

**CM/GC CONSTRUCTION CONTRACT  
DPAC GARAGE CRITICAL REPAIRS,  
13TH STREET IMPROVEMENT/CHAMPA STREET BRIDGE**

**THIS AGREEMENT** is made between the **CITY AND COUNTY OF DENVER**, a municipal corporation of the State of Colorado (the “City”) and **TURNER CONSTRUCTION COMPANY**, a New York corporation, registered to do business in Colorado, whose address is 5500 Greenwood Plaza Boulevard, Suite 515 E. Greenwood Village, Colorado 80111, hereinafter referred to as “the Contractor”, jointly “the parties.”

**RECITALS**

**1.** The City wishes to obtain Construction Management/General Contracting (CM/GC) services for the DPAC Garage Critical Repairs/13<sup>th</sup> Street Improvement/Champa Street Bridge.

DPAC GARAGE CRITICAL REPAIRS  
13TH STREET IMPROVEMENT/CHAMPA STREET BRIDGE  
Project No. **PWFAC2016-050; PWFAC2016-056**  
CONTRACT CONTROL NO. PWADM-201734069-00  
(the “PROJECT”)

**2.** In furtherance of the Project, the City has contracted with Martin and Martin for the design for the DPAC parking garage repairs, and Short Elliot Hendrickson (SEH) for design of the 13<sup>th</sup> Street Improvements and Champa bridge demolition. (the “Designers or Design Consultants or Consultant Team”) to perform professional architectural and engineering design services for the programming and design of the Project.

**3.** Pursuant to Section 20-56 of the Denver Revised Municipal Code, the City commenced on July 18, 2016, and advertised for at least three (3) consecutive days, the City’s solicitation for qualification submissions from qualified contractors for the Project.

**4.** The City’s solicitation sought a contractor to furnish all Construction Manager/General Contractor (“CM/GC”) preconstruction and construction experience, expertise and services; and all construction administration, management, supervision, coordination and project construction experience and expertise; and all construction services, work effort, labor, tools, supplies, manufactured components, equipment, materials, and everything else necessary and required to assist in the Project design and to complete the construction of the Project on an expedited basis and within budget; while satisfying the City’s longstanding commitment to quality, efficiency, value, innovation, partnering, responsiveness to agency and community needs and compliance with all applicable regulatory requirements in the performance of general public improvements.

**5.** Submissions received pursuant to said advertisement were evaluated and formal proposals were requested from selected firms best meeting the City’s qualifications criteria for this Project.

**6.** Proposals received were evaluated and ranked by a selection committee and a recommendation was made to the Executive Director of Public Works who evaluated the Proposals and recommended that a contract or contracts for performance on the Project be made and entered into with the above-named Contractor.

**7.** Based upon that ranking, the City and the Contractor entered into a Preconstruction Services Agreement, Work Order No. 201631551, commencing (Notice to Proceed) on December 15, 2016 to perform preconstruction services.

**8.** In accordance with the terms and conditions of the Preconstruction Services Agreement, the Contractor has reviewed the Project Site and design documents and has performed constructability, availability, scheduling and cost estimating analysis on design documents prepared for the Project.

9. Based on this performance, the Contractor is thoroughly informed about the Project and the Project design.

10. As a consequence of the Project's time limitations and in order to maintain the existing Project schedule, the Contractor and the City now desire to enter into a Construction Manager/General Contractor contract (the "Construction Contract"). The Project work has been divided into two packages each with its own Guaranteed Maximum Price ("GMP") for all of the Work necessary to complete that package of work. The two packages are:

GMP 1: DPAC Garage Critical Repairs and Champa Street Pedestrian Bridge Demolition Project ("**GMP 1**"); and

GMP 2: 13<sup>th</sup> Street Improvements between Arapahoe Street and Champa Street Project ("**GMP 2**").

11. The Contractor is willing, able and has the present capacity to perform the construction phase services, as an independent contractor, in accordance with this Construction Contract, said advertisement, the preconstruction agreement and the referenced selection documents.

**NOW THEREFORE**, in consideration of the compensation to be paid the Contractor, the mutual agreements hereinafter contained, and subject to the terms hereinafter stated, it is mutually agreed as follows:

## **1.0 PROJECT SUMMARY AND DEFINITIONS:**

1.1 **Project.** The "Project" as used herein shall mean the:

DPAC GARAGE CRITICAL REPAIRS, 13TH STREET IMPROVEMENT & CHAMPA STREET BRIDGE

1.1.1 The Project is located at the "Project Site" 1080 14<sup>th</sup> Street and 13<sup>th</sup> Street: Arapahoe Street to Champa Street, Denver, Colorado.

1.1.2 The specific details of the Project are more particularly set forth in the "DPAC Garage Critical Repairs – 100% Construction Documents" prepared by Martin/Martin and dated April 13, 2016, Champa Street Pedestrian Bridge Demolition by SEH dated January 30, 2017, and 13<sup>th</sup> Street Roadway Improvements: Arapahoe Street to Champa Street – 60% Submittal by SEH dated January 9, 2017.

1.1.3 The Project shall be comprised of the following:

1.1.3.1 **GMP 1:** Drawing Set 1: DPAC Garage Critical Repairs and Drawing Set 2: Champa Street Pedestrian Bridge Demolition.

**GMP 2:** Drawing Set 3: 13<sup>th</sup> Street Roadway Improvements: Arapahoe Street to Champa Street.

1.1.4 **Contractor Selection.** In accordance with the requirements of Section 20-56 of the Denver Revised Municipal Code (the "**DRMC**"), the City implemented and completed a competitive selection process to identify qualified Contractors to perform both preconstruction and construction services for the Project. The Contractor was selected as the first ranked proposer to perform such services for the City as set forth in the City's Request for Proposals (RFP) dated September 13, 2016; and the Contractor's RFP Submittals dated October 11, 2016 and October 14, 2016. In referencing these solicitations and submissions herein, the City and the Contractor acknowledge that the scope of the Project, as presented and addressed by these documents, has materially evolved since the issuance of these documents and that some information presented will not be applicable to this Construction Contract or the Project.

1.2 **Budget.** The Contractor acknowledges and accepts that there are limited funds available to design and construct the Project. The Project construction budget (the "Budget") is, and is subject to increase or decrease at the sole discretion of the Manager of Public Works. The Contractor further acknowledges and accepts that the GMP Work must be completed within the construction budget. As part of this acknowledgment and acceptance, the Contractor shall at all times cooperate fully with the City and the Design Consultant to develop the Project and its various

components for construction and ultimately construct the Project so as not to exceed the limited funds available in the Project Budget.

**1.3 Project Format.** In the performance of this Construction Contract, the Contractor acknowledges and accepts that scope and schedule are critical for Project delivery. Based on these considerations, the City has elected to utilize a Construction Manager/General Contractor (“**CM/GC**”) project delivery approach and will fast track the Project.

**1.3.1** The Contractor is familiar with this approach and understands that the CM/GC method is a specialized and rigorous delivery approach requiring maximum cooperation between all parties. As a consequence of the delivery approach, the Contractor acknowledges and accepts the following: (1) that the complete services to be rendered by the Contractor, the organizational and process inter-relationships governing construction and the construction cost, schedule and sequencing are either in the developmental stage or have not yet been fully defined; and (2) that portions of the Project could have their design completed as separate phases.

**1.3.2** In preparing and submitting the GMP Proposals, the Contractor understands, confirms and agrees that its responsibility under this CM/GC approach is to construct the Project in accordance with the Contract Documents. It is further understood and accepted that because the GMPs are based, in part, on incomplete design documents, the Contractor shall exercise reasonable care and its best diligence, efforts and judgment to determine the intent of the most recent Project design documents, has carefully considered this intent, both express and inferable, in calculating the GMPs and has based all of its GMP calculations on the Scope of Work , program and standards of workmanship, and quality of construction, equipment, materials and finishes that can be inferred from the most recent design documents and any documented Project expectations and/or requirements provided to the Contractor.

**1.3.3** Subject to any allowed contingency provided for in Section 1.5, the Contractor further acknowledges and agrees the GMPs fully account for any risks associated with failing to consider the design intent reasonably inferable from the Contract Documents. The Contractor has documented in the Basis of the GMP Proposals and provided the City any and all clarifications regarding the design intent, including the intended level of quality of the Project. No GMP increase or extension of the Contract Time will be allowed to account for any assumption, exclusion and clarification the Contractor failed to document or for any other item of Work covered by the Contract Documents that the Contractor failed to account for in its GMPs.

**1.4 Allowances.** No allowances are set forth in the GMP Proposals.

**1.5 Contingency.**

**1.5.1 Construction Contingency Amount.** GMP 1 will include a construction contingency in an amount equal to a lump sum of **Eighty-Six Thousand Eight Hundred Sixty-Two and 62/100 dollars (\$86,862.62)** (“GMP 1 Contingency”). for the entire scope of the GMP 1 Work. GMP 2 will include a construction contingency in an amount equal to a lump sum of **Two Hundred One Thousand dollars (\$201,000.00)** (“GMP 2 Contingency”). for the entire scope of the GMP 2 Work.

**1.5.2 Contingency Accounting.** The GMP Proposals are not line item GMPs. During the course of the Work, some GMP line items may exceed the estimated amounts and others may under run the estimated amounts shown in the GMP Proposals without impacting the overall GMPs. The Contractor may charge to the Contingency any costs which are properly reimbursable as Cost of the Work, but not the basis for a Change Order. These costs may include costs attributable to errors and omissions by the Contractor; costs to correct defective, nonconforming or damaged work; costs generated from clarification of the Contract Documents; costs for code changes or code upgrades required by governmental agencies which are not otherwise the basis for a change order; overtime and acceleration costs to meet contract schedule; and costs, including legal fees, for contractual disputes, with parties other than the City. The Contingency shall be increased to the extent that there are underruns in budget items included in the GMPs. The Contractor shall notify the Project Manager, in writing, of each such charge to or credit of the contingency prior to taking such action and shall provide a periodic reconciliation of contingency credits and expenditures in a format acceptable to the Project Manager.

**1.5.3 Contingency Management.** The Contractor acknowledges that, subject to available funding, it is the desire of the City to incorporate as many additional Work items into the Work as reasonable or otherwise increase the Work to be performed by the Contractor to enhance the Project. The Contractor agrees to accept a mutually agreeable reduction of the contingency whenever the City and the Contractor reasonably agree that the Project risk is substantially decreased and such agreement shall not be unreasonably withheld.

**1.5.4 Contingency Allocation.** The Contractor acknowledges that GMP 1 and GMP 2 are funded through two (2) individual and separate accounts and that the Contingency assigned to one account cannot be used as described in paragraphs 1.5.2 and 1.5.3 for the other account. The Contingency shall be accounted and managed within the following individual GMPs:

GMP 1: Drawing Set 1: DPAC Garage Critical Repairs and Drawing Set 2: Champa Street Pedestrian Bridge Demolition shared combined contingency equal to a lump sum of **Eighty-Six Thousand Eight Hundred Sixty-Two and 62/100 dollars (\$86,862.62)**.

GMP 2: Drawing Set 3: 13<sup>th</sup> Street Improvements: Arapahoe Street to Champa Street contingency equal to a lump sum of **Two Hundred One Thousand dollars (\$201,000.00)**.

**1.6 Design Consultant.** The “**Design Consultant**” or “**Designer**” as used herein shall mean the legally approved professional architect/engineer, or group or association or professional corporation or joint venture of such approved professional architects, engineers and/or consultants, who have contracted with the City to accomplish the architectural, engineering and other design and related technical services necessary to complete the Project. The Project Design Consultant is: Martin and Martin and SEH. In case of termination of the Design Consultant, the City will appoint a Design Consultant whose status under the Construction Contract shall be the same as that of the former Design Consultant.

**1.7 User Agency.** The “User Agency” as used herein shall mean the City agency currently responsible for the operation and maintenance of the Project. The User Agency is the City and County of Denver Department of Department of Public Works..

**1.8 Construction Team.** The Contractor, the City, and the Design Consultant, called the “Construction Team,” shall work together to complete the Project. The Contractor shall provide leadership to the Construction Team on all matters relating to Construction.

## **2.0 CONTRACT DOCUMENTS:**

**2.1** It is agreed by the parties hereto that the following list of instruments, drawings and documents which are attached hereto, bound herewith or incorporated herein by reference constitute and shall be referred to as the “Contract Documents” and all of said instruments, drawings and documents taken together as a whole constitute the Contract and Agreement between the parties hereto, and they are as fully a part of this Contract and Agreement as if they were set out verbatim and in full herein. The Contract Documents represent the entire and complete integration of all understandings between the City and the Contractor and supersedes all prior negotiations, representations or agreements. No prior or contemporaneous addition, deletion or other amendment hereto shall have any force or effect whatsoever, unless embodied herein in writing. No subsequent novation, renewal, addition, deletion or other amendment hereto shall have any force or effect unless embodied in a written amendatory or other agreement or change order properly executed by the parties. When the Technical Specifications and Contract Drawings are complete and issued by the Design Consultant for construction, they will, without further action be incorporated into this Construction Contract as if fully set forth herein as **Exhibits C and D1, D2, and D3**.

This CMGC Construction Contract

Advertisement of Notice of Invitation for Proposals, dated July 18, 2016 (incorporated by reference)

Request for Proposals (RFP), dated September 13, 2016 (incorporated by reference)

Contractor Response to RFP, dated October 11, 2016 (incorporated by reference)

General Contract Conditions (incorporated by reference; table of contents attached as **Exhibit A**)

Special Contract Conditions (attached as **Exhibit B**)

Technical Specifications (to be incorporated by reference when developed as **Exhibit C**)

Contract Drawings (**Exhibits D1, D2 & D3**)

GMP 1 (Attached as **Exhibit D1**: DPAC Garage Critical Repairs and **Exhibit D2**: Champa Street Pedestrian Bridge Demolition)

GMP 2 (Attached as **Exhibit D3**: 13<sup>th</sup> Street Improvements: Arapahoe Street to Champa Street)

GMP Proposal (**Exhibits E1, E2 & E3**)

GMP 1 (Attached as **Exhibit E1**)

GMP 2 (Attached as **Exhibit E2**)

GMP 1 and 2: Proposal Assumptions and Clarifications (Attached as **Exhibit E3**)

Self-Performed Work Proposal (attached as **Exhibit F**)

Billing Rates for Salaried Personnel (attached as **Exhibit G**)

Equipment Rental Rates (to be later attached as **Exhibit H**)

Prevailing Wage Rate Schedule(s) (attached as **Exhibit I**)

Equal Employment Opportunity Provisions (attached as **Exhibit J**)

Minority/Women Owned Business Enterprise Program Compliance Plan (attached as **Exhibit K**)

Certificate of Insurance (attached as **Exhibit L**)

Performance and Payment Bond (attached as **Exhibit M**)

Notice to Proceed Form (attached as **Exhibit N**)

Contractor's Certification of Payment Form (attached as **Exhibit O**)

Final/Partial Lien Release Form (attached as **Exhibit P**)

Final Receipt Form (attached as **Exhibit Q**)

Preconstruction Services Work Order 201631551, dated December 12, 2016 (incorporated by reference as **Exhibit R**)

**2.2** If anything in the Contract Documents is inconsistent with this Construction Contract, this Construction Contract will govern. The order of precedence of the Contract Documents shall be as follows:

**2.2.1** this Construction Contract, as may be modified by amendment or change orders;

**2.2.2** the General Contract Conditions;

**2.2.3** the Basis of the GMP Work Proposal,

**2.2.4** the Technical Specifications;

**2.2.5** the Contract Drawings; and

**2.2.6** all other Exhibits, whether attached to this Construction Contract, incorporated by reference or later added by Change Order.

**2.3** The intent of the Contract Documents is to include all terms, conditions, work items and services necessary or required for the proper execution and completion of the Work. The Contract Documents are complementary, and what is required by any one shall be binding as if required by all. Work items or services not covered in the Contract Documents will be required unless they are not consistent with the Contract Documents and are not inferable from the Contract Documents as being necessary to produce the result intended by the Contract Documents. Anything mentioned in the Technical Specifications and not shown on the Contract Drawings, or shown on the Contract Drawings and not mentioned in the Technical Specifications, shall be of like effect as if shown or mentioned in both. Words and abbreviations that have well known technical or trade meanings are used in the Contract Documents in accordance with such recognized meaning.

**2.4** It is contemplated by the parties that numerous exhibits or attachments, including construction documents and final technical specifications, will not be accomplished or must be developed after execution of this Construction Contract and, as such, must be finalized, incorporated by reference and/or attached to and be made a part of the Contract Documents subsequent to execution of this Construction Contract. The incorporation of such exhibits or attachments into this Construction Contract shall be accomplished by written directive from the Manager of Public Works or the Manager's designee. The parties shall be diligent in accomplishing these exhibits and attachments. To the extent these new exhibits or attachments conflict with other exhibits or portions of this Construction Contract, the greater service, better quality or greater quantity shall be included in the Work. However, nothing contained in this section shall limit the Contractor's ability to seek Change Order time and compensation adjustments for City changes to the Work incorporated into any of these later exhibits and attachments.

**2.5** Where reference is made in this Construction Contract to a provision of the General Conditions or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

### **3.0 SCOPE OF WORK:**

**3.1 Completion Obligation.** The Contractor shall execute the Project described in the Contract Documents, except to the extent specifically indicated in the Contract Documents as the responsibility of others. The Contractor agrees to commence and undertake the performance of the Work under this Construction Contract within ten (10) days of the date of issuance of a Notice to Proceed in substantially the form attached as **Exhibit N** and agrees to substantially complete said Work within the Contract Time and fully complete said Work in accordance with the Contract Documents. The Contractor may complete the Project earlier than the date for substantial completion established by the Contract Time, but any claim by the Contractor based on delay shall be based upon the date for substantial completion established by the Contract Time and not on an earlier projected completion date that the Contractor may propose.

**3.2 Scope of Work.** The entire Scope of Work shall include the following:

**3.2.1 Preconstruction Phase Services.** The Preconstruction Services are comprised of all those services, obligations and responsibilities set forth in the Preconstruction Services Agreement, incorporated herein by this reference as **Exhibit R**. In order to expedite Project completion, the Parties entered into the Preconstruction Agreement to perform Preconstruction Services, in anticipation of the start of the Construction Phase of the Project. In accordance with the terms of the Preconstruction Agreement, compensation for the performance of such services is based on a lump sum fee for services. For the duration of this Construction Contract, the Contractor shall continue to perform any further Preconstruction Services required by the Project as part of its obligations under this Construction Contract as a Cost of the Work with no increase to the GMPs.

**3.2.2 Construction Services.** The Construction Phase Services shall include the furnishing of all construction administration, management, supervision and coordination experience and expertise, as well as all construction services, work effort, labor, tools, supplies, manufactured components, equipment, materials, and everything else necessary and

required to complete the construction of the Project on time and within budget; while satisfying the City's longstanding commitment to quality, efficiency, value, innovation, partnering, responsiveness to agency and community needs and compliance with all applicable regulatory requirements in the performance of general public improvements. Compensation for the Construction Phase Services shall be in accordance with the terms and conditions of this Construction Contract.

**3.2.2.1 GMP Scope of Work.** The Contractor shall perform all Construction Services, as set forth in the GMP Proposals, which is attached as **Exhibits E1 (GMP 1) and E2 (GMP 2)**.

**3.2.3 The Work.** The terms "Scope of Work" or "Work" as used herein shall mean all Construction Services required by or reasonably inferable from the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work shall constitute the whole of the Project.

**3.3 Acknowledgement of Scope of Work.** The Contractor expressly recognizes and acknowledges that this Project must be completed within the time and fiscal constraints as set forth throughout this Construction Contract.

**3.3.1** The Contractor further represents to the City that by executing this Construction Contract, it has been fully informed of and has thoroughly reviewed the following: the objectives of the Project; the work effort of the Design Consultant performed to date for the Project; all of the Contract Documents attached to this Construction Contract or incorporated by reference; the City's general time and budget constraints and contingencies applicable to the Budget; and all of the Work required by the Contractor by the Contract Documents. Based upon this thorough review and analysis and recognizing that the contract for design services is between the City and the Designer, the Contractor nonetheless represents to the City that it will provide or perform all of the necessary Work within the requirements of the Contract Documents.

**3.3.2** Also by execution of this Construction Contract, the Contractor covenants and represents that the Contractor has visited the site of the Project (the "Site") and has had sufficient time and opportunity to independently examine and is sufficiently familiar with: the Site, the character and nature of the Site layout and materials, the character and nature of all Site constraints, restrictions and limitations, and limitations on ingress, egress and construction staging and performance; and the local conditions under which the Work is to be performed, including weather conditions and any other factors which may impact the Work. The Contractor further represents that it has taken into consideration and correlated these direct observations, examinations and investigations with the requirements of the Contract Documents and in the pricing of the Work, the formulation of the GMPs, the Contractors Fee and in preparing all Exhibits.

**3.3.3** Also by execution of this Construction Contract, the Contractor represents that it has reviewed and is familiar with the City's general expectations and scheduling assumptions regarding the completion of the Project and opening of the completed facility and that, given the Scope of Work, these scheduling assumptions are reasonable and achievable. The Contractor further represents that it will take into consideration and correlate these assumptions and constraints with the requirements of the Contract Documents and in the pricing of the Work, the GMPs and the Contractor's Fee.

**3.3.4** Finally, the Contractor represents that it has reviewed the Design Consultant Agreements and the 100% Design Drawings for Drawing Set 1, the 60% Design Drawings for Drawing Set 2, and the 90% Permit Design Drawings for Drawing Set 3, accepts the terms and requirements thereof and affirmatively states that the Project, as expressed by the design documents and the Project requirements and constraints as modified by value engineering suggestions, budget adjustments and cost cutting measures suggested by the Contractor as of March 24, 2017 is a reasonable and constructible Project, incorporating a reasonable and workable delivery approach, schedule and budget.

#### **4.0 RELATIONSHIP OF THE PARTIES:**

**4.1** The parties intend herein to establish a relationship wherein the City relies upon the integrity and fidelity of the Contractor to complete the Project within the time and budget constraints set forth in this Construction Contract and in a manner which satisfies the City's longstanding commitment to quality, efficiency, value, innovation, partnering,

responsiveness to agency and community needs and compliance with all applicable regulatory requirements in the performance of general public improvements.

**4.2** The Contractor accepts the relationship of trust and confidence established by this Construction Contract with the City. The Contractor further agrees to utilize the Contractor's best skills, efforts, and judgment in furthering the interests of the City regarding the Project; to furnish at all times an adequate supply of qualified and competent workers and quality materials; and to perform the work in the best, most expeditious, and economical manner. Further, the Contractor agrees to furnish efficient business administration, construction management and superintendence and to use its best efforts to complete the Work in an expeditious and economical manner, consistent with the interests of the City.

**4.3** The City will have a separate agreement with the Design Consultant to design the Project and to provide construction contract administration services necessary to ensure that the Work conforms to the Contract Drawings and Technical Specifications. Both the Contractor and the Design Consultant shall be given direction by the City, or the City's designated and authorized representative(s). The Contract Documents shall not be deemed to create any contractual relationship between the Design Consultant and the Contractor or any separate contractors, subcontractors of any tier or suppliers on the Project. The relationship between the Contractor and the Design Consultant is intended to be cooperative and proactive, with both participating on the same team with the City.

**4.4** The Contractor shall accept the designated and authorized representatives of the City identified in the Contract Documents and perform its obligations toward and in response to such representatives in the same manner it would toward and in response to the City, pursuant to such designation and authorization.

**4.5 City Delegation Of Authority.** With reference to G.C. 212, CITY'S CONTRACT ADMINISTRATION LINE OF AUTHORITY, the Manager delegates to the City Engineer the authority necessary to undertake the responsibilities identified as the responsibilities of the Deputy Manager under this Construction Contract. The City Engineer hereby designates as Project Manager with authority to handle the day to day administration of this Construction Contract, the following personnel:

**Department of Public Works Project Manager**

**Telephone**

Michael Young

720-913-4523

**5.0 COORDINATION AND COOPERATION:**

**5.1** The Contractor agrees to cooperate and coordinate fully with the City in its performance of the Work to meet or exceed the City's time and budgetary objectives and limitations, while maintaining the City's longstanding commitment to quality, efficiency, value, innovation, partnering, responsiveness to agency and community needs and compliance with all applicable regulatory requirements in the construction of general public improvements.

**5.2** The Contractor shall, as a continuing work item under this Construction Contract, facilitate coordination, communication and cooperation regarding its performance hereunder between the City's Department of Public Works ("Public Works"), the Project Manager, the Design Consultant, the User Agency, other City consultants and any affiliated entities. In addition, the Contractor shall coordinate its efforts under this Construction Contract with all involved governmental and regulatory entities.

**5.3** The Contractor shall be responsible for taking accurate and comprehensive minutes at all Construction meetings attended by the Contractor regarding the Project. Those minutes shall be prepared in a format approved by the Project Manager and issued to all attendees, as well as those other parties designated by the City, no later than three working days after the meeting. Unless approved in advance in writing by the Project Manager and to the greatest extent practicable, Project meetings with the City shall be conducted in the City and County of Denver, Colorado.

**5.4** Nothing contained in the Contract Documents shall be deemed to give any third party any claim or right of action against the City, the Design Consultant or the Contractor that does not otherwise exist without regard to the Contract Documents.

**5.5** The Contractor shall use its best efforts and take all necessary precautions to protect and prevent damage and/or disruption to all City facilities and equipment, and shall coordinate all ingress and egress requirements with appropriate persons and agencies.

**6.0 CONTRACT TIME, SUBSTANTIAL COMPLETION AND LIQUIDATED DAMAGES:**

**6.1 Substantial Completion.** The term “Substantial Completion” is defined in the General Conditions. The number of days the Contractor shall have to attain Substantial Completion of the Scope of the Work set forth in the Contract Documents is set forth in this Section.

**6.2 Construction Time.** The term “Construction Time” is defined as the total number of days between the date of the Notice to Proceed with Construction and the date on which Substantial Completion of all Work must be completed by the Contractor which is November 24, 2017.

**6.3 Final Completion.** Final Completion of the Work occurs following Substantial Completion when all punch list items are completed and the Contractor has provided the City with a Final Lien Release Form (which may be contingent upon receipt of Final Payment) (in the form of **Exhibit Q**). The term “Final Completion” is defined in the General Conditions.

**6.4 Liquidated Damages.** The parties recognize and agree that time is of the essence of this Contract. In the event that the Work is not Substantially Complete within the Construction Time, as that time may be extended for delays for which an extension of time is permitted under the terms of the Contract Documents, the City and the Contractor acknowledge and agree, after a full discussion of the implications of this section, that it would be impractical and extremely difficult to estimate the damages (including, by way of example but without limitation, direct and indirect, incidental, special and consequential damages) which the City might incur for failure of the Contractor to timely achieve Substantial Completion within either the Construction Time. Therefore, the City and the Contractor have determined that a reasonable estimate of the total detriment that the City would suffer in the event that the Contractor so defaults and the Project is not Substantially Complete within the Construction Time, as extended as permitted herein, is and shall be, in the event of said default and failure, as the sole and exclusive remedy (whether at law or in equity) of the City for this delay, and not as a penalty, the amount per day stated below that the Work shall remain not Substantially Complete after the Construction Time, as applicable, including extensions, has elapsed. It is understood and agreed that the City reserves all of its other rights and remedies for any other or different breach or default of this Construction Contract by Contractor, or for any other cause of action.

Liquidated Damages Table

Amount per Day	Substantial Completion	\$750.00
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The parties agree that the foregoing amounts shall be the full amount of liquidated damages recoverable against the Contractor by the City for the Contractor’s breach of its covenants of timely performance hereunder. The amount so determined shall be the full, agreed upon and liquidated damages recoverable against the Contractor by the City for the Contractor’s breach of its covenants of timely performance hereunder. The provisions of this Section shall not limit the rights and remedies of the City pursuant to the General Conditions.

**7.0 SUBCONTRACTS AND OTHER AGREEMENTS:**

**7.1 Subcontractor Selection.** The Contractor recognizes and accepts that the subcontractor and supplier selection and contracting procedures specified herein are intended to promote pricing or buyout of the Work which is fair and reasonable and, to the greatest extent practicable, is based on fair and open competition. As such, all Work, except for Work or Services included in the Contractor’s Fee, the Contractor’s General Conditions or Work performed by the Contractor with the prior written approval of the Project Manager (“Self-Performed Work”) shall be procured based upon competitive bids awarded to the lowest, responsive and qualified bidder and subcontracted to “Subcontractors” and “Suppliers,” which may include Contractor Self-Performed Work under Section 7.1, in accordance with **Exhibit F** and in compliance with the General Conditions, attached hereto and incorporated herein as **Exhibit A**. Each Subcontractor and Supplier selection shall be reviewed by the City and the City reserves the right to reject any Subcontractor or Supplier in accordance with the terms and conditions of the General Conditions or in the event the City

determines that the selection was not made after a competitive bid. Upon request of the Contractor, the City may waive the competitive bid requirement of this Section with the express written approval of the Project Manager.

## **7.2 Self-Performed Work.**

**7.2.1** Upon prior written approval of the Project Manager, the Contractor may compete for designated Subcontractor or Supplier Work packages. Should the Contractor submit a proposal for any such package, such proposal shall be submitted directly to the Project Manager one week prior to any proposal deadline and all bid or selection requirements specified in **Exhibit A** shall apply to proposal or bid opening and evaluation. The Project Manager shall review with the Contractor all bids submitted where the Contractor has submitted a bid and shall make the final award after consultation with the Contractor. The City must approve any Self-Performed Work award to the Contractor. The Contractor shall perform for the Contractor's lump sum bid amount on the basis of a Stipulated Lump Sum Subcontract, which shall also be subject to City review and written approval of the Project Manager prior to commencement of any Self-Performed Work, but shall not be subject to the cost of work limitations of the Contract Documents.

**7.2.2** Notwithstanding the bidding requirements set forth in Section 7.2.1, the Contractor shall submit to the City, at least one week prior to receipt of sub-contractor bid proposals, a final Self-Performed Work Proposal for any proposed Self-Performed work on the Project. Such final Proposal shall be for the scope of work described in the Self-Performed Work Proposal attached hereto as **Exhibit F** and, under no circumstances, shall the proposal exceed the maximum amount for such work set forth in **Exhibits E1 and E2**. Upon receipt of the final Proposal, the Manager may, at the Manager's sole discretion, accept the proposal, reject the proposal or engage in further negotiations regarding this work. If finally accepted by the Manager, the City will issue a change order for this work and the work described in the Final Self-Performed Work Proposal will be incorporated into the GMPs Scope of Work and GMPs price as if fully set forth herein. In addition, the Construction Time shall be adjusted accordingly. If the City rejects the final proposal, the terms of Section 7.2.1 shall apply to the sub-contracted work of the Project.

**7.3 Subcontract Forms.** All subcontracts will be between the Contractor and the selected Subcontractors or Suppliers, which may include the Contractor for Lump Sum Self-Performed Work. The form of each subcontract shall be furnished to the City for review and acceptance as to form, which acceptance shall not be unreasonably withheld. All subcontracts shall require that all Subcontractors or Suppliers of any tier performing Work accept and agree to be bound by the terms and conditions of the Contract Documents and to assume toward the Contractor all obligations and responsibilities the Contractor, by the Contract Documents, assumes toward the City. All subcontracts shall preserve and protect the rights of the City under the Contract Documents with respect to the Work to be performed by the Subcontractor so that the subcontracting thereof shall not prejudice these rights.

**7.4 Substitution.** The Contractor shall make no substitution for a Subcontractor or Supplier previously selected without the prior written approval of the Project Manager and such approval shall not be unreasonable withheld.

**7.5 Responsibility.** The Contractor shall be responsible to the City for the acts and omissions of its agents and employees, Subcontractors and Suppliers of any tier, and their agents and employees performing Work under this Construction Contract.

## **8.0 COMPENSATION.**

**8.1 Cost of the Work.** The term Cost of the Work shall consist of costs necessarily incurred in the proper performance of the Work for the Project as delineated below which shall be paid by the City to the Contractor. Cost of the Work shall not include any Fee of the Contractor. Any allowable mark-up by the Contractor is included in the Contractor's Fee. Cost of the Work shall consist of the following Contractor incurred items set forth below:

**8.1.1** Cost of wages paid for labor in the performance of the Work at the site or with the City's agreement at offsite workshops, which shall as a minimum be in accordance with the prevailing wage rates established by the City and County of Denver for construction projects, as set out in DRMC Section 20-76, and in effect at the time that the GMPs is established. In the event the prevailing wage rates are increased in accordance with DRMC Section 20-76, on the anniversary date of this Construction Contract, these increases shall also be included as a cost of the work. Costs paid or incurred by the Contractor shall include actual wages for the Contractor's own personnel (including overtime

premiums as applicable), taxes, insurance, contributions, assessments and benefits required by law or collective bargaining agreements and for personnel not covered by such agreements, customary benefits and the Contractor's company policy such as sick leave, individual and dependent medical and health benefits, disability insurance, holidays, craft training fund, vacation, pension, and, as applicable, 401K contributions. The City and the Contractor agree that the wages and burden for the personnel referenced in this paragraph and paragraphs 8.1.17 and 8.1.18 shall be charged as a Cost of the Work at not less than the stipulated fixed rates set forth on Prevailing Wage Rate Schedule, attached as **Exhibit I**, or as appropriate charges at the stipulated fixed rates set forth on the Billing Rates for Salaried Personnel attached as **Exhibit G**.

**8.1.2** Cost of contributions, assessments or taxes for such items as unemployment compensation and social security, insofar as such cost is based on wages, salaries or other remuneration paid pursuant to Section 8.1.1.

**8.1.3** Cost of mock-ups and testing, as may be previously approved by the Project Manager.

**8.1.4** Cost of all materials, supplies and equipment incorporated in the Work, including costs of transportation thereof.

**8.1.5** Payments properly made by the Contractor to Subcontractors and Suppliers under Project subcontracts for performance of portions of the Work including insurance required by this Contract and bond premiums incurred.

**8.1.6** Payments actually made for architects, engineers and other consultants providing services to the Contractor reasonably required to perform the work, unless such services are to be provided to the Owner by the Design Consultant or other City-Retained Consultants (as defined in the Design Consultant's Agreement for Professional Design Services).

**8.1.7** Cost, including transportation, inspection, handling, storage and maintenance, of all temporary facilities and all materials, supplies, equipment and hand tools not owned by the workmen that are consumed in the performance of the Work on the Project. The Contractor shall negotiate with the City the salvage value of all items purchased and used on the Project but not consumed, damaged, lost or stolen at the completion of the work, crediting any proceeds against the Cost of the Work. If the Contractor and the City cannot agree on the salvage value of the above items then said items shall remain the property of the City and the Contractor shall give no credit to the Cost of the Work. The Contractor may institute a voluntary recycling program.

**8.1.8** Actual rental charges of all necessary machinery and equipment, exclusive of hand tools, used at the Site, whether rented from the Contractor (at rental rates approved by City and specified on **Exhibit H**) or others, including equipment owned by the Contractor that is assigned to salaried staff and charged to the Project and costs of fuel, oil, insurance, maintenance and minor repairs and replacements, transportation, installation, dismantling and removal thereof. The City and the Contractor agree that the rates for the rented equipment shall be charged as a Cost of Work at the stipulated fixed rates set forth on the Equipment Rental Rate Schedule, attached as **Exhibit H**.

**8.1.9** The cost of the premiums for all bonds and Builder's Risk insurance that the Contractor is required to procure by this Construction Contract. The costs of the premiums for all other insurance that the Contractor is required to procure by this Construction Contract or that are deemed necessary by the Contractor with the City's written approval shall be charged as a Cost of the Work at the stipulated fixed percentage of 1.28% of the Cost of Work, and all deductibles that are attributable to this Construction Contract, including equipment insurance deductibles.

**8.1.10** Applicable sales, use or similar taxes related to the direct performance of the Work and for which the Contractor is liable, imposed by any governmental authority.

**8.1.11** Permits, fees, licenses, costs of all tests, commissioning costs, inspections and approvals, as may be required by the Contract Documents or applicable laws, ordinances or public authority for the performance of the work (except for inspection and testing performed by the City, at its cost).

**8.1.12** Actual costs of reproduction, telegrams, facsimile transmissions, mobile phones, long distance telephone calls, telephone service at the Site, postage and express delivery charges, and reasonable petty cash expenses of the site office in connection with the Work.

**8.1.13** Cost of removal of all debris from the Site.

**8.1.14** Costs for temporary and permanent power, lighting, heat, chilled drinking water, sewer and water services as required to complete the Work at the Site, and costs for snow removal as required.

**8.1.15** Cost incurred by the Contractor in repairing or correcting defective, damaged or nonconforming work, provided that such defective, damaged or nonconforming work was beyond the control of the Contractor, Subcontractors, or Suppliers, or caused by the ordinary mistakes or inadvertence, and not the negligence of the Contractor's or any Subcontractor's or Supplier's supervisory personnel. If the costs associated with such defective, damaged or nonconforming work are recoverable from insurance or Subcontractors or Suppliers, the Contractor shall exercise its best efforts to obtain recovery from the appropriate source and credit the Cost of the Work if recovery is obtained.

**8.1.16** Costs incurred due to any emergency affecting the safety of persons and property and related to the Work unless otherwise covered by insurance or reimbursable from a Subcontractor or Supplier, or unless such costs are due to the fault or negligence of the Contractor or a Subcontractor or Supplier of any tier.

**8.1.17** Wages or salaries of the Contractor's supervisory and administrative personnel when stationed at the site, and when stationed off-site and working on the Project in accordance with the staffing and salary schedule set forth in **Exhibit G**, including vacation time, in accordance with the Contractor's company policy, accrued and taken during the performance of the Work. This includes estimators, safety personnel, quality control personnel and their assistants.

**8.1.18** Wages or salaries of the Contractor's supervisory or administrative personnel engaged at factories, workshops or on the road, in expediting the production or transportation of materials or equipment required for the Work, but only for that portion of their time required for the Work in accordance with the staffing and salary schedule set forth in **Exhibit G**.

**8.1.19** With prior written approval of the Project Manager, that portion of the reasonable travel and subsistence expenses of the Contractor's personnel incurred while traveling in discharge of duties connected with the Work.

**8.1.20** Fees of testing laboratories for tests required by the Contract Documents.

**8.1.21** Legal, mediation and arbitration costs other than those arising from disputes between the City and the Contractor reasonably incurred by the Contractor in the performance of the Work and with the City's prior written permission of the Project Manager.

**8.1.22** Other costs incurred in the performance of the Work if and to the extent approved in advance in writing by the City.

**8.1.23** Costs associated with the implementation of any established company safety program, which costs shall be subject to City's reasonable approval.

**8.1.24** Contractor's General Conditions expenses as identified in **Exhibit E1 and E2**. These expenses include rented or purchased materials and equipment used by the Contractor at the Project site office in connection with the Work.

**8.1.25** Cost of warranty repairs, to the extent not covered by a subcontract or purchase agreement (provided that the Contractor shall use its best efforts to enforce the warranties received from subcontractors, suppliers and vendors). These costs include the Contractor's administrative staff associated with supervision and management of the warranty repairs.

**8.1.26** Reasonable data processing costs related to the work, including data line service, internet charges, software costs and licenses fees.

**8.1.27** All costs and fees incurred in the performance of work and approved for payment under the Preconstruction Services Agreement (**Exhibit S**).

**8.1.28** Deposits for materials, design of manufactured items and supplied items is the responsibility of the contractor. Reimbursements will be made once the item is installed and accepted by the Project Manager.

**8.2** **Costs Not To Be Reimbursed.** Cost of the Work shall not include expenditures made for any of the following:

**8.2.1** Salary of any officer of the Contractor.

**8.2.2** Salary of the Contractor's employees stationed at the Contractor's main office not working on the Project.

**8.2.3** Overhead, profit and general expenses of any kind except as included in the Contractor's Fee.

**8.2.4** The capital expenses of the Contractor, including interest on capital employed for the work.

**8.2.5** Expenses of the Contractor's principal office and offices, other than the Site office.

**8.2.6** Costs incurred by the Contractor in situations where such costs may be covered by insurance or recoverable from a Subcontractor or Supplier, if the Contractor failed to use its best efforts to obtain such insurance proceeds or recovery from the responsible Subcontractor(s) or Supplier(s).

**8.2.7** Expenses incurred for relocation and temporary living expenses of personnel required for the Work, or when such relocation is for the convenience of the Contractor.

**8.2.8** Any cost that would cause the GMPs to be exceeded.

**8.2.9** Any costs not specifically included in the Cost of the Work, Section 8.1.

**8.2.10** Costs of retesting non-conforming Work.

**8.3** **Contractor's Fee.** The "Contractor's Fee" (the "Fee") to be paid to the Contractor and included in the GMPs shall be a lump sum of **Fifty-Two Thousand Five Hundred Dollars (\$52,500.00) for GMP 1 and One Hundred Seventeen Thousand Two Hundred Fifty Dollars (\$117,250.00) for GMP 2**, payable in progress installments pursuant to a mutually agreeable schedule of progress installments.

**8.4** **Guaranteed Maximum Price.**

**8.4.1** **Guaranteed Maximum Price.** The GMP proposals for GMP 1 and the GMP proposal for GMP 2 have been accepted by the City and incorporated herein as **Exhibits E1 and E2**, subject to adjustments as provided in the Contract Documents.

**8.4.2** The Guaranteed Maximum Price consists of the sum of (i) the estimated Cost of the Work; and (ii) the Fee. The Contractor has presented and the City has accepted the Guaranteed Maximum Price and Basis of the GMP Proposals attached hereto as **Exhibits E1 and E2**. The Parties specifically agree that the City shall not be subject to any cost, charge or fee under this Agreement that is not specified above.

**8.5 Savings.** In the event that the actual Cost of the Work plus the Fee shall be less than the GMPs, the resulting savings shall inure One Hundred Percent (100%) to the City. The Contractor shall distribute such savings to the City by Change Order that either reduces the GMPs or implements enhancements or additions to the Project requested by the City.

**8.5.1 Savings Management.** Savings related to the Work included in GMP 1 will be managed independently of Savings related to the Work included in GMP 2.

**8.6 Construction Contract Amount and Funding.** In accordance with the terms of this Construction Contract, the maximum Construction Contract Amount to be paid by the City to the Contractor under this Agreement shall not exceed **FOUR MILLION SEVEN HUNDRED NINETY-FOUR THOUSAND EIGHT HUNDRED THIRTY DOLLARS (\$4,794,830.00)**. The Contractor guarantees and warrants that the Project will be completed by its performance hereunder for the GMP amounts. In no event will the City's liability exceed the maximum Construction Contract Amount, as adjusted by duly authorized change order in accordance with this Construction Contract. The parties specifically agree that any performance by the Contractor hereunder shall not subject the City to any cost, charge or fee not specified above.

## **9.0 DISPUTE RESOLUTION:**

It is the express intention of the parties to this Construction Contract that all disputes of any nature whatsoever regarding the Construction Contract including, but not limited to, any claims for compensation or damages arising out of breach or default under this Construction Contract, shall be resolved by administrative hearing pursuant to the provisions of Section 56-106, DRMC or, with respect to appropriate issues involving Small Business Enterprise contracting, by Section 28-33, DRMC. The Contractor expressly agrees that this dispute resolution process is the sole and only dispute resolution mechanism that will be recognized and employed by the parties for any claims put forward by the Contractor, notwithstanding any other claimed theory of entitlement on the part of the Contractor or its Subcontractors or Suppliers.

## **10.0 ADDITIONAL PROVISIONS:**

**10.1 No Discrimination in Employment.** In connection with the performance of the Work under this Construction Contract, the Contractor agrees not to refuse to hire, discharge, promote or demote, or to discriminate in matters of compensation against any person otherwise qualified, solely because of race, color, religion, national origin, gender, age, military status, sexual orientation, marital status, or physical or mental disability; and the Contractor further agrees to insert the foregoing provision in all subcontracts hereunder. Further, the Contractor agrees to comply with the provisions of Section 28-45 to 28-47, DRMC, and all Rules and Regulations promulgated and adopted by the Manager of Public Works pursuant thereto relating to non-discrimination in employment by contractors, subcontractors and suppliers receiving compensation for work performed on the Project.

**10.2 Title to the Work.** The parties agree that the City shall have title to all components and aspects of the Project which are in place and title to all materials for which any payment has been made to the Contractor hereunder.

**10.3 Compliance with Minority/Women Owned Business Enterprise Requirements.** This Construction Contract is subject to all applicable provisions of Divisions 1 and 3 of Article III, of Chapter 28, Denver Revised Municipal Code (D.R.M.C.), designated as Sections 28-31 – 29-36 and 28-52 – 28-90 D.R.M.C. and referred to in this Contract as the "M/WBE Ordinance". In accordance with the requirements of the M/WBE Ordinance, the Contractor is committed to, at a minimum, meet the participation goal of **twelve percent (12%)** established for this Project utilizing properly certified M/WBE subcontractors and suppliers. In addition to the applicable provisions of the M/WBE Ordinance, the Contractor agrees, as an express condition of its performance hereunder, to comply with the requirements of any approved Small Business Enterprise Compliance Plan (attached and incorporated herein as **Exhibit K**). Such plan shall, at a minimum, include a narrative regarding compliance with the goal; a list of committed M/WBE participants along with dollar and percent participation for each evidencing compliance with the overall goal, and fully executed letters of intent for each listed participant, all in a form satisfactory to the City. Without limiting the general applicability of the foregoing, the Contractor acknowledges its continuing duty, pursuant to Sections 28-72, 28-73 and 28-75 DRMC and the M/WBE Program, to meet and maintain throughout the duration of this Construction Contract its

participation and compliance commitments and to ensure that all Subcontractors subject to the M/WBE Ordinance or the M/WBE Program also maintain such commitments and compliance. Failure to comply with these requirements may result, at the discretion of the Director of the Division of Small Business Opportunity (“DSBO”), in the imposition of sanctions against the Contractor in accordance with Section 28-77, DRMC. Nothing contained in this Paragraph or in the referenced City ordinance shall negate the City’s right to prior approval of Subcontractors, or substitutes therefore, under this Construction Contract.

**10.4 Prevailing Wage Requirements** Contractor shall comply with, and agrees to be bound by, all requirements, conditions and City determinations regarding the Payment of Prevailing Wages Ordinance, Sections 20-76 through 20-79, D.R.M.C. including, but not limited to, the requirement that every covered worker working on a City owned or leased building or on City-owned land shall be paid no less than the prevailing wages and fringe benefits in effect on the date the bid or request for proposal was advertised. In the event a request for bids, or a request for proposal, was not advertised, Contractor shall pay every covered worker no less than the prevailing wages and fringe benefits in effect on the date funds for the contract were encumbered.

Date bid or request for qualifications/proposals was advertised July 18, 2016.

If contract opportunity was not advertised, date of written encumbrance N/A.

Prevailing wage and fringe rates will adjust on, and only on, the anniversary of the date the Contract was fully executed. Unless expressly provided for in this Agreement, Contractor will receive no additional compensation for increases in prevailing wages or fringe benefits.

Contractor shall provide the Auditor with a list of all subcontractors providing any services under the contract.

Contractor shall provide the Auditor with electronically-certified payroll records for all covered workers employed under the contract.

Contractor shall prominently post at the work site the current prevailing wage and fringe benefit rates. The posting must inform workers that any complaints regarding the payment of prevailing wages or fringe benefits may be submitted to the Denver Auditor by calling 720-913-5000 or emailing [auditor@denvergov.org](mailto:auditor@denvergov.org).

**10.5** If Contractor fails to pay workers as required by the Prevailing Wage Ordinance, Contractor will not be paid until documentation of payment satisfactory to the Auditor has been provided. The City may, by written notice, suspend or terminate work if Contractor fails to pay required wages and fringe benefits.

**10.6 Applicability of Laws.** This Contract and Agreement between the Contractor and the City shall be deemed to have been made in the City and County of Denver, State of Colorado and shall be subject to, governed by and interpreted and construed in accordance with the laws of the State of Colorado and the Charter, the Revised Municipal Code, Rules, Regulations, Executive Orders and fiscal rules of the City. As such, the Contractor shall at all times comply with the provisions of the Charter, Revised Municipal Code, Rules, Regulations, Executive Orders and fiscal rules of the City, and those of the State of Colorado and Federal Laws and Rules and Regulations, which in any manner limit, control or apply to the actions or operations of the Contractor, any Subcontractors, employees, agents or servants of the Contractor engaged in the Work or affecting the materials and equipment used in the performance of the Work, as the same may be, from time to time, promulgated, revised or amended. The Charter and Revised Municipal Code of the City, as the same may be amended from time to time, are hereby expressly incorporated into this Construction Contract as if fully set out herein by this reference.

**10.7 Appropriation.** Notwithstanding any other term, provision, or condition herein, all payment obligations under this Construction Contract shall be limited to the funds appropriated or otherwise made available by the Denver City Council and paid into the Treasury of the City. As of the date of this Construction Contract **FOUR MILLION SEVEN HUNDRED NINETY-FOUR THOUSAND EIGHT HUNDRED THIRTY DOLLARS (\$4,794,830.00)** have been appropriated for this Construction Contract. The Manager of Public Works, upon reasonable written request, will advise the Contractor in writing of the total amount of appropriated and encumbered funds that are or remain available for payment to the Contractor.

**10.8** The issuance of any form of order or directive by the City which would cause the aggregate amount payable to the Contractor to exceed the amount appropriated for the Work to be performed in accordance with the Contract Documents is expressly prohibited. In no event shall the issuance of any change order or other form of order or directive by the City be considered valid or binding if it requires additional compensable Work to be performed, which Work will cause the aggregate amount payable for such Work to exceed the amount appropriated and encumbered for the Work, unless and until such time as the Contractor has been advised in writing by the Manager of Public Works that a lawful appropriation sufficient to cover the entire cost of such additional Work has been made. It shall be the responsibility of the Contractor to verify that the amounts already appropriated for the Work are sufficient to cover the entire cost of such Work, and any Work undertaken or performed in excess of the amount appropriated is undertaken or performed in violation of the terms of this Agreement, without the proper authorization for such Work, and at the Contractor's own risk and sole expense.

**10.9 Approvals.** In the event this contract calls for the payment by the City of five hundred thousand dollars (\$500,000.00) or more, approval by the City Council of the City and County of Denver, acting by ordinance, in accordance with Section 3.2.6 of the Charter of the City and County of Denver, is and shall be an express condition precedent to the lawful and binding execution and effect and performance of this contract.

**10.10 Assignment Strictly Prohibited.** The Contractor shall not assign or otherwise transfer, in whole or in part, any of its rights, benefits, claims, obligations, duties or entitlement to monies owed or which may become due under this Construction Contract, except upon the prior written consent and approval of the Manager to such assignment.

**10.11 Conflict of Interest.** The parties agree that no official, officer or employee of the City shall have any personal or beneficial interest whatsoever in the services or property described herein and the City further agrees not to hire or contract for services with any official, officer or employee of the City or any other person which would be in violation of the Denver Revised Municipal Code Chapter 2, Article IV, Code of Ethics, or Denver City Charter provisions 1.2.9 and 1.2.12.

**10.12 Taxes, Charges and Penalties.** Except as provided in the City's Prompt Payment ordinance, codified at DRMC Sections 20-107, 20-108 and 20-109, the City shall not be liable for the payment of any taxes, late charges, interest or penalties of any nature arising out of this Construction Contract.

**10.13 Waiver of C.R.S. 13-20-802 et. seq.** The Contractor specifically waives all the provisions of Part 8 of Article 20 of Title 13, Colorado Revised Statutes regarding defects in the Work under this Construction Contract.

**10.14 Proprietary or Confidential Information.**

**10.14.1 City Information:** The Contractor understands and agrees that, in performance of this Construction Contract, the Contractor may have access to private or confidential information that may be owned or controlled by the City and that such information may contain proprietary or confidential details, the disclosure of which to third parties may be damaging to the City. The Contractor agrees that all information disclosed by the City to the Contractor shall be held in confidence and used only in performance of the Construction Contract. The Contractor shall exercise the same standard of care to protect such information as a reasonably prudent Contractor would to protect its own proprietary data.

**10.14.2 Contractor Information:** The parties understand that all the material provided or produced under this Construction Contract may be subject to the Colorado Open Records Act, C.R.S. 24-72-201, et seq., and that in the event of a request to the City for disclosure of such information, the City shall advise the Contractor of such request in order to give the Contractor the opportunity to object to the disclosure of any of its proprietary or confidential material. In the event of the filing of a lawsuit to compel such disclosure, the City will tender all such material to the court for judicial determination of the issue of disclosure and the Contractor agrees to intervene in such lawsuit to protect and assert its claims of privilege against disclosure of such material. The Contractor further agrees to defend, indemnify and save and hold harmless the City, its officers, agents and employees, from any claim, damages, expense, loss or costs arising out of the Contractor's intervention to protect and assert its claims of privilege against disclosure under this Section including, but not limited to, prompt reimbursement to the City of all reasonable attorney fees, costs and damages that the City may incur directly or may be ordered to pay by such court.

**10.15 Status of Contractor.** It is understood and agreed that the status of the Contractor shall be that of an independent contractor retained on a contractual basis to perform work or services for limited periods of time, and it is not intended, nor shall it be construed, that the Contractor, or any member of its staff or any consultant, is an employee or officer of the City for any purpose whatsoever.

**10.16 Rights and Remedies Not Waived.** No payment or failure to act under the Construction Contract by the City shall constitute a waiver of any breach of covenant or default which may then exist on the part of the Contractor. No assent, expressed or implied, by either party to any breach of the Construction Contract shall be held to be a waiver of any default or other breach.

**10.17 Notices.** Any notices, demands, or other communications required or permitted to be given by any provision of this Construction Contract shall be given in writing, delivered personally or sent by registered mail, postage prepaid and return receipt requested, addressed to the parties at the addresses set forth herein or at such other address as either party may hereafter or from time to time designate by written notice to the other party given in accordance herewith. Notice shall be considered received on the day on which such notice is actually received by the party to whom it is addressed, or the third (3rd) day after such notice is mailed, whichever is earlier. Unless changed in writing, such notices shall be mailed to:

If to the Contractor:

Aaron J Laird  
Special Projects Division Manager  
Turner Construction Company  
5500 Greenwood Plaza Blvd, Suite 220  
Greenwood Village, CO 80111

If to the City

Manager of Public Work  
Department of Public Works  
City and County of Denver  
201 West Colfax, Department 608  
Denver, Colorado 80202

With a copy to:

City Attorney  
City and County of Denver  
201 West Colfax, Department 1207  
Denver, Colorado 80202

**10.18 Survival of Certain Provisions.** The parties understand and agree that all terms, conditions and covenants of this Construction Contract, together with the exhibits and attachments hereto, if any, any or all of which, by reasonable implication, contemplate continued performance or compliance beyond the expiration or termination of this Construction Contract (by expiration of the term or otherwise), shall survive such expiration or termination and shall continue to be enforceable as provided herein. Without limiting the generality of the foregoing, the Contractor's obligations for the provision of insurance, for indemnity to the City and for preserving confidentiality of trade secrets and other information shall survive for a period equal to any and all relevant statutes of limitation, plus the time necessary to fully resolve any claims, matters, or actions begun within that period.

**10.19 Contract Binding.** It is agreed that this Construction Contract shall be binding on and inure to the benefit of the parties hereto, their heirs, executors, administrators, successors and duly authorized assigns.

**10.20 Paragraph Headings.** The captions and headings set forth herein are for convenience of reference only and shall not be construed so as to define or limit the terms and provisions hereof.

**10.21 Severability.** It is understood and agreed by the parties hereto that, if any part, term, or provision of this Construction Contract, except for the provisions of this Construction Contract requiring prior appropriation and

limiting the total amount to be paid by the City, is by the courts held to be illegal or in conflict with any law of the State of Colorado, the validity of the remaining portions or provisions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if the Construction Contract did not contain the particular part, term or provision held to be invalid.

**10.22 Electronic Signatures and Electronic Records.** Contractor consents to the use of electronic signatures by the City. The Agreement, and any other documents requiring a signature hereunder, may be signed electronically by the City in the manner specified by the City. The Parties agree not to deny the legal effect or enforceability of the Agreement solely because it is in electronic form or because an electronic record was used in its formation. The Parties agree not to object to the admissibility of the Agreement in the form of an electronic record, or a paper copy of an electronic document, or a paper copy of a document bearing an electronic signature, on the ground that it is an electronic record or electronic signature or that it is not in its original form or is not an original.

**[SIGNATURE PAGES FOLLOW]**

**Contract Control Number:**

IN WITNESS WHEREOF, the parties have set their hands and affixed their seals at Denver, Colorado as of

SEAL

**CITY AND COUNTY OF DENVER**

ATTEST:

By \_\_\_\_\_

\_\_\_\_\_

APPROVED AS TO FORM:

REGISTERED AND COUNTERSIGNED:

By \_\_\_\_\_

By \_\_\_\_\_

By \_\_\_\_\_



**Contract Control Number:**

By: DocuSigned by:  
Aaron Laird  
C1B42E7BB9D1425...

Name: Aaron Laird  
(please print)

Title: 4SPD Manager  
(please print)

**ATTEST: [if required]**

By: DocuSigned by:  
Rebecca Kalinowsky  
0D1B75830EC0465...

Name: Rebecca Kalinowsky  
(please print)

Title: SPD Operations Manager  
(please print)



**Exhibit A  
General Contract Conditions  
2011 Edition**

**CITY AND COUNTY OF DENVER  
DEPARTMENT OF PUBLIC WORKS**

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**EXHIBIT B  
SPECIAL CONTRACT CONDITIONS**

**CITY AND COUNTY OF DENVER  
DEPARTMENT OF PUBLIC WORKS**

**SC-1 CONSTRUCTION SPECIFICATIONS**

Except as amended herein or in the attached Technical Specifications, all Work performed under the terms of this Contract shall be governed by the applicable provisions of the following latest editions:

*Standard Specifications for Construction, GENERAL CONTRACT CONDITIONS, City and County of Denver* (The Index for which is bound herein and commonly referred to as the "Yellow Book") (2011 Edition)

*Colorado Department of Transportation "Standard Specifications for Road and Bridge Construction"* (Sections 200 through 700 of the 2011 Edition).

*Transportation Standards and Details for the Engineering Division, City and County of Denver* (January, 2013)

*Manual on Uniform Traffic Control Devices for Streets & Highways* (MUTCD)

*Building Code of the City and County of Denver*

*National Fire Protection Association Standards* (As referenced in the Building Code of the City and County of Denver)

*Wastewater Management Division – Detail and Technical Specifications for Storm and Sanitary Construction.*

The aforementioned documents are available for review at the Capital Projects Management Office, 201 W. Colfax Ave., Dept. 506, (5<sup>th</sup> floor), Denver, CO 80202. *The Standard Specifications for Construction, GENERAL CONTRACT CONDITIONS, City and County of Denver*, and the *Standards and Details for the City and County of Denver* are available online at:

<http://www.denvergov.org/Portals/480/documents/2011%20DENVER%20GENERAL%20CONTRACT%20CONDITIONS.pdf>

<http://www.denvergov.org/rightofwayservices/RightofWayServices/ConstructionInspection/RightofWayConstructionInspection/StandardsandDetails/TransportationStandardsandDetails/tabid/442463/Default.aspx>

<http://www.denvergov.org/wastewatermanagement/WastewaterManagement/EngineeringandPermits/StandardsandDetails/tabid/438018/Default.aspx>

The *Manual on Uniform Traffic Control Devices for Streets & Highways* is available for review as stated above, or can be viewed at the Federal Highway Administration Website at: [www.fhwa.dot.gov](http://www.fhwa.dot.gov), where you will also find purchase information.

The "*Colorado Department of Transportation Standard Specifications for Road and Bridge Construction*" is available for review as stated above, or can be purchased from the Colorado Department of Transportation.

**SC-2 CITY DELEGATION OF AUTHORITY**

With reference to General Contract Condition 109, DEPUTY MANAGER, General Contract Condition 206, ENGINEERING DIVISION and General Contract Condition 214, CITY’S CONTRACT ADMINISTRATION LINE OF AUTHORITY, the Manager hereby designates the City Engineer as the City official responsible for those certain actions and decisions designated as the responsibility of the Deputy Manager under the General Conditions and delegates to the City Engineer the authority necessary to undertake those responsibilities under this Contract. The Director shall have supervisory responsibility over the Project Manager. Additionally, Contractor questions concerning the Plans and Technical Specifications shall be directed to:

**Denver Department of Public Works / Engineering Division,**

Project Manager

Brandon Gainey, Public Works/ Facilities Capital Projects

Consultant

Martin and Martin and Short Elliot Hendrickson

**SC-3 CONTRACT AMOUNT; BID PRICE, GUARANTEED MAXIMUM PRICE**

General Condition 103, CONTRACT AMOUNT, is hereby deleted in its entirety and replaced with the following:

"Contract Amount," "Bid Price," "Bid Amount," or "Maximum Contract Amount" means the Guaranteed Maximum Price ("GMP") under the Contract.

In the General Conditions, the phrases "provided to the City at no cost," "at no cost to the City," "cost . . . shall be borne by the Contractor," "costs shall be reimbursed by the Contractor," "at the expense of the Contractor," "Contractor shall bear any and all costs," and "Contractor shall bear any and all additional costs," mean that the costs in question are to be included as a Cost of the Work without any increase to the Guaranteed Maximum Price. Also, whenever a General Condition states that the Contractor shall be required to take any action, or responsible for any action or thing, it means that such requirements and responsibilities are included as a Cost of the Work without any increase to the Guaranteed Maximum Price, unless there is a specific statement to the contrary as to any such requirement or responsibility.

**SC-4 TIME OF BIDDING; TIME OF CONTRACTING**

In the General Conditions, the words "time of bidding," "bidding," and the like, shall mean the time when the Contract is signed.

**SC-5 CONTRACT DOCUMENTS**

General Condition 104 CONTRACT DOCUMENTS is hereby deleted in its entirety and replaced with the following:

"The Contract Documents" consist of the documents which are listed in the Contract Form."

**SC-6 CONTRACT TIME**

General Condition 105 CONTRACT TIME is hereby deleted in its entirety and replaced with the following:

"Contract Time" is the time specified in the Contract within which the Contractor is required to substantially complete the Work. Substantial Completion shall occur prior to Final Completion. The Contract Documents may require completion on or before a certain specified date.

**SC-7 DEPUTY MANAGER/CITY ENGINEER**

General condition 109 DEPUTY MANAGER is hereby deleted in its entirety and replaced with the following:

The "Deputy Manager" means the official who reports directly to the Manager and exercises supervisory responsibility in the City agency defined in Title 2 herein that is responsible for the Project. The Manager hereby designates the City Engineer as the Deputy Manager for purposes of this Contract. The City Engineer shall have responsibility for this Project and shall undertake all duties, responsibilities, rights and authority, including specific actions and decisions, delegated to the Deputy Manager under the various terms and conditions of this Contract.

**SC-8 SUBCONTRACTOR**

General Condition 118, SUBCONTRACTOR, is hereby amended by adding a new final sentence to read as follows:

"Subcontractor" may also mean the Contractor pursuant to a subcontract for lump-sum self-performed work, as authorized in the Contract Form.

**SC-9 WORK**

General Condition 121 WORK is hereby deleted in its entirety and replaced with the following:

The terms "Scope of Work" or "Work" as used herein shall mean all Preconstruction and Construction Phase services required by or inferable from the Contract Documents, whether completed or partially completed, and includes all other labor, management, administration, supervision, materials, supplies, manufactured components, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations under the Contract.

**SC-10 WORKING HOURS AND SCHEDULE**

General Condition 306 WORKING HOURS AND SCHEDULE is hereby deleted in its entirety and replaced with the following:

1. Work shall normally not be done on Saturdays, Sundays, City observed holidays, or outside of the daytime working hours which may be specified in the Special Conditions, except for such work as may be necessary for proper care, maintenance, and protection of Work already done, or in cases when the Work would be endangered or when hazard to life or property would result. The Contractor shall comply with Denver's noise control ordinance during all working hours.
- 2.. If the Contractor believes it may be necessary to work on Saturdays, Sundays, holidays, city furlough days, or at night, the Contractor shall make prior arrangements with the Project Manager and receive written approval at least twenty-four (24) hours before such work period so that proper inspection and engineering services can be provided. Such approval may be revoked by the Project Manager if the Contractor fails to maintain adequate equipment and lighting at night for the proper prosecution, control and inspection of the Work. If Work is done

outside of approved working hours, and the Project Manager has not assigned inspectors to the Work, the Work performed during those periods of time may be declared defective solely on the grounds that it was not properly inspected.

3. The Contractor shall schedule and coordinate the performance of all of its Subcontractors and Suppliers, including their use of the Work site. The Contractor shall keep the Subcontractors and Suppliers informed of the Project construction schedule to enable the Subcontractors and Suppliers to plan and perform their work properly.
4. The Contractor shall submit, with the GMP Proposal, a construction schedule which shall provide for the expeditious and practicable execution of the Work. Such construction schedule shall be in a Critical Path Method (CPM) format or such other format approved by the Project Manager. This Schedule shall be considered, upon City acceptance, the baseline schedule for the Project. A Critical Path Method schedule shall be required in any event for any Contractor Change Request pursuant to G.C. 1103.4 and any resulting claim. The receipt of the schedule by the Project Manager shall in no way constitute acceptance of the Contractor's anticipated schedule of construction activities. The schedule will be reviewed for comment by the Project Manager. The Project Manager's review and comment on the schedule shall not constitute approval or acceptance thereof by the City.
5. The Critical Path Method schedule shall provide reasonable detail as described in the Technical Specifications and shall include a time scaled network and computer printout. Additionally, float or slack is defined as the amount of time between the early start date and the late start date, or the early finish date and the late finish date, of any activities in the schedule. Float or slack is not time for the exclusive use or benefit of either the Contractor or the City.
6. The Contractor shall, once a month, submit a progress report and an updated schedule in a form acceptable to the Project Manager.

#### **SC-11 SUBCONTRACTOR ACCEPTANCE**

General Condition 502, SUBCONTRACTOR ACCEPTANCE, is hereby deleted in its entirety and replaced by the following:

1. Except as provided in the City's Small Business Enterprise (SBE), Disadvantaged Business Enterprise (DBE), or Minority and Women Business Enterprise (M/WBE) contracting requirements, the City recognizes that prior to bidding, the bidder may not have been able to negotiate for all portions of the Work which the bidder proposes to subcontract. The City will, therefore, permit the successful bidder to propose additional Subcontractor(s) at any time during the Contract period provided, however, that any limitation on subcontracting has not been exceeded, and that all such SBE, DBE, or M/WBE requirements are adhered to, including, if applicable, the Contractor's SBE or M/WBE Compliance Plan. If the proposed Subcontractor(s) are acceptable and the City, by letter to the Contractor, approves of the Subcontractor(s), the Contractor may enter into agreements with these parties. If any proposed Subcontractor(s) are not acceptable to the City, the Contractor must submit for City approval the names of substitute Subcontractors.
2. Each Subcontractor which the Contractor expects to perform Work must be accepted in writing by the Project Manager before the Subcontractor begins work. The acceptance or rejection of any proposed Subcontractor shall be at the Project Manager's sole discretion. The reasons the Project Manager may use for not accepting a Subcontractor include, but are not limited to, the following:
  - A. Default on a contract within the last five (5) years.

- B. Default on a contract which required that a surety complete the contract under payment or performance bonds issued by the surety.
  - C. Debarment within the last five (5) years by a public entity or any organization which has formal debarment proceedings.
  - D. Significant or repeated violations of Federal Safety Regulations (OSHA).
  - E. Failure to have the specific qualifications listed in the Contract Documents for the work that the Subcontractor will perform.
  - F. Failure to have the required City or Colorado licenses to perform the work described in the subcontract.
  - G. Failure to pay workers the proper wage and benefits or to pay suppliers or subcontractors with reasonable promptness within the last five (5) years.
  - H. Conviction, plea of nolo contendere, entry into a formal agreement admitting guilt or entry of a plea of guilty or otherwise admitting culpability to criminal offenses of bribery, kickbacks, collusive bidding, bid-rigging, anti-trust, fraud, undue influence, theft, racketeering, extortion or any offense of a similar nature in connection with Subcontractor's business, on the part of Subcontractor's principal owners, officers, or employees, within the last five (5) years.
  - I. Failure to pay taxes or fees to the City.
  - J. Evidence that the Subcontractor was selected by the Contractor through the process of bid shopping, dishonesty or buyout.
3. The Contractor shall submit a statement signed by an officer or principal of the Contractor certifying that the Contractor has investigated the qualifications and background of each proposed Subcontractor and certifying under oath that, to the best of his or her knowledge, none of the bases for rejection listed above exist. In lieu of this certification, the Contractor may identify, for each proposed Subcontractor, any of the issues listed above applicable to that Subcontractor and attach to that statement a list of all judicial and administrative proceedings in the last five (5) years in which any proposed Subcontractor is or was a party, the proceedings involving any of the issues listed above or in which any proposed Subcontractor filed for bankruptcy.
4. This Title 5 does not create, and shall not be interpreted as creating, any contractual relationship or privity of contract between the City and any Subcontractor. The acceptance or rejection of a proposed Subcontractor shall not create in that Subcontractor a right to any subcontract nor shall said acceptance or rejection relieve the Contractor of its responsibilities for the work of any Subcontractor.

## **SC-12 PAYMENT PROCEDURE**

The application for payment shall be submitted through Textura® Corporations Construction Management Website. Contractor recognizes and agrees that it shall be required to use the Textura Construction Payment Management System for this Project. Contractor further agrees that, to the fullest extent possible within the CPM System, the City shall be entitled to all non-Confidential records, reports, data and other information related to the project that are available to Contractor through the CPM System, including, but not limited to, information related to Contractor and subcontractor billings. To that end, Contractor agrees that it will activate

any available settings within the CPM System that are necessary to grant the City access to such non-Confidential information related to the contract and the project. Applications for payment shall be based on the Contract Unit Prices or the approved Schedule of Values described in GC 903.1

In accordance with General Contract Condition 902, PAYMENT PROCEDURE, the party(ies) responsible for review of all Pay Applications shall be:

<u>Agency/Firm</u>	<u>Name</u>	<u>Telephone</u>
Public Works/ Facilities Capital Projects	Brandon Gainey	720-913-8815

In accordance with General Contract Condition 906, APPLICATIONS FOR PAYMENT, each Application submitted shall include the following:

1. The estimate of Work completed shall be based on the approved schedule of values or unit prices, as applicable, and the percent of the Work complete.
2. Each Application for Payment shall include each and every independent subcontractor's payroll information including pay dates and pay amounts.
3. The Contractor shall also submit to the Auditor and other appropriate officials of the City in a timely fashion, information required by General Contract Condition 1004, REPORTING WAGES PAID.

In accordance with General Contract condition 907, RELEASES AND CONTRACTORS CERTIFICATION OF PAYMENT, Applications for Payment must be accompanied by completed Partial or Final Claim Release Form, as appropriate, from EACH subcontractor and supplier, **AND/OR** the Contractors' Certification of Payment Form. The forms, Final/Partial Release and Certificate of Payment (Subcontractor/Supplier) and the Contractor's Certification of Payment, both of which must be used are attached.

### **SC-13 SCHEDULE OF VALUES FOR LUMP SUM SUBCONTRACTS**

Special Condition 903, SCHEDULE OF VALUES FOR LUMP SUM CONTRACTS, is hereby deleted in its entirety and replaced by the following:

1. The Contractor shall furnish to the Project Manager, for review and approval, a Schedule of Values for lump sum subcontracts, in such detail as the Project Manager shall request, no later than thirty (30) Days prior to the issuance of the first pay application. The Schedule of Values shall show the amount included for each principal category of work and shall be in proper balance. No pay application shall be submitted until the submitted Schedule of Values is approved in writing by the Project Manager.
2. Should the City issue a Change Order that decreases or increases the Contract Amount, the Schedule of Values shall be modified to reflect the amount of such decrease or increase and resubmitted to the Project Manager at least fifteen (15) Days prior to the pay application reflecting such increase or decrease.

### **SC-14 APPLICATIONS FOR PAYMENT**

General Condition 906, APPLICATIONS FOR PAYMENT, is hereby deleted in its entirety and replaced by the following:

1. Each complete application shall contain a list of Subcontractor and material invoices. If requested by the City, the Contractor will furnish the City with invoices shown on the lists which accompany any application for payment.
2. Application for payment shall be based on approved Cost of the Work items incurred, completed and/or certified by the Contractor. The application shall specify the Cost of the Work so certified as having been incurred by the Contractor for Work performed during the preceding

period. The Contractor's Fee shall be paid based on the actual Cost of Work items incurred. Each application for payment shall also be accompanied by a written schedule of values which sets out the Cost of the Work for the Project together with the Contractor's accounting of the percentage of completion of each line item of Cost of the Work of which the City is liable to pay the Contractor.

3. The Contractor shall certify in writing with each application for payment that to its knowledge the Project will be completed at a cost within the Guaranteed Maximum Price, as modified by change orders, and shall identify with reasonable particularity any circumstances which could result in the total cost to the Contractor (including Fee) in completing the Project exceeding the Guaranteed Maximum Price.
4. Reserved
5. Each application for payment for materials or equipment stored on or off the Project site shall be accompanied by bills of sale to establish the City's title to such material or equipment free and clear of liens and encumbrances; evidence of property insurance covering such materials or equipment; evidence, as to material and equipment stored off the Project site, that the same have been properly labeled as the City's property and segregated from the vendor's other inventory; and, if required by the City, contracts and financing statements sufficient to create a security interest in favor of the City in materials or equipment stored off the Project site which remain in the possession of the vendor of such materials or equipment.
6. Each progress payment application shall show each Subcontractor or Supplier participating in the Work completed during the previous progress period and the dollar amount of such participation. The Contractor will assure that the Subcontractors and/or Suppliers are filing for and are being paid for only the value of materials and services delivered and performed upon or incurred for the Project and that the Subcontractors and/or Suppliers are not over-billing for the effort performed. The Contractor shall, prior to or with the submission of each application for payment, furnish to the City proper evidence accounting for the distribution to Subcontractors and/or Suppliers of funds received under prior applications together with proper releases and waiver, in form and content acceptable to the City, obtained in connection therewith.
7. If the Contractor disputes a Subcontractor's or Supplier's entitlement to a portion of the previous progress payment, the Contractor shall submit to the City copies of any written communication from the Contractor to such Subcontractor or Supplier explaining the Contractor's determination not to render payment to such Subcontractor or Supplier, together with proof of service of such written communication upon such Subcontractor or Supplier.
8. Each application for payment shall be signed. Such signed application for payment shall constitute a representation by the Contractor to the City that the Work has progressed to the point indicated; that the quality of the Work covered by the estimate is in accordance with the Contract Documents; that each obligation covered by the payment application has been properly incurred, is a proper charge and has not been the basis of any previous application (except as otherwise noted); that the money received as a result of the application will be used to discharge the Contractor's obligations under the Contract; and that the Contractor is entitled to payment in the amount requested. The Project Manager or the Design Consultant, as appropriate, must also verify and certify the estimate of Work completed prior to any acceptance by the City.
9. By submitting an application for payment, the Contractor warrants that: (i) the title to the Work covered by an application for payment will pass to the City upon receipt of payment by the Contractor; (ii) the Work covered by previous payment applications is free and clear of liens, claims, security interests or encumbrances, hereinafter referred to as "liens", except for any interest created by retainage; and (iii) no Work covered by an application for payment is subject

to an agreement under which an interest therein or an encumbrance thereon is retained by the seller or otherwise imposed by the Contractor or any other person or entity.

10. The Contractor shall not include in its application for payment any billing for defective Work or for work performed by Subcontractors or Suppliers if it does not intend to pay the Subcontractors or Suppliers for such work.
11. Approval of an application for payment of Work completed or actual payment by the City shall not foreclose the right of the City to examine the books and records of the Contractor to determine the correctness and accuracy of any item.
12. Should the City decline or fail to approve for payment any items of the Contractor's Fee, the Cost of the Work, or any other item shown on an application for payment, the City shall notify the Contractor in writing, setting forth the reasons for such action. The City shall pay that portion of each payment application which is not disapproved in writing by the City.
13. No progress payment or partial or entire use or occupancy of the Project by the City shall constitute an acceptance of Work not in accordance with the Contract Documents.

#### **SC-15 DISCOUNTS, REBATES AND REFUNDS**

Cash discounts obtained on payments made by the Contractor shall accrue to the City if (1) before making the payment, the Contractor included them in an Application for Payment and received payment therefore from the City, or (2) the City has deposited funds with the Contractor with which to make payments; otherwise, cash discounts shall accrue to the Contractor. Trade discounts, rebates, refunds and amounts received from sales of surplus materials and equipment shall accrue to the City, and the Contractor shall make provisions so that they can be secured. Amounts which accrue to the City herein shall be credited to the City as a deduction from the Cost of the Work.

#### **SC-16 ADJUSTMENT OF CONTRACT AMOUNT**

General Condition 1104, ADJUSTMENT TO CONTRACT AMOUNT, is hereby deleted in its entirety and replaced by the following:

1. Contract Amount Adjustments. All adjustments to the Contract Amount shall be determined by using one or more of the following methods:
  - A. A negotiated lump sum. If requested by the City, the Contractor shall promptly provide itemized and sufficient substantiating data, including calculations, measurements, cost records, production rates, equipment types and capacity, labor costs by craft and other information which the City may reasonably require the Contractor to produce in order to permit the City to evaluate any lump sum Contractor Change Request. In pricing such proposals, the Contractor shall include estimates of the type of costs described in G.C. 1104.2.
  - B. Unit prices (as stated in the Contract Documents or subsequently agreed upon) multiplied by final verified quantities of work performed;
  - C. Costs as determined in a manner previously agreed upon by the parties, which include markups, that do not exceed those set forth in G.C. 1104.2 below; or
  - D. Time and Material costs as determined in the manner described in G.C. 1104.2, Calculation of the Contract Adjustment. These amounts may be reduced where necessary to take into account the cost of Base Contract Work, Work included in

approved Change Orders, Work described in other Field Order/Change Directives, idle time for workers and/or equipment when Work could have been performed in other locations or when the number of workers or amount of equipment provided exceeded the number or amount required to perform the Work, unsatisfactory Work, or Work which may be or was performed concurrently with the changed Work and which cannot be easily segregated from the changed Work .

2. Calculation of the Contract Adjustment. In no event shall the charge or credit to the City associated with any change exceed the sum of the following:

- A. Direct Labor The actual net, direct increase or decrease in the cost of the Contractor's labor. Such cost shall include only the cost associated with the workers who actually perform the changed Work. The cost of supervision, management and field or office overhead shall not be included or calculated as a direct labor cost. For shop work, the direct labor cost shall include only those workers who work directly on the item being manufactured or the actual operators of the equipment being used to handle the items being manufactured.
- B. Labor Burden. Contractor's actual costs for worker's compensation and liability insurance, payroll taxes, social security and employees' fringe benefits (including employer paid health insurance) imposed on the basis of payrolls. This burden must reflect the variability of some burdens, ie social security. The burden shall be itemized and include all small tools and miscellaneous supplies. The total labor burden for such small tools shall not exceed two percent (2%) of the Direct Labor cost.
- C. Direct Material, Supplies, Installed Equipment. The actual net, direct cost of materials, supplies and equipment incorporated into or consumed by the Work. If actual costs are not available, this cost shall be the lowest commercially available price including all discounts and rebates and all applicable taxes. Such cost shall be based on buying the material, supplies and equipment in the largest practical quantity to receive quantity discounts.
- D. Equipment Costs. Without markup or operator, the lesser of (i) the actual net cost to the Contractor of owned or rented equipment, other than small tools; or (ii) the rental rate for such equipment as determined by using the following method(s):
  - (1) Equipment rental rates listed in the appropriate rental rate book currently in use by the Colorado Department of Transportation. If an item of equipment does not appear in the rental rate book currently in use by the Colorado Department of Transportation, the rental rates published by the Associated Equipment Dealers may be used as a basis for negotiating a rental rate for a particular piece of equipment. The Contractor shall provide all information necessary to determine the appropriate rental rate at the time the equipment is brought on the job. This shall include, but not be limited to, type, description, make, year, model, series, serial number, fuel type, transmission, wheel combination, GVW, capacity and equipment owner.
  - (2) Rental equipment costs shall be determined using actual invoiced rates, less all discounts for basic equipment rental.
  - (3) Mobilization/demobilization costs will be paid if the equipment is mobilized exclusively for Work described in a Change Order. If the equipment is also used on Base Contract Work, no mobilization or demobilization cost will be paid. Mobilization/demobilization costs will be based on using the least

expensive means to mobilize or demobilize Equipment shall be obtained from the nearest available source. When the least expensive methods are used, the costs shown in the actual invoice will be the basis for pricing.

E. Mark Up For Overhead And Profit.

- (1) The Contractor's Fee on the calculated change of Cost of Work shall be the only amount added to such calculated cost of Work to as markup and profit to the Contractor, including any fee on applicable Work self-performed by the Contractor.
- (2) A Subcontractor of any tier who actually performs the Work shall be entitled to a markup of twelve percent (12 %) on the actual costs for items A through D in GC 1104.2 above. Bonds and insurance are compensated at direct cost without markup.
- (3) A supervising Subcontractor (if any) shall be entitled to a three percent (3%) markup on the actual price charged to the Subcontractor by a Subcontractor of lower tier.
- (4) All of the Contractor's and Subcontractor's field and office overhead and supervision costs are included in the Fee and markups listed above.
- (5) Neither the Contractor nor Subcontractor of any tier, nor the City in the case of a credit, will apply or attempt to apply these percentage adjustments in a way which would pyramid either the cost or credit because of the involvement of a Subcontractor or sub-subcontractor. Written justification and approval shall be required for any percentages exceeding a total of fifteen percent (15%).

F. Bonds, Insurance, Permits And Taxes. The actual increases or decreases in the cost of premiums for bonds and insurance, permit fees, and sales, use or similar taxes related to the Work. The Contractor shall not be entitled to a Fee for any such costs.

3. Totals as Equitable Adjustment. The Contractor agrees that the total of the above items constitute an equitable adjustment for any and all costs or damages resulting from a change.

4. No Equitable Adjustment for Obstruction by Contractor. No equitable adjustment shall be made as a result of costs resulting from any act, hindrance, obstacle, obstruction, interference or omission of the Contractor, its Subcontractors, Suppliers, or surety, or any other entity or individual acting on behalf of the Contractor.

5. Calculation of Certain Equitable Adjustments.

A. In case of delay in completion of the entire Contract due to drawings, designs or specifications which are defective and for which the City is responsible, the equitable adjustment for delays or costs incurred prior to notification to the City of such defect shall only include the extra cost and time reasonably incurred by the Contractor in attempting to comply with the defective drawings, designs or specifications before the Contractor identified, or reasonably should have identified, such defect.

B. An equitable adjustment shall not include increased costs for delay resulting from the Contractor's failure to continue performance during determination of any Contractor Change Request or claim.

6. Price Reductions for Defective Cost or Pricing Data. If it is later determined that pricing adjustments to the Contract were not correct due to incomplete or inaccurate pricing data by the Contractor or any Subcontractor or Supplier or that lower prices were reasonably available, the price shall be reduced accordingly and the Contract Amount modified by an appropriate Change Order.
7. Variation in Quantity of Unit Priced Items. Where the quantity of a unit-priced item in the Contract is an estimated quantity and the actual quantity of the unit-priced item varies more than twenty-five percent (25%) above or below the estimated quantity, and where this difference changes the total original Contract value by more than five percent (5%), an equitable adjustment in the Contract Amount may be made by Change Order. The equitable adjustment shall be based upon any increase or decrease in cost due solely to the variation above one hundred twenty-five percent (125%) or below seventy-five percent (75%) of the estimated quantity. If the quantity variation is such as to cause an increase in the time necessary for completing the Work, the Contractor may request, in writing, an extension of time in accordance with GC 1105.
8. Disposition of Excess or Obsolete Property. When the cost of materials, supplies, equipment or other personal property made obsolete or excess as a result of a delay is included in the equitable adjustment, the Project Manager shall have the right to prescribe the manner of disposition of such property.

#### **SC-17 SURETY BONDS**

General Condition 1501, SURETY BONDS, is hereby deleted in its entirety and replaced by the following:

1. Payment and performance bonds must be issued by a corporate surety authorized to do business in the State of Colorado and approved by the Mayor, the Manager and the City Attorney.
2. Before the Contract is executed, the Contractor shall have furnished such surety bonds and appropriate Powers of Attorney as a guarantee of the faithful performance of the Contract and the payment of bills for labor and materials.
3. The Manager may direct, at his sole discretion, that the required payment and performance bonds be combined in a format approved by the City Attorney.
4. The Contractor shall provide a Consent of Surety for any duly executed Change Order that increases the Contract Amount, thereby increasing the penal sum of the bonds.
5. The form of the Performance and Payment Bond to be used by the Contractor is included in the Contract Documents.

#### **SC-18 CONSTRUCTION INSPECTION BY THE CITY**

General Condition 1701, CONSTRUCTION INSPECTION BY THE CITY, is modified as follows:

1. Persons who are employees of the City or who are under contract to the City or the City as lessee will be assigned to inspect and test the Work. These persons may perform any tests and observe the Work to determine whether or not designs, materials used, manufacturing and construction processes and methods applied, and equipment installed satisfy the requirements of the drawings and specifications, accepted Shop Drawings, Product Data and Samples, and the General Contractor's warranties and guarantees. The General Contractor shall permit these inspectors unlimited access to the Work and provide means of safe access to the Work, which cost shall be included as a Cost of the Work without any increase to the Guaranteed Maximum Price. In addition, General Contractor shall provide whatever access and means of access are needed to

off-site facilities used to store or manufacture materials and equipment to be incorporated into the Work and shall respond to any other reasonable request to further the inspector's ability to observe or complete any tests. Such inspections shall not relieve the General Contractor of any of its quality control responsibilities or any other obligations under the Contract. All inspections and all tests conducted by the City are for the convenience and benefit of the City. These inspections and tests do not constitute acceptance of the materials or Work tested or inspected, and the City may reject or accept any Work or materials at any time prior to the inspections pursuant to G.C. 2002, whether or not previous inspections or tests were conducted by the inspector or a City representative.

2. The Building Inspection Division will perform building code compliance inspections for structures designed for human occupancy. It is the General Contractor's responsibility to schedule and obtain these inspections. If a code compliance inspection results in identification of a condition which will be at variance to the Contract Documents, the General Contractor shall immediately notify the Project Manager and confirm such notification with formal correspondence no later than forty-eight (48) hours after the occurrence.
3. When any unit of government or political subdivision, utility or railroad corporation is to pay a portion of the cost of the Work, its respective representatives shall have the right to inspect the Work. This inspection shall not make any unit of government or political subdivision, utility or railroad corporation a party to the Contract, and shall not interfere with the rights of either party.

#### **SC-19 AUTHORITY OF INSPECTORS**

General Condition 1702, AUTHORITY OF INSPECTORS, is hereby deleted in its entirety and replaced by the following:

Inspectors assigned to the Work by the Project Manager are authorized to reject any Work, any materials, or any component of the Work which is not as required or specified in the Contract Documents. Such rejection will be confirmed by the Project Manager in writing to the Contractor. Inspections may extend to all or any part of the Work and to the preparation, fabrication or manufacture of the materials to be used. The inspector is not authorized to alter or waive the provisions of the Contract Documents, nor is the inspector authorized to issue instructions contrary to the provisions of the Contract Documents or to act as foreman for the Contractor.

#### **SC-20 TERMINATION OF CONTRACT FOR CONVENIENCE OF THE CITY**

General Condition 2202, TERMINATION OF CONTRACT FOR CONVENIENCE OF THE CITY, is hereby deleted in its entirety and replaced by the following:

1. The performance of Work under the Contract may be terminated without cause by the City in whole or in part whenever the Manager, in his sole discretion, shall determine that such termination is in the best interest and convenience of the City or whenever the City is prohibited from completing the Work for any reason. Such termination shall be effected by giving not less than three (3) Days' written notice to the Contractor specifying the extent to which performance of the Work is terminated and the date upon which such termination becomes effective.
2. Upon receipt of such notice of termination, the Contractor shall:
  - A. Stop work as specified in the notice;
  - B. Terminate all orders and subcontracts except as necessary to complete Work which is not terminated;

- C. If directed in writing by the Manager to do so, assign all right, title, and interest in subcontracts and materials in progress, in which case the City will have the right, in its discretion, to settle or pay any or all Claims arising out of the termination of such subcontracts;
  - D. Settle outstanding liabilities and claims with the approval of the Manager;
  - E. Complete performance of such part of the Work as has not been terminated; and
  - F. Take such other actions as may be necessary, or as may be directed by the City, for the protection and preservation of the property related to the Contract.
3. Except as provided herein, any inventory resulting from the termination of the Contract may, with written approval of the Manager, be sold or acquired by the Contractor under the conditions prescribed by and at prices approved by the City.
  4. Upon receipt of notice of such termination, the Contractor shall submit to the Project Manager a request for final payment, in a form and with certification prescribed by the City. Such request shall be submitted promptly but in no event later than sixty (60) Days from the effective date of termination, unless extended in writing by the Project Manager upon the written request of the Contractor within such sixty (60) Day period.
  5. The final payment to the Contractor after a termination for convenience shall be calculated by adding the following amounts:
    - (1) Any actual costs incurred by the Contractor since the last approved pay request that are reimbursable as a Cost of the Work plus the proportionate Fee on such costs;
    - (2) The actual costs incurred by the Contractor for terminating the Work and for protecting the Work in the manner, if any, directed by the City, plus the proportionate Fee on such costs; and
    - (3) The amount of retainage withheld by the City to date.
  6. The acceptance of final payment as calculated above shall constitute a waiver of all Claims by the Contractor except those previously made in accordance with G.C. 1301 which have been separately identified by the Contractor as unsettled in the final Project Application for Payment.
  7. The Manager may, from time to time, under such terms and conditions as the Manager may prescribe, authorize partial payments and payments against costs incurred by the Contractor for the terminated portion of the Contract, if it is estimated that the total of such payments will not exceed the amount to which the Contractor will be entitled. If the total of such payments is in excess of the amount to which the Contractor is entitled, the excess shall be payable by the Contractor to the City upon demand, together with interest computed pursuant to statute, for the period from the date the excess payment is received by the Contractor to the date the excess is repaid to the City.
  8. The settlement for the Work performed shall not relieve the Contractor or its surety from responsibility for defective Work and/or materials on the completed portion of the Work nor for labor and materials or any other items as guaranteed by the surety bond or bonds.
  9. The City shall be given full access to all books, correspondence, records, electronic files and data bases, and other materials of the Contractor relating to the Contract in order to determine

the amounts to be paid on account of the termination of the Contract under this G.C. 2202. The Contractor shall, as requested by the City, furnish clear copies of any such materials.

10. In the event the parties fail to agree in whole or in part on the amount or amounts to be paid to the Contractor in connection with the termination of work pursuant to this G.C. 2202, the Contractor may appeal the Project Manager's determination as to the amount owed in accordance with Title 13, except that, if the Contractor has failed to submit its request for payment within the time provided above and has failed to request an extension of such time, it shall have no such right of appeal.

**SC-21 SUBCONTRACTS**

In accordance with General Contract Condition 501, SUBCONTRACTS, no limit shall apply to that percentage of the Work, which may be sublet providing that the subcontractors receive prior approval in accordance with General Contract Condition 502, SUBCONTRACTOR ACCEPTANCE.

**SC-22 RESERVED**

**SC-23 DISPOSAL OF NON-HAZARDOUS WASTE AT DADS**

In accordance with the Landfill Agreement made between the City and Waste Management of Colorado, Inc., bidders will be required to haul dedicated loads (non-hazardous entire loads of waste) to the Denver-Arapahoe Disposal Site ("DADS") for disposal. DADS is located at Highway 30 and Hampden Avenue in Arapahoe County, Colorado. The City will pay all fees associated with such disposal but the bidder shall be responsible for the costs of transporting the loads. Non-hazardous waste is defined as those substances and materials not defined or classified as hazardous by the Colorado Hazardous Waste Commission pursuant to C.R.S. §25-15-207, as amended from time to time, and includes construction debris, soil and asbestos. Bidders shall not use Gun Club Road between I-70 and Mississippi Avenue as a means of access to DADS.

**SC-24 PROHIBITION ON USE OF CCA-TREATED WOOD PRODUCTS**

The use of any wood products pressure-treated with chromated copper arsenate (CCA) is prohibited. Examples of CCA-treated wood products include wood used in play structures, decks, picnic tables, landscaping timbers, fencing, patios, walkways and boardwalks.

**SC-25 WAIVER OF: PART 8 OF ARTICLE 20 OF TITLE 13, COLORADO REVISED STATUTES.**

The Contractor specifically waives all the provisions of Part 8 of Article 20 of Title 13, Colorado Revised Statutes regarding defects in the Work under this Construction Contract.

**SC-26 DEBARRED SUBCONTRACTORS PROHIBITED**

The Contractor is prohibited from hiring any subcontractor currently debarred by the City in accordance with section 20-77 of the Denver Revised Municipal Code.

**SC-27 ATTORNEY'S FEES**

Colorado Revised Statute 38-26-107 requires that in the event any person or company files a verified statement of amounts due and unpaid in connection with a claim for labor and materials supplied on this project, the City shall withhold from payments to the Contractor sufficient funds to insure the payment of any such claims. Should the City and County of Denver be made a party to any lawsuit to enforce such unpaid claims or any lawsuit arising out of or relating to such withheld funds, the Contractor agrees to pay to the City its costs and a reasonable attorney's fee which cost shall be included as a Cost of the Work.

Because the City Attorney Staff does not bill the City for legal services on an hourly basis, the Contractor agrees a reasonable fee shall be computed at the rate of one hundred dollars per hour of City Attorney time.

## SC-28 INSURANCE

General Condition 1601 is hereby deleted in its entirety and replaced with the following:

1. **General Conditions:** Contractor agrees to secure, at or before the time of execution of this Agreement, the following insurance covering all operations, goods or services provided pursuant to this Agreement. Contractor shall keep the required insurance coverage in force at all times during the term of the Agreement, or any extension thereof, during any warranty period, and for eight (8) years after termination of the Agreement. The required insurance shall be underwritten by an insurer licensed or authorized to do business in Colorado and rated by A.M. Best Company as "A-"VIII or better. Each policy shall contain a valid provision or endorsement requiring notification to the City in the event any of the required policies be canceled or non-renewed before the expiration date thereof. Such written notice shall be sent to the parties identified in the Notices section of this Agreement. Such notice shall reference the City contract number listed on the signature page of this Agreement. Said notice shall be sent thirty (30) days prior to such cancellation or non-renewal unless due to non-payment of premiums for which notice shall be sent ten (10) days prior. If such written notice is unavailable from the insurer, contractor shall provide written notice of cancellation, non-renewal and any reduction in coverage to the parties identified in the Notices section by certified mail, return receipt requested within three (3) business days of such notice by its insurer(s) and referencing the City's contract number. If any policy is in excess of a deductible or self-insured retention, the City must be notified by the Contractor. Contractor shall be responsible for the payment of any deductible or self-insured retention. The insurance coverages specified in this Agreement are the minimum requirements, and these requirements do not lessen or limit the liability of the Contractor. The Contractor shall maintain, at its own expense, any additional kinds or amounts of insurance that it may deem necessary to cover its obligations and liabilities under this Agreement.

2. **Proof of Insurance:** Contractor shall provide a copy of this Agreement to its insurance agent or broker. Contractor may not commence services or work relating to the Agreement prior to placement of coverages required under this Agreement. Contractor certifies that the certificate of insurance attached as **Exhibit** \_\_\_\_, preferably an ACORD certificate, complies with all insurance requirements of this Agreement. The City requests that the City's contract number be referenced on the Certificate. The City's acceptance of a certificate of insurance or other proof of insurance that does not comply with all insurance requirements set forth in this Agreement shall not act as a waiver of Contractor's breach of this Agreement or of any of the City's rights or remedies under this Agreement. The City's Risk Management Office may require additional proof of insurance, including but not limited to policies and endorsements.

3. **Additional Insureds:** For Commercial General Liability, Auto Liability and Contractors Pollution Liability, Contractor and subcontractor's insurer(s) shall name the City and County of Denver, its elected and appointed officials, employees and volunteers as additional insured.

4. **Waiver of Subrogation:** For all coverages required under this Agreement, Contractor's insurer shall waive subrogation rights against the City.

5. **Subcontractors and Subconsultants:** All subcontractors and subconsultants (including independent contractors, suppliers or other entities providing goods or services required by this Agreement) shall be subject to all of the requirements herein and shall procure and maintain the same coverages required of the Contractor. Contractor shall include all such subcontractors as additional insured under its policies (with the exception of Workers' Compensation) or shall ensure that all such subcontractors and subconsultants maintain the required coverages. Contractor agrees to provide proof of insurance for all such subcontractors and subconsultants upon request by the City.

6. **Workers' Compensation/Employer's Liability Insurance:** Contractor shall maintain the coverage as required by statute for each work location and shall maintain Employer's Liability insurance with limits of \$100,000 per occurrence for each bodily injury claim, \$100,000 per occurrence for each

bodily injury caused by disease claim, and \$500,000 aggregate for all bodily injuries caused by disease claims. . If an exposure exists, the U.S. Longshore and Harborworkers Compensation Act endorsement shall be attached to the policy. Contractor expressly represents to the City, as a material representation upon which the City is relying in entering into this Agreement, that none of the Contractor's officers or employees who may be eligible under any statute or law to reject Workers' Compensation Insurance shall effect such rejection during any part of the term of this Agreement, and that any such rejections previously effected, have been revoked as of the date Contractor executes this Agreement.

**7. Commercial General Liability:** Contractor shall maintain a Commercial General Liability insurance policy with limits of \$1,000,000 for each occurrence, \$1,000,000 for each personal and advertising injury claim, \$2,000,000 products and completed operations aggregate, and \$2,000,000 policy aggregate.

**8. Business Automobile Liability:** Contractor shall maintain Business Automobile Liability, or its equivalent, with minimum limits of \$1,000,000 combined single limit applicable to all owned, hired and non-owned vehicles used in performing services under this Agreement. If transporting wastes, hazardous material, or regulated substances, Contractor shall carry a pollution coverage endorsement and an MCS 90 endorsement on their policy. Transportation coverage under the Contractors Pollution Liability policy shall be an acceptable replacement for a pollution endorsement to the Business Automobile Liability policy.

**9. Excess/Umbrella Liability:** Contractor shall maintain excess liability limits of \$3,000,000. Coverage must be written on a "follow form" basis. Any combination of primary and excess coverage may be used to achieve required limits.

**10. Builders Risk or Installation Floater:** Contractor shall maintain limits equal to the completed value of the project. Coverage shall be written on an all risk, replacement cost basis including coverage for soft costs, flood and earth movement, if in a flood or quake zone, and, if applicable, equipment breakdown including testing. Contractor is responsible for payment of all policy deductibles. The City and County of Denver, Contractor, and sub-contractors shall be named insureds under the policy. Policy shall remain in force until acceptance of the project by the City.

**11. Contractors Pollution Liability:** Contractor shall maintain limits of \$1,000,000 per occurrence and \$2,000,000 policy aggregate. Policy to include bodily injury; property damage including loss of use of damaged property; defense costs including costs and expenses incurred in the investigation, defense or settlement of claims; and clean up costs. Policy shall include a severability of interest or separation of insured provision (no insured vs. insured exclusion) and a provision that coverage is primary and non-contributory with any other coverage or self-insurance maintained by the City.

**12. Additional Provisions:**

(a) For Commercial General Liability, Excess Liability and Contractors Pollution Liability the policies must provide the following:

- (i) That this Agreement is an Insured Contract under the policy;
- (ii) Defense costs are outside the limits of liability;
- (iii) A severability of interests or separation of insureds provision (no insured vs. insured exclusion); and
- (iv) A provision that coverage is primary and non-contributory with other coverage or self-insurance maintained by the City.

(b) For claims-made coverage:

(i) The retroactive date must be on or before the contract date or the first date when any goods or services were provided to the City, whichever is earlier.

(c) Contractor shall advise the City in the event any general aggregate or other aggregate limits are reduced below the required per occurrence limits. At their own expense, and where such general aggregate or

other aggregate limits have been reduced below the required per occurrence limit, the Contractor will procure such per occurrence limits and furnish a new certificate of insurance showing such coverage is in force.

## **EXHIBIT C**

### **Technical Specifications**

[TO BE INCORPORATED INTO THIS CONSTRUCTION CONTRACT ONCE COMPLETED AND ISSUED BY THE DESIGN CONSULTANT FOR CONSTRUCTION IN ACCORDANCE WITH ARTICLE 2.0 CONTRACT DOCUMENTS, PARAGRAPH 2.1]



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 MAIN 303.431.6100 MARTINMARTIN.COM

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ANDERSON HALLAS ARCHITECTS, PC

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# DPAC - GARAGE CRITICAL REPAIRS

## 950 13th STREET

### DENVER, COLORADO 80204

#### CITY PROJECT NUMBER: 201525595

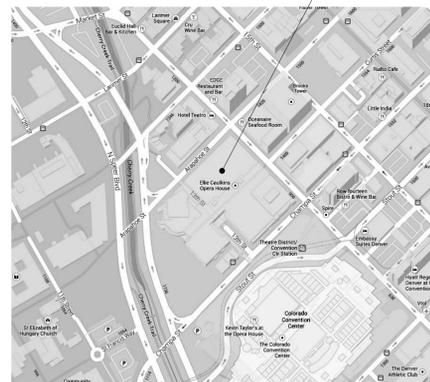
#### MARTIN/MARTIN PROJECT NO. 15.0702.S.02

#### FOR CONSTRUCTION 04/13/2016

AERIAL PHOTO



VICINITY MAP



**OWNER'S REPRESENTATIVE**

PUBLIC WORKS - CITY AND COUNTY OF DENVER

201 WEST COLFAX AVENUE, #506  
 DENVER, COLORADO 80202  
 720.913.8814

CONTACT: STEPHANIE REED  
 stephanie.reed@denvergov.org  
 303.957.7283

CITY AND COUNTY OF DENVER  
 DEPARTMENT OF PUBLIC WORKS

APPROVED BY:	
MANAGER OF PUBLIC WORKS _____	DATE _____
CITY ENGINEER _____	DATE _____
DIRECTOR OF ENGINEERING CAPITAL PROJECTS _____	DATE _____
CITY TRAFFIC ENGINEER _____	DATE _____
DIRECTOR OF SMALL BUSINESS OPPORTUNITY _____	DATE _____

SHEET NUMBER	SHEET TITLE
0.00	COVER SHEET
S0.01	GENERAL NOTES
S0.02	WORK LIST
S0.03	1-COMPONENT TRAFFIC COATING SPECIFICATION
S0.04	EPOXY OVERLAY AND LEVELING COMPOUND SPEC
S0.05	JOINT SEALANT SPECIFICATION
S0.06	PENETRATING SEALER SPECIFICATION
S1.01n	LEVEL 1 PLAN - NORTH
S1.01s	LEVEL 1 PLAN - SOUTH
S1.02n	LEVEL 2 PLAN - NORTH
S1.02s	LEVEL 2 PLAN - SOUTH
S1.03n	LEVEL 3 PLAN - NORTH
S1.03s	LEVEL 3 PLAN - SOUTH
S1.04n	LEVEL 4 PLAN - NORTH
S1.04s	LEVEL 4 PLAN - SOUTH
S1.05n	LEVEL 5 PLAN - NORTH
S1.05s	LEVEL 5 PLAN - SOUTH
S1.06n	LEVEL 6 PLAN - NORTH
S1.06s	LEVEL 6 PLAN - SOUTH
S1.07n	LEVEL 7 PLAN - NORTH
S1.07s	LEVEL 7 PLAN - SOUTH
S1.08n	LEVEL 8 PLAN - NORTH
S1.08s	LEVEL 8 PLAN - SOUTH
S1.09	LEVEL 9 PLAN
S2.01n	LEVEL 1 REFLECTED CEILING PLAN - NORTH
S2.01s	LEVEL 1 REFLECTED CEILING PLAN - SOUTH
S2.02n	LEVEL 2 REFLECTED CEILING PLAN - NORTH
S2.02s	LEVEL 2 REFLECTED CEILING PLAN - SOUTH
S2.03n	LEVEL 3 REFLECTED CEILING PLAN - NORTH
S2.03s	LEVEL 3 REFLECTED CEILING PLAN - SOUTH
S2.04n	LEVEL 4 REFLECTED CEILING PLAN - NORTH
S2.04s	LEVEL 4 REFLECTED CEILING PLAN - SOUTH
S2.05n	LEVEL 5 REFLECTED CEILING PLAN - NORTH
S2.05s	LEVEL 5 REFLECTED CEILING PLAN - SOUTH
S2.06n	LEVEL 6 REFLECTED CEILING PLAN - NORTH
S2.06s	LEVEL 6 REFLECTED CEILING PLAN - SOUTH
S2.07n	LEVEL 7 REFLECTED CEILING PLAN - NORTH
S2.07s	LEVEL 7 REFLECTED CEILING PLAN - SOUTH
S2.08	LEVEL 8 REFLECTED CEILING PLAN
S3.01	NORTH STAIR PLAN
S4.01	REPAIR DETAILS
S4.02	REPAIR DETAILS
S4.03	NORTH STAIR REPAIR DETAILS
A3.01	FLOOR PLAN & SECTIONS
A4.01	DETAILS & SPECIFICATIONS
A4.02	PHOTOS
P0.01	PLUMBING NOTES, SCHEDULES, DETAILS & LEGEND
P1.01n	LEVEL 1 PLUMBING PLAN - NORTH
P1.03n	LEVEL 3 PLUMBING PLAN - NORTH
P1.04n	LEVEL 4 PLUMBING PLAN - NORTH

NORTH GALLERIA STAIR WORK LIST

WORK ITEM	DESCRIPTION	REF DTL	QUANTITY
A1	REMOVE EXISTING TRAFFIC COATING REMAINING ON STAIR (AFTER DEMOLITION OF UNSOUND CONCRETE), 4TH LEVEL THROUGH 7TH LEVEL ONLY	1/A3.01	765 SF
A2	REMOVE RUST AND PEELING PAINT BACK TO SOUND METAL. PREPARE METAL FOR REPAINTING ABOVE CONCRETE ON INSIDE FACE OF STEEL CURB ON EITHER SIDE OF STAIR, 3" ABOVE CONCRETE 4TH LEVEL THROUGH 7TH LEVEL, 2" ABOVE CONCRETE 3RD LEVEL THROUGH 4TH LEVEL. MAY REQUIRE WASHING AWAY RUST RESIDUE TO IDENTIFY RUST LOCATIONS.	A2/A4.02	364 LF
A3	REMOVE RUST AND PEELING PAINT BACK TO SOUND METAL. PREPARE METAL AND REMAINING PAINT FOR REPAINTING ON TOP FLANGE OF STRINGER ON OUTSIDE EDGE OF BOTH SIDES OF STAIR, FROM 4TH LEVEL TO 7TH LEVEL. MAY REQUIRE WASHING AWAY RUST RESIDUE TO IDENTIFY RUST LOCATIONS.	A3/A4.02	212 LF
A4	REMOVE RUST AND PEELING PAINT AT SPOTS (4" X 4" MAX SIZE) BACK TO SOUND METAL. PREPARE METAL FOR REPAINTING ON STRINGERS SUPPORTING STAIR, FROM 4TH LEVEL TO 7TH LEVEL. MAY REQUIRE WASHING AWAY RUST RESIDUE TO IDENTIFY RUST LOCATIONS.	A4/A4.02	20 LOC
A5	REMOVE RUST AND PEELING PAINT AT SPOTS (2" X 2" MAX SIZE) BACK TO SOUND METAL. PREPARE METAL FOR REPAINTING ON STEEL CURB ON EITHER SIDE OF STAIR, FROM 3RD LEVEL TO 4TH LEVEL. MAY REQUIRE WASHING AWAY RUST RESIDUE TO IDENTIFY RUST LOCATIONS.	A5/A4.02	50 LOC
A6	REMOVE RUST AND PEELING PAINT BACK TO SOUND METAL. PREPARE METAL FOR REPAINTING ON UNDERSIDE OF STAIR DECK WHERE BUBBLING PAINT AND RUST OCCURS. AREAS ARE FULL WIDTH OF STAIR AND APPROXIMATELY 5' LONG. OCCURS AT BOTTOM AND TOP OF 4TH TO 5TH AND 5TH TO 6TH LEVEL FLIGHTS AND BOTTOM ONLY OF 6TH TO 7TH LEVEL FLIGHT. MAY REQUIRE WASHING AWAY RUST RESIDUE TO IDENTIFY RUST LOCATIONS. (5 LOCATIONS OF APPROX 30 SF)	A6/A4.02	150 SF
A7	REMOVE RUST AND PEELING PAINT BACK TO SOUND METAL. PREPARE METAL FOR REPAINTING AT EDGES OF METAL PANELS ON OUTSIDE OF STAIR AND LANDING FROM 3RD LEVEL TO 4TH LEVEL. OCCURS PARTICULARLY AT FASTENERS.	A7/A4.02	13 SF
A8	PREPARE METAL CURB, STRINGER, AND DECKING OF STAIRS FROM 4TH LEVEL TO 7TH AND METAL CURB AND OUTSIDE METAL PANELS ON STAIR AND LANDING FROM 3RD LEVEL TO 4TH. SURFACE PREP TO BE DONE PER PAINT MANUFACTURERS RECOMMENDATIONS AND SPECS AND SHEET A4.01.	A4, A5, A6, A7/A4.02	2200 SF
A9	REPAINT METAL CURB, STRINGER, AND DECKING OF STAIRS FROM 4TH LEVEL TO 7TH. REPAINT METAL CURB AND OUTSIDE METAL PANELS ON STAIR AND LANDING FROM 3RD LEVEL TO 4TH. PAINT SHALL BE TWO COATS, AMIDOAMINE EPOXY PAINT.	A4, A5, A6, A7/A4.02	2200 SF
A10	INSTALL NEW SINGLE COMPONENT PEDESTRIAN RATED TRAFFIC COATING ON STAIR AND LANDINGS, 4TH LEVEL THROUGH 7TH LEVEL.	1/A3.01	765 SF
A11	NEW DRAIN LINE (RE: PLUMB) WILL COME DOWN ABOVE DROPPED ACT. AT LOCATIONS OF WORK, REMOVE AND PROTECT EXISTING CEILING TILES FROM DAMAGE. REPLACE TILES WHEN WORK IS COMPLETE. DRAIN LINES SHALL BE ROUTED TO JOIN EXISTING DRAIN LINES ABOVE BOX OFFICE. SOME MINOR CUTTING AND PATCHING OF DRYWALL WALLS MAY BE REQUIRED. PATCHING OF DRYWALL SHALL BE SEAMLESS WITH EXISTING AND SHALL BE PAINTED TO MATCH EXISTING. ANY PIPING EXPOSED TO PUBLIC VIEW SHALL BE PAINTED TO MATCH EXISTING EXPOSED PIPING.	A11A, A11B /A4.02	LUMP SUM

NOTES:  
 1. THE VALUES IN THE "QUANTITY" COLUMN OF THE WORK LIST MAY BE GREATER THAN OR LESS THAN THE AMOUNTS SHOWN ON PLAN. USE THE QUANTITIES LISTED IN THE WORK LIST FOR BID PURPOSES.

WORK ITEM	DESCRIPTION	REF DTL	QUANTITY
S1	REPAIR ALL SPALLS & DELAMINATIONS IN CONCRETE STAIRS AND LANDINGS WHERE SHOWN ON PLANS. FOR BID PURPOSES, ASSUME HALF OF THE QUANTITY LISTED IS FULL DEPTH AND ONE QUARTER OF THE QUANTITY LISTED HAS A 3" REPAIR DEPTH. THE OTHER QUARTER OF THE QUANTITY LISTED CAN BE ASSUMED TO BE A "SHALLOW" PATCH. INSTALL SEALANT AROUND PERIMETER OF THE PATCH PER THE REPAIR DETAILS.	2/S4.01 1/S4.03 3/S4.03	370 SF
S2	CUT OUT EXISTING SEALANTS AND RE-SEAL ALL HORIZONTAL JOINTS AND OTHER LOCATIONS SHOWN ON PLANS AND DETAILS. SEALANT TO BE A POLYURETHANE SEALANT	2/S4.02	165 LF
S3	CUT OUT EXISTING COVE JOINT SEALANTS AT HORIZONTAL TO VERTICAL INTERFACES AND RE-SEAL WITH A POLYURETHANE SEALANT WHERE INDICATED. INSTALL NEW COVE JOINTS AT HORIZONTAL TO VERTICAL INTERFACES WHERE SEALANT WAS NOT PREVIOUSLY INSTALLED.	3/S4.02	625 LF
S4	ROUT AND SEAL ALL SURFACE CRACKS GREATER THAN 1/16 INCH IN WIDTH IN THE STAIR LANDINGS. REMOVE AND REPLACE SEALANT IN PREVIOUSLY ROUTED & SEALED CRACKS. SEALANT TO BE A POLYURETHANE.	2/S4.02	175 LF
S5	CLEAN AND REMOVE RUST FROM REINFORCING STEEL. AT EACH REINFORCING BAR THAT HAS GREATER THAN 25% SECTION LOSS, PROVIDE A #4 BAR WITH 180 DEGREE HOOK EACH END WITH 1.5" CLEAR ALL AROUND (1'-0" MINIMUM BAR LENGTH). THE QUANTITY IS BASED ON 75% OF REPAIR LOCATIONS WILL REQUIRE ADDITIONAL BAR	1/S4.03 3/S4.03	450 LF
S6	AT STAIR TREADS, REMOVE STEEL ANGLE WITH GREATER THAN 25% SECTION LOSS OR WHERE ITS INTERIOR HAS LOST THE ANCHOR HEAD. AT LANDINGS WHERE HAS WELDED TO CHANNEL HAS LOST ITS ANCHOR HEAD, REMOVE THE HAS. AT LOCATIONS WHERE THESE ITEMS HAVE BEEN REMOVED, INSTALL A 3/8"x3"x0'-3" AT THE CENTERLINE OF THE GUARDRAIL POST LOCATION	2/S4.03	50 LOC
S7	CLEAN AND REMOVE ALL RUST ON EXPOSED STEEL SURFACE AND PLACE 1/4" PLATE CENTERED ON HOLE OR STEEL SECTION AS DEEMED NECESSARY BY THE ENGINEER. WELD PLATE TO STEEL MEMBER WITH 1/8" WELD ALL AROUND. FOR BID PURPOSES ASSUME PLATE SIZE OF 1/4"x4"x0'-4".	4/S4.03	10 LOC

NOTES:  
 1. THE VALUES IN THE "QUANTITY" COLUMN OF THE WORK LIST MAY BE GREATER THAN OR LESS THAN THE AMOUNTS SHOWN ON PLAN. USE THE QUANTITIES LISTED IN THE WORK LIST FOR BID PURPOSES.

GARAGE REPAIR & WATERPROOFING WORK LIST

WORK ITEM	DESCRIPTION	REF DTL	QUANTITY
1	REPAIR ALL SPALLS & DELAMINATIONS IN CONCRETE SLABS WHERE SHOWN ON PLANS OR AS REQUIRED AT PLUMBING WORK LOCATIONS. FOR BID PURPOSES ASSUME THE QUANTITY LISTED HAS AN AVERAGE THICKNESS OF 3" INCHES. IF REPAIR DEPTHS ARE LESS THAN 1 INCH AT ANY LOCATION, THE "SCALED AREA" REPAIR IS ACCEPTABLE. INSTALL SEALANT AROUND PERIMETER OF THE PATCH PER THE REPAIR DETAILS.	2/S4.01 4/S4.01	1,000 SF
2	LOCATE (BY CONTRACTOR) AND REPAIR BROKEN DOUBLE TEE FLANGE-TO-FLANGE CONNECTIONS (CONNECTION IS BROKEN IF DIFFERENTIAL DEFLECTION OCCURS WHEN VEHICLE IS DRIVEN OVER IT). INSTALL NEW CARBON FIBER BISCUIT AT SPACING TO MATCH EXISTING FLANGE TO FLANGE CONNECTIONS. FOR ESTIMATING PURPOSES, ASSUME EIGHT (8) CONNECTIONS NEED TO BE INSTALLED PER BROKEN DOUBLE-TEE JOINT.	6/S4.01	12 TEE TO TEE JOINTS
3	REPAIR SCALED AREAS ON THE SURFACES OF THE SLAB BY INSTALLING AN EPOXY MORTAR LEVELING COURSE. USE THE SAME PROCEDURE TO RE-ESTABLISH THE PROPER JOINT PROFILES AT DAMAGED CONTROL JOINTS PRIOR TO INSTALLING SEALANT. FOR BIDDING PURPOSES, ASSUME AVERAGE THICKNESS OF 3/16" FOR THE QUANTITY NOTED.	2/S4.01	21,000 SF
4	PERFORM FULL DEPTH SLAB REPAIRS WHERE REQUIRED.	5/S4.01	30 SF
5	PERFORM CONCRETE REPAIRS TO DAMAGED OR DETERIORATED VERTICAL SURFACES THAT ARE TO RECEIVE TRAFFIC COATING AND/OR INTERSECT A COVE JOINT.	4/S4.01	50 SF
6	CUT OUT EXISTING SEALANTS AND RE-SEAL ALL HORIZONTAL PRECAST JOINTS, CONTROL JOISTS AND OTHER LOCATIONS SHOWN ON PLAN. SEALANT TO BE A POLYURETHANE SEALANT.	2/S4.02	35,000 LF
7	CUT OUT EXISTING COVE JOINT SEALANTS AT HORIZONTAL TO VERTICAL INTERFACES AND RE-SEAL WITH A POLYURETHANE SEALANT WHERE SHOWN ON PLAN. INSTALL NEW COVE JOINTS AT PIPE AND STAIR PENETRATIONS OR AT HORIZONTAL TO VERTICAL INTERFACES WHERE SEALANT WAS NOT PREVIOUSLY INSTALLED.	3/S4.02	18,000 LF
8	ROUT AND SEAL ALL SURFACE CRACKS GREATER THAN 1/16 INCH IN WIDTH IN THE SLAB. REMOVE AND REPLACE SEALANT IN PREVIOUSLY ROUTED & SEALED CRACKS AT NEW TRAFFIC COATING AREAS. INSTALL DETAIL COAT OF TRAFFIC COATING BASE COAT AS REQUIRED OVER JOINTS WHERE NEW TRAFFIC COATING WILL BE INSTALLED. SEALANT TO BE A POLYURETHANE.	2/S4.02	4,000 LF
9	INSTALL EPOXY OVERLAY TO MITIGATE LOCALIZED PONDING WHERE NOTED ON PLAN.	3/S4.01	3,000 SF
10	REMOVE THE EXISTING TRAFFIC COATING TO BARE CONCRETE USING SHOT BLAST OR OTHER MEANS NECESSARY WHERE NOTED ON LEVEL 4. THE SURFACE SHALL BE FREE OF ALL DIRT, OIL, DEBRIS, LOOSE MATERIAL AND SHALL MEET THE SURFACE REQUIREMENTS OUTLINED IN THE SPECIFICATION.	N/A	11,100 SF
11	INSTALL A SINGLE COMPONENT POLYURETHANE TRAFFIC COATING SYSTEM RATED FOR HEAVY TRAFFIC OVER THE PREPARED SURFACES AT LEVEL 4, WHERE NOTED ON PLAN. EXTEND THE COATING 4" VERTICALLY UP ALL WALLS AND SPANDRELS AT THE DECK PERIMETER.	4/S4.02	11,100 SF
12	REMOVE EXISTING DELAMINATED TRAFFIC COATING TO BARE CONCRETE USING SHOT BLAST OR OTHER MEANS NECESSARY WHERE NOTED ON LEVEL 4. THE SURFACE SHALL BE FREE OF ALL DIRT, OIL, DEBRIS, LOOSE MATERIAL AND SHALL MEET THE SURFACE REQUIREMENTS OUTLINED IN THE SPECIFICATION.	N/A	500 SF
13	INSTALL A SINGLE COMPONENT POLYURETHANE TRAFFIC COATING SYSTEM FOR PEDESTRIAN TRAFFIC OVER THE PREPARED SURFACES AT LEVEL 4. EXTEND THE COATING 4" VERTICALLY UP ALL WALLS AND SPANDRELS AT THE DECK PERIMETER.	4/S4.02 6/S4.02	500 SF
14	PREPARE THE EXISTING TRAFFIC COATING ON LEVEL 4. IN PEDESTRIAN AREAS NOTED ON PLAN, TO RECEIVE A NEW TOP COAT USING SHOT BLAST OR OTHER MEANS NECESSARY. THE SURFACE SHALL BE FREE OF ALL DIRT, OIL, DEBRIS, LOOSE MATERIAL AND SHALL MEET THE SURFACE REQUIREMENTS OUTLINED IN THE SPECIFICATION. IF MOCK-UP RESULTS ARE NOT SATISFACTORY ACCORDING TO SPECS, CONTRACTOR MAY USE SOLVENT WIPES OR ADHESION PROMOTERS AS REQUIRED TO ACHIEVE ADEQUATE BOND. PROVIDE ACCEPTABLE ADHESION TEST RESULTS TO OWNER PRIOR TO INSTALLING NEW TOP COAT IN LARGE AREAS.	N/A	9,600 SF
15	INSTALL A SINGLE COMPONENT POLYURETHANE TOP COAT FOR PEDESTRIAN TRAFFIC OVER THE PREPARED SURFACES ON LEVEL 4. EXTEND THE COATING 4" VERTICALLY UP ALL WALLS AND SPANDRELS AT THE DECK PERIMETER.	5/S4.02	9,600 SF
16	REMOVE AND REPLACE THE HORIZONTAL EXPANSION JOINTS WHERE NOTED ON PLAN. REMOVE ADJACENT DETERIORATED AREAS OF THE TOPPING SLAB, DOUBLE-TEE, AND BEAMS BELOW AS REQUIRED TO REBUILD THE SHOULDERS OF THE NEW JOINT FOR ITS ENTIRE LENGTH.	8/S4.02 9/S4.02	20 LF
17	REMOVE AND REPLACE DELAMINATED GROUT BELOW BASE PLATES OF MECHANICAL EQUIPMENT.	N/A	8 LOC
18	POWER WASH TOP SURFACE AND APPLY A CLEAR PENETRATING 100% SOLIDS SILANE SEALER PER SPECIFICATIONS. SEALER SHALL BE APPLIED ON ALL HORIZONTAL SURFACES IN NON-TRAFFIC COATED AREAS. DO NOT APPLY SEALER TO AREAS THAT RECEIVED AN EPOXY MORTAR OVERLAY FOR SCALED SURFACES OR PONDING MITIGATION. POWER WASHING FLUID SHALL CAPTURED AND DISPOSED OF IN ACCORDANCE WITH LOCAL REGULATIONS.	N/A	215,000 SF

WORK ITEM	DESCRIPTION	REF DTL	QUANTITY
19	PERFORM CONCRETE REPAIRS TO DAMAGED OR DETERIORATED VERTICAL SURFACES.	4/S4.01	300 SF
20	PERFORM CONCRETE REPAIRS TO DAMAGED OVERHEAD SURFACES.	4/S4.01	400 SF
21	REMOVE RUST FROM CORRODED EMBED PLATES, BEARING PLATES AND FENCE CONNECTION PLATES. COAT EXPOSED STEEL WITH PRIMER PER CONCRETE REPAIR NOTES.	N/A	45 LOC
22	EPOXY INJECT CRACKS WHERE NOTED ON PLAN.	9/S4.01	100 LF
23	REMOVE EFFLORESCENCE AND STAINING FROM CONCRETE SURFACES WHERE NOTED ON PLAN. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.	N/A	1,000 SF
24	REMOVE AND REPLACE VERTICAL SEALANTS ABOVE THE PARKING DECK WHERE NOTED ON PLAN WITH A SILICONE SEALANT. INSTALL SEALANT IN THE JOINTS WHERE NOTED ON PLANS INCLUDING AROUND THE COLUMNS, AND INSIDE FACE OF SPANDREL PANEL. THIS WORK ITEM MAY REQUIRE THE USE OF LIFT ACCESS. CONTRACTOR TO INCLUDE ACCESS IN UNIT COSTS PROVIDED WITH BID.	11/S4.02	500 LF
25	CLEAN AND REMOVE UNSOUND CONCRETE IN (E) CRICKET. PERFORM WATER TEST TO DETERMINE REQUIRED SIZE AND SLOPE OF NEW CRICKET FOR PROPER WATER DRAINAGE. CONSTRUCT NEW CRICKET OVERLAY WITH REPAIR MORTAR PER DETAIL. ASSUME AVERAGE THICKNESS OF 1 1/2".	1/S4.02	80 SF
26	REPAIR PRECAST WALL STEEL CONNECTIONS.	10/S4.02	10 LOC
27	RE-STRIPE THE ENTIRE SURFACE THAT RECEIVED NEW TRAFFIC COATING TO MATCH THE ORIGINAL PARKING LAYOUT. PAINT TO BE "PROMAR LOW VOC ACRYLIC COPOLYMER TRAFFIC MARKING PAINT" BY SHERWIN WILLIAMS OR APPROVED EQUAL.	10/S4.02	LUMP SUM

NOTES:  
 1. THE VALUES IN THE "QUANTITY" COLUMN OF THE WORK LIST MAY BE GREATER THAN OR LESS THAN THE AMOUNTS SHOWN ON PLAN. USE THE QUANTITIES LISTED IN THE WORK LIST FOR BID PURPOSES.

PROJECT ADD ALTERNATE WORK LIST

WORK ITEM	DESCRIPTION	REF DTL	QUANTITY
A0g1	PREPARE THE SURFACE OF THE CONCRETE TO RECEIVE A NEW TRAFFIC COATING USING SHOT BLAST OR OTHER MEANS NECESSARY ON LEVEL 9. THE SURFACE SHALL BE FREE OF ALL DIRT, OIL, DEBRIS, LOOSE MATERIAL AND SHALL MEET THE SURFACE REQUIREMENTS OUTLINED IN THE SPECIFICATION. INSTALL A SINGLE COMPONENT POLYURETHANE TRAFFIC COATING SYSTEM FOR PEDESTRIAN TRAFFIC OVER THE PREPARED SURFACES AT LEVEL 9. EXTEND THE COATING 4" VERTICALLY UP ALL WALLS AND SPANDRELS AT THE DECK PERIMETER.	4/S4.02	8,250 SF
A0g2	PREPARE SURFACE AND INSTALL NEW SINGLE COMPONENT POLYURETHANE TRAFFIC COATING ON STAIR AND LANDINGS, 3RD LEVEL THROUGH 4TH LEVEL.	4/S4.02	675 SF
A0g3	REPAINT METAL CURB, STRINGER, AND DECKING OF STAIRS FROM 7TH LEVEL TO 8TH. PAINT SHALL BE TWO COATS, AMIDOAMINE EPOXY PAINT. ANTICIPATE MINOR SURFACE PREP INCLUDING SMALL AMOUNTS OF RUST AND PEELING PAINT.	N/A	425 SF

NOTES:  
 1. THE VALUES IN THE "QUANTITY" COLUMN OF THE WORK LIST MAY BE GREATER THAN OR LESS THAN THE AMOUNTS SHOWN ON PLAN. USE THE QUANTITIES LISTED IN THE WORK LIST FOR BID PURPOSES.

GARAGE PLUMBING WORK LIST

WORK ITEM	DESCRIPTION	REF DTL	QUANTITY
P1	PROVIDE NEW DRAINS AND ASSOCIATED PIPING NEAR STAIR AREA.	7/S4.01	3 LOC
P2	CLEAN EXISTING DRAIN LINE.	N/A	1 LOC

NOTES:  
 1. THE VALUES IN THE "QUANTITY" COLUMN OF THE WORK LIST MAY BE GREATER THAN OR LESS THAN THE AMOUNTS SHOWN ON PLAN. USE THE QUANTITIES LISTED IN THE WORK LIST FOR BID PURPOSES.

DPAC - GARAGE CRITICAL REPAIRS

950 13th STREET  
 DENVER, COLORADO 80204  
 CITY PROJECT NUMBER: 201525595

REVISIONS

NO.	ISSUE	DATE

PROJECT NO: 15.0702.S.02  
 DATE: 04/13/2016  
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SHEET TITLE:  
 WORK LIST

SHEET NUMBER:  
 S0.02

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PRINCIPAL: EJ  
EOR: Enter EOR's Name Here  
PROJECT MANAGER: BB

### TRAFFIC COATING SPECIFICATION (1-COMPONENT URETHANE NOTES)

**1) PART 1 - GENERAL**

1A) RELATED DOCUMENTS  
- DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1-SPECIFICATION SECTIONS, APPLY TO WORK OF THIS SECTION.

1B) SUMMARY  
- SECTION INCLUDES:  
---- APPLICATION OF HIGH-SOLIDS, FLUID-APPLIED, POLYURETHANE, WATERPROOFING, TRAFFIC-BEARING, MEMBRANE DECK COATING SYSTEM.  
---- ALL LABOR, MATERIAL AND EQUIPMENT NECESSARY FOR COMPLETION OF ALL REHABILITATION AND APPLICATION OF FLUID APPLIED VEHICULAR TRAFFIC COATING SYSTEM, INCLUDING, BUT NOT NECESSARILY LIMITED TO, THE FOLLOWING:  
---- PEDESTRIAN RATED TRAFFIC COATING SYSTEM IS TO BE INSTALLED AT THE AREAS INDICATED.  
---- HEAVY VEHICULAR RATED TRAFFIC COATING SYSTEM IS TO BE INSTALLED AT THE AREAS INDICATED.  
---- COORDINATION OF TOP COAT APPLICATIONS WITH ADJACENT WORK.

1C) SUBMITTALS  
- PRODUCT DATA: INCLUDE MANUFACTURER'S WRITTEN INSTRUCTIONS FOR EVALUATING, PREPARING, AND TREATING SUBSTRATE, TECHNICAL DATA, AND TESTED PHYSICAL AND PERFORMANCE PROPERTIES. WHEN SUBMITTING MANUFACTURER'S LITERATURE, HIGHLIGHT ITEMS PERTAINING TO THIS PROJECT.  
- SHOP DRAWINGS: SHOW LOCATIONS AND EXTENT OF WATERPROOFING. INCLUDE DETAILS FOR SUBSTRATE JOINTS AND CRACKS, SHEET FLASHINGS, PENETRATIONS, INSIDE AND OUTSIDE CORNERS, TIE-INS TO ADJOINING WATERPROOFING, TERMINATION CONDITIONS AND TAPERED INSULATION LAYOUT AND SLOPES.  
- INSTALLER CERTIFICATES: SIGNED BY MANUFACTURERS CERTIFYING THAT INSTALLERS COMPLY WITH REQUIREMENTS.  
- INSTALLER QUALIFICATIONS: MINIMUM OF 5 YEARS EXPERIENCE IN APPLICATION. SUBMIT LIST OF AT LEAST FIVE COMPLETED PROJECTS OF SIMILAR SCOPE AND SIZE. INCLUDE: PROJECT NAME, OWNER'S NAME, OWNER'S REPRESENTATIVE AND CONTACT INFORMATION, DESCRIPTION OF THE WORK, MATERIALS USED, PROJECT SUPERVISOR COST OF TRAFFIC COATING WORK AND TOTAL PROJECT COST.  
- PRODUCT TEST REPORTS: FROM A QUALIFIED INDEPENDENT TESTING AGENCY INDICATING AND INTERPRETING TEST RESULTS OF WATERPROOFING FOR COMPLIANCE WITH REQUIREMENTS, BASED ON COMPREHENSIVE TESTING OF CURRENT WATERPROOFING FORMULATIONS.  
- LETTER FROM MANUFACTURER CERTIFYING COMPATIBILITY OF NEW TRAFFIC COATING SYSTEM WITH ACCESSORIES, CONTACTING MATERIALS. MANUFACTURER SHALL ISSUE CERTIFICATE OF COMPLIANCE INDICATING THEIR ACCEPTANCE OF WORK IN PLACE.  
- MAINTENANCE MANUAL: SUBMIT ONE MAINTENANCE MANUAL, IDENTIFIED WITH PROJECT NAME, LOCATION, DATE, TYPE OF TRAFFIC COATING SYSTEM APPLIED, AND SURFACE TO WHICH SYSTEM WAS APPLIED. INCLUDE RECOMMENDATIONS FOR PERIODIC INSPECTIONS, CARE AND MAINTENANCE. IDENTIFY COMMON CAUSES OF DAMAGE WITH INSTRUCTIONS FOR TEMPORARY PATCHING UNTIL PERMANENT REPAIR CAN BE MADE.  
- WARRANTY: SUBMIT SAMPLE WARRANTY WITH BID. SUBMIT TWO COPIES OF WRITTEN WARRANTY AFTER INSTALLATION.

1D) QUALITY ASSURANCE  
- INSTALLER QUALIFICATIONS: A QUALIFIED INSTALLER WHO IS AUTHORIZED, APPROVED, OR LICENSED TO INSTALL WATERPROOFING MANUFACTURER'S PRODUCTS; AND WHO IS ELIGIBLE TO RECEIVE WATERPROOFING WARRANTY SPECIFIED. INSTALLER TO HAVE 5 YEARS EXPERIENCE MINIMUM.  
- SOURCE LIMITATIONS: OBTAIN MATERIALS AND ACCESSORIES THROUGH ONE SOURCE FROM A SINGLE MANUFACTURER.  
- MOCK UP: MAKE A 4 FOOT BY 4 FOOT SAMPLE OF EACH SYSTEM TO BE INSTALLED AT JOB SITE, AT LOCATION DESIGNATED BY ENGINEER. SAMPLE SHALL DEMONSTRATE SURFACE PREPARATION, JOINT & CRACK TREATMENT, COLOR, TEXTURE, AND FINISH OF INSTALLED SYSTEM.  
---- MANUFACTURER'S REPRESENTATIVE SHALL BE PRESENT DURING MOCKUP AND MUST DIRECT APPROPRIATE CHANGES IN METHODS AND MATERIALS. FINAL SAMPLE INSTALLATION MUST BE APPROVED BY TECHNICAL REPRESENTATIVE.  
---- APPROVED MOCKUPS MAY BECOME PART OF THE COMPLETED WORK IF UNDISTURBED AT TIME OF SUBSTANTIAL COMPLETION.  
- PREINSTALLATION CONFERENCE: CONDUCT CONFERENCE AT PROJECT SITE. REVIEW REQUIREMENTS FOR COATING, INCLUDING SURFACE PREPARATION SPECIFIED UNDER OTHER SECTION, SUBSTRATE CONDITION AND PRETREATMENT, MINIMUM CURING PERIOD, FORECASTED WEATHER CONDITIONS, SPECIAL DETAILS AND SHEET FLASHINGS, INSTALLATION PROCEDURES, TESTING AND INSPECTION PROCEDURES, AND PROTECTION AND REPAIRS.

1E) DELIVERY, STORAGE, AND HANDLING  
- DELIVER MATERIALS TO JOB SITE IN SEALED, UNDAMAGED CONTAINERS. IDENTIFY EACH CONTAINER WITH MATERIAL NAME, DATE OF MANUFACTURE, AND LOT NUMBER. PROVIDE SPECIFICATIONS ON REQUIRED MAINTENANCE DURING WARRANTY PERIOD.  
- STORE MATERIALS IN THEIR ORIGINAL UNDAMAGED CONTAINERS IN A CLEAN, DRY, PROTECTED LOCATION AND WITHIN THE TEMPERATURE RANGE REQUIRED BY WATERPROOFING MANUFACTURER.

1F) PROJECT CONDITIONS  
- FIELD-VERIFIED ALL DIMENSIONS AND EXISTING DETAILS PRIOR TO BIDDING AND ACQUISITION OR INSTALLATION OF MATERIALS. NOTIFY THE ENGINEER OF ANY EXISTING CONDITION FOUND TO BE DIFFERENT THAN AS INDICATED IN THE CONTRACT DOCUMENTS. ENGINEER SHALL REVIEW THE CONDITION AND INFORM CONTRACTOR OF NECESSARY CHANGES, IF NECESSARY.  
- INSTALL COATING MATERIALS IN STRICT ACCORDANCE WITH ALL SAFETY AND WEATHER CONDITIONS REQUIRED BY MANUFACTURER, PRODUCT LITERATURE, MATERIAL SAFETY DATA SHEETS, OR LOCAL, STATE, AND FEDERAL RULES AND REGULATIONS.  
- ENVIRONMENTAL CONDITIONS: APPLY TRAFFIC COATING MATERIALS ONLY WHEN:  
---- SUBSTRATE SURFACE TEMPERATURES ARE ABOVE 40 DEGREES FAHRENHEIT AND LOWER THAN 90 DEGREES FAHRENHEIT.  
---- DO NOT APPLY IN RAIN OR WHEN RAIN IS EXPECTED WITHIN 24 HOURS. DO NOT APPLY ABOVE 90 DEGREES FAHRENHEIT OR BELOW 40 DEGREES FAHRENHEIT OR WHEN TEMPERATURES ARE EXPECTED TO FALL BELOW 40 DEGREES FAHRENHEIT WITHIN 24 HOURS.  
---- OPEN FIRES AND SPARK PRODUCING EQUIPMENT ARE NOT AND WILL NOT BE IN APPLICATION AREA UNTIL VAPORS HAVE BEEN DISSIPATED.  
---- POST "NO SMOKING" SIGNS IN AREA DURING AND FOR AT LEAST EIGHT (8) HOURS FOLLOWING APPLICATION PERIOD.  
---- PROVIDE AND MAINTAIN VEHICULAR AND PEDESTRIAN BARRICADES AND TRAFFIC CONTROL AT COATING AREAS DURING INSTALLATION AND CURING PERIOD.  
---- PROVIDE POSITIVE, CONTINUOUSLY SUPPLIED VENTILATION FOR INTERIOR APPLICATIONS THROUGHOUT APPLICATION PERIOD AND EIGHT (8) HOURS THEREAFTER.

1G) WARRANTY  
- COMPLETED TRAFFIC COATING INSTALLATION SHALL BE GUARANTEED JOINTLY AND SEVERALLY, ON A SINGLE DOCUMENT, BY MANUFACTURER AND APPLICATOR, AGAINST DEFECTS OF MATERIALS AND WORKMANSHIP INCLUDING BUT NOT LIMITED TO WATER TIGHTNESS, COLOR FASTNESS, AND DELAMINATION OF SYSTEM FROM SUBSTRATE, FOR A PERIOD OF FIVE (5) YEARS, NON PRO-RATED, BEGINNING WITH DATE OF SUBSTANTIAL COMPLETION OF THE TRAFFIC COATING SYSTEM.

**2) PART 2 - PRODUCTS**

2A) Products  
- TRAFFIC COATING SYSTEMS SHALL BE ONE OF THE FOLLOWING PRODUCTS OR APPROVED EQUAL:  
---- MASTERSEAL TRAFFIC 1500, MANUFACTURED BY BASF  
---- SIKALASTIC 710/735 AL WITH ALIPHATIC TOP COAT, MANUFACTURED BY SIKA

2B) SUBSTITUTIONS MUST BE APPROVED BY ENGINEER PRIOR TO BID FINALIZATION AND PROJECT AWARD.

2C) RELATED MATERIALS  
- COMPONENTS AND ACCESSORIES USED WITH TRAFFIC COATING MUST BE CERTIFIED BY TRAFFIC COATING MANUFACTURER AS COMPATIBLE WITH TRAFFIC COATING.  
- CONCRETE PRIMER, GRIT PRIMER, AND METAL PRIMER SHALL BE THOSE RECOMMENDED BY THE MANUFACTURER OF SYSTEM USED.  
- BACKER ROD: OPEN CELL BACKER ROD ACCEPTABLE TO MANUFACTURER OF SYSTEM USED.  
- SEALANT: AS SPECIFIED AND ACCEPTED BY MANUFACTURER OF THE SYSTEM USED.  
- SHEET FLASHING: PRECURED COMMERCIAL GRADE NEOPRENE. APPLY WITH ADHESIVE RECOMMENDED BY MANUFACTURER OF SYSTEM USED.  
- FLASHING REINFORCEMENT: WOVEN, UNCOATED FIBERGLASS MESH.  
- AGGREGATE: AS SPECIFIED BY MANUFACTURER OF THE SYSTEM USED.  
- CLEANING AGENTS: AS RECOMMENDED BY MANUFACTURER OF THE SYSTEM USED.

**3) PART 3 - EXECUTION**

3A) Examination  
- BEFORE ANY WORK IS STARTED THE APPLICATOR SHALL THOROUGHLY EXAMINE ALL SURFACES FOR ANY DEFICIENCIES. SHOULD ANY DEFICIENCIES EXIST, THE ENGINEER SHALL BE NOTIFIED IN WRITING AND CORRECTIONS MADE.  
- CONCRETE: VERIFY WORK DONE UNDER OTHER SECTIONS MEETS FOLLOWING REQUIREMENTS:  
---- CONCRETE DECK SURFACE IS FREE OF RIDGES AND SHARP PROJECTIONS.  
---- CONCRETE PATCHES HAVE CURED A MINIMUM OF 5 DAYS. CURING METHODS USED ARE COMPATIBLE WITH SURFACE REQUIREMENTS FOR COATING SYSTEM.  
---- CONCRETE WAS FINISHED BY A POWER OR HAND STEEL TROWEL FOLLOWED BY SOFT HAIR BROOM TO OBTAIN LIGHT TEXTURE OR "SIDEWALK" FINISH.  
---- DAMAGED AREAS OF CONCRETE DECK HAVE BEEN RESTORED TO MATCH ADJACENT AREAS. USE 100% SOLIDS EPOXY AND SAND FOR FILLING AND LEVELING.  
---- CONCRETE SURFACES ARE VISIBLY DRY AND PASS A 4-HOUR RUBBER MAT TEST (NO CONDENSATION) PRIOR TO APPLICATION OF COATING SYSTEM. USE BLACK MAT TAPED TO DECK ON ALL EDGES.  
- TREAT SURFACES OF EXISTING TRAFFIC COATING AND OTHER SUBSTRATES AS REQUIRED BY MANUFACTURER'S APPLICATION INSTRUCTIONS.

3B) PREPARATION  
- CLEAN AND PREPARE SUBSTRATE IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. REMOVE LAITANCE, LOOSE MATERIAL, GREASE, OIL, AND OTHER CONTAMINANTS WHICH WILL AFFECT THE BOND OF THE COATING.  
- PREPARE ALL CONCRETE SURFACES BY SHOTBLASTING (NO EXCEPTIONS). SURFACES SHALL BE DRY AND BROOM OR VACUUM CLEANED. CONTRACTOR IS RESPONSIBLE FOR CONTAINMENT AND CLEAN-UP OF BLASTING MEDIA AND DEBRIS. PROVIDE SURFACE PROFILE TO ACHIEVE SPECIFIED ADHESION EQUAL TO ICRI SURFACE PROFILE CSP 3.  
- LOCATE ANY DEBONDED AREAS BY MEANS SUCH AS CHAIN DRAG.  
- REPAIR VOIDS AND DELAMINATED AREAS WITH CEMENTITIOUS AND EPOXY PATCHING MATERIALS.  
- ROUT OR SAW CUT ALL CRACKS AND JOINTS EXCEEDING 1/16 IN. WIDE AND FILL WITH SEALANT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.  
- ROUT AND/OR CLEAN ALL CONTROL JOINTS AND CONSTRUCTION JOINTS THAT ARE TO BE OVERCOATED BY DECK COATING; REMOVE EXISTING SEALANTS. FILL WITH SEALANT OR MANUFACTURED EXPANSION JOINT COVER.  
- PROVIDE A 1/4" X 1/4" SAW CUT WHERE COATING SYSTEM IS TERMINATED WITHIN A HORIZONTAL PLANE.  
- PROTECT ADJACENT SURFACES WITH DROP CLOTHS OR MASKING AS REQUIRED.  
- COMMENCEMENT OF COATING INSTALLATION IMPLIES ACCEPTANCE OF TOP SURFACE OF SUBSTRATE AS SUITABLE TO ACCEPT TRAFFIC COATING.  
- TREAT SURFACES OF EXISTING TRAFFIC COATING AND OTHER SUBSTRATES AS REQUIRED BY MANUFACTURER'S APPLICATION INSTRUCTIONSSURFACE PREPARATION

3C) PRIMER AND DETAIL WORK  
- INSTALL PRIMER PER MANUFACTURER.

3D) DETAIL WORK:  
- APPLY BASE COAT WITH SPECIFIED MIL WET FILM THICKNESS PER MANUFACTURER OVER ALL FLASHINGS (SHEET FLASHINGS, SEALANT COVES AND RIGID CORNERS). EXTEND COATING 3 INCHES MINIMUM BEYOND FLASHING OUT ONTO ADJACENT DECK SURFACE. UNLESS OTHERWISE INDICATED ON DRAWINGS OR WHERE LIMITED BY HEIGHT OF BASE, EXTEND COATING A MINIMUM OF 4 IN. ABOVE THE TOP OF THE FLASHING AND TERMINATE IN A STRAIGHT LINE. USE MASKING TAPE FOR SUCH PURPOSES.  
- APPLY BASE COAT WITH SPECIFIED MIL WET FILM THICKNESS PER MANUFACTURER FOR A DISTANCE OF 3 INCHES MINIMUM ON EACH SIDE OF ALL CRACKS.  
- APPLY BASE COAT WITH SPECIFIED MIL WET FILM THICKNESS PER MANUFACTURER FOR A DISTANCE OF 3 INCHES MINIMUM ON EACH SIDE OF ALL EXPANSION JOINTS, CONTROL JOINTS AND CONSTRUCTION JOINTS TO BE COATED.

3E) FLASHINGS  
- AT PROJECTIONS THROUGH DECK COATINGS WHERE PROJECTIONS ARE STRUCTURALLY AND RIGIDLY CONNECTED TO THE SUBSTRATE, SUCH AS POSTS, VENTS, PIPES, STANCHIONS, RAILINGS, RIGIDLY CONNECTED WALL/SLAB INTERSECTIONS AND SIMILAR SUCH CONNECTED ITEMS HAVING LIMITED MOVEMENT, PROVIDE A 1/2 IN. BEAD OF SEALANT. TOOL SEALANT TO FORM COVE AND ALLOW TO CURE BEFORE OVERCOATING WITH TRAFFIC COATING.

3F) APPLICATION  
- APPLY ALL COATS TO MEET THE WET MIL THICKNESS PER MANUFACTURER.  
- INTERMEDIATE COATS SHALL BE APPLIED USING THE AGGREGATE TO REFUSAL METHOD.  
- SUBSTITUTIONS FOR WET MIL THICKNESSES WITHIN THE INTERMEDIATE AND TOP COATS ARE ACCEPTABLE PROVIDED THE TOTAL (BASE, INTERMEDIATE(S) AND TOP) WET MIL THICKNESS PER THE MANUFACTURER'S DATA SHEET IS MET:  
  
- PEDESTRIAN RATED SYSTEMS  
---- MASTERSEAL TRAFFIC 1500 - 50 WET MILS TOTAL  
---- SIKALASTIC 710/735 AL - 59 WET MILS TOTAL (HEAVY PEDESTRIAN OPTION)  
- HEAVY VEHICULAR RATED SYSTEMS  
---- MASTERSEAL TRAFFIC 1500 - 70 WET MILS TOTAL  
---- SIKALASTIC 710/735 AL - 75 WET MILS TOTAL (EXTRA HEAVY DUTY OPTION)

3G) FIELD QUALITY CONTROL  
- MOCK-UP TESTING: PERFORM TWO ADHESION TESTS ON MOCK-UP AND SUBMIT REPORT TO OWNER. NOTIFY ENGINEER AND MANUFACTURER IMMEDIATELY IF LESS THAN 150 PSI.  
---- ADHESION TESTING: PULL TAB TESTING AT TWO LOCATIONS EVERY 5,000 SQ FT TO VERIFY ADEQUATE BOND. TEST TO FAILURE AND DOCUMENT.  
---- VERIFY THICKNESS OF COATING DURING APPLICATION FOR EACH 600 SQ FT OF INSTALLED COATING.  
---- PREPARE TEST AND INSPECTION REPORTS.  
- FINAL INSPECTION:  
---- CONTRACTOR SHALL CHAIN DRAG ALL MEMBRANE AREAS AT THE CONCLUSION OF WORK TO LOCATE ANY DEBONDED AREAS. REMOVE AND REPLACE ALL DEBONDED AREAS.  
---- ARRANGE FOR MANUFACTURER'S TECHNICAL PERSONNEL TO INSPECT INSTALLATION UPON COMPLETION. NOTIFY ENGINEER 48 HOURS IN ADVANCE OF DATE AND TIME OF INSPECTION.

3H) CLEANING  
- CLEAN STAINS FROM ADJACENT SURFACES WITH CLEANER RECOMMENDED BY MANUFACTURER OF SYSTEM USED.  
- NOTE: WHEN USING SOLVENTS FOR CLEANUP, EXTINGUISH ALL SOURCES OF IGNITION IN THE AREA AND OBSERVE PROPER PRECAUTIONARY MEASURES FOR HANDLING SUCH MATERIALS.  
- REMOVE FOREIGN MATTER FROM FINISHED COATING SURFACES.



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# DPAC - GARAGE CRITICAL REPAIRS

950 13th STREET  
DENVER, COLORADO 80204  
CITY PROJECT NUMBER: 201525595

REVISIONS		
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PROJECT NO: 15.0702.S.02  
DATE: 04/13/2016  
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SHEET TITLE:  
**1-COMPONENT TRAFFIC COATING SPECIFICATION**

SHEET NUMBER:  
**S0.03**

**EPOXY OVERLAY AND LEVELING COMPOUND SPECIFICATION**

**1) PART 1- GENERAL**

1A) SUMMARY  
 - SECTION INCLUDES:  
 ----- CONCRETE OVERLAY AND REPAIR MORTAR SYSTEM FOR EXTERIOR ELEVATED DECKS.

1B) SYSTEM DESCRIPTION  
 - COMPRESSIVE STRENGTH, ASTM C579:  
 ----- 3 HOURS: 1,000 PSI.  
 ----- 24 HOURS: 5,000 PSI.  
 ----- 7 DAYS: 6,000 PSI.

- DESIGN REQUIREMENTS:  
 ----- OVERLAY SHALL BE APPLIED TO AREAS SCHEDULED WITH APPLICATION METHODS REQUIRED.  
 ----- REPAIR MORTAR SHALL BE APPLIED IN SINGLE LIFTS UP TO 3 INCHES (76 MM) IN THICKNESS ON HORIZONTAL SURFACES.

1C) SUBMITTALS  
 - PRODUCT DATA: SUBMIT MANUFACTURER'S TECHNICAL BULLETINS AND MSDS ON EACH PRODUCT.  
 - SUBMIT LIST OF PROJECT REFERENCES AS DOCUMENTED IN THIS SPECIFICATION UNDER QUALITY ASSURANCE ARTICLE. INCLUDE CONTACT NAME AND PHONE NUMBER OF PERSON CHARGED WITH OVERSIGHT OF EACH PROJECT.

1D) QUALITY CONTROL SUBMITTALS:  
 - PROVIDE PROTECTION PLAN OF SURROUNDING AREAS AND NON-CEMENTITIOUS SURFACES.

- APPLICATOR QUALIFICATIONS:  
 ----- COMPANY WITH MINIMUM OF 5 YEARS EXPERIENCE IN APPLICATION OF SPECIFIED PRODUCTS AND SYSTEMS ON PROJECTS OF SIMILAR SIZE AND SCOPE, AND IS ACCEPTABLE TO PRODUCT MANUFACTURER.  
 ----- SUCCESSFUL COMPLETION OF A MINIMUM OF 5 PROJECTS OF SIMILAR SIZE AND COMPLEXITY TO SPECIFIED WORK.

1F) FIELD SAMPLE  
 - INSTALL AT PROJECT SITE OR PRE-SELECTED AREA OF THE GARAGE A MINIMUM OF 1 CUBIC FOOT, USING SPECIFIED REPAIR MORTAR. APPLY SAMPLE IN STRICT ACCORDANCE WITH MANUFACTURER'S WRITTEN APPLICATION INSTRUCTIONS. MANUFACTURER'S REPRESENTATIVE WILL REVIEW TECHNICAL ASPECTS, SURFACE PREPARATION, REPAIR, AND WORKMANSHIP. FIELD SAMPLE WILL BE STANDARD FOR JUDGING WORKMANSHIP ON REMAINDER OF PROJECT.

1G) DELIVERY, STORAGE, AND HANDLING  
 - DELIVER MATERIALS IN MANUFACTURER'S ORIGINAL, UNOPENED, UNDAMAGED CONTAINERS WITH IDENTIFICATION LABELS INTACT.  
 - STORE IN UNOPENED CONTAINERS AT 60 TO 80 DEGREES F IN CLEAN, DRY CONDITIONS.

1H) PROJECT CONDITIONS  
 - ENVIRONMENTAL REQUIREMENTS:  
 ----- ENSURE THAT SUBSTRATE SURFACE AND AMBIENT AIR TEMPERATURE ARE MINIMUM OF 50 DEGREES F AND RISING AT APPLICATION TIME AND REMAIN ABOVE 50 DEGREES F FOR AT LEAST 24 HOURS AFTER APPLICATION. ENSURE THAT FROST OR FROZEN SURFACES ARE THAWED AND DRY.  
 ----- DO NOT APPLY MATERIAL IF SNOW, RAIN, FOG, AND MIST ARE ANTICIPATED WITHIN 12 HOURS AFTER APPLICATION. ALLOW SURFACES TO ATTAIN TEMPERATURE AND CONDITIONS SPECIFIED BEFORE PROCEEDING WITH OVERLAY APPLICATION.  
 ----- DO NOT APPLY OVER SEALANT JOINTS, CONTROL JOINTS, OR OTHER MATERIALS THAT WILL BE AFFECTED BY SOLVENT.

- HOT-WEATHER APPLICATION:  
 ----- IN HOT WEATHER, PRECONDITION MATERIALS TO 65 TO 70 DEGREES F BEFORE MIXING AND APPLYING.  
 ----- CONTINUOUS MIXES OF 30 GALLONS CAN BE MIXED EVERY 3 MINUTES BUT SHALL BE DUMPED WITHIN 6 MINUTES, BE SPREAD WITHIN 10 MINUTES OF PLACEMENT, AND BROADCAST AGGREGATE WITHIN 20 MINUTES.

- COOL-WEATHER APPLICATION:  
 ----- APPLICATION CAN PROCEED IN TEMPERATURES AS LOW AS 50 DEGREES F. CONDITION ALL COMPONENTS TO 80 TO 100 DEGREES F BEFORE MIXING AND APPLYING.  
 ----- AT 50 DEGREES F, A HAND-OPERATED ROLLER SHALL BE USED TO ENSURE THE AGGREGATE PENETRATES THE COOL RESIN.

**2) PART 2- PRODUCTS**

2A) MANUFACTURER'S  
 - SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS FROM THE FOLLOWING MANUFACTURERS:  
 ----- BASF BUILDING SYSTEMS, 889 VALLEY PARK DRIVE, SHAKOPEE, MN 55379  
 ----- SIKA CORPORATION U.S.

2B) SUBSTITUTIONS:  
 - SUBMIT TO OWNER FOR APPROVAL.  
 - CITY PROJECT MANAGER WILL BE SOLE JUDGE OF APPROPRIATENESS OF SUBSTITUTIONS.

2C) MATERIALS  
 - OVERLAY: A RAPID-CURING, SKID-RESISTANT, EPOXY-BASED CONCRETE OVERLAY SYSTEM, MIXED WITH AGGREGATE IT IS DESIGNED FOR USE AS A REPAIR MORTAR.

----- ACCEPTABLE PRODUCTS:  
 - MASTERSEAL 350 BY BASF BUILDING SYSTEMS.  
 - SIKADUR 22, LOW-MOD BY SIKA CORPORATION.

----- COLOR: AMBER.

- PATCH AND REPAIR MORTAR:  
 ----- ACCEPTABLE PRODUCT:  
 - MASTERSEAL 350 BY BASF BUILDING SYSTEMS.  
 - SIKADUR 22, LOW-MOD BY SIKA CORPORATION.

- AGGREGATE:  
 ----- AS SPECIFIED BY THE MANUFACTURER OF THE SYSTEM USED

2D) REPAIR MORTAR MIXING  
 - ENSURE THAT REPAIR MORTAR IS THOROUGHLY MIXED USING FORCED-ACTION MIXER. MIX IN SUITABLY SIZED CONTAINER USING AN APPROPRIATE PADDLE WITH SLOW-SPEED (400 TO 500 RPM) HEAVY-DUTY DRILL.  
 - DO NOT USE FREE-FALL MIXERS.  
 - NEVER MIX PARTIAL BAGS.  
 - DO NOT OVER MIX.  
 - ALWAYS MIX MATERIAL IN CLEAN CONTAINERS.  
 - NEVER RETEMPER REPAIR MORTAR.

2E) MIXING  
 - THOROUGHLY MIX EACH COMPONENT SEPARATELY FOR 2 TO 3 MINUTES.  
 - MIX PART A AND PART B IN PROPER RATIO (1 TO 1 BY VOLUME), USING SLOW-SPEED DRILL AND PADDLE FOR 2 TO 3 MINUTES. KEEP MIXING PADDLE FULLY SUBMERGED DURING MIXING TO AVOID WHIPPING AIR INTO THE PRODUCT.  
 - BECAUSE OF QUICK CURE RATE OF THIS PRODUCT, DO NOT MIX MORE MATERIAL USABLE WITHIN THE POT LIFE OF 15 TO 25 MINUTES AT 75 DEGREES F. ELEVATED TEMPERATURES DECREASE POT LIFE, AND REDUCED TEMPERATURES INCREASE POT LIFE.

**3) PART 3- EXECUTION**

3A) SURFACE PREPARATION  
 - PROTECT ADJACENT WORK AREAS AND FINISH SURFACES FROM DAMAGE DURING SYSTEM APPLICATION.  
 - ENSURE AREA BEING REPAIRED IS STRUCTURALLY SOUND AND FULLY CURED.  
 - CONCRETE PREPARATION:  
 - SHOT BLAST THE SURFACE TO EXPOSE COARSE AGGREGATE AND REMOVE ALL LOOSE MATERIALS SCHEDULED FOR OVERLAY.  
 - MEET THE REQUIREMENTS OF ICRI GUIDELINE NO. 03732 STANDARD CSP 4. TO ENSURE PROPER SURFACE PREPARATION, PERFORM "DIRECT TENSION" TESTING ACCORDANCE WITH ACI 503 APPENDIX A EVERY 4,500 SF.  
 - CLEAN SURFACE BY REMOVING DUST, UNSOUND OR CONTAMINATED MATERIAL, OIL, PAINT, GREASES, OR CORROSION DEPOSITS.  
 - DO NOT USE METHOD OF SURFACE PREPARATION THAT COULD DAMAGE CONCRETE.  
 - WHERE BREAKING OUT IS NOT REQUIRED, ROUGHEN SURFACE AND REMOVE LAITANCE BY MECHANICAL MEANS OR HIGH-PRESSURE WATER WASH. REMOVE OIL AND GREASE DEPOSITS BY STEAM CLEANING, DETERGENT SCRUBBING, OR DEGREASING. TO ENSURE OPTIMUM RESULTS, TEST EFFECTIVENESS OF DECONTAMINATION WITH PULL-OFF TEST.

3B) APPLICATION  
 - PRECONDITION ALL COMPONENTS TO 70 DEGREES F FOR 24 HOURS BEFORE USING.

3C) PATCHING AND REPAIR BY EPOXY MORTAR METHOD:  
 - PRIME THE AREA TO RECEIVE THE EPOXY MORTAR USING NEAT RESIN (PARTS A AND B MIXED BUT WITH NO AGGREGATE). PROVIDE FORMING AS REQUIRED TO PREVENT THE MATERIAL FROM SLUMPING INTO THE JOINT.  
 - SLOWLY ADD UP TO 5 PARTS BY VOLUME OF OVEN DRIED SAND TO 1 PART OF MIXED EPOXY.  
 - PLACE THE EPOXY MORTAR INTO THE REPAIR AREA AND LEVEL WITH A TROWEL OR FLOAT. AVOID OVER WORKING OF THE SURFACE. IF RESIN APPEARS AT THE TOP, CREATING A SLICK FINISH, BROADCAST AGGREGATE TO REFUSAL ONTO LEVELED SURFACE.  
 - ALLOW TIME FOR SUFFICIENT CURING BEFORE REMOVING FORMS, IF APPLICABLE.

3D) OVERLAY BY BROADCAST AGGREGATE METHOD:  
 - SPREAD THE MIXED OVERLAY MATERIAL ONTO THE SUBSTRATE WITH A NOTCHED SQUEEGEE AT A RATE TO ACHIEVE A MINIMUM FINAL THICKNESS OF 40 MILS AT ALL LOCATIONS (APPROX. 40 SF/GALLON OR 2.5 GALLONS/100 SF). PLACE THE EPOXY TO PERMIT A CONTINUOUS OPERATION.  
 - BEGIN THE AGGREGATE BROADCAST IMMEDIATELY, BUT STOP TO MAINTAIN A WET EDGE. BROADCAST AGGREGATE TO COMPLETE SATURATION. IF WET SPOTS DEVELOP, IMMEDIATELY BROADCAST ADDITIONAL AGGREGATE UNTIL A DRY SURFACE IS RE-ESTABLISHED.  
 - APPLY A SECOND COAT IN THE SAME MANNER DESCRIBED ABOVE TO CREATE A FINAL TOTAL OVERLAY THICKNESS OF 80 MILS. THE MAXIMUM RECOAT WINDOW IS 24 HOURS.

3E) CLEANING  
 - CLEAN WET REPAIR MORTAR MATERIAL FROM TOOLS AND EQUIPMENT WITH WATER OR SOLVENT. REMOVE CURED MATERIALS MECHANICALLY.  
 - CLEAN UP AND PROPERLY DISPOSE OF DEBRIS REMAINING ON PROJECT SITE RELATED TO APPLICATION.  
 - REMOVE TEMPORARY COVERINGS AND PROTECTION FROM ADJACENT WORK AREAS.

3F) PROTECTION  
 - PROTECT TRAFFIC MEMBRANE FROM DAMAGE DURING CONSTRUCTION.  
 - PROTECT FROM FREEZING FOR 24 HOURS AFTER APPLICATION.  
 - PROTECT SURFACE PRIOR TO INSTALLATION OF FINISH TOPPING FROM DAMAGE BY USE OF PLYWOOD, MASONITE, OR OTHER SUITABLE PROTECTION COURSE, UNTIL SUBSTANTIAL COMPLETION.

**DPAC - GARAGE CRITICAL REPAIRS**

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SHEET TITLE:  
**EPOXY OVERLAY AND LEVELING COMPOUND SPEC**

SHEET NUMBER:  
**S0.04**

**JOINT SEALANT SPECIFICATION**

**1) PART 1 - GENERAL**

- 1A) SUMMARY  
 - SECTION INCLUDES:  
 - SILICONE JOINT SEALANTS  
 - URETHANE JOINT SEALANTS
- 1B) ABBREVIATIONS  
 - GRADE:  
 - NS = NON-SAG  
 - P = POURABLE (SELF-LEVELING)  
 - TYPE:  
 - S = SINGLE COMPONENT  
 - M = MULTI COMPONENT  
 - USE:  
 - NT = NON-TRAFFIC  
 - T = TRAFFIC  
 - CLASS = MOVEMENT  
 - EXAMPLE: 100/50 WITH 1" JOINT CAN EXPAND TO 2" AND CONTRACT TO 1/2"

- 1C) PRECONSTRUCTION TESTING  
 - PRECONSTRUCTION COMPATIBILITY AND ADHESION TESTING: SUBMIT TO JOINT-SEALANT MANUFACTURERS, FOR TESTING INDICATED BELOW. SAMPLES OF MATERIALS THAT WILL CONTACT OR AFFECT JOINT SEALANTS.  
 - USE ASTM C 1087 TO DETERMINE WHETHER PRIMING AND OTHER SPECIFIC JOINT PREPARATION TECHNIQUES ARE REQUIRED TO OBTAIN RAPID, OPTIMUM ADHESION OF JOINT SEALANTS TO JOINT SUBSTRATES.  
 - SCHEDULE SUFFICIENT TIME FOR TESTING AND ANALYZING RESULTS TO PREVENT DELAYING THE WORK.  
 - FOR MATERIALS FAILING TESTS, OBTAIN JOINT-SEALANT MANUFACTURER'S WRITTEN INSTRUCTIONS FOR CORRECTIVE MEASURES INCLUDING USE OF SPECIALLY FORMULATED PRIMERS.  
 - TESTING WILL NOT BE REQUIRED IF JOINT-SEALANT MANUFACTURERS SUBMIT JOINT PREPARATION DATA THAT ARE BASED ON PREVIOUS TESTING, NOT OLDER THAN 24 MONTHS, OF SEALANT PRODUCTS FOR ADHESION TO, AND COMPATIBILITY WITH, JOINT SUBSTRATES AND OTHER MATERIALS MATCHING THOSE SUBMITTED.  
 - PRECONSTRUCTION FIELD-ADHESION TESTING: BEFORE INSTALLING SEALANTS, FIELD TEST THEIR ADHESION TO PROJECT JOINT SUBSTRATES AS FOLLOWS:  
 - LOCATE TEST JOINTS WHERE INDICATED ON PROJECT OR, IF NOT INDICATED, AS DIRECTED BY ENGINEER.  
 - CONDUCT FIELD TESTS FOR EACH APPLICATION INDICATED BELOW:  
 - EACH KIND OF SEALANT AND JOINT SUBSTRATE INDICATED.  
 - NOTIFY ENGINEER SEVEN DAYS IN ADVANCE OF DATES AND TIMES WHEN TEST JOINTS WILL BE ERRECTED.  
 - ARRANGE FOR TESTS TO TAKE PLACE WITH JOINT-SEALANT MANUFACTURER'S TECHNICAL REPRESENTATIVE PRESENT.  
 - TEST METHOD: TEST JOINT SEALANTS ACCORDING TO METHOD A, FIELD-APPLIED SEALANT JOINT HAND PULL TAB, IN APPENDIX X1 IN ASTM C 1193 OR METHOD A, TAIL PROCEDURE, IN ASTM C 1521.  
 - FOR JOINTS WITH DISSIMILAR SUBSTRATES, VERIFY ADHESION TO EACH SUBSTRATE SEPARATELY; EXTEND CUT ALONG ONE SIDE, VERIFYING ADHESION TO OPPOSITE SIDE. REPEAT PROCEDURE FOR OPPOSITE SIDE.  
 - REPORT WHETHER SEALANT FAILED TO ADHERE TO JOINT SUBSTRATES OR TORE COHESIVELY. INCLUDE DATA ON PULL DISTANCE USED TO TEST EACH KIND OF PRODUCT AND JOINT SUBSTRATE. FOR SEALANTS THAT FAIL ADHESIVELY, RETEST UNTIL SATISFACTORY ADHESION IS OBTAINED.  
 - EVALUATION OF PRECONSTRUCTION FIELD-ADHESION-TEST RESULTS: SEALANTS NOT EVIDENCING ADHESIVE FAILURE FROM TESTING, IN ABSENCE OF OTHER INDICATIONS OF NONCOMPLIANCE WITH REQUIREMENTS, WILL BE CONSIDERED SATISFACTORY. DO NOT USE SEALANTS THAT FAIL TO ADHERE TO JOINT SUBSTRATES DURING TESTING.

- 1D) ACTION SUBMITTALS  
 - PRODUCT DATA: FOR EACH JOINT-SEALANT PRODUCT INDICATED.  
 - SAMPLES FOR INITIAL SELECTION: MANUFACTURER'S COLOR CHARTS CONSISTING OF STRIPS OF CURED SEALANTS SHOWING THE FULL RANGE OF COLORS AVAILABLE FOR EACH PRODUCT EXPOSED TO VIEW.  
 - SAMPLES FOR VERIFICATION: FOR EACH KIND AND COLOR OF JOINT SEALANT REQUIRED, PROVIDE SAMPLES WITH JOINT SEALANTS IN 1/2-INCH- (13-MM) WIDE JOINTS FORMED BETWEEN TWO 6-INCH- (150-MM)-LONG STRIPS OF MATERIAL MATCHING THE APPEARANCE OF EXPOSED SURFACES ADJACENT TO JOINT SEALANTS.

- 1E) INFORMATIONAL SUBMITTALS  
 - QUALIFICATION DATA: FOR QUALIFIED INSTALLER AND TESTING AGENCY.  
 - PRODUCT CERTIFICATES: FOR EACH KIND OF JOINT SEALANT AND ACCESSORY, FROM MANUFACTURER.  
 - SEALANT, WATERPROOFING, AND RESTORATION INSTITUTE (SWRI) VALIDATION CERTIFICATE: FOR EACH SEALANT SPECIFIED TO BE VALIDATED BY SWRI'S SEALANT VALIDATION PROGRAM.  
 - PRODUCT TEST REPORTS: BASED ON EVALUATION OF COMPREHENSIVE TESTS PERFORMED BY A QUALIFIED TESTING AGENCY, INDICATING THAT SEALANTS COMPLY WITH REQUIREMENTS.  
 - PRECONSTRUCTION COMPATIBILITY AND ADHESION TEST REPORTS: FROM SEALANT MANUFACTURER, INDICATING THE FOLLOWING:  
 - MATERIALS FORMING JOINT SUBSTRATES AND JOINT-SEALANT BACKINGS HAVE BEEN TESTED FOR COMPATIBILITY AND ADHESION WITH JOINT SEALANTS.  
 - INTERPRETATION OF TEST RESULTS AND WRITTEN RECOMMENDATIONS FOR PRIMERS AND SUBSTRATE PREPARATION NEEDED FOR ADHESION.  
 - PRECONSTRUCTION FIELD-ADHESION TEST REPORTS: INDICATE WHICH SEALANTS AND JOINT PREPARATION METHODS RESULTED IN OPTIMUM ADHESION TO JOINT SUBSTRATES BASED ON TESTING SPECIFIED IN "PRECONSTRUCTION TESTING" ARTICLE.  
 - FIELD-ADHESION TEST REPORTS: FOR EACH SEALANT APPLICATION TESTED.  
 - WARRANTIES: SAMPLE OF SPECIAL WARRANTIES.

- 1F) QUALITY ASSURANCE  
 - INSTALLER QUALIFICATIONS: MANUFACTURER'S AUTHORIZED REPRESENTATIVE WHO IS TRAINED AND APPROVED FOR INSTALLATION OF UNITS REQUIRED FOR THIS PROJECT.  
 - SOURCE LIMITATIONS: OBTAIN EACH KIND OF JOINT SEALANT FROM SINGLE SOURCE FROM SINGLE MANUFACTURER.  
 - PRODUCT TESTING: TEST JOINT SEALANTS USING A QUALIFIED TESTING AGENCY.  
 - TESTING AGENCY QUALIFICATIONS: AN INDEPENDENT TESTING AGENCY QUALIFIED ACCORDING TO ASTM C 1021 TO CONDUCT THE TESTING INDICATED.  
 - TEST ACCORDING TO SWRI'S SEALANT VALIDATION PROGRAM FOR COMPLIANCE WITH REQUIREMENTS SPECIFIED BY REFERENCE TO ASTM C 920 FOR ADHESION AND COHESION UNDER CYCLIC MOVEMENT, ADHESION-IN-PEEL, AND INDENTATION HARDNESS.  
 - MOCKUPS: CRATE MOCK UP OF ASSEMBLY WITH SEALANT. USE MATERIALS AND INSTALLATION METHODS SPECIFIED IN THIS SECTION.  
 - PREINSTALLATION CONFERENCE: CONDUCT CONFERENCE AT PROJECT SITE.

- 1G) PROJECT CONDITIONS  
 - DO NOT PROCEED WITH INSTALLATION OF JOINT SEALANTS UNDER THE FOLLOWING CONDITIONS:  
 - WHEN AMBIENT AND SUBSTRATE TEMPERATURE CONDITIONS ARE OUTSIDE LIMITS PERMITTED BY JOINT-SEALANT MANUFACTURER OR ARE BELOW 40 DEG F (5 DEG C).  
 - WHEN JOINT SUBSTRATES ARE WET.  
 - WHERE JOINT WIDTHS ARE LESS THAN THOSE ALLOWED BY JOINT-SEALANT MANUFACTURER FOR APPLICATIONS INDICATED.  
 - WHERE CONTAMINANTS CAPABLE OF INTERFERING WITH ADHESION HAVE NOT YET BEEN REMOVED FROM JOINT SUBSTRATES.

- 1H) WARRANTY  
 - SPECIAL INSTALLER'S WARRANTY: MANUFACTURER'S STANDARD FORM IN WHICH INSTALLER AGREES TO REPAIR OR REPLACE JOINT SEALANTS THAT DO NOT COMPLY WITH PERFORMANCE AND OTHER REQUIREMENTS SPECIFIED IN THIS SECTION WITHIN SPECIFIED WARRANTY PERIOD.  
 - WARRANTY PERIOD: TWO (2) YEARS FROM DATE OF SUBSTANTIAL COMPLETION FOR SILICONE SEALANTS.  
 - SPECIAL MANUFACTURER'S WARRANTY: MANUFACTURER'S STANDARD FORM IN WHICH JOINT-SEALANT MANUFACTURER AGREES TO FURNISH JOINT SEALANTS TO REPAIR OR REPLACE THOSE THAT DO NOT COMPLY WITH PERFORMANCE AND OTHER REQUIREMENTS SPECIFIED IN THIS SECTION WITHIN SPECIFIED WARRANTY PERIOD.  
 - WARRANTY PERIOD: TEN (10) YEARS FROM DATE OF SUBSTANTIAL COMPLETION FOR SILICONE SEALANTS.  
 - SPECIAL WARRANTIES SPECIFIED IN THIS ARTICLE EXCLUDE DETERIORATION OR FAILURE OF JOINT SEALANTS FROM THE FOLLOWING:  
 - MOVEMENT OF THE STRUCTURE CAUSED BY STRUCTURAL SETTLEMENT OR ERRORS ATTRIBUTABLE TO DESIGN OR CONSTRUCTION RESULTING IN STRESSES ON THE SEALANT EXCEEDING SEALANT MANUFACTURER'S WRITTEN SPECIFICATIONS FOR SEALANT ELONGATION AND COMPRESSION.  
 - DISINTEGRATION OF JOINT SUBSTRATES FROM NATURAL CAUSES EXCEEDING DESIGN SPECIFICATIONS.  
 - MECHANICAL DAMAGE CAUSED BY INDIVIDUALS, TOOLS, OR OTHER OUTSIDE AGENTS.  
 - CHANGES IN SEALANT APPEARANCE CAUSED BY ACCUMULATION OF DIRT OR OTHER ATMOSPHERIC CONTAMINANTS.

**2) PART 2 - PRODUCTS**

- 2A) MATERIALS, GENERAL  
 - COMPATIBILITY: PROVIDE JOINT SEALANTS, BACKINGS, AND OTHER RELATED MATERIALS THAT ARE COMPATIBLE WITH ONE ANOTHER AND WITH JOINT SUBSTRATES UNDER CONDITIONS OF SERVICE AND APPLICATION, AS DEMONSTRATED BY JOINT-SEALANT MANUFACTURER, BASED ON TESTING AND FIELD EXPERIENCE.  
 - LIQUID-APPLIED JOINT SEALANTS: COMPLY WITH ASTM C 920 AND OTHER REQUIREMENTS INDICATED FOR EACH LIQUID-APPLIED JOINT SEALANT SPECIFIED, INCLUDING THOSE REFERENCING ASTM C 920 CLASSIFICATIONS FOR TYPE, GRADE, CLASS, AND USES RELATED TO EXPOSURE AND JOINT SUBSTRATES.  
 - SUITABILITY FOR IMMERSION IN LIQUIDS. WHERE SEALANTS ARE INDICATED FOR USE I FOR JOINTS THAT WILL BE CONTINUOUSLY IMMersed IN LIQUIDS, PROVIDE PRODUCTS THAT HAVE UNDERGONE TESTING ACCORDING TO ASTM C 1247. LIQUID USED FOR TESTING SEALANTS IS DEIONIZED WATER, UNLESS OTHERWISE INDICATED.  
 - STAIN-TEST-RESPONSE CHARACTERISTICS: WHERE SEALANTS ARE SPECIFIED TO BE NONSTAINING TO POROUS SUBSTRATES, PROVIDE PRODUCTS THAT HAVE UNDERGONE TESTING ACCORDING TO ASTM C 1248 AND HAVE NOT STAINED POROUS JOINT SUBSTRATES INDICATED FOR PROJECT.  
 - COLORS OF EXPOSED JOINT SEALANTS: AS SELECTED BY HOA FROM MANUFACTURER'S FULL RANGE.

- 2B) SILICONE JOINT SEALANTS  
 - SINGLE-COMPONENT, NONSAG, NEUTRAL-CURING SILICONE JOINT SEALANT: ASTM C 920, TYPE S, GRADE NS, CLASS 100/50, FOR USE NT.  
 - PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:  
 - DOW CORNING CORPORATION; 790 OR NS PARKING STRUCTURE SEALANT.  
 - GE ADVANCED MATERIALS - SILICONES; SILPRUF LM SCS2700.  
 - MAY NATIONAL ASSOCIATES, INC.; BONDAFLEX SIL 290 OR BONDAFLEX SIL 728 NS.  
 - PECORA CORPORATION; 301 NS, 311 NS, 890 OR 890FTS.  
 - SIKA CORPORATION, CONSTRUCTION PRODUCTS DIVISION; SIKASIL-C990.  
 - TREMCO INCORPORATED; SPECTREM TOR SPECTREM 800.

- SINGLE-COMPONENT, NONSAG, TRAFFIC-GRADE, NEUTRAL-CURING SILICONE JOINT SEALANT: ASTM C 920, TYPE S, GRADE NS, CLASS 100/50, FOR USE T.  
 - PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:  
 - DOW CORNING CORPORATION; 790 OR NS PARKING STRUCTURE SEALANT.  
 - MAY NATIONAL ASSOCIATES, INC.; BONDAFLEX SIL 728 NS.  
 - PECORA CORPORATION; 301 NS OR 311 NS.  
 - TREMCO INCORPORATED; SPECTREM 800.

- 2C) URETHANE JOINT SEALANTS  
 - SINGLE-COMPONENT, POURABLE, TRAFFIC-GRADE, URETHANE JOINT SEALANT: ASTM C 920, TYPE S, GRADE P, CLASS 25, FOR USE T.  
 - PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:  
 - BASF BUILDING SYSTEMS; MASTERSEAL SL 1.  
 - BOSTIK, INC.; CHEM-CALK 950.  
 - MAY NATIONAL ASSOCIATES, INC.; BONDAFLEX PUR 35 SL.  
 - PECORA CORPORATION; UREXPAN NR-201.  
 - POLYMERIC SYSTEMS, INC.; FLEXIPRENE 952.  
 - SCHNEE-MOREHEAD, INC.; PERMATHANE SM7101.  
 - SIKA CORPORATION, CONSTRUCTION PRODUCTS DIVISION; SIKAFLEX - 1CSL.  
 - TREMCO INCORPORATED; VULKEM 45.

- MULTICOMPONENT, NONSAG, URETHANE JOINT SEALANT: ASTM C 920, TYPE M, GRADE NS, CLASS 25, FOR USE NT.  
 - PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:  
 - BASF BUILDING SYSTEMS; MASTERSEAL NP 2.  
 - BOSTIK, INC.; CHEM-CALK 500.  
 - MAY NATIONAL ASSOCIATES, INC.; BONDAFLEX PUR 201.  
 - PECORA CORPORATION; DYNATRED.  
 - SIKA CORPORATION, CONSTRUCTION PRODUCTS DIVISION; SIKAFLEX - 2C NS SIKAFLEX - 2C EZ MIX.  
 - TREMCO INCORPORATED; VULKEM 227.

- 2D) JOINT SEALANT BACKING  
 - GENERAL: PROVIDE SEALANT BACKINGS OF MATERIAL THAT ARE NONSTAINING; ARE COMPATIBLE WITH JOINT SUBSTRATES, SEALANTS, PRIMERS, AND OTHER JOINT FILLERS; AND ARE APPROVED FOR APPLICATIONS INDICATED BY SEALANT MANUFACTURER BASED ON FIELD EXPERIENCE AND LABORATORY TESTING.  
 - CYLINDRICAL SEALANT BACKINGS: ASTM C 1330, TYPE C (CLOSED-CELL MATERIAL WITH A SURFACE SKIN), AND OF SIZE AND DENSITY TO CONTROL SEALANT DEPTH AND OTHERWISE CONTRIBUTE TO PRODUCING OPTIMUM SEALANT PERFORMANCE.  
 - BOND-BREAKER TAPE: POLYETHYLENE TAPE OR OTHER PLASTIC TAPE RECOMMENDED BY SEALANT MANUFACTURER FOR PREVENTING SEALANT FROM ADHERING TO RIGID, INFLEXIBLE JOINT-FILLER MATERIALS OR JOINT SURFACES AT BACK OF JOINT. PROVIDE SELF-ADHESIVE TAPE WHERE APPLICABLE.

- 2E) MISCELLANEOUS MATERIALS  
 - PRIMER: MATERIAL RECOMMENDED BY JOINT-SEALANT MANUFACTURER WHERE REQUIRED FOR ADHESION OF SEALANT TO JOINT SUBSTRATES INDICATED, AS DETERMINED FROM PRECONSTRUCTION JOINT-SEALANT-SUBSTRATE TESTS AND FIELD TESTS.  
 - CLEANERS FOR NONPOROUS SURFACES: CHEMICAL CLEANERS ACCEPTABLE TO MANUFACTURERS OF SEALANTS AND SEALANT BACKING MATERIALS, FREE OF OILY RESIDUES OR OTHER SUBSTANCES CAPABLE OF STAINING OR HARMING JOINT SUBSTRATES AND ADJACENT NONPOROUS SURFACES IN ANY WAY, AND FORMULATED TO PROMOTE OPTIMUM ADHESION OF SEALANTS TO JOINT SUBSTRATES.  
 - MASKING TAPE: NONSTAINING, NONABSORBENT MATERIAL COMPATIBLE WITH JOINT SEALANTS AND SURFACES ADJACENT TO JOINTS.

**3) PART 3 - EXECUTION**

- 3A) EXAMINATION  
 - EXAMINE JOINTS INDICATED TO RECEIVE JOINT SEALANTS, WITH INSTALLER PRESENT, FOR COMPLIANCE WITH REQUIREMENTS FOR JOINT CONFIGURATION, INSTALLATION TOLERANCES, AND OTHER CONDITIONS AFFECTING JOINT-SEALANT PERFORMANCE.  
 - PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

- 3B) PREPARATION  
 - SURFACE CLEANING OF JOINTS: CLEAN OUT JOINTS IMMEDIATELY BEFORE INSTALLING JOINT SEALANTS TO COMPLY WITH JOINT-SEALANT MANUFACTURER'S WRITTEN INSTRUCTIONS AND THE FOLLOWING REQUIREMENTS:  
 - REMOVE ALL FOREIGN MATERIAL FROM JOINT SUBSTRATES THAT COULD INTERFERE WITH ADHESION OF JOINT SEALANT, INCLUDING DUST, PAINTS (EXCEPT FOR PERMANENT, PROTECTIVE COATINGS TESTED AND APPROVED FOR SEALANT ADHESION AND COMPATIBILITY BY SEALANT MANUFACTURER), OLD JOINT SEALANTS, OIL, GREASE, WATERPROOFING, WATER REPELLENTS, WATER, SURFACE DIRT, AND FROST.  
 - CLEAN POROUS JOINT SUBSTRATE SURFACES BY BRUSHING, GRINDING, MECHANICAL ABRADING, OR A COMBINATION OF THESE METHODS TO PRODUCE A CLEAN, SOUND SUBSTRATE CAPABLE OF DEVELOPING OPTIMUM BOND WITH JOINT SEALANTS. REMOVE LOOSE PARTICLES REMAINING AFTER CLEANING OPERATIONS ABOVE BY VACUUMING OR BLOWING OUT JOINTS WITH OIL-FREE COMPRESSED AIR. POROUS JOINT SUBSTRATES INCLUDE THE FOLLOWING:  
 - CONCRETE.  
 - MASONRY.  
 - REMOVE LAITANCE AND FORM-RELEASE AGENTS FROM CONCRETE.

- CLEAN NONPOROUS JOINT SUBSTRATE SURFACES WITH CHEMICAL CLEANERS OR OTHER MEANS THAT DO NOT STAIN, HARM SUBSTRATES, OR LEAVE RESIDUES CAPABLE OF INTERFERING WITH ADHESION OF JOINT SEALANTS. NONPOROUS JOINT SUBSTRATES INCLUDE THE FOLLOWING:  
 - METAL.

- JOINT PRIMING: PRIME JOINT SUBSTRATES WHERE RECOMMENDED BY JOINT-SEALANT MANUFACTURER OR AS INDICATED BY PRECONSTRUCTION JOINT-SEALANT-SUBSTRATE TESTS OR PRIOR EXPERIENCE. APPLY PRIMER TO COMPLY WITH JOINT-SEALANT MANUFACTURER'S WRITTEN INSTRUCTIONS. CONFINE PRIMERS TO AREAS OF JOINT-SEALANT BOND; DO NOT ALLOW SPILLAGE OR MIGRATION ONTO ADJOINING SURFACES.  
 - MASKING TAPE: USE MASKING TAPE WHERE REQUIRED TO PREVENT CONTACT OF SEALANT OR PRIMER WITH ADJOINING SURFACES THAT OTHERWISE WOULD BE PERMANENTLY STAINED OR DAMAGED BY SUCH CONTACT OR BY CLEANING METHODS REQUIRED TO REMOVE SEALANT SMEARS. REMOVE TAPE IMMEDIATELY AFTER TOOLING WITHOUT DISTURBING JOINT SEAL.

- 3C) INSTALLATION OF JOINT SEALANTS  
 - GENERAL: COMPLY WITH JOINT-SEALANT MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS FOR PRODUCTS AND APPLICATIONS INDICATED, UNLESS MORE STRINGENT REQUIREMENTS APPLY.  
 - SEALANT INSTALLATION STANDARD: COMPLY WITH RECOMMENDATIONS IN ASTM C 1193 FOR USE OF JOINT SEALANTS AS APPLICABLE TO MATERIALS, APPLICATIONS, AND CONDITIONS INDICATED.  
 - INSTALL SEALANT BACKINGS OF KIND INDICATED TO SUPPORT SEALANTS DURING APPLICATION AND AT POSITION REQUIRED TO PRODUCE CROSS-SECTIONAL SHAPES AND DEPTHS OF INSTALLED SEALANTS RELATIVE TO JOINT WIDTHS THAT ALLOW OPTIMUM SEALANT MOVEMENT CAPABILITY.  
 - DO NOT LEAVE GAPS BETWEEN ENDS OF SEALANT BACKINGS.  
 - DO NOT STRETCH, TWIST, PUNCTURE, OR TEAR SEALANT BACKINGS.  
 - REMOVE ABSORBENT SEALANT BACKINGS THAT HAVE BECOME WET BEFORE SEALANT APPLICATION AND REPLACE THEM WITH DRY MATERIALS.  
 - INSTALL BOND-BREAKER TAPE BEHIND SEALANTS WHERE SEALANT BACKINGS ARE NOT USED BETWEEN SEALANTS AND BACKS OF JOINTS.  
 - INSTALL SEALANTS USING PROVEN TECHNIQUES THAT COMPLY WITH THE FOLLOWING AND AT THE SAME TIME BACKINGS ARE INSTALLED:  
 - PLACE SEALANTS SO THEY DIRECTLY CONTACT AND FULLY WET JOINT SUBSTRATES.  
 - COMPLETELY FILL RECESSES IN EACH JOINT CONFIGURATION.  
 - PRODUCE UNIFORM, CROSS-SECTIONAL SHAPES AND DEPTHS RELATIVE TO JOINT WIDTHS THAT ALLOW OPTIMUM SEALANT MOVEMENT CAPABILITY.  
 - TOOLING OF NONSAG SEALANTS: IMMEDIATELY AFTER SEALANT APPLICATION AND BEFORE SKINNING OR CURING BEGINS, TOOL SEALANTS ACCORDING TO REQUIREMENTS SPECIFIED IN SUBPARAGRAPHS BELOW TO FORM SMOOTH, UNIFORM BEADS OF CONFIGURATION INDICATED; TO ELIMINATE AIR POCKETS; AND TO ENSURE CONTACT AND ADHESION OF SEALANT WITH SIDES OF JOINT.  
 - REMOVE EXCESS SEALANT FROM SURFACES ADJACENT TO JOINTS.  
 - USE TOOLING AGENTS THAT ARE APPROVED IN WRITING BY SEALANT MANUFACTURER AND THAT DO NOT DISCOLOR SEALANTS OR ADJACENT SURFACES.  
 - PROVIDE CONCAVE JOINT PROFILE PER FIGURE 8A IN ASTM C 1193, UNLESS OTHERWISE INDICATED.

- 3D) FIELD QUALITY CONTROL  
 - FIELD-ADHESION TESTING: FIELD TEST JOINT-SEALANT ADHESION TO JOINT SUBSTRATES AS FOLLOWS:  
 - EXTENT OF TESTING: TEST COMPLETED AND CURED SEALANT JOINTS AS FOLLOWS:  
 - PERFORM 10 TESTS FOR THE FIRST 500 FEET OF JOINT LENGTH FOR EACH KIND OF SEALANT AND JOINT SUBSTRATE.  
 - PERFORM 1 TEST FOR EACH 500 FEET OF JOINT LENGTH THEREAFTER OR 1 TEST PER EACH FLOOR PER ELEVATION.  
 - TEST METHOD: TEST JOINT SEALANTS ACCORDING TO METHOD A, FIELD-APPLIED SEALANT JOINT HAND PULL TAB, IN APPENDIX X1 IN ASTM C 1193 OR METHOD A, TAIL PROCEDURE, IN ASTM C 1521.  
 - FOR JOINTS WITH DISSIMILAR SUBSTRATES, VERIFY ADHESION TO EACH SUBSTRATE SEPARATELY; EXTEND CUT ALONG ONE SIDE, VERIFYING ADHESION TO OPPOSITE SIDE. REPEAT PROCEDURE FOR OPPOSITE SIDE.

- INSPECT TESTED JOINTS AND REPORT ON THE FOLLOWING:  
 - WHETHER SEALANTS FILLED JOINT CAVITIES AND ARE FREE OF VOIDS.  
 - WHETHER SEALANT DIMENSIONS AND CONFIGURATIONS COMPLY WITH SPECIFIED REQUIREMENTS.  
 - WHETHER SEALANTS IN JOINTS CONNECTED TO PULLED-OUT PORTION FAILED TO ADHERE TO JOINT SUBSTRATES OR TORE COHESIVELY. INCLUDE DATA ON PULL DISTANCE USED TO TEST EACH KIND OF PRODUCT AND JOINT SUBSTRATE. COMPARE THESE RESULTS TO DETERMINE IF ADHESION PASSES SEALANT MANUFACTURER'S FIELD-ADHESION HAND-PULL TEST CRITERIA.  
 - RECORD TEST RESULTS IN A FIELD-ADHESION-TEST LOG. INCLUDE DATES WHEN SEALANTS WERE INSTALLED, NAMES OF PERSONS WHO INSTALLED SEALANTS, TEST DATES, TEST LOCATIONS, WHETHER JOINTS WERE PRIMED, ADHESION RESULTS AND PERCENT ELONGATIONS, SEALANT FILL, SEALANT CONFIGURATION, AND SEALANT DIMENSIONS.

- REPAIR SEALANTS PULLED FROM TEST AREA BY APPLYING NEW SEALANTS FOLLOWING SAME PROCEDURES USED ORIGINALLY TO SEAL JOINTS. ENSURE THAT ORIGINAL SEALANT SURFACES ARE CLEAN AND THAT NEW SEALANT CONTACTS ORIGINAL SEALANT.  
 - EVALUATION OF FIELD-ADHESION TEST RESULTS: SEALANTS NOT EVIDENCING ADHESIVE FAILURE FROM TESTING OR NONCOMPLIANCE WITH OTHER INDICATED REQUIREMENTS WILL BE CONSIDERED SATISFACTORY. REMOVE SEALANTS THAT FAIL TO ADHERE TO JOINT SUBSTRATES DURING TESTING OR TO COMPLY WITH OTHER REQUIREMENTS. RETEST FAILED APPLICATIONS UNTIL TEST RESULTS PROVE SEALANTS COMPLY WITH INDICATED REQUIREMENTS.3.5 CLEANING  
 - CLEAN OFF EXCESS SEALANT OR SEALANT SMEARS ADJACENT TO JOINTS AS THE WORK PROGRESSES BY METHODS AND WITH CLEANING MATERIALS APPROVED IN WRITING BY MANUFACTURERS OF JOINT SEALANTS AND OF PRODUCTS IN WHICH JOINTS OCCUR.

- 3E) PROTECTION  
 - PROTECT JOINT SEALANTS DURING AND AFTER CURING PERIOD FROM CONTACT WITH CONTAMINATING SUBSTANCES AND FROM DAMAGE RESULTING FROM CONSTRUCTION OPERATIONS OR OTHER CAUSES SO SEALANTS ARE WITHOUT DETERIORATION OR DAMAGE AT TIME OF SUBSTANTIAL COMPLETION. IF, DESPITE SUCH PROTECTION, DAMAGE OR DETERIORATION OCCURS, CUT OUT AND REMOVE DAMAGED OR DETERIORATED JOINT SEALANTS IMMEDIATELY SO INSTALLATIONS WITH REPAIRED AREAS ARE INDISTINGUISHABLE FROM ORIGINAL WORK.



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**DPAC - GARAGE CRITICAL REPAIRS**

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 DENVER, COLORADO 80204

CITY PROJECT NUMBER: 201525595

REVISIONS		
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PROJECT NO: 15.0702.S.02  
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**JOINT SEALANT SPECIFICATION**

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**PENETRATING SEALER SPECIFICATION**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 01 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.

**1.2 SUMMARY**

A. SECTION INCLUDES PENETRATING WATER-REPELLENT TREATMENTS FOR THE FOLLOWING VERTICAL AND HORIZONTAL SURFACES:

1. PRECAST CONCRETE.

**1.3 PERFORMANCE REQUIREMENTS**

A. GENERAL PERFORMANCE: WATER REPELLENTS SHALL MEET PERFORMANCE REQUIREMENTS INDICATED WITHOUT FAILURE DUE TO DEFECTIVE MANUFACTURE, FABRICATION, OR INSTALLATION.

1. WATER REPELLENTS: COMPLY WITH PERFORMANCE REQUIREMENTS SPECIFIED, AS DETERMINED BY TESTING ON MANUFACTURER'S STANDARD SUBSTRATE ASSEMBLIES REPRESENTING THOSE INDICATED FOR THIS PROJECT.

B. WATER ABSORPTION: MINIMUM 90 PERCENT REDUCTION OF WATER ABSORPTION AFTER 24 HOURS IN COMPARISON OF TREATED AND UNTREATED SPECIMENS.

1. PRECAST CONCRETE: ASTM C 642.

C. DURABILITY: MAXIMUM 5 PERCENT LOSS OF WATER-REPELLENT PROPERTIES AFTER 2500 HOURS OF WEATHERING ACCORDING TO ASTM G 154 IN COMPARISON TO WATER-REPELLENT-TREATED SPECIMENS BEFORE WEATHERING.

**1.4 PRECONSTRUCTION TESTING**

A. PRECONSTRUCTION TESTING: INSTALLED WATER REPELLENTS SHALL COMPLY WITH PERFORMANCE REQUIREMENTS INDICATED, AS EVIDENCED BY REPORTS OF TESTS PERFORMED ON MANUFACTURER'S STANDARD SUBSTRATE ASSEMBLIES BY A QUALIFIED TESTING AGENCY.

1. SELECT SIZES AND CONFIGURATIONS OF ASSEMBLIES TO ADEQUATELY DEMONSTRATE CAPABILITY OF WATER REPELLENTS TO COMPLY WITH PERFORMANCE REQUIREMENTS.

2. IN ADDITION TO VERIFYING PERFORMANCE REQUIREMENTS, USE TEST APPLICATIONS TO VERIFY MANUFACTURER'S WRITTEN INSTRUCTIONS FOR APPLICATION PROCEDURE AND OPTIMUM RATES OF PRODUCT APPLICATION TO SUBSTRATE ASSEMBLIES.

3. NOTIFY DESIGN PROFESSIONAL SEVEN DAYS IN ADVANCE OF THE DATES AND TIMES WHEN ASSEMBLIES WILL BE TESTED.

**1.5 ACTION SUBMITTALS**

A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.

1. INCLUDE MANUFACTURER'S PRINTED STATEMENT OF VOC CONTENT.

2. INCLUDE MANUFACTURER'S STANDARD COLORS.

3. INCLUDE MANUFACTURER'S RECOMMENDED NUMBER OF COATS FOR EACH TYPE OF SUBSTRATE AND SPREADING RATE FOR EACH SEPARATE COAT.

4. PRINTOUT OF CURRENT "MPI APPROVED PRODUCTS LIST" FOR EACH PRODUCT CATEGORY SPECIFIED IN PART 2 THAT SPECIFIES WATER REPELLENTS APPROVED BY MPI, WITH THE PROPOSED PRODUCT HIGHLIGHTED.

B. SAMPLES: FOR EACH TYPE OF WATER REPELLENT AND SUBSTRATE INDICATED, 12 BY 12 INCHES IN SIZE, WITH SPECIFIED WATER-REPELLENT TREATMENT APPLIED TO HALF OF EACH SAMPLE.

**1.6 INFORMATIONAL SUBMITTALS**

A. QUALIFICATION DATA: FOR QUALIFIED APPLICATOR.

B. PRODUCT CERTIFICATES: FOR EACH TYPE OF WATER REPELLENT, FROM MANUFACTURER.

C. PRECONSTRUCTION TESTING REPORTS: FOR WATER-REPELLENT-TREATED SUBSTRATES.

D. FIELD QUALITY-CONTROL REPORTS.

E. WARRANTY: SPECIAL WARRANTY SPECIFIED IN THIS SECTION.

**1.7 QUALITY ASSURANCE**

A. APPLICATOR QUALIFICATIONS: AN EMPLOYER OF WORKERS TRAINED AND APPROVED BY MANUFACTURER.

B. MPI STANDARDS: COMPLY WITH MPI STANDARDS INDICATED AND PROVIDE WATER REPELLENTS LISTED IN ITS "MPI APPROVED PRODUCTS LIST."

C. MOCKUPS: APPLY WATER REPELLENT TO EACH TYPE OF SUBSTRATE REQUIRED.

1. LOCATE EACH TEST APPLICATION AS SHOWN ON DRAWINGS.

2. SIZE: 5 SQUARE FEET.

3. FINAL APPROVAL BY OWNER OF WATER-REPELLENT APPLICATION WILL BE FROM TEST APPLICATIONS.

**1.8 PROJECT CONDITIONS**

A. LIMITATIONS: PROCEED WITH APPLICATION ONLY WHEN THE FOLLOWING EXISTING AND FORECASTED WEATHER AND SUBSTRATE CONDITIONS PERMIT WATER REPELLENTS TO BE APPLIED ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS AND WARRANTY REQUIREMENTS:

1. CONCRETE SURFACES AND MORTAR HAVE CURED FOR NOT LESS THAN 28 DAYS.

2. BUILDING HAS BEEN CLOSED IN FOR NOT LESS THAN 30 DAYS BEFORE TREATING WALL ASSEMBLIES.

3. AMBIENT TEMPERATURE IS ABOVE 40 DEG F AND BELOW 100 DEG F AND WILL REMAIN SO FOR 24 HOURS.

4. SUBSTRATE IS NOT FROZEN AND SUBSTRATE-SURFACE TEMPERATURE IS ABOVE 40 DEG F AND BELOW 100 DEG F.

5. RAIN OR SNOW IS NOT PREDICTED WITHIN 24 HOURS.

6. NOT LESS THAN SEVEN DAYS HAVE PASSED SINCE SURFACES WERE LAST WET.

7. WINDY CONDITIONS DO NOT EXIST THAT MIGHT CAUSE WATER REPELLENT TO BE BLOWN ONTO VEGETATION OR SURFACES NOT INTENDED TO BE TREATED.

**1.9 WARRANTY**

A. SPECIAL WARRANTY: MANUFACTURER'S STANDARD FORM IN WHICH MANUFACTURER AND APPLICATOR AGREE(S) TO REPAIR OR REPLACE MATERIALS THAT FAIL TO MAINTAIN WATER REPELLENCY SPECIFIED IN "PERFORMANCE REQUIREMENTS" ARTICLE WITHIN SPECIFIED WARRANTY PERIOD.

1. WARRANTY PERIOD: FIVE YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

**PART 2 - PRODUCTS**

**2.1 PENETRATING SEALERS**

A. SILANE, PENETRATING WATER REPELLENT: CLEAR, CONTAINING 100 PERCENT OR MORE SOLIDS OF ALKYL TRIALKOXSILANES; WITH ALCOHOL, MINERAL SPIRITS, WATER, OR OTHER PROPRIETARY SOLVENT CARRIER; AND WITH 400 G/L OR LESS OF VOCs.

1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:

- ADVANCED CHEMICAL TECHNOLOGIES, INC.; SIL-ACT ATS-100.
- BASF CONSTRUCTION CHEMICALS, LLC; MASTERPROTECT H 1000.
- CHEMICAL PRODUCTS INDUSTRIES, INC.; SW-244-100 VOC.

**PART 2 - PRODUCTS**

**2.1 PENETRATING SEALERS**

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- CHEMICAL PRODUCTS INDUSTRIES, INC.; SW-244-100 VOC.

**PART 3 - EXECUTION**

**3.1 EXAMINATION**

A. EXAMINE SUBSTRATES, AREAS, AND CONDITIONS, WITH APPLICATOR PRESENT, FOR COMPLIANCE WITH REQUIREMENTS AND CONDITIONS AFFECTING PERFORMANCE OF THE WORK.

1. VERIFY THAT SURFACES ARE CLEAN AND DRY ACCORDING TO WATER-REPELLENT MANUFACTURER'S REQUIREMENTS. CHECK MOISTURE CONTENT IN THREE REPRESENTATIVE LOCATIONS BY METHOD RECOMMENDED BY MANUFACTURER.

2. INSPECT FOR PREVIOUSLY APPLIED TREATMENTS THAT MAY INHIBIT PENETRATION OR PERFORMANCE OF WATER REPELLENTS.

3. VERIFY THAT THERE IS NO EFFLORESCENCE OR OTHER REMOVABLE RESIDUES THAT WOULD BE TRAPPED BENEATH THE APPLICATION OF WATER REPELLENT.

4. VERIFY THAT REQUIRED REPAIRS ARE COMPLETE, CURED, AND DRY BEFORE APPLYING WATER REPELLENT.

B. TEST PH LEVEL ACCORDING TO WATER-REPELLENT MANUFACTURER'S WRITTEN INSTRUCTIONS TO ENSURE CHEMICAL BOND TO SILICA-CONTAINING OR SILICEOUS MINERALS.

C. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

**3.2 PREPARATION**

A. CLEANING: BEFORE APPLICATION OF WATER REPELLENT, CLEAN SUBSTRATE OF SUBSTANCES THAT COULD IMPAIR PENETRATION OR PERFORMANCE OF PRODUCT ACCORDING TO WATER-REPELLENT MANUFACTURER'S WRITTEN INSTRUCTIONS AND AS FOLLOWS:

1. PRECAST CONCRETE: REMOVE OIL, CURING COMPOUNDS, LAITANCE, AND OTHER SUBSTANCES THAT INHIBIT PENETRATION OR PERFORMANCE OF WATER REPELLENTS ACCORDING TO ASTM E 1857.

B. PROTECT ADJOINING WORK, INCLUDING MORTAR AND SEALANT BOND SURFACES, FROM SPILLAGE OR BLOW-OVER OF WATER REPELLENT. COVER ADJOINING AND NEARBY SURFACES OF ALUMINUM AND GLASS IF THERE IS THE POSSIBILITY OF WATER REPELLENT BEING DEPOSITED ON SURFACES. COVER LIVE VEGETATION.

C. COORDINATION WITH MORTAR JOINTS: DO NOT APPLY WATER REPELLENT UNTIL POINTING MORTAR FOR JOINTS ADJACENT TO SURFACES RECEIVING WATER-REPELLENT TREATMENT HAS BEEN INSTALLED AND CURED.

D. COORDINATION WITH SEALANT JOINTS: DO NOT APPLY WATER REPELLENT UNTIL SEALANTS FOR JOINTS ADJACENT TO SURFACES RECEIVING WATER-REPELLENT TREATMENT HAVE BEEN INSTALLED AND CURED.

1. WATER-REPELLENT WORK MAY PRECEDE SEALANT APPLICATION ONLY IF SEALANT ADHESION AND COMPATIBILITY HAVE BEEN TESTED AND VERIFIED USING SUBSTRATE, WATER REPELLENT, AND SEALANT MATERIALS IDENTICAL TO THOSE REQUIRED.

**3.3 APPLICATION**

A. MANUFACTURER'S FIELD SERVICE: ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO INSPECT THE SUBSTRATE BEFORE APPLICATION OF WATER REPELLENT AND TO INSTRUCT APPLICATOR ON THE PRODUCT AND APPLICATION METHOD TO BE USED.

B. APPLY A HEAVY-SATURATION COATING OF WATER REPELLENT, ON SURFACES INDICATED FOR TREATMENT, USING 15 PSI- PRESSURE SPRAY WITH A FAN-TYPE SPRAY NOZZLE TO THE POINT OF SATURATION. APPLY COATING IN DUAL PASSES OF UNIFORM, OVERLAPPING STROKES. REMOVE EXCESS MATERIAL; DO NOT ALLOW MATERIAL TO PUDDLE BEYOND SATURATION. COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS FOR APPLICATION PROCEDURE UNLESS OTHERWISE INDICATED.

C. APPLY A SECOND SATURATION COATING, REPEATING FIRST APPLICATION. COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS FOR LIMITATIONS ON DRYING TIME BETWEEN COATS AND AFTER RAINSTORM WETTING OF SURFACES BETWEEN COATS. CONSULT MANUFACTURER'S TECHNICAL REPRESENTATIVE IF WRITTEN INSTRUCTIONS ARE NOT APPLICABLE TO PROJECT CONDITIONS.

**3.4 FIELD QUALITY CONTROL**

A. TESTING OF WATER-REPELLENT MATERIAL: OWNER RESERVES THE RIGHT TO INVOKE THE FOLLOWING PROCEDURE AT ANY TIME AND AS OFTEN AS OWNER DEEMS NECESSARY DURING THE PERIOD WHEN WATER REPELLENT IS BEING APPLIED:

1. OWNER WILL ENGAGE THE SERVICES OF A QUALIFIED TESTING AGENCY TO SAMPLE WATER-REPELLENT MATERIAL BEING USED. SAMPLES OF MATERIAL DELIVERED TO PROJECT SITE WILL BE TAKEN, IDENTIFIED, SEALED, AND CERTIFIED IN PRESENCE OF CONTRACTOR.

2. TESTING AGENCY WILL PERFORM TESTS FOR COMPLIANCE OF WATER-REPELLENT MATERIAL WITH PRODUCT REQUIREMENTS.

3. OWNER MAY DIRECT CONTRACTOR TO STOP APPLYING WATER REPELLENTS IF TEST RESULTS SHOW MATERIAL BEING USED DOES NOT COMPLY WITH PRODUCT REQUIREMENTS. CONTRACTOR SHALL REMOVE NONCOMPLYING MATERIAL FROM PROJECT SITE, PAY FOR TESTING, AND CORRECT DEFICIENCY OF SURFACES TREATED WITH REJECTED MATERIALS, AS APPROVED BY DESIGN PROFESSIONAL.

B. COVERAGE TEST: IN THE PRESENCE OF DESIGN PROFESSIONAL, HOSE DOWN A DRY, REPELLENT-TREATED SURFACE TO VERIFY COMPLETE AND UNIFORM PRODUCT APPLICATION. A CHANGE IN SURFACE COLOR WILL INDICATE INCOMPLETE APPLICATION.

1. NOTIFY DESIGN PROFESSIONAL SEVEN DAYS IN ADVANCE OF THE DATES AND TIMES WHEN SURFACES WILL BE TESTED.

2. REAPPLY WATER REPELLENT UNTIL COVERAGE TEST INDICATES COMPLETE COVERAGE.

**3.5 CLEANING**

A. IMMEDIATELY CLEAN WATER REPELLENT FROM ADJOINING SURFACES AND SURFACES SOILED OR DAMAGED BY WATER-REPELLENT APPLICATION AS WORK PROGRESSES. CORRECT DAMAGE TO WORK OF OTHER TRADES CAUSED BY WATER-REPELLENT APPLICATION, AS APPROVED BY DESIGN PROFESSIONAL.

B. COMPLY WITH MANUFACTURER'S WRITTEN CLEANING INSTRUCTIONS.

**EFFLORESCENCE REMOVAL**

1. REMOVE EFFLORESCENCE BY SCRUBBING WITH CLEAN WATER, SUPPLEMENTED BY PRESSURE WASHING WITH CLEAN WATER.

2. IF SCRUBBING AND PRESSURE WASHING DOES NOT REMOVE ALL EFFLORESCENCE STAINING, SCRUB WITH ONE PART HYDROCHLORIC ACID IN 9 TO 19 PARTS WATER USING A STIFF NON-METALIC BRISTLE BRUSH. SURFACE SHOULD BE SATURATED WITH WATER BEFORE SCRUBBING WITH ACID SOLUTION. TEST ACID SOLUTION ON AN INCONSPICUOUS LOCATION AND ALLOW TO DRY BEFORE USING ON LARGER AREAS. OWNER TO VERIFY THAT ACID APPLICATION IS ACCEPTABLE.

3. THOROUGHLY RINSE WITH CLEAN WATER AND ALLOW TO DRY.

4. IF HYDROCHLORIC ACID SOLUTION DOES NOT REMOVE ALL EFFLORESCENCE STAINING, THE FOLLOWING SOLUTIONS MAY BE SUBSTITUTED:

- ONE PART PHOSPHORIC ACID IN 9 PARTS WATER
- ONE PART PHOSPHORIC ACID PLUS ONE PART ACETIC ACID IN 19 PARTS WATER.

5. NEUTRALIZE ANY UNUSED DILUTED ACID BY MIXING 1 GALLON OF DILUTED ACID INTO 3 POUNDS OF POWDERED CALCIUM HYDROXIDE.

6. FOR MIXTURES CONTAINING ACID, CONTRACTOR SHALL COLLECT THE RUN-OFF AND DISPOSE OFF SITE IN ACCORDANCE WITH CHOSEN PRODUCT DATA MSDS GUIDELINE.

**DPAC - GARAGE CRITICAL REPAIRS**

950 13th STREET  
 DENVER, COLORADO 80204

CITY PROJECT NUMBER: 201525595

**REVISIONS**

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PROJECT NO: 15.0702.S.02

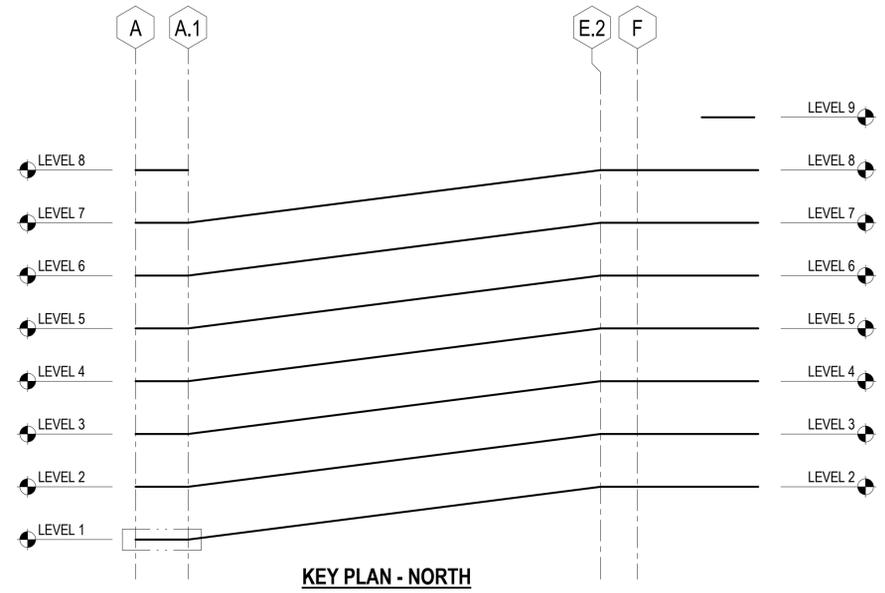
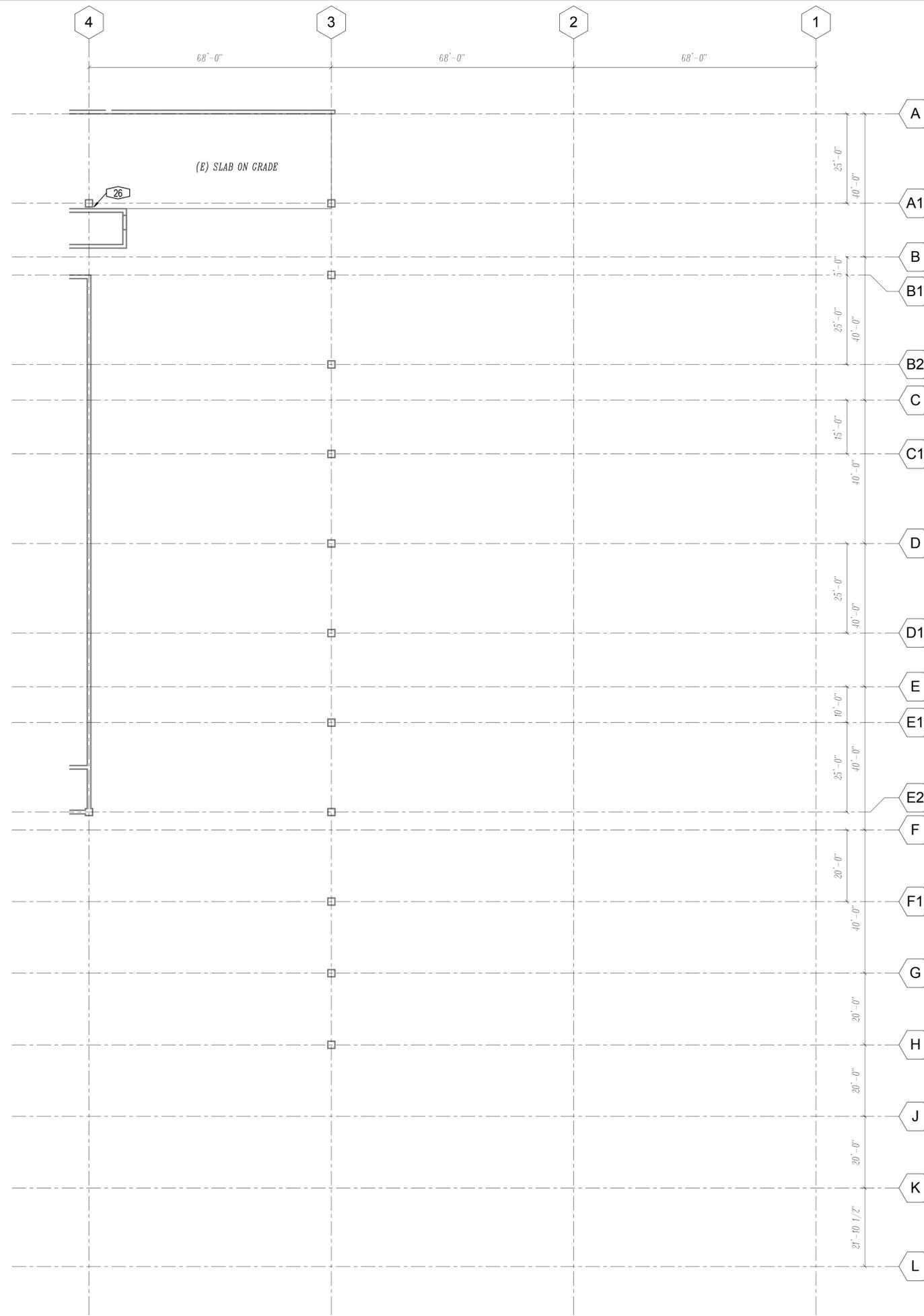
DATE: 04/13/2016

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SHEET TITLE:  
**PENETRATING SEALER SPECIFICATION**

SHEET NUMBER:

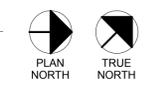
**S0.06**



**PLAN NOTES:**  
 1. THE WORK ITEMS SHOWN ON THIS LEVEL OCCUR ON THE TOP SURFACE AND / OR WALLS / COLUMNS ABOVE THE AREA OUTLINED IN THE KEY PLAN.

**LEVEL 1 NORTH**

1/16" = 1'-0"



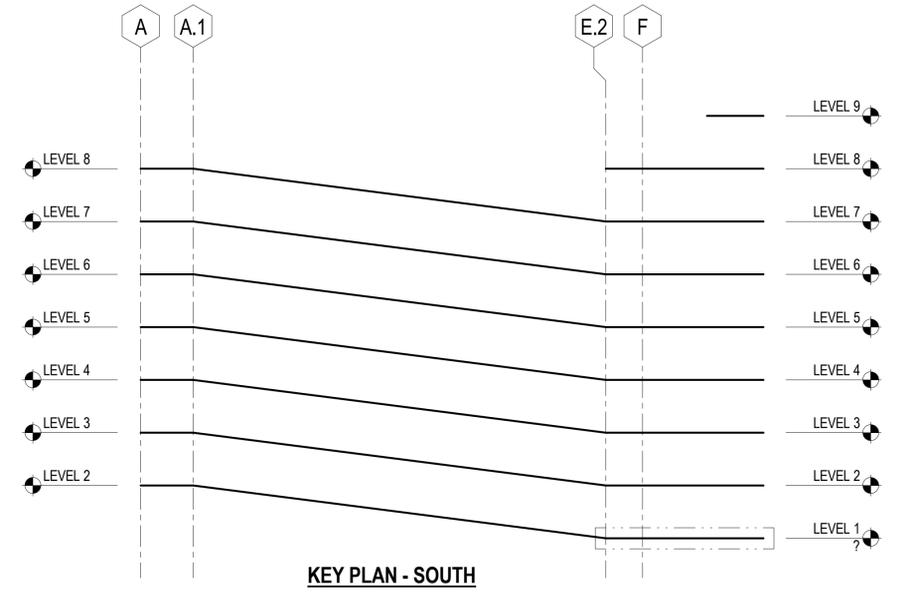
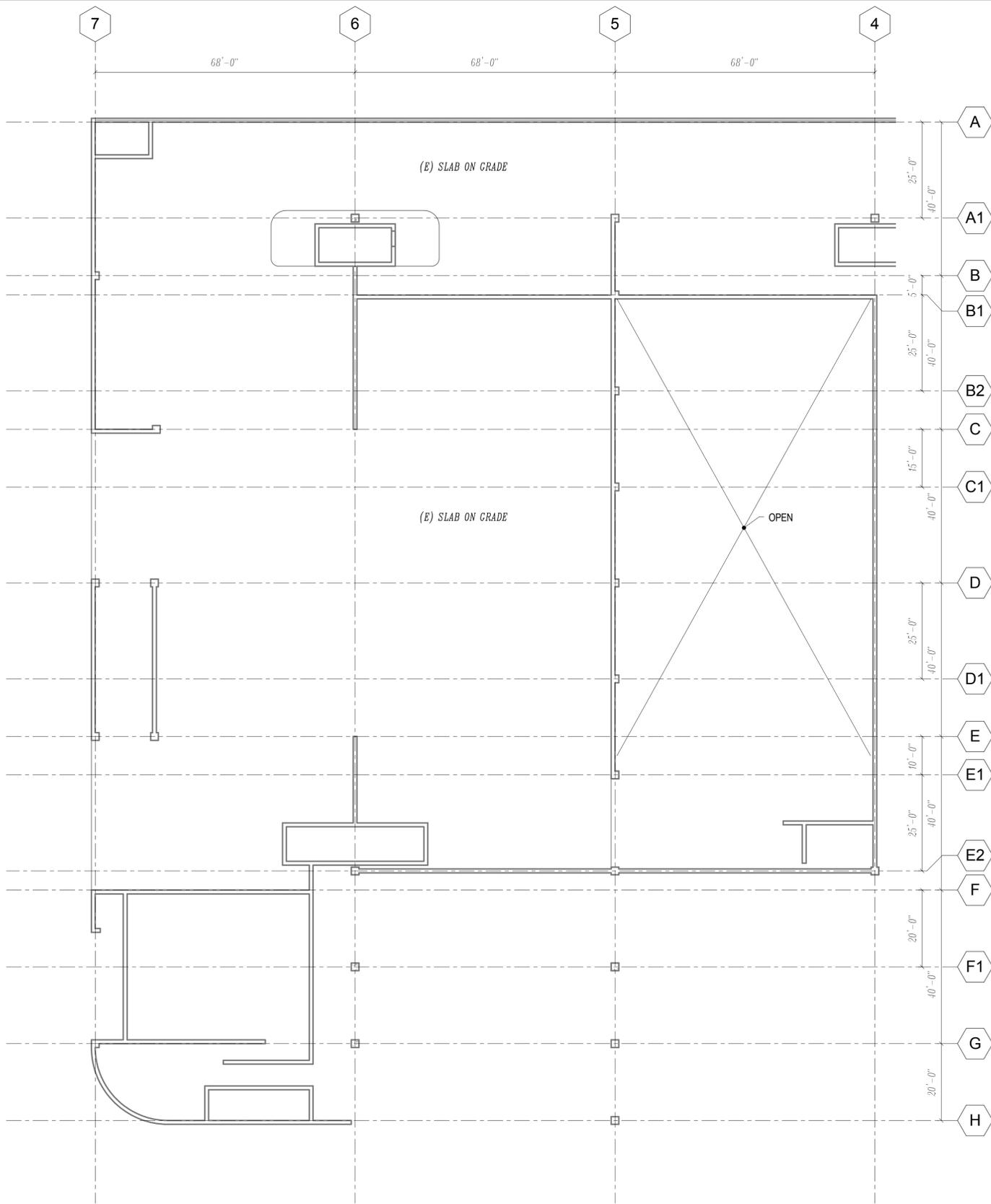
- PLAN NOTES:**
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  - [Symbol] INDICATES APPROXIMATE LOCATION AND SQUARE FOOTAGE OF DAMAGED OR UNBONDED TOPPING. SEE WORK ITEM 1
  - [Symbol] INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM 3
  - [Symbol] INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM 4
  - [Symbol] INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM 15

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SHEET TITLE:  
**LEVEL 1 PLAN - NORTH**  
 SHEET NUMBER:  
**S1.01n**



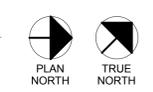
**PLAN NOTES:**  
 1. THE WORK ITEMS SHOWN ON THIS LEVEL OCCUR ON THE TOP SURFACE AND / OR WALLS / COLUMNS ABOVE THE AREA OUTLINED IN THE KEY PLAN.

**LEVEL 1 SOUTH**

1/16" = 1'-0"

**NOTE:**

- 1. NO WORK THIS SHEET.



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CITY PROJECT NUMBER: 201525595

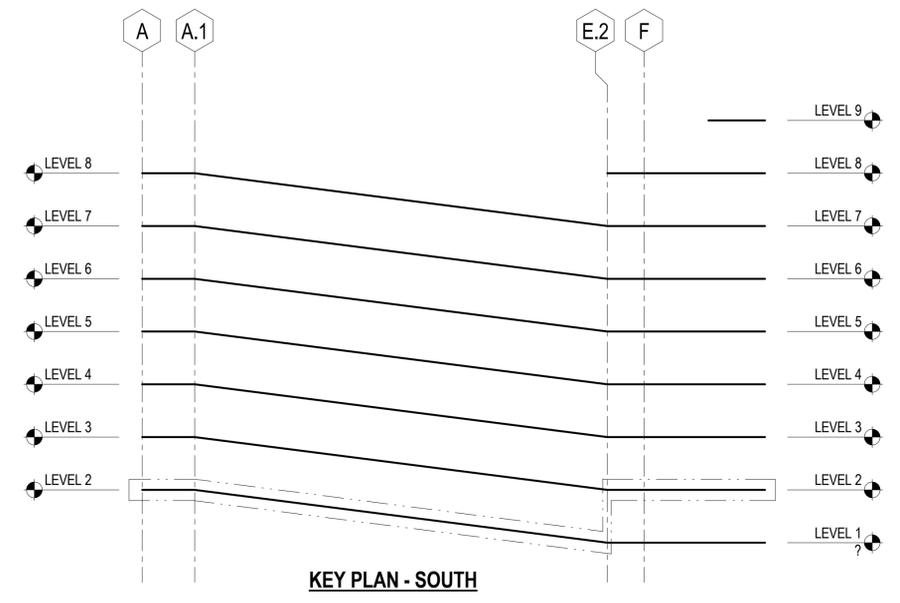
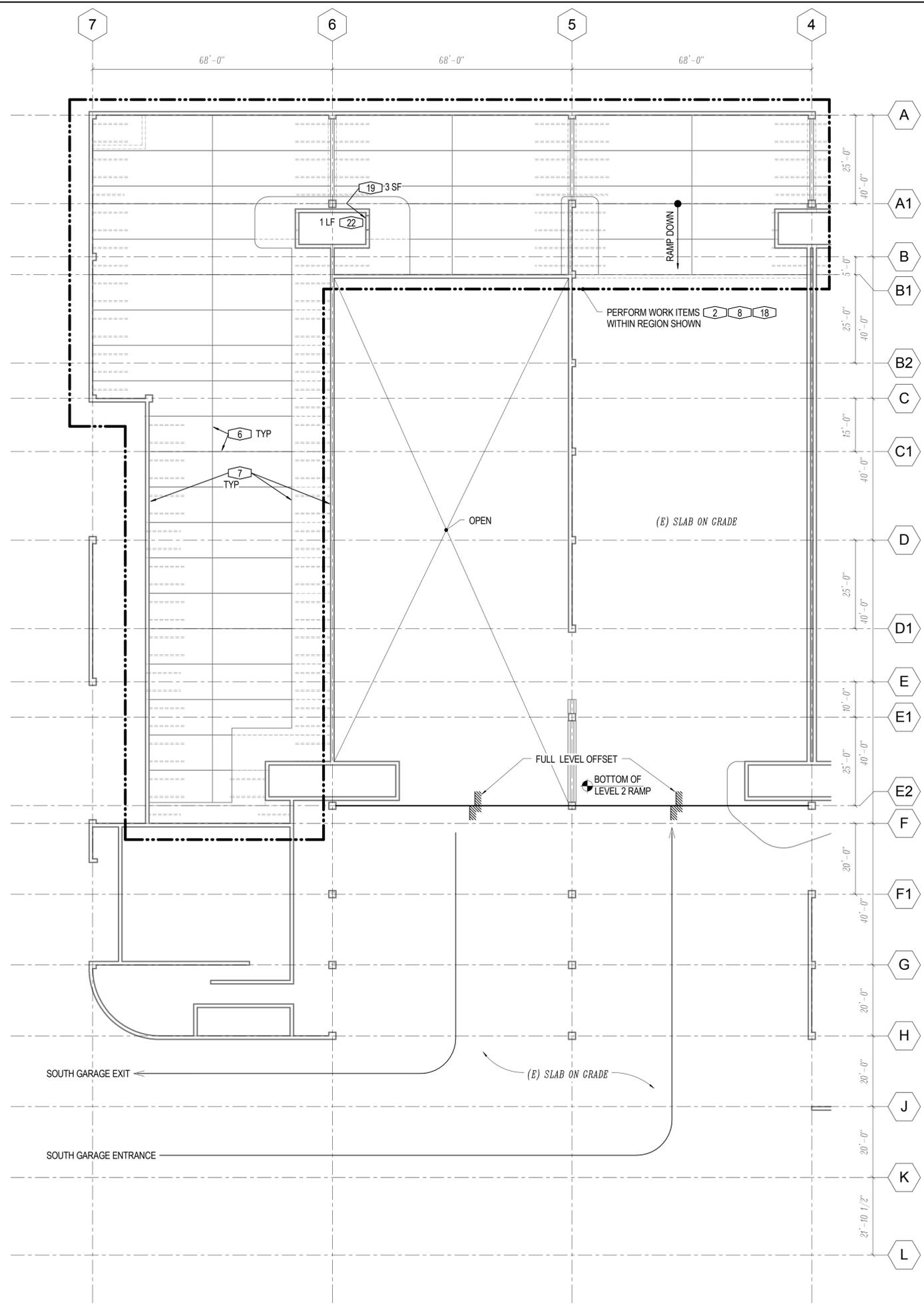
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SHEET TITLE:  
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SHEET NUMBER:  
**S1.01s**

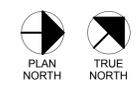




**PLAN NOTES:**  
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**LEVEL 2 SOUTH**

1/16" = 1'-0"



- PLAN NOTES:**
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  - INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM 4
  - INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM 9

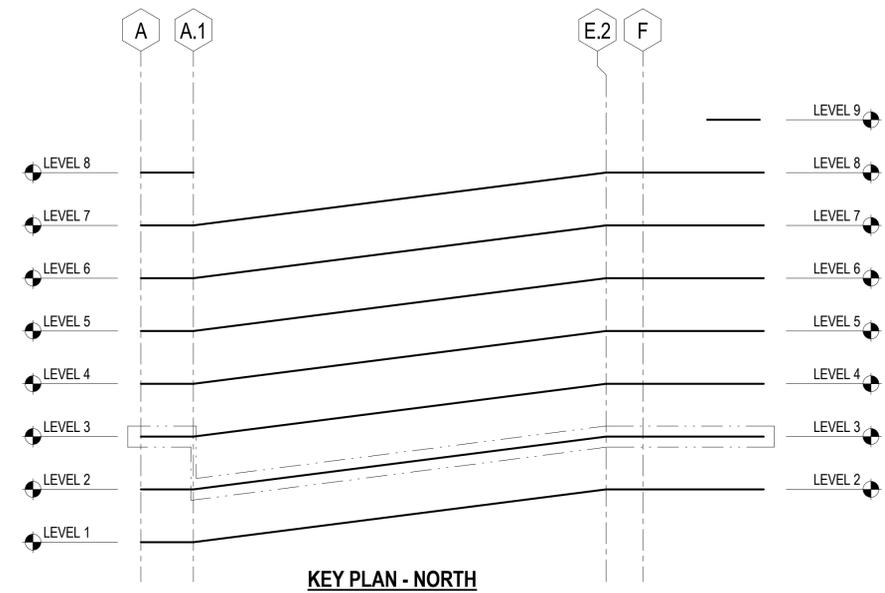
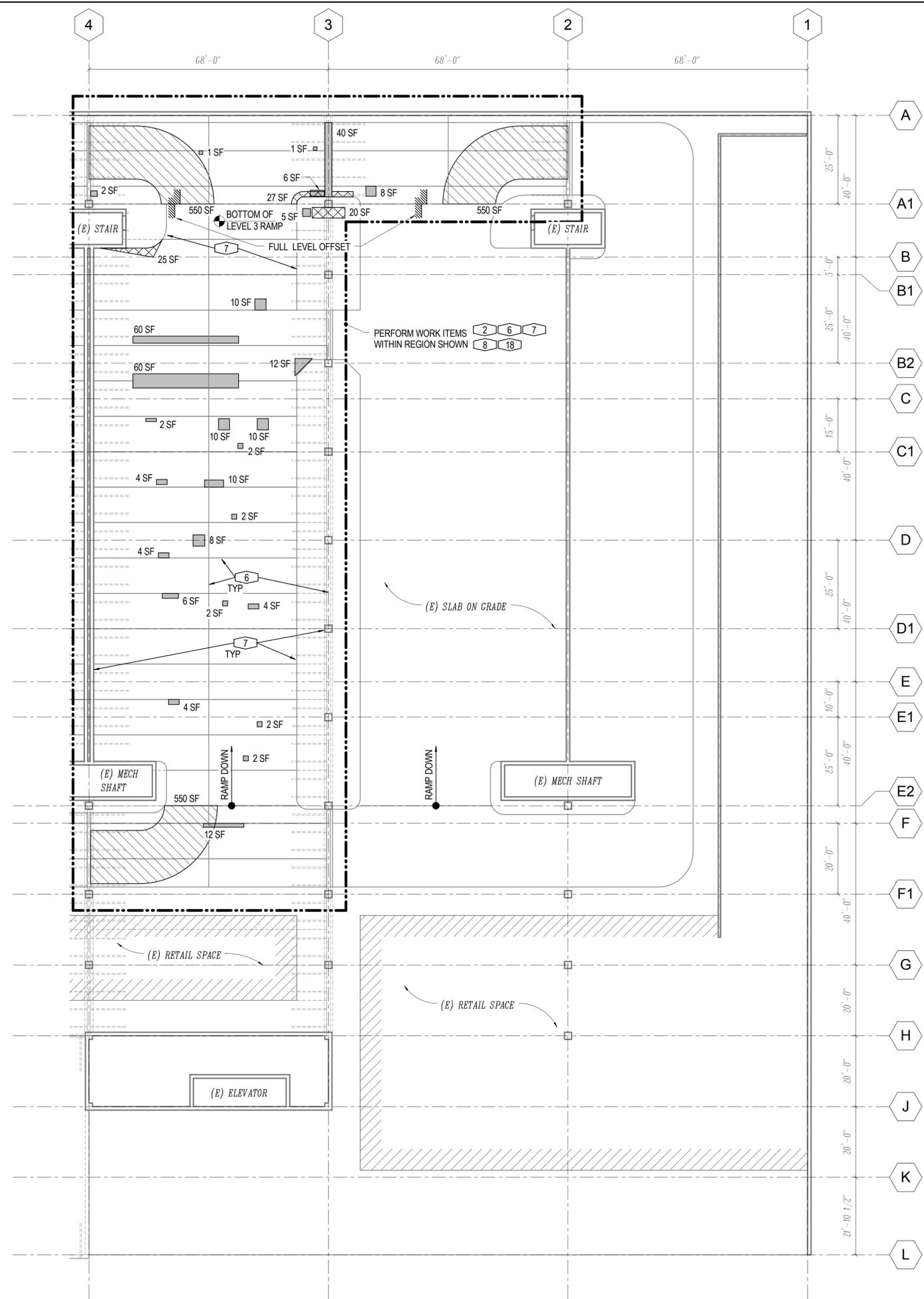
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SHEET TITLE:  
**LEVEL 2 PLAN - SOUTH**  
 SHEET NUMBER:  
**S1.02s**

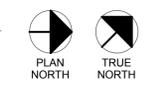
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 CITY PROJECT NUMBER: 201525595



**PLAN NOTES:**  
 1. THE WORK ITEMS SHOWN ON THIS LEVEL OCCUR ON THE TOP SURFACE AND / OR WALLS / COLUMNS ABOVE THE AREA OUTLINED IN THE KEY PLAN.

**LEVEL 3 NORTH**

1/16" = 1'-0"



**PLAN NOTES:**

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- [Hatched Box] INDICATES APPROXIMATE LOCATION AND SQUARE FOOTAGE OF DAMAGED OR UNBONDED TOPPING. SEE WORK ITEM 1
- [Diagonal Lines Box] INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM 3
- [Solid Black Box] INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM 4
- [Cross-hatched Box] INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM 9

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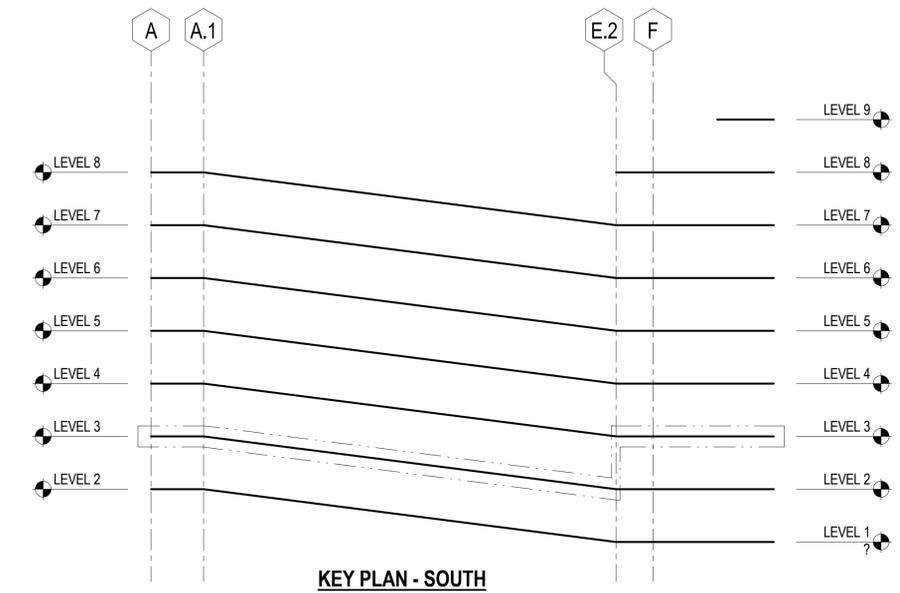
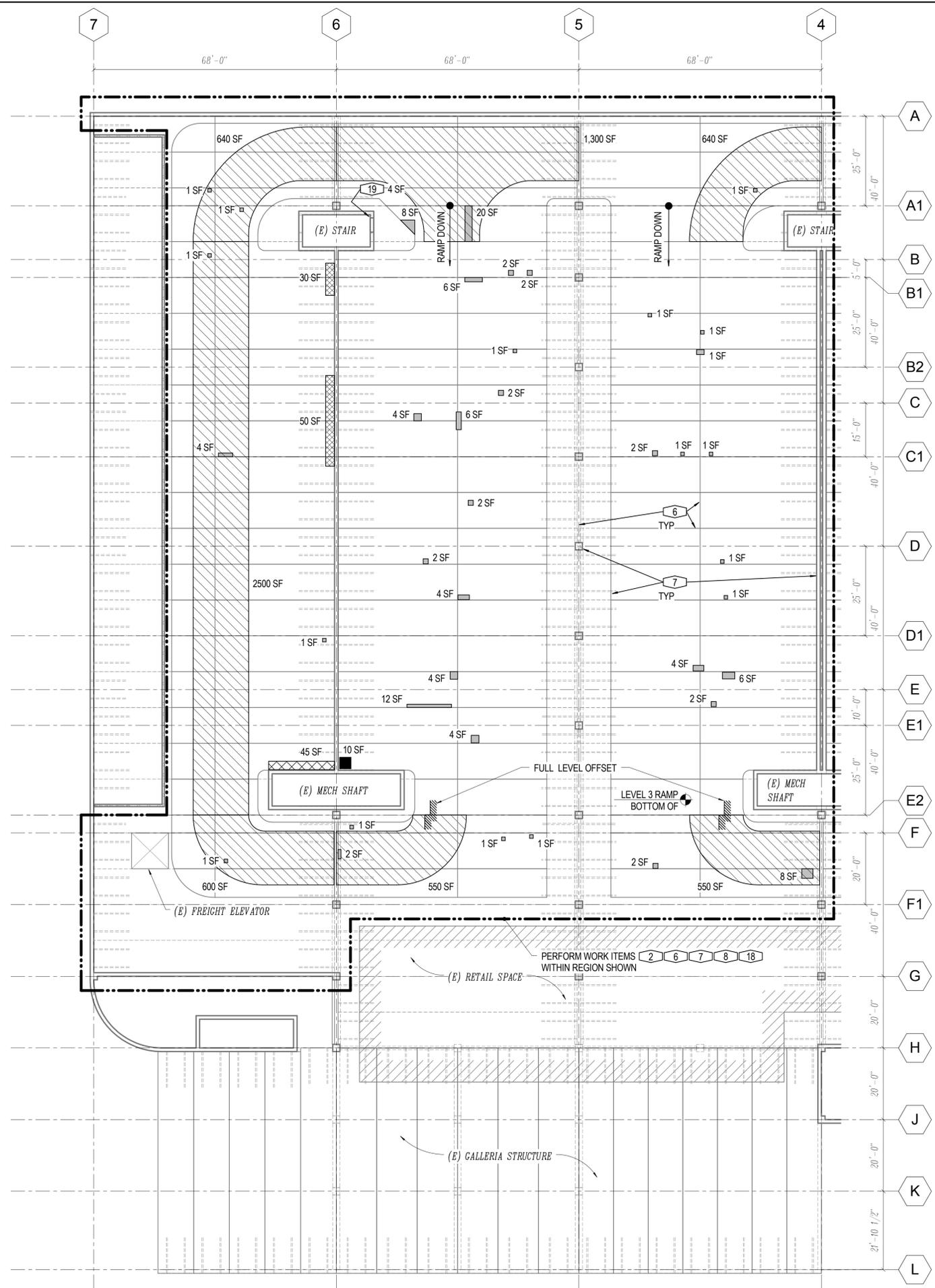
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SHEET TITLE:  
**LEVEL 3 PLAN - NORTH**

SHEET NUMBER:  
**S1.03n**

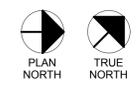
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 CITY PROJECT NUMBER: 201525595



**PLAN NOTES:**  
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**LEVEL 3 SOUTH**

1/16" = 1'-0"



**PLAN NOTES:**

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- [Diagonal hatched pattern] INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM 3
- [Solid black] INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM 4
- [Cross-hatched pattern] INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM 9

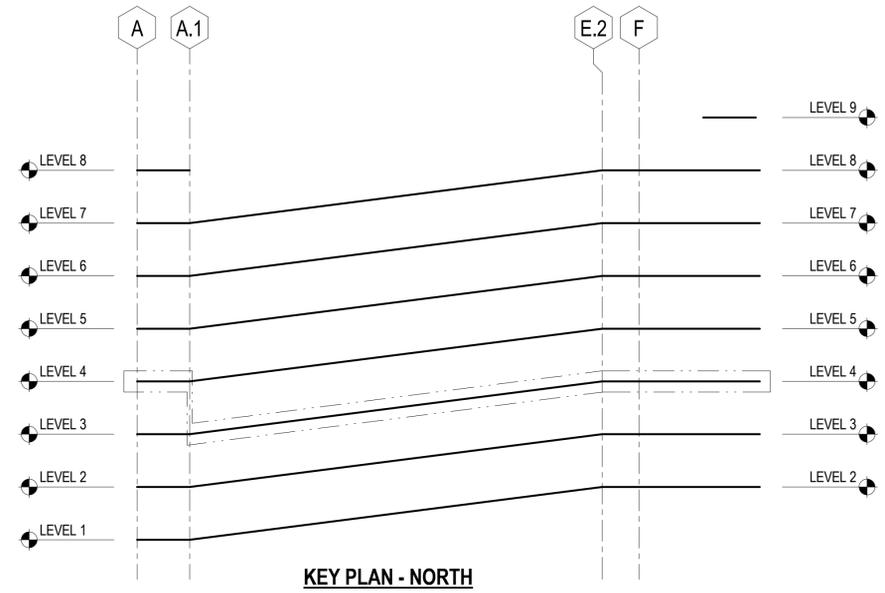
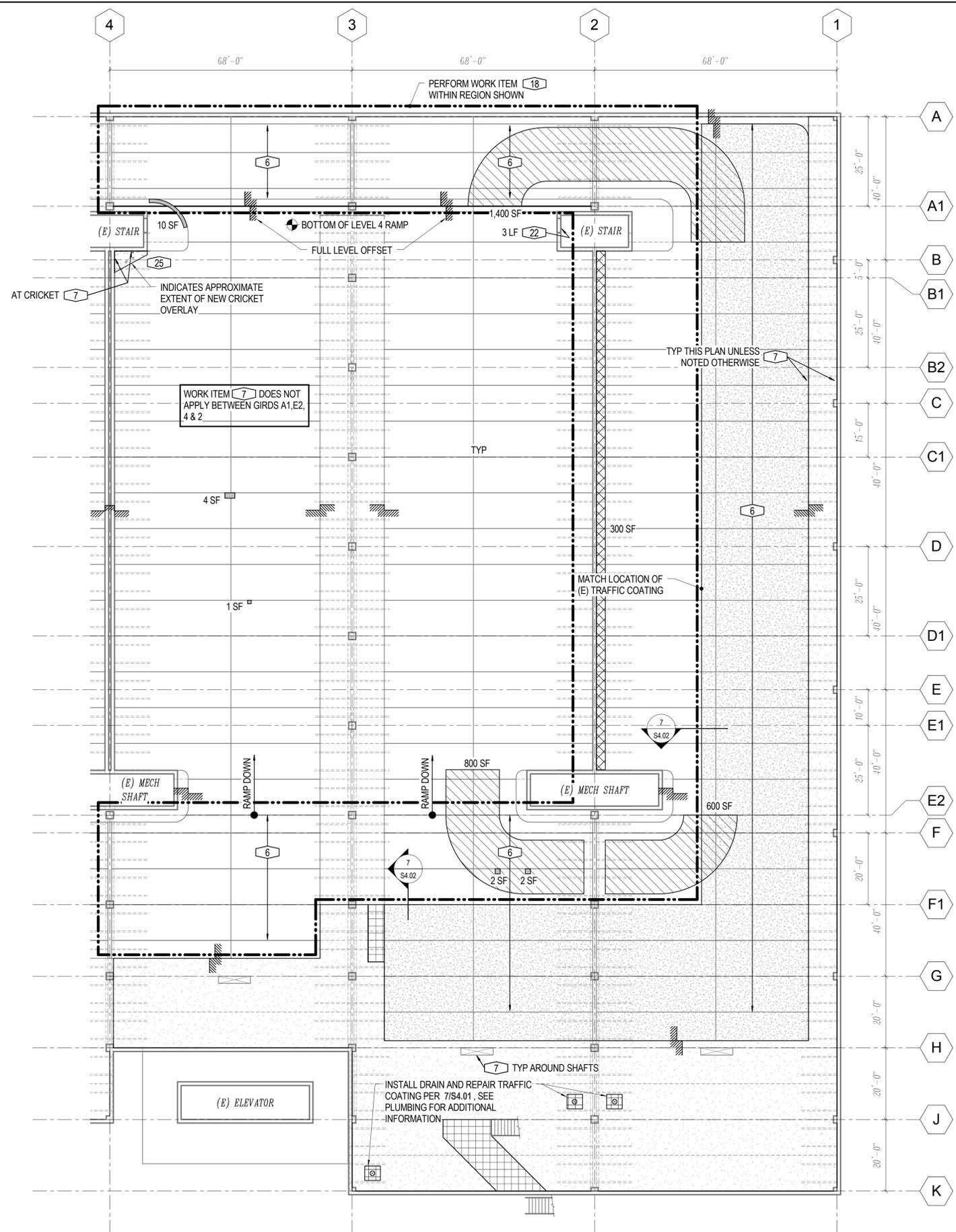
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SHEET TITLE:  
**LEVEL 3 PLAN - SOUTH**

SHEET NUMBER:  
**S1.03s**



**KEY PLAN - NORTH**

**PLAN NOTES:**  
 1. THE WORK ITEMS SHOWN ON THIS LEVEL OCCUR ON THE TOP SURFACE AND / OR WALLS / COLUMNS ABOVE THE AREA OUTLINED IN THE KEY PLAN.



- LEVEL 4 NORTH**  
 1/16" = 1'-0"
- PLAN NOTES:**
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  - INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM 3
  - INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM 4
  - INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM 9
  - INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEMS 10, 11
  - INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEMS 12, 13
  - INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEMS 14, 15

**DPAC - GARAGE CRITICAL REPAIRS**  
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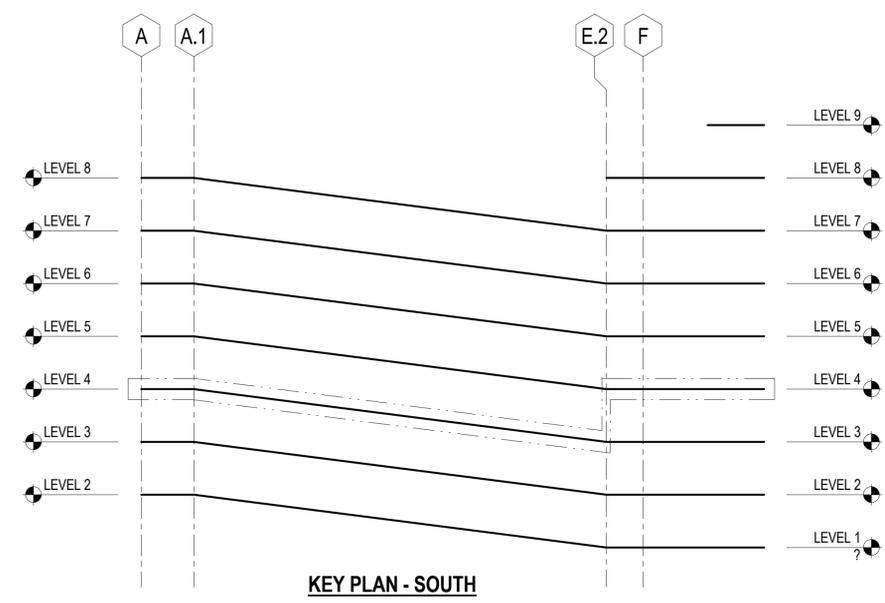
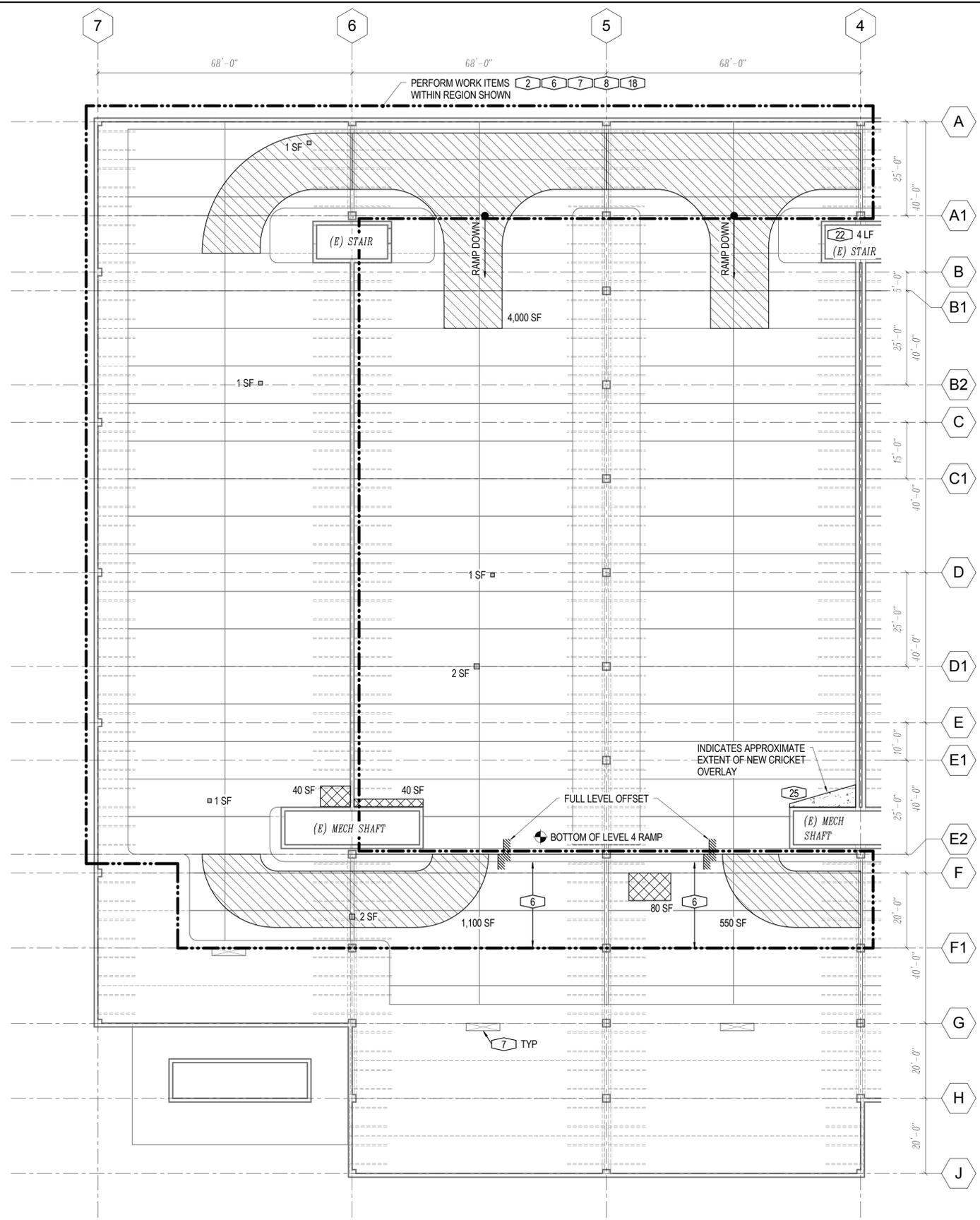
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SHEET TITLE:  
**LEVEL 4 PLAN - NORTH**

SHEET NUMBER:  
**S1.04n**



**PLAN NOTES:**  
 1. THE WORK ITEMS SHOWN ON THIS LEVEL OCCUR ON THE TOP SURFACE AND / OR WALLS / COLUMNS ABOVE THE AREA OUTLINED IN THE KEY PLAN.

**LEVEL 4 SOUTH**

1/16" = 1'-0"



**PLAN NOTES:**

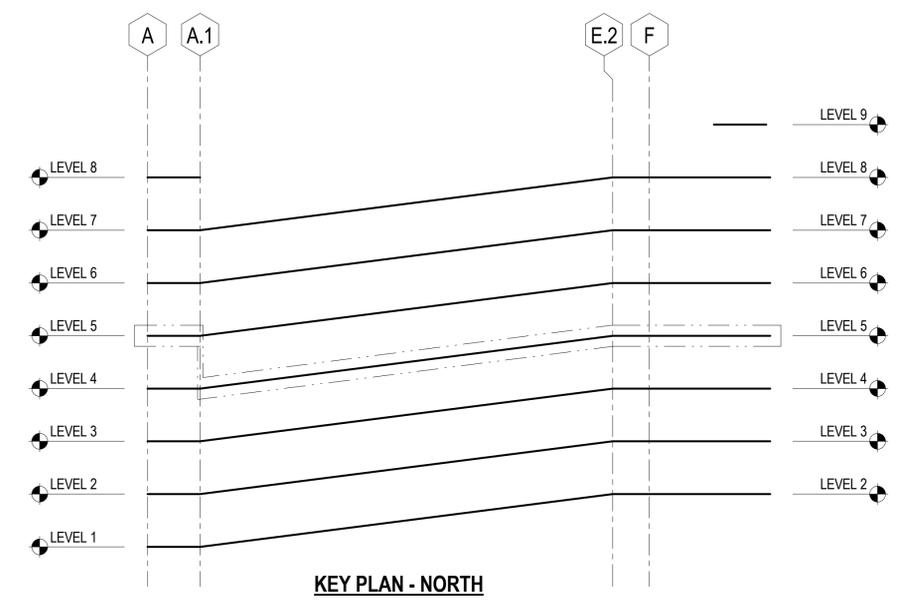
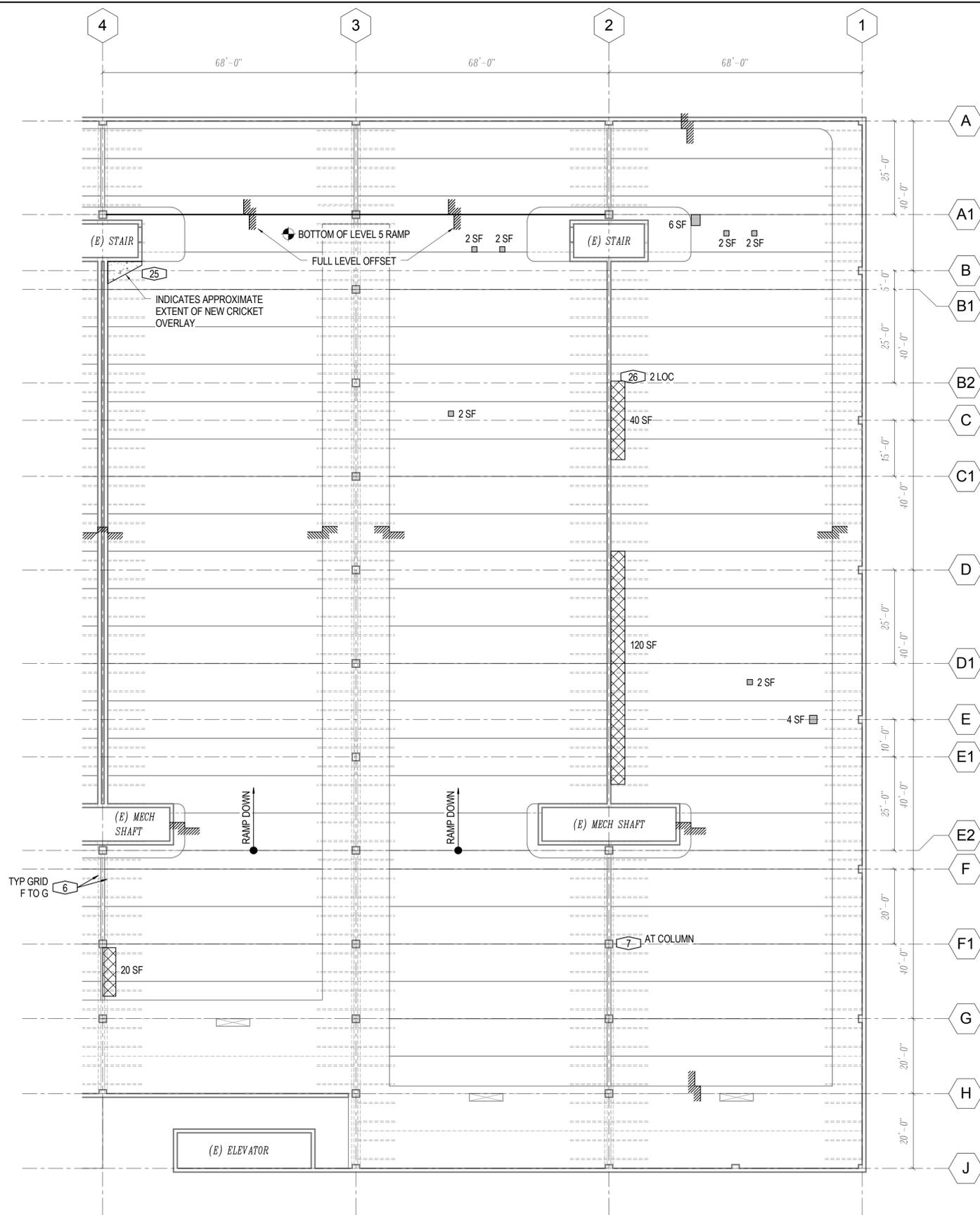
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- INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM 3
- INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM 4
- INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM 9

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 CITY PROJECT NUMBER: 201525595

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SHEET TITLE:  
**LEVEL 4 PLAN - SOUTH**  
 SHEET NUMBER:  
**S1.04s**



PLAN NOTES:  
 1. THE WORK ITEMS SHOWN ON THIS LEVEL OCCUR ON THE TOP SURFACE AND / OR WALLS / COLUMNS ABOVE THE AREA OUTLINED IN THE KEY PLAN.

LEVEL 5 NORTH

1/16" = 1'-0"



- PLAN NOTES:
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  - WORK ITEMS TYPICAL TO THIS PLAN ARE: 2
  - INDICATES APPROXIMATE LOCATION AND SQUARE FOOTAGE OF DAMAGED OR UNBONDED TOPPING. SEE WORK ITEM 1
  - INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM 3
  - INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM 4
  - INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM 9

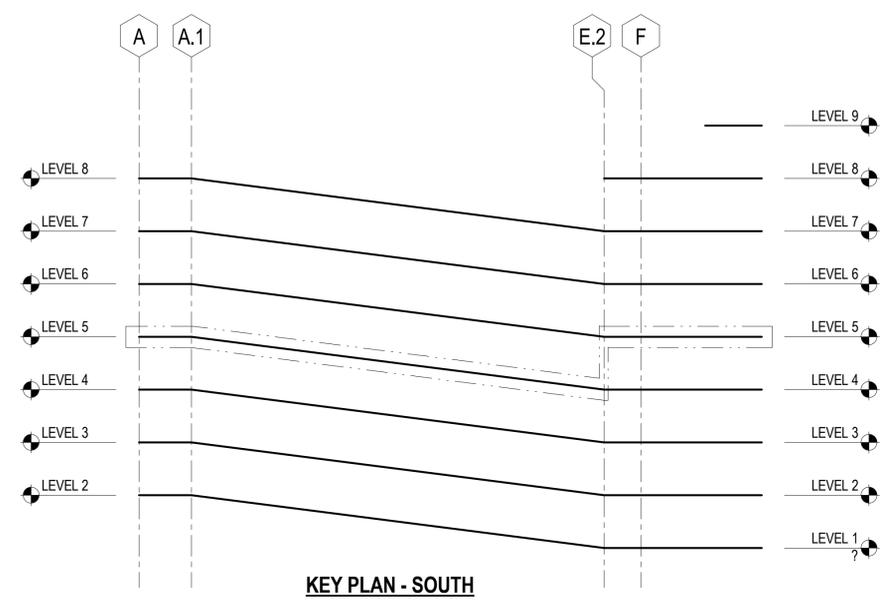
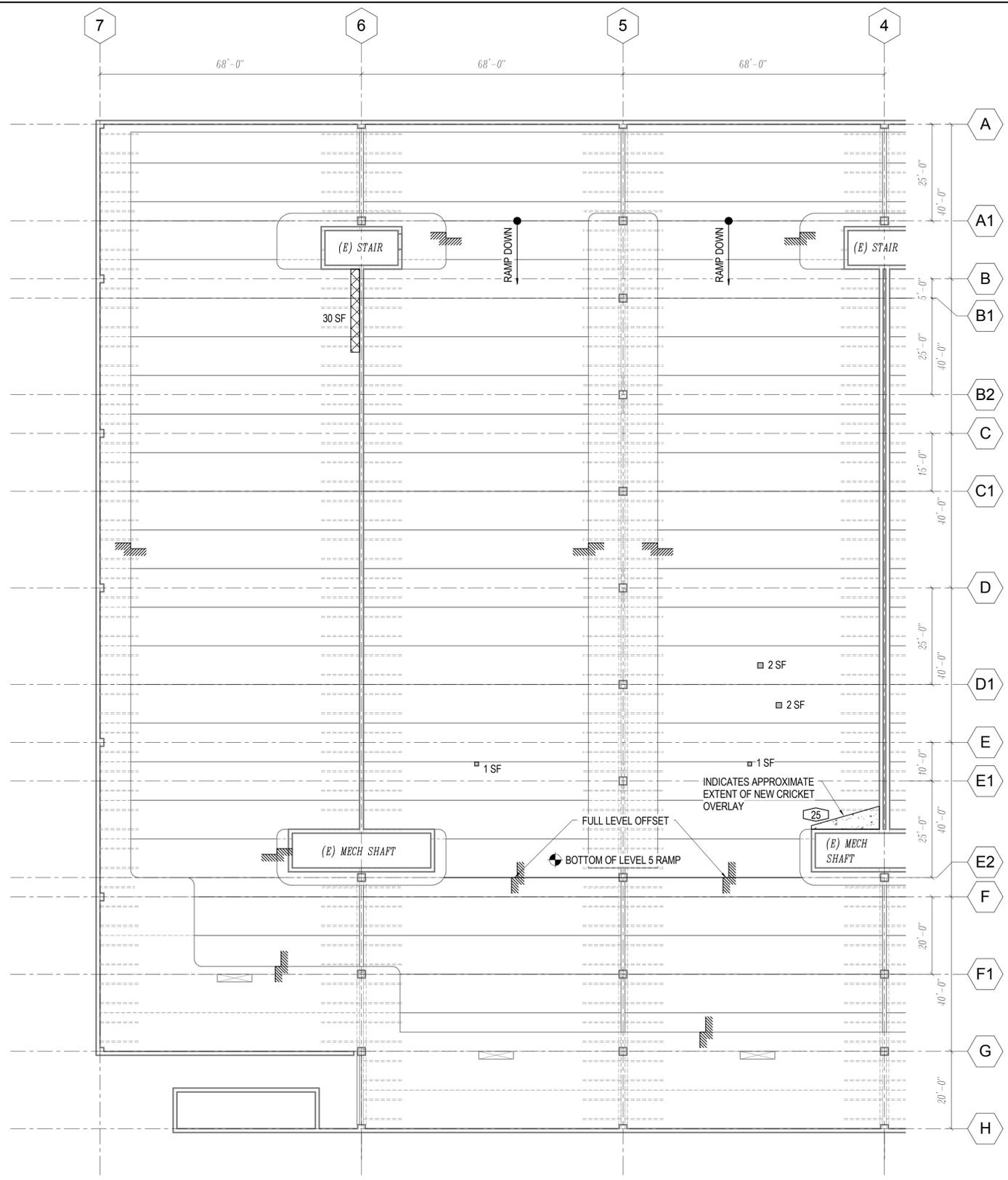
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SHEET TITLE:  
 LEVEL 5 PLAN - NORTH

SHEET NUMBER:  
**S1.05n**



**PLAN NOTES:**  
 1. THE WORK ITEMS SHOWN ON THIS LEVEL OCCUR ON THE TOP SURFACE AND / OR WALLS / COLUMNS ABOVE THE AREA OUTLINED IN THE KEY PLAN.

**LEVEL 5 SOUTH**

1/16" = 1'-0"



- PLAN NOTES:**
- SEE SHEET S0.02 FOR A COMPREHENSIVE LIST OF WORK ITEMS AND QUANTITIES FOR THE ENTIRE PROJECT. EVERY WORK ITEM NUMBER WILL NOT NECESSARILY BE USED ON EACH PLAN.
  - ALL DIMENSIONS SHOWN ARE APPROXIMATE AND FOR BIDDING PURPOSES ONLY. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS PRIOR TO PERFORMING REPAIRS OR INSTALLING SEALANTS AND COATINGS.
  - PRESERVE AND PROTECT ALL EXISTING ELECTRICAL CONDUITS AS REQUIRED TO PERFORM REPAIRS. FIELD VERIFY ALL EXISTING ELECTRICAL CONDITIONS. PROVIDE ANY ADDITIONAL WORK NECESSARY AS REQUIRED TO PRESERVE, PROTECT, OR SUPPORT ALL EXISTING WIRING, DEVICES, CONDUITS, AND ELECTRICAL COMPONENTS TO REMAIN FOR AN 'AS-EXISTING' PERFORMANCE. RE-SUPPORT ALL EXISTING CONDUIT AS REQUIRED BACK TO EXISTING CONDITIONS. ELECTRICAL CONDUIT IS PRESENT IN THE CONCRETE TOPPING SLABS. CONTRACTOR SHALL TAKE CAUTION NEAR KNOWN ELECTRICAL ITEMS.
  - WORK ITEMS TYPICAL TO THIS PLAN ARE: **2**
  - INDICATES APPROXIMATE LOCATION AND SQUARE FOOTAGE OF DAMAGED OR UNBONDED TOPPING. SEE WORK ITEM **1**
  - INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM **3**
  - INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM **4**
  - INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM **9**

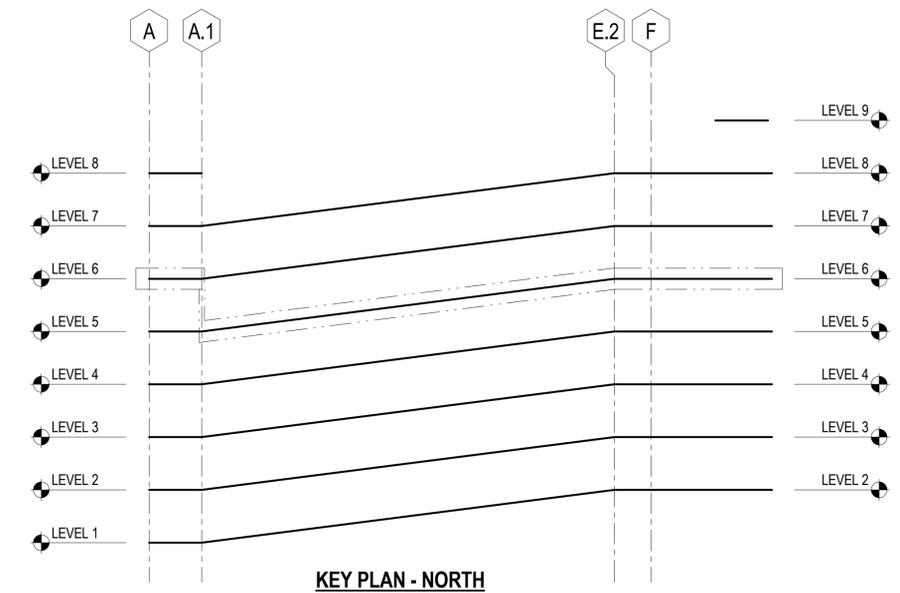
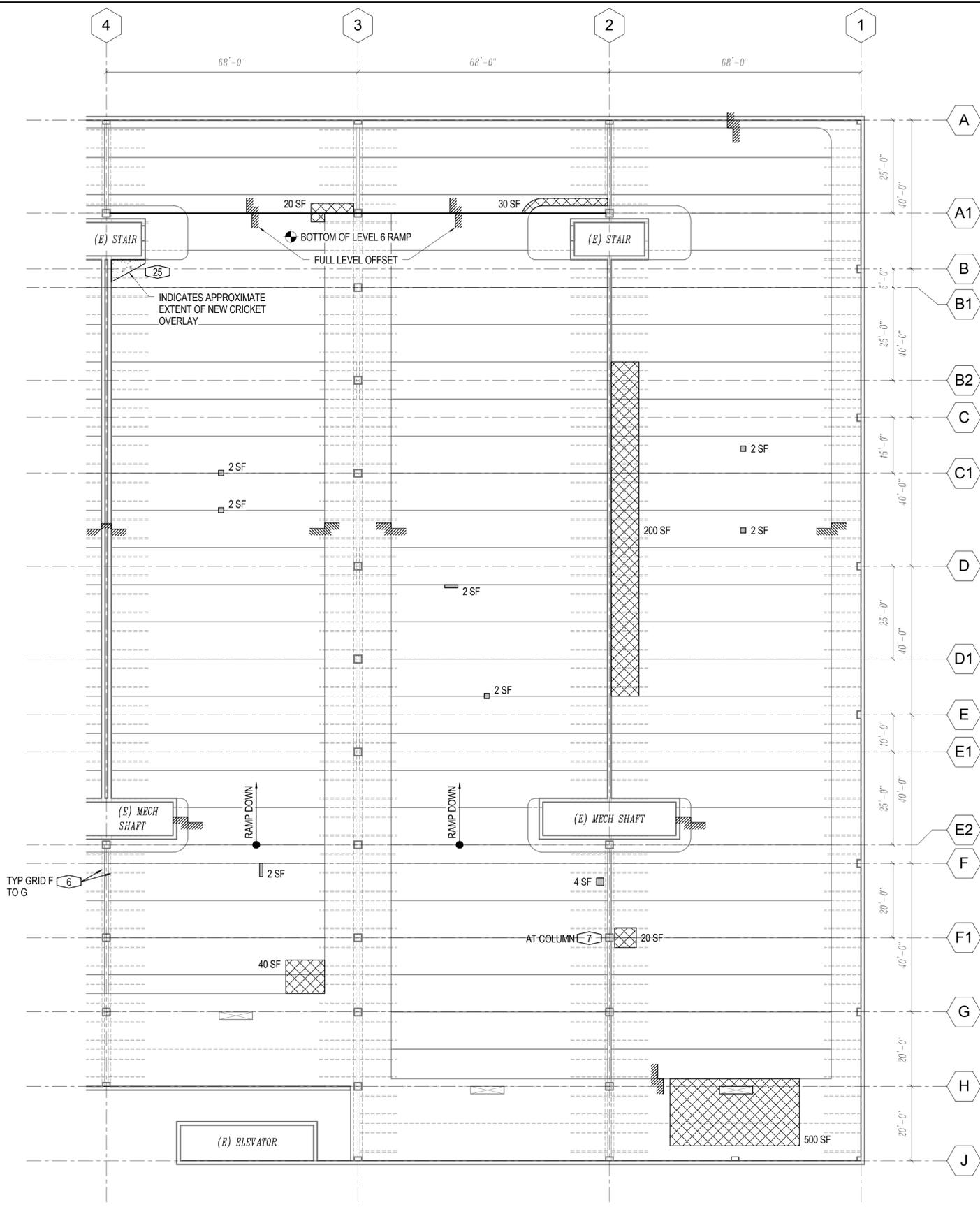
**DPAC - GARAGE CRITICAL REPAIRS**  
 950 13th STREET  
 DENVER, COLORADO 80204  
 CITY PROJECT NUMBER: 201525595

REVISIONS		
NO.	ISSUE	DATE

PROJECT NO: 15.0702.S.02  
 DATE: 04/13/2016  
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SHEET TITLE:  
**LEVEL 5 PLAN - SOUTH**

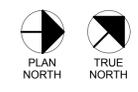
SHEET NUMBER:  
**S1.05s**



**PLAN NOTES:**  
 1. THE WORK ITEMS SHOWN ON THIS LEVEL OCCUR ON THE TOP SURFACE AND / OR WALLS / COLUMNS ABOVE THE AREA OUTLINED IN THE KEY PLAN.

**LEVEL 6 NORTH**

1/16" = 1'-0"



**PLAN NOTES:**

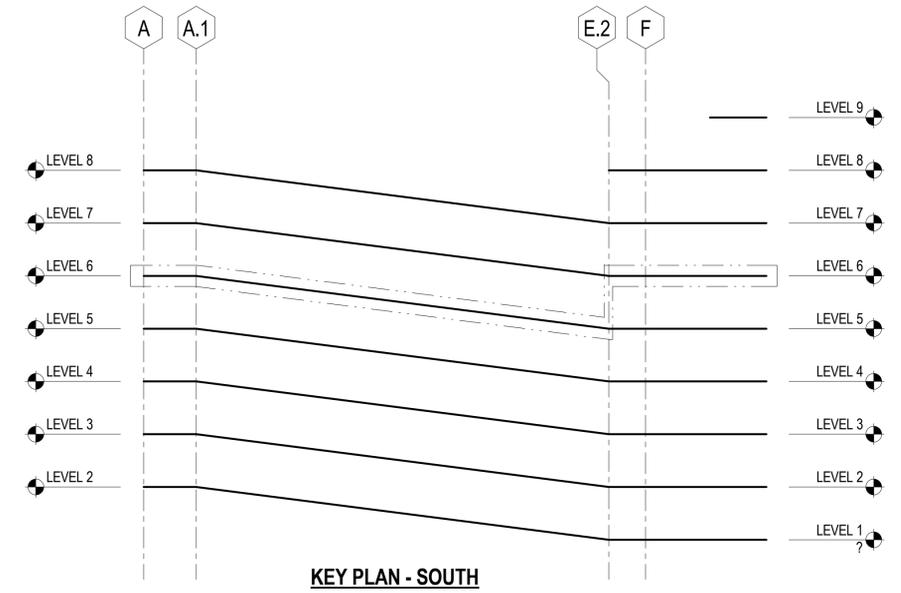
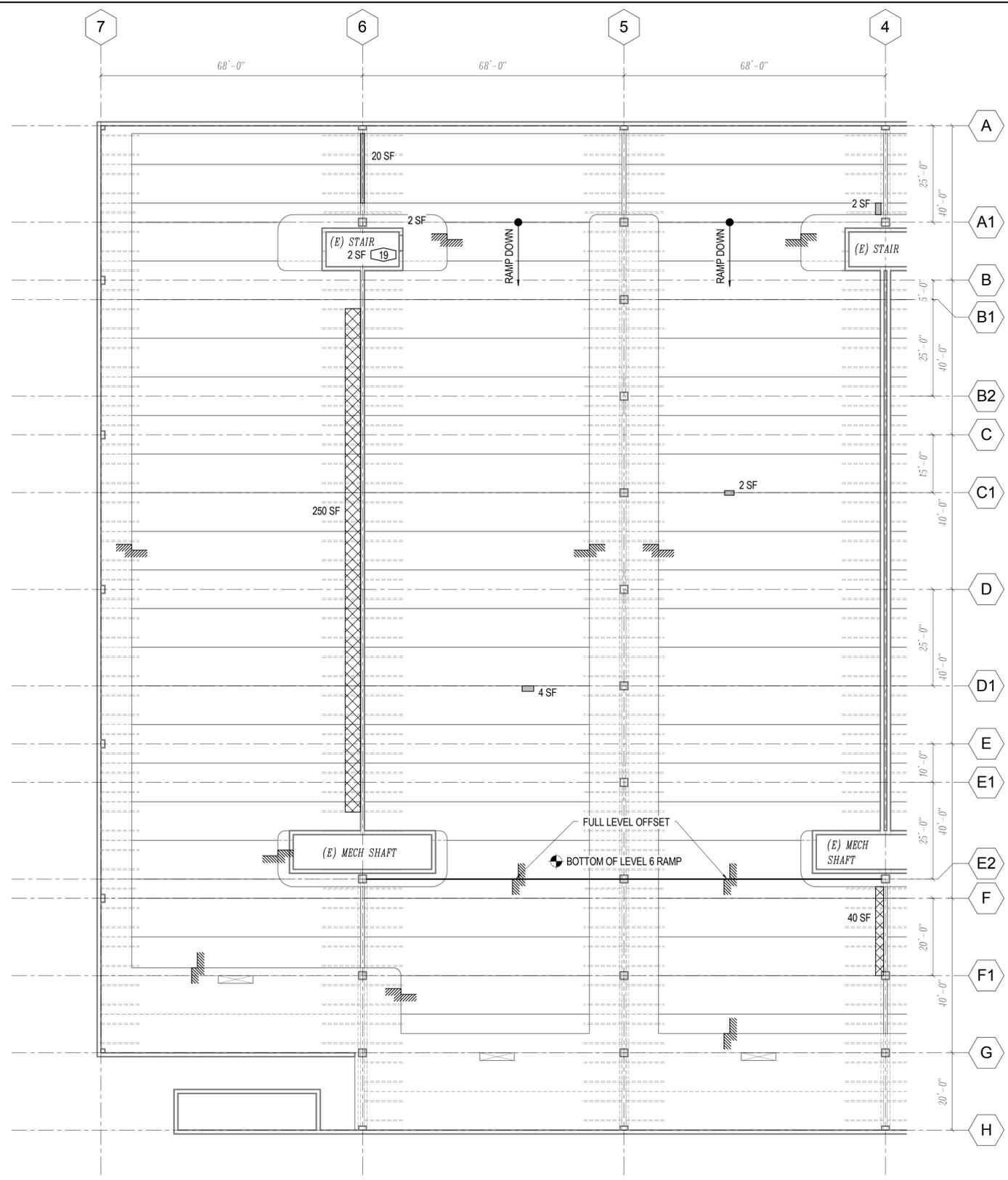
- SEE SHEET S0.02 FOR A COMPREHENSIVE LIST OF WORK ITEMS AND QUANTITIES FOR THE ENTIRE PROJECT. EVERY WORK ITEM NUMBER WILL NOT NECESSARILY BE USED ON EACH PLAN.
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- WORK ITEMS TYPICAL TO THIS PLAN ARE: **2**
- INDICATES APPROXIMATE LOCATION AND SQUARE FOOTAGE OF DAMAGED OR UNBONDED TOPPING. SEE WORK ITEM **1**
- INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM **3**
- INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM **4**
- INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM **9**

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 950 13th STREET  
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 CITY PROJECT NUMBER: 201525595

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PROJECT NO: 150702.S.02  
 DATE: 04/13/2016  
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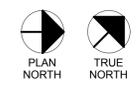
SHEET TITLE:  
**LEVEL 6 PLAN - NORTH**  
 SHEET NUMBER:  
**S1.06n**



**PLAN NOTES:**  
 1. THE WORK ITEMS SHOWN ON THIS LEVEL OCCUR ON THE TOP SURFACE AND / OR WALLS / COLUMNS ABOVE THE AREA OUTLINED IN THE KEY PLAN.

**LEVEL 6 SOUTH**

1/16" = 1'-0"



**PLAN NOTES:**

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- WORK ITEMS TYPICAL TO THIS PLAN ARE: **2**
- INDICATES APPROXIMATE LOCATION AND SQUARE FOOTAGE OF DAMAGED OR UNBONDED TOPPING. SEE WORK ITEM **1**
- INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM **3**
- INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM **4**
- INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM **9**

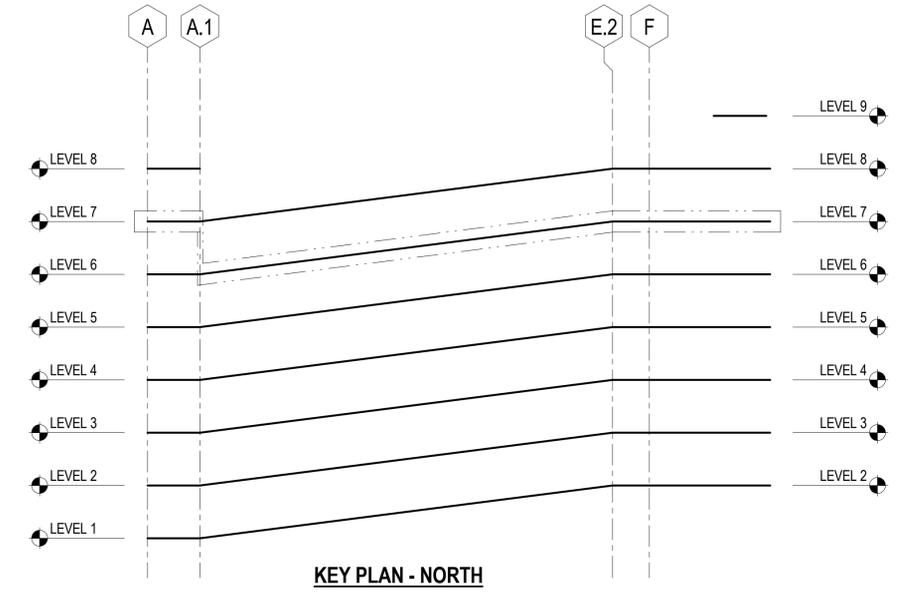
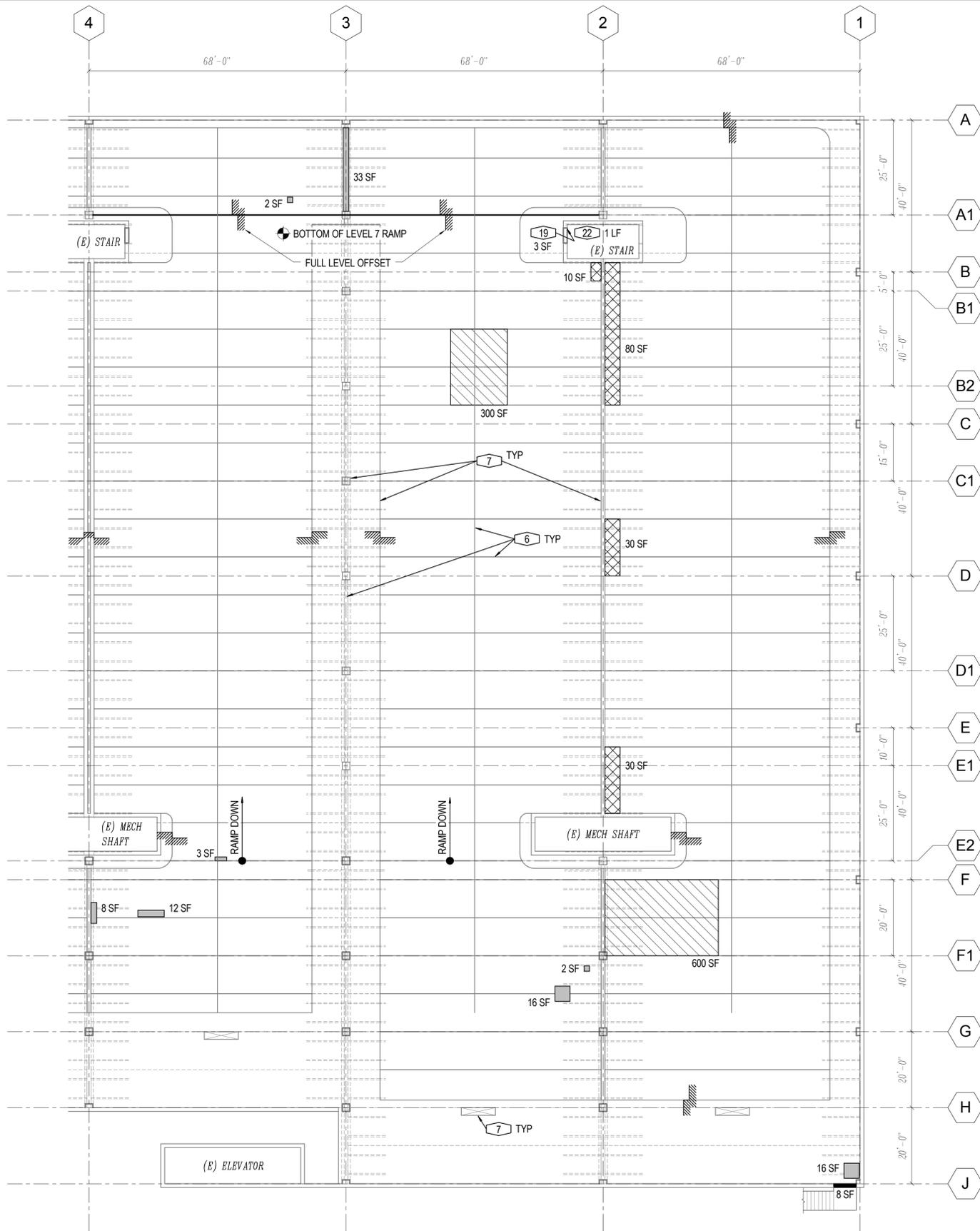
**DPAC - GARAGE CRITICAL REPAIRS**  
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REVISIONS		
NO.	ISSUE	DATE

PROJECT NO: 15.0702.S.02  
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SHEET TITLE:  
**LEVEL 6 PLAN - SOUTH**

SHEET NUMBER:  
**S1.06s**



**PLAN NOTES:**  
 1. THE WORK ITEMS SHOWN ON THIS LEVEL OCCUR ON THE TOP SURFACE AND / OR WALLS / COLUMNS ABOVE THE AREA OUTLINED IN THE KEY PLAN.

**LEVEL 7 NORTH**

1/16" = 1'-0"



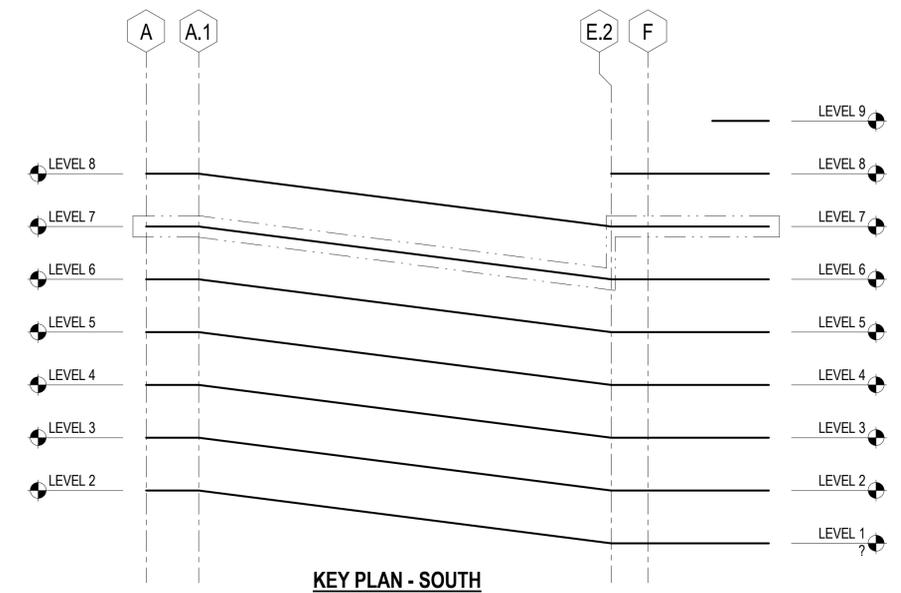
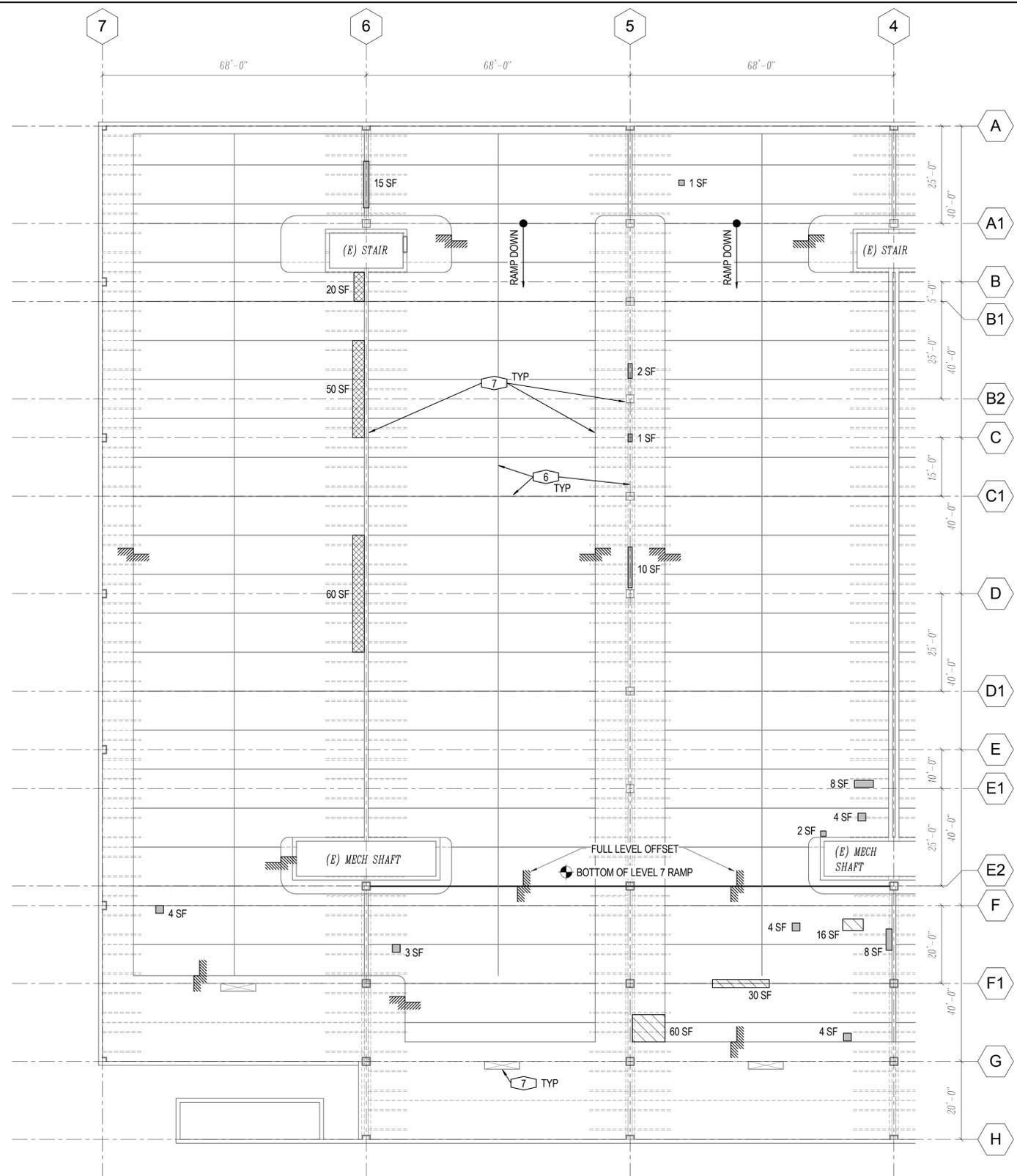
- PLAN NOTES:**
- SEE SHEET S0.02 FOR A COMPREHENSIVE LIST OF WORK ITEMS AND QUANTITIES FOR THE ENTIRE PROJECT. EVERY WORK ITEM NUMBER WILL NOT NECESSARILY BE USED ON EACH PLAN.
  - ALL DIMENSIONS SHOWN ARE APPROXIMATE AND FOR BIDDING PURPOSES ONLY. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS PRIOR TO PERFORMING REPAIRS OR INSTALLING SEALANTS AND COATINGS.
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  - WORK ITEMS TYPICAL TO THIS PLAN ARE: (2) (8) (18)
  - (Hatched box) INDICATES APPROXIMATE LOCATION AND SQUARE FOOTAGE OF DAMAGED OR UNBONDED TOPPING. SEE WORK ITEM (1)
  - (Diagonal lines) INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM (3)
  - (Solid black) INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM (4)
  - (Cross-hatched) INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM (9)

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PROJECT NO: 15.0702.S.02  
 DATE: 04/13/2016  
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SHEET TITLE:  
**LEVEL 7 PLAN - NORTH**  
 SHEET NUMBER:  
**S1.07n**



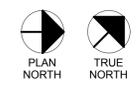
**PLAN NOTES:**  
 1. THE WORK ITEMS SHOWN ON THIS LEVEL OCCUR ON THE TOP SURFACE AND / OR WALLS / COLUMNS ABOVE THE AREA OUTLINED IN THE KEY PLAN.

**LEVEL 7 SOUTH**

1/16" = 1'-0"

**PLAN NOTES:**

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- WORK ITEMS TYPICAL TO THIS PLAN ARE: 2 8 18
- INDICATES APPROXIMATE LOCATION AND SQUARE FOOTAGE OF DAMAGED OR UNBONDED TOPPING. SEE WORK ITEM 1
- INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM 3
- INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM 4
- INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM 9

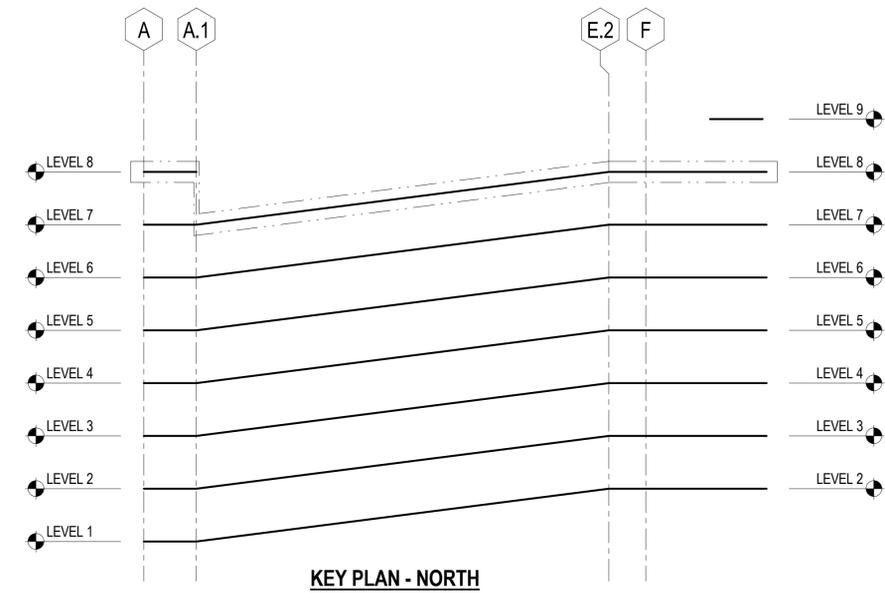
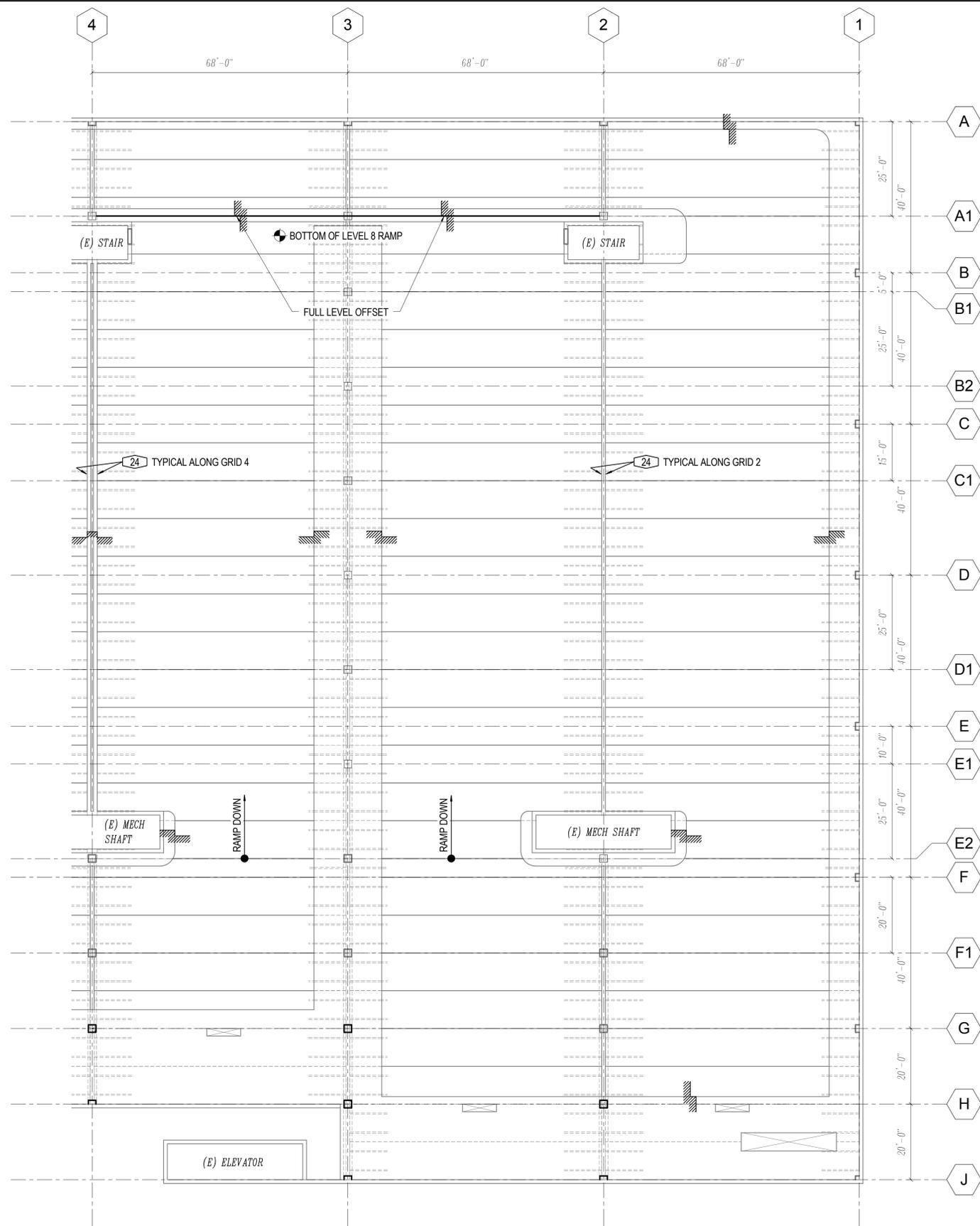


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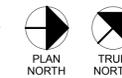
SHEET TITLE:  
**LEVEL 7 PLAN - SOUTH**  
 SHEET NUMBER:  
**S1.07s**



**PLAN NOTES:**  
 1. THE WORK ITEMS SHOWN ON THIS LEVEL OCCUR ON THE TOP SURFACE AND / OR WALLS / COLUMNS ABOVE THE AREA OUTLINED IN THE KEY PLAN.

**LEVEL 8 NORTH**

1/16" = 1'-0"



**PLAN NOTES:**

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**DPAC - GARAGE CRITICAL REPAIRS**

950 13th STREET  
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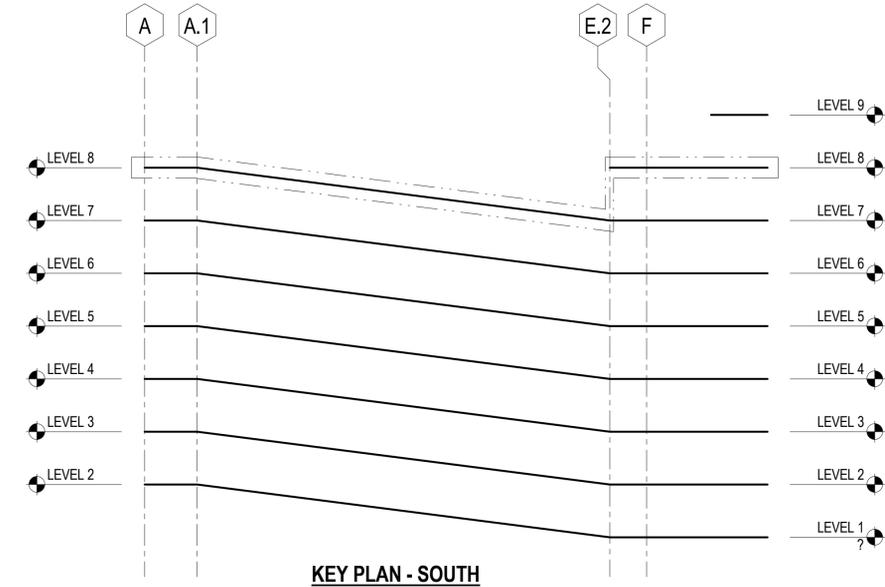
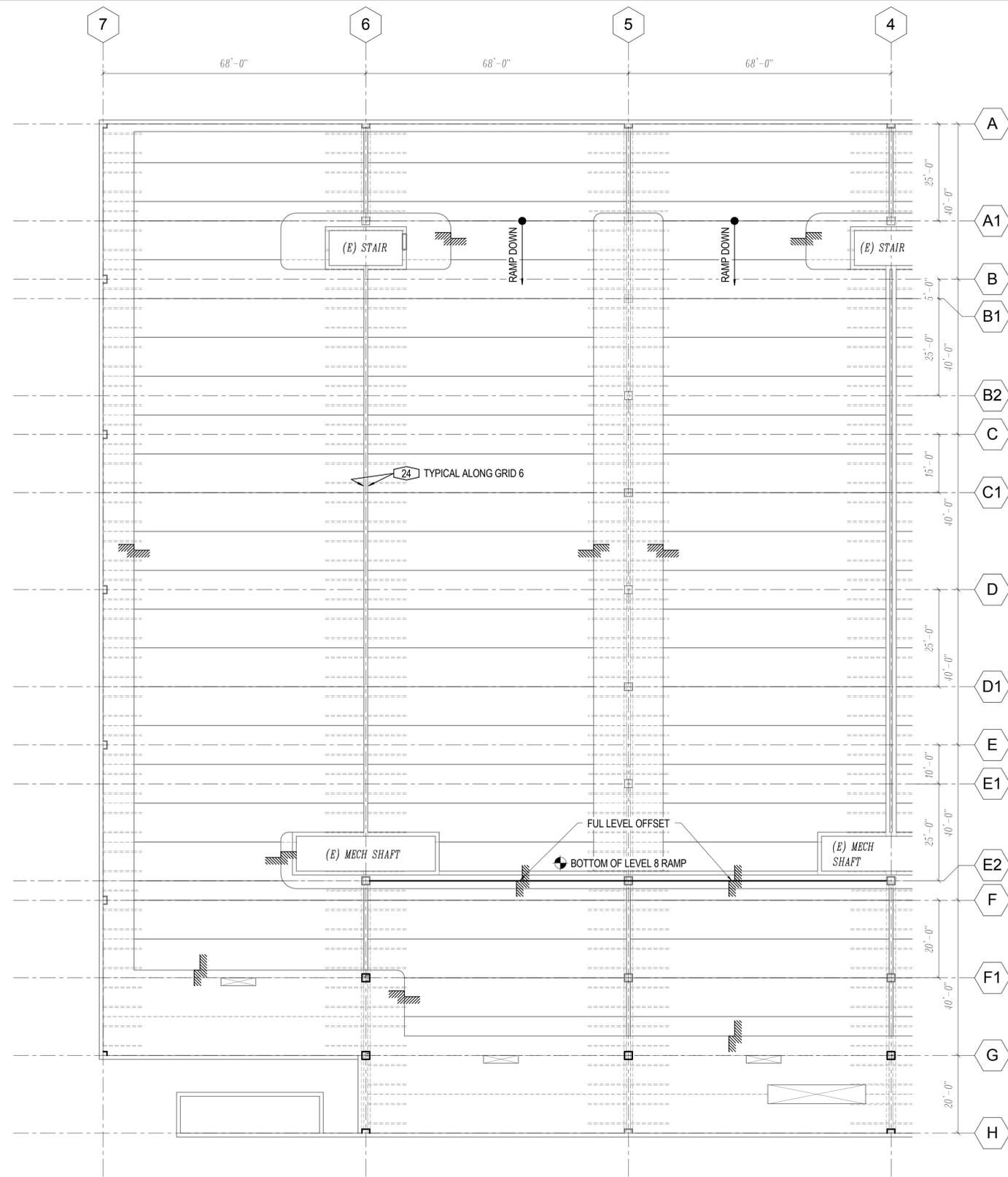
**REVISIONS**

NO.	ISSUE	DATE

PROJECT NO: 15.0702.S.02  
 DATE: 04/13/2016  
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SHEET TITLE:  
**LEVEL 8 PLAN - NORTH**

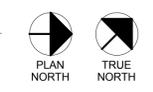
SHEET NUMBER:  
**S1.08n**



**PLAN NOTES:**  
 1. THE WORK ITEMS SHOWN ON THIS LEVEL OCCUR ON THE TOP SURFACE AND / OR WALLS / COLUMNS ABOVE THE AREA OUTLINED IN THE KEY PLAN.

**LEVEL 8 SOUTH**

1/16" = 1'-0"



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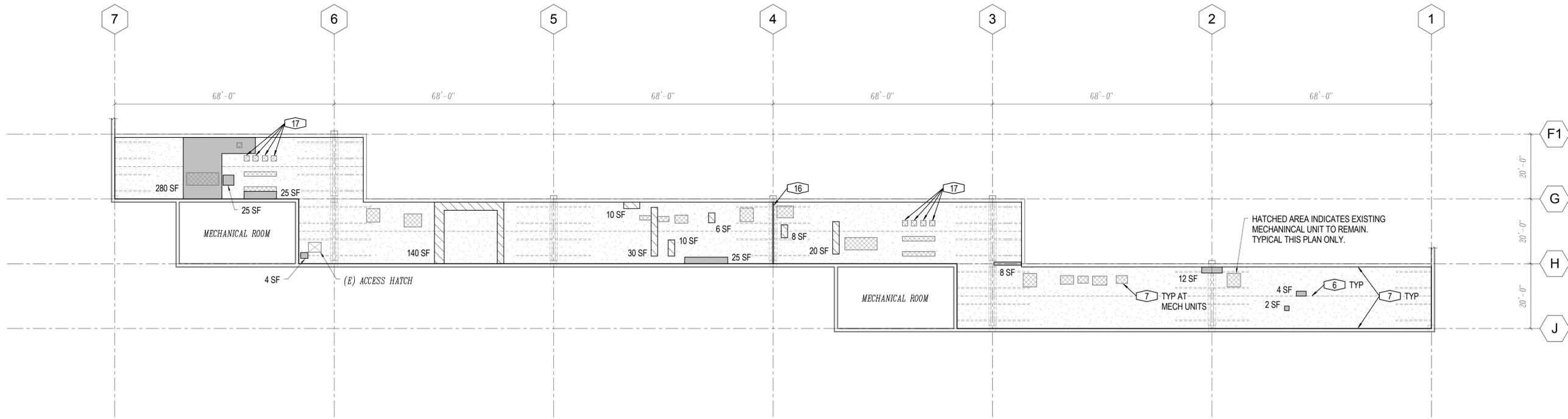
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SHEET TITLE:  
**LEVEL 8 PLAN - SOUTH**

SHEET NUMBER:  
**S1.08s**



**LEVEL 9**

1/16" = 1'-0"



**PLAN NOTES:**

- SEE SHEET S0.02 FOR A COMPREHENSIVE LIST OF WORK ITEMS AND QUANTITIES FOR THE ENTIRE PROJECT. EVERY WORK ITEM NUMBER WILL NOT NECESSARILY BE USED ON EACH PLAN.
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- WORK ITEMS TYPICAL TO THIS PLAN ARE: **2** **8**
- INDICATES APPROXIMATE LOCATION AND SQUARE FOOTAGE OF DAMAGED OR UNBONDED TOPPING. SEE WORK ITEM **1**
- INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM **3**
- INDICATES THE EXTENT OF THE PARKING DECK TO PERFORM WORK ITEM **Add1**

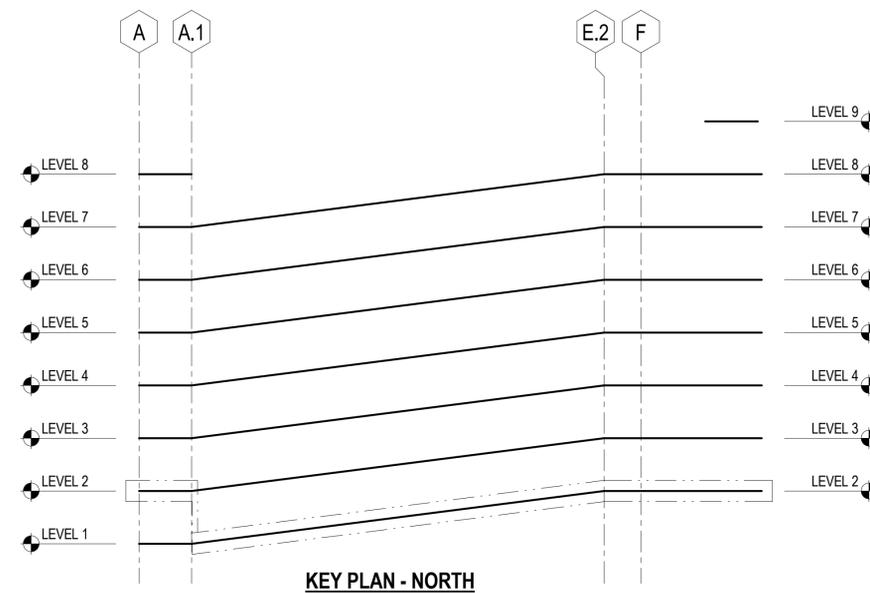
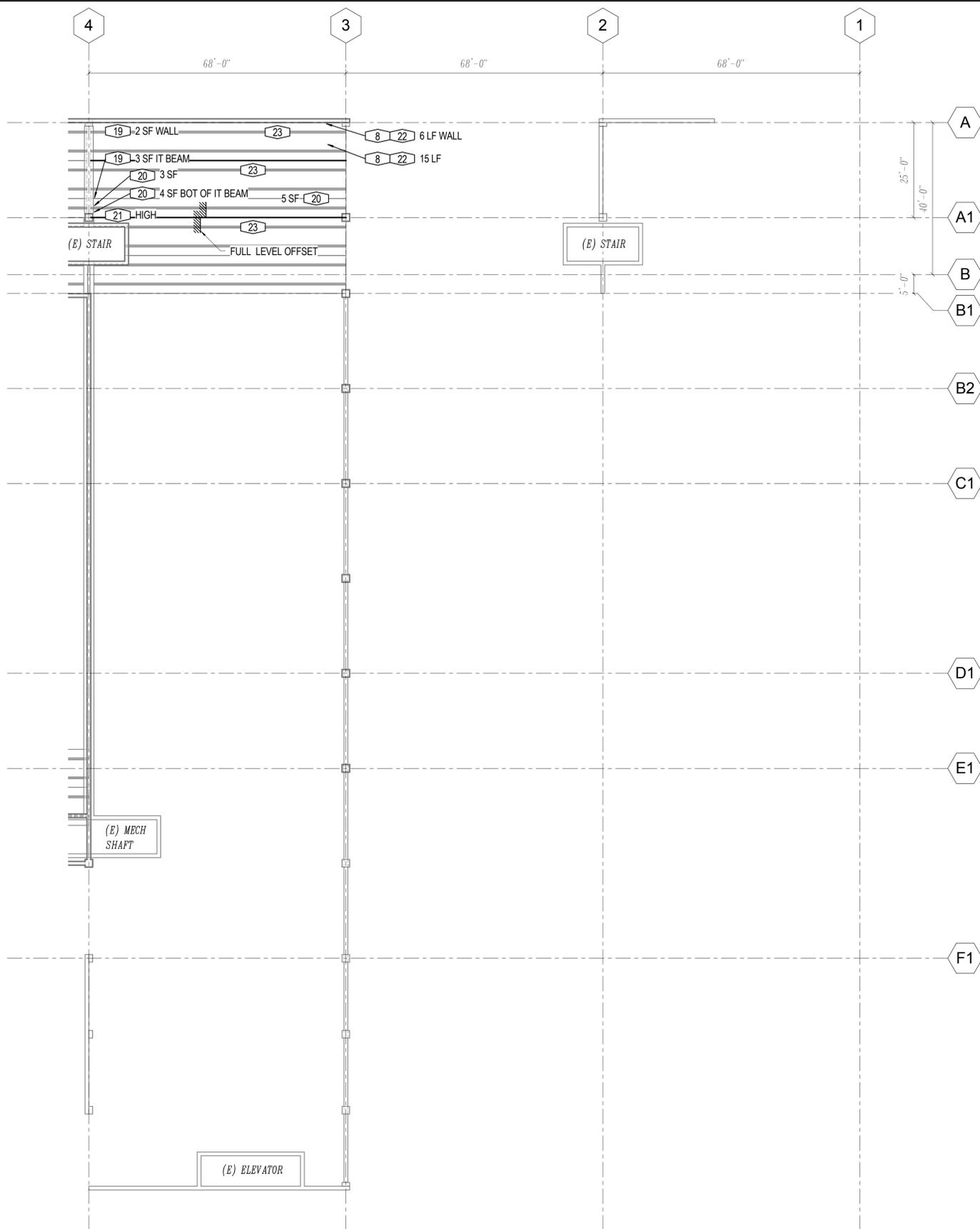
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SHEET TITLE:  
**LEVEL 9 PLAN**

SHEET NUMBER:  
**S1.09**



**RCP NOTES:**  
 1. THE WORK ITEMS SHOWN ON THIS LEVEL OCCUR ON THE UNDERSIDE OF THE LEVEL OUTLINED IN THE KEY PLAN.

**LEVEL 1 RCP - NORTH**

1/16" = 1'-0"



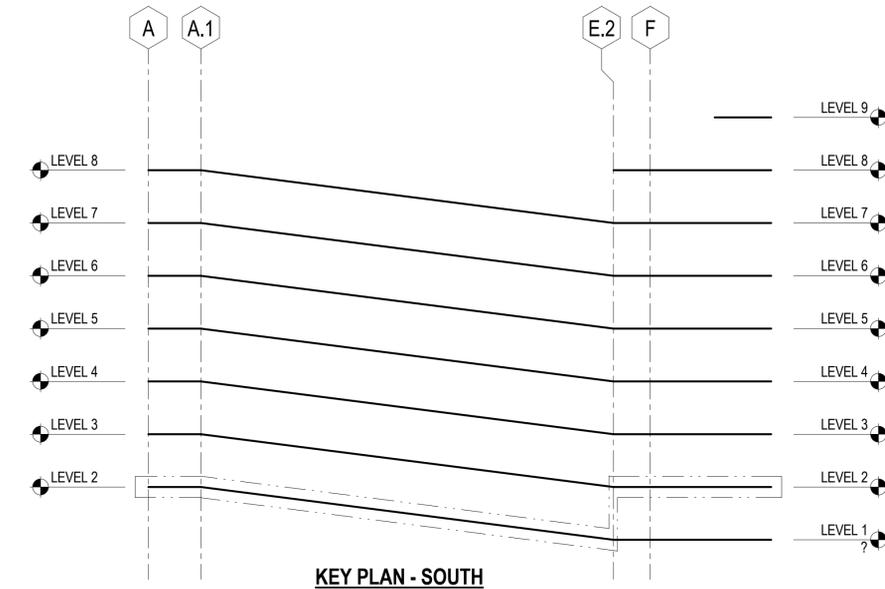
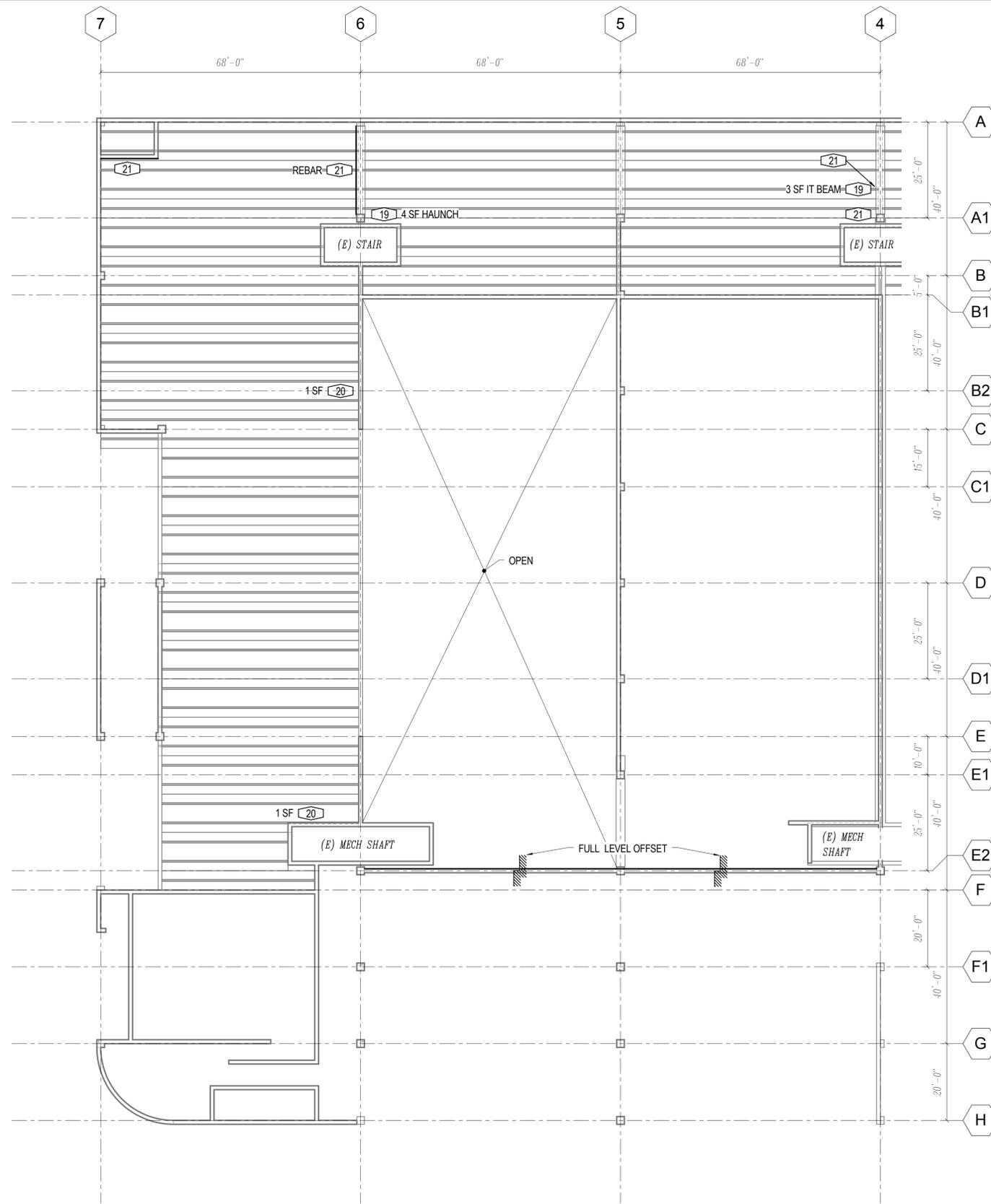
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PROJECT NO: 15.0702.S.02  
 DATE: 04/13/2016  
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SHEET TITLE:  
**LEVEL 1 REFLECTED CEILING PLAN - NORTH**  
 SHEET NUMBER:  
**S2.01n**



**RCP NOTES:**  
 1. THE WORK ITEMS SHOWN ON THIS LEVEL OCCUR ON THE UNDERSIDE OF THE LEVEL OUTLINED IN THE KEY PLAN.

**LEVEL 1 RCP - SOUTH**

1/16" = 1'-0"



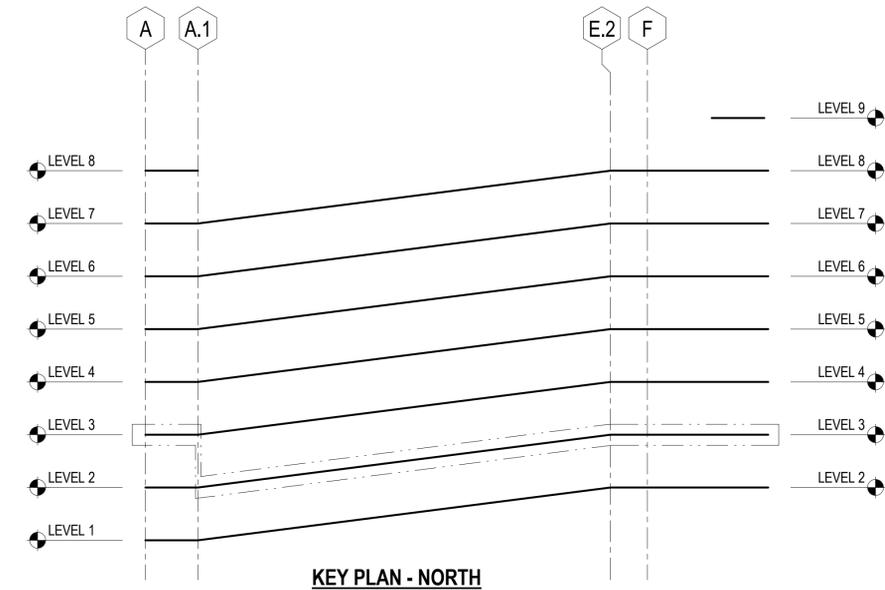
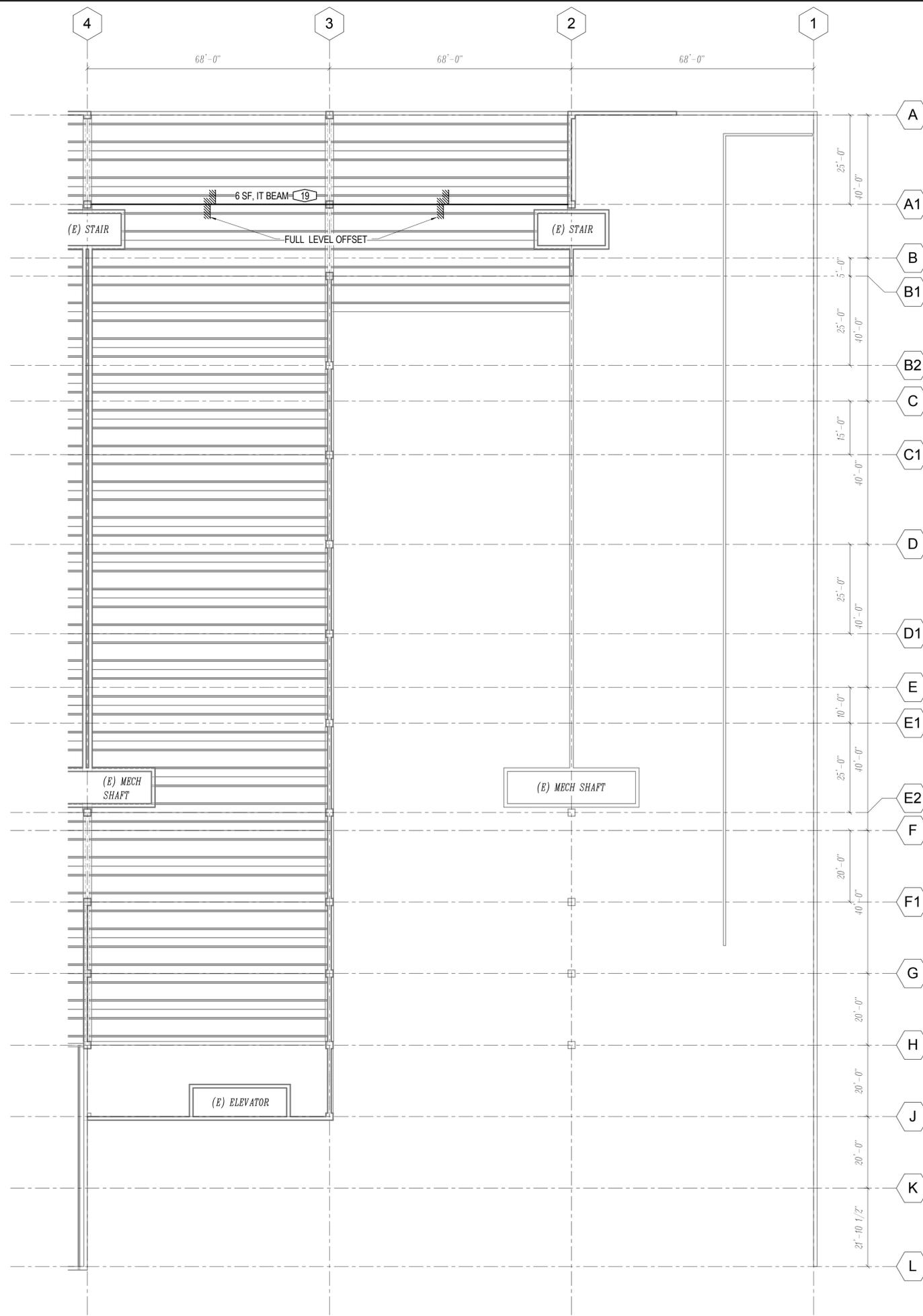
- RCP NOTES:**
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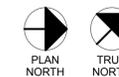
SHEET TITLE:  
**LEVEL 1 REFLECTED CEILING PLAN - SOUTH**  
 SHEET NUMBER:  
**S2.01s**



**RCP NOTES:**  
 1. THE WORK ITEMS SHOWN ON THIS LEVEL OCCUR ON THE UNDERSIDE OF THE LEVEL OUTLINED IN THE KEY PLAN.

**LEVEL 2 RCP - NORTH**

1/16" = 1'-0"



**RCP NOTES:**

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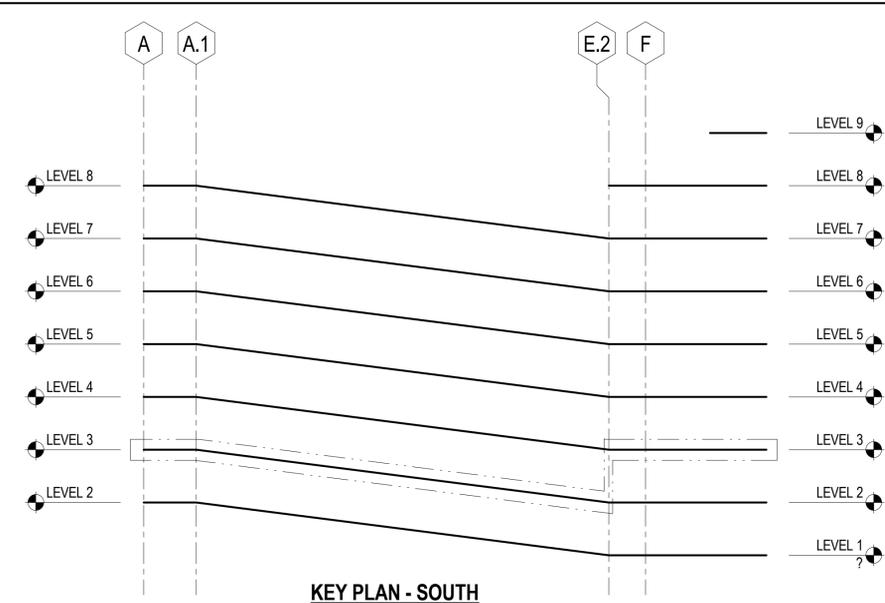
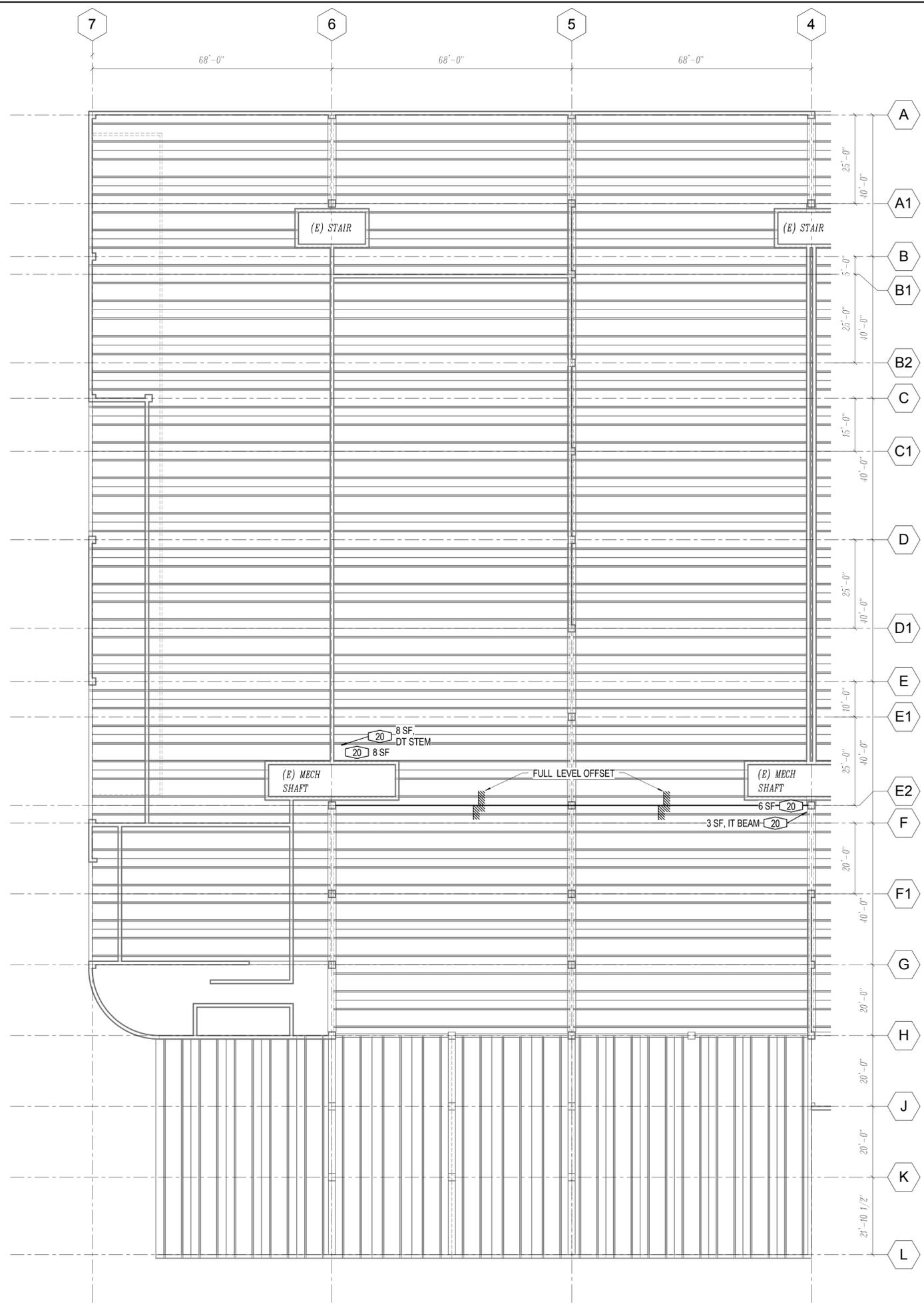
**DPAC - GARAGE CRITICAL REPAIRS**

950 13th STREET  
 DENVER, COLORADO 80204  
 CITY PROJECT NUMBER: 201525595

REVISIONS		
NO.	ISSUE	DATE

PROJECT NO: 15.0702.S.02  
 DATE: 04/13/2016  
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SHEET TITLE:  
**LEVEL 2 REFLECTED CEILING PLAN - NORTH**  
 SHEET NUMBER:  
**S2.02n**



**RCP NOTES:**  
 1. THE WORK ITEMS SHOWN ON THIS LEVEL OCCUR ON THE UNDERSIDE OF THE LEVEL OUTLINED IN THE KEY PLAN.

**LEVEL 2 RCP - SOUTH**

1/16" = 1'-0"

**RCP NOTES:**

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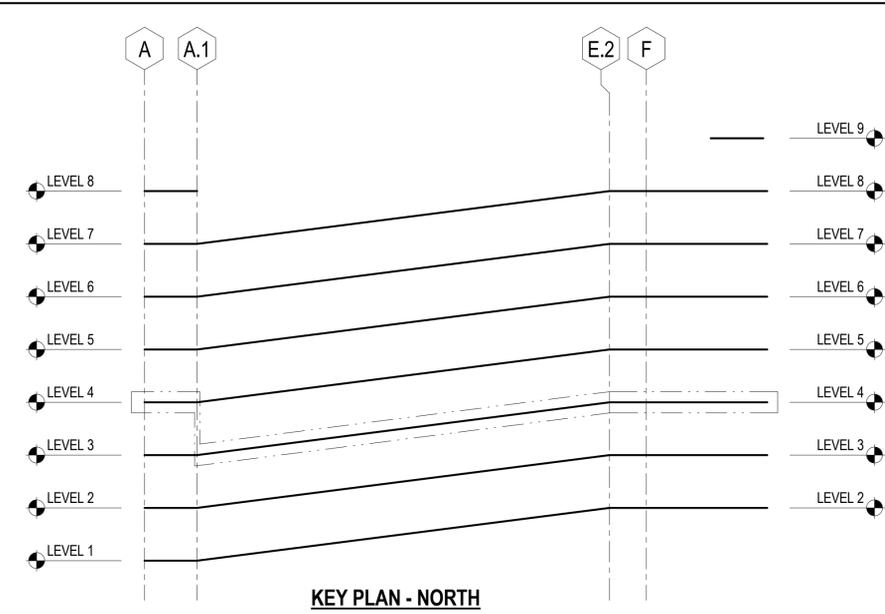
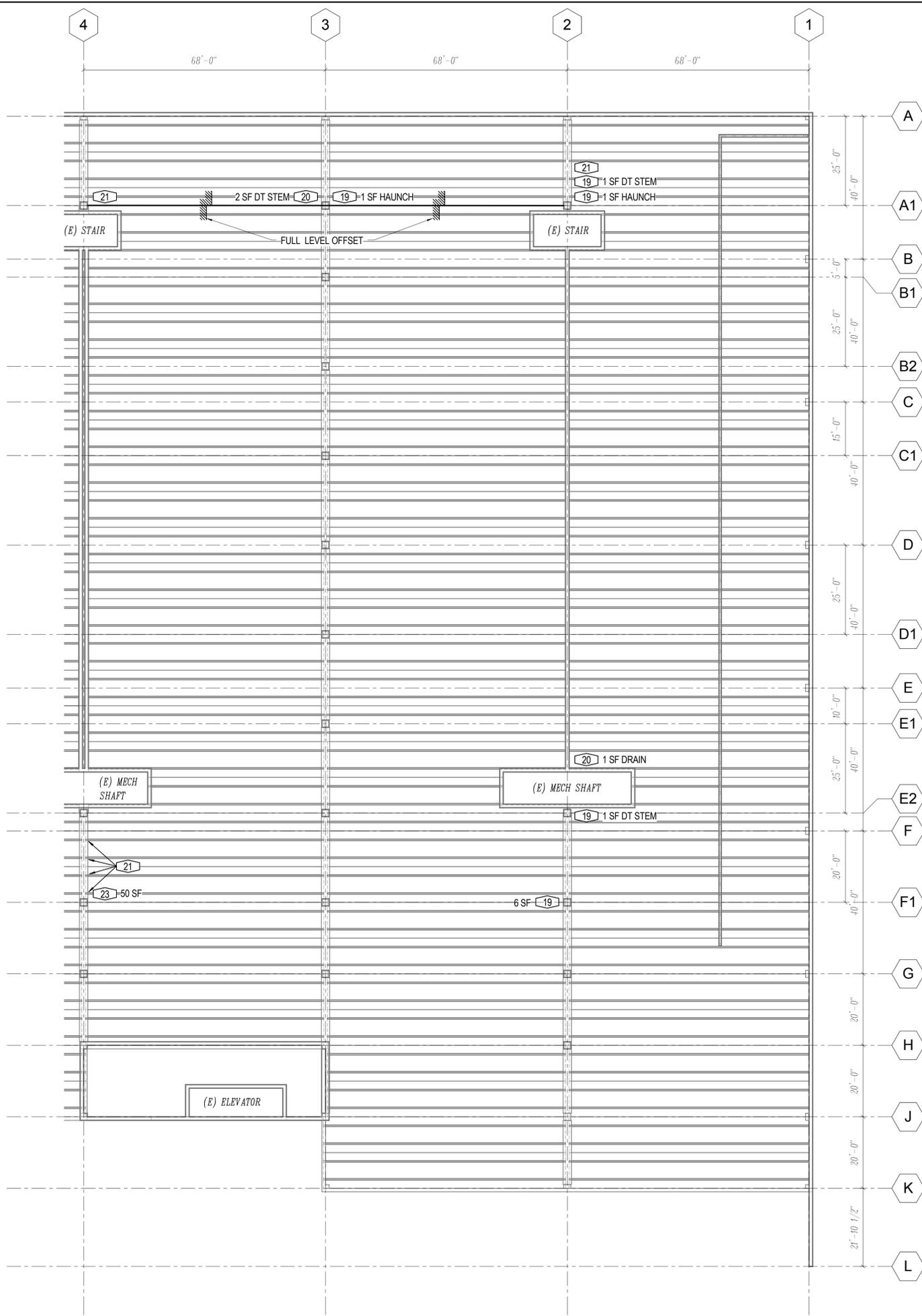
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**REVISIONS**

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SHEET TITLE:  
**LEVEL 2 REFLECTED CEILING PLAN - SOUTH**  
 SHEET NUMBER:  
**S2.02s**



**RCP NOTES:**  
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**LEVEL 3 RCP - NORTH**

1/16" = 1'-0"



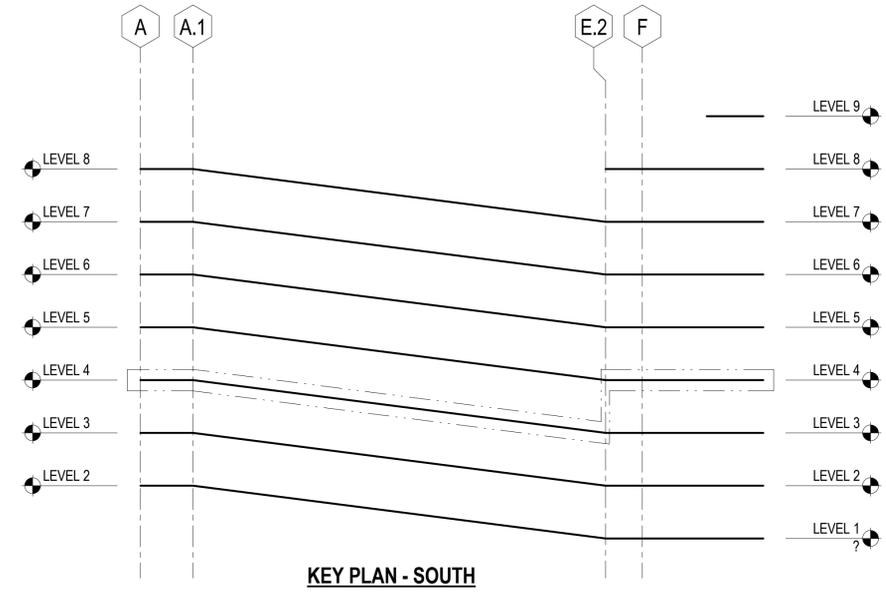
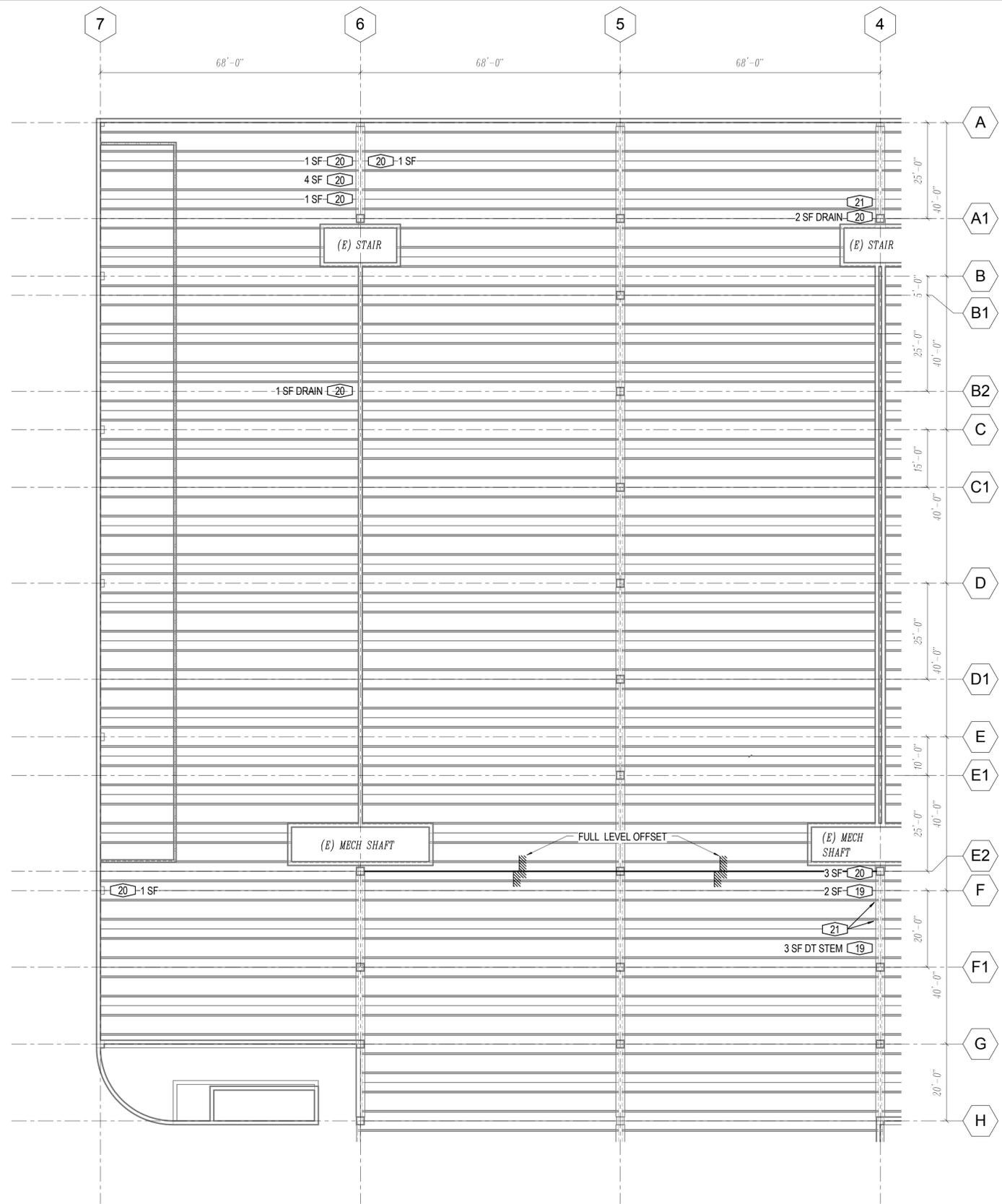
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SHEET TITLE:  
**LEVEL 3 REFLECTED CEILING PLAN - NORTH**  
 SHEET NUMBER:  
**S2.03n**



**RCP NOTES:**  
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**LEVEL 3 RCP - SOUTH**

1/16" = 1'-0"



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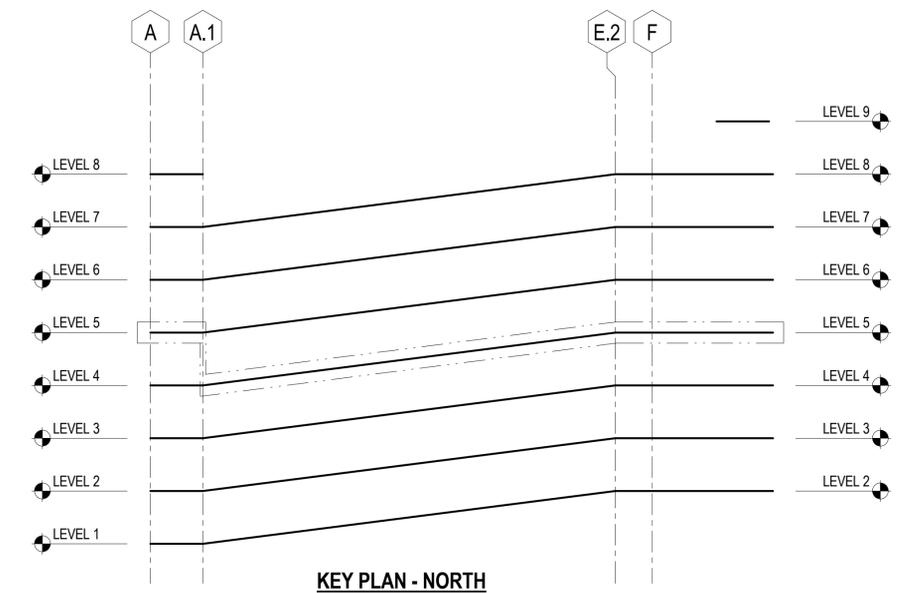
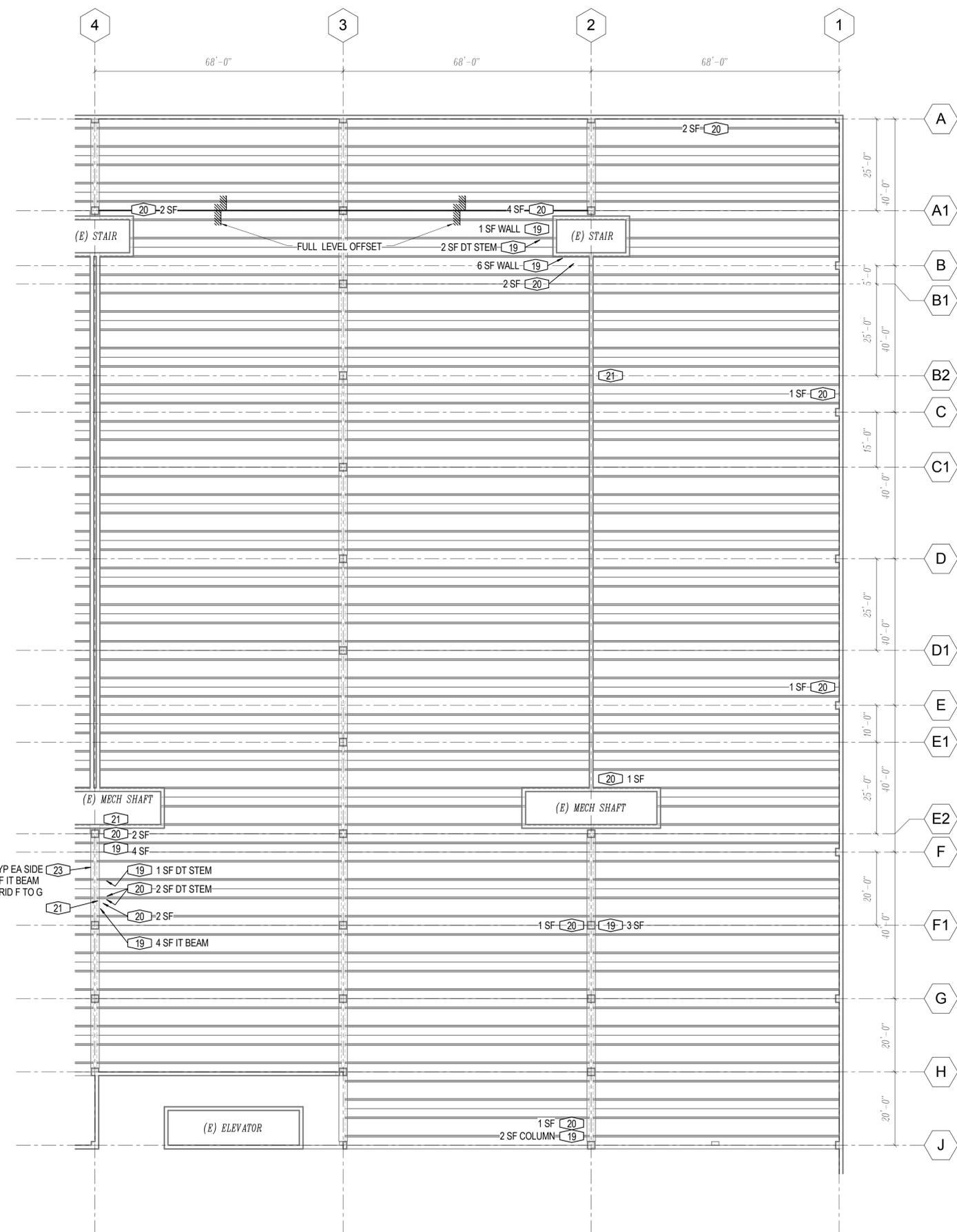
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**LEVEL 3 REFLECTED CEILING PLAN - SOUTH**  
 SHEET NUMBER:  
**S2.03s**



RCP NOTES:  
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**LEVEL 4 RCP - NORTH**

1/16" = 1'-0"



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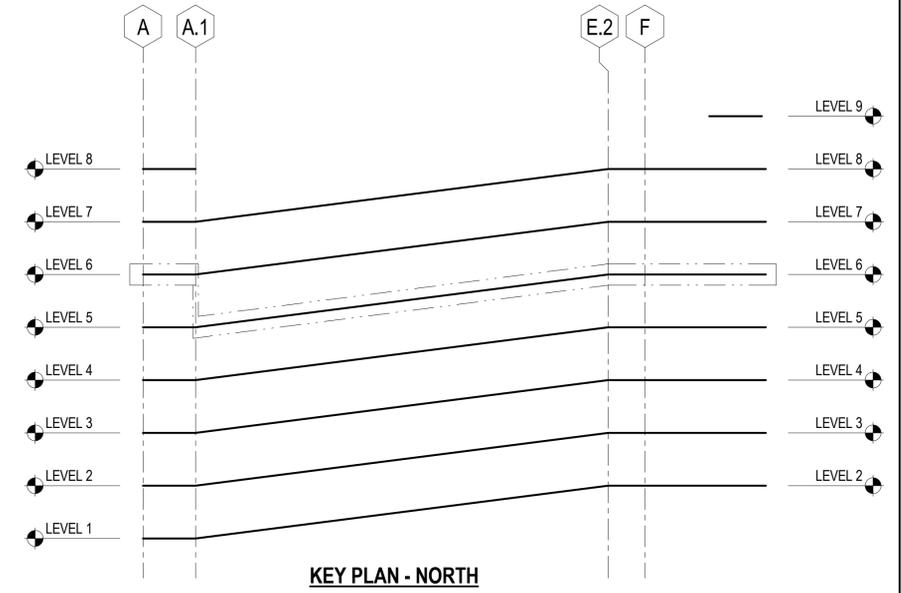
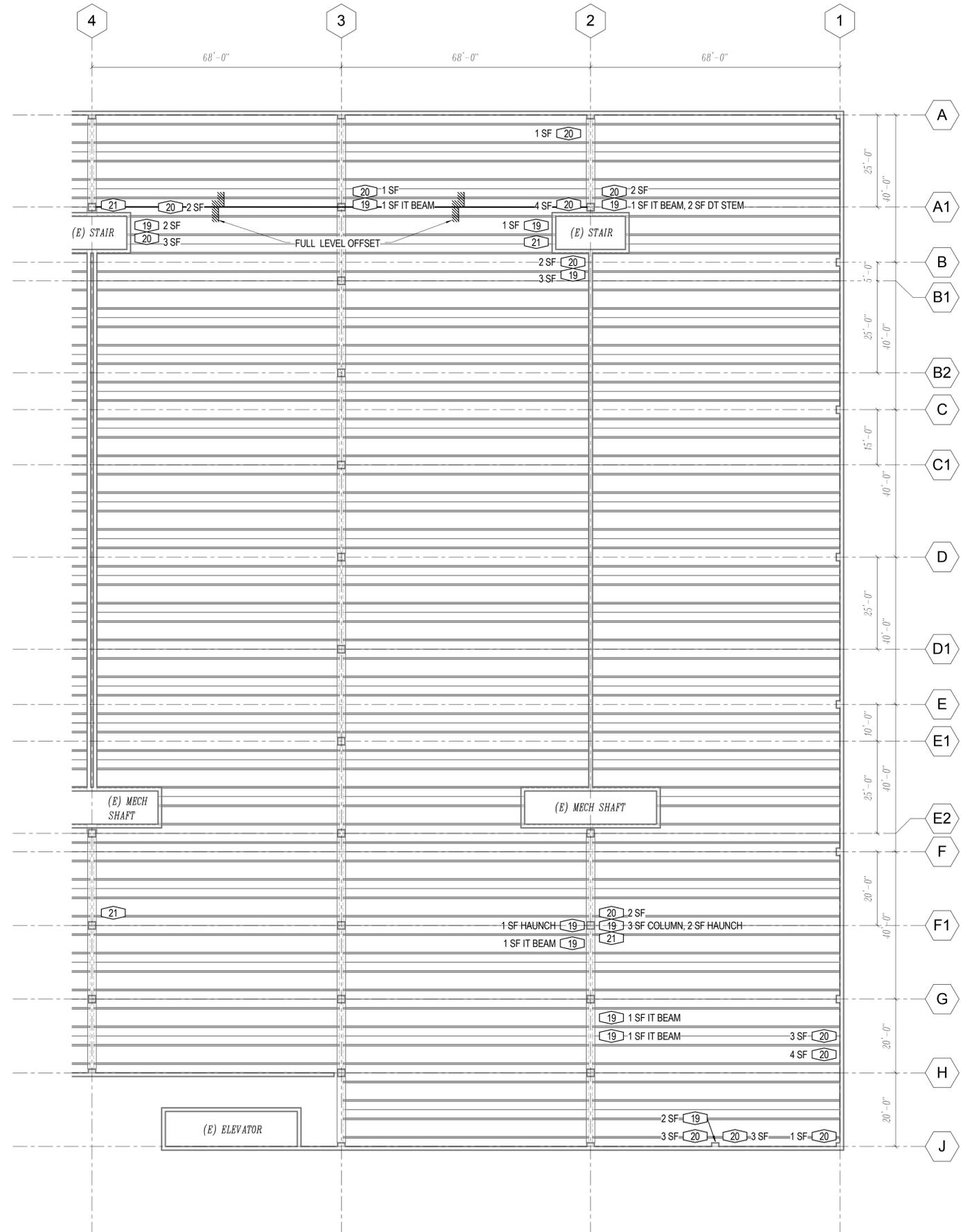
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SHEET TITLE:  
**LEVEL 4 REFLECTED CEILING PLAN - NORTH**  
 SHEET NUMBER:  
**S2.04n**





**RCP NOTES:**  
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**LEVEL 5 RCP - NORTH**

1/16" = 1'-0"



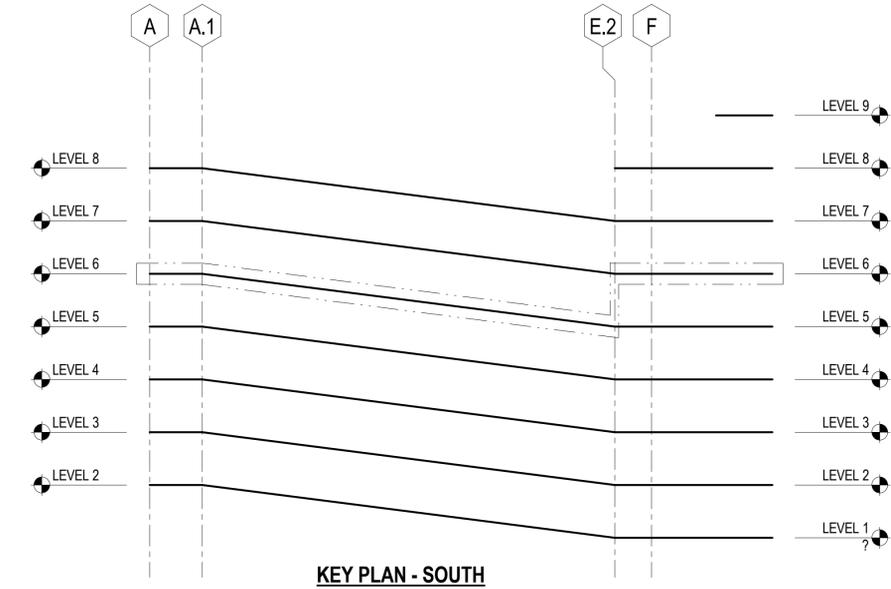
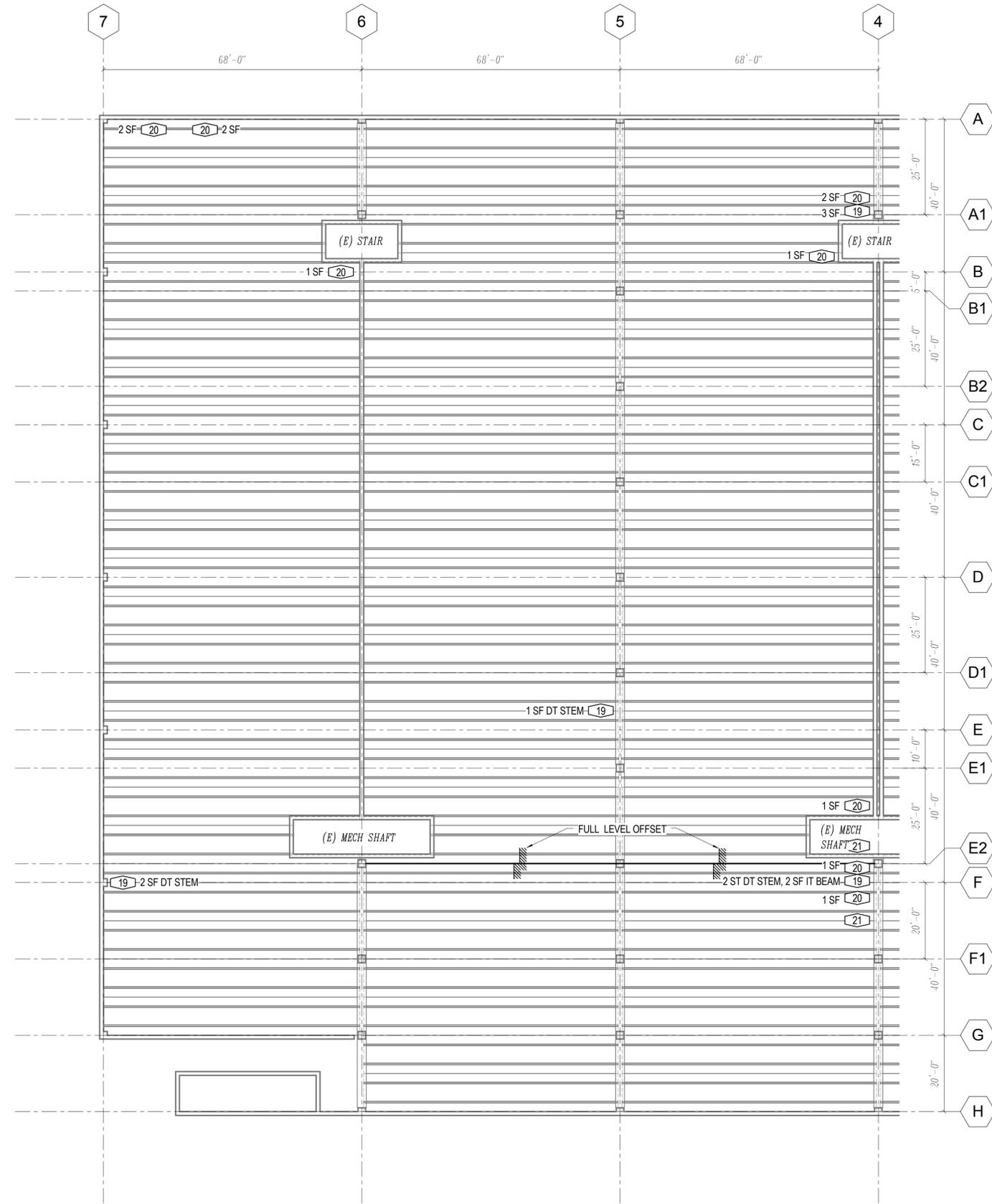
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**S2.05n**



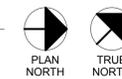
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**LEVEL 5 RCP - SOUTH**

1/16" = 1'-0"

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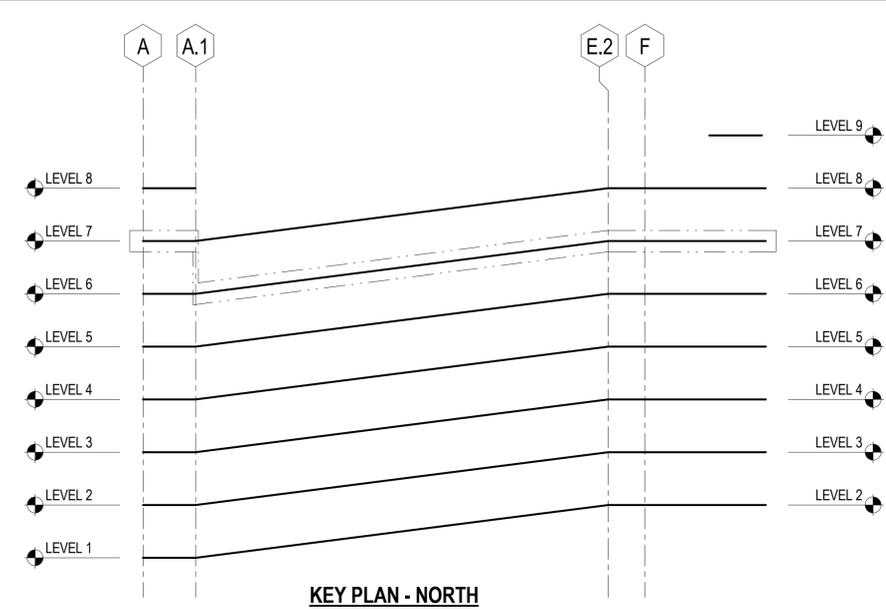
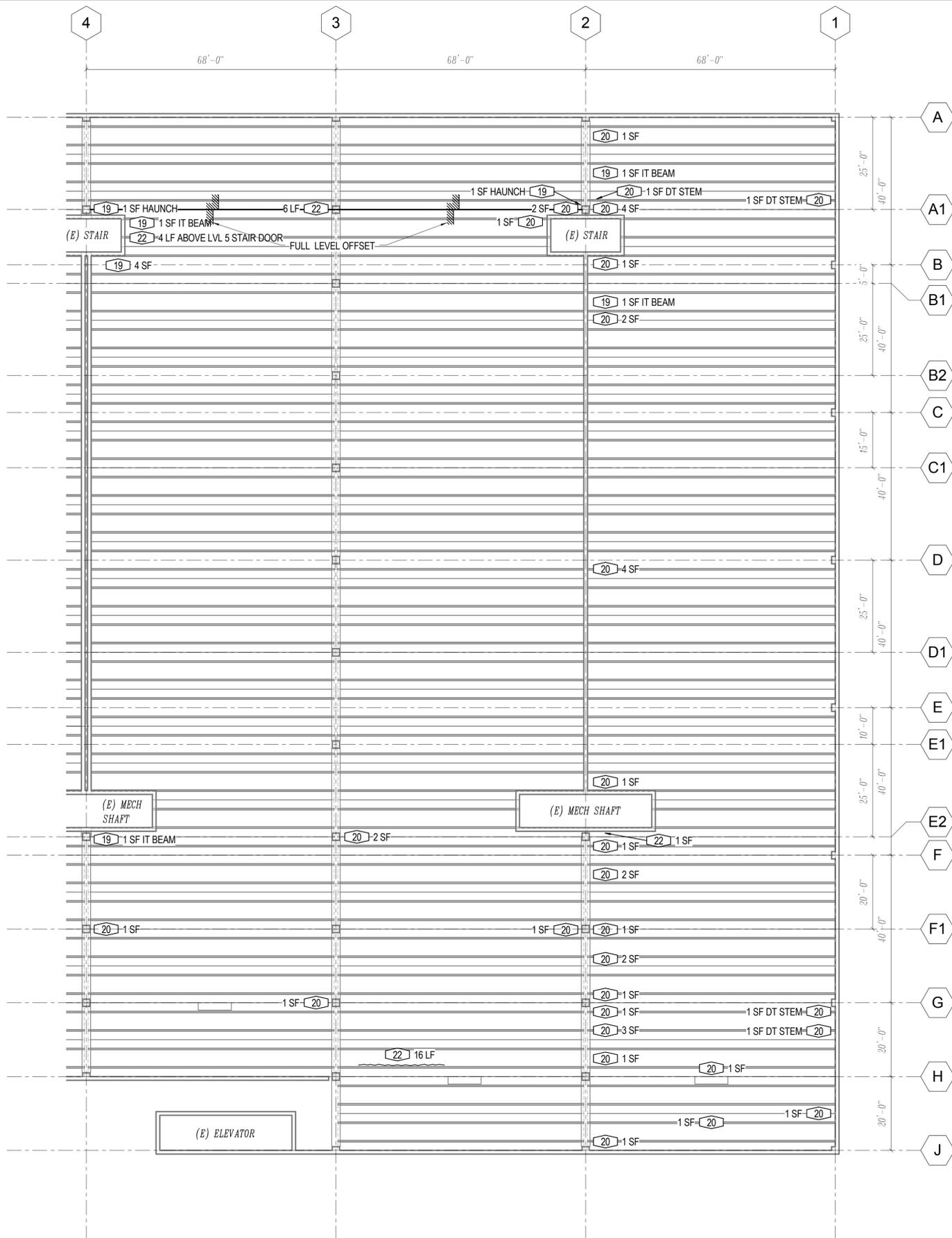
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**S2.05s**



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**LEVEL 6 RCP - NORTH**

1/16" = 1'-0"



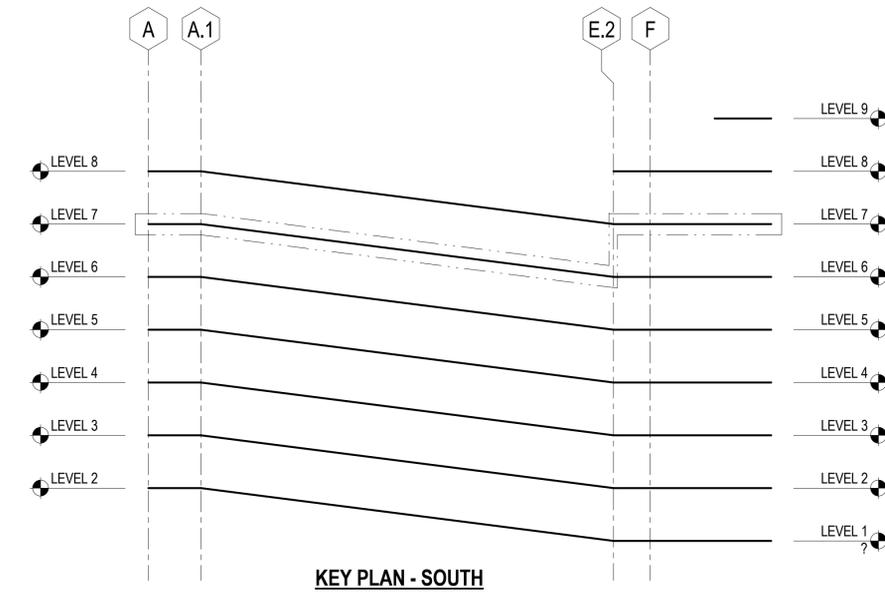
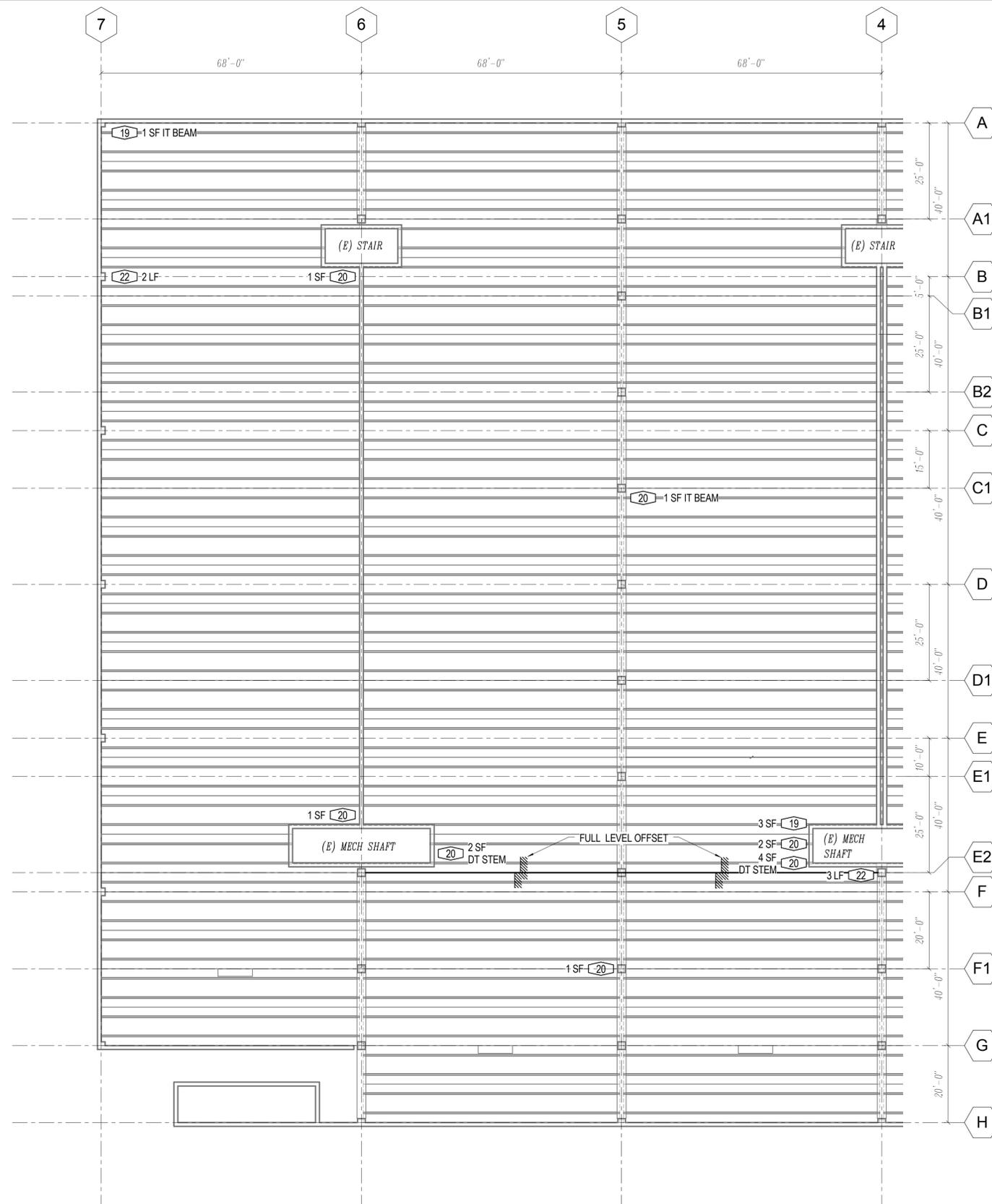
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**LEVEL 6 REFLECTED CEILING PLAN - NORTH**  
 SHEET NUMBER:  
**S2.06n**



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**LEVEL 6 RCP - SOUTH**

1/16" = 1'-0"



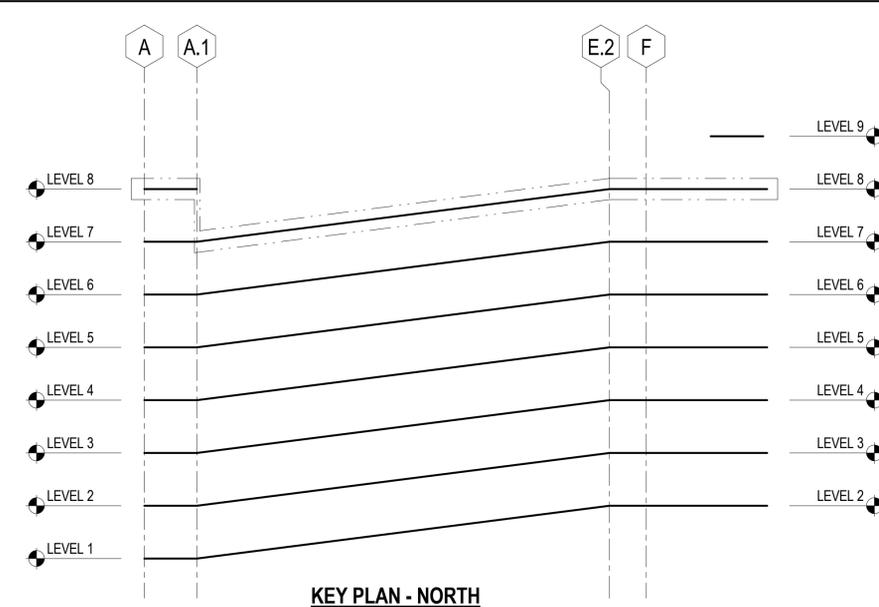
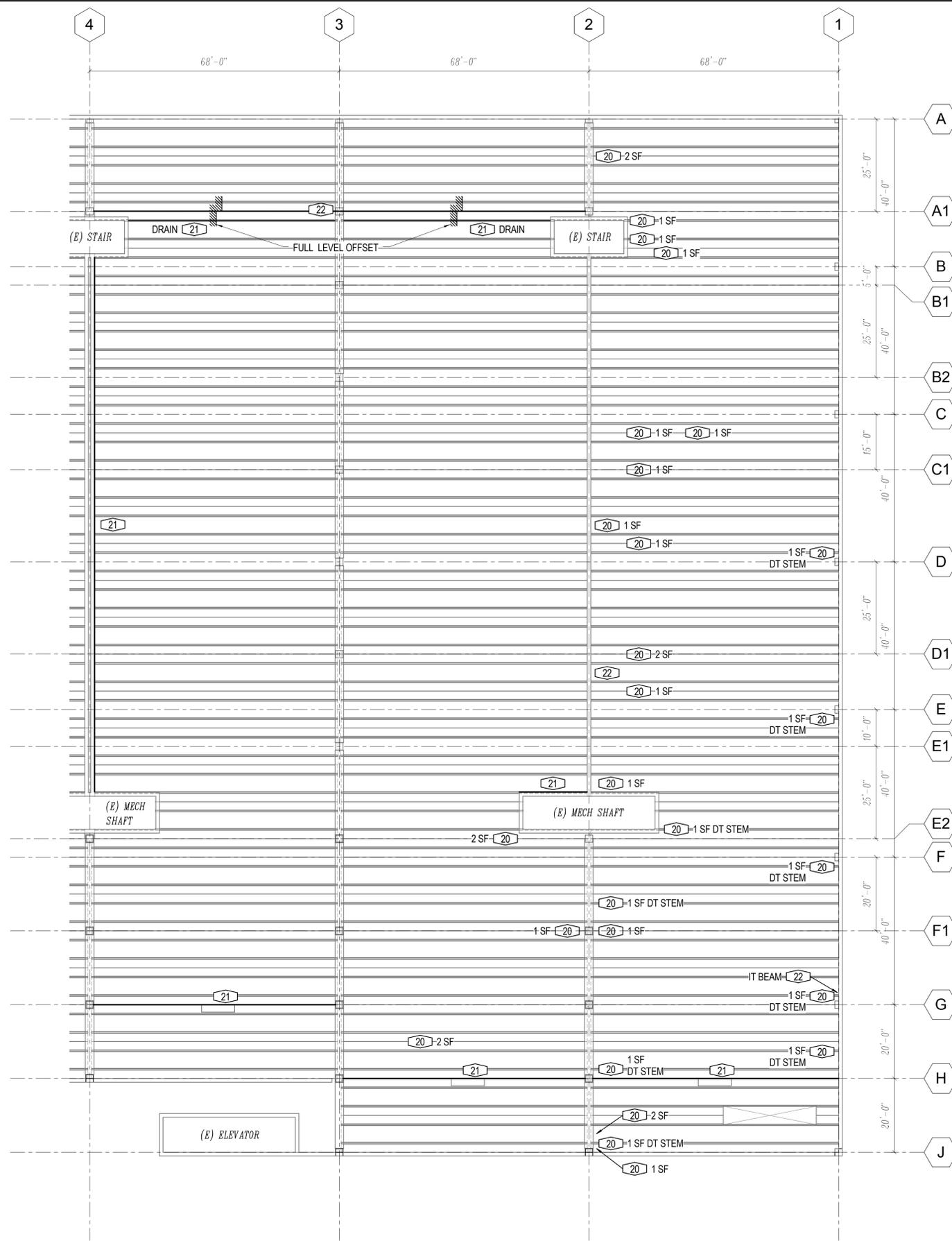
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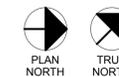
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**LEVEL 7 RCP - NORTH**

1/16" = 1'-0"

**RCP NOTES:**

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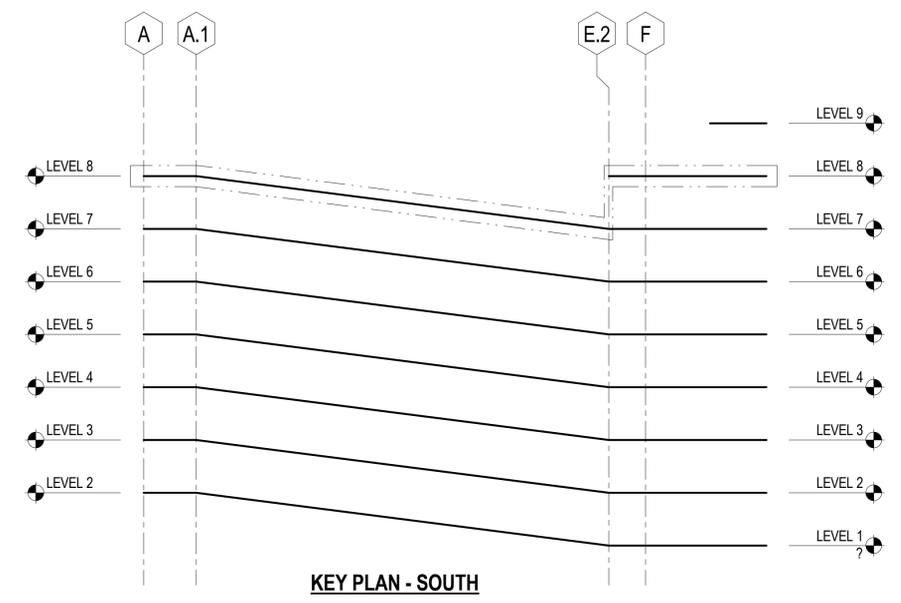
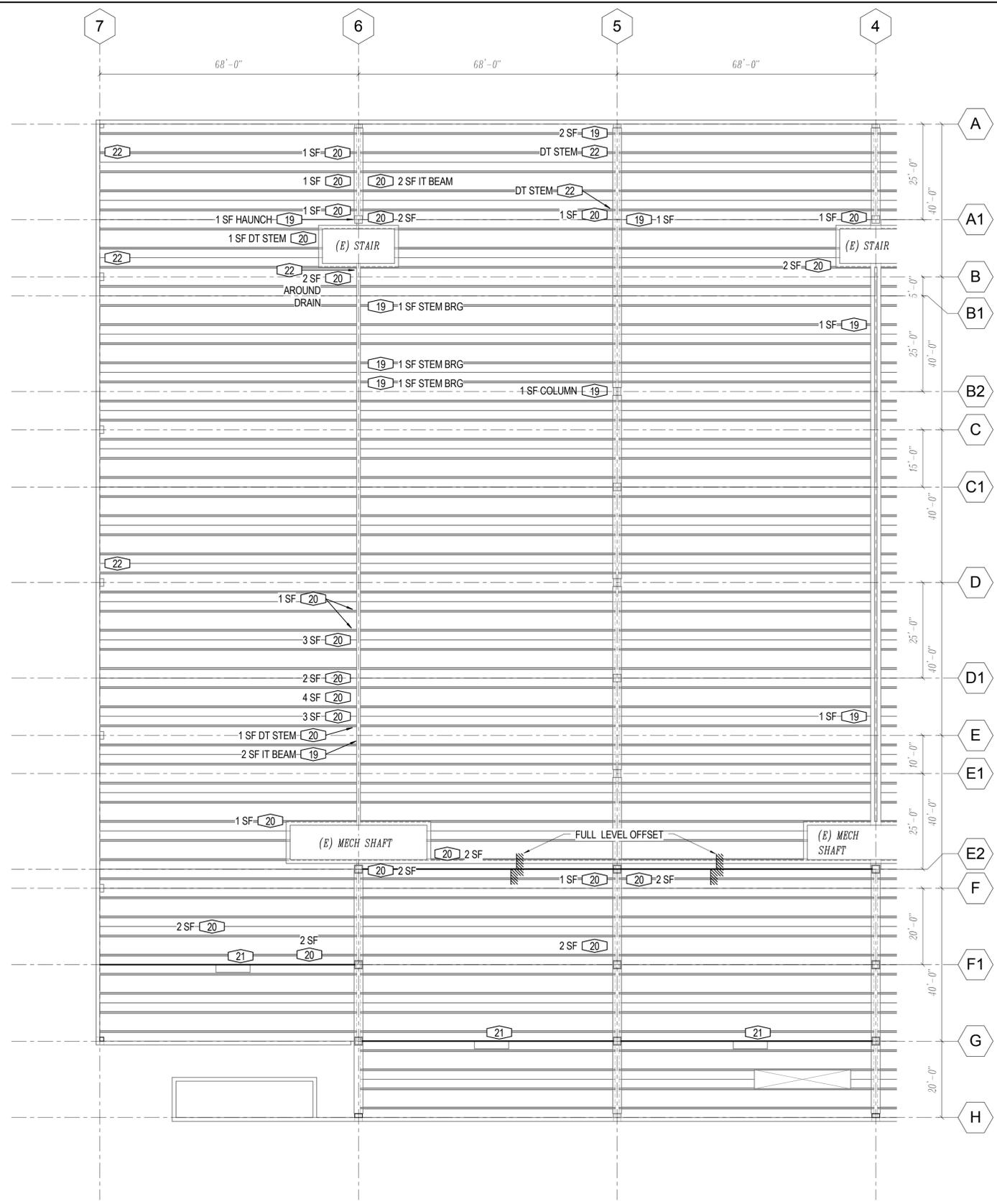


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SHEET TITLE:  
**LEVEL 7 REFLECTED CEILING PLAN - NORTH**  
 SHEET NUMBER:  
**S2.07n**



**RCP NOTES:**  
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**LEVEL 7 RCP - SOUTH**

1/16" = 1'-0"



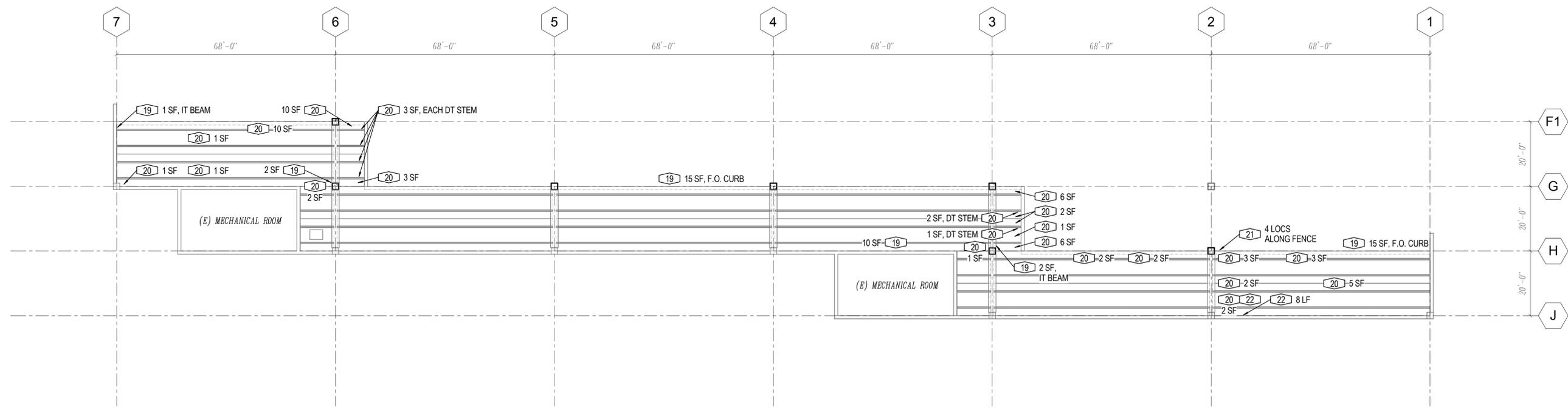
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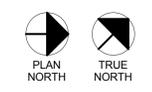
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**LEVEL 7 REFLECTED CEILING PLAN - SOUTH**  
 SHEET NUMBER:  
**S2.07s**



**LEVEL 8 RCP**

1/16" = 1'-0"



**RCP NOTES:**

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PRINCIPAL: EJ  
EOR: Enter EOR's Name Here  
PROJECT MANAGER: BB

**DPAC - GARAGE CRITICAL REPAIRS**

950 13th STREET  
DENVER, COLORADO 80204  
CITY PROJECT NUMBER: 201525595

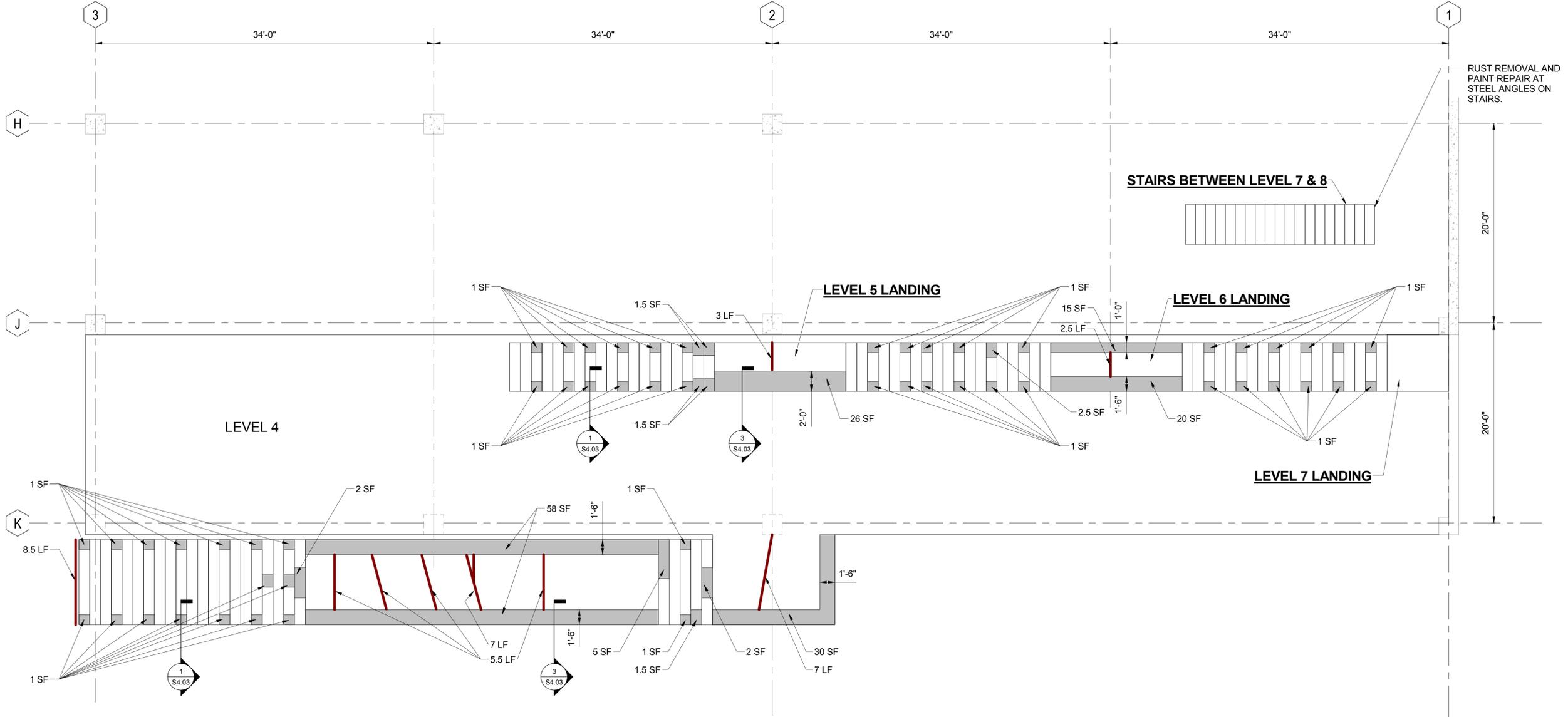
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NO.	ISSUE	DATE

PROJECT NO: 15.0702.S.02  
DATE: 04/13/2016  
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**SHEET TITLE:**  
LEVEL 8 REFLECTED  
CEILING PLAN

SHEET NUMBER:  
**S2.08**



**NORTH STAIR DETERIORATION PLAN**

3/16" = 1'-0"

**PLAN NOTES:**

1. SEE SHEET S0.02 FOR A COMPREHENSIVE LIST OF WORK ITEMS AND QUANTITIES FOR THE ENTIRE PROJECT. EVERY WORK ITEM NUMBER WILL NOT NECESSARILY BE USED ON EACH PLAN.
2. ALL DIMENSIONS ARE APPROXIMATE AND FOR BIDDING PURPOSES ONLY. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS PRIOR TO PERFORMING REPAIRS OR INSTALLING SEALANTS AND COATINGS.
3. INDICATES APPROXIMATE LOCATION AND SQUARE FOOTAGE OF DAMAGED OR UNBONDED TOPPING. SEE WORK ITEM S1
4. INDICATES APPROXIMATE LOCATION AND LINEAR FEET OF CRACKS TO BE ROUTED AND SEALED. SEE WORK ITEM S4
5. WORK ITEMS TYPICAL TO THIS PLAN ARE: S2 S3 S5 S6 S7

**DPAC - GARAGE CRITICAL REPAIRS**  
 950 13th STREET  
 DENVER, COLORADO 80204

CITY PROJECT NUMBER: 201525595

REVISIONS		
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PROJECT NO: 15.0702.S.02  
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SHEET TITLE:  
**NORTH STAIR PLAN**

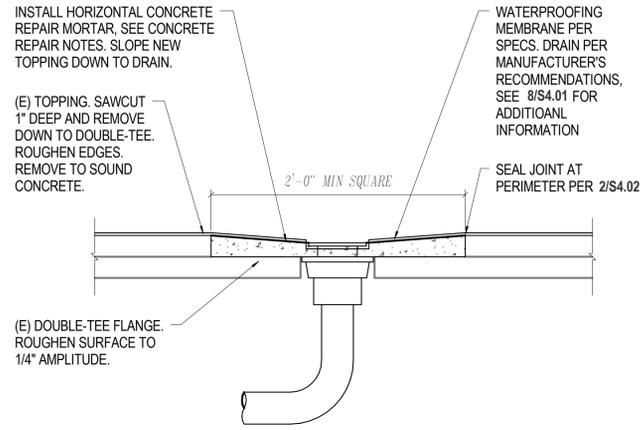
SHEET NUMBER:  
**S3.01**

**LAP SPLICE SCHEDULE (INCHES)**

BAR SIZE (IN-LB)	BAR SIZE (METRIC)	F <sub>c</sub> = 5,000 PSI CLASS 'B'
#3	#10	22
#4	#13	29
#5	#16	36
#6	#19	43
#7	#22	63
#8	#25	72
#9	#29	81
#10	#32	91
#11	#36	101

**LAP SPLICE NOTES:**

- ALL SPLICES SHALL BE WIRED IN CONTACT
- LAP LENGTHS SPECIFICALLY DETAILED ON DRAWINGS SHALL GOVERN IN LIEU OF LAP LENGTHS SCHEDULED
- SCHEDULED LAP LENGTHS ASSUME:
  - CLEAR COVER IS GREATER THAN BAR DIAMETER, BUT NOT LESS THAN 3/4"
  - CLEAR SPACING BETWEEN BARS IS GREATER THAN 2 BAR DIAMETERS
  - IF EITHER CONDITION A OR B IS NOT MET FOR A GIVEN BAR, INCREASE LENGTHS BY 50%
  - IF REINFORCING IS EPOXY COATED, INCREASE SCHEDULED LENGTHS BY 50%

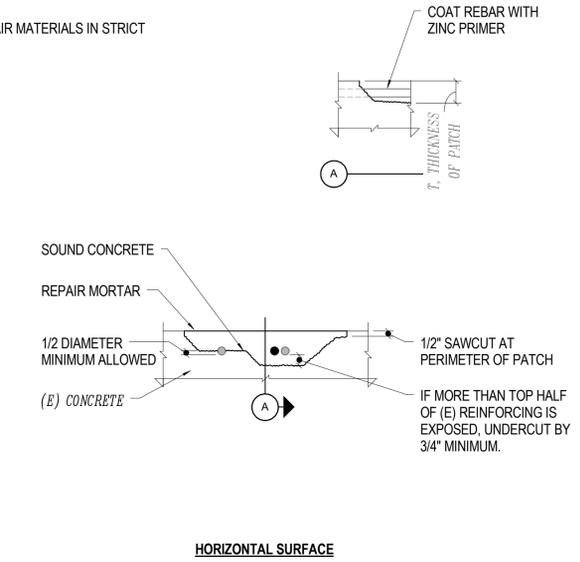
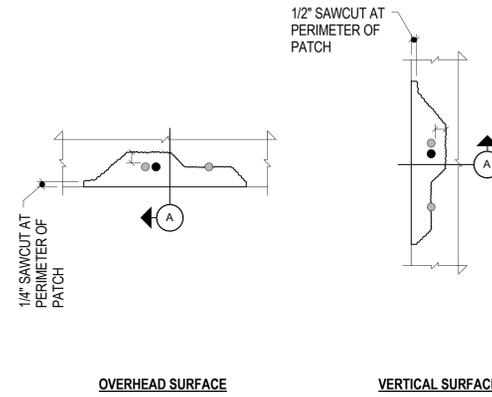


**NOTE:**

- INSTALL NEW DRAINS IN STRICT ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. PROVIDE ALL NECESSARY GASKETS, ADAPTERS, ETC. AS REQUIRED FOR THE PROPER INSTALLATION OF THE DRAINS.

**NOTES:**

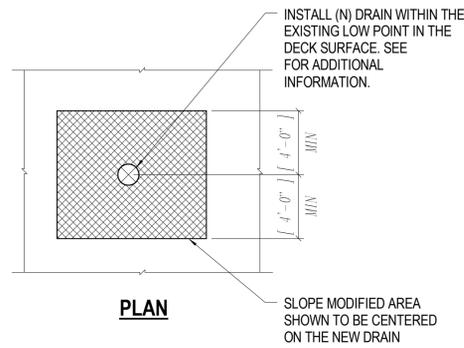
- SEE CONCRETE REPAIR NOTES FOR REQUIREMENTS. PREPARE SURFACES, INSTALL, AND CURE REPAIR MATERIALS IN STRICT ACCORDANCE WITH PRODUCT MANUFACTURER'S LITERATURE.



**10** NO SCALE LAP SPLICE/DEVELOPMENT LENGTHS

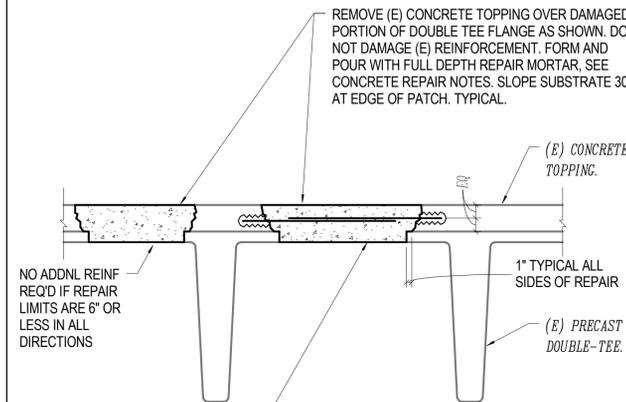
**7** NO SCALE TYP (N) DRAIN INSTALLATION

**4** NO SCALE PARTIAL DEPTH CONCRETE REPAIR



**NOTES:**

- PREPARE THE EXISTING TRAFFIC COATING TO RECEIVE ADDITIONAL LAYERS.
- INSTALL AN AGGREGATE EXTENDED OVERLAY INTO THE LOW PORTIONS OF THE REPAIR LIMITS AS REQUIRED TO CREATE A CONSTANT SLOPE TOWARD THE DRAIN(S) WITHIN THE HATCHED AREAS. SEE PLUMBING SHEETS.
- INSTALL A TOP COAT OF THE TRAFFIC COATING OUTLINED IN THE WORK LIST AS SHOWN ON PLAN.

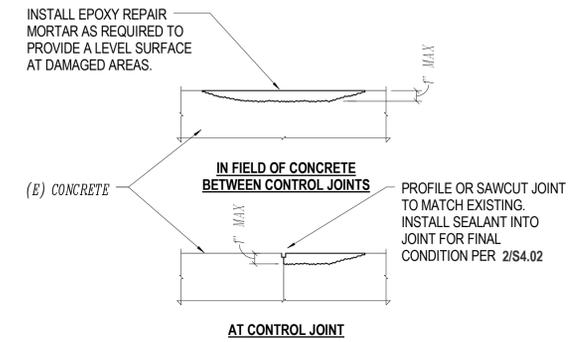


- NO ADDNL REINF REQD IF REPAIR LIMITS ARE 6\"/>

IF (E) REINFORCING/MESH IS DAMAGED DURING CONCRETE REMOVAL, DRILL & EPOXY #3 @ 12\"/>

**NOTE:**  
 IF LENGTH OF REPAIR EXCEEDS 16\"/>

**NOTE:**  
 REMOVE RUST FROM ALL EXPOSED REINFORCEMENT AND COAT WITH REBAR PRIMER PER CONCRETE REPAIR NOTES. IF REINFORCEMENT HAS LOST 10% OR MORE OF ITS CROSS-SECTIONAL AREA, SPLICE WITH ADDITIONAL #3 BARS. LAP BARS AS DIRECTED BY ENGINEER.



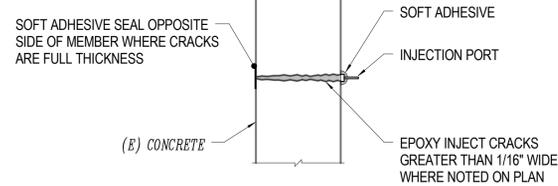
**NOTES:**

- SEE EPOXY MORTAR SPECIFICATION FOR REQUIREMENTS. PREPARE SURFACES, INSTALL AND CURE MATERIALS IN STRICT ACCORDANCE WITH MANUFACTURER'S LITERATURE.
- COAT EXPOSED STEEL WITH REBAR PRIMER, SEE SPECIFICATIONS.
- WHERE PATCH EXCEEDS 1/4\"/>
- SEED TOP SURFACE OF REPAIR AREA WITH SAND TO PREVENT SLIPPERY SURFACES.
- SEE CONCRETE REPAIR NOTES FOR ADDITIONAL INFORMATION

**8** NO SCALE SLOPE AROUND NEW DRAIN

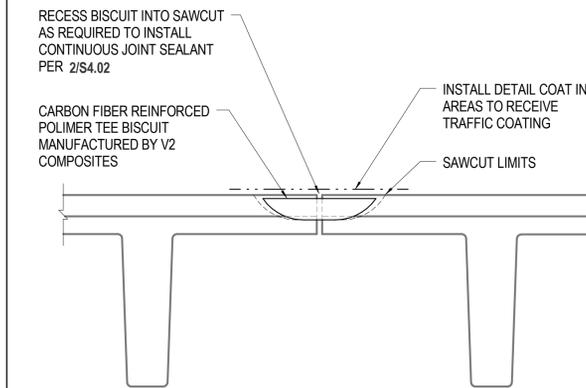
**5** NO SCALE FULL DEPTH DOUBLE-TEE FLANGE SPALL REPAIR

**2** NO SCALE CONCRETE SURFACE REPAIR AT SCALED AREA



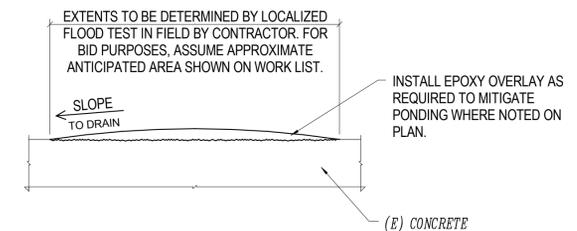
**NOTES:**

- SEE PROJECT GENERAL NOTES & SPECIFICATIONS FOR ACCEPTABLE PRODUCTS
- REMOVE SEALS AND PORTS, AND GRIND SURFACES SMOOTH FOR FINAL CONDITIONS.



**NOTES:**

- STRIKE THE EPOXY USED TO PLACE BISCUIT FLUSH WITH ADJACENT SURFACES TYPICAL EXCEPT AT SEALANT JOINT INTERSECTION



**NOTES:**

- SEE EPOXY OVERLAY SPECIFICATION FOR REQUIREMENTS. PREPARE SURFACES, INSTALL AND CURE MATERIALS IN STRICT ACCORDANCE WITH MANUFACTURER'S LITERATURE.
- COAT EXPOSED STEEL WITH REBAR PRIMER, SEE SPECIFICATIONS.
- WHERE PATCH EXCEEDS 1/4\"/>
- SEED TOP SURFACE OF REPAIR AREA WITH SAND TO PREVENT SLIPPERY SURFACES.
- SEE CONCRETE REPAIR NOTES FOR ADDITIONAL INFORMATION

**9** NO SCALE EPOXY INJECTION DETAIL

**6** NO SCALE DOUBLE-TEE FLANGE CONN - CFRP TEE BISCUIT

**3** NO SCALE THIN OVERLAY FOR PONDING MITIGATION

**DPAC - GARAGE CRITICAL REPAIRS**

950 13th STREET  
 DENVER, COLORADO 80204  
 CITY PROJECT NUMBER: 201525595

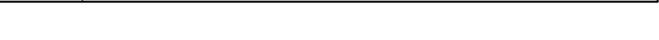
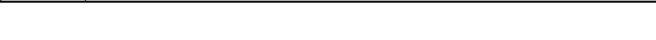
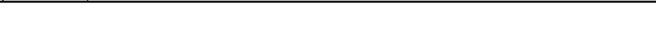
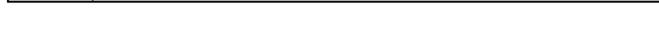
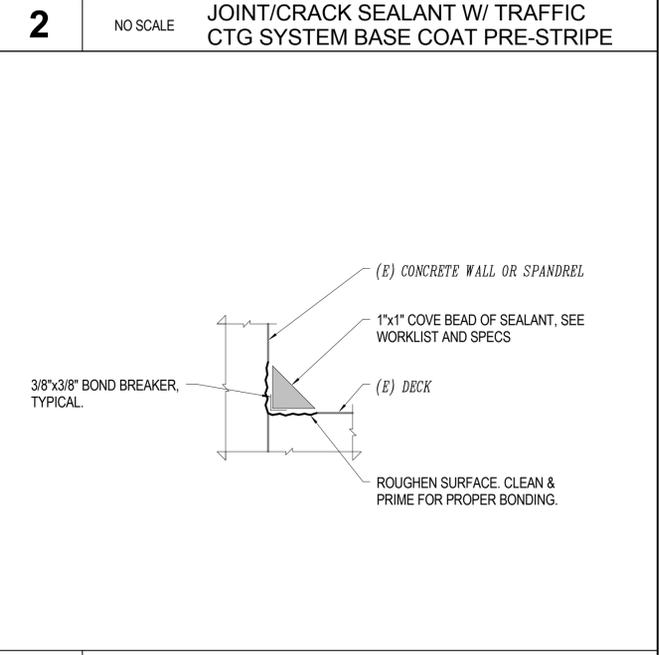
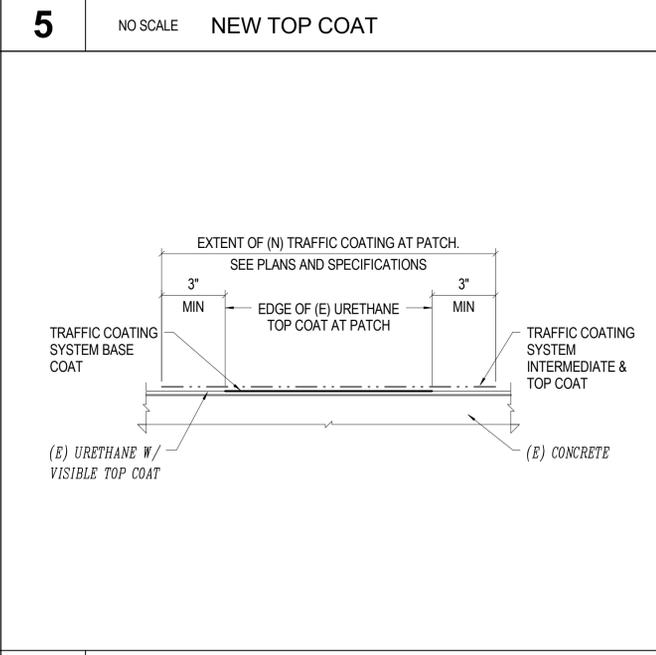
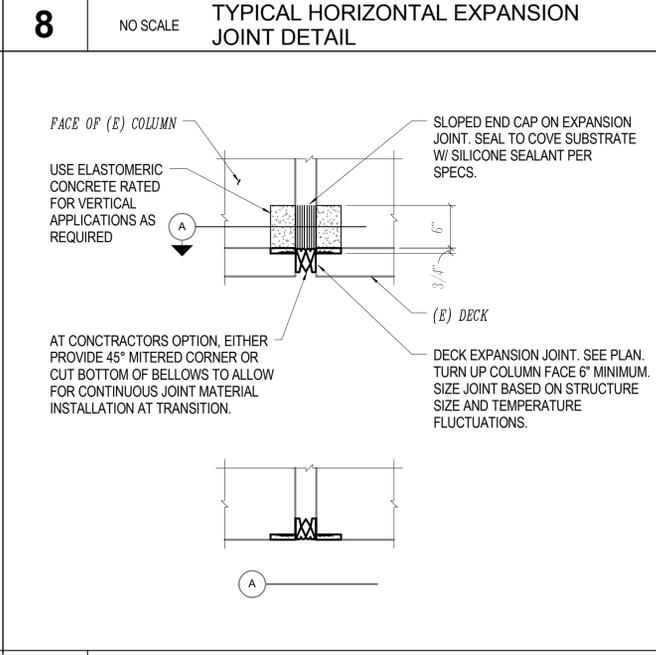
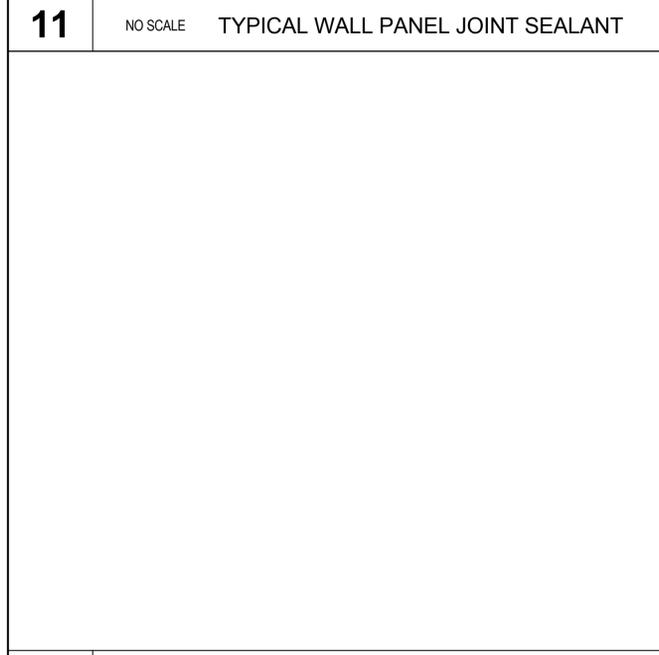
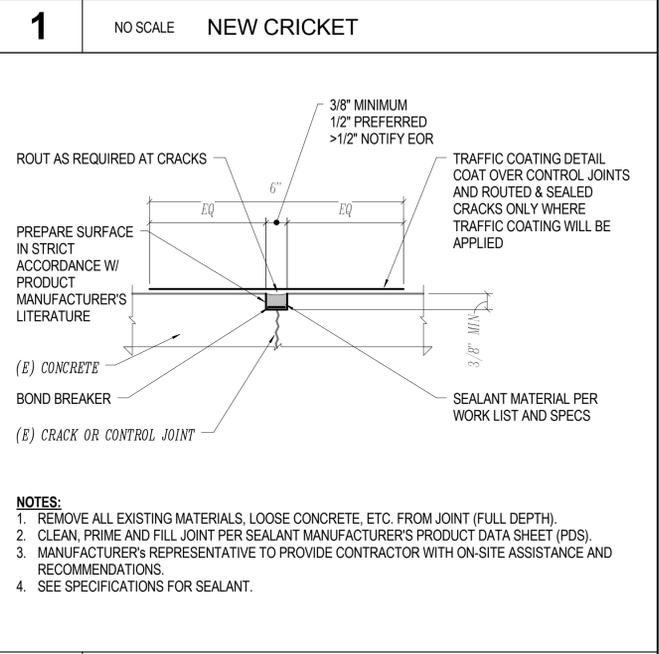
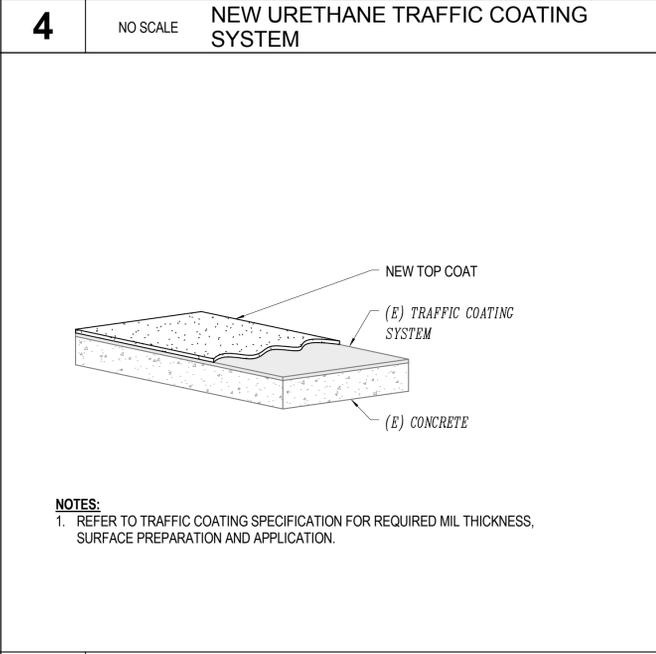
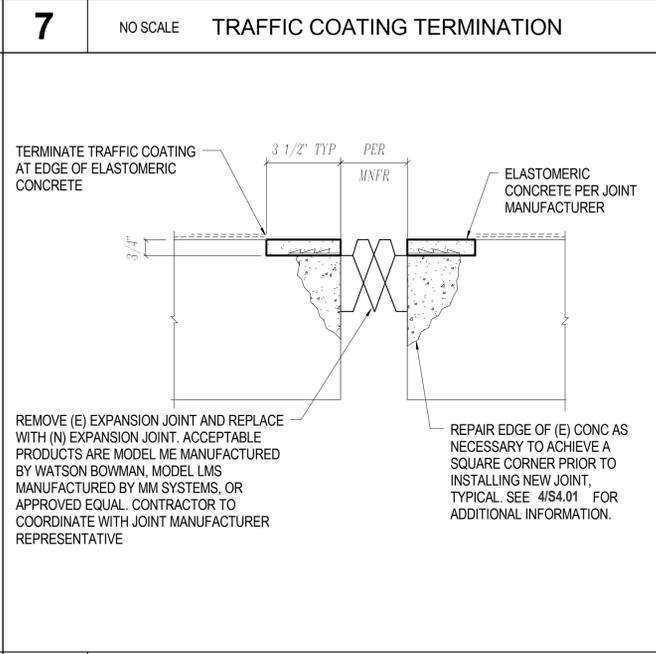
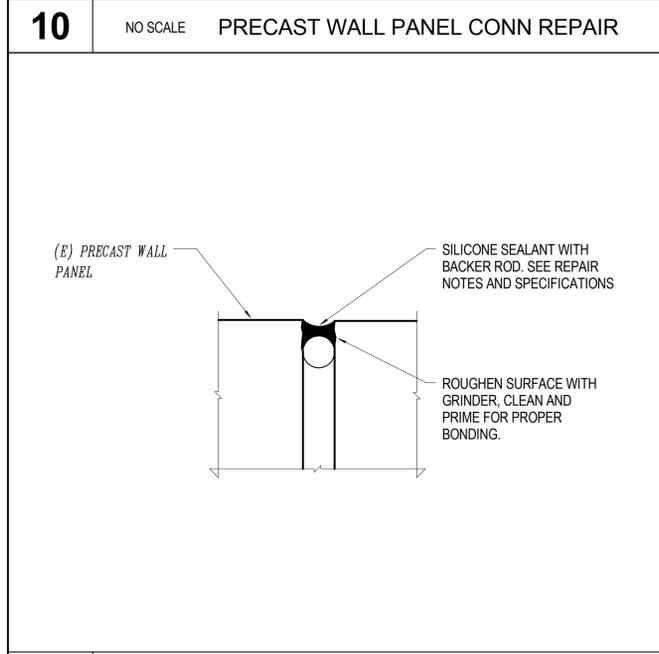
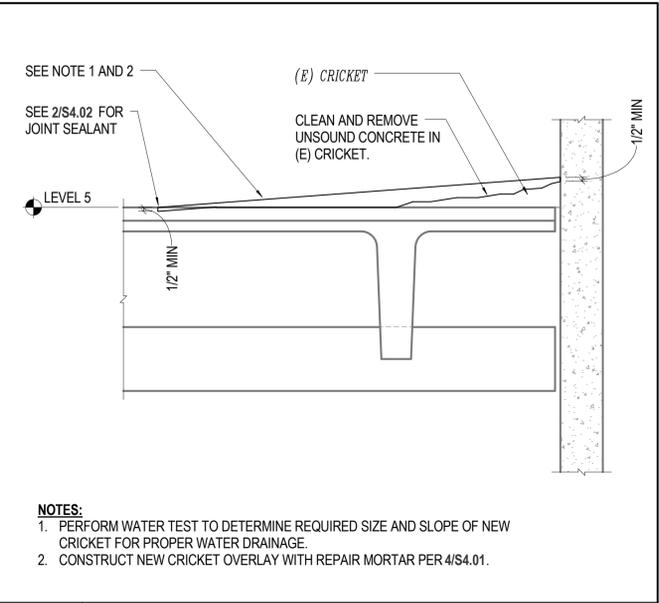
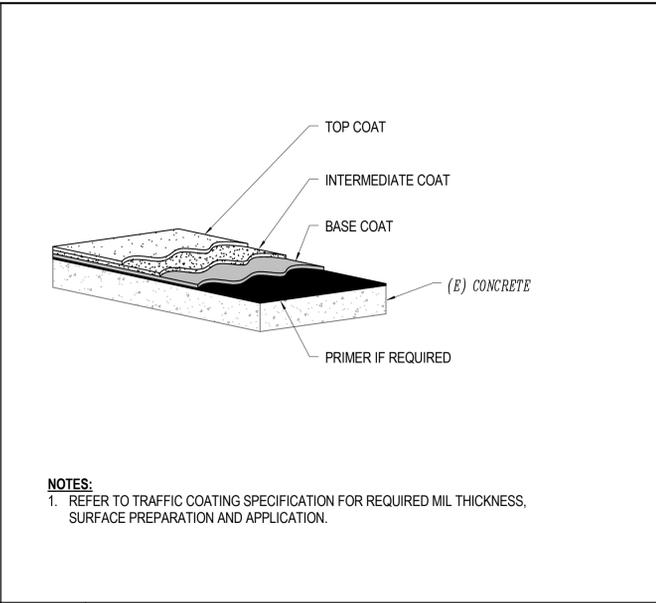
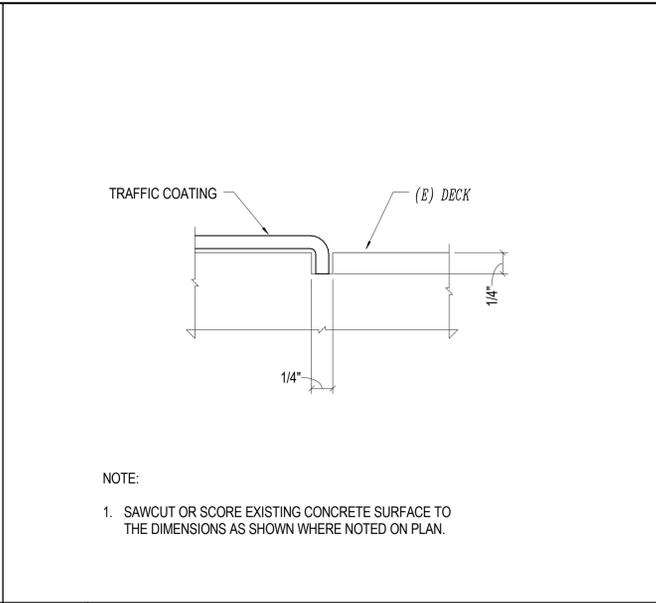
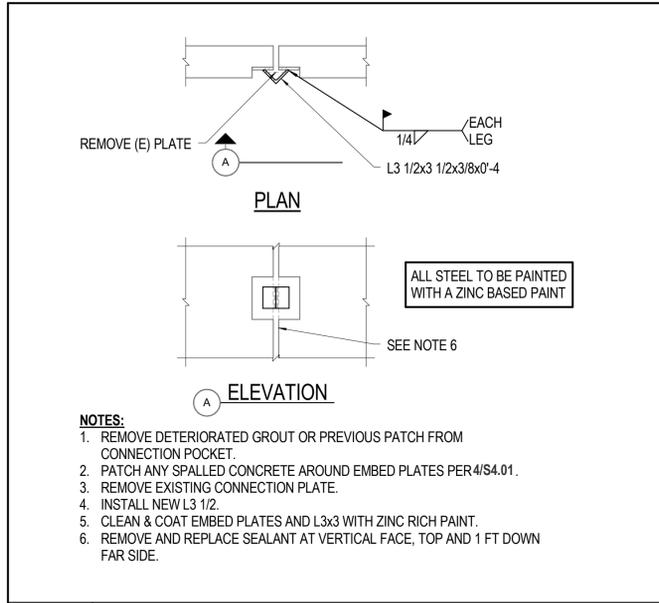
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NO.	ISSUE	DATE

PROJECT NO: 15.0702.S.02  
 DATE: 04/13/2016  
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**SHEET TITLE:**  
 REPAIR DETAILS

SHEET NUMBER:  
**S4.01**

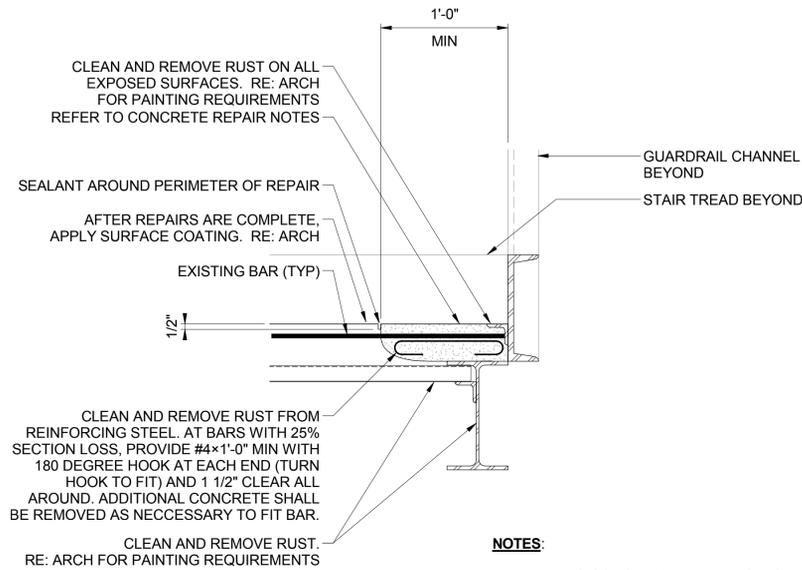


**DPAC - GARAGE CRITICAL REPAIRS**  
950 13th STREET  
DENVER, COLORADO 80204  
CITY PROJECT NUMBER: 201525595

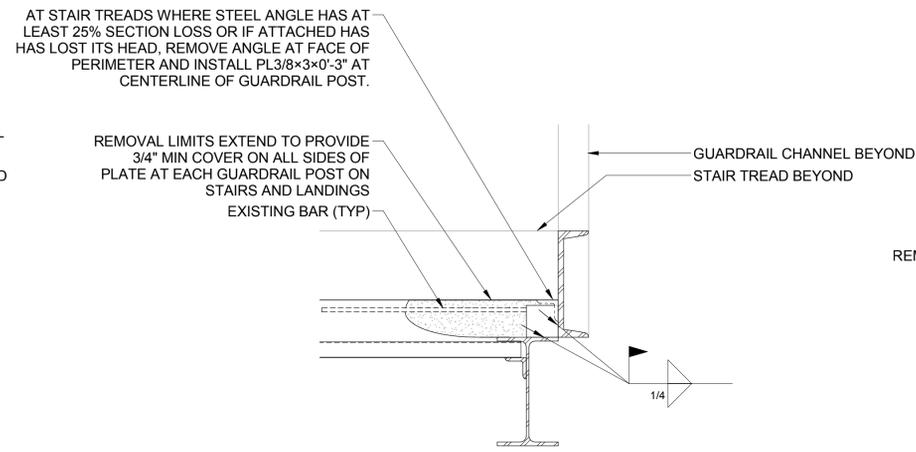
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NO.	ISSUE	DATE

PROJECT NO: 15.0702.S.02  
DATE: 04/13/2016  
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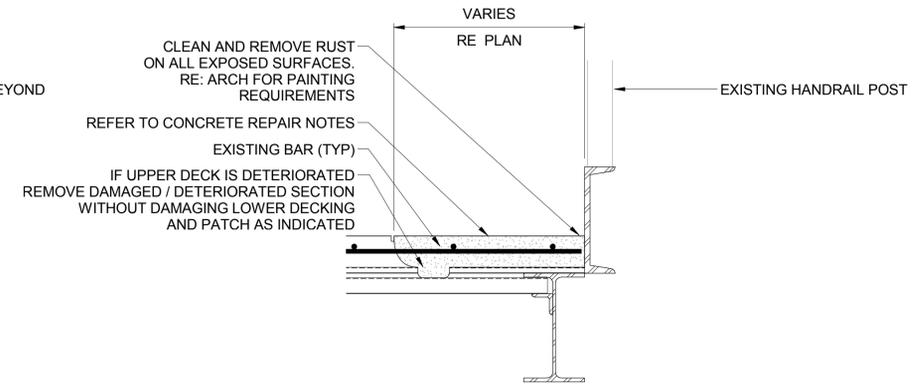
SHEET TITLE:  
**REPAIR DETAILS**  
SHEET NUMBER:  
**S4.02**



① TYPICAL STAIR TREAD REPAIR  
1 1/2" = 1'-0"



② REPAIR AT GUARDRAIL POSTS  
1 1/2" = 1'-0"

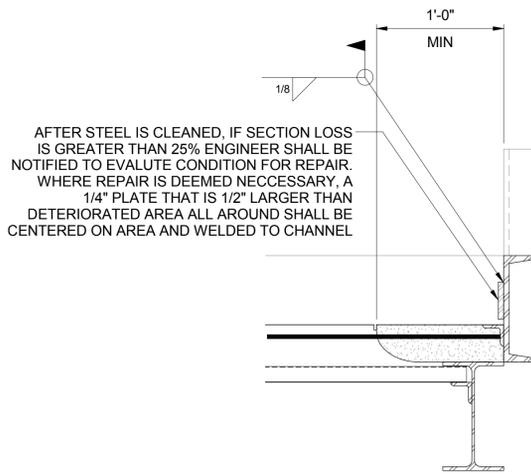


③ TYPICAL LANDING REPAIR  
1 1/2" = 1'-0"

- NOTES:**
1. REFER TO CONCRETE REPAIR NOTES FOR ADDITIONAL INFORMATION.
  2. LIMITS OF DETERIORATION TO BE VERIFIED IN FIELD.

- NOTES:**
1. REFER TO DETAIL 1 AND CONCRETE REPAIR NOTES FOR CONCRETE PATCHING INFORMATION AND REQUIREMENTS.
  2. AT STAIR LANDINGS WHERE ANCHOR FROM CHANNEL INTO CONCRETE HAS LOST ITS HEAD, INSTALL PLATE AS INDICATED IN ABOVE DETAIL.

- NOTES:**
1. REFER TO DETAIL 1 AND CONCRETE REPAIR NOTES FOR CONCRETE PATCHING INFORMATION AND REQUIREMENTS.



④ CHANNEL REPAIR  
1 1/2" = 1'-0"

DPAC - GARAGE CRITICAL REPAIRS

950 13th STREET  
DENVER, COLORADO 80204

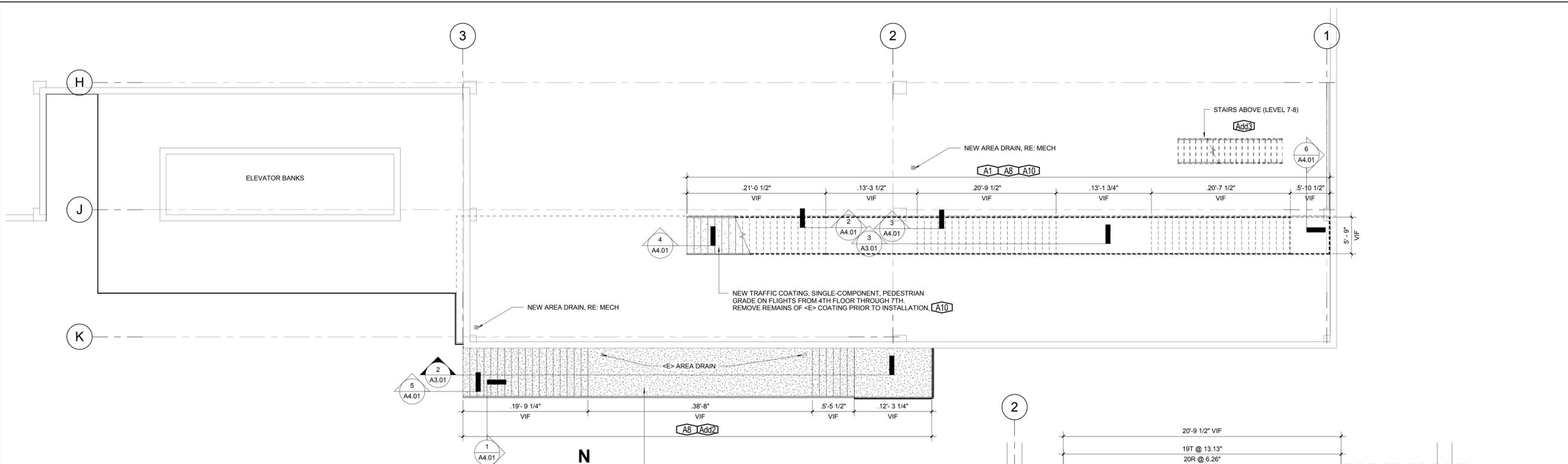
CITY PROJECT NUMBER: 201525595

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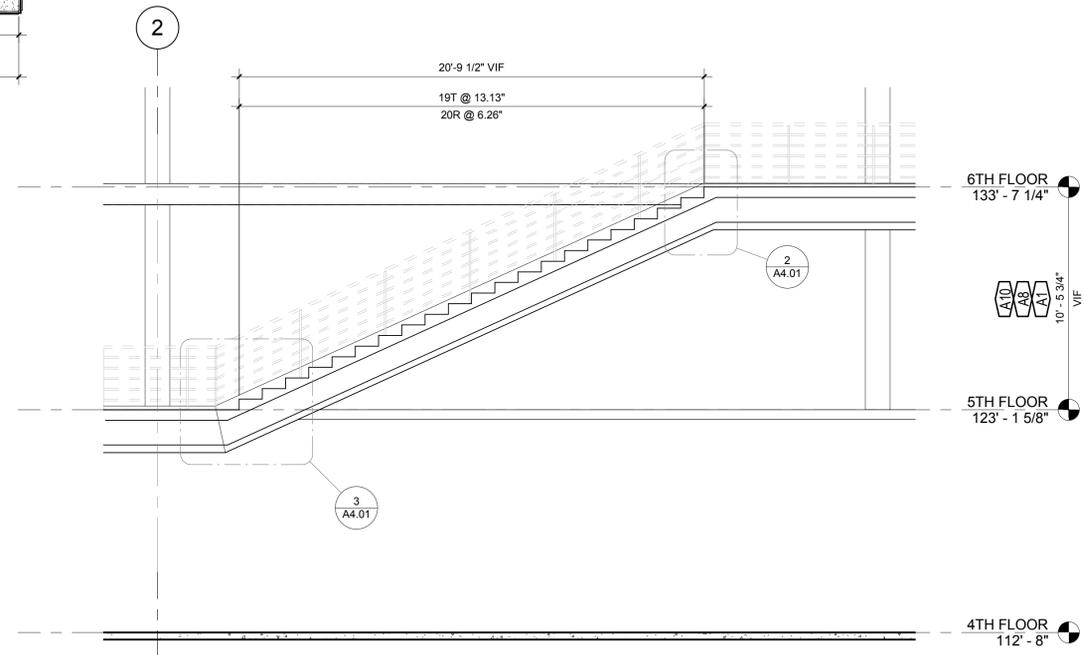
PROJECT NO: 15.0702.S.02  
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SHEET TITLE:  
NORTH STAIR  
REPAIR DETAILS

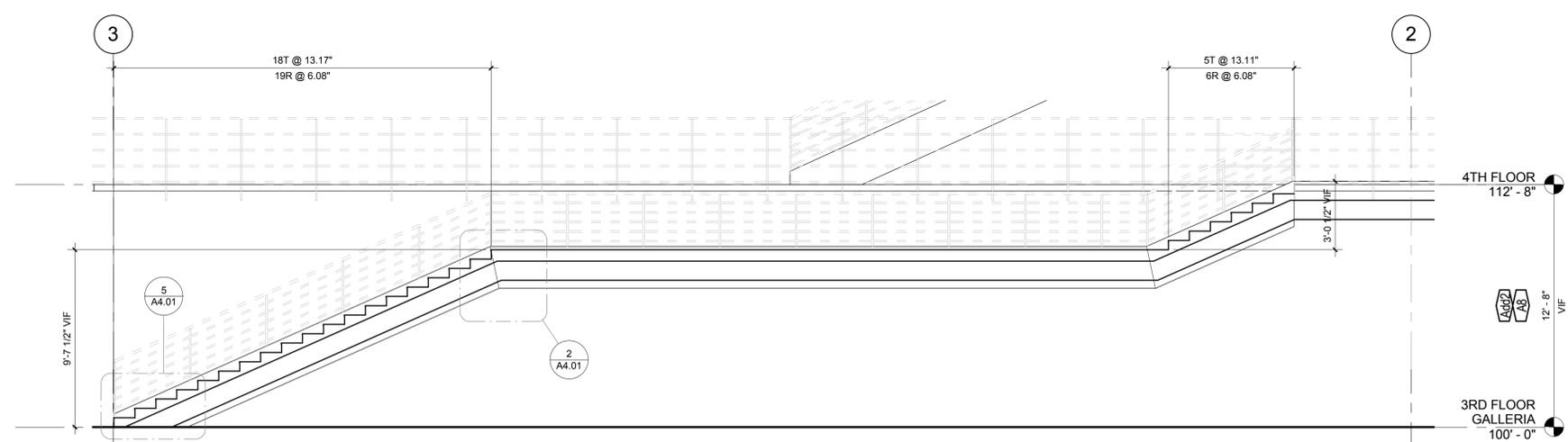
SHEET NUMBER:  
**S4.03**



**1 FLOOR PLAN**  
1/8" = 1'-0"



**3 SECTION, TYP**  
1/4" = 1'-0"



**2 SECTION LOWER STAIR**  
1/4" = 1'-0"

**DPAC - GARAGE CRITICAL REPAIRS**  
CITY PROJECT NUMBER: 201525595  
950 13th STREET  
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SHEET TITLE:  
**FLOOR PLAN & SECTIONS**  
SHEET NUMBER:  
**A3.01**

**SECTION 09 90 00 - PAINTING AND COATING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Surface preparation.
- B. Field application of paints, stains, and other coatings.
- C. Scope: Clean and prepare stairs for repainting

**1.02 REFERENCE STANDARDS**

- A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.
- B. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials; 2007.

**1.03 SUBMITTALS**

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide complete list of all products to be used, with the following information for each:
  - 1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
  - 2. Cross-reference to specified paint system(s) product is to be used in; include description of each system.
  - 3. Manufacturer's installation instructions.
- C. Samples: Submit three paper "drop" samples, 8-1/2 by 11 inches in size, illustrating range of colors available for each finishing product specified.

**1.04 MOCK-UP**

- A. Provide panel, 3 feet long by 2 feet high, illustrating coating color, texture, and finish.
- B. Locate where directed.
- C. Mock-up may remain as part of the work.

**1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

**1.06 FIELD CONDITIONS**

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Provide all paint and coating products used in any individual system from the same manufacturer; no exceptions.
- B. Provide all paint and coating products from the same manufacturer to the greatest extent possible.
- C. Paints:
  - 1. Benjamin Moore & Co: www.benjaminmoore.com.
  - 2. PPG Architectural Finishes, Inc: www.ppgaf.com.
  - 3. Sherwin-Williams Company: www.sherwin-williams.com.
- D. Substitutions: See Section 01 60 00 - Product Requirements.

**2.02 PAINTS AND COATINGS - GENERAL**

- A. Paints and Coatings: Ready mixed, unless intended to be a field-catalyzed coating.
  - 1. Provide paints and coatings of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
  - 2. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
  - 3. Supply each coating material in quantity required to complete entire project's work from a single production run.
  - 4. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.
- B. Primers: Where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.
- C. Volatile Organic Compound (VOC) Content:
  - 1. Provide coatings that comply with the most stringent requirements specified in the following:
    - a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
  - 2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.
- D. Flammability: Comply with applicable code for surface burning characteristics.

**2.03 PAINT SYSTEMS - EXTERIOR**

- A. Primer: Amidozmine Epoxy Paint
  - 1. Basis of Design: Sherwin Williams Epoxy Mastic Aluminum II
- B. Top Coat (1 coat): DTM Acrylic Coating
  - 1. Basis of Design: Pro Industrial DTM Acrylic Coating
  - 2. Sheen: Eg-Shel
  - 3. Colors: 2 (see 3.07)

**2.04 ACCESSORY MATERIALS**

- A. Accessory Materials: Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials required to achieve the finishes specified whether specifically indicated or not; commercial quality.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Do not begin application of coatings until substrates have been properly prepared.
- B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

**3.02 PREPARATION**

- A. Clean surfaces thoroughly and correct defects prior to coating application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove rust and peeling paint according to Hand Tool Clean per SSPC-SP2 (minimum). Clean Surface to sound substrate.
- D. Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1
- E. Previously Painted Surfaces: If in sound condition, clean the surface of all foreign material. Smooth, hard or glossy coatings and surfaces should be dulled by abrading the surface. Apply a test area, allowing paint to dry one week before testing adhesion. If adhesion is poor, or if this product attacks the previous finish, removal of the previous coating may be necessary.

**3.03 APPLICATION**

- A. Prime any care steel within 8 hours or before flash rusting occurs.
- B. Apply products in accordance with manufacturer's instructions.
- C. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- D. Apply each coat to uniform appearance.
- E. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

**3.05 CLEANING**

- A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

**3.06 PROTECTION**

- A. Protect finished coatings until completion of project.
- B. Touch-up damaged coatings after Substantial Completion.

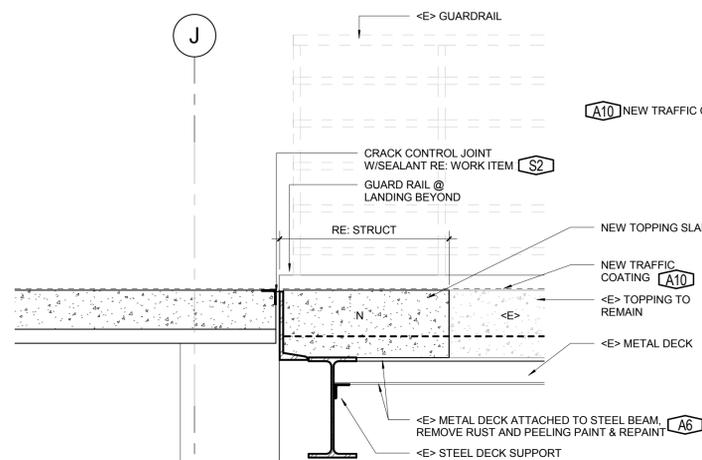
**3.07 SCHEDULE - COLORS**

- A. PT-1 - Curb. Match <e> teal
- B. PT-2 - Base. Match <e> off white

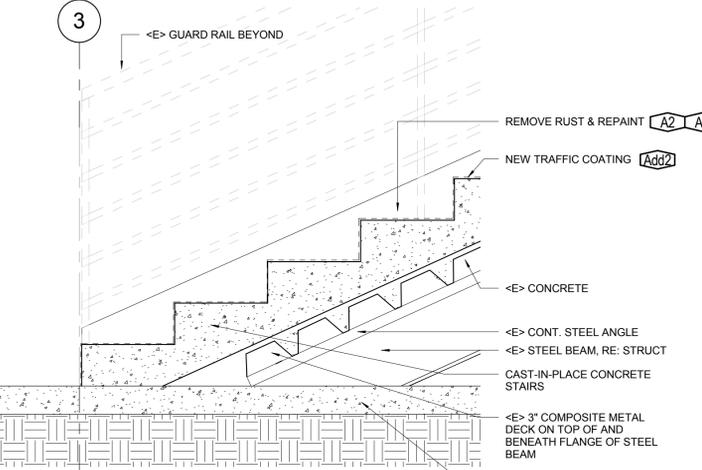
**END OF SECTION 09 90 00**

**GENERAL NOTE:**

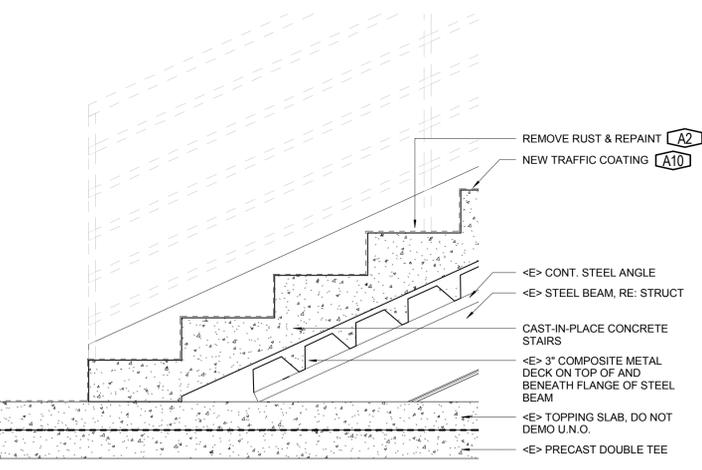
- 1. FOR DEMOLITION SCOPE, RE: STRUCTURAL. ONLY REPAIRS SHOWN



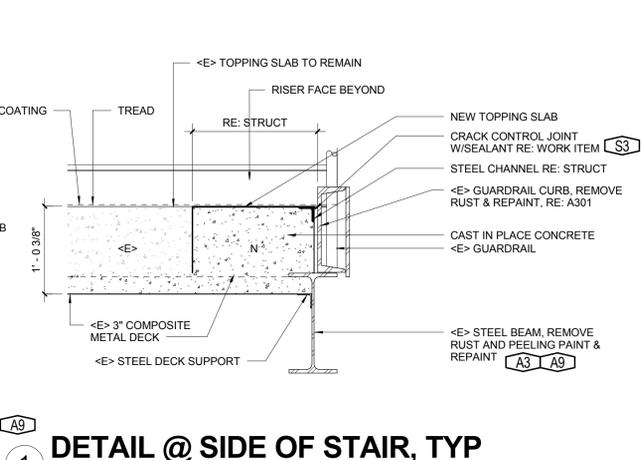
**DETAIL @ LANDING GARAGE TRANSITION**  
1" = 1'-0"



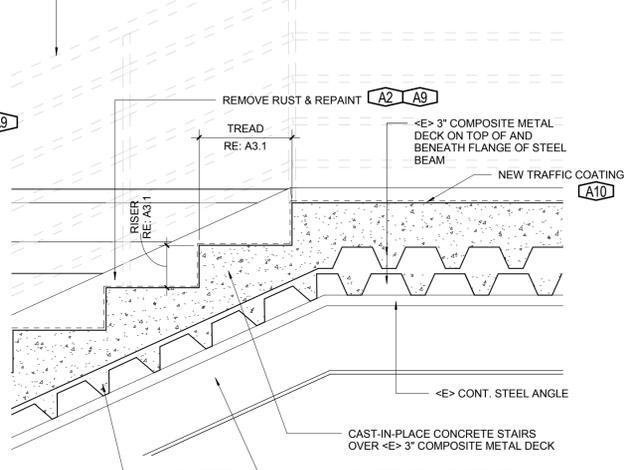
**DETAIL @ BOTTOM OF LEVEL 3 STAIR**  
1" = 1'-0"



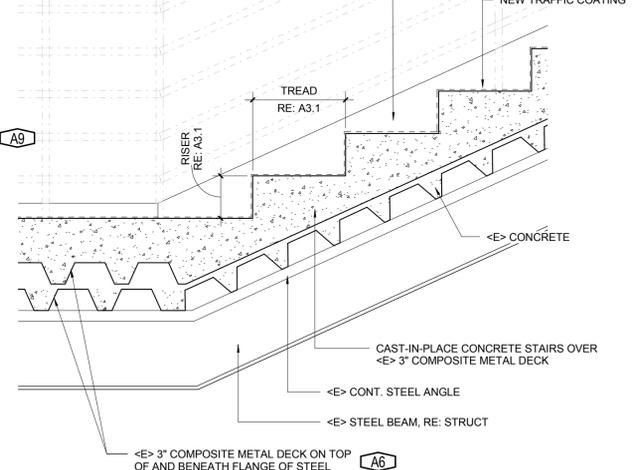
**DETAIL @ BOTTOM OF LEVEL 4 STAIR**  
1" = 1'-0"



**DETAIL @ SIDE OF STAIR, TYP**  
1" = 1'-0"



**DETAIL @ TOP OF STAIR/LANDING**  
1" = 1'-0"



**DETAIL @ BOTTOM OF TYP STAIR/LANDING**  
1" = 1'-0"

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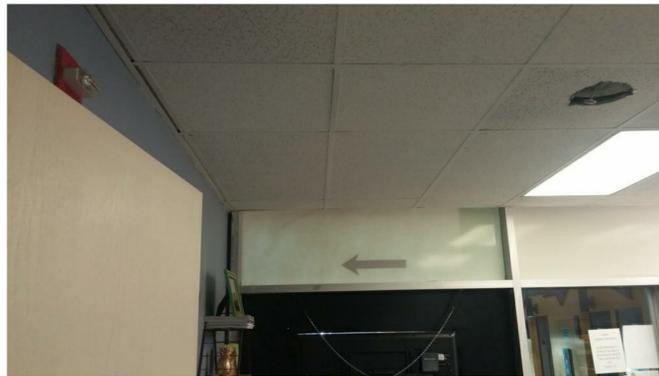
**A7** **CONDITION OF CLOSER PANEL**  
(FLIGHTS BETWEEN 3RD & 4TH LEVELS)



**A3** **CONDITION OF TOP FLANGE**  
(FLIGHTS BETWEEN 4TH & 7TH LEVELS)



**A2** **TYPICAL RUST AT TREADS/RISERS**  
(FLIGHTS BETWEEN 4TH & 7TH LEVELS)  
(FLIGHTS BETWEEN 3RD & 4TH LEVELS, SIMILAR)



**A11a** **TYPICAL CEILING TILE TO BE TEMP. RELOCATED FOR DRAINLINE WORK**  
(INTERIOR OF 3RD LEVEL TENANT)



**A5** **TYPICAL RUST ON CURB**  
(FLIGHTS BETWEEN 3RD & 4TH LEVELS)



**A11b** **APPROX. LOCATION OF DRAINLINE ROUTING**  
(INTERIOR OF 3RD LEVEL TENANT)



**A6** **CONDITION OF UNDERSIDE OF DECK**  
(FLIGHTS BETWEEN 4TH & 7TH LEVELS)



**A4** **TYPICAL RUST AT INTERSECTIONS OF STEEL**  
(FLIGHTS BETWEEN 4TH & 7TH LEVELS)

**DPAC - GARAGE CRITICAL REPAIRS**

CITY PROJECT NUMBER: 201525595  
950 13th STREET  
DENVER, COLORADO 80204

REVISIONS		
NO.	ISSUE	DATE

PROJECT NO: 15.0702.S.02  
DATE: 04/13/2016  
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SHEET TITLE:  
**PHOTOS**

SHEET NUMBER:  
**A4.02**

**MARTIN/MARTIN**  
 CONSULTING ENGINEERS  
 12499 WEST COLFAX AVENUE, LAKEWOOD, COLORADO 80215  
 MAIN 303.431.6100 MARTINMARTIN.COM

**360**  
 Three Sixty Engineering, Inc.  
 1000 Jackson St. #360 Golden, CO 80601  
 303.580.2000 303.580.1332 fax

**DPAC - GARAGE CRITICAL REPAIRS**  
 CITY PROJECT NUMBER: 201525595  
 950 13th STREET  
 DENVER, COLORADO 80204

PLUMBING FIXTURE SCHEDULE					
TAG	DESCRIPTION	MANUFACTURER	MODEL NUMBER	FINISH	REMARKS
AD-1	AREA DRAIN	ZURN	Z533-SA-Z-VP	CAST IRON	1,2,3,4

REMARKS:

- MOUNT FLUSH WITH FLOOR.
- PROVIDE WITH Z1036 INSTALLATION STABILIZER.
- PROVIDE WITH VANDAL-PROOF SECURED TOP.
- SEE DETAIL 7 ON STRUCTURAL SHEET S4.01.

**PLUMBING NOTES**

**I. GENERAL**

A. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND NOT INTENDED TO SHOW ALL TRANSITIONS, OFFSETS, ETC. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND PROVIDE ALL NECESSARY FITTINGS TO COMPLETE THE INTENT OF THE DRAWINGS. ANY DISCREPANCIES BETWEEN DRAWINGS AND FIELD CONDITIONS SHALL BE REPORTED TO THE DESIGN ENGINEER FOR RESOLUTION.

B. CONTRACTOR SHALL COORDINATE WORK WITH OTHER TRADES AND NOTIFY ENGINEER IF ANY CONFLICTS OCCUR.

C. CONTRACTOR SHALL REVIEW THESE DOCUMENTS CAREFULLY. CONTRACTOR SHALL CONTACT THREE SIXTY ENGINEERING, INC. (360) (303.940.2050), FOR RESOLUTION OF ANY DISCREPANCIES, OMISSIONS, OR CLARIFICATIONS, BEFORE BID DATE. IN THE EVENT THAT AN INTERPRETATION OF BID DOCUMENTS IS NECESSARY AFTER THE BID DATE, THE DECISION OF 360 SHALL BE FINAL AND BINDING.

D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COSTS OF ALL CHANGE ORDERS, WHICH THE OWNER AND ENGINEER HAVE NOT APPROVED IN WRITING PRIOR TO THE EXECUTION OF THE ASSOCIATED WORK.

**II. PRODUCTS**

A. WASTE PIPING: SERVICE WEIGHT CAST IRON SOIL PIPE WITH HEAVY DUTY SHIELDED COUPLING (HUSKY 4000 OR EQUAL).

B. PIPE INSULATION: (INSULATE ALL HEAT TRACED PIPING), 2" THICK MINERAL FIBER, PREFORMED PIPE INSULATION (JOHNS MANVILLE OR EQUAL), MINERAL OR GLASS FIBERS BONDED WITH A THERMOSETTING RESIN. COMPLY WITH ASTM C 547.

C. FIELD-APPLIED JACKETING: (JACKET ALL INSULATED PIPING), ALUMINUM JACKET, COMPLY WITH ASTM B 209. (CHILDERS BRAND OR EQUAL), 3 MIL THICK HEAT BONDED POLYETHYLENE AND KRAFT PAPER. FACTORY FABRICATED FITTING COVERS SAME MATERIAL AND THICKNESS AS JACKET. INSTALL WITH 2" OVERLAP AT LONGITUDINAL SEAMS AND END JOINTS. OVERLAP LONGITUDINAL SEAMS ARRANGED TO SHED WATER. SEAL END JOINTS WITH WEATHERPROOF SEALANT RECOMMENDED BY INSULATION MANUFACTURER. SECURE JACKET WITH STAINLESS STEEL BANDS 12" ON CENTER AND AT END JOINTS.

**III. EXECUTION**

A. ALL PLUMBING WORK SHALL COMPLY WITH LOCAL CODES AND ORDINANCES.

B. PROVIDE DIELECTRIC UNIONS AT CONNECTIONS BETWEEN DISSIMILAR METALS, I.E., IRON VALVES AND COPPER TUBING.

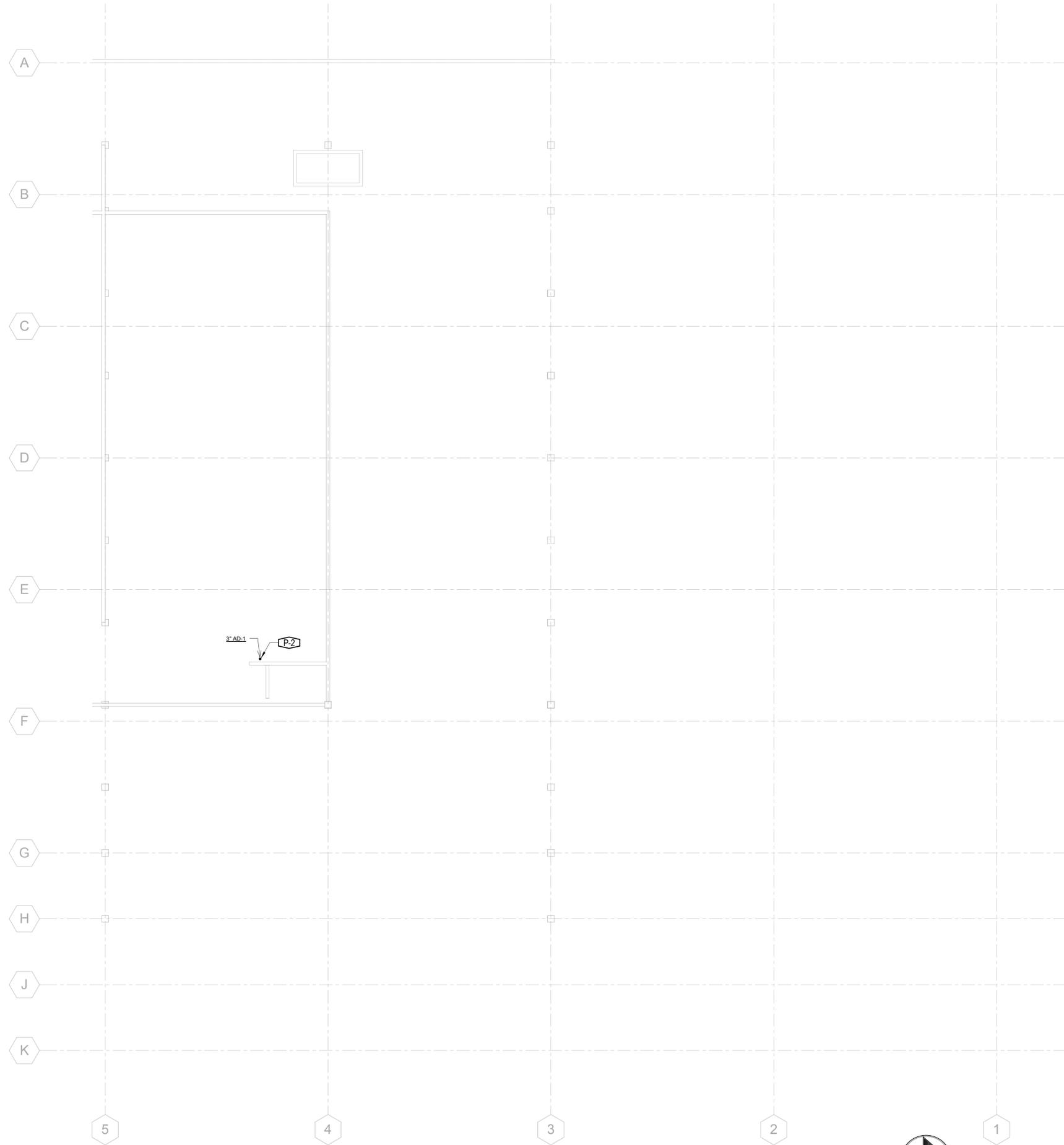
C. PROVIDE PIPE HANGERS OF THE SAME MATERIAL AS THE PIPING SYSTEM OR USE COATED HANGERS.

PLUMBING LEGEND	
	DRAIN LINE
	NEW TO EXISTING
	ELBOW UP
	ELBOW DOWN
NOTE: NEW PIPING SHOWN HEAVIER THAN EXISTING.	

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PROJECT NO: 15.0702.S.02  
 DATE: 04/13/16  
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SHEET TITLE:  
**PLUMBING NOTES,  
 SCHEDULES,  
 DETAILS, LEGEND**  
 SHEET NUMBER:  
**P0.01**



1 LEVEL 1 - NORTH  
1/16" = 1'-0"



WORK LIST ITEMS (RE: SHEET S0.02)

P-2

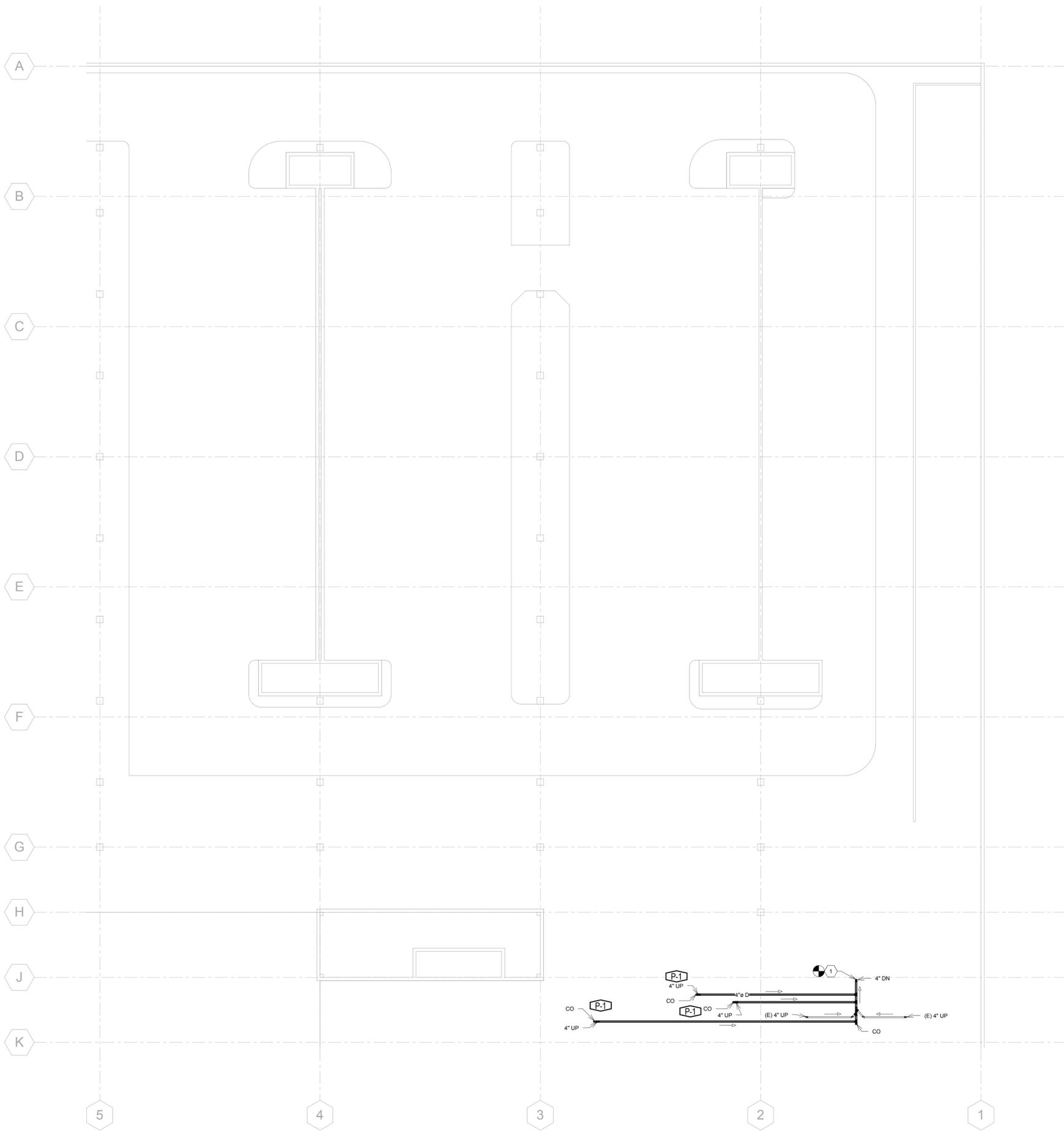
# DPAC - GARAGE CRITICAL REPAIRS

CITY PROJECT NUMBER: 201525595  
950 13th STREET  
DENVER, COLORADO 80204

REVISIONS		
NO.	ISSUE	DATE

PROJECT NO: 15.0702.S.02  
DATE: 04/13/16  
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SHEET TITLE:  
LEVEL 1 PLUMBING  
PLAN - NORTH  
SHEET NUMBER:  
**P1.01n**



1 LEVEL 3 - NORTH  
 1/16" = 1'-0"

**KEY NOTES:**  
 1 CONNECT NEW RISER PIPING TO EXISTING AS CLOSE TO CONCRETE AS POSSIBLE.

**WORK LIST ITEMS (RE: SHEET S0.02)**  
 P-1 PROVIDE (3) NEW DRAINS AND ASSOCIATED PIPING.

**GENERAL NOTES:**  
 CONTRACTOR TO COORDINATE ADDITION OF NEW DRAINS WITH EXISTING PIPES, DUCTS, STRUCTURE, AND ARCHITECTURE.  
 CONTRACTOR TO VERIFY SHOWN ROUTING IS ACCEPTABLE.

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 MAIN 303.431.6100 MARTINMARTIN.COM

**360**  
 Three Sixty Engineering, Inc.  
 1600 Jackson St. #350 Golden, CO 80601  
 303.581.2500 303.581.3322 fax

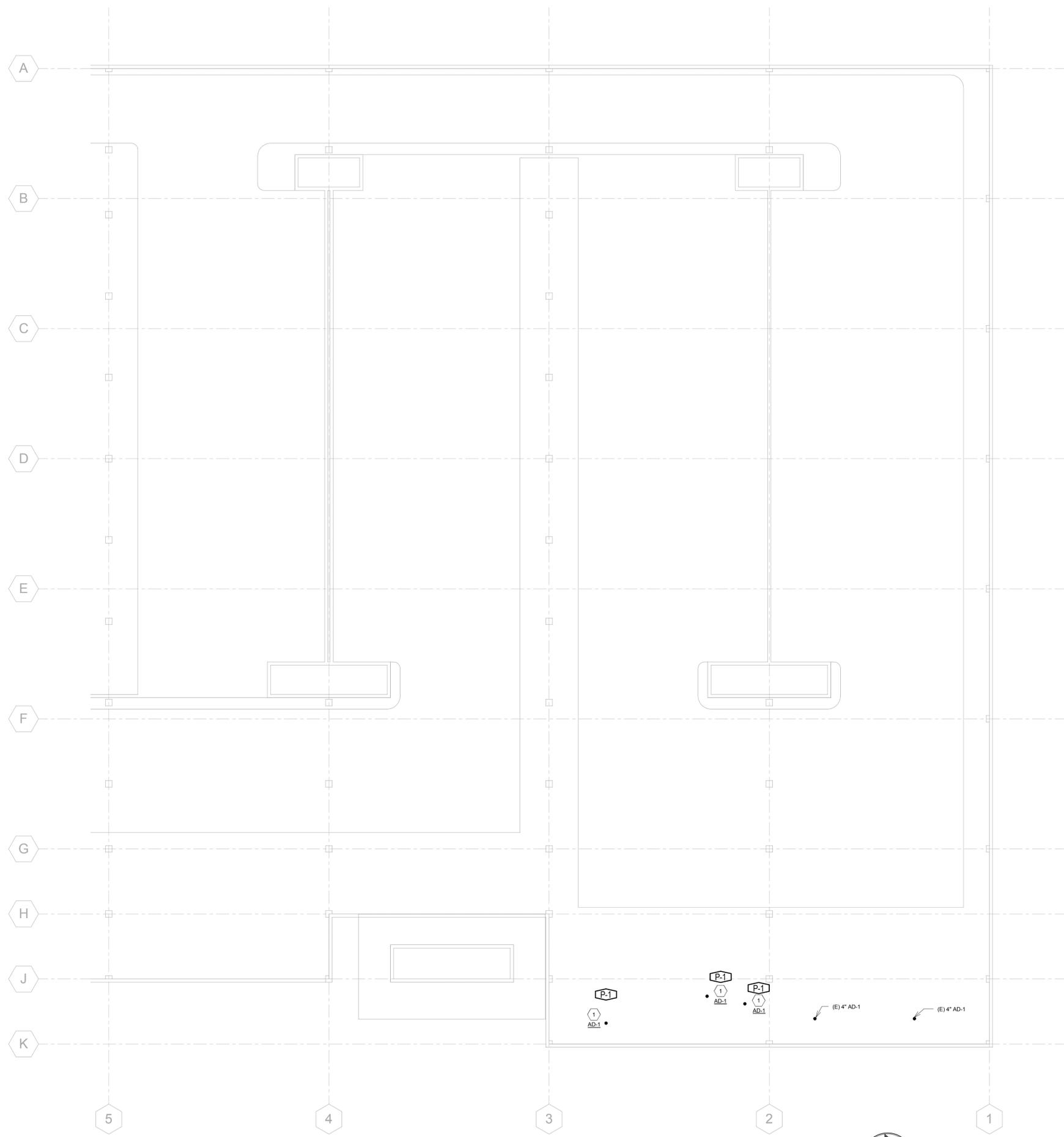
**DPAC - GARAGE CRITICAL REPAIRS**  
 CITY PROJECT NUMBER: 201525595  
 950 13th STREET  
 DENVER, COLORADO 80204

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 DATE: 04/13/16  
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SHEET TITLE:  
**LEVEL 3 PLUMBING PLAN - NORTH**

SHEET NUMBER:  
**P1.03n**



1 LEVEL 4 - NORTH  
 1/16" = 1'-0"



**KEY NOTES:**  
 1 PROVIDE NEW AREA DRAIN IN LOW POINT OF SLAB. CONTRACTOR TO DETERMINE (3) LOW SPOTS OF DRAIN AND INSTALL.

**WORK LIST ITEMS (RE: SHEET S0.02)**  
 P-1 PROVIDE (3) NEW DRAINS AND ASSOCIATED PIPING.

**GENERAL NOTES:**  
 CONTRACTOR TO COORDINATE ADDITION OF NEW DRAINS WITH EXISTING PIPES, DUCTS, STRUCTURE, AND ARCHITECTURE.  
 CONTRACTOR TO VERIFY SHOWN ROUTING IS ACCEPTABLE.

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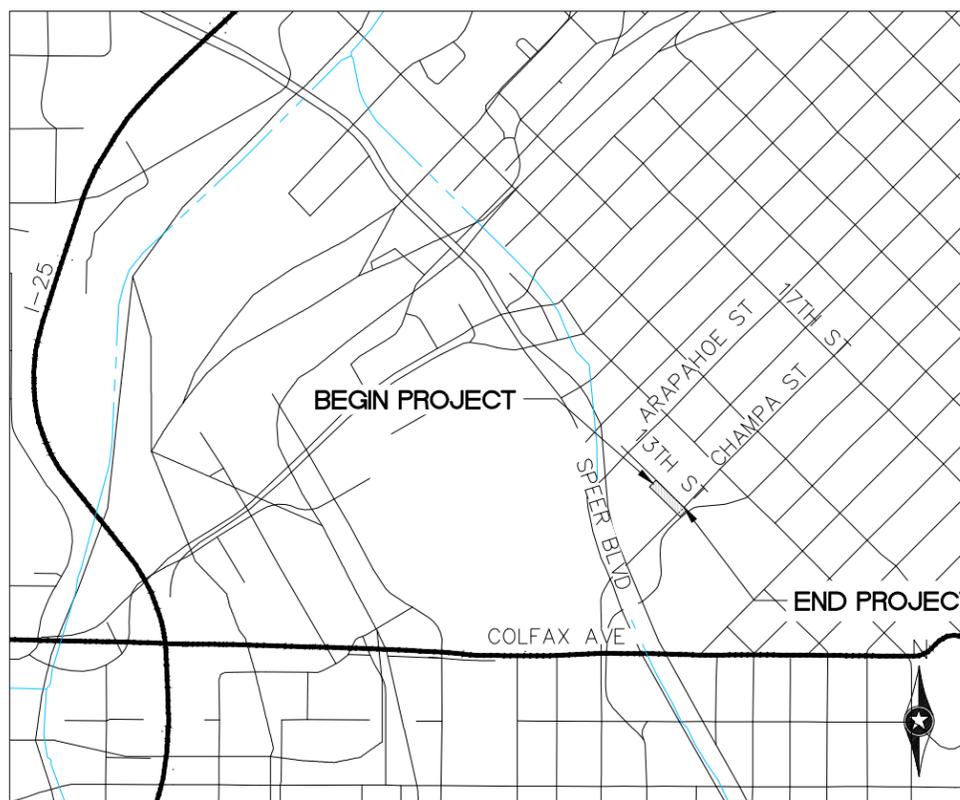
SHEET TITLE:  
**LEVEL 4 PLUMBING PLAN - NORTH**

SHEET NUMBER:  
**P1.04n**

CITY AND COUNTY OF DENVER  
 DEPARTMENT OF PUBLIC WORKS  
 TRANSPORTATION DIVISION /  
 CITY ENGINEER'S OFFICE

CONTRACT EXHIBIT "D2"  
 Turner CM/GC Contract  
 GMP 1: Champa Street Pedestrian Bridge Demolition

13TH STREET ROADWAY IMPROVEMENTS  
 ARAPAHOE STREET TO CHAMPA STREET  
 PEDESTRIAN BRIDGE DEMOLITION



LOCATION MAP



SHEET NO.	INDEX OF SHEETS
1	TITLE SHEET
2	EXISTING BRIDGE REMOVAL PLAN
3	EXISTING BRIDGE REMOVAL DETAILS
4	ARCHITECTURAL DETAILS
5	EROSION CONTROL PLAN

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COLORADO LAW (SENATE BILL 93-155) REQUIRES PERSONS TO NOTIFY THE UTILITY NOTIFICATION CENTER OF COLORADO 2 BUSINESS DAYS PRIOR TO MAKING OR BEGINNING AN EXCAVATION. NOTIFICATION MAY BE MADE BY CALLING: **811**

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 CHECKED EN DATE 1/30/17

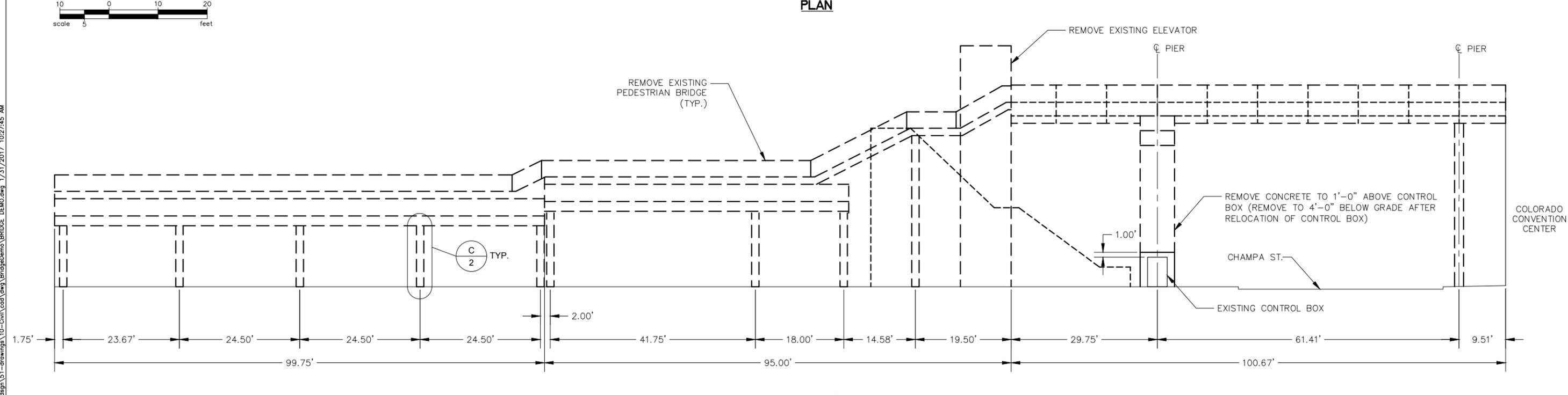
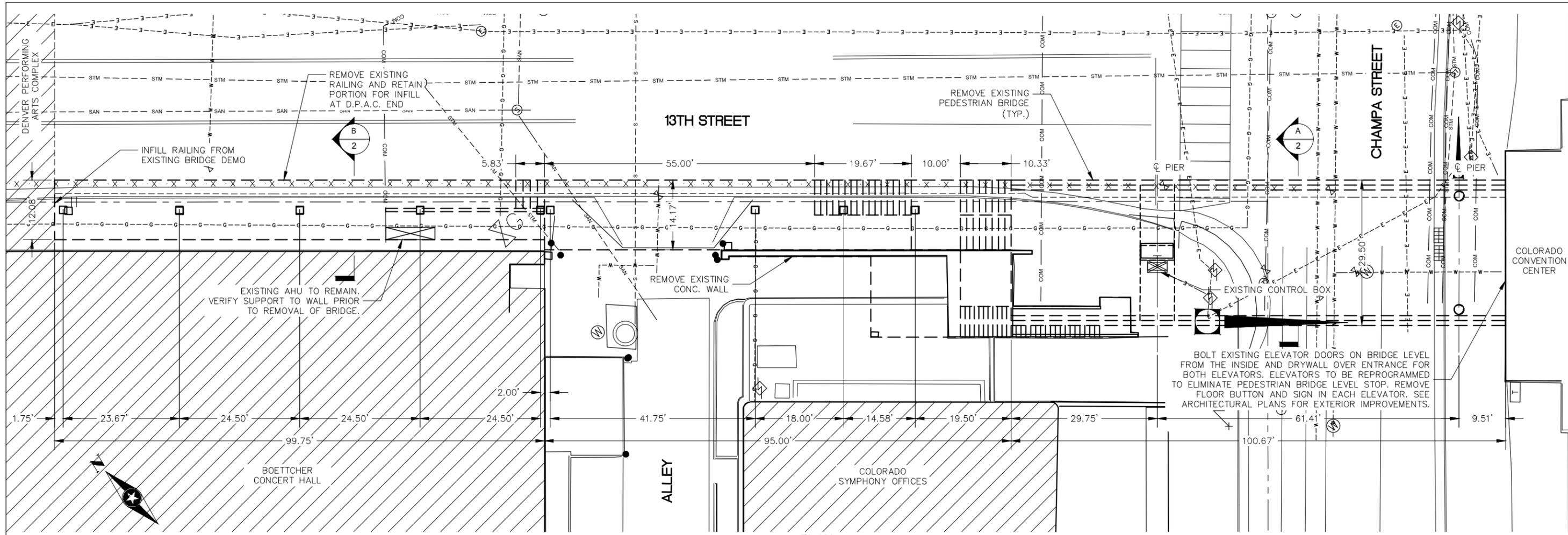


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 TOWER ONE, SUITE 6000  
 DENVER, CO 80222-7938

13TH STREET ROADWAY IMPROVEMENTS  
 ARAPAHOE ST TO CHAMPA ST

BRIDGE DEMOLITION  
 TITLE SHEET  
 SEH PROJECT NO. 137801  
 DATE ISSUED 1/30/17

SHEET NO. **1**  
 SHEET OF



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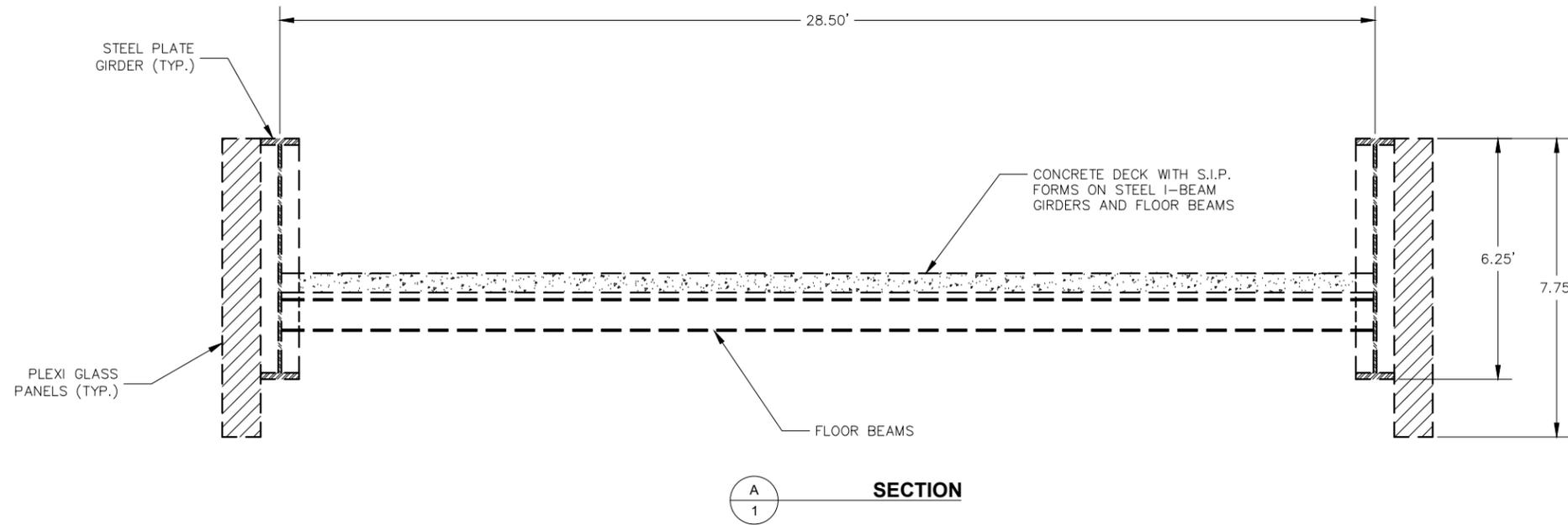
**13TH STREET ROADWAY IMPROVEMENTS**  
ARAPAHOE ST TO CHAMPA ST

**EXISTING BRIDGE REMOVAL PLAN**  
SEH PROJECT NO. 137801  
DATE ISSUED 1/30/17

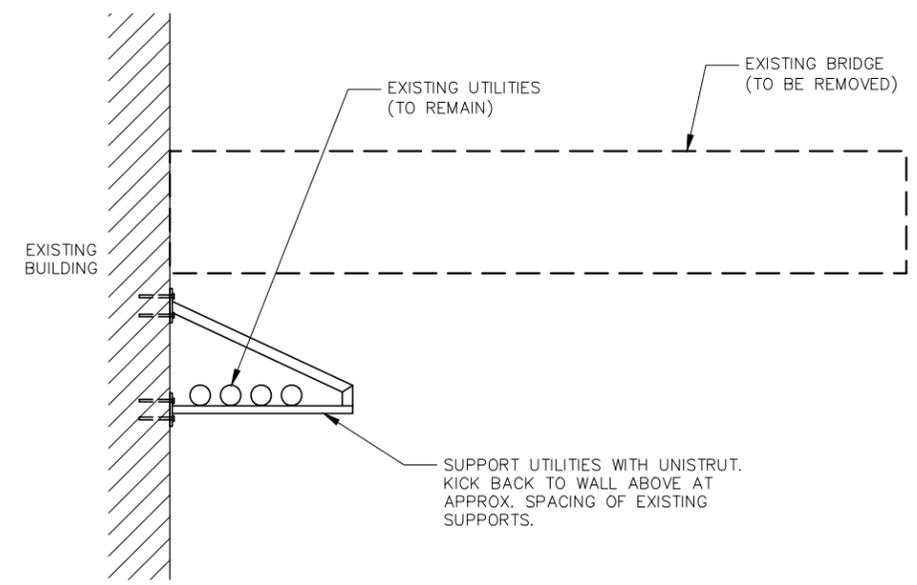
SHEET NO. **2**  
SHEET OF \_\_

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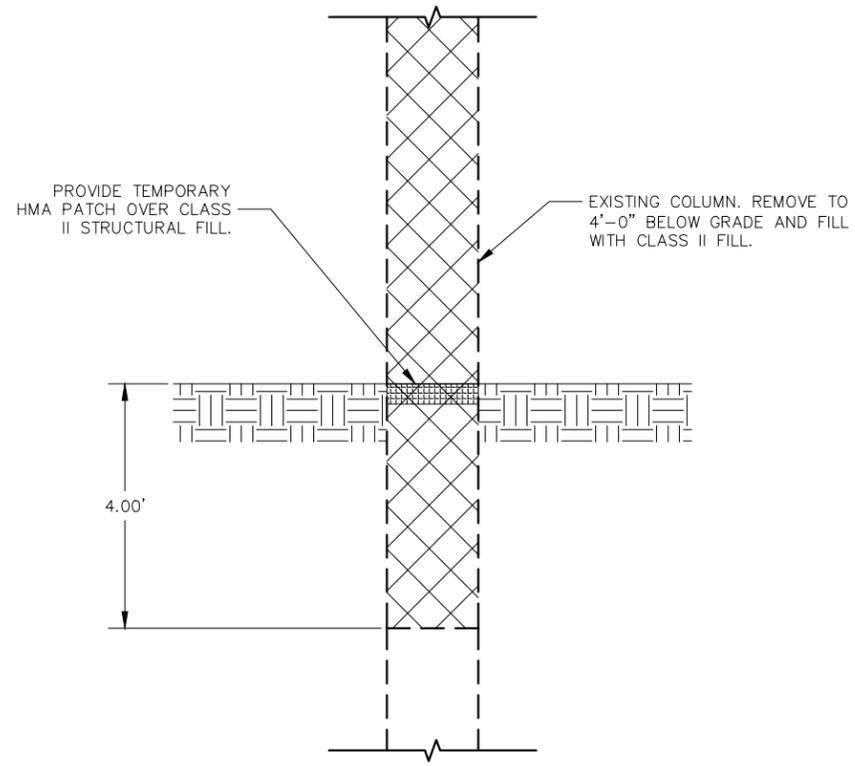
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**A**  
1 SECTION



**B**  
1 SECTION



**C**  
1 SECTION

**GENERAL NOTES:**

1. ALL DIMENSIONS TO BE VERIFIED AND ENGINEER TO BE NOTIFIED IF DIMENSIONS VARY SIGNIFICANTLY TO THOSE SHOWN.
2. MEP AND ARCHITECTURAL DRAWINGS NOT REVIEWED UNTIL 100% DRAWINGS.
3. CONTRACTOR TO PROTECT EXISTING UTILITIES UNDER BRIDGE THAT ARE TO REMAIN AND PROVIDE SUPPORT FOR UTILITIES SUPPORTED BY THE BRIDGE STRUCTURE PRIOR TO REMOVAL OF THE BRIDGE.
4. CONTRACTOR TO PROTECT EXISTING HVAC UNDER BRIDGE AND SUPPORT AS REQUIRED PRIOR TO BRIDGE REMOVAL.
5. THE TYPE, SIZE, LOCATION AND NUMBER OF ALL KNOWN UNDERGROUND UTILITIES ARE APPROXIMATE UNLESS OTHERWISE NOTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO COMMENCING WORK.
6. REMOVE POWER AND ELECTRICAL CONNECTIONS TO EXISTING ELEVATOR. REFER TO CONVENTION CENTER EXHIBITION LEVEL ELECTRICAL DISTRIBUTION LOCATION PLAN, ONE-LINE DIAGRAMS AND PANEL BOARD SCHEDULES FOR INFORMATION.
7. REMOVE ELECTRICAL CONNECTION TO ADA DOOR CONTROLLER.

**RECOMMENDED BRIDGE REMOVAL SEQUENCE:**

1. REMOVE ANY EXTERIOR FACADE AND RAILING.
2. SUPPORT AND COVER EXISTING UTILITIES AND DUCT WORK.
3. REMOVE CONCRETE AND METAL DECK.
4. SHORE BRIDGE GIRDERS PRIOR TO REMOVAL OF FLOOR BEAMS.
5. REMOVE FLOOR BEAMS.
6. REMOVE BUILT UP PLATE GIRDERS.
7. REMOVE COLUMNS TO 4'-0" BELOW GRADE AND FILL WITH CLASS II FILL.

**BRIDGE DEMO SALVAGE MATERIALS – TURN OVER TO OWNER (WILL PICK UP FROM PROJECT SITE)**

1. RELOCATE:
  - A. DOOR OPERATOR BUTTON FOR CCC ELEVATOR LOBBY DOORS, STREET LEVEL, CURRENTLY LOCATED ON NORTH COLUMN.
  - B. DRUM DRIP SERVING Z1/Z2 ELEVATOR TOWER, CURRENTLY LOCATED ON SOUTH COLUMN.
2. SALVAGE FROM CCC ELEVATOR LOBBY, BRIDGE LEVEL:
  - A. DOORS, HARDWARE, ADA DOOR OPERATOR & BUTTONS.
  - B. LIGHT FIXTURES (4 EA).
  - C. FIRE ALARM PULL STATION (1 EA).
  - D. FA HORN/STROBE (1 EA).
  - E. DIGITAL SIGNAGE AND ASSOCIATED CLUTTER-HAMMER TRANSFORMER (1 EA).
  - F. STAINLESS STEEL "PERFORMER PASS" DROP BOX (1 EA).
3. SALVAGE FROM BRIDGE:
  - A. SECURITY CAMERAS (2 EA).
4. SALVAGE FROM Z3 ELEVATOR STRUCTURE:
  - FIRE ALARM HORN/STROBES (3 EA).

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NO.	REVISIONS	DATE	BY
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COLORADO LAW (SENATE BILL 93-155) REQUIRES PERSONS TO NOTIFY THE UTILITY NOTIFICATION CENTER OF COLORADO 2 BUSINESS DAYS PRIOR TO MAKING OR BEGINNING AN EXCAVATION. NOTIFICATION MAY BE MADE BY CALLING:  
**811**

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CHECKED \_\_\_\_\_ DATE \_\_\_\_\_



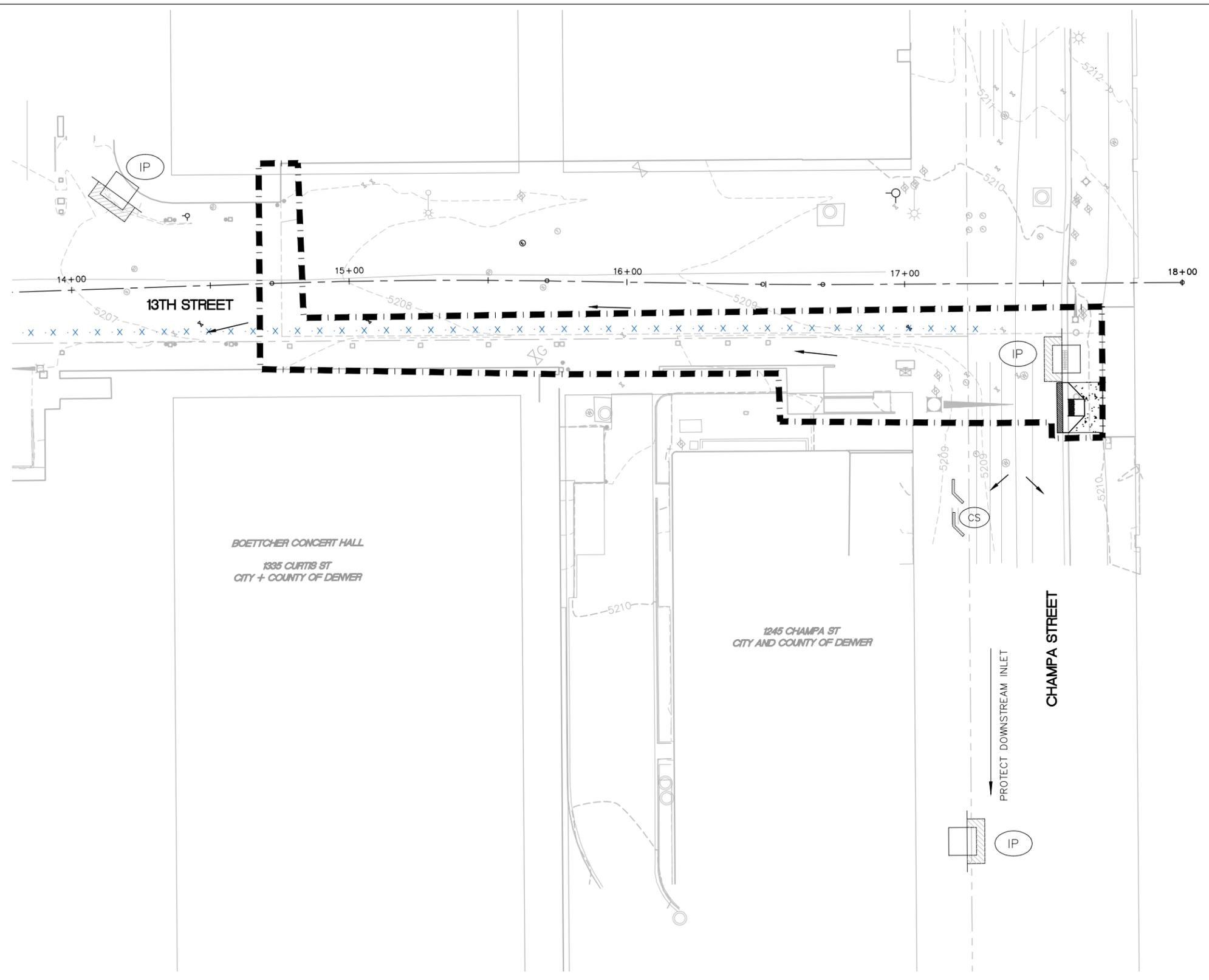
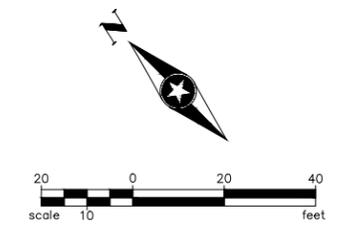
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TOWER ONE, SUITE 6000  
DENVER, CO 80222-7938

**13TH STREET ROADWAY IMPROVEMENTS**  
ARAPAHOE ST TO CHAMPA ST

**EXISTING BRIDGE REMOVAL DETAILS**  
SEH PROJECT NO. 137801  
DATE ISSUED 1/30/17

SHEET NO. **3**  
SHEET OF \_





**LEGEND**

	(SF)	SILT FENCE
	(IP)	INLET PROTECTION
	(CS)	CURB SOCK
	(EL)	EROSION LOG
		FLOW ARROW
		LIMITS OF DISTURBANCE

- NOTES:**
- LIMITS OF DISTURBANCE = 0.22 ACRES.
  - PLACE CONCRETE WASHOUT AREA AND STABILIZED STAGING AREA AS DIRECTED BY CONTRACTOR.
  - ANY BMPs SHOWN THAT REQUIRE GRADING, E.G. SEDIMENT BASINS, SEDIMENT TRAPS, CONCRETE WASH OUT AREAS, ETC..., SHALL NOT BE PLACED UNTIL AFTER THE PRE-CONSTRUCTION MEETING.
  - CONTRACTOR TO PROVIDE SPECIFICS ON CONSTRUCTION PHASES.

BOETTCHER CONCERT HALL  
1335 CURTIS ST  
CITY + COUNTY OF DENVER

1245 CHAMPA ST  
CITY AND COUNTY OF DENVER

CHAMPA STREET

PROTECT DOWNSTREAM INLET

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**13TH STREET ROADWAY IMPROVEMENTS**  
ARAPAHOE ST TO CHAMPA ST

**BRIDGE DEMOLITION EROSION CONTROL**  
SEH PROJECT NO. 137801  
DATE ISSUED 1/30/17

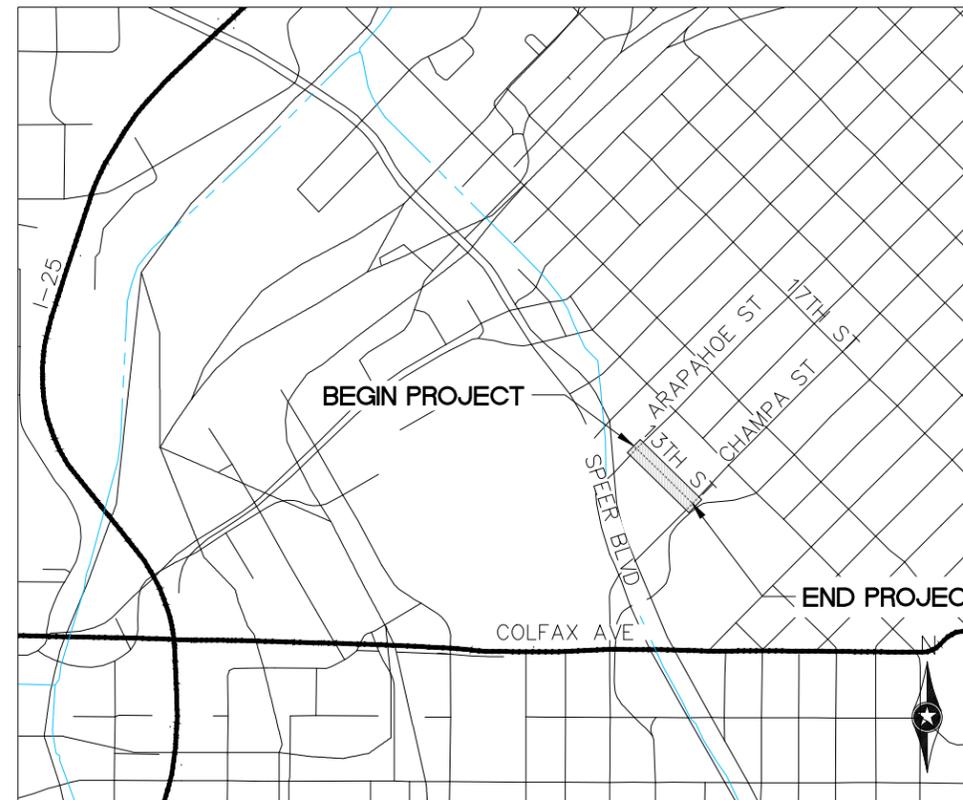
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**CITY AND COUNTY OF DENVER  
 DEPARTMENT OF PUBLIC WORKS  
 TRANSPORTATION DIVISION /  
 CITY ENGINEER'S OFFICE  
 CITY AND COUNTY OF DENVER CONTRACT NO.  
 2016-PROJMSTR-000XXXX  
 13TH STREET ROADWAY IMPROVEMENTS  
 ARAPAHOE STREET TO CHAMPA STREET**

**TABULATION OF LENGTH & DESIGN DATA**

STATION	ROADWAY		MAJOR STR
	FEET	MILES	FEET
ARAPAHOE ST STA. 21+00 TO 23+00	200	0.04	N/A
13TH STREET STA. 10+75 TO 17+75	642	0.13	N/A
CHAMPA ST STA. 31+00 TO 33+00	200	0.04	N/A
<b>TOTAL</b>	<b>1100</b>	<b>0.21</b>	<b>0.0</b>
<b>SUMMARY OF PROJECT LENGTH</b>			
ROADWAY (NET LENGTH)	1100	0.21	
MAJOR STRUCTURE			
PROJECT GROSS LENGTH	1100	0.21	

DESIGN DATA	13TH STREET
MINIMUM RADIUS OF CURVE	250'
MAXIMUM GRADE	7%
MINIMUM S.S.D. HORIZONTAL	200 ft
MINIMUM S.S.D. VERTICAL	200 ft
MAXIMUM DESIGN SPEED	30 mph
2030 DESIGN TRAFFIC (ADT)	-
DHV TRUCKS %	-
CLEAR ZONE DISTANCE (TANGENT)	12'
CLEAR ZONE DISTANCE (ON CURVE)	12'
CONSTRUCTION CLEAR ZONE	18'



SHEET NO.	INDEX OF SHEETS
1	TITLE SHEET
2	CDOT STANDARD PLANS LIST
3	CCD STANDARD PLANS LIST
4-5	GENERAL NOTES
6	SURVEY CONTROL DIAGRAM
7	TYPICAL SECTIONS
8	HORIZONTAL CONTROL PLAN
9-10	ROADWAY DEMOLITION PLAN
11-12	ROADWAY PLAN AND PROFILE
13-15	INTERSECTION DETAIL SHEETS
16	STORM DRAINAGE PLAN AND PROFILE
17-23	LANDSCAPE AND IRRIGATION PLANS & DETAILS
24-26	TRAFFIC SIGNAL PLANS & DETAILS
27-28	SIGNING AND STRIPING PLAN
29	EROSION CONTROL PLAN
30-31	UTILITY PLAN

\*PEDESTRIAN BRIDGE DEMOLITION PLANS TO BE PROVIDED UNDER SEPARATE SUBMITTAL.  
 \*\*TRAFFIC CONTROL AND CASDP SUBMITTALS TO BE COORDINATED WITH CM/GC WITH FINAL PLANS.

**CITY AND COUNTY OF DENVER  
 DEPARTMENT OF PUBLIC WORKS**

APPROVED:

_____ EXECUTIVE DIRECTOR OF PUBLIC WORKS	_____ DATE
_____ CITY ENGINEER	_____ DATE
_____ DIRECTOR OF ENGINEERING CAPITOL PROJECTS	_____ DATE
_____ CITY TRAFFIC ENGINEER	_____ DATE

**LOCATION MAP**



60% SUBMITTAL

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COLORADO LAW (SENATE BILL 93-155) REQUIRES PERSONS TO NOTIFY THE UTILITY NOTIFICATION CENTER OF COLORADO 2 BUSINESS DAYS PRIOR TO MAKING OR BEGINNING AN EXCAVATION. NOTIFICATION MAY BE MADE BY CALLING:  
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**13TH STREET ROADWAY IMPROVEMENTS  
 ARAPAHOE ST TO CHAMPA ST**

**TITLE SHEET**

SEH PROJECT NO. 137801 DATE ISSUED 1/9/17

SHEET NO. **1**  
 SHEET OF 31



TRANSPORTATION ENGINEERING STANDARD DRAWINGS

TRAFFIC STANDARD DRAWINGS

NO.	DESCRIPTION
<input checked="" type="checkbox"/> 4.0	INDEX OF STANDARD DRAWINGS
<input type="checkbox"/> 5.0	LEGEND
<input type="checkbox"/> 5.1	STANDARD RIGHT-OF-WAY CROSS SECTIONS & UTILITY LOCATIONS
<input type="checkbox"/> 5.2	CURB & GUTTER AND SIDEWALK
<input checked="" type="checkbox"/> 5.3a	TYPICAL CURB & GUTTER SECTIONS
<input checked="" type="checkbox"/> 5.4	CURB & GUTTER AND SIDEWALK JOINT DETAILS
<input type="checkbox"/> 5.5	CONCRETE GUTTER OVERLAY
<input type="checkbox"/> 6.0	STANDARD RESIDENTIAL CURB CUT
<input checked="" type="checkbox"/> 6.1	STANDARD COMMERCIAL & MULTI-FAMILY CURB CUT
<input checked="" type="checkbox"/> 6.2	CURB CUT CROSS-SECTIONS
<input type="checkbox"/> 6.3	CORNER CLEARANCES & MINIMUM DISTANCES BETWEEN ACCESS POINTS
<input checked="" type="checkbox"/> 7.0a,b,c	CURB RAMP NOTES AND TYPICAL SECTION
<input checked="" type="checkbox"/> 7.1	CURB RAMP TYPE 1
<input checked="" type="checkbox"/> 7.2	CURB RAMP TYPE 2
<input checked="" type="checkbox"/> 7.3	CURB RAMP TYPE 3
<input type="checkbox"/> 7.4a,b,c	CURB RAMP TYPE 4
<input checked="" type="checkbox"/> 7.5	DOWNTOWN SIGNALIZED CORNER BLENDED TRANSITION
<input type="checkbox"/> 7.6	CURB RAMP TRUNCATED DOME PLACEMENT OPTIONS
<input checked="" type="checkbox"/> 7.7	TYPICAL SIDEWALK TRANSITION TO DIRECTIONAL CURB RAMP
<input checked="" type="checkbox"/> 7.8	SIGNAL EQUIPMENT CLEAR ZONE
<input checked="" type="checkbox"/> 8.0	INTERSECTION VALLEY GUTTER
<input checked="" type="checkbox"/> 9.0	SIDEWALK CHASE DRAIN AND TREAD PLATE
<input type="checkbox"/> 9.1a	TYPICAL CONCRETE BUS PULLOUT
<input type="checkbox"/> 9.1b	TYPICAL CONCRETE BUS PAD
<input type="checkbox"/> 10.0	TYPICAL ALLEY LAYOUT
<input type="checkbox"/> 10.1	ALLEY CUT
<input type="checkbox"/> 10.2	ALLEY CUT (HISTORIC DISTRICT)
<input type="checkbox"/> 10.3	TYPICAL ALLEY CROSS-SECTION
<input type="checkbox"/> 10.4	ALLEY CURB HEAD
<input checked="" type="checkbox"/> 11.0	TYPICAL CONCRETE PAVEMENT JOINT LAYOUT
<input checked="" type="checkbox"/> 11.1a,b	GENERAL NOTES FOR CONCRETE PAVEMENT AND PAVEMENT JOINTS
<input checked="" type="checkbox"/> 11.2a	CONCRETE EXPANSION AND SAWED TRANSVERSE CONTRACTION PAVEMENT JOINTS
<input checked="" type="checkbox"/> 11.2b	SAWED LONGITUDINAL CONTRACTION AND CONSTRUCTION JOINTS
<input checked="" type="checkbox"/> 11.3	CONCRETE PAVEMENT JOINT SEALANT
<input checked="" type="checkbox"/> 11.4	CONCRETE PAVEMENT MISCELLANEOUS DETAILS
<input checked="" type="checkbox"/> 11.5a	CONCRETE PAVEMENT JOINTING AT NEW MANHOLES AND ALL INLETS
<input checked="" type="checkbox"/> 11.5b	CONCRETE PAVEMENT JOINTING AT EXISTING MANHOLES
<input checked="" type="checkbox"/> 11.6	CONCRETE PANEL REPLACEMENT AT TRENCH OR STREET
<input checked="" type="checkbox"/> 12.0	ASPHALT PATCH

NO.	DESCRIPTION
<input type="checkbox"/> 12.1	TRENCH PATCH (GRAVEL OR LANDSCAPE MATERIALS)
<input type="checkbox"/> 12.2	TRENCH ("T") PATCH (ASPHALT) MORATORIUM/RESIDENTIAL
<input type="checkbox"/> 12.3	TRENCH ("T") PATCH (CONCRETE)
<input type="checkbox"/> 12.4	TRENCH MATERIAL REQUIREMENTS
<input checked="" type="checkbox"/> 12.5a	TYPICAL ASPHALT DETAIL
<input checked="" type="checkbox"/> 12.5b	TYPICAL ASPHALT DETAIL LIFT THICKNESS CRITERIA
<input checked="" type="checkbox"/> 12.6	TYPICAL ASPHALT DETAIL LIFT MIX DESIGN CRITERIA
<input type="checkbox"/> 13.0a,b	TREE PLANTER
<input checked="" type="checkbox"/> 13.1	DOWNTOWN STREETS PERMITTED SIDEWALK OCCUPANCY
<input type="checkbox"/> 14.0	STANDARD CUL-DE-SAC
<input type="checkbox"/> 15.0	"L" TYPE ALLEY CONFIGURATIONS

NO.	DESCRIPTION
<input checked="" type="checkbox"/> 16.1.0	2011 TRAFFIC ENGINEERING SERVICES
<input checked="" type="checkbox"/> 16.1.1	TRAFFIC SIGNAL NOTES
<input checked="" type="checkbox"/> 16.1.2	LEGEND/KEY NOTES
<input checked="" type="checkbox"/> 16.1.3	SPAN WIRE SIGNAL DESIGN
<input checked="" type="checkbox"/> 16.1.4	MOUNTING HARDWARE
<input checked="" type="checkbox"/> 16.1.5	LOOP DETECTION
<input checked="" type="checkbox"/> 16.1.6	CONDUIT DETAILS
<input checked="" type="checkbox"/> 16.1.7	PULL BOXES
<input checked="" type="checkbox"/> 16.1.8	SIGNAL POLE FOUNDATION
<input checked="" type="checkbox"/> 16.1.9	MAST ARM POLE LOADS
<input checked="" type="checkbox"/> 16.1.10	MOUNTING DETAILS
<input checked="" type="checkbox"/> 16.1.11	TABLE DATA
<input checked="" type="checkbox"/> 16.1.12	LUMINAIRE DETAILS
<input checked="" type="checkbox"/> 16.1.13	PEDESTAL POLE DETAILS
<input checked="" type="checkbox"/> 16.1.14	POLE FOUNDATION DETAILS
<input checked="" type="checkbox"/> 16.1.15	FOUNDATIONS FOR XCEL FACILITIES
<input type="checkbox"/> 16.1.16	"P" CABINET BASE
<input checked="" type="checkbox"/> 16.1.17	"P" CABINET & BASE
<input type="checkbox"/> 16.1.18	"M" CABINET BASE
<input checked="" type="checkbox"/> 16.1.19	METER PEDESTAL CABINET DETAILS
<input checked="" type="checkbox"/> 16.1.20	METER PEDESTAL CABINET FOUNDATION AND BASE
<input type="checkbox"/> 16.1.21	FLASHING BEACON DETAILS
<input type="checkbox"/> 16.1.22	DRIVER'S FEEDBACK SIGN DETAILS
<input type="checkbox"/> 16.1.23	FLASHING BEACON & SIGN SHEET 1
<input type="checkbox"/> 16.1.24	FLASHING BEACON & SIGN SHEET 2
<input checked="" type="checkbox"/> 16.2.1	CROSSWALK LAYOUT DETAILS
<input checked="" type="checkbox"/> 16.2.2	PAVEMENT MARKING DETAILS SHEET 1
<input checked="" type="checkbox"/> 16.2.3	PAVEMENT MARKING DETAILS SHEET 2
<input checked="" type="checkbox"/> 16.2.4	BIKE LANE TYPICAL MARKING DETAILS
<input checked="" type="checkbox"/> 16.2.5	CENTRAL BUSINESS DISTRICT PAVEMENT MARKING DETAILS
<input checked="" type="checkbox"/> 16.2.6	SINGLE SIGN POST MOUNTING DETAILS
<input checked="" type="checkbox"/> 16.2.7	MULTIPLE SIGN POST MOUNTING DETAILS
<input checked="" type="checkbox"/> 16.2.8	ONE-WAY SIGN PLACEMENT DETAILS
<input checked="" type="checkbox"/> 16.2.9	TRAFFIC SIGN UTILITY POLE MOUNTING DETAIL
<input checked="" type="checkbox"/> 16.2.10	GROUND MOUNT STREET NAME SIGN INSTALLATION DETAIL
<input checked="" type="checkbox"/> 16.2.11	GROUND MOUNT STREET NAME SIGN DETAIL
<input type="checkbox"/> 16.2.12	OVERHEAD STREET NAME SIGNS (INSTALLED PRIOR TO APRIL, 2011)
<input checked="" type="checkbox"/> 16.2.13	OVERHEAD STREET NAME SIGNS (INSTALLED AFTER APRIL, 2011)
<input type="checkbox"/> 16.2.14	PARKING METER POST INSTALLATION
<input type="checkbox"/> 16.2.15	BARRICADE DETAILS

WASTEWATER MANAGEMENT DIVISION STANDARD DRAWINGS

NO.	DESCRIPTION
<input checked="" type="checkbox"/> S-301.1	TRENCHING AND BEDDING PART 1
<input checked="" type="checkbox"/> S-301.2	TRENCHING AND BEDDING PART 2
<input type="checkbox"/> S-350	ENCASEMENT OF SANITARY SEWERS
<input type="checkbox"/> S-401	SHIPLAP JOINGS/TYP R JOINTS
<input checked="" type="checkbox"/> S-450	INLET CONNECTIONS AND PIPELINE CLOSURES
<input type="checkbox"/> S-501.1	PRECAST MANHOLE BARRELS AND TOP SECTIONS
<input type="checkbox"/> S-502	MANHOLE BASE CONSTRUCTION TYPE A/C
<input checked="" type="checkbox"/> S-503	TYPE B MANHOLE
<input type="checkbox"/> S-504.1	TYPE P MANHOLE
<input checked="" type="checkbox"/> S-504.2	TYPE B MANHOLE BASE SECTIONS
<input type="checkbox"/> S-520	TYPICAL MANHOLE BASE CHANNELIZATION
<input type="checkbox"/> S-530	MANHOLE OUTSIDE DROP
<input type="checkbox"/> S-550	WATER STOP GASKET
<input checked="" type="checkbox"/> S-616.1	SINGLE NO. 16 INLET
<input type="checkbox"/> S-616.2	DOUBLE NO. 16 INLET
<input type="checkbox"/> S-616.3	TRIPLE NO. 16 INLET
<input type="checkbox"/> S-616V	SINGLE, DOUBLE, TRIPLE VALLEY INLET
<input type="checkbox"/> S-620.1	NO. 14 INLET (SHEET 1)
<input type="checkbox"/> S-620.2	NO. 14 INLET (SHEET 2)
<input type="checkbox"/> S-701	24" DIAMETER RING AND COVER
<input type="checkbox"/> S-716	GRATE AND FRAME, ADJUSTABLE CURB BOX

CITY AND COUNTY OF DENVER

STANDARD DRAWINGS LIST

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60% SUBMITTAL

NO.	REVISIONS	DATE	BY
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COLORADO LAW (SENATE BILL 93-155) REQUIRES PERSONS TO NOTIFY THE UTILITY NOTIFICATION CENTER OF COLORADO 2 BUSINESS DAYS PRIOR TO MAKING OR BEGINNING AN EXCAVATION. NOTIFICATION MAY BE MADE BY CALLING:  
**811**

DESIGNED EO DATE 1/9/17  
DRAWN IC DATE 1/6/17  
CHECKED EN DATE 1/9/17



PHONE: 720.540.6800  
2000 S. COLORADO BLVD.  
TOWER ONE, SUITE 6000  
DENVER, CO 80222-7938

**13TH STREET ROADWAY IMPROVEMENTS**  
ARAPAHOE ST TO CHAMPA ST

**STANDARD PLANS LISTS - CCD STANDARD**  
SEH PROJECT NO. 137801 DATE ISSUED 1/9/17

SHEET NO. **3**  
SHEET OF 31

**SURVEYING**

- PRIOR TO BEGINNING WORK ON THE PROJECT, THE CONTRACTOR'S SURVEYOR SHALL PERFORM A SURVEY TO VERIFY ALL SURVEY CONTROL POINTS, CITY OF DENVER RANGE POINTS, SECTION CORNERS, AND BENCHMARKS AS SHOWN ON THE SURVEY CONTROL DIAGRAM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ALL LAND SURVEY MONUMENTS DISRUPTED BY CONSTRUCTION ACTIVITIES OR BY NEGLIGENCE ON THE PART OF THE CONTRACTOR. THE CONTRACTOR IS REQUIRED TO FOLLOW COLORADO STATE LAW REGARDING SURVEY MONUMENTS. THE CONTRACTOR SHALL RETAIN A COLORADO LICENSED PROFESSIONAL LAND SURVEYOR TO RESET ANY AFFECTED SURVEY MONUMENTS. THIS WILL NOT BE PAID SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK UNLESS SPECIFIED OTHERWISE IN SECTION 629. FOR FURTHER INFORMATION CONTACT:  
PUBLIC WORKS – SURVEY DEPARTMENT  
ATTN: CITY SURVEYOR  
201 W. COLFAX AVE.  
DENVER, CO 80202  
720-865-3121
- AFTER COMPLETION OF THE PAVING OPERATIONS, THE CONTRACTOR SHALL UPGRADE TEMPORARY RANGE POINTS WITH PERMANENT RANGE POINT MONUMENTS AT THE LOCATIONS AS INDICATED ON THE LAND SURVEY CONTROL DIAGRAM. MONUMENTS SHALL MEET CURRENT CITY AND COUNTY OF DENVER STANDARDS. SEE SECTION 629 OF THE SPECIAL PROVISIONS FOR MORE INFORMATION.
- A SURVEY SHALL BE DEPOSITED WITH THE CITY AND COUNTY OF DENVER PER STATE STATUTE. CITY MONUMENT RECORDS SHALL BE PREPARED FOR ALL RANGE POINTS WITHIN THE PROJECT AND DEPOSITED WITH THE CITY SURVEYOR.
- ANY PERSON WHO KNOWINGLY REMOVES, ALTERS, OR DEFACES ANY PUBLIC LAND SURVEY MONUMENT AND/OR BOUNDARY MONUMENT OR ACCESSORY, COMMITS A CLASS TWO (2) MISDEMEANOR PURSUANT TO STATE STATUTE C.R.S. SECTION 18-4-508.
- ALL STATIONS AND OFFSETS SHOWN ON THE PLANS ARE TO THE CONTROL LINES UNLESS OTHERWISE NOTED. THE USE OF CONTROL MONUMENTS FOR CONSTRUCTION STAKING OTHER THAN THOSE SHOWN ON THE PLANS OR APPROVED BY THE PW DEPT IS PROHIBITED, AND USE OF SUCH MONUMENTS IS AT THE CONTRACTOR'S SOLE RISK.
- PROPOSED FINISHED GROUND ELEVATIONS FOR ITEMS TO BE ADJUSTED, RESET OR MODIFIED SHALL BE FIELD VERIFIED BY THE CONTRACTOR.

**GENERAL**

- PROPOSED FINISHED GROUND ELEVATIONS FOR ITEMS TO BE ADJUSTED, RESET, OR MODIFIED SHALL BE FIELD VERIFIED BY THE CONTRACTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ASPECTS OF SAFETY INCLUDING, BUT NOT LIMITED TO EXCAVATION, TRENCHING, SHORING, TRAFFIC CONTROL, AND SECURITY.
- THE CONTRACTOR SHOULD REMOVE MATERIALS AND EQUIPMENT FROM THE ROADWAY ROW AT THE CLOSE OF DAILY OPERATIONS. THE TRAFFIC CONTROL PLAN (TCP) MUST INCLUDE PROTECTIVE MEASURES WHERE MATERIALS AND EQUIPMENT MAY BE STORED IN THE ROW, BUT ENSURE FIVE FEET OF PEDESTRIAN CLEARANCE ON SIDEWALKS. THE CONTRACTOR SHALL NOT STOCKPILE MATERIAL IN THE CLEAR ZONE OF THE TRAVELED WAY.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PROJECT PERMITS ASSOCIATED WITH CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR BEING AWARE OF, NOTIFYING, COORDINATING AND SCHEDULING ALL INSPECTIONS REQUIRED FOR FINAL APPROVALS AND PROJECT ACCEPTANCE. ALL WORK, INCLUDING CORRECTION WORK, IS SUBJECT TO NOTIFICATION AND INSPECTION REQUIREMENTS.
- IF ANY OF THE CONTRACTOR'S OPERATIONS DESTROY OR DAMAGE ANY PROPERTY, PUBLIC OR PRIVATE, THE CONTRACTOR SHALL PROMPTLY REPAIR OR REPLACE SUCH PROPERTY, TO THE SATISFACTION OF THE PROJECT MANAGER, BEFORE THE CITY WILL ACCEPT OR PAY FOR THE WORK PERFORMED UNDER THE CONTRACT. IF THE CONTRACTOR FAILS TO REPAIR OR REPLACE SUCH PROPERTY, THE CITY, AT THE SOLE DISCRETION OF THE MANAGER, MAY UNDERTAKE SUCH REPAIR OR REPLACEMENT AND DEDUCT THE COST OF THE SAME FROM AMOUNTS PAYABLE TO THE CONTRACTOR UNDER THE CONTRACT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING AS-BUILT INFORMATION ON A SET OF RECORD DRAWINGS KEPT ON THE CONSTRUCTION SITE, AND AVAILABLE TO THE CITY INSPECTOR AT ALL TIMES. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL SUBMIT RECORD DRAWINGS, IN AN AUTOCAD COMPATIBLE FORMAT, TO THE CITY. THE PRODUCTION OF THESE DOCUMENTS WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE WORK.
- ALL WORK SHALL CONFORM TO CURRENT CITY AND COUNTY OF DENVER STANDARDS AND SPECIFICATIONS. THE CITY RESERVES THE RIGHT TO ACCEPT OR REJECT ANY MATERIALS AND WORKMANSHIP THAT DOES NOT CONFORM TO THE LATEST EDITION OF THE CITY STANDARDS SPECIFICATIONS, OR HALT CONSTRUCTION UNTIL THE CONFLICT IS RESOLVED.
- PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, ALL STORM DRAIN INLETS, LATERALS, MAINS AND OTHER STORM RUNOFF APPURTENANCES WITHIN THE PROJECT LIMITS SHALL BE CLEARED OF SEDIMENT AND DEBRIS IN ACCORDANCE WITH DENVER WASTEWATER MANAGEMENT DIVISION STANDARDS. AFTER CONSTRUCTION, THE CONTRACTOR SHALL REMOVE ANY SEDIMENT OR DEBRIS FROM THE STORM SEWER SYSTEM AT NO COST TO THE CITY.
- PRIOR TO FINAL ACCEPTANCE, ALL DISTURBED PORTIONS OF ROADWAY ROW SHALL BE CLEANED UP AND RESTORED TO THEIR ORIGINAL CONDITION, SUBJECT TO CITY APPROVAL.
- NO WORK SHALL BE PERMITTED ON WEEKENDS OR HOLIDAYS WITHOUT PRIOR AUTHORIZATION OR UNLESS OTHERWISE SPECIFIED. THE CITY MAY RESTRICT WORK IN THE ROW DURING ADVERSE WEATHER CONDITIONS OR DURING PERIODS OF HIGH TRAFFIC VOLUME.
- NO CLEATED OR TRACKED EQUIPMENT MAY WORK IN OR MOVE OVER PAVED SURFACES

WITHOUT MATS.

- WHERE ROW FENCES MUST BE REMOVED OR CUT TO FACILITATE CONSTRUCTION, APPROVAL MUST FIRST BE GIVEN BY THE CITY. EXISTING ROW/FENCE LINE MUST BE ESTABLISHED BY GOOD SURVEY PRACTICES. FENCES WILL BE REPLACED IN KIND ACCORDING TO CITY FENCING STANDARDS.
- PROTECTION AND REPLACEMENT OF STREET IMPROVEMENTS ARE THE RESPONSIBILITY OF THE CONTRACTOR UNTIL THESE IMPROVEMENTS ARE FULLY COMPLETED AND ACCEPTED BY THE CITY.

**PROJECT PLANS, SPECIFICATIONS, PERMITS**

- ALL MATERIAL, EQUIPMENT, INSTALLATION AND CONSTRUCTION WITHIN THE ROW SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE FOLLOWING STANDARD REFERENCES AS APPLICABLE:
  - CITY AND COUNTY OF DENVER, STANDARDS AND DETAILS FOR ENGINEERING DIVISION
  - STORM DRAINAGE AND SANITARY SEWER CONSTRUCTION DETAIL AND TECHNICAL SPECIFICATIONS
  - DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS FOR CONSTRUCTION GENERAL CONTRACT CONDITIONS
  - WASTEWATER MANAGEMENT DIVISION STANDARD DETAILS
  - TRAFFIC STANDARD DRAWINGS AND TRAFFIC ENGINEERING SERVICES PROJECT SPECIALS
  - COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND STANDARD PLANS, (M&S STANDARDS)
  - FEDERAL HIGHWAY ADMINISTRATION (FHWA), MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS AND THE COLORADO SUPPLEMENT THERETO
  - AMERICAN ASSOCIATION OF STATE AND HIGHWAY TRANSPORTATION OFFICIALS (AASHTO) ROADSIDE DESIGN GUIDE
- THE CONTRACTOR SHALL HAVE ONSITE AT ALL TIMES, ONE COPY OF THE APPROVED PLANS, ONE COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS, AND COPIES OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED FOR THE JOB.
- IF DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED WHICH COULD INDICATE A SITUATION THAT IS NOT IDENTIFIED ON THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE PROJECT MANAGER IMMEDIATELY.

**UTILITIES**

- THE TYPE, SIZE, LOCATION AND NUMBER OF ALL KNOWN UNDERGROUND UTILITIES ARE APPROXIMATE WHEN SHOWN ON THE DRAWINGS, UNLESS OTHERWISE NOTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ALONG THE ROUTE OF THE WORK BEFORE COMMENCING NEW CONSTRUCTION. RESPONSIBILITIES FOR THE RELOCATION OF UTILITY LINES ARE AS NOTED IN THE PROJECT SPECIAL PROVISIONS. THE CONTRACTOR SHALL COOPERATE WITH COMPANIES TRYING TO COORDINATE THE RELOCATION EFFORT. LINES NOT RELOCATED SHALL BE PROTECTED BY THE CONTRACTOR IN PLACE. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) AT 1-800-922-1987, AT LEAST 2 WORKING DAYS PRIOR TO BEGINNING EXCAVATION OR GRADING.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING UTILITIES DURING CONSTRUCTION AND SHALL HOLD THE CITY AND ITS ENGINEERS HARMLESS FOR DAMAGES ARISING FROM THE CONTRACTOR'S FAILURE TO ADEQUATELY PROTECT EXISTING UTILITIES. DAMAGED UTILITIES SHALL BE REPAIRED BY AND AT THE EXPENSE OF THE CONTRACTOR.
- THE CONTRACTOR IS REQUIRED TO RESET, ADJUST OR REPLACE ANY UTILITIES THAT ARE IMPACTED BY CONSTRUCTION AND ARE DESIGNED TO REMAIN WITHIN THE PROJECT LIMITS.
- LOCATIONS FOR POTHOLING SHALL BE AS APPROVED BY THE PROJECT MANAGER.

**REMOVALS, EXISTING ITEMS, SAW CUTTING**

- ALL ITEMS TO BE REMOVED AND NOT RESET SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY.
- SIGNS AND / OR SIGNAL EQUIPMENT DESIGNATED AS REMOVAL ITEMS SHALL BE CAREFULLY REMOVED AND DELIVERED BY THE CONTRACTOR TO THE CITY YARD AT 5440 ROSLYN STREET, BUILDING E. ANY MATERIAL DESIGNATED FOR SALVAGE THAT IS DAMAGED AFTER REMOVAL SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER. NO SEPARATE PAYMENT SHALL BE MADE FOR LOADING, HAULING, UNLOADING, OR PLACING SALVAGED MATERIALS IN THE CITY YARD.
- WHERE IT IS REQUIRED TO REMOVE EXISTING CONCRETE OR ASPHALT, CUTTING SHALL BE DONE TO A NEAT WORK LINE TO FULL DEPTH USING A SAW, CUTTING WHEEL, OR OTHER METHOD APPROVED BY THE PROJECT MANAGER. THIS WILL NOT BE PAID SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK.
- REMOVAL OF EXISTING CURB AND GUTTER, SIDEWALK, DRIVEWAYS, CURB CUTS, AND OTHER CONCRETE ITEMS THAT ARE ATTACHED OR ADJACENT TO OTHER CONCRETE ITEMS SHALL BE REMOVED TO THE NEAREST JOINT, AS NEEDED TO AVOID DAMAGING THE REMAINING CONCRETE ITEMS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO ADJACENT SIDEWALK DURING CURB AND GUTTER REMOVAL AND SHALL REPLACE DAMAGED SECTIONS AT NO ADDITIONAL COST TO THE PROJECT.
- THE CONTRACTOR IS REQUIRED TO RESET, ADJUST, OR REPLACE ANY UTILITIES, LANDSCAPING, SPRINKLER SYSTEMS, SIGNS, SIDEWALKS, ETC. THAT ARE IMPACTED BY CONSTRUCTION AND ARE NOT DESIGNATED TO BE REMOVED.
- THE CONTRACTOR SHALL USE AGGREGATE BASE COURSE OR ASPHALT MILLINGS TO FILL AREA LEFT BY REMOVAL OF DRIVEWAY OR CURB RAMP PRIOR TO PLACEMENT OF NEW SIDEWALK, DRIVEWAY OR CURB RAMP.

**PAVEMENT**

- A TACK COAT IS REQUIRED PRIOR TO THE PLACEMENT OF SUBSEQUENT LIFTS OF HMA.
- WHERE NEW CONSTRUCTION IS TO ABUT EXISTING PAVEMENT, THE EXISTING PAVEMENT SHALL BE REMOVED TO A NEAT VERTICAL LINE TO CREATE A CLEAN CONSTRUCTION JOINT.
- PATCH ASPHALT PAVEMENT AS NECESSARY TO JOIN NEW GUTTERS WITH EXISTING PAVEMENT.
- WHEN AN EXISTING ASPHALT STREET IS CUT, THE STREET MUST BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN ITS ORIGINAL CONDITION. THE EXISTING STREET CONDITION SHALL BE DOCUMENTED BEFORE ANY CUTS ARE MADE. PATCHING SHALL BE DONE IN CONFORMANCE WITH THE PROJECT STANDARDS. THE FINISHED PATCH SHALL BLEND SMOOTHLY INTO THE EXISTING SURFACE. ALL LARGE PATCHES SHALL BE PAVED WITH AN ASPHALT LAY-DOWN MACHINE.

**EARTHWORK AND EXCAVATIONS**

- THE CONTRACTOR SHALL LIMIT CONSTRUCTION ACTIVITIES TO THOSE AREAS WITHIN THE LIMITS OF DISTURBANCE AND TOES OF SLOPE AS SHOWN ON THE PLANS AND CROSS SECTION. ANY DISTURBANCE BEYOND THESE LIMITS SHALL BE RESTORED TO ORIGINAL CONDITIONS AT THE EXPENSE OF THE CONTRACTOR.
- WATER SHALL BE USED AS A DUST PALLIATIVE WHERE REQUIRED. COST FOR DUST PALLIATIVE SHALL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED INCIDENTAL TO THE WORK.
- THE DEPTH OF RECONDITIONING AND FOR THE BASES OF CUTS AND FILLS SHALL BE 6 INCHES. THE PROJECT SPECIFIED MOISTURE DENSITY CONTROL SHALL BE APPLIED FOR THE SPECIFIED DEPTH. THE EXCAVATION REQUIRED FOR COMPACTION OF BASES OF CUTS AND FILLS WILL BE CONSIDERED SUBSIDIARY TO THAT OPERATION AND WILL NOT BE PAID FOR SEPARATELY.
- MOISTURE DENSITY CONTROL SHALL BE APPLIED FULL DEPTH FOR ALL EMBANKMENTS.
- DURING EACH PHASE OF CONSTRUCTION, THE CONTRACTOR SHALL SHAPE TO DRAIN AND COMPACT THE WORK AREA TO A UNIFORM CROSS-SECTION. ELIMINATE ALL RUTS AND LOW SPOTS THAT COULD HOLD WATER. AREAS AND FACILITIES SUBJECTED TO FLOODING, REGARDLESS OF THE SOURCE OF WATER, SHALL BE PROMPTLY DEWATERED AND RESTORED AT NO ADDITIONAL COST TO THE CITY.
- ALL WORK SHALL BE PROPERLY BACKFILLED PRIOR TO THE END OF THE WORKDAY. NO OPEN HOLES ARE ALLOWED OVERNIGHT.
- WHERE CONSISTENT WITH SAFETY AND SPACE CONSIDERATIONS, EXCAVATED MATERIAL IS TO BE PLACED ON THE UPHILL SIDE OF TRENCHES.
- MATERIAL REMOVED FROM ANY PORTION OF THE ROADWAY PRISM MUST BE REPLACED IN LIKE KIND WITH EQUAL OR BETTER COMPACTION. NO SEGREGATION OF MATERIALS WILL BE PERMITTED.

**CONCRETE**

- IF CONCRETE REPLACEMENT IS NECESSARY, THE ENTIRE AFFECTED SLAB OR PANEL MUST BE REPLACED.
- THE CONTRACTOR SHALL SELECT AND USE A BOXOUT AT CATCH BASINS, MANHOLES, AND OTHER ROADWAY APPURTENANCES OF SIMILAR AND LARGER SIZE. SEE CCD STD DWG NO. 11.5.
- SIDEWALK SHALL BE CLASS P CONCRETE. THE USE OF ¾ IN (#67) TOP SIZE AGGREGATE IS ALLOWED.
- BENDER BOARDS (TWO INCH MINIMUM THICKNESS) SHALL BE USED ON ALL CURVES OF LESS THAN 75 FOOT RADIUS.
- CURB AND GUTTER ANGLE BREAKS SHALL BE SMOOTHED WITH A 2 FT RADIUS UNLESS OTHERWISE SHOWN ON THE PLANS.
- PROVIDE A 2 FT CURB AND GUTTER TRANSITION AT EACH END OF INLETS.
- THE CONTRACTOR SHALL INSTALL ½ IN EXPANSION JOINT MATERIAL BETWEEN THE CURB, CURB AND GUTTER AND THE SIDEWALK, AND AROUND INLET STRUCTURES OR BLOCKOUTS OR AS DIRECTED BY THE PROJECT MANAGER.
- CURB RAMPS SHALL BE CONSTRUCTED USING TRUNCATED DOMES AS SHOWN IN THE CITY AND COUNTY OF DENVER STANDARD DETAILS. TRUNCATED DOMES SHALL NOT BE PAID SEPARATELY, BUT INCLUDED IN THE COST OF THE CONCRETE CURB RAMP.

**TRAFFIC**

- THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND MAINTAINING ADEQUATE TRAFFIC CONTROL THROUGHOUT THE PROJECT, INCLUDING PROPER TRAFFIC CONTROL DEVICES AND PERSONNEL. A TRAFFIC CONTROL PLAN (TCP) IS SUBJECT TO CITY APPROVAL PRIOR TO COMMENCING WORK ON ROADWAY ROW. A COPY OF APPROVED TCPS MUST BE AVAILABLE ON SITE DURING WORK. TRAFFIC CONTROL IS TO BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- ALL PAVEMENT MARKINGS MUST BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
- COORDINATE ALL TRAFFIC SIGNAL EQUIPMENT RELOCATIONS WITH PUBLIC WORKS TRAFFIC ENGINEERING SERVICES (TES).

60% SUBMITTAL

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COLORADO LAW (SENATE BILL 93-155) REQUIRES PERSONS TO NOTIFY THE UTILITY NOTIFICATION CENTER OF COLORADO 2 BUSINESS DAYS PRIOR TO MAKING OR BEGINNING AN EXCAVATION. NOTIFICATION MAY BE MADE BY CALLING:  
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PHONE: 720.540.6800  
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DENVER, CO 80222-7938

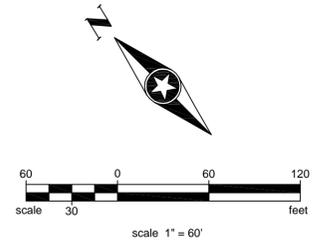
**13TH STREET ROADWAY IMPROVEMENTS**  
**ARAPAHOE ST TO CHAMPA ST**

**GENERAL NOTES**

SEH PROJECT NO. 137801 DATE ISSUED 1/9/17

SHEET NO. **4**  
SHEET OF 31





**HORIZONTAL DATUM:**

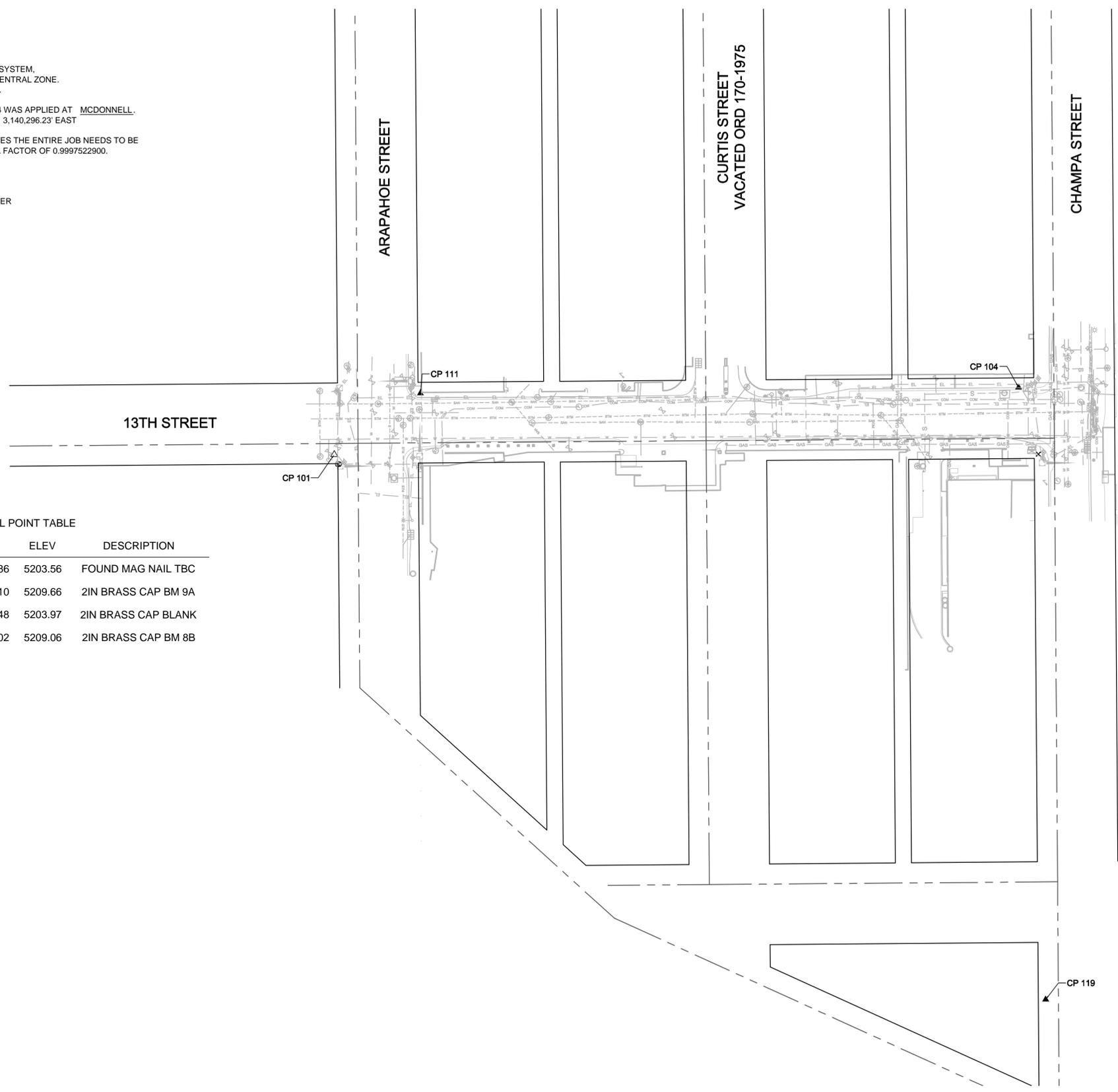
A LOCAL MODIFIED GROUND COORDINATE SYSTEM,  
BASED ON THE COLORADO STATE PLANE CENTRAL ZONE,  
NGS CONTROL MCDONNELL WAS UTILIZED.

A GROUND SCALE FACTOR OF 1.0002477714 WAS APPLIED AT MCDONNELL,  
(US SURVEY FEET) = 1,695,891.64' NORTH 3,140,296.23' EAST

TO CONVERT TO STATE PLANE COORDINATES THE ENTIRE JOB NEEDS TO BE  
SCALED AT THIS POINT (MCDONNELL) BY A FACTOR OF 0.9997522900.

**VERTICAL DATUM:**

BASED ON THE CITY AND COUNTY OF DENVER  
BENCHMARK 9A  
NAVD 88 ELEVATION=5209.66'



**CONTROL POINT TABLE**

PNT NO.	NORTH	EAST	ELEV	DESCRIPTION
101	1696667.07	3140746.86	5203.56	FOUND MAG NAIL TBC
104	1696232.90	3141275.10	5209.66	2IN BRASS CAP BM 9A
111	1696649.50	3140850.48	5203.97	2IN BRASS CAP BLANK
119	1695784.73	3140865.02	5209.06	2IN BRASS CAP BM 8B

P:\MCD\DENVER\137801\2.0 Champa Bridge & 13th St\9-survey\92-CAD\10-C5A\DCPA Control Diagram.dwg 12/20/2016 1:40:41 PM

60% SUBMITTAL

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COLORADO LAW (SENATE BILL 93-155) REQUIRES PERSONS TO NOTIFY THE UTILITY NOTIFICATION CENTER OF COLORADO 2 BUSINESS DAYS PRIOR TO MAKING OR BEGINNING AN EXCAVATION. NOTIFICATION MAY BE MADE BY CALLING:  
**811**

DESIGNED \_\_\_\_\_ DATE \_\_\_\_\_  
DRAWN DRH DATE 12/20/16  
CHECKED SJK DATE 12/20/16

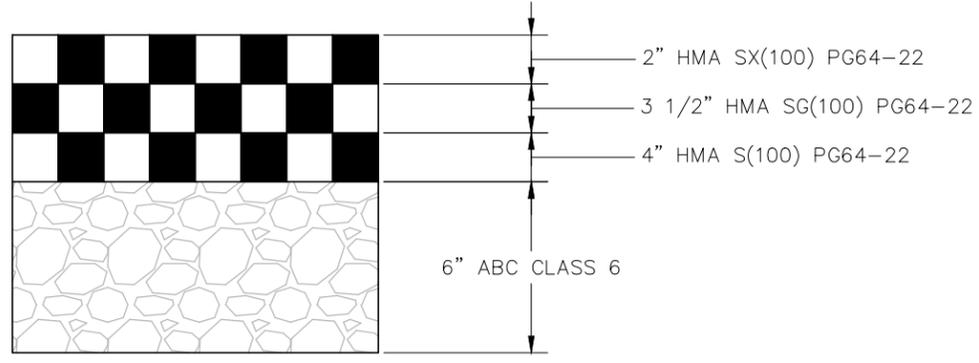


**SEH**  
PHONE: 720.540.6800  
2000 S. COLORADO BLVD.  
TOWER ONE, SUITE 6000  
DENVER, CO 80222-7938

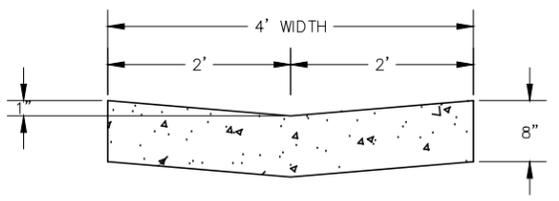
**13TH STREET ROADWAY IMPROVEMENTS**  
ARAPAHOE ST TO CHAMPA ST

**SURVEY CONTROL DIAGRAM**  
SEH PROJECT NO. 137801  
DATE ISSUED 12/20/16

SHEET NO. **6**  
SHEET 6 OF 30

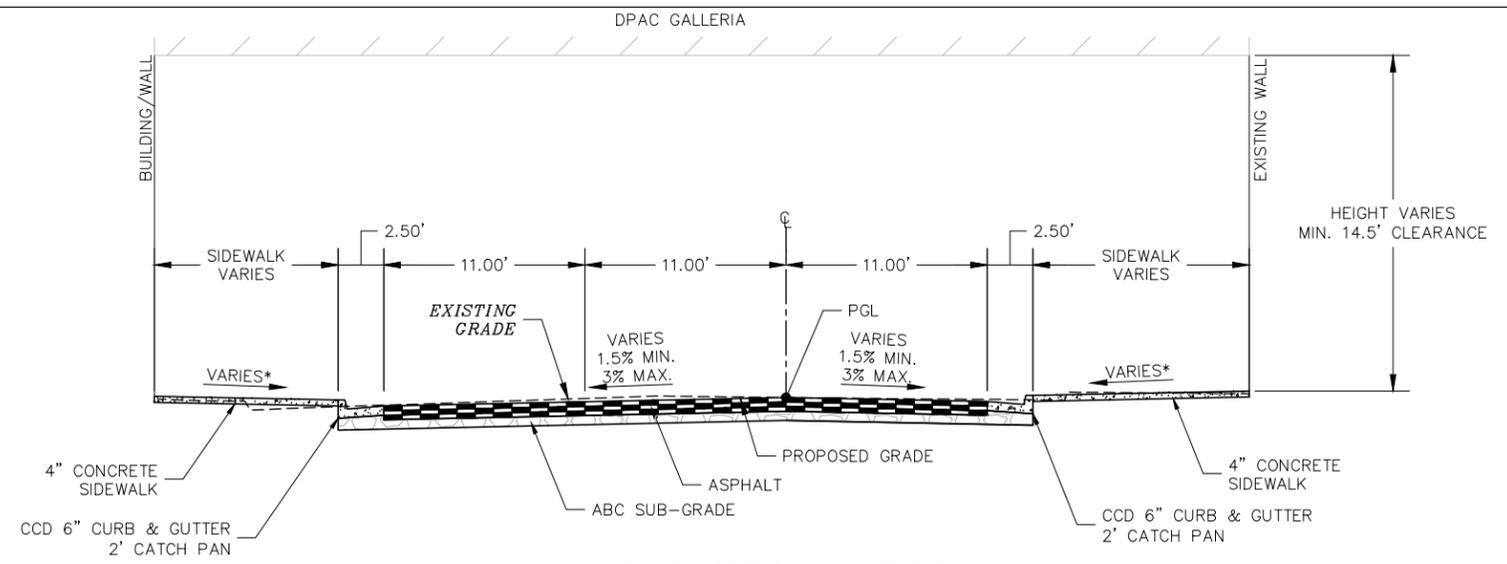


TYPICAL FULL DEPTH PAVEMENT SECTION NTS



VALLEY GUTTER DETAIL NTS

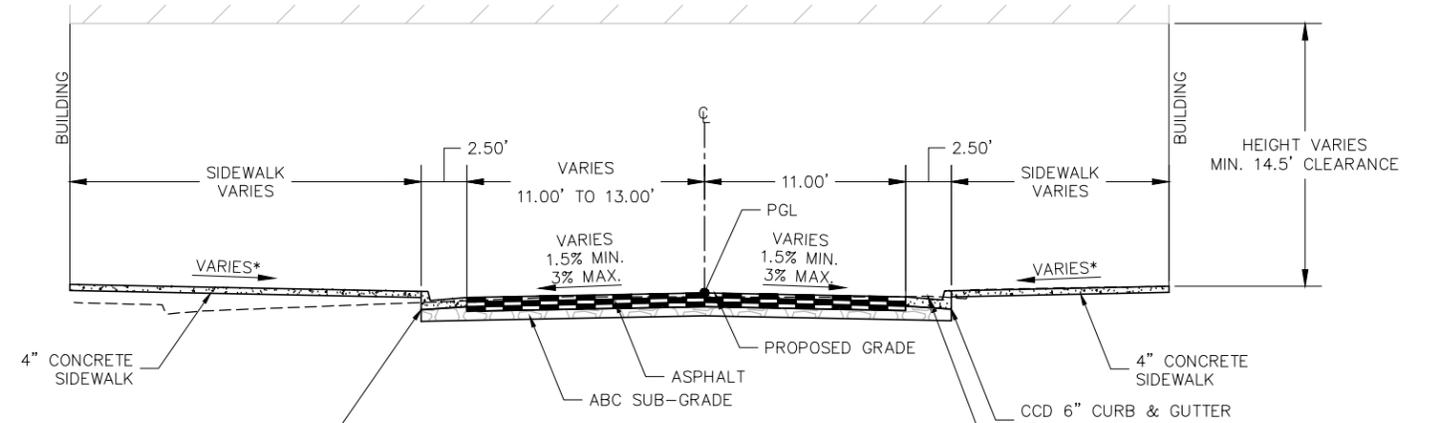
**NOTES FOR REVIEWERS:**  
 THE PROPOSED CONFIGURATION OF 13TH STREET WAS DEVELOPED IN COLLABORATION WITH THE CITY AND COUNTY OF DENVER PUBLIC WORKS AND ARTS AND VENUES STAFF. STAFF INPUT WAS SOLICITED THROUGH STAKEHOLDER MEETINGS, SITE VISITS AND REGULAR COORDINATION MEETINGS. THIS INPUT WAS THEN INCORPORATED INTO THE PROPOSED ROADWAY LAYOUT AND CONFIGURATION.  
 THE EXISTING ROADWAY IS COVERED BY THE DENVER PERFORMING ARTS COMPLEX (DPAC) GALLERIA FROM STATION 10+93.53 TO 14+75.61 AND WILL REMAIN COVERED WHEN THE PROJECT IS COMPLETE.



TYPICAL SECTION - 13th STREET

STA. 10+80.41 TO 11+90  
 ENTIRE SECTION UNDER DPAC GALLERIA  
 DPAC GALLERIA

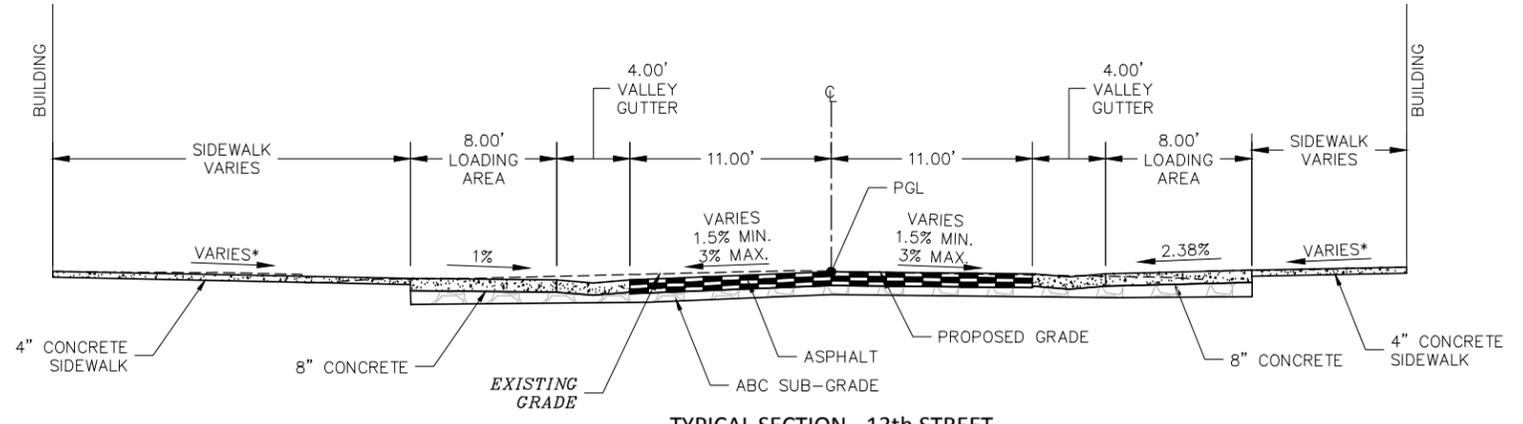
\* SIDEWALK GRADING VARIES 1.7% MAXIMUM.



TYPICAL SECTION - 13th STREET

STA. 11+90 TO 14+83.05 RT AND 15+19.68 LT  
 STA. 11+90 TO 14+75.61 UNDER DPAC GALLERIA

\* SIDEWALK GRADING VARIES 1.7% MAXIMUM.



TYPICAL SECTION - 13th STREET

STA. 14+83.05 RT TO 16+91.47

\* SIDEWALK GRADING VARIES 1.7% MAXIMUM.

60% SUBMITTAL

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COLORADO LAW (SENATE BILL 93-155) REQUIRES PERSONS TO NOTIFY THE UTILITY NOTIFICATION CENTER OF COLORADO 2 BUSINESS DAYS PRIOR TO MAKING OR BEGINNING AN EXCAVATION. NOTIFICATION MAY BE MADE BY CALLING:  
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**13TH STREET ROADWAY IMPROVEMENTS**  
 ARAPAHOE ST TO CHAMPA ST

TYPICAL SECTIONS  
 SEH PROJECT NO. 137801  
 DATE ISSUED 1/9/17

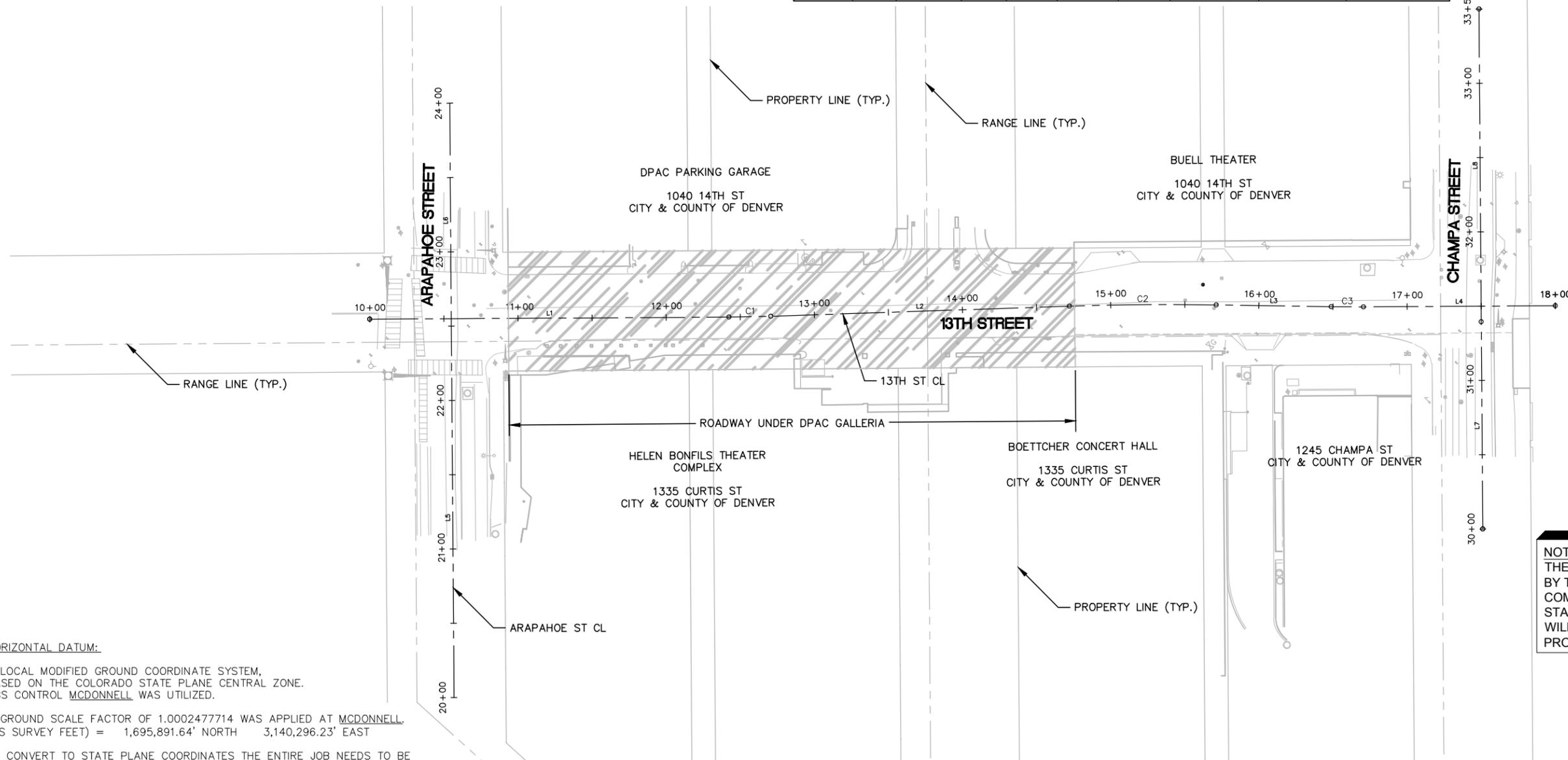
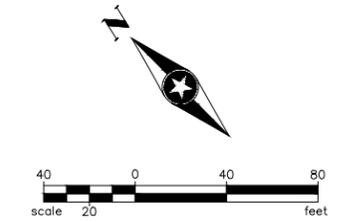
SHEET NO. **7**  
 SHEET OF 31

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ALIGNMENT TABULATION - 13TH-CL									
POINT ID	POINT	STATION	DELTA	RADIUS	TANGENT	LENGTH	NORTHING	EASTING	BEARING
L1		10+00.00				242.43	1696690.4212	3140761.0320	S 45° 19' 10" E
C1		12+42.43	001° 36' 45"	1000.00	14.07	28.14	1696519.9564	3140933.4082	
L2		12+70.57				201.60	1696500.4520	3140953.6945	S 46° 55' 55" E
C2		14+72.17	002° 50' 16"	2000.00	49.54	99.05	1696362.7882	3141100.9695	
L3		15+71.22				77.65	1696293.3845	3141171.6274	S 44° 05' 39" E
C3		16+48.87	001° 14' 26"	1000.00	10.83	21.65	1696237.6198	3141225.6563	
L4		16+70.52				129.48	1696222.2348	3141240.8887	S 45° 20' 05" E

ALIGNMENT TABULATION - ARAPAHOE-CL									
POINT ID	POINT	STATION	DELTA	RADIUS	TANGENT	LENGTH	NORTHING	EASTING	BEARING
L5		20+00.00				242.43	1696470.1229	3140621.1491	N 44° 34' 51" E
L6		22+42.43				157.57	1696642.7965	3140791.3142	N 44° 35' 34" E

ALIGNMENT TABULATION - CHAMPA-CL									
POINT ID	POINT	STATION	DELTA	RADIUS	TANGENT	LENGTH	NORTHING	EASTING	BEARING
L7		30+00.00				139.48	1696059.5227	3141192.1311	N 44° 34' 55" E
L8		31+39.48				210.52	1696158.8677	3141290.0368	N 44° 34' 22" E



**HORIZONTAL DATUM:**

A LOCAL MODIFIED GROUND COORDINATE SYSTEM, BASED ON THE COLORADO STATE PLANE CENTRAL ZONE. NGS CONTROL MCDONNELL WAS UTILIZED.

A GROUND SCALE FACTOR OF 1.0002477714 WAS APPLIED AT MCDONNELL. (US SURVEY FEET) = 1,695,891.64' NORTH 3,140,296.23' EAST

TO CONVERT TO STATE PLANE COORDINATES THE ENTIRE JOB NEEDS TO BE SCALED AT THIS POINT (MCDONNELL) BY A FACTOR OF 0.9997522900.

**VERTICAL DATUM:**

BASED ON THE CITY AND COUNTY OF DENVER BENCHMARK 9A NAVD 88 ELEVATION=5209.66'

**NOTES FOR REVIEWERS:**  
 THE EXISTING ROADWAY IS COVERED BY THE DENVER PERFORMING ARTS COMPLEX (DPAC) GALLERIA FROM STATION 10+93.53 TO 14+75.61, AND WILL REMAIN COVERED WHEN THE PROJECT IS COMPLETE.

**LEGEND**

LIMITS OF GALLERIA LID

60% SUBMITTAL

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COLORADO LAW (SENATE BILL 93-155) REQUIRES PERSONS TO NOTIFY THE UTILITY NOTIFICATION CENTER OF COLORADO 2 BUSINESS DAYS PRIOR TO MAKING OR BEGINNING AN EXCAVATION. NOTIFICATION MAY BE MADE BY CALLING:  
**811**

DESIGNED EO DATE 1/9/17  
 DRAWN IC DATE 1/6/17  
 CHECKED EN DATE 1/9/17

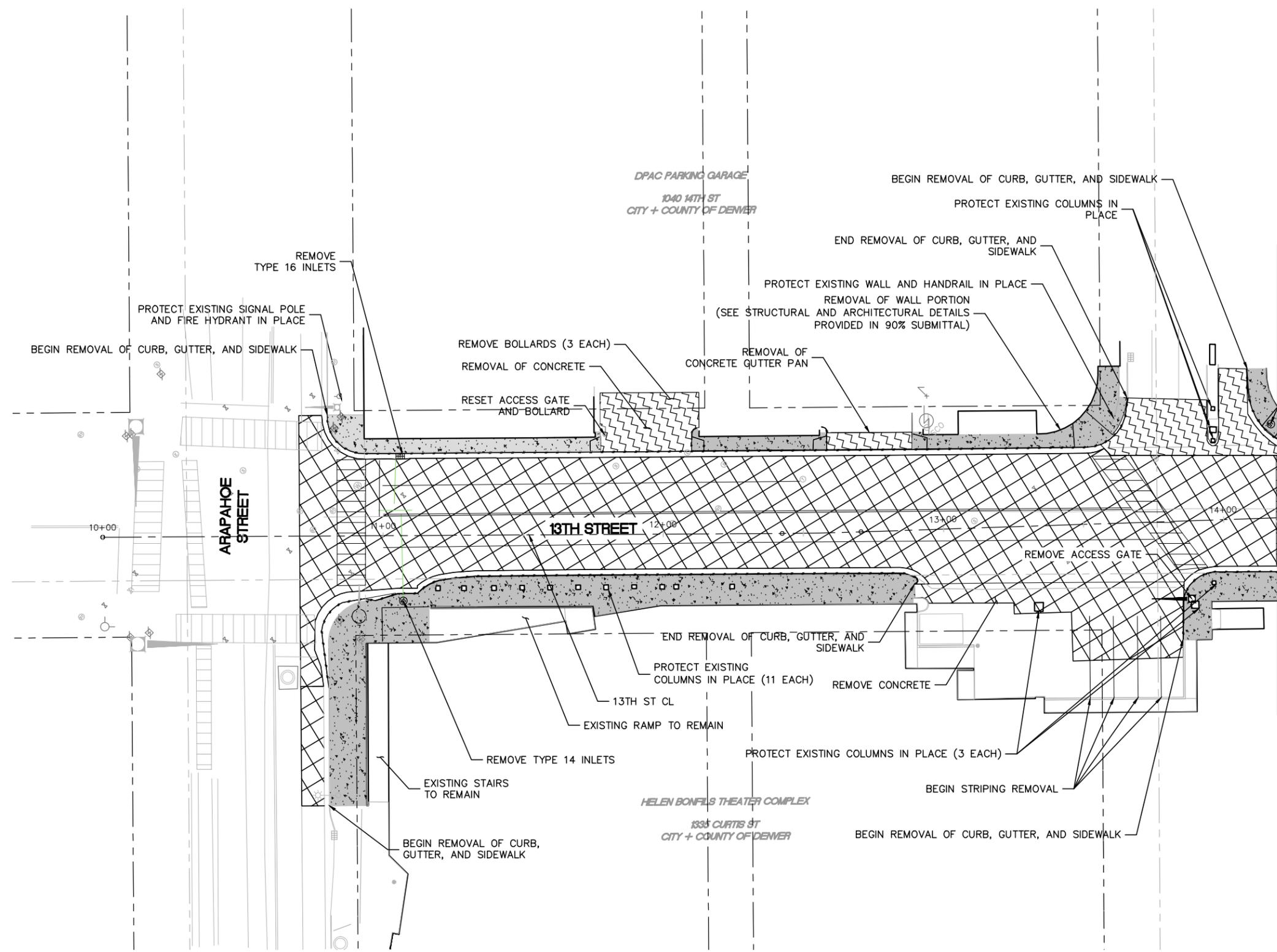
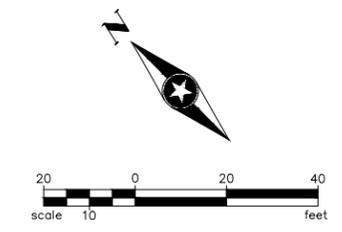


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**13TH STREET ROADWAY IMPROVEMENTS**  
 ARAPAHOE ST TO CHAMPA ST

**HORIZONTAL CONTROL PLAN**  
 SEH PROJECT NO. 137801 DATE ISSUED 1/9/17

SHEET NO. **8**  
 SHEET OF 31



MATCH LINE SHEET 10

**LEGEND**

	LIMITS OF REMOVAL OF ASPHALT
	LIMITS OF CONCRETE SIDEWALK REMOVAL
	LIMITS OF CONCRETE REMOVAL
	LIMITS OF ELEVATOR STRUCTURE REMOVAL
	LIMITS OF PEDESTRIAN BRIDGE REMOVAL
	LIMITS OF PLANTER REMOVAL
	LIMITS OF LANDSCAPE ROCK REMOVAL
	CURB AND GUTTER REMOVAL

**NOTES:**  
 1. SEE TRAFFIC SIGNAL PLANS FOR SIGNAL REMOVALS.  
 2. SEE UTILITY PLANS FOR UTILITY REMOVALS.

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COLORADO LAW (SENATE BILL 93-155) REQUIRES PERSONS TO NOTIFY THE UTILITY NOTIFICATION CENTER OF COLORADO 2 BUSINESS DAYS PRIOR TO MAKING OR BEGINNING AN EXCAVATION. NOTIFICATION MAY BE MADE BY CALLING:  
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DESIGNED EO DATE 1/9/17  
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 CHECKED EN DATE 1/9/17

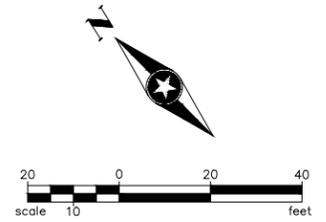


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 DENVER, CO 80222-7938

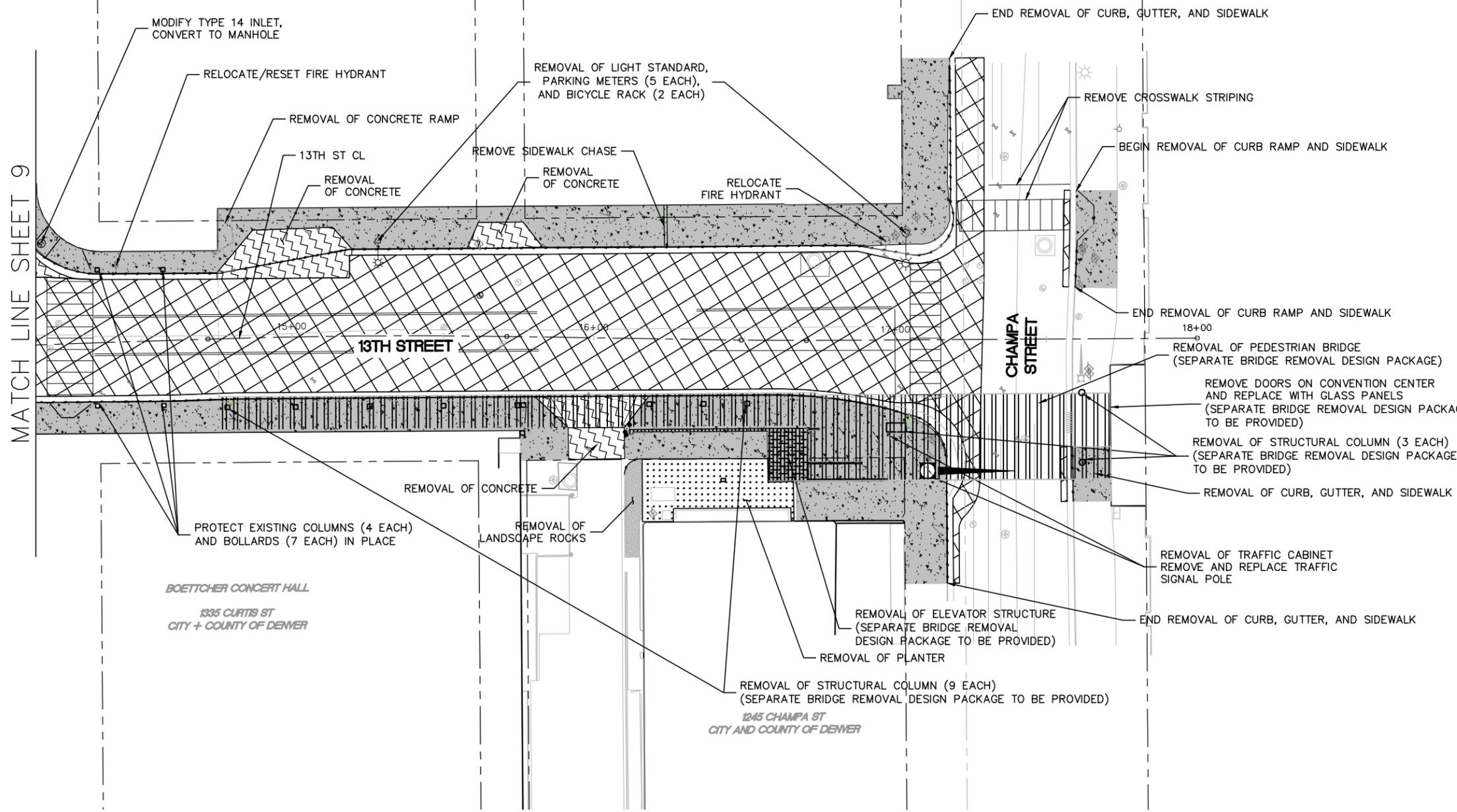
**13TH STREET ROADWAY IMPROVEMENTS**  
 ARAPAHOE ST TO CHAMPA ST

**DEMOLITION PLAN**  
 SEH PROJECT NO. 137801  
 DATE ISSUED 1/9/17

SHEET NO. **9**  
 SHEET OF 31



**NOTES FOR REVIEWERS:**  
 THE EXISTING PEDESTRIAN BRIDGE ALONG THE SOUTH SIDE OF 13TH STREET CROSSING OVER CHAMPA STREET WILL BE REMOVED. THE EXISTING DOORS ON THE SECOND LEVEL OF THE CONVENTION CENTER WILL NEED TO BE REMOVED AND REPLACED WITH GLASS PANELS. A SEPARATE PEDESTRIAN BRIDGE AND ELEVATOR REMOVAL PACKAGE IS BEING PREPARED AND WILL BE SUBMITTED PRIOR TO THE 90% SUBMITTAL.



- LEGEND**
- LIMITS OF REMOVAL OF ASPHALT
  - LIMITS OF CONCRETE SIDEWALK REMOVAL
  - LIMITS OF CONCRETE REMOVAL
  - LIMITS OF ELEVATOR STRUCTURE REMOVAL
  - LIMITS OF PEDESTRIAN BRIDGE REMOVAL
  - LIMITS OF PLANTER REMOVAL
  - LIMITS OF LANDSCAPE ROCK REMOVAL
  - CURB AND GUTTER REMOVAL

**NOTES:**  
 1. SEE TRAFFIC SIGNAL PLANS FOR SIGNAL REMOVALS.  
 2. SEE UTILITY PLANS FOR UTILITY REMOVALS.

MATCH LINE SHEET 9

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COLORADO LAW (SENATE BILL 93-155) REQUIRES PERSONS TO NOTIFY THE UTILITY NOTIFICATION CENTER OF COLORADO 2 BUSINESS DAYS PRIOR TO MAKING OR BEGINNING AN EXCAVATION. NOTIFICATION MAY BE MADE BY CALLING:  
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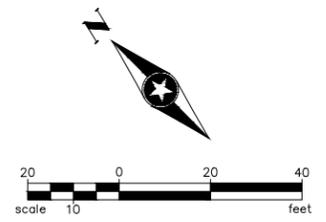
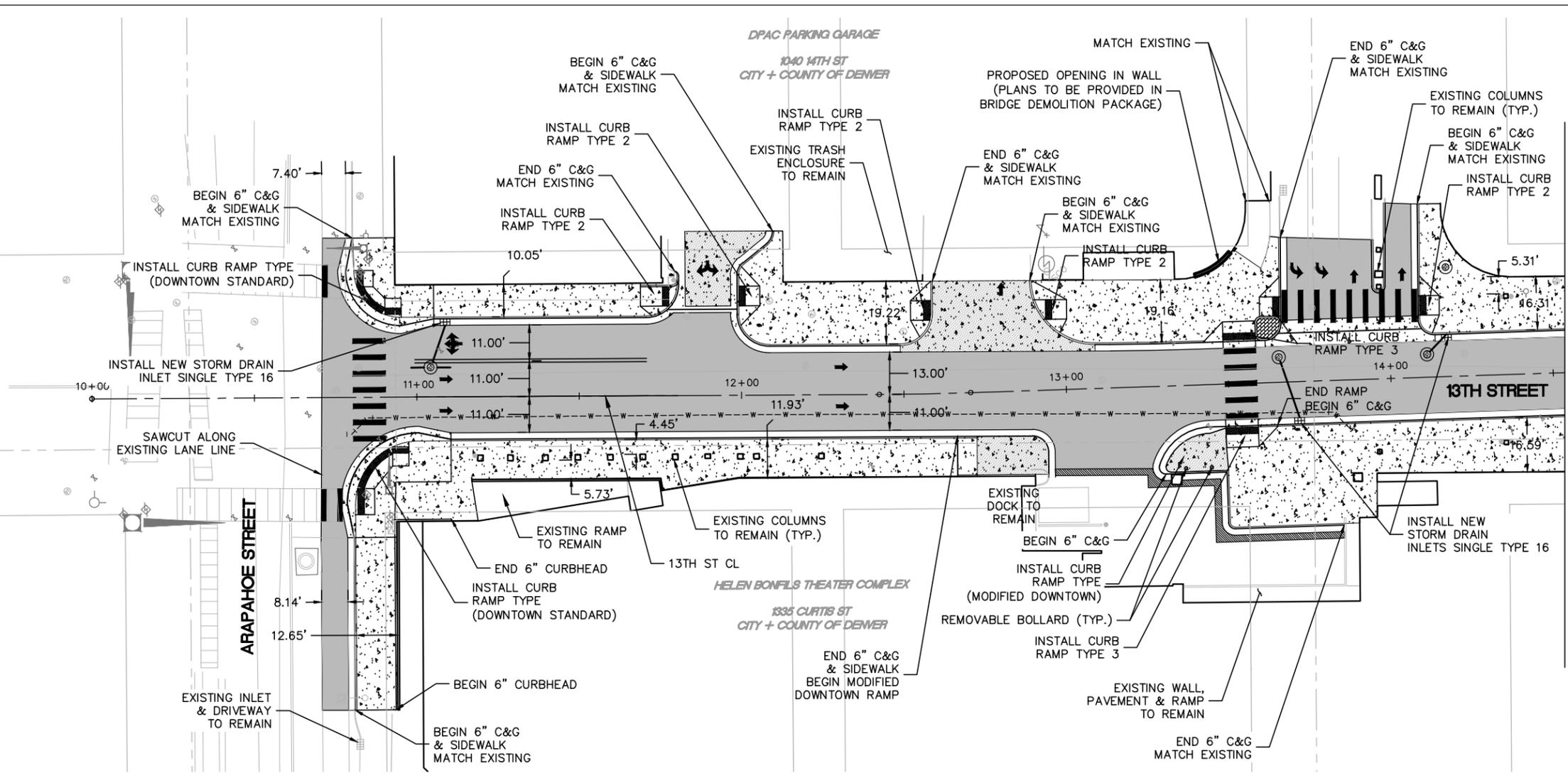
PHONE: 720.540.6800  
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**13TH STREET ROADWAY IMPROVEMENTS**  
 ARAPAHOE ST TO CHAMPA ST

**DEMOLITION PLAN**  
 SEH PROJECT NO. 137801 DATE ISSUED 1/9/17

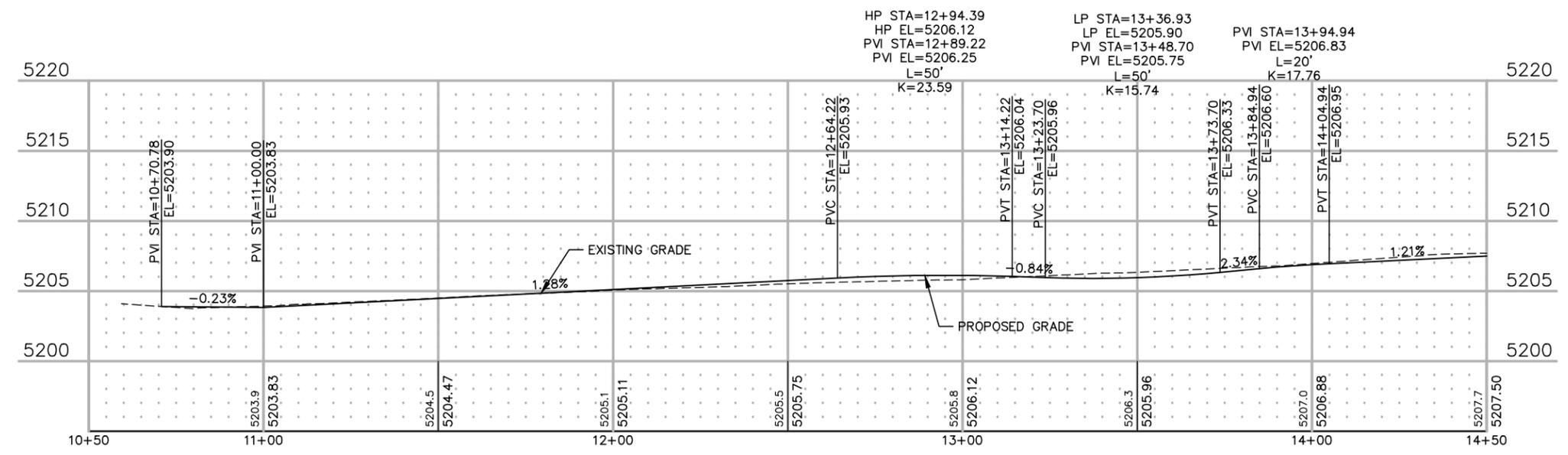
SHEET NO. **10**  
 SHEET OF 31

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- LEGEND**
- PROPOSED ASPHALT
  - ASPHALT PATCHING AREA
  - PROPOSED 8" CONCRETE
  - PROPOSED 4" CONCRETE
- NOTES:**
1. ALL DIMENSIONS AND RADII MEASUREMENTS ARE TO FLOWLINE UNLESS OTHERWISE NOTED.
  2. ALL RAMP AND CURB CUTS PER CITY AND COUNTY OF DENVER (CCD) STANDARDS.
  3. 6 INCH VERTICAL CURB (6" C&G) PER CCD STANDARD 5.3a.
  4. SEE SHEET 16 FOR STORM DRAINAGE INFORMATION.

MATCH LINE SHEET 12



**NOTES FOR REVIEWERS:**  
 DURING CONCEPTUAL DESIGN, IT WAS DETERMINED BY CITY AND COUNTY OF DENVER PUBLIC WORKS AND ARTS & VENUES STAFF TO CONVERT 13TH STREET FROM A TWO WAY CONFIGURATION TO A ONE-WAY CONFIGURATION.

THE EXISTING ROADWAY IS COVERED BY THE DENVER PERFORMING ARTS COMPLEX (DPAC) GALLERIA FROM STATION 10+93.53 TO 14+75.61 AND WILL REMAIN COVERED WHEN THE PROJECT IS COMPLETE THEREFORE MINIMAL STORMWATER INLETS WILL NEED TO BE PROVIDED. EXISTING INLETS WILL BE REPLACED WITH SINGLE TYPE 16 INLETS. NO LANDSCAPING UNDER DPAC GALLERIA.

THE AMOUNT OF IMPERVIOUS AREA WILL NOT CHANGE FROM THE EXISTING CONDITION TO THE PROPOSED CONDITION SO WATER QUALITY PROVISIONS ARE NOT PROVIDED.

THE MODIFIED DOWNTOWN RAMP ON THE SOUTH SIDE OF 13TH STREET BETWEEN STA. 12+50 AND 13+50 ARE PROVIDED TO ALLOW EASIER TRUCK ACCESS INTO AND OUT OF THE EXISTING BONFILS LOADING AREA. THESE RAMP ARE SHOWN AS 8 INCHES THICK DUE TO THE POSSIBILITY OF TRUCKS TRAVELING OVER THESE RAMP.

60% SUBMITTAL

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COLORADO LAW (SENATE BILL 93-155) REQUIRES PERSONS TO NOTIFY THE UTILITY NOTIFICATION CENTER OF COLORADO 2 BUSINESS DAYS PRIOR TO MAKING OR BEGINNING AN EXCAVATION. NOTIFICATION MAY BE MADE BY CALLING:  
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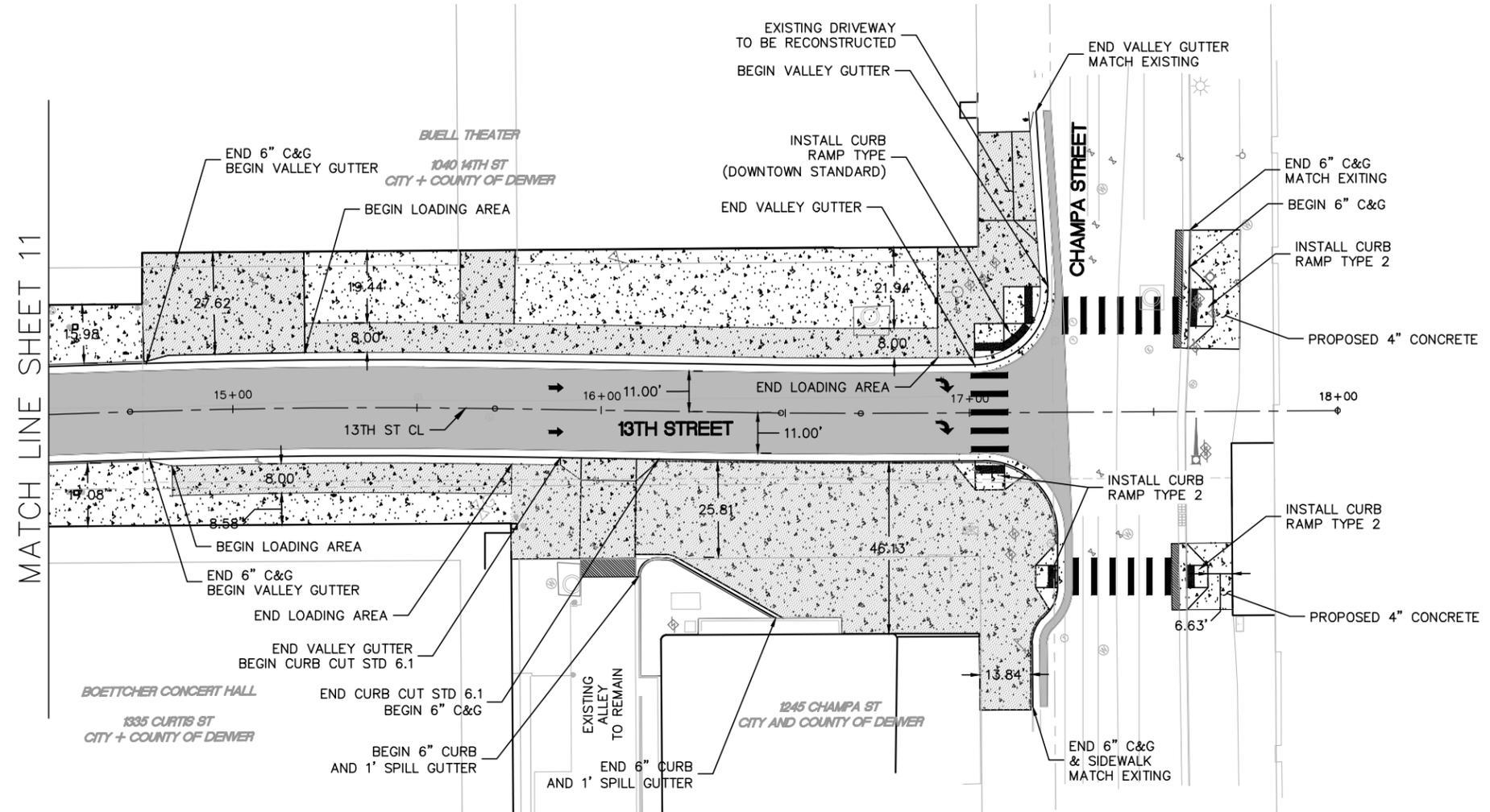
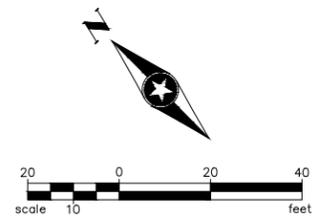


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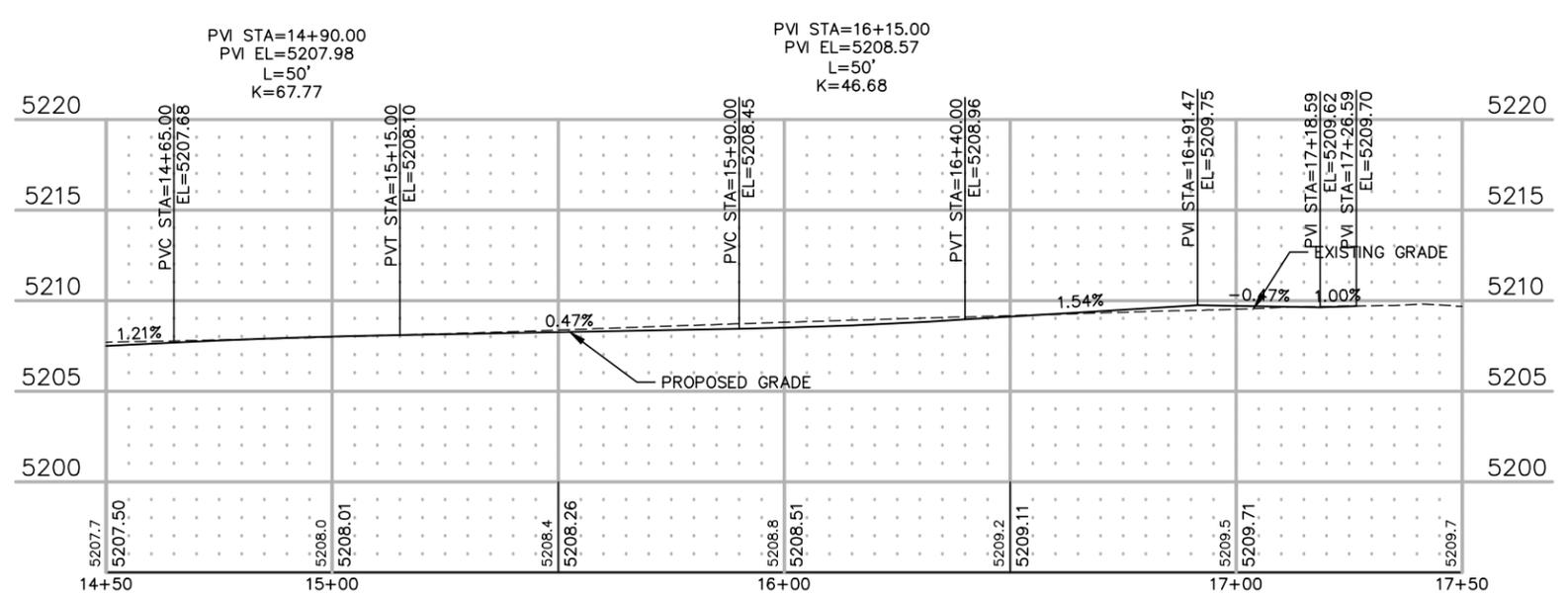
**13TH STREET ROADWAY IMPROVEMENTS**  
 ARAPAHOE ST TO CHAMPA ST

**ROADWAY PLAN AND PROFILE**  
 SEH PROJECT NO. 137801 DATE ISSUED 1/9/17

SHEET NO. **11**  
 SHEET OF 31



- LEGEND**
- PROPOSED ASPHALT
  - ASPHALT PATCHING AREA
  - PROPOSED 8\"/>
- NOTES:**
1. ALL DIMENSIONS AND RADII MEASUREMENTS ARE TO FLOWLINE UNLESS OTHERWISE NOTED.
  2. ALL RAMPS AND CURB CUTS PER CITY AND COUNTY OF DENVER (CCD) STANDARDS.
  3. 6 INCH VERTICAL CURB (6\"/>



**NOTES FOR REVIEWERS:**

DURING CONCEPTUAL DESIGN, IT WAS DETERMINED BY CITY AND COUNTY OF DENVER PUBLIC WORKS AND ARTS & VENUES STAFF TO CONVERT 13TH STREET FROM A TWO WAY CONFIGURATION TO A ONE-WAY CONFIGURATION.

THE AMOUNT OF IMPERVIOUS AREA WILL NOT CHANGE FROM THE EXISTING CONDITION TO THE PROPOSED CONDITION SO WATER QUALITY PROVISIONS WILL NOT BE PROVIDED.

THE LOADING AREAS AND SIDEWALKS ARE SHOWN AS 8 INCHES DUE TO THE POTENTIAL FOR THE HIGH VOLUME OF LARGE TRUCKS AT THESE LOCATIONS.

THE VALLEY GUTTER IS PROVIDED TO PROVIDE EASIER ACCESS TO LOADING AREAS.

URBAN DESIGN/LANDSCAPING/LIGHTING IS STILL UNDER DEVELOPMENT AND WILL BE SHOWN AT 60%.

60% SUBMITTAL

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COLORADO LAW (SENATE BILL 93-155) REQUIRES PERSONS TO NOTIFY THE UTILITY NOTIFICATION CENTER OF COLORADO 2 BUSINESS DAYS PRIOR TO MAKING OR BEGINNING AN EXCAVATION. NOTIFICATION MAY BE MADE BY CALLING:  
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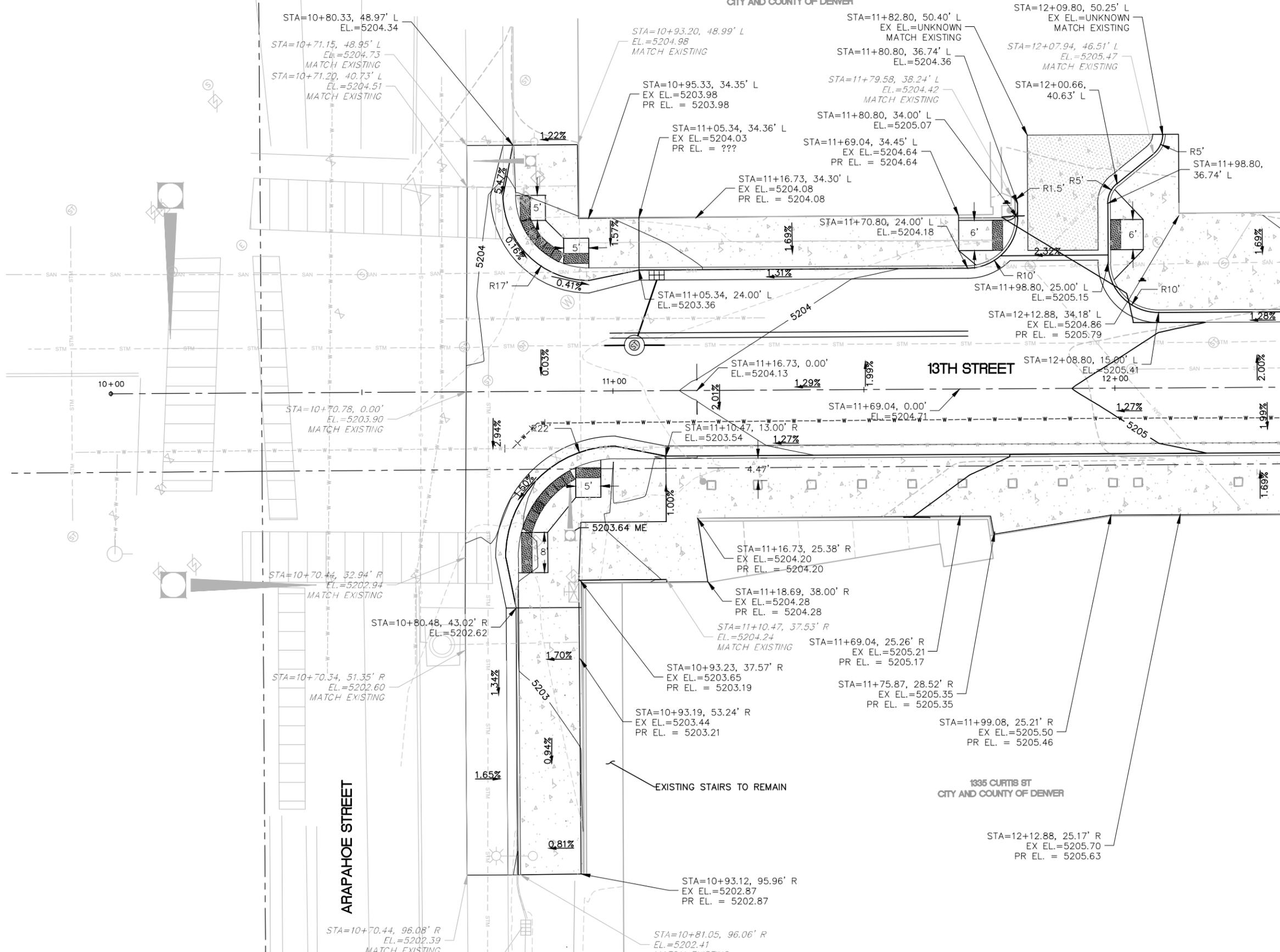
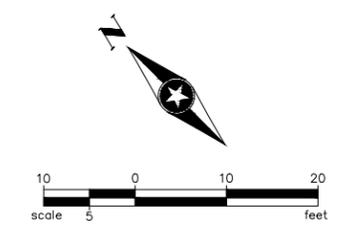
**13TH STREET ROADWAY IMPROVEMENTS**  
 ARAPAHOE ST TO CHAMPA ST

**ROADWAY PLAN AND PROFILE**

SEH PROJECT NO. 137801 DATE ISSUED 1/9/17

SHEET NO. **12**  
 SHEET OF 31

1040 14TH ST  
CITY AND COUNTY OF DENVER



MATCH LINE SHEET 10

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COLORADO LAW (SENATE BILL 93-155) REQUIRES PERSONS TO NOTIFY THE UTILITY NOTIFICATION CENTER OF COLORADO 2 BUSINESS DAYS PRIOR TO MAKING OR BEGINNING AN EXCAVATION. NOTIFICATION MAY BE MADE BY CALLING:  
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**13TH STREET ROADWAY IMPROVEMENTS**  
ARAPAHOE ST TO CHAMPA ST

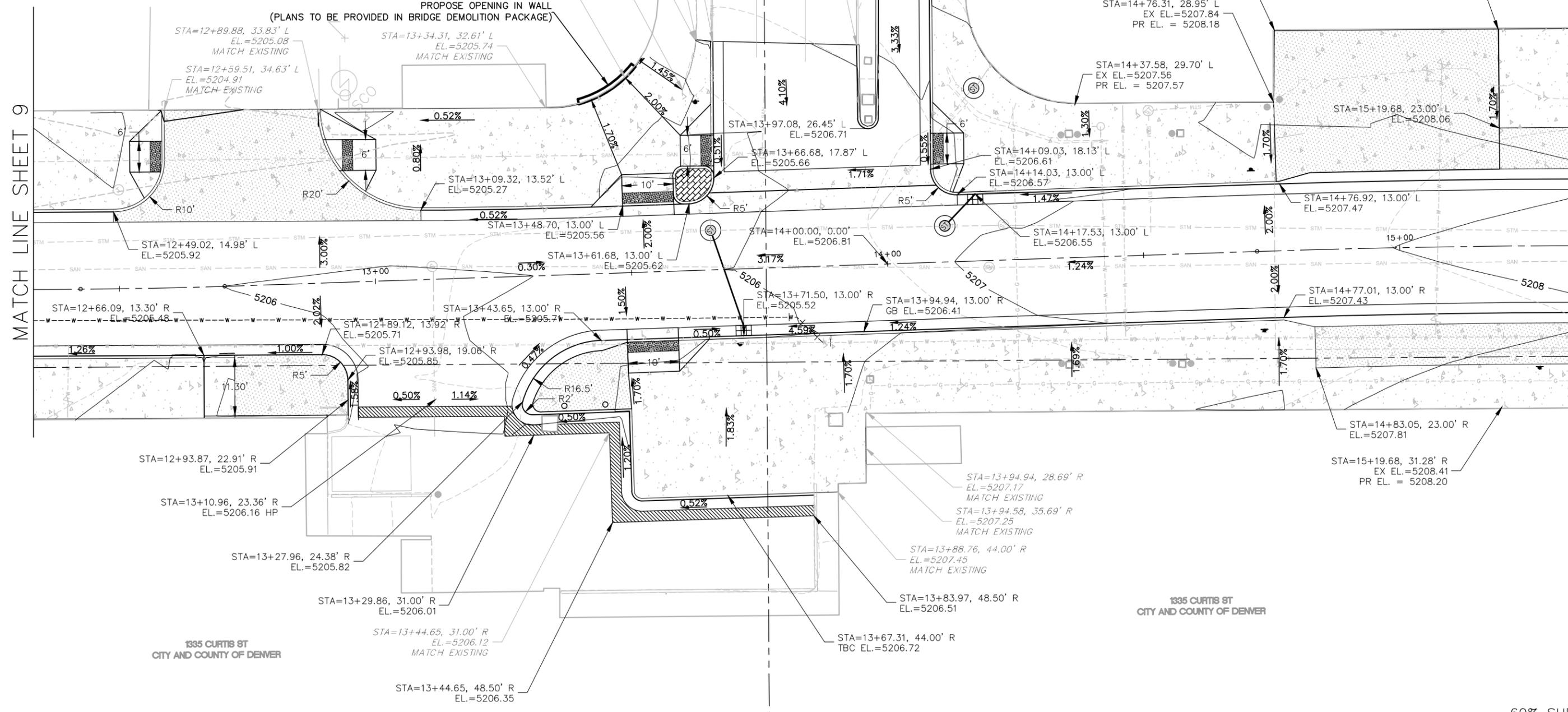
**ROADWAY INTERSECTION DETAILS**  
ARAPAHOE ST & 13TH ST  
SEH PROJECT NO. 137801 DATE ISSUED 1/9/17

SHEET NO. **13**  
SHEET OF 31



1040 14TH ST  
CITY AND COUNTY OF DENVER

1335 CURTIS ST  
CITY AND COUNTY OF DENVER



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COLORADO LAW (SENATE BILL 93-155) REQUIRES PERSONS TO NOTIFY THE UTILITY NOTIFICATION CENTER OF COLORADO 2 BUSINESS DAYS PRIOR TO MAKING OR BEGINNING AN EXCAVATION. NOTIFICATION MAY BE MADE BY CALLING:  
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DENVER, CO 80222-7938

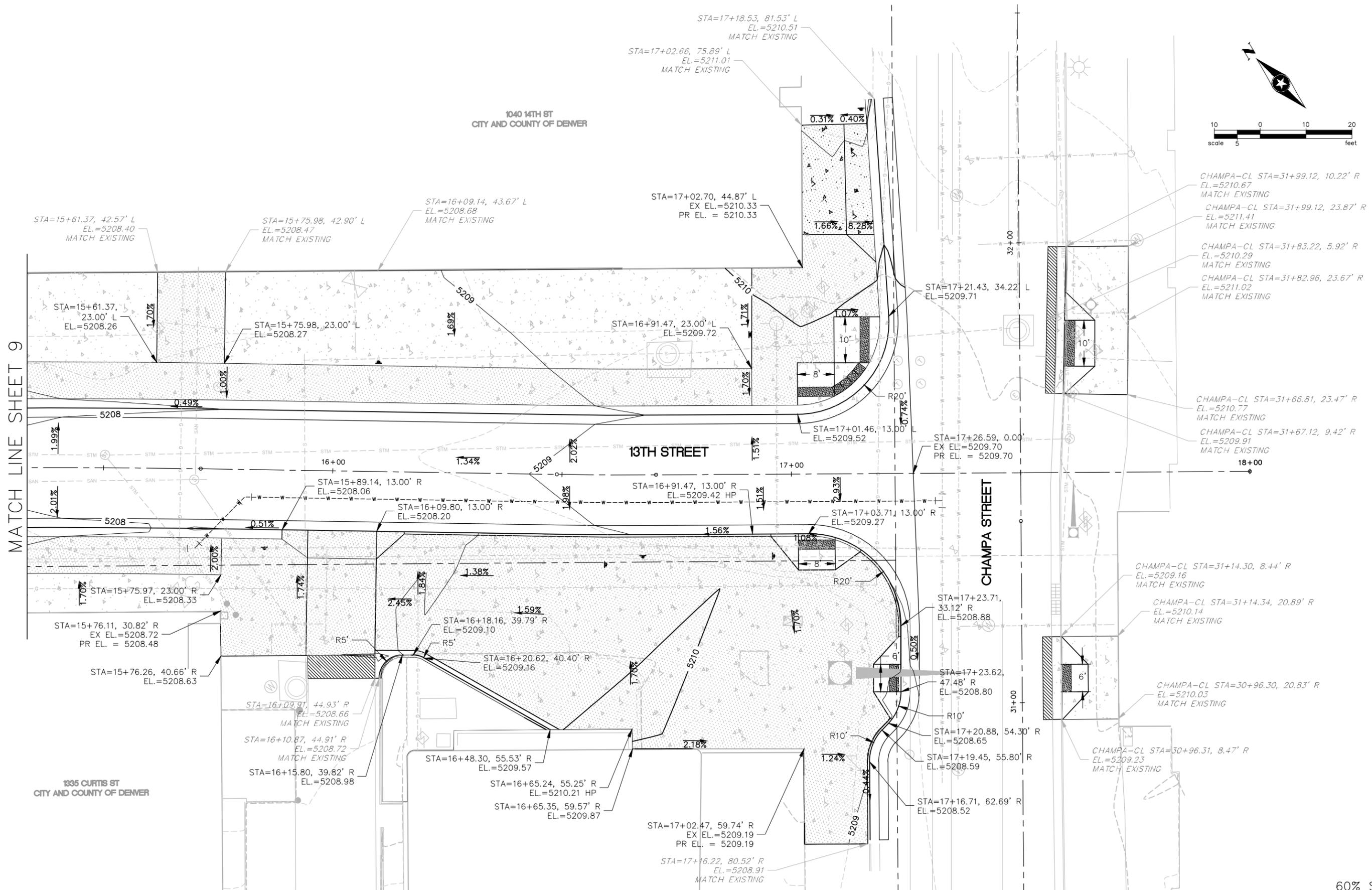
**13TH STREET ROADWAY IMPROVEMENTS**  
ARAPAHOE ST TO CHAMPA ST

**ROADWAY INTERSECTION DETAILS**  
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DATE ISSUED 1/9/17

SHEET NO. **14**  
SHEET OF 31

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MATCH LINE SHEET 9



STA=15+61.37, 42.57' L  
EL.=5208.40  
MATCH EXISTING

STA=15+75.98, 42.90' L  
EL.=5208.47  
MATCH EXISTING

STA=16+09.14, 43.67' L  
EL.=5208.68  
MATCH EXISTING

STA=17+18.53, 81.53' L  
EL.=5210.51  
MATCH EXISTING

STA=17+02.66, 75.89' L  
EL.=5211.01  
MATCH EXISTING

STA=17+02.70, 44.87' L  
EX EL.=5210.33  
PR EL.=5210.33

STA=15+61.37, 23.00' L  
EL.=5208.26

STA=15+75.98, 23.00' L  
EL.=5208.27

STA=16+91.47, 23.00' L  
EL.=5209.72

STA=17+21.43, 34.22' L  
EL.=5209.71

CHAMPA-CL STA=31+99.12, 10.22' R  
EL.=5210.67  
MATCH EXISTING

CHAMPA-CL STA=31+99.12, 23.87' R  
EL.=5211.41  
MATCH EXISTING

CHAMPA-CL STA=31+83.22, 5.92' R  
EL.=5210.29  
MATCH EXISTING

CHAMPA-CL STA=31+82.96, 23.67' R  
EL.=5211.02  
MATCH EXISTING

CHAMPA-CL STA=31+66.81, 23.47' R  
EL.=5210.77  
MATCH EXISTING

CHAMPA-CL STA=31+67.12, 9.42' R  
EL.=5209.91  
MATCH EXISTING

STA=15+89.14, 13.00' R  
EL.=5208.06

STA=16+91.47, 13.00' R  
EL.=5209.42 HP

STA=17+03.71, 13.00' R  
EL.=5209.27

CHAMPA-CL STA=31+14.30, 8.44' R  
EL.=5209.16  
MATCH EXISTING

CHAMPA-CL STA=31+14.34, 20.89' R  
EL.=5210.14  
MATCH EXISTING

STA=15+76.11, 30.82' R  
EX EL.=5208.72  
PR EL.=5208.48

STA=15+76.26, 40.66' R  
EL.=5208.63

STA=16+09.91, 44.93' R  
EL.=5208.66  
MATCH EXISTING

STA=16+10.87, 44.91' R  
EL.=5208.72  
MATCH EXISTING

STA=16+15.80, 39.82' R  
EL.=5208.98

STA=16+18.16, 39.79' R  
EL.=5209.10

STA=16+20.62, 40.40' R  
EL.=5209.16

STA=16+48.30, 55.53' R  
EL.=5209.57

STA=16+65.24, 55.25' R  
EL.=5210.21 HP

STA=16+65.35, 59.57' R  
EL.=5209.87

STA=17+02.47, 59.74' R  
EX EL.=5209.19  
PR EL.=5209.19

STA=17+16.22, 80.52' R  
EL.=5208.91  
MATCH EXISTING

STA=17+23.71, 33.12' R  
EL.=5208.88

STA=17+23.62, 47.48' R  
EL.=5208.80

STA=17+20.88, 54.30' R  
EL.=5208.65

STA=17+19.45, 55.80' R  
EL.=5208.59

STA=17+16.71, 62.69' R  
EL.=5208.52

CHAMPA-CL STA=30+96.30, 20.83' R  
EL.=5210.03  
MATCH EXISTING

CHAMPA-CL STA=30+96.31, 8.47' R  
EL.=5209.23  
MATCH EXISTING

60% SUBMITTAL

NO.	REVISIONS	DATE	BY
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COLORADO LAW (SENATE BILL 93-155) REQUIRES PERSONS TO NOTIFY THE UTILITY NOTIFICATION CENTER OF COLORADO 2 BUSINESS DAYS PRIOR TO MAKING OR BEGINNING AN EXCAVATION. NOTIFICATION MAY BE MADE BY CALLING:  
**811**

DESIGNED EO DATE 1/9/17  
DRAWN IC DATE 1/6/17  
CHECKED EN DATE 1/9/17



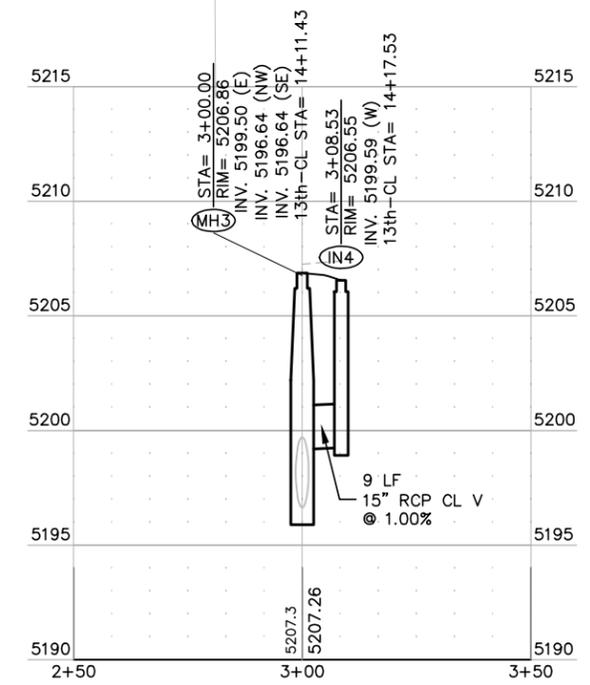
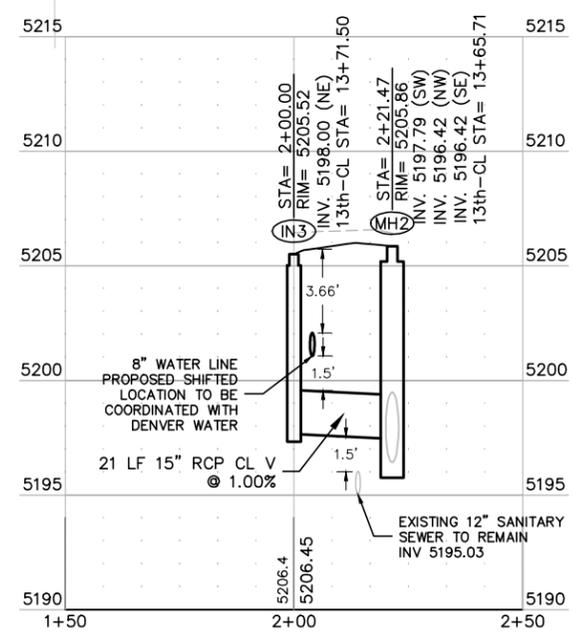
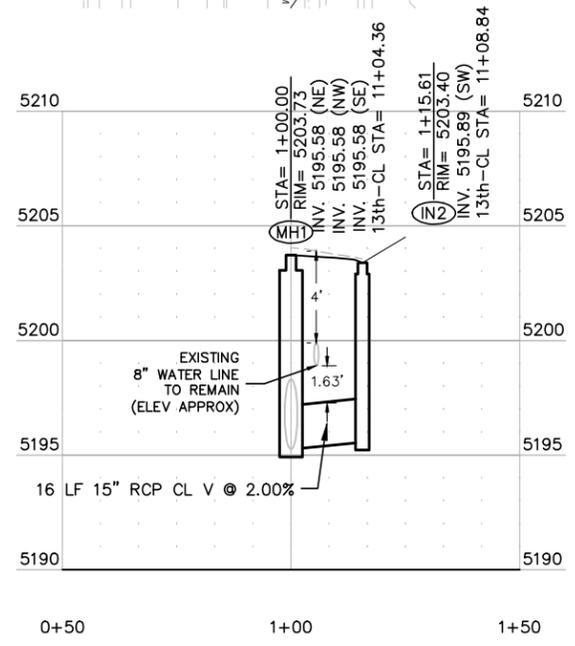
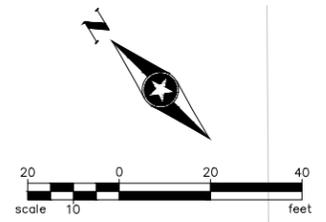
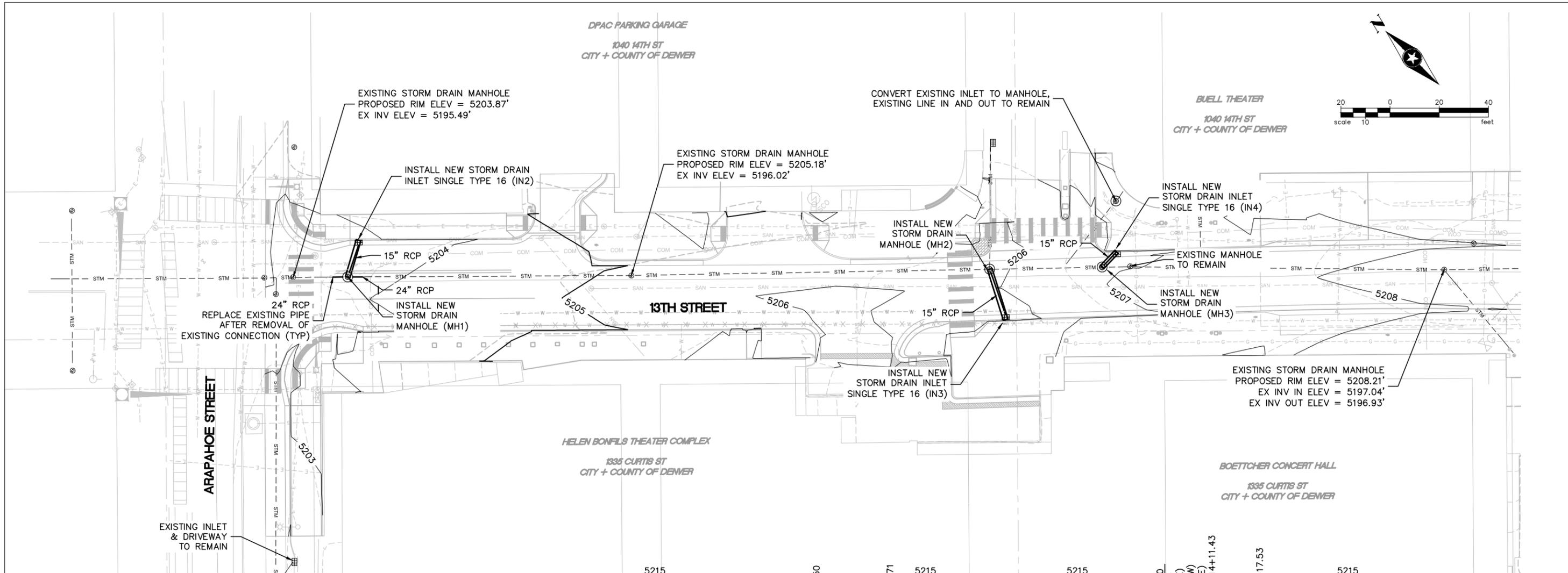
PHONE: 720.540.6800  
2000 S. COLORADO BLVD.  
TOWER ONE, SUITE 6000  
DENVER, CO 80222-7938

**13TH STREET ROADWAY IMPROVEMENTS**  
ARAPAHOE ST TO CHAMPA ST

**ROADWAY INTERSECTION DETAILS**  
**CHAMPA ST & 13TH ST**  
SEH PROJECT NO. 137801  
DATE ISSUED 1/9/17

SHEET NO. **15**  
SHEET OF 31

F:\V\0\DENVER\137801\5-final-dsgn\5-final-dsgn\10-drawings\10-civil\cad\dwg\10-storm\10-storm-plan-and-profile.dwg 1/10/2017 9:35:03 AM



- NOTES:**
1. ALL INLETS AND MANHOLES TO BE CITY AND COUNTY OF DENVER STANDARD.
  2. EXISTING STORM MAIN LINE AND CONNECTING PIPES TO REMAIN UNLESS OTHERWISE NOTED.

60% SUBMITTAL

NO.	REVISIONS	DATE	BY
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COLORADO LAW (SENATE BILL 93-155) REQUIRES PERSONS TO NOTIFY THE UTILITY NOTIFICATION CENTER OF COLORADO 2 BUSINESS DAYS PRIOR TO MAKING OR BEGINNING AN EXCAVATION. NOTIFICATION MAY BE MADE BY CALLING:  
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**13TH STREET ROADWAY IMPROVEMENTS**  
 ARAPAHOE ST TO CHAMPA ST

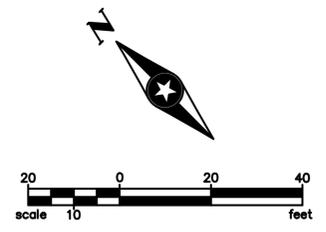
STORM DRAINAGE PLAN AND PROFILE		SHEET NO.
SEH PROJECT NO. 137801	DATE ISSUED 1/9/17	<b>16</b>
		SHEET OF 31



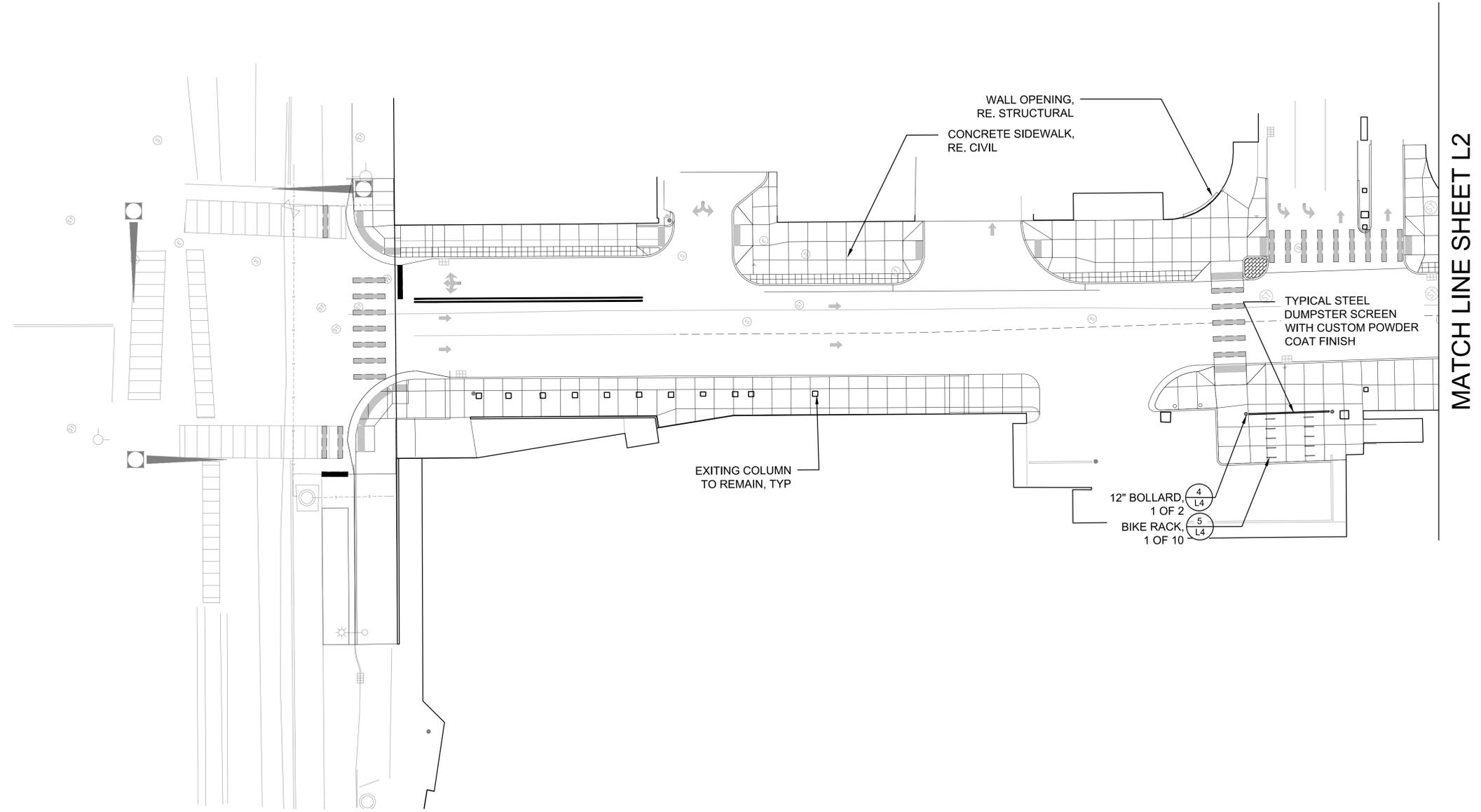
**NOT FOR CONSTRUCTION**

**LANDSCAPE SHEET INDEX:**

- L1: LANDSCAPE PLAN WEST
- L2: LANDSCAPE PLAN EAST
- L3: LANDSCAPE ENLARGEMENT
- L4: LANDSCAPE DETAILS
- L5: PLANTING DETAILS
- IR-1: IRRIGATION PLAN
- IR-2: IRRIGATION DETAILS



- LEGEND**
- PROPOSED DECIDUOUS TREES
  - COBBLE
  - PLANTED AREA
  - 12" BOLLARD
  - 6" REMOVABLE BOLLARD
  - PEDESTRIAN LIGHT



NO.	REVISIONS	DATE	BY
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DESIGNED BG DATE 12/16/16  
 DRAWN AG DATE 12/16/16  
 CHECKED BG DATE 12/16/16



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 TOWER ONE, SUITE 6000  
 DENVER, CO 80222-7938

**13TH STREET ROADWAY IMPROVEMENTS**  
 ARAPAHOE ST TO CHAMPA ST

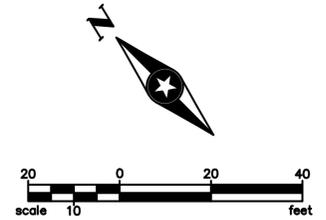
LANDSCAPE PLAN WEST  
 SEH PROJECT NO. 137801  
 DATE ISSUED 01/09/17

SHEET NO. **17**  
 SHEET OF 31 OF 31

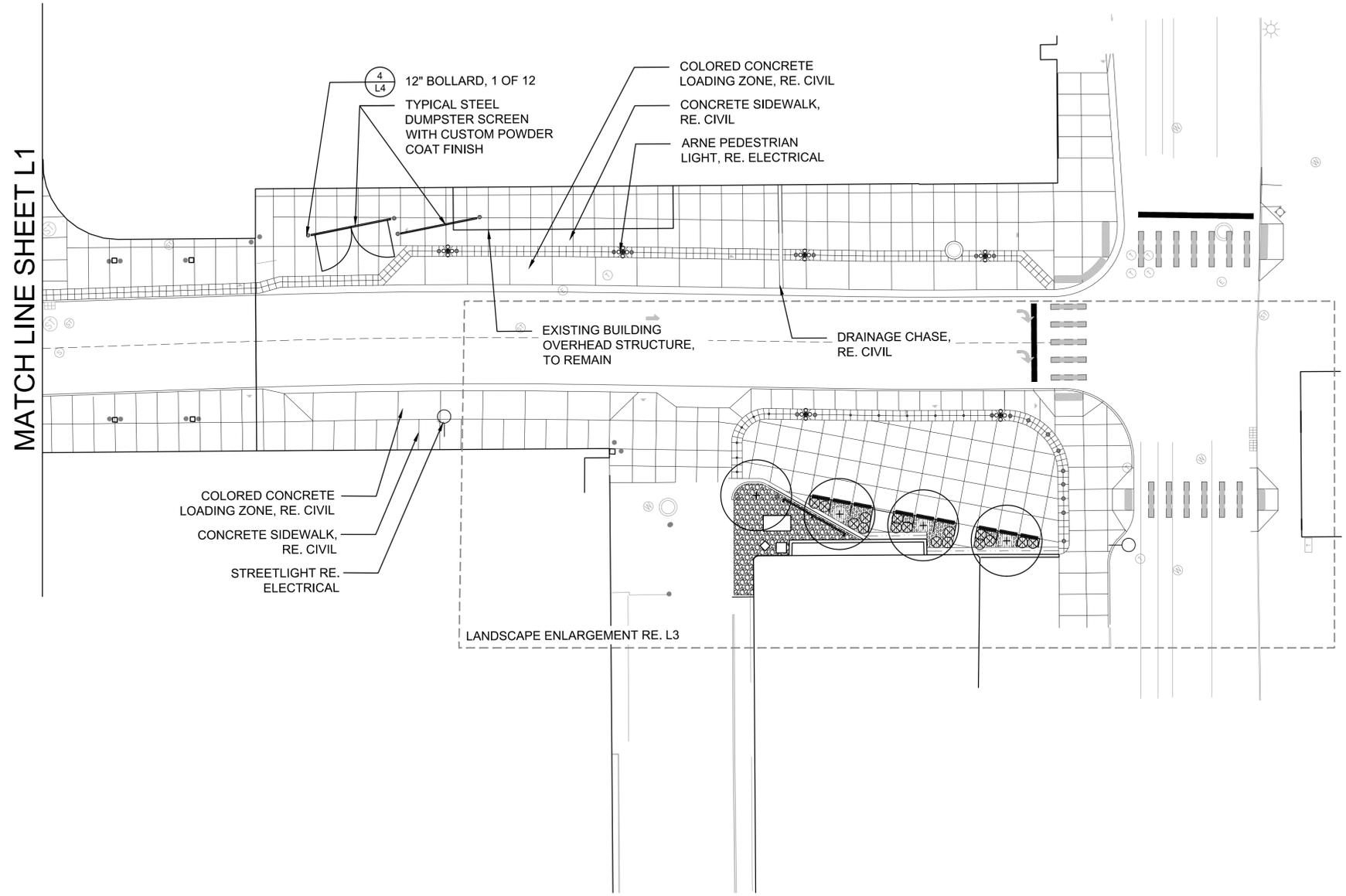
60% SUBMITTAL



**NOT FOR CONSTRUCTION**



- LEGEND**
- PROPOSED DECIDUOUS TREES
  - COBBLE
  - PLANTED AREA
  - 12" BOLLARD
  - 6" REMOVABLE BOLLARD
  - PEDESTRIAN LIGHT



MATCH LINE SHEET L1

NO.	REVISIONS	DATE	BY
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**13TH STREET ROADWAY IMPROVEMENTS**  
 ARAPAHOE ST TO CHAMPA ST

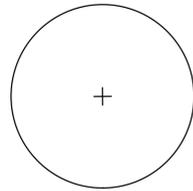
LANDSCAPE PLAN EAST  
 SEH PROJECT NO. 137801 DATE ISSUED 01/09/17

SHEET NO. **18**  
 SHEET OF 31 OF\_31

60% SUBMITTAL

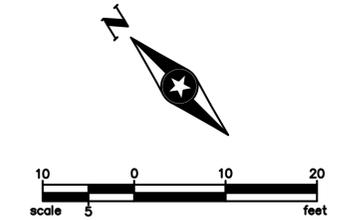


**NOT FOR CONSTRUCTION**

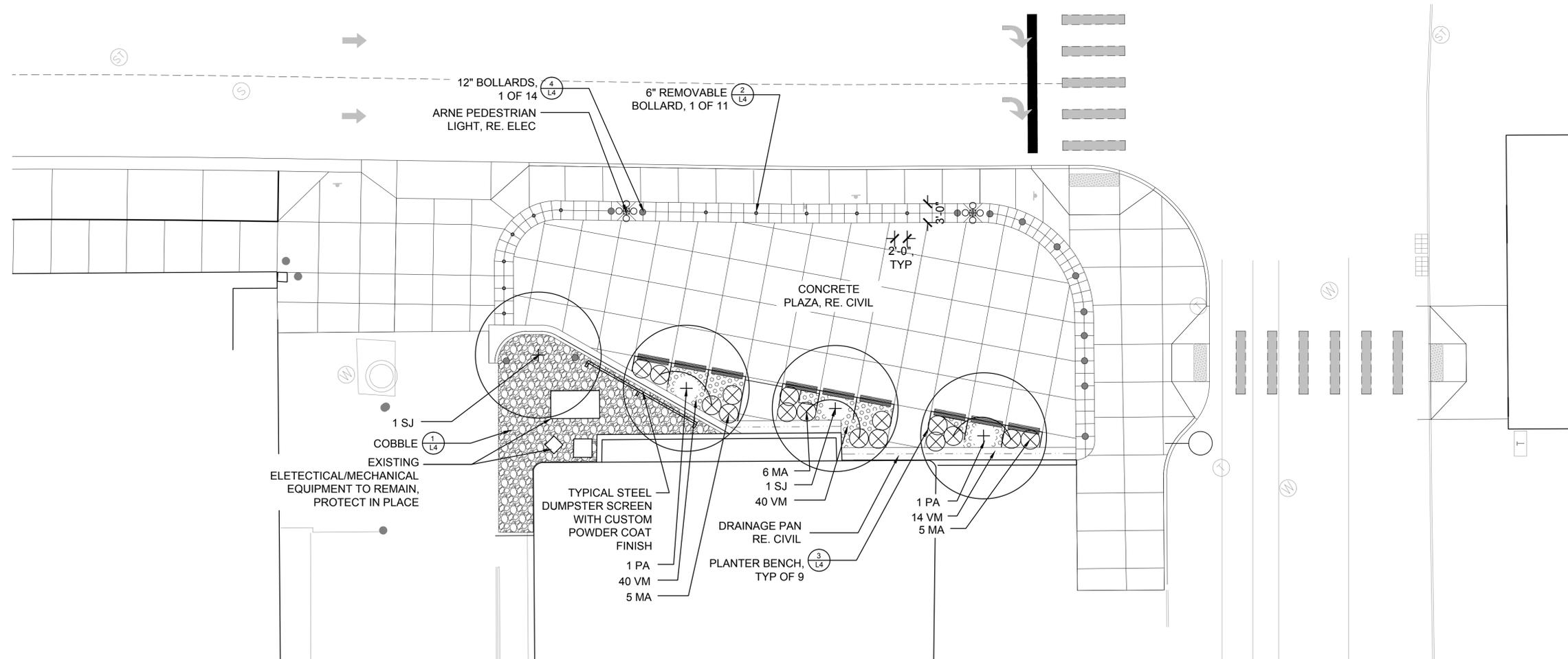
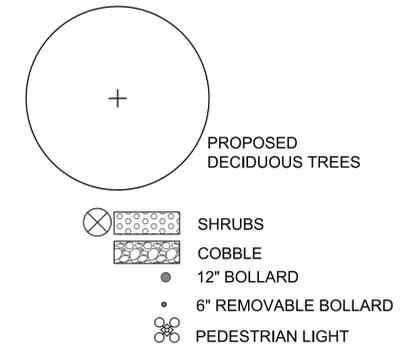


LANDSCAPE SCHEDULE					
SYM BOL	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	NOTES/SPACING
<b>DECIDUOUS TREES</b>					
PA	2	<i>Populus x acuminata</i>	Lanceleaf Cottonwood	2" Cal B&B	AS SHOWN
SJ	2	<i>Sophora japonica 'Regent'</i>	Regent Pagoda Tree	2" Cal B&B*	AS SHOWN
<b>SHRUB AND GROUNDCOVER</b>					
MA	16	<i>Mahonia aquifolium 'Compacta'</i>	Compact Oregon Grape Holly	#5	3' O.C.
VM	94	<i>Vinca minor</i>	Periwinkle	#1	12" O.C.

1. In the event of a discrepancy between the plan graphic and the landscape legend, the larger quantity shall take precedence.



LEGEND



\\SERVER\CPG Projects\13th and Champa\CAD\PL-13TH-CHAMPA.dwg 1/5/2017 3:14:47 PM

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COLORADO LAW (SENATE BILL 93-155) REQUIRES PERSONS TO NOTIFY THE UTILITY NOTIFICATION CENTER OF COLORADO 2 BUSINESS DAYS PRIOR TO MAKING OR BEGINNING AN EXCAVATION. NOTIFICATION MAY BE MADE BY CALLING:  
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2000 S. COLORADO BLVD.  
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DENVER, CO 80222-7938

**13TH STREET ROADWAY IMPROVEMENTS**  
ARAPAHOE ST TO CHAMPA ST

LANDSCAPE ENLARGEMENT

SEH PROJECT NO. 137801 DATE ISSUED 01/09/17

SHEET NO.

**19**

SHEET OF 31





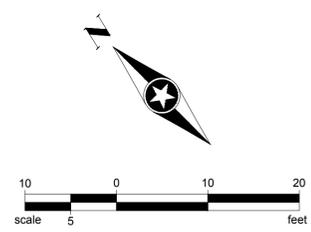
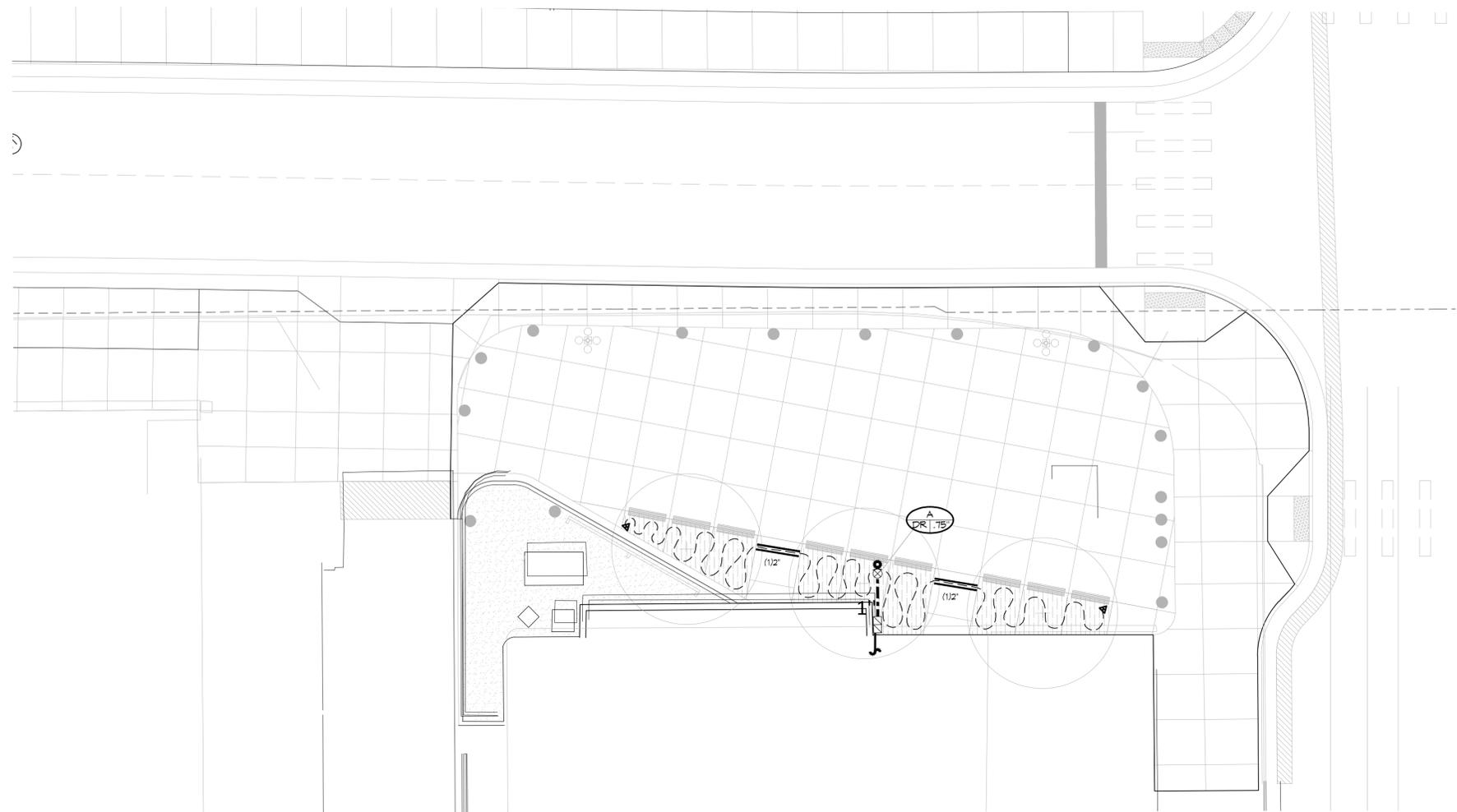
## IRRIGATION CONSTRUCTION NOTES

STUDIO CPG . THE

1. DRAWINGS AND BASE INFORMATION - ALL BASE AND PLANTING INFORMATION HAVE BEEN PROVIDED BY CONTRACTOR IS RESPONSIBLE TO NOTIFY HYDROSYSTEMS\*KDI OF ANY DISCREPANCIES BETWEEN THE UTILITY OR PLANTING PLANS AND THE IRRIGATION PLAN. IF CONTRACTOR FAILS TO NOTIFY HYDROSYSTEMS\*KDI AND MAKES CHANGES TO THE IRRIGATION SYSTEM DESIGN, HE ASSUMES ALL COSTS AND LIABILITIES ASSOCIATED WITH THOSE FIELD CHANGES. REFER TO SPECIFICATIONS FOR ADDITIONAL PROJECT REQUIREMENTS.
2. SYSTEM PRESSURE - HYDROSYSTEMS\*KDI HAS CONTACTED THE LOCAL WATER DISTRICT THAT SERVES THIS SITE AND THEY HAVE BEEN TOLD THAT THE STATIC WATER PRESSURE IN THIS AREA SHOULD BE **60 (TO BE CONFIRMED) PSI**. THE CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY PRESSURE PRIOR TO COMMENCING ANY CONSTRUCTION AND NOTIFY HYDROSYSTEMS\*KDI OF ANY VARIANCE FROM THE STATED PRESSURE IMMEDIATELY. WRITTEN DOCUMENTATION OF PRESSURE TEST AND RESULTS SHALL BE PROVIDED TO HYDROSYSTEMS\*KDI AT CONSTRUCTION ONSET. IF CONTRACTOR FAILS TO FIELD VERIFY PRESSURE AND/OR NOTIFY HYDROSYSTEMS\*KDI OR ANY VARIATIONS FROM THIS PRESSURE, THEN HE ASSUMES ALL CONSTRUCTION AND ENGINEERING COSTS ASSOCIATED WITH SYSTEM MODIFICATIONS REQUIRED TO ACCOMMODATE ACTUAL SITE PRESSURE. THIS SYSTEM HAS BEEN DESIGNED FOR A REQUIRED STATIC PRESSURE OF MINIMUM. 60 PSI
3. IRRIGATION SYSTEM OPERATION INTENT - THIS IRRIGATION SYSTEM HAS BEEN DESIGNED TO IRRIGATE THE ESTABLISHED LANDSCAPE WITHIN A THREE NIGHT PER WEEK SEVEN HOUR PER NIGHT WATERING WINDOW. ESTABLISHMENT WATERING WILL REQUIRE UP TO TWICE AS MUCH IRRIGATION FOR A FOUR TO SIX WEEK PERIOD. THE DESIGN IS BASED ON THE FOLLOWING PROJECTED WEEKLY APPLICATION RATES AFTER ESTABLISHMENT. THESE FIGURES ARE BASED ON A 30-YEAR AVERAGE WEATHER DATA AND WILL NEED TO BE ADJUSTED DUE TO SEASONAL CHANGES AND WEATHER CONDITIONS ABOVE AND BELOW THE AVERAGE VALUES UTILIZED. NOTE: DENVER WATER WILL NOT ALLOW ANY GIVEN ZONE TO OPERATE MORE THAN THREE DAYS PER WEEK. CONTROLLER SHALL BE PROGRAMMED TO ALTERNATE ZONE OPERATION.
 

ORNAMENTAL PLANTINGS	0.90" PER WEEK PEAK SEASON
----------------------	----------------------------
4. EQUIPMENT INSTALLATION - IT IS THE INTENT OF THIS DESIGN THAT ALL IRRIGATION EQUIPMENT BE INSTALLED WITHIN PROPERTY LIMITS AND WITHIN LANDSCAPED AREAS. ANY EQUIPMENT OTHER THAN VALVE BOXES OR SLEEVING THAT CONTAINS PIPE OR WIRES SHOWN OUTSIDE OF THESE LIMITS IS SHOWN IN THAT LOCATION FOR GRAPHICAL CLARITY ONLY. ALL VALVE BOXES SHALL BE INSTALLED A MINIMUM OF 2'-0" FROM EDGE OF ANY PAVED SURFACES UNLESS SPECIFICALLY INDICATED ON PLANS. BOXES INSTALLED IN OPEN TURF AREAS SHALL BE KEPT TO EDGES AND STAKED FOR REVIEW IF ALONG HIGH TRAFFIC AREAS. ALL VALVE BOXES SHALL BE PLACED A MINIMUM OF 3'-0" FROM THE CENTERLINE OF ANY DRAINAGE SWALE. ALL VALVE BOXES WITHIN PAVEMENT SHALL BE TIER 15 RATED BOXES FOR HEAVY DUTY NON-DELIBERATE TRAFFIC. BOX LID COLOR SHALL MATCH ADJACENT MATERIALS, I.E. GREEN IN TURF, TAN IN WOOD MULCH, GRAY IN STONE MULCH, PURPLE FOR RECLAIMED WATER SYSTEMS (IF REQUIRED). REFER TO LANDSCAPE PLANS FOR MATERIAL COLORS AND TYPES. ALL BOXES SHALL BE INSTALLED TO BE FLUSH WITH GRADE AND IN AN ORDERLY MANNER.
5. MANUAL DRAIN VALVES - CONTRACTOR TO INSTALL ONE MANUAL DRAIN VALVE ON PRESSURE SUPPLY LINE DIRECTLY DOWNSTREAM OF BACKFLOW PREVENTER AND AT ALL LOW POINTS AND DEAD ENDS OF PRESSURE SUPPLY PIPING TO INSURE COMPLETE DRAINAGE OF SYSTEM. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THESE LOCATIONS IN-FIELD AND INSTALLATION LOCATIONS SHALL BE NOTED ON AS-BUILTS.
6. DRIP IRRIGATION - REFER TO IRRIGATION DETAIL SHEET FOR DRIP EMITTER QUANTITIES AND PLACEMENT.
7. SLEEVING - ALL SLEEVING UNDER PAVED SURFACES SHOWN ON PLANS IS BY CONTRACTOR UNLESS OTHERWISE NOTED. SLEEVING SHALL BE INSTALLED IN THE SIZES AND QUANTITIES SHOWN ON PLANS OR BASED ON THE SCHEDULE BELOW. WHERE SLEEVES ARE SHOWN, BUT NOT LABELED, FOLLOW THE SCHEDULE BELOW. ALL MAINLINE, CONTROL WIRES AND DRIP LINES UNDER PAVED SURFACES ARE TO BE INSTALLED IN SLEEVING. ALL MAINLINE SLEEVE LOCATIONS TO INCLUDE A SEPARATE WIRE SLEEVE.
 

SLEEVED PIPE SIZE/WIRE QUANTITY	REQUIRED SLEEVE SIZE & (QUANTITY)
3/4" - 1 1/4" PIPING	2" PVC (1)
1-25 CONTROL WIRES	2" PVC (1)
8. PLANS AND SPECIFICATIONS - CONTRACTOR RESPONSIBLE TO ENSURE WORK CONFORMS TO PLANS AND SPECIFICATIONS. AT ONSET OF CONSTRUCTION, VERIFY PLANS ARE CURRENT. WHERE REQUIRED BY CITY, CONTRACTOR SHALL CONSTRUCT ONLY OFF CITY STAMPED PLANS. REVISIONS TO CITY STAMPED PLANS SHALL CONFORM TO CITY FIELD CHANGE PROCEDURES AND DOCUMENTATION.



### IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER	MODEL NO.	DESCRIPTION	DETAIL NO.
	FEBCO OR EQUAL	765BV	PRESSURE VACUUM BREAKER BACKFLOW PREVENTER	1
N/S	OLDCASTLE	REFER TO SPECIFICATIONS AND DETAILS	VALVE BOXES	VARIOUS
	MATCO OR EQUAL	201X	MANUAL DRAIN VALVE	2
		CLASS 200 BE - 2 1/2" & SMALLER	PVC MAINLINE	4
		CLASS 160	PVC SLEEVING	3
	TORO OR EQUAL	BLUE STRIPE	POLY DRIP TUBING - 3/4" MIN. WIDTH	6
	HUNTER	ICZ-101-25 W/ NODE-100 BATTERY OPERATED CONTROLLER	DRIP VALVE ASSEMBLY	5
			DRIP LINE FLUSH-OUT STUB	7
N/S	RAIN BIRD	XERI-BUG	DRIP EMITTERS	6
CONTROLLER & STATION NO. CONTROL VALVE SIZE				

REFER TO SHEET  
 IR1 IRRIGATION SCHEDULE, NOTES  
 IR1 IRRIGATION PLANS  
 IR2 IRRIGATION DETAILS

HydroSystems-KDI, Inc.   
 860 Tabor Street, Suite 200  
 Lakewood, Colorado 80401  
 303-980-5327  
 303-980-5384 (fax)

60% SUBMITTAL

NO.	REVISIONS	DATE	BY
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COLORADO LAW (SENATE BILL 93-155) REQUIRES PERSONS TO NOTIFY THE UTILITY NOTIFICATION CENTER OF COLORADO 2 BUSINESS DAYS PRIOR TO MAKING OR BEGINNING AN EXCAVATION. NOTIFICATION MAY BE MADE BY CALLING:  
811

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 CHECKED KD DATE 12/16/16



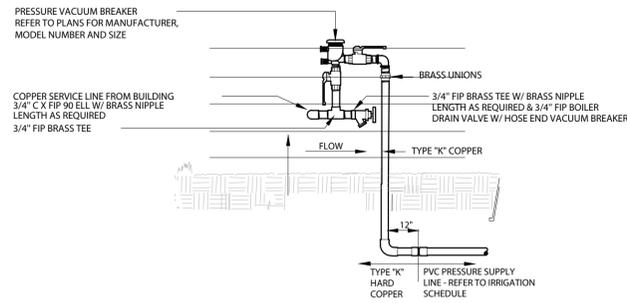
PHONE: 720.540.6800  
 2000 S. COLORADO BLVD.  
 TOWER ONE, SUITE 6000  
 DENVER, CO 80222-7938

13TH STREET ROADWAY  
 IMPROVEMENTS  
 ARAPAHOE ST TO CHAMPA ST

SEH PROJECT NO. 137801	DATE ISSUED 01/09/17	SHEET NO. <span style="font-size: large; font-weight: bold;">22</span> SHEET OF 31
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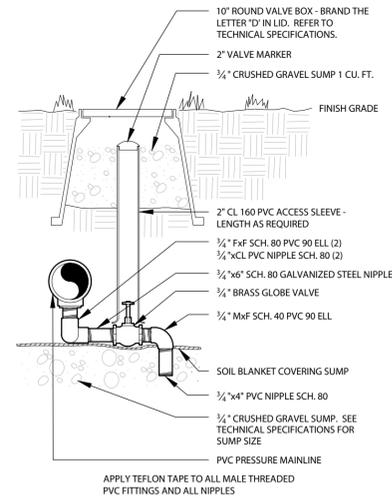
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NOTE:  
DIAMETER OF FITTINGS AND TUBING SHALL EQUAL DIAMETER OF BACKFLOW PREVENTER UNLESS NOTED OTHERWISE.  
INSTALL VACUUM BREAKER PER MANUFACTURER'S RECOMMENDATIONS AND LOCAL PLUMBING CODES.



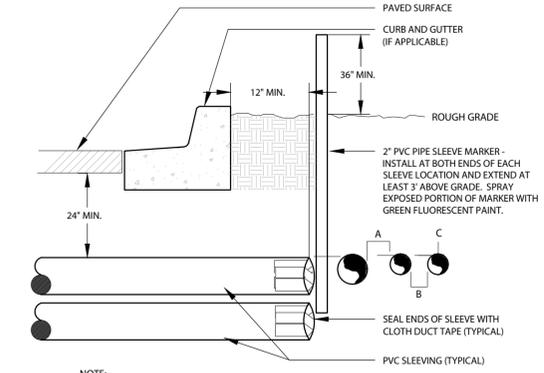
### BACKFLOW PREVENTER - PVB

1



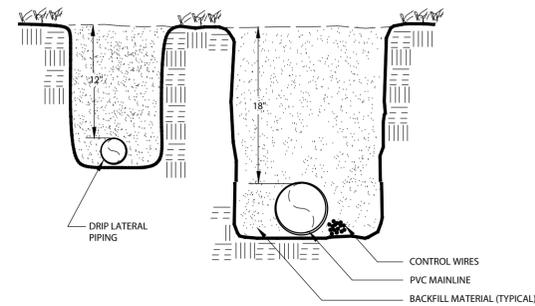
### MANUAL DRAIN VALVE

2



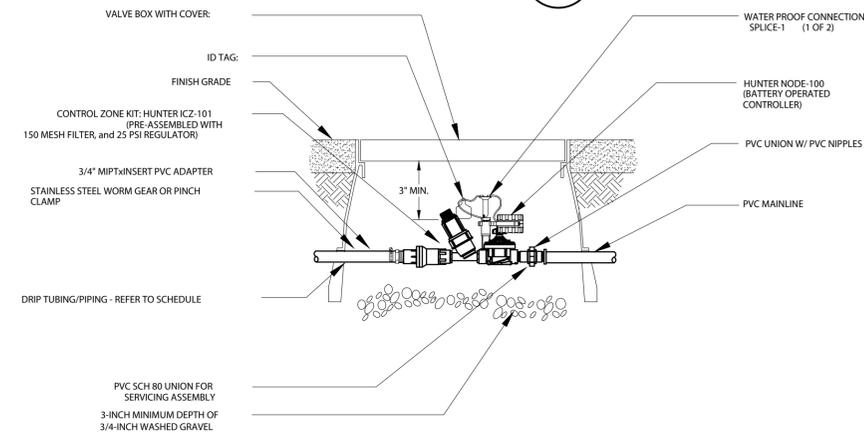
### IRRIGATION SLEEVING

3



### TRENCH

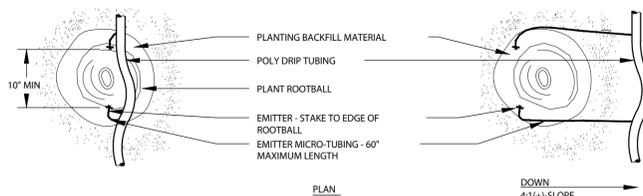
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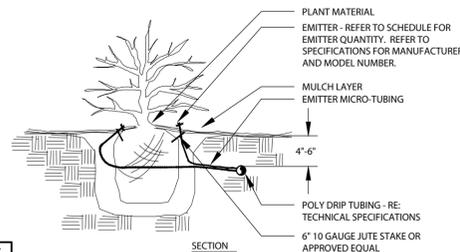
### BATTERY OPERATED CONTROL VALVE

DRIP VALVES

5

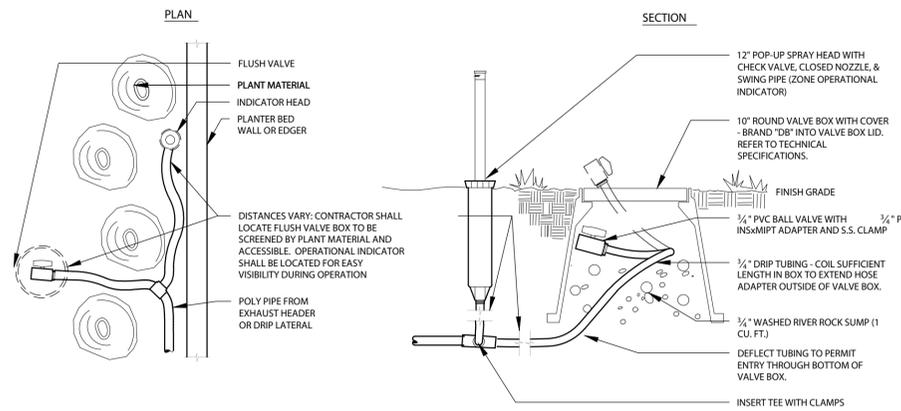


PLANT SIZE	EMITTER FLOW RATE	EMITTER QTY. AT MULCHED BED LOCATIONS	EMITTER QTY. AT NATIVE SEED LOCATIONS
1 - 2 GALLON MATERIAL	0.5 GPH	ONE EACH	ONE EACH
5 GALLON MATERIAL	0.5 GPH	TWO EACH	TWO EACH
1 1/2" CALIPER TREE	1.0 GPH	THREE EACH	FOUR EACH
2" CALIPER TREE	1.0 GPH	FOUR EACH	SIX EACH
2 1/2" CALIPER TREE	1.0 GPH	SIX EACH	EIGHT EACH
3" CALIPER TREE	1.0 GPH	EIGHT EACH	TEN EACH
3 1/2" CALIPER TREE	1.0 GPH	NINE EACH	ELEVEN EACH
4" CALIPER TREE	1.0 GPH	TEN EACH	TWELVE EACH
6 FT. CONIFEROUS TREE	1.0 GPH	FOUR EACH	SIX EACH
8 FT. CONIFEROUS TREE	1.0 GPH	SIX EACH	NINE EACH
10 FT. CONIFEROUS TREE	1.0 GPH	EIGHT EACH	TWELVE EACH
12 FT. CONIFEROUS TREE	1.0 GPH	TEN EACH	FOURTEEN EACH



NOTES:  
INSTALL EMITTERS ON OPPOSING SIDES OF ROOTBALL. THREE OR MORE EMITTERS SHALL BE EQUALLY SPACED AROUND ROOT BALL.  
EMITTERS ARE TO BE INSTALLED TO CLEAR SURFACE BY A MINIMUM OF 1" AND A MAXIMUM OF 2".  
FLUSH ALL LINES THOROUGHLY, INCLUDING EMITTER MICRO-TUBING PRIOR TO EMITTER INSTALLATION.  
IF PLANTING ON A 4:1 SLOPE OR STEEPER, INSTALL BOTH EMITTERS ON UPHILL SIDE OF ROOT BALL.  
EMITTERS SHALL BE SELF-FLUSHING, PRESSURE COMPENSATING-TYPE UNLESS NOTED OTHERWISE WITHIN TECHNICAL SPECIFICATIONS.  
DRIP VALVE ZONES ARE DESIGNED TO ACCOUNT FOR DIFFERENCES IN PLANT REQUIREMENTS (HYDROZONES) AND SUN EXPOSURE.  
CONTRACTOR SHALL ENSURE HYDROZONES ARE VALVED SEPARATELY AS SHOWN ON PLAN.  
SITE CONDITIONS MAY DICTATE THAT MULTIPLE SUN EXPOSURES ARE VALVED TOGETHER DURING THE DESIGN PROCESS. CONTRACTOR SHALL ADJUST EMITTER SCHEDULE AS FOLLOWS:  
EMITTER QUANTITIES SHALL REMAIN THE SAME BUT EMITTER GALLONAGES SHALL BE DOUBLED FOR PLANTS WITH SOUTH AND WEST EXPOSURES.  
EMITTER QUANTITIES AND GALLONAGE SHALL BE AS SHOWN IN SCHEDULE FOR PLANTS WITH NORTH AND EAST EXPOSURES.  
FOR PLANTINGS WITH NORTH AND EAST EXPOSURE SHALL DICTATE VALVE RUN-TIMES AND CONTRACTOR SHALL ADJUST SCHEDULING ACCORDINGLY.

6



### DRIP FLUSH VALVE

7

REFER TO SHEET  
IR1 IRRIGATION SCHEDULE, NOTES  
IR1 IRRIGATION PLANS  
IR2 IRRIGATION DETAILS

HydroSystems-KDI, Inc. Irrigation Consulting  
860 Tabor Street, Suite 200  
Lakewood, Colorado 80401  
303-980-5377  
303-980-5384 (fax)

60% SUBMITTAL

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DESIGNED JG DATE 12/16/16  
DRAWN JG DATE 12/16/16  
CHECKED KD DATE 12/16/16



PHONE: 720.540.6800  
2000 S. COLORADO BLVD.  
TOWER ONE, SUITE 6000  
DENVER, CO 80222-7938

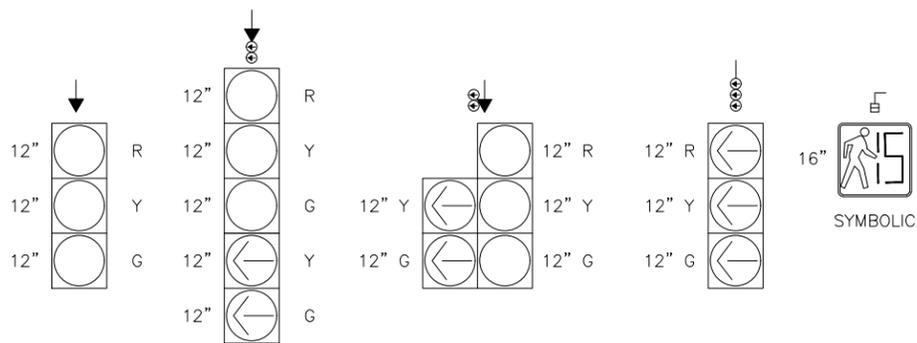
13TH STREET ROADWAY IMPROVEMENTS  
ARAPAHOE ST TO CHAMPA ST

SEH PROJECT NO. 137801 DATE ISSUED 01/09/17 SHEET 23 OF 31

# LEGEND

# KEY NOTES

-  CONTROLLER CABINET-EXISTING
-  CONTROLLER CABINET-NEW (DARKENED PORTION INDICATES DOOR SIDE OF CABINET)
-  PULL BOX, EXISTING
-  NEW PULL BOX (18"x30"x18" UNLESS OTHERWISE NOTED ON PLANS)
-  WATER VALVE PULL BOX
-  LOOP DETECTOR (LENGTH AS SPECIFIED)
-  POLE - EXISTING
-  POLE OR PEDESTAL - NEW
-  OPTICOM
-  DOWN GUY
-  UNDERGROUND CONDUIT - EXISTING
-  UNDERGROUND CONDUIT - NEW
-  LUMINAIRE
-  PEDESTRIAN PUSH BUTTON, LEFT OR RIGHT ARROW. "WAIT FOR WALK SIGNAL"
-  MAST ARM (LENGTH AS SPECIFIED, SHOWING SIGNAL WITH BACKPLATE)
-  SPAN-WIRE MOUNTED (SHOWING SIGNAL WITH BACKPLATE)
-  PEDESTAL OR SIDE BRACKET MOUNTED (SHOWING SIGNAL WITHOUT BACKPLATE)
-  VIDEO DETECTION CAMERA
-  RADIO ANTENNA
-  MICROWAVE DETECTOR
-  POLE MOUNTED SIGN
-  SPAN WIRE MOUNTED SIGN
-  MAST ARM MOUNTED SIGN
-  CLOSED CIRCUIT TELEVISION CAMERA
-  BLANK OUT SIGN
-  VARIABLE MESSAGE SIGN
-  ELECTRIC METER



## REMOVALS

- 1A REMOVE SIGNAL HEAD
- 1B REMOVE SIGNAL POLE
- 1D REMOVE SIGNAL CABINET, CONTROLLER, PULL BOXES & WATER VALVE PULL BOXES
- 1E REMOVE MAST ARM
- 1F REMOVE SPAN WIRE, CABLE AND ALL ATTACHED SIGNAL HEADS AND EQUIPMENT
- 1G REMOVE PUSH BUTTON
- 1H ELECTRIC UTILITY COMPANY TO REMOVE EXISTING POLE

## RESETS

- 2A RESET SIGNAL HEAD
- 2B RESET SIGNAL POLE
- 2C RESET SIGNAL CONTROLLER, CABINET AND ASSOCIATED EQUIPMENT
- 2D RESET PUSH BUTTON
- 2G RESET SPAN WIRE
- 2H RESET SPAN WIRE AND ALL ATTACHED SIGNAL EQUIPMENT
- 2J RESET DETECTOR
- 2K ELECTRIC UTILITY COMPANY TO RESET EXISTING POLE

## INSTALLATIONS

- 3A INSTALL SIGNAL HEAD OR HEADS
- 3B INSTALL SIGNAL CABINET, CONTROLLER AND ASSOCIATED EQUIPMENT
- 3C INSTALL PUSH BUTTON
- 3D INSTALL CONDUIT
- 3D(3) INSTALL THREE CONDUITS (TWO 3 INCH CONDUITS AND ONE 2 INCH CONDUIT)
- 3E INSTALL SIGNAL POLE
- 3F INSTALL MAST ARM - (LENGTH AS SHOWN)
- 3G INSTALL SPAN WIRE
- 3H (SPECIAL) INSTALL PULL BOX MARKED "TRAFFIC COMM" ON LID
- 3H(2) INSTALL TWO PULL BOXES ONE MARKED "TRAFFIC" ONE MARKED "ELECTRIC" ON LIDS
- 3J INSTALL DETECTOR
- 3K ELECTRIC UTILITY COMPANY TO INSTALL SIGNAL POLE
- 3L ELECTRIC UTILITY COMPANY TO INSTALL POWER FEED. CONTRACTOR TO EXTEND TO CONTROLLER
- 3M ELECTRIC UTILITY COMPANY TO INSTALL LUMINAIRE
- 3N INSTALL LUMINAIRE
- 3P INSTALL WATER VALVE PULL BOX
- 3Q NO CHANGE
- 3S INSTALL STREET LIGHT STANDARD
- 3T INSTALL OPTICOM
- 3U INSTALL INTERCONNECT (SIZE & TYPE AS SHOWN)
- 3V INSTALL VIDEO DETECTION CAMERA
- 3W INSTALL ELECTRIC METER

60% SUBMITTAL

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COLORADO LAW (SENATE BILL 93-155) REQUIRES PERSONS TO NOTIFY THE UTILITY NOTIFICATION CENTER OF COLORADO 2 BUSINESS DAYS PRIOR TO MAKING OR BEGINNING AN EXCAVATION. NOTIFICATION MAY BE MADE BY CALLING: **811**

DESIGNED EO DATE 1/9/17  
 DRAWN IC DATE 1/6/17  
 CHECKED EN DATE 1/9/17



PHONE: 720.540.6800  
 2000 S. COLORADO BLVD.  
 TOWER ONE, SUITE 6000  
 DENVER, CO 80222-7938

**13TH STREET ROADWAY IMPROVEMENTS**  
 ARAPAHOE ST TO CHAMPA ST

TRAFFIC SIGNAL STANDARD SYMBOLS		SHEET NO.
		<b>24</b>
SEH PROJECT NO. 137801	DATE ISSUED 1/9/17	SHEET OF 31

TRAFFIC SIGNAL NOTES

GENERAL

1. ITEM NUMBER REFERS TO THE APPROPRIATE SECTION OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION – COLORADO DEPARTMENT OF TRANSPORTATION 2011.
2. THE CONTRACTOR SHALL BE AWARE OF THE FRANCHISE AGREEMENT IN PLACE BETWEEN THE CITY & COUNTY OF DENVER AND XCEL ENERGY. PER THE FRANCHISE AGREEMENT ALL TRAFFIC SIGNAL POLES WITH STREET LIGHTS ATTACHED AND STREET LIGHT POLES ARE OWNED AND MAINTAINED BY XCEL ENERGY. THEREFORE ALL SUBMITTALS FOR TRAFFIC SIGNAL POLES AND STREET LIGHT POLES SHALL BE MADE TO XCEL ENERGY AND CITY & COUNTY OF DENVER TRAFFIC ENGINEERING DEPARTMENT SERVICES. NO TRAFFIC SIGNAL POLES OR STREET LIGHT POLES SHALL BE ORDERED UNTIL A SUBMITTAL HAS BEEN ACCEPTED FROM XCEL ENERGY AND CITY & COUNTY OF DENVER TRAFFIC ENGINEERING SERVICES.
3. XCEL ENERGY TO REMOVE ALL POLES WITH EXISTING STREET LIGHTING ATTACHED. THE CONTRACTOR SHALL REMOVE ALL OTHER SIGNAL EQUIPMENT INCLUDING SIGNAL POLES WITHOUT STREET LIGHTING, MAST ARMS, SPAN WIRE POLES, PEDESTAL POLES, SIGNAL HEADS, SPAN WIRE, PUSH BUTTONS, PULL BOXES, CONTROLLER CABINETS AND ALL FOUNDATIONS AS SHOWN ON THE PLANS. CONTRACTOR SHALL REPAIR ALL SIDEWALK AND OTHER CONCRETE AFTER REMOVALS OR AS DIRECTED AND APPROVED BY THE TRAFFIC ENGINEERING SERVICES ENGINEER.
4. ALL SALVAGED SIGNAL EQUIPMENT REMOVED REMAINS THE PROPERTY OF CITY & COUNTY OF DENVER AND MUST BE DELIVERED TO TRAFFIC ENGINEERING SERVICES AT 5440 ROSLYN STREET. COORDINATE WITH TRAFFIC ENGINEERING SERVICES PROJECT INSPECTOR AT 720-865-4000 PRIOR TO DELIVERY.
5. NO TRAFFIC SIGNAL SHALL BE TURNED ON OR TURNED OFF ON A FRIDAY OR PRIOR TO A HOLIDAY WITHOUT PRIOR NOTIFICATION TO TRAFFIC ENGINEERING SERVICES (720-913-0801).

HARDWARE

6. ALL OVERHEAD SIGNAL HEADS SHALL BE CONSTRUCTED OF DIE CAST ALUMINUM AND PAINTED DARK OLIVE GREEN IN CONFORMANCE WITH FEDERAL SPECIFICATION 14056 (12" DIAMETER ONLY).
7. POLY SIGNAL HEADS ARE REQUIRED FOR ALL SIDE MOUNT SIGNALS AND PEDESTRIAN SIGNALS. ALL POLY HEADS SHALL BE DARK OLIVE GREEN IN CONFORMANCE WITH FEDERAL SPECIFICATION 14056.
8. ALL HARDWARE INCLUDING SPACERS, ELBOWS, POLE PLATES AND PLUMBIZERS SHALL BE PAINTED DARK OLIVE GREEN IN CONFORMANCE WITH FEDERAL SPECIFICATION 14056.
9. LIGHT EMITTING DIODE (LED) SIGNAL LENSES SHALL BE INSTALLED IN ALL SIGNAL INDICATIONS (RED, YELLOW, GREEN, AND WALK, DON'T WALK, AND COUNTDOWN PEDESTRIAN SIGNAL SECTIONS).
10. EXACT LOCATION OF THE SIGNAL POLES AND PEDESTALS SHALL BE DETERMINED IN THE FIELD BY CITY & COUNTY OF DENVER TRAFFIC ENGINEERING SERVICES.

CONSTRUCTION

11. CONDUIT RUNS SHOWN AS TO BE TWO 3 INCH SCHEDULE 80 PVC FOR TRAFFIC AND ONE 2 INCH SCHEDULE 80 PVC FOR ELECTRIC UTILITY. SCHEDULE 80 PVC WILL CONSTITUTE THE MINIMUM REQUIRED CONDUIT THICKNESS.
12. TWO PULL BOXES TO BE INSTALLED AT LOCATIONS SHOWN AS . DESIGNATE ON LID "TRAFFIC" FOR SIGNAL CABLES AND "ELECTRIC" FOR ELECTRIC UTILITY CABLES BY PHYSICALLY EMBOSSING, NOT PAINTING. PULL BOX LIDS FOR COMMUNICATION CONDUITS (SPECIAL) SHALL BE DESIGNATED "TRAFFIC COMM" BY PHYSICALLY EMBOSSING, NOT PAINTING. SEE STD. DWG. NO. 16.1.7 FOR PULL BOX DIMENSIONS.
13. A SINGLE 3 INCH CONDUIT SHALL BE REQUIRED AND INSTALLED FROM THE TRAFFIC COMM PULL BOX TO THE TRAFFIC SIGNAL CONTROLLER CABINET. CONDUIT SHALL BE SCHEDULE 80 PVC CONDUIT.
14. INTERCONNECT CONDUIT PULL BOXES SHALL BE PLACED AT 500 FOOT MAXIMUM SPACING, OR OTHERWISE DIRECTED BY CITY & COUNTY OF DENVER ENGINEER.
15. INSTALL WATER VALVE PULL BOX AND 2 INCH SCHEDULE 80 PVC CONDUIT FOR LOOP DETECTION INTERCEPT WHERE SHOWN ON PLANS. SEE STD. DWG. NO. 16.1.5.
16. ALL HOLES IN TRAFFIC SIGNAL POLES TO BE DRILLED OR SAWED. INSTALLING HOLES BY BURNING WITH A TORCH IS NOT APPROVED.
17. THE BOTTOM OF ALL SPAN WIRE MOUNTED SIGNAL HEADS SHALL BE ON THE SAME HORIZONTAL PLAN AND HAVE A MINIMUM CLEARANCE OF 16'-6" AND A MAXIMUM CLEARANCE OF 19'-0" ABOVE THE CROWN OF PAVEMENT SURFACE, UNLESS OTHERWISE SPECIFIED BY TRAFFIC ENGINEERING SERVICES. ALL SPAN WIRE SHALL INCLUDE A BOTTOM WIRE OR WIND TETHER.
18. EXISTING SIGNAL FACES SHALL REMAIN VISIBLE AND ILLUMINATED UNTIL NEW SIGNALS ARE TURNED ON. BLOCKING OF EXISTING FACE BY NEW FACE WILL REQUIRE NEW FACE TO BE TEMPORARILY WIRED FOR ILLUMINATION.
19. ANCHOR BOLTS SHALL NOT BE TRIMMED UNTIL SIGNAL POLE BASE ELEVATION IS APPROVED BY CITY & COUNTY OF DENVER ENGINEER.

WIRING

20. ALL TRAFFIC SIGNAL WIRE CONNECTORS SHALL BE OF THE BUCHANNAN COMPRESSION TYPE WITH COPPER NONFERROUS CONNECTORS AND IDEAL WRAP-CAPS OR APPROVED EQUAL.
21. WIRE SPLICING IN THE PULL BOXES ARE NOT ALLOWED EXCEPT FOR THE LOOP WIRES. ALL LOOP WIRES SHALL BE SPLICED IN THE WATER VALVE TRAFFIC PULL BOXES.
22. THREE (3) SPARE CONDUCTORS SHALL BE PROVIDED TO EACH PULL BOX AND TO THE END OF EACH MAST ARM.
23. ALL SOLDERLESS CONNECTORS SHALL BE USED.
24. BARE WIRE IN OPTICOM CABLE SHALL BE SHRINK TUBED ON BOTH ENDS FOR TOTAL INSULATION.

SIGNING

25. OVERHEAD STREET NAME SIGNS TO BE FURNISHED AND INSTALLED ON EACH MAST ARM AS NOTED ON STD. DWG. NO. 16.1.10 DETAIL 9. SIGN TO BE BOLTED ON 18 INCH TELSPAR EXTENSION WHICH CONNECTS TO MAST ARM BY USE OF ADAPTER SCREWED INTO HOUSING.
26. CONTRACTOR SHALL NOT REMOVE ANY REGULATORY TRAFFIC SIGNS UNLESS SPECIFIED ON PLANS. CITY AND COUNTY OF DENVER, TRANSPORTATION DIVISION TO BE NOTIFIED 48 HOURS PRIOR TO ANY SIGNING CHANGES 720-865-3150.
27. ALL PERTINENT SIGNS AND PAVEMENT MARKINGS MUST BE IN PLACE AT THE TIME A TRAFFIC SIGNAL CHANGE IS MADE, SUCH AS A NEW SIGNAL TURN ON, AND OR CHANGES MADE TO EXISTING SIGNAL OPERATION.

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COLORADO LAW (SENATE BILL 93-155) REQUIRES PERSONS TO NOTIFY THE UTILITY NOTIFICATION CENTER OF COLORADO 2 BUSINESS DAYS PRIOR TO MAKING OR BEGINNING AN EXCAVATION. NOTIFICATION MAY BE MADE BY CALLING:  
**811**

DESIGNED EO DATE 1/9/17  
DRAWN IC DATE 1/6/17  
CHECKED EN DATE 1/9/17



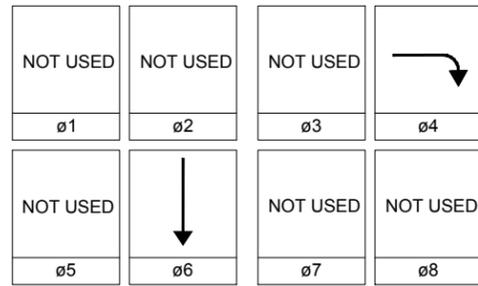
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2000 S. COLORADO BLVD.  
TOWER ONE, SUITE 6000  
DENVER, CO 80222-7938

**13TH STREET ROADWAY IMPROVEMENTS**  
ARAPAHOE ST TO CHAMPA ST

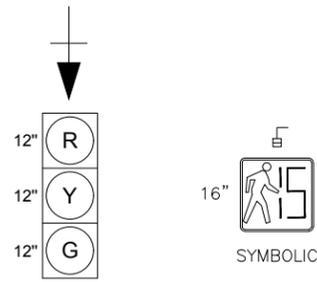
**TRAFFIC SIGNAL NOTES**  
SEH PROJECT NO. 137801 DATE ISSUED 1/9/17

SHEET NO. **25**  
SHEET OF 31

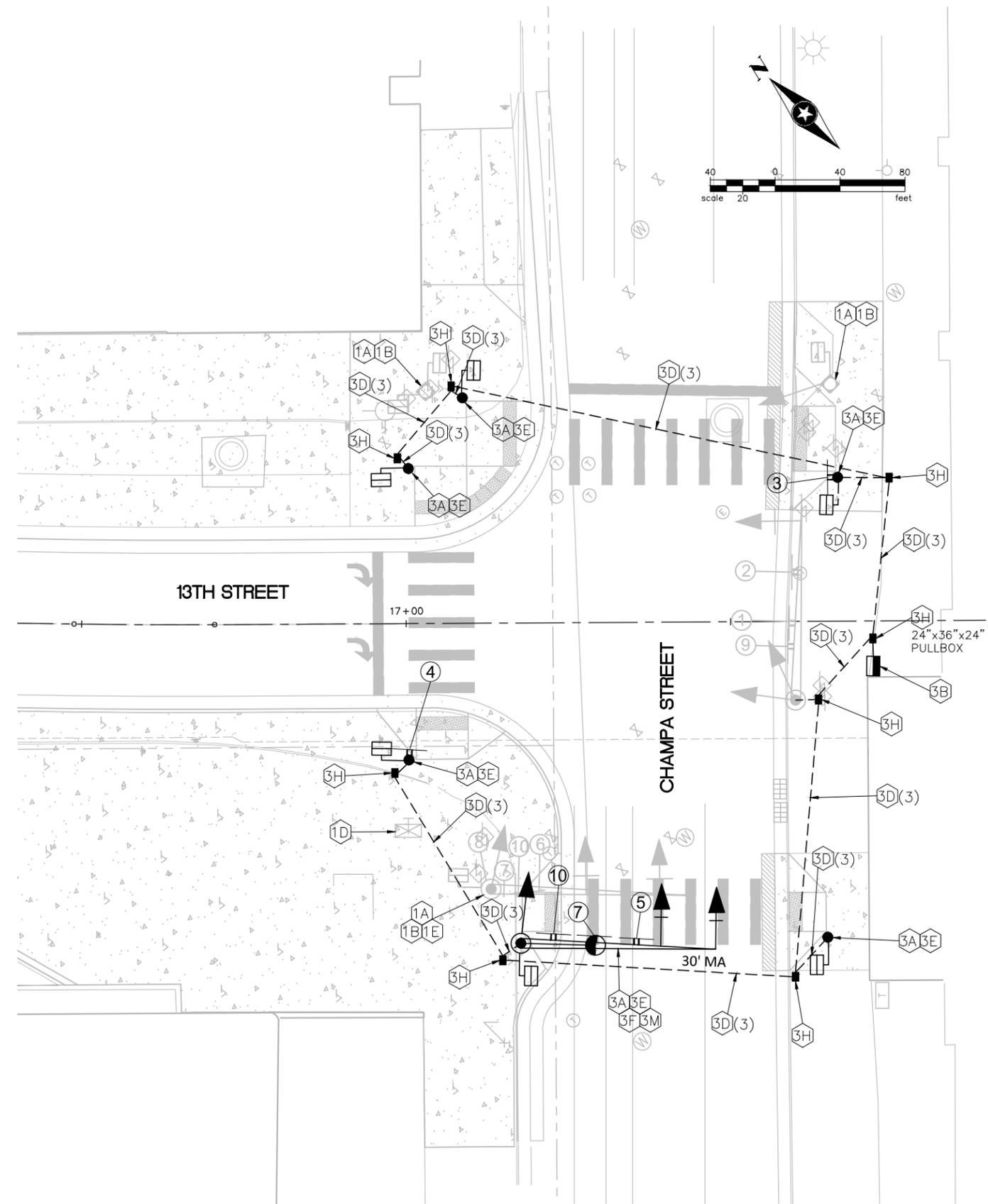
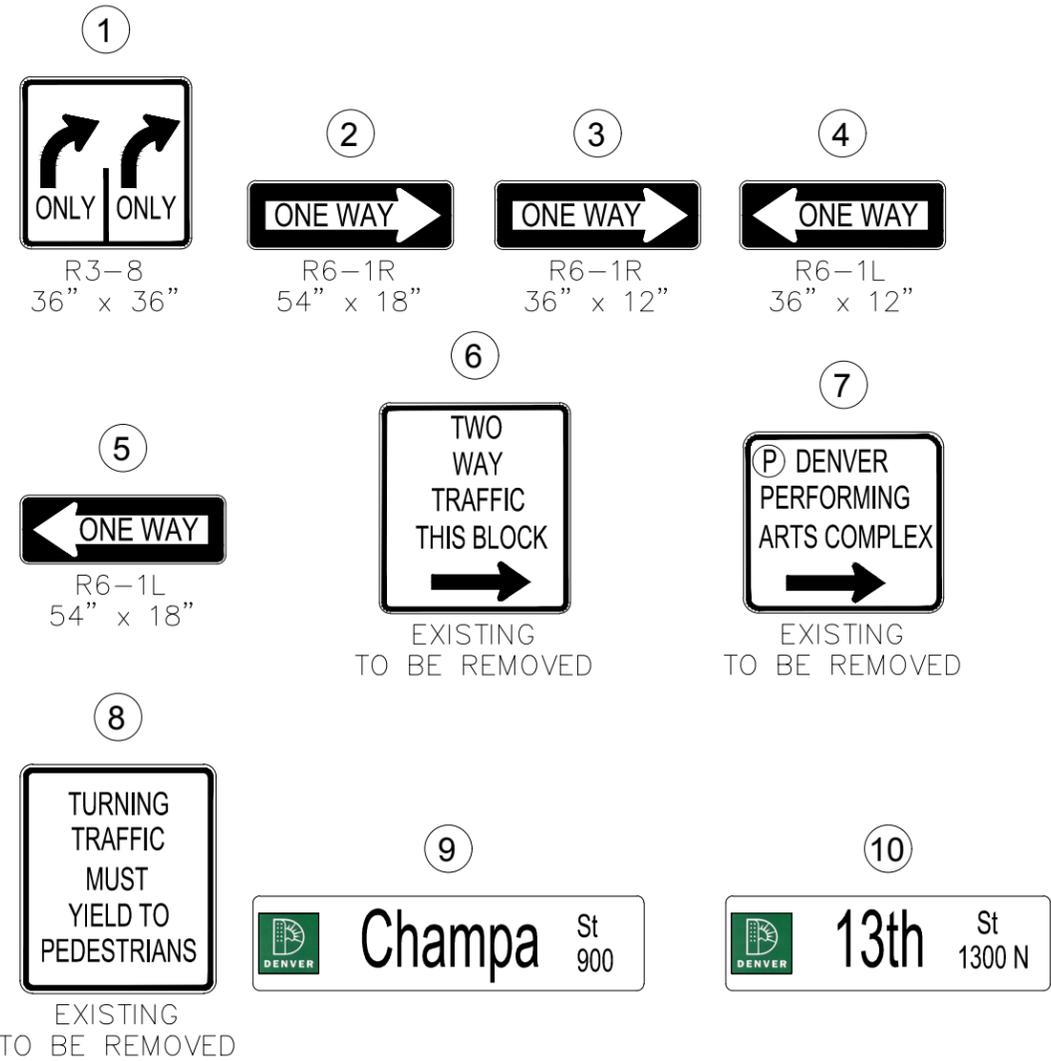
SIGNAL PHASING



SIGNAL DETAIL



SIGN DETAIL



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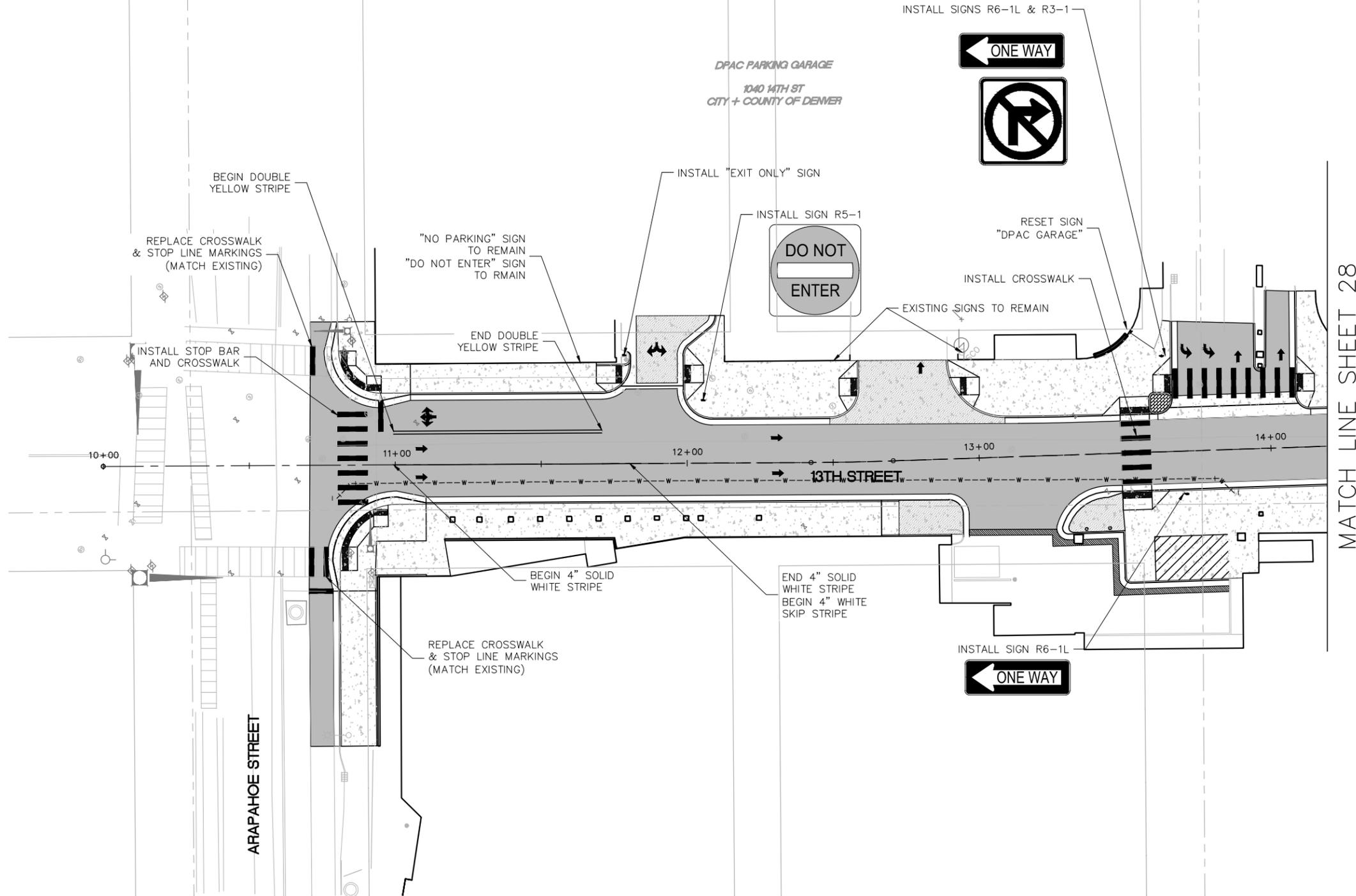
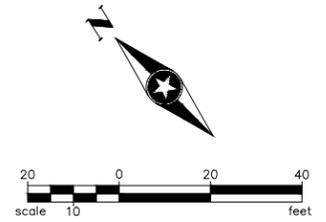


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DENVER, CO 80222-7938

**13TH STREET ROADWAY IMPROVEMENTS**  
ARAPAHOE ST TO CHAMPA ST

TRAFFIC SIGNAL PLAN  
SEH PROJECT NO. 137801  
DATE ISSUED 1/9/17

60% SUBMITTAL  
SHEET NO. **26**  
SHEET OF 31



MATCH LINE SHEET 28

NOTE:  
PEDESTRIAN WAY FINDING SIGNS TO BE DETERMINED.

60% SUBMITTAL

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COLORADO LAW (SENATE BILL 93-155) REQUIRES PERSONS TO NOTIFY THE UTILITY NOTIFICATION CENTER OF COLORADO 2 BUSINESS DAYS PRIOR TO MAKING OR BEGINNING AN EXCAVATION. NOTIFICATION MAY BE MADE BY CALLING:  
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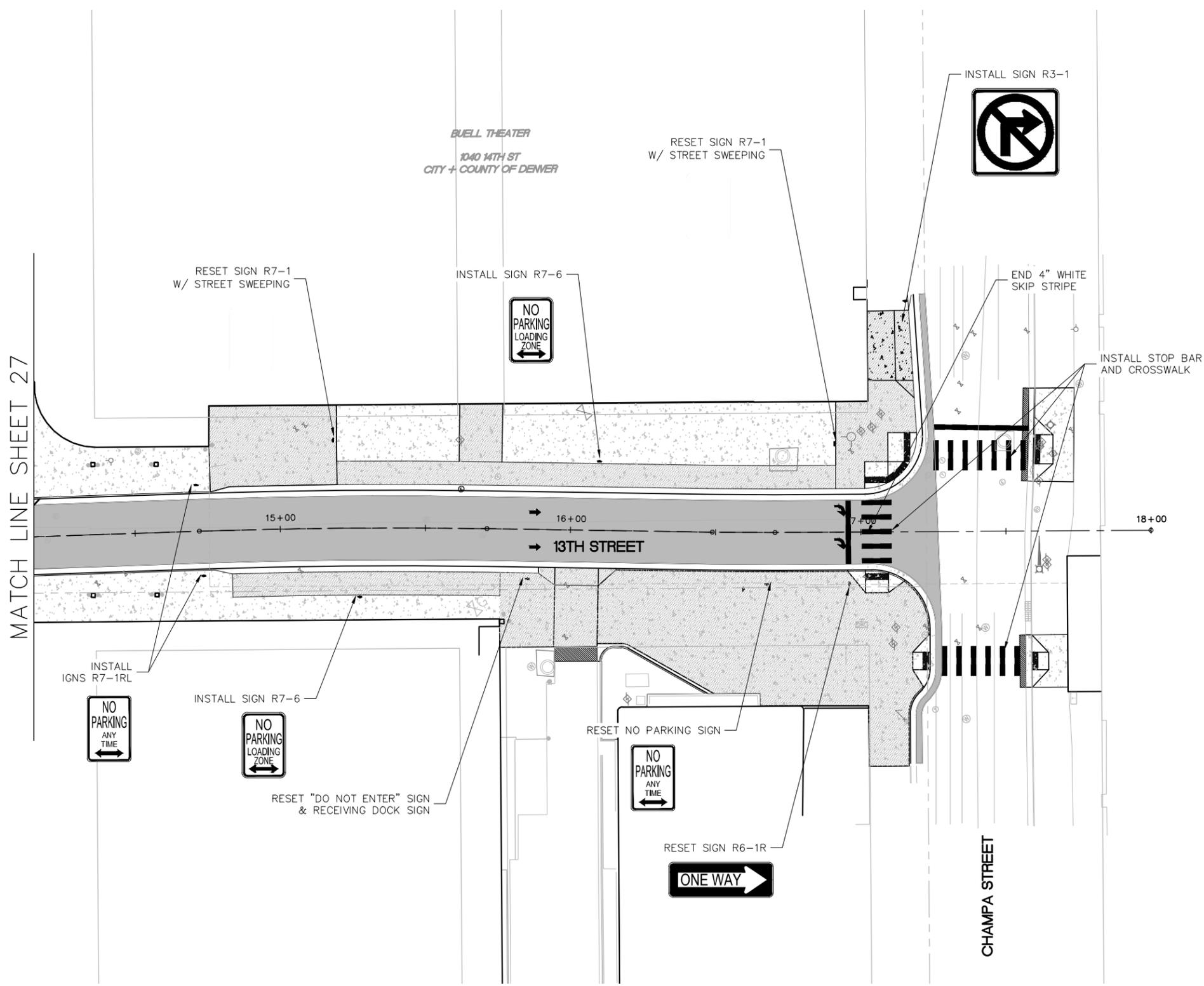
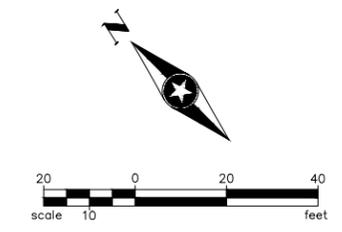


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**13TH STREET ROADWAY IMPROVEMENTS**  
ARAPAHOE ST TO CHAMPA ST

SIGNING AND STRIPING PLAN	
SEH PROJECT NO. 137801	DATE ISSUED 1/9/17

SHEET NO.  
**27**  
SHEET OF 31



MATCH LINE SHEET 27

**BUELL THEATER**  
1040 14TH ST  
CITY + COUNTY OF DENVER

NOTE:  
PEDESTRIAN WAY FINDING SIGNS TO BE DETERMINED.

60% SUBMITTAL

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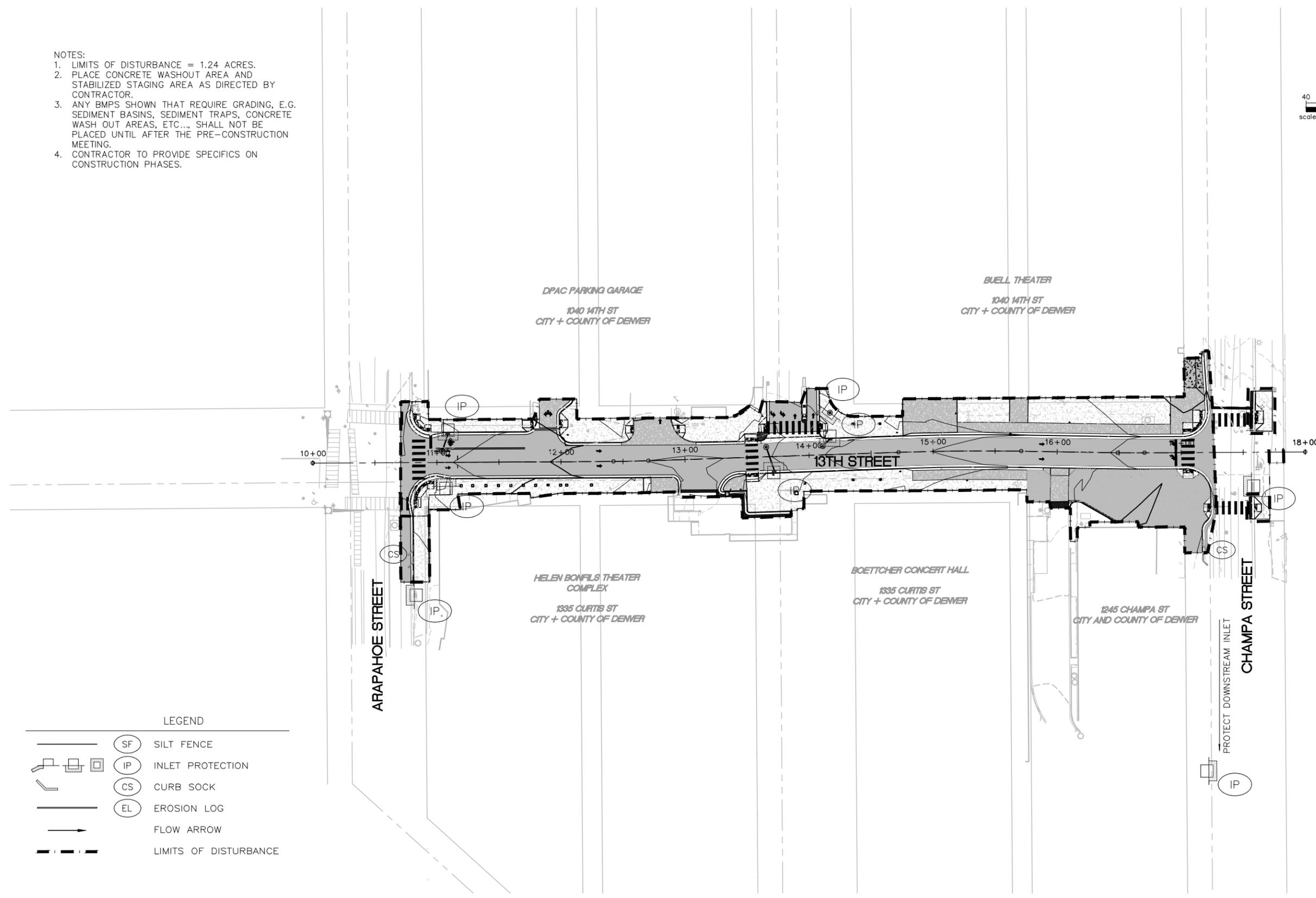
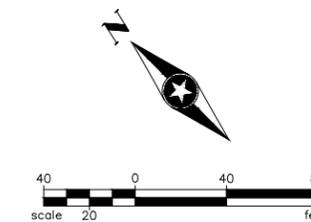
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**13TH STREET ROADWAY IMPROVEMENTS**  
ARAPAHOE ST TO CHAMPA ST

**SIGNING AND STRIPING PLAN**  
SEH PROJECT NO. 137801 DATE ISSUED 1/9/17

SHEET NO. **28**  
SHEET OF 31

- NOTES:
1. LIMITS OF DISTURBANCE = 1.24 ACRES.
  2. PLACE CONCRETE WASHOUT AREA AND STABILIZED STAGING AREA AS DIRECTED BY CONTRACTOR.
  3. ANY BMPs SHOWN THAT REQUIRE GRADING, E.G. SEDIMENT BASINS, SEDIMENT TRAPS, CONCRETE WASH OUT AREAS, ETC.... SHALL NOT BE PLACED UNTIL AFTER THE PRE-CONSTRUCTION MEETING.
  4. CONTRACTOR TO PROVIDE SPECIFICS ON CONSTRUCTION PHASES.



LEGEND

	(SF)	SILT FENCE
	(IP)	INLET PROTECTION
	(CS)	CURB SOCK
	(EL)	EROSION LOG
		FLOW ARROW
		LIMITS OF DISTURBANCE

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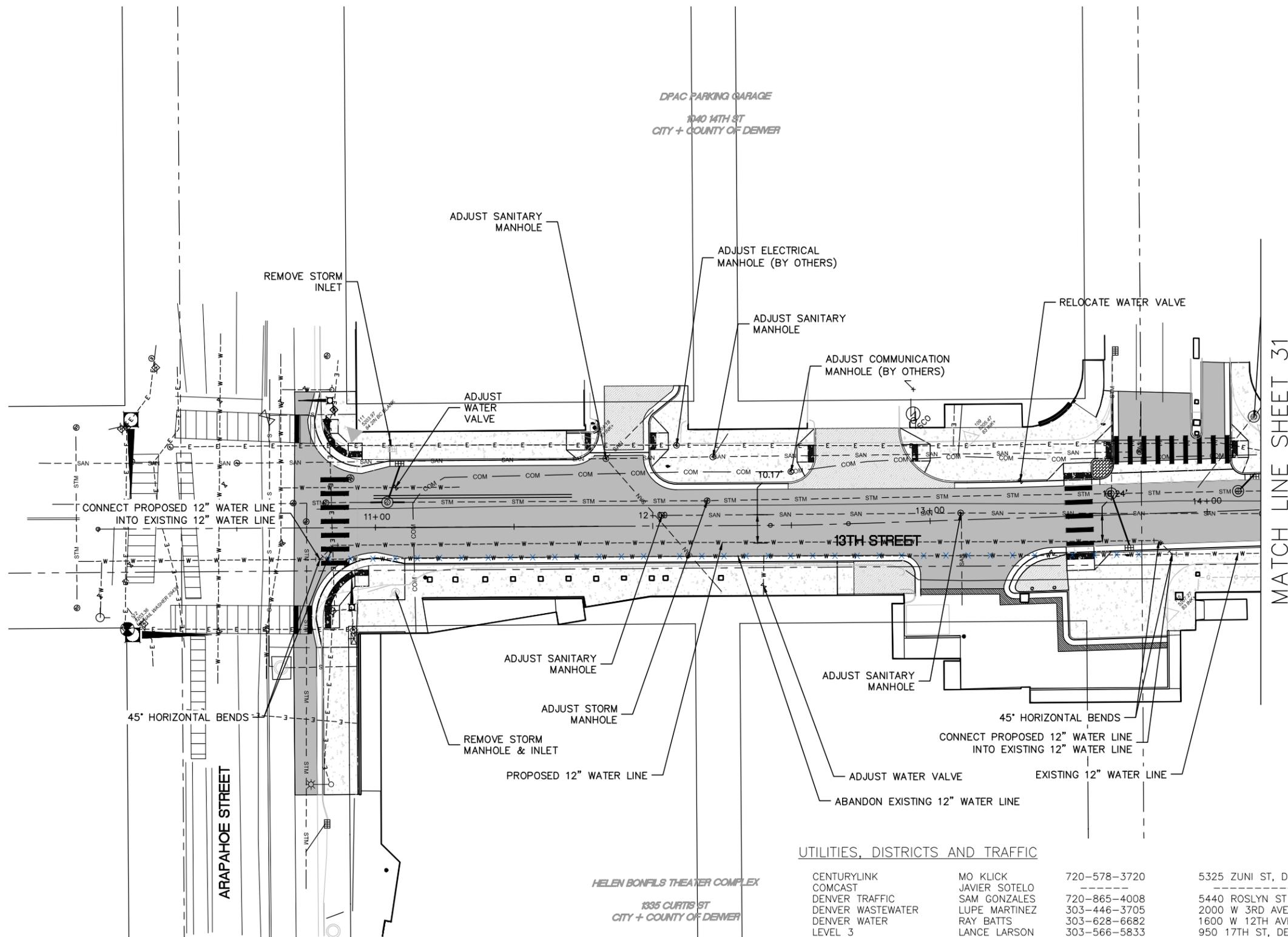
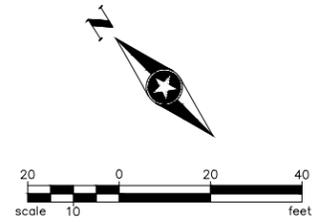


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**13TH STREET ROADWAY IMPROVEMENTS**  
 ARAPAHOE ST TO CHAMPA ST

**EROSION CONTROL**  
 SEH PROJECT NO. 137801 DATE ISSUED 1/9/17

SHEET NO. **29**  
 SHEET OF 31



MATCH LINE SHEET 31

**811** Know what's below.  
Call before you dig.

CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

**UTILITIES, DISTRICTS AND TRAFFIC**

CENTURYLINK	MO KLICK	720-578-3720	5325 ZUNI ST, DENVER, CO 80221	MAUREEN.KLICK@CENTURYLINK.COM
COMCAST	JAVIER SOTELO			JAVIER_SOTELO@CABLE.COMCAST.COM
DENVER TRAFFIC	SAM GONZALES	720-865-4008	5440 ROSLYN ST BLDG E, DENVER, CO 80216	SAM.GONZALES@DENVERGOV.ORG
DENVER WASTEWATER	LUPE MARTINEZ	303-446-3705	2000 W 3RD AVE, 3RD FLOOR, DENVER, CO 80223	LUPE.MARTINEZ@DENVERGOV.ORG
DENVER WATER	RAY BATTS	303-628-6682	1600 W 12TH AVE, DENVER, CO 80204	RAY.BATTS@DENVERWATER.ORG
LEVEL 3	LANCE LARSON	303-566-5833	950 17TH ST, DENVER, CO 80202	LANCE.LARSON@LEVEL3.COM
METRO WASTEWATER	CRAIG SIMMONDS	303-286-3338	6450 YORK ST, DENVER, CO 80229	CSIMMONDS@MWRD.DST.CO.US
XCEL ENERGY	MARISA MONTOYA	303-571-3720	1123 W 3RD AVE, DENVER, CO 80223	MARISA.L.MONTOYA@XCELENERGY.COM

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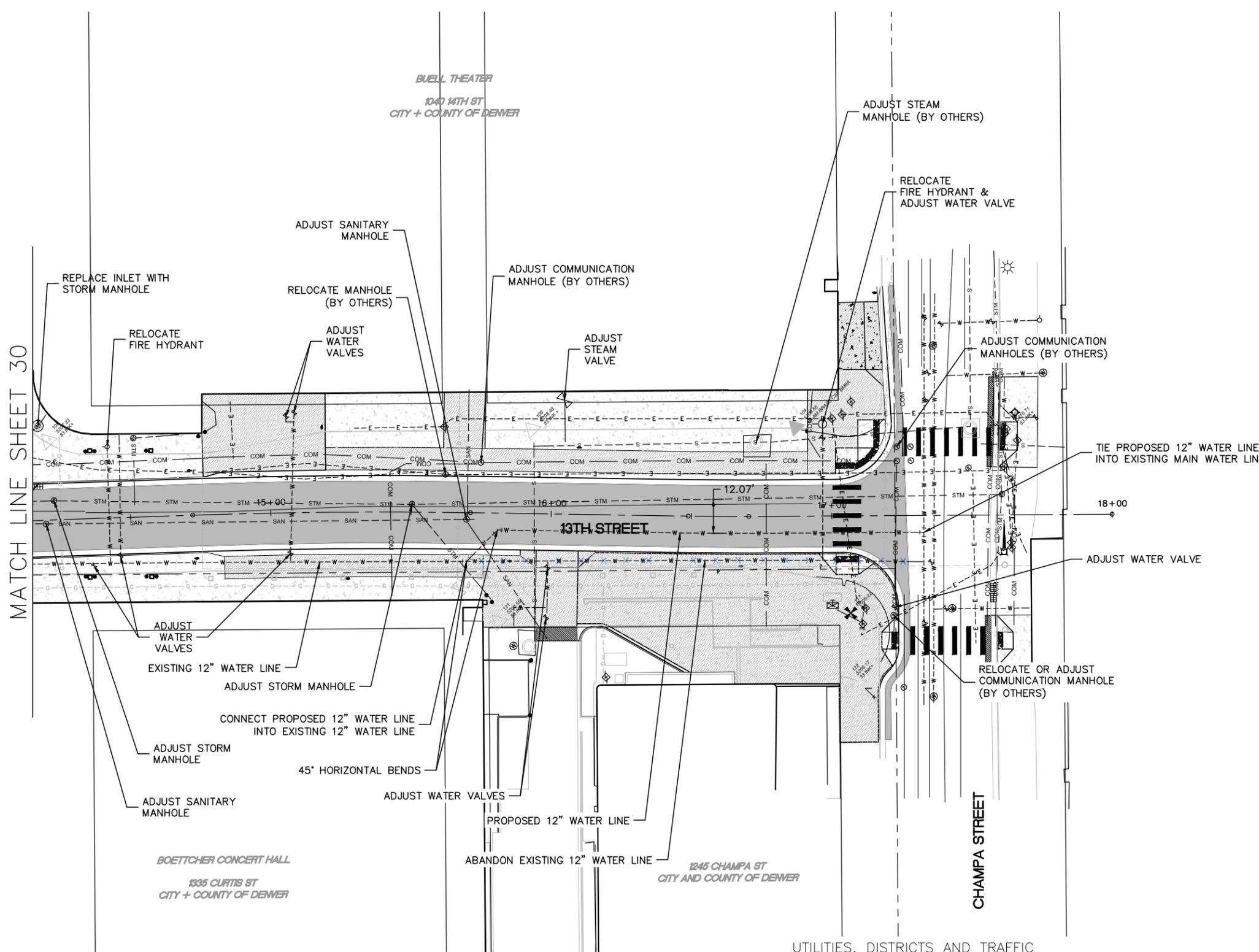
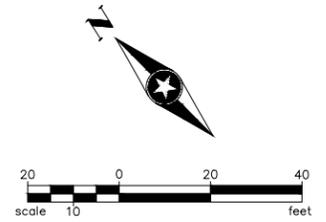
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**13TH STREET ROADWAY IMPROVEMENTS**  
ARAPAHOE ST TO CHAMPA ST

**UTILITY PLAN**

SEH PROJECT NO. 137801 DATE ISSUED 1/9/17

SHEET NO. **30**  
SHEET OF 31



MATCH LINE SHEET 30

**811** Know what's below.  
Call before you dig.

CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

UTILITIES, DISTRICTS AND TRAFFIC

CENTURYLINK	MO KLICK	720-578-3720	5325 ZUNI ST, DENVER, CO 80221	MAUREEN.KLICK@CENTURYLINK.COM
COMCAST	JAVIER SOTELO			JAVIER_SOTELO@CABLE.COMCAST.COM
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XCEL ENERGY	MARISA MONTOYA	303-571-3720	1123 W 3RD AVE, DENVER, CO 80223	MARISA.L.MONTOYA@XCELENERGY.COM

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COLORADO LAW (SENATE BILL 93-155) REQUIRES PERSONS TO NOTIFY THE UTILITY NOTIFICATION CENTER OF COLORADO 2 BUSINESS DAYS PRIOR TO MAKING OR BEGINNING AN EXCAVATION. NOTIFICATION MAY BE MADE BY CALLING:  
**811**

DESIGNED EO DATE 1/9/17  
DRAWN IC DATE 1/6/17  
CHECKED EN DATE 1/9/17



PHONE: 720.540.6800  
2000 S. COLORADO BLVD.  
TOWER ONE, SUITE 6000  
DENVER, CO 80222-7938

**13TH STREET ROADWAY IMPROVEMENTS**  
ARAPAHOE ST TO CHAMPA ST

UTILITY PLAN	
SEH PROJECT NO. 137801	DATE ISSUED 1/9/17

60% SUBMITTAL  
SHEET NO. **31**  
SHEET OF 31



**EXHIBIT "E1"**  
**Turner CM/GC Contract**  
**GMP 1 Proposal: DPAC Garage Critical Repairs/Champa Street Bridge**

**CCD # 201525595**  
**DPAC - Garage Critical Repairs**  
**Bid Package One**

Trade Package	[ A ] For Construction	
	Drawings Dated:	4/13/2016
	Gross Area SF = 215,000	
	Cost	Cost / SF
Demolition	\$ 67,815	\$ 0.32
Powerwash and Seal	\$ 84,675	\$ 0.32
Concrete	\$ 180,254	\$ 0.84
Structural Steel	\$ 24,993	\$ 0.12
Rough Carpentry	\$ 28,015	\$ 0.13
Waterproofing / Damproofing	\$ 146,068	\$ 0.68
Traffic Coatings	\$ 75,687	\$ 0.35
Joint Sealants	\$ 202,084	\$ 0.94
Painting	\$ 34,412	\$ 0.16
Plumbing	\$ 22,180	\$ 0.10
Asphalt Paving & Striping	\$ 5,032	\$ 0.02
<b>Subtotal - Directs</b>	<b>\$ 871,214</b>	<b>\$ 4.05</b>
General Conditions	\$ 189,787	\$ 0.88
Preconstruction	\$ -	\$ -
Permit and Plan Review (By Owner)	\$ -	\$ -
<b>Subtotal w/ General Conditions</b>	<b>\$ 1,061,001</b>	<b>\$ 4.93</b>
Fee	\$ 52,500	\$ 0.24
Insurance & Sub Bonds	\$ 43,850	\$ 0.20
<b>Subtotal w/ Indirects</b>	<b>\$ 1,157,351</b>	<b>\$ 5.38</b>
Construction Contingency	\$ 45,000	\$ 0.21
Quantity Reconciliation Allowance	\$ 100,000	\$ 0.47
<b>Total Construction Estimate</b>	<b>\$ 1,302,351</b>	<b>\$ 6.06</b>

**Alternates**

Add1 - Surface Preparation	\$ 33,111
Add2 - Traffic Coating	\$ 5,977
Add3 - RePaint	\$ 1,711



3/24/17  
Revised 4/13/17 - M. Young

City & County of Denver  
Pedestrian Bridge Demolition  
Bid Package Two - Part B

Trade Package	[ A ] For Construction	
	Drawings Dated:	1/9/2017
	Gross Area SF = 5,500	
	Cost	Cost / SF
Demolition	\$	431,254
Structural Steel	\$	36,237
Waterproofing / Damproofing	\$	3,200
Joint Sealants	\$	800
Glass & Glazing - Exteriors	\$	20,500
Gypsum Board Assemblies	\$	5,500
Painting	\$	750
Vertical Transportation	\$	34,616
Plumbing	\$	15,000
Mechanical	\$	25,000
Electrical	\$	29,187
Site Clearing / Earthwork	\$	1,950
<b>Subtotal - Directs</b>	<b>\$</b>	<b>622,594</b>
General Conditions	\$	-
Preconstruction	\$	-
Permit and Plan Review (By Owner)	\$	-
<b>Subtotal w/ General Conditions</b>	<b>\$</b>	<b>622,594</b>
Fee	\$	-
Insurance	\$	-
<b>Subtotal w/ Indirects</b>	<b>\$</b>	<b>622,594</b>
Construction Contingency	\$	41,862.62 (M. Young 4/13/17)
Textura Fee (\$4,786,692.62 X 0.17%)	\$	8,137.38 (M. Young 4/13/17)
<b>Total Bridge Estimate (Directs Only)</b>	<b>\$</b>	<b>672,594</b>

Textura Fee Summary:

DPAC Garage Critical Repairs =	\$1,302,351.00
Pedestrian Bridge Demolition =	\$ 664,456.62 (Without Textura Fee)
13th Street Repairs =	\$2,819,885.00
TOTAL BASE GMP =	\$4,786,692.62
Textura Fee (.17%) =	\$ 8,137.38
<b>TOTAL CONTRACT GMP =</b>	<b>\$4,794,830.00</b>



**City & County of Denver**  
**13th Street Repairs**  
**60% Budget - Bid Package Two**

Trade Package	[ A ] For Construction	
	Drawings Dated:	1/9/2017
	Gross Area SF = 81,401	
	Cost	Cost / SF
Demolition	\$ 4,750	\$ 0.06
Concrete	\$ 18,350	\$ 0.23
Miscellaneous Metals	\$ 56,720	\$ 0.70
Acoustical Ceilings & Wall Panels	\$ 353,140	\$ 4.34
Painting	\$ 10,200	\$ 0.13
Signage	\$ 1,760	\$ 0.02
Electrical	\$ 514,630	\$ 6.32
Site Clearing / Earthwork	\$ 246,001	\$ 3.02
Site Concrete and Rigid Paving	\$ 404,223	\$ 4.97
Asphalt Paving & Striping	\$ 292,799	\$ 3.60
Landscaping	\$ 23,284	\$ 0.29
Site Furnishings	\$ 19,770	\$ 0.24
Site Utilities	\$ 148,117	\$ 1.82
<b>Subtotal - Directs</b>	<b>\$ 2,093,744</b>	<b>\$ 25.72</b>
General Conditions	\$ 309,956	\$ 3.81
Preconstruction	\$ -	\$ -
Permit and Plan Review (By Owner)	\$ <del>25,000</del>	\$ <del>0.31</del>
<b>Subtotal w/ General Conditions</b>	<b>\$ 2,428,700</b>	<b>\$ 29.84</b>
Fee	\$ 117,250	\$ 1.44
Insurance & Sub Bonds	\$ 97,935	\$ 1.20
<b>Subtotal w/ Indirects</b>	<b>\$ 2,643,885</b>	<b>\$ 32.48</b>
Construction Contingency	\$ 201,000	\$ 2.47
Design Contingency	\$ -	\$ -
<b>Total Street Improvement Estimate</b>	<b>\$ 2,844,885</b>	<b>\$ 34.95</b>
<b>Total Revised with Permit and Plan Review Deleted = \$2,819,885</b>		



## **CCD Project # 201525595**

### **13<sup>th</sup> Street Roadway Improvements (60% Budget)**

#### **Champa St. Bridge Demolition**

#### **DPAC Garage Critical Repairs**

#### Assumptions & Clarifications

4/6/2017

These Assumptions and Clarifications form the basis of our understanding of the Project scope to provide complete and functioning facilities. These Assumptions and Clarifications are provided to allow the entire team to understand the complete scope of the Project and what scope is included in the Proposal. Turner assumes mutually agreeable contract terms.

#### **General Items**

1. The Schedule is based on normal working days, Monday-Friday. Night Work and Overtime is not included. We have included Daily Shift work from 7am-5pm.
2. The Proposal makes the following assumptions concerning site logistics and general requirements:
  - a. Laydown and Storage areas will be within project boundaries and will remain unrestricted.
  - b. Cost for all utilities are by owner.
  - c. We have not included costs for relocation of employees/tenants.
  - d. We have not included any weather delays or snow/ice removal.
3. It is understood that the Owner, Design Team and Turner will work together to monitor modifications of the Contract Documents in accordance with the intent and scope conveyed in these Assumptions and Clarifications. Should deviations from such intent and scope result in an increase to the Proposal, Turner will recommend possible solutions in order to protect the Proposal from increasing, and the Owner will direct the Design Team to make such mutually agreed upon changes, or adjust the Proposal by Change Order.
4. For all warranty work, it is expressly assumed that the Owner has properly maintained all systems and components per the manufacturer's recommendations and operation and maintenance procedures, and that warranty work will be granted in accordance with the aforementioned provisions, should systems fail under normal operating conditions.
5. The Proposal includes provisions for correction of existing code deficiencies only as identified in the drawings, and only within the construction area. Similarly, the Proposal does not include provisions to verify the operating condition of or make repairs to existing equipment and fixtures unless specifically identified.
6. There are no line item guarantees associated with the Proposal. It will be based upon the total cost.
7. The Proposal and completion schedule do not provide for the effects of any terrorist-related events or the incidence of disease or other illness that reaches outbreak, epidemic, endemic and/or pandemic proportions or otherwise affects the area in which the Project is located and/or our labor or supply chain, it being recognized and agreed that all such events are not within the Construction Manager's control.
8. Architects, Design Consultants, Engineers and/or any other entities providing design for the project as agents of the Owner are not included as Additional Insured as they have no insurable interest in the property.
9. We have not included any security or watchman services.
10. The following Turner personnel rates will be billed for all Self-Perform on change orders, as applicable:

General Foreman	\$85.00 / hr
Carpenter Foreman	\$76.00 / hr
Carpenter	\$65.00 / hr



## CCD Project # 201525595

### 13<sup>th</sup> Street Roadway Improvements (60% Budget)

#### Champa St. Bridge Demolition

#### DPAC Garage Critical Repairs

#### Assumptions & Clarifications

4/6/2017

Labor Foreman	\$57.00 / hr
Laborer	\$52.00 / hr
Warehouse Manager	\$63.00 / hr

11. It is assumed that the City and County of Denver will waive all Right of Way, Road Closure, and Parking Meter permit fees for construction activities. Right of Way, Road Closure, and Parking Meter permit fees are excluded. Turner Construction will provide all coordination, permit application submittals, and traffic controls plans per applicable permit requirements. The Proposal excludes building permit, plan review, impact fees, tap fees, developmental fees or usage fees. These are assumed by Owner.
12. This proposal includes working on the bridge demolition while Champa Street is open and includes (1) weekend closure to remove structural beams. If this sequence is not accepted, additional costs may be incurred.
13. We assume a standard one-year warranty.
14. The Proposal includes Prevailing/Davis Bacon wages.
15. The Proposal does not include Buy American Act.
16. The Proposal makes no provisions for documentation and costs associated with LEED certification.
17. We assumed a Clean Letter will be provided prior to mobilization. We have not included the removal, abatement and/or remediation of contaminated or hazardous materials is excluded at this time. Should hazardous materials be encountered during the work, Turner assumes appropriate adjustments may be made to the project schedule and cost.
18. Material testing and 3rd party inspections have not been included. It is assumed that these are by the Owner, if needed.
19. It is assumed that (1) lane of one-way traffic will be open during Denver Water's construction activities. Closures by Denver Water directly are considered beyond Turner Construction's control.
20. We have not included costs for relocation of employees/tenants.
21. Work to be coordinated around and with DPAC event schedule. Minor "quiet times" and "no work" times are assumed. Multiple/consecutive "no work" days are not included in the schedule.

#### **Existing Conditions**

22. The City and County of Denver to pay DADS disposal fee after being provided ticket books from the hauling companies.

#### **Concrete**

23. Concrete and grouting activities will be performed above 40 degrees Fahrenheit only.

#### **Thermal and Moisture Protection**

24. All Division 7 coatings, sealants, or caulking will be performed above 40 degrees Fahrenheit only.

#### **Glass and Glazing**

25. Our proposal currently includes a budget number for the Colorado Convention Center curtain wall replacement panels. The curtain wall manufacturer has certain contractors in town that are certified to



## **CCD Project # 201525595**

**13<sup>th</sup> Street Roadway Improvements (60% Budget)**

**Champa St. Bridge Demolition**

**DPAC Garage Critical Repairs**

Assumptions & Clarifications

4/6/2017

install their product. Turner Construction is in the process of determining the proper contractor to work with for this scope.

### **Elevator**

26. Our proposal includes Centric Elevator performing the elevator decommissioning and reprogramming. If the Owner requires the current service provider (KONE Elevator) to perform this scope, there will be an added cost.

### **Mechanical & Plumbing**

27. We have included an allowance for minimal modifications to mechanical equipment/piping work associated with the pedestrian bridge demolition. It is our understanding that this work will mostly include supporting to existing building.
28. We have not provided any repairs or adjustment to existing heat trace.
29. We have not provided commissioning of any existing equipment.
30. We exclude seismic hangers and accessories.

### **Electrical**

31. We have included an allowance for minimal modifications to electrical equipment/conduit work associated with the pedestrian bridge demolition. It is our understanding that this work will mostly include supporting to existing building.
32. It is assumed that no permanent conduits have to be rerouted from the Colorado Convention Center to the Denver Performing Arts Complex. We have included money to cut and make safe existing electrical conduits for demolition. We have excluded the reroute of any conduits that remain in place.

## **EXHIBIT F**

### **Self-Performed Work Proposal**

Work items proposed to be self-performed by Turner:

- Erosion control
- Project-specific signage
- Minor/unforeseen demolition items
- Rough carpentry
- Site cleanup and dust control
- Temporary protection
- On-site safety control



**CCD Project # 201525595 – 13<sup>th</sup> Street Roadway Improvements & DPAC Garage  
Critical Repairs**

*Unit Rates*

3/27/17

**General Items**

1. The following Turner unit rates will be billed for all Direct Hard Costs or change orders, as applicable:

**Staff:**

Project Executive	\$150.00 / hr
Senior Superintendent	\$120.00 / hr
Project Superintendent	\$110.00 / hr
Purchasing Manager	\$110.00 / hr
Sr. Project Manager	\$110.00 / hr
Safety Manager	\$100.00 / hr
Preconstruction Manager	\$100.00 / hr
Project Manager	\$100.00 / hr
Purchasing Agent	\$90.00 / hr
Project Cost/Accounting	\$85.00 / hr
Project Asst. Superintendent	\$85.00 / hr
Project Engineer/Estimator	\$75.00 / hr
Subcontract Administrator	\$63.00 / hr

**Trade Labor:**

General Foreman	\$85.00 / hr
Carpenter Foreman	\$76.00 / hr
Carpenter	\$65.00 / hr (OT - \$97.50 / hr; DT - \$130.00 / hr)
Labor Foreman	\$57.00 / hr (OT - \$85.50 / hr; DT - \$114.00 / hr)
Laborer	\$52.00 / hr (OT - \$78.00 / hr; DT - \$104.00 / hr)
Warehouse Manager	\$63.00 / hr

**EXHIBIT "H" - Equipment Rental Rates  
Turner CM/GC Contract  
DPAC Garage Critical Repairs/13th Street  
Improvements/Champa Street Bridge**

*Equipment Rates*

Cat	Class	Description	Day	Week	4Week
<b>AIR COMPRESSORS</b>					
100	3185	COMPRESSOR 175-195 CFM	82	240	665
100	3275	COMPRESSOR 350-450 CFM 150 PSI	183	731	1738
<b>AIR TOOLS &amp; ACCESSORIES</b>					
110	13	RIVET BUSTER AIR JUMBO	82	212	547
110	1100	CHIPPING GUN AIR 15#	24	61	128
110	1170	CONCRETE SCABBLER AIR 5 HEAD	122	347	506
110	1550	BREAKER PAVEMENT AIR 30#	31	74	146
110	1570	BREAKER PAVEMENT AIR 60#	37	85	183
110	1580	BREAKER PAVEMENT AIR 90#	43	98	225
110	1640	RIVET BUSTER AIR	47	151	343
110	1680	ROCK DRILL AIR 50-59 LB	48	153	347
110	2400	AIR HOSE 3/4" X 50'	13	24	55
110	4210	CLAY SPADE 1 1/8" X 6"	5	20	35
<b>COMPACTION EQUIPMENT</b>					
150	2600	RAMMER LARGE 2900-3600 LBS/BLOW	68	185	363
150	3100	VIB PLATE MEDIUM 3400# IMPACT	55	130	322
150	3500	VIB PLATE REVERSIBLE SMALL 6500# IMPACT	92	183	641
<b>COMPACTION, ROLLERS</b>					
160	1265	ROLLER 24-33" WALKBEHIND PAD	225	821	1829
160	2620	ROLLER 1.5 TON DOUBLE DRUM SMOOTH	153	500	1128
<b>CONCRETE EQUIPMENT</b>					
180	2190	MIXER 3-3.9 CUBIC FEET ELECTRIC	74	231	427
180	2219	MIXER MORTAR 9 CUBIC FEET	102	343	677
180	5016	BUGGY 15-19 CUBIC FEET POWERED WHEEL	104	238	482
180	5580	BUCKET CONCRETE 1 YARD	31	92	183
180	7000	CORE DRILL ELECTRIC 13-15 AMP	74	231	610
180	9536	FINISHER CONCRETE 36"	61	214	519
<b>ELECTRIC TOOLS</b>					
190	2000	DEMO HAMMER 20-25# ELECTRIC	61	74	275
190	2030	DEMO HAMMER 30-34# ELECTRIC	74	231	427
190	2200	DEMO HAMMER 60# ELECTRIC	74	275	604
190	6225	ROTARY HAMMER SMALL SDS ELECTRIC	61	135	275
190	6375	ROTARY HAMMER LARGE SDS MAX ELECTRIC	74	231	427
<b>FLOOR EQUIPMENT</b>					
220	2000	CONCRETE GRINDER 2 HEAD 1 PHASE 1.5HP	74	231	610
220	2200	CONCRETE GRINDER 2 HEAD GAS	92	275	731
220	5425	PLANNER CONCRETE 8" 9HP GAS	366	853	1768
220	6100	TILE STRIPPER 100-199# 110 VOLT	153	500	1128
220	7055	FLOOR POLISHER/STRIPPER 17"	61	153	305
220	7062	FLOOR SCRUBBER 28" WALKBEHIND	55	267	753

*National Accounts*

Cat	Class	Description	Day	Week	4Week
220	7850	SCRUBBER FLOOR RIDE ON	486	1397	3048
220	8000	HARDWOOD SANDER 8" DRUM W/DUST BAG	61	153	305
<b>FORKLIFTS</b>					
230	5130	FORKLIFT 6' FORKS	74	231	427
230	5250	FORKLIFT JIB	92	275	604
<b>FORKLIFTS INDUSTRIAL</b>					
231	1200	FORKLIFT WHSE 5000# GAS/LP	179	486	1109
231	1205	FORKLIFT WHSE 5000# LOW PROFILE GAS/LP	228	535	1205
<b>FORKLIFTS REACH</b>					
233	1025	FORKLIFT 5000# 16-20' VARIABLE REACH	332	624	1673
233	1160	FORKLIFT VARIABLE REACH 6000# 35-39'	329	547	2056
233	1170	FORKLIFT VARIABLE REACH 6000# 40-49'	329	547	2056
233	1370	FORKLIFT VARIABLE REACH 8000# 40-49'	384	946	2226
233	1470	FORKLIFT VARIABLE REACH 9000# 30-45'	384	946	2226
233	1650	FORKLIFT VARIABLE REACH 10000# 50' & UP	473	1280	3156
233	1675	FORKLIFT VARIABLE REACH 12000# 55' & UP	670	1765	4470

GENERATORS					
240	2981	GENERATOR 2.0-2.4 KW	56	185	369
240	3001	GENERATOR 3.0-3.4 KW	43	104	201
240	3051	GENERATOR 5.5-5.9 KW	61	153	305
240	3056	GENERATOR 6.0-6.4 KW	61	153	305
240	3131	GENERATOR 19-29 KVA	164	336	1020
240	3156	GENERATOR 45-49 KVA	222	451	1349
240	3166	GENERATOR 50-59 KVA	244	488	1463
240	3186	GENERATOR 70-84 KVA	189	547	1643
240	3225	GENERATOR 110-124 KVA	384	767	2301
240	3231	GENERATOR 125-149 KVA	244	731	2157
240	3256	GENERATOR 180-199 KVA	268	943	2743
240	3351	GENERATOR 400-499 KVA	669	1952	4630
HEATERS, FANS & BLOWERS					
250	1150	DUCT HOSE 8" X 25'	31	84	206
250	1175	DUCT HOSE 12" X 25'	12	24	55
250	2250	DEHUMIDIFIER SMALL	43	104	201
250	2275	DEHUMIDIFIER MEDIUM	58	151	296
250	2280	DEHUMIDIFIER LARGE	109	275	466
250	2325	CARPET BLOWER DRYER	61	153	305
250	2475	HEATER INDIRECT 400K BTU	92	288	840
250	3025	HEATER SPACE 150K BTU PROPANE	55	130	296
250	3100	HEATER DIRECT 400K BTU	89	212	445
250	3121	HEATER INDIRECT 750K BTU DIESEL	792	1680	4716
250	3122	HEATER 1MM BTU DSL HIGH VOLUME TOWABLE	853	2316	5427
250	3124	HEATER DIRECT 1MM BTU	153	646	1809
250	3125	HEATER DIRECT 1.5MM BTU	153	775	2261
250	3437	HEATER 136K BTU 480V ELECTRIC	104	244	519
250	3444	HEATER 30 KW 480V ELECTRIC	604	1219	3651
250	3460	HEATER 165K BTU KEROSENE	79	183	397

### National Accounts

Cat	Class	Description	Day	Week	4Week
250	3485	HEATER 500K BTU DUCTED	175	466	1107
250	6110	SPOT COOLER 10K-14K BTU 110V	111	263	449
250	6812	GROUND HEATER UP TO 2500 SQ FT	459	1310	4193
250	6815	GROUND HEATER 5000-6000 SQ FT	799	2325	7337
SCISSOR LIFTS					
300	1500	SCISSOR LIFT 14-18' ELECTRIC	147	283	602
300	1515	VERTICAL LIFT 15' ELEC SELF PROPELLED	105	205	332
300	1520	VERTICAL LIFT 20' ELEC SELF PROPELLED	111	216	344
300	2000	SCISSOR LIFT 19' ELECTRIC	130	245	391
300	2515	SCISSOR LIFT 24-26' ELECTRIC 30-36" WIDE	169	316	486
300	2525	SCISSOR LIFT 24-26' ELECTRIC 46-68" WIDE	169	316	486
300	2580	PUSHAROUND 20-25' DC	111	251	332
300	2999	SCISSOR LIFT 30-35' ELECTRIC 46-48" WIDE	205	439	834
300	3080	PUSHAROUND 26-35' DC	117	268	432
300	4000	SCISSOR LIFT 39-40' ELECTRIC	228	479	1166
300	4080	PUSHAROUND 36-48' DC	216	438	1161
300	5050	SCISSOR LIFT 50-59' IC 4WD	332	659	1744
BOOM LIFTS					
310	3050	BOOM 30-33' ARTICULATING DC	228	565	1602
310	3450	BOOM 34-39' ARTICULATING DC	286	729	1866
310	4001	BOOM 40-50' ARTICULATING	308	675	1802
310	4003	BOOM 45-50' TELESCOPIC 4WD	270	603	1724
310	4026	BOOM 37-44' TELESCOPIC	270	603	1724
310	4050	BOOM 40-46' ARTICULATING ELEC NARROW	245	601	1686
310	4051	BOOM 43-46' ARTICULATING ELECTRIC	245	601	1686
310	6001	BOOM 60-64' ARTICULATING	373	954	2198
310	6026	BOOM 60-64' TELESCOPIC	342	883	2143
310	6526	BOOM 65-70' TELESCOPIC	393	1048	2607
310	8001	BOOM 76-80' ARTICULATING	662	1788	4514
310	8026	BOOM 76-80' TELESCOPIC	648	1749	4431
310	8526	BOOM 84-86' TELESCOPIC 4WD	697	1837	5130
310	9826	BOOM 120' TELESCOPIC 4WD	1284	3491	8155
310	9830	BOOM 135' TELESCOPIC WITH JIB 4WD	1749	4023	8817
LIGHTING EQUIPMENT					
320	4000	LIGHT TOWER TOWABLE SMALL	87	237	480
320	4010	LIGHT TOWER WITH 16-20KW GENERATOR	78	216	449
MATERIAL HANDLING EQUIPMENT					
330	9719	LIFT MATERIAL 16-18' 400-650# MANUAL	85	190	459
330	9727	LIFT MATERIAL 24-25' 400-650# MANUAL	94	221	466
PRESS WASHERS & PAINT EQUIP					
350	1	PRESSURE WASHER 4000 PSI	76	205	380
350	3050	PRESSURE WASHER HOT GAS	117	309	484
350	3200	PRESSURE WASHER GAS 3000 PSI	53	151	348
350	3220	PRESSURE WASHER GAS 3500 PSI	76	205	380
N/A					
520	9040	PUMP 3" AOD - ALUMINUM	70	221	408

National Accounts

Cat	Class	Description	Day	Week	4Week
520	9130	PUMP 2" DEWATERING	55	153	305
520	9140	PUMP 3" DEWATERING	67	231	427
520	9145	PUMP 3" DIAPHRAGM	74	231	427
520	9146	PUMP 3" DIAPHRAGM ELECTRIC	74	231	427
520	9230	PUMP 2" TRASH	48	153	305
520	9240	PUMP 3" TRASH	61	135	427
520	9830	PUMP 2" ELECTRIC SUBMERSIBLE	48	153	305
520	9840	PUMP 3" ELECTRIC SUBMERSIBLE	74	231	427
N/A					
534	2020	HOSE 2X20 PVC SUCTION - CAMLOCK	15	59	95
534	6620	HOSE 2X50 LAYFLAT DISCHARGE - CAMLOCK	6	24	61
N/A					
535	2020	HOSE 3X20 PVC SUCTION - CAMLOCK	14	31	95
535	6620	HOSE 3X50 LAYFLAT DISCHARGE - CAMLOCK	6	24	61
SAFETY/TRAFFIC EQUIPMENT					
550	8030	GAS DETECTOR 4 GAS	86	317	951
SIGN, 0-9.99 SQFT NR/EG/SEG					
551	2055	MESSAGE BOARD SOLAR	240	821	2054
SAWS & ACCESSORIES					
625	7805	SAW CUT-OFF 14" GAS	61	153	305
625	9480	DIAMOND BLADE 14"	31	55	104
625	9570	BLADE DIAMOND CONCRETE 14" DRY	68	246	500
SWEEPERS					
750	1105	SWEEPER RIDE ON 8' WINDROW THREE WHEEL	201	427	1219
SKID STEER LOADERS					
903	45	SKID STEER LOADER 1351-1699#	178	480	1274
903	71	SKID STEER LOADER 1700-1899#	183	488	1335
903	80	SKID STEER LOADER 1900-2000#	183	488	1335
903	90	SKID STEER LOADER 2001-2599#	212	665	1576
903	522	SKID STEER TRACK LOADER WALKBEHIND	206	719	1233
903	561	SKID STEER TRACK LOADER 1300-1699#	206	610	1643
903	570	SKID STEER TRACK LOADER 1700-1999#	336	911	2130
903	585	SKID STEER TRACK LOADER 2400-2999#	366	975	2133
903	5060	SKID STEER BUCKET 60" TOOTH	47	137	424
903	5066	SKID STEER BUCKET 66" SMOOTH	47	137	424
903	5067	SKID STEER BUCKET 66" TOOTH	47	137	424
903	5355	SKID STEER/MINI EXCAVATOR BREAKER	92	275	731
903	5410	SKID STEER FORK ATTACHMENT	43	109	183
903	5440	SKID STEER ANGLE BROOM	74	231	610
903	5500	SKID STEER AUGER POWER UNIT	77	244	524
903	5612	SKID STEER AUGER BIT 12"	77	244	524
EXCAVATORS					
905	1015	EXCAVATOR 25000-29999#	427	1341	3901
MINI EXCAVATORS					
907	35	MINI EXCAVATOR 3000-3999#	196	580	1341
907	62	MINI EXCAVATOR 6000-6799#	231	669	1459

## National Accounts

Cat	Class	Description	Day	Week	4Week
907	75	MINI EXCAVATOR 7400-9199#	301	850	1931
907	111	MINI EXCAVATOR 10000-13999# REDUCED TAIL	336	1342	4026
907	525	MINI EXCAVATOR BUCKET 12"	35	68	137
907	535	MINI EXCAVATOR BUCKET 18"	35	68	137
907	545	MINI EXCAVATOR BUCKET 24"	35	68	137
907	555	MINI EXCAVATOR BUCKET 36"	35	68	137
<b>TRAILERS &amp; CONTAINERS</b>					
920	1920	CONTAINER SHIPPING 8' X 8' X 20'	61	153	305
920	3020	TRAILER EQUIPMENT TANDEM AXLE	68	275	411
920	7005	TRAILER WATER TANK 500 GALLON	82	244	596
<b>TRENCHERS</b>					
930	1101	TRENCHER 11-15HP WALKBEHIND TIRE	92	275	731
<b>TRENCH SHORING TOOLS AND ACC</b>					
940	6950	SHORING PUMP HAND	9	38	115
<b>TRENCH BOXES STEEL</b>					
941	9315	TRENCH BOX 10' X 12'	212	636	1910
941	9321	TRENCH BOX 10' X 16' WITH 4" WALL	222	665	1987
941	9328	TRENCH BOX 10' X 24' WITH 6" WALL	288	1007	3021
<b>TRENCH BOXES ALUMINUM</b>					
942	1200	KIT:3.5' SHORE 40-64" CYL	14	52	141
<b>N/A</b>					
944	9914	ROAD PLATE 4' X 8'	15	101	360
944	9920	ROAD PLATE 5' X 8'	12	79	225
944	9924	ROAD PLATE 5' X 10'	14	79	225
944	9930	ROAD PLATE 6' X 10'	16	92	347
944	9932	ROAD PLATE 6' X 12'	16	92	347
944	9942	ROAD PLATE 8' X 10'	20	122	366
944	9943	ROAD PLATE 8' X 12'	22	92	347
944	9946	ROAD PLATE 8' X 20'	39	170	427
<b>TRUCKS DUMP AND FLATBED</b>					
952	7050	TRUCK DUMP 5 YARD CLASS C	178	547	1761
<b>TRUCKS WATER</b>					
953	2225	TRUCK WATER 2000-2999 GALLON	207	777	1814
<b>N/A</b>					
955	1120	UTILITY VEHICLE 4X4 GAS 2 SEAT	74	231	427
<b>WELDERS</b>					
975	1350	WELDER ARC 300 AMP GAS/DIESEL TOWABLE	98	268	726

## National Accounts

Cat	Class	Description
<b>AIR COMPRESSORS</b>		
100	3185	COMPRESSOR 175-195 CFM
100	3275	COMPRESSOR 350-450 CFM 150 PSI
100	3350	COMPRESSOR 350-395 CFM DIESEL
<b>AIR TOOLS &amp; ACCESSORIES</b>		
110	1010	BLOW PIPE AIR WITH SHUTOFF VALVE
110	1100	CHIPPING GUN AIR 15#
110	1550	BREAKER PAVEMENT AIR 30#
110	1570	BREAKER PAVEMENT AIR 60#
110	1640	RIVET BUSTER AIR
110	2400	AIR HOSE 3/4" X 50'
<b>COMPACTION EQUIPMENT</b>		
150	2400	RAMMER MEDIUM 2400-2800 LBS/BLOW
150	2600	RAMMER LARGE 2900-3600 LBS/BLOW
150	3100	VIB PLATE MEDIUM 3400# IMPACT
150	3810	VIB PLATE REVERSIBLE XL 11000# IMPACT
150	3820	VIB PLATE REVERSIBLE XL 13000# IMPACT
<b>COMPACTION, ROLLERS</b>		
160	2405	ROLLER 40-49" VIB SINGLE DRUM SMOOTH
160	2420	ROLLER 50-56" VIB SINGLE DRUM PAD
160	2425	ROLLER 50-56" VIB SINGLE DRUM SMOOTH
160	2440	ROLLER 61-70" VIB SINGLE DRUM PAD
160	2445	ROLLER 61-70" VIB SINGLE DRUM SMOOTH
160	2450	ROLLER 80-89" VIB SINGLE DRUM PAD
160	2455	ROLLER 80-89" VIB SINGLE DRUM SMOOTH
<b>CONCRETE EQUIPMENT</b>		
180	910	WHEELBARROW 6 CUBIC FEET
<b>ELECTRIC TOOLS</b>		
190	6375	ROTARY HAMMER LARGE SDS MAX ELECTRIC
190	6525	ROTARY HAMMER XL SDS MAX ELECTRIC
<b>FORKLIFTS</b>		
230	5150	FORK EXTENSIONS UNDER 6'
230	5260	FORKLIFT CRANE BOOM
230	5270	TRUSS BOOM 12' ATTACHMENT
230	5274	TRUSS BOOM 2000# CAPACITY 12' LONG

Minimum	Day	Week	4Week
63	63	247	690
104	104	414	1093
104	104	414	1093
17	17	33	64
21	21	76	207
21	21	76	207
21	21	76	207
28	28	114	290
9	9	28	81
31	31	128	338
31	31	128	338
21	21	86	252
81	81	339	863
104	104	385	978
219	219	621	1783
259	259	805	2185
259	259	805	2185
316	316	978	2703
316	316	978	2703
374	374	1265	3910
374	374	1265	3910
17	17	82	145
54	54	201	604
54	54	163	546
13	13	36	97
38	38	102	276
38	38	102	276
101	101	201	575

FORKLIFTS INDUSTRIAL		
231	1200	FORKLIFT WHSE 5000# GAS/LP
231	1250	FORKLIFT WHSE 6000# GAS/LP
231	1253	FORKLIFT WHSE 6000# PNEUMATIC
231	1351	FORKLIFT WHSE 8000# DIESEL
231	1353	FORKLIFT WHSE 8000# PNEUMATIC
FORKLIFTS ROUGH TERRAIN		
232	2305	FORKLIFT ROUGH TERRAIN 8000# 15-22' 2WD

### National Accounts

Cat	Class	Description
FORKLIFTS REACH		
233	1025	FORKLIFT 5000# 16-20' VARIABLE REACH
233	1170	FORKLIFT VARIABLE REACH 6000# 40-49'
233	1250	FORKLIFT VARIABLE REACH 7000# 38-44'
233	1370	FORKLIFT VARIABLE REACH 8000# 40-49'
233	1470	FORKLIFT VARIABLE REACH 9000# 30-45'
233	1650	FORKLIFT VARIABLE REACH 10000# 50' & UP
GENERATORS		
240	3006	GENERATOR 3.5-3.9 KW
240	3041	GENERATOR 5.0-5.4 KW
240	3051	GENERATOR 5.5-5.9 KW
240	3056	GENERATOR 6.0-6.4 KW
240	3126	GENERATOR 15.0-17.9 KW
240	3131	GENERATOR 19-29 KVA
240	3136	GENERATOR 30-39 KVA
240	3146	GENERATOR 40-44 KVA
240	3156	GENERATOR 45-49 KVA
240	3166	GENERATOR 50-59 KVA
240	3176	GENERATOR 60-69 KVA
240	3186	GENERATOR 70-84 KVA
240	3196	GENERATOR 85-89 KVA
SCISSOR LIFTS		
300	2000	SCISSOR LIFT 19' ELECTRIC
300	2001	SCISSOR LIFT 20-21' ELECTRIC
300	2515	SCISSOR LIFT 24-26' ELECTRIC 30-36" WIDE
300	2525	SCISSOR LIFT 24-26' ELECTRIC 46-68" WIDE
300	2551	SCISSOR LIFT 25-27' IC 4WD
300	2999	SCISSOR LIFT 30-35' ELECTRIC 46-48" WIDE
300	3000	SCISSOR LIFT 30-33' ELECTRIC 68" WIDE
300	3051	SCISSOR LIFT 30-35' IC 4WD
300	4000	SCISSOR LIFT 39-40' ELECTRIC
300	4051	SCISSOR LIFT 36-49' IC 4WD
300	5050	SCISSOR LIFT 50-59' IC 4WD
BOOM LIFTS		
310	3001	BOOM 30-39' ARTICULATING IC 4WD
310	3050	BOOM 30-33' ARTICULATING DC
310	3450	BOOM 34-39' ARTICULATING DC
310	4001	BOOM 40-50' ARTICULATING
310	4003	BOOM 45-50' TELESCOPIC 4WD
310	4026	BOOM 37-44' TELESCOPIC
310	4051	BOOM 43-46' ARTICULATING ELECTRIC
310	6001	BOOM 60-64' ARTICULATING
310	6005	BOOM 60-64' ARTICULATING ELECTRIC
310	6026	BOOM 60-64' TELESCOPIC
310	6526	BOOM 65-70' TELESCOPIC
LIGHTING EQUIPMENT		

### National Accounts

Cat	Class	Description
320	1100	LIGHT STAND 1 X 1000W QUARTZ
320	4000	LIGHT TOWER TOWABLE SMALL
PRESS WASHERS & PAINT EQUIP		
350	1	PRESSURE WASHER 4000 PSI
350	3025	PRESSURE WASHER HOT ELECTRIC
350	3050	PRESSURE WASHER HOT GAS
350	3105	PRESSURE WASHER ELECTRIC 1000 PSI
350	3175	PRESSURE WASHER GAS 2500 PSI
350	3200	PRESSURE WASHER GAS 3000 PSI
350	3220	PRESSURE WASHER GAS 3500 PSI
350	3224	PRESSURE WASHER 5000 PSI
350	3250	PRESSURE WASHER HOSE 50' EXTENSION
PLUMBING & PIPE EQUIPMENT		
500	3072	SNAKE POWER 1/2" X 50' ELECTRIC
N/A		
520	1003	PUMP 4" VAC ASSIST - DIESEL
520	2003	PUMP 6" VAC ASSIST - DIESEL
520	9130	PUMP 2" DEWATERING
520	9140	PUMP 3" DEWATERING
520	9145	PUMP 3" DIAPHRAGM

167	167	431	1093
167	167	454	1121
167	167	454	1121
236	236	633	1495
236	236	633	1495
259	259	920	2645

Minimum	Day	Week	4Week
288	288	834	2185
316	316	920	2645
345	345	1035	2875
374	374	1093	2990
403	403	1179	3450
460	460	1208	3738
35	35	137	409
38	38	152	455
41	41	167	501
46	46	184	551
97	97	386	1159
121	121	483	1449
138	138	552	1518
143	143	570	1710
159	159	634	1900
186	186	745	2236
196	196	782	2347
206	206	821	2464
216	216	863	2588
109	109	224	460
109	109	224	460
144	144	288	633
144	144	288	633
173	173	403	949
173	173	403	949
190	190	431	1064
213	213	489	1265
259	259	575	1495
259	259	575	1495
316	316	834	2013
247	247	633	1725
230	230	575	1553
230	230	575	1553
259	259	765	1840
259	259	765	1840
259	259	765	1840
259	259	765	1840
345	345	1150	2760
345	345	1150	2760
345	345	1150	2760
345	345	1150	2760

Minimum	Day	Week	4Week
55	55	201	223
109	109	259	661
76	76	304	759
133	133	373	1012
138	138	465	1150
31	31	121	317
60	60	230	580
55	55	221	662
69	69	313	759
129	129	396	1288
17	17	49	136
63	63	263	745
132	132	530	1589
166	166	662	1987
24	24	97	290
28	28	110	331
32	32	110	299

520	9230	PUMP 2" TRASH
520	9240	PUMP 3" TRASH
520	9250	PUMP 4" TRASH
520	9830	PUMP 2" ELECTRIC SUBMERSIBLE
520	9840	PUMP 3" ELECTRIC SUBMERSIBLE
N/A		
534	2020	HOSE 2X20 PVC SUCTION - CAMLOCK
534	6620	HOSE 2X50 LAYFLAT DISCHARGE - CAMLOCK
N/A		
535	2020	HOSE 3X20 PVC SUCTION - CAMLOCK
535	6620	HOSE 3X50 LAYFLAT DISCHARGE - CAMLOCK
N/A		
536	2020	HOSE 4X20 PVC SUCTION - CAMLOCK
536	6620	HOSE 4X50 LAYFLAT DISCHARGE - CAMLOCK
536	6820	HOSE 4X50 RUBBER DISCHARGE - CAMLOCK
N/A		
537	2020	HOSE 6X20 PVC SUCTION - CAMLOCK
537	6620	HOSE 6X50 LAYFLAT DISCHARGE - CAMLOCK
PIPE		
545	9710	PUMP 3/4" SUBMERSIBLE
545	9820	PUMP HYDROSTATIC TEST 550 PSI GAS
SAWS & ACCESSORIES		

24	24	97	290
32	32	110	299
45	45	179	500
14	14	55	166
24	24	97	290
2	2	2	3
5	5	18	37
2	2	2	6
7	7	28	62
3	3	3	7
10	10	37	83
10	10	37	83
9	9	18	28
46	46	138	331
17	17	49	124
70	70	206	653

**National Accounts**

Cat	Class	Description
625	4300	CHAINSAW 16"-17"
625	7750	SAW CUT-OFF 12" GAS
625	7805	SAW CUT-OFF 14" GAS
625	7875	SAW CUT-OFF CART
SURVEYING EQUIPMENT		
700	1250	LEVEL TRANSIT
700	2000	LASER SELF LEVELING CONSTRUCTION
SWEEPERS		
750	1020	SWEEPER HAND HELD GAS POWER
BACKHOES		
902	1100	BACKHOE/LOADER 60-90HP 4WD EXT-A-HOE
SKID STEER LOADERS		
903	15	SKID STEER LOADER UNDER 851#
903	45	SKID STEER LOADER 1351-1699#
903	71	SKID STEER LOADER 1700-1899#
903	80	SKID STEER LOADER 1900-2000#
903	90	SKID STEER LOADER 2001-2599#
903	105	SKID STEER LOADER 2600# AND OVER
903	545	SKID STEER TRACK LOADER 851-1299#
903	561	SKID STEER TRACK LOADER 1300-1699#
903	580	SKID STEER TRACK LOADER 2000-2399#
903	585	SKID STEER TRACK LOADER 2400-2999#
903	5355	SKID STEER/MINI EXCAVATOR BREAKER
903	5410	SKID STEER FORK ATTACHMENT
903	5435	SKID STEER PICKUP BROOM WITH DUMP BUCKET
903	5440	SKID STEER ANGLE BROOM
903	5500	SKID STEER AUGER POWER UNIT
LOADERS		
904	1115	LOADER LANDSCAPE 4WD 60HP
904	2010	LOADER WHEEL 1.0-1.4 CUBIC YARD
904	2020	LOADER WHEEL 2.0-2.4 CUBIC YARD
904	2025	LOADER WHEEL 2.5-2.9 CUBIC YARD
MINI EXCAVATORS		
907	35	MINI EXCAVATOR 3000-3999#
907	58	MINI EXCAVATOR 5000-5999#
907	62	MINI EXCAVATOR 6000-6799#
907	75	MINI EXCAVATOR 7400-9199#
907	100	MINI EXCAVATOR 10000-14000#
907	114	MINI EXCAVATOR 15000-19999#
907	570	MINI EXCAVATOR BREAKER
TRAILERS & CONTAINERS		
920	1920	CONTAINER SHIPPING 8' X 8' X 20'
920	5290	CONTAINER STORAGE 20'
920	7005	TRAILER WATER TANK 500 GALLON

Minimum	Day	Week	4Week
30	30	95	244
24	24	100	293
28	28	114	335
9	9	28	64
58	58	263	612
75	75	288	859
32	32	120	368
288	288	978	2760
121	121	466	1380
144	144	495	1472
155	155	554	1656
173	173	615	1840
216	216	727	2162
201	201	805	2415
190	190	776	2300
217	217	869	2588
242	242	966	2875
276	276	1104	3278
74	74	221	644
23	23	92	288
166	166	557	1656
147	147	497	1472
124	124	373	1104
242	242	840	2443
359	359	1076	3220
616	616	1611	4264
702	702	1895	4738
138	138	552	1610
163	163	629	1863
182	182	699	2070
201	201	776	2300
337	337	1304	3726
374	374	1449	4140
156	156	465	1380
173	173	173	173
173	173	173	173
98	98	201	518

EXHIBIT I  
PREVAILING WAGE RATES



**DENVER**  
THE MILE HIGH CITY

**Office of Human Resources**  
Denver's Human Resource Agency

201 W. Colfax, Department 412  
Denver, CO 80202  
p: 720.913.5751  
f: 720.913.5720  
[www.denvergov.org/csa](http://www.denvergov.org/csa)

TO: All Users of the City of Denver Prevailing Wage Schedules  
FROM: Alena Duran, Associate Human Resource Professional  
DATE: June 6, 2016  
SUBJECT: Latest Change to Prevailing Wage Schedules

Please be advised, prevailing wage rates for some building, heavy, and highway construction trades have not been updated by the United States Department of Labor (DOL) since March 1, 2002. The Career Service Board, in their meeting held on April 21, 2011, approved the use of the attached supplemental wage rates until prevailing wage rates for these classifications of work are again published by the United States Department of Labor in accordance with the Davis-Bacon Act.

The effective date for this publication will be **Friday June 3, 2016** and applies to the City and County of Denver for **HEAVY CONSTRUCTION PROJECTS** in accordance with the Denver Revised Municipal Code, Section 20-76(c).

General Wage Decision No. CO160012  
Superseded General Decision No. CO20150012  
Modification No. 7  
Publication Date: 6/3/2016  
(8 pages)

Unless otherwise specified in this document, apprentices shall be permitted only if they are employed pursuant to, and individually registered in, a bona fide apprenticeship program registered with the U.S. Department of Labor (DOL). The employer and the individual apprentice must be registered in a program, which has received prior approval, by the DOL. Any employer, who employs an apprentice and is found to be in violation of this provision, shall be required to pay said apprentice the full journeyman scale.

For questions please call (720) 913-5018

Attachments as listed above.

General Decision Number: CO160012 06/03/2016 CO12

Superseded General Decision Number: CO20150012

State: Colorado

Construction Type: Heavy

Counties: Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, El Paso, Jefferson, Larimer, Mesa, Pueblo and Weld Counties in Colorado.

HEAVY CONSTRUCTION PROJECTS

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.15 for calendar year 2016 applies to all contracts subject to the Davis-Bacon Act for which the solicitation was issued on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.15 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2016. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/08/2016
1	01/15/2016
2	01/22/2016
3	03/11/2016
4	03/18/2016
5	03/25/2016
6	05/06/2016
7	06/03/2016

ASBE0028-001 10/01/2014

	Rates	Fringes
Asbestos Workers/Insulator (Includes application of all insulating materials, protective coverings, coatings and finishings to all types of mechanical systems).....	\$ 28.83	13.53

BRCO0007-004 01/01/2016

ADAMS, ARAPAHOE, BOULDER, BROOMFIELD, DENVER, DOUGLAS AND JEFFERSON COUNTIES

	Rates	Fringes
BRICKLAYER.....	\$ 26.01	7.71

BRCO0007-006 05/01/2015

EL PASO AND PUEBLO COUNTIES

	Rates	Fringes
BRICKLAYER.....	\$ 24.44	8.90

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 ELEC0012-004 09/01/2015

PUEBLO COUNTY

	Rates	Fringes
ELECTRICIAN		
Electrical contract over		
\$1,000,000.....	\$ 27.35	11.00+3%
Electrical contract under		
\$1,000,000.....	\$ 24.85	11.00+3%

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 \* ELEC0068-001 06/01/2016

ADAMS, ARAPAHOE, BOULDER, BROOMFIELD, DENVER, DOUGLAS,  
 JEFFERSON, LARIMER, AND WELD COUNTIES

	Rates	Fringes
ELECTRICIAN.....	\$ 33.85	13.99

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 ELEC0111-001 01/01/2016

	Rates	Fringes
Line Construction:		
Groundman.....	\$ 18.79	22.25%+\$5.45
Line Equipment Operator.....	\$ 29.40	22.25%+\$5.45
Lineman and Welder.....	\$ 42.14	25.25%+\$5.45

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 ELEC0113-002 06/01/2015

EL PASO COUNTY

	Rates	Fringes
ELECTRICIAN.....	\$ 30.00	14.95

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 ELEC0969-002 06/01/2015

MESA COUNTY

	Rates	Fringes
ELECTRICIAN.....	\$ 24.00	7.92

-----  
 ENGI0009-001 10/23/2013

	Rates	Fringes
Power equipment operators:		
Blade: Finish.....	\$ 25.04	9.15
Blade: Rough.....	\$ 24.73	9.15
Bulldozer.....	\$ 24.73	9.15
Cranes: 50 tons and under..	\$ 24.88	9.15

Cranes: 51 to 90 tons.....	\$ 25.04	9.15
Cranes: 91 to 140 tons.....	\$ 25.19	9.15
Cranes: 141 tons and over...	\$ 25.97	9.15
Forklift.....	\$ 24.37	9.15
Mechanic.....	\$ 24.88	9.15
Oiler.....	\$ 24.01	9.15
Scraper: Single bowl under 40 cubic yards.....	\$ 24.88	9.15
Scraper: Single bowl, including pups 40 cubic yards and over and tandem bowls.....	\$ 25.04	9.15
Trackhoe.....	\$ 24.88	9.15

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IRON0024-003 11/01/2013

	Rates	Fringes
Ironworkers:.....	\$ 24.80	18.77
Structural		

-----  
LABO0086-001 05/01/2009

	Rates	Fringes
Laborers:		
Pipelayer.....	\$ 18.68	6.78

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\* PLUM0003-005 06/01/2016

ADAMS, ARAPAHOE, BOULDER, BROOMFIELD, DENVER, DOUGLAS,  
JEFFERSON, LARIMER AND WELD COUNTIES

	Rates	Fringes
PLUMBER.....	\$ 38.43	15.19

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PLUM0058-002 07/01/2015

EL PASO COUNTY

	Rates	Fringes
Plumbers and Pipefitters.....	\$ 34.30	14.38

-----  
PLUM0058-008 07/01/2015

PUEBLO COUNTY

	Rates	Fringes
Plumbers and Pipefitters.....	\$ 34.30	14.38

-----  
PLUM0145-002 07/01/2013

MESA COUNTY

	Rates	Fringes
Plumbers and Pipefitters.....	\$ 32.67	11.55

-----  
PLUM0208-004 06/01/2015

ADAMS, ARAPAHOE, BOULDER, BROOMFIELD, DENVER, DOUGLAS,  
JEFFERSON, LARIMER AND WELD COUNTIES

	Rates	Fringes
PIPEFITTER.....	\$ 35.35	13.39
-----		
SHEE0009-002 07/01/2015		
	Rates	Fringes
Sheet metal worker.....	\$ 32.85	14.63
-----		
TEAM0455-002 07/01/2015		
	Rates	Fringes
Truck drivers:		
Pickup.....	\$ 19.66	4.02
Tandem/Semi and Water.....	\$ 20.29	4.02
-----		
SUCO2001-006 12/20/2001		
	Rates	Fringes
BOILERMAKER.....	\$ 17.60	
Carpenters:		
Form Building and Setting....	\$ 16.97	2.74
All Other Work.....	\$ 15.14	3.37
Cement Mason/Concrete Finisher....	\$ 17.31	2.85
IRONWORKER, REINFORCING.....	\$ 18.83	3.90
Laborers:		
Common.....	\$ 11.22	2.92
Flagger.....	\$ 8.91	3.80
Landscape.....	\$ 12.56	3.21
Painters:		
Brush, Roller & Spray.....	\$ 15.81	3.26
Power equipment operators:		
Backhoe.....	\$ 16.36	2.48
Front End Loader.....	\$ 17.24	3.23
Skid Loader.....	\$ 15.37	4.41
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WELDERS - Receive rate prescribed for craft performing  
operation to which welding is incidental.

**Office of Human Resources**

**Supplemental rates  
(Specific to the Denver Projects)  
(Supp #74, Date: 02-03-2012)**

<b>Classification</b>		<b>Base</b>	<b>Fringe</b>
Millwrights		\$28.00	\$10.00
Line Construction:			
	Lineman, Gas Fitter/Welder	\$36.88	\$9.55
	Line Eq Operator/Line Truck Crew	\$25.74	\$8.09
Power Equipment Operators (Tunnels Above and Below Ground, shafts and raises):			
	GROUP 1	\$25.12	\$10.81
	GROUP 2	\$25.47	\$10.85
	GROUP 3	\$25.57	\$10.86
	GROUP 4	\$25.82	\$10.88
	GROUP 5	\$25.97	\$10.90
	GROUP 6	\$26.12	\$10.91
	GROUP 7	\$26.37	\$10.94
Power Equipment Operators:			
	GROUP 1	\$22.97	\$10.60
	GROUP 2	\$23.32	\$10.63
	GROUP 3	\$23.67	\$10.67
	GROUP 4	\$23.82	\$10.68
	GROUP 5	\$23.97	\$10.70
	GROUP 6	\$24.12	\$10.71
	GROUP 7	\$24.88	\$10.79
Ironworkers (Ornamental)		\$24.80	\$10.03
Laborers:			
	GROUP 1	\$17.68	\$8.22
	GROUP 2	\$18.18	\$8.27
	GROUP 3	\$21.59	\$8.61
Laborers: (Tunnel)			
	GROUP 1	\$18.53	\$8.30
	GROUP 2	\$18.63	\$8.31
	GROUP 3	\$19.73	\$8.42
	GROUP 4	\$21.59	\$8.61
	GROUP 5	\$19.68	\$8.42
Laborers (Removal of Asbestos)		\$21.03	\$8.55
Truck Drivers:			
	GROUP 1	\$18.42	\$10.00
	GROUP 2	\$19.14	\$10.07
	GROUP 3	\$19.48	\$10.11
	GROUP 4	\$20.01	\$10.16
	GROUP 5	\$20.66	\$10.23
	GROUP 6	\$21.46	\$10.31

POWER EQUIPMENT OPERATOR CLASSIFICATIONS  
(TUNNELS ABOVE AND BELOW GROUND, SHAFTS, AND RAISES):

GROUP 1 - Brakeman

GROUP 2 - Motorman

GROUP 3 - Compressor

GROUP 4 - Air Tractors; Grout Machine; Gunnite Machine; Jumbo Form

GROUP 5 - Concrete Placement Pumps; Mucking Machines and Front End Loaders, Underground, Slusher; Mine Hoist Operator; Mechanic

GROUP 6 - Mechanic Welder

GROUP 7 - Mole

*NOTE: Any equipment listed below being used in tunnel work, below or above ground shall be paid not less than \$2.00 per hour above the listed wage rates.*

POWER EQUIPMENT OPERATOR CLASSIFICATIONS:

GROUP 1 - Air compressor, brakeman, drill operator - smaller than Watson 2500 and similar, operators of 5 or more light plants, welding machines, generators, single unit conveyor, pumps, vacuum well point system, tractor, under 70 hp with or without attachments compressors, 360 C.F.M. or less.

GROUP 2 - Conveyor, handling **building** materials, ditch witch and similar trenching machine, haulage motor man, pugmill, portable screening plant with or without a spray bar, screening plants, with classifier.

GROUP 3 - Asphalt screed, asphalt plant, backfiller, bituminous spreader or laydown machine; cableway signalman, caisson drill, William MF, similar or larger; C.M.I. and similar, concrete batching plants, concrete finish machine, concrete gang saw on concrete paving, concrete mixer, less than 1 yd., concrete placement pumps, under 8 inches, distributors, bituminous surfaces dozer, drill, diamond or core, drill rigs, rotary, churn, or cable tool, elevating graders, elevator operator, equipment, lubricating and service engineer, grout machine, gunnite machine, hoist, 1 drum, horizontal directional drill operator, sandblasting machine, single unit portable crusher, with or without washer, tie tamper, wheel mounted, tractor, 70 hp and over with or without attachments, trenching machine operator, winch on truck.

GROUP 4 - Cable operated power shovels, draglines, articulated truck operator, clamshells, and backhoes, 5 cubic yards and under, concrete mixer over 1 cubic yard, concrete paver 34E or similar, concrete placement pumps, 8 inches and over, grade checker, hoist, 2 drums, hydraulic backhoe, 3/4 yds and over, loader, over 6 cubic yards, mechanic, mixer mobile, multiple unit portable crusher, with or without washer; pile driver, tractor with side boom, roto- mill and similar, welder.

GROUP 5 - Cable operated power shovels, draglines, clamshells and backhoes over 5 cubic yards, caisson drill Watson 2500 similar or larger, hoist 3 drum or more, mechanic – welder (heavy-duty).

GROUP 6 - Cableway, derrick, quad nine push unit, wheel excavator, belt or elevating loader

GROUP 7 - tower cranes all types

LABORER CLASSIFICATIONS:

GROUP 1 - Janitors; Yardmen

GROUP 2 –Erosion Control, Dowel Bars; Fence Erectors; Gabion Basket and Reno mattresses; Signaling, Metal Mesh; Stake Caser; Traffic Control Devices; Tie Bars and Chairs in Concrete; Paving; Waterproofing Concrete; Air, Gas, Hydraulic Tools and Electrical Tool Operators; Barco Hammers; Cutting Torches; drill; diamond and core drills; Core, diamond, air track including but not limited to; Joy, Mustang, PR-143, 220 Gardner-**Denver**, Hydrosonic, and water blaster operator; Chuck Tender; Electric hammers; Jackhammers; Hydraulic Jacks; Tampers; Air Tampers; Automatic Concrete Power Curbing Machines; Concrete Processing Material; Concrete Tender; Operators of concrete saws on pavement (other than gangsaws); Power operated Concrete Buggies; Hot Asphalt

Labor; Asphalt Curb Machines; Paving Breakers; Transverse Concrete Conveyor Operator; Cofferdams; Boxtenders; Caisson 8' to 12'; Caisson Over 12'; Jackhammer Operators in Caissons over 12'; Labor applicable to Pipe coating or Wrapping; Pipe Wrappers, Plant and Yard; Relining Pipe; Hydroliner (a plastic may be used to waterproof); Pipelayer on Underground Bores; Sewer, Water, Gas, Oil Conduit; Enamalers on Pipe, inside and out, Mechanical Grouters; Monitors; Jeep Holiday Detector Men; Pump Operators; Rakers; Vibrators; Hydro- broom, Mixer Man; Gunnite Nozzlemen; Shotcrete Operator; and chain saws, gas and electric; Sand Blaster; Licensed Powdermen; Powdermen and Blaster; Siphons; Signalmen; Dumpman/spotter; Grade Checker.

GROUP 3 - Plug and galleys in dams; Scalars; any work on or off Bridges 40' above the ground performed by Laborers working from a Bos'n Chair, Swing Stage, Life Belt, or Block and Tackle as a safety requirement.

### TUNNEL LABORER CLASSIFICATIONS:

GROUP 1 - Outside Laborer - Above ground

GROUP 2 - Minimum Tunnel Laborer, Dry Houseman

GROUP 3 - Cable or Hose Tenders, Chuck Tenders, Concrete Laborers, Dumpmen, Whirley Pump Operators

GROUP 4 - Tenders on Shotcrete, Guniting and Sand Blasting; Tenders, core and Diamond Drills; Pot Tenders

GROUP 5 - Collapsible Form Movers and Setters; Miners; Machine Men and Bit Grinders; Nippers; Powdermen and Blasters; Reinforcing Steel Setters; Timbermen (steel or wood tunnel support, including the placement of sheeting when required); and all Cutting and Welding that is incidental to the Miner's work; Tunnel Liner Plate Setters; Vibrator Men, Internal and External; Unloading, stopping and starting of Moran Agitator Cars; Diamond and Core Drill Operators; Shotcrete operator; Gunnite Nozzlemen; Sand Blaster; Pump Concrete Placement Men.

Laborers (Removal of Asbestos) Removal or encapsulation of Asbestos Material (including removal of asbestos from mechanical systems that are going to be scraped) and work involving the removal, handling, or dealing with toxic or hazardous waste.

### TRUCK DRIVER CLASSIFICATIONS:

GROUP 1 - Sweeper Truck, Flat Rack Single Axle and Manhaul, Shuttle Truck or Bus.

GROUP 2 - Dump Truck Driver to and including 6 cubic yards, Dump Truck Driver over 6 cubic yards to and including 14 cubic yards, Straddle Truck Driver, Liquid and Bulk Tankers Single Axle, Euclid Electric or Similar, Multipurpose Truck Specialty and Hoisting.

GROUP 3 - Truck Driver Snow Plow.

GROUP 4 - Cement Mixer Agitator Truck over 10 cubic yards to and including 15 cubic yards.

WELDERS: Receive rate prescribed for craft performing operation to which welding is incidental.



**DENVER**  
THE MILE HIGH CITY

**Career Service Authority**

Denver's Human Resource Agency

201 W. Colfax, Department 412

Denver, CO 80202

p: 720.913.5751

f: 720.913.5720

[www.denvergov.org/csa](http://www.denvergov.org/csa)

TO: All Users of the City of Denver Prevailing Wage Schedules

FROM: Seth Duhon-Thornton Staff HR Professional

DATE: Tuesday, January 26, 2016

SUBJECT: Latest Change to Prevailing Wage Schedules

Please be advised, prevailing wage rates for some building, heavy, and highway construction trades have not been updated by the United States Department of Labor (DOL) since March 1, 2002. The Career Service Authority Board, in their meeting held on April 21, 2011, approved the use of the attached supplemental wage rates until prevailing wage rates for these classifications of work are again published by the United States Department of Labor in accordance with the Davis-Bacon Act.

The effective date for this publication is **Friday January 8, 2016** and applies to the City and County of Denver for **HIGHWAY CONSTRUCTION PROJECTS** in accordance with the Denver Revised Municipal Code, Section 20-76(c).

General Wage Decision No. CO160019  
Superseded General Decision No. CO20150019  
Modification No. 0  
Publication Date: 1/8/2016  
(8 pages)

Unless otherwise specified in this document, apprentices shall be permitted only if they are employed pursuant to, and individually registered in, a bona fide apprenticeship program registered with the U.S. Department of Labor (DOL). The employer and the individual apprentice must be registered in a program, which has received prior approval, by the DOL. Any employer, who employs an apprentice and is found to be in violation of this provision, shall be required to pay said apprentice the full journeyman scale.

For questions call (720) 913-5018

Attachments as listed above.



(3)-Hydraulic Backhoe (Wheel Mounted, under 3/4 yds), Hydraulic Backhoe (Backhoe/Loader combination), Drill Rig Caisson (smaller than Watson 2500 and similar), Loader (up to and including 6 cu. yd.).....\$ 24.73	9.15
(3)-Loader (under 6 cu. yd.) Denver County.....\$ 24.73	9.15
(3)-Motor Grader (blade- rough) Douglas County.....\$ 24.73	9.15
(4)-Crane (50 tons and under), Scraper (single bowl, under 40 cu. yd).....\$ 24.88	9.15
(4)-Loader (over 6 cu. yd) Denver County.....\$ 24.88	9.15
(5)-Drill Rig Caisson (Watson 2500 similar or larger), Crane (51-90 tons), Scraper (40 cu.yd and over),.....\$ 25.04	9.15
(5)-Motor Grader (blade- finish) Douglas County.....\$ 25.04	9.15
(6)-Crane (91-140 tons).....\$ 25.19	9.15

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SUCO2011-004 09/15/2011

	Rates	Fringes
CARPENTER (Excludes Form Work)....\$ 19.27		5.08
CEMENT MASON/CONCRETE FINISHER		
Denver.....\$ 20.18		5.75
Douglas.....\$ 18.75		3.00
ELECTRICIAN (Excludes Traffic Signal Installation).....\$ 35.13		6.83
FENCE ERECTOR (Excludes Link/Cyclone Fence Erection).....\$ 13.02		3.20
GUARDRAIL INSTALLER.....\$ 12.89		3.20
HIGHWAY/PARKING LOT STRIPING:Painter		
Denver.....\$ 12.62		3.21
Douglas.....\$ 13.89		3.21
IRONWORKER, REINFORCING (Excludes Guardrail Installation).....\$ 16.69		5.45
IRONWORKER, STRUCTURAL (Includes Link/Cyclone Fence Erection, Excludes Guardrail Installation).....\$ 18.22		6.01

LABORER

Asphalt Raker.....	\$ 16.29	4.25
Asphalt Shoveler.....	\$ 21.21	4.25
Asphalt Spreader.....	\$ 18.58	4.65
Common or General		
Denver.....	\$ 16.76	6.77
Douglas.....	\$ 16.29	4.25
Concrete Saw (Hand Held)....	\$ 16.29	6.14
Landscape and Irrigation....	\$ 12.26	3.16
Mason Tender-		
Cement/Concrete		
Denver.....	\$ 16.96	4.04
Douglas.....	\$ 16.29	4.25
Pipelayer		
Denver.....	\$ 13.55	2.41
Douglas.....	\$ 16.30	2.18
Traffic Control (Flagger)....	\$ 9.55	3.05
Traffic Control (Sets		
Up/Moves Barrels, Cones,		
Install Signs, Arrow		
Boards and Place		
Stationary Flags)(Excludes		
Flaggers).....	\$ 12.43	3.22
PAINTER (Spray Only).....	\$ 16.99	2.87
POWER EQUIPMENT OPERATOR:		
Asphalt Laydown		
Denver.....	\$ 22.67	8.72
Douglas.....	\$ 23.67	8.47
Asphalt Paver		
Denver.....	\$ 24.97	6.13
Douglas.....	\$ 25.44	3.50
Asphalt Roller		
Denver.....	\$ 23.13	7.55
Douglas.....	\$ 23.63	6.43
Asphalt Spreader.....	\$ 22.67	8.72
Backhoe/Trackhoe		
Douglas.....	\$ 23.82	6.00
Bobcat/Skid Loader.....	\$ 15.37	4.28
Boom.....	\$ 22.67	8.72
Broom/Sweeper		
Denver.....	\$ 22.47	8.72
Douglas.....	\$ 22.96	8.22
Bulldozer.....	\$ 26.90	5.59
Concrete Pump.....	\$ 21.60	5.21
Drill		
Denver.....	\$ 20.48	4.71
Douglas.....	\$ 20.71	2.66
Forklift.....	\$ 15.91	4.68
Grader/Blade		
Denver.....	\$ 22.67	8.72
Guardrail/Post Driver.....	\$ 16.07	4.41
Loader (Front End)		
Douglas.....	\$ 21.67	8.22
Mechanic		
Denver.....	\$ 22.89	8.72
Douglas.....	\$ 23.88	8.22
Oiler		
Denver.....	\$ 23.73	8.41

Douglas.....	\$ 24.90	7.67
Roller/Compactor (Dirt and Grade Compaction)		
Denver.....	\$ 20.30	5.51
Douglas.....	\$ 22.78	4.86
Rotomill.....	\$ 16.22	4.41
Screed		
Denver.....	\$ 22.67	8.38
Douglas.....	\$ 29.99	1.40
Tractor.....	\$ 13.13	2.95

TRAFFIC SIGNALIZATION:

Groundsman

Denver.....	\$ 17.90	3.41
Douglas.....	\$ 18.67	7.17

TRUCK DRIVER

Distributor

Denver.....	\$ 17.81	5.82
Douglas.....	\$ 16.98	5.27

Dump Truck

Denver.....	\$ 15.27	5.27
Douglas.....	\$ 16.39	5.27

Lowboy Truck.....	\$ 17.25	5.27
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Mechanic.....	\$ 26.48	3.50
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Multi-Purpose Specialty &

Hoisting Truck

Denver.....	\$ 17.49	3.17
Douglas.....	\$ 20.05	2.88

Pickup and Pilot Car

Denver.....	\$ 14.24	3.77
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Douglas.....	\$ 16.43	3.68
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Semi/Trailer Truck.....	\$ 18.39	4.13
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Truck Mounted Attenuator....	\$ 12.43	3.22
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Water Truck

Denver.....	\$ 26.27	5.27
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Douglas.....	\$ 19.46	2.58
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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

**Office of Human Resources**  
**Supplemental rates**  
**(Specific to the Denver Projects)**  
**(Supp 35, Date: 01-13-2012)**

<b><u>Classification</u></b>		<b><u>Base</u></b>	<b><u>Fringe</u></b>
Millwrights		\$28.00	\$10.00
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	Lineman, Gas Fitter/Welder	\$36.88	\$9.55
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Power Equipment Operators (Tunnels Above and Below Ground, shafts and raises):			
	GROUP 1	\$25.12	\$10.81
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	GROUP 3	\$25.57	\$10.86
	GROUP 4	\$25.82	\$10.88
	GROUP 5	\$25.97	\$10.90
	GROUP 6	\$26.12	\$10.91
	GROUP 7	\$26.37	\$10.94
Power Equipment Operators:			
	GROUP 1	\$22.97	\$10.60
	GROUP 2	\$23.32	\$10.63
	GROUP 3	\$23.67	\$10.67
	GROUP 4	\$23.82	\$10.68
	GROUP 5	\$23.97	\$10.70
	GROUP 6	\$24.12	\$10.71
	GROUP 7	\$24.88	\$10.79
Ironworkers (Ornamental)		\$24.80	\$10.03
Laborers (Removal of Asbestos)		\$21.03	\$8.55
Plumbers		\$30.19	\$13.55
Pipefitters		\$30.45	\$12.85
Truck Drivers:			
	GROUP 1	\$18.42	\$10.00
	GROUP 2	\$19.14	\$10.07
	GROUP 3	\$19.48	\$10.11
	GROUP 4	\$20.01	\$10.16
	GROUP 5	\$20.66	\$10.23
	GROUP 6	\$21.46	\$10.31

**POWER EQUIPMENT OPERATOR CLASSIFICATIONS**  
**(TUNNELS ABOVE AND BELOW GROUND, SHAFTS, AND RAISES):**

GROUP 1 - Brakeman

GROUP 2 - Motorman

GROUP 3 - Compressor

GROUP 4 - Air Tractors; Grout Machine; Gunnite Machine; Jumbo Form

GROUP 5 - Concrete Placement Pumps; Mucking Machines and Front End Loaders, Underground, Slusher; Mine Hoist Operator; Mechanic

GROUP 6 - Mechanic Welder

GROUP 7 - Mole

*NOTE: Any equipment listed below being used in tunnel work, below or above ground shall be paid not less than \$2.00 per hour above the listed wage rates.*

**POWER EQUIPMENT OPERATOR CLASSIFICATIONS:**

GROUP 1 - Air compressor, brakeman, drill operator -smaller than Watson 2500 and similar, operators of 5 or more light plants, welding machines, generators, single unit conveyor, pumps, vacuum well point system, tractor, under 70 hp with or without attachments compressors, 360 C.F.M. or less

GROUP 2 - Conveyor, handling building materials, ditch witch and similar trenching machine, forklift, haulage motor man, pugmill, portable screening plant with or without a spray bar, screening plants, with classifier, self-propelled roller, rubber-tires under 5 tons.

GROUP 3 - asphalt plant, backfiller; cableway signalman; C.M.I. and similar, concrete batching plants, concrete finish machine, concrete gang saw on concrete paving, concrete mixer, less than 1 yd., under 8 inches, distributors, bituminous surfaces dozer, drill, diamond or core, elevating graders, elevator operator, lubricating and service engineer, grout machine, gunnite machine, hoist, 1 drum, horizontal directional drill operator, hydraulic backhoes; road stabilization machine, sandblasting Machine, single unit portable crusher, with or without washer, Tie tamper, wheel mounted, trenching machine operator, winch on truck.

GROUP 4 - Cable operated power shovels, draglines, articulated truck operator, clamshells, 5 cubic yards and under, concrete mixer over 1 Cubic yard, concrete pavers 34E or similar, grade Checker, hoist, 2 drums, mechanic, mixer mobile, Portable crusher, with or without washer; tractor with sideboom, roto-M ill and similar, welder.

GROUP 5 - Cable operated power shovels, draglines, clamshells and Backhoes over 5 cubic yards, caisson drill Watson 2500 similar or larger, motor grader blade-finish, hoist 3 drum or more.

GROUP 6 - Cableway, derrick, quad nine push unit, wheel excavator, belt or elevating loader.

GROUP 7 - tower cranes all types.

**TRUCK DRIVER CLASSIFICATIONS:**

GROUP 1 - Greasemen, Servicemen and Ambulance Drivers, Battery Men, Shuttle Truck or Bus, Flat Rack Tandem Axle.

GROUP 2 - Fork Lift Driver, Straddle Truck Driver, Lumber Carrier, Liquid and Bulk Tankers Single Axle, Combination, Euclid Electric or Similar, Specialty and Hoisting, Truck Drivers Fuel Truck, Grease Truck, Combination Fuel and Grease.

GROUP 3 - Truck Driver Snow Plow, Truck Driver Dump or Type Jumbo and similar type equipment.

GROUP 4 - Cement Mixer Agitator Truck over 10 cubic yards to and including 15 cubic yards, Tire Man, Cab Operated Distributor Truck Driver.

GROUP 5 - Heavy Duty Diesel Mechanic, Body Man, Welders or Combination Men.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

**EXHIBIT J**  
**Equal Employment Opportunity Provisions**

**RULES AND REGULATIONS**  
**REGARDING**  
**EQUAL EMPLOYMENT OPPORTUNITY**

Promulgated and adopted by the Manager of Public Works pursuant to and by authority of Article III, Division 2, Chapter 28 of the Revised Municipal Code of the City and County of Denver, and for the purpose of insuring that contractors, subcontractors and suppliers soliciting and receiving compensation for contract work from or through the City and County of Denver provide equal opportunity in employment without regard to race, color, creed, sex, national origin, age, religion, marital status, political opinion or affiliation or mental or physical handicap and meet certain requirements for the hiring, training, promotion, and treatment during employment of members of ethnic groups subject to differential treatment, including persons of African descent (Black), Spanish-surnamed (Hispanic), Asian-American and American Indian Groups.

**RULE I - DEFINITIONS**

- A. "City" means the City and County of Denver.
- B. "Manager" shall mean the Manager of Public Works for the City and County of Denver.
- C. "Contract" means a contract entered into with the City and County of Denver, financed in whole or in part by local resources or funds of the City and County of Denver, for the construction of any public building or prosecution or completion of any public work.
- D. "Contractor" means the original party to a contract with the City and County of Denver, also referred to as the "general" or "prime" contractor.
- E. "Director" means the Director of the Division of Small Business Opportunity.
- F. "Subcontractor" means any person, company, association, partnership, corporation, or other entity, which assumes by subordinate agreement some or all of the obligations of the general or prime contractor.
- G. The phrase "Bidding Specifications" as used in Article III, Division 2 of Chapter 28 of the Revised Municipal Code shall include BID CONDITION, INVITATION TO BID, and NOTICE OF PROPOSAL.
- H. "Affirmative Action Program" means a set of specific and result-oriented procedures or steps to which a contractor commits himself to apply every good faith effort to employ members of ethnic minority groups, to include persons of African descent (Black), Spanish surnamed (Hispanic), Asian-American, American Indians, and persons with mental or physical handicap.
- I. "Division of Small Business Opportunity" means the City agency established pursuant to Article III, Division 1 of Chapter 28 of the Denver Revised Municipal Code.

## **RULE II - NOTICE OF HEARING**

When results of conciliation efforts are unsatisfactory to the Manager and he is informed in accordance with Article III, Division 2 of Chapter 28 of the Revised Municipal code that a contractor or subcontractor has apparently failed to meet affirmative action and equal employment opportunity requirements after a reasonable period of notice to correct deficiencies, the Manager will, prior to imposition of any sanctions, afford the general contractor a hearing in order to determine whether the contractor or his subcontractors have failed to comply with the affirmative action and equal employment opportunity requirements of Article III, Division 2 of Chapter 28 of the Revised Municipal Code or of the contract. Written notice of such hearing shall be delivered personally or sent by certified mail, return receipt requested, to the contractor and to any subcontractor involved, at least ten (10) days prior to the date scheduled for the hearing.

## **RULE III - HEARING**

- A. Contractors will appear at hearings and may be represented by counsel, and may present testimony orally and other evidence.
- B. Hearings shall be conducted by one or more hearing examiners designated as such by the Manager.
- C. The Director of the Division of Small Business Opportunity may participate in hearings as a witness.
- D. Hearings shall be held at the place specified in the notice of hearing.
- E. All oral testimony shall be given under oath or affirmation and a record of such proceedings shall be made.
- F. All hearings shall be open to the public.
- G. The hearing officer shall make recommendations to the Manager who shall make a final decision.

## **REGULATIONS**

### **REGULATION NO. 1 - ORDINANCE:**

The Rules and Regulations of the Manager shall be inserted in the bidding specifications for every contract for which bidding is required.

### **REGULATION NO. 2 - EXEMPTIONS:**

Each contract and subcontract, regardless of the dollar amount, shall be subject to affirmative action requirements unless specifically exempted in writing individually by the Manager. Exemptions apply only to "affirmative action" in equal employment opportunity, and are not to be construed as condonation in any manner of "discrimination" or "discriminatory practices" in employment because of race, color, creed, sex, age, national origin, religion, marital status, political opinion or mental or physical handicap.

### **REGULATION NO. 3 - DIRECTOR OF CONTRACT COMPLIANCE:**

The Director of the Division of Small Business Opportunity shall perform the duties assigned to such official by Article III, Division 2 Chapter 28 of the Revised Municipal Code and by the Manager. (1) The Director of the Division of Small Business Opportunity or designated representatives shall inform bidders and contractors of affirmative action procedures, programs, and goals in accordance with the Ordinance at pre-bid and pre-construction conference; (2) make regular on-site inspections; (3) supply contractors and subcontractors with report forms to be completed by them when requested, and furnished to the Director of the Division of Small Business Opportunity; and (4) review payroll records, employment records and practices of general contractors and their subcontractors and suppliers during the performance of any contract. The Director of the Division of Small Business Opportunity shall promptly report apparent affirmative action deficiencies to the Manager.

### **REGULATION NO. 4 - GOALS AND TIMETABLES:**

In general, goals and timetables should take into account anticipated vacancies and the availability of skills in the market place from which employees should be drawn. In addition, where discrimination in employment by a general contractor or any of his subcontractors is indicated, a corrective action program will take into account the need by the general contractor and his subcontractors to correct past discriminatory practices and reach goals of minority manpower utilization on a timely basis through such recruiting and advertising efforts as are necessary and appropriate.

**REGULATION NO. 5 - AWARD OF CONTRACTS:**

It shall be the responsibility of the Director of the Division of Small Business Opportunity to determine the affirmative action capability of bidders, contractors and subcontractors and to recommend to the Manager the award of contracts to those bidders, contractors and subcontractors and suppliers who demonstrate the ability and willingness to comply with the terms of their contract.

**REGULATION NO. 6 - PUBLICATION AND DUPLICATION:**

Copies of these Rules and Regulations as amended by the Manager from time to time, shall as soon as practicable and after Notice being published will be made a part of all City Contracts.

**REGULATION NO. 7 - NOTICE TO PROCEED:**

Prior to issuance of the Notice to Proceed, a sign-off will be required of the Director of the Division of Small Business Opportunity or his designee.

**REGULATION NO. 8 - CONTRACTS WITH SUBCONTRACTORS:**

To the greatest extent possible, the contractor shall make a good faith effort to contract with minority contractors, subcontractors and suppliers for services and supplies by taking affirmative actions, which include but are not limited to the following:

1. Advertise invitations for subcontractor bids in minority community news media.
2. Contact minority contractor organizations for referral of prospective subcontractors.
3. Purchase materials and supplies from minority material suppliers.

**REGULATION NO. 9 - AGENCY REFERRALS:**

It shall be no excuse that the union with which the contractor or subcontractor has an agreement providing for referral, exclusive or otherwise, failed to refer minority employees.

**REGULATION NO. 10 - CLAUSES:**

The Manager shall include the appropriate clauses in every contract and the contractor shall cause to be inserted in every subcontract the appropriate clauses:

1. APPENDIX A: City and County of Denver Equal Opportunity Clause - ALL CONTRACTS funded only with City and County of Denver monies.
2. APPENDIX B: Equal Opportunity Clause (11246) - ALL FEDERAL ASSISTED.
3. APPENDIX C: Section 3 - Assurance of Compliance - HUD ASSISTED PROJECTS.
4. APPENDIX D: Section 3 - Clause - HUD ASSISTED PROJECTS.

All amendments to the appendices shall be included by reference.

**REGULATION NO. 11 - SHOW CAUSE NOTICES:**

When the Manager has reasonable cause to believe that a contractor has violated Article III, Division 2 of Chapter 28 of the Denver Revised Municipal Code, he may issue a notice requiring the contractor to show cause, within fifteen (15) days why enforcement procedures, or other appropriate action to insure compliance, should not be instituted.

**REGULATION NO. 12 - BID CONDITIONS - AFFIRMATIVE ACTION REQUIREMENTS - EQUAL EMPLOYMENT OPPORTUNITY:**

1. APPENDIX E: The Bid Conditions - Affirmative Action Requirements - Equal Employment Opportunity as amended and published by the U.S. Department of Labor Employment Standards Administration, Office of Federal Contract Compliance, shall be inserted verbatim for bidding specification for every non-exempt contract involving the use of Federal funds.

2. APPENDIX F: The Bid Conditions - Affirmative Action Requirements - Equal Employment Opportunity as published by the Department of Public Works, City and County of Denver, shall be inserted verbatim as bidding specifications for every non-exempt contract using City funds.

**CITY AND COUNTY OF DENVER  
DEPARTMENT OF PUBLIC WORKS**

**APPENDIX A**

**CITY AND COUNTY OF DENVER EQUAL OPPORTUNITY CLAUSE -  
ALL CONTRACTS**

1. The Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, sex, age, national origin, religion, marital status, political opinion or affiliation, or mental or physical handicap. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, creed, color, sex, age, national origin, religion, marital status, political opinion or affiliation, or mental or physical handicap. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
2. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, sex, age, national origin, religion, marital status, political opinion or affiliation, or mental or physical handicap.
3. The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided, advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
4. Each Contractor will comply with all provisions of Article III, Division 2 of Chapter 28 of the Revised Municipal Code, and the rules, regulations, and relevant orders of the Manager and the Director.
5. The Contractor will furnish all information and reports required by Article III, Division 2 of Chapter 28 of the Revised Municipal Code, and by rules, regulations and orders of the Manager and Director or pursuant thereto, and will permit access to his books, records, and accounts by the Manager, Director, or their designee for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
6. In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations or orders, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further City contracts in accordance with procedures authorized in Article III, Division 2, Chapter 28 of the Revised Municipal Code, or by rules, regulations, or order of the Manager.
7. The Contractor will include Regulation 12, Paragraph 2 and the provisions of paragraphs (1) through (6) in every subcontract of purchase order unless exempted by rules, regulations, or orders of the Manager issued pursuant to Article III, Division 2, Chapter 28 of the Revised Municipal Code, so that such provisions will be binding on each subcontractor or supplier. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance.

The applicant further agrees to be bound by the above equal opportunity clauses with respect to its own employment practices when it participates in City contracts. The Contractor agrees to assist and cooperate actively with the Manager and the Director in obtaining compliance of subcontractors and suppliers with the equal opportunity clause and the rules, regulations and relevant orders of the Manager, and will furnish the Manager and the Director such information as they may require for the supervision of compliance, and will otherwise assist the Manager and Director in the discharge of the City's primary responsibility for securing

compliance. The Contractor further agrees to refrain from entering into any contract or contract modification subject to Article III, Division 2 of Chapter 28 of the Revised Municipal Code with a contractor debarred from, or who has not demonstrated eligibility for, City contracts.

The Contractor will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the Manager and Director. In addition, the Contractor agrees that failure or refusal to comply with these undertakings the Manager may take any or all of the following actions:

- A. Cancellation, termination, or suspension in whole or in part of this contract.
- B. Refrain from extending any further assistance to the applicant under the program with respect to which the failure occurred until satisfactory assurance of future compliance has been received from such applicant.
- C. Refer the case to the City Attorney for appropriate legal proceedings.

**SUBCONTRACTS:** Each prime Contractor or Subcontractor shall include the equal opportunity clause in each of its subcontracts.

**CITY AND COUNTY OF DENVER  
DEPARTMENT OF PUBLIC WORKS**

**APPENDIX F**

**AFFIRMATIVE ACTION REQUIREMENTS**

**EQUAL EMPLOYMENT OPPORTUNITY**

For All Non-Exempt Construction Contracts to Be Awarded by the  
City and County of Denver, Department of Public Works.

**NOTICE**

EACH BIDDER, CONTRACTOR OR SUBCONTRACTOR (HEREINAFTER THE CONTRACTOR) MUST FULLY COMPLY WITH THE REQUIREMENTS OF THESE BID CONDITIONS AS TO EACH CONSTRUCTION TRADE IT INTENDS TO USE ON THIS CONSTRUCTION CONTRACT, AND ALL OTHER CONSTRUCTION WORK (BOTH CITY AND NON-CITY) IN THE DENVER AREA DURING THE PERFORMANCE OF THIS CONTRACT OR SUBCONTRACT. THE CONTRACTOR COMMITS ITSELF TO THE GOALS FOR MINORITY MANPOWER UTILIZATION, AS APPLICABLE, AND ALL OTHER REQUIREMENTS, TERMS AND CONDITION OF THESE BID CONDITIONS BY SUBMITTING A PROPERLY SIGNED BID.

THE CONTRACTOR SHALL APPOINT A COMPANY EXECUTIVE TO ASSUME THE RESPONSIBILITY FOR THE IMPLEMENTATION OF THE REQUIREMENTS, TERMS AND CONDITIONS OF THESE BID CONDITIONS.

/s/ \_\_\_\_\_

Manager of Public Works  
City and County of Denver

**A. REQUIREMENTS - AN AFFIRMATIVE ACTION PLAN:**

Contractors shall be subject to the provisions and requirements of these bid conditions including the goals and timetables for minority\* and female utilization, and specific affirmative action steps set forth by the Division of Small Business Opportunity (DSBO). The contractor's commitment to the goals for minority, and female utilization as required constitutes a commitment that it will make every good faith effort to meet such goals.

**1. GOALS AND TIMETABLES:**

The goals and timetables for minority and female participation, expressed in percentage terms for the contractor's aggregate workforce in each trade are as follows:

GOALS FOR MINORITY PARTICIPATION FOR EACH TRADE	GOALS FOR FEMALE PARTICIPATION FOR EACH TRADE
From January 1, 1982 to Until Further Notice	From January 1, 1982 to Until Further Notice
<b>21.7% - 23.5%</b>	<b>6.9%</b>

The goals for minority and female utilization above are expressed in terms of hours of training and employment as a proportion of the total number of hours to be worked by the contractor's aggregate workforce, which includes all supervisory personnel, in each trade, on all projects for the City and County of Denver during the performance of its contract (i.e., The period beginning with the first day of work on the City and County of Denver funded construction contract and ending with the last day of work).

The hours of minority and female employment and training must be substantially uniform throughout the length of the contract in each trade and minorities and females must be employed evenly on each of a contractor's projects. Therefore, the transfer of minority or female employees from contractor to contractor or from project to project for the purpose of meeting the contractor's goals shall be a violation of these Bid Conditions.

If the Contractor counts the nonworking hours of apprentices they must be employed by the Contractor during the training period; the Contractor must have made a commitment to employ apprentices at the completion of their training subject to the availability of employment opportunities; and the apprentices must be trained pursuant to training programs approved by the Bureau of Apprenticeship and Training.

\* "Minority" is defined as including, Blacks, Spanish Surname Americans, Asian Americans, and American Indians, and includes both men and minority women.

**2. SPECIFIC AFFIRMATIVE ACTION STEPS:**

No contractor shall be found to be in noncompliance solely on account of its failure to meet its goals, but will be given an opportunity to demonstrate that the contractor has instituted all the specific affirmative action steps specified and has made every good faith effort to make these steps work toward the attainment of its goals within the timetables, all to the purpose of expanding minority and female utilization in its aggregate workforce. A contractor, who fails to comply with its obligation under the Equal Opportunity Clause of its contract and fails to achieve its commitments to the goals for minority and female utilization has the burden of proving that it has engaged in an Affirmative Action Program directed at increasing minority and female utilization and that such efforts were at least as extensive and as specific as the following:

- a. The Contractor should have notified minority and female organizations when employment opportunities were available and should have maintained records of the organization's response.

- b. The Contractor should have maintained a file of the names and addresses of each minority and female referred to it by any individual or organization and what action was taken with respect to each such referred individual, and if the individual was not employed by the Contractor, the reasons. If such individual was sent to the union hiring hall for referral and not referred back by the union or if referred, not employed by the Contractor, the file should have documented this and their reasons.
- c. The Contractor should have promptly notified the Department of Public Works, and the Division of Small Business Opportunity when the union or unions with which the Contractor has collective bargaining agreements did not refer to the contractor a minority or female sent by the contractor, or when the Contractor has other information that the union referral process has impeded efforts to meet its goals.
- d. The Contractor should have disseminated its EEO policy within its organization by including it in any employee handbook or policy manual; by publicizing it in company newspapers and annual reports and by advertising such policy at reasonable intervals in union publications. The EEO policy should be further disseminated by conducting staff meetings to explain and discuss the policy; by posting of the policy; and by review of the policy with minority and female employees.
- e. The Contractor should have disseminated its EEO policy externally by informing and discussing it with all recruitment sources; by advertising in news media, specifically including minority and female news media; and by notifying and discussing it with all subcontractors.
- f. The Contractor should have made both specific and reasonably recurrent written and oral recruitment efforts. Such efforts should have been directed at minority and female organizations, schools with substantial minority and female enrollment, and minority and female recruitment and training organizations within the Contractor's recruitment area.
- g. The Contractor should have evidence available for inspection that all tests and other selection techniques used to select from among candidates for hire, transfer, promotion, training, or retention are being used in a manner that does not violate the OFCCP Testing Guidelines in 41 CFR Part 60-3.
- h. The Contractor should have made sure that seniority practices and job classifications do not have a discriminatory effect.
- i. The Contractor should have made certain that all facilities are not segregated by race.
- j. The Contractor should have continually monitored all personnel activities to ensure that its EEO policy was being carried out including the evaluation of minority and female employees for promotional opportunities on a quarterly basis and the encouragement of such employees to seek those opportunities.
- k. The Contractor should have solicited bids for subcontracts from available minority and female subcontractors engaged in the trades covered by these Bid Conditions, including circulation of minority and female contractor associations.

**NOTE:**

The Director and the Division of Small Business Opportunity will provide technical assistance on questions pertaining to minority and female recruitment sources, minority and female community organizations, and minority and female news media upon receipt of a request for assistance from a contractor.

**3. NON - DISCRIMINATION:**

In no event may a contractor utilize the goals and affirmative action steps required in such a manner as to cause or result in discrimination against any person on account of race, color, religion, sex, marital status, national origin, age, mental or physical handicap, political opinion or affiliation.

**4. COMPLIANCE AND ENFORCEMENT:**

In all cases, the compliance of a contractor will be determined in accordance with its obligations under the terms of these Bid Conditions. All contractors performing or to perform work on projects subject to these Bid Conditions hereby agree to inform their subcontractors in writing of their respective obligations under the terms and requirements of these Bid Conditions, including the provisions relating to goals of minority and female employment and training.

**B. CONTRACTORS SUBJECT TO THESE BID CONDITIONS:**

In regard to these Bid Conditions, if the Contractor meets the goals set forth therein or can demonstrate that it has made every good faith effort to meet these goals, the Contractor shall be presumed to be in compliance with Article III, Division 2 of Chapter 28 of the Revised Municipal Code, the implementing regulations and its obligations under these Bid Conditions. In the event, no formal sanctions or proceedings leading toward sanctions shall be instituted unless the contracting or administering agency otherwise determines that the contractor is violating the Equal Opportunity Clause.

1. Where the Office of Contract Compliance finds that a contractor failed to comply with the requirements of Article III, Division 2 of Chapter 28 of the Revised Municipal Code or the implementing regulations and the obligations under these Bid Conditions, and so informs the Manager, the Manager shall take such action and impose such sanctions, which include suspension, termination, cancellation, and debarment, as may be appropriate under the Ordinance and its regulations. When the Manager proceeds with such formal action it has the burden of proving that the Contractor has not met the goals contained in these Bid Conditions. The Contractor's failure to meet its goals shall shift to it the requirement to come forward with evidence to show that it has met the good faith requirements of these Bid Conditions.
2. The pendency of such proceedings shall be taken into consideration by the Department of Public Works in determining whether such contractor can comply with the requirements of Article III, Division 2 of Chapter 28 of the Revised Municipal Code, and is therefore a "responsible prospective contractor".
3. The Division of Small Business Opportunity shall review the Contractor's employment practices during the performance of the contract. If the Division of Small Business Opportunity determines that the Contractor's Affirmative Action Plan is no longer an acceptable program, the Director shall notify the Manager.

**C. OBLIGATIONS APPLICABLE TO CONTRACTORS:**

It shall be no excuse that the union with which the Contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority or female employees. Discrimination in referral for employment, even if pursuant to provisions of a collective bargaining agreement, is prohibited by the National Labor Relations Act, as amended, Title VI of the Civil Rights Act of 1964, as amended, and Article III, Division 2 of Chapter 28 of the Revised Municipal Code. It is the policy of the Department of Public Works that contractors have a responsibility to provide equal employment opportunity, if they wish to participate in City and County of Denver contracts. To the extent they have delegated the responsibility for some of their employment practices to a labor organization and, as a result, are prevented from meeting their obligations pursuant to Article III, Division 2, Chapter 28 of the Revised Municipal Code, such Contractors cannot be considered to be in compliance with Article III, Division 2, Chapter 28 of the Revised Municipal Code, or its implementing rules and regulations.

**D. GENERAL REQUIREMENTS:**

Contractors are responsible for informing their subcontractors in writing regardless of tier, as to their respective obligations. Whenever a Contractor subcontracts a portion of work in any trade covered by these Bid Conditions, **it shall include these Bid Conditions in such subcontracts and each subcontractor shall be bound by these**

**Bid Conditions to the full extent as if it were the prime contractor.** The Contractor shall not, however, be held accountable for the failure of its subcontractors to fulfill their obligations under these Bid Conditions. However, the prime contractor shall give notice to the Director of any refusal or failure of any subcontractor to fulfill the obligations under these Bid Conditions. A subcontractor's failure to comply will be treated in the same manner as such failure by a prime contractor.

1. Contractors hereby agree to refrain from entering into any contract or contract modification subject to Article III, Division 2, Chapter 28 of the Revised Municipal Code with a contractor debarred from, or who is determined not to be a "responsive" bidder for the City and County of Denver contracts pursuant to the Ordinance.
2. The Contractor shall carry out such sanctions and penalties for violation of these Bid Conditions and the Equal Opportunity Clause including suspension, termination and cancellation of existing subcontracts and debarment from future contracts as may be ordered by the Manager pursuant to Article III, Division 2, Chapter 28 of the Revised Municipal Code and its implementing regulations.
3. Nothing herein is intended to relieve any contractor during the term of its contract from compliance with Article III, Division 2, Chapter 28 of the Revised Municipal Code, and the Equal Opportunity Clause of its contract with respect to matters not covered in these Bid Conditions.
4. Contractors must keep such records and file such reports relating to the provisions of these Bid Conditions as shall be required by the Office of Contract Compliance.
5. Requests for exemptions from these Bid Conditions must be made in writing, with justification, to the Manager of Public Works, 201 W. Colfax, Dept. 608, Denver, Colorado 80202, and shall be forwarded through and with the endorsement of the Director

**EXHIBIT K**  
**Minority/Women Owned Business Enterprise Program Compliance Plan**

**AFFIRMATIVE ACTION PROGRAM**  
**TURNER CONSTRUCTION COMPANY**  
**DENVER BUSINESS UNIT**

**FOR CALENDAR YEAR 2016**

EEO Officer      Hilton O. Smith, Senior Vice President  
National Community Affairs  
Turner Construction Company  
Hanna Building  
1422 Euclid Avenue, Suite 1400  
Cleveland, Ohio 44115

**APPROVED BY:**

A handwritten signature in blue ink, appearing to read "H. O. Smith", is written over a horizontal line.

Vice President & General Manager

Denver Business Unit

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## I. TURNER'S CONFIDENTIAL TRADE SECRET MATERIALS

This Affirmative Action Program ("AAP") contains confidential, trade secret and commercial information. 18 U.S.C. §1905 prohibits the Office of Federal Contract Compliance Programs from voluntarily releasing this information pursuant to the Freedom of Information Act ("FOIA"). In addition, exemptions 3 and 4 of the FOIA protect information in this document and attachments from *mandatory* disclosure to FOIA requests because it would necessarily cause substantial harm to Turner's competitive position. *See, e.g., Chrysler v. Brown*, 441 U.S. 281 (1979), *CNA Financial Corp. v. Donovan*, 830 F.2d 1132, 1151-52 (D.C. Cir. 1987), *cert. denied*, 485 U.S. 977 (1988). Furthermore, release of any of Turner's confidential, trade secret or commercial information would be arbitrary and capricious in violation of the Administrative Procedure Act. *See CNA Financial Corp.*, 830 F.2d at 1154 and n. 149.

## II. INTRODUCTION TO TURNER'S AFFIRMATIVE ACTION PROGRAM

The Turner Corporation ("Turner" or the "Company") declares and reaffirms to its employees, its subsidiaries' employees and to the public that it is firmly committed to a policy of affirmative action, which assures that it will not discriminate against any applicant or employee in any employment practice because of race, sex, gender identity, sexual orientation, pregnancy, childbirth and other pregnancy-related conditions, color, national origin, ancestry, age, creed, religion, citizenship, marital status (including registered domestic partners), parental status, disabilities, genetic information, status as a protected veteran, or any other characteristic or status protected by law. Turner further declares and affirms that it will take necessary action to correct under-representation and under-utilization of minority groups, women, protected veterans, and the disabled at all levels of responsibility within the company. To that end, Turner's management has adopted programs to augment its past efforts in this area. Turner intends, by its actions, to set an example for treating everyone equally, regardless of race, sex, gender identity, sexual orientation, pregnancy, childbirth and other pregnancy-related conditions, color, national origin, ancestry, age, creed, religion, citizenship, marital status (including registered domestic partners), parental status, disabilities, genetic information, status as a protected veteran, or any other characteristic or status protected by law.

Employees with questions or concerns about any type of discrimination or harassment in the workplace are encouraged to bring these issues to the attention of their immediate supervisor or Turner's Equal Employment Opportunity Officer. Employees and applicants will not be subjected to reprisal, retaliation, harassment, intimidation, threat, coercion or discrimination because they have engaged in any of the following activities: (1) filed a complaint of unlawful discrimination with Turner or with a federal, state, or municipal agency; (2) assisted or participated in any investigation, compliance review, hearing, or any other activity related to the administration of any federal, state or municipal equal employment opportunity or affirmative action statute; (3) opposed any act or practice made unlawful by federal, state or local law requiring equal employment opportunity or affirmative action; or (4) exercised any other employment right protected by federal, state or local law or its implementing regulations. For further information regarding Turner's internal policies for addressing complaints of discrimination or harassment, please refer to Turner's Policy Statement on Harassment.

Turner believes in the benefits of an effective affirmative action program to ensure equal employment and promotion opportunities for all individuals. Turner's Affirmative Action Program ("AAP") seeks to ensure compliance with Executive Orders 11246 and 11375, the American with Disabilities Act of 1990, Section 503 of the Rehabilitation Act of 1973, Section 420 of the Vietnam Era Veterans' Readjustment Assistance Act of 1974, and the Veterans Employment Opportunities Act of 1998, as amended and as applicable. Turner declares and reaffirms it will continue to seek a leadership role in developing programs and processes to achieve equality of opportunity within the construction industry. Turner's AAP is available for review upon request by any employee or applicant. An employee can make an oral or e-mail request to the employee's facility manager or to Turner's Equal Employment Opportunity Officer. Turner posts a notice at each facility of the location and hours during which applicants and employees may access Turner's AAP.

### III. TURNER'S EQUAL EMPLOYMENT OPPORTUNITY POLICY ("EEO POLICY")

Turner has long recognized its responsibility to extend Equal Employment Opportunity to all individuals. The Company's Affirmative Action Program supports this policy with positive procedures and objectives to ensure fair employment practices.

The Turner Corporation and its subsidiaries continue to demonstrate and administer strong diversity and affirmative action efforts throughout the entire organization. Our long-term commitment to provide equal and nondiscriminatory employment opportunity to all persons based on qualifications and merit, without regard to race, sex, gender identity, sexual orientation, pregnancy, childbirth and other pregnancy-related conditions, color, national origin, ancestry, age, creed, religion, citizenship, marital status (including registered domestic partners), parental status, disabilities, genetic information, status as a protected veteran, or any other protected characteristic or status has not and will not waver. Non-discriminatory treatment at all levels of employment with regard to recruitment, hiring, training, promotions, benefits, compensation and all other employment-related factors is included in this Company-wide policy. Only the merit of the individual measured against objective and valid job requirements shall be considered.

All employees are expected to adhere to this Equal Employment Opportunity Policy. Turner employees must comply with all federal, state, and local laws prohibiting discrimination in employment, including discrimination based on race, sex, gender identity, sexual orientation, pregnancy, childbirth and other pregnancy-related conditions, color, national origin, ancestry, age, creed, religion, citizenship, marital status (including registered domestic partners), parental status, disabilities, genetic information, status as a protected veteran, and any other protected characteristic or status. The Company expects the organizations with which it does business to share this commitment.

Any employee or applicant for employment who feels that he or she has been the victim of discrimination should contact their Operations Manager, Project Executive, or Department Head; local Human Resources Director or Manager; or the Vice President of Employee Relations.

The Company forbids retaliation of any kind (including harassment, intimidation, threats, coercion or discrimination) against any individual who files a charge of discrimination, reports or otherwise objects to harassment or discrimination, assists, testifies, or participates in an equal employment proceeding, or otherwise exercises any other right protected under applicable equal opportunity employment laws.

Turner recognizes that progress in diversity and affirmative action efforts requires more than policy statements alone. The Company, therefore, will make every effort to implement the letter and spirit of the law. To further the principle of equal and nondiscriminatory employment opportunity for all,

Turner has developed affirmative action plans for minorities, women, individuals with disabilities, and protected veterans. These plans, or relevant portions of them, are available for your inspection upon request. In order to ensure proper implementation of these plans, I have selected Hilton O. Smith, Senior Vice President for National Community Affairs, as the Equal Employment Opportunity (EEO) Officer for Turner. Please ask the HR department in your local Turner office for more information regarding these plans.

A copy of this EEO policy and the local EEO policy (where applicable) will be prominently posted at Turner facilities as required. Any applicant or employee may request assistance in reading or otherwise obtaining the information included in this policy.



Peter J. Davoren  
President & CEO

#### IV. COMMUNITY AFFAIRS

Turner is a community builder. Turner's Community Affairs Program has been proactive nationally for over four decades. The Company does not believe that affirmative action and/or equal employment opportunity activities end on Company premises. Turner is deeply committed to public programs that expand all types of horizons – social, economic and educational. Turner encourages its employees to be committed to community outreach. The Company's efforts through the years have netted highly positive results. Because of these results Turner has garnered hundreds of community service awards.

It is Turner's belief that the support of communities in which we do business assists in achieving the Company's objectives of growth and development of its employees. In so doing, Turner takes affirmative steps to develop viable sources for its growth. We believe in equal employment opportunities.

Turner's Community Affairs Program has an education arm which includes our widely recognized Turner School of Construction Management and YouthForce 2020 programs. In the communities in which we serve, the Company is involved in various educational programs. Turner's mentor/protégé programs upgrade minority and women business involvement and also improve high school and college students' knowledge of the construction industry. Turner also supports a wide variety of national, regional and local service groups.

**Additionally, this Business Unit supports/works with/cooperates with the following organizations/programs/efforts:** the local Association of General Contractors, CoreNet, Urban Land Institute, Society for Marketing Professional Services, US Green Building Council, NAIOP, Design Build Institute of America, Colorado Association of Healthcare Engineers and Directors, 7x24 Exchange, Lean Construction Institute, Hispanic Contractors of Colorado, Denver Chamber of Commerce, National Association of Health Services Executives, Associated Builders and Contractors, and the Aurora Economic Development Council. Six employees hold influence within these organizations with Board positions and several others participate on a committee level. Turner is partnering with AGC in 2016 for our annual Construction Management Training Course. AGC is providing classroom space and assisting with advertising for the course. Turner also reached out to Hispanic Contractors of Colorado and the Black Chamber of Commerce to promote the course to their membership.

## **V. MINORITY/WOMEN BUSINESS ENTERPRISE UTILIZATION**

Turner's senior management unequivocally embraces and supports its Minority/Women Business Enterprise ("M/WBE") Program. Turner's track record is long and positive in the utilization of M/WBEs, and its utilization program is an integral part of the Company's corporate culture. Turner's objective is to increase the visibility, improve the economic viability, and expand opportunities for the utilization of these businesses. The Company has been recognized nationwide and has received well over 100 awards for leadership in utilization of such businesses.

Since 1969, Turner has sponsored construction management seminars for minority, women and small business enterprises throughout the nation annually. These nationally recognized seminars are taught by professional Turner staff volunteers and include such topics as Risk Management, Construction Estimating, Safety, and Effective Marketing. It has helped attendees win major contracts, often to work with or for Turner, and has also helped them build networks among themselves, leading to fruitful joint ventures and long-term business relationships.

Turner's track record demonstrates that it recognizes the benefit of and continued need to support minority- and women-owned businesses. Turner's approach is to use legitimate M/WBEs as part of Turner's overall business development program, with an important objective being to increase the visibility, improve the economic viability and enlarge the opportunities for employment of minority- and women- owned businesses. Turner further attempts to increase participation by these firms through the development and maintenance of a data bank of minority and women businesses. The Company also participates as a corporate member of the National Association of Minority Contractors and numerous other national and local M/WBE organizations.

Turner maintains a national goal of 20% relative to the annual utilization of M/WBEs in the areas of construction, subcontracting, prime contracting, joint venture relationships/ associations, and goods and services. When determining its annual goal, Turner considers the inherent employment impediments in the construction industry, as well as fluctuations in the volume of business due to local, regional and national business climates and events, so that the Company's overall goal can be achievable and attainable. Each year, Turner makes a good faith effort to reach its stated objective.

## VI. ASSIGNMENT OF RESPONSIBILITY

Hilton O. Smith, Senior Vice President, National Community Affairs, serves as the Equal Employment Opportunity Officer ("EEO Officer") for the Company. Mr. Smith can be contacted at hsmith@tcco.com. The EEO Officer has the full support of and access to senior management officials. The EEO Officer reports to the Company's Chairman and President and makes recommendations for policy changes when appropriate. The EEO Officer is assisted by Community Affairs and Human Resources professionals and the Senior Vice President of Diversity, Inclusion and Community in implementing the terms and development of Turner's AAP.

Each business unit and its management are expected and required to carry out the letter and spirit of the law as described in the AAP. A Community Affairs professional is assigned in each business unit or region with responsibility for implementing the AAP elements in the assigned business unit(s). The EEO Officer, with the assistance of Turner's Community Affairs and Human Resources professionals, has responsibilities that include:

1. Developing policy statements, affirmative action programs, and internal and external communication techniques.
2. Periodically reviewing employment practices, including personnel policies and procedures, to ensure Turner continues to practice its policy of equal employment opportunity.
3. Identifying problem areas, if any.
4. Assisting management in arriving at solutions to problems.
5. Designing and implementing audit and reporting systems that will:
  - a. Measure effectiveness of the company's EEO Policy and AAP.
  - b. Indicate needs for remedial action.
  - c. Determine the degree to which the company's placement goals and other affirmative action objectives have been attained.
6. Serving as liaison between the company and compliance enforcement agencies.
7. Serving as liaison between the company and minorities' and women's organizations, as well as community action groups concerned with employment opportunities for minorities and women.
8. Keeping management informed of the latest developments in the entire equal opportunity area.
9. Ensuring that supervisors are following and implementing the company's EEO Policy and AAP and informing them that their individual success in following and implementing the company's EEO Policy and AAP is being evaluated.

The Community Affairs and Human Resources professionals, under the direction of the EEO Officer, have responsibilities that include:

1. Assisting in the identification of problem areas and establishment of local and unit goals and objectives.
2. Initiating active involvement with local minority organizations, women's organizations, community action groups and community service programs, to include suppliers, vendors and businesses as identified by OFCCP Executive Order 11246 when and where possible, including:
  - a. working with community, city, and state organizations to implement and stimulate efforts needed to increase the use of such suppliers;
  - b. identifying and obtaining certification of all such business enterprises;
  - c. compiling, distributing and updating a directory of such businesses that can be utilized by the Company and its subcontractors;
  - d. providing ongoing assistance to purchasing personnel and resolving problems incurred in obtaining vendor source data and qualifying new vendors and businesses;
  - e. arranging for in-house publicity of the Company's M/W/D/VBE Program to maintain and improve employee awareness and interest and to encourage identification and referral of potential such vendors to assist the Company in meeting its commitment and goals.
3. Auditing training programs and hiring and promotion patterns to ensure there are no impediments to the attainment of goals and objectives.
4. Holding regular discussions with managers, supervisors and employees to be certain the firm's policies are being followed.
5. Reviewing the qualifications of all employees to ensure that minorities and women are given full opportunities for transfers and promotions.
6. Providing career counseling for all employees.
7. Auditing to ensure that each location is in compliance in areas such as:
  - a. Posters are properly displayed.
  - b. All facilities that the Company maintains for the use and benefit of its employees are in fact desegregated, both in policy and use.
  - c. Minority, female, disabled and protected veteran employees are afforded a full opportunity and are encouraged to participate in all Company-sponsored educational, training, recreational and social activities.

## VII. INTERNAL AUDIT AND REPORTING SYSTEMS

A report is submitted at regular intervals to the Chairman and President informing him of the diversity of employment within the Company. The EEO Officer informs upper management of the report's results and effectiveness and submits recommendations to ensure prompt remedial action, if necessary, to achieve positive results. The EEO Officer also shares results of the report with other levels of management to assist them, if necessary, in improving performance.

Turner recognizes its responsibility to affirmative action and equal employment opportunities and is committed to complying with all government regulations. The Company will initiate corrective remedial action, including adjustments in programs, when needed to meet the goals of the Company's affirmative action program.

The audit and reporting systems provide for:

1. Maintaining and monitoring accurate and up-to-date records on all applicants, hires, promotions, transfers and terminations by race, ethnicity, sex, disability and protected veteran status;
2. Requiring reports from Business Unit managers on a scheduled basis that indicate the degree to which corporate and/or unit goals are timely attained; and
3. Reviewing all selection, promotion and training procedures to ensure nondiscrimination.

## VIII. IDENTIFICATION OF PROBLEM AREAS

As part of Turner's ongoing audit and reporting processes, it has conducted a thorough analysis of the following employment and personnel matters for the 12-month period January 1, 2015 through December 31, 2015 to determine whether impediments, if any, to equal employment opportunity exist. Turner's analysis included the following factors:

1. Composition of the workforce, by Business Unit and job group, as regards minority and female distribution and utilization.
2. Personnel activity, including applicant flow, hires, promotions, terminations and other personnel actions, to determine whether there are selection disparities.
3. The total selection process, including recruitment, referral, position descriptions, position titles, worker specifications, application forms, interview procedures, referral procedures, recruitment final selection process and similar procedures, to determine if any disparities exist in the employment or advancement of minorities or women.
4. Transfer, promotion and compensation system procedures and practices to insure that there are no gender-, race- or ethnicity-based disparities.
5. Company-sponsored recreational and social events, as well as other special programs such as educational assistance.
6. All company training programs, formal and informal.
7. Technical phases of compliance such as posters, retention of applications, notification to subcontractors, etc.

This Business Unit has identified no problem areas that may impede the equal employment opportunities for minorities or women.

## **IX. DEVELOPMENT AND EXECUTION OF ACTION-ORIENTED PROGRAMS**

To attain its affirmative action and equal employment goals and objectives, Turner has developed and executes numerous general, company-wide programs, as well as specific Business Unit initiatives and procedures, including the following:

### **A. Training of Employees Involved in Employment Decisions**

Turner trains all personnel involved in the recruitment, screening, selection, promotion, disciplinary, and related processes to ensure that the commitments in the Company's AAP and EEO Policy are implemented. Special attention is paid to considerations of equality in programming both on-the-job training programs and outside training opportunities. A written record is made and maintained of each formal training session, identifying the time, place and participants.

### **B. Notice of AAP and EEO Policy to Subcontractors**

Turner incorporates, by reference, the standard equal opportunity clauses concerning (i) race, color, religion, sex, and national origin (41 CFR 60-1.4), (ii) disabled individuals (41 CFR 60-741.5(a), and (iii) protected veterans and (41 CFR 60-300.5), in all covered federal subcontracts.

### **C. Publication of Posters**

Turner posts in a conspicuous location available to all employees and applicants, notice posters explaining that Turner is obligated by law to act in a non-discriminatory manner and take affirmative action to employ and advance in employment qualified women, minorities, individuals with disabilities and protected veterans. Further, the Company informs all employees and applicants of these obligations.

### **D. Union Notification**

Unions representing members of Turner's workforce throughout the country are made aware of the Company's AAP and EEO Policy, and the Company seeks support for such programs and policies. Turner also maintains non-discrimination clauses in all of its collective bargaining agreements. Further, the Company periodically informs such unions of Turner's non-discrimination policies and commitment to take affirmative action to employ and advance in employment qualified women, minorities, individuals with disabilities and protected veterans. Turner complies with all notice requirements regarding union participation and rights.

Turner provides immediate written notification to the regional OFCCP director when one of its unions fails to refer to Turner a minority, female, disabled or veteran applicant sent by Turner, or when Turner has other information that one of its unions' referral processes or procedures has impeded Turner's efforts to meet its affirmative action obligations.

### **E. Notification to State Job Bank**

Turner lists many employment openings with the state's job bank(s) (i.e., employment service delivery system (ESDS)), usually concurrently with the use of other recruitment sources or efforts. Such notifications include the normal obligations to accept referrals of women, minorities,

disabled individuals and protected veterans. The Company, however, does not hire employees from any particular group of applicants. Certain job openings generally will not be posted with a state's job bank, including (a) positions to be filled exclusively from internal sources; (b) executive and senior management positions; and (c) temporary positions lasting three days or fewer.

#### **F. File Annual Employment Reports**

Turner annually files a Federal Contractor Veterans' Employment Report (VETS-4212 (formerly, VETS-100A)) and Standard Form 100 (EEO-1).

#### **G. Review of Personnel Processes**

Under the direction of the EEO Officer, Turner periodically reviews its personnel processes and makes any necessary modifications to ensure that its processes do not have an adverse impact on women and minorities. The EEO Officer then periodically reports directly to Turner's upper management on the results.

#### **H. Record Retention**

In compliance with 41 CFR 60-1.12, any personnel or employment record made or kept by Turner shall be preserved for a period of not less than two years from the date of the making of the record or the personnel action involved, whichever occurs later. Such records include, but are not necessarily limited to, records pertaining to hiring, assignment, promotion, demotion, transfer, layoff or termination, rates of pay or other terms of compensation, and selection for training or apprenticeship, and other records having to do with requests for reasonable accommodation, the results of any physical examination, job advertisements and postings, applications and resumes, tests and test results, and interview notes. In the case of involuntary termination of an employee, the personnel records of the individual terminated shall be kept for a period of not less than two years from the date of the termination.

When Turner has received notice that a complaint of discrimination has been filed, that a compliance evaluation has been initiated, or that an enforcement action has been commenced, Turner shall preserve all personnel records relevant to the complaint, compliance evaluation or enforcement action until final disposition. The term "personnel records relevant to the complaint" include, for example, personnel or employment records relating to the complainant and to all other employees holding positions similar to that held or sought by the complainant, and application forms or test papers submitted by unsuccessful applicants and by all other candidates for the same position as that for which the complainant unsuccessfully applied.

#### **I. Company-Wide Additional Affirmative Action Steps**

Turner takes at least the following additional affirmative action steps to ensure equal employment opportunities for minorities, women, individuals with disabilities and protected veterans:

1. Ensures and maintains a working environment free of harassment, intimidation, and coercion at all sites and facilities. Where possible, Turner assigns two or more women to each construction project. Turner ensures that all foremen, superintendents, and other on-site supervisory

personnel are aware of and will carry out Turner's obligations to maintain such a nondiscriminatory working environment, with specific attention to minority and female individuals working at such sites or facilities.

2. Establishes and maintains a current list of minority and female recruitment sources and provides written notification to such sources and community organizations when Turner or its unions have available employment opportunities. Turner further maintains a record of such organizations' responses.

3. Maintains a current file of the names, addresses and telephone numbers of each minority and female applicant and minority or female referral from a union, recruitment source or community organization. Turner further maintains a current file of the action that was taken with respect to each such individual (i.e., hired; not hired because not qualified/failed drug test; offered position but applicant rejected, etc.). In situations where Turner has referred an applicant to the union for referral back to Turner, Turner maintains documentation regarding this action and its results (i.e., candidate referred back/hired; candidate not referred back/hired, and reasons why the referral or hiring did not occur).

4. Supports minority- and women-owned subcontractors by developing and maintaining a data bank of minority- and women-owned businesses. Turner participates as a corporate member of several national and local minority and women business enterprise organizations in various geographical locations throughout the country. Additionally, Turner documents and maintains a record of all solicitations or offers for subcontracts from minority and female contractors and suppliers, including solicitations from minority and female contractor associations and other business associations.

5. Develops on-the-job training opportunities and/or participates in training programs for relevant geographic areas, expressly including minorities, women, individuals with disabilities, and protected veterans. Turner provides notice of these programs to minority, women's, individuals with disabilities and veteran recruitment sources and community organizations in the respective geographic area.

6. Directs its recruitment efforts to community and training organizations that specifically support minorities, women, individuals with disabilities and protected veterans, and to schools with predominantly minority and female students serving the relevant geographic recruitment area. For instance, Turner actively recruits at predominantly minority and women's colleges and universities that have civil engineering and construction technology programs and at job fairs and national conferences where similar schools are represented. Turner sends written notification to such organizations and schools describing any openings, screening procedures, and tests to be used in the selection process. Further, Turner, where reasonable, provides after-school, summer and vacation employment opportunities to minority, female and disabled youth, both on construction sites and in other areas of Turner's operations.

7. Ensures that all facilities and company activities are non-segregated, except that separate or single-user toilets and changing facilities are provided to assure privacy between the sexes.

8. Hires employees, including a Vice President of Diversity and Community Affairs, to assist the Company in the development of programs to foster diversity awareness among the Company's employees, prepare diversity training modules for Turner staff, and develop mentoring and evaluation programs to better retain the Company's minority and female personnel. Turner has also utilized external diversity consultants to assist in these efforts.

9. Maintains records of all solicitation of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

#### **J. Business Unit Additional Affirmative Action Steps**

This Business Unit has developed the following additional action-oriented programs to ensure equal employment opportunities for all employees:

##### **Examples of potential action-oriented programs include:**

\* **Validate the job titles and job qualifications using only job performance criteria, ensuring that job specifications are nondiscriminatory. Qualifications for a particular job are consistent in all locations in this business unit.**

\* **Increase external recruitment of qualified minority, female, disabled and veteran applicants.**

\* **Review and retrain all personnel having any part in the selection process. All such personnel are chosen with special care and receive ongoing training to ensure all hiring processes remain nondiscriminatory.**

\* **Hold formal briefing sessions with representatives of minority and female recruiting sources. These sessions should include presentations by minority and female employees and provide clear and concise explanations of current and expected future job openings, as well as the company's selection processes. Position descriptions, worker qualifications and other recruiting literature will be made available to these representatives and/or sources. Formal arrangements with these recruiting sources will be made for referral of applicants and feedback on the hiring status of applicants.**

\* **Actively encourage minority and female employees to refer and recruit qualified minority and female applicants.**

\* **Make a good faith effort to include minorities and women on hiring, personnel and human resources staff. Minority and female employees will also be made available for participation in career days, youth engagement and motivation programs, and related community activities.**

\* **Whenever possible, special employment programs will be undertaken, such as: (1) technical and non-technical co-op programs with predominantly minority and women's colleges; (2) after school and/or work study jobs for minority and/or female youths; (3) summer jobs for minority and/or female youths; (4) include minority and female members**

of the workforce in recruiting brochures; and (5) advertise on a regular basis in help-wanted sections of minority and women's interest media.

\* The following steps will be taken to insure that minority and female employees have equal opportunity for all promotions: (1) promotional opportunities are posted or announced; (2) necessary remedial, job training and work-study programs are provided for minority and female employees; (3) formal employee evaluation programs are provided; (4) an inventory of the skills, academic achievements and experience levels of current minority and female employees is maintained; (5) job and worker specifications are validated based only on job performance related criteria; (6) supervisory personnel justifications if they do not upgrade seemingly qualified minority or female employees; (7) formal career counseling programs such as aptitude development, education aid, job rotation and similar programs are provided; and (8) seniority practices and seniority clauses in union contracts are reviewed to ensure that such practices or clauses are nondiscriminatory and do not have a discriminatory effect.

## X. DISSEMINATION OF THE AFFIRMATIVE ACTION POLICY

**A. Internal Dissemination.** To facilitate internal dissemination of Turner's EEO Policy and AAP and to ensure that employees and supervisory personnel understand its contents, the Company:

1. Includes a statement of the policies in the employee staff handbook;
2. Publicizes the policies on the Company intranet;
3. Conducts meetings with management personnel to explain their responsibility for implementation;
4. Conducts meetings with all employees to discuss corporate policy and individual responsibility;
5. Includes an explanation in employee orientation and management training programs;
6. Publishes articles covering the policies in internal publications;
7. Posts the policies on Company bulletin boards; and
8. Communicates to all employees the existence of the policies to allow employees to avail themselves of its benefits.

**B. External Dissemination.** To facilitate external dissemination of Turner's EEO Policy and AAP and to ensure anyone interested understands its contents, the Company:

1. Informs all recruiting sources verbally and in writing of the stipulation that these sources actively recruit and refer minorities and women for all positions listed;
2. Incorporates the EEO clause covered by Executive Order 11246, as amended, and its implementing regulations, in all purchase orders, and contractual documents, as applicable;
3. Notifies minority and women's organizations, community agencies, community leaders, secondary schools, and colleges of the Company's policies;
4. Communicates to prospective employees the existence of the policies to allow such prospective employees to avail themselves of their benefits; and
5. Sends written notification of the Company's policies to all subcontractors, vendors, and suppliers, requesting appropriate action on their part.

## XI. TURNER'S POLICY STATEMENT ON HARASSMENT

### **Sexual Harassment**

It is the goal of the Company to promote a workplace that is free of sexual harassment by employees, clients, independent contractors, vendors or non-employees of Turner, at a work site or when you are involved in any business relationship as part of your job. Sexual harassment of employees occurring in the workplace or in other settings in which employees may find themselves in connection with their employment is unlawful and will not be tolerated by the Company. This policy applies to all incidents of alleged harassment, including those which occur off premises, or off-hours, whether the alleged offender is a supervisor, co-worker or even a non-employee with whom you may be involved in any business or potential business relationship. To achieve our goal of providing a workplace free from sexual harassment, we have provided a procedure by which inappropriate conduct will be dealt with, if encountered by employees. Further, any retaliation against an individual who has complained about sexual harassment, or retaliation against individuals for cooperating with an investigation of a sexual harassment complaint, is similarly unlawful and will not be tolerated.

The Company takes allegations of sexual harassment seriously. We will respond promptly to complaints of sexual harassment and where it is determined that such inappropriate conduct has occurred, we will act promptly to eliminate the conduct and impose such corrective action as is necessary, including disciplinary action where appropriate.

Please note that while this policy sets forth our goals of promoting a workplace that is free of sexual harassment, the policy is not designed or intended to limit our authority to discipline or take remedial action for workplace conduct which we deem unacceptable, regardless of whether that conduct satisfies the definition of sexual harassment.

### Definition of Sexual Harassment

Sexual harassment is defined as sexual advances, requests for sexual favors, and verbal or physical conduct of a sexual nature when:

- (a) submission to or rejection of such advances, requests or conduct is made either explicitly or implicitly a term or condition of employment, or made a basis for employment decisions such as favorable reviews, salary increases, promotions, increased benefits or continued employment, regardless of whether the harasser actually carries through with the threats to alter the subordinate's terms or conditions of employment;
- or (b) such advances, requests or conduct have the purpose or effect of unreasonably interfering with an individual's work performance by creating an intimidating, hostile, humiliating, or sexually offensive work environment.

Other sexually-oriented conduct, whether it is intended or not, that is unwelcome and has the effect of creating a workplace environment that is hostile, offensive, intimidating, or humiliating to male or female workers may also constitute sexual harassment.

While it is not possible to list all those additional circumstances that may constitute sexual harassment, the following are some examples of conduct which, if unwelcome, may constitute sexual harassment, depending upon the totality of the circumstances including the severity of the conduct and its pervasiveness:

- Unwelcome sexual advances, whether they involve physical touching or not;
- Sexual epithets, slurs, jokes, written or oral references to sexual conduct; gossip regarding one's sex life; comments on an individual's body, comments about an individual's sexual activity, deficiencies, or prowess;
- Displaying sexually suggestive objects, pictures, cartoons;
- Leering, whistling, brushing against the body, sexual gestures, suggestive or insulting comments;
- Sending or circulating, whether in print or electronic form, literature or communications (articles, magazines or e-mails) of a sexual nature;
- Inquiries into one's sexual experiences; and
- Discussion of one's sexual activities.

#### Complaints of Sexual Harassment

If any of our employees believes that he or she has been subjected to sexual harassment, the employee should promptly file a complaint with his/her Project Manager, Operations Manager, Project Executive, Department Head or Human Resources Director/Manager. This may be done in writing or orally. These people are also available to discuss any concerns you may have and to provide information to you about our policy on sexual harassment and our complaint process. If you feel uncomfortable bringing the matter to one of the persons listed above, you can raise the issue directly with the business unit General Manager or equivalent senior executive, or Vice President of Employee Relations.

Any supervisor or manager who has reason to suspect harassment is occurring must notify the Human Resources Director/Manager or the Vice President of Employee Relations.

All employees should take special note that, as stated above, retaliating against an individual who has complained about sexual harassment, and retaliating against individuals for cooperating with an investigation of a sexual harassment complaint, is unlawful and will not be tolerated by this Company. However, if after investigating any complaint of harassment the Company determines that the complaint is frivolous and was not made in good faith, or that an employee has provided false information regarding the complaint, disciplinary action may be taken against the individual who filed the bad-faith complaint or who gave the false information.

All complaints will be kept confidential to the maximum extent possible, and all employees have an obligation to maintain this confidentiality whether they are involved in the complaint or investigation or otherwise become aware of the complaint. All employees have a duty to report any conduct that they believe violates this policy. In addition, every employee has a duty to cooperate with any investigation conducted by the Company, regardless of whether the investigation is being conducted by Company officials or outside parties retained by the Company for this purpose.

#### Sexual Harassment Investigation

When we receive a complaint we will promptly investigate the allegation in a fair and expeditious manner. The investigation will be conducted in such a way as to maintain confidentiality to the extent practicable under the circumstances. Our investigation may include a private interview with the person filing the complaint and with any witnesses. We may also interview the person alleged to have committed sexual harassment. When we have completed our investigation, we may, to the extent appropriate, inform the person filing the complaint and the person alleged to have committed the conduct of the results of that investigation.

If it is determined that inappropriate conduct has occurred, we will act promptly to eliminate the offending conduct, and where it is appropriate we will also impose disciplinary action up to and including termination of employment.

#### **Other Unlawful Harassment**

The Company strongly supports the rights of all its employees to work in an environment free from all forms of unlawful harassment, including harassment on the basis of race, sex, gender identity, sexual orientation, pregnancy, childbirth and other pregnancy-related conditions, color, national origin, ancestry, age, creed, religion, citizenship, marital status (including registered domestic partners), parental status, disabilities, genetic information, status as a protected veteran, or any other characteristic or status protected by law.

Unlawful harassment is verbal or physical conduct that denigrates or shows hostility or aversion toward an individual because of a protected characteristic, and that:

- (a) creates an intimidating, hostile or offensive working environment;
- (b) unreasonably interferes with an individual's work performance; or
- (c) otherwise adversely affects an individual's employment opportunities.

Unlawful harassing conduct includes, but is not limited to:

- epithets;
- slurs;
- negative stereotyping;
- threatening, intimidating or hostile acts that relate to a protected characteristic;

- written or graphic material that denigrates or shows hostility or aversion toward an individual or group because of a protected characteristic, and that is placed on walls, bulletin boards, or elsewhere on the employer's premises, or circulated in the workplace on paper or electronically.

The Company prohibits unlawful harassment of any kind. Any violation of the Company's unlawful harassment policy should be reported in accordance with the complaint procedure in the Sexual Harassment policy and the complaint will be handled in the manner set forth in that procedure.

If the result of the investigation indicates that corrective action is called for, such action may include disciplinary measures up to and including immediate termination of the employment of the offender.

#### **Employee's Responsibility**

- All employees should avoid contributing directly or indirectly to any form of harassment in the workplace.
- Report any observed or potential harassment promptly and confidentially to management and/or to the Human Resources Director/Manager.
- Cooperate fully in any investigation in a discreet, confidential, and sensitive manner. Failure to cooperate may be grounds for disciplinary action.

#### **Supervisor's Responsibility**

- Maintain an open-door policy for employees to communicate potential concerns at an early stage and seek counsel from the Human Resources Director/Manager.
- Take all complaints or concerns of alleged or possible harassment seriously, no matter how minor or who is involved.
- Report any alleged incidents or receipt of formal complaints immediately to the appropriate management and to the Human Resources Director/Manager.
- Cooperate fully in any investigation and maintain confidentiality to the extent possible.
- Take appropriate action to prevent retaliation or prohibited conduct from reoccurring during and after any investigations or complaints.
- Communicate support of the policy and guidelines throughout the organization.
- Make sure that all employees within your area of responsibility are aware of this policy, ensure that personnel decisions are in compliance with this policy, and initiate corrective action (after consulting with the Human Resources Director/Manager, Operations Manager, Project Executive or the Vice President of Employee Relations) when improper behavior is observed or reported.

Supervisors who knowingly allow or tolerate harassment or retaliation are in violation of this policy and subject to disciplinary action.

**Prevention Program**

Avoidance of harassment and sexual harassment requires constant supervisory and management awareness. Publication of this policy reaffirms the Company's desire to eliminate any form of harassment. Anti-harassment training is provided to all employees throughout the Company annually, or as otherwise required by state or local law. The resulting work environment should be one sensitive to harassment and sexual harassment issues and one positioned to prevent violations. We trust that all our employees will continue to act responsibly to establish and maintain a harassment-free working environment.

## **XII. STATISTICAL ANALYSES**

Turner applies the statistical analyses required by OFCCP regulations in performing its affirmative action auditing obligations, including a regression analysis of compensation for similarly situated employees. The analyses and records created to conduct such analyses contain confidential and proprietary information. Accordingly, Turner takes appropriate steps to maintain their confidentiality. Turner can access its analyses and records in a timely manner and will take all necessary steps to cooperate and coordinate with federal, state and municipal agencies that request to review such analyses and records.

Turner reaffirms to its employees, its subsidiaries' employees and to the public that it is firmly committed to a policy of affirmative action and will not discriminate against any applicant or employee in any employment practice because of race, color, religion, sex (including pregnancy, childbirth or related medical conditions), marital status, sexual orientation, national origin, ancestry, age, veteran status, mental or physical disability or any other characteristic protected by law. Turner further declares and affirms that it will take necessary action to correct under-representation and under-utilization of minority groups, women, protected veterans and the disabled at all levels of responsibility within the Company. Turner intends, by its actions, to set an example for treating everyone equally, regardless of race, sex, gender identity, sexual orientation, pregnancy, childbirth and other pregnancy-related conditions, color, national origin, ancestry, age, creed, religion, citizenship, marital status (including registered domestic partners), parental status, disabilities, genetic information, status as a protected veteran, or any other characteristic or status protected by law.





# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

04/21/2017

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).**

<b>PRODUCER</b> Turner Surety and Insurance Brokerage, Inc. Mack-Cali Centre II 650 From Road - Suite 295 Paramus, NJ 07652	<b>CONTACT NAME:</b> _____	<b>FAX (A/C, No):</b> _____
	<b>PHONE (A/C, No, Ext):</b> 201-267-7500	<b>E-MAIL ADDRESS:</b> _____
<b>INSURED</b> Turner Corporation Turner Construction Company 3 Paragon Drive Montvale, NJ 07645		<b>INSURER(S) AFFORDING COVERAGE</b> INSURER A :Zurich American Insurance Co
		<b>INSURER B :</b> _____
		<b>INSURER C :</b> _____
		<b>INSURER D :</b> _____
		<b>INSURER E :</b> _____
		<b>INSURER F :</b> _____

**COVERAGES**

CERTIFICATE NUMBER:Q946KBG6

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
	<b>COMMERCIAL GENERAL LIABILITY</b> <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR _____ GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER: _____						EACH OCCURRENCE \$ DAMAGE TO RENTED PREMISES (Ea occurrence) \$ MED EXP (Any one person) \$ PERSONAL & ADV INJURY \$ GENERAL AGGREGATE \$ PRODUCTS - COMP/OP AGG \$ _____ \$
	<b>AUTOMOBILE LIABILITY</b> <input type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS ONLY						COMBINED SINGLE LIMIT (Ea accident) \$ BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ _____ \$
	<b>UMBRELLA LIAB</b> <input type="checkbox"/> OCCUR <b>EXCESS LIAB</b> <input type="checkbox"/> CLAIMS-MADE DED _____ RETENTION \$ _____						EACH OCCURRENCE \$ AGGREGATE \$ _____ \$
	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? <input type="checkbox"/> Y / N (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below						PER STATUTE <input type="checkbox"/> OTH-ER <input type="checkbox"/> E.L. EACH ACCIDENT \$ E.L. DISEASE - EA EMPLOYEE \$ E.L. DISEASE - POLICY LIMIT \$
A	Contractors Pollution Liability			CPL 4856374-06	03/31/2017	03/31/2018	Limit \$ 1,000,000 Aggregate limit \$ 2,000,000 SIR \$ \$ \$

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

LOCATION: DPAC GARAGE CRITICAL REPAIRS,13TH STREET IMPROVEMENT/CHAMPA STREET BRIDGE, 1325 CHAMPA STREET, DENVER CO.

JOB #TBD

ADDITIONAL INSURED: CITY AND COUNTY OF DENVER, ITS ELECTED AND APPOINTED OFFICIALS, EMPLOYEES AND VOLUNTEERS AS ADDITIONAL INSURED.

COVERAGE IS PRIMARY AND NON-CONTRIBUTORY.

WAIVER OF SUBROGATION IN FAVOR OF THE ADDITIONAL INSUREDS.

**CERTIFICATE HOLDER****CANCELLATION**

THE CITY AND COUNTY OF DENVER, COLORADO 201 WEST COLFAX DENVER, CO 80202	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.  AUTHORIZED REPRESENTATIVE 
--	--

**EXHIBIT M**  
**Payment and Performance Bond**

**CITY AND COUNTY OF DENVER**  
**DEPARTMENT OF PUBLIC WORKS**  
**PERFORMANCE AND PAYMENT BOND**

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned **Turner Construction Company**, a corporation organized and existing under and by virtue of the laws of the State of **New York**, hereafter referred to as the "Contractor", and **Liberty Mutual Insurance Company**, a corporation organized and existing under and by virtue of the laws of the State of **Massachusetts**, and authorized to transact business in the State of Colorado, as Surety, are held and firmly bound unto the CITY AND COUNTY OF DENVER, a municipal corporation of the State of Colorado, hereinafter referred to as the "City", in the penal sum of **Four Million Seven Hundred Ninety Four Thousand Eight Hundred Thirty Dollars (\$4,794,830.00)**, lawful money of the United States of America, for the payment of which sum, well and truly to be made, we bind ourselves and our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents;

THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH THAT:

WHEREAS, the above bounden Contractor has entered into a written contract with the aforesaid City for furnishing all labor and tools, supplies, equipment, superintendence, materials and everything necessary for and required to do, perform and complete the construction of **CONTRACT NO. 201734069 CONSTRUCTION MANAGER GENERAL CONTRACTOR (CM/GC) SERVICES FOR 13<sup>TH</sup> STREET & DPAC GARAGE IMPROVEMENTS**, Denver, Colorado, and has bound itself to complete the project within the time or times specified or pay liquidated damages, all as designated, defined and described in the said Contract and Conditions thereof, and in accordance with the Plans and Technical Specifications therefore, a copy of said Contract being made a part hereof;

NOW, THEREFORE, if the said Contractor shall and will, in all particulars well and truly and faithfully observe, perform and abide by each and every Covenant, Condition and part of said Contract, and the Conditions, Technical Specifications, Plans, and other Contract Documents thereto attached, or by reference made a part thereof and any alterations in and additions thereto, according to the true intent and meaning in such case, then this obligation shall be and become null and void; otherwise, it shall remain in full force and effect;

PROVIDED FURTHER, that if the said Contractor shall satisfy all claims and demands incurred by the Contractor in the performance of said Contract, and shall fully indemnify and save harmless the City from all damages, claims, demands, expense and charge of every kind (including claims of patent infringement) arising from any act, omission, or neglect of said Contractor, its agents, or employees with relation to said work; and shall fully reimburse and repay to the City all costs, damages, and expenses which it may incur in making good any default based upon the failure of the Contractor to fulfill its obligation to furnish maintenance, repairs or replacements for the full guarantee period provided in the Contract Documents, then this obligation shall be null and void; otherwise it shall remain in full force and effect;

PROVIDED FURTHER, that if said Contractor shall at all times promptly make payments of all amounts lawfully due to all persons supplying or furnishing it or its subcontractors with labor and materials, rental machinery, tools or equipment used or performed in the prosecution of work provided for in the above Contract and that if the Contractor will indemnify and save harmless the City for the extent of any and all payments in connection with the carrying out of such Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect;

PROVIDED FURTHER, that if the said Contractor fails to duly pay for any labor, materials, team hire, sustenance, provisions, provender, gasoline, lubricating oils, fuel oils, grease, coal, or any other supplies or materials used or consumed by said Contractor or its subcontractors in performance of the work contracted to be done, or fails to pay any person who supplies rental machinery, tools or equipment, all amounts due as the result of the use of such machinery, tools or equipment in the prosecution of the work, the Surety will pay the same in any amount not exceeding the amount of this obligation, together with interest as provided by law;

PROVIDED FURTHER, that the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract, or to contracts with others in connection with this project, or the work to be performed thereunder, or the Technical Specifications and Plans accompanying the same, shall in any way affect its obligation on this bond and it does hereby waive notice of any change, extension of time, alteration or addition to the terms of the Contract, or contracts, or to the work, or to the Technical Specifications and Plans.

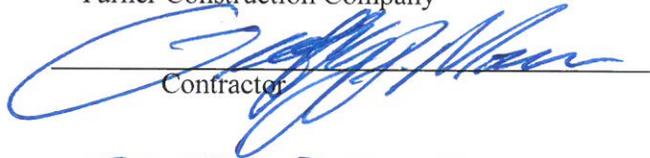
IN WITNESS WHEREOF, said Contractor and said Surety have executed these presents as of this 20 day of April, 2017.

Attest:



Donald R. Oshiro  
Assistant Corporate Secretary

Turner Construction Company



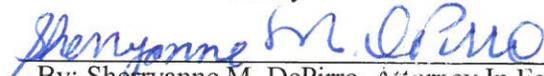
Contractor

GEORGEY P. MOORE

By: VICE President

Liberty Mutual Insurance Company

Surety

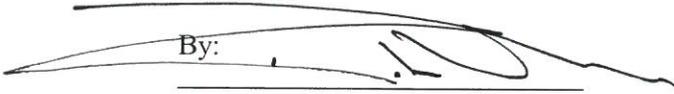


By: Sherryanne M. DePirro Attorney In Fact

(Accompany this bond with Attorney-in-Fact's authority from the Surety to execute bond, certified to include the date of the bond).

APPROVED AS TO FORM:  
Attorney for the City and County  
of Denver

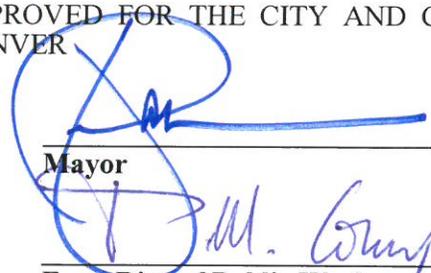
By:



Assistant City Attorney

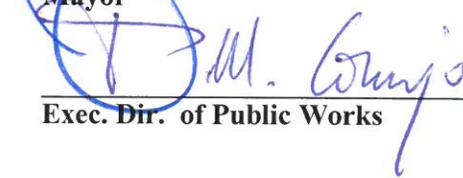
APPROVED FOR THE CITY AND COUNTY OF  
DENVER

By:



Mayor

By:



Exec. Dir. of Public Works

**CORPORATE ACKNOWLEDGMENT**

Form 152

STATE OF

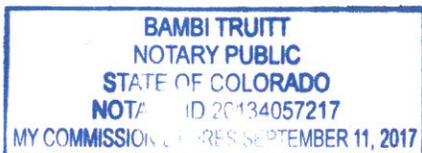
COUNTY OF

On this 20<sup>TH</sup> day of APRIL, 2017, before me personally came Geoffrey P. Moore to me known, who, being by me duly sworn, did depose and say that she/he resides in Highlands Ranch, Colorado that she/he is the Vice President + Operations Manager of the Turner Construction Company

the corporation described in and which executed the above instrument that she/he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that she/he signed her/his name thereto by like order.

(SEAL)

Bambi Truitt



**CORPORATE ACKNOWLEDGMENT**

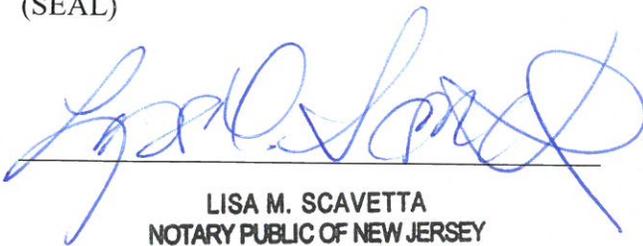
Form 152

STATE OF NEW JERSEY

COUNTY OF BERGEN

On this 20th day of April, 2017, before me personally came SHERRYANNE M. DePIRRO to me known, who, being by me duly sworn, did depose and say that she/he resides in MANAHAWKIN, NEW JERSEY that she/he is the ATTORNEY IN FACT of the LIBERTY MUTUAL INSURANCE COMPANY the corporation described in and which executed the above instrument that she/he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that she/he signed her/his name thereto by like order.

(SEAL)



LISA M. SCAVETTA  
NOTARY PUBLIC OF NEW JERSEY  
ID # 50016460  
My Commission Expires 6/4/2020

**THIS POWER OF ATTORNEY IS NOT VALID UNLESS IT IS PRINTED ON RED BACKGROUND.**

This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

Certificate No. 7674029

Liberty Mutual Insurance Company  
The Ohio Casualty Insurance Company West American Insurance Company

**POWER OF ATTORNEY**

KNOWN ALL PERSONS BY THESE PRESENTS: That The Ohio Casualty Insurance Company is a corporation duly organized under the laws of the State of New Hampshire, that Liberty Mutual Insurance Company is a corporation duly organized under the laws of the State of Massachusetts, and West American Insurance Company is a corporation duly organized under the laws of the State of Indiana (herein collectively called the "Companies"), pursuant to and by authority herein set forth, does hereby name, constitute and appoint, Elliot W. Wolffe; Lisa M. Scavetta; Maria L. Spadaccini; Mary R. McKee; Nicholas F. Walsh; Sherryanne M. DePirro; Vincent C. Miseo

all of the city of Paramus, state of NJ each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents and shall be as binding upon the Companies as if they have been duly signed by the president and attested by the secretary of the Companies in their own proper persons.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed thereto this 17th day of March, 2017.



The Ohio Casualty Insurance Company  
Liberty Mutual Insurance Company  
West American Insurance Company

By: David M. Carey  
David M. Carey, Assistant Secretary

STATE OF PENNSYLVANIA ss  
COUNTY OF MONTGOMERY

On this 17th day of March, 2017, before me personally appeared David M. Carey, who acknowledged himself to be the Assistant Secretary of Liberty Mutual Insurance Company, The Ohio Casualty Company, and West American Insurance Company, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at King of Prussia, Pennsylvania, on the day and year first above written.



COMMONWEALTH OF PENNSYLVANIA  
Notarial Seal  
Teresa Pastella, Notary Public  
Upper Merion Twp., Montgomery County  
My Commission Expires March 28, 2021  
Member, Pennsylvania Association of Notaries

By: Teresa Pastella  
Teresa Pastella, Notary Public

This Power of Attorney is made and executed pursuant to and by authority of the following By-laws and Authorizations of The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company which resolutions are now in full force and effect reading as follows:

**ARTICLE IV – OFFICERS** – Section 12. Power of Attorney. Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and execution of any such instruments and to attach thereto the seal of the Corporation. When so executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

**ARTICLE XIII – Execution of Contracts – SECTION 5. Surety Bonds and Undertakings.** Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

**Certificate of Designation** – The President of the Company, acting pursuant to the Bylaws of the Company, authorizes David M. Carey, Assistant Secretary to appoint such attorneys-in-fact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

**Authorization** – By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Renee C. Llewellyn, the undersigned, Assistant Secretary, The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy of the Power of Attorney executed by said Companies, is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.



By: Renee C. Llewellyn  
Renee C. Llewellyn, Assistant Secretary

Not valid for mortgage, note, loan, letter of credit, currency rate, interest rate or residual value guarantees.

To confirm the validity of this Power of Attorney call 1-610-832-8240 between 9:00 am and 4:30 pm EST on any business day.



PERFORMANCE AND PAYMENT BOND  
SURETY AUTHORIZATION

FAX NUMBER: 720-913-3183  
TELEPHONE NUMBER: 720-913-3267

Assistant City Attorney  
201 W. Colfax Ave. Dept 1207  
Denver, Colorado 80202

RE: Turner Construction Company

Contract No:201734069  
Project Name: Construction Manager General Contractor (CM/GC) Services for 13<sup>th</sup> Street &  
DPAC Garage Improvements  
Contract Amount:\$4,794,830.00  
Performance and Payment Bond No.: 015055148

Dear Assistant City Attorney,

The Performance and Payment Bonds covering the above captioned project were executed by this agency, through insurance company, on the 20th day of April, 2017.

We hereby authorize the City and County of Denver, Department of Public Works, to date all bonds and powers of attorney to coincide with the date of the contract.

If you should have any additional questions or concerns, please don't hesitate to give me a call.

Sincerely,

  
Sherryanne M. DePirro  
Surety Analyst



**EXHIBIT N**

**Notice to Proceed Form**



Denver Public Works  
Engineering Division  
Capital Projects Management – Dept. 506  
Right-of-Way Services – Dept 507  
Traffic Engineering Services – Dept 508  
Policy and Planning – Dept. 509  
  
201 West Colfax Ave, Dept 614  
Denver, CO 80202  
[www.work4denver.com](http://www.work4denver.com)

Current Date

**NOTICE TO PROCEED  
(SAMPLE)**

Name  
Company  
Street  
City/State/Zip

**CONTRACT NO. «CONTRACT NO», «PROJECT NAME»**

In accordance with General Contract Condition 302 of the Standard Specifications for Construction, General Contract Conditions, 2011 Edition, you are hereby authorized and directed to proceed on \_\_\_\_\_ with the work of constructing contract number \_\_\_\_\_ «Contract No», as set forth in detail in the contract documents for the City and County of Denver.

With a contract time of \_\_\_\_\_ calendar days, the project must be complete on or before \_\_\_\_\_.

If you have not already done so, you must submit your construction schedule, in accordance with General Contract Condition 306.2.B, to the Project Manager within 10 days. Additionally, you must submit your tax exempt certificate, and copies of your subcontractors' certificates, in accordance with General Contract Condition 323.5, to the Project Manager as soon as possible. Failure to submit these certificates will delay processing of payment applications.

Sincerely,

Lesley B. Thomas  
City Engineer

cc:



*Protecting the Present & Building the Future*  
Accountability, Innovation, Empowerment, Performance, Integrity,  
Diversity, Teamwork, Respect, Excellence, Safety



**EXHIBIT P**

**Final/Partial Lien Release Form**

**FINAL/PARTIAL RELEASE AND CERTIFICATE OF PAYMENT  
(SUBCONTRACTOR/SUPPLIER)**

\_\_\_\_\_ Date: \_\_\_\_\_, 20\_\_\_\_.

(PROJECT NO. and NAME)

\_\_\_\_\_ Subcontract #:

(NAME OF CONTRACTOR)

Subcontract Value: \$

\_\_\_\_\_ Last Progress Payment: \$

(NAME OF SUBCONTRACTOR/SUPPLIER) Date:

Check Applicable Box: Total Paid to Date: \$

[ ] MBE [ ] WBE Date of Last Work:

\_\_\_\_\_

The Undersigned hereby certifies that all costs, charges or expenses incurred by the undersigned or on behalf of the undersigned for any work, labor or services performed and for any materials, supplies or equipment provided on the above referenced Project or used in connection with the above referenced Subcontract (the "Work Effort") have been duly paid in full.

The Undersigned further certifies that each of the undersigned's subcontractors and suppliers that incurred or caused to be incurred, on their behalf, costs, charges or expenses in connection with the undersigned's Work Effort on the above referenced Project have been duly paid in full.

In consideration of \$\_\_\_\_\_ representing the Last Progress Payment referenced above and in further consideration of the Total Paid to Date, also referenced above, and other good and valuable consideration received and accepted by the undersigned this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_, the Undersigned hereby releases and discharges the City and County of Denver (the "City"), the above referenced City Project, the City's premises and property and the above referenced Contractor from all claims, liens, rights, liabilities, demands and obligations, whether known or unknown, of every nature arising out of or in connection with the performance of the work effort.

As additional consideration for the payments referenced above, the undersigned agrees to defend, indemnify and save and hold harmless the City, its officers, employees, agents and assigns and the above-referenced Contractor from and against all costs, losses, damages, causes of action, judgments under the subcontract and expenses arising out of or in connection with any claim or claims against the City or the Contractor which arise out of the Undersigned's performance of the Work Effort and which may be asserted by the Undersigned or any of its suppliers or subcontractors of any tier or any of their representatives, officers, agents, or employees.

It is acknowledged that this release is for the benefit of and may be relied upon by the City and the referenced Contractor.

The foregoing shall not relieve the undersigned of any obligation under the provisions of the Undersigned's subcontract, as the subcontract may have been amended, which by their nature survive completion of the Undersigned's work effort including, without limitation, warranties, guarantees, insurance requirements and indemnities.

STATE OF COLORADO ) ss.  
CITY OF \_\_\_\_\_ ) \_\_\_\_\_  
(Name of Subcontractor)

Signed and sworn before me this  
day of \_\_\_\_\_, 20\_\_\_\_. By: \_\_\_\_\_

Notary Public/Commissioner of  
Oaths  
My Commission Expires

Title: \_\_\_\_\_



## Instructions for Completing the Contractor/Consultant Certification of Payment Form

Office of Economic Development  
Division of Small Business Opportunity  
Compliance Unit  
201 W. Colfax Ave. Dept. 907  
Denver, CO 80202  
Phone: 720-913-1999  
[DSBO@denvergov.org](mailto:DSBO@denvergov.org)

**Note:** The attached Contractor/Consultant Certification of Payment form must be completed by the Contractor/Subconsultant and all subcontractors/subconsultant or suppliers used on the project at any tier and submitted with each pay application. The Contractor/Consultant is responsible for the accuracy of all information provided and is required to have each subcontractor/subconsultant or supplier fill out the appropriate forms. Please be sure to complete all information requested at the top of the form, including the name of the person who prepared this form.

If you reproduce this form, you must continue to list each of the originally listed firms, as well as any additional firms used during the performance period of the contract. Please complete an additional CCP if there is second tier-ing involved.

If you have any questions, please call the Compliance Unit of DSBO at 720.913.1999.

### Instructions for Completing the Contractor/Consultant Certification of Payment Form, per Column

**Contractor/Subcontractor or Subconsultant/Supplier Name:** In the space provided, list all subcontractors/subconsultants and suppliers used on the project. For all M/W/S/E/DBEs use the exact name listed in the DSBO Directory.

**M/W/S/E/DBE/NON:** For each name listed, indicate whether the entity is a certified M/W/S/E/DBE.

**Column A:** Provide the contract amount, as listed at bid time, for the Contractor/Consultant and each subcontractor/subconsultant or supplier.

**Column B:** Provide the percentage portion of each listed subcontractor/subconsultant or supplier contract amount (Column A) compared to the total original contract amount in (I).

**Column C:** Provide the original contract amount (Column A) for each subcontractor/subconsultant or supplier plus any awarded alternate and/or change order amounts applicable. If an alternate/change order does not apply to the listed firm, re-enter the original contract amount (Column A).

**Column D:** Provide the percent portion of each listed subcontractor/subconsultant or supplier contract amount (Column C) compare to the current total contract amount in (II).

**Column E:** Provide the amount requested for work performed or materials supplied by each listed subcontractor/subconsultant or supplier for this pay application. The sum of the items in this column should equal the estimated amount requested for this pay application.

**Column F:** Provide the amount paid to each subcontractor/subconsultant or supplier on the previous pay application. Enter the previous pay application number in the column heading. The sum of the items listed in this column should equal the warrant amount paid to the Contractor/Consultant on the previous pay application. The amounts paid to the subcontractor/subcontractor or suppliers should be the actual amount of each check issued.

**Column G:** Provide the net paid to date for the Contractor/Subconsultant and each listed subcontractor/subconsultant or supplier.

**Column H:** Provide the percent portion of the net paid to date (Column G) for the Contractor/Subconsultant and each listed subcontractor/subconsultant or supplier of the current total contract amount in (II).

**EXHIBIT Q**

**Final Receipt Form - Certificate of Final Release**



Denver Public Works  
Engineering Division  
Capital Projects Management – Dept. 506  
Right-of-Way Services – Dept 507  
Traffic Engineering Services – Dept 508  
Policy and Planning – Dept. 509  
201 West Colfax Ave, Dept 614  
Denver, CO 80202  
[www.work4denver.com](http://www.work4denver.com)

Certificate of Contract Release  
(SAMPLE)

Date

Name  
Company  
Street  
City/State/Zip

RE: Certificate of Contract Release for  
«CONTRACT NO», «PROJECT NAME»

Received this date of the City and County of Denver, as full and final payment of the cost of the improvements provided for in the foregoing contract, \_\_\_\_\_ dollars and \_\_\_\_\_ cents (\$\_\_\_\_\_), in cash, being the remainder of the full amount accruing to the undersigned by virtue of said contract; said cash also covering and including full payment for the cost of all extra work and material furnished by the undersigned in the construction of said improvements, and all incidentals thereto, and the undersigned hereby releases said City and County of Denver from any and all claims or demands whatsoever, regardless of how denominated, growing out of said contract.

And these presents are to certify that all persons performing work upon or furnishing materials for said improvements under the foregoing contract have been paid in full and this payment to be made is the last or final payment.

\_\_\_\_\_  
Contractor's Signature

\_\_\_\_\_  
Date Signed

If there are any questions, please contact me by telephone at (720) 913-XXXX. Please return this document via facsimile at (720) 913-1805 and mail to original to the above address.

**EXHIBIT R**

Preconstruction Services Work Order 201631551, dated December 12, 2016.  
(Incorporated by Reference)