

FRANKLIN COUNTY CONVENTION FACILITIES AUTHORITY

PROJECT MANUAL

for

Bid Package 2026-06

**Exterior Access Control Improvements
Greater Columbus Convention Center**

Technical Specifications Prepared By:

Korda Nemeth Engineering, Inc.

September 23, 2026

NOTICE TO BIDDERS
FRANKLIN COUNTY CONVENTION FACILITIES AUTHORITY
Greater Columbus Convention Center Exterior Access Control
Improvements

Sealed bids will be received by the Franklin County Convention Facilities Authority, hereinafter referred to as the “Owner” of the Greater Columbus Convention Center (“GCCC”), 400 N. High St., Columbus, Ohio 43215 until **October 12, 2026, at 3:00 PM EST** and will be publicly opened and read aloud immediately thereafter, for the furnishing of materials and performing the labor for the execution and construction of:

Exterior Access Control Improvements

Owner’s Estimate: \$2,100,000

in accordance with specifications prepared by the Engineer. All information for bidders, including the Project Manual, Form of Proposal, Plans, Technical Specifications, form bond and other Contract Documents may be examined at the following offices:

Franklin County Convention Facilities Authority
400 N. High Street, 4th Floor
Columbus, Ohio 43215

Requests for copies of bid documents as well as questions regarding plans and specifications should be addressed to Jordan Edmonds, General Counsel, Franklin County Convention Facilities Authority, email: jedmonds@fccfa.org.

No bidder may withdraw their bid within 60 days after the actual date of the bid opening, except as provided for in the Project Manual.

Each bid must be accompanied by a Bid Guaranty and Contract Bond in the exact form included in the project manual and meeting the requirements of Section 153.54 of the Ohio Revised Code.

State of Ohio prevailing wage rates and Equal Employment Opportunity requirements are applicable to this bid invitation for all work performed pursuant to this contract.

The Franklin County Convention Facilities Authority reserves the right to waive any informality or in its sole discretion, to reject any or all bids.

Bids shall be sealed and delivered on or before October 12, 2026, at 3:00 PM EST to:

Franklin County Convention Facilities Authority
400 North High Street, 4th Floor
Columbus, Ohio 43215
Re: GCCC Exterior Access Control Improvements

INSTRUCTIONS TO BIDDERS

GENERAL REQUIREMENTS & INFORMATION

- a) Bidders shall inspect all plans and specifications and visit the site of the work to verify existing conditions and to become familiar with the conditions under which the project work will be performed.
- b) The Form of Proposal, Bid Guaranty, Responsibility Analysis Form, schedule, and all other required submittals, each fully executed, are to be submitted in sealed form and addressed to the Franklin County Convention Facilities Authority as provided for in the Notice to Bidders. **Interested bidders must provide one original and two hard copies of all required submittals.**
- c) Owner & Engineer:
 - 1) The Owner is:

Franklin County Convention Facilities Authority (FCCFA)
400 North High Street, 4th Floor
Columbus, Ohio 43215-2096
Phone: 614-827-2800
 - 2) The Engineer is:

Christopher Fleming
Korda Nemeth Engineering, Inc.
1650 Watermark Dr., Suite 200
Columbus, Ohio 43215
Phone: 614-487-1650
- d) The Project consists of providing all labor, materials, equipment, and services necessary for the timely and proper completion of construction for the Greater Columbus Convention Center (“GCCC”) Exterior Access Control Improvements as described within the Project Manual and Technical Specifications.

Bidders are responsible for visiting the site to determine existing conditions. No plea of ignorance of conditions that exist, or of conditions or difficulties that may be encountered in the execution of the work, as a result of the failure to make such examination and investigation, will be accepted as an excuse for any failure or omission on the part of the bidders to fulfill in every respect all the requirements of the contract, nor will the same be accepted as a basis for any claim whatsoever for extra compensation or for an extension of time.

ARTICLE 1. PROPOSALS

- a) For lump sum bids, separate bids will be received for any or all divisions of work shown on the Form of Proposal. If not bidding a given contract on the Form of Proposal mark it "N/A".
- b) In the case of unit price bids, the contractor shall submit bids on all items listed, unless other instructions are noted in the Form of Proposal.

Unless otherwise expressly provided in the Project Manual and related bid documents, such unit prices shall be fully loaded rates that include, but are not limited to, all overhead, profit, labor, materials, equipment, services, insurance and bonding costs necessary for the timely and proper installation of the item for which the unit prices are requested. The unit prices quoted in the proposal shall be the basis for any change orders entered into under the contract, unless the Engineer determines that the use of such unit prices will cause substantial inequity to either the Contractor or the Owner.

- c) **Bids must include the following documents:**
 - 1) The Form of Proposal (bid)
 - 2) The Bid Guaranty
 - 3) EEO Certification Clause
 - 4) Non-Discrimination Policy Compliance
 - 5) Contractor's Review Certificate
 - 6) Manufacturer's Declaration and Subcontractor Declaration
 - 7) Declaration of Insurance
 - 8) Project Schedule
 - 9) Responsibility Analysis Form
- d) The wording of the Form of Proposal (bid) shall be used without change, alteration, or addition (except as provided for in the Project Manual). Any other change in the wording may cause a bid to be rejected; however, the Owner reserves the right to waive any informalities not affecting the substance of the bid.
- e) The forms used in submitting the bid shall be those furnished by the Owner in this Project Manual.
- f) The bid shall contain the bid guaranty meeting the requirements of Section 153.54 of the Ohio Revised Code.
- g) Bidders shall take the following precautions in preparing bids:
 - 1) Sign the bid. Failure to do so shall result in rejection of the bid. Bids shall be signed with the name typed below the signature. A bidder that is a corporation shall sign its bid with the legal name of the corporation followed

by the name of the state of incorporation and the legal signature, including title, of an officer authorized to bind the corporation to a contract.

2) Alternates:

The Owner may request bids on alternates. If the Owner requests bids on alternates, the Bidder should include the cost of the alternates requested on its Form of Proposal.

Where the Form of Proposal provides for quoting either an addition or deduction for an "Alternate," indicate whether the sum named is an addition or deduction by ruling out the words not applicable. Any alteration or erasure must be initiated by the Bidder.

All requested alternates, if any, shall be bid by all bidders. If no change in the base bid is required enter "no change". Do not mark with any notation other than the cost change or "no change" (e.g., "N/A" or "No Bid", shall be taken as meaning "No Change" and a cost of \$0.00 shall be used in determining the lowest and best bidder and preparation of the contract). If a bidder does not accept a value of \$0.00 for any incorrectly marked alternates accepted by the Owner, the bid shall be considered non-responsive and be grounds for the rejection of the bid. At the time of awarding the contract, the Owner will select or reject alternates as it determines is in its best interest.

If, during the progress of the work, the Owner desires to reinstate any alternate not included in the contract, the Owner reserves the right to reinstate the alternate at the price bid by the Bidder provided that such action is taken in sufficient time so as not to delay the progress of the work or cause the Bidder additional expense.

- 3) Complete and sign the Equal Employment Opportunity Certification attached to the Form of Proposal.
 - 4) Bidders shall acknowledge and note receipt of addenda on the Form of Proposal.
 - 5) Bids shall not be submitted by facsimile transmission.
 - 6) Bids shall be enclosed in a sealed opaque envelope with the Bidder's name and the title of the Project printed in the upper left-hand corner and addressed as follows: Offices of the Franklin County Convention Facilities Authority, 400 N. High St., Fourth Floor, Columbus, Ohio 43215.
- h) All bids are valid for a period of sixty (60) days after the date of opening bids. A bidder for a contract with the Owner may withdraw their bid from consideration if the price

bid was substantially lower than the other bids, provided the bid was submitted in good faith and the reason for the bid price being substantially lower was a clerical mistake as opposed to a judgment mistake and was actually due to an unintentional and substantial quantity of work, labor, or material made directly in the compilation of the bid. Request to withdraw such bid must be made in writing and filed with the Owner within two (2) business days after the opening of bids.

ARTICLE 2. METHOD OF AWARD

- a) The Owner will receive bids for each of the contracts as set forth on the Form of Proposal and as defined in the Project Manual.

Subject to the right of the Owner to reject any and all bids and as provided below, the Owner will award a single contract for each of the contracts/bid packages listed in the Project Manual or one or more combined contracts for combination(s) of the bid packages. Bidders must furnish all information requested on or accompanying the Form of Proposal. Failure to do so may result in disqualification of the bid.

- b) Determination of Lowest and Best Bid (see Instructions to Bidder's Responsibility Analysis Form):

Subject to the right of the Owner to reject any or all bids, the Owner will award the contract for the work to the Bidder submitting the lowest and best bid, taking into consideration accepted alternates. In determining which bid is the lowest and best bid, the Owner may take into consideration not only the amount of the bid but such of the following criteria as it, in its sole discretion, deems appropriate and may give such weight thereto as it deems appropriate:

- 1) The Bidder's financial ability to complete the contract successfully and on time without resort to its Surety;
- 2) The Bidder's prior experience with similar work on comparable or more complex projects;
- 3) The Bidder's prior history of the successful and timely completion of similar projects;
- 4) The Bidder's equipment and facilities;
- 5) The adequacy, in numbers and experience, of the Bidder's work force to complete the contract successfully and on time;
- 6) The Bidder's prior experience on other projects of the Owner, including the Bidder's demonstrated ability to complete its work on these projects in accordance with the contract documents and on time, and its ability to work with the Owner.

- 7) The Bidder's compliance with federal, state, and local laws, rules, and regulations, including but not limited to, the prevailing wage law and Occupational Safety and Health Act;
 - 8) All of the foregoing with respect to each of the subcontractors which the Bidder intends to use on the Project; and
 - 9) Depending upon the type of work, other essential factors, as the Owner may determine.
 - 10) Absent special circumstances, no bidder shall be deemed responsible unless that bidder has been in existence for at least thirty-six months.
- c) Acceptance of the contract within the 60-day period following the opening of bids automatically assumes that if materials, labor or subcontract cost increases, then those costs shall be absorbed by the Bidder. Award of contracts beyond the 60-day period shall be reviewed for increased costs after award of the contract only if the cause for delay is no fault of the Bidder.
- d) If, in the opinion of the Owner, the acceptance of the lowest bid is not in the best interest of the Owner, the Owner may accept at its discretion, another bid so opened or reject all bids and advertise for other bids. Such advertisement will be for such time, in such form and in such newspapers as may be directed by the Owner.
- e) No contract shall be awarded if the low bidder is more than 20% below the median of all other bids received for projects where the estimate is \$100,000 or more, and no contract shall be awarded if the low bidder is more than 25% below the median of all other bids received for projects where the estimate is less than \$100,000, unless the following occurs and/or are reviewed:
- 1) An interview with the low bidder, the purpose of which is to determine what, if anything, has been overlooked in the bid in question, and to analyze the process envisioned by the contractor to complete the contract in question.
 - 2) The financial status of the low bidder and its Surety based upon certified financial statements submitted by each.
 - 3) Receipt of written confirmation by the Surety that it has reviewed the bid in question.
 - 4) The record of the low bidder in performing other public works projects in the past.

If after review and consideration, the acceptance of the lowest and best bid is not in the best interest of the Owner, the Owner may accept another bid so opened or reject all bids and advertise for other bids.

- f) In accordance with Ohio Revised Code 153.12, no contract will be awarded if the price of the contract exceeds the published estimate by more than 20%.
- g) If individual and combined contract bids are included on the Form of Proposal and a bidder opts to submit multiple bids, a bidder shall not be permitted to be determined to be the low bidder for any individual contract bid if that bidder withdraws a lower combination contract bid for any reason (including omission of any work item or math/clerical errors).
- h) The Owner reserves the right to disqualify bids, before or after opening, upon evidence of collusion with intent to defraud or other illegal practices on the part of the Bidder.
- i) After determination of the lowest and best bid, the selected contractor shall receive a Recommendation of Award, a copy of the full unexecuted contract and an unexecuted copy of the Notice of Authority to Proceed (NTP) with construction. The successful bidder shall then provide the required items for formal execution of the contract and NTP by the Owner all in accordance with Article 8. If the project schedule requires that the contractor commence work (or make commitments and preparations to commence the work) prior to receipt of the fully executed contract and NTP, the contractor, in order to meet the requirements of the project schedule, shall be solely responsible to notify the Owner in writing ten (10) business days before the date that such NTP is required. The Owner may direct the contractor to proceed with the work with an executed NTP before the formal execution of the contract. If the contractor has met all of the requirements for executing a contract and the Owner chooses not to execute the contract, the contractor shall be reimbursed for all reasonable costs incurred as a result of starting work under the NTP and prior to receipt of a fully executed contract.
- j) No contract shall be entered into until:
 - 1) The Industrial Commission has certified that the corporation, partnership or person so awarded the Contract has complied with Sections 4123.01 to 4123.99 (Workers' Compensation), inclusive of the Revised Code;
 - 2) If the bidder so awarded the contract is a foreign corporation, the Secretary of State has certified that such corporation is authorized to do business in this state; and, if the bidder so awarded the contract is a non-Ohio person or partnership, then until the bidder has filed with a Secretary of State a Power of Attorney designating the Secretary of State as its agent for the purpose of accepting service of summons in any action brought under Section 153.05 of the Revised Code or under Sections 4123.02 to 4123.99 inclusive, of the Ohio Revised Code.
 - 3) The successful bidder shall notify the Owner, within three (3) calendar days after notification of recommendation of award, the provisions the Bidder has

made or reasonably can be expected to make in order to meet the requirements of the Owner's Disadvantaged Business Participation Plan. Notification shall include a statement of the Bidder's present intention concerning which portions of the contract will be awarded to disadvantaged business subcontractors and materialmen and the identity of the intended subcontractor or materialman, if any. Within such five (5) calendar day period, the successful bidder may request in writing a longer period of time to meet the provisions of the plan. Such request shall set forth the reasons additional time is required. The Owner shall notify the successful bidder in writing of its approval or disapproval of the request. If additional time is approved by the Owner or if formal execution of the contract is delayed due to any failure of the Bidder to meet the requirements of the Owner's Disadvantaged Business Participation Plan, the Bidder shall remain responsible for all the requirements and timelines of the Project.

- 4) The required certificates of insurance coverage (as set forth in the contract) and bond are submitted to the Owner.
- 5) A copy of the contract is forwarded to the successful bidder by the Owner, signed by the successful bidder and returned to the Owner.
- 6) All requirements of Article 8 herein have been satisfied.

The contract cannot be fully executed until this information is provided. If the Bidder fails to provide the documents within the required time, the Bidder is solely responsible to meet all project schedule requirements regardless of the date of the formal execution of the contract.

ARTICLE 3. BID GUARANTY

- a) All Bid Guaranties and Contract Bonds must be satisfactory to the Owner.
- b) The BID GUARANTY AND CONTRACT BOND meeting the requirements of Section 153.54(B) of the Ohio Revised Code, as furnished by the Owner, shall be used without change of wording.
- c) If the amount is left blank, the penal sum of the Bid Guaranty and Contract Bond will be the full amount of the Bidder's base bid plus add alternates; alternatively, if completed, the amount must be not less than the full amount of the base bid plus add alternates, stated in dollars and cents. A percentage is not acceptable.
- d) The Bid Guaranty and Contract Bond must be signed by an Authorized Agent of an acceptable Surety Bonding Company and by the Bidder. The bond must be issued by a surety company authorized by the Ohio Department of Insurance to transact business in the State of Ohio. It is essential that the bond be issued by a surety company which can adequately demonstrate a record of competent underwriting, efficient management, adequate reserves, and soundness of investments.

The requirements of Section 3905.41 of the Ohio Revised Code are mandatory and require the Bid Guaranty and Contract Bond to be countersigned by an Ohio resident agent. It is the duty of the Bidder to determine the applicability of Section 3905.41. Non-compliance with Section 3905.41 will cause the Bidder's bid to be rejected.

- e) Bid Guaranties and Contract Bonds must be supported by credentials showing the Power of Attorney of the Agent.
- f) In lieu of the Bid Guaranty referred to in Article 2(b) above, the Bidder may submit the Bid Guaranty provided in Division (C) of Section 153.54 of the Revised Code, in the form of a Certified Check, Cashier's Check, or Letter of Credit pursuant to Chapter 1305 of the Revised Code. A Bid Bond is not acceptable for use as a Bid Guaranty.
- g) The amount of the Certified Check, Cashier's Check or Letter of Credit shall be equal to ten percent (10%) of the base bid plus add alternates.
- h) The Bid Guaranty shall be payable to the Franklin County Convention Facilities Authority.
- i) Bid Guaranties shall be returned to all unsuccessful bidders immediately after the contract is executed.
- j) The Certified Check, Cashier's Check or Letter of Credit shall be returned to the successful bidder upon filing of the Bond required in Division (C), Section 153.54 of the Ohio Revised Code. The Performance Bond shall not be deemed "filed" until the Contract is fully executed.

ARTICLE 4. STANDARDS – SUBSTITUTIONS

- a) Those articles, devices, materials, forms of construction, fixtures, etc., named in the Technical Specifications to denote the kind and quality required shall be known as "Standards" and all bids shall be based on the same.
- b) Where two or more "Standards" are named together, the successful bidder may furnish any one of the "Standards" named, but contractors shall make their selections known to the Owner within thirty (30) days following award of the contract. Failure to comply with this requirement will automatically hold up payment requests from the contractor in view of possible improper materials being used on the project. The first "Standard" listed shall be considered as the basis of design. If a contractor opts to use a named "Standard" other than the basis of design and this results in any necessary modifications to any other element of the contract documents, the same contractor shall be responsible for all associated additional costs.
- c) Bidders desiring consideration for the use of material, equipment, etc., not named in the specifications may submit proposals for the substitution of same for "Standards" as

specified, using the “Substitution Sheet” attached to the proposal form and listing, for each proposed change: (1) the “Standard” specified, (2) the substitution, and (3) the change in bid price, (or “no change”). Proposed substitutions must be included on the “Substitution Sheet” to be considered. Complete specifications and descriptions of any proposed substitutions being considered for acceptance shall be furnished to the Owner promptly upon request. Acceptance of substitutes shall be at the sole discretion of the Owner.

- d) Any substitution accepted must be incorporated in the formal contract.
- e) Substitution shall not affect the determining of lowest and best bid.
- f) No substitution will be considered prior to receipt of bids unless written request for approval has been received by the Owner at least **ten (10) days prior to the date for receipt of bids**. A statement setting forth changes in other materials, equipment, or other portions of the work, including changes in the work of other contractors that incorporation of the proposed substitution would require, shall be included. The burden of proof of the merit of the proposed substitution is upon the proposer. The Owner’s decision of approval or disapproval of a proposed substitution shall be final.

If the brand or product is acceptable, the Owner will approve it prior to bidding in an addendum issued by the Owner to all bidders on record.

- g) In proposing a substitution, the Bidder represents and warrants that each proposed substitution will not result in any changes to the project, including changes to the work of other contractors, or any decrease in the performance of any equipment or systems to be installed in the project and agrees to pay any additional costs incurred by the Owner as a result of a substitution which is accepted.
- h) **Following the award of the contract, there shall be no substitutions**, except pursuant to a change order. The Owner in its sole discretion may decline to consider a substitution or a change order.
- i) If the specified materials and/or manufacturers are no longer available, it is the Bidder’s responsibility to notify the Owner during the bidding period. Substitutions made during the construction period resulting from these conditions (i.e., failure of the Bidder to notify Owner) will be made solely at the Owner’s discretion.

ARTICLE 5. EXAMINATION OF DOCUMENTS

- a) Each bidder shall examine all Bid Documents, including, but not limited to, Project Manual, Project Schedule, Notice to Bidders, Form of Proposal, addenda, plans, specifications, etc., for all other divisions of the work as well as its own, noting particularly all requirements which will affect its work in any way. These bid documents shall become the Contract Documents, as defined in the contract that governs the relationship between the successful bidder and the Owner when the

contract is executed. Failure of a bidder to become fully acquainted with the amount and nature of work required to complete its division of the work in conformity with all requirements for the project as a whole will not be considered subsequently as a basis for extra compensation.

- b) Should any requirements in the plans and/or specifications for the project, as a whole, appear to a bidder to be in disagreement with those for the part of the work on which a bidder proposes to bid or in the case of a discrepancy in the plans and specifications, a request for clarification, in writing should be addressed to the Owner at least five (5) calendar days prior to the date set for opening bids. The Owner will reply to all such inquiries through an addendum. Verbal interpretations will not be honored and are not legally binding. The Owner will forward a copy of same to all individuals holding plans and specifications. If, in examining the contract documents, the Bidder discovers an apparent violation of the Ohio Basic Building Code, or other applicable statute or regulation, the Bidder shall report such apparent violation to the Owner promptly. However, this provision shall not be construed as imposing responsibility on the Bidder to ensure conformity of the plans and specifications to the Ohio Basic Building Code and other applicable regulations.
- c) No allowance will be made subsequently for any omission, error, or negligence of the Bidder.
- d) Unless specifically assigned to one (1) contract for all aspects of the project, each bidder is responsible for including all requirements for all sections contained in the Project Manual, and project schedule in the base bid amount. (Contract is not limited to only those specifications sections listed in the contract summary of work.)

ARTICLE 6. OPENING OF BIDS

Bids shall be opened and read publicly at the time and place named in the Notice to Bidders. The time for opening bids shall be extended at the discretion of the Owner with no further advertising when an addendum to the plans or specifications is issued within seventy-two (72) hours of the scheduled bid opening, excluding Saturdays, Sundays and Legal Holidays.

ARTICLE 7. ADDENDA

- a) Any explanation, interpretation, correction, or modification of the Project Manual or Bid Documents will be issued in the form of an addendum, which shall be the only means considered binding; explanations, interpretations, etc., made by any other means shall NOT be legally binding. All addenda shall become a part of the Contract Documents.
- b) Bidders shall submit questions to the Owner no later than five (5) days prior to the advertised bid date, to allow sufficient time for the Owner to respond. All addenda will be issued except as hereafter provided and mailed or otherwise furnished to persons who have obtained Bid Documents for the project, at least seventy-two (72) hours prior

to the published time for the opening of bids; excluding Saturdays, Sundays, and legal holidays. If any addendum is issued within such seventy-two (72) hour period, then the time for opening of bids shall be extended one (1) week with no further advertising of bids required.

- c) Copies of each addendum will be sent only to the bidders to whom Bid Documents have been issued. Receipt of addenda shall be indicated by bidders in the space provided on the Form of Proposal.
- d) Each bidder shall carefully read and review the Bid Documents and immediately bring to the attention of the Owner any error, omission, inconsistency, or ambiguity therein.
- e) If a bidder fails to indicate receipt of all addenda through the last addendum issued by the Owner on its Form of Proposal, the bid of such bidder will be deemed to be responsive only if:
 - 1) The bid received clearly indicates that the Bidder received the addendum, such as where the addendum added another item to be bid upon and the Bidder submitted a bid on that item; or
 - 2) The addendum involves only a matter of form or is one which has either no effect or has merely a trivial or negligible effect on price, quantity, quality, or delivery of the item bid upon.

ARTICLE 8. ADDITIONAL SUBMITTAL REQUIREMENTS

- a) Upon receipt of the Notification of Recommendation of Award (NOA), the successful bidder will submit the following to the Owner:
 - 1) One copy of an Executed Contract;
 - 2) Contract Bond;
 - a) Including Certificate of Compliance issued by the Department of Insurance, showing the Bonding Company is Licensed to do business in the State of Ohio.
 - b) Including a Financial Statement of the Bonding Company.
 - 3) Certificate of Insurance;
 - 4) Completed W-9 Form;
 - 5) Workers' Compensation Certificate (Industrial Commission certification of O.R.C. requirements).

If the successful bidder fails to provide the documents within the required time, the Bidder is solely responsible to meet all project schedule requirements regardless of the date of the formal execution of the contract. Failure of the Bidder to provide these documents within fifteen (15) days of the Notification of Recommendation of Award (NOA) may result in rejection of the bid.

- b) The successful bidder shall notify the Owner, within three (3) calendar days of receipt of the Notification of Award (NOA) of the provisions the Bidder has made or reasonably can be expected to make in order to meet the provisions of the Owner's Disadvantaged Business Participation Plan.
- c) Within fifteen (15) calendar days of receipt of the Notification of Recommendation of Award (NOA) or such longer time as may be permitted in writing by the Owner, the apparent low bidder will submit the following to Owner:
 - 1) The list of all proposed subcontractors, suppliers, manufacturers, and vendors.

After approval by the Owner of the list submitted by the successful bidder, the list shall not be changed unless written approval of the change is authorized by the Owner.
 - 2) Schedule of Values – the breakdown of labor and material for the project, including the sum thereof.
 - 3) A current resume of the person or persons proposed to represent the Bidder as project manager or superintendent.
 - 4) A shop drawing and submittal schedule (which includes every submittal requirement in the specifications).
- d) Within fifteen (15) calendar days of receipt of the Notification of Recommendation of Award (NOA), the Bidder is required to submit a schedule to the Owner which shall, at a minimum, show detailed work operations and durations. The intent of this requirement is to allow the Owner an opportunity to more fully understand how the Bidder intends to complete the details of the project. This detailed working schedule shall identify manpower requirements and be thoroughly coordinated with the Owner and all other trades. The Owner anticipates that work will commence in October 2026 and be completed by May 2027. The selected Bidder will be required to coordinate final installation and construction schedules with the event schedule of the Greater Columbus Convention Center so as to minimize construction impact on event operations.

ARTICLE 9. TAXES

Materials purchased for use or consumption in connection with the proposed work will be exempt from the State of Ohio Sales Tax as provided for in Section 5739.02 of the Revised Code of Ohio and also from the State of Ohio Use Tax, Section 5741.01.

ARTICLE 10. LIQUIDATED DAMAGES

Liquidated damages apply to the terms of the contract.

ARTICLE 11. PROJECT SCHEDULE

Each bidder is required to submit a project schedule with their bid which shall at a minimum, show work operations and duration. The Bidder shall prosecute its work, at the direction of the Owner, furnishing at all times sufficient skilled workmen, materials, and equipment to perform its work to meet the line-item progress required by the project schedule, so as not to delay the completion of the whole or any part of the work. The Owner anticipates that work will commence in October 2026 and be complete by May 2027. The final schedule will be determined in consultation with Owner and shall account for the GCCC's event schedule.

ARTICLE 12. OWNER'S RIGHT TO WAIVE DEFECTS AND IRREGULARITIES

- a) The Owner reserves the right to waive any and all irregularities provided that the defects and irregularities do not affect the amount of the bid in any material respect or otherwise give the Bidder a competitive advantage.
- b) By submitting a bid, the Bidder agrees that (i) the Owner's determination of whether a defect or irregularity affects the amount of the bid in any material respect or otherwise gives the Bidder a competitive advantage will be final and conclusive, and (ii) the Bidder will pay the Owner's attorneys' and consultants' fees related to any challenge to the bid procedure or process, brought directly or indirectly by the Bidder and/or any of its affiliates, which is unsuccessful.

ARTICLE 13. CONTINUITY OF CONVENTION CENTER OPERATIONS

The successful bidder shall plan and perform all work without creating any interruption or disruption to normal Greater Columbus Convention Center operations and functions. All necessary interruptions and disruptions must be minimized, planned, scheduled and approved by the Owner. In preparation of the bid, bidders may not assume the use of any activity or operation that will result in the disruption of convention center activities without the prior approval of the Owner.

ARTICLE 14. PREVAILING OR MINIMUM WAGE RATES

- a) Each laborer, workman or mechanic employed by the Bidder for the work herein specified or by the subcontractor or by other persons upon work shall be paid not less than the prevailing wage rates as determined by the Ohio Department of Commerce Division of Industrial Relations in accordance with Chapter 4115 of the Ohio Revised Code.
- b) In the event the wage rate for any labor classification is changed between the time the rates are published herein and the time the work required by this contract is performed, or in the event any class of labor employed is not included in the published schedule of prevailing wages, then the rate prevailing at the time the work is actually performed, as ascertained and determined by the Ohio Department of Commerce Division of

Industrial Relations or the US Department of Labor, shall govern the work under this contract. No increase in the contract sum will be allowed for any later increase in the prevailing rates or wages as they may apply to this work.

ARTICLE 15. PAYROLL SUBMITTAL

- a) All contractors and subcontractors shall keep full and accurate payroll records covering all disbursements of wages to their employees to whom they are required to pay not less than the prevailing rate of wages, as set forth in the Contract Documents. Such records shall be preserved for a period of three years from the date of completion of the contract.
- b) Every contractor and subcontractor shall deliver to the Owner a certified copy of their payroll, with each month's payment application for the previous month's weekly payrolls which shall show for each employee paid any wages, their name, current address, social security number, numbers of hours worked each day during the pay period and the total for each week, their hourly rate of pay, job classification, fringe payments, and deductions from their wages. In addition, the contractor, at the beginning of performance under the contract, shall give to the Owner a schedule of the dates during the life of this contract with the Owner on which contractor is required to pay wages to employees and a complete list of all subcontractors. Upon completion of the contract and prior to final payment, each contractor and subcontractor shall file with the Owner an affidavit stating that the contractor and subcontractor has fully complied with Chapter 4115 of the Ohio Revised Code. The Owner will withhold payment of any monthly/partial and/or final payment until all requirements have been met in accordance with the terms of the contract.

ARTICLE 16. INSURANCE

Insurance requirements are defined in the contract.

NON-DISCRIMINATION POLICY

The Franklin County Convention Facilities Authority (“FCCFA”) is committed to equal opportunity and non-discrimination in all aspects of its contracting and procurement activities through the adoption of this Non-Discrimination Policy (“Non-Discrimination Policy”). Pursuant to this Non-Discrimination Policy, the FCCFA will not participate in either active or passive unlawful discrimination of any type.

The FCCFA recognizes that it has a continuing obligation to avoid unlawful discrimination in contracting and procurement activities. Therefore, all Contractors shall not have engaged, and shall not engage, in any kind of unlawful discrimination. Each Contractor, prior to being engaged by the FCCFA, shall certify in writing that such Contractor, directly or indirectly (1) has not engaged, is not engaged, and will not engage in any kind of unlawful discrimination involving race, color, sex, disability, age, religion, veteran status or national origin, whether or not such discrimination is related to a contract or procurement activity with or for the FCCFA and (2) will not, for any purpose related to its engagement by the FCCFA, employ or contract with persons or businesses which the Contractor knows or has reason to know have engaged, are engaged, or will engage in any kind of unlawful discrimination involving race, color, sex, disability, age, religion, veteran status or national origin, whether or not such unlawful discrimination is related to a contract or procurement activity with or for the FCCFA.

It is the position of the FCCFA that discrimination against business owners based on race, color, sex, disability, age, religion, veteran status, or national origin is prohibited. No person unlawfully shall be denied the benefit of, or otherwise discriminated against, in connection with the award and/or performance of any contract or award, or modification of any contract or award, between a Contractor and the FCCFA on such basis.

The fundamental tenets of this Non-Discrimination Policy are as follows:

- All Contractors should have an equal opportunity to compete with respect to contract and procurement activities of the FCCFA, regardless of race, color, sex, disability, age, religion, veteran status or national origin;
- No Contractor shall have engaged or shall engage in any kind of unlawful discrimination involving race, color, sex, disability, age, religion, veteran status, or national origin, whether or not such unlawful discrimination is related to a contracting or procurement activity with or for the FCCFA;
- The FCCFA through its staff, management company and other contractors will (i) monitor and provide periodic reports to the FCCFA regarding compliance by the FCCFA and its Contractors with this Non-Discrimination Policy; (ii) collect and record information on the use of minorities and women in contracting and procurement activities and (iii) analyze data to evaluate in utilization of minorities and women in the FCCFA’s contracting and procurement activities;

- The FCCFA shall review this Non-Discrimination Policy periodically to ensure that it effectively promotes and achieves non-discrimination and equal opportunity in connection with FCCFA contracting and procurement activities; and
- All Contractors shall comply with this Non-Discrimination Policy. A Contractor's success or failure to comply with this Non-Discrimination Policy will be a factor in any award of contracts or procurements from the FCCFA to such Contractor.

The FCCFA through its staff, management company and other contractors shall be responsible for implementing, monitoring, and evaluating this Non-Discrimination Policy.

The FCCFA staff shall periodically review this Non-Discrimination Policy to ensure that it effectively promotes non-discrimination and equal opportunity in connection with the FCCFA's contracting and procurement activities and periodically report to the Board regarding compliance by the FCCFA and its contractors.

If the FCCFA determines that the objectives of this policy are not being achieved, the FCCFA may, in its discretion, direct the Executive Director to conduct further investigations into the reasons for not achieving such objectives.

This Non-Discrimination Policy applies to all contracting and procurement activities of the FCCFA, including contracting for construction, professional and non-professional services and procurement of goods and supplies.

This Non-Discrimination Policy shall be referenced in each bid and request for proposal or qualifications document issued by the FCCFA. A contractor's failure to comply with this Non-Discrimination Policy may result in (a) debarment from participation in future FCCFA contracting opportunities, (b) liability for breach of contract and (c) the enforcement of any other remedies available under the related contract or applicable law.

FORM OF PROPOSAL

Submitted By: _____

on: _____, 2026

To: Franklin County Convention Facilities Authority
400 North High Street, 4th Floor
Columbus, Ohio 43215-2096

having read the Project Manual, Specifications and examined the Drawings entitled:

**Bid Package 2026-06 Greater Columbus Convention Center Exterior Access Control
Improvements**

as prepared by the Franklin County Convention Facilities Authority for the construction of said project and having also received, read and included their provisions in the bid all addenda thereto as follows:

Addendum No: _____ Dated: _____ Addendum No: _____ Dated: _____

Addendum No: _____ Dated: _____ Addendum No: _____ Dated: _____

and having also inspected the site of and the conditions affecting and governing the construction of said project, the undersigned proposes to furnish all materials and perform all labor as specified, described, shown, and required in the Project Manual, Specifications and Drawings for the Work, for the indicated sum:

(NOTE: Fill in all spaces of items being bid and quote the sum in both words and figures.)

ESTIMATE FOR PROJECT
(\$2,100,000)

Total material, labor and services for the project – **Bid Package 2026-06 Greater Columbus Convention Center Exterior Access Control Improvements** - for the lump sum amount of:

Dollars (\$ _____)

FORM OF PROPOSAL (continued)

EXECUTION OF PROPOSAL

NOTE A: TIME OF COMPLETION

- a) It is understood and agreed that the work embodied in this contract shall be completed no later than the completion date stated within the contract, unless an extension of time is granted by the Owner.
- b) Upon failure to have all work completed within the period of time above mentioned, the Contractor shall forfeit and pay, or cause to be paid, to the Owner for and as liquidated damages to be deducted from any payment due or to become due to the said contractor, the sum set forth in the following table for the size of contract, for each and every day thereafter that the said work remains in an unfinished condition.

DOLLAR AMOUNT OF CONTRACT DOLLARS PER DAY

\$0 to \$100,000.00	\$250.00
\$100,000.01 to \$500,000.00	\$500.00
\$500,000.01 to \$1,000,000.00	\$1,000.00
\$1,000,000.01 to \$10,000,000.00	\$2,500.00
\$10,000,000.01 and up	\$5,000.00

NOTE B: Failure to sign proposal may result in rejection of the Bid.

THIS PROPOSAL SUBMITTED BY: _____

Name of Contractor

BY: _____
Signature of Contractor or Authorized Representative

DATE: _____

Contact Person for contract processing: _____

Mailing Address if different from above: _____

FRANKLIN COUNTY CONVENTION FACILITIES AUTHORITY

Non-Discrimination Policy

_____ hereby has reviewed the FCCFA's non-discrimination policy.
(Name of Contractor)

The contractor agrees to comply with all policy requirements and, directly or indirectly, (1) has not engaged, is not engaged, and will not engage in any kind of unlawful discrimination involving race, color, sex, disability, age, religion, veteran status or national origin, whether or not such discrimination is related to a contract or procurement activity with or for the FCCFA and (2) will not, for any purpose related to its engagement by the FCCFA, employ or contract with persons or businesses which the Contractor knows or has reason to know have engaged, are engaged, or will engage in any kind of unlawful discrimination involving race, color, sex, disability, age, religion, veteran status or national origin, whether or not such unlawful discrimination is related to a contract or procurement activity with or for the FCCFA. The contractor further agrees to incorporate these requirements in all subcontracts on this project regardless of tier.

Date: _____

Signature of Contractor or Authorized Representative

- () Submitted own Affirmative Action Plan.
- () Contractor has been certified as a minority and/or female owned business.
(Submit copy of certification as received from the federal government and/or any Ohio government unit or public authority).

Note: This certification must be filled and signed. Failure to comply may invalidate your bid.

DECLARATION OF INSURANCE TO THE FRANKLIN COUNTY CONVENTION FACILITIES AUTHORITY

THIS IS TO CERTIFY THAT THE FOLLOWING DESCRIBED POLICIES OF INSURANCE HAVE BEEN ISSUED AND ARE IN FULL FORCE AND EFFECT AT THIS TIME:

1. Name Insured (Contractor):
2. Address:
3. Title and Location: Franklin County Convention Facilities Authority -
(Contract Job Site) Greater Columbus Convention Center
4. Project: GCCC Exterior Access Control Improvements
5. Policy Number(s), Carriers and Expiration Dates:

LIMITS OF LIABILITY IN \$1,000 AMOUNTS

TYPE OF INSURANCE		Each Occurrence	Aggregate
GENERAL LIABILITY			
Comprehensive Form	Bodily Injury	\$	\$
Premises-Operations			
Explosion and Collapse Hazard	Property	\$	\$
Underground Hazard	Damage`		
Products/Completed Operations			
Hazard	Combined	\$	\$
Contractual Hazard	Single Limit	\$	\$
Broad Form Property Damage			
Independent Contractors	Personal Injury	\$	\$
Personal Injury			
AUTOMOBILE LIABILITY			
	Bodily Injury	\$	
Comprehensive Form	Each Person		
Owned	Bodily Injury	\$	
	Each Accident		

Hired

Non-Owned

Property Damage \$

EXCESS LIABILITY

Combined \$
Single Limit

Umbrella Form

Combined \$ \$
Single Limit

Following Form

Self-Insured \$

List any manuscript or unusual exclusions for forms and attach copies.

Check those of the following operations which are excluded:

_____ Asbestos removal or abatement _____ PCP Removal _____ Demolition

It is agreed that sixty (60) days written notice of cancellation or material change in the described policy(s) will be given to the holder of this certificate, known as the Franklin County Convention Facilities Authority, 400 North High Street, Columbus, OH 43215.

Insurance Agency:

Address:

Telephone:

Contractor's Signature:

Agent's Signature:

Date: _____

Date: _____

ADDITIONAL INSURED WITH RESPECT TO THIS JOB ONLY; AS THEIR INTEREST MAY APPEAR:

1. Franklin County Convention Facilities Authority, its other contractors and own forces, if any, and the subcontractors, sub-subcontractors, consultants, agents, and employees of any of them, in their individual capacities as such;
2. The Franklin County Convention Facilities Authority Board, its members, consultants, agents, and employees of any of them, in their individual capacities as such;
3. The Architect/Engineer its consultants, agents, and employees of any of them, in their individual capacities as such;
4. The Construction Manager, its consultants, agents, and employees of any of them, in their individual capacities as such.
5. Legends Global, its consultants, agents, and employees of any of them, in their individual capacities as such.

**FRANKLIN COUNTY CONVENTION FACILITIES AUTHORITY
CONTRACTOR'S REVIEW CERTIFICATE**

The undersigned acknowledges that:

- (1) the contractor's authorized agent has carefully read and understood all of the Bid Documents submitted for the Greater Columbus Convention Center Exterior Access Control Improvements, including, but not limited to, the Notice to Bidders, Instructions to Bidders, Form of Proposal, Substitution Sheet, Prevailing Wage Determination, Form of Bid Guaranty and Contract Bond, this Contractor's Review Certificate, Project Manuals, Specifications and Drawings; and
- (2) the Bid Documents are sufficient and adequate for the undersigned to perform the Work; and
- (3) the contractor's authorized agent has carefully reviewed the site and conditions under which the Work will be performed, or has been given ample opportunity to do so, and fully assumes the risk for any condition at the site that could have been discovered by a careful and diligent review of the site; and
- (4) the contractor's authorized agent has confirmed that the contractor's surety is authorized to do business in the State of Ohio.

Dated: _____

CONTRACTOR: _____

By: _____
SIGNATURE

TYPED OR PRINTED NAME

Its: _____

NOTE: The Bidder should review the Bid Documents and the site and conditions under which the Work will be performed so that the Bidder can give the acknowledgments contained in this Certificate.

BID GUARANTY AND CONTRACT BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned

(Name and Address)

as Principal and

(Name of Surety)

as Surety, are hereby held and firmly bound unto the Franklin County Convention Facilities Authority as Obligee in the penal sum of the dollar amount of the bid submitted by the Principal to the Obligee on this _____ day of _____, 2026 to undertake the project known as the Greater Columbus Convention Center Exterior Access Control Improvements. The penal sum referred to herein shall be the dollar amount of the Principal's bid to the Obligee, incorporating any additive or deductive alternate proposals made by the Principal on the date referred to above to the Obligee, which are accepted by the Obligee. In no case shall the penal sum exceed the amount of _____ dollars (\$ _____).

(If the above line is left blank, the penal sum will be the full amount of the Principal's bid, including add alternates.) Alternatively, if completed, the amount stated must not be less than the full amount of the bid, including add alternates, in dollars and cents. A percentage is not acceptable. For the payment of the penal sum well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH, that whereas the above-named Principal has submitted a bid on the above referred to Project;

NOW, THEREFORE, if the Obligee accepts the bid of the Principal and the Principal fails to enter into a proper contract in accordance with the bid, plans, details, specifications, and bills of material; and in the event the Principal pays to the Obligee the difference, not to exceed ten percent of the penalty hereof, between the amount specified in the bid and such larger amount for which the Obligee may in good faith contract with the next lowest bidder to perform the Work covered by the bid; or in the event the Obligee does not award the Contract to the next lowest bidder and resubmits the Project for bidding, the Principal will pay the Obligee the difference, not to exceed ten percent of the penalty hereof, between the amount specified in the bid, or the costs, in connection with the resubmission, or printing new contract documents, required advertising and printing and mailing notices to prospective bidders, whichever is less, then this obligation shall be null and void, otherwise to remain in full force and effect. If the Obligee accepts the bid of the Principal and the Principal, within ten days after the awarding of the Contract, enters into a proper contract in accordance with the bid, plans, details, specifications, and bills of material, which said Contract is made a part of this Bond the same as though set forth herein; and

IF THE SAID Principal shall well and faithfully perform each and every condition of such Contract; and indemnify the Obligee against all damage suffered by failure to perform such Contract according to the provisions thereof and in accordance with the plans, details, specifications, and bills of material therefor; and shall pay all lawful claims of subcontractors, materialmen, and laborers, for labor performed and materials furnished in the carrying forward, performing, or completing of said Contract; we agreeing and

assenting that this undertaking shall be for the benefit of any materialman, subcontractor or laborer having a just claim, as well as for the Obligee herein; then this obligation shall be void; otherwise the same shall remain in full force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall in no event exceed the penal amount of this obligation as herein stated.

THE SAID Surety hereby stipulates and agrees that no modifications, omissions, or additions, in or to the terms of said Contract or in or to the plans and specifications therefor shall in any way affect the obligations of said Surety on its Bond, and it does hereby waive notice of any such modifications, omissions or additions to the terms of the Contract or to the Work or to the specifications.

SIGNED AND SEALED This _____ day of _____, 2026.

PRINCIPAL:

BY:

TITLE:

SURETY

SURETY COMPANY ADDRESS:

Street

City State Zip

Telephone:

BY:

Attorney-in-Fact

If the requirements of Section 3905.41 of the Ohio Revised Code are applicable or if Surety Agent's Address is other than Ohio, and the Ohio Department of Insurance's Certificate of Compliance is not attached, please complete Ohio Resident Agent Information as follows:

SURETY AGENT'S ADDRESS:

Agency Name: _____

Agency Name: _____

Street _____

Street _____

City State Zip

City State Zip

Telephone _____

Telephone _____

NOTE Failure by any party to sign this Bid Guaranty and Contract Bond shall result in rejection of bid.

INSTRUCTIONS TO BIDDERS RESPONSIBILITY ANALYSIS FORM

FRANKLIN COUNTY CONVENTION FACILITIES AUTHORITY DETERMINATION OF LOWEST AND BEST BID

This form must be completed in its entirety and submitted with the Bid Form. Attach additional sheets if necessary to provide complete answers to the questions below. Do not include any misleading statements and make sure to include all facts necessary to make the statements made not misleading. The term "Project" means the project for which the attached bid is submitted. All references to "**Bidder**" should be answered with respect to the **actual legal entity** submitting the bid.

Subject to the right of the Owner to reject any or all bids, the Owner will award the Contract for the Work to the Bidder submitting the lowest and best bid, taking into consideration accepted alternates. In determining which bid is the lowest and best bid, the Owner may take into consideration not only the amount of the bid but such of the following criteria as the Owner, in its sole discretion, deems appropriate, and may give such weight thereto as it deems appropriate:

Bidder Name _____

Bid Package No.: 2026-06 _____ Contract No(s): _____

Trade/Service _____

Product (s) Supplied _____

1. Bidder shall provide all information listed below with its bid, unless otherwise noted. Failure to do so may, at the Owner's discretion, result in rejection of the bid.
2. The Owner reserves the right to reject all bids.
3. Will the Bidder employ supervisory personnel on this Project that have three (3) or more years in the specific trade and/or maintain the appropriate state license?

_____ Yes _____ No
4. On a separate sheet, provide information to demonstrate the following:
 - Bidder's previous performance to complete its work on projects of similar size and scope.
 - Bidder's previous ability to complete these same projects on time.
 - Bidder's previous ability to work with this Owner, Architect, Engineer and/or Construction Manager.
5. Bidder shall not have an EMR (Workers' Compensation Interstate/Intrastate Experience Modification Rate) greater than 1.5. If Bidder's EMR is above 1.0, Bidder shall provide a letter from Insurance Broker providing EMR for the most recent five (5) years, reasoning for EMR being above 1.0 and incident rates for that time period.

6. Has the Bidder been in existence at least 36 months?

_____ Yes _____ No

7. Has the Bidder, or any principal, owner, officer, stockholder, affiliate or any person involved in the bidding, contracting or leasing process been cited in the last five (5) years for violations of or failure to comply with any laws including without limitation:

a. Workers' compensation laws _____ Yes _____ No

b. Wage and hour laws _____ Yes _____ No
(including the Davis-Bacon Act and the Ohio
Prevailing Wage Act)

c. Unemployment laws _____ Yes _____ No

d. Tax laws _____ Yes _____ No

e. Fair Labor Standards Act _____ Yes _____ No

f. Immigration laws _____ Yes _____ No

g. Licensing requirements _____ Yes _____ No

h. OSHA _____ Yes _____ No

i. EPA _____ Yes _____ No

j. Any items below: _____ Yes _____ No

1. A judgment or conviction for any business-related conduct constituting a crime under federal, state or local government law including, but not limited to, fraud, extortion, bribery, racketeering, price-fixing or bid collusion or any crime related to truthfulness and/or business conduct.
2. A criminal investigation or indictment for any business-related conduct constituting a crime under federal, state or local government law including, but not limited to, fraud, extortion, bribery, racketeering, price-fixing or bid collusion or any crime related to truthfulness and/or business conduct.
3. An unsatisfied judgment, injunction or lien for any business-related conduct obtained by any federal, state or local government agency including, but not limited to, judgments based on taxes owed and fines and penalties assessed by any federal, state, or local government agency.
4. An investigation for a civil or criminal violation for any business-related conduct by any federal, state or local agency.
5. A grant of immunity for any business-related conduct constituting a crime under federal, state or local governmental law including, but not limited to, fraud,

extortion, bribery, racketeering, price-fixing, bid collusion or any crime related to truthfulness and/or business conduct.

6. An administrative proceeding or civil action seeking specific performance or restitution in connection with any federal, state or local contract or lease.
7. A sanction imposed as a result of judicial or administrative proceedings relative to any business or professional license.
8. A consent order with the Ohio Environmental Protection Agency, or a federal, state or local government enforcement determination involving a violation of federal, state, or local environmental laws.

If yes, on a separate sheet, provide complete details including the date of each citation or violation; the nature of each violation; and the sanction for each violation. If the Bidder was fined, include the dollar amount.

For purposes of 7.a. above, a violation of the Workers' compensation laws is a determination by the Ohio Bureau of Workers Compensation that the contractor is not in compliance with Ohio Workers' Compensation laws and regulations.

For purposes of 7.b. above, a violation of the Ohio Prevailing Wage Act is a determination by the Ohio Department of Commerce, Division of Labor and Worker Safety, Wage and Hour Division, or successor that the contractor is not in compliance with the provisions, duties, obligations and is subject to the remedies and penalties of Chapter 4115 of the Ohio Revised Code.

8. Does Bidder have any outstanding liens? If yes, on a separate sheet identify each circumstance and Bidder's response.

_____ Yes _____ No

9. Has Bidder been party to litigation or arbitration proceedings in connection with any work performed, services rendered, or products supplied in the last five years? If yes, on a separate sheet, provide complete details, including dates, parties, whether Bidder was a plaintiff/claimant or defendant/respondent, the nature of the dispute and the ultimate determination or other resolution (i.e. settlement).

_____ Yes _____ No

10. In the last five years, has Bidder had work rejected as defective (other than minor re-work accomplished without formal notice)? If yes, on a separate sheet identify each circumstance and Bidder's response.

_____ Yes _____ No

11. In the last five years, has Bidder's contract or employment been terminated prior to completion of a project for any reason other than convenience of the Owner? If yes, on a separate sheet identify each such circumstance and provide full details.

_____ Yes _____ No

12. Bidder shall secure any required bonds from a surety licensed to do business in the State of Ohio with an A.M. Best Company rating of at least A. Has Bidder met this requirement?

_____ Yes _____ No

13. Has Bidder's construction license ever been revoked in any state?

_____ Yes _____ No

14. In the last five years, has Bidder had its own forces supplemented by an Owner, contractor or construction manager or had a claim made against it for defective, delayed or non-compliant work? If yes, on a separate sheet identify each such circumstance and provide full details.

_____ Yes _____ No

15. Bidder for a skilled contract (i.e. plumbing, electrical, HVAC, or fire safety) shall certify that Bidder will not subcontract greater than 50% of its awarded contract.

16. Does Bidder provide a minimum healthcare medical plan for those employees working on the project? If yes, list the healthcare plan provider below.

_____ Yes _____ No

Healthcare Medical Plan Provider: _____

17. Does Bidder contribute to an employee pension or retirement plan for those employees working on the project? If yes, list the pension or retirement plan provider below.

_____ Yes _____ No

Pension Plan or Retirement Plan Provider: _____

The contractor may be asked to provide ERISA form 5500 for the retirement plan.

18. Has Bidder implemented an OSHA compliant Safety Program?

_____ Yes _____ No

19. Does Bidder maintain a substance abuse policy that meets or exceeds requirements of the Ohio BWC and that its personnel are subject to on this Project?

_____ Yes _____ No

20. Is the bidder a foreign corporation (i.e. not incorporated under the laws of Ohio) or an individual or partnership?

_____ Yes _____ No

21. If yes to Item 20 above, provide proof of a Certificate of Good Standing from the Secretary of State showing the right of the Bidder to do business in the State and/or proof of filing with the Secretary of State a Power of Attorney designating the Secretary of State as Bidder's agent.

22. Bidder shall certify that the Bidder's subcontractors / vendors shall meet all requirements contained herein.

23. The Owner reserves the right to request the following information within 48 hours of the bid date:

- a. On a separate sheet, list all projects greater than \$500,000 completed by Bidder in the preceding five years and for each, provide Bidder's original contract amount, final contract amount and a reference name and phone number.
- b. For the three largest projects listed from Item 3 above list your average manpower and peak manpower along with the original duration of the project and final duration of the project.
- c. On a separate sheet, provide Bidder's current work load under contract. List each current project and its respective contract amount and scheduled duration.
- d. On a separate sheet, provide information on Bidder's equipment and facilities.
- e. Bidder shall provide sufficient financial information to demonstrate fiscal capability to perform the project. All financial information identified by the Bidder as a trade secret and contained herein shall be treated as a trade secret and exempt from Ohio's Public Records laws, but the Owner's sole duty shall be to notify Bidder of any requests for that information so that Bidder is afforded the opportunity, at Bidder's expense, to contest in court the disclosure of any such information. The Owner may, but shall not be obligated to, contest any request for the disclosure of such information.
- f. On a separate sheet, identify, in numbers and experience, the Bidder's work force. Differentiate between hourly and salaried staff. Describe Bidder's workforce, focusing on worker experience and continuity.
- g. Bidder for a skilled trade contract or fire safety contract shall certify and upon request, provide evidence that Bidder is a state licensed heating, ventilating, and air conditioning contractor, refrigeration contractor, electrical contractor, plumbing contractor, or hydronics contractor or licensed by the State Fire Marshall and uses skilled, trained personnel.
- h. Identify the number of man hours and associated wages for each trade classification included in the Contractor's and Subtiers' Base Bid. Separately list the subtier's information. Provide additional sheet if more room is needed. DO NOT include payroll taxes, assessments or fringe benefits of any kind in the Wage amounts.

Trade	Man Hours	Wages (No fringes or OH&P)
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

The Undersigned certifies under oath that the information provided herein and on all supplemental pages of explanation is true, complete and correct.

Company

By _____

Title _____
(Signature must be notarized)

Sworn to and subscribed in my presence this _____ day of _____,

By _____, the _____ of
_____, a _____ on
behalf of the _____.

Notary Public

My Commission Expires: _____

Franklin County Convention Facilities Authority
Bid Evaluation Process:

In determining the lowest and best bid for construction contracts, the Franklin County Convention Facilities Authority will take the following steps and consider the following items in making this determination. The Authority reserves its discretion to evaluate the price and quality of bids to ensure that the lowest and best bid is selected. The Authority reserves its discretion to modify this process at any time and for any reason without notice.

1. Select which alternates will be accepted.
2. Identify the apparent low bidder based on the accepted alternates.
 - 2.1 Is the apparent low bid responsive? Are all required bid submissions included?
 - 2.2 Has the bidder qualified their bid in a way that would disqualify the bid?
3. Meet with the bidder to determine that all project scope is clearly understood and included. Discuss project schedule, safety and all project requirements. Identify key project staff. Identify subcontractors. Identify long lead time equipment. Discuss submission, review and approval process. Identify and discuss other items pertinent to the job.
4. Is the bidder well qualified?
 - 4.1 Background Check:
 - Check Dun and Bradstreet.
 - Run Lexus/Nexus check.
 - Check for prevailing wage and workers compensation compliance.
 - 4.2 Is the bidder qualified for a job of this scope? (Questions 4, 6, 15, 23.a, b,c,d,e)
 - 4.3 Has the bidder demonstrated that they will provide qualified, well trained staff? (Questions 3, 23.f, g)
 - 4.4 Does the bidder provide a minimum healthcare medical plan for those employees working on the project? (Question 16)
 - Does the bidder contribute to an employee pension or retirement plan for those employees working on the project? (Question 17)
 - 4.5 Does the bidder have a history of providing quality construction services? (Questions 6, 9, 10, 11, 13, 14)
 - 4.6 Does the bidder maintain a safe workplace? (Questions 5, 18, 19)
 - 4.7 Does the bidder follow all applicable laws? (Question 7)
 - 4.8 Is the bidder financially stable? (Questions 7.j.3, 8, 12, 23.e)
5. If it is determined that the apparent low bid is responsive, valid and the bidder is well qualified:

- 5.1 Assemble all necessary documentation and paperwork required in the bid documents.
- 5.2 Submit a resolution for board approval to enter into the contract.
- 5.3 Issue a notice to proceed.
- 5.4 Sign a contract with the successful bidder.

SECTION 31 00 00
EARTHWORK

PART 1 GENERAL

1.01 DESCRIPTION

- A. This Section includes the following:
1. Excavate subsoil and stockpile for later reuse.
 2. Grade and contour site to elevations indicated on Drawings.
 3. Remove from site excess topsoil and subsoil.
 4. Preparing subgrade and filling under slabs on grade, foundations, sidewalks, and paving.
 5. Excavation.
 6. Fill materials and compaction.
 7. Building perimeter backfilling.
 8. Subgrade stabilization for pavement subgrade.
 9. Excavating and backfilling trenches and structures.
 10. Bedding materials.
 11. Fill for over-excavation.
 12. Finish grade subsoil.
 13. Place, level, and compact topsoil.

1.02 RELATED SECTIONS

- A. Work under this section is subject to the requirements of the Contract Documents including General Conditions, Supplementary Conditions, Drawings, and sections under Division 01 General Requirements.
- B. Section 02 41 13 – Site Demolition
- C. Section 03 30 00 - Cast-in-Place Concrete
- D. Section 31 10 00 - Site Clearing
- E. Section 31 25 00 - Erosion and Sedimentation Control
- F. Section 32 13 00 - Rigid Pavement
- G. Section 32 12 00 - Flexible Pavement
- H. Section 32 92 00 - Turf and Grasses
- I. Section 31 23 33 - Piped Utilities - Basic Methods
- J. Section 33 11 00 - Water Utilities
- K. Section 33 30 00 - Sanitary Sewerage
- L. Section 33 40 00 - Storm Water Utilities
- M. Section 33 41 00 - Subdrainage

N. Section 33 50 00 - Natural Gas Distribution

1.03 REFERENCED STANDARDS

- A. American Society of Testing and Materials (ASTM).
 - 1. C 136 — Method for Sieve Analysis for Fine and Coarse Aggregates.
 - 2. D 422 — Particle Size Analysis of Soils.
 - 3. D 698 — Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5 lb. (2.49 kg) Rammer and 12-inch (304.8 mm) Drop.
 - 4. D 1556 — Test Method for Density of Soil in Place by the Sand-Cone Method.
 - 5. D 1557 — Test Methods for Moisture-Density Relations of Soils and Soil Aggregate Mixtures Using 120 lb. (4.54 kg) Rammer and 18-inch (457 mm) Drop.
 - 6. D 2487 — Classification of Soils for Engineering Purposes (Unified Soil Classification System).
 - 7. D 2488 — Description and Identification of Soils (Visual — Manual Procedure).
 - 8. D 2922 — Density of Soil and Soil Aggregate in Place by Nuclear Methods (Shallow Depth).
 - 9. D 3017 — Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).
 - 10. D 4318 — Liquid Limit, Plastic Limit and Plastic Index of Soils.
- B. Occupation Safety and Health Administration (OSHA), 29 Code of Federal Regulations (CFC) Part 1926.650 to .657, Subpart P Construction Standard for Excavations.
- C. **City of Columbus; Construction and Materials Specifications (CMSC).**
 - 1. **The Terms “Engineer,” “Director,” “City,” and other similar terms shall be interpreted as the Owner.**
 - 2. **In the event of any conflicts between ODOT CMS (CMSC) and the Contract Documents, the most stringent shall apply**
 - 3. **Local municipality having jurisdiction.**

1.04 SUBMITTALS

- A. Comply with requirements of Division 1 for submittals. Submit two copies of the following items:
 - 1. Material qualification tests for each fill material used and field density test reports directly from Testing Agency.
 - 2. Testing Agency certificate of inspection and compliance with specifications for the following:
 - a. Bearing capacity for all footing/foundation subgrades.
 - b. Acceptability for both on-site and borrow fill materials, prior to use.
 - c. Acceptability of subgrade prior to fill and pavement base placement.
 - d. Acceptability of fill placement.
 - 3. Shoring or underpinning plans, signed and sealed by a structural engineer licensed in Ohio.
 - 4. Submit 1-foot square samples of geotechnical fabric and filter fabric.
- B. Submit to the testing agency in accordance with Division 1 of the project specifications, one week prior to fill placement in order to perform qualification tests.
 - 1. 10 lb. sample of each type of fill to the Testing Agency in airtight containers.

1.05 QUALITY ASSURANCE

- A. Unless otherwise specified, **(the Owner/the Contractor)** shall pay for a Testing Agency to perform the following required qualification tests. The Contractor shall coordinate all activities with the Testing Agency and provide the Testing Agency with an accurate schedule and provide notice of field operations.
 - 1. Qualification tests on each different fill material (both on-site and imported).
 - 2. Fill Materials: Provide the following information and qualifications tests for each fill material, including select on-site materials, prior to use on project site.
 - a. Location of sources for each required imported materials prior to delivery to site.
 - b. Analysis of fine and coarse aggregate ASTM C 136.
 - c. Particle size analysis of soils ASTM D 422.
 - d. Liquid Limit, Plastic Limit and Plasticity Index, ASTM D 4318 — cohesive materials only.
 - e. Proctor density or relative density information according to test method identified in the Compaction Requirements Schedule at the end of this section.
- B. Fill material shall not be used until qualification tests have been completed and the Testing Agency has approved the fill material.

1.06 DEFINITIONS

- A. Stripping: Removal of existing surficial unsuitable materials (see definition) to their entire depth or as indicated.
- B. Excavation: Cutting, digging, removing, and wasting materials of every description, including soils, foundations, rock, and whatever substance encountered to dimensions, limits, elevations, and contours as indicated or required by either the Drawings or these Specifications.
- C. Rock: Boulders and detached stones having a volume of 2/3 cubic yard or more and any large masses of igneous, metamorphic, or sedimentary rocks, including firmly conglomerated deposits that cannot be removed with a 1 cubic yard capacity power shovel without drilling or blasting.
- D. Unsuitable Materials: Topsoil, loam, gumbo, mud, muck, silt, expansive clay, peat, soils with an organic content greater than 3% by weight, rubbish, debris, foundation and slab materials, paving materials, soil meeting ASTM D 2481 soil classification group ML, MH, CH, OL, OH and PT, rock greater than four (4) inches in diameter, soils with a maximum dry weight of less than 100 pounds per cubic foot, vegetation and frozen or dry lumps. Expansive clay is any clay with a liquid limit in excess of 50 and/or Plasticity Index of 30 or greater.
- E. Unstable Materials: Materials which are not classified as unsuitable materials, but due to their condition of being wet, dry, or frozen, are unacceptable for use in fills.
- F. Imported Fill Material or Borrow: Approved soil materials from sources other than those made available by required excavation of Project. Imported fill shall be free of unsuitable and unstable materials and shall be approved by the Testing Agency and have a proctor test to be utilized prior to placement.

- G. Filling/Backfilling: Placing of approved soil materials in accordance with specified procedures and materials and in conformity with lines, grades, contours, cross-sections and elevations shown on Drawings or required by these Specifications.
- H. Subgrade: Undisturbed soil or compacted fill material upon which additional fill, sub-base or base course, footing, foundation, or slab cushion is placed.
- I. Engineered Fill: An acceptable soil, aggregate, or man-made material that is placed in a controlled manner to satisfy a defined compaction Specification. The defined compaction Specification would include a maximum lift thickness, acceptable moisture content, and minimum required compaction percentage based on a moisture/density relationship (proctor or relative density).
- J. Hydrated Lime: A dry powder obtained by treating quicklime with water enough to satisfy its chemical affinity for water under the conditions of its hydration. It consists essentially of calcium hydroxide or a mixture of calcium hydroxide and magnesium oxide or magnesium hydroxide, or both.
- K. Quicklime: A calcined limestone, the major part of which is calcium oxide or calcium oxide in association with magnesium oxide, capable of slaking with water.
- L. Pond Liner Material: Cohesive, on-site soils, USCS Classification CL or CL-ML. Soils shall be free of any unsuitable materials with greater than 70% passing the No. 200 sieve. Soils shall have a moisture content at or slightly above maximum of 4% optimum.
- M. Stabilized Subgrade: Pavement subgrade soil stabilized in accordance with the Testing Agency recommendations and as generally described in Section 3.04.E.
- N. Unauthorized Excavation: consists of removal of materials beyond indicated subgrade elevations or dimensions without specific direction of Owner/Engineer. Unauthorized excavation, as well as remedial work directed by Owner/Engineer shall be at Contractor's expense.
 - 1. Under footings, foundation bases or retaining walls, backfill unauthorized excavation with lean concrete or extend indicated bottom elevation of footing or base to excavation bottom without altering required top elevation.
 - 2. In locations other than those above, backfill and compact unauthorized excavations as specified for authorized excavations of same classification, unless otherwise directed by the Engineer or Testing Agency.
- O. Additional excavation: When excavation has reached required subgrade elevations, notify Testing Agency, who will make an evaluation of the conditions. If the Testing Agency determines that bearing materials at required subgrade elevations are unsuitable or unstable, continue excavation until suitable bearing materials are encountered and backfill the excavated area as directed by the Testing Agency based on these specifications. The contract sum may be adjusted by an appropriate contract modification.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Store and handle all materials to prevent their deterioration from weather.

- B. Provide sediment and erosion control around all stockpiles in accordance with Section 31 25 00
- C. Sequence work and stockpiles to minimize contamination or mixing of materials.

1.08 PROJECT RECORD DOCUMENTS

- A. Accurately record location of existing utilities, their disposition (abandon or active), rerouted utilities, new utilities by horizontal dimensions, elevations or inverts, and slope gradients.
- B. Verify finished grade spot elevations at locations shown on the grading plans.

1.09 LAYOUT

- A. Employ a Professional Surveyor, registered in State of Ohio, to lay out and establish all lines and grades, including centerline of all structural columns.
- B. Erect control points prior to excavation. Protect existing control points.
- C. All surveying costs to be paid by the Contractor performing the work.

PART 2 PRODUCTS

2.01 FILL MATERIALS

- A. Type A –**CMSC** Item 411 - Stabilized Crushed Aggregate.
- B. Type B – Pea Gravel: Natural stone; washed, free of clay, shale, organic matter; graded in accordance with ANSI/ASTM C136, to the following:
 - 1. Minimum Size: 1/4 inch.
 - 2. Maximum Size: 5/8 inch.
- C. Type C – Sand: Natural river or bank sand, washed: free of silt, clay, loam, friable or soluble materials, or organic matter graded in accordance with ANSI/ASTM C136, within the following limits.

<u>Sieve Size</u>	<u>Percent Passing</u>
No. 4	100
No. 14	10 to 100
No. 50	5 to 90
No. 100	4 to 30
No. 200	0

- D. Type D - Subsoil–Reused, select onsite or borrow soil materials conforming to the following:
 - 1. ASTM D2487 Soil Classification Groups GW, GC, GM, SW, SC, SM, CL, and ML.
 - 2. Less than 3% organic material by weight.
 - 3. Free of unstable or unsuitable material or construction debris.
 - 4. Conform with **CMSC** item 203.02.R
- E. Type E –**CMSC** Item 703, size no. 57 aggregate.

- F. Type F –**CMSC** Item 653.02 Topsoil: Fertile, friable, fine sandy clay loam, uniform in composition, capable of sustaining vigorous plant growth and free of subsoil, stones, lumps, clods of hard earth, plants, plant roots, sticks, noxious weeds, slag, cinders, demolition debris or other extraneous matter over 1 inch in the largest dimension.
- G. Type G - Concrete: Structural concrete conforming to Section 03 30 00, "Cast-in-Place Concrete" with a compressive strength of 4500 psi.
- H. Type H - Drainage Fill: **CMSC** Item 703, Size No. 8 aggregate.
- I. Type I – Low Strength Mortar Backfill: **CMSC** Item 613
- J. Type J - Aggregate Base: **CMSC** Item 304.
- K. Type K – Bank Run Gravel: The material shall consist of bank run sand and gravel, free of frozen materials, wood, rubbish, and unsuitable or unstable material. It shall have no more than 20% passing the No. 200 sieve and no particle size larger than 3 inches. Sources of borrow shall be designated well in advance of construction and the material shall be approved by the Testing Agency prior to beginning work.

2.02 CONSTRUCTION FENCE

- A. Plastic construction fence, orange in color, with the following properties:
 - 1. Material - Co-polymer
 - 2. Typical Aperture Size - 1.3 inches x 1.3 inches
 - 3. Minimum Tensile Strength:
 - a. MD 850 lbs./ft. width
 - b. TD 1050 lbs./ft. width
 - c. MD 4850 psi
 - d. TD 5810 psi
 - 4. Junction Strength - 90% of rib strength (minimum) Nominal Porosity – 75%
 - 5. Ultraviolet Resistance - Fully stabilized
 - 6. Temperature Range - -22 degrees F to 150 degrees F
 - 7. Manufacturer - Tensar Safety Grid or approved equal

PART 3 EXECUTION

3.01 GENERAL

- A. The following Specification shall be considered as general criteria for earthwork operations. In those instances where field conditions arise which are not adequately covered by these criteria, instructions for that specific condition will be issued by the Architect/Engineer.
- B. Dust Control:
 - 1. Use all means necessary to control dust on and near the work and on and near all off-site borrow areas if such dust is caused by the Contractor's operations during performance of the work or if resulting from the condition in which the Contractor leaves the site.
 - 2. Thoroughly moisten all surfaces as required to prevent dust being a nuisance to the public, neighbors, and concurrent performance of other work on the site.

- C. Grading operations shall be performed in such a manner as to direct and control storm water runoff so that no damage or erosion occurs. Saturation of cut and fill areas shall be prevented by directing storm water runoff and not allowing ponding to occur. Fills are to be crowned as required to maintain drainage at the end of each work day. Existing drainage routes shall not be choked or obstructed until new ones are available. Temporary culverts, pumps or other equipment shall be used to facilitate drainage of fills during construction, failure to drain storm water shall not be grounds for delay of this contract due to saturated site conditions. The Contractor shall remove and dispose of saturated materials in excess of allowable moisture content at compaction and shall maintain the project schedule at all times.
- D. Dewatering: All excavation, construction, and backfill of pipes or other facilities to be constructed under this Contract shall be constructed under dry conditions. The Contractor shall constantly maintain all excavations in a dewatered, workable condition, and shall be responsible for installing, operating, maintaining and removing such dewatering systems as are required.
- E. Site Grading:
 - 1. Existing Conditions: Visit site and verify earthwork requirements prior to commencing work.
 - a. Existing Grades: Existing grades and contours are indicated on Drawings and represent the best information available on actual existing site conditions. Verify existing grades prior to commencing work. Commencement of work is construed as acceptance of grades and/or contours as correct.
 - b. Subsurface Conditions: Results of explorations are for use in estimating work quantities and design parameters, and for the information of the Bidders only, and neither the Owner nor the Associate/Engineer will be responsible for variations in subsoil deposition and quality or for changes which may have occurred after the investigations were made.
 - c. See logs of explorations for indication of existing soil and rock boundaries.
 - 2. Required contours and elevations are indicated and noted on the Drawings. Should indicated figures conflict with actual conditions and contours, notify the Engineer and await their direction before proceeding.

3.02 PREPARATION

- A. Identify required lines, levels, contours, and datum.
- B. Identify known below grade utilities. Stake and flag locations.
- C. Identify and flag above grade utilities.
- D. Maintain and protect existing utilities remaining which pass through work area.
- E. Notify utility company to remove and relocate utilities.
- F. Upon discovery of unknown utility or concealed conditions, discontinue affected work; notify Engineer.

3.03 ROUGH GRADING AND EMBANKMENT CONSTRUCTION

A. Rough Grading:

1. Site clearing and grubbing shall be done prior to any rough grading in accordance with Section 31 10 00. All debris and deleterious material shall be removed from areas to be filled or backfilled in accordance with this specification.
2. Dispose of excess excavated material or supply additional suitable material as necessary to complete the rough grading to the required elevations.
3. The finished subgrade surface shall be reasonably smooth and free from irregular surface changes and shall be no more than 0.05 feet above or below the approved subgrade elevation.
4. Newly graded areas shall be protected from the action of the elements. Any damage that may occur as a result of natural causes or any construction activities, prior to the acceptance of the work, shall be repaired and grades re-established to the required elevations and slopes.
5. During the performance of rough grading operations, the subgrade shall be proof-rolled under the direction of the testing agency. The proof-roll shall be performed by heavy equipment (minimum 30-ton dual axle dump truck). Any areas discovered which are soft and unstable or exhibit other conditions (pumping or rutting), shall be stabilized immediately as directed by the Testing Agency using one of the following options:
 - a. Scarifying, aerating and recompact.
 - b. Over-excavating and replacing with acceptable fill material.
 - c. Using lime or lime/fly ash modification techniques.
6. Removal of unsuitable material and its replacement as directed shall be paid on basis of contract conditions relative to changes in work.
7. In general, subgrade shall be established at the following levels:
 - a. For Pavement Areas: Finish grade less the thickness of pavement and base material.
 - b. For Structures: Finish floor elevation less the thickness of the slab and aggregate backfill per Section 3.07.C.
 - c. For Lawn Areas: Finish grade less topsoil thickness.
 - d. Sidewalks and Plazas: Finish grade less sidewalk and aggregate base thickness.
 - e. Landscape Area: Finish grade less topsoil and mulch.

B. Subgrade Preparation:

1. Proof Rolling:
 - a. All subgrade surfaces shall be proof rolled by means of heavy equipment (minimum 30-ton dual axle dump truck) to locate and permit timely correction of the subgrade deficiencies. Proof rolling shall be witnessed by the Testing Agency and approved by Testing Agency prior to continuing work.
 - b. In cut sections, proof rolling of the subgrade surface shall be done to determine the location and extent of areas below subgrade surface that may require subgrade undercutting. Should any portion of the cut subgrade surface fail to provide satisfactory support for the proof-rolling operation, the Testing Agency may order corrective undercut and backfill work done. Refer to Section 3.03, Paragraph A.5 and A.6 for corrective measures.

- c. In embankment sections, prior to placing the embankment, proof rolling on the subgrade surface shall be done to determine the uniformity of the compaction below the subgrade and any deficiencies requiring corrective work. Any deficiencies discovered during proof rolling operations shall be corrected in a manner satisfactory to the Testing Agency. Refer to Section 3.03 Paragraph A.5 and A.6 for corrective measures. After all corrective work has been completed, the surface shall be proof rolled again. Corrective work shall not be considered complete and acceptable until the embankment shows satisfactory and uniform response to the proof rolling operations.
 2. Construction:
 - a. Subgrade shall be shaped to line, grade, and cross section, and compacted as specified. This operation shall include plowing, disking, and any moistening or aerating required to obtain specified compaction. Soft or otherwise unsatisfactory material shall be removed and replaced with satisfactory excavated material or other approved material as directed. Rock encountered in the cut section shall be excavated to a depth of 6 inches below subgrade. Low areas resulting from removal of unsatisfactory material or excavation of rock shall be brought up to required grade with satisfactory materials, and the entire subgrade shall be shaped to line, grade and cross section and compacted as specified. After rolling, the surface of the subgrade for roadways shall not show deviations greater than 1/2 inch when tested with a 12-foot straightedge applied both parallel and at right angles to the centerline of the area. The elevation of the finish subgrade shall not vary more than 0.05 foot from the established grade and cross section.
 3. Compaction:
 - a. Compaction shall be accomplished by sheepfoot rollers, pneumatic-tired rollers, steel-wheeled rollers, vibratory compactors, or other approved equipment. Except for paved areas and railroads, each layer of the embankment shall be compacted to a maximum density in accordance with the Compaction Requirements Schedule at this end of this specification.
- C. Embankment:
 1. Initial Lift: After proof rolling of the existing subgrade has been completed, the surface of the area to be filled shall be scarified to a depth of 6 inches. An initial 3-inch layer of fill material shall then be spread over the scarified surface and the entire area compacted as specified.
 2. Fill Lift Thickness: Areas requiring fill shall be filled and backfilled using suitable materials compacted in layers not to exceed the following (all thicknesses are loose thicknesses):
 - a. Within building areas - 8 inches.
 - b. Under pavements, sidewalks or plazas - 8 inches.
 - c. General site fill - 12 inches.
 3. Moisture Content: Placed material shall not deviate from the optimum by more than two percent (+/-2%). Moisture content of any material which displays pronounced deformation under construction equipment shall not exceed the optimum. Drying of wet soil shall be performed with the use of plows, discs, harrows, or other approved methods. If additional water is required, it should be uniformly distributed through the use of approved water wagons and shall be thoroughly incorporated into the material by means of discs or other suitable mixing equipment. Care shall be taken to avoid trapping water within the fill.

4. Amount of Compaction: After each layer has been placed, mixed, and spread evenly, it shall be thoroughly compacted to not less than the percent shown under the Compaction Requirements Schedule in accordance with ASTM Method (D-698/D-1557).
5. Compaction of Embankment Layers: Compaction equipment shall be of such design that it will be able to compact the fill to the specified density. Compaction of each layer shall be continuous over its entire area and the compaction equipment shall make sufficient trips to ensure that the required density has been obtained.
6. Density Tests: Field density tests shall be made by the Testing Agency per the Compaction Requirements Schedule. Density tests shall be taken in compacted material below the disturbed surface. When these tests indicate that the density of any layer of fill or portion thereof is below the required density, the particular layer or portion shall be reworked until the required density has been obtained.
7. Seasonal Limits: No fill material shall be placed, spread, or rolled while it is frozen or thawing or during unfavorable weather conditions. When the work is interrupted by heavy rain, fill operations shall not resume until the Testing Agency indicates that the moisture content and density of the previously placed fill are as specified.
8. Drainage: The embankment and borrow areas should be maintained in a freely draining condition at all times. Proper drainage should be provided for any water or springs which may be encountered.
9. Existing Slopes: When the embankment meets the natural grade of a slope, a bench shall be cut in the existing slope. These cuts are to serve as keys to connect the existing grade with the newly placed fill.
10. Unacceptable Fill Subgrade Material: Frozen fill material or any suitable fill shall not be placed on frozen or snow-covered surfaces.
11. Soft and Wet Soils: If soft, yielding material is encountered in embankments as a result of trapping water, and cannot be satisfactorily stabilized by moisture control and compaction, the unstable material shall be excavated to the depth required by the Testing Agency. The excavation shall then be filled with suitable material and compacted in accordance with the requirements outlined above.
12. Rock: When fill material includes rock, the maximum rock size acceptable shall be 4 inches. No large rocks shall be allowed to nest and all voids must be carefully filled with small stones or earth, properly compacted. No large rocks will be permitted within 12 inches of the finished grade.
13. Shale and Siltstone:
Shale and siltstone embankment materials shall be sprinkled to bring the moisture content to within a range of optimum minus 3% to optimum plus 3%. Compaction shall be accomplished with a vibratory sheepsfoot roller in conjunction with a static sheepsfoot roller. The minimum weight for the static sheepsfoot roller shall be 60,000 lbs. The minimum total compactive effort for the vibratory tamping foot roller shall be 50,000 lbs. in accordance with the manufacturer's Specifications. Larger rollers will be permitted as required to obtain density. At the decision of the Geotechnical Engineer, vibration may not be used on fill materials that are predominately cohesive in nature. Each embankment lift shall receive a minimum of three (3) passes with the static roller and a minimum of two (2) passes with a vibratory roller. The rollers should not exceed three (3) miles per hour during these passes.

Mixtures of shale and siltstone and rock shall be placed in accordance with the above noted provisions for shale and siltstone. Rock in such mixtures shall be reduced in size not to exceed 8 inches or separated from the mixture and placed as rock fill.

14. New Embankment on Existing Slopes: When embankment is to be placed and compacted on hillsides or where new embankment is to be compacted against existing embankments, slopes that are steeper than 8:1 shall be continuously benched over those areas where it is required as the work is brought up in layers. Benching shall be of sufficient width to permit operations of placing and compacting equipment. Each horizontal cut shall begin at the intersection of the original ground and the vertical sides of the previous cuts. Material thus cut out shall be recompacted along with the new embankment.

D. Ponds:

1. Perform cut/fill operations to the above Specifications.
2. Establish pond elevations to 2 feet below finished grade elevations as noted on Drawings.
3. The Testing Agency shall observe the soils at this elevation and indicate any apparent sand and gravel seams to be removed. Excavate sand and gravel seams until suitable pond liner material is encountered. Backfill excavation with suitable pond liner material. Corrective undercut and backfill of sand and gravel seams will be paid for as specified in paragraph 3.03, A.5 and A.6 above. The area of soils to be observed shall extend to 1 foot above the high-water elevation, as noted on the Drawings.
4. Establish finished pond elevations by placing a minimum of two (2) 8-inch lifts (loose thickness) of suitable pond liner material. Each lift shall be compacted with a sheepsfoot roller making a minimum of two (2) passes in perpendicular directions. The pond liner material shall be compacted to 98% Standard Proctor Density and the moisture content shall be at or above optimum moisture content.
5. The 2-foot-thick pond liner material shall be installed on the bottom of the pond and along the pond embankment to a height of 1 foot above the high-water elevation noted on the Drawings.
6. After finished grades have been established, the surface shall be rolled with a vibratory steel drum roller or a fully loaded 30-ton truck or similar pneumatic tired vehicle to smooth the surface.

E. Stabilized Subgrade:

1. Once the Contractor has selected a chemical stabilization, said Contractor shall provide the Testing Agency a sample of significant size for testing.
2. The Testing Agency will perform soils tests and determine the acceptability of the Mixture.
3. The Contractor may be required to prepare alternative additives for testing until a suitable additive is selected.
4. The Testing Agency shall observe and test all subgrade stabilization to confirm acceptance as pavement subgrade.

3.04 TOPSOIL EXCAVATION

- A. Excavate topsoil from areas to be further excavated, re-landscaped, or regraded and stockpile in area designated on site.
- B. Seed stockpile in accordance with Section 31 25 00, "Erosion and Sediment Control."

3.05 EXCAVATION

- A. Underpin adjacent structures which may be damaged by excavation work, including utilities and pipe chases.
- B. Excavate subsoil and whatever material encountered required to accommodate building foundations, slabs-on-grade, paving and site structures, and construction operations.
- C. Machine slope banks.
- D. Excavation cut not to interfere with normal 45 degree bearing splay of foundation.
- E. Grade top perimeter of excavation to prevent surface water from draining into excavation.
- F. Hand trim excavation. Remove loose matter. Compact bottoms of excavations with a plate vibrator if directed by the Testing Agency. All excavations to be protected as work progresses.
- G. Remove lumped subsoil, boulders, and rock greater than 1/3 cubic yard measured by volume.
- H. Notify Testing Agency or Engineer of unexpected subsurface conditions and discontinue affected work in area until notified to resume work.
- I. Correct unauthorized excavation at no extra cost to Owner.
- J. Correct areas over-excavated by error at no extra cost to the Owner.
- K. Remove all excavated material from within building area.
- L. Contractor solely responsible for means and methods employed to excavate materials encountered on site.
- M. It is intent of Contract Documents that excavation cuts be used as forms for vertical surfaces of footings and column pads. Soil conditions which prevent vertical cuts, or excavation characteristics which require forming concrete are responsibility of General Trades Contractor.
- N. Prior to placing concrete for the footings, all foundation excavations shall be inspected and approved by the Testing Agency, for the bearing capacity indicated on the Drawings.

3.06 BUILDING FILL AND BACKFILL

- A. Remove any accumulated debris from excavations before backfilling.
- B. Backfill on interior side of perimeter footings and foundation walls and on both sides of interior footings and foundation walls with Type A or Type H fill. Place in 8-inch layers, compact with vibratory compaction equipment to a maximum dry unit weight as shown in the compaction requirements schedule at the end of this section.
- C. Construct gravel base under floor slab of Type A, Type E, or Type H fill within building area to provide a layer of minimum 4-inch thickness. Shape subgrade and gravel base for floor slab construction per Drawings.

- D. Within all areas to receive asphalt or concrete pavement immediately adjacent to exterior walls, backfill on exterior of foundation walls with Type A, Type H, Type J, or Type K fill. Place in 8-inch layers, compact with vibratory compaction equipment to a maximum dry unit weight as shown in the compaction requirements schedule at the end of this section.
- E. Backfill at all other exterior foundation walls with suitable excavated material. Place material in 8-inch layers and compact to 98% of the maximum dry unit weight. Backfill to level slightly above grade at building exterior to drain water away from building. At walls with foundation drains and/or weep holes, provide Type A or Type H material for extent indicated on structural drawings. Place material in 8-inch layers and compact to a maximum dry unit weight as shown in the compaction requirements schedule at the end of this section.
- F. Exercise caution to avoid damage to foundation damp-proofing during backfill and compaction operations.

3.07 SUBSOIL PREPARATION FOR PLACING TOPSOIL

- A. Eliminate uneven areas and low spots. Remove debris, roots, branches, stones, in excess of 2 inches in size. Remove subsoil contaminated with petroleum products.
- B. Scarify subgrade to depth of 6 inches where topsoil is scheduled. Scarify in areas where equipment used for hauling and spreading topsoil has compacted subsoil.

3.08 PLACING TOPSOIL

- A. Place topsoil in areas where seeding, sodding, and planting is scheduled.
- B. Use topsoil in relatively dry state.
- C. Place during dry weather.
- D. Fine grade topsoil eliminating rough or low areas. Maintain levels, profiles, and contours of subgrade.
- E. Remove stone, roots, grass, weeds, debris, and foreign material while spreading.
- F. Manually spread topsoil around trees, plants, building and curbs to prevent damage.
- G. Roll placed topsoil.
- H. Leave stockpile area and site clean and raked, ready to receive landscaping.

3.09 SCHEDULE OF LOCATIONS

- A. The following paragraphs identify compacted topsoil thicknesses for various locations.
 - 1. Seeded Areas: 6 inches minimum
 - 2. Sod: 6 inches minimum
 - 3. Shrub Beds: 18 inches minimum
 - 4. Flower Beds: 12 inches minimum
 - 5. Planter Boxes: To within 3 inches of box rim

3.10 FIELD QUALITY CONTROL

- A. Field inspection and testing will be performed by an independent Testing Agency.
- B. Tests and analysis of fill material will be performed in accordance with ANSI/ASTM C136 and with Division 1.
- C. Compaction testing will be performed in accordance with ANSI/ASTM D2922 and D3017 and with Division 1.
- D. Field density test reports shall clearly identify the following information for each test:
 - 1. Horizontal and vertical location of test
 - 2. Material type being tested
 - 3. Proctor test method
 - 4. Maximum proctor density
 - 5. Specified density
 - 6. Optimum moisture content
 - 7. Field test method
 - 8. Actual moisture content
 - 9. Tested density
 - 10. Pass/fail indication
- E. Do not submit reports of failing tests without follow-up report of reworked area and passing retest. Submitted test reports without specified information will be returned for revisions and resubmittal.
- F. Submit rough draft of daily Field Observation Report to the Engineer via facsimile the day of the field visit. Follow up with formal report.
- G. Excavate, replace at near optimum moisture, recompact and retest all areas failing to meet compaction requirements at no additional cost.

3.11 ACCEPTANCE

- A. Top Surface of Backfilling: Under Paved Areas: Plus, or minus 0.05 feet from required elevations.
- B. Top Surface of General Backfilling: Plus, or minus 0.05 feet from required elevations.

3.12 SCHEDULE OF FILL MATERIAL AND COMPACTION REQUIREMENTS SCHEDULE

- A. Compact fill materials to meet the following minimum Standard Modified Proctor Density, (ASTM D698 /ASTM D1557).

LOCATIONS	MATERIAL TYPES												COMPACTION REQUIREMENTS		
	A I T E M 4 I I	B P E A G R A V E L	C S A N D	D S U B S O I L	E I T E M 7 0 3 5 7	F T O P S O I L	G C O N C R E T E	H I T E M 7 0 3 8	I C D F	J I T E M 3 0 4	K B A N K R U N G R A V E L	L N S D B	% C O M P A C T I O N	M I N I M U M T E S T	U N I T A R E A / L I F T
Aggregate base under exterior concrete slabs, sidewalks, and plaza areas.	X									X		X	98%	1/1000 SY	
Foundation wall backfill as defined in "Building Fill & Backfill."	X							X					98%	1/100 SY	
Areas to receive asphalt or concrete pavement or walks immediately adjacent to exterior walls.	X							X		X	X		100%	1/500 SY	
Aggregate base beneath interior floor slab.	X				X			X					100%	1/500 SY	
General site fill, both paved and non-paved areas, utility trenches outside paved areas, utility trenches under pavement in excess of 48 inch depth, corrective backfill, areas to receive lawns immediately adjacent to exterior walls.				X									98%	1/1000 SY	
Sewer bedding.					X								N/A	N/A	
Underdrains, french drains, aggregate drainage material behind site retaining walls.					X			X					N/A	N/A	
Abandoned utilities, trench backfill where shown on drawings.									X				N/A	N/A	
Utility trenches less than or equal to 48 inch depth under pavement.	X									X			100%	1/300 LF	
Aggregate base beneath asphalt roads.										X			100%	1/500 SY	
Fill beneath floor slabs and aggregate base or foundations, corrective backfill for over excavation, or fill for removed foundations.	X			X						X	X	X	100%	1/500 SY	
Finish slopes, lawn areas, planters.						X							N/A	N/A	
Sewer Encasement							X								

3.13 PROTECTION OF PERSONS AND PROPERTY

- A. Barricade open excavations occurring and post with warning lights from dusk to dawn each day and as otherwise required.
- B. Erect construction barriers to prevent public access to the area of the Work. Maintain in place throughout the new construction operations. Erection, maintenance, alterations, and removal of the barriers shall be the responsibility of the Contractor.
- C. Do not close or obstruct streets or sidewalks without the proper permit. Conduct operations with minimum traffic interference.
- D. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by earthwork operations.
- E. Protect public and private property adjacent to and on the job site, including vents, utility lines, roadways, sidewalks, light standards, hydrants, and trees not indicated for removal. Repair damage to the property at no cost to the Owner.
- F. Notify local authorities having jurisdiction of existing damage in adjacent streets or improvements such as paving, curbs, gutters, sidewalks and alley surfacing, prior to start of demolition work. If damage to streets and improvements is discovered after work has commenced, and such damage was not reported before start of work, the Contractor will perform and pay for the necessary repairs.
- G. Maintain and preserve utilities transversing premises as long as they are required. Backfill and compact all excavation made for removal of utilities.
- H. Seal or cap all utility lines leading from demolished structures in accordance with regulations of authorities having jurisdiction.
- I. Before starting work related to existing utilities such as electrical, sewer, water, heat, gas and fire lines that will temporarily discontinue or disrupt service to any existing building, notify the utility companies 72 hours in advance and obtain approval in writing before proceeding with this phase of work.
- J. Earthwork:
 - 1. Stability of temporary excavations:
 - a. All excavations shall be in accordance with OSHA requirements.
 - b. Shore and brace where sloping is not possible because of space restrictions or stability of material excavated.
 - c. Maintain sides and slopes of excavations in safe condition until completion of backfilling.
 - 2. Shoring:
 - a. Except as specified elsewhere, provide all shoring required for earthwork or required as a result of earthwork for safety of workers, existing structures, public or adjacent properties.
 - b. Provide materials for shoring and bracing in good serviceable condition.
 - c. Establish requirements for shoring and bracing to comply with local codes and authorities having jurisdiction.

- d. Maintain shoring and bracing in excavations regardless of time period excavations will be open.
- K. The Engineer has designed a project which will be safe after full completion. The Engineer has no expertise in, and takes no responsibility for, construction means and methods or job site safety during construction, which are exclusively the Contractor's responsibility. Processing and/or approving submittals made by the Contractor which may contain information related to construction methods or safety issues, or participation in meetings where such issues might be discussed, shall not be construed as voluntary assumption by the Engineer of any responsibility for safety procedures.

END OF SECTION

SECTION 31 23 33
PIPED UTILITIES-BASIC METHODS

PART 1 GENERAL

1.01 DESCRIPTION

- A. This section includes the following:
 - 1. Excavate trenches for utilities from outside building to municipal utilities or as shown on Drawings.
 - 2. Backfilling and compaction.
 - 3. Compacted bedding for utilities.
 - 4. Compaction.

1.02 RELATED SECTIONS

- A. Work under this section is subject to the requirements of the Contract Documents including General Conditions, Supplementary Conditions, Drawings, and sections under Division 01 General Requirements.
- B. Section 01 40 00 - Quality Requirements
- C. Section 03 30 00 - Cast-in-Place Concrete
- D. Section 31 00 00 - Earthwork
- E. Section 33 11 00 - Water Utilities
- F. Section 33 30 00 - Sanitary Sewerage
- G. Section 33 40 00 - Storm Water Utilities
- H. Section 33 41 00 - Subdrainage
- I. Section 33 50 00 - Natural Gas Distribution

1.03 REFERENCE STANDARDS

- A. American Society of Testing and Materials (ASTM).
 - 1. C136 - Method for Sieve Analysis of Fine and Coarse Aggregates.
 - 2. D698 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5 lb. (2.49 kg) Rammer and 12-inch (304.8 mm) Drop.
 - 3. D1556 - Test Method for Density of Soil in Place by the Sand-Cone Method.
 - 4. D1557 - Test Methods for Moisture-Density Relations of Soils and Soil -Aggregate Mixtures using 10 lb. (4.54 kg.) Rammer and 18-inch (457 mm) Drop.
 - 5. D2922 - Density of Soil and Soil Aggregate in Place by Nuclear Methods (Shallow Depth).
 - 6. D3017 - Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

- B. City of Columbus; Construction and Materials Specifications (CMSC).**
- 1. The Terms “Engineer,” “Director,” “City,” and other similar terms shall be interpreted as the Owner.**
 - 2. In the event of any conflicts between ODOT CMS (CMSC) and the Contract Documents, the most stringent shall apply**
 - 3. Local municipality having jurisdiction.**

1.04 SUBMITTALS

- A. Comply with the requirements of Division 1 for submittals and specification section 31 00 00 for bedding and backfill, testing, and sampling requirements.

1.05 QUALITY ASSURANCE

- A. The Testing Agency shall provide compaction testing for bedding and backfill and document any necessary over excavation and stabilization in utility trenches in accordance with Specification Section 31 00 00, "Earthwork."
- B. Coordinate schedule with Testing Agency.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store and grade all materials to prevent their deterioration from weather.
- B. Provide sedimentation and erosion control around stockpiles in accordance with Section 31 25 00, "Erosion and Sediment Control".
- C. Separate work and stockpiles to minimize contamination or mixing of materials.

1.07 PROJECT RECORD DOCUMENTS

- A. Accurately record location of pipe runs, connections, inlets, manholes, valves, fittings, elevations, inverts, and slope gradient.
- B. Provide locations and disposition (active/abandoned) of any utilities encountered during trenching activities.

1.08 LAYOUT

- A. Employ a Professional Surveyor, registered in State of Ohio, to lay out and establish all lines and grades, including centerline of all structural columns.
- B. Erect control points prior to excavation. Protect existing control points.
- C. All surveying costs to be paid by the Contractor performing the work.

PART 2 PRODUCTS

2.01 BACKFILL MATERIALS

- A. As specified in Section 31 00 00, "Earthwork."

2.02 BEDDING MATERIALS

- A. Type B, C, E or G Material: As specified in Section 31 00 00, "Earthwork."

2.03 GEOTEXTILE FABRIC

- A. Fabric: Mirafi Geotextile, 160 N or equal for use with underdrain.

PART 3 EXECUTION

3.01 GENERAL

- A. Provided trenches, bedding and backfill in accordance with specification Section 31 00 00.
- B. Hand trim excavations to required elevations. Correct over excavation with compacted fill material per Section 31 00 00.
- C. Remove large stones or other hard matter which could damage pipe or impede consistent backfilling and compaction.

3.02 EXAMINATION

- A. Site Information: Verify existing utility locations within construction limits.
- B. Locate existing structures and piping to be closed and abandoned.
- C. Identify required lines, levels, contours, and datum.
- D. Maintain and protect existing utilities remaining, which pass through work area. Repair damaged utilities to the satisfaction of the Owner of the utility and the Associate Engineer.

3.03 PROTECTION OF PERSONS AND PROPERTY

- A. The Engineer has designed a project which will be safe after full completion. The Engineer has no expertise in, and takes no responsibility for, construction means and methods or job site safety during construction, which are exclusively the Contractor's responsibility. Processing and/or approving submittals made by the Contractor which may contain information related to construction methods or safety issues, or participation in meetings where such issues might be discussed, shall not be construed as voluntary assumption by the Engineer of any responsibility for safety procedures.
- B. Earthwork:
 - 1. Stability of temporary excavations:
 - a. All excavations shall be in accordance with OSHA requirements.
 - b. Shore and brace where sloping is not possible because of space restrictions or stability of material excavated.
 - c. Maintain sides and slopes of excavations in safe condition until completion of backfilling.

2. Shoring:

- a. Except as specified elsewhere, provide all shoring required for earthwork or required as a result of earthwork for safety of workers, existing structures, public or adjacent properties.
- b. Provide materials for shoring and bracing in good serviceable condition.
- c. Establish requirements for shoring and bracing to comply with local codes and authorities having jurisdiction.
- d. Maintain shoring and bracing in excavations regardless of time period excavations will be open.

C. Protect plant life, lawns, and other features remaining as a portion of final landscaping.

D. Protect benchmarks, existing structures, sidewalks, paving, and curbs from excavation equipment and vehicular traffic.

E. Protect above and below grade utilities to be removed, abandoned, or remain.

3.04 EXCAVATION

A. Excavate subsoil and whatever material encountered including rock, required for storm sewers, sanitary sewers, water, and gas piping. See rock definition in Earthwork Section. Rock excavation will be paid on a unit price basis.

B. Cut trenches sufficiently wide to enable installation of utilities and allow inspection and as shown on details provided on Drawings.

C. Excavations shall not interfere with normal 45 degree bearing splay of foundations.

D. Hand trim excavation. Hand trim for bell and spigot pipe joints. Remove loose matter.

E. Remove lumped subsoil, boulders, and rock greater than 1/3 cu. yd. measured by volume.

F. Correct unauthorized excavation in accordance with Section 31 00 00 at no cost to Owner.

G. Correct areas over-excavated by error in accordance with Section 31 00 00 at no cost to Owner.

H. Stockpile excavated material in area designated on site and remove excess material not being used, from site.

I. Cut out soft areas of subgrade not capable of insitu compaction. Backfill with Type D fill and compact to density equal to or greater than requirements for subsequent backfill materials. Corrective undercut and backfill will be paid for per Earthwork Section, Paragraph 3.03, A.6.

J. Dewatering: All excavation, construction and backfill of pipes or other facilities to be constructed under this Contract shall be constructed under dry conditions. The Contractor shall constantly maintain all excavations in a dewatered, workable condition, and shall be responsible for installing, operating, maintaining, and removing such dewatering systems as are required. The evaluation of the sufficiency of the condition shall be made by the Testing Agency and his/her decision shall be binding upon the Contractor. If the Testing Agency determines that dewatering is inadequate, the Contractor shall modify his/her methods until such time as the Testing Agency then agrees with the adequacy of the operating condition.

3.05 BEDDING

- A. Support pipe and conduit during placement and compaction of bedding fill.
- B. Bed per Standard Details provided on Drawings and Schedule at the end of this Section.

3.06 BACKFILLING

- A. Backfill trenches to contours and elevations with unfrozen materials.
- B. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen, or spongy subgrade surfaces.
- C. Granular Fill: Place and compact materials in continuous layers not exceeding 8 inches compacted depth.
- D. Soil Fill: Place and compact material in continuous layers not exceeding 8 inches compacted depth.
- E. Employ a placement method that does not disturb or damage conduit in trench.
- F. Maintain optimum moisture content of backfill materials to attain required compaction density.
- G. Leave fill material stockpile areas completely free of excess fill materials.

3.07 MATERIAL SCHEDULE

- A. Storm and Sanitary Piping:
 - 1. Bedding Fill: Type E, per Standard Detail, compacted to 95%.
 - 2. Backfill with Type D in 8-inch lifts, compacted to 98%.
 - 3. Under roadways, parking lots, sidewalks, and plaza areas, backfill with Type J in 8-inch lifts compacted to 100%.
 - 4. Under roadways, parking lots, sidewalks, and plaza areas where cover from top of subgrade to top of pipe is 30 inches or less, provide concrete encasement per Standard Detail.
- B. Waterlines:
 - 1. Bedding Fill: Type E under roadways, parking lots, sidewalks, and plaza areas. Type D in lawn areas, washed, rounded stone (crushed stone not acceptable).
 - 2. In lawn areas, backfill with Type D in 8-inch lifts, compacted to 98%.
 - 3. Under roadways, parking lots, sidewalks, and plaza areas, backfill with Type A or Type J in 8-inch lifts, compacted to 100%.
- C. Gas Lines:
 - 1. Bedding Fill: Not required. Provide 6 inches of Type C all around gas line.
 - 2. In lawn areas, backfill with Type D in 8-inch lifts, compacted to 98%.
 - 3. Under roadways, parking lots, sidewalks, and plaza areas, backfill with Type A or Type C in 8-inch lifts, compacted to 100%.

- D. Force Main Piping:
 - 1. Bedding Fill Type E, washed, rounded stone (crushed stone not acceptable).
 - 2. In lawn areas, backfill with Type D in 8-inch lifts, compacted to 98%.
 - 3. Under roadway, parking lots, sidewalks, and plaza areas, backfill with Type A or J in 8-inch lifts, compacted to 100%.

3.08 FIELD QUALITY CONTROL

- A. Field inspection and testing will be performed under provisions of Division 1 and Section 31 00 00.
- B. Tests and analysis of fill material will be performed in accordance with ANSI/ASTM C136 and with Division 1.
- C. Compaction testing will be performed in accordance with ASTM D2922 and ASTM D3017 and with Division 1.
- D. If tests indicate Work does not meet specified requirements, remove Work, replace, and retest, and repeat until a passing test is achieved at no cost to Owner.
- E. Frequency of Tests: Every 100 feet and every lift.

3.09 ACCEPTANCE

- A. Top Surface of Backfilling: Under Paved Areas: Plus, or minus 0.05 feet from required elevations.
- B. Top Surface of General Backfilling: Plus, or minus 0.05 feet from required elevations.

3.10 PROTECTION OF FINISHED WORK

- A. Protect finished Work under provisions of Division 1.
- B. Recompect fills subjected to vehicular traffic.

END OF SECTION

SECTION 31 25 00
EROSION AND SEDIMENT CONTROL

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Temporary and permanent erosion and sediment control.
- B. Comply with OEPA requirements and Stormwater Pollution Prevention Plan prepared for this project.

1.02 RELATED WORK

- A. Section 31 00 00, "Earthwork"
- B. Section 32 92 00, "Turfs and Grasses"

1.03 SUBMITTALS

- A. Comply with requirements of Division 0 and 1. Submit material qualification tests and certificates of compliance as indicated.
- B. A stormwater BMPs shall be inspected once every seven (7) days and within 24 hours of a 0.5 inch or greater rainfall. Inspection logs (included herein) shall be kept and shall be submitted to the Owner or Ohio EPA upon request.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Topsoil: Type F Material - Section 31 00 00, "Earthwork."
- B. Filter Barrier Geotextile: The geotextile shall be of either woven or nonwoven construction and consist of long chain polymeric filaments or fibers composed of polypropylene, polyethylene or polyimide. The filament and fibers shall be oriented into a stable network whereby they retain their positions relative with each other. The geotextile shall be ultraviolet stabilized and shall be inert to chemicals commonly found in soil. The geotextile shall meet or exceed physical properties of Supac 5NPUV or Supac G WMUV.
 - 1. Grab Tensile Strength: 90 lb. minimum as measured per test method ASTM D 1682.
 - 2. Mullen Burst Strength: 190 psi minimum as measured per test method ASTM D 3786.
 - 3. Slurry Flow Rate: 0.3 gal./min./ft² maximum.
 - 4. Equivalent Opening Size: 40-80 as measured per test method US Std. Sieve CW-02215.
 - 5. Ultraviolet Radiation Stability: 70% minimum as measured per test method ASTM D 4355.
- C. Filter Barrier Stakes: 2" x 2" x 3'-0" wooden stakes.
- D. Rock Channel Protection: Quarried stone meeting the requirements of ODOT Item 601.09 Rock Channel Protection, Type A, B, C, or D with filter, as noted on Drawings.

- E. Seed and Soil Supplements for Temporary Seeding: Provide seed mixture with 20% by weight of perennial ryegrass, 30% red fescue and 50% Kentucky Blue Grass. Provide pulverized agricultural limestone and commercial fertilizer, 10-20-20 or approved substitute.
- F. Mulch: Unrotted straw free from weeds and coarse material or other approved product suitable for required application.
- G. Mulch Binder: Cutback or emulsified asphalt or synthetic binder such as Petroset, Terratack or Aerospray.
- H. Jute Matting: Cloth or Plain weave, undyed and unbleached single jute yarn, 47 to 49 inches wide, averaging 1.15 to 1.26 lbs., per lin. yard loosely twisted construction of not less than 1.6 turns per inch, 78 warp ends per width of cloth and 41 weft ends per lin. yard, meeting the requirements of CC Item 671.
- I. Matting Staples; No. 8 plain wire, 6-10 inches long.
- J. Commercial Matting Products: Erosionet, Holdgro, Weedcheck, Curlex or approved equal. Product must cover minimum of 30% of soil surface and meeting the requirements of CC Item 671 ODOT Item 671.

PART 3 EXECUTION

3.01 GENERAL

- A. Provide temporary and permanent erosion and sediment control items as required by governing agency, as required by permit, as indicated on the plans, as noted in this Specification, and as noted in the Stormwater Pollution Prevention Plan.

3.02 INSTALLATION

- A. Install temporary erosion and sediment control items prior to clearing and commencing earthwork or as soon as practical as sitework progresses.
- B. Install required permanent erosion and sediment control items as soon as no damage or deterioration will result to those items due to construction activities.

3.03 TEMPORARY ACCESS ROAD AND CONTRACTOR USE AREA

- A. Locate access road where indicated or as approved by Owner and local authority having jurisdiction over public roads in vicinity of site. Locate use areas where indicated or as convenient.
- B. Access road shall be at least 20 feet wide. All cuts and fill shall be 3:1 or flatter to the extent possible. Drainage ditches shall be provided as needed. The roadbed and use areas surface shall be cleared of all vegetation, roots, and other objectionable material.

- C. The entrance shall be maintained in a condition which will prevent tracking or flow of mud onto public rights-of-way. This may require periodic top dressing with stone, as conditions demand, and repair and/or cleanout of any structures used to trap sediment. All materials spilled, dropped, washed, or tracked from vehicles onto roadways or into storm drains must be removed immediately.
- D. All roadside ditches, cuts, fills and disturbed areas adjacent to use areas and access road shall be stabilized with appropriate temporary vegetation immediately after grading.
- E. Both road and use areas may require periodic top dressing with new stone. Seeded areas should be checked periodically to ensure that a vigorous stand of vegetation is maintained. Ditches and other drainage structures should be checked regularly to ensure that they do not become clogged with silt or other debris.

3.04 FILTER FABRIC BARRIERS

- A. Construct where indicated or otherwise required by grading operations to reduce sediment content or runoff.
- B. The height of a filter barrier shall be a minimum of 15 inches and shall not exceed 18 inches.
- C. Filter barrier geotextile shall be purchased in a continuous roll and cut to the length of the barrier to avoid the use of joints.
- D. The stakes shall be spaced a maximum of 3 feet apart at the barrier location and driven securely into the ground (minimum of 8 inches).
- E. A trench shall be excavated approximately 4 inches wide and 4 inches deep along the line of stakes and upslope from the barrier.
- F. The filter material shall be stapled to the wooden stakes, and 8 inches of the fabric shall be extended into the trench. Heavy duty wire staples at least 1/2 inch long shall be used. Filter materials shall not be stapled to existing trees.
- G. The trench shall be backfilled, and the soil compacted over the filter material.
- H. If a filter is to be constructed across a ditch line or swale, the barrier shall be of sufficient length to eliminate end flow, and the plan configuration shall resemble an arc or horseshoe with the ends-oriented upslope.
- I. Filter barrier shall be removed when they have served their useful purpose, but not before the upslope area has been permanently stabilized.
- J. Filter barrier shall be inspected immediately after each rainfall and at least daily during prolonged rainfall. Any required repairs shall be made immediately.
- K. Should the fabric on the filter barrier become ineffective prior to the end of its need, the fabric shall be replaced promptly.
- L. Sediment deposits should be removed after each rainfall. They shall be removed when deposits reach approximately one-half the height of the barrier.

- M. Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required shall be dressed to conform with the existing grade, prepared, and seeded.

3.05 ROCK CHANNEL PROTECTION (RCP) PLACEMENT

- A. Place RCP on bedding layer, where indicated, to produce a well graded mass of rock with minimum practical percentage of voids.

3.06 TOPSOIL STORAGE AND APPLICATION

- A. Stockpile acceptable topsoil generally where indicated and in such a manner that natural drainage is not obstructed, and no off-site sediment damage shall result. Side slopes of the stockpile shall not exceed 2:1.
- B. A perimeter dike with gravel outlet, silt fence, or straw bale barrier shall surround all topsoil stockpiles.
- C. Temporary seeding of stockpiles shall be completed within seven (7) days of the formation of the stockpile.
- D. Before topsoiling, establish indicated and needed erosion and sediment control items such as diversions, berms, dikes, waterways, sediment basin, etc. Previously established grades on the areas to be topsoiled shall be maintained according to the Drawings.
- E. After the areas to be topsoiled have been brought to grade, and immediately prior to dumping and spreading the topsoil, the subgrade shall be loosened by discing or scarifying to a depth of at least 2 inches to insure bonding of the topsoil and subsoil.
- F. Topsoil shall not be placed while in a frozen or muddy condition, when the subgrade is excessively wet, or in a condition that may otherwise be detrimental to proper grading or proposed sodding or seeding. The topsoil shall be uniformly distributed to a minimum compacted depth of 3 inches on 3:1 or steeper slopes and 4 inches on flatter slopes. Any irregularities in the surface, resulting from topsoiling or other operations, shall be corrected in order to prevent the formation of depressions or water pockets. Avoid undue compaction.

3.07 TEMPORARY FILL DIVERSION

- A. The diversion shall be constructed at the top of the fill at the end of each workday as needed.
- B. The diversion shall be located at least 2 feet inside the top edge of the fill.
- C. The supporting ridge of the lower side shall be constructed with a uniform height along its entire length.
- D. Since the practice is temporary and under most situations will be covered the next workday, the maintenance required should be low. If the practice is to remain in use for more than one day, an inspection will be made at the end of each workday and repairs made to the measure if needed. The Contractor should avoid the placement of any material over the structure while it is in use. Construction traffic should not be permitted to cross the diversion.

3.08 TEMPORARY DIVERSION DIKE

- A. Whenever feasible, the dike should be built before construction begins on the project.
- B. The dike should be adequately compacted to prevent failure.
- C. Temporary or permanent seeding and mulch shall be applied to the dike within fifteen (15) days of construction.
- D. The dike should be located to minimize damages by construction operations and traffic.
- E. The measure shall be inspected after every storm and repairs made to the dike, flow channel, and outlet, as necessary. Approximately once every week, whether a storm has occurred or not, the measure shall be inspected, and repairs made if needed. Damages caused by construction traffic or other activity must be repaired before the end of each working day.

3.09 SEEDING

- A. Incorporate lime and 10-20-20 fertilizer into soil prior to seeding. Apply lime at 900 lbs./1000 S.Y. Apply fertilizer at 200 lbs./1000 S.Y. Apply seed at 25 lbs./1000 S.Y. Within 48 hours after any given area is seeded, straw or hay shall be evenly placed over all seeded areas at the rate of approximately 2 tons per acre for straw, or 3 tons per acre for hay, when seeding is performed between the dates of March 15 and October 15, and the approximate rate of 3 tons per acre straw, or 4 1/2 tons per acre for hay, when seeding is performed between the dates of October 15 and March 15 of the succeeding year. Provide matting where required to establish seed growth.
- B. Areas which fail to establish vegetative cover adequate to prevent rill erosion will be re-seeded as soon as such areas are identified.

3.10 MAINTENANCE

- A. Maintain all erosion and sediment control items until final project acceptance. Repair breaches and replace deteriorated or missing items immediately after discovery.
- B. All stormwater BMPs shall be inspected once every seven (7) days and within 24 hours of a 0.5 inch or greater rainfall. Inspection logs (included herein) shall be kept and shall be submitted to the Owner or Ohio EPA upon request.
- C. Clean sedimentation basins and catch basins as required to maintain effectiveness or as otherwise directed.
- D. Removal: Remove temporary erosion control items as directed and prior to Project close-out.

END OF SECTION

SECTION 32 13 00
RIGID PAVEMENT

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Concrete sidewalks, detectable warnings, curbs, gutters, and streets.
- B. Reinforcement.
- C. Surface finish.
- D. Curing

1.02 WORK INSTALLED BUT FINISHED UNDER OTHER SECTIONS

- A. Not used.

1.03 RELATED WORK

- A. Section 31 00 00, "Earthwork"
- B. Section 32 12 00, "Flexible Pavement"
- C. Section 33 40 00, "Storm Drainage"
- D. Section 03 30 00, "Cast-in-Place Concrete"

1.04 REFERENCES

- A. ACI 301 - Specifications for Structural Concrete for Buildings.
- B. ASTM D1751-99 – Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
- C. ASTM D1752-04a – Standard Specification for Preformed Sponge Rubber Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction.
- D. ASTM C33-03 - Standard Specification for Concrete Aggregates.
- E. ASTM C94-04a - Standard Specification for Ready Mixed Concrete.
- F. ASTM C150-04a - Standard Specification for Portland Cement.
- G. ASTM C260-01 - Standard Specification for Air-Entraining Admixtures for Concrete.
- H. ASTM C309-03 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
- I. ASTM C494-04 - Standard Specification for Chemical Admixtures for Concrete.
- J. ASTM C920-02 – Standard Specification for Elastomeric Joint Sealants.

- K. ASTM D5249 – Standard Specification for Backer Material for Use with Cold and Hot Applied Joint Sealants in Portland Cement Concrete and Asphalt Joints.
- L. FS TT-C-800 - Curing Compound, Concrete, for New and Existing Surfaces.
- M. State of Ohio Department of Transportation Construction and Material Specifications (CMS) 2019.
- N. City of Columbus, Ohio Construction and Material Specifications (CCMS) 2018.

1.05 QUALITY ASSURANCE

- A. Perform work in accordance with ACI 301.
- B. Obtain materials from same source throughout.
- C. Install curb and gutter in accordance with ODOT Item 609.

1.06 REGULATOR REQUIREMENTS

- A. Conform to City code for paving work on public property.

1.07 TESTS

- A. Testing and analysis will be performed under provisions of Division 1.
- B. Submit proposed mix design of each class of concrete to appointed firm for review prior to commencement of work.
- C. Testing firm will take cylinders and perform slump and air entrainment tests in accordance with ACI 301.

1.08 SUBMITTALS

- A. Submit product data under provisions of Division 1.
- B. Include data on joint filler, admixtures, curing compounds.
- C. Submit manufacturer's instructions under provisions of Division 1.

PART 2 PRODUCTS

2.01 CONCRETE MATERIALS

- A. Cement: ASTM C150-86, Type I, II or III Portland type, gray color.
- B. Fine and Coarse Aggregate: ASTM C33-86.
- C. Water: Potable.

2.02 FORM MATERIALS

- A. Conform to ACI 301.
- B. Joint Filler: ASTM D1751-83.

2.03 REINFORCEMENT

- A. Reinforcing Steel: ASTM A615; 60 ksi yield grade.
- B. Welded Steel Wire Fabric: Plain type, ANSI/ASTM A175; in flat sheets.
- C. Tie Wire: Annealed steel, minimum 16 gauge.
- D. Dowels: ASTM A615; 40 ksi yield grade, plain steel, uncoated finished.
- E. Synthetic Fiber Reinforcement: ASTM C1116-97 and ASTM C1018-97. Acceptable products include, but are not limited:
 - 1. Nycon Nylon Fibers.
 - 2. Forta Nylo-Mono Nylon Fibers
 - 3. Fibermesh Fibermix Stealth Polypropylene Fibers.
 - 4. Grace Polypropylene Fibers
 - 5. Forta Mighty-Mono Polypropylene Fibers

Synthetic fiber reinforcement shall be used in strict accordance with the manufacturer's recommendations. Dosage rate shall be as recommended by the manufacturer, but not less than 1 pound per cubic yard.

2.04 ACCESSORIES

- A. Dissipating Curing Compound: Comply with ASTM C309-19, Type 1, Class A or B (clear), except moisture loss not to exceed 0.40 kg/sq m. in 72 hours. Compound shall comply with EPA's VOC requirements. Apply at the manufacturer's written recommended application rate.
- B. Sealer: Clear membrane-forming compound which will not yellow. Must be formulated for the intended application, either interior or exterior and applied per the manufacturer's written recommendations. Must comply with EPA's VOC requirements and be compatible with the curing compound used.
- C. Penetrating Sealer: Acceptable products include, but are not limited to:
 - 1. L&M Construction Chemicals - Aquapel Plus 40
 - 2. ProSoCo - Saltguard WB
 - 3. Huls America Inc. - Chem-Trete BSM 40
 - 4. Master Builders Inc. - Masterseal SL 40
 - 5. Lyntal International - Iso-Flex 618-50 WB
 - 6. BASF - Enviroseal 40 or Hydrozo Silane 40
 - 7. Tex-Cote - Rainstopper RS140

- D. Expansion, Isolation, and Construction Joints:
1. Pre-formed Joint Filler: Non-impregnated type, closed cell resilient polyethylene foam, 1/2 inch thick unless otherwise noted. Meet or exceed requirements of ASTM D 1752, Sections 5.1 through 5.4, and ASTM D 5249, Type 2. Ceramar Flexible Foam Expansion Joint by W.R. Meadows or approved equal.
 2. Joint Cap: Two piece vinyl device with upper 1/2 inch removable after curing period. Width corresponding to joint filler. Products by Greenstreak Plastic Products, Vinylex Corp., Vulcan Metal Products, or approved equal.
 3. Joint Sealant: High performance, self leveling, elastomeric polyurethane sealant conforming to ASTM C-920. Sikaflex 1CSL or approved equal.

2.05 ADMIXTURES

- A. Air Entrainment: ASTM C260-86.
- B. Chemical Admixture: ASTM C494-86, Type A or D - water reducing, Type C or E - accelerating.

2.06 CONCRETE MIX

- A. Mix concrete in accordance with ASTM C94.
- B. Provide concrete for the following characteristics:
- Compressive Strength at 28 days: 4000 psi.
 - Min cementitious materials content 564 lbs./cu. yd.
 - Max water-cementitious ratio 0.45, air content 6+1, -1.5%
- C. Use accelerating admixtures in cold weather only when approved by Architect/Engineer. Use of admixtures will not relax cold weather placement requirements.
- D. Use set-retarding admixtures during hot weather only when approved by Architect/Engineer.
- E. Add air entraining agent to concrete mix for concrete work exposed to exterior.
- F. Concrete mixes shall not contain any deleterious or other reactive aggregates or materials that can initiate and promote alkali silica reaction (ASR).

2.07 DETECTABLE WARNINGS

- A. Detectable warning surfaces shall contrast visually with walking surfaces and be textured to provide slip resistance. The preferred color for a light background shall be brick red. The preferred color for a dark background shall be light granite. Color shall be integral with the detectable warning surface and shall not be painted or surface applied.
- B. Detectable warning surface shall have truncated domes with a consistent base diameter ranging from 0.9 inches 1.4 inches. Truncated domes shall have a height of 0.2 inches and a top diameter ranging from 50 to 65 percent of the base diameter.

- C. Truncated domes shall have a consistent spacing ranging from 1.6 inches to 2.4 inches measured center-to-center. Base-to-base spacing measured between the most adjacent domes shall be 0.65 inches minimum.
- D. Detectable warning surfaces shall be of the type specified on the drawings:
 - 1. Type I – Pre-Manufactured Wet-Set Products
 - 2. Type II – Stamped, Color Dyed Concrete
 - 3. Type III – Precast Manufactured Clay and Concrete Pavers
- E. Contractor shall submit detectable warning surface product data for review prior to construction.

PART 3 EXECUTION

3.01 INSPECTION

- A. Verify compacted subgrade or granular base stabilized soil is ready to support paving and imposed loads.
- B. Proof roll subgrade and correct any areas determined unacceptable to Testing Agency immediately prior to placement of concrete pavement.
- C. Verify gradients and elevations of base are correct.
- D. Beginning of installation means acceptance of existing conditions.
- E. Proof roll prior to base placement.

3.02 REINFORCEMENT

- A. Place reinforcement at mid-height of slabs-on-grade.
- B. Interrupt reinforcement at expansion joints.
- C. Place reinforcement to achieve slab and curb alignment as detailed.
- D. Provide dowelled joints at interruptions of concrete with one end of dowel set in capped sleeve to allow longitudinal movement, per ODOT Item 451.

3.03 JOINTS

- A. Location: Locate as shown on drawings. In absence of information on drawings, provide joints as specified below.
- B. Control Joints: Created within 8 hours of concrete placement. Sawed typical, tooled where allowed by the Engineer.
 - 1. Slabs:
 - a. Spacing (in feet) shall be between 2 to 2-1/2 times slab thickness (in inches) in both directions, i.e. 4-inch thick slab shall have joint spacing at 8 foot to 10 foot centers.

- b. Grid of control joints to be approximately square with longest side to be not longer than 1.5 times the shortest side, i.e. 4-foot wide walk shall have joint spacing at 4 feet to 6 feet maximum.
 - c. Depth of Joint: 1/4 of slab thickness.
 - d. Width of Joint: 1/8 inch.
 - 2. Curbs:
 - a. Maximum 10 feet on center. Aligned with joints in adjacent vehicular paving and sidewalks.
 - b. Depth of Joint: 1-1/2 inches minimum.
 - c. Width of Joint: 1/8 inch.
- C. Isolation Joints: Formed before concrete placement.
 - 1. Location in Slabs and Curbs: Provide where slabs and curbs abut vertical surfaces: at intersections of sidewalks, abrupt changes in slab width, walls, columns, pole bases, outside face or edge of curbs, and manholes, catch basins, or curb inlets.
 - 2. Joint: Provide 1/2 inch wide Pre-formed Joint Filler with removable 3/8 inch deep Joint Caps. Joint Cap shall be set to finish grade elevation. After concrete has set, Joint Cap shall be removed and filled with 3/8 inch of Joint Sealant. Clean joint surfaces free from dirt, dust, and other contaminants that may affect the bond of the joint sealant material. Install Joint Sealant per manufacturer's specifications
 - a. Slabs: Provide Pre-formed Joint Filler to full depth of slab minus 3/8 inches to allow for installation of Joint Cap and Joint Sealant.
 - b. Curbs: Provide Pre-formed Joint Filler to full depth of curb. Joint Filler material shall be cut to match contour of face of curb minus 3/8 inches to allow for installation of Joint Cap and Joint Sealant.
- D. Expansion Joints: Formed before concrete placement. Provide when specifically shown on the drawings or when placing concrete during temperatures less than 40 degrees Fahrenheit.
 - 1. Location:
 - a. Slabs: Space maximum of 25 feet on center.
 - b. Curbs: Align with joints in pavement. In absence of concrete pavement, provide at intervals not exceeding 25 feet.
 - 2. Joint: Provide 1/2 inch wide Pre-formed Joint Filler with removable 3/8 inch deep Joint Caps. Joint Cap shall be set to finish grade elevation. After concrete has set, Joint Cap shall be removed and filled with 3/8 inch of Joint Sealant. Clean joint surfaces free from dirt, dust, and other contaminants that may affect the bond of the joint sealant material. Install Joint Sealant per manufacturer's specifications
 - a. Slabs: Provide Pre-formed Joint Filler to full depth of slab minus 3/8 inches to allow for installation of Joint Cap and Joint Sealant.
 - b. Curbs: Provide Pre-formed Joint Filler to full depth of curb. Joint Filler material shall be cut to match contour of face of curb minus 3/8 inches to allow for installation of Joint Cap and Joint Sealant.
- E. Construction Joints: Clean, formed joints shall be set at predetermined locations and/or when 30 minutes elapses between successive pours of concrete.
 - 1. Slabs: Provide Pre-formed Joint Filler, Joint Cap, and Joint Sealant at predetermined location. Joint shall be similar to Isolation Joint specified previously.
 - 2. Curbs: Provide Pre-formed Joint Filler, Joint Cap, and Joint Sealant at predetermined location. Joint shall be similar to Isolation Joint specified previously.

3.04 PLACING CONCRETE

- A. Place concrete in accordance with ACI 301.
- B. Hot Weather Placement: ACI 305.
- C. Cold Weather Placement: ACI 306.
- D. Ensure reinforcement, inserts, embedded parts, formed joints are not disturbed during concrete placement.
- E. Place concrete continuously between predetermined construction joints. Do not break or interrupt successive pours such that cold joints occur.
- F. Excavate, shape and compact subgrade for suitable bearing surface. Remove unacceptable material. Remove all roots occurring within 12 inches of nearest concrete surface. Fill depressions with acceptable material and compact.
- G. Place, shape, and compact aggregate base to required section and grade. Provide 4 inch base course unless indicated otherwise.
- H. Provide suitable forms of metal, wood or as approved to contain concrete to indicated line, grade and shape until set. Provide face forms for curb and other sections free of defects and conforming to indicated shapes. Provide side forms to full depth of concrete. Use approved flexible forms or curved forms of proper radius on curves having a radius of 150 feet or less.
- I. Coat all forms with form treating material prior to placing concrete to prevent concrete damage during form removal.
- J. Concrete mixing: ACI 301, Chapter 7, ready-mixed unless permission is given to site mix.
- K. Place control, isolation, and expansion joints as indicated on Drawings and as specified previously.
- L. Immediately before concrete placement, thoroughly wet all moisture absorbing material that will be in contact with the concrete. Standing water not permitted.
- M. Place concrete in forms without segregation. Vibrate or hand tamp to remove voids. Strike off concrete and float smooth.
- N. Do not place concrete on frozen ground.
- O. Finish concrete as specified.
- P. Place backfill using required material as soon as possible without damaging concrete.
- Q. Repair or remove and replace damaged concrete as directed. Conform to ACI 301, Chapter 9.
- R. Curing:
 - 1. ACI 301, Chapter 12. Use waterproof sheet materials or liquid membrane.
 - 2. Surfaces which are to receive penetrating sealer are to be moist-cured without the use of a curing compound.

- 3. Dissipating curing compound may be used, if completely removed prior to application of penetrating sealer.
- S. Place expansion joints as indicated on Drawings. In addition, place where concrete surrounds or adjoins any existing fixed objects such as fire hydrants, columns, building foundations, and other rigid structures.
- T. Maximum allowable deviation of formed edges from indicated location: 1/2 inch. Maximum allowable deviation of surface: 1/8 inch when checked with a 10 foot straight edge. Remove to nearest joint and replace any walk or slab exceeding stated deviations.
- U. Slope walks and slabs away from buildings as indicated but not less than 1/8 inch per foot. Maintain design drainage grades to avoid low spots trapping water.
- V. After water sheen has disappeared, lightly brush surface to a uniform texture unless otherwise indicated or directed. Edge joints to provide a smooth border around each panel.
- W. Appearance: Take special precautions in material sources, mixing, delivery, and placement of walks to insure uniform appearance and coloration throughout the entire walkway. Variations in coloration, texture, and finish of any given type of walkway will be unacceptable.
- X. Do not remove forms for minimum of 12 hours after finishing.

3.05 FINISHING

- A. Sidewalk Paving: Light broom, radiused and trowel joint edges.
- B. Curbs and Gutters: Light broom.
- C. Place curing compound on exposed concrete surfaces immediately after finishing. Apply in accordance with manufacturer's instructions.

3.06 PENETRATING SEALER

- A. Remove all dust, dirt, laitance, and other contaminants. Remove curing compound completely, if used.
- B. Provide test patches as required to ensure compatibility and effectiveness.
- C. Apply with spray or roller, at the manufacturer's written recommended coverage rate, to the following surfaces:
 - 1. Horizontal top surface of all concrete exposed to the weather.
 - 2. Vertical surfaces of columns, walls, curbs, etc. within 12 inches of a treated horizontal surface.
- D. Entire application is to be in strict conformance with the manufacturer's written requirements.

3.07 DETECTABLE WARNINGS

- A. Detectable warning surface shall extend the full width of travel of the curb ramp or landing. Warning surface shall extend a minimum of 24 inches in the direction of travel.

- B. The detectable warning surface shall be located such that the edge of the detectable warning nearest the curb line is 6 inches from the face of curb.
- C. Truncated domes shall be aligned in a square grid and must not be skewed diagonally in the direction of travel. Truncated domes shall be aligned in rows parallel and perpendicular to the direction of travel.
- D. The detectable warning finish surface shall be uniformly profiled to match the adjacent pavement surfaces without lips or obstructions.
- E. Type I and Type II Detectable warning surfaces shall be installed in accordance with the manufacturer's specifications.
- F. Type III Precast Manufactured Clay and Concrete pavers shall be installed per the manufacturer's specifications or as follows:
 - 1. Pavers shall be laid on a 4 inch thick unreinforced concrete base and set into a 1/2 inch thick bed of freshly poured latex or epoxy modified cement mortar.
 - 2. Pavers (excluding dome surface) shall be flush with the surrounding concrete.
 - 3. Joints between pavers and adjacent concrete shall be mortared flush and smooth with the adjacent surface and shall not exceed 1/4 inch in width.
 - 4. Joint spacing between pavers shall be between 1/16 to 5/32 inches.
 - 5. Joints between pavers shall be sand filled. Sand shall be a well graded, washed, non-plastic angular material free from foreign matter. Maximum particle size shall be no larger than the joint spacing.
 - 6. Pavers shall be crack-free and consist of full, completely formed domes.
 - 7. A 6 inch concrete edge restraint shall be provided around the full perimeter of the pavers. Concrete shall be cast-in-place, 3000 psi concrete.
 - 8. Pavers shall be protected during construction to avoid damage. Paver surfaces shall be kept clean of cement.

3.08 FIELD QUALITY CONTROL

- A. Field inspection and testing will be performed under provisions of Division 1.
- B. Maintain records of placed concrete items. Record date, location of pour, quantity, air temperature, and test samples taken.

3.09 PROTECTION

- A. Immediately after placement, protect concrete under provisions of Division 1 from premature drying, excessive hot or cold temperatures, and mechanical injury.

END OF SECTION

AMERISTAR® PERIMETER SECURITY USA INC.
Stalwart® II Daycare | Anti-Ram Barrier – PU30/P2 Engineered Cable System
Construction Specification 32 30 00 11

PART 1 – GENERAL

1.01 WORK INCLUDED

The contractor shall provide all labor, materials and appurtenances necessary for installation of the anti-ram barrier system defined herein at (specify project site).

1.02 RELATED WORK

Section ____ - Earthwork

Section ____ - Concrete

1.03 SYSTEM DESCRIPTION

The manufacturer shall supply a total anti-ram cable barrier system of the Ameristar® Stalwart II® Majestic PU30/P2 Engineered design. The system shall include all components (i.e., cables, supports, panels, posts, and hardware) required. The barrier shall comply with Ameristar's Stalwart II PU30/P2 System Drawings (supplied upon request).

1.04 QUALITY ASSURANCE

The contractor shall provide laborers and supervisors who are thoroughly familiar with the type of construction involved and materials and techniques specified. Installation contractor used for this scope of work must provide documentation from the manufacturer showing completion of core training on Stalwart anti-ram barrier systems.

1.05 REFERENCES

- ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process.
- ASTM B117 - Practice for Operating Salt-Spray (Fog) Apparatus.
- ASTM D523 - Test Method for Specular Gloss.
- ASTM D714 - Test Method for Evaluating Degree of Blistering in Paint.
- ASTM D1654 - Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments.
- ASTM D2244 - Test Method for Calculation of Color Differences from Instrumentally Measured Color Coordinates.
- ASTM D2794 - Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
- ASTM D3359 - Test Method for Measuring Adhesion by Tape Test.
- ASTM F2656 – Standard Test Method for Vehicle Crash Testing of Perimeter Barriers
- Federal Specification RR-W-410E / Wire Rope and Strand.
- ASTM F2408 – Ornamental Fences Employing Galvanized Steel Tubular Pickets.

1.06 SUBMITTAL

The manufacturer's literature shall be submitted prior to installation.

1.07 PRODUCT HANDLING AND STORAGE

Upon receipt at the job site, all materials shall be checked to ensure that no damage occurred during shipping or handling. Materials shall be stored in such a manner to ensure proper ventilation and drainage, and to protect against damage, weather, vandalism and theft.

PART 2 – MATERIALS

2.01 MANUFACTURER

A. The anti-ram cable barrier system shall conform to the Stalwart II Majestic PU30/P2 Engineered design, manufactured by Ameristar Perimeter Security USA Inc., in Tulsa, Oklahoma. This system shall be PU30/P2 Engineered based on test results of similar design. Engineering analysis shall be based upon ASTM F2656, Impact

Condition Designation PU30, Penetration Rating P2, with capability of stopping a 5,070 lb vehicle traveling at speeds up to 30 mph.

B. The integrated steel fence panel shall conform to Montage Plus Ornamental Steel, Majestic design, 3" picket spacing, flush bottom rail treatment, 3-Rail style manufactured by Ameristar Perimeter Security USA Inc., in Tulsa, Oklahoma.

C. The entire anti-ram barrier system, and all associated panels, gates, accessories, fittings, and fasteners shall be obtained from a single source.

2.02 MATERIAL

A. Steel material for cable-supporting framework (i.e., rails and I-beam posts) shall be galvanized prior to forming and shall conform to the requirements of ASTM A653/A653M, with a minimum yield strength of 45,000 psi (310 MPa). The steel shall be hot-dip galvanized to meet the requirements of ASTM A653/A653M with a minimum zinc coating weight of 0.90 oz/ft² (276 g/m²), Coating Designation G-90. Steel material for fence panels shall conform to the requirements of ASTM A653/A653M, with a minimum yield strength of 45,000 psi (310 MPa) and a minimum zinc (hot-dip galvanized) coating weight of 0.60 oz/ft² (184 g/m²), Coating Designation G-60.

B. The fence panel rails shall be steel channel, 1.5" x 1.4375" x 14 Ga. Picket holes in the rail shall be spaced 4.675" o.c. Material for pickets shall be 3/4" square x 18 Ga. tubing. The cross-sectional shape of the anti-ram rails shall conform to the manufacturer's Stalwart II rail design a nominal 2" x 2" x 11 Ga. Tamperproof fasteners shall be used to fasten each fence panel to post bracket and rail to post connections. Posts shall conform to the manufacturer's Stalwart II I-Beam design with a nominal 3" x 2.75" x 12 Ga.

C. The cable material shall be Independent Wire-Rope Core (IWRC) wire rope conforming to Federal Specification RR-W-410E, 6 x 36 Warrington Seale, preformed, right regular lay, medium lubrication, Extra Improved Plow Steel (EIPS), with a breaking strength of 103,400 pounds (51.7 tons). Cable diameter shall be 1 inch.

2.03 FABRICATION

A. Stalwart II rails and posts shall be pre-cut to specified lengths. Post flange shall be pre-punched to accept rail to post and fence panel to post bracket attachment. Post web shall be punched providing a clear opening for interior of rails to align throughout the entire system for affixing conduit, video cabling, IDS wiring, and other components for a complete systems integration. Stalwart II rails shall be attached to I-beam post flange providing a bracket-less design at each intermediate post.

B. Fence panel pickets and rails shall be pre-cut to specified lengths. Pickets shall be inserted into the pre-punched holes in the rails and shall be aligned to standard spacing using a specially calibrated alignment fixture. The aligned pickets and rails shall be joined at each picket-to-rail intersection by Ameristar's proprietary fusion welding process, thus completing the rigid panel assembly.

C. The manufactured galvanized anti-ram framework and fence panels shall be subjected to the PermaCoat[®] thermal stratification coating process (high-temperature, in-line, multi-stage, multi-layer) including, as a minimum, a six-stage pretreatment/wash, an electrostatic spray application of an epoxy base, and a separate electrostatic spray application of a polyester finish. The base coat shall be a thermosetting epoxy powder coating (gray in color) with a minimum thickness of 2 mils (0.0508mm). The topcoat shall be a "no-mar" TGIC polyester powder coat finish with a minimum thickness of 2 mils (0.0508mm). The color shall be black. The stratification-coated framework shall be capable of meeting the performance requirements for each quality characteristic shown in Table 1.

D. The manufactured fence panel shall be capable of meeting the vertical load, horizontal load, and infill performance requirements for commercial weight fences under ASTM F2408.

PART 3 - EXECUTION

3.01 PREPARATION

- A. The purchaser shall indicate the location of barrier line with suitable stakes. Stake intervals shall not exceed 500 ft or line of sight.
- B. The purchaser shall indicate all underground utility locations, USC&G benchmarks, property monuments, and other underground structures.
- C. Before installing the Stalwart II Daycare Anti-Ram Cable System, all necessary site clearing and grading shall be performed by the purchaser. An adequate clearance on both sides of the cable barrier line is required.
- D. Installation contractor for this scope of work must be capable of bonding projects up to \$3 million and must demonstrate such with a letter from a reputable bonding entity with the bid documents.
- E. Installation contractor for this scope of work must provide documentation from the product manufacturer indicating they have been trained on installation practices for Stalwart anti-ram systems by the product manufacturer, documentation shall be provided with bid documents.
- F. Installation contractor for this scope of work must provide documentation with bid indicating that the company currently has in place a minimum \$2 million in general liability coverage as well as a minimum \$1 million in commercial vehicle insurance, documentation shall be provided with bid documents.

3.02 INSTALLATION

- A. The Stalwart II barrier shall be installed per Ameristar's System Drawings. Fence panels, brackets, cabling, and fasteners shall be installed according to installation instructions and drawings. Posts and bollards shall be installed per product drawings and installation instructions. The "Earthwork" and "Concrete" sections of this specification shall govern material requirements for the concrete footer unless otherwise specified by the product drawings or installation instructions.

3.03 FENCE INSTALLATION MAINTENANCE

When cutting/drilling rails or posts adhere to the following steps to seal the exposed steel surfaces; 1) Remove all metal shavings from cut area. 2) Apply zinc-rich primer to thoroughly cover cut edge and/or drilled hole; let dry. 3) Apply 2 coats of custom finish paint matching fence color. Failure to seal exposed surfaces per steps 1-3 above will negate warranty. Ameristar spray cans or paint pens shall be used to prime and finish exposed surfaces; it is recommended that paint pens be used to prevent overspray. Use of non-Ameristar parts or components will negate the manufactures' warranty.

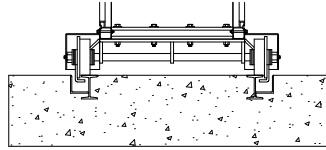
3.04 CLEANING

The contractor shall clean the jobsite thoroughly to ensure it is left neat and free of any debris caused by the installation of the cable system.

Table 1 – Coating Performance Requirements		
Quality Characteristics	ASTM Test Method	Performance Requirements
Adhesion	D3359 – Method B	Adhesion (Retention of Coating) over 90% of test area (Tape and knife test).
Corrosion Resistance	B117, D714 & D1654	Corrosion Resistance over 3,500 hours (Scribed per D1654; failure mode is accumulation of 1/8" coating loss from scribe or medium #8 blisters).
Impact Resistance	D2794	Impact Resistance over 60 inch lb. (Forward impact using 0.625" ball).
Weathering Resistance	D2244, D523 (60° Method)	Weathering Resistance over 1,000 hours (Failure mode is 60% loss of gloss or color variance of more than 3 delta-E color units).

Specification Section 32 31 00

**TYM-HYD BOX FRAME ROLLER
GATE SYSTEM WITH
HYDRAULIC OPERATOR
(ORNAMENTAL)**



PART 1 - GENERAL:

1.01 SECTION INCLUDES:

- A. The work in this section shall include furnishing all labor, materials, equipment and appliances necessary to complete all Fortress Box Frame Roller Gate and Hydraulic Operator System(s) required for this project in strict accordance with this specification section and drawings.

1.02 REFERENCES:

- A. Underwriters Laboratory Gate Operator Requirements (UL 325).
 - 1. Operators shall be built to UL 325 standards and be listed by a testing laboratory. Complete all electrical work according to local codes and National Electrical code. All fieldwork shall be performed in a neat and professional manner, completed to journeyman standards.
 - 2. Current safety standards require the use of multiple external sensors to be capable of reversing the gate in either direction upon sensing an obstruction. See 2.02 D.
 - 3. Pedestrians should never use vehicle gates. Separate pedestrian gates must always be provided when foot traffic is present.
 - 4. Current safety standards require gate operators to be designed and labeled for specific usage classes. Hydraulic Operator Model TYM-HYD-VF2/3 is compliant in usage Classes III and IV.
- B. ASTM F 2200 Standard Specification for Automated Vehicular Gate Construction. See 2.04 C.
- C. American Welding Society AWS D1.2 Structural Welding Code. See 2.04 D.
- D. ASTM A 123 Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel.

1.03 SUBMITTALS:

- A. Product Data:
 - 1. Provide manufacturer's catalog cuts with printed specifications and installation instructions.
 - 2. Deliver two (2) copies of operation and maintenance data covering the installed products, including name, address and telephone number of the nearest fully equipped service center.

3. Each operator shall bear a label indicating that the operator mechanism has been tested for full power and pressure of all hydraulic components, full stress tests of all mechanical components and electrical tests of all overload devices.
- B. Shop Drawings:**
1. Supply shop drawings showing the relationship of operating systems with gate components, including details of all major components.
 2. Include complete details of gate construction, gate height and post spacing dimensions.
- C.** Each operator shall bear a label indicating that the operator mechanism has been tested for full power and pressure of all hydraulic components, full stress tests of all mechanical components and electrical tests of all overload devices.
- D. Certifications:**
1. The aluminum welders and welding process for gate manufacture must be certified per section 2.04 D.
 2. Operator Manufacturer: A company specializing in the manufacture of hydraulic gate operators of the type specified, with a minimum of ten years experience.
 3. Installer: A minimum of three years experience installing similar equipment.

PART 2 - PRODUCTS:

2.01 HYDRAULIC GATE OPERATORS:

- A.** Hydraulic Gate Operator TYM-HYD-VF2/3 with controller to be supplied by Tymetal Corp., 678 Wilbur Avenue, Greenwich, NY 12834 – (800)-328-4283.

2.02 OPERATION:

- A.** Operation shall be by means of a metal rail passing between a pair of aluminum alloy wheels with polyurethane treads. Operator drive wheels will be driven using hydraulic motors, and system shall not include belts, gears, pulleys, roller chains or sprockets to transfer power from operator to gate panel. The operator shall generate a minimum horizontal pull of 300 lb (136 kg) without the drive wheels slipping and without distortion of supporting arms. Operator shall be capable of handling gates weighing up to 5,000 lb (2,200 kg). The operator shall be speed controlled by an electronic Variable Frequency Drive (VFD) which will accelerate and decelerate the gate gradually to prevent shock loads to the gate and operator assembly. The maximum gate velocity of the TYM-HYD-VF2/3 shall be selectable between 2.2 ft/s (670 mm/s) and 3 ft/s (914 mm/s). The operator shall contain an Emergency Fast Operation (EFO) mode wherein a separate continuous input allows the operator to override all safety inputs and run at the EFO speed. The gate velocity during Emergency Fast Operation (EFO) shall not be less than 3 ft/s (914 mm/s). Upon starting, the VFD will gradually accelerate the gate to its operating speed. When at the slow down limit, the VFD will gradually reduce gate velocity to 1 ft/s (304 mm/s), thereafter, at the stop limit, the VFD will slow the electric motor and gate to a gradual stop. Two adjustable hydraulic brake valves (one for each direction) assist in slowing the gate to a precise stop.
- B.** Standard mechanical components shall include as a minimum:

1. Supporting arms: Cast aluminum. Arms shall incorporate a low-speed sleeve bearing acting on arm pivot pins. (item 2 below)
2. Arm pivot pins: 3/4" (19 mm) diameter, stainless steel, with integral tabs for ease of removal.
3. Tension spring: 2 – 2 1/2" (51mm - 63 mm) medium to heavy duty, minimum 500 lb (226 kg) capacity.
4. Tension adjustment: Finger tightened nut, not requiring the use of tools.
5. Drive release: Must instantly release tension on both drive wheels and disengage them from contact with drive rail in a single motion, for manual operation.
6. Limit sensors or switches: Fully adjustable,
 - a. Switches - toggle types, with stripped ends to VFD.
 - b. Sensors – hall effect, jacketed cable, stripped ends to VFD.
7. Chassis: 1/4" (6 mm) steel base plate and 12 Ga. (3 mm) sides and back welded and ground smooth.
8. Cover: 10 Ga. zinc plated steel with textured TGIC gray polyester powder coat finish. All joints welded, filled and ground smooth. Finished corners square and true with no visible joints.
 - a. The cover shall have a detention quality mogul lock.
9. Finish: Zinc substrate with textured powder coat finish, tested to withstand 1,000 hour salt spray test.
10. Drive wheels: Two 8" diam (203 mm) AdvanceDrive™ wheels. Aluminum alloy with polyurethane over mold.
11. Drive rail: Shall be extruded 6061 T6, not less than 1/8" (3 mm) thick. Drive rail shall incorporate roll pins for ease of replacement or splicing. Pins shall enable a perfect butt splice.
12. Hydraulic hose: Shall be 3/8" (9.5 mm) reinforced, synthetic, abrasion resistant, rated to 3,000 psi or greater (20.6 MPa).
13. Hydraulic valves: Shall be individually replaceable cartridge type, in an integrated hydraulic manifold.
14. Hose fittings: At manifold shall be quick-disconnect type, others shall be swivel type.
15. Hydraulic fluid: High performance type with a viscosity index greater than 375 and temperature range -40° F to 158° F (-40° C to 70° C).
16. 0 – 3000 psi pressure transducer with a digital readout on the control board shall be standard. The hydraulic fluid reservoir shall be formed from a single piece of metal, non-welded, and shall be powder painted on the inside and the outside, to prevent fluid contamination.

C. Minimum standard electrical components:

1. Pump motor: 2 hp, 3450 RPM, three phase. (Note, the VFD converts single phase input power to drive the three phase motor)
2. VFD: 2 hp, Modbus monitored and controlled.
3. All components shall have overload protection.
4. Electrical enclosure: metal, with hinged plastic lid for protection from intrusion of foreign objects.
5. 1 directional valve control solenoid.
6. Multi-function button to wake menu screen without opening the lid.
7. Controls: SmartTouch 725 Controller containing:
 - a. inherent entrapment monitoring (UL 325, Type A);
 - b. built in audible "warn before operate" system;
 - c. built in timer to close;

- d. 32 character OLED display for reporting of functions and codes with 7 button user interface;
 - e. multiple programmable options for output relays or sensor inputs;
 - f. two user programmable inputs;
 - g. two user programmable monitored sensor inputs;
 - h. anti-tailgate mode;
 - i. menu configuration, event logging and system diagnostics easily accessible with a USB flash drive or HySecurity's Installer Phone App;*
 - j. embedded web server capable of sending alerts, faults and errors via e-mail;*
 - k. web based user interface allowing secure login to operator for remote operations and diagnostics;*
 - l. four inputs for Hy5B vehicle detector loops;
 - m. OXI antenna/receiver input for use with NICE OXI receivers and fobs;
 - n. one electromechanical and two solid state relays;
 - o. HS-1 for I/O Expansion Module;
 - p. HS-2 for ModBus to VFD;
 - q. RS485 and ethernet for network connections;*
 - r. USB port for firmware updates and troubleshooting logs;
 - s. sequenced and dual gate connections;
 - t. BlueBUS input for use with NICE BlueBUS devices;
 - u. emergency input programmable for emergency open or close remote or radio input;
 - v. open, close, stop inputs for remote or radio inputs. Transformer: 75 VA, non-jumpered taps, for all common voltages.
8. Power supply, 24 VDC, 5 A output, variable voltage input.
- D.** Required external sensors: See 1.02 A2. Specify photo eyes or gate edges or a combination thereof to be installed such that the gate is capable of reversing in either direction upon sensing an obstruction.
- E.** Optional control devices: (consider one or more of the following: card reader, key-switch, radio control, pushbuttons, vehicle detectors, keypads or seven day timers).
- F.** 208-230 60 hz VAC single phase, 220 50 hz VAC single phase, 208-230/460 60 hz VAC three phase, and 220/380/440 50 hz VAC three phase available. 115 VAC single phase is not available.

2.03 FACTORY TESTING:

- A.** Fully assemble and test, at the factory, each gate operator to assure smooth operation, sequencing and electrical connection integrity. Apply physical loads to the operator to simulate field conditions. Tests shall simulate physical and electrical loads equal to the fully rated capacity of the operator components.
- B.** Check all operator mechanical connections for tightness and alignment. Check all welds for completeness and continuity. Check welded corners and edges to assure they are square and straight.
- C.** Inspect operator painted finish for completeness and gloss. Touch up imperfections prior to shipment.
- D.** Check all hydraulic hoses and electrical wires to assure that chafing cannot occur during shipping or operation.

2.04 BOX FRAME ROLLER GATES:

- A. Tymetal Corp., 678 Wilbur Avenue, Greenwich, NY 12834 – (800) 328-4283, shall manufacture the Box Frame Roller Gate(s).
- B. Approved Substitution: All other systems must be submitted to the design team in accordance with substitution requirements as set forth in the general provisions of the specification manual for approval prior to the bid date. Products submitted after the bid date will not be approved.
- C. Gate manufacturer shall certify gate is manufactured in compliance with ASTM F 2200, Standard Specification for Automated Vehicular Gate Construction and the operators are UL 325 listed. See 1.02 B and 1.02 A.
- D. Gate manufacturer shall provide independent certification as to the use of a documented Welding Procedure Specification and Procedure Qualification Record to insure conformance to the AWS D1.2 welding code. Upon request, Individual Certificates of Welder Qualification documenting successful completion of the requirements of the AWS D1.2 code shall also be provided. See 1.02 C.

2.05 GATE CONSTRUCTION DETAILS:

A. Gate Frame:

- 1. All welds on the gate frame shall conform to Welding Procedure Specification and Procedure Qualification Record to insure conformance to the AWS D1.2 Structural Welding Code. All individual welders shall be certified to AWS D1.2 welding code. See 1.02 C.
- 2. The gate frames shall be fabricated from 6000 Series aluminum alloy extrusions. The primary members (top and bottom) shall be "P" shaped in cross section with no less than 2" on a side and weighing not less than 1.6 lb/lf. The vertical members at the ends of each panel section shall be 2"x2" in cross section weighing not less than 1.1 lb/ft. Intermediate vertical members shall alternate between 1"x2" and 1"x1" in cross section weighing not less than 0.82 lb/lf and 0.52 lb/lf, respectively. They shall be spaced at a distance not to exceed the overall height of the box frame. The gate shall be constructed in "box" form with the width between the frames measuring 24" from outside to outside. Between these frames there shall be a continuous series of 1"x1" diagonal and horizontal bracing with the diagonals welded at approximately 45 degrees to the frames.
- 3. Box Frame trolley assemblies shall be bolted to the box frame at intervals as specified on the bid drawings. Each assembly shall consist of a galvanized steel carriage to which two (2) wheel assemblies are secured. Each wheel shall be rated for a minimum load capacity of 2,000 lb.
- 4. Safety guides of 3/8" x 3" galvanized steel bar with attached guide wheels shall be provided at a maximum of 10'-0" on center along the entire gate length.
- 5. Wheel assemblies shall be covered by a single 11 gauge galvanized steel cover at each location.

B. Gate Track:

- 1. The gate shall roll on two parallel tracks, which are embedded in concrete so that the top of the track is level with the ground surface. The track shall consist of two (2) parallel W4 x 13 A36 steel beams (may be provided by others). The tracks shall be hot dipped galvanized and set so as to vary no more than 1/4" in width between

tracks with the maximum width as shown in the bid drawings (i.e.: +/- 1/8" for each track).

C. Diagonal Bracing:

1. Diagonal "X" bracing of 3/16" or 1/4" diameter stainless or galvanized steel cable shall be installed throughout the gate to brace the gate panels and to provide a ready means for vertical adjustment.

D. Gate Filler:

1. Ornamental Picket: Picket sizes shall be 1" square. Pickets may extend through only the clear opening portion or through the entire length of the gate as required. If a motorized gate operator is to be applied to the gate and the specified picket spacing allows for openings in the gate frame that exceed 2 1/4" (57mm), a secondary gate filler shall be secured at each end of the gate frame and tied at each 2" x 2" (51mm x 51mm) vertical member. The secondary gate filler shall extend to a minimum height of 72" (1.2m) above grade and shall be sized to prevent a 2 1/4" (57mm) diameter sphere from passing through openings anywhere along the length of the gate frame, and in that portion of the adjacent fence that the gate covers in the open position.

E. Finish:

1. Gate to be mill finish aluminum or color coated with polyester powder as specified. If powder coated, the gate (including track member) and all accessories shall be pretreated chemically by sand blasting or other acceptable method to ensure proper coating adherence. Gate posts (to be supplied by others) shall be galvanized or coated as specified by the design team.

F. Gate Lock:

1. (Optional) Gate system shall be furnished with an electro-mechanical lock. Lock shall be supplied with status indication and with a six tumbler mechanical lock. All gates shall be keyed alike. Lock requires additional 115V power supplied by others.

PART 3 - EXECUTION:

3.01 SITE INSPECTION:

- A. Final grades and installation conditions shall be examined. Installation shall not begin until all unsatisfactory conditions are corrected.
- B. Locate concrete mounting pad in accordance with approved shop drawings.
- C. Make sure that gate is level and operating smoothly under manual conditions before installation of gate operators. Do not proceed until gate panel is aligned and operates without binding.

3.02 INSTALLATION:

- A. Equipment in this section shall be installed in strict accordance with the company's printed instructions unless otherwise shown on the contract drawings.
- B. The gate and installation shall conform to:
 1. ASTM F 2200 standard specification for automated vehicular gate construction.
 2. UL 325 standards.

- C. Installer shall ensure that the electrical service to the operator is at least 20A for 3 phase and 30A for 1 phase. Electrical wiring to conform to NEC and manufacturer's installation instructions.
- D. The installing contractor shall be responsible to ensure that appropriate external primary entrapment safety devices be installed for the specific site conditions to protect against all potential entrapment zones. Proper operation of these safety devices shall be verified and training as to the operation and maintenance of these devices for the users and owners shall be documented.

3.03 SYSTEM VALIDATION:

- A. The complete system shall be adjusted to assure it is performing properly. Test gate operator through a minimum of ten full cycles and adjust to ensure operation without binding, scraping or uneven motion. Test limit switches for proper "at rest" gate position.
- B. All anchor bolts shall be fully concealed in the finished installation.
- C. For operated gate systems - test and explain safety features:
 - 1. Each system feature and device is a separate component of the gate system.
 - 2. Read and follow all instructions for each component.
 - 3. Ensure that all instructions for mechanical components, safety devices and the gate operator are available for everyone who will be using the gate system.
 - 4. The warning signs shipped with the gate operator must be installed in prominent position on both sides of the gate.
- D. Ensure the owner is clear with regard to the safety points concerning the basic operational guidelines of the safety features of the gate operator system. These safety points are listed in the gate operator manual and must be read prior to system use.

Note: Tymetal Corp. reserves the right to modify and/or make changes as deemed necessary without previous notice.

SECTION 33 11 00
WATER DISTRIBUTION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Provide new water lines from the existing water main to points shown on the plans. This includes, but is not limited to the following:
 - 1. Piping and fittings
 - 2. Fire hydrants
 - 3. Curb boxes and valves
 - 4. Post indicating valves, standard and electrically supervised
 - 5. Post type siamese
 - 6. Tapping sleeves and valves
 - 7. Meter pit and piping
 - 8. Flushing and testing
 - 9. Sterilization
 - 10. All labor, equipment, devices, materials and performing all operations necessary in connection with the combined water system as herein specified and shown, indicated or noted on the drawings and subject to the terms and conditions of the contract.

1.02 RELATED SECTIONS

- A. Section 03 30 00, "Cast-in-Place Concrete"
- B. Section 31 23 33, "Piped Utilities - Basic Methods"

1.03 REFERENCES

- A. Construction and Materials Specifications – City of Columbus (CMSC) 2012 Edition

1.04 SUBMITTALS

- A. Submit under provisions of Division 1.
- B. Submit product data, shop drawings, catalog cuts, etc., for pipe, fire hydrants, siamese, detector checks, meters, fittings, valves and accessories.
- C. Certification from the Contractor stating that hydrostatic tests have been conducted in accordance with Specifications and in the presence of the Project Manager Engineer / Inspector and that the completed pipeline is acceptable in accordance with criteria set forth in Specifications for leakage.
- D. Certification from the Contractor stating that pipe lines constructed have been disinfected as specified and are safe for conveying potable water.
- E. Sequence of work in accordance with this Section and Division 1.

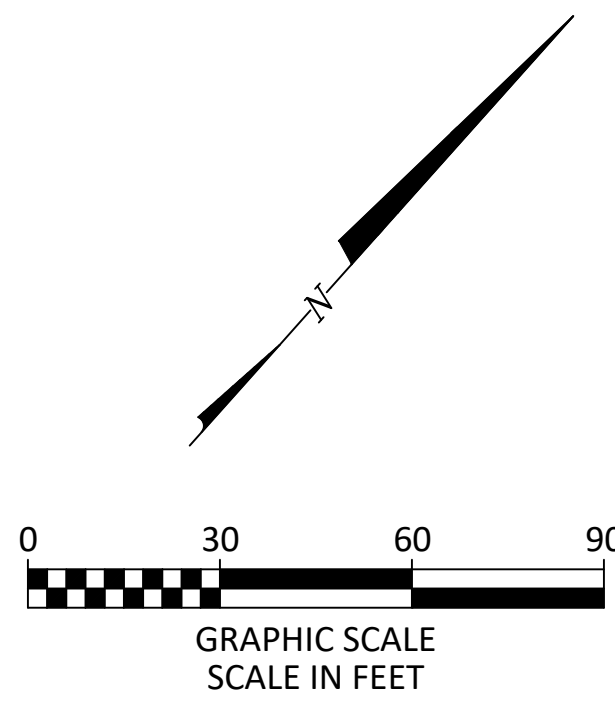
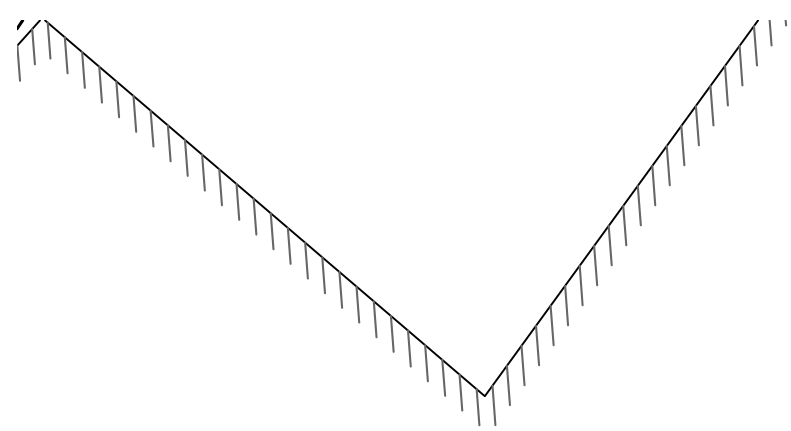
PART 2 PRODUCTS

- A. Provide products for Water Distribution in accordance with CMSC Section 800 and the details and notes on the drawings.

PART 3 EXECUTION

- A. Perform work in accordance with CMSC Section 800 and notes on drawings.

END OF SECTION

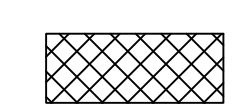


DEMOLITION LEGEND

EXISTING

REFER TO SHEET TS1.1

PROPOSED



REMOVE EXISTING ASPHALT, GRAVEL, AND CONCRETE PAVEMENT, CONCRETE SIDEWALK, BUILDING FOUNDATION, AND PAVEMENT BASE MATERIALS

REMOVE EXISTING TREE

PROTECT EXISTING TREE TO REMAIN

REMOVE EXISTING CONCRETE CURB

GENERAL NOTES:

1. SITE SURVEY PERFORMED BY KORDA, DATED 8/25/2026. REFER TO SHEET TS1.1 FOR ALL EXISTING SITE FEATURES.
2. DISPOSE OF CONSTRUCTION DEBRIS OFF-SITE IN ACCORDANCE WITH LOCAL CODES.
3. REMOVE AND DISPOSE OF ON SITE FEATURES AS SHOWN ON THE PLAN.
4. SAW-CUT EXISTING PAVEMENT AT LIMITS OF PAVEMENT REMOVAL TO FULL DEPTH USING CARE TO CUT NEAT, STRAIGHT LINES. CUT AT EXISTING JOINTS WHERE POSSIBLE.
5. CONTRACTOR TO PROTECT EXISTING SITE FEATURES TO REMAIN OUTSIDE CONSTRUCTION LIMITS. REPAIR ANY DAMAGE TO THE SATISFACTION OF THE OWNER AT NO ADDITIONAL COST.
6. CONTROL DUST AT THE SITE. PROVIDE STREET CLEANING WHEN NECESSARY, AND WHEN REQUESTED BY OWNER.
7. GRADE SITE DURING CONSTRUCTION TO PROVIDE POSITIVE DRAINAGE TO EXISTING AND/OR PROPOSED STORM WATER MANAGEMENT SYSTEMS.
8. PERFORM WORK IN ACCORDANCE WITH LOCAL CODES AND REGULATIONS.

X CODED NOTES:

1. PROTECT EXISTING PAVEMENT/SIDEWALK TO REMAIN.
2. PROTECT EXISTING CONCRETE CURB OR CURB AND GUTTER TO REMAIN.
3. SAWCUT EXISTING PAVEMENT WITH NEAT, STRAIGHT LINES. MATCH EXISTING PAVEMENT GRADE AT THIS POINT.
4. PROTECT EXISTING UTILITY STRUCTURE TO REMAIN. ADJUST TO FINAL GRADE.
5. REMOVE EXISTING GUARDRAIL.
6. REMOVE EXISTING SWING GATE.
7. REMOVE EXISTING GUARD SHACK.
8. REMOVE AND STORE BARRIERS TO BE REINSTALLED AFTER CONSTRUCTION.
9. WATER SERVICE VALVES TO BE RELOCATED. REFER TO SHEET C3.2 FOR DETAILS.
10. REMOVE EXISTING BOLLARD.



No.	Description	Date

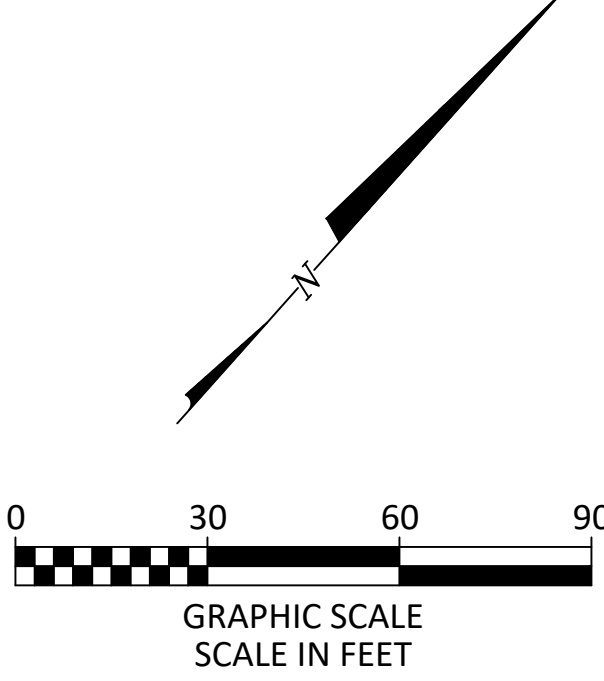
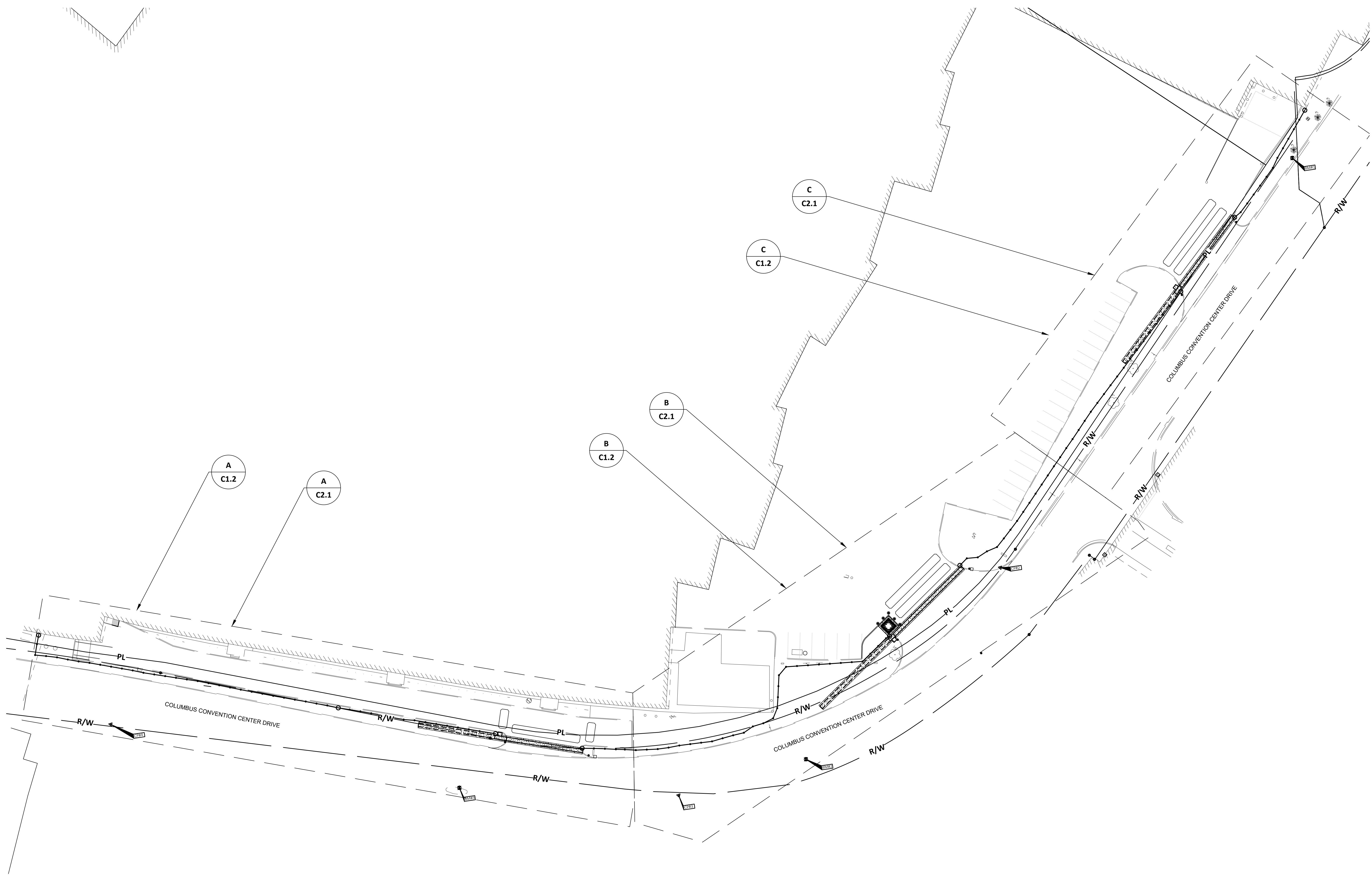
GREATER COLUMBUS CONVENTION CENTER
SITE SECURITY IMPROVEMENTS

KORDA Korda/Nemeth Engineering, Inc. Consulting Engineers
1650 Watermark Drive, Suite 200 Columbus, Ohio 43215-7010
TEL 614-487-1650 - WEB www.korda.com

DEMOLITION PLAN



NOT FOR CONSTRUCTION WORKING DRAWINGS FOR REVIEW	PROJECT NUMBER: 2026-0416			
	DRAWN BY: KATIE VATKE	KEY	DATE	SHEET NUMBER
	DESIGNED BY: GRAHAM WATKINS	KEY	09/14/2026	C0.1
	CHECKED BY: PROJECT NUMBER: 2026-0416	GJW		



STAKING LEGEND

- EXISTING**
REFER TO SHEET TS1
- PROPOSED**
- BUILDING/WALL
 - STRAIGHT CURB PER DETAIL C/C1.4
 - PAVEMENT
 - BOLLARD PER DETAIL A/C1.3
 - FENCE & POSTS PER DETAIL D/C1.3
 - PAVEMENT MARKING
 - CONCRETE GATE TRACK

GENERAL NOTES:

- DIMENSIONS AND COORDINATES ARE GIVEN TO FACE OF CURB AND FACE OF BUILDING UNLESS OTHERWISE NOTED.
- BUILDING COORDINATES PROVIDED FOR GENERAL LOCATION AND ORIENTATION ONLY. REFER TO ARCHITECTURAL PLANS FOR BUILDING LAYOUT.
- CURB AND SIDEWALK RADII SHALL BE 5'-0" UNLESS OTHERWISE NOTED.
- PROVIDE STRIPING AND SYMBOLS AS SHOWN PER ODOT ITEM 641 AND 642. PROVIDE STRIPING PAINT WITH GLASS BEADS. PROVIDE TYPE I OR TYPE IA PAINT IN ACCORDANCE WITH ODOT ITEM 642 DEPENDING ON TEMPERATURE CONDITIONS AT THE TIME OF APPLICATION. TYPICAL LINE WIDTH SHALL BE 4 INCHES, COLOR WHITE. PROVIDE TWO COATS.
- STANDARD PARKING STALL DIMENSIONS ARE 5'-0" IN WIDTH BY 18'-0" IN LENGTH UNLESS OTHERWISE NOTED.
- SAWCUT FULL DEPTH SIDEWALK AND PAVEMENT WHERE NEW WORK ABUTS EXISTING CONSTRUCTION. TAKE CARE TO PROVIDE NEAT STRAIGHT LINES. PROVIDE PAVEMENT SEALANT PER ODOT ITEM 705.04 AT JOINT BETWEEN EXISTING AND NEW ASPHALT. REMOVE CONCRETE TO NEAREST JOINT. PROVIDE 1/2" PREFORMED EXPANSION JOINT FILLER BETWEEN NEW AND EXISTING CONSTRUCTION.
- ANY PROPERTY PINS DAMAGED AS PART OF CONSTRUCTION SHALL BE RESET BY AN OHIO REGISTERED SURVEYOR.
- MAINTAIN PEDESTRIAN AND VEHICULAR ACCESS TO ADJACENT BUILDINGS AT ALL TIMES DURING CONSTRUCTION.
- REFER TO ARCHITECTURAL DRAWINGS FOR ALL SITE SIGNAGE NOT SHOWN ON THIS SHEET.
- PROVIDE CONTROL JOINTS PER DETAIL B/C1.3. PROVIDE ISOLATION JOINTS WHERE NEW CONCRETE ABUTS EXISTING STRUCTURES PER DETAIL C/C1.3 AND PER SPECIFICATIONS.

CODED NOTES:

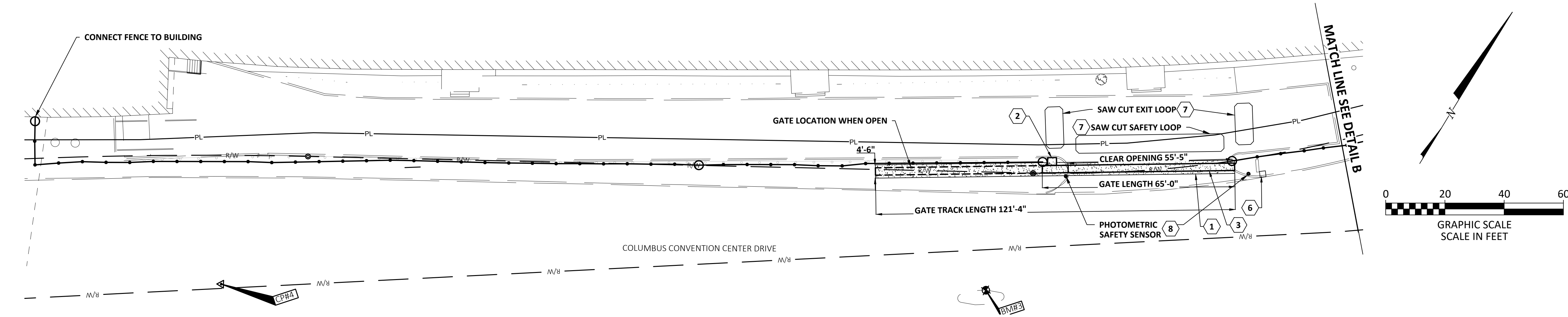
- SAW-CUT EXISTING PAVEMENT WITH NEAT, STRAIGHT LINES. MATCH EXISTING PAVEMENT GRADE AT THIS POINT.
- TYM-HYD GATE OPERATOR PAD.
- BOX FRAME ROLLER GATE PER DETAIL E/C1.3
- BOX FRAME ROLLER GATE PER DETAIL A/C1.4
- BOX FRAME ROLLER GATE PER DETAIL B/C1.4
- PROVIDE CARD READER AND KNOX BOX ACCESS MOUNTED TO PEDESTAL. PROVIDE CONDUIT FOR POWER/CONTROLS BACK TO GUARD SHACK.
- DETECTION LOOP. PROVIDE CONDUIT FROM DETECTION LOOP TO MOTORIZED GATE CONTROL COORDINATE WITH EQUIPMENT IN FIELD PRIOR TO ROUGH-IN.
- PHOTOMETRIC SENSOR. PROVIDE CONDUIT FROM SENSOR TO MOTORIZED GATE CONTROL COORDINATE WITH EQUIPMENT IN FIELD PRIOR TO ROUGH-IN.
- PROPOSED GUARD SHACK, REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS.
- INSTALL MANDOOR COMPATIBLE WITH STALWART II FENCE.

No.	Description	Date
GREATER COLUMBUS CONVENTION CENTER		
SITE SECURITY IMPROVEMENTS		
KORDA Korda/Nemeth Engineering, Inc. Consulting Engineers 1650 Watermark Drive, Suite 200 Columbus, Ohio 43215-7010 TEL 614-487-1650 • WEB www.korda.com		
STAKING PLAN		
PROJECT NUMBER:		2026-0416
DRAWN BY:	KEV	DATE
DESIGNED BY:	KEV	SHEET NUMBER
CHECKED BY:	GJW	09/14/2026
PROJECT NUMBER:		C1.1



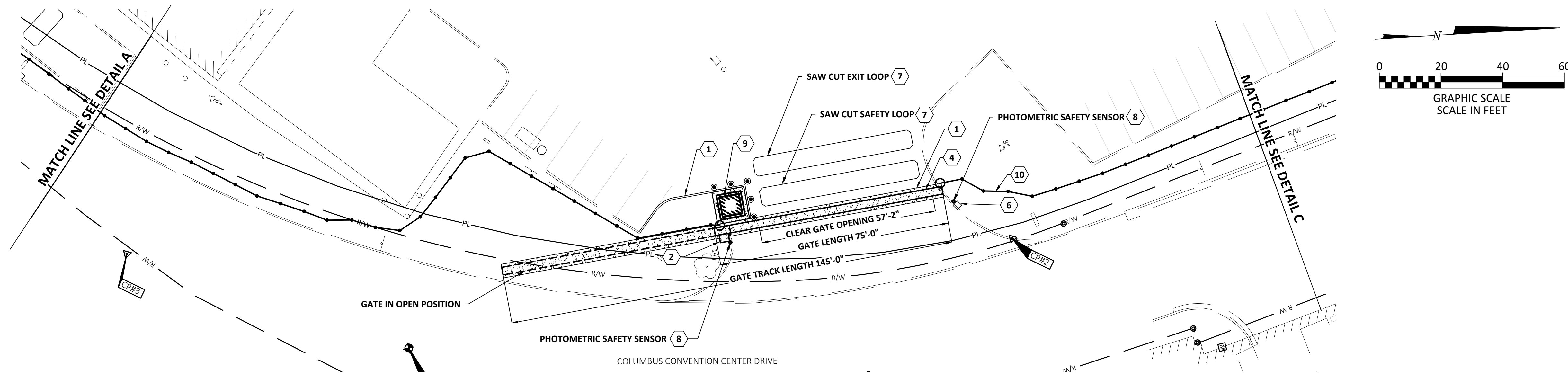
NOT FOR CONSTRUCTION
WORKING DRAWINGS
FOR REVIEW

DRAWN BY: KATIE VATKE
DESIGNED BY: KATIE VATKE
CHECKED BY: GRAHAM WATKINS
PROJECT NUMBER: 2026-0416



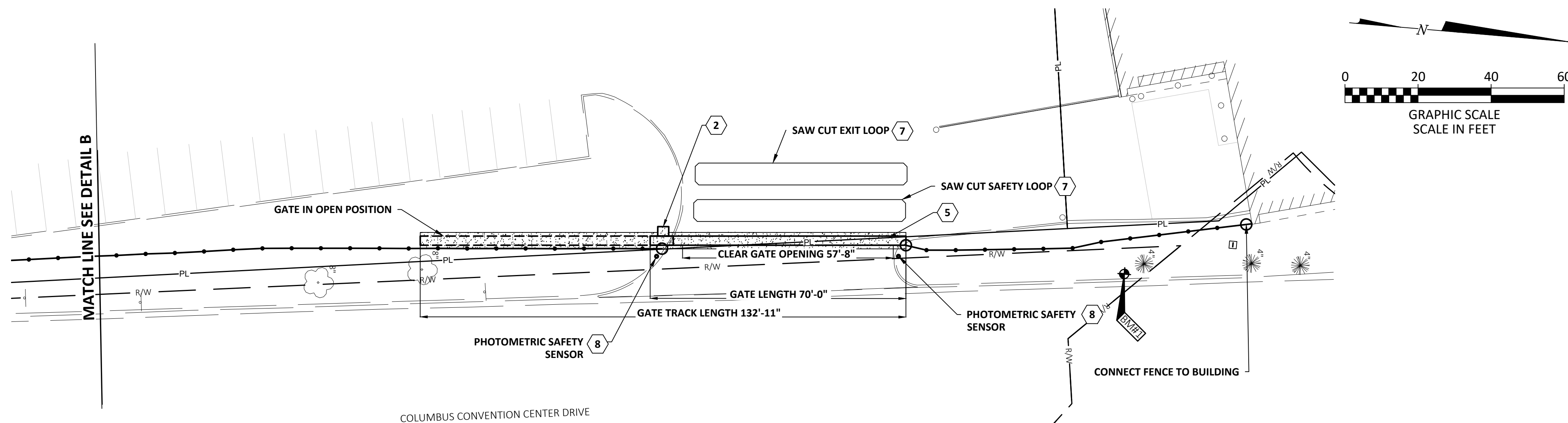
A **DETAIL**
SOUTHERN GATE STAKING PLAN

1"=20'



B **DETAIL**
MIDDLE ENTRANCE GATE STAKING PLAN

1"=20'



C **DETAIL**
NORTHERN EXIT GATE STAKING PLAN

1"=20'

STAKING LEGEND

EXISTING

REFER TO SHEET TS1

PROPOSED

- BUILDING/WALL
- STRAIGHT CURB PER DETAIL C/C1.4
- PAVEMENT
- BOLLARD PER DETAIL A/C1.3
- FENCE & POSTS PER DETAIL D/C1.3
- PAVEMENT MARKING
- CONCRETE GATE TRACK

GENERAL NOTES:

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- STANDARD PARKING STALL DIMENSIONS ARE 9'-0" IN WIDTH BY 18'-0" IN LENGTH UNLESS OTHERWISE NOTED.
- SAWCUT FULL DEPTH SIDEWALK AND PAVEMENT WHERE NEW WORK ABUTS EXISTING CONSTRUCTION. TAKE CARE TO PROVIDE NEAT STRAIGHT LINES. PROVIDE PAVEMENT SEALANT PER ODOT ITEM 705.04 AT JOINT BETWEEN EXISTING AND NEW ASPHALT. REMOVE CONCRETE TO NEAREST JOINT. PROVIDE 1/2" PREFORMED EXPANSION JOINT FILLER BETWEEN NEW AND EXISTING CONSTRUCTION.
- ANY PROPERTY PINS DAMAGED AS PART OF CONSTRUCTION SHALL BE RESET BY AN OHIO REGISTERED SURVEYOR.
- MAINTAIN PEDESTRIAN AND VEHICULAR ACCESS TO ADJACENT BUILDINGS AT ALL TIMES DURING CONSTRUCTION.
- REFER TO ARCHITECTURAL DRAWINGS FOR ALL SITE SIGNAGE NOT SHOWN ON THIS SHEET.
- PROVIDE CONTROL JOINTS PER DETAIL B/C1.3. PROVIDE ISOLATION JOINTS WHERE NEW CONCRETE ABUTS EXISTING STRUCTURES PER DETAIL C/C1.3 AND PER SPECIFICATIONS.

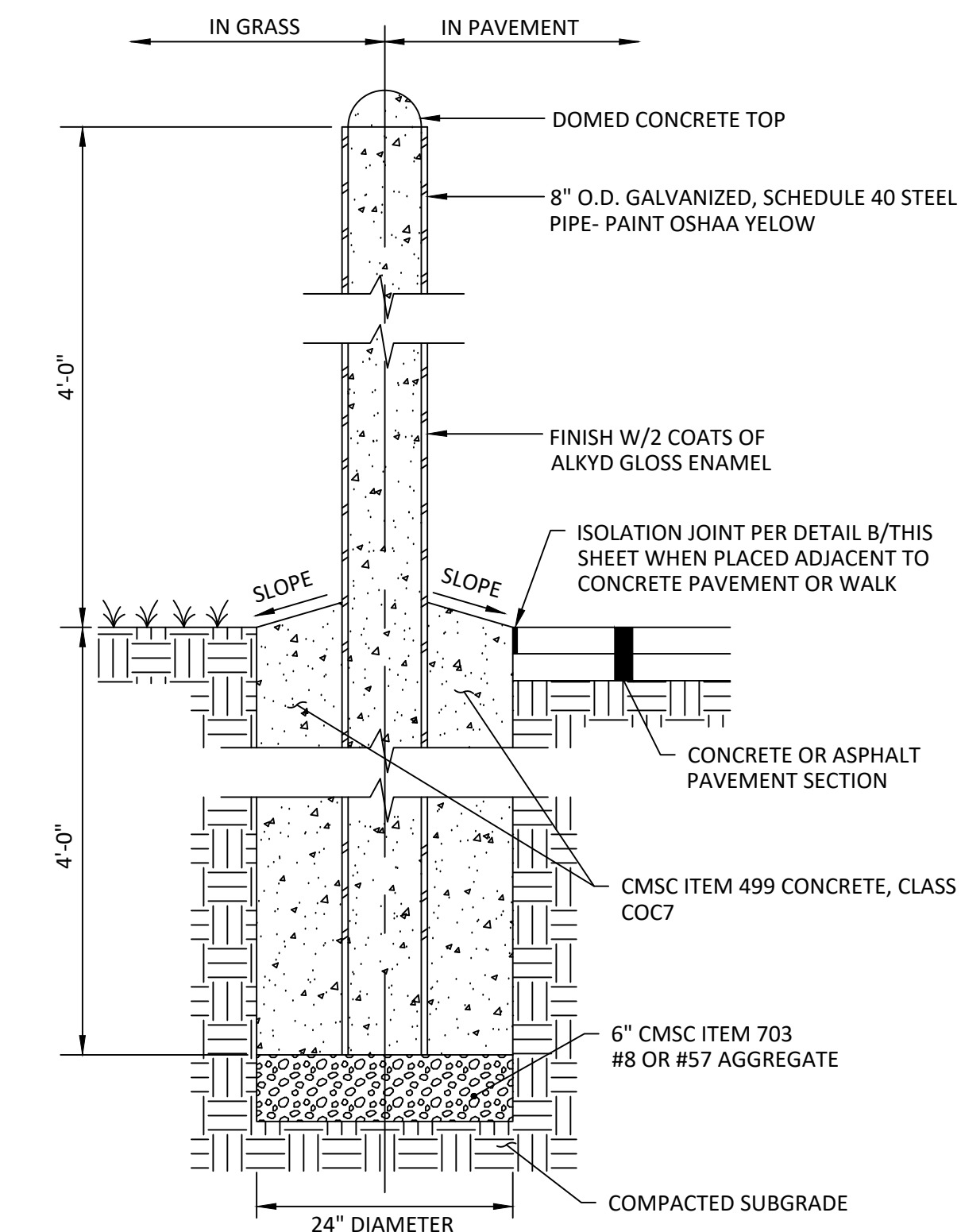
(X) CODED NOTES:

- SAW-CUT EXISTING PAVEMENT WITH NEAT, STRAIGHT LINES. MATCH EXISTING PAVEMENT GRADE AT THIS POINT.
- TYM-HVD GATE OPERATOR PAD.
- BOX FRAME ROLLER GATE PER DETAIL E/C1.3
- BOX FRAME ROLLER GATE PER DETAIL A/C1.4
- BOX FRAME ROLLER GATE PER DETAIL B/C1.4
- PROVIDE CARD READER AND KNOX BOX ACCESS MOUNTED TO PEDESTAL. PROVIDE CONDUIT FOR POWER/CONTROLS BACK TO GUARD SHACK.
- DETECTION LOOP. PROVIDE CONDUIT FROM DETECTION LOOP TO MOTORIZED GATE CONTROL COORDINATE WITH EQUIPMENT IN FIELD PRIOR TO ROUGH-IN.
- PHOTOMETRIC SENSOR. PROVIDE CONDUIT FROM SENSOR TO MOTORIZED GATE CONTROL COORDINATE WITH EQUIPMENT IN FIELD PRIOR TO ROUGH-IN.
- PROPOSED GUARD SHACK. REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS.
- INSTALL TYMETAL 2150 STYLE A PRE-HUNG PEDESTRIAN SWING GATE MAN DOOR COMPATIBLE WITH 8FT STALWART II FENCE. REFER TO ELECTRICAL PLANS FOR CARD ACCESS DETAILS.

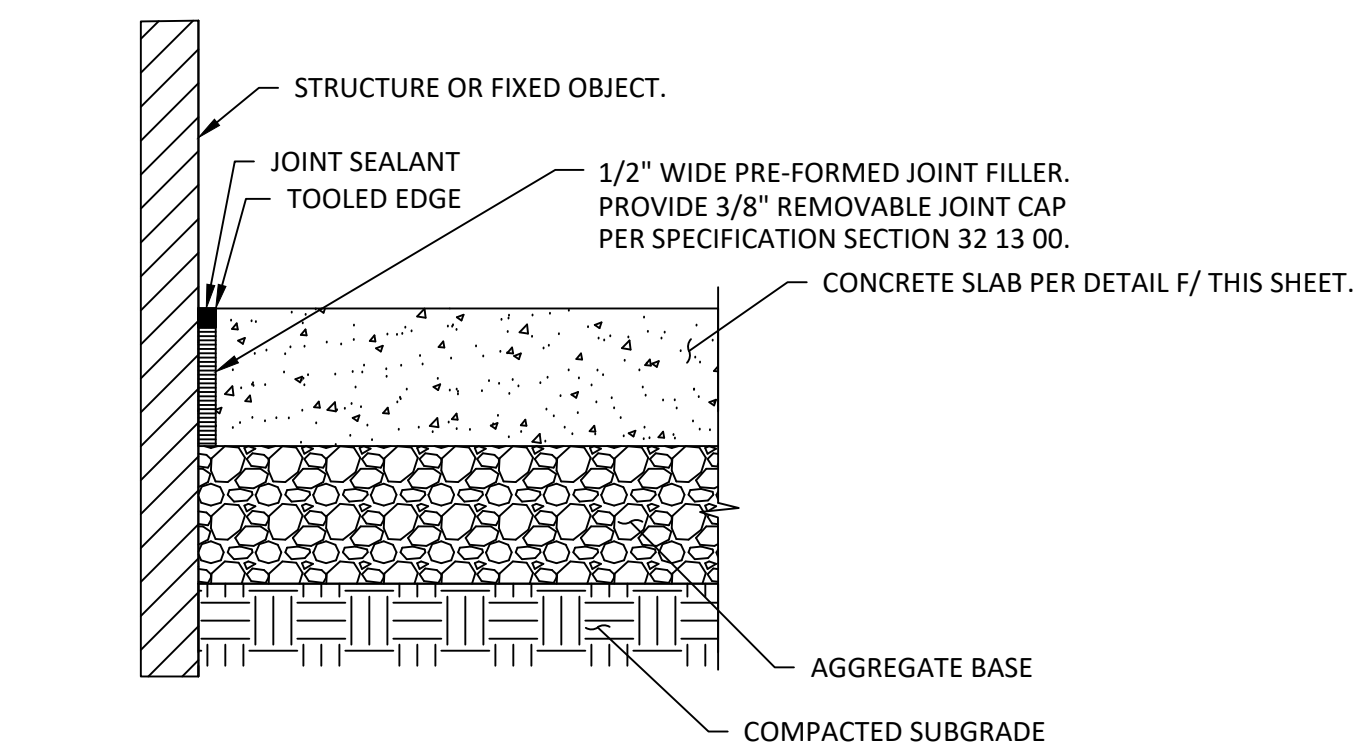
No.	Description	Date
	GREATER COLUMBUS CONVENTION CENTER	
	SITE SECURITY IMPROVEMENTS	
	KORDA Korda/Nemeth Engineering, Inc. - Consulting Engineers 1650 Watermark Drive, Suite 200 - Columbus, Ohio 43215-7010 TEL 614-487-1650 - WEB www.korda.com	
	STAKING PLAN	
	PROJECT NUMBER: 2026-0416	
	DRAWN BY: KEV DATE: 09/14/2026 SHEET NUMBER: C1.2	

**NOT FOR
CONSTRUCTION**
WORKING DRAWINGS
FOR REVIEW

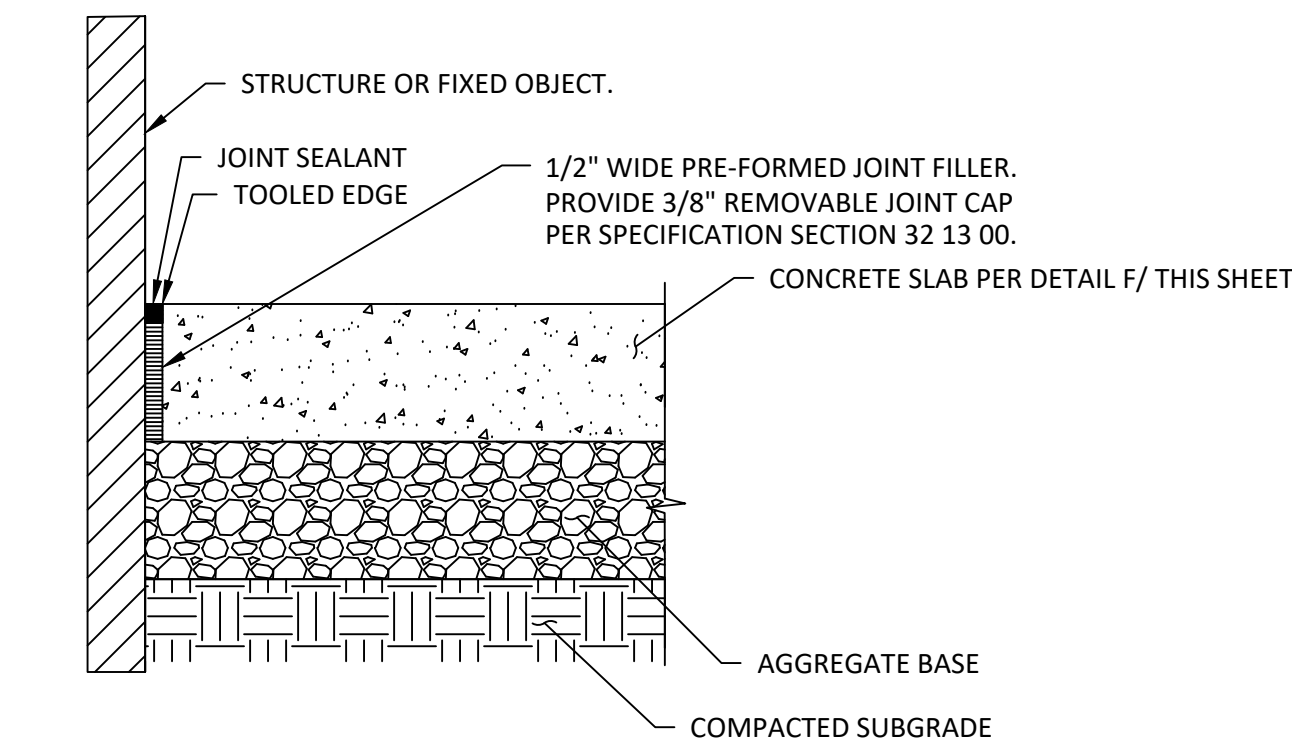
KORDA
KORDA NEMETH ENGINEERING
WWW.KORDA.COM
DRAWN BY: KATIE VATKE
DESIGNED BY: KATIE VATKE
CHECKED BY: GRAHAM WATKINS
PROJECT NUMBER: 2026-0416



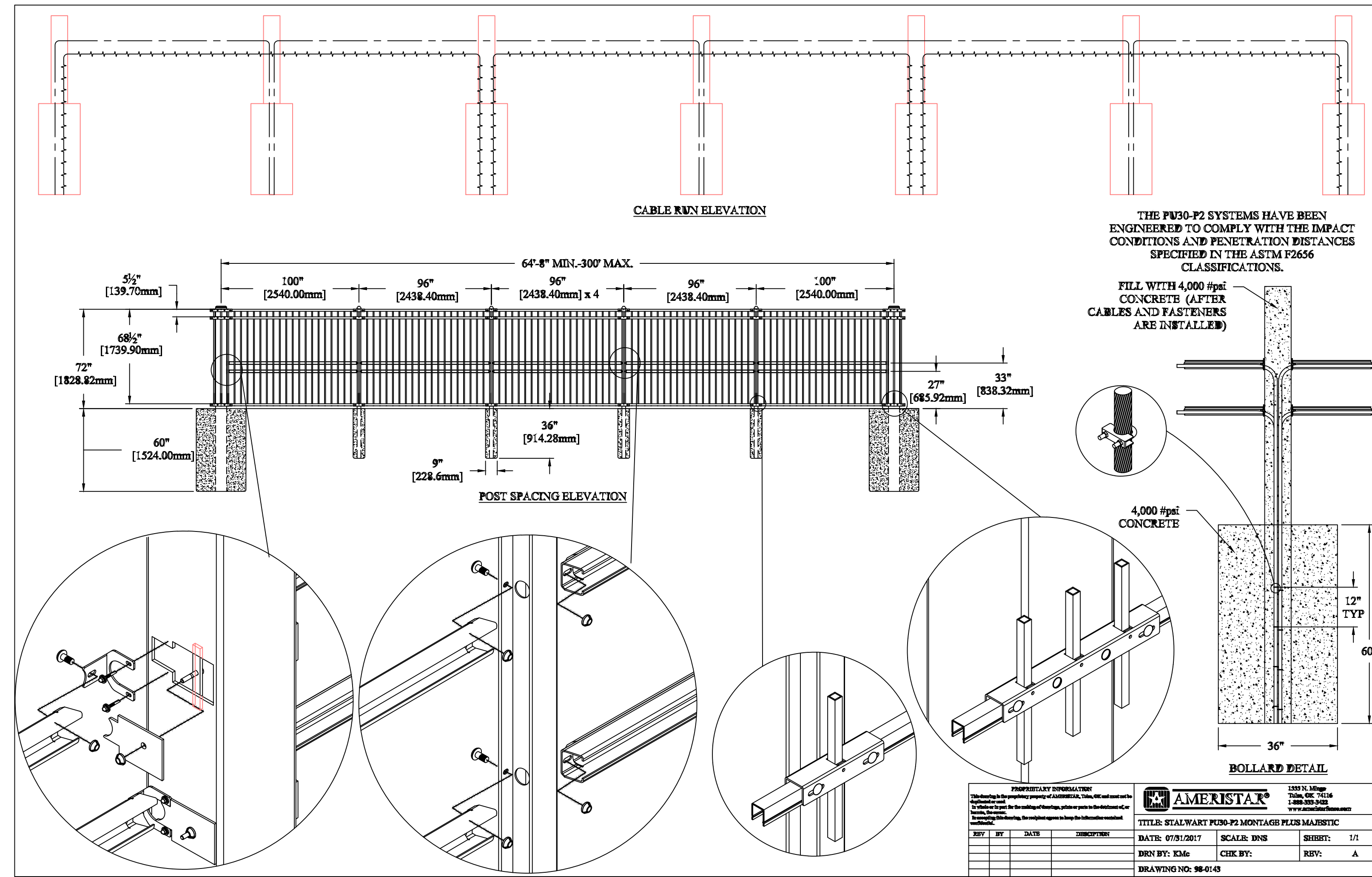
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STEEL PIPE BOLLARD



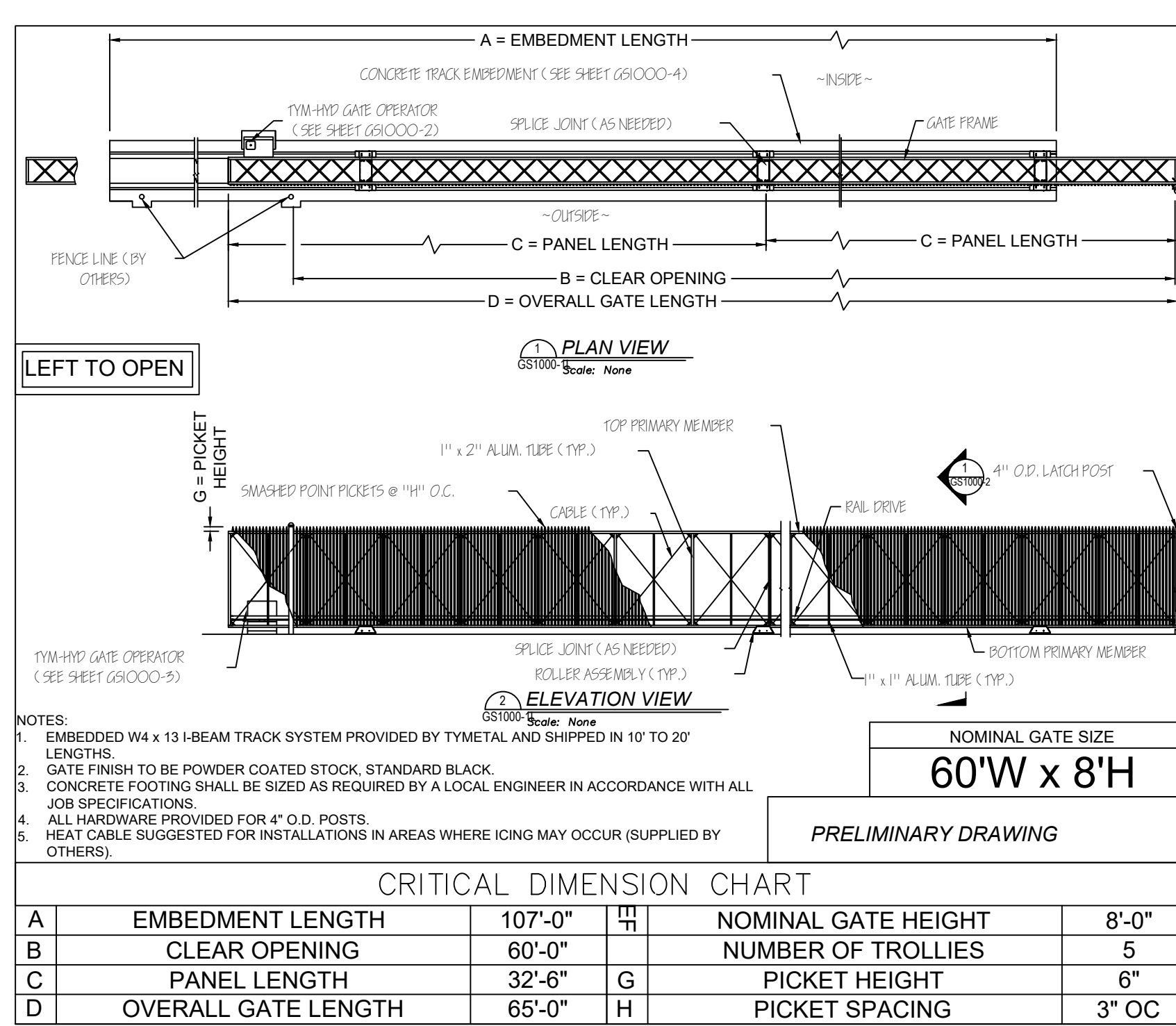
B DETAIL
CONCRETE ISOLATION JOINT



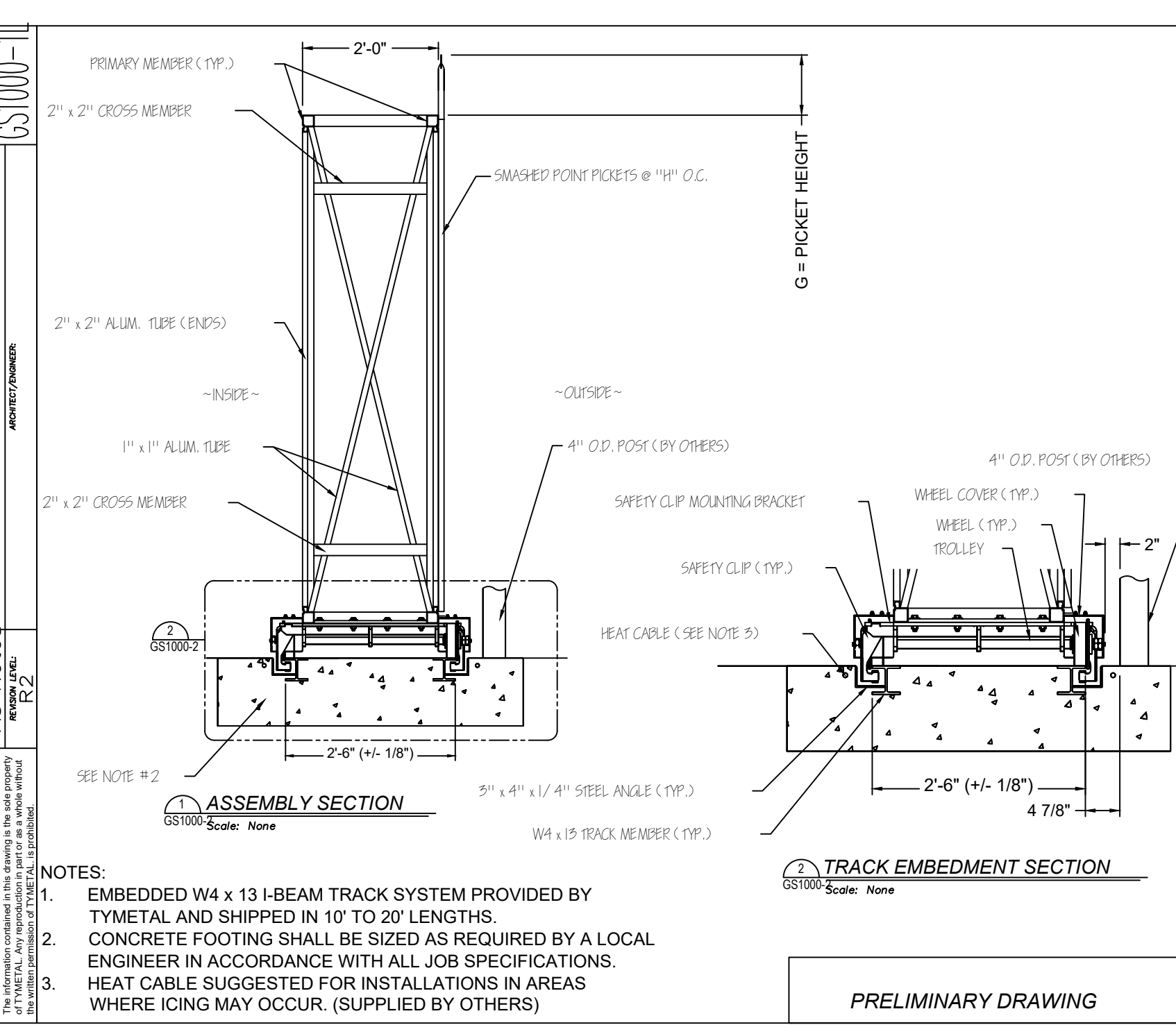
C DETAIL
CONCRETE ISOLATION JOINT



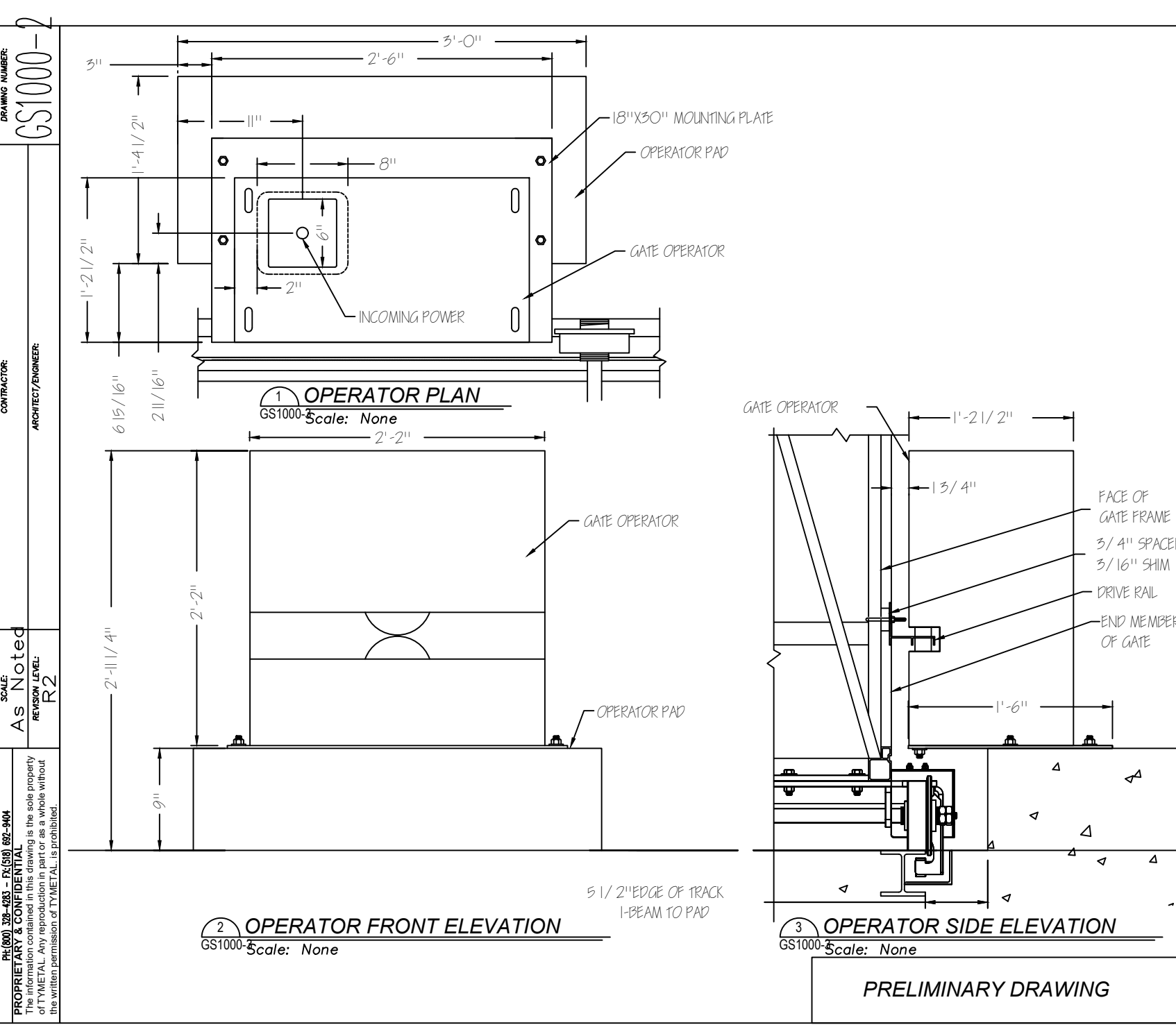
D DETAIL
STALWART II FENCE



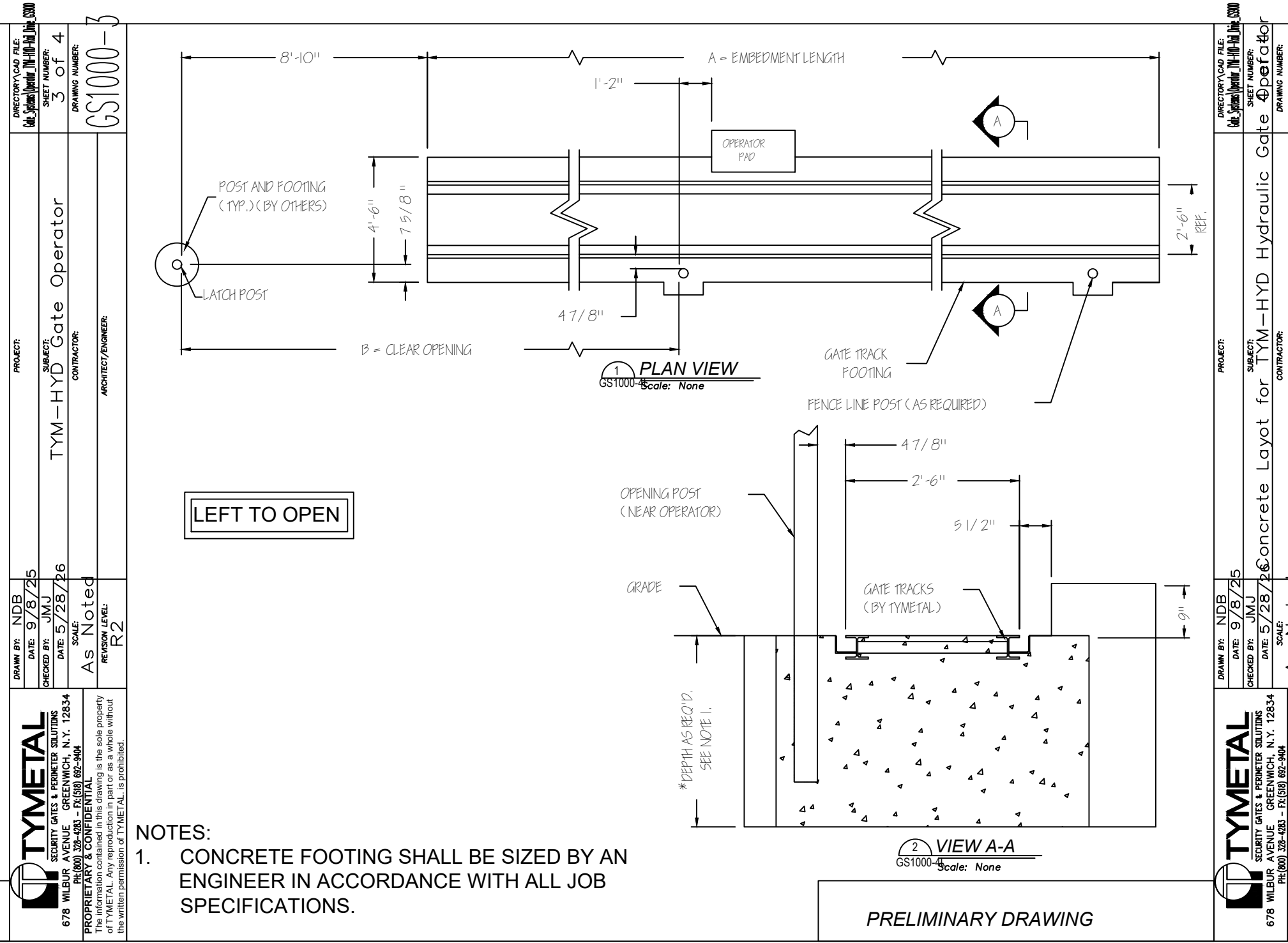
E DETAIL
60' CLEAR OPENING BOX FRAME ROLLER GATE



F DETAIL
60' CLEAR OPENING BOX FRAME ROLLER GATE



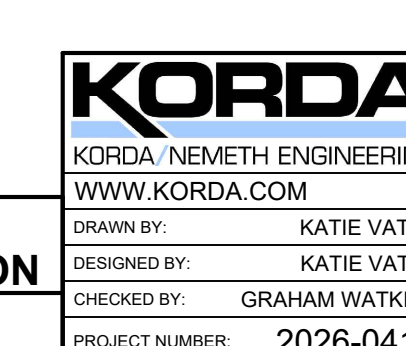
G DETAIL
60' CLEAR OPENING BOX FRAME ROLLER GATE



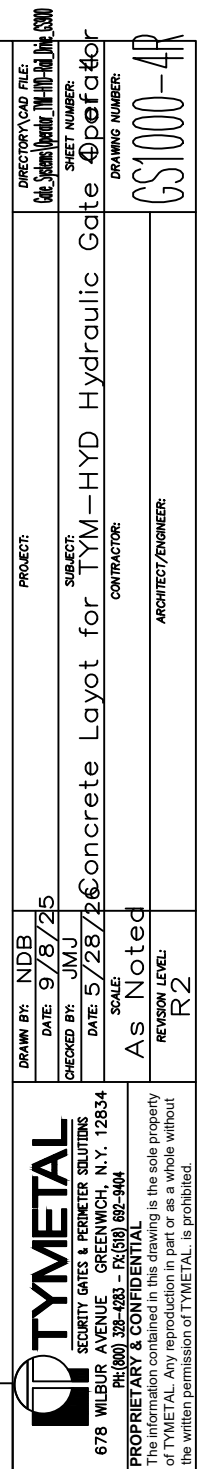
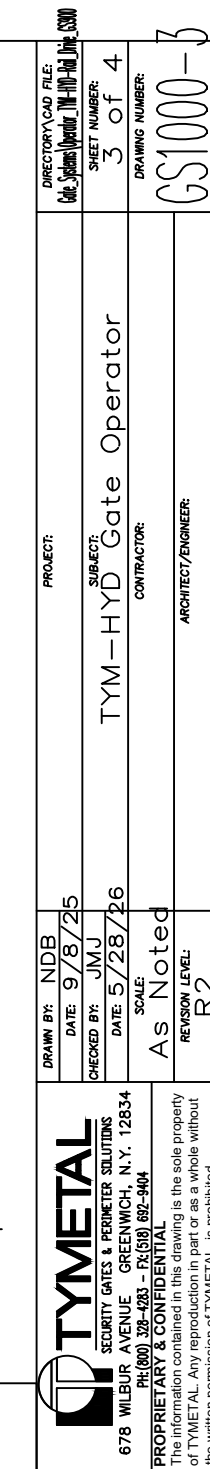
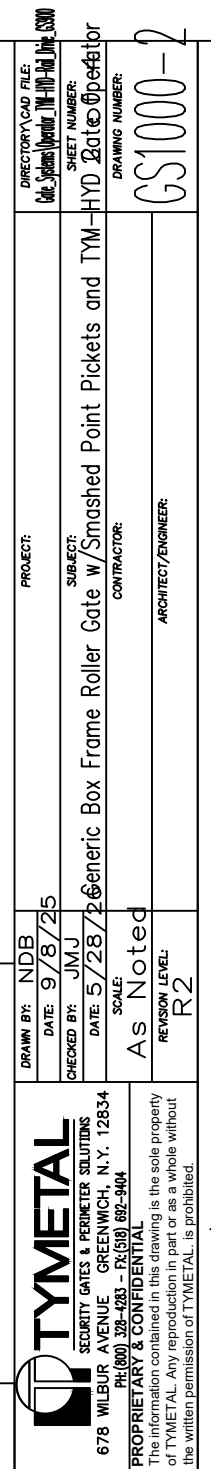
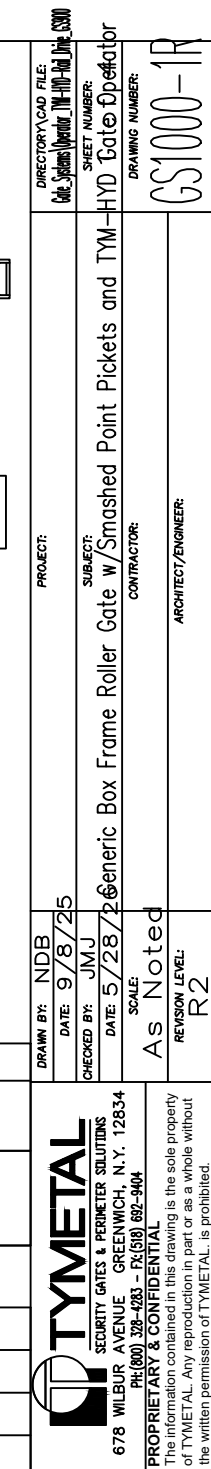
H DETAIL
60' CLEAR OPENING BOX FRAME ROLLER GATE

No.	Description	Date
1	GREATER COLUMBUS CONVENTION CENTER	
2	SITE SECURITY IMPROVEMENTS	
3	STAKING DETAILS	

PROJECT NUMBER:	2026-0416
DRAWN BY:	KEV
DESIGNED BY:	DATE
CHECKED BY:	KEV
PROJECT NUMBER:	2026-0416
CHECKED BY:	GJW
DATE:	09/14/2026
SHEET NUMBER:	C1.3

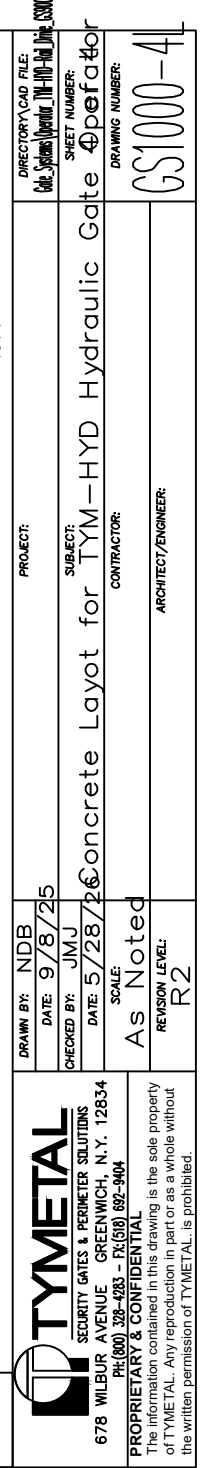
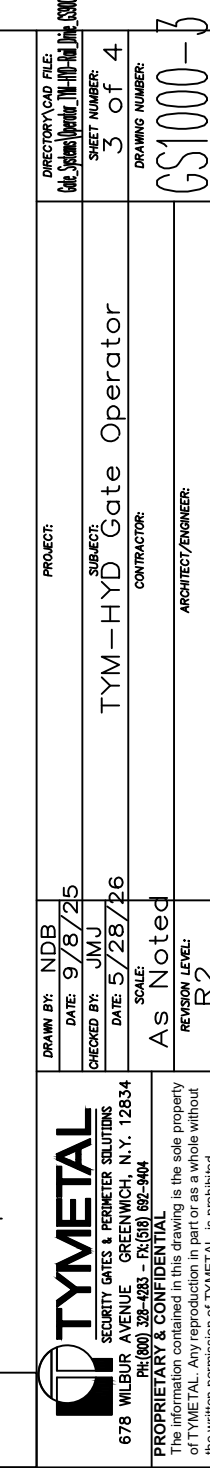
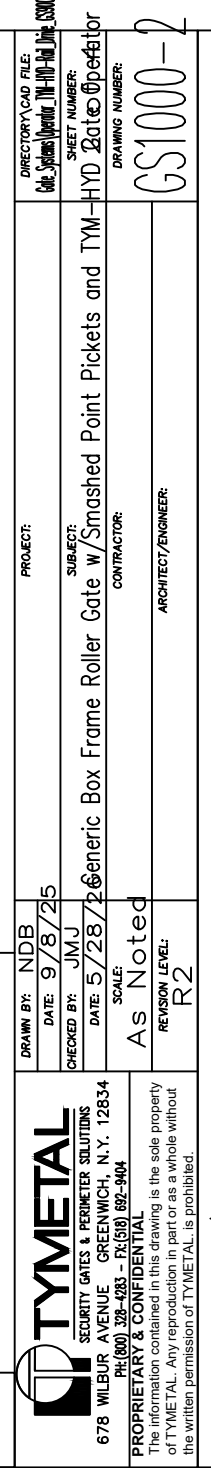
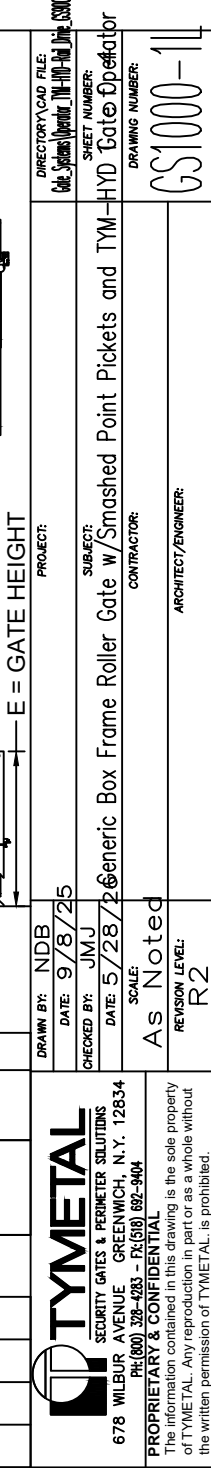


NOT FOR CONSTRUCTION
WORKING DRAWINGS
FOR REVIEW



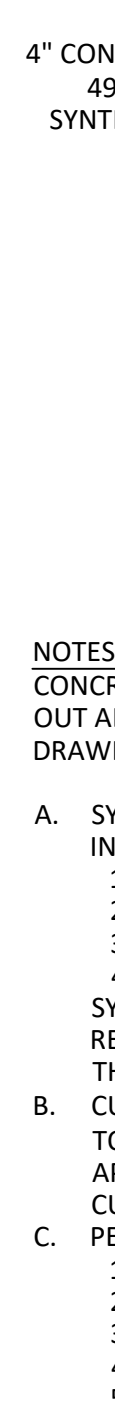
A

A	EMBEDMENT LENGTH	127'-0"	M	NOMINAL GATE HEIGHT	8'-0"
B	CLEAR OPENING	70'-0"		NUMBER OF TROLLIES	6
C	PANEL LENGTH	37'-6"	G	PICKET HEIGHT	6"
D	OVERALL GATE LENGTH	75'-0"	H	PICKET SPACING	3" OC



B

A	EMBEDMENT LENGTH	117'-0"	H	NOMINAL GATE HEIGHT	8'-0"
B	CLEAR OPENING	65'-0"		NUMBER OF TROLLIES	5
C	PANEL LENGTH	35'-0"	G	PICKET HEIGHT	6"
D	OVERALL GATE LENGTH	70'-0"	H	PICKET SPACING	3' OC



NOTES

CONCERNING

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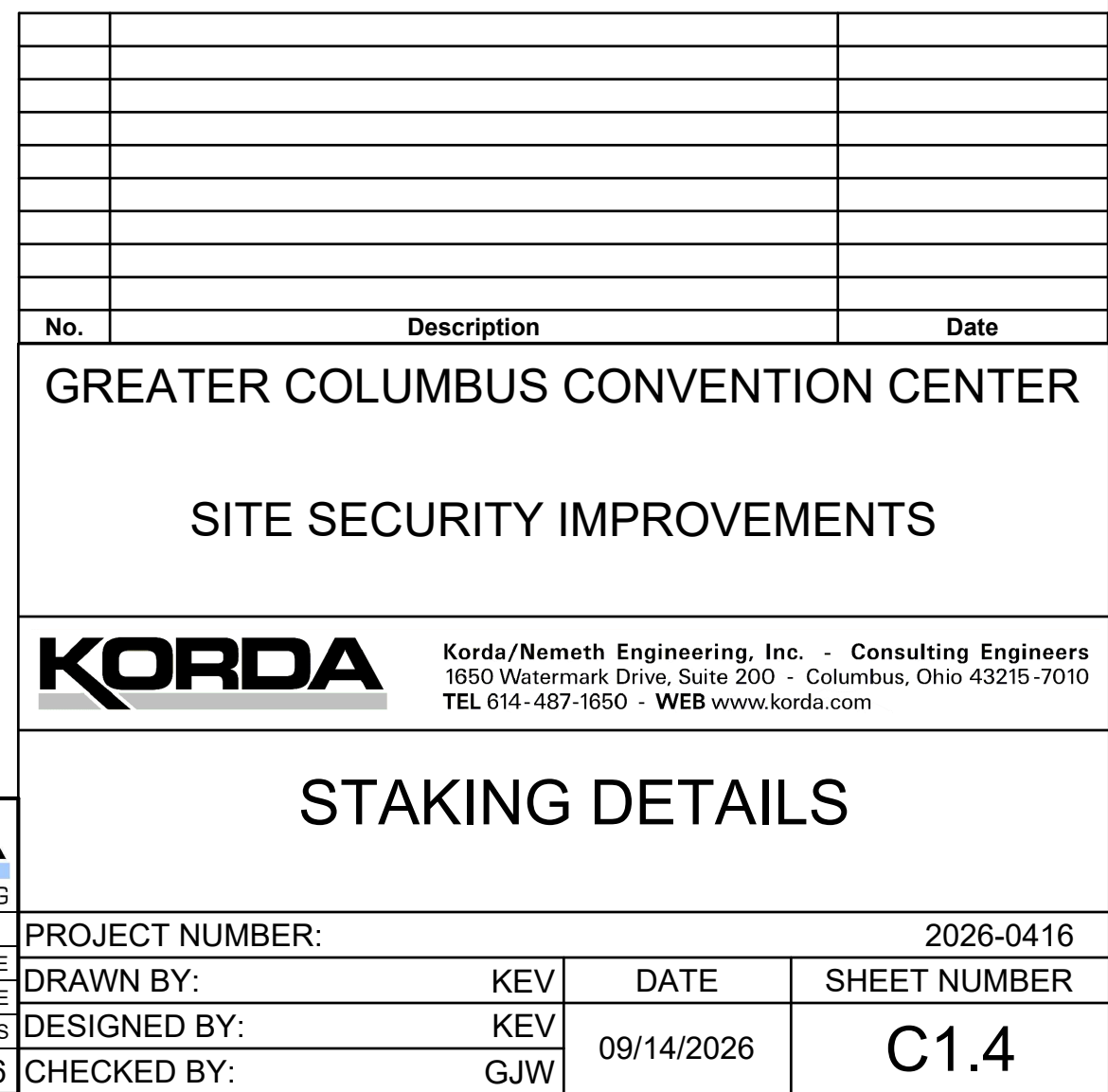
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C

N.T.S.

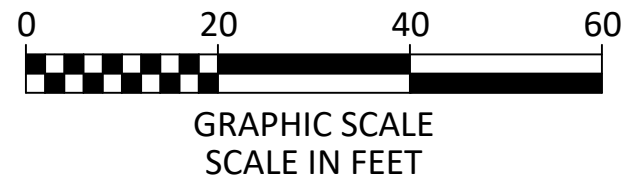
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NTS

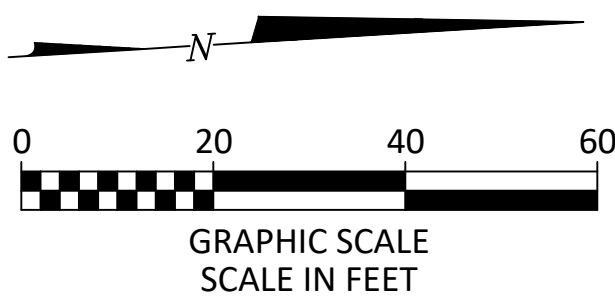
**KORDA**

KORDA / NEMETH ENGINEERING	
WWW.KORDA.COM	
DRAWN BY:	KATIE VATKINS
DESIGNED BY:	KATIE VATKINS
CHECKED BY:	GRAHAM WATKINS
PROJECT NUMBER:	2026-0416

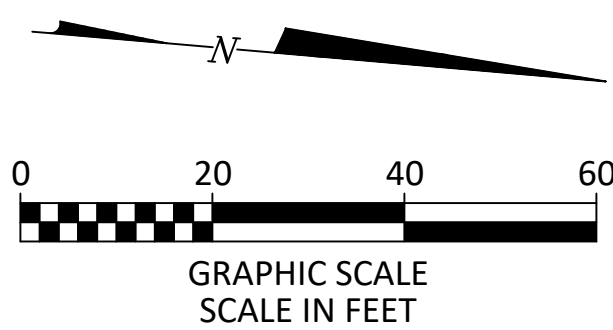
PROJECT NUMBER:		2026-0416	
DRAWN BY:	KEV	DATE	SHEET NUMBER
DESIGNED BY:	KEV	09/14/2026	C1.4
CHECKED BY:	GJW		



1":20"



1":20'



1":20'

GENERAL NOTES:

1. PAVEMENT ELEVATIONS REFER TO FINISHED PAVEMENT ELEVATION AT FACE OF CURB UNLESS OTHERWISE NOTED.
2. ADD 700 TO SPOT ELEVATIONS TO OBTAIN U.S.G.S. ELEVATIONS.
3. CONSTRUCTION WORK WILL NOT BE PERMITTED WITHOUT APPROVED PLANS AND INSPECTION.
4. PERFORM WORK IN CONFORMANCE WITH CITY OF COLUMBUS MATERIAL SPECIFICATIONS AND STANDARD CONSTRUCTION DRAWINGS. THERE SHALL BE NO DISCREPANCY BETWEEN CITY OF COLUMBUS REQUIREMENTS AND PROJECT SPECIFICATIONS, CITY OF COLUMBUS STANDARDS SHALL GOVERN.
5. SOIL EROSION AND SEDIMENTATION BMP MEASURES, PER SHEET C2.2, SHALL BE INSTALLED PRIOR TO START OF ANY CONSTRUCTION AND SHALL BE MAINTAINED UNTIL CONSTRUCTION HAS BEEN COMPLETED, INCLUDING GRASS BEING WELL ESTABLISHED AND/OR PERMANENT EROSION AND SEDIMENTATION BMP MEASURES IN PLACE. BMP MEASURES SHALL BE TO THE SATISFACTION OF THE CITY OF COLUMBUS.
6. CLEANING SHALL BE ON A 3-6 MONTH BASIS. REQUIRE THROUGH THE DURATION OF THIS CONSTRUCTION PROJECT. THIS INCLUDES SWEEPING, POWER CLEANING, AND (IF NECESSARY) MANUAL REMOVAL OF DIRT AND/OR MUD IN THE STREET GUTTERS.
7. REMOVE SEDIMENT FROM DETENTION AREAS, OUTLET STRUCTURES, AND UNDERDRAINS PRIOR TO THE START OF ANY CONSTRUCTION.
8. ANY EXISTING STORM INLETS IMPACTED BY THE NEW CONSTRUCTION ACTIVITY WILL NEED THE APPROPRIATE INLET PROTECTION FOR SEDIMENT CONTROL.
9. DIMENSIONS AND COORDINATES ARE TO FACE OF CURB OR FACE OF BUILDING UNLESS OTHERWISE NOTED.
10. MAXIMUM FINISH SLOPES SHALL BE 4:1 UNLESS OTHERWISE NOTED.
11. COORDINATES AND ELEVATIONS BASED ON SURVEY PERFORMED BY KORDA, DATED 05/28/2026. REFER TO SHEET 151.
12. CONTRACTOR SHALL STRIP AND STOCKPILE EXISTING TOPSOIL THROUGHOUT THE SITE PRIOR TO EXCAVATION. UPON COMPLETION OF FINAL GRADING, PROVIDE 6 INCHES OF TOPSOIL AND SEED AREAS DISTURBED BY CONSTRUCTION, INCLUDING LAYDOWN AREAS AND TRAILER LOCATIONS IF LOCATED OUTSIDE THE GRADING/SEEDING LIMITS.
13. EXPOSED MATERIALS SHALL BE STOCKPILED IN A LOCATION THAT DOES NOT LIE OFF SITE IN ACCORDANCE WITH LOCAL CODES. NO PERMANENT STOCKPILES WILL REMAIN ON SITE. EXISTING VALVES, MANHOLES, AND OTHER APPURTENANCES TO REMAIN LOCATED WITHIN THE WORK LIMITS SHALL BE ADJUSTED TO FINISH GRADE.
14. OUTLET CURB UNDERDRAINS TO ADJACENT EXISTING UNDERDRAINS OR STORM SEWER SYSTEM.
15. EXPOSE UTILITIES NOTED THIS: EXPOSE PRIOR TO BEGINNING WORK ON THAT UTILITY TO DETERMINE EFFECTS ON THE PROPOSED ALIGNMENT AND PROFILE. REPORT ELEVATION DATA TO THE ENGINEER IN ORDER THAT ANY CORRECTIONS TO THE ELEVATION AND LOCATION CAN BE MADE.
16. CONCRETE ADJACENT TO BUILDING SHALL BE SLOPED AWAY FROM BUILDING AT 2.0% UNLESS OTHERWISE NOTED.
17. ROOF DRAINS, FOUNDATION DRAINS, AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER ARE PROHIBITED.

GREATER COLUMBUS CONVENTION CENTER

SITE SECURITY IMPROVEMENTS



NOT FOR CONSTRUCTION	WWW.KORDA.COM		PROJECT NUMBER:		2026-0416
	DRAWN BY: KATIE VATKE		DRAWN BY: KEV		DATE
	DESIGNED BY: KATIE VATKE		DESIGNED BY: KEV		
	CHECKED BY: GRAHAM WATKINS		CHECKED BY: GJW		09/14/2026
WORKING DRAWINGS FOR REVIEW	PROJECT NUMBER: 2026-0416		C2.1		

KORDA
KORDA/NEMETH ENGINEERING

N.T.S.



WATERLINE	
SHEET	SHEET
.....1/2	C3.1
.....2/2	C3.2

THIS PROJECT CONSISTS OF PROVIDING 990 FEET OF ADDITIONAL SITE SECURITY FENCING TO THE GREATER COLUMBUS CONVENTION CENTER LOADING DOCK AREA INCLUDING 3 GATES AND A REPLACED GUARD SHACK. ONE ADDITIONAL FIRE HYDRANT IS TO BE CONSTRUCTED OUTSIDE OF THE FENCE AS WELL AS MOVING 3 WATER VALVES TO ENSURE ACCESS OUTSIDE THE FENCE.

BENCHMARKS

*All coordinates provided are (project) ground coordinates based on State Plane Coordinates Ohio South Zone NAD 83 with 2011 NSRS adjustment (epoch 2010.00) as established by GPS observations using the Ohio Department of Transportation Real-Time Network (ODOT RTN) with GEOID18. Horizontal and vertical units are in U.S. Survey Feet.

Elevations are based on NAVD 88 utilizing The Ohio Department of Transportation Ohio Real time Network (ODOT RTN) with GEOID18. Source Benchmark is Franklin County Survey Control designation N308 with an elevation of 752.910 (NAVD 88). Source Benchmark was verified by GPS methods. Horizontal and vertical units are in U.S. Survey Feet.

1. THE CITY OF COLUMBUS CONSTRUCTION AND MATERIALS SPECIFICATIONS (CMSC), INCLUDING ALL REVISIONS, SUPPLEMENTS AND STANDARD DRAWINGS, SHALL BE THE LATEST VERSION PUBLISHED AT THE TIME OF SIGNATURE BY THE DIRECTOR OF PUBLIC SERVICE AND SHALL GOVERN ALL ITEMS THAT ARE A PART OF THIS PLAN UNLESS NOTED OR DATED OTHERWISE.

1. THE CITY OF COLUMBUS CONSTRUCTION AND MATERIALS SPECIFICATIONS (CMSC), INCLUDING ALL REVISIONS, SUPPLEMENTS AND STANDARD DRAWINGS, SHALL BE THE LATEST VERSION PUBLISHED AT THE TIME OF BIDDING. THE CMSC SHALL BE USED TO THE EXTENT THAT IT APPLIES TO THE PROJECT AND TO THE PART OF THE PROJECT UNLESS NOTED OTHERWISE.
2. ALL WATER MAIN MATERIALS AND INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE CURRENT RULES AND REGULATIONS OF THE CITY OF COLUMBUS, DIVISION OF WATER. ALL CITY OF COLUMBUS, DIVISION OF WATER STANDARD DRAWINGS SHALL APPLY TO THE PROJECT, UNLESS OTHERWISE NOTED.
3. FOR ANY EMERGENCIES INVOLVING THE WATER DISTRIBUTION SYSTEM, PLEASE CONTACT THE DIVISION OF WATER DISTRIBUTION MAINTENANCE OFFICE AT 614-645-7788.
4. ALL BRASS FITTINGS ASSOCIATED WITH WATER WORK, INCLUDING REPAIRS TO THE EXISTING SYSTEM, SHALL CONFORM TO THE REVISIONS ALLOWED LEAK EXTRACTION LIMIT PER THE UPDATED NSF/61 STANDARD. THE DIVISION OF WATER'S APPROVED MATERIALS LIST HAS BEEN UPDATED TO REFLECT THIS REQUIREMENT.
5. IT SHALL BE UNLAWFUL FOR ANY PERSON TO PERFORM ANY WORK ON CITY OF COLUMBUS WATER MAIN SYSTEMS WITHOUT FIRST SECURING LICENSE TO ENGAGE IN SUCH WORK, AS INDICATED IN THE CITY OF COLUMBUS WATER MAIN SYSTEMS WORKING CONDITIONS AND REGULATIONS IN ANY CITY SERVICE PERMITS OR APPOINTMENTS INCLUDING WATER MAIN REPAIRS, REPLACEMENTS, REPAIRS TO EXISTING WATER MAINS, AND WATER MAIN CONSTRUCTION. ANY VIOLATION OF THESE REQUIREMENTS MAY BE SUBJECT TO A FINE OF \$500 PER VIOLATION PER SERVICE LINE AND TAP(S). THIS REQUIREMENT MAY BE MET BY UTILIZATION OF A SUBCONTRACTOR WHO HOLDS A CITY OF COLUMBUS WATER CONTRACTOR LICENSE OR A COMBINED WATER/SEWER CONTRACTOR TO PERFORM THIS WORK. UTILIZATION OF A SUBCONTRACTOR MUST MEET THE LICENSING REQUIREMENTS OF CITY OF COLUMBUS BUILDING CODE, IN PARTICULAR SECTION 4114.119 AND 4114.529.
6. NO PERSON SHALL BEGIN CONSTRUCTION OR INSTALLATION OF A PUBLIC WATER MAIN UNTIL PLANS HAVE BEEN APPROVED BY THE STATE OF OHIO ENVIRONMENTAL PROTECTION AGENCY (DEPA).

7. THE CONTRACTOR SHALL OBTAIN THE PROPER HYDRANT PERMITS¹, AND PAY ANY APPLICABLE FEES, FOR ANY APPROVED HYDRANT USAGE DEEMED NECESSARY FOR WORK UNDER THIS IMPROVEMENT PERMIT. PERMITS MAY BE OBTAINED THROUGH THE DIVISION OF WATER RESOURCES (614-546-7300). CONTRACTOR SHALL ADHERE TO ALL RULES & REGULATIONS GOVERNING SAID PERMIT AND MUST HAVE THE ORIGINAL PERMIT ON SITE ANYTIME IN WHICH THE HYDRANT IS IN USE. PERMITS MAY BE OBTAINED BY ACCESSING [HTTP://PORTAL.COLUMBUS.GOV/PERMITS/](http://portal.columbus.gov/permits/). COST TO BE INCLUDED IN THE VARIOUS BID ITEMS.

- NO WATER SERVICE CONNECTION PERMITS SHALL BE ISSUED OR CONNECTIONS MADE TO ANY WATER TAPS UNTIL WATER MAINS HAVE BEEN DISINFECTIONED BY THE CITY OF COLUMBIUS, DIVISION OF WATER.
9. ALL FIRE HYDRANTS TO BE INSTALLED IN THE CITY OF COLUMBIUS SHALL BE PAINTED WITH THE COLOR "SAFETY ORANGE". THE FIRE HYDRANTS SHALL BE PROVIDED WITH TWO COATS IN A GLOSS ENAMEL OF THE "SAFETY ORANGE" COLOR FOR THE ENTIRE HYDRANT. THE TOPS OF THE FIRE HYDRANTS ARE NO LONGER REQUIRED TO BE PAINTED BLACK. AFTER INSTALLATION OF FIRE HYDRANTS, THE NEW OR RELOCATED FIRE HYDRANTS TO CLEARLY IDENTIFY THEM AS INACTIVE. THE FACTORY APPLIED HYDRANT PAINTS WILL NOT BE ACCEPTED UNTIL ANY PAINT DAMAGE FROM SHIPPING OR INSTALLATION HAS BEEN REPAIRED. USE HYDRANT TOUCH UP PAINT IN ACCORDANCE WITH THE APPROVED MATERIALS LIST.
10. ALL FIRE HYDRANTS, WHETHER NEW OR RELOCATED, SHALL BE INSPECTED AND APPROVED BY THE DIVISION OF FIRE PRIOR TO BEING PUT INTO SERVICE. THE CONTRACTOR SHALL CONTACT THE DIVISION OF FIRE AT 614-645-8672 TO SCHEDULE THE INSPECTION OF THE NEW OR RELOCATED FIRE HYDRANTS. THE CITY WILL PROVIDE THE CONTRACTOR "OUT OF SERVICE" RINGS THAT SHALL BE PLACED ON A NEW OR RELOCATED FIRE HYDRANT TO CLEARLY IDENTIFY THEM AS INACTIVE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION, STORAGE, AND RETURN OF THE "OUT OF SERVICE" RINGS. IF DAMAGE HAS OCCURRED, THE CONTRACTOR SHALL REMOVE THE "OUT OF SERVICE" RINGS FROM THE FIRE HYDRANTS. ALL "OUT OF SERVICE" RINGS SHALL BE RETURNED TO THE CITY. ALL COORDINATION AND WORK REQUIRED TO EXIST AND ACCEPT THE FIRE HYDRANT SHALL BE INCLUDED IN THE PRICE BID ITEM 809.
11. MAINTAIN EIGHTEEN (18) INCHES VERTICAL AND TEN (10) FEET HORIZONTAL SEPARATION BETWEEN ANY SANITARY OR STORM SEWER PIPING AND ALL PROPOSED WATER MAINS.
12. WHEN CROSSING THE EXISTING WATER MAIN, AND LOW STRENGTH MATERIAL (ITEM 613) IS TO BE USED AS BACKFILL, THE CONTRACTOR SHALL PROVIDE SIZE NO. 57 CRUSHED CARBONATE STONE (CCS); FOOT BELOW TO 1 FOOT ABOVE THE EXISTING WATER MAIN.
13. IF DURING EXCAVATION, THE POLYETHYLENE ENCASEMENT ON THE EXISTING WATER MAIN BECOMES DAMAGED, THE CONTRACTOR SHALL REMOVE THE POLYETHYLENE ENCASEMENT PER MANUFACTURER'S SPECIFICATIONS AND FOLLOW STANDARD DRAWINGS L-1003 AND L-1004. AT THEIR OWN EXPENSE, ENSURE THAT THE ENTIRE EXPOSED AREA IS COVERED WITH NEW POLYETHYLENE ENCASEMENT AND SECURELY TAPPED, PRIOR TO BACKFILLING.
14. CONTRACTOR SHALL ADHERE TO THE REQUIREMENTS OF THE OHIO ADMINISTRATIVE CODE CHAPTER 3745-83-02 WATER DISRUPTION OF SERVICE RULE. EXCAVATE PITS SUFFICIENTLY BELOW THE AREA TO BE CONNECTED TO IN ORDER TO MAINTAIN WATER LEVELS BELOW THE WATER MAIN. IF WATER FROM THE PIT ENTERS THE EXISTING MAIN, CONTACT DIVISION OF WATER IMMEDIATELY. ENSURE ALL EXCAVATION IS TO BE SIZED TO ACCOMMODATE THE WATER MAIN AND TO REMOVAL OF ALL WATER.
15. "ITEM SPECIAL - SURVEY COORDINATES" SHALL INCLUDE ALL MATERIAL, EQUIPMENT, AND LABOR NECESSARY TO OBTAIN HORIZONTAL AND VERTICAL (NORTHING, EASTING, AND CENTERING OF PIPE ELEVATION) SURVEY COORDINATES FOR THE WATER MAIN IMPROVEMENTS. THE SURVEY COORDINATES SHALL BE OBTAINED FOR THE COMPLETED WATER MAIN CONSTRUCTION AND SHALL INCLUDE A VALVES, TEES, CROSSES, BENDS, HORIZONTAL DEFLECTIONS, PLUGS, REDUCERS, TAPPING SLEEVES, FIRE HYDRANTS, AIR RELEASES, CURB STOPS, TRACER WIRE BODIES, AND CASING PIPE TERMINI. THE SURVEY COORDINATES ARE REQUIRED ON THE WATER MAIN EVERY 200 FEET, WITHOUT ANY FITTING OR OTHER WATER MAIN STRUCTURE BEING INSTALLED WITHIN THAT LENGTH OF THE IMPROVEMENT.

ALL SURVEY COORDINATES SHALL BE REFERENCED TO THE APPLICABLE COUNTY ENGINEER'S MONUMENTS, AND SHALL BE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD 83) (THE NRS2011) ADJUSTMENT, WITH FURTHER REFERENCE MADE TO THE OHIO STATE PLANE SOUTH COORDINATE SYSTEM (GRID), SOUTH ZONE, WITH ELEVATIONS BASED ON NAVD 88 DATUM. ALL COORDINATES (NORTHING, EASTING, AND CENTERLINE OF PIPE ELEVATION) SHALL BE REFERENCED TO THE NEAREST HUNDREDTH (N XXXXXXX.X, E XXXXXXX.X, C/E XXXXX.X). ALL SURVEY COORDINATES SHALL BE ACCURATE TO WITHIN 1/10 OF PIPE HORIZONTAL AND A TENTH OF A FOOT (0.10) OR LESS VERTICAL.

THE COORDINATES SHALL BE DOCUMENTED TO THE ENGINEER IN DIGITAL SPREADSHEET FORM AND SHALL INCLUDE THE APPLICABLE ITEM, STATION, NORTHING, EASTING, AND CENTERLINE OF PIPE ELEVATION. COORDINATES SHALL BE SUBMITTED TO THE ENGINEER ON A BI-WEEKLY BASIS. COORDINATES SHALL ALSO BE REQUIRED TO BE SUBMITTED TO THE DIVISION OF WATER AS PART OF THE REQUEST FOR CHLORINATION.

LUMP SUM PAYMENT IS FULL COMPENSATION FOR ALL WORK INVOLVED IN OBTAINING AND DOCUMENTING THE SURVEY COORDINATES AS DESCRIBED IN THIS SPECIFICATION

CITY OF COLUMBUS, OHIO

DEPARTMENT OF PUBLIC UTILITIES

DIVISION OF WATER

TITLE SHEET

GREATER COLUMBUS CONVENTION CENTER SECURITY IMPROVEMENTS



—

2

THE CITY OF COLUMBUS CONSTRUCTION AND MATERIAL SPECIFICATIONS (CMSC), 2018 EDITION AND REVISIONS, INCLUDING SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

SIGNATURES BELOW SIGNIFY ONLY CONCURRENCE WITH THE
GENERAL PURPOSE AND GENERAL LOCATION OF THE PROJECT. ALL
TECHNICAL DETAILS REMAIN THE RESPONSIBILITY OF THE ENGINEER
PREPARING THE PLANS.

FIRE PREVENTION BUREAU, DIVISION OF FIRE

FIRE PREVENTION BUREAU, DIVISION OF FIRE

ADMINISTRATOR, DIVISION OF POWER

ADMINISTRATOR, DIVISION OF WATER RECLAMATION

ADMINISTRATOR, DIVISION OF WATER

CITY ENGINEER/ADMINISTRATOR, DIVISION OF DESIGN AND CONSTRUCTION

FOR WATER MAIN ONLY PLANS:

1. PERMITS: WHEN EXCAVATING WITHIN COLUMBUS PUBLIC RIGHT OF WAY LIMITS, THE CONTRACTOR SHALL OBTAIN AN EXCAVATION PERMIT FROM CITY OF COLUMBUS, DEPARTMENT OF PUBLIC SERVICE - PERMIT OFFICE; PHONE: (614) 645-7497; FAX: (614) 645-1876; EMAIL: COLSPERMITS@COLUMBUS.GOV

FOR WATER MAIN ONLY PLANS

1. PERMITS: WHEN EXCAVATING WITHIN COLUMBUS PUBLIC RIGHT OF WAY LIMITS, THE CONTRACTOR SHALL OBTAIN AN EXCAVATION PERMIT FROM CITY OF COLUMBUS, DEPARTMENT OF PUBLIC SERVICE - PERMIT OFFICE; PHONE: (614) 645-7497; FAX: (614) 645-1876; EMAIL: COLSPERMITS@COLUMBUS.GOV
2. THE DEVELOPER SHALL ENTER INTO AN AGREEMENT WITH THE CITY OF COLUMBUS, DIVISION OF WATER IN ACCORDANCE WITH SECTION 105.15 OF THE COLUMBUS CITY CODE PRIOR TO CONSTRUCTING ANY WATER MAINS.
3. THE DEVELOPER SHALL DEPOSIT WITH THE CITY OF COLUMBUS THE TOTAL ESTIMATED COST FOR CONSTRUCTION INSPECTION PRIOR TO ANY CONSTRUCTION OPERATION. CONTACT THE DPU PERMIT OFFICE AT (614) 645-7330 TO PAY STANDBY INSPECTION FEES. A COMPLETED WATER AGREEMENT FORM WILL ALSO NEED SUBMITTED TO THE DPU PERMIT OFFICE AT THAT TIME.
4. THE CITY OF COLUMBUS INSPECTION WILL BE PERFORMED BY THE DEPARTMENT OF PUBLIC SERVICE (DPS). CONTACT DPS AT (614) 645-0433 FOR ADDITIONAL INFORMATION.
5. PUBLIC TREE PRESERVATION AND PUBLIC TREE PROTECTION NOTES: CONSULTANT SHALL USE THE LATEST VERSION OF THE CRPD STANDARD NOTES FOR CONSTRUCTION, FOUND AT [HTTPS://COLUMBUSRECPARKS.COM/CONNECT/BUSINESS-RESOURCES/](https://columbusrecparks.com/connect/business-resources/)
6. THERE WILL BE NO COST PARTICIPATION BY THE CITY OF COLUMBUS, DIVISION OF WATER FOR THE INSTALLATION OF THE FIRE HYDRANT ON CONVENTION CENTER WAY.
7. SINCE NOT ALL TAPS ARE BEING PROVIDED ON THIS PROJECT WITH THE INSTALLATION OF THE NEW WATER MAIN, IT WILL BE THE DEVELOPER'S RESPONSIBILITY TO PROVIDE TAPS, WHEN NECESSARY, AT NO COST TO THE CITY OF COLUMBUS. NO TAPS SHALL BE INSTALLED UNTIL THE NECESSARY PERMITS ARE OBTAINED.

No.	Description	Date

GREATER COLUMBUS CONVENTION CENTER

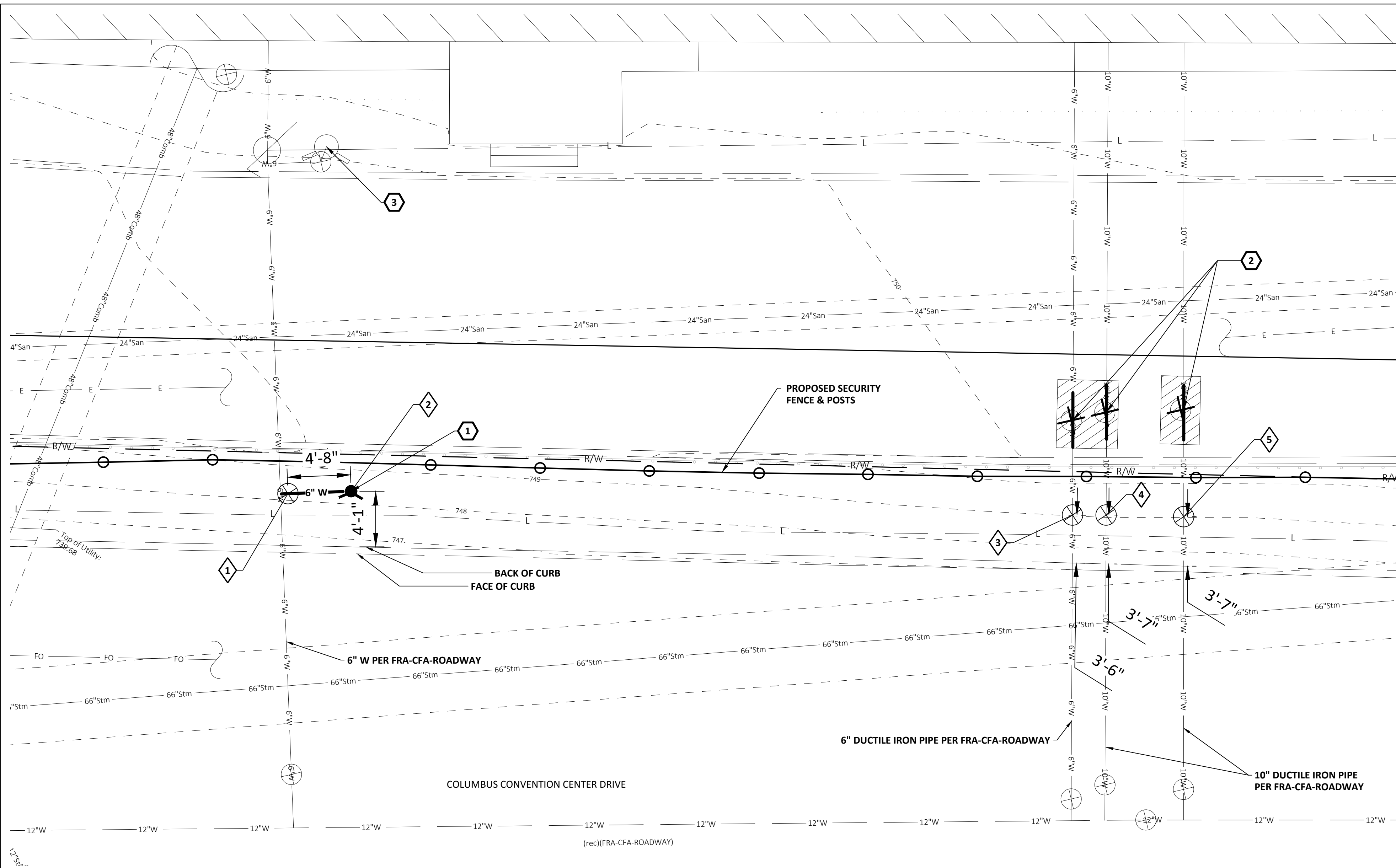
SITE SECURITY IMPROVEMENTS



WATERLINE - TITLE
SHEET



NOT FOR CONSTRUCTION	WWW.KORDA.COM		PROJECT NUMBER:		2026-0416
	DRAWN BY: KATIE VATKE		DRAWN BY: KEV		DATE
	DESIGNED BY: KATIE VATKE		DESIGNED BY: KEV		SHEET NUMBER
	CHECKED BY: GRAHAM WATKINS		CHECKED BY: GJW		09/14/2026
WORKING DRAWINGS FOR REVIEW	PROJECT NUMBER: 2026-0416		C3.1		



COLUMBUS PARKS AND RECREATION GENERAL NOTES

PUBLIC TREE IMPACT NOTE

ANY WORK ON OR WITHIN THE CRITICAL ROOT ZONE OF A PUBLIC TREE IS CONSIDERED AN IMPACT TO THE PUBLIC TREE. A PUBLIC TREE PLAN AND PERMIT FROM COLUMBUS RECREATION & PARKS FORESTRY IS REQUIRED FOR ANY PLAN WITH PUBLIC TREES IN THE WORK LIMITS. THE PUBLIC TREE PLAN SHALL DENOTE ALL PUBLIC TREES IN THE PROJECT'S WORK LIMITS. TREE INFORMATION SHALL CONFORM TO THE COLUMBUS TREE TECHNICAL MANUAL. REQUIREMENTS AND BE PROVIDED BY A NATURAL RESOURCE PROFESSIONAL. FAILURE TO CONTACT THE CITY FORESTRY REPRESENTATIVE IN ADVANCE OF CONSTRUCTION WILL RESULT IN THE CONTRACTOR REIMBURSING FORESTRY FOR THE COST OF ANY AND ALL DAMAGE TO PUBLIC TREES.

PUBLIC TREE PROTECTION NOTE

ALL PUBLIC TREES AND THE GROUND IN THE CRITICAL ROOT ZONE, WHETHER SHOWN OR NOT SHOWN ON THE PLANS, ARE TO BE PROTECTED UNLESS A PERMIT TO REMOVE IS GIVEN BY COLUMBUS RECREATION & PARKS (CRPD) FORESTRY. THE CONTRACTOR SHALL PROTECT TREES NEAR OR ADJACENT TO THE WORK AREA TO AVOID DAMAGE TO ALL TREES THAT ARE TO REMAIN. HEAVY EQUIPMENT WILL NOT BE ALLOWED TO COMPACT THE SOIL OVER THE CRITICAL ROOT ZONE OF EXISTING PUBLIC TREES. RESTRICTED EQUIPMENT ACCESS ROUTES SHALL BE COORDINATED WITH CRPD FORESTRY AT FORESTRY@COLUMBUS.GOV BEFORE WORK BEGINS. TEMPORARY PAVING MATERIALS, SUCH AS PLYWOOD, LUMBER OR RUBBER MATTING, SPREAD OVER THE ROOT ZONE OF PUBLIC TREES MAY BE REQUIRED TO PREVENT COMPACTION. CONSTRUCTION MATERIALS, EXCAVATION DEBRIS, FUEL, EQUIPMENT, OR VEHICLES ARE NOT TO BE STOCKPILED, STORED, DUMPED, OR PARKED WITHIN THE CRITICAL ROOT ZONE OF PUBLIC TREES. ALL TREES MUST BE PROTECTED AGAINST INJURY OR DAMAGE TO BRANCHES, TRUNKS, OR ROOTS FROM CONSTRUCTION AND EXCAVATION, AS DESCRIBED IN THE CRPD TREE TECHNICAL MANUAL. IF THERE IS A QUESTION REGARDING TREE PROTECTION NEEDS, THE CONTRACTOR MUST CONTACT THE CITY FORESTRY SECTION AT FORESTRY@COLUMBUS.GOV.

FORESTRY PERMIT NOTE

ANY WORK ON OR WITHIN THE CRITICAL ROOT ZONE OF A PUBLIC TREE REQUIRES A FORESTRY PERMIT. ALL APPLICABLE FEES MUST BE PAID PRIOR TO PERMIT ISSUANCE. REFER TO THE CRPD TREE TECHNICAL MANUAL FOR TREE REMOVAL, PRUNING, PROTECTION, AND MITIGATION STANDARDS.

OAK WILT NOTE

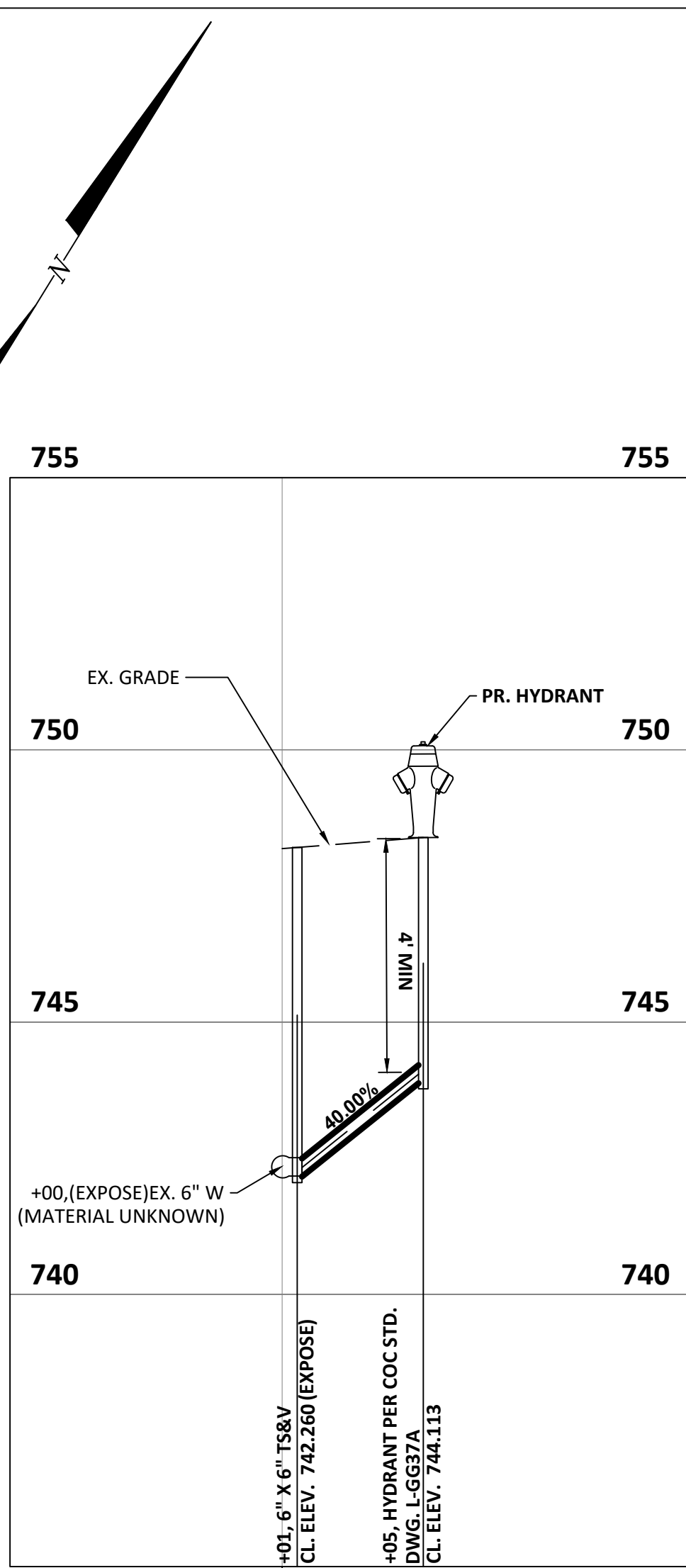
TO PREVENT THE SPREAD OF OAK WILT, A FUNGAL DISEASE, OAK TREES SHALL ONLY BE PRUNED FROM NOVEMBER 1 TO MARCH 1.

THE DIVISION OF POWER

THE DIVISION OF POWER (DOP) MAY HAVE OVERHEAD AND UNDERGROUND PRIMARY, SECONDARY, AND STREET LIGHTING AT THIS WORK LOCATION. THE CONTRACTOR IS HEREBY REQUIRED TO CONTACT OUPS AT 811 OR 1-800-362-2764 FORTY- EIGHT HOURS PRIOR TO CONDUCTING ANY ACTIVITY WITHIN THE CONSTRUCTION AREA.

ANY REQUIRED RELOCATION, SUPPORT, PROTECTION, OR ANY OTHER ACTIVITY CONCERNED WITH THE CITY'S ELECTRICAL FACILITIES IN THE CONSTRUCTION AREA IS TO BE PERFORMED BY THE CONTRACTOR UNDER THE DIRECTION OF DOP PERSONNEL AND AT THE EXPENSE OF THE PROJECT. DOP SHALL MAKE ALL FINAL CONNECTIONS TO DOP'S EXISTING ELECTRICAL SYSTEM AT THE EXPENSE OF THE PROJECT. THE CONTRACTOR SHALL USE MATERIAL AND MAKE REPAIRS TO A CITY OF COLUMBUS STREET LIGHTING SYSTEM BY FOLLOWING DOP'S "MATERIAL AND INSTALLATION SPECIFICATIONS" (MIS) AND THE CITY OF COLUMBUS "CONSTRUCTION AND MATERIAL SPECIFICATIONS" (CMSC). ANY NEW OR RE-INSTALLED UNDERGROUND STREETLIGHT SYSTEM SHALL REQUIRE TESTING AS REFERRED TO IN SECTION 1000.18 OF THE CMSC MANUAL. THE CONTRACTOR SHALL CONFORM TO DOP'S EXISTING STREET LIGHT LOCKOUT/TAGOUT (LOTO) PROCEDURE, MIS-1, COPIES OF WHICH ARE AVAILABLE FROM DOP.

IF ANY ELECTRIC FACILITY BELONGING TO DOP IS DAMAGED IN ANY MANNER BY THE CONTRACTOR, ITS AGENTS, SERVANTS, OR EMPLOYEES, AND REQUIRES EMERGENCY REPAIRS, THE DOP DISPATCH OFFICE SHOULD BE CONTACTED IMMEDIATELY AT (614) 645-7627. DOP SHALL MAKE ALL NECESSARY REPAIRS, AND THE EXPENSE OF SUCH REPAIRS AND OTHER RELATED COSTS SHALL BE PAID BY THE CONTRACTOR TO THE DIVISION OF POWER, CITY OF COLUMBUS, OHIO.



ADDITIONAL HYDRANT PROFILE
SCALE: 1"=5' HORIZ. 1"=5' VERT.

LEGEND

EXISTING

- WATER LINE
- VALVE
- FIRE HYDRANT
- UNDERGROUND LIGHTING CIRCUIT
- STORM SEWER
- SANITARY SEWER
- CONTOUR LINE
- GUARD RAIL

PROPOSED

- WATER LINE
- FIRE HYDRANT
- GATE VALVE & CURB BOX
- REMOVE EXISTING VALVE AND REPLACE WITH DUCTILE IRON PIPE
- PAVEMENT REPLACEMENT PER STD. DWG. 1441

GENERAL NOTES:

- WHERE PLANS PROVIDE FOR A PROPOSED UTILITY TO BE CONNECTED TO, OR CROSS OVER, OR UNDER AN EXISTING UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES, BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED UTILITY. THESE LOCATIONS ARE NOTED THUS: EXPOSE. IF IT IS DETERMINED THAT THE ELEVATION OF THE EXPOSED UTILITY DIFFERS FROM THE PLAN ELEVATION, RESULTS IN A CHANGE IN THE PLAN SEWER SLOPE, OR WILL INTERSECT AN EXISTING UTILITY AS SHOWN ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED UTILITY WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

CODED NOTES:

- FIRE HYDRANT TYPE A PER COC STD. DWG. L-6637A
- REMOVE VALVE AND REINSTALL PIPE.
- PROTECT EXISTING FIRE HYDRANT TO REMAIN.

ESTIMATE OF QUANTITIES

These quantities have been provided only as an estimate to the scope of the work for inspection purposes only. The Contractor is solely responsible to evaluate the complete project as detailed in the notes, plans, and specifications and procedures necessary for the completion of the plan improvements and submit his total project cost accordingly. Deviation between the plans and the quantities shall not be cause for additional compensation. Submission of bid means acceptance of entire project, whether or not described in the table below.

ITEM	QUANTITY	UNIT	DESCRIPTION
801	10	LF	6 INCH PIPE AND FITTINGS
801	8	LF	10 INCH PIPE AND FITTINGS
802	1	EA	6 INCH VALVE & APPURTENANCES
802	2	EA	10 INCH VALVE & APPURTENANCES
803	1	EA	6" X 6" TAPPING SLEEVE & VALVE & APPURTENANCES
809	1	EA	FIRE HYDRANT
SPEC	1	LUMP	SURVEY COORDINATES
SPEC	3	EA	VALVE DEMOLITION

WATER SERVICE COORDINATES

NO.	TYPE	NORTHING	EASTING	NORTHING AS-BUILT	EASTING AS-BUILT	CENTERLINE ELEVATION
1	6" x 6" TAPPING SLEEVE & VALVE	718334.35	1828152.48			
2	PROPOSED FIRE HYDRANT	718336.95	1828156.32			
3	6" VALVE	718363.36	1828202.11			
4	10" VALVE	718364.66	1828204.21			
5	10" VALVE	718367.56	1828209.10			



EASEMENT REFERENCE		REVISIONS		
COUNTY RECORDER INSTRUMENT NUMBER	DATE RECORDED	NO.	DESCRIPTION	APPROVAL/DATE

KORDA KORDA NEMETH ENGINEERING
1850 Watermark Drive, Suite 200 • Columbus, Ohio 43216-7010
TEL 614-487-1650 • FAX 614-487-1651 • WEB www.korda.com

CITY OF COLUMBUS, OHIO
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF WATER

PLAN & PROFILE
GREATER COLUMBUS CONVENTION CENTER SECURITY IMPROVEMENTS



XX-XXX

2
2

No.	Description	Date
GREATER COLUMBUS CONVENTION CENTER		
SITE SECURITY IMPROVEMENTS		
KORDA Korda/Nemeth Engineering, Inc. - Consulting Engineers 1850 Watermark Drive, Suite 200 • Columbus, Ohio 43216-7010 TEL 614-487-1650 • WEB www.korda.com		
WATERLINE - PLAN & PROFILE		
PROJECT NUMBER: 2026-0416		
DRAWN BY: KATIE VATKE	KEV	DATE
DESIGNED BY: KATIE VATKE	KEV	SHEET NUMBER
CHECKED BY: GRAHAM WATKINS	KEV	09/14/2026
PROJECT NUMBER: 2026-0416	GJW	C3.2



NOT FOR CONSTRUCTION
WORKING DRAWINGS
FOR REVIEW

CHECKED BY: GRAHAM WATKINS
PROJECT NUMBER: 2026-0416

SYMBOL		DESCRIPTION		NOTING HEIGHT UNLESS NOTED OTHERWISE	
	LUMINAIRE: TYPE "R1": SEE LUMINAIRE SCHEDULE				---
	ARCHITECTURAL SPECIALTY LUMINAIRE: TYPE "R1": SEE LUMINAIRE SCHEDULE				---
	EMERGENCY EGRESS LUMINAIRE: ON EMERGENCY BRANCH CIRCUIT OR WITH INTEGRAL BATTERY PACK				---
	CEILING OR WALL MOUNTED LUMINAIRE TYPE "R2", "W2": SEE LUMINAIRE SCHEDULE				SEE DRAWINGS
	EXIT SIGN FIXTURE (WITH DIRECTIONAL ARROWS AS SHOWN) (TYPE AND MOUNTING AS NOTED, SEE LUMINAIRE SCHEDULE) SHADED AREA DENOTES FACE				94"
	EMERGENCY LIGHTING ASSEMBLY (TYPE AND MOUNTING AS NOTED, SEE LUMINAIRE SCHEDULE)				94"
	SITE LUMINAIRE (TYPE AND MOUNTING AS NOTED; SEE LUMINAIRE SCHEDULE)				---
	LINE VOLTAGE SWITCH 0 - OCCUPANCY SENSOR SWITCH 2 - 2POLE 3 - 3-WAY 4 - 4-WAY D - DIMMER D3 - 3 WAY DIMMER K - KEY OPERATED M - MOMENTARY CONTACT SWITCH P - SWITCH WITH PILOT LIGHT TM - SWITCH WITH TIMER VS - VACANCY SENSOR SWITCH LT - LOW TEMPERATURE OPERATION - 4°F.				46"
	LOW VOLTAGE VACANCY SENSOR, CEILING MOUNTED				CEILING
	LOW VOLTAGE OCCUPANCY SENSOR, CEILING MOUNTED				CEILING
	LOW VOLTAGE SWITCH, 1 ZONE, 2 BUTTON, ON AND OFF				46"
	LOW VOLTAGE SWITCH AS INDICATED 2 - 2 ZONE, 4 BUTTON, ON AND OFF SC - 4 BUTTON SCENE SELECTOR				46"
	LOW VOLTAGE DIMMER, 1 ZONE, 4 BUTTON, ON, OFF, RAISE, LOWER				46"
	LOW VOLTAGE DIMMER SWITCH AS INDICATED 2 - 2 ZONE, 4 BUTTON, ON/OFF, RAISE, LOWER G - GRAPHIC USER INTERFACE SC - 4 BUTTON SCENE SELECTOR				46"

		MOUNTING HEIGHT UNLESS NOTED OTHERWISE	
<u>SYMBOL</u>	<u>DESCRIPTION</u>		
	COMBINATION FIRE ALARM AUDIBLE AND VISUAL DEVICE	LENS LOCATED WITHIN 80" TO 96"	
	FIRE ALARM VISUAL DEVICE	LENS LOCATED WITHIN 80" TO 96"	
	FIRE ALARM AUDIBLE DEVICE	≥ 80" TO TOP OF DEVICE ≥ 6" FROM CEILING TO TOP OF DEVICE	
	CEILING MOUNTED COMBINATION FIRE ALARM AUDIBLE AND VISUAL DEVICE	CEILING	
	CEILING MOUNTED FIRE ALARM VISUAL DEVICE	CEILING	
	CEILING MOUNTED FIRE ALARM AUDIBLE DEVICE	48"	
	FIRE ALARM MANUAL PULL STATION, K. KEY OPERATED TYPE	CEILING	
	FIRE ALARM MAGNETIC DOOR HOLDER	72"	
	FIRE ALARM FLOW SWITCH (BY DIVISION 22)	----	
	FIRE ALARM TAMPER SWITCH (BY DIVISION 22)	----	
	CEILING MOUNTED FIRE ALARM SMOKE DETECTOR; HEAT DETECTOR	----	

SYMBOL	DESCRIPTION	MOUNTING HEIGHT UNLESS NOTED OTHERWISE
	SIMPLEX RECEPTACLE: DUPLEX RECEPTACLE: QUADRUPLUX (DOUBLE DUPLEX) RECEPTACLE	18"
	DUPLEX RECEPTACLE: QUADRUPLUX RECEPTACLE	48"
	GROUND FAULT INTERRUPTER	---
	DUPLEX RECEPTACLE, WITH TWO USB PORTS	18"
	RECEPTACLE FOR EQUIPMENT AS INDICATED	---
C -	CLOCK	---
CF -	COPY/FAK MACHINE	18"
DH -	DOOR HARDWARE	---
E -	CGFI RECEPTACLE FOR MECHANICAL EQUIPMENT PER NEC 210.63 (A)	---
M -	MONITOR	COORD HT
MT -	MICROWAVE	COORD HT
TV -	TELEVISION OUTLET MOUNTED IN AV BOX	SEE TECH
	WEATHERPROOF CGFI DEVICE WITH WEATHERPROOF IN-USE COVER	24"
	JUNCTION BOX, CEILING OR WALL MOUNTED	SEE DRAWINGS
	JUNCTION BOX FOR EQUIPMENT AS INDICATED	---
DH -	DOOR HARDWARE	---
DW -	DISHWASHER	18"
EH -	EXHAUST HOOD	---
FN -	SYSTEM FURNITURE	---
FW -	ELECTRIC HAND DRYER	COORD HT
HVAC -	HVAC CONTROLS	---
KCT -	KITCHEN EQUIPMENT * DENOTES EQUIPMENT NUMBER	SEE KIT/DWGS
MS -	MOTORIZED SCREEN	---
SD -	SMOKE DAMPER	---
WS -	MOTORIZED WINDOW SHADES	---
	MOTORIZED SHADE CONTROLLER	COORD HT
	RECEPTACLE CABLE DROP REFER TO DETAIL X ON SHEET E-XXX	CEILING
	CORD REEL	CEILING
	SPECIAL PURPOSE RECEPTACLE (TYPE AS NOTED) OR IN SPECIFICATIONS)	SEE DRAWINGS
	SPECIAL PURPOSE RECEPTACLE FOR EQUIPMENT AS INDICATED	---
CD -	NEIMA 14-30R, CLOTHES DRYER	34"
RA -	NEIMA 6-30R, RAMP	---
	CONTROL TRANSFORMER FOR AUTOMATIC FALSH/ FLUSH VALVE, MOUNTED ABOVE CEILING, PROVIDE 120V POWER CONNECTION AND TOGGLE DISCONNECT SWITCH	---
	AUTOMATIC DOOR OPERATOR 120V 10. PROVIDE WIRING TO PUSHBUTTON	COORD HT
	AUTOMATIC DOOR OPERATOR 120V 10. PROVIDE WIRING TO PUSHBUTTON	---
	HAND WAVE AUTOMATIC DOOR OPERATOR	---
	SINGLE SERVICE PRE-WIRED MULTIPLE OUTLET RACEWAY	SEE DRAWINGS
	DUAL SERVICE FIVE WIRED MULTIPLE OUTLET RACEWAY	SEE DRAWINGS
	MOTOR (BY DIVISION 1-25)	---
	MANUAL MOTOR STARTER	46"
	TOGGLE DISCONNECT SWITCH	46"
	SWITCH FURNISHED BY OTHERS FOR EQUIPMENT AS INDICATED MS - MOTORIZED SCREEN	46"
	SAFETY SWITCH (SWITCH SIZE, FUSE SIZE, NO. OF POLES AS NOTED) *3R* DENOTES NEMA "3R" ENCLOSURE, "N" DENOTES NONFUSED	60"
	COMBINATION MOTOR STARTER (STARTER SIZE, FUSE SIZE, NO. OF POLES AS NOTED) *3R* DENOTES NEMA "3R" ENCLOSURE, "N" DENOTES NONFUSED	60"
	MAGNETIC MOTOR STARTER (STARTER SIZE, NO. OF POLES AS NOTED) *3R* DENOTES NEMA "3R" ENCLOSURE, "N" DENOTES NONFUSED	60"
	PUSHBUTTON STATION	46"
	CONTROL PANEL	SEE DRAWINGS
	VARIABLE FREQUENCY DRIVE	SEE DRAWINGS
	VOICE/DATE TERMINAL BOARD	60"
	PANELBOARD, SURFACE MOUNTED, FLUSH MOUNTED PANEL DESIGNATION AS SHOWN	72"
	DISTRIBUTION PANELBOARD	---
	CONDUIT, RISER UP	---
	CONDUIT, RISER DOWN	---
	CONDUIT ROUTED UNDER FLOOR/SPACE OR UNDERGROUND (POLES AS NOTED) *3R* DENOTES NEMA "3R" ENCLOSURE, "N" DENOTES NONFUSED	---
	HOME RUN BRANCH CIRCUIT (UNDERHEAD)	---
	HOME RUN BRANCH CIRCUIT (OVERHEAD/OOR)	---
	FLEXIBLE CONDUIT OR CABLE	---
	TRANSFORMER (SIZE AS NOTED OR IN TRANSFORMER SCHEDULE)	SEE DRAWINGS
	POWER SUPPLY	---

1. REFER TO DRAWINGS AND SPECIFICATIONS OF OTHER CONSTRUCTION TRADES FOR ADDITIONAL ELECTRICAL WORK INCLUDED IN THIS CONTRACT.
2. COORDINATE EXACT LOCATIONS OF EQUIPMENT WITH OTHER CONSTRUCTION TRADES. VERIFY EXACT WIRING AND CONNECTION REQUIREMENTS WITH SUBMITTALS. VERIFY ALL WIRING METHODS, MATERIALS, SPECIALTY OUTLET TYPES SHALL BE VERIFIED BEFORE ORDERING. ALL ELECTRICAL WORK SHOWN HERE MUST BE VERIFIED AND COORDINATED IN-TIME BEFORE INSTALLATION.
3. REFER TO ARCHITECTURAL ELEVATIONS FOR OUTLET MOUNTING HEIGHTS.
4. EXACT LOCATIONS OF FLOOR RECESSED OUTLETS, FLOORBOXES, AND POKE-THRU, SHALL BE COORDINATED WITH FURNITURE AND EQUIPMENT PLANS. OBTAIN LATEST PLANS FROM OWNER'S REPRESENTATIVE.
5. ALL CONDUITS IN AREAS WITHOUT SUSPENDED CEILINGS SHALL BE RUN INCONSPICUOUSLY AS POSSIBLE, HIDDEN BEHIND BEARS, CLOSE TO DECK, ETC. OBTAIN APPROVAL OF CONDUIT RUNS BELOW BEAMS WITH OWNER'S REPRESENTATIVE.
6. ALL DEVICES SHOWN ON THE EXTERIOR OF THE BUILDING SHALL BE WEATHERPROOF TYPE. ALL ROOF AND ROOFPEAK DEVICES SHALL HAVE WHILE-IN-USE COVERS UNLESS NOTED OTHERWISE.
7. REFER TO ARCHITECTURAL DOOR SCHEDULES, AND DOOR HARDWARE SPECIFICATION FOR ELECTRICAL DEVICES INSTALLED AT DOORS.
8. PROVIDE ALL FINAL POWER CONNECTIONS TO EQUIPMENT. PROVIDE ALL CONDUIT, DEVICE BOXES, AND CONTROL WIRING TO EQUIPMENT UNLESS NOTED OTHERWISE.
9. RACEWAY SHALL RUN AS INCONSPICUOUSLY AS POSSIBLE. VERTICAL RUNS SHALL OCCUR IN CORNERS OF ROOMS. HORIZONTAL RUNS SHALL OCCUR ON THE BASIS OF THE CLOSEST WALL WITH VERTICAL RUNS TO DEVICE BOXES BRANCHING OUT OF CORNER BOXES, TEES, ELBOWS, ETC.
10. REFER TO ARCHITECTURAL PLANS FOR WALL CONSTRUCTION.
11. CIRCUIT NUMBER INDICATED WITH "GF" IS A CIRCUIT PROTECTED BY GROUND FAULT INTERRUPTING CIRCUIT BREAKER.
12. PROVIDE HOSPITAL GRADE DEVICES IN ANY "PATIENT CARE" SPACE. MC CABLE IS NOT PERMITTED.
13. PROVIDE "TAMPER RESISTANT" DEVICES IN ANY PRE-K & SCHOOL BUILDING. ANY BUSINESS OFFICE SPACE IN ANY WAITING AREA.
14. GFI DEVICES SHALL BE LOCATED SO THEY ARE BEING CONSIDERED "ACCESSIBLE". PROVIDE GFCI TYPE CIRCUIT CIRCUIT BREAKERS OTHERWISE.

1. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF LUMINAIRES. COORDINATE WITH OTHER TRADES CONTRACTORS, IN ADVANCE OF INSTALLATION, TO AVOID CONFLICTS OF SUPPORT HARDWARE ABOVE AND BELOW THE CEILING FINISHES.
2. REFER TO ARCHITECTURAL ELEVATIONS, CASEWORK AND DETAILS, ELECTRICAL DETAILS, AND LUMINAIRE SCHEDULE FOR LUMINAIRE MOUNTING HEIGHTS AND ADDITIONAL INSTALLATION INFORMATION.
3. LOCATIONS OF LUMINAIRES IN ROOMS WITH MECHANICAL EQUIPMENT SHALL BE COORDINATED IN ADVANCE OF INSTALLATION. SUPPORT FIXTURES TO BE LOCATED OVER ACCESS PATHWAYS AROUND EQUIPMENT SHALL NOT BE USED TO SUPPORT THE LIGHTING. DO NOT SUSPEND FIXTURES FROM PIPING OR DUCTWORK. PROVIDE APPROPRIATE MOUNTING HARDWARE AS REQUIRED TO SUPPORT FIXTURES.
4. SOME SWITCHED LIGHTING CIRCUITING NOT SHOWN FOR CLARITY. ALL FIXTURES WITHIN A SPACE SHALL BE ON THE SAME CIRCUIT. SWITCHES/OCCUPANCY/VACANCY SENSORS SHOWN IN THAT SPACE UNLESS NOTED OTHERWISE.
5. OCCUPANCY/VACANCY SENSOR POWER PACKS ARE NOT SHOWN FOR ALL ROOMS. TO OCCUPANCY/VACANCY SENSOR WIRING DIAGRAMS, POWER PACKS TO BE LOCATED WITHIN EACH ROOM ABOVE CEILING AND IN CLOSE PROXIMITY TO THE POWER CONDUIT AND WIRING FROM POWER PACK TO SENSOR UNITS.
6. INSTALL DRIVER FOR LUMINAIRES PROVIDED WITH REMOTE DRIVERS IN PROVIDE REMOTE MECHANICAL ROOMS. REMOTE DRIVERS SHALL BE PROVIDED DRIVER WIRING SIZED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION FOR DISTANCE.
7. PROVIDE STEEL BRIDGING BETWEEN PURLINS/JOISTS/BEAMS AS NECESSARY TO SUPPORT THE WEIGHT OF SUSPENDED LUMINAIRES.

1. TURN OVER ANY SALVAGEABLE EQUIPMENT.
2. COORDINATE EXACT EXTENT OF DEMOLITION WITH ARCHITECTURAL DEMOLITION DRAWINGS.
3. COORDINATE PHASING OF DEMOLITION AND CONSTRUCTION PER DRAWINGS.
4. REMOVE ALL LIGHTING FIXTURES, DEVICES, OUTLETS, CONDUIT, CABLES, PANELS, AND EQUIPMENT WITHIN AREAS OF DEMOLITION. REMOVE WIRING AND CONDUIT BACK TO SOURCE OR LAST POINT OF CONNECTION TO REMAIN.
5. EXISTING PERMIT OUTSIDE OF SCOPE OF WORK BOUNDARIES SHALL BE MAINTAINED. RECONNECT ANY CIRCUITS CUT PASSING THROUGH DEMOLITION AREAS.
6. REMOVE ALL UNUSED WIRING AND CABLES BACK TO THEIR SOURCE. REMOVE UNCAUSED CONDUIT THAT IS EXPOSED OR OPEN TO ACCESSIBLE CEILING UNLESS WHICH IS AFFECTED BY OR IS IN THE AREA OF THE DEMOLITION WORK.
7. THE INTENTION OF THE ELECTRICAL DEMOLITION DRAWINGS IS TO DISCONNECT AND REMOVE ALL ELECTRICAL WORK MADE VOID BY THE PROJECT. THE CONTRACTOR SHALL VERIFY EXISTING ELECTRICAL MATERIAL QUANTITIES REQUIRED TO BE REMOVED.
8. WHERE BURIED CONDUITS EXTENDING OUT OF A CONCRETE SLAB BEING DEMOLISHED, CUT AND REMOVE THE CONDUIT AND PLUG WITH TOP OF SLAB AND PLUG WITH NON-SHRINK WATERPROOF GROUT FILL.
9. COORDINATE ALL DEMOLITION WORK WITH ALL OTHER TRADES.
10. LEGALLY DISPOSE OF HAZARDOUS MATERIALS AND BALLAST OR OTHER EQUIPMENT CONTAINING PCB'S AND LAMPS CONTAINING MERCURY. COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS.

1. THE FIRE ALARM SYSTEM IN THIS BUILDING IS TO BE DESIGNED TO, TO BE PERFORMED BY MET CERTIFIED TECHNICIAN.
2. DEVICE LOCATIONS AND QUANTITIES SHOWN ON THESE DRAWINGS INDICATE THE INTENT TO MEET CODE REQUIREMENTS FOR THIS BUILDING TYPE AND LOCATIONS SHOWN ARE NOT TO BE CONSIDERED AS NEUTRAL ELEMENTS FOR BEST AESTHETIC APPEARANCE IN THE SPACES. ADDITIONAL DEVICES MAY BE NEEDED IN SPACES TO MEET CODE. DEVICES SHALL BE LOCATED IN ACCORDANCE WITH THEIR PARTICULAR UL LISTING REQUIREMENTS.
3. FIRE ALARM DESIGNER SHALL BE THE AUTHOR OF HIS OWN DOCUMENTS FOR FIRE ALARM PERMITS. THE FIRE ALARM DESIGNER SHALL BE ASSESSED BEYOND THOSE SHOWN ON THESE DRAWINGS. CODE 9098 CONTRACTOR/VENDOR SHALL INCLUDE THE COSTS OF ALL DEVICES IN HIS NECESSARY IN THIS BUILDING.
4. ALL LOCATIONS SHALL BE APPROVED BY THE ARCHITECT BEFORE INSTALLATION.

1. BRANCH CIRCUIT CONDUIT ROUTING IS NOT SHOWN ON THE PLANS AND LEFT TO THE DISCRETION OF THE CONTRACTOR. BRANCH CIRCUIT WIRE SIZE SHALL BE AS FOLLOWS BASED ON CONDUIT ROUTE LENGTHS. BEFORE WIRE INSTALLATION, VERIFY THAT THE FURTHEST DISTANCE FROM PANELBOARD TO OUTLET DOES NOT EXCEED THE FOLLOWING DISTANCE FOR WIRE SIZE SHOWN. INCREASE WIRE SIZE APPROPRIATELY FOR FARTHER DISTANCES.

CONDUCTOR SIZE	MAXIMUM LENGTH
#12 AWG	100 FEET
#10 AWG	150 FEET
#8 AWG	250 FEET
#6 AWG	400 FEET

ABBREVIATIONS USED ON DRAWINGS IN GENERAL, ARE LISTED BELOW. REFER TO CSI DOCUMENT 10-2.4 FOR ANY ABBREVIATIONS LISTED ON THE DRAWINGS BUT ARE NOT LISTED BELOW.

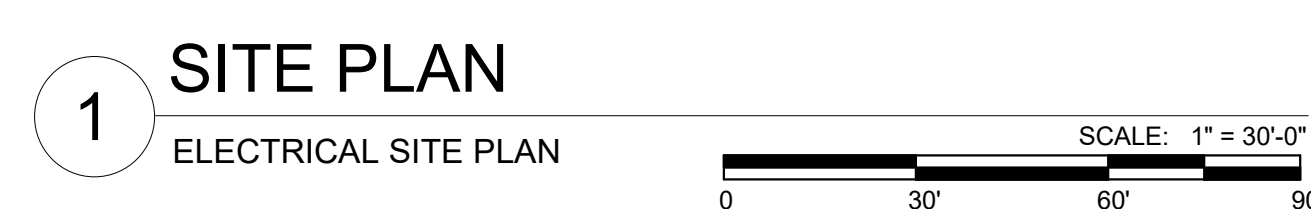
A	AMPS
AC	AIR COMPRESSOR
AF	ARC FLASH CIRCUIT INTERRUPTER DEVICE
AFB	ABOVE FINISH FLOOR
AFB	ABOVE FINISH GRADE
AHU	AIR HANDLER UNIT
BKR	BREAKER
C	CONDUIT
CA	CABLE ANTENNA TELEVISION
CCTV	CLOSED CIRCUIT TELEVISION
CUH	CABINET UNIT HEATER
CKT	CIRCUIT
CPT	CONTROL POWER TRANSFORMER
CS	COPPER
DISTR	DISTRIBUTION
DLH	DAYLIGHT HARVESTING
EF	EXHAUST FAN
EM	ELECTRIC
EM	EMERGENCY
EMT	ELECTRIC METALIC TUBING
EPO	EMERGENCY POWER OFF
EVE	ELECTRIC VEHICLE SERVICE EQUIPMENT (CHARGER)
EWC	ELECTRIC WATER COOLER
EX	EXISTING
EXP	EXPLOSION PROOF TYPE DEVICE
F	FUSE
FAA	FIRE ALARM ANNUNCIATOR
FACP	FIRE ALARM CONTROL PANEL
FAP	FIRE ALARM PANEL
FAR	FIRE ALARM REMOTE ANNUNCIATOR
FC	FAN COIL UNIT
FLMT	LIGHT FIXTURE
FLUOR	FLUORESCENT
LFR	LIGHT
FS	FUSIBLE SWITCH
GRG	GROUTING
GRS	GALVANIZED RIGID CONDUIT
GF	GROUND FAULT INTERRUPTER DEVICE
HD	HIGH INTENSITY DISCHARGE
HVAC	HEATING, VENTILATION, AIR CONDITIONING
HSP	HORSEPOWER
IF	INFORMATION TECHNOLOGY
ITC	JUNCTION BOX
KEP	KITCHEN EQUIPMENT CONTRACTOR
KILOV	KILOVOLT
KVA	KILOVOLT/ AMPERE
KW	KILOWATTS
LC	LIGHTING CIRCUIT
LTC	LIGHTING
LV	LOW VOLTAGE
MGG	MOTOR CONTROL CENTER
MECH	MECHANICAL
MSB	MAIN SWITCHBOARD
MT	MOUNTED
NOTD	INDICATES MOUNTING HEIGHT (N) TO CENTER OF DEVICE FROM FINISH FLOOR UNLESS OTHERWISE NOTED
N	NOT IN CONTRACT
NIC	NOTED
NIL	NOT LIGHT
NHS	NOT TO SCALE
ON CC OR OIC	ON CENTER OR OVERHEAD
P	POLE (PHASE)
PVC	POLYVINYL CHLORIDE
PNE	PNEUMATIC/ ELECTRIC
PNL	PANEL
Ø OR P	PHASE
RAF	RETURN AIR FAN
RTU	ROOFTOP UNIT
SHUT TRIP	SHUT TRIP
SW	SWITCH
TCF	TEMPERATURE CONTROL PANEL
TRFMR	TRANSFORMER
TR	TAMPER RESISTANT
TV	TELEVISION
TRP	TYPICAL
UG	UNDERGROUND
UH	UNIT HEATER
UNL	UNLESS NOTED OTHERWISE
VO	VOLTS
VAV	VARIABLE AIR VOLUME
VTD	VARIABLE FREQUENCY DRIVE
VC	VOLUME IN FIELD
W	WATTS
WP	WEATHER-PROOF TYPE DEVICE
1E.1	MEANS DETAIL NO. 1, DRAWING SHEET "E1"

1. SOME SYMBOLS MAY NOT BE USED.
2. MOUNTING HEIGHTS ARE TO CENTER OF DEVICE UNLESS NOTED OTHERWISE.
3. STRAIGHT LINES BETWEEN DEVICES INDICATE CONTROLLED CIRCUIT.
4. DASHED SYMBOLS INDICATE EXISTING DEVICES TO BE REMOVED.
5. SOLID SYMBOLS WITH LIGHT LINEWEIGHT INDICATE EXISTING DEVICES TO REMAIN.
6. DASHED SYMBOLS WITH SUBSCRIPT "RL" INDICATE EXISTING DEVICES TO BE RELOCATED.
7. SOLID SYMBOLS WITH SUBSCRIPT "R" INDICATE RELOCATED DEVICES.

	DEVICE SURFACES
AC	ABOVE COUNTER
C	CEILING MOUNTED OUTLET
F	FLOOR MOUNTED OUTLET
S	SURFACE RACEWAY OUTLET
M	MODULAR FURNITURE OUTLET
W	WALL MOUNTED
WG	WIRE GUARD
WP	WEATHER PROOF

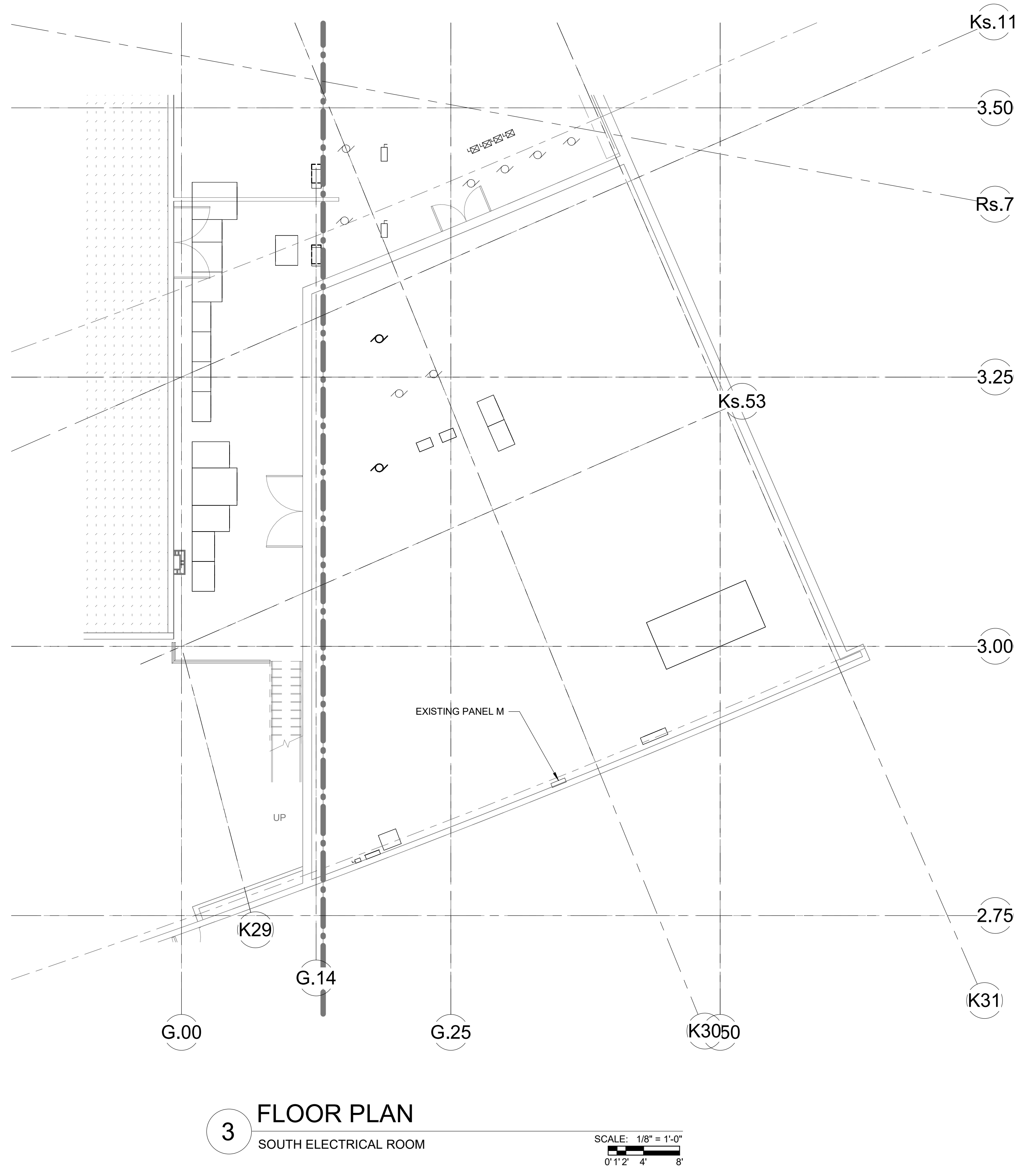
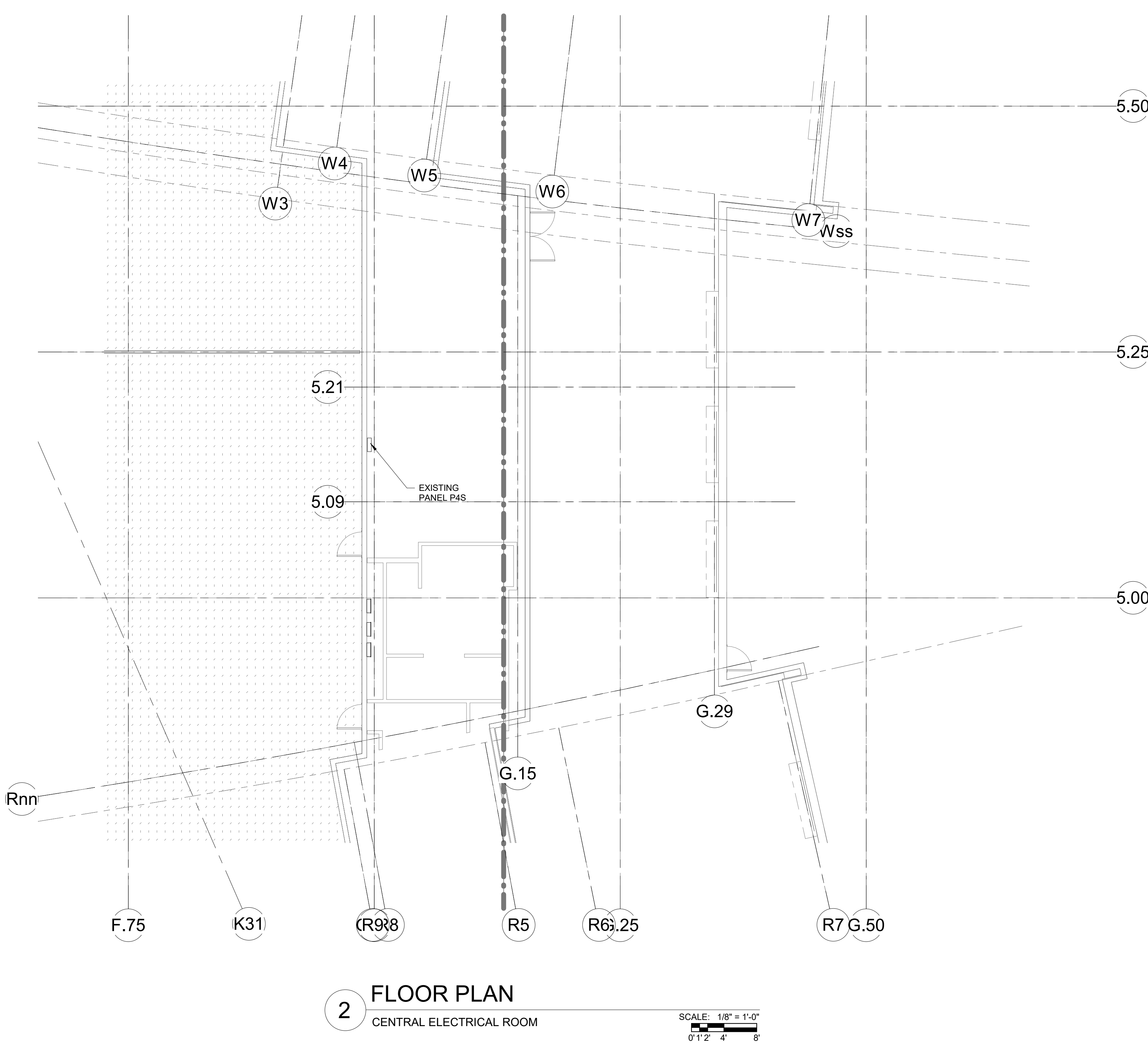
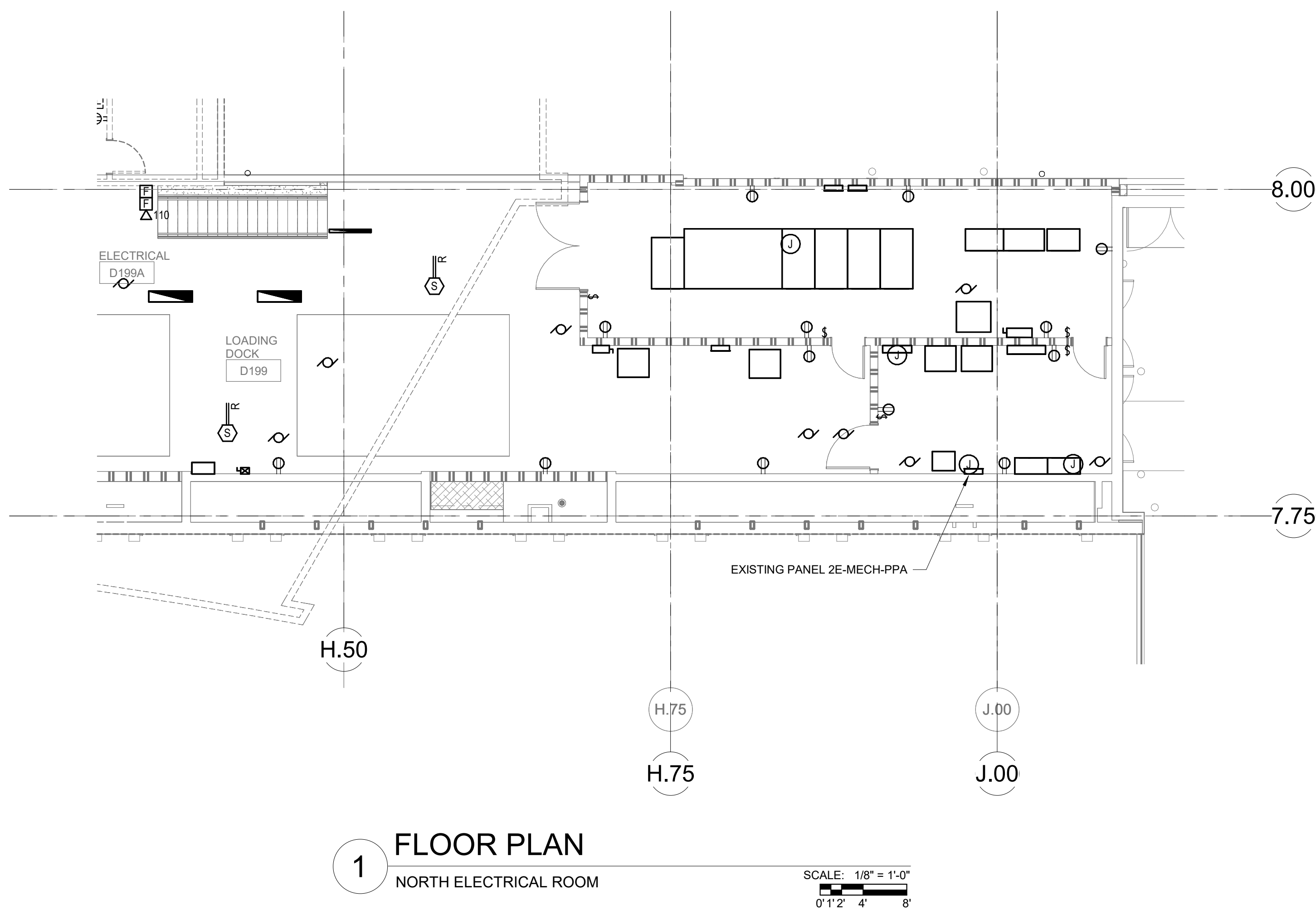
ELECTRICAL SHEET INDEX	
SHEET NUMBER	SHEET NAME
E0 0	ELECTRICAL SYMBOLS AND LEGENDS
E0 1	ELECTRICAL SITE PLAN
E4 1	EXISTING ELECTRICAL ROOMS
E5 1	ELECTRICAL SCHEDULES
E5 2	ELECTRICAL SCHEDULES
E6 1	ONE LINE DIAGRAM
E6 2	ONE LINE SCHEDULES
E7 1	ELECTRICAL DETAILS
E7 2	ELECTRICAL DETAILS

No.	Description	Date
GREATER COLUMBUS CONNECTION CENTER		
SITE SECURITY IMPROVEMENTS		
 Korda/Namech Engineering, Inc. - Consulting Engineers 1650 Westpark Drive, Suite 200 Columbia, Ohio 43215-7010 TEL 614-447-1650 - WEB www.korda.com		
ELECTRICAL SYMBOLS AND LEGENDS		
PROJECT NUMBER:		2026-0416
DRAWN BY: Author	DATE	SHEET NUMBER
DESIGNED BY: Designer	09/14/2026	E0.0
CHECKED BY: Checker		



CHECKED BY: Checker	05/14/2020	E0.1
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CHECKED BY: Checker	05/14/2020	E0.1
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No.	Description	Date
	GREATER COLUMBUS CONVENTION CENTER	
	SITE SECURITY IMPROVEMENTS	
	KORDA Korda/Remeth Engineering, Inc. - Consulting Engineers 1650 Watermark Drive, Suite 200 - Columbus, Ohio 43215-7010 TEL 614-467-1650 - WEB www.korda.com	
	EXISTING ELECTRICAL ROOMS	
PROJECT NUMBER:	2026-0416	
DRAWN BY: Author	DATE	SHEET NUMBER
DESIGNED BY: Designer	09/14/2026	E4.1
CHECKED BY: Checker		

NOT FOR
CONSTRUCTION
WORKING DRAWINGS
FOR REVIEW

LIGHTING FIXTURE SCHEDULE HERE

-ELECTRICAL ENGINEER TO FILL OUT IN EXCEL.
-ELECTRICAL DRAFTER TO LINK FROM EXCEL.
H:\Projects\XXXX\JOB NUMBER JOB
NAME\Electrical\Schedules\L.TG

No.	Description	Date
GREATER COLUMBUS CONVENTION CENTER		
SITE SECURITY IMROVEMENTS		
 Korda/Remeth Engineering, Inc. - Consulting Engineers 1650 Watermark Drive, Suite 200 - Columbus, Ohio 43215-7010 TEL 614-467-1650 - WEB www.korda.com		
ELECTRICAL SCHEDULES		
PROJECT NUMBER:		2026-0416
DRAWN BY: Author	DATE	SHEET NUMBER
DESIGNED BY: Designer	09/14/2026	E5.1
CHECKED BY: Checker		

NOT FOR
CONSTRUCTION
WORKING DRAWINGS
FOR REVIEW

Panel Name: 2E-MECH-PPA

Location:

Supply From:

Mounting:

Legend:

Volts:

Phases:

Wires:

Notes:

Mains Type:

Mains Rating:

MCB

225.00 A

Note	#	Branch Circuit Description	Trip	#	A	B	C	#	Trip	Branch Circuit Description	#	Note
				1				2				
				3				4				
				5				6				
				7				8				
				9				10				
				11				12				
				13				14				
				15				16				
				17				18				
				19				20				
				21				22				
				23				24				
				25				26				
				27				28				
				29				30				
				31				32				
				33				34				
				35				36				
				37				38				
				39				40				
				41				42				
Phase Total KVA:					0.00	0.00	0.00					
Phase Total Amps:					0.00	0.00	0.00					
Load Classification		Connected Load	NEC Demand Factor		NEC Demand			Panel Summary				
LIGHTING		0.00 kVA	0.00%		0.00 kVA							
RECEPTACLE & MSC		0.00 kVA			0.00 kVA			Total Conn. Load:		0.00 kVA		
MOTOR		0.00 kVA	0.00%		0.00 kVA			Total NEC Demand:		0.00 kVA		
HEATING		0.00 kVA			0.00 kVA			Total Conn.:		0.00 A		
EXISTING		0.00 kVA			0.00 kVA			Total NEC Demand:		0.00 A		

Panel Name: M												
Location:			120/208 Wye				Mains Type:			MCB		
Supply From:			Phases:				Mains Rating:			225.00 A		
Mounting:			Wires:				Notes:					
Legend:												
Note	#	Branch Circuit Description	Trip	#	A	B	C	#	Trip	Branch Circuit Description	#	Note
				1				2				
				3				4				
				5				6				
				7				8				
				9				10				
				11				12				
				13				14				
				15				16				
				17				18				
				19				20				
				21				22				
				23				24				
				25				26				
				27				28				
				29				30				
				31				32				
				33				34				
				35				36				
				37				38				
				39				40				
				41				42				
Phase Total KVA:				0.00	0.00	0.00						
Phase Total Amps:				0.00	0.00	0.00						
Load Classification		Connected Load	NEC Demand Factor		NEC Demand			Panel Summary				
LIGHTING		0.00 kVA	0.00%		0.00 kVA							
RECEPTACLE & MSC		0.00 kVA			0.00 kVA			Total Conn. Load:		0.00 kVA		
MOTOR		0.00 kVA	0.00%		0.00 kVA			Total NEC Demand:		0.00 kVA		
HEATING		0.00 kVA			0.00 kVA			Total Conn.:		0.00 A		
EXISTING		0.00 kVA			0.00 kVA			Total NEC Demand:		0.00 A		

Panel Name: P4S

Location:

Supply From:

Mounting:

Legend:

120/208 Wye

Phases:

Wires:

Notes:

Mains Type:

Mains Rating:

MCB

225.00 A

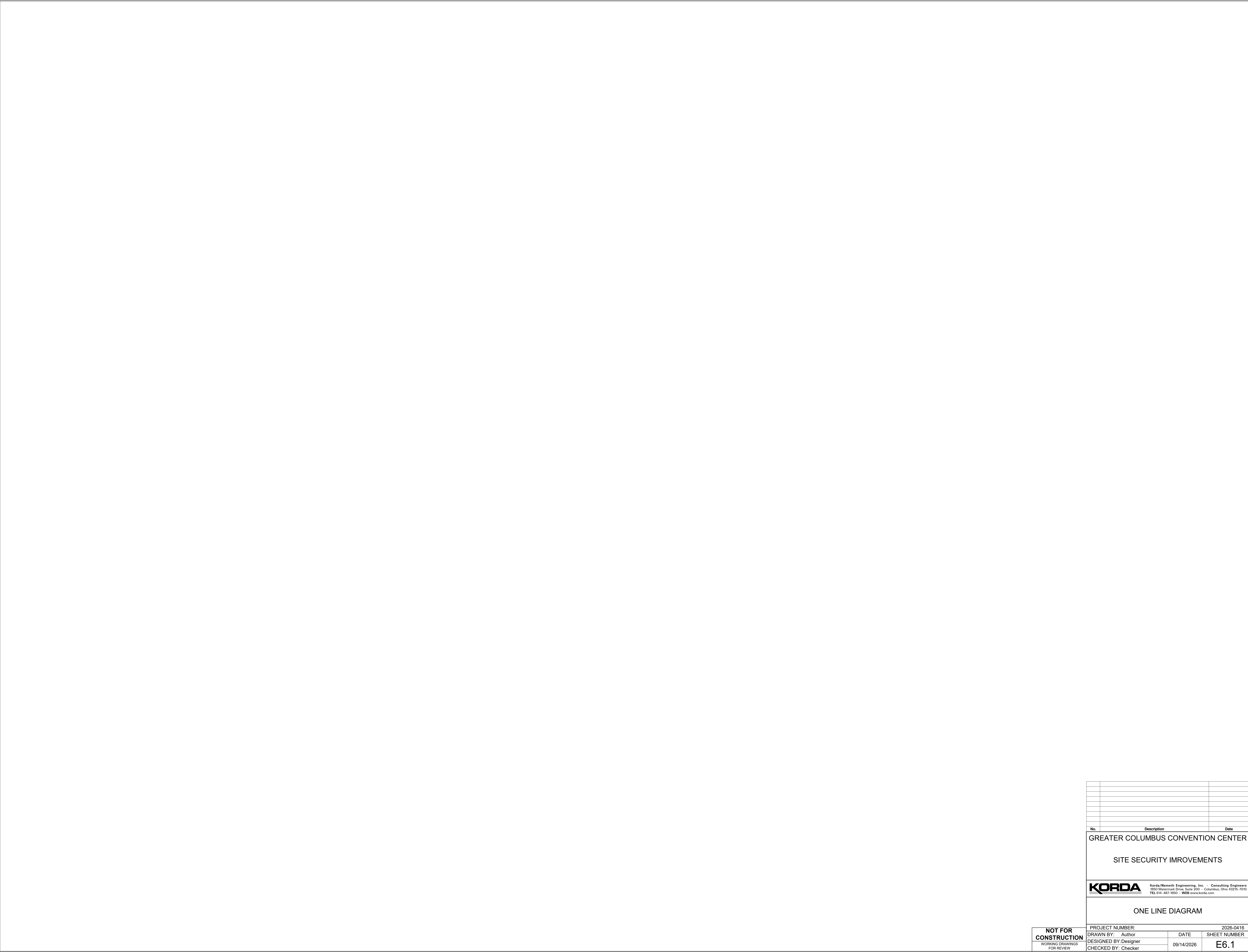
Note	#	Branch Circuit Description	Trip	#	A	B	C	#	Trip	Branch Circuit Description	#	Note				
	1			2				2								
	3			4				4								
	5			6				6								
	7			8				8								
	9			10				10								
	11			12				12								
	13			14				14								
	15			16				16								
	17			18				18								
	19			20				20								
	21			22				22								
	23			24				24								
	25			26				26								
	27			28				28								
	29			30				30								
	31			32				32								
	33			34				34								
	35			36				36								
	37			38				38								
	39			40				40								
	41			42				42								
Phase Total KVA:					0.00	0.00	0.00									
Phase Total Amps:					0.00	0.00	0.00									
Load Classification		Connected Load	NEC Demand Factor		NEC Demand		Panel Summary									
LIGHTING		0.00 kVA	0.00%		0.00 kVA											
RECEPTACLE & MISC		0.00 kVA			0.00 kVA		Total Conn. Load:		0.00 kVA							
MOTOR		0.00 kVA	0.00%		0.00 kVA		Total NEC Demand:		0.00 kVA							
HEATING		0.00 kVA			0.00 kVA		Total Conn.:		0.00 A							
EXISTING		0.00 kVA			0.00 kVA		Total NEC Demand:		0.00 A							

EQUIPMENT GROUNDING
CONDUCTOR SCHEDULE

CIRCUIT AMPACITY	SIZE (AWG)
20	#12
30	#10
40	#10
50	#10
60	#10
70	#8
80	#8
90	#8
100	#8
110	#6
125	#6
150	#6
175	#6
200	#4
225	#4
250	#4
300	#4
350	#3
400	#3

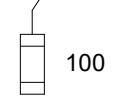
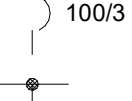
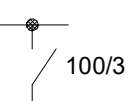
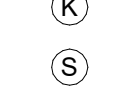
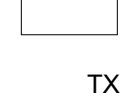
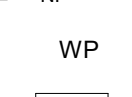
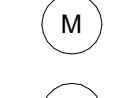
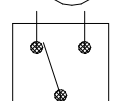
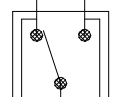
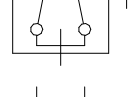
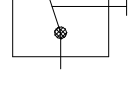
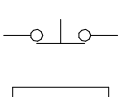
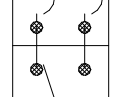
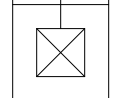
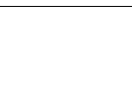
NOTES:
1. ALL EQUIPMENT GROUNDING
CONDUCTORS SHALL BE COPPER.

BRANCH CIRCUIT WIRING SCHEDULE			
277 VOLT 1Ø, 2W. + GND CIRCUITS			
CIRCUIT BREAKER	CONDUCTOR	RACEWAY	BRANCH CIRCUIT DISTANCE
20A-1P	2 #12 & 1 #12 GND	3/4" CONDUIT	0 - 145'
	2 #10 & 1 #10 GND	3/4" CONDUIT	145' - 230'
	2 #8 & 1 #10 GND	3/4" CONDUIT	230' - 370'
30A-1P	2 #10 & 1 #10 GND	3/4" CONDUIT	0 - 190'
	2 #8 & 1 #10 GND	3/4" CONDUIT	190' - 340'
	2 #6 & 1 #10 GND	3/4" CONDUIT	340' - 390'
480 VOLT 3Ø, 3W. + GND CIRCUITS			
CIRCUIT BREAKER	CONDUCTOR	RACEWAY	BRANCH CIRCUIT DISTANCE
20A-3P	3 #12 & 1 #12 GND	3/4" CONDUIT	0 - 215'
	3 #10 & 1 #10 GND	3/4" CONDUIT	215' - 345'
30A-3P	3 #10 & 1 #10 GND	3/4" CONDUIT	0 - 230'
	3 #8 & 1 #10 GND	3/4" CONDUIT	230' - 370'
40A-3P	3 #8 & 1 #10 GND	3/4" CONDUIT	0 - 350'
	3 #6 & 1 #10 GND	3/4" CONDUIT	350' -
50A-3P	3 #6 & 1 #10 GND	3/4" CONDUIT	0 - 350'
	3 #4 & 1 #8 GND	1" CONDUIT	350' -
60A-3P	3 #4 & 1 #8 GND	3/4" CONDUIT	0 - 290'
	3 #4 & 1 #6 GND	1" CONDUIT	290' -
277/480 VOLT 3Ø, 4W. + GND CIRCUITS			
CIRCUIT BREAKER	CONDUCTOR	RACEWAY	BRANCH CIRCUIT DISTANCE
20A-3P *	4 #12 & 1 #12 GND	3/4" CONDUIT	0 - 215'
	4 #10 & 1 #10 GND	3/4" CONDUIT	215' - 345'
30A-3P *	4 #10 & 1 #10 GND	3/4" CONDUIT	0 - 230'



No.	Description	Date
GREATER COLUMBUS CONVENTION CENTER		
SITE SECURITY IMROVEMENTS		
 Korda/Remeth Engineering, Inc. - Consulting Engineers 1650 Watermark Drive, Suite 200 - Columbus, Ohio 43215-7010 TEL 614-467-1650 - WEB www.korda.com		
ONE LINE DIAGRAM		
PROJECT NUMBER:		2026-0416
DRAWN BY: Author	DATE	SHEET NUMBER
DESIGNED BY: Designer	09/14/2026	E6.1
CHECKED BY: Checker		

NOT FOR
CONSTRUCTION
WORKING DRAWINGS
FOR REVIEW

SYMBOLS LIST FOR WIRING DIAGRAMS AND DETAILS	
1. SOME SYMBOLS MAY NOT BE USED.	
SYMBOL	DESCRIPTION
	FUSIBLE SWITCH WITH FUSES (SIZE AS NOTED)
	CIRCUIT BREAKER (SIZE AS NOTED)
	SPACE FOR DEVICE (SIZE AS NOTED)
	SPARE FUSIBLE SWITCH (WITHOUT FUSES)
	KIRK KEY INTERLOCK
	SHUNT TRIP
	ANALOG AMMETER
	ANALOG VOLTMETER
	GROUND FAULT SENSOR/OPERATOR
	CURRENT TRANSFORMER
	POTENTIAL TRANSFORMER
	ANALOG WATT-HOUR METER
	UTILITY METER
	ELECTRONIC METERING UNIT
	PANELBOARD
	POWER TRANSFORMER. "TX" DENOTES NAME "T1" NOTES TYPE (SEE TRANSFORMER SCHEDULE)
	GROUNDING ELECTRODE AND CONDUCTOR (CONDUCTOR SIZE AS NOTED)
	COMBINATION MOTOR STARTER (STARTER SIZE, FUSE SIZE, NO. OF POLES-AS NOTED) "3R" DENOTES NEMA "3R" ENCLOSURE, "NF"=NONFUSED
	MAGNETIC MOTOR STARTER (STARTER SIZE, FUSE SIZE, NO. OF POLES-AS NOTED) "3R" DENOTES NEMA "3R" ENCLOSURE, "NF"=NONFUSED
	SAFETY SWITCH (SWITCH SIZE, FUSE SIZE, NO. OF POLES-AS NOTED) "NF"=NONFUSED
	WEATHERPROOF
	CONTROL PANEL (BY OTHERS)
	VARIABLE FREQUENCY DRIVE
	SURGE PROTECTION DEVICE
	MOTOR
	EMERGENCY GENERATOR
	AUTOMATIC TRANSFER SWITCH
	BYPASS/ISOLATION AUTOMATIC TRANSFER SWITCH
	MANUAL TRANSFER SWITCH
	EQUIPMENT (AS NOTED)
	PUSHBUTTON - NORMALLY OPEN
	PUSHBUTTON - NORMALLY CLOSED
	FIRE PUMP CONTROLLER (BY OTHERS)

ALUMINUM ONE LINE DIAGRAM-FEEDER SCHEDULE							
INSULATION TYPE: COMPACT XHHW-2, ALUMINUM CONDUCTORS							
OVERCURRENT PROTECTION AMPACITY	NOTE NUMBER	NUMBER OF SETS	PHASE WIRES QUANTITY - SIZE	NEUTRAL WIRE QUANTITY - SIZE	GROUND SIZE COPPER ONLY	CONDUIT SIZE PER SET	COMMENTS
100	1A	1	3 - #1 AWG	-	1 - #8 AWG	1-1/4"	
125	2A	1	3 - #2/0 AWG	-	1 - #6 AWG	1-1/2"	
150	3A	1	3 - #3/0 AWG	-	1 - #6 AWG	2"	
175	4A	1	3 - #4/0 AWG	-	1 - #6 AWG	2"	
200	5A	1	3 - 250 KCMIL	-	1 - #6 AWG	2"	
225	6A	1	3 - 300 KCMIL	-	1 - #4 AWG	2-1/2"	
250	7A	1	3 - 350 KCMIL	-	1 - #4 AWG	2-1/2"	
300	8A	1	3 - 500 KCMIL	-	1 - #4 AWG	3"	
350	9A	2	3 - #4/0 AWG	-	1 - #3 AWG	2"	
400	10A	2	3 - 250 KCMIL	-	1 - #3 AWG	2"	
500	11A	2	3 - 350 KCMIL	-	1 - #2 AWG	2-1/2"	
600	12A	2	3 - 500 KCMIL	-	1 - #1 AWG	3	
700	13A	3	3 - 350 KCMIL	-	1 - #1/0 AWG	2-1/2"	
800	14A	3	3 - 400 KCMIL	-	1 - #1/0 AWG	3"	
1000	15A	3	3 - 600 KCMIL	-	1 - #2/0 AWG	3-1/2"	
1200	16A	4	3 - 500 KCMIL	-	1 - #3/0 AWG	3"	
1600	17A	5	3 - 600 KCMIL	-	1 - #4/0 AWG	3-1/2"	
2000	18A	6	3 - 600 KCMIL	-	1 - 250 KCMIL	3-1/2"	
100	19A	1	3 - #1 AWG	1 - #1 AWG	1 - #6 AWG	1-1/2"	
125	20A	1	3 - #2/0 AWG	1 - #2/0 AWG	1 - #6 AWG	1-1/2"	
150	21A	1	3 - #3/0 AWG	1 - #3/0 AWG	1 - #6 AWG	2"	
200	22A	1	3 - 250 KCMIL	1 - 250 KCMIL	1 - #6 AWG	2-1/2"	
225	23A	1	3 - 300 KCMIL	1 - 300 KCMIL	1 - #4 AWG	3"	
250	24A	1	3 - 350 KCMIL	1 - 350 KCMIL	1 - #4 AWG	3"	
300	25A	1	3 - 500 KCMIL	1 - 500 KCMIL	1 - #4 AWG	3-1/2"	
350	26A	2	3 - #4/0 AWG	1 - #4/0 AWG	1 - #3 AWG	2"	
400	27A	2	3 - 250 KCMIL	1 - 250 KCMIL	1 - #3 AWG	2-1/2"	
500	28A	2	3 - 350 KCMIL	1 - 350 KCMIL	1 - #2 AWG	3"	
600	29A	2	3 - 500 KCMIL	1 - 500 KCMIL	1 - #1 AWG	3-1/2"	
700	30A	3	3 - 350 KCMIL	1 - 350 KCMIL	1 - #1/0 AWG	3"	
800	31A	3	3 - 400 KCMIL	1 - 400 KCMIL	1 - #1/0 AWG	3"	
1000	32A	3	3 - 600 KCMIL	1 - 600 KCMIL	1 - #2/0 AWG	4"	
1200	33A	4	3 - 500 KCMIL	1 - 500 KCMIL	1 - #3/0 AWG	3-1/2"	
1600	34A	5	3 - 600 KCMIL	1 - 600 KCMIL	1 - #4/0 AWG	4"	
2000	35A	6	3 - 600 KCMIL	1 - 600 KCMIL	1 - 250 KCMIL	4"	
2500	36A	8	3 - 600 KCMIL	1 - 600 KCMIL	1 - 350 KCMIL	4"	
3000	37A	8	3 - 700 KCMIL	1 - 700 KCMIL	1 - 400 KCMIL	4"	
4000	38A	12	3 - 600 KCMIL	1 - 600 KCMIL	1 - 500 KCMIL	4"	
5000	39A	13	3 - 750 KCMIL	1 - 750 KCMIL	1 - 700 KCMIL	5"	
OPEN	53A	-	-	-	-	-	
125	54A	1	3 - #2/0 AWG	1 - #2/0 AWG	1 - #6 AWG	1-1/2"	30 KVA TXMR SEC
175	55A	1	3 - #4/0 AWG	1 - #4/0 AWG	1 - #4 AWG	2-1/2"	45 KVA TXMR SEC
225	56A	1	3 - 300 KCMIL	1 - 300 KCMIL	1 - #2 AWG	3"	75 KVA TXMR SEC
400	57A	2	3 - 250 KCMIL	1 - 250 KCMIL	1 - #1/0 AWG	2-1/2"	112.5 KVA TXMR SEC
600	58A	2	3 - 500 KCMIL	1 - 500 KCMIL	1 - #2/0 AWG	3.5"	150 KVA TXMR SEC
800	59A	3	3 - 400 KCMIL	1 - 400 KCMIL	1 - #3/0 AWG	3"	225 KVA TXMR SEC
1200	60A	4	3 - 500 KCMIL	1 - 500 KCMIL	1 - 250 KCMIL	4"	300 KVA TXMR SEC
1600	61A	5	3 - 600 KCMIL	1 - 600 KCMIL	1 - 400 KCMIL	4"	500 KVA TXMR SEC

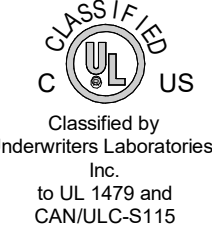
COPPER ONE LINE DIAGRAM-FEEDER SCHEDULE							
INSULATION TYPE: THWN with COPPER CONDUCTORS							
OVERCURRENT PROTECTION AMPACITY	NOTE NUMBER	NUMBER OF SETS	PHASE WIRES QUANTITY - SIZE	NEUTRAL WIRE QUANTITY - SIZE	GROUND SIZE (EGG)	CONDUIT SIZE PER SET	COMMENTS
20	1	1	3 - #12 AWG	-	1 - #12 AWG	3/4"	
30	2	1	3 - #10 AWG	-	1 - #10 AWG	3/4"	
40	3	1	3 - #8 AWG	-	1 - #10 AWG	3/4"	
50	4	1	3 - #6 AWG	-	1 - #10 AWG	3/4"	
70	5	1	3 - #4 AWG	-	1 - #8 AWG	1"	
90	6	1	3 - #2 AWG	-	1 - #8 AWG	1-1/4"	
110	7	1	3 - #1 AWG	-	1 - #6 AWG	1-1/4"	
150	8	1	3 - #1/0 AWG	-	1 - #6 AWG	1-1/2"	
175	9	1	3 - #2/0 AWG	-	1 - #6 AWG	1-1/2"	
200	10	1	3 - #3/0 AWG	-	1 - #6 AWG	2"	
225	11	1	3 - #4/0 AWG	-	1 - #4 AWG	2"	
250	12	1	3 - 250 KCMIL	-	1 - #4 AWG	2"	
300	13	1	3 - 350 KCMIL	-	1 - #4 AWG	2-1/2"	
350	14	1	3 - 500 KCMIL	-	1 - #3 AWG	3"	
400	15	1	3 - 600 KCMIL	-	1 - #3 AWG	3"	
500	16	2	3 - 250 KCMIL	-	1 - #2 AWG	2"	
600	17	2	3 - 350 KCMIL	-	1 - #1 AWG	2-1/2"	
700	18	2	3 - 500 KCMIL	-	1 - #1/0 AWG	3"	
800	19	2	3 - 600 KCMIL	-	1 - #1/0 AWG	3"	
1000	20	3	3 - 400 KCMIL	-	1 - #2/0 AWG	3"	
1200	21	3	3 - 600 KCMIL	-	1 - #3/0 AWG	3"	
1600	22	4	3 - 600 KCMIL	-	1 - #4/0 AWG	3-1/2"	
OPEN	23	-	-	-	-	-	
100	24	1	3 - #1 AWG	1 - #1 AWG	1 - #6 AWG	1-1/2"	
150	25	1	3 - #1/0 AWG	1 - #1/0 AWG	1 - #6 AWG	2"	
200	26	1	3 - #3/0 AWG	1 - #3/0 AWG	1 - #6 AWG	2"	
225	27	1	3 - #4/0 AWG	1 - #4/0 AWG	1 - #4 AWG	2-1/2"	
250	28	1	3 - 250 KCMIL	1 - 250 KCMIL	1 - #4 AWG	2-1/2"	
300	29	1	3 - 350 KCMIL	1 - 350 KCMIL	1 - #4 AWG	3"	
350	30	1	3 - 500 KCMIL	1 - 500 KCMIL	1 - #3 AWG	3-1/2"	
400	31	1	3 - 600 KCMIL	1 - 600 KCMIL	1 - #3 AWG	3-1/2"	
500	32	2	3 - 250 KCMIL	1 - 250 KCMIL	1 - #2 AWG	2-1/2"	
600	33	2	3 - 350 KCMIL	1 - 350 KCMIL	1 - #1 AWG	3"	
800	34	2	3 - 600 KCMIL	1 - 600 KCMIL	1 - #1/0 AWG	4"	
1000	35	3	3 - 400 KCMIL	1 - 400 KCMIL	1 - #2/0 AWG	3"	
1200	36	3	3 - 600 KCMIL	1 - 600 KCMIL	1 - #3/0 AWG	4"	
1600	37	4	3 - 600 KCMIL	1 - 600 KCMIL	1 - #4/0 AWG	4"	
2000	38	5	3 - 600 KCMIL	1 - 600 KCMIL	1 - 250 KCMIL	4"	
2500	39	6	3 - 600 KCMIL	1 - 600 KCMIL	1 - 350 KCMIL	4"	
3000	40	8	3 - 500 KCMIL	1 - 500 KCMIL	1 - 400 KCMIL	4"	
4000	41	10	3 - 600 KCMIL	1 - 600 KCMIL	1 - 500 KCMIL	4"	
FIRE PUMP	48	1	3 - #1 AWG	-	1 - #6 AWG	2"	2 HR FIRE RATED
FIRE PUMP	49	1	6 - #1 AWG	-	1 - #6 AWG	2"	Y- Δ STARTER
TVSS	50	1	3 - #2 AWG	1 - #2 AWG	1 - #2 AWG	1-1/2"	MINIMIZE LENGTH
15 KV	51	1	3 - #4/0 AWG	-	1 - #4/0 AWG	5"	
15 KV	52	1	3 - 500 KCMIL	-	1 - #4/0 AWG	5"	
OPEN	53	-	-	-	-	-	
50	54	1	3 - #8 AWG	3 - #8 AWG	1 - #6 AWG	3/4"	15 KVA TXMR SEC
125	55	1	3 - #1 AWG	1 - #1 AWG	1 - #6 AWG	1-1/2"	30 KVA TXMR SEC
175	56	1	3 - #2/0 AWG	1 - #2/0 AWG	1 - #4 AWG	2"	45 KVA TXMR SEC
225	57	1	3 - #4/0 AWG	1 - #4/0 AWG	1 - #2 AWG	2-1/2"	75 KVA TXMR SEC
400	58	1	3 - 600 KCMIL	1 - 600 KCMIL	1 - #1/0 AWG	3-1/2"	112.5 KVA TXMR SEC
600	59	2	3 - 350 KCMIL	1 - 350 KCMIL	1 - #2/0 AWG	2-1/2"	150 KVA TXMR SEC
800	60	2	3 - 600 KCMIL	1 - 600 KCMIL	1 - #3/0 AWG	4"	225 KVA TXMR SEC
1200	61	3	3 - 600 KCMIL	1 - 600 KCMIL	1 - 250 KCMIL	4"	300 KVA TXMR SEC
1600	62	4	3 - 600 KCMIL	1 - 600 KCMIL	1 - 400 KCMIL	4"	500 KVA TXMR SEC
30	63	1	3 - #10 AWG	-	1 - #10 AWG	3/4"	
40	64	1	3 - #8 AWG	-	1 - #8 AWG	3/4"	
50	65	1	3 - #6 AWG	-	1 - #6 AWG	3/4"	
70	66	1	3 - #4 AWG	-	1 - #4 AWG	1"	
90	67	1	3 - #2 AWG	-	1 - #2 AWG	1-1/4"	
110	68	1	3 - #1 AWG	-	1 - #1 AWG	1-1/2"	
150	69	1	3 - #1/0 AWG	-	1 - #1/0 AWG	1-1/2"	
175	70	1	3 - #2/0 AWG	-	1 - #2/0 AWG	2"	
200	71	1	3 - #3/0 AWG	-	1 - #3/0 AWG	2"	
225	72	1	3 - #4/0 AWG	-	1 - #4/0 AWG	2"	
250	73	1	3 - 250 KCMIL	-	1 - 250 KCMIL	2-1/2"	
300	74	1	3 - 350 KCMIL	-	1 - 350 KCMIL	3"	
350	75	1	3 - 500 KCMIL	-	1 - 500 KCMIL	3"	
400	76	1	3 - 600 KCMIL	-	1 - 600 KCMIL	3-1/2"	

MSB / DP LOAD SUMMARIES HERE

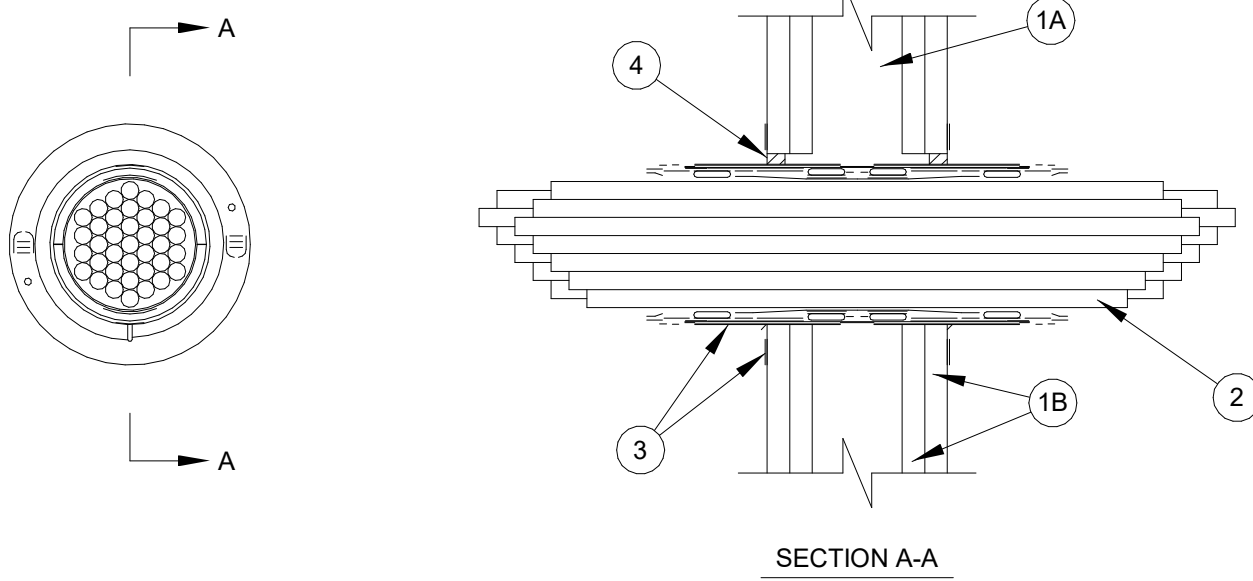
-LINKED FROM REVIT MODEL BY ELECTRICAL DRAFTER ONCE ELECTRICAL DISTRIBUTION HAS BEEN BUILT IN REVIT MODEL

No.	Description	Date
GREATER COLUMBUS CONVENTION CENTER		
SITE SECURITY IMROVEMENTS		
KORDA Korda/Remeth Engineering, Inc. - Consulting Engineers 1650 Watermark Drive, Suite 200 - Columbus, Ohio 43215-7010 TEL 614-467-1650 - WEB www.korda.com		
ONE LINE SCHEDULES		
PROJECT NUMBER:		2026-0416
DRAWN BY: Author	DATE	SHEET NUMBER
DESIGNED BY: Designer	09/14/2026	E6.2
CHECKED BY: Checker		

NOT FOR CONSTRUCTION
WORKING DRAWINGS FOR REVIEW



System No. W-L-3334	
ANSI/UL 1479 (ASTM E814)	CANULC S115
F Ratings - 1, 2, 3 and 4 Hr (See Item 1)	F Ratings - 1, 2, 3 and 4 Hr (See Item 1)
T Rating - 0, 1-3/4, 2, 3 and 4 Hr (See Items 2 and 3)	T Rating - 0, 1, 1-3/4, 2, 3 and 4 Hr (See Items 2 and 3)
L Rating At Ambient - Less Than 1 CFM (See Item 2)	FH Ratings - 1, 2, 3 and 4 Hr (See Item 1)
L Ratings At 400 F - 1 and Less Than 1 CFM (See Item 2)	FTH Ratings - 0, 1, 1-3/4, 2, 3 and 4 Hr (See Items 2 and 3)
	L Rating At Ambient - Less Than 1 CFM (See Item 2)
	L Ratings At 400 F - 1 and Less Than 1 CFM (See Item 2)



- Wall Assembly — The 1, 2, 3 or 4 hr fire rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described within the individual U300, U400, V400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall incorporate the following construction features:
 - Studs — Wall framing shall consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced max 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC for 1 and 2 hr wall assemblies. Steel studs to be 3-5/8 in. (92 mm) for 3 and 4 hr wall assemblies.
 - Gypsum Board — Nom 5/8 in. (16 mm) thick gypsum board as specified in the individual Wall and Partition Design. Opening in gypsum board to be max 2-1/2 in. (64 mm) diam for 2" device and max 4-1/2 in. (114 mm) diam for 4" device.The hourly F and FH Ratings of the freestop system are dependent upon the hourly rating of the wall in which it is installed.
- Cables — Within the loading area for each freestop device, the cables may represent a 0 to 100 percent visual fill. Cables to be tightly bunched within the device and rigidly supported on both sides of wall assembly. Any combination of the following types of cables may be used:
 - Max 100 per No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) jacketing and insulation.
 - Max 7C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.
 - Max 40 AWG Type RHH ground cable.
 - Max 4 or No. 22 AWG Cat 5 or Cat 6 computer cables.
 - Max RG 6/U coaxial cable with fluorinated ethylene insulation and jacketing.
 - Fiber optic cable with polyvinyl chloride (PVC) or polyethylene (PE) jacket and insulation having a max diam of 1/2 in. (13 mm).
 - Max 20/C No. 22 AWG shielded printer cable with PVC jacket.
- Through-Penetrating Product — Two copper conductors No. 18 AWG (or smaller) Power or Non Power Limited Fire Alarm Cable with or without a jacket under a metal armor.

For opening with cables, when the hourly rating of the wall assembly is 1 hr, the T, FT and FTH Ratings are 0 hr. For opening with cables, when the hourly rating of the wall assembly is 2 hr, the T, FT and FTH Ratings are 1-3/4 hr except that, when Item 2C, 2G, 2I, 2J or 2K is used, the T, FT and FTH Ratings are 1 hr for 2C, 2OR 2I and the T, FT and FTH Ratings are 1/2 hr for 2J or 2K (see item 3 also). When the hourly rating of the wall assembly is 3 or 4 hr, the T, FT and FTH Ratings are 2 hr. For wall assemblies with 3 or 4 hr rating, items 2G and 2I are not to be used.

L Ratings apply only when device flanges and CP 606 or FS-One Sealant are used. See Table below for L Ratings.

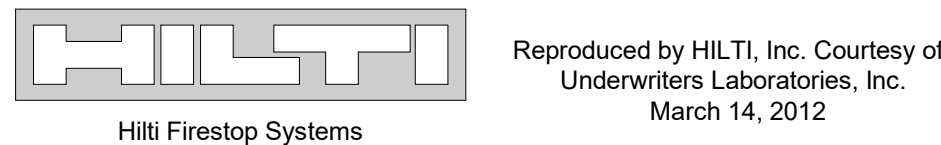
Max Cable Fill	Cable Type	L Rating, CFM/Sq Ft	L Rating, CFM
		Ambient	400°F
0%		Ambient	400°F
100%	Item 2D only	5	1
100%	Any cables (Item 2) in any combination	9	10

- Firestop Device — Firestop device consists of a corrugated steel tube with an inner plastic housing, intumescent material rings and twisted inner fabric smoke seal. Firestop device to be installed in accordance with the accompanying installation instructions. As an option, the inner fabric seal may remain open except that, to attain the L Rating, the inner fabric seal shall be twisted to completely close off the opening within device. Device slid into wall such that ends project an equal distance from the approximate centerline of the wall assembly. The annular space between the device and the periphery of the opening shall be min 0 in. (point contact). Device provided with flanges that are spun clockwise onto device threads, butting tightly to both sides of wall. Device flanges are optional. When the device flanges are not used, the T, FT and FTH Ratings for the freestop system are 0 hr. For blank opening (no cables), the T, FT and FTH Ratings for the freestop system equal the F and FH Ratings only when the device flanges are used.

- HLTI CONSTRUCTION CHEMICALS, DIV OF HLTI INC — CP 653 2" Speed Sleeve and CP 653 4" Speed Sleeve
- Fill, Void or Cavity Material — Sealant — Min 1/2 in. (13 mm) thickness of fill material applied within the annulus between freestop device and wall, flush with both surfaces of wall, and an additional 1/4 in. (6 mm) bead applied around periphery of device. When device flanges are used, gypsum drywall compound may be used in place of the fill material.

HLTI CONSTRUCTION CHEMICALS, DIV OF HLTI INC — FS-ONE or CP 606 Sealant

*Bearing the UL Classification Mark



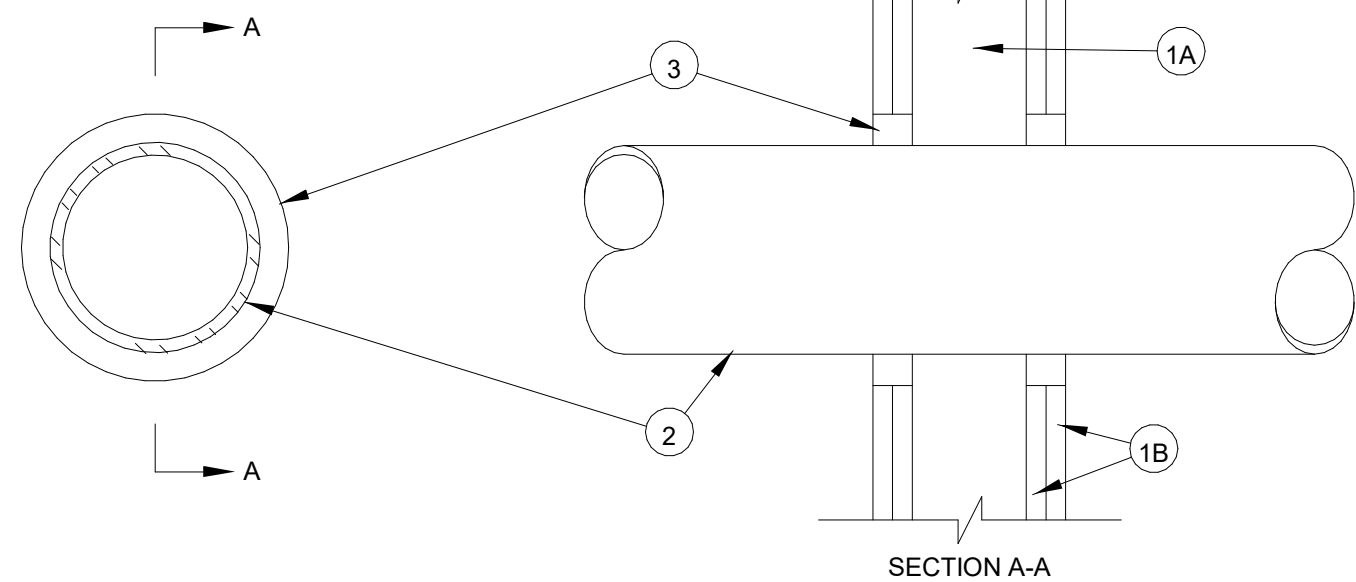
DETAIL

UL LISTED THROUGH WALL PENETRATION N.T.S.

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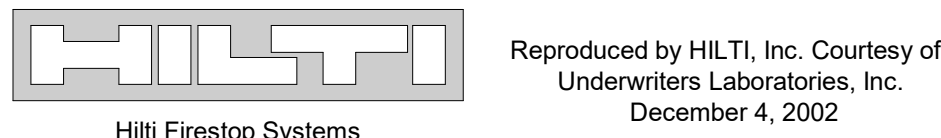
System No. W-L-1054	
F Ratings - 1 and 2 Hr (See Items 1 and 3)	T Rating - 0 Hr
L Rating At Ambient - Less Than 1 CFM/Sq Ft	L Rating At 400 F - 4 CFM/Sq Ft



- Wall Assembly — The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
 - Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. wide and spaced max 24 in. OC. When steel studs are used and the diam of opening exceeds the width of stud cavity, the opening shall be framed on all sides using lengths of steel stud installed between the vertical studs and screw-attached to the steel studs at each end. The framed opening in the wall shall be 4 to 6 in. wider and 4 to 6 in. higher than the diam of the penetrating item such that, when the penetrating item is installed in the opening, a 2 to 3 in. clearance is present between the penetrating item and the framing on all four sides.
 - Gypsum Board — 5/8 in. thick, 4 ft wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 32-1/4 in. for steel stud walls. Max diam of opening is 14-1/2 in. for wood stud walls. The F Rating of the freestop system is equal to the fire rating of the wall assembly.
- Through-Penetrants — One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the freestop system. The annular space shall be min 0 in. to max 2-1/4 in. Pipe may be installed with continuous point contact. Pipe, conduit or tubing may be installed at an angle not greater than 45 degrees from perpendicular. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:
 - Steel Pipe — Nom 30 in. diam (or smaller) Schedule 10 (or heavier) steel pipe.
 - Iron Pipe — Nom 30 in. diam (or smaller) cast or ductile iron pipe.
 - Conduit — Nom 4 in. diam (or smaller) steel electrical metallic tubing or 6 in. diam steel conduit.
 - Copper Tubing — Nom 6 in. diam (or smaller) Type L (or heavier) copper tubing.
 - Copper Pipe — Nom 6 in. diam (or smaller) regular (or heavier) copper pipe.
- Fill, Void or Cavity Material — Sealant — Min 5/8 in. thickness of fill material applied within the annulus, flush with both surfaces of wall. At the point or continuous contact locations between pipe and wall, a min 1/2 in. diam bead of fill material shall be applied at the pipe wall interface on both surfaces of wall.

HLTI CONSTRUCTION CHEMICALS, DIV OF HLTI INC — FS-One Sealant

*Bearing the UL Classification Mark



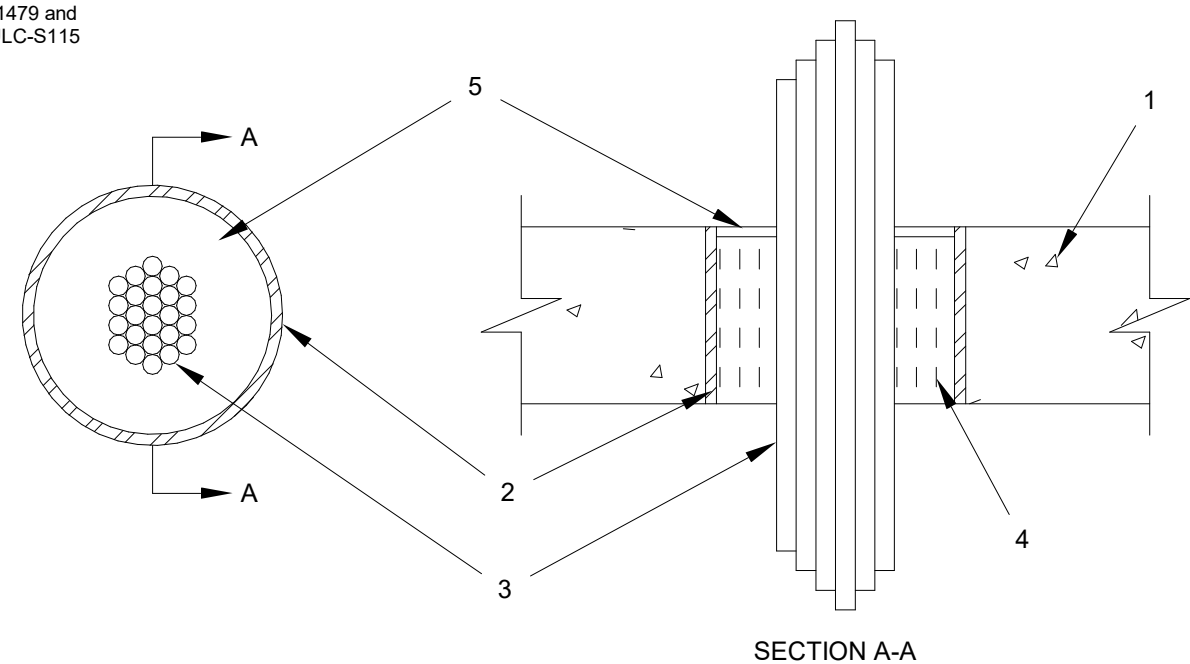
DETAIL

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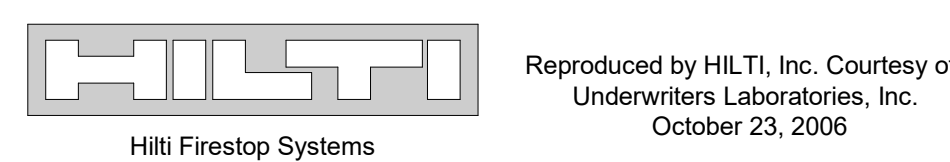
System No. C-AJ-3180	
F Rating - 3 Hr	T Rating - 0 Hr



- Floor or Wall Assembly — Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600 2400 kg/m3) concrete floor or min 4-3/4 in. (121 mm) thick reinforced lightweight or normal weight concrete wall. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diam of opening is 6 in. (152 mm). See Concrete Blocks (C221) category in the Fire Resistance Directory for names of manufacturers.
- Steel Sleeve — (Optional) — Nom 6 in. (152 mm) diam (or smaller) Schedule 40 (or heavier) steel pipe cast or grouted into floor or wall assembly, flush with floor or wall surfaces.
- Cables — Aggregate cross-sectional area of cables in opening to be max 45 percent of the aggregate cross-sectional area of the opening. Cables to be rigidly supported on both sides of floor or wall assembly. Any combination of the following types and sizes of metallic conductor or fiber optic cable may be used:
 - Max 500 kcmil single copper conductor power cable with thermoplastic insulation and polyvinyl chloride (PVC) jacket.
 - Max 300 pair No. 24 AWG copper conductor telecommunication cables with polyvinyl chloride (PVC) insulation and jacket material.
 - Max 7C copper conductor No. 12 AWG multi-conductor power and control cables with polyvinyl chloride (PVC) or cross-linked polyethylene (XLPE) insulation and PVC jacket.
 - Multiple fiber optical communication cables jacketed with PVC and having a max outside diam of 1/2 in. (13 mm).
 - Max 3/C copper conductor No. 12 AWG with bare aluminum ground, polyvinyl chloride (PVC) insulated steel, metal-clad cable.
 - Max 3/C with ground 2/0 AWG copper conductor SER cable with cross-linked polyethylene (XLPE) insulation and polyvinyl chloride (PVC) jacket.
 - RG/U coaxial cable with polyethylene (PE) insulation and polyvinyl chloride (PVC) jacket having a max outside diameter of 5/8 in. (13 mm).
 - Fire Resistive Cables* — Max 1-1/4 in. (32 mm) diam single conductor or multi conductor Type MI cable. A min 1/8 in. (3 mm) separation shall be maintained between MI cables and any other types of cable.
- Packing Material — Min 4-1/4 in. (108 mm) thickness of min 4 pcf (64 kg/m3) mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor to accommodate the required thickness of fill material.
- Fill, Void or Cavity Material — Sealant — Min 1/4 in. (6.4 mm) thickness of fill material applied within the annulus, flush with top surface of floor or with both surfaces of wall.

HLTI CONSTRUCTION CHEMICALS, DIV OF HLTI INC — FS-One Sealant

*Bearing the UL Classification Mark



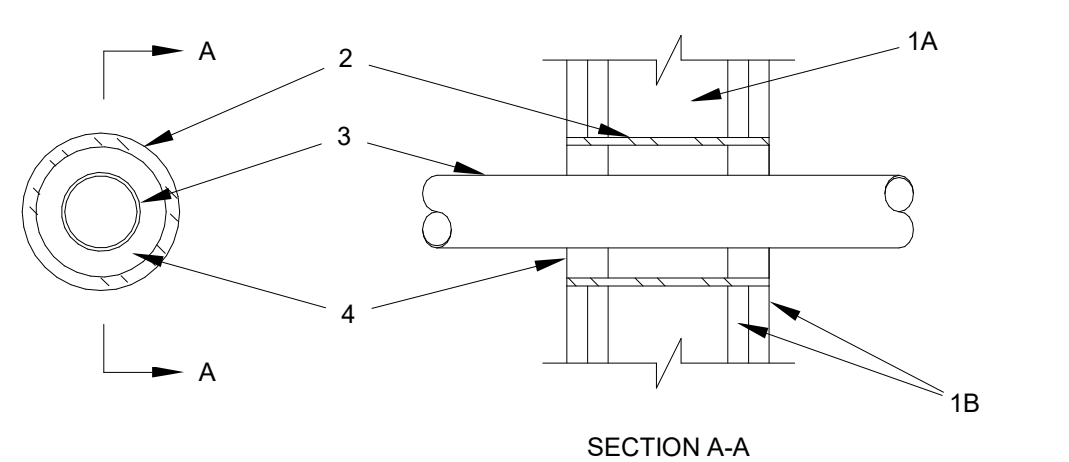
DETAIL

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System No. W-L-2075	
F Ratings - 1 & 2 Hr (See Item 4)	T Ratings - 0 and 2 Hr (See Item 4)
L Rating At Ambient - Less Than 1 CFM/Sq Ft	L Rating At 400 F - 4 CFM/Sq Ft



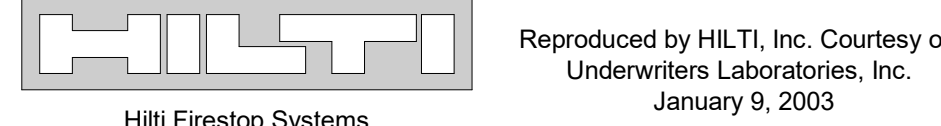
- Floor or Wall Assembly — The fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
 - Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. wide and spaced max 24 in. OC.
 - Gypsum Board — Nom 5/8 in. thick gypsum wallboard, as specified in the individual Wall and Partition Design. Max diam of opening is 4 in.
- Metallic Sleeve — (Optional) — Nom 4 in. diam (or smaller) Schedule 40 (or thinner) steel pipe cast into wall assembly with joint compound and installed flush with wall surfaces.
- Electrical Nonmetallic Tubing — Nom 2 in. diam (or smaller) corrugated wall electrical nonmetallic tubing (ENT) constructed of polyvinyl chloride (PVC). Tubing to be rigidly supported on both sides of wall assembly. A nom annular space of 3/4 in. is required within the freestop system. See Electrical Nonmetallic Tubing (FKHU) category in the Electrical Construction Materials Directory for names of manufacturers.
- Fill, Void or Cavity Material — Sealant — Installed symmetrically on both sides of the wall. The hourly F Rating of the freestop system is equal to the hourly fire rating of the wall assembly in which it is installed. Fill material applied within the annulus, flush with each end of the steel sleeve at the thickness shown in the table below:

F Rating Hr	T Rating Hr	Fill Mtl Depth In.
1	0	5/8
2	2	1-1/4

HLTI CONSTRUCTION CHEMICALS, DIV OF HLTI INC — FS-One Sealant

*Bearing the UL Listing Mark

*Bearing the UL Classification Marking



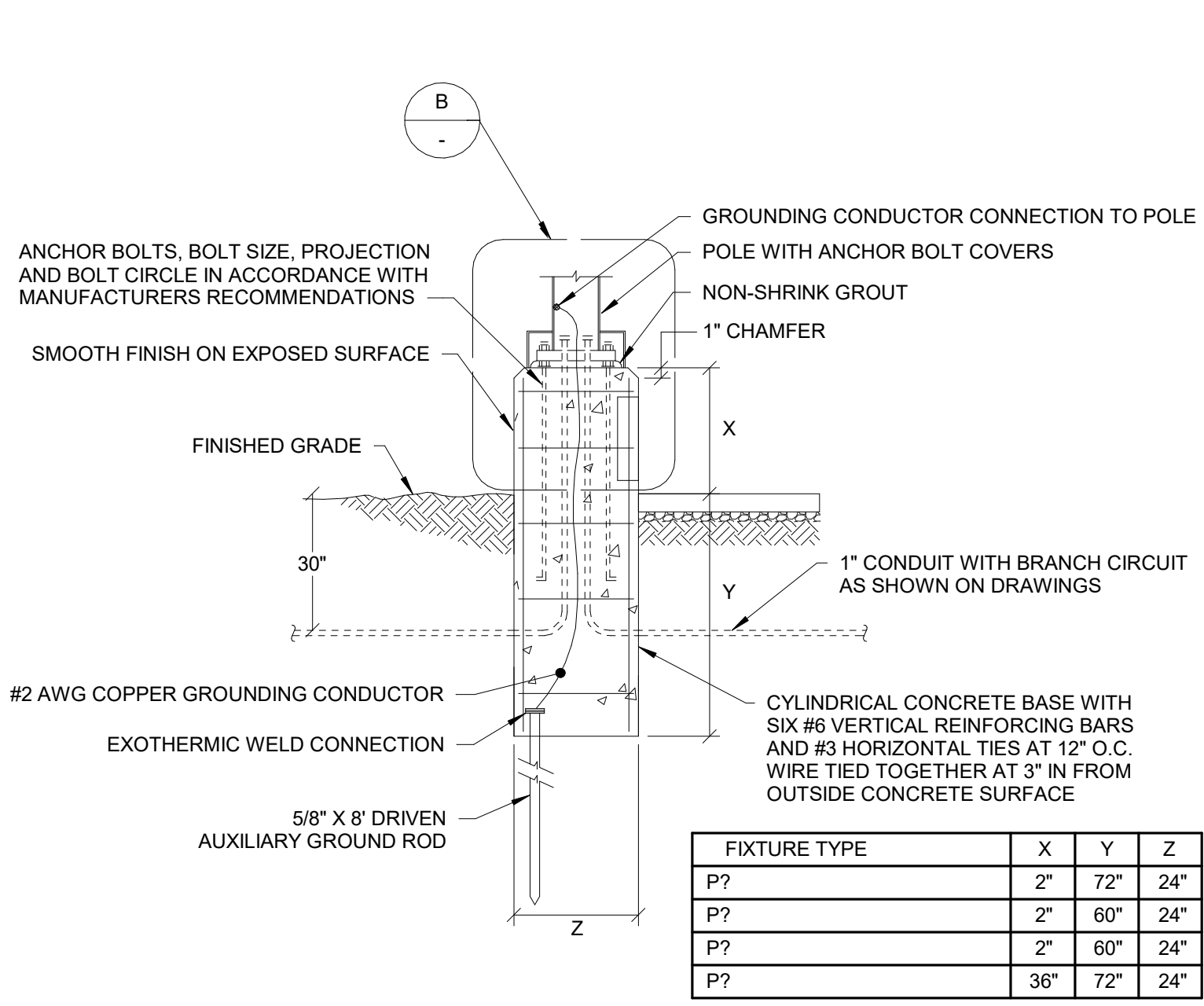
DETAIL

UL LISTED THROUGH WALL PENETRATION N.T.S.

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No.	Description	Date
GREATER COLUMBUS CONVENTION CENTER		
SITE SECURITY IMPROVEMENTS		
KORDA Korda/Kenneth Engineering, Inc. - Consulting Engineers 1650 Watermark Drive, Suite 200 - Columbus, Ohio 43215-7010 TEL 614-467-8650 - WEB www.korda.com		
ELECTRICAL DETAILS		
PROJECT NUMBER:	2026-0416	
DRAWN BY: Author	DATE	SHEET NUMBER
DESIGNED BY: Designer	09/14/2026	E7.1
CHECKED BY: Checker		

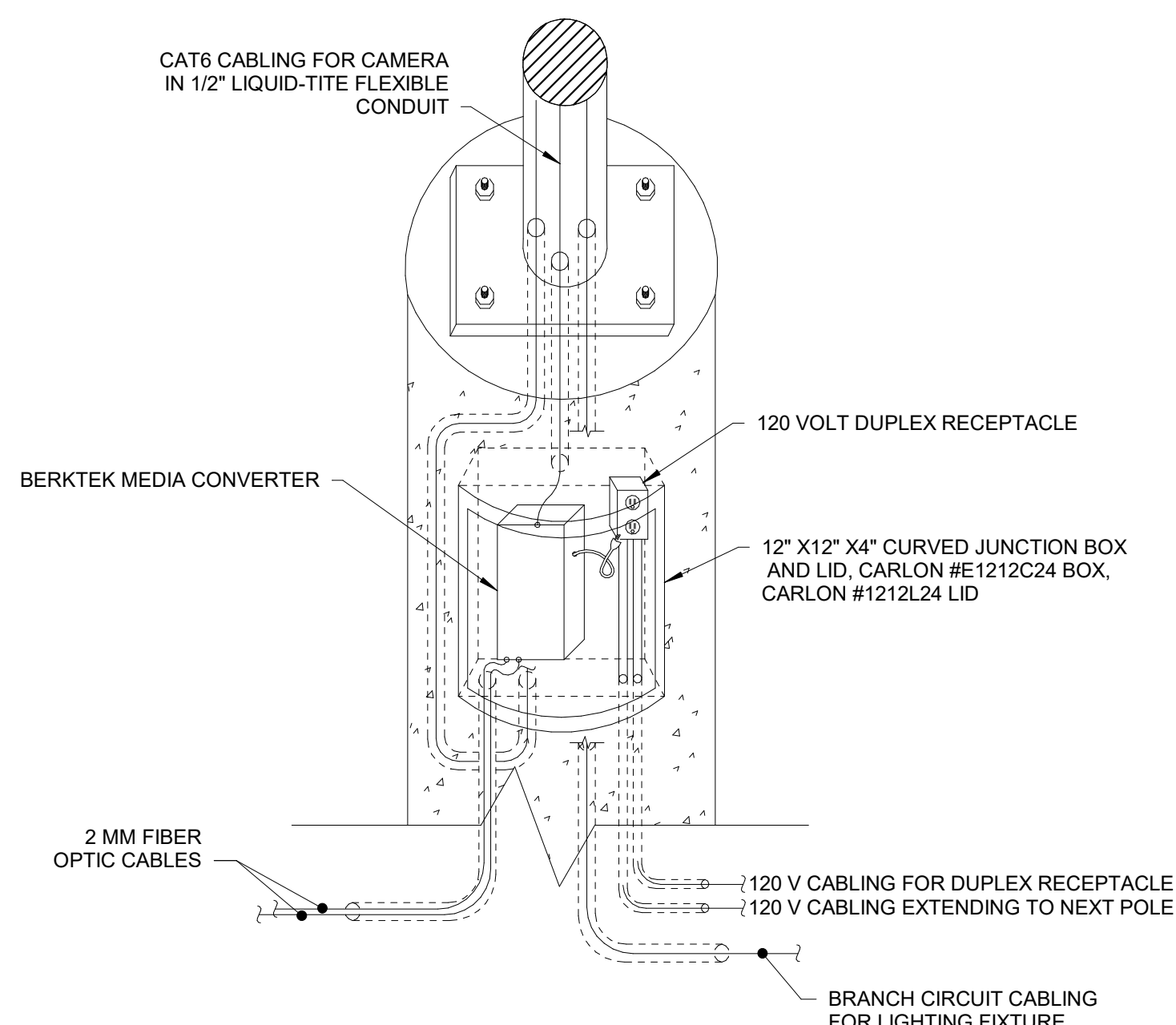
NOT FOR
CONSTRUCTION
WORKING DRAWINGS
FOR REVIEW



1 DETAIL

POLE MOUNTED LUMINAIRE BASE

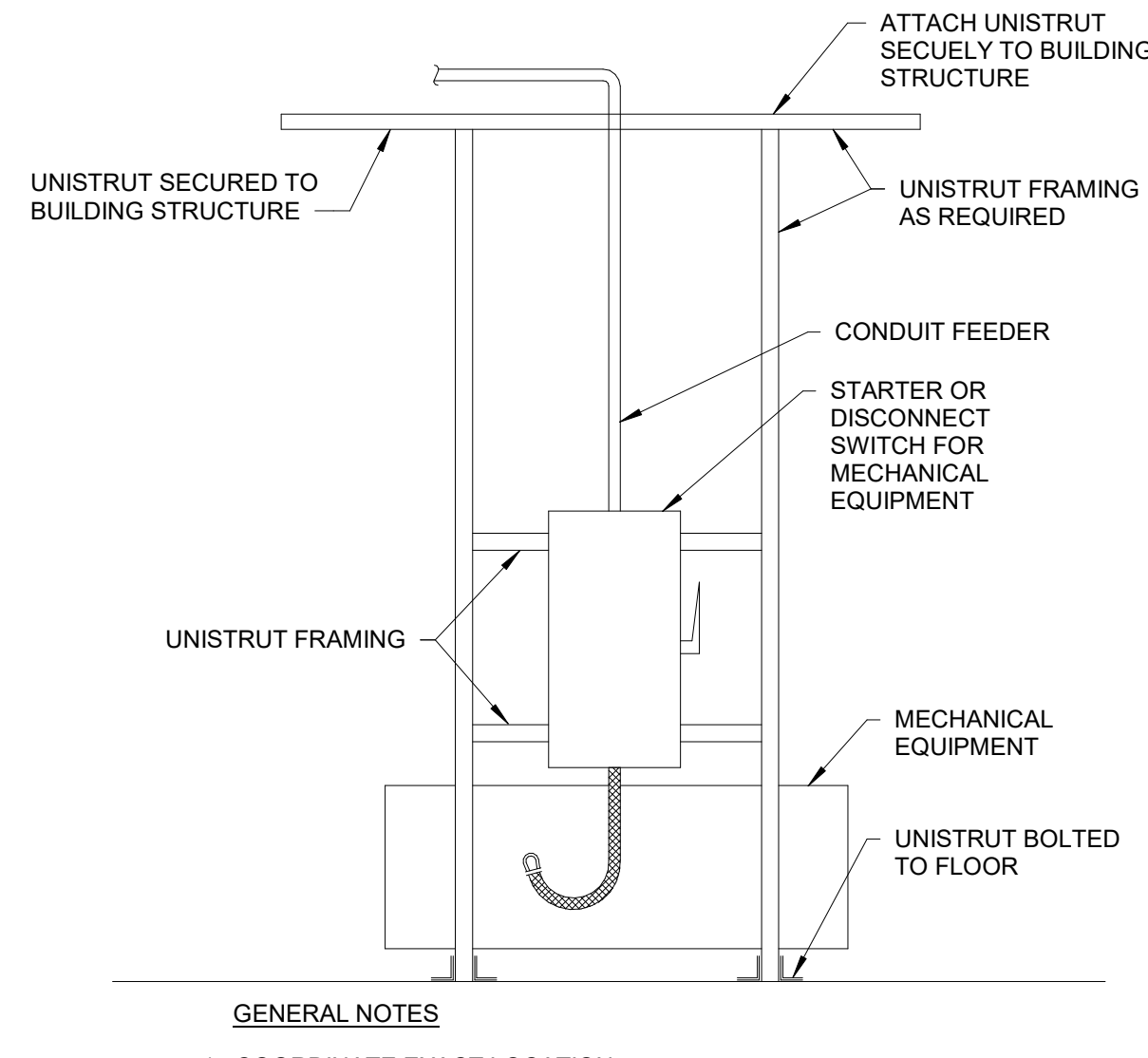
N.T.S.



2 DETAIL

014 - POLE MOUNTED LUMINAIRE BASE

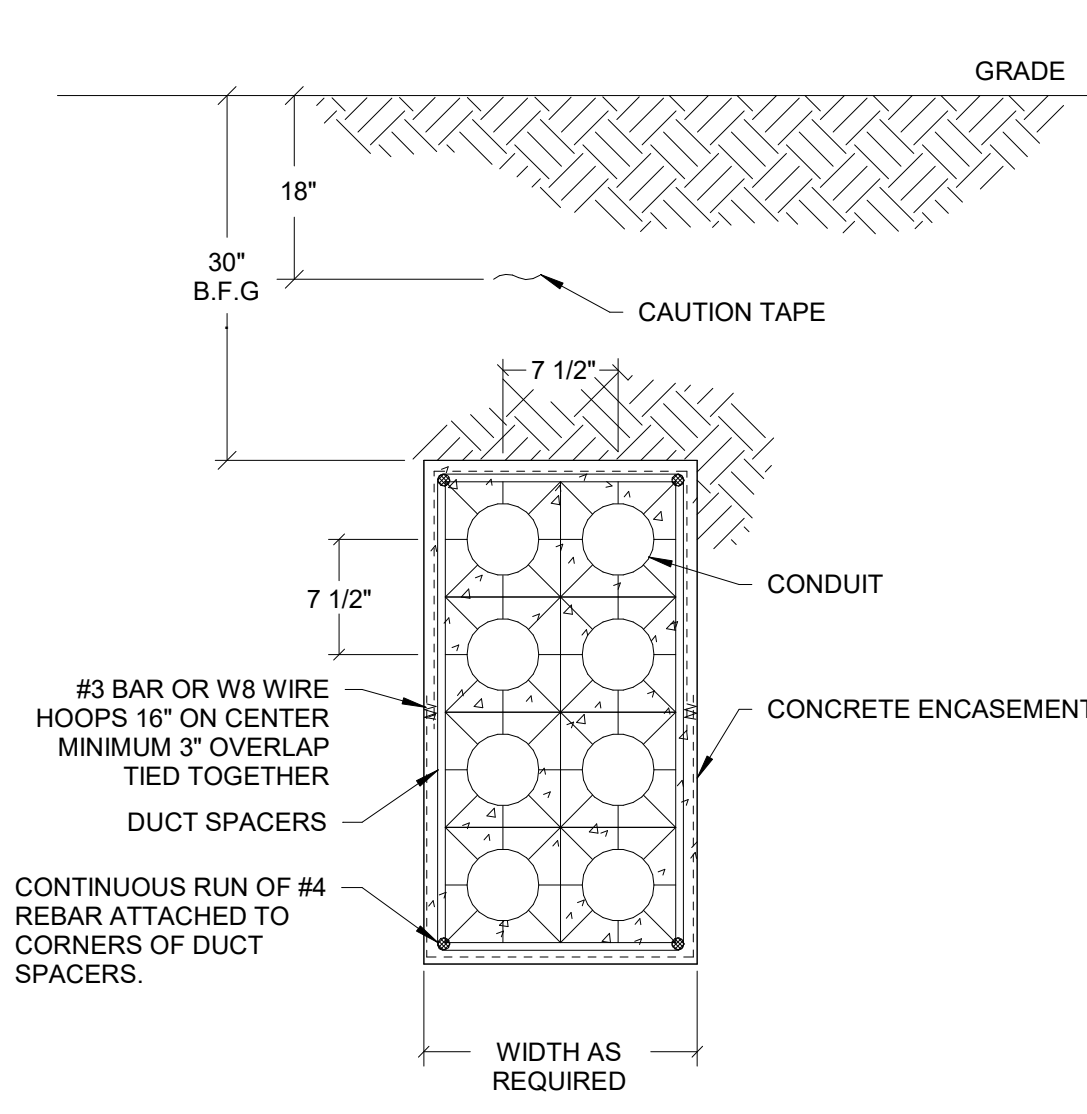
N.T.S.



3 FLOOR PLAN

TYPICAL STARTER / DISCONNECT SWITCH AT MECHANICAL EQUIPMENT

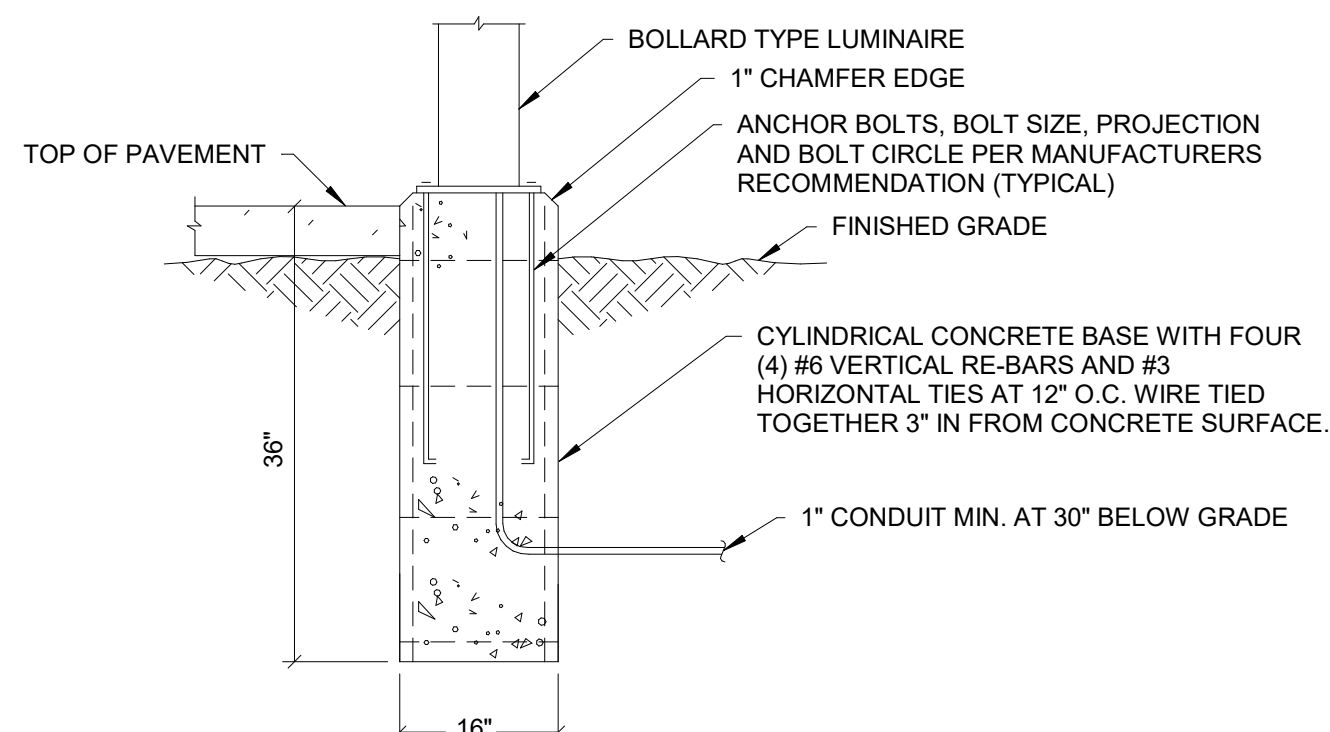
SCALE: 12" = 1'-0"



4 DETAIL

DUCTBANK SECTION - TYPICAL

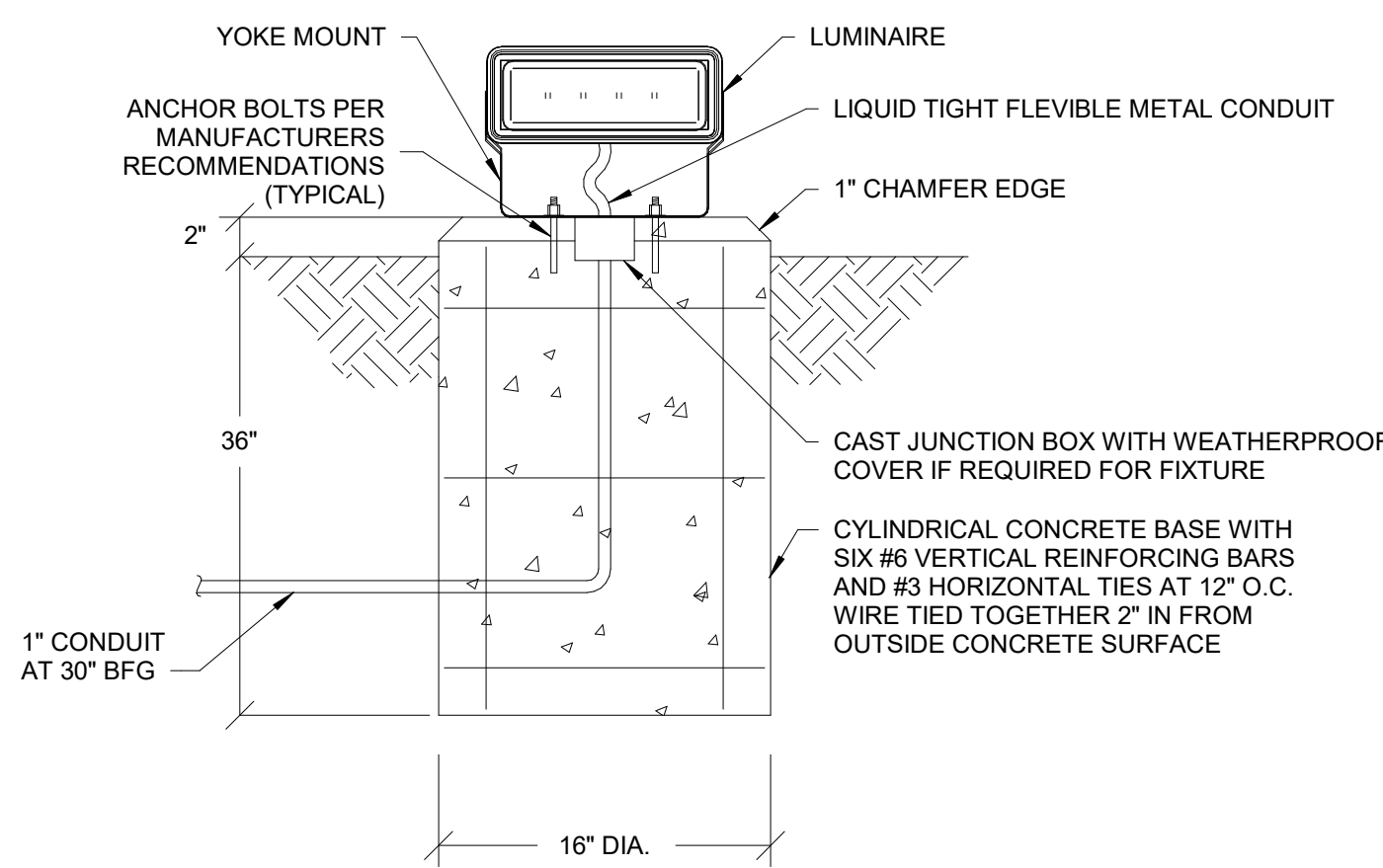
N.T.S.



5 DETAIL

BOLLARD BASE

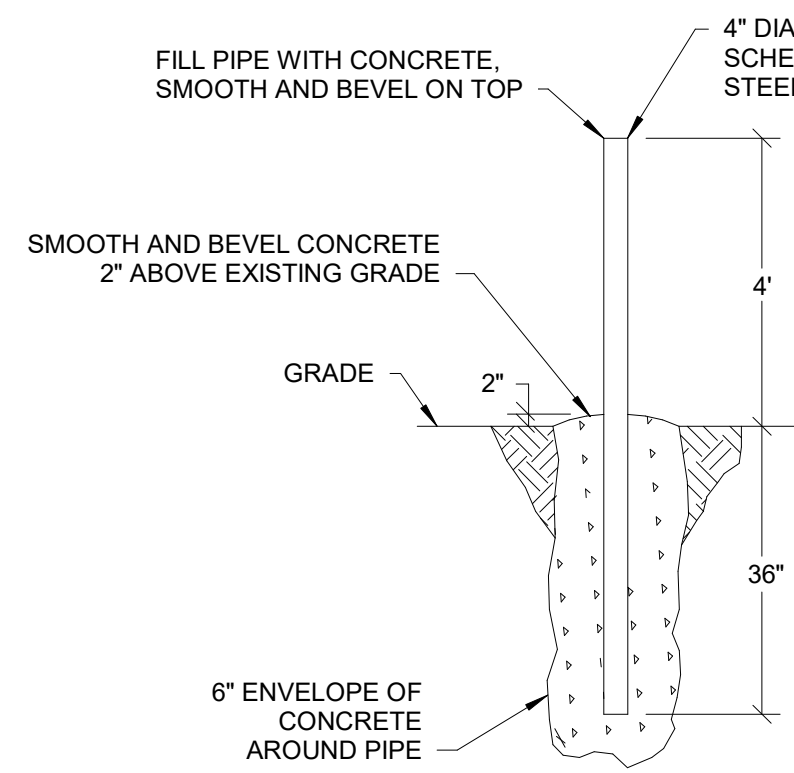
N.T.S.



6 DETAIL

GROUND MOUNTED LUMINAIRE BASE

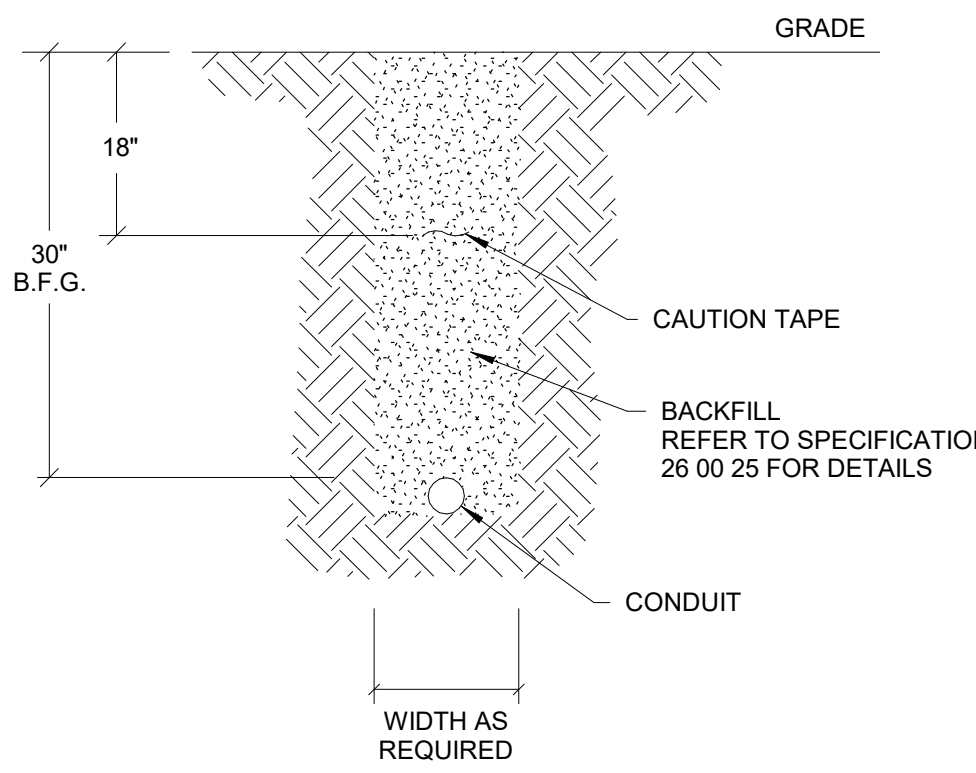
N.T.S.



7 DETAIL

PROTECTIVE PIPE BOLLARD

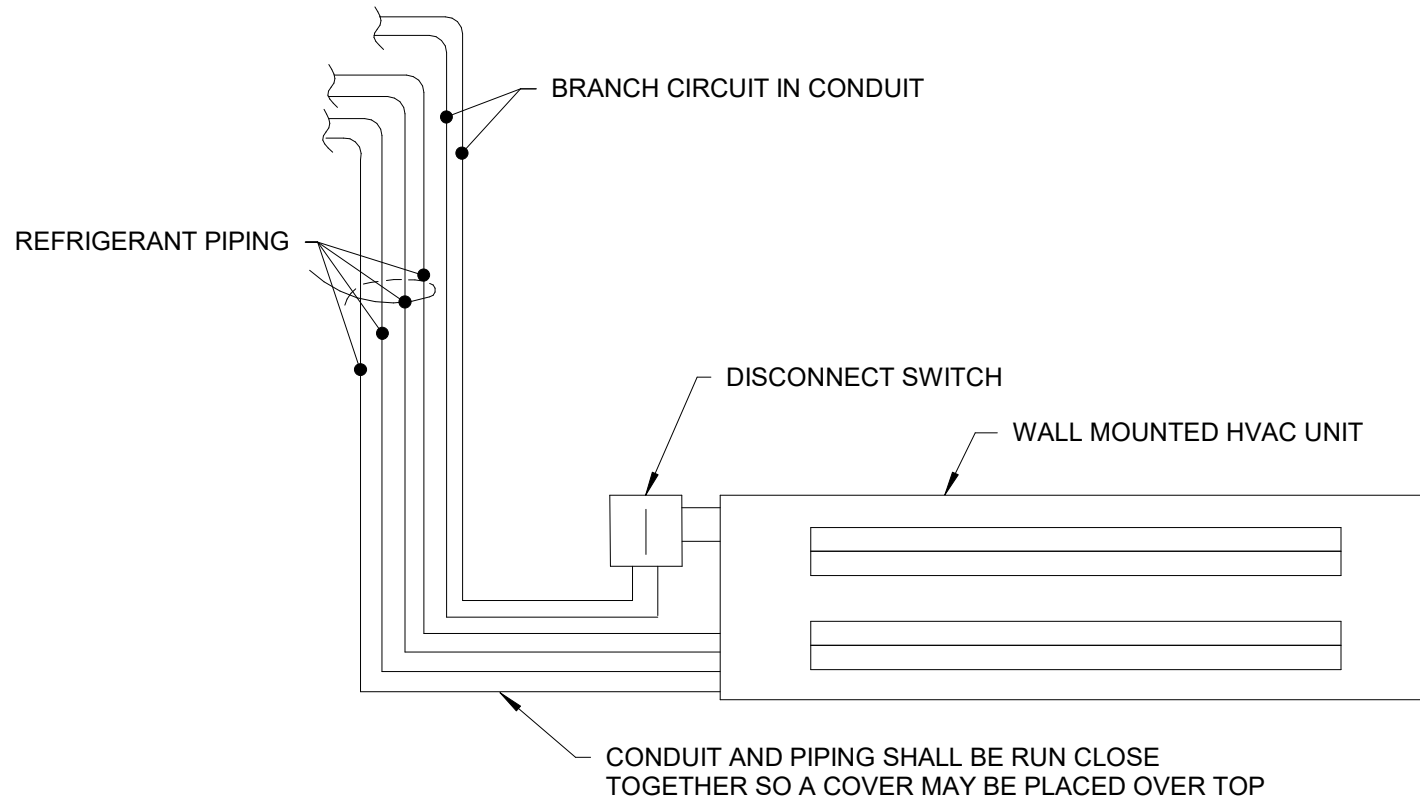
N.T.S.



8 DETAIL

SITE LIGHTING UNDERGROUND CONDUIT

N.T.S.



9 FLOOR PLAN

WALL MOUNTED HVAC UNIT

SCALE: 12" = 1'-0"

No.	Description	Date
1	GREATER COLUMBUS CONVENTION CENTER	
2	SITE SECURITY IMPROVEMENTS	
3	KORDA	
4	ELECTRICAL DETAILS	
5	PROJECT NUMBER:	2026-0416
6	DRAWN BY: Author	DATE
7	DESIGNED BY: Designer	09/14/2026
8	CHECKED BY: Checker	E7.2

NOT FOR CONSTRUCTION
WORKING DRAWINGS
FOR REVIEW



No.	Description	Date	
GREATER COLUMBUS CONVENTION CENTER			
SITE SECURITY IMPROVEMENTS			
.\Korda + Address.bmp			
GUARD BOOTH DETAILS			
PROJECT NUMBER:		2026-0416	
DRAWN BY:	DATE	SHEET NUMBER	
DESIGNED BY:	09/14/2026	SP-100	
CHECKED BY:			

**NOT FOR
CONSTRUCTION**

PROJECT NUMBER:	2026-0416		
DRAWN BY:	DATE	SHEET NUMBER	
DESIGNED BY:	09/14/2026	SP-100	
CHECKED BY:			

TECHNOLOGY SYSTEMS ABBREVIATIONS	
AAC	ABOVE ACCESSIBLE CEILING
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AHJ	AUTHORITY HAVING JURISDICTION
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APC	ANGLE POLISHED CONNECTOR
AV	AUDIO VISUAL
AWG	AMERICAN WIRE GAUGE
BAS	BUILDING AUTOMATION SYSTEM
BC	BONDING CONDUCTOR
BCT	BONDING CONDUCTOR FOR TELECOMMUNICATIONS
BFS	BELOW FINISH GRADE
BIS	BUILDING INDUSTRY CONSULTING SERVICE INTERNATIONAL
BMS	BUILDING MANAGEMENT SYSTEM
CAD	COMPUTER-AIDED DESIGN
CAT	CATEGORY
CATV	COMMUNITY ANTENNA TELEVISION (CABLE TELEVISION)
CCTV	CLOSED-CIRCUIT TELEVISION
CM	COMMUNICATIONS GENERAL-PURPOSE CABLE
CMP	COMMUNICATIONS PLENUM CABLE
CMR	COMMUNICATIONS RISER CABLE
CMX	COAXIAL CABLE
CP	CONSOLIDATION POINT
CPE	CUSTOMER PREMISES EQUIPMENT
CRAC	COMPUTER ROOM AIR CONDITIONING
CSI	CONSTRUCTION SPECIFICATIONS INSTITUTE
DAS	DISTRIBUTED ANTENNA SYSTEM
dB	DECIBEL
dBmV	DECIBEL MILLIVOLT
DVR	DIGITAL VIDEO RECORDER
EF	ENTRANCE FACILITY
ER	EQUIPMENT ROOM
ETP	FOIL TWISTED-PAIR
GC	GENERAL CONTRACTOR
GE	GROUNDING EQUALIZER
GEC	GROUNDING EQUALIZER CONDUCTOR
HCM	HORIZONTAL CROSS-CONNECT
HDM	HIGH DEFINITION MULTIMEDIA INTERFACE
HH	HANDHOLE
HV	HEATING, VENTILATING, AND AIR CONDITIONING
IC	INTERMEDIATE CROSS-CONNECT
ID	INSIDE DIAMETER
IDC	INSULATION DISPLACEMENT CONNECTOR
ISO	ISOLATED GROUND
ISO	INPUT/OUTPUT (DEVICE)
IP	INTERNET PROTOCOL
IS	INFORMATION SYSTEMS
ITS	INFORMATION TECHNOLOGY
KVM	KEYBOARD / VIDEO / MOUSE
LAN	LOCAL AREA NETWORK
LCD	LIQUID CRYSTAL DISPLAY
LED	LIGHT-EMITTING DIODE
MC	MAIN CROSS-CONNECT
MD	MAIN DISTRIBUTOR
MDF	MAIN DISTRIBUTION FRAME
MH	MAINTENANCE HOLE
MM	MULTITRACE
MUTOA	MULTI-USER TELECOMMUNICATIONS OUTLET ASSEMBLY
IN	INDICATES MOUNTING HEIGHT (N) TO CENTER OF DEVICE AFF
N/A	NOT APPLICABLE
NEC	NATIONAL ELECTRIC CODE
NT	NOT IN CONTRACT
NIS	NOT TO SCALE
NVR	NETWORK VIDEO RECORDER
OD	OUTSIDE DIAMETER
OEM	ORIGINAL EQUIPMENT MANUFACTURER
OFRC	OPTICAL FIBER CONDUCTIVE RISER CABLE
OFNP	OPTICAL FIBER NONCONDUCTIVE PLENUM CABLE
OFNR	OPTICAL FIBER NONCONDUCTIVE RISER CABLE
OLT	OPTICAL LINE TERMINAL
ONT	OPTICAL NETWORK TERMINAL
OSP	OUTSIDE PLANT
OTDR	OPTICAL TIME DOMAIN REFLECTOMETER
PA	PUBLIC ADDRESS
PBX	PRIVATE BRANCH EXCHANGE
POE	POWER OVER ETHERNET
PON	PASSIVE OPTICAL NETWORK
POS	POINT OF SALE
PAIR	PAIR
PSTN	PUBLIC SWITCHED TELEPHONE NETWORK
PTZ	PAN, TILT, AND ZOOM
PVC	POLYVINYL CHLORIDE
QoS	QUALITY OF SERVICE
REGD	REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
REQ	REQUEST TO EXIT
RF	RADIO FREQUENCY
RFID	RADIO FREQUENCY IDENTIFICATION
RGB	RED, GREEN, BLUE
RU	RACK UNIT
RX	RECEIVER
SCS	STRUCTURED CABLING SYSTEM
SCP	SCREENED TWISTED-PAIR
SFP	SMALL FORM FACTOR
STP	SCREENED / FOIL TWISTED-PAIR
SM	SINGLE MODE
STP	SHIELDED TWISTED-PAIR
TB	TELECOMMUNICATIONS BONDING BACKBONE
TC	TELECOMMUNICATIONS CLOSET
TDD	TELECOMMUNICATIONS DEVICE FOR THE DEAF
TDMM	TELECOMMUNICATIONS DISTRIBUTION METHODS MANUAL
TE	TELECOMMUNICATIONS ENCLOSURE
TEB	TELECOMMUNICATIONS EQUIPMENT BONDING CONDUCTOR
TGB	TELECOMMUNICATIONS GROUNDING BUSBAR
TMSB	TELECOMMUNICATIONS MAIN GROUNDING BUSBAR
TO	TELECOMMUNICATIONS OUTLET
TV	TELEVISION
TX	TRANSMITTER
UNTP	UNSHIELDED TWISTED-PAIR WITH FOIL SCREENED TWISTED-PAIR CONDUCTORS
UL	UNDERWRITERS LABORATORIES INC.
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTIBLE POWER SUPPLY
USOC	UNIVERSAL SERVICE ORDER CODE
UTP	UNSHIELDED TWISTED-PAIR
UUTP	UNSHIELDED TWISTED-PAIR WITH UNSHIELDED TWISTED-PAIR CONDUCTORS
VLAN	VIRTUAL LAN
VOP	VOICE OVER INTERNET PROTOCOL
VPN	VIRTUAL PRIVATE NETWORK
WAN	WIDE AREA NETWORK
WAP	WIRELESS ACCESS POINT
WLAN	WIRELESS LOCAL AREA NETWORK

TECHNOLOGY SYMBOLS		1. SOME SYMBOLS MAY NOT BE USED	2. MOUNTING HEIGHTS ARE TO CENTER U.N.O.	MOUNTING HEIGHT UNLESS NOTED OTHERWISE
SYMBOL	DESCRIPTION			
AUDIO/VISUAL SYMBOLS				
	SOUND SYSTEM SPEAKER, PENDANT MOUNTED	---		
	* = ZONE NUMBER			
	V = INTEGRAL VOLUME CONTROL			
	SOUND SYSTEM SPEAKER, CEILING MOUNTED, WALL MOUNTED	94"		
	* = ZONE NUMBER			
	V = INTEGRAL VOLUME CONTROL			
	SOUND SYSTEM OUTDOOR HORN SPEAKER	---		
	WP = WEATHERPROOF			
	CENTRAL SOUND SYSTEM CEILING MOUNTED SPEAKER	IN CEILING		
	CENTRAL SOUND SYSTEM WALL MOUNTED SPEAKER	144"		
	CENTRAL SOUND SYSTEM CEILING MOUNTED PAGING HORN	IN CEILING		
	CENTRAL SOUND SYSTEM WALL MOUNTED PAGING HORN	144"		
	LOCAL SOUND SYSTEM CEILING MOUNTED SPEAKER	IN CEILING		
	LOCAL SOUND SYSTEM WALL MOUNTED SPEAKER	144"		
	SOUND SYSTEM VOLUME ATTENUATOR	46"		
	VIDEO PROJECTOR, CEILING MOUNTED, (1) CAT6 UTP	IN CEILING		
	W = WALL MOUNTED	COORD. HT		
	VIDEO MONITOR DISPLAY DEVICE; REFER TO SPEC 27 41 05	---		
	* = SCREEN DIAGONAL			
	MICROPHONE INPUT JACK, WALL MOUNTED; FLOOR MOUNTED; CEILING MOUNTED	18"		
	CONDUIT, RISER UP	---		
	CONDUIT, RISER DOWN	---		
	AUDIO/VISUAL, OUTLET BOX (REFER TO 26 05 35)	SEE DRAWINGS		
	W/ DOUBLE GANG RING AND (2) 1-1/4" CONDUITS STUBBED TO ABOVE ACCESSIBLE CEILING FOR LAY-IN CEILING APPLICATIONS (CONDUITS EXTENDED TO PROJECTOR FOR EXPOSED CEILING APPLICATIONS).			
	H = HIGH OUTLET			
	L = LOW OUTLET			
	F = FLOOR OUTLET			
	CONTROL PANEL, (1) CAT6 UTP	---		
	TOUCHSCREEN CONTROLLER, (1) CAT6 UTP	---		
	ROOM SCHEDULER, (1) CAT6 UTP	48"		
VOICE/DATA SYMBOLS				
	WIRELESS ACCESS POINT, (2) CAT6A UTP	IN CEILING		
	W = WALL MOUNTED			
	1 PORT, WALL MOUNT, (1) CAT6 UTP	18"		
	2 PORT, WALL MOUNT, (2) CAT6 UTP	18"		
	3 PORT, WALL MOUNT, (3) CAT6 UTP	18"		
	4 PORT, WALL MOUNT, (4) CAT6 UTP	18"		
	JUNCTION BOX FURNITURE FEED FOR POWER & DATA, FLOOR MOUNTED; SEE SPEC SECTION 26 05 37	FLOOR		
	FLOOR RECESSED OUTLET BOX	FLOOR		
	* = # OF CAT6 UTP; SEE SPEC SECTION 26 05 38			
	0 = NO DATA, PROVIDE CONDUIT PATHWAY FOR FUTURE DATA			
	FLUSH FIRE-RATED POKE-THRU; SEE SPEC SECTION 26 05 39	FLOOR		
	FURNITURE FEED FOR POWER AND VOICE/DATA			
	FLOOR RECESSED FIRE RATED "POKE-THRU" OUTLET ASSEMBLY	FLOOR		
	* = # OF CAT6 UTP; SEE SPEC SECTION 26 05 40			
	0 = NO DATA, PROVIDE CONDUIT PATHWAY FOR FUTURE DATA			
	DUAL CHANNEL UNDER FLOOR DUCT	---		
	* = # OF CAT6 UTP; SEE SPEC SECTION 26 05 42			
	0 = NO DATA, PROVIDE CONDUIT PATHWAY FOR FUTURE DATA			
	MONITOR DATA OUTLET, (1) CAT6 UTP	COORD. HT		
	ELEVATOR, (1) CAT6 UTP, ANALOG LINE	---		
	DATA OUTLET FOR FREEZER / FRIDGE, (1) CAT6 UTP	COORD. HT		
	DATA OUTLET FOR MULTIFUNCTION DEVICE, (2) CAT6 UTP	COORD. HT		
	(1) FOR DATA AND (1) FOR VOICE			
	DATA OUTLET FOR PRINTER, (1) CAT6 UTP	COORD. HT		
	DATA OUTLET FOR PYXIS MACHINE, (1) CAT6 UTP	18"		
	WALL PHONE, (1) CAT6 UTP FOR VOICE	46"		
	CLINICAL ENGINEERING, WALL MOUNT	COORD. HT		
	* = # OF CAT6 PORTS (AND CABLES)			
	DUAL SERVICE FIELD WIRED MULTIPLE OUTLET RACEWAY	SEE DRAWINGS		
	TELEVISION OUTLET, (1) CAT6 UTP, (1) RG6 COAX	60"		
	P = PATIENT ROOM TELEVISION OUTLET	60"		
	(1) CAT6 UTP, (1) RG6 COAX, (1) HDMI, (1) 1/4", 3-CONDUCTOR CABLE	60"		
	CP = CONFERENCE ROOM TELEVISION OUTLET, (1) CAT6 UTP, (1) RG6 COAX, (1) HDMI	60"		
	VIDEO CONFERENCE CAMERA, (1) CAT6 UTP	COORD. HT		
	W = WALL MOUNTED			
	C = CEILING MOUNTED			
NURSE CALL SYMBOLS				
	CODE BLUE STATION	58"		
	CODE BLUE ANNUNCIATOR	58"		
	NURSE CALL - PATIENT STATION	46"		
	NURSE CALL - BED CONNECTOR	58"		
	NURSE CALL - DUTY STATION	58"		
	NURSE CALL - EMERGENCY PULL CORD STATION	58"		
	NURSE CALL - BASE STATION	---		
	NURSE CALL - EMERGENCY PUSH BUTTON STATION	58"		
	NURSE CALL - STAFF STATION	58"		
	NURSE CALL - STAFF COMMUNICATION TERMINAL	58"		
	NURSE CALL - SHOWER EMERGENCY PULL CORD STATION	58"		
	STAFF LOCATOR	---		
	NURSE CALL CORRIDOR DOME LIGHT FOR PATIENT ROOM, CEILING, WALL MOUNTED, "Z" = ZONE LIGHT	88"		

TECHNOLOGY SYMBOLS		1. SOME SYMBOLS MAY NOT BE USED	2. MOUNTING HEIGHTS ARE TO CENTER U.N.O.	MOUNTING HEIGHT UNLESS NOTED OTHERWISE
SYMBOL	DESCRIPTION			
SECURITY SYMBOLS				
	SECURITY SYSTEM HORN, WP - WEATHERPROOF	---		
	INTERIOR SECURITY SYSTEM CAMERA, (1) CAT6 UTP	92"		
	EXTERIOR SECURITY SYSTEM CAMERA, (1) CAT6 UTP	144"		
	PUSH BUTTON DOOR RELEASE	---		
	BUZZER	92"		
	BLUE LIGHT EMERGENCY PHONE	46"		
	SECURITY SYSTEM CARD READER, INCLUDES DOOR POSITION SWITCH(ES)	46"		
	WIRELESS LOCKSET WITH INTEGRAL CARD READER BY DIV. 8	COORD. WALL HEIGHT		
	ACCESS CONTROL WIRELESS GATEWAY	CEL. COORD. LOC. WITH VENDOR		
	DURESS ALARM	---		
	LOCAL DOOR ACCESS CONTROLLER, (1) CAT6 UTP	---		
	SECURITY SYSTEM ELECTRIC DOOR LATCH	46"		
	EMERGENCY CALLSTROBE LIGHT	---		
	SECURITY SYSTEM GLASS BREAK DETECTION	CEIL. OR 94"		
	INTERCOM, BASE, DOOR STATION	46"		
	SECURITY SYSTEM KEY PAD	46"		
	SECURITY SYSTEM MAGNETIC DOOR LATCH	---		
	SECURITY SYSTEM MOTION DETECTOR	CEIL. OR 94"		
	SECURITY SYSTEM DOOR POSITION SWITCH	---		
	SECURITY SYSTEM DOOR LOCKDOWN PULL STATION	COORD. HEIGHT		
MISCELLANEOUS SYMBOLS				
	EMERGENCY RADIO ANTENNA	IN CEILING		
	CLOCK, CEILING MOUNTED; WALL MOUNTED	94"		
	CLOCK * ET = ELAPSED TIME CLOCK, D = DIGITAL, WG = WIREGUARD	94"		
	SBB (SECONDARY BONDING BUSBAR)	90"		
	PBB (PRIMARY BONDING BUSBAR)	90"		
	E2 PATH SERIES 44+ MULTIGANG FIRESTOP, QUANTITY OF GANGS AS REQUIRED TO ALLOW 30% SPARE CAPACITY.	ABOVE CEILING		
	S = E2 PATH SERIES 3INX2 MULTIGANG SMOKE & ACUSTICAL PATHWAY, QUANTITY OF GANGS AS REQUIRED TO ALLOW 30% SPARE CAPACITY.			
	8" X 4" W X 3/4" AC QUALITY OR BETTER PLYWOOD BACKBOARD IN TR SPACES, MOUNT 8" AFF 4" WIDE BY 8" TALL AT SPECIFIED LOCATIONS, PAINT FRONT BACK AND SIDES WITH TWO COATS FIRE RETARDANT PAINT.	104"		
	AREA OF RESCUE COMMAND CENTER	60" TO CENTER		
	AREA OF RESCUE LIGHTED SIGN	MATCH ADJACENT EXIT SIGN		
	AREA OF RESCUE STATION	46" TO CENTER		
	TWO-WAY EMERGENCY COMMUNICATIONS SYSTEM, BASE, CALL STATION, (1) CAT6 UTP	48"		
	STAFF TIME CLOCK, (1) CAT6 UTP	SEE DRAWINGS		

SYMBOL LIST GENERAL INFORMATION	
1.	DASHED SYMBOLS INDICATE EXISTING DEVICES TO BE REMOVED.
2.	SOLID SYMBOLS WITH LIGHT LINEWEIGHT INDICATE EXISTING DEVICES TO REMAIN.
3.	DASHED SYMBOLS WITH SUBSCRIPT "RL" INDICATE EXISTING DEVICES TO BE RELOCATED.
4.	SOLID SYMBOLS WITH SUBSCRIPT "RD" INDICATE RELOCATED DEVICES.

SCOPE OF WORK NOTES	
1.	ALL CATEGORY CABLING AS SPECIFIED IN DIVISION 27 AND/OR DIVISION 28 INCLUDING BUT NOT LIMITED TO CABLING FOR NURSE CALL, CCTV, ACCESS CONTROL, AV OVER-UP, CONTROL NETWORK, AND HOBASIT, SHALL BE PROVIDED BY DIVISION 27 STRUCTURED CABLING CONTRACTOR. ALL CATEGORY CABLING FOR DIVISION 27 AND DIVISION 28 APPLICATIONS SHALL COMPLY WITH INSTALLATION, TESTING, AND CERTIFICATION REQUIREMENTS PER SPECIFICATION SECTION 27 10 00.

SPEAKER ZONE SCHEDULE	
ZONE NUMBER	ZONE DESCRIPTION
1	-
2	-
3	-
4	-
5	-
6	-
7	-
8	-
9	-

TECHNOLOGY GENERAL NOTES	
1.	DO NOT SCALE DRAWINGS. VERIFY DIMENSIONS IN FIELD PRIOR TO COMMENCEMENT OF WORK.
2.	WHEREVER THE WORD "PROVIDE" IS USED IT SHALL MEAN TO "FURNISH AND INSTALL".
3.	IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS TO ESTABLISH A STANDARD OF QUALITY. THE OWNER RESERVES THE RIGHT TO APPROVE METHODS AND MATERIAL NOT REFLECTED HEREIN.
4.	CONTRACTORS SHALL VISIT SITE PRIOR TO BID AND VERIFY THAT CONDITIONS ARE AS INDICATED. CONTRACTOR SHALL INCLUDE IN HIS BID COSTS REQUIRED TO MAKE HIS WORK MEET EXISTING CONDITIONS.
5.	WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER TO THE SATISFACTION OF THE OWNER.
6.	WORK, MATERIALS AND EQUIPMENT SHALL CONFORM TO THE LATEST EDITIONS OF LOCAL, STATE AND NATIONAL CODES, ORDINANCES AND STANDARDS.
7.	PROVIDE RECORD DRAWINGS. INCLUDE ALL ADDENDUM ITEMS, CHANGE ORDERS, ALTERATIONS, REROUTINGS, ETC.
8.	VERIFY EXACT LOCATION OF EQUIPMENT PRIOR TO ROUGH-IN.
9.	ALL CABLING THAT PASSES THROUGH OR ORIGINATES IN EXPOSED CEILING SPACES SHALL BE INSTALLED IN LISTED METALLIC RACEWAYS. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS, RACEWAYS IN SLAB-ON-GRADE OR BELOW GRADE SHALL BE SCHEDULE 40 PVC. TRANSITIONS FROM BELOW TO ABOVE GRADE SHALL BE WITH RIGID STEEL ELBOWS. EMT FITTINGS SHALL BE WITH MALLEABLE IRON OR STEEL. CONNECTORS SHALL BE INSULATED THROAT TYPE.
10.	THERE SHALL BE NO MORE THAN TWO 90 DEGREE BENDS BETWEEN PULL BOXES, PULL BOXES AND CABLE TRAYS SHOWN ON DRAWINGS SHALL BE CONSIDERED THE MINIMUM REQUIREMENTS. CONTRACTOR SHALL INSTALL PULL BOXES ACCORDING TO FIELD CONDITIONS.
11.	ALL CABLING ABOVE ACCESSIBLE CEILING AREAS, WHERE NOT IN CABLE TRAY, SHALL BE SUPPORTED WITH A J-HOOK SUPPORT SYSTEM. J-HOOK SPACING SHALL VARY BETWEEN 4 AND 5' ON CENTER. J-HOOK SHALL NOT BE SUPPORTED BY OR OTHERWISE ATTACHED TO THE SUSPENDED CEILING GRID WIRING OR ANY OTHER BUILDING ANCLLARY SYSTEM SUCH AS ELECTRICAL OR PLUMBING CONDUITS.
12.	REFER TO ARCHITECTURAL PLANS FOR WALL CONSTRUCTION.
13.	RACEWAYS SHALL BE RUN AS INCONSPICUOUSLY AS POSSIBLE. VERTICAL RUNS SHALL OCCUR IN CORNERS OF ROOMS. HORIZONTAL RUNS SHALL OCCUR ALONG BASEBOARD OR WALL WITH VERTICAL RUNS UP TO THE DEVICE BOXES BRANCHING OUT OF CORNER BOXES, TEES OR ELBOWS.
14.	ALL CONDUITS IN AREAS WITHOUT SUSPENDED CEILINGS SHALL BE RUN AS INCONSPICUOUSLY AS POSSIBLE, HIDDEN BEHIND BEAMS, CLOSE TO DECK, ETC. OBTAIN APPROVAL OF CONDUIT RUNS BELOW BEAMS WITH OWNERS REPRESENTATIVE.
15.	ADD STEEL BRIDGING BETWEEN PURLINS/JOISTS/BEAMS AS NECESSARY TO SUPPORT THE WEIGHT OF SUSPENDED DEVICES AND FIXTURES.
16.	ALL DEVICES IN CEILINGS IN A ROOM SHALL BE ALIGNED.
17.	AT EXISTING LOCATION WHERE WALL FURRING DEPTH IS TOO SHALLOW FOR STANDARD PULL BOX, CONTRACTOR SHALL DISSECT EXISTING SURROUNDING MATERIAL SO THAT BOX IS FLUSH WITH WALL, WHERE CONDUIT IS TOO DEEP, CONTRACTOR SHALL CORREL OUT SURROUNDING MATERIAL. EXPOSED SURFACE MOUNTED CONDUIT AND JUNCTION BOXES ARE PROHIBITED.
18.	PROVIDE SURFACE RACEWAY SIZE ADEQUATE FOR QUANTITY OF DATA CABLES.
19.	COORDINATE WITH OWNER FOR EXACT MOUNTING HEIGHT AND LOCATION OF ALL WALL-MOUNTED SECURITY CAMERAS.
20.	FOR ALL EXTERIOR NETWORK DEVICES CONNECTED WITH CATEGORY CABLING, PROVIDE SURGE PROTECTION DEVICE IN TECHNOLOGY ROOM (OR NEAR TELECOMMUNICATIONS ENCLOSURE SERVING NETWORK DEVICE, IF THERE IS NO TECHNOLOGY ROOM).
21.	REFER TO SITE PLANS FOR SITE REQUIREMENTS.
22.	PROVIDE ONE 2 INCH SLEEVE INTO EACH



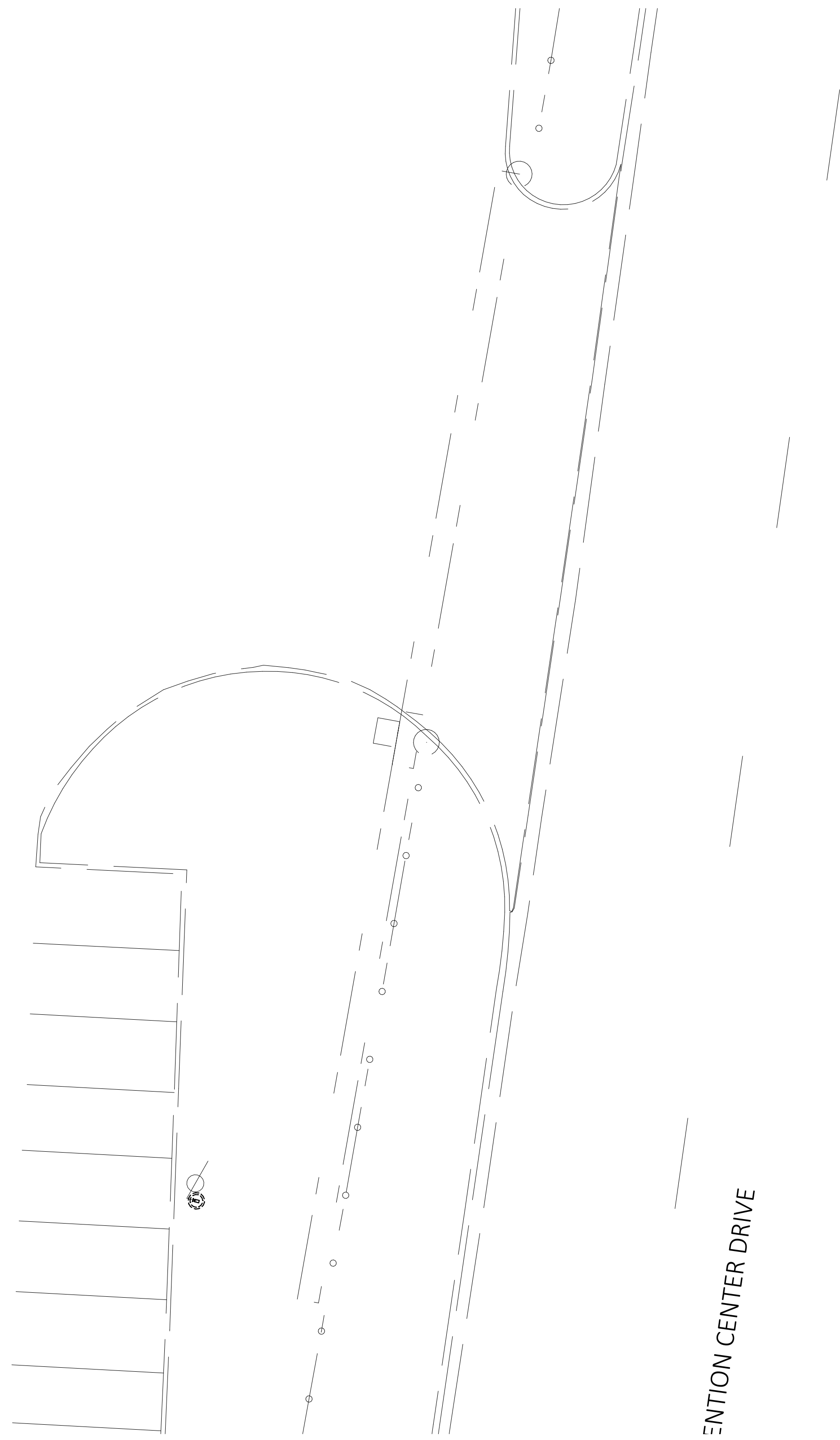
- CODED NOTES
- EXISTING TECHNOLOGY ENCLOSURE F4.
 - EXISTING TECHNOLOGY CABINET IDF T012.
 - EXISTING TECHNOLOGY ENCLOSURE IDF H9.
 - 17' x 30' x 18" DEEP UNDERGROUND JUNCTION BOX WITH "COMMUNICATIONS" LOGO ON COVER. REFER TO 26 05 82 FOR FURTHER DETAIL.
 - DUAL HEIGHT PEDESTAL FOR INTERCOM AND CARD READER.
 - (1) 1" CONDUIT FROM NEW UNDERGROUND JUNCTION BOX TO EXISTING LIGHTING POLE.
 - (1) 1" CONDUIT FROM NEW SECURITY KIOSK TO NEW UNDERGROUND JUNCTION BOX.
 - (1) 1" CONDUIT FROM NEW UNDERGROUND JUNCTION BOX TO NEW PEDESTAL.
 - (1) 1" CONDUIT FROM NEW UNDERGROUND JUNCTION BOX TO NEW GATE CONTROLLER.
 - (1) 2" CONDUIT FROM EXISTING TELECOM ENCLOSURE TO NEW UNDERGROUND JUNCTION BOX.

1 SITE PLAN
TECHNOLOGY SITE OVERALL

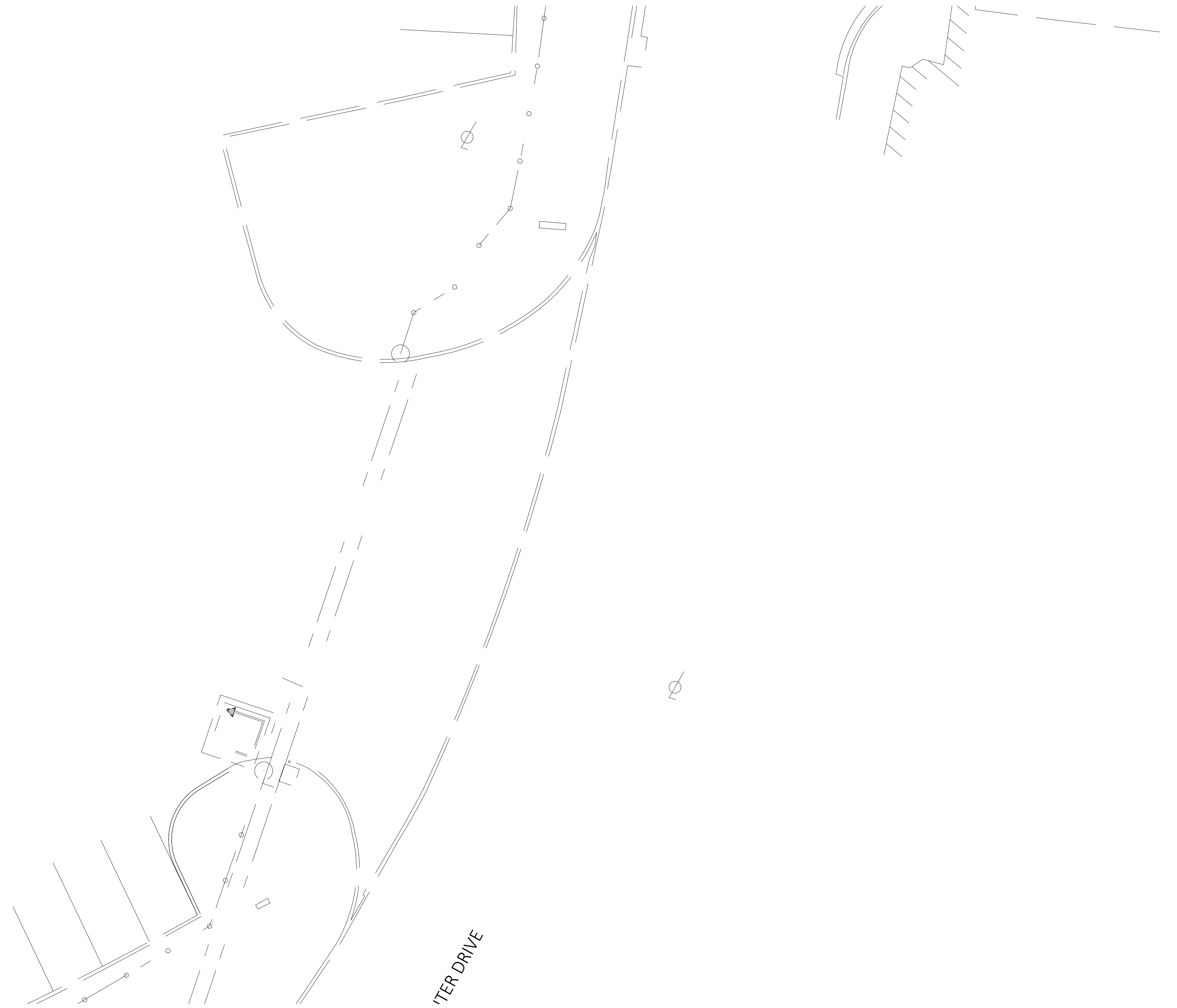
SCALE: 1" = 30'-0"
0 30' 60' 90'

No.	Description	Date
GREATER COLUMBUS CONVENTION CENTER		
SITE SECURITY IMPROVEMENTS		
KORDA Korda/Nemeth Engineering, Inc. - Consulting Engineers 1850 Watermark Drive, Suite 200 - Columbus, Ohio 43260-7010 TEL 614-487-1850 - WEB www.korda.com		
TECHNOLOGY SITE PLAN OVERALL		
PROJECT NUMBER:		2026-0416
DRAWN BY: Author	DATE	SHEET NUMBER
DESIGNED BY: Designer	09/14/2026	T0.1
CHECKED BY: Checker		

NOT FOR
CONSTRUCTION
WORKING DRAWINGS
FOR REVIEW



1 SITE PLAN
ENLARGED GATE PLAN 1 DEMOLITION SCALE: 1" = 10'-0"
0 10' 20' 30'



2 SITE PLAN
ENLARGED GATE PLAN 2 DEMOLITION SCALE: 1" = 10'-0"
0 10' 20' 30'

No.	Description	Date
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GREATER COLUMBUS CONVENTION CENTER

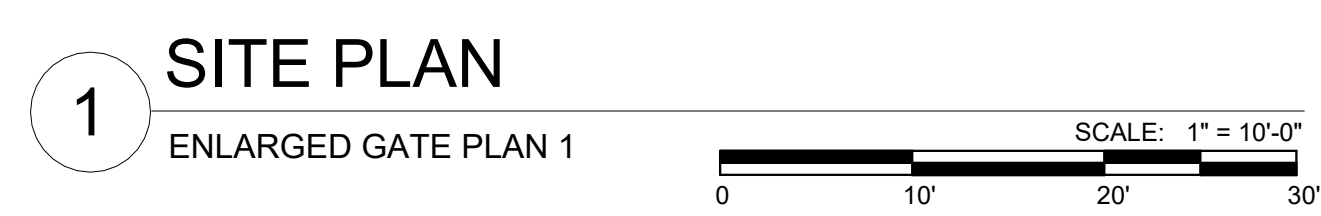
SITE SECURITY IMROVEMENTS

KORDA Korda/Kemeth Engineering, Inc. - Consulting Engineers
1850 Watermark Drive, Suite 200 - Columbus, Ohio 43229-7010
TEL 614-487-1850 - WEB www.korda.com

TECHNOLOGY SITE ENLARGED DEMOLITION
PLANS

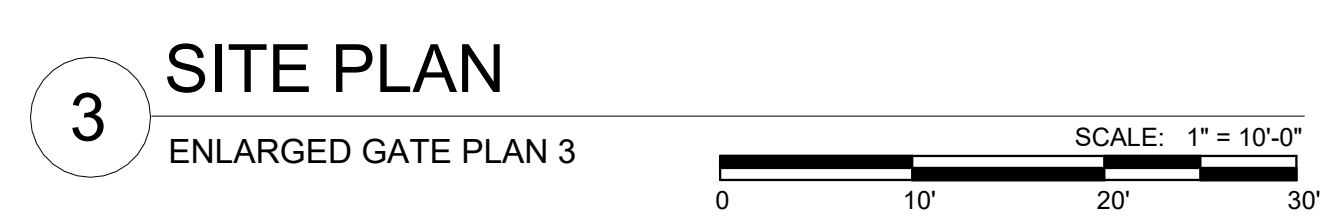
PROJECT NUMBER:		2026-0416	
DRAWN BY: Author	DATE	SHEET NUMBER	
DESIGNED BY: Designer	09/14/2026	T1.1	
CHECKED BY: Checker			

NOT FOR
CONSTRUCTION
WORKING DRAWINGS
FOR REVIEW



-  CODING NOTES

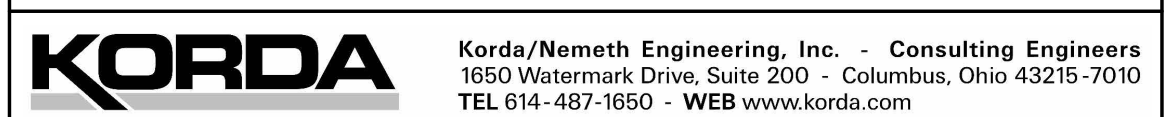
 1. NEW CAMERA TO BE INSTALLED ON EXISTING SITE LIGHTING POLE. CAMERA BY DIV. 28. DIV. 27 CONTRACTOR TO PROVIDE (1) 16-STRAND 0.5M FIBER CABLE TO MEDIA CONVERTER (BY DIV. 28). DIV. 27 CONTRACTOR SHALL PROVIDE SFP MODULES AT BOTH ENDS. SEE SPECIFICATION 28 23 00 FOR MEDIA CONVERTER DETAILS.
 2. DUAL WIDE PEDESTAL FOR INTERCOM AND CARD READER.
 3. ???
 4. CARD READER TO BE INSTALLED ON MAIN GATE.

[illegible]

No.	Description	Date

GREATER COLUMBUS CONVENTION CENTER

SITE SECURITY IMPROVEMENTS



TECHNOLOGY SITE ENLARGED NEW WORK PLANS

PROJECT NUMBER:	2026-0416
-----------------	-----------

DRAWN BY: Author		DATE	SHEET NUMBER
------------------	--	------	--------------

DESIGNED BY: Designer	09/14/2026	T2.1
CHECKED BY: Checker		

**NOT FOR
CONSTRUCTION**

WORKING DRAWINGS
FOR REVIEW

**NOT FOR
CONSTRUCTION**
WORKING DRAWINGS
FOR REVIEW

Prevailing Wage Rate Skilled Crafts

Name of Union: Cement Mason Local 132 (Columbus)

Type of Rate: Commercial

Change #:
LCN01-2026ib

Craft:
Cement Mason

Effective Date:
6/1/2026

Effective Date:
6/1/2026

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Cement Mason	\$36.92		\$9.30	\$4.85	\$0.85	\$0.00	\$3.18	\$0.06	\$0.00	\$0.00	\$55.16	\$73.62
Apprentice	BHR	Percent										
1st Year	\$25.84	\$70.00	\$9.30	\$4.85	\$0.85	\$0.00	\$3.18	\$0.06	\$0.00	\$0.00	\$44.08	\$57.00
2nd Year	\$29.54	\$80.00	\$9.30	\$4.85	\$0.85	\$0.00	\$3.18	\$0.06	\$0.00	\$0.00	\$47.78	\$62.55
3rd Year	\$33.23	\$90.00	\$9.30	\$4.85	\$0.85	\$0.00	\$3.18	\$0.06	\$0.00	\$0.00	\$51.47	\$68.08

(*)Special Calculation Note :

Other: International Training Fund

Working on swing stage, slip scaffold, window jack scaffold, scissor lifts, and aerial lifts shall receive the following rates:

\$0.50 above the regular rate for heights up to fifty (50) feet above grade level

\$1.00 above the regular rate for heights over fifty (50) feet above grade level

Ratio :

3 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

Ashland, Coshocton, Crawford, Delaware, Fairfield, Fayette, Franklin, Guernsey, Hocking, Knox, Licking, Madison, Marion, Morrow, Muskingum, Perry, Pickaway, Richland, Ross, Union, Vinton, Wyandot

Special Jurisdictional Note :

Details :

Prevailing Wage Rate Skilled Crafts

Name of Union: Electrical Local 683 Inside

Type of Rate: Commercial

Change #:
LCN01-2026ib

Craft:
Electrical

Effective Date:
6/10/2026

Effective Date:
6/10/2026

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Electrician	\$46.00		\$12.50	\$7.52	\$1.06	\$0.00	\$4.50	\$0.00	\$0.00	\$0.00	\$71.58	\$94.58
Welding	\$47.00		\$12.50	\$7.52	\$1.06	\$0.00	\$4.50	\$0.00	\$0.00	\$0.00	\$72.58	\$96.08
Medium Voltage Splicing	\$47.00		\$12.50	\$7.52	\$1.06	\$0.00	\$4.50	\$0.00	\$0.00	\$0.00	\$72.58	\$96.08
Over 100 feet	\$69.00		\$12.50	\$7.52	\$1.06	\$0.00	\$	\$0.00	\$0.00	\$0.00	\$94.68	\$129.18
Level 1 CW 0 to 2000 hours	\$16.18		\$6.99	\$0.49	\$0.96	\$0.00	\$0.49	\$0.10	\$0.00	\$0.00	\$25.21	\$33.30
Level 2 CW 2001 to 4000 hours	\$17.20		\$6.99	\$0.52	\$0.96	\$0.00	\$0.52	\$0.10	\$0.00	\$0.00	\$26.29	\$34.89
Level 3 CW 4001 to 6000 hours	\$18.21		\$6.99	\$0.55	\$0.96	\$0.00	\$0.55	\$0.10	\$0.00	\$0.00	\$27.36	\$36.47
Level 4 CW 6001 to 8000 hours	\$20.23		\$6.99	\$0.61	\$0.96	\$0.00	\$0.61	\$0.10	\$0.00	\$0.00	\$29.50	\$39.61
Level 1 CE 8001 to 10000 hours	\$22.25		\$6.99	\$0.67	\$0.96	\$0.00	\$0.67	\$0.10	\$0.00	\$0.00	\$31.64	\$42.77
Level 2 CE 10,001 to 12,000 hours	\$24.28		\$6.99	\$0.73	\$0.96	\$0.00	\$0.73	\$0.10	\$0.00	\$0.00	\$33.79	\$45.93
Level 3 CE 12,001 to 14,000 hours	\$30.35		\$6.99	\$0.91	\$0.96	\$0.00	\$0.91	\$0.10	\$0.00	\$0.00	\$40.22	\$55.40
Apprentice	BHR	Percent										
0-1000 hrs 1st Period	\$23.00	\$50.00	\$12.50	\$3.76	\$1.06	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$40.32	\$51.82
1001-2000 hrs 2nd Period	\$25.30	\$55.00	\$12.50	\$4.14	\$1.06	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$43.00	\$55.65
2001-3500 hrs 3rd Period	\$27.60	\$60.00	\$12.50	\$4.51	\$1.06	\$0.00	\$2.70	\$0.00	\$0.00	\$0.00	\$48.37	\$62.17
3501-5000 hrs 4th Period	\$29.90	\$65.00	\$12.50	\$4.89	\$1.06	\$0.00	\$2.93	\$0.00	\$0.00	\$0.00	\$51.28	\$66.23
5001-6500 hrs 5th Period	\$32.20	\$70.00	\$12.50	\$5.26	\$1.06	\$0.00	\$3.15	\$0.00	\$0.00	\$0.00	\$54.17	\$70.27

6501-8000 hrs 6th Period	\$36.80	\$80.00	\$12.50	\$6.02	\$1.06	\$0.00	\$3.60	\$0.00	\$0.00	\$0.00	\$59.98	\$78.38
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(*)Special Calculation Note :

Other for CW/CE: Education Fund

Ratio :

1 to 3 Journeymen to 2 Apprentices
4 to 6 Journeymen to 4 Apprentices

Construction Wireman and Construction Electrician Ratio:
1 Journeymen to 4 (CW/CE) Employees
An Inside Journeyman Wireman is required on the project at the 5th worker or when apprentices are used.

Jurisdiction (* denotes special jurisdictional note) :

Champaign, Clark, Delaware, Fairfield, Franklin, Madison, Pickaway*, Union

Special Jurisdictional Note :

In Pickaway County the following townships: Circleville, Darby, Harrison, Jackson, Madison, Monroe, Muhlenberg, Scioto, Walnut, Washington.

Details :

Prevailing Wage Rate Skilled Crafts

Name of Union: Electrical Local 71 Outside (Central OH Chapter)

Type of Rate: Commercial

Change #:
LCN01-2025ib

Craft:
Electrical

Effective Date:
6/4/2025

Effective Date:
6/4/2025

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Electrical Lineman	\$46.03		\$7.50	\$1.38	\$0.46	\$0.00	\$9.20	\$0.50	\$0.00	\$0.00	\$65.07	\$88.09
Traffic Signal & Lighting Journeyman	\$44.43		\$7.50	\$1.33	\$0.44	\$0.00	\$8.89	\$0.50	\$0.00	\$0.00	\$63.09	\$85.31
Equipment Operator	\$40.44		\$7.50	\$1.21	\$0.40	\$0.00	\$8.09	\$0.50	\$0.00	\$0.00	\$58.14	\$78.36
Groundman 0-12 months (W/O CDL)	\$24.52		\$7.50	\$0.74	\$0.25	\$0.00	\$4.90	\$0.50	\$0.00	\$0.00	\$38.41	\$50.67
Groundman 0-12 Months W/CDL	\$26.78		\$7.50	\$0.80	\$0.27	\$0.00	\$5.36	\$0.50	\$0.00	\$0.00	\$41.21	\$54.60
Groundman greater than 1 Year W/CDL	\$29.07		\$7.50	\$0.87	\$0.29	\$0.00	\$5.81	\$0.50	\$0.00	\$0.00	\$44.04	\$58.58
Traffic Signal Apprentices	\$		\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
1st 1,000 hours	\$26.66		\$7.50	\$0.80	\$0.27	\$0.00	\$5.33	\$0.50	\$0.00	\$0.00	\$41.06	\$54.39
2nd 1,000 hours	\$28.88		\$7.50	\$0.87	\$0.29	\$0.00	\$5.78	\$0.50	\$0.00	\$0.00	\$43.82	\$58.26
3rd 1,000 hours	\$31.10		\$7.50	\$0.93	\$0.31	\$0.00	\$6.22	\$0.50	\$0.00	\$0.00	\$46.56	\$62.11
4th 1,000 hours	\$33.32		\$7.50	\$1.00	\$0.33	\$0.00	\$6.66	\$0.50	\$0.00	\$0.00	\$49.31	\$65.97
5th 1,000 hours	\$35.54		\$7.50	\$1.07	\$0.36	\$0.00	\$7.11	\$0.50	\$0.00	\$0.00	\$52.08	\$69.85
6th 1,000 hours	\$39.99		\$7.50	\$1.20	\$0.40	\$0.00	\$8.00	\$0.50	\$0.00	\$0.00	\$57.59	\$77.59
Apprentice	BHR	Percent										
1st 1,000 Hours	\$27.62	\$60.00	\$7.50	\$0.83	\$0.28	\$0.00	\$5.52	\$0.50	\$0.00	\$0.00	\$42.25	\$56.06
2nd 1,000 Hours	\$29.92	\$65.00	\$7.50	\$0.90	\$0.30	\$0.00	\$5.98	\$0.50	\$0.00	\$0.00	\$45.10	\$60.06
3rd 1,000 Hours	\$32.22	\$70.00	\$7.50	\$0.97	\$0.32	\$0.00	\$6.44	\$0.50	\$0.00	\$0.00	\$47.95	\$64.06
4th 1,000 Hours	\$34.52	\$75.00	\$7.50	\$1.04	\$0.35	\$0.00	\$6.90	\$0.50	\$0.00	\$0.00	\$50.81	\$68.07

5th 1,000 Hours	\$36.82	\$80.00	\$7.50	\$1.10	\$0.37	\$0.00	\$7.36	\$0.50	\$0.00	\$0.00	\$53.65	\$72.07
6th 1,000 Hours	\$39.13	\$85.00	\$7.50	\$1.17	\$0.39	\$0.00	\$7.82	\$0.50	\$0.00	\$0.00	\$56.51	\$76.07
7th 1,000 Hours	\$41.43	\$90.00	\$7.50	\$1.24	\$0.41	\$0.00	\$8.28	\$0.50	\$0.00	\$0.00	\$59.36	\$80.07

(*)Special Calculation Note :

Other is Health Reimbursement Account

Ratio :

1 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

Adams, Ashland, Athens, Coshocton, Crawford, Delaware, Fairfield, Fayette, Franklin, Gallia, Guernsey, Highland, Hocking, Jackson, Knox, Lawrence, Licking, Madison, Marion, Meigs, Monroe, Morgan, Morrow, Muskingum, Noble, Perry, Pickaway, Pike, Richland, Ross, Scioto, Tuscarawas, Union, Vinton, Washington

Special Jurisdictional Note :

Details :

A groundman when directed shall assist a Journeyman Lineman, Traffic Signal and Lighting Journeyman or Equipment Operator in the performance of his/her work on the ground, including the use of hand tools. Under no circumstances shall this classification climb poles, towers, or work from an elevated platform or bucket truck. This classification shall not perform work normally assigned to an Apprentice. No more than three (3) Groundmen shall work alone. Jobs with more than three Groundmen shall be supervised by a Groundcrew Foreman, Journeyman Lineman, Journeyman Traffic Signal Technician or an Equipment Operator. Scope of Work: installation and maintenance of highway and street lighting, highway and street sign lighting, electronic message boards and traffic control systems, camera systems, traffic signal work, substation and line construction including overhead and underground projects for private and industrial work as in accordance with the IBEW Constitution. This Agreement includes the operation of all tools and equipment necessary for the installation of the above projects.

Prevailing Wage Rate Skilled Crafts

Name of Union: Electrical Local 71 Outside Utility Power

Type of Rate: Commercial

Change #:
LCN01-2026ib

Craft:
Electrical

Effective Date:
1/7/2026

Effective Date:
1/7/2026

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Electrical Lineman	\$52.03		\$7.50	\$1.56	\$0.52	\$0.00	\$12.49	\$1.00	\$0.00	\$0.00	\$75.10	\$101.12
Substation Technician	\$52.03		\$7.50	\$1.56	\$0.50	\$0.00	\$12.49	\$1.00	\$0.00	\$0.00	\$75.08	\$101.09
Cable Splicer	\$54.50		\$7.50	\$1.64	\$0.55	\$0.00	\$13.08	\$1.00	\$0.00	\$0.00	\$78.27	\$105.52
Operator A	\$46.61		\$7.50	\$1.40	\$0.47	\$0.00	\$11.19	\$1.00	\$0.00	\$0.00	\$68.17	\$91.47
Operator B	\$41.17		\$7.50	\$1.23	\$0.41	\$0.00	\$9.87	\$1.00	\$0.00	\$0.00	\$61.18	\$81.77
Operator C	\$33.00		\$7.50	\$0.99	\$0.33	\$0.00	\$7.92	\$1.00	\$0.00	\$0.00	\$50.74	\$67.24
Groundman 0-12 months Exp	\$26.02		\$7.50	\$0.78	\$0.26	\$0.00	\$6.24	\$1.00	\$0.00	\$0.00	\$41.80	\$54.81
Groundman 0-12 months Exp w/CDL	\$28.62		\$7.50	\$0.86	\$0.29	\$0.00	\$6.87	\$1.00	\$0.00	\$0.00	\$45.14	\$59.45
Groundman 1 yr or more	\$28.62		\$7.50	\$0.86	\$0.29	\$0.00	\$6.87	\$1.00	\$0.00	\$0.00	\$45.14	\$59.45
Groundman 1 yr or more w/CDL	\$33.82		\$7.50	\$1.01	\$0.34	\$0.00	\$8.12	\$1.00	\$0.00	\$0.00	\$51.79	\$68.70
Equipment Mechanic A	\$41.17		\$7.50	\$1.23	\$0.41	\$0.00	\$9.87	\$1.00	\$0.00	\$0.00	\$61.18	\$81.77
Equipment Mechanic B	\$37.09		\$7.50	\$1.11	\$0.37	\$0.00	\$8.90	\$1.00	\$0.00	\$0.00	\$55.97	\$74.52
Equipment Mechanic C	\$33.00		\$7.50	\$0.99	\$0.33	\$0.00	\$7.92	\$1.00	\$0.00	\$0.00	\$50.74	\$67.24
Line Truck w/auger	\$36.40		\$7.50	\$1.09	\$0.36	\$0.00	\$8.71	\$1.00	\$0.00	\$0.00	\$55.06	\$73.26
Apprentice	BHR	Percent										
1st 1000 hrs	\$31.22	\$60.00	\$7.50	\$0.94	\$0.31	\$0.00	\$7.49	\$1.00	\$0.00	\$0.00	\$48.46	\$64.07
2nd 1000 hrs	\$33.82	\$65.00	\$7.50	\$1.01	\$0.34	\$0.00	\$8.12	\$1.00	\$0.00	\$0.00	\$51.79	\$68.70
3rd 1000 hrs	\$36.42	\$70.00	\$7.50	\$1.09	\$0.36	\$0.00	\$8.74	\$1.00	\$0.00	\$0.00	\$55.11	\$73.32

4th 1000 hrs	\$39.02	\$75.00	\$7.50	\$1.17	\$0.39	\$0.00	\$9.37	\$1.00	\$0.00	\$0.00	\$58.45	\$77.96
5th 1000 hrs	\$41.62	\$80.00	\$7.50	\$1.25	\$0.44	\$0.00	\$9.99	\$1.00	\$0.00	\$0.00	\$61.80	\$82.61
6th 1000 hrs	\$44.23	\$85.00	\$7.50	\$1.33	\$0.44	\$0.00	\$10.61	\$1.00	\$0.00	\$0.00	\$65.11	\$87.22
7th 1000 hrs	\$46.83	\$90.00	\$7.50	\$1.40	\$0.47	\$0.00	\$11.24	\$1.00	\$0.00	\$0.00	\$68.44	\$91.86

(*)Special Calculation Note :

Other: Health Reimbursement Account

Ratio :

(1) Journeyman Lineman to (1) Apprentice

Jurisdiction (* denotes special jurisdictional note) :

Adams, Ashland, Ashtabula, Athens, Auglaize, Belmont, Brown, Butler, Carroll, Champaign, Clark, Clermont, Clinton, Columbiana, Coshocton, Crawford, Cuyahoga, Darke, Delaware, Fairfield, Fayette, Franklin, Gallia, Geauga, Greene, Guernsey, Hamilton, Harrison, Highland, Hocking, Holmes, Jackson, Jefferson, Knox, Lake, Lawrence, Licking, Logan, Lorain, Madison, Mahoning, Marion, Medina, Meigs, Mercer, Miami, Monroe, Montgomery, Morgan, Morrow, Muskingum, Noble, Perry, Pickaway, Pike, Portage, Preble, Richland, Ross, Scioto, Shelby, Stark, Summit, Trumbull, Tuscarawas, Union, Vinton, Warren, Washington, Wayne

Special Jurisdictional Note :

Details :

Operator "A": John Henry Rock Drill, D-6 (or equivalent) and above, Trackhoe Digger, (320 Track excavator), Cranes (greater than 25 tons and less than 45 tons).

Operator "B": Cranes (greater than 6 tons and up to 25 tons), Backhoes, Road Tractor, Dozer up to D-5, Pressure Digger- wheeled or tracked, all Tension wire Stringing equipment.

Operator "C": Trench, Backhoe, Riding type vibratory Compactor, Ground Rod Driver, Boom Truck (6 ton & below), Skid Steer Loaders, Material Handler.

Prevailing Wage Rate Skilled Crafts

Name of Union: Labor Local 423

Type of Rate: Commercial

Change #:
LCN01-2026ib

Craft:
Laborer

Effective Date:
6/1/2026

Effective Date:
6/1/2026

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Laborer Group 1	\$33.98		\$9.45	\$4.60	\$0.40	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$49.53	\$66.52
Group 2	\$34.29		\$9.45	\$4.60	\$0.40	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$49.84	\$66.98
Group 3	\$34.60		\$9.45	\$4.60	\$0.40	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$50.15	\$67.45
Group 4	\$34.91		\$9.45	\$4.60	\$0.40	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$50.46	\$67.91
Apprentice	BHR	Percent										
0-1000 hrs	\$23.79	\$70.00	\$9.45	\$4.60	\$0.40	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$39.34	\$51.23
1001-2000 hrs	\$27.18	\$80.00	\$9.45	\$4.60	\$0.40	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$42.73	\$56.32
2001-3000 hrs	\$30.58	\$90.00	\$9.45	\$4.60	\$0.40	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$46.13	\$61.42
3001-4000 hrs	\$32.28	\$95.00	\$9.45	\$4.60	\$0.40	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$47.83	\$63.97
More than 4000 hrs	\$33.98	\$100.00	\$9.45	\$4.60	\$0.40	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$49.53	\$66.52

(*)Special Calculation Note :

Ratio :

1 Journeymen to 1 Apprentice
4 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

Fairfield, Fayette, Franklin, Hocking, Licking, Madison, Pickaway, Union

Special Jurisdictional Note :

Details :

Group 1: General Laborers, Carpenter Tender, Cathodic Protection, Cleaning Debris, Cleaning of all Material, General Clean-up including Vacuum Cleaning, Scraping and Cleaning of Walls and Floors, Landscape, Installation and Removal of Fencing, Sod Layers, All Portable Heaters, Flagman, Loading and Unloading of all Trucks, Handling and conveying all Materials, Washing of all Windows, Conveyor Belt, All Water Pumps up to and including three (3) inch intake, Watchman, Water Boy and Tool Room Attendant. Group 1- Swimming Pools, Pool Decks, Surrounding Sidewalk and Parking Garages.

Group 2: Skid Steer, Concrete Specialists, Brick Tender, Stone Mason Tender, Plaster Tender, Mortar Mixer and Operator, Cement Mason Tender, Construction Specialist, All Scaffold Builders (Swinging Scaffolds), Lagging, Bush Hammering, Jack Hammer Operator, Air or Electric Pneumatic Tool Operator, Power Driven Tools, Power Buggy Operators, Pouring and Placement of all concrete, Fork Lift Operators, Power Wheelbarrow Operators, Asphalt and Blacktop Rakers, Wrecker/Demolition, Sand Blasting and Chipping, Welders on Demolition, Grade Checkers, a person on a bucket pouring concrete, Guniting Nozzle man, Wagon and Churn Drill Operator, Concrete Saw Operator, Brush Feeders on pulverizers, Pipe Layers, Bottom Man, Laser Gun, Burners, Sand Blasting of concrete, Vibrator Man, Steward, Signal Man, Caisson, Caisson Bottom Man, Piledrivers, Asbestos and Lead Abatement Laborers. Hazardous Waste (Level B): Any work requiring the following protective equipment must be paid at Group 2 rate, A protective suit and an Air Purifying Respirator (APR) with the appropriate filter canisters. The ensemble is used when contaminants are reliably known not to be hazardous to the skin and not IDLH (Immediately Dangerous To Life or Health) and correct filter protection is available. This ensemble offers adequate protection for many jobs. Heat stress may be a problem due to inherent restrictions to breathing in an APR. Also, normal job related injury risk will be nearly as high as for Level C Equipment.

Group 3 Hazardous (Level C:) Any work requiring the following protective equipment must be paid at Group 3 rate, A chemically resistant splash suit and a (SCBA) or Airline Respirator. This ensemble is required when the situation is very hazardous, such as oxygen deficient atmospheres, IDLH atmospheres, or confined space entries, but the risk of skin exposure is not as great as in Level D situations. Then Level C ensemble gives the second highest level of protection, but also puts physical stress on the worker; primarily heat stress, reduced vision, dexterity and mobility directly attributable to wearing of the protective equipment. Therefore, in addition to the hazardous material, the hazard of the normal job related injuries is greatly increased.

Group 4 Hazardous Waste (Level D) requiring the following protective equipment must be paid at Group 4 rate, Protective equipment is required when the area has been known to contain extremely toxic contaminants or contaminants unknown but may be expected to be extremely toxic and /or Immediately Dangerous to Life and Health (IDLH). This ensemble includes fully encapsulated chemical suit (moon suit), Self Contained Breathing Apparatus (SCBA), or Airline Fed Respirator, and various types and numbers of boots and gloves, cool vests and voice activated radios are optional equipment sometimes worn. Level D ensembles provide the highest level of protection from contaminants but places the greatest physical and mental stress on the worker. The claustrophobic environment of the moon suit causes anxiety in most people, which greatly increases the already inherent heat stress problems. Also, this ensemble reduces vision, mobility, dexterity, and communication capacity, all of which increase the risk of normal job related injuries, ie., slips, falls, caught between, etc. Hazardous Pay of \$0.25 per hour shall be paid in addition to classifications shown above Swing Scaffolds (suspended by rope or pulley), and swing scaffolds for grain storage tank or grain elevators, when the work is performed at a height of fifty (50) feet or more above the foundations or grade level, whichever is higher. Caisson work and tunnel work (depth being 15 feet or deeper) Hazardous Waste Removal & Lead Abatement Workers: Exclusive or "Hot" area with toxic or hazardous materials, when one of the following personal protective equipment ensembles will be required for necessary protection against toxic contaminants. All of the ensembles increase the risks of certain types of worker-related injuries. When Laborers complement another craft receiving premium rate of pay Laborers will also receive premium pay for this "HOT" type of work.

AIA® Document A105® – 2017

Standard Short Form of Agreement Between Owner and Contractor

AGREEMENT made as of the day of in the year 2026
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

Franklin County Convention Facilities Authority
400 N. High Street, 4th Floor
Columbus, Ohio 43215
kpaul@fccfa.org

and the Contractor:
(Name, legal status, address and other information)

for the following Project:
(Name, location and detailed description)

Greater Columbus Convention Center Exterior Access Control Improvements
400 N. High Street
Columbus, Ohio 43215

The Architect:
(Name, legal status, address and other information)

Korda/Nemeth Engineering, Inc. 1650 Watermark Dr., Suite 200 Columbus, Ohio
43215 Chris.fleming@korda.com

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS:
The author of this document may have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added to or deleted from the original AIA text.

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ARTICLE 1 THE CONTRACT DOCUMENTS

The Contractor shall complete the Work described in the Contract Documents for the Project. The Contract Documents consist of

- .1 this Agreement signed by the Owner and Contractor;
- .2 the drawings and specifications prepared by the Architect, dated, and enumerated as follows:

Drawings:

Number

Title

Date

Specifications:

Section

Title

Pages

- .3 addenda prepared by the Architect as follows:

Number

Date

Pages

- .4 written orders for changes in the Work, pursuant to Article 10, issued after execution of this Agreement; and
- .5 other documents, if any, identified as follows:

The Owner's Request for Bids issued on September 23, 2026

ARTICLE 2 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 2.1 The Contract Time is the number of calendar days available to the Contractor to substantially complete the Work.

§ 2.2 Date of Commencement:

Unless otherwise set forth below, the date of commencement shall be the date of this Agreement.

(Insert the date of commencement if other than the date of this Agreement.)

The Contractor shall not commence any Work until after receipt of the Notice to Proceed.

§ 2.3 Substantial Completion:

Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion, as defined in Section 12.5, of the entire Work:

(Check the appropriate box and complete the necessary information.)

[] Not later than () calendar days from the date of commencement.

[X] By the following date: May 31, 2027

ARTICLE 3 CONTRACT SUM

§ 3.1 The Contract Sum shall include all items and services necessary for the proper execution and completion of the Work. Subject to additions and deductions in accordance with Article 10, the Contract Sum is:

(\$)

§ 3.2 For purposes of payment, the Contract Sum includes the following values related to portions of the Work:
(Itemize the Contract Sum among the major portions of the Work.)

Portion of the Work	Value
---------------------	-------

§ 3.3 The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and hereby accepted by the Owner:
(Identify the accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

§ 3.4 Allowances, if any, included in the Contract Sum are as follows:
(Identify each allowance.)

Item	Price
------	-------

§ 3.5 Unit prices, if any, are as follows:
(Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit (\$0.00)
------	-----------------------	-------------------------

ARTICLE 4 PAYMENTS

§ 4.1 Based on Contractor's Applications for Payment certified by the Architect, the Owner shall pay the Contractor, in accordance with Article 12, as follows:
(Insert below timing for payments and provisions for withholding retainage, if any.)

Provided that an Application for Payment is received and certified by the Architect not later than the 1st day of a month, the Owner shall make payment of the approved amount to the Contractor not later than the 15th day of the following month. If an Application for Payment is received and certified by the Architect after the date fixed above, payment shall be made by the Owner not later than forty-five days after the Owner receives the certified Application for Payment.

Retainage for labor shall be withheld from each payment in the amount of 4% of the Application for Payment until the Work is Substantially Complete. Retainage for materials shall be withheld for each payment in the amount of 8% of the Application for Payment until the material is incorporated into the work. Retained amounts shall be paid within 30 days of the date of Substantial Completion.

§ 4.2 Payments due and unpaid (except disputed amounts) under the Contract Documents shall bear interest from the date payment is due at the rate below, or in the absence thereof, at the legal rate prevailing at the place of the Project.

(Insert rate of interest agreed upon, if any.)

4 % per annum

ARTICLE 5 INSURANCE

§ 5.1 The Contractor shall maintain the following types and limits of insurance until the expiration of the period for correction of Work as set forth in Section 14.2, subject to the terms and conditions set forth in this Section 5.1:

§ 5.1.1 Commercial General Liability insurance for the Project, written on an occurrence form, with policy limits of not less than (\$ 1,000,000) each occurrence, (\$ 2,000,000) general aggregate, and (\$ 1,000,000) aggregate for products-completed operations hazard.

§ 5.1.2 Automobile Liability covering vehicles owned, and non-owned vehicles used, by the Contractor, with policy limits of not less than (\$ 1,000,000) per accident, for bodily injury, death of any person, and property damage arising out of the ownership, maintenance, and use of those motor vehicles along with any other statutorily required automobile coverage.

§ 5.1.3 The Contractor may achieve the required limits and coverage for Commercial General Liability and Automobile Liability through a combination of primary and excess or umbrella liability insurance, provided that such primary and excess or umbrella insurance policies result in the same or greater coverage as those required under Section 5.1.1 and 5.1.2, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The excess policy shall not require exhaustion of the underlying limits only through the actual payment by the underlying insurers.

§ 5.1.4 Workers' Compensation at statutory limits.

§ 5.1.5 Employers' Liability with policy limits not less than (\$ 1,000,000) each accident, (\$ 1,000,000) each employee, and (\$ 1,000,000) policy limit.

§ 5.1.7 Other Insurance Provided by the Contractor

(List below any other insurance coverage to be provided by the Contractor and any applicable limits.)

Coverage	Limits

§ 5.2 The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance and shall provide property insurance to cover the value of the Owner's property. The Contractor may be entitled to receive an increase in the Contract Sum equal to the insurance proceeds related to a loss for damage to the Work covered by the Owner's property insurance.

§ 5.3 The Contractor shall obtain an endorsement to its Commercial General Liability insurance policy to provide coverage for the Contractor's obligations under Section 8.12.

§ 5.4 Prior to commencement of the Work, each party shall provide certificates of insurance showing their respective coverages.

§ 5.5 Unless specifically precluded by the Owner's property insurance policy, the Owner and Contractor waive all rights against (1) each other and any of their subcontractors, suppliers, agents, and employees, each of the other; and (2) the Architect, Architect's consultants, and any of their agents and employees, for damages caused by fire or other causes of loss to the extent payment is received for such damage or loss from property insurance or other insurance applicable to the Project, except such rights as they have to the proceeds of such insurance.

ARTICLE 6 GENERAL PROVISIONS

§ 6.1 The Contract

The Contract represents the entire and integrated agreement between the parties and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a written

modification in accordance with Article 10.

§ 6.2 The Work

The term “Work” means the construction and services required by the Contract Documents, and includes all other labor, materials, equipment, and services provided, or to be provided, by the Contractor to fulfill the Contractor’s obligations.

§ 6.3 Intent

The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all. If inconsistencies exist within or between parts of the Contract Documents, or between the Contract Documents and applicable standards, codes, or ordinances, the Contractor shall, in accordance with the Owner’s interpretation, either (1) provide the better quality or greater quantity of Work, or (ii) comply with the more stringent requirement.

§ 6.4 Ownership and Use of Architect’s Drawings, Specifications and Other Documents

Documents prepared or provided by the Architect are instruments of the Architect’s service for use solely with respect to this Project. The Architect shall retain all common law, statutory, and other reserved rights, including the copyright. The Contractor, subcontractors, sub-subcontractors, and suppliers are authorized to use and reproduce the instruments of service solely and exclusively for execution of the Work. The instruments of service may not be used for other Projects or for additions to this Project outside the scope of the Work without the specific written consent of the Architect.

§ 6.5 Electronic Notice

Written notice under this Agreement may be given by one party to the other by email as set forth below.

(Insert requirements for delivering written notice by email such as name, title, and email address of the recipient, and whether and how the system will be required to generate a read receipt for the transmission.)

Notices shall be sent to the email addresses provided for each party in this Agreement.

ARTICLE 7 OWNER

§ 7.1 Information and Services Required of the Owner

§ 7.1.1 If requested in writing by the Contractor, the Owner shall furnish all necessary surveys and a legal description of the site.

§ 7.1.2 Except for permits and fees under Section 8.7.1 that are the responsibility of the Contractor, the Owner shall obtain and pay for other necessary approvals, easements, assessments, and charges.

§ 7.1.3 The Owner shall prepare and provide to the Contractor a Notice of Commencement pursuant to Ohio Revised Code Section 1311.252.

§ 7.2 Owner’s Right to Stop the Work

If the Contractor fails to correct Work which is not in accordance with the Contract Documents, the Owner may direct the Contractor in writing to stop the Work until the correction is made. If the Owner’s exercise of its rights pursuant to this Section 7.2 is determined by a court or arbiter to have been unjustified, such exercise shall be deemed to have been a suspension of the Work pursuant to Section 16.4.

§ 7.3 Owner’s Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a seven-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies, correct such deficiencies. In such case, the Architect may withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the cost of correction, as well as charges of engineers, attorneys, and other professionals.

§ 7.4 Owner’s Right to Perform Construction and to Award Separate Contracts

§ 7.4.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner’s own forces, and to award separate contracts in connection with other portions of the Project.

§ 7.4.2 The Contractor shall coordinate and cooperate with the Owner's own forces and separate contractors employed by the Owner.

ARTICLE 8 CONTRACTOR

§ 8.1 Review of Contract Documents and Field Conditions by Contractor

§ 8.1.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents. Before executing the Agreement, the Contractor and each Subcontractor and Sub-subcontractor have evaluated and satisfied themselves as to the conditions and limitations under which the Work is to be performed, including, without limitation, (i) the location, condition, layout, and nature of the Project site and surrounding areas, (ii) generally prevailing climatic conditions, (iii) anticipated labor supply and costs, (iv) availability and cost of materials, tools, and equipment, and (v) other similar issues. The Owner assumes no responsibility or liability for the physical condition or safety of the Project site or any improvements located on the Project site.

§ 8.1.2 The Contractor shall carefully study and compare the Contract Documents with each other and with information furnished by the Owner. Before commencing activities, the Contractor shall (1) take field measurements and verify field conditions; (2) carefully compare this and other information known to the Contractor with the Contract Documents; and (3) promptly report errors, inconsistencies, or omissions discovered to the Owner and Architect.

§ 8.2 Contractor's Construction Schedule

§ 8.2.1 The Contractor, promptly after being awarded the Contract and throughout the Work, shall prepare, and keep current, and submit each time it is updated for the Owner's and Architect's information a Contractor's construction schedule for the Work.

§ 8.2.2 The Contractor shall coordinate its Work with the work of other contractors and consultants working on the Project. Contractor, and other contractors shall keep schedules up to date and promptly notify each other and the Owner and Architect in writing if such schedules are impacted. Contractor shall use its best efforts to accommodate the schedules of other contractors and consultants.

§ 8.2.3 In developing the construction schedule for the Work, Contractor shall take into consideration the schedule of events and daily operations of the Greater Columbus Convention Center. Contractor shall schedule work at the site so as to minimize the impact of the Work on the daily operations of the Greater Columbus Convention Center.

§ 8.3 Supervision and Construction Procedures

§ 8.3.1 The Contractor shall supervise and direct the Work, consistent with the standard of care exercised by other professional contractors in the Contractor's trade in the region where the Project is located, and using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work.

§ 8.3.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner, through the Architect, the names of subcontractors or suppliers for each portion of the Work. The Contractor shall not contract with any subcontractor or supplier to whom the Owner or Architect have made a timely and reasonable objection.

§ 8.4 Labor and Materials

§ 8.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work.

§ 8.4.2 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Contract Work. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them.

§ 8.4.3 Except in the case of minor changes in the Work authorized by the Owner or Architect, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order.

§ 8.4.4 This Project is a public improvement and, therefore, is subject to "prevailing wage" requirements. The Contractor shall pay the required prevailing wages applicable to the Project and shall comply with all restrictions, requirements, and agreements with respect to the laborers and mechanics employed by it for the performance of the Work. The Contractor shall require all of its Subcontractors to (1) pay prevailing wages, (2) comply with all restrictions, requirements, and agreements with respect to their laborers and mechanics employed for the performance of their work, and (3) include in any sub-subcontract the same requirements set forth in this Section 8.4.4.

§ 8.4.5 DISCRIMINATION AND INTIMIDATION

§ 8.4.5.1 In the hiring of employees for the performance of the Work, including without limitation Work to be performed by a Subcontractor, no Contractor or Subcontractor, and no person acting on behalf of a Contractor or Subcontractor, shall discriminate against or intimidate any person by reason of race, color, creed, religion, national origin, ancestry, sex, disability, sexual orientation, military status, or any other basis prohibited by law.

§ 8.4.5.2 Neither the Contractor nor any of its Subcontractors, nor any person acting on behalf of the Contractor or any of its Subcontractors, shall, in any manner, discriminate against or intimidate any employee hired for the performance of the Work on account of race, color, creed, religion, national origin, ancestry, sex, disability, sexual orientation, military status, or any other basis prohibited by law.

§ 8.4.5.3 The Contractor and its Subcontractors shall, throughout the Project, comply with Ohio Revised Code Sections 153.59 and 153.591, and with the Owner's Non-Discrimination Policy. For any violation of this Section 8.4.5 or Ohio law, the Contractor shall suffer such penalties as provided for in Ohio Revised Code Section 153.60 and the Owner's Non-Discrimination Policy. In addition to any remedies the Owner has under Ohio law for a violation of this Section 8.4.5, the Owner may also exercise any of the remedies set forth in the Contract Documents.

§ 8.4.5.4 The Contractor and its Subcontractors shall fully cooperate with any official or agency of the Owner, the city, state, or federal government seeking to eliminate unlawful employment discrimination, and with all other Owner, city, state, and federal efforts to assure equal employment practices under this Contract.

§ 8.4.5.5 The Contractor shall comply with the State of Ohio's Equal Employment Opportunity in the Construction Industry rules set forth in Ohio Administrative Code Chapters 123:2-3 through 123:2-9. The Contractor also shall provide monthly reporting of its workforce by the tenth Day of each month for the preceding month to the Equal Opportunity Division of the Department of Administrative Services, using Input Form 29 (available at <http://das.ohio.gov/Divisions/EqualOpportunity/InputForm29.aspx>).

§ 8.4.6 MINORITY, FEMALE, AND DISADVANTAGED BUSINESS PARTICIPATION

§ 8.4.6.1 The Owner intends to have minority, female, and disadvantaged businesses used throughout the Project. To this end, the Contractor is encouraged to include participation in the Project by certified minority, female, and disadvantaged business enterprise Subcontractors that have received appropriate certification from the federal or Ohio government.

§ 8.5 Warranty

The Contractor warrants to the Owner and Architect that: (1) materials and equipment furnished under the Contract will be new and of good quality unless otherwise required or permitted by the Contract Documents; (2) the Work will be free from defects not inherent in the quality required or permitted; and (3) the Work will conform to the requirements of the Contract Documents. Any material or equipment warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 12.5.

§ 8.6 Taxes

§ 8.6.1 The Contractor shall pay sales, consumer, use, and similar taxes that are legally required when the Contract is executed.

§ 8.6.2 Materials purchased for use or consumption in connection with the Work may be exempt from the State of Ohio Sales Tax as provided in Ohio Revised Code Section 5739.02, and from the State of Ohio Use Tax as provided in Ohio Revised Code Section 5741.01. Purchases by the Contractor of expendable items such as form lumber, tools, oils, greases, fuel, and equipment rentals are subject to the application of the Ohio Sales or Use Tax.

§ 8.7 Permits, Fees and Notices

§ 8.7.1 The Contractor shall obtain and pay for the building permit and other permits and governmental fees, licenses, and inspections necessary for proper execution and completion of the Work.

§ 8.7.2 The Contractor shall comply with and give notices required by agencies having jurisdiction over the Work. If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume full responsibility for such Work and shall bear the attributable costs. The Contractor shall promptly notify the Architect and Owner in writing of any known inconsistencies in the Contract Documents with such governmental laws, rules, and regulations.

§ 8.8 Submittals

The Contractor shall promptly review, approve in writing, and submit to the Architect shop drawings, product data, samples, and similar submittals required by the Contract Documents. Shop drawings, product data, samples, and similar submittals are not Contract Documents, but the Work shall be in accordance with approved submittals.

§ 8.9 Use of Site

The Contractor shall confine operations at the site to areas permitted by law, ordinances, permits, the Contract Documents, and the Owner. The Contractor shall use best efforts to minimize any interference with the occupancy or beneficial use of (i) any areas and buildings adjacent to the site of the Work and (ii) the building on which the Work is being performed. Without prior approval of the Owner, the Contractor shall not permit any workers to use any existing facilities at the Project site, including, without limitation, lavatories, entrances, and parking areas other than those designated by the Owner.

§ 8.10 Cutting and Patching

The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly.

§ 8.11 Cleaning Up

The Contractor shall keep the premises and surrounding area free from accumulation of debris and trash related to the Work. At the completion of the Work, the Contractor shall remove its tools, construction equipment, machinery, and surplus material; and shall properly dispose of waste materials.

§ 8.12 Indemnification

§ 8.12.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's and Owner's consultants, officers, trustees, and agents and employees of any of them, from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent, intentional, or other wrongful acts or omissions of the Contractor, a subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder.

§ 8.12.2 If the Project is located in close proximity of other buildings and property, then the Contractor must use all care and diligence to avoid damage to any such buildings and property. As a result and consistent with that obligation, in addition to the indemnification required by Section 8.12.1, the Contractor shall indemnify and hold harmless the Owner, Architect, and Architect's and Owner's agents and employees from and against claims, damages, losses and expenses, including but not limited to attorney's fees, arising out of or resulting from performance of the Work that impacts, injures or destroys any building or property beyond the Project physical limits.

ARTICLE 9 ARCHITECT

§ 9.1 The Architect will provide administration of the Contract as described in the Contract Documents. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 9.2 The Architect will visit the site at intervals appropriate to the stage of construction to become generally familiar with the progress and quality of the Work.

§ 9.3 The Architect will not have control over or charge of, and will not be responsible for, construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs in connection with the Work, since these are solely the Contractor's responsibility. The Architect will not be responsible for the Contractor's failure to carry out the Work in accordance with the Contract Documents.

§ 9.4 Based on the Architect's observations and evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor.

§ 9.5 The Architect and Owner have authority to reject Work that does not conform to the Contract Documents. If the Architect or Owner do not reject non-conforming Work they have discovered, the Architect or Owner may demand in writing that the Contractor bring the non-conforming Work into compliance with the Contract Documents.

§ 9.6 The Architect will promptly review and approve or take appropriate action upon Contractor's submittals, for the purpose of checking for conformance with the Contract Documents. Review of such submittals is not for the purpose of determining the accuracy and completeness of other information such as dimensions, quantities, and installation or performance of equipment or systems, which are the Contractor's responsibility. The Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences, or procedures.

§ 9.7 On written request from either the Owner or Contractor, the Architect will promptly interpret matters concerning performance under, and requirements of, the Contract Documents. The Architect's response to such requests shall be made in writing and delivered to both the Owner and Contractor within any time limits agreed upon or otherwise with reasonable promptness.

§ 9.8 Such interpretations of the Architect will be consistent with the requirements indicated in, or reasonably inferable from the Contract Documents, and will be in writing or in the form of drawings.

§ 9.9 The Architect's duties, responsibilities, and limits of authority as described in the Contract Documents shall not be changed without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

ARTICLE 10 CHANGES IN THE WORK

§ 10.1 The Owner, without invalidating the Contract, may order changes in the Work within the general scope of the Contract, consisting of additions, deletions or other revisions, and the Contract Sum or Contract Time, or both, shall be adjusted accordingly, in writing. If the Owner and Contractor cannot agree to a change in the Contract Sum, the Owner shall pay the Contractor its actual costs plus reasonable overhead and profit. The Contractor shall not be entitled to an increase in the Contract Sum or to an extension of the Contract Time, or both, on account of any change in the Work that is not the subject of a Change Order prior to the commencement of such Work.

§ 10.2 Subject to the approval of the Owner, the Architect may authorize or order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. Such authorization or order shall be in writing and shall be binding on the Owner and Contractor. The Contractor shall proceed with such minor changes promptly.

§ 10.3 If concealed or unknown physical conditions are encountered at the site that differ materially from those indicated in the Contract Documents or from those conditions ordinarily found to exist, the Contract Sum and Contract Time may be equitably adjusted.

ARTICLE 11 TIME

§ 11.1 Time limits stated in the Contract Documents are of the essence of the Contract.

§ 11.2 If the Contractor is delayed at any time in progress of the Work by changes ordered in the Work, or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, or other causes beyond the Contractor's control, the Contract Time shall be subject to equitable adjustment. The Contractor, however, will not be entitled to an extension of the Contract Time to the extent that such delay occurs concurrently with a delay or delays attributable to the Contractor.

§ 11.3 Costs caused by delays or by improperly timed activities or defective construction shall be borne by the responsible party.

ARTICLE 12 PAYMENTS AND COMPLETION

§ 12.1 Contract Sum

The Contract Sum stated in this Agreement, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 12.2 Applications for Payment

§ 12.2.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment for Work completed in accordance with the values stated in this Agreement. The Application shall be supported by data substantiating the Contractor's right to payment as the Owner or Architect may reasonably require, such as evidence of payments made to, and waivers of liens from, subcontractors and suppliers. Payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment stored, and protected from damage, off the site at a location agreed upon in writing.

§ 12.2.2 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment, all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or other encumbrances adverse to the Owner's interests.

§ 12.2.3 As a condition precedent to the Contractor's entitlement to payment on account of an Application for Payment, the Contractor shall submit with each Application for Payment:

- .1 a partial conditional lien waiver from the Contractor for the total payment requested in the Application for Payment;
- .2 a partial conditional lien waiver from all Subcontractors and Sub-subcontractors on whose account the Contractor is seeking payment in the Application for Payment for the total amount of such payment requested;
- .3 a partial unconditional lien waiver from the Contractor for the sum of all previously paid progress payments (not applicable to the Contractor's first Application for Payment) and not applicable to retainage;
- .4 unless previously provided, a partial or final unconditional lien waiver from each Subcontractor and Sub-subcontractor on whose account the Contractor previously sought and received payment for the sum of all such previously paid payments;
- .5 a notarized statement from the Contractor certifying that: (1) the Application for Payment is correct; (2) the Contractor is entitled to payment of the amounts requested; and (3) all due and payable bills with respect to the Work have been paid in full or will be paid in full from the proceeds of the Application for Payment;
- .6 an application for payment on AIA Document G702/G703 to the Contractor from every Subcontractor on whose account the Contractor is seeking payment in the Application for Payment;
- .7 any other information required by the Contract Documents to be submitted with an Application for Payment; and
- .8 such other information substantiating the Contractor's right to payment as the Owner may reasonably require.

§ 12.3 Certificates for Payment

The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in part; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole. If certification or notification is not made within such seven-day period, the Contractor may, upon seven additional days' written notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time and the Contract Sum shall be equitably adjusted due to the delay.

§ 12.4 Progress Payments

§ 12.4.1 After the Architect has issued a Certificate for Payment, but subject to the Owner's decision to approve payment in whole or in part, or if the Owner approves payment in the absence of a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents. The Owner may decline to approve payment in whole or in part to such extent as may be necessary in the Owner's opinion to protect the Owner from loss for which the Contractor is or may be responsible, including loss resulting from acts and omissions of the Contractor's employees or Subcontractors or their respective agents, because of, among other things:

- .1 defective Work not remedied;
- .2 liens or third-party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a separate contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;
- .7 repeated failure to carry out the Work in accordance with the Contract Documents; or
- .8 representations made by the Contractor that are not true.

§ 12.4.2 The Contractor shall promptly pay each subcontractor and supplier, upon receipt of payment from the Owner, an amount determined in accordance with the terms of the applicable subcontracts and purchase orders.

§ 12.4.3 Neither the Owner nor the Architect shall have responsibility for payments to a subcontractor or supplier.

§ 12.4.4 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the requirements of the Contract Documents.

§ 12.4.5 Notwithstanding any other provision of the Contract Documents to the contrary, if any claim or lien for which the Contractor is responsible is filed or asserted or there is any reason to believe that such a claim or lien may be filed or asserted at any time during the performance of the Work or the duration of the Contract, the Owner may withhold from any payment otherwise due to the Contractor a sum sufficient, in the Owner's reasonable opinion or as required by law, to pay all obligations and expenses necessary to satisfy such claim or lien until the Contractor furnishes such evidence satisfactory to the Owner that the indebtedness and the claim or lien in respect thereof, if any, has been satisfied, discharged, and released of record if and as provided by law pending the resolution of any such dispute between the Contractor and the entity asserting the claim or lien. The Owner may withhold final payment from the Contractor until the Work and the site are free and clear of any and all claims, liens, or rights thereto arising out of Work performed or materials furnished in furtherance of the Work. In the event that the unpaid balance of the Contract Sum is insufficient to cover such losses, costs, damages, and fees, or if the lien claim arises from the Contractor's failure to properly pass through any payment received from the Owner, the Contractor shall immediately pay the difference to the Owner. The Contractor shall have no responsibility under this Section for any lien or claim caused by Owner's failure to make payment to Contractor when due.

§ 12.5 Substantial Completion

§ 12.5.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents and when all government inspections have been successfully completed and all required permits and authorizations have been issued (unless inability to obtain any such permits is due to causes not the fault of the Contractor) so the Owner can occupy or utilize the Work for its intended use.

§ 12.5.2 When the Contractor believes that the Work or designated portion thereof is substantially complete, it will notify the Architect and the Architect will make an inspection to determine whether the Work is substantially complete. When the Architect determines that the Work is substantially complete, the Architect shall prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, establish the responsibilities of the Owner and Contractor, and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 12.6 Final Completion and Final Payment

§ 12.6.1 Upon receipt of a final Application for Payment, the Architect will inspect the Work. When the Architect finds the Work acceptable and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment.

§ 12.6.2 Final payment shall not become due until the Contractor submits to the Architect releases and waivers of liens, and data establishing payment or satisfaction of obligations, such as receipts, claims, security interests, or encumbrances arising out of the Contract.

§ 12.6.3 Acceptance of final payment by the Contractor, a subcontractor or supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

§ 12.6.4 Notwithstanding any other provision of the Contract Documents to the contrary, the date of final completion of the Work is the date determined by the Owner when all Work is complete, accessible, operable, and usable by the Owner and all parts and systems are 100% complete and cleaned for the Owner's full use and all drawings, certificates, bonds, guarantees, and documents required by the Contract Documents have been provided to the Owner by the Contractor.

§ 12.6.5 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Owner (1) an affidavit in form and substance reasonably acceptable to the Owner that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied and that all Work is complete in accordance with the requirements of the Contract Documents, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5) a final lien waiver from the Contractor and each Subcontractor; (6) all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, record documents, as-built copies of the Contract Documents, and other documents required by the Contract Documents; and (7) all of the documents and information required under Article 12 to be included with Applications for Payment. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor shall furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall immediately refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

ARTICLE 13 PROTECTION OF PERSONS AND PROPERTY

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs, including all those required by law in connection with performance of the Contract. The Contractor shall take reasonable precautions to prevent damage, injury, or loss to employees on the Work and other persons who may be affected thereby, the Work and materials and equipment to be incorporated therein, and other property at the site or adjacent thereto. The Contractor shall promptly remedy damage and loss to property caused in whole or in part by the Contractor, or by anyone for whose acts the Contractor may be liable.

ARTICLE 14 CORRECTION OF WORK

§ 14.1 The Contractor shall promptly correct Work rejected by the Architect or Owner as failing to conform to the requirements of the Contract Documents. The Contractor shall bear the cost of correcting such rejected Work, including the costs of uncovering, replacement, and additional testing.

§ 14.2 In addition to the Contractor's other obligations including warranties under the Contract, the Contractor shall, for a period of one year after Substantial Completion, correct work not conforming to the requirements of the Contract Documents. The Contractor will work together with the Architect and Owner to see that the corrective work is completed.

§ 14.3 If the Contractor fails to correct nonconforming Work within a reasonable time, the Owner may correct it in accordance with Section 7.3.

ARTICLE 15 MISCELLANEOUS PROVISIONS

§ 15.1 Assignment of Contract

Neither party to the Contract shall assign the Contract as a whole without written consent of the other.

§ 15.2 Tests and Inspections

§ 15.2.1 At the appropriate times, the Contractor shall arrange and bear costs of tests, inspections, and approvals of portions of the Work required by the Contract Documents or by laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities.

§ 15.2.2 If the Architect or Owner requires additional testing, the Contractor shall perform those tests.

§ 15.2.3 The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after the Contract is executed. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 15.3 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules.

ARTICLE 16 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 16.1 Termination by the Contractor

If the Work is stopped under Section 12.3 for a period of 14 days through no fault of the Contractor, the Contractor may, upon seven additional days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed including reasonable overhead and profit.

§ 16.2 Termination by the Owner for Cause

§ 16.2.1 The Owner may terminate the Contract if the Contractor

- .1 refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the subcontractors;
- .3 disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise fails to perform any of its duties or obligations under a provision of the Contract Documents.

§ 16.2.2 When any of the above reasons exist, the Owner, after consultation with the Architect, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may:

- .1 take possession of the site and of all materials thereon owned by the Contractor, and
- .2 finish the Work by whatever reasonable method the Owner may deem expedient.

§ 16.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 16.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 16.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, such excess shall be paid to the Contractor. If such costs exceed the unpaid balance, the Contractor shall pay the difference to the Owner. This obligation for payment shall survive termination of the Contract.

§ 16.3 Termination by the Owner for Convenience

The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause. The Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed. However, if the Owner terminates the Contract pursuant to this Section 16.3, but the Contractor is in default, the Contractor will be entitled to receive only such sums as it would be entitled to receive following the occurrence of an event of default as provided in Section 16.2.

§ 16.4 SUSPENSION BY THE OWNER FOR CONVENIENCE

§ 16.4.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine. The Contract Sum or Contract Time, or both, may be adjusted for increases in the cost and time caused by suspension, delay, or interruption, but no such adjustment will be made to the extent

- .1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

ARTICLE 17 OTHER TERMS AND CONDITIONS

(Insert any other terms or conditions below.)

§ 17.1 CLAIMS

§ 17.1.1 DEFINITION

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim.

§ 17.1.2 NOTICE OF CLAIMS

Claims by either the Owner or Contractor must be initiated by written notice to the other party. Claims by either party must be initiated within 10 days after occurrence of the event giving rise to such Claim or within 10 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later. The Contractor's failure to initiate and substantiate a Claim shall constitute an irrevocable waiver of the Claim.

§ 17.1.2.1 Unless otherwise agreed in writing by the Owner, within 45 days after the initiation of a Claim, the Contractor shall submit in writing to the Owner all information that the Contractor believes substantiates the Claim and all information and statements required to substantiate a Claim as provided in this Section 17.1. The failure to comply with the requirements of this Section 17.1.2.1 shall constitute an irrevocable waiver of any related Claim.

§ 17.1.3 CONTINUING CONTRACT PERFORMANCE

Pending final resolution of a Claim, the Contractor shall proceed diligently with performance of the Contract, and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 17.1.4 CLAIMS FOR ADDITIONAL COST

§ 17.1.4.1 Except in the event of a Claim relating to an emergency endangering life or property, the Contractor shall obtain the Owner's specific written authorization prior to proceeding with any change in the Work that may entitle the Contractor to an increase in the Contract Sum. The Contractor's failure to obtain such prior written authorization shall constitute an irrevocable waiver of any related Claim. If the Contractor wishes to make a Claim for an increase in the Contract Sum for any reason other than a change in the Work ordered by the Owner, written notice as provided in this Article shall be given before proceeding to execute the affected Work.

§ 17.1.4.2 The Contractor shall substantiate each Claim for an increase in the Contract Sum with (1) written documentation of the actual additional direct costs to the Contractor due to the event giving rise to the Claim; and (2) a written statement from the Contractor that the increase requested is the entire increase in the Contract Sum associated with the Claim.

§ 17.1.5 CLAIMS FOR ADDITIONAL TIME

§ 17.1.5.1 Except in the event of a Claim relating to an emergency endangering life or property, the Contractor shall obtain the Owner's specific written authorization prior to proceeding with any change in the Work that may entitle the Contractor to an increase in the Contract Time. The Contractor's failure to obtain such prior written authorization shall constitute an irrevocable waiver of any related Claim. If the Contractor wishes to make a Claim for an increase in the Contract Time for any reason other than a change in the Work ordered by the Owner, written notice as provided in this Article shall be given before proceeding to execute the affected Work.

§ 17.1.5.2 The Contractor shall substantiate each Claim for an extension of the Contract Time with (1) a written description of the effect of the delay on the progress of the Work; (2) a detailed schedule which identifies the critical portions of the Work impacted by the delaying event and the dates of such impact; (3) a detailed written proposal for an increase in the Contract Sum which would fully compensate the Contractor for all costs of acceleration of the Work needed to completely overcome the associated delay together with a statement consistent with Section 17.1.4.2; and (4) a written statement from the Contractor that the extension requested is the entire extension of the Contract Time associated with the Claim.

- .1** In the case of a continuing delay occurring on consecutive days, only one Claim is necessary. However, within ten days after the cessation of the cause of the continuing delay, the Contractor shall notify the Owner in writing that the cause of the delay has ceased. The failure to give timely notice of the cessation of the cause of the continuing delay will constitute an irrevocable waiver of any Claim based on the continuing delay.

§ 17.1.5.3 In addition to the requirements of Section 17.1.5.1, if adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on a critical element of the scheduled

construction. Notwithstanding any other provision of the Contract Documents to the contrary, the Contract Time will not be adjusted on account of the impact of any normal adverse weather on any of the Work or on account of the impact of any abnormal adverse weather on non-critical elements of the Work. The support for and evaluation of all adverse-weather Claims shall be based upon average weather conditions during the 10 years immediately preceding the dates at issue in the Claim as such weather conditions were recorded at the government-controlled weather-recording facility nearest to the site.

§ 17.1.5.4 Notwithstanding any other provision of the Contract Documents to the contrary, an extension of the Contract Time will be the Contractor's exclusive remedy in the event of any delay not the proximate result of the act or failure to act of the Owner or anyone for whom the Owner is directly responsible. The Contractor specifically waives any right it may otherwise have to an increase in the Contract Sum or to any type of damages because of such delay or disruption to all or any part of the Work, whether such delay was foreseen or unforeseen and whether caused by the active interference of any party for whom the Owner is not directly responsible.

- .1 Notwithstanding the provisions of Section 17.1.5.3 to the contrary, the Contractor will not be entitled to an extension of the Contract Time to the extent that such delay occurs concurrently with a delay attributable to the Contractor.

§ 17.1.5.5 Notwithstanding any other provision of the Contract Documents to the contrary, in no event shall the Contractor be entitled to an increase in the Contract Time on account of any delaying impact on a non-critical element of the Work.

§ 17.1.6 INITIAL DECISION

§ 17.1.6.1 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 17.1.6.2 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 17.1.6.3 Notwithstanding any other provision of the Contract Documents to the contrary, either party may seek judicial relief in the state or federal court where the Project is located, but only if the sole relief sought is a temporary restraining order or a preliminary or permanent injunction.

§ 17.1.6.4 Upon receipt of a written request, the Contractor shall make available to the Owner and its representatives all books, records, and other documents in the Contractor's possession or under its control that relate to any Claim or dispute, and the Contractor shall require its Subcontractors and Sub-subcontractors to do likewise.

§ 17.1.7 MEDIATION

§ 17.1.7.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract except those waived as provided for in Sections 12.6., 17.1.2, 17.1.4, and 17.1.5 shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 17.1.7.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 17.1.7, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 17.1.7.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 17.1.8 LITIGATION

§ 17.1.8.1 Any Claim arising out of or related to the Contract, except Claims relating to aesthetic effect and except those waived as provided for elsewhere in the Contract Documents, shall, after 75 days after initiation of the Claim, be subject to litigation.

The filing of a lawsuit under this Section does not relieve the parties of their obligation to mediate their disputes pursuant to Section 17.1.7.

§ 17.1.8.2 All litigation arising or allegedly arising out of or resulting from the Project shall be held and brought only in the state or federal court where the Project is located. The parties consent to the exclusive jurisdiction of and venue in that court.

This Agreement entered into as of the day and year first written above.

(If required by law, insert cancellation period, disclosures or other warning statements above the signatures.)

OWNER (Signature)

(Printed name and title)

CONTRACTOR (Signature)

(Printed name and title)

LICENSE NO.:

JURISDICTION: