

ADDENDUM NO. 2

June 2, 2023

Carmel High School Stadium South Support Building

E. 136th Street
Carmel, IN 46032

TO: ALL BIDDERS OF RECORD

This Addendum forms a part of and modifies the Bidding Requirements, Contract Forms, Contract Conditions, Specifications, and Drawings dated December 13, 2022, by Fanning Howey. 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 2-1 through 2-2 and attached Fanning Howey Associates, Inc. Addendum No. 2 dated June 1, 2023, consisting of 3 pages, revised Specification Section 27 51 11 – Public Address and Mass Notification Systems, and revised Drawings G2.1, SU1.1, SU2.11, A7.01, A7.02, A7S.01, E1.1, and T1.02.

A. SPECIFICATION SECTION 01 12 00 – MULTIPLE CONTRACT SUMMARY

1. Paragraph 3.03 Bid Categories

A. Bid Category No. 1 – General Trades

Add the following Clarification

23. Reference attached sheet G1.4 for work to be included within this project.

F. Bid Category No. 6 – Electrical and Technology

Replace the following Clarification

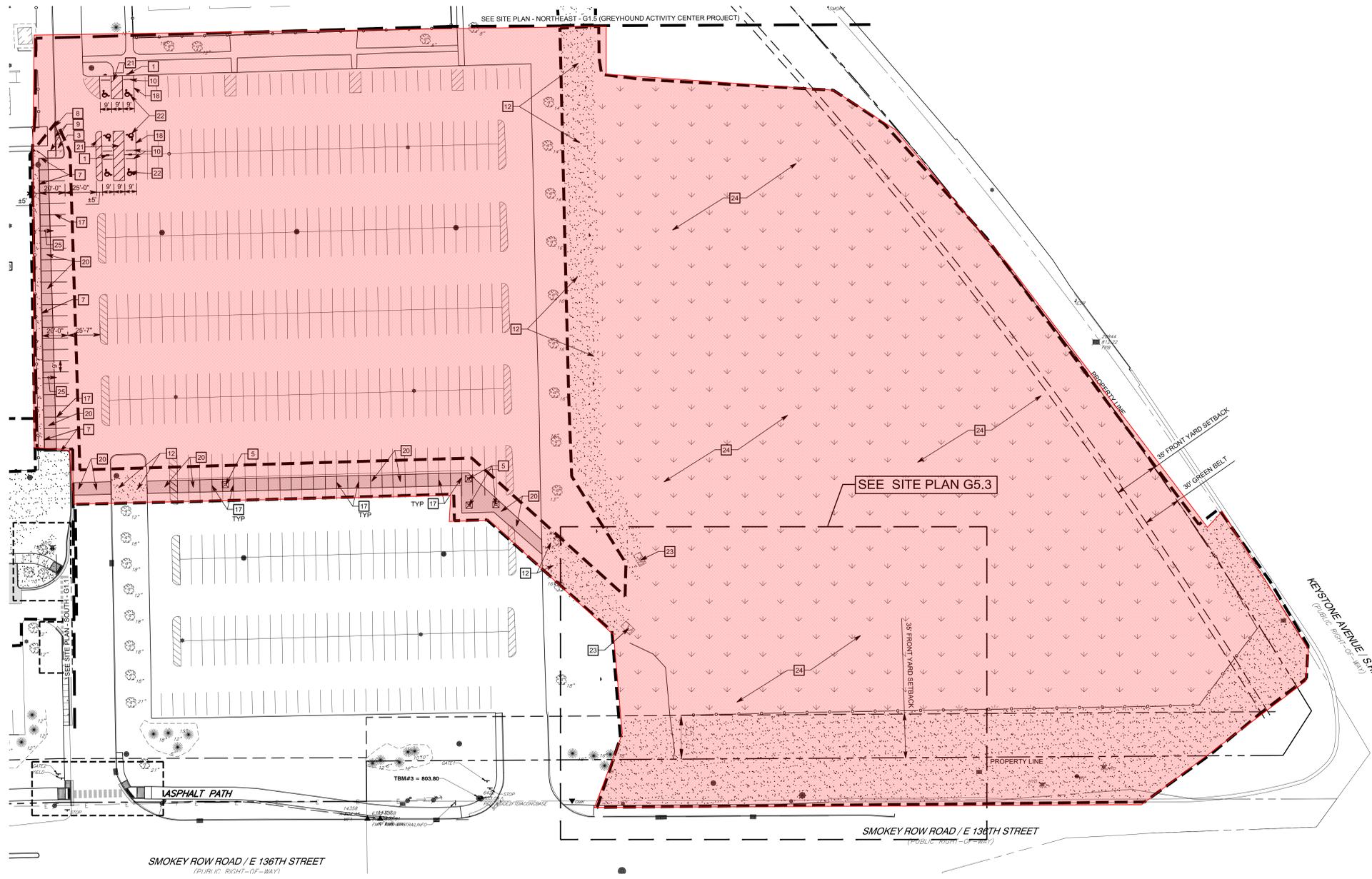
12. Use existing underground conduit to Carmel High School for Fiber.

B. SPECIFICATION SECTION 01 21 00 – ALLOWANCES

1. Paragraph 3.01 Product Allowance

Add the following Allowances

C. Bid Category No. 6 Electrical and Technology Light Fixture LS1 \$13,000



GENERAL NOTES

- SEE DRAWING G00.1 FOR GENERAL NOTES AND ADDITIONAL LEGEND.
- TOPOGRAPHIC CONDITIONS AND EXISTING UTILITIES SHOWN WERE PROVIDED BY CEC CIVIL & ENVIRONMENTAL CONSULTANTS DATED MAY 17, 2022. THE ENGINEER MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED.
- CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE PROJECT AREA INCLUDING UNDERGROUND UTILITY CONDITIONS, LOCATION AND DEPTH PRIOR TO ANY OTHER SITE CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER.

SITE KEYNOTES (SOUTH BUILDING)

- 1 ADA ACCESSIBLE PARKING SIGN - SEE DETAIL P/G4.11
- 3 MONOLITHIC CURB & WALK - SEE DETAIL B/G4.11
- 5 CONCRETE COLLAR - SEE DETAIL E/G4.11
- 7 CONCRETE STRAIGHT CURB - SEE DETAIL H/G4.11
- 8 CURB TO CURB CONNECTION - SEE DETAIL J/G4.11
- 9 PROVIDE DOWEL BETWEEN NEW AND EXISTING CONCRETE SIDEWALK - SEE DETAIL K/G4.11
- 10 PARKING BUMPER - PER DETAIL O/G4.11
- 12 LAWN AREA - SEE LANDSCAPE PLANS
- 17 4" WIDE WHITE PAVEMENT MARKING - PER SPECIFICATIONS
- 18 4" WIDE BLUE PAVEMENT MARKING - PER SPECIFICATIONS
- 20 ASPHALT PAVEMENT - PER DETAIL L/G4.11
- 21 4" WIDE BLUE PAVEMENT STRIPE @ 3'-0" AT 45 DEGREES - PER DETAIL N/G4.11
- 22 WHITE ADA LOGO ON BLUE BACKGROUND - PER DETAIL O/G4.11
- 23 RIPRAP AT PIPE END SECTION - PER DETAIL
- 24 SEEDED NATIVE PLANT AREA - SEE LANDSCAPE PLAN
- 25 SLOPE NEW PAVEMENT AWAY FROM CURB AND MATCH EXISTING EDGE OF PAVEMENT GRADE. SLOPE AT 1.5% MIN. / 2.0% MAX.

PROPOSED SITE LEGEND

- APPROXIMATE LIMITS OF CONSTRUCTION
- BUILDING
- CONCRETE SIDEWALK/PAVEMENT
- ASPHALT PAVEMENT
- SEEDED LAWN

CARMEL STADIUM SOUTH SUPPORT BUILDING

E 136th St, Carmel, IN 46032

CARMEL CLAY SCHOOLS



ARCHITECT



317.848.0966 WWW.FHAI.COM
350 E NEW YORK ST #300, INDIANAPOLIS, IN 46204

CONSULTANT



CONSTRUCTION DOCUMENTS

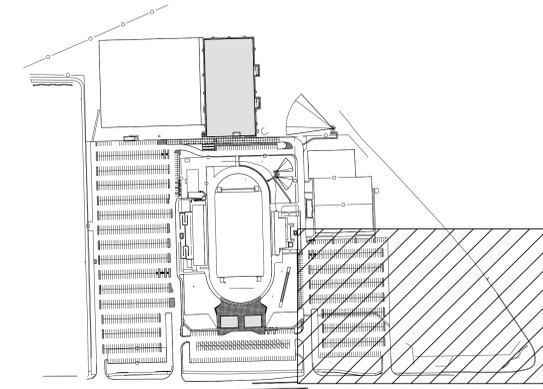


PROJECT MANAGER: PMR
DRAWN BY: ARS
PROJECT NUMBER: 220136.00
PROJECT ISSUE DATE: 04.28.2023

| REV. NO. | DESCRIPTION | DATE |
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SITE PLAN - SOUTHEAST

G1.4



LEGEND

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.



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ADDENDUM NO. 2

Carmel Stadium South Support Building

Project No. 220136.00

Carmel Clay Schools
Carmel, Indiana

Index of Contents

Addendum No. 2, 7 items, 3 pages
Revised Project Manual Sections: 27 51 11 – Public Address and Mass Notification Systems
Revised Drawing Sheets: G2.1, SU1.1, SU2.11, A7.01, A7.02, A7S.01, E1.1 and T1.02

Date: June 1, 2023

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



Paul A. Miller, License No. AR10800161
Expiration Date: 12/31/2023

TO: ALL BIDDERS OF RECORD

ADDENDUM NO. 2 to Drawings and Project Manual, dated April 26, 2023 for Carmel High School South Support Building for Carmel Clay Schools, 5201 East 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 SECTIONS

- A. Section 27 51 11 – Public Address and Mass Notification Systems has been revised, dated 6/1/23, and is included with and hereby made a part of this Addendum.

ITEM NO. 2. PROJECT MANUAL, SECTION 10 51 13 – METAL LOCKERS

- A. Add 2.3, D., 1., as follows:

“1. Provide bolt assembly for anchoring Geartopper to mounting plate within locker assembly.”

- B. Delete 2.5, J., 1., in its entirety.

- C. Add 2.5, J., 5., as follows:

- “5. Equipment Topper: Top of Locker fixed mounted Geartopper by GearGrid Corporation or equal.
- a. One inch diameter tube in configuration to store shoulder pads and helmets
 - b. Finish: Powdercoated as selected from Manufacturer’s 15 standard colors.
 - c. Dimensions: Approximately 21 inches wide x 24.5 inches high.
 - d. Provide 3/16 inch thick steel mounting plate for interior of open locker.

- D. Add 3.2, C., 7., as follows:

“7. Install Geartopper assembly onto top lockers using bolt assembly where indicated.”

ITEM NO. 3. PROJECT MANUAL, SECTION 12 32 16 – MANUFACTURED PLASTIC-LAMINATE-FACED (EDUCATIONAL) CASEWORK

- A. Add 1.1, A., 4., as follows:

“4. Quartz surfacing countertops.”

- B. Article 2.3: Change second subparagraph “A” noting Solid-Surfacing Material, to “L”.

C. Add 2.3, M., as follows:

- “M. Quartz Surfacing: Material comprised of up to 93 percent crushed quartz aggregate combined with polymer resins and pigments and fabricated into slabs using vacuum vibro-compaction process.
1. Manufacturer: Caesarstone U.S.A., Inc. or equal.
 2. Thickness: 3/4 inch, minimum.
 3. Identification: Labeled with batch number and manufacturer’s imprinted identifying mark on back.
 4. Finish: Polished.
 5. Color: As indicated on List of Finishes.”

D. Add 2.10, D., as follows:

- “D. Quartz countertops: 3/4 inch minimum quartz surfacing slabs in configuration indicated on Drawings.
1. Core Material: Particleboard made with exterior glue, 1 inch – 1/18 inch thick either fully supported or in a framework configuration as recommended by fabricator.
 2. Edges: Beveled
 3. Outside corners: Square
 4. Mounting Adhesives: Provide structural-grade silicone or epoxy adhesives as recommended by manufacturer for application and condition of use.
 5. Fabricate tops in one pieces to greatest extent possible. Joint type where required shall be bonded.
 6. Provide shop-applied edges of same material and thickness.
 7. Provide backsplash and endsplash in solid 3/4 inch materials, field applied.
 8. Color: As selected from manufacturers standard or as listed in the “List of Finishes”.”

ITEM NO. 4. PROJECT MANUAL, SECTION 27 13 23 FIBER BACKBONE

A. Replace paragraph 3.2, E as follows:

- “E. All fiber optic cable run outdoor and under slab in the conduit shall be rated for outdoor. At entrance into High School, transition from outdoor loose fiber cable to indoor plenum rated armored fiber cable.”

ITEM NO. 5. PROJECT MANUAL, SECTION 28 13 10 ACCESS CONTROL

A. Add paragraph 1.2, D as follows:

- “D. The Owner currently utilizes RS2 Access It! for district wide access control systems. Central Indiana Hardware is the existing preferred integrator for access controls. For pricing, the following contact information should be used: Central Indiana Hardware, Damir Husejnovic, Office: 317-558-5700, Mobile: 317-989-1514, email: husejnovicd@cih-inc.com”

B. Replace paragraph 2.1, A, 1 as follows: “1. RS2 Access It! to match district standard, no equals.”

C. Replace paragraph 2.5, J, 1 as follows: “1. UL294 certified and compatible with both 13.56 MHz and 125 kHz proximity cards.”

D. Replace paragraph 2.5, J, 2 as follows: “2. Approved Manufacturer: HID Signo series or approved equal.”

ITEM NO. 6. PROJECT MANUAL, SECTION 33 41 00 – STORM UTILITY DRAINAGE PIPING

A. Add 1.1, A., 8., as follows:

“8. Trench Drain assembly as indicated on Drawings.”

ITEM NO. 7. REVISED DRAWING SHEETS

A. Drawing Sheets: G2.1, SU1.1, SU2.11, A7.01, A7.02, A7S.01, E1.1 and T1.02 have been revised, dated 6/1/23, and are included with and hereby made a part of this Addendum. These Drawings supersede the original documents.

END OF ADDENDUM

SECTION 27 51 11 - PUBLIC ADDRESS AND MASS NOTIFICATION SYSTEMS

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. This Section includes but is not limited to the following:
 - 1. Ceiling speakers
 - 2. Program sources.
 - 3. Power amplifiers.
 - 4. Audio signal processors.
 - 5. Wireless microphones.
 - 6. Miscellaneous sound equipment, cables, hardware, etc.
- B. Related section includes the following:
 - 1. Division 26 – Electrical
 - 2. Division 27 – Communications Sections.

1.3 SECTION DEFINITIONS

- A. Channels: Separate parallel signal paths, from sources to loudspeakers or loudspeaker zones, with separate amplification and switching that permit selection between paths for speaker alternative program signals.
- B. Zone: Separate group of loudspeakers and associated supply wiring that may be arranged for selective switching between different channels.

1.4 SUBMITTALS

- A. Shop Drawings: Signed and sealed by a qualified sound system engineer.
 - 1. Equipment Details: Detail equipment assemblies and indicate dimensions, weights, required clearances, method of field assembly, components, and location of each field connection.
 - 2. Console layouts.
 - 3. Control panels.
 - 4. Rack arrangements.
 - 5. Wiring Diagrams: Power, signal, and control wiring. Include the following:
 - a). Identify terminals to facilitate installation, operation, and maintenance.
 - b). Single-line diagram showing interconnection of components.
 - c). Cabling diagram showing cable routing.
 - 6. Loudspeakers mounting details.
 - 7. Loudspeakers locations and aiming details.
- B. Quality Assurance/Control Submittals:
 - 1. Product Data: For each item specified.
- C. Closeout Submittals:
 - 1. Operation and Maintenance Data: For public address and music equipment to include in emergency, operation, and maintenance manuals.
 - 2. Extra Materials: Receipt for extra materials.

3. Loose Equipment: Receipt for loose materials not fastened in place.
- D. See Common Work Results For Communications section 270500 for more submittal requirements.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
 1. Maintenance Proximity: Not more than 2 hours' normal travel time from Installer's place of business to Project site.
 2. Cable installer must have on staff a registered communication distribution designer certified by Building Industry Consulting Service International.
 3. Installation shall be by personnel certified by National Institute for Certification in Engineering Technologies as audio systems Level III technician.
- B. Source Limitations: Obtain public address and music equipment through a single source authorized by manufacturer to distribute each product.
- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- D. Comply with NFPA 70 – National Electrical Code.
- E. Comply with UL 50.
- F. TIA/EIA-607 Telecommunications grounding.
- G. Latest edition of BISCI – TDMM – manual
- H. Americans with Disabilities Act (ADA)
- I. Federal Communications Commission, Part 15
- J. Sound System Engineering (Davis and Patronics) 3rd Edition 2006.
- K. NSCA – Certified Systems Installer, C-SI
- L. InfoComm International – Certified Technology Specialist, CTS.
- M. Provide labeling per ANSI/EIA/TIA-606 requirement and in accordance with the Owner and Technology Consultant.

1.6 COORDINATION

- A. Coordinate layout and installation of system components and suspension system with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, fire-suppression system, and partition assemblies.

1.7 WARRANTY

- A. The public address and mass notifications system shall carry a warranty as specified in Section "Demonstration and Training of Communications Systems".

1.8 TRAINING

- A. Provide training per Section "Demonstration and Training of Communications Systems".

1.9 RECORD DRAWINGS/OPERATION AND MAINTENANCE MANUALS

- A. Provide record drawings and operation and maintenance manuals as described in Sections "Operation and Maintenance of Communications" and "Common Works Results for Communication Systems".

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. The approved manufacturers are listed in each product section. Alternative manufacturers may be considered per the Contract Documents requirements.

2.2 EQUIPMENT AND MATERIALS

- A. Coordinate features to form an integrated system. Match components and interconnections for optimum performance of specified functions.
- B. Equipment: Modular type using solid-state components, fully rated for continuous duty, unless otherwise indicated. Select equipment for normal operation on input power usually supplied at 110 to 130 V, 60 Hz.

2.3 CEILING SPEAKERS

- A. 4-Inch Ceiling Loudspeaker System.
 - 1. Approved Manufacturer:
 - a). Electro-Voice, Inc. EVID C4.2 series
 - b). JBL Professional, Control 24CT.
 - c). EAW CIS300
 - d). Soundtube CM 400i
 - e). Community D4LP Series
 - 2. Provide 4-inch coaxial ceiling loudspeaker system with ported bass reflex enclosure as follows:
 - a). LH Transducer: 4 inch cone.
 - b). HF Transducer: 3/4 inch diaphragm.
 - c). Voice Coil Diameter: 1 inch.
 - d). Magnet Weight: 10 oz., nominal.
 - e). Impedance: 8 ohms, nominal.
 - f). Power Rating: 25 W RMS.
 - g). Sensitivity: 88 dB average.
 - h). Frequency Response: 75 to 20,000 Hz, plus or minus 7 dB.
 - i). Dispersion Angle: 130 degrees.
 - j). Enclosure: 285 cu. in. fiberglass lined 18 gauge steel, textured white finish with 24 gauge steel tile bridge.
 - k). Grille: Round one-piece perforated steel, textured white finish.
 - l). Transformer: 25/70 V, 1.5 dB insertion loss, rated 16 W with at least 5 primary taps, and bypass position for direct-coupled 8 ohm operation.

2.4 POWER AMPLIFIERS

- A. Provide power amplifiers, as shown, that meets to the following requirements:

1. Comply with TIA/EIA SE-101-A.
2. Mounting: TIA/EIA-310-D, standard 19-inch rack mounted.
3. Output Power: 250 watts nominal x 2 channels.
4. Frequency Response: 20 – 20KHz +1dB / -3dB
5. Minimum Signal-to-Noise Ratio: 60 dB, at rated output.
6. Total Harmonic Distortion: Less than 0.3 percent at rated power output from 50 to 12,000 Hz.
7. Output Regulation: Less than 2 dB from full to no load.
8. Controls: On/off, input levels, and low-cut filter.
9. Outputs: 8 ohms at 25 / 70V balanced
10. Input Sensitivity: Matched to preamplifier and providing full-rated output with sound-pressure level of less than 10 dynes/sq. cm impinging on speaker microphone or handset transmitter.

B. Accessories

1. Rack-mount kit
2. Power cable

C. Rack Spaces – 1 RU

D. Manufacturers:

1. TOA Electronics, Inc. DA-250DH
2. Equals by Crown, Crest Audio, Peavey.

2.5 DIGITAL SIGNAL PROCESSORS (DSP)

A. Minimum 8-Input, 8-Output digital signal processor / mixer.

1. Provide a minimum 8 input, 8 output audio processor with feedback reduction, as follows:
 - a). Modular construction
 - b). Ducker.
 - c). 10 bands parametric equalizer.
 - d). 32 presets.
 - e). Frequency response: 20 – 20kHz \pm 1.0dB, -3dB loss
2. Accessories
 - a). Input / output modules – provide terminal blocks and other accessories as required.
 - b). Rack-Mount Bracket: TIA/EIA-310-D, standard 19-inch.
 - c). Power supplies as required.
3. Approved Manufacturer
4. TOA Electronics, Inc. M-9000M2
5. Equals by Crown, BSS Audio, Ashly.

2.6 PROGRAM SOURCES AND RECORDERS

A. AM/FM Synthesized Digital Tuner.

1. Approved Manufacturer:
 - a). TOA Model DT-940.
 - b). Denon DN-350UI.
 - c). TASCAM, TU-690
 - d). Bogen DST1
2. Provide frequency synthesized digital AM mono and FM stereo radio receiver, as follows:
 - a). AM Frequency Band: 520 to 1,710 kHz in 10 kHz steps.

- b). FM Frequency Band: 87.9 to 107.9 MHz in 200 kHz steps.
- c). AM Sensitivity: 24 micro-volts.
- d). FM Sensitivity: 4 micro-volts.
- e). Presets: Any combination of 40 AM or FM stations.
- f). A multi-function digital display shall be included with automatic station Scanning and Manual Tuning: Automatic station storage to memory shall be possible using auto-scan mode. Direct station frequency tuning shall be possible using manual entry.
- g). Connections: Two RCA-type jacks for stereo operation and removable terminal block for monaural operation. Push-type terminals shall be provided for connection of included AM and FM antennas.
- h). Housing: Painted, black steel
- i). Power: 120 V, 60 Hz, 180 mA.
- 3. Accessories:
 - a). Rack-Mount Bracket: TIA/EIA-310-D, standard 19-inch. (1U rack space)
 - b). Antenna: AM/FM stainless steel whip.

2.7 WIRELESS MICROPHONES

- A. Approved Manufacturer:
 - 1. TOA S5.3 HD series
 - 2. Equal by Electro-Voice, Sennheiser, Telex, Audio-Technica or Shure.
- B. Provide combination wireless systems as follows:
 - 1. Professional wireless receivers.
 - 2. Wireless body pack transmitter.
 - 3. Handheld microphone.
- C. Accessories:
 - 1. Antenna boosters and remote antennas.
 - a). Provide two TOA YW-4500 remote antenna, with signal booster, power supply, coaxial cable and accessories.
 - b). Locate antenna in meeting room for wireless microphone system.
 - c). Connect with cabling as required by manufacturer.

2.8 SOUND EQUIPMENT CABINETS

- A. All sound equipment shall be housed in steel protective cabinets. Located with data patch panels and other technology equipment. See section 27 11 00 for further information.

2.9 MISCELLANEOUS COMPONENTS

- A. Provide stereo inputs as shown on AV diagram.
- B. Provide volume control on wall, TOA ZM-9012 or approved equal.
- C. Conductors and Cables: Jacketed, twisted pair and twisted multi-pair, untinned solid copper.
 - 1. Insulation for Wire in Conduit: Thermoplastic, not less than 1/32 inch thick.
 - 2. Microphone Cables: Neoprene jacketed, not less than 2/64 inch thick, over shield with filled interstices. Shield No. 34 AWG tinned, soft-copper strands formed into a braid or approved equivalent foil. Shielding coverage on conductors is not less than 60 percent.
 - 3. Plenum Cable: Listed and labeled for plenum installation.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Wiring Method: Install wiring in raceways unless otherwise noted.
- B. Wiring Method: Install wiring in raceways except within consoles, cabinets, desks, and counters and except in accessible ceiling spaces where cable wiring method may be used. Use plenum cable in environmental air spaces including plenum ceilings.
- C. Install exposed cables in finished areas parallel and perpendicular to surfaces or exposed structural members, and follow surface contours. Secure and support cables by straps, staples, or similar fittings so designed and installed to avoid damage to cables. Secure cable at intervals not exceeding 30 inches and not more than 6 inches from cabinets, boxes, or fittings.
- D. Wiring within Enclosures: Bundle, lace, and train conductors to terminal points with no excess. Use lacing bars in cabinets.
- E. Control-Circuit Wiring: Install number and size of conductors as recommended by system manufacturer for control functions indicated.
- F. Separation of Wires: Separate speaker-microphone, line-level, speaker-level, and power wiring runs. Install in separate raceways or, where exposed or in same enclosure, separate conductors at least 12 inches for speaker microphones and adjacent parallel power and telephone wiring. Separate other intercommunication equipment conductors as recommended by equipment manufacturer.
- G. Splices, Taps, and Terminations: Arrange on numbered terminal strips in junction, pull, and outlet boxes; terminal cabinets; and equipment enclosures.
- H. Match input and output impedances and signal levels at signal interfaces. Provide matching networks where required.
- I. Identification of Conductors and Cables: Color-code conductors and apply wire and cable marking tape to designate wires and cables so they identify media in coordination with system wiring diagrams.
- J. Wall-Mounting Outlets: Flush mounted.
- K. Conductor Sizing: Unless otherwise indicated, size speaker circuit conductors from racks to loudspeaker outlets not smaller than No. 18 AWG and conductors from microphone receptacles to amplifiers not smaller than No. 22 AWG.
- L. Speaker-Line Matching Transformer Connections: Make initial connections using tap settings indicated on Drawings.
- M. Connect wiring according to local and national codes.

3.2 GROUNDING

- A. Ground cable shields and equipment to eliminate shock hazard and to minimize ground loops, common-mode returns, noise pickup, cross talk, and other impairments.

- B. Signal Ground Terminal: Locate at main equipment cabinet. Isolate from power system and equipment grounding.
- C. Install grounding electrodes as specified in Division 26 Section "Grounding and Bonding for Electrical Systems."

3.3 FIELD QUALITY CONTROL

- A. Perform the following field tests and inspections and prepare test reports:
 - 1. Schedule tests with at least seven days' advance notice of test performance.
 - 2. After installing public address and music equipment and after electrical circuitry has been energized, test for compliance with requirements.
 - 3. Operational Test: Perform tests that include originating program and page messages at microphone outlets, preamplifier program inputs, and other inputs. Verify proper routing and volume levels and that system is free of noise and distortion.
 - 4. Signal-to-Noise Ratio Test: Measure signal-to-noise ratio of complete system at normal gain settings as follows:
 - a). Disconnect microphone at connector or jack closest to it and replace it in the circuit with a signal generator using a 1000-Hz signal. Replace all other microphones at corresponding connectors with dummy loads, each equal in impedance to microphone it replaces. Measure signal-to-noise ratio.
 - b). Repeat test for each separately controlled zone of loudspeakers.
 - c). Minimum acceptance ratio is 50 dB.
 - 5. Signal Ground Test: Measure and report ground resistance at public address equipment signal ground. Comply with testing requirements specified in Division 26 Section "Grounding and Bonding for Electrical Systems."
- B. Retesting: Correct deficiencies, revising tap settings of speaker-line matching transformers where necessary to optimize volume and uniformity of sound levels, and retest. Prepare a written record of tests.
- C. Inspection: Verify that units and controls are properly labeled and interconnecting wires and terminals are identified. Prepare a list of final tap settings of paging speaker-line matching transformers.

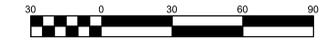
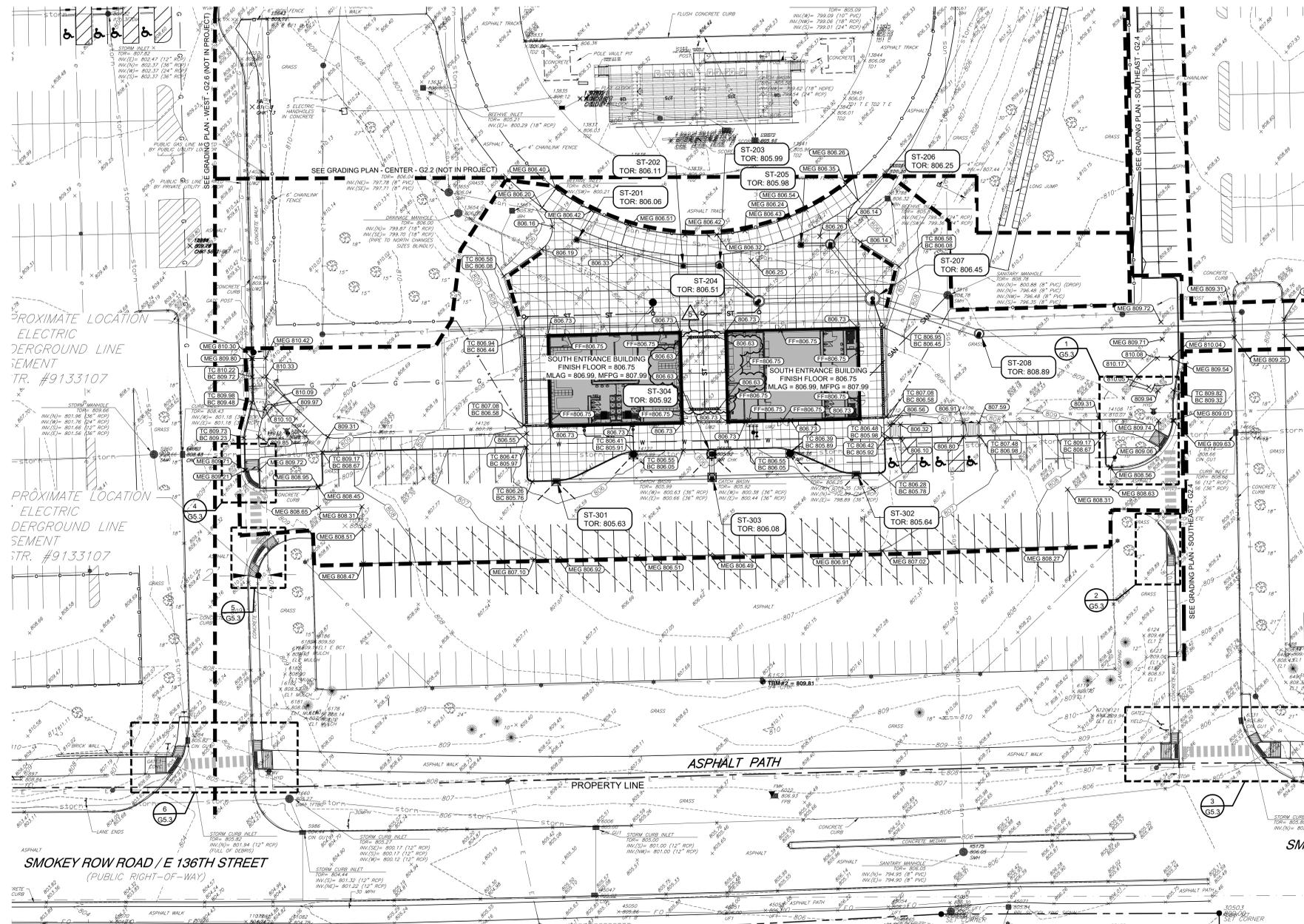
3.4 STARTUP SERVICE

- A. Engage a factory-authorized service representative to perform startup service.
- B. Verify that electrical wiring installation complies with manufacturer's submittal and installation requirements.
- C. Complete installation and startup checks according to manufacturer's written instructions.

3.5 ADJUSTING

- A. Occupancy Adjustments: When requested within 12 months of date of Substantial Completion, provide on-site assistance in adjusting system to suit actual occupied conditions. Provide up to two visits to site outside normal occupancy hours for this purpose, without additional cost.

END OF SECTION 27 51 11



GENERAL NOTES

- SEE DRAWING GD0.1 FOR GENERAL NOTES AND ADDITIONAL LEGEND.
- TOPOGRAPHIC CONDITIONS AND EXISTING UTILITIES SHOWN WERE PROVIDED BY CEC CIVIL & ENVIRONMENTAL CONSULTANTS DATED MAY 17, 2022. THE ENGINEER MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED.
- CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE PROJECT AREA INCLUDING UNDERGROUND UTILITY CONDITIONS, LOCATION AND DEPTH PRIOR TO ANY OTHER SITE CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER.

GRADING PLAN LEGEND

- MEG EXISTING SPOT ELEVATION
- MEG MATCH EXISTING GRADE
- TC TOP OF CURB
- BC BOTTOM OF CURB
- EP EDGE OF PAVEMENT
- FL FLOWLINE
- TW TOP OF WALL
- 730 EXISTING CONTOUR W/ ELEVATION
- 735 PROPOSED CONTOUR W/ ELEVATION
- 750.85 PROPOSED SPOT ELEVATION
- TC BC PROPOSED CURB ELEVATION
- APPROXIMATE LIMITS OF CONSTRUCTION

CARMEL STADIUM SOUTH SUPPORT BUILDING

E 136th St, Carmel, IN 46032

CARMEL CLAY SCHOOLS



ARCHITECT



317.848.0966 WWW.FHAI.COM
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CONSULTANT



CONSTRUCTION DOCUMENTS



PROJECT MANAGER: PMR
DRAWN BY: ARS
PROJECT NUMBER: 220136.00
PROJECT ISSUE DATE: 04.28.2023

| REV. NO. | DESCRIPTION | DATE |
|----------|-------------------|------------|
| 1 | REGULATORY REVIEW | 1-18-2023 |
| 2 | TAC RESPONSE | 03-17-2023 |
| 3 | SSS FINAL CD'S | 4-26-2023 |
| 4 | TAC RESPONSE | 5-5-2023 |
| 5 | ADDENDUM #2 | 6-01-2023 |
| | | |
| | | |
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GRADING PLAN - SOUTH

G2.1



Know what's below.
Call before you dig.

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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.

CARMEL STADIUM SOUTH SUPPORT BUILDING

E 136th St, Carmel, IN 46032

CARMEL CLAY SCHOOLS



ARCHITECT



317.848.0966 WWW.FHAI.COM
350 E NEW YORK ST #300, INDIANAPOLIS, IN 46204

CONSULTANT



CONSTRUCTION DOCUMENTS

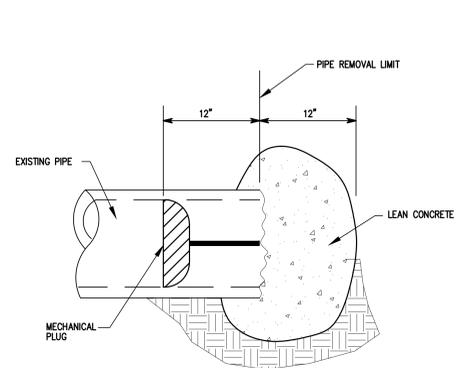


PROJECT MANAGER: PWR
DRAWN BY: ARS
PROJECT NUMBER: 220136.00
PROJECT ISSUE DATE: 04.26.2023

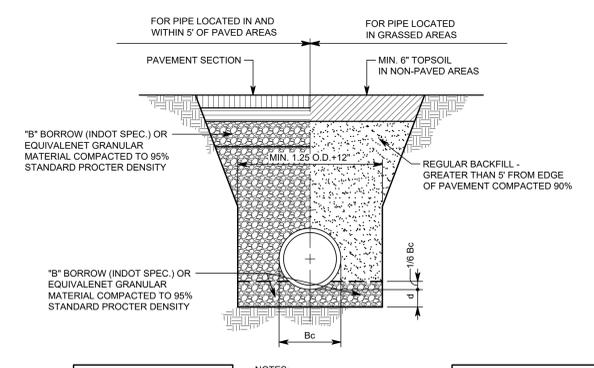
| REV. NO. | DESCRIPTION | DATE |
|----------|-------------------|-----------|
| 1 | REGULATORY REVIEW | 1-18-2023 |
| 2 | SSB FINAL CD'S | 4-26-2023 |
| 3 | ADDENDUM #2 | 6-01-2023 |

SITE UTILITY DETAILS

SU2.11



PIPE CAP DETAIL
NO SCALE

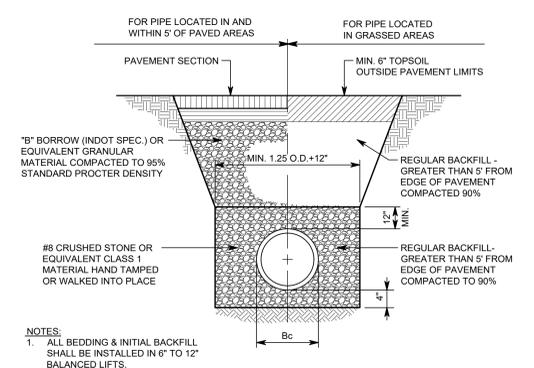


| DEPTH OF BEDDING MATERIAL BELOW PIPE | |
|--------------------------------------|----------|
| D | (d) MIN. |
| 27" & SMALLER | 3" |
| 30" TO 60" | 4" |
| 66" & LARGER | 6" |

NOTES:
1. ALL BEDDING & INITIAL BACKFILL SHALL BE INSTALLED IN 6" TO 12" BALANCED LIFTS.
2. A MIN. 9" CLEARANCE EACH SIDE OR PIPE FOR 42" DIA. AND LESS.

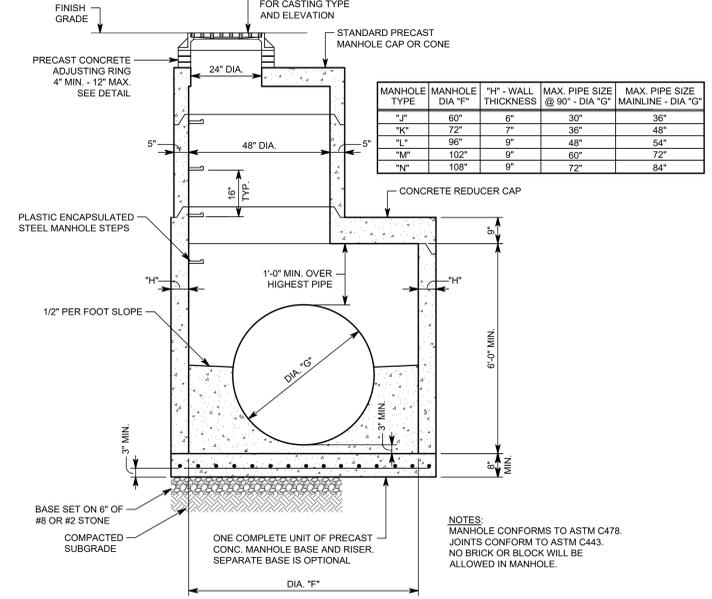
LEGEND
Bc = OUTSIDE DIAMETER
D = INSIDE DIAMETER
d = DEPTH OF BEDDING MATERIAL BELOW PIPE

STORM SEWER (RCP) TRENCH DETAIL
3/4" = 1'-0"

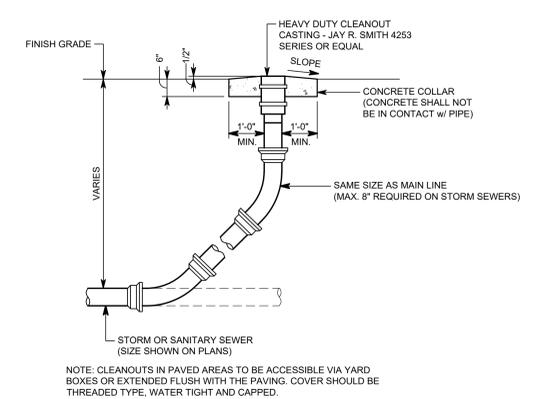


NOTES:
1. ALL BEDDING & INITIAL BACKFILL SHALL BE INSTALLED IN 6" TO 12" BALANCED LIFTS.
2. A MIN. 9" CLEARANCE EACH SIDE OR PIPE FOR 42" DIA. AND LESS.

STORM SEWER (PVC & HDPE) TRENCH DETAIL
NO SCALE



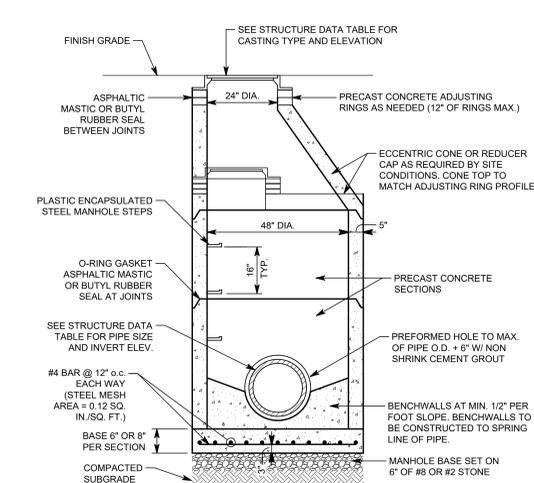
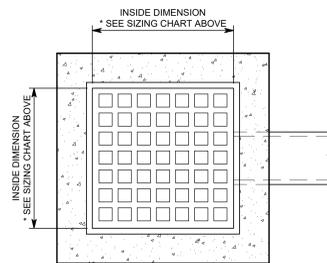
STORM MANHOLE TYPE "J - N" DETAIL
1/2" = 1'-0"



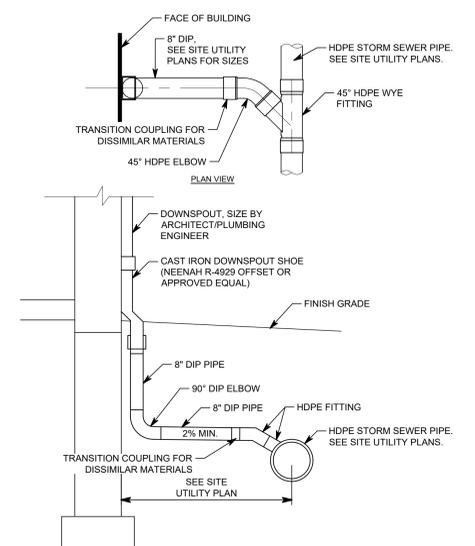
CLEANOUT DETAIL
1/2" = 1'-0"

STRUCTURE SIZING CHART

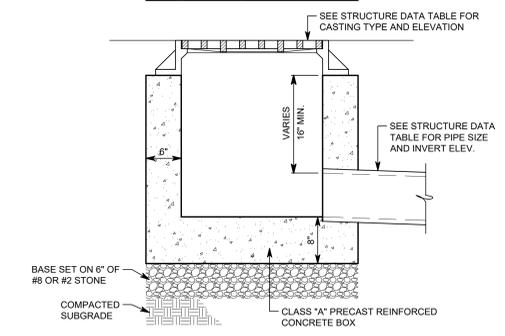
| INSIDE DIMENSIONS | INLET TYPE | PIPE SIZE | MAX. NUMBER OF SIDES OF THE INLET WITH PIPES |
|-------------------|------------|------------|--|
| 24" X 24" | "A" | 12" TO 15" | 3 |
| 30" X 30" | "F" | 15" TO 18" | 3 |
| 24" X 36" | "M" | 18" TO 24" | 3 |



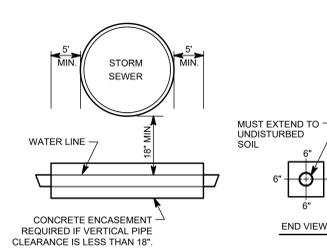
STORM MANHOLE TYPE "C" DETAIL
1/2" = 1'-0"



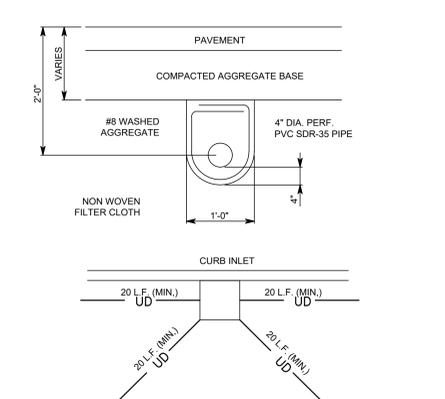
DOWNSPOUT BOOT DETAIL
NO SCALE



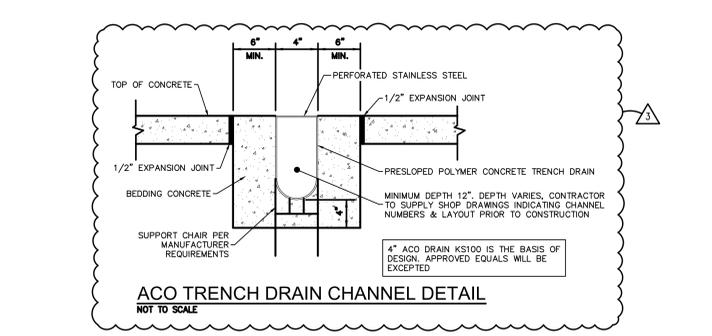
STORM INLET DETAIL
1" = 1'-0"



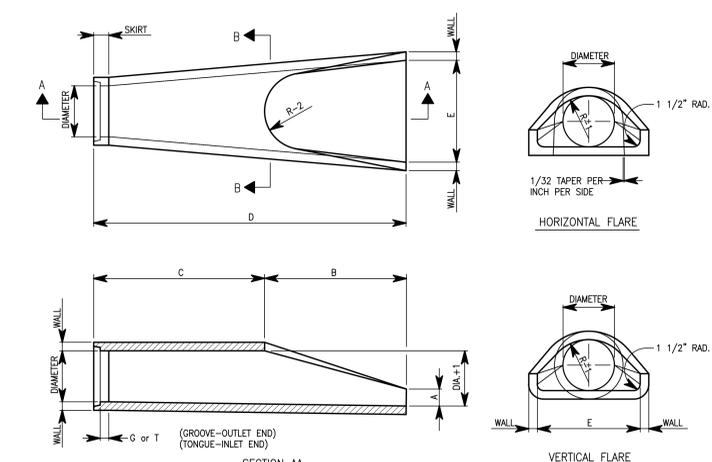
STORM SEWER / WATER LINE CROSSING DETAIL
NO SCALE



PAVEMENT UNDERDRAIN DETAIL
NO SCALE



ACO TRENCH DRAIN CHANNEL DETAIL
NOT TO SCALE



SIZE SCHEDULE

| DIA. | WALL | G or T | WT. | SEC. | A | B | C | D | E | DIA.+1 | R-1 | R-2 | SKIRT |
|------|-------|--------|-------|--------|--------|--------|--------|-----|----|--------|--------|-------|-------|
| 12 | 2 | 1 1/2 | 530 | 4 | 24 | 48 1/2 | 72 1/2 | 24 | 13 | 10 1/8 | 9 | 3 1/2 | |
| 15 | 2 1/2 | 2 | 740 | 6 | 27 | 46 | 73 | 30 | 16 | 12 1/8 | 11 | 3 1/2 | |
| 18 | 2 1/2 | 2 1/2 | 990 | 9 | 27 | 46 | 73 | 36 | 19 | 15 1/2 | 12 | 4 | |
| 21 | 2 1/2 | 2 1/2 | 1280 | 9 | 35 | 38 | 73 | 42 | 22 | 16 1/8 | 13 | 4 | |
| 24 | 3 | 2 1/2 | 1520 | 9 1/2 | 43 1/2 | 30 | 73 1/2 | 48 | 25 | 16 1/8 | 14 | 4 1/2 | |
| 27 | 3 1/2 | 2 1/2 | 1930 | 10 1/2 | 48 | 25 1/2 | 73 1/2 | 54 | 28 | 17 3/4 | 14 1/2 | 4 1/2 | |
| 30 | 3 1/2 | 3 | 2190 | 12 | 54 | 19 1/2 | 73 1/2 | 60 | 31 | 18 3/8 | 15 | 5 | |
| 33 | 3 1/2 | 3 1/2 | 3150 | 13 1/2 | 58 1/2 | 39 1/2 | 97 1/2 | 66 | 34 | 23 1/4 | 17 1/2 | 5 1/2 | |
| 36 | 4 | 3 1/2 | 4100 | 15 | 63 | 34 1/2 | 97 1/2 | 72 | 37 | 24 1/8 | 20 | 5 1/2 | |
| 42 | 4 1/2 | 3 1/2 | 5380 | 21 | 63 | 35 | 98 | 78 | 43 | 27 1/4 | 22 | 5 1/2 | |
| 48 | 5 | 4 1/2 | 6550 | 24 | 72 | 26 | 98 | 84 | 49 | 28 1/2 | 22 | 5 1/2 | |
| 54 | 5 1/2 | 4 1/2 | 8040 | 27 | 65 | 35 | 100 | 90 | 55 | 32 1/2 | 24 | 6 1/2 | |
| 60 | 6 | 5 | 8750 | 30 | 60 | 39 | 99 | 96 | 61 | 36 1/2 | 24 | 6 1/2 | |
| 66 | 6 1/2 | 5 1/2 | 10630 | 24 | 78 | 21 | 99 | 102 | 67 | 35 1/8 | 24 | 7 1/2 | |
| 72 | 7 | 6 | 12520 | 34 | 78 | 21 | 99 | 108 | 73 | 38 1/2 | 24 | 7 1/2 | |
| 78 | 7 1/2 | 6 1/2 | 14430 | 24 | 78 | 21 | 99 | 114 | 79 | 41 1/2 | 24 | 8 1/2 | |
| 84 | 8 | 7 | 16350 | 24 | 78 | 21 | 99 | 120 | 85 | 44 1/2 | 24 | 9 | |

NOTES:
MANUFACTURER OF END SECTION IS IN ACCORDANCE WITH APPLICABLE PORTIONS OF A.S.T.M. SPECIFICATION C76.

PRECAST FLARED END SECTION
1" = 1'-0"

FIRE ALARM SYMBOLS table with columns: SYMBOL, DESCRIPTION, MH. Includes symbols for addressable interface device, heat detector, smoke detector, fire alarm annunciation panel, fire alarm control panel, etc.

POWER SYMBOLS table with columns: SYMBOL, DESCRIPTION, MOUNTING HEIGHT TO BOTTOM. Includes symbols for conduit concealed above ceiling, 20 amp duplex receptacle, single flush box, etc.

POWER SYMBOLS table with columns: SYMBOL, DESCRIPTION, MH. Includes symbols for surface circuit breaker panelboard, flush mounted circuit breaker panelboard, push button station, etc.

LIGHTING SYMBOLS table with columns: SYMBOL, DESCRIPTION, MH. Includes symbols for occupancy sensor, push button station, key operated switch, etc.

ELECTRICAL GENERAL NOTES section containing numbered notes 1 through 31 regarding construction, safety, and equipment requirements.

CARMEL STADIUM SOUTH SUPPORT BUILDING project information including address (E 136th St, Carmel, IN 46032) and FANNING HOWEY ARCHITECT logo.

Branch Panel: L2

Location: RM B101
Supply From: L1
Mounting: Recessed
Enclosure: Type 1
Notes: INTEGRAL SURGE PROTECTION

Table with columns: CKT, Circuit Description, Trip, Poles, A (VA), B (VA), C (VA), Poles, Trip, Circuit Description, CKT. Lists various receptacles and spare units.

Legend table with columns: Legend, Motor, Receptacle, Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals.

Notes: NOTE 1: PROVIDE WITH 5mA GFCI BREAKER

Branch Panel: L1

Location: RM 102
Supply From: UTILITY CO. TRANSFORMER
Mounting: Surface
Enclosure: Type 1
Notes: INTEGRAL SURGE PROTECTION

Table with columns: CKT, Circuit Description, Trip, Poles, A, B, C, Poles, Trip, Circuit Description, CKT. Lists fire alarm panel, door power supplies, exterior lighting, etc.

Legend table with columns: Legend, Motor, Receptacle, Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals.

Notes: NOTE 1: PROVIDE WITH 5mA GFCI BREAKER

Branch Panel: L1

Location: RM 102
Supply From: UTILITY CO. TRANSFORMER
Mounting: Surface
Enclosure: Type 1
Notes: INTEGRAL SURGE PROTECTION

Table with columns: CKT, Circuit Description, Trip, Poles, A, B, C, Poles, Trip, Circuit Description, CKT. Lists fire alarm panel, door power supplies, exterior lighting, etc.

Legend table with columns: Legend, Motor, Receptacle, Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals.

Notes: NOTE 1: CONNECT WITH #4#1, #6G IN 2". NOTE 2: CONNECT WITH #4#1, #6G IN 3/4". NOTE 3: CONNECT WITH #4#1 O.D. ALUMINUM #4G IN 1-1/2". NOTE 4: PROVIDE WITH 5mA GFCI BREAKER.

LUMINAIRE SCHEDULE - GENERAL NOTES

- 1. FOR ALL DOWNLIGHTING FIXTURES, PROVIDE REQUIRED MOUNTING HARDWARE FOR MOUNTING IN LAY-IN TYPE CEILINGS.
2. CONTRACTOR TO VERIFY TYPES AND QUANTITY OF LIGHT FIXTURES REQUIRING EMERGENCY BATTERY INVERTERS AND PROVIDE REQUIRED QUANTITY OF EMERGENCY BATTERY INVERTERS, LABOR, MATERIAL, ETC. IN THE PROJECT BID FOR FIELD INSTALLATION OF EMERGENCY BATTERY INVERTERS.
3. LIGHT FIXTURE SUBMITTALS TO INCLUDE DATA SHEETS FOR ALL FIXTURE TYPES, INCLUDING ADDITIONAL DATA SHEETS FOR DRIVER COMBINATIONS REQUIRED TO MEET THE INSTALLATION REQUIREMENTS OF THE VARIOUS FIXTURE TYPES INDICATED IN THE REMARKS COLUMN OF THE FIXTURE SCHEDULES OR ON THE DRAWINGS. SUBMITTALS SHALL ALSO INDICATE COLOR FOR ANY CUSTOM COLOR LIGHT FIXTURES.

ELECTRICAL ABBREVIATIONS

Table of electrical abbreviations with columns: # (N/P/N/W), NUMBER OF POLES, NUMBER OF WIRES, MLO, MOCPP, MTG, MNTG, MVT, N, N+, N-, N0, N1, N2, N3, N4, N5, N6, N7, N8, N9, N10, N11, N12, N13, N14, N15, N16, N17, N18, N19, N20, N21, N22, N23, N24, N25, N26, N27, N28, N29, N30, N31, N32, N33, N34, N35, N36, N37, N38, N39, N40, N41, N42, N43, N44, N45, N46, N47, N48, N49, N50, N51, N52, N53, N54, N55, N56, N57, N58, N59, N60, N61, N62, N63, N64, N65, N66, N67, N68, N69, N70, N71, N72, N73, N74, N75, N76, N77, N78, N79, N80, N81, N82, N83, N84, N85, N86, N87, N88, N89, N90, N91, N92, N93, N94, N95, N96, N97, N98, N99, N100.

FANNING HOWEY ARCHITECT logo and contact information: 317-848-0966, WWW.FHAI.COM, 350 N NEW YORK ST #300 INDIANAPOLIS, IN 46202.

LUMINAIRE SCHEDULE table with columns: PLAN TYPE, MANUFACTURER/CATALOG, MOUNTING, NO., WATTS, TYPE, LUMENS, APPLIED VOLTAGE, DESCRIPTION, VA LOAD. Lists various lighting fixtures like PORTFOLIO LD6A, LITHONIA LD8, etc.

LUMINAIRE SCHEDULE table with columns: PLAN TYPE, MANUFACTURER/CATALOG, MOUNTING, NO., WATTS, TYPE, LUMENS, APPLIED VOLTAGE, DESCRIPTION, VA LOAD. Lists various lighting fixtures like PORTFOLIO LD6A, LITHONIA LD8, etc.

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CONSTRUCTION DOCUMENTS

Table of construction documents with columns: REV. NO., DESCRIPTION, DATE. Lists revision 1 (ADDENDUM 1) and revision 2 (ADDENDUM 2).

CONSTRUCTION DOCUMENTS section including a signature block for Brian W. Butler, Registered Professional Engineer, and a table for revision control.

E1.1 ELECTRICAL SYMBOL LEGEND & SCHEDULES

