ADDENDUM NO. 01

February 21, 2025

CCS 2025 Pavement Improvements
520 E. Main St.,
Carmel, IN 46032

TO: ALL BIDDERS OF RECORD

This Addendum forms a part of and modifies the Bidding Requirements, Contract Forms, Contract Conditions, the Specifications, and the Drawings dated February 3, 2025, by Fanning Howey Associates Acknowledge receipt of the Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

This Addendum consists of Pages ADD 1-1 and attached Fanning/Howey Associates, Inc. Addendum No. 01, dated February 20, 2025, consisting of 1 page and 2 drawings.

A D D E N D U M N O. 1

Carmel Clay Schools – Paving Improvements

Project No. 224211.00

Carmel Clay Schools
Carmel, Indiana

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Addendum No. 1, 2 Items, 1 page
Revised Project Manual Section: 32 12 16 – Asphalt Paving and Sealing
Revised Drawing Sheets: Cover and G1.5

Date: February 20, 2025

FANNING/HOWEY ASSOCIATES, INC.
ARCHITECTS/ENGINEERS/CONSULTANTS

TO: ALL BIDDERS OF RECORD

ADDENDUM NO. 1 to Drawings and Project Manual, dated February 20, 2025, for Carmel Clay Schools, 5201 E. Main Street, Carmel, Indiana 46033; as prepared by Fanning/Howey Associates, Inc., Indianapolis, Indiana. This Addendum shall hereby be and become a part of the Contract Documents the same as if originally bound thereto.

The following clarifications, amendments, additions, revisions, changes, and modifications change the original Contract Documents only in the amount and to the extent hereinafter specified in this Addendum.

Each bidder shall acknowledge receipt of this Addendum in his proposal or bid.

NOTE: Bidders are responsible for becoming familiar with every item of this Addendum. (This includes miscellaneous items at the very end of this Addendum.)

RE: ALL BIDDERS

ITEM NO. 1. REVISED PROJECT MANUAL SECTION

A. 32 12 16 – Asphalt Paving and Sealing has been revised, dated 02/20/25, and is included with and hereby made part of this addendum.

ITEM NO. 2. REVISED DRAWING SHEET

A. Drawing Sheets Cover and G1.5 have been revised, dated 2/20/25, and is included with and hereby made a part of this Addendum. These Drawings supersede the original documents.

END OF ADDENDUM

SECTION 32 12 16 - ASPHALT PAVING AND SEALING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:
   1. Cold milling of existing hot-mix asphalt pavement in playground areas as noted and any deteriorating areas as encountered in parking lots ..
   2. Hot-mix asphalt paving in playground areas as noted and any deteriorating areas as encountered in parking areas .
   3. Pavement marking paint
   4. **Playground game marking paint**
   5. Asphalt surface treatments.
      a. Sealcoating of parking areas and drives as noted

1.3 DEFINITION

A. Hot-Mix Asphalt Paving Terminology: Refer to ASTM D 8 for definitions of terms.

B. DOT: Department of Transportation.

1.4 SYSTEM DESCRIPTION

A. Provide hot mix asphalt paving according to materials, workmanship, and other applicable requirements of standard specification of state or local DOT.

B. Special Conditions
   1. Protection of work in place
      a. All paving work shall be protected from construction traffic at all times after completion. All damaged work shall be replaced with no additional payment.
   2. Playgrounds
      a. No Bituminous Mixtures shall contain slag, iron, iron oxide or any other ferrous mineral or ferrous material. Ferrous materials are not compatible with the paints or color coatings specified for this project.
      b. The contractor shall confirm that the aggregates suppliers for bituminous mixtures shall supply aggregates free from ferrous materials.
      c. All bituminous pavements that contain ferrous materials or exhibit rust trailing of any nature or amount after installation shall be milled off and replaced with no additional payment.

1.5 SUBMITTALS

A. Quality Assurance/Control Submittals:
   1. Product Data: For each type of product indicated. Include technical data and tested physical and performance properties.
   2. Job-Mix Designs: Certification, by authorities having jurisdiction, of approval of each job mix proposed for the Work.
      a. Certification: Provide material certificates signed by the material producer and the Contractor, certifying that each mixture does not contain ferrous material or ferrous minerals of any kind.

1.6 QUALITY ASSURANCE

A. Testing Agency Qualifications: Qualified according to ASTM D 3666 for testing indicated.

B. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of the State Department of Transportation Standard Specifications for asphalt paving work, except where modified, changed or added to in this specification:
   1. Measurement and payment provisions and safety program submittals included in standard specifications do not apply to this Section.

C. Pre-installation Conference: Conduct conference at Project site.
   1. Review methods and procedures related to hot-mix asphalt paving including, but not limited to, the following:
      a. Review proposed sources of paving materials, including capabilities and location of plant that will manufacture hot-mix asphalt.
      b. Review condition of subgrade and preparatory work.
      c. Review requirements for protecting paving work, including restriction of traffic during installation period and for remainder of construction period.
      d. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver pavement-marking materials to Project site in original packages with seals unbroken and bearing manufacturer's labels containing brand name and type of material, date of manufacture, and directions for storage.

B. Store pavement-marking materials in a clean, dry, protected location within temperature range required by manufacturer. Protect stored materials from direct sunlight.

1.8 PROJECT CONDITIONS

A. Environmental Limitations: Do not apply asphalt materials if subgrade is wet or excessively damp, if rain is imminent or expected before time required for adequate cure, or if the following conditions are not met:
   1. Tack Coat: Minimum surface temperature of 60 deg F.
   2. Slurry Coat: Comply with weather limitations in ASTM D 3910.
   3. Asphalt Base Course: Minimum surface temperature of 40 deg F and rising at time of placement.
   4. Asphalt Surface Course: Minimum surface temperature of 60 deg F at time of placement.

B. Pavement-Marking Paint: Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of 40 deg F for oil-based materials and 55 deg F for water-based materials, and not exceeding 95 deg F.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply for product selection:
   1. Manufacturers: Subject to compliance with requirements, provide product by the manufacturers specified.

B. Products of other manufacturers will be considered for acceptance provided they equal or exceed the material requirements and functional qualities of the specified product. The "Substitution Request Form" and complete technical data for evaluation must accompany requests for A/E's approval. All materials for evaluation must be received by the Project Manager and Specification Department at least 10 days prior to bid due date. Additional approved manufacturers will be issued by Addendum.

2.2 COMPACTED AGGREGATE BASE MATERIAL

A. General: Use materials and gradations that have performed satisfactory in previous installations.
   1. Aggregates shall meet DOT requirement of State in which the project is located and as indicated.

B. Compacted aggregate base for all pavement types shall consist of natural aggregate. The aggregate shall contain 95 to 100 percent crushed content.
   1. Provide crushed limestone. The contractor may provide 95 to 100 percent crushed gravel. Class B or higher aggregates shall be used in all cases.
   2. Compacted aggregate base material shall conform to the gradation shown in the table for each class of paving.
   3. All compacted aggregate for bituminous paving shall be constructed in two lifts. In no case shall compacted aggregate lifts be thicker than 4 inches.
   4. Compacted aggregate shall contain 0% soft particles, 0 percent shale and 0 percent flat elongated particles.

2.3 MATERIAL GRADATIONS (Percent Passing is shown):

SIEVE SIZE mm (US Sieve)	PARKING AND DRIVES SURFACE COURSE	PLAYGROUND SURFACE COURSE		BINDER COURSE	BASE COURSE	COMPACTED AGGREGATE
37.5 (1 ½)					100	100
25.0 (1)				100	80-99	80-100
19.0 (3/4)		100		80-98	67-90	70-90
12.5 (1/2)	100	76-96		56-80	42-74	55-80
9.5 (3/8)	85-98	62-84		43-68	33-60	45-70
4.75 (No. 4)	57-67	47-57		30-40	25-35	35-60
2.36 (No. 8)	31-62	26-56		14-40	12-34	25-50
1.18 (No. 16)	17-50	14-46		8-32	7-28	---
600mm (No. 30)	8-37	6-34		5-24	4-22	12-30
300mm (No. 50)	3-25	2-22		2-16	1-16	---
150mm (No. 100)	0-14	0-14		0-10	0-10	---
75mm (No. 200)	0-3	0-3		0-3	0-3	5-10
% Bitumen	5.5-7.0	5.0-6.4		4.1-5.2	4.0-5.1	N/A

2.4 PAVING MATERIALS

A. General: Use locally available materials and gradations, which exhibit a satisfactory record of previous installations.

B. Mineral Filler: Limestone dust, Portland cement, or other inert material complying with State Department of Transportation Standard Specifications.

C. Asphalt Cement: Use Performance Grade liquid asphalt's in accordance with State Department of Transportation Standard Specifications.

D. Tack Coat: ASTM D977, emulsified asphalt or ASTM D2397, cationic emulsified asphalt, slow setting, diluted in water, of suitable grade and consistency for application.

E. Pavement Sealers

1. Emulsified-Asphalt Slurry: ASTM D 977-03 and ASTM D 2397-02, consisting of polymer modified emulsified-asphalt, fine aggregates and mineral fillers. No Coal Tar based products will be acceptable.
   a. Basis-of-Design: Asphalt emulsion pavement sealer “Jennite AE” as manufactured by Neyra Industries, Inc., Cincinnati, Ohio. Other acceptable Emulsified- Asphalt products include “MasterSeal (PMM) as manufactured by Sealmaster, “Guardian AE” as manufactured by GemSeal Pavement Products, Chicago , Il., “Brewer AE-H/S” as manufactured by The Brewer Company, Milford,Oh.
   b. Mineral Aggregate: Shall be clean, dry silica sand, free from foreign matter. No more than 2 percent retained on 30 mesh or coarser; no more than 10 percent passing 140 mesh, and no more than .3 percent passing 200 mesh.
   c. Water: If recommended by manufacturer shall be incorporated at recommended rates but shall not exceed 10 percent of the volume.

2.5 AUXILIARY MATERIALS

A. Herbicide: Commercial chemical for weed control, registered by the EPA. Provide in granular, liquid, or wettable powder form.

B. Paving Geotextile: AASHTO M 288, nonwoven polypropylene; resistant to chemical attack, rot, and mildew; and specifically designed for paving applications.

C. Joint Sealant: ASTM D 6690 or AASHTO M 324, Type II or III, hot-applied, single-component, polymer-modified bituminous sealant.

D. Pavement-Marking Paint: Alkyd-resin type, lead and chromate free, ready mixed, complying with AASHTO M 248, Type N or Type F; colors complying with FS TT-P-1952.
   1. Color: As indicated on drawings.

E. Accessibility Pavement-Marking Paint: Latex, waterborne emulsion, lead and chromate free, ready mixed, complying with FS TT-P-1952, Type II, with drying time of less than 45 minutes.
   1. Color: Blue. and White

2.6 MIXES

A. All mix design parameters shall be measured in accordance and comply with State Department of Transportation Standard Specifications

1.	VMA%	15
2.	Air Voids %	3.5
3.	Fines/Binder Ratio	1.2
4.	Fine Aggregate Angularity	3
5.	Flow (mm)	2.0 – 4.0
6.	L.A. Abrasion Loss	40
7.	Soft Particle Max.	8
8.	Stability Min.	4.0 kN

2.7 RECYCLED ASPHALT PAVEMENT

A. Recycled asphalt pavement may be used ONLY in bituminous base or bituminous binder , provided the recycled asphalt does not contain objectionable material or materials that are not compatible with paints, coatings or other pavement markings, and do not exceed DOT recommended percentages.

2.8 PLAYGROUND GAME MARKING PAINT

A. Basis-of-Design: **Playground Paint for Game markings**: Plexipave System, California Products. Installation shall consist of 1 coat Plexipatch, 1 coat of Acrylic re-surfacer, 2 coats of fortified Plexipave, 1 coat of finish coat ; 2 coats of line paint.
   1. Subject to compliance with requirements, provide either the named product or a comparable product by one of the following:
      a. Nova Sports, Milford, Massachusetts.
      b. California Products Corp., Cambridge, Massachusetts.
      c. Advanced Polymer Technologies Corp., Harmony, Pennsylvania.

B. Line Paint: Non-oxidizing durable acrylic polymer emulsion pigmented with lightfast metallic oxides. Color, white.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that subgrade is dry and in suitable condition to begin paving.

B. Proof-roll subgrade below pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.
   1. Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph (5 km/h).
   2. Proof roll with a loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons.
   3. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted backfill or fill as directed.

C. Proceed with paving only after unsatisfactory conditions have been corrected.

3.2 COLD MILLING

A. Clean existing pavement surface of loose and deleterious material immediately before cold milling. Remove existing asphalt pavement by cold milling to grades and cross sections indicated.
   1. Mill to a depth as noted on plans. See plan for depths
   2. Mill to a uniform finished surface free of excessive gouges, grooves, and ridges.
   3. Control rate of milling to prevent tearing of existing asphalt course.
   4. Repair or replace curbs, manholes, and other construction damaged during cold milling.
   5. Excavate and trim unbound-aggregate base course, if encountered, and keep material separate from milled hot-mix asphalt.
   6. Transport milled hot-mix asphalt to asphalt recycling facility.
   7. Keep milled pavement surface free of loose material and dust.

3.3 PATCHING

A. Hot-Mix Asphalt Pavement: Saw cut perimeter of patch and excavate existing pavement section to sound base. Excavate rectangular or trapezoidal patches, extending min.12 inches into adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically. Remove excavated material. Re-compact existing unbound-aggregate base course to form new subgrade.

B. Tack Coat: Apply uniformly to vertical surfaces abutting or projecting into new, hot-mix asphalt paving at a rate of 0.05 to 0.15 gal./sq. yd.
   1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
   2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

C. Patching: Fill excavated pavements with hot-mix asphalt base mix for full thickness of patch and, while still hot, compact flush with adjacent surface.

D. Patching: Partially fill excavated pavements with hot-mix asphalt base mix and, while still hot, compact. Cover asphalt base course with compacted, hot-mix surface layer finished flush with adjacent surfaces.

3.4 REPAIRS

A. Leveling Course: Install and compact leveling course consisting of hot-mix asphalt surface course to level sags and fill depressions deeper than 1 inch in existing pavements.
   1. Install leveling wedges in compacted lifts not exceeding 3 inches thick.

B. Crack and Joint Filling: Remove existing joint filler material from cracks or joints to a depth of 1/4 inch.
   1. Clean cracks and joints in existing hot-mix asphalt pavement.
   2. Use emulsified-asphalt slurry to seal cracks and joints less than 1/4 inch wide. Fill flush with surface of existing pavement and remove excess.
   3. Use hot-applied joint sealant to seal cracks and joints more than 1/4 inch wide. Fill flush with surface of existing pavement and remove excess.

3.5 INSTALLATION OF COMPACTED AGGREGATE BASE

A. The entire area to receive compacted aggregate shall be proof rolled with a tandem dump truck loaded with approximately 15 tons. The proof rolling shall be executed prior to installing the compacted aggregate. All soft and yielding areas shall be repaired.
   1. The acceptable observed subgrade deflection shall be 1/2 inch or less measured at the rear tire.

B. Compacted aggregate shall be installed immediately after acceptance of the subgrade proof roll operation by the soils engineer and Architect.
   1. The subgrade shall be repaired and the proof roll operation repeated in the event the approved subgrade is disturbed by construction traffic, rain or other circumstance prior to placing the compacted aggregate.
   2. The proof roll operation shall be repeated in the event the subgrade is left exposed for 3 work days or more prior to placing the compacted aggregate.

C. Place the aggregate material in accordance with applicable sections of the State Department of Transportation Standard Specifications and as hereinafter specified.

D. Aggregate material shall be compacted to thickness indicated on the Drawings. Each lift shall be compacted with approved rollers to no less than 100 percent of the maximum dry density as determined by Method C of AASHTO T99, as modified in Article 2.03.24.

E. All compacted aggregates for all bituminous pavements shall be installed in 2 lifts.

F. Grade Control: During construction maintain lines and grades, including crown and cross-slope of compacted aggregate course.

G. Shoulders: Where curbs are not indicated, place shoulders along edges of aggregate subbase course to prevent lateral movement. Construct shoulders of acceptable aggregate materials, placed in such quantity to compact to thickness of each aggregate base course layer. Compact and roll at least a 12 inch width of shoulder simultaneously with compacting and rolling of each layer of aggregate subbase course.

3.6 SURFACE PREPARATION

A. General: Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that prepared subgrade is ready to receive paving.

B. Herbicide Treatment: Apply herbicide according to manufacturer's recommended rates and written application instructions. Apply to dry, prepared subgrade or surface of compacted-aggregate base before applying paving materials.
   1. Mix herbicide with prime coat if formulated by manufacturer for that purpose.

C. Tack Coat: Apply uniformly to surfaces at a rate of 0.05 to 0.15 gal./sq. yd.
   1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
   2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

3.7 HOT-MIX ASPHALT PLACING

A. Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand to areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness when compacted.
   1. Place hot-mix asphalt base course in number of lifts and thicknesses indicated.
   2. Place hot-mix asphalt surface course in single lift.
   3. Spread HMA base mix at minimum temperature of 250 deg F and HMA Surface Mix at a minimum temperature of 280 deg F.
   4. Begin applying mix along centerline of crown for crowned sections and on high side of one-way slopes unless otherwise indicated.
   5. Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat.

B. Place paving in consecutive strips not less than 10 feet wide unless infill edge strips of a lesser width are required.
   1. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Complete a section of asphalt base course before placing asphalt surface course.

C. Promptly correct surface irregularities in paving course behind paver. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

D. Special Conditions
   1. Fenced areas: All fence fabric shall be removed from poles prior to paving fenced areas.
   2. The paving machine shall not be allowed to track over or back track over any finished course of freshly placed bituminous mixture while the mixture is still hot or warm. Tracking the paving machine over freshly placed bituminous courses shall render that section of pavement unacceptable. All unacceptable pavements shall be removed and replaced with no additional payment.

3.8 JOINTS

A. Construct joints to ensure a continuous bond between adjoining paving sections. Construct joints free of depressions, with same texture and smoothness as other sections of hot-mix asphalt course.
   1. Clean contact surfaces and apply tack coat to joints.
   2. Offset longitudinal joints, in successive courses, a minimum of 6 inches.
   3. Offset transverse joints, in successive courses, a minimum of 24 inches.
   4. Construct transverse joints at each point where paver ends a day's work and resumes work at a subsequent time. Construct these joints using either "bulkhead" or "papered" method according to AI MS-22, for both "Ending a Lane" and "Resumption of Paving Operations."
   5. Compact joints as soon as hot-mix asphalt will bear roller weight without excessive displacement.
   6. Compact asphalt at joints to a density within 2 percent of specified course density.

3.9 COMPACTION

A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot, hand tampers or with vibratory-plate compactors in areas inaccessible to rollers.
   1. Complete compaction before mix temperature cools to 185 deg F.

B. Breakdown Rolling: Complete breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness. Correct laydown and rolling operations to comply with requirements.

C. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:
   1. Average Density: 96 percent of reference laboratory density according to ASTM D 6927 or AASHTO T 245, but not less than 94 percent nor greater than 100 percent.

D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.

E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.

F. Repairs: Remove paved areas that are defective or contaminated with foreign materials and replace with fresh, hot-mix asphalt. Compact by rolling to specified density and surface smoothness.

G. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.

H. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.10 INSTALLATION TOLERANCES

A. Pavement Thickness: Compact each course to produce the thickness indicated within the following tolerances:
   1. Base Course: Plus or minus 1/2 inch.
   2. Surface Course: Plus 1/4 inch, no minus.

B. Pavement Surface Smoothness: Compact each course to produce a surface smoothness within the following tolerances as determined by using a 10-foot (3-m) straightedge applied transversely or longitudinally to paved areas:
   1. Base Course: 1/4 inch.
   2. Surface Course: 3/16 inch.
   3. Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch.

3.11 SURFACE TREATMENTS

A. Application must be made when ambient temperature and pavement temperatures are above 50 degrees and no temperature expected below 50 degrees anticipated for 48 hours.

B. New asphalt should be allowed to cure for a minimum of 30 days prior to application.
   1. Fog Seals: Apply fog seal in minimum 2 coats at a total minimum rate of 0.35 gal./sq. yd. on asphalt pavement and allow to cure. With fine sand, lightly dust areas receiving excess fog seal.

3.12 PAVEMENT MARKING

A. Do not apply pavement-marking paint until layout, colors, and placement have been verified with Architect prior to the start of construction.

B. Allow paving to age for minimum of 30 days before starting pavement marking.

C. Sweep and clean surface to eliminate loose material and dust.

D. Apply paint with mechanical equipment to produce pavement markings, of dimensions indicated, with uniform, straight edges. Apply at manufacturer's recommended rates to provide a minimum wet film thickness of 15 mils.
   1. Broadcast glass beads uniformly into wet pavement markings at a rate of 6 lb/gal.

3.13 ASPHALT PLAYGROUND PAINTING

A. The playground pavement surface shall be clean, free from contamination of dirt, dust, and foreign debris and shall be dry.

B. New asphalt surfaces should not be painted until cured a minimum of 30 days.

C. Limitations to installing acrylic products:
   1. Do not apply when temperatures are below 50 degrees F. or when rain is imminent.
   2. Do not allow to freeze.
   3. Follow manufacturer’s recommendations on dilution, mixing, application rate, and recoat time and method for each product.

D. Install (2) coats of **Plexipave color on playground pavement surface GAME MARKINGS ONLY.** See Drawings and "Painted Playground Notes" additional information and for colors of games and line markings.
   1. Base coat color : (GRAY) – owner is to have final color selection approval prior to the start of construction

E. Install 2 coats line paint on top of base coats as edging to painted games, maps, etc. as shown on the Drawings and as noted in “Painted Playground Notes.” Install numbers, letters, and shapes in colors as noted on the Drawings.

3.14 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.

B. Thickness: In-place compacted thickness of hot-mix asphalt courses will be determined according to ASTM D 3549.
   1. Compacted thickness shall not be less than indicated.

C. Surface Smoothness: Test finished surface of each asphalt concrete course for smoothness, using a 10-foot straightedge applied parallel with, and at right angles to, centerline of paved area. Surfaces will not be accepted if exceeding the following tolerances for smoothness:
   1. Binder Course: 1/4 inch.
   2. Surface Course: 3/16 inch.
   3. Check surface areas at intervals as directed by the Architect.

D. Flood Test
   1. Schedule: After the pavement is complete, perform a flood test in the presence of the Architect.
   2. Method: Perform the flooding by use of water tank truck or available water.
   3. If depressions exist where water is ponding to a depth of more than 1/8 inch, fill with fresh hot asphalt concrete to provide proper drainage. Feather and smooth the edges of fill so that the joint to original surface is not visible.

E. Test un-compacted asphalt concrete mix and report the following:
   1. Sampling: AASHTO T168 (ASTM D979).
   2. Asphalt Cement Content: AASHTO T164 (ASTM D2172).
   3. Perform at least one initial test for paving, unless otherwise specified or directed.

F. In-Place Density: Testing agency will take samples of un-compacted paving mixtures and compacted pavement according to ASTM D 979 or AASHTO T 168.
   1. Reference maximum theoretical density will be determined by averaging results from four samples of hot-mix asphalt-paving mixture delivered daily to site, prepared according to ASTM D 2041, and compacted according to job-mix specifications.
   2. In-place density of compacted pavement will be determined by testing core samples according to ASTM D 1188 or ASTM D 2726.
      a. One core sample will be taken for every 500 sq. yd. or less of installed pavement, with no fewer than 3 cores taken.
      b. Field density of in-place compacted pavement may also be determined by nuclear method according to ASTM D 2950 and correlated with ASTM D 1188 or ASTM D 2726.

G. Replace and compact hot-mix asphalt where core tests were taken.

H. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements.

3.15 FINAL ACCEPTANCE CRITERIA FOR HEAVY AND STANDARD DUTY PAVING

A. Final acceptance for paving shall be based on asphalt coring within the test area limits as shown on the Drawings. Arrange for and execute core sampling by an independent testing agency. The cost of this testing shall be included in the bid by Contractor.

B. Core Requirements
   1. Cores shall be a minimum of 2 inches in diameter and 24 inches in depth.
   2. Cores shall be taken at a rate of 1 core every 3000 sq.yds. for each pavement type in each test area.
   3. The location of the cores shall be at painted lines and as determined by the Engineer and marked on the Drawings after the surface course has been constructed.
   4. The total thickness of the surface plus the binder course for each core shall be determined. The total thickness of the compacted aggregate base for each core shall be measured and recorded.
   5. The average thickness of each aggregate course for each pavement type shall be determined and recorded for each test area. The average thickness of the surface course plus the binder course shall be determined and recorded for each test area.
   6. Voids created as a result of the coring shall be filled using concrete, mortar or other bituminous material as directed.

C. Acceptance Criteria
   1. The thickness of each asphalt course as shown on the Drawings is the compacted minimum not an average. If the average thickness of any asphalt or aggregate course is less than that shown on the Drawings, then the entire test area shall be resurfaced using a bituminous surface mixture with appropriate aggregate size to obtain 90 pound per square yard yield without breaking or scratching the aggregate.
   2. If the average thickness of the surface plus the binder or the average thickness of the compacted aggregate equals or exceeds the required thickness and if any course in any individual core is less than that shown on the Drawings then, at the discretion of the Engineer, that portion of the test area shall be resurfaced using 90 pound per square yard bituminous surface. Areas requiring resurfacing due to inadequate core samples shall not be less than 2400 square feet.

3. No asphalt materials shall be removed to correct insufficient compacted aggregate once the binder or surface has been placed. The only acceptable corrective measure for insufficient compacted aggregate is additional bituminous material. Substantially insufficient compacted aggregate shall be corrected by additional resurface work constructed at a rate of 1 compacted inch of asphalt for every 2 inches of insufficient aggregate.
4. No additional payment will be made for additional construction necessary due to insufficient cores.

D. Acceptance Submittals
1. No bituminous pavements will be accepted until it has been demonstrated by the Contractor that the pavements are in accordance with the Drawings and Specifications. The Contractor shall submit the following:
a. Pavement coring report with a drawing illustrating the location of each core taken, asphalt and aggregate thicknesses and subgrade moisture content.
b. Modified proctor maximum dry density soil data for each soil type used as subgrade within the pavement. The soils data sheet(s) shall indicate which asphalt core or cores the soil corresponds to.
c. Job mix formula for each type of bituminous mixture. The job mix formula shall contain, at minimum, the aggregate gradation, percent bitumen, source and type of bitumen and the laboratory maximum compacted density for the mixture.
d. In-place asphalt compaction density test results illustrating the corresponding core to which the test applies.

E. Variation from Job Mix Formula or Required Gradations:
1. Compliance Criteria
a. Paving work shall be considered in compliance if the gradations and % bitumen noted in the table are within the specified ranges. No contract adjustments shall be made for all work that is in compliance with these specifications.
2. Substantial Compliance Criteria
a. Paving work shall be considered within substantial compliance if the gradations and percent bitumen noted in the table are within plus or minus 0.20
b. A deduct contract adjustment shall be made at the rate of $0.50 per square yard for each square yard of paving that varies from the Job Mix Formula or the Required Gradations.
3. Non-Compliance: Paving work shall be considered non-compliant if the gradations and percent bitumen deviate greater than 0.20 of the values in the table.

3.16 DISPOSAL

A. Except for material indicated to be recycled, remove excavated materials from Project site and legally dispose of them in an EPA-approved landfill.
1. Do not allow milled materials to accumulate on-site.

END OF SECTION 321216

PROJECT #224211.00

CARMEL CLAY SCHOOLS
PAVING IMPROVEMENTS

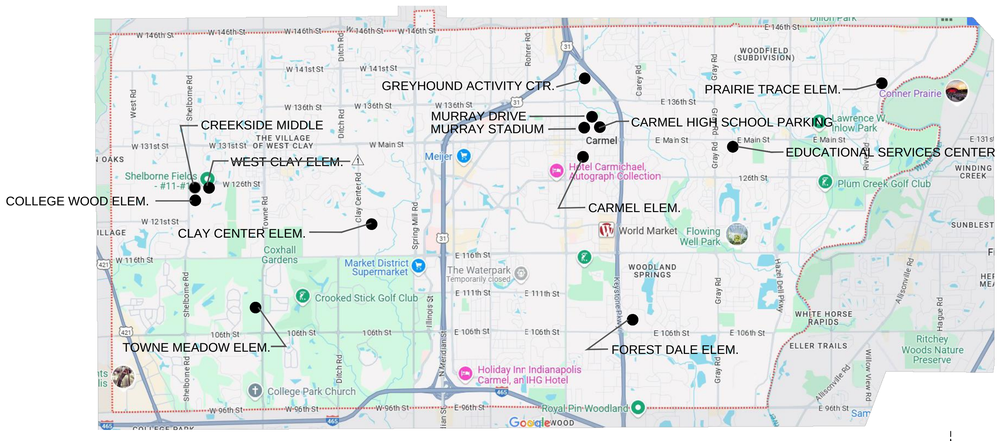
CARMEL, IN. 46032

100% CONSTRUCTION DOCUMENTS
02-03-2025

CONSTRUCTION MANAGER
THE SKILLMAN CORPORATION
3834 S. EMERSON AVE., BLDG A
INDIANAPOLIS, IN 46203
PHONE: 317-783-6151

ARCHITECT
FANNING HOWEY ASSOCIATES INC.
350 EAST NEW YORK STREET, SUITE 300
INDIANAPOLIS INDIANA 46204
PHONE: (317) 848-0966

OWNER
CARMEL CLAY SCHOOLS
5185 E MAIN ST
CARMEL, INDIANA 46033
PHONE: (317) 844-9961



LOCATION MAP

SHEET INDEX

PAVING IMPROVEMENTS

C0	COVER SHEET

SITE SHEETS

G1.0	ESC- EDUCATIONAL SVCS. CENTER
G1.1	CLAY CENTER ELEM.
G1.2	CREEKSIDE MIDDLE
G1.3	COLLEGEWOOD ELEM.
~~G1.4~~	~~WEST CLAY ELEM.~~
G1.5	PRAIRIE TRACE ELEM. AND PLAYGROUND PAVING DETAILS
G1.6	FORESTDALE ELEM.
G1.7	TOWN MEADOW ELEM.
G1.8	CARMEL ELEM.
G1.9	GREYHOUND ACTIVITY CENTER AND TYPICAL DETAILS
G1.10	MURRAY STADIUM
G1.11	MURRAY DRIVE
G1.12	CARMEL HIGH SCHOOL PARKING

⚠1 2-20-2025 — ~~WEST CLAY ELEM.~~ REMOVE THIS SHEET FROM PROJECT

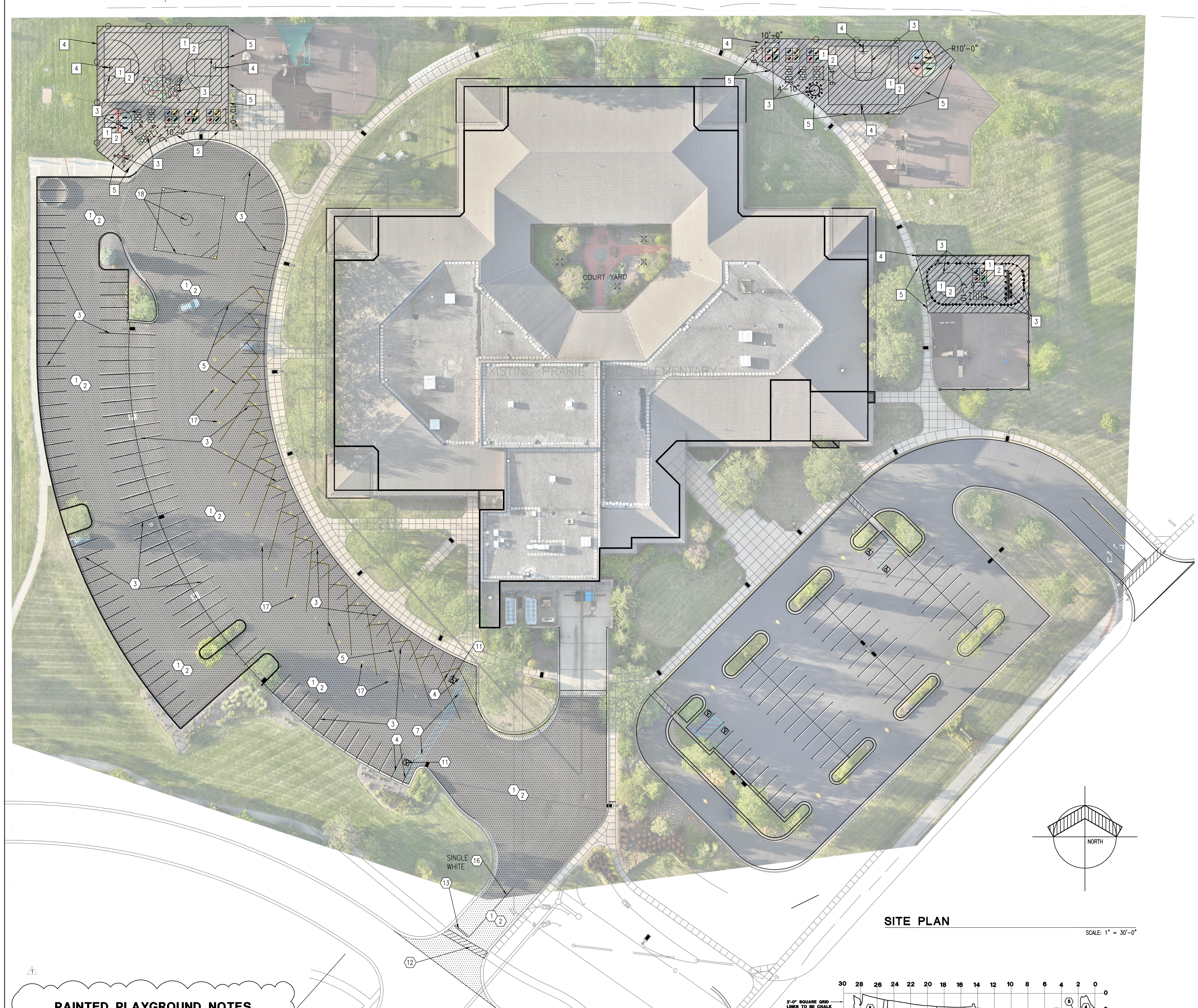
100% CONSTRUCTION DOCUMENTS

PAUL A. MILLER REGISTERED No. A 10000161 STATE OF INDIANA ARCHITECT

PROJECT NUMBER: 224211.00

COVER SHEET

224211.00 CARMEL CLAY SCHOOLS PAVING IMPROVEMENTS



SITE PLAN

SCALE: 1" = 30'-0"

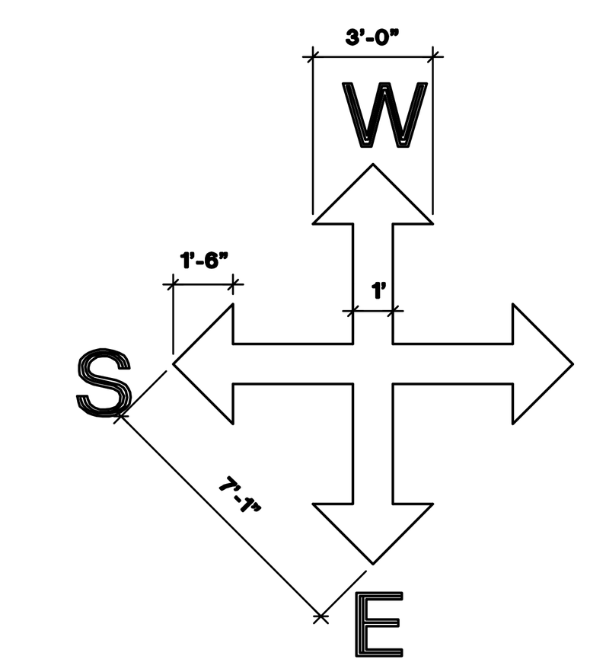
PLAN NOTES

ALL NOTES MAY NOT BE INDICATED ON THIS SHEET

1. INSTALL BITUMINOUS CRACK FILLER IN EXISTING PAVEMENT CRACKS WHETHER NOTED OR NOT IN ALL SHADED PAVED AREAS.
2. FOLLOWING CRACK FILLING OPERATIONS SEALCOAT ALL PAVED AREAS AS NOTED IN SHADED PAVED AREAS. THOROUGHLY CLEAN EXISTING PAVED SURFACES OF ALL DIRT AND DEBRIS PRIOR TO SEALCOATING
3. FOLLOWING CRACK FILLING AND SEALCOATING OPERATIONS STRIPE ALL CAR PARKING SPACES WITH 4" WIDE WHITE STRIPING TO MATCH EXISTING SIZE AND SPACING
4. FOLLOWING CRACK FILLING AND SEALCOATING OPERATIONS STRIPE ALL ACCESSIBLE PARKING SPACES WITH 4" WIDE BLUE STRIPING TO MATCH EXISTING SIZE AND SPACING
5. FOLLOWING CRACK FILLING AND SEALCOATING OPERATIONS STRIPE ALL BUS PARKING SPACES WITH 4" WIDE YELLOW STRIPING TO MATCH EXISTING SIZE AND SPACING
6. FOLLOWING CRACK FILLING AND SEALCOATING OPERATIONS STRIPE ALL HATCHED PARKING ISLANDS WITH 4" WIDE YELLOW STRIPING TO MATCH EXISTING SIZE AND SPACING
7. FOLLOWING CRACK FILLING AND SEALCOATING OPERATIONS STRIPE ALL HATCHED ACCESSIBLE PEDESTRIAN AISLES WITH 4" WIDE BLUE STRIPING TO MATCH EXISTING SIZE AND SPACING. ALIGN HATCHED SURFACE WITH RAMP DETECTABLE WARNING SURFACES.
8. FOLLOWING CRACK FILLING AND SEALCOATING OPERATIONS STRIPE ALL DESIGNATED HATCHED FIRE OR NO PARKING ZONES WITH 4" WIDE YELLOW STRIPING TO MATCH EXISTING SIZE AND SPACING
9. FOLLOWING CRACK FILLING AND SEALCOATING OPERATIONS PAINT SPECIAL COLOR TEXT TO MATCH EXISTING SIZE, SPACING AND COLOR OR COLOR OF ADJACENT STRIPING.
10. FOLLOWING CRACK FILLING AND SEALCOATING OPERATIONS PAINT CURB IN COLOR TO MATCH EXISTING.
11. FOLLOWING CRACK FILLING AND SEALCOATING OPERATIONS PAINT ACCESSIBLE PARKING SYMBOL IN EXISTING LOCATIONS.
12. FOLLOWING CRACK FILLING AND SEALCOATING OPERATIONS PAINT WHITE HATCHED PEDESTRIAN CROSSING IN SIZE TO MATCH EXISTING.
13. FOLLOWING CRACK FILLING AND SEALCOATING OPERATIONS PAINT WHITE VEHICULAR STOP BARS IN LOCATIONS NOTED.
14. FOLLOWING CRACK FILLING AND SEALCOATING OPERATIONS PAINT WHITE VEHICULAR CHEVRONS AT SPEED BUMP LOCATIONS NOTED.
15. FOLLOWING CRACK FILLING AND SEALCOATING OPERATIONS PAINT WHITE VEHICULAR DIRECTIONAL ARROWS IN LOCATIONS NOTED.
16. FOLLOWING CRACK FILLING AND SEALCOATING OPERATIONS PAINT VEHICULAR LANE STRIPING. SEE PLAN FOR COLOR AND NUMBER OF LANE LINES.
17. FOLLOWING CRACK FILLING AND SEALCOATING OPERATIONS PAINT VEHICULAR PARKING SPACE NUMBERS IN SIZE AND COLOR TO MATCH EXISTING.
18. FOLLOWING CRACK FILLING AND SEALCOATING OPERATIONS PAINT GAME MARKINGS TO MATCH EXISTING.

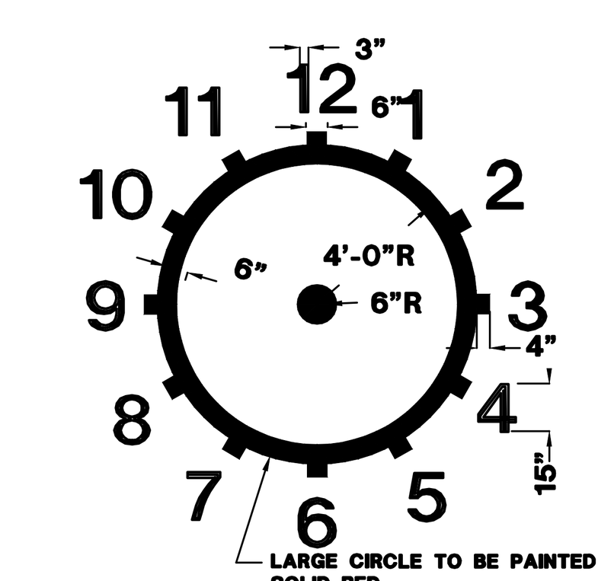
PLAYGROUND PLAN NOTES

1. DOCUMENT EX. PAVEMENT MARKINGS AND DIMENSIONS PRIOR TO MILLING OF EX. ASPHALT PAVING IN IT'S ENTIRETY IN ALL HATCHED AREAS NOTED - EX. AGGREGATE BASE COURSE TO REMAIN - CONTRACTOR IS TO RE-COMPACT EX. BASE TO MEET ASPHALT MANUF. RECOMMENDED PERCENTAGE PRIOR TO APPLYING AN ADDITIONAL APPROX. 2" LEVELING COURSE OF AGGREGATE TO THE EX. BASE COURSE.
2. (Rev. 1) CONTRACTOR IS TO PROVIDE A NEW (3") INTERMEDIATE ASPHALT BASE COURSE , (2") SURFACING COURSE OF ASPHALT TO EX. ASPHALT PAVEMENT GAME AREAS. WEDGE AND LEVEL FINISH COURSE AS REQUIRED TO MEET EXISTING SURFACES FLUSH. ALL FINISH SURFACES TO DRAIN. ~~FOLLOWING PLAYGROUND PAVING OPERATIONS AND MIN. 30 DAY ASPHALT CURE TIME AND PRIOR TO PAINTING OF GAME MARKINGS CONTRACTOR SHALL INSTALL 2 COATS OF PLEXI PAVE COLOR SYSTEM IN COLOR AS SELECTED BY OWNER/ARCHITECT OVER ENTIRE HATCHED PLAYGROUND AREA AS NOTED.~~
3. (Rev. 1) CONTRACTOR IS TO PROVIDE NEW PVMT AND GAME MARKINGS MATCHING EX. PAVEMENT GAMES FOUND ON SITE. - ALL PVMT MARKINGS ARE TO BE DOCUMENTED PRIOR TO THE START OF CONSTRUCTION SO THAT THEY CAN BE MATCHED AFTER PAVING OPERATIONS. CONTRACTOR IS TO ALLOW MIN. OF (30) CURE TIME PRIOR TO INSTALLING ~~PLAYGROUND COLOR SYSTEM AND~~ NEW PVMT MARKINGS TO NEW ASPHALT PAVED AREAS. SEE GAME DETAILS THIS SHEET.
4. EX. BASKETBALL GOAL AND EX. FENCING TO REMAIN - PROTECT DURING START OF CONSTRUCTION TYP
5. ALL EX. CONC. PAVEMENT AREAS AND CURBS TO REMAIN - PROTECT DURING THE START OF CONSTRUCTION TYP



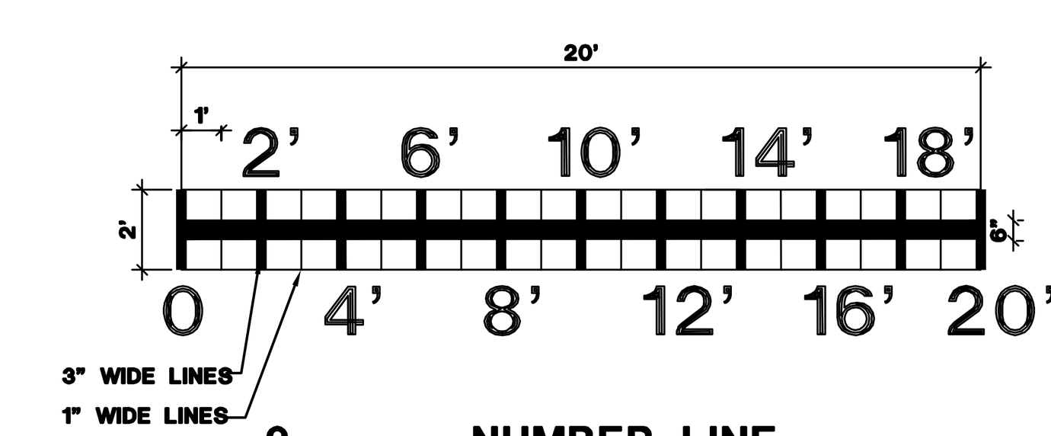
1 COMPASS

NTS



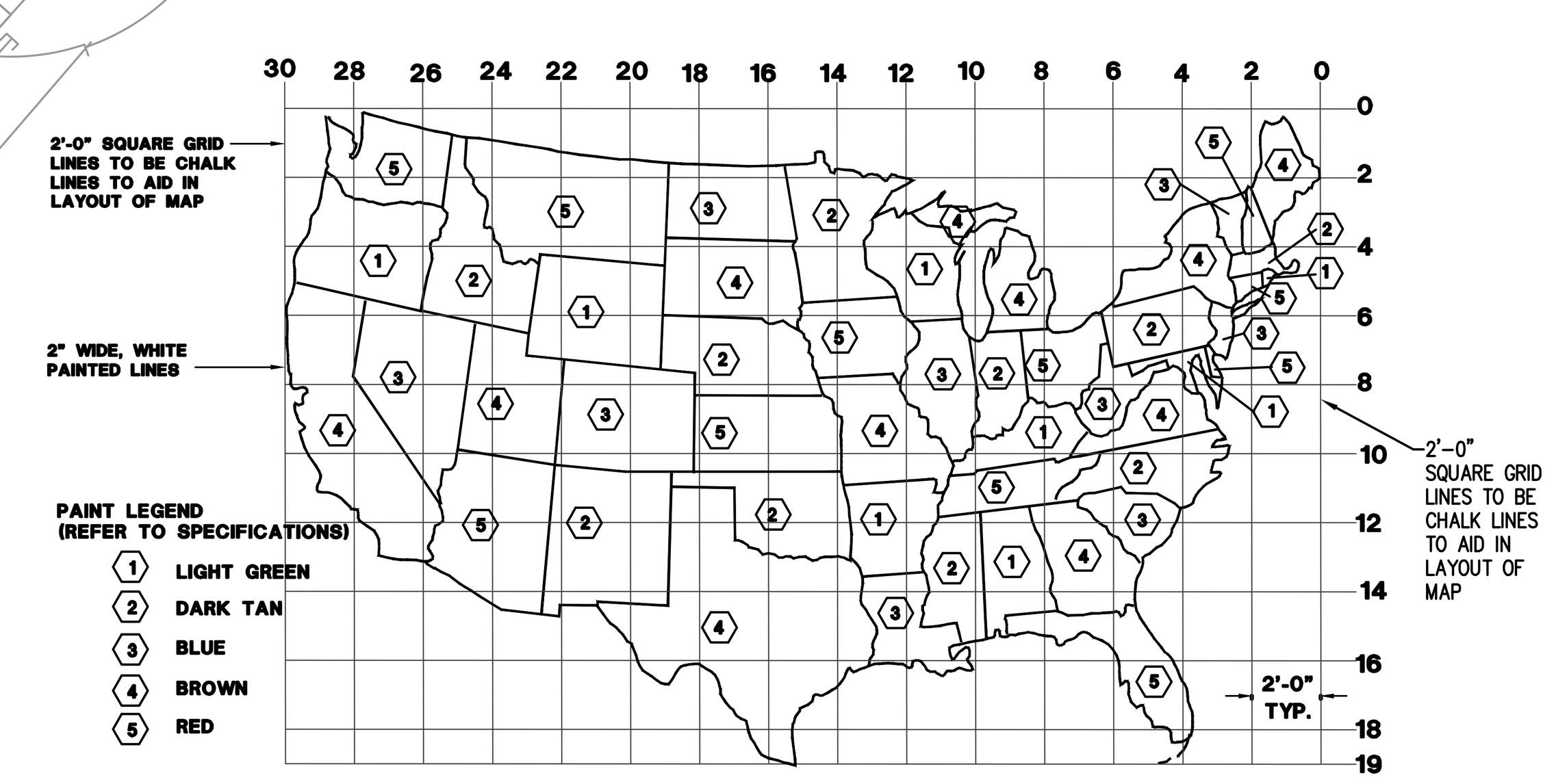
2 PAINTED CLOCK

NTS



3 NUMBER LINE

NTS



4 PAINTED U.S.A. MAP

NTS

PAINTED PLAYGROUND NOTES

PAINTED PLAYGROUND GAME NOTES: SEE SHT G4.00 FOR ALL PAINTED GAME LAYOUTS

1. DETAIL 12 – FUNNEL/DROPSHOT, TETHERBALL AND FOUR SQUARE COLORS TO BE AS NOTED ON THE PLAN. THE LINES ARE TO BE 2" WIDE, PAINTED WHITE – SEE PLAN FOR DETAILS
2. DETAIL 8 – HOPSCOTCH LINES ARE TO BE 2" WIDE, PAINTED WHITE. HOPSCOTCH AREAS COLORS ARE AS FOLLOWS: AREAS 1 AND 4 ARE TO BE BLUE. AREAS 2, 5, & 7 ARE RED. AREAS 3,6, & 8 ARE YELLOW. THE NUMBERS ARE TO BE WHITE WITH 1" WIDE LINES.
3. DETAIL 7 – COMPASS: LINES OUTLINING ARROWS ARE TO BE 2" WIDE, PAINTED WHTIE; CENTER OF ARROWS ARE TO BE PAINTED SOLID RED. LETTERS (N,S,E,W) ARE TO BE WHITE, 21" HIGH WITH 3" WIDE LINES.
4. DETAIL 6 – CLOCK: LARGE CIRCLE TO BE PAINTED SOLID RED. SMALL CENTER CIRCLE AND NUMBERS TO BE PAINTED SOLID WHITE. NUMBERS ARE TO BE 15" HIGH AND WITH 3" WIDE LINES.
5. ALL THE SMALL CIRCLES, SQUARES, TRIANGLES & DIAMONDS ARE TO BE 1'–6" DIAMETER OR ALONG EDGES. THEY ARE TO BE PAINTED SOLID WHITE. THE SYMBOLS ARE TO BE 1'–0" APART. SOLID AND DASHED LINES IN THE KINDERGARTEN PLAY AREA ARE TO BE 2" WIDE, PAINTED WHITE.
6. REFER TO SPECIFICATIONS FOR TYPE OF PAINTING SYSTEM TO BE USED.

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CAUTION !!

THE LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES SHOWN ON THE PLAN ARE BASED UPON ABOVE GROUND EVIDENCE (INCLUDING, BUT NOT LIMITED TO, MANHOLES, INLETS, VALVES, AND MARKS MADE UPON THE GROUND BY OTHERS) AND ARE SPECULATIVE IN NATURE. THERE MAY ALSO BE OTHER EXISTING UNDERGROUND UTILITIES FOR WHICH THERE IS NO ABOVE GROUND EVIDENCE OR FOR WHICH NO ABOVE GROUND EVIDENCE WAS OBSERVED. THE EXACT LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHALL BE VERIFIED BY CONTRACTOR PRIOR TO ANY AND ALL CONSTRUCTION.

LOCATIONS GIVEN ARE APPROXIMATE AND ARE TO BE SITE VERIFIED PRIOR TO THE START OF CONSTRUCTION. ALL CONCRETE AND ASPHALT PAVING NOT NOTED FOR WORK IS TO REMAIN – PROTECT DURING CONSTRUCTION TYP

CARMEL CLAY SCHOOLS
5201 E. MAIN STREET, CARMEL, IN. 463033
(317)-844-9961

ARCHITECT
FANNING HOWEY
317-848-0966 WWW.FHAI.COM

KEY PLAN

100% CONSTRUCTION DOCUMENTS

PAUL A. MILLER REGISTERED No. AR10800161 STATE OF INDIANA ARCHITECT

PROJECT MANAGER: DR
DRAWN BY: JB,EB
PROJECT NUMBER: 224211.00
PROJECT CONSTRUCTION ISSUE DATE: 02-03-2025

REV. NO.	DESCRIPTION	DATE
1	ADDENDUM #1	2–20–2025

PRAIRIE TRACE ELEMENTARY PAVING PLAN AND PLAYGROUND PAVEMENT DETAILS

G1.5