90 minutes shall not be used in the work. Concrete shall not be dropped freely more than five feet on unexposed work, or more than three feet in exposed work. Concrete shall be mixed and placed only when temperature is at least 40 degrees F and rising. Concrete shall be placed only upon surfaces that are free from frost, ice, mud, or other detrimental circumstances. When placed on dry soil or pervious material, water proof paper or polyethylene sheeting shall be laid over the surfaces that are to receive the concrete.

3.7 FINISHES

- A. Concrete shall be deposited to the required thickness, compacted, screed to grade, and finished monolithically to a smooth broom finish. Where drains or sumps occur, the concrete shall be sloped to drain. Slight honeycomb and minor defects shall be patched with cement mortar made with one-part cement and two parts fine aggregate and then rubbed smooth with carborundum brick. Patching shall be accomplished immediately after forms are removed. Immediately after removing forms, other exposed surfaces shall be dampened, brush-coated with grout, and rubbed with a wood float. Floating devices shall be rubbed with burlap and kept damp by fog spraying.

3.8 CURING

- A. Immediately after placing or finishing, concrete surfaces not covered by forms shall be protected against moisture loss for not less than 7 days by use of impervious sheeting or curing compound. Curing compound shall be applied in strict accordance with the manufacturer's recommendations.

3.9 BONDING AND GROUTING

- A. Before depositing new concrete on concrete that has set, the surface of the set concrete shall be thoroughly cleaned of laitance, foreign matter, and loose particles leaving a rough surface with clean and sound exposed aggregate. Forms shall be retightened, and the surfaces of the set concrete shall be slushed with a grout coat of neat cement and water. Where an epoxy bonding agent is called for on the drawings, the epoxy bonding agent shall be polysulfide liquid polymer and an epoxy resin combined at the job site, in equal volumes and thoroughly mixed. The mixed agent shall be applied on a clean concrete surface by brushing or spraying. A 10-mil coating shall be spread evenly to cover all bonding surfaces. When a bonding agent has been applied, and while the surface is still sticky, new concrete to be bonded shall be put in place.

3.10 PROTECTION

- A. Protect new portland cement concrete from damage for the duration of this contract.
- B. Existing Pavement: Protect existing pavements to remain from damage. Movement of construction machinery and equipment over existing pavements during construction shall be at the Contractor's risk. Existing pavements damaged by the contractor's operations shall be repaired or replaced to their original condition at the contractor's expense.
- C. Erosion Control: Protect existing streams, ditches, and storm drain inlets from water-borne soil by the means indicated on the contract drawings.
- D. Existing Utilities: Location of the existing utilities indicated is approximate. The Contractor shall physically verify the location and elevation of the existing utilities indicated prior to starting construction. The Contractor shall contact the local utility location company or each applicable utility company as required for assistance in locating existing utilities.
- E. Structures and surfaces: Protect newly backfilled areas and adjacent structures, slopes, or grades from traffic, erosion settlement, or any other damage. Repair and reestablish damaged or eroded grades and slopes and restore surface construction prior to acceptance.

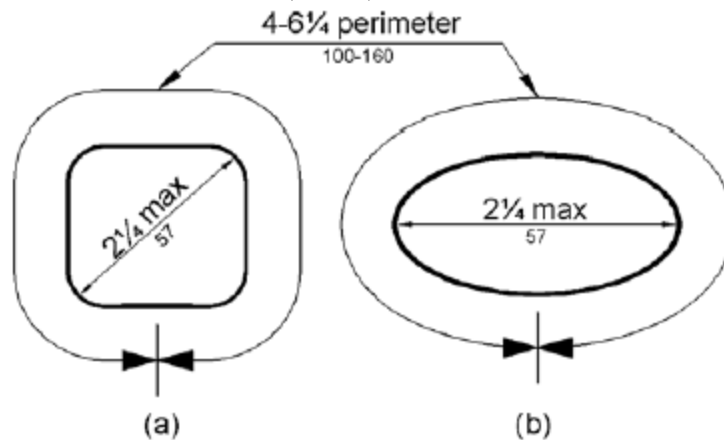
3.11 FIELD QUALITY CONTROL

- A. The Owner and/or its representative have the right to require any portion of the Work be conducted in its presence. If the Work is covered after such instruction, it shall be exposed by the Contractor for observation. However, Work may proceed if the Owner and/or its representative fail to appear for the scheduled inspection or test when properly notified.
- B. All Work conducted and materials furnished shall be subject to review by the Owner, Engineer and/or the Owner's Representative.
- C. All improper Work shall be reconstructed, and all materials that do not conform to the requirements of the Contract Documents shall be removed from the Work upon notice. Rejected materials shall be marked in the field.

D. Handrails

- A. Handrails are to be installed by location and according to included drawings.
- B. Handrails are to comply with DOJ ADA Ch.5 General Site and Building Elements
- C. Where Required. Handrails shall be provided on both sides of ramps.

- D. Handrails shall be continuous within the full length of each ramp run. Inside handrails on switchbacks and ramps shall be continuous between flights or runs.
- E. Handrails shall be at a consistent height above walking surfaces, and ramp surfaces.
- F. Clearance between handrail gripping surfaces and adjacent surfaces shall be 1½ (38 mm) minimum.
- G. Handrail gripping surfaces shall be continuous along their length and shall not be obstructed along their tops or sides. The bottoms of handrail gripping surfaces shall not be obstructed for more than 20 percent of their length. Where provided, horizontal projections shall occur 1½ (38 mm) minimum below the bottom of the handrail gripping surface.
- H. Where handrails are provided along walking surfaces with slopes not steeper than 1:20, the bottoms of handrail gripping surfaces shall be permitted to be obstructed along their entire length where they are integral to crash rails or bumper guards.
- I. Circular cross section handrail gripping surfaces with a circular cross section shall have an outside diameter of 1¼ inches (32 mm) minimum and 2 inches (51 mm) maximum.
- J. Non-Circular Cross Sections. Handrail gripping surfaces with a non-circular cross section shall have a perimeter dimension of 4 inches (100 mm) minimum and 6¼ inches (160 mm) maximum, and a cross-section dimension of 2¼ inches (57 mm) maximum.



- K. Handrail gripping surfaces and any surfaces adjacent to them shall be free of sharp or abrasive elements and shall have rounded edges.
- L. Handrails shall not rotate within their fittings.
- M. Handrail gripping surfaces shall extend beyond and in the same direction of stair flights and ramp runs.
- N. Extensions shall not be required for continuous handrails at the inside turn of switchback or dogleg stairs and ramps.
- O. Ramp handrails shall extend horizontally above the landing for 12 inches (305 mm) minimum beyond the top and bottom of ramp runs. Extensions shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent ramp run.

SECTION B – PLAYGROUND EQUIPMENT, BORDERS, AND ACCESSIBLE PATH SPECIFICATIONS

E. Playground Equipment

- 1) Equipment is to be IPEMA Certified

- 2) List of equipment type and location for installation is included with solicitation
- 3) Equipment must meet all ADA, CPSC, ATSM, guidelines for accessible play
- 4) All playground equipment must be designed for age appropriateness of user with accompanying labels
- 5) Unit pricing will be required for any further equipment need, outside of what is specified in this bid.
 - a) Total bid price will include equipment needed for project. Unit price will be for equipment that may be deemed necessary after completion of project for up to one year or superseded by similar bid within the year after completion.
- 4) Shall provide outdoor commercial playground equipment that meets all current playground safety standards and certifications including CPSC #325 and the current ASTM F1487 playground standard and should include the most durable components carried by the manufacturer
- 5) Bolt/Connector systems shall be Factory drilled, bolt through systems for all deck and component connections. All collars a minimum of 383 aluminum alloy die cast. System should be tamper resistant to minimize damage exposure. Connectors should be powder coated.
- 6) Bridges, walkways, decks, and platforms shall be slip resistant. Provide manufacturer's standard elevated drainable decks, platforms, landings, walkways, ramps, and similar transitional play surfaces.
- 7) Large platforms should be covered, as much as possible, for sun protection
- 8) High-contact surfaces (such as slides, etc.) shall be oriented as much as possible to minimize direct sun light.
- 9) Rails shall be a minimum of 1 -5/16" O.D. x .083" (14 gauge) wall galvanized steel tubing or 1-5/16" O.D schedule 40 steel.
 - Steel Plates, Shapes, and Bars: ASTM A 36/A 36M
 - Steel Pipe: ASTM A 53/A 53M or ASTM A 135, standard-weight.
 - Steel Tubing: ASTM A 500 or ASTM A 513, cold formed.
 - Steel Sheet: ASTM A 1011/A 1011M
 - No Expanded Metal Decks or Stairs will be accepted
 - Chain and Fittings: ASTM A 467/A 467M, Class CS, 4/0 or 5/0, welded-straight-link coil chain; with commercial-quality, stainless steel or zinc-plated steel connectors and swing or ring hangars, or provided by manufacture.
 - Castings and Hangers: Malleable iron, ASTM A 47/A 47M, Grade 32510, hot-dip galvanized.
- 10) All metal equipment, shall be weather resistant with powder coated baked on paint. Coating shall be as follows: Decks: non-phthalate coating (Thermoplastic) with minimum of 30 mils coating. Metal parts: powder coating, electrostatically applied to all metal parts (excluding stainless steel), components shall be free of sharp edges and splatter and shall be properly cleaned and treated with a rust inhibitor, minimum thickness of 5 mil and oven cured between 375-425 degrees Fahrenheit
- 11) All plastic components composed of MDPE (tunnels, etc.) at least .375" thick, with side panels at least .25" thick. Rotomolded with ultra violet degradation inhibitors, double walled. Color impregnated, UV stabilized, and mold resistant.
- 12) All upright posts and beams shall be at least 4.5 O.D., schedule 40 steel pipe, with a minimum wall thickness of 7/32" in accordance with ASTM a-53, Type E, Grade A.; or 5" O.D., 11 gauge, .120" wall thickness, galvanized steel.
- 13) Exposed ends of steel posts shall be fitted with a cast aluminum (minimum 383 alloy) hemi-dome end cap permanently adhered in place. Friction fitted and plastic caps not allowed
- 14) All fastening hardware should be vandal resistant stainless steel: deviations from this should be noted in the proposal.
- 15) Elevated Play Surfaces: Guardrails or protective barriers completely surround elevated play surface except for access openings in accordance with CPSC guidelines.

- 16) Stepped Play Surfaces: Provide manufacturer's standard infill between stepped platforms according to referenced standards.
- 17) Protective Barriers and Guardrails: Fabricate according to ASTM F 1487
- 18) Handrails: Welded metal pipe or tubing, OD 1.25 inches. Provide handrails at height for use by age group indicated below:
 - Ages: between 2 and 5 - between 5 and 12
- 19) Roofs and Canopies: Umbrella style sunshades or roofs to cover main structure. (Must comply with current wind load calculations for location).
- 20) Install engineered wood fiber fall surfacing for critical fall height where needed, in addition to Grassmat® ADA accessible paths.

G. Playground Borders & ADA Accessible Ramp

- 1) Border Timbers: Anchored-in-place, weather-resistant containment barrier designed to minimize sharp edges, protrusions, and tripping hazards; formed by interconnected, modular units.
 - a. Polyethylene Units: UV-light-stabilized, in manufacturer's standard sizes.
 - b. Color: Black, 6' long, 12" tall, 3 stakes per timber.
 - c. Anchor Stakes: Manufacturer's standard. Galvanized.
- 2) ADA Accessible Double Ramp
 - a. Color: Black
 - b. Anchor Stakes: Manufacturer's standard. Galvanized.
 - c. Must meet existing grades and provide even transition from adjoining surfaces

H. Grassmats® - ADA Accessible Path

- 1) Stabilizing Mats: Manufacturer's standard, water-permeable rubber mats tested for impact attenuation according to ASTM F 1292, and rated for use in the following locations, with anchoring / installation system designed to anchor mat securely to one another to form a uniform surface without trip hazards.
- 2) Mats are to form a complete path of accessibility into, around, and exit the play area.
 - a. Location: At excessive wear areas and as follows:
 - On grade above existing engineered wood fiber surface, so as to form an even and complete ADA accessible path:
 - From the ADA installed wheelchair accessible ramp into the play area
 - Around the outside of the use zones of play equipment
 - To and around all ground level play systems
 - To all designated transfer platforms of elevated play structures
 - To all ADA accessible wheelchair platform swings or ADA swing seat
 - At finished grade around transfer stations at accessible perimeter.
 - Directly under swings and exit of slide, or other designated high use area
 - Color: Black

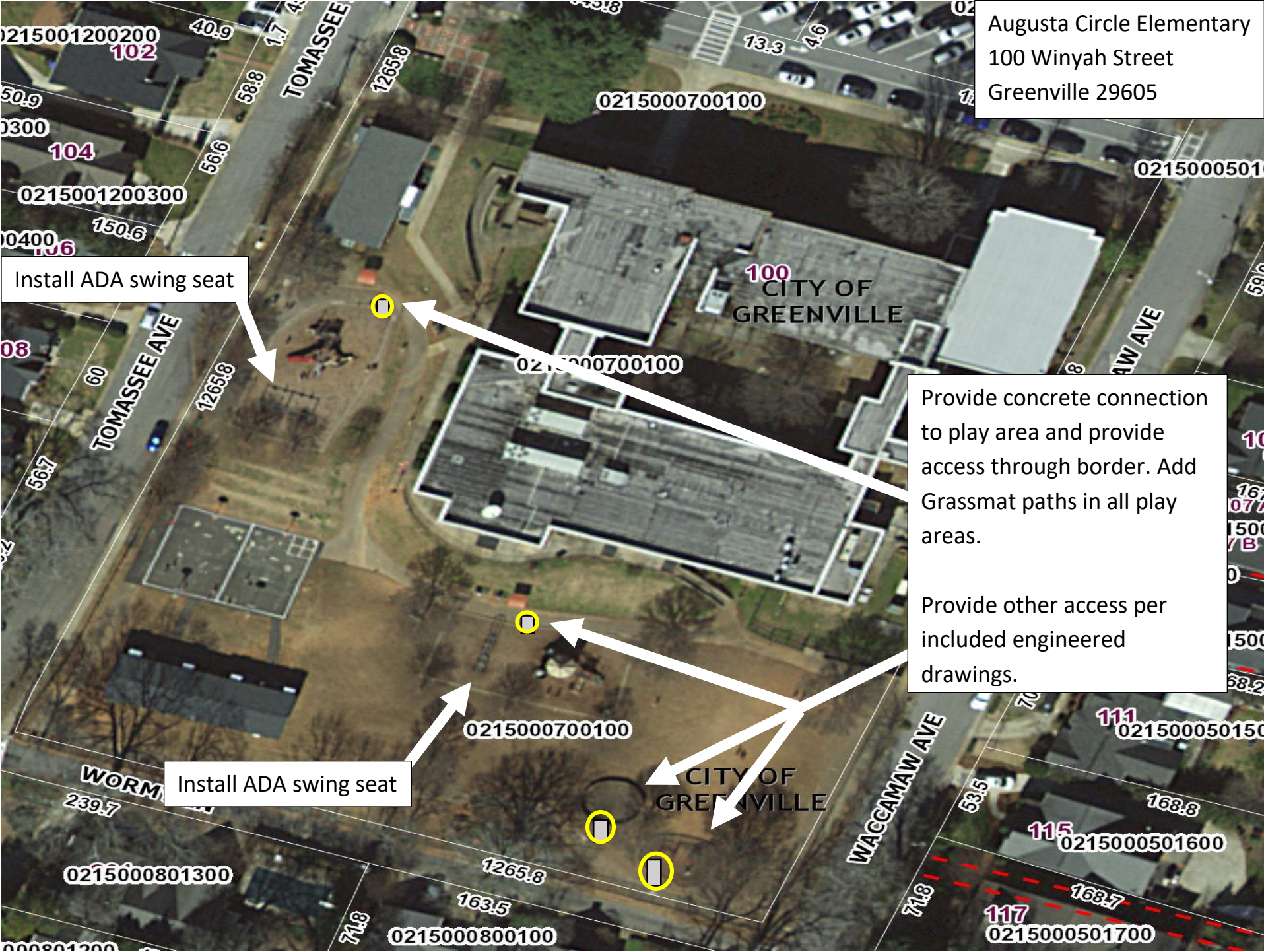
SECTION C – SUMMARY OF SITE-SPECIFIC WORK TO BE PERFORMED, and SITE MAPS

See site layouts and engineered drawings for:

- location of schools and aerial view of current conditions at each school

- location and path for concrete ramps and sidewalks
- location of grading to be performed
- location for equipment removal or installed
- location for ADA swing seats to be installed
- location for ground play components to be installed

Augusta Circle Elementary
100 Winyah Street
Greenville 29605



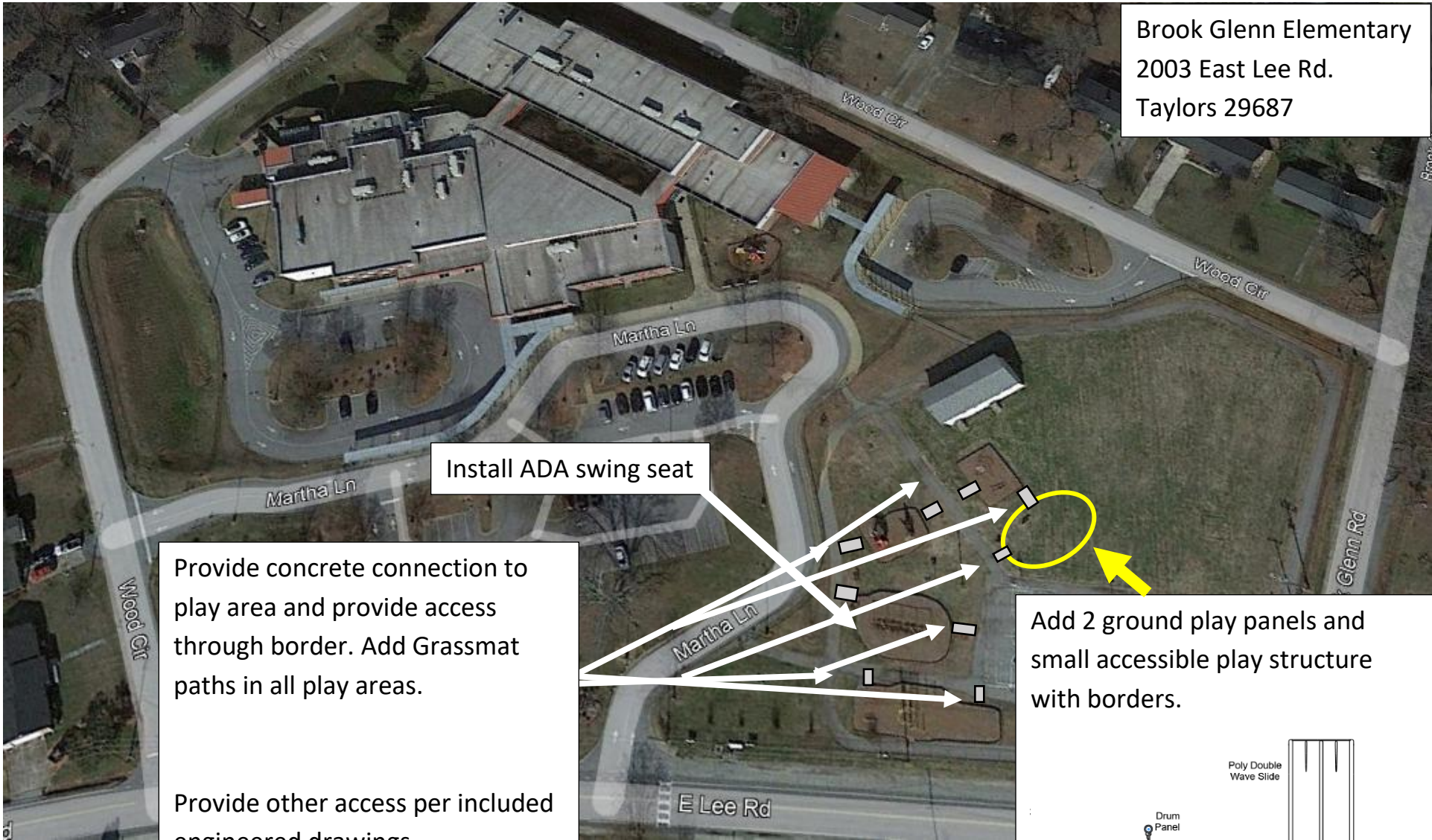
Install ADA swing seat

Install ADA swing seat

Provide concrete connection to play area and provide access through border. Add Grassmat paths in all play areas.

Provide other access per included engineered drawings.

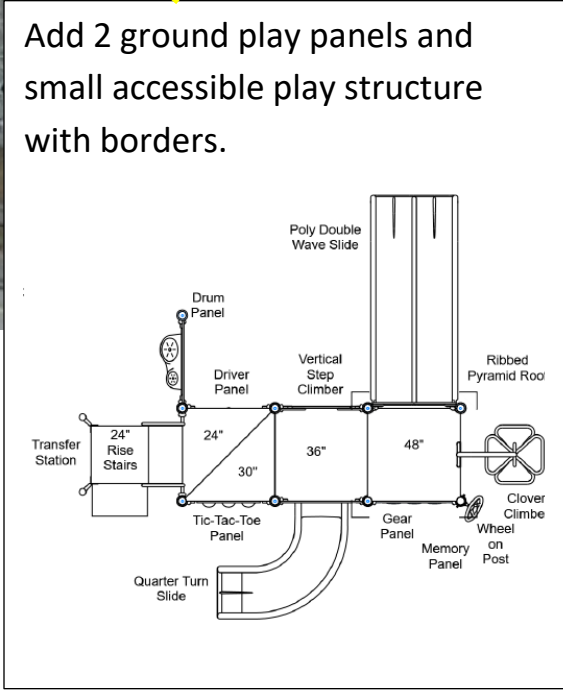
Brook Glenn Elementary
2003 East Lee Rd.
Taylors 29687



Install ADA swing seat

Provide concrete connection to play area and provide access through border. Add Grassmat paths in all play areas.

Provide other access per included engineered drawings.



Provide concrete connection to play area and provide access through border. Add Grassmat paths in all play areas.

Provide other access per included engineered drawings.

Brushy Creek Elementary
1344 Brushy Creek Rd.
Taylors 29687

Install ADA swing seat



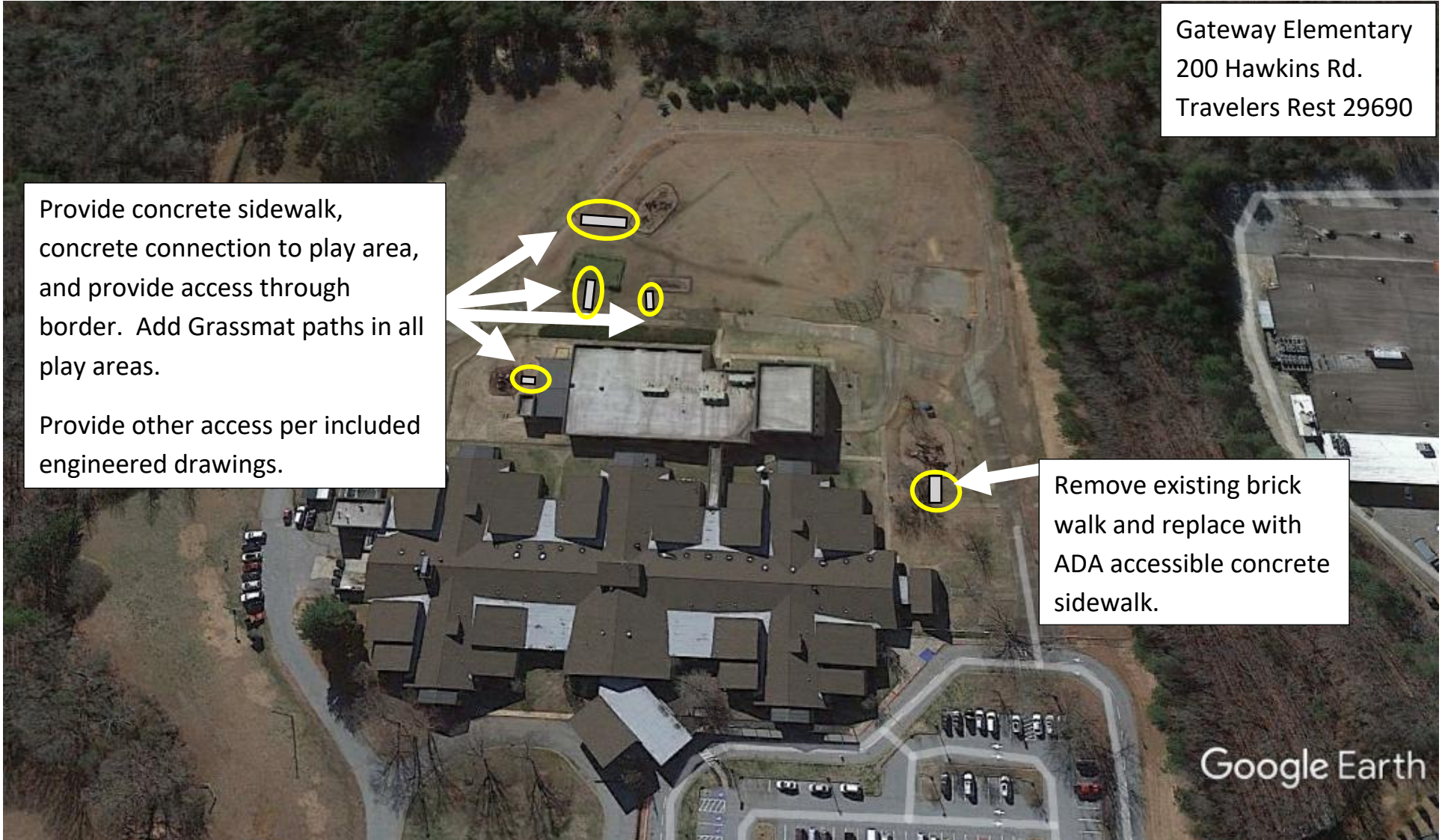
Gateway Elementary
200 Hawkins Rd.
Travelers Rest 29690

Provide concrete sidewalk,
concrete connection to play area,
and provide access through
border. Add Grassmat paths in all
play areas.

Provide other access per included
engineered drawings.

Remove existing brick
walk and replace with
ADA accessible concrete
sidewalk.

Google Earth





Lake Forest Elementary
16 Berkshire Avenue
Greenville 29615

Provide concrete sidewalk,
concrete connection to play areas,
and provide access through
border. Add Grassmat paths in all
play areas.

Provide other access per included
engineered drawings.

Install ADA swing seat

Robert Cashion Elementary
1500 Fork Shoals Road
Greenville 29605

Move Gate

Add Gate

Move Shade Structure
inside playground and
concrete.

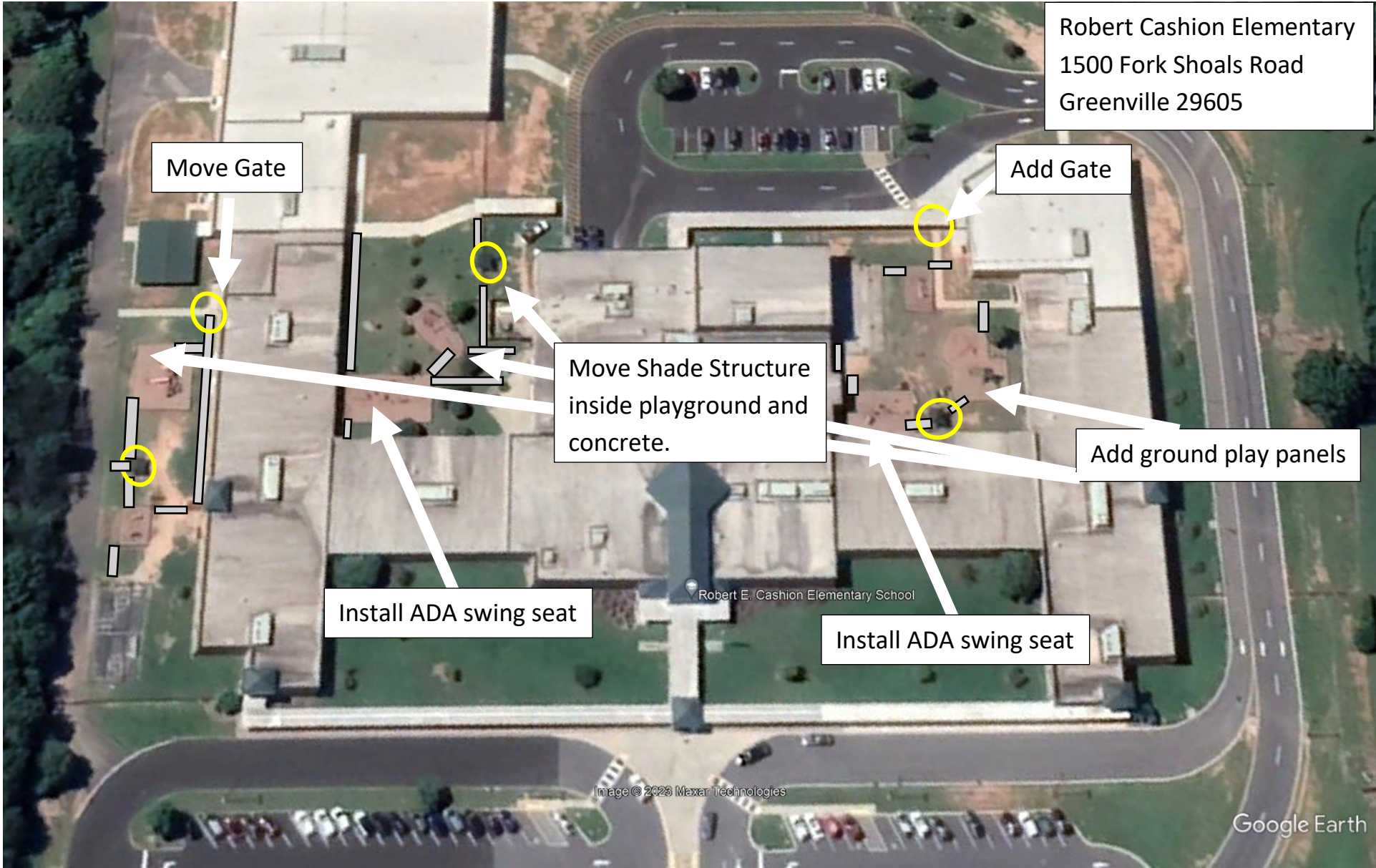
Add ground play panels

Install ADA swing seat

Install ADA swing seat

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Google Earth



Sara Collins Elementary
1200 Parkins Mill Road
Greenville 29607

Provide concrete sidewalk,
concrete connection to play areas,
and provide access through
border. Add Grassmat paths in all
play areas.

Provide other access per included
engineered drawings.

Any issues to meet ADA or
does it meet ADA?

What do we have to do to
access these areas?



Sterling School Charles Townes Gifted Center
99 John McCarroll Way
Greenville 29607

Provide concrete sidewalk,
concrete connection to play areas,
and provide access through
border. Add Grassmat paths in all
play areas.

Install ADA swing seat

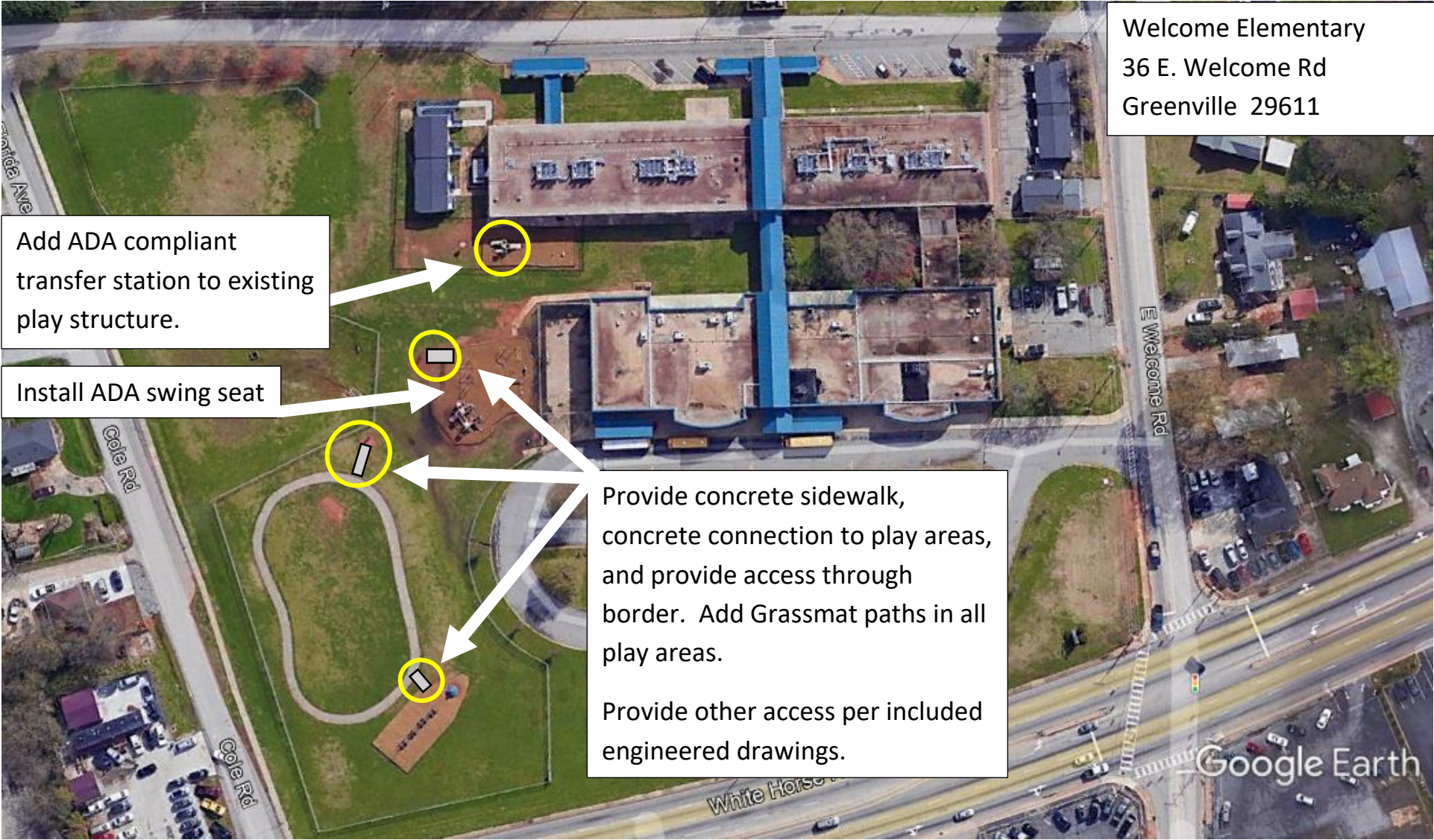


Welcome Elementary
36 E. Welcome Rd
Greenville 29611


Add ADA compliant transfer station to existing play structure.

Install ADA swing seat

Provide concrete sidewalk, concrete connection to play areas, and provide access through border. Add Grassmat paths in all play areas.
Provide other access per included engineered drawings.



Westcliffe Elementary
105 Eastbourne Rd.
Greenville 29611



Provide concrete sidewalk,
concrete connection to play areas,
and provide access through
border. Add Grassmat paths in all
play areas.

Provide other access per included
engineered drawings.

Google Earth

	Install appropriate ground surface at all play areas		Provide compliant transfer stations	Install an ADA swing seat on existing swing set		Install ground play components	Install Accessible Play Structure
School Name	PRIMARY	KINDERGARTEN		PRIMARY	KINDERGARTEN		
Augusta Circle Elementary	1	1		1			
Brook Glenn Elementary	1	1		1			1
Brushy Creek Academy	1	1		1			
Fountain Inn Elementary	1	1		1			
Gateway Elementary	1	1					
Lake Forest Elementary	1	1		1			
Robert Cashion Elementary	1	1				3	
Sarah Collins Elementary	1	1					
Sterling/Charles Townes Center	1	1		1		1(k)	
Welcome Elementary	1	1	1	1			
Westcliffe Elementary	1	1					