Contract Routing Form

ROUTING: Urgent Rush

printed on: 06/21/2021

Contract between:

J.P. Cullen & Sons Inc.

and Dept. or Division:

Engineering Division

Name/Phone Number:

Project: Metro Transit Phase 3A- Maintenance and Driver Facility

Contract No.: 8981

File No.: 11230

Enactment No.: RES-21-00422

Enactment Date: 06/18/2021

Dollar Amount: 9,412,947.00

(Please DATE before routing)

Signatures Required	Date Received	Date Signed
City Clerk	1 6/22/21	1 6/22/21
Director of Civil Rights	(g/25/21	1 6/25/21
Risk Manager	16/28/2021	1 6/28/2021 RN
Finance Director	16/28/2021	16/26/2021
City Attorney	16/28/2021	6/28/2021
Mayor	1 6/128/12021	<u> φ 301202 </u>

Please return signed Contracts to the City Clerk's Office Room 103, City-County Building for filing.

Original + 2

Copies

06/21/2021 16:17:50 enjls - Jon Evans 243-5893



Demographics

Company Name: Travelers Casualty and Surety Company of America

SBS Company Number: 54218780

Domicile Type: Foreign

NAIC Group Number: 3548 - Travelers Grp

Merger Flag: Yes

NAIC CoCode: 31194 State of Domicile: Connecticut

Organization Type: Stock

Short Name:

FEIN: 06-0907370

Country of Domicile: United States

Date of Incorporation: 07/18/1974

Address

Business Address ONE TOWER SQ HARTFORD, CT 06183 United States

Mailing Address ONE TOWER SQ HARTFORD, CT 06183 United States

Statutory Home Office Address ONE TOWER SQ

HARTFORD, CT 06183 United States

Main Administrative Office Address

ONE TOWER SQ HARTFORD, CT 06183 United States

Phone, Email, Website

Phone Number Business Primary Phone (860) 277-0111

(844) 816-9447

NPN

17584644

17584644

Email No results found. Website

No results found.

Company Type

Company Type: Property and Casualty

Status: Active

Fax Phone

Effective Date: 07/01/1997 Issue Date: 09/10/1975

Articles of Incorporation Received: No

License Number

17584644

17584644

Status Reason:

License Type

Intermediary (Agent) Individual

Intermediary (Agent) Individual

Legacy State ID: 110846 Approval Date: Article No:

Status Date: 09/10/1975

Expiration Date: File Date: COA Number:

Appointment Date

12/22/2015

12/22/2015

Appointments

Show 10 v entries

TINA DOMASK

TINA DOMASK

Showing 1 to 2 of 4767 entries

Line of Authority

Casualty

Property

Q tina d

Effective Date

02/19/2021

Expiration Date 03/15/2022 03/15/2022

02/19/2021

Next Last

Line Of Business

Show 10 ventries	Showing 1 to 10 of 11 entries		Q Filt	er			
Line of Business	Citation Type					Effective I	Date
Aircraft	Aircraft					09/10/1975	5
Automobile	Automobile					09/10/197	5
Credit Insurance	Credit Insurance		***************************************			09/10/197	5
Disability Insurance	Disability Insurance					09/10/197	5
Fidelity Insurance	Fidelity Insurance				······	09/10/197	5
Fire, Inland Marine and Other Property Insurance	Fire, Inland Marine and Other Property Insurance					09/10/197	′5
Liability and Incidental Medical Expense Insurance (other than automobile)	Liability and Incidental Medical Expense Insurance (o	ther than auton	nobile)			09/10/197	15
Miscellaneous	Miscellaneous					09/10/197	5
Ocean Marine Insurance	Ocean Marine Insurance					09/10/197	′5
Surety Insurance	Surety Insurance					09/10/197	15
Outery insurance		First	Previous	1	2	Next	Las

Contact

Address E-mail Preferred Name Name Contact Type



City of Madison

City of Madison Madison, WI 53703 www.cityofmadison.com

Legislation Details (With Text)

65646

Version: 1

Name:

Awarding Public Works Contract No. 8981, Madison

Metro Transit Phase 3A - Maintenance and Driver

Facility Improvements.

Type:

File #:

Resolution

Status:

Passed

File created:

5/24/2021

In control:

Engineering Division

On agenda:

6/15/2021

Final action:

6/15/2021

Enactment date: 6/18/2021

Enactment #:

RES-21-00422

Title:

Awarding Public Works Contract No. 8981, Madison Metro Transit Phase 3A - Maintenance and Driver

Facility Improvements. (6th AD)

Sponsors:

BOARD OF PUBLIC WORKS

Indexes:

Code sections:

Attachments:

1. 8981BidOpeningTab.pdf, 2. 8981 contract.pdf

Date	Ver.	Action By	Action	Result
6/15/2021	1	COMMON COUNCIL	Adopt Under Suspension of Rules 2.04, 2.05, 2.24, and 2.25	Pass
6/2/2021	1	BOARD OF PUBLIC WORKS	RECOMMEND TO COUNCIL TO ADOPT UNDER SUSPENSION OF RULES 2.04, 2.05, 2.24, & 2.25 - REPORT OF OFFICER	Pass
5/24/2021	1	Engineering Division	Refer	

The proposed resolution awards a contract for improvements to the Metro Transit facility at 1101 East Washington Avenue. A 2018 study detailed a 4-phase construction plan for the Metro facility and this contract represents phase 3A. The contract price totals \$10,165,980. The 2021 adopted capital budget includes funding of \$10,805,000 within Metro's Facilities Repairs and Improvement program for the phase 3A remodel. No additional appropriation required.

Awarding Public Works Contract No. 8981, Madison Metro Transit Phase 3A - Maintenance and Driver Facility Improvements. (6th AD)

BE IT RESOLVED, that the following low bids for miscellaneous improvements be accepted and that the Mayor and City Clerk be and are hereby authorized and directed to enter into a contract with the low bidder contained herein, subject to the Contractor's compliance with Section 39.02 of the Madison General Ordinances concerning compliance with the Affirmative Action provisions and subject to the Contractor's compliance with Section 33.07 of the Madison General Ordinances regarding Best Value Contracting:

BE IT FURTHER RESOLVED, that the funds be encumbered to cover the cost of the projects contained herein.

See attached document (Contract No. 8981) for itemization of bids.

EN- Steve Danner-Rivers

CONTRACT NO. 8981 METRO TRANSIT PHASE 3A - MAINTENANCE AND DRIVER FACILITY IMPROVEMENTS

J. P. CULLEN & SONS, INC.

\$9,412,947.00

Acct. No. 11230-85-140-114403: 53310 (90924)

Contingency 8%±

\$9,412,947.00 <u>753,033.00</u>

GRAND TOTAL

\$10,165,980.00

\$9,412,94	17.00
ORIG	INAL

BID OF ______ J. P. CULLEN & SONS, INC.

2021

PROPOSAL, CONTRACT, BOND AND SPECIFICATIONS

FOR

METRO TRANSIT PHASE 3A – MAINTENANCE AND DRIVER FACILITY IMPROVEMENTS

CONTRACT NO. 8981

PROJECT NO. 11230

MUNIS NO. 11230-85-140-114403

IN

MADISON, DANE COUNTY, WISCONSIN

AWARDED BY THE COMMON COUNCIL MADISON, WISCONSIN ON JUNE 15, 2021

CITY ENGINEERING DIVISION 1600 EMIL STREET MADISON, WISCONSIN 53713

https://bidexpress.com/login

METRO TRANSIT PHASE 3A - MAINTENANCE AND DRIVER FACILITY IMPROVEMENTS CONTRACT NO. 8981

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This Proposal, and Agreement have been prepared by:

CITY ENGINEERING DIVISION
CITY OF MADISON
MADISON, DANE COUNTY, WISCONSIN

Robert F. Phillips
Robert F. Phillips, P.E., City Engineer

RFP: JCE

SECTION A: ADVERTISEMENT FOR BIDS AND INSTRUCTIONS TO BIDDERS

REQUEST FOR BID FOR PUBLIC WORKS CONSTRUCTION CITY OF MADISON, WISCONSIN

A BEST VALUE CONTRACTING MUNICIPALITY

PROJECT NAME:	METRO TRANSIT PHASE 3A - MAINTENANCE AND DRIVER
	FACILITY IMPROVEMENTS
CONTRACT NO.:	8981
SBE GOAL	20%
BID BOND	5%
PRE BID BUILDING TOUR (9:00 A.M.)	WEDNESDAY APRIL 28, 2021
DEADLINE FOR BIDDER QUESTIONS, CLARIFICATIONS	THURSDAY MAY 6, 2021
AND REQUESTS FOR SUBSTITUTIONS (2:00 P.M.)	
PREQUALIFICATION APPLICATION DUE (2:00 P.M.)	THURSDAY MAY 13, 2021
SBE PRE BID MEETING	See Pre Bid Meeting info below
BID SUBMISSION (2:00 P.M)	THURSDAY MAY 20, 2021
BID OPEN (2:30 P.M.)	THURSDAY MAY 20, 2021
PUBLISHED IN WSJ	FRIDAY APRIL 15, 22, 29 &
	MAY 6, 2021

PRE BID BUILDING /SITE TOUR:

The City of Madison is conducting one (1) Non mandatory Pre-Bid Walkthrough session at Metro Transit at 1101 E. Washington Ave, during the bidding period of this contract. All contractors are invited to attend a short introductory meeting, a short guided tour of the project area, and then will be allowed to more thoroughly review the project area at their own pace. Please note: this is an occupied building with constant bus traffic and requires high visibility vests to be worn at all times. This is the only time contractors shall be provided with guided access to non-public areas in the scope of the project. Masks and social distancing are mandatory if attending the Pre-Bid Walkthrough.

Additional site visits on a case by case basis are not guaranteed and can be scheduled by contacting the City Project Manager. Contractors may also review public areas at any time during normal working hours, but request that you contact the City Project Manager at least one working day prior to the visit, so staff at the building can be notified that visitors may be present.

Staff from Mead & Hunt, City Project Manager (CPM), and City Construction Manager (CCM) will be on hand to take questions related to the plans and specifications. Questions shall be recorded and responded to in the form of a published addendum.

BIDDER QUESTIONS, CLARIFICATIONS, AND REQUESTS FOR SUBSTITUTIONS:

If needed, Mead & Hunt and the CPM shall publish addenda to respond to any questions, clarifications, or requests for substitutions.

- Any questions or requests for clarifications regarding plans and specifications shall be submitted directly to Mead & Hunt and the CPM. Responses that change the contract scope and/or schedule will be published by Mead & Hunt and/or the CPM in the form of a bidding addendum.
- Requests for substitutions shall be done according to Specification 01 25 13 Product Substitution
 Procedures and other specifications as necessary. Use the form at the end of the specification.
 Contractors are cautioned to review all specifications and note whether substitutions for specific
 products will be allowed or not.
- See the contract contact information at the end of Section D-Special Provisions for contact information. All questions and/or substitution requests shall be sent via email, reference <u>Metro Transit</u> Phase 3A – Maintenance and Driver Facility Improvements City Contract #8981.

 The deadline for receiving all questions, clarifications, and requests for substitutions shall be as indicated in the schedule table above.

SBE PRE BID MEETING: Small Business Enterprise Pre-Bid Meetings are not being held in person at this time. Contractors can schedule one-on-one phone calls with Juan Pablo Torres Meza in Affirmative Action to count towards good faith efforts. Juan Pablo can be reached at 608-261-9162 or by email, itorresmeza@cityofmdison.com.

<u>PREQUALIFICATION</u> <u>APPLICATION</u>: Forms are available on our website, <u>www.cityofmadison.com/business/pw/forms.cfm</u>. If not currently prequalified in the categories listed in Section A, an amendment to your Prequalification will need to be submitted prior to the same due date. Postmark is not applicable.

<u>BIDS TO BE SUBMITTED</u>: by hand to 1600 EMIL ST., MADISON, WI 53713 or online at <u>www.bidexpress.com</u>.

THE BID OPENING is at 1600 EMIL ST., MADISON, WI 53713.

The process for submission of bids has not changed. Bids may be submitted on line through Bid Express or in person at 1600 Emil St. Please note that the doors at 1600 Emil St. are locked, but there is a sign with phone numbers on the door. Please call one of the numbers and staff will come to the door to get your bid. Until further notice, the bid openings will be closed to the public to support the guidance of social distancing as the City responds to responsively to COVID-19 impacts to services. The bids will be posted on line after the bid opening. If you have any questions, please call Alane Boutelle at 608-267-1197, or John Fahrney at 608-266-9091.

STANDARD SPECIFICATIONS

The City of Madison's Standard Specifications for Public Works Construction - 2021 Edition, as supplemented and amended from time to time, forms a part of these contract documents as if attached hereto.

These standard specifications are available on the City of Madison Public Works website, www.cityofmadison.com/Business/PW/specs.cfm.

The Contractor shall review these Specifications prior to preparation of proposals for the work to be done under this contract, with specific attention to Article 102, "BIDDING REQUIREMENTS AND CONDITIONS" and Article 103, "AWARD AND EXECUTION OF THE CONTRACT." For the convenience of the bidder, below are highlights of three subsections of the specifications.

SECTION 102.1: PRE-QUALIFICATION OF BIDDERS

In accordance with Wisconsin State Statutes 66.0901 (2) and (3), all bidders must submit to the Board of Public Works proof of responsibility on forms furnished by the City. The City requires that all bidders be qualified on a biennial basis.

Bidders must present satisfactory evidence that they have been regularly engaged in the type of work specified herein and they are fully prepared with necessary capital, materials, machinery and supervisory personnel to conduct the work to be contracted for to the satisfaction of the City. All bidders must be prequalified by the Board of Public Works for the type of construction on which they are bidding prior to the opening of the bid.

In accordance with Section 39.02(9)(a)I. of the General Ordinances, all bidders shall submit in writing to the Affirmative Action Division Manager of the City of Madison, a Certificate of Compliance or an Affirmative Action Plan at the same time or prior to the submission of the proof of responsibility forms.

The bidder shall be disqualified if the bidder fails to or refuses to, prior to opening of the bid, submit a Certificate of compliance, Affirmative Action Plan or Affirmative Action Data Update, as applicable, as

defined by Section 39.02 of the General Ordinances (entitled Affirmative Action) and as required by Section 102.11 of the Standard Specifications.

SECTION 102.4 PROPOSAL

No bid will be accepted that does not contain an adequate or reasonable price for each and every item named in the Schedule of Unit Prices.

A lump sum bid for the work in accordance with the plans and specifications is required. The lump sum bid must be the same as the total amounts bid for the various items and it shall be inserted in the space provided.

All papers bound with or attached to the proposal form are considered a part thereof and must not be detached or altered when the proposal is submitted. The plans, specifications and other documents designated in the proposal form will be considered a part of the proposal whether attached or not.

A proposal submitted by an individual shall be signed by the bidder or by a duly authorized agent. A proposal submitted by a partnership shall be signed by a member/partner or by a duly authorized agent thereof. A proposal submitted by a corporation shall be signed by an authorized officer or duly authorized registered agent of such corporation, and the proposal shall show the name of the State under the laws of which such corporation was chartered. The required signatures shall in all cases appear in the space provided thereof on the proposal.

Each proposal shall be placed, together with the proposal guaranty, in a sealed envelope, so marked as to indicate name of project, the contract number or option to which it applies, and the name and address of the Contractor or submitted electronically through Bid Express (www.bidexpress.com). Proposals will be accepted at the location, the time and the date designated in the advertisement. Proposals received after the time and date designated will be returned to the bidder unopened.

SECTION 102.5: BID DEPOSIT (PROPOSAL GUARANTY)

All bids, sealed or electronic, must be accompanied with a Bid Bond (City of Madison form) equal to at least 5% of the bid or a Certificate of Annual/Biennial Bid Bond or certified check, payable to the City Treasurer. Bid deposit of the successful bidders shall be returned within forty-eight (48) hours following execution of the contract and bond as required.

MINOR DISCREPENCIES

Bidder is responsible for submitting all forms necessary for the City to determine compliance with State and City bidding requirements. Nothwithstanding any language to the contrary contained herein, the City may exercise its discretion to allow bidders to correct or supplement submissions after bid opening, if the minor discrepancy, bid irregularity or omission is insignificant and not one related to price, quality, quantity, time of completion or performance of the contract.

Bidders for this Contract(s) must be Pre-Qualified for at least one of the following type(s) of construction denoted by an \boxtimes

<u>Build</u>	ding	<u>Demolition</u>			
101		Asbestos Removal	110		Building Demolition
120		House Mover			
Stre	≙ŧ	Utility and Site Construction			
201		Asphalt Paving	265	П	Retaining Walls, Precast Modular Units
205		Blasting			Retaining Walls, Reinforced Concrete
210		Boring/Pipe Jacking			Sanitary, Storm Sewer and Water Main
215	Ħ	Concrete Paving	2,0	ш	Construction
220		Con. Sidewalk/Curb & Gutter/Misc. Flat Work	276	П	Sawcutting
221		Concrete Bases and Other Concrete Work	280		
222	_	Concrete Removal	285		
225		Dredging	290	=	Sewer Pipe Bursting
230		Fencing	295		
235		Fiber Optic Cable/Conduit Installation	300		
240		Grading and Earthwork			Storm & Sanitary Sewer Laterals & Water Svc.
241		Horizontal Saw Cutting of Sidewalk	310		
242		Infrared Seamless Patching			Street Lighting
245		Landscaping, Maintenance		_	Tennis Court Resurfacing
246	H	Ecological Restoration			Traffic Signals
250		Landscaping, Site and Street			Traffic Signing & Marking
251		Parking Ramp Maintenance			Tree pruning/removal
252		Pavement Marking			Tree, pesticide treatment of
255		Pavement Sealcoating and Crack Sealing	335		Trucking
260		Petroleum Above/Below Ground Storage	340	_	
200	ш	Tank Removal/Installation	340	ш	Electrical & Communications
262		Playground Installer	399	П	
262	ш	Flayground installer	333		Other
Brid	ge (<u>Construction</u>			
501		Bridge Construction and/or Repair			
Build	<u>gnit</u>	<u>a Construction</u>			
401		Floor Covering (including carpet, ceramic tile installation,	437		Metals
		rubber, VCT	440		Painting and Wallcovering
402		Building Automation Systems	445		Plumbing
403		Concrete	450		Pump Repair
404		Doors and Windows	455		Pump Systems
405		Electrical - Power, Lighting & Communications	460		Roofing and Moisture Protection
410		Elevator - Lifts	464		Tower Crane Operator
412		Fire Suppression	461		Solar Photovoltaic/Hot Water Systems
413		Furnishings - Furniture and Window Treatments	465		Soil/Groundwater Remediation
415		General Building Construction, Equal or Less than \$250,000	466		Warning Sirens
420		General Building Construction, \$250,000 to \$1,500,000	470		Water Supply Elevated Tanks
425	\boxtimes	General Building Construction, Over \$1,500,000	475		Water Supply Wells
428		Glass and/or Glazing	480		Wood, Plastics & Composites - Structural &
429		Hazardous Material Removal			Architectural
430		Heating, Ventilating and Air Conditioning (HVAC)	499		Other
433		Insulation - Thermal			
435		Masonry/Tuck pointing			
.					
State	<u>e of</u>	f Wisconsin Certifications			
1		Class 5 Blaster - Blasting Operations and Activities 2500 feet a	and clo	se	to inhabited buildings for quarries, open pits and
		road cuts.			
2		Class 6 Blaster - Blasting Operations and Activities 2500 feet a			
		excavations, basements, underwater demolition, underground			
3		Class 7 Blaster - Blasting Operations and Activities for structur	es gre	ate	r than 15 ' in height, bridges, towers, and any of
		the objects or purposes listed as "Class 5 Blaster or Class 6 Bl	laster"		
4		Petroleum Above/Below Ground Storage Tank Removal and Ir			
5		Hazardous Material Removal (Contractor to be certified for ask			
		of Health Services, Asbestos and Lead Section (A&LS).) See t	he foll	owi	ng link for application:
		www.dhs.wisconsin.gov/Asbestos/Cert. State of Wisconsin Per	rforma	ınce	of Asbestos Abatement Certificate must be
		attached.			
6		Certification number as a Certified Arborist or Certified Tree W	orker :	as a	administered by the International Society of
		Arboriculture			
7		Pesticide application (Certification for Commercial Applicator F			ith the certification in the category of turf and
		landscape (3.0) and possess a current license issued by the D	ATCP)	
8		State of Wisconsin Master Plumbers License.			

SECTION B: PROPOSAL

Please refer to the Bid Express Website at https://bidexpress.com look up contract number and go to Section B: Proposal Page

You can access all City of Madison bid solicitations for FREE at www.bidexpress.com

Click on the "Register for Free" button and follow the instructions to register your company and yourself. You will be asked for a payment subscription preference, since you may wish to bid online someday. Simply choose the method to pay on a 'per bid' basis. This requires no payment until / unless you actually bid online. You can also choose the monthly subscription plan at this time. You will, however, be asked to provide payment information. Remember, you can change your preference at anytime. You will then be able to complete your free registration and have full access to the site. Your free access does not require completion of the 'Digital ID' process, so you will have instant access for viewing and downloading. To be prepared in case you ever do wish to bid online, you may wish to establish your digital ID also, since you cannot bid without a Digital ID.

If you have any problems with the free registration process, you can call the bidexpress help team, toll free at 1-888-352-2439 (option 1, option1).

SECTION C: SMALL BUSINESS ENTERPRISE

Instructions to Bidders City of Madison SBE Program Information

2 Small Business Enterprise (SBE) Program Information

2.1 Policy and Goal

The City of Madison reaffirms its policy of nondiscrimination in the conduct of City business by maintaining a procurement process which remains open to all who have the potential and ability to sell goods and services to the City. It is the policy of the City of Madison to allow Small Business Enterprises (SBE) maximum feasible opportunity to participate in City of Madison contracting. The bidder acknowledges that its bid has been submitted in accordance with the SBE program and is for the public's protection and welfare.

Please refer to the "ADVERTISEMENT FOR BIDS" for the goal for the utilization of SBEs on this project. SBEs may participate as subcontractors, vendors and/or suppliers, which provide a commercially useful function. The dollar value for SBE suppliers or 'materials only' vendors shall be discounted to 60% for purposes of meeting SBE goals.

A bidder which achieves or exceeds the SBE goal will be in compliance with the SBE requirements of this project. In the event that the bidder is unable to achieve the SBE goal, the bidder must demonstrate that a good faith effort to do so was made. Failure to either achieve the goal or demonstrate a good faith effort to do so will be grounds for the bidder being deemed a non-responsible contractor ineligible for award of this contract.

A bidder may count towards its attainment of the SBE goal only those expenditures to SBEs that perform a commercially useful function. For purposes of evaluating a bidder's responsiveness to the attainment of the SBE goal, the contract participation by an SBE is based on the percentage of the total base bid proposed by the Contractor. The total base bid price is inclusive of all addenda.

Work performed by an SBE firm in a particular transaction can be counted toward the goal only if it involves a commercially useful function. That is, in light of industry practices and other relevant considerations, does the SBE firm have a necessary and useful role in the transaction, of a kind for which there is a market outside the context of the SBE Program, or is the firm's role a superfluous step added in an attempt to obtain credit towards goals? If, in the judgment of the Affirmative Action Division, the SBE firm will not perform a commercially useful function in the transaction, no credit towards goals will be awarded.

The question of whether a firm is performing a commercially useful function is completely separate from the question of whether the firm is an eligible SBE. A firm is eligible if it meets the definitional criteria and ownership and control requirements, as set forth in the City of Madison's SBE Program.

If the City of Madison determines that the SBE firm is performing a commercially useful function, then the City of Madison must then decide what that function is. If the commercially useful function is that of an SBE vendor / supplier that regularly transacts business with the respective product, then the City of Madison will count 60% of the value of the product supplied toward SBE goals.

To be counted, the SBE vendor / supplier must be engaged in selling the product in question to the public. This is important in distinguishing an SBE vendor / supplier, which has a regular trade with a variety of customers, from a firm which performs supplier-like functions on an <u>ad hoc</u> basis or for only one or two contractors with whom it has a special relationship.

A supplier of bulk goods may qualify as an eligible SBE vendor / supplier if it either maintains an inventory or owns or operates distribution equipment. With respect to the distribution equipment; e.g., a fleet of trucks, the term "operates" is intended to cover a situation in which the supplier leases the equipment on a regular basis for its entire business. It is not intended to cover a situation in which the firm simply provides drivers for trucks owned or leased by another party; e.g., a prime contractor, or leases such a party's trucks on an ad hoc basis for a specific job.

If the commercially useful function being performed is not that of a qualified SBE vendor / supplier, but rather that of delivery of products, obtaining bonding or insurance, procurement of personnel, acting as a broker or manufacturer's representative in the procurement of supplies, facilities, or materials, etc., only the fees or commissions will apply towards the goal.

For example, a business that simply transfers title of a product from manufacturer to ultimate purchaser; e. g., a sales representative who re-invoices a steel product from the steel company to the Contractor, or a firm that puts a product into a container for delivery would not be considered a qualified SBE vendor / supplier. The Contractor would not receive credit based on a percentage of the cost of the product for working with such firms.

Concerning the use of services that help the Contractor obtain needed supplies, personnel, materials or equipment to perform a contract: only the fee received by the service provider will be counted toward the goal. For example, use of a SBE sales representative or distributor for a steel company, if performing a commercially useful function at all, would entitle the Contractor receiving the steel to count only the fee paid to the representative or distributor toward the goal. This provision would also govern fees for professional and other services obtained expressly and solely to perform work relating to a specific contract.

Concerning transportation or delivery services: if an SBE trucking company picks up a product from a manufacturer or a qualified vendor / supplier and delivers the product to the Contractor, the commercially useful function it is performing is not that of a supplier, but simply that of a transporter of goods. Unless the trucking company is itself the manufacturer or a qualified vendor / supplier in the product, credit cannot be given based on a percentage of the cost of the product. Rather, credit would be allowed for the cost of the transportation service.

The City is aware that the rule's language does not explicitly mention every kind of business that may contribute work on this project. In administering these programs, the City would, on a case-by-case basis, determine the appropriate counting formula to apply in a particular situation.

2.2 Contract Compliance

Questions concerning the SBE Program shall be directed to the Contract Compliance Officer of the City of Madison Department of Civil Rights, Affirmative Action Division, 210 Martin Luther King, Jr. Blvd., Room 523, Madison, WI 53703; telephone (608) 266-4910.

2.3 Certification of SBE by City of Madison

The Affirmative Action Division maintains a directory of SBEs which are currently certified as such by the City of Madison. Contact the Contract Compliance Officer as indicated in Section 2.2 to receive a copy of the SBE Directory or you may access the SBE Directory online at www.cityofmadison.com/civil-rights/contract-compliance/targeted-business-enterprise.

All contractors, subcontractors, vendors and suppliers seeking SBE status must complete and submit the Targeted Business Certification Application to the City of Madison Affirmative Action Division by the time and date established for receipt of bids. A copy of the Targeted Business Certification Application is available by contacting the Contract Compliance Officer at the address and telephone indicated in Section 2.2 or you may Certification Application online access the Targeted Business www.cityofmadison.com/civil-rights/contract-compliance/targeted-business-enterpriseprograms/targeted-business-enterprise. Submittal of the Targeted Business Certification Application by the time specified does not guarantee that the applicant will be certified as a SBE eligible to be utilized towards meeting the SBE goal for this project.

2.4 Small Business Enterprise Compliance Report

2.4.1 Good Faith Efforts

Bidders shall take all necessary affirmative steps to assure that SBEs are utilized when possible and that the established SBE goal for this project is achieved. A contractor who self performs a portion of the work, and is pre-qualified to perform that category of work, may subcontract that portion of the work, but shall not be required to do so. When a bidder is unable to achieve the established SBE goal, the bidder must demonstrate that a good faith effort to do so was made. Such a good faith effort should include the following:

- 2.4.1.1 Attendance at the pre-bid meeting.
- 2.4.1.2 Using the City of Madison's directory of certified SBEs to identify SBEs from which to solicit bids.
- 2.4.1.3 Assuring that SBEs are solicited whenever they are potential sources.
- 2.4.1.4 Referring prospective SBEs to the City of Madison Affirmative Action Division for certification.
- 2.4.1.5 Dividing total project requirements into smaller tasks and/or quantities, where economically feasible, to permit maximum feasible SBE participation.
- 2.4.1.6 Establishing delivery schedules, where requirements permit, which will encourage participation by SBEs.
- 2.4.1.7 Providing SBEs with specific information regarding the work to be performed.
- 2.4.1.8 Contacting SBEs in advance of the deadline to allow such businesses sufficient time to prepare a bid.
- 2.4.1.9 Utilizing the bid of a qualified and competent SBE when the bid of such a business is deemed reasonable (i.e. 5% above the lowest bidder), although not necessarily low.
- 2.4.1.10 Contacting SBEs which submit a bid, to inquire about the details of the bid and confirm that the scope of the work was interpreted as intended.
- 2.4.1.11 Completion of Cover Page (page C-6), Summary Sheet (page C-7) and SBE Contact Reports (pages C-8 and C9) if applicable.

2.4.2 Reporting SBE Utilization and Good Faith Efforts

The Small Business Enterprise Compliance Report is to be submitted by the bidder with the bid: This report is due by the specified bid closing time and date. Bids submitted without a completed SBE Compliance Report as outlined below may be deemed non-responsible and the bidder ineligible for award of this contract. Nothwithstanding any language to the contrary contained herein, the City may exercise its discretion to allow bidders to correct or supplement submissions after bid opening, if the minor discrepancy, bid irregularity or omission is insignificant and not one related to price, quality, quantity, time of completion, performance of the contract, or percentage of SBE utilization.

- 2.4.2.1 If the Bidder <u>meets or exceeds</u> the goal established for SBE utilization, the Small Business Enterprise Compliance Report shall consist of the following:
 - 2.4.2.1.1 **Cover Page,** Page C-6; and
 - 2.4.2.1.2 **Summary Sheet,** C-7.
- 2.4.2.2 If the bidder <u>does not meet</u> the goal established for SBE utilization, the Small Business Enterprise Compliance Report shall consist of the following:
 - 2.4.2.2.1 **Cover Page**, Page C-6;
 - 2.4.2.2.2 **Summary Sheet,** C-7; and
 - 2.4.2.2.3 **SBE Contact Report,** C-8 and C-9. (A <u>separate</u> Contact Report must be completed for <u>each applicable</u> SBE which is not utilized.)

2.5 Appeal Procedure

A bidder which does not achieve the established goal and is found non-responsible for failure to demonstrate a good faith effort to achieve such goal and subsequently denied eligibility for award of contract may appeal that decision to the Small Business Enterprises Appeals Committee. All appeals shall be made in writing, and shall be delivered to and received by the City Engineer no later than 4:30 PM on the third business day following the bidder's receipt of the written notification of ineligibility by the Affirmative Action Division Manager. Postmark not acceptable. The notice of appeal shall state the basis for the appeal of the decision of the Affirmative Action Division Manager. The Appeal shall take place in accordance with Madison General Ordinance 33.54.

2.6 SBE Requirements After Award of the Contract

The successful bidder shall identify SBE subcontractors, suppliers and vendors on the subcontractor list in accordance with the specifications. The Contractor shall submit a detailed explanation of any variances between the listing of SBE subcontractors, vendors and/or suppliers on the subcontractor list and the Contractor's SBE Compliance Report for SBE participation.

No change in SBE subcontractors, vendors and/or suppliers from those SBEs indicated in the SBE Compliance Report will be allowed without prior approval from the Engineer and the Affirmative Action Division. The contractor shall submit in writing to the City of Madison Affirmative Action Division a request to change any SBE citing specific reasons which necessitate such a change. The Affirmative Action Division will use a general test of reasonableness in approving or rejecting the contractor's request for change. If the request is approved, the Contractor will make every effort to utilize another SBE if available.

The City will monitor the project to ensure that the actual percentage commitment to SBE firms is carried out.

2.7 SBE Definition and Eligibility Guidelines

A Small Business Enterprise is a business concern awarded certification by the City of Madison. For the purposes of this program a Small Business Enterprise is defined as:

- A. An independent business operated under a single management. The business may not be a subsidiary of any other business and the stock or ownership may not be held by any individual or any business operating in the same or a similar field. In determining whether an entity qualifies as a SBE, the City shall consider all factors relevant to being an independent business including, but not limited to, the date the business was established, adequacy of its resources for the work in which it proposes to involve itself, the degree to which financial, equipment leasing and other relationships exist with other ineligible firms in the same or similar lines of work. SBE owner(s) shall enjoy the customary incidents of ownership and shall share in the risks and profits commensurate with their enjoyment interests, as demonstrated by an examination of the substance rather than form or arrangements that may be reflected in its ownership documents.
- B. A business that has averaged no more than \$4.0 million in annual gross receipts over the prior three year period and the principal owner(s) do not have a personal net worth in excess of \$1.32 million.

Firm and/or individuals that submit fraudulent documents/testimony may be barred from doing business with the City and/or forfeit existing contracts.

SBE certification is valid for one (1) year unless revoked.

SECTION D: SPECIAL PROVISIONS

METRO TRANSIT PHASE 3A - MAINTENANCE AND DRIVER FACILITY IMPROVEMENTS CONTRACT NO. 8981

It is the intent of these Special Provisions to set forth the final contractual intent as to the matter involved and shall prevail over the Standard Specifications and plans whenever in conflict therewith. In order that comparisons between the Special Provisions can be readily made, the numbering system for the Special Provisions is equivalent to that of the Specifications.

Whenever in these Specifications the term "Standard Specifications" appears, it shall be taken to refer to the City of Madison Standard Specifications for Public Works Construction and Supplements thereto.

SECTION 102.9: BIDDER'S UNDERSTANDING

Tax Exempt Status. Effective with all contracts executed after January 1, 2016, the sales price from the sale, storage, use or other consumption of tangible personal property that is used in conjunction with a public works improvement for a tax exempt entity (including the City of Madison), is exempt from State sales tax. Said property must become a component of the project owned by the tax exempt entity and includes: any building; shelter; parking lot; parking garage; athletic field; storm sewer; water supply system; or sewerage and waste water treatment facility, but does not include a highway, street or road.

The contractor shall ensure that the exemption for sales and use tax available under Wis. Stat. Sec.77.54(9m) applies where available. The contractor shall provide all necessary documentation as required by the State of Wisconsin and the City of Madison to comply with this exemption.

See link to <u>Wisconsin Department of Revenue Tax Bulletin</u>, <u>January 2016</u>, <u>Number 192</u> and <u>2015 Wis.</u> Act 126 for additional information.

Contractors wishing to sub contract with a non-union Small Business Enterprise (SBE) may encourage the non-union SBE subcontractor to consider entering into a Project Labor Agreement with the subject union specific to the Metro Transit Phase 3A – Maintenance and Driver Facility Improvements, to enable the General Contractor to count the participation of the non-union SBE for SBE Goal achievement. Interested SBE Subcontractors may contact the Executive Director, Building and Construction Trades Council of South Central Wisconsin at btrades@sbcglobal.net or at (608) 256-3161 to discuss entering into such an agreement.

SECTION 102.11: BEST VALUE CONTRACTING

This Contract shall be considered a Best Value Contract if the Contractor's bid is equal to or greater than \$65,000 for a single trade contract; or equal to or greater than \$318,000 for a multi-trade contract pursuant to MGO 33.07(7).

ARTICLE 103: AWARD AND EXECUTION OF THE CONTRACT

The awarded Contractor shall completely execute the signing of all contract documents and submit them to City Engineering (Attn: Alane Boutelle, 1600 Emil Street, Madison, WI 53703) prior to 12:00pm on Thursday, June 17, 2021. Delays by the Contractor in submitting the required completed contract documents will not adjust the project completion date. Payment and Performance Bonds shall be dated no sooner than Wednesday, June 16, 2021.

The bidder must completely fill in the base bid and the alternate. After the initial bid advertisement and prior to bid opening the City will establish a Construction Budget Dollar Value. If any responsible bidder submits a base bid plus alternate one (1) that is below the Construction Budget Dollar Value, the City will award the contract based on the base bid plus alternate one (1). If no responsible bidder submits a base bid plus alternate one (1) that is below the Construction Budget Dollar Value, the City will award the contract based on the base bid only. The City shall have the right to proceed or not proceed with

alternate one (1) regardless of how the bid was awarded. The City shall have the right to reject all bids regardless of the value of the bids submitted.

ARTICLE 104: SCOPE OF WORK

This contract is for the Metro Transit Phase 3A – Maintenance and Driver Facility Improvements (approx. 55,000 sf) at 1101 E. Washington Ave as identified in drawings. Work includes phasing to allow for continuous owner occupancy and 24-hour operations. The improvement work includes, but is not limited to, selective demolition; structural modifications; below grade piping, MEP FP T upgrades including a new generator, new electrical service, and new water service; new maintenance equipment and lifts; some site civil work to facilitate the remodeling and new generator; and new finished spaces to support drivers and maintenance staff (bathrooms, break room, training room, parts room and offices).

The roof on this facility was replaced in 2018 and is under warranty. Roof patching work is to comply with manufacturer requirements per **Exhibit C – Specification Volume 1 Dated April 8, 2021** – Section 07 01 53

The scope of work includes the furnishing of all labor, materials, equipment, tools, and other services necessary to complete the work in accordance with the intent of this contract. The Contractor shall use properly functioning equipment capable of performing the tasks required. The Contractor shall furnish workers who perform quality work and who are experienced and knowledgeable in the work proposed.

SECTION 104.1: LANDS FOR WORK

General outlines for the Lands for Work for this contract are represented on the **Exhibit A- Plans Dated April 8, 2021** and generally include the interior, roof and a limited portion of the exterior of the property at 1101 E. Washington Ave. All use of the City Lands for Work – by the Contractor - shall be reviewed and approved by the City's Construction Manager.

The Contractor for this Work must also coordinate the work so as not to interfere with Metro Transit operations. Vehicles can only be parked on site for deliveries. Onsite storage, staging and office space will be limited.

No tobacco product use is allowed on the Lands for Work.

SECTION 104.2: <u>INTENT AND COORDINATION OF CONTRACT DOCUMENTS</u>

The contract documents are complimentary of each other and consist of all of the following:

- The City Standard Specifications for Public Works Construction, 2021 Edition
- These Special Provisions including all plans and specifications as noted by the exhibits listed below.
- All Addenda to the bidding documents.

EXHIBITS FOR BIDDING PURPOSES:

- Exhibit A Plans Volume 1 Dated April 8, 2021
- Exhibit B Plans Volume 2 Dated April 8, 2021
- Exhibit C Specification Volume 1 Dated April 8, 2021
- Exhibit D Specification Volume 2 Dated April 8, 2021

SECTION 105.5: INSPECTION OF WORK

The Contractor shall coordinate directly with any and all regulatory agencies having jurisdiction over the licensing, permitting, and inspection of work as described in the construction documents.

All Contractors shall be familiar with Specification 01 45 16 – Field Quality Control Procedures regarding City of Madison policies and procedures for Quality Assurance and Quality Control.

SECTION 105.6: CONTRACTORS RESPONSIBILITY FOR WORK

The Contractor shall not take advantage of any discrepancy in the plans or specifications. This shall include but not be limited to apparent errors, omissions, and interpretations involving codes, regulations, and standards.

Any Contractor who identifies such a discrepancy during the bidding process shall notify Mead & Hunt and the City Project Manager (CPM) of the discrepancy prior to the "Questions and Clarifications Deadline" as noted in Section A of the bid documents.

Any Contractor who identifies such a discrepancy after the bidding process and/or after contract signing shall immediately notify Mead & Hunt, the CPM, and the CCM in writing and request clarification on how to proceed. See Specification 01 26 13 – Request for Information (RFI).

SECTION 105.7: CONTRACT DOCUMENTS

The General Contractor is responsible for reproducing all construction documents necessary to complete the Work at their own cost. This shall include plans, specifications, and addenda for the General Contractor and all Sub-contractors. The Contractor shall keep one copy of all drawings and Specifications on the project site, in good order, available to the Project Designers and all City representatives.

SECTION 105.9: SURVEYS, POINTS, AND INSTRUCTIONS

The General Contractor is responsible for providing all survey, benchmarks, points, and elevations required for this project.

SECTION 105.12: COOPERATION BY THE CONTRACTOR

Any Work outside the specified Lands for Work will need to be coordinated with CCM for City of Madison Engineering.

- Provide an anticipated work schedule including number of people, type of access, equipment, and duration. Schedule shall be supplied at least five (5) working days prior to the date access will be required.
- All tools, equipment, and materials shall be mobile and shall be moved back to within the Lands for Work at the end of each work day or otherwise coordinated with Metro Transit.
- All adjacent spaces will be hermetically sealed to minimize dust and debris from entering adjacent spaces. Any common areas including but limited to drive aisles, hallways, and roof access (if utilized) shall be cleaned of dust and debris at the end of each work day

All excessive noisy activities will need to be coordinated and scheduled with the CCM for City of Madison Engineering.

The General Contractor shall be responsible for the sequencing of the project.

The Contractor shall review all other specifications within the construction documents and Additional Reference Documents for other requirements and coordination of work associated with this contract.

SECTION 107.2: PROTECTION AND RESTORATION OF PROPERTY

The Contractor shall be responsible for the protection and restoration of all new and existing work according to Specification 01 76 00 – Protecting Installed Construction.

SECTION 108.2: PERMITS AND LICENSING

See 01 31 46 - Permits.

The Contractor is responsible for obtaining all required permits. The Contractor is not responsible for paying for the City Building, City HVAC, City Electrical, City Plumbing, Madison Fire Department Sprinkler and Madison Fire Department Fire Alarm permits. The Contractor is responsible for paying for other permits not explicitly stated here.

The Contractor shall be responsible for any fines issued due to non-compliance with the project permits.

SECTION 109.7: TIME OF COMPLETION

Work shall only begin after the contract is completely executed and the start work letter is received. It is anticipated that the start work letter shall be issued on or about **July 5, 2021**.

The Contractor shall have reached a level of <u>Construction Closeout</u> **NO LATER THAN Friday, August 26, 2022**

The Contractor shall review Specifications 01 29 76 - Progress Payment Procedures and 01 77 00 - Closeout Procedures and be completely familiar with the progress payment milestones and definitions related to construction closeout and contract closeout.

SECTION 109.9: LIQUIDATED DAMAGES

The fixed, agreed upon, liquidated damages for failure to complete all work within the Contract Time, shall be calculated in accordance with Article 109 of Standard Specifications, per working day.

NON STANDARD BID ITEMS

BID ITEM 90000 - BASE BID

DESCRIPTION: The BASE BID shall include the complete installation of all building, mechanical, site, and utility components; the accepted testing, and commissioning of all systems; and the completion, and turn-in of all deliverables as outlined in the plans and specifications.

METHOD OF MEASUREMENT: The BASE BID shall be measured as Lump Sum of the required construction and installations described in the plans and specifications. Partial Payments shall be requested as indicated in Specifications 01 29 73 - Schedule of Values and 01 29 76 - Progress Payment Procedures.

BASIS OF PAYMENT: The BASE BID shall be paid at the contract lump sum price. Partial payments shall be reviewed and authorized as described in the above referenced specifications.

BID ITEM 90001 – ALTERNATE 1

DESCRIPTION: ALTERNATE NO. 1: See Specification 012300 – Alternates and Drawings AD101F and A-101F. All Work Associated with Area F, First Floor only, as identified per Drawing G131.

METHOD OF MEASUREMENT: The ALTERNATE NO. 1 shall be measured as Lump Sum of the required construction and installations described in the plans and specifications. Partial Payments shall be requested as indicated in Specifications 01 29 73-Schedule of Values and 01 29 76-Progress Payment Procedures.

BASIS OF PAYMENT: The ALTERNATE NO. 1 shall be paid at the contract lump sum price. Partial payments shall be reviewed and authorized as described in the above referenced specifications.

POINTS OF CONTACT

We ask all Contractors with questions and concerns regarding the bidding documents shall contact the Project Architect by e-mail so we may properly log, track, and respond to all issues.

* Please reference <u>Metro Transit Phase 3A – Maintenance and Driver Facility Improvements</u> #8981.

The Project Architect for this contract is:

Mead & Hunt Richard Lundeen, AIA PH: 608-443-0529

Email: Richard.Lundeen@meadhunt.com

The City Project Manager (CPM) for this contract is:

City of Madison Jon Evans, PE PH: 608-243-5893

Email: jevans@cityofmadison.com



Department of Public Works

Engineering Division

Robert F. Phillips, P.E., City Engineer

City-County Building, Room 115
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Madison, Wisconsin 53703
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engineering@cityofmadison.com
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Deputy City Engineer Gregory T. Fries, P.E.

Deputy Division Manager Kathleen M. Cryan

Principal Engineer 2

John S. Fahrney, P.E. Christopher J. Petykowski, P.E. Janet Schmidt, P.E.

Principal Engineer 1

Christina M. Bachmann, P.E. Mark D. Moder, P.E. James M. Wolfe, P.E.

Facilities & Sustainability Bryan Cooper, Principal Architect

Mapping Section Manager Eric T. Pederson, P.S.

> Financial Manager Steven B. Danner-Rivers

May 6, 2021

NOTICE OF ADDENDUM ADDENDUM NO. 1 City of Madison, Engineering Department

CONTRACT NO. 8981 METRO TRANSIT PHASE 3A – MAINTENANCE AND DRIVER FACILITY IMPROVEMENTS

This addendum is issued to modify, explain or correct the original Drawings, Specifications, or Contract Documents marked as *Metro Transit Phase 3A-Maintenance and Driver Facility Improvements, City of Madison, Contract* #8981, as issued on April 8th, 2021 and is hereby made a part of the contract documents.

This addendum consists of the following documents:

Please attach these Addendum documents to the Drawings (Exhibits A and B), Specifications (Exhibits C and D), and Proposal Specifications in your possession.

Please note that Addendum 2 will contain technical addendum information and is expected to be published the week of May 10^{th} , 2021

1. GENERAL CONTRACT CONDITIONS

A. The Bid date is to be changed from May 20th to May 27th, 2021.

2. GENERAL QUESTIONS AND ANSWERS

A. Pre-Bid Walk Through sign-in sheet from April 28th, 2021

3. ACCEPTABLE EQUIVALENTS

A. None

4. **SPECIFICATIONS**

A. None

5. DRAWINGS

A. None

6. PROPOSAL AND CONTRACT SPECIFICATIONS

A. Revised bid date – see revised page A1 of the Contract Specifications.



CONTRACT NO. 8535, PROJECT NO. 11229 METRO TRANSIT PHASE 2 – FACILITY IMPROVEMENTS

Page 2 of 2

Please acknowledge this addendum in Section E on page E-1: Bidder's Acknowledgement on Bid Express.

Electronic version of these documents can be found on Bid Express at https://www.bidexpress.com/ and the City of Madison web site at https://www.bidexpress.com/ and the City of Madison web site at https://www.bidexpress.com/ and the City of Madison web site at https://www.cityofmadison.com/business/PW/contracts/openforBid.cfm

If you are unable to download plan revisions associated with the addendum, please contact the Engineering office at 608-266-4751 to receive the material by another method.

For questions regarding this bid, contact:

Mead & Hunt, Inc. Rich Lundeen, AIA, Project Manager PH: 608-443-0529

Email: richard.lundeen@meadhunt.com

City of Madison

Jon Evans, PE, Project Manager

PH: 608-243-5893

Email: jevans@cityofmadison.com

Sincerely,

for:

Robert F. Phillips, P.E., City Engineer

SECTION A: ADVERTISEMENT FOR BIDS AND INSTRUCTIONS TO BIDDERS

REQUEST FOR BID FOR PUBLIC WORKS CONSTRUCTION CITY OF MADISON, WISCONSIN

A BEST VALUE CONTRACTING MUNICIPALITY

PROJECT NAME:			SIT PHASE 3A -	1
		MAINTENANC	E AND DRIVER	
		FACILITY IMPI	ROVEMENTS	
CONTRACT NO.:		8981]
SBE GOAL		20%]
BID BOND		5%		
PRE BID BUILDING TOUR (9:00 A.M.)		WEDNESDAY	APRIL 28, 2021	
DEADLINE FOR BIDDER QUESTIONS, CLARIFICATION	VS.	THURSDAY	MAY 6, 2021	
AND REQUESTS FOR SUBSTITUTIONS (2:00 P.M.)	$(\ \ \ \ \ \ \)$	* * * * *	* * * * * * * *] `)
PREQUALIFICATION APPLICATION DUE (2:00 P.M.)		THURSDAY	MAY 20, 2021	1 1
SBE PRE BID MEETING	>	See Pre Bid Me	eeting info below	」く
BID SUBMISSION (2:00 P.M)	>	THURSDAY	MAY 27, 2021	」く
BID OPEN (2:30 P.M.)		THURSDAY	MAY 27, 2021	
PUBLISHED IN WSJ	(FRIDAY	APRIL 15, 22, 29 &	
	(MAY 6, 13, 20 2021])
	7			. 1

PRE BID BUILDING /SITE TOUR:

The City of Madison is conducting one (1) Non mandatory Pre-Bid Walkthrough session at Metro Transit at 1101 E. Washington Ave, during the bidding period of this contract. All contractors are invited to attend a short introductory meeting, a short guided tour of the project area, and then will be allowed to more thoroughly review the project area at their own pace. Please note: this is an occupied building with constant bus traffic and requires high visibility vests to be worn at all times. This is the only time contractors shall be provided with guided access to non-public areas in the scope of the project. Masks and social distancing are mandatory if attending the Pre-Bid Walkthrough.

Additional site visits on a case by case basis are not guaranteed and can be scheduled by contacting the City Project Manager. Contractors may also review public areas at any time during normal working hours, but request that you contact the City Project Manager at least one working day prior to the visit, so staff at the building can be notified that visitors may be present.

Staff from Mead & Hunt, City Project Manager (CPM), and City Construction Manager (CCM) will be on hand to take questions related to the plans and specifications. Questions shall be recorded and responded to in the form of a published addendum.

BIDDER QUESTIONS, CLARIFICATIONS, AND REQUESTS FOR SUBSTITUTIONS:

If needed, Mead & Hunt and the CPM shall publish addenda to respond to any questions, clarifications, or requests for substitutions.

- Any questions or requests for clarifications regarding plans and specifications shall be submitted directly to Mead & Hunt and the CPM. Responses that change the contract scope and/or schedule will be published by Mead & Hunt and/or the CPM in the form of a bidding addendum.
- Requests for substitutions shall be done according to Specification 01 25 13 Product Substitution
 Procedures and other specifications as necessary. Use the form at the end of the specification.
 Contractors are cautioned to review all specifications and note whether substitutions for specific
 products will be allowed or not.
- See the contract contact information at the end of Section D-Special Provisions for contact information. All questions and/or substitution requests shall be sent via email, reference Metro Transit Phase 3A Maintenance and Driver Facility Improvements City Contract #8981.

Madison Metro Transit Phase 3A - Maintenance and Driver Improvements Wednesday, April 28, 2021, 9:00 am **Pre-Bid Building Tour** Contract 8981

ATTENDEES PLEASE SIGN-IN

NAME	COMPANY	EMAIL	PHONE
MATT LENNEMANN	STERTIL KONI		100 643 9001
Harmy HA	THEFT SHAP	FREND, LINESSESSESSESSESSESSESSESSESSESSESSESSESS	(817.218.39)
Curt Klein	Ban Jack Wisconson cutteran		ectrus consin. on 920, 450-7030
JACOB CATES	JOE DAMFLS		608-271-4800
Tim Marka	Fluio Aire Dynamics	Tim, martin @ FADCORP.com	५।५-२५२ -१२०।
JR STIBO	Phoin	nn Com	108 354 4 bl 2
KEVIN JUDD	INTEGER DUDG SYSTEMS	}	108-668-3501
Thomas Medy	Pieper Power	d) . Jr. Mod	1179-106-804 m
ROBERT PAYSMOR	Mapp & Lynt	robert. Lapsner @ Meadhunt. com loss Bills ANS 0510	108 BITTS AM 0510

Madison Metro Transit Phase 3A - Maintenance and Driver Improvements Contract 8981

Pre-Bid Building Tour Wednesday, April 28, 2021, 9:00 am

ATTENDEES PLEASE SIGN-IN

MOH HANGE	HJ Participara	whomilter & hij pertraburacon	ca 15 - 35 m	
April 27	metro	Comesty @ metroso.com	Shb 2- 709	
Jeremy DeBoer	Van Est	idebora @ Vonact.com	388-9009	
JASON PICTON	Jenas	IPieron OwhyTeeRA. com	608-396-1125	
Suar Globons	Terra	Sgittons of why terra 16m	605-210-3913	
Garin Jusmes	Tr North	gjasmer @tri-north.com	6082047239	
faired Roffsen thankly	Harrica	brian @hartwigelumbrigion 815.560 1323	B15.560 1323	
Jason Hanad	J. M Harud	jaarud@ charter. Net 1-608-757-7369	1-608-757-7369	
Scott Botton	S.M. AARCUS	Sbottan AAKudmech Denna! com +608-681-4903	- 7608-681-4903	
Kyle Wenrwein	Hooper Corporation	KWehrwein @ hooper. corp. com	688 201-S807	
share Bonett	KVA Electric		608-475-9768	
WIKE (1658	MIDON	ESTIMATING @ MILON -CONSTLUCTION . COM	920-969-734/	

JOSH PEARSON

JP CHUKA

JOSH . PEARSON @ JPCNUEN . COM

108-421-3410

108-754-6601

DAVID. BARAN & JRCULEN.COM

Madison Metro Transit Phase 3A - Maintenance and Driver Improvements Contract 8981

Pre-Bid Building Tour Wednesday, April 28, 2021, 9:00 am

ATTENDEES PLEASE SIGN-IN

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ػ۫	Browst @Alliance Sciving, Com	847 783 6585	Alliance Bemo	Bill Handt
3,00	epelkerse scandinars.com	608 444-3934	Ses Engineers	Eric Oelkes
3	WCooped Geeneral Heaven Con	608-212-1091	GH AC	METCH COOPER
	estimate chmbrant.com	2102-538-1548/414-397-3008 estimates chimbrard+.com	HM Brandt Demo	Chayanne Brunst
25	Blhraball@ Soxarhesen.com	608-663-6244	FOX AEN ESON	BRIAN THESISALD
•	jquackonboss@jfahrencom	1008-234-3998	ST Ahern	Jordan (Quackerbass
•	leroynawa.Hspoka.com	715-370-0130	Walt's Petroleur	Liky Nordmeger
	MIKE. SCHWALZEUSAFP.US	1460-818-0541	USA FIRE PATERTIAN	MIKE SCHWART



Department of Public Works

Engineering Division

Robert F. Phillips, P.E., City Engineer

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Principal Engineer 1

James M. Wolfe, P.E.

Christina M. Bachmann, P.E. Mark D. Moder, P.E.

Facilities & Sustainability Bryan Cooper, Principal Architect

Mapping Section Manager Eric T. Pederson, P.S.

Financial Manager

Steven B. Danner-Rivers

May 13, 2021

NOTICE OF ADDENDUM ADDENDUM NO. 2 City of Madison, Engineering Department

CONTRACT NO. 8981 METRO TRANSIT PHASE 3A – MAINTENANCE AND DRIVER FACILITY IMPROVEMENTS

This addendum is issued to modify, explain or correct the original Drawings, Specifications, or Contract Documents marked as Metro Transit Phase 3A-Maintenance and Driver Facility Improvements, City of Madison, Contract #8981, as issued on April 8th, 2021 and is hereby made a part of the contract documents.

This addendum consists of the following documents:

Please attach these Addendum documents to the Drawings (Exhibits A and B), Specifications (Exhibits C and D), and Proposal Specifications in your possession.

1. GENERAL CONTRACT CONDITIONS

A. None.

2. GENERAL QUESTIONS AND ANSWERS

- A. Is it possible to receive the Sprinkler As-Builts as an exhibit with the addendum.
 - i. Yes, attached see Exhibit E Fire Suppr As-Builts provided with Addendum 2.
- B. Can the "sprinkler reconfiguration" for zones 6 and 4A be better defined? Much of the area was modified in Phase 2, is this necessary.
 - i. The current zoning does not meet current code compliance. The modification in zoning is part of the scope of work as noted. If contractor has a suggestion to reconfigure in a different way and still meet current code compliance, we are open to suggestions.
- C. Is there a OH door on Metro big enough to get concrete trucks in? I seem to recall there isn't and I'm checking with Kevin to confirm but I believe we had to buggy every cy of concrete into the building. I'm thinking about the congestion that is created at the main entrance and keeping them in operation.
 - i. Correct, the door heights limit the concrete truck access inside the building.
- D. Also, I am wondering about the exterior wall panels that contain asbestos and where the line is drawn between what we are responsible for and what the abatement contractor needs to do. I imagine we would take the panels down and stack them on site someplace for them to strip mastic or do what ever they need to do but what happens after that? Do they get thrown in a metals dumpster by them that we would provide?
 - i. The intent was to approach this the same way as Phase 1. The abatement contractor handles it turn key and are listed in the spec (AA Environmental). Timing coordinated with the GC. The building walls should not be open for too long, especially along Ingersoll. In Phase 1, AA Environmental just took the entire panel and disposed of it as ACM since the caulking



was pretty extensive at every joint – so the clips holding the panels on were cut and then the entire assembly was removed in full sections.

- E. Sheet A-101C show Helical Piers in the lower right corner of this area. It is our understanding that this work was already completed in the past and what is shown is not part of this project. Please confirm. If it is part of this project, please provide sheet S-101c as some of what is shown crosses over the match line to Area-E. There is no sheet S-101E to better show this area. Please confirm the extent of this work area. If what is shown on S-101C is all we need to worry about, even the helical piers on the other side of the match line, then please confirm.
 - i. All of the helical piles east of column line 13 are existing. S-101C shows this work as grey linework, indicating it is existing. There is no structural work in Area E.
- F. Does the piping, for the generator system, inside the building from the current underground tank location have to be removed?
 - i. Yes. Refer to keynote 8.017 on sheets MD102C, MD102D, and MD102F. Contractor shall also refer to key notes 8.001, 8.002, 8.003 and 8.012 on sheet MD402. Section 23 11 13 has summary of demolition of fuel-oil piping inside the building.
- G. Is the temporary piping for the fuel control system allowed to tie into the existing line?
 - i. It is allowed to tie into the existing 4 tanks that serve the fueling pumps. These tanks are south of the building, just west of the Phase 1 Service Lane addition.
- H. Please provide spec section with manufacturer and/or model number for the Aluminum Bar Grille called out in detail 8/I-502.
 - i. For aluminum bar grille, refer to HVAC LD-1 per keynote 7.102 on sheet M-101A. This references detail 15/M-511 and is scheduled on sheet M-602.
- I. Specifications indicate load testing is to occur with the helical piles. How my load tests are expected?
 - i. Specification section 31 66 15 does not require in-situ pile testing. References are made to in-situ pile testing in the spec for the possibility that unforeseen conditions may arise where in-situ testing is required. With the current conditions, it is not expected that in-situ pile load tests are required.
- J. Sheet G101 has a "CONSTRUCTION SEQUENCE SCOPES OF WORK" area on this sheet. I assume that the CONSTRUCTION SEQUENCE is the same as the PHASED CONSTRUCTION listed on page 01 1000 3 of the Spec book (IE: are PHASES the same as SEQUENCES?). Please advise.
 - i. Correct, sequence and phases are the same.
- K. On 1/G131 it states that the drawing is of OVERALL BASE BID FIRST FLOOR PLAN. One of the notes on this 1/G131 says BASE BID AREA F SECOND FLOOR. On 2/G131 there are two notes on the drawing .. one is for first floor and one is for second floor. I am confused regarding the notes on this sheet referencing both first and second floor on the same plan. Please advise.
 - i. 1/G-131 shows the existing first floor of Maintenance B to remain unaltered. Second floor work reconfigurations and infrastructure are still required as base bid.
 - ii. 2/G-131 shows the new reconfiguration of first floor Maintenance B as an alternate.
- L. Sheet C021 is titled OVERALL EXISTING SITE PLAN. It appears to me that there are items of new construction on this sheet (example ... 30" RCP STORM MINIMUM NEW PIPE SLOPE). Please advise.
 - i. The sheet shows existing conditions only. The elements shown are all existing and no new work is required on this sheet.



- M. Specification Section 01 32 33 Photographic Documentation Item 2.1 requires a web-based camera service and time lapse construction camera for the project. Please confirm the Owner would like bidders to include this expense given the nature of this project.
 - i. Yes, provide cameras for the project as specified.
- N. 1.4 E Talks about the mounting of the lube reel banks. After looking through the drawings, I see where Q102 notes that the mounting details are with the structural drawings. I went through the structural drawings and have been unable to find any specific info on the reel bracketing required for the lube reel banks that are to be hung from the ceiling. My experience tells me that these brackets could be very expensive depending on what is intended. Hoping you can provide a drawing of what is required.
 - i. S-151C & S-151D show Structural Framing with keynote 3.507 and details are on 12 & 16/S-541.
- O. Sheet A-101A at intersection of axis G and 1, it references detail 1/A-501 (shown below). It does not list a material for the space noted in Red. Also shown similarly at other wall sections. Please confirm this is empty space.
 - i. This is an open space created by the depth/projection of the grade beam below the stud wall. Fill cavity full with insulation as shown.
- P. Note 4.130 relates to maintenance paint preparation and appear on A-101A, A-101C, A-101D, and A-101F. In most cases the note references an enclosed room or space. On sheets A-101C&D there is no traditional room partitions and there is no defined delineation of the extent of the application of this note. There are multiple vehicle circulation rooms, service bays, and other adjacent rooms on the sheets. Could you please define the extent of this note on these sheets.
 - i. The extent of work for maintenance paint preparation generally follows the extent of concrete replacement to define the plan area of the spaces for ceilings and adjacent wall work.

3. ACCEPTABLE EQUIVALENTS

- A. 07 27 26 Fluid Applied Membrane Air Barrier
 - i. Product: W.R. Meadows Air-Shield LSR
- B. 08 41 13 Aluminum-Framed Entrances and Storefronts
 - i. Product: Tubelite
- C. 09 51 13 Acoustical Panel Ceilings
 - i. Product: Armstrong Panels
- D. 09 54 23 Linear Metal Soffits
 - i. Hunter Douglas 150F Linear Metal Soffit
- E. 09 80 00 Acoustic Felt
 - i. CSI Wall Panels: Soundcore Plus 1" Acoustical Panel
- F. 10 21 13.19 Plastic Toilet Compartments
 - i. Scranton Products Hiny Hiders
- G. 12 24 13 Roller Window Shades
 - i. Draper



4. **SPECIFICATIONS**

Not attached

- A. Specification 06 40 23 (NOT attached)
 - i. Revise 2.2.b.1 Wood Species and cut: Natural Ash cladding prefinished, classic slat wood wall panel https://urbanevolutions.com/product/slatted-wall-panel-3/
- B. Specification 09 65 13 (NOT attached) Resilient and Metal Base and Accessories
 - i. Part 2.1.A: revise (WB-1) to be "(RB-1)."
 - ii. Add
- 2.1.B: Resilient Base (RB-2)
 - 1. Manufacturer and Product:
 - a. Mannington 4" coved base Burkebase Type TP or equal. https://www.manningtoncommercial.com/products/accessories/burke/burkebase-type-tp/
- C. Specification 09 91 23 (NOT Attached) Interior Painting
 - i. Replace Part 3.3.E. with, "Painting Mechanical and Electrical Work: Paint items exposed in finished occupied spaces (Rooms 1101 through 1119) including, but not limited to, the following:"
- D. Specification 12 64 00 (NOT attached) Upholstery Fabric
 - i. Part 2.2A: Upholstery Fabric UPH-1 is Architex Billow in the color Makena Beach (https://www.architex-ljh.com/billow-makena-beach/)

Attached

- E. Specification 01 32 26 (attached) Construction Progress Reporting
 - i. Added section 3.0, which requires reporting of daily sign in sheets
- F. Specification 02 65 00 (attached) Removal and Disposal of Storage Tanks
 - i. Replace specification in its entirety for modified requirements.
- G. Specification 08 91 19 (attached) Fixed Louvers and Grilles
 - i. Replace specification in its entirety to provide manufacturer and grille information for exterior soffit vent grilles.
- H. Specification 10 22 39 (attached) Folding Panel Partitions
 - i. Replace specification in its entirety for modified requirements of the panels.
- I. Specification 14 40 00 (attached), Lifts (Hoists) and Vertical Storage Units
 - i. Replace specification in its entirety to address lift requirements for length of travel and beacon stack light.
- J. Specification 22 15 19 (attached), Air Compressors and Recievers
 - Replace specifications in its entirety to remove "oil-free" and replace with "oil-lubricated" in Part 2.2.A.3
- K. Specification 22 31 00 (attached), Domestic Water Softeners
 - i. Replace specification in its entirety to remove Part 2.1.B.5: ASME requirement for the FRP pressure vessel.
- L. Specification 22 34 00 (attached), Fuel-Fired, Domestic Water Heaters
 - i. Replace specification in its entirety to remove:



- Part 1.5.C: ASME Compliance
- Part 2.1.3.: ASME requirement for the Storage Tank Construction
- Part 2.2.3.a: ASME requirement.

5. **DRAWINGS**

A. Civil

- i. Drawing C-101 (attached); Removed additional note to replace concrete sidewalk.
- ii. Drawing C-102 (attached); Provided a viewport for the bollards along the perimeter of the generator. Added annotation references for the viewport, detail reference, and separation distances.
- iii. Drawing C-141 (attached); Changed proposed 18" storm pipe to 12" and existing to 10".
- iv. Drawing C-502 (attached); Added a 6" galvanized bollard detail.

B. Structural

- i. Drawing S-001 (attached); Note TI-2 modified.
- ii. Drawing SD101A (attached); Provide paving demolition at the end of the truck dock.
- iii. Drawing SD101D (attached); Removed errant instance of keyed note.
- iv. Drawing S-101A (attached); Strip footing schedule added, foundation added at end of truck dock.
- v. Drawing S-101B (attached); Added foundation for electrical room.
- vi. Drawing S-101C (attached); Added dimensions for pit foundations.
- vii. Drawing S-101D (attached); Added dimensions for pit foundations.
- viii. Drawing S-111A (attached); Paving added at end of truck dock.
 - ix. Drawing S-131A (attached);
 - Added referenced to spandrel connection 20/S-531.
 - Added spandrel in breakroom.
 - Adjusted wall in parts room.
 - x. Drawing S-142A (attached); Added platform connections to existing.
- xi. Drawing S-401 (attached); Removed extraneous detail reference.
- xii. Drawing S-441 (attached);
 - Details 1,2; Added detail reference.
 - Added detail 14/S-441.
- xiii. Drawing S-501 (attached); Within detail 6; added section for GB1240
- xiv. Drawing S-531 (attached); Added detail 20.
- xv. Drawing S-541 (attached);
 - Modified detail 18.
 - Changed detail name 'B' to 22.
 - Added details 19 and 23.
- xvi. Drawing S-551 (attached); Added detail 9.

C. Architectural

- i. Drawing AD101A (attached)
 - Room E135, add overhead crane demo and keynote.
 - Add Demo Keynote 4.062.
- ii. Drawing AD102A (attached)
 - Revise keynote 4.036.
- iii. Drawing A-602 (NOT attached), Door Type FC, add to the title "High Speed Rubber Roll-up Doors"
- iv. Add sheet A-801 (attached) Signage Plan and Types

D. Interiors

i. Drawing I-401 (attached); Change "RFT-1 (Color 5316)" to "RFT-1 (Color 5307)" in all instances and change brown hatch to gray hatch.



- ii. Drawing I-601 (attached), Interior finishes schedule;
 - Remove row for finish number RFT-3. RFT-3 will not be used in this project.
 - Finish number PAB-3, change product description manufacturer from
 "Armstrong" to "CSI Wall Panels", model number from "8246" to
 "SCCPLU4601", style from "Feltworks Acoustical Panel" to "Soundcore Plus 1"
 Acoustical Panel", and color from "FBL" to "SND902".
 - Finish number UPH-1, change product description manufacturer from "Momentum" to "Architex", style from "Site Line" to "Billow", and color from "Mineral" to "Makena Beach".
 - Finish number RFT-1, change first color listed from "5316" to "5307".
 - Finish number WSHD-1, change product description manufacturer from "Mechoshade" to "Draper Inc.", style from "Thermoveil 1300" to "PW3570", color from "Black Brown" to "Ebony", and remove remark "Mechoshade or equal. Black/brown color or similar standard color in series"
 - Finish number WSHD-2, change product description manufacturer from "Mechoshade" to "Draper Inc.", style from "Thermoveil 1300" to "SW7000-V40", and remove remark "Mechoshade or equal. Onyx color or similar standard color in series"
 - Finish number WD-1, change style from "Urban Elm" to "Urban Ash" and add remark "Custom Slat Wall Panels".
 - Add finish number "RB-2" with finish description "Rubber Base Type 2", manufacturer "Mannington", color "523", size "4", and remarks "Burkebase Type TP Coved or equal. See sheet I-102F"

E. Equipment

- Drawings QD101A, QD101C, QD101D, Q101A, Q101C, Q101D, Q101F & Q401 (attached)
 - Revise Equipment Schedule as shown.

F. Plumbing

- i. Drawing PD131D (attached); Added additional compressed air and water supply pipe demolition.
- ii. Drawing P-100A (attached); Provide underground plumbing for future vending in Greeting 1112.
- iii. Drawing P-101A (attached); Provide aboveground plumbing for future vending in Greeting 1112.
- iv. Drawing P-131A (attached); Provide supply plumbing for future vending in Greeting 1112
- v. Drawing P-131D (attached);
 - Added new pipe connection to for existing compressed air and supply pipe lines.
 - Re-routed ESEW-1 piping plan south of the door.
 - Added new keyed note 6.158.
- vi. Drawing P-131F (attached); Provided additional Hose Reels for air and water, additional air drops.
- vii. Drawing P-431 (attached); Piping changes on Detail 3 and 4.

G. HVAC

i. Drawing M-603 (attached): Change Ductwork Finish to "Mill" in the HVAC Duct Schedule on M-603

H. Electrical (ALL NOT attached)

- i. Drawing E-101F; In Vehicle Storage E177, along column line F and between column lines 19 and 20 delete Temporary Generator Connection Cabinet (TGCC)
- ii. Drawing E-601; In Luminaire Schedule add the following acceptable manufactures as



follows: Des. A1; Cooper Lighting, Des. D1: Lightolier, Des. DK1; Solas-Ray, Des. K21; Daybright, Des. L3; CONTECH, Des. N6; Daybrite, Des. N11; Viscor, Des. OA1; Lightolier, Des. OA2; Gardco, Des. P1; Betacalco, Des. P2; GLighting, Scott, Des. P2, P3 and P4; Scott, Des. S1; Halo Lighting, Des. Q1; Omni Light and Q-Tran, Des. Q2; Prizm, Des. X1 and X2; EMGI-Lite. DES. N2, N3, N5 and N7; Viscor LHBD series.

- iii. Drawing E-604; In panel schedule 1ROL6 change enclosure type from NEMA 12 to NEMA
- iv. Drawing E-701; On switchboard MSBNH1, change minimum breaker IC rating from 25,000 to 35,000 RMS SYM @480V.
- v. Drawing E-703;
 - On distribution panel MDOH1, change minimum breaker IC rating from 25,000 to 35,000 RMS SYM @480V.
 - On ATS-EM, change "SCCR =14,000A" to "WCR=30,000A."
 - On ATS-OP, change "SCCR =14,000A" to "WCR 50,0000A."
 - On Generator Connection Cabinet (GCC), change "SCCR =25,000A" to "Calculated Fault Current RMS Sym. @480V=25,000 AIC."
 - Add keyed note 9.320 to read: Service Entrance Conductors from CT/Meter Cabinet to Switchboard are to be routed within masonry chase provided within Parts Storage 1237 to meet the requirements of NEC 230.6.
 - Add keyed note 9.321 to read: Feeder conductors from generator to Bussed Gutter and feeder from Generator Connection Cabinet (GCC) to ATS-EM shall utilize masonry chase provided within Parts Storage 1237 to get to second floor Mechanical room 220.

6. PROPOSAL AND CONTRACT SPECIFICATIONS

A. None

Please acknowledge this addendum in Section E on page E-1: Bidder's Acknowledgement on Bid Express.

Electronic version of these documents can be found on Bid Express at https://www.bidexpress.com/ and the City of Madison web site at https://www.bidexpress.com/ and the City of Madison web site at https://www.bidexpress.com/ and the City of Madison web site at https://www.cityofmadison.com/business/PW/contracts/openforBid.cfm

If you are unable to download plan revisions associated with the addendum, please contact the Engineering office at 608-266-4751 to receive the material by another method.

For questions regarding this bid, contact:

Mead & Hunt, Inc.
Rich Lundeen, AIA, Project Manager

PH: 608-443-0529

Email: richard.lundeen@meadhunt.com

City of Madison

Jon Evans, PE, Project Manager

PH: 608-243-5893

Email: jevans@cityofmadison.com

Sincerely,

Robert F. Phillips, P.E., City Engineer

1			SECTION 01 32 26
2			CONSTRUCTION PROGRESS REPORTING
3			
4	PAR	T 1 – GE	NERAL1
5		1.1.	SUMMARY1
6		1.2.	RELATED SPECIFICATION SECTIONS1
7		1.3.	PERFORMANCE AND QUALITY ASSURANCE REQUIREMENTS1
8	PAR	T 2 – PR	ODUCTS - THIS SECTION NOT USED1
9	PAR	T 3 - EXI	CUTION1
10		3.0	DAILY SIGN-IN SHEET1
11		3.1.	CONTRACTOR JOURNAL1
12		3.2.	CONSTRUCTION PROGRESS MEETINGS2
13			
14	PAR	T 1 – GE	NERAL CONTRACTOR CONTR
15			
16	1.1.	SUN	IMARY
17		A.	Daily records of project activities, resources used, weather conditions, and other information related to the
18			ongoing progress of the project are extremely important at all levels of Construction Management.
19		В.	Daily records provide the base for weekly progress reports and updating progress schedules.
20			
21	1.2.	RELA	ATED SPECIFICATION SECTIONS
22		A.	Section 01 31 19 Project Meetings
23		• В	
24		C.	Section 01 32 23 Photographic Documentation
25			
26	1.3.		FORMANCE AND QUALITY ASSURANCE REQUIREMENTS
27		A.	The General Contractor (GC) shall be responsible for all Construction Progress Reporting as outlined in this and
28		_	other specifications as noted.
29		В.	The GC shall maintain daily progress journals in a format of his/her choosing provided it is legible and contains
30		_	the information as outlined in Section3.1 below.
31		C.	The journal shall be located in the job trailer and shall be reviewable by the Project Architect or City Project
32			Manager if so requested.
33	D 4 D	T 2 DC	ODUCTO THE COTTON NOT HEED
34	PAR	1 Z - PF	ODUCTS - THIS SECTION NOT USED
35 36	DAD.	TO EV	ECLITION
36 37	PAR	13-EV	<u>ECUTION</u>
38	3.0	DAII	Y SIGN-IN SHEET
39	3.0	Α.	The GC shall provide and maintain a daily sign-in sheet and require all workers and visitors to sign in/out each
40		7	work day. These daily sign-in sheet reports shall include name/company/time-in/time-out. These reports can be
41			submitted daily or at the end of each week to the City Project Manager or as directed by City Staff.
42			substituted dutily of de the child of each week to the city indject Manager of as directed by city statis.
43	3.1.	CON	TRACTOR JOURNAL
44		A.	The GC shall maintain a journal of daily progress on which Work is performed by any employee or entity for
45			which the GC is responsible. Such reports shall include all relevant data concerning the progress of Work
46			activities the GC and Subcontractors are responsible for and the effect of that activity on the time of
47			performance of the Contract.
48			1. Some projects may not require weekly journals be kept instead of daily journals. This is at the sole
49			discretion of the City Project Manager. A daily journal will generally be required when the contract has a
50			significant amount of site work. A weekly journal will generally be used when a contract is interior work
51			only.
52		В.	Journal entries shall be made on the Contractor Daily/Weekly Report Form located in the Construction Progress-
53			Daily Journal Library on the Project Management Web Site. The form consists of the following areas:
54			1. Weather; include temperature, humidity, precipitation, wind and other related information such as
55			significant storm events, times, and details.
56			2. Work completed by trade
57			3. Delays encountered
58			4. Deliveries received or delayed

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1			5. Hot issues that need to be addressed
2			6. Safety issues
3			7. Photograph progress and upload to the Photo Library on the Project Management Web Site.
4			8. Other including inspections, testing, etc.
5			9. Space for attaching documents
6		C.	Contractor Daily/Weekly Report Forms shall be completed and signed by the GC's Job Superintendent or other on-site representative authorized by the GC confirming each such report is current, accurate and complete.
8		D.	If applicable the GC shall include schedules of quantities and costs, progress schedules, wage rates, reports,
9			estimates, invoices, records and other data as requested by the CPM concerning Work performed or to be
10 11			performed under this Contract if the CPM determines such information is needed to substantiate Change Order proposals, claims, or to resolve disputes.
12			proposals, claims, or to resolve disputes.
13	3.2.	CON	STRUCTION PROGRESS MEETINGS
14		A.	The GC shall provide a verbal summary of the previous two (2) weeks progress reports at each bi-weekly
15			construction progress meeting.
16			
17			
18			END OF SECTION
19			

01 32 26 - 2

SECTION 02 65 00 REMOVAL AND DISPOSAL OF STORAGE TANKS

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. The Contractor shall furnish all labor, material, tools, transportation and equipment necessary to remove the existing Underground Storage Tank (UST), associated electrical, structural, and product equipment, (e.g., dead men, anchor straps, piping, manways, piping, pumps, and dispenser(s), if present). This section specifies requirements for the permitting and removal of the UST and is intended to supplement the construction/installation specifications. Generally, the work shall include, but not be limited to:
 - 1. File all necessary notices, obtain all permits and licenses, and pay for all governmental taxes, fees, and other costs in connection with the work. Obtain all necessary approvals of all governmental departments having jurisdiction.
 - Coordinate removal activities with SCS Engineers, 2830 Dairy Drive, Madison, WI. (608) 224-2830. SCS Engineers is the City of Madison approved vendor for these activities and will provide Wisconsin DATCP-Certified UST Tank System Remover Cleaner to oversee the operation.
 - 3. After SCS has determined the tank atmosphere is safe, remove, the of UST(s), and appurtenant piping for the tank(s) and set aside onsite for cleaning and removal by SCS.. The work shall include the removal of the tank and associated piping between the tank and the building. Removal of piping and associated contents within the building is addressed in the Mechanical drawings.
 - 4. SCS will provide a Wisconsin DATCP-certified Tank System Site Assessor to perform the required site assessment soil sampling and documentation.
 - 5. Comply with the Contractor's submitted Health and Safety Plan

1.3 DEFINITIONS

- A. LEL: Lower Explosive Limit
- B. OSHA: Occupational, Health and Safety Administration
- C. PID: Photoionization Detector

1.4 REGULATORY REQUIREMENTS

- A. Tank closure shall be carried out in accordance with the Agriculture, Trade and Consumer Protection (DATCP), as well as any other applicable local, state and City of Madison regulations. Wherever there is a conflict or overlap of requirements, the most stringent provisions shall apply.
- B. The Contractor shall obtain and pay for all local and state permits and make necessary arrangements with the local Fire Department prior to the removal of tanks.

- C. The Contractor shall keep the local Fire Department informed of all activities throughout the performance of the work. This task may be delegated to SCS.
- D. For work that will be sub-contracted, the Contractor is responsible to ensure that the Sub-contractor has reviewed and will strictly adhere to this specification, all reference documents, and with all local, state and federal regulations.
- E. All Contractors and/or Sub-contractors must have current, applicable licenses for all work performed.

1.5 SAFETY REQUIREMENTS

- A. All personnel shall be trained in the proper use and maintenance of the appropriate protective equipment used on this project. Smoking will not be allowed in the work area or loading area during the course of the work.
- B. Personnel working inside and in the general vicinity of the tanks shall be trained and thoroughly familiar with the safety precautions, procedures, and equipment required for controlling the potential hazards associated with this work, including training for confined space entry. Personnel shall use proper protection and safety equipment during work in and around the tanks, including instruments to monitor air quality, explosive atmospheres and oxygen content.
- C. All provisions of the site Health and Safety Plan included shall be in force during tank removal activities, unless modified in writing by the Contractor's Site Safety Officer.
- D. Warning signs and devices shall be placed at regular intervals along the work area perimeter, and establish restricted work zones, support areas and decontamination areas as needed. Contractor shall furnish, install and maintain fencing or other appropriate barricades at open excavations, including illumination if left over night.
- E. Prior to ending operations on any working day or at any time the Contractor is not on site, the Contractor shall secure all areas of work by erecting temporary safety fencing in accordance with Section 01 50 00 TEMPORARY FACILITIES AND CONTROLS.
- F. Cutting of steel or other metals by thermal methods shall, at all times, occur in a non-explosive environment. During such work, percent of lower explosive limit in the tanks, piping of the surrounding atmosphere shall be continuously monitored. The Contractor shall note that residual pockets of oils or residues may exist in some of the pipelines and the Contractor shall exercise care to prevent release to the environment and harm to workers, facility staff or the public resulting from potential explosive nature of the contained materials.
- G. The Contractor shall provide and maintain an adequate supply of fire extinguishers and other required safety equipment in close proximity to all tank cleaning and removal activities.

1.6 COORDINATION

- A. Arrange selective demolition schedule so as not to interfere with Owner's operations.
- B. See Construction Sequencing Drawing G-101 for detailed sequencing requirements.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ASSE A10.6 and NFPA 241.
- C. Standards: Comply with CH. ATCP 93 and any other state and federal tank laws.
- D. Reference Standards can be found at: https://datcp.wi.gov/Pages/Programs Services/PetroleumHazStorageTanksLawsRegula tions.aspx

PART 3 - EXECUTION

3.1 GENERAL

A. Provide suitable personnel, material and equipment to remove the fuel piping and tank and all sludge and liquids that may be in the piping prior to removal. Take all necessary precautions during removal of the tanks to prevent damage to utilities adjacent to the area. All fuel fill, boiler supply and other fuel lines and vents shall be removed.

3.2 PERMITTING

A. Prior to initiating storage tank removal activities, the Contractor shall notify the local fire department. The Contractor shall apply for and obtain a Permit for storage tank removal and transportation to approved tank disposal yard in accordance with the provisions of state, local and federal requirements.

3.3 TANK CLEANING

- A. SCS will clean and dispose the tank following removal by the Contractor and will contract directly with the owner for these services: SCS Engineers, 2830 Dairy Drive, Madison, WI. (608) 224-2830. SCS Engineers is the City of Madison. The contractor will be responsible for draining and removing petroleum piping inside the building. Piping shall be drained back into the tank.
- B. The Contractor shall perform the following activities prior to closure of the tank:
 - 1. Notify the local fire department.
 - 2. Contact Digger's Hotline to obtain information on underground utilities, a minimum of 72 hours prior to excavation.
 - 3. Obtain all necessary permits, as previously detailed within this Section.
- C. Inspect the work area prior to excavation, decontamination and removal activities to the extent required to safely perform the work.
- D. The Contractor shall protect existing site surfaces, materials, and structures from inadvertent Contamination from cleaning operations. Should such contamination occur, the Contractor shall not be reimbursed for costs associated with replacement or proper disposal of contaminated materials.

- E. Assure that any electrical power connected to the tanks or its ancillary equipment (pumps) has been deactivated and the actual wiring properly dismantled at the circuit breaker(s).
- F. Collect, containerize and dispose of all residual oils, other product, and sludge remaining in the piping prior to tank cleaning and removal.
- G. T SCS shall use a suitably calibrated instrument to determine if the atmosphere within the tanks exceeds ten percent of the Lower Explosive Limit (LEL). Readings shall be taken throughout the tanks depth wherever access is possible. If the vapors within the tanks exceed ten percent of the LEL, the atmosphere shall be purged or interted followed by a recheck of the LEL until the vapors are less than 10 percent of the LEL.
- H. After acceptable LEL levels have been reached, excavation of tanks may begin after approval of the Owner's Representative.

3.4 TANK EXCAVATION

- A. The Contractor shall provide all labor, permitting, tools, material, services, and equipment necessary to properly demolish the concrete vault, excavate the tank(s), and associated mechanical piping and appurtenances, after pipe and tank cleaning and disposal activities.
- B. After the tank and mechanical piping have been purged, cleaned, and gas freed of vapors, but prior to removal, the Contractor shall plug all holes and inert the tanks and piping, as specified by the Board of Fire Prevention regulations.
- C. Once the tanks are cleaned and inert, the Contractor must be careful to excavate around the tank, exposing as much of the tank as possible, to allow for a visual inspection of the tank surface. The inspection is performed to identify possible holes, cracks, etc. and other evidence that a leak may have occurred. Remove the tank hold-down straps, if any, lift the tank out of the excavation, place on a level surface, and block the tank to prevent movement. The exterior of each tank and pipe shall be cleaned, and if contaminated soil or groundwater conditions exist, the cleaning wastes contained for proper disposal. Methods for removal shall be predetermined by Contractor and approved by the Owner or their representative.
- D. The SCS shall monitor the excavations and every 20 feet along pipe trenches for visual indications of the release of petroleum and shall use a PID for headspace screening of samples and to conduct ambient air readings during all excavation activities. The Contractor shall assist the SCS in collecting appropriate soil samples during post excavation from excavation graves. These samples will be submitted by SCS for analysis at an analytical laboratory. Headspace screening of soil samples will performed by SCS The City of Madison will coordinate reporting obligations as well as any further environmental remediation. As a result, the Contractor may be required to perform additional excavation in the area.]
- E. If large areas of petroleum impacted soils are encountered in the UST excavation, or greater than one-half inch (½") of free oil on a groundwater surface, work shall stop and the City of Madison Project Manager shall be immediately notified. Subsequent earthwork and/or groundwater handling work will be under the direction of SCS.
- F. Incidental volumes of visually (or by field PID) contaminated soils may be expected during excavation of the USTs and piping. These soils shall be segregated and stored

during characterization and preparation for offsite disposal by the Contractor. Apparently clean soils shall be stockpiled separately for future reuse at the site. Reuse of these soils will be directed by City of Madison or SCS.

3.5 TANK REMOVAL

- A. The tanks shall be removed from the excavation and the exterior cleaned to remove all soil and inspected for signs of corrosion, structural damage, or leakage.
- B. Tank anchoring structures such as concrete deadmen or hold down slabs shall be removed, unless otherwise directed by the Owner.
- C. All piping including electrical conduit associated with the tanks shall be completely removed to the interior face of any associated building wall. Piping shall be reduced to appropriate lengths and cleaned of all contaminated materials. Sleeves and piping passing through wall shall be flushed clean and then permanently capped and plugged on the outside in a manner approved by the Owner.
- D. All level monitoring and control equipment shall be completely removed to the interior face of any associated building wall. This includes transmitters, indicators, conduit, wiring, pumps and dispensers.

3.6 DISPOSAL

A. All concrete associated with existing buried tanks shall be broken up and reused/disposed in accordance with Section 01 74 19 CONSTRUCTION AND WASTE MANAGEMENT AND DISPOSAL.

END OF SECTION 02 65 00

SECTION 08 91 19 FIXED LOUVERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes:
 - 1. Fixed drainable louvers with blank-off panels, bird, and insect screens.
 - 2. Aluminum eggcrate return grille

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of louver, vent and accessory indicated.
- B. Shop Drawings: Show layouts of louver and vents, including plans, elevations, sections, details, and attachments metal wall panels and other work.
- C. Color Chart: Provide Manufacturer's color chart with full range of standard colors.

1.4 QUALITY ASSURANCE

- A. Source Limitation: Obtain louvers and vents through one source from a single manufacturer.
- B. Installer Qualifications: An employer of workers trained and approved by manufacturer.
 - 1. Installer's responsibilities include fabricating and installing louvers and vents integral to metal wall panel assemblies and providing professional engineering services needed to assume engineering responsibility.

PART 2 - PRODUCTS

2.1 LOUVERS

- A. Manufacturers:
 - 1. Basis-of-design manufacturer and product:
 - a. Manufacturer: Greenheck
 - b. Product: ESD-603
 - 1) 150-mm (6 inches) extruded aluminum stationary blade exterior louver.

- B. Louvers shall be horizontal, extruded-aluminum, drainable-blade louvers:
 - 1. Aluminum Thickness: 2.06-mm (0.081 inches) for both blades and frames.
 - 2. Six-inch-deep frames and drainable blades.
- C. Reference Louver Schedule on the mechanical drawing sheets for quantity and size of louvers.

2.2 ALUMINUM EGGCRATE RETURN GRILLE

- A. Manufacturers:
 - 1. Basis-of-design manufacturer and product:
 - a. Manufacturer: Titus
 - b. Product: 50F
 - 1) Aluminum border and aluminum grid construction
 - 2) ½" x ½" x 1 inch
 - c. Size: 24 inch x 24 inch

2.3 ACCESSORIES

- A. Louver Screens: Provide removable bird screens at interior face of each exterior louver. Fabricate screen frames from same kind and form of metal as indicated for louver to which screens are attached.
- B. Provide manufacturer's standard insulated blank-off panels at all areas of louvers not being utilized for air intake and exhaust.

2.4 FINISHES

- A. Color Anodic Finish: AAMA 611, AA-M10C22A42, 0.0018-mm (0.07 mil) thicker.
 - 1. Color: As selected by Architect from full range of manufacturer's standard colors.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install louvers level, plumb, and at indicated alignment with adjacent work.
- B. Use concealed anchorages where possible.
- C. Protect metal surfaces from corrosion or galvanic action by applying a heavy coating of bituminous paint on surfaces that will be in contact with concrete, masonry, or dissimilar metals.

END OF SECTION 08 91 19

SECTION 10 22 39 FOLDING PANEL PARTITIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 **SUMMARY**

- A. Section Includes:
 - 1. Electrically operated, acoustical panel partitions.
- B. Related Requirements:
 - 1. Section 05 50 00 "Metal Fabrications" for supports that attach supporting tracks to overhead structural system.
 - 2. Section 09 29 00 "Gypsum Board" for fire-rated assemblies and sound barrier construction above the ceiling at track.
 - 3. Electrical and communications Sections for electrical service and connections for motor operators, controls, and limit switches and for system disconnect switches.

1.3 DEFINITIONS

- A. NIC: Noise Isolation Class.
- B. NRC: Noise Reduction Coefficient.
- C. STC: Sound Transmission Class.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include plans, elevations, sections, attachment details.
 - 2. Indicate stacking and operating clearances. Indicate location and installation requirements for hardware and track, blocking, and direction of travel.
 - 3. Include diagrams for power, signal, and control wiring.
- B. Samples for Initial Selection: For each type of exposed material, finish, covering, or facing.
 - 1. Include Samples of accessories involving color selection.

- C. Samples for Verification: For each type of exposed material, finish, covering, or facing, prepared on Samples of size indicated below:
 - 1. Textile Facing Material: Full width by not less than 36-inch- (914-mm-) long section of fabric from dye lot to be used for the Work, with specified treatments applied. Show complete pattern repeat.
 - 2. Panel Facing Material: Manufacturer's standard-size unit, not less than 3 inches (75 mm) square.
 - 3. Panel Edge Material: Not less than 3 inches (75 mm) long.
 - 4. Hardware: One of each exposed door-operating device.

1.6 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Reflected ceiling plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:
 - 1. Partition track, track supports and bracing, switches, turning space, and storage layout.
 - 2. Suspended ceiling components.
 - 3. Structural members to which suspension systems will be attached.
 - 4. Size and location of initial access modules for acoustical tile.
 - 5. Items penetrating finished ceiling including the following:
 - a. Lighting fixtures.
 - b. HVAC ductwork, outlets, and inlets.
 - c. Speakers.
 - d. Sprinklers.
 - e. Smoke detectors.
 - f. Access panels.
 - 6. Plenum –fire, smoke, and acoustical barriers.
- B. Setting Drawings: For embedded items and cutouts required in other work.
- C. Qualification Data: For Installer.
- D. Product Certificates: For each type of operable panel partition.
- E. Product Test Reports: For each operable panel partition, for tests performed by a qualified testing agency.
- F. Field quality-control reports.
- G. Sample Warranty: For manufacturer's special warranty.

1.7 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For operable panel partitions to include in maintenance manuals.

- 1. In addition to items specified in Section 01 78 23 "Operation and Maintenance Data," include the following:
 - a. Panel finish facings and finishes for exposed trim and accessories. Include precautions for cleaning materials and methods that could be detrimental to finishes and performance.
 - b. Seals, hardware, track, track switches, carriers, and other operating components.
 - c. Electric operator and controls.

1.8 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Protectively package and sequence panels in order for installation. Clearly mark packages and panels with numbering system used on Shop Drawings. Do not use permanent markings on panels.

1.10 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of operable panel partitions that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Faulty operation of operable panel partitions.
 - b. Deterioration of metals, metal finishes, and other materials beyond normal use.
 - 2. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Acoustical Performance: Provide operable panel partitions tested by a qualified testing agency for the following acoustical properties according to test methods indicated:
 - 1. Sound-Transmission Requirements: Operable panel partition assembly tested for laboratory sound-transmission loss performance according to ASTM E90, determined by ASTM E413, and rated for not less than the STC indicated.
 - Noise-Isolation Requirements: Installed operable panel partition assembly, identical to partition tested for STC, tested for NIC according to ASTM E336, determined by ASTM E413, and rated for 10 dB less than STC value indicated.

- B. Fire-Test-Response Characteristics: Provide panels with finishes complying with one of the following as determined by testing identical products by a testing and inspecting agency acceptable to authorities having jurisdiction:
 - 1. Surface-Burning Characteristics: Comply with ASTM E84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - a. Flame-Spread Index: 25 or less.
 - b. Smoke-Developed Index: 450 or less.
 - 2. Fire Growth Contribution: Complying with acceptance criteria of local code and authorities having jurisdiction when tested according to NFPA 286.
- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.2 OPERABLE ACOUSTICAL PANELS

- A. Operable Acoustical Panels: Partition system, including panels, seals, finish facing, suspension system, operators, and accessories.
 - 1. Basis of Design:
 - a. North Wall of 1104: Skyfold, Zenith Premium Model C.
 - b. Dividing Wall of 1104: Skyfold, Zenith Model B
- B. Panel Operation: Electrically operated, vertical lift panels.
- C. Panel Construction: As required to support panel from suspension components and with reinforcement for hardware attachment. Fabricate panels with tight hairline joints and concealed fasteners. Fabricate panels so finished in-place partition is rigid; level; plumb; aligned, with tight joints and uniform appearance; and free of bow, warp, twist, deformation, and surface and finish irregularities.
- D. Dimensions: Fabricate operable acoustical panel partitions to form an assembled system of dimensions indicated and verified by field measurements.
 - 1. Panel Width: As indicated in the Drawings.
- E. STC: Not less than 51.
- F. Panel Weight: 6.2 lb/sq. ft. (55 kg/sq. m) maximum.
- G. Panel Thickness: Nominal dimension of 12 inches (102 mm).
- H. Panel Materials: Manufacturer's standard, unless otherwise indicated in the Drawings.
- I. Panel Closure: Manufacturer's standard unless otherwise indicated.

- J. Hardware: Manufacturer's standard as required to operate operable panel partition and accessories; with decorative, protective finish.
- K. Finish Facing: as indicated in the Drawings and Finish Schedule.

2.3 SEALS

- A. Description: Seals that produce operable panel partitions complying with performance requirements and the following:
 - 1. Manufacturer's standard seals unless otherwise indicated.
 - 2. Seals made from materials and in profiles that minimize sound leakage.
 - 3. Seals fitting tight at contact surfaces and sealing continuously between adjacent panels and between operable panel partition perimeter and adjacent surfaces, when operable panel partition is extended and closed.

2.4 PANEL FINISH FACINGS

- A. Description: Finish facings for panels that comply with indicated fire-test-response characteristics and that are factory applied to operable panel partitions with appropriate backing, using mildew-resistant non-staining adhesive as recommended by facing manufacturer's written instructions.
- B. Fabric Wall Covering: Manufacturer's standard fabric, from same dye lot, treated to resist stains.
 - 1. Color/Pattern: Provide HPL, Marker Boards and Fabric for walls per the Finish Schedule.
- C. Trimless Edges: Fabricate exposed panel edges so finish facing wraps uninterrupted around panel, covering edge and resulting in an installed partition with facing visible on vertical panel edges, without trim, for minimal sightlines at panel-to-panel joints.

2.5 ELECTRIC OPERATORS

- A. Factory-assembled electric operation system of size and capacity recommended and provided by operable panel partition manufacturer for partition specified; with electric motor and factory-prewired motor controls, speed reducer, chain drive, control stations, control devices, and accessories required for operation. Include wiring from control stations to motor. Coordinate operator wiring requirements and electrical characteristics with building electrical system.
- B. Comply with NFPA 70.
- C. Control Equipment: Comply with NEMA ICS 1, NEMA ICS 2, and NEMA ICS 6.
- D. Motor Electrical Characteristics:
 - 1. Horsepower: Manufacturer's standard.
 - 2. Volts: 230.
 - 3. Phase: Polyphase.

4. Hertz: 60.

- E. Control Stations: Two single-key-operated, constant-pressure control stations located remotely from each other on opposite sides and opposite ends of partition run. Wire in series to require simultaneous activation of both key stations to operate partition. Each three-position control station labeled "Open," "Close," and " Stop." Furnish two keys per station.
- F. Obstruction-Detection Devices: Equip each motorized operable panel partition with indicated automatic safety sensor that causes operator to immediately stop and reverse direction.
 - 1. Sensor Edge: Contact-pressure-sensitive safety edge along partition's leading edge.

G. Safety Requirements:

- 1. The operable wall shall employ an electromagnetic type of brake which shall activate firmly, without hesitation, when power is lost to the system. This brake shall have a minimum retarding torque rating equal to 200% of the motor drive's full load torque. The drive system shall be equipped with a manual override and a brake release lever.
- 2. The operable wall shall employ a dynamic brake, distinct and separate from the brake in 2.2.4.1, in order to lower the operable wall at a controlled speed of no more than approximately 150% of the normal down speed, in the case of a catastrophic failure in the motor drive's power train. Alternately, the operable wall shall employ a brake, distinct and separate from the brake in 2.2.4.1, in order to completely halt the downward motion of the wall in the case of a catastrophic failure in the power train.
- 3. The operable wall shall employ electrical or other limit switches in order to stop the wall at it's up and down travel limits.
- 4. The operable wall shall employ an over torque detector in order to sense a jam in the system and to act as an over travel limit in the up direction should the primary limit switch fail to act in 1.3.2.4. This over torque sensor shall be mechanical, using the motor's torque arm in it's over torque detection.
- 5. The entire length of the bottom edge of the operable wall shall be equipped with a continuous pressure sensing strip which shall cut power to the motor drive and shall activate the brake outlined in 2.2.4.1, if the sensing edge comes in firm contact with an object, before the operable wall is in the full down (closed) position. The operable wall will automatically reverse direction and ascend for approximately 3 seconds to clear the obstruction. The power shall remain cut to the motor drive until the switches have been released. The operation of the operable wall can resume once the obstruction is removed.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine flooring, floor levelness, structural support, and opening, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of operable panel partitions.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install operable panel partitions and accessories after other finishing operations, including painting, have been completed in area of partition installation.
- B. Install panels in numbered sequence indicated on Shop Drawings.
- C. Broken, cracked, chipped, deformed, or unmatched panels are not acceptable.
- D. Broken, cracked, deformed, or unmatched gasketing or gasketing with gaps at butted ends is not acceptable.
- E. Light-Leakage Test: Illuminate one side of partition installation and observe vertical joints and top and bottom seals for voids. Adjust partitions for alignment and full closure of vertical joints and full closure along top and bottom seals.

3.3 FIELD QUALITY CONTROL

- A. NIC Testing: Engage a qualified testing agency to perform tests and inspections.
 - 1. Testing Extent: Testing agency shall randomly select one operable panel partition installation(s) for testing.
 - Testing Methodology: Perform testing of installed operable panel partition for noise isolation according to ASTM E336, determined by ASTM E413, and rated for not less than NIC indicated. Adjust and fit partitions to comply with NIC test method requirements.
- B. An operable panel partition installation will be considered defective if it does not pass tests and inspections.
- C. Prepare test and inspection reports.

3.4 ADJUSTING

- A. Adjust operable panel partitions, hardware, and other moving parts to function smoothly, and lubricate as recommended by manufacturer.
- B. Adjust panels to operate smoothly and easily, without binding or warping.
- C. Verify that safety devices are properly functioning.

3.5 MAINTENANCE SERVICE

A. Maintenance Service: Beginning at Substantial Completion, maintenance service shall include 12 months' full maintenance by manufacturer's authorized service representative. Include quarterly preventive maintenance, repair or replacement of worn

or defective components, lubrication, cleaning, and adjusting as required for proper operable-partition operation. Parts and supplies shall be manufacturer's authorized replacement parts and supplies.

3.6 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain operable panel partitions.

END OF SECTION 10 22 39

SECTION 14 40 00 LIFTS (HOISTS) AND VERTICAL STORAGE UNITS

PART 1 - GENERAL

<u>1.1</u> <u>SCOPE</u>

A. Applicable provisions of the General and Supplementary Conditions and Division 01 govern work under this Section.

1.2 DESCRIPTION

- A. Work Included:
 - 1. Nine (9) vehicle lifts: ECO 60
 - 2. One (1) ECO 90
 - 3. Two (2) vertical storage units:
 - a. one (1) for tire storage and
 - b. one (1) for parts inventory.
- B. Related Work Specified Elsewhere

1.	Cast-In Place Concrete	Section 03 30 00
2.	Plumbing Systems	Division 22
3.	Electrical	Division 26

1.3 SUBMITTALS

- A. Within 35 days after award of Contract, and before any of the materials of this Section are delivered to the job site, submit complete to the Owner in accordance with these Specifications; the following:
 - 1. Shop Drawings: Shop drawings shall include, but not necessarily be limited to, the following:
 - a. Wiring and control schematic and detail diagrams
 - b. Maximum electrical requirements
 - c. Outline dimensions of equipment
 - d. Equipment and component layout
 - e. Details of equipment and controls
 - f. Installation detail
 - 2. Operation and Maintenance Manuals.

1.4 Product Delivery, Storage and Handling

A. Protection: Use all means necessary to protect the materials of this Section before, during and after installation and to protect the installed work and materials of all other trades.

- B. Delivery and Storage of Materials
 - 1. Deliver materials in manufacturer's original sealed containers.
- C. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Owner and at no additional cost to the Owner.

1.5 QUALITY ASSURANCE

- A. Manufacturer shall be a reputable manufacturing firm, regularly engaged in the design and manufacture of lifts. All similar items shall be the product of a single manufacturer.
- B. A manufacturer's field service representative shall install the equipment, conduct acceptance testing and train the Owner's personnel in the proper operation and maintenance of the equipment.
- C. The following information shall be provided with the bid documents regarding the manufacturer's experience and qualifications:
 - 1. Provide a minimum of three locations where similar equipment has been provided/installed including the date placed in service.
 - 2. Provide the name and telephone number of individuals at above locations who are familiar with the operation and maintenance of the lift equipment.

1.6 CERTIFICATION REQUIREMENTS

- A. Materials shall comply with ISO, E.N. and meet or exceed 9000 quality standards.
- B. The lift installer shall be certified as a factory authorized installer, trained and authorized by the manufacturer supplying the lift equipment. Certification shall be provided with the bid documents.
- C. The lift manufacturer shall comply with all applicable requirements of the "Buy America" provisions of the Surface Transportation Act as outlined by the Federal Transit Administration and U.S. Department of Transportation.
- D. The Lift Manufacturer shall be a held in good standings with the Automobile Lift Institute (ALI).
- E. The lift or lifts, shall be labeled and listed by a Nationally Recognized Testing Laboratory as established by OSHA for conformance to ANSI/ALI ALCTV-1998 Automotive Lifts, "Safety Requirements for the Construction, Care and Use of Automotive Lifts," as published by the American National Standards Institute. The lifts shall be Gold labeled certified with the ALI/ETL certification. The lift company's Quality Management System shall be ISO9001. The lift manufacturer shall comply with all applicable requirements of the Buy America Act.

1.7 APPLICABLE STANDARDS

A. In addition to the requirements outlined herein, the lift or lifts shall comply with all applicable requirements of Automotive Lift Institute (ALI), American National Standards

Institute (ANSI), and "Safety Requirements for the Construction, Care and Use of Automobile Lifts", as published by the American National Standards Institute. All electrical apparatus shall be UL Listed.

1.8 WARRANTY

- A. Following completion of installation and start up of lift equipment, the manufacturer shall provide a one (1) year warranty against manufacturing defects in materials, function and workmanship.
- B. Warranty shall include materials and labor necessary to correct defects.
- C. All parts shall be readily available locally in the United States.

PART 2 - PRODUCTS

2.1 SCISSORS IN-GROUND LIFTS

A. Model:

- 1. ECO- 60 as manufactured by Stertil-Koni USA Inc.
 - a. General Description: lift shall consist of two lifting units in line with the longitudinal axis of the vehicle, each lifting unit so equipped as to engage the axle and/or suspension as specified herein. One of the two lifting units will be movable fore and aft to affect variable spacing between lifting mechanisms. The other lifting unit shall be fixed.
 - b. Lifting Capacity:
 - 1) Lift shall be capable of raising 60,000 lbs. (27,216 kg), 30,000 lbs. (13,608 kg) Fixed/ 30,000 lbs. (13,608 kg) Moveable.
 - 2) Unbalanced Loads, Moveable to Fixed: Lift shall be capable of raising 30,000 lbs (13,608 kg) on one unit and 0 lbs (0 kg) on the other unit.
 - c. Travel range for the movable lifting unit is as follows, depending on selected model:
 - 1) 204 inches (ECO 60-17) 120 inches (ECO-60-10)

2. Dimensions:

- a. Lifting height shall be no less than 70 inches (1,780 mm) as measured from the bolster at full rise to the finished floor.
- b. Lifting Rate: 90 seconds; 45 inches (1,140 mm) per minute, minimum.
- c. Maximum depth below finished floor for any structural component or member: 34 inches (864 mm) maximum.
- d. Movable and fixed lifting unit synchronization: 2 inches (51 mm).
- e. Lift Units:

- 1) Lift units and continuous recess insert shall be completely removable with no lift components or structural framing permanently embedded in the concrete.
- 2) Lift unit shall be a hydraulically powered, mechanically articulating scissor lift, complete with a mechanical locking system.
- 3) All steel surfaces shall be powder coated.
- 4) By means of a centering link, the lifting unit structure shall articulate symmetrically about the center axis of the lift unit as it raises and lowers.

3. Movable Lifting Unit:

- a. Movable lifting unit shall relocate horizontally fore and aft while in the fully retracted position.
- b. When the entire travel frame insert has the covers in place and the lift is operational, it forms a continuous recess that shall meet the following design and performance criteria:
 - 1) The movable lifting unit shall not be required to recess, or park, in only one "pocketed" location, providing increased productivity in servicing fleet vehicles of varying wheelbases.
 - The movable lifting unit may be recessed below finished floor at any position between the minimum and maximum dimensions of the travel range.
 - 3) The movable lifting unit shall be capable of fore and aft travel while recessed below floor.
- c. Maximum depth below finished floor for the continuous recess insert, rear lifting unit or any fixed or movable component shall be 34 inches (864 mm).
- d. The movable steel box insert shall have an open floor design, mounted off the concrete floor of the trench to allow for the collection, cleaning and drainage of all liquids and solids that accumulate in the trench.
- e. Aluminum covers for moveable mechanism is anodized structural 6061 aluminum extrusions engineered to accept a 7,500 lb. (3,402 kg) point load on a contact area of 2 x 2 inches (50 x 50 mm) and shaped to include a full-length interlocking hinge. Covers shall fit together tightly and uniformly to promote smooth travel so as to prevent jamming and twisting. Covers shall be able to accept a 13,500 lb. (6,123 kg.) drive over load on a 6 x 9 inch (152 x 228 mm) contact area.
- f. Aluminum covers for the moveable mechanism are attached to UHMW slider blocks for reduced friction and increased longevity. These slider blocks shall keep the covers properly centered at all times. Horizontal grooves in the UHMW sliders shall, together with essentially half moon shaped guide rails in the end section of lift's steel box insert, securely guide the covers as they travel in and out of the recess.
- g. Aluminum covers for the moveable mechanism shall be flush with finished floor within a tolerance of less than 1/8 inch. Covers that are lower than the finished floor are not be acceptable.
- h. Movable lifting unit and the covers shall bear on and slide over UHMW surfaces for low friction and minimal maintenance.

- i. Hydraulically powered carriage drive shall utilize a rack and gear arrangement on both left and right sides for smooth and even fore-aft travel without binding.
- j. Rack shall be inverted and positioned under the load channel of the movable lifting unit insert where it is protected so as not to collect dirt, grease etc.
- k. All hydraulic and compressed air service lines are fed from control console to moveable lifting unit insert through one PVC chase way per unit.
- I. All low voltage, intrinsically safe electric service lines shall be fed from the control console to the moveable lifting unit insert through one 3/4 inch rigid conduit per unit, installed to meet local requirements.

4. Fixed Lifting Unit:

a. Fixed lifting unit shall be drop-in, and bolted in-place with eight 7/8 inch (22 mm) stainless steel anchors.

5. Hydraulic System:

- a. System shall be comprised of high pressure, low volume, single acting, 7 inch (178 mm) diameter cylinders, one in each lifting unit.
- b. The hydraulic system shall be a power up / gravity down design. Lifts that rely on the power units to run during the lowering cycle shall not be acceptable due to increased power consumption.
- c. High pressure seals shall be internal to the cylinder, where they are protected from salt, dirt, etc.
- d. Combined, the two cylinders shall only require 7 gallons (26.5 l) of AW 15 hydraulic oil for lifting to full height.
- e. Each pistons requires 3.5 gallons (13.25 Liters) of hydraulic oil for lifting to full height.
- f. Each cylinder shall have a hose break velocity fuse (safety check valve) integrally mounted to prevent excessive loss of fluid from the cylinder.
- g. The hoses shall be of reinforced construction and utilize JIC fittings throughout.
- h. The hoses feeding the front movable lift carriage shall be supported and contained by a cable carrier to prevent the hoses from dragging or tangling.
- i. The lift shall be driven by two individual power units, readily available as an off-the-shelf component.

6. Adapters:

- a. The lift system shall include a variety of axle engaging accessory adapters designed to raise heavy vehicles by the axles or chassis. The accessory adapters shall be easily removed for storage and/or change out.
- b. Adapter Adjustment: Minimum 13.25 inches (337 mm); Maximum 56 inches (1422 mm).
- c. Bolster Width: 40 inches (1016 mm) minimum.

- d. Bolster and Base Adapters for all lifting units shall recess below finished floor.
- e. Base adapters shall be restrained to prevent over extension.
- f. Removal of base adapters shall be accomplished by pulling-up a spring loaded pin and sliding the base adapter off the bolster.
- g. The base adapter shall have at least a five hole pattern that will allow every accessory adapter to be used in the reverse direction, allowing up to eight positions of the accessory adapter on the base adapter.

7. Controls:

- a. The control system shall conform to all current NEC, UL 201 and OSHA codes.
- b. The control system shall be PCB operated and continuously monitor all operating functions and safety systems of the lifting units. The control system shall utilize intrinsically safe inclinometers to constantly monitor the elevation of the lifting units to ensure synchronized operation. Synchronization through flow control valves is not acceptable. Control systems that do not constantly monitor the elevation of all lifting units are not acceptable.
- c. The control system shall have a provision to allow the operator to electronically restrict the maximum lifting height.
- d. The control system shall provide audio and visual feedback that communicates with the operator. The control system shall facilitate troubleshooting by providing no less than 44 fault codes displayed in numeric fashion on the PCB.
- e. The enclosure for electrical control components shall be IP 54 rated and have the following controls mounted on the front cover
 - 1) Disconnect switch, 3 phase
 - 2) Push buttons for Lift Raise, Lower and Unlock
 - 3) Selector button for synchronized, moveable, or fixed lifting
 - 4) Push buttons for hydraulic moveable carriage drive
- f. The control console shall be equipped with a main power disconnect switch which interrupts all incoming power. Main power disconnect shall be lock-out capable.
- g. Console access panels shall have key-hole slots and recessed handles for easy removal and installation.
- h. The control system shall include, on the control box face, a blue HOME indicator lamp. This lamp shall illuminate when all lifting units are fully retracted to inform the operator that the bay is clear to allow entry and exit by the vehicle.
- i. The control system shall automatically prohibit horizontal movement of the moveable lifting unit when raised above 12 inches A.F.F.
- j. The control system shall have a provision to allow the operator to open the mechanical locks during rising to reduce noise emission.
- k. The lift, when fitted with the proper electrical motor, shall operate at the following voltages: 208 (3 phase)
- 8. Automatic Wheel Base Positioning

a. The control system shall be equipped with an AWBP (automatic wheel base positioning) system that allows the operator to program not less than 16 wheelbase positions into the control system for reduced set up times. The AWBP system shall include a min. 4 inch color touch screen to allow the operator to select and program vehicle wheel bases. The AWBP system shall allow the operator to store wheel base positions by vehicle brand and year or license plate for ease of use and safety to avoid selection of the incorrect vehicle. Additionally, the color LCD touch screen shall be utilized to display AWBP related error messages and instructions. Once a vehicle has been selected, the moveable lifting unit shall travel to the pre-programmed position without interruptions or stops.

9. Wired Remote Control:

- a. The lift shall be equipped with an ergonomic industrial remote control, rated for use in NEC Class 1, Div. 2, hazardous locations.
- b. Remote control shall be connected to the control console through a multiconductor cable with military-style DIN connector. Standard cable length shall be 35 feet. (10.6 m)
- c. Remote control shall allow full function control of the lift, with the following:
 - 1) Push/Pull E-Stop Button
 - 2) Push buttons for Lift Raise, Lower and Unlock
 - 3) Selector button for synchronized lifting
 - 4) Push buttons for hydraulic moveable carriage drive
- d. Remote control shall be equipped with an emergency E-Stop button that de-energizes power to all outputs of the PCB. Re-activation of the control system requires resetting the E-Stop and re-energizing the control system.
- e. The control box shall have a provision to disable operation of the remote control during lowering when the bolster is below 12 inches A.F.F.

10. Safety Devices:

- a. Each lifting unit shall be equipped with double lock jaw, gravity engaging, mechanical locks with the first lock position engaging at a minimum height of 18 inches (457 mm).
- b. Number of Mechanical Lock Stops: 12, minimum.
- c. Vertical height spacing between each lock stop: 6 inches (152 mm), maximum.
- d. The mechanical locks shall be made of high strength T-1 steel.
- e. All push buttons shall be of momentary contact, dead man type.

11. HOME Beacon Stack Light:

a. The lift shall be equipped with an external HOME beacon stack light. This beacon light shall turn green when all lifting units are fully retraced to inform the operator that the bay is clear to allow entry and exit by the vehicle. When one or more lifting units are not fully lowered the beacon

light shall turn red to inform the operator that the bay is not clear and it is not safe to move the vehicle into or out of the bay.

b. The beacon light shall have the option to be mounted in a remote location (e.g. by the bay door) for optimum visibility.

2.2 SCISSORS STYLE IN-GROUND LIFTS

A. Scissor style in-ground Lift Model ECO90 as manufactured by Stertil-Koni USA, Inc.

1. General Description:

a. The lift shall consist of three lifting units in line with the longitudinal axis of the vehicle, each lifting unit so equipped as to engage the axle, suspension, and/or frame as specified herein. Two of the two lifting units shall be movable fore and aft to affect variable spacing between lifting mechanisms. The other lifting unit shall be fixed.

2. Lifting Capacity:

- a. Lift shall be capable of raising 90,000 lbs. (40,826 kg), 30,000 lbs. (13,608 kg) each fixed/ 30,000 lbs. (13,608 kg) each movable lifting unit.
- b. Unbalanced Loads, Movable to Fixed: Lift shall be capable of raising 30,000 lbs (13,608 kg) on one unit and 0 lbs (0 kg) on the other unit.

Dimensions:

- a. The lifting height shall be no less than 70 inches (1,780 mm) as measured from the point of adapter contact at full rise to the finished floor.
- b. Lifting Rate: 90 seconds; 45 inches (1,140 mm) per minute, minimum.
- c. Maximum depth below finished floor for any structural component or member: 34 inches (864 mm) maximum.
- d. Movable and fixed lifting unit synchronization: 2 inches (51 mm).
- e. Travel range for the movable lifting unit shall be as follows, depending on selected model:
 - 1) ECO 90-17-xx: 204 inches (5,182 mm)

4. Lifting Units:

- a. Lifting units and continuous recess inserts shall be completely removable with no lift components or structural framing permanently embedded in the concrete.
- b. Lifting units shall be hydraulically powered, mechanically articulating scissors, complete with a mechanical locking system.
- c. All steel surfaces shall be powder coated.
- d. By means of a centering link, the lifting unit structure shall articulate symmetrically about the center axis of the lift unit as it raises and lowers.

5. Movable Lifting Units:

- a. The movable lifting unit shall relocate horizontally fore and aft while in the fully retracted position.
- b. When the entire continuous recess insert has the covers in place and the lift is operational, it shall form a continuous recess that shall meet the following design and performance criteria:
 - 1) The movable lifting unit shall not be required to recess, or park, in only one "pocketed" location, providing increased productivity in servicing fleet vehicles of varying wheelbases.
 - 2) The movable lifting unit may be recessed below finished floor at any position between the minimum and maximum dimensions of the travel range.
 - 3) The movable lifting unit shall be capable of fore and aft travel while recessed below floor.
- c. Maximum depth below finished floor for the continuous recess insert, rear lifting unit or any fixed or movable component shall be 34 inches (864 mm).
- d. The movable steel box insert shall have an open floor design, mounted off the concrete floor of the trench to allow for the collection, cleaning and drainage of all liquids and solids that accumulate in the trench.
- e. The aluminum covers for the movable mechanism shall be anodized structural 6061 aluminum extrusions engineered to accept a 7,500 lb. (3,402 kg) point load on a contact area of 2 x 2 inches (50 x 50 mm) and shall be shaped to include a full-length interlocking hinge. Covers shall fit together tightly and uniformly to promote smooth travel so as to prevent jamming and twisting. The covers shall be able to accept a 13,500 lb. (6,123 kg.) drive over load on a 6 x 9 inch (152 x 228 mm) contact area.
- f. The aluminum covers for the movable mechanism shall be attached to UHMW slider blocks for reduced friction and increased longevity. These slider blocks shall keep the covers properly centered at all times. Horizontal grooves in the UHMW sliders shall, together with half-moon shaped guide rails in the end section of the lift's steel box insert, securely guide the covers as they travel in and out of the recess.
- g. Transition plates shall be bolted to the continuous recess insert to provide for a flush and smooth transition from the shop floor to the aluminum covers. The transition plates also shall assist the cover travel by holding the covers down so they can't buckle during horizontal travel.
- h. The aluminum covers for the movable mechanism shall be flush with the finished floor within a tolerance of less than 1/8 inch. Covers that are lower than the finished floor shall not be acceptable.
- i. The movable lifting unit and the covers shall bear on and slide over UHMW surfaces for low friction and minimal maintenance.
- j. The hydraulically powered carriage drive shall utilize a rack and gear arrangement on both the left and right sides for smooth and even fore-aft travel without binding.
- k. The rack shall be inverted and positioned under the load channel of the movable lifting unit insert where it is protected so as not to collect dirt, grease etc.

- I. All hydraulic and compressed air service lines shall be fed from the control console to the movable lifting unit insert through one PVC chase way per lifting unit.
- m. All low voltage, intrinsically safe electric service lines shall be fed from the control console to the movable lifting unit insert through one 3/4 inch rigid conduit per lifting unit, installed to meet local requirements.

6. Fixed Lifting Unit:

a. The fixed lifting unit shall be bolted in place with eight each 7/8 inch (22 mm) stainless steel anchors.

7. Hydraulic System:

- a. System shall be comprised of three high pressure, low volume, single acting, 7 inch (178 mm) diameter cylinders, one in each lifting unit.
- b. The hydraulic system shall be a power up / gravity down design. Lifts that rely on the power units to run during the lowering cycle shall not be acceptable due to increased power consumption and wear.
- c. High pressure seals shall be internal to the cylinder, where they are protected from salt, dirt, etc.
- d. Each cylinder shall require no more than 3.5 gallons (13.25 liters) of hydraulic fluid for lifting to full height.
- e. Combined, the three cylinders shall only require 10.5 gallons (39.75 l) of AW 15 hydraulic fluid for lifting to full height.
- f. Each cylinder shall have a hose break velocity fuse (safety check valve) integrally mounted to prevent excessive loss of fluid from the cylinder.
- g. The hoses shall be of reinforced construction and utilize JIC fittings throughout.
- h. The hoses feeding the movable lift carriage shall be supported and contained by a cable carrier to prevent the hoses from dragging or tangling.
- i. The lift shall be driven by three individual power units, readily available as an off-the-shelf component.

8. Adapters:

- a. The lift system shall include a variety of axle engaging accessory adapters designed to raise heavy vehicles by the axles or frame. Adapters shall be either axle or frame oriented. Spinning adapters shall not be acceptable due to risk of accidental rotation during vehicle spotting and setup.
- b. The base adapter shall have at least a five hole pattern that will allow every accessory adapter to be used in the reverse direction, allowing up to eight positions of the accessory adapter on the base adapter.
- c. Sliding base adapters shall be restrained to prevent over extension.
- d. Bolster and base adapters for all lifting units shall recess below finished floor.
- e. Adapter Adjustment: Minimum 13.25 inches (337 mm); Maximum 56 inches (1,422 mm).
- f. Bolster Width: 40 inches (1,016 mm) minimum.

9. Controls:

- a. The control system shall conform to all current NEC, UL 201 and OSHA codes.
- b. The control system shall be PCB operated and continuously monitor all operating functions and safety systems of the lifting units.
- c. The control system shall utilize intrinsically safe inclinometers to constantly monitor the elevation of the lifting units to ensure synchronized operation.
- d. The control system shall allow the user to adjust the sensitivity of the electronic synchronization without the use of special tools, within the absolute limits of ANSI/ALI ALCTV standard.
- e. The control system shall have the ability to receive regular software updates/upgrades as control system advances become available. All updates/upgrades shall be possible through data transfer without the need for component replacement.
- f. On the face of the control console, control elements shall include:
 - 1) "UP" button.
 - 2) "Down" button.
 - 3) "Lock release" button.
 - 4) "Confirm" button
 - A high definition 7 inch (178 mm) LCD screen touch screen. The touch screen shall be specifically designed for a harsh workshop environment. The touch screen shall provide systems information, but operation of the lift shall be initiated by the primary operational buttons. The touch screen shall include a removable micro-SD memory card for storage of user configurable information. The touch screen shall be capable of providing the following functions:
 - a) "Lifting unit selection" indicator: displays to the operator which lifting units in the lift have been selected for operation. The display illustrates the ability to operate the lifting units singularly, or groups of lifting units as synchronized sets.
 - b) "Lifting unit height" indicator: displays to the operator the height of each individual lifting unit. The height indicator shall also provide, on the touch screen, a clear indicator if the lifting unit has been set to stop at a restricted lifting height.
 - c) "Lifting units fully lowered" indicator: displays to the operator that all lifting units are fully retracted into the ground to inform the operator that the bay is clear to allow entry and exit by the vehicle.
 - d) "Error message" indicator: displays to the operator when a fault code has been registered by the control system, the touch screen shall inform the operator of any fault situations being present in the lift. The control system shall have the ability to display error messages including fault description on the screen.
 - e) One-touch access to the Guide screen: This area of the touch screen provides to the operator:

i. Owner information

- f) One-touch access to the Information screen: This area of the touch screen provides to all users:
 - i. Owner information
 - ii. Contact information for service provider
 - iii. Equipment time log including lifting unit run times
- g) One-touch access to the Settings screen which displays various options. The settings screen shall allow control of:
 - i. Settings screen option (1): authorized users shall have the ability to change the language (English, Spanish, French) displayed on the screen as well as the units of measure for height and weight (imperial or metric units).
 - ii. Settings screen option (2): authorized users shall have the ability to retract the mechanical locks during raising for reduced noise, as well as to set a restricted maximum lifting height.
 - iii. Access to the Shop and Assistance screens: from the Settings screen, authorized users shall have the ability to control the service settings.
- h) One-touch access to the Shop configuration screen options which is PIN protected. The shop configuration screen shall allow adjustment of:
 - i. Edit of owner's details: allows the ability to edit the information displayed on the Owner's field.
- One-touch access to the Assistance configuration screen which displays various options and is PIN protected. The maintenance configuration screen shall allow adjustment of:

Screen 1

- i. Initiation of crush protection which guards against a crushing hazard during lowering when using the optional remote control. This safety system, when enabled, will interrupt lowering as the lift reaches 18 inches (457 mm) above finished floor. At that time, the operator needs to return to the control console and continue the lowering cycle by utilizing the control buttons located on the face of the control console.
- ii. Ability to disable height difference monitoring to aid in trouble shooting. Once initiated, this control system option allows the maintainer to operate the lifting system outside normal safety

limits. This system is only for use by the lift system maintainer during repair procedures. This system option will automatically be disabled and the control system returned to default operating parameters after 10 minutes.

Screen 2

- i. Ability to view lift system run time to properly plan for lift system maintenance.
- ii. Ability to view individual lifting unit motor run time to properly plan for lift system maintenance.

Screen 6

 This screen shall allow back up of the operating system

Screen 7

- i. This screen shall display operating system information
- g. The enclosure for electrical control components shall be IP 54 rated.
- h. The control console shall be equipped with a main power disconnect switch which interrupts all incoming power. Main power disconnect shall be lock-out capable.
- i. Control console access panels shall have key-hole slots and recessed handles for easy removal and installation.
- j. The control system shall automatically prohibit horizontal movement of the movable lifting unit when raised above 12 inches (305 mm) above finished floor. This parameter shall be user programmable without the use of special tools.
- k. The lift, when fitted with the proper electrical motors, shall operate at the following voltages: 208 (3 phase)

10. Safety Devices:

- a. Each lifting unit shall be equipped with double lock jaw, gravity engaged, mechanical locks with the first lock position engaging at a minimum height of 18 inches (457 mm).
- b. Number of Mechanical Lock Stops: 12, minimum.
- c. Vertical height spacing between each lock stop: 6 inches (152 mm), maximum.
- d. The mechanical locks shall be made of high strength T-1 steel.
- e. All push buttons shall be of momentary contact, dead man type.

11. Automatic Wheel Base Positioning:

a. The control system shall be equipped with an AWBP (automatic wheel base positioning) system that allows the operator to program an infinite number of wheelbase positions into the control system for reduced set up times. The AWBP system shall be controlled via the 7 inch (178 mm)

color touch screen to allow the operator to select and program vehicle wheel bases. The AWBP system shall allow the operator to store wheel base positions by vehicle brand and year or license plate for ease of use and safety to avoid selection of the incorrect vehicle.

b. Once a vehicle has been selected, the movable lifting unit shall travel to the pre-programmed position without interruptions or stops.

12. Wired Remote Control:

- a. The lift shall be equipped with an ergonomic industrial remote control, rated for use in NEC Class 1, Div. 2, hazardous locations.
- b. Remote control shall be connected to the control console through a multiconductor cable with military-style DIN connector. Standard cable length shall be 35 feet. (10.6 m)
- c. Remote control shall allow full function control of the lift, with the following:
 - 1) Push/Pull E-Stop Button
 - 2) Push buttons for Lift Raise, Lower and Unlock
 - 3) Selector button for synchronized (group) or single operation
 - 4) Push buttons for hydraulic movable carriage drive
- d. Remote control shall be equipped with an emergency E-Stop button that de-energizes power to all outputs of the PCB. Re-activation of the control system requires resetting the E-Stop and re-energizing the control system.
- e. The control box shall have a provision to disable operation of the remote control during lowering when the bolster is below 18 inches (457 mm) above finished floor.

13. HOME Beacon Stack Light:

- a. The lift shall be equipped with an external HOME beacon stack light. This beacon light shall turn green when all lifting units are fully retraced to inform the operator that the bay is clear to allow entry and exit by the vehicle. When one or more lifting units are not fully lowered the beacon light shall turn red to inform the operator that the bay is not clear and it is not safe to move the vehicle into or out of the bay.
- b. The beacon light shall have the option to be mounted in a remote location (e.g. by the bay door) for optimum visibility.

2.3 VERTICAL STORAGE UNIT #1 – TIRES

A. Motorized Carousel

a. Model: #HT54288-0963-SV12 - Custom

b. Capacity: Max per size

c. Carrier width: 15'-0"
 d. Height: 15'-0"
 e. Carousel width: 14'-11"

f. Depth: 9'-4"

2.4 VERTICAL STORAGE UNIT #2 - PARTS

A. Motorized Carousel

a. Model: #P1812-24-120 - Custom

b. Height: 16'-3" c. Width: 12'-0" d. Depth: 6'-3"

e. Carrier QTY: Max per size

2.5 ACCEPTABLE MANUFACTURERS:

- A. Stertil Koni Lifts
- B. Vidmar Vertical Storage Units

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until supporting structures have been properly prepared.
- B. If supporting structures preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Transmit submittals and deliverables required by this section.
- B. Furnish product as indicated.
- C. Ensure that substrates are in suitable condition to receive the work of this section.
- D. Clean surfaces thoroughly prior to installation.
- E. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 FABRICATION

A. Fabricate equipment in accordance with all specifications and approved drawings.

3.4 INSTALLATION

- A. Prior to commencing any on-site work, contractor shall provide facility all the construction details for the lift along with requirements for any specialty embedded items associated with lifts. The contractor and lift installer will closely coordinate requirements during installation phase. Installer shall provide and install materials required for complete and operable installation as indicated on manufacturer's installation drawings.
- B. Provide 3-inch high concrete service pad with chamfered edges under control console.

- C. Install in accordance with manufacturer's instructions.
- D. Test for proper operation, and re-test if necessary, until satisfactory results are obtained.

3.5 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before substantial completion.

3.6 START-UP DEMONSTRATION

A. Following installation, the equipment installer shall perform an acceptance test as recommended by the manufacturer. Prior to the test, submit a testing program for approval. The program shall show that the equipment meets all of the conditions described by this specification and that the equipment will perform as intended. Notification of Start-Up Demonstration will be scheduled two weeks in advance of the estimated date.

3.7 TRAINING

- A. After completion of installation the installer shall provide a training program to all operating personnel to correctly demonstrate operation and maintenance procedures of the equipment.
- B. As a minimum training shall include: (1) Proper use and maintenance procedures of the lift; (2) safety features; (3) Cleaning procedures; (4) Proper methods for storage and handling of materials, including troubleshooting; and (5) Servicing, adjusting, routine preventative maintenance.

END OF SECTION 14 40 00

SECTION 221519 - AIR COMPRESSORS AND RECEIVERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, Standard Specifications, Proposal Documents, Special Provisions, Supplemental Specifications, Bid Item Manual and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Lubricated, reciprocating air compressors.

1.3 DEFINITIONS

- A. Actual Air: Air delivered from air compressors. Flow rate is delivered compressed air measured in acfm.
- B. Standard Air: Free air at 68 deg F and 1 atmosphere (29.92 in. Hg) before compression or expansion and measured in scfm.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
- B. Operation and Maintenance Data: For compressed-air equipment to include in emergency, operation, and maintenance manuals.

1.5 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. ASME Compliance: Fabricate and label receivers to comply with ASME Boiler and Pressure

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Vessel Code.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS FOR PACKAGED AIR COMPRESSORS AND RECEIVERS

- A. General Description: Factory-assembled, -wired, -piped, and -tested; electric-motor-driven; air-cooled; continuous-duty air compressors and receivers that deliver air of quality equal to intake air.
- B. Control Panels: Automatic control station with load control and protection functions. Comply with NEMA ICS 2 and UL 508.
 - 1. Enclosure: NEMA ICS 6, Type 12 control panel unless otherwise indicated.
 - 2. Motor Controllers: Full-voltage, combination magnetic type with under voltage release feature and motor-circuit-protector-type disconnecting means and short-circuit protective device.
 - 3. Control Voltage: 120-V ac or less, using integral control power transformer.
 - 4. Motor Overload Protection: Overload relay in each phase.
 - 5. Starting Devices: Hand-off-automatic selector switch in cover of control panel, plus pilot device for automatic control.
- C. Receivers: Steel tank constructed according to ASME Boiler and Pressure Vessel Code: Section VIII, Division 1.
 - 1. Pressure Rating: At least as high as highest discharge pressure of connected compressors, and bearing appropriate code symbols.
 - 2. Interior Finish: Corrosion-resistant coating.
 - 3. Accessories: Include safety valve, pressure gage, drain, and pressure-reducing valve.
- D. Mounting Frame: Fabricate mounting and attachment to pressure vessel with reinforcement strong enough to resist packaged equipment movement during a seismic event when base is anchored to building structure.
- 2.2 ROTARY-SCREW AIR COMPRESSORS
 - A. Rotary-Screw Air Compressors:

AIR COMPRESSORS AND RECEIVERS

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- 1. <u>Manufacturers:</u> Subject to compliance with requirements, provide products by the following:
 - a. Ingersoll Rand.
 - b. Kaeser.
 - c. Quincy.
- 2. Description: Packaged unit.
- 3. Air Compressor(s): Single-stage, oil-lubricated rotary-screw type with lubricated helical screws and lubricated gearbox, and of construction that prohibits oil from entering compression chamber.
 - a. Cooling/Lubrication System: Unit-mounted, air-cooled exchanger package prepiped to unit; with air-pressure circulation system with coolant stop valve, full-flow coolant filter, and thermal-bypass valve.
 - b. Air Filter: Dry type, with maintenance indicator and cleanable replaceable filter element.
 - c. Air/Coolant Receiver and Separation System: 150-psig- rated steel tank with ASME safety valve, coolant-level gage, multistage air-coolant separator element, minimum pressure valve, blowdown valve, discharge check valve, coolant stop valve, full-flow coolant filter, and thermal-bypass valve.
 - d. Capacity Control: Capacity modulation between zero and 100 percent air delivery, with operating pressures between 50 and 100 psig. Include necessary control to hold constant pressure. When air demand is zero, unload compressor by using pressure switch and blowdown valve.
 - e. Mounting: Freestanding.
- 4. Sound-attenuation enclosure.
- B. Capacities and Characteristics:
 - 1. Compressed-Air Service: Shop air.
 - 2. Air Compressor(s): One.
 - 3. Standard-Air Capacity of Each Air Compressor: 335 scfm free air.
 - 4. Actual-Air Capacity of Each Air Compressor: 300 acfm delivered.
 - 5. Discharge-Air Pressure: 135.
 - 6. Discharge-Air Temperature: 100° F or less.
 - 7. Motor (Each Air Compressor):
 - a. Horsepower: 75.
 - b. Speed: 1531 rpm.
 - 8. Electrical Characteristics:
 - a. Volts: 460.

- b. Phase(s): Three.
- c. Hertz: 60.
- d. Full-Load Amperes: 101.
- e. Maximum Overcurrent Protection: 150 amperage.
- 9. Receiver: ASME construction steel tank.
 - a. Orientation: Vertical arrangement.
 - b. Capacity: See drawing schedule
 - c. Interior Finish: Epoxy.
 - d. Pressure Rating: 150 psig minimum.
 - e. Pressure Regulator Setting: See drawing schedule
 - f. Pressure Relief Valve Setting: 135 psig.
 - g. Drain: Automatic valve.

2.3 INLET-AIR FILTERS

- A. Description: Combination inlet-air filter-silencer, suitable for remote installation, for each air compressor.
 - 1. Construction: Weatherproof housing for replaceable, dry-type filter element, with silencer tubes or other method of sound reduction.
 - 2. Capacity: Match capacity of air compressor, with filter having collection efficiency of 99 percent retention of particles larger than 10 micrometers.
- 2.4 Refrigerant Compressed-Air Dryers
- A. Description: Noncycling, air-cooled, electric-motor-driven unit with steel enclosure and capability to deliver 35 deg F, 100-psig air at dew point. Include automatic ejection of condensate from airstream, step-down transformers, disconnect switches, inlet and outlet pressure gages, thermometers, automatic controls, and filters.

2.5 MOTORS

- A. Comply with NEMA designation, temperature rating, service factor, enclosure type, and efficiency requirements for motors specified in Division 22 Section "Common Motor Requirements for Plumbing Equipment."
 - 1. Motor Sizes: Minimum size as indicated. If not indicated, large enough so driven load will not require motor to operate in service factor range above 1.0.
 - 2. Controllers, Electrical Devices, and Wiring: Comply with requirements for electrical devices and connections specified in Division 26 Sections.

PART 3 - EXECUTION

3.1 EQUIPMENT INSTALLATION

- A. Equipment Mounting: Install air compressors and air dryers anchored to concrete bases using elastomeric pads. Comply with requirements in Division 03 Section "Cast-in-Place Concrete."
- B. Arrange equipment so controls and devices are accessible for servicing.
- C. Maintain manufacturer's recommended clearances for service and maintenance.
- D. Install the following devices on compressed-air equipment:
 - 1. Pressure Gage and Safety Valve: Install on each compressed-air receiver.
 - 2. Pressure Regulators: Install downstream from air compressors and dryers.
 - 3. Automatic Drain Valves: Install on filters and dryers. Discharge condensate over nearest floor or open site drain.

3.2 CONNECTIONS

- A. Comply with requirements for piping specified in Division 22 Section "General-Service Compressed-Air Piping." Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Install piping adjacent to machine to allow service and maintenance.

3.3 IDENTIFICATION

A. Identify general-service air compressors and components. Comply with requirements for identification specified in Division 22 Section "Identification for Plumbing Piping and Equipment."

3.4 STARTUP SERVICE

- A. Perform startup service.
 - 1. Complete installation and startup checks according to manufacturer's written instructions.

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- 2. Verify that air-compressor inlet filters and piping are clear.
- 3. Check for equipment vibration-control supports and flexible pipe connectors and verify that equipment is properly attached to substrate.
- 4. Check safety valves for correct settings. Ensure that settings are higher than air-compressor discharge pressure but not higher than rating of system components.
- 5. Drain receiver tanks.
- 6. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.
- 7. Test and adjust controls and safeties.

3.5 DEMONSTRATION

A. Train Owner's maintenance personnel to adjust, operate, and maintain air compressors and dryers.

END OF SECTION 221519

SECTION 22 31 00 DOMESTIC WATER SOFTENERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 **SUMMARY**

- A. Section Includes:
 - 1. Commercial Water softeners.
 - 2. Chemicals.
 - 3. Water-testing sets.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
 - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for water softeners.
 - 2. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
 - 3. Wiring Diagrams: For power, signal, and control wiring.
- B. Operation and Maintenance Data: For water softeners to include in emergency, operation, and maintenance manuals.

1.4 QUALITY ASSURANCE

- A. Product Options: Drawings indicate size, profiles, and dimensional requirements of water softeners and are based on the specific system indicated. Refer to Division 01 Section "Product Requirements."
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended application.
- C. UL Compliance: Fabricate and label water softeners to comply with UL 979, "Water Treatment Appliances."

1.5 COORDINATION

A. Coordinate size and location of concrete bases. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified in Division 03.

1.6 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of water softeners that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Structural failures of mineral and brine tanks.
 - b. Faulty operation of controls.
 - c. Deterioration of metals, metal finishes, and other materials beyond normal use.
 - d. Attrition loss of resin exceeding 3 percent per year.
 - e. Mineral washed out of system during service run or backwashing period.
 - f. Effluent turbidity greater and color darker than incoming water.
 - g. Fouling of underdrain system, gravel, and resin with turbidity or by dirt, rust, or scale from water softener or soft water, while operating according to manufacturer's written operating instructions.
 - 2. Warranty Period: 5 years from date of Substantial Completion.

1.7 MAINTENANCE SERVICE

A. Maintenance: Submit four copies of manufacturer's "Agreement for Continued Service and Maintenance," before Substantial Completion, for Owner's acceptance. Offer terms and conditions for furnishing chemicals and providing continued testing and servicing to include replacing materials and equipment. Include one-year term of agreement with option for one-year renewal.

PART 2 - PRODUCTS

2.1 WATER SOFTENERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Culligan International Company.
 - 2. Diamond Water Systems, Inc.
 - 3. Hellenbrand Inc.
- B. Description: Factory-assembled, pressure-type water softener.
 - 1. Standard: Comply with NSF 61 Annex, "Drinking Water System Components Health Effects."
 - 2. Model: progressive/metered water softening system.
 - 3. Configuration: Twin unit with two mineral tanks and two brine tanks.
 - 4. Mounting: On housekeeping pad.
 - 5. Mineral Tanks: FRP, pressure-vessel quality.
 - a. Pressure Rating: 125 psig minimum.
 - b. Freeboard: 50 percent minimum for backwash expansion above normal resin bed level.

- c. Distribution System: Hub and radial-arm or header-lateral type; fabricated from nonmetallic pipe and fittings with individual, fine-slotted, non-clogging plastic strainers, and arranged for even flow distribution through resin bed.
- 6. Controls: Electronic programmable, fully automatic; factory wired, and factory mounted on unit.
 - a. Adjustable duration of various regeneration steps.
 - b. Push-button start and complete manual operation.
 - Electric time clock and switch for fully automatic operation, adjustable to initiate regeneration at any hour of day and any day of week or at fixed intervals.
 - d. Electronic water meter, adjustable to initiate regeneration according to time clock schedule or by volume override.
- 7. Flow Control: Automatic, to control backwash and flush rates over wide variations in operating pressure; does not require field adjustments.
 - a. Demand-Initiated Control: Each mineral tank of twin mineral-tank unit is equipped with automatic-reset-head water meter that electrically activates cycle controllers to initiate regeneration at preset total in gallons. Head automatically resets to preset total in gallons for next service run. Electrical lockout prevents simultaneous regeneration of both tanks.
- 8. Brine Tank: Combination measuring and wet-salt storing system.
 - a. Tank and Cover Material: Fiberglass, 3/16 inch thick; or molded PE, 3/8 inch thick.
 - b. Brine Valve: Float operated, and plastic fitted for automatic control of brine withdrawal and freshwater refill.
 - c. Size: 330lb each.
- 9. Factory-Installed Accessories:
 - a. Piping, valves, tubing, and drains.
 - b. Sampling cocks.
 - c. Main-operating-valve position indicators.
 - d. Water meters.
- C. Capacities and Characteristics:
 - Water Analysis:
 - a. Hardness: 25 grains/gal. or ppm.

2.2 WATER-TESTING SETS

A. Description: Manufacturer's standard water-hardness testing apparatus and chemicals with testing procedure instructions. Include metal container suitable for wall mounting.

PART 3 - EXECUTION

3.1 WATER SOFTENER INSTALLATION

- A. Equipment Mounting:
 - 1. Install water softeners on cast-in-place concrete equipment base(s).
- B. Install brine lines and fittings furnished by equipment manufacturer but not specified to be factory installed.
- C. Prepare mineral-tank distribution system and underbed for minerals and place specified mineral into mineral tanks.
- D. Install remote salt delivery system to the top of brine tanks and have delivery system piping piped to the outside of the building in a location a delivery truck can access.
- E. Install water-testing sets mounted on wall, unless otherwise indicated, and near water softeners.

3.2 CONNECTIONS

- A. Comply with requirements for piping specified in Section 22 11 16 "Supply Piping for Plumbing." Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Where piping is installed adjacent to equipment, allow space for service and maintenance of equipment.
- C. Install shutoff valves on raw-water inlet and soft-water outlet piping of each mineral tank, and on inlet and outlet headers.
 - 1. Metal and plastic valves are specified in Section 22 05 23 "General-Duty Valves for Plumbing."
 - 2. Exception: Water softeners with factory-installed shutoff valves at locations indicated.
- D. Install pressure gages on raw-water inlet and soft-water outlet piping of each mineral tank. Pressure gages are specified in Section 22 05 19 "Meters and Gages for Plumbing."
 - 1. Exception: Water softeners with factory-installed pressure gages at locations indicated.
- E. Install valved bypass in water piping around water softeners.
 - 1. Metal and plastic valves are specified in Section 22 05 23 "General-Duty Valves for Plumbing." Water piping is specified in Section 22 11 16 "Supply Piping for Plumbing."
- F. Install drains as indirect wastes to spill into open drains or over floor drains or floor sinks.

3.3 IDENTIFICATION

A. Identify system components. Comply with requirements for identification specified in Section 22 05 53 "Identification for Plumbing."

3.4 FIELD QUALITY CONTROL

- A. Tests and Inspections:
 - 1. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
 - 2. Operational Test: After electrical circuitry has been energized, start units to confirm proper unit operation.
 - 3. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- B. Water softeners will be considered defective if they do not pass tests and inspections.
- C. Prepare test and inspection reports.

3.5 STARTUP SERVICE

- A. Engage a factory-authorized service representative to perform startup service.
 - 1. Complete installation and startup checks according to manufacturer's written instructions.
- B. Add water to brine tanks and fill with salt:
- C. Sample water softener effluent after startup and at three consecutive seven-day intervals (total of four samples) and prepare certified test reports for required water performance characteristics. Comply with the following:
 - 1. ASTM D 859, "Test Method for Silica in Water."
 - 2. ASTM D 1067, "Test Methods for Acidity or Alkalinity of Water."
 - 3. ASTM D 1068, "Test Methods for Iron in Water."
 - 4. ASTM D 1126, "Test Method for Hardness in Water."
 - 5. ASTM D 1129, "Terminology Relating to Water."
 - ASTM D 3370, "Practices for Sampling Water from Closed Conduits."

3.6 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain water softeners.

END OF SECTION 22 31 00

SECTION 22 34 00 FUEL-FIRED, DOMESTIC-WATER HEATERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

- 1. Commercial, gas-fired, high-efficiency, storage, domestic-water heaters.
- 2. Domestic-water heater accessories.

1.3 ACTION SUBMITTALS

A. Product Data: For each type and size of domestic-water heater indicated. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.

1.4 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For fuel-fired, domestic-water heaters to include in emergency, operation, and maintenance manuals.

1.5 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. ASHRAE/IESNA Compliance: Fabricate and label fuel-fired, domestic-water heaters to comply with ASHRAE/IESNA 90.1.
- C. NSF Compliance: Fabricate and label equipment components that will be in contact with potable water to comply with NSF 61 Annex G, "Drinking Water System Components Health Effects."

1.6 COORDINATION

A. Coordinate sizes and locations of concrete bases with actual equipment provided.

1.7 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of fuel-fired, domestic-water heaters that fail in materials or workmanship within specified warranty period.

- 1. Failures include, but are not limited to, the following:
 - a. Structural failures including storage tank and supports.
 - b. Faulty operation of controls.
 - c. Deterioration of metals, metal finishes, and other materials beyond normal use.
- 2. Warranty Periods: From date of Substantial Completion.
 - a. Commercial, Gas-Fired, Storage, Domestic-Water Heaters:
 - 1) Storage Tank: Five years.
 - 2) Controls and Other Components: Three year(s).
 - b. Compression Tanks: Five years.

PART 2 - PRODUCTS

2.1 COMMERCIAL, GAS-FIRED, STORAGE, DOMESTIC-WATER HEATERS

- A. Commercial, Gas-Fired, High-Efficiency, Storage, Domestic-Water Heaters:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Bock Water Heaters.
 - b. Bradford White Corporation.
 - c. Heat Transfer Products, Inc.
 - d. Smith, A. O. Corporation.
 - 2. Description: Manufacturer's proprietary design to provide at least 95 percent combustion efficiency at optimum operating conditions.
 - 3. Storage-Tank Construction: Steel with 150-psig minimum working-pressure rating.
 - a. Tappings: Factory fabricated of materials compatible with tank. Attach tappings to tank before testing.
 - b. Interior Finish: Comply with NSF 61 Annex G barrier materials for potable-water tank linings, including extending finish into and through tank fittings and outlets.
 - 4. Factory-Installed Storage-Tank Appurtenances:
 - a. Anode Rod: Electronic anode system or replaceable magnesium anode.
 - b. Dip Tube: Required unless cold-water inlet is near bottom of tank.
 - c. Drain Valve: Corrosion-resistant metal complying with ASSE 1005.
 - d. Insulation: Comply with ASHRAE/IESNA 90.1. Surround entire storage tank except connections and controls.
 - e. Jacket: Steel with enameled finish.

- f. Burner or Heat Exchanger: Comply with UL 795 or approved testing agency requirements for gas-fired, high-efficiency, domestic-water heaters, and natural-gas fuel.
- g. Temperature Control: Adjustable thermostat.
- h. Safety Controls: Automatic, high-temperature-limit and low-water cutoff devices or systems.
- i. Combination Temperature-and-Pressure Relief Valves: ANSI Z21.22/CSA 4.4-M. Include one or more relief valves with total relieving capacity at least as great as heat input, and include pressure setting less than domestic-water heater working-pressure rating. Select one relief valve with sensing element that extends into storage tank.

2.2 DOMESTIC-WATER HEATER ACCESSORIES

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. AMTROL, Inc.
 - b. Smith, A. O. Corporation.
 - c. Watts.
- 2. Description: Steel pressure-rated tank constructed with welded joints and factory-installed butyl-rubber diaphragm. Include air pre-charged to minimum system-operating pressure at tank.
- 3. Construction:
 - a. Tappings: Factory-fabricated steel, welded to tank before testing and labeling.
 - b. Interior Finish: Comply with NSF 61 Annex G barrier materials for potablewater tank linings, including extending finish into and through tank fittings and outlets.
 - c. Air-Charging Valve: Factory installed.

2.3 COMMERCIAL, GAS-FIRED, PRESSURE WASHER

- A. Commercial, Gas-Fired, Pressure Washer:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Hotsy.
 - b. Landa.
 - c. Alkota Cleaning Systems, Inc.
 - 2. Description:
 - a. Burner: NG Fired, 365,000btu minimum capacity, AGA listed controls, ring type with aspirating spuds, natural gas.
 - b. All open flames and fire rings shall be mounted at minimum of 18 inches above the finished floor.

- c. Heating Coil: Vertically-fired, one inch outside diameter, hydrostatic-pressured tested; 14,900psi burst rating
- d. Water pump: Triplex water pump with positive displacement, ceramic pluggers, brass manifold, and oil bath crankcase.
- e. Fabrication: Welded angle iron Frame shall have heavy gauge tank and cabinet.
- f. Supplier shall provide 1/2"inche outside diameter ASTM-A-312 Schedule 38 stainless steel piping. Provide ANSI/ASME B 31.3 stainless steel fittings. Provide piping from high-pressure wash unit to each trigger gun wand for a complete operable system.
- g. Manufacturer shall supply all necessary soap system equipment including piping, fittings, distribution hose, and connections for a complete operable soap distribution system.
- h. Programmable smart relay feature shall control over run time, auto start/stop and shut down functionality.

3. Controls:

- a. Adjustable temperature controller, safety pressure relief valve, pressure switch, ON/OFF electric motor switch with overload protection, unloader, water heater switch, detergent valve and automatic non-comtaminating float valve.
- b. 24v backdraft diverter in exhaust duct wired to PLC controls.

4. Accessories:

- a. Trigger gun (one trigger for each location)
- b. Wall mounted remote control for hot/cold water.
- c. 36 inch wand (one each per trigger gun location)
- d. Nozzle (one each per trigger gun location)
- e. Quick coupler (one each per trigger gun location)
- f. Soap Solenoid and switch ((one each per trigger gun location)
- g. Replacement nozzle: (one pack per trigger gun, pack of four, 4-1/2" millimeter with quick disconnect)
- h. Draft diverter: (one per unit)
- i. Reel (one each per trigger gun location)

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PART 3 - EXECUTION

3.1 DOMESTIC-WATER HEATER INSTALLATION

- A. Commercial, Domestic-Water Heater Mounting: Install commercial domestic-water heaters on concrete base. Comply with requirements for concrete base specified in Division 3.
 - 1. Exception: Omit concrete bases for commercial domestic-water heaters if installation on stand, bracket, suspended platform, or directly on floor is indicated.

- 2. Maintain manufacturer's recommended clearances.
- 3. Arrange units so controls and devices that require servicing are accessible.
- 4. Install dowel rods to connect concrete base to concrete floor. Unless otherwise indicated, install dowel rods on 18-inchcenters around the full perimeter of concrete base.
- 5. For supported equipment, install epoxy-coated anchor bolts that extend through concrete base and anchor into structural concrete floor.
- 6. Place and secure anchorage devices. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
- 7. Install anchor bolts to elevations required for proper attachment to supported equipment.
- 8. Anchor domestic-water heaters to substrate.
- B. Install domestic-water heaters level and plumb, according to layout drawings, original design, and referenced standards. Maintain manufacturer's recommended clearances. Arrange units so controls and devices needing service are accessible.
 - 1. Install shutoff valves on domestic-water-supply piping to domestic-water heaters and on domestic-hot-water outlet piping. Comply with requirements for shutoff valves specified in Section 22 05 23 "General-Duty Valves for Plumbing."
- C. Install gas-fired, domestic-water heaters according to NFPA 54.
 - 1. Install gas shutoff valves on gas supply piping to gas-fired, domestic-water heaters without shutoff valves.
 - 2. Install gas pressure regulators on gas supplies to gas-fired, domestic-water heaters without gas pressure regulators if gas pressure regulators are required to reduce gas pressure at burner.
 - 3. Install automatic gas valves on gas supplies to gas-fired, domestic-water heaters if required for operation of safety control.
 - 4. Comply with requirements for gas shutoff valves, gas pressure regulators, and automatic gas valves specified in Section 23 11 23 "Facility Natural-Gas Piping."
- D. Install combination temperature-and-pressure relief valves in top portion of storage tanks. Use relief valves with sensing elements that extend into tanks. Extend commercial-water-heater relief-valve outlet, with drain piping same as domestic-water piping in continuous downward pitch, and discharge by positive air gap onto closest floor drain.
- E. Install water-heater drain piping as indirect waste to spill by positive air gap into open drains or over floor drains. Install hose-end drain valves at low points in water piping for domestic-water heaters that do not have tank drains. Comply with requirements for hose-end drain valves specified in Section 22 11 19 "Supply Piping Specialties for Plumbing."
- F. Install thermometer on outlet piping of domestic-water heaters. Comply with requirements for thermometers specified in Section 22 05 19 "Meters and Gages for Plumbing."
- G. Install piping-type heat traps on inlet and outlet piping of domestic-water heater storage tanks without integral or fitting-type heat traps.

- H. Fill domestic-water heaters with water.
- I. Charge domestic-water thermal expansion tanks with air.

3.2 CONNECTIONS

- A. Comply with requirements for domestic-water piping specified in Section 22 11 16 "Supply Piping for Plumbing."
- B. Comply with requirements for gas piping specified in Section 23 11 23 "Facility Natural-Gas Piping."
- C. Drawings indicate general arrangement of piping, fittings, and specialties.
- D. Where installing piping adjacent to fuel-fired, domestic-water heaters, allow space for service and maintenance of water heaters. Arrange piping for easy removal of domesticwater heaters.

3.3 IDENTIFICATION

A. Identify system components. Comply with requirements for identification specified in Section 22 05 53 "Identification for Plumbing."

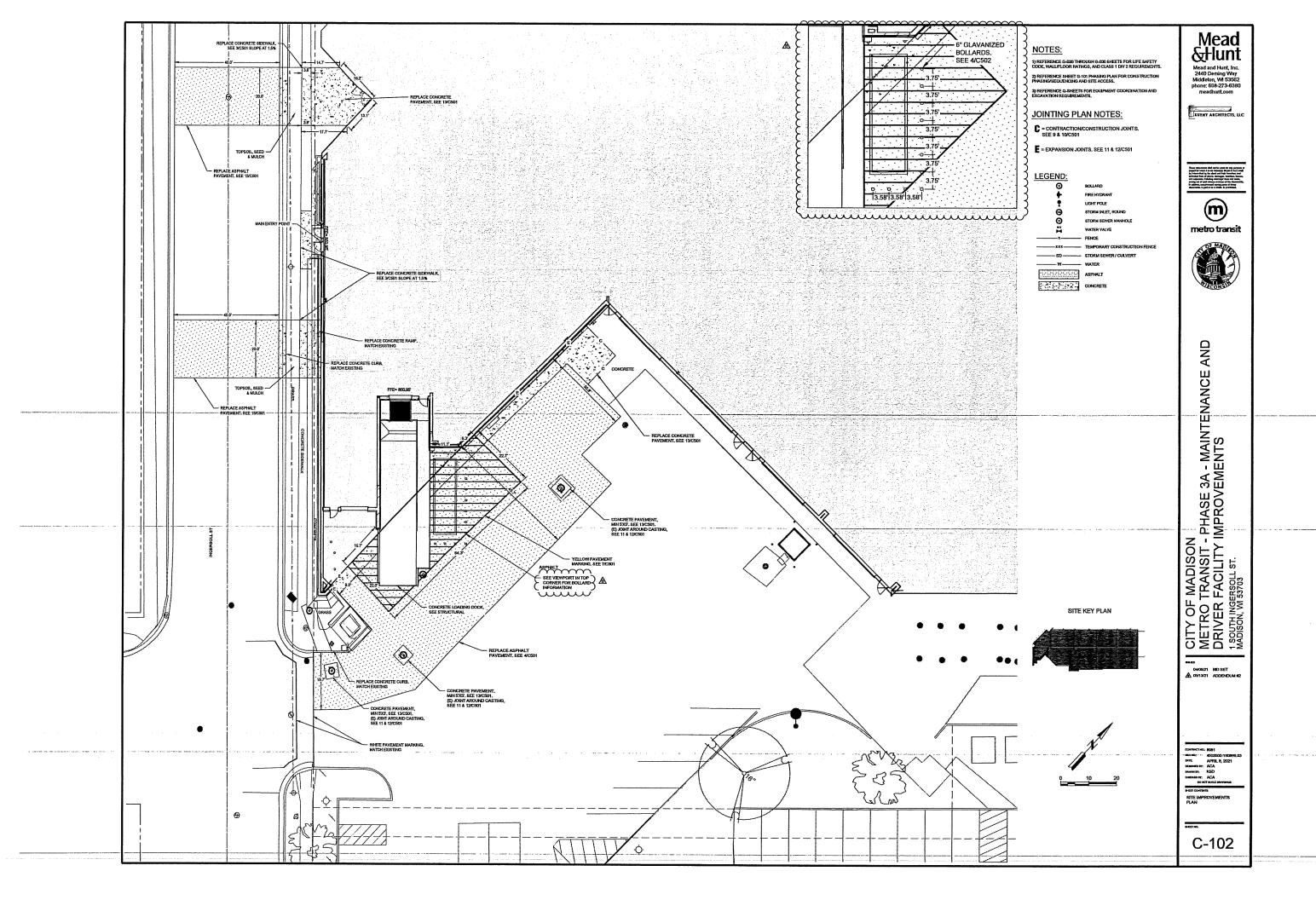
3.4 FIELD QUALITY CONTROL

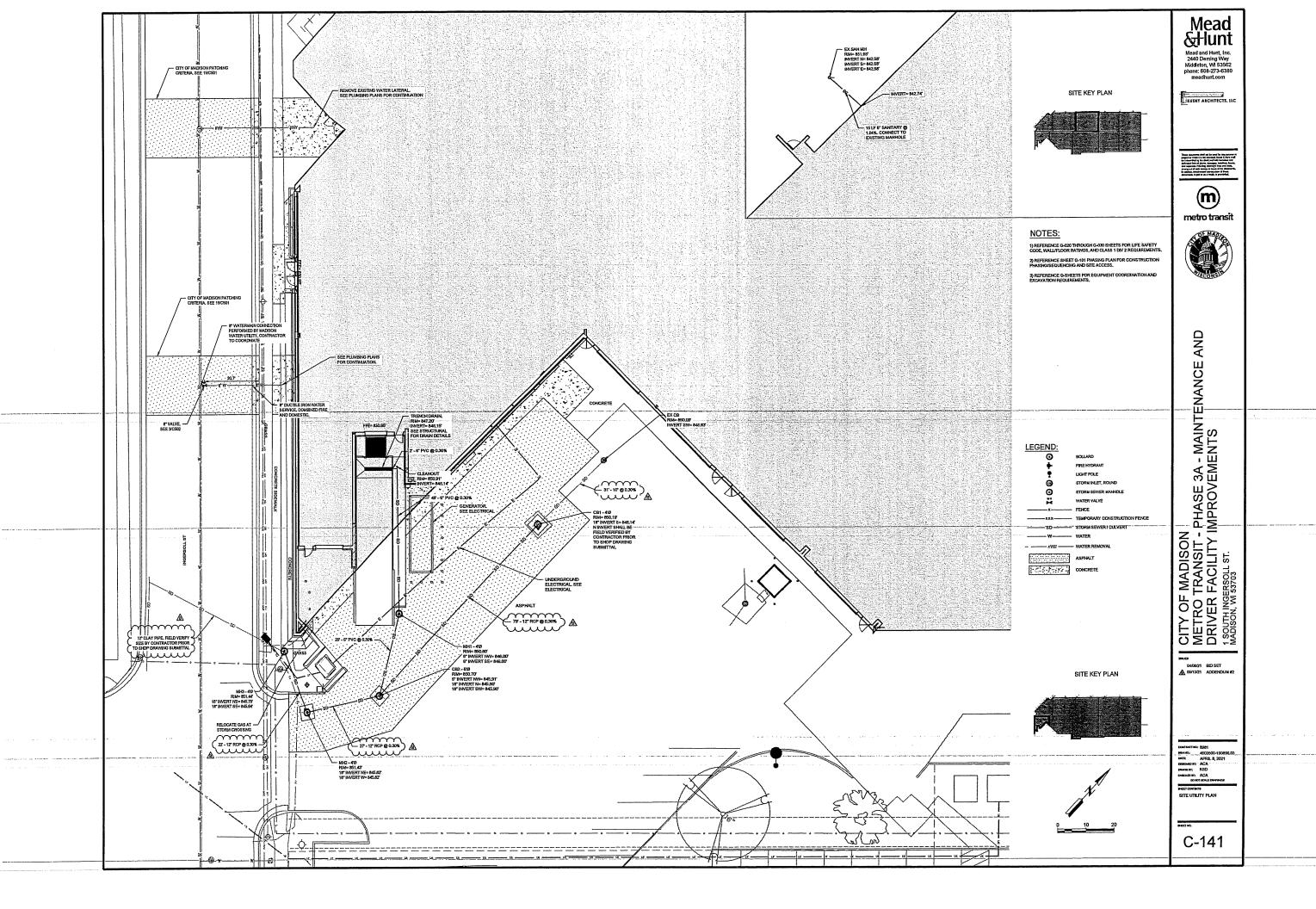
- A. Perform tests and inspections.
 - 1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.
 - 2. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
 - 3. Operational Test: After electrical circuitry has been energized, start units to confirm proper operation.
 - 4. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- B. Domestic-water heaters will be considered defective if they do not pass tests and inspections.
- C. Prepare test and inspection reports.

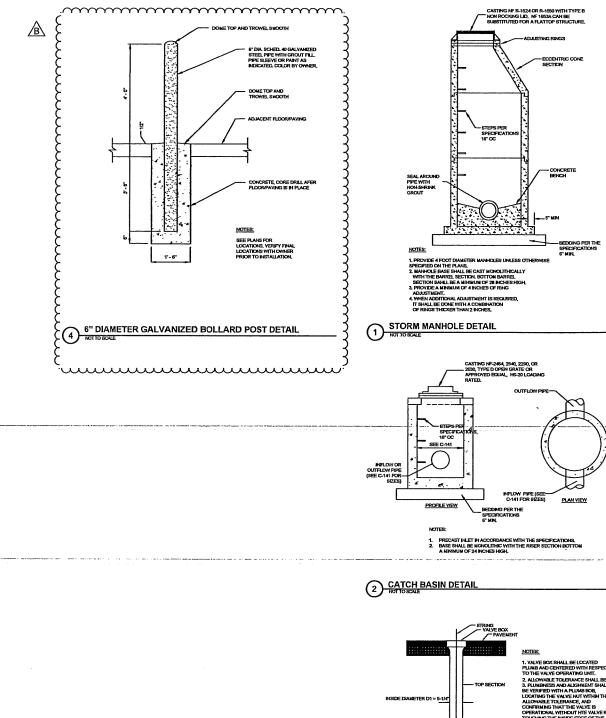
3.5 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain domestic-water heaters.

END OF SECTION 22 34 00







SECTION DETAIL. DI=5-1/4"
USe-Z
T-a)*
T-a)* (*)TOLERANCE T=}*

WATER VALVE BOX ALIGNMENT DETAIL

MOTTO SECULE

CITY OF MADISON
METRO TRANSIT - PHASE 3A - MAINTENANCE AND
DRIVER FACILITY IMPROVEMENTS
1 SOUTH INGERSOLL ST.
MADISON, WI 53703

Mead &Hunt

Mead and Hunt, Inc. 2440 Deming Way Middleton, WI 53562 phone: 608-273-6380 meadhunt.com

 \bigcirc metro transit

C-502

F-1. FOOTING SUBGRADES SHALL BE CLEAN AND FREE OF DEBRIS, STANDING WATER AND LOOSE SOL. 1. GOVERNING CODE: WISCONSIN COM 2. REX CATEGORY: 3. FLOOR LIVE LOAD (1803.1. THE FOUNDATION CONTRACTOR SMALL FULLY REVIEW UNDER-GROUND FLUMEND BRAWNINGS AND SMALL COORDINATE WITH THE MODEL GROUND FLUMEND CONTRACTOR TO DEPERESS FROM THE AND PROVIDE PERESS THOUGH FOUNDATION MAJES RECESSARY TO ACCOMMODATE WILLIAM CHAPTER THE CONTRICTS OF THAT SHIP CHAPTER THE CONTRICTS OF THE CONTRICTS OF THE CHAPTER THAT CONTRICTS OF THE CHAPTER THAT CHAPTER THE CONTRICTS OF THE CHAPTER THAT CHAPTER THAT CHAPTER THE CHAPTER THAT CH 4. ROOF LIVE LOAD (1603.1.2) MINIMUM ROOF LIVE LOAD 20 PSF 5. ROOF SHOW LOAD (1603.1.3) F-5. REFER TO ELECTRICAL DRAWING SITE LIGHTING FOR POLE BASES. SUPPLED AND INSTALLED BY GENERAL CONTRACTOR. F-6. COORDNATE WITH ARCHITECTURAL AND CIVIL DRAWINGS FOR UNCETT AMENUS FOUNDATIONS NOT SHOWN ON STRUCTURAL DRAWINGS 6. WIND DESIGN DATA (1603.1.4 F.P. CONTROL JOUTE N THE CAST-RHALGE CONCRETE FOUNDATION WALLS SHALL SE PACES ON TRONG NOTTO DISCRED OF OLO, OR AS LOCATED P DRAWNES AND SHOULD ALEN WITH ANSORM CONTROL JONN SWIESES APPLASHE, SEE DETAIL SHEETS FOR CONTROL, JONN TETALS, PROVIDE YERICAL TY GROOM AT ALL CONSTRUCTION AND CONTROL, DONTS. CONTRACTOR SHALL SHEET PLANS OF JOINT LOCATIONS FOR APPROVAL. ULTRMATE WIND SPEED (3-SECOND GUST): NOMINAL WIND SPEED (3-SECOND GUST) WIND EXPOSURE: NTERNAL PRESSURE COEFFICIENT: GCPI = 4+ 0.15 7. EARTHOUAKE DESIGN DATA (1803.1.5) F-8. A LEAN CONCRETE MUD SLAB 2" TO 3" THICK SMALL BE USED IN THE FOO EXCAVATION IF THE BOTTOM OF THE EXCAVATION TENDS TO BECOME MUDDY AND SOFT DUE TO CONSTRUCTION ACTIVITY, LEAN CONCRETE SMALL HAVE A MINIMAN 25 DAY COMPRESSIVE STREMSTH OF 2000 PSI. AUPORTANCE FACTOR: MAPPED, MCE, SY, DAMPED, SPECTE AT SHORT PERIODS: AT A PERIOD OF 1 SECOND: CCELERATIONS F-9. COORDINATE GROUNDING REQUIREMENTS FOR FOUNDATION/FOOTING REMFORCING STEEL WITH ELECTRICAL DRAWNISS. COORDINATE INSTALLATION OF GROUNDING WIESECQUIRENT WITH ELECTRICAL CONTRACTOR PROBE TO CASTING CONCRETE, REPER TO NO SITE CLASS: DESIGN EARTHOUAKE SPECTRAL ACCELERATIONS AT SHORT PERIODS: Sale AT A PERIOD OF 1 SECOND: Sole F-10. SEE TYPICAL SLAB-ON-GRADE DETAILS FOR SLAB AND SUB-BASE REQUIREMENTS. THESE WILL BE TYPICAL THROUGHOUT UNLESS NOTED B. GEOTECHNICAL DESIGN DATA (1603.1.6) NET ALLOWABLE SOIL BEARING PRESSURE 1500 PSF PER CGC GEOTECHNICAL REPORT, PROJECT D15051-8 DATED 06/12/2018 **CONCRETE & REINFORCING STEEL NOTES** COMPRESSIVE STRENGTH COMPRESSI 10. SPECIAL LOADS (1603.1.8) SPECIAL LOADING CONDITIONS ARE NOT APPLICABLE TO THE DESIGN OF THIS BUILDING: THEREFORE SPECIAL LOADS ARE NOT REGISTED. CR-1. PROVIDE HOTICOLD WEATHER PROCEDURES AND PROTECTION ACCORDANCE WITH ACI RECOMMENDATIONS AND PROJECT SPECIFICATIONS. 11, PHOTOVOLTAIC PANEL SYSTEM LOADS (1603.1.8.1) CR-2. ALL CONCRETE DESIGN AND CONSTRUCTION SHALL CONFORM WITH THE LOCAL BUILDING CODE REQUIREMENTS AND THOSE OF THE FOLLOWING STANDARDS RATEST EDITIONS. 12. STRUCTURAL OBSERVATIONS FOR SEISMIC AND/OR WIND RESISTANCE "ACI318, BUILDING CODE REQUIREMENTS FOR REINFORCED CONC." "ACI315, DETALS AND DETALING OF CONCRETE REINFORCEMENT" "ACI301, SEPCIPACTIONS FOR STRUCTURAL CONCRETE FOR BLOGS." "ACI307, RECOMMENDED PRACTICE FOR CONCRETE FORM WORK!" STRUCTURAL DESERVATIONS FOR SEISURC AND WIND RESTISTANCE ARE NOT REQUIRED. CR-3. REINFORCING SHALL BE DETAILED IN ACCORDINGS WITH ACI 315 **GENERAL NOTES** CR-8. CONCRETE REINFORCEMENT PROTECTION/CLEAR COVER, LUILO. G-1. FELD VERFY ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO START OF CONSTRUCTION - RESOLVE ANY DISCREPANCY WITH ARCHITECTIFINGINES FOOTINGS: BOTTOM & SIDES TOP DO NOT SCALE DRAWINGSIII G-2: FOR CLARITY, ALL EXTER OR SLABS AND SIDEWALKS MAY NOT BE SHI FOR EXCIT DIMENSIONS, LOCATIONS, JOINTS AND SCORE LINES, SEE ABOUTTECTURAL ANYOR CAN DRAWNIS WALLS: EXTERIOR EXPOSURE INTERIOR EXPOSURE 2 BEAMS/COLUMNS: OVER TIES OR STIFRUPS 1 1/2* G4. DETAILS MARKED "TYPICAL" MAY OR MAY NOT BE CUT ON PLANS, BUT SMALL APPLY UNLESS NOTED OTHERWISE. ELEVATED SLABS: CR-7. ALL BAR LAPS SHALL CONFORM TO ACI 318-14, PARAGRAPH 25.5.1, CLASS TS SPLICE CRITERIA. USE TOP BAR LAP LENGTHS FOR TOP BARS IN SLABS AND BEAUS OVER 12" DEEP. CR-8. LAP LENGTH SHALL BE SPECIFICALLY NOTED ON SHOP DRAWINGS WHERE MORE THAN ONE BAR MAKES UP A CONTRUCUS STRING. G-6. SEE ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMENG PLANFOR SLEEVES, INSERTS, ETC. NOT SHOWN ON STRUCTURAL PLANS. G-7. NO PPES OR SLEEVES FOR MECHANICAL TRADES SHALL PASS THROUGH STRUCTURAL MEMBERS WITHOUT APPROVAL OF THE STRUCTURAL ENGINEER. CR-10. CONTINUOUS TOP AND BOTTOM BARS, WHEN SHOWN IN TRANSVERSE SECTION ONLY, SHALL BE LAPPED AS FOLLOWS: CR-11. PROVIDE ONE (1) HOOKED REMFORDING BAR IN CONCRETE FOOTING TO SERVE AS A "CONCRETE ENCASED BLECTRODE" IN ACCORDANCE WITH THE MITDRAL BECTRIE COOC. COORDANGE WITH BLECTRICA. CONTRACTION FOR EQUIT LOCATION. HOOKED REMFORMS DAY STAND. A MACANTEN, LOWAL DISTREL, CONFORMS TO ASTIM ATOR. B. BAR SEE HUMBER H HOOKED AT ONE END ONLY. C. MARRIAM HORIZOTHAL LEWSTHOP REMFORMS TO ASTIM ATOR. D. MORRIET FOOTING SHALL BE SO'D AS DEFINED IN NEC. ARTICLE SO, D. MORRIAM VEHTICAL PROJECTION OF REMFORMING THE ONLY CONCRETE ROUTING SHALL BE SO'D AS DEFINED IN NEC. ARTICLE SO, D. MORRIAM VEHTICAL PROJECTION OF REMFORMING BAR SHALL BE Z'. E. MORRIAM SHALL BE YOUR AND THE OWNER SHALL BE Z'. G-S. CONTRACTOR SHALL POST LIVE LOADS PER SECTION 166.1 OF THE GOVERNING CODE. G-10. SECTIONS. DETALS. AND NOTES SHOWN ON THE DRAWINGS ARE INTEND TO BE TYPICAL AND SHALL APPLY TO SMILAR CONDITIONS ELSEWHERE, IAM ESS TOWERWAYS SHOWN EARTHWORK NOTES CR-12. ALL CONCRETE FOUNDATION WALLS SHALL HAVE A MINIMUM OF (2) #5 BARS CONTINUOUS TOP AND BOTTOM, UNLESS INDICATED OTHERWISE. EW-1, REFERENCE GEOTECHICAL DATA AND EARTH MOVING SPECIFICATION FOR DEFINITION OF MATERIALS AND COMPACTION REQUIREMENTS. L OPENINGS IN CONCRETE FOUNDATION WALLS ARE TO HAVE (4) #S AGONAL BARS EACH FACE OF THE WALL AND SHALL EXTEND 2 FEET EYOND OPENING ON EACH SIDE, UNLESS NOXCATED OTHERWISE. EW-2. REFERENCE GEOTECHNICAL DATA AND EARTH MOVING SPECIFICATION FOR REQUIREMENTS FOR EXCAVATION AND CONTROL OF SURFACE WATER AND GROUND WATER. CA-14. PROVIDE POOTING DOWELS TO MATCH VERTICAL WALL REINFORCING WHERE WALL REINFORCING IS NOT INDICATED, DOWEL POOTING TO POUNDATION WALLS WITH IS TERRAR AT 18 TO, US 7-3" LONG, WITH STANDARD HOOKS BUSEDOED A MARMANIA OF 5" NOT POOTING. CR-16. HOOK HORIZONTAL WALL AND BEAM RENFORCING BARS AT DISCONTRUCUS ENDS, TYPICAL UNLESS NDICATED OTHERWISE. EXTEREMPROCEMENT TO FAR FACE OF PIERS/PEDESTALS AND/OR COLLIMAS WILESS NDICATED OTHERWISE. EW-5. BEFORE PLACING FOOTINGS, FOUNDATIONS OR SLAB-ON-GRADE, THE SPECIFICATIONS. SPECIFICATIONS. EW-6. DO NOT BACKFILL OR FILL SOIL MATERIAL ON SURFACES THAT ARE MUDDY, PROZEN, OR CONTAIN FROST AND/OR ICE. CR-20, TRECKEN THE SLAD-VIGALUE BEIGHT INTERIOR MASONAY PARTITIONS STATES BEIGHT STATES OF ALC ALC AND EXCHANGE DESCRIPTIONS OF A STATE OF A ST CR-21, PITCH CONCRETE TO FLOOR DRAINS, COORDINATE WITH PLUMBING AND ARCHITECTURAL DRAWINGS.

FOUNDATION NOTES

STRUCTURAL DESIGN CRITERIA

WHERE MASONRY IS APPLIED ADJACENT TO STEEL MEMBERS (BEA COLUMNS) PROVIDE ANCHORING DEVICES PER SPECIFICATIONS. M-5. REFER TO ARCHITECTURAL PLANS AND DOOR/FRAME SCHEDULES FOR LINTEL ROUGH OPENING LOCATIONS, SIZES, AND ELEVATIONS. ALL MASONRY WALLS ARE TO HAVE 9 GAUGE HORIZONTAL JONT REINFORCEMENT WHICH DOES NOT EXCEED 16 INCHES ON CENTER VERTICALLY. M-7. ALL LAPS SHALL BE 48 BAR DIAMETERS UNLESS INDICATED OTHERWISE M-8. GROUT SOLID ALL JAMBS IN ALL MASONRY WALLS FULL HEIGHT TO UNDERSDE OF LINTEL. EXTEND GROUTED JAMB FROM FACE OF MASONRY OPENING AT LEAST 24', AN AMMILIAN OF 3 CELLS, AT OTHER BEAM BEARING FLATE, LIALESS RIDEATED OTHERWISE. M-9. PROVIDE CORNER SPLICE BARS FOR ALL BOND BEAMS OCCURRING AT CORNERS OR WALL INTERSECTIONS. SPLICE BAR TO BE THE SAME SIZE MID. ALL NON-STRUCTURAL MASONRY WALLS SHALL BE RENFORCED WITH A MARKUM BY VEHTCAL BANS AT 47 O.C. WITH THAT COME GROUTED AND MARKUM STRUCK BAND STATES OF THE STATE OF THE PROPERTY OF THE COURSES SHALL BE GROUTED SCILD, PROVIDE A CONTINUOUS BOND BEAM AT TOP OF WALL WITH (2) AS BANS CONTINUOUS, GROUT BOND BEAM SOLID, PROVIDE & DOWIEL AT 47 O.C., NOT POCTOTAS M-11. USE SLEEVE ANCHORS IN NON-STRUCTURAL MASONRY WALL PARTITIONS IN-13. PROVIDE HORIZONTAL BOND BEAMS (DIAPHRAGM CHORDS) WITH (2) #5 BAR: CONTINUOUS, BENEATH FLOOR/ROOF MEMBER BEARING ELEVATIONS AND M-14. PROVIDE 10 CAGE BENT SLIP JOINT PLATES 4" A " 2 1-0" LONG AT 3"-0" O.C. EACH SIDE OF THE TOP OF ALL NON-STRUCTURAL MISONRY WALLS. ATTACH TO UNDERSED OF HEITAL ROOP DEVELOR OR STRUCTURAL STELL WITH LEAD BLUDG SLEF OFFILE. SLIP LEAD BLOOK OR STRUCTURAL STELL WITH LEAD BLUDG SLEF OFFILE. SLIP LEAD BLOOK OR STRUCTURAL OFFI LEAD BLOOK SLIP LAND SLIP LEAD BLOOK OR STRUCTURAL SLIP DAMETER. SEE ARCHITECTURAL DRAWNOS FOR KON-STRUCTURAL MASONRY WALL LOCATIONS. MANTAIN 1 (MANKAM) GAB PERVENT TOP OF MASONRY WALL AND BOTTOM OF STRUCTURAL DO NOT ATTACH PLATE TO MASONRY WALL SLOED STRUCTURAL DO NOT ATTACH PLATE TO MASONRY WALL MASS NDOCATED OTHERWISE. SHOP DRAWINGS SD4, THE APPROVED SHOP DRAWNIS DO NOT REPLACE THE ORBINAL CONTRACT DRAWNISS. THEAS OUTTEE OR SHOWN INCORRECTLY ARE NOT TO BE CONSISTENCE OF THE ORBINAL CONTRACT DRAWNISS. IT IT IS CREAMED, CONTRACT DRAWNISS. IT IS SHOWN INCORRECTLY ARE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DRAWNISS. SD-5. SHOP DRAWING REVIEW IS INTENDED ONLY FOR GENERAL CONFORMANCE TO THE DESIGN CONCEPT AND CONSTRUCTION DOCUMENTS. SD-7. ALLOW A MINIMUM OF (10) WORKING DAYS FOR REVIEW OF SHOP DRAWINGS BY THE STRUCTURAL ENGINEER. DELEGATED DESIGN SUBMITTALS DS-2. PIPE AND TUBE RAILINGS - SPECIFICATION SECTION 055213

MASONRY NOTES

STRUCTURAL STEEL NOTES MATERIAL PROPERTIES (U.M.O.)
V.SIMPES
V M-1. PROVIDE HOT AND COLD WEATHER PROCEDURES AND TEMPORARY MOSTURE PROTECTION IN ACCORDANCE WITH ACLRECOMMENDATIONS AND PROJECT SPECIFICATIONS. \$-1. STEEL BEAMS WITH RESIDUAL CAMBER RESULTING FROM MILL FABRICAT OR ROLLING STALL BE SHOP FABRICATED AND ERECTED SUCH THAT THE RESDUAL CAMBER COUNTERACT'S GRAVITY LOAD DEFLECTION. HOLLDW MASONRY UNITS SHALL BE LAD WITH FULL HEAD JOINTS AND FULL BED JOINTS OF THE FACE SHELLS AND UNDER WEBS WHERE THE ADJACENT CELLS ARE TO BE FILLED WITH GROUT AND AT THE BOTTOM COURSE. 8-2 ALL BOLTED CONNECTIONS SHALL UTLIZE 34 INCH DIAMETER A325 BOLTS TIGHTENED TO THE SNUG-TIGHT CONDITION. THE SNUG-TIG CONDITION IS DEPRIED BY THE RICSO'S SPECIFICATION FOR STRUCY JOINTS USING ASTIM A325 OR MASS BOLTS, UNLESS INDICATED OTH 5-3. STEEL CONNECTIONS NOT DETAILED ON THE PLANS ARE TO BE THE FABRICATOR'S STANDARD AND ARE TO BE SELECTED AND DESIGNED ACCORDANCE WITH AREA ASD SPECIFICATIONS, TYPE 2 FRAMING CONNECTIONS, FOR THE REACTIONS MOKATED. 5-4. THE MINIMUM CONNECTION PLATE/ANGLE THICKNESS SHALL BE 5/15", THE MINIMUM WELD 14", AND THE MINIMUM DESIGN LOAD ON ANY CONNECTION 10 KPS; UNLESS MOICATED OTHERWISE. S-5. ALL CONNECTIONS TO PIPE AND TUBE COLUMNS SHALL BE THROCONNECTIONS INN FSS OTHERWISE INDICATED. S-6. ALL ANCHOR BOLTS ARE TO BE 3/4" INCH DMAKETER F1554 Gr. 55 THREADED ROUS UNLESS NDICATED OTHERWISE. (2-1/2 NICH DMAKETER ANCHOR BOLTS SHALL BE PROVIDED AT ALL BEAM AND LINTEL BEARINGS ON CONCRETE OR MASONRY, UNLESS NDICATED OTHERWISE. S-7. POST INSTALLED ANCHORS ARE TO BE ADHESIVE ANCHORS, INSTALL ANCHORS WITH EMBEDMENT DEPTHS INDICATED, UNLESS INDICATED S-B. STUD ANCHORS ARE TO BE NELSON STUDS OR EQUAL (ASTM A108). S-9. BEAM AND LINTEL PLATES SHALL BE FULLY GROUTED WITH A MINIMUM 12" NON-SHRINK GROUT. 5-10. ALL WELDING OF NEW STEEL IS TO BE WITH ETXXX ELECTRODES, U.H.O. WELDING SHALL BE IN ACCORDANCE WITH THE LATEST AWS SPECIFICATIONS BY CERTIFIED WELDERS. S-11. WHEN FIELD WELDING TO EXISTING STEEL, ADJUST WELDING PROCED AS REGULARD TO BE COMPATIBLE WITH THE NEW AND EXISTING STEEL S-13, ALL EXTERIOR MASONRY SHELF ANGLES, UNITEL BEAMS, AND LINTEL
PLATES SHALL BE HOTED PEOPLE AND VANZETI ACCORDING TO ASTM A12 STEEL BAR JOISTS MATERIAL PROPERTIES (LUN.O) COMPLY WITH SUIS "SPECIFICATIONS" FOR WEB AND STEEL-ANGLE CHORD J-1, BAR JOSTS SHALL BE DESIGNED TO RESIST FORCES INDICATED ON DRAWINGS AND SPECIFICATIONS. U.2. TYPICAL BAR JOSTS ARE NOT DESIGNED FOR CONCENTRATED LOADS, PLACE LOADS AT PANEL POINTS OR WELD ADDITIONAL DOUBLE ANGLE MEMBERS ONE EACH SIDE FROM POINT OF CONCENTRATED LOAD TO THE NEAREST PANEL POINT ON THE OPPOSITE CHORD. J-3. ALL FELD MODIFICATIONS OR REPAIRS TO THE JOIST, OR JOIST GRIDERS SHALL BE APPROVED BY THE JOIST MANUFACTURER IN WRITING. THIS LETTER SHALL BE FORWANDED TO THE ENGINEER FOR REVIEW. J-4. CUTTING & DRILLING OF CHORD OR WEB MEMBERS IN BAR JOISTS, OR JOIST GROERS, IS NOT PERMITTED. JS. ALL BRIDGING SHALL BE EQUALLY SPACED, UNLESS NOTED OTHER JOST MANUFACTURER. CONTRACTOR(S) SHALL PROVIDE MEANS FOR ADECUATE DISTRIBUTION OF CONSTRUCTION LOADS SO THAT CARRYING CAPACITY OF ANY BAR JOIST, JOIST GRIDER, OR OTHER STRUCTURAL MEMBER IS NOT EXCEEDED. JOIST SHALL BE CONSIDERED AS UNSTABLE DURING ERECTION, UNDER NO CRICUMSTANCES ARE CONSTRUCTION LOADS OF ANY DESCRIPTION TO BE PLACED ON UNBROBES JOISTS IN THE APPLICATION OF CONSTRUCTION LOAD UNBROBED JOISTS IS NO BRECT YOLKHOON OF CUSHA, REGULATIONS.

METAL DECK

MD-1. SEE PLAN FOR DEPTH AND GAUGE.

THIS, CONTRACTOR SHALL CORRECT ALL MONCONFORMANCES AT CONTRACTOR EXPENSE. CONTRACTOR SHALL NOT APPLY COST OF CORRECTIONS TO ALL OWNERS. THIS, THE CONTRACTOR SHALL NOT APPLY THE COST OF THE CONTRACTOR'S DAYOC PROGRAM NOR INSPECTIONS TO THE ALLOWANCE. THIS OBSERVATION OF FELD WELDS SHALL INCLUDE PLACEMENT, TYPE, SIZE, FUSION, POROSITY, CRACKING, UNDERCUT, SPATTER AND SMOOTHNESS FOLLOWING AWAY D. 1 **ABBREVIATIONS** BOTTOM OF
BOTTOM
BASE PLATE TYPE
BEARING
CENTER TO CENTER = CONTRAUOUS = DOUBLE-TEE FOUNDATION
FIELD VISING
GALVANIZED
HIGH PERFORMANCE
LONG IS BEARING
LONG IS BEARING
LONG IS BEARING
LONG IS BEARING
NOT IN CONTRACT
NOT IN CONTRACT
NOT IN CONTRACT
PRECASSE PERFORMAN
FEACUTOR
SILP CRITICAL
STRIP FOOTING TYPE
SMALAR
STRANGES STEEL
STEEL
TOP OF
TOP GENERAL
TOP OF COLUMN
TOP OF FILE
TOP OF FOUNDA
TOP OF STEEL
TOP OF OF STEEL
TOP OF OF STEEL
TOP OF OF STEEL
TOP OF STEEL
TOP OF OF S J-9. ALL BRIDGING SHALL BE PER SJI AND AS REQUIRED FOR DESIGN LOADS. J-10. PROVIDE JOST WITH UPLET CAPACITY AS REQUIRED BY THE BUILDING CODE AND THE STRUCTURAL DESIGN CRITERIA. MD-2. METAL DECKING SHALL BE CONTINUOUS OVER 3 SPANS AND HAVE JOINTS OVER SUPPORTING MEMBERS, UNLESS INDICATED OTHERWISE. BUTTON PUNCHING ROOF DECK IS NOT PERMITTED. REFERENCE MD-S. CONTRACTOR IS RESPONSIBLE FOR PROVIDING COLUMN CLOSURES AND ALL OTHER RELATED ACCESSORIES REQUIRED FOR COMPLETE DECK INSTRULATION AT ROOFS AND FLOORS.

OBSERVATION AND INSPECTION

OBSETYE NOTALLATION, RENSTALLATION OF JOST BRIDGERS AND BRACHNG.

SERVE NEW JOST TOP CHORD CONNECTION TO ROOF DECK OBSERVE NO WELD RESKAY TO DISSOKY ON DETAILS 11/5-543 AND 21/5-543 UNTIL AFTER WAU-6 PLACED.

STRUCTURAL SYMBOLOGY TH. IT IS THE COMPRICTIONS RESPONSELTLY TO PERFORM ALL STRUCTURAL WORK IN COMPRIANCE WITH THE COMPRIANT DOCUMENTS. ANY STRUCTURAL INSPECTION PROVIDED BY OTHER DOES NOT RELEVE THE COMPRICTION OF THE RESPONSELLY. ANY STRUCTURAL DEVATIONS IN THE PROVIDED BY OTHER PROVIDED BY OTHER PROVIDED BY OTHER PROVIDED BY OTHER COMPRICTION WITHOUT COST OR ANY DEALY TO THE PROVIDE CONSTRUCTION OSSERVATIONS AND INSPECTION.

13. THE COMPRICTION SHALL REPONDE THE RISPECTION AGENCY ACCESS TO ALL PLACES WHERE THE WORK IS BEEN OF REPORTABLE. AND INSPECTIONS.

13. THE COMPRICTION SHALL PROVIDE THE RISPECTION AGENCY ACCESS TO ALL PLACES WHERE THE WORK IS BEEN OF REPORTIONS.

15. THE COMPRICTION SHALL PROVIDE THE RISPECTION AGENCY ACCESS TO ALL PLACES WHERE THE WORK IS BEEN OF REPONDED. AN INSPECTION OF RESPONSIVE THE PROVIDE THE COMMENCEMENT OF WORK REQUIRING OBSERVATION ON RISPECTION. FOUNDATION PLAN - CONCRETE FOOTING - CONCRETE FOUNDATION WALL ON CONCRETE FOOTING TOF OF FOOTING ELEVATION 100'-0" (P ---- TOP OF WALL ELEVATION TM. THE INSPECTION AGENCY IS NOT AUTHORIZED TO DIRECT OR APPROVE ANY CHANGES FROM THE CONTRACT DOCUMENTS. IF THE CONTRACTOR WISKES TO DUESTION THE TESTING AGENCY'S INTERPRETATION OF THE CONTRACT DOCUMENTS, HE MAY DO SO D THT. THE CONTRACTOR SHULL HOTEY THE INSPECTION AGENCY OF ANY WELDS THAT WERE DONE IN THE FELD THAT WERE NOT DETAILED AS FIELD WELD! ON THE DESIGN PAYMYNGS. THA. NSPECTION AGENCY SHALL:

A DESERVE SHORING AND RELAVAL OF BALLAST BEFORE RENFORCING

B. DESERVE ASSINCE OF SKYW DURING RENFORCING

D. CLOSELY INSPECT ANY INDUCOMORAHING WELDS

E. MARGINETELY MOTE THE CONTRACTION OF HON-CONFORMING WORK.

F. SSUE BHYERLY FROGRESS REPORTS

G. DESERVE RESTAULTUR, REINSTALLATION OF JOST BRIDGING AND FRAMING PLAN INDICATES BRACING CONN THS. WELD INSPECTION SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTIOR THIO. STRUCTURAL OBSERVATIONS SHALL BE PERFORMED BY A PROFESSIONA ENGINEER LICENSED IN THE STATE OF WISCONSIN, - INDICATES REQUIRED UP IN REAM (INCHES) THI2 PROGRESS REPORTS SHALL INCLIDE DOCUMENTATION OF ALL OBSERVATION AND INSPECTIONS AND NONCOMPORMANCES. PROGRESS REPORTS SHALL BE SEALED AND SISKED BY A PROFESSIVAL ENGINEER.

(8,54E)

SYY#

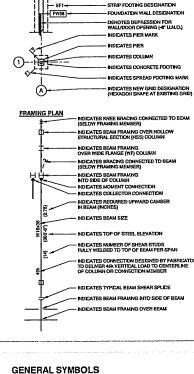
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(SLB##)

5-201

__...L# ...

OPENING WIDTH HEAD HEIGHT FROM FIN, FLOOR



STRUCTURAL WALL TYPE

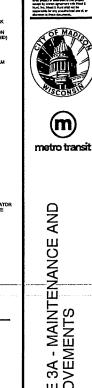
STRUCTURAL ELEVATION

STRUCTURAL FLOOR PLAN

DETAIL OR SECTION

ELEVATION

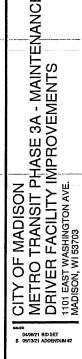
DECK SPAN



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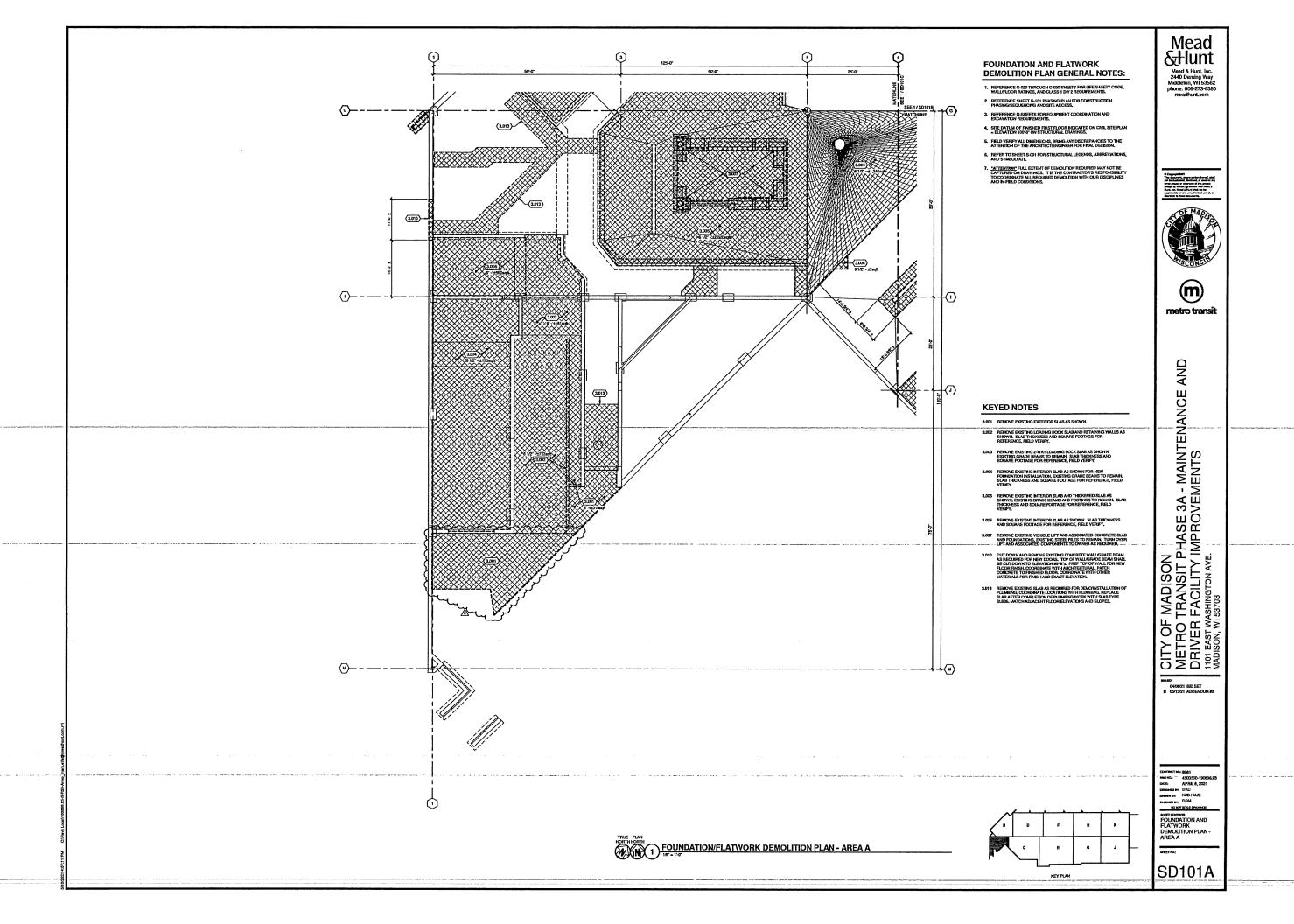
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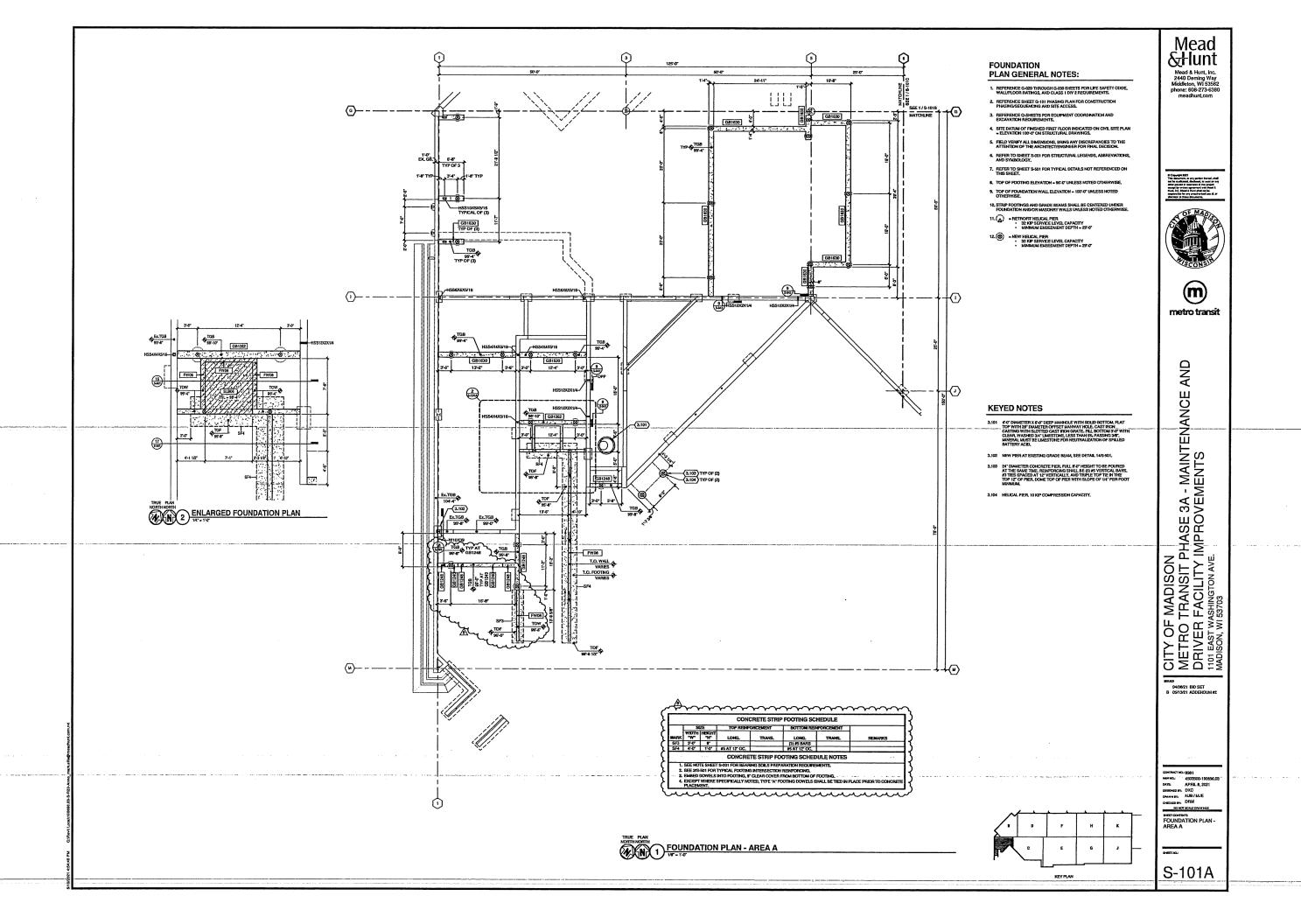
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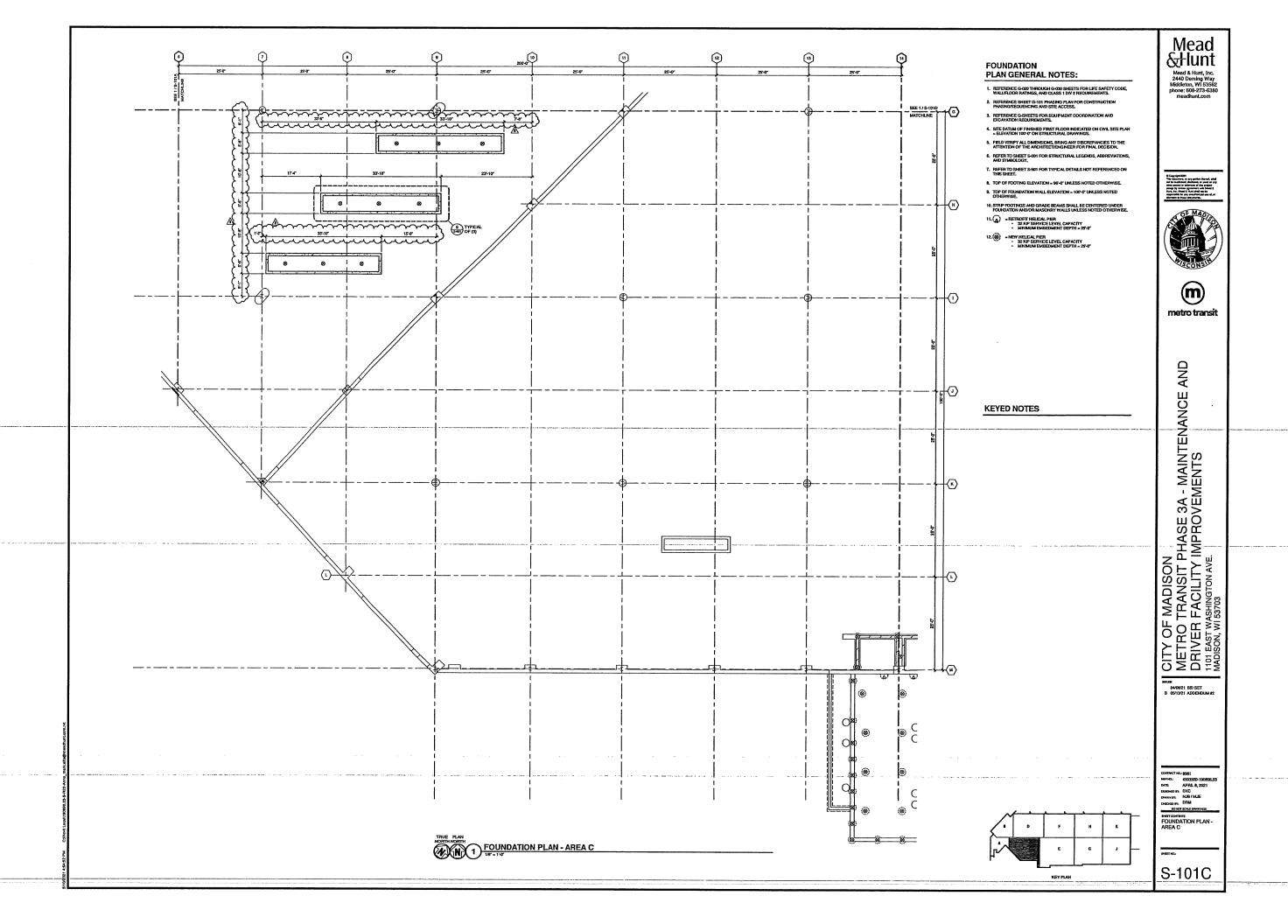
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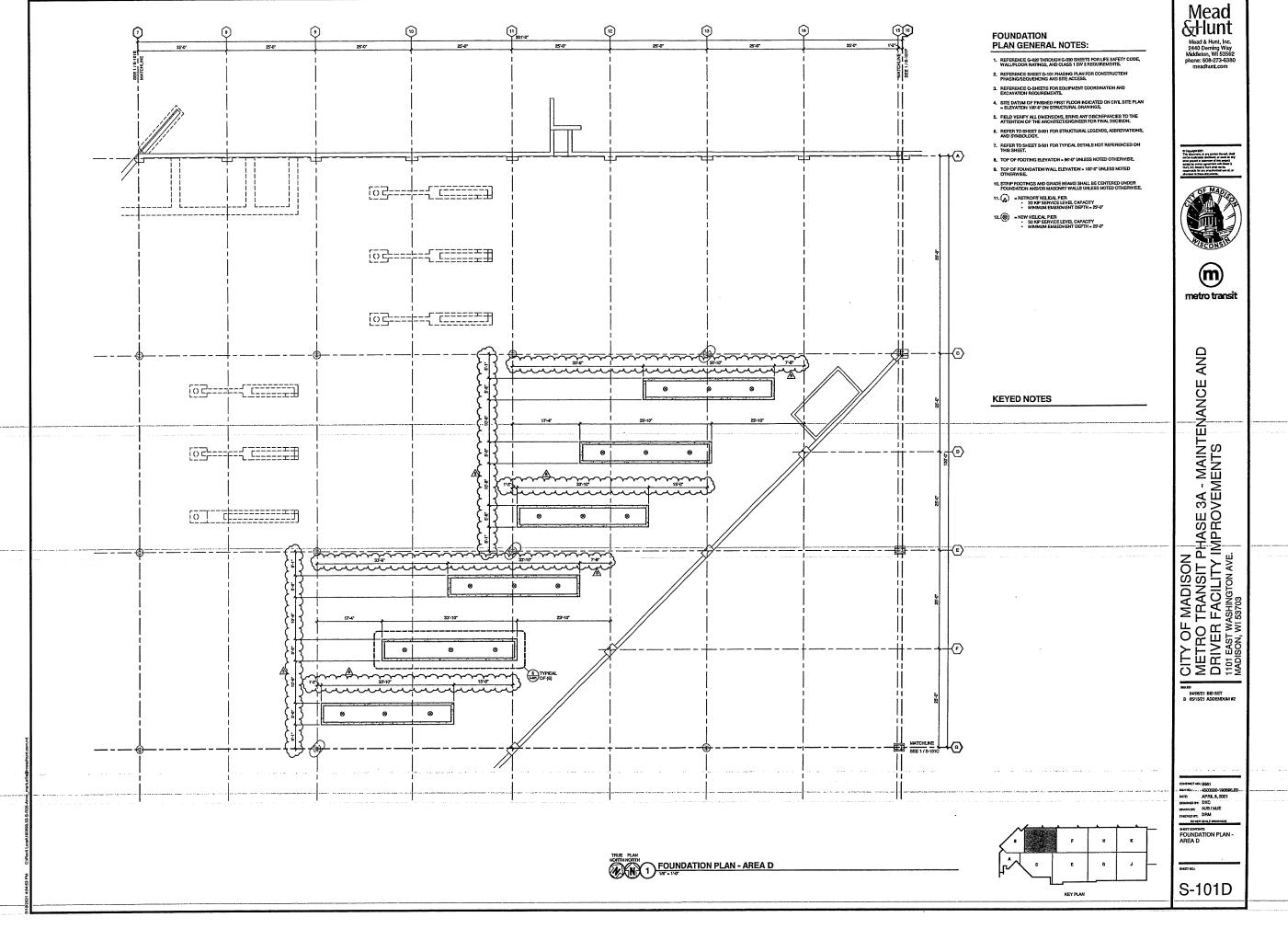
STRUCTURAL NOTES

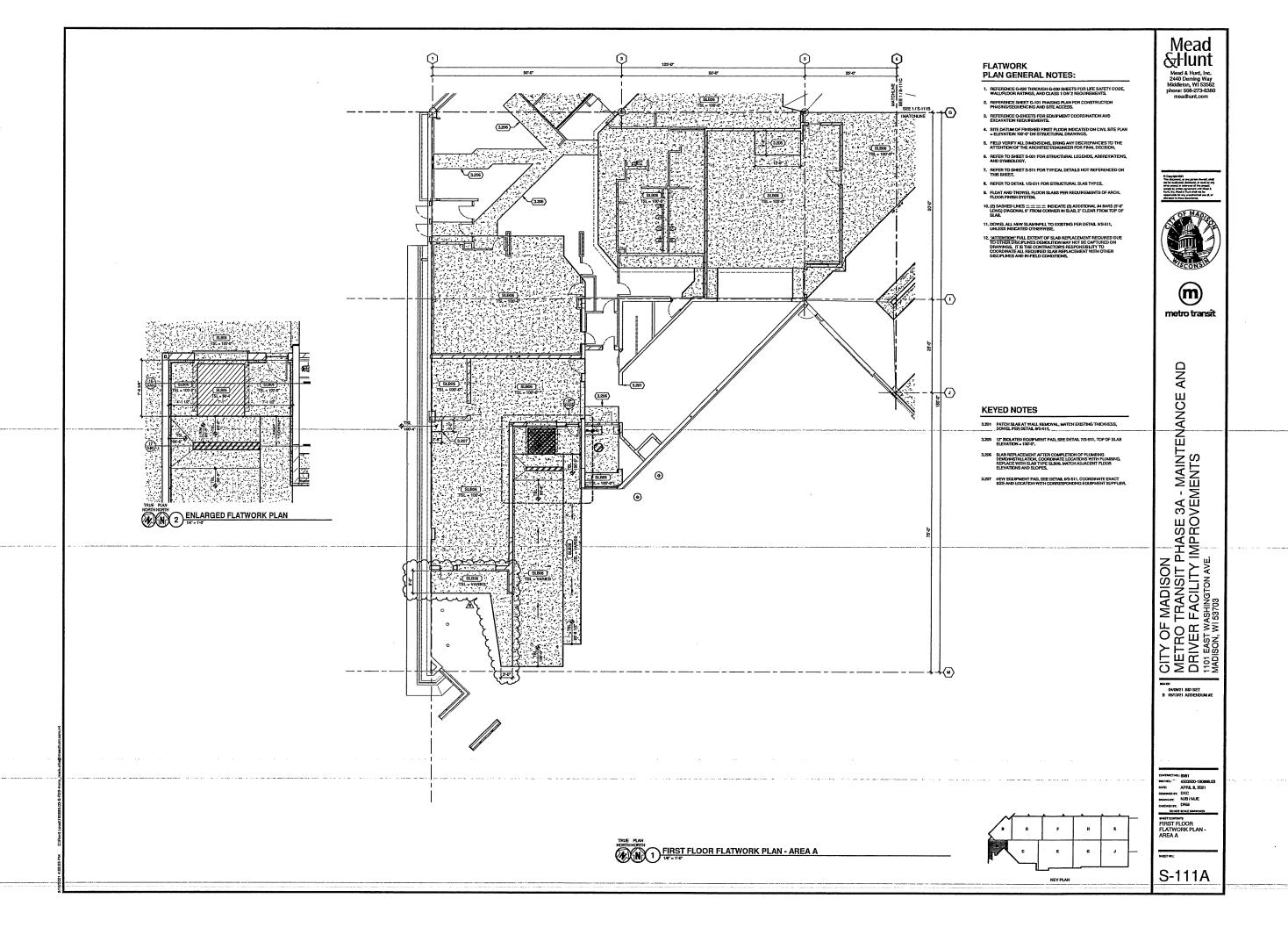
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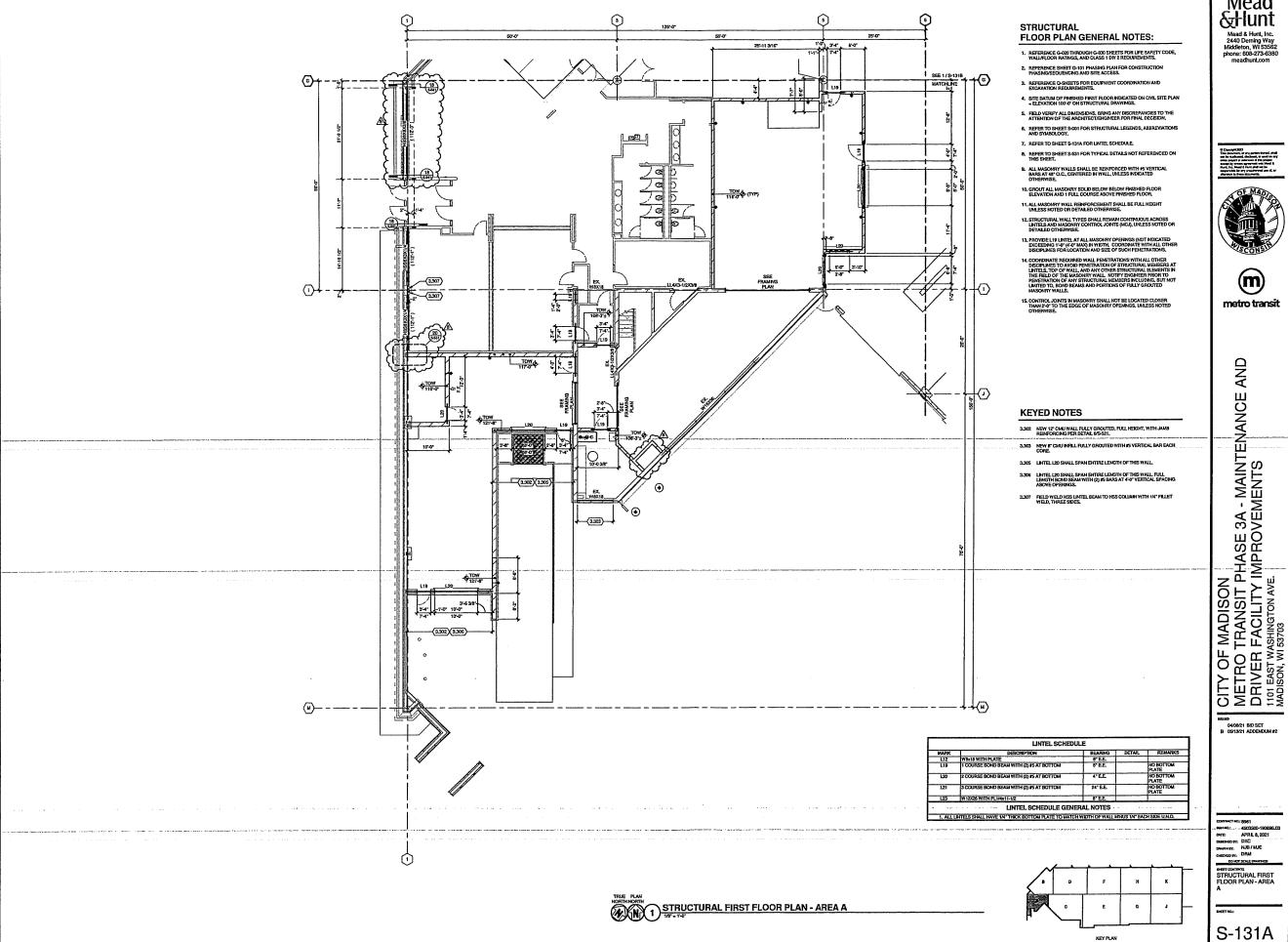












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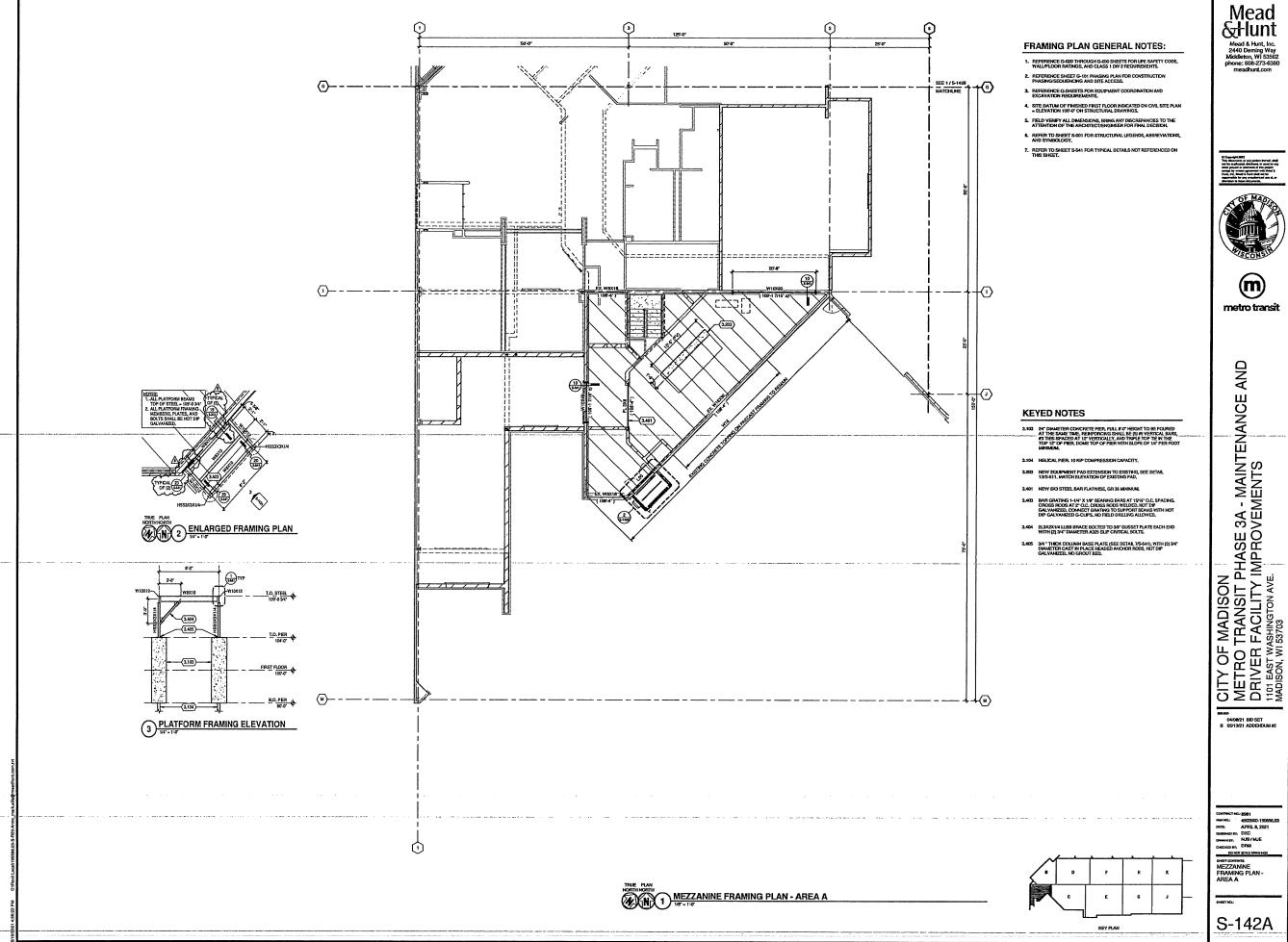




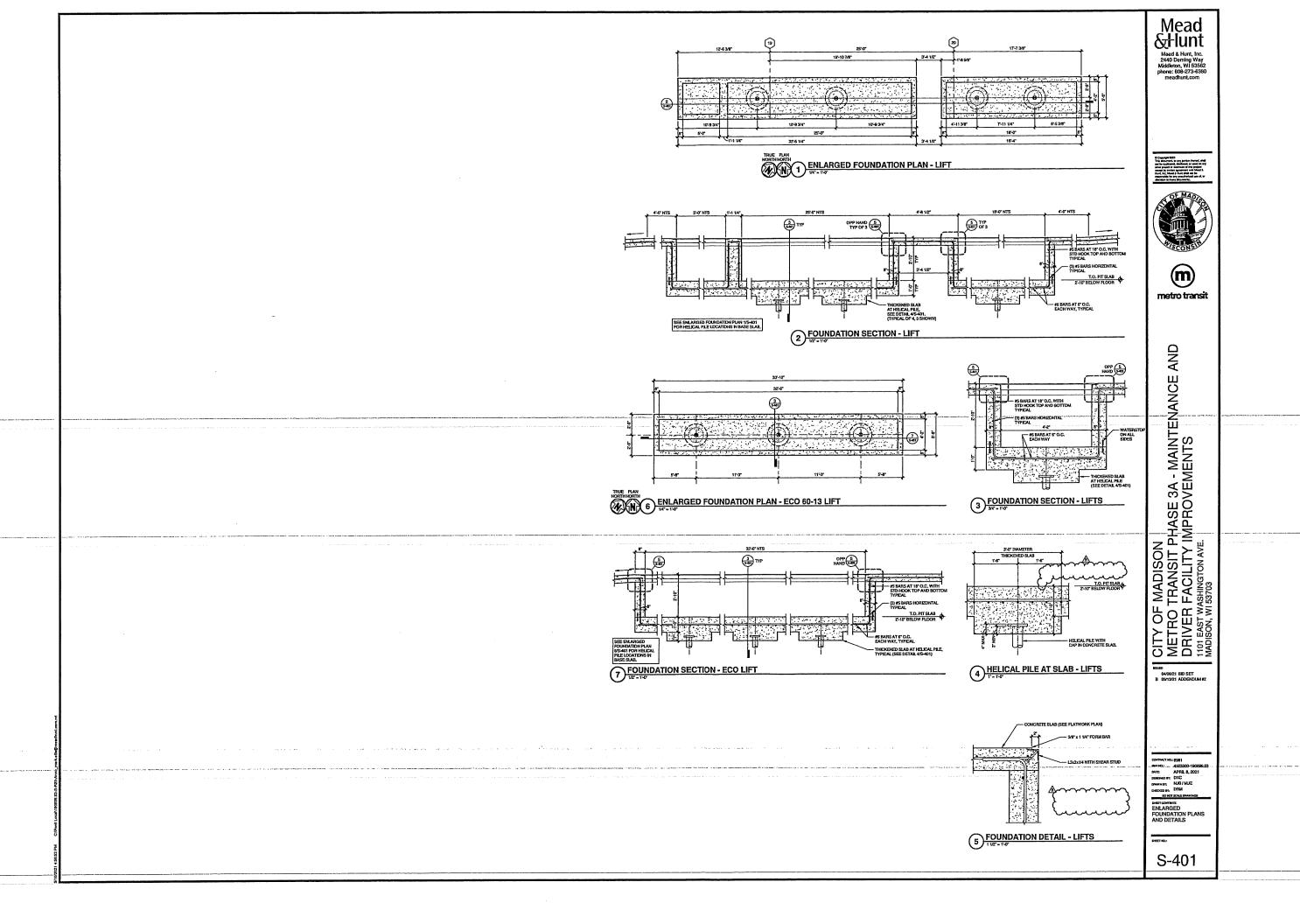


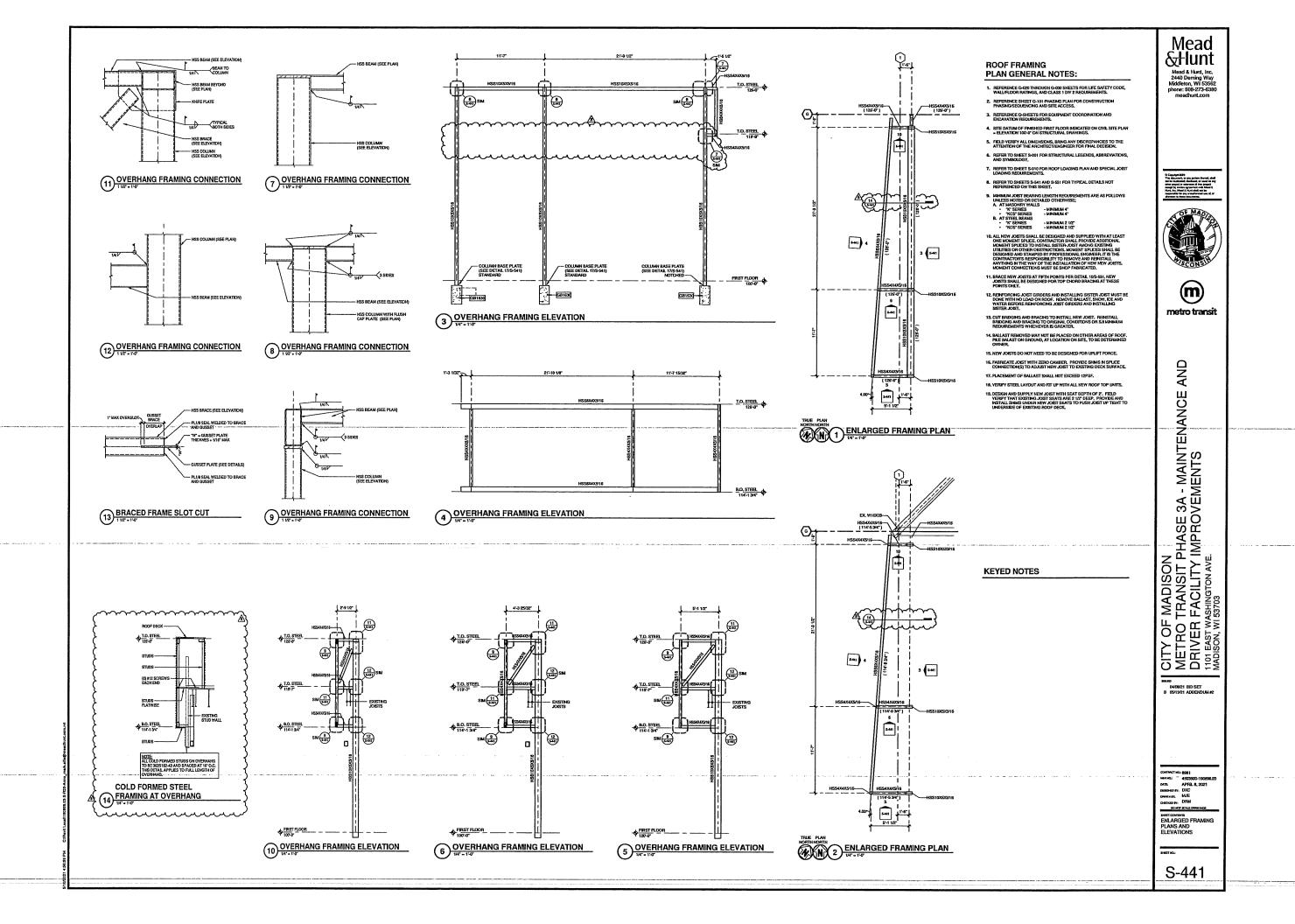
AND

S-131A



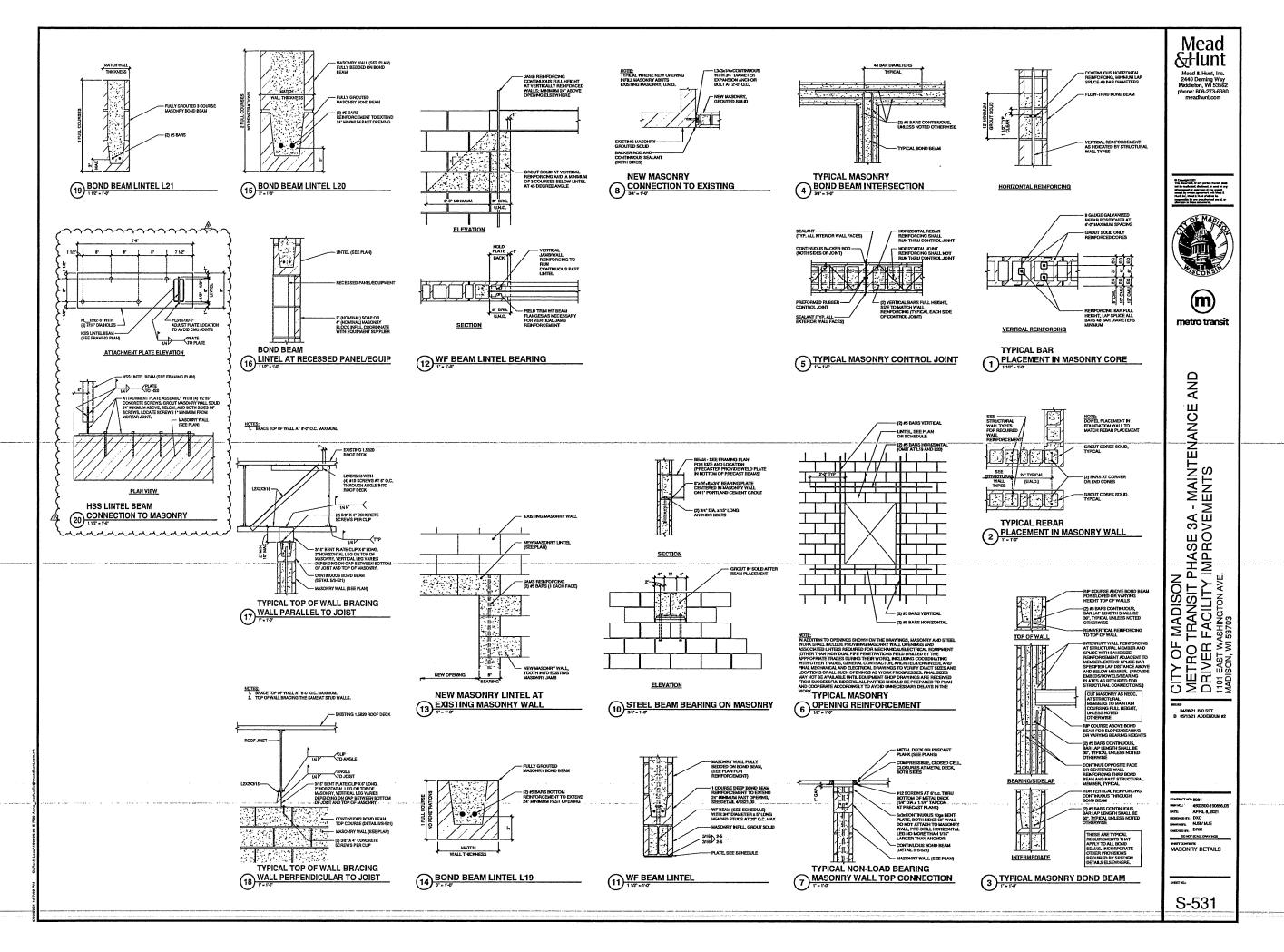


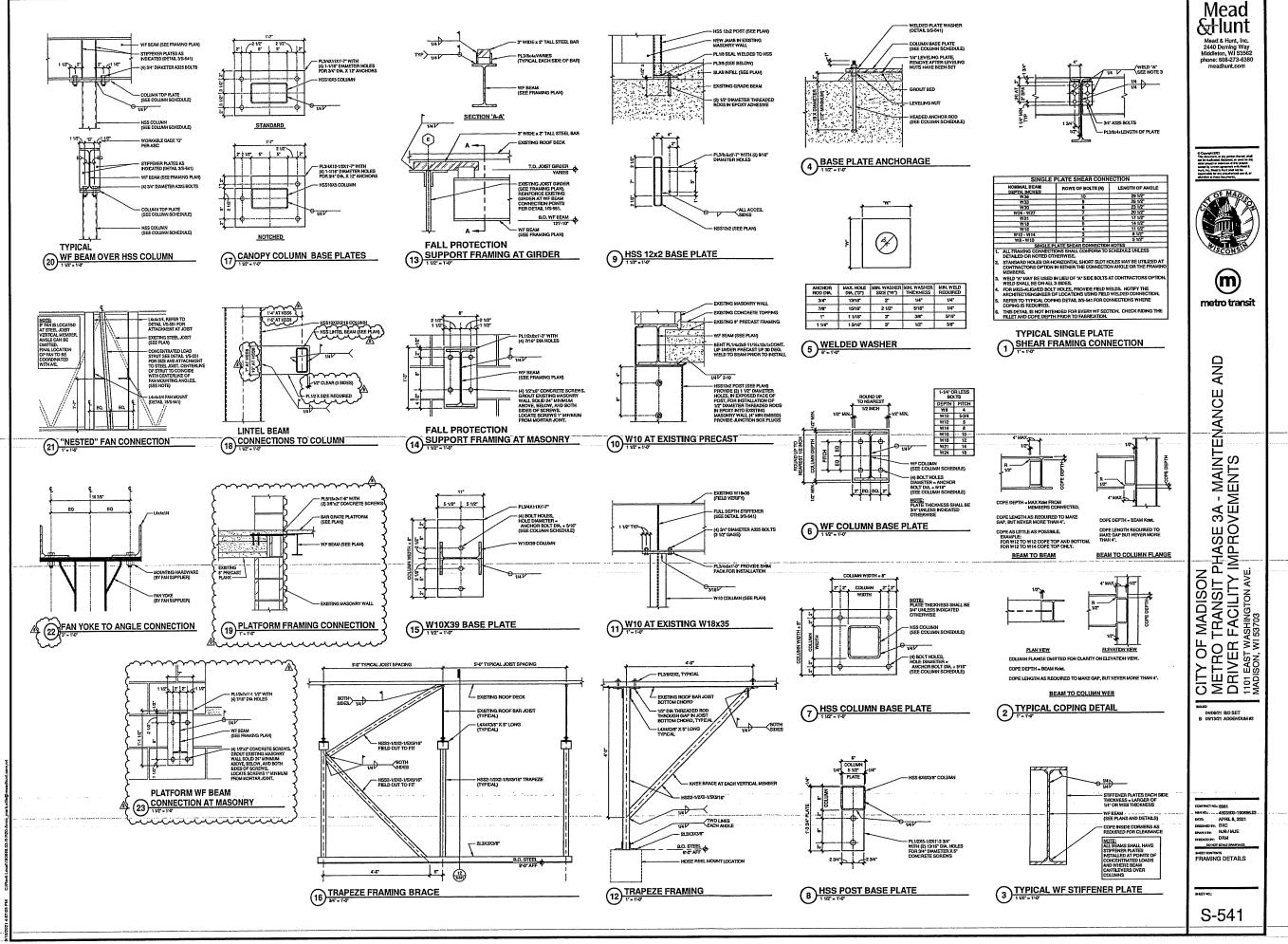


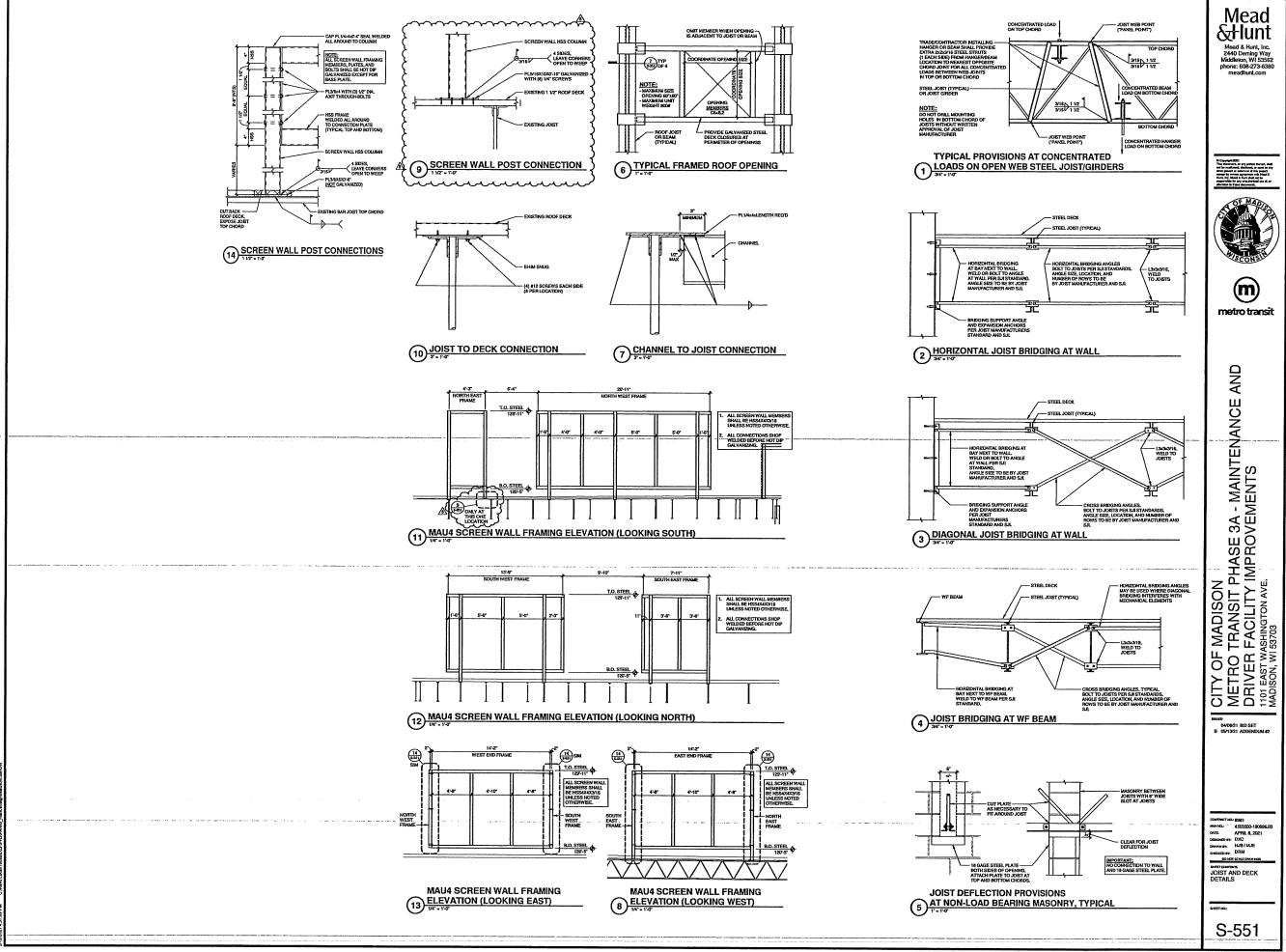


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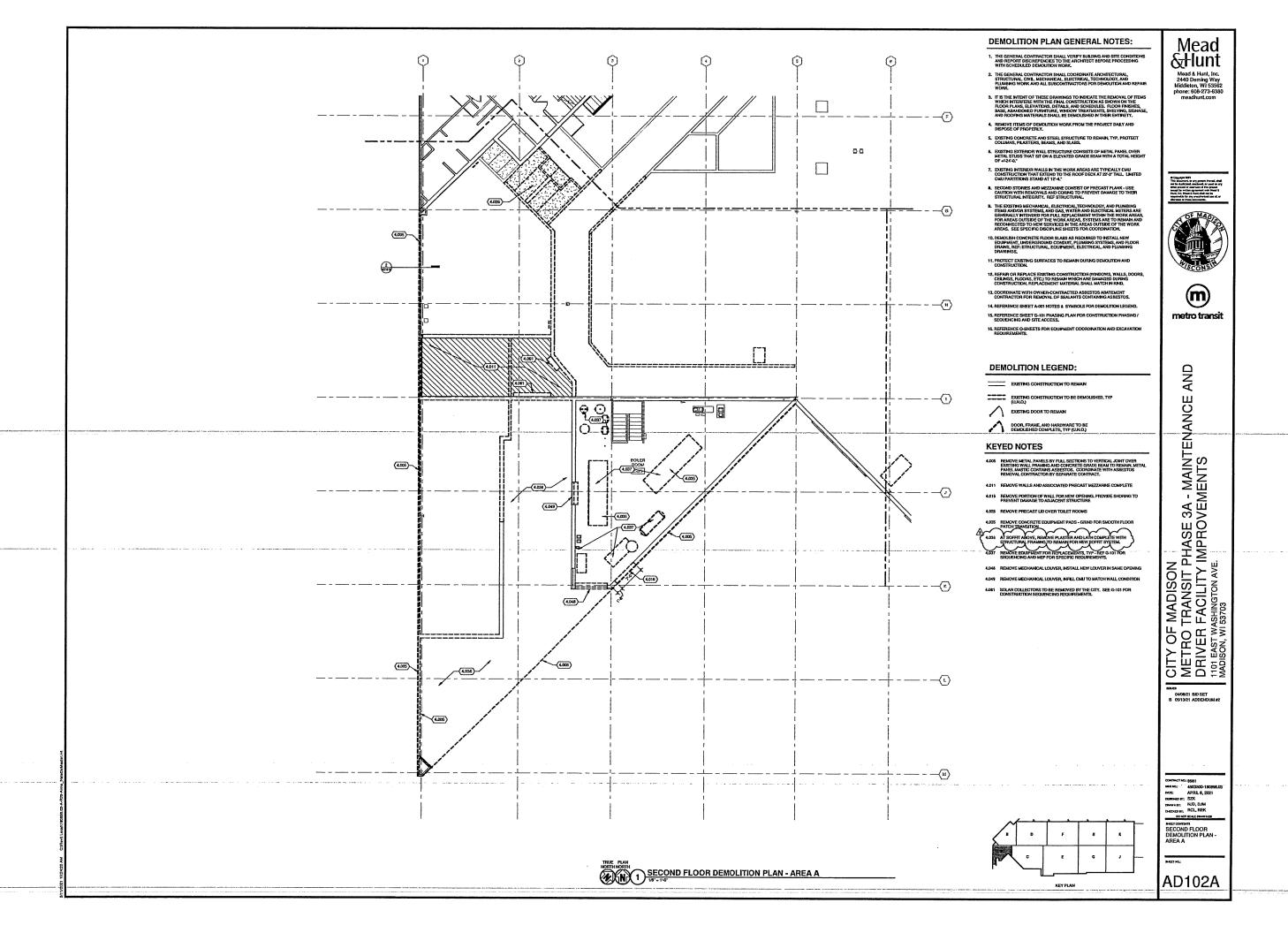
AT EXISTING GRADE BEAM **NEW PIER**



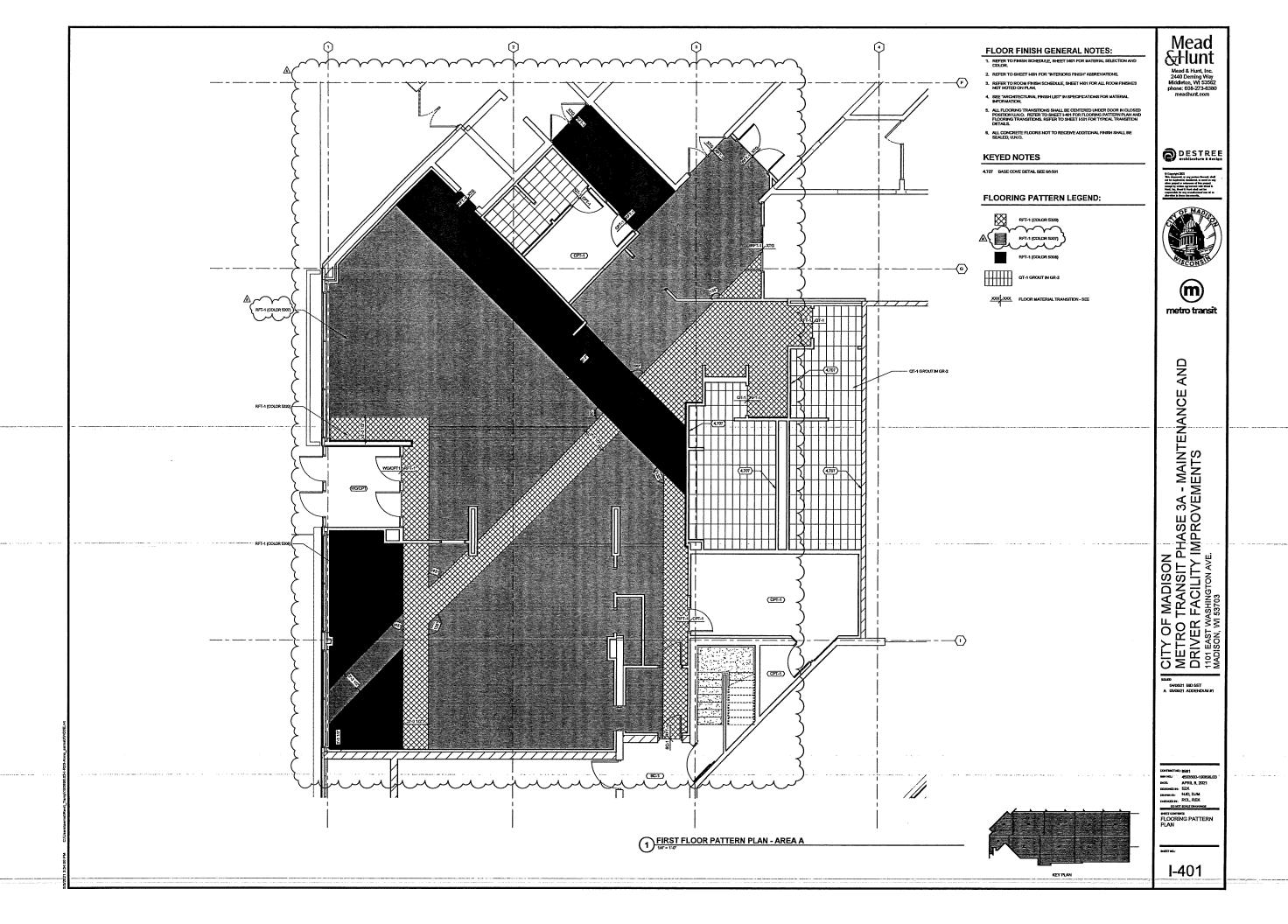




ADDENDUMZ



Abservacinz



					ROOM F	INISH SC	HEDULE				
ROOM		T		T	WA	LLS		CEI	LING		
NO,	ROOM NAME	FLOOR	BASE	NORTH	EAST	SOUTH	WEST	MITL	HEIGHT	REMARKS	
1101	VESTIBLE	WOOT	IRB-1	WD-1	PT-6	PT-0	PT-6	GWB	11'-5"	WOOD ACCENT WALL ON NORTH WALL - SEE I-101A	
102	HALLWAY	RFT-1	RB-1	WD-1		PLAM-1/ PT-9	PT-6	GWB/ACT- 1	12-0	WOOD ACCENT WALL ON NORTH WALL AND PLAN SOFFIT SURROUNDING OPERABLE PARTITION SYSTEM ON SOUTH WALL - SEE HIDIA	
103	GENERAL BREAK ROOM	RFT-1	RB-1	PT-6	PT-W CT-1	WD-1	PT-5	ACT-1	12-0"	TILE ON WALLS SURROUNDING EWC AND WHERE KITCHENETTE CASEMORY OCCURS, WOOD ACCENT WALL ON SOUTHERN END OF BANGUETTE SEATING - SEE SEE LINDS	
1104	DRIVER TRAINING ROOM	RFT-1	RB-1	PLAM-1/ PT-7	PT-6	PT-6	PT-6	ACT-1	12-0	PLAM SOFFIT SURROUNDING OPERABLE PARTITION SYSTEM ON NORTH WALL - SEE 1-101A	
105	STORAGE	RFT-1	RB-1	PT-6	PT-6	PT-6	PT-6	ACT-1	8-0.		
	CORRIDOR	RFT-1	RB-1	PT-6	PT-6	PT-6	PT-6	ACT-1	g-0.		
	VESTIBULE	RFT-1	RB-1	PT-6	ह्म-इ	PT-6	PT-6	ACT-1	3-0.		
	INSTRUCTOR'S OFFICE	CPT-1	RB-1	PT-6	PT-10	PT-6	PT-6	ACT-1	a-0.	SEE HOTA	
	CLOSET	CPT-1	RB-1	PT-6	PT-6	PT-6	PT-8	EXPIPT-5	L		
	MONEAR	QT-1	•	CT-1	CT-1	CT-1	CT-1/ VWC-2	ACT-2	g-0-	WC-2 OWNER SUPPLED, OWNER INSTALLED - SEE 1-1014	
	MBIS	QT-1		CT-1	CT-1/ VWC-2	CT-1	CT-1	ACT-2	a-0.	WC-2 OWNER SUPPLIED, OWNER INSTALLED - SEE HOM	
1112	GREETING	RFT-1	RB-1	PT-6	CT-IV WD-1	CT-1/ WD-1/ VWC-2	CT-1	GWB/ACT-	12-0	SEE HONA	
117	FLEX H.R. OFFICE	CPT-1	RB-1	PT-6	PT-6	PT-10	PT-6	ACT-1	3-0-	SEE I-101A	
118	TESTING	GT-1	RB-1	CT-1	VMC-1	CT-1	CT-1	GWB	B-0"	SEE HOTA	
119	TOLET	QT-1	RB-1	CT-1	VWC-1	CT-1	CT-1	GWB	8-0"	SEE 1-101A	
120	VESTIBLLE	RFT-1	RB-1	PT-6	PT-6	PT-6	PT-8	ACT-1	12-0		
211	SERVICE BAY #13-15	SC-1	-	-	-	PT-4	<u> </u>	EXP			
	SERVICE BAY #15-18	SC-1	-	-	-	PT-4	<u> </u>	EXP			
	SERVICE BAY #19-21	5C-1	-	<u> </u>	-	PT-4	<u> </u>	EXP	ļ		
	WORK AREA	5C-1	-	<u> </u>	<u> </u>	PT-4	<u> </u>	EXP			
	VEHICLE CIRCULATION	SC-1	<u>- </u>	<u> </u>	<u> </u>	-	PT-7	EXP EXP	 	SEE HIDIA	
	VEHICLE CIRCULATION	5C-1	-	<u> </u>	<u></u>	PT-4	PT-6	EXPPT-6	 		
	DATA	SC-1	-	a.Tq	PT-6	PT-6	PT-6	EXPIPI-6	 		
	ELECTRICAL ROOM	SC-1	-	PT-4	PT-4	PT-4	PT-4	EXP EXP	 		
	TIRES WATER SERVICE ENTRY	SC-1		PT-4	PT-4	P1-4	PT-4	EXP	 		
	RECEIVING	SC-1		PT-4 PT-8		PT-4	PT-4	EXP	 	PT-8 UP TO 10-0", PT-4 ABOVE 10-0", SEE L-101A	
233	LOADING DOCK	+~~		1 1 1	 '	 			 		
	STAGING	SC-1	 	ग्रन्थ ग्रन्थ	PT-4	PT-4	PT-4	EXP	1	PT-8 UP TO 10-0", PT-4 ABOVE 10-0", SEE I-101A	
	STAIRS	RB-2	-	PT-4	PT-4	PT-4	PT-4			RFT STAIR TREADS/NOSINGS WITH YELLOW VISUALLY IMPAIRED STRIPS	
235	BATTERY STORAGE/ CHARGING	SC-1	t	PT-4	PT-4	PT-4	PT-4	ĐΦ	1		
	PARTS STORAGE	SC-1	1-	PT-4	PT-4	PT-4	PT-4 PT-8		I	PT-8 UP TO 10"-0", PT-4 ABOVE 10"-0", SEE 1-101A	
238	PARTS	SC-1	-	PT-4	P7-4	P7-4	PT-4/PT-8			PT-8 UP TO 10-0", PT-4 ABOVE 10-0", SEE H101A	
701	COMM	SC-1	-	PT-4	PT-4	PT-4	PT-4	ĐΦ		NON CHU WALL TO HAVE IT COVE WALL BASE	
121	сони	5C-1	RB-1	PT-5	PT-6	PT-6	PT-6	ĐΦ			
201	MECHANICAL	SC-1		PT-4	PT-4	PT-4	PT-4	EXP	1		
7301	ELECTRICAL.	SC-1		PT-4	PT-4	PT-4	P1-4	EXP			
302	STORAGE	SC-1		PT-4	PT-4	PT-4	PT4	ÐФ			
	STORAGE	SC-1		PT-4	PT-4	PT-4	PT-4	EXP	ļ		
2305	WATER/ COMPRESSOR ROOM	SC-1		PT-4	PT-4	PT-4	PT-4	EXP	<u> </u>		

			F	ROOM FIN	IISH SCH	EDULE 34	ALTERI	VATE NO.	1	
ROOM		T 1		1	WA	ILS		CEI	LING	
NO.	ROOM NAME	FLOOR	BASE	NORTH	EAST	SOUTH	WEST	MTL	HEIGHT	REMARKS
1301	VEST.	SC-1	-	-	PT-4	PT-4		EXP	I	
1302	WENS	OT-1	-	CT-1	CT-1	CI-1			5-0"	
1303	WOMEN'S	QT-1	-	CT-1	CT-1	CT-1			5-0°	
1304	STEAM CLEANING	SC-1		PT-4	PT-4	PT-4	PT-4	EXP		
1305	METER SHOP	SC-1	-	PT-4	PT-4	PT-4	PT-4	EXP		
1306	UNIT SHOP	SC-1	-	PT-4	PT-4	PT-4	PT-4	EФ		
1307	VEST.	SC-1	-	-	PT-4	PT-4	PT-4	EXP		
308	WELDING	SC-1		PT-4	PT-4	PT-4	PT-4	EXP ·	-	\$1.7 kg 1 kg 1 kg 2 kg 2 kg 2 kg 2 kg 2 kg 2
1309	BODY SHOP	SC-1	-	PT-4	PT-4	PT-4	PT-A	EXP		
	STARS	R8-2		PT-4 .	PT-4	PT-4	PT-4			RB STAIR TREADS/NOSINGS WITH YELLOW VISUALLY IMPAIRED STRIPS
1311	SERVICE BAYS #22-23	SC-1		PT-4	PT-4	PT-4	PT-4			

GENERAL FINISH NOTES:

- ALL INTERIOR HIS DOOR FRAME FINISHES AND METAL DOORS TO BE PAINTED PT-S, U.N.O. IN DOOR SCHEDULE.
- ALL PLAN-1 TO RUN IN THE VERTICAL DIRECTION UNLESS NOTED OTHERWISE.

- 4. ALL CORNER GUARDS TO MATCH WALL PAINT COLOR.
- 5. YWC-2 TO BE OWNER SUPPLED, OWNER INSTALLED
- 6. STAIR NOSINGS WITH YELLOW VISUALLY IMPARED STRIPS AT THE TOP OF STAIR FLIGHTS. ALL OTHER STEPS TO HAVE STAIR TREADS WITH YELLOW VISUALLY IMPARED STRIPS.

INTERIORS FINISH ABBREVIATIONS:

Mead & Hunt, Inc. 2440 Deming Wey Middelon, WI 35820 phone: 608-273-6380 meadhunt.com







metro transit

CITY OF MADISON
METRO TRANSIT PHASE 3A - MAINTENANCE AND
DRIVER FACILITY IMPROVEMENTS
1101 EAST WASHINGTON AVE.
MADISON, WI 53703

D4/08/21 BID SET A 05/08/21 ADDENDUM IFI

I-601

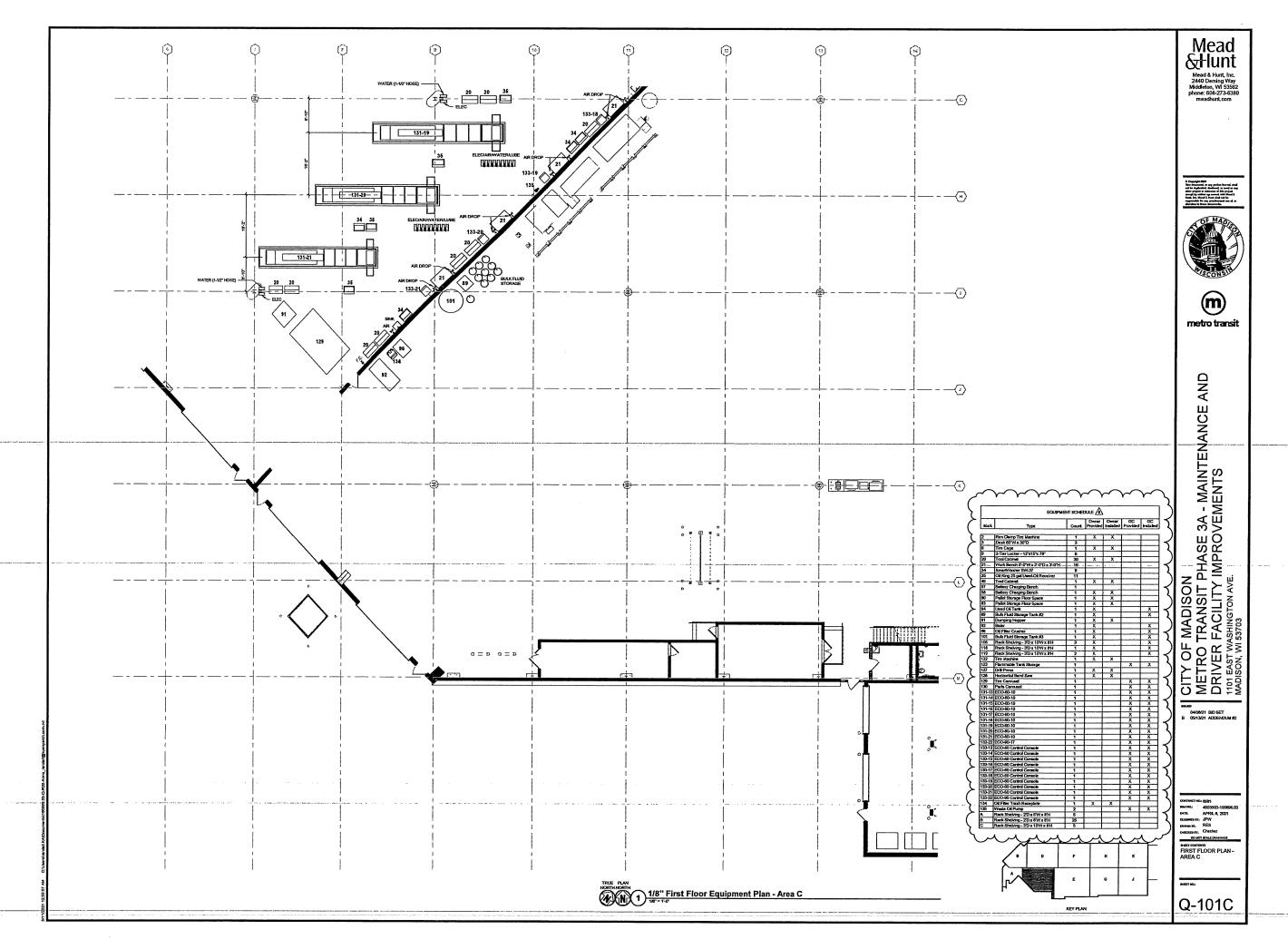
			· · · · · · · · · · · · · · · · · · ·	NTERIOR FINISHES	SCHEDULE		
	T	T		DUCT DESCRIPTION			
				DUCT DESCRIPTION	<u>'</u>		-
FINISH	FINISH DESCRIPTION	MANUFACTURER	MODEL NUMBER	STYLE	COLOR	SIZE	REMARKS
NUMBER	FINISH DESCRIPTION	MANUFACTURER	NOMBER	SIILE	COLOR	- OLL	TEN-080
ACT-1	ACOUSTIC CEILING TILE - TYPE 1	USG		 	WHITE	24" X 24"	W/ USG DOWN BRAND CENTRICITEE 9/16" GRID
ACT-2	ACOUSTIC CEILING TILE - TYPE 2	ARMSTRONG	1753		WHITE	24"X24"	WASHABLE ACT W/ 9/16" GRID
APT-1	ALUMNOM PERIMETER TRIM - TYPE 1	ARMSTRONG	AX1PC6STRWH	5" ONE PIECE AXION	WHITE		
L		ARMSTRONG	AXSSTRWH	CLASSIC FOR DRYWALL 5" AXIOM CLASSIC	WHITE		W/ 7239 ADJUSTABLE TRIM CLIP
APT-2 CG-1	ALUMINUM PERIMETER TRIM-TYPE 2 CORNER GUARD-TYPE 1	INPRO	3448	B'ACCOM CLASSIC	0103	12 X 3/4"	SEE HIDIA FOR CORNER GUARD LOCATIONS
CG-2	CORNER GUARD-TYPE 2	INPRO	3448		0257	12 X 3/4	SEE HIDIA FOR CORNER GUARD LOCATIONS
व्या-1	CARPET-TYPE 1	MOHAWK GROUP	GT154	 	599	24"X24"	
CT-1	CERANIC WALL TILE - TYPE 1	DESELLIVING		INDUSTRIAL GLASS	WHITE	3,9" X 11,8"	GROUT TO BE GR-1
GR-1	GROUT-TYPE 1	TEC			927		USED FOR CT-1
GR-2	GROUT-TYPE 2	TEC	 		941 5225		USED FOR OT-1
HPDS-1 LMC-1	HPDE PARTITION - TYPE 1 LINEAR METAL CEILING	BRADLEY	SERIES 400	SERIES 400	EFFECTS CINNAMON		
PAB-1	POLYESTER ACCUSTICAL BOARD-TYPE 1	LUCID ECOCORE	+	LINES	ECC-08	1/2" THICK	TOP LAYER - LINES PATTERN
PAB-2	POLYESTER ACQUISTICAL BOARD - TYPE 2	LUCIO ECOCORE	+		ECC-06	1/2" THICK	BASE LAYER
PAB-3	POLYESTER ACCUSTICAL BOARD - TYPE 3	CSIWALL PANELS	SCCPLU4601	SOUNDCORE PLUS 1"	SND902		
			1	ACOUSTICAL PANEL	<u> </u>		
PLAM-1	PLASTIC LAMBATE - TYPE 1 PERFORATED HETAL BASE - TYPE 1	FORMICA STYLMARK	 		1747	65	BANQUETTE PERFORATED TOE BASE MATERIAL
PMIL-1 PT-4	PAINT COLOR - TYPE 4	SHERWIN WILLIAMS	 		SW/7004	-18	BANGOETTE PEROCNATED TOE BASE MATERIAL
PI-S	PAINT COLOR-TYPE 5	SHERWINWILLIAMS	-		SW7069		ALL HM FRAMES AND METAL DOORS TO BE PAINTED PT-5
PT-6	PAINT COLOR-TYPE 6	SHERWINWILLIAMS	 	 	SW7029		
PT-7	PAINT COLOR - TYPE 7	SHERWINWILLIAMS	 		SW6342		
PT-8	PAINT COLOR - TYPE 8	SHERWIN WILLIAMS			SWE510		
PT-0	PAINT COLOR - TYPE 9	SHERWIN WILLIAMS			SW7E25		
PT-10	PAINT COLOR - TYPE 10	SHERWIN WILLIAMS			SW6417		GROUT TO BE GR-2
OT-1	QUARRY TILE-TYPE 1	LANDWARK CERANICS	<u> </u>	CHARME	GRAPHITE DARK	12" X 24"	GROUT TO BE GREZ
RET-1	RUBBER BASE - TYPE 1 RUBBER FLOOR TILE - TYPE 1	MANNINGTON	ARTICLE 1850	GRANO	523 5307, 5320, 8 5308	3.5MM TRE	SEE 1401 FOR FLOORING PATTERN
RFT-2	RUBBER FLOOR STARS-TYPE 2	NORA	ARTICLE 1000	HAMMERED	0716	7.022.10.	VISUALLY IMPAIRED STRPS IN COLOR SAFETY YELLOW
RT-1	RUBBER TRANSITION - TYPE 1	TARKETT	SLT-63-J	SLIMILINE	63		
RT-2	RUBBER TRANSITION - TYPE 2	TARKETT	SLT-63-B	SLIMILNE	63		
SCH-1	SCHLUTER EDGE - TYPE 1	SCHLUTER SYSTEMS	A 80 ATGB	SCHLUTERJOLLY	ATG8		
SCH-2	SCHLUTER EDGE - TYPE 2	SCHLUTER SYSTEMS		SCHLUTER-DILEX-AHK	ATG8		
SCH3	SCHLUTER EDGE - TYPE 3	SCHLUTER SYSTEMS		SCHLUTER-DILEX-AHK	ATG8		THE TO COUNTERTOP AND INSIDETILE CORNERS
SCH4	SCHLUTER EDGE - TYPE 4	SCHLUTER SYSTEMS	ATK 100 ATGB	SCHLUTER-RENO-TK SCHLUTER-RENO-Y	ATG8		
SCH6 SCH6	SCHLUTER EDGE - TYPE 5 SCHLUTER EDGE - TYPE 6	SCHLUTER SYSTEMS	AEVT 100 B20 AU 100 ATGB	SCHLUTER-RENO-U	ATG8		
SCH-6	SCHLUTER EDGE - TYPE 8	SCHLUTER SYSTEMS	RO 80 ATGB	SCHLUTER-ROUNDEC	ATGB		OUTSIDE TILE CORVERS
SSM-1	SOUID SURFACE - TYPE 1	CORIAN	1		ASH CONCRETE	12MM SHEET	
UPH-1	UPHOLSTERY - TYPE 1	ARCHITEX		BELOW	MAKENA BEACH		BANQUETTE BACK UPHOLSTERY
UPH2	UPHOLSTERY-TYPE 2	NOMENTUM		BIDURANCEEPU	JETTY		BANQUETTE SEAT UPHOUSTERY
UPH3	UPHOLSTERY-TYPE 3	CARVEGE	6427S	METEOR	706		OPERABLE VERTICAL PARTITION FASRIC
VYYC-1	VINYL WALL COVERING - TYPE 1	CARNEGE	8104		33		OWNER SUPPLIED, OWNER INSTALLED
VWC-2	VINYL WALL COVERING - TYPE 2	Lucavious	ļ	URBAN ELM	NATURAL STAIN		OTTHER SUPPLIED, OTTHER INSTALLED
WD-1 WDF-1	WOOLDESIGN FELT-TYPE 1	URBAN EVOLUTIONS FLIZ FELT		UNDVIELE	150	2MM THICK	
WORDET	WALK OFF CARPET - TYPE 1	BENTLEY MILLS	8RN24		800115	24"X24"	
WSHD-1	WINDOW SHADE-TYPE 1	DRAFER INC.		PW3570	EBONY	-1	
WSHD-2	WINDOW SHADE-TYPE 2	DRAPER INC.		5W7000-V40	ONYX		

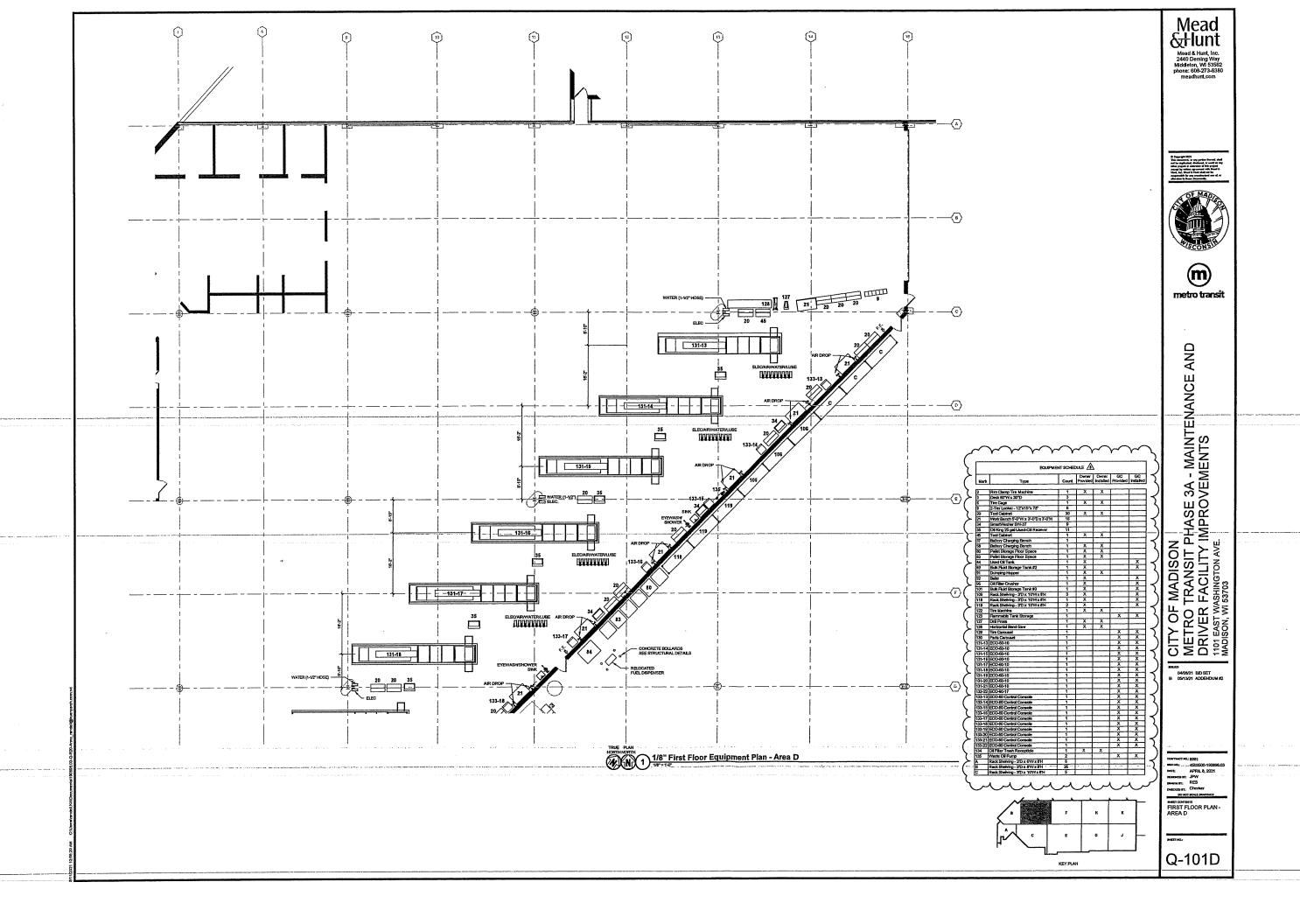
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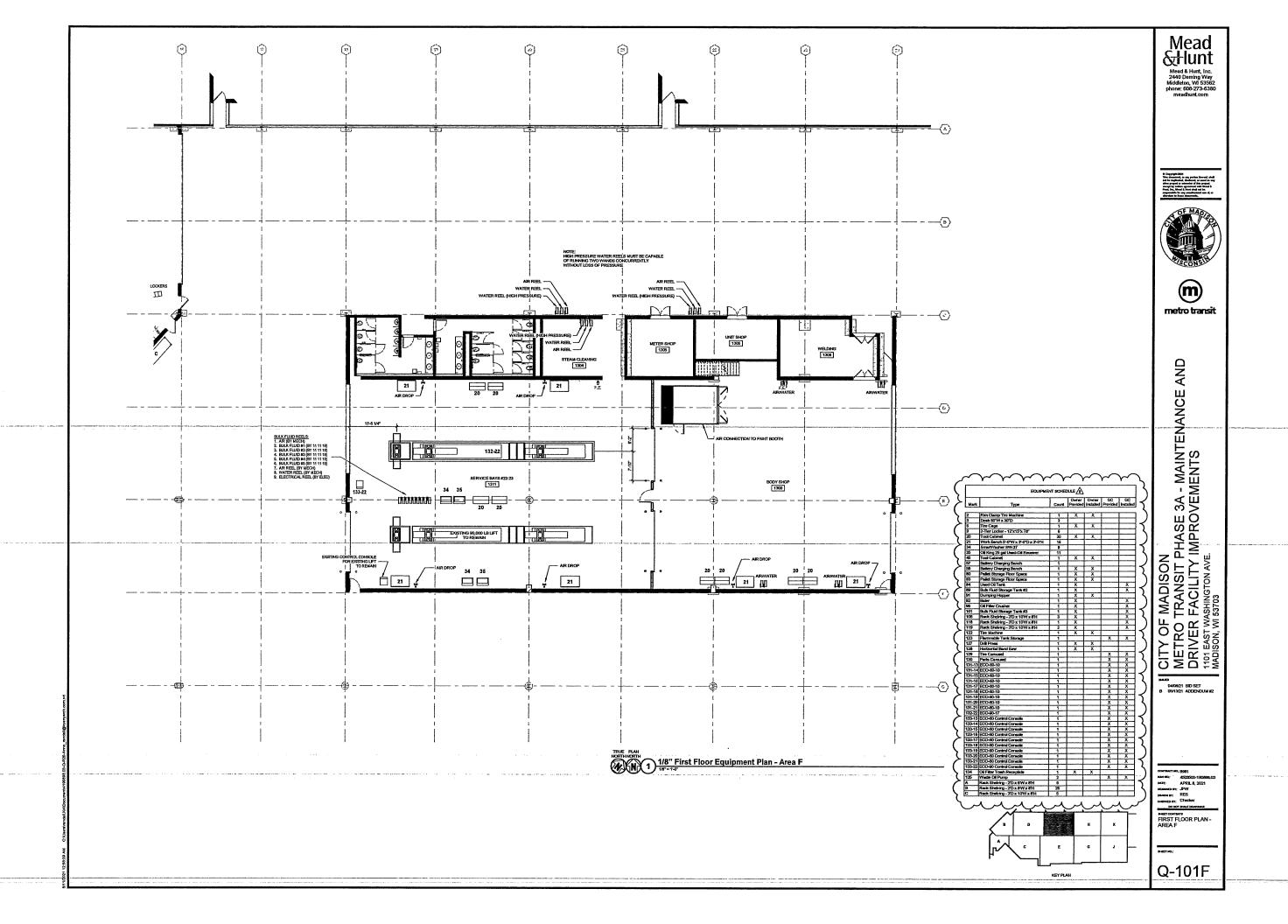
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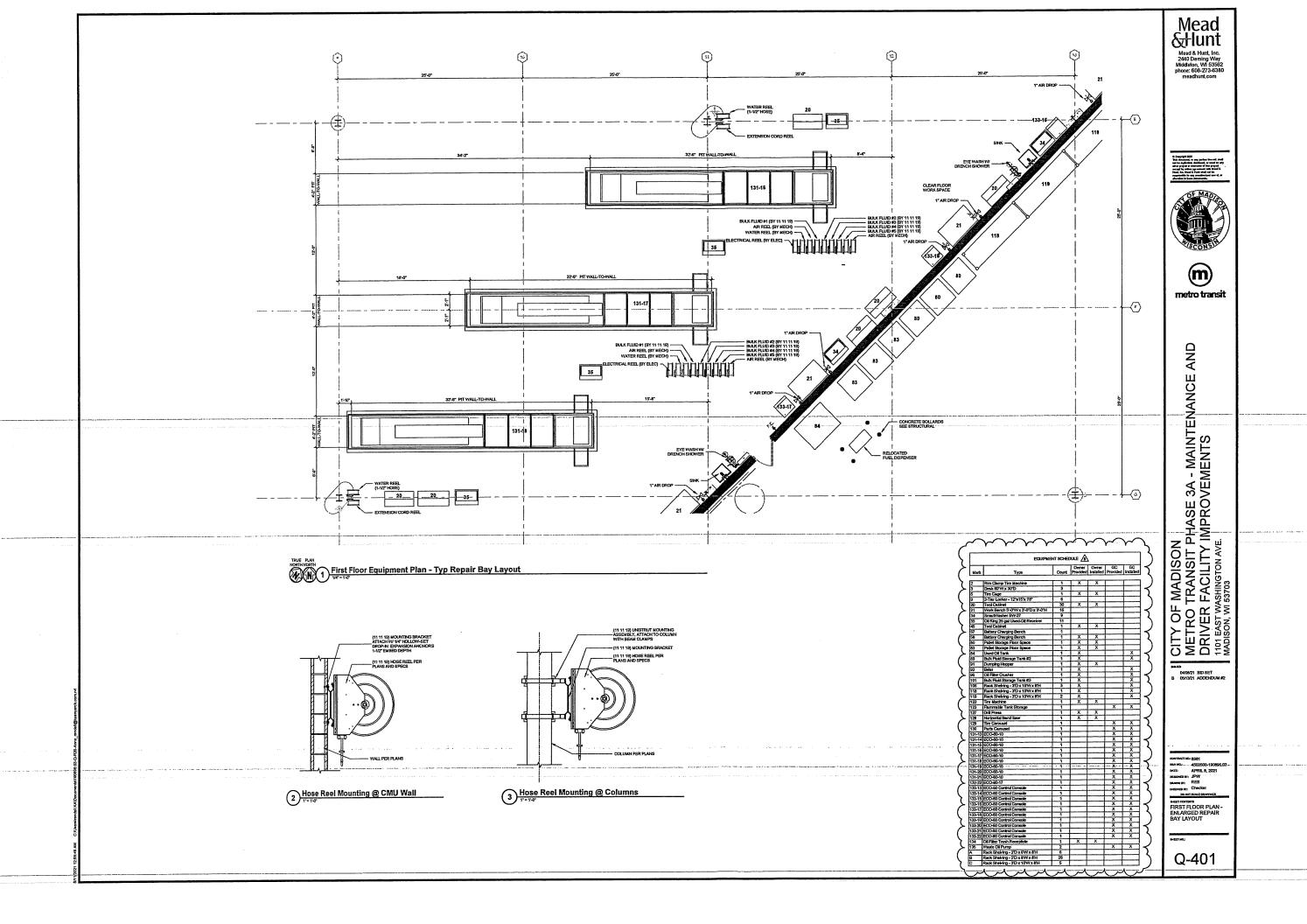
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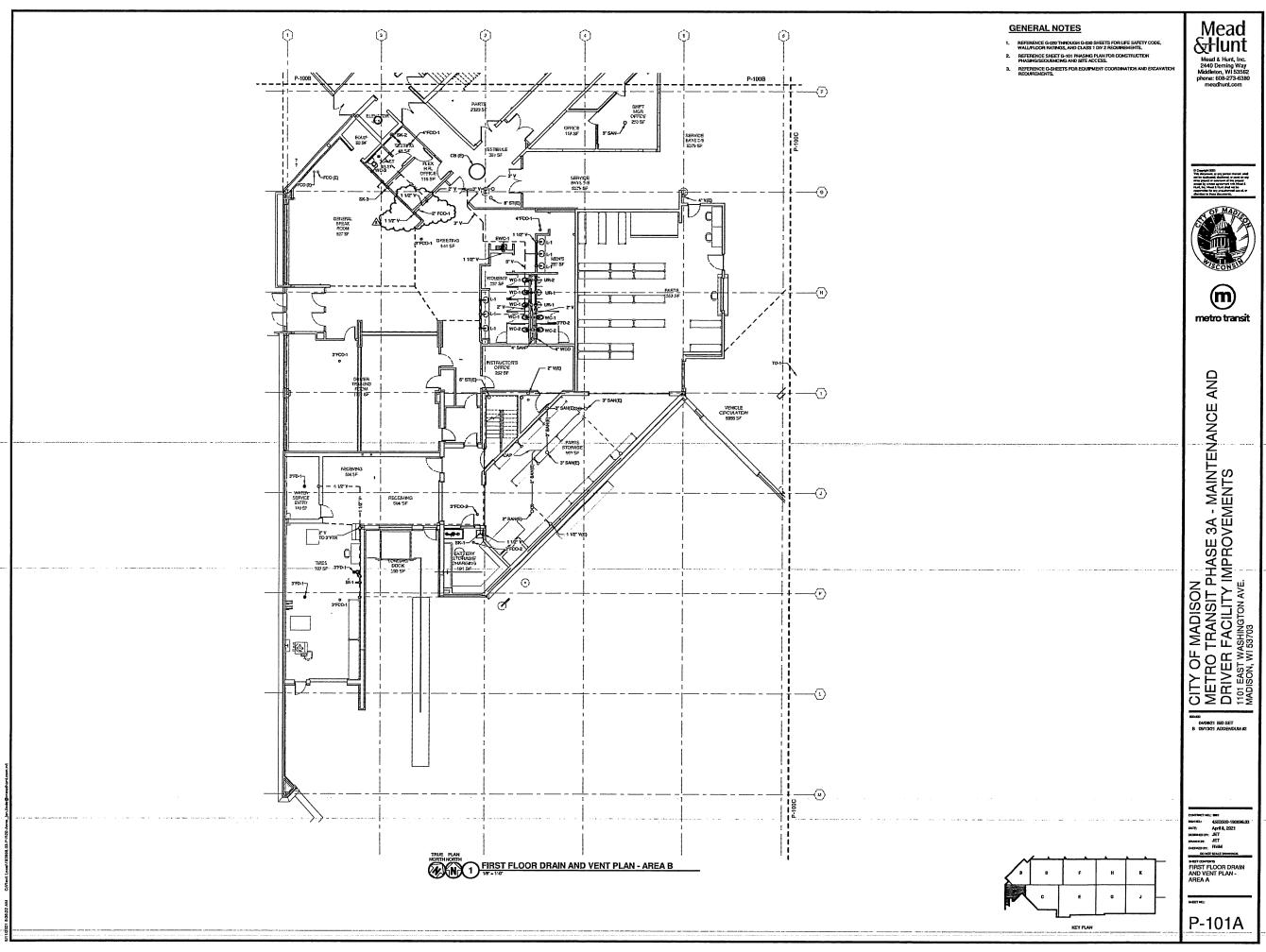




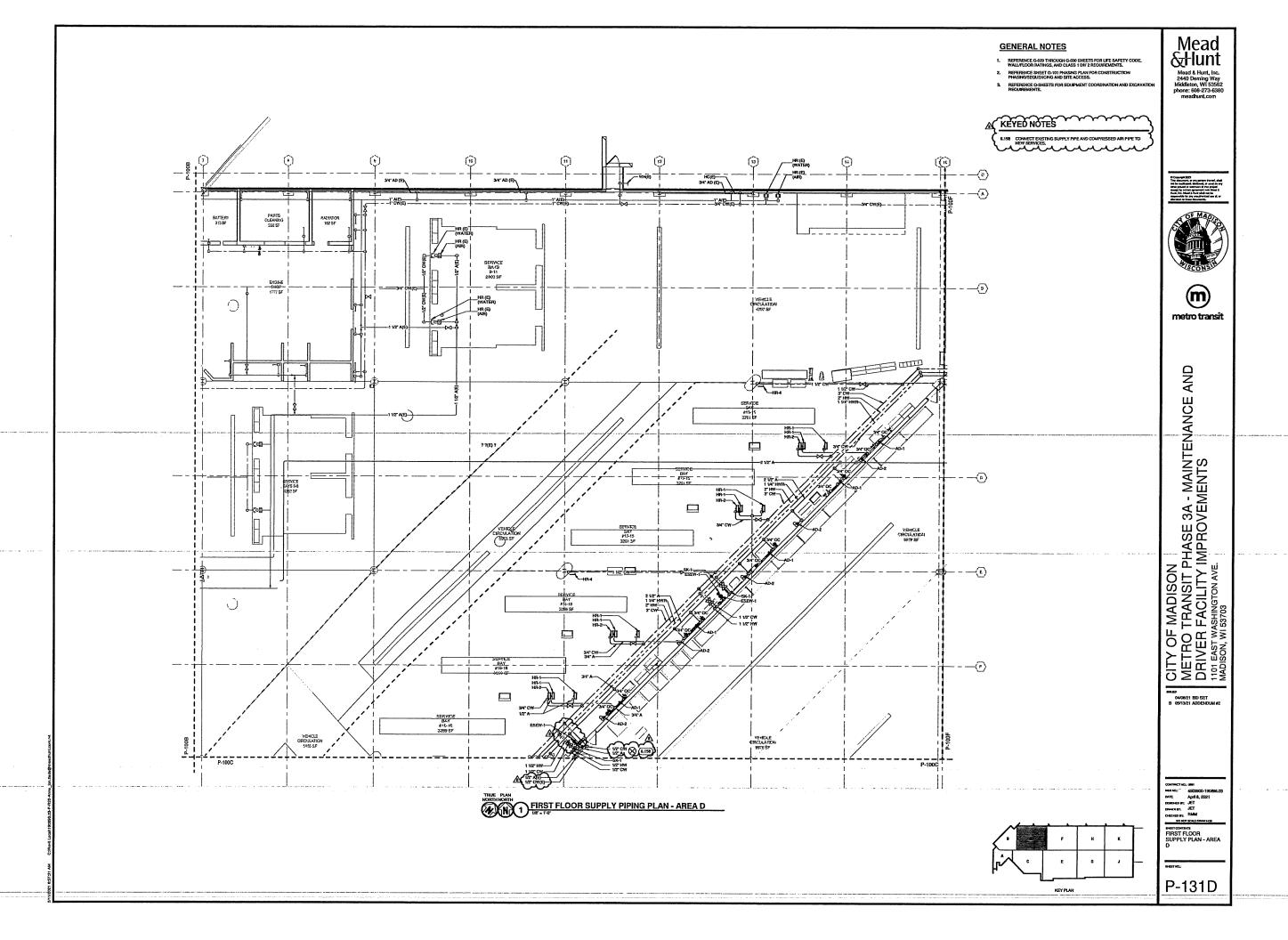


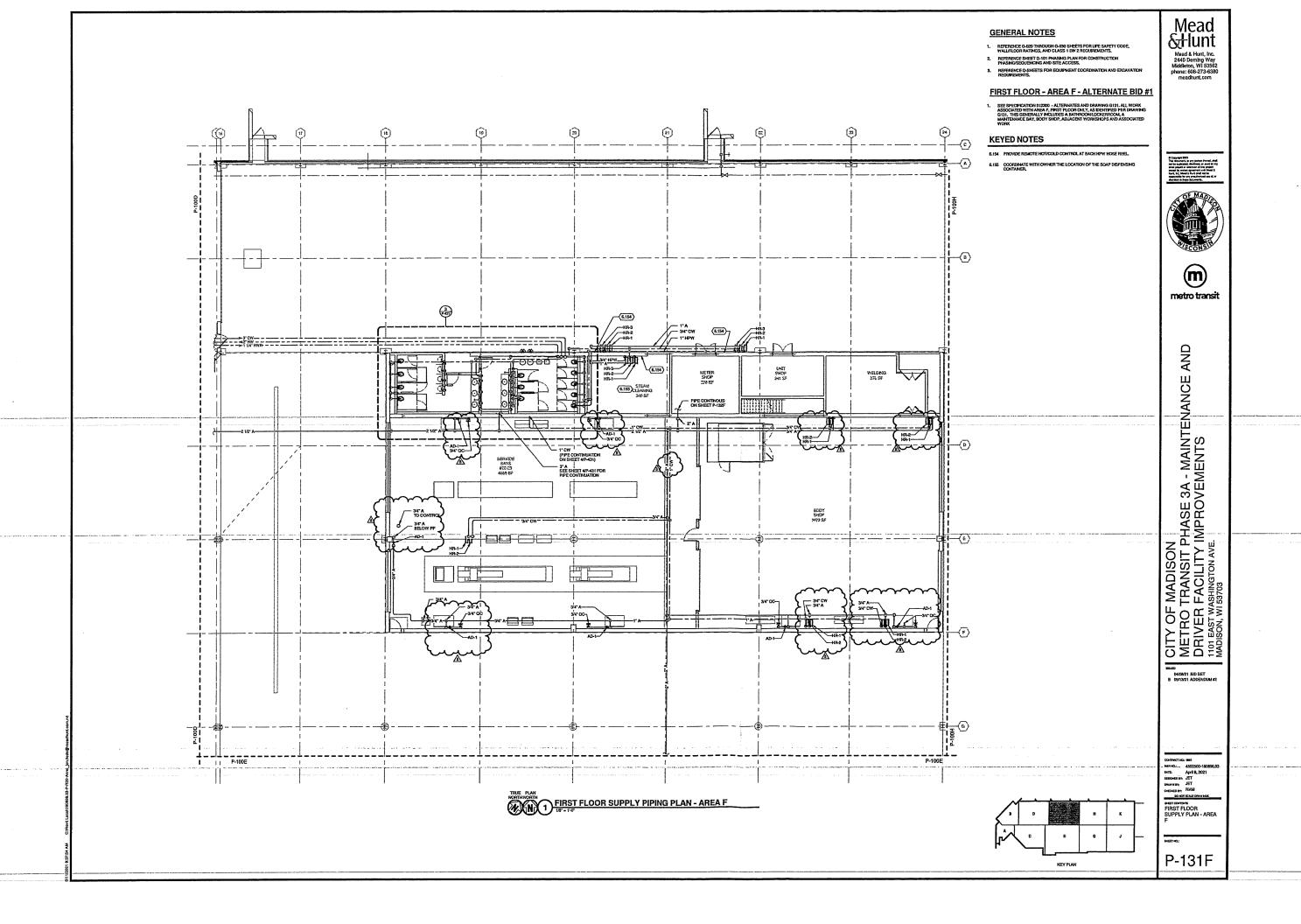


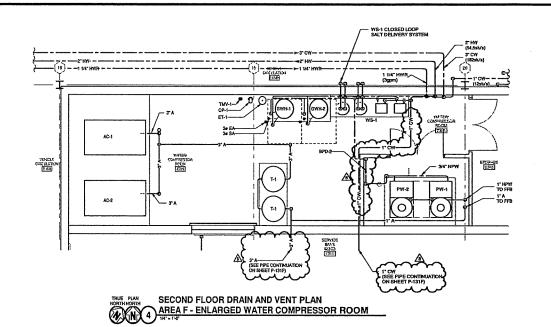
Mead & Hunt, Inc. 2440 Deming Way Middelon, WI 53552 phone: 669-273-6380 meadhunt.com **GENERAL NOTES** - - (c) 154 m metro transit CITY OF MADISON METRO TRANSIT PHASE 3A - MAINTENANCE AND DRIVER FACILITY IMPROVEMENTS 1101 EAST WASHINGTON AVE. MADISON, WI 53703 -- (E) 04/08/21 BID SET B 05/13/21 ADDENDUM #2 CONTINCT INC. MET IMPINIC: 4500500-190600.00 April 6, 2001 CONTINUE SET CONTINUE SE THUE PLAN NORTHNORTH ORTHNORTH FIRST FLOOR SUPPLY PIPING DEMOLITION PLAN - AREA D 187-1-05 PD131D

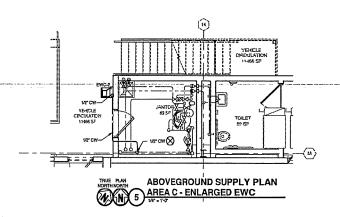


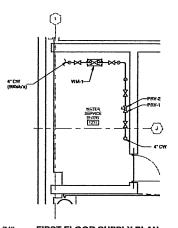
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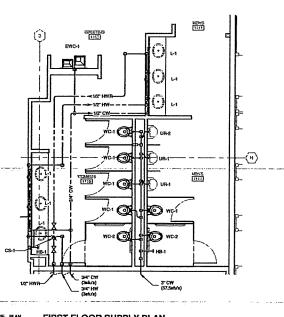




FIRST FLOOR SUPPLY PLAN

AREA A - ENLARGED WATER SERVICE ENTRY

W-197



FIRST FLOOR SUPPLY PLAN
PAREA A - ENLARGED BATHROOM
W-107 PIRST FLOOR - AREA F - ALTERNATE BID #1 FIRST FLOOR SUPPLY PLAN
AREA F - ENLARGED BATHROOM

Mead & Hunt, Inc. 2440 Deming Way Middleton, WI 53562 phone: 608-273-6380 meadhunt.com

Mead &Hunt





CITY OF MADISON
METRO TRANSIT PHASE 3A - MAINTENANCE AND
DRIVER FACILITY IMPROVEMENTS
1101 EAST WASHINGTON AVE.
MADISON, WI 59703

04/08/21 BID SET B 05/13/21 ADDENOUM I

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MAN HOL. ASSOSIOD-190899
NOTE: April 8, 2021
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DI NOT SCHE ENVIROS
SHEET CONTINES
SUPPLY PLUMBING

P-431

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& Hunt Mead & Hunt, Inc. 2440 Deming Way Middleton, WI 53552 phone: 608-273-6380 meadhunt.com

(m)metro transit

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CITY OF MADISON METRO TRANSIT PHASE 3A - MAINTI DRIVER FACILITY IMPROVEMENTS 1101 EAST WASHINGTON AVE. MADISON, WI 53703

D408/21 BID SET B 05/13/21 ADDENDUM #2

M-603

	1	t "	AIR FLOW	1	L	MOTOR		FAN	1 -7	1	(2) MTG.	M	AXIMUM SC	OUND	(1)	OPEN	ang (IN)	1	1		1
	MANUFACTURER, MODEL NUMBER	FAN TYPE	RATE (CFM)	ESP (IN WC)	HP	внр	TYPE	SPEED	DRIVE TYPE		HEIGHT (FT)	(3) (DB)	(4) SONES	INSTALL. TYPE	INTERLOCK WITH	LENGTH	HTOW	ACCESSORIES	WEIGHT S (LB)	LOCATION	REMARKS
		5	1210	0.75	1/2	ECM	1800	1254	DIRECT			-	14.6		BAS	-	-	20	130	ZONE 2	
		5	500	0.50	1/12	ECM	1750	1709	DIRECT			-	7.7		T-STAT	10.5	10.5	20	65		ELEC ROOM
		3	5,000	5.00	10	TEFC	1600	1739	DIRECT		- 1	-		•	MAU-4/5(E)	<u> </u>	-		615	ZONE 2	
	EXISTING	5	695	0.5	1/6	ECM	1750	1152	DIRECT		- 1	<u> </u>	6.7	-	AC-01(E)	18.5	18.5	20	110	ZONE 2	
	EXISTING	5	700	0.5	1/2	ECM	1750	1100	DIRECT		1 -		8.2	•	T-STAT	18.5	18.5	20	115	ZONE 3	
	EXISTING	5	735	0.5	1/2	TEFC	1750		DIRECT		1 - 1	-	· .	-	MAU-8(E)	18.5	18.5	20	115	ZONE 3	
	EXISTING	3	1,130	3.50	1.5	TEFC	3600	3294	DIRECT		1 - 1	-	25	-	SWITCH W/MAU-8(E)	- 1		2	165	ZONE 3	DEMO
	EXISTING	3	400	3.50	0.5	ECM	1750	1730	DIRECT		-	-	· .		SWITCH W/MAU-8(E)		-	2	65	ZONE 3	DEMO
	EXISTING	3	1150	3.25	1.5	TEFC	3600	3237	DIRECT		1 - 1	-	25		SWITCH W/MAU-B(E)	-	1 -	2	165	ZONE 3	DEMO
	EXISTING	3	3,500	3.00	3	TEFC	1481	1750	DIRECT	450/3	-	-	19.2	-	SWITCH W/MAU-8(E)	-	-	2	340	ZONE 3	
	EXISTING	3	3,800	0.75	2	TEFC	1351	1000	DIRECT	460/3	-	-	12.1	-	MAU-8(E)	-	-	2	234	ZONE 3	
	EXISTING	3	1,150	3.25	1,5	TEFC	3600	3237	DIRECT	450/3	1 - 1	-	25	-	SWITCH W/MAU-8(E)	1	-	2	165	ZONE 3	DEMO
F-27(E)	EXISTING	5	15,175	0.75	10	TEFC	860	853	DIRECT		1 - 1	 -	34		MAU-4/5(E)	47	47	20	675	ZONE 2	f
	EXISTING	5	15,175	0.75	10	TEFC	860	863	DIRECT		1 - 1	-	34	-	MAU-4/5(E)	47	47	20	675	ZONE 2	
	EXISTING	3	2,600	2.50	2	TEFC	1750	1477	DIRECT		+	 -	16	 - 	MAU-8(E)	1	1 -	-	211	ZONE 3	DEMO
F-30(E)	EXISTING	2	B,000	0.50	3	TEFC	-	1 -	-	460/3	 - '	1 -	-		MAU-8(E)	1 -	-	1	1	ZONE 3	1
		$\overline{}$				1	$\overline{}$	1	+		 	<u> </u>	1	 			_	 	1	1	
	FANT	YPE				1			MOTO	DR TYPE			INS	STALLATION	TYPE	†		1		·	
	CENTRIFUGAL		AXIA	AL		ODP	OPEN DE	RIP PROOF)F		-	A		E INLET, FREE OUTLET							
1	SIDEWALL	В	ROOFTOP DO	OWNBLAST					SED FAN CO	COLED	,			LET, DUCTED		1					
2	INLINE	1	SIDEWALL PR			1	EXPLOSION PROOF C DUCTED INLET, FREE OUT							1							
3	UTILITY	1 -	TUBE AXIAL			1									TED OUTLET	1					
,	CABINET	1	VANE AXIAL						SED AIR OVE		,	REMARK		MLEI, DOG	IED COILE:	i					
:	ROOFTOP UPBLAST	1			,	TEAO	IUIAL.	ENGLOS	al Amon	zH.	,		ALC: UNIVERSAL STREET		·	··					
5		1	MIXED FLOW		- '	1					,				I SECTION 230993 - HV					onw	··· openio
	ROOFTOP HOODED	13	ROOFTOP FRE	PUPBLASI	,	1					,				IS FROM FINISHED FLO		1. OF INDM	CATED HOUN, I	TO TOP OF	FAN UN 117	ALL OPENING.
7	ROOFTOP FILTERED SUPPLY			- COPPE											EL RATING PER AMCA						
	TO THE PARTY OF TH		SIM PENAD	ACCESSO	PRIES										AT 5 FT IN A HEMISPH	EHICAL FI	der Her) PEH AMA SOL	1-		
1	GRAVITY BACKDRAFT DAMPER		OUTLET WIRE					D WALL CA			,	(5)	VFD HATE	TED FAN MOT	/ORL						
2	MOTORIZED BACKDRAFT DAMPER		MALET FILTER					D ROOF CA			,	i									
	WEATHERHOOD	13	MOTOR COVE	⊒R		23	HINGED F	ROOF CUP	/RB		,	i									
4	WALL COLLAR	14	HOUSING INST	JULATION		24	INLET GR	AILLE			,	i									
5	MOTOR WIRE GUARD	15	BELT (OSHA) Y	, WIRE GUAP	Φ.	25 1	BASEMO	JUNTED V	/IBRATION	ISOLATORS	,	i									
6	MOTOR (OSHA) WIRE GUARD	16	INLET BELL				DUCTADA				,	i									
	SHUTTER GUARD		INLET/OUTLET	T FLANGES	4				SOLATOR	æc	,	i									
7	FAN SPEED CONTROLLER		INLET VANE D						ENE ISOLAT		,	i									
			##Land 1	Ann		21,					,	i i									
		19	EVTENOED 11.	met nieg		200	******														
8 9	NON-FUSED DISCONNECT SWITCH INLET WIRE GUARD		EXTENDED LU MFFL ROOF CL			29	FACTOR	Y INSULA	TED ANGL	LED FILTER BOX	1	1									

EXISTING EXHAUST FAN (EF) SCHEDULE - REBALANCE

		UCI	CT MATERIAL		PRESS.		LEAKAG	E CLASS	
	SYSTEM	TYPE	REFERENCE STANDARD	- THISK	(IN WC)	SEAL CLASS	RECT.	ROUND	COMMENTS
SUPPLY AIR	DUCT CONNECTED TO TERMINAL UNITS	G90 GALV.	ASTM A 653	MI 7	3	A	12	- 6	
	DUCT CONNECTED TO CONSTANT VOLUME MAU ROOFTOP UNITS	G90 GALV.	ASTM A 653	MILL	3	A	12	6	
l	DUCT CONNECTED TO VARIABLE AIR VOLUME AHU ROOFTOP UNITS	G90 GALV.	ASTM A 653	MILL	3	A	12	6	
	DUCT CONNECTED TO OTHER FAN POWERED EQUIPMENT	G90 GALV.	ASTM A 653	≻ MILL ≺	3	A	12	6	
RETURN AIR	DUCT CONNECTED TO TERMINAL UNITS	G90 GALV.	ASTM A 653	NOLL Y	3	-	12	Б	
1	DUCT CONNECTED TO AHUMAU ROOFTOP UNITS	G90 GALV.	ASTM A 653	<u> </u>	3		12	6	
	DUCT CONNECTED TO OTHER FAN POWERED EQUIPMENT	G90 GALV.	ASTM A 653	MILL Y	3	<u> </u>	12	6	
			7.0	})	- `` -			
EXHAUST AIR	DUCT CONNECTED TO EXHAUST FANS	G90 GALV.	ASTM A 653	MILL Y	3	A	12	6	
1	DUCT CONNECTED TO AHUMAU ROOFTOP LITTS	G90 GALV.	ASTM A 653	MILL	3	Α.	12	6	
	DUCT CONNECTED TO OTHER FAN POWERED EQUIPMENT	G90 GALV.	ASTM A 653	MILL	3	A	12	6	
l	DUCT CONNECTED TO FANS EXHAUSTING HIGH HUMIDITY AIR - EXPOSED TO VIEW	ALUMPAUM, ALLOY 3003H-14	ASTM B 209	BRIGHT	3	A	12	6	SEAL LIQUID-TIGHT, SLOPE TOWARD GRILLE.
1	DUCT CONNECTED TO FANS EXHAUSTING HIGH HUMIDITY AIR - CONCEALED	ALUMINUM, ALLOY 3003H-14	ASTM B 209	MILL	3	A	12	6	SEAL LIXUID-TIGHT, SLOPE TOWARD GRILLE.
OUTSIDE AIR	DUCT CONNECTED TO TERMINAL UNITS	G90 GALV.	ASTM A 653	MIL -	3		12	8	
	DUCT CONNECTED TO AHU AND MAU UNITS	G90 GALY.	ASTM A 653	MILL Y	3	-	12	6	
i	DUCT CONNECTED TO OTHER FAN POWERED EQUIPMENT	G90 GALV.	ASTM A 653	MILL	3	A	12	-	
	FIRST 3 FEET FROM LOUVER/HOOD	PVC-COATED GALV.	ASTM A 653	4 MILL PVC	3	Â	12		SEAL LIQUID-TIGHT, SLOPE TOWARD LOUVER.
		1 TO CONTED CALL.	ADIMIA USO	(<u> </u>		<u> </u>	GENE EGOLFRAM, SLOTE TOTAL EGOTEL
TRANSFER DUCTS		G90 GALV.	ASTM A 653	MILL	1	В	12	- 6	1" THICK, PROVIDE EROSION RESISTANT COATING (7)
			INGS	$\tau A Z$					
	CT ELBOWS (COMPLY WITH SMACKAS "THAC DUST CONSTRUCTION STRUCARDS - M RADIUS TYPE RE 1 WITH MINIMAIN 1.5 RADIUS-TO-DAMETER RATIO, AND TWO WAR RADIUS TYPE RE 3 WITH MINIMAIN 1.0 RADIUS-TO-DAMETER RATIO AND TWO WAR MITERED TYPE RE 2 WITH VANES COMPLYING WITH SMACKAS THAC DUCT CONS	ES. TRUCTION STANDARDS - METAL AND FI	EXIBLE,* FIGURE :			NO FIGURE	2-4, "YANE !	SUPPORT IN	IEBOWS.
ROUND DUCT ELBO	OWS (COMPLY WITH SMACNA'S "HYAC DUCT CONSTRUCTION STANDARDS - METAL AND RADIUS TO DIAMETER RATIO: 1,5	ND FLEXIBLE," FIGURE 3-3, "ROUND DUC	TELBOWS.7						
1	ROUND ELBOWS, 12 INCHES AND SMALLER IN DIAMETER: STAMPED OR PLEATED								
L	ROUND ELBOWS, 14 INCHES AND LARGER IN DIAMETER: WELDED								
RECTANGULAR BRA	ANCH DUCT CONFIGURATION (COMPLY WITH SMACNA'S "HYAC DUCT CONSTRUCTION RECTANGULAR MAIN TO RECTANGULAR BRANCH: 45° ENTRY	N STANDARDS - METAL AND FLEXIBLE,"	FIGURE 2-6, *BRAJ	NCH CONNECTIONS.7					
1	RECTANGULAR MAIN TO ROUND BRANCH: SPIN IN								
ROUND BRANCH DU	UCT CONFIGURATION (COMPLY WITH SMACHA'S "HVAC DUCT CONSTRUCTION STAN	DARDS - METAL AND FLEXIBLE," FIGURE	3-4, '90 DEGREE'	TEES AND LATERALS," A	ND FIGURE	3-5, "CONIC	AL TEES, S	ADDLE TAP	S ARE PERMITTED IN EXISTING DUCT)
l .	WELDOWN ARM STARM AND LOWER, POWER TAR								- · · · · · · · · · · · · · · · · · · ·

EM	ARKS:
1)	PROVIDE PAINT GRIP TYPE DUCT WHERE DUCT IS EXPOSED AND INDICATED TO BE PAINTED BY DIV 09, REFER TO SECTION 09 91 23 - INTERIOR PAINTING
m	BOTALL DUCT ACCORDING TO DUACHAR MAIN DUCT CONTROLOGICAL PTARTERS.

(2) INSTALL DUCT ACCORDING TO SIMCOVAS "HAVE DUCT CONSTRUCTION STANDARDS. METAL AND FLEXIBLE" UNLESS OTHERWISE INDICATED.

INTERMEDIATE REMPROCEMENT MATERIAL SAMLE MATERIAL DUCT MATERIAL.

(4) SUPPLY AIR DUCTS PASSING THROUGH UNCONDITIONED OR OUTDOOR SPACES SHALL BE SEAL CLASS A (ASHRAE 90.1 - 2007).

(5) RETURN AIR DUCTS PASSING THROUGH OUTDOOR SPACES SHALL BE SEAL CLASS A (ASHRAE 90.1 - 2007).

(6) SHEET METAL MATERIALS SHALL BE FREE OF PITTING, SEAM MARKS, SCHAEN, BIOSCOLORATIONS, AND OTHER IMPERFECTIONS.

(7) LINED DUCTWORK MUST STILL BE WRAPPED TO MEET TOTAL INSULATING VALUE PER INSULATION SPECIFICATION AND SCHEDULE.

	****						FAN	FILTER U	NITS (F	FU) SC	HEDUL	.E									
	PRE-FILTER FINAL FILTER CARBON FILTER														(2)	T T		T .			
1						MEDIA		PRESS DRO				PRESS DRO				PRESS DR	OP. (TWG)	MTG.			
MARK	MANUFACTURER, MODEL NUMBER	AIR FLOY (CFM)	(IN YYC)		(VOLTS/PH)		MERY RATING	INITIAL	FINAL		MERV RATING	INITIAL	FINAL	LENGTH (IN)	RATING	INITIAL	FINAL	HEIGHT (FT)	WEIGHT (LB)		REMARK
FFU-1	AIRMATION, AMB-302GM	3,000	0	1	208/1	4	8	0.3	1	12	16	0.5	1.5	12	-	0.5	1	19'-8"	300	1309	(3)
FFU-2	AIRMATION, AMS-302GM	3,000	0	1	208/1	4	8	0.3	1	12	16	0.5	1.5	12		0.5	1	19-8"	300	1309	(3)
FFU-3	AIRMATION, AMB-302GM	3,000	0	1	208/1	4	_ B	0.3	1	12	16	0.5	1.5	12	-	0.5	1	19-8	300	1309	(3)
	1	2 1,714				ľ.		VIII.	1.2.	1											

FACTORY MOUNTED TRANSFORMER

EXISTING AIR TERMINAL (AT) SCHEDULE - REBALANCE

1 ELECTRIC HEAT

(4) INTERLOCK AT-1 WITH EXHAUST FAVIS FEF-5, FEF-7, AND EF-35 WITH LOCAL SWITCHES. EXHAUST FAVI EF-35 SHALL BE INTERLOCK GAS DETECTION AND MAU-8(E).

2 FUSE 3 DDC CONTROLS 4 PNEUMATIC CONTROL

5 SERIES FAN POWERED

6 PARALLEL FAN POWERED 7 BYPASS

MARK MANUFACTURER, MODEL NUM
AT-1(E) TITUS, DESY
AT-2(E) TITUS, DESY
AT-4(E) TITUS, DESY
AT-4(E) TITUS, DESY

PRESSURE INDEPENDENT

(3) VARIABLE VOLUME AIR TERMINAL

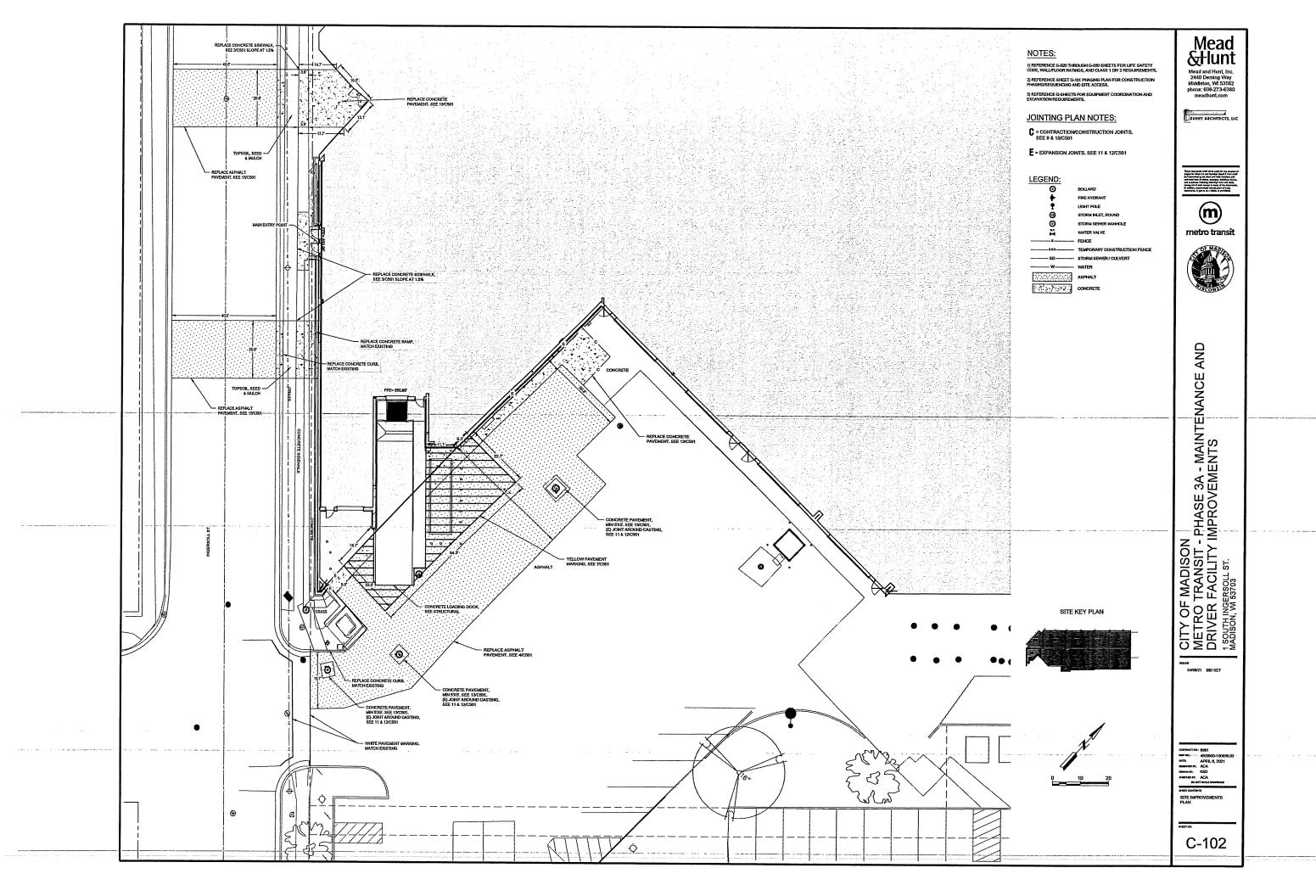
1 PRESSURE INDEPRIDENT 5
2 PRESSURE INDEPRIDENT 6
3 SINGLE DUCT 7
4 DULD DUCT FEMARKS;
(1) MAXIMUM STATIC PRESSURE DROP BASED ON MAX
(2) CONSTRUCT VOLUME AR TERMINAL

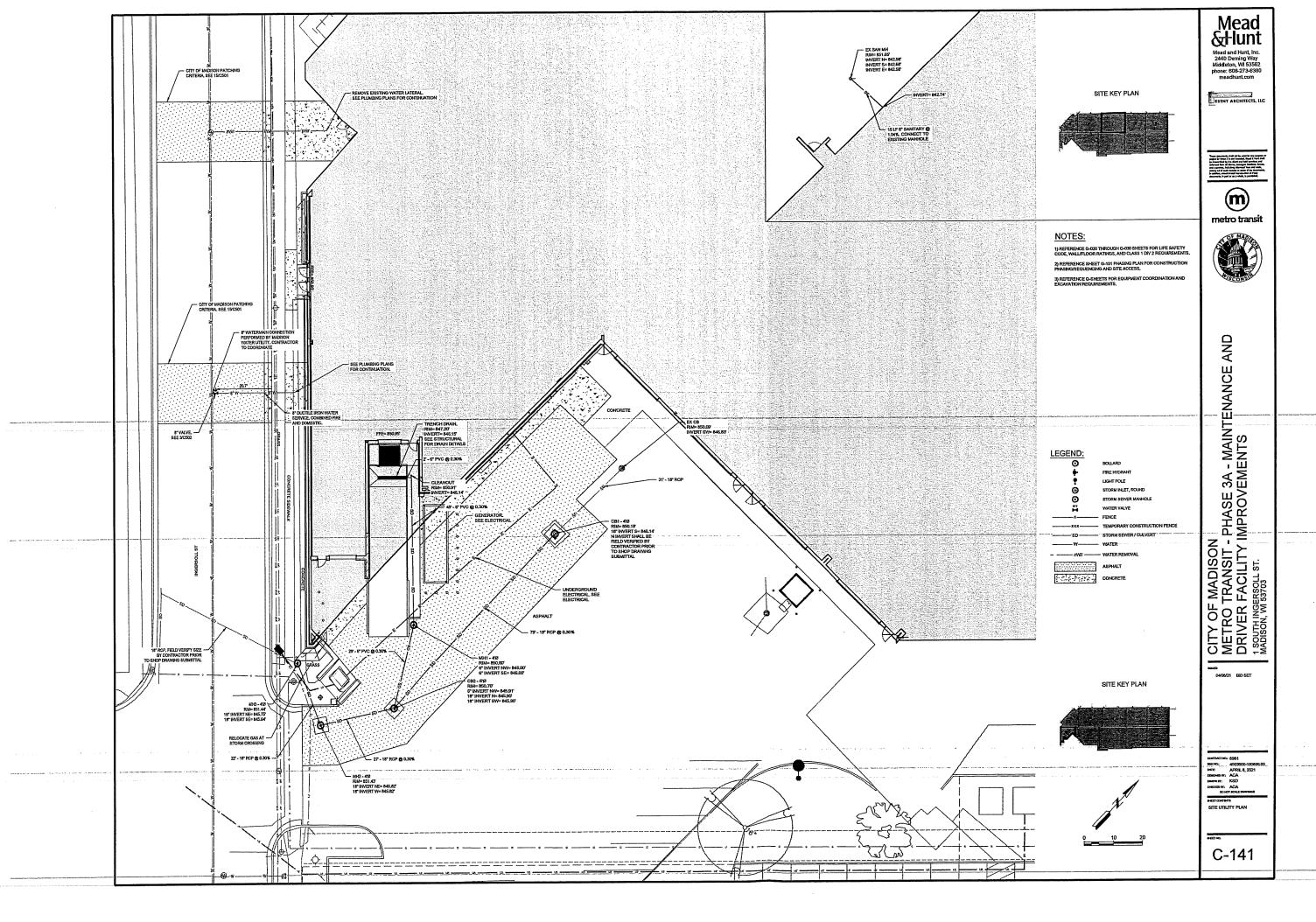
(1) SEE SEQUENCE OF OPERATION SPECIFICATION SECTION 23 09 93.
(2) MOUNTING HEIGHT IS FROM FINISHED FLOOR LEVEL TO BOTTOM OF UNIT.
(3) PROVIDE WITH TIMER CONTROLLER IN THE NEMA 4 ENCLOSURE.

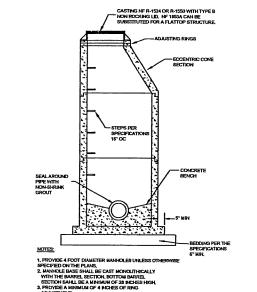
		_:				FL	ME EX	TRACT	OR (FE) SCHED	ULE						
			HOSE	APPROX.	WORKING	RAIL - A	RM LENG	тнѕ (и)	$\overline{}$	MTG.	ELECTRICAL		1				
MARK	MANUFACTURER, MO	DEL NUMBER	DIA.	AIR FLOW (CFM)	RADIUS (FT)	A	В	С	MTG. TYPE	HEIGHT (FT)	VOLTS/PH	MOTOR (HP)	MOTOR TYPE	ACCESSORIES	WEIGHT (LB)	LOCATION	REMARKS
FE-3	NEDERMAN, AHU150		6	1800-2100	-	6	12	840	R	15	460/3	3	ODP	2, 12	-	ROOM 1220	(1)(2)
FE-4	NEDERMAN, AHU150		6	1800-2100	-	6	12	840	R	15	460/3	3	ODP	2, 12	-	ROOM 1218	(1)(2)
FE-5	NEDERMAN, ARU150	Ĭ	В	1800-2100	-	6	12	840	R	15	460/3	3	ODP	2, 12	-	ROOM 1218	(1)(2)
FE-6	NEDERMAN, AHU150	_	- 6	1800-2100	-	6	12	780	R	15	450/3	3	ODP	2, 12	-	ROOM 1311	(1)(2)
FE-7	NEDERMAN, AHU150	-	6	1800-2100	-	6	12	780	R	15	460/3	3	ODP	2, 12	-	ROOM 1311	(1)(2)
	l :		1														
M	OUNTING TYPE			MOTO	R TYPE				ACCESSORIES .								
WL	WALL	ODP OPEN	DRIP PROC	OF:					1	HOOD SPO	TLIGHT	6	STARTER		11	3' SEMI-RIGID	HOSE EXTENSION
CL	CELING	TEAO TOTA	ITA ENCID	SED AIR-OVER	a				2	HOOD FAN	SWITCH	7	7 10' EXTENSION HOSE			MOUNTING H	ROWARE
FR	FLOOR	TENY TOTA	ITA ENCIO	SED NON-YEN	TLATED				3	WELDER IN	TERLOCK	В	ELECTROS	TATIC FILTER			
BN	BENCH	XPL EXPLOSION PROOF							4	AUTOMATIC	DAMPER	9	MECHANIC	AL FILTER			
DU DUCT								5	CONTROLL	RAT	10	CARBON FI	LTER				
R	R RAIL SYSTEM																

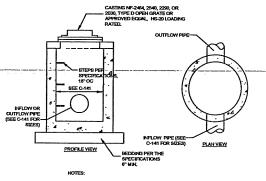
- (7) ALU 190 AAL WITH SPRING EXAUST HOSE REEL. PROVIDE QUANTY OF THREE HOSE REEL TROLLEYS FOR EACH FUME EXTRACTOR TRACK SYSTEM.
 (2) REEL HOSE TEMPERATURE RATED UP TO 600 DBER. (7)
 (2) PROVIDE (6) PORTRALE GUALD ADM/TER CARTS FER SECTION 23 34 00. REFER TO SECTION 23 34 00 FOR ADDITIONAL ACCESSORIES.

REMARKS 2) 2) 2) 2) 3) 3) 5) 6 EXTENSION WARE	CONNECTION (SM) IMPRIL: 4593500-1806866, 1 DOE: APPIL B, 2021 SEMBORDER: DAI DOWNER: RIV OCICIODER: SW OCICIODER: SW OCICIODER: SW HVAC SCHEDULES

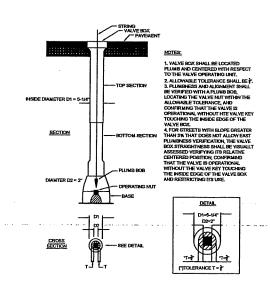








2 CATCH BASIN DETAIL



WATER VALVE BOX ALIGNMENT DETAIL

NOT TO SECULE

Mead &Hunt



metro transit



CITY OF MADISON

METRO TRANSIT - PHASE 3A - MAINTENANCE AND
DRIVER FACILITY IMPROVEMENTS

1 SOUTH INGERSOLL ST.
MADISON, WI 53703

C-502

STRUCTURAL DESIGN CRITERIA 1. GOVERNMO CODE: WISCONSN COMMERCIAL BUILDING CODE SPS 361-366 2. RISK CATEGORY: 3. FLOOR LIVE LOAD (1803.1.1 FLOOR AT GRADE: SECOND FLOOR:

MEZZAMINE
4. ROOF LIVE LOAD (1603,1.2) MRSMUM BOOF LIVE LOAD:
E. ROOF SNOW LOAD (1603.1.3)
GROUND SNOW LOAD: FLAT-ROOF SNOW LOAD: SNOW EXPOSURE FACTOR: SNOW LOAD BUPORTAINCE FACTOR:
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
 WIND DESIGN DATA (1603.1.4) ULTIMATE WIND SPEED (3-SECOND GU
ULTIMATE WIND SPEED (3-SECOND GU NOWMUL WIND SPEED (3-SECOND GUS WIND EXPOSURE: INTERNAL PRESSURE COEFFICIENT:
7. EARTHQUAKE DESIGN DATA (1603.1.5) M/PORTANCE FACTOR:
MAPPED, MCE, 5% DAMPED, SPECTRA AT SHORT PERIODS: AT A PERIOD OF 1 SECOND:
AT A PERIOD OF 1 SECOND: SITE CLASS:
DESIGN EARTHOUAKE SPECTRAL ACC AT SHORT PERIODS: AT A PERIOD OF 1 SECOND:
B. GEOTECHRICAL DESIGN DATA (1603.1). NET ALLOWARLE SOIL BEARING PRESS
NET ALLOWABLE SOIL BEARING PRESS PER CGC GEOTECHNICAL REPORT, PR 9. FLOOD DESIGN DATA (1803.1.7)
BUILDING IS NOT LOCATED IN FLOOD H DESIGN DATA IS NOT REQUIRED
10. SPECIAL LOADS (1603.1.8)
SPECIAL LOADING CONDITIONS ARE N THIS BUILDING; THEREFORE SPECIAL
11. PHOTOYOLTAIC PANEL SYSTEM LOAD
PANEL SYSTEM: SUPPORT SYSTEM:
 STRUCTURAL OBSERVATIONS FOR SE STRUCTURAL OBSERVATIONS FOR SE ARE NOT REQUIRED.
ARE NOT REQUIRED.
GENERAL NOTES
G-1. FELD VERIFY ALL DIMENSIONS AND OF CONSTRUCTION - RESOLVE ANY
DO NOT SCALE DRAWINGS
 G2 FOR CLARITY, ALL EXTERIOR SLABS FOR EXACT DIMENSIONS, LOCATION ARCHITECTURAL AND/OR CYLL DRA
G-1 VERFY ALL SIZES, WEIGHTS AND LO ELECTRICAL EQUIPMENT, ROOF FEI MECHANICAL AND ELECTRICAL CON
G-4. DETAILS MARKED "TYPICAL" MAY OR SHALL APPLY UNLESS NOTED OTHE
G-5. STRUCTURAL SYSTEM IS DESIGNED ANY SHORING OR BRACING NECESS BETHE RESPONSIBILITY OF THE GE
G-6. SEE ARCHITECTURAL, MECHANICAL FOR SLEEVES, INSERTIS, ETC. NOT S
G-7. NO PPES OR SLEEYES FOR MECHA STRUCTURAL MEMBERS WITHOUT A ENGINEER.
GA. THE CONTRACTOR IS SOLELY RESP ACCIDENTS WHICH RESULT IN DEAT PROPERTY ARISING OUT OF OR IN O OF THE WORK.
 G-9. CONTRACTOR SHALL POST LIVE LO. GOVERNING CODE.
G-10. SECTIONS, DETALS, AND NOTES SH TO BE TYPICAL AND SHALL APPLY TO UNLESS OTHERWISE SHOWN.
EARTHWORK NOTES
EW-1. REFERENCE GEOTECHICAL DATA FOR DEFINITION OF MATERIALS AV
EW-2. REFERENCE GEOTECH-NICAL DATA FOR REQUIREMENTS FOR EXCAVI WATER AND GROUND WATER.
EW-3. UNLESS NOTED OTHERWISE, THE NOEPENDENT, QUALIFIED GEOTE AGENCY TO IDENTEY AREAS OF P SUBGRADE PREPARATIONS AND T OF COMPACTED FILL MATERIAL.
EW4. ALL SUBTERRANEAN STRUCTURE OF EXCAYATIONS SHALL BELLOCA PRIOR TO EARTH REMOVAL WORK WARKERS LINTLE EXCAYATION ACI F UNDERGROUND UTILITY CONFU- ENCOUNTERED DURING EXCAYAT NAMEDIATELY.
EW-5. BEFORE PLACING FOOTINGS, FOU SUB-GRADE SHALL BE PREPARED SPECIFICATIONS.
EW-6. DO NOT BACKFILL OR FILL SOL IV MUDDY, FROZEN, OR CONTAIN FRO
EY-7. PLACE BACKFEL AND FILL SOLLW STRUCTURES TO REQUIRED BLEV THE FULL LENGTH OF EACH STRU

ITANCE FACTOR:	k=1	- !	EXCAVATION IF THE BOTTOM OF THE MUDDY AND SOFT DUE TO CONSTRUC SHALL HAVE A MINIMUM 28 DAY COMP	EXCAVATION TENDS TO BECOME CTION ACTIVITY, LEAN CONCRETE
ED, MCE, 5% DAMPED, SPECTRAL ACCI ORT PERIODS: ERIOD OF 1 SECOND: 11ASS:	55 = 0.08 G 51 = 0.05 G D	F-9.	COORDINATE GROUNDING REQUIREM RENIFORCING STEEL WITH ELECTRIC INSTALLATION OF GROUNDING WIRES CONTRACTOR PRIOR TO CASTING CO	
N EARTHOUAKE SPECTRAL ACCELERA ORT PERIODS: ERIOD OF 1 SECOND:	ATIONS Sox = 0.09 G Sox = 0.073 G	F-10.	ADDITIONAL INFONKATION. SEE TYPICAL SLAB-OH-GRADE DETAIL	
ECHNICAL DESIGN DATA (1603.1.5)	18M PSE	•	OTHERWISE.	
LLOWABLE SOIL BEARING PRESSURE GC GEOTECHNICAL REPORT, PROJEC	T C15051-8 DATED 06/12/2018			
<u>o design data</u> (1803.1 <i>1</i>) PNG IS NOT LOCATED IN FLOOD HAZAR	D AREA; THEREFORE FLOOD	СО	NCRETE & REINFO	RCING STEEL NOTES
IN DATA IS NOT REQUIRED ALLOADS (1603.1.8)	4	MATE	RIAL PROPERTIES (U.N.O.) RESSIVE STRENGTH -Fc-4X	(SI
AL LOADING CONDITIONS ARE NOT AP BUILDING; THEREFORE SPECKL LOADS	PLICABLE TO THE DESIGN OF SARE NOT REQUIRED	CONC	PROVIDE HOT/COLD WEATHER PRO	KSI (A615 GR 60)
DYCLTAIC PAINEL SYSTEM LOADS (160)			ACCORDANCE WITH ACI RECOMME SPECIFICATIONS.	NDATIONS AND PROJECT
L SYSTEM: DRT SYSTEM: CTURAL OBSERVATIONS FOR BEISMIC	NYA NYA ANDVOR WIND RESISTANCE	CR-2	STANDARDS (LATEST EDITION):	TRUCTION SHALL CONFORM WITH THE ENTS AND THOSE OF THE FOLLOWING
CTURAL DESERVATIONS FOR SEISMIC FOT REQUIRED.			AC1307, RECOMMENDED PRACTICE	
		CR-3. CR-4.	RENFORCING SHALL BE DETALED ALL RENFORCEMENT BARS SHALL THE LATEST CRSI MANUAL OF STAN	IN ACCORDANCE WITH ACI 315. BE FABRICATED IN ACCORDANCE WITH YOARD PRACTICE AND SHALL BE CLEAN G RUST.
ERAL NOTES		CR-5.		THONS FOR INFORMATION REGARDING MATERIALS, AND ADMIXTURES.
D VERFY ALL DIMENSIONS AND EXIST	ING CONDITIONS PRIDE TO START REPANCY WITH ARCHITECT/ENGINEER.	CR-&	CONCRETE REMFORCEMENT PROT	TECTION CLEAR COVER, U.N.O.:
NOT SCALE DRAWINGSIII			FOOTINGS: BOTTOM & SIDES TOP	J T
CLARITY, ALL EXTERIOR SLABS AND S EXACT DIMENSIONS, LOCATIONS, JOI HITECTURAL AND/OR CYLL DRAWINGS	EDEWALKS MAY NOT BE SHOWN. NTS AND SCORE LINES, SEE		WALLS: EXTERIOR EXPOSURE	2
FY ALL SIZES, WEIGHTS AND LOCATIC CTRICAL EQUIPMENT, ROOF FENETRA CHANICAL AND ELECTRICAL CONTRACT			INTERIOR EXPOSURE BEAMS/COLUMNS: OVER TIES OR STIRRUPS	11/2"
CHANICAL AND ELECTRICAL CONTRACT ALS MARKED "TYPICAL" MAY OR MAY ALL APPLY UNLESS NOTED OTHERWISE			ELEVATED SLABS:	1"
LL APPLY UNLESS NOTED OTHERWISE SUCTURAL SYSTEM IS DESIGNED TO WIN SHORING OR BRACKIG NECESSARY D THE RESPONSIBILITY OF THE GENERAL		CR-7.	ALL BAR LAPS SHALL CONFORM TO "B" SPUCE CRITERIA. USE TOP BAR AND BEAMS OVER 12" DEEP.	ACI 318-14, PARAGRAPH 25.5.1, CLASS I LAP LENGTHS FOR TOP BARS IN SLABS
'SHORING OR ERACING NECESSARY OF THE RESPONSIBILITY OF THE GENERAL ARCHITECTURAL, MECHANICAL, ELEC I SLEEYES, INSERTS, ETC, NOT SHOWN		CR-8.		LY NOTED ON SHOP DRAWINGS WHERE
SLEEYES, INSERTS, ETC. NOT SHOW! PPES OR SLEEYES FOR MECHANICAL UCTURAL MEMBERS WITHOUT APPRO INEER.		CR-9.	HORIZONTAL BARS SHALL BE DETA LEAST ONE END OF THE BAR TO TH WALL	ILED TO SHOW THE DISTANCE FROM AT IE NEAREST BUILDING GRID LINE OR
		CR-10		URS, WHEN SHOWN IN TRANSVERSE AS FOLLOWS:
CONTRACTOR IS SOLELY RESPONSIB IDDITS YINICH RESULT IN DEATH, PER PERTY ARISING OUT OF OR IN CONNE THE WORK.	RSONAL INJURY, OR DAMAGE TO CTION WITH THE PERFORMANCE		TOP BARS HEAR MID-SPANS; BOTTO U.N.O.	DM BARS DIRECTLY OVER SUPPORTS,
ITRACTOR SHALL POST LIVE LOADS PI FERHING CODE. TITOMS, DETALS, AND NOTES SHOWN I BE TYPICAL AND SHALL APPLY TO SME ESS OTHERWISE SHOWN.	ON THE DRAWINGS ARE INTENDED	CR-11	PROVIDE ONE (I) HOOKED RENFOR TO SERVE AS A "CONCRETE ENCAS THE NATIONAL ELECTRIC CODE. OR CONTRACTOR FOR EXACT LOCATIO CONFORM TO THE FOLLOWING: A INCONTED, LOW-ALLOY STEE	RONG BAR IN CONCRETE FOOTING SED ELECTRODE" IN ACCORDANCE WITH OORDINATE WITH ELECTRICAL ONL HOOKED RENFORCING BAR SHALL EL, CONFORMING TO ASTM A706.
THWORK NOTES			CONCRETE SLAB SHALL BE IT	EL, CONFORMING TO ASTM A706, IAT DIKE END DILLY, IAT DIKE END DILLY, IN OF REINFORCING BAR ENCASED IN IE 20-07 AS DEFINED IN NEC, ARTICLE 250 ION OF REINFORCING BAR ABOYE 6. IN EINFORCING BAR SHALL BE 2°.
	ARTH MOVING SPECIFICATION	CR-12	ALL CONCRETE FOURDATION WALL CONTINUOUS TOP AND BOTTOM, UI	.S SHALL HAVE A MUNIMUM OF (2) #5 BARS NLESS INDICATED OTHERWISE.
EFERENCE GEOTECHICAL DATA AND E OH DEFINITION OF MATERIALS AND CO EFERENCE GEOTECHNICAL DATA AND OH RECUREMENTS FOR EXCAVATION	EARTH MOVING SPECIFICATION	CR-13	ALL OPENINGS IN CONCRETE FOUN DIAGONAL BARS EACH FACE OF TH BEYOND OPENING ON EACH SIDE, U	IDATION WALLS ARE TO HAVE (4) #5 IE WALL AND SHALL EXTEND 2 FEET UNLESS INDICATED OTHERWISE.
ATER AND GROUND WATER. WLESS NOTED OTHERWISE, THE CONT DEPENDENT, ONLY 1850 GEOTECHNIC	RACTOR SHALL RETAIN AN	CR-14	PROVIDE FOOTING DOWELS TO MAY WHERE WALL REMFORCING IS NOT FOUNDATION WALLS WITH IS REBA STANDARD HOOKS EMBEDDED A M	TCH VERTICAL WALL REINFORCING. FINDICATED, DOWEL FOOTING TO IR AT 16" O.C. BY 3"40" LONG, WITH INMIUM OF 9" INTO FOOTING.
SENCY TO IDENTIFY AREAS OF POOR S USGRADE PREPARATIONS AND TO OVE F COMPACTED FILL MATERIAL LESUBSTERPANEAN STRUCTURES, UTIL F EXCAYATIONS SHALL BE LOCATED A VIOLATOR SHALL BE LOCATED A VIOLATOR SHALL BE LOCATED A VIOLATOR SHALL BE LOCATED A		CR-15	ALL PER FOOTINGS TO HAVE DOW! SIZE AND QUANTITY AS PER STEEL REQUIRED FOR A CLASS 'B' TENSIC RENTFORCEMENT, UNLESS INDICAT	ELS WITH STANDARD HOOKS OF SAME DOWELS TO LAP PIER STEEL AS ON SPLICE, HOOK UNDER FOOTING TED OTHERWISE.
AURI TO EARTH REMOVAL WORK. CON ARKERS UNTIL EXCAVATION ACTIVITIE UNDERGROUND UTILITY CONFLICTS A KCOUNTERED DURING EXCAVATION, N MEDIATELY.	(TRACTOR SHALL MANTAN S HAYE CEASED, RE DISCOVERED BEFORE OR HOTEY THE ARCHITECT/ENGRIEER	CR-16	HOOK HORIZONTAL WALL AND BEAU DISCONTRAIOUS ENDS, TYPICAL UN REINFORCEMENT TO FAR FACE OF UNLESS PROCATED OTHERWISE.	M RENFORCING BARS AT NESS NOKATED OTHERWISE, EXTEND PIERS/PEDESTALS AND/OR COLUMNS
EFORE PLACING FOOTINGS, FOUNDATI JB-GRADE SHALL BE PREPARED AND I	IONS OR SLAB-ON-GRADE, THE INSPECTED AS REQUIRED BY THE	CR-17	. WATER STOPS SHALL BE PROVIDED CONSTRUCTION JOINTS WHERE FINGRADE UNLESS OMISSION IS APPRI	rished floor is below exterior
O NOT BACKFILL OR FILL SOIL MATERIA UDDY, FRIOZEN, OR CONTAIN FRIOST A	NO/ORICE.		AS INDICATED ON DRAWINGS.	"-0" LONG 1" BELOW TOP OF SLAB AT OPENINGS IN CONCRETE SLABS AND
ACE BACKFRI. AND FILL SOL MATERIA TRUCTURES TO REGURED ELEVATION RE FULL LENGTH OF EACH STRUCTURE	ALS EVENLY ON ALL SIDES OF IS AND UNEFORMLY ALONG E.	CR-19	. REFER TO FLATWORK DRAWINGS A SLAB-ON-GRADE FINISH TYPES AND TILE, AND OTHER FINISH MATERIALS	UND/OR SPECIFICATIONS FOR D DEPRESSIONS REQUIRED FOR MATS, S.
	****			EATH INTERIOR MASONRY PARTITIONS TON GRADE. THICKENED PORTION TO CE OF THE WALL ON EACH SIDE.
NAME AND ADDRESS OF THE PARTY O			REMFORCE THE THICKENED PORTI LONGITUDINAL REMFORCING BARS UNLESS INDICATED OTHERWISE.	ON WITH (3) ISCONTINUOUS, AND IS TRANSVERSE BARS AT 16" O.C.,
			ARCHITECTURAL DRAWINGS.	IS, COORDRATE WITH PLUMBING AND
		CR-22	PROVIDE CONTROL OR CONSTRUCT AT 15 FOOT MAXAMUM CENTERS EM- DTHERWISE. CONTRACTOR SHALL THE ARCHITECT/PRIGNEER FOR API GRADE. COORDINATE WITH ARCHITE FINISHES SUCH AS TILE AND TERRA-	TION JORITS IN SLABS-ON-GRADE CH DIRECTION, UNLESS INDICATED SUBMIT PLAIS OF JORIT LOCATIONS TO PROVAL PRIOR TO CASTING SLABS-ON TECTURAL DRAWINGS AND FLOOR LZZO.
				HETE OR SOLID MASONRY TO BE EPOXY
				TTED TO BE EMBEDDED IN CONCRETE.
		CR-25.	WHEN DRILLING INTO EXISTING CON RADAR OR XRAY SCANNING TO LOC DRILL THROUGH EXISTING REINFOR IF ANCHOR LOCATIONS INTERFERE	NCRETE USE GROUND PENETRATING CATE EXISTING REINFORCING. <u>DO NOT</u> ICING. CONTACT ENGINEER IMMEDIATELY WITH EXISTING REINFORCING.

FOUNDATION NOTES

F-1. FOOTING SUBGRADES SHALL BE CLEAN AND FREE OF DEBRIS, STANDING WATER, AND LOOSE SOIL.

THE FOLKDATION CONTRACTOR SHALL FIRLY REVIEW UNDER-GROUN FLUMENG DRAWNESS AND SAULL COORDONATE WITH THE UNDER-GRO SELEYES TROUGH FOLKDATION WALLS AS RECESSARY TO ACCOMMO. FLUMENG LIVES OR TRAPS WHICH PENETRATE CONCRETE FOOTINGS (FOLKDATION).

F-5. REFER TO ELECTRICAL DRAWING SITE LIGHTING FOR POLE BASES. SUPPLIED AND INSTALLED BY GENERAL CONTRACTOR.

F-S. COORDINATE WITH ARCHITECTURAL AND CIVIL DRAWINGS FOR MISCELLANEOUS FOUNDATIONS HOT SHOWN ON STRUCTURAL DRAWINGS

F-7. CONTROL JOINTS IN THE CAST-H-PLACE CONCRETE FOURDATION WALLS SHALL BE PLACED AT SPACKING MOT TO SECEND 20 OLD, OR AS LOCATED BY A PLACED, SEED STATE OF THE PLACED AT SPACKING AND THE PLACED AT SPACKING AND THE PLACED AND THE P

F-8. A LEAN CONCRETE MUD SLAB 2" TO 3" THICK SHALL BE USED IN THE FOO' EXCAVATION IF THE BOTTOM OF THE EXCAVATION TENDS TO BECOME

F-2. ALL COLUMN FOOTINGS ARE TO BE CENTERED UNDER COLUMN CENTERLINES, UNLESS INDICATED OTHERWISE.

MIO. ALL DON-STRUCTURAL MASCHEY WALLS SHALL BE REPORTED WITH A MERBERN SEVERTICAL BROKET AT AND C. WITH THAT CORE REQUIRED AND HORIZONTAL JOHN REMPORCIMENT AT 16 D.C. THE BOTTOM TWO COURSES SHALL BE GROUTED SOLD. FROVED A CONTINUOUS BOND BEAM AT TOP DE WALL WITH (2) AS BARS CONTINUOUS, GROUT BOND BEAM SOLD PROVIDE OF DOWEL AT 40 D.C., MICH FOOTING. M-11. USE SLEEVE ANCHORS IN NON-STRUCTURAL MASONRY WALL PARTITIONS UNILESS INDICATED OTHERWISE. M-13, PROVIDE HORIZONTAL BOND BEAMS (DIAPHRAGII CHORDS) WITH (2) #5 BARS M-14. PROVIDE 10 CAGE BENT SLP JOINT PLATES 4" & F.X. 1-0" LONG AT 7-0" O.C. EACH SIDECT PHE TOP OF ALL NON STRUCTURAN BLOOMEY MULE. WITH 3 (MYNNIUM) SELP-DAILING, SELF-THERANNO SCREWS (1972) AS REQUIRED BY THOUSAND, SELF-THERANNO SCREWS (1972) AS REQUIRED BY THOUSAND, SELF-THERANNO SCREWS (1972) AS RECORDER BY THOUSAND, SELF THERANNO SCREWS (1974) AS RECORDER BY THOUSAND, SELF THERANNO SCREWS (1974) MASONRY WALL LOCATIONS. JAMPIAN 11" (WANDIAN) GAP BETWEEN TOP OF MASONRY WALL LOCATIONS. JAMPIAN 11" (WANDIAN) GAP BETWEEN TOP OF MASONRY WALL LOCATIONS. JAMPIAN 11" (WANDIAN) GAP BETWEEN TOP OF MASONRY WALL LOCATIONS. JAMPIAN 11" (WANDIAN) GAP BETWEEN TOP OF MASONRY WALL LOCATIONS. JAMPIAN 11" (WANDIAN) GAP BETWEEN TOP OF MASONRY WALL AND SOTTION OF STRUCTURE. DO NOT ATTACH PLATE SHOP DRAWINGS SD4, THE APPROVED SHOP DRAWINGS DO NOT REPLACE THE ORIGINAL TO CONTRACT DRAWINGS. ITEMS CONTRED ON SHOWN INCORPECTLY ARE NOT TO BE CONSIDERED CHANGES TO THE CORRIGINE CONTRACT DOWNINGS. IT ITS CONTRACT DRAWINGS. THE SHOWN INCORRECTLY ARE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DRAWINGS. SD-5. SHOP DRAWING REVIEW IS INTENDED ONLY FOR GENERAL CONFORMANCE TO THE DESIGN CONCEPT AND CONSTRUCTION DOCUMENTS. SD-6. SHOP DRAWINGS WILL BE RETURNED FOR RESUBMITTAL IF MAJOR ERRORS ARE FOUND DURING REVIEW. SD-7. ALLOW A MINIMUM OF (10) WORKING DAYS FOR REVIEW OF SHOP DRAWINGS BY THE STRUCTURAL ENGINEER. **DELEGATED DESIGN SUBMITTALS** DS-1, HELICAL PILES - SPECIFICATION SECTION 316615. DS-2. PIPE AND TUBE RAILINGS - SPECIFICATION SECTION 055213. DS-3, COLD FORMED METAL FRAMING - SPECIFICATION SE

MASONRY NOTES

M-2. MASONRY SHALL BE PLACED IN ONE-HALF RUNNING BOND U.H.O.

M-3. HOLLOW MASONRY UNITS SHALL BE LAD WITH FULL HEAD JONITS AND FULL BED JONITS OF THE FACE SHELLS AND UNDER WEBS WHERE THE ADJACENT CELLS ANE TO BE FULLED WITH GROUT AND AT THE BOTTOM COURSE.

M-5. REFER TO ARCHITECTURAL PLANS AND DOOR/FRAME SCHEDULES FOR LINTEL ROUGH OPENING LOCATIONS, SIZES, AND ELEVATIONS,

LALL MASONRY WALLS ARE TO HAVE 9 GAUGE HORIZONTAL JOINT REINFORCEMENT WHICH DOES NOT EXCEED 16 INCHES ON CENTER VERTICALLY.

GROUT SOLID ALL JAMBS IN ALL MASONRY WALLS FULL HEIGHT TO UNDERSIDE OF LINTEL. EXTEND GROUTED LAND FROM FACE OF MY OPENING AT LEAST 24" AURICUMO 470 CELLS, AT OTHER BEAM BE LOCATIONS, GROUT SOLID A MINDAUN 24"22" AREA BENEATH THE BI PLATE, UNLESS MIDICATED OTHERWISE.

M-9. PROVIDE CORNER SPLICE BARS FOR ALL BOND BEAMS OCCURRING AT CORNERS OR WALL INTERSECTIONS. SPLICE BAR TO BE THE SAME SIZE AS BARS IN THE BOND BEAM.

MAT. AND LARS SHALL BE AS BAR DIAMETERS IN ESS MOVATED OTHE

MORTAR GROUT AT 28-DAYS

STRUCTURAL STEEL NOTES

8-1. STEEL BEAKS WITH RESIDUAL CAMBER RESULTING FROM MILL FABRICATIO OR ROLLING SHALL BE SHOP FABRICATED AND ERECTED SUCH THAT THIS RESIDUAL CAMBER COUNTERACTS GRAVITY LOAD DEFLECTION.

ALL BOLTED CONNECTIONS SHALL UTILIZE 3/4 INCH DIAMETER ASSESSOLTS TIGHTENED TO THE SNUG-TIGHT CONDITION. THE SNUG-TIC CONDITION IS DEFINED BY THE RCSCTS SPECIFICATION FOR STRUK CONTS USING ASSIM ASSES OR ASSIS BOLTS*, UMAESS INDICATED OTH

STEEL CONNECTIONS NOT DETAILED ON THE PLANS ARE TO BE THE FABRICATOR'S STANDARD AND ARE TO BE SELECTED AND DESIGNED I ACCORDANCE WITH ASS ASD SPECIFICATIONS, TYPE 2 FRAMING CONNECTIONS, FOR THE REACTIONS NOKCATED.

. THE MINIMUM CONNECTION PLATE/ANGLE THICKNESS SHALL BE 5/16", THE MINIMUM WELD 14", AND THE MINIMUM DESIGN LOAD ON ANY CONNECTION TO KIPS, UNLESS INDICATED OTHERWISE.

ALL CONNECTIONS TO PIPE AND TUBE COLUMNS SHALL BE THRO CONNECTIONS UNLESS OTHERWISE INDICATED,

ALL ANCHOR BOLTS ARE TO BE 34" NCH DAMETER F1554 Gr. 55 THREADED HOOS UNLESS NOICATED OTHERWISS. (27-1/2 NCH DAMETER ANCHOR BOLTS SHALL BE PROVIDED AT ALL BEAM AND LINTEL BEARINGS ON CONCRETE OR MASONITY, UNLESS NOICATED OTHERWISE.

S-7. POST INSTALLED ANCHORS ARE TO BE ADHESIVE ANCHORS, INSTALL ANCHORS WITH EMBEDMENT DEPTHS INDICATED, UNLESS INDICATED OTHERWISE. S-8. STUD ANCHORS ARE TO BE NELSON STUDS OR EQUAL (ASTM A108)

BEAM AND LINTEL PLATES SHALL BE FULLY GROUTED WITH A MINIMUM 1/7 NON-SHRINK GROUT.

S-10. ALL WELDING OF NEW STEEL IS TO BE WITH ETWOX ELECTRODES, U.N.O.
WELDING SHALL BE IN ACCORDANCE WITH THE LATEST AWS SPECIFICATION
BY CERTIFIED WELDERS.

S-11. WHEN FIELD WELDING TO EXISTING STEEL, ADJUST WELDING PROCED AS REQUIRED TO BE COMPATIBLE WITH THE NEW AND EXISTING STEE

S-13. ALL EXTERIOR MASONRY SHELF ANGLES, LINTEL BEAMS, AND LINTEL PLATES SHALL BE NOT DEPENDED OUT VALUE ACCORDING TO ASTM A 12

STEEL BAR JOISTS

MATERIAL PROPERTIES (U.N.O.)
COMPLY WITH SURS "SPECIFICATIONS" FOR WEB AND STEEL-ANGLE CHORD

BAR JOISTS SHALL BE DESIGNED TO RESIST FORCES INDICATED ON DRAWINGS AND SPECIFICATIONS. 14. TYPICAL BAR JOSTS ARE NOT DESIGNED FOR CONCENTRATED LOADS, PLACE LOADS AT PAVEL POINTS OR WELD ADDITIONAL DOUBLE ANGLE MEMBERS OWE EACH SIDE FROM POINT OF CONCENTRATED LOAD TO THE MEANEST PAVEL POINT ON THE OPPOSITE CHORD.

CUTTING & DRILLING OF CHORD OR WEB MEMBERS IN BAR JOISTS, OR JOIST GIRDERS, IS NOT PERMITTED. ALL BRIDGING SHALL BE EQUALLY SPACED, UNLESS NOTED JOIST MANUFACTURER.

JOST SHALL BE CONSIDERED AS UNSTABLE DURING ERECTION. UNDER NO CHICUMSTANCES ARE CONSTRUCTION LIABS OF ANY DESCRIPTION TO BE PLACED ON UNRARDED JOSTS IN EAPPLICATION OF CONSTRUCTION LIABOUR UNBOUGH JOSTS IS IN DRECT VICIATION OF O.S.HA. REGULATIONS.

J-10. PROVIDE JOIST WITH UPLET CAPACITY AS REQUIRED BY THE BUILDING CODE AND THE STRUCTURAL DESIGN CRITERIA.

METAL DECK

MD-1. SEE PLAN FOR DEPTH AND GAUGE

MD-2. METAL DECKING SHALL BE CONTRUOUS OVER 3 SPANS AND HAVE JOINTS OVER SUPPORTING MEMBERS, UNLESS INDICATED OTHERWISE.

MD-6. CONTRACTOR IS RESPONSIBLE FOR PROVIDING COLUMN CLOSURES AND ALL OTHER RELATED ACCESSORIES REQUIRED FOR COMPLETE DECK INSTALLATION AT ROOFS AND FLOORS.

OBSERVATION AND INSPECTION

THE CONTRACTOR SHALL PROVIDE THE INSPECTION AGENCY ACCESS
TO ALL PLACES WHERE THE WORK IS BEING PERFORMED. A MINIMUM 21 HOURS NOTFEATTON SHALL BE GREAT TO THE RESPECTION AGENCY PROPERTY AND THE CONSIDERATION OF WORK RECURRING DESERVATION OF INSPECTION.

TH4. THE INSPECTION AGENCY IS NOT AUTHORIZED TO DIRECT OR APPROVE ANY CHANGES FROM THE CONTRACT DOCUMENTS. FTHE CONTRACTON WISHES TO QUESTION THE TESTRA GENORY'S INTERPRETATION OF THE CONTRACT DOCUMENTS, HE MAY DO SO DI

THS. THE INSPECTING AGENCY IS NOT INSPECTING FOR O.S.H.A.
COMPLAINCE OR REQUIRED TO INSPECT TEMPORARY CONSTRUCTION, SUCH
AS TEMPORARY BRACION, TEMPORARY CONSTRUCTION IS THE
CONTRACTOR'S SOLE RESPONSIBILITY.

THY. THE CONTRACTOR SHALL NOTFY THE INSPECTION AGENCY OF ANY WELDS THAT WERE DONE IN THE FELD THAT WERE NOT DETAILED AS FELD WELDS ON THE DESIGN DRAWNED.

THIO, STRUCTURAL OBSERVATIONS SHALL BE PERFORMED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF WISCONSIN.

THIS, THE CONTRACTOR SHALL NOT APPLY THE COST OF THE CONTRACTOR'S CANCE PROGRAM NOR INSPECTIONS TO THE ALLOWANCE.

BOTTOM OF
BOTTOM
BASE PLATE TYPE
BEARING
CONTROL TO CENTER
CONSTRUCTION CONTROL JOINT
CONTROL JOINT
CONTROL JOINT
CONTROLLED JOW STRENGTH MATERIAL ("FLOWABLE FILL")

ABBREVIATIONS

CONTINUOUS

DOUBLE-TEE

DAMETER

DOUBLE-TEE BEARING

EACH FACE
ELEVATION
EACH WAY
SPREAD FO

= POUNDATION
= FIGURE VERNIFY
= GALVANIZED
= MICH PERFORMA
= JOIST BEARING
= LONG LEG HORIZ
** LONG LEG HORIZ
** LONG LEG VERTIN
= NOT IN CONTRAC

- PECAST EBARNA - PECAST - BEACTION - SUP CRITICAL - STEP FOOTING TO - SUP AN ESSIVE - SUP CRITICAL - STEP FOOTING TO - SUBAR - STANLESS STEEL - STEEL - TOP OF COLUMN - TOP OF COLUMN - TOP OF COLUMN - TOP OF CHECK - TOP OF STEEL -

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STRUCTURAL SYMBOLOGY

FY08]-

1)-

(A)--

FRAMING PLAN

GENERAL SYMBOLS

DECK SPAN

STRUCTURAL ELEVATION

(\$,\$\$\$) SW#

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(SLB#

5-201

- CONCRETE FOOTING

TOP OF WALL ELEVATION

NOCATES PER

- INDICATES COLLAMN

- NOICATES KHEE BRACING CONNECTED TO BEAA NOICATES BEAM FRAMING OVER HOLLOW STRUCTURAL SECTION (HSS) COLUMN

INDICATES BEAM FRAMING INTO SIDE OF COLUMN

INDICATES TOP OF STEEL ELEVATION - INDICATES NUMBER OF SHEAR STUDS FULLY WELDED TO TOP OF BEAM PER SPAN

NOICATES CONNECTION DESIGNED BY FABRICA TO DELIVER 454 VERTICAL LOAD TO CENTERLINE

INDICATES TYPICAL BEAM SHEAR SPLICE --- PADICATES REAU FRAMPAG INTO SIDE OF BEAM

--- STRIP FOOTING DESIGNATION

--- FOUNDATION WALL DESIGNATION

DENOTES DEPRESSION FOR WALL/DOOR OPENING (-6" U.N.O.)

INDICATES CONCRETE FOOTING

INDICATES NEW GRID DESIGNATION (HEXAGON SHAPE AT EXISTING GRID)

TOF TOP OF FOOTING ELEVATION

- CONCRETE FOUNDATION WALL

FOUNDATION PLAN

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metro transit

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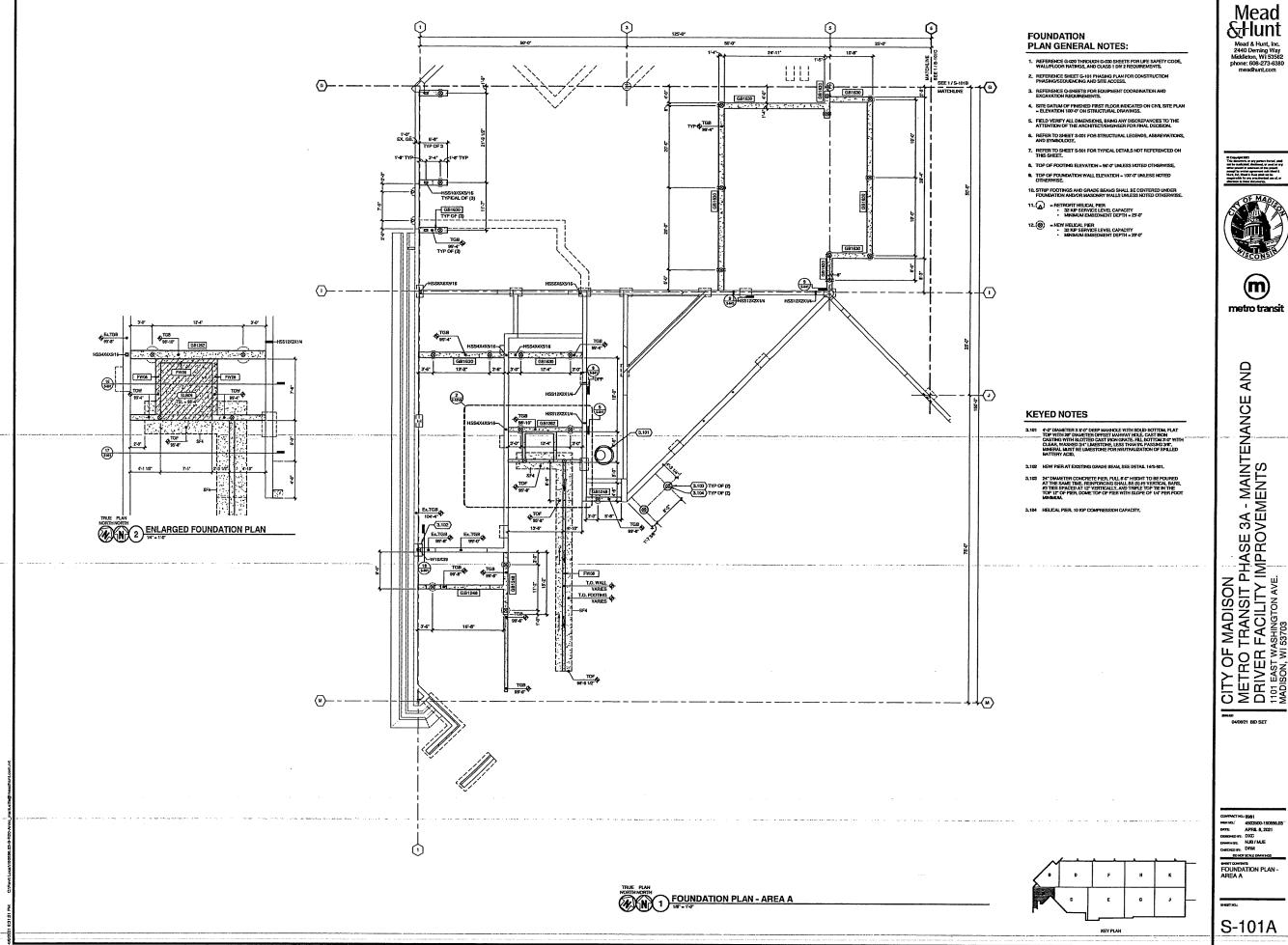
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MIN NO.: 4503500-19069
DOTE: APAIL 6, 2021
DEED-ED FIT: DXC
DAWTHET: NJB / MUE
DEED-ED FIT: DRM
DO NOT SCALE PROFINCES

STRUCTURAL NOTES

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metro transit

CITY OF MADISON
METRO TRANSIT PHASE 3A - MAINTENANCE
DRIVER FACILITY IMPROVEMENTS
1101 EAST WASHINGTON AVE.
MADISON, WI 53703

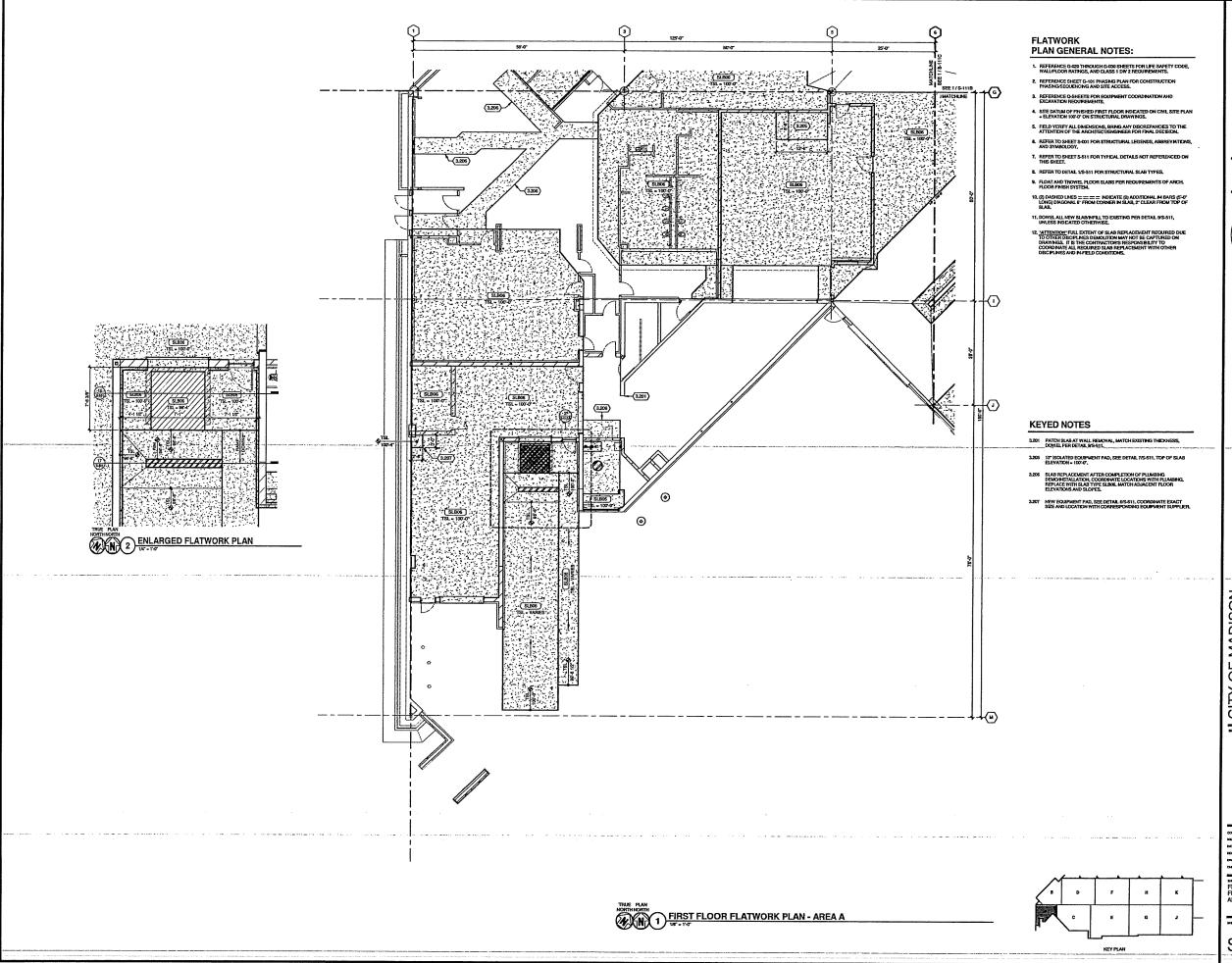
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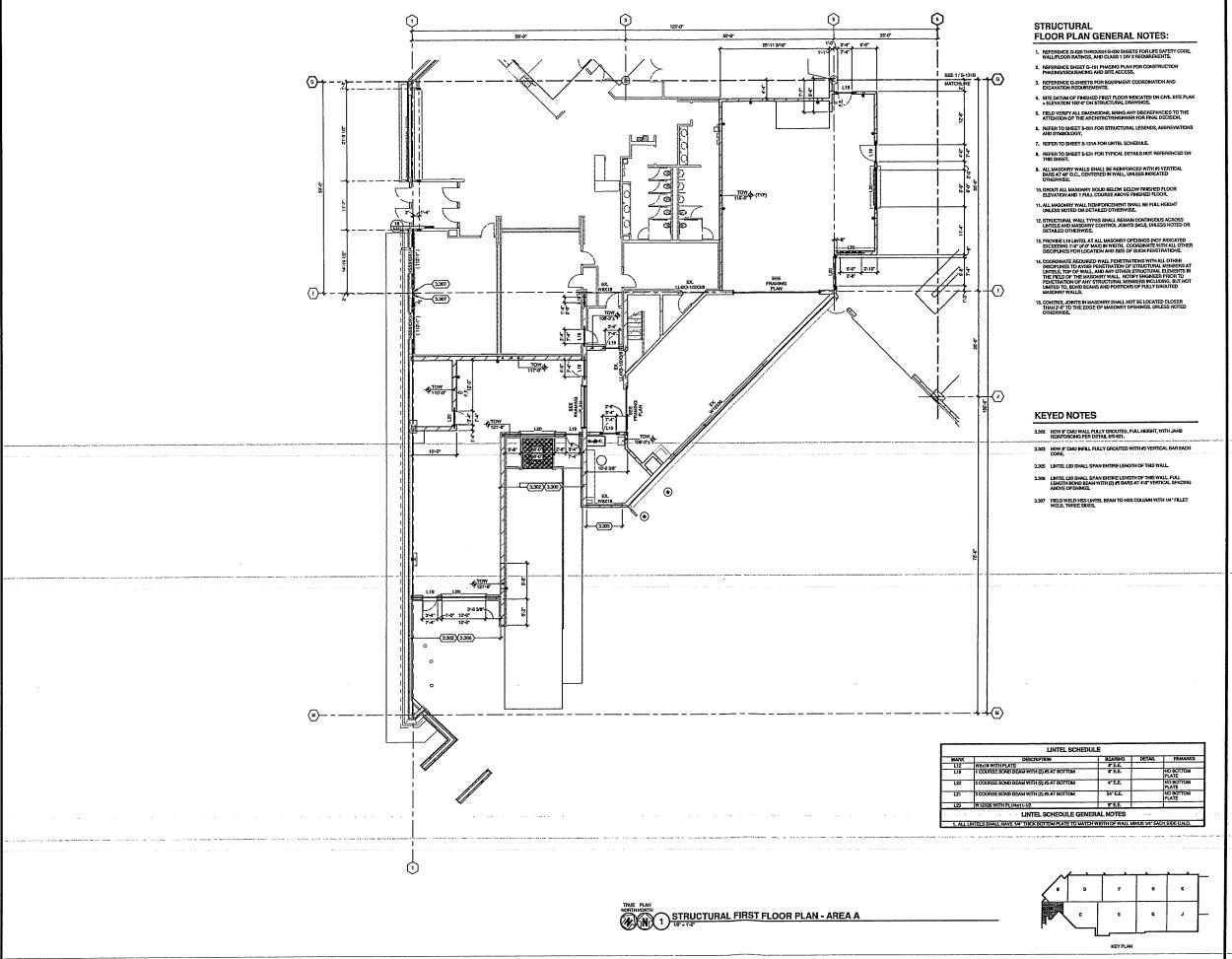
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CITY OF MADISON
METRO TRANSIT PHASE 3A - MAINTENANCE
DRIVER FACILITY IMPROVEMENTS
MADISON, WI 53703 04/08/21 BID SET

CONTRACT MOL. 8981
MAN MOL. 4500500-19089
DATE: APRIL 8, 2021
GEROMAD PE: DXC
DOMINETE: NUB / MUE
CONTRACT PLOOPING
EIRST FLOOR
FLATWORK PLAN AREA A

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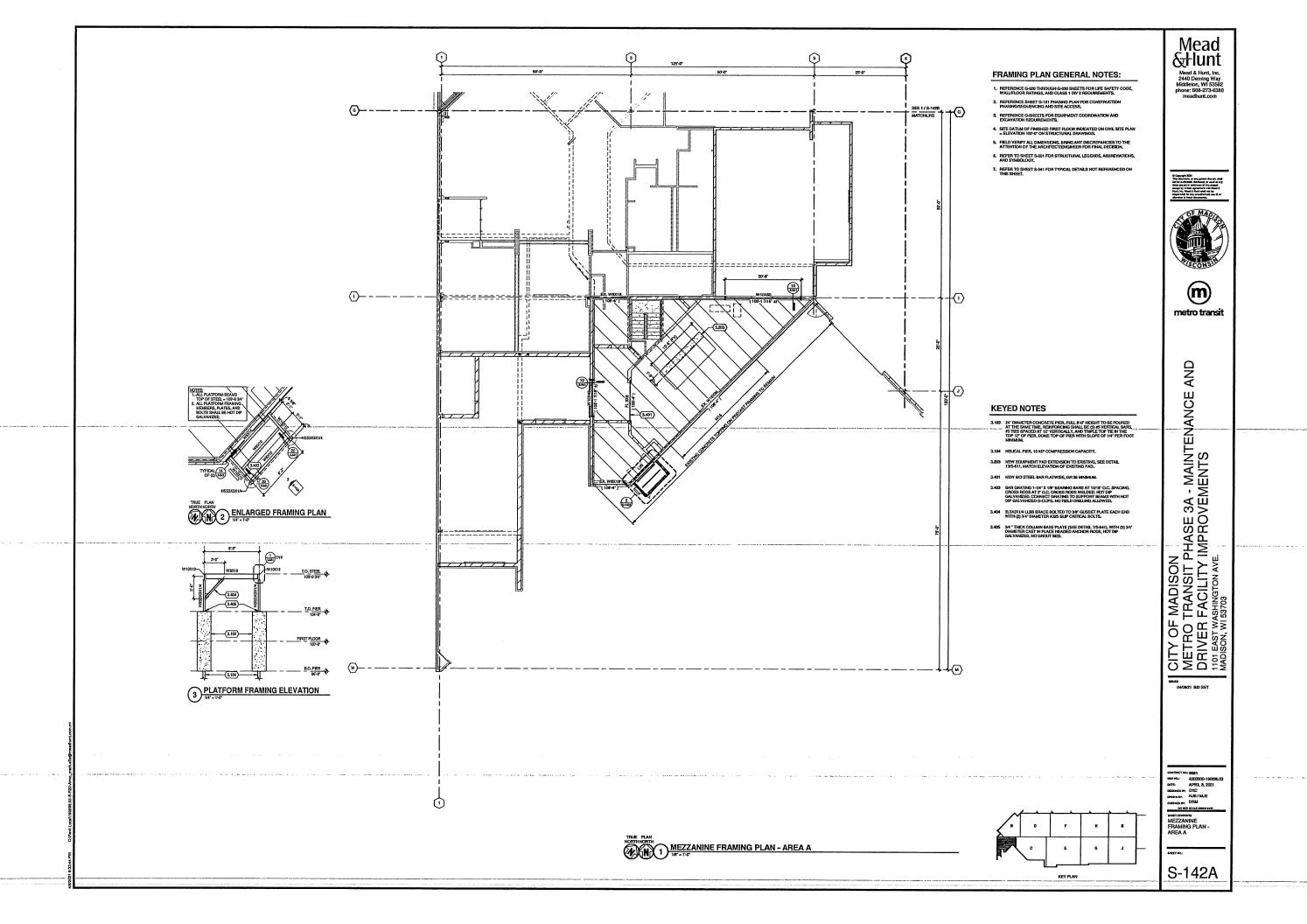
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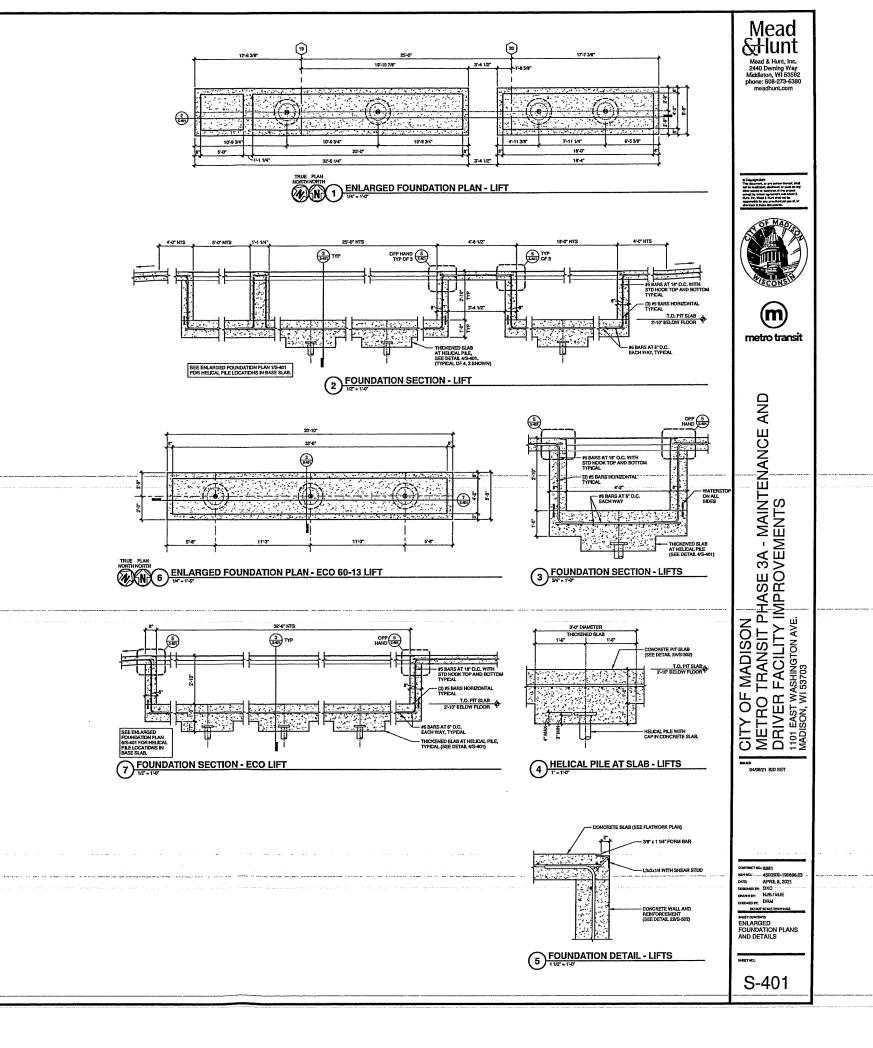
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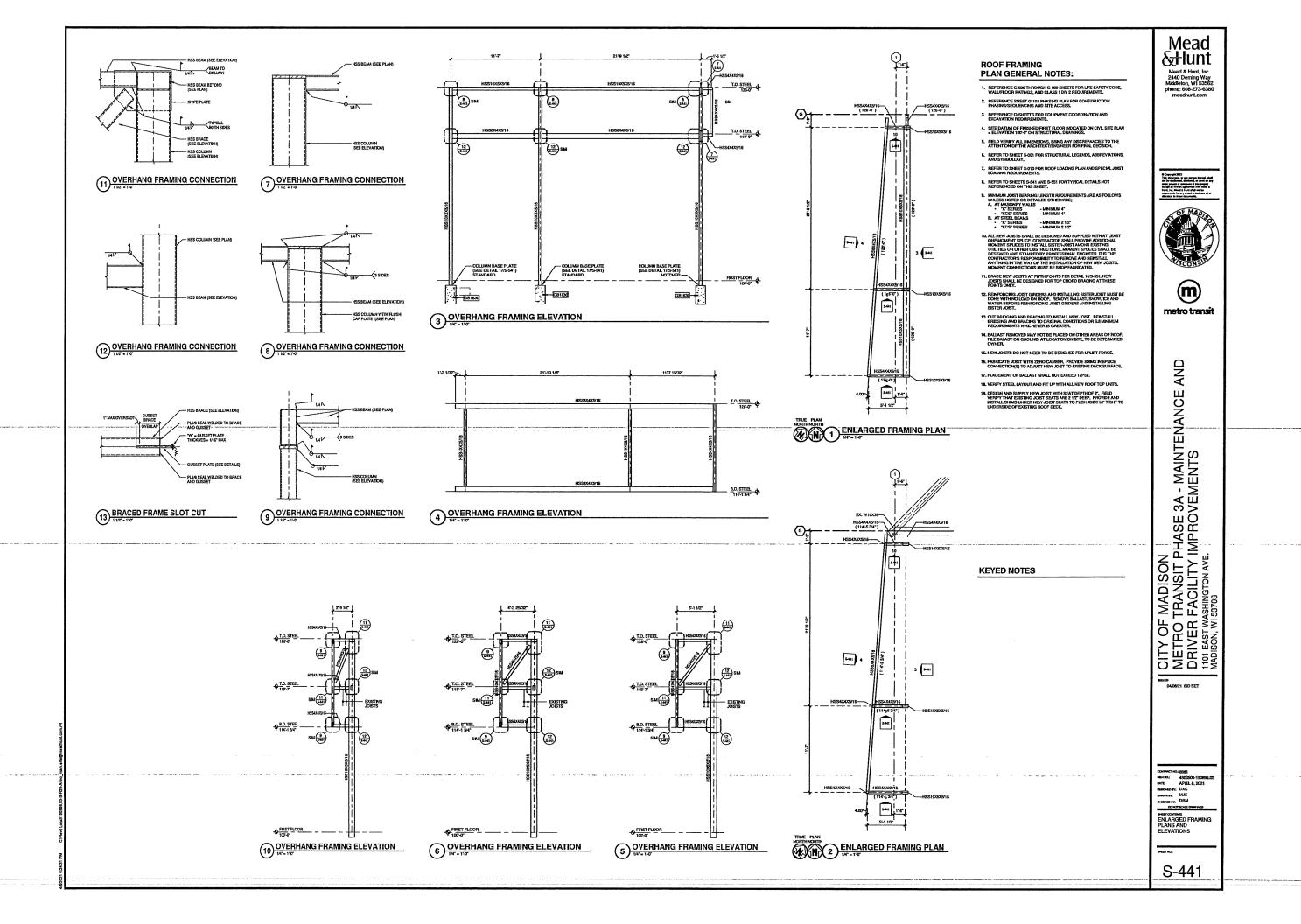
TRANSIT PHASE 3A - MAINTENANCE FACILITY IMPROVEMENTS

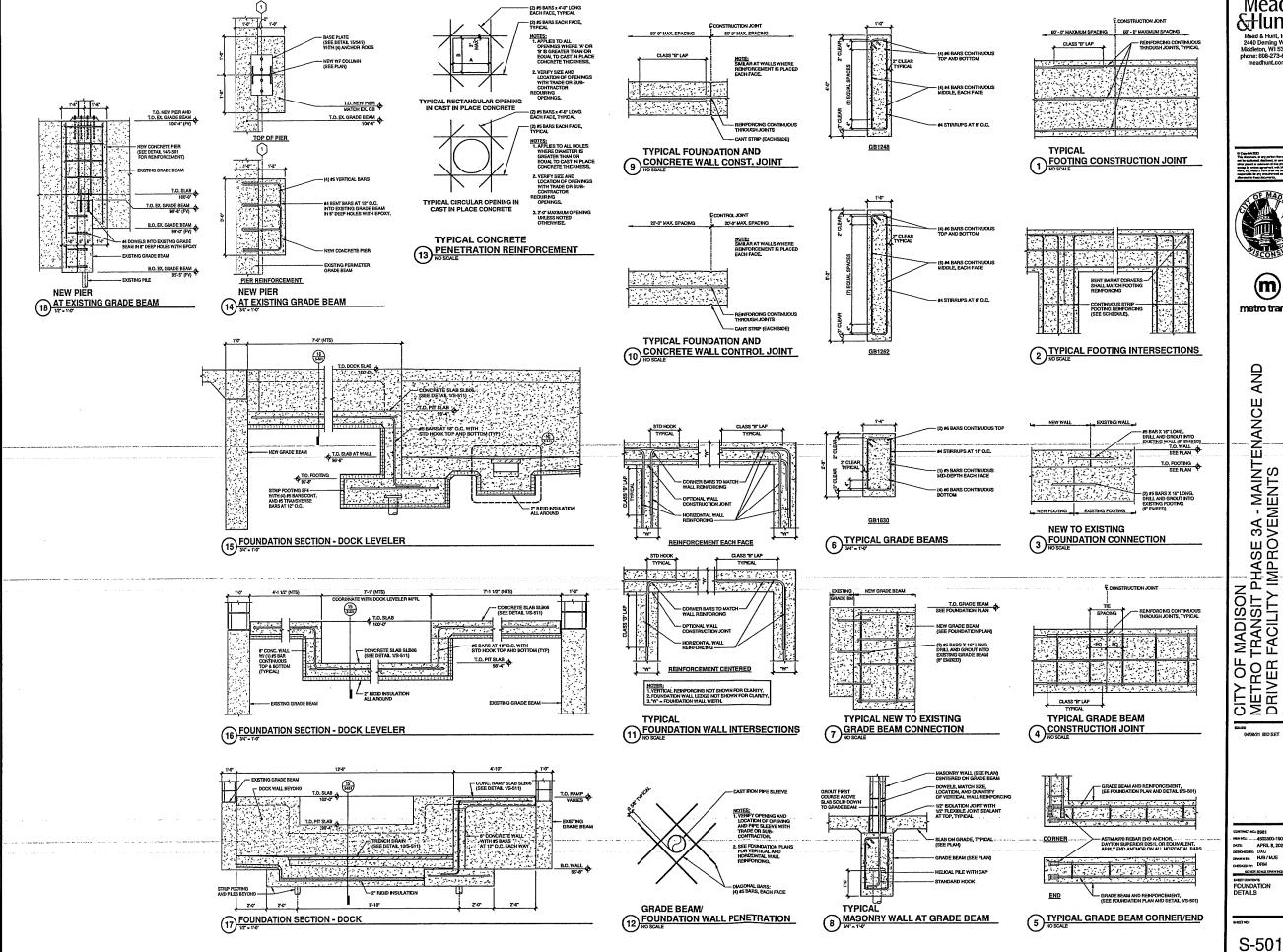
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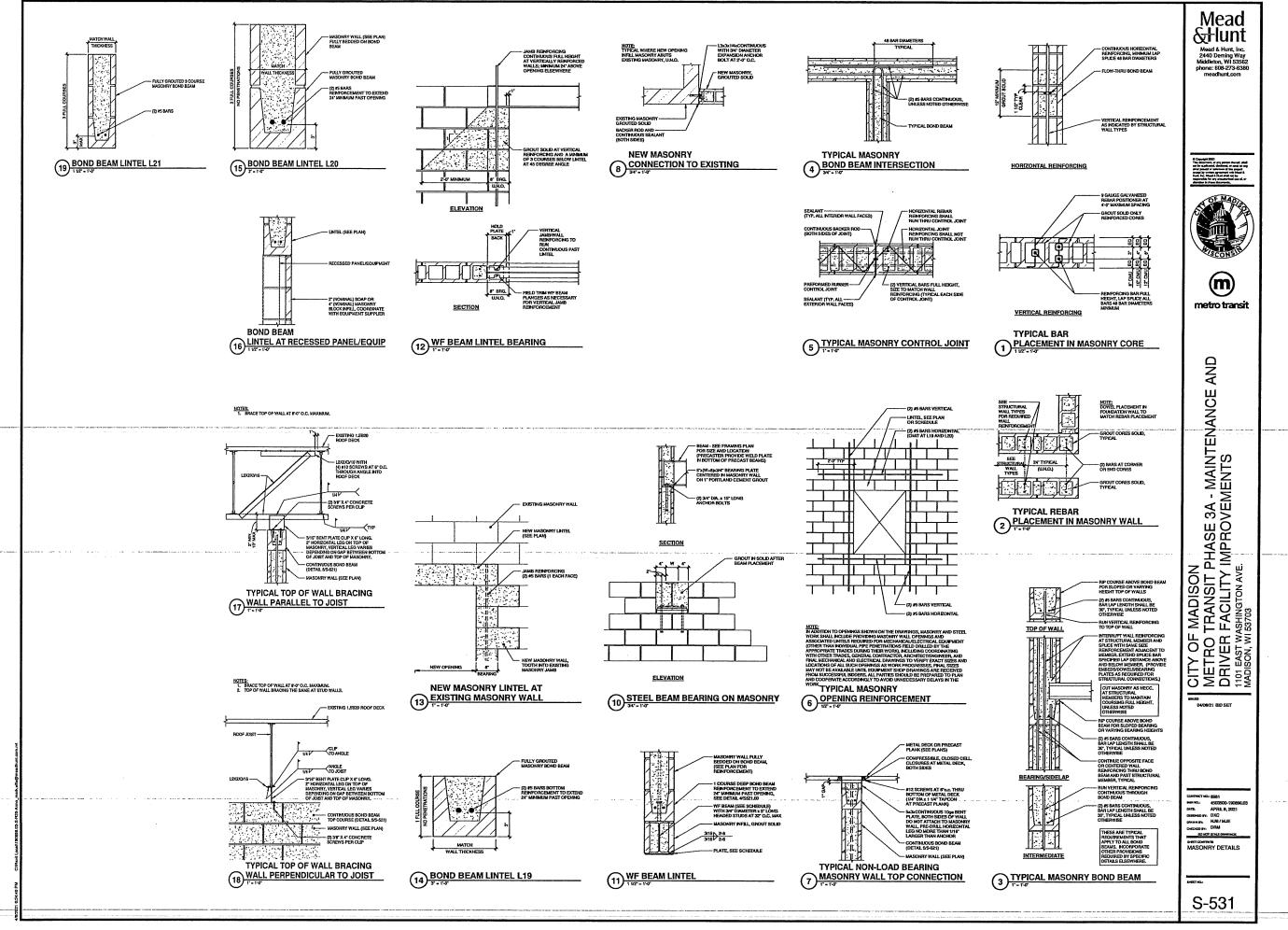




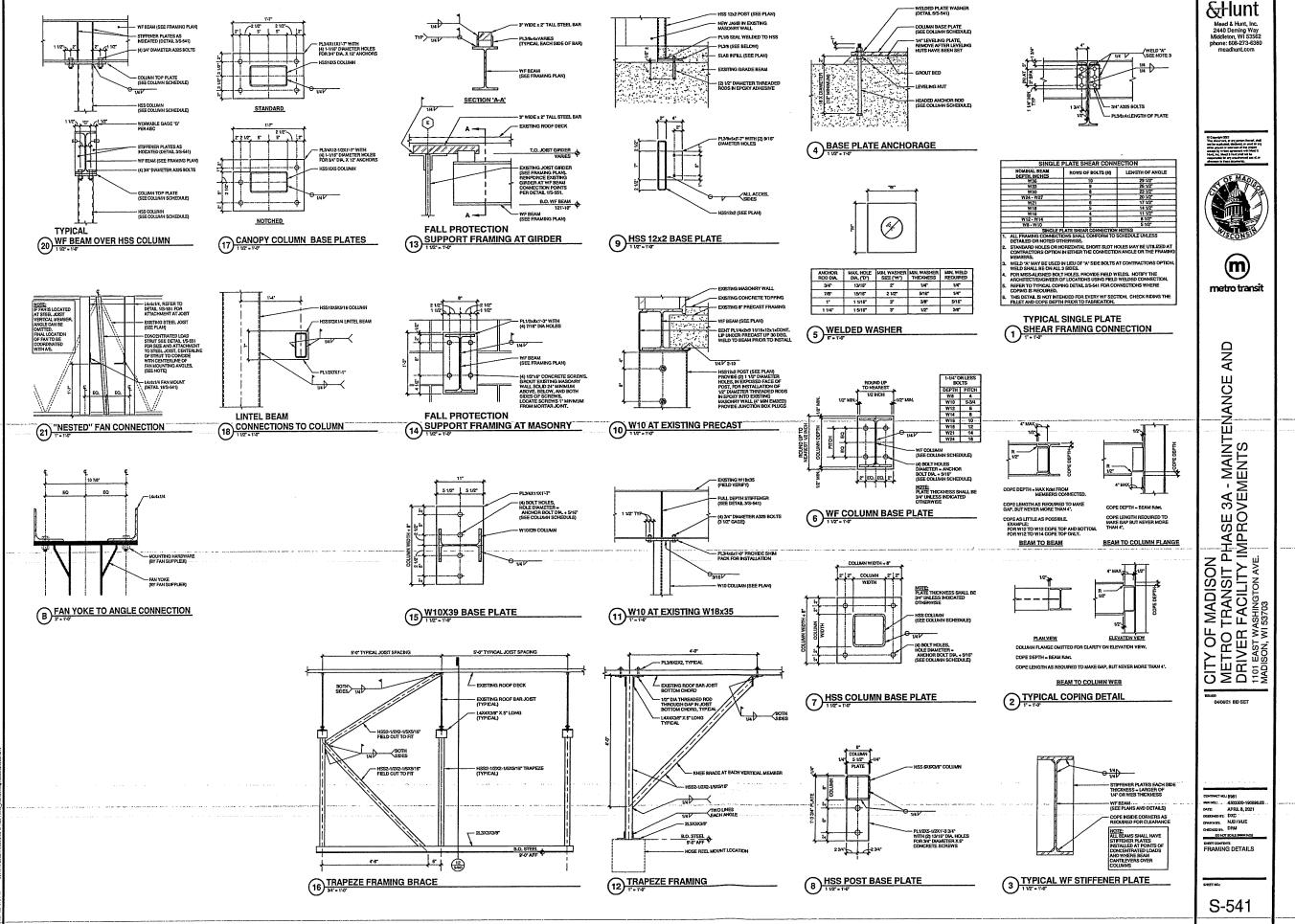


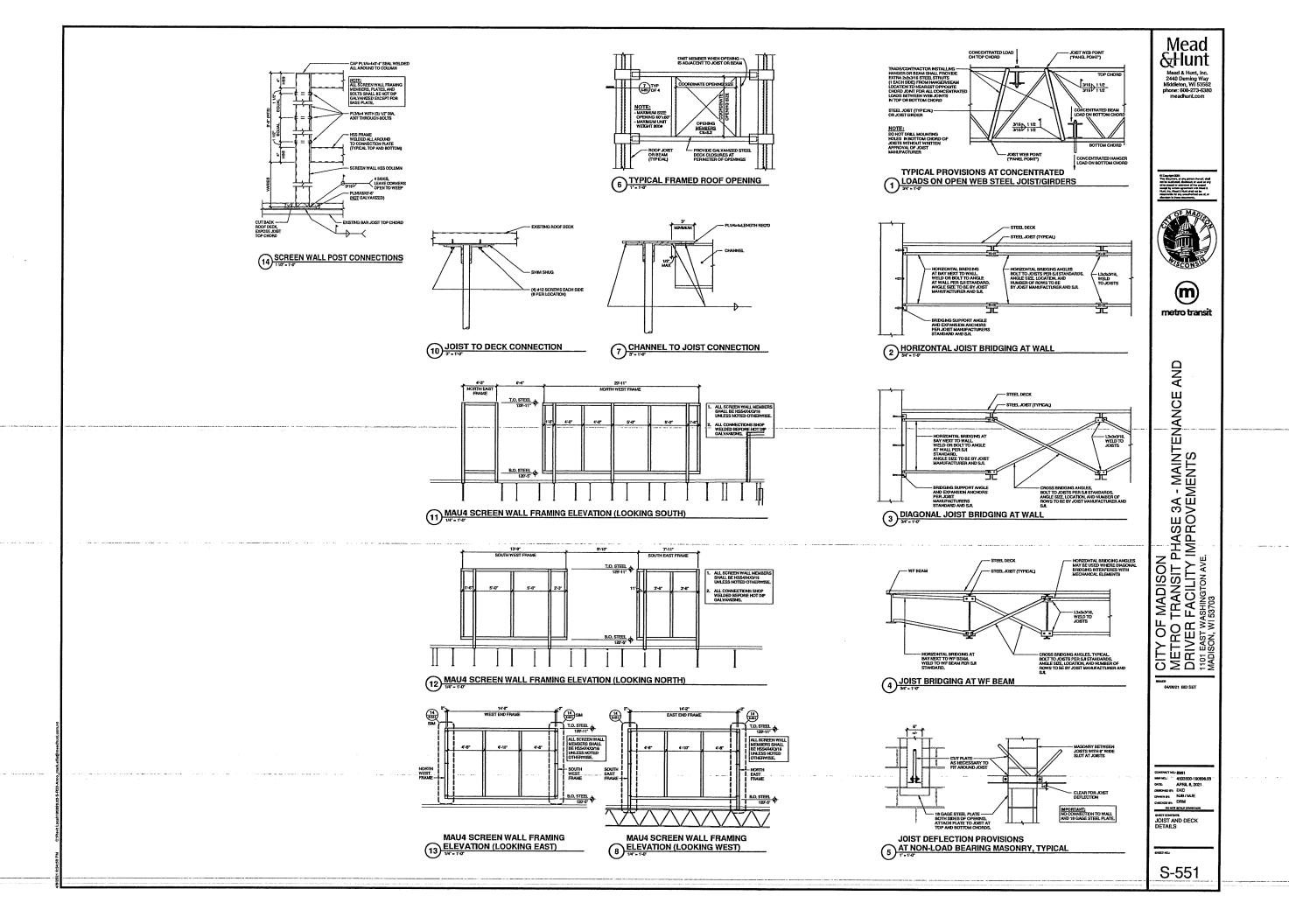


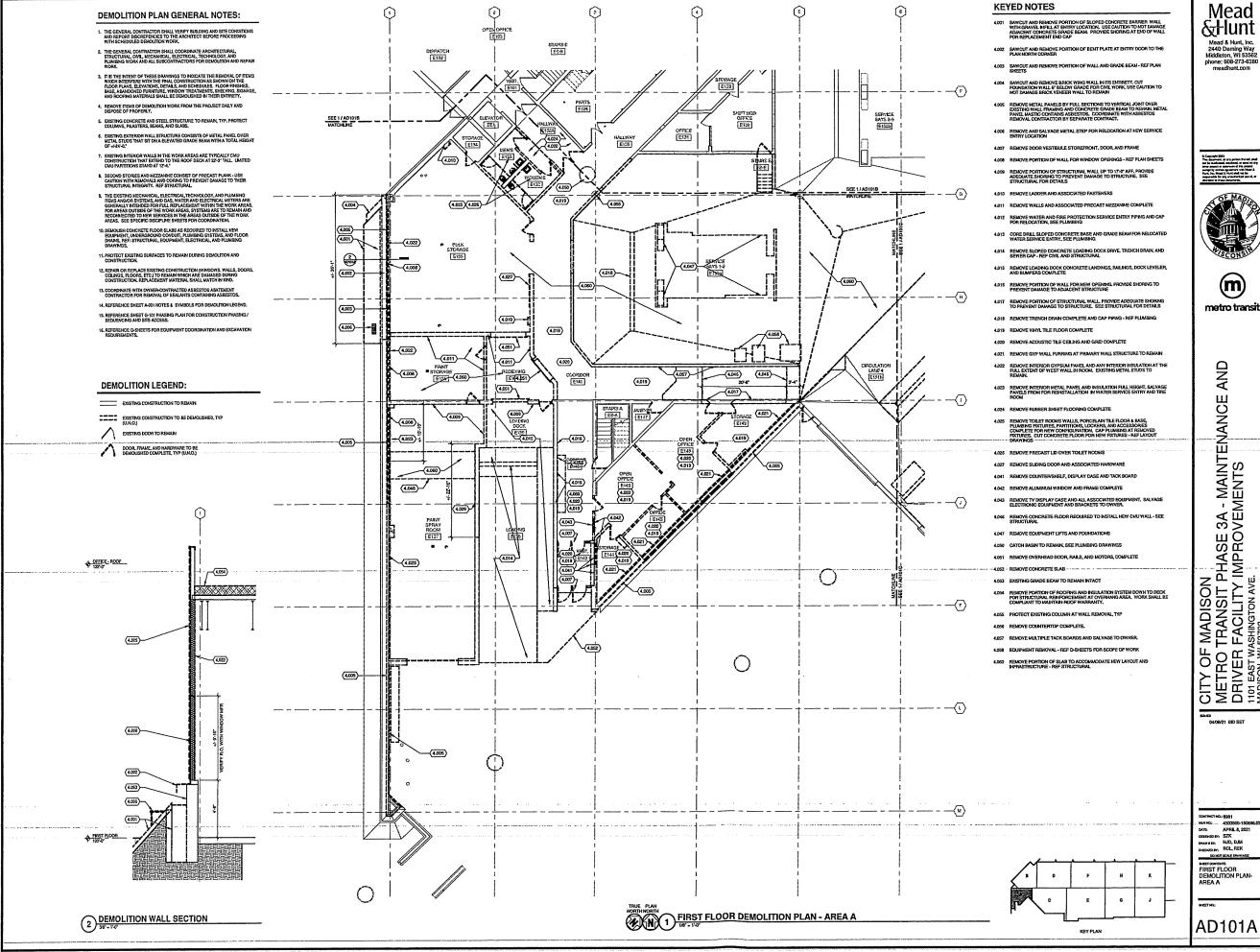
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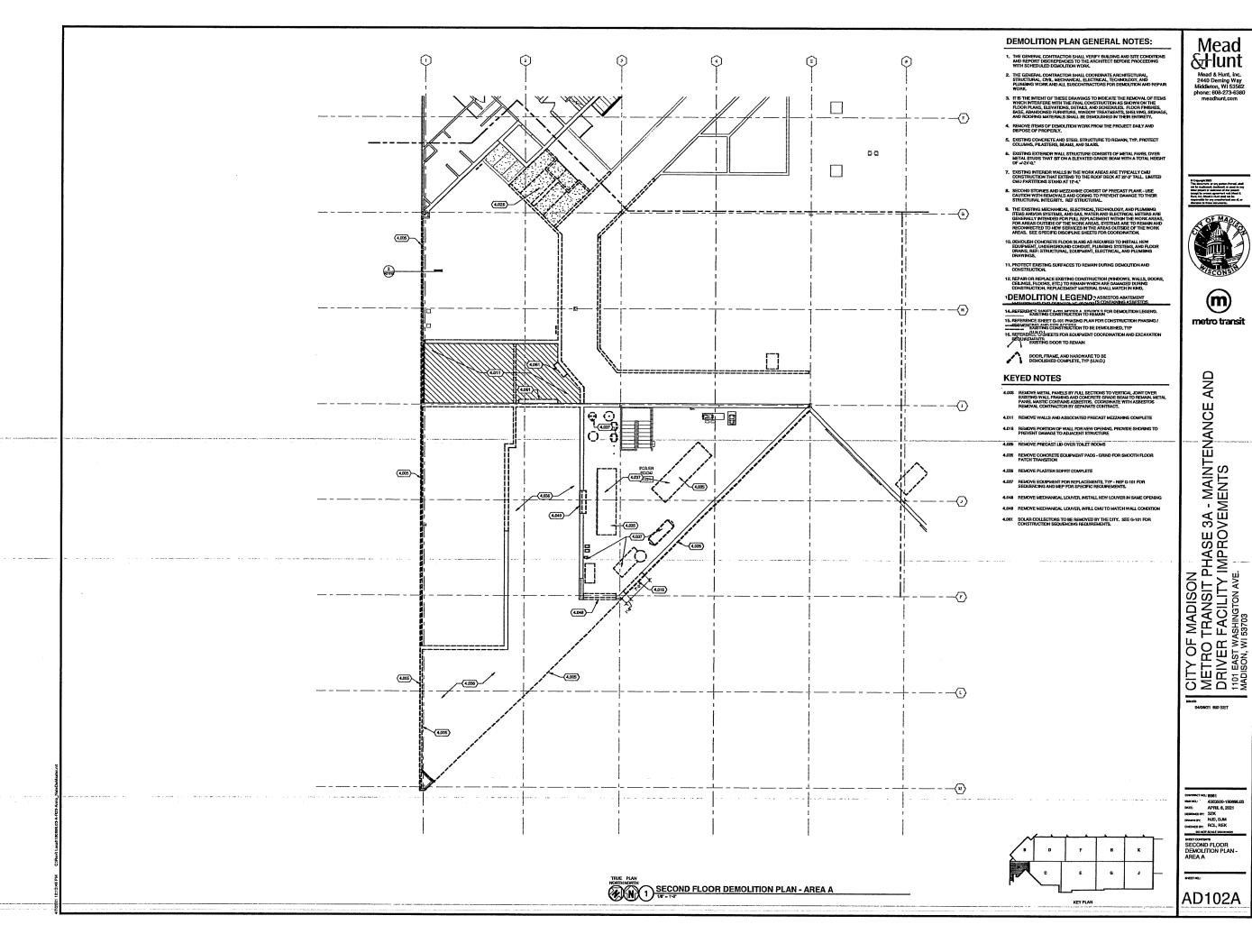
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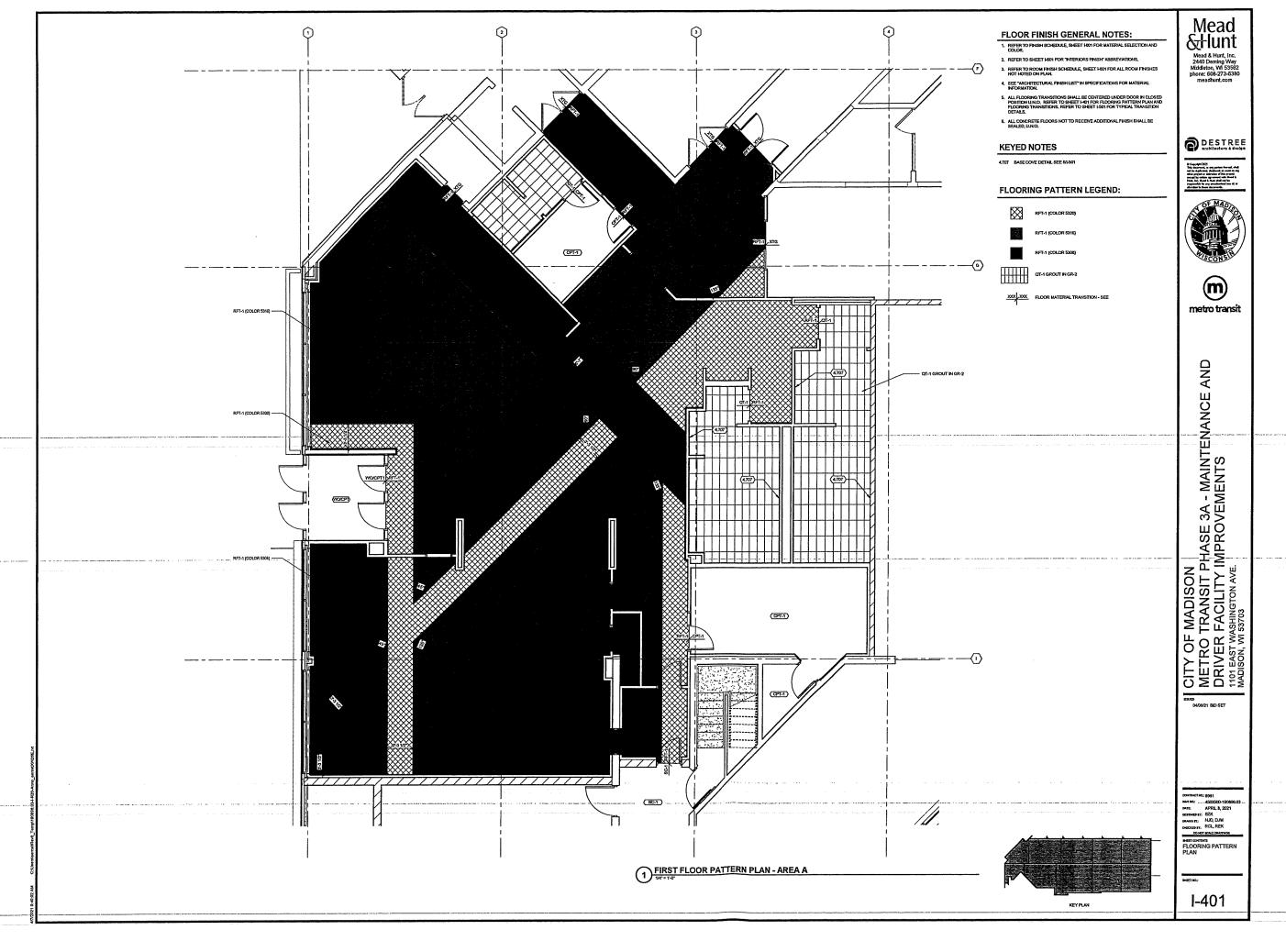




metro transit

MADISON
TRANSIT PHASE 3A - MAINTENANCE
FACILITY IMPROVEMENTS
ASHINGTON AVE. 153703 CITY OF I METRO T DRIVER F 1101 EAST WAS 64/08/21 BID SET





								·		
ROOM	Ì					MTR		CEI	LING	
NO.	ROOM NAME	FLOOR	BASE	NORTH	EAST	SOUTH	WEST	MTL	HEIGHT	REMARKS
101	IVESTERA E	IWOOPT	RB-1	WO-1	PT-6	IPT-9	PT-6	IGWB	111-6	WOOD ACCENT WALL ON NORTH WALL - SEE HIDIA
102	HALLWAY	RFT-1	RB-1	WD-1	1.12	PLAN-1/	PT-6	GWB/ACT-		WOOD ACCENT WALL ON NORTH WALL AND PLAN SOFFT
ruz	Institution 1	N-1-1	NO-1		ſ	PT-9	F1-0	1	12-0	SURROUNDING OPERABLE PARTITION SYSTEM ON SOUTH
1103	GENERAL BREAK ROOM	RFT-1	RB-1	PT-6	PT-BYCT-1	WD-1	PT-6	ACT-1	17-0	THE ON WALLS SURROUNDING EWO AND WHERE KITCHEMETTE CASEWORK OCCURS, WOOD ACCENT WAL ON SOUTHERN END OF BANQUETTE SEATING - SEE SEE LINDTA
104	DRIVER TRAINING ROOM	RFT-1	RB-1	PLAM-1/ PT-7	PT-6	PT-6	PT-6	ACT-1	12-0	PLAM SOFFIT SURROUNDING OPERABLE PARTITION SYSTEM ON NORTH WALL - SEE 1-101A
105	STORAGE	RFT-1	RB-1	PT-6	PT-6	PT-6	PT-6	ACT-1	2-0"	
106	CORRIDOR	RFT-1	RB-1	PT-6	PT-6	PT-6	PT-6	ACT-1	a-c.	
107	VESTIBLLE	RFT-1	RB-1	PT-6	PT-6	PT-6	PT-6	ACT-1	8-0"	
106	SASTRUCTOR'S OFFICE	CPT-1	RB-1	PT-6	PT-10	PT-5	PT-6	ACT-1	6-0.	SEE HIDIA
109	CLOSET	CPT-1	RB-1	PT-6	PT-6	PT-6	PT-6	EXPIPT-6	t	
1110	WOMENS	OT-1	F	CT-1	CT-1	CT-1	CT-1/ VWC-2	ACT-2	a-o.	WWC-2 OWNER SUPPLIED, OWNER INSTALLED - SEE 1-101,
111	MB42	OT-1	F	CT-1	CT-1/ VWC-2	CT-1	CT-1	ACT-2	å-0.	VWC-2 OWNER SUPPLIED, OWNER INSTALLED - SEE 1-101.
112	GREETING	RFT-1	RB-1	PT-6	CT-W WD-1	CT-V WD-V VWC-2	CT-1	GWBACT- 1	12-0	SEE HOTA
117	FLEX H.R. OFFICE	CPT-1	RB-1	PT-6	PT-6	PT-10	PT-5	ACT-1	9-0	SEE 1-101A
118	TESTING	QT-1	RB-1	CT-1	VWC-1	CT-1	CT-1	GWB	8-0	SEE HOTA
119	TOLET	QT-1	RB-1	CT-1	VWC-1	CT-1	CT-1	GWB	8-0	SEE 1-101A
120	VESTIBLAE	RFT-1	RB-1	PT-6	PT-6	PT-5	PT-6	ACT-1	12-0	
211	SERVICE BAY #13-15	ISC-1	-	-	-	PT-4	-	EXP		
214	SERVICE BAY #16-18	SC-1	-	-	-	PT-4	-	EXP	†	
217	SERVICE BAY #19-21	SC-1	F	-	1-	PT-4	-	EXP		
218	WORK AREA	SC-1	-	-	-	PT-4	-	EXP		***************************************
220	VEHICLE CIRCULATION	SC-1	-	1	-	1-	PT-7	EXP		SEE LICIA
221	VEHICLE CIRCULATION	SC-1	-	-	-	PT-4	-	EXP		
Z25	DATA	SC-1	-	PT-6	PT-6	PT-6	PT-6	EXPYPT-6	1	
229	BLECTRICAL ROOM	SC-1	-	PT-6	PT-6	PT-6	PT-8	EXPYPT-6	1	
230	TIRES	SC-1	-	PT-4	PT-4	PT-4	PT-4	EXP		
231	WATER SERVICE ENTRY	SC-1	-	PT-4	PT-4	PT-4	PT-4	EXP		
232	RECEIVING	SC-1	-	PT-4 PT-8	PT-4	PT-4	PT-4	EXP	i	PT-8 UP TO 10-0", PT-4 ABOVE 10-0", SEE I-101A
233	LOADING DOCK									
234	STAGING	SC-1	-	PT-4 PT-8	PT-4	PT-4	PT-4	EФ		PT-8 UP TO 10-0", PT-4 ABOVE 10-0", SEE I-101A
235	STARS	RB-2	F	PT-4	PT-4	P7-4	PT-4			RFT STAIR TREADS/NOSINGS WITH YELLOW VISUALLY INPARED STRIPS
236	BATTERY STORAGE CHARGING	SC-1	-	PT-4	PT-4	PT-4	PT-4	EΦ		
237	PARTS STORAGE	SC-1	-	PT-4	PT-4	PT-4	PT-4 PT-8	EXP	1	PT-8 UP TO 10-0", PT-4 ABOVE 10-0", SEE I-101A
236	PARTS	SC-1	-	PT-4	PT-4	PT-4		EΦ	1	PT-8 UP TO 10-0", PT-4 ABOVE 10-0", SEE 1-101A
701	COMM	SC-1	-	PT-4	PT-4	PT-4	PT-4	EXP		HON CHU WALL TO HAVE 4" COVE WALL BASE
121	COMM	SC-1	RB-1	PT-8	PT-6	PT-6	PT-6	EXP	1	
201	MECHANICAL	SC-1			PT-4	PT-4	PT-4	ΕΦ	†	
301	ELECTRICAL	SC-1			PT-4	PT-4	PT-4	EXP		
302	STORAGE	SC-1			PT-4	PT-4	PT-4	EXP	 	
303	STORAGE	SC-1		PT-4	PT-4	PT-4	PT-4	EXP		
305	WATER/ COMPRESSOR ROOM	SC-1			PT-4	शन	PT-4	ĐΦ	 	
306	MECH	SC-1		PI-4	PT-4	PI-4	P7-4	EXP		

			i	ROOM FIN	ISH SCH	EDULE 3	ALTER	NATE NO	. 1	
ROOM				T	W	NIS.		CE	ILING	
NO.	ROOM NAME	FLOOR	BASE	NORTH	EAST	SOUTH	WEST	MTL	HEIGHT	REMARKS
1301	IVEST.	ISC-1			PT-4	Im 4	Inc.	Inve		
1302	MENS	GT-1						EXP		
			-		CT-1	CT-1		ACT-2	8-0"	
	WOMEN'S	QT-1	•	CT-1	CT-1	CT-1	CT-1	ACT-2	6-0"	
1304	STEAM CLEANING	SC-1	-	PT-4	PT-4	शन-4	PT-4	EXP	1	
1305	METER SHOP	SC-1	-	PT-4	PT-4	PT-4	PT-4	EXP	1	
1306	UNIT SHOP	5C-1	-	PT-4	PT-4	PT-4	PT-4	ÐФ	1	
1307	VEST.	5C-1	-	-	PT-4	PT-4	PT-4	EXP	1	
1308	WELDING	5C-1	-	PT-4	PT-4	PT-4	PY-4	EXP	1 22 2 2	
1309	BODY SHOP	SC-1	-	PT-4	PT-4	PT-4	PT-4	ĐP	1	
1310	STARS	RB-2		PT-4	PT-4	PT-4	PT-4			RB STAIR TREADS/ACSPASS WITH YELLOW VISUALLY IMPARED STRIPS
1311	SERVICE BAYS #22-23	5C-1		PT-4	PT-4	PT-4	PT-4	1		

				NTERIOR FINISHES	SCHEDULE		
	I	T	PRC	DUCT DESCRIPTION	J.		
FINISH	FINISH DESCRIPTION	MANUFACTURER	MODEL NUMBER	STYLE	COLOR	SIZE	REMARKS
					- OOLOIL		TOPPOO
CT-1	ACOUSTIC CEILING TILE - TYPE 1	usg		 	WHITE	24" X 24"	W/USG DONN BRAND CENTRICITEE 9/16" GRID
CT-2	ACOUSTIC CEILING TILE - TYPE 2	ARMSTRONG	1753	†	WHITE	24"X24"	WASHABLE ACT W/9/16" GRID
PT-1	ALUMINUM PERIMETER TRIM - TYPE 1	ARMSTRONG	AX1PC6STRWH	5" ONE PIECE AXIONI CLASSIC FOR DRYWALL	WHETE		
PT-2	ALUMNUM PERIMETER TRIM - TYPE 2	ARMSTRONG	AXESTRIVH	6" AXXXVII CLASSIC	WHITE		W/7239 ADJUSTABLE TRIM CLIP
G-1	CORNER GUARD - TYPE 1	INPRO	3448		0103	12 X 3/4	SEE HIDIA FOR CORNER GUARD LOCATIONS
G-2	CORNER GUARD - TYPE 2	INPRO	3448	1	0257	17 X 3/4"	SEE HOTA FOR CORNER GUARD LOCATIONS
PT-1	CARPET-TYPE 1	MOHAWK GROUP	GT154	1	590	24 X 24	
T-1	CERAMIC WALL TILE - TYPE 1	DESELLIVING		INDUSTRIAL GLASS	WHITE	3.9" X 11.8"	GROUT TO BE GR-1
R-1	GROUT - TYPE 1	TEC			927		USED FOR CT-1
R-2	GROUT - TYPE 2	TEC	1		941	_	USED FOR QT-1
PDE-1	HPDE PARTITION - TYPE 1	BRADLEY	SERIES 400	SERES 400	SZ25		
MC-1	LINEAR METAL CEILING	ARMSTRONG	1	METALWORKS LINEAR	EFFECTS CINNAMON		
AB-1	POLYESTER ACQUISTICAL BOARD - TYPE 1	LUCID ECOCORE	† — — —	UNES	ECC-06	1/2" THICK	TOP LAYER - LINES PATTERN
AB-2	POLYESTER ACQUISTICAL BOARD - TYPE 2	LUCIDECOCORE	 		ECC-06	1/Z THICK	BASE LAYER
AB-3	POLYESTER ACCUSTICAL BOARD-TYPE 3	ARMSTRONG	67.46	FELTWORKS ACOUSTICAL PANEL	FBL	122 11321	
LAM-1	PLASTIC LAMINATE - TYPE 1	FORMICA	1		7740		
MTL-1	PERFORATED METAL BASE - TYPE 1	STYLMARK	 		123		BANQUETTE PERFORATED TOE BASE MATERIAL
T-4	PAINT COLOR - TYPE 4	SHERWIN WILLIAMS	 		SW7004	- `	BAKELETE PERFORMED TOE BASE MILETON.
T-5	PAINT COLOR - TYPE 5	SHERWINWILLIAMS	 		SW7050		ALL HIJ FRANES AND METAL DOORS TO BE PAINTED PT-5
T-6	PANT COLOR - TYPE 6	SHERWIN WILLIAMS	 	 	SW1029		PACTURE PROCESS AND RETALLOCKES TO BE PARTIED PT-9
1-7	PANT COLOR-TYPE?	SHERWIN WILLIAMS	 	 	SW6342		
T-8	PANT COLOR - TYPE 8	SHERWIN WILLIAMS	 		SW8510		
7-9	PANT COLOR - TYPE 9	SHERWINWILLIAMS	 		SW7525		· · · · · · · · · · · · · · · · · · ·
T-10	PANT COLOR - TYPE 10	SHERWIN WILLIAMS	 		SW5417		
T-1	OWARRY TILE - TYPE 1	LANDHARK CERAMICS		CHARME	GRAPHITE DARK	12'X24	GROUT TO BE GR-2
B-1	RUBBER BASE - TYPE 1	MANNINGTON	EEETC	- CIPCION	523	12 A27	GROOT TO ZE GREZ
FT-1	RUBBER FLOOR TILE - TYPE 1	NORA	ARTICLE 1880	GRANO	5316, 5320, & 5308	3.5MM TRE	SEE 1401 FOR FLOORING PATTERN
FT-2	RUBBER FLOOR STARS - TYPE 2	NORA	7-17-22-1000	HAMMERED	0716	JOHN INE	VISUALLY INPARED STRPS IN COLOR SAFETY YELLOW
FTS	RUBBER FLOOR TILE - TYPE 3	NORA	ARTICLE 1880	GRANDED	5304		BLECTROSTATICALLY DISSIPATIVE RUBBER PLOOR TILE
T-1	RUBBER TRANSITION - TYPE 1	TARKETT	SLT-63-J	SUMUNE	63		ELECTROSIALIZAÇÃI DESPAINTE ROBBER PLOOR ILE
T-2	RUBBER TRANSITION-TYPE 2	TARKETT	SLT-63-8	SUMUNE	63		
CH-1	SCHLUTER EDGE-TYPE 1	SCHLUTER SYSTEMS	A BO ATGB	SCHLITTER-XXLLY	ATGA		
CH2	SCHLUTER EDGE - TYPE 2	SCHLUTER SYSTEMS	AHK 15 100 ATGR	SCHILITER-DILEX-AHK	ATGB		
CH3	SCHLUTER EDGE - TYPE 3	SCHLUTER SYSTEMS	AHK 15 50 ATGO	SCHLUTER-DLEX-AHK	ATGB		TILE TO COUNTERTOP AND INSIDE TILE CORNERS
CH4	SCHLUTER EDGE - TYPE 4	SCHLUTER SYSTEMS	ATX 100 ATGB	SCHLUTER RENO-TK	ATGB		THE TOCKMENOP AND PASSE THE CURRENS
CH-5	SCHLUTER EDGE - TYPE 5	SCHLUTER SYSTEMS	AEVT 100 B20	SCHLUTER RENO-Y	AE		
CH6	SCHLUTER EDGE - TYPE 6	SCHLUTER SYSTEMS	AU 100 ATGB				
CH-7	SCHLUTER EDGE - TYPE 7	SCHLUTER SYSTEMS	RO SO ATGE	SCHLUTERRENO-U	ATGB		
SM-1	SOLD SURFACE - TYPE 1	CORIAN	NO BUAIGE	SCHLUTER-ROUNDEC	ATGB		OUTSIDE TILE CORNERS
SM-T PH-1	UPHOLSTERY - TYPE 1	MOMENTUM	 	lamer	ASH CONCRETE	12MM SHEET	
PH-2	UPHOLSTERY - TYPE 1	MOMENTUM		SITELINE	MINERAL.		BANQUETTE BACK UPHOLSTERY
PH3				ENDURANCE EPU	JETTY .		BANCLETTE SEAT UPHOLSTERY
MC-1	UPHOLSTERY - TYPE 3	CARNEGIE	5261	FRACTAL EMBOSS	708		OPERABLE YERTICAL PARTITION FABRIC
		CARNEGIE	8104		33		
MC-2	VINYL WALL COVERING - TYPE 2	l			L		OWNER SUPPLIED, OWNER INSTALLED
D-1	URBAN WOOD - TYPE 1	URBAN EVOLUTIONS		URBAN ELM	NATURAL STAIN		
DF-1	WOOLDESIGN FELT-TYPE 1	FLIZ FELT			150	2MM THICK	
YOYOPT	WALK OFF CARPET-TYPE 1	BENTLEY KALLS	8FU-024		800115	24" X 24"	
/SHD-1	WINDOW SHADE-TYPE 1	MECHOSHADE		THERMOVEL 1300	BLACK BROWN		MECHOSHADE OR ECILIAL, BLACK/BROWN COLOR OR SHALAR STANDARD COLOR IN SERIES
SHD-2	WINDOW SHADE-TYPE 2	MECHOSHADE	1	THERMOYELL EQUINION	CNYX		MECHOSHADE OR EDUAL ONYX COLOR OR SIMILAR STANDARD COLOR

GENERAL FINISH NOTES:

- 2. ALL PLAN-1 TO RUN IN THE VERTICAL DIRECTION OTHERWISE.
- 5. VWC-2 TO BE OWNER SUPPLIED, OWNER INSTALLED
- STAIR NOSINGS WITH YELLOW VISUALLY IMPARED STRPS AT THE TOP OF STAIR FLIGHTS, ALL OTHER STEPS TO HAVE STAIR TIREADS WITH YELLOW VISUALLY IMPAIRED STRPS.

INTERIORS FINISH ABBREVIATIONS:

Mead &Hunt

Mead & Hunt, Inc. 2440 Deming Way Middleton, WI 53562 phone: 608-273-6380 meadhunt.com



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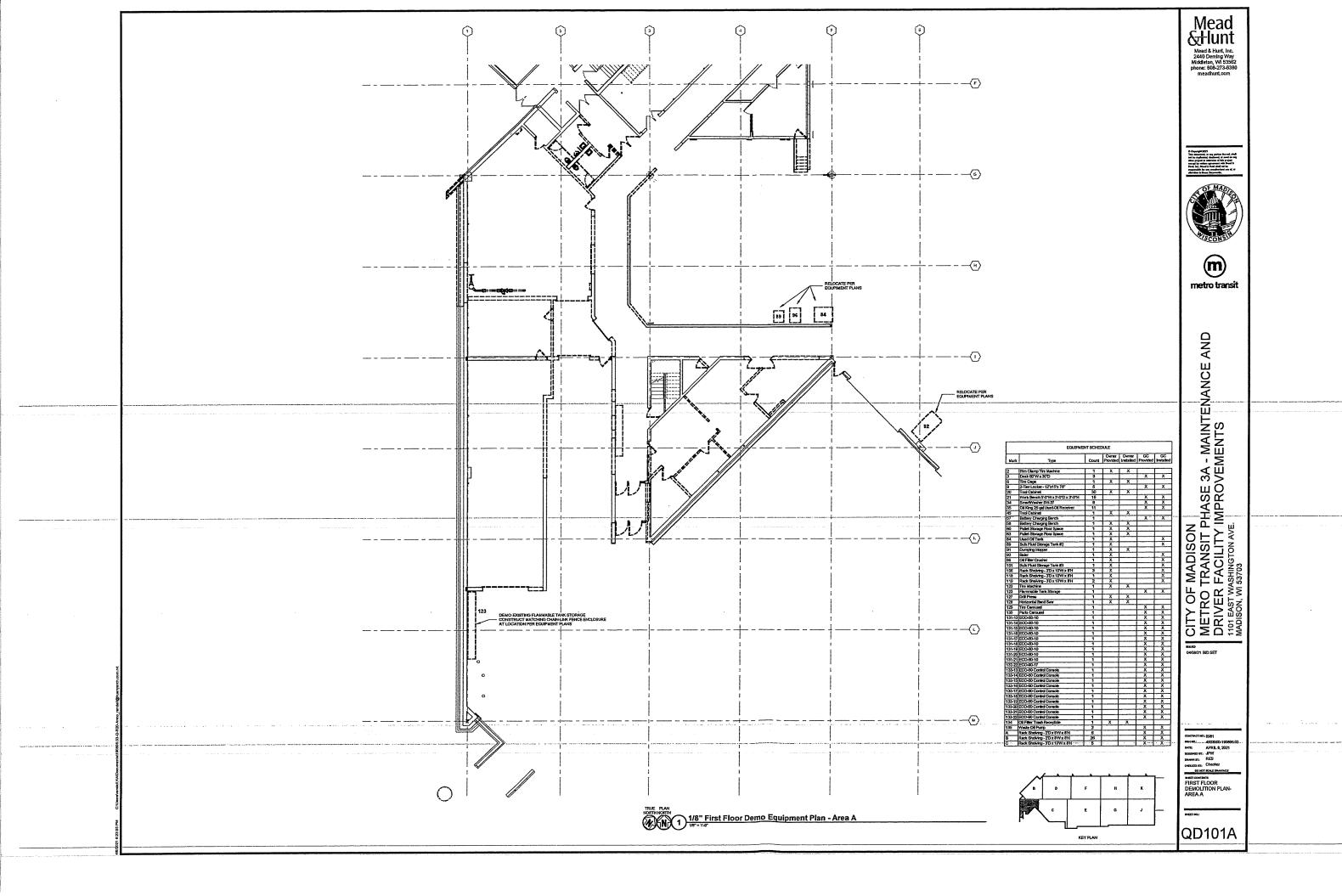
CITY OF MADISON
METRO TRANSIT PHASE 3A - MAINTENANCE AND
DRIVER FACILITY IMPROVEMENTS
1101 EAST WASHINGTON AVE.
MADISON, WI 53703

CONTINCT HOLE 5981

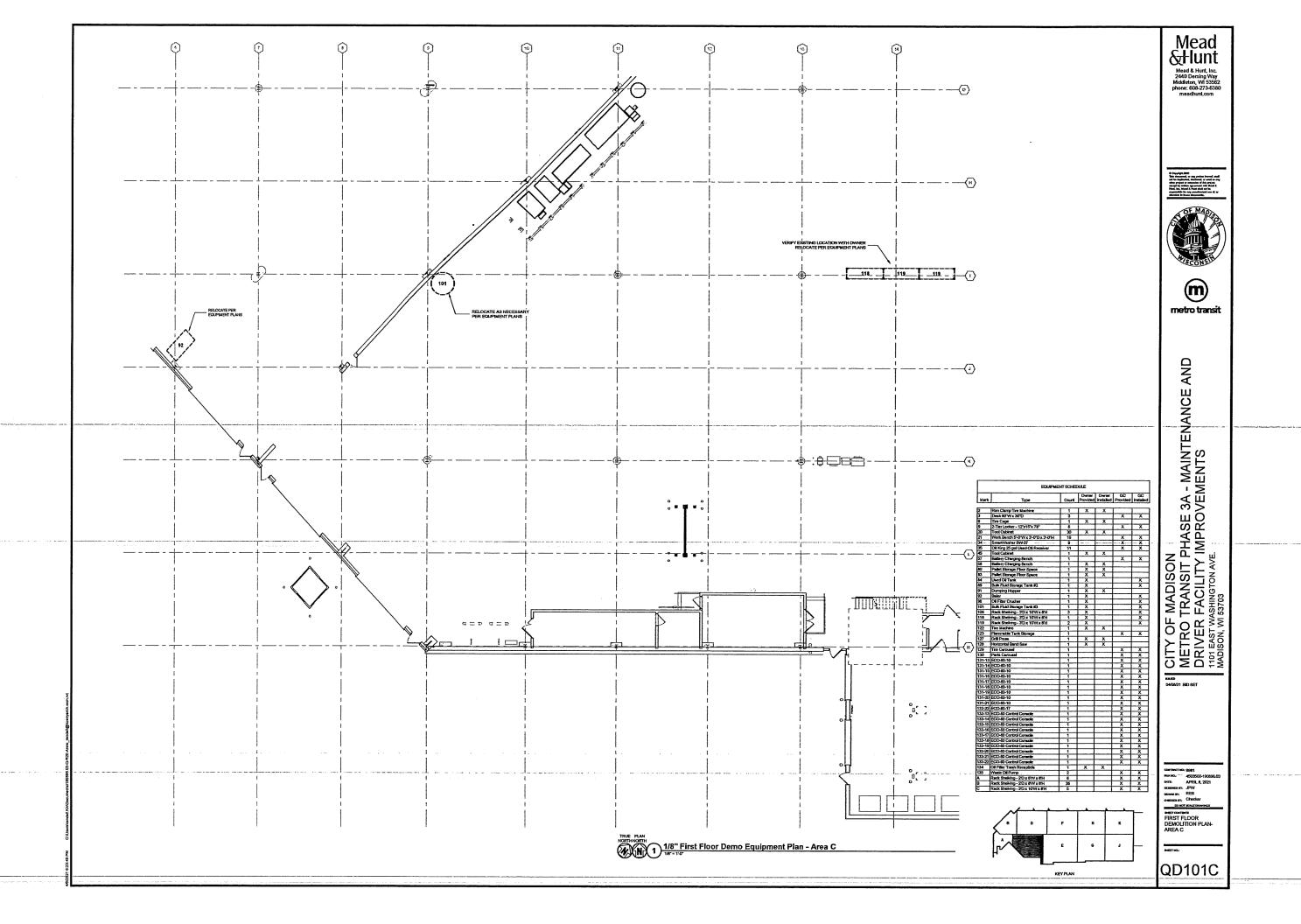
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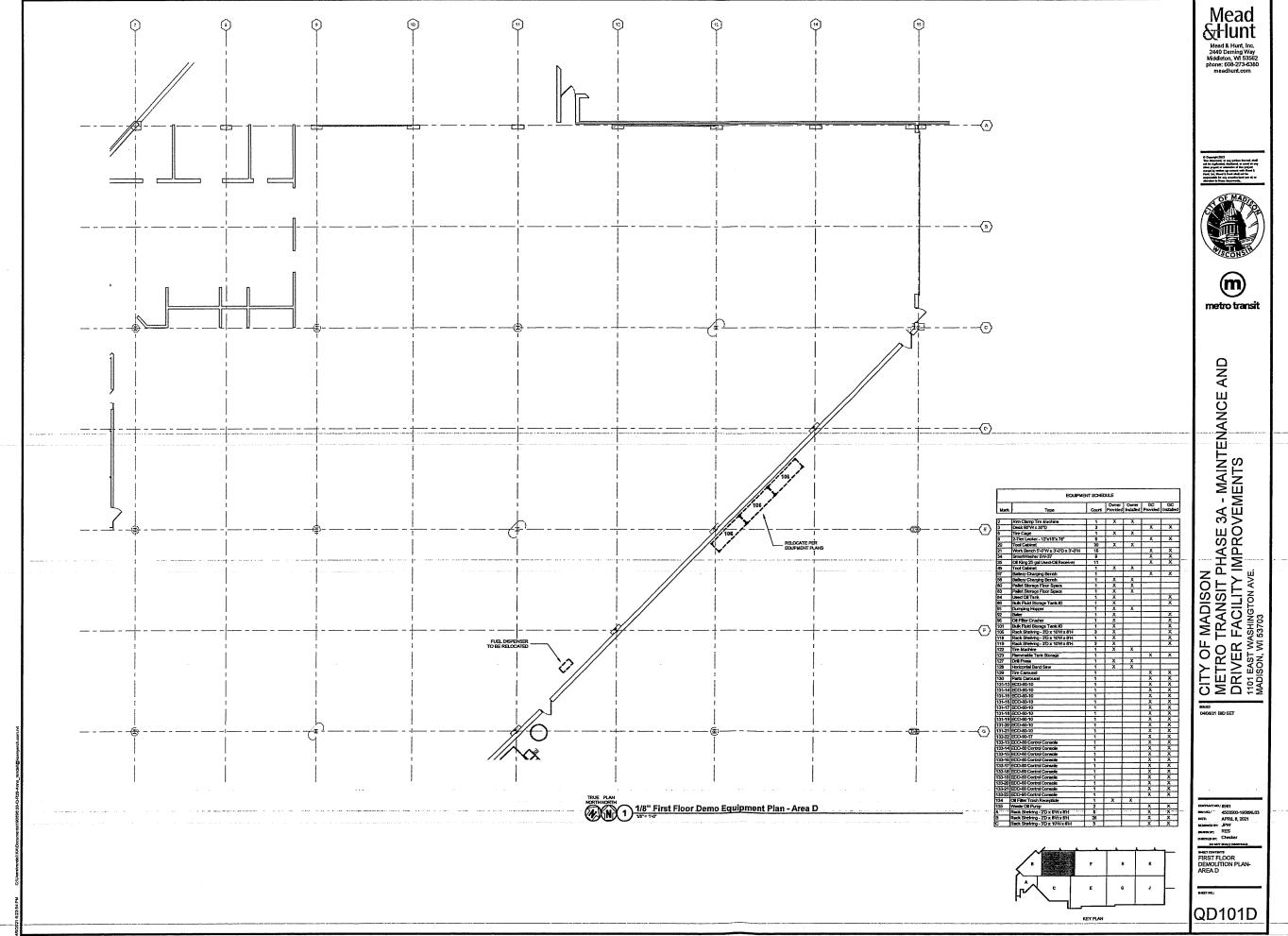
MATEL 8, 2

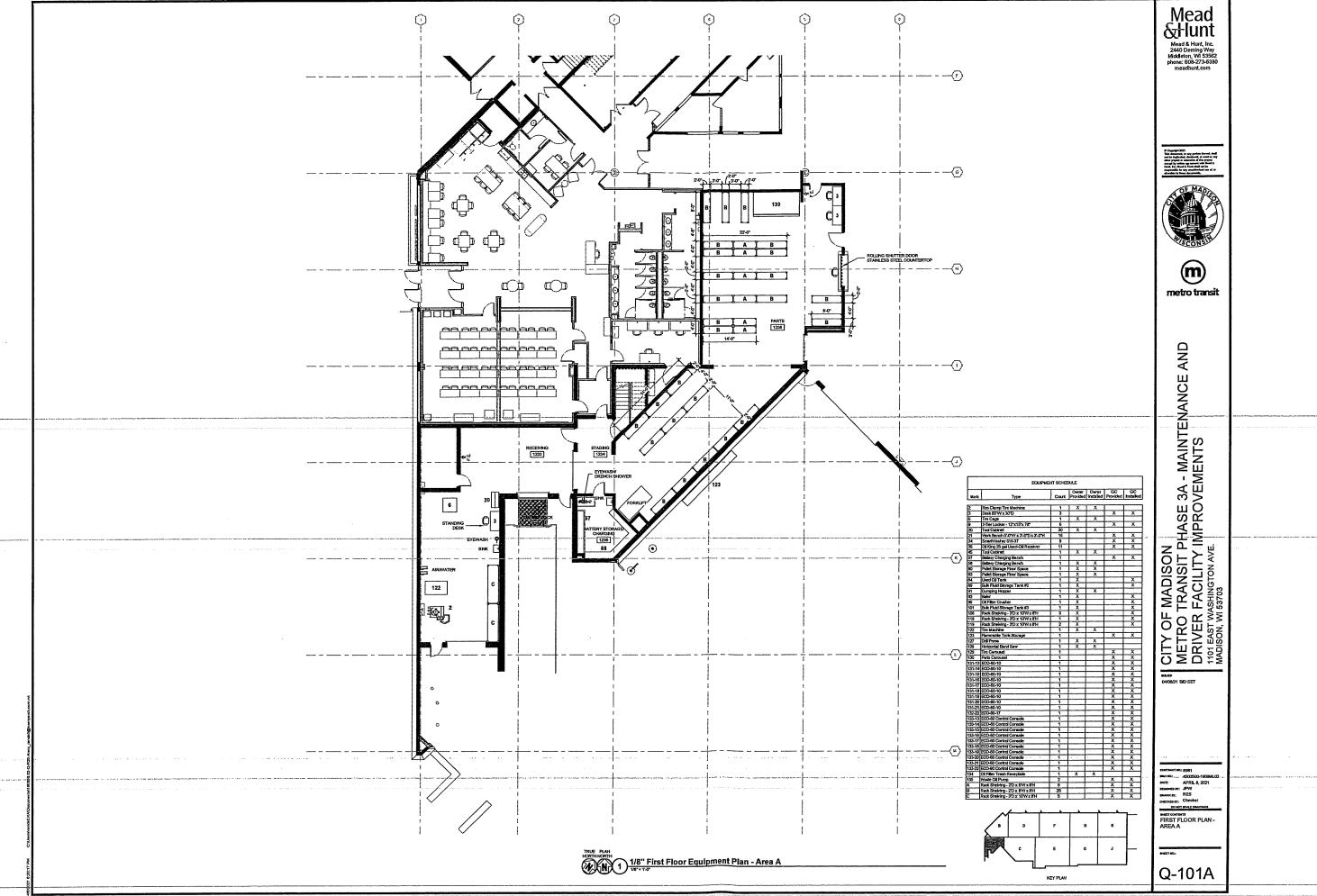
I-601



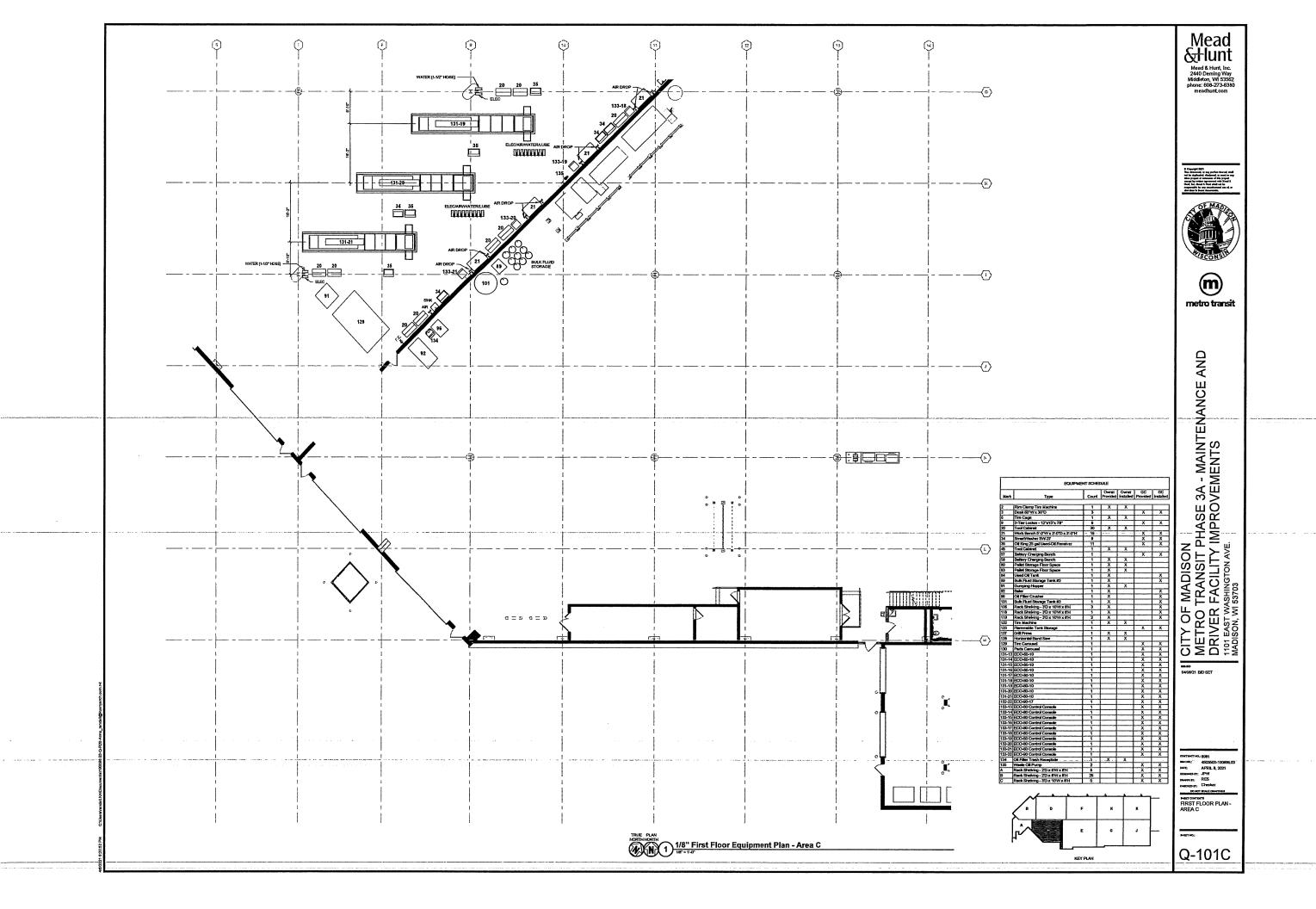
12 (GINA-2

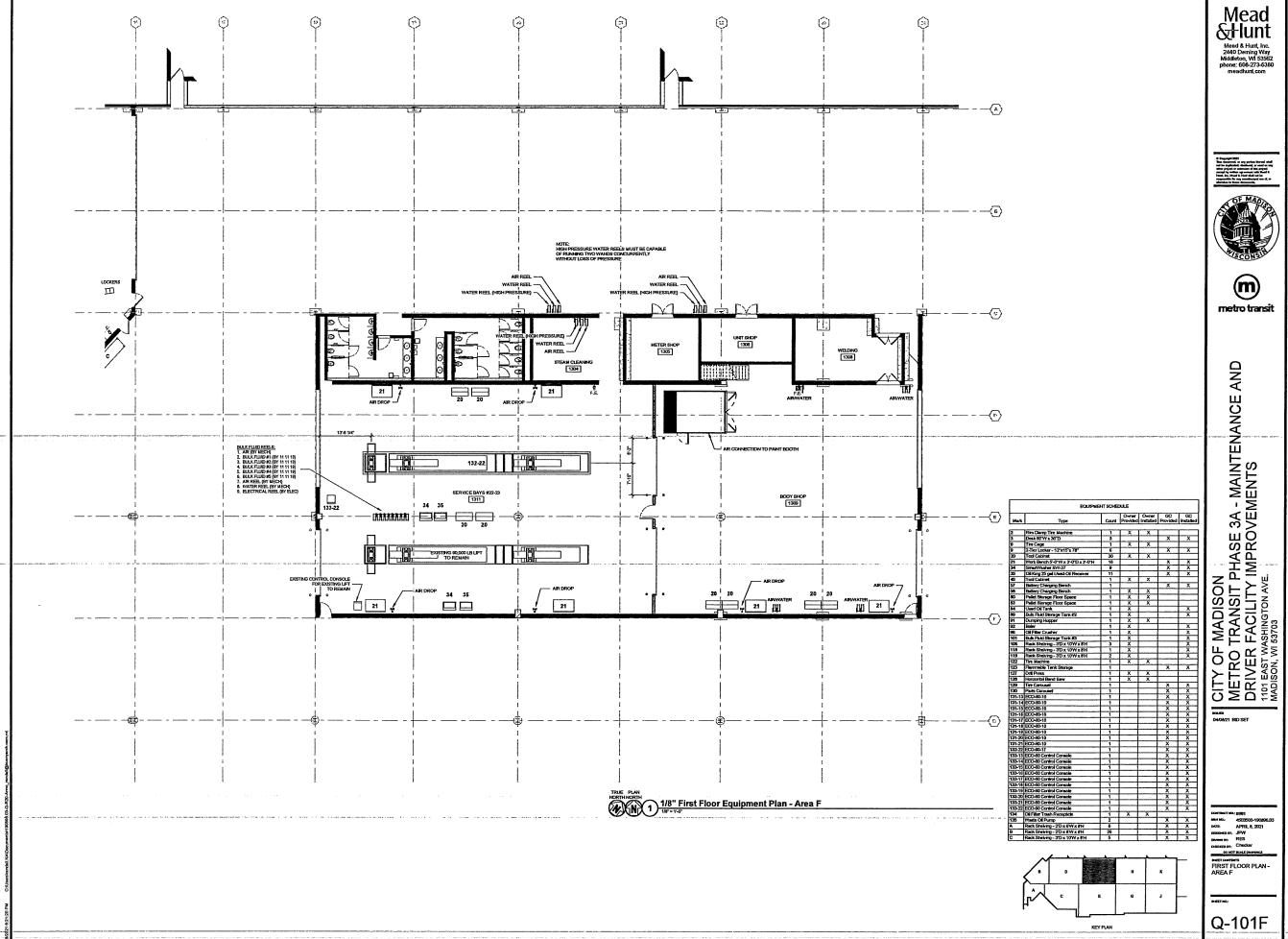




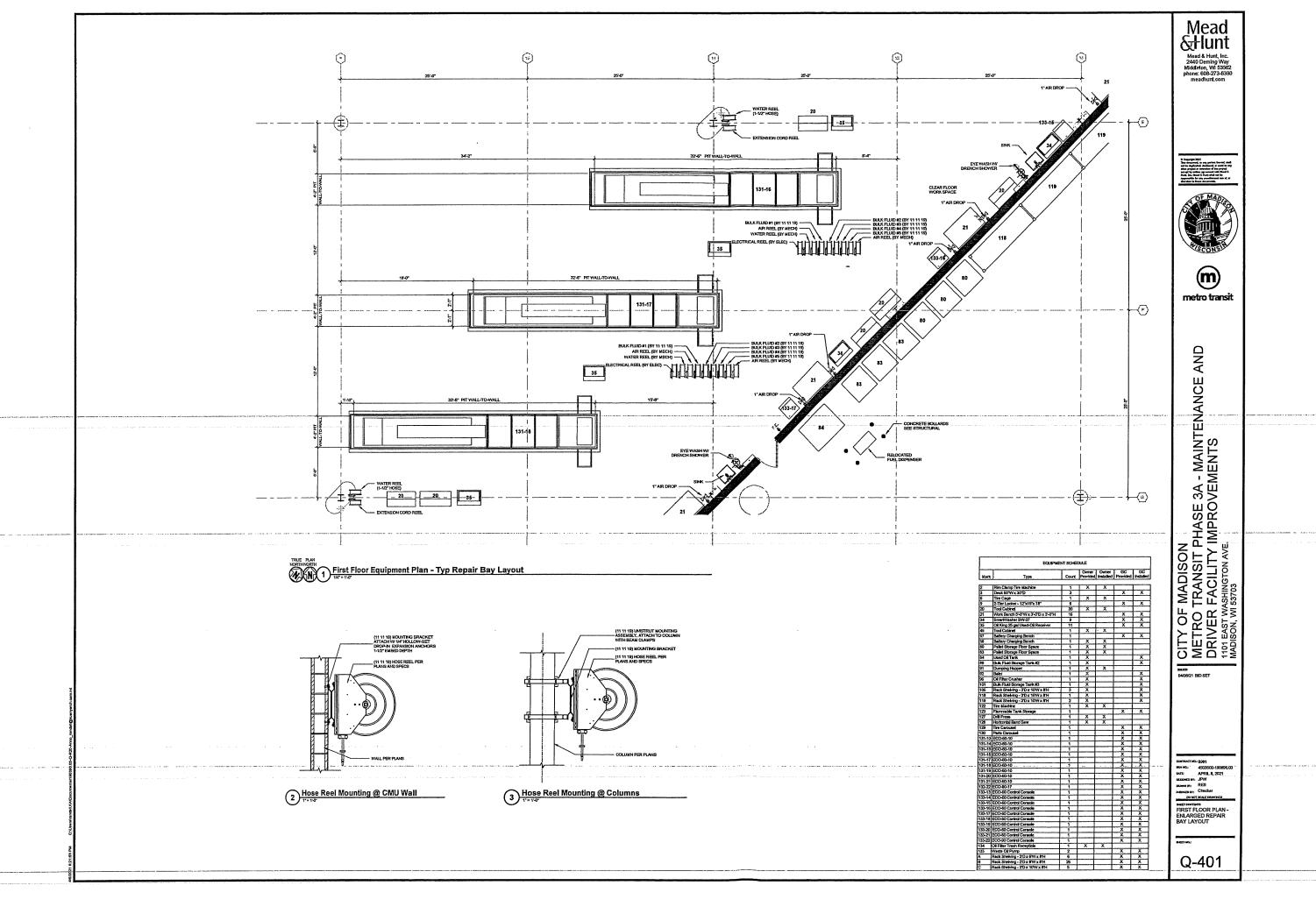


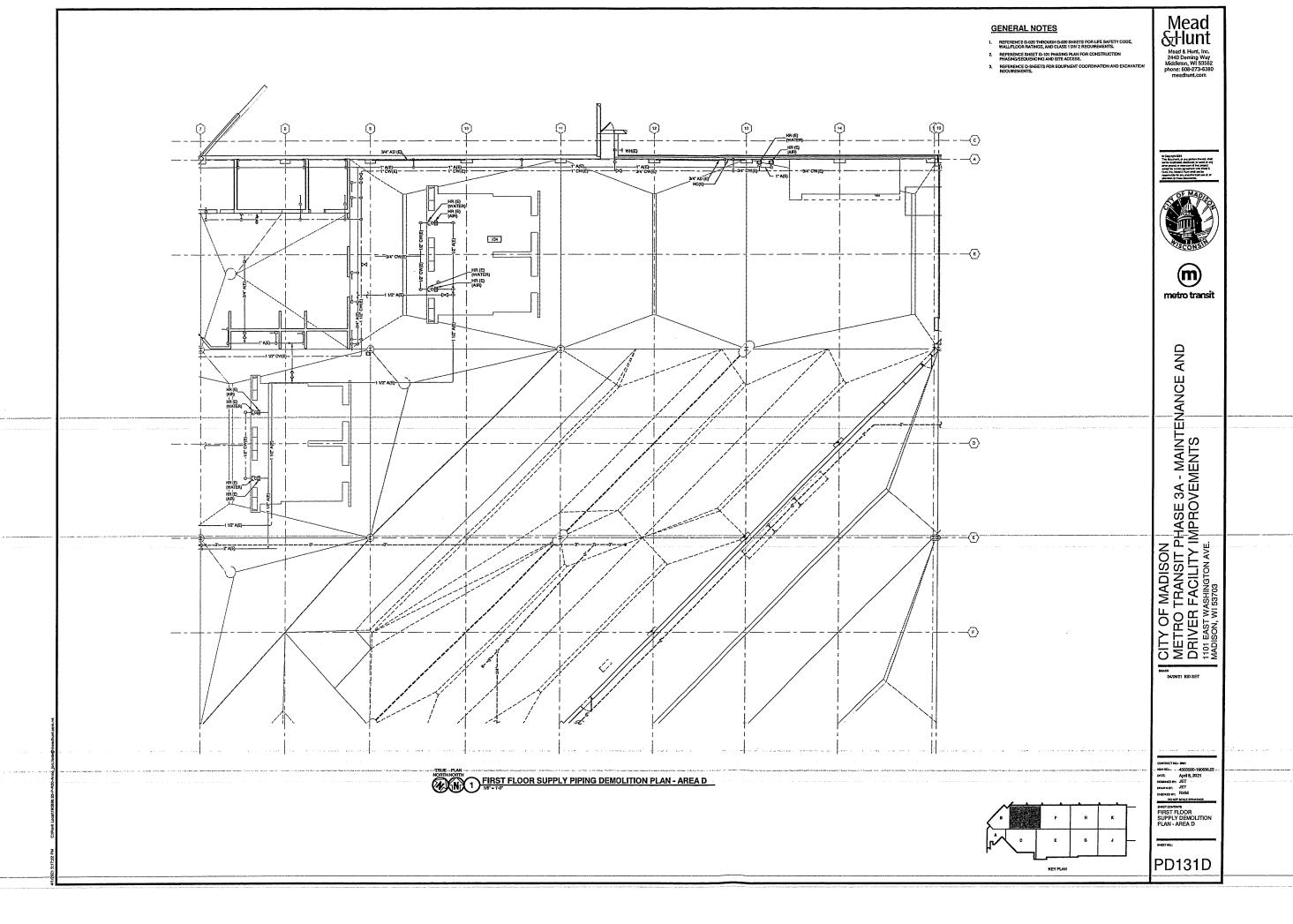
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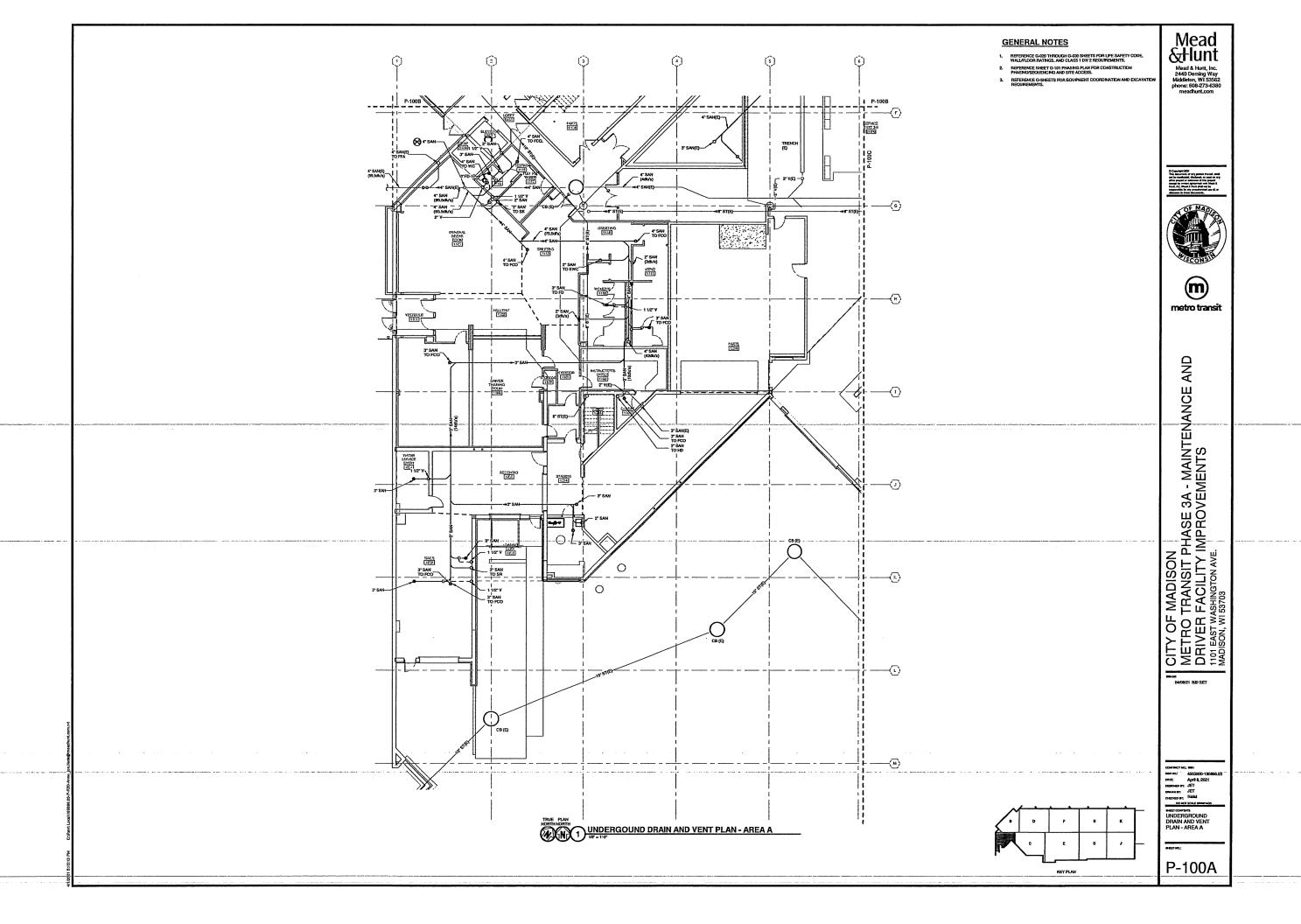


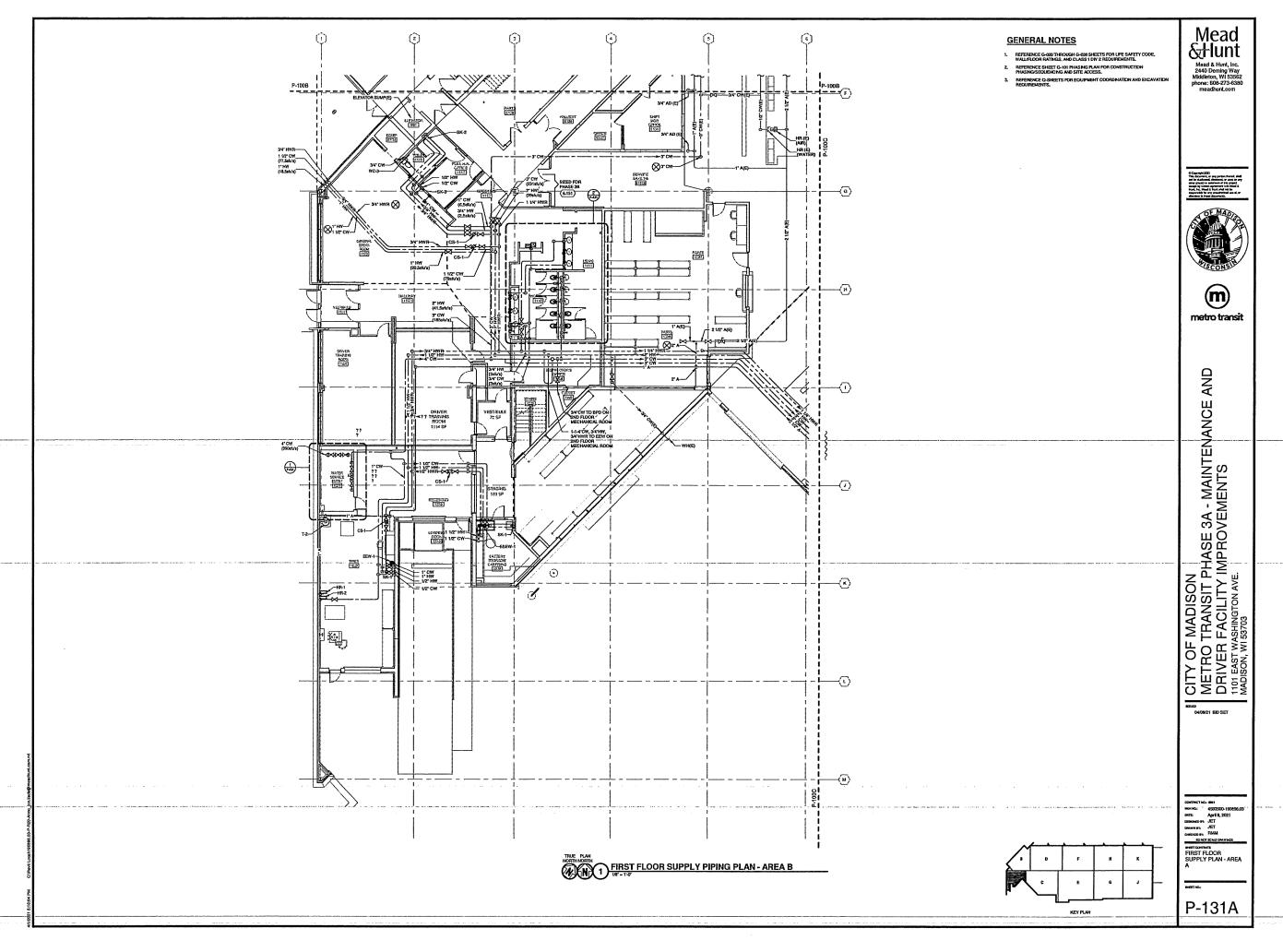


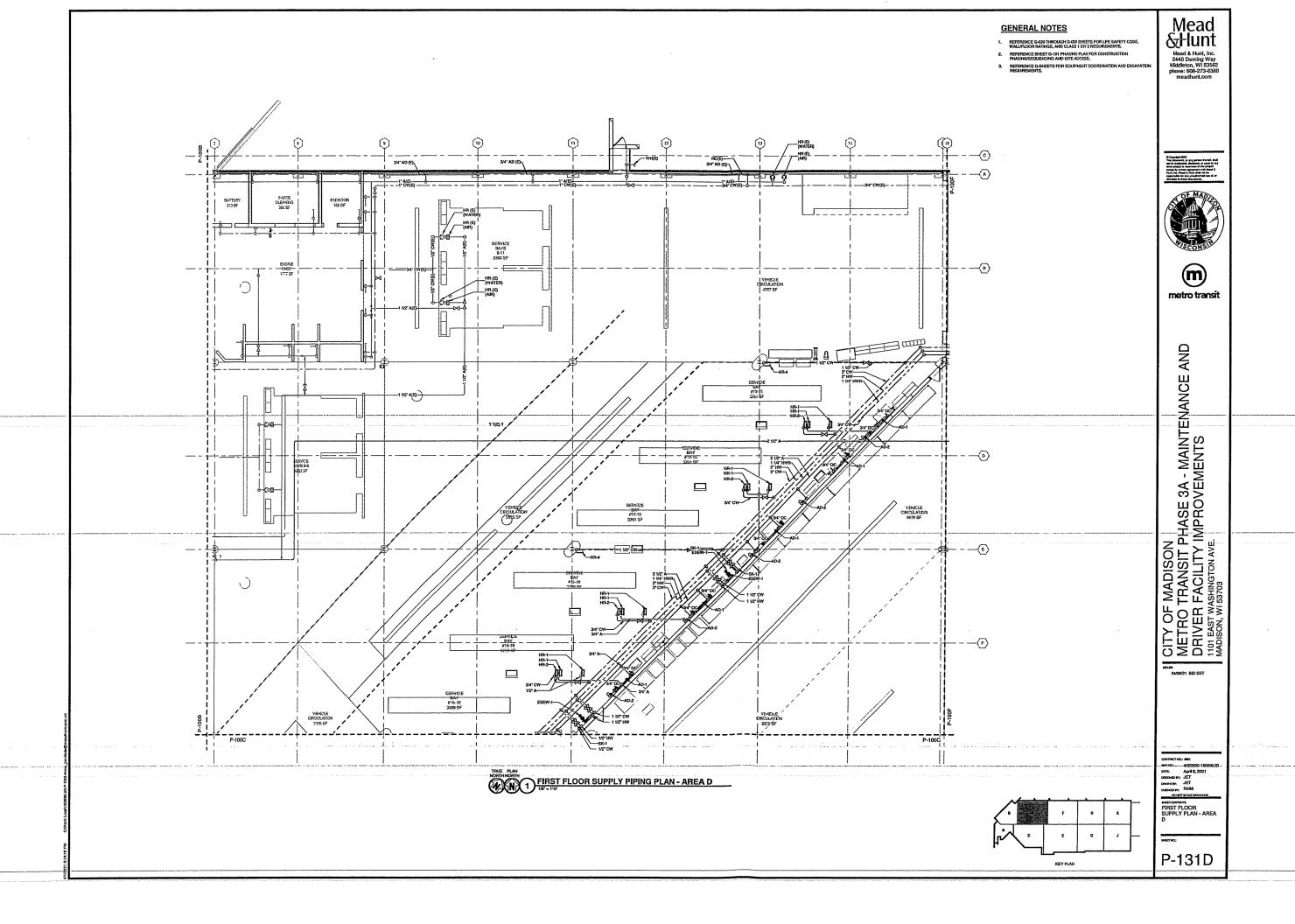
1816, 1NU - 7

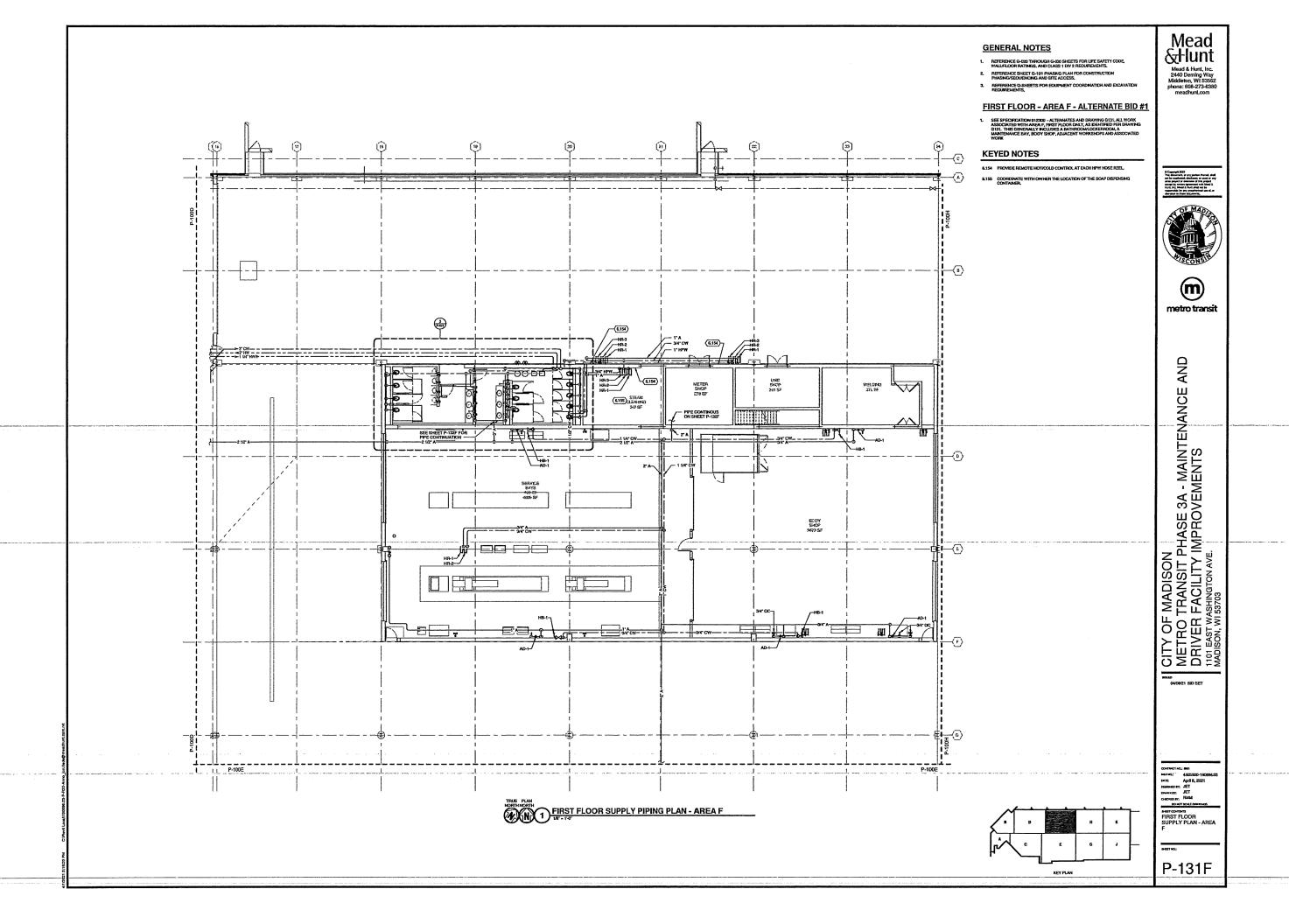


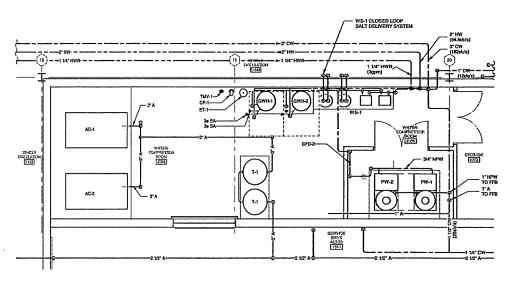










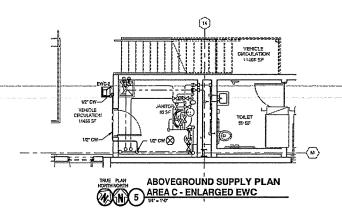


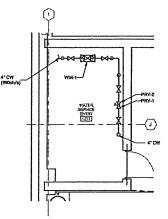
SECOND FLOOR DRAIN AND VENT PLAN

AREA F - ENLARGED WATER COMPRESSOR ROOM

16'-10'

16'-10'

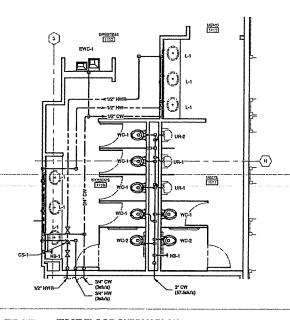


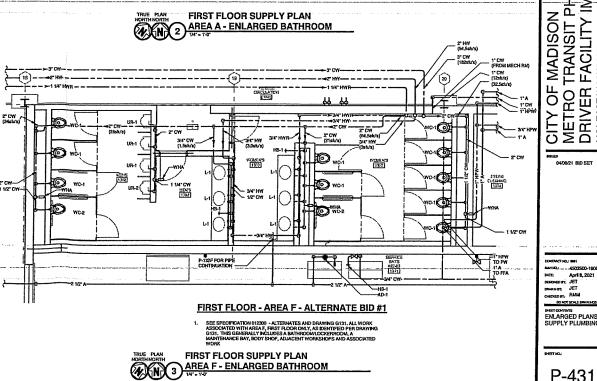


FIRST FLOOR SUPPLY PLAN

AREA A - ENLARGED WATER SERVICE ENTRY

W-197





AND CITY OF MADISON
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1101 EAST WASHINGTON AVE.
MADISON, WI 53703

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ENLARGED PLANS SUPPLY PLUMBING

P-431

INTERLOCK AT-1 WITH EXHAUST FAVIS FEF-6, FEF-7, AND EF-35 WITH LOCAL SWITCHES. EXHAUST FAVI EF-35 SHALL BE INTERLOCK GAS DETECTION AND MAU-8(EL

Γ			1	EXISTIN	IG AJR	TERMI	VAL (A	г) ѕсні	EDULE	- REBA	LANCE				
-		***************************************		AIR FLO	W (CFM)	(1)	INLET		OUTLET						
١.	MARK	MANUFACTURER, MODEL NUMBER	TYPE	MAX.	MH	HAX, PD (IN, WC)	SIZE	HTG(W (Ni)	DEPTH (NA)	QTY.	INTERLOCK	WEIGHT (LB)	ACCESSORIES	LOCATION	REMARKS
A	T-1(E)	TITUS, DESV	1,3	3,300	1,000	0.35	24X16	38	18	•	(4)	150	3	ZONE 3	(3)
A	T-2(E)	TITUS, DESV	1,3	600	0	0.35	16	24	18	-		130	3	ZONE 3	(3)
A	T-3(E)	TITUS, DESV	1,3	2,350	0	0.35	15	24	18	-	EF-18	130	3	ZONE 3	(3)
A	T-4(E)	TITUS, DESV	1,3	720	0	0.35	8	16	10	•	EF-14	100	3	ZONE 3	(2)
┝		TYPE						L	I		ACCE	SSORIES	L	L	l
Г	1	PRESSURE INDEPENDENT	5	SERIES F	AN POW	ERED	1	ELECTR	CHEAT			5	FACTORY MOU	NTED TRAN	SFORMER
	2	PRESSURE DEPENDENT	6	PARALLE	L FAN PO	WERED	2	FUSE				6	FACTORY MOU	NTED DISCO	NNECT SWITCH
	3	SINGLE DUCT	7	BYPASS			3	DDC COR	TROLS						
1	4	DUAL DUCT					4	PNEUMA	TIC CONTI	ROLS					

	FAN FILTER UNITS (FFU) SCHEDULE																					
								PRE	FILTER			FINA	L FILTER			CARBO	N FILTER		(2)		l	
							MEDIA		PRESS DRO	P. ("WG)			PRESS DRO		MEDIA		PRESS DR	OP. ("WG)	MITG.	l		
l M	RK	MANUFACTURER, MODEL NUMBER	AIR FLOY (CFM)	(ESP (EN WC)		(VOLTS/PH)		RATING	INTIAL	FINAL	LENGTH (IN)	MERY RATING	INITIAL	FINAL	LENGTH (IN)	MERV RATING	PATTIAL.	FINAL.	HEIGHT (FT)	WEIGHT (LB)		REMARKS
FF	U-1	AIRMATION, AMB-302GM	3,000	0	1	208/1	4	8	0.3	1	12	16	0.5	1.5	12	•	0.5	1	19-8	300		(3)
FF	U-2	AIRMATION, AMB-302GM	3,000	0	1	208/1	4	8	0.3	1	12	16	0.5	1.5	12	-	0.5	1	19-6	300		(3)
FF	U-3	AIRMATION, AMB-302GM	3,000	0	1	208/1	4	8	0,3	1	12	16	0,5	1.5	12	-	0.5	1	19-8	300	1309	(3)
														1.7.7.7								1
(1) (2)	MARKS; SEE SEQUENCE OF OPERATION SPECIFICATION SECTION 22 99 93. MOUNTING HEIGHT IS FROM FINISHED FLOOR LEVEL TO BOTTOM OF UNIT. PROVIDE WITH TIMES CONTROLLER IN THE NEWA & BOXCOSURE.																					

						FU	IME EX	TRACT	OR (FE) SCHED	ULE						
			HOSE	APPROX.	WORKING	RAIL-A	RM LENG	THS (UI)		MTG.	E	LECTRICAL					
MARK	MANUFACTURER, M	ODEL NUMBER	DIA. (IN)	AIR FLOW (CFM)	RADIUS (FT)	A	В	C	MTG. TYPE	HEIGHT (F1)	VOLTS/PH	MOTOR (HP)	MOTOR TYPE	ACCESSORIES	WEIGHT (LB)	LOCATION	REMARKS
FE-3	NEDERMAN, AHU150		6	1800-2100	-	6	12	840	R	15	460/3	3	ODP	2, 12	•	ROOM 1220	
FE-4	NEDERMAN, AHU150		6	1500-2100	-	6	12	840	R	15	460/3	3	ODP	2, 12	-	ROOM 1218	
FE-5	NEDERMAN, AHU150		6	1800-2100	-	6	12	840	R	15	460/3	3	ODP	2, 12	-	ROOM 1218	
FE-6	NEDERMAN, AHIL1150		6	1800-2100	-	6	12	780	R	15	450/3	3	ODP	2, 12	-	ROOM 1311	
FE-7	NEDERMAN, AHU150		6	1800-2100	•	6	12	780	R	15	460/3	3	ODP	2,12	-	ROOM 1311	(1)(2)
M	OUNTING TYPE			MOTO	R TYPE								ACCE	SSORIES			
WL.	WALL.	ODP OPEN	ORIP PRO	OF.					1	HOOD SPO	TLIGHT	6	STARTER		11	3 SEMI-RIGID	HOSE EXTENSE
CL	CEILING	TEAO TOTAL	LY ENCLO	SED AIR-OVE	3				2	HOOD FAN	SWITCH	7	10' EXTENS	BION HOSE	12	MOUNTING H	ARDWARE
FR FLOOR TENY TOTALLY ENCLOSED NON-VENTILATED										3 WELDER INTERLOCK 8 ELECTROSTATIC FILTER							
BN	BENCH	XPL EXPLO	SION PRO	OF					4 AUTOMATIC DAMPER 9 MECHANICAL FILTER								
DU	DUCT								5	CONTROL	YBAL	10	CARBON F	LTER			
R	RAIL SYSTEM								1								

(1) ALU 150 RAIL WITH SPRING EXHAUST HOSE REEL. PROVIDE QUANITY OF THREE HOSE REEL TROLLEYS FOR EACH FUME EXTRACTOR TRACK SYSTEM.

TER CARTS PER SECTION 23 34 00. REFER TO SECTION 23 34 00 FOR ADDITIONAL ACCESSORIES.

								TYICTIN	IC EYH	AUST FAN (E	E/ SURE	DUI E	REBAI	ANCE							
								~311	TO EAT	MUDI PANE	1 / JUNE	- ::::-	ILDM								
			AIR FLOW			MOTOR		FAN			(Z) MTG.	MA	XIMUM SC	CIND	(1)	OPEN	NG (IN)				
		FAN	RATE	ESP				SPEED	DRIVE	ELECTRICAL.	HEIGHT	(3)	(4)	INSTALL.	INTERLOCK				WEIGHT		
ARK	MANUFACTURER, MODEL NUMBER	TYPE	(CFM)	(IN WC)	HP	BHP	TYPE	(RPM)	TYPE	(VOLTS/PH)	(FI)	(ĎĖ)	SONES	TYPE	WITH	LENGTH	MIDIH	ACCESSORIES	(LB)	LOCATION	REMARKS
4(E)	EXISTING	5	1210	0.75	1/2	ECM	1800	1254	DIRECT	115/1	-	-	14.6	-	BAS	-	-	20	130	ZONE 2	
	EXISTING	5	500	0.50	1/12	ECM	1750	1709	DIRECT	115/1	-	-	7.7	-	T-STAT	10.5	10.5	20	65		ELEC ROOM
	EXISTING	3	5,000	5.00	10	TEFC	1800	1739	DIRECT	450/3		-	-	-	MAU-4/5(E)	-	-		615	ZONE 2	
-8(E)	EXISTING	5	695	0.5	1/6	ECM	1750	1152	DIRECT	115/1	•	-	6.7	•	AC-D1(E)	18.5	18.5	20	110	ZONE 2	
13(E)	EXISTING	5	700	0,5	1/2	ECM	1750	1100	DIRECT	115/1		-	8.2	-	T-STAT	18.5	1B.5	20	115	ZONE 3	
14(E)	EXISTING	5	735	0.5	1/2	TEFC	1750		DIRECT	115/1				-	MAU-8(E)	18.5	18,5	20	115	ZONE 3	
15(E)	EXISTING	3	1,130	3.50	1.5	TEFC	3600	3294	DIRECT	460/3	-	-	25	-	SWITCH W/MAU-8(E)	•	-	2	165		DEMO
16(E)	EXISTING	3	400	3.50	0.5	ECM	1750	1730	DIRECT	115/1		+	-	-	SWITCH W/MAU-8(E)	-	-	2	65		DEMO
-17(E)	EXISTING	3	1150	3.25	1.5	TEFC	3600	3237	DIRECT	460/3	-	-	25	-	SWITCH W/MAU-8(E)	-	,	2	165		DEMO
18(E)	EXISTING	3	3,500	3.00	3	TEFC	1481	1750	DIRECT	460/3		-	19,2	-	SWITCH W/MAU-8(E)	-	-	2	340	ZONE 3	
19(E)	EXISTING	3	3,800	0.75	2	TEFC	1351	1000	DIRECT	460/3		•	12.1	•	MAU-8(E)	•	-	2	234	ZONE 3	
20(E)	EXISTING	3	1,150	3.25	1.5	TEFC	3500	3237	DIRECT	460/3	•		25	-	SWITCH W/MAU-8(E)		-	2	165	ZONE 3	DEMO
27(E)	EXISTING	5	15,175	0.75	10	TEFC	860	863	DIRECT	460/3	•	-	34	•	MAU-4/S(E)	47	47	20	675	ZONE 2	
25(E)	EXISTING	5	15,175	0.75	10	TEFC	860	863	DIRECT	450/3	•	-	34	-	MAU-4/5(E)	47	47	20	675	ZONE 2	
29(E)	EXISTING	3	2,600	2.50	2	TEFC	1750	1477	DIRECT	460/3	•	-	16	-	MAU-8(E)	-	-	-	211	ZONE 3	OKAD
30(E)	EXISTING	2	8,000	0.50	3	TEFC	-	-	-	460/3	•	-	•	-	MAU-8(E)	-	-	-	-	ZONE 3	
	FAN T	YPE	YE .						MOTO	RTYPE			IKS	TALLATION	TYPE						
	CENTRIFUGAL		AXIAL ODP					IP PROOF	F			A	FREE INL	ET, FREE O	ULET						
1	SIDEWALL	8 ROOFTOP DOWNBLAST TEFC TOTALLY ENC					ENCLOS	SED FAN COOLED				B FREE INLET, DUCTED OUTLET									
	DAINE	9	9 SIDEWALL PROPELLER XPL EX					L EXPLOSION PROOF					C DUCTED INLET, FREE OUTLET								
-			S SIDEWALL PROPELLER XPL									_				1					

!	INLINE	9	SIDEWALL PROPELLER	XPL	EXPLOSION PROOF	С	DUCTED INLET, FREE OUTLET	
1	UTILITY	10	TUBE AXIAL	WV	INVERTER DUTY	D	DUCTED INLET, DUCTED OUTLET	
ı	CABINET	11	VANE AXIAL	TEAO	TOTALLY ENCLOSED AIR OVER	REMAR	KS:	
•	ROOFTOP UPBLAST	12	MIXED FLOW	1		(1)	SEE SPECIFICATION SECTION 230993 - HVAC SI	EQUENCE OF
			DOOFTOD FOR URBILART			/01	MOUNTAIN DESCRIP SE EBOM EMBERED IS DOES!	EVER OF BUD

HINGED ROOF CURB

MALET GRALLE

DUCT ADAPTOR

HANGING SPRING ISOLATORS

28 HANGING NEOPRENE ISOLATORS
29 FACTORY INSULATED ANGLED FILTER BOX

12 MIXED FLOW 13 ROOFTOP FRP UPBLAST ROOFTOP FILTERED SUPPL

SEE SPECIFICATION SECTION 230993 - HYAC SEQUENCE OF OPERATION.
MOUNTING HEIGHT IS FROM FINISHED RLOOR LEVEL OF INDICATED ROOM, TO TOP OF FAN OR W
SOUND POWER LEVEL RATING FOR ANCA 301.
LOUDNESS VALUES AT 5 FT IN A HEMISPHERICAL FREE FIELD PER AMCA 301. 11 OUTLET WIRE GUARD HOODED WALL CAP GRAVITY BACKDRAFT DAMPER

(m)

Mead & lunt Mead & Hunt, Inc. 2440 Deming Way Middleton, WI 53562 phone: 608-273-6380 meadhunt.com

O Empregática:
This discourse; or any purpose thereof, of all and his disclosure; or any purpose thereof, of all and his disclosure; or common of the prompted integral by written a programment with bland it.

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metro transit

Ω Ш $\overline{\mathbf{O}}$ ENAN(MAINTE IENTS

CITY OF MADISON
METRO TRANSIT PHASE 3A - M
DRIVER FACILITY IMPROVEMEI
1101 EAST WASHINGTON AVE.
MADISON, WI 53703 04/08/21 BID SET

CONSMICTAL: 5981
MANIMO: " 4503500-190896.00
DATE APRE 8, 2021
DESCRIPTO DAG
DARRINE: BRITY
DARRINE: SHY
DO NOT SCHE DIMININGS

HVAC SCHEDULES

M-603

		1	EXISTIN	IG AJR	TERMI	IAL (A	г) ѕсні	EDULE	- REBA	LANCE				
 			AIR FLO	W (CFM)	(1)	INLET		OUTLET						
MARK	MANUFACTURER, MODEL NUMBER	TYPE	MAX.		MAX, PD (IN, WC)	SIZE	HTG(W (Ni)	DEPTH (N)	QTY.	INTERLOCK	WEIGHT (LB)	ACCESSORIES	LOCATION	REMARKS
AT-1(E)	TITUS, DESY	1,3	3,300	1,000	0.35	24X16	38	18	•	(4)	150	3	ZONE 3	(3)
AT-2(E)	TITUS, DESY	1,3	600	0	0.35	16	24	18	-		130	3	ZONE 3	(3)
AT-3(E)	TITUS, DESV	1,3	2,350	0	0.35	15	24	18	-	EF-18	130	3	ZONE 3	(3)
AT-4(E)	TITUS, DESV	1,3	720	0	0.35	8	16	10		EF-14	100	3	ZONE 3	(2)
	TYPE									ACCE	SSORIES			
1	PRESSURE INDEPENDENT	5	SERIES	AN POWI	RED	1	ELECTR	CHEAT			5	FACTORY MOU	NTED TRAN	SFORMER
2	PRESSURE DEPENDENT	6	PARALLE	L FAN PO	WERED	2	FUSE				6	FACTORY MOU	NTED DISCO	ONNECT SWITCH
3	SINGLE DUCT	7	BYPASS			3	DDC COR	TROLS						

(1) MAXIMUM STATIC PRESSURE DROP BASED ON MAXIMUM RATED AIR FLOW
(2) CONSTANT VOLUME AIR TERMINAL VARIABLE VOLUME AIR TERMINAL

HVAC DUCT SCHEDULE DUCT MATERIAL | PRESS, CLASS | LEAKAGE CLASS | CLASS | SEAL (NWC) | CLASS | RECT. | ROUND | SYSTEM

DUCT CONNECTED TO TERMINAL UNITS

DUCT CONNECTED TO CONSTANT VOLUME MAU ROOFTOP UNITS ASTM A 653 MILL PHOSPHATIZED G90 GALY. DEICT CONNECTED TO VARIABLE ARE VOLUME ARLUBOOFTOP UNITS GRO GALV. ASTM A 653 MILL PHOSPHATIZED DUCT CONNECTED TO OTHER FAN POWERED EQUIPMENT ASTM A 653 MR.L. PHOSPHATIZES DUCT CONNECTED TO TERMINAL LINES 12 6 DUCT CONNECTED TO AHUMAU ROOFTOP UNITS
DUCT CONNECTED TO OTHER FAN POWERED EQUIPMEN ASTM A 653 MILL PHOSPHATIZED
ASTM A 653 MILL PHOSPHATIZED G90 GALV DUCT CONNECTED TO EXHAUST FANS
DUCT CONNECTED TO AHUMAU ROOFTOP UNITS
DUCT CONNECTED TO OTHER FAN POWERED EQUIPMENT 12 6 ASTM A 653 M8 I PHOSPHATIZED G90 GALV. ASTM A 653 MILL PHOSPHATIZED G90 GALV. ASTM A 653 MILL PHOSPHATIZED DUCT CONNECTED TO FANS EXHAUSTING HIGH HUMIDITY AIR - EXPOSED TO VIEW DUCT CONNECTED TO FANS EXHAUSTING HIGH HUMIDITY AIR - CONCEALED ASTM B 209 BAIGHT SEAL LICENDATIONE SLOPE TOWARD GREEF 12 6 12 6 DUCT CONNECTED TO TERMINAL UNITS
DUCT CONNECTED TO ANU AND MAJU UNITS
DUCT CONNECTED TO OTHER FAN POWERED EQUIPMEN ASTU A 653 MB I PHOSPHATIZED ASTM A 653 MILL PHOSPHATIZED
ASTM A 653 MILL PHOSPHATIZED G90 GALV. ASTM A 653 4 MILL PVC 1 B 12 6 1" THICK, PROVIDE EROSION RESISTANT COATING (7)

ASTM A 653 MILL PHOSPHATIZED G90 GALV. FITTINGS

ECTANGULAR DUCT ELBOWS (COMPLY WITH SMACHA'S "HYAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE," FIGURE 2-2, "RECTANGULAR ELBOWS.")

ECTANGULAR DUCT ELBOWS (COMPLY WITH SAUCANS THYLO DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE, "FIGURE 22, "RECTANGULAR ELBOWS.")

— RADIUS TYPE RE 1 WITH MARIMAN IS PADUIS TO DUALETER RATIO OND TWO VAMES.

MITTERD TYPE RE 2 WITH VANES COMPLY'RE WITH MARIMAN IS PADUIS TO DUALETER RATIO AND TWO VAMES.

MITTERD TYPE RE 2 WITH VANES COMPLY'RE WITH MARIMAN IS ADAILS TO DUALETER RATIO OND TWO VAMES.

MITTERD TYPE RE 2 WITH VANES COMPLY'RE WITH MARIMAN SAUCANS THAN DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE, "FIGURE 2-3, "VAMES AND VANE RUNNERS," AND FIGURE 2-4, "VANE SUPPORT IN ELBOW XIND DUCT ELBOWS.")

RADIUS TO DUALETER RATIO: 1.5

ROUND ELBOWS, 12 WICHES AND SMALLER IN DUALETER. STAMPED OR PLEATED

ROOFTOP HOODES

WEATHERHOOD

WALL COLLAR MOTOR WIRE GUARD

INLET WIRE GUARD

MOTOR (OSHA) WIRE GUARD

NON-RUSED DISCONNECT SWITCH

SHUTTER GUARD FAN SPEED CONTROLLER

INLET FILTER GUARD

HOUSING INSULATION

BELT (OSHA) WIRE GUARE

INI ET/OUT ET ELANGES

INLET VANE DAMPER

EXTENDED LUBE LINES

13 MOTOR COVER

INLET BELL

20 MFR. ROOF CURB

ROUND ELBOWS, 14 INCHES AND LARGER IN DIAMETER: WELDED

NGULAR BRANCH DUCT CONFIGURATION (COMPLY WITH SMACHA'S THYAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXBLE, "FIGURE 2-6, "BRANCH CONNECTIONS.")

AUCH DUCT CONFIGURATION (COMPLY MITH SMACHAS MYAC DUCT CONSTRUCTION STANDARDS - NETAL AND FLEXIBLE, PROVIDE 26, SHAWCH CONNECTIONS:)

RECTANGULAR MAINTO ROUND BRANCH: SPHI IN

DUCT CONFIGURATION (COMPLY WITH SMACHAS "HYAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE," FIGURE 3-4, "90 DEGREE TEES AND LATERALS," AND FIGURE 3-5, "CONICAL TEES." SADDLE TAPS ARE PERMITTED IN EXISTING DUCT) VELOCITY 1500 FT/MIN AND LOWER: CONSCAL TAP VELOCITY GREATER THAN 1500 FT/MIN: 45" LATERAL

REMARISS:

(1) PROVIDE PAINT GRIP TYPE DUCT WHERE DUCT IS EXPOSED AND INDICATED TO BE PAINTED.

(2) INSTALL DUCT ACCORDING TO SMACIAN'S "PAIG DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE" UNLESS OTHERWISE INDICATED.

(3) INTERMEDIATE REINFORCEMENT MATERIAL SHALL MATCH DUCT MATERIAL.

(4) SUPPLY AIR DUCTS PASSING THROUGH UNCONDITIONED OR OUTDOOR SPACES SHALL BE SEAL CLASS A (ASHRAE 90.1 - 2007).

SECTION AND DUCTS PASSING THROUGH OUTDOOR OF OUTDOOR AND ESTAIL BE SEAL CLASS A VESTION AND THROUGH STATEMENT OF THROUGH OUTDOOR STATEMENT OUTDOOR



Department of Public Works

Engineering Division

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May 19, 2021

NOTICE OF ADDENDUM
ADDENDUM NO. 3
City of Madison, Engineering Department

CONTRACT NO. 8981

METRO TRANSIT PHASE 3A - MAINTENANCE AND DRIVER FACILITY IMPROVEMENTS

This addendum is issued to modify, explain or correct the original Drawings, Specifications, or Contract Documents marked as *Metro Transit Phase 3A-Maintenance and Driver Facility Improvements, City of Madison, Contract* #8981, as issued on April 8th, 2021 and is hereby made a part of the contract documents.

This addendum consists of the following documents:

Please-attach-these-Addendum-documents-to-the-Drawings-(Exhibits-A-and-B), Specifications (Exhibits-B-and-C), and Proposal Specifications in your possession.

1. GENERAL CONTRACT CONDITIONS

A. None

2. GENERAL QUESTIONS AND ANSWERS

- A. On sheet S-151A, between grids G-I and 3-5 there are joists being added between the existing joists. During the walkthrough, it was observed that there are several mechanical, electrical, and plumbing conflicts in the spaces between the joists where new joists are to be added. See photo below as an example. The MEP drawings do not identify or address these conflicts. Please clarify what is to happen in these locations.
 - i. Note 10 of the Roof Framing General Notes states "IT IS THE CONTRACTOR'S RESPONSIBILITY TO REMOVE AND REINSTALL ANYTHING IN THE WAY OF THE INSTALLATION OF NEW JOISTS.
 - ii. Most of the conduit shown is planned for demo. Coordinate trades to determine the appropriate course of work.
- B. Please clarify based on past phases and/or existing building information if the existing concrete slab on grade contains concrete reinforcement, welded wire reinforcement or no reinforcement.
 - i. The 1979 drawings show: 6 ½" slab on compacted fill with WWF 66x44.
- C. Please clarify the following concerning Room 2121 on sheet A-102B
 - i. Drawings seem to indicate a new partition (along with a dashed line) on the plan southwest of room. We can find indication of what this is to be.



- The indication for the partition is noted for information for the current communications room equipment layout. Partition will be provided in forthcoming project and is not part of the current construction package.
- ii. The walk through did not go to this area. Can you confirm the construction of the existing plan northwest wall that contains call out note 4.117
 - Wall is of gypsum and metal stud construction.
- iii. Note 4.116 is referenced. Can you confirm that intent of note is to mount panels "up to" 7'-0" AFF in lieu of "@" noted. Also considering question item a). above if just the perimeter walls get plywood or potentially the new "partition" on both sides too?
 - Plywood panels are to be mounted with the top at 7'-0." Future wall is not part of the current project and will not require plywood.
- D. Please provide the TOW elevations for the loading dock retaining wall on drawing S-101A?
 - i. The top of the foundation wall is the bottom of the slab. The slab is shown on S-111A. Top of wall elevations will be added to S-101A.
- E. Detail 15/S-501 calls out 2" rigid around the trench drain and dock ramp slab; however, on S-111A the dock slab is called out as SLB06. Should this slab be SLB06R or disregard the insulation requirement?
 - i. The slab around the low end of the loading dock will stay SLB06. The underslab insulation is required as shown on details 15, 16 and 17 on S-501. SLB06R includes 2" of sand that is only needed for hydronic heating conduit. Hydronic heating is not needed at the loading dock and so the sand is not needed.
- F. Under the compressed air piping in 22 15 13 2.1A, would either the Champion Quick Lock and/or the Rapidair Fastpipe Aluminum piping systems be acceptable in lieu of the SCH40 steel currently called out?
 - i. No. Provide 40 steel pipe as specified. Existing system is steel pipe and will need to be maintained until future phases occur.
- G. Will alternate vehicle lift manufacturers be acceptable?
 - i. No. Stertil-Koni is the only approved manufacturer for the in-ground lifts as the established building standard.
- H. Does the project want dual shades (both mesh and blackout) in the Training Room? And mesh only in the Breakroom? The only powered shades are in the Training Room, correct?
 - i. Correct, Driver Training #1104 should have dual shades with 5% open mesh and black out fabric. Breakroom #1103 will only have the 5% open mesh no black out fabric. You are also correct about powered shades only in the Training room.
- I. On sheet QD-101A note at 1.L line there is a note that states to "Demo Existing Flammable Tank Storage Construct Matching Chain Link Fence Enclosure at Location Per Equipment Plans". There is also a mark note of #123 which just states flammable tank storage. We are unable to find "...at location per equipment plans" per the stated note on equipment plans or any reference on architectural plans. Please clarify what the flammable tank storage is, what size it is to be, what materials it is comprised of, and provide a specification section for chain link fence/posts if that is part of the storage construction.
 - i. Existing flammable tank storage (denoted by #123 on sheet QD101A) is a chain link fence enclosure, and shall be demolished. A new flammable tank storage enclosure shall be constructed at the location shown on sheet Q101A, also denoted by #123. See sheet Q101A for typical fencing detail and enclosure layout. Material from the existing chain link fence



enclosure may be reused if they are in excellent condition (free of rust, defects, etc.) and compatible with new construction.

J. Spec Section 11 11 19 Lubrication Systems

- i. 1.4 E Talks about the mounting of the lube reel banks. After looking through the drawings, I see where Q102 notes that the mounting details are with the structural drawings. I went through the structural drawings and have been unable to find any specific info on the reel bracketing required for the lube reel banks that are to be hung from the ceiling. My experience tells me that these brackets could be very expensive depending on what is intended. Hoping you can provide a drawing of what is required.
 - Each reel will require a Lincoln Model 85242 Heavy Duty Reel Mounting Kit. This mounting kit will attach to the structural angles provided in detail 16/S-541 at each reel bank (also see sheets S-151C and S-151D, keyed note 3.507). Alternate reel manufacturers may require a unique mounting bracket.
- ii. 2.1 D states e-stops are to be supplied for a lube dispensing station. I do not see a tapper or other dispensing station shown. Can you clarify?
 - No tapping dispenser station is required.
- iii. 2.1 D 5 suggests that the Waste Oil tank requires an E-stop as well. But then 2.1 G 1 calls for a Lincoln Overfill Valve. Both of these seem redundant, and incorrect. A BJ Enterprise 007 Alarm with a 007SV solenoid valve at each pump would ensure the tank cannot be overfilled from the remote pumps.
 - The BJ Enterprise 007 Alarm with a 007SV solenoid valve at each waste air pump can be used to control overfill, no E-stop needed.
- iv. 2.1 G 1 calls for two Waste oil Evac pumps (#135 on the equip schedule). I was able to locate these on Q101 C&D. I don't however see anything in area F. Assuming they do not want to manually transport waste oil from area F back to the other areas, should there be a pump station in area F also?
 - The only waste oil pumps required are the two shown. No pump is needed in the Maintenance B area.
- v. Is the lube piping required to be supported at a specific dimension? Typically the tubing Mfg states no more than 10' between supports, but I have seen jobs where they go over and above at as little as 4', which of course adds significant costs.
 - Tubing supports must meet the manufacturer's minimum requirements.

3. ACCEPTABLE EQUIVALENTS

- A. 11 11 19 Lubrication System
 - i. Samson
 - ii. Balcrank
- B. 12 24 13 Roller Window Shades
 - i. Springs
 - ii. WT
- C. 22 15 19 Air Compressors and Receivers
 - i. Part 2 Products 2.2.A.1.d: PneuTech

4. SPECIFICATIONS

- A. Delete specification sections 07 95 00 Expansion Control and 07 95 13 Expansion Joint Cover Assemblies. Project does not include Expansion Joints.
- B. Specification section 11 11 19 Lubrication Systems (attached).



- i. Replace entire specification for modified requirements.
- C. Specification 22 15 19 Air Compressors and Receivers (attached),
 - i. Add PneuTech to list of acceptable manufacturers.
- D. Specification 27 15 13 Communications Copper Horizontal Cabling (attached),
 - i. Replace entire specification for modified requirements.
- E. Add Specification 27 51 16 Public Address Systems (attached).

5. **DRAWINGS**

A. Civil

i. Drawing C-141 (attached), revise notes regarding water lateral connection detail requirements.

B. Structural

- i. Drawing S-001 (attached); Add control joint symbol to General Symbols
- ii. Drawing SD-101A (attached);
 - Add demolition of grade beam
 - Add demolition of additional slab on grade
- iii. Drawing SD-151A (attached); Add demolition of roof for mechanical opening
- iv. Drawing S-101A (attached)
 - Add top of retaining wall elevations at loading dock
 - Add short grade beams
- v. Drawing S-111A (attached)
 - Add slab on grade, interior
 - Add concrete end cap to landscape feature, exterior, at main employee entrance
- vi. Drawing S-131A (attached)
 - Added framing for vertical lift partitions; plan view and KN 3.321, 3.322, 3.323
 - Modified keyed note 3.302 (corrected sheet reference to S-531)
 - Modified Lintel Schedule (changed L20 bearing to 8")
- vii. Drawing S-151A (attached)
 - Added keyed notes; signage, framing clearance.
 - Change W24 beam size.
 - Modify keyed note 3.506
 - Add roof framed opening
 - Changed elevation of (3) W12x40 beams
- viii. Drawing S-151C (attached)
 - Modified keyed note 3.507 added detail reference for Trapeze Framing.
- ix. Drawing S-151D (attached)
 - Modified keyed note 3.507 added detail reference for Trapeze Framing.
- x. Drawing S-151F (attached)
 - Added Trapeze Framing near grid E19.
 - Added keyed note 3.507
- xi. Drawing S-501(attached); Deleted rebar terminations on detail 5
- xii. Drawing S-511 (attached); Added detail 14
- xiii. Drawing S-541 (attached); Add weld to detail 12
- xiv. Drawing S-551 (attached); Added details 15, 16 and 18

C. Architectural

- i. Drawing A-101A (attached),
 - Add the coordination and details for the folding panel partitions.



- Add keynote 4.138 to concrete end of landscape wall near door 1101B.
- Add keynote 4.138.
- ii. Drawing A-102F (attached),
 - Revise keynote pointing at railings by door 2305B to 4.125.
 - Add keynote 4.125.
- iii. Drawing A-201 (attached),
 - West building elevation 1, revise keynote near door 1101B to 4.138.
 - Add keynote 4.138.
- iv. Drawing A-301 (attached), building section 4, revise detail to coordinate structural modification.
- v. Drawing A-312 (attached),
 - Revise Wall Section 4 for coordination of structure for the folding panel partition.
 - Add Wall Section 5 for coordination of structure for the folding panel partition.
- vi. Drawing A-501 (attached), revise detail 15 to coordinate structural modification.

D. Interiors

- i. Drawing I-101A (attached);
 - Add interior elevation symbol 10/I-403
 - Add enlarged plan detail symbol 22/I-501
 - Add enlarged plan detail symbol 23/I-501
- ii. Drawing I-121A (attached);
 - Remove all existing ceiling hatches from areas outside of work scope.
 - Add ACT-1 at 13'2 ½" A.F.F. on both sides of operable vertical partition in Driver Training Room 1104.
- iii. Drawing I-403 (attached);
 - Add interior elevation 10/I-403 and label the elevation "General Break Room—Wood Wall"
- iv. Drawing I-404 (attached);
 - Detail 1, change text "Powered double roller w/ black out and mesh window shades" to "Powered double roller WSHD-1 and WSHD-2"
 - Detail 5, add section cut 20/I-501 showing WD-1 @ GWB ceiling.
 - Detail 6, change text "Banquette base PMTL-1" to "Banquette base WB-1"
 - Detail 6, add label "Electrical outlets in toe; see electrical for locations and spacing" pointing to electrical outlet.
 - Detail 6, remove furniture in elevation, show routed wood toe base pattern and electrical outlets, and dimension distance from routed openings to electrical outlets.
- v. Drawing I-501 (attached);
 - Detail 8, show routed wood toe base and change text "Perforated PMTL-1 base" to "Routed WB-1 base".
 - Detail 8, add detail call out at routed toe base.
 - Add detail 18/I-501 and label the detail "WD-1 @ ACT-1"
 - Add detail 19/I-501 and label the detail "WD-1 @ Banquette Ceiling Element"
 - Add detail 20/I-501 and label the detail "WD-1 @ GWB"
 - Add detail 21/I-501 and label the detail "Banquette Routed Base".
 - Add detail 22/I-501 and label the detail "WD-1 @ Mullion Wall & Corner".
 - Add detail 23/I-501 and label the detail "WD-1 @ GWB Wall".
- vi. Drawing I-601 (attached);
 - Interior finishes schedule
 - o Remove row for finish number PMTL-1. PMTL-1 will not be used in this project.
 - o Add finish number "WB-1" with finish description "Wood Base Type



- 1", color "Stain black/brown", size "6", and remarks "Banquette routed toe base with marine wood finish; stain color to be approved".
- o Finish number WSHD-1 add remarks "Draper Inc. PW3570 or equal".
- Finish number WHSD-2 add remarks "Draper Inc. SW7000-V40 or equal".
- Add General Finish Note 6, "Stair treads, risers, and landings to be RFT-2".

E. Equipment

i. Drawings Q-101A (attached), provide fenced flammable storage area as shown.

F. Electrical

i. Drawing E-601 (attached): In Luminaire Schedule add the following acceptable manufactures as follows: Des; A1, D1, DK1, J1, K2, L1, L3, N6, N11 and S1: Elite Lighting, Des; L2 and L4: Metalumen Manufacturing Inc., Des; OA1: Atlantic Lighting, Des; OA2; LSI Industries, DES; P1: National Lighting Company, Des; P2, P3 and P4: Lightway Industries, Des; Q1: TPR Enterprises and Des; X1, X2: LightAlarms.

G. Technology

i. Drawing T-101A (attached), room 1108, remove extraneous outlet.

6. PROPOSAL AND CONTRACT SPECIFICATIONS

A. None.

Please acknowledge this addendum in Section E on page E-1: Bidder's Acknowledgement on Bid Express.

Electronic version of these documents can be found on Bid Express at https://www.bidexpress.com/ and the City of Madison web site at https://www.cityofmadison.com/business/PW/contracts/openforBid.cfm

If you are unable to download plan revisions associated with the addendum, please contact the Engineering office at 608-266-4751 to receive the material by another method.

For questions regarding this bid, contact:

Mead & Hunt, Inc.

Rich Lundeen, AIA, Project Manager

PH: 608-443-0529

Email: richard.lundeen@meadhunt.com

City of Madison

Jon Evans, PE, Project Manager

PH: 608-243-5893

Email: jevans@cityofmadison.com

Sincerely,

Robert F. Phillips, P.E., City Engineer

SECTION 11 11 19 LUBRICATION SYSTEMS

PART 1 - GENERAL

1.1 SCOPE

A. Applicable provisions of the General and Supplementary Conditions and Division 01 govern work under this Section.

1.2 RELATED WORK

- A. Division 22
- B. Division 26

1.3 DESCRIPTION

- A. Furnish and install a complete inside "lubrication system" as herein described and shown on drawings. The system is an extension of the existing system. This shall include all items necessary to complete the installation and as usually included in similar work whether specifically mentioned in the Contract Documents or not, including:
 - 1. Lubrication reels
 - 2. Piping, fittings and valves
 - 3. Pipe support
 - 4. Equipment mounting and support
 - Lube pumps
 - 6. Lube tanks (existing to be reused)
 - 7. Installation
 - 8. Adapters
 - 9. Emergency Shut Off
 - 10. Vehicle Oil Pump (Waste Oil System)
 - 11. Low voltage wiring and components for controls/alarms
- B. The entire project shall be designed, fabricated and installed by a contractor with not less than five years of installation experience with projects of this type and size.
- C. This Contractor shall hire all other trades as required to complete this project.
- D. All piping in building to run as high as possible, verify locations of all HVAC, electrical, plumbing, piping, ductwork, and fire protection piping.
- E. Component and coordination of this system with fluid control system.

1.4 MISCELLANEOUS EQUIPMENT AND INSTALLATION SPECIFICATIONS

A. This system shall be bid on an installed basis by a qualified and experienced contractor with five years experience in the installation of centralized lubrication systems.

- B. Lubrication system piping shall be of size required for proper function of systems, piping shall be annealed steel tubing and matching fittings.
- C. All reels and pumps shall have shut-off valves and union connections.
- D. The piping shall be installed as per the manufacturer's installation instructions and good practice as noted on the plans. The manufacturers' installation procedure shall be completely followed by the contractor.
- E. The reels shall be mounted and secured to a heavy duty mounting assembly attached directly to the wall, structure, or column and extending down to 16' above the floor in the repair shop and on the supports in the vehicle parking area. One portion of the procedure is being emphasized as follows, but in no way minimizes the remaining manufacturers' installation instructions.
- F. One portion of the procedure is being emphasized as follows, but in no way minimizes the remaining manufacturers' installation instructions.
 - 1. Blow all air lines clean before making final equipment connections.
 - 2. Flush lubricant lines with non-flammable cleaner to remove foreign materials.
 - 3. Do not install control valves before flushing.
 - 4. Each line shall be flushed with the pump to be used on the line.
 - 5. After the lines are flushed, install control valves and pressure test with line under pressure. Check all connections and fittings for leakage.
 - 6. Adjust the hose ball stops so valves hang 7' from floor.

1.5 DRAWINGS

- A. Contractor shall design a system based on equipment locations shown on drawings. Contractors shall use Architectural and Mechanical drawings to do so, coordinate locations with all other contractors, verify equipment, duct, electrical and plumbing locations.
- B. Intent: It is the intent and the requirement of these Contract Documents, including Specifications, to provide finished work, complete in all respects and ready for operation by the Owner.
- C. It is the Contractor's responsibility to review all materials and equipment hereinafter specified or indicated on the Architectural drawings with regard to their proper operation and compliance with all governing Codes and then include in his bid proposal all materials required to provide the Owner with a completely approved and operating system whether or not all items have been specifically mentioned herein.
- D. Any dimensions given in figures on the drawings and details regarding the locations and configuration of any part of this work shall take precedence over dimensions and locations obtained by scaling the drawings. All dimensions, whether given in figures or scaled from the drawings, shall be field verified by the Contractor prior to fabricating any materials or ordering any equipment.
- E. The contractor shall design working shop drawings for review and coordination.

1.6 CODES AND APPROVALS

- A. Comply with all codes, laws and ordinances of all governing bodies having jurisdiction over this work. In the event that the requirements of any of the codes, laws or ordinances conflict with these Contract Documents the more stringent requirements shall govern the Contractor.
- B. This entire installation shall be in complete compliance with guidelines set forth in:
 - 1. N.F.P.A. latest edition and all other applicable N.F.P.A. Standards.
 - 2. Applicable Local Codes.
 - 3. Fire insurance requirements. (Rating Bureau and Owners)
 - 4. State Codes.
 - 5. Local Codes.
- C. Secure all required permits and pay all fees.

1.7 SUBMITTALS

- A. Submit to the Engineer, preliminary layout and detail drawings with pipe locations and sizes, as specified hereinafter, for approval as to compliance with contract intent.
- B. Submit layout drawings, details and calculations of the system design to Engineer. Engineer shall approve these submittals prior to fabrication or installation of any materials by the contractor and proof of such approval shall be submitted to the Architect.
- C. The above-mentioned submittal shall be submitted in triplicate and shall include catalog cut sheets on the following:
 - 1. All equipment, fittings, pipe, hangers, etc.

1.8 MATERIALS AND WORKMANSHIP

- A. All materials furnished for this work shall be suitable for use on this type of installation.
- B. All work shall be guaranteed for one year from the date of final acceptance by the Owner against defective materials and careless workmanship.
- C. Contractor shall patch the holes made necessary by this work and provide sleeves and waterproof members for any protrusions of the exterior building walls.

1.9 RECORD DRAWINGS

- A. Upon completion of the project the Contractor shall provide the Owner with three (3) sets of Record Drawings updated to reflect any field changes that may have been made to the shop drawings.
- B. Contractor shall review the system installation with the Owner or his representative and instruct him as to the proper care and maintenance procedures. This instruction should include providing all instruction charts describing operation and proper maintenance.

PART 2 - PRODUCTS

2.1 EQUIPMENT

A. General:

- 1. All hose reels located in the lube reel banks, Lube dispensing Station, control valves and pumps shall be matched to a single source manufacturer.
- B. Equipment by Lincoln, Graco, Samson, Balcrank or pre-approved equal shall be used.

C. Reels:

- 1. Reels shall be rated "heavy duty" with single pedestal and hose roller arms, permanently lubricated bearings, extra-large ratchet latch, fully ported swivel, be capable of retracting a minimum of 50' x 1/2" hose, carry a minimum one year limited parts and labor warranty, and have metal product identification tags.
- 2. Bulk Fluid #1, Bulk Fluid #2, Bulk Fluid #3, Bulk Fluid #4 and Anti Freeze.
 - a. #83464-50 Lincoln 50' x 1/2" 2250 psi WP hose
 - b. Lincoln Hose Inlet Kit
 - c. #769 Lincoln Control valve
 - d. #768 Lincoln Control valve
 - e. #Lincoln Solenoid valve with ready lights at all reels
 - f. #Lincoln Medium pressure inlet hose kit (comes with hose Reel)
 - g. #Lincoln Lubricant Filter
 - h. #66084 Lincoln 2,000 psi shut-off ball valve
 - i. #Lincoln Non-metered dispensing valve
 - j. #3867 Lincoln metering control valve, 60 quart, preset countdown. (to be used at each Stations, 35 reels)
 - k. #85242 Lincoln Heavy Duty Reel Mounting Kit
- D. Emergency Shut off for Each Set of Hose Reels, Lube Dispensing Station and Waste Oil Tank:
 - 1. This contractor shall add normally open air solenoid valves, panic push button for shut off and wiring from push button to solenoid valves to shut off supply air to air pumps. Connect solenoid to nearest power circuit.
 - 2. System shall operate by closing air solenoid valves at air pump inlets when panic button is pushed. Shutting down the air system is also an acceptable emergency shut off method.
 - 3. Include sign indicating "emergency shut off for lubrication reels." (d)
 - 4. Locations: Mount panic button on wall or support at 4' above floor near lube areas. Two panic buttons will be required: one on the column at grid lines G and 9, and a second panic button in maintenance B along the west wall, between the two overhead doors
 - 5. The waste oil tank should have an auto shout off when it reaches 95% full. This should be done by interrupting the air supply only to the waste oil tank via an air solenoid at the tank and each pump station.

E. Pumps

- 1. At EACH group of lube reels (7 locations)
- 2. All pumps shall have a minimum 4" diameter air motor size and the lubrication pumps shall have a limited parts and labor warranty.
- 3. General Lubrication: Fluid #1, Bulk Fluid #2, Bulk Fluid #3, Bulk #4 and Anti Freeze

Quantity	Part #	Description
4	2014	Lincoln Powermaster 3, 10:1 ratio stub pump with
		4" diameter air motor and 6" stroke and built-in air
		muffler with remote wall mount brackets/supports
	85627	For antifreeze, 1:1 air-operated diaphragm pump
223	Way make A Anti-Make Talland	with wall mount brackets/supports
5	74024	Lincoln 2' air connect hose
4	1230060	Lincoln 5' x 3/4" product hose
	1625060	for antifreeze, Lincoln 5"x 1" product hose
5	83132	Lincoln Bung adapter
5	82439	Lincoln low-level cut off
5		Thermal relief valves
5	Local	Suction tubes for between pump and low level cutoff
in in its control of the control of	Zakalanda Baraj pirama mana da Sa	High pressure valves

- a. As needed: suction and pressure hosed for remote location of pumps.
- b. Other miscellaneous items for proper system function.
- 4. Miscellaneous Pump Accessories

Quantity	Part #	Description
5	83168	Lincoln 1/2" air regulator and gauge
5	70332	Lincoln 3/4" product shut off ball valve
5	66084	Lincoln 1/2" pump air shut off ball valve
5	6600112	Lincoln 3/4" airline filter
5	600212	Lincoln 3/4" airline lubricator
5 5 5 5 5	70332	Lincoln 3/4" shut-off ball valve for main airline

- F. Above Ground Tanks (existing Tank will be reused)
- G. Vehicle Oil Pump (Waste Oil pump), 2 Stations,
 - 1. A UL listed evacuation pump is to be mounted on wall 48" above the floor and include air filter, regulator, oiler, 6' x 3/4" suction hose, quick disconnect couplers, shut off valves and back check valves.

Quantity	Part #	Description
2	4100	Lincoln UL evacuation kit. Includes: a 1" inlet UL
		aouble
2	256200	Lincoln 1/4" air valve

2	84824	Lincoln overfill warning valve for double wall Tank or
2	72060	Lincoln 5' air connecting hose
2	Local	Local Y-strainer
2	241408	Lincoln I" fluid coupler
2	613	Lincoln portable waste oil receiver
2	66493	Lincoln 16 gallon drum with threaded hole base
2	84714	Lincoln 20 gallon portable waste oil truck cart
2	241409	Lincoln 1" fluid nipple
2		Air shut off valves

a. Other miscellaneous items required for proper system function

H. Piping:

- 1. Vehicle Oil Piping: Black steel ASTM A53 threaded pipe
- 2. All piping shall be as required for intended use and per industry standards.
- 3. Piping:
 - a. Oil, etc.:1" OD steel tubing with a wall thickness of 0.083" with matching joint systems is the minimum piping size final size by this contractor.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

- A. Inspection: Prior to all work of this Section, carefully inspect the installed Work of all other trades and verify that all such Work is complete to the point where this installation may properly commence. Verify that lubrication systems shall be installed in strict accord with all pertinent codes and regulations and the approved Shop Drawings.
- B. Discrepancies: In the event of discrepancy, immediately notify the Architect for clarification and await his decision before proceeding.

3.2 INSTALLATION

- A. Openings, Cutting, Sleeves and Repairing:
 - 1. The Contractor shall do all necessary openings, required to install all piping, fixtures and equipment. Only saw cutting or core drilling will be allowed. All piping shall be concealed wherever possible.
 - 2. All openings or holes shall be sleeved.
 - 3. Provide as necessary to permit installation of piping or any other part of the Work under this Section. Cooperate with other trades and adjust with them, subject to Architect's review, all questions of interference, right-of-way for piping, etc. Make all arrangements with various Contractors for any special framing or chases.
 - 4. All openings or holes thru new walls, floors, ceiling or footings shall be sawcut or core drilled.

- 5. Openings around pipes penetrating required fire resistance rated floor, wall and roof assemblies shall be filled solidly with material of fire-resistance rating equal to the required rating of assembly penetrated.
- 6. On all pipes passing through floors, walls and ceilings, provide chrome plated brass escutcheons of approved design and finish having outside diameter to cover sleeved openings and inside diameter to fit pipe. Securely fasten in place to floors, walls and ceilings.
- 7. Holes through exterior walls shall be waterproofed and made watertight.
- 8. The Contractor shall patch and return to original condition all areas damaged, sawcut, core drilled, etc. on this project and site.
- 9. All holes, openings, etc. cut through any reinforced concrete must be drilled with care so as to avoid spalling and unnecessary damage or weakening of the structural members. Chopping or breaking out will not be permitted. BEFORE cutting or drilling, permission must be obtained from Architect and any damage shall be repaired to Architect's satisfaction. Holes for piping through floors and walls already in place will be by means of core drilling.
- 10. Provisions for openings, holes, chases and clearances through walls, floors, ceilings, etc. in new construction shall be made in advance of construction of such parts of the building. The openings shall be provided by others during construction of the building, but it shall be the responsibility of the Contractor to furnish the applicable Contractor with all openings, dimensions and sleeves where required for installing this Work. These dimensions shall size and locate the opening sites. If the Contractor neglects to inform the other Contractors of opening requirements before that portion of the building has been constructed, the Contractor shall, at his own expense, cut his own opening and provide framing and lintels as required and approved by the Architect.
- 11. Sleeves shall be SCH 40 galvanized iron, except pipes passing through floors shall-have steel-sleeves-extended one inch above finished floors. Sleeve-shall-be 1/2 inch larger than piping. Seal in open space around sleeve with caulking rope and finish with caulking to level of sleeve. Sleeves in outside wall shall be galvanized steel pipe, Schedule 40. 1 inch larger than piping, seal with oakum and finish with caulking to level of sleeve. Take special care in core drilling thru concrete floors so as not to spill water below and cause damage.
- 12. This contractor shall protect existing/New building, structure, drives, walks, equipment, etc. and furnishings when sawcutting, core drilling or installing this work.

B. Electrical Work:

- Contractor shall see that starters are properly located allowing for easy access and where ambient temperatures do not exceed normal room temperatures. Starters should not be secured to equipment, but instead to walls in close proximity to equipment.
- 2. Where walls are not available, provide steel sandwich panels mounted on pipe legs and floor flange.
- 3. Contractor shall furnish: All motors in connections with this work, starters for all motors, overload protection for all motors and wiring diagrams, mercury float switches with 20' wire.
- 4. This Contractor shall provide: All conduit, wiring and connectors of all requirements for all equipment requiring electrical service, all remote control devices including starters and final wiring connections.

C. Painting and Finishes:

- 1. Painting will be done by others.
- 2. Structural iron, iron pipe supports, platforms exposed pipe hangers, etc. provided by this Contractor and any equipment which is not furnished with an enamel finish shall be wire brushed free of rust, scale, etc., and given one coat of aluminum colored "Rustoleum" paint by a Journeyman Painter under the employ of the Contractor.
- 3. Any surfaces of equipment in these areas where finish has been rusted or destroyed shall be refinished.
- 4. The piping included as part of section (2.1)(H) of this specification section does not need to be painted.

D. General Pipe Work:

1. All piping shall be cleaned before installation by blowing out with compressed air or by other approved method. Provide temporary plugs or cap for all open ends of pipe and fixture when work is not being carried on to completion.

E. Lubrication System Layout:

1. General:

- a. Layout the lubrication system in careful coordination with the approved Shop Drawings, determining proper elevation for all components of the system and using only the minimum number of bends to produce a satisfactorily functioning system.
- b. Diagrammatic layouts for water, soil and vent piping are intended as a guide only and do not relieve the Contractor of any and all requirements of the State and Local Codes.
- 2. Information given herein and on Drawings is as exact as could be secured. Size and location shown are taken from the field survey. This Contractor must, therefore, examine location carefully and verify all measurements, distances, levels, etc. before starting work.
- 3. Wherever the location of piping of equipment is governed by architectural features, this Contractor shall establish their location by referring to the General Drawings; he shall not scale the Drawings for exact dimensions.
- 4. Services: Locations of services are approximate, and Contractor shall:
 - a. Check existing locations, elevations and pitches of present piping before making connections to same;
 - b. Report immediately to Architect in writing any existing conditions which will prohibit the installation of new work;
 - c. Await Architect's decision on approximate adjustment of line locations and elevations before proceeding.
- 5. In event Drawings and Specifications are not in full accord and alterations, additions or deductions are necessary or exception in regard to size of equipment, notify Architect immediately, in writing and await his decision.

6. These Specifications and the accompanying Drawings are intended to provide for a finished and complete lubrication system.

3.3 FIELD QUALITY CONTROL

A. Tests:

1. General:

- a. All tests and trials requested or directed by the Architect must be made by the Contractor without additional cost before acceptance of the Work.
- b. Furnish all test pumps, gauges, equipment, and personnel required and test as necessary to demonstrate the integrity of the finished lubrication installation to the approval of all pertinent authorities and the Architect.
- 2. The contractor shall conduct tests of systems as required by codes, regulatory agencies, and this specification. Tests shall be made with the medium and under pressure as stated in the test requirements. Notify the Engineer and regulatory agencies prior to conducting tests. Contractor shall complete the attached certification form and submit to the Engineer when tests have been completed.

Type of System	Gauge Pressure	Medium
Lube Piping	150% of Normal Static Pressure	Air

- 3. The pressure in pounds per square inch, gauge, are given as an initial pressure to be applied to lines being tested, together with test medium. Tests are to be applied for a minimum period of four (4) hours and until tests are complete. Final pressures at the end of test period may vary only by that caused by expansion of the test medium due to temperature changes.
- 4. Check of systems during application of test pressures should include visual check for water medium leakage, soap bubble or similar for air and nitrogen medium.
- 5. This Contractor shall include all temporary caps, plugs, valves, fittings, air bleeds, etc. as required for tests.
- 6. Architect's Right to Retesting
 - a. Should the Contractor refuse or neglect to make any tests necessary to demonstration of the integrity of the completed system, the Architect may retain the services of an outside consultant to make all such tests and their resulting adjustments and balance.
 - b. The cost for such tests shall be deducted from amounts owing to the Contractor and shall not be borne by the Owner.

3.4 ADJUSTMENT AND CLEANING

A. As completion of the Work, remove protective material from all lubrication equipment and piping, all paint and plaster spatterings and clean the fixtures and equipment. They are to be left and ready for use.

- B. Make good and pay for glass breakage, plaster patching and repairs to all other finished Work caused by this installation. Contractor shall patch and return to original condition all floors, walls, ceiling, etc., damaged as a result of his work.
- C. Rubbish removal as directed by Architect during progress of Work and at time of completion. Leave building and premises in clean, orderly condition.

3.5 HOLES THRU FIRE WALLS

A. Comply with all State and Local Codes with regard to all pipe types passing thru fire walls and rated rooms.

3.6 PIPE IDENTIFICATION

- A. Identify all mechanical equipment with nameplate bearing equipment name and number, using 1½" white Bakelite with ½" black letters permanently mounted in a conspicuous place. Use mechanical fasteners instead of adhesive to mount nameplates wherever possible.
- B. Markings. Each piping system furnished and installed shall be identified. The direction of flow shall be indicated by means of stenciled legends and flow arrows. The marking shall be applied after all painting and cleaning of the piping and insulation is completed.
- C. Location. The legend and flow arrow shall be applied at all valve locations at all points where piping enters or leaves a wall, partition, bulkhead, cluster of piping, or similar obstruction and at approximately 30 feet intervals on pipe runs with at least one in each space or room. Color shall be verified with Owner with stencils sized as follows: Over 2" 1" high; 2" and under ½" high. The marking shall be located so as to be conspicuous and legible at all times from any reasonable point.
- D. Valve Charts and Tags. Valve charts will be provided for each piping system. They shall consist of schematic drawings of piping layouts, which show and identify each valve and describes its function. Upon completion of the work, two copies of each chart, sealed to rigid backboard with clear lacquer under glass and framed, shall be mounted in the mechanical room where directed by the Owner. Valve lists shall be furnished as required. Provide 1 1/4" plastic or brass tags with 1/4" letters for all valves. Attach tags to valve handles by chrome plated "S" hooks. Furnish printed lists showing valve number, service, and location in each copy of Owner's Service Manual. Tags equal to Seton #2960 are acceptable.
- E. Identification Symbol types and colors shall be verified with Owner.

3.7 PIPE HANGERS AND SUPPORTS

A. This Contractor shall be responsible to support and hang this work in a proper manner as per all codes and jobsite requirements.

END OF SECTION 11 11 19

SECTION 22 15 19 AIR COMPRESSORS AND RECEIVERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, Standard Specifications, Proposal Documents, Special Provisions, Supplemental Specifications, Bid Item Manual and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Lubricated, reciprocating air compressors.

1.3 DEFINITIONS

- A. Actual Air: Air delivered from air compressors. Flow rate is delivered compressed air measured in acfm.
- B. Standard Air: Free air at 68 deg F and 1 atmosphere (29.92 in. Hg) before compression or expansion and measured in scfm.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
- B. Operation and Maintenance Data: For compressed-air equipment to include in emergency, operation, and maintenance manuals.

1.5 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. ASME Compliance: Fabricate and label receivers to comply with ASME Boiler and Pressure Vessel Code.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS FOR PACKAGED AIR COMPRESSORS AND RECEIVERS

- A. General Description: Factory-assembled, -wired, -piped, and -tested; electric-motor-driven; air-cooled; continuous-duty air compressors and receivers that deliver air of quality equal to intake air.
- B. Control Panels: Automatic control station with load control and protection functions. Comply with NEMA ICS 2 and UL 508.
 - 1. Enclosure: NEMA ICS 6, Type 12 control panel unless otherwise indicated.
 - 2. Motor Controllers: Full-voltage, combination magnetic type with under voltage release feature and motor-circuit-protector-type disconnecting means and short-circuit protective device.
 - 3. Control Voltage: 120-V ac or less, using integral control power transformer.
 - 4. Motor Overload Protection: Overload relay in each phase.
 - 5. Starting Devices: Hand-off-automatic selector switch in cover of control panel, plus pilot device for automatic control.
- C. Mounting Frame: Fabricate mounting and attachment to pressure vessel with reinforcement strong enough to resist packaged equipment movement during a seismic event when base is anchored to building structure.

2.2 ROTARY-SCREW AIR COMPRESSORS

- A. Rotary-Screw Air Compressors:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by the following:
 - Ingersoll Rand.
 - b. Kaeser.
 - c. Quincy.
 - d. PneuTech
 - Description: Packaged unit.
 - 3. Air Compressor(s): Single-stage, oil-free, rotary-screw type with nonlubricated helical screws and lubricated gearbox, and of construction that prohibits oil from entering compression chamber.
 - a. Cooling/Lubrication System: Unit-mounted, air-cooled exchanger package pre-piped to unit; with air-pressure circulation system with coolant stop valve, full-flow coolant filter, and thermal-bypass valve.
 - b. Air Filter: Dry type, with maintenance indicator and cleanable replaceable filter element.
 - c. Air/Coolant Receiver and Separation System: 150-psig- (1035-kPa-) rated steel tank with ASME safety valve, coolant-level gage, multistage air-coolant separator element, minimum pressure valve, blowdown valve, discharge check valve, coolant stop valve, full-flow coolant filter, and thermal-bypass valve.
 - d. Capacity Control: Capacity modulation between zero and 100 percent air delivery, with operating pressures between 60 and 135 psig (345 and 690 kPa). Include necessary control to hold constant pressure. When air

demand is zero, unload compressor by using pressure switch and blowdown valve.

- e. Mounting: Freestanding.
- 4. Sound-attenuation enclosure.
- B. Capacities and Characteristics:
 - 1. Compressed-Air Service: Shop air.
 - 2. Air Compressor(s): One.
 - 3. Standard-Air Capacity of Each Air Compressor: 335 scfm (standard L/s) free air.
 - 4. Actual-Air Capacity of Each Air Compressor: 300 acfm (actual L/s) delivered.
 - 5. Discharge-Air Pressure: 135.
 - 6. Discharge-Air Temperature: 100° F (deg C) or less.
 - 7. Motor (Each Air Compressor):
 - a. Horsepower: 75.
 - b. Speed: 1531 rpm.
 - 8. Electrical Characteristics:
 - a. Volts: 460.
 - b. Phase(s): Three.
 - c. Hertz: 60.
 - d. Full-Load Amperes: 101.
 - e. Maximum Overcurrent Protection: 150 amperage.

2.3 RECEIVER TANK

- A. Steel tank constructed according to ASME Boiler and Pressure Vessel Code: Section VIII, Division 1.
 - 1. Orientation: Vertical Arrangement.
 - 2. Capacity: See drawing schedule.
 - 3. Interior finish: Epoxy.
 - 4. Pressure Rating: 165psig minimum.
 - 5. Pressure Regulator Setting: 135pisg.
 - 6. Pressure Relief Valve Setting: 137psig.
 - 7. Accessories: Include safety valve, pressure gage, drain, and pressure-reducing valve.

2.4 MOTORS

- A. Comply with NEMA designation, temperature rating, service factor, enclosure type, and efficiency requirements for motors specified.
 - 1. Motor Sizes: Minimum size as indicated. If not indicated, large enough so driven load will not require motor to operate in service factor range above 1.0.
 - 2. Controllers, Electrical Devices, and Wiring: Comply with requirements for electrical devices and connections specified in Division 26 Sections.

PART 3 - EXECUTION

3.1 EQUIPMENT INSTALLATION

- A. Equipment Mounting: Install air compressors and air dryers anchored to concrete bases using elastomeric pads. Comply with requirements in Division 03 Section "Cast-in-Place Concrete."
- B. Arrange equipment so controls and devices are accessible for servicing.
- C. Maintain manufacturer's recommended clearances for service and maintenance.
- D. Install the following devices on compressed-air equipment:
 - 1. Pressure Gage and Safety Valve: Install on each compressed-air receiver.
 - 2. Pressure Regulators: Install downstream from air compressors and dryers.
 - 3. Automatic Drain Valves: Install on filters and dryers. Discharge condensate over nearest floor or open site drain.

3.2 CONNECTIONS

- A. Comply with requirements for piping specified in Division 22 Section "Compressed Air Piping." Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Install piping adjacent to machine to allow service and maintenance.

3.3 IDENTIFICATION

A. Identify general-service air compressors and components. Comply with requirements for identification specified in Division 22 Section "Identification for Plumbing."

3.4 STARTUP SERVICE

- A. Perform startup service.
 - 1. Complete installation and startup checks according to manufacturer's written instructions.
 - 2. Verify that air-compressor inlet filters and piping are clear.
 - 3. Check for equipment vibration-control supports and flexible pipe connectors and verify that equipment is properly attached to substrate.
 - 4. Check safety valves for correct settings. Ensure that settings are higher than air-compressor discharge pressure but not higher than rating of system components.
 - 5. Drain receiver tanks.
 - 6. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.
 - 7. Test and adjust controls and safeties.

3.5 DEMONSTRATION

A. Train Owner's maintenance personnel to adjust, operate, and maintain air compressors and dryers.

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SECTION 27 15 13 COMMUNICATIONS COPPER HORIZONTAL CABLING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

- 1. Category 6 twisted pair cable.
- 2. Twisted pair cable hardware, including plugs and jacks.
- 3. Cable management system.
- 4. Cabling identification products.
- 5. Grounding provisions for twisted pair cable.
- 6. Source quality control requirements for twisted pair cable.

1.3 DEFINITIONS

- A. Cross-Connect: A facility enabling the termination of cable elements and their interconnection or cross-connection.
- B. EMI: Electromagnetic interference.
- C. FTP: Shielded twisted pair.
- D. F/FTP: Overall foil screened cable with foil screened twisted pair.
- E. F/UTP: Overall foil screened cable with unscreened twisted pair.
- F. IDC: Insulation displacement connector.
- G. LAN: Local area network.
- H. Jack: Also commonly called an "outlet," it is the fixed, female connector.
- I. Plug: Also commonly called a "connector," it is the removable, male telecommunications connector.
- J. RCDD: Registered Communications Distribution Designer.
- K. Screen: A metallic layer, either a foil or braid, placed around a pair or group of conductors.
- L. Shield: A metallic layer, either a foil or braid, placed around a pair or group of conductors.

- M. S/FTP: Overall braid screened cable with foil screened twisted pair.
- N. S/UTP: Overall braid screened cable with unscreened twisted pairs.
- O. UTP: Unscreened (unshielded) twisted pair.

1.4 COPPER HORIZONTAL CABLING DESCRIPTION

- A. Horizontal cable cabling system shall provide interconnections between Distributor A, Distributor B, or Distributor C, and the equipment outlet, otherwise known as "Cabling Subsystem 1," in the telecommunications cabling system structure. Cabling system consists of horizontal cables, intermediate and main cross-connects, mechanical terminations, and patch cords or jumpers used for horizontal-to-horizontal cross-connection.
 - 1. TIA-568-C.1 requires that a minimum of two equipment outlets be installed for each work area.
 - Horizontal cabling shall contain no more than one transition point or consolidation point between the horizontal cross-connect and the telecommunications equipment outlet.
 - Bridged taps and splices shall not be installed in the horizontal cabling.
- B. A work area is approximately 100 sq. ft. (9.3 sq. m), and includes the components that extend from the equipment outlets to the station equipment.
- C. The maximum allowable horizontal cable length is 295 feet (90 m). This maximum allowable length does not include an allowance for the length of 16 feet (4.9 m) to the workstation equipment or in the horizontal cross-connect.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: Reviewed and stamped by RCDD.
 - 1. System Labeling Schedules: Electronic copy of labeling schedules, in software and format selected by Owner.
 - 2. System Labeling Schedules: Electronic copy of labeling schedules that are part of the cabling and asset identification system of the software.
 - 3. Cabling administration Drawings and printouts.
 - 4. Wiring diagrams and installation details of telecommunications equipment, to show location and layout of telecommunications equipment, including the following:
 - a. Telecommunications rooms plans and elevations.
 - b. Telecommunications pathways.
 - c. Telecommunications system access points.
 - d. Telecommunications grounding system.
 - e. Telecommunications conductor drop locations.
 - f. Typical telecommunications details.
 - g. Mechanical, electrical, and plumbing systems.

- C. Twisted pair cable testing plan.
- D. Samples: For telecommunications jacks and plugs, in specified finish, one for each type and configuration.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For RCDD, installation supervisor, and field inspector.
- B. Product Certificates: For each type of product.
- C. Source quality-control reports.
- D. Field quality-control reports.

1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For splices and connectors to include in maintenance manuals.
- B. Software and Firmware Operational Documentation:
 - 1. Software operating and upgrade manuals.
 - 2. Program Software Backup: On USB media or compact disk, complete with data files.
 - 3. Device address list.
 - 4. Printout of software application and graphic screens.

1.8 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Connecting Blocks: One of each type.
 - 2. Faceplates: One of each type.
 - 3. Jacks: Ten of each type.
 - 4. Patch-Panel Units: One of each type.
 - 5. Plugs: Ten of each type.

1.9 QUALITY ASSURANCE

- A. Installer Qualifications: Cabling Installer must have personnel certified by BICSI on staff.
 - 1. Layout Responsibility: Preparation of Shop Drawings and cabling administration Drawings, cabling administration Drawings, and field testing program development by an RCDD.
 - 2. Installation Supervision: Installation shall be under the direct supervision of Technician, who shall be present at all times when Work of this Section is performed at Project site.
 - 3. Testing Supervisor: Currently certified by BICSI as an RCDD to supervise on-site testing.
 - 4. The Contractor shall have experience in the installation and testing of similar systems a specified in the plans and specifications for this contract.

- 5. The Contractor shall have completed at least 2 projects of similar size and scope within the last 24 months.
- 6. The contractor shall provide references upon request. Information to provide shall include project name, address, date of installation, client name, title, telephone number, and project description.
- 7. The Contractor shall be certified by the connectivity manufacturer to install, service and warranty the specified product from the time of bidding through the duration of the contract installation and warranty period.
- 8. The Contractor must maintain a State Contractors License as required by the State of Wisconsin.
- 9. All members of the Contractors installation team must be certified by the manufacturer as having completed the necessary training to complete their part of the installation. All personnel shall be adequately trained in the use of tools and equipment required for the complete installation.
- 10. The Contractor shall own and maintain tools, installation equipment, and testing equipment necessary for the successful installation and testing of Optical and Category 5E, 6, and 6A premise distribution systems.
- 11. The Owners reserves the right to require the Contractor to remove from the project any such employee the Owner deems to be incompetent, careless, or insubordinate.
- B. Testing Agency Qualifications: Testing agency must have personnel certified by BICSI on staff.
 - 1. Testing Agency's Field Supervisor: Currently certified by BICSI as an RCDD.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Test cables upon receipt at Project site.
 - Test each pair of twisted pair cable for open and short circuits.

1.11 PROJECT CONDITIONS

A. Environmental Limitations: Do not deliver or install cables and connecting materials until wet work in spaces is complete and dry, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.

1.12 COORDINATION

A. Coordinate layout and installation of telecommunications pathways and cabling with Owner's telecommunications and LAN equipment and service suppliers.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General Performance: Horizontal cabling system shall comply with transmission standards in TIA-568-C.1, when tested according to test procedures of this standard.

- B. Telecommunications Pathways and Spaces: Comply with TIA-569-D.
- C. Grounding: Comply with TIA-607-B.

2.2 GENERAL CABLE CHARACTERISTICS

- A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction as complying with the applicable standard and NFPA 70 for the following types:
 - 1. Communications, Plenum Rated: Type CMP complying with UL 1685.
- B. Surface-Burning Characteristics: Comply with ASTM E84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - 1. Flame-Spread Index: 25 or less.
 - 2. Smoke-Developed Index: 50 or less.
- C. RoHS compliant.

2.3 CATEGORY 6 TWISTED PAIR CABLE

- A. Plenum cable construction shall be four twisted pairs of 23AWG insulated solid conductors with a ripcord surrounded by a tight outer jacket.
- B. Non-plenum cable construction shall be four twisted pairs of 23AWG insulated solid conductors with a ripcord surrounded by a tight outer jacket.
- C. No minimum compliant cable will be accepted, this facility requires additional band width.
- D. The ripcord shall be directly underneath the outer jacket.
- E. Cable shall be marked with the manufacturer and pertinent information. UL, ETL, or CSA agency certification or verification markings shall be on the cable jacket according to the certifying agency's requirements.
- F. Color coding of pairs shall be as follows:
 - 1. Pair 1: white/blue; blue
 - 2. Pair 2: white/orange; orange
 - 3. Pair 3: white/green; green
 - 4. Pair 4: white/brown; brown
- G. Plenum or riser rated jackets
- H. Cable shall be supplied in 1000 foot spools or 1000 foot Reelex boxes.
- I. Cable shall exceed CAT6 transmission requirements specified in ANSI/TIA/EIA-568-C-2.
- J. Cable shall be UL and C(UL) listed.
- K. Cable shall exceed the requirements of TIA/TSB-155, 10 GB/S Ethernet operation over 37 meters channel length.

- L. CAT6 UTP horizontal distribution cable as specified in the contract documents shall be
 - 1. Mohawk Advancenet Cable
 - a. Plenum M57193
 - b. Riser M57202

2.4 TWISTED PAIR CABLE HARDWARE

- A. Description: Hardware designed to connect, splice, and terminate twisted pair copper communications cable.
- B. Manufacturers: Subject to compliance with requirements, provide products by the following:
 - 1. Hubbell Premise Wiring; brand of Hubbell Electrical Solutions; Hubbell Incorporated.
- C. Patch Panel: Modular panels housing numbered jack units with IDC-type connectors at each jack location for permanent termination of pair groups of installed cables.
 - 1. CAT6 patch panels shall be standard 8-position, RJ-45 style, un-keyed, FCC-compliant receptacle in 24 and 48 port configurations.
 - 2. Panel frames shall be black powder coated 14 gauge steel with rolled edges on top and bottom for proper stiffness.
 - 3. Panels shall accommodate a minimum of 24 ports for each rack mount unit (1 RMU=1.75 inches). 48 ports are recommended.
 - 4. Panels shall be designed for 4-pair, 100 ohm balanced unshielded twisted pair (UTP) cable.
 - 5. Panels shall terminate 26-22 AWG solid connectors
 - 6. Panels shall have individual port identification numbers on the front and rear of the panel. Panels shall have the CAT6 designation visible from the front when installed.
 - 7. Printed circuit boards shall be fully enclosed front and rear for physical protection.
 - 8. Panel contacts shall accept a minimum of 2000 mating cycles without degradation of electrical or mechanical performance.
 - 9. Panel termination method shall follow the industry standard 110 IDC punch-down using a standard 110 impact termination tool.
 - 10. CAT6 panels shall be backward compatible with existing category 3, 5, and 5E cabling systems for fit, form, and function.
 - 11. CAT6 patch panels when installed shall exceed the link or channel performance requirements of ANSI/TIA/EIA-568-C.2.
 - 12. CAT6 patch panels shall be able to accommodate 10G in a 37 meter channel per TSB-155.
 - 13. CAT6 patch panels shall be:
 - a. Hubbell (Nextspeed 6 series)
 - b. 24 port P6E24U
 - c. 48 port P6E48UFeatures:

- 14. Construction: 16-gauge steel and mountable on 19-inch (483 mm) equipment racks.
- D. Patch Cords: Factory-made, four-pair cables in 48-inch (1200-mm) lengths; terminated with an eight-position modular plug at each end.
 - 1. Patch cords shall have bend-relief-compliant boots and color-coded icons to ensure performance. Patch cords shall have latch guards to protect against snagging.
 - 2. Patch cords shall have color-coded boots for circuit identification.

E. Plugs and Plug Assemblies:

- 1. Male; eight position; color-coded modular telecommunications connector designed for termination of a single four-pair, 100-ohm, unshielded or shielded twisted pair cable.
- 2. Standard: Comply with TIA-568-C.2.
- 3. Marked to indicate transmission performance.

F. Jacks and Jack Assemblies:

- 1. Female; eight position; modular; fixed telecommunications connector designed for termination of a single four-pair, 100-ohm, unshielded or shielded twisted pair cable.
- 2. Designed to snap-in to a patch panel or faceplate.
- 3. Standard: Comply with TIA-568-C.2.
- 4. Marked to indicate transmission performance.

G. Faceplate:

- 1. Two, and Four port, vertical single gang faceplates designed to mount to single gang wall boxes.
- 2. Plastic Faceplate: High-impact plastic. Coordinate color with Section 26 27 26 "Wiring Devices."
- Metal Faceplate: Stainless steel, complying with requirements in Section 26 27 26 "Wiring Devices."
- 4. For use with snap-in jacks accommodating any combination of twisted pair, optical fiber, and coaxial work area cords.
 - a. Flush mounting jacks, positioning the cord at a 45-degree angle.

H. Legend:

- 1. Machine printed, in the field, using adhesive-tape label.
- 2. Snap-in, clear-label covers and machine-printed paper inserts.
- 3. UL 2043.

2.5 IDENTIFICATION PRODUCTS

A. Comply with TIA-606-B and UL 969 for a system of labeling materials, including label stocks, laminating adhesives, and inks used by label printers.

2.6 **GROUNDING**

A. Comply with TIA-607-B.

2.7 SOURCE QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to evaluate cables.
- B. Factory test cables on reels according to TIA-568-C.1.
- C. Factory test twisted pair cables according to TIA-568-C.2.
- D. Cable will be considered defective if it does not pass tests and inspections.
- E. Prepare test and inspection reports.

PART 3 - EXECUTION

3.1 WIRING METHODS

- A. Wiring Method: Install cables in raceways and cable trays, except within consoles, cabinets, desks, and counters and except in accessible ceiling spaces, attics, and gypsum board partitions where unenclosed wiring method may be used. Conceal raceway and cables, except in unfinished spaces.
 - 1. Install plenum cable in environmental air spaces, including plenum ceilings.
- B. Wiring Method: Conceal conductors and cables in accessible ceilings, walls, and floors where possible.
- C. Wiring within Enclosures: Bundle, lace, and train cables within enclosures. Connect to terminal points with no excess and without exceeding manufacturer's limitations on bending radii. Provide and use lacing bars and distribution spools. Install conductors parallel with or at right angles to sides and back of enclosure.

3.2 INSTALLATION OF PATHWAYS

- A. Comply with requirements for demarcation point, cabinets, and racks specified in Section 27 11 00 "Communications Equipment Room Fittings."
- B. Drawings indicate general arrangement of pathways and fittings.

3.3 INSTALLATION OF TWISTED-PAIR HORIZONTAL CABLES

- A. Comply with NECA 1 and NECA/BICSI 568.
- B. General Requirements for Cabling:
 - 1. Comply with TIA-568-C.0, TIA-568-C.1, and TIA-568-C.2.

- 2. Comply with BICSI's "Information Transport Systems Installation Methods Manual (ITSIMM),"Copper Structured Cabling Systems," "Cable Termination Practices" Section.
- 3. Install 110-style IDC termination hardware unless otherwise indicated.
- 4. Do not untwist twisted pair cables more than 1/2 inch (12 mm) from the point of termination to maintain cable geometry.
- 5. Terminate all conductors; no cable shall contain unterminated elements. Make terminations only at indicated outlets, terminals, cross-connects, and patch panels.
- 6. Consolidation points may be used only for making a direct connection to equipment outlets:
 - a. Do not use consolidation point as a cross-connect point, as a patch connection, or for direct connection to workstation equipment.
 - b. Locate consolidation points for twisted-pair cables at least 49 feet (15 m) from communications equipment room.
- 7. Cables may not be spliced. Secure and support cables at intervals not exceeding 30 inches (760 mm) and not more than 6 inches (150 mm) from cabinets, boxes, fittings, outlets, racks, frames, and terminals.
- 8. Install lacing bars to restrain cables, prevent straining connections, and prevent bending cables to smaller radii than minimums recommended by manufacturer.
- 9. Bundle, lace, and train conductors to terminal points without exceeding manufacturer's limitations on bending radii, but not less than radii specified in BICSI Information Transport Systems Installation Methods Manual, "Copper Structured Cabling Systems," "Cable Termination Practices" Section. Use lacing bars and distribution spools.
- 10. Do not install bruised, kinked, scored, deformed, or abraded cable. Do not splice cable between termination, tap, or junction points. Remove and discard cable if damaged during installation, and replace it with new cable.
- 11. Cold-Weather Installation: Bring cable to room temperature before dereeling. Heat lamps shall not be used for heating.
- 12. In the communications equipment room, install a 10-foot- (3-m-) long service loop on each end of cable.
- 13. Pulling Cable: Comply with BICSI Information Transport Systems Installation Methods Manual, "Copper Structured Cabling Systems," "Pulling and Installing Cable" Section. Monitor cable pull tensions.

C. Open-Cable Installation:

- 1. Install cabling with horizontal and vertical cable guides in telecommunications spaces with terminating hardware and interconnection equipment.
- 2. Suspend twisted pair cabling, not in a wireway or pathway, a minimum of 8 inches (200 mm) above ceilings by cable supports not more than 60 inches (1524 mm) apart.
- 3. Cable shall not be run through structural members or in contact with pipes, ducts, or other potentially damaging items.

D. Installation of Cable Routed Exposed under Raised Floors:

1. Install plenum-rated cable only.

- 2. Install cabling after the flooring system has been installed in raised floor areas.
- 3. Coil cable 6 feet (1800 mm) long not less than 12 inches (300 mm) in diameter below each feed point.
- E. Group connecting hardware for cables into separate logical fields.

F. Separation from EMI Sources:

- Comply with recommendations from BICSI's "Telecommunications Distribution Methods Manual" and TIA-569-D for separating unshielded copper communication cable from potential EMI sources, including electrical power lines and equipment.
- 2. Separation between open communications cables or cables in nonmetallic raceways and unshielded power conductors and electrical equipment shall be as follows:
 - a. Electrical Equipment Rating Less Than 2 kVA: A minimum of 5 inches (127 mm).
 - b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 12 inches (300 mm).
 - c. Electrical Equipment Rating More Than 5 kVA: A minimum of 24 inches (600 mm).
- 3. Separation between communications cables in grounded metallic raceways and unshielded power lines or electrical equipment shall be as follows:
 - a. Electrical Equipment Rating Less Than 2 kVA: A minimum of 2-1/2 inches (64 mm).
 - b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 6 inches (150 mm).
 - c. Electrical Equipment Rating More Than 5 kVA: A minimum of 12 inches (300 mm).
- 4. Separation between communications cables in grounded metallic raceways, power lines, and electrical equipment located in grounded metallic conduits or enclosures shall be as follows:
 - a. Electrical Equipment Rating Less Than 2 kVA: No requirement.
 - b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 3 inches (76 mm).
 - c. Electrical Equipment Rating More Than 5 kVA: A minimum of 6 inches (150 mm).
- 5. Separation between Communications Cables and Electrical Motors and Transformers, 5 kVA or HP and Larger: A minimum of 48 inches (1200 mm).
- 6. Separation between Communications Cables and Fluorescent Fixtures: A minimum of 5 inches (127 mm).

3.4 FIRESTOPPING

A. Comply with TIA-569-D, Annex A, "Firestopping."

B. Comply with "Firestopping Systems" Article in BISCI's "Telecommunications Distribution Methods Manual."

3.5 GROUNDING

- A. Install grounding according to the "Grounding, Bonding, and Electrical Protection" chapter in BICSI's "Telecommunications Distribution Methods Manual."
- B. Comply with TIA-607-B and NECA/BICSI-607.
- C. Locate grounding bus bar to minimize the length of bonding conductors. Fasten to wall, allowing at least a 2-inch (50-mm) clearance behind the grounding bus bar. Connect grounding bus bar to suitable electrical building ground, using a minimum No. 4 AWG grounding electrode conductor.
- D. Bond metallic equipment to the grounding bus bar, using not smaller than a No. 6 AWG equipment grounding conductor.

3.6 IDENTIFICATION

- A. Identify system components, wiring, and cabling complying with TIA-606-B. Comply with requirements for identification specified in Section 27 05 53 "Identification for Communications Systems."
 - 1. Administration Class: Class 3.
 - 2. Color-code cross-connect fields and apply colors to voice and data service backboards, connections, covers, and labels.
- B. Paint and label colors for equipment identification shall comply with TIA-606-B for Class 3 level of administration, including optional identification requirements of this standard.
- C. Cable Schedule: Install in a prominent location in each equipment room and wiring closet. List incoming and outgoing cables and their designations, origins, and destinations. Protect with rigid frame and clear plastic cover. Furnish an electronic copy of final comprehensive schedules for Project.
- D. Cabling Administration Drawings: Show building floor plans with cabling administration-point labeling. Identify labeling convention and show labels for telecommunications closets, terminal hardware and positions, horizontal cables, work areas and workstation terminal positions, grounding buses and pathways, and equipment grounding conductors.

E. Cable and Wire Identification:

- 1. Label each cable within 4 inches (100 mm) of each termination and tap, where it is accessible in a cabinet or junction or outlet box, and elsewhere as indicated.
- 2. Each wire connected to building-mounted devices is not required to be numbered at the device if wire color is consistent with associated wire connected and numbered within panel or cabinet.

- 3. Exposed Cables and Cables in Cable Trays and Wire Troughs: Label each cable at intervals not exceeding 15 feet (4.5 m).
- 4. Label each terminal strip, and screw terminal in each cabinet, rack, or panel.
 - a. Individually number wiring conductors connected to terminal strips, and identify each cable or wiring group, extended from a panel or cabinet to a building-mounted device, with the name and number of a particular device.
 - b. Label each unit and field within distribution racks and frames.
- 5. Identification within Connector Fields in Equipment Rooms and Wiring Closets: Label each connector and each discrete unit of cable-terminating and connecting hardware. Where similar jacks and plugs are used for both voice and data communication cabling, use a different color for jacks and plugs of each service.
- F. Labels shall be preprinted or computer-printed type, with a printing area and font color that contrast with cable jacket color but still comply with TIA-606-B requirements for the following:
 - 1. Cables use flexible vinyl or polyester that flexes as cables are bent.

3.7 FIELD QUALITY CONTROL

- A. Perform tests and inspections with the assistance of a factory-authorized service representative.
- B. Tests and Inspections:
 - 1. Visually inspect jacket materials for NRTL certification markings. Inspect cabling terminations in communications equipment rooms for compliance with color-coding for pin assignments, and inspect cabling connections for compliance with TIA-568-C.1.
 - 2. Visually inspect cable placement, cable termination, grounding and bonding, equipment and patch cords, and labeling of all components.
 - 3. Test twisted pair cabling for DC loop resistance, shorts, opens, intermittent faults, and polarity between conductors. Test operation of shorting bars in connection blocks. Test cables after termination but not cross-connection.
 - a. Test instruments shall meet or exceed applicable requirements in TIA-568-C.2. Perform tests with a tester that complies with performance requirements in "Test Instruments (Normative)" Annex, complying with measurement accuracy specified in "Measurement Accuracy (Informative)" Annex. Use only test cords and adapters that are qualified by test equipment manufacturer for channel or link test configuration.
- C. Data for each measurement shall be documented. Data for submittals shall be printed in a summary report that is formatted similarly to Table 10.1 in BICSI's "Telecommunications Distribution Methods Manual," or shall be transferred from the instrument to the computer, saved as text files, printed, and submitted.

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- D. Remove and replace cabling where test results indicate that they do not comply with specified requirements.
- E. End-to-end cabling will be considered defective if it does not pass tests and inspections.
- F. Prepare test and inspection reports.

END OF SECTION 27 15 13

SECTION 27 51 16 PUBLIC ADDRESS SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

- 1. Power amplifiers.
- 2. Control system.
- 3. Microphones.
- 4. Telephone paging adapters.
- 5. Tone generator.
- 6. Monitor panel.
- 7. Loudspeakers.
- 8. Microphone and headphone outlets.
- 9. Battery backup power unit.
- Conductors and cables.

1.3 <u>DEFINITIONS</u>

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

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: Power, signal, and control wiring.
 - 1. Include plans, elevations, sections, and attachment details.
 - 2. Include details of equipment assemblies. Indicate dimensions, weights, required clearances, method of field assembly, components, and location and size of each field connection.
 - 3. Console layouts.
 - 4. Control panels.
 - Rack arrangements.
 - 6. Calculations: For sizing backup battery.

- 7. Wiring Diagrams: For power, signal, and control wiring.
 - a. Identify terminals to facilitate installation, operation, and maintenance.
 - b. Single-line diagram showing interconnection of components.
 - c. Cabling diagram showing cable routing.
- C. Delegated-Design Submittal: For supports and seismic restraints for control consoles, equipment cabinets and racks, and components indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
 - 1. Detail fabrication and assembly of supports and seismic restraints for control consoles, equipment cabinets and racks, and components.

1.5 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Reflected ceiling plans, drawn to scale, on which ceiling-mounted items including lighting fixtures, diffusers, grilles, speakers, sprinklers, access panels, and special moldings are shown and coordinated with each other, using input from installers of the items involved.
- B. Qualification Data: For Installer and testing agency.
- C. Seismic Qualification Certificates: For control consoles, equipment cabinets and racks, accessories, and components, from manufacturer.
 - Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation. Include qualification data for testing agency.
 - 2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
 - 3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.
- D. Field quality-control reports.

1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For public address systems to include in emergency, operation, and maintenance manuals.
 - 1. In addition to items specified in Section 01 77 00 "Closeout Procedures" and Section 01 78 23 "Operation and Maintenance Data," include the following:
 - a. List of tools and replacement items recommended to be stored at Project for ready access. Include part and drawing numbers, current unit prices, and source of supply.
 - b. Operating instructions laminated and mounted adjacent to operating console location.
 - c. Training plan.

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
- B. Testing Agency Qualifications: Qualified agency, with the experience and capability to conduct testing indicated.
 - 1. Testing Agency's Field Supervisor: Currently certified to supervise on-site testing.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - 1. Bogen Communications, Inc.
 - TOA Electronics.
 - 3. Valcom.
- B. Source Limitations: Obtain public address system from single source from single manufacturer.
- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- D. Comply with NFPA 70.

2.2 FUNCTIONAL DESCRIPTION OF SYSTEM

- A. System Functions:
 - 1. Selectively connect any zone to any available signal channel.
 - 2. Selectively control sound from microphone outlets and other inputs.
 - 3. "All-call" feature shall connect the all-call sound signal simultaneously to all zones regardless of zone or channel switch settings.
 - 4. Telephone paging adapter shall allow paging by dialing an extension from any local telephone instrument and speaking into the telephone.
 - 5. Produce a program-signal tone that is amplified and sounded over all speakers, overriding signals currently being distributed.
 - 6. Reproduce high-quality sound that is free of noise and distortion at all loudspeakers at all times during equipment operation including standby mode with inputs off; output free of nonuniform coverage of amplified sound.

2.3 PERFORMANCE REQUIREMENTS

A. Delegated Design: Design supports and seismic restraints for control consoles, equipment cabinets and racks, and components, including comprehensive engineering

- analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
- B. Seismic Performance: Supports and seismic restraints for control consoles, equipment cabinets and racks, and components shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
 - 1. The term "withstand" means "the unit will remain in place without separation of any parts when subjected to the seismic forces specified and the unit will be fully operational after the seismic event."

2.4 SYSTEM DESCRIPTION

- A. Compatibility of Components: Coordinate component features to form an integrated system. Match components and interconnections for optimum performance of specified functions.
- B. Equipment: Comply with UL 813. Equipment shall be modular, using solid-state components, and fully rated for continuous duty unless otherwise indicated. Select equipment for normal operation on input power usually supplied at 110 to 130 V, 60 Hz.
- C. Equipment Mounting: Where rack, cabinet, or console mounting is indicated, equipment shall be designed to mount in a 19-inch housing complying with EIA/ECA-310-E.
- D. Weather-Resistant Equipment: Listed and labeled by a qualified testing agency for duty outdoors or in damp locations.

2.5 POWER AMPLIFIERS

- A. Mounting: Rack.
- B. Output Power: 70-V balanced line. 80 percent of the sum of wattage settings of connected for each station and speaker connected in all-call mode of operation, plus a 25 percent allowance for future stations.
- C. Total Harmonic Distortion: Less than 3 percent at rated power output from 50 to 12,000 Hz.
- D. Minimum Signal-to-Noise Ratio: 80 dB, at rated output.
- E. Frequency Response: Within plus or minus 3 dB from 20 to 12,000 Hz.
- F. Output Regulation: Less than 2 dB from full to no load.
- G. Controls: On-off, input levels, and low-cut filter.
- H. Input Sensitivity: Matched to preamplifier and to provide full-rated output with sound-pressure level of less than 10 dynes/sq. cm impinging on speaker microphone or handset transmitter.

2.6 MICROPHONES

A. Paging Microphone:

- Type: Dynamic, with cardioid polar characteristic.
- 2. Impedance: 500 ohms.
- 3. Frequency Response: Uniform, 100 to 12,000 Hz.
- 4. Sensitivity: Minus 70 dB +/- 6 dB.
- 5. Output Level: Minus 58 dB, minimum.
- 6. Cable: Braided shield cable with XLR connectors. Coordinate impedance with microphone impedance.
- 7. Mounting: Desk stand with integral-locking, press-to-talk switch.

2.7 VOLUME LIMITER/COMPRESSOR

A. Minimum Performance Requirements:

- 1. Frequency Response: 45 to 15,000 Hz, plus or minus 1 dB minimum.
- 2. Reduction Ratio: Automatically vary compression ratio, and attack and release times for voice and music inputs.
 - a. Compression Ratio Range: 3:1 to 10:1 minimum.
 - b. Averaging Compressor Attack Time: Up to 500 milliseconds.
 - c. Signal Fast Compression Attack Time: Less than 10 milliseconds.
 - d. Release time: Up to 500 milliseconds.
- 3. Distortion: 0.5 percent, maximum.
- 4. Rated Output: Minimum of plus 14 dB.
- 5. Inputs: Minimum of two inputs with variable front-panel gain controls and VU or decibel meter for input adjustment.
- 6. Rack mounted.

2.8 CONTROL SYSTEM

- A. Cabinet: Modular, rack-mount style; complying with EIA/ECA-310-E.
- B. Panel for Equipment and Controls: Rack mounted.

C. Controls:

- 1. Switching devices to select signal sources for distribution channels.
- 2. Program selector switch to select source for each program channel.
- 3. Switching devices to select zones for paging.
- 4. All-call capability.
- 5. Emergency override over all-call.
- Indicators: A visual annunciation for each distribution channel to indicate source being used.
- E. Self-Contained Power and Control Unit: A single assembly of basic control, electronics, and power supply necessary to accomplish specified functions.

- F. Spare Positions: 20 percent spare zone control.
- G. Microphone jack.

2.9 TELEPHONE PAGING ADAPTER

- A. Adapters shall accept voice signals from telephone extension dialing access and automatically provide amplifier input and program override for preselected zones.
 - 1. Minimum Frequency Response: Flat, 200 to 2500 Hz.
 - 2. Impedance Matching: Adapter matches telephone line to public address equipment input.
 - Rack mounted.

2.10 TONE GENERATOR

- A. Tone generator shall provide clock and program interface with public address system.
- B. Signals: Minimum of seven distinct, audible signal types including wail, warble, high/low, alarm, repeating and single-stroke chimes, and tone.
- C. Pitch Control: Chimes and tone.
- D. Volume Control: All outputs.
- E. Activation-Switch Network: Establishes priority and hierarchy of output signals produced by different activation setups.
- F. Mounting: Rack.

2.11 LOUDSPEAKERS

- A. Cone-Type Loudspeakers:
 - 1. Minimum Axial Sensitivity: 91 dB at 1 m, with 1-W input.
 - 2. Frequency Response: Within plus or minus 3 dB from 50 to 15,000 Hz.
 - 3. Size: 8 inches] with 1-inch voice coil and minimum 5-oz. ceramic magnet.
 - 4. Rated Output Level: 10 W.
 - 5. Minimum Dispersion Angle: 100 degrees.
 - 6. Matching Transformer: Full-power rated with four taps. Maximum insertion loss of 0.5 dB.
 - 7. Surface-Mounted Units: Ceiling, wall, or pendant mounted, as indicated, in steel back boxes, acoustically dampened. Front face of at least 0.0478-inch steel and whole assembly rust proofed and shop primed for field painting.
 - 8. Flush-Ceiling-Mounted Units: In steel back boxes, acoustically dampened. Metal ceiling grille with white baked enamel.
- B. Horn-Type Loudspeakers:
 - 1. Type: Single-horn units, double-reentrant design, with minimum full-range power rating of 15 W.

- 2. Matching Transformer: Full-power rated with four standard taps. Maximum insertion loss of 0.5 dB.
- 3. Frequency Response: Within plus or minus 3 dB from 250 to 12,000 Hz.
- 4. Dispersion Angle: 130 by 110 degrees.
- 5. Mounting: Integral bracket.
- 6. Units in Damp, Wet, or Outdoor Locations: Listed and labeled for environment in which they are located.
- 7. Units in Hazardous (Classified) Locations: Listed and labeled for environment in which they are located. Provide any accessories required to maintain listing.

2.12 OUTLETS

A. Microphone Outlet: Three-pole, polarized, locking-type, microphone receptacles in single-gang boxes. Equip wall outlets with brushed stainless-steel device plates. Equip floor outlets with gray tapered rubber or plastic cable nozzles and fixed outlet covers.

2.13 CONDUCTORS AND CABLES

- A. Jacketed, twisted pair and twisted multipair, untinned solid copper.
 - 1. Insulation for Wire in Conduit: Thermoplastic, not less than 1/32 inch thick.
 - 2. Microphone Cables: Neoprene jacketed, not less than 2/64 inch thick, over shield with filled interstices. Shield No. 34 AWG, tinned, soft-copper strands formed into a braid or approved equivalent foil. Shielding coverage on conductors is not less than 60 percent.
 - 3. Plenum Cable: Listed and labeled for plenum installation.

PART 3 - EXECUTION

3.1 WIRING METHODS

- A. Wiring Method: Install cables in pathways and cable trays except within consoles, cabinets, desks, and counters, and except in accessible ceiling spaces and in gypsum board partitions where unenclosed wiring method may be used. Conceal pathway and cables except in unfinished spaces.
 - 1. Install plenum cable in environmental air spaces, including plenum ceilings.
- B. Wiring Method: Conceal conductors and cables in accessible ceilings, walls, and floors where possible.
- C. Wiring within Enclosures: Bundle, lace, and train cables to terminal points with no excess and without exceeding manufacturer's limitations on bending radii. Provide and use lacing bars and distribution spools.

3.2 INSTALLATION OF PATHWAYS

A. Install manufactured conduit sweeps and long-radius elbows whenever possible.

3.3 INSTALLATION OF CABLES

A. Comply with NECA 1.

B. General Cable Installation Requirements:

- 1. Terminate conductors; no cable shall contain unterminated elements. Make terminations only at outlets and terminals.
- 2. Splices, Taps, and Terminations: Arrange on numbered terminal strips in junction, pull, and outlet boxes; terminal cabinets; and equipment enclosures. Cables may not be spliced.
- 3. Secure and support cables at intervals not exceeding 30 inches and not more than 6 inches from cabinets, boxes, fittings, outlets, racks, frames, and terminals.
- 4. Bundle, lace, and train conductors to terminal points without exceeding manufacturer's limitations on bending radii. Install lacing bars and distribution spools.
- 5. Do not install bruised, kinked, scored, deformed, or abraded cable. Do not splice cable between termination, tap, or junction points. Remove and discard cable if damaged during installation and replace it with new cable.
- 6. Cold-Weather Installation: Bring cable to room temperature before dereeling. Heat lamps shall not be used.

C. Open-Cable Installation:

- 1. Install cabling with horizontal and vertical cable guides in telecommunications spaces with terminating hardware and interconnection equipment.
- 2. Suspend speaker cable not in a wireway or pathway a minimum of 8 inches above ceiling by cable supports not more than 60 inches apart.
- 3. Cable shall not be run through structural members or be in contact with pipes, ducts, or other potentially damaging items.
- D. Separation of Wires: Separate speaker-microphone, line-level, speaker-level, and power wiring runs. Install in separate pathways or, where exposed or in same enclosure, separate conductors at least 12 inches apart for speaker microphones and adjacent parallel power and telephone wiring. Separate other communication equipment conductors as recommended by equipment manufacturer.

3.4 INSTALLATION

- A. Coordinate layout and installation of system components and suspension system with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, fire-suppression system, and partition assemblies.
- B. Match input and output impedances and signal levels at signal interfaces. Provide matching networks where required.
- C. Identification of Conductors and Cables: Color-code conductors and apply wire and cable marking tape to designate wires and cables so they identify media in coordination with system wiring diagrams.
- D. Equipment Cabinets and Racks:

- 1. Group items of same function together, either vertically or side by side, and arrange controls symmetrically. Mount monitor panel above the amplifiers.
- 2. Arrange all inputs, outputs, interconnections, and test points so they are accessible at rear of rack for maintenance and testing, with each item removable from rack without disturbing other items or connections.
- 3. Blank Panels: Cover empty space in equipment racks so entire front of rack is occupied by panels.
- E. Volume Limiter/Compressor: Equip each zone with a volume limiter/compressor. Install in central equipment cabinet. Arrange to provide a constant input to power amplifiers.
- F. Wall-Mounted Outlets: Flush mounted.
- G. Floor-Mounted Outlets: Conceal in floor and install cable nozzles through outlet covers. Secure outlet covers in place. Trim with carpet in carpeted areas.
- H. Conductor Sizing: Unless otherwise indicated, size speaker circuit conductors from racks to loudspeaker outlets not smaller than No. 18 AWG and conductors from microphone receptacles to amplifiers not smaller than No. 22 AWG.
- I. Weatherproof Equipment: For units that are mounted outdoors, in damp locations, or where exposed to weather, install consistent with requirements of weatherproof rating.
- J. Speaker-Line Matching Transformer Connections: Make initial connections using lowest tap settings.

3.5 GROUNDING

- A. Ground cable shields and equipment to eliminate shock hazard and to minimize ground loops, common-mode returns, noise pickup, cross talk, and other impairments.
- B. Signal Ground Terminal: Locate at main equipment cabinet. Isolate from power system and equipment grounding.
- C. Install grounding electrodes as specified in Section 27 05 26 "Grounding and Bonding for Communications Systems."

3.6 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- B. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections.
- C. Perform tests and inspections.
 - 1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.
- D. Tests and Inspections:

- Schedule tests with at least seven days' advance notice of test performance.
- 2. After installing public address system and after electrical circuitry has been energized, test for compliance with requirements.
- 3. Operational Test: Perform tests that include originating program and page messages at microphone outlets, preamplifier program inputs, and other inputs. Verify proper routing and volume levels and that system is free of noise and distortion.
- 4. Signal-to-Noise Ratio Test: Measure signal-to-noise ratio of complete system at normal gain settings as follows:
 - a. Disconnect microphone at connector or jack closest to it and replace it in the circuit with a signal generator using a 1000-Hz signal. Replace all other microphones at corresponding connectors with dummy loads, each equal in impedance to microphone it replaces. Measure signal-to-noise ratio.
 - b. Repeat test for each separately controlled zone of loudspeakers.
 - c. Minimum acceptance ratio is 50 dB.
- 5. Distortion Test: Measure distortion at normal gain settings and rated power. Feed signals at frequencies of 50, 200, 400, 1000, 3000, 8000, and 12,000 Hz into each preamplifier channel. For each frequency, measure distortion in the paging and all-call amplifier outputs. Maximum acceptable distortion at any frequency is 3 percent total harmonics.
- 6. Acoustic Coverage Test: Feed pink noise into system using octaves centered at 500 and 4000 Hz. Use sound-level meter with octave-band filters to measure level at five locations in each zone. For spaces with seated audiences, maximum permissible variation in level is plus or minus 2 dB. In addition, the levels between locations in same zone and between locations in adjacent zones must not vary more than plus or minus 3 dB.
- 7. Power Output Test: Measure electrical power output of each power amplifier at normal gain settings of 50, 1000, and 12,000 Hz. Maximum variation in power output at these frequencies must not exceed plus or minus 1 dB.
- 8. Signal Ground Test: Measure and report ground resistance at public address equipment signal ground. Comply with testing requirements specified in Section 27 05 26 "Grounding and Bonding for Communications Systems."
- E. Inspection: Verify that units and controls are properly labeled and interconnecting wires and terminals are identified. Prepare a list of final tap settings of paging speaker-line matching transformers.
- F. Public address system will be considered defective if it does not pass tests and inspections.
- G. Prepare test and inspection reports.
 - 1. Include a record of final speaker-line matching transformer-tap settings and signal ground-resistance measurement certified by Installer.

3.7 STARTUP SERVICE

A. Perform startup service.

- 1. Verify that electrical wiring installation complies with manufacturer's submittal and installation requirements.
- 2. Complete installation and startup checks according to manufacturer's written instructions.

3.8 ADJUSTING

- A. On-Site Assistance: Engage a factory-authorized service representative to provide onsite assistance in adjusting sound levels, resetting transformer taps, and adjusting controls to meet occupancy conditions.
- B. Occupancy Adjustments: When requested within 12 months of date of Substantial Completion, provide on-site assistance in adjusting system to suit actual occupied conditions. Provide up to two visits to Project during other-than-normal occupancy hours for this purpose.

3.9 DEMONSTRATION

A. Train Owner's maintenance personnel to adjust, operate, and maintain the public address system and equipment. Refer to Section 01 79 00 "Demonstration and Training."

END OF SECTION 27 51 16

STRUCTURAL DESIGN CRITERIA SIN COMMERCIAL BUILDING CODE SPS 361-366

3	STRUCTURAL DE
1	. GOVERNMG CODE: WISCONS 2015 MTE
2	
3	FLOOR LIVE LOAD (1803.1.1) FLOOR AT GRADE: SECOND FLOOR: MEZZANINE:
4	ROOF LIVE LOAD (1603.1.2) NINGSUM ROOF LIVE LOAD:
5	ROOF SNOW LOAD (1803.1.3)
	GROUND SNOW LOAD: FLAT-ROOF SNOW LOAD: SNOW EXPOSURE FACTOR: SNOW LOAD IMPORTANCE FAC THERMAL FACTOR:
6	WIND DESIGN DATA (1603.1.4) ULTIMATE WIND SPEED (3-SECTION OF THE PROPERTY OF
7	
	MPORTANCE FACTOR:
	MAPPED, MCE, 5% DAMPED, SP AT SHORT PERIODS: AT A PERIOD OF 1 SECOND:
	SITE CLASS: DESIGN EARTHOUAKE SPECTR
_	DESIGN EARTHQUAKE SPECTR AT SHORT PERIODS: AT A PERIOD OF 1 SECOND:
8.	MET ALLOWABLE SOIL BEARING PER CGC GEOTECHNICAL REP
9.	FLOOD DESIGN DATA (1603.1.7)
	BUILDING IS NOT LOCATED IN F DESIGN DATA IS NOT REQUIRE
1	 SPECIAL LOADS (1603.1.8) SPECIAL LOADING CONDITIONS THIS BUILDING: THEREFORE SE
1	THIS BUILDING: THEREFORE SP 1. PHOTOYOLTAIC PANEL SYSTEM
	PANEL SYSTEM: SUPPORT SYSTEM:
11	 STRUCTURAL OBSERVATIONS STRUCTURAL OBSERVATIONS ARE NOT REQUIRED.
	ARE NOT REQUIRED.
c	GENERAL NOTES
_	
_	-1. FELD VERIFY ALL DIMENSION OF CONSTRUCTION - RESOLV DO NOT SCALE DRAW
6	-1. FEED VERIFY ALL DIMENSION OF CONSTRUCTION - RESOLV DO NOT SCALE DRAW 2. FOR CLARITY, ALL EXTERIOR FOR EXACT DIMENSIONS, LOX ARCHITECTURAL AND/OR CN
6	FELD VERFY ALL DMENSON OF CONSTRUCTION - RESOLV DO NOT SCALE DRAW! FOR CLARITY, ALL EXTERDA FOR BUACT DANSENIS LIC ANCHITECTURAL MANGREY VERFY ALL SIZES, UPREMITS, ELECTRICAL FOLLOWING, NO
G G	FEID VERFY ALL DMENSON OF CONSTRUCTION - RESOLV DO NOT SCALE DRAW! FOR CLAINT, ALL EXTEROR FOR BEAGT DMENSONS, LOS ARCHITECTURAL ANDOR ON LEGITIS. VERFY ALL SUES, WEBSITS, ED MEGUMICAL AND BECTIFICAL SUES WEBSITS, AND LEGITIS OF MEGUMICAL AND BECTIFICAL SMALL RAPIL VINCESS NOTE.
G	FED VERFY ALL DMENSON OF CONSTRUCTION - RESOUT ON OF CONSTRUCTION - RESOUT OF CONSTRUCTION - RESOUT ON OF CONSTRUCTION - RESOUT ON OF CONSTRUCTION - RESOURCE -
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6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	1. FED VERFY ALL DIMENSION OF CONTRIVETION - RESCO. DO NOT SCALE DRAW! 2. FOR CLARITY, ALL EXTENDER PROBAGOT DAMESION OF CONTRIVETION - RESCO. DO NOT SCALE DRAW! 3. VERFY ALL SIZES, WEIGHTS, W
	1. FEED VERIFY ALL DIMENSION OF CONSTRUCTION - RESCOND - RESCOND OF CONSTRUCTION - RESCOND - RESCOND OF CONSTRUCTION - RES

DESIGN DATA (1603.1.4)	0,-12	,	MISCELLAMEDUS FOUNDATIONS NOT SHOWN ON STRUCTURAL DRAWINGS.
ATE WIND SPEED (3-SECOND GUST): AL WIND SPEED (3-SECOND GUST) EXPOSURE: WL PRESSURE COEFFICIENT:	Yut = 115 MPH Yuso = 90 MPH C GCPI = ++ 0.15	F-7.	CONTROL JOHTS IN THE CAST-N-PLACE CONCRETE FOUNDATION WALLS SHALL BEF ALED AT SEADAN IN OTTO EXCEED BY CO. OR AS LOCATED PER PAWAMES AND SHOULD ALEN WITH WASONITY CONTROL JOHTS WHERE PAPILABLE. SEE DETAIL SHEET FOR CONTROL JOHN DEFAILS. PROVIDE VERTICAL "Y GROOVE AT ALL CONSTRUCTION AND CONTROL JOHN'S. CONTRACTOR SHALL ISBARIE FLAVE OF JOHN'S ICANTENDED FOR APPROVAL.
QUAKE DESIGN DATA (1600.1.5) TANCE FACTOR:	k=1		A LEAF CONCRETE MUD SLAB S' TO S' THICK SHALL BE USED IN THE FOOTING EXCAVATION IF THE BOTTOM OF THE EXCAVATION TENDS TO BECOME MUDDY AND SOFT DUE TO CONSTRUCTION ACTIVITY. LEAN CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSINE STRENGTH OF 2000 PSL
ED, MCE, 5% DAMPED, SPECTRAL ACCI DRT PERIODS: ERIOD OF 1 SECOND: LASS:	ELERATIONS: S _F = 0.06 G S ₁ = 0.05 G	E.6	COORDINATE GROUNDING REQUIREMENTS FOR FOUNDATION FOOTING RENFORCING STEEL WITH ELECTRICAL DRAWNIGS. COORDINATE NISTALLATION OF GROUNDING WIRESPOURNERS WITH FIRE STREAM
N EARTHOUAKE SPECTRAL ACCELERA DRT PERIODS: ERIOD OF 1 SECOND:	TIONS Sos = 0.09 G Sos = 0.073 G	F-10.	CONTRACTOR PRIDE TO CASTING CONCRETE. REFER TO NOTE CR-11 FOR ADDITIONAL INFORMATION. SEE TYPICAL SLAS-ON-GRADE DETAILS FOR SLAS AND SUB-BASE RECUPELMENTS. THESE WILL BE TYPICAL THROUGHOUT UNALESS NOTED
CHRICAL DESIGN DATA (1603.1.6)	roo bor		OTHERWISE.
LOWABLE SOIL BEARING PRESSURE 1 30 GEOTECHNICAL REPORT, PROJECT	500 PSF F C15051-8 DATED 06/12/2018		
<u>ldesign data</u> (1803.1.7) NG IS NOT LOCATED IN FLOOD HAZARI N DATA IS NOT REDURRED	D AREA: THEREFORE FLOOD	CC	NCRETE & REINFORCING STEEL NOTES
N DATA IS NOT REQUIRED ULLOADS (1603.1.8)		MATE	RIAL PROPERTIES (U.K.O.)
<u>LLOADIS</u> (1603.1.6) LLOADING CONDITIONS ARE NOT API UILDING: THEREFORE SPECIAL LOADS	PLICABLE TO THE DESIGN OF	COM	PRESSIVE STRENGTH -Fo = 4 KSI PRESSIVE STRENGTH -Fo = 4 KSI -Fy = 60 KSI (AS15 GR 60)
WOLTAIC PANEL SYSTEM LOADS (1803	.1.8.1)	CR-1.	PROVIDE HOTICOLD WEATHER PROCEDURES AND PROTECTION IN ACCORDANCE WITH ACI RECOMMENDATIONS AND PROJECT SPECIFICATIONS.
SYSTEM: HT SYSTEM: TURAL OBSERVATIONS FOR SEISMIC (NA NA NA NADIOR WIND RESISTANCE	CR-2.	LOCAL BUILDING CODE REQUIREMENTS AND THOSE OF THE FOLLOWING STANDARDS (LATEST EDITION):
TURAL OBSERVATIONS FOR SEISMIC / DT REQUIRED.	UND YYDIO RESTISTANCE		ACI 318, BUILDING CODE RECUREMENTS FOR REINFORCED CONC. ACI 315, DETAILS AD DETAILENG OF CONCRETE REINFORCEMENT ACI 301, SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BLIDS, ACI 307, RECOMMENDED PRACTICE FOR CONCRETE FORM WORK
		CR-1	RENFORCING SHALL BE DETAILED IN ACCORDANCE WITH ACI 315. ALL RENFORCEMENT BARS SHALL BE FABRICATED IN ACCORDANCE WITH THE LATEST ORSI MANULO E STRUMARD PRACTICE AND SHALL BE CLEAN AND FREE OF GREASE AND SCALING RUST.
RAL NOTES		CR-6.	AND PREE OF GREASE AND SCALING RUST. SEE SECTION 003000 OF SPECIFICATIONS FOR INFORMATION REGARDING CONCRETE MIX DESIGN, TESTING, MATERIALS, AND ADMOTURES.
VERIFY ALL DIMENSIONS AND EXIST ONSTRUCTION - RESOLVE ANY DISCRI	NG CONDITIONS PRIOR TO START EPANCY WITH ARCHITECT/ENGINEER.	CR-6.	CONCRETE REINFORCEMENT PROTECTION/CLEAR COVER, LLN.O.:
NOT SCALE DRAWINGSHIL			FOOTINGS: BOTTOM & SIDES 3* TOP. 2*
CLARITY, ALL EXTERIOR SLABS AND SI EXACT DIMENSIONS, LOCATIONS, JOIN ITTECTURAL AND/OR CIVIL DRAWINGS.			WALLS: EXTERIOR EXPOSURE 2" INTERIOR EXPOSURE 1"
FY ALL SIZES, WEIGHTS AND LOCATION TRICAL EQUIPMENT, ROOF PENETRAT WHICAL AND ELECTRICAL CONTRACTI	IS OF MECHANICAL AND IONS, DUCTS, ETC. WITH ORS AND FIELD CONDITIONS,		BEAMS/COLUMNS: OVER TIES OR STIRRUPS 1 1/2"
LS WARKED "TYPICAL" MAY OR MAY N LAPPLY UNLESS NOTED OTHERWISE.		CR-7,	ELEVATED SLABS: ALL BAR LAPS SHALL CONFORM TO ACISTB-14, PAPAGRAPH 25.5.1, CLASS TO SPUCE CRITERIA. USE TOP BAR LAP LENGTHS FOR TOP BARS IN SLABS
ICTURAL SYSTEM IS DESIGNED TO WO SHORING OR BRACING NECESSARY DI E RESPONSIBILITY OF THE GENERAL			LAP LENGTH SHALL BE SPECIFICALLY NOTED ON SHOP DRAWINGS WHERE
urchitectural, Mechanical, Elect Bleeves, Inserts, etc. Not Shown Pes or Sleeves for Mechanical T Ictural Members Without Approv	ON STRUCTURAL PLANS.	CR-9.	MORE THAN ONE BAR MAKES UP A CONTINUOUS STRING, HORIZONTAL BARS SHALL BE DETAILED TO SHOW THE DISTANCE FROM AT LEAST ONE END OF THE BAR TO THE MEAREST BUILDING GRID LIVE OR
NEER. CONTRACTOR IS SOLEDY RESPONSED	E FOR ALL SITE SAFETY AND ALL	CR-10	WALL. I. CONTINUOUS TOP AND BOTTOM BARS, WHEN SHOWN IN TRANSVERSE SECTION ONLY, SHALL BE LAPPED AS FOLLOWS:
DENTS WHICH RESULT IN DEATH, PER ERTY ARISING OUT OF OR IN CONNEC IE WORK,			TOP BARS NEAR MID-SPANS; BOTTOM BARS DIRECTLY OVER SUPPORTS, U.H.O.
RACTOR SHALL POST LIVE LOADS PER PRING CODE.		CR-11	PROVIDE ONE (1) HOOKED REINFORCING BAR IN CONCRETE FOOTING TO SERVE AS A CONCRETE EXCASED ELECTRODE VI ACCORDANCE WITH THE NATIONAL ELECTRIC CODE. COORDINATE WITH ELECTRICAL CONTRACTOR FOR EXACT LICCATION. HOOKED REINFORCING BAR SHALL CONFORM TO THE POLLOWING.
IONS, DETAILS, AND NOTES SHOWN O ETYPICAL AND SHALL APPLY TO SMIL SS OTHERWISE SHOWN.	N THE DRAWMAS ARE INTENDED AR CONDITIONS ELSEWHERE,		CONTROLTOR FUR EXACT LOCATION. HOWED HERPORTERS BAY SMLL CONTROLTOR FULL CONTROL CONTROL THE FULL CONTROL B. BAS SEZ HAMSER A HOWED AT ONE ERO ONLY. C. MANALA HORSOWALL LENGTH OF REPORTERS BAY ENCASED IN CONCRETE FOOTING SHALL BE OFF. C. MONGRETE AND SMLL BE OFF. C. MONGRETE SALL BE OFF. C. MONGRETE SALL BAY BAY OF REPORTERS BAY BAY BAY C. MONGRETE SALL BAY
HWORK NOTES			
TERENCE GEOTECHICAL DATA AND EA I DEFINITION OF MATERIALS AND COM	RTH MOVING SPECIFICATION PACTION REQUIREMENTS.		LALL CONCRETE FOUNDATION WALLS SHALL HAVE A MINIMUM OF (2) #5 BARS CONTINUOUS TOP AND BOTTOM, UNLESS INDICATED OTHERWISE. ALL OPENINGS IN CONCRETE FOUNDATION WALLS ARE TO HAVE (4) #5
TERENCE GEOTECHNICAL DATA AND E R REQUIREMENTS FOR EXCAVATION A TER AND GROUND WATER,	ARTH MOVING SPECIFICATION ND CONTROL OF SURFACE		. ALL OPENINGS IN CONCRETE FOUNDATION WALLS ARE TO HAVE (4) #5 DAGONAL BARS EACH FACE OF THE WALL AND BHALL EXTEND 2 FEET BEYOND OPENING ON EACH SIDE, UNLESS PROXATED OTHERWISE. PROVIDE FOOTING DOWELS TO MATCH VEHTICAL WALL REINFORCING.
ESS NOTED OTHERWISE, THE CONTR EPENDENT, QUALIFED GEOTECHNICA ENCY TO IDENTIFY AREAS OF POOR SX GRADE PREPARATIONS AND TO OVER	ACTOR SHALL RETAIN AN LENGINEERING PRIVITESTING DILS, TO MONITOR PROPER DESE AND YEST THE SI ACCELED.		. PROVIDE FOOTING DOWELS TO MATCH VERTICAL WALL REINFORCING, WHERE WALL REINFORCING IS NOT MORCATED, DOWEL FOOTING TO FOURDATION WALLS WITH IS REBAR AT 1'S 0.0. BY 3" OLONG, WITH STANDARD HOOKS EMBEDDED A MENBRUM OF 3" INTO FOOTING.
CORPACTED FILL MATERIAL	DEC DOSIO FOR BUTHE SOCI	CR-15	. ALL PIER FOOTINGS TO HAVE DOWELS WITH STANDARD HOOKS OF SAME SIZE AND OLUXITITY AS PIER STEEL, DOWELS TO LAP PIER STEEL AS REQUIRED FOR A CLASS "E "TENSION SPLICE, HOOK UNDER FOOTING REINFORCEMENT, UNLESS INDICATED OTHERWISE.
SECONATIONS SHALL BE LOCATED AND OR TO EARTH REMOVAL WORK. CONT IXERS UNTIL EXCAVATION ACTIVITIES NOTER ROUND UTILITY CONFLICTS AR SOLINTERED DURING EXCAVATION, NO EDIATELY.	RACTOR SHALL MANTAIN HAVE CEASED. E DISCOVERED BEFORE OR TIFY THE ARCHITECT/ENGINEER	CR-16	. HOOK HORIZDATTAL WALL AND BEAM REINFORCING BARS AT DECONTRUDUS ENDS, TYPICAL LINAESS HIDICATED OTHERWISE, EXTEND REINFORCIBENT TO FAR FACE OF PIERS/PEDESTALS AND/OR COLLINNS UNLESS INDICATED OTHERWISE,
ORE PLACING FOOTINGS, FOUNDATIO I-GRADE SHALL BE PREPARED AND IN CIFICATIONS,	NS OR SLAB-ON-GRADE, THE SPECTED AS REQUIRED BY THE	CR-17	, WATER STOPS SHALL BE PROVIDED IN HORIZONTAL AND VERTICAL CONSTRUCTION JOINTS WHERE FINISHED FLOOR IS BELOW EXTERIOR GRADE UNLESS OMISSION IS APPROVED BY THE ENGINEER.
NOT BACKFILL OR FILL SOIL MATERIAL DDY, FROZEN, OR CONTAIN FROST AN	DIORICE.	CR-18	. PROVIDE ADDITIONAL 44 BARS AT 4-0" LONG 1" BELDY TOP OF SLAB AT 45" TO ALL RE-ENTRANT CORNERS, OPENINGS IN CONCRETE SLABS AND AS INDICATED ON DRAWINGS.
CE BACKFILL AND FILL SOIL MATERIAL UCTURES TO REQUIRED ELEVATIONS FULL LENGTH OF EACH STRUCTURE.	S EYEAR Y ON ALL SIDES OF AND UNEFORMLY ALONG		REFER TO FLATWORK DRAWINGS AND/OR SPECIFICATIONS FOR SUAB-ON-GRADE FINISH TYPES AND DEPRESSIONS REQUIRED FOR MATS, TILE, AND OTHER FINISH MATERIALS.
		CR-20	. FIGICAET THE SLAB-CH-GRADE BENEATH NTERIOR HASONRY PARTITIONS 8 INCHES BELOW BOTTOM OF SLAB ON GRADE. THICKENED PORTION TO EXTERIO 8 RICHES BETOMO THE FACE OF THE WALL ON EACH SIDE. REINFORCE THE THICKENED PORTION WITH 15, INCONTINUOUS, LONGRUDDHIS REPROPICING BAISS AND 5T TRANSVERSE BAISS AT 16" O.C.
		CR-21.	UNLESS INDICATED OTHERWISE. PITCH CONCRETE TO FLOOR DRAINS, COORDINATE WITH PLUMBING AND ARCHITECTURAL DRAWINGS.
		CR-22	PROVIDE CONTROL OR CONSTRUCTION JORTS IN SLABS-ON-GRADE AT 15 FOOT MAXMAN CENTERS EACH DIRECTION, UNLESS INDICATED OTHERWISE, CONTRACTOR SHALL SUBMIT PLANS OF JOINT LOCATIONS TO THE ARCHITECTURGUISHER FOR APPROVIDE JURIST TO CASTON'S TO SECON.
		CR-23	GRADE. COORDINATE WITH ARCHITECTURAL DRAWINGS AND FLOOR PRISHES SUCH AS THE AND TERRAZZO. ALL DOWNELS NITO EXISTING CONCRETE OR SOLID MASONITY TO BE EPOXY ADHESIVE ANCHORS.
			ALUMINUM CONDUIT IS NOT PERMITTED TO BE EMBEDDED IN CONCRETE.
		CR-25.	WHEN DRILLING INTO EXISTING CONCRETE USE GROUND PENETRATING RADAR OR TRAY SCAWARG TO LOCATE EXISTING REINFORCING, DO NOT DRILL THROUGH EXISTING REINFORCING, CONTACT EMPLIES IN MAIEDITELY FANCHOR LOCATIONS WITERFERE WITH EXISTING REINFORCING.
	THE CONTROL OF THE RESIDENCE OF THE STREET, AND ADDRESS OF THE STREET, AND		

FOUNDATION NOTES

WI DOT: 11K WHEEL, 34K TANDEM 80 PSF 80 PSF

F-1. FOOTING SUBGRADES SHALL BE CLEAN AND FREE OF DEBRIS, STANDING WATER, AND LOOSE SO!

F.2. ALL DOLUMN FAUNT THE MEDICAL PROPERTY OF THE PROPERTY OF

F-5. REFER TO ELECTRICAL DRAWING SITE LIGHTING FOR POLE BASES. SUPPLIED AND INSTALLED BY GENERAL CONTRACTOR.

F-6. COORDINATE WITH ARCHITECTURAL AND CIVIL DRAWINGS FOR MISCELLAYEOUS FOUNDATIONS NOT SHOWN ON STRUCTURAL DRAY

M-12, REFER TO STRUCTUR JOINT LOCATIONS, V INDICATED, PROVIDE CONTROL JOINT LAY M-14, PROVIDE 10 GAGE BENEACH SIDE OF THE TO ATTACH TO UNDERSOD WITH 3 (MUBRIUM) SEL REGUIRED BY THICKNIN CONCRETE DECK WITH 316" DAMIETER, SEE A MASONRY WALL LOCA OF MASONRY WALL DO MASONRY WALL UNTO MASONRY W SHOP DRAWIN SD-2. THE GENERAL CONTRI-PRODUCT DATA FOR C PRIOR TO SUBMITTAL CONTRACTOR, ANY SI-STAMPED BY THE GEN CONTRACTOR SHALL (THE CONTRACT DOCUMENTS SD-5, SHOP DRAWING REVE TO THE DESIGN CONC SD-7. ALLOW A MINIMUM OF BY THE STRUCTURAL DELEGATED D DS-1, HELICAL PILES - SPECI DS-2, PIPE AND TUBE RAILS DS-3, COLD FORMED METAL

M-B.	ALL LAPS SHALL BE 48 BAR DIAMETERS UNLESS INDICATED OTHERWISE,
	GROUT SOUD ALL JAMBS IN ALL MASONRY WALLS FIALL HEIGHT TO UNDERSIDE OF LIVITEL. EXTEND GROUTED JAMB FROM FACE OF MASONRY OPENING AT LEST 24" (A MINIMUM OF 2 CELLS, AT OTHER BEAM BEARWING LOCATIONS, GROUT SOUD A MINIMUM 22"-24" AREA BENEATH THE BEARING PLATE, UNLESS MOCKATED OTHERWING.
M-9,	PROVIDE CORNER SPLICE BARS FOR ALL BOND BEAMS OCCURRING AT CORNERS OR WALL INTERSECTIONS. SPLICE BAR TO BE THE SAME SIZE AS BARS INTERBOND BEAM.
M10.	MINIMUM AS YERTICAL BARS AT 45" O.C., WITH THAT CORE GROUTED AND HORIZONTAL JOINT EREPROFEMENT AT 15" C.C., THE BOTTOM TWO COURSES SHALL BE GROUTED SOLID. PROVIDE A CONTINUOUS BOND BEAM AT TOP OF WALL WITH (2) A BARS CONTINUOUS, GROUT BOND BEAM SOLID, PROVIDE AS DOWEL AT 45" O.C., INTO FOOTINGS,
	USE SLEEVE ANCHORS IN NON-STRUCTURAL MASONRY WALL PARTITIONS, UNLESS INDICATED OTHERWISE.
	REFER TO STRUCTURAL AND/OR ARCHITECTURAL DRAWINGS FOR CONTROL JOHT LUCATIONS, WHERE MASONING TOOTIFIOL JOHN LUCATIONS ARE NOT BOICATED, PROVIDE THEM AT 25 MAXIMUM CENTERS, SUBMIT MASONRY CONTROL JOHN LAYOUT TO THE ENGINEER FOR APPROVAL.
	. PROVIDE HORIZONTAL BOND BEAMS (DIAPHRAGM CHORDS) WITH (2) IS BARS CONTRAUOUS, BENEATH FLOOR/ROOF MEMBER BEARING ELEVATIONS AND AT DECK EDGE,
M-14	PROVIDE 10 AMERIENT SUP JOHN THATES 7 - 4" 1 "FLOWS AT 3" OF D. EACH SEC OF THE TOP OF ALL SHAN ETTIRCHMAR MASONITY WALLS. ATTACHTO INDERSOR OF METAL BOOF DECK OR STRUCTURAL STEEL WITH 3 (MARKING SELE-PRILLAND, SEET-HREADING SCREWS) (17) AS RECURED BY THOWNESS OF BASE METAL, ATTACHTO LIMBESSE OF OF THE SECOND SELECT OF THE SECOND
SH	OP DRAWINGS
	SHOP DRAWINGS SHALL BE SUBMITTED FOR STRUCTURAL ITEMS AS REQUIRED BY THE SPECIFICATIONS. CONSTRUCTION DOCUMENTS SHALL NOT BE REPRODUCED FOR USE AS SHOP DRAWINGS.
	THE GENERAL CONTRACTOR SHALL REVIEW ALL SHOP DRAWINGS AND PRODUCT DATA FOR CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS PRODUCT DATA FOR CONFORMANCE WITH THE CONSTRUCTION DATA PROPERTY OF THE STAMPED BY THE CONTRACTOR. ANY SHOP DRAWING OR PRODUCT DATA NOT REVIEWED AND STAMPED BY THE GENERAL CONTRACTOR WILL BE REJECTED. GENERAL CONTRACTOR WILL BE REJECTED. GENERAL CONTRACTOR SHALL CLUD OR FLAG ALL TEAS NOT IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND SHALL VEHEV ALL DOMENSIONS.
SD-3.	ANY CHANGES, SUBSTITUTIONS OR DEVATONS FROM THE ORIGINAL CONTRACT DRAWNESS SHALL BE CLOUDED BY THE MANIFACTURER OR FABRICATOR. ANY CHANGES, SUBSTITUTIONS, ON DEVATIONS YINGH ARE CLOUDED OR FLAGGED BY SUBMITTIME PAYRES SHALL NOT BE CONSIDERED APPROVED AFTER THE BYAINEER'S REVIEW, UNLESS SPECIFICALLY NOTED ACCORDINGLY BY THE ENGINEER'S.
	THE APPROVED SHOP PRAYMINGS DO NOT REPLACE THE ORIGINAL CONTRACT DRAWNS. THEM CONTRECT DRAWNS. GREAT CONTRACT DRAWNS. THEM CONTRACT DRAWNINGS. THE ORIGINAL CONTRACT DRAWNINGS. IT IS THE CONTRACTOR'S REPROMEBLING TO BENUE THAT THEM CONTRECT OR SERVED HIM TO BENUE THAT THEM CONTRECT OR SERVED HIM CORRECTLY OR DEVIATED BY ACCORDANCE WITH THE CONTRACT DRAWNINGS.
	SHOP DRAWING REVIEW IS INTENDED ONLY FOR GENERAL CONFORMANCE TO THE DESIGN CONCEPT AND CONSTRUCTION DOCUMENTS.
	SHOP DRAWINGS WILL BE RETURNED FOR RESUBMITTAL IF MAJOR ERRORS ARE FOUND DURING REVIEW.
50-7.	ALLOW A MANAULAI OF (10) WORKING DAYS FOR REVIEW OF SHOP DRAWINGS By the Structural Engineer.
DE	LEGATED DESIGN SUBMITTALS
DOC! THE I THEN	JMENTS FOR DELEGATED DESIGN SUBMITTAL ITEMS SHALL BE REVIEWED BY PAGINEER OF RECORD IN RESPONSIBLE CHARGE WHO SHALL FORWARD ITO THE BULDING OFFICIAL WITH A NOTATION INDICATING THAT THEY HAVE REVIEWED AND ARE IN GENERAL CONFORMANCE WITH THE DESIGN OF THE
DOCU THE E THEM BEEN BUILD	JMENTS FOR DELEGATED DESIGN SUBMITTAL ITEMS SHALL BE REVIEWED BY PAGINEER OF RECORD IN RESPONSIBLE CHARGE WHO SHALL FORWARD ITO THE BULDING OFFICIAL WITH A NOTATION INDICATING THAT THEY HAVE REVIEWED AND ARE IN GENERAL CONFORMANCE WITH THE DESIGN OF THE
DOCU THE E THEM BEEN BUILD DS-1.	MENTS FOR DELEGATED DESIGN SUBMITTAL ITEMS SHALL BE REVEWED BY DIGNIEGE OF RECORD IN RESPONSELE CHARGE WIRD SHALL FORWARD ITO THE BUILDING OFFICIAL WITH A MOTATION MODICATION THAT THEY HAVE REVEWED AND ARE IN GENERAL CONFORMANCE WITH THE DESIGN OF THE MIX. HELICAL PLES - SPECIFICATION SECTION 31661S. PPE AND TUBE RAILINGS - SPECIFICATION SECTION 052213.
DOCU THE E THEM BEEN BUILD DS-1.	MINITS FOR DELEGATED DESIGN SUBMITTAL ITEMS SHALL BE REVIEWED BY POINTEED OF RECORD IN RESPONSEILE CHARGE WHO SHALL FORMARD TO THE BUILDING OFFICIAL WITH A WOTATION MODICATION FIAT THEY HAVE REVIEWED AND ARE IN GENERAL CONFORMANCE WITH THE DESIGN OF THE MINI. HELICAL PLES - SPECIFICATION SECTION 31661S.
DOCU THE E THEM BEEN BUILD DS-1.	MENTS FOR DELEGATED DESIGN SUBMITTAL ITEMS SHALL BE REVEWED BY DIGNIEGE OF RECORD IN RESPONSELE CHARGE WIRD SHALL FORWARD ITO THE BUILDING OFFICIAL WITH A MOTATION MODICATION THAT THEY HAVE REVEWED AND ARE IN GENERAL CONFORMANCE WITH THE DESIGN OF THE MIX. HELICAL PLES - SPECIFICATION SECTION 31661S. PPE AND TUBE RAILINGS - SPECIFICATION SECTION 052213.
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MASONRY NOTES

N-2. MASONRY SHALL BE PLACED IN ONE-HALF RUNNING BOND U.N.O.

M-S. REFER TO ARCHITECTURAL PLANS AND DOORFRAME SCHEDULES FOR LINTEL ROUGH OPENING LOCATIONS, SIZES, AND ELEVATIONS.

IH-6. ALL MASONRY WALLS ARE TO HAVE 9 GAUGE HORIZONTAL JON'T REINFORCEMENT WHICH DOES NOT EXCEED 16 INCHES ON CENTER VERTICALLY.

STRUCTURAL STEEL NOTES

MATERIAL PROPERTIES (U.H.O.) W-SHAPES

8-2. ALL BOLTED CONNECTIONS SHALL UTBLDE 34 INCH DIAMETER A225 BOLTS TIGHTENED TO THE SINUS-TIGHT CONDITION. THE SINUS-TIG CONDITION IS DEFINED BY THE RCSCS "SPECIFICATION FOR STRUC JOHTS USING ASTM A225 OR MAD BOLTS", UNLESS INDICATED OTH

STEEL CONNECTIONS NOT DETAILED ON THE PLANS ARE TO BE THE FABRICATORS STANDARD AND ARE TO BE SELECTED AND DESIGNED ACCORDANCE WITH ASC ASD SPECIFICATIONS, TYPE 2 FRAMING CONNECTIONS, FOR THE REACTIONS MODICATED.

NAMIAN NO, BOLTS FER CONNECTION

• 2 FOR NEWBERS 10 NO-RES DEEP OR LESS

• 3 FOR NEWBERS 10 NO-RES DEEP OR LESS

• 4 FOR NEWBERS 16 NO-RES DEEP

• 4 FOR NEWBERS 16 NO-RES DEEP

• 5 FOR NEWBERS 16 NO-RES DEEP

• 7 FOR NEWBERS 21 NO-RES DEEP

• 7 FOR NEWBERS 21 NO-RES DEEP

• 9 FOR NEWBERS 20 NO-RES DEEP

• 10 FOR NEWBERS 20 NO-RES DEEP

ALL CONNECTIONS TO PIPE AND TUBE COLUMNS SHALL BE THROUGH PLATE CONNECTIONS UNLESS OTHERWISE INDICATED. ALL ANCHOR BOLTS ARE TO BE 3/4" INCH DIAMETER F1.554 Gr. ES THREADED ROOS UNLESS INDICATED OTHERWISE. (2)-1/2 INCH DIAMETER ANCHOR BOLTS SHALL BE PROVIDED AT ALL BEAM AND LINTEL BEARINGS ON CONCRETE OR MASONRY, UNLESS INDICATED OTHERWISE.

5-7. POST RISTALLED ANCHORS ARE TO BE ADHESIVE ANCHORS, INSTALL ANCHORS WITH EMBEDMENT DEPTHS INDICATED, UNLESS INDICATED OTHERWISE.

S-8. STUD ANCHORS ARE TO BE NELSON STUDS OR EQUAL (ASTM A108) S-9. BEAM AND UNITEL PLATES SHALL BE FULLY GROUTED WITH A MINIMUM 1/2" NON-SHRIBK GROUT.

S-13. ALL EXTERIOR MASONRY SHELF ANGLES, UNITEL BEAMS, AND LIMITEL PLATES SHALL BE HOT DIPPED GALYANIZED ACCORDING TO ASTM A123

STEEL BAR JOISTS

MATERIAL PROPERTIES (UNLO)
COMPLY WITH SUIS "SPECIFICATIONS" FOR WEB AND STEEL-ANGLE CHORD

ALL FIELD MODIFICATIONS OR REPAIRS TO THE JOIST, OR JOIST GIRDERS, SHALL BE APPROYED BY THE JOIST MANUFACTURER IN WRITING, THIS LETTER SHALL BE FORWARDED TO THE ENGINEER FOR REVIEW.

CUTTING & DRILLING OF CHORD OR WEB MEMBERS IN BAR JOISTS, OR JOIST GROERS, IS NOT PERMITTED. ALL BRIDGING SHALL BE EQUALLY SPACED, UNLESS NOTED OTHERWISE, BY

JOIST SHALL BE CONSIDERED AS UNSTABLE DURING ERECTION, UNDER N

J-8. YHERE X-BRIDGING INTERFERES WITH MECHANICAL PIPING OR DUCTWORK, UTILIZE HORIZONTAL BRIDGING AS DIRECTED BY JOIST MANUFACTURER. J-9. ALL BRIDGING SHALL BE PER SJI AND AS REQUIRED FOR DESIGN LOADS.

J-10. PROVIDE JOIST WITH UPLIFT CAPACITY AS REQUIRED BY THE BUILDING CODE AND THE STRUCTURAL DESIGN CRITERIA.

METAL DECK

MD-2. METAL DECKING SHALL BE CONTINUOUS OVER 3 SPANS AND HAVE JOINTS OVER SUPPORTING MEMBERS, UNLESS INDICATED OTHERWISE.

MD-3. BUTTON PUNCHING ROOF DECK IS NOT PERAUTTED, REFERENCE DRAWINGS FOR ROOF DECK ATTACHMENT REQUIREMENTS, STRU DMPHRAGM ACTION IS PROVIDED BY THE ROOF DECK AND ITS ATTACHMENT.

MD-8. CONTRACTOR IS RESPONSIBLE FOR PROVIDING COLUMN CLOSURES AND ALL OTHER RELATED ACCESSORIES REQUIRED FOR COMPLETE DECK INSTALLATION AT ROOFS AND FLOORS.

OBSERVATION AND INSPECTION

THI. IT IS THE CONTRACTOR'S RESPONSBLITY TO PERFORMALL STRUCTURAL WORK IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. MY STRUCTURAL INSPECTION PHOYOBE BY OTHERS DOES NOT RELEVE THE CONTRACTOR OF THIS RESPONSBLITY. ANY STRUCTURAL DEVIATORS FROM THE CONTRACTOR OF THIS RESPONSBLITY. ANY STRUCTURAL DEVIATORS FROM THE CONTRACTOR WITHOUT COST OR ANY DELAY TO THE PROJECT SORGULE.

THE CONTRACTOR SHALL RETAIN AN INDEPENDENT INSPECTION

TH3. THE CONTRACTOR SHALL PROVIDE THE RISPECTION AGENCY ACCESS TO ALL PLACES WHERE THE WORK IS BEND PERFORMED. A MINIMAN OIL HOURS NOTECATION SHALL BE GIVEN TO THE RISPECTION AGENCY PRIOR TO THE COMMENCEMENT OF WORK REQUIRING OBSERVATION OR RISPECTION.

THA. THE INSPECTION AGENCY IS NOT AUTHORIZED TO DIRECT OR APPROVE ANY CHANGES FROM THE CONTRACT DOCUMENTS. IF THE CONTRACTOR WISHES TO QUESTION THE TESTING AGENCY'S INTERPRETATION OF THE CONTRACT DOCUMENTS, HE MAY DO SO D

THE. THE INSPECTING AGENCY IS NOT INSPECTING FOR O.S.H.A.
COMPLIANCE OR RECURRED TO INSPECT TEMPORARY CONSTRUCTION, SUCH AS TEMPORARY BRACING. TEMPORARY CONSTRUCTION IS THE CONTRACTOR'S SOLE RESPONSELLTY.

THA INSPECTION AGENCY SHALL:

A. DESERVE SHORING AND REMOVAL OF BALLAST BEFORE REINFORCING

B. DESERVE SHORING AND REMOVAL OF BALLAST BEFORE REINFORCING

C. DESERVE ASSENCE OF SNAWD DURNOS REINFORCING

C. LOSSELY INSPECT ANY NOWCOMPORIUM WELDS

E. MEDDATELY MOTHER THE CONTRINATION FOR HON-COMPORIUM WORK.

F. SISUE BHYERLY PROCRESS REPORTS

C. DESERVE HISTALLATION, REPISTILLATION OF JOST BRIDGING AND

DBSERVE NO MELD HES WALL OF CHARLETTON TO ROOF DECK
SERVE NEW JOET TOP CHORD COMMECTION TO ROOF DECK
DBSERVE NO WELD HESAM TO HSSAX ON DETALS 1/1/5-543 AND
21/5-543 URITL AFTER MALI-6 PLACED,

TH4. WELD INSPECTION SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTIOR.

THIO, STRUCTURAL OBSERVATIONS SHALL BE PERFORMED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF WISCONSIN.

THIS, PROGRESS REPORTS SHALL INCLIDE DOCUMENTATION OF ALL OBSERVATION AND INSPECTIONS AND HONCONFORMANCES, PROGRESS REPORTS SHALL BE SEALED AND SISHED BY A PROFESSIONAL ENGINEER.

THIS, CONTRACTOR SHALL CORRECT ALL NONCONFORMANCES AT CONTRACTOR EXPENSE, CONTRACTOR SHALL NOT APPLY COST OF CORRECTIONS TO ALL OWNERS.

TH14. CONTRACTOR SHALL PROVIDE REINSPECTION OF ALL NONCONFORMANCES AT CONTRACTOR'S EXPENSE. CONTRACTOR SHALL NOT APPLY COST OF REINSPECTION TO ALLOWANCE.

THE THE CONTRACTOR SHALL NOT APPLY THE COST OF THE CON GAOC PROGRAM NOR INSPECTIONS TO THE ALLOWANCE.

TH-18. OBSERVATION OF FIELD WELDS SHALL INCLUDE PLACEMENT, TYPE, SIZE, FUSION, POROSITY, CRACKING, UNDERCUT, SPATTER AND SMOOTHNESS FINE DWING AWS OLD.

ABBREVIATIONS

BOTTOM OF
BOTTOM
BASE PLATE TYPE
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= TO BE DETERMINED

TOP OF COLUMN

TOP OF FOOTING

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TOP OF STEEL

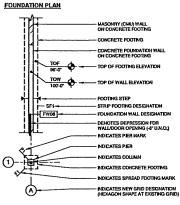
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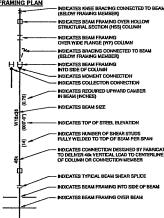
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TYPICAL

STRUCTURAL SYMBOLOGY





GENERAL SYMBOLS

STRUCTURAL WALL TYPE

STRUCTURAL ELEVATION

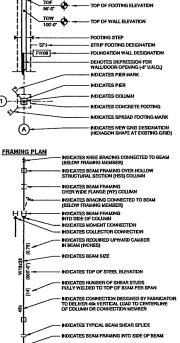
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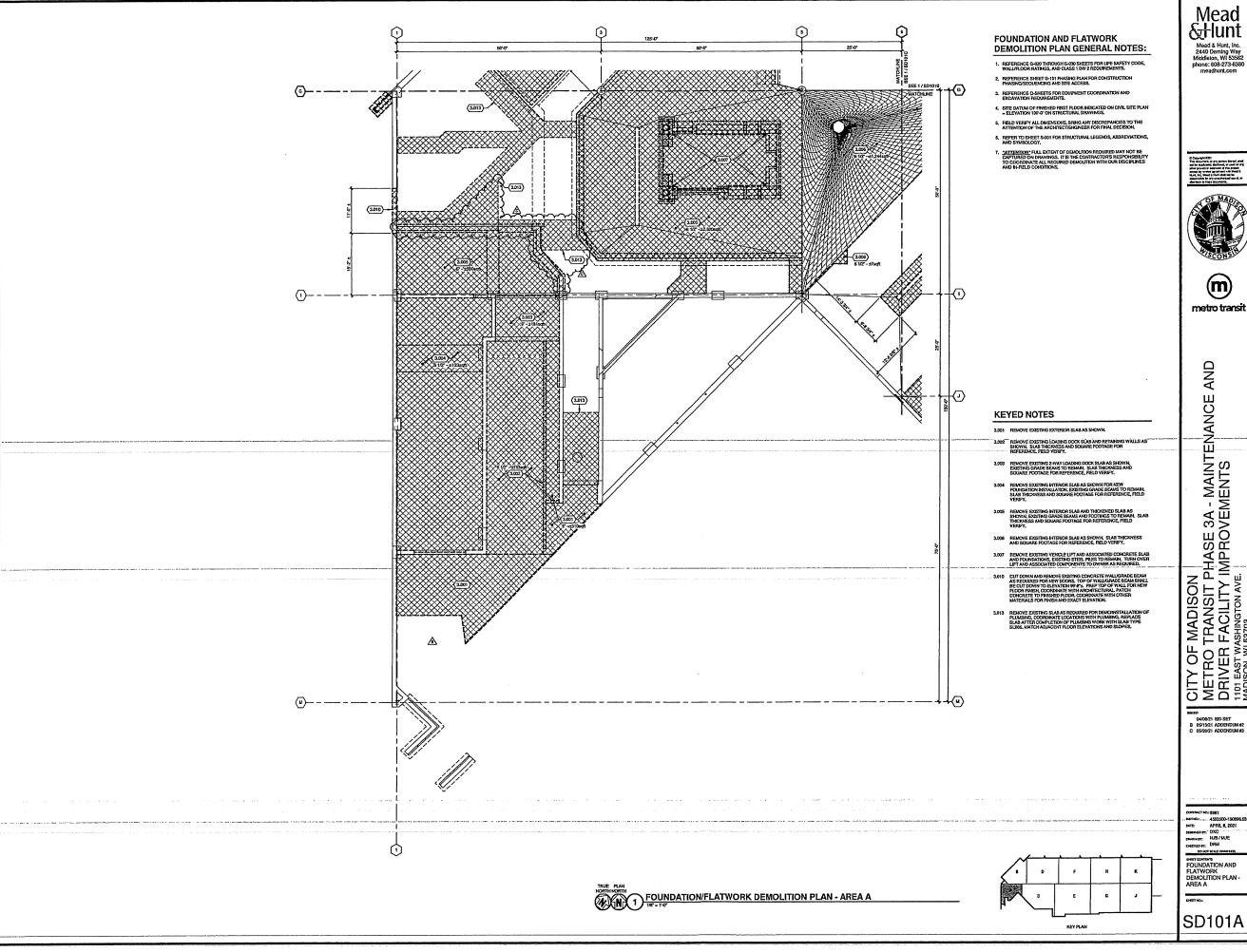


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DRIVER FACILITY IMPROVEMENTS
MADISON, WI 53703 04/08/21 BID SET B 05/13/21 ADDENDUM #2 C 05/20/21 ADDENDUM #3

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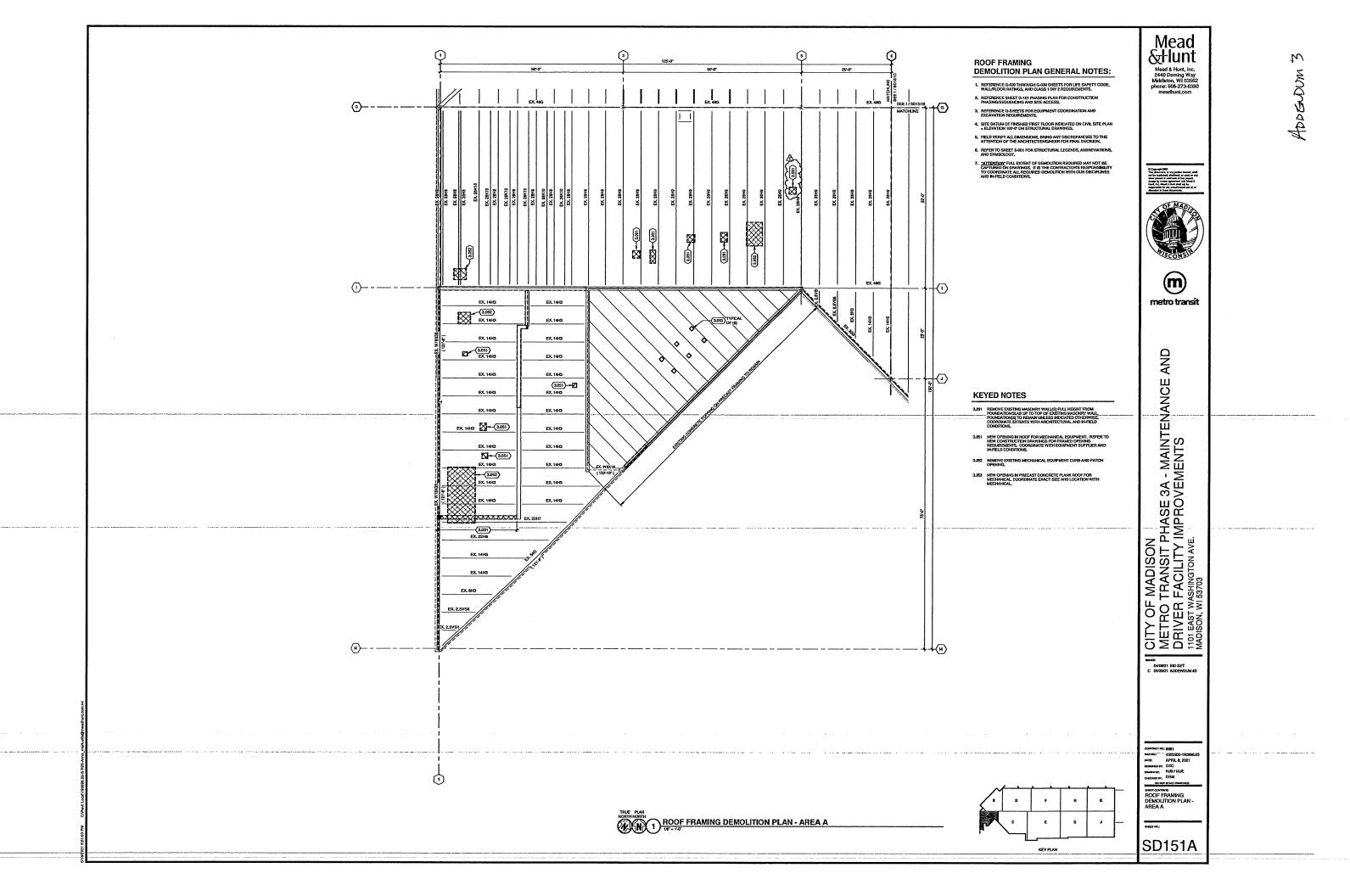
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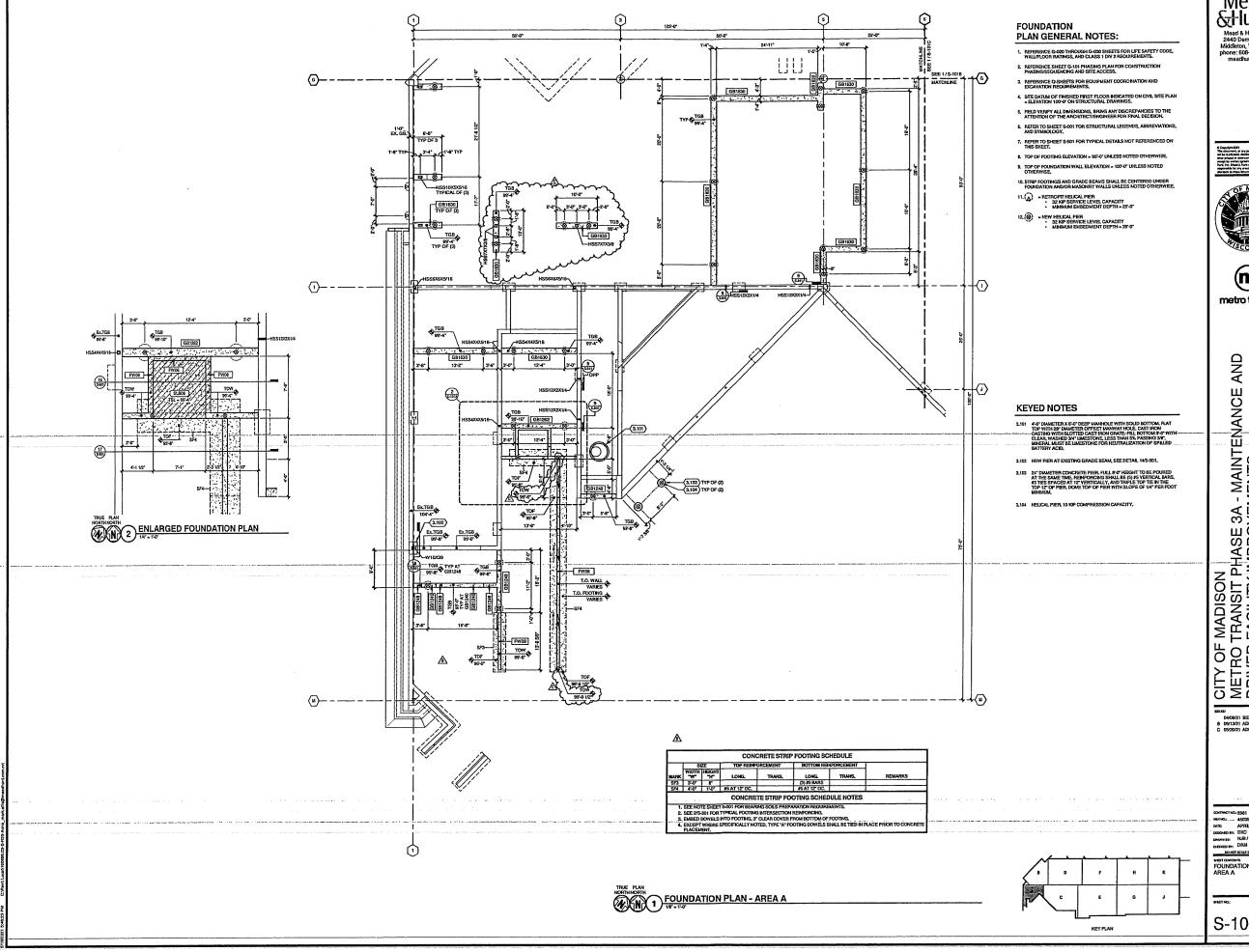
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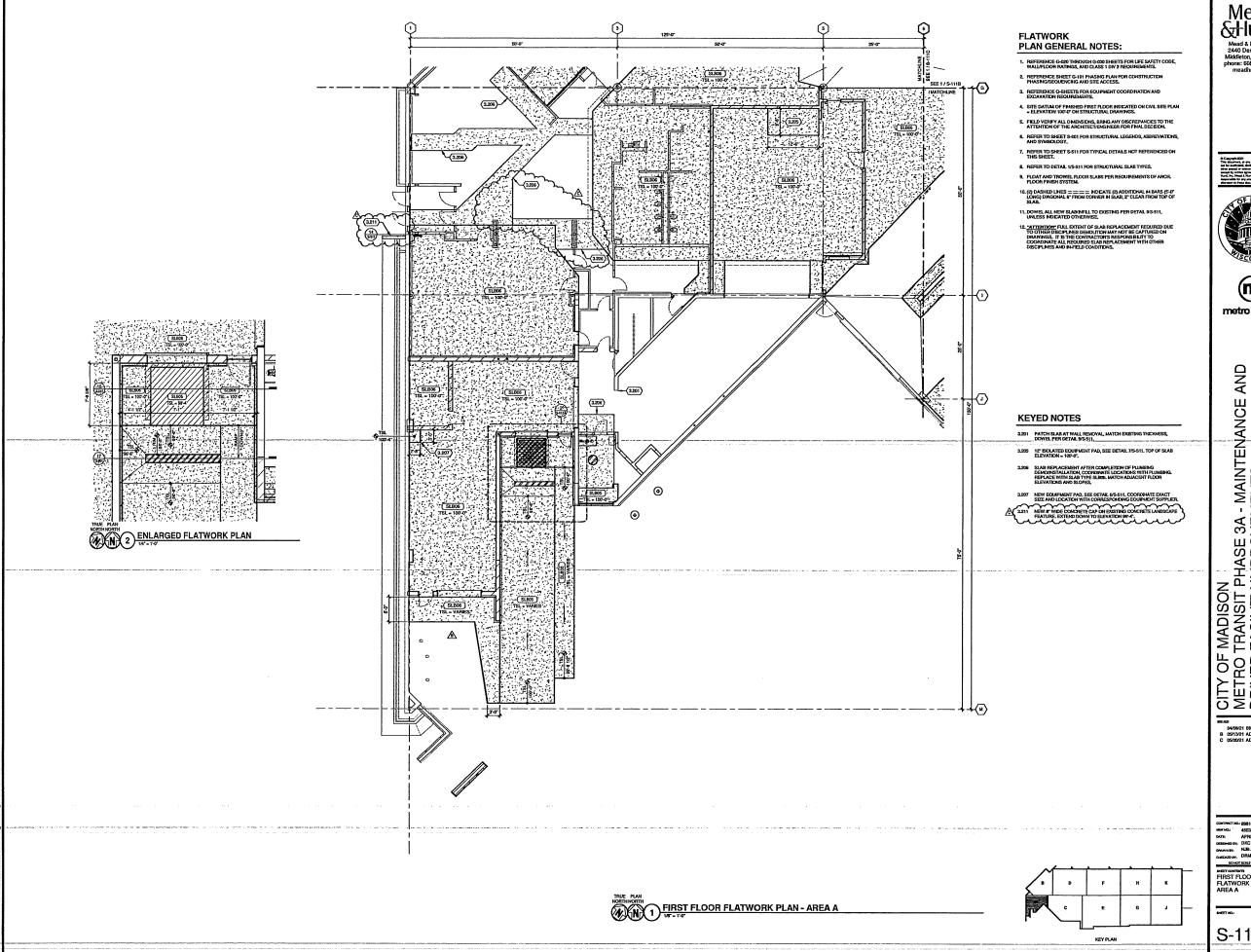
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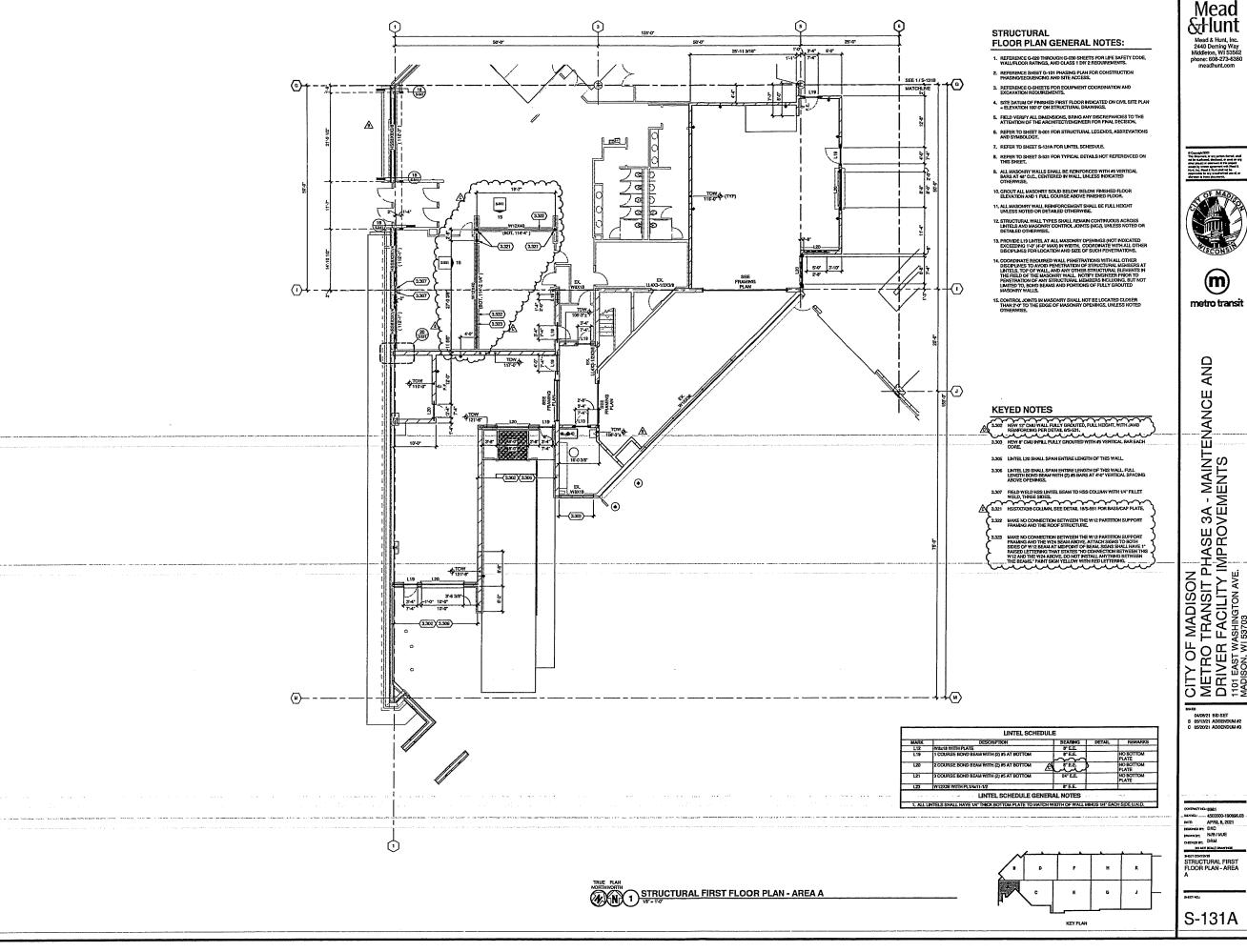
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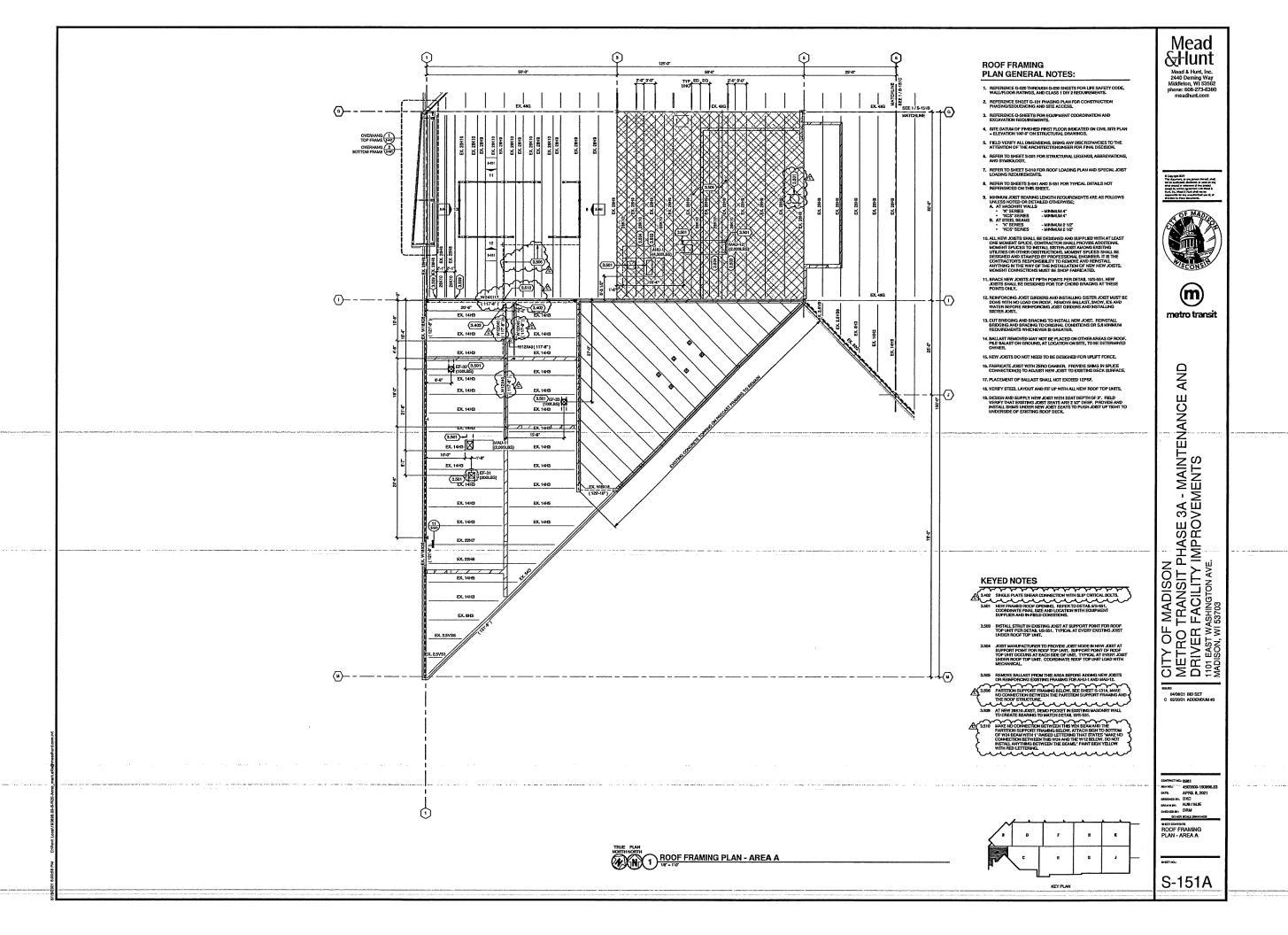


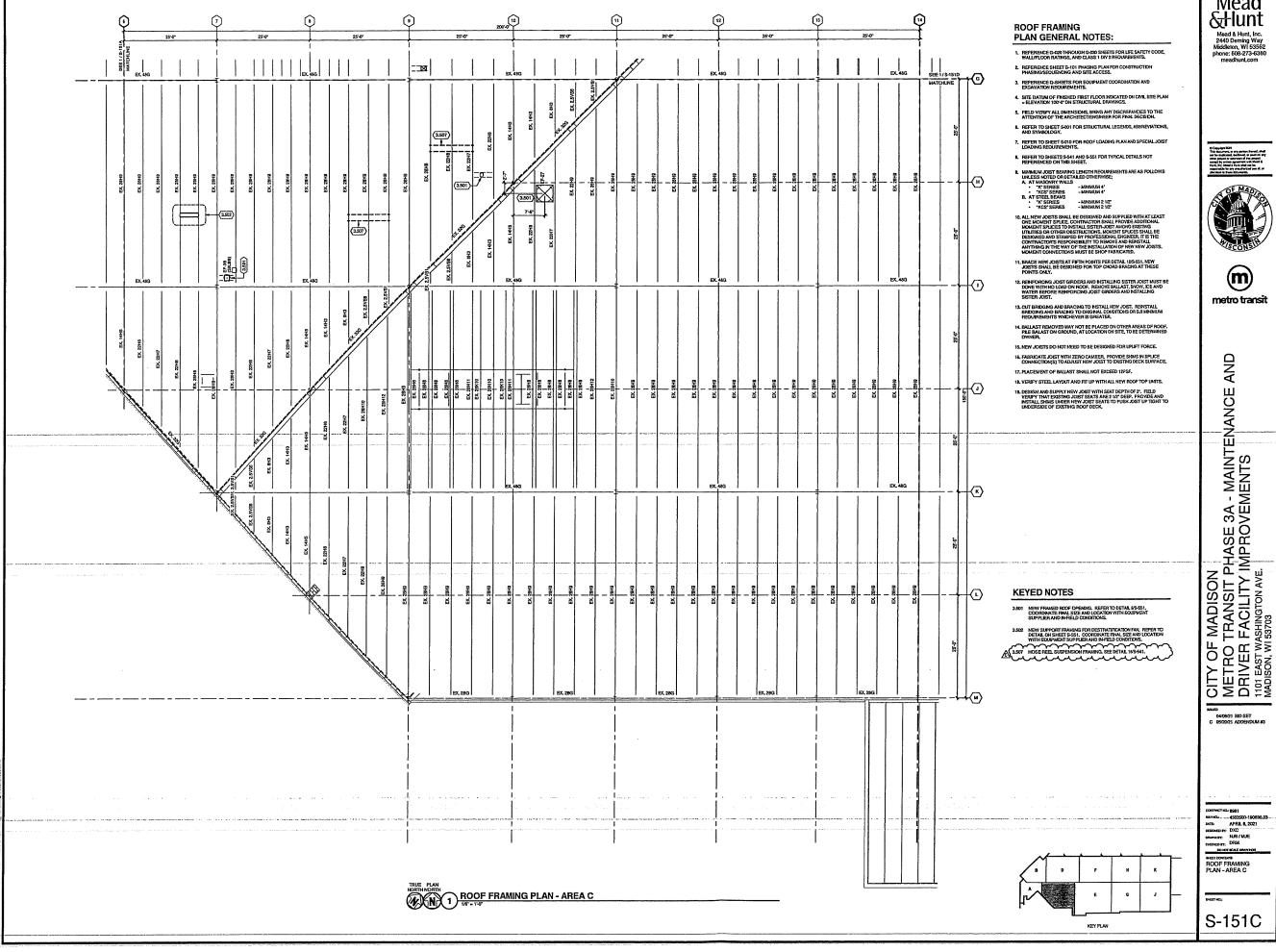
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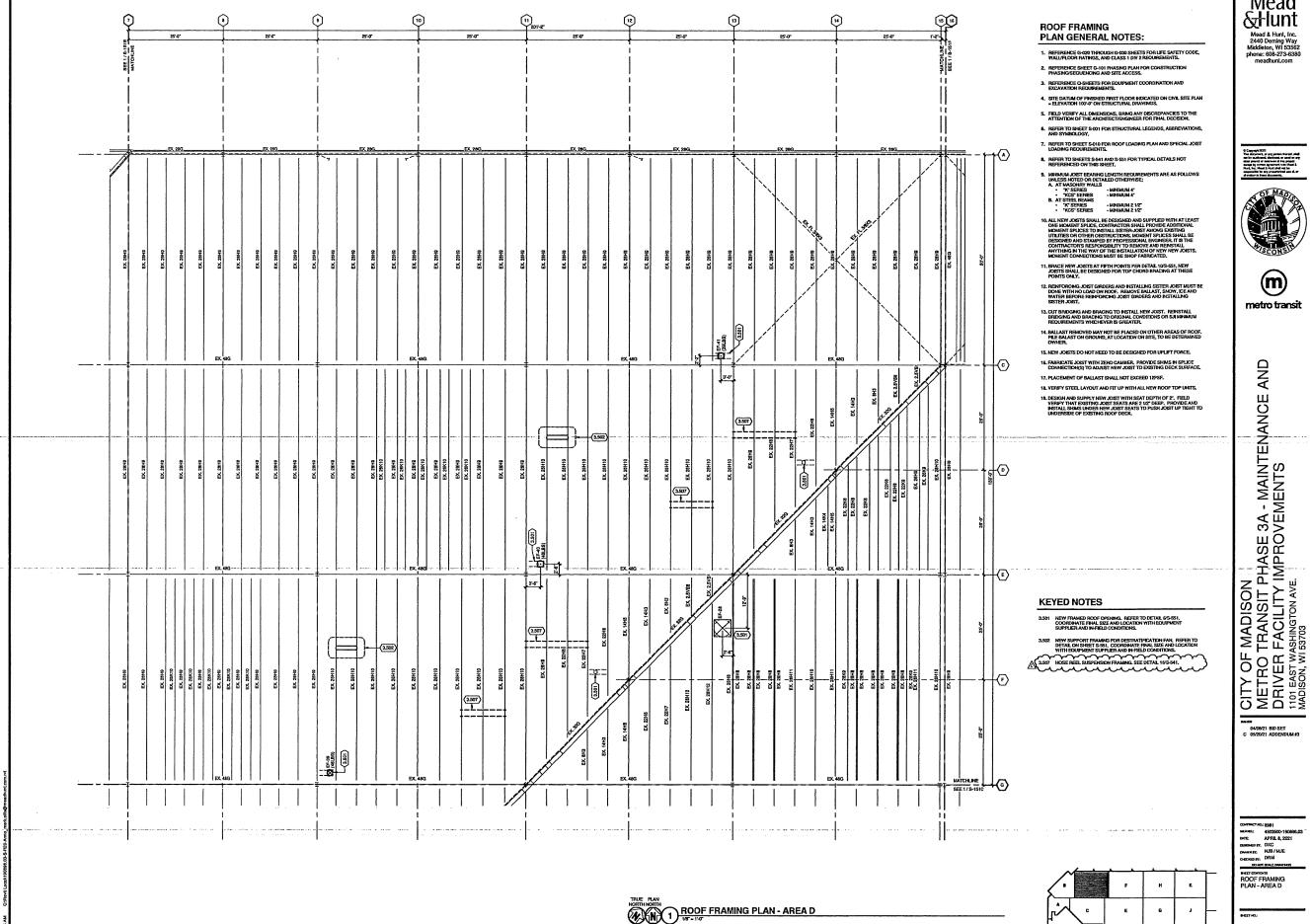
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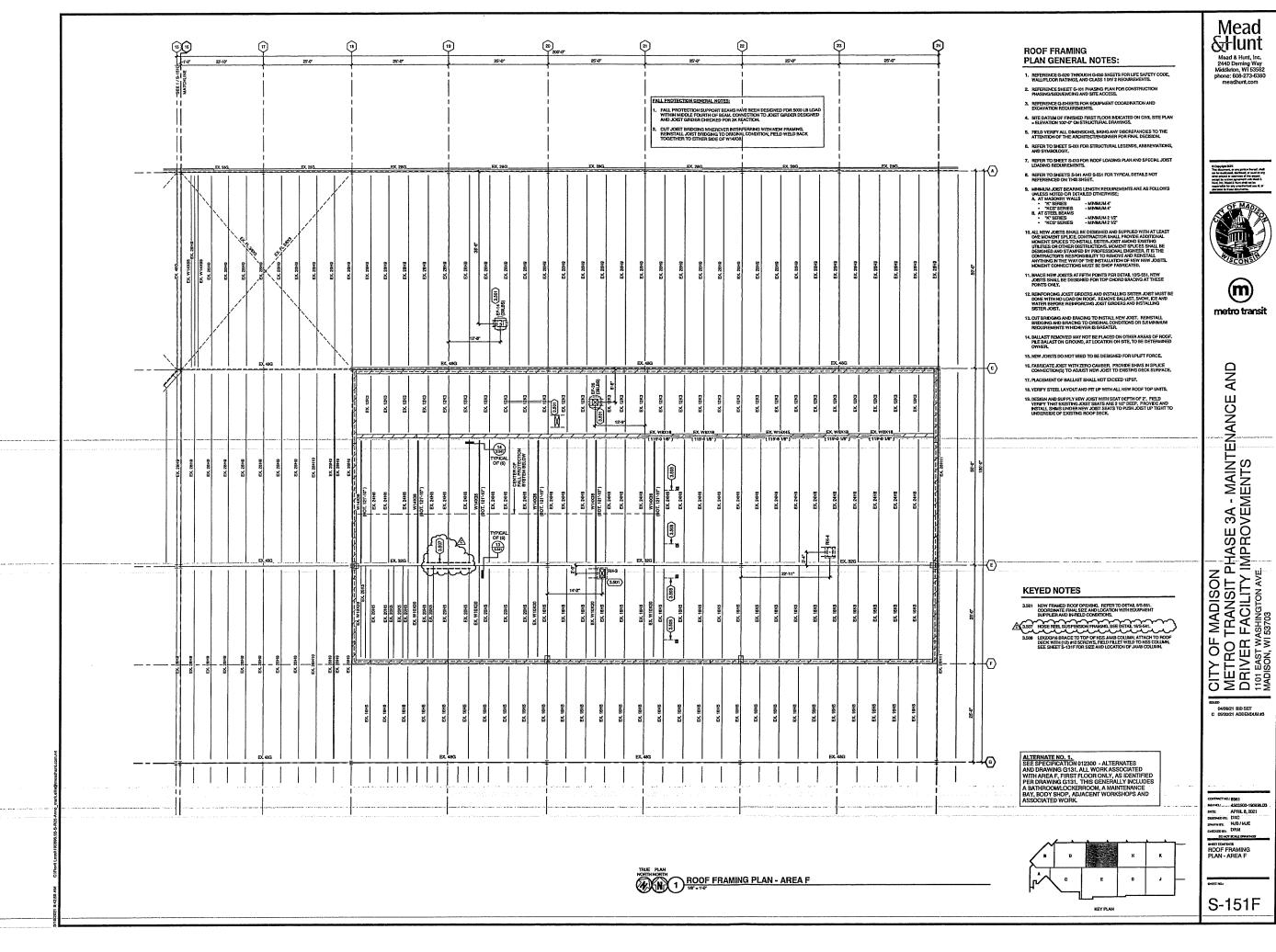
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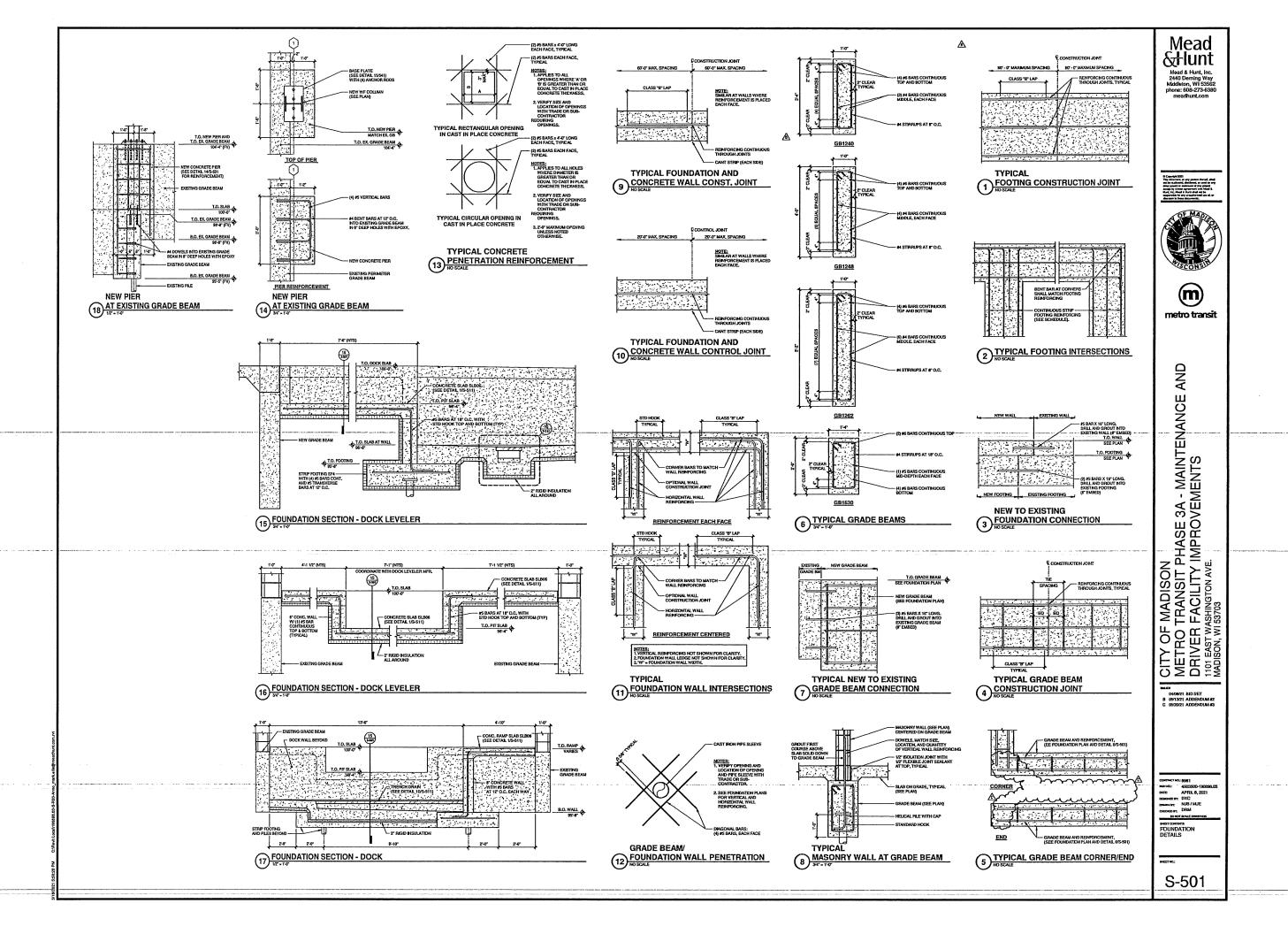
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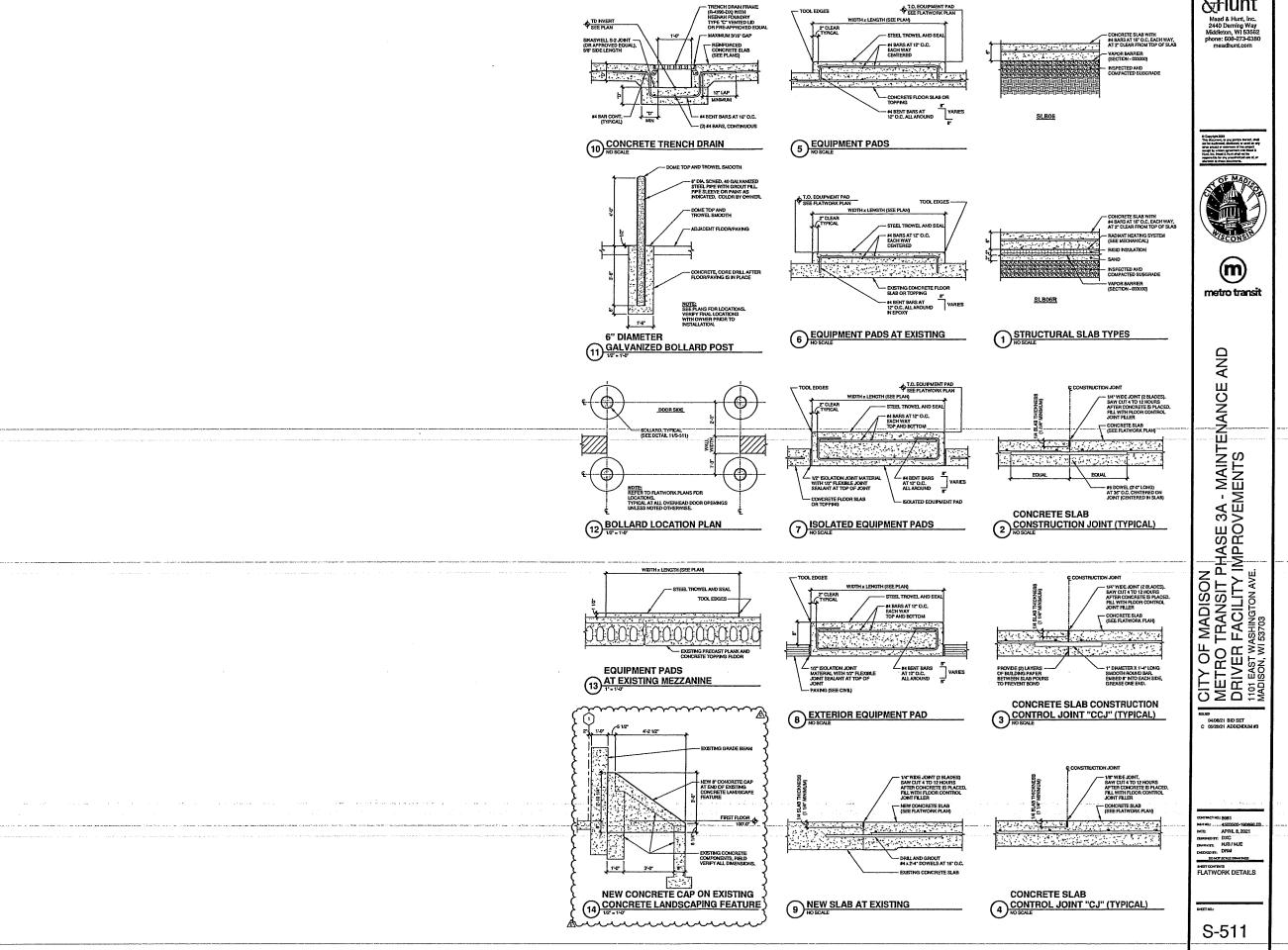
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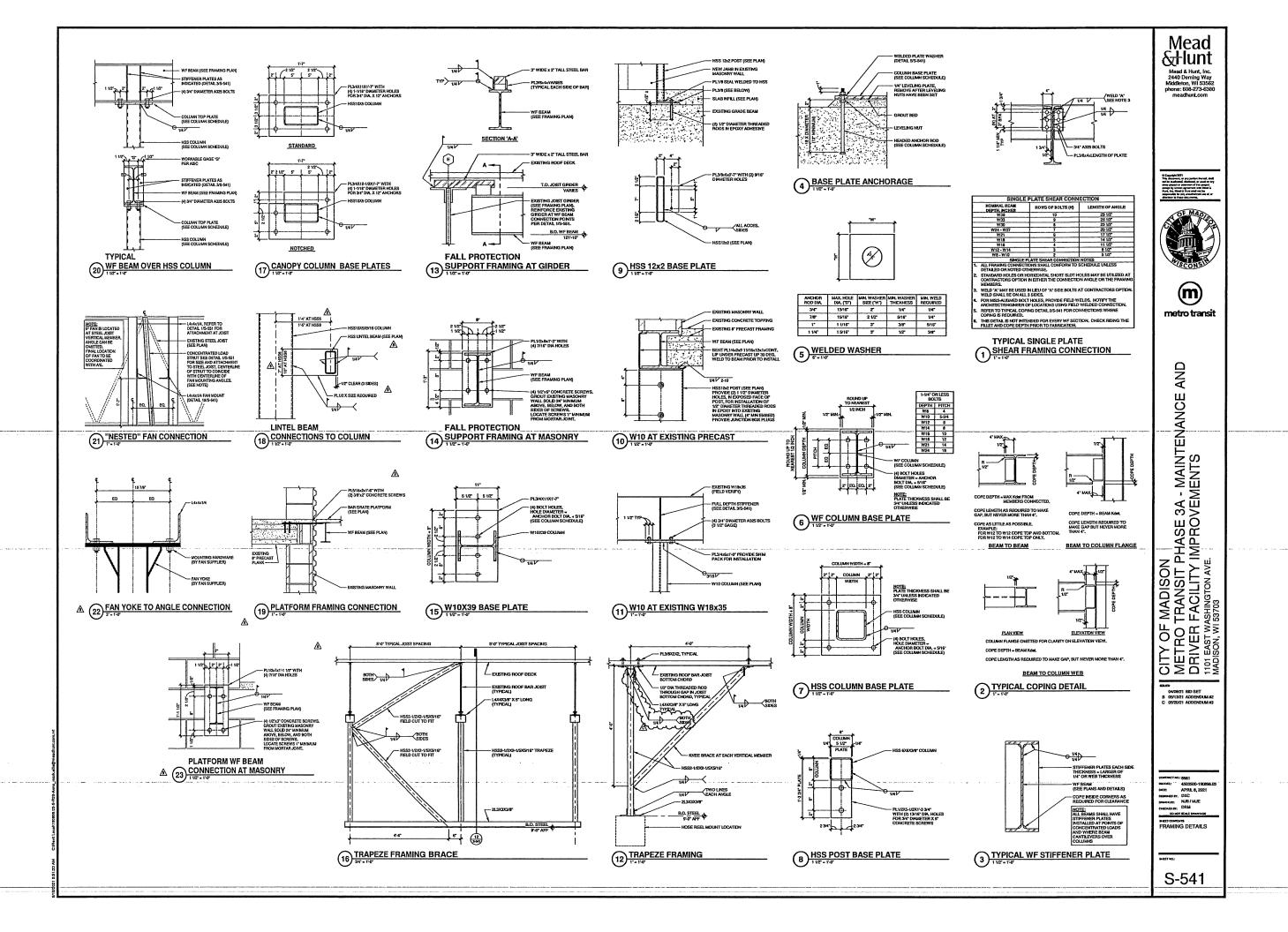
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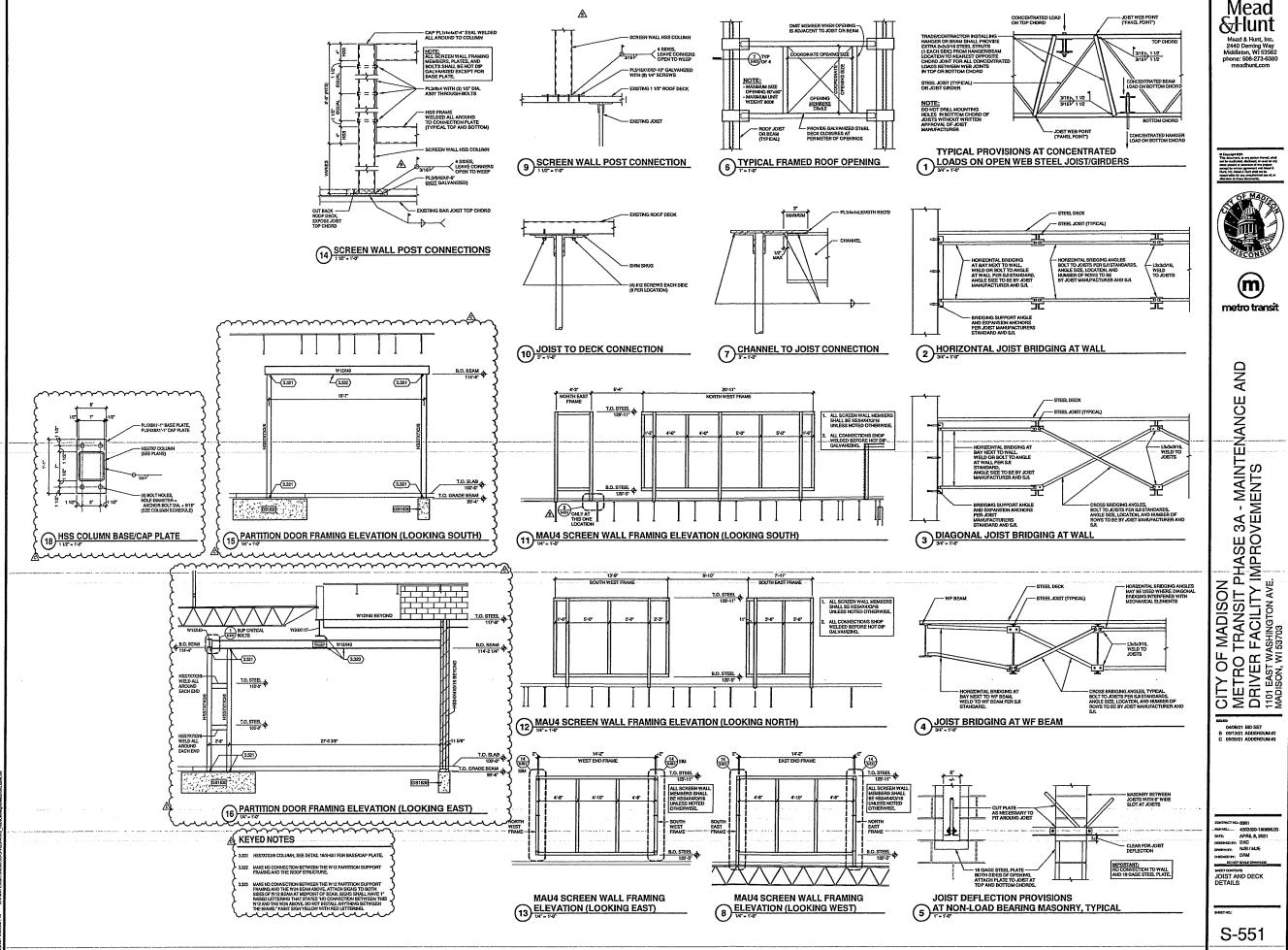
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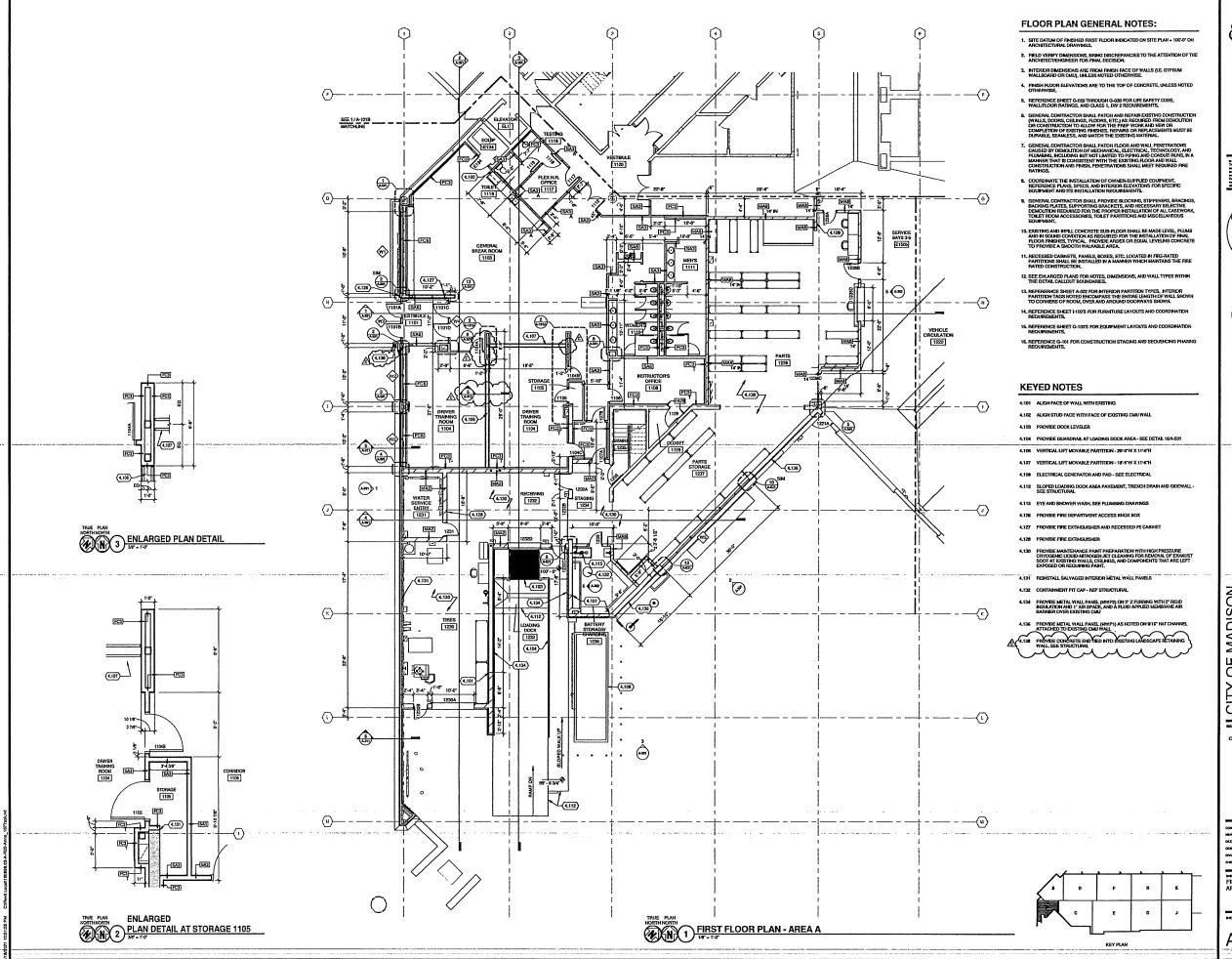












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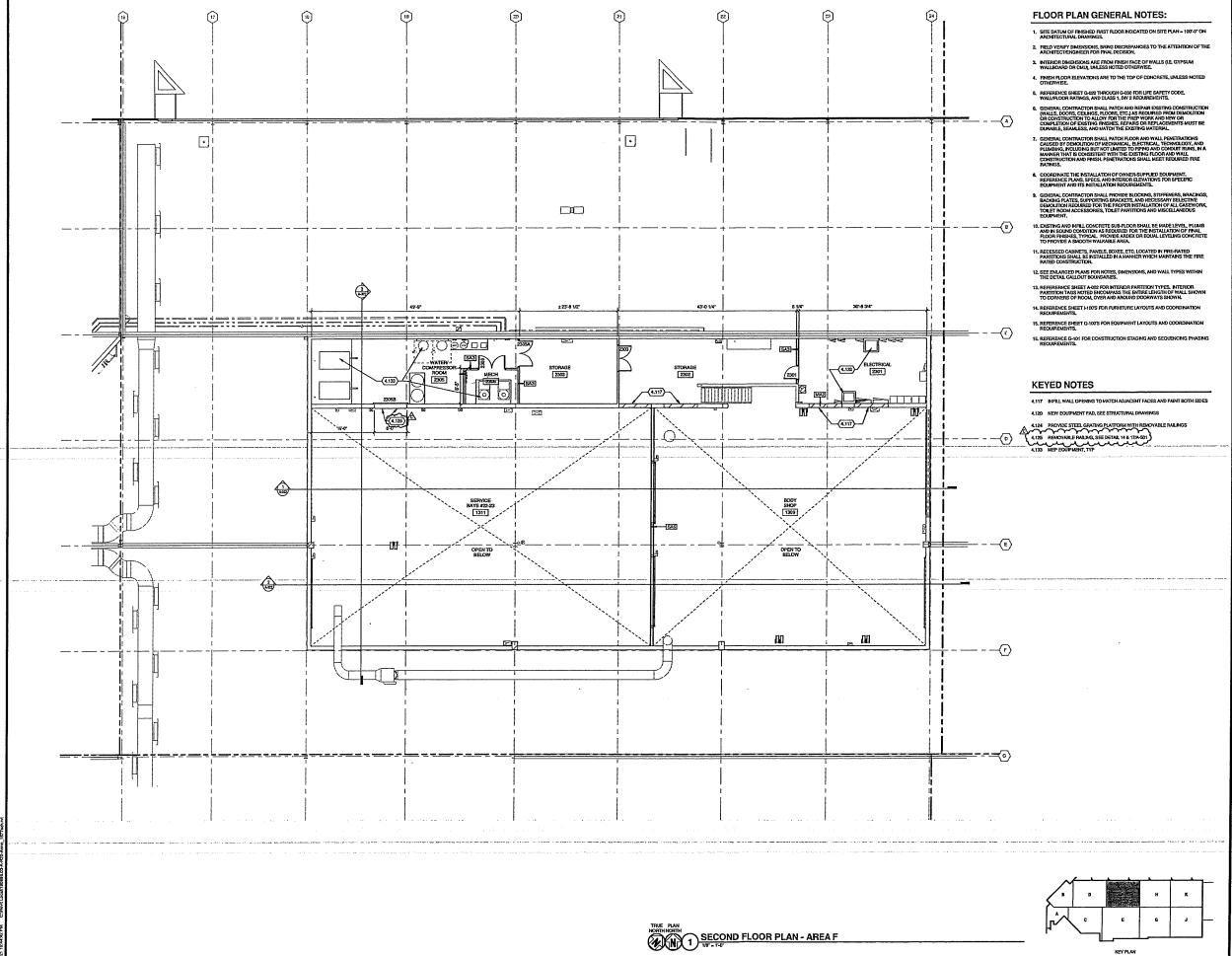
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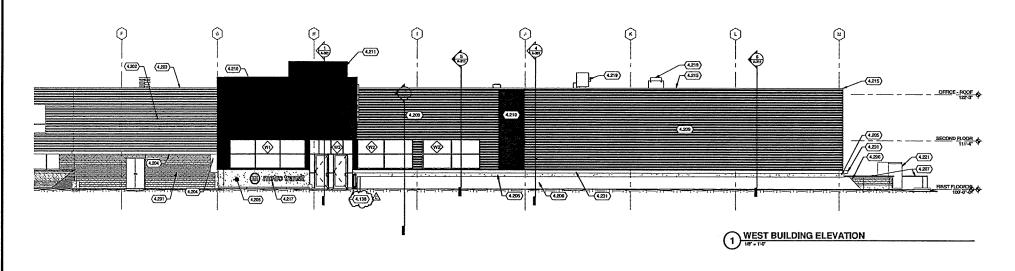
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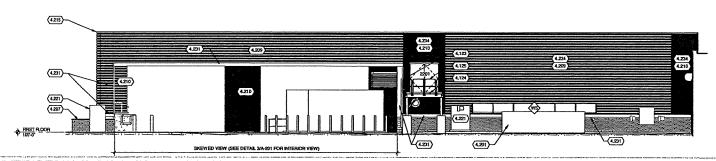
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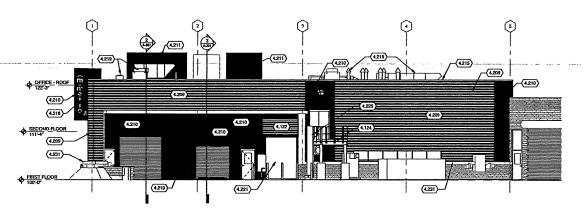
PLAN - AREA F

A-102F





2 SOUTHEAST BUILDING ELEVATION



3 SOUTH BUILDING ELEVATION

Mead & lunt

Mead & Hunt, Inc. 2440 Deming Way Middleton, WI 53562 phone: 608-273-6380 meadhunt.com

of Copyright REG.
This discovers, or any parties flowed, their rat to students, or used on tay not on early or the students, or used on tay of the project energy by orders and progressive such Media S.
Hard, See, Media S. Auto after the responsible for any any, attention one of, or observation is the students and the second second second.



KEYED NOTES

4.125 REMOVABLE RALING SEE DETAIL 14 1 FRANCO!

4.130 PROVIDE CONCRETE END TIED INTO EXISTING LANDSCAPE RETAINSO,
MALERES BRICK TO REMAN.



metro transit

CITY OF MADISON
METRO TRANSIT PHASE 3A - MAINTENANCE AND
DRIVER FACILITY IMPROVEMENTS
1101 EAST WASHINGTON AVE.
MADISON, WI 53703

85/29 04/08/21 BID SET C 05/29/21 ADDENDUM #3

CONTINCT ICE (881

MEMICE ** 4503500-190896.05

DATE APRIL (1, 2021

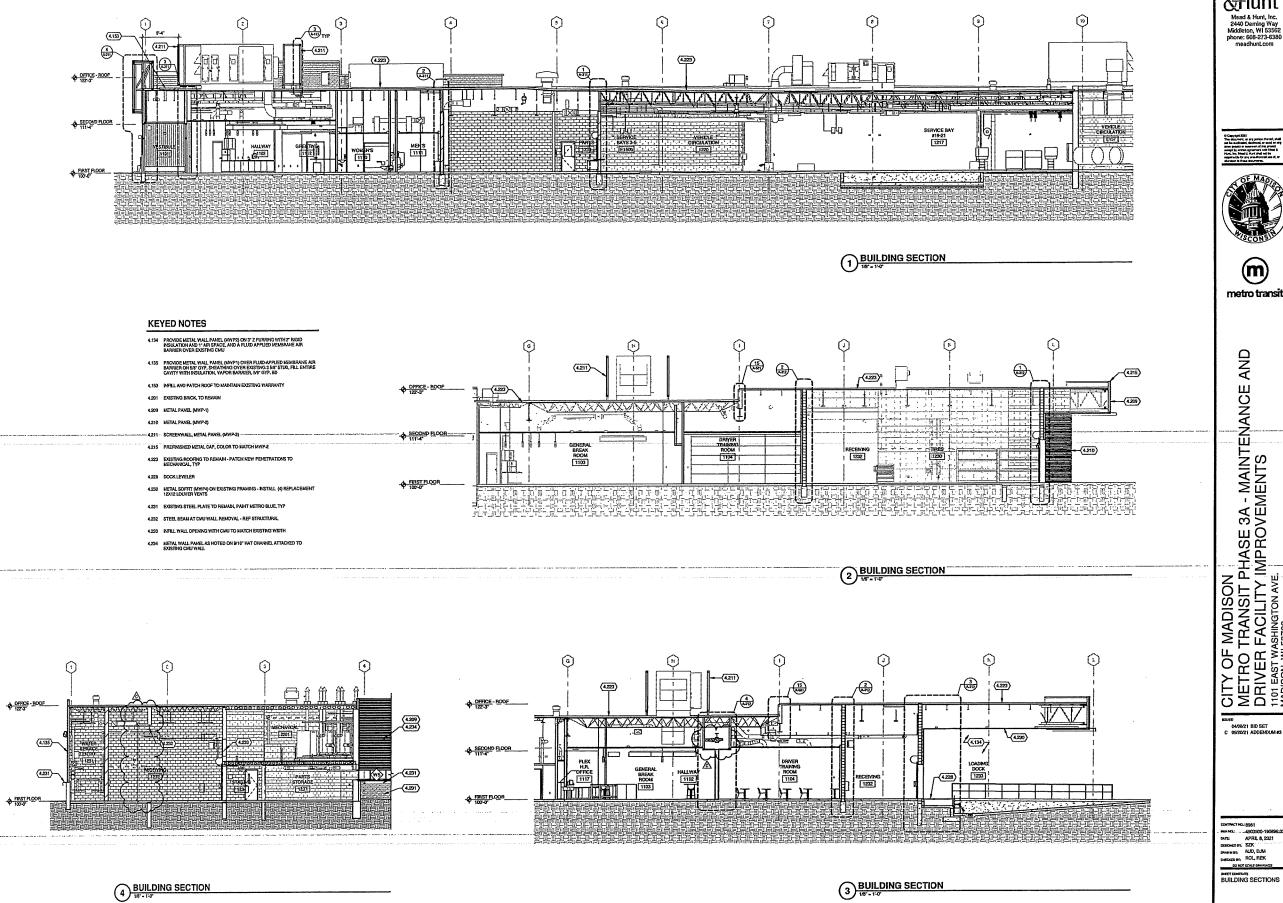
EXEMPLE 91: SZX

DAMPIE 91: NJD, DJM

DESCRIP 11: REK

DO NOT SCALE EMPIRES EXTERIOR ELEVATIONS

A-201



 \bigcirc metro transit CITY OF MADISON
METRO TRANSIT PHASE 3A - MAINTENANCE
DRIVER FACILITY IMPROVEMENTS
1101 EAST WASHINGTON AVE.
MADISON, WI 53703 04/08/21 BID SET C 05/20/21 ADDENDUM K

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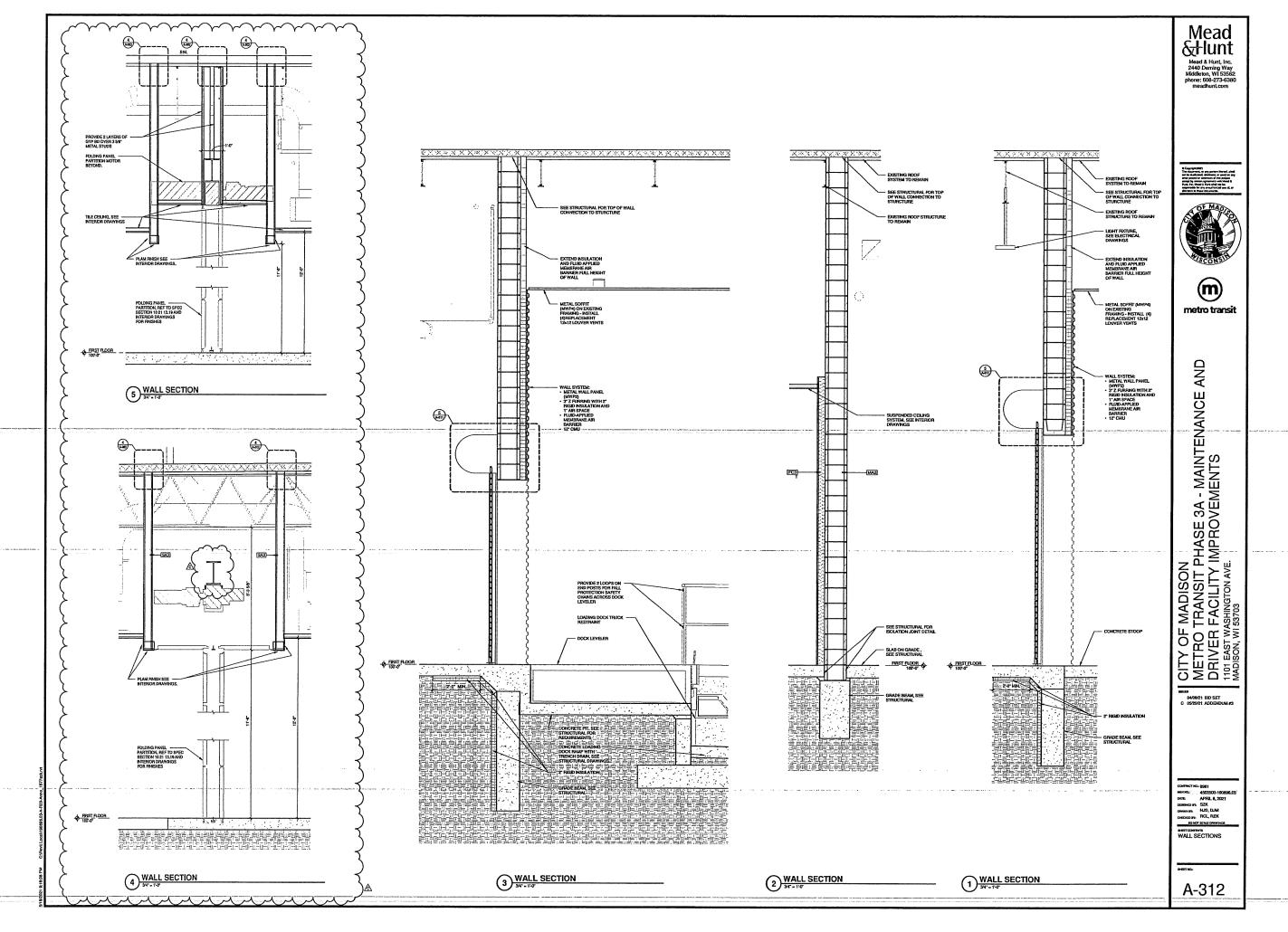
A-301

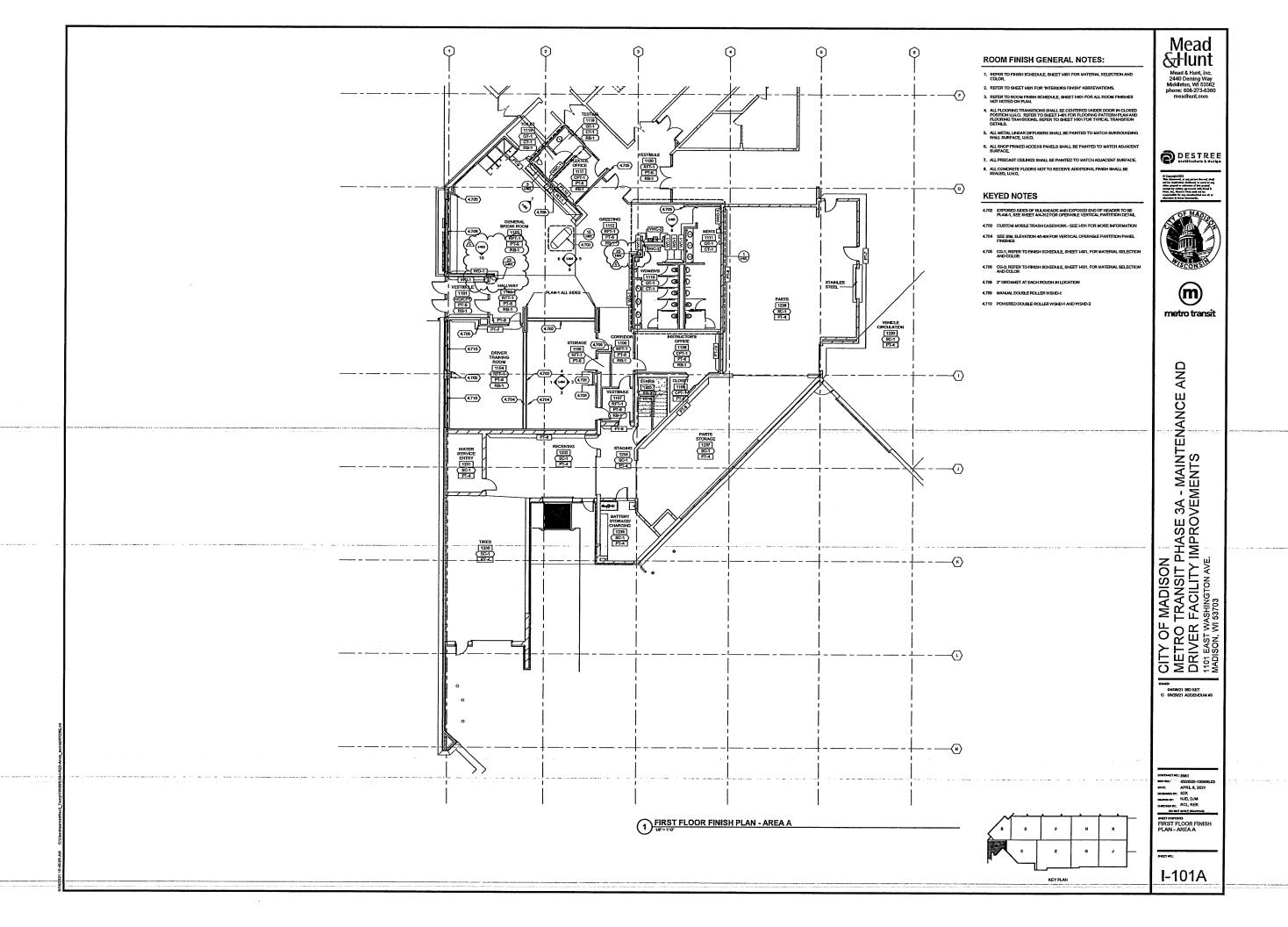
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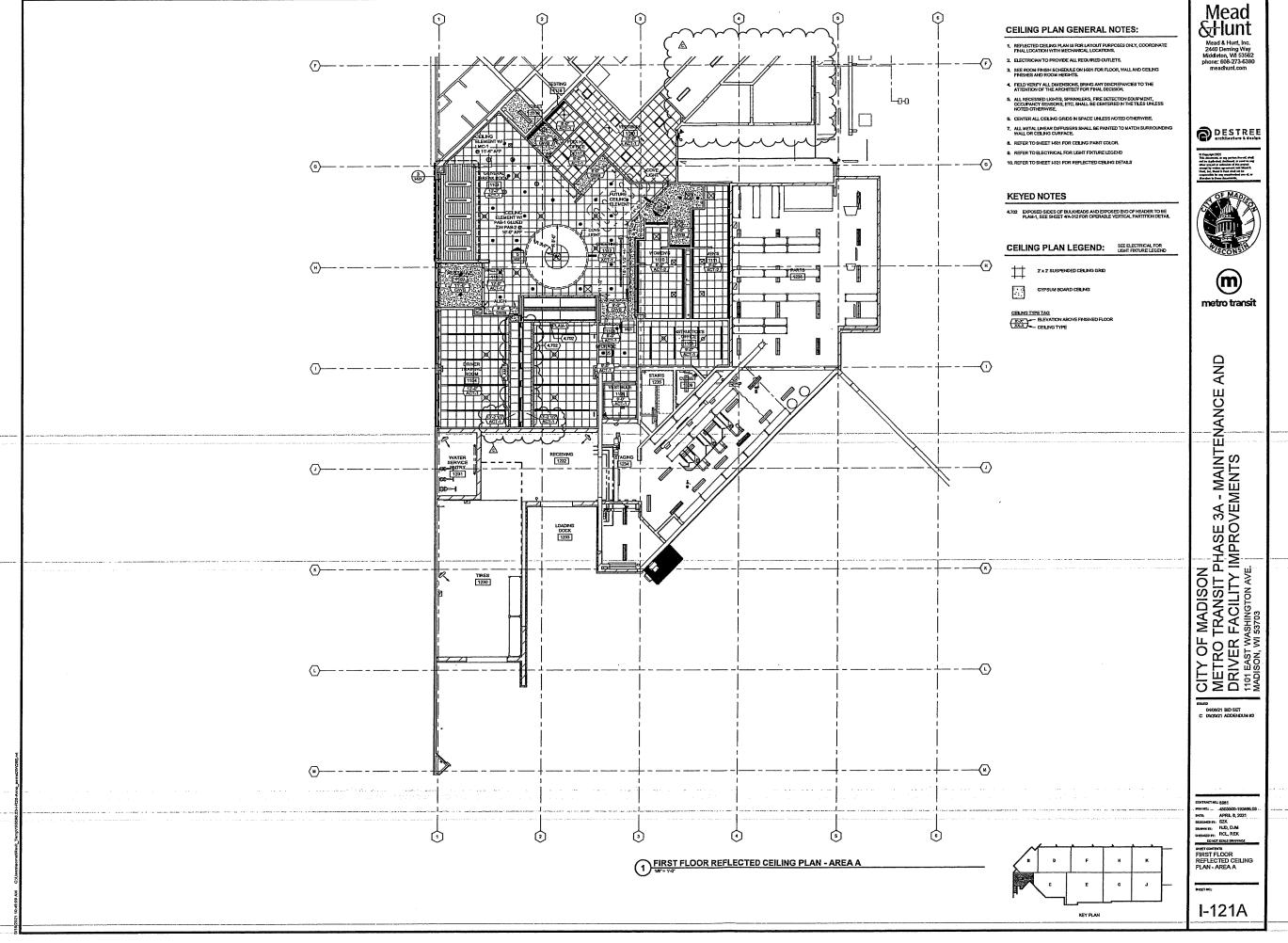


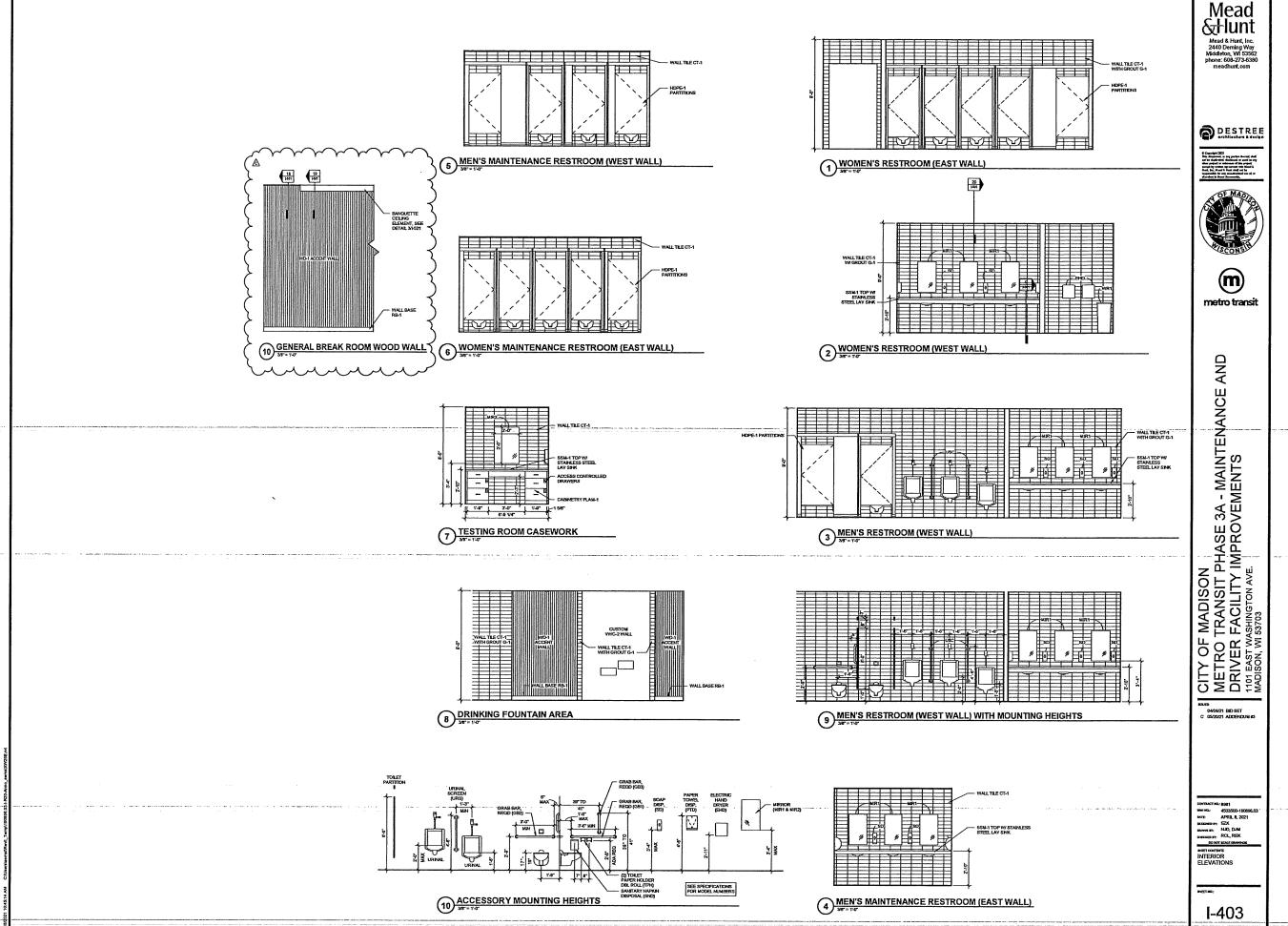


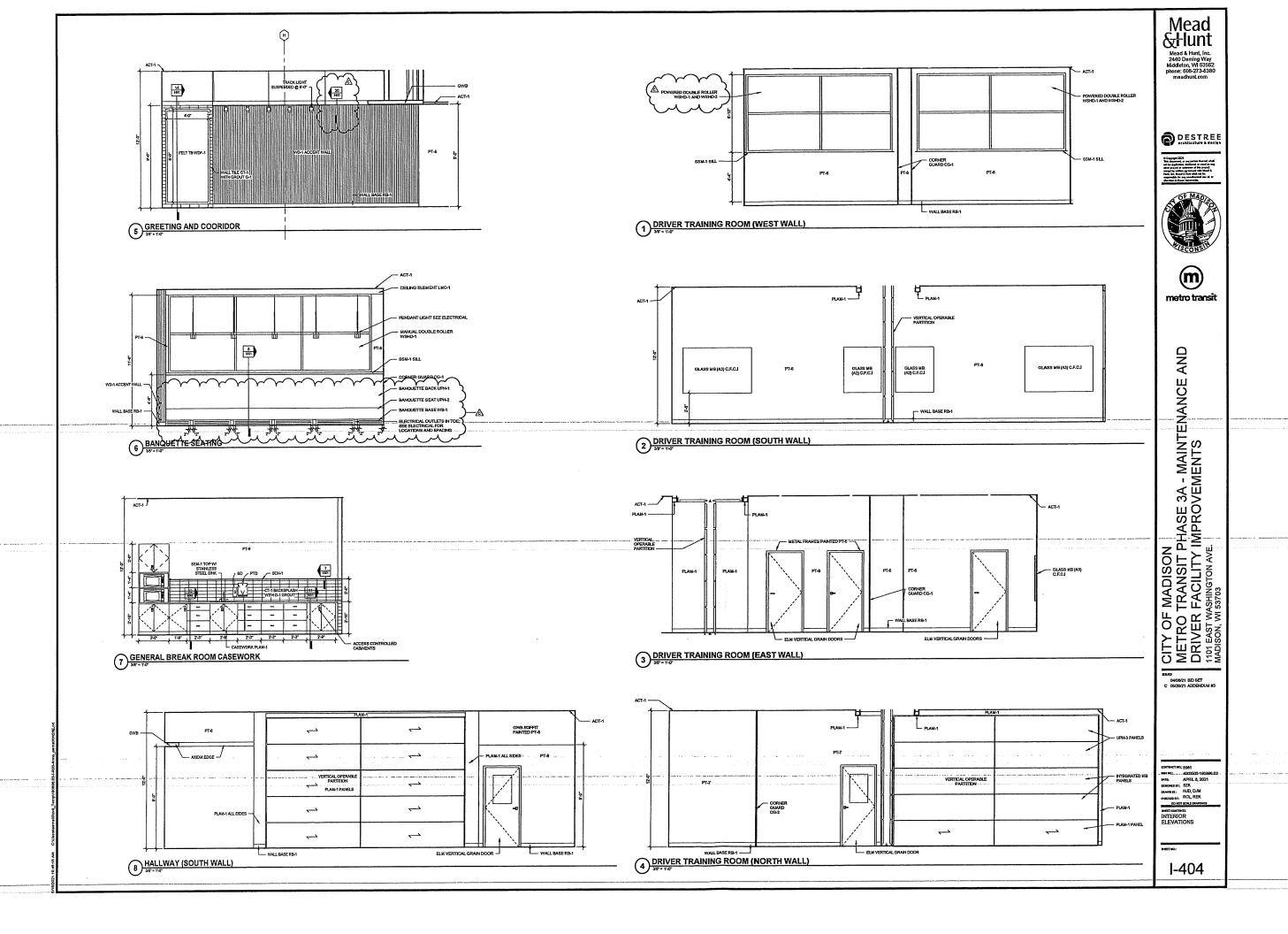


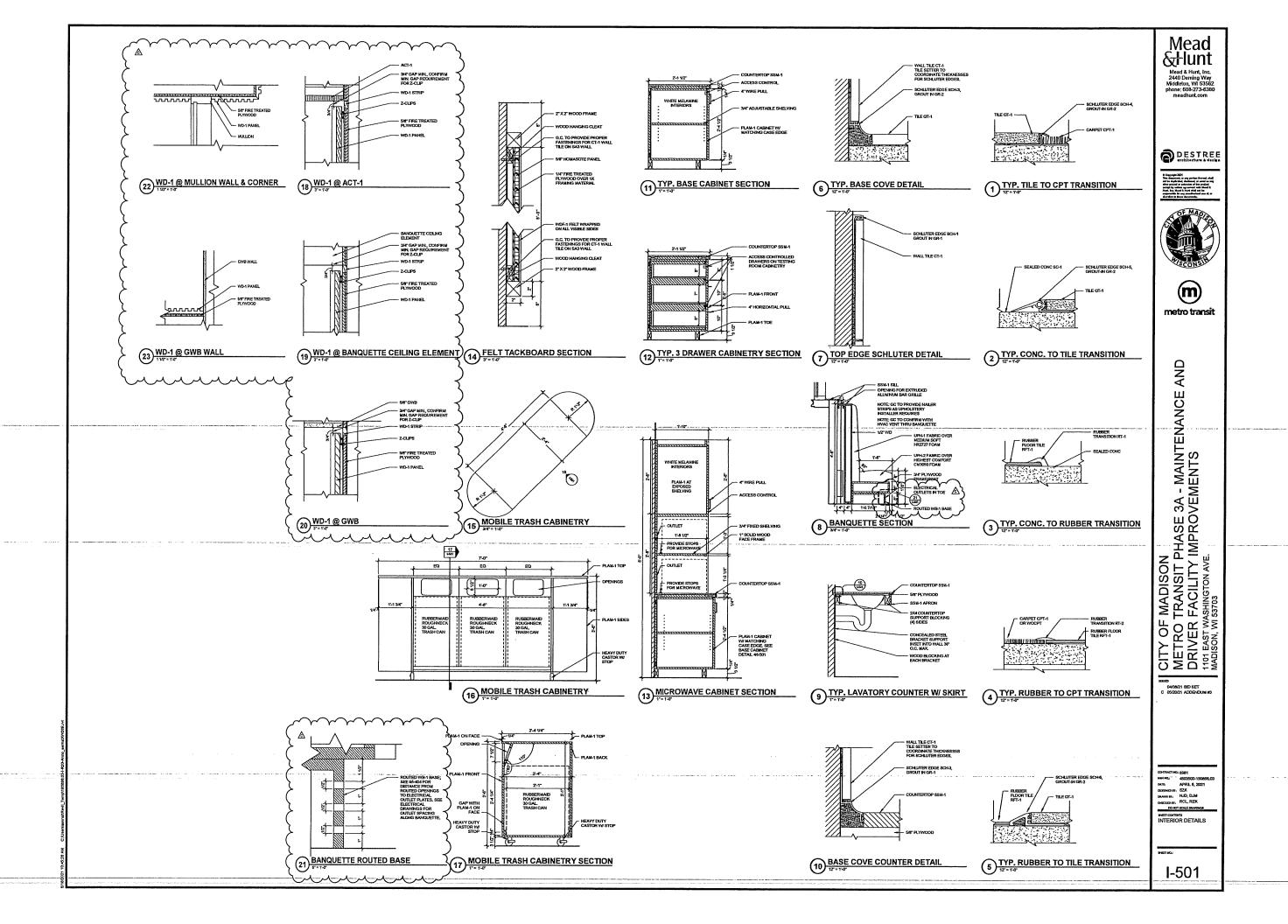












					ROOM	INISH SC	HEDULE				
ROOM		T	BASE		WA	ULS .		CEI	UNG		
NO.	ROOM NAME	FLOOR		NORTH	EAST	SOUTH	WEST	MTL	HEIGHT	REMARKS	
1101	IVESTIBULE	IWOOPT	RB-1	IWD-1	ट्रा -6	PT-9	PT-6	GYYB	11'-5"	WOOD ACCENT WALL ON NORTH WALL - SEE HIDIA	
1102	HALLWAY	RFT-1	RB-1	WD-1	-	PLAM-1/ PT-9	PT-6		12-0"	WOOD ACCENT WALL ON NORTH WALL AND PLAN SOFFTI SURROUNDING OPERABLE PARTITION SYSTEM ON SOUTH WALL - SEE H101A	
1103	GENERAL BREAK ROOM	RFT-1	RB-1	PT-6	PT- ₩ CT-1	WD-1	PT-6	ACT-1	12-0	TILE ON WALLS SURROUNDING EWO AND WHERE KITCHERETTE CASEN/ORK OCCURS, WOOD ACCENT WALL ON SOUTHERN END OF BANQUETTE SEATING - SEE SEE HIGH.	
1104	DRIVER TRAINING ROOM	RFT-1	RB-1	PLAU-1/ PT-7	PT-6	PT-6	PT-6	ACT-1	12-0"	PLAY SOFFIT SURROUNDING OPERABLE PARTITION SYSTEM ON NORTH WALL - SEE 1-101A	
1105	STORAGE	RFT-1	RB-1	PT-6	PT-6	PT-6	PT-6	ACT-1	F-0"		
1105	CORRIDOR	RFT-1	RB-1	PT-6	PT-6	PT-6	PT-6	ACT-1	8-0		
1107	VESTIBULE	RFT-1	RB-1	PT-6	PT-6	PT-6	PT-6	ACT-1	8.0.		
1108	INSTRUCTOR'S OFFICE	CPT-1	RB-1	PT-6	PT-10	PT-6	PT-5	ACT-1	8-0.	SEE L101A	
1109	CLOSET	CPT-1	RB-1	PT-6	PT-6	PT-6	PT-6	EXP/PT-6			
1110	WONE SAEMON	QT-1	-	CT-1	CT-1	CT-1	CT-1/ VWC-2	ACT-2	a-a.	VWC-2 OWNER SUPPLIED, OWNER INSTALLED - SEE 1-101.	
1111	MEYS	वा-1	F	CT-1	CT-1/ VWC-2	CT-1	CT-1	ACT-2	3-0-	YHYC-2 OWNER SLAFFLED, OWNER INSTALLED - SEE 1-101.	
1112	GREETING	RFT-1	RB-1	PT-6	CT-1/ WD-1	CT-1/ WD-1/ VWC-2	CT-1	GWB/ACT-	12-0"	SEE HOIA	
1317	FLEX H.R. OFFICE	CPT-1	RB-1	PT-6	PT-6	PT-10	PT-6	ACT-1	9-0	SEE I-101A	
118	TESTING	QT-1	RB-1	CT-1	VWC-1	CT-1	CT-1	GVVB	5-C	SEE 1-101A	
119	TOILET	QT-1	RB-1	CT-1	WWC-1	CT-1	CT-1	GWB	5.0"	SEE HOTA	
1120	VESTIBLLE	RFT-1	R9-1	PT-6	PT-6	PT-6	PT-6	ACT-1	12-0		
1211	SERVICE BAY #13-15	SC-1	-	F	-	PT-4	-	EXP			
1214	SERVICE BAY #16-18	SC-1	1-	-	-	PT-4	-	EXP	T		
1217	SERVICE BAY #19-21	SC-1	-	-	-	PT-4	-	EXP			
1218	WORK AREA	SC-1	-	-	-	PT-4	-	EXP			
1220	VEHICLE CIRCULATION	SC-1	-	-	-	-	PT-7	EXP		SEE H101A	
1221	VEHICLE CIRCULATION	SC-1		-	-	PT-4	-	EXP			
1228	DATA	SC-1	F	PT-6	PT-6	PT-5	PT-6	EXP/PT-6			
1229	ELECTRICAL ROOM	5C-1	-	PT-6	PT-6	PT-6	PT-6	EXPIPT-6			
1230	TIRES	SC-1	-	PT-4	PT-4	PT-4	PT-4	EXP			
1231	WATER SERVICE ENTRY	SC-1	ŀ	PT-4	PT-4	PT-4	PT-4	EXP			
1232	RECEIVING	SC-1	-	PT-4 PT-8	PT-4	PT-4	PT-4	EXP		PT-8 UP TO 10-0", PT-4 ABOVE 10-0", SEE 1-101A	
1233	LOADING DOCK										
1234	STAGING	SC-1	ŀ	PT-4/PT-6		PT-4	PT-4	ĐΦ		PT-8 UP TO 10-0", PT-4 ABOVE 10-0", SEE 1-101A	
1235	STAIRS	RB-2		PT-4	PT-4	PT-4	PT-4			RFT STAIR TREADS/NOSINGS WITH YELLOW VISUALLY IMPAIRED STRIPS	
1235	BATTERY STORAGE/ CHARGING	SC-1	ŀ	PT-4	PT-4	PT-4	PT-4	ĐΧP			
1237	PARTS STORAGE	5C-1	<u> -</u>	PT-4	PT-4	PT-4	श.य श. ब			PT-8 UP TO 10-0", PT-4 ABOVE 10-0", SEE 1-101A	
238	PARTS	SC-1	-	PT-4	PT-4	PT-4	PT-4 PT-8			PT-8 UP TO 10-0", PT-4 ABOVE 10-0", SEE I-101A	
701	COKM	SC-1	-	PT-4	PT-4	PT-4	PT-4	EXP		NON CINU WALL TO HAVE IT COVE WALL BASE	
2121	CONM	SC-1	RB-1	PT-6	PT-6	PT-6	PT-5	EXP			
2201	MECHANICAL	SC-1		PT-4	PT-4	PT-4	PT-4	ĐΦ		ļ	
2301	ELECTRICAL	5C-1	L	PT-4	PT-4	PT-4	PT-4	EXP			
2302	STORAGE	SC-1		PT-4	PT-4	PT-4	PT-4	EXP	ļ		
2303	STORAGE	SC-1		PT-4	PT-4	PT-4	PT-4	EXP			
2305	WATER/COMPRESSOR ROOM	SC-1		PT-4	PT-4	PT-4	PT-4	EXP			
2306	MECH	SC-1	l-	PT-4	PT-4	PT-4	PT-4	EXP	1		

			F	ROOM FIN	NSH SCH	EDULE 3	ALTER	VATE NO	.1	
ROOM				WALLS				CE	ILING	
NO.	ROOM NAME	FLOOR	BASE	NORTH	EAST	SOUTH	WEST	MTL	HEIGHT	REMARKS
1301	IVEST.	Isc-1			PT-4	PT-4	PT-4	EXP		
	MENS	QT-1	-	CT-1	CT-1		CT-1	ACT-2	8-0"	
	WOMENS	QT-1		CT-1	CT-1		CT-1	ACT-2	5-C"	
	STEAN CLEARING	SC-1	-	PT-4	PT-4	PT-4	PT-4	EXP	T	
1305	WETER SHOP	SC-1	-		PT-4		PT-4	EXP		
1305	UNIT SHOP	5C-1	-	PT-4	PT-4	PT-4	PT-4	EXP		
1307	VEST.	SC-1	-	1-	PT-4	PT-4	PT-4	EXP	T	
1308	WELDING	SC-1		PT-4	PT-4	PT-4 ***	PT-4	EXD	1	
1309	BODY SHOP	SC-1	-	PT-4	PT-4	PT-4	PT-4	EXP		
1310	STAIRS	R9-2	-	PT-4	PT-4	PT-4	PT-4			RB STAIR TREADS/NOSINGS WITH YELLOW VISUALLY IMPAIRED STRIPS
1311	SERVICE BAYS #22-23	SC-1		PT-4	PT-4	PT-4	PT-4	1	1	

 GENERAL FINISH NOTES:	

- 1. ALL INTERIOR HIS DOOR FRAME FINISHES AND METAL DOORS TO BE PARTED PT-5. UNIO NIDOOR SCHEDULE.
- 2. ALL PLAM-1 TO RUN IN THE VERTICAL DRECTION UNLESS NOTED OTHERWISE.

INTERIORS FINISH ABBREVIATIONS:

DESTREE erchitecture & deriga

Mead & Hunt, Inc. 2440 Deming Way Middleton, WI 53562 phone: 608-273-6380 meadhunt.com





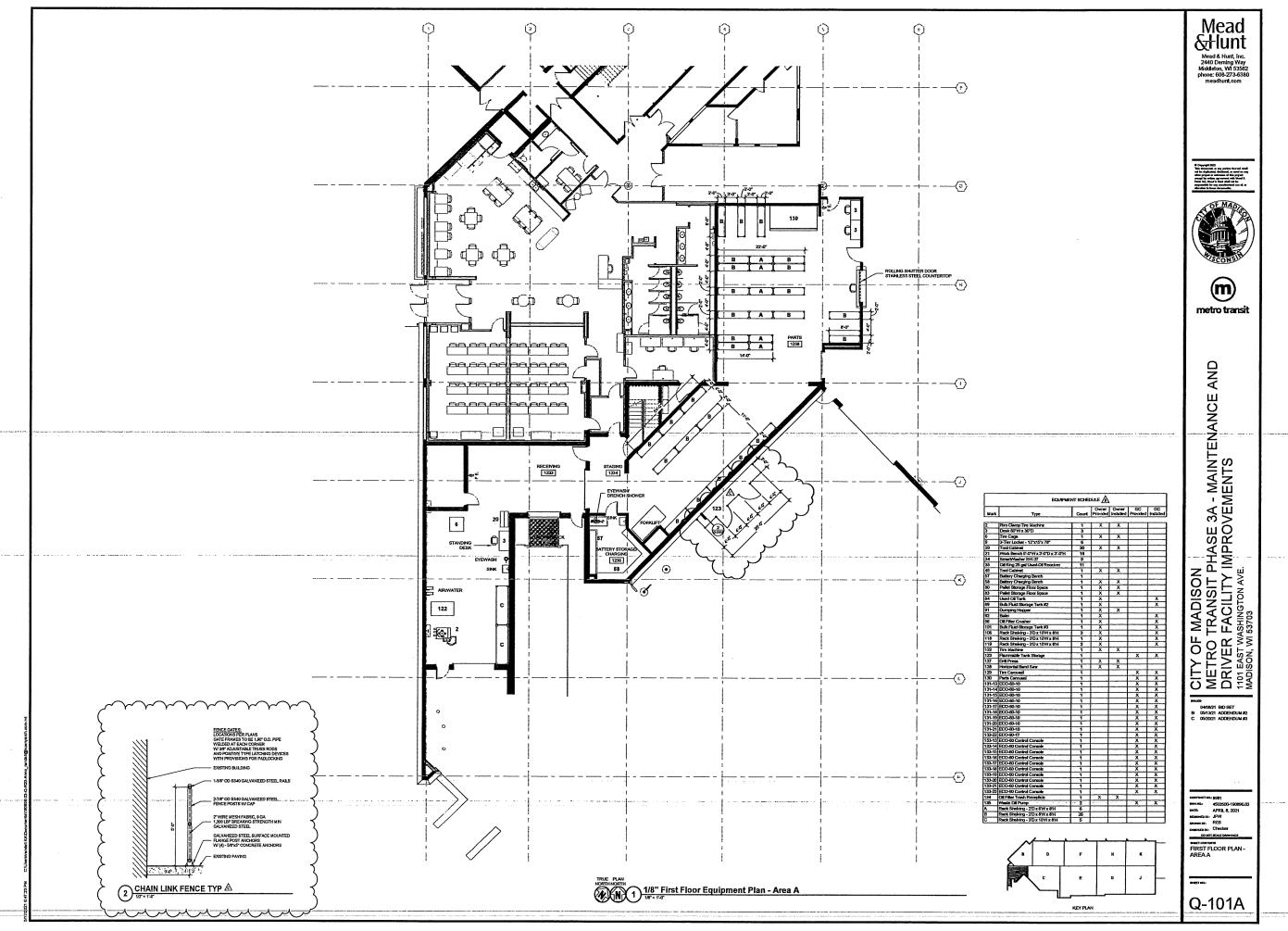


metro transit

AND CITY OF MADISON
METRO TRANSIT PHASE 3A - MAINTENANCE,
DRIVER FACILITY IMPROVEMENTS
1101 EAST WASHINGTON AVE.
MADISON, WI 53703

I-601

_					NTERIOR FINISHES	SCHEDULE		
ŀ		1			DUCT DESCRIPTION			
1					DUCT DESCRIPTION	<u> </u>		4
١.	FINISH			MODEL.			l	
L	NUMBER	FINISH DESCRIPTION	MANUFACTURER	NUMBER	STYLE	COLOR	SIZE	REMARKS
			l	<u> </u>		<u> </u>		
	CT-1	ACOUSTIC CEILING TILE - TYPE 1	usg			WHITE	24 X 24 24 X 24	W/ USG DOWN BRAND CENTRICITEE 916" GRID WASHABLE ACT W/ 916" GRID
	CT-2 PT-1	ACOUSTIC CEILING TILE - TYPE 2 ALUMINUM PERIMETER TRIM - TYPE 1	ARMSTRONG ARMSTRONG	AXIPOSTRWH	6" ONE PIECE AXIOM	WHITE	24° X 24°	WASHABLE ACT W/9/16" GRID
ľ	W1-1	ALDMINUM PERIMETER TRIM-11PE 1	ARMSTRONG	ANIPLASIENTE	CLASSIC FOR DRYWALL	WAIE	ı	
١,	VPT-2	ALUMNUM PERIMETER TRIM - TYPE 2	ARMSTRONG	AXESTRWH	6" AXIOM CLASSIC	WHITE		W/ 7239 ADJUSTABLE TRIM CLIP
	XG-1	CORNER GUARD - TYPE 1	NPRO	3448		D103	12 X 3/4"	SEE HIDIA FOR CORNER GUARD LOCATIONS
	7G-2	CORNER GUARD - TYPE 2	INPRO	3449		0257	12 X 3/4	SEE HIDTA FOR CORNER GUARD LOCATIONS
· lō	ज्ञान	CARPET-TYPE 1	MOHAWK GROUP	GT154		599	24 X 24	
	ग्र-1	CERANIC WALL TILE - TYPE 1	DIESEL LIVING		INDUSTRIAL GLASS	WHITE	3.9" X 11.8"	GROUT TO BE GR-1
	3R-1	GROUT - TYPE 1	TEC	I		927		USED FOR CT-1
	3R-2	GROUT-TYPE 2	TEC	<u> </u>		941		USED FOR OT-1
	PDE-1	HPDE PARTITION - TYPE 1	BRADLEY	SERIES 400	SERIES 400	5225		
	MC-1	LINEAR METAL CEILING	ARMSTRONG LUCID ECOCORE	_	METALWORKS LINEAR	EFFECTS CINNAMON ECC-08	1/2" THICK	TOP LAYER - LINES PATTERN
	AB-1 AB-2	POLYESTER ACCUSTICAL BOARD - TYPE 1 POLYESTER ACCUSTICAL BOARD - TYPE 2	LUCID ECOCORE	 	LINES	ECC-06	1/2 THICK	BASE LAYER
	AB-3	POLYESTER ACOUSTICAL BOARD - TYPE 3	CSIWALLPANELS	SCCPLU4601	SOUNDCORE PLUS 1"	SND902	102 114001	JOSE ON INC.
ľ	~D~3	POLIESIEN ACCOSTANCE BOND-11FE'S	Carrialization	SCA-LOWER,	ACOUSTICAL PANEL	J. Comme	ŀ	
F	3.A.V-1	PLASTIC LAMINATE - TYPE 1	FORMICA			7747		
	7-4	PAINT COLOR - TYPE 4	SHERWINWILLIAMS			SW7004		
F	7.5	PAINT COLOR - TYPE 5	SHERWIN WILLIAMS			5W7069		ALL HIJ FRANES AND METAL DOORS TO BE PAINTED PT-5
	7-5	PAINT COLOR-TYPES	SHERWIN WILLIAMS			SW7029		
	ग-न	PAINT COLOR - TYPE 7	SHERWINWILLIAMS			SW6342		
	T-8	PAINT COLOR - TYPE 8	SHERWIN WILLIAMS			SW6510		
	ग-9	PAINT COLOR-TYPE 9	SHERWIN WILLIAMS	<u> </u>		SW7625		
	T-10	PAINT COLOR - TYPE 10	SHERWIN WILLIAMS	ļ	CHARME	SW6417	12°X 24°	GROUT TO BE GR-2
	1T-1 UB-1	OUARRY TILE - TYPE 1 RUBBER BASE - TYPE 1	LANDHARK CERANICS MANNINGTON	EEETC	CHARME	GRAPHETE DARK 523	12 A24	GROOT TO BE GR-2
	(B-2	RUBBER BASE - TYPE 2	MANNINGTON	EEEIU		523		BURKEBASE TYPE TP COVED OR EQUAL, SEE SHEET 1-102F
	¥7-1	RUBBER FLOOR TILE - TYPE 1	NORA	ARTICLE 1880	GRANO	5307, 5320, & 5308	3.5MM TRE	SEE 1401 FOR FLOORING PATTERN
	₹T-2	RUBBER FLOOR STARS - TYPE 2	NORA		HAMMERED	0716		VISUALLY IMPAIRED STRIPS IN COLOR SAFETY YELLOW
TR	₹ Т-1	RUBBER TRANSITION - TYPE 1	TARKETT	SLT-63-J	SUMUNE	63		
ħ	रा-2	RUBBER TRANSITION - TYPE 2	TARKETT	SLT-63-B	SLIMLINE	83		
	CH-1	SCHLUTER EDGE - TYPE 1	SCHLUTER SYSTEMS	A 50 ATGB	SCHLUTER-JOLLY	ATGB		
	iCH-2	SCHLUTER EDGE - TYPE 2	SCHLUTER SYSTEMS	AHK 15 100 ATGB	SCHLUTER-DILEX-AHK	ATGB		
	CH3	SCHILLTER EDGE-TYPE 3	SCHLUTER SYSTEMS	AHK 15 50 ATGB	SCHILITER-DILEX-AHK	ATG8	-	TILE TO COUNTERTOP AND INSIDE TILE CORNERS
	CH4	SCHILITER EDGE - TYPE 4	SCHLUTER SYSTEMS	ATK 100 ATGB	SCHLUTER-RENO-TK	ATGB		
	CH-5 CH-6	SCHLUTER EDGE-TYPE 5	SCHLUTER SYSTEMS SCHLUTER SYSTEMS	AEVT 100 B20 AU 100 ATGB	SCHLUTER-RENO-V	AE ATGB		
	3CH-7	SCHUTER EDGE - TYPE 6	SCHLUTER SYSTEMS	RO 80 ATGB	SCHLUTER-ROUNDEC	ATG8		OUTSIDE TILE CORNERS
	SM-1	SOLID SURFACE - TYPE 1	CORIAN		TOTAL CONTROL OF THE PARTY OF T	ASH CONCRETE	12MM SHEET	
	FF1-1	UPHOLSTERY - TYPE 1	ARCHITEX	 	BILLOW	MAKENA BEACH		BANQUETTE BACK UPHOLSTERY
	IPH-2	UPHOLSTERY - TYPE 2	MOMENTUM		ENDURANCE EPU	JETTY		BANQUETTE SEAT UPHOLSTERY
	PH3	UPHOLSTERY - TYPE 3	CARNEGE	6427S	METEOR	706	1	OPERABLE VERTICAL PARTITION FABRIC
	WC-1	VINYL WALL COVERING - TYPE 1	CARNEGE	8104		33		
	YYC-2	VINYL WALL COVERING - TYPE 2			l			OWNER SUPPLIED, OWNER INSTALLED
۳	YB-1	WOOD BASE - TYPE 1		I		STAIN BLACK/BROWN	5	BANQUETTE ROUTED TOE BASE WITH MARINE WOOD FINISH, STAIN CO
L		LEDGE TOOLS	(DELLEDING PROCES	ļ	URBAN ASH	NATURAL STAIN		CUSTON SLAT WALL PANELS
		URBANWOOD - TYPE 1	URBAN EVOLUTIONS	ļ	UKBANASH	150	2MM THICK	COSTOM SCAT TIALL PARCES
	YDF-1 YOYOPT	WOOL DESKIN FELT-TYPE 1	FLIZ FELT BENTLEY MALS	5RN24		800115	24"X 24"	
	VOICE I	WINDOW SHADE-TYPE 1	DRAPER INC.	ionnes.	PW3570	EBONY	47 744	DRAPER INC. PAYS570 OR EQUAL
		WINDOW SHADE - TYPE 1	DRAPER INC.	 	SW7000-V40	ONYX		DRAPER NC. SW7000-V40 OR EQUAL



OIE:	MEET ALL REQUIR	EMENTS AND FEATURES	FINATION REGARDING LUMINAIRE AND INSTALLATION REQUIREMENTS. PRO INDICATED. ACCEPTABLE MANUFACTURERS MUST MEET THE PHOTOMETR	IC PERFORMAN	CE OF THE						1101101100	LOOD! WEO ! MY										
	ABBREVIATIONS:				CE OF THE	LISTED UP	VIT.															
		ES = EXPOSED STRUCT LG = LAY-IN GRID	OARD P ** PENDANT R ** RECESSED V ** VARIES URE PLAS ** PLASTER S ** SURFACE W ** WALL MOUNTED PL ** POLE MOUNTED UNY ** UNIVERSAL VOLTAGE										$\sim\sim\sim$	١								
DES.	MANUFACTURER	CATALOG SERIES	DESCRIPTION	LAMP DATA	VOLTAGE	BALLAST/ DRIVER	MOUNT	CEILING TYPE	FIXTURE DEPTH	LED SYSTEM INPUT WATTAGE	LED DELIVERED LUMENS	OPTIONS ACCESSORIES	ACCEPTABLE MANUFACTURERS	NOTE OF								
A1	LITHONIA	EPANL SERIES	Z x Z LED EDGE-LIT FLAT PAVEL	4000K LED	2779	Ð	R	LG	r	29,2	3333		COLUMBIA CFP, ELITE LIGHTING INO ASTRAL EDGE	15								
					 	 						\rightarrow	PORTFOLIO, LITEISTRY	K								
D1	GOTHAM	EVO4 SERIES	4" LED ROUND RECESSED DOWNLIGHT WITH WHITE REFLECTOR AND FLANGE, MEDIUM DISTRIBUTION, AND SEMI-SPECULAR FINISH	4000K LED	277V	Ð	R	LG	6 1/Z	13.7W	1527	-	USAL ELITE LIGHTING	11								
			LED DOCK LIGHT, WITH 32 DEGREE FLOOD OPTICS AND POLYCARBONATE			 	_					5	PHOENIX	V								
DK1	HUBBELL.	DOKSTAR SERIES	LENS, IN-LINE ROCKER SWITCH, 40" DOUBLE STRUT SWING ARM WITH STANDARD & CORD AND PLUG	5000K LED	120V	D	W	-	-	21W	1506		ELITE LIGHTING	1								
\neg			12 LED TRACK LIGHT, WHITE, WITH SOLITE TEMPERED GLASS LENSES.				 					\	JUNO, BRUCK, ELITE LIGHTING	ナ								
Ji	CONTECH	CTL SERIES	ORDER WITH 12 CONTECH LT WHITE TRACK WITH OUTLET BOX COVER PLATE LA-4 AND AIRCRAFT CABLE	4000K LED	120V	D	В	LG	•	19W	2213		TIMES SOUARE, LSI	T								
			4' LED WALL BRACKET WITH LOW GLARE ACRYLIC LENS AND WHITE									7	METALUX, COLUMBIA	\rightarrow								
K21	CREE	LS SERIES	FINISH.	4000K LED	2777	D	W	•	3	40H	4250	<u> </u>	LITHOMIA, ELITE LIGHTING	K.								
Li			4" LED NARROW RECESSED LINEAR FIXTURE WITH WHITE POWDER COAT				В	1					PINNACLE, LUMENWERX, CORONET	1								
L3	AXIS	BEAM4 LED SERIES	EXTRUDED ALUMINUM HOUSING AND FORSTED FLUSH LENS, 90 CRI	4000K LED	ZTTV	D	n	LG	3-7/8*	5W/FT	400 LW/FT	3	FINELITE, ELITE LIGHTING	V								
12	AXIS	BEAM4 LED SERIES	4° LED RECESSED PERIMETER FIXTURE WITH EXTRUDED ALUMINUM HOUSING, 2° REGRESS, TELESCOPIC END, SEE PLANS FOR EXACT	4000K LED	2770/	В	В		6"	5 W/FT	400 LW/FT		PINNACLE, LUMENWERX, CORONET	Įζ								
	~~3	BEAM LED SCRES	LENGTH REQUIRED.	4000A LED	2777	D		FC	ů	3 11/1	400 (507)		FINELITE, METALUMEN	<u> </u>								
13	OWNILIGHT	CONTINUUM SERIES	FIELD CUTTABLE LED TAPELIGHT MOUNTED IN ALUMBRUM CHANNEL,	3000K LED	247	D	s	GWB	0.5*	1.47 W/FT	140 UWFT		ACOLYTE, OPTIC ARTS, MODA	Ŋ								
	OWNED CO.	DOI THE CONTRACTOR	DIMMABLE, 90 CRI	3000KILLD	277	D	D R	GWB			(40 00)		LEO LINEAR, ELITE LIGHTING	1)								
L4	AXIS	BEAMA LED SERIES	4" LED RECESSED PERIMETER FIXTURE WITH EXTRUDED ALUMINUM HOUSING, 2" REGRESS, TELESCOPIC END, SEE PLANS FOR EXACT	4000K LED				GWB	6"	5 W/FT	400 LWFT	۷	PINNACLE, LUMENWERX, CORONET	K								
	BEAM LED SERVES		LENGTH REQUIRED.								100 0000	(FINELITE, METALUMEN	亾								
N2	LITHONIA	MSL SERIES	4' LED SURFACE INDUSTRIAL FIXTURE WITH STEEL HOUSING AND BAXED WHITE FINANCE PRISH	4000K LED		D			3-1/4~	40W	3636		METALUX, COLUMBIA	\mathcal{V}								
			WHITE ENAMEL HAISH										DAYBRITE	D_								
ка	LITHONIA MISL S	MSL SERIES	4' LED CHAIN-HUNG PENDANT INDUSTRIAL FIXTURE WITH STEEL HOUSING	4000K LED	2mv	D	P		3-1/4"	40W	3636		METALUX, COLUMBIA	↓)								
			AND BAKED WHITE ENAMEL FINISH										DAYBRITE	K _								
NS LI	LITHONIA	MSL SERIES	8' LED SURFACE INDUSTRIAL FIXTURE WITH STEEL HOUSING AND BAKED WHITE ENAMEL FINISH	4000K LED	2777	D	s		3-1/4"	58W	7273		METALUX, COLUMBIA	-17								
			HINT DEVICE 1990!										DAYBRITE	K-								
N6	BARRON	VPA SERIES	4' LED SURFACE LINEAR VAPORTIGHT WITH POLYCARBONATE HOUSING FOR CORROSIVE ENVIRONMENT	4000K LED	OK LED 277V	D	s		3.6*	4011	5200	(-	METALUX, COLUMBIA	·K								
-								<u> </u>				-	DAYBRITE, ELITE LIGHTING METALUX, COLUMBIA	V-								
N7	AINOHTLI	MSL SERIES	8" LED SURFACE INDUSTRIAL FIXTURE WITH STEEL HOUSING AND BAKED WHITE ENAMEL FINISH	4000K LED 1	120V	D	D S	-	3-1/4"	58W	7273	-	DAYBRITE	-R								
							_					\longrightarrow	LITHONIA, ELITE LIGHTING	+)-								
N11	LITHONIA	FEM SERIES	4' LED PENDANT INDUSTRIAL YAPOR-TIGHT FIXTURE WITH FIBERGLASS HOUSING	4000K LED 2	2777	D	D P	P -	4-1/4"	94.3W	15150		METALUX, COLUMBIA	が								
-+													PORTFOLIO, LITEISTRY	+>								
DA1	GOTHAM	EVO6 SERIES	5" LED ROUND RECESSED DOWNLIGHT, WET LOCATION HATED, FLUSH LENSED WHITE PAINTED TRIM WITH SMOOTH CLEAR LENS	4000K LED 27	2777	D	R	•	7 9/16"	1017	B57		USAL ATLANTIC LIGHTING	K								
											LED WALL MOUNTED FOTURE WITH DIE CAST ALLIMPRUM HOUSING,										MCGRAW EDISON, HUBBELL, LSI	K
DA2	LITHONIA	D-SERIES SIZE 1	SERIES SIZE 1	SERIES SIZE 1	SERIES SIZE 1	-SERVES SIZE 1	SERIES SIZE 1	ACRYLIC LENS, DARK SKY FRIENDLY CERTIFIED, IP65 RATED, FORWARD THROW LIGHT DISTRIBUTION AND DARK BRONZE FINISH.	4000K LED	2771	D	W	-	10-	13W	1515		PHILIPS 122 SCONCE SERIES	IJ.			
			4" LED LINEAR PENDANT WITH ALUMINUM BODY AND WOOD SIDE PANELS,								1848 UP		MODERN FORMS, PURE EDGE	t								
Pi I	DESIGNPLAN	PLANK SERIES	AIRCRAFT CABLE MOUNT, 90 CRI	4000K LED	2777	Đ	P	LG	8*	72W	1866 DOWN		NATIONAL LIGHTING COMPANY	1)_								
P2 (G LIGHTING	GLOBO SERIES			277	- 0		GWB		42W		~	SPI, LIGHTWAY INDUSTRIES	5								
	GEGHTING	GLUBU SERIES	24* LED ACRYLIC GLOBE INTERIOR PENDANT	4000K LED	2114	ט	,	GMB	24****	4217	4912	7	ALLATI	1)								
P3	EUREKA	NIKA SERIES	8" LED GLOBE INTERIOR PENDANT WITH CLEAR CABLE AND 0-10Y	4000K LED	2779	р	Р	LG.	8"	9,899	987		WAC, LIGHTWAY INDUSTRIES	K								
			DIMMING, BO CRI									(_	A) LATI	몮								
P4	EUREKA	MIKA SERIES	12" LED GLOBE INTERIOR PENDANT WITH CLEAR CABLE AND 0-10V DIMMING, 80 CRI	4000K LED	2770	D	P	LG	12"	9.89	1062		WAC, LIGHTWAY INDUSTRIES	IJ								
		SUPER NEON SERIES	LED FLEXIBLE COVE LIGHT PROVIDE ALL REQUIRED ACCESSORIES TO									ϵ	FOLINFAR HIGHT ACOLYTE	1								
Q1 1	MODA LIGHT		CREATE A COMPLETE AND OPERABLE SYSTEM AS SHOWN ON THE	ND OPERABLE SYSTEM AS SHOWN ON THE 4000K LED 24V	247	D	8	GYP	1-1/8"	5W/FT	100 LM/FT	\longrightarrow		∤)								
\dashv			PLANS.									<i>></i>	OPTIC ARTS, TPR ENTERPRISES	K								
81	JUNO OMUL	SLIMFORM SERIES	LED SURFACE MOUNT DOWNLIGHT, 11" DIAMETER, WIRE DIRECTLY TO J-BOX	4000K LED	2777	D	5	ES	.9"	1514	1300		DMF LIGHTING	1								
			SINGLE FACE EXIT LIGHT, DIE CAST ALUMINUM, UNIVERSAL MOUNT, RED										ELITE LIGHTING LITHONIA, SURE-LITE	K-								
X1 E	EVENIUTE	RAZOR SERIES	LETTERS	LED	2777		UNV	-		-		(DUAL-LITE, LIGHT ALARMS	1								
X2 E	EVENUTE	RAZOR SERIES	DOUBLE FACE EXIT LIGHT, DIE CAST ALUMINUM, UNIVERSAL MOUNT, RED LETTERS	LED	277V	-	UNY	-			-	}	LITHOMA, SURE-LITE DUAL-LITE, LIGHT ALARMS	リ								
LLAS	T/DRIVER CO	DELISTING: (SEE	SPECIFICATIONS)																			

LUMINAIRE SCHEDULE

- G LED DIMMABLE POWER SUPPLY ADVANCE XITANJUM OR EQUAL

GENERAL NOTES:

2 ESHALL VERIFY AND COORDINATE ALL LUMINARE TRINSFLAMGES WITH RESPECTIVE CEILING TYPES SCHEDULED AND/OR SUBMITTED BY THE GC PRIOR TO ORDERING OF THE LUMINARES, SCHEDULE INDICATES TRIM TYPES BASED ON THE GENERIC CEILING PRIOR TO ORDERING OF THE LUMINARES, SCHEDULE INDICATES TRIM TYPES BASED ON THE GENERIC CEILING PRIOR TO ORDERING OF THE LUMINARES, SCHEDULE INDICATES TRIM TYPES BASED ON THE GENERIC CEILING PRIOR TO ORDERING OF THE LUMINARES, SCHEDULE INDICATES TRIM TYPES BASED ON THE GENERIC CEILING PRIOR TO ORDERING OF THE LUMINARES, SCHEDULE INDICATES TRIM TYPES BASED ON THE GENERIC CEILING PRIOR TO ORDERING OF THE LUMINARES, SCHEDULE INDICATES TRIM TYPES BASED ON THE GENERIC CEILING PRIOR TO ORDERING OF THE LUMINARES, SCHEDULE INDICATES TRIM TYPES BASED ON THE GENERIC CEILING PRIOR TO ORDERING OF THE LUMINARES, SCHEDULE INDICATES TRIM TYPES BASED ON THE GENERIC CEILING PRIOR TO ORDERING OF THE LUMINARES, SCHEDULE INDICATES TRIM TYPES BASED ON THE GENERIC CEILING PRIOR TO ORDERING OF THE LUMINARES, SCHEDULE INDICATES TRIM TYPES BASED ON THE GENERIC CEILING PRIOR TO ORDERING OF THE LUMINARES, SCHEDULE INDICATES TRIM TYPES BASED ON THE GENERIC CEILING PRIOR TO ORDERING OF THE LUMINARES, SCHEDULE INDICATES TRIM TYPES BASED ON THE GENERIC CEILING PRIOR TO ORDERING OF THE LUMINARES, SCHEDULE INDICATES TRIM TYPES BASED ON THE GENERIC CEILING PRIOR TO ORDER TO ORD

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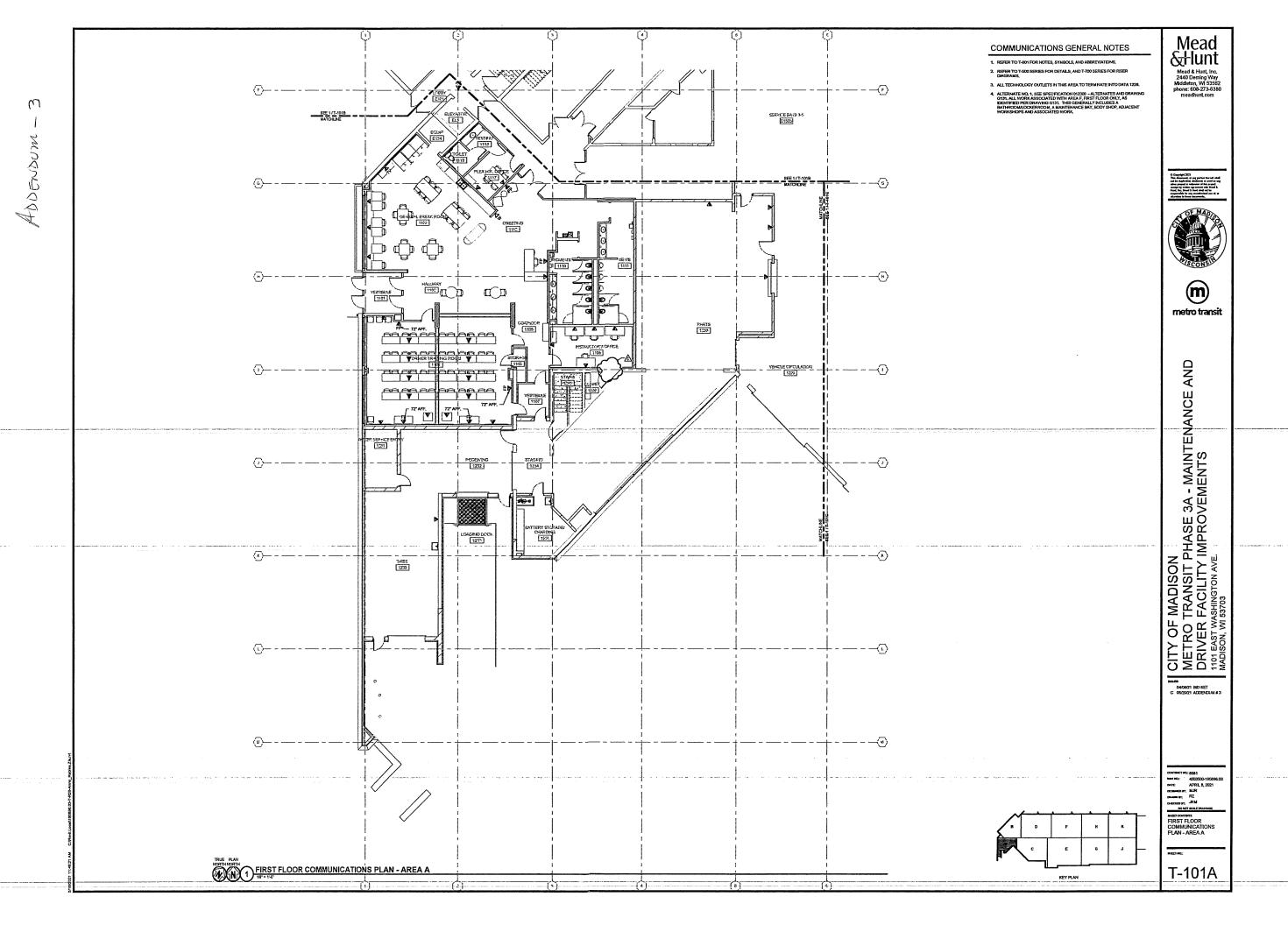
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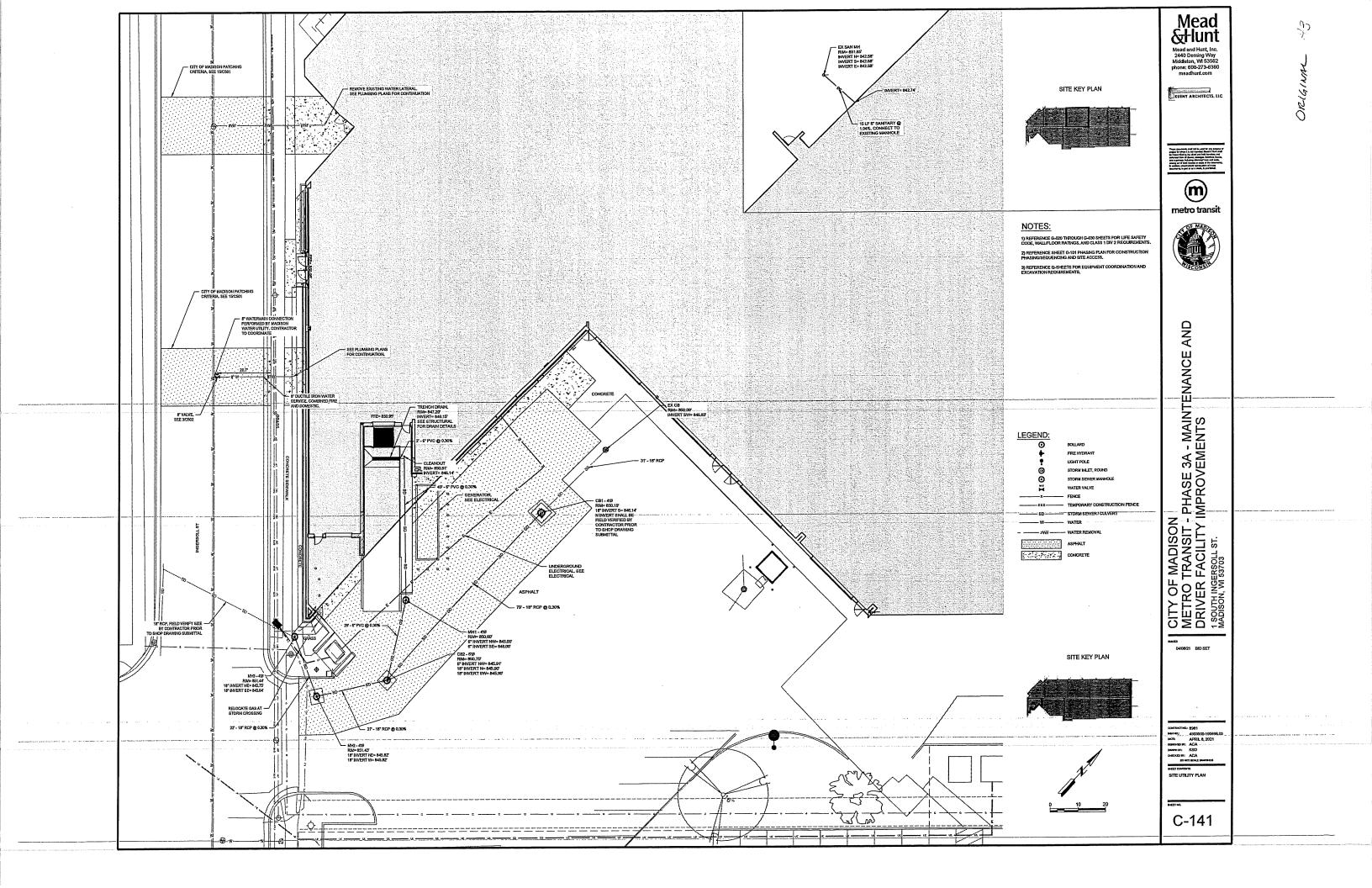
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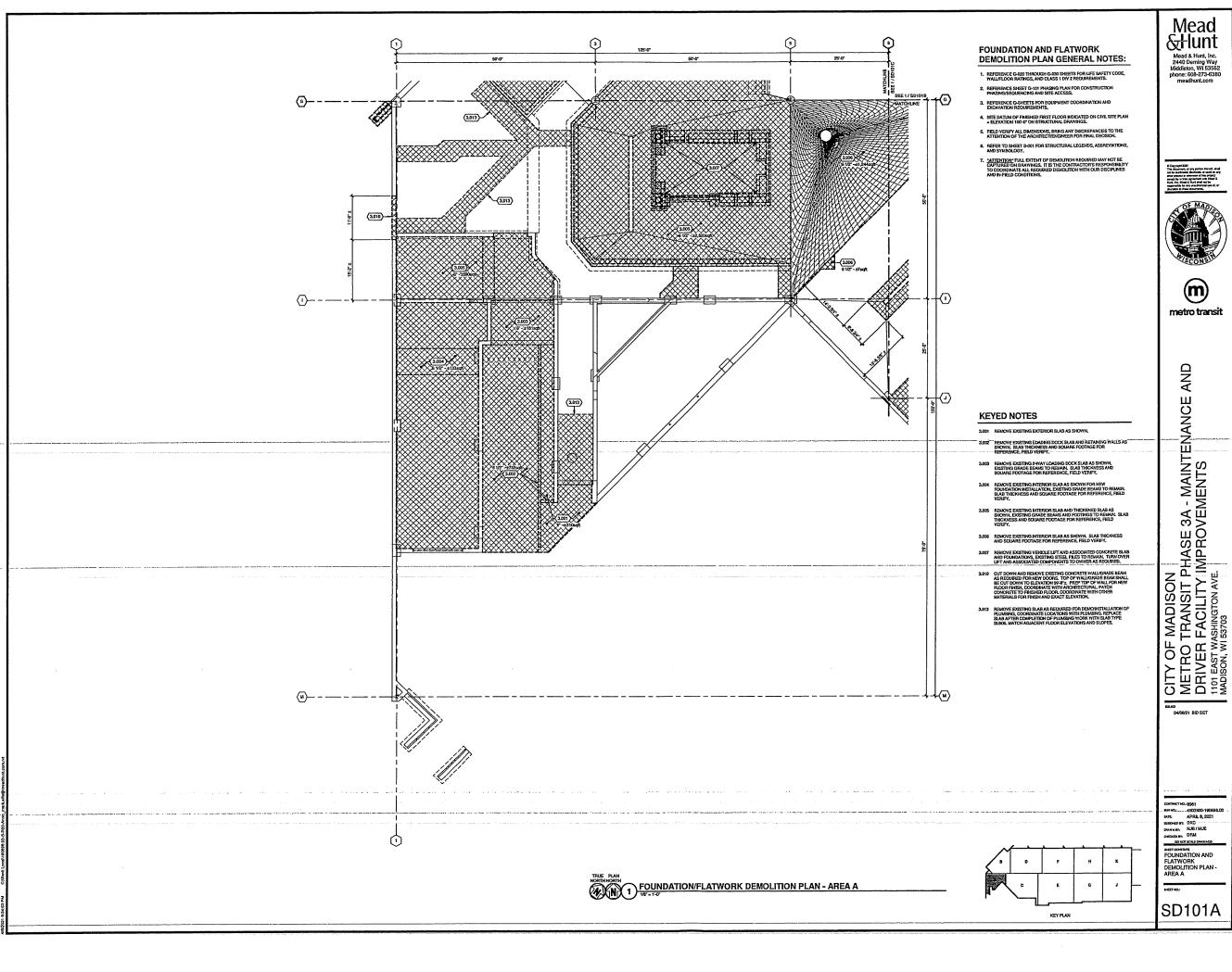
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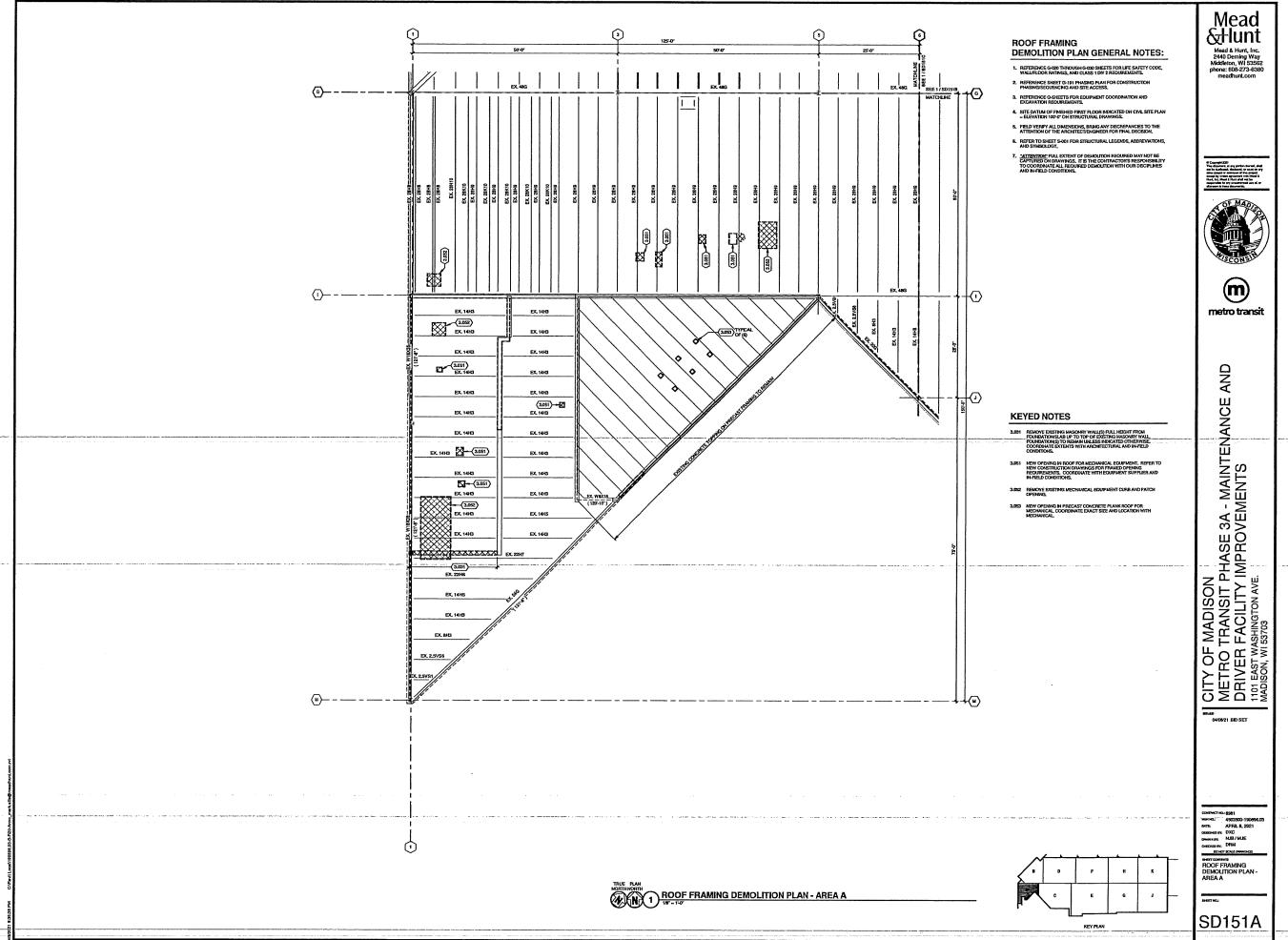
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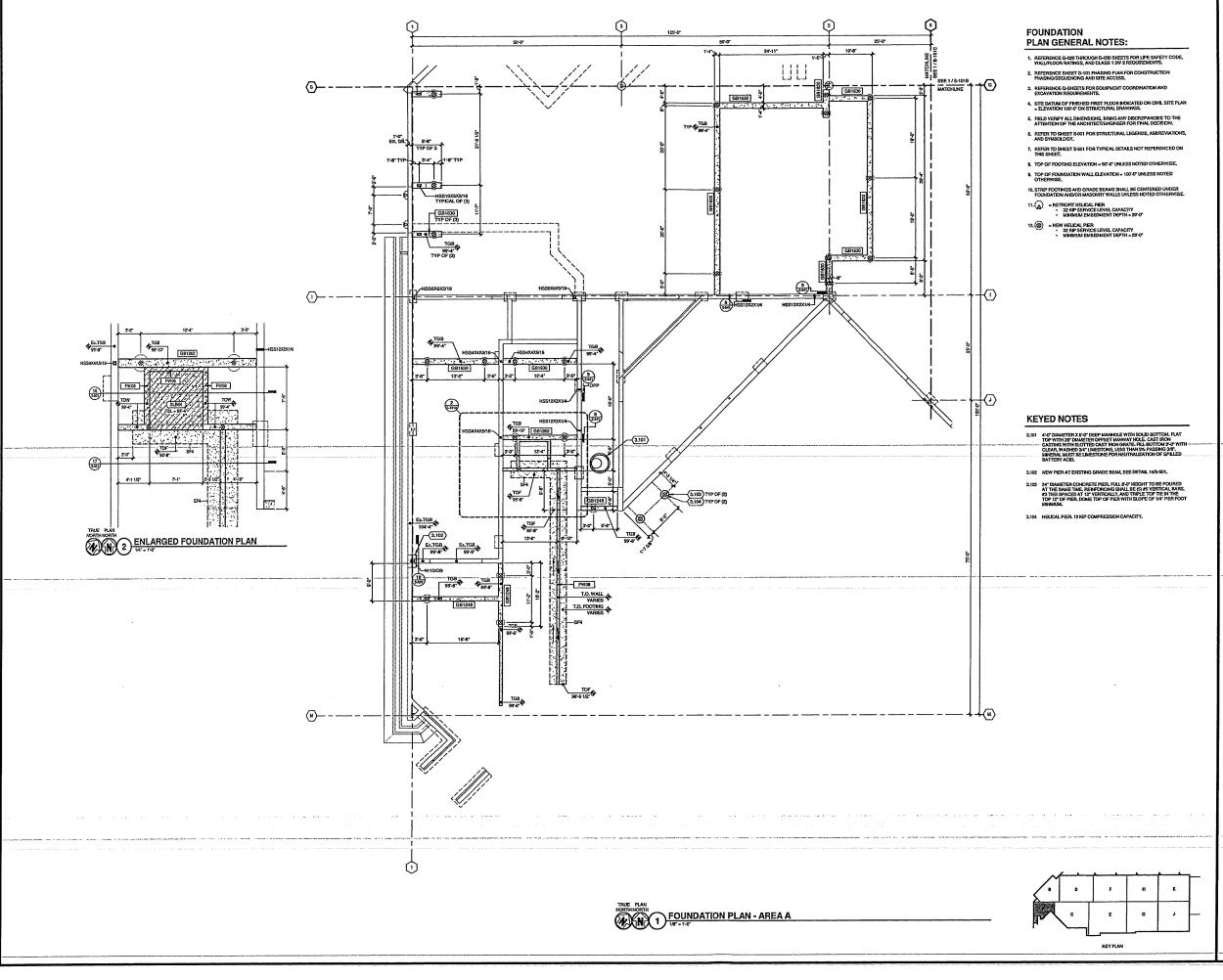
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STRUCTURAL DESIGN CRITERIA **FOUNDATION NOTES** MASONRY NOTES STRUCTURAL STEEL NOTES OBSERVATION AND INSPECTION STRUCTURAL SYMBOLOGY THI. IT IS THE CONTRACTOR'S RESPONSELTY TO PERFORM ALL STRUCTURAL WORK IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. ANY WORK IN CONFORMANCE WITH THE OFFINERS DOES NOT RELEVE THE ERCIAL BUILDING CODE SPS 361-366 AL RUIT DING CODE FOOTING SUBGRADES SHALL BE CLEAN AND FREE OF DEBRIS, STANDING WATER, AND LOOSE SOL. MATERIAL PROPERTIES (U.N.O.) MATERIAL PROPERTES (UNIO) FOUNDATION PLAN 2. RISK CATEGORY: F-2. ALL COLUMN FOOTBIGS ARE TO BE CENTERED UNDER COLUMN CENTERLINES, UNLESS INDICATED OTHERWISE. MASONRY (CMJ) WALL ON CONCRETE FOOTING 3. FLOOR LIVE LOAD (1803.1.1 F4. THE FUNDATION CONTINUED IS MALE FILLY REVIEW INFORMATION TO MALE AS A MESSESSARY TO ACCOMPLIANCE OF THE PROPERTY WHICH PENETRATE CONCRETE POOTINGS FUNDATIONS. ... CYNCRETE FOOTING TH2. THE CONTRACTOR SHALL PROVIDE AN ALLOWANCE PER THE FRONT END DOCUMENTS FOR THE OWNER TO RETAIN AN INDEPENDENT INSPECTION AGENCY TO PROVIDE CONSTRUCTION OBSERVATIONS AND INSPECTIONS. S-1. STEEL BEAMS WITH RESIDUAL CAMBER RESULTING FROM MILL FABRICATE OR ROLLING SHALL BE SHOP FABRICATED AND ERECTED SUCH THAT THIS RESIDUAL CAMBER COUNTERACTS GRAVITY LOAD DEPLECTION. - CONCRETE FOUNDATION WALL ON CONCRETE FOOTING M-2. MASONRY SHALL BE PLACED IN ONE-HALF RUNNING BOND U.M.C 4. ROOF LIVE LOAD (1603.1.2) THE CONTRACTOR SHALL PROVIDE THE RESPECTION AND REPORTION TO ALL PROVIDE THE RESPECTION ASSESSMENT TO ALL PROVIDE GENERAL PROPERTY OF A PROPER M-3. HOLLOW MASONRY UNITS SHALL BE LAID WITH FULL HEAD JOINTS AND FULL BED JOINTS OF THE FACE SHELLS AND UNDER WEBS WHERE THE ADJACENT CELLS AND TO BE FULLD WITH GROUT AND AT THE BOTTOM COURSE. TOF TOP OF FOOTING ELEVATION MINIMUM ROOF LIVE LOAD: S-2. ALL BOLTED CONNECTIONS SHALL UTILIZE 3/4 INCH DIAMETER A325 SOLIS IKINTENED TO THE SNUG-TIGHT CONDITION. THE SNUG-TIGHT CONDITION. THE SNUG-TIGHT CONDITION IS DEFINED BY THE ROSCS SPECIFICATION FOR STRUCT JONTS USING ASTMARZS OR AND BOLTS, UNLESS NOTICATED OTHER 5. ROOF SNOW LOAD (1803.1.3) TOW TOP OF WALL ELEVATION N-4. WHERE MASONRY IS APPLIED ADJACENT TO STEEL MEMBERS (BEAMS AND COLUMNS) PROVIDE ANCHORING DEVICES PER SPECIFICATIONS. GROUND SNOW LOAD: FLAT-ROOF SNOW LOAD SNOW EXPOSURE FACT SNOW LOAD IMPORTAN THERMAL FACTOR: 5-1. STEEL CONNECTIONS NOT DETAILED ON THE PLANS ARE TO BE THE FABRICATIONS STANDARD AND ARE TO BE SELECTED AND DESIGNED ACCORDANCE WITH AISK ASS SPECIFICATIONS, TYPE 2 FRAMING CONNECTIONS, FOR THE REACTIONS INDICATED. F-S. REFER TO ELECTRICAL DRAWING SITE LIGHTING FOR POLE BASES. SUPPLIED AND INSTALLED BY GENERAL CONTRACTOR. M-5. REFER TO ARCHITECTURAL PLANS AND DOORVFRAME SCHEDULES FOR LINTEL ROUGH OPENING LOCATIONS, SIZES, AND ELEVATIONS. SF1-- STRIP FOOTING DESIGNATION - FOLISDATION WALL DESIGNATION M-6. ALL MASONRY WALLS ARE TO HAVE 9 GAUGE HORIZONTAL JOINT REINFORCEMENT WHICH DOES NOT EXCEED 16 INCHES ON CENTER VERTICALLY 8. WIND DESIGN DATA (1603.1.4) F.T. CONTROL JOINTS IN THE CAST-H-PLACE CONCRETE FOUNDATION WALLS SHALL BE PLACED AT SPACKNIK MOT TO DECED 270 CL, OR AS LOCATED PI PLACED AT SPACKNIK MOT TO DECED 270 CL, OR AS LOCATED PI PLACED AT SPACKNIK SP DENOTES DEPRESSION FOR ULTIMATE WIND SPEED (3-SECOND GUST): NOMINAL WIND SPEED (3-SECOND GUST) WIND EXPOSURE: NTERNAL PRESSURE COEFFICIENT: GCP1 * 4+ 0.15 M-7. ALL LAPS SHALL BE 48 BAR DIAMETERS UNLESS INDICATED OTHERWISE II-8. GROUT SOUD ALL JAMBS IN ALL MASONRY WALLS FULL HEIGHT TO UNDERSIDE OF LINTEL. EXTEND GROUTED JAMB FROM FACE OF MASONRY OPENING AT LEAST 2" (A NAMINUM OF 3 CELLS), AT OTHER BEAM BEARING LOCATIONS, GROUT SOUD A MINIMUM 2"5"24" AREA BENEATH THE BEARING PLATE, UNALESS INDICATED OTHERWISE. 7. EARTHOUAKE DESIGN DATA (1803.1.5) INDICATES COLUMN F-R. A LEAN CONCRETE MUD SLAB 2" TO 3" THICK SNALL BE USED IN THE FOOTIN EXCAVATION F THE BOTTOM OF THE EXCAVATION TENDS TO BECOME MUDDY AND SOFT DUE TO CONSTRUCTION ACTIVITY. LEAN CONCRETE SHALL MAYE A MINIMAN 2D DAY COMPRESSIVE STREMSTRY OF 2000 PSI. 1)-THE INSPECTING AGENCY IS NOT INSPECTING FOR O.S.H.A. COMPLIANCE OR REQUIRED TO INSPECT TEMPORARY CONSTRUCTION, SUCH AS TEMPORARY BRACKS, TEMPORARY CONSTRUCTION IS THE CONTRACTIONS SOLE RESPONSIBILITY. IMPORTANCE FACTOR: MAPPED, MCE, 5% DAMPED, SPECTRAL ACCELERATIONS AT SHORT PERIODS: \$1 = 0.06 G AT A PERIOD OF 1 SECOND: \$1 = 0.05 G 4-9. PROVIDE CORNER SPLICE BARS FOR ALL BOND BEAMS OCCURRING AT CORNERS OR WALL INTERSECTIONS. SPLICE BAR TO BE THE SAME SIZE AS BARS IN THE BOND BEAM. S4. THE MINIMUM CONNECTION PLATE/ANGLE THICKNESS SHALL BE 916", THE MINIMUM WELD 141", AND THE MINIMUM DESIGN LOAD ON ANY CONNECTION 10 KPS, UNESS MORCATED OTHERWISE. F-A. COORDINATE GROUNDING REQUIREMENTS FOR FOUNDATION FOOTING RENFORCING STEEL WITH ELECTRICAL DRAWNINGS. COORDINATE INSTALATION OF GROUNDING WREESCEUPHENT WITH ELECTRICAL CONTRACTION FROM TO CASTING CONCRETE, REFER TO NO THY. THE CONTRACTOR SHALL NOTFY THE INSPECTION AGENCY OF ANY WELDS THAT WERE DONE IN THE FIELD THAT WERE NOT DETAILED AS FIELD WELDS ON THE DESIGN DRAWINGS. (A)-MIO, ALL NON-STRUCTURAL MASONRY WALLS SHALL BE REMFORCED WITH A MARKUM BY VERTICAL BANGS AT AFF QC. WITH THAT CORE GROUPED AND MARKUM BY VERTICAL BANGS AT AFF QC. WITH THAT CORE GROUPED AND COURSES SHALL BE GROUPED SOLD. PROVIDE A CONTINUOUS SOMD BEAM AT TOP OF WALL WITH (2) PE BARS CONTINUOUS, GROUP BOND BEAM SOLD. PROVIDE BE DOWEL AT 450, AND PROTICES AT SITE CLASS: S-5. ALL CONNECTIONS TO PIPE AND TUBE COLUMNS SHALL BE THROUGH PLATE CONNECTIONS UNLESS OTHERWISE MORCATED. NSPECTOM AGENCY SHALL A. DRSETYE SHORNO AND EMOVAL OF BALLAST BEFORE REINFORCING. B. OBSETIVE ASSENCE OF SHOW DURING REINFORCING. C. YESUALLY OBSENCE ALL FIELD WELDS. C. LOSSELY PRESECT ANY INDIVIDENCEMBRING WELDS. E. MIREDWITELY NOTIFY THE CONTRACTION OF NON-CONFORMING WORK. F. SSUE BHYEREDLY PROCRESS REPORTS. Q. OBSERVE NSTALLATION, REINSTALLATION OF JOIST BRIDGING AND BRACING. FRAMING PLAN 5-4. ALL ANCHOR BOLTS ARE TO BE 3/4" INCH DIAMETER F155A Gr. 55 THREADED RODS UNLESS PEDICATED OTHERWISE. (2)-1/2 INCH DIAMETER ANCHOR BOLTS SWILL BE PROVIDED AT ALL BEAM AND INTEL BEARWASS ON CONCRETE OR MASONINY, UNLESS PRIOZATED OTHERWISE. F-10. SEE TYPICAL SLAB-ON-GRADE DETAILS FOR SLAB AND SUB-BASE REDUREMENTS. THESE WILL BE TYPICAL THROUGHOUT UNLESS NOTED INDICATES KNEE BRACING CONNECTED TO BE B. GEOTECHNICAL DESIGN DATA (1603.1.6) I-11. USE SLEEVE ANCHORS IN HON-STRUCTURAL MASONRY WALL PARTITIONS - INDICATES BEAM FRAMING OVER HOLLOW STRUCTURAL SECTION (HSS) COLUMN S-7, POST INSTALLED ANCHORS ARE TO BE ADHESIVE ANCHORS. INSTALL ANCHORS WITH EMBEDMENT DEPTHS INDICATED, UNLESS INDICATED OTHERWISE. - INDICATES BEAM FRAMING OVER WIDE FLANGE (WF) COLL! M-12. REFER TO STRUCTURAL AND/OR ARCHITECTURAL DRAWINGS FOR CONTROL JOHT LOCATIONS. WHERE MASONRY CONTROL JOINT LOCATIONS ARE NOT INDICATED, PROVIDE THEM AT 25 MAXIMUM CENTERS. SIGNAT MASONRY CONTROL JOINT LAYOUT TO THE ENGINEER FOR APPROVAL. 9. FLOOD DESIGN DATA (1603.1.7) HACKIG. H. SERVE NEW JOIST TOP CHORD CONNECTION TO ROOF DECK DESERVE NO WELD HSSAXI TO HSSAXI ON DETAILS 11/5-543 AND 21/5-543 UNTIL AFTER MAU-6 PLACED. **CONCRETE & REINFORCING STEEL NOTES** S-8. STUD ANCHORS ARE TO BE NELSON STUDS OR FOLIAL (ASTM A108) INDICATES BRACING CONNECTED TO BEAM BUILDING IS NOT LOCATED W FLOOD HAZARD AREA; THEREFORE FLOOD DESIGN DATA IS NOT RECVERED. III-13, PROVIDE HORIZONITAL BOND BEANS (DIAPHRAGM CHORDS) WITH (2) IS BA CONTINUOUS, BENEATH FLOOR/ROOF MEMBER BEARING ELEVATIONS AND AT DECK EDGE. MATERIAL PROPERTIES (U.N.O.) COMPRESSIVE STRENGTH -Pc - 4 KSI -Pc - 60 KSI (A615 GR 60) I. BEAM AND UNITEL PLATES SHALL BE FULLY GROUTED WITH A MINIMUM 1/2" NON-SHRINK GROUT. INDICATES BEAM FRAMING INTO SIDE OF COLUMN TH9. WELD INSPECTION SHALL BE PERFORMED BY AN AWS CERTIFIED WELD 10. SPECIAL LOADS (1503.1.6) S-10. ALL WELDING OF NEW STEEL IS TO BE WITH ETIXX ELECTRODES, U.N.O. WELDING SHALL BE IN ACCORDANCE WITH THE LATEST AWS SPECIFICATIONS BY CERTERON WELD DEPS SPECIAL LOADING CONDITIONS ARE NOT APPLICABLE TO THE DESIGN OF THIS BUILDING: THEREFORE SPECIAL LOADS ARE NOT REQUIRED M-14, PROVIDE 10 CAGE BENT SLIP JOINT PLATES 4" A "A " 1" CLONG AT 2" O' O.C. EACH SIDE OF THE TOP OF ALL NON-STRUCTURAL MASORITY WALLS. ATTACH TO UNDERSEDE OF BEATLA ROOF BEGON OR STRUCTURAL STEEL WITH 3 (MANUAUS) SELF-ORTLLING, SELF-THREADONG SCREWS (117) AS WITH 3 (MANUAUS) SELF-ORTLLING, SELF-THREADONG SCREWS (117) AS CONCRETE DECK WITH 3 (MANUAUS) SELF-ATPHOSE DOWNERS TO SCREWS 316" DAMBETER, SEE ANCHITECTURAL DRAWNGS FOR NON-STRUCTURAL MASORITY WALL LOCATIONS. MANTARY I YIEMINIANI QAD BETTWEEN TOP OF MASONETY WALL LAND BOTTOM OF STRUCTURE. DO NOT ATTACH PLATES TO MOSORITY WALL LOCATIONS SHOULDES TO STRUCTURE. THIO, STRUCTURAL OBSERVATIONS SHALL BE PERFORMED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF WISCONSIN. PROCATES COLLECTOR CONNECTIO S-11. WHEN FIELD WELDING TO EXISTING STEEL, ADJUST WELDING PROCEDS AS REQUIRED TO BE COMPATIBLE WITH THE NEW AND EXISTING STEEL CR-2. ALL CONCRETE DESIGN AND CONSTRUCTION SHALL CONFORM WITH THE LOCAL BUILDING CODE REQUIREMENTS AND THOSE OF THE FOLLOWING STANDARDS ILLESTE EDITION. - INDICATES BEAM SIZE THIS CONTRACTOR SHALL CORRECT ALL NONCONFORMANCES AT CONTRACTOR'S EXPENSE. CONTRACTOR SHALL NOT APPLY COST OF CORRECTIONS TO A LOWALCE. 12. STRUCTURAL OBSERVATIONS FOR SEISMIC AND/OR WIND RESISTANCE STRUCTURAL OBSERVATIONS FOR SEISMIC AND WIND RESTISTANCE ARE NOT REDURED. "ACI318, BUILDING CODE REQUIREMENTS FOR REINFORCED CONC." "ACI315, DETALS AND DETALING OF CONCRETE REINFORCEMENT" "ACI301, SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BLOSS, "ACI307, RECOMMENDED PRACTICE FOR CONCRETE FORM WORK" S-12. ALL EXTERIOR MASONRY SHELF ANGLES, LINTEL BEAMS, AND LINTEL PLATES SHALL BE HOT DIPPED GALVANIZED ACCORDING TO ASTM A122 INDICATES MUMBER OF SHEAR STUDS FULLY WELDED TO TOP OF BEAM PER SPAN CR-1. REINFORCING SHALL BE DETAILED IN ACCORDANCE WITH ACI 315 THIS. THE CONTRACTOR SHALL NOT APPLY THE COST OF THE CONTRACTOR'S OAVOC PROGRAM NOR INSPECTIONS TO THE ALLOWANCE. CR-4. ALL REINFORCEMENT BARS SHALL BE FABRICATED IN ACCORDANCE WITH THE LATEST CRSI MANIAL OF STANDARD PRACTICE AND SHALL BE CLEAN AND FREE OF GRAZES AND STAIL BKG BIRST. THIS OBSERVATION OF FELD WELDS SHALL INCLUDE PLACEMENT, TYPE, SIZE, FUSION, POROSITY, CRACKING, UNDERCUT, SPATTER AND SMOOTHNESS DID IN OWNER AWS DID. **GENERAL NOTES** CR-S. SEE SECTION 033000 OF SPECIFICATIONS FOR INFORMATION REG. CONCRETE MIX DESKIN, TESTING, MATERIALS, AND ADMIXTURES, SHOP DRAWINGS STEEL BAR JOISTS SD-1. SHOP DRAWINGS SHALL BE SUBMITTED FOR STRUCTURAL ITEMS AS REQUIRED BY THE SPECFICATIONS. CONSTRUCTION DOCUMENTS SHALL NOT BE REPRONUED FOR USE AS SHOP DRAWINGS MATERIAL PROPERTIES (U.N.O) COMPLY WITH BUTS "SPECIFICATIONS" FOR WEB AND STEEL-ANGLE CHORD FOOTINGS: BOTTOM & SIDES DO NOT SCALE DRAWINGSIII 5-2. FOR CLARITY, ALL EXTERIOR SLABS AND SDEWALKS WAY NOT BE SHOWN FOR EXACT DIMENSIONS, LOCATIONS, JOHN'S AND SCORE LINES, SEE ARCHITECTURAL AND/OR CIVIL DRAWINGS. MALLS: EXTERIOR EXPOSURE INTERIOR EXPOSURE TYPICAL BAR JOSTS ARE NOT DESIGNED FOR CONCENTRATED LOADS, PULCADS AT PARKE, POINTS OR WELD ADDITIONAL DOUBLE ANGLE MEMBERS ONE EACH SDE FROM POINT OF CONCENTRATED LOAD TO THE NEAREST PARKE, POINT ON THE OPPOSITE CHORD. BEAMS/COLUMNS: OVER TIES OR STERRUPS **ABBREVIATIONS GENERAL SYMBOLS** G-4. DETALS MARKED "TYPICAL" MAY OR MAY NOT BE CUT ON PLANS, BUT SHALL APPLY UNLESS NOTICE OTHERWISE. ELEVATED SLABS: * BOTTOM OF _____ * BOTTOM * BASE PLATE TYPE (0.555) CR-7. ALL BAR LAPS SHALL CONFORM TO ACI 318-14, PARAGRAPH 25.5.1, CLASS TO SPICE CRITERA. USE TOP BAR LAP LENGTHS FOR TOP BARS IN SLABS AND BEAUE OVER 127 DEED. SW# CUTTING & DRILLING OF CHORD OR WEB MEMBERS IN BAR JOISTS, OR JOIST GIRDERS, IS NOT PERMITTED. ELEVATION ALL BRIDGING SHALL BE EQUALLY SPACED, UNLESS NOTED OTHERWISE, BY JOIST MANUFACTURER G-8. SEE ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING PLANS FOR SLEEVES, INSERTS, ETC. NOT SHOWN ON STRUCTURAL PLANS. CONTROL JOINT CONTROLLED LOS CONTINUOUS DOUBLE-TEE (SLBH) STRUCTURAL SLAB TYPE HORIZONTAL BARS SHALL BE DETAILED TO SHOW THE DISTANCE FROM AT LEAST ONE END OF THE BAR TO THE NEAREST BUILDING GRID LINE OR G-7. NO PIPES OR SLEEVES FOR MECHANICAL TRADES SHALL PASS THROUGH STRUCTURAL MEMBERS WITHOUT APPROVAL OF THE STRUCTURAL 5-201 STRUCTURAL ELEVATION - DIAMETER - DOUBLE-TEE BEACH FACE - ELEVATION CR-19. CONTRIUOUS TOP AND BOTTOM BARS, WHEN SHOWN IN TRANSVERSE SECTION ONLY, SHALL BE LAPPED AS FOLLOWS: JOST SHALL BE CONSIDERED AS UNSTABLE DURING ERECTION. UNDER HO OFICUMSTANCES ARE CONSTRUCTION LOADS OF ANY DESCRIPTION TO BE PLACED ON UNBRIDGED JOSTS IN THE APPLICATION OF CONSTRUCTION LOAD ON UNBRIDGED JOSTS IS IN D SD-5. SHOP DRAWING REVIEW IS INTENDED ONLY FOR GENERAL CONFORMANCE TO THE DESIGN CONCEPT AND CONSTRUCTION DOCUMENTS. (F20) TOP BARS NEAR MID-SPANS; BOTTOM BARS DIRECTLY OVER SUPPORTS, SD-6, SHOP DRAWINGS WILL BE RETURNED FOR RESUBMITTAL IF MAJOR ERRORS ARE FOUND DURING REVIEW. CHI. PROVIDE ONE (1) HOOKED RESPORCING BAR IN CONCRETE FOOTING TO SERVE AS A CONCRETE ENCASED ELECTRODE" IN ACCORDANCE WITH THE HANDAUL ELECTRIC CODE. COORDINATE WITH ELECTRICAL CONTRACTOR FOR EMACT LOCATION. HOOKED RESPORCING BAR SHALL CONTRACT TO THE FOLLOWING THE CONCREMENT TO ASTM ATOR. B. BAR SUZE INMEREN 4 HOOKED AT ONE SHO CHAY. C. MARRIAM HORIZONIAL ELECTRIC ONE SHO CHAY. C. MARRIAM HORIZONIAL ELECTRIC ONE SHALL BE CASED IN CONCRETE FOOTING SHALL BE 20°C AS DEFINED IN HEC, ARTICLE EXC. D. MARRIAM VERTICAL PROJECTRION OF RESPORCING BAR SHALL BE 20°C. CONCRETE SHALL BE 40°C. L. BARRIAM COVERT ALL MORNO RESPORCING BAR SHALL BE 2°C. WHERE X-BRIDGING INTERFERES WITH MECHANICAL PIPING OR DUCTIVORS UTLIZE HORIZONTAL BRIDGING AS DIRECTED BY JOINT MANUFACTURER. 10.... G-9. CONTRACTOR SHALL POST LIVE LOADS PER SECTION 106.1 OF THE SD-7, ALLOW A MINIMUM OF (10) WORKING DAYS FOR REVIEW OF SHOP DRAWINGS BY THE STRUCTURAL ENGINEER. TRANSIT F TRANSIT F FACILITY I J-9. ALL BRIDGING SHALL BE PER SJI AND AS REQUIRED FOR DESIGN LOADS. G-10. SECTIONS, DETALS, AND NOTES SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMLAR CONDITIONS ELSEWHERE, URLESS INTERPRIES SHOWN. FIELD VERIEY GALVANIZED HIGH PERFORMANCE CC JOIST BEARING LONG LEG HORIZONTAL LONG LEG VERTICAL NOT IN CONTRACT NOT TO SCALE STRUCTURAL FLOOR PLAN J-10. PROVIDE JOIST WITH UPLIFT CAPACITY AS REQUIRED BY THE BUILDING CODE AND THE STRUCTURAL DESIGN CRITERIA. EARTHWORK NOTES DELEGATED DESIGN SUBMITTALS METAL DECK CR-12. ALL CONCRETE FOUNDATION WALLS SHALL HAVE A MINIMUM OF (2) #5 BARS CONTINUOUS TOP AND BOTTOM, UNLESS INDICATED OTHERWISE. EW-1. REFERENCE GEOTECHICAL DATA AND EARTH MOVING SPECIFICATION FOR DEFINITION OF MATERIALS AND COMPACTION BEOLISISMENTS. PRECAST PRECAST PRECAST REACTION SIP FORTICAL SITUP FOOTING TYP SINIAR STANLESS STEEL STEEL STEEL STEEL STOP OF TO DE DETERMINED TOP OF COLUMN TOP OF FOOTING TOP OF FOOTING TOP OF FOOTING TOP OF FOOTING TOP OF STEEL TOP OF STEEL TOP OF STEEL TOP OF SIAB TYPPCAL UMAESN MOTED OTH WILDEN WICE FASS CITY OF I METRO T DRIVER I MD-1. SEE PLAN FOR DEPTH AND GAUGE DS-1, HELICAL PILES - SPECIFICATION SECTION 316615. MD-2. METAL DECKING SHALL BE CONTINUOUS OVER 3 SPANS AND HAVE JOINTS OVER SUPPORTING MEMBERS, URLESS INDICATED OTHERWISE. EW-1. UNLESS NOTED OTHERWISE, THE CONTRACTOR SHALL RETAIN AN INDEPENDENT, CUALIFED GEOTECHNICAL ENGINEERING FRUVTES AGENCY TO DENTIFY AREAS OF POOR SOLS, TO MONITOR PROPES SUBGRADE PREPARATIONS AND TO OVERSEE AND TEST THE PLACE. DS-2. PIPE AND TUBE RAILINGS - SPECIFICATION SECTION 055213 MD-3, BUTTON PUNCHING ROOF DECK IS NOT PERMITTED, REFERENCE DRAYINGS FOR ROOF DECK ATTACHMENT REQUIREMENTS, STRI DIAPHRAGIA ACTION IS PROVIDED BY THE BOOCE DECK AND ITS DS-3, COLD FORMED METAL FRAMING - SPECIFICATION SECTION 05400 MO-L ALL MISCELLAVEOUS OPERBYSS IN METAL ROOF DECK ARE TO BE FRAME BY L5:2:2:36 ANGLES. LONG LEG OF ANGLES SHALL BE VERTICAL ANGLES SHALL BE VELDED TO THE TOP CHORDY LANGE OF ROOF FRAMING AND EACH OTHER LINE ESS NOCATED OTHERWISE. CR-18. HOOK HORIZONTAL WALL AND BEAM REINFORCING BARS AT DISCONTRUDUS ENDS, TYPICAL UNLESS INDICATED OTHERWISE. EXTEN REINFORCEMENT TO FAR FACE OF PIERS/PEDESTALS AND/OR COLUMNS MIO-S. CONTRACTOR IS RESPONSELE FOR PROVIDING POUR STOPS AT EDGES ON METAL DECK PER BOY POUR STOP SELECTION TABLERECOMMENDATIONS OR BENT PLATE POUR STOPS AS REQUIRED TO FORM THE SLAB EDGE, UNLESS NOWCATED OTHERWISE. CR-17. WATER STOPS SHALL BE PROVIDED IN HORIZONTAL AND VERTICAL CONSTRUCTION JOINTS WHERE FINISHED FLOOR IS BELOW EXTERIOR GRADE UNLESS OMISSION IS APPROVED BY THE ENGINEER. EW-5. BEFORE PLACING FOOTINGS, FOUNDATIONS OR SLAB-ON-GRADE, THE SUB-GRADE SHALL BE PREPARED AND INSPECTED AS REQUIRED BY THE CR-18. PROVIDE ADDITIONAL M BARS AT 4-0" LONG 1" BELOW TOP OF SLAB AT 45" TO ALL RE-ENTRANT CORNERS, OPENINGS IN CONCRETE SLABS AND AS NOT ATTER DRIVINGS. EY-6. DO NOT BACKFILL OR FILL SOIL MATERIAL ON SURFACES THAT ARE MUDDY, FROZEN, OR CONTAIN FROST AND/OR ICE. EY-7. PLACE BACKFILL AND FILL SOL MATERIALS EVENLY ON ALL SIDES OF STRUCTURES TO REQUIRED ELEVATIONS AND UNFORMLY ALONG CR-19. REFER TO FLATWORK DRAWINGS AND/OR SPECIFICATIONS FOR SLAB-ON-GRADE FINISH TYPES AND DEPRESSIONS REQUIRED FOR MATS, THE, AND OTHER FINISH MATERIALS. CR-21. PITCH CONCRETE TO FLOOR DRAWS. COORDWATE WITH PLUMBING AND CR-22. PROVIDE CONTING OR CONSTRUCTION JOINTS IN BASIS ON-GRADE ATT IS FORT MANDRILL CERTIFIED SCHOOL TO SERVE THE SERVED ATTER OTHERWISE. CONTRACTION SAIL SIGNED THAN IS ALSO RECOVERED. THE ARCHITECTURE AND FOR APPROVAL PROOF TO CASTING SAIL GRADE. COORDINATE WITH ARCHITECTURAL DRAWNIGS AND FLOOR FINNESS SUCH AS TILE. AND TERRAZZIO.

CR-23. ALL DOWELS INTO EXISTING CONCRETE OR SOLID MASONRY TO BE EPOXY ADRESTYE ANCHORS. CR-24. ALUARHUM CONDUIT IS NOT PERMITTED TO BE EMBEDDED IN CONCRETE. CR-25. WHEN DRILLING INTO EXISTING CONCRETE USE GROUND PENETHATING RADAR OR XRAY SCANNING TO LOCATE EXISTING REINFORCING, <u>DO NOT</u> DRILL THROUGH EXISTING REINFORCING, <u>CONTACT ENGINEER IMMEDIATELY</u> F ANCHOR LOCATIONS INTERFERE WITH EXISTING RESPORCING.







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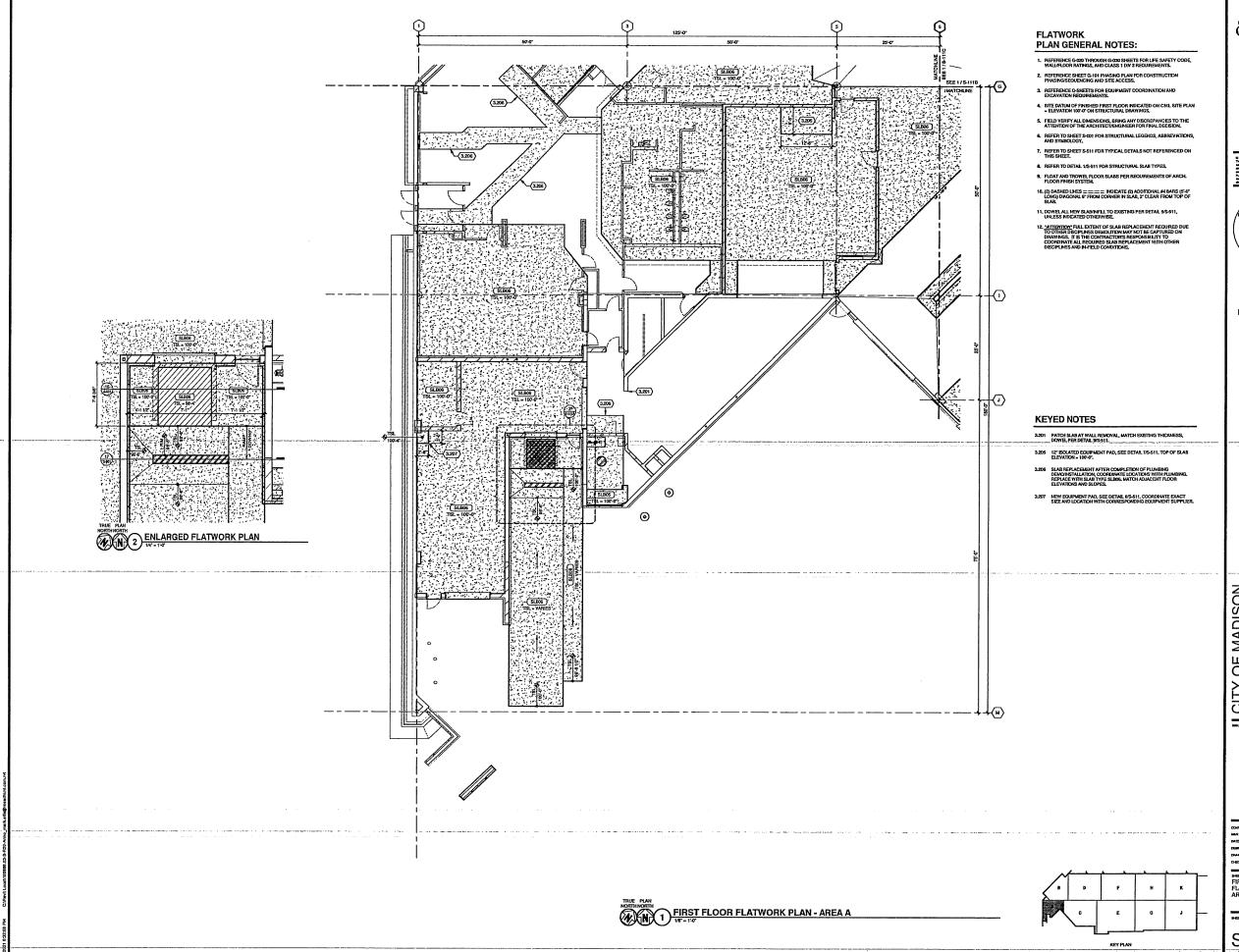
metro transit

AND

CITY OF MADISON
METRO TRANSIT PHASE 3A - MAINTENANCE
DRIVER FACILITY IMPROVEMENTS
MADISON, WI 53703 MAJED 04/08/21 BID SET

POUNDATION PLAN -AREA A

S-101A



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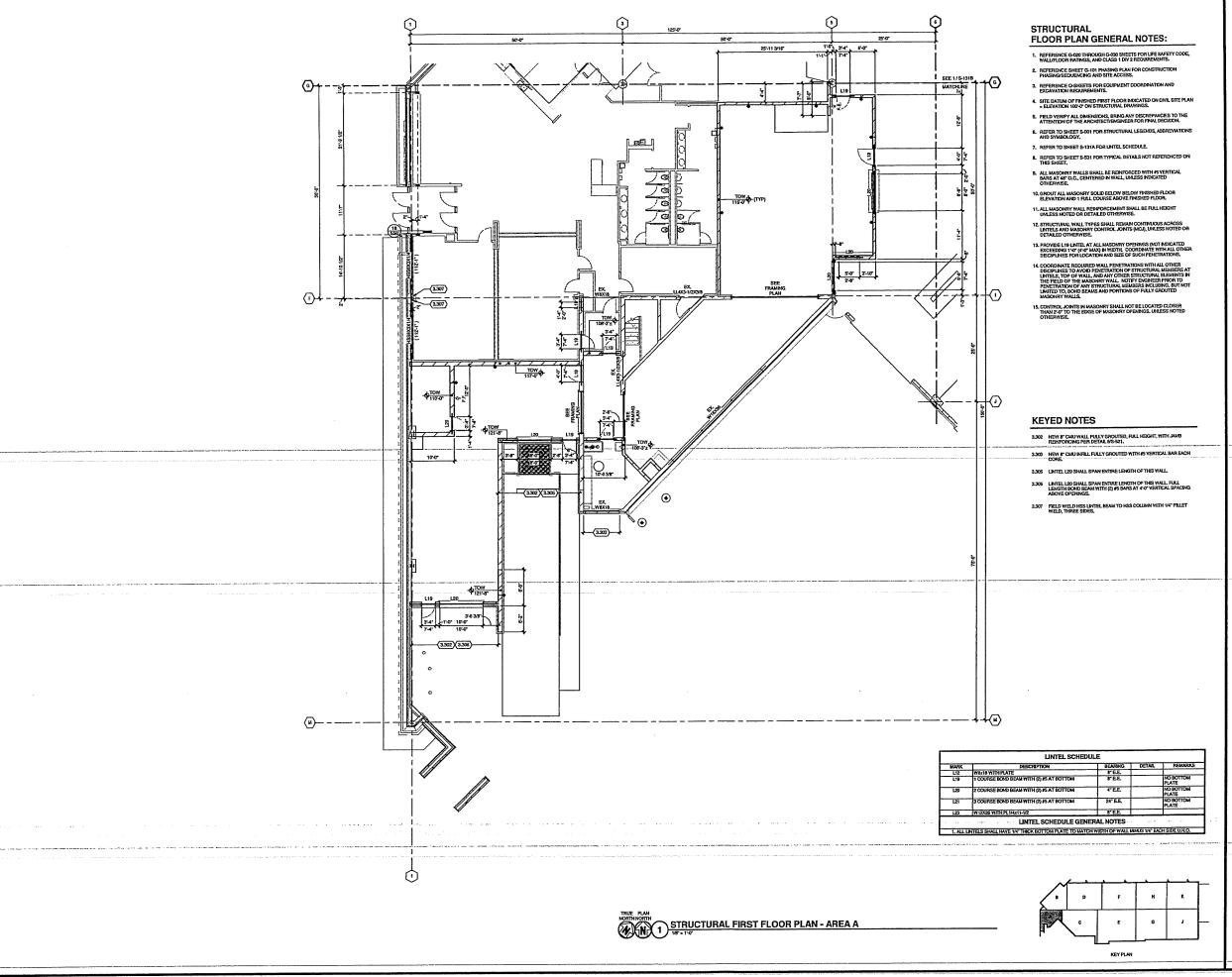
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METRO TRANSIT PHASE 3A - MAINTENANCE
DRIVER FACILITY IMPROVEMENTS
MADISON, WI 53703

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MADISON, WI 53703

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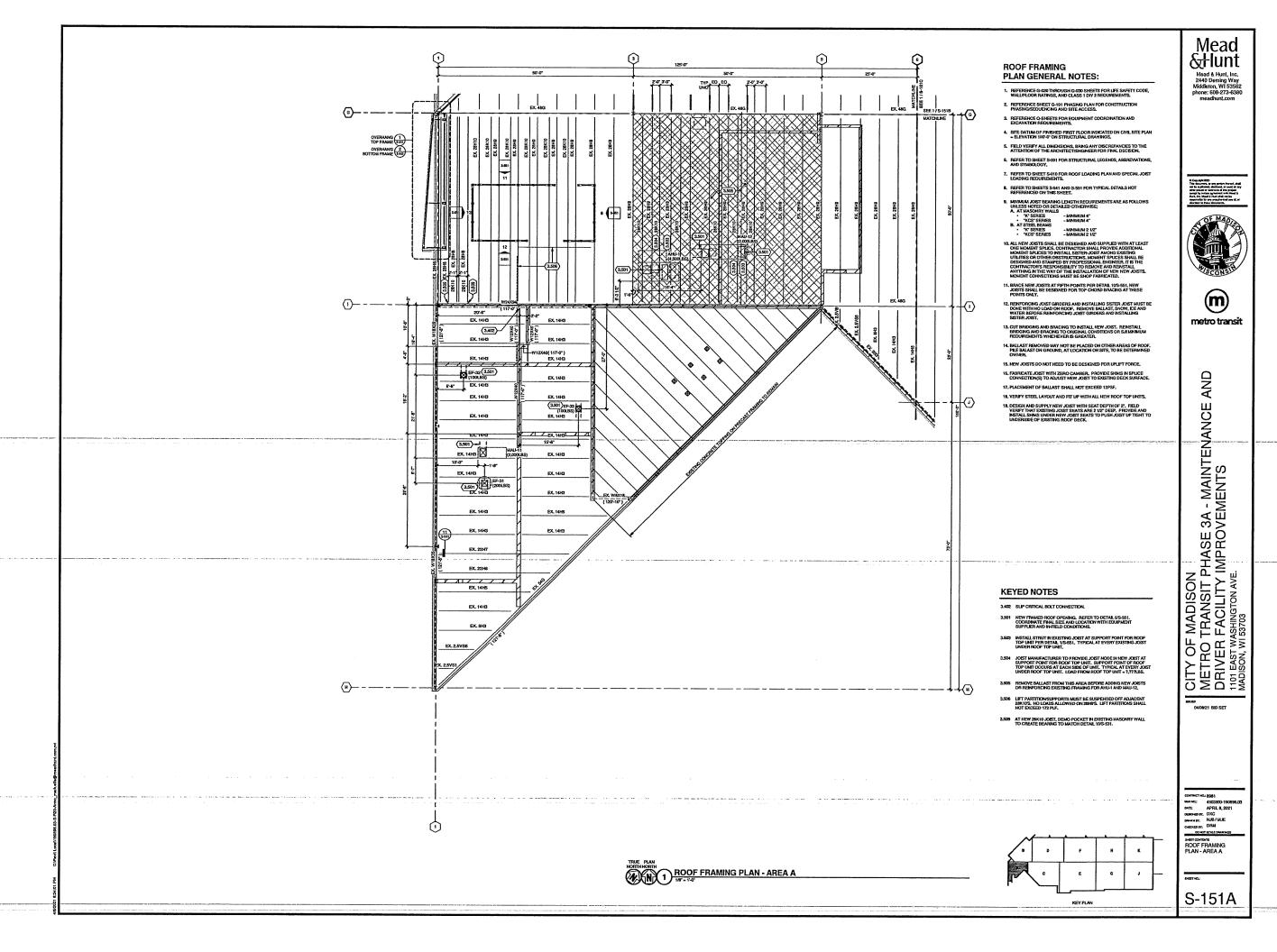
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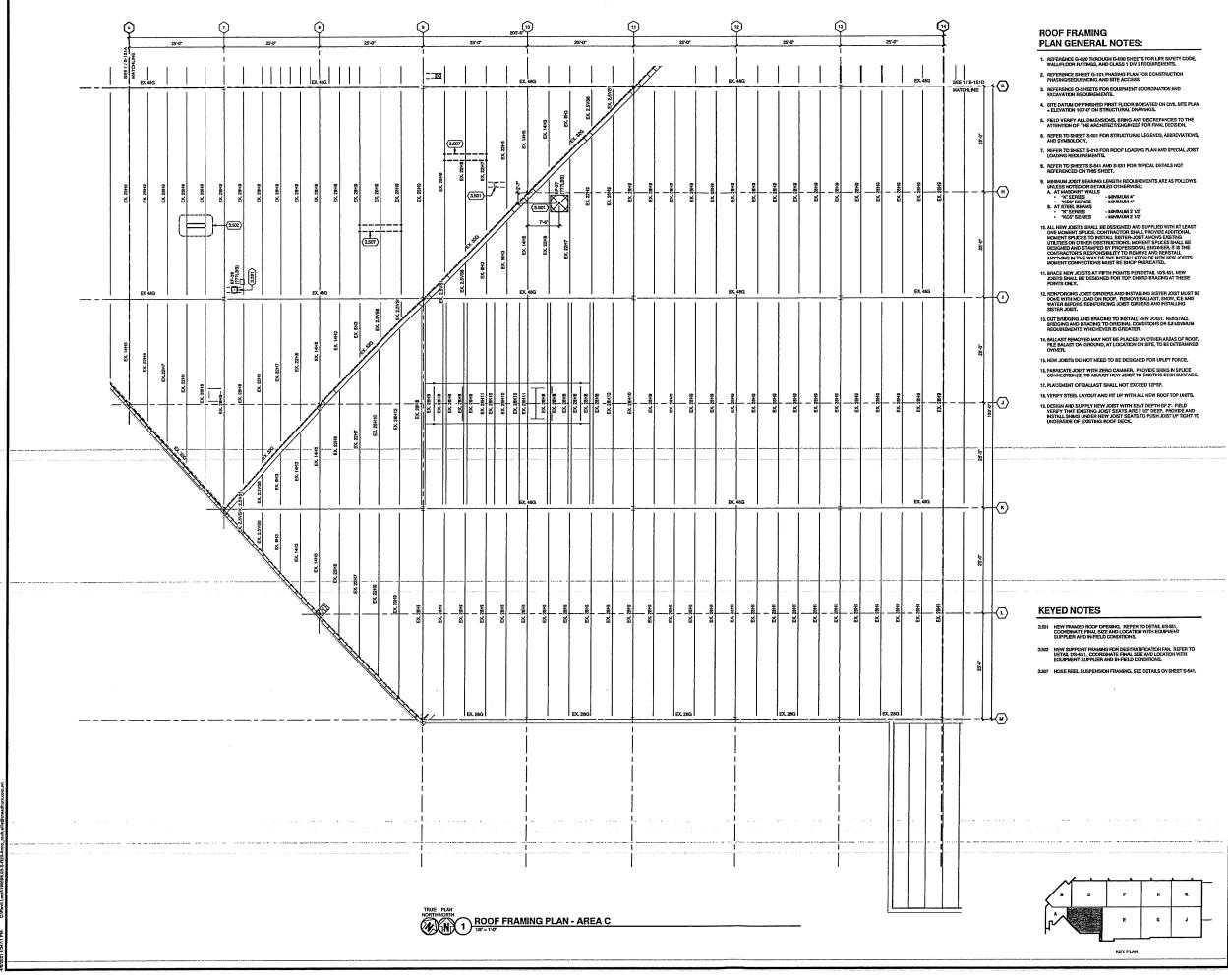
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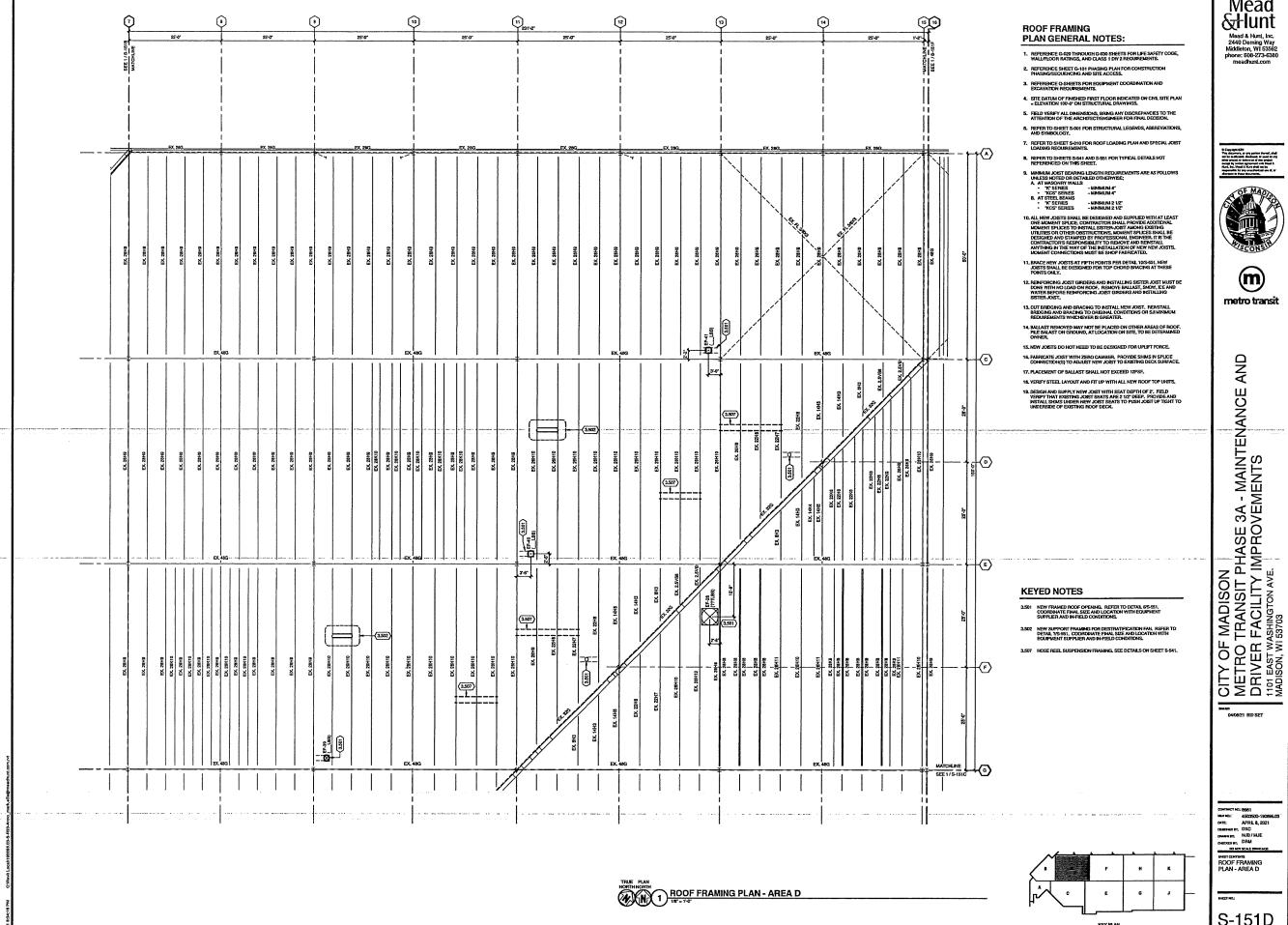
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CITY OF MADISON
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DRIVER FACILITY IMPROVEMENTS
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MADISON, WI 53703 04/08/21 BID SET

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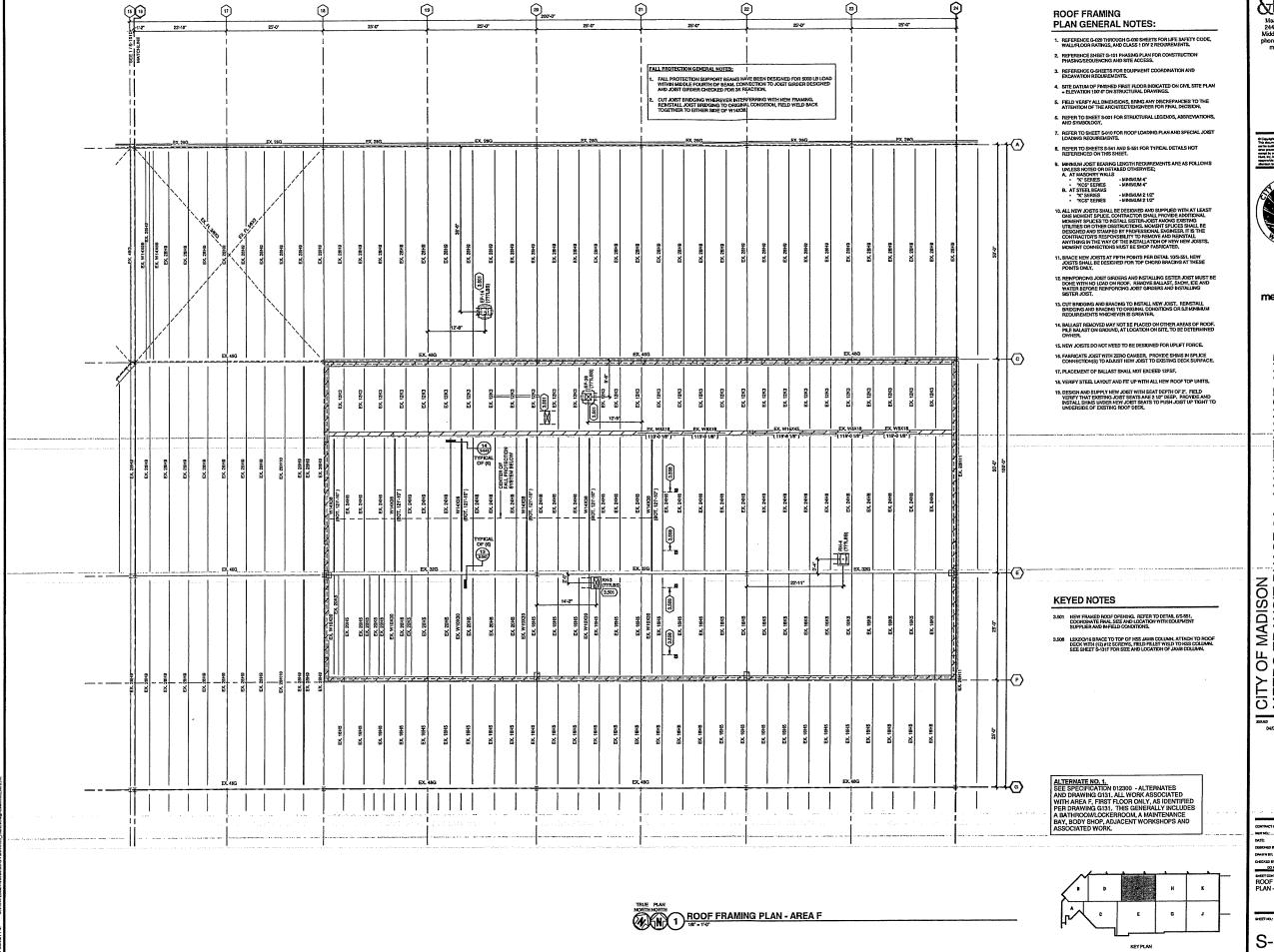
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PERTURNING ROOF FRAMING PLAN - AREA D

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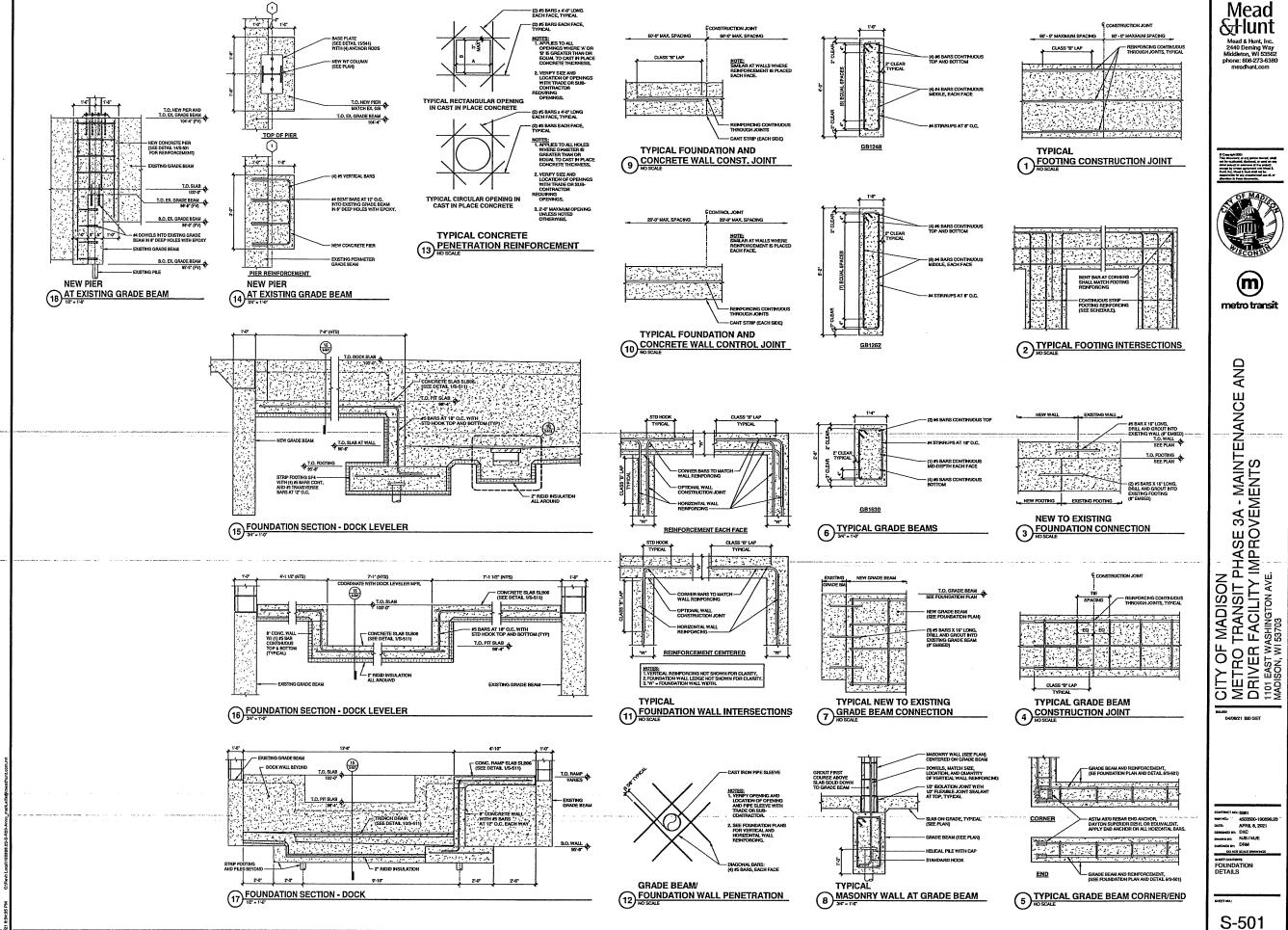


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CONTRACT NO.: 8581

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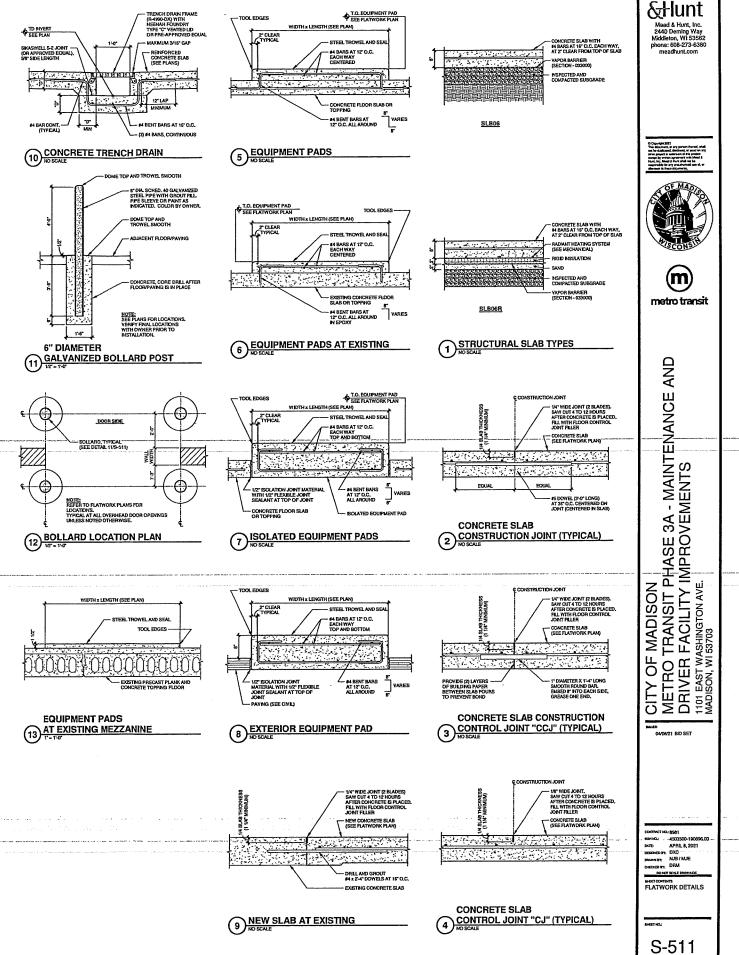
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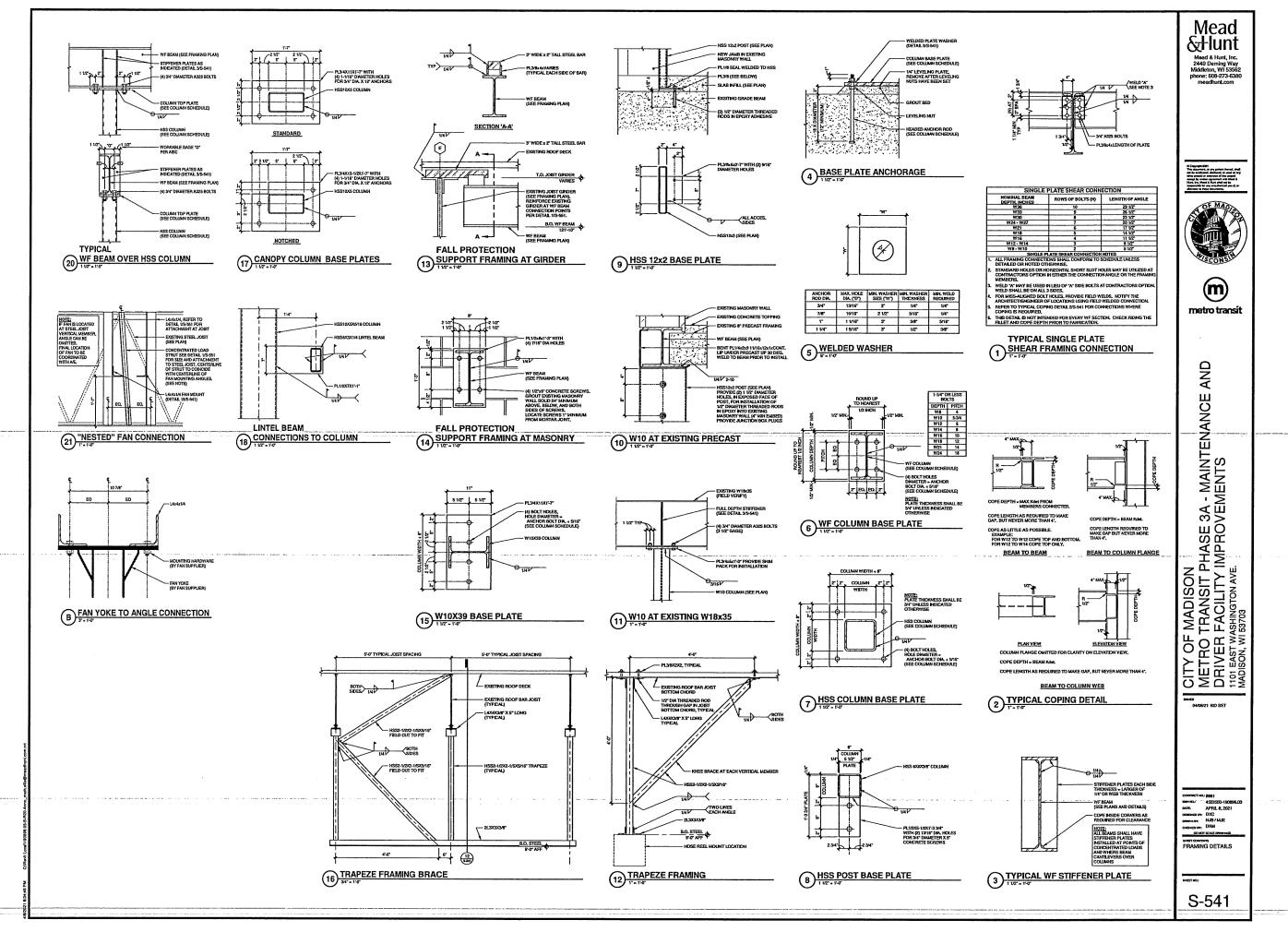
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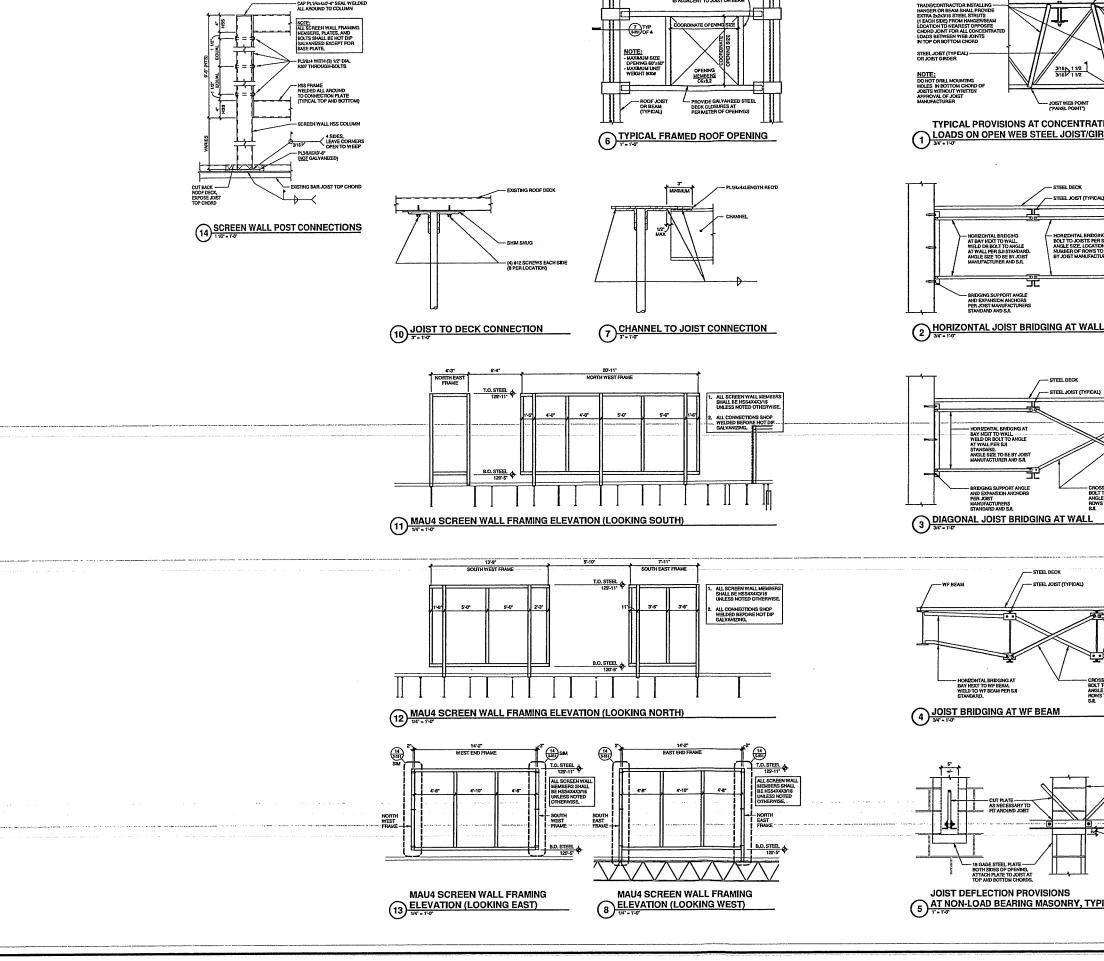
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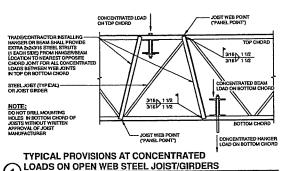
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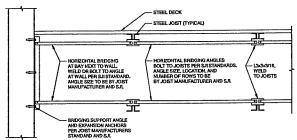
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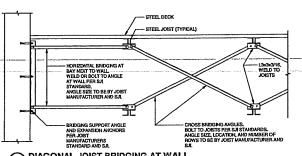
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MADISON, WI 53703



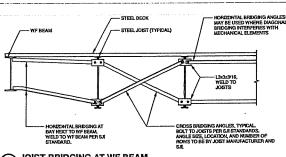


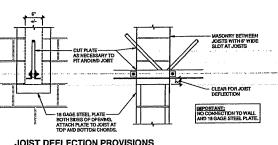
LOADS ON OPEN WEB STEEL JOIST/GIRDERS





DIAGONAL JOIST BRIDGING AT WALL





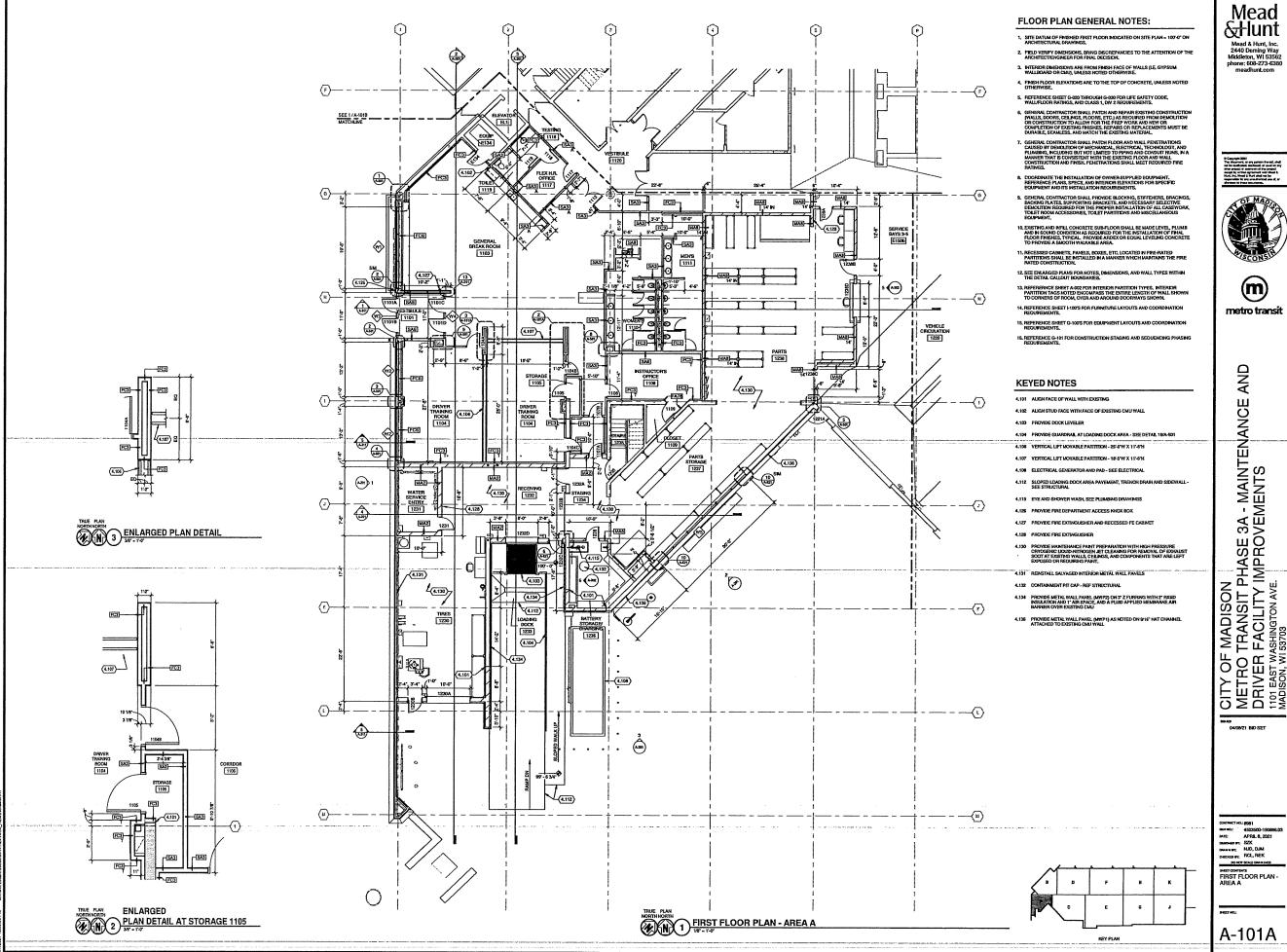
JOIST DEFLECTION PROVISIONS

AT NON-LOAD BEARING MASONRY, TYPICAL

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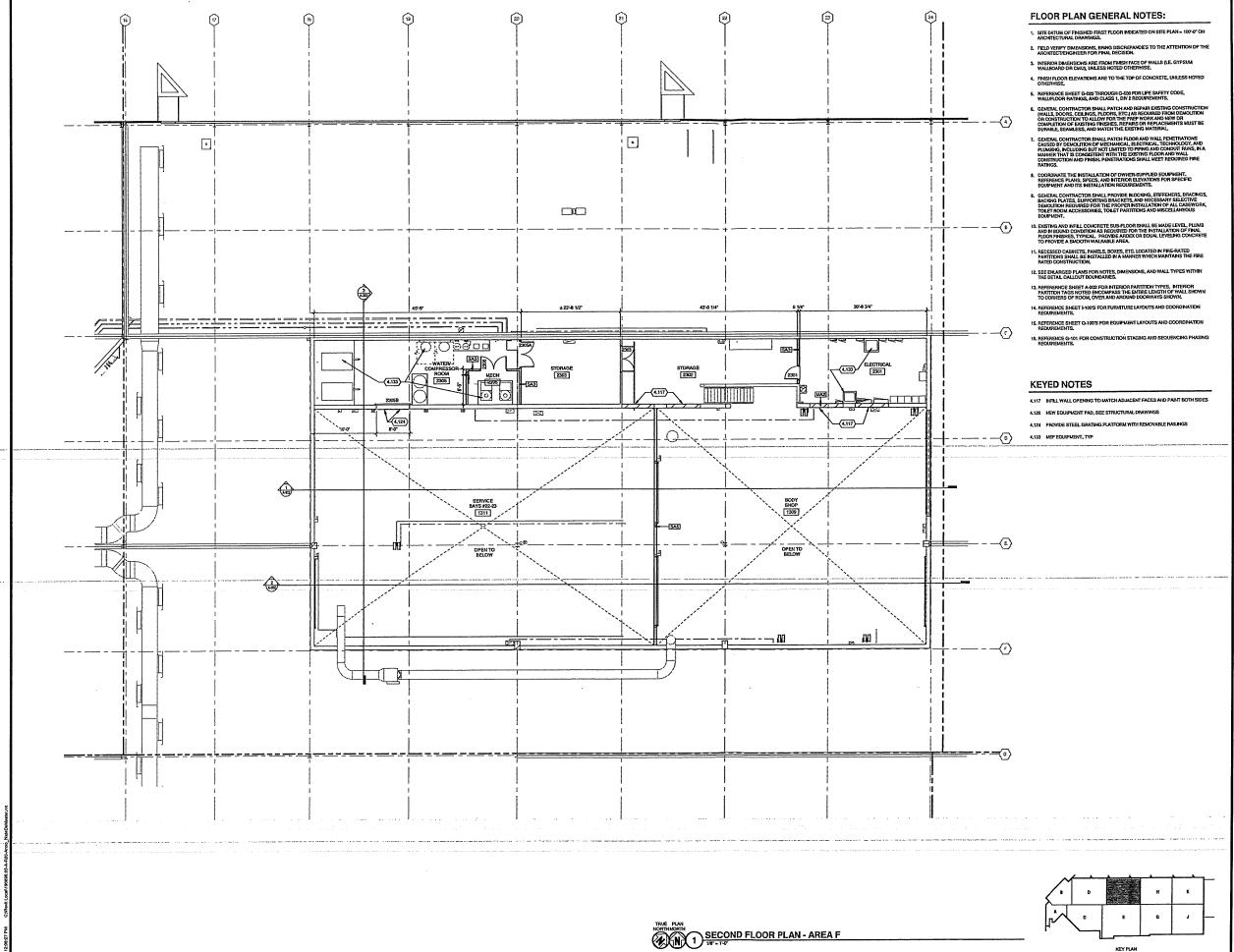
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MADISON, WI 53703

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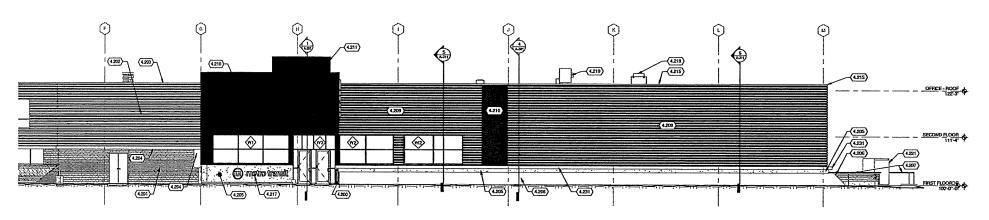
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PLAN - AREA F

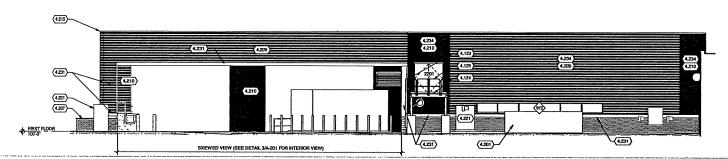
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KEY PLAN

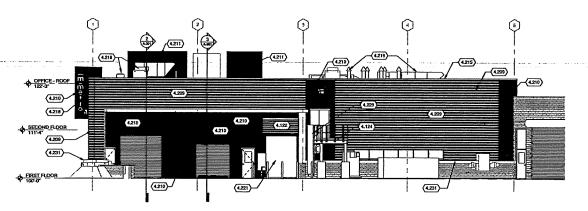
A-102F



WEST BUILDING ELEVATION



2 SOUTHEAST BUILDING ELEVATION



3 SOUTH BUILDING ELEVATION





KEYED NOTES



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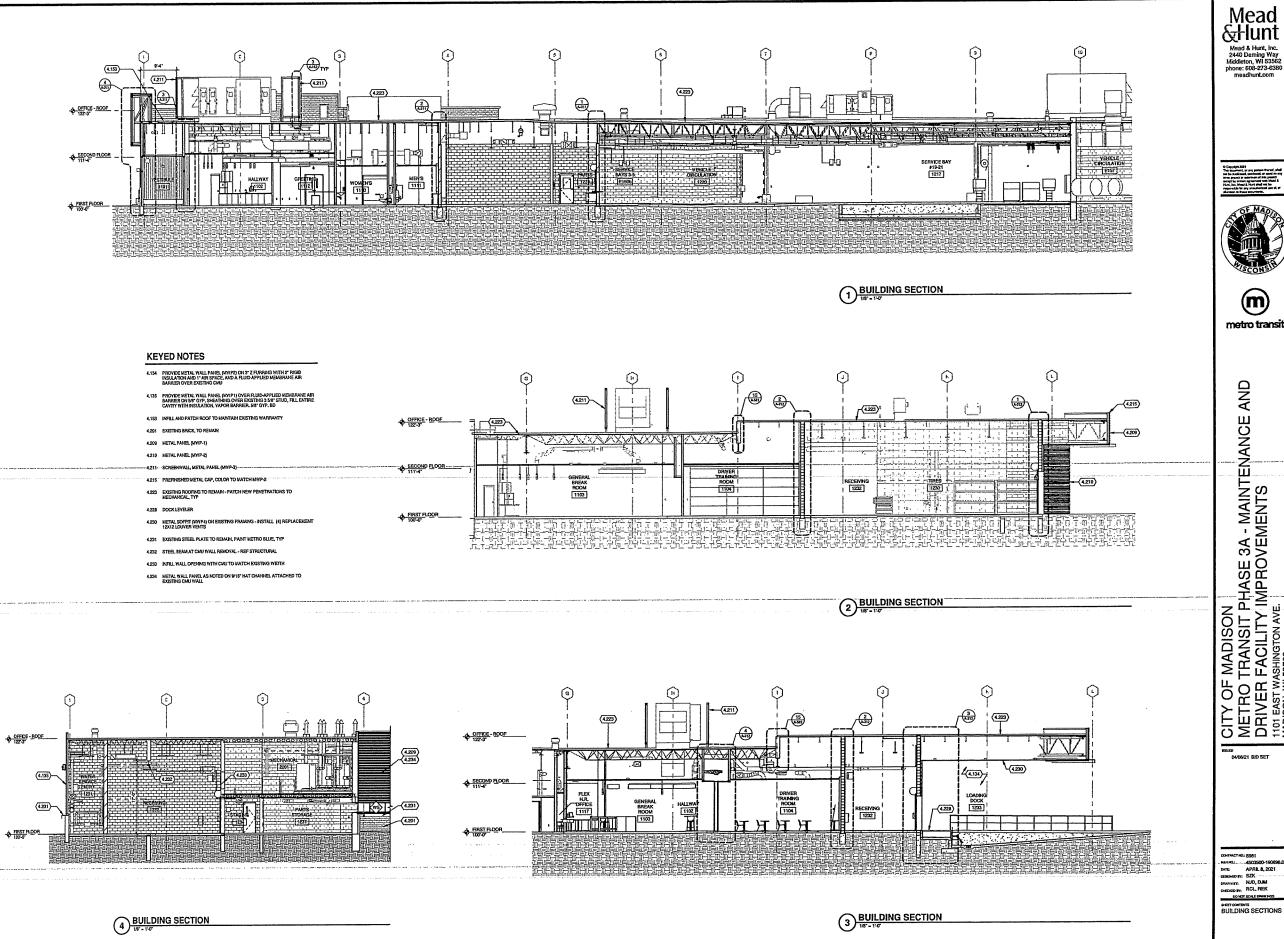
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DRIVER FACILITY IMPROVEMENTS
MADISON, WI 53703

CONTACT FIG. 8061
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EXTERIOR
ELEVATIONS

DESTAGE

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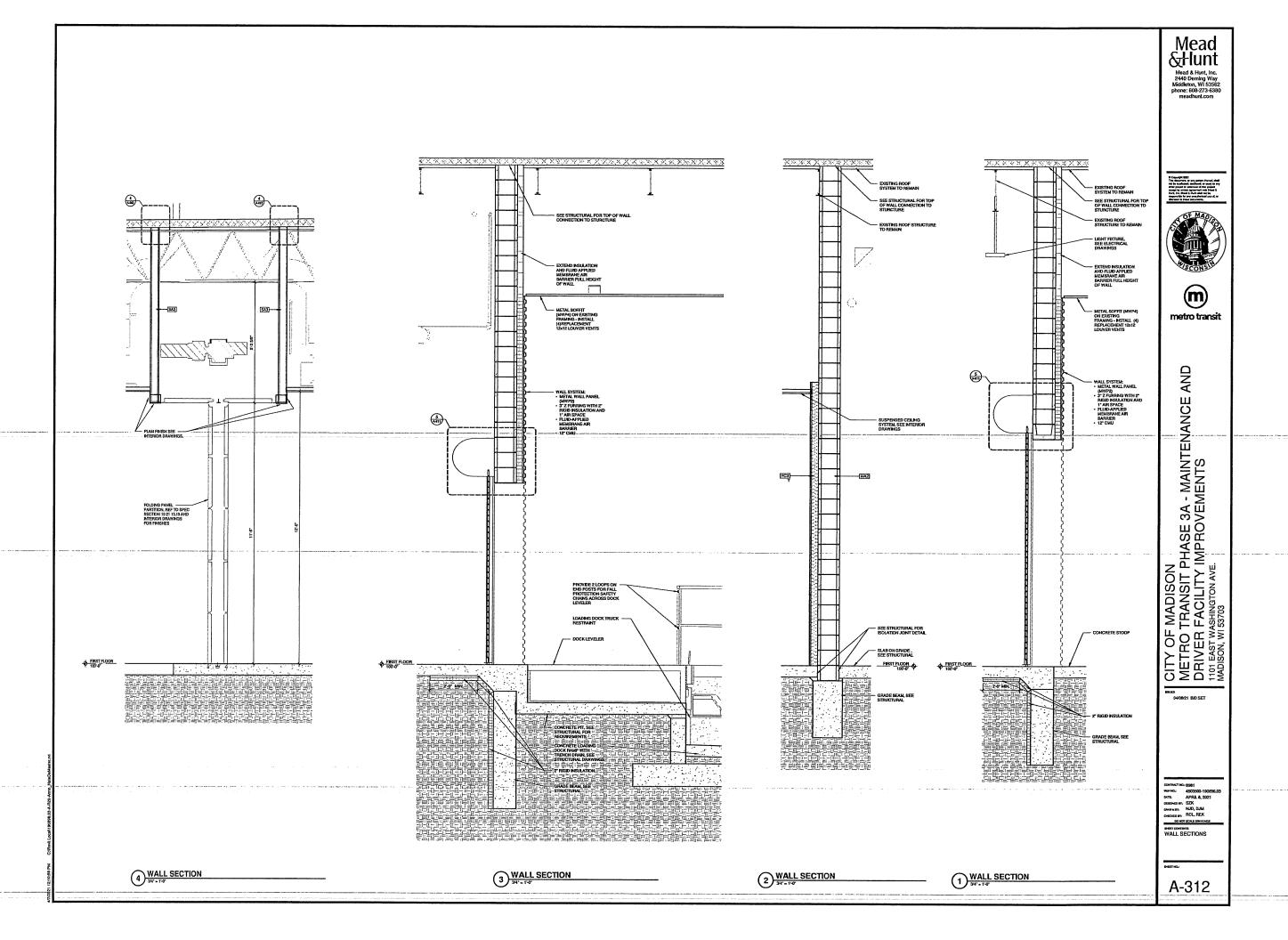
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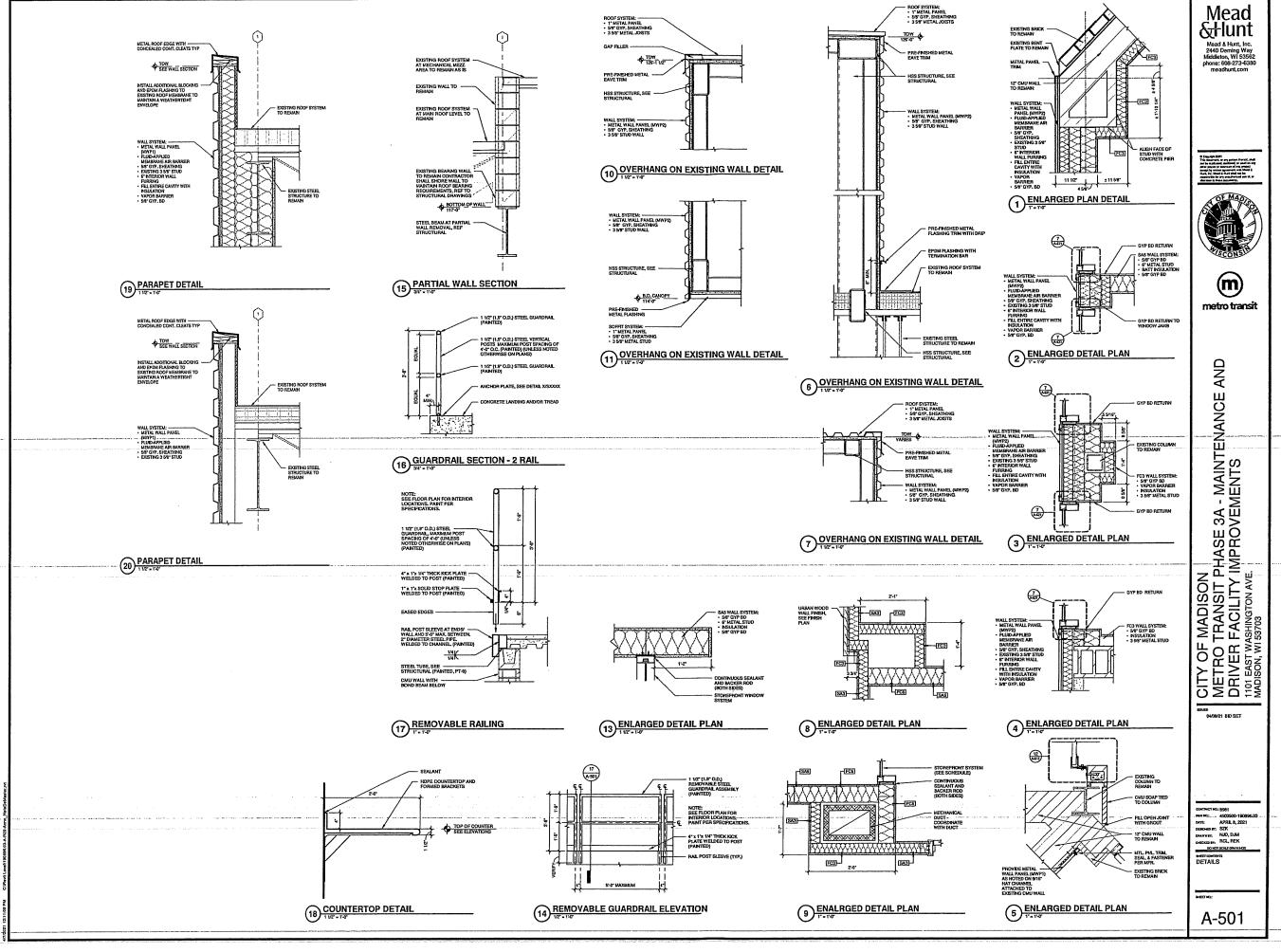
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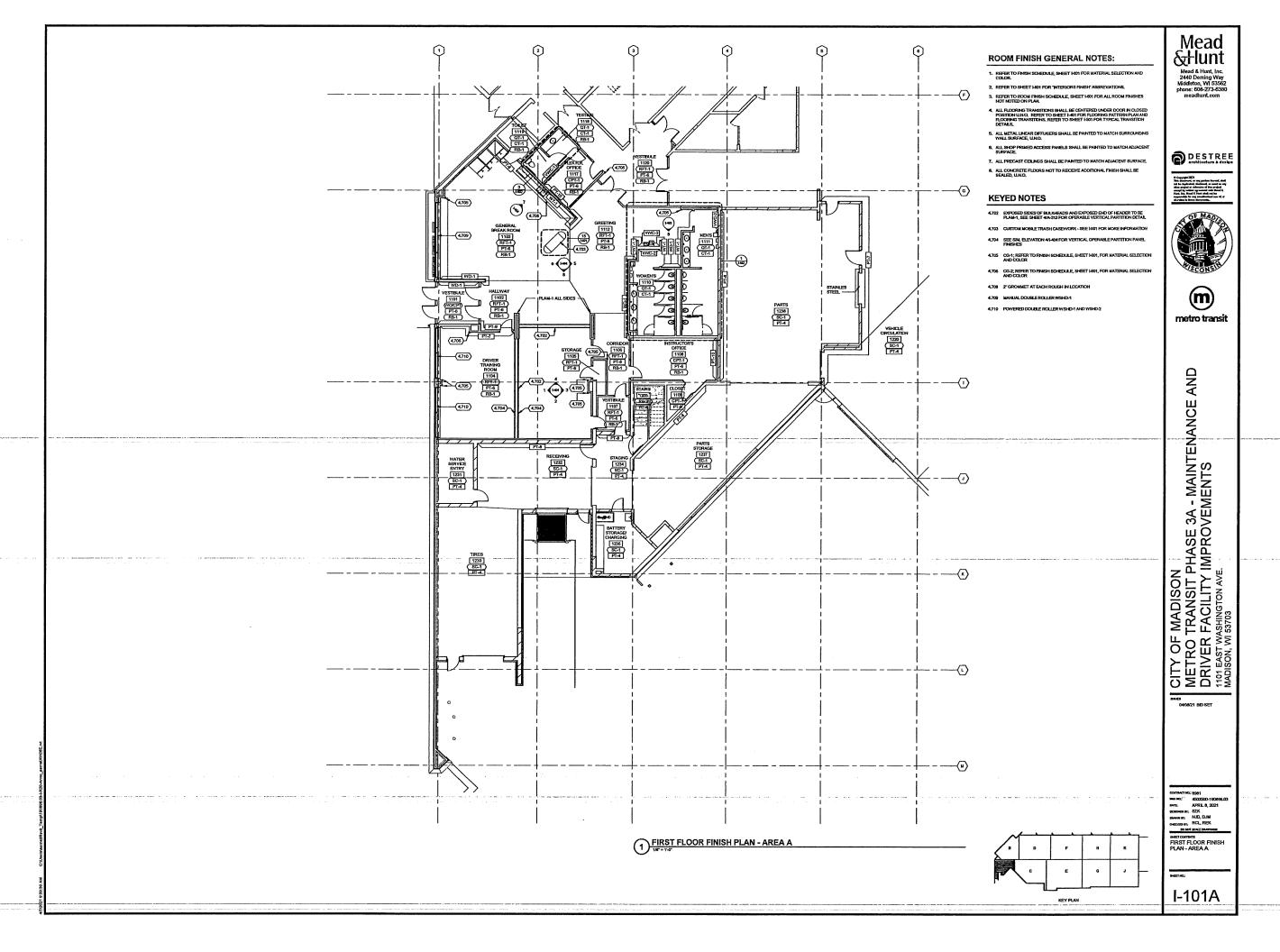
DESCRIPTION MID, DAM

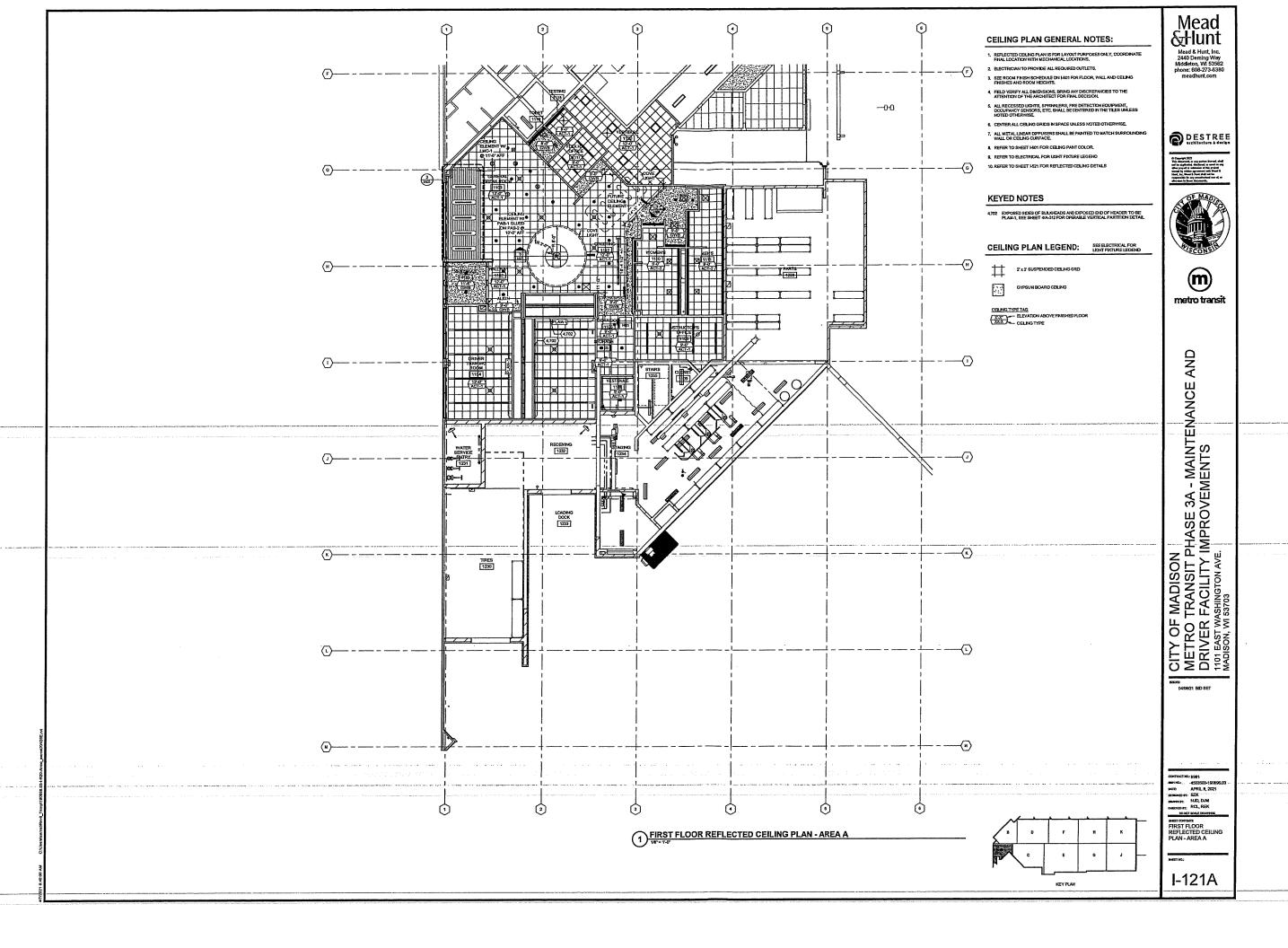
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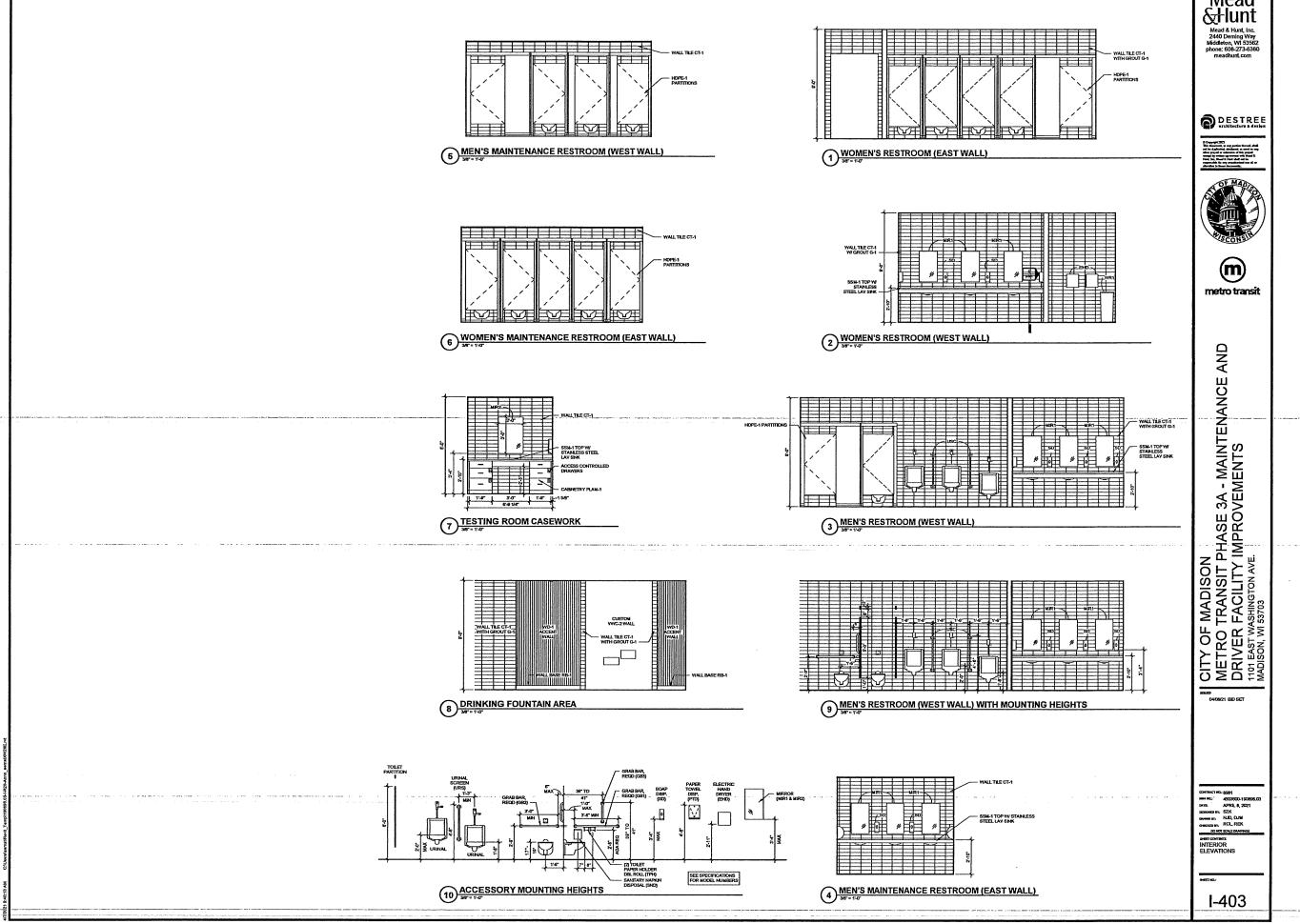
A-301



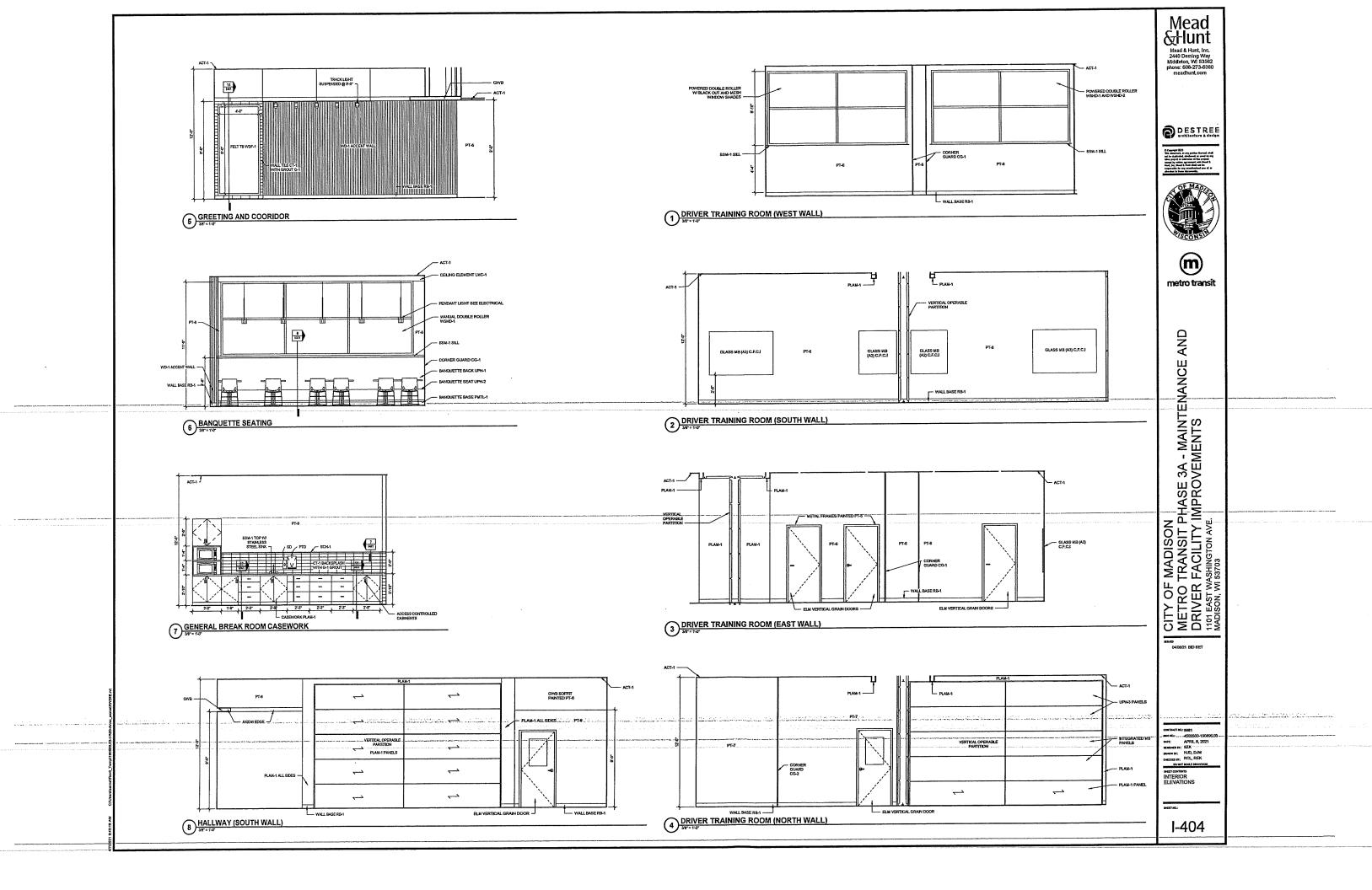


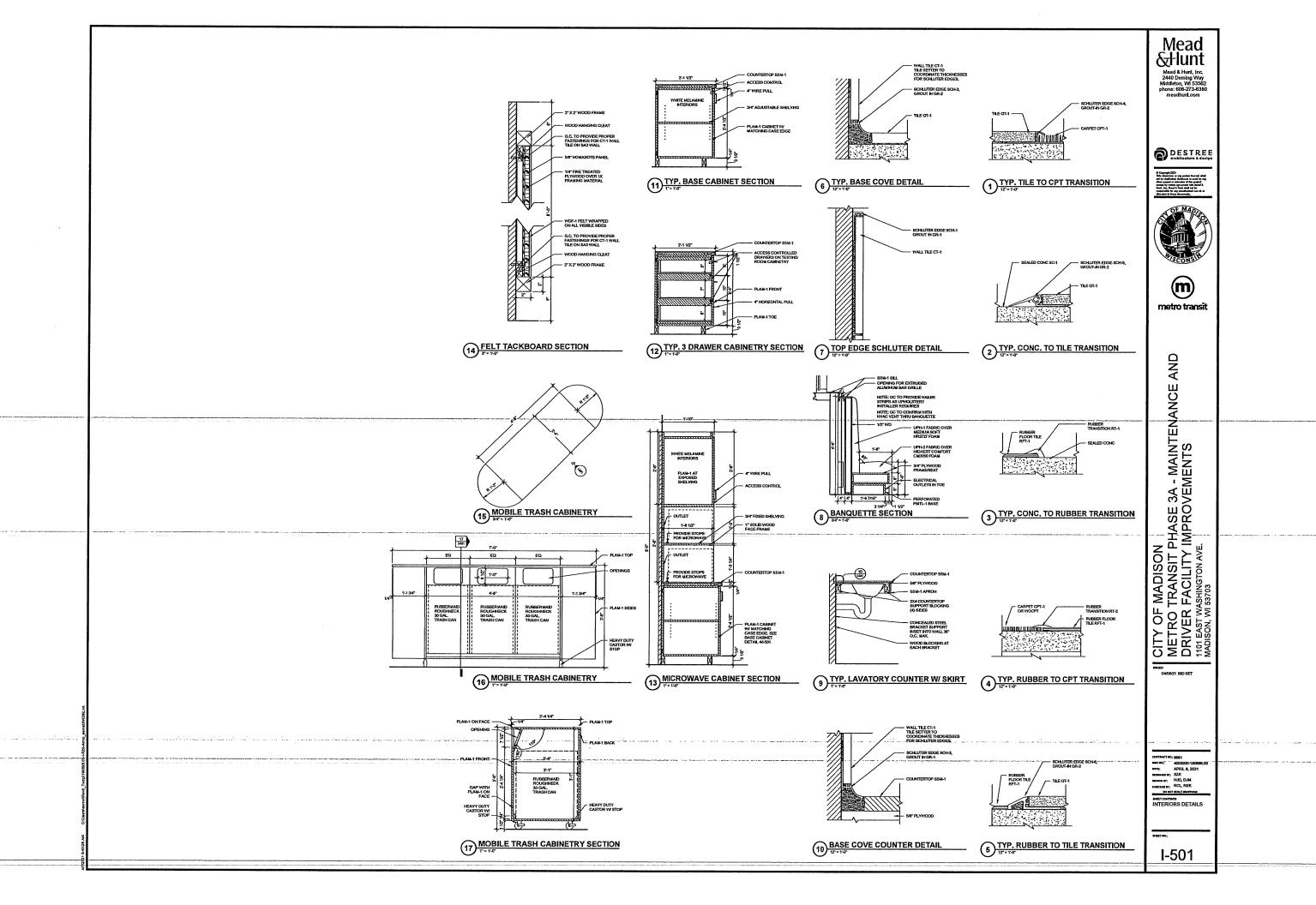






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ROOM		1		1	WA	ULS		CEI	JNG	
NO.	ROOM NAME	FLOOR	BASE	NORTH	EAST	SOUTH	WEST	MTL	HEIGHT	REMARKS
101	VESTIBULE	WORPT	RB-1	NYD-1	PT-6	PT-9	PT-6	GWB	11'-5"	WOOD ACCENT WALL ON NORTH WALL-SEE 1-101A
1102	HALLWAY	RFT-1	R8-1	WD-1	Ī	PLAM-1/ PT-9	PT-6	GWB/ACT- 1	12-0"	WOOD ACCENT WALL ON NORTH WALL AND PLAN SOFFTI SURROUNDING OPERABLE PARTITION SYSTEM ON SOUTH WALL - SEE H101A
1103	GENERAL BREAK ROOM	RFT-1	RB-1	PT-6	श-स्रटान	WD-1	PT-6	ACT-1	12-0"	THE ON WALLS SURROUNDING EVIC AND WHERE KITCHENETTE CASEWORK COCURS, WOOD ACCENT WALL ON SOUTHERN END OF BANQUETTE SEATING - SEE SEE INDIA.
1104	DRIVER TRAINING ROOM	RFT-1	RB-1	PLAN-V PT-7	PT-6	PT-8	PT-6	ACT-1	12-0"	PLAM SOFFIT SURROUNDING OPERABLE PARTITION SYSTEM ON NORTH WALL - SEE 1-101A
1105	STORAGE	RFT-1	RB-1	PT-6	PT-6	PT-6	PT-6	ACT-1	5-0	
1106	CORRIDOR	RFT-1	RB-1	PT-6	PT-6	PT-6	PT-6	ACT-1	2-0	
1107	VESTIBULE	RFT-1	RB-1	PT-6	PT-6	PT-6	PT-6	ACT-1	8-0°	
1108	INSTRUCTOR'S OFFICE	CPT-1	RB-1	PT-6	PT-10	PT-6	PT-6	ACT-1	2- 0.	SEE I-101A
1109	CLOSET	CPT-1	RB-1	PT-6	PT-6	PT-6	PT-6	EXPIPT-6		
1110	WOMENS	QT-1	-	CT-1	CT-1	टा-1	CT-1/ VWC-2	ACT-2	2-Q	WYC-2 OWNER SUPPLIED, OWNER INSTALLED - SEE H101/
1111	MEYS	QT-1	-	CT-1	CT-1/ VWC-2	टा-१	CT-1	ACT-2	à-0.	WYC-2 OWNER SUPPLIED, OWNER INSTALLED - SEE HIGH
1112	GREETING	RFT-1	RB-1	PT-6	CT-1/ WD-1	CT-1/ WD-1/ VWC-2	CT-4	GWB/ACT- 1	12-0"	SEE 1-101A
1117	FLEX H.R. OFFICE	CPT-1	RB-1	PT-6	PT-6	PT-10	PT-6	ACT-1	2-0.	SEE I-101A
1118	TESTING	QT-1	RB-1	CT-1	WC-1	CT-1	CT-1	GWB	8-U	SEE H101A
1119	TOLET	QT-1	RB-1	CT-1	VWC-1	CT-1	CT-1	CWB	8-U	SEE H101A
1120	VESTIBULE	RFT-1	RB-1	PT-6	PT-6	PT-6	PT-6	ACT-1	12-0	
1211	SERVICE BAY #13-15	SC-1	-	-	-	PT-4	-	EXP		
1214	SERVICE BAY #15-18	5C-1		F	-	PT-4	·	EXP		
1217	SERVICE BAY #19-21	SC-1	•	F	-	PT-4	-	EФ		
	WORK AREA	SC-1	•	-	-	PT-4	-	ĐΦ		
1220	VEHICLE CIRCULATION	SC-1		F	+	J	PT-7	EXP		SEE L-101A
1221	VEHICLE CIRCULATION	SC-1	-	-	+	PT-4	ŀ	ĐΦ		
1228	DATA	SC-1	•	PT-6	PT-6	PT-6	PT-6	EXPPT-6		
1229	ELECTRICAL ROOM	SC-1	-	PT-6		PT-6	PT-6	EXP/PT-6		
1230	TIRES	5C-1	Ŀ	PT-4		PT-4	PT-4	ĐΦ		
1231	WATER SERVICE ENTRY	SC-1	-	PT-4	श4	PT-4	PT-4	ĐΦ		
1232	RECEIVING	SC-1	<u> </u>	PT-4 PT-8	PT-4	PT-4	PT-4	ĐΦ		PT-8 UP TO 10-0", PT-4 ABOVE 10-0", SEE H101A
1233	LOADING DOCK					1				
1234	STAGING	SC-1	-	PT-4/PT-8		PT-4	PT-4	ĐΦ		PT-8 UP TO 10-0", PT-4 ABOVE 10-0". SEE H101A
1236	STAIRS	RB-2	<u> </u>	PT-4		PT-4	PT-4			RFT STAR TREADS/NOSINGS WITH YELLOW VISUALLY IMPAIRED STRIPS
236	BATTERY STORAGE CHARGING	5C-1	-	PT-4		PT-4	PT-4	Ð₽		
	PARTS STORAGE	SC-1	-	PT-4	PT-4	PT-4	PT-4 PT-8	ĐΦ	ļ	PT-8 UP TO 10-0", PT-4 ABOVE 10-0", SEE 1-101A
	PARTS	SC-1	•	PT-4	PT-4			EXP		PT-8 UP TO 10-0", PT-4 ABOYE 10-0", SEE I-101A
701	COMM	SC-1	<u>:</u>	PT-4	PT-4	PT-4	PT-4	EXP		NON CHU WALL TO HAVE IT COVE WALL BASE
	сони	SC-1	RB-1	PT-6	PT-6	PT-6	PT-6	EΦ		
201	MECHANICAL	SC-1		PT-4			PT-4	EXP		
301	ELECTRICAL .	SC-1		PT-4	PT-4		PT-4	EXP		
302	STORAGE	SC-1		PT-4	PT-4		PT-4	EXP	Ĺ	
303	STORAGE	SC-1		PT-4	PT-4	PT-4	PT-4	EXP		
7305	WATER/ COMPRESSOR ROOM	SC-1		PT-4		PT-4	PT-4	EXP		
306	RECH	5C-1	-	PT-4	PT-4	PT-4	PT-4	EXP	<u> </u>	í

			F	ROOM FIN	ISH SCH	EDULE 3/	ALTER	VATE NO.	.1	
ROOM			I	I	WA	II.S		CEI	LING	-
NO.	ROOM NAME	FLOOR	BASE	NORTH	EAST	SOUTH	WEST	MTL	HEIGHT	REMARKS
	VEST.	SC-1	-				PT-4	ÐФ]	
1302	MENS	QT-1	-	CT-1	CT-1	CT-1	CT-1	ACT-2	8-0"	
1303	WOKENS	QT-1	-	CT-1	CT-1	CT-1	CT-1	ACT-2	8-0"	
1304	STEAM CLEANING	SC-1		PT-4	PT-4	PT-4	PT-4	EXP		
305	METER SHOP	SC-1	-	PT-4	PT-4	PT-4	PT-4	EXP		
1306	UNIT SHOP	SC-1	-	PT-4	PT-4	PT-4	PT-4	EXP	1	
307	VEST.	SC-1			PT-4	PT-4	PT-4	EXP		
1308	WELDING	SC-1	-	PT-4	PT-4	PT-4	PT-4	EΦP	1	
1309	BODY SHOP	SC-1		PT-4	PT-4	PT-4	PT-4	EXP	· · · · · · · · · · · · · · · · · · ·	Commence of the commence of th
1310	STAIRS	RB-2	-	PT-4	PT-4	PT-4	PT-4			RB STAIR TREADS/NOSINGS WITH YELLOW VISUALLY IMPAIRED STRIPS
1311	SERVICE BAYS #22-23	SC-1		PT-4	श्रम	PT-4	PT-4			

				NTERIOR FINISHES			
			PRC	DUCT DESCRIPTION	N		
FINISH NUMBER	FINISH DESCRIPTION	MANUFACTURER	MODEL NUMBER	STYLE	COLOR	SIZE	REMARKS
ACT-1	ACOUSTIC CEILING TILE - TYPE 1	USG		 	WHITE	24 X 24	W/USG DONN BRAND CENTRICITEE 9/16" GRID
ACT-2	ACOUSTIC CEILING TILE - TYPE 2	ARMSTRONG	1753	1	WHITE	24"X24"	WASHABLE ACT W/ 9/16" GRID
APT-1	ALUMNUM PERIMETER TRIM - TYPE 1	ARMSTRONG	AX1PC6STRWH	5" ONE PIECE AXION CLASSIC FOR DRYYALL	WHITE		
APT-2	ALUMNUM PERIMETER TRIM - TYPE 2	ARMSTRONG	AXESTRWH	5" AXXXXII CLASSIC	WHITE		W/7239 ADJUSTABLE TRIM CLIP
CG-1	CORNER GUARD - TYPE 1	INPRO	3448		0103	12 X 3/4"	SEE I101A FOR CORNER GUARD LOCATIONS
CG-2	CORNER GUARD-TYPE 2	INPRO	3448		0257	12 X 3/4"	SEE HOTA FOR CORNER GUARD LOCATIONS
হেগ-1	CARPET-TYPE 1	MOHAWK GROUP	GT154	1	599	24"X 24"	
CT-1	CERAMIC WALL TILE - TYPE 1	DESELLIVING		INDUSTRIAL GLASS	WHITE	3.9"X 11.6"	GROUT TO BE GR-1
GR-1	GROUT-TYPE1	TEC			927	7	USED FOR CT-1
GR-2	GROUT-TYPE 2	TEC			941	7	USED FOR OT-1
HPDE-1	HPDE PARTITION - TYPE 1	BRADLEY	SERIES 400	SERIES 400	SZ25		
LMC-1	LINEAR METAL CEILING	ARMSTRONG	T	METALWORKS LINEAR	EFFECTS CINNAMON		
PAB-1	POLYESTER ACOUSTICAL BOARD - TYPE 1	LUCID ECOCORE	T	LINES	ECC-08	1/2" THICK	TOP LAYER - LINES PATTERN
PAB-2	POLYESTER ACOUSTICAL BOARD-TYPE 2	LUCIDECCCORE	T		ECC-06	1/2" THICK	BASE LAYER
PAB-3	POLYESTER ACCUSTICAL BOARD - TYPE 3	ARMSTRONG	8246	ACOUSTICAL PANEL	FBL.		
PLAM-1	PLASTIC LANINATE - TYPE 1	FORMICA			7747		
PMTL-1	PERFORATED METAL BASE - TYPE 1	STYLMARK	1		123	6"	BANQUETTE PERFORATED TOE BASE MATERIAL
PT-4	PAINT COLOR - TYPE 4	SHERWINWILLIAMS	1		SW7004	1	
PT-5	PAINT COLOR-TYPE 5	SHERWINWILLIAMS			SW/7069		ALL HM FRAMES AND METAL DOORS TO BE PAINTED PT-5
PT-6	PAINT COLOR - TYPE 6	SHERWINWELLAMS	1		SW7029		
PT-7	PAINT COLOR - TYPE 7	SHERWINWELLARS	 		5W6342	1	
PT-8	PAINT COLOR-TYPE 6	SHERWIN WILLIAMS	†		SW6510		
ट्रा न	PAINT COLOR-TYPE 9	SHERWINWILLIAMS			SW7625		
PT-10	PAINT COLOR - TYPE 10	SHERWINWILLIAMS			SW8417		
QT-1	QUARRY TILE - TYPE 1	LANDWARK CERAMICS		CHARME	GRAPHITE DARK	12" X 24"	GROUT TO BE GR-2
RB-1	RUBBER BASE - TYPE 1	MANNINGTON	FEETC		523	4	
RFT-1	RUBBER FLOOR TILE - TYPE 1	NORA	ARTICLE 1880	GRANO	5315, 5320, & 5308	3,5MM TILE	SEE 1401 FOR FLOORING PATTERN
RFT-2	RUBBER FLOOR STAIRS - TYPE 2	NORA		HAMMERED	0716		VISUALLY IMPAIRED STRIPS IN COLOR SAFETY YELLOW
RFT-3	RUBBER FLOOR TILE - TYPE 3	NORA	ARTICLE 1880	GRANO ED	5304	 	ELECTROSTATICALLY DISSIPATIVE RUBBER FLOOR TILE
RT-1	RUBBER TRANSITION - TYPE 1	TARKETT	SLT-63-J	SUMUNE	63		
RT-2	RUBBER TRANSITION - TYPE 2	TARKETT	SLT-63-B	SIMUNE	63	+	
SCH-1	SCHLUTER EDGE-TYPE 1	SCHLUTER SYSTEMS	A BO ATGB	SCHLUTER-JOLLY	ATGB		
SCH-2	SCHLUTER EDGE - TYPE 2	SCHLUTER SYSTEMS	AHK 15 100 ATGB	SCHLUTER-DILEX-AHK	ATGB		
	SCHLUTER EDGE - TYPE 3	SCHLUTER SYSTEMS	AHK 1S 60 ATGB	SCHLUTER-DILEX-AHK	ATGB	1	TILE TO COUNTERTOP AND INSIDE TILE CORNERS
SCH-4	SCHLUTER EDGE - TYPE 4	SCHLUTER SYSTEMS	ATK 100 ATGB	SCHLUTER-RENO-TK	ATGB	1	
SCH-5	SCHLUTER EDGE - TYPE 5	SCHLUTER SYSTEMS	AEVT 100 B20	SCHLUTER-RENOV	AE	 	
	SCHLUTER EDGE-TYPE 6	SCHLUTER SYSTEMS	AU 100 ATGB	SCHLUTER-RENOU	ATGB	1	†
	SCHLUTER EDGE - TYPE 7	SCHLUTER SYSTEMS	RO SO ATGE	SCHLUTER-ROUNDEC	ATGB		OUTSIDE TILE CORNERS
	SOLID SURFACE - TYPE 1	CORIAN	1	1	ASH CONCRETE	12MM SHEET	
	UPHOLSTERY - TYPE 1	MOMENTUM	1	SITELINE	MINERAL	1	BAYQUETTE BACK UPHOLSTERY
	UPHOLSTERY - TYPE 2	MOMENTUM	 	DIDURANCE EPU	ETTY	1	BANQUETTE SEAT UPHOLSTERY
	UPHOLSTERY - TYPE 3	CARNEGE	6261	FRACTAL EMBOSS	706	 	OPERABLE VERTICAL PARTITION FABRIC
	VINYL WALL COVERING - TYPE 1	CARNEGE	8104	1	33	 	
	VINYL WALL COYERING - TYPE 2		 	 		+	OWNER SUPPLIED, OWNER INSTALLED
		URBAN EVOLUTIONS		URBAN B.M	NATURAL STAIN		Control and control and the co
	WOOLDESKIN FELT - TYPE 1	FLEFELT	1		150	2MM THICK	
	WALK OFF CARPET - TYPE 1	BENTLEY MILLS	BRN24		800115	24" X 24"	
	WINDOW SHADE-TYPE 1	MECHOSHADE		THERMOVEL 1300	BLACK BROWN		MECHOSHADE OR EXAL. BLACK/BROWN COLOR OR SIMILAR STANDARD
YSHD-2	WINDOW SHADE-TYPE 2	MECHOSHADE		THERMOVEIL EQUATOX	OWX		MECHOSHADE OR EQUAL, DNYX COLOR OR SIMILAR STANDARD COLOR IN

GENERAL FINISH NOTES:

- ALL INTERIOR HIM DOOR FRAME FINISHES AND METAL DOORS TO BE PAINTED PT-S. U.N.O. IN DOOR SCHEDULE.
- ALL PLAN-1 TO RUN IN THE VERTICAL DIRECT OTHERWISE.
- SEE FINISH PLAN HIDTA, ELEVATION 4/4/04 (TYPICAL), AND ELEVATION M/4/04 FOR VERTICAL PARTITION FINISHES.
- 5. VYYC-2 TO BE OWNER SUPPLIED, OWNER INSTALLED
- 6. STAR NOSINGS WITH YELLOW VISUALLY IMPARIED STRPS AT THE TOP OF STAR FLIGHTS, ALL OTHER STEPS TO HAVE STAR TREADS WITH YELLOW VISUALLY IMPARIED STRPS.

INTERIORS FINISH ABBREVIATIONS:

ACT = ACCUSTICAL CELIAS TILE
ACT = ALUMANI PERIBETER TRIM
CODE = CONCRETE MASONAY UNIT
COT = CARPET
COT = CONCRETE MASONAY UNIT
COT = CARPET
COT = CONCRETE MASONAY UNIT
COT = CARPET
COT = CONCRETE MASONAY
CO

Mead &Hunt

Mead & Hunt, Inc. 2440 Deming Way Middleton, WI 53562 phone: 608-273-6380 meadhunt.com

DESTREE architecture & design





CITY OF MADISON
METRO TRANSIT PHASE 3A - MAINTENANCE AND
DRIVER FACILITY IMPROVEMENTS
1101 EAST WASHINGTON AVE.
MADISON, WI 53703 63400 040A/21 BID SET

CONTRACT NO. 8694

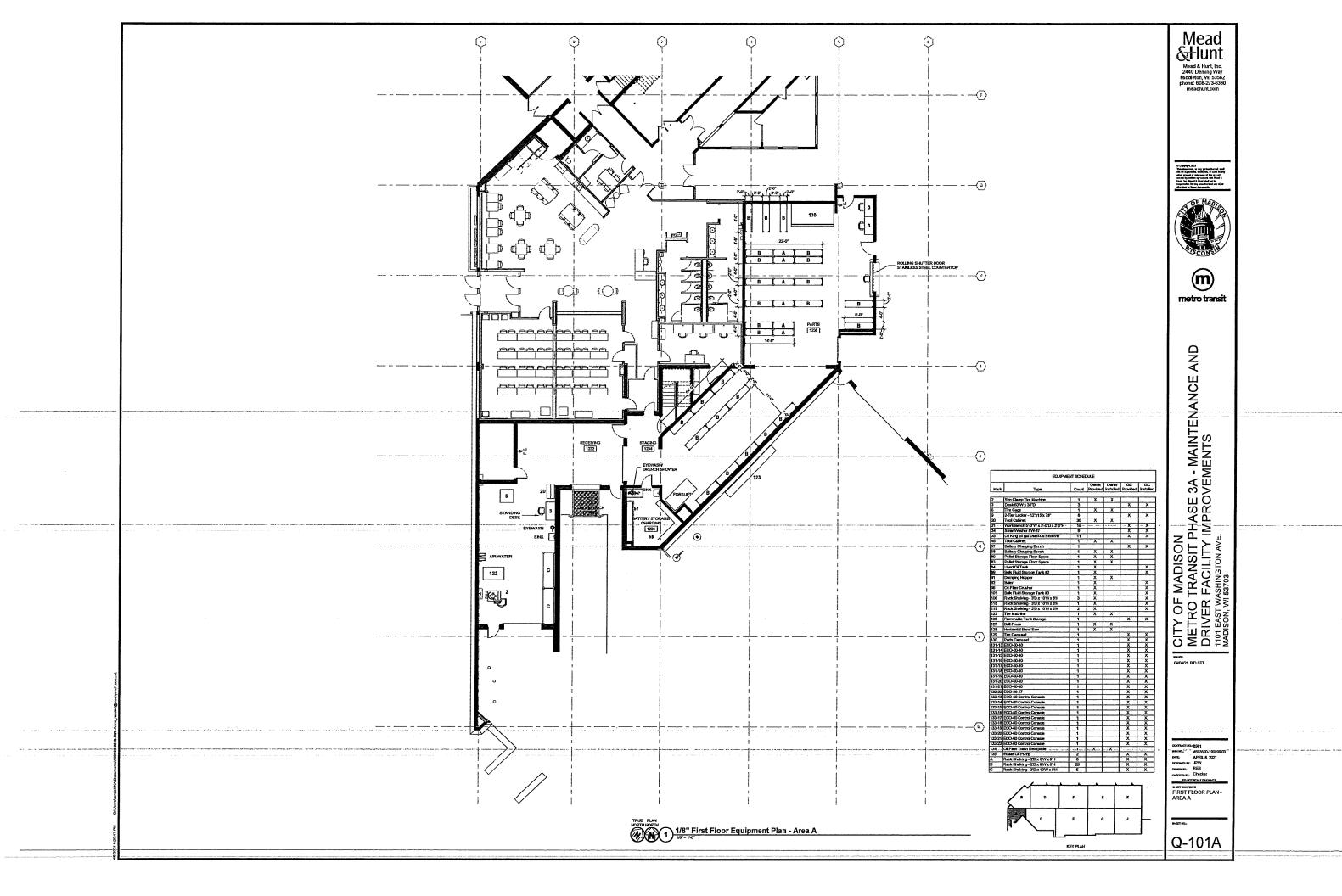
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NOTE APPEL 8, 2021

COSSOO 15 COS

IMEET HO:

I-601



	ABBREVIATIONS;	ES = EXPOSED STRUCTO LG = LAY-IN GRID	URE PLAS = PLASTER S = SURFACE W = WALL MOUNTED PL = POLE MOUNTED UNY = UNIVERSAL VOLTAGE										
DES.	MANUFACTURER	CATALOG SERIES	DESCRIPTION	LAMP DATA	VOLTAGE	BALLAST/ DRIVER	моинт	CEILING TYPE	FIXTURE DEPTH	LED SYSTEM IMPUT WATTAGE	LED DELIVERED LUMENS	OPTIONS / ACCESSORIES	ACCEPTABLE MANUFACTURERS
A1	LITHONIA	EPANL SERIES	Z x Z LED EDGE-LIT FLAT PANEL	4000K LED	277V	D G	R	LG	2	29.2	3333		COLUMBIA CFP
													IKIO ASTRAL EDGE
D1	GOTHAM	EVO4 SERIES	LED ROUND RECESSED DOWNLIGHT WITH WHITE REFLECTOR AND	4000K LED	2777	D	R	LG .	6 1/Z	13.7W	1527		PORTFOLIO, LITEISTRY
			FLANGE, MEDIUM DISTRIBUTION, AND SEMI-SPECULAR FINISH										USAI
DK1	HUBBELL	DOKSTAR SERIES	LED DOCK LIGHT, WITH 32 DEGREE FLOOD OPTICS AND POLYCARBONATE LENS, IN-LINE ROCKER SYNTCH, 40" DOUBLE STRUT SWING ARM WITH STANDARD 6" CORD AND PLUG	5000K LED	120V	D	w	-	-	21W	1506		PHOENIX
			12' LED TRACK LIGHT, WHITE, WITH SOLITE TEMPERED GLASS LENSES, ORDER WITH 12' CONTECH L'T WHITE TRACK WITH OUTLET BOX COVER	l	-						l		JUNO, BRUCK
J1	CONTECH	CTL SERIES	ORDER WITH 12 CONTECH LT WHITE TRACK WITH OUTLET BOX COVER PLATE LA-4 AND AIRCRAFT CABLE	4000K LED	120V	Ф	R	re	•	1977	2213		TIMES SQUARE, LSI
			I LED WALL BRACKET WITH LOW GLARE ACRYLIC LENS AND WHITE			_			_				METALUX, COLUMBIA
K21	CREE	LS SERIES	FINISH.	4000K LED	2771	D	w	•	2,	4011	4250		LITHONIA
			C LED NARROW RECESSED LINEAR FIXTURE WITH WHITE POWDER COAT										PINHACLE, LUMENWERX
LI	AXIS	BEAM4 LED SERIES	EXTRUDED ALUMINUM HOUSING AND FORSTED FLUSH LENS, 90 CRI	4000K LED	2777	D	R	re	3-7/8-	5WFT	400 UNFT		CORONET, FINELITE
			C LED RECESSED PERDAETER FIXTURE WITH EXTRUDED ALUMINUM HOUSING, Z' REGRESS, TELESCOPIC END, SEE PLANS FOR EXACT			_			_				PINNACLE, LUMENWERX
12	AXIS	BEAM4 LED SERIES	HOUSING, 2" REGRESS, TELESCOPIC END, SEE PLANS FOR EXACT LENGTH REQUIRED.	4000K LED	2777	D	R	LG	6	5WFT	400 LWFT		CORONET, FINELITE
			FIELD CUTTABLE LED TAPELIGHT MOUNTED IN ALUMINUM CHANNEL,										ACOLYTE, OPTIC ARTS
13	OMNILIGHT	CONTINUUM SERIES	DIMMABLE, 90 CRI	3000K LED	24V	D	s	CMB	0.5*	1.47 WIFT	140 UWFT		MODA, LED LINEAR
			← LED RECESSED PERIMETER FIXTURE WITH EXTRUDED ALUMINUM										PINHACLE, LUMENWERX
L4	AXIS	BEAM LED SERIES	HOUSING, 2" REGRESS, TELESCOPIC END. SEE PLANS FOR EXACT LENGTH REQUIRED.	4000K LED	2777	ם	R	GWB	6	5WFT	400 LIWFT		CORONET, FINELITE
			# I FO DUINGADE NOVICE DATE OF THE LIGHT OF THE DAY OF		-								METALUX, COLUMBIA
H2	пинони	MSL SERIES	If LED SURFACE INDUSTRIAL FIXTURE WITH STEEL HOUSING AND BAKED WHITE ENAMEL FINISH	4000K LED	2777	D	8	-	3-1/4"	4011	3636		DAYBRITE
	l		ALED CHAIN WIND DESIDENT INCOMES OF THE PARTY PARTY POLICE.						-				METALUX, COLUMBIA
КЗ	ПНОИМ	MSL SERIES	I' LED CHAIN-HUNG PENDANT INDUSTRIAL FIXTURE WITH STEEL HOUSING AND BAKED WHITE ENAMEL FIHISH	4000K LED	277V	Ð	P	-	3-1/4"	40\Y	3636		DAYBRITE
	<u> </u>												METALUX, COLUMBIA
N5	ЦТНОНА	MSLSERIES	IF LED SURFACE INDUSTRIAL FIXTURE WITH STEEL HOUSING AND BAKED WHITE ENAMEL FINISH	4000K LED	2777	D	8	-	3-1/4"	58W	7273		DAYBRITE
	l		ALTE MUNICIPAL CHICAR VARIABLE VARIABLE VALUE CONTROL CONTROL										METALUX, COLUMBIA
N6	BARRON	VPA SERIES	LED SURFACE LINEAR VAPORTIGHT WITH POLYCARBONATE HOUSING FOR CORROSIVE ENVIRONMENT	4000K LED	277V	D	8	-	3,6*	40N	5200		DAYERITE
			TIES BUSSESS HIS HER STORE HER STORE HER LANGUAGE AND DAVID		l								METALUX, COLUMBIA
N7	LITHONIA	MSL SERIES	8" LED SURFACE INDUSTRIAL FIXTURE WITH STEEL HOUSING AND BAKED WHITE ENAMEL FINISH	4000K LED	120V	D	s	-	3-1/4"	5811	72/3		DAYERITE
													LITHONIA
H11	LITHONIA	FEM SERIES	✓ LED PENDANT INDUSTRIAL VAPOR-TIGHT FIXTURE WITH FIBERGLASS HOUSING	4000K LED	zπv	Ð	Р	-	4-1/4"	94.3W	15160		METALUX, COLUMBIA
					<u> </u>								PORTFOLIO, LITEISTRY
CA1	GOTHAM	EVO6 SERIES	6" LED ROUND RECESSED DOWNLIGHT, WET LOCATION RATED, FLUSH LENSED WHITE PAINTED TRIM WITH SMOOTH CLEAR LENS	4000K LED	277₹	D	R	-	79/15*	1077	857		USAI
			LED WALL MOUNTED FIXTURE WITH DIE CAST ALUMINUM HOUSING.										MCGRAW EDISON, HUBBELL
DA2	пнони	D-SERIES SIZE 1	ACRYLIC LENS, DARK SKY FRIENDLY CERTIFIED, 1965 RATED, FORWARD THROW LIGHT DISTRIBUTION AND DARK BRONZE FINISH.	4000K LED	277₹	D	w	-	10"	1317	1515		PHILIPS 122 SCONCE SERIES
													MODERN FORMS
PI	DesignPlan	PLANK SERIES	4' LED LINEAR PENDANT WITH ALUMINUM BODY AND WOOD SIDE PANELS, AIRCRAFT CABLE MOUNT, 90 CRI	4000K LED	2777	ם	P	1G	6"	72W	1848 UP 1866 DOWN		PURE EDGE
7,511.5								**********					SPI
P2	G LIGHTING	GLOBO SERIES	24 LED ACRYLIC GLOBE INTERIOR PENDANT	4000K LED	2777	O	•••Р	GWB	24	42VV	4912		ALLATI
			8" LED GLOBE INTERIOR PENDANT WITH CLEAR CABLE AND 0-10V										WAC
P3	EUREKA	MIKA SERIES	DIMMING, SO CRI	4000K LED	2777	Đ	P	LG	B.	9,870	967		A) LATI
	r.mrv.		12" LED GLOBE INTERIOR PENDANT WITH CLEAR CABLE AND 0-10V	annous) Pri							4000		WAC
r4	EUREKA	MIXA SERIES	DIMMING, BO CRI	4000K LED	2777	D		re	12*	9.577	1062		AI LATI
			LED FLEXIBLE COVE LIGHT, PROVIDE ALL REQUIRED ACCESSORIES TO								400 1 1 1		LED LINEAR, HLIGHT
Q1	MODA LIGHT	SUPER NEON SERIES	CREATE A COMPLETE AND OPERABLE SYSTEM AS SHOWN ON THE PLANS.	4000K LED	24V	D	5	GYP	1-1/8*	5WFT	100 LWFT		ACOLYTE, OPTIC ARTS
			LED SURFACE MOUNT DOWNLIGHT, 11° DIAMETER, WIRE DIRECTLY TO										DMF LIGHTING
51	JUHO	SLIMFORM SERIES	J-BOX	4000K LED	2777	D	8	ES	.5"	1514	1300		
X1	EVENUTE	RAZOR SERIES	SINGLE FACE EXIT LIGHT, DIE CAST ALUMINUM, UNIVERSAL MOUNT, RED	LED	277V	_	עאע		_		-		LITHONIA, SURE-LITE
-			LETTERS DOUBLE FACE EXIT LIGHT, DIE CAST ALUMINUM, UNIVERSAL MOUHT, RED										DUAL-LITE LITHONIA, SURE-LITE
X2	EVENLITE	IOZON GENEG	LETTERS	LED	2779	-	אאט	-	-		•		DUAL-LITE
LLA:	ST/DRIVER CO	DE LISTING: (SEE	SPECIFICATIONS)										
		WER SUPPLY (0-10V).											
		WER SUPPLY (TRAILING E											
			S LUTRON HI LUME OR EQUAL.										
G	LED DIMMABLE POA	VER SUPPLY ADVANCE X	JTANIUM OR EQUAL										

LUMINAIRE SCHEDULE

GENERAL NOTES:

- 1. ONLY BALLAST SERIES IS INDICATED ON THIS SCHEDULE. REFER TO SPECIFICATIONS FOR FURTHER INFORMATION, EACH FIXTURE SUBMITTAL SHALL BE PROVIDED WITH FULL BALLAST AND LAMP INFORMATION.
- 2 ESHALL VERIFY AND COORDINATE ALL LUMINARE TRIMS/FLANGES WITH RESPECTIVE CEILING TYPES SCHEDULED AND/OR SUBMITTED BY THE GC PRIOR TO ORDERING OF THE LUMINARES, SCHEDULE INDICATES TRIM TYPES BASED ON THE GENERIC CEILING INFORMATION AVAILABLE AT THE TIME BIDDING DOCUMENTS WERE ISSUED AND DOES NOT REFLECT ACTUAL THICKNESS OF GYPSUM WALL BOARD OR PLASTER CEILING OR EXACT GRID TYPE SPECIFIED BY THE ARCHITECT.

YED NOTES:

- PERMETER FIXTURE SHALL BE WALL TO WALL INSTALLATION, LUMINARIES SHALL BE PROVIDED WITH SLIDING SLEEVE OR EXACT MEASUREMENTS SHALL BE VERIFIED IN FIELD PRIOR TO RELEASING FIXTURE
- VERIFY ALL COMPONENTS REQUIRED TO CREATE A COMPLETE SYSTEMS AS INDICATED ON PLAN INCLUDING POWER SUPPLIES AND CONNECTION ACCESSORIES,

© Coppy) NC:
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Mead & Hunt, Inc. 2440 Deming Way Middeton, WI 55552 phone: 608-273-6380 meadhunt.com





CITY OF MADISON
METRO TRANSIT PHASE 3A - MAINTENANCE AND
DRIVER FACILITY IMPROVEMENTS
1101 EAST WASHINGTON AVE.
MADISON, WI 53703

ESUED D4/08/21 BID SET

CONTINUE TO 18 1994

INFO APPEL 8, 2021

INFO

BHEET HO!

E-601

SECTION E: BIDDERS ACKNOWLEDGEMENT

CONTRACT TITLE METRO TRANSIT PHASE 3A

CONTRACT NO. 8981

Bidder must state a Unit Price and Total Bid for each item. The Total Bid for each item must be the product of quantity, by Unit Price. The Grand Total must be the sum of the Total Bids for the various items. In case of multiplication errors or addition errors, the Grand Total with corrected multiplication and/or addition shall determine the Grand Total bid for each contract. The Unit Price and Total Bid must be entered numerically in the spaces provided. All words and numbers shall be written in ink.

1.	The undersigned having familiarized himself/herself with the Contract documents, including Advertisement for Bids, Instructions to Bidders, Form of Proposal, City of Madison Standard Specifications for Public Works Construction - 2021 Edition thereto, Form of Agreement, Form of Bond, and Addenda issued and attached to the plans and specifications on file in the office of the City Engineer, hereby proposes to provide and furnish all the labor, materials, tools, and expendable equipment necessary to perform and complete in a workmanlike manner the specified construction on this project for the City of Madison; all in accordance with the plans and specifications as prepared by the City Engineer, including Addenda to the Contract Nos. 1 through 3 Issued thereto, at the prices for said work as contained in this proposal. (Electronic bids submittals shall acknowledge addendum under Section E and shall not
2.	acknowledge here) If awarded the Contract, we will initiate action within seven (7) days after notification or in accordance with the date specified in the contract to begin work and will proceed with diligence to bring the project to full completion within the number of work days allowed in the Contract or by the calendar date stated in the Contract.
3.	The undersigned Bidder or Contractor certifies that he/she is not a party to any contract, combination in form of trust or otherwise, or conspiracy in restraint of trade or commerce or any other violation of the anti-trust laws of the State of Wisconsin or of the United States, with respect to this bid or contract or otherwise.
4.	I hereby certify that I have met the Bid Bond Requirements as specified in Section 102.5. (IF BID BOND IS USED, IT SHALL BE SUBMITTED ON THE FORMS PROVIDED BY THE CITY, FAILURE TO DO SO MAY RESULT IN REJECTION OF THE BID).
5,;	I hereby certify that all statements herein are made on behalf of J.P. Cullen & Sons, Inc. (name of corporation, partnership, or person submitting bid) a corporation organized and existing under the laws of the State of Wisconsin a partnership consisting of N/A; of the City of Janesville State of Wisconsin; that I have examined and carefully prepared this Proposal, from the plans and specifications and have checked the same in detail before submitting this Proposal; that I have fully authority to make such statements and submit this Proposal in (its, their) behalf, and that the said statements are true and correct.
SIGNATU	
Vice Pi	resident
HHIRTH	0.74h
(Notary My Con	Public or other officer authorized to administer oaths) nmission Expires February 1, 2025 shall not add any conditions or qualifying statements to this Proposal. E-1
My Con	Public or other officer authorized to administer oaths) nmission Expires February 1, 2025 shall not add any conditions or qualifying statements to this Proposal.

Contract 8981 - J. P. Cullen & Sons, Inc.

Section F: Best Value Contracting (BVC)

This section is a required document for the bid to be considered complete. There are two methods for completing the Best Value Contracting (BVC) form. Method one: The form can be filled out online and submitted to this site to be included with your electronic bid. Method two: The form can be downloaded from the site and submitted by hand to the City of Madison.

Method of Submittal for BVC (click in box below to choose) *

I will submit Bid Express fillable online form (BVC).

Best Value Contracting

1. The Contractor shall indicate the non-apprenticeable trades used on this contract.

active apprentice requirement. Apprenticeable trades are those trades considered apprenticeable by the State of Wisconsin. Please check applicable box if you are seeking an exemption.
Contractor has a total skilled workforce of four or less individuals in all apprenticeable trades combined.
No available trade training program; The Contractor has been rejected by the only available trade training program, or there is no trade training program within 90 miles.
Contractor is not using an apprentice due to having a journey worker on layoff status, provided the journey worker was employed by the contractor in the past six months.
First time contractor on City of Madison Public Works contract requests a onetime exemption but intends to comply on all future contracts and is taking steps typical of a "good faith" effort.
Contractor has been in business less than one year.
Contractor doesn't have enough journeyman trade workers to qualify for a trade training program in that respective trade.
An exemption is granted in accordance with a time period of a "Documented Depression" and defined by the State of Wisconsin.

3. The Contractor shall indicate on the following section which apprenticeable trades are to be used on this contract. Compliance with active apprenticeship, to the extent required by M.G.O. 33.07(7), shall be satisfied by documentation from an applicable trade training body; an apprenticeship contract with the Wisconsin Department of Workforce Development or a similar agency in another state; or the U.S Department of Labor. This documentation is required prior to the Contractor beginning work on the project site.

pro	The Contractor has reviewed the list and shall not use any apprenticeable trades on this eject.
	ST APPRENTICABLE TRADES (check all that apply to your work to be performed on this ntract)
	BRICKLAYER CARPENTER CEMENT MASON / CONCRETE FINISHER CEMENT MASON (HEAVY HIGHWAY) CONSTRUCTION CRAFT LABORER DATA COMMUNICATION INSTALLER ELECTRICIAN ENVIRONMENTAL SYSTEMS TECHNICIAN / HVAC SERVICE TECH/HVAC INSTALL / RVICE GLAZIER HEAVY EQUIPMENT OPERATOR / OPERATING ENGINEER INSULATION WORKER (HEAT and FROST) IRON WORKER IRON WORKER (ASSEMBLER, METAL BLDGS) PAINTER and DECORATOR PLASTERER PLUMBER RESIDENTIAL ELECTRICIAN ROOFER and WATER PROOFER SHEET METAL WORKER SPRINKLER FITTER STEAMFITTER STEAMFITTER STEAMFITTER (SERVICE) TAPER and FINISHER TELECOMMUNICATIONS (VOICE, DATA and VIDEO) INSTALLER-TECHNICIAN
	TILE SETTER

CONTRACT NO. 8981

Small Business Enterprise Compliance Report

This information may be submitted electronically through Bid Express or submitted with bid in sealed envelope.

Cover Sheet

Prime Bidder Information

Company:	J.P. Cullen & Sons, Inc.
Address:	330 E Delavan Drive, Janesville, WI 53546
Telephone Number:	608-754-6601
Fax Number:	608-754-9171
Contact Person/Title:	Jeremy Shecterle - Vice President
Prime Bidder Certificati	<u>on</u>
Name:	Jeremy Shecterle
Title:	Vice President
Company:	J.P. Cullen & Sons, Inc.
I certify that the informa knowledge and belief.	ation contained in this SBE Compliance Report is true and correct to the best of my
Dessica	2 DOUG Bidder's Signature Bidder's Signature
Witness' Signature	U Diduci a ordinarina
5/27/2021	
Date	· ···· / /

CONTRACT NO. 898

Small Business Enterprise Compliance Report

Summary Sheet

SBE Subcontractors Who Are NOT Suppliers

Name(s) of SBEs Utilized		Type of Work		% of Tot Bid Amo	
Par-Loc, Inc	To	pilet Partitions		0.12	 %
Mobile Glass Inc	GI	ass/Glazing		0.76	%
Early Bird Painting	Pa	ainting		1.29	%
Hunt & Collins	H'	VAC		15.18	%
Garage Door Express	O ₁	verhead Door		0.87	 %
					%
					%
					 %
·					<u></u> %
					 %
					%
			······································		 %
			***		%
Subtotal SBE who are NOT suppliers:				18.21	%
SBE Subcontractors Who Are Suppliers					
Name(s) of SBEs Utilized		Type of Work		% of To Bid Amo	
					%
					%_
					%_
					%
					%
					%
Subtotal Contractors who are suppliers:	0	% x 0.6 = _	0	_ % (discounted to 60	0%)
Total Percentage of SBE Utilization:	18.21	<u></u> %.			

METRO TRANSIT PHASE 3A - MAINTENANCE AND DRIVER FACILITY IMPROVEMENTS

CONTRACT NO. 8981 DATE: 5/27/2021

J. P. Cullen & Sons, Inc.

ltem	Quantity	Price	Extension
Section B: Proposal Page			
90000 - Base Bid - Lump Sum	1.00	\$8,653,930.00	\$8,653,930.00
Section B: Proposal Page Alternate 1			
90001 - ALTERNATE NO. 1. SEE SPECIFICATION 012300 -	Vocage (Valence provided de Lange de que beneficiand y conserve	39,500 a fig., com d'amendantes tradament 200 a fig. 2 com accessible 100 à 200 à 20	0
ALTERNATES AND DRAWINGS AD101F AND A-101F. ALL WORK			
ASSOCIATED WITH AREA F, FIRST FLOOR ONLY, AS IDENTIFIED)		
PER DRAWING G131. THIS GENERALLY INCLUDES ROOMS			
1301, 1302, 1303, 1304, 1305, 1306, 1308, 1309, 1311, ALONG			
WITH ALL ASSOCIATED STRUCTURAL, EQUIPMENT, FIRE			
PROTECTION, PLUMBING, HVAC, ELECTRICAL AND			
COMMUNICATIONS SYSTEMS Lump Sum	1.00	\$759,017.00	\$759,017.00
2 Items	Totals		\$9,412,947,00

SECTION G: BID BOND

LET ALL KNOW BY THESE DOCUMENTS PRESENTED, THAT Principal and Surety, as identified below, are held and firmly bound unto the City of Madison, (hereinafter referred to as the "Obligee"), in the sum of five per cent (5%) of the amount of the total bid or bids of the Principal herein accepted by the Obligee, for the payment of which the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

The conditions of this obligation are such that, whereas the Principal has submitted, to the City of Madison a certain bid, including the related alternate, and substitute bids attached hereto and hereby made a part hereof, to enter into a contract in writing for the construction of:

METRO TRANSIT PHASE 3A - MAINTENANCE AND DRIVER FACILITY IMPROVEMENTS CONTRACT NO. 8981

- If said bid is rejected by the Obligee, then this obligation shall be void.
- 2. If said bid is accepted by the Obligee and the Principal shall execute and deliver a contract in the form specified by the Obligee (properly completed in accordance with said bid) and shall furnish a bond for his/her faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said bid, then this obligation shall be void.

If said bid is accepted by the Obligee and the Principal shall fail to execute and deliver the contract and the performance and payment bond noted in 2. above executed by this Surety, or other Surety approved by the City of Madison, all within the time specified or any extension thereof, the Principal and Surety agree jointly and severally to forfeit to the Obligee as liquidated damages the sum mentioned above, it being understood that the liability of the Surety for any and all claims hereunder shall in no event exceed the sum of this obligation as stated, and it is further understood that the Principal and Surety reserve the right to recover from the Obligee that portion of the forfeited sum which exceed the actual liquidated damages incurred by the Obligee.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by an extension of the time within which the Obligee may accept such bid, and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, on the day and year set forth below.

	PRINCIPAL		
William & South	J.P. Cullen & Sons, Inc.		
	Name of Principal		
Q CORPORATE	Mill M.	H.C.	May 27, 2021
SEAL /	By Michael M Griffin,		Date
	E Michael M Grittin,	CFO	
"III ISCORS	Name and Title		
SEAL			
Seal	SURETY		
2 .0 2	Travelers Casualty and Sure	ety Company of America	
\$ 77	Name of Surety		
, f (4.5)	Tina of Domas	sk	May 27, 2021
	Ву		Date
	Tina L. Domask, Attorney-in	ı-Fact	
	Name and Title		
National P authority to	rovider No. 17584644	for the year 2021, and	ove company in Wisconsin under appointed as attorney in fact with nd referred to above, which power
May 27, 202	21 .	Tina L. Domask	
Date		Agent Signature	
		c/o CSDZ, LLC 1600 Aspen Commons, Suite 990	
	-	Address	
		Middleton, WI 53562	
		City, State and Zip Code	
		608.242.2550	
		Telephone Number	

NOTE TO SURETY & PRINCIPAL

The bid submitted which this bond guarantees shall be rejected if the following instrument is not attached to this bond:

Power of Attorney showing that the agent of Surety is currently authorized to execute bonds on behalf of the Surety, and in the amounts referenced above.



Travelers Casualty and Surety Company of America **Travelers Casualty and Surety Company** St. Paul Fire and Marine Insurance Company

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company are corporations duly organized under the laws of the State of Connecticut (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint Tina L. Domask of Middleton, Wisconsin, their true and lawful Attorney-in-Fact to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed, and their corporate seals to be hereto affixed, this 3rd day of February, 2017.







State of Connecticut

City of Hartford ss.

Robert L. Raney, Senior Vice President

On this the 3rd day of February, 2017, before me personally appeared Robert L. Raney, who acknowledged himself to be the Senior Vice President of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, and that he, as such, being authorized so to do, executed 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 hereunto set my hand and official seal.

My Commission expires the 30th day of June, 2021



Marie C. Tetreault, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, which resolutions are now in full force and effect, reading as follows:

RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

FURTHER RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

FURTHER RESOLVED, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

FURTHER RESOLVED, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, and Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, Kevin E. Hughes, the undersigned, Assistant Secretary of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which remains in full force and effect.

Dated this

day of

May

. 2021



Kar E. Huyton Kevin E. Hughes, Assistant Secretary

SECTION H: AGREEMENT

THIS AGREEMENT made this 17th day of Tund in the year Two Thousand and Twenty-One between J. P. CULLEN & SONS, INC. hereinafter called the Contractor, and the City of Madison, Wisconsin, hereinafter called the City.

WHEREAS, the Common Council of the said City of Madison under the provisions of a resolution adopted **JUNE 15, 2021**, and by virtue of authority vested in the said Council, has awarded to the Contractor the work of performing certain construction.

NOW, THEREFORE, the Contractor and the City, for the consideration hereinafter named, agree as follows:

Scope of Work. The Contractor shall, perform the construction, execution and completion of the following listed complete work or improvement in full compliance with the Plans, Specifications, Standard Specifications, Supplemental Specifications, Special Provisions and contract; perform all items of work covered or stipulated in the proposal; perform all altered or extra work; and shall furnish, unless otherwise provided in the contract, all materials, implements, machinery, equipment, tools, supplies, transportation, and labor necessary to the prosecution and completion of the work or improvements:

- Completion Date/Contract Time. Construction work must begin within seven (7) calendar days after the date appearing on mailed written notice to do so shall have been sent to the Contractor and shall be carried on at a rate so as to secure full completion SEE SPECIAL PROVISIONS, the rate of progress and the time of completion being essential conditions of this Agreement.
- Contract_Price. The City shall pay to the Contractor at the times, in the manner and onthe conditions set forth in said specifications, the sum of NINE MILLION FOUR HUNDRED

 TWELVE THOUSAND NINE HUNDRED FORTY-SEVEN AND NO/100 (\$9,412,947.00) Dollars being
 the amount bid by such Contractor and which was awarded to him/her as provided by law.
- 4. Affirmative Action. In the performance of the services under this Agreement the Contractor agrees not to discriminate against any employee or applicant because of race, religion, marital status, age, color, sex, disability, national origin or ancestry, income level or source of income, arrest record or conviction record, less than honorable discharge, physical appearance, sexual orientation, gender identity, political beliefs, or student status. The Contractor further agrees not to discriminate against any subcontractor or person who offers to subcontract on this contract because of race, religion, color, age, disability, sex, sexual orientation, gender identity or national origin.

The Contractor agrees that within thirty (30) days after the effective date of this agreement, the Contractor will provide to the City Affirmative Action Division certain workforce utilization statistics, using a form to be furnished by the City.

If the contract is still in effect, or if the City enters into a new agreement with the Contractor, within one year after the date on which the form was required to be provided, the Contractor will provide updated workforce information using a second form, also to be furnished by the City. The second form will be submitted to the City Affirmative Action Division no later than one year after the date on which the first form was required to be provided.

The Contractor further agrees that, for at least twelve (12) months after the effective date of this contract, it will notify the City Affirmative Action Division of each of its job openings at facilities in Dane County for which applicants not already employees of the Contractor are to be considered.

The notice will include a job description, classification, qualifications and application procedures and deadlines. The Contractor agrees to interview and consider candidates referred by the Affirmative Action Division if the candidate meets the minimum qualification standards established by the Contractor, and if the referral is timely. A referral is timely if it is received by the Contractor on or before the date started in the notice.

Articles of Agreement Article I

The Contractor shall take affirmative action in accordance with the provisions of this contract to insure that applicants are employed, and that employees are treated during employment without regard to race, religion, color, age, marital status, disability, sex, sexual orientation, gender identity or national original and that the employer shall provide harassment free work environment for the realization of the potential of each employee. 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 insofar as it is within the control of the Contractor. The Contractor agrees to post in conspicuous places available to employees and applicants notices to be provided by the City setting out the provisions of the nondiscrimination clauses in this contract.

Article II

The Contractor shall in all solicitations or advertisements for employees placed by or on behalf of the Contractors state that all qualified or qualifiable applicants will be employed without regard to race, religion, color, age, marital status, disability, sex, sexual orientation, gender identity or national origin.

Article III

The Contractor shall send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding a notice to be provided by the City advising the labor union or worker's representative of the Contractor's equal employment opportunity and affirmative action commitments. Such notices shall be posted in conspicuous places available to employees and applicants for employment.

Article V

The Contractor agrees that it will comply with all provisions of the Affirmative Action Ordinance of the City of Madison, including the contract compliance requirements. The Contractor agrees to submit the model affirmative action plan for public works contractors in a form approved by the Affirmative Action Division Manager.

Article VI

The Contractor will maintain records as required by Section 39.02(9)(f) of the Madison General Ordinances and will provide the City Affirmative Action Division with access to such records and to persons who have relevant and necessary information, as provided in Section 39.02(9)(f). The City agrees to keep all such records confidential, except to the extent that public inspection is required by law.

Article VII

In the event of the Contractor's or subcontractor's failure to comply with the Equal Employment Opportunity and Affirmative Action Provisions of this contract or Section 39.03 and 39.02 of the Madison General Ordinances, it is agreed that the City at its option may do any or all of the following:

- 1. Cancel, terminate or suspend this Contract in whole or in part.
- 2. Declare the Contractor ineligible for further City contracts until the Affirmative Action requirements are met.
- 3. Recover on behalf of the City from the prime Contractor 0.5 percent of the contract award price for each week that such party fails or refuses to comply, in the nature of liquidated damages, but not to exceed a total of five percent (5%) of the contract price, or ten thousand dollars (\$10,000), whichever is less. Under public works contracts, if a subcontractor is in noncompliance, the City may recover liquidated damages from the prime Contractor in the manner described above. The preceding sentence shall not be construed to prohibit a prime Contractor from recovering the amount of such damage from the non-complying subcontractor.

Article VIII

The Contractor shall include the above provisions of this contract in every subcontract so that such provisions will be binding upon each subcontractor. The Contractor shall take such action with respect to any subcontractor as necessary to enforce such provisions, including sanctions provided for noncompliance.

Article IX

The Contractor shall allow the maximum feasible opportunity to small business enterprises to compete for any subcontracts entered into pursuant to this contract. (In federally funded contracts the terms "DBE, MBE and WBE" shall be substituted for the term "small business" in this Article.)

- 5. Substance Abuse Prevention Program Required. Prior to commencing work on the Contract, the Contractor, and any Subcontractor, shall have in place a written program for the prevention of substance abuse among its employees as required under Wis. Stat. Sec. 103.503.
- 6. Contractor Hiring Practices.

Ban the Box - Arrest and Criminal Background Checks. (Sec. 39.08, MGO)

This provision applies to all prime contractors on contracts entered into on or after January 1, 2016, and all subcontractors who are required to meet prequalification requirements under MGO 33.07(7)(I), MGO as of the first time they seek or renew pre-qualification status on or after January 1, 2016. The City will monitor compliance of subcontractors through the pre-qualification process.

- a. **Definitions.** For purposes of this section, "Arrest and Conviction Record" includes, but is not limited to, information indicating that a person has been questioned, apprehended, taken into custody or detention, held for investigation, arrested, charged with, indicted or tried for any felony, misdemeanor or other offense pursuant to any law enforcement or military authority.
 - "Conviction record" includes, but is not limited to, information indicating that a person has been convicted of a felony, misdemeanor or other offense, placed on probation, fined, imprisoned or paroled pursuant to any law enforcement or military authority.
 - "Background Check" means the process of checking an applicant's arrest and conviction record, through any means.
- **b. Requirements.** For the duration of this Contract, the Contractor shall:

- 1. Remove from all job application forms any questions, check boxes, or other inquiries regarding an applicant's arrest and conviction record, as defined herein.
- 2. Refrain from asking an applicant in any manner about their arrest or conviction record until after conditional offer of employment is made to the applicant in question.
- 3. Refrain from conducting a formal or informal background check or making any other inquiry using any privately or publicly available means of obtaining the arrest or conviction record of an applicant until after a conditional offer of employment is made to the applicant in question.
- 4. Make information about this ordinance available to applicants and existing employees, and post notices in prominent locations at the workplace with information about the ordinance and complaint procedure using language provided by the City.
- 5. Comply with all other provisions of Sec. 39.08, MGO.
- **c. Exemptions:** This section shall not apply when:
 - 1. Hiring for a position where certain convictions or violations are a bar to employment in that position under applicable law, or
 - 2. Hiring a position for which information about criminal or arrest record, or a background check is required by law to be performed at a time or in a manner that would otherwise be prohibited by this ordinance, including a licensed trade or profession where the licensing authority explicitly authorizes or requires the inquiry in question.

To be exempt, Contractor has the burden of demonstrating that there is an applicable law or regulation that requires the hiring practice in question, if so, the contractor is exempt from all of the requirements of this ordinance for the position(s) in question.

METRO TRANSIT PHASE 3A – MAINTENANCE AND DRIVER FACILITY IMPROVEMENTS CONTRACT NO. 8981

IN WITNESS WHEREOF, the Contractor has hereunto set his/her hand and seal and the City has caused this contract to be sealed with its corporate seal and to be executed by its Mayor and City Clerk on the dates written below.

Countersigned:		J. P. CULLEN & SONS, INC.	
Witness Witness	6-17-21 Date 6/17/21 Date	President Secretary	6/17/2 Date 6/17/21
CITY OF MADISON, WISCONS Provisions have been made the liability that will accrue under the	to pay the	Approved as to form:	
Mulweduly Finance Director	6/28/27 J Date	Whal Haas 6 City Attorney	/18/201 Date
Mouml Morarth Witness	(131/20) Date	Mayor A Danz for	Date (1) 22/21
Witness	Date	City Clerk	Date

SECTION I: PAYMENT AND PERFORMANCE BOND

LET ALL KNOW BY THESE DOCUMENTS PRESEN principal, and Travelers Casualty and Surety	
	re held and firmly bound unto the City of Madison, UNDRED TWELVE THOUSAND NINE HUNDRED a, lawful money of the United States, for the payment
The condition of this Bond is such that if the above perform all of the terms of the Contract entered into a construction of:	
METRO TRANSIT PHASE 3A – MAINT IMPROVEN CONTRACT	MENTS
in Madison, Wisconsin, and shall pay all claims fo prosecution of said work, and save the City harmless in the prosecution of said work, and shall save harm (under Chapter 102, Wisconsin Statutes) of employe is to be void, otherwise of full force, virtue and effect	from all claims for damages because of negligence lless the said City from all claims for compensation es and employees of subcontractor, then this Bond
Signed and sealed thisda	y of
Countersigned:	J. P. CULLEN & SONS, INC. Company Name (Principal) CORPORATE
Witness	BEAL.
Secretary Secretary	Tresident Seal Seal Seal Seal Seal Seal Seal Seal
Approved as to form:	Travelers Casualty and Surety Company of America Surety Seal
Mirhal Haas City Attorney	By Commission By Attorney-in-Fact Tina L. Domask
This certifies that I have been duly licensed as an National Producer Number 17584644 for the with authority to execute this payment and perform revoked.	e year 2021, and appointed as attorney-in-fact
June 17, 2021 Date	Agent Signature Tina L. Domask



Travelers Casualty and Surety Company of America **Travelers Casualty and Surety Company** St. Paul Fire and Marine Insurance Company

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That Travelers Casually and Surety Company of America, Travelers Casually and Surety Company, and SI. Paul Fire and Marine Insurance Company are corporations duly organized under the laws of the State of Connecticut (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint Tina L. Domask of Middleton, Wisconsin, their true and lawful Altomey-in-Fact to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed, and their corporate seals to be hereto affixed, this 3rd day of February, 2017.







State of Connecticut

City of Hartford ss.

On this the 3rd day of February, 2017, before me personally appeared Robert L. Raney, who acknowledged himself to be the Senior Vice President of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, and that he, as such, being authorized so to do, executed 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 hereunto set my hand and official seal.

My Commission expires the 30th day of June, 2021



This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of Travelers Casualty and Surety Company of America, Travelers Casually and Surety Company, and St. Paul Fire and Marine Insurance Company, which resolutions are now in full force and effect, reading as follows:

RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Altomeys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

FURTHER RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

FURTHER RESOLVED, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chalman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

FURTHER RESOLVED, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and altesting bands and undertakings and other writings obligatory in the nature thereof, and any such Power of Altomey or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, Kevin E. Hughes, the undersigned, Assistant Secretary of Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company, do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which remains in full force and effect.

Dated this

17th

day of

2021



Mar F. Huylen Kevin E. Hughes, Assistant Secretary

To verify the authenticity of this Power of Attorney, please call us at 1-800-421-3880. Please refer to the above-named Attorney-in-Fact and the details of the bond to which the power is attached.