### Package 01/02, Addendum No. 03

4622 Pennsylvania Ave. Suite 1400 Kansas City, Missouri 64112 (913) 307.3700 info@hoeferwelker.com

Project:	Lee's Summit Police Joint Operations Facility
Date of Issuance:	November 19, 2024
Location:	2 NE Tudor Rd.,
	Lee's Summit, Mo 64086

This addendum is hereby made a part of the Contract Documents to the same extent as if it were originally included therein. Receipt of this Addendum shall be acknowledged on the Proposal Form.

Any Specification Sections and Drawings attached herein shall hereby be made a part of the Contract Documents.

## The following represents Amendments to the Drawings, dated August 30<sup>th</sup>, 2024, and November 1<sup>st</sup>, 2024 respectively.

#### GENERAL

- 1. VP Buildings is an approved manufacturer for metal buildings.
- 2. Drainage Memorandum
  - a. Included for information.

#### **SPECIFICATIONS**

- 3. Specification 015723 Stormwater Pollution Prevention Plan
  - a. Updated per FDP comments.
- 4. Specification 087100 Door Hardware
  - a. Removed door 138 from set 11.0
  - b. Added door 138B to set 10.0
  - c. Added door 138A to set 22.0, and Alt 1
  - d. Moved door 153 to hw set 26.0
- 5. Specification 230923 paragraph 2.1.1 revised to include Automated Logic, Delta, Siemens, Talon, and Trane as acceptable controls manufacturers.

#### <u>GENERAL</u>

- 1. Sheet G-111 Grid Geometry Plan
  - a. Updated dock lift dimensions

#### **CIVIL SHEETS**

- 1. Sheet C0.1 GENERAL INFORMATION
  - a. Additional general notes added per city requirements.
- 2. Sheet C1.0 DEMOLITION PLAN
  - a. Additional tree removal called out.
- 3. Sheet C2.0 OVERALL SITE PLAN
  - a. Addition of building architectural grid points
- 4. Sheet C2.1 SITE PLAN
  - a. Addition of building architectural grid points
- 5. Sheet C2.2 SITE PLAN
  - a. Call of utility adjustments required by vehicle bay addition.

### Package 01/02, Addendum No. 03

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- 6. Sheet C2.3 DIMENSION PLAN
  - a. Correction of labeling errors (i.e. mislabeled dimensions, overlapping/unreadable dimension labels)
- 7. Sheet C2.4 DIMENSION PLAN
  - a. Correction of labeling errors (i.e. mislabeled dimensions, overlapping/unreadable dimension labels)
- 8. Sheet C3.0 OVERALL GRADING PLAN
  - a. Minor grading changes incident of additional design coordination and city comments.
- 9. Sheet C3.1 DETAILED GRADING PLAN
  - a. Minor grading changes incident of additional design coordination and city comments.
- 10. Sheet C3.2 DETAILED GRADING PLAN
  - a. Minor grading changes incident of additional design coordination and city comments.
- 11. Sheet C3.3 ADA GRADING PLAN
  - a. Minor grading changes incident of additional design coordination and city comments.
- 12. Sheet C3.4 ADA GRADING PLAN
  - a. Sheet added.
- 13. Sheet C4.0 UTILITY PLAN
  - a. Removal of water and sanitary notes that are replaced by plan and profile sheets of utility line as required by city review comment.
- 14. Sheet C4.1 SANITARY PLAN AND PROFILE
  - a. Sheet added incident of city review comment.
- 15. Sheet C4.2 WATER PLAN AND PROFILE
  - a. Sheet added incident of city review comment.
- 16. Sheet C5.0 STORM PLAN AND PROFILE
  - a. Modification to storm sewer design per city review comments.
- 17. Sheet C5.1 STROM PLAN AND PROFILE
  - a. Modification to storm sewer design per city review comments.
- 18. Sheet C5.2 PROPOSED DRAIANGE MAP
  - a. Sheet added per city review comment.
- 19. Sheet C5.3 STORM CALCULATIONS
  - a. Sheet added per city review comment.
- 20. Sheet C6.0 EROSION CONTROL PLAN
  - a. Changes to proposed grading.
- 21. Sheet C6.1 EROSION CONTROL PLAN
  - Changes to proposed grading.
- 22. Sheet C7.5 CIVIL DETAILS 6
  - a. Skimmer detail added.

#### LANDSCAPE

- 1. Sheet L-101 LANDSCAPE PLAN
  - a. Added shrub screening around a condenser unit adjacent to the vehicle apparatus building (Alt. 2)
  - b. Revised the shade structure to a 15x16 footprint
  - c. Revised multiple plant quantities in the plant schedule
- 2. Sheet L-102 JOF ENLARGEMETN PLAN
  - a. Added shrub screening around a condenser unit adjacent to the vehicle apparatus building (Alt. 2)
  - b. Revised the locations of four (4) trees around the site
- 3. Sheet L-103 EAST PARKING ENLARGEMENT PLAN
  - a. Added shrubs to the area north of the new eastern parking stalls
  - b. Revised the shade structure from the Upfit to the Scenic (both by Landscape Forms)

### Package 01/02, Addendum No. 03

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- 4. Sheet L-104 IRRIGATION PLAN
  - a. Revised the location of the 1.5-inch irrigation meter and irrigation system point of connection

#### **STRUCTURAL**

- 5. Sheet S-200 Main Level Framing Plan
  - a. Modified framing at loading dock
- 6. Sheet S-411 Floor Framing Details
  - a. Modified detail 11

#### ARCHITECTURAL

- 2. Sheet A-321 Wall Sections
  - a. Updated section A10
- 3. Sheet A-322 Wall Sections
  - a. Updated section A9
- 4. Sheet A-502 Exterior Section Details
  - a. Updated sections A1 and E1
- 5. Sheet A-503 Exterior Section details
  - a. Updated section E4
- 6. Sheet A-601- DOOR SCHEDULE, DETAILS, AND INT. WIN. TYPES
  - a. Added doors 138A, 138B, 139, 140B to schedule.
  - b. Changed hw set on door 153
  - c. Changed door material on 150
- 7. Sheet AI101- LOWER LEVEL FINISH PLAN
  - a. Added notes to clarify stair finishes
- 8. Sheet Al102 MAIN LEVEL FINISH PLAN
  - a. Added notes to clarify stair finishes

#### **PLUMBING**

- 1. Sheet P-121 LOWER LEVEL WATER AND GAS PLAN
  - a. Added underground medium pressure gas line to outdoor grill with pressure regulator and gas cock.
  - b. Revised keynote P11 to include added load from outdoor grill.
- 2. Sheet P-601 PLUMBING SCHEDULES
  - a. Added PR3 for outdoor grill.

#### **MECHANICAL**

- 1. Sheet M-101– LOWER LEVEL HVAC PLAN
  - a. Added general note 2 and 3.
  - b. Added annotations for duct dimensions.
  - c. Revised RH1 exhaust duct diameter.
- 2. Sheet M-102– MAIN LEVEL HVAC PLAN
  - a. Added Keynote 13.
  - b. Revised diffuser locations in room AC EMERG MGMT 145.
  - c. Added annotations for duct dimensions.
- 3. Sheet M-103- VEHICLE BUILDING HVAC PLAN
  - a. Revised location of AHU-V1 and associated ductwork.
  - b. Revised location of UH-V3.

### Package 01/02, Addendum No. 03

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- 4. Sheet M-111– LOWER LEVEL PIPING PLAN
  - a. Edited annotations.
  - b. Added shutoff valve.
  - c. Added Keynote 14.
- 5. Sheet M-112– MAIN LEVEL PIPING PLAN
  - a. Edited annotation.
  - b. Added Keynote 15.
- 6. Sheet M-601– MECHANICAL SCHEDULES
  - a. Revised Range Hood Schedule CFM, Width, and Diameter.
  - b. Revised electrical data in Fan Schedule.
  - c. Added Power Fuse Block option to all WSHPs.
- 7. Sheet M-602– MECHANICAL SCHEDULES
  - a. Edited Split System Schedule Note 5.

#### **ELECTRICAL**

- 1. Sheet ES101 ELECTRICAL SITE PLAN
  - a. Revised pole-mounted fixture mounting heights due to adjacent residential property.
  - b. Added pole-mounted fixture due to mounting height requirements.
- 2. Sheet E-100 LOWER LEVEL POWER PLAN
  - a. Added power for dock-leveler.
- 3. Sheet E-101 MAIN LEVEL POWER PLAN
  - a. Revised room layout due to architectural changes.
- 4. Sheet E-401 ENLARGED ELECTRICAL PLANS
  - a. Revised location of mechanical equipment per mechanical changes.
- 5. Sheet E-502 ELECTRICAL DETAILS
  - a. Revised pole-mounted fixture mounting heights due to adjacent residential property.
- 6. Sheet E-601 PANELBOARD SCHEDULES
  - a. Added power for dock-leveler.
- 7. Sheet E-621 ELECTRICAL SCHEDULES
  - a. Revised light fixture specifications due to adjacent residential property.

#### **TECHNOLOGY**

- 1. Sheet TG001 TECHNOLOGY LEGEND AND GENERAL NOTES
  - a. Revised Infrastructure schedule providing 3 data cables to Wireless Access Points.
- 2. Sheet T-100 LOWER LEVEL TECHNOLOGY PLAN
  - a. Revised Wireless Access Point Layout.
- 3. Sheet T-101 MAIN LEVEL TECHNOLOGY PLAN
  - a. Added Data Outlet in Chief 121 office.
- 4. Sheet T-502 TECHNOLOGY DETAILS
  - a. Removed duplicate infrastructure schedule as it exists on TG001.

#### ATTACHMENTS:

Specification: 015723, 087100, 230923(only updated in narrative). Sheets: G-111, C0.1, C1.0, C2.0, C2.1, C2.2, C2.3, C2.4, C3.0, C3.1, C3.2, C3.3, C3.4 C4.0, C4.1, C4.2, C5.0, C5.1, C5.2, C5.3 C6.0, C6.1, C7.5, L-101, L-102, L-103, L-104, S-200, S-411, A-

### Package 01/02, Addendum No. 03 4622 Pennsylvania Ave. Suite 1400

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321, A-322, A-502, A-503, A-601, Al101, Al102, P-121, P-601, M-101, M-102, M-103, M-111, M-112, M-601, M-602, ES101, E-100, E-101, E-401, E-502, E-601, E-621, TG001, T-100, T-101, T-502

ADDENDUM NO. 03

# FINAL STORMWATER REPORT FOR Lee's Summit Joint Operations Campus

**Project Location:** 

10 NE Tudor Road, Lee's Summit, MO 64086

BHC Project # 041470.00.01

10/16/2024 Rev : 11/15/2024



CIVIL ENGINEERING / SURVEYING / UTILITIES

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1.1 Methodology

### 2.0 Existing Conditions

- 2.1 Project Site
- 2.2 Hydrology
- 2.3 Existing Detention

### **3.0 Proposed Conditions**

- 3.1 Project Site
- 3.2 Hydrology
- 3.3 Proposed Detention

### 4.0 Downstream Analysis

- 5.0 Water Quality
- 6.0 Permitting
- 7.0 Conclusion



## **Table of Appendices**

### **Appendix A – Reference Documents**

- A1 HyrdoCAD Output Summary
- A2 Douglass Station Commercial Park Reference Documents
- A3 Spillway Design
- A4 FEMA Firmette



## **1.0 Introduction**

This Final Stormwater Management Study is prepared for the expansion of the existing Lee's Summit Joint Operations Campus located at 10 NE Tudor Road, Lee's Summit, Missouri. The purpose of this study is to evaluate the existing on-site detention pond and the impacts of the expanded development on the existing detention pond and surrounding area. The project will result in the construction of a new Fire Administration building and associated Parking.

Governing design criteria is based on the APWA 5600 comprehensive control and the capacity of the downstream system to convey discharge during the systems design events.



Figure 1: Project Location Aerial



## 1.1 Methodology

The unit hydrograph modeling for this report was conducted using TR-55 methodologies within HydroCAD.

Runoff for this report was determined using a SCS Type II 24-Hour rainfall event.

The design storms used for this report were the 2-year (50%), 10-year (10%), and 100-year (1%) events. Rainfall depths for these events were determined from NOAA Atlas 14. The table below contains these rainfall depths.

Table I: Report Design Storms

Report Design Storms							
Storm Event Rainfall Depth (in)							
2-Year	3.70						
10-Year	5.66						
100-Year	9.23						

The following documents were used as the design criteria for this report:

 Kansas City Metropolitan Chapter of APWA Standards, Specification and Design Criteria, Section 5600 (2011)

### Controlling Design Requirement

APWA 5600 requires that rainfall events are held to the following to the following release rates. 0.5 cfs for the 2-year, 2.0 cfs for the 10-yr, and 3.0 cfs for the 100-yr for any newly developed area. For this site the area considered new development would the eastern third of the site where the Fire Administration be located. BHC and the City of Lee's Summit have been unable to find the existing drainage study for the project and have not quantified release rates. BHC has reached out to the engineer of record (Bartlett and West), but was unable to obtain that information.

Additionally, BHC reviewed the receiving system to evaluate potential flooding issues down stream of the site. In this case the down stream system is the proposed storm sewer installed as part of the development of the Douglas Station Multifamily site to the north. This site is not yet developed, therefore BHC has relied on the final development plans prepared by the developer and their engineer, dated March 8, 2024. From that review BHC has determined that the developer has considered release rates from our proposed pond that pass through to the Douglas Station Commercial Park Regional Pond. From conversations between BHC and City Staff (Gene Williams and Grant White), BHC has determined that the assumed Joint Operations Center pond release rates contained within the Douglas Station Multifamily Final Development Plans should be considered the controlling design requirement.



## **2.0 Existing Conditions**

## 2.1 Project Site

The existing project site is currently occupied by the existing Lee's Summit Municipal Court Facility basin on the site grading, the project site has 11.41 acres tributary to the detention pond, and additional 0.78 acres of off-site runoff from the right-of-way of Tudor. Total tributary area is 12.19 acres.

## 2.2 Hydrology

A majority of the project site drains towards the existing detention pond. This drainage area is summarized below in Table II.

#### Table II: Existing Drainage Areas

-		AREA	AREA PERVIOUS IMPERVIOUS			CN-Value	C-VALUE		
	Total	631,858 SF	(14.51 ac)	294518.55 SF	(6.76 ac)	337,339 SF	(7.74 ac)	90	0.62
To Pond	Onsite	497,121 SF	(11.41 ac)	237177.93 SF	(5.44 ac)	259,943 SF	(5.97 ac)	89	0.61
	Offsite	33,883 SF	(0.78 ac)	12318.70 SF	(0.28 ac)	21,564 SF	(0.50 ac)	91	0.68
Not to Pond	Onsite	26,149 SF	(0.60 ac)	21777.89 SF	(0.50 ac)	4,371 SF	(0.10 ac)	83	0.40
	Offsite	74,704 SF	(1.71 ac)	23244.02 SF	(0.53 ac)	51,460 SF	(1.18 ac)	92	0.71

The drainage area was analyzed in HydroCAD, using TR-55 methodologies to calculate the peak runoff from the existing site in the 2-, 10-, and 100-year storm events to the existing detention pond. These calculations are found in Appendix A1. Table III below summarizes these quantities.

Table III: Existing Site Generated Runoff

Existing Site Generated Runoff (cfs)							
2-Year 10-Year 100-Year							
47.16	78.42	134.50					

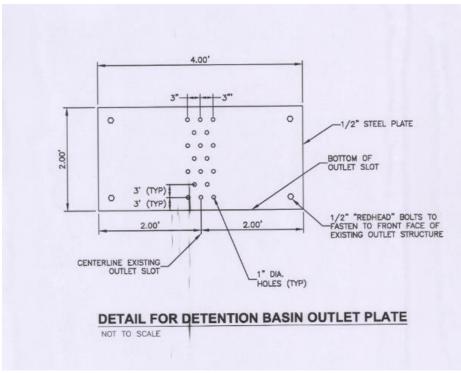


## 2.3 Existing Detention

The existing detention pond was evaluated in all runoff events. The storm events are attenuated through the pond by two existing 30" CMP culvert pipes. During the 2013 modifications to the site a 2-ft plate with multiple orifices was added to detention pond, an image of this control structure is below. The Stormwater Management Study from 2013 modification has not been found at the time this report was submitted, therefore, BHC evaluated the flow through the pond based on the conditions that presently exist. This results in the following pond peak release rates:

	Existing Detention Pond								
Storm									
Event	Peak Release (cfs)	Peak Release (cfs)	Release (CFS)	Elevation					
2-year	29.89	0	29.89	1002.57					
10-year	53.31	1.89	55.21	1003.29					
100-year	73.08	42.83	115.91	1003.97					

Due to the activation of the overflow spillway in the 10-year event, BHC believes that the existing pond is undersized, based on the established Design Methodology Section 1.1 of this report. Therefore, additional volume is needed with the proposed modification to address the current undersized pond.







## **3.0 Proposed Condition**

### 3.1 **Project Site**

The project will result in the construction of a Fire Administration building, associated parking and site grading changes. This will result in an increase of the tributary area to the detention pond from 12.19 acres to 12.39 (11.59 acres from project site and 0.8 acres from Tudor right-of-way).

## 3.2 Hydrology

A majority of the project site drains towards the existing detention pond. This drainage area is summarized below in Table IV.

#### Table IV: Proposed Drainage Areas

		AREA	AREA PERVIOUS IMPERVIOUS			<b>CN-Value</b>	C-VALUE		
	Total	632,704 SF	(14.52 ac)	226,996 SF	(5.21 ac)	405,708 SF	(9.31 ac)	92	0.68
To Pond	Onsite	504,869 SF	(11.59 ac)	175,873 SF	(4.04 ac)	328,996 SF	(7.55 ac)	92	0.69
	Offsite	34,740 SF	(0.80 ac)	13,154 SF	(0.30 ac)	21,586 SF	(0.50 ac)	91	0.67
Not to Pond	Onsite	19,248 SF	(0.44 ac)	15,814 SF	(0.36 ac)	3,434 SF	(0.08 ac)	83	0.41
	Offsite	73,848 SF	(1.70 ac)	22,155 SF	(0.51 ac)	51,692 SF	(1.19 ac)	93	0.72

The drainage area was analyzed in HydroCAD, using TR-55 methodologies to calculate the peak runoff from the existing site in the 2-, 10-, and 100-year storm events. These calculations are found in Appendix A1. Table V below summarizes these quantities.

#### Table V: Proposed Site Generated Runoff

Proposed Site Generated Runoff (cfs)							
2-Year 10-Year 100-Year							
50.58	82.12	138.64					

The proposed development of the site results in an increase in peak runoff rates in all analyzed storm events. To manage runoff to pre-development levels the existing detention pond will need to be expanded.



## 3.3 Controlling Release Rate

### Downstream Analysis

The City of Lee's Summit provided the Final Development Plans submitted by for the multifamily development located north of the project site. BHC has reviewed the plans and sheet C202 indicates that a release rate from the pond located on the Joint Operations Center property considered a release rate of 36 cfs in the 10-year storm, and 54 CFS in the 100-year storm.

Additionally, the current overflow spillway discharges to the proposed Douglas Station Multi-Family Project. The current spillway location creates a potential of flooding of downstream Multi-Family site. Therefore, this proposed design includes raising the top of the north berm elevation of the detention pond to 1005.50. This allows for the construction of spillway to west towards Commerce Drive and minimizes downstream flooding during an emergency overflow event.

### 3.3 Proposed Detention

Detention will be provided by modification of the existing dry detention pond. Presently, the outlet of the pond includes two 30" CMP outlet pipes, the proposed solutions considers replacing the existing CMP structures an outlet control structure with a weir wall. The weir wall will have a 3" opening for the water quality storm (extended dry detention released over 40 hours). The 10 and 100-yr events will be controlled by 4" wide by 18" tall opening. The depth an area of the pond has been increased to allow for (1) additional detention and (2) a direct connection to the proposed inlet 1-6 located on the development to the north.

Information regarding the downstream system has been provided in Appendix A2.

Proposed Detention Pond						
Storm Event	Peak Release (cfs)	Stage Storage Elevation				
Water Quality	0.37	997.5				
*2-year	23.73	999.49				
10-year	34.50	1000.85				
100-year	55.61	1002.75				
Bottom of Spillway		1003.75				
**Top of Spillway		1004.70				
Top of Berm		1005.50				

This controls the release rate to the flows assumed for the project.

\*The 2-year event was not defined in the downstream system.

\*\*Spillway sizing is provided in Appendix A3.



### Emergency Overflow Spillway

As previously discussed, the current emergency overflow spillway discharges onto property proposed for multifamily construction. This creates potential for downstream flooding during an event that activates the emergency spillway. To prevent this the proposed design raises the top of berm height to 1005.50 and relocates the spillway to the discharge on Commerce Drive. To provide the flow required for the 100-year event the spillway will need to be constructed of concrete and include a retaining wall to stabilize the berm along the northside of the site. This location and detailing of the spillway are indicated on Sheet C3.3 in the project plans.

The current spillway design provides 0.8-ft of freeboard between the top of spillway flow elevation and the top of berm. Per Gene Williams review comments dated November 1, 2024, if 0.8-ft of freeboard can be provider a waiver from APWA 5600 is not required.



## 4.0 Downstream Analysis

As previously discussed BHC reviewed downstream infrastructure as part of this analysis. The site discharges to a currently undeveloped site that has an active Final Development Plan in review by the City of Lee's Summit. The proposed development includes installation of an enclosed storm sewer system through the property replacing the existing channel. The proposed detention meets the allowed release rates to that system from the on-site pond. However, the site does not have surface flow capacity for the emergency overflow event required by APWA 5600. Therefore, the proposed design relocates the existing overflow spillway to discharge to Commerce Drive. As part of the Stormwater Management Study. Downstream conditions were considered.

Additionally, BHC recommends a direct connection to the Douglas Station Muli-Family system to in lieu of an overland flow.



## 4.0 Water Quality

Per the Lee Summit design and construction manual "volumetric and/or extended detention control of the 90% mean annual event storm event shall be provided for broad protection of the receiving system, including channel erosion protection and flood peak reductions over a range of return periods."

This is achieved as described above with the use of the restricted 3" orifice to manage runoff from the 1.37 inch event.



## 6.0 Permitting

## 6.1 United State Army Corps of Engineers (USACE)

The National Wetland Inventory and USGS Mapping does not Identify and jurisdictional waters within the site area. There are no known USACE regulated levees with 500-feet of the site.

## 6.2 Federal Emergency Management Agency (FEMA)

The site is located within the Zone X, and outside of the 1% and 0.2% annual chance flood hazard, as shown on FEMA FIRM Map 29095C0417G, effective 1/20/2017. The FEMA Firmette for the project site can be found in Appendix A4

## 6.3 Missouri Department of Natural Resources (MoDNR)

The area to be disturbed by the project site exceeds 1-arce; a Notice of Intent (NOI) is required to be submitted to MoDNR and a Stormwater Pollution Prevention Plan (SWPPP) will be prepared for the project.



## 6.0 Conclusion

Multiple stormwater control criteria were considered for the development of the proposed project. It was also determined that the existing pond is undersized as the overflow spillway is activated in the 10-year event. Therefore, the existing undersize of this pond needs addressed as part of the proposed improvements.

It was determined that limiting release rate criteria is the capacity of the proposed Douglas Station Multifamily storm sewer system. The design rates of the Joint Operations Center to the receiving storm sewer system were considered the controlling design criteria.

The existing overflow spillway discharging to the Douglas Station project is proposed to be relocated to discharge to Commerce Drive.

Additionally, the stormwater design meets the Lee's Summit Design and Construction manual requirements for water quality control through the use of an Extended Dry Detention system.



## **Appendix A – Reference Documents**

- A1 HyrdoCAD Output Summary
- A2 Douglass Station Commercial Park Reference Documents
- A3 Spillway Design
- A4 FEMA Firmette
- A5 Drainage Maps

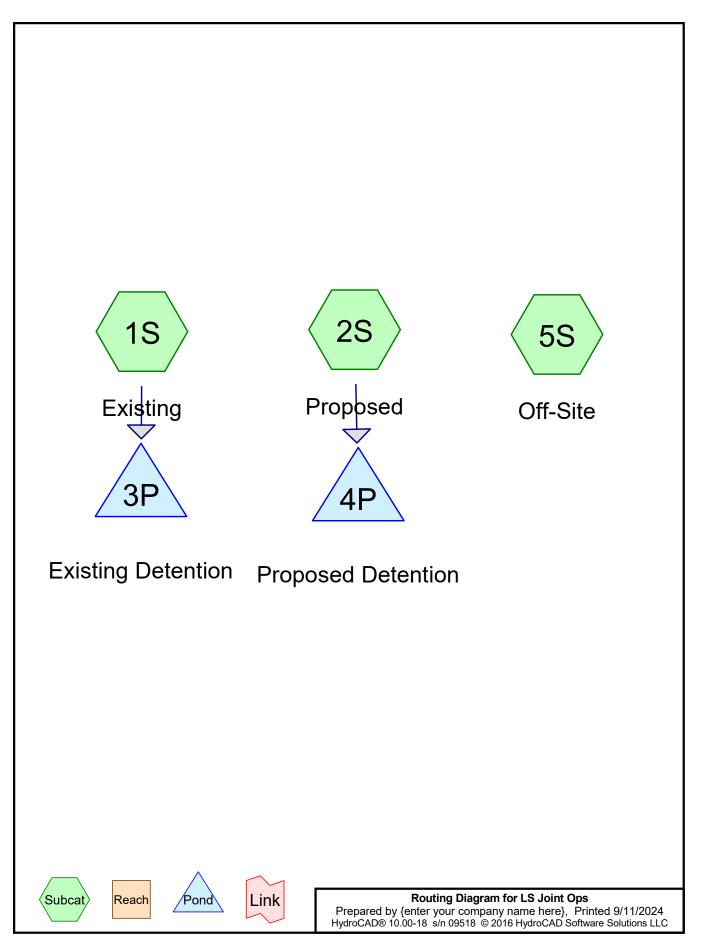


## **Appendix A – Reference Documents**

- A1 HyrdoCAD Output Summary
- A2 Douglass Station Commercial Park Reference Documents
- A3 Spillway Design
- A4 FEMA Firmette
- A5 Drainage Maps



Appendix A1



### Area Listing (all nodes)

Area	CN	Description			
(acres)		(subcatchment-numbers)			
12.190	90	(1S)			
12.390	92	(2S)			
0.500	91	(5S)			
25.080	91	TOTAL AREA			

### Soil Listing (all nodes)

Area	Soil	Subcatchment
(acres)	Group	Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
25.080	Other	1S, 2S, 5S
25.080		TOTAL AREA

Ground	Covers	(all	nodes)	

HSG-A	HSG-B	HSG-C	HSG-D	Other	Total	Ground	Subcatchment
(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	Cover	Numbers
0.000 <b>0.000</b>	0.000 <b>0.000</b>	0.000 <b>0.000</b>	0.000 <b>0.000</b>	25.080 <b>25.080</b>	25.080 <b>25.080</b>	TOTAL AREA	1S, 2S, 5S

LS Joint Ops	
Prepared by {enter your company name here}	Printe
HydroCAD® 10.00-18 s/n 09518 © 2016 HydroCAD Software Solutions LLC	

#### Line# Node In-Invert Out-Invert Length Slope Diam/Width Height Inside-Fill n (feet) (ft/ft) (inches) Number (feet) (feet) (inches) (inches) 3P 999.50 999.00 40.0 0.0125 0.025 30.0 0.0 1 0.0 2 4P 994.90 994.50 40.0 0.0100 0.012 30.0 0.0 0.0

### Pipe Listing (all nodes)

LS Joint Ops	Type II 24-hr 2-year Rainfall=3.70"
Prepared by {enter your company name here}	Printed 9/11/2024
HydroCAD® 10.00-18 s/n 09518 © 2016 HydroCAD Software Solutions	LLC Page 6
	-

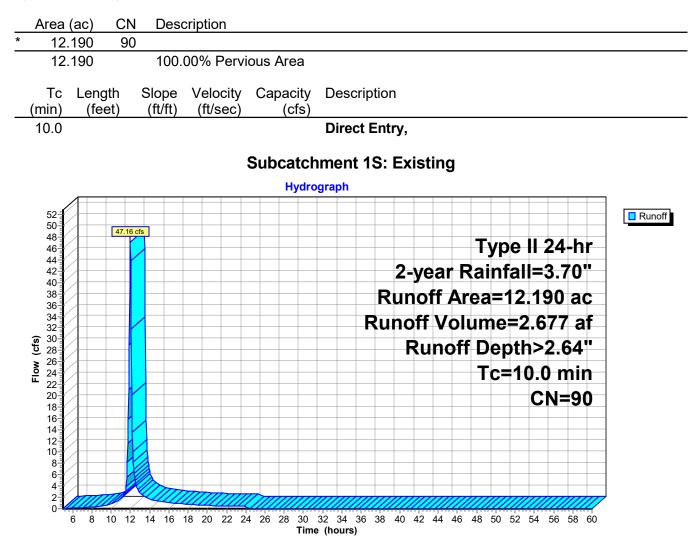
Time span=5.00-60.00 hrs, dt=0.05 hrs, 1101 points Runoff by SCS TR-20 method, UH=SCS, Weighted-CN Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing	Runoff Area=12.190 ac 0.00% Impervious Runoff Depth>2.64" Tc=10.0 min CN=90 Runoff=47.16 cfs 2.677 af
Subcatchment 2S: Proposed	Runoff Area=12.390 ac 0.00% Impervious Runoff Depth>2.83" Tc=10.0 min CN=92 Runoff=50.58 cfs 2.918 af
Subcatchment 5S: Off-Site	Runoff Area=0.500 ac 0.00% Impervious Runoff Depth>2.73" Tc=5.0 min CN=91 Runoff=2.33 cfs 0.114 af
Pond 3P: Existing Detention Primary=29.89 cfs	Peak Elev=1,002.57' Storage=33,368 cf Inflow=47.16 cfs 2.677 af 2.670 af Secondary=0.00 cfs 0.000 af Outflow=29.89 cfs 2.670 af
Pond 4P: Proposed Detention	Peak Elev=999.49' Storage=49,259 cf Inflow=50.58 cfs 2.918 af Outflow=23.73 cfs 2.918 af
Total Runoff Area = 25.080	ac Runoff Volume = 5.709 af Average Runoff Depth = 2.73" 100.00% Pervious = 25.080 ac 0.00% Impervious = 0.000 ac

#### Summary for Subcatchment 1S: Existing

Runoff = 47.16 cfs @ 12.01 hrs, Volume= 2.677 af, Depth> 2.64"

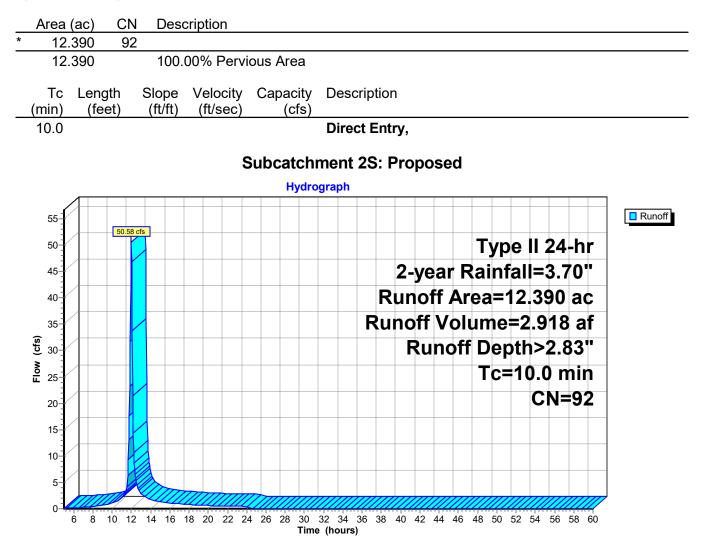
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Type II 24-hr 2-year Rainfall=3.70"



#### Summary for Subcatchment 2S: Proposed

Runoff = 50.58 cfs @ 12.01 hrs, Volume= 2.918 af, Depth> 2.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Type II 24-hr 2-year Rainfall=3.70"

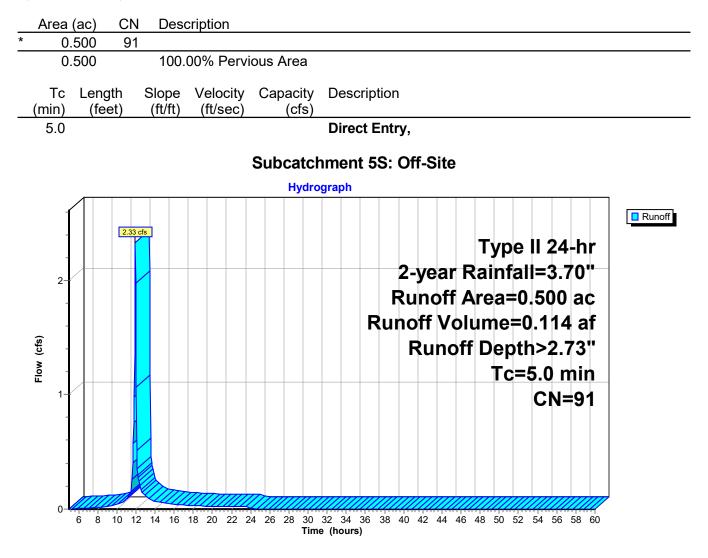


#### Summary for Subcatchment 5S: Off-Site

[49] Hint: Tc<2dt may require smaller dt

Runoff = 2.33 cfs @ 11.95 hrs, Volume= 0.114 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Type II 24-hr 2-year Rainfall=3.70"



#### Summary for Pond 3P: Existing Detention

Inflow Area =	12.190 ac,	0.00% Impervious, Inflow D	epth > 2.64" for 2-year event
Inflow =	47.16 cfs @	12.01 hrs, Volume=	2.677 af
Outflow =	29.89 cfs @	12.11 hrs, Volume=	2.670 af, Atten= 37%, Lag= 6.0 min
Primary =	29.89 cfs @	12.11 hrs, Volume=	2.670 af
Secondary =	0.00 cfs @	5.00 hrs, Volume=	0.000 af

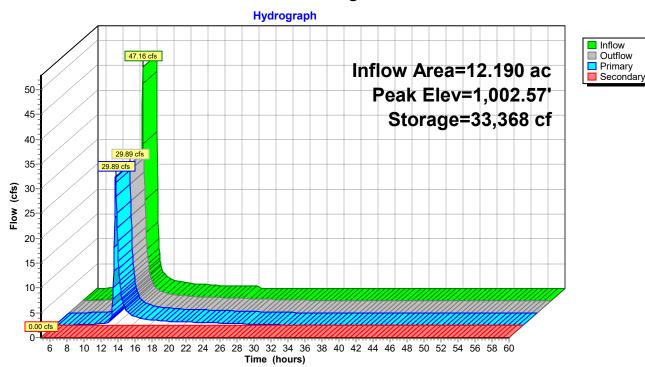
Routing by Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Peak Elev= 1,002.57' @ 12.11 hrs Surf.Area= 18,484 sf Storage= 33,368 cf

Plug-Flow detention time= 87.9 min calculated for 2.668 af (100% of inflow) Center-of-Mass det. time= 86.7 min ( 888.6 - 802.0 )

Volume	Invert	Avail.Sto	rage Storage l	Description	
#1	999.00'	88,38	35 cf Custom	Stage Data (Pris	matic) Listed below (Recalc)
	-	<b>5</b> A			
Elevatio		rf.Area	Inc.Store	Cum.Store	
(fee	/	(sq-ft)	(cubic-feet)	(cubic-feet)	
999.0	-	10	0	0	
1,000.0		2,580	1,295	1,295	
1,001.0		12,035	7,308	8,603	
1,002.0		17,125	14,580	23,183	
1,003.0		19,500	18,313	41,495	
1,004.0		22,140	20,820	62,315	
1,005.0	00	30,000	26,070	88,385	
Device	Routing	Invert	Outlet Devices		
#1	Primary	999.50'		CMP_Round 30'	
					eadwall, Ke= 0.500
					99.00' S= 0.0125 '/' Cc= 0.900
			,	w Area= 4.91 sf	
#2	Device 1	999.25'	1.0" Vert. Orif	ice/Grate X 3.00	
#3	Device 1	999.50'		ice/Grate X 2.00	
#4	Device 1	999.75'		ice/Grate X 3.00	
#5	Device 1	1,000.00'		ice/Grate X 2.00	
#6	Device 1	1,000.25'		ice/Grate X 3.00	
#7	Device 1	1,000.50'		ice/Grate X 2.00	
#8	Device 1	1,000.75'		ice/Grate X 3.00	
#9	Secondary	1,003.20'			ad-Crested Rectangular Weir
					80 1.00 1.20 1.40 1.60
					) 2.64 2.63 2.64 2.64 2.63
#10	Device 1	1,001.00'	•	-	ngular Weir 2 End Contraction(s)
			1.0' Crest Heig	ght	

Primary OutFlow Max=29.57 cfs @ 12.11 hrs HW=1,002.56' (Free Discharge) 1=CMP\_Round 30" (Passes 29.57 cfs of 52.84 cfs potential flow) 2=Orifice/Grate (Orifice Controls 0.14 cfs @ 8.42 fps) 3=Orifice/Grate (Orifice Controls 0.09 cfs @ 8.37 fps) 4=Orifice/Grate (Orifice Controls 0.13 cfs @ 8.01 fps) 5=Orifice/Grate (Orifice Controls 0.08 cfs @ 7.64 fps) 6=Orifice/Grate (Orifice Controls 0.12 cfs @ 7.25 fps) 7=Orifice/Grate (Orifice Controls 0.92 cfs @ 6.25 fps) 10=Sharp-Crested Rectangular Weir (Weir Controls 28.01 cfs @ 4.87 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=999.00' (Free Discharge) —9=Broad-Crested Rectangular Weir (Controls 0.00 cfs)



### Pond 3P: Existing Detention

#### Summary for Pond 4P: Proposed Detention

[82] Warning: Early inflow requires earlier time span

Inflow Area =	12.390 ac,	0.00% Impervious, Inflow D	epth > 2.83" for 2-year event
Inflow =	50.58 cfs @	12.01 hrs, Volume=	2.918 af
Outflow =	23.73 cfs @	12.15 hrs, Volume=	2.918 af, Atten= 53%, Lag= 8.2 min
Primary =	23.73 cfs @	12.15 hrs, Volume=	2.918 af

Routing by Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Peak Elev= 999.49' @ 12.15 hrs Surf.Area= 17,706 sf Storage= 49,259 cf

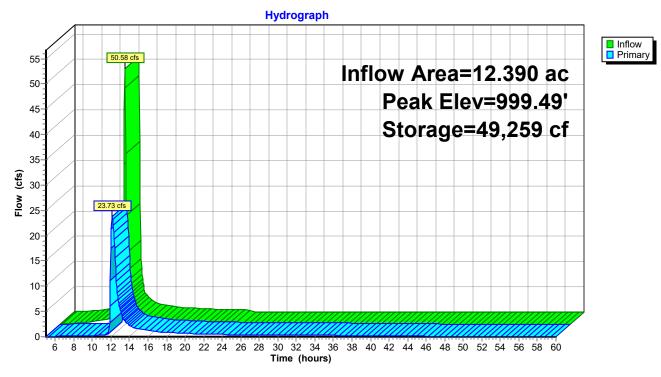
Plug-Flow detention time= 238.1 min calculated for 2.915 af (100% of inflow) Center-of-Mass det. time= 239.1 min (1,032.7 - 793.6)

Volume	Inve	rt Avail.Sto	rage Storage	Description	
#1	995.0	0' 153,44	48 cf Custom	Stage Data (Pri	smatic) Listed below (Recalc)
		~ ~ ~			
Elevatio		Surf.Area	Inc.Store	Cum.Store	
(feet	1	(sq-ft)	(cubic-feet)	(cubic-feet)	
995.0	-	50	0	0	
996.0		8,213	4,132	4,132	
997.0		10,000	9,107	13,238	
998.0		14,340	12,170	25,408	
999.00		16,580	15,460	40,868	
1,000.00		18,880	17,730	58,598	
1,001.00		21,240	20,060	78,658	
1,002.0		23,640	22,440	101,098	
1,003.00		26,110	24,875	125,973	
1,004.00	0	28,840	27,475	153,448	
<b>D</b> .	<b>Б</b> (;				
	Routing	Invert	Outlet Devices		
#1	Primary	994.90'	30.0" Round		
					eadwall, Ke= 0.500
					994.50' S= 0.0100 '/' Cc= 0.900
			,	w Area= 4.91 sf	
	Device 1	995.00'		fice/Grate C= (	
#3	Device 1	997.62'		0" H Vert. Orific	
#4	Primary	1,001.10'	24.0" W x 12.0	0" H Vert. Orific	e/Grate C= 0.600
	0.451	Max-00 70 afa	@ 40.45 has 11		
				W=999.49' (Fr	ee Discharge)
	•		of 43.17 cfs pote $0.49$ cfs (	,	

**2=Orifice/Grate** (Orifice Controls 0.49 cfs @ 10.05 fps)

**3=Orifice/Grate** (Orifice Controls 23.20 cfs @ 5.30 fps)

-4=Orifice/Grate (Controls 0.00 cfs)



### Pond 4P: Proposed Detention

LS Joint Ops	Type II 24-hr	10-year Rainfall=5.66"
Prepared by {enter your company name here}		Printed 9/11/2024
HydroCAD® 10.00-18 s/n 09518 © 2016 HydroCAD Software Solutions	s LLC	Page 14
Time span=5.00-60.00 hrs, dt=0.05 hrs,	1101 points	-

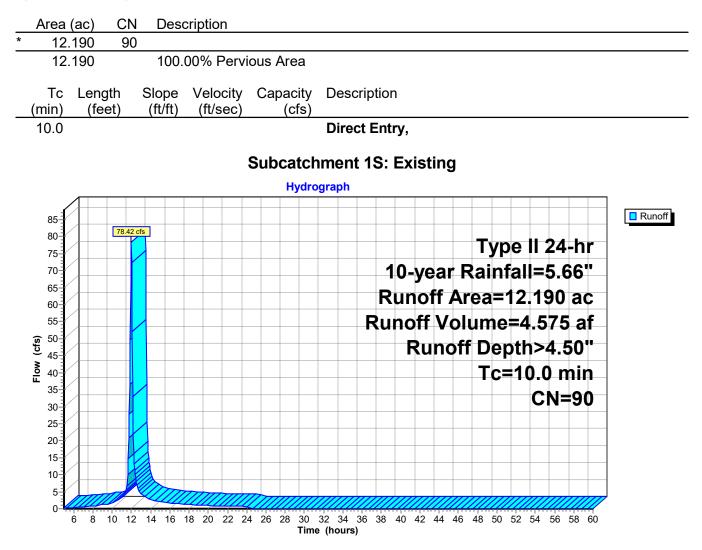
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing	Runoff Area=12.190 ac 0.00% Impervious Runoff Depth>4.50" Tc=10.0 min CN=90 Runoff=78.42 cfs 4.575 af
Subcatchment 2S: Proposed	Runoff Area=12.390 ac 0.00% Impervious Runoff Depth>4.71" Tc=10.0 min CN=92 Runoff=82.12 cfs 4.862 af
Subcatchment 5S: Off-Site	Runoff Area=0.500 ac 0.00% Impervious Runoff Depth>4.61" Tc=5.0 min CN=91 Runoff=3.81 cfs 0.192 af
Pond 3P: Existing Detention Primary=53.31 cfs	Peak Elev=1,003.29' Storage=47,320 cf Inflow=78.42 cfs 4.575 af 4.559 af Secondary=1.89 cfs 0.009 af Outflow=55.21 cfs 4.568 af
Pond 4P: Proposed Detention	Peak Elev=1,000.85' Storage=75,559 cf Inflow=82.12 cfs 4.862 af Outflow=34.50 cfs 4.862 af
Total Runoff Area = 25.08	0 ac Runoff Volume = 9.629 af Average Runoff Depth = 4.61" 100.00% Pervious = 25.080 ac 0.00% Impervious = 0.000 ac

#### Summary for Subcatchment 1S: Existing

Runoff = 78.42 cfs @ 12.01 hrs, Volume= 4.575 af, Depth> 4.50"

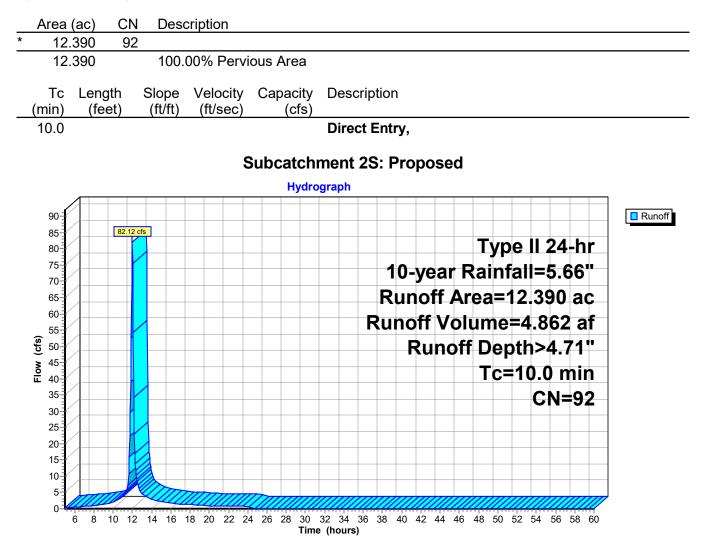
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Type II 24-hr 10-year Rainfall=5.66"



## Summary for Subcatchment 2S: Proposed

Runoff = 82.12 cfs @ 12.01 hrs, Volume= 4.862 af, Depth> 4.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Type II 24-hr 10-year Rainfall=5.66"

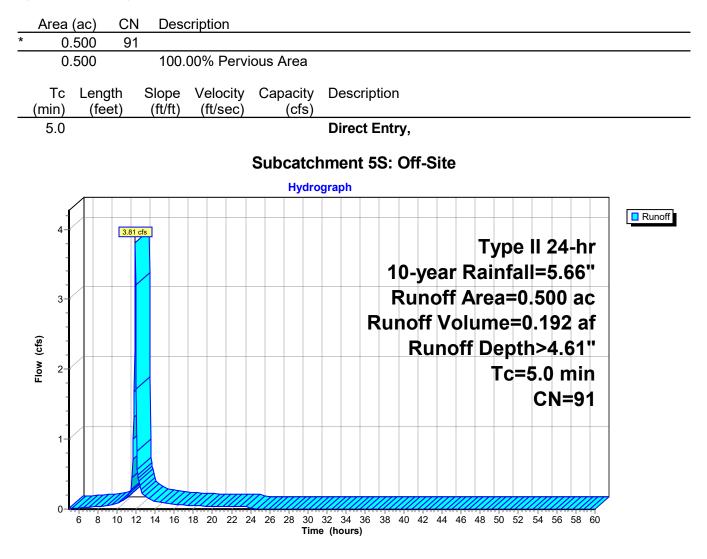


## Summary for Subcatchment 5S: Off-Site

[49] Hint: Tc<2dt may require smaller dt

Runoff = 3.81 cfs @ 11.95 hrs, Volume= 0.192 af, Depth> 4.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Type II 24-hr 10-year Rainfall=5.66"



## Summary for Pond 3P: Existing Detention

[82] Warning: Early inflow requires earlier time span

Inflow Area =	12.190 ac,	0.00% Impervious, Inflow D	epth > 4.50" for 10-year event
Inflow =	78.42 cfs @	12.01 hrs, Volume=	4.575 af
Outflow =	55.21 cfs @	12.10 hrs, Volume=	4.568 af, Atten= 30%, Lag= 5.4 min
Primary =	53.31 cfs @	12.10 hrs, Volume=	4.559 af
Secondary =	1.89 cfs @	12.10 hrs, Volume=	0.009 af

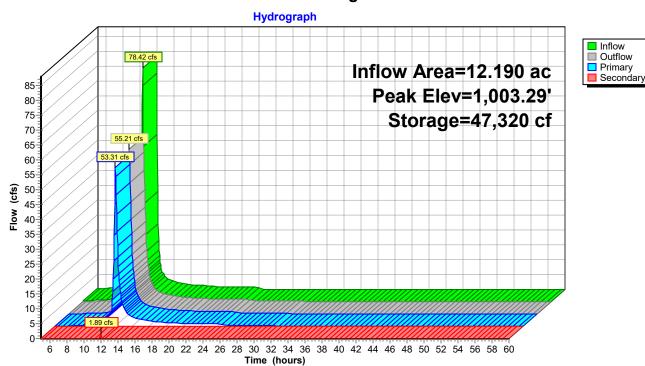
Routing by Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Peak Elev= 1,003.29' @ 12.10 hrs Surf.Area= 20,273 sf Storage= 47,320 cf

Plug-Flow detention time= 66.2 min calculated for 4.567 af (100% of inflow) Center-of-Mass det. time= 64.4 min ( 852.7 - 788.3 )

Volume	Invert	Avail.Sto	rage Storage	Description	
#1	999.00'	88,38	35 cf Custom	Stage Data (Pris	matic) Listed below (Recalc)
Elevatio		urf.Area	Inc.Store	Cum.Store	
fee		(sq-ft)	(cubic-feet)	(cubic-feet)	
999.0	,	<u>(34-11)</u> 10	0	0	
1,000.0	-	2,580	1,295	1,295	
1,000.0		12,035	7,308	8,603	
1,002.0		17,125	14,580	23,183	
1,003.0		19,500	18,313	41,495	
1,004.0		22,140	20,820	62,315	
1,005.0	00	30,000	26,070	88,385	
Device	Routing	Invert	Outlet Devices	S	
#1	Primary	999.50'		CMP_Round 30'	
					eadwall, Ke= 0.500
					99.00' S= 0.0125 '/' Cc= 0.900
			,	w Area= 4.91 sf	
#2	Device 1	999.25'		fice/Grate X 3.00	C= 0.600
#3	Device 1	999.50'		fice/Grate X 2.00	
#4	Device 1	999.75'		fice/Grate X 3.00	
#5	Device 1	1,000.00'		fice/Grate X 2.00	
#6 #7	Device 1 Device 1	1,000.25'		fice/Grate X 3.00 fice/Grate X 2.00	
#7 #8	Device 1 Device 1	1,000.50' 1,000.75'		fice/Grate X 3.00	
#0 #9	Secondary	,			ad-Crested Rectangular Weir
#3	Secondary	1,005.20			80 1.00 1.20 1.40 1.60
					) 2.64 2.63 2.64 2.64 2.63
#10	Device 1	1,001.00'			ngular Weir 2 End Contraction(s)
		.,	1.0' Crest Hei		
				-	

Primary OutFlow Max=53.25 cfs @ 12.10 hrs HW=1,003.29' (Free Discharge) 1=CMP\_Round 30" (Passes 53.25 cfs of 62.25 cfs potential flow) 2=Orifice/Grate (Orifice Controls 0.15 cfs @ 9.38 fps) 3=Orifice/Grate (Orifice Controls 0.10 cfs @ 9.32 fps) 4=Orifice/Grate (Orifice Controls 0.15 cfs @ 9.01 fps) 5=Orifice/Grate (Orifice Controls 0.09 cfs @ 8.68 fps) 6=Orifice/Grate (Orifice Controls 0.14 cfs @ 8.34 fps) 7=Orifice/Grate (Orifice Controls 1.10 cfs @ 7.48 fps) 10=Sharp-Crested Rectangular Weir (Weir Controls 51.43 cfs @ 6.34 fps)

Secondary OutFlow Max=1.79 cfs @ 12.10 hrs HW=1,003.29' (Free Discharge) —9=Broad-Crested Rectangular Weir (Weir Controls 1.79 cfs @ 0.81 fps)



## Pond 3P: Existing Detention

## Summary for Pond 4P: Proposed Detention

[82] Warning: Early inflow requires earlier time span

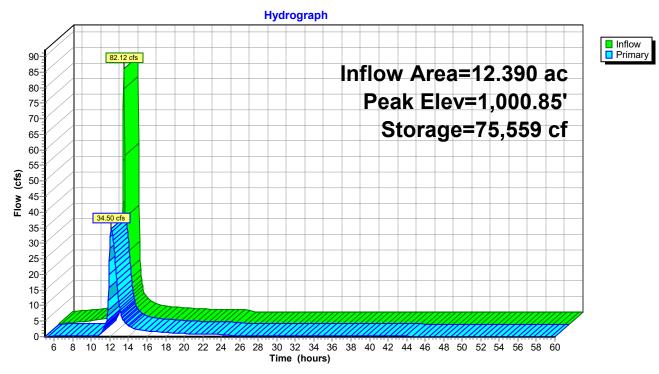
Inflow Area =	12.390 ac,	0.00% Impervious, Inflo	w Depth > 4.71" for 10-year event
Inflow =	82.12 cfs @	12.01 hrs, Volume=	4.862 af
Outflow =	34.50 cfs @	12.16 hrs, Volume=	4.862 af, Atten= 58%, Lag= 8.9 min
Primary =	34.50 cfs @	12.16 hrs, Volume=	4.862 af

Routing by Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Peak Elev= 1,000.85' @ 12.16 hrs Surf.Area= 20,893 sf Storage= 75,559 cf

Plug-Flow detention time= 164.0 min calculated for 4.857 af (100% of inflow) Center-of-Mass det. time= 164.9 min (947.0 - 782.2)

Volume	Inver	t Avail.Sto	rage Storage [	Description			
#1	995.00	' 153,44	48 cf Custom	Stage Data (Pris	matic) Lis	ted below (I	Recalc)
Flovetio	- C	urf.Area	Inc.Store	Cum Store			
Elevatio (fee		(sq-ft)	(cubic-feet)	Cum.Store (cubic-feet)			
995.0	/	<u>(3q-1t)</u> 50	0	0			
995.0 996.0	-	8,213	4,132	4,132			
997.0		10,000	9,107	13,238			
998.0		14,340	12,170	25,408			
999.0		16,580	15,460	40,868			
1,000.0	-	18,880	17,730	58,598			
1,001.0		21,240	20,060	78,658			
1,002.0		23,640	22,440	101,098			
1,003.0		26,110	24,875	125,973			
1,004.0	0	28,840	27,475	153,448			
Device	Routing	Invert	Outlet Devices	i			
#1	Primary	994.90'	30.0" Round	Culvert			
	,		L= 40.0' CPP	, square edge he	adwall, K	e= 0.500	
			Inlet / Outlet In	vert= 994.90' / 9	94.50' S=	= 0.0100 '/'	Cc= 0.900
			n= 0.012, Flow	v Area= 4.91 sf			
#2	Device 1	995.00'		i <b>ce/Grate</b> C= 0.	.600		
#3	Device 1	997.62'		" H Vert. Orifice		C= 0.600	
#4	Primary	1,001.10'	24.0" W x 12.0	" H Vert. Orifice	/Grate C	C= 0.600	
1=Cu	Primary OutFlow Max=34.45 cfs @ 12.16 hrs HW=1,000.84' (Free Discharge)						
			ontrols 0.57 cfs ( ontrols 33.88 cfs				

-4=Orifice/Grate (Controls 0.00 cfs)



## Pond 4P: Proposed Detention

LS Joint Ops	Type II 24-hr	100-year Rainfall=9.23"
Prepared by {enter your company name here}		Printed 9/11/2024
HydroCAD® 10.00-18 s/n 09518 © 2016 HydroCAD Software Solution	is LLC	Page 22
		-

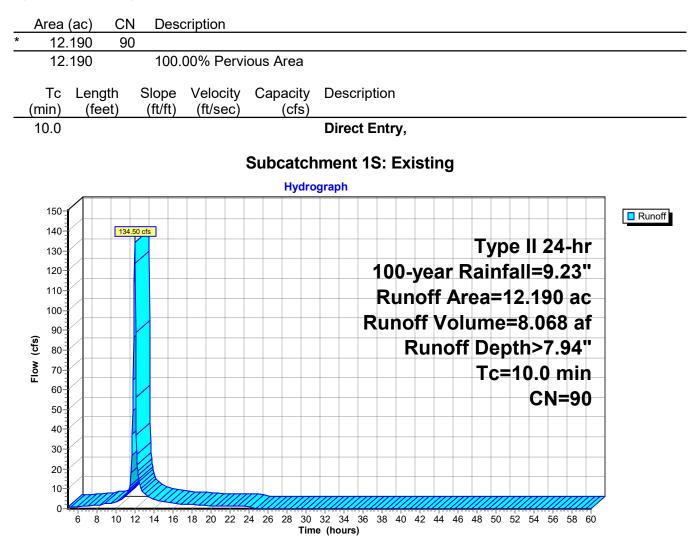
Time span=5.00-60.00 hrs, dt=0.05 hrs, 1101 points Runoff by SCS TR-20 method, UH=SCS, Weighted-CN Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing	Runoff Area=12.190 ac  0.00% Impervious  Runoff Depth>7.94" Tc=10.0 min  CN=90  Runoff=134.50 cfs  8.068 af
Subcatchment 2S: Proposed	Runoff Area=12.390 ac 0.00% Impervious Runoff Depth>8.15" Tc=10.0 min CN=92 Runoff=138.64 cfs 8.411 af
Subcatchment 5S: Off-Site	Runoff Area=0.500 ac 0.00% Impervious Runoff Depth>8.04" Tc=5.0 min CN=91 Runoff=6.47 cfs 0.335 af
Pond 3P: Existing Detention Primary=73.08 cfs	Peak Elev=1,003.97' Storage=61,626 cf Inflow=134.50 cfs 8.068 af 7.468 af Secondary=42.83 cfs 0.592 af Outflow=115.91 cfs 8.060 af
Pond 4P: Proposed Detention	Peak Elev=1,002.75' Storage=119,612 cf Inflow=138.64 cfs 8.411 af Outflow=55.61 cfs 8.411 af
Total Runoff Area = 25.0	80 ac Runoff Volume = 16.814 af Average Runoff Depth = 8.04" 100.00% Pervious = 25.080 ac 0.00% Impervious = 0.000 ac

## Summary for Subcatchment 1S: Existing

Runoff = 134.50 cfs @ 12.01 hrs, Volume= 8.068 af, Depth> 7.94"

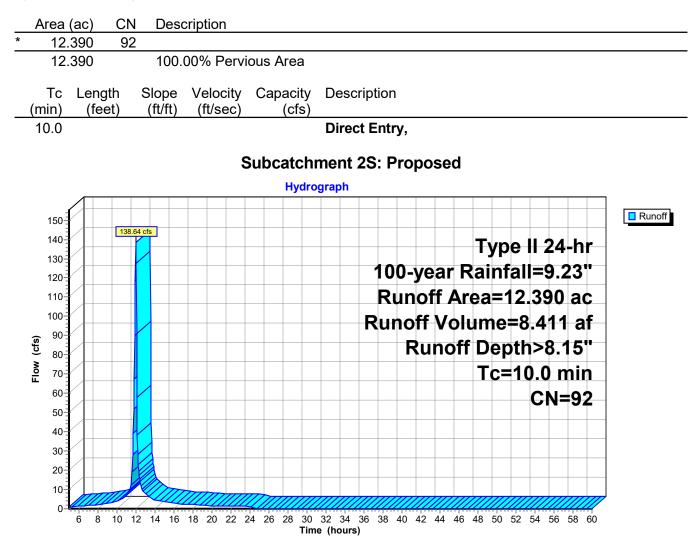
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Type II 24-hr 100-year Rainfall=9.23"



## Summary for Subcatchment 2S: Proposed

Runoff = 138.64 cfs @ 12.01 hrs, Volume= 8.411 af, Depth> 8.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Type II 24-hr 100-year Rainfall=9.23"

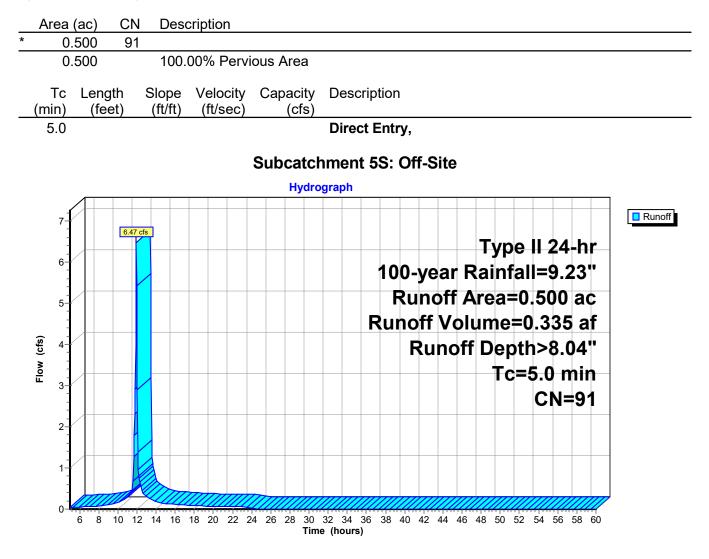


### Summary for Subcatchment 5S: Off-Site

[49] Hint: Tc<2dt may require smaller dt

Runoff = 6.47 cfs @ 11.95 hrs, Volume= 0.335 af, Depth> 8.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Type II 24-hr 100-year Rainfall=9.23"



## Summary for Pond 3P: Existing Detention

[82] Warning: Early inflow requires earlier time span

Inflow Area =	12.190 ac,	0.00% Impervious, Inflow	Depth > 7.94" for 100-year event
Inflow =	134.50 cfs @	12.01 hrs, Volume=	8.068 af
Outflow =	115.91 cfs @	12.06 hrs, Volume=	8.060 af, Atten= 14%, Lag= 3.4 min
Primary =	73.08 cfs @	12.06 hrs, Volume=	7.468 af
Secondary =	42.83 cfs @	12.06 hrs, Volume=	0.592 af

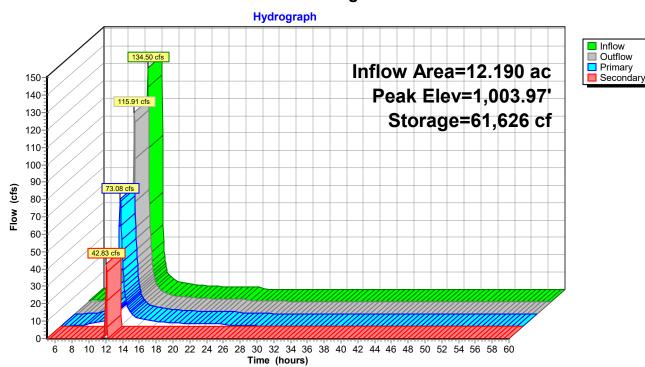
Routing by Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Peak Elev= 1,003.97' @ 12.06 hrs Surf.Area= 22,058 sf Storage= 61,626 cf

Plug-Flow detention time= 46.9 min calculated for 8.059 af (100% of inflow) Center-of-Mass det. time= 45.4 min ( 822.5 - 777.1 )

Volume	Invert	Avail.Sto	rage Storage I	Description	
#1	999.00'	88,38	35 cf Custom	Stage Data (Prisi	matic) Listed below (Recalc)
Elevatio		urf.Area	Inc.Store	Cum.Store	
fee		(sq-ft)	(cubic-feet)	(cubic-feet)	
999.0	/	<u>(34-11)</u> 10	0	0	
1,000.0	-	2,580	1,295	1,295	
1,000.0		12,035	7,308	8,603	
1,001.0		17,125	14,580	23,183	
1,003.0		19,500	18,313	41,495	
1,004.0		22,140	20,820	62,315	
1,005.0		30,000	26,070	88,385	
,					
Device	Routing	Invert	Outlet Devices	6	
#1	Primary	999.50'	30.0" Round	CMP_Round 30'	' X 2.00
	-		L= 40.0' CMF	P, square edge he	eadwall, Ke= 0.500
			Inlet / Outlet In	vert= 999.50' / 99	99.00' S= 0.0125 '/' Cc= 0.900
			,	v Area= 4.91 sf	
#2	Device 1	999.25'		ice/Grate X 3.00	C= 0.600
#3	Device 1	999.50'		ice/Grate X 2.00	C= 0.600
#4	Device 1	999.75'		ice/Grate X 3.00	
#5	Device 1	1,000.00'		ice/Grate X 2.00	
#6	Device 1	1,000.25'		ice/Grate X 3.00	
#7	Device 1	1,000.50'		ice/Grate X 2.00	C= 0.600
#8	Device 1	1,000.75		ice/Grate X 3.00	
#9	Secondary	1,003.20'			ad-Crested Rectangular Weir
					80 1.00 1.20 1.40 1.60 ) 2.64 2.63 2.64 2.64 2.63
#10	Device 1	1,001.00'			ngular Weir 2 End Contraction(s)
#10	Device I	1,001.00	1.0' Crest Heig		ngular Well 2 Lind Contraction(S)
			1.5 616611619	,	

Primary OutFlow Max=72.73 cfs @ 12.06 hrs HW=1,003.95' (Free Discharge) 1=CMP\_Round 30" (Barrel Controls 72.73 cfs @ 7.41 fps) 2=Orifice/Grate (Passes < 0.17 cfs potential flow) 3=Orifice/Grate (Passes < 0.11 cfs potential flow) 4=Orifice/Grate (Passes < 0.16 cfs potential flow) 5=Orifice/Grate (Passes < 0.10 cfs potential flow) 6=Orifice/Grate (Passes < 0.15 cfs potential flow) 7=Orifice/Grate (Passes < 0.10 cfs potential flow) 8=Orifice/Grate (Passes < 1.24 cfs potential flow) 10=Sharp-Crested Rectangular Weir (Passes < 76.70 cfs potential flow)

Secondary OutFlow Max=41.07 cfs @ 12.06 hrs HW=1,003.95' (Free Discharge) —9=Broad-Crested Rectangular Weir (Weir Controls 41.07 cfs @ 2.29 fps)



## Pond 3P: Existing Detention

## Summary for Pond 4P: Proposed Detention

[82] Warning: Early inflow requires earlier time span

Inflow Area =	12.390 ac,	0.00% Impervious, Inflo	w Depth > 8.15" for 100-year event
Inflow =	138.64 cfs @	12.01 hrs, Volume=	8.411 af
Outflow =	55.61 cfs @	12.16 hrs, Volume=	8.411 af, Atten= 60%, Lag= 9.3 min
Primary =	55.61 cfs @	12.16 hrs, Volume=	8.411 af

Routing by Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Peak Elev= 1,002.75' @ 12.16 hrs Surf.Area= 25,501 sf Storage= 119,612 cf

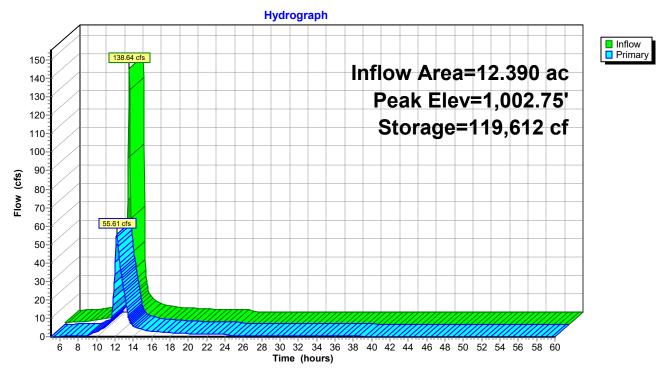
Plug-Flow detention time= 113.0 min calculated for 8.402 af (100% of inflow) Center-of-Mass det. time= 113.9 min ( 886.8 - 773.0 )

Volume	Inve	ert Avail.Sto	rage Storage [	Description	
#1	995.0	0' 153,44	48 cf Custom	Stage Data (Pris	smatic) Listed below (Recalc)
Elevatio		Surf.Area	Inc.Store	Cum.Store	
(fee	t)	(sq-ft)	(cubic-feet)	(cubic-feet)	
995.0	-	50	0	0	
996.0		8,213	4,132	4,132	
997.0		10,000	9,107	13,238	
998.0	-	14,340	12,170	25,408	
999.0		16,580	15,460	40,868	
1,000.0		18,880	17,730	58,598	
1,001.0		21,240	20,060	78,658	
1,002.0		23,640	22,440	101,098	
1,003.0		26,110	24,875	125,973	
1,004.0	0	28,840	27,475	153,448	
Device	Routing	Invert	Outlet Devices		
-	0		30.0" Round (		
#1	Primary	994.90'			adwall Kat 0 500
					eadwall, Ke= 0.500 94.50' S= 0.0100 '/' Cc= 0.900
				v Area= 4.91 sf	94.50 S= 0.0100 / CC= 0.900
#2	Device 1	995.00'	,	<b>ce/Grate</b> C= 0	0.600
#2 #3	Device 1 Device 1	997.62'		" H Vert. Orifice	
#3 #4	Primary	1,001.10'		" H Vert. Orifice	
<del></del>	rinary	1,001.10			
Primarv	OutFlow	Max=55.44 cfs	@ 12.16 hrs H	W=1.002.74' (F	Free Discharge)
			of 60.66 cfs pote		
	1-2-Original Crate (Original Controls 0.65 of @ 12.29 for)				

**2=Orifice/Grate** (Orifice Controls 0.65 cfs @ 13.28 fps)

-3=Orifice/Grate (Orifice Controls 44.61 cfs @ 10.20 fps)

-4=Orifice/Grate (Orifice Controls 10.18 cfs @ 5.09 fps)



## Pond 4P: Proposed Detention

<b>LS Joint Ops</b> Prepared by {enter your company name HydroCAD® 10.00-18 s/n 09518 © 2016 Hyd					
Time span=5.00-60.00 hrs, dt=0.05 hrs, 1101 points Runoff by SCS TR-20 method, UH=SCS, Weighted-CN Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method					
Subcatchment 1S: Existing	Runoff Area=12.190 ac 0.00% Impervious Runoff Depth=0.58" Tc=10.0 min CN=90 Runoff=10.74 cfs 0.592 af				
Subcatchment 2S: Proposed	Runoff Area=12.390 ac 0.00% Impervious Runoff Depth=0.69" Tc=10.0 min CN=92 Runoff=13.00 cfs 0.715 af				
Subcatchment 5S: Off-Site	Runoff Area=0.500 ac 0.00% Impervious Runoff Depth=0.64" Tc=5.0 min CN=91 Runoff=0.57 cfs 0.026 af				
Pond 3P: Existing Detention	Peak Elev=1,001.18' Storage=10,894 cf Inflow=10.74 cfs 0.592 af				

 Pond 3P: Existing Detention
 Peak Elev=1,001.18' Storage=10,894 cf
 Inflow=10.74 cfs
 0.592 af

 Primary=1.88 cfs
 0.585 af
 Secondary=0.00 cfs
 0.000 af
 Outflow=1.88 cfs
 0.585 af

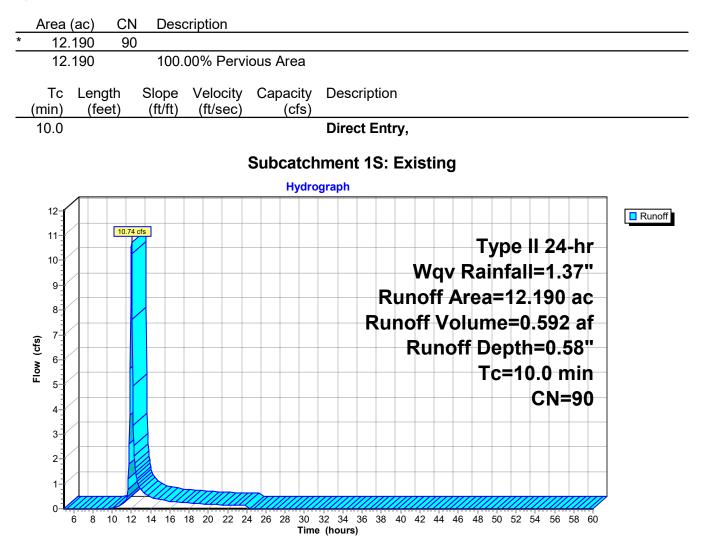
Pond 4P: Proposed DetentionPeak Elev=997.52' Storage=18,980 cfInflow=13.00 cfs0.715 afOutflow=0.37 cfs0.715 af

Total Runoff Area = 25.080 acRunoff Volume = 1.334 afAverage Runoff Depth = 0.64"100.00% Pervious = 25.080 ac0.00% Impervious = 0.000 ac

## Summary for Subcatchment 1S: Existing

Runoff = 10.74 cfs @ 12.02 hrs, Volume= 0.592 af, Depth= 0.58"

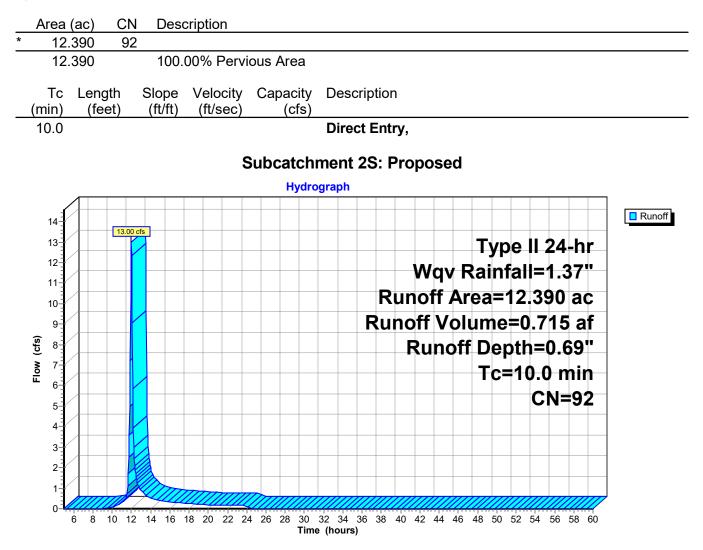
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Type II 24-hr Wqv Rainfall=1.37"



## Summary for Subcatchment 2S: Proposed

Runoff = 13.00 cfs @ 12.02 hrs, Volume= 0.715 af, Depth= 0.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Type II 24-hr Wqv Rainfall=1.37"

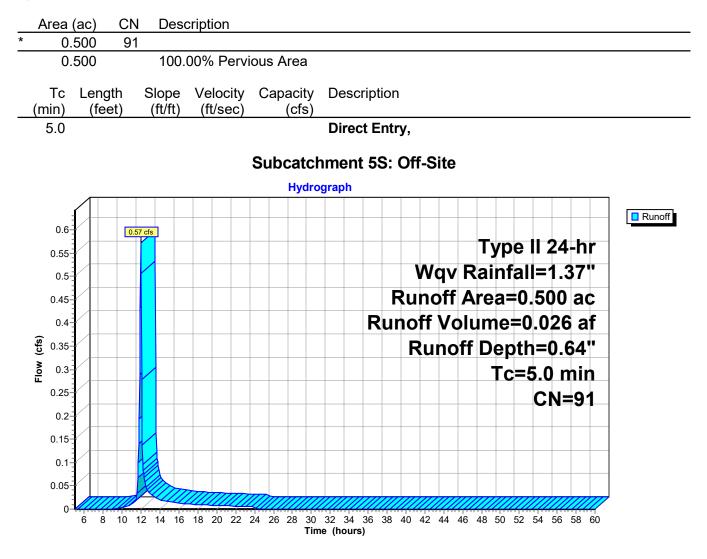


## Summary for Subcatchment 5S: Off-Site

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.57 cfs @ 11.96 hrs, Volume= 0.026 af, Depth= 0.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Type II 24-hr Wqv Rainfall=1.37"



## Summary for Pond 3P: Existing Detention

Inflow Area =	12.190 ac,	0.00% Impervious, Inflow E	Depth = 0.58" for Wqv event
Inflow =	10.74 cfs @	12.02 hrs, Volume=	0.592 af
Outflow =	1.88 cfs @	12.34 hrs, Volume=	0.585 af, Atten= 83%, Lag= 19.5 min
Primary =	1.88 cfs @	12.34 hrs, Volume=	0.585 af
Secondary =	0.00 cfs @	5.00 hrs, Volume=	0.000 af

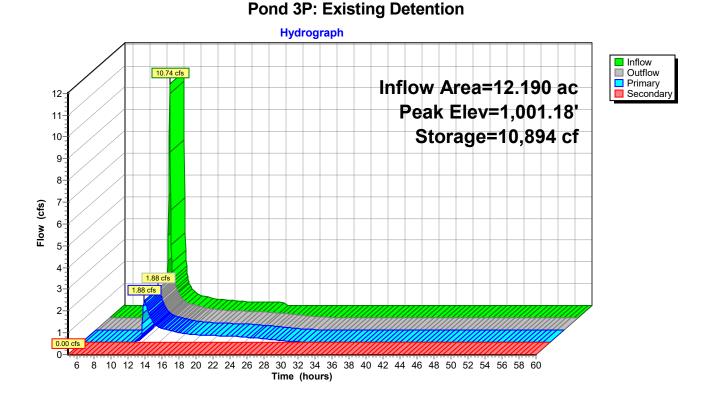
Routing by Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Peak Elev= 1,001.18' @ 12.34 hrs Surf.Area= 12,968 sf Storage= 10,894 cf

Plug-Flow detention time= 201.2 min calculated for 0.585 af (99% of inflow) Center-of-Mass det. time= 193.0 min (1,038.2 - 845.1)

Volume	Invert	Avail.Stor	rage Storage l	Description	
#1	999.00'	88,38	35 cf Custom	Stage Data (Pris	matic) Listed below (Recalc)
			la a Otana	Ourse Otherse	
Elevatio		rf.Area	Inc.Store	Cum.Store	
(fee	/	(sq-ft)	(cubic-feet)	(cubic-feet)	
999.0		10	0	0	
1,000.0		2,580	1,295	1,295	
1,001.0		12,035	7,308	8,603	
1,002.0		17,125	14,580	23,183	
1,003.0		19,500	18,313	41,495	
1,004.0		22,140	20,820	62,315	
1,005.0	00	30,000	26,070	88,385	
Device	Routing	Invert	Outlet Devices		
-					" X 2 00
#1	Primary	999.50'		CMP_Round 30	
					eadwall, Ke= 0.500
					99.00' S= 0.0125 '/' Cc= 0.900
40	Davis 1		,	w Area= 4.91 sf	$\mathbf{O}_{-}$ 0.000
#2	Device 1	999.25'		ice/Grate X 3.00	
#3	Device 1	999.50'		ice/Grate X 2.00	
#4	Device 1	999.75'		ice/Grate X 3.00	
#5	Device 1	1,000.00'		ice/Grate X 2.00	
#6	Device 1	1,000.25'		ice/Grate X 3.00	
#7	Device 1	1,000.50'		ice/Grate X 2.00	
#8	Device 1	1,000.75'		ice/Grate X 3.00	
#9	Secondary	1,003.20'	Head (feet) 0.	.20 0.40 0.60 0.	ad-Crested Rectangular Weir 80 1.00 1.20 1.40 1.60 0 2.64 2.63 2.64 2.64 2.63
#10	Device 1	1,001.00'		p-Crested Recta	ngular Weir 2 End Contraction(s)

Primary OutFlow Max=1.87 cfs @ 12.34 hrs HW=1,001.18' (Free Discharge) 1=CMP\_Round 30" (Passes 1.87 cfs of 22.64 cfs potential flow) 2=Orifice/Grate (Orifice Controls 0.10 cfs @ 6.25 fps) 3=Orifice/Grate (Orifice Controls 0.07 cfs @ 6.17 fps) 4=Orifice/Grate (Orifice Controls 0.09 cfs @ 5.68 fps) 5=Orifice/Grate (Orifice Controls 0.06 cfs @ 5.14 fps) 6=Orifice/Grate (Orifice Controls 0.07 cfs @ 4.55 fps) 7=Orifice/Grate (Orifice Controls 0.04 cfs @ 3.86 fps) 8=Orifice/Grate (Orifice Controls 0.39 cfs @ 2.67 fps) 10=Sharp-Crested Rectangular Weir (Weir Controls 1.04 cfs @ 1.43 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=999.00' (Free Discharge) —9=Broad-Crested Rectangular Weir (Controls 0.00 cfs)



## Summary for Pond 4P: Proposed Detention

Inflow Area =	12.390 ac,	0.00% Impervious, Inflow D	epth = 0.69" for Wqv event
Inflow =	13.00 cfs @	12.02 hrs, Volume=	0.715 af
Outflow =	0.37 cfs @	15.56 hrs, Volume=	0.715 af, Atten= 97%, Lag= 212.6 min
Primary =	0.37 cfs @	15.56 hrs, Volume=	0.715 af

Routing by Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Peak Elev= 997.52' @ 15.56 hrs Surf.Area= 12,241 sf Storage= 18,980 cf

Plug-Flow detention time= 617.6 min calculated for 0.714 af (100% of inflow) Center-of-Mass det. time= 618.1 min (1,451.1 - 833.1)

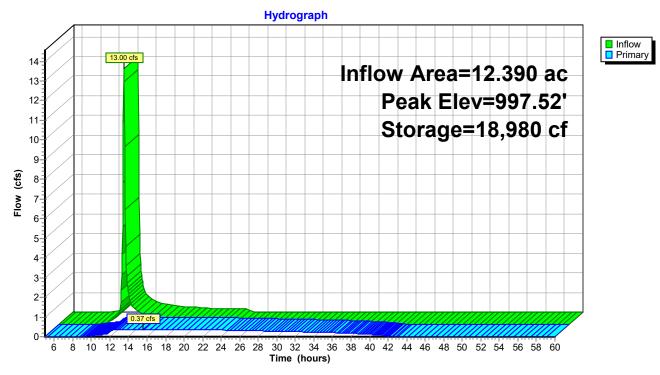
Volume	Inve	ert Avail.Sto	rage Storage D	escription	
#1	995.0	0' 153,44	48 cf Custom S	Stage Data (Pris	matic) Listed below (Recalc)
Elevatio		Surf.Area	Inc.Store	Cum.Store	
(fee	t)	(sq-ft)	(cubic-feet)	(cubic-feet)	
995.0		50	0	0	
996.0		8,213	4,132	4,132	
997.0		10,000	9,107	13,238	
998.0		14,340	12,170	25,408	
999.0		16,580	15,460	40,868	
1,000.0		18,880	17,730	58,598	
1,001.0		21,240	20,060	78,658	
1,002.0		23,640	22,440	101,098	
1,003.0		26,110	24,875	125,973	
1,004.0	0	28,840	27,475	153,448	
Device	Routing	Invert	Outlet Devices		
#1	Primary	994.90'	30.0" Round C	Culvert	
	,				eadwall, Ke= 0.500
					94.50' S= 0.0100 '/' Cc= 0.900
			n= 0.012, Flow	/ Area= 4.91 sf	
#2	Device 1	995.00'	3.0" Vert. Orifi	ce/Grate C= 0	.600
#3	Device 1	997.62'	42.0" W x 15.0	" H Vert. Orifice	<b>/Grate</b> C= 0.600
#4	Primary	1,001.10'	24.0" W x 12.0	" H Vert. Orifice	<b>/Grate</b> C= 0.600
Primary	OutFlow	Max=0.37 cfs (	@ 15.56 hrs HW	=997.52' (Free	e Discharge)
	Wart (Dag	sees 0.37 of of	25 70 cfc notent	ial flow)	

**1=Culvert** (Passes 0.37 cfs of 25.79 cfs potential flow)

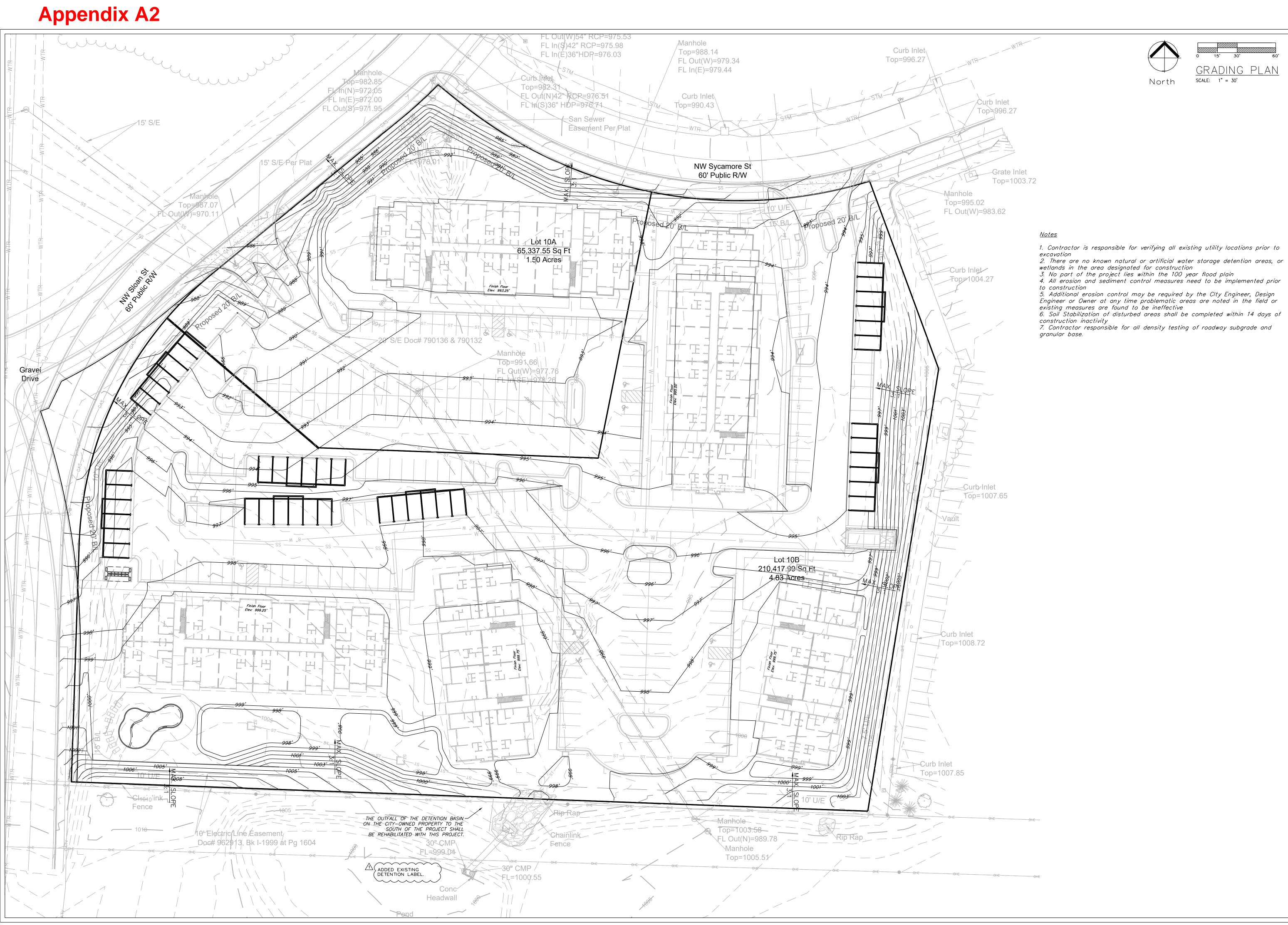
**2=Orifice/Grate** (Orifice Controls 0.37 cfs @ 7.45 fps) **3=Orifice/Grate** (Controls 0.00 cfs)

-3=Orifice/Grate (Controls 0.00 cfs)

-4=Orifice/Grate (Controls 0.00 cfs)



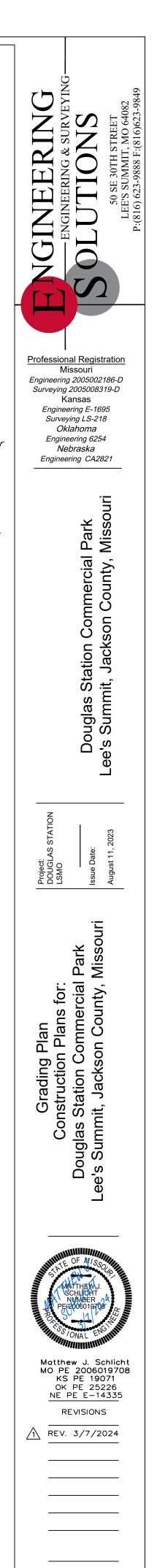
## Pond 4P: Proposed Detention



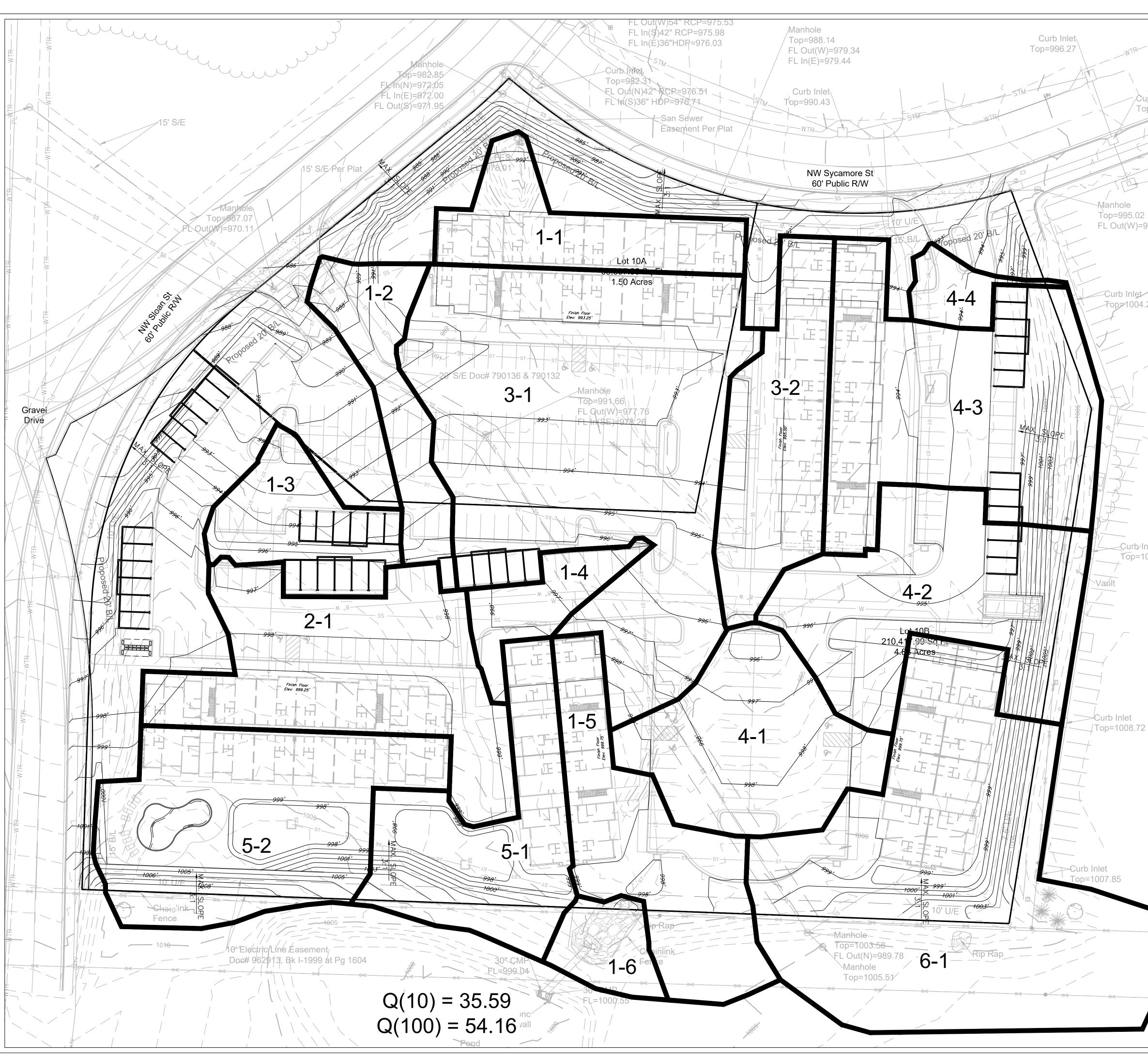
## <u>Notes</u>



GRADING PLAN SCALE: 1" = 30'



C.200





DRAINAGE MAP SCALE: 1" = 30'

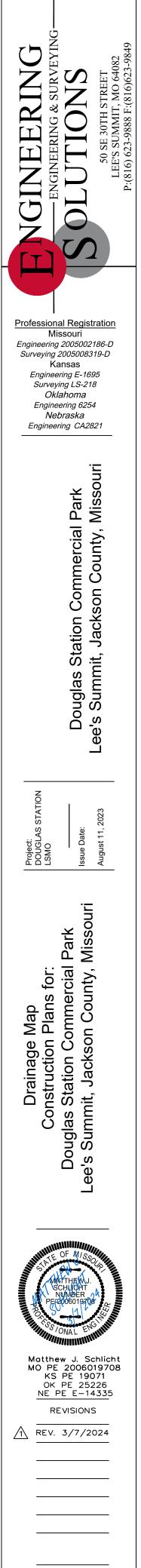
/ Curb Inlet Top=996.27 Grate Inlet Top=1003.72

Top=995.02 FL Out(W)=983.62

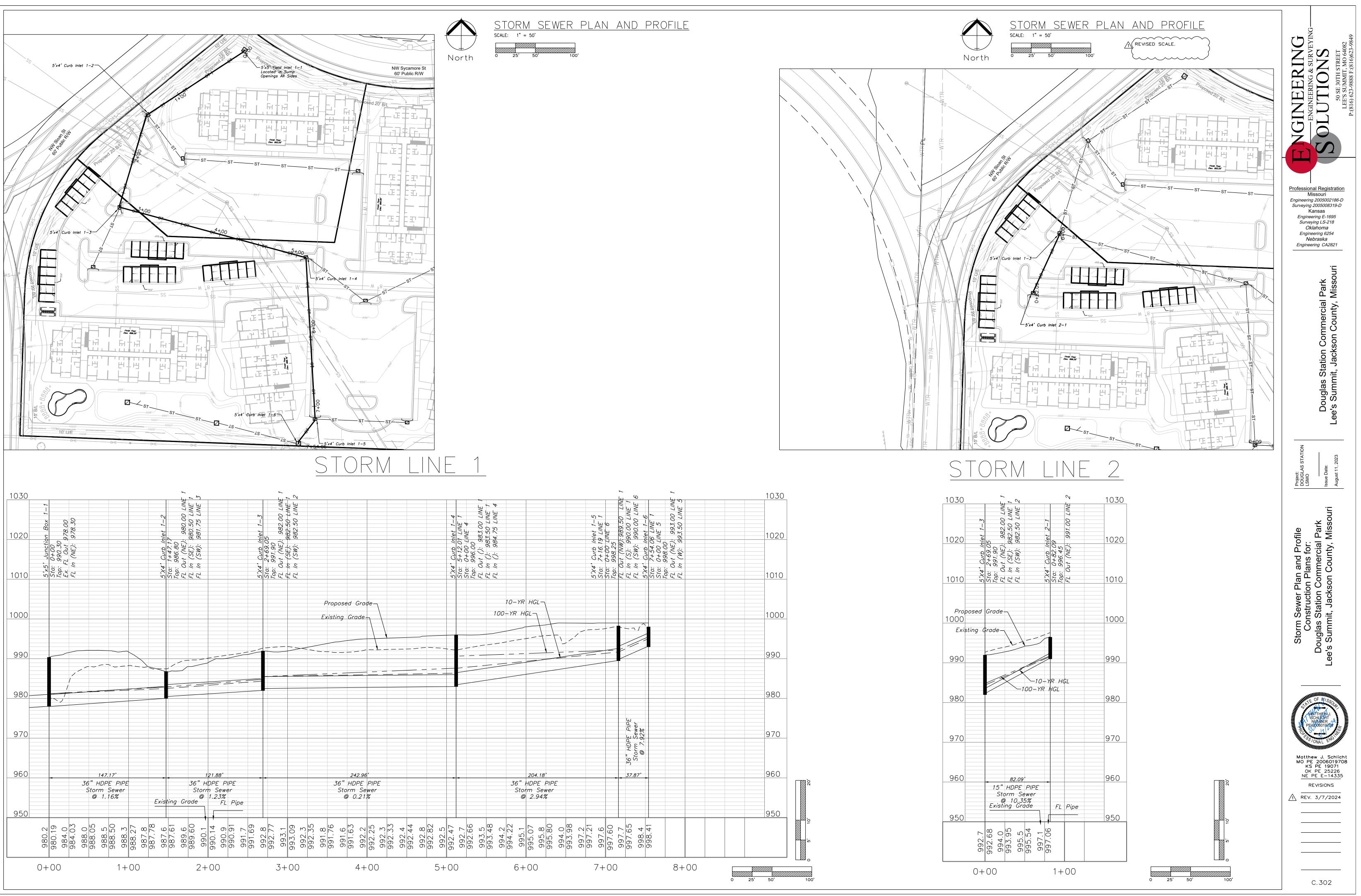
Curb Inlet Top=1004.27

> Curb/Inlet Top=1007.65

						AREA	D	POST	1-1	1-2	1:3	14	1-5	1-6	2-1	3-1	3-2	4-1	4-2	4-3	4-4	5-1	5-2	6-1
				¥	1.25	CFS	100 Q		1.67	1.49	1.57	0.83	2.86	0.67	3.60	8.07	2.24	2.85	3.96	4.74	0.48	2.76	4.08	7.89
						y CFS	10 Q		96-0	0.85	0.89	0.48	1.63	0.38	2.04	4.59	1.27	1.62	2.25	2.70	0.27	1.57	2.32	4.49
						ntensity Intensity	1001		6.6	10.2	10.1	10.1	10.2	6.9	9.2	9.6	9.1	10.0	10.2	10.2	10.3	10.3	9.8	10.0
						Intensit	101		7.0	7.2	7.2	7.2	7.3	7.0	6.5	6.8	6.5	7.1	7.3	7.3	7.4	7.4	7.0	7.1
-			-		Total		T© 10	00	6.1	5.4	5.6	5.7	5.2	6.1	8.1	6.8	8.3	5.8	5.3	5.3	5.0	5.0	6.4	5.7
				Cal	Channel	Two	T(II)	10010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		ATION		Cal	Channel	One	T(T)	100.000	1.1	0.4	0.6	0.7	0.2		1.8	1.8	0.4	0.2	0.3	0.3			0.1	0.7
1		TC COMPUTATION		Used	Min 5	Max 15	T(I)		5.0	5.0	5.0	5.0	5.0	6.1	6.3	5.0	7.9	5.7	5.0	5.0	5.0	5.0	6.3	5.0
		-		Cal	Overland	Flow	T(I)		4.2	4.6	22	4.3	3.6	6.1	6.3	5.0	7.9	5.7	4.8	3.4	4.6	4.8	6.3	4.5
-			vations		0	VELOCITY	F/S		3.0	4.8	3.2	2.7	3.2	0.0	1.8	2.7	2.8	3.7	3.3	4.3	0.0	0.0	5.7	3.3
Other	2		Overwrite Slope or Elevations	V		SLOPE VE	%		2.16	5.48	2.46	1.82	2.44		0.78	1.76	1.88	3.29	2.63	4.49			8.00	4.14
Undev	n	0.3	<b>Dverwrite S</b>	if necessary	H	NO	ELEV		989.0	<b>586.3</b>	992.0	996.0	998.0	0.999	0.966	300.5	993.8	995.0	93.5	993.5	993.3	0.766	3966	998.0
SnglFam	S	0.51			ST REACI	ЧD	ELEV		993.3	992.0	0.566	0.866	0.999	1025.5	397.5	935.6	995.0	996.3	0.395	0.799	993.3	0.766	998.5	1003.5
MultFam SnglFam Undev	M	0.66	P=Paved	U=Unpaved	-LOW - FIRST REACH	CHANNEL	LENGTH		197.0	105.0	122.0	110.0	41.0	0.0	193.0	290.0	64.0	38.0	57.0	78.0	0.0	0.0	25.0	133.0
Lake	L	0.90	SURFACE	CODE	٩	or (	D	W.	Ъ	۵.	۵.	م	٩	n	۵.	٩	٩	٩	٩	٩	٩.	٩	۵.	U
Grass/Park	9	0.30				SLOPE	%		1.4	5.3	7.1	2.1	7.5	1.2	2.0	3.9	1.0	2.8	4.5	10.3	2.7	3.0	2.0	5.5
Dirt	0	0.60	Overwrite Length - DnElev or Slope			NQ	ELEV	101	993.25	992.00	995.00	998.00	999.00	1025.50	997.50	995.60	995.00	996.25	995.00	997.00	993.25	997.00	998.50	1003.50
Bus/Com	8	0.87	ength - Dn	(	00' MAX	ЧD	ELEV	01	993.8	997.3	0.766	0.999	1005.0	1026.3	939.5	939.5	996.0	999.0	939.5	1006.0	995.0	999.3	1000.5	1009.0
Asph/ConcBus/Com	A	0.90	<b>Dverwrite</b> L	if necessary	FLOW - 1	OVRLND	LENGTH		35.0	100.0	28.0	48.0	80.0	65.0	100.0	100.0	100.0	100.0	100.0	87.0	65.0	75.0	100.0	100.0
368			0	ĥ	OVERLAND FLOW - 10(		VALUE 1		0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Surface types	SURFACE CODES	"C" Values			0	SURFACE	CODE	20	W	W	W	V	W	W	W	W	W	W	W	W	W	W	W	W
0	0)					DN	ELEV		989.00	986.25	992.00	996.00	998.00	999.00	996.00	990.50	993.80	995.00	993.50	993.50	993.25	997.00	996.50	998.00
	computing			ERSHED		Ð	ELEV		993.75	997.25	997.00	00.666	1005.00	1026.25	999.50	999.50	996.00	00.666	999.50	1006.00	995.00	999.25	1000.50	1009.00
	yellow areas are self computing	overwrite if necessary	<u>1</u>	TOTAL WATERSHED		WTRSHD	LENGTH		232.00	205.00	150.00	158.00	121.00	65.00	293.00	390.00	164.00	138.00	157.00	165.00	65.00	75.00	125.00	233.00
	ellow area	verwrite if		T		TOTAL W	ACRES L		0.21	0.18	0.19	0.10	0.34	0.08	0.48	1.02	0.30	0.35	0.47	0.56	0.06	0.32	0.50	0.95
	Y	0				TOTAL	SQ.FT. A		8941	7710	8221	4385	14772	3575	20721	44340	12979	15058	20476	24522	2438	14125	21986	41482
-						AREA	D	POST	1-1	1-2	1-3	1-4	1-5	1-6	2-1	3-1	3-2	4-1	4-2	4-3	4-4	5-1	5-2	6-1



C.202

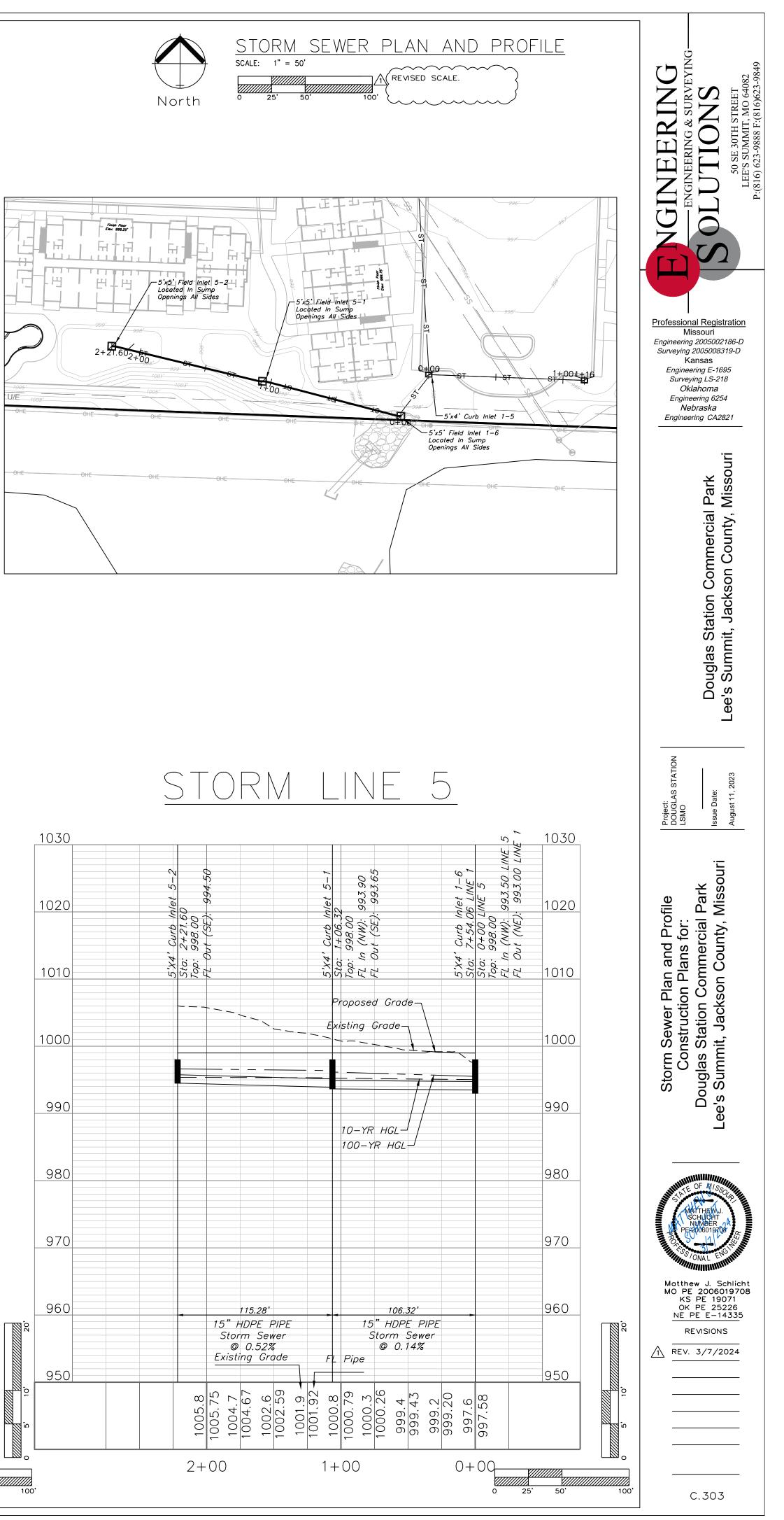


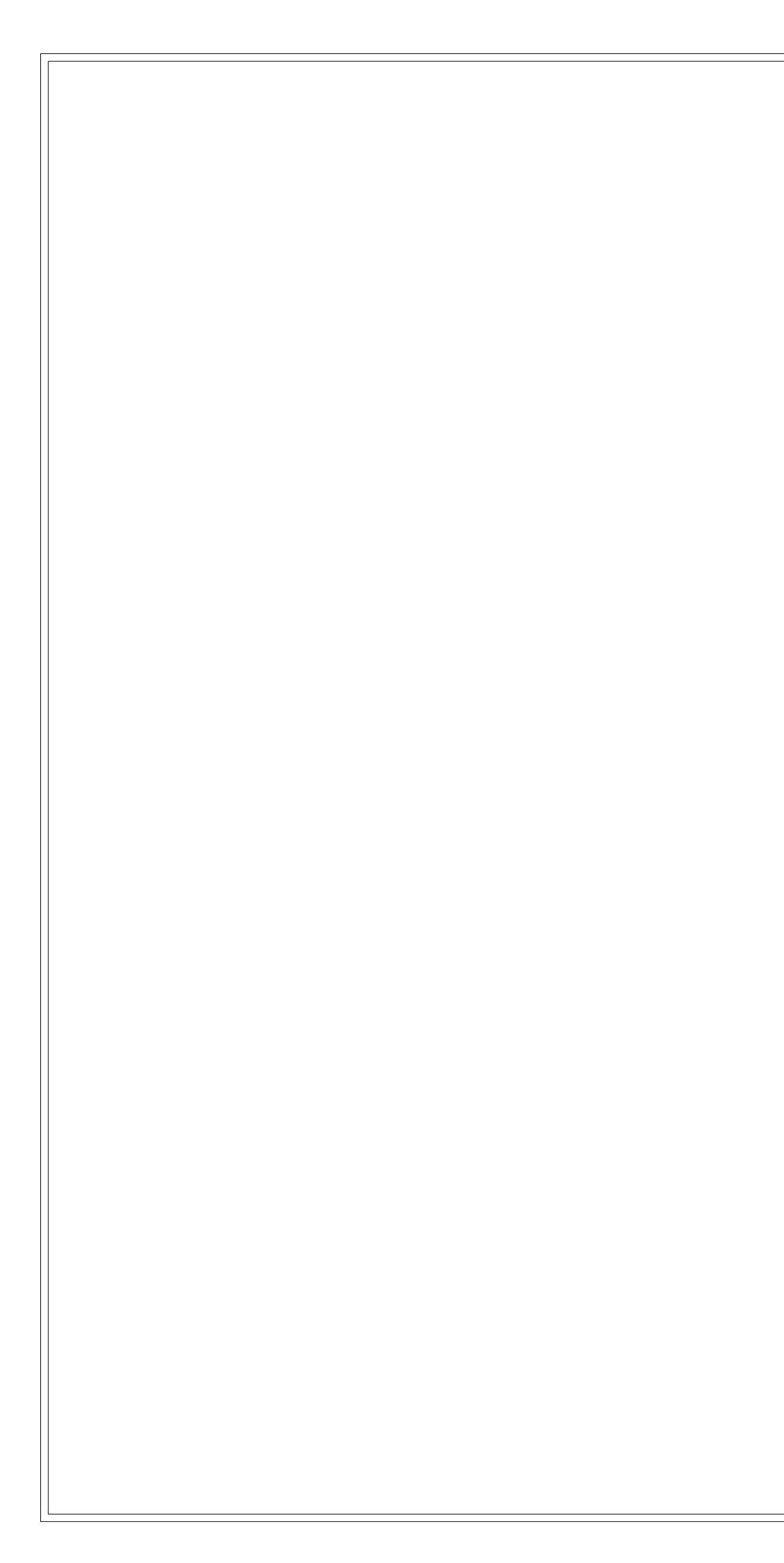


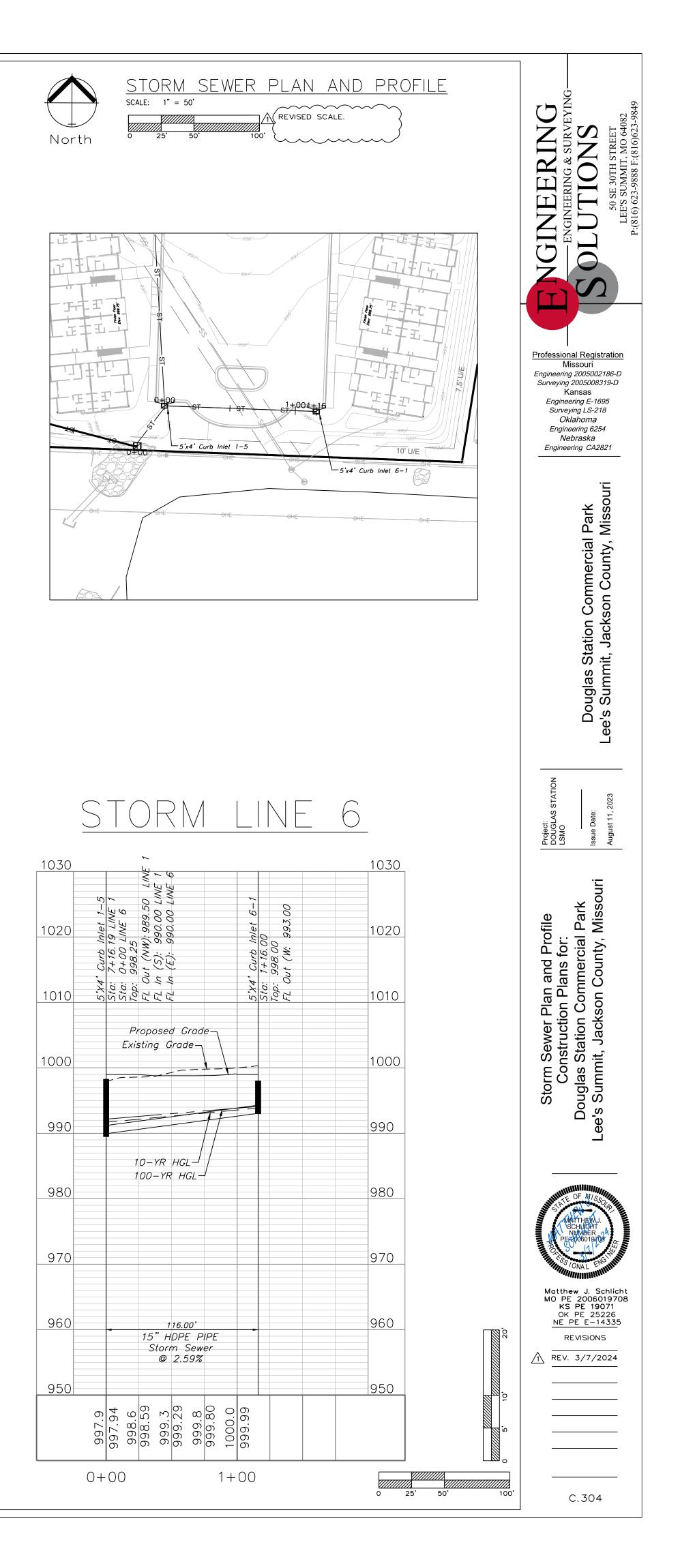












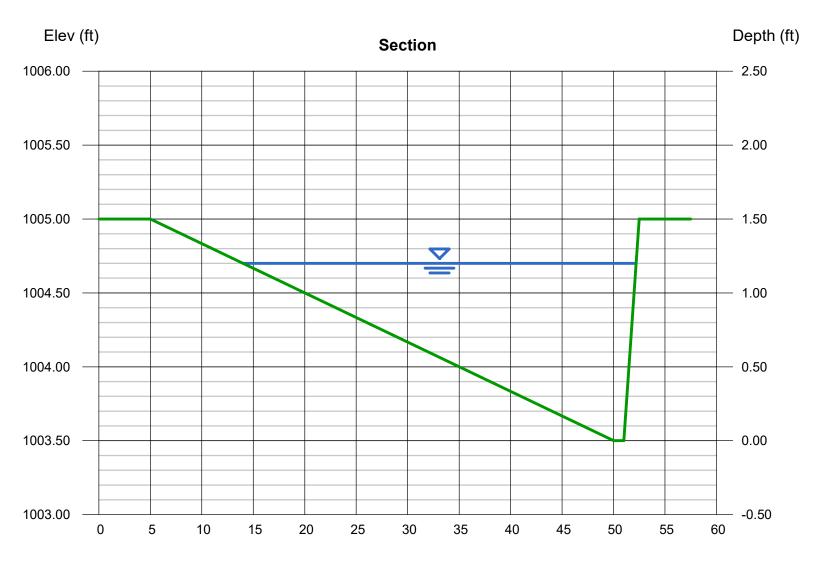
# **Channel Report**

**Appendix A3** 

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc.

## **Overflow Spillway**

Trapezoidal		Highlighted	
Bottom Width (ft)	= 1.00	Depth (ft)	= 1.20
Side Slopes (z:1)	= 30.00, 1.00	Q (cfs)	= 167.10
Total Depth (ft)	= 1.50	Area (sqft)	= 23.52
Invert Elev (ft)	= 1003.50	Velocity (ft/s)	= 7.10
Slope (%)	= 1.00	Wetted Perim (ft)	= 38.72
N-Value	= 0.015	Crit Depth, Yc (ft)	= 1.46
		Top Width (ft)	= 38.20
Calculations		EGL (ft)	= 1.98
Compute by:	Q vs Depth		
No. Increments	= 10		



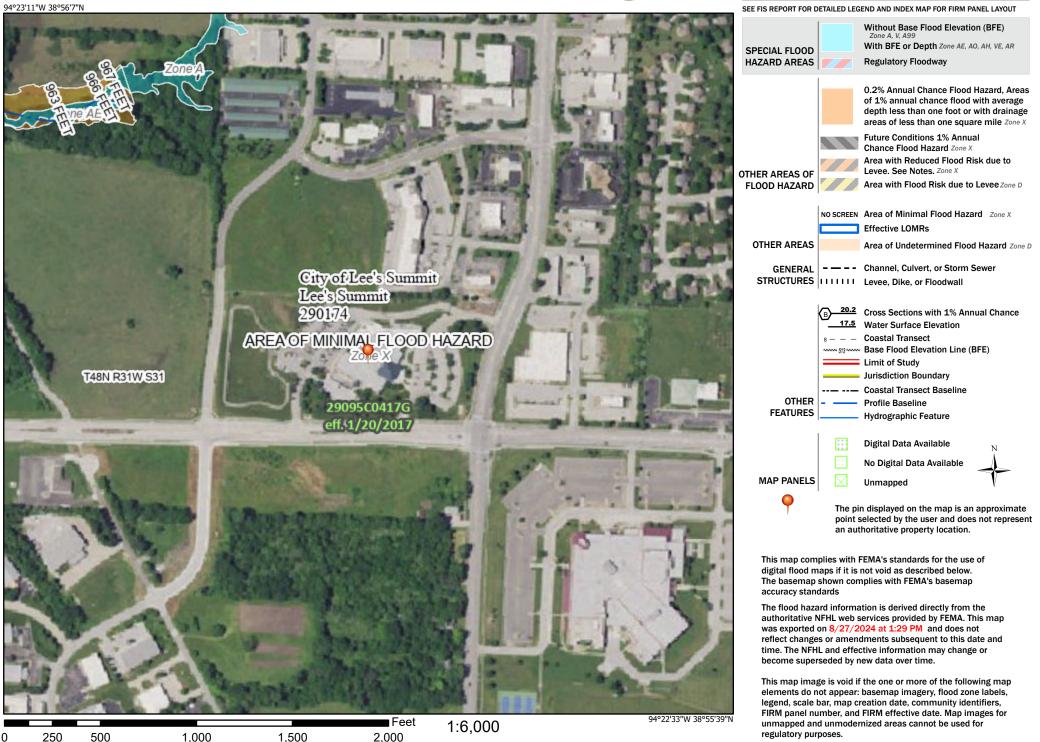
Wednesday, Sep 11 2024

Reach (ft)

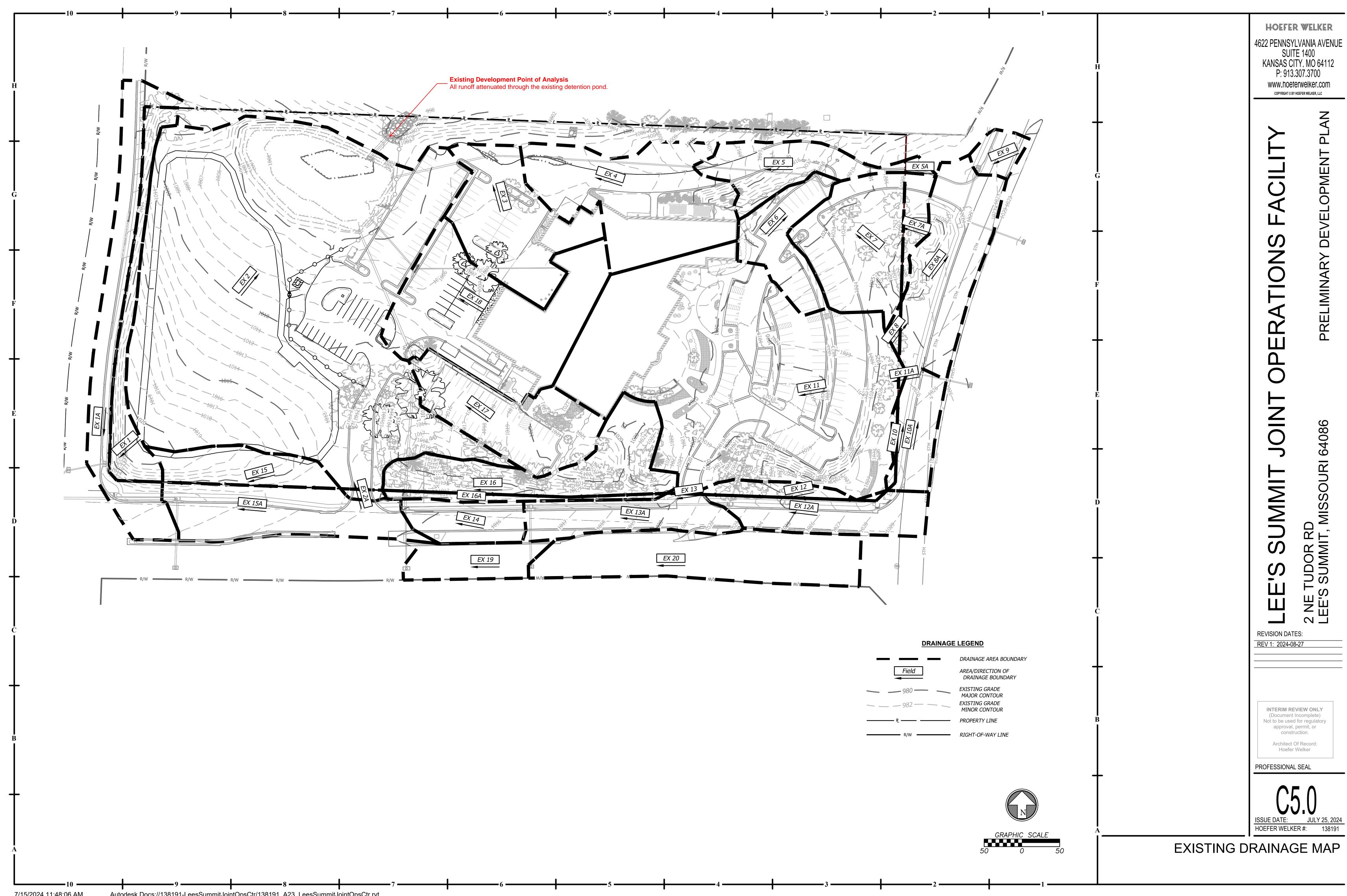
# National Flood Hazard Layer FIRMette



## Appendix A4 Legend

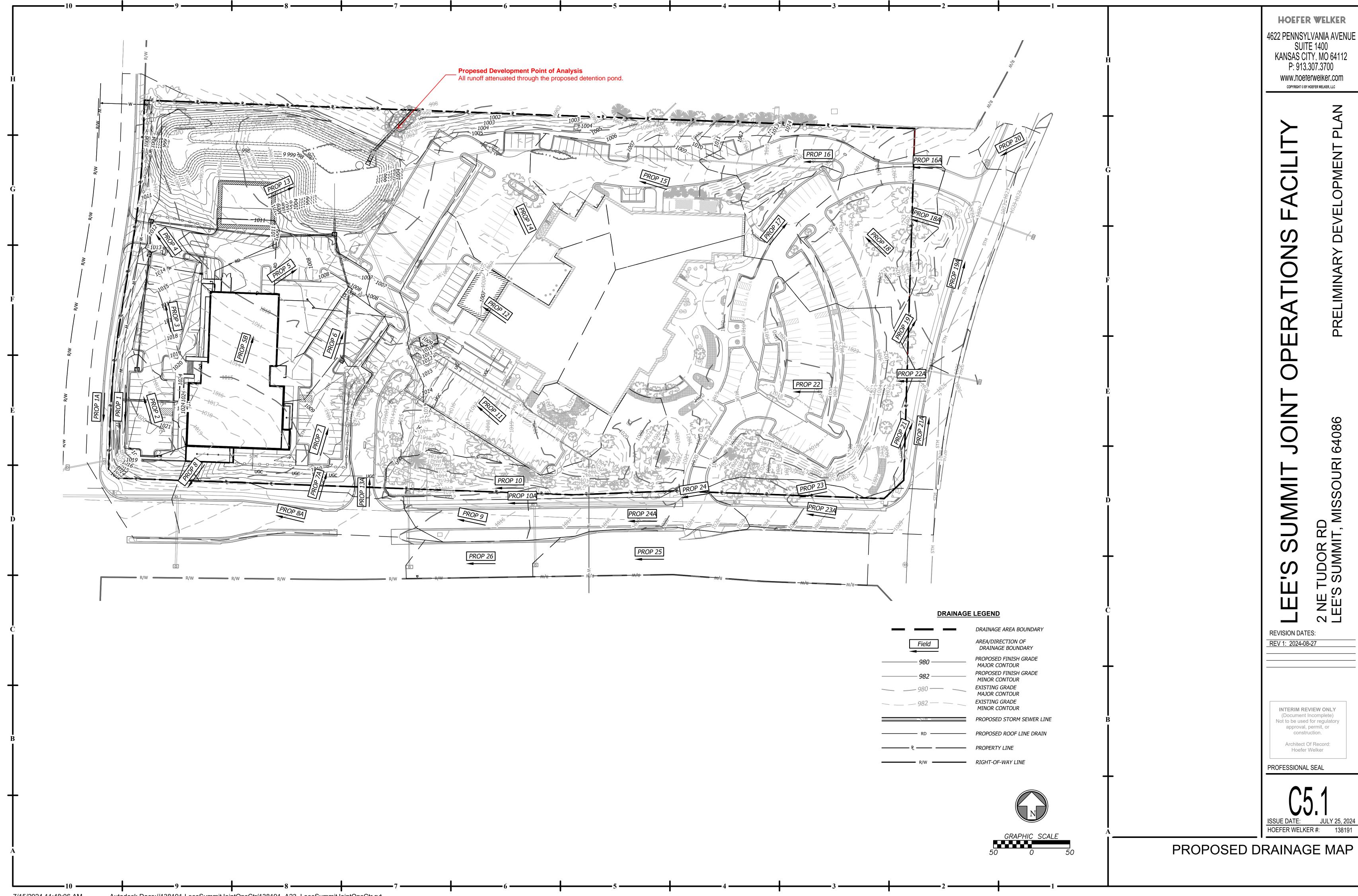


Basemap Imagery Source: USGS National Map 2023



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	- 980	-
	- 982	_
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#### Stormwater Pollution Prevention Plan (SWPPP)

#### For Construction Activities At:

Lee's Summit Joint Operations Facility 2 NE TUDOR ROAD LEE'S SUMMIT, MO 64086

#### **SWPPP Prepared For:**

TITAN CONSTRUCTION PM: LUKE WESTBROOK 8207 MELROSE DRIVE, SUITE 200 LENEXA, KANSAS, 66214 913-782-6700 LWESTBROOK@TITANBUILT.COM

#### **SWPPP Prepared By:**

BHC MICHAEL MAKRIS 7101 College Blvd, Suite 400 Overland Park, KS 66210 913-663-1900 MIKE.MAKRIS@IBHC.COM

#### **SWPPP Preparation Date:**

#### 09/03/2024

#### **Estimated Project Dates:**

Project Start Date: 10/25/2024

Project Completion Date: 04/30/2026

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## SECTION 1: CONTACT INFORMATION/RESPONSIBLE PARTIES

## 1.1 Operator(s) / Subcontractor(s)

## Operator(s):

```
Titan Construction
TBD
8207 Melrose Drive, Suite 200
Lenexa, KS 66214
TBD
TBD
```

## Subcontractor(s):

Qualified person(s) appointed by TITAN CONSTRUCTION

#### Emergency 24-Hour Contact:

Qualified person(s) appointed by TITAN CONSTRUCTION

## 1.2 Stormwater Team

## Stormwater Team

Name and/or Position, and Contact	Responsibilities	I Have Completed Training Required by the Kansas GCP	I Have Read the Kansas GCP and Understand the Applicable Requirements
Qualified person(s) appointed by TITAN CONSTRUCTION	TBD by TITAN CONSTRUCTION	□ Yes □ No	□ Yes Date:
Qualified person(s) appointed by TITAN CONSTRUCTION	TBD by TITAN CONSTRUCTION	□ Yes □ No	□ Yes Date:
Qualified person(s) appointed by TITAN CONSTRUCTION	TBD by TITAN CONSTRUCTION	□ Yes □ No	□ Yes Date:

Name and/or Position and Contact	Training(s) Received	Date Training(s)	If Training is a Non-EPA Training, Confirm that it Satisfies the Minimum
		Completed	Elements of Kansas CGP
Qualified person(s) appointed by TITAN CONSTRUCTION	TBD by TITAN CONSTRUCTION	Date:	<ul> <li>Principles and practices of erosion and sediment control and pollution prevention practices at construction sites</li> <li>Proper installation and maintenance of erosion and sediment controls and pollution prevention practices used at construction sites</li> <li>Performance of inspections, including the proper completion of required reports and documentation, consistent with the requirements of Part 4</li> </ul>
Qualified person(s) appointed by TITAN CONSTRUCTION	TBD by TITAN CONSTRUCTION	Date:	<ul> <li>Principles and practices of erosion and sediment control and pollution prevention practices at construction sites</li> <li>Proper installation and maintenance of erosion and sediment controls and pollution prevention practices used at construction sites</li> <li>Performance of inspections, including the proper completion of required reports and documentation, consistent with the requirements of Part 4</li> </ul>
Qualified person(s) appointed by TITAN CONSTRUCTION	TBD by TITAN CONSTRUCTION	Date:	<ul> <li>Principles and practices of erosion and sediment control and pollution prevention practices at construction sites</li> <li>Proper installation and maintenance of erosion and sediment controls and pollution prevention practices used at construction sites</li> <li>Performance of inspections, including the proper completion of required reports and documentation, consistent with the requirements of Part 4</li> </ul>

## Stormwater Team Members Who Conduct Inspections Pursuant to CGP

#### SECTION 2: SITE EVALUATION, ASSESSMENT, AND PLANNING

#### 2.1 Project/Site Information

#### **Project Name and Address**

Project/Site Name: Lee's Summit Joint Operations Facility
Street/Location: 2 NE TUDOR ROAD
City: Lee's Summit
State: Missouri
ZIP Code: 64086
County or Similar Government Division: Jackson County
Section, Township, Range: 31,T48N,R31W

#### Project Latitude/Longitude

Latitude: 35Deg 55' 53" N (decimal degrees)	Longitude: - 94 Deg 22' 58'' W (decimal degrees)	
Latitude/longitude data source: 🗌 Map Google Earth	$\Box$ GPS $\blacksquare$ Other (please specify):	
Horizontal Reference Datum: 🗌 NAD 27	🗆 NAD 83 🛛 WGS 84	

#### Additional Site Information

Is your site located on Indian country lands, or on a property of religious or  $\Box$  Yes  $\boxtimes$  No cultural significance to an Indian Tribe?

If yes, provide the name of the Indian Tribe associated with the area of Indian country (including the name of Indian reservation if applicable), or if not in Indian country, provide the name of the Indian Tribe associated with the property:

#### N/A

#### 2.2 Discharge Information

Does your project/site discharge stormwater into a Municipal Separate Storm Sewer System (MS4)?	🛛 Yes	🗌 No
Are there any waters of the U.S. within 50 feet of your project's earth disturbances?	□ Yes	🛛 No

For each point of discharge, provide a point of discharge ID (a unique 3-digit ID, e.g., 001, 002), the name of the first receiving water that receives stormwater directly from the point of discharge and/or from the MS4 that the point of discharge discharges to, and the following receiving water information, if applicable:

Point of Discharge ID (Add ID to EC Plans, include lat and long)	Name of receiving water or MS4 that receives stormwater discharge ( <u>EPA</u> <u>Watershed Tool)</u>	Is the receiving water impaired (on the CWA 303(d) list)? EPA Watershed Tool	If yes, list the pollutants that are causing the impairment:	Has a TMDL been completed for this receiving waterbody?	If yes, list TMDL Name and ID:	Drainage Area to Point of Discharge	Area to be disturbed in Drainage Area
[001]	Receiving stream north of project site.	□ Yes □ No		□ Yes □ No		11.58 AC	5 AC

[Include additional rows or delete as necessary.]

# 2.3 Nature of the Construction Activities

#### **General Description of Project**

Provide a general description of the nature of your construction activities, including the age or dates of past renovations for structures that are undergoing demolition:

The project will expand the existing Lee's Summit Civic campus with the addition of a new fire administration building. The construction will disturb approximately 5-acres of site area.

If you are conducting earth-disturbing activities in response to a public emergency, document the cause of the public emergency (e.g., mud slides, earthquake, extreme flooding conditions, widespread disruption in essential public services), information substantiating its occurrence (e.g., State disaster declaration or similar State or local declaration), and a description of the construction necessary to reestablish affected public services:

# N/A

Business days and hours for the project: Project Oprtation Days and Hours

#### Size of Construction Site

Size of Property	11.58 Ac.
Total Area Expected to be Disturbed by Construction Activities	5.0 Ac.
Maximum Area Expected to be Disturbed at Any One Time, Including On-site and Off-site Construction Support Areas	5.0 Ac.

#### Type of Construction Site (check all that apply):

Single-Family Residential	Multi-Family Residential	Commercial	🗆 Industrial
🗆 Institutional 🛛 Highway	y or Road 🛛 Utility 🗍 Ot	her	
Will you be discharging dewa	tering water from your site?	⊠ Yes	□ No
If yes, will you be discharging former Federal or State remed	5	rent or 🛛 🗆 Yes	⊠ No

# **Pollutant-Generating Activities**

List and describe all pollutant-generating activities and indicate for each activity the associated pollutants or pollutant constituents that could be discharged in stormwater from your construction site. Take into account where potential spills and leaks could occur that contribute pollutants to stormwater discharges, and any known hazardous or toxic substances, such as PCBs and asbestos, that will be disturbed during construction.

Pollutant-Generating Activity	Pollutants or Pollutant Constituents
(e.g., paving operations; concrete, paint, and stucco washout and waste disposal; solid waste storage and disposal; and dewatering operations)	(e.g., sediment, fertilizers, pesticides, paints, caulks, sealants, fluorescent light ballasts, contaminated substrates, solvents, fuels)
On site grading and construction activities	Sediment
Seeding and/or sodding activities	Pesticides, Fertilizer
Building construction	Plaster, Glue, Adhesives, Paints, Caulks, Concrete
Building demolition	Plaster, Fluorescent Light Ballasts, Sediment, Paints, Glue, Adhesives, Concrete, etc.
Washout areas	Concrete
Parking lot and driveway construction	Asphalt, Concrete, Curing Compounds
Construction staging areas	Cleaning Solvents, Hydraulic Oil/Fluids, Gasoline, Diesel Fuel, Sewer Waste from Portable Toilets

# **Construction Support Activities** (only provide if applicable)

Describe any construction support activities for the project (e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas):

#### N/A

Contact information for construction support activity: TITAN CONSTRUCTION 913-782-6700 LWESTBROOK@TITANBUILT.COM [Repeat as necessary.]

#### 2.4 Sequence and Estimated Dates of Construction Activities

#### Phase I

Pre-Construction Activities - Prior to Land Disturbance - See Sheet C6.0				
Estimated Start Date of Construction Activities for this	TBD by Titan			
Phase				
Estimated End Date of Construction Activities for this	TBD by Titan			
Phase				
Estimated Date(s) of Application of Stabilization	TBD by Titan			
Measures for Areas of the Site Required to be	[Add additional dates as necessary]			
Stabilized				
Estimated Date(s) when Stormwater Controls will be	TBD by Titan			
Removed	[Add additional dates as necessary]			

#### Phase II

Mid-Construction Activities - Mass Grading, Utility Contruction - See Sheet C6.1		
Estimated Start Date of Construction Activities for this	TBD by Titan	
Phase		
Estimated End Date of Construction Activities for this	TBD by Titan	
Phase		
Estimated Date(s) of Application of Stabilization	TBD by Titan	
Measures for Areas of the Site Required to be		
Stabilized		
Estimated Date(s) when Stormwater Controls will be	TBD by Titan	
Removed		

#### Phase III

Post-Construction Activities - Building and Parking Lot Construction, Final Grading, Landscaping - See Sheet C6.2		
Estimated Start Date of Construction Activities for this Phase	TBD by Titan	
Estimated End Date of Construction Activities for this Phase	TBD by Titan	

Estimated Date(s) of Application of Stabilization Measures for Areas of the Site Required to be Stabilized	TBD by Titan
Estimated Date(s) when Stormwater Controls will be Removed	TBD by Titan

# 2.5 Authorized Non-Stormwater Discharges

# List of Authorized Non-Stormwater Discharges Present at the Site

Authorized Non-Stormwater Discharge	Will or May Occur at Your Site?
Discharges from emergency fire-fighting activities	🗆 Yes 🛛 No
Fire hydrant flushings	🗆 Yes 🛛 No
Landscape irrigation	🛛 Yes 🗆 No
Water used to wash vehicles and equipment	🛛 Yes 🗌 No
Water used to control dust	🛛 Yes 🗆 No
Potable water including uncontaminated water line flushings	🗆 Yes 🛛 No
External building washdown (soaps/solvents are not used and external surfaces do not contain hazardous substances)	🗆 Yes 🖾 No
Pavement wash waters	🛛 Yes 🗌 No
Uncontaminated air conditioning or compressor condensate	🗆 Yes 🛛 No
Uncontaminated, non-turbid discharges of ground water or spring water	🗆 Yes 🛛 No
Foundation or footing drains	🛛 Yes 🗆 No
Uncontaminated construction dewatering water	Xes 🗆 No

(Note: You are required to identify the likely locations of these authorized non-stormwater discharges on your site map. See Section 2.6, below, of this SWPPP Template.)

# 2.6 Site Maps



An aerial photo of the project location is shown above for context. Refer to Appendix A for detailed site maps that include the site layout, site grading, and site erosion control plans.

#### SECTION 3: DOCUMENTATION OF COMPLIANCE WITH OTHER FEDERAL/STATE REQUIREMENTS

#### 3.1 Endangered Species Protection

Is any threatened or endangered species habitat located within the site boundary or in the receiving water body?

No

Describe how this determination was made:

#### 3.2 Historic Property Screening Process

Are there any known historical or archeological sites present within the site boundary or any historic structures located within 1000 feet of the project site?

No

Describe how this determination was made:

# 3.3 Safe Drinking Water Act Underground Injection Control Requirements

Do you plan to install any of the following controls? Check all that apply below.

- □ Infiltration trenches (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system)
- Commercially manufactured pre-cast or pre-built proprietary subsurface detention vaults, chambers, or other devices designed to capture and infiltrate stormwater flow
- Drywells, seepage pits, or improved sinkholes (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system)

🛛 N/A

# SECTION 4: EROSION AND SEDIMENT CONTROLS AND DEWATERING PRACTICES

#### 4.1 Natural Buffers or Equivalent Sediment Controls

#### **Buffer Compliance Alternatives**

Are there any receiving waters within 50 feet of your project's earth disturbances?  $\Box$  YES  $\boxtimes$  NO

#### 4.2 Perimeter Controls

#### **Specific Perimeter Controls**

Filter Fabric Silt Fence			
<b>Description:</b> Inst	<b>Description:</b> Install filter fabric silt fence along the downslope perimeter of the project site.		
Installation	See Erosion Control Plans and Details in Appendix A.		
Maintenance Requirements	Remove sediment before it has accumulated to one-half of the above- ground height of any perimeter control. After a storm event, if there is evidence of stormwater circumventing or undercutting the perimeter control, extend controls and/or repair undercut areas to fix the problem.		
Design Specifications	See Erosion Control Plans and Details in Appendix A.		

#### 4.3 Sediment Track-Out

#### General

• Vehicle washing will be provided by the contractor as needed. If necessary, street cleaning will take place as soon as possible after sediment has left the site.

Construction En	trance		
<b>Description:</b> Ter	nporary rock construction entrance placed as the entry/exit location for		
construction ve	hicles.		
Installation	See Erosion Control Plans and Details in Appendix A.		
Maintenance Requirements	Where sediment has been tracked-out from the site onto paved roads, sidewalks, or other paved areas outside of your site, remove the deposited sediment by the end of the same business day in which the track-out occurs or by the end of the next business day if track-out occurs on a non-business day. Remove the track-out by sweeping, shoveling, or vacuuming these surfaces, or by using other similarly effective means of sediment removal. Hosing or sweeping tracked-out sediment into any constructed or natural site drainage feature, storm drain inlet, or receiving water is not allowed.		
Design	See Erosion Control Plans and Details in Appendix A.		
Specifications			

#### Specific Track-Out Controls

# 4.4 Stockpiles or Land Clearing Debris Piles Comprised of Sediment or Soil

#### General

 Stockpile areas will be monitored continuously throughout the project by the contractor. Stockpile areas will be bordered a minimum by perimeter silt fence. The contractor will be responsible to prevent soil from being transmitted away from the stockpile area by stormwater. Inspect weekly and within 24hrs after a rainfall event that may cause surface erosion, whichever is sooner. Maintain as necessary.

#### 4.5 Minimize Dust

#### General

 On areas of exposed soil, the contractor will minimize dust through the appropriate application of water or other dust suppression techniques to control the generation of pollutants that could be discharged in stormwater from the site.

#### 4.6 Minimize Steep Slope Disturbances

#### General

Disturbance of any existing steep slopes (40% or greater) is to be minimized by the contractor. Any constructed steep slopes (40% or greater) are to be protected.

#### Specific Steep Slope Controls

Steep Slope Protection			
Description: Install vertical soil stabilizing mats/blankets vertically down steep slopes.			
Installation	See Erosion Control Plans and Details in Appendix A.		
Maintenance	Inspect routinely and after rainfall events. Maintain or replace as necessary.		
Requirements			
Design	See Erosion Control Plans and Details in Appendix A.		
Specifications			

#### 4.7 Topsoil

#### General

• The final site design is highly impervious after construction, and therefore, little or no vegetation is inteded to remain.

#### 4.8 Soil Compaction

#### General

- In areas of the site where final vegetative stabilization will occur or where infiltration practices will be installed the contractor shall:
  - Restrict vehicle and equipment use in those locations.
  - Before seeding or planting areas of exposed soil that have been compacted, use techniques that rehabilitate and condition the soils as necessary to support vegetative growth.

# 4.9 Storm Drain Inlets

# General

• The contractor will install inlet protection measures that remove sediment from discharges prior to entry into any storm drain inlet that carries stormwater from the project site. The contractor will clean, or remove and replace, the protection measures as sediment accumulates, the filter becomes clogged, and/or performance is compromised. Where there is evidence of sediment accumulation adjacent to the inlet protection measure, remove the deposited sediment by the end of the same business day in which it is found or by the end of the following business day if removal by the same business day is not feasible.

#### **Specific Storm Drain Inlet Controls**

Storm Inlet Protection			
<b>Description:</b> Inst	<b>Description:</b> Install filter sock around storm inlet to remove sediment from runoff before entry		
into the existing	or proposed storm sewer system.		
Installation	See Erosion Control Plans and Details in Appendix A.		
Maintenance Requirements	Clean, or remove and replace, the inlet protection measures as sediment accumulates, the filter becomes clogged, and/or performance is compromised. Where there is evidence of sediment accumulation adjacent to the inlet protection measure, remove the deposited sediment by the end of the same business day in which it is found or by the end of the following business day if removal by the same business day is not feasible.		
Design Specifications	See Erosion Control Plans and Details in Appendix A.		

# 4.10 Constructed Site Drainage Feature

#### General

• The contractor will install erosion control features to control stormwater discharges, including both peak flowrates and total stormwater volume, to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points.

#### Specific Constructed Site Drainage Features

Rock Check Da	m
	all rock check dam within drainage channels to reduce erosion and trap
sediments.	
Installation	See Erosion Control Plans and Details in Appendix A.
Maintenance Requirements	The contractor will clean, or remove and replace, the protection measures as sediment accumulates, the filter becomes clogged, and/or performance is compromised. Where there is evidence of sediment accumulation adjacent to the inlet protection measure, remove the deposited sediment by the end of the same business day in which it is found or by the end of the following business day if removal by the same business day is not feasible.
Design Specifications	See Erosion Control Plans and Details in Appendix A.

#### 4.12 Dewatering Practices

• No dewatering practices are used on this project site.

#### 4.13 Site Stabilization

# Total Amount of Land Disturbance Occurring at Any One Time

Five Acres or less

 $\Box$  More than Five Acres

Final Seeding, S	od, and Landscaping
☑ Vegetative	□ Non-Vegetative
	Permanent
Description:	
<ul> <li>Initiate the soil where</li> </ul>	d and seeding as shown on the Erosion Control Plan in Appendix A. he installation of stabilization measures immediately in any areas of exposed re construction activities have permanently ceased or will be temporarily for 14 or more calendar days.
Installation	7/1/2022
Completion	12/30/2022
Maintenance	See Appendix A
Requirements	
Design Specifications	See Appendix A

# **SECTION 5: POLLUTION PREVENTION CONTROLS**

# 5.1 Potential Sources of Pollution

#### **Construction Site Pollutants**

Material/Chemical	Physical Description	Stormwater Pollutants	Location
Pesticides (insecticides, fungicides, herbicides, rodenticides)	Various colored to colorless liquid, powder, pellets, or grains	Chlorinated hydrocarbons, organophosphates, carbamates, arsenic	Herbicides used for noxious weed control
Fertilizer	Liquid or solid grains	Nitrogen, phosphorous	Newly seeded areas
Plaster	White granules or powder	Calcium sulphate, calcium carbonate, sulfuric acid	Building construction
Cleaning solvents	Colorless, blue, or yellow-green liquid	Perchloroethylene, methylene chloride, trichloroethylene, petroleum distillates	No equipment cleaning allowed in project limits
Asphalt	Black solid	Oil, petroleum distillates	Streets and roofing
Concrete	White solid/grey liquid	Limestone, sand, pH, chromium	Curb and gutter, building construction
Glue, adhesives	White or yellow liquid	Polymers, epoxies	Building construction
Paints	Various colored liquid	Metal oxides, Stoddard solvent, talc, calcium carbonate, arsenic	Building construction
Curing compounds	Creamy white liquid	Naphtha	Curb and gutter
Wood preservatives	Clear amber or dark brown liquid	Stoddard solvent, petroleum distillates, arsenic, copper, chromium	Timber pads and building construction
Hydraulic oil/fluids	Brown oily petroleum hydrocarbon	Mineral oil	Leaks or broken hoses from equipment
Gasoline	Colorless, pale brown or pink petroleum hydrocarbon	Benzene, ethyl benzene, toluene, xylene, MTBE	Secondary containment/staging area
Diesel Fuel	Clear, blue-green to yellow liquid	Petroleum distillate, oil & grease, naphthalene, xylenes	Secondary containment/staging area
Sewer waste from portable toilets	Brown	Nitrogen, phosphorous	Portable toilets/ construction staging area

# 5.2 Spill Prevention and Response

# **Spill Prevention**

- An effort will be made to store only enough material on site as is required to perform the work.
- All materials stored on site with be arranged in a neat, orderly manner within their appropriately labeled containers, and if possible, sheltered under a roof or within an enclosure.
- Substances stored shall not be mixed with one another unless recommended by the manufacturer.
- Whenever possible, a product will be used up before disposing of the container.
- Manufacturer's recommendations for proper use and disposal will be followed.
- The site manager or delegated personnel will inspect, daily, to ensure the proper use and disposal of onsite materials.
- Hazardous waste will be disposed of properly (as per local and state recommended methods)

# Spill Containment, Cleanup & Personnel Training

- Manufacturers' recommended methods for spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information and cleanup supplies.
- Materials and equipment necessary for spill cleanup will be kept in the material storage areas on site. Equipment and materials will include, but not be limited to, brooms, dust pans, maps, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for this purpose.
- All spills will be cleaned up immediately after discovery.
- The spill area will be kept well ventilated, and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- Spills of toxic or hazardous material will be reported to the appropriate state or local agency, regardless of the size.
- Should a spill occur, the spill prevention plan will be adjusted by the site manager to
  include measures to prevent this type of spill from reoccurring and how to clean up the
  spill if there is another one. A description of the spill, what caused it, and the cleanup
  measures will also be included.
- The site manager will be the spill prevention and cleanup coordinator.

# 5.3 Fueling and Maintenance of Equipment or Vehicles

#### General

 The contractor will provide an effective means of eliminating the discharge of spilled or leaked chemicals, including fuels and oils, from these activities. Adequate supplies will be available at all times to handle spills, leaks, and disposal of used liquids. Drip pans and absorbents will be used under leaky vehicles. Oil and oily wastes will be disposed of or recycled in accordance with federal, state, and local requirements. Spills will be cleaned up immediately using dry clean up measures.

# 5.4 Washing of Equipment and Vehicles

# General

• The contractor will provide designated washing areas to prevent wash water from running off to contaminate surface water or infiltrating to contaminate groundwater.

# 5.5 Storage, Handling, and Disposal of Building Products, Materials, and Wastes

#### 5.5.1 Building Materials and Building Products

#### General

 The contractor will provide either (1) cover (e.g., plastic sheeting, temporary roofs) to minimize the exposure of these products to precipitation and to stormwater, or (2) a similarly effective means designed to minimize the discharge of pollutants from these areas. Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a discharge of pollutants, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use).

#### 5.5.2 Pesticides, Herbicides, Insecticides, Fertilizers, and Landscape Materials

#### General

 The contractor will, in storage areas, provide either (1) cover (e.g., plastic sheeting, temporary roofs) to minimize the exposure of these chemicals to precipitation and to stormwater, or (2) a similarly effective means designed to minimize the discharge of pollutants from these areas; and comply with all application and disposal requirements included on the registered pesticide, herbicide, insecticide, and fertilizer label.

#### 5.5.3 Diesel Fuel, Oil, Hydraulic Fluids, Other Petroleum Products, and Other Chemicals

#### General

- If the total volume on site is 55 gallons or less, the contractor will store chemicals in watertight containers, if stored outside, use a spill containment pallet or similar device to capture small leaks or spills, and have a spill kit available on site that is in good working condition (i.e., not damaged, expired, or used up) and ensure personnel are available to respond expeditiously in the event of a leak or spill.
- If the total volume on site is more than 55 gallons, the contractor will store chemicals in water-tight containers, store containers a minimum of 50 feet from waters of the U.S., drainage systems, and stormwater inlets, provide either (1) cover (e.g., temporary roofs) to minimize the exposure of these containers to precipitation and to stormwater, or (2) secondary containment (e.g., curbing, spill berms, dikes, spill containment pallets); and have a spill kit available on site that is in good working condition and ensure personnel are available to respond expeditiously in the event of a leak or spill.

#### 5.5.4 Construction and Domestic Waste

#### General

• The contractor will provide waste containers of sufficient size and number to contain construction and domestic waste. Waste containers are to be emptied regularly and cleaned up immediately if they overflow.

# 5.5.5 Sanitary Waste

# General

• The contractor will position portable toilets so that they are secure and will not be tipped or knocked over, and so that they are located away from waters of the U.S. and stormwater inlets or conveyances.

# 5.6 Washing of Applicators and Containers used for Stucco, Paint, Concrete, Form Release Oils, Cutting Compounds, or Other Materials

#### General

 The contractor will provide areas to direct wash water into a leak-proof container or leak-proof and lined pit designed so that no overflows can occur due to inadequate sizing or precipitation. Washout and cleanout activities should occur as far away as possible from waters of the U.S. and stormwater inlets.

#### 5.7 Application of Fertilizers

#### General

The contractor will apply fertilizer at a rate and in amounts consistent with manufacturer's specifications, or document in the SWPPP departures from the manufacturer specifications where appropriate, apply at the appropriate time of year for your location, and preferably timed to coincide as closely as possible to the period of maximum vegetation uptake and growth, avoid applying before heavy rains that could cause excess nutrients to be discharged, never apply to frozen ground, never apply to stormwater conveyance channels, and follow all other federal, state, and local requirements regarding fertilizer application.

# SECTION 6: INSPECTION, MAINTENANCE, AND CORRECTIVE ACTION

#### 6.1 Inspection Personnel and Procedures

#### Site Inspection Schedule

- Every 7 calendar days
- Every 14 calendar days and within 24 hours of:

A rainfall total of 0.5 inches or greater being observed based on a single monitoring event; or based on the cumulative total of two consecutive monitoring events when the rainfall total of the first monitoring event is less than 0.5 inches.

#### 6.2 Corrective Action

#### Personnel Responsible for Corrective Actions

TITAN CONSTRUCTION or qualified person(s) appointed by TITAN CONSTRUCTION

#### **Corrective Action Logs**

A copy of the corrective action log is found in Appendix E.

#### 6.3 Delegation of Authority

#### Duly Authorized Representative(s) or Position(s):

TITAN CONSTRUCTION or qualified person(s) appointed by TITAN CONSTRUCTION

#### SECTION 7: CERTIFICATION AND NOTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name:	Title:
Signature:	Date:

#### SWPPP APPENDICES

Appendix A – Site Maps and Construction Documents

Appendix B – Construction General Permit

Appendix C – Example Inspection Report

Appendix E – Corrective Action Log

Appendix F – SWPPP Amendment Log

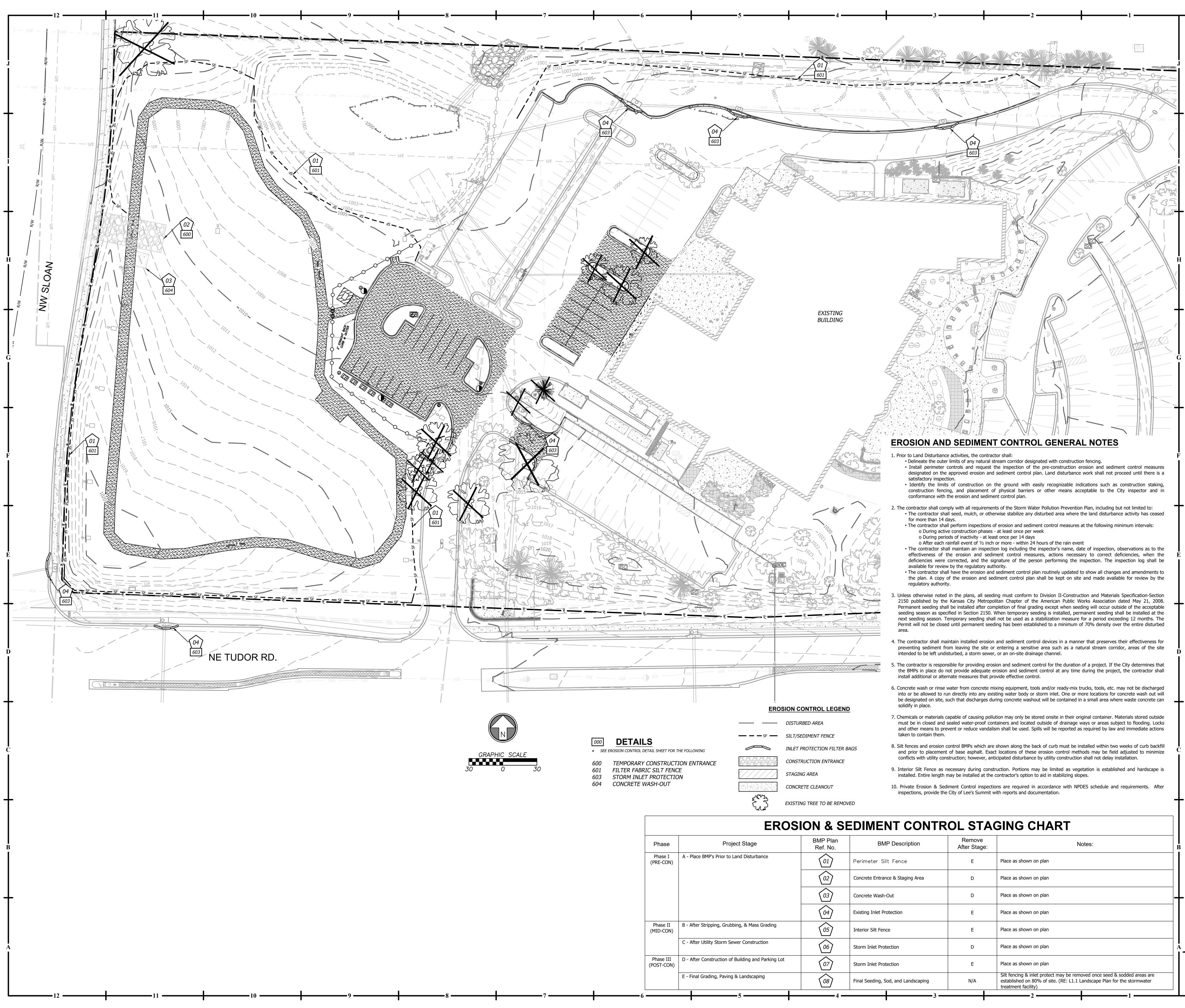
Appendix G – Subcontractor Certifications/Agreements

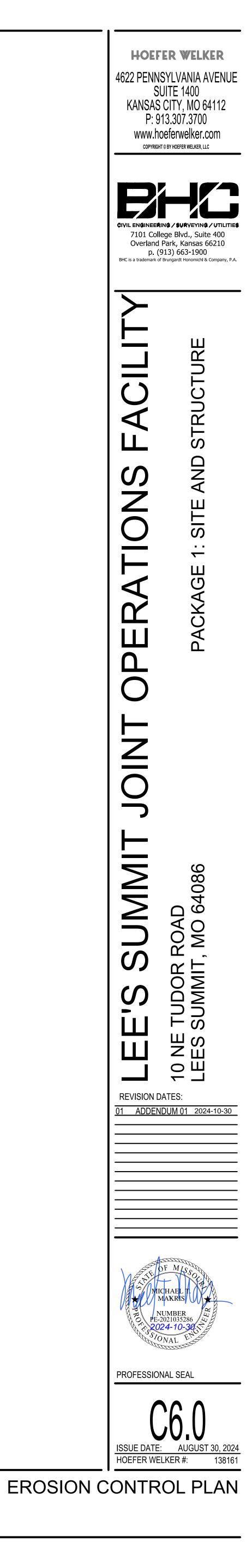
Appendix H – Grading and Stabilization Activities Log

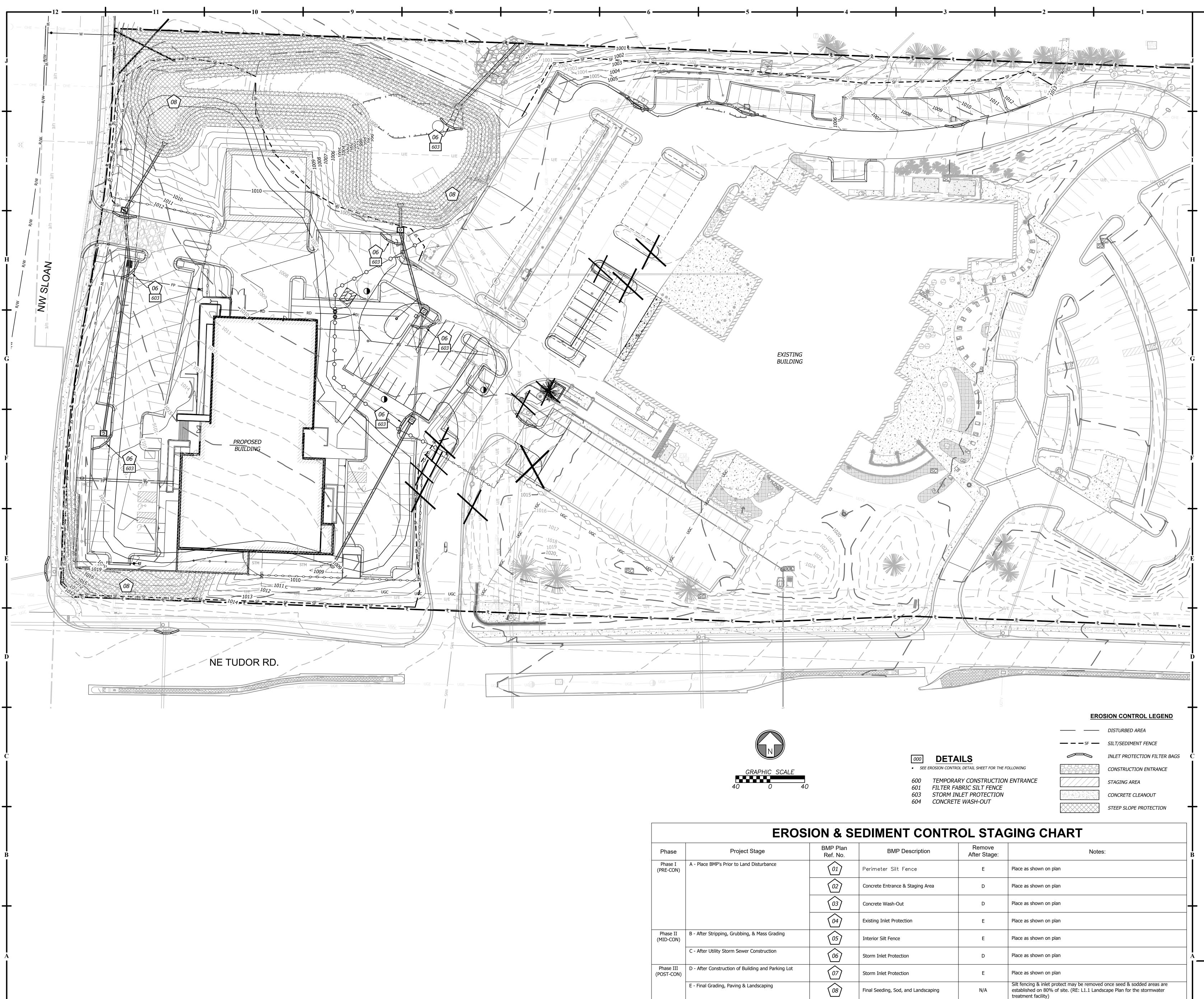
Appendix I – Training Documentation

Appendix J – Delegation of Authority

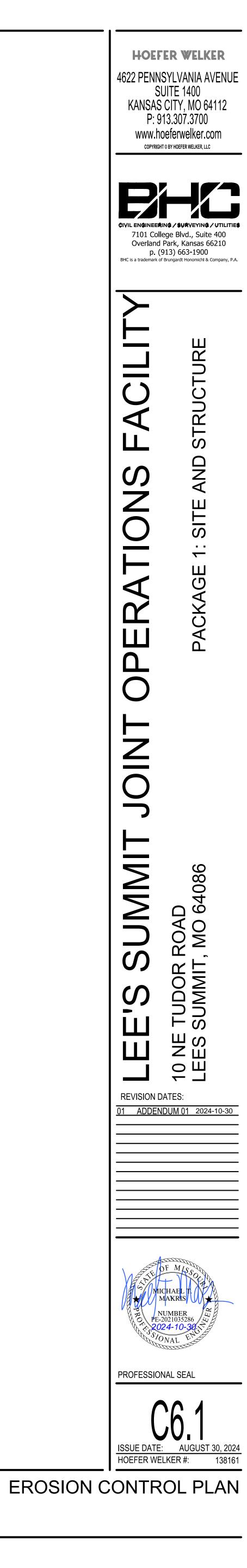
Appendix A – Site Maps and Construction Documents

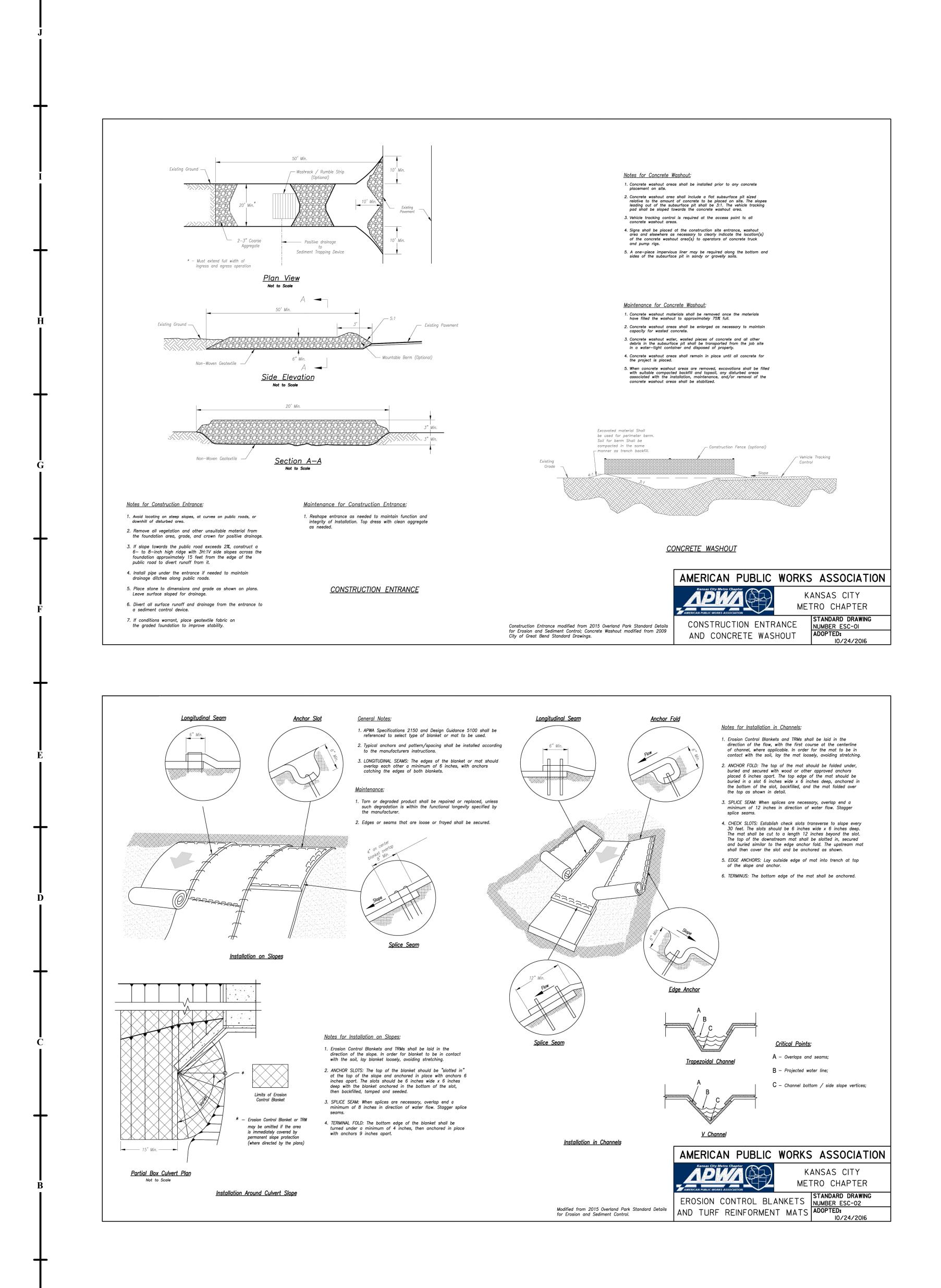


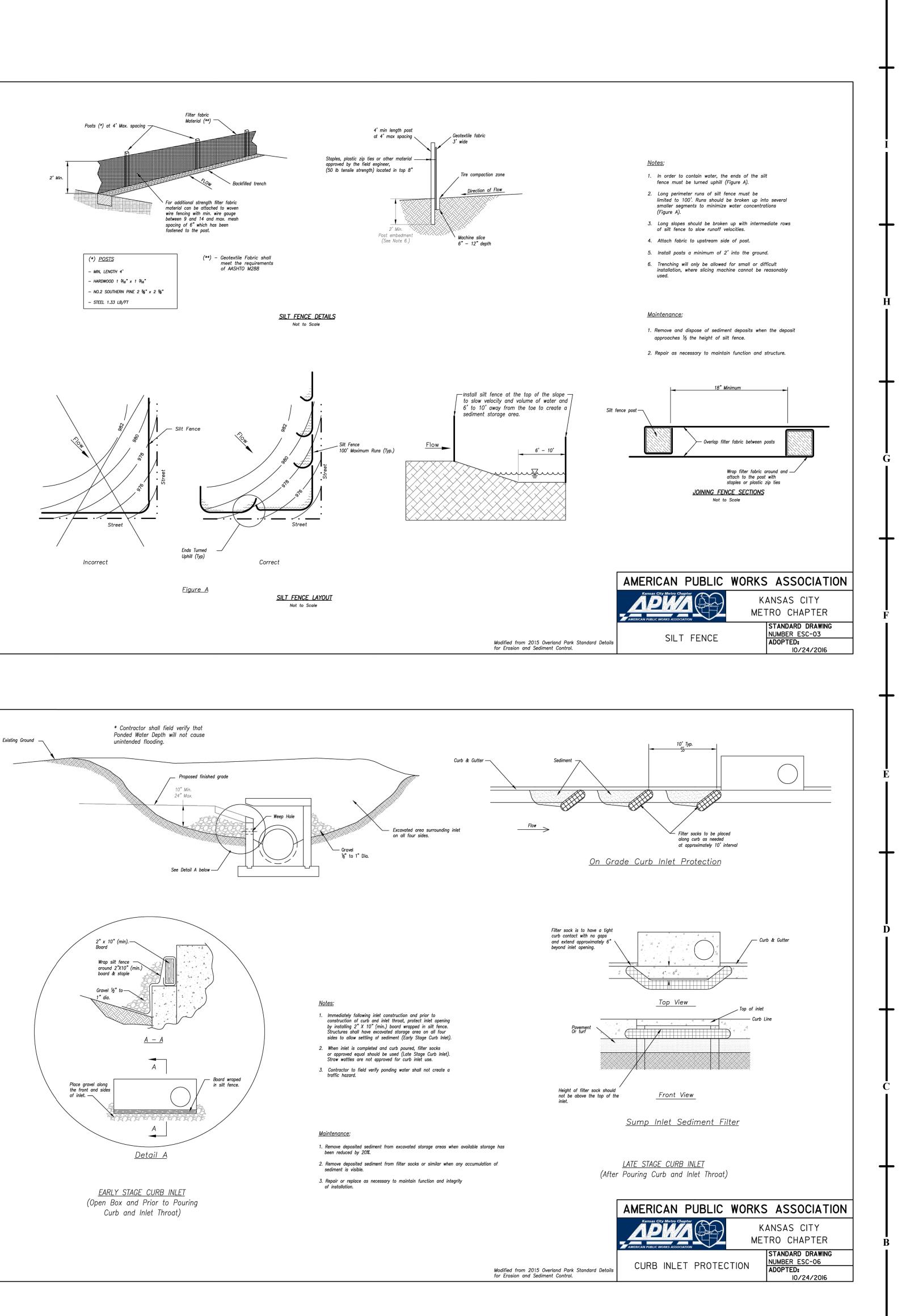


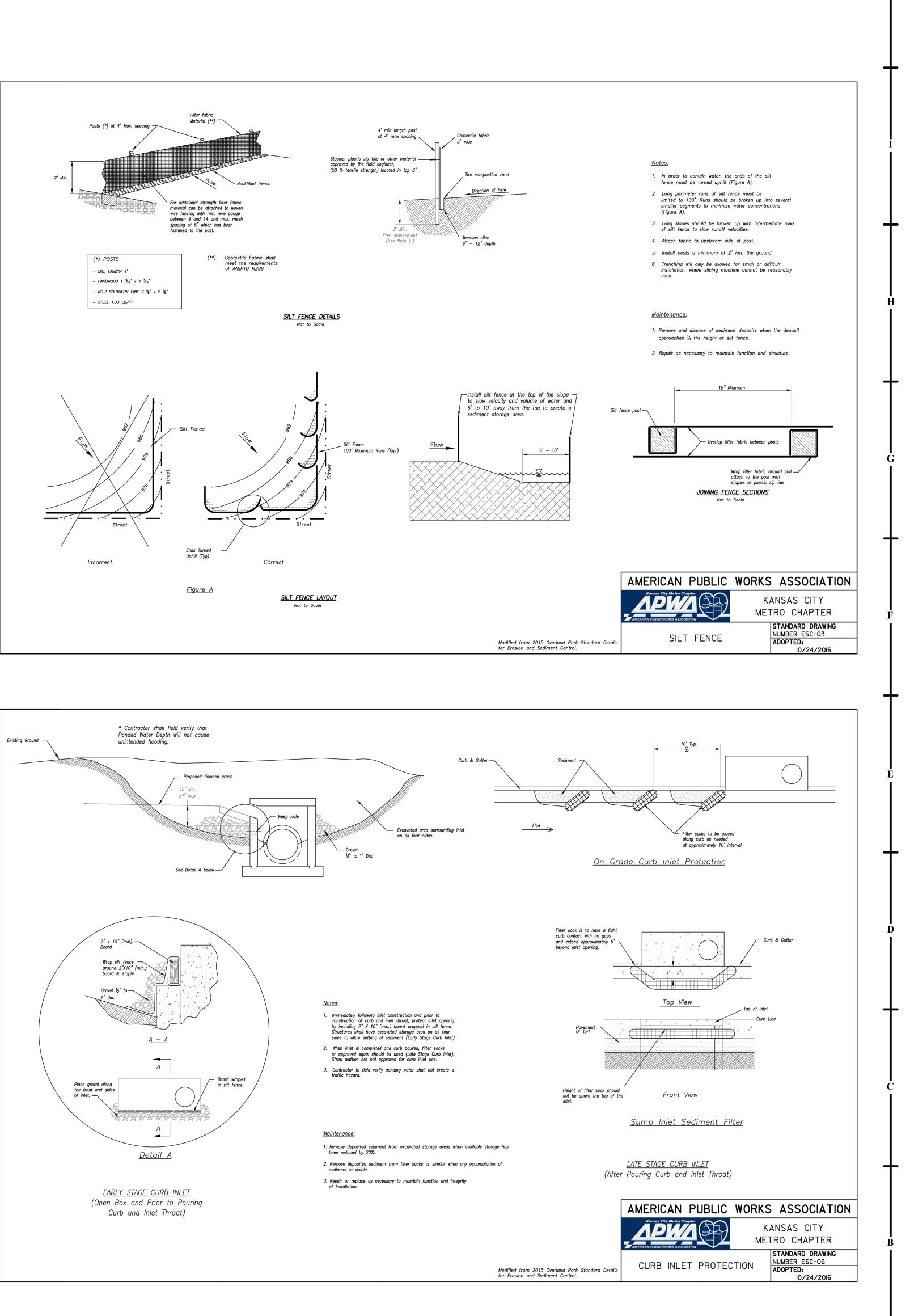


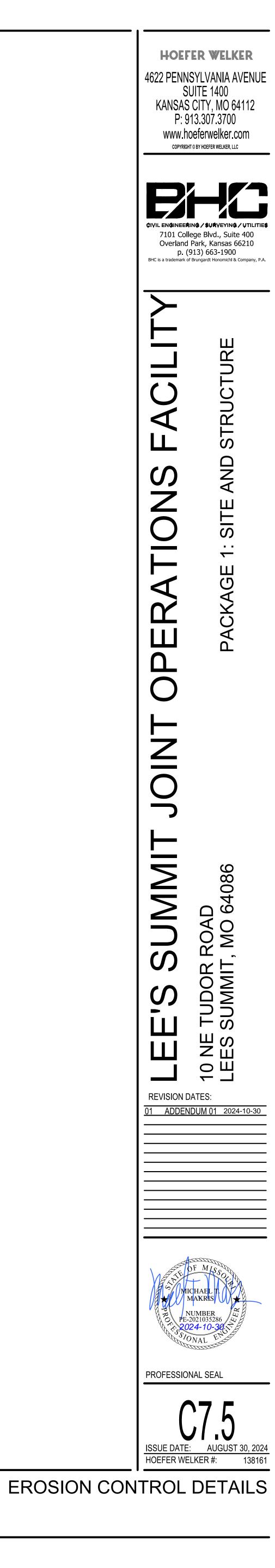
	EROS	SION & SE
Phase	Project Stage	BMP Plan Ref. No.
Phase I (PRE-CON)	A - Place BMP's Prior to Land Disturbance	
		02
		03
		04
Phase II (MID-CON)	B - After Stripping, Grubbing, & Mass Grading	05
	C - After Utility Storm Sewer Construction	06
Phase III (POST-CON)	D - After Construction of Building and Parking Lot	07
	E - Final Grading, Paving & Landscaping	08
j ———	5	4











Appendix B – Construction General Permit

# STATE OF MISSOURI

# **DEPARTMENT OF NATURAL RESOURCES**

# MISSOURI CLEAN WATER COMMISSION



# **MISSOURI STATE OPERATING PERMIT**

In compliance with the Missouri Clean Water Law (Chapter 644 RSMo, hereinafter, the Law) and the Federal Water Pollution Control Act (Public Law 92-500, 92<sup>nd</sup> Congress) as amended,

Permit No.:	MO-RAxxxxx
Owner:	< name >
Address:	< address >
Continuing Authority:	< name, or Same as above >
Address:	< address, or Same as above >
Facility Name:	< name >
Facility Address:	< physical address >
Legal Description:	<sup>1</sup> /4, <sup>1</sup> /4, <sup>1</sup> /4, Sec. xx, TxxN, RxxW, < county > County
UTM Coordinates:	X = , Y =
Receiving Stream:	< receiving stream > < (C, P, L1, L2, L3) >
First Classified Stream and ID:	< 1 <sup>st</sup> classified stream > <(C, P, etc.)> <(WBID #number)>
USGS Basin and Sub-watershed No.:	< (USGS HUC12 #) >

is authorized to discharge from the facility described herein, in accordance with the effluent limitations, benchmarks, and monitoring requirements as set forth herein.

#### **FACILITY DESCRIPTION**

#### All Outfalls

Construction or land disturbance activity (e.g., clearing, grubbing, excavating, grading, filling, and other activities that result in the destruction of the root zone and/or land disturbance activity that is reasonably certain to cause pollution to waters of the state).

This permit authorizes only stormwater and certain non-stormwater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas.

February 8, 2022 Effective Date

February 7, 2027 Expiration Date

hing Wiebug

hris Wieberg, Director, Water Protection Program

#### I. APPLICABILITY

#### A. Permit Coverage and Authorized Discharges

- 1. This Missouri State Operating Permit (permit) authorizes the discharge of stormwater and certain non-stormwater discharges from land disturbance sites that disturb one or more acres, or disturb less than one acre when part of a larger common plan of development or sale that will disturb a cumulative total of one or more acres over the life of the project. A permit must be issued before any disturbance of root zone of the existing vegetation or other land disturbance activities may begin.
- 2. If an individual or developer proposes to improve a lot for development or sale that is less than an acre and part of a common plan of development or sale, a permit is required. If an individual proposes to develop a lot to reside on themselves, the development is not considered part of the larger common plan of development or sale and does not require a permit unless the lot is an acre or more [10 CSR 20-6.200 (1)(B)6.]. See table below.

#### Permit Requirements for a Common Promotional Plan

	Land Disturbance Permit Required?	
	Less than one acre (< 1 acre)	One acre or more (≥ 1 acre)
Land disturbance by a developer (or a contractor working on their behalf), regardless of type of development (initial, commercial, residential)	Yes, if part of a larger common plan of development or sale with cumulative disturbance of one or more acres including individual residential lots in order to improve the lot for sale	Yes
Land disturbance by an individual to reside on themselves (or a contractor working on their behalf)	No	Yes

This general permit also authorizes the discharge of stormwater and certain non-stormwater discharges from smaller projects where the Missouri Department of Natural Resources (Department) has exercised its discretion to require a permit [10 CSR 20-6.200 (1)(B)].

A Missouri State Operating Permit (MORA, MOR100, or site specific) that specifically identifies the project must be issued before any site vegetation is removed (disturbance of the root zone) or the site disturbed [10 CSR 20-6.200 (1)(A)].

Any persons who operate, use, or maintain a land disturbance activity (owner/operator) which is subject to permitting requirements for stormwater discharges from land disturbance activities, who disturbs land prior to permit issuance from the Department is in violation of both State [10 CSR 20-6.200 (1)(A)] and Federal regulations.

The owner/operator and continuing authority of this permit are responsible for compliance with this permit [10 CSR 20-6.200 (3)(B)].

The primary operator(s) of a land disturbance site is any party associated with the project who either: 1) has operational control over construction plans, including the ability to make modifications to those plans; or 2) has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit conditions. This may be the General Contractor, Project Manager, or similar role.

- 3. This permit authorizes stormwater discharges from land disturbance support activities (e.g., equipment staging yards, material storage areas, excavated material disposal areas, borrow areas, concrete, or asphalt batch plants) provided appropriate stormwater controls are designed, installed, and maintained and the following conditions are met and addressed in the Stormwater Pollution Prevention Plan (SWPPP):
  - (a) The support activity is directly related to the construction site required to have permit coverage for stormwater discharges;
  - (b) The support activity is not a commercial operation or serve multiple unrelated construction sites;
  - (c) The support activity does not continue to operate beyond the completion of the construction activity at the project it supports;
  - (d) Sediment and erosion controls are implemented in accordance with the conditions of this permit; and
  - (e) The support activity is strictly stormwater discharges. Support activities which discharge process water shall apply for separate coverage, such as a concrete batch plant discharging process water shall be covered under a MOG49.

The permittee is responsible for compliance with this permit for any construction support activity.

- 4. This permit authorizes non-stormwater discharges from the following activities provided that these discharges are treated by appropriate Best Management Practices (BMPs) where applicable and addressed in the permittee's specific SWPPP required by this general permit:
  - (a) Discharges from emergency fire-fighting activities;
  - (b) De-chlorinated fire hydrant flushing;
  - (c) Uncontaminated water line flushing;
  - (d) Uncontaminated condensate from air conditioning or compressor condensate;
  - (e) Landscape watering;
  - (f) Uncontaminated, non-turbid discharges of ground water or spring water;
  - (g) Foundation or footing drains where flows are not contaminated with process materials;
  - (h) Water used to control dust; and
  - (i) Pavement wash waters, provided spills or leaks of toxic or hazardous substances have not occurred (unless all spill material has been removed) and where soaps, solvents, and detergents are not used. Directing pavement wash waters directly into any water of the state, storm inlet, or stormwater conveyance, unless the conveyance is connected to an effective control, is prohibited.
- 5. Sites that have contaminated soils that will be disturbed by the land disturbance activity, or where such materials are brought to the site to use as fill or borrow, shall notify the Department's Water Protection Program for approval <u>before</u> applying for coverage under this permit. The Department reserves the right to revoke or deny coverage under this general permit; a site-specific permit may be required to cover such activities.

#### **B.** Permit Restrictions

- 1. Any non-stormwater discharges other than those explicitly authorized in Part I APPLICABILTY, Condition A.3 are prohibited under this permit.
- 2. This permit does not authorize the discharge of process wastewaters, treated or otherwise, including water used to wash machinery, equipment, buildings, or wastewater from washout of concrete.
- 3. For sites operating within the watershed of any Outstanding National Resource Water (which includes the Ozark National Riverways and the National Wild and Scenic Rivers System), sites that discharge to an Outstanding State Resource Water, or facilities located within the watershed of an impaired water as designated in the 305(b) report, including the 303(d) list, with an impairment for sediment:

(a) This permit authorizes stormwater discharge so long as no degradation of water quality occurs due to discharges from the permitted facility per 10 CSR 20-7.031(3)(C) and as long as the facility is 1,000 or more feet away from the Outstanding National or State Resource Water or a water of the state with an impairment for sediment.

(b) A site with a discharge found to be causing degradation or contributing to an impairment by discharging a pollutant of concern, during an inspection or through complaint investigations, may be required to become a no discharge facility or obtain a site-specific permit with more stringent monitoring and SWPPP requirements.

(c) For sites within 1,000 feet of Outstanding National or State Resource Water or a water of the state with an impairment for sediment, the site shall operate as a no-discharge facility as defined in 10 CSR 20-6.015(1)(B)7, and discharges from dewatering of sedimentation basins is prohibited.

- 4. This general permit does not authorize the placement of fill materials in flood plains, placement of fill into any floodway, the obstruction of stream flow, or changing the channel of a defined drainage course. This general permit addresses only the quality of the stormwater runoff and the minimization of off-site migration of sediments and other water contaminants.
- 5. This permit does not allow stream channel or wetland alterations unless approved by Section 404 of the federal Clean Water Act (CWA) permitting authorities. Land disturbance activities may not begin in waters of the United States until any required Section 404 permit and Section 401 certification have been obtained.
- 6. This operating permit does not affect, remove, or replace any requirement of the National Environmental Policy Act; the Endangered Species Act; the National Historic Preservation Act; the Comprehensive Environmental Response, Compensation and Liability Act; the Resource Conservation and Recovery Act; or any other relevant acts. Determination of applicability to the above mentioned acts is the responsibility of the permittee. Additionally, this permit does not establish terms and conditions for runoff resulting from silvicultural activities listed in Section 402(1)(3)(a) of the Clean Water Act.
- 7. Compliance with all requirements in this permit does not supersede any requirement for obtaining project approval from an established local authority nor remove liability for compliance with county and other local ordinances.

- 8. The Department may require any facility or site authorized by a general permit to apply for a site-specific permit [10 CSR 20-6.010(13)(C)]. Cases where a site-specific permit may be required include, but are not limited to, the following:
  - (a) The discharge(s) is a significant contributor of a pollutant(s) which impairs the designated uses or general criteria of the receiving stream;
  - (b) The discharger is not in compliance with the conditions of the general permit;
  - (c) A Total Maximum Daily Load (TMDL) containing requirements applicable to the discharge(s) is approved; or
  - (d) Materials or contaminants exist at the site, or are brought to the site to use as fill or borrow, which may necessitate special controls or permit limits not otherwise considered under this general permit, such as contaminated soils from federal clean-up sites. This general permit may be authorized when additional contaminant controls are proposed by the applicant and the proposal is accepted by the Department in written correspondence.
- 9. If a facility or site covered under a current general permit desires to apply for a site-specific permit, the facility or site may do so by contacting the Department for application requirements and procedures.
- 10. Any discharges not expressly authorized in this permit and not clearly disclosed in the permit application cannot become authorized or shielded from liability under CWA section 402(k) or Section 644.051.16, RSMo, by disclosure to EPA, state, or local authorities after issuance of this permit via any means, including any other permit applications, funding applications, the SWPPP, discharge monitoring reporting, or during an inspection. Discharges at the facility not expressly authorized by this permit must be covered by another permit, be exempt from permitting, or be authorized through some other method.
- 11. In the event that a State of Emergency is declared, either by the State or Federal government, and as a result an emergency-related project requires land disturbance activity that requires a permit, the owner/operator of the project may begin work prior to permit issuance so long as they implement sediment and erosion controls in compliance with the master general permit conditions contained herein. The owner/operator is not exempt from permitting and shall apply for the land disturbance permit as soon as practicable but no later than seven calendar days after starting work. The Department may determine that other emergencies, considered on a case-by-case basis, are applicable. Contact the Department to determine if non-state of emergencies are applicable.

#### **II. EXEMPTIONS FROM PERMIT REQUIREMENTS**

- Facilities that discharge all stormwater runoff directly to a combined sewer system (as defined in 40 CFR 122.26 and 40 CFR 35.2005) connecting to a publicly owned treatment works which has consented to receive such a discharge are exempt from Department stormwater permit requirements.
- 2. Land disturbance activities that disturb less than one (1) acre of total land area which are not part of a common plan of sale where water quality standards are not exceeded are exempt from Department stormwater permit requirements. Land disturbance activity on an individual residential building lot is not considered as part of the overall subdivision unless the activity is by the developer to improve the lot for sale.
- 3. Oil and gas related activities as listed in 40 CFR 122.26(a)(2)(ii) where water quality standards are not exceeded are exempt from Department stormwater permit requirements.
- 4. Linear, strip, or ribbon construction or maintenance operations meeting one (1) of the following criteria are exempt from Department stormwater permit requirements:
  - (a) Grading of existing dirt or gravel roads which does not increase the runoff coefficient and the addition of an impermeable surface over an existing dirt or gravel road;
  - (b) Cleaning or routine maintenance of roadside ditches, sewers, waterlines, pipelines, utility lines, or similar facilities;
  - (c) Trenches two (2) feet in width or less; or
  - (d) Emergency repair or replacement of existing facilities as long as BMPs are employed during the emergency repair.

#### **III. REQUIREMENTS**

1. The permittee shall post a public notification sign at the main entrance to the site with the specific MORA permit number. The public notification sign must be visible from the public road that provides access to the site's main entrance. An alternate location is acceptable provided the public can see it and it is noted in the SWPPP. The public notification sign must remain posted at the site until the permit has been terminated. The sign is provided at the end of this permit.

- 2. The permittee shall be responsible for notifying the land owner and each contractor or entity (including utility crews and city employees or their agents) who will perform work at the site of the existence of the SWPPP and what actions or precautions shall be taken while on-site to minimize the potential for erosion and the potential for damaging any BMP. The permittee is responsible for any damage a subcontractor may do to established BMPs and any subsequent water quality violation resulting from the damage.
- 3. Ensure the design, installation, and maintenance of effective erosion and sediment controls to minimize the discharge of pollutants. At a minimum, such controls must be designed, installed, and maintained to:
  - (a) Control stormwater volume, velocity, and peak flow rates within the site to minimize soil erosion;
  - (b) Control stormwater discharges, including both peak flow rates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and stream bank erosion and scour;
  - (c) Minimize the amount of exposed soil during construction activity;
  - (d) Minimize the disturbance of steep slopes;
  - (e) Minimize sediment discharges from the site. Address factors such as:
    - 1) the amount, frequency, intensity, and duration of precipitation;
    - 2) the nature of resulting stormwater runoff;
    - 3) expected flow from impervious surfaces, slopes, and drainage features; and
    - 4) soil characteristics, including the range of soil particle size expected to be present on the site;
  - (f) Provide and maintain natural buffers around surface waters as detailed in Part V. BMP REQUIREMENTS Condition 7, direct stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration and filtering, unless infeasible;
  - (g) Minimize soil compaction and preserve topsoil where practicable; and
  - (h) Capture or treat a 2-year, 24-hour storm event.
- 4. A 2-year, 24-hour storm event shall be determined for the project location using the National Oceanic and Atmospheric Administration's National Weather Service Atlas 14 which can be located at <a href="https://hdsc.nws.noaa.gov/hdsc/pfds/pfds">https://hdsc.nws.noaa.gov/hdsc/pfds/pfds</a> map cont.html.
  - (a) As an alternative to utilizing NOAA Atlas 14 for site specific data to determine the 2-year, 24-hour storm event the conservative default value can be used based on the map provided by the Department in the Factsheet portion of this permit. The permittee may choose which source to use for the site specific data.
- 5. BMPs for land disturbance [10 CSR 20-6.200(1)(D)2] are a schedule of activities, practices, or procedures that reduces the amount of soil available for transport or a device that reduces the amount of suspended solids in runoff before discharge to waters of the state. The term BMPs are also used to describe the sediment and erosion controls and other activities used to prevent stormwater pollution. BMPs are divided into two main categories: structural or non-structural; and they are also classified as temporary or permanent.
- 6. Installation of BMPs necessary to prevent soil erosion and sedimentation at the downgradient project boundary (e.g. buffers, perimeter controls, exit point controls, storm drain inlet protection) must be complete prior to the start of all phases of construction. By the time construction activity in any given portion of the site begins, downgradient BMPs must be installed and operational to control discharges from the initial site clearing, grading, excavating, and other earth-disturbing activities. Additional BMPs shall be installed as necessary throughout the life of the project. Following the installation of these initial BMPs, all BMPs needed to control discharges shall be installed and made operational prior to subsequent earth disturbing activities.
- 7. Temporary BMPs may be added and removed as necessary with updates to the SWPPP as specified in the requirements below.
- 8. All BMPs shall be maintained and remain in effective operating condition during the entire duration of the project, with repairs made within the timeframes specified elsewhere in this permit, until final stabilization has been achieved.
  - (a) Ensure BMPs are protected from activities that would reduce their effectiveness.
  - (b) Remove any sediment per the BMP manufacturer's instructions or before it has accumulated to one-half of the aboveground height of any BMP that collects sediment (i.e. silt fences, sediment traps, etc.)
  - (c) The project is considered to achieve final stabilization when Part V. BMP REQUIREMENTS, Condition 13 is met.
- 9. Minimize sediment trackout from the site and sediment transport onto roadways.
  - (a) Restrict vehicle traffic to designated exit points.
  - (b) Use appropriate stabilization techniques or BMPs at all points that exit onto paved roads or areas outside of the site.
  - (c) Use additional controls to remove sediment from vehicle and equipment tires prior to exit from facility where necessary.
  - (d) Any sediment or debris that is tracked out past the exit pad or is deposited on a roadway after a precipitation event shall be removed the shorter of either daily or before a rain event. Remove the track-out sediment by sweeping, shoveling, or vacuuming these surfaces, or by using other similarly effective means of sediment removal. Sediment or debris tracked out

on pavement or other impervious surfaces shall not be disposed of into any stormwater conveyance, storm drain inlet, or water of the state.

- (e) Stormwater inlets susceptible to receiving sediment or other pollutants from the permitted land disturbance site shall have curb inlet protection. This may include inlets off the active area where track out from vehicles and equipment could impact the stormwater runoff to those inlets.
- 10. Concrete washout facilities shall be used to contain concrete waste from the activities onsite, unless the washout of trucks and equipment is managed properly at an offsite location.

The washout facility shall be managed to prevent solid and/or liquid waste from entering waters of the state by the following:

- (a) Direct the wash water into leak-proof containers or pits designed so that no overflows can occur due to inadequate sizing or precipitation;
- (b) Locate washout activities a minimum of 50 feet from waters of the state, stormwater inlets and/or stormwater conveyances;
- (c) Washout facilities shall be cleaned, or new facilities must be constructed and ready for use, once the washout is 75% full;
- (d) Designate the washout area(s) and conduct such activities only in these areas.
- (e) Ensure contractors are aware of the location, such as by marking the area(s) on the map or signage visible to the truck and/or equipment operators.
- 11. Good housekeeping practices shall be maintained at all times to keep waste from entering waters of the state.
  - (a) Provide solid and hazardous waste management practices, including providing trash containers, regular site cleanup for proper disposal of solid waste such as scrap building material, product/material shipping waste, food/beverage containers, spent structural BMPs;
  - (b) Provide containers and methods for proper disposal of waste paints, solvents, and cleaning compounds.
  - (c) Manage sanitary waste. Portable toilets shall be positioned so that they are secure and will not be tipped or knocked over and so that they are located away from waters of the state and stormwater inlets and stormwater conveyances.
  - (d) Ensure the storage of construction materials be kept away from drainage courses, stormwater conveyances, storm drain inlets, and low areas.
- 12. All fueling facilities present shall at all times adhere to applicable federal and state regulations concerning underground storage, above ground storage, and dispensers.
- 13. Any hazardous wastes that are generated onsite shall be managed, stored, and transported according to the provisions of the Missouri Hazardous Waste Laws and Regulations.
- 14. Store all paints, solvents, petroleum products, petroleum waste products, and storage containers (such as drums, cans, or cartons) so they are not exposed to stormwater or provide other prescribed BMPs such as plastic lids and/or portable spill pans to prevent the commingling of stormwater with container contents. Commingled water may not be discharged under this permit. Provide spill prevention, control, and countermeasures to contain the spill. Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall prevent the contamination of groundwater.
- 15. Implement measures intended to prevent the spillage or loss of fluids, oil, grease, fuel, etc. from vehicles and equipment to thereby prevent the contamination of stormwater from these substances. This may include prevention measures such as, but not limited to, utilizing drip pans under vehicles and equipment stored outdoors, covering fueling areas, using dry clean-up methods, use of absorbents, and cleaning pavement surfaces to remove oil and grease.
- 16. Spills, Overflows, and Other Unauthorized Discharges.
  - (a) Any spill, overflow, or other discharge not specifically authorized in the permit above are unauthorized.
  - (b) Should an unauthorized discharge cause or permit any contaminants to discharge or enter waters of the state, the unauthorized discharge must be reported to the appropriate Regional Office as soon as practicable but no more than 24 hours after the discovery of the discharge. If the spill or overflow needs to be reported after normal business hours or on the weekend, the facility must call the Department's Environmental Emergency Response hotline at (573) 634-2436. Leaving a message on a Department staff member voice-mail does not satisfy this reporting requirement.
  - (c) A record of all spills shall be retained with the SWPPP and made available to the Department upon request.
  - (d) Other spills not reaching waters of the state must be cleaned up as soon as possible to prevent entrainment in stormwater but are not required to be reported to the Department.
- 17. The full implementation of this operating permit shall constitute compliance with all applicable federal and state statutes and regulations in accordance with RSMo 644.051.16 and the CWA §402(k); however, this permit may be reopened and modified or alternatively revoked and reissued to comply with any applicable effluent standard or limitation issued or approved under Clean Water Act §§ 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) if the effluent standard or limitation so issued or approved contains different conditions or is otherwise more stringent than any effluent limitation in the permit or controls any pollutant not limited

in the permit. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, termination, notice of planned changes, or anticipated non-compliance does not stay any permit condition.

#### **IV. STORMWATER POLLUTION PREVENTION PLAN (SWPPP) MANAGEMENT REQUIREMENTS**

1. The primary requirement of this permit is the development and implementation of a SWPPP which incorporates site specific practices to best minimize the soil exposure, soil erosion, and the discharge of pollutants, including solids.

The purpose of the SWPPP is to ensure the design, implementation, management, and maintenance of BMPs in order to prevent sediment and other pollutants in stormwater discharges associated with the land disturbance activities [40 CFR 122.44 (k)(4)] from entering waters of the state above established general and narrative criteria; compliance with Missouri Water Quality Standards; and compliance with the terms and conditions of this general permit.

- (a) The SWPPP must be developed and implemented <u>prior to conducting any land disturbance activities</u> and must be specific to the land disturbance activities at the site.
- (b) The permittee shall fully implement the provisions of the SWPPP required under this permit as a condition of this general permit throughout the term of the land disturbance project. Failure to develop, implement, and maintain a SWPPP may lead to immediate enforcement action.
- (c) The SWPPP is a living document and shall be updated any time site conditions warrant adjustments to the project or BMPs.
- (d) Either an electronic copy or a paper copy of the SWPPP, and any required reports, must be accessible to anyone on-site at all times when land disturbance operations are in process or other operational activities that may affect the maintenance or integrity of the BMP structures and made available as specified under Part VIII. STANDARD PERMIT CONDITIONS, Condition 1 of this permit. The SWPPP shall be readily available upon request and should not be sent to the Department unless specifically requested
- 2. A SWPPP must be developed, implemented, and maintained at the site or electronically accessible by on-site personnel. Failure to implement and maintain the BMPs chosen, which can be revised and updated, is a permit violation. The chosen BMPs will be the most reasonable and cost effective while also ensuring the highest quality water discharged attainable for the facility. Facilities with established SWPPPs and BMPs shall evaluate BMPs on a regular basis and change the BMPs as needed if there are BMP deficiencies.
- 3. The SWPPP must:
  - (a) List and describe the location of all outfalls;
  - (b) List any allowable non-stormwater discharges occurring on site and where these discharges occur;
  - (c) Incorporate required practices identified below;
  - (d) Incorporate sediment and erosion control practices specific to site conditions;
  - (e) Discuss whether or not a 404 Permit is required for the project;
  - (f) Discuss whether the discharges are in the watershed of Outstanding National or State Resource Water or in the watershed of a water impaired for sediment.
  - (g) Name the person(s) responsible for inspection, operation, and maintenance of BMPs. The SWPPP shall list the names and describe the role of all owners/primary operators (such as general contractor, project manager) responsible for environmental or sediment and erosion control at the land disturbance site.
- 4. The SWPPP briefly must describe the nature of the land disturbance activity, including:
  - (a) The function of the project (e.g., low density residential, shopping mall, highway, etc.);
  - (b) The intended sequence and timing of activities that disturb the soils at the site;
  - (c) Estimates of the total area expected to be disturbed by excavation, grading, or other land disturbance support activities including off-site borrow and fill areas;
  - (d) If within the boundaries of a regulated Municipal Separate Storm Sewer System (MS4s), list the name of the regulated MS4.
- 5. In order to identify the site, the SWPPP shall include site information including size in acres. The SWPPP shall have sufficient information to be of practical use to contractors and site construction workers to guide the installation and maintenance of BMPs.
- 6. The function of the SWPPP and the BMPs listed therein is to prevent or minimize pollution to waters of the state. A deficiency of a BMP means it was not effective in preventing or minimizing pollution of waters of the state.

The permittee shall select, install, use, operate and maintain appropriate BMPs for the permitted site. The following manuals are acceptable resources for the selection of appropriate BMPs:

*Developing Your Stormwater Pollution Prevention Plan: A Guide for Construction Sites*, (Document number EPA 833-R-06-004) published by the United States Environmental Protection Agency (USEPA) in May 2007. This manual as well as other information, including examples of construction SWPPPs, is available at the USEPA internet site at <a href="https://www.epa.gov/sites/production/files/2015-10/documents/sw\_swppp\_guide.pdf">https://www.epa.gov/sites/production/files/2015-10/documents/sw\_swppp\_guide.pdf</a>; and <a href="https://www.epa.gov/npdes/developing-stormwater-pollution-prevention-plan-swppp">https://www.epa.gov/npdes/developing-stormwater-pollution-prevention-plan-swppp</a>.

The latest version of *Protecting Water Quality: A field guide to erosion, sediment and stormwater best management practices for development sites in Missouri,* published by the Department. This manual is available at: <u>https://dnr.mo.gov/document-search/protecting-water-quality-field-guide</u>.

The permittee is not limited to the use of these guidance manuals. Other guidance publications may be used to select appropriate BMPs. However, all BMPs must be described and justified in the SWPPP. Although the use of these manuals or other resources is recommended and may be used for BMP selection, they do not supersede the conditions of this permit. They may be used to inform in the decision making process for BMP selection but they are not themselves part of the permit conditions.

The permittee may retain the SWPPP, inspection reports, and all other associated documents (including a copy of this permit) electronically pursuant to RSMo 432.255. The documents must be made available to all interested persons in either paper or electronic format as required by this permit and the permittee must remit a copy (electronic or otherwise) of the SWPPP and inspection reports to the Department upon request.

- 7. The SWPPP must contain a legible site map, multiple maps if necessary, identifying:
  - (a) Site boundaries of the property;
  - (b) Locations of all waters of the state (including wetlands) within the site and half a mile downstream of the site's outfalls;
  - (c) Location of all outfalls;
  - (d) Direction(s) of stormwater flow (use arrows) and approximate slopes before and after grading activities;
  - (e) Areas of soil disturbance and areas that will not be disturbed (or a statement that all areas of the site will be disturbed unless otherwise noted);
  - (f) Location of structural and non-structural BMPs, including natural buffer areas, identified in the SWPPP;
  - (g) Locations where stabilization practices are expected to occur;
  - (h) Locations of on-site and off-site material, waste, borrow or equipment storage areas and stockpiles;
  - (i) Designated points where vehicles will exit the site;
  - (j) Location of stormwater inlets and conveyances including ditches, pipes, man-made conduits, and swales; and
  - (k) Areas where final stabilization has been achieved.
- 8. An individual shall be designated by the permittee as the environmental lead. This environmental lead shall have knowledge in erosion, sediment, and stormwater control principles, knowledge of the permit, and the site's SWPPP. The environmental lead shall ensure all personnel and contractors understand any requirements of this permit may be affected by the work they are doing. The environmental lead or designated inspector(s) knowledgeable in erosion, sediment, and stormwater control principles shall inspect all structures that function to prevent or minimize pollution of waters of the state.
- 9. Throughout coverage under this permit, the permittee shall amend and update the SWPPP as appropriate during the term of the land disturbance activity. All SWPPP modifications shall be signed and dated. The permittee shall amend the SWPPP to incorporate any significant site condition changes which impact the nature and condition of stormwater discharges. At a minimum, these changes include whenever the:
  - (a) Location, design, operation, or maintenance of BMPs is changed;
  - (b) Design of the construction project is changed that could significantly affect the quality of the stormwater discharges;
  - (c) Permittee's inspections indicate deficiencies in the SWPPP or any BMP;
  - (d) Department notifies the permittee in writing of deficiencies in the SWPPP;
  - (e) SWPPP is determined to be ineffective in minimizing or controlling erosion and sedimentation (e.g., there is visual evidence of excessive site erosion or sediment deposits in streams, lakes, or downstream waterways, sediment or other wastes offsite); and/or
  - (f) Department determines violations of water quality standards may occur or have occurred.
- 10. Site Inspections: The environmental lead, or a designated inspector, shall conduct regularly scheduled inspections. These inspections shall be conducted by a qualified person, one who is responsible for environmental matters at the site, or a person trained by and directly supervised by the person responsible for environmental matters at the site. Site inspections shall include, at a minimum, the following:
  - (a) For disturbed areas that have not achieved final stabilization, all installed BMPs and other pollution control measures shall be inspected to ensure they are properly installed, appear to be operational, and are working as intended to minimize the

discharge of pollutants.

- (b) For areas on site that have achieved either temporary or final stabilization, while at the same time active construction continues on other areas, ensure that all stabilization measures are properly installed, appear to be operational, and are working as intended to minimize the discharge of pollutants.
- (c) Inspect all material, waste, borrow, and equipment storage, and maintenance areas that are covered by this permit. Inspect for conditions that could lead to spills, leaks, or other accumulations of pollutants on the site.
- (d) Inspect all areas where stormwater typically flows within the site, including drainage ways designed to divert, convey, and/or treat stormwater.
- (e) All stormwater outfalls shall be inspected for evidence of erosion, sediment deposition, or impacts to the receiving stream. If a discharge is occurring during an inspection, the inspector must observe and document the visual quality of the discharge, and take note of the characteristics of the stormwater discharge, including turbidity, color; odor; floating, settled, or suspended solids; foam; oil sheen; and other indicators of stormwater pollutants.
- (f) When practicable the receiving stream shall also be inspected for a minimum of 50 feet downstream of the outfall.
- (g) The perimeter of the site shall be inspected for evidence of BMP failure to ensure concentrated flow does not develop a new outfall.
- (h) The SWPPP must explain how the environmental lead will be notified when stormwater runoff occurs.
- 11. Inspection Frequency: All BMPs must be inspected in accordance to one of the schedules listed below. The inspection frequency shall be documented in the SWPPP, and any changes to the frequency of inspections, including switching between the options listed below, must be documented on the inspection form:
  - (a) At least once every seven (7) calendar days and within 48 hours after any storm event equal to or greater than a 2-year, 24-hour storm has ceased during a normal work day or within 72 hours if the rain event ceases during a non-work day such as a weekend or holiday; or
  - (b) Once every 14 calendar days and within 24 hours of the occurrence of a storm event of 0.25 inches of precipitation or greater, or the occurrence of runoff from snowmelt. To determine if a storm event of 0.25 inches or greater has occurred on the site, the permittee shall either keep a properly maintained rain gauge on site, or obtain the storm event information from a weather station near the site location.
    - 1) Inspections are only required during the project's normal working hours.
    - 2) An inspection must be conducted within 24 hours of a storm event which has produced 0.25 inches. The inspection shall be conducted within 24 hours of the event end, or within 72 hours if the rain event ceases during a non-work day such as a weekend or holiday.
    - 3) If it is elected to inspect every 14 calendar days and there is a storm event at the site that continues for multiple days, and each day of the storm produces 0.25 inches or more of rain, the permittee shall conduct an inspection within 24 hours of the end of the storm or within 72 hours if the rain event ceases during a non-work day such as a weekend or holiday.
  - (c) For any portion of the site that discharges within the watershed of an Outstanding National or State Resource Water or a water impaired for sediment, inspections shall be inspected once every seven (7) calendar days and within 24 hours of the occurrence of a storm event of 0.25 inches or greater, or when the occurrence of runoff flow from frozen or snowmelt is sufficient to cause a discharge.
  - (d) Areas on-site that have achieved stabilization, while at the same time active construction continues on other areas, may reduce inspection frequency to monthly, for those stabilized areas, if the following conditions exist:
    - 1) For areas where disturbed portions have undergone temporary stabilization, inspections shall occur at least once a month while stabilized and when re-disturbed shall follow either frequency outlined in (a),(b), or (c) above.
    - 2) Areas on-site that have achieved final stabilization must be inspected at least once per month until the permit is terminated.
  - (e) If construction activities are suspended due to frozen conditions, the permittee may temporarily reduce site inspections to monthly until thawing conditions begin to occur if all of the following are met:
    - 1) Land disturbances have been suspended; and
    - 2) All disturbed areas of the site have been stabilized in accordance with Part V. BMP REQUIREMENTS, Condition 13.
    - 3) The change shall be noted in the SWPPP.
  - (f) Any basin dewatering shall be inspected daily when discharge is occurring. The discharge shall be observed and dewatering activities shall be ceased immediately if the receiving stream is being impacted. These inspections shall be noted on a log or on the inspection report.

If weather conditions or other issues prevent correction of BMPs within seven calendar days, the reasons for the delay must be documented (including pictures) and there must be a narrative explaining why the work cannot be accomplished within the seven day time period. The documentation must be filed with the regular inspection reports. The corrections shall be made as soon as weather conditions or other issues allow.

12. Site Inspection Reports: A log of each inspection and/or copy of the inspection report shall be kept readily accessible and must be made available upon request by the Department. Electronic logs are acceptable as long as reports can be provided within 24

hours. If inspection reports are kept off-site, the SWPPP must indicate where they are stored. The inspection report shall be signed by the environmental lead or designated inspector (electronically or otherwise).

(a) The inspection report is to include the following minimum information:

- 1) Inspector's name and title.
- 2) Date and time of inspection.
- 3) Observations relative to the effectiveness of the BMPs and stabilization measures. The following must be documented:
  - a. Whether BMPs are installed, operational, and working as intended;
  - b. Whether any new or modified stormwater controls are needed;
  - c. Facilities examined for conditions that could lead to spill or leak;
  - d. Outfalls examined for visual signs of erosion or sedimentation at outfalls. Excessive erosion or sedimentation may be due to BMP failure or insufficiency. Response to observations should be addressed in the inspection report.
- 4) Corrective actions taken or necessary to correct the observed problem.
- 5) Listing of areas where land disturbance operations have permanently or temporarily stopped.
- 13. Any structural or maintenance deficiencies for BMPs or stabilization measures shall be documented and corrected as soon as possible but no more than seven (7) calendar days after the inspection.
  - (a) Corrective action documentation shall be stored with the associated site inspection report.
  - (b) Immediately take all reasonable steps to address the condition, including cleaning up any contaminated surfaces so the material will not discharge in subsequent storm events.
  - (c) If weather conditions or other issues prevent correction of BMPs within seven calendar days, the reasons for the delay must be documented (this may include pictures) and there must be a narrative explaining why the work cannot be accomplished within the seven day time period. The permittee shall correct the problem as soon as weather conditions or issues allow.
  - (d) Corrective actions may be required by the Department. The permittee must comply with any corrective actions required by the Department as a result of permit violations found during an inspection.

#### V. BMP REQUIREMENTS

- 1. The information, practices, and BMP requirements in this section shall be implemented on site and, where noted, provided for in the SWPPP.
- 2. Existing vegetation and trees shall be preserved where practicable. The permittee is encouraged to preserve topsoil where practicable. Trees designated for preservation should have a protective barrier outside of the dripline, or the area directly located under the outer reaches of the tree's branches.
- 3. The permittee shall select appropriate BMPs for use at the site and list them in the SWPPP. When selecting effective BMPs, the permittee shall consider stormwater volume and velocity and shall incorporate more than one BMP and sequential treatment devices where the use of a single BMP is ineffective to prevent or minimize sediment or other pollutants from leaving the site. Permittee should consider a schedule for performing erosion control measures when selecting BMPs.
- 4. The SWPPP shall include a description of both structural and non-structural BMPs that will be used at the site.
  - (a) The SWPPP shall provide the following general information for each BMP which will be used one or more times at the site:
    - 1) Physical description of the BMP;
    - 2) Site conditions that must be met for effective use of the BMP;
    - 3) BMP installation/construction procedures, including typical drawings; and
    - 4) Operation and maintenance procedures and schedules for the BMP.
  - (b) The SWPPP shall provide the following information for each specific instance where a BMP is to be installed:
    - 1) Whether the BMP is temporary or permanent;
    - 2) When the BMP will be installed in relation to each phase of the land disturbance procedures to complete the project; and
    - 3) Site conditions that must be met before removal of the BMP if the BMP is not a permanent BMP.
- 5. Structural BMP Installation: The permittee shall ensure all BMPs are properly installed and operational at the locations and relative times specified in the SWPPP.
  - (a) Perimeter control BMPs for runoff from disturbed areas shall be installed or existing vegetative areas marked for preservation before general site clearing is started. Note this requirement does not apply to earth disturbances related to initial site clearing and establishing entry, exit, or access of the site, which may require that stormwater controls be installed immediately after the earth disturbance.
  - (b) For phased projects, BMPs shall be properly installed as necessary prior to construction activities.
  - (c) Stormwater discharges which leave the site from disturbed areas shall pass through an appropriate impediment to sediment movement such as a sedimentation basin, sediment traps (including vegetative buffers), or silt fences prior to leaving the land

disturbance site.

- (d) A drainage course change shall be clearly marked on a site map and described in the SWPPP.
- (e) If vegetative stabilization measures are being implemented, stabilization efforts are considered "installed" when all activities necessary to seed or plant the area are completed. Vegetative stabilization is not considered "operational" until the vegetation is established.
- 6. Install sediment controls along any perimeter areas of the site that are downgradient from any exposed soil or other disturbed areas. Prevent stormwater from circumventing the edge of the perimeter control. For sites where perimeter controls are infeasible, other practices shall be implemented to minimize discharges to perimeter areas of the site.
- 7. For surface waters of the state, defined in Section 644.016.1(27) RSMo, located on or adjacent to the site, the permittee must maintain a riparian buffer or structural equivalent in accordance with at least one of the following options. The selection and location must be described in the SWPPP.
  - (a) Provide and maintain a 50-foot undisturbed natural buffer; or
  - (b) Provide and maintain an undisturbed natural buffer that is less than 50 feet and is supplemented by erosion and sediment controls that achieve the sediment load reduction equivalent to a 50-foot undisturbed natural buffer; or
  - (c) If infeasible to provide and maintain an undisturbed natural buffer of any size, implement erosion and sediment controls to achieve the sediment load reduction equivalent to a 50-foot undisturbed natural buffer.
  - (d) The permittee is not required to comply with (a), (b), or (c) above if one or more of the following exceptions apply and documentation is provided in the SWPPP:
    - 1) If there is no discharge of stormwater to waters of the state through the area between the disturbed portions of the site and waters of the state located within 50 feet of the site. This includes situations where the permittee has implemented permanent control measures that will prevent such discharges, such as a berm or other barrier.
    - 2) Where no natural buffer exists due to preexisting development disturbances that occurred prior to the initiation of planning for the current development of the site.
      - a. Where some natural buffer exists but portions of the area within 50 feet of the waters of the state are occupied by preexisting development disturbances the permittee is required to comply with (a), (b), or (c) above.
    - 3) For linear projects where site constraints make it infeasible to implement a buffer or equivalent provided the permittee limit disturbances within 50 feet of any waters of the state and/or the permittee provides supplemental erosion and sediment controls to treat stormwater discharges from earth disturbances within 50 feet of the water of the state. The permittee must also document in the SWPPP the rationale for why it is infeasible for the permittee to implement (a), (b), or (c) and describe any buffer width retained and supplemental BMPs installed.
  - (e) Where the permittee is retaining a buffer of any size, the buffer should be measured perpendicularly from any of the following points, whichever is further landward from the water:
    - 1) The ordinary high water mark of the water body, defined as the line on the shore established by fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, and/or the presence of litter and debris; or
    - 2) The edge of the stream or river bank, bluff, or cliff, whichever is applicable.
- 8. Slopes for disturbed areas must be identified in the SWPPP. A site map or maps defining the sloped areas for all phases of the project must be included in the SWPPP. The disturbance of steep slopes shall be minimized.
- 9. Manage stockpiles or land clearing debris piles composed, in whole or in part, of sediment and/or soil.
  - (a) Locate the piles outside of any natural buffers zones, established under the condition above, and away from any stormwater conveyances, drain inlets, and areas where stormwater flow is concentrated;
  - (b) Install a sediment barrier along all downgradient perimeter areas;
  - (c) Prevent stormwater flows from causing erosion of stockpiles, for example, by diverting flows around them.
  - (d) For piles that will be unused for 14 or more days, provide cover with appropriate temporary stabilization in accordance with Part V. BMP REQUIREMENTS, Condition 13.
  - (e) Rinsing, sweeping, or otherwise placing any soil, sediment, debris, or stockpiled product which has accumulated on pavement or other impervious surfaces into any stormwater conveyance, storm drain inlet, or water of the state is prohibited.
- 10. The site shall include BMPs for pollution prevention measures and shall be noted in the SWPPP. At minimum such measures must be designed, installed, implemented, and maintained to:
  - (a) Minimize the discharge of pollutants from equipment and vehicle rinsing; no detergents, additives, or soaps of any kind shall be used. Rinse waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;
  - (b) Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials present on the site to precipitation and to stormwater;
  - (c) Minimize the discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response

procedures, including, but not limited to, the installation of containment berms and use of drip pans at petroleum product and liquid storage tanks and containers; and

- (d) Prevent discharges from causing or contributing to an exceedance of water quality standards including general criteria.
- 11. Sedimentation Basins: The SWPPP shall include a sedimentation basin for each drainage area with ten or more acres disturbed at one time.
  - (a) The sedimentation basin shall be sized, at a minimum, to treat a local 2-year, 24-hour storm.
  - (b) Sediment basins shall not be constructed in any waters of the state or natural buffer zones.
  - (c) Discharges from dewatering activities shall be managed by appropriate controls. The SWPPP shall include a description of any anticipated dewatering methods and specific BMPs designed to treat dewatering water.
    - 1) Appropriate controls include, but are not limited to, sediment socks, dewatering tanks, tube settlers, weir tanks, filtration systems (e.g. bag or sand filters), and passive treatment systems that are designed to remove or retain sediment.
    - 2) Erosion controls and velocity dissipation devices (e.g. check dams, riprap, and vegetated buffers) to prevent erosion at inlets, outlets, and discharge points shall be utilized.
    - 3) Water with an oil sheen shall not be discharged and shall be marked in SWPPP.
    - 4) Visible floating solids and foam shall not be discharged.
  - (d) Until final stabilization has been achieved, sediment basins and impoundments shall utilize outlet structures or floating skimmers that withdraw water from the surface when discharging.
    - Under frozen conditions, it may be considered infeasible to withdraw water from the surface and an exception can be made for that specific period as long as discharges that may contain sediment and other pollutants are managed by appropriate controls. If determined infeasible due to frozen conditions, documentation must be provided in the SWPPP to support the determination, including the specific conditions or time period when this exception applies.
  - (e) Accumulated sediment shall not exceed 25% of total volume or as prescribed in the design, whichever is less. Note in the SWPPP the locations for disposal of the material removed from sediment basins.
  - (f) Prevent discharges to the receiving stream causing visual turbidity. For the purposes of this permit, visual turbidity refers to a sediment plume or other cloudiness in the water caused by sediment that can be identified by an observer.
  - (g) The SWPPP shall require the basin be maintained until final stabilization of the disturbed area served by the basin.

Where use of a sediment basin is infeasible, the SWPPP shall evaluate and specify other similarly effective BMPs to be employed to control erosion and sediment. These similarly effective BMPs shall be selected from appropriate BMP guidance documents authorized by this permit. The BMPs must provide equivalent water quality protection to achieve compliance with this permit. The SWPPP shall require both temporary and permanent sedimentation basins to have a stabilized spillway to minimize the potential for erosion of the spillway or basin embankment.

- 12. Soil disturbing activities on site that have ceased either temporarily or permanently shall initiate stabilization immediately in accordance with the options below. For soil disturbing activities that have been temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days:
  - (a) The permittee shall construct BMPs to establish interim stabilization; and
  - (b) Stabilization must be initiated immediately and completed within 14 calendar days.
  - (c) For soil disturbing activities that have been permanently ceased on any portion of the site, final stabilization of disturbed areas must be initiated immediately and completed within 14 calendar days.
    - Extension to the 14-day completion period for temporary and final stabilization may be made due to weather and equipment malfunctions. In these circumstances, the justification for the extension to the 14 day shall be documented in the SWPPP. The discontinuation or continuation of the extension may be determined by review of the Department staff when on site.
  - (d) Until stabilization is complete, interim sediment control shall consist of well-established and maintained BMPs that are reasonably certain to protect waters of the state from sediment pollution over an extended period of time. This may require adding more BMPs to an area than is normally used during daily operations. The types of BMPs used must be suited to the area disturbed, taking into account the number of acres exposed and the steepness of the slopes. If the slope of the area is greater than 3:1 (three feet horizontal to one foot vertical) or if the slope is greater than 3% and greater than 150 feet in length, then the permittee shall establish interim stabilization within seven days of ceasing operations on that part of the site. The following activities would constitute the immediate initiation of stabilization:
    - 1) Prepping the soil for vegetative or non-vegetative stabilization as long as seeding, planting, and/or installation of non-vegetative stabilization products takes place as soon as practicable;
    - 2) Applying mulch or other non-vegetative product to the exposed areas;
    - 3) Seeding or planting the exposed areas;
    - 4) Finalizing arrangements to have stabilization product fully installed in compliance with the deadlines for completing stabilization.
  - (e) If vegetative stabilization measures are being implemented, stabilization is considered "installed" when all activities necessary to seed or plant the area are completed. Installed does not mean established.

(f) If non-vegetative stabilization measures are being implemented, stabilization is considered "installed" when all such measures are implemented or applied.

1) Non-vegetative stabilization shall prevent erosion and shall be chosen for site conditions, such as slope and flow of stormwater.

- (g) Final stabilization is not considered achieved until vegetation has grown and established to meet the requirements below.
- 13. Prior to removal of BMPs, ceasing site inspections, and requesting termination of the permit, final stabilization must be achieved. Final stabilization shall be achieved as soon as possible once land disturbance activities have ceased. Document in the SWPPP the type of stabilization and the date final stabilization is achieved.
  - (a) The project is considered to have achieved final stabilization when perennial vegetation (excluding volunteer vegetation), pavement, buildings, or structures using permanent materials (i.e. riprap, gravel, etc.) cover all areas that have been disturbed. With respect to areas that have been vegetated, vegetation must be at least 70% coverage of 100% of the vegetated areas on site. Vegetation must be evenly distributed.
  - (b) Disturbed areas on agricultural land are considered to have achieved final stabilization when they are restored to their preconstruction agricultural use. If former agricultural land is changing to non-agricultural use, this is no longer considered agricultural land and shall follow condition (a).
  - (c) If the intended function of a specific area of the site necessitates that it remain disturbed, final stabilization is considered achieved if all of the following are met:
    - 1) Only the minimum area needed remains disturbed (i.e. dirt access roads, motocross tracks, utility pole pads, areas being used for storage of vehicles, equipment, materials). Other areas must meet the criteria above.
    - 2) Permanent structural BMPs (rock checks, berms, grading, etc.) or non-vegetative stabilization measures are implemented and designed to prevent sediment and other pollutants from entering waters of the state.
    - 3) Inspection requirements in Part IV. SWPPP MANAGEMENT REQUIREMENT, Condition 11 are met and documented in the SWPPP.
  - (d) Winter weather and frozen conditions do not excuse any of the above final stabilization requirements. If vegetation is required for stabilization the permittee must maintain BMPs throughout winter weather and frozen conditions until thawing and vegetation meets final stabilization criteria above. Document stabilization attempts during frozen conditions in the SWPPP. Consider future freezing when removing vegetation and plan with temporary stabilization techniques before the ground becomes frozen.

#### VI. PERMIT TERMINATION

- 1. Until the permittee terminates coverage under this permit, the permittee must comply with all conditions in the permit, including continuation of site inspections and public notification signage posted. To terminate permit coverage, the permittee must submit to the appropriate Regional Office a complete and accurate Request for Termination of Operating Permit which certifies that the site meets the following requirements:
  - (a) For any areas that (1) were disturbed during construction, (2) are not covered over by permanent structures, and (3) over which the permittee had control during the construction activities, the requirements for final vegetative or non-vegetative stabilization in Part V BMP REQUIREMENTS, Condition 13;
  - (b) The permittee has removed and properly disposed of all construction materials, waste, and waste handling devices and has removed all equipment and vehicles that were used during construction, unless intended for long-term use following termination of permit coverage;
  - (c) The permittee has removed all temporary BMPs that were installed and maintained during construction, except those that are intended for long-term use following termination of permit coverage or those that are biodegradable; and
  - (d) The permittee has removed all potential pollutants and pollutant-generating activities associated with construction, unless needed for long-term use following termination of permit coverage.

The Department may request photographs that clearly document compliance with termination requirements.

2. The permit may be terminated if;

(a) There has been a transfer of control of all areas of the site for which the current permittee is responsible under this permit to another operator, and that operator has obtained coverage under this permit; or

(b) Coverage under an individual or alternative general NPDES permit, with land disturbance conditions, has been obtained.

#### VII. SAMPLING REQUIREMENTS

The permittee is not required to sample stormwater under this permit. The Department may require sampling and reporting as a result of illegal discharges, compliance issues related to water quality concerns or BMP effectiveness, or evidence of off-site

impacts from activities at the site. If such an action is needed, the Department will specify in writing the sampling requirements, including such information as location and extent. If the permittee refuses to perform sampling when required, the Department may terminate the general permit and require the facility to obtain a site-specific permit with sampling requirements.

#### VIII. STANDARD PERMIT CONDITIONS

- 1. Records: The permittee shall retain copies of this general permit, the SWPPP and all amendments for the site named in the State Operating Permit, results of any monitoring and analysis, and all site inspection records required by this general permit.
  - (a) The records shall be accessible during normal business hours and retained for a period of at least three (3) years from the date of termination.
  - (b) The permittee shall provide a copy (electronic or otherwise) of the SWPPP to the Department, USEPA, or any local agency or government representative if they request a copy in the performance of their official duties within 24 hours of the request (or next working day), unless given more time by the representative.
  - (c) The permittee shall provide a copy of the SWPPP to those who are responsible for installation, operation, or maintenance of any BMP. The permittee, their representative, and/or the contractor(s) responsible for installation, operation and maintenance of the BMPs shall have a current copy of the SWPPP with them when on the project site.
- 2. Land Ownership and Change of Ownership: Federal and Missouri stormwater regulations [10 CSR 20-6.200(1) (B)] require a stormwater permit and erosion control measures for all land disturbances of one or more acres. These regulations also require a permit for land disturbance sites less than one acre if the lot is part of a larger common plan of development or sale.
  - (a) If the permittee sells any portion of the permitted site to a developer for commercial, industrial, or residential use, this land remains a part of the common sale and the new owner must obtain a permit prior to conducting any land disturbance activity. Therefore, the original permittee must amend the SWPPP to show that the property has been sold and, therefore, no longer under the original permit coverage.
  - (b) Property of any size which is part of a larger common plan of development where the property has achieved final stabilization and the original permit terminated will require application of a new land disturbance permit for any future land disturbance activity unless the activity is by an individual residential building lot owner on a site less than one acre.
  - (c) If a portion of a larger common plan of development is sold to an individual for the purpose of building his or her own private residence, a permit is required if the disturbed portion of the land sold is equal to or greater than one acre. No permit is required, however, for less than one acre of land disturbed on the portion sold.
- 3. Permit Transfer: This permit may not be transferred to a new owner in any fashion except by submitting an Application for Transfer of Operating Permit signed by the seller and buyer of the site along with the appropriate modification fee. In some cases, revocation and reissuance may be necessary. Facilities that undergo transfers of ownership without notice to the Department are considered to be operating without a permit.
- 4. Termination: This permit may be terminated when the project has achieved final stabilization, defined in Part VI. PERMIT TERMINATION.
  - (a) In order to terminate the permit, the permittee shall notify the Department by submitting the form Request for Termination of Operating Permit Form MO 780-2814. The form should be submitted to the appropriate Regional Office or through an approved electronic system if it should become available.
  - (b) The Cover Page (Certificate Page) of the Master General Permit for Land Disturbance specifies the "effective date" and the "expiration date" of the Master General Permit. The "issued date" along with the "expiration date" will appear on the State Operating Permit issued to the applicant. This permit does not continue administratively beyond the expiration date.
- 5. Duty to Reapply: If the project or development completion date will be after the expiration date of this general permit, then the permittee must reapply to the Department for a new permit. This permit may be applied for and issued electronically in accordance with Section 644.051.10, RSMo.
  - (a) Due to the nature of the electronic permitting system, a period of time may be granted at the discretion of the Department in order to apply for a new permit after the new version is effective. Applicants must maintain appropriate best management practices and inspections during the discretionary period.
- 6. Duty to Comply: The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Missouri Clean Water Law and Federal Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.
- 7. Modification, Revocation, and Reopening:
  - (a) If at any time the Department determines that the quality of waters of the state may be better protected by reopening this permit, or revoking this permit and requiring the owner/operator of the permitted site to apply for a site-specific permit, the Department may revoke a general permit and require any person to obtain such an operating permit as authorized by 10

CSR20-6.010(13) and 10 CSR 20-6.200(1)(B).

- (b) If this permit is reopened, modified, or revoked pursuant to this Section, the permittee retains all rights under Chapter 536 and 644 Revised Statutes of Missouri upon the Department's reissuance of the permit as well as all other forms of administrative, judicial, and equitable relief available under law.
- 8. Other Information: Where the permittee becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.
- 9. Duty to Provide Information: The permittee shall furnish to the Department, within 24 hours unless explicitly granted more time in writing, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Department upon request, copies of records required to be kept by this permit.
- 10. Inspection and Entry: The permittee shall allow the Department, or an authorized representative (including an authorized contractor acting as a representative of the Department), upon presentation of credentials and other documents as may be required by law, to:
  - (a) Enter upon the permittee's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of the permit;
  - (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
  - (c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
  - (d) Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Federal Clean Water Act or Missouri Clean Water Law, any substances or parameters at any location.
- 11. Signatory Requirement:
  - (a) All permit applications, reports required by the permit, or information requested by the Department shall be signed and certified. (See 40 CFR 122.22 and 10 CSR 20-6.010)
  - (b) The Federal Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit (including monitoring reports or reports of compliance or non-compliance) shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six (6) months per violation, or by both.
  - (c) The Missouri Clean Water Law provides that any person who knowingly makes any false statement, representation or certification in any application, record, report, plan, or other document filed or required to be maintained pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than ten thousand dollars, or by imprisonment for not more than six months, or by both.
- 12. Property Rights: This permit does not convey any property rights of any sort or any exclusive privilege.
- 13. Notice of Right to Appeal: If you were adversely affected by this decision, you may be entitled to pursue an appeal before the administrative hearing commission (AHC) pursuant to Sections 621.250 and 644.051.6 RSMo. To appeal, you must file a petition with the AHC within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC. Any appeal should be directed to:

Administrative Hearing Commission U.S. Post Office Building, Third Floor 131 West High Street, P.O. Box 1557 Jefferson City, MO 65102-1557 Phone: 573-751-2422 Fax: 573-751-5018 Website: https://ahc.mo.gov



# STORMWATER DISCHARGES FROM THIS LAND DISTURBANCE SITE ARE AUTHORIZED BY THE MISSOURI STATE OPERATING PERMIT NUMBER:

# ANYONE WITH QUESTIONS OR CONCERNS ABOUT STORMWATER DISCHARGES FROM THIS SITE, PLEASE CONTACT THE MISSOURI DEPARTMENT OF NATURAL RESOURCES AT **1-800-361-4827**

# MISSOURI DEPARTMENT OF NATURAL RESOURCES FACT SHEET FOR MASTER GENERAL PERMIT MO-RAXXXX

The Federal Water Pollution Control Act [Clean Water Act (CWA)] Section 402 of Public Law 92-500 (as amended) established the National Pollution Discharge Elimination System (NPDES) permit program. This program regulates the discharge of pollutants from point sources into the waters of the United States and the release of stormwater from certain point sources. All such discharges are unlawful without a permit (Section 301 of the CWA). After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. Missouri State Operating Permits (permit) are issued by the Missouri Department of Natural Resources (Department) under an approved program operated in accordance with federal and state laws (Federal CWA and Missouri Clean Water Law Section 644 as amended). Permits are issued for a period of five (5) years unless otherwise specified.

Per 40 CFR 124.56, 40 CFR 124.8, and 10 CSR 20-6.020(1)(A)2, a Fact Sheet shall be prepared to give pertinent information regarding the applicable regulations, rationale for the development of effluent limitations and conditions, and the public participation process for the permit. A Fact Sheet is not an enforceable part of an MSOP.

#### **DEFINITIONS FOR THE PURPOSES OF THIS PERMIT:**

<u>Common Promotional Plan</u>: A plan undertaken by one (1) or more persons to offer lots for sale or lease; where land is offered for sale by a person or group of persons acting in concert, and the land is contiguous or is known, designated, or advertised as a common unit or by a common name or similar names, the land is presumed, without regard to the number of lots covered by each individual offering, as being offered for sale or lease as part of a common promotional plan.

Dewatering: The act of draining rainwater and/or groundwater from basins, building foundations, vaults, and trenches.

<u>Effective Operating Condition</u>: For the purposes of this permit, a stormwater control is kept in effective operating condition if it has been implemented and maintained in such a manner that it is working as designed to minimize pollutant discharges.

<u>Emergency-Related Project</u>: A project initiated in response to a public emergency (e.g. earthquakes, extreme flooding conditions, tornado, disruptions in essential public services, pandemic) for which the related work requires immediate authorization to avoid imminent endangerment to human health/safety or the environment or to reestablish essential public services.

Exposed Soils: For the purposes of this permit, soils that as a result of earth-disturbing activities are left open to the elements.

Immediately: For the purposes of this permit, immediately should be defined as within 24 hours.

<u>Impervious Surface</u>: For the purpose of this permit, any land surface with a low or no capacity for soil infiltration including, but not limited to, pavement, sidewalks, parking areas and driveways, packed gravel or soil, or rooftops.

<u>Infeasible</u>: Infeasible means not technologically possible or not economically practicable and achievable in light of best industry practices.

Install or Installation: When used in connection with stormwater controls, to connect or set in position stormwater controls to make them operational.

Land Disturbance Site or Site: The land or water area where land disturbance activities will occur and where stormwater controls will be installed and maintained. The land disturbance site includes construction support activities, which may be located at a different part of the property from where the primary land disturbance activity will take place or on a different piece of property altogether. Off-site borrow areas directly and exclusively related to the land disturbance activity are part of the site and must be permitted.

Larger Common Plan of Development or Sale: A continuous area where multiple separate and distinct construction activities are occurring under one plan, including any offsite borrow areas that are directly and exclusively related to the land disturbance activity. Off-site borrow areas utilized for multiple different land disturbance projects are considered their own entity and are not part of the larger common plan of development or sale. See definition of Common Promotional Plan to understand what a 'common plan' is.

<u>Minimize</u>: To reduce and/or eliminate to the extent achievable using stormwater controls that are technologically available and economically practicable and achievable in light of best industry practices.

<u>Non-structural BMP</u>: Institutional, educational, or pollution prevention practices designed to limit the amount of stormwater runoff or pollutants that are generated in the landscape. Examples of non-structural BMPs include picking up trash and debris, sweeping up nearby sidewalks and streets, maintaining equipment, and training site staff on stormwater control practices.

<u>Operational</u>: for the purposes of this permit, stormwater controls are made "operational" when they have been installed and implemented, are functioning as designed, and are properly maintained.

<u>Ordinary High Water Mark:</u> The line on the shore established by fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, and/or the presence of litter and debris.

<u>Outfall</u>: For the purposes of this permit, outfalls are locations where stormwater exits the site property, including pipes, ditches, swales, channels, or other conduits that transport stormwater discharges associated with the construction activity.

Peripheral: For the purposes of this permit, peripheral should be defined as the outermost boundary of the area that will be disturbed.

<u>Permanently</u>: For the purposes of this permit, permanently is defined as any activity that has been ceased without any intentions of future disturbance.

<u>Pollution Prevention Controls (or Measures)</u>: Stormwater controls designed to reduce or eliminate the addition of pollutants to construction site discharges through analysis of pollutant sources, implementation of proper handling/disposal practices, employee education, and other actions.

<u>Qualified Person (inspections)</u>: A person knowledgeable in the principles and practice of erosion and sediment controls and pollution prevention who possesses the appropriate skills and training to assess conditions at the construction site that could impact stormwater quality and the appropriate skills and training to assess the effectiveness of any stormwater controls selected and installed to meet the requirements of this permit.

Stormwater Control (also referred to as sediment/erosion controls): refers to any temporary or permanent BMP or other method used to prevent or reduce the discharge of pollutants to waters of the state.

<u>Structural BMP</u>: Physical sediment/erosion controls working individually or as a group (treatment train) appropriate to the source, location, and area climate for the pollutant to be controlled. Examples of structural BMPs include silt fences, sedimentation ponds, erosion control blankets, and seeding.

<u>Temporary Stabilization</u>: A condition where exposed soils or disturbed areas are provided temporary vegetation and/or non-vegetative protective cover to prevent erosion and sediment loss. Temporary stabilization may include temporary seeding, geotextiles, mulches, and other techniques to reduce or eliminate erosion until either final stabilization can be achieved or until further construction activities take place to re-disturb this area.

<u>Treatment Train</u>: A multi-BMP approach to managing the stormwater volume and velocity and often includes erosion prevention and sediment control practices often applied when the use of a single BMP is inadequate in preventing the erosion and transport of sediment. A good option to utilize as a corrective action.

<u>Volunteer Vegetation</u>: A volunteer plant is a plant that grows on its own, rather than being deliberately planted for stabilization purposes. Volunteers often grow from seeds that float in on the wind, are dropped by birds, or are inadvertently mixed into soils. Commonly, volunteer vegetation is referred to as 'weeds'. This does not meet the requirements for final stabilization.

<u>Waters of the State:</u> Section 644.016.1(27) RSMo. defines waters of the state as, "All waters within the jurisdiction of this state, including all rivers, streams, lakes and other bodies of surface and subsurface water lying within or forming a part of the boundaries of the state which are not entirely confined and located completely upon lands owned, leased or otherwise controlled by a single person or by two or more persons jointly or as tenants in common."

# EXAMPLES OF TYPES; BUT NOT LIMITED TO'S:

Building materials and building products typically present at constructions sites: Asphalt sealants, copper flashing, roofing materials, adhesives, concrete admixtures, and gravel and mulch stockpiles

<u>Construction and domestic (solid) waste:</u> Packaging materials, scrap construction materials, masonry products, timber, pipe and electrical cuttings, plastics, Styrofoam, concrete, demolition debris, and other trash or building materials.

<u>Hazardous or toxic waste that may be present at construction sites:</u> Caulks, sealants, fluorescent light ballasts (mercury), solvents, petroleum-based products, wood preservatives, additives, curing compounds, and acids.

Pollutant-generating activities: Paving operations; concrete, paint, and stucco washout and waste disposal; solid waste storage and

disposal; and dewatering activities.

<u>Types of pollutants typically found at constructions sites:</u> Sediment; nutrients; heavy metals; pesticides and herbicides; oil and grease; bacteria and viruses; trash, debris, and solids; treatment polymers; and any other toxic chemicals.

<u>BMPs for Erosion Control:</u> Temporary/permanent seeding, hydroseeding, mulch and hydromulch, erosion control blankets, dust control, sodding, slope protection, and preservation of existing vegetation.

<u>BMPs for Sediment Control:</u> Fabric drop inlet protection, excavated drop inlet protection, block and gravel inlet protection, domed inlet protection, inlet bag or insert, silt fence, temporary diversion, right-of-way/diversion bar, temporary slope drain, subsurface drain, rock outlets, berms, filter socks, transition mats, temporary sediment trap, energy dissipaters, rock check dam, ditch checks, wattles, straw bale barrier, vegetative buffer strip, sediment basin, particle curtains, frog logs, and dispersion fields.

#### EPERMITTING FOR LAND DISTURBANCE

In order to apply for the states MO-RA land disturbance permit you will need to utilize the Department's online ePermitting system. In order to access this, you will need to register an account with the Missouri Gateway for Environmental Management (MoGEM). The following user guides will assist you with this process.

MoGEM Website: <u>https://dnr.mo.gov/data-e-services/missouri-gateway-environmental-management-mogem</u> ePermitting Website: <u>https://dnr.mo.gov/data-e-services/water/electronic-permitting-epermitting</u> How to Register: <u>https://dnr.mo.gov/document-search/registering-new-user-account-within-missouri-gateway-environmental-management-mogem-portal</u>

ePermitting User Guides: (found on ePermitting website)

- How to Add a Facility: https://dnr.mo.gov/document-search/epermitting-chapter-2-home-facility-search-associate-new-facility
- How to Apply for a Permit: <u>https://dnr.mo.gov/document-search/epermitting-chapter-3-create-new-permit</u>.

# PART I – BASIC PERMIT INFORMATION

Facility Type:Industrial Stormwater; Land DisturbanceFacility SIC Code(s):1629Facility Description:Construction or land disturbance activity (e.g., clearing, grubbing, excavating, grading, filling, and other<br/>activities that result in the destruction of the root zone and/or land disturbance activity that is reasonably<br/>certain to cause pollution to waters of the state).

This permit establishes a SWPPP requirement for pollutants of concern from all facilities covered under this permit. 10 CSR 20-6.200(7) specifies "general permits shall contain BMP requirements and/or monitoring and reporting requirements to keep the stormwater from becoming contaminated".

Land disturbance activities include clearing, grubbing, excavating, grading, filling and other activities that result in the destruction of the root zone and/or other activities that are reasonably certain to cause pollution to waters of the state.

A Missouri State Operating Permit for land disturbance permit is required for construction disturbance activities of one or more acres, or for construction activities that disturb less than one acre when they are part of a larger common plan of development or sale that will disturb a cumulative total of one or more acres over the life of the project per 10CSR 20-6.200(1)(D)28.

The primary requirement of a land disturbance permit is the development of a SWPPP which incorporates site-specific BMPs to minimize soil exposure, soil erosion, and the discharge of pollutants. The SWPPP ensures the design, implementation, management and maintenance of BMPs in order to prevent sediment and other pollutants from leaving the site.

When it precipitates, stormwater washes over the loose soil on a construction site and various other materials and products being stored outside. As stormwater flows over the site, it can pick up pollutants like sediment, debris, and chemicals from the loose soil and transport them to nearby storm sewer systems or directly into rivers, lakes, or coastal waters. The Missouri Department of Natural Resources is responsible for ensuring that construction site operators have the proper stormwater controls in place so that construction can proceed in a way that protects your community's clean water and the surrounding environment. One way the department helps protect water quality is by issuing land disturbance permits.

Local conditions are not considered when developing conditions for a general permit. A facility may apply for a site-specific permit if they desire a review of site-specific conditions.

#### CHANGES TO THE RENEWAL OF THIS PERMIT INCLUDE:

While drafting this permit for renewal, the Department hosted three public meetings held on January 27, February 17, and March 9, 2021, which allowed stakeholders to voice concerns about conditions within the permit and submit comments during the period of initial stakeholder involvement. These concerns were taken into consideration when drafting the permit. In addition to these meetings, the Department also held an informal review period for stakeholders to review the draft prior to the 30 day public comment period.

- Updated language throughout the permit to current permit language used by the Department and EPA.
- Added language for emergency related projects.
- Clarified conditions which were ambiguous.
- Reorganized sections/conditions for logical progression.
- Authorized permit transfers and some modifications.
- Sections added for termination procedures, discharges to special streams, and procedures for concrete washout.

# PART II – RECEIVING STREAM INFORMATION

#### **APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:**

Per Missouri Effluent Regulations (10 CSR 20-7.015), the waters of the state are divided into seven (7) categories. This permit applies to facilities discharging to the following water body categories:

- ✓ Missouri or Mississippi River [10 CSR 20-7.015(2)]
- ✓ Lakes or Reservoirs [10 CSR 20-7.015(3)]
- ✓ Losing Streams [10 CSR 20-7.015(4)]
- Metropolitan No-Discharge Streams [10 CSR 20-7.015(5)]
   Special Streams [10 CSR 20-7.015(6)]
- ✓ Subsurface Waters [10 CSR 20-7.015(7)]
- ✓ All Other Waters [10 CSR 20-7.015(8)]

Missouri Water Quality Standards (10 CSR 20-7.031) defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and/or 1st classified receiving stream's designated water uses shall be maintained in accordance with 10 CSR 20-7.031(24). A general permit does not take into consideration site-specific conditions.

#### **MIXING CONSIDERATIONS:**

This permit applies to receiving streams of varying low flow conditions. Therefore, the effluent limitations must be based on the smallest low flow streams considered, which includes waters without designated uses. As such, no mixing is allowed [10 CSR 20-7.031(5)(A)4.B.(I)(a)]. No Zone of Initial Dilution is allowed. [10 CSR 20-7.031(5)(A)4.B.(I)(b)].

#### **RECEIVING STREAM MONITORING REQUIREMENTS:**

There are no receiving water monitoring requirements recommended at this time.

# PART III – RATIONALE AND DERIVATION OF EFFLUENT LIMITATIONS & PERMIT CONDITIONS

#### 305(B) REPORT, 303(d) LIST, & TOTAL MAXIMUM DAILY LOAD (TMDL):

Section 305(b) of the Federal CWA requires each state identify waters not meeting Water Quality Standards and for which adequate water pollution controls have not been required. Water Quality Standards protect such beneficial uses of water as whole body contact, maintaining fish and other aquatic life, and providing drinking water for people, livestock, and wildlife. The 303(d) report, which includes the 303(d) list, helps state and federal agencies keep track of waters which are impaired but not addressed by normal water pollution control programs.

A TMDL is a calculation of the maximum amount of a given pollutant a body of water can absorb before its water quality is affected. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan will be developed which shall include the TMDL calculation. For facilities with an existing general permit before a TMDL is written on their receiving stream, the Department will evaluate the permit and may require any facility authorized by this general permit to apply for and obtain a sitespecific operating permit.

#### **ANTI-BACKSLIDING:**

A provision in the Federal Regulations [CWA Section 303(d)(4); CWA Section 402(c); 40 CFR Part 122.44(I)] requires a reissued permit to be as stringent as the previous permit with some exceptions.

✓ Not Applicable: All effluent limitations in this permit are at least as protective as those previously established.

#### **ANTIDEGRADATION:**

Antidegradation policies ensure protection of water quality for a particular water body on a pollutant by pollutant basis to ensure Water Quality Standards are maintained to support beneficial uses such as fish and wildlife propagation and recreation on and in the water. This also includes special protection of waters designated as an Outstanding National Resource Water or Outstanding State Resource Water [10 CSR 20-7.031(3)(C)]. Antidegradation policies are adopted to minimize adverse effects on water.

The Department has determined the best avenue forward for implementing the Antidegradation requirements into general stormwater permits is by requiring the appropriate development and maintenance of a SWPPP. The SWPPP must identify all reasonable and effective BMPs, taking into account environmental impacts and costs. This analysis must document why no discharge or no exposure options are not feasible at the facility. This selection and documentation of appropriate control measures will then serve as the analysis of alternatives and fulfill the requirements of the Antidegradation Rule and Implementation Procedure 10 CSR 20-7.031(3) and 10 CSR 20-7.015(9)(A)5.

Any facility seeking coverage under this permit which undergoes expansion or discharges a new pollutant of concern must update their SWPPP and select reasonable and cost effective new BMPs. New facilities seeking coverage under this permit are required to develop a SWPPP including this analysis and documentation of appropriate BMPs. Renewal of coverage for a facility requires a review of the SWPPP to ensure the selected BMPs continue to be appropriate.

✓ Applicable; the facility must review and maintain stormwater BMPs as appropriate.

#### **BENCHMARKS:**

When a permitted feature or outfall consists of only stormwater, a benchmark may be implemented at the discretion of the permit writer. Benchmarks require the facility to monitor and, if necessary, replace and update stormwater control measures. Benchmark concentrations are not effluent limitations. A benchmark exceedance, therefore, is not a permit violation; however, failure to take corrective action is a violation of the permit. Benchmark monitoring data is used to determine the overall effectiveness of control measures and to assist the permittee in knowing when additional corrective actions may be necessary to comply with the limitations of the permit.

✓ Not applicable; this facility has stormwater-only outfalls and does not contain numeric benchmarks.

#### **BEST MANAGEMENT PRACTICES:**

Minimum site-wide BMPs are established in this permit to ensure all permittees are managing their sites equally to protect waters of the state from certain activities which could cause negative effects in receiving water bodies. If the minimum BMPs are not followed, the facility may violate general criteria [10 CSR 20-7.031(4)]. Statutes are applicable to all permitted facilities in the state; therefore, pollutants cannot be released unless in accordance with RSMo 644.011 and 644.016 (17).

During a short time period, construction sites can contribute more sediment to streams than can be deposited naturally during several decades. The resulting siltation and contribution of other pollutants from construction sites can cause physical, chemical, and biological harm to Missouri's waters. Land disturbance activities, such as clearing and grading the land surface, increases the potential for sediment discharges.

The previous version of this permit contained the majority of the BMPs required in this permit and were found to protect water quality. Additional BMPs were added to improve protections with language taken from the EPA's Construction General Permit.

Language was added for track out to clarify and to combine with the roadway conditions in the previous permit. Preventing sediment from entering roadway inlets will protect water quality. Requirements were added for concrete wash out management. This is a common activity on construction sites which had not been address in the previous permit. Containment of the wash out water will protect waters of the state. This language was adopted from the EPAs Construction General Permit.

This renewal requires certain operators be listed in the SWPPP, this was added to ensure all responsible parties are known to the staff on site in the event there is an environmental issue that needs attention.

Inspection conditions were added to clarify what parts of the site to inspect. By inspecting areas prone to pollution, such as material storage, or location where pollutants are like to leave the site, such as the outfall, there is increased protections to water quality by stopping pollutants before leaving the site, or correcting an issue quickly.

Inspection frequencies were reduced for areas where stabilization has been achieved. It was the permit writer's judgement that stabilized areas do not require inspections at the same frequency as active areas of a site as the stabilization is a BMP to reduce sediment loss. Additional inspections are required for sediment basin dewatering activities during times of dewatering. These activities open the possibility for high volumes of sediment to be discharged into the receiving waters. By inspecting the discharge, the waters shall be better protected. Language was added to add the temporary reduction of inspections for areas that have frozen ground.

Condition was added for stockpile management to add clarity for operators on site. Migration of soil or product from mis-managed piles can enter waters of the state and cause water quality violations. Conditions were added to sediment basin dewater to increase the protection of receiving waters by increasing controls to retain sediment and keep it out of the discharged water.

Language was added to include National and State Resource Waters with added protections. Language for this was taken from the template for Missouri General Permits. These requirements also include waters with impairments for sediment, the pollutant of concern under this permit. Extra protections in these special stream requirements were added to clarify the discharges must be stormwater only.

Language was added to include the encouragement of preserving vegetation, trees, and soil. Clearing reduces the natural uptake of water and nutrients by vegetation and excessive grading can smooth the ground surface, increasing amount and velocity of runoff. Vegetation inhibits erosion as the roots hold the topsoil in place, while leaves protect the surface against rain. Once the vegetative cover is gone, erosion is accelerated. The longer the exposed area is subject to erosive forces, the more severe the effect. Clarification was added to define voluntary vegetation and to explain that these shallow rooted short-lived vegetation is not allowed as permanent stabilization.

#### CHANGES IN DISCHARGES OF TOXIC POLLUTANT:

This special condition reiterates the federal rules found in 40 CFR 122.44(f) and 122.42(a)(1). In these rules, the facility is required to report changes in amounts of toxic substances discharged. Toxic substances are defined in 40 CFR 122.2 as "...any pollutant listed as toxic under section 307(a)(1) or, in the case of "sludge use or disposal practices," any pollutant identified in regulations implementing section 405(d) of the CWA." Section 307 of the clean water act then refers to those parameters found in 40 CFR 401.15. The permittee should also consider any other toxic pollutant in the discharge as reportable under this condition.

#### DOMESTIC WASTEWATER, SLUDGE, AND BIOSOLIDS:

Domestic wastewater is defined as wastewater (i.e., human sewage) originating primarily from the sanitary conveyances of bathrooms and kitchens. Domestic wastewater excludes stormwater, animal waste, process waste, and other similar waste.

✓ Not applicable; this permit does not authorize discharge of domestic waste, sludge, or biosolids. This includes discharges to onsite lagoons. If a facility has an onsite lagoon, they may need to obtain a separate general or site specific permit to cover discharges or land application from this structure.

Sewage sludge is solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works; including but not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works. Biosolids are solid materials resulting from domestic wastewater treatment meeting federal and state criteria for productive use (i.e. fertilizer) and after having pathogens removed.

✓ Not applicable; this permit does not authorize discharge or land application of biosolids or sludge. A separate permit must be obtained for these activities, either general or site specific.

#### **EFFLUENT LIMITATION GUIDELINE:**

Effluent Limitation Guidelines, or ELGs, are found at 40 CFR 400-499. These are limitations established by the EPA based on the SIC code and the type of work a facility is conducting. Most ELGs are for process wastewater and some address stormwater. All are technology based limitations which must be met by the applicable facility at all times.

✓ The industries covered under this permit have an associated Effluent Limit Guideline (ELG) which is applicable to the stormwater discharges in this permit and is applied under 40 CFR 125.3(a).

#### **ELECTRONIC DISCHARGE MONITORING REPORT (EDMR) SUBMISSION SYSTEM:**

The U.S. Environmental Protection Agency (EPA) promulgated a final rule on October 22, 2015, to modernize Clean Water Act reporting for municipalities, industries, and other facilities by converting to an electronic data reporting system. The final rule requires regulated entities and state and federal regulators to use information technology to electronically report data required by the National Pollutant Discharge Elimination System (NPDES) permit program instead of filing paper reports. To comply with the federal rule, the Department is requiring all permittees to begin submitting discharge monitoring data and reports online.

 $\checkmark$  Not applicable; this permit has no limits to report.

#### **GENERAL CRITERIA CONSIDERATIONS:**

In accordance with 40 CFR 122.44(d)(1), effluent limitations shall be placed into permits for pollutants determined to cause, have reasonable potential to cause, or to contribute to, an excursion above any water quality standard, including narrative water quality criteria. In order to comply with this regulation, the permit writer has completed a reasonable potential determination on whether discharges have reasonable potential to cause or contribute to an excursion of the general criteria listed in 10 CSR 20-7.031(4). In instances where reasonable potential exists, the permit includes limitations within the permit to address the reasonable potential. In

discharges where reasonable potential does not exist, the permit may include monitoring to later determine the discharge's potential to impact the narrative criteria. Additionally, RSMo 644.076.1, as well as Standard Permit Conditions Part VIII of this permit state it shall be unlawful for any person to cause or allow any discharge of water contaminants from any water contaminant or point source located in Missouri in violation of sections 644.006 to 644.141 of the Missouri Clean Water Law or any standard, rule, or regulation promulgated by the commission.

#### LAND APPLICATION:

Land application, or surficial dispersion of wastewater and/or sludge, is performed by facilities to maintain a basin as no-discharge. Requirements for these types of operations are found in 10 CSR 20-6.015; authority to regulate these activities is from RSMo 644.026. V Not applicable; this permit does not authorize operation of a surficial land application system to disperse wastewater or sludge.

#### LAND DISTURBANCE:

Land disturbance, sometimes called construction activities, are actions which cause disturbance of the root layer or soil; these include clearing, grading, and excavating of the land. 40 CFR 122.26(b)(14) and 10 CSR 20-6.200(3) requires permit coverage for these activities. Coverage is not required for facilities when only providing maintenance of original line and grade, hydraulic capacity, or to continue the original purpose of the facility.

Applicable; this permit provides coverage for land disturbance activities. These activities have SWPPP requirements and may be combined with the standard site SWPPP. Land disturbance BMPs should be designed to control the expected peak discharges. The University of Missouri has design storm events for the 25 year 24 hour storm; these can be found at: <a href="http://ag3.agebb.missouri.edu/design\_storm/comparison\_reports/20191117\_25yr\_24hr\_comparison\_table.htm">http://ag3.agebb.missouri.edu/design\_storm/comparison\_reports/20191117\_25yr\_24hr\_comparison\_table.htm</a>; to calculate peak discharges, the website <a href="https://www.lmnoeng.com/Hydrology/rational.php">https://www.lmnoeng.com/Hydrology/rational.php</a> has the rational equation to calculate expected discharge volume from the peak storm events.</a>

#### **NUTRIENT MONITORING:**

Nutrient monitoring is required for facilities characteristically or expected to discharge nutrients (nitrogenous compounds and/or phosphorus) when the design flow is equal to or greater than 0.1 MGD per 10 CSR 20-7.015(9)(D)8.

✓ This is a stormwater only permit; therefore, it is not subject to provisions found in 10 CSR 20-7.015 per 10 CSR 20-7.015(1)(C).

#### **OIL/WATER SEPARATORS:**

Oil water separator (OWS) tank systems are frequently found at industrial sites where process water and stormwater may contain oils and greases, oily wastewaters, or other immiscible liquids requiring separation. Food industry discharges typically require pretreatment prior to discharge to municipally owned treatment works. Per 10 CSR 26-2.010(2)(B), all oil water separator tanks must be operated according to manufacturer's specifications and authorized in NPDES permits per 10 CSR 26-2.010(2) or may be regulated as a petroleum tank.

✓ Not applicable; this permit does not authorize the operation of OWS. The facility must obtain a separate permit to cover operation of and discharge from these devices.

#### **OPERATOR CERTIFICATION REQUIREMENTS:**

As per 10 CSR 20-6.010(8) Terms and Conditions of a Permit, permittees shall operate and maintain facilities to comply with the Missouri Clean Water Law and applicable permit conditions and regulations. Operators or supervisors of operations at regulated wastewater treatment facilities shall be certified in accordance with [10 CSR 20-9.020(2)] and any other applicable state law or regulation.

✓ Not applicable; the facilities covered under this permit are not required to have a certified operator.

#### **PERMIT SHIELD:**

The permit shield provision of the Clean Water Act (Section 402(k)) and Missouri Clean Water Law (644.051.16 RSMo) provides that when a permit holder is in compliance with its NPDES permit or MSOP, they are effectively in compliance with certain sections of the Clean Water Act and equivalent sections of the Missouri Clean Water Law. In general, the permit shield is a legal defense against certain enforcement actions but is only available when the facility is in compliance with its permit and satisfies other specific conditions, including having completely disclosed all discharges and all facility processes and activities to the Department at time of application. It is the facility's responsibility to ensure that all potential pollutants, waste streams, discharges, and activities, as well as wastewater land application, storage, and treatment areas, are all fully disclosed to the Department at the time of application or during the draft permit review process. Subsequent requests for authorization to discharge additional pollutants or expanded or newly disclosed flows, or for authorization for previously unpermitted and undisclosed activities or discharges, will likely require permit modification or may require the facility be covered under a site specific permit.

#### **PRETREATMENT PROGRAM:**

This permit does not regulate pretreatment requirements for facilities discharging to an accepting permitted wastewater treatment facility. If applicable, the receiving entity (the publicly owned treatment works - POTW) must ensure compliance with any effluent limitation guidelines for pretreatment listed in 40 CFR Subchapter N per 10 CSR 20-6.100. Pretreatment regulations per RSMo 644.016 are limitations on the introduction of pollutants or water contaminants into publicly owned treatment works or facilities.

✓ Not Applicable; the facilities covered under this permit are not required to meet pretreatment requirements under an ELG.

#### PUBLIC NOTICE OF COVERAGE FOR AN INDIVIDUAL FACILITY:

Public Notice of reissuance of coverage is not required unless the facility is a specific type of facility as defined in 10 CSR 20-6.200(1). The need for an individual public notification process shall be determined and identified in the permit [10 CSR 20-6.020(1)(C)5.].

✓ Not applicable; public notice is not required for coverage under this permit to individual facilities. The MGP is public noticed in lieu of individual permit PN requirements.

#### **REASONABLE POTENTIAL ANALYSIS (RPA):**

Federal regulation 40 CFR Part 122.44(d)(1)(i) requires effluent limitations for all pollutants which are or may be discharged at a level which will cause or have the reasonable potential to cause or contribute to an in-stream excursion above narrative or numeric water quality standard. In accordance with 40 CFR Part 122.44(d)(iii) if the permit writer determines any given pollutant has the reasonable potential to cause or contribute to an in-stream excursion above the water quality standard, the permit must contain effluent limits for the pollutant.

✓ The permit writer reviewed industry materials, available past inspections, and other documents and research to evaluate general and narrative water quality reasonable potential for this permit. Permit writers also use the Department's permit writer's manual, the EPA's permit writer's manual (<u>https://www.epa.gov/npdes/npdes-permit-writers-manual</u>), program policies, and best professional judgment. For each parameter in each permit, the permit writer carefully considers all applicable information regarding technology based effluent limitations, effluent limitation guidelines, and water quality standards. Best professional judgment is based on the experience of the permit writer, cohorts in the Department and resources at the EPA, research, and maintaining continuity of permits if necessary. For stormwater permits, the permit writer is required per 10 CSR 6.200(6)(B)2 to consider: A. application and other information supplied by the permittee; B. effluent guidelines; C. best professional judgment of the permit writer; D. water quality; and E. BMPs.

#### SCHEDULE OF COMPLIANCE (SOC):

Per § 644.051, RSMo, a permit may be issued with a Schedule of Compliance (SOC) to provide time for a facility to come into compliance with new state or federal effluent regulations, water quality standards, or other requirements. Such a schedule is not allowed if the facility is already in compliance with the new requirement or if prohibited by other statute or regulation. An SOC includes an enforceable sequence of interim requirements (e.g. actions, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit. *See also* Section 502(17) of the Clean Water Act, and 40 CFR 122.2. For new effluent limitations, the permit may include interim monitoring for the specific parameter to demonstrate the facility is not already in compliance with the new requirement. Per 40 CFR 122.47(a)(1) and 10 CSR 20-7.031(11), compliance must occur as soon as possible. If the permit provides a schedule for meeting new water quality based effluent limits, an SOC must include an enforceable, final effluent limitation in the permit even if the SOC extends beyond the life of the permit.

✓ Not Applicable: This permit does not contain a SOC.

#### SETBACKS:

Setbacks, sometimes called separation distances, are common elements of permits and are established to provide a margin of safety in order to protect the receiving water and other features from accidents, spills, unusual events, etc. Specific separation distances are included in 10 CSR 20-8 for minimum design standards of wastewater structures. While wastewater is considered separately from stormwater under this permit, the guides and Chapter 8 distances may remain relevant to requirements under this permit if deemed appropriate by the permittee.

- Discharge to the watersheds of a Metropolitan No-Discharge Stream (10 CSR 20-7.031 Table F) is authorized by this permit if the discharges are in compliance with 10 CSR 20-7.015(5) and 10 CSR 20-7.031(7). Discharges to these watersheds are authorized for uncontaminated stormwater discharges only.
- This permit authorizes stormwater discharges which are located in a way to allow water to be released into sinkholes, caves, fissures, or other openings in the ground which could drain into aquifers (except losing streams) per 10 CSR 20-7.015(7). It is the best professional judgment of the permit writer to allow discharges to losing streams as the effluent is stormwater only.
- ✓ This permit authorizes stormwater discharge in the watersheds of Outstanding state Resource Waters (OSRW); Outstanding National Resources Waters (ONRW), which includes the Ozark National Riverways and the National Wild and Scenic Rivers System; and impaired waters as designated in the 305(b) report, including the 303(d), list so long as no degradation of water quality occurs in the OSRW and ONRW due to discharges from the permitted facility per 10 CSR 20-7.015(6)(B) and 10 CSR 20-7.031(3)(C).

Additionally, if the facility is found to be causing degradation or contributing to an impairment by discharging a pollutant of concern during an inspection or through complaint investigations, they will be required to become a no discharge facility or obtain a site specific permit with more stringent monitoring and SWPPP requirements. Missouri's impaired waters can be found at <a href="https://dnr.mo.gov/water/what-were-doing/water-planning/quality-standards-impaired-waters-total-maximum-daily-loads/impaired-waters">https://dnr.mo.gov/water/what-were-doing/water-planning/quality-standards-impaired-waters-total-maximum-daily-loads/impaired-waters</a>. Sites within 1000 feet of a OSRW, ONRW, or water impaired for sediment must operate as a no-discharge facility. These additional protections are borrowed from the USEPA 2021 draft Construction General Permit.

#### SLUDGE - DOMESTIC BIOSOLIDS:

Biosolids are solid materials resulting from domestic wastewater treatment meeting federal and state criteria for beneficial use (i.e. fertilizer). Sewage sludge is solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works; including, but not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works.

✓ This permit does not authorize discharge or land application of biosolids. Sludge/biosolids is not generated by this industry.

#### **SLUDGE – INDUSTRIAL:**

Industrial sludge is solid, semi-solid, or liquid residue generated during the treatment of industrial process wastewater in a treatment works; including, but not limited to, scum or solids removed in primary, secondary, or advanced wastewater treatment process; scum and solids filtered from water supplies and backwashed; and a material derived from industrial sludge.

 $\checkmark$  Not applicable; sludge is not generated by this industry.

#### SPILL REPORTING:

Any emergency involving a hazardous substance must be reported to the Department's 24 hour Environmental Emergency Response hotline at (573) 634-2436 at the earliest practicable moment after discovery. The Department may require the submittal of a written report detailing measures taken to clean up a spill. These reporting requirements apply when the spill results in chemicals or materials leaving the permitted property <u>or</u> reaching waters of the state. This requirement is in addition to the noncompliance reporting requirement found in Standard Conditions Part I. <u>https://dnr.mo.gov/waste-recycling/investigations-cleanups/environmental-emergency-response</u>.

Underground and above ground storage devices for petroleum products, vegetable oils, and animal fats may be subject to control under federal Spill Prevention, Control, and Countermeasure Regulation and are expected to be managed under those provisions, if applicable. Substances regulated by federal law under the Resource Conservation and Recovery Act (RCRA) or the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) which are transported, stored, or used for maintenance, cleaning or repair shall be managed according to the provisions of RCRA and CERCLA.

#### **STORMWATER POLLUTION PREVENTION PLAN (SWPPP):**

In accordance with 40 CFR 122.44(k), BMPs must be used to control or abate the discharge of pollutants when: 1) Authorized under section 304(e) of the Clean Water Act (CWA) for the control of toxic pollutants and hazardous substances from ancillary industrial activities; 2) Authorized under section 402(p) of the CWA for the control of stormwater discharges; 3) Numeric effluent limitations are infeasible; or 4) the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA. In accordance with the EPA's *Developing Your Stormwater Pollution Prevention Plan: A Guide for Construction Sites*, (Document number EPA 833-R-06-004) published by the EPA in 2007

<u>https://www.epa.gov/sites/production/files/2015-10/documents/sw\_swppp\_guide.pdf</u>, BMPs are measures or practices used to reduce the amount of pollution entering waters of the state from a permitted facility. BMPs may take the form of a process, activity, or physical structure. Additionally, in accordance with the Stormwater Management, a SWPPP is a series of steps and activities to 1) identify sources of pollution or contamination, and 2) select and carry out actions which prevent or control the pollution of storm water discharges. Additional information can be found in *Stormwater Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices* (EPA 832-R-92-006; September 1992).

A SWPPP must be prepared if the SIC code for the facility is found in 40 CFR 122.26(b)(14) and/or 10 CSR 20-6.200(2). A SWPPP may be required of other facilities where stormwater has been identified as necessitating better management. The purpose of a SWPPP is to comply with all applicable stormwater regulations by creating an adaptive management plan to control and mitigate stream pollution from stormwater runoff. Developing a SWPPP provides opportunities to employ appropriate BMPs to minimize the risk of pollutants being discharged during storm events. The following paragraph outlines the general steps the permittee should take to determine which BMPs will work to achieve the benchmark values or limits in the permit. This section is not intended to be all encompassing or restrict the use of any physical BMP or operational and maintenance procedure assisting in pollution control. Additional steps or revisions to the SWPPP may be required to meet the requirements of the permit.

Areas which should be included in the SWPPP are identified in 40 CFR 122.26(b)(14). Once the potential sources of stormwater pollution have been identified, a plan should be formulated to best control the amount of pollutant being released and discharged by each activity or source. This should include, but is not limited to, minimizing exposure to stormwater, good housekeeping measures, proper facility and equipment maintenance, spill prevention and response, vehicle traffic control, and proper materials handling. Once a plan has been developed, the facility will employ the control measures determined to be adequate to prevent pollution from entering waters of the state. The facility will conduct inspections of the BMPs to ensure they are working properly and re-evaluate any BMP not achieving compliance with permitting requirements. For example if the BMP being employed is deficient in controlling

stormwater pollution, corrective action should be taken to repair, improve, or replace the failing BMP. If failures do occur, continue this trial and error process until appropriate BMPs have been established.

The EPA has developed factsheets on the pollutants of concern for specific industries along with the BMPs to control and minimize stormwater (<u>https://www.epa.gov/npdes/stormwater-discharges-industrial-activities</u>). Along with EPA's factsheets, the International Stormwater BMP database (<u>https://bmpdatabase.org/</u>) may provide guidance on BMPs appropriate for specific industries.

For new, altered, or expanded stormwater discharges, the SWPPP shall identify reasonable and effective BMPs while accounting for environmental impacts of varying control methods. The antidegradation analysis must document why no discharge or no exposure options are not feasible. The selection and documentation of appropriate control measures shall serve as an alternative analysis of technology and fulfill the requirements of antidegradation [10 CSR 20-7.031(3)].

Alternative analysis evaluation of the BMPs is a structured evaluation of BMPs which are reasonable and cost effective. The alternative analysis evaluation should include practices designed to be: 1) non-degrading; 2) less degrading; or 3) degrading water quality. The glossary of the *Antidegradation Implementation Procedure* defines these three terms. The chosen BMP will be the most reasonable and effective management strategy while ensuring the highest statutory and regulatory requirements are achieved and the highest quality water attainable for the facility is discharged. The alternative analysis evaluation must demonstrate why "no discharge" or "no exposure" is not a feasible alternative at the facility. This structured analysis of BMPs serves as the antidegradation review, fulfilling the requirements of 10 CSR 20-7.031(3) Water Quality Standards and *Antidegradation Implementation Procedure*, Section II.B.

 Applicable: A SWPPP shall be developed and implemented for each site and shall incorporate required practices identified by the Department with jurisdiction, incorporate control practices specific to site conditions, and provide for maintenance and adherence to the plan.

#### **UNDERGROUND INJECTION CONTROL (UIC):**

The UIC program for all classes of wells in the State of Missouri is administered by the Missouri Department of Natural Resources and approved by EPA pursuant to section 1422 and 1425 of the Safe Drinking Water Act (SDWA) and 40 CFR 147 Subpart AA. Injection wells are classified based on the liquids which are being injected. Class I wells are hazardous waste wells which are banned by RSMo 577.155; Class II wells are established for oil and natural gas production; Class III wells are used to inject fluids to extract minerals; Class IV wells are also banned by Missouri in RSMo 577.155; Class V wells are shallow injection wells; some examples are heat pump wells and groundwater remediation wells. Domestic wastewater being disposed of sub-surface is also considered a Class V well. In accordance with 40 CFR 144.82, construction, operation, maintenance, conversion, plugging, or closure of injection wells shall not cause movement of fluids containing any contaminant into Underground Sources of Drinking Water (USDW) if the presence of any contaminant may cause a violation of drinking water standards or groundwater standards under 10 CSR 20-7.031 or other health-based standards or may otherwise adversely affect human health. If the Department finds the injection activity may endanger USDWs, the Department may require closure of the injection wells or other actions listed in 40 CFR 144.12(c), (d), or (e). In accordance with 40 CFR 144.26, the permittee shall submit a Class V Well Inventory Form for each active or new underground injection well drilled, or when the status of a well changes, to the Missouri Department of Natural Resources, Geological Survey Program, P.O. Box 250, Rolla, Missouri 65402. Single family residential septic systems and non-residential septic systems used solely for sanitary waste and having the capacity to serve fewer than 20 persons a day are excluded from the UIC requirements (40 CFR 144.81(9)).

✓ Not applicable; this permit does not authorize subsurface wastewater systems or other underground injection. These activities must be assessed under an application for a site specific permit. Certain discharges of stormwater into sinkholes may qualify as UIC. It is important the permittee evaluate all stormwater basins, even those holding water; as sinkholes have varying seepage rates. This permit does not allow stormwater discharges into sinkholes. The facility must ensure sinkholes are avoided in the construction process. The State's online mapping resource

https://modnr.maps.arcgis.com/apps/webappviewer/index.html?id=87ebef4af15d438ca658ce0b2bbc862e has a sinkhole layer.

#### VARIANCE:

Per the Missouri Clean Water Law Section 644.061.4, variances shall be granted for such period of time and under such terms and conditions as shall be specified by the commission in its order. The variance may be extended by affirmative action of the commission. In no event shall the variance be granted for a period of time greater than is reasonably necessary for complying with the Missouri Clean Water Law Section 644.006 to 644.141 or any standard, rule, or regulation promulgated pursuant to Missouri Clean Water Law Section 644.006 to 644.141.

✓ Not Applicable: This permit is not drafted under premises of a petition for variance.

#### WASTELOAD ALLOCATIONS (WLA) FOR LIMITATIONS:

Per 10 CSR 20-2.010(78), the amount of pollutant each discharger is allowed by the Department to release into a given stream after the Department has determined total amount of pollutant which may be discharged into the stream without endangering its water quality. Water quality based maximum daily and average monthly effluent limitations were calculated using methods and procedures outlined in USEPA's Technical Support Document For Water Quality-based Toxics Control (TSD) (EPA/505/2-90-001).

✓ Not applicable; water quality limitations were not applied in this permit.

#### WATER QUALITY STANDARDS:

Per 10 CSR 20-7.031(4), General Criteria shall be applicable to all waters of the state at all times, including mixing zones. Additionally, 40 CFR 122.44(d)(1) directs the Department to include in each NPDES permit conditions to achieve water quality established under Section 303 of the CWA, including state narrative criteria for water quality.

#### WHOLE EFFLUENT TOXICITY (WET) TEST:

Per 10 CSR 20-7.031(1)(FF), a toxicity test conducted under specified laboratory conditions on specific indicator organism; and per 40 CFR 122.2, the aggregate toxic effect of an effluent measured directly by a toxicity test. A WET test is a quantifiable method of determining if a discharge from a facility may be causing toxicity to aquatic life by itself, in combination with, or through synergistic responses when mixed with receiving water.

✓ Not applicable: At this time, permittees are not required to conduct a WET test. This permit is for stormwater only.

# PART IV – EFFLUENT LIMITATIONS DETERMINATION

#### EPA Construction General Permit (CGP)

The CGP was used to research and support best professional judgment decisions made in establishing technology-based conditions for this general permit which are consistent with national standards. The permit writer determined the standards established by the CGP are achievable and consistent with federal regulations. Additionally, the conditions reflecting the best practicable technology currently available are utilized to implement the ELG.

In this general permit, technology-based effluent conditions are established through the SWPPP and BMP requirements. Effective BMPs should be designed on a site-specific basis. The implementation of inspections provides a tool for each facility to evaluate the effectiveness of BMPs to ensure protection of water quality. Any flow through an outfall is considered a discharge. Future permit action due to permit modification may contain new operating permit terms and conditions which supersede the terms and conditions, including effluent limitations, of this operating permit.

# PART V-REPORTING REQUIREMENTS

#### SAMPLING:

The permittee is not required to sample stormwater under this permit. The Department may require sampling and reporting as a result of illegal discharges, compliance issues related to water quality concerns or BMP effectiveness, or evidence of off-site impacts from activities at the facility. If such an action is needed, the Department will specify in writing the sampling requirements, including such information as location and extent. If the permittee refuses to perform sampling when required, the Department may terminate the general permit and require the facility to obtain a site-specific permit with sampling requirements.

#### **REPORTING:**

There are no reporting requirements for MO-RAxxxx land disturbance permits. Land disturbance information is best reviewed on an as requested basis and this permit established documents requirements that allow the Department to request and receive needed documentation prior to, during, or after site inspections.

# PART VI – RAINFALL VALUES FOR MISSOURI & SURFACE WATER BUFFER ZONES

Knowledge of the 2-year, 24-hour storm event is used in this permit for two main reasons:

1) The design, installation, and maintenance of effective erosion and sediment controls to minimize the discharge of pollutants. These erosion and sediment controls must be designed to capture or treat a 2-year, 24-hour storm event. This includes BMPs and, depending on the acreage of the drainage area, sediment basins.

2) If the seven-day inspection frequency is utilized, an inspection must occur within 48 hours after any storm event equal to or greater than a 2-year, 24 hour storm has ceased.

A 2-year, 24-hour storm event may be determined in two different ways. For site-specific 2-year, 24-hour storm event information utilize the National Oceanic and Atmospheric Administration's National Weather Service Atlas 14 (NOAA Atlas 14) which is located at <u>https://hdsc.nws.noaa.gov/hdsc/pfds/pfds\_map\_cont.html</u>. This is the most accurate and preferred method for determining the 2-year, 24-hour storm event. In general, this will be the least stringent method. For more information visit; <u>https://www.weather.gov/media/owp/oh/hdsc/docs/Atlas14\_Volume8.pdf</u>.

As an alternative to NOAA Atlas 14, a default value may be utilized. The map below provided by the Department represent the most conservative, protective values for default values applicable to Missouri. In general, this will be the most stringent method. This map is based on Technical Paper No. 40 (TP-40). TP-40 provides a map of the continental U.S. for the 2-year, 24-hour storm event. See map below for default values.

#### Map 1: Default Values for 2-Year, 24-Hour Storm Event for Design of Sediment and Erosion Controls



**Surface Water Buffer Zones:** In order to design controls that match the sediment removal efficiency of a 50-foot buffer, you first need to know what this efficiency is for your site. The sediment removal efficiencies of natural buffers vary according to a number of site-specific factors, including precipitation, soil type, land cover, slope length, width, steepness, and the types of erosion and sediment controls used to reduce the discharge of sediment prior to the buffer. For additional information; https://www.epa.gov/sites/default/files/2017-02/documents/2017\_cgp\_final\_appendix\_g\_- buffer\_reqs\_508.pdf

# PART VII – ADMINISTRATIVE REQUIREMENTS

On the basis of preliminary staff review and applicable standards and regulations, the Department, as administrative agent for the Missouri Clean Water Commission, proposes to issue a permit(s) subject to certain effluent limitations, schedules, and special conditions contained herein and within the permit. The proposed determinations are tentative pending public comment.

# **PUBLIC MEETING:**

The Department hosted three public meetings for this permit. The meetings were held on January 27, February 17, and March 9, 2021.

#### **PUBLIC NOTICE:**

The Department shall give public notice when a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest or because of water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and facility must be notified of the denial in writing.

The Department must give public notice of a pending permit or of a new or reissued Missouri State Operating Permit. The public comment period is a length of time not less than thirty (30) days following the date of the public notice, during which interested persons may submit written comments about the proposed permit.

For persons wanting to submit comments regarding this proposed permit, please refer to the Public Notice page located at the front of this draft permit. The Public Notice page gives direction on how and where to submit appropriate comments.

✓ The Public Notice period for this permit was held from November 5, 2021 and ends December 6, 2021. Two letters were received during the 30 day Public Notice period. The summarized comments from the letter and the Department's responses

to the comments are below and are in reference to the Public Noticed version of this permit. The comments and responses to the Public Notice of this permit do not warrant the modification of the terms and conditions of this permit.

Letter 1:

Comment #1: Numbering on Page 3 - there are two #2's

Response: Thank you, this was corrected.

Comment #2: 2. ... If an individual proposes to develop a lot to reside on (themself),

**Response**: This word has been added to add clarity.

**Comment #3**: Table on Page 3, I. Applicability Section A, #2. The second row, second column is confusing. This second part seems to imply that lots less than 1 acre but not part of a common plan would need a permit if the lot is to be sold. This seems contrary to the one or more acres required for a permit.

**Response**: The second part was reworded in effort to clarify. The "or if" was changed to "including" to clarify both situations are part of the common plan and would require a permit.

**Comment #4**: The first part of this section before the semicolon seems incomplete:

Response: The redundant wording was removed to clarify this condition.

**Comment #5**: There is no #3.

**Response**: Thank you, this was corrected.

**Comment #6**: Number 4. Could the impaired water also be on the 303(d) list? Impaired waters are only on the 305(b) list after they have a TMDL written. What about the streams on the 303(d) list that are waiting for a TMDL?

**Response**: The 303(d) list is a less-encompassing component of the all-encompassing 305(b) Report. The permit has been edited to state "designated in the 305(b) Report, including the 303(d) list," to emphasizing the 303(d) list.

**Comment #7**: 10. Change the word States to state

Response: This was corrected.

**Comment #8**: There are 2 (b)s under #1. 1(c). Part VII. should be Part VIII STANDARD PERMIT CONDITIONS 6. Replace the period with a colon after BMPs. "The permittee shall select, install, use, operate and maintain appropriate BMPs for the permitted site. The following manuals are acceptable resources for the selection of appropriate BMPs:"

**Response**: These corrections were made.

Comment #9: 11(b) 2 and 3. These are missing periods after the word "holiday"

**Response**: These corrections were made.

Comment #10: V. BMP Requirements (2) Can you define "dripline"

Response: A longer explanation of "dripline" was added to that condition for clarity.

**Comment #11**: 11.(c)(2) Is this missing a word after "from". In the phrase "discharge points from" ? Perhaps just remove the word "from". The phrase would read "inlets, outlets, and discharge points shall be utilized."

**Response**: This correction has been made.

**Comment #12**: Also, the addition of language related to BMPs discussed on page 5 and 6 of the fact sheet are positive additions to the permit and should help guide protection of waters of the state from sediment.

On the top of page 6 of the fact sheet, it appears there is a typo: "Migration of soil or product from mis-managed **plies**" **Response**: This correction has been made.

Letter 2:

**Comment #1**: Define Outfalls.

**Response**: Outfalls are points with discharges of stormwater from areas associated with the industrial activity for which the facility is permitted; in this case construction. Discerning if certain drains which leave the site would be considered an outfall or not would be specific to each site, in addition to the specific phase of construction. Outfalls on construction sites are often not stationary. An outfall does not need to be a pipe, it can be a ditch, channel, or other conduit that discharges stormwater off the property, and there is no size constraint to outfalls. A definition has been added to the fact sheet to add clarification. **Comment #2: I. Applicability: A. Permit Coverage and Authorized Discharges** – Permit numbering is off.

**Response**: Thank you, this has been corrected.

Comment #3: I. Applicability: B. Permit Restrictions – Permit numbering is off.

**Response**: Thank you, this has been corrected.

**Comment #4**: 4(c) Discharges from dewatering of sedimentation basins is prohibited. Does this mean direct dumping of dewatering material? Are dewatering controls such as sediment bags, infiltration trenches, or buffer strips allowed? **Response**: The definition of no-discharge facility found in 10 CSR 20-6.015 includes the condition "To hold or irrigate, or otherwise dispose without discharge to surface or subsurface waters of the state, all process wastes and associated storm water flows except for discharges that are caused by catastrophic and chronic storm events;". Dewatering controls are allowed so long as they are operated so that the dewatered material and water is not discharged to waters of the state. **Comment #5**: 4(c) references 10 CSR 20-6.15(1)B(7). Should this be 10 CSR 20-6.015(1)B(7)?

**Response**: This has been corrected, thank you.

**Comment #6**: Could the department please clarify what is meant by a "catastrophic event" referenced in this regulation? The permit design standards are for the 2-year, 24-hour storm.

Response: Catastrophic storm is defined in 10 CSR 20-6.015(1)(B)2 as "A precipitation event of twenty-four (24)-hour

duration or less that exceeds the twenty-five (25)-year, twenty-four (24)-hour storm event." A chronic storm event is defined in 10 CSR 20-6.015(1)(B)3 as "A precipitation event with a duration of more than twenty-four (24) hours that exceeds the one-in-ten (1 in 10)-year return frequency."

This information is found on the National Oceanic and Atmospheric Administration's National Weather Service Atlas 14. A link can be found in the permit part **III. REQUIREMENTS** 4.

Comment #7: IV. SWPPP Management Requirements 1. Multilevel numbering is off.

**Response**: This has been corrected, thank you.

**Comment #8**: **VIII. Standard Permit Conditions 2. Land Ownership and Change of Ownership** 2(c) – Please clarify if an individual needs a land disturbance permit for their personal residence if the portion of land sold is equal to or greater than one acre, as it states in the proposed permit, or only if they will be disturbing one acre or greater. **Response**: The word 'disturbed' has been included in this portion to add clarity.

**DATE OF FACT SHEET:** 10/13/2021

COMPLETED BY: SARAH WRIGHT, ENVIRONMENTAL SPECIALIST MISSOURI DEPARTMENT OF NATURAL RESOURCES WATER PROTECTION PROGRAM OPERATING PERMITS SECTION - STORMWATER AND CERTIFICATION UNIT (573) 526-1139 Sarah.wright@dnr.mo.gov, dnr.generalpermits@dnr.mo.gov Appendix C – Example Inspection Report

General Information	
Project Name	City Project No.
Permit Holder/Owner	
Location	
General Contractor	Date of Inspection
Inspector's Name(s)	
Inspector's Contact Information	
Inspection Information	
Describe present phase of construction:	
Type of Inspection:         Regular       During storm event       Post-storm event       Joint City/Contract	or 🗌 Initial
Weather at time of this inspection?         Raining       Snowing         High Winds       Sunny/Cloudy         Snow Cover	Other:
Are there any active discharges of sediment from the site at the time of inspection?	Yes No
Is there evidence of any non-active discharges of sediment from the site that have occu inspection? Yes No If yes, describe:	rred since the last
Have deficiencies noted on the last inspection been corrected? Yes No If no, explain:	

All deficiencies noted on the following pages shall be corrected within 7 days of this inspection.
Copy of inspection report sent to:
1.
2.
3.

BMP/Activity		<b>Corrective Action Needed and Notes</b>
Site complies with Erosion and	Yes No	
Sediment Control Plan.		
Are BMPs in place as required by the site		
plan?		
Sediment leaving site	Yes No	
Are sediment deposits evident at		
discharge points and/or in receiving		
waters?		

BMP/Activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
Solid Waste Management Is trash/debris contained and/or removed	Yes No	Yes No	
regularly? Installation and Maintenance of	Yes No	Yes No	
Washout Area Are washout facilities (e.g. concrete, paint, stucco) available, clearly marked and maintained?			
Are non-stormwater discharges (e.g., wash water, dewatering) properly controlled?			
Proper Storage and Disposal of	□Yes □No	□Yes □No	
Materials Are vehicle and equipment fueling, cleaning, and maintenance areas free of spills, leaks, or any other deleterious material?			
Are materials that are potential stormwater contaminants stored inside or under cover?			
Are sanitary facilities made available, properly located and maintained?			
Site Stabilization	Yes No	Yes No	
Are all slopes and disturbed areas not actively being worked properly			
stabilized? Are temporary stabilization measures still			
in good condition (straw mulch, blankets, hydromulch)?			

BMP/Activity	Implemented?	Maintenance Required?	Corrective Action Needed and
		Kequireu:	Notes
Installation and Maintenance of Stabilized Site Access	Yes No	Yes No	
Is the construction access preventing			
sediment from being tracked off-site?			
Is rock compacted or filled with dirt?			
Are alternative measures (street			
sweeping) being done regularly?			
Installation and Maintain of	Yes No	Yes No	
Temporary Sediment Controls			
Are perimeter controls and sediment			
barriers adequately installed and in good			
condition (keyed in, runoff getting under			
or around)?			
Are natural resource areas (e.g., streams,			
wetlands, mature trees, etc.) protected with barriers or similar BMPs?			
Installation and Maintenance of Inlet	Yes No	Yes No	
Protection			
Are storm drain inlets protected with			
approved devices?			
Do BMPs need maintenance			
(deteriorating, accumulated sediment)?			
Is runoff getting around or under BMP?			
Installation of Sediment Basin or Trap	Yes No	Yes No	
Is outlet area stabilized?			
Are sides and overflow stabilized and in			
good condition?			
Is capacity at least 80%?			
Stockpiles Protected	□Yes □No	☐Yes ☐No	
Are all stockpiles located away from			
streets and drainage areas and properly			
protected? Installation and Maintenance of	Yes No	Yes No	
Construction Fencing Along All			
Critical Areas			
Are all stream buffers, wetlands and other			
protected areas designated with fencing to			
prevent encroachment?			
(Ex: Orange fencing to keep construction			
equipment out of stream buffer.)			
Stream Crossings	Yes No	Yes No	
Is stream crossing properly installed per			
plan including rock?			
Is disturbance minimized and BMPs in			
place for disturbed area?			

Appendix D – USGS Soils Report

# Appendix E – Corrective Action Log

Inspection Date	Inspector Name(s)	Description of BMP Deficiency	Corrective Action Needed (including planned date/responsible person)	Date Action Taken/Responsible person

# Appendix F – SWPPP Amendment Log

No.	Description of the Amendment	Date of Amendment	Amendment Prepared by [Name(s) and Title]

#### Appendix G - Subcontractor Certifications/Agreements

SUBCONTRACTOR CERTIFICATION STORMWATER POLLUTION PREVENTION PLAN

Project Number: \_\_\_\_\_

Project Title: \_\_\_\_\_

Operator(s):

As a subcontractor, you are required to comply with the Stormwater Pollution Prevention Plan (SWPPP) for any work that you perform on-site. Any person or group who violates any condition of the SWPPP may be subject to substantial penalties or loss of contract. You are encouraged to advise each of your employees working on this project of the requirements of the SWPPP. A copy of the SWPPP is available for your review at the office trailer.

Each subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the following certification statement:

I certify under the penalty of law that I have read and understand the terms and conditions of the SWPPP for the above designated project and agree to follow the practices described in the SWPPP.

This certification is hereby signed in reference to the above named project:

Company:

Address:

Telephone Number: \_\_\_\_\_

Type of construction service to be provided: \_\_\_\_\_

Signature:

Title:

Date: \_\_\_\_\_

Appendix H – Grading and Stabilization Activities Log

Date Grading Activity Initiated	Description of Grading Activity	Description of Stabilization Measure and Location	Date Grading Activity Ceased (Indicate Temporary or Permanent)	Date When Stabilization Measures Initiated
			Temporary	
			Permanent	
			Temporary     Permanent	
			Temporary     Permanent	
			Temporary     Permanent	
			□ Temporary □ Permanent	
			Temporary Permanent	
			Temporary     Permanent	
			Temporary     Permanent	

Appendix I – Training Documentation

Stormwater Pollution Prevention Training Log
Project Name: Lee's Summit Joint Operations Facility
Project Location: 2 NE TUDOR ROAD
Instructor's Name(s):
Instructor's Title(s):
Course Location: Date:
Course Length (hours):
Stormwater Training Topic:
Erosion Control BMPs Emergency Procedures
Sediment Control BMPs 🗌 Good Housekeeping BMPs
Non-Stormwater BMPs
Specific Training Objective:

Attendee Roster:

No.	Name of Attendee	Company
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

# Appendix J – Delegation of Authority Form

Delegation of Authority

I, \_\_\_\_\_\_ (name), hereby designate the person or specifically described position below to be a duly authorized representative for the purpose of overseeing compliance with environmental requirements, including the MISSOURI WATER POLLUTION CONTROL AND NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM STORMWATER RUNOFF FROM CONSTRUCTION ACTIVITIES GENERAL PERMIT (Kansas GCP), at the

\_\_\_\_\_ construction site. The designee is authorized to sign any reports, stormwater pollution prevention plans and all other documents required by the permit.

 (name of person or position)
 (company)
 (address)
 (city, State, zip)
 (phone)

By signing this authorization, I confirm that I meet the requirements to make such a designation as set forth in the Missouri GCP, and that the designee above meets the definition of a "duly authorized representative" as set forth in the Missouri GCP.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Company:	
Title:	
Signature:	
•	
Date:	

# SECTION 087100 - DOOR HARDWARE

#### 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. This Section includes commercial door hardware for the following:
  - 1. Swinging doors.
  - 2. Sliding doors.
  - 3. Other doors to the extent indicated.
- B. Door hardware includes, but is not necessarily limited to, the following:
  - 1. Mechanical door hardware.
  - 2. Electromechanical door hardware.
  - 3. Automatic operators.
  - 4. Cylinders specified for doors in other sections.
- C. Related Sections:
  - 1. Division 08 Section "Hollow Metal Doors and Frames".
  - 2. Division 08 Section "Flush Wood Doors".
  - 3. Division 08 Section "Aluminum-Framed Entrances and Storefronts".
  - 4. Division 08 Section "Automatic Door Operators".
- D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.
  - 1. ANSI A117.1 Accessible and Usable Buildings and Facilities.
  - 2. FEMA P-361 2015/2021 Design and Construction Guidance for Community Safe Rooms.
  - 3. ICC 500-2014/2020, ICC/NSSA Standard for the Design and Construction of Storm Shelters.
  - 4. ICC/IBC International Building Code.
  - 5. NFPA 70 National Electrical Code.
  - 6. NFPA 80 Fire Doors and Windows.
  - 7. NFPA 101 Life Safety Code.
  - 8. NFPA 105 Installation of Smoke Door Assemblies.
  - 9. UL/ULC and CSA C22.2 Standards for Automatic Door Operators Used on Fire and Smoke Barrier Doors and Systems of Doors.

- 10. State Building Codes, Local Amendments.
- E. Standards: All hardware specified herein shall comply with the following industry standards as applicable. Any undated reference to a standard shall be interpreted as referring to the latest edition of that standard:
  - 1. ANSI/BHMA Certified Product Standards A156 Series.
  - 2. UL10C Positive Pressure Fire Tests of Door Assemblies.
  - 3. ANSI/UL 294 Access Control System Units.
  - 4. UL 305 Panic Hardware.
  - 5. ANSI/UL 437- Key Locks.

# 1.3 SUBMITTALS

- A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.
- B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing, fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
  - 1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
  - 2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
  - 3. Content: Include the following information:
    - a. Type, style, function, size, label, hand, and finish of each door hardware item.
    - b. Manufacturer of each item.
    - c. Fastenings and other pertinent information.
    - d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
    - e. Explanation of abbreviations, symbols, and codes contained in schedule.
    - f. Mounting locations for door hardware.
    - g. Door and frame sizes and materials.
    - h. Warranty information for each product.
  - 4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.
- C. Shop Drawings: Details of electrified access control hardware indicating the following:

- 1. Wiring Diagrams: Upon receipt of approved schedules, submit detailed system wiring diagrams for power, signaling, monitoring, communication, and control of the access control system electrified hardware. Differentiate between manufacturer-installed and field-installed wiring. Include the following:
  - a. Elevation diagram of each unique access controlled opening showing location and interconnection of major system components with respect to their placement in the respective door openings.
  - b. Complete (risers, point-to-point) access control system block wiring diagrams.
  - c. Wiring instructions for each electronic component scheduled herein.
- 2. Electrical Coordination: Coordinate with related sections the voltages and wiring details required at electrically controlled and operated hardware openings.
- D. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.
- E. Informational Submittals:
  - 1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.

#### 1.4 CLOSEOUT SUBMITTALS

- A. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Procedures.
- B. Project Record Documents: Provide record documentation of as-built door hardware sets in digital format (.pdf, .docx, .xlsx, .csv) and as required in Division 01, Project Record Documents.

# 1.5 QUALITY ASSURANCE

- A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.
- B. Certified Products: Where specified, products must maintain a current listing in the Builders Hardware Manufacturers Association (BHMA) Certified Products Directory (CPD).
- C. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

- D. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.
- E. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.
  - 1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.
  - 2. Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.
- F. Each unit to bear third party permanent label indicating compliance with the referenced testing standards.
- G. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:
  - 1. Function of building, purpose of each area and degree of security required.
  - 2. Plans for existing and future key system expansion.
  - 3. Requirements for key control storage and software.
  - 4. Installation of permanent keys, cylinder cores and software.
  - 5. Address and requirements for delivery of keys.
- H. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.
  - 1. Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
  - 2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
  - 3. Review sequence of operation narratives for each unique access controlled opening.
  - 4. Review and finalize construction schedule and verify availability of materials.
  - 5. Review the required inspecting, testing, commissioning, and demonstration procedures
- I. At completion of installation, provide written documentation that components were applied according to manufacturer's instructions and recommendations and according to approved schedule.

# 1.6 DELIVERY, STORAGE AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.
- B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.
- C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

# 1.7 COORDINATION

- A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.
- B. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

# 1.8 WARRANTY

- A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:
  - 1. Structural failures including excessive deflection, cracking, or breakage.
  - 2. Faulty operation of the hardware.
  - 3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
  - 4. Electrical component defects and failures within the systems operation.
- C. Warranty Period: Unless otherwise indicated, warranty shall be one year from date of Substantial Completion.

# PART 2 - PRODUCTS

#### 2.1 BUTT HINGES

- A. Hinges: ANSI/BHMA A156.1 butt hinges with number of hinge knuckles and other options as specified in the Door Hardware Sets.
  - 1. Quantity: Provide the following hinge quantity:
    - a. Two Hinges: For doors with heights up to 60 inches.
    - b. Three Hinges: For doors with heights 61 to 90 inches.
    - c. Four Hinges: For doors with heights 91 to 120 inches.
    - d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.
  - 2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:
    - a. Widths up to 3'0": 4-1/2" standard or heavy weight as specified.
    - b. Sizes from 3'1" to 4'0": 5" standard or heavy weight as specified.
  - 3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:
    - a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
    - b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.
  - 4. Hinge Options: Comply with the following:
    - a. Non-removable Pins: With the exception of electric through wire hinges, provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for the all out-swinging lockable doors.
  - 5. Manufacturers:
    - a. McKinney (MK) TA/T4A Series, 5-knuckle.

#### 2.2 CONTINUOUS HINGES

- A. Continuous Geared Hinges: ANSI/BHMA A156.26 Grade 1-600 continuous geared hinge. with minimum 0.120-inch thick extruded 6063-T6 aluminum alloy hinge leaves and a minimum overall width of 4 inches. Hinges are non-handed, reversible and fabricated to template screw locations. Factory trim hinges to suit door height and prepare for electrical cut-outs.
  - 1. Manufacturers:.
    - a. Pemko (PE).

- B. Pin and Barrel Continuous Hinges: ANSI/BHMA A156.26 Grade 1-600 pin and barrel continuous hinges with minimum 14 gauge Type 304 stainless steel hinge leaves, concealed stainless pin, and twin self-lubricated nylon bearings at each knuckle separation. Factory trim hinges to suit door height and prepare for electrical cut-outs.
  - 1. Manufacturers:
    - a. Markar Products; ASSA ABLOY Architectural Door Accessories (MR).
    - b. Pemko (PE).

# 2.3 POWER TRANSFER DEVICES

- A. Electrified Quick Connect Transfer Hinges: Provide electrified transfer hinges with Molex<sup>™</sup> standardized plug connectors and sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets with a 1-year warranty. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.
  - 1. Manufacturers:
    - a. McKinney (MK) QC (# wires) Option.
- B. Electrified Quick Connect Stainless Steel Continuous Transfer Hinges: Provide electrified transfer stainless steel continuous hinges with electrical transfer access prep accessible without de-mounting door from the frame. Furnish with Molex<sup>™</sup> standardized plug connectors with sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.
  - 1. Manufacturers:
    - a. Markar Products; ASSA ABLOY Architectural Door Accessories (MR) MP-ETAP-EL (# wires) Option.
- C. Concealed Quick Connect Electric Power Transfers: Provide concealed wiring pathway housing mortised into the door and frame for low voltage electrified door hardware. Furnish with Molex<sup>™</sup> standardized plug connectors and sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.
  - 1. Manufacturers:
    - a. Pemko (PE) EL-CEPT Series.
    - b. Securitron (SU) EL-CEPT Series.
- D. Electric Door Wire Harnesses: Provide electric/data transfer wiring harnesses with standardized plug connectors to accommodate up to twelve (12) wires. Connectors plug directly to through-

door wiring harnesses for connection to electric locking devices and power supplies. Provide sufficient number and type of concealed wires to accommodate electric function of specified hardware. Provide a connector for through-door electronic locking devices and from hinge to junction box above the opening. Wire nut connections are not acceptable. Determine the length required for each electrified hardware component for the door type, size and construction, minimum of two per electrified opening.

- 1. Provide one each of the following tools as part of the base bid contract:
  - a. McKinney (MK) Electrical Connecting Kit: QC-R001.
  - b. McKinney (MK) Connector Hand Tool: QC-R003.
- 2. Manufacturers:
  - a. McKinney (MK) QC-C Series.

#### 2.4 DOOR OPERATING TRIM

- A. Flush Bolts and Surface Bolts: Provide products conforming to ANSI/BHMA A156.3 and A156.16, Grade 1.
  - 1. Flush bolts to be furnished with top rod of sufficient length to allow bolt retraction device location approximately six feet from the floor.
  - 2. Furnish dust proof strikes for bottom bolts.
  - 3. Surface bolts to be minimum 8" in length and U.L. listed for labeled fire doors and U.L. listed for windstorm components where applicable.
  - 4. Provide related accessories (mounting brackets, strikes, coordinators, etc.) as required for appropriate installation and operation.
  - 5. Manufacturers:
    - a. Rockwood (RO).
- B. Coordinators: ANSI/BHMA A156.3 door coordinators consisting of active-leaf, hold-open lever and inactive-leaf release trigger. Model as indicated in hardware sets.
  - 1. Manufacturers:
    - a. Rockwood (RO).
- C. Door Push Plates and Pulls: ANSI/BHMA A156.6 door pushes and pull units of type and design specified in the Hardware Sets. Coordinate and provide proper width and height as required where conflicting hardware dictates.
  - 1. Push/Pull Plates: Minimum .050 inch thick, size as indicated in hardware sets, with beveled edges, secured with exposed screws unless otherwise indicated.
  - 2. Door Pull and Push Bar Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door unless otherwise indicated.

- 3. Offset Pull Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door and offset of 90 degrees unless otherwise indicated.
- 4. Pulls, where applicable, shall be provided with a 10" clearance from the finished floor on the push side to accommodate wheelchair accessibility.
- 5. Fasteners: Provide manufacturer's designated fastener type as indicated in Hardware Sets. When through-bolt fasteners are in the same location as a push plate, countersink the fasteners flush with the door face allowing the push plate to sit flat against the door.
- 6. Manufacturers:
  - a. Rockwood (RO).

#### 2.5 CYLINDERS AND KEYING

- A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.
- B. Patented Cylinders: ANSI/BHMA A156.5, Grade 1 Certified Products Directory (CPD) listed cylinders employing a utility patented and restricted keyway requiring the use of a patented key. Cylinders are to be protected from unauthorized manufacture and distribution by manufacturer's United States patents.
  - 1. Patented key systems shall not be established with products that have an expired patent. Expired systems shall only be specified and supplied to support existing systems.
  - 2. Manufacturers:
    - a. Corbin Russwin (RU) Access 3 AP.
    - b. Sargent (SA) Degree DG1.
- C. Keying System: Each type of lock and cylinders to be factory keyed.
  - 1. Supplier shall conduct a "Keying Conference" to define and document keying system instructions and requirements.
  - 2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
  - 3. New System: Key locks to a new key system as directed by the Owner.
- D. Key Quantity: Provide the following minimum number of keys:
  - 1. Change Keys per Cylinder: Two (2)
  - 2. Master Keys (per Master Key Level/Group): Five (5).
  - 3. Construction Keys (where required): Ten (10).
- E. Construction Keying: Provide construction master keyed cylinders.
- F. Key Registration List (Bitting List):
  - 1. Provide keying transcript list to Owner's representative in the proper format for importing into key control software.

2. Provide transcript list in writing or electronic file as directed by the Owner.

#### 2.6 KEY CONTROL

- A. Key Control Cabinet: Provide a key control system including envelopes, labels, and tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet. Key control cabinet shall have expansion capacity of 150% of the number of locks required for the project.
  - 1. Manufacturers:
    - a. Lund Equipment (LU).
    - b. MMF Industries (MM).
    - c. Telkee (TK).

#### 2.7 MORTISE LOCKS AND LATCHING DEVICES

- A. Mortise Locksets, Grade 1 (Heavy Duty): Provide ANSI/BHMA A156.13, Series 1000, Operational Grade 1 Certified Products Directory (CPD) listed mortise locksets. Listed manufacturers shall meet all functions and features as specified herein.
  - 1. Manufacturers:
    - a. Corbin Russwin Hardware (RU) ML2000 Series.
    - b. Sargent Manufacturing (SA) 8200 Series.

#### 2.8 LOCK AND LATCH STRIKES

- A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:
  - 1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
  - 2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
  - 3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
  - 4. Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.
- B. Standards: Comply with the following:
  - 1. Strikes for Mortise Locks and Latches: BHMA A156.13.
  - 2. Strikes for Bored Locks and Latches: BHMA A156.2.
  - 3. Strikes for Auxiliary Deadlocks: BHMA A156.36.
  - 4. Dustproof Strikes: BHMA A156.16.

#### 2.9 CONVENTIONAL EXIT DEVICES

- A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:
  - 1. At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.
  - 2. Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper fasteners for installation as tested and listed by UL. Consult manufacturer's catalog and template book for specific requirements.
  - 3. Except on fire rated doors, provide exit devices with hex key dogging device to hold the pushbar and latch in a retracted position. Provide optional keyed cylinder dogging on devices where specified in Hardware Sets.
  - 4. Devices must fit flat against the door face with no gap that permits unauthorized dogging of the push bar. The addition of filler strips is required in any case where the door light extends behind the device as in a full glass configuration.
  - 5. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty escutcheon trim with threaded studs for thru-bolts.
    - a. Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets.
    - b. Where function of exit device requires a cylinder, provide a cylinder (Rim or Mortise) as specified in Hardware Sets.
  - 6. Vertical Rod Exit Devices: Where surface or concealed vertical rod exit devices are used at interior openings, provide as less bottom rod (LBR) unless otherwise indicated. Provide dust proof strikes where thermal pins are required to project into the floor.
  - 7. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2" wide stiles.
  - 8. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.
  - 9. Rail Sizing: Provide exit device rails factory sized for proper door width application.
  - 10. Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.
- B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 Certified Products Directory (CPD) listed exit devices. Listed manufacturers shall meet all functions and features as specified herein.
  - 1. Electromechanical exit devices shall have the following functions and features:
    - a. Universal Molex plug-in connectors that have standardized color-coded wiring and are field configurable in fail safe or fail secure and operate from 12vdc to 24vdc regulated.
    - b. EcoFlex or equivalent technology that reduces energy consumption up to 92% as certified by GreenCircle.
    - c. Options to be available for request-to-exit or enter signaling, latchbolt and touchbar monitoring.

- d. Field configurable electrified trim to fail-safe or fail-secure that operates from 12-24VDC.
- e. Five-year limited warranty for electromechanical features.
- 2. Manufacturers:
  - a. Corbin Russwin Hardware (RU) ED4000 / ED5000 Series.
  - b. Sargent Manufacturing (SA) 80 Series.
- C. Multi-Point Exit Devices (Storm Shelter Openings): Multi-point exit devices specifically engineered for out-swinging door applications on tornado or hurricane resistant storm shelter openings. Extra heavy duty steel component construction with each of the latching points automatically activated when the device is locked. The multi-point exit device is approved for usage as part of a complete ICC 500 (2014/2020) and FEMA P-361 (2015/2021) door, frame and hardware assembly.
  - 1. Manufacturers:
    - a. Corbin Russwin Hardware (RU) FE5400S Series.
    - b. Sargent Manufacturing (SA) FM8700 Series.

#### 2.10 DOOR CLOSERS

- A. All door closers specified herein shall meet or exceed the following criteria:
  - 1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers.
  - 2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
  - 3. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the Americans with Disabilities Act, provide units complying with ANSI ICC/A117.1.
  - 4. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
  - 5. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.
  - 6. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.
- B. Door Closers, Surface Mounted (Large Body Cast Iron): ANSI/BHMA A156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control.

- 1. Manufacturers:
  - a. Corbin Russwin Hardware (RU) DC8000 Series.
  - b. Norton Rixson (NO) 9500 Series.
  - c. Sargent Manufacturing (SA) 281 Series.
- C. Door Closers, Surface Mounted (Heavy Duty): ANSI/BHMA A156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control. Provide non-handed units standard..
  - 1. Manufacturers:
    - a. Corbin Russwin Hardware (RU) DC6000 Series.
    - b. Norton Rixson (NO) 7500 Series.
    - c. Sargent Manufacturing (SA) 351 Series.
- D. Door Closers, Surface Mounted (Cam Action): ANSI/BHMA 156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, high efficiency door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be of the cam and roller design, one piece cast aluminum silicon alloy body with adjustable backcheck and independently controlled valves for closing sweep and latch speed.
  - 1. Manufacturers:
    - a. Corbin Russwin (RU) DC5000 Series.
    - b. Norton Rixson (NO) 2800ST Series.
    - c. Sargent Manufacturing (SA) 422 Series.

#### 2.11 ARCHITECTURAL TRIM

- A. Door Protective Trim
  - 1. General: Door protective trim units to be of type and design as specified below or in the Hardware Sets.
  - 2. Size: Fabricate protection plates (kick, armor, or mop) not more than 2" less than door width (LDW) on stop side of single doors and 1" LDW on stop side of pairs of doors, and not more than 1" less than door width on pull side. Coordinate and provide proper width and height as required where conflicting hardware dictates. Height to be as specified in the Hardware Sets.
  - 3. Where plates are applied to fire rated doors with the top of the plate more than 16" above the bottom of the door, provide plates complying with NFPA 80. Consult manufacturer's catalog and template book for specific requirements for size and applications.
  - 4. Protection Plates: ANSI/BHMA A156.6 protection plates (kick, armor, or mop), fabricated from the following:

- a. Stainless Steel: 300 grade, 050-inch thick.
- 5. Options and fasteners: Provide manufacturer's designated fastener type as specified in the Hardware Sets. Provide countersunk screw holes.
- 6. Manufacturers:
  - a. Rockwood (RO).

#### 2.12 DOOR STOPS AND HOLDERS

- A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.
- B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.
  - 1. Manufacturers:
    - a. Rockwood (RO).
- C. Overhead Door Stops and Holders: ANSI/BHMA A156.8, Grade 1 Certified Products Directory (CPD) listed overhead stops and holders to be surface or concealed types as indicated in Hardware Sets. Track, slide, arm and jamb bracket to be constructed of extruded bronze and shock absorber spring of heavy tempered steel. Provide non-handed design with mounting brackets as required for proper operation and function.
  - 1. Manufacturers:
    - a. Norton Rixson (RF).
    - b. Rockwood (RO).
    - c. Sargent Manufacturing (SA).

#### 2.13 ARCHITECTURAL SEALS

- A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.
- B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.
  - 1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.

- C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.
  - 1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and NFPA 252, Standard Methods of Fire Tests of Door Assemblies.
- D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.
- E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.
- F. Manufacturers:
  - 1. Pemko (PE).

#### 2.14 ELECTRONIC ACCESSORIES

- A. Push-Button Switches: Industrial grade momentary or alternate contact, back-lighted push buttons with stainless-steel switch enclosures. 12/24 VDC bi-color illumination suitable for either flush or surface mounting.
  - 1. Manufacturers:
    - a. Alarm Controls (AK) TS Series.
    - b. Securitron (SU) PB Series.
- B. Door Position Switches: Door position magnetic reed contact switches specifically designed for use in commercial door applications. On recessed models the contact and magnetic housing snap-lock into a 1" diameter hole. Surface mounted models include wide gap distance design complete with armored flex cabling. Provide SPDT, N/O switches with optional Rare Earth Magnet installation on steel doors with flush top channels.
  - 1. Manufacturers:
    - a. Securitron (SU) DPS Series.
- C. Intelligent Switching Power Supplies: Provide power supplies with single, dual or multi-voltage configurations at 12 and/or 24VDC. Power Supply shall have battery backup function with an integrated battery charging circuit. The power supply shall have a standard, integrated Fire Alarm Interface (FAI). The power supply shall provide capability for secondary voltage, power distribution, direct lock control and network monitoring through add on modules. The power supply shall be expandable up to 16 individually protected outputs. Output modules shall provide individually protected, continuous outputs and/or individually protected, relay controlled outputs. Network modules shall provide remote monitoring functions such as status reporting, fault reporting and information logging.

- 1. Manufacturers:
  - a. Securitron (SU) AQL Series.

#### 2.15 FABRICATION

A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

#### 2.16 FINISHES

- A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.
- B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware
- C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

#### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

#### 3.2 PREPARATION

- A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.
- B. Wood Doors: Comply with ANSI/DHI A115-W series.

#### 3.3 INSTALLATION

A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.

- 1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.
- B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:
  - 1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
  - 2. DHI TDH-007-20: Installation Guide for Doors and Hardware.
  - 3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
  - 4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.
- C. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.
- D. Push Plates and Door Pulls: When through-bolt fasteners are in the same location as a push plate, countersink the fasteners flush with the door face allowing the push plate to sit flat against the door.
- E. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."
- F. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

#### 3.4 FIELD QUALITY CONTROL

- A. Field Inspection (Punch Report): Reference Division 01 Sections "Closeout Procedures". Produce project punch report for each installed door opening indicating compliance with approved submittals and verification hardware is properly installed, operating and adjusted. Include list of items to be completed and corrected, indicating the reasons or deficiencies causing the Work to be incomplete or rejected.
  - 1. Organization of List: Include separate Door Opening and Deficiencies and Corrective Action Lists organized by Mark, Opening Remarks and Comments, and related Opening Images and Video Recordings.

#### 3.5 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to

operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

#### 3.6 CLEANING AND PROTECTION

- A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.
- B. Clean adjacent surfaces soiled by door hardware installation.
- C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

#### 3.7 DEMONSTRATION

A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

#### 3.8 DOOR HARDWARE SETS

- A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.
  - 1. Quantities listed are for each pair of doors, or for each single door.
  - 2. The supplier is responsible for handing and sizing all products.
  - 3. Where multiple options for a piece of hardware are given in a single line item, the supplier shall provide the appropriate application for the opening.
- B. Manufacturer's Abbreviations:
  - 1. MK McKinney
  - 2. MR Markar
  - 3. PE Pemko
  - 4. SU Securitron
  - 5. RO Rockwood
  - 6. SA SARGENT
  - 7. RF Rixson
  - 8. NO Norton
  - 9. LU Lund Equipment Co

#### **Hardware Sets**

#### Set: 1.0

Doors: 039A, 042B, 135, 200B, 200C, 201B, FENCE GATE 1, FENCE GATE 2, FENCE GATE 3, FENCE GATE 4, FENCE GATE 5 Description: OH / STORM SHUTTER / TRASH

1 Padlock	DG1 758	SA	087100
1 Hardware By Others	Hardware By Door Supplier		

Notes: PADLOCK @ FENCE GATES

#### Set: 2.0

Doors: 001, 002 Description: ALD SLIDING

1 Hardware By Others

Hardware By Door Supplier

Notes: CARD READER REQUIRED AT 001.

#### Set: 3.0

#### Doors: 018A, 155C, ST-1A

Description: FEMA ICC500 EXTERIOR EXIT DEVICE EO CPS CLOSER

1 Continuous Hinge	HG305 x Door Height	630	MR 087100
1 Multipoint Exit Device, Exit Only	12 FM8710 EO	US32D	SA 087100
1 Door Closer	TB 281 CPS	EN	SA 087100
1 Door Stop	462	US2C	RO 087100
1 Gasketing	S773D (Head & Jambs)		PE 087100
1 Rain Guard	346C x Overall Frame width		PE 087100
1 Sweep	345ANB x Door Width		PE 087100
1 Threshold	1715A x Opening Width		PE 087100
1 Position Switch	DPS-M-BK		SU 087100

Notes: CUTOUT THRESHOLD SO BOTTOM STRIKE CAN BE MOUNTED TO CONCRETE FLOOR AND NOT ON THE THRESHOLD. DOOR WILL HAVE A 5/8" UNDERCUT.

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#### <u>Set: 4.0</u>

#### Doors: 005 Description: FEMA ICC500 EXTERIOR MP EXIT W/ELEC TRIM CPS CLOSER

1 Continuous Hinge	HG305 EL4 x Door Height	630	MR	087100	4
1 Fail Secure Exit Device	DG1 12 FM8774-24v ETMB 306 AUX	US32D	SA	087100	4
1 Door Closer	TB 281 CPS	EN	SA	087100	
1 Latch Cover Kick Plate	BFLG1050 10" 2" LDW	US32D	RO	087100	
1 Door Stop	462	US2C	RO	087100	
1 Gasketing	S773D (Head & Jambs)		PE	087100	
1 Rain Guard	346C x Overall Frame width		PE	087100	
1 Sweep	345ANB x Door Width		PE	087100	
1 Threshold	1715A x Opening Width		PE	087100	
1 ElectroLynx Harness	QC-C1500P		MK	087100	4
1 ElectroLynx Harness	QC-C Length Required		MK	087100	4
1 Card Reader	Wall Mounted Reader by access control provider		HID	)	
1 Position Switch	DPS-M-BK		SU	087100	4
1 Motion Sensor	XMS		SU	087100	4
1 Power Supply	AQD or Centralized Power Source (coordinate w/GC)		SU	087100	4

Notes: ACCESS BY AUTHORIZED CARD CREDENTIAL OR MANUAL KEY. ALWAYS FREE EGRESS.

## CUTOUT THRESHOLD SO BOTTOM STRIKE CAN BE MOUNTED TO CONCRETE FLOOR AND NOT ON THE THRESHOLD. DOOR WILL HAVE A 5/8" UNDERCUT.

Doors: 018B

#### <u>Set: 5.0</u>

#### Description: FEMA ICC500 EXTERIOR EXIT DEVICE PR CLOSER

1 Continuous Hinge	HG305 x Door Height	630	MR 087100
1 Multipoint Exit Device	DG1 12 FM8706 ETMB	US32D	SA 087100
1 Surface Closer	SRI TB 281 P10	EN	SA 087100
1 Door Stop	462	US2C	RO 087100
1 Gasketing	S773D (Head & Jambs)		PE 087100

1 Threshold	1715A x Opening Width	PE	087100	
1 Position Switch	DPS-M-BK	SU	087100	4

## Notes: CUTOUT THRESHOLD SO BOTTOM STRIKE CAN BE MOUNTED TO CONCRETE FLOOR AND NOT ON THE THRESHOLD. DOOR WILL HAVE A 5/8" UNDERCUT.

#### <u>Set: 6.0</u>

Doors: 043A, 049B

Description: EXTERIOR ALD CARD READER EXIT ELR X PULL X CPS CLOSER

1 Continuous Hinge	CFMSLF-HD1 PT		PE	087100	
1 Electric Power Transfer	EL-CEPT	630	SU	087100	4
1 Rim Exit Device, Storeroom	DG1 55 AD8504 x Pull (see below)	US32D	SA	087100	4
1 Cylinder Rim/Mortise	type as req'd for hardware item, match existing key system				
1 Door Pull, offset	RM3310-24 Mtg-Type 12XHD	US32D	RO	087100	
1 Door Closer	CPS7500	689	NO	087100	
1 Drop Plate	7788	689	NO	087100	
1 Blade Stop	6891	689	NO	087100	
1 Set Weatherstrip	by Door Manufacturer				
1 Sweep	3452AV		PE	087100	
1 Threshold	2005AT		PE	087100	
1 ElectroLynx Harness	QC-C1500P/QC-C1500		MK	087100	4
1 ElectroLynx Harness	QC-Cxx/CxxP (size to door width/hardware)		MK	087100	4
1 Position Switch	DPS		SU	087100	4
1 Card Reader	provided by owner		HID	)	
1 Power Supply	AQD or Centralized Power Source (coordinate w/GC)		SU	087100	4

Notes: ACCESS BY AUTHORIZED CARD CREDENTIAL OR MANUAL KEY. ALWAYS FREE EGRESS.

#### <u>Set: 7.0</u>

Doors: 100A

Description: EXTERIOR ALD RIM EXIT MELR X PULL OH STOP AUTO OPERATOR

1 Continuous Hinge	CFMSLF-HD1 PT		PE 087100	
1 Electric Power Transfer	EL-CEPT	630	SU 087100	4

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1 Rim Exit Device, Storeroom	DG1 55 56 AD8504 x Pull (see below)	US32D	SA 087100	4
1 Door Pull, offset	RM3310-24 Mtg-Type 12XHD	US32D	RO 087100	
1 Conc Overhead Stop	1-336	630	RF 087100	
1 Automatic Opener	6061 D	689	NO 087100	4
1 Set Weatherstrip	by Door Manufacturer			
1 Sweep	3452AV		PE 087100	
1 Threshold	254x226AFGT		PE 087100	
1 ElectroLynx Harness	QC-C1500P/QC-C1500		MK 087100	4
1 ElectroLynx Harness	QC-Cxx/CxxP (size to door width/hardware)		MK 087100	4
1 Card Reader	Wall Mounted Reader by access control provider		HID	
1 Position Switch	DPS		SU 087100	4
1 Wall Switch, wave mullion mount	704		NO 087100	4
1 Door Switch, mullion mount	503		NO 087100	4
1 Card Reader	provided by owner		HID	
1 Power Supply	AQD or Centralized Power Source (coordinate w/GC)		SU 087100	4

Notes: ACCESS BY AUTHORIZED CARD CREDENTIAL OR MANUAL KEY. PROGRAM ACTUATOR SWITCHES AS DIRECTED BY SECURITY FOR ACCESS CONTROL TIMES OR BY CARD READER ACTIVATION. ALWAYS FREE EGRESS.

#### <u>Set: 8.0</u>

### Doors: 042C Description: EXTERIOR HMD CARD READER LOCK CPS CLOSER

2 Hinge, Full Mortise, Hvy Wt	T4A3386 NRP 4-1/2" x 4-1/2"	US32D	MK 087100	
1 Hinge, Full Mortise, Hvy Wt	T4A3386 QC12 4-1/2" x 4-1/2"	US32D	MK 087100	4
1 Fail Safe Lock	DG1 RX 8270-24V LNMB	US32D	SA 087100	4
1 Door Closer	CPS7500	689	NO 087100	
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO 087100	
1 Rain Guard	346C x Overall Frame width		PE 087100	
1 Gasketing	2891AS		PE 087100	
1 Sweep	3452AV		PE 087100	
1 Threshold	254x226AFGT		PE 087100	
1 ElectroLynx Harness	QC-C1500P/QC-C1500		MK 087100	4
1 ElectroLynx Harness	QC-Cxx/CxxP (size to door		MK 087100	4

	width/hardware)	
1 Card Reader	Wall Mounted Reader by access control provider	HID
1 Position Switch	DPS	SU 087100 🗳
1 Power Supply	AQD or Centralized Power Source (coordinate w/GC)	SU 087100 🞸

#### <u>Set: 8.1</u>

## Doors: TR-01 Description: EXTERIOR HMD STOREROOM LOCK CPS CLOSER

3 Hinge, Full Mortise, Hvy Wt	T4A3386 NRP 4-1/2" x 4-1/2"	US32D	MK 087100
1 Storeroom/Closet Lock	3 CPC DG1 8204 LNMB	US32D	SA 087100
1 Surface Closer	SRI TB 281 CPS	EN	SA 087100
3 Silencer	608		RO 087100

Notes: EXTERIOR EXPOSED.

#### Set: 8.2 ALT 2

Doors: 200A, 201A

Description: EXTERIOR HMD INSWING CARD READER LOCK CLOSER

2 Hinge, Full Mortise, Hvy Wt	T4A3386 4-1/2" x 4-1/2"	US32D	MK 087100	
1 Hinge, Full Mortise, Hvy Wt	T4A3386 QC12 4-1/2" x 4-1/2"	US32D	MK 087100	4
1 Fail Secure Lock	DG1 RX 8271-24V LNMB	US32D	SA 087100	4
1 Surface Closer	7500	689	NO 087100	
1 Wall Stop	RM861	US32D	RO 087100	
1 Gasketing	S88D		PE 087100	
1 Door Bottom	209AV		PE 087100	
1 Door Bottom	412CPKL		PE 087100	
1 Threshold	2005AT		PE 087100	
1 ElectroLynx Harness	QC-C1500P/QC-C1500		MK 087100	4
1 ElectroLynx Harness	QC-Cxx/CxxP (size to door width/hardware)		MK 087100	4
1 Card Reader	Wall Mounted Reader by access control provider		HID	

1 Position Switch	DPS	SU	087100	ل
1 Power Supply	AQD or Centralized Power Source (coordinate w/GC)	SU	087100	4

#### <u>Set: 9.0</u>

#### Doors: 109B

#### Description: CARD READER LOCK PR CLOSER GASKET

2 Hinge, Full Mortise, Hvy Wt	T4A3786 NRP 4-1/2" x 4-1/2"	US26D	MK 087100	
1 Hinge (heavy weight)	T4A3786 QC12 4-1/2" x 4-1/2"	US26D	MK 087100	4
1 Fail Safe Lock	DG1 RX 8270-24V LNMB	US32D	SA 087100	4
1 Cylinder Rim/Mortise	type as req'd for hardware item, match existing key system			
1 Door Closer	PR7500	689	NO 087100	
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO 087100	
1 Wall Stop	RM861	US32D	RO 087100	
1 Gasketing	S88D		PE 087100	
1 ElectroLynx Harness	QC-C1500P/QC-C1500		MK 087100	4
1 ElectroLynx Harness	QC-Cxx/CxxP (size to door width/hardware)		MK 087100	4
1 Position Switch	DPS		SU 087100	4
1 Card Reader	provided by owner		HID	
1 Power Supply	AQD or Centralized Power Source (coordinate w/GC)		SU 087100	4

Notes: ACCESS BY AUTHORIZED CARD CREDENTIAL OR MANUAL KEY. ALWAYS FREE EGRESS.

#### <u>Set: 10.0</u>

## Doors: 007B, 008B, 011, 015B, 016B, 017A, 017B, 041, 107, 138B, 140A, 146, 148, 151 Description: CARD READER LOCK CLOSER GASKET

2 Hinge (heavy weight)	T4A3786 4-1/2" x 4-1/2"	US26D	MK 087100	
1 Hinge (heavy weight)	T4A3786 QC12 4-1/2" x 4-1/2"	US26D	MK 087100	4
1 Fail Safe Lock	DG1 RX 8270-24V LNMB	US32D	SA 087100	4

1 Surface Closer	7500	689	NO 087100	
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO 087100	
1 Wall Stop	RM861	US32D	RO 087100	
1 Gasketing	S88D		PE 087100	
1 ElectroLynx Harness	QC-C1500P/QC-C1500		MK 087100	4
1 ElectroLynx Harness	QC-Cxx/CxxP (size to door width/hardware)		MK 087100	4
1 Card Reader	Wall Mounted Reader by access control provider		HID	
1 Position Switch	DPS		SU 087100	4
1 Card Reader	provided by owner		HID	
1 Power Supply	AQD or Centralized Power Source (coordinate w/GC)		SU 087100	4

146 NEEDS FM200 CONFIRM GASKETING WITH DOOR SUPPLIER.

#### Set: 11.0

#### Doors: 101, <del>138</del> Description: ALD CARD READER LOCK CPS CLOSER WIDE STILE REQUIRED\*\*\*

2 Hinge, Full Mortise, Hvy Wt	T4A3786 NRP 4-1/2" x 4-1/2"	US26D	MK 087100	
1 Hinge (heavy weight)	T4A3786 QC12 4-1/2" x 4-1/2"	US26D	MK 087100	4
1 Fail Safe Lock	DG1 RX 8270-24V LNMB	US32D	SA 087100	4
1 Door Closer	CPS7500	689	NO 087100	
1 Drop Plate	7788	689	NO 087100	
1 Blade Stop	6891	689	NO 087100	
1 Set Weatherstrip	by Door Manufacturer			
1 ElectroLynx Harness	QC-C1500P/QC-C1500		MK 087100	4
1 ElectroLynx Harness	QC-Cxx/CxxP (size to door width/hardware)		MK 087100	4
1 Card Reader	Wall Mounted Reader by access control provider		HID	
1 Position Switch	DPS		SU 087100	4
1 Card Reader	provided by owner		HID	
1 Power Supply	AQD or Centralized Power Source (coordinate w/GC)		SU 087100	4

#### Set: 12.0

Doors: 109A

Description: ALD CARD READER LOCK CPS CLOSER WIDE STILE REQUIRED\*\*\* REMOTE RELEASE

1 Continuous Hinge	CFMSLF-HD1 PT		PE 087100	
1 Electric Power Transfer	EL-CEPT	630	SU 087100	4
1 Fail Safe Lock	DG1 RX 8270-24V LNMB	US32D	SA 087100	4
1 Door Closer	CPS7500	689	NO 087100	
1 Drop Plate	7788	689	NO 087100	
1 Blade Stop	6891	689	NO 087100	
1 Set Weatherstrip	by Door Manufacturer			
1 ElectroLynx Harness	QC-C1500P/QC-C1500		MK 087100	4
1 ElectroLynx Harness	QC-Cxx/CxxP (size to door width/hardware)		MK 087100	4
1 Card Reader	Wall Mounted Reader by access control provider		HID	
1 Position Switch	DPS		SU 087100	4
1 Card Reader	provided by owner		HID	
1 Pushbutton	PB3ER		SU 087100	4
1 Power Supply	AQD or Centralized Power Source (coordinate w/GC)		SU 087100	4

Notes: ACCESS BY AUTHORIZED CARD CREDENTIAL OR MANUAL KEY. ALWAYS FREE EGRESS. REMOTE RELEASE FROM RECEPTION.

LEVEL III BULLET RESISTANT DOOR AND GLASS REQUIRED.

#### Set: 13.0

Description: ALD CARD READER LOCK CLOSER GASKET WIDE STILE REQUIRED\*\*\*

2 Hinge (heavy weight)	T4A3786 4-1/2" x 4-1/2"	US26D	MK 087100	
1 Hinge (heavy weight)	T4A3786 QC12 4-1/2" x 4-1/2"	US26D	MK 087100	4

Doors: 105B

1 Fail Safe Lock	DG1 RX 8270-24V LNMB	US32D	SA 087100	4
1 Surface Closer	7500	689	NO 087100	
1 Drop Plate	7788	689	NO 087100	
1 Wall Stop	RM861	US32D	RO 087100	
1 Gasketing	S88D		PE 087100	
1 ElectroLynx Harness	QC-C1500P/QC-C1500		MK 087100	4
1 ElectroLynx Harness	QC-Cxx/CxxP (size to door width/hardware)		MK 087100	4
1 Card Reader	Wall Mounted Reader by access control provider		HID	
1 Position Switch	DPS		SU 087100	4
1 Card Reader	provided by owner		HID	
1 Power Supply	AQD or Centralized Power Source (coordinate w/GC)		SU 087100	4

#### Set: 14.0

Doors: 152A

## Description: CARD READER LOCK CLOSER OH STOP GASKET

2 Hinge (heavy weight)	T4A3786 4-1/2" x 4-1/2"	US26D	MK 087100	
1 Hinge (heavy weight)	T4A3786 QC12 4-1/2" x 4-1/2"	US26D	MK 087100	4
1 Fail Safe Lock	DG1 RX 8270-24V LNMB	US32D	SA 087100	4
1 Conc Overhead Stop	1-336	630	RF 087100	
1 Surface Closer	7500	689	NO 087100	
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO 087100	
1 Gasketing	S88D		PE 087100	
1 ElectroLynx Harness	QC-C1500P/QC-C1500		MK 087100	4
1 ElectroLynx Harness	QC-Cxx/CxxP (size to door width/hardware)		MK 087100	4
1 Card Reader	Wall Mounted Reader by access control provider		HID	
1 Position Switch	DPS		SU 087100	4
1 Card Reader	provided by owner		HID	
1 Power Supply	AQD or Centralized Power Source (coordinate w/GC)		SU 087100	4

#### Set: 15.0

Doors: 045

## Description: PAIR CARD READER LOCK CLOSER OH STOP SELF LATCHING FB

5 Hinge (heavy weight)	T4A3786 4-1/2" x 4-1/2"	US26D	MK 087100	
1 Hinge (heavy weight)	T4A3786 QC12 4-1/2" x 4-1/2"	US26D	MK 087100	4
1 Flush Bolt	2905/2805 per dr mtrl self latch top only	US26D	RO 087100	
1 Fail Safe Lock	DG1 RX 8270-24V LNMB	US26D	SA 087100	4
1 Coordinator	2600	Black	RO 087100	
1 Mounting Bracket	2601 Mounting Brackets	Black	RO 087100	
2 Conc Overhead Stop	1-336	630	RF 087100	
2 Surface Closer	7500	689	NO 087100	
2 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO 087100	
2 Silencer	608		RO 087100	
1 ElectroLynx Harness	QC-C1500P/QC-C1500		MK 087100	4
1 ElectroLynx Harness	QC-Cxx/CxxP (size to door width/hardware)		MK 087100	4
1 Card Reader	Wall Mounted Reader by access control provider		HID	
2 Position Switch	DPS		SU 087100	4
1 Power Supply	AQD or Centralized Power Source (coordinate w/GC)		SU 087100	4

Notes: ACCESS BY AUTHORIZED CARD CREDENTIAL OR MANUAL KEY. ALWAYS FREE EGRESS.

#### Set: 16.0

#### Doors: ST-1C

#### Description: RIM EXIT ELEC TRIM FAIL SAFE CLOSER GASKET

2 Hinge (heavy weight)	T4A3786 4-1/2" x 4-1/2"	US26D	MK 087100	
1 Hinge (heavy weight)	T4A3786 QC12 4-1/2" x 4-1/2"	US26D	MK 087100	4

1 Fail Safe Exit Device	DG1 12 55 8875-24v ETMB	US32D	SA 087100	4
1 Surface Closer	2800ST	689	NO 087100	
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO 087100	
1 Wall Stop	RM861	US32D	RO 087100	
1 Gasketing	S88D		PE 087100	
1 ElectroLynx Harness	QC-C1500P/QC-C1500		MK 087100	4
1 ElectroLynx Harness	QC-Cxx/CxxP (size to door width/hardware)		MK 087100	4
1 Card Reader	Wall Mounted Reader by access control provider		HID	
1 Position Switch	DPS		SU 087100	4
1 Power Supply	AQD or Centralized Power Source (coordinate w/GC)		SU 087100	4

Set: 17.0

## Doors: 007A, 008A, 015A, 016A, 019, 022, 023, 106, 110, 111, 112, 113, 114, 115, 116, 121, 124, 125, 126, 127, 128, 129, 141, 142, 143, 144, 145 Description: OFFICE LOCK NO CLOSER GASKET

3 Hinge, Full Mortise	TA2714 4-1/2" x 4-1/2"	US26D	MK 087100
1 Office/Entry Lock	DG1 8205 LNMB	US26D	SA 087100
1 Wall Stop	RM861	US32D	RO 087100
1 Gasketing	S88D		PE 087100

Notes: ALT 1 ADD CARD READER OPENING 022, 023, 100, 110, 111, 112, 113, 114, 115, 116, 121, 124, 125, 126, 127, 128, 129, 141, 142, 143, 144, 145

PROIVE HARDWARE SET WITH THE FOLLOWING ITEMS FOR ALTERNATE #1 - 2 T4A3786, 1 T4A3786 QC, DG1 8270 FAIL SAFE / 8271 FAIL SECURE RX LNMB 26D, 2 WIRING HARNESS, DPS, POWER SUPPLY AND CARD READER.

#### Set: 17.1

Doors: 105A Description: ALD OFFICE LOCK NO CLOSER GASKET

Hinge, Full Mortise	TA2714 4-1/2" x 4-1/2"	US26D	MK 087100
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Office/Entry Lock	DG1 8205 LNMB	US26D	SA 087100
Wall Stop	RM861	US32D	RO 087100
Set Weatherstrip	by Door Manufacturer		

#### Set: 18.0

Doors: 039B, 039C

Description: OFFICE LOCK NO CLOSER

3 Hinge, Full Mortise	TA2714 4-1/2" x 4-1/2"	US26D	MK 087100
1 Office/Entry Lock	DG1 8205 LNMB	US26D	SA 087100
1 Surface Closer	7500 PR/REG per dr swing	689	NO 087100
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO 087100
1 Wall Stop	RM861	US32D	RO 087100
3 Silencer	608		RO 087100

Notes: ALT 1 ADD CARD READER OPENING 039B, 039C

PROIVE HARDWARE SET WITH THE FOLLOWING ITEMS FOR ALTERNATE #1 - 2 T4A3786, 1 T4A3786 QC, DG1 8270 FAIL SAFE / 8271 FAIL SECURE RX LNMB 26D, 2 WIRING HARNESS, DPS, POWER SUPPLY AND CARD READER.

#### Set: 19.0

Doors: 134

Description: STOREROOM LOCK CPS CLOSER

3 Hinge, Full Mortise, Hvy Wt	T4A3786 NRP 4-1/2" x 4-1/2"	US26D	MK 087100
1 Storeroom/Closet Lock	DG1 8204 LNMB	US26D	SA 087100
1 Cylinder Rim/Mortise	type as req'd for hardware item, match existing key system		
1 Door Closer	CPS7500	689	NO 087100
1 Gasketing	S88D		PE 087100

Notes: GC TO CONFIRM EXISTING FRAME PREP WILL ACCEPT NEW HARWARE AS SPECIFIED. COMPLY WITH ALL UL CRITERIA FOR FIELD MODIFICATIONS.

ALT 1 ADD CARD READER OPENING 134

PROIVE HARDWARE SET WITH THE FOLLOWING ITEMS FOR ALTERNATE #1 - 2 T4A3786, 1 T4A3786 QC, DG1 8270 FAIL SAFE / 8271 FAIL SECURE RX LNMB 26D, 2 WIRING HARNESS, DPS, POWER SUPPLY AND CARD READER.

#### Set: 20.0

#### Doors: 020, <del>153</del> Description: STOREROOM LOCK CLOSER

3 Hinge, Full Mortise	TA2714 4-1/2" x 4-1/2"	US26D	MK 087100
1 Storeroom/Closet Lock	DG1 8204 LNMB	US26D	SA 087100
1 Surface Closer	7500	689	NO 087100
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO 087100
1 Wall Stop	RM861	US32D	RO 087100
3 Silencer	608		RO 087100

Notes: ALT 1 ADD CARD READER OPENING 020 AND 153

PROIVE HARDWARE SET WITH THE FOLLOWING ITEMS FOR ALTERNATE #1 - 2 T4A3786, 1 T4A3786 QC, DG1 8270 FAIL SAFE / 8271 FAIL SECURE RX LNMB 26D, 2 WIRING HARNESS, DPS, POWER SUPPLY AND CARD READER.

#### Set: 21.0

#### Doors: 014

#### Description: STOREROOM LOCK PR CLOSER STC GASKET WIDE

3 Hinge, Full Mortise, Hvy Wt	T4A3786 NRP 5" x 4-1/2"	US26D	MK 087100
1 Storeroom/Closet Lock	DG1 8204 LNMB	US26D	SA 087100
1 Door Closer	PR7500	689	NO 087100
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO 087100
1 Wall Stop	RM861	US32D	RO 087100
2 Gasketing	S88D Double Row for Sound		PE 087100
1 Frame Protection Pads	ACP112BL		PE 087100
1 Door Bottom, concealed	434APKL		PE 087100
1 Threshold	154A		PE 087100

#### Set: 22.0

#### Doors: 040, 138A, 149, 157

#### Description: STOREROOM LOCK CLOSER STC GASKET

3 Hinge, Full Mortise	TA2714 4-1/2" x 4-1/2"	US26D	MK 087100
1 Storeroom/Closet Lock	DG1 8204 LNMB	US26D	SA 087100
1 Surface Closer	7500	689	NO 087100

1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO 087100
1 Wall Stop	RM861	US32D	RO 087100
2 Gasketing	S88D Double Row for Sound		PE 087100
1 Frame Protection Pads	ACP112BL		PE 087100
1 Door Bottom, concealed	434APKL		PE 087100
1 Threshold	154A		PE 087100

Notes: ALT 1 ADD CARD READER OPENING 040, 138A, 149, 157

PROIVE HARDWARE SET WITH THE FOLLOWING ITEMS FOR ALTERNATE #1 - 2 T4A3786, 1 T4A3786 QC, DG1 8270 FAIL SAFE / 8271 FAIL SECURE RX LNMB 26D, 2 WIRING HARNESS, DPS, POWER SUPPLY AND CARD READER.

#### Set: 23.0

Doors: 122

Description: STOREROOM LOCK NO CLOSER

3 Hinge, Full Mortise	TA2714 4-1/2" x 4-1/2"	US26D	MK 087100
1 Storeroom/Closet Lock	DG1 8204 LNMB	US26D	SA 087100
1 Surf Overhead Stop	10-336	630	RF 087100
3 Silencer	608		RO 087100

#### Set: 24.0

Doors: 021

Description: STOREROOM EXIT PR CLOSER STC GASKET

3 Hinge, Full Mortise, Hvy Wt	T4A3786 NRP 4-1/2" x 4-1/2"	US26D	MK 087100
1 Rim Exit Device, Storeroom	DG1 8804 ETMB	US32D	SA 087100
1 Door Closer	PR7500	689	NO 087100
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO 087100
1 Wall Stop	RM861	US32D	RO 087100
2 Gasketing	S88D Double Row for Sound		PE 087100
1 Frame Protection Pads	ACP112BL		PE 087100
1 Door Bottom, concealed	434APKL		PE 087100
1 Threshold	154A		PE 087100

Notes: ALT 1 ADD CARD READER OPENING 021

PROIVE HARDWARE SET WITH THE FOLLOWING ITEMS FOR ALTERNATE #1 - 2 T4A3786,

## 1 T4A3786 QC, DG1 55-8876 ETMB 32D, 2 WIRING HARNESS, DPS, POWER SUPPLY AND CARD READER.

#### <u>Set: 25.0</u>

Doors: 042A

Description: PAIR STOREROOM LOCK OH STOP CPS CLOSER GASKET SWEEP TH

8 Hinge, Full Mortise, Hvy Wt	T4A3386 NRP 4-1/2" x 4-1/2"	US32D	MK 087100
1 Dust Proof Strike	570	US26D	RO 087100
2 Flush Bolt	555/557 per dr mtrl	US26D	RO 087100
1 Storeroom/Closet Lock	DG1 8204 LNMB	US26D	SA 087100
2 Door Closer	CPS7500	689	NO 087100
2 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO 087100
2 Wall Stop	RM861	US32D	RO 087100
1 Astragal Set	by Door Manufacturer		
1 Gasketing	2891AS		PE 087100
2 Sweep	315CN		PE 087100
1 Threshold	171A		PE 087100

Notes: ALT 1 ADD CARD READER OPENING 042A

PROIVE HARDWARE SET WITH THE FOLLOWING ITEMS FOR ALTERNATE #1 - 7 T4A3786, 1 T4A3786 QC, DG1 8270 FAIL SAFE / 8271 FAIL SECURE RX LNMB 26D, 2 WIRING HARNESS, DPS, POWER SUPPLY AND CARD READER.

#### Set: 26.0

Doors: 153, 156

Description: PAIR STOREROOM LOCK MFB CLOSER

6 Hinge (heavy weight)	T4A3786 4-1/2" x 4-1/2"	US26D	MK 087100
1 Dust Proof Strike	570	US26D	RO 087100
2 Flush Bolt	555/557 per dr mtrl	US26D	RO 087100
1 Storeroom/Closet Lock	DG1 8204 LNMB	US26D	SA 087100
1 Conc Overhead Stop	1-336	630	RF 087100
1 Surface Closer	7500	689	NO 087100
2 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO 087100
1 Wall Stop	RM861	US32D	RO 087100
2 Silencer	608		RO 087100

Notes: ALT 1 ADD CARD READER

#### OPENING 156

# PROIVE HARDWARE SET WITH THE FOLLOWING ITEMS FOR ALTERNATE #1 - 5 T4A3786, 1 T4A3786 QC, DG1 8270 FAIL SAFE / 8271 FAIL SECURE RX LNMB 26D, 2 WIRING HARNESS, DPS, POWER SUPPLY AND CARD READER.

#### Set: 27.0

Doors: 048, 140B Description: CLASSROOM LOCK CLOSER GASKET

3 Hinge (heavy weight)	T4A3786 4-1/2" x 4-1/2"	US26D	MK 087100
1 Classroom Lock	DG1 8237 LNMB	US26D	SA 087100
1 Surface Closer	7500	689	NO 087100
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO 087100
1 Wall Stop	RM861	US32D	RO 087100
1 Gasketing	S88D		PE 087100

Notes: ALT 1 ADD CARD READER OPENING 048

PROIVE HARDWARE SET WITH THE FOLLOWING ITEMS FOR ALTERNATE #1 - 2 T4A3786, 1 T4A3786 QC, DG1 8270 FAIL SAFE / 8271 FAIL SECURE RX LNMB 26D, 2 WIRING HARNESS, DPS, POWER SUPPLY AND CARD READER.

#### Set: 28.0

Doors: 047

#### Description: PAIR CLASSROOM LOCK SELF LATCH FB TOP CLOSER GASKET

3 Hinge (heavy weight)	T4A3786 4-1/2" x 4-1/2"	US26D	MK 087100
1 Flush Bolt	2905/2805 per dr mtrl self latch top only	US26D	RO 087100
1 Classroom Lock	DG1 8237 LNMB	US26D	SA 087100
1 Coordinator	2600	Black	RO 087100
1 Mounting Bracket	2601 Mounting Brackets	Black	RO 087100
1 Conc Overhead Stop	1-336	630	RF 087100
1 Surface Closer	7500	689	NO 087100
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO 087100
1 Gasketing	S88D		PE 087100

#### Set: 29.0

Doors: 155A, 155B

#### Description: CLASSROOM EXIT HO CLOSER GASKET

3 Hinge, Full Mortise, Hvy Wt	T4A3786 NRP 4-1/2" x 4-1/2"	US26D	MK 087100
1 Rim Exit Device, Classroom	DG1 8813 ETMB	US32D	SA 087100
1 Door Closer	PR7500	689	NO 087100
1 Surface Closer	PR7500H	689	NO 087100
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO 087100
1 Wall Stop	RM861	US32D	RO 087100
1 Gasketing	S88D		PE 087100

#### Set: 30.0

Doors: 012, 013, 025, 027, 028, 029, 036, 038, 130, 131, 132, 133, 136, 137 Description: PRIVACY W/INDICATOR NO CLOSER GASKET

3 Hinge, Full Mortise	TA2714 4-1/2" x 4-1/2"	US26D	MK 087100
1 Privacy Lock	V20 8266 LNMB	US26D	SA 087100
1 Wall Stop	RM861	US32D	RO 087100
1 Gasketing	S88D		PE 087100

#### Set: 31.0

Doors: 032, 033, 034, 123

Description: PRIVACY W/INDICATOR NO CLOSER HINGE PIN GASKET

3 Hinge, Full Mortise	TA2714 4-1/2" x 4-1/2"	US26D	MK 087100
1 Privacy Lock	V20 8266 LNMB	US26D	SA 087100
1 Door Stop	76306	US26D	MK 087100
1 Gasketing	S88D		PE 087100

Notes: ALT 1 ADD CARD READER OPENING 123

PROIVE HARDWARE SET WITH THE FOLLOWING ITEMS FOR ALTERNATE #1 - 2 T4A3786, 1 T4A3786 QC, DG1 NAC-82281 FAIL SECURE / NAC-82280 FAIL SAFE W/PHR OPTION X V20 INDICATOR, 2 WIRING HARNESS, DPS, POWER SUPPLY AND CARD READER.

#### Set: 32.0

Doors: 147

Description: PASSAGE LATCH CLOSER OH STOP

3 Hinge (heavy weight)	T4A3786 4-1/2" x 4-1/2"	US26D	MK 087100
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DOOR HARDWARE Lee's Summit Joint Operations Facility #138191

1 Passage Latch	8215 LNMB	US26D	SA 087100
1 Conc Overhead Stop	1-336	630	RF 087100
1 Surface Closer	7500	689	NO 087100
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO 087100
3 Silencer	608		RO 087100

#### Set: 33.0

Doors: 139

Description: PASSAGE LATCH PR CLOSER GASKET

3 Hinge (heavy weight)	T4A3786 4-1/2" x 4-1/2"	US26D	MK 087100
1 Passage Latch	8215 LNMB	US26D	SA 087100
1 Door Closer	PR7500	689	NO 087100
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO 087100
1 Wall Stop	RM861	US32D	RO 087100
1 Gasketing	S88D		PE 087100

#### Set: 34.0

### Doors: 154B Description: PASSAGE LATCH NO CLOSER

3 Hinge (heavy weight)	T4A3786 4-1/2" x 4-1/2"	US26D	MK 087100
1 Passage Latch	8215 LNMB	US26D	SA 087100
1 Wall Stop	RM861	US32D	RO 087100
3 Silencer	608		RO 087100

#### <u>Set: 35.0</u>

Doors: 030

Description: PASSAGE LATCH CLOSER OH STOP GASKET

3 Hinge (heavy weight)	T4A3786 4-1/2" x 4-1/2"	US26D	MK 087100
1 Passage Latch	8215 LNMB	US26D	SA 087100
1 Conc Overhead Stop	1-336	630	RF 087100
1 Surface Closer	7500	689	NO 087100
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO 087100
1 Wall Stop	RM861	US32D	RO 087100
1 Gasketing	S88D		PE 087100

#### <u>Set: 36.0</u>

Doors: 049A

#### Description: PASSAGE CLOSER GASKET

3 Hinge (heavy weight)	T4A3786 4-1/2" x 4-1/2"	US26D	MK 087100
1 Passage Latch	8215 LNMB	US26D	SA 087100
1 Surface Closer	7500	689	NO 087100
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO 087100
1 Wall Stop	RM861	US32D	RO 087100
1 Gasketing	S88D		PE 087100

#### Set: 37.0

#### Doors: ST-1B

#### Description: PASSAGE RIM EXIT CAM CLOSER GASKET

3 Hinge (heavy weight)	T4A3786 4-1/2" x 4-1/2"	US26D	MK 087100
1 Rim Exit Device, Passage	12 8815 ETMB	US32D	SA 087100
1 Surface Closer	2800ST	689	NO 087100
1 Kick Plate	K1050 10" x 2" LDW 4BE CSK	US32D	RO 087100
1 Wall Stop	RM861	US32D	RO 087100
1 Gasketing	S88D		PE 087100

#### Set: 38.0

Doors: 043B

Description: ALD PASSAGE EXIT PR CLOSER

1 Continuous Hinge	CFMSLF-HD1		PE 087100
1 Rim Exit Device, Passage	AD8515 ETMB	US32D	SA 087100
1 Door Closer	PR7500	689	NO 087100
1 Drop Plate	7788	689	NO 087100
1 Blade Stop	6891	689	NO 087100
1 Wall Stop	RM861	US32D	RO 087100
1 Set Weatherstrip	by Door Manufacturer		

#### Set: 39.0

Doors: 100B

#### Description: ALD DUMMY EXIT X PULL X AUTO OPERATOR

1 Continuous Hinge	CFMSLF-HD1		PE 087100
1 Push Bar	8893	US32D	SA 087100
1 Door Pull, offset	RM3310-24 Mtg-Type 12XHD	US32D	RO 087100
1 Conc Overhead Stop	1-336	630	RF 087100

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1 Automatic Opener	6061 D	689	NO 087100	4
1 Set Weatherstrip	by Door Manufacturer			
1 Wall Switch, wave mullion mount	704		NO 087100	4

#### Set: 40.0

Doors: MISC Description: MISC

1 BITTING LIST	KEY RECORDS	SA
1 KEY BLANKS	BOX OF 50	SA
1 Key Cabinet	Sized per specification documents	LU
1 Knox Box	Knox Box (coordinate with local fire station for requirements and location)	

#### Set: 41.0

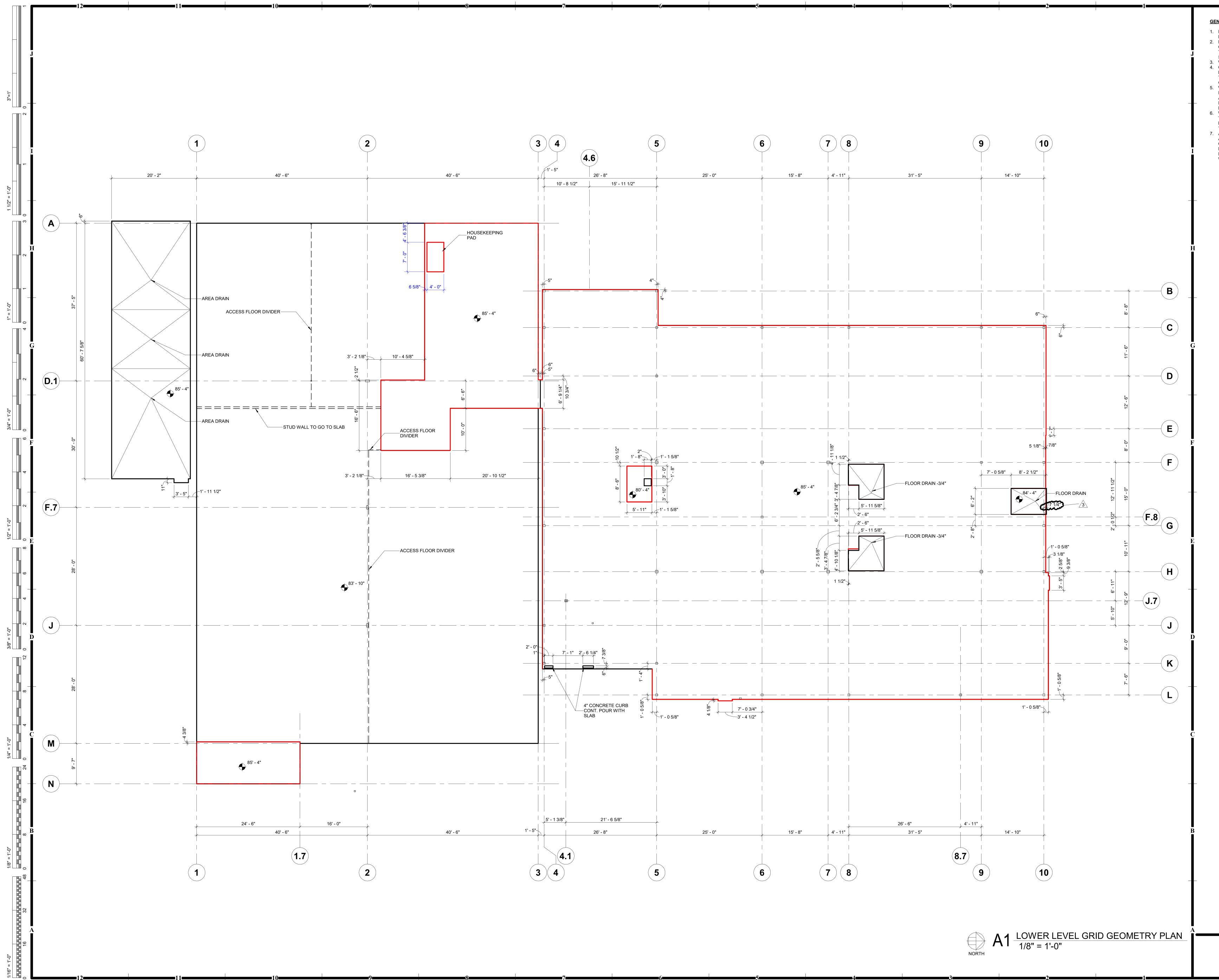
#### Doors: 150 Description: ICC500 PAIR EXIT DEVICE W/ELEC TRIM CLOSER MHO

1 Continuous Hinge	HG305 x Door Height	630	MR 087100	
1 Continuous Hinge	HG305 EL4 x Door Height	630	MR 087100	4
1 Multipoint Exit Device	DG1 12 FM8706 ETMB	US32D	SA 087100	
1 Fail Secure Exit Device	12 FM8774-24v ETMB	US32D	SA 087100	4
2 Surface Closer	TB 281 P10	EN	SA 087100	
2 Latch Cover Kick Plate	BFLG1050 10" 2" LDW	US32D	RO 087100	
2 Electromagnetic Holder	998M	689	RF 087100	4
2 Astragal	305CN x Door Height		PE 087100	
1 Gasketing	S773D (Head & Jambs)		PE 087100	
1 Threshold	1715A x Opening Width		PE 087100	
1 ElectroLynx Harness	QC-C1500P/QC-C1500		MK 087100	4
1 ElectroLynx Harness	QC-Cxx/CxxP (size to door width/hardware)		MK 087100	4
1 Card Reader	Wall Mounted Reader by access control provider		HID	
2 Position Switch	DPS-M-BK		SU 087100	4
1 Power Supply	AQD1-1R x hardware requirements		SU 087100	4

#### Notes: CUTOUT THRESHOLD SO BOTTOM STRIKE CAN BE MOUNTED TO CONCRETE FLOOR AND NOT ON THE THRESHOLD. ACCESS BY AUTHORIZED CARD CREDENTIAL OR MANUAL KEY. ALWAYS FREE EGRESS.

DOORS WILL HAVE A 5/8" UNDERCUT.

END OF SECTION 087100



11/19/2024 8:58:33 AM

Autodesk Docs://138191-LeesSummitJointOpsCtr/138191\_A23\_LeesSummitJointOpsCtr.rvt

## GENERAL NOTES - GRID GEOMETRY PLANS:

- 2. DIMENSIONS FOR EDGE OF SLAB, SLAB OPENINGS, SLAB DEPRESSIONS, AND/ OR THICKENED SLABS ARE SHOWN ON THE STRUCTURAL DRAWINGS. 3. WP = WORK POINTS. 4. CONTRACTOR IS TO START THE BUILDING LAYOUT FROM THE FIRST WORK POINT,
- GRID GEOMETRY FOR THE BUILDING. 5. WORK POINTS ARE TO BE COORDINATED FROM THE (G-11111 SHEETS) ARCHITECTURAL GRID GEOMETRY PLAN(S) -FOR THE CIVIL AND STRUCTURAL DRAWINGS.
- LATITUDE FOR CORRECT PLACEMENT OF THE BUILDING ON THE SITE. 7. ANY DISCREPANCIES BETWEEN THE
- REPORTED TO THE ARCHITECT IN WRITING FOR RESOLUTION, PRIOR TO PROCEEDING WITH THE WORK.

# HOEFER WELKER 1. RE: SHEET G-011 FOR ADDITIONAL GENERAL NOTES THAT ARE APPLICABLE. 4622 PENNSYLVANIA AVENUE SUITE 1400 KANSAS CITY, MO 64112 P: 913.307.3700 www.hoeferwelker.com THEN THE NEXT, ETC. - TO ESTABLISH THE COPYRIGHT © BY HOEFER WELKER, LLC 6. WORK POINTS ON CIVIL DRAWINGS SHOW THEIR ASSOCIATED LONGITUDE AND ARCHITECTURAL DRAWINGS AND THE CIVIL OR STRUCTURAL DRAWINGS SHALL BE



GRID GEOMETRY PLAN

	Proposed Line Types and Symbols shown. Existing		
	unless designated otherwise b	y the inclusion of a survey by	
	Set Survey Monument Set Survey Monument (in concrete)	STM	- Storm Sewer Line Storm Sewer Manhole
		Ď	Curb Inlet
0	Found Survey Monument		Field Inlet
(0.U.)	Found Survey Monument in Box		Junction Box Grate Inlet
(0.0.) Ø	Origin Unknown Found Right-of-Way Marker	0	Grate Inlet (Round/Domed)
$\overline{\bigtriangleup}$	Control Point	Ď	End Section
$\mathbf{O}$	Benchmark		Headwall
•	Set Hub	œ	Down Spout
— — онс —	<ul> <li>Overhead Utility Line(s)</li> </ul>	RD CMP	- Roof Drain Corrugated Metal Pipe
V	Underground Electric Line Marker	CMAP	Corrugated Metal Arch Pipe
- UGE	- Underground Electric Line	CPP	Corrugated Plastic Pipe
— KCP&L ——	– Underground KCP&L Line (e.g.)	HDPE	High Density Polyethylene Pipe
- <b>(-</b> -	Utility Pole	RCP	Reinforced Concrete Pipe
÷	Utility Pole with Transformer Guy Anchor	RCAP RCB	Reinforced Concrete Arch Pipe Reinforced Concrete Box
<b>\$</b> _0	Utility Pole w/Light & arm	FES	Flared End Section
<b>○</b>	Street Light Pole w/ arm	$\sim$	Pipe Continues-Outlet or Source
() EP	Street Light Pole (14')		Not Found or Not Surveyed
EM	Electric Pedestal (above ground) Electric Meter	-0-0-0-0-	- Wood Fence
EV	Electric Access Vault (underground)	-0-0-0-0-	- Chain Link Fence
EB	Electric Access Box (mounted)		- Wire Fence (with or without barb
Ē	Electric Manhole	<del>-                                    </del>	- Barbed Wire Fence
©	Electric Pull Box (underground) Transformer (pad mounted)	<del></del>	- Plastic Fence - Iron or Metal Fence
 ★	Yard Light	v v v v 0	Gate Post
AC	Air Conditioner Unit		Retaining Wall
			-
W	– Water Line – Water Service Line	<del>- 0 -</del>	Single Pole Sign Single Pole Sign
— ws —— W	<ul> <li>Water Service Line</li> <li>Underground Water Line Marker</li> </ul>	→ —	Single Pole Sign Double Pole Sign
Ŏ	Water Valve	<u>.</u>	Double I die Jigit
бQ	Fire Hydrant		Railroad Crossing Gate
б <del>о</del>	Fire Hydrant Assembly		Railroad Switch Machine
WM WM	Water Meter Water Manhole	++++++++++	
WV WV	Water Manhole Water Vault (underground)		
SC	Sprinkler Control Box	 رئی	Wheel Stop
8	Sprinkler Head		ADA Parking Stall ADA Detection Warning Pad
<u>†</u>	Yard Hydrant		ADA Detection Warning Fau
BFV BFP	Backflow Valve (BFV) Backflow Proventor (BED)	6	Bush
BO	Backflow Preventer (BFP) Blow-Off Assembly	ENT	
	Diew off Assembly		Deciduous Tree and Size (Scaled for Size)
— GAS ——	– Gas Line	~	(Scaled for Size)
— GS ——	- Gas Service Line		Coniferous Tree and Size
	<ul> <li>Underground Spire Line (e.g.)</li> <li>Underground Gas Line Marker</li> </ul>	<b>***</b> ***	(Scaled for Size)
Ğ	Gas Manhole or Access Lid	Æxx.	Tree Stump
	Gas Valve	.mmm	• Foliage Drip Line/Edge of Timber
RG	Regulator Unit		Hedge
<u>cm</u> C	Gas Meter	ſ	Center Line
Ц — Р — — —	Casing Vent — Underground Pipe Line (High Capacity)	С PL	Property Line
7	Underground Pipe Line Marker	R/W	Right-of-Way Line
v		R =	Radius
– UGT ———	Underground Telephone Line	L=	Arc Length
– – att —	<ul> <li>Underground AT&amp;T Line (e.g)</li> <li>Underground Telephone Line Marker</li> </ul>	CB CD	Chord Bearing Chord Distance
$\nabla$	Telephone Pedestal (above ground)	Δ	Interior Angle (Delta)
$\overline{\mathbb{O}}$	Telephone Manhole	I.T.B.	Initial Tangent Bearing
TA	Telephone Access Vault (underground)	R/W	Right-of-Way
TB	Telephone Access Box (mounted)	(M) (m)	Monumented
— f0 —— \F7	<ul> <li>Underground Fiber Optic Line</li> <li>Underground Fiber Optic Line Marker</li> </ul>	(m) (D)	Measured Deeded
F E	Fiber Optic Pedestal	(D) (P)	Deeded Platted
Ē	Fiber Optic Manhole	(r) (C)	Calculated
FV	Fiber Optic Vault (underground)	(CR)	Calculated from Record Dimensio
EV	Fiber Optic Pedestal on top of Vault	(CM)	Calculated from Found Monumen
[36']	Traffic Signal Post w/ Mast Arm	(PR) BK.	Proportioned Book
•	Pedestrian Signal Pole	PG.	Page
1 C	Traffic Control Manhole	DOC.	Document Number
TC	Traffic Control Cabinet	INS.	Instrument Number
[CV]	Traffic Control Vault (underground)	VOL.	Volume Essement
— UGTV ———	<ul> <li>Underground Cable TV Line</li> </ul>	ESMT. B/L	Easement Building Setback Line
— — SPC —	<ul> <li>Underground Cable TV Line</li> <li>Underground Spectrum Line (e.g.)</li> </ul>	U/E	Utility Easement
	Underground Cable TV Marker	D/E	Drainage Easement
	Cable TV Pedestal (above ground)	ST/E	Storm Sewer Easement
<b></b>	Manholo-Unknown Durnasa	S/E IE/E	Sanitary Sewer Easement
0 0	Manhole-Unknown Purpose Grease Trap Access Lid	IE/E TC/E	Ingress/Egress Easement Temporary Construction Easemer
ୢ୷୷	Monitoring Well	SQ. FT.	Square Feet
⊖ <sub>BH</sub>	Bore Hole	AC	Acres
<b>O</b>	Fill Lid (for Underground Tank)	CY	Cubic Yard
SAN	– Sanitary Sewer Line – Sanitary Sewer Service Line	LF CO.	Linear Feet Company
_ ss S	<ul> <li>Sanitary Sewer Service Line</li> <li>Sanitary Sewer Manhole</li> </ul>	CO. L/S	Company Landscaping (Bushes, Trees, Flow
0	Clean-out	_, .	Border, Mulch, any or all of ther
VCP	Vitrified Clay Pipe	ASPH	Asphalt
DIP	Ductile Iron Pipe	CONC	Concrete
PVC CIR	Polyvinyl Chloride Pipe	COR	Corner Potaining Wall
CIP	Cast Iron Pipe	R.WALL STA.	Retaining Wall Station
$\mathbb{V}$	Underground Utility Line Marker	Lt	Left
•	<ul> <li>Metal Guard Rail or Handrail</li> </ul>	Rt	Right
	Flag Pole	PI	Point of Intersection
~		PC	Point of Curve
$\odot$	Satellite Dish Mailbox		
•	Satellite Dish Mailbox Concrete or Metal Bollard	рт 	Point of Curve Point of Tangent Not To Scale

## LEGAL DESCRIPTION

 $\sim\sim\sim\sim$ 

Lot 1-A, NEW LEE'S POLICE AND COURT FACIMTY, a subdivision in Lee's Summit, Jackson County, Missouri

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## TRACT 2:

All that part of the Southeast Quarter of Section 31, Township 48, Range 31, described as follows: Beginning at a point 1450 feet west of the northeast corner of the southeast quarter of said Section 31; thence west 75 feet, more or less to the northeast corner of Lot 1, SUMMIT PARK, a subdivision in Lee's Summit, as recorded in Plat Book 6, at Page 38, at the Recorder's Office of said County; thence south along the east line of said Lot 1, 230 feet more or less to the intersection with the westerly right of way line of County Highway 10-E, aka N. Douglas Street; thence northeasterly along said westerly right of way line to the Point of Beginning.

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## OIL AND GAS WELLS

According to the "Oil and Gas Permits" database published by the Missouri Department of Natural Resources, as of November 13, 2024, no oil or gas wells (of any status) are listed within subject property site.

## **GENERAL NOTES**

 $\sim$ 

- Summit, Missouri.

Concrete Arch Pipe Concrete Box Section les-Outlet or Source d or Not Surveyed ence (with or without barb)

rom Record Dimensions

rom Found Monuments

back Line nent

#### sement r Easement

wer Easement ess Easement

## Construction Easement

## g (Bushes, Trees, Flowers,

ulch, any or all of them)

## all

ersection

## ngent

All work in public easement and Right-of-Way shall be installed per the requirements and specifications of the City of Lee's Summit, Missouri.

2. All existing topographic, survey, and utility information shown was provided to BHC in the form of an Topographic Survey prepared by BHC and dated April 2, 2024. BHC makes no guarantees as to the accuracy of the existing information shown hereon. Contractors shall satisfy themselves as to the existing conditions of the site and have all utilities located prior to commencing construction.

The Contractor shall be required to obtain all Federal, State, and Local permits required for this project prior to commencing construction.

4. Any work adjacent to or crossing existing streets requires proper traffic control devices. Traffic control devices shall be placed in accordance with the Manual of Uniform Traffic Control Devices (MUTCD).

5. The contractor shall be required to demolish, remove and dispose of all existing structures, pavements, and features necessary to construct the improvements shown hereon. Any waste materials generated during construction shall be removed from the site by the Contractor and disposed of in accordance with all local, State, and Federal regulations governing such disposal.

The contractor shall prevent any trash, debris, or liquid wastes from being disposed of in sanitary sewers, storm sewers, or open drainage systems.

7. The Contractor shall be solely responsible to protect adjacent property, structures, and other improvements from damage during construction. In the event of damage to adjacent property, structures, or improvements, the contractor shall repair or replace such damage to the Owners's satisfaction at the Contractor's expense.

8. Contractors at the site shall be solely responsible for jobsite safety for all aspects of work shown hereon.

9. All work and materials used in the construction of the improvements shown hereon shall comply with all referenced standards, specifications, and plan notes.

10. All buildings are shown as a reference only. All buildings shall be located and constructed per the Architectural drawings prepared by others.

11. Contractor shall be responsible for contacting all utility companies for field locations of underground utilities affected by the contract. All existing utilities indicated on these plans are according to the best information available to the engineer; however, all utilities actually existing may not be shown. Utilities damaged through the negligence of the contractor to obtain the location of same shall be repaired or replaced at the expense of the contractor.

12. Coordinate with facility representative as to when construction activities may be performed to work with the operations of the facility.

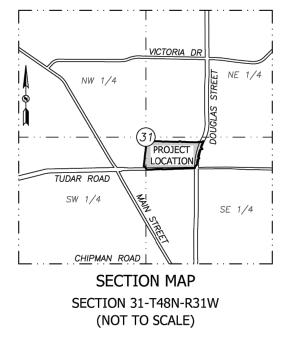
13. Any and all hazards shall be properly identified and barricaded from access during all non-construction periods.

14. Unless specified otherwise, all construction shall meet the requirements of the Missouri Department of Transportation (MoDOT) Standard Specifications, except as modified by these plans.

15. Third party inspection of the storm sewer is required, after inspection, provide documentation to the City of Lee's

16. Private Erosion & Sediment Control inspections are required in accordance with NPDES schedule and requirements. After inspections, provide the City of Lee's Summit, Missouri with reports and documentation.

17. A Right-of-Way permit is required from the City of Lee's Summit, Missouri Public Works Department for any work within the public right-of-way.



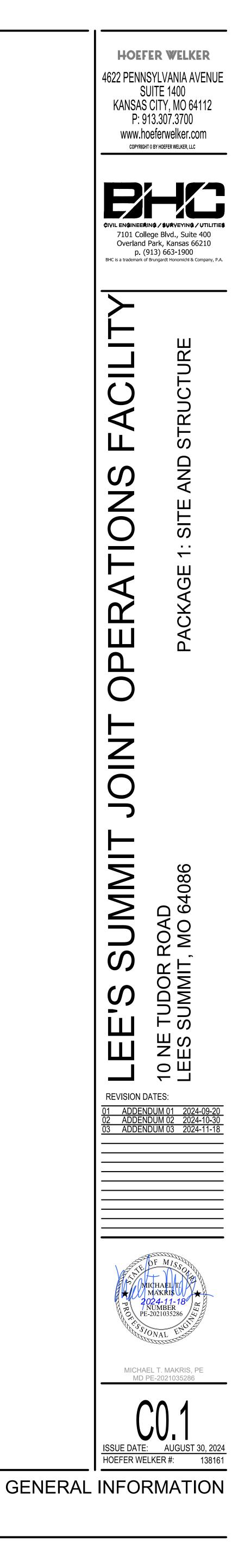
	PROJECT CONTROL TABLE (NAD83 MISSOURI STATE PLANE, WEST ZONE, US SURVEY FOOT)				
POINT NO.	CONTROL POINT/ BENCHMARK DESCRIPTION	NORTHING COORDINATE	EASTING COORDINATE	ELEV.	
1	CP1 /IB4 WITH CP CAP	1006378.56	2822886.48	1029.44'	
2	CP2 /CUT PLUS BACK OF WALK	1006378.62	2821916.33	1011.43'	
3	CP3 /CHISEL PLUS ON W. EDGE OF WALK	1006849.13	2821878.06	1010.62'	
4	CP4 /IB4 WITH CP CAP	1006865.95	2823140.23	1023.26'	
5	CP5 /IB4 W CP CAP	1006971.51	2822049.11	1009.85'	
10	CPO /IB4 WITH CP CAP	1006274.88	2823059.46	1031.60'	

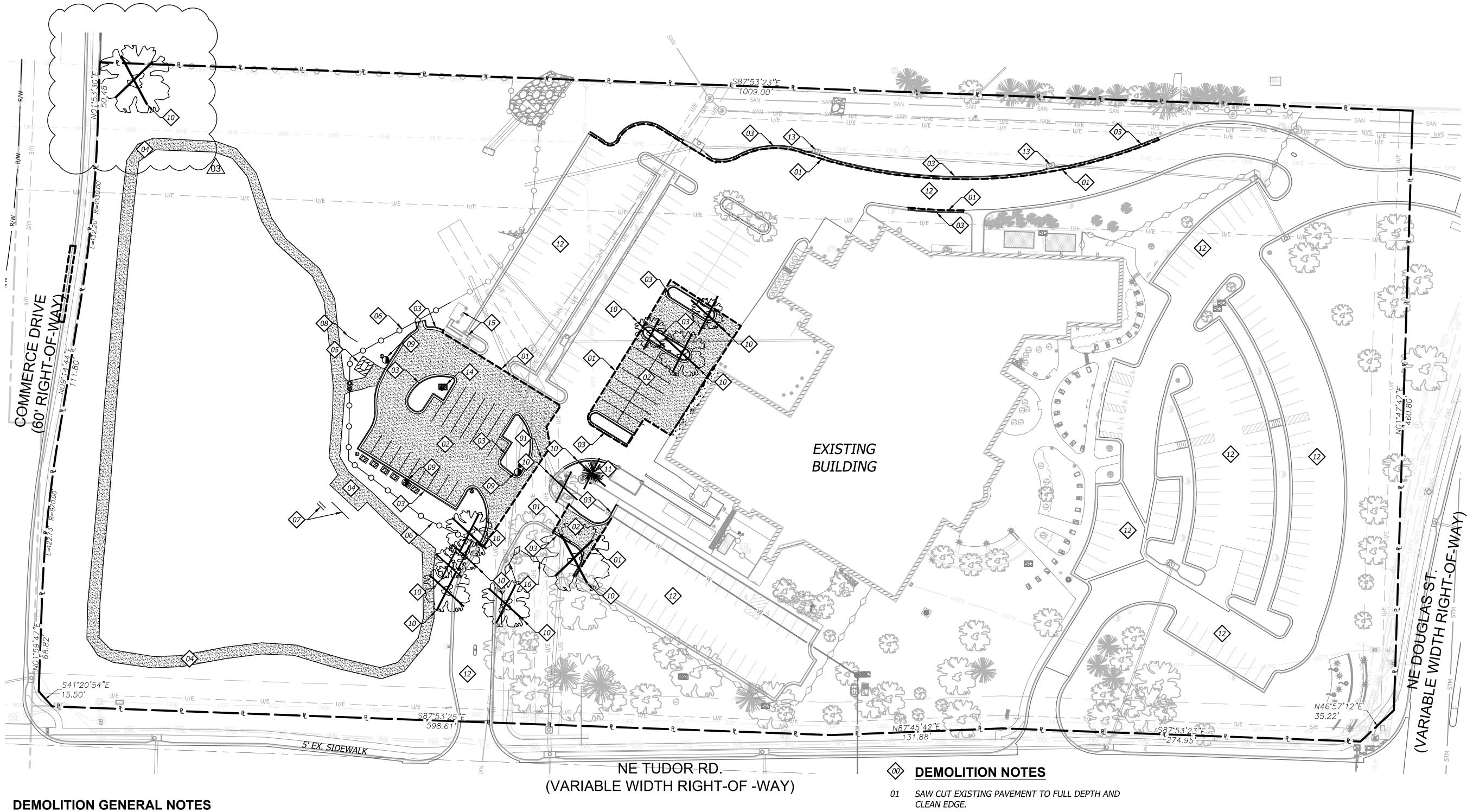
BENCHMARKS

(NAVD88 Datum) BM1 Chiseled square on the North face of a grate inlet, located on the South side of Tudor Road, approximately 425 feet East of the intersection of Tudor Road and Sloan Street.

Elevation: 1015.01

BM2 Chiseled square on the Northwest corner of a pedestrian crossing signal, located on the Southwest corner of the intersection of Tudor Road and Douglas Street. Elevation: 1031.01





- 1. Contractor shall verify the location, size, material and depth of all utilities prior to any excavation or construction activity.
- 2. All materials shall be removed and disposed of off-site. It is the contractors responsibility to meet all applicable laws and regulations pertaining to the disposal of construction/demolition material.
- 3. The contractor shall ensure that any structures to remain which are damaged during demolition operations shall be repaired to meet current code, at no additional cost to the owner.
- 4. The contractor shall remove any and all existing debris which is encountered from the existing site. This shall include, but shall not be limited to, footings, concrete slabs, conduits, granular subgrade, utility services, and/or unsuitable structural fill material as determined by the owner's engineer. The cost for these removals shall be considered incidental to the project. Said debris shall become property of the contractor and it shall be the responsibility of the contractor to dispose of properly off-site.
- 5. It shall be the contractor's responsibility to meet all applicable laws and regulations pertaining to the disposal of construction/demolition material.
- 6. The contractor shall be responsible for obtaining and payment of any permits for demolition that pertain to this project.
- 7. All protection fencing shall be installed prior to demolition/construction activity. The contractor shall provide a 6-foot security fence around the entire job site with locked gated access points, if required by the owner or the City.
- 8. All existing utilities removed during construction shall have their trenches backfilled with structural fill and be compacted to the requirements for structural fill.
- 9. All removals required to properly perform the work (whether shown on the plans or not) shall be performed by the contractor at no additional cost to the owner.

- 02 REMOVE & DISPOSE OF EXISTING ASPHALT.
- 03 REMOVE & DISPOSE OF EXISTING CURB AND GUTTER.
- 04 REMOVE & DISPOSE OF ASPHALT TRAIL.
- 05 REMOVE & DISPOSE OF EXISTING SHED.
- 06 REMOVE & DISPOSE OF EXISTING CHAIN LINK FENCE.
- 07 REMOVE & DISPOSE OF EXISTING PULL UP BARS.
- 08 REMOVE & DISPOSE OF EXISTING WOODEN WINDOW. 09 REMOVE & DISPOSE OF EXISTING LIGHT POLES.
- 10 REMOVE & DISPOSE OF EXISTING TREES.
- 11 RELOCATE WATER VAULT TO ALLOW FOR PROPOSED TRASH ENCLOSURE.
- 12 MILL EXISTING PARKING LOT 2", OVERLAY ASPHALT AND RESTRIPE TO MATCH EXISTING. CONTRACTOR TO COORDINATE OVERLAY WORK SEQUENCE WITH OWNER TO MINIMIZE DISRUPTION TO FACILITY OPERATIONS.
- 13 STRUCTURE TO MODIFIED TO FROM CURB INLET TO GRATE TOP INLET.
- 14. REMOVE & RELOCATE EXISTING SHUT-OFF FOR FUEL PUMP
- 15. EXISTING FUEL STATION TO REMAIN. TO BE PROTECTED DURING CONSTRUCTION.
- 16. REMOVE & DISPOSE OF EXISTING CHAIN IRON FENCE.

# LEGEND

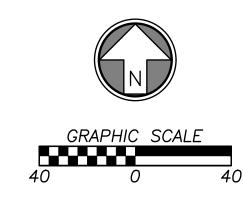
R/W RIGHT - OF - WAY LINE — PROPERTY LINE

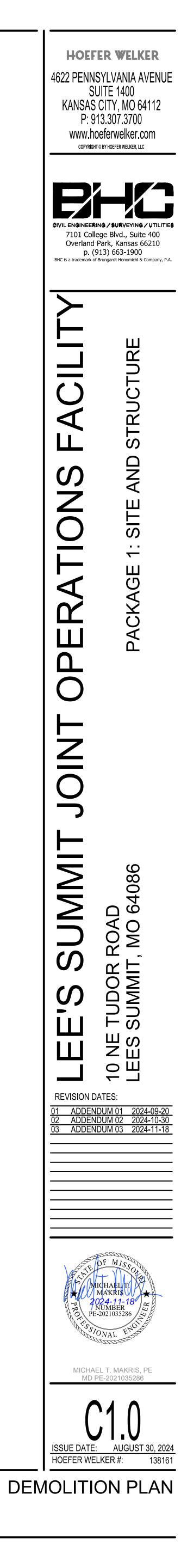
- EXISTING OVERHEAD UTILITY LINES
- EXISTING UNDERGROUND ELECTRICAL LINE
- EXISTING GAS LINE
- EXISTING WATER LINE
- ••••• SAW CUT LINE

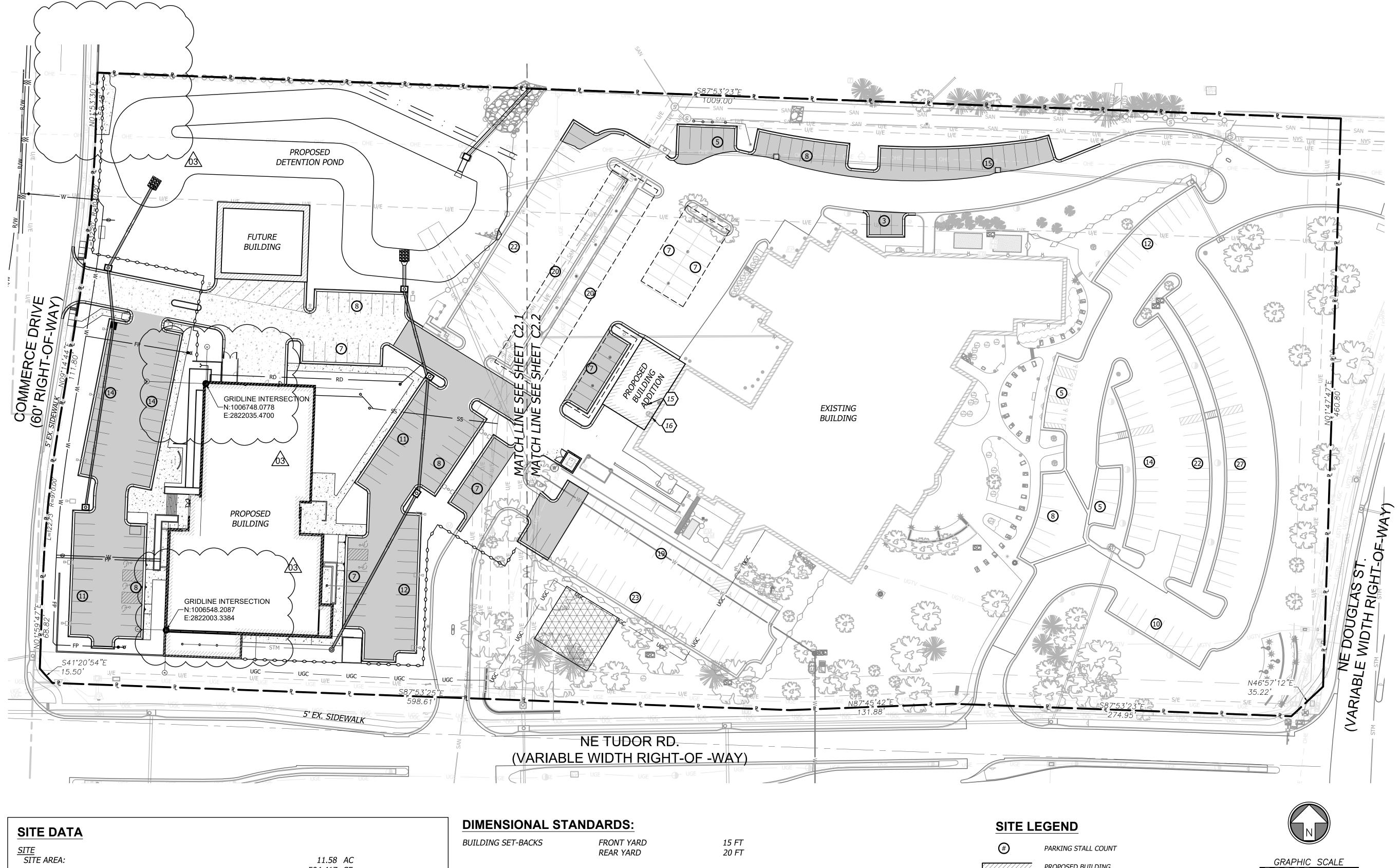
\_\_\_\_\_ GAS \_\_\_\_\_

×

- ASPHALT PAVEMENT TO BE REMOVED
- EXISTING TREE LINE
  - EXISTING TREE TO BE REMOVED







SI	ΤE	DA	ΓΑ

ZONTNO		
<u>PARKING</u> PARKING PROVIDED: ADA PARKING SPACES:		STANDARD HANDICAP (6 VAN)
PROPOSED BUILDING AREA: PROPOSED FUTURE BUILDING AREA: FLOOR AREA RATIO (FAR):	•	SF (8.7%) SF (0.9%)
<u>BUILDING</u> EXISTING BUILDING (INCLUDING ADDITION) AREA:	93,507	SF (18.5)
IMPERVIOUS AREA: EXISTING: PROPOSED:	•	SF (45.4%) SF (58.7%)
SITE AREA:	11.58 504,417	

## ZONING

PO (PLANNED OFFICE)

# **OWNERSHIP:**

PARCEL NO. 52-900-04-237-00-0-00-000 CITY OF LEE'S SUMMIT, MO LEE'S SUMMIT POLICE AND COURT FACILITY INSTRUMENT NO. 199710020462, BOOK 60, PAGE 53

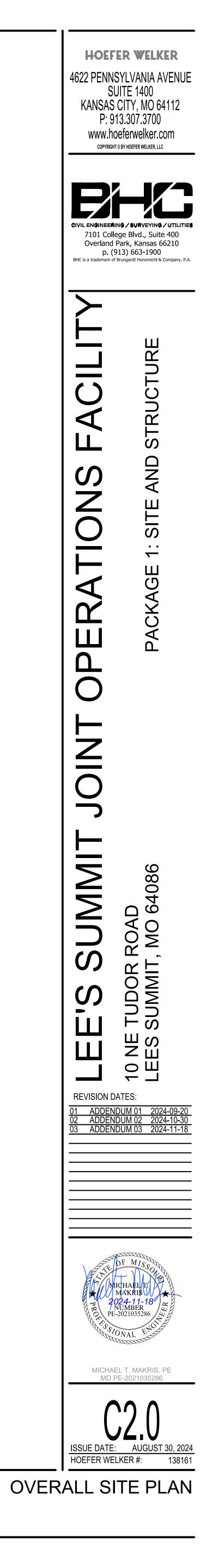
	****	511
PARKING SPACE DIMENSIONS	LENGTH WIDTH	19 FT 9 FT
DRIVEWAY AISLE MINIMUM		24 FT
PARKING SET-BACKS	RIGHT OF WAY RESIDENTIAL DISTRICT SIDE AND REAR P/L	20 FT 20 FT 6 FT
BUILDING SET-BACKS	FRONT YARD REAR YARD	15 FT 20 FT

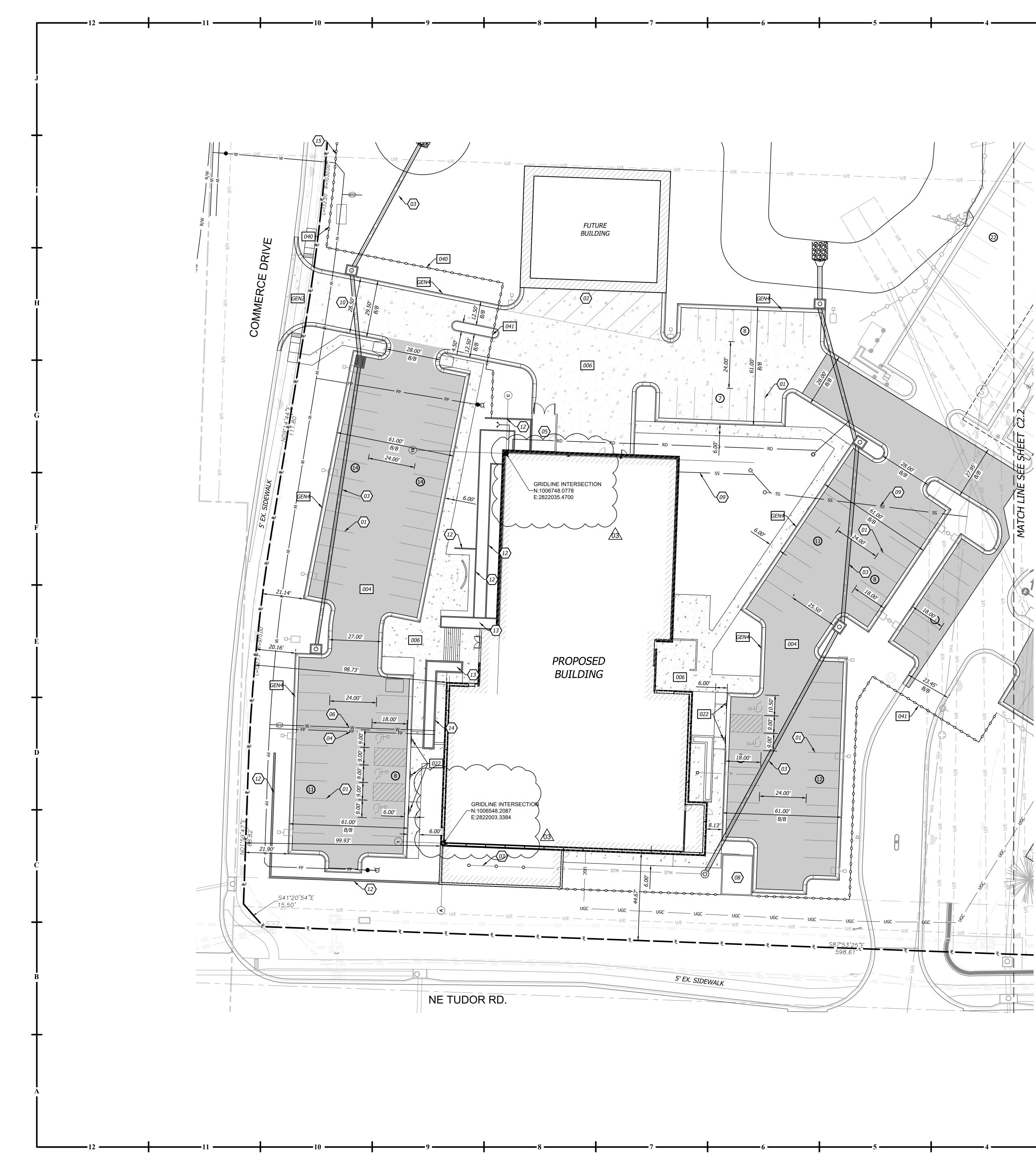
**GENERAL NOTES:** 

- MINIMUM CURB RADIUS OF 3 FEET (UNLESS OTHERWISE SPECIFIED).
- ALL NEW ON-SITE WIRING AND CABLES SHALL BE INSTALLED UNDERGROUND. ALL ABOVE GROUND ELECTRICAL AND/ OR TELEPHONE CABINETS MUST BE PLACED WITHIN THE
- INTERIOR SIDE OR REAR BUILDING SETBACK YARDS.
- ALL CONCRETE MATERIALS (ASPHALTIC AND PORTLAND) SHALL BE MEET KANSAS CITY
- METROPOLITAN MATERIALS BOARD (KCMMB) SPECIFICATIONS. ALL EXTERIOR GROUND OR BUILDING MOUNTED EQUIPMENT, INCLUDING BUT NOT LIMITED TO MECHANICAL EQUIPMENT, UTILITY METER BANKS AND COOLERS, SHALL BE SCREENED FROM PUBLIC VIEW WITH LANDSCAPING OR ARCHITECTURAL TREATMENT COMPATIBLE WITH THE BUILDING ARCHITECTURE.
- ALL EXERIOR -MOUNTED AND ROOFTOP BUILDING HVAC AND MECHANICAL EQUIPMENT, VENTS, 6. PIPING, ROOF ACCESS LADDERS AND UTILITY METERS MUST BE LOCATED OUT OF VIEW OR OTHERWISE SCREENED FROM PUBLIC VIW FROM ALL ADJACENT STREETS AND RESIDENTIALLY ZONED OR DEVELOPED PROPERTIES. SCREENING MUST BE ACCOMPLISHED WITH LANDSCAPING, SCREEN WALLS, BUILDING ELEMENTS, OR A COMBINATION OF THESE METHODS.
- 7. BUILDING FOOTPRINT AS SHOWN REPRESENTS THE MOST EXTERIOR LINE WORK FOR BUILDING AS PROVIDED BY HOEFER WELKER. REFERENCE DRAWING DATED 2024-10-08.

- PROPOSED BUILDING
- EXISTING BUILDING
- LIGHT DUTY ASPHALT PAVEMENT
- LIGHT DUTY PCC PAVEMENT
- CONCRETE SIDEWALK
- STRAIGHT BACK CURB & GUTTER (TYPE CG-1)
- RETAINING WALL
- STRAIGHT BACK DRY CURB & GUTTER (TYPE CG-1 DRY)

- ZERO HEIGHT CURB
- TRANSITION CURB





# ZONING

PO (PLANNED OFFICE)

## **GENERAL NOTES:**

- MINIMUM CURB RADIUS OF 3 FEET (UNLESS OTHERWISE SPECIFIED).
   ALL NEW ON-SITE WIRING AND CABLES SHALL BE INSTALLED UNDERGROUND.
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- 4. ALL EXTERIOR GROUND OR BUILDING MOUNTED EQUIPMENT, INCLUDING BUT NOT LIMITED TO MECHANICAL EQUIPMENT, UTILITY METER BANKS AND COOLERS, SHALL BE SCREENED FROM PUBLIC VIEW WITH LANDSCAPING OR ARCHITECTURAL TREATMENT COMPATIBLE WITH THE BUILDING ARCHITECTURE.
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- 6. BUILDING FOOTPRINT AS SHOWN REPRESENTS THE MOST EXTERIOR LINE WORK FOR BUILDING AS PROVIDED BY HOEFER WELKER.

## **CONSTRUCTION NOTES**

- 01 LEAD FREE, WATER-BORNE EMULSION BASED TRAFFIC PAINT FOR PARKING LOT STRIPING (WHITE ON ASPHALT & YELLOW ON
- CONCRETE). 02 PROPOSED NO PARKING STRIPING
- 03 PROPOSED STORM SEWER SYSTEM
- 04 PROPOSED FIRE PROTECTION SYSTEM
- 05 PROPOSED TRASH ENCLOSURE. (REF. TO ARCHITECTURAL PLANS)
  06 PROPOSED WATER SERVICE SYSTEM
  07 PROPOSED GENERATOR
- 07 PROPOSED GENERATOR 08 PROPOSED TRANSFORMER PAD LOCATION
- 09 PROPOSED SANITARY SEWER SYSTEM
- CITY OF LEE'S SUMMIT COMMERCIAL DRIVE ENTRANCE (GEN-1)
   PROPOSED COMMUNICATIONS TOWER LOCATION. PENDING FURTHER DESIGN.
- SITE RETAINING WALLS ARE DELEGATED DESIGN. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR ENGINEER/ARCHITECT REVIEW.
   PRODUCT - VERSA-LOK MOSAIC, COLOR BY ARCHITECT.
   PLANTER WALLS SPECIFIED BY ARCHITECT.
- 14 HANDRAILS REQUIRED FOR ADA RAMP SPECIFIED BY ARCHITECT.
  15 PROPOSED FENCE TO CONNECT TO EXISTING FENCE ALONG
  - NORTHERN PROPERTY LINE.

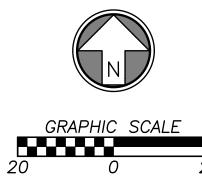
## SITE LEGEND

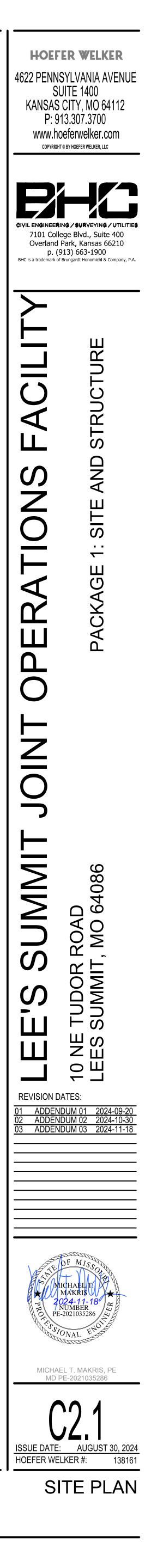
# Image: Parking stall countImage: Parking stall countProposed buildingProposed buildingImage: Parking building buildingImage: Parking building building buildingImage: Parking building building building building building building buildingImage: Parking building buil

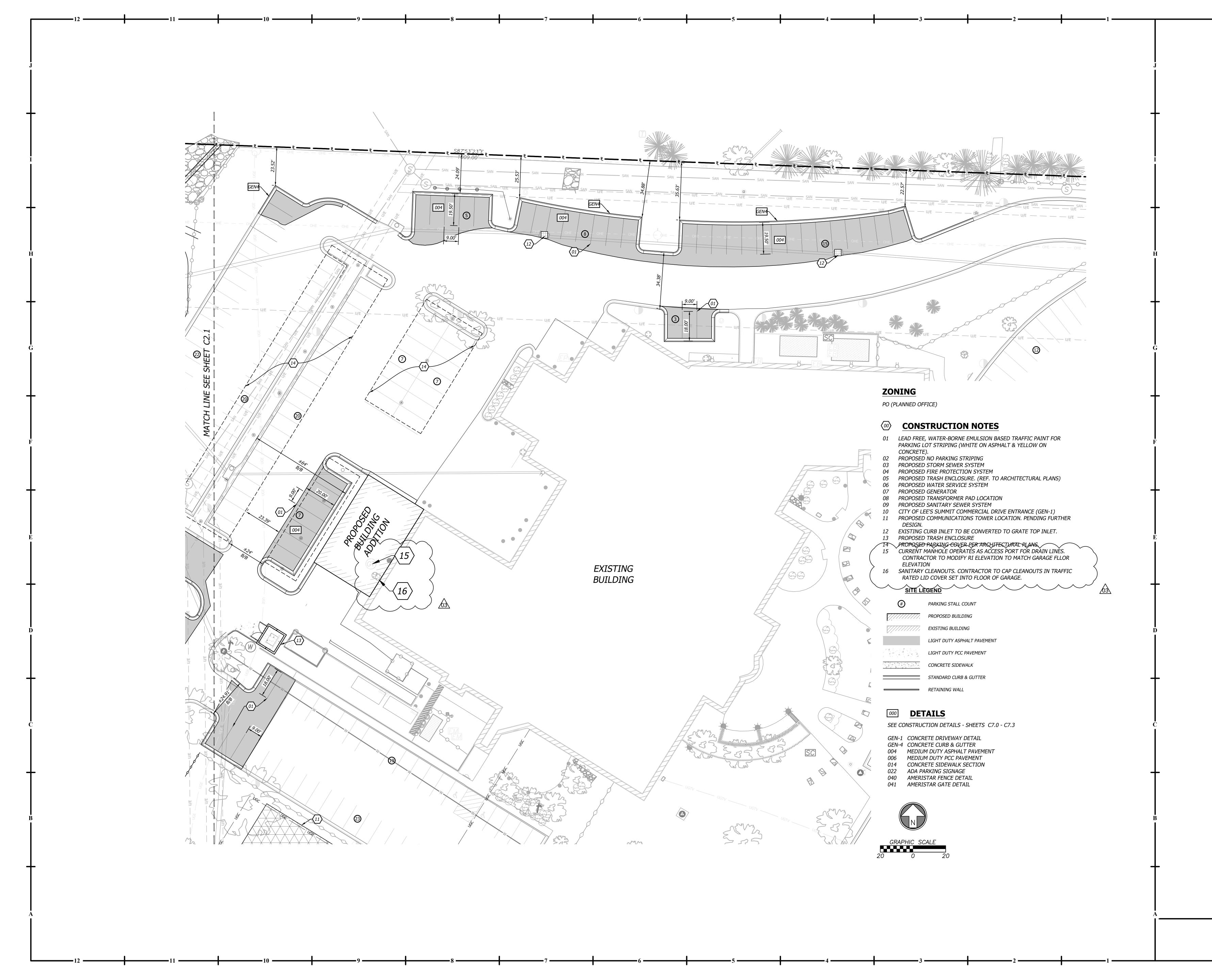
## **DETAILS**

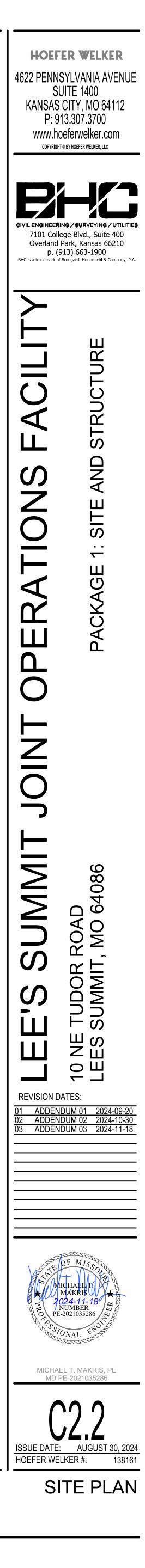
SEE CONSTRUCTION DETAILS - SHEETS C7.0 - C7.3

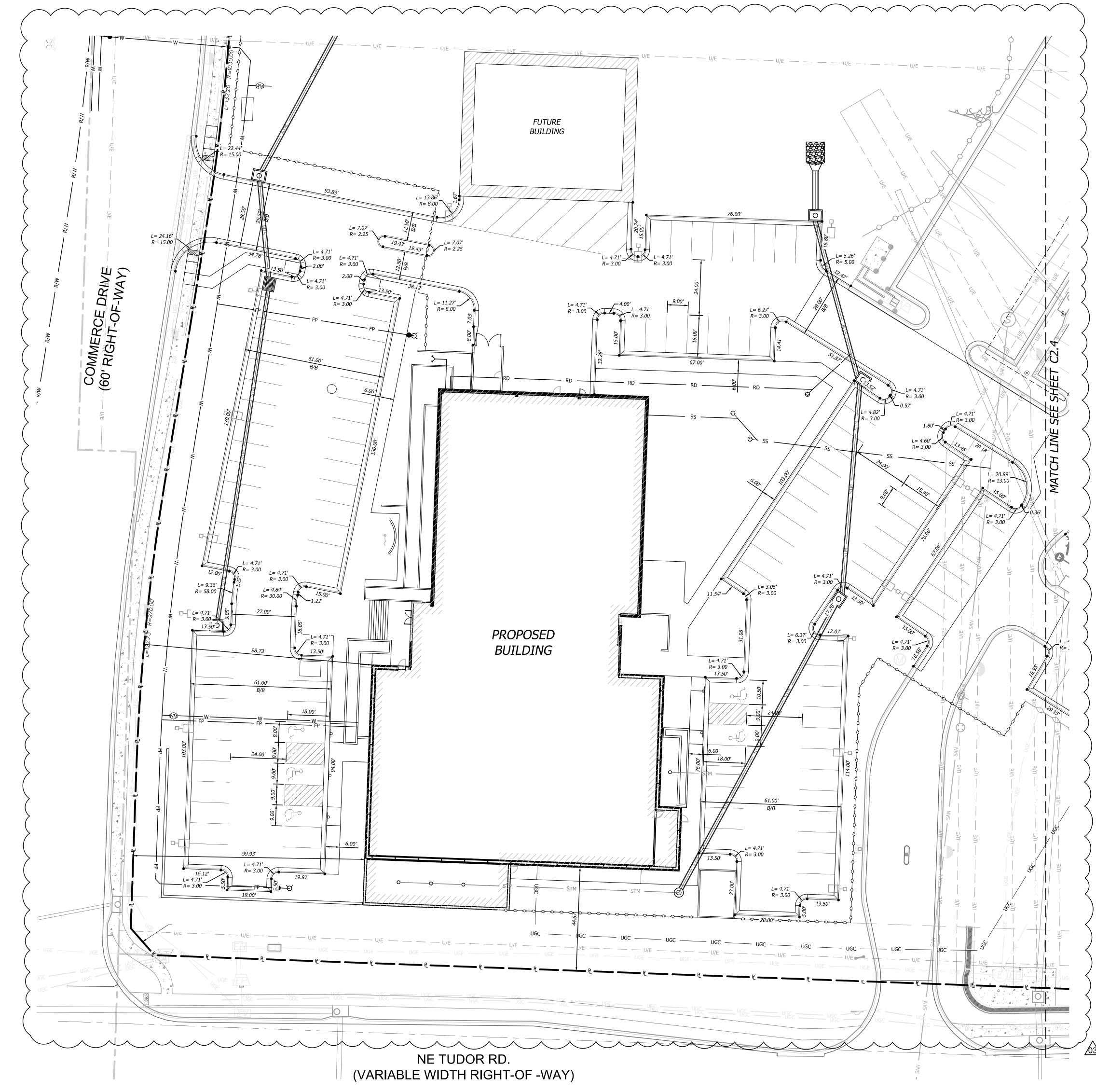
- GEN-1 CONCRETE DRIVEWAY DETAIL
- GEN-4 CONCRETE CURB & GUTTER004 MEDIUM DUTY ASPHALT PAVEMENT
- 006 MEDIUM DUTY PCC PAVEMENT
- 014 CONCRETE SIDEWALK SECTION022 ADA PARKING SIGNAGE
- 040 AMERISTAR FENCE DETAIL
- 041 AMERISTAR GATE DETAIL











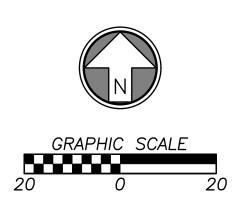


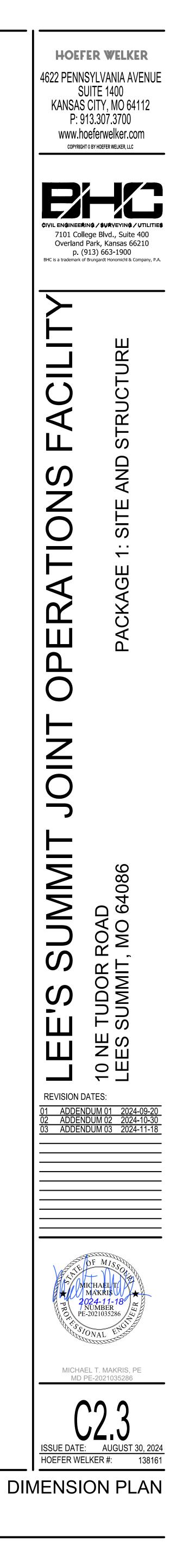
- 1. All dimensions are to/along back of curb unless otherwise noted.
- 2. All dimensions are to bottom of wall unless otherwise noted.

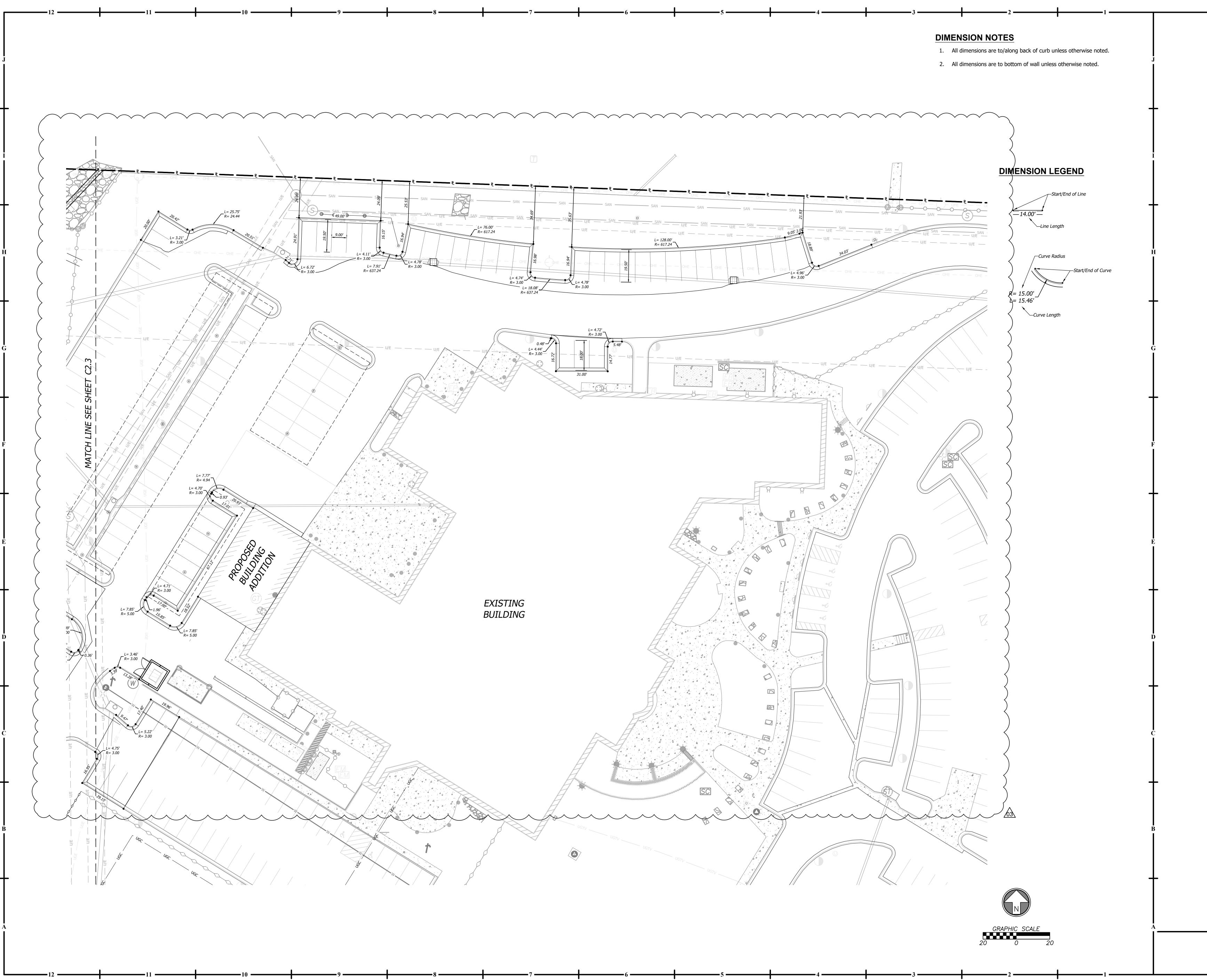
### **DIMENSION LEGEND**

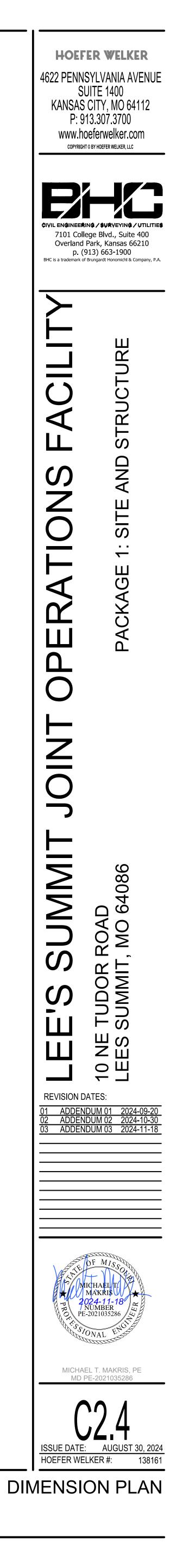
*\_\_\_\_Start/End of Line* Line Length

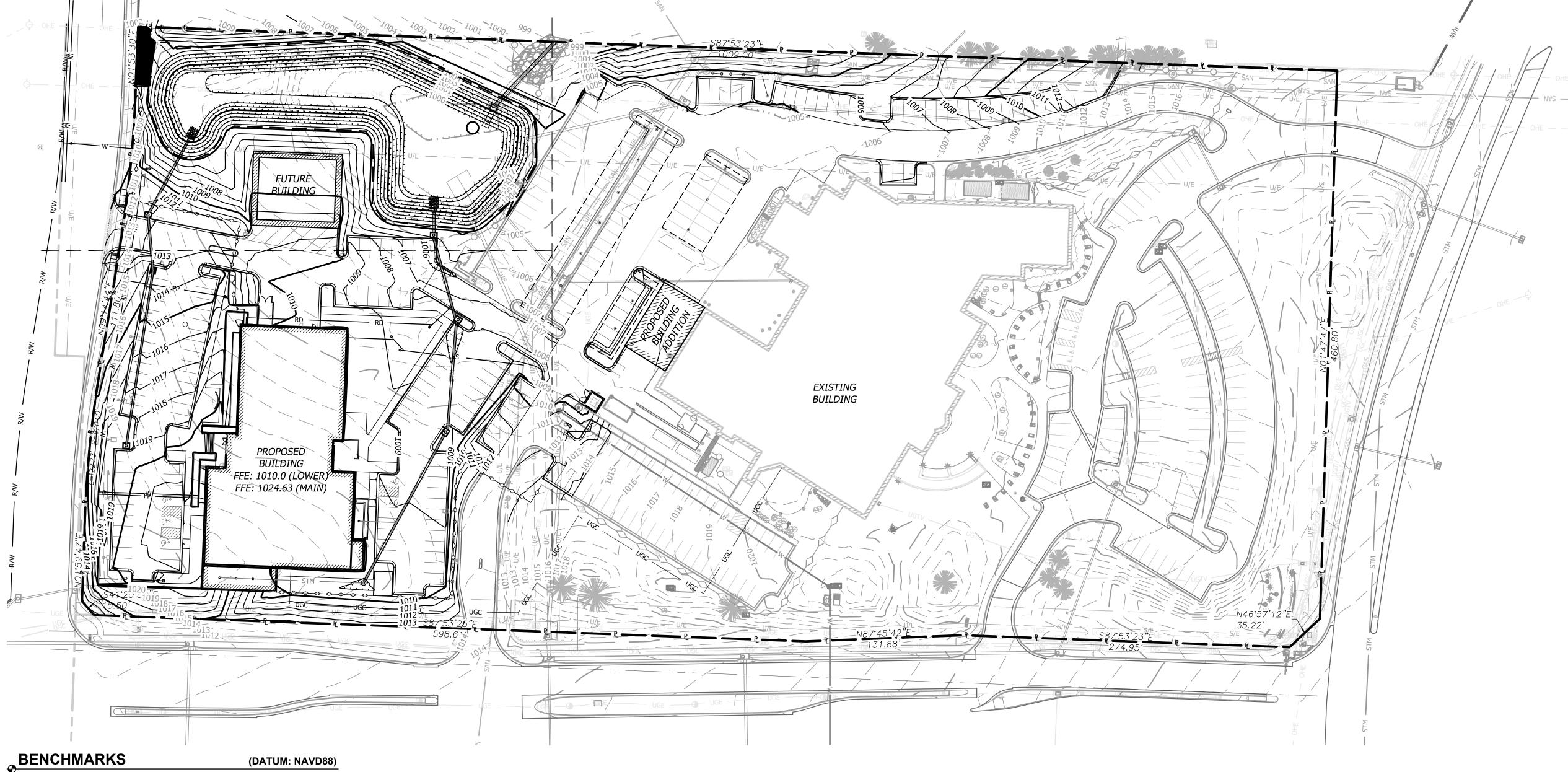
\_Curve Radius R= 15.00'\_\_ L= 15.46' Curve Length











BENCHMARK NUMBER: 1 ELEVATION= 1015.01

CHISELED SQUARE ON THE NORTH FACE OF A GRATE INLET, LOCATED ON THE SOUTH SIDE OF TUDOR ROAD, APPROXIMATELY 425 FEET EAST OF THE INTERSECTION OF TUDOR ROAD AND SLOAN STREET.

BENCHMARK NUMBER: 2 ELEVATION= 1031.01

CHISELED SQUARE ON THE NORTHWEST CORNER OF A PEDESTRIAN CROSSING SIGNAL, LOCATED ON THE SOUTHWEST CORNER OF THE INTERSECTION OF TUDOR ROAD AND DOUGLAS STREET.

### FLOOD STATEMENT

The subject property lies within Flood Zone "X" (unshaded) (Areas determined to be outside the 0.2% annual chance floodplain.), as shown on the Jackson County, Missouri and Incorporated Areas Flood Insurance Rate Map (F.I.R.M.). Map Number: 29095C0417G Panel No: 417 of 625

### Map Revised Date: January 20, 2017

**NOTE:** This statement is provided for informational purposes only and shall in no way constitute a basis for a flood certificate. No field work was performed to establish the boundaries of this zone. The information was derived by scaling the subject property on the above referenced map.

### **GRADING GENERAL NOTES**

- 1. Contractor shall obtain a copy of the <u>Geotechnical Services Report</u>, prepared for the project and satisfy himself as to the existing conditions and recommendations contained in the report.
- 2. As discussed in the Geotechnical Report, over excavation of existing unsuitable soils will be required under building and pavement areas. Contractor shall perform over excavation of unsuitable soils as a part of this work.
- 3. Contractor shall obtain soils suitable as structural fill from off-site sources. All borrow materials must be tested and approved by the Geotechnical Engineer prior to importing the soils to the project site.
- 4. Contractor shall operate under the terms and permits included in the Stormwater Pollution Prevention Plan (SWPPP) prepared for this project and permitted through the State of Missouri. Contractor shall employ a qualified person to conduct regular inspections of the site erosion control measures and document such inspections in the SWPPP document maintained by the Contractor.
- 5. All topsoil, vegetation, root structures, and deleterious materials shall be stripped from the ground surface prior to the placement of embankments. Contractor shall obtain the on-site geotechnical representative's acceptance of the existing ground surface materials and the proposed fill material prior to the placement of fill.
- 6. All proposed contour lines and spot elevations shown are finish ground elevations. Contractor shall account for pavement depths, building pads, topsoil, etc when grading the site.

### **GRADING LEGEND**

982
980
982
R/W

7. All disturbed areas that are not to be paved (green spaces) shall be finish graded with a minimum of six inches of

8. All excavation and embankments shall comply with the recommendations provided by the geotechnical engineer.

Prior to placing any concrete or asphalt pavement the contractor shall perform a proof roll of the pavement sub-grade with a fully loaded tandem axle dump truck. The proof roll shall be conducted in the presence of the Engineer and the on-site geotechnical representative. Areas that display rutting or pumping that are unsatisfactory to the engineer shall be re-worked and a follow-up proof roll shall be conducted prior to acceptance of the sub-grade for paving. The contractor may, at its own expense, stabilize the sub-grade using Class C fly ash or

### 10. Finished grades shall not be steeper than 3:1.

topsoil.

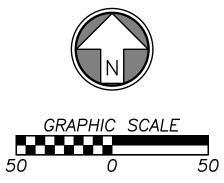
quicklime.

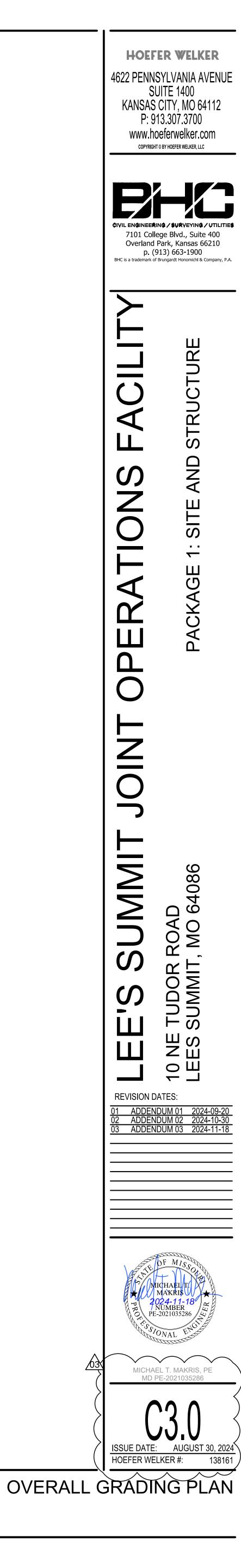
9.

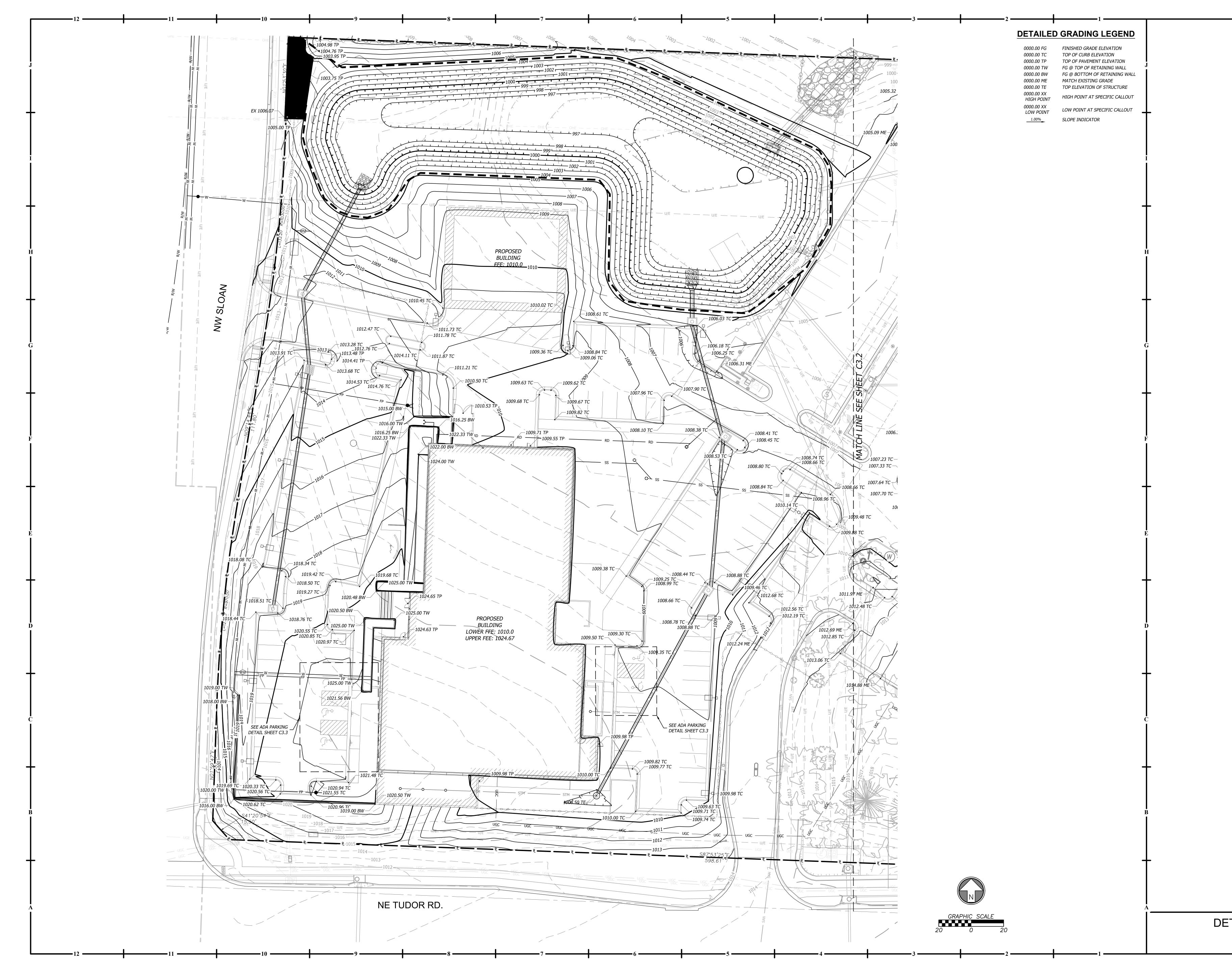
11. All grading work shall be considered unclassified. No additional payments shall be made for rock excavation. Contractor shall satisfy himself as to any rock excavation required to accomplish the improvements shown hereon.

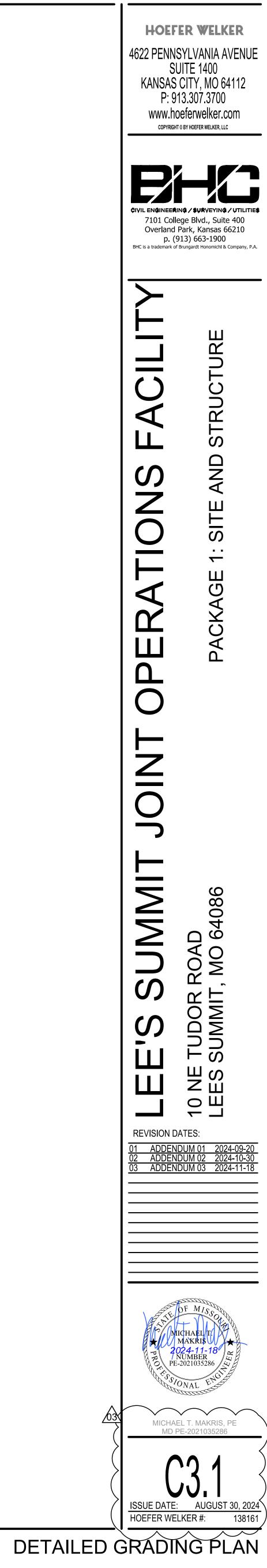
12. A 2.0% maximum cross slope shall be maintained on all pedestrian sidewalks and paths.

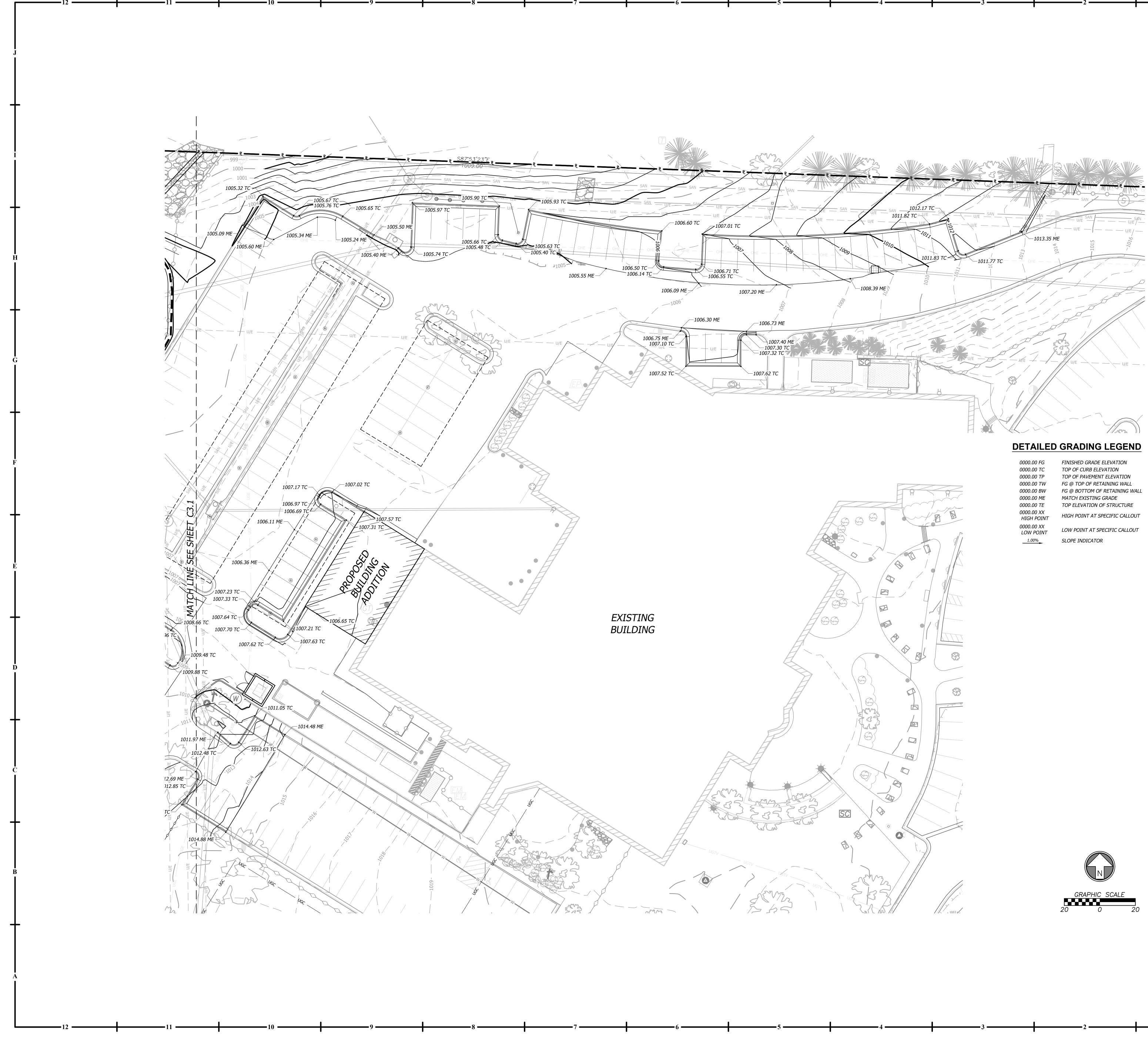
- FINISH GRADE MAJOR CONTOURS
- *FINISH GRADE MINOR CONTOURS*
- EXISTING GRADE MAJOR CONTOURS
- *EXISTING GRADE MINOR CONTOURS*
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- STANDARD CURB & GUTTER
- DRY CURB & GUTTER
- ZERO HEIGHT CURB
- TRANSITION CURB
- RETAINING WALL

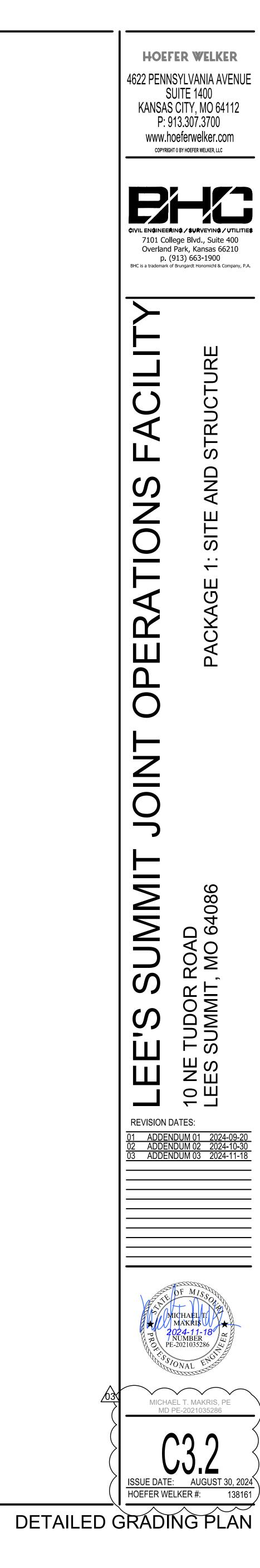


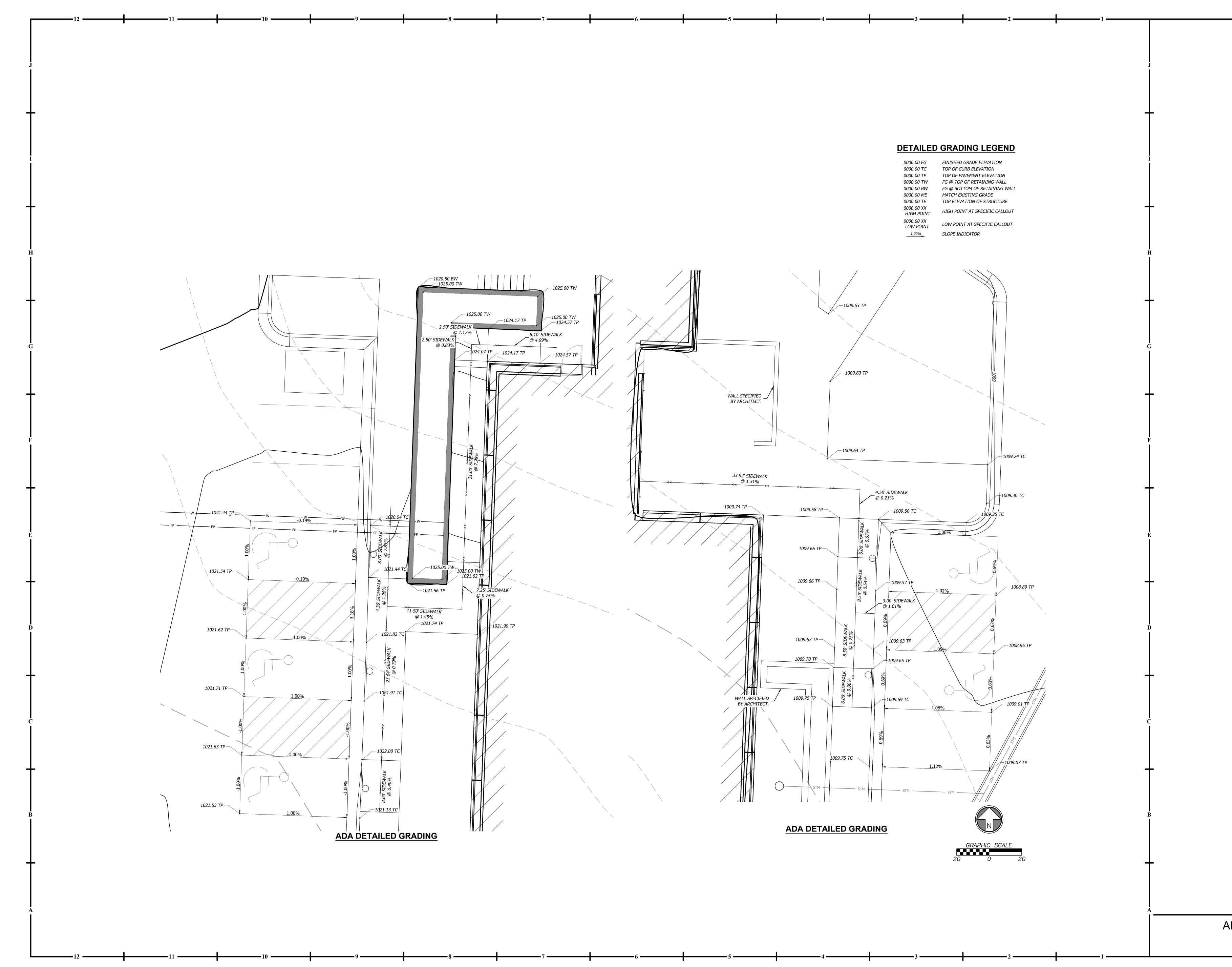


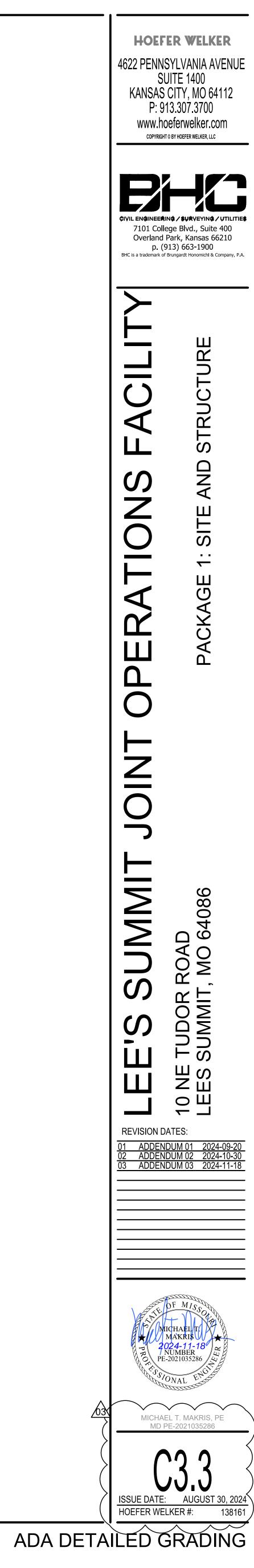


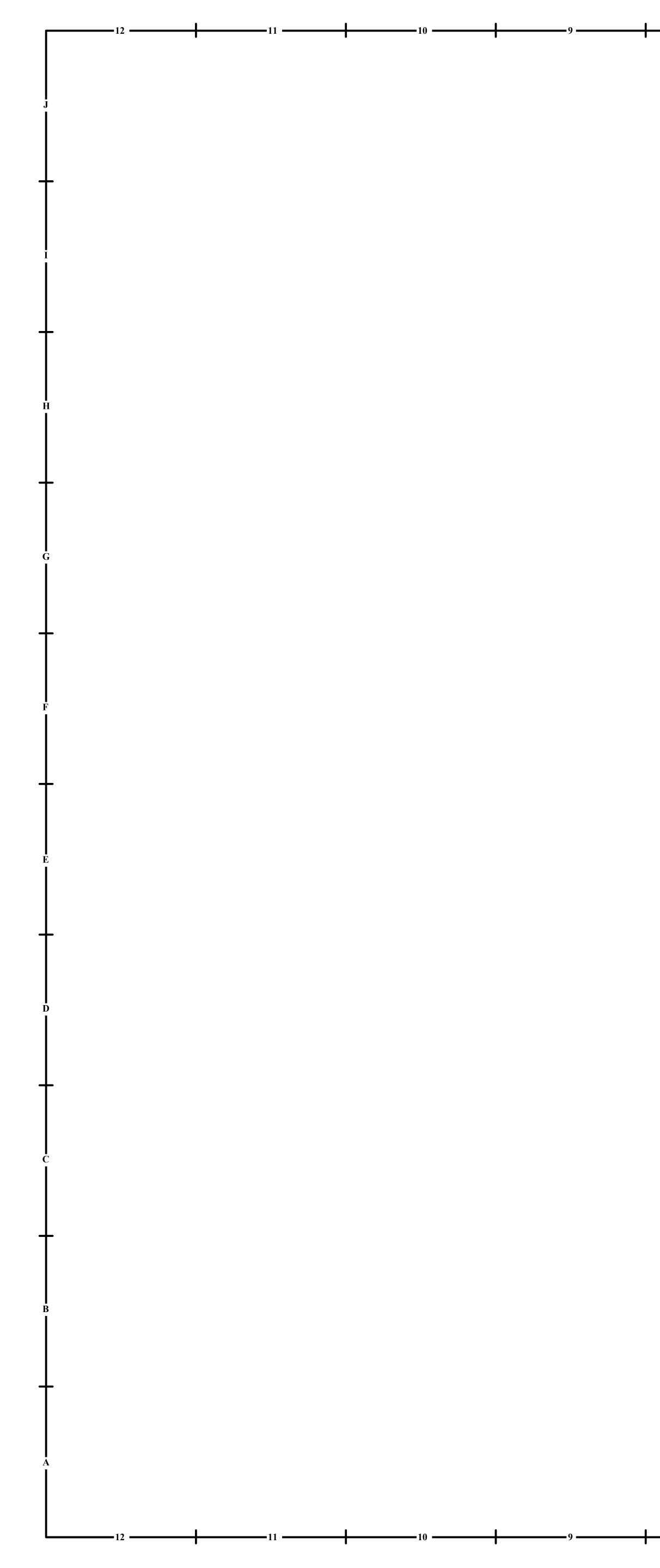


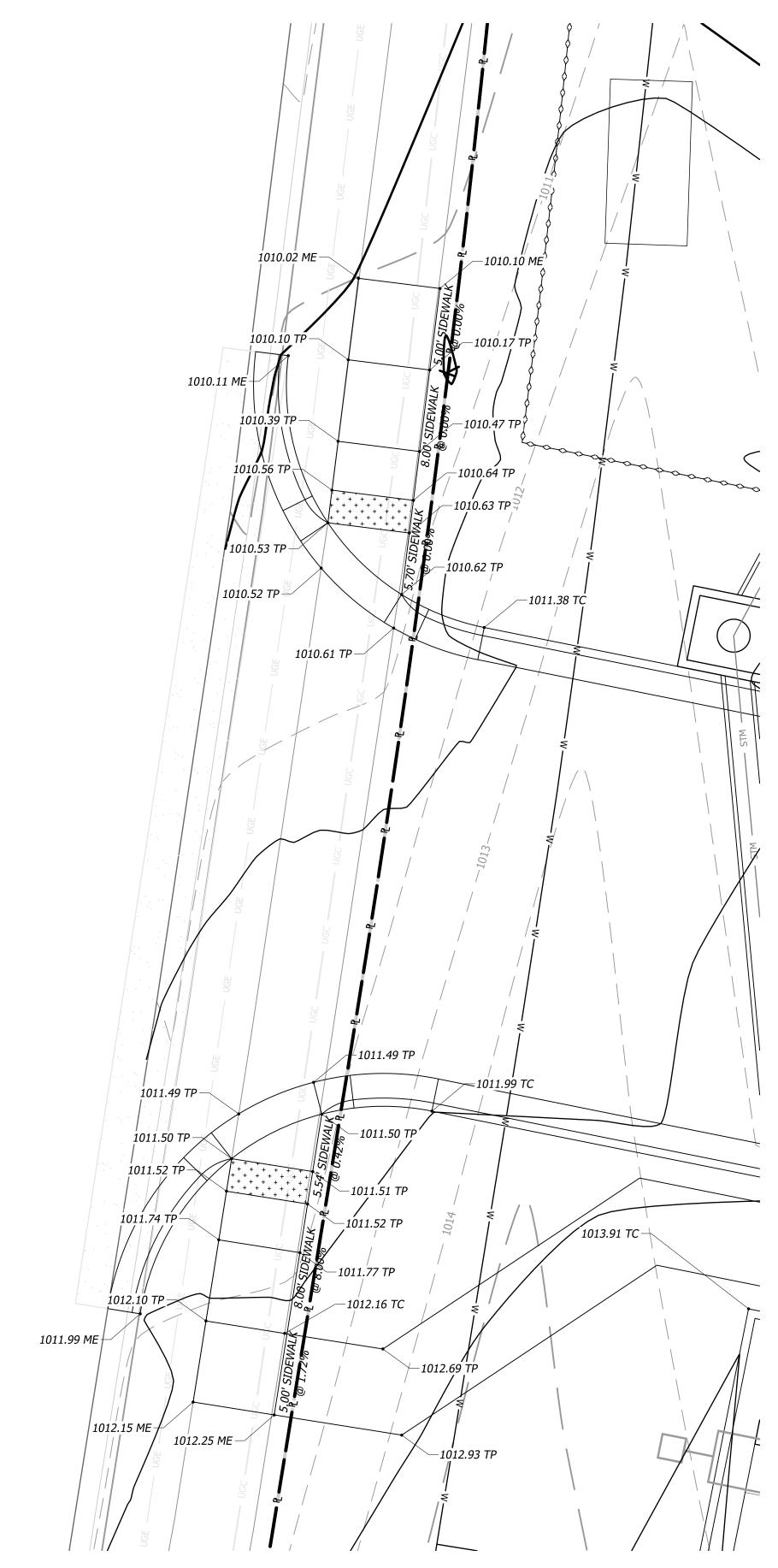








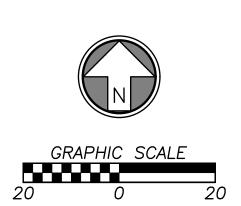


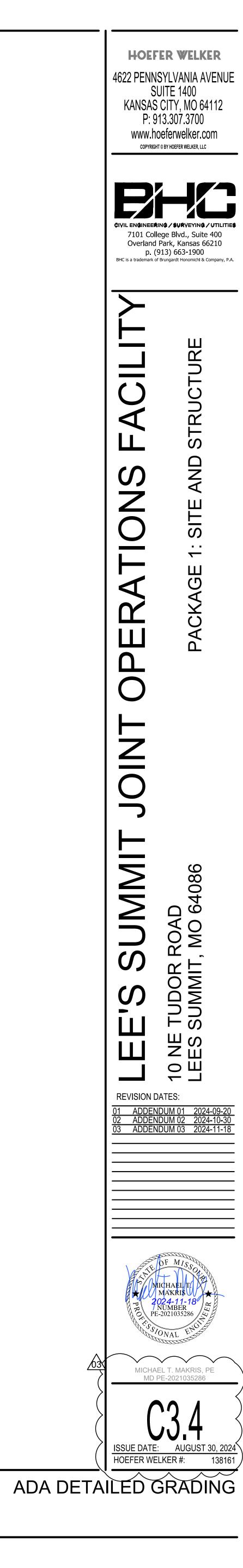


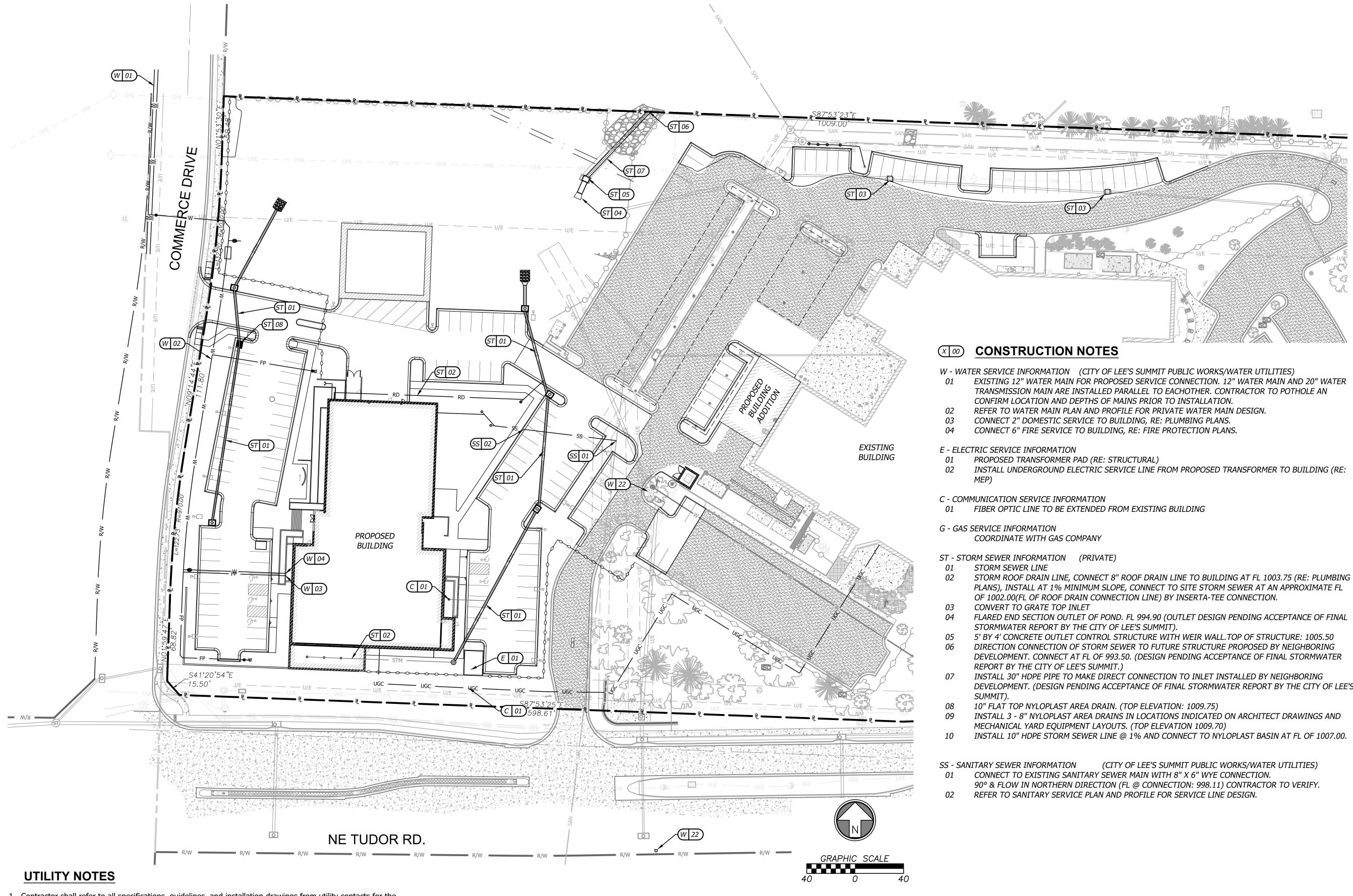
ADA DETAILED GRADING - CROSSWALK

### DETAILED GRADING LEGEND

0000.00 FG	FINISHED GRADE ELEVATION
0000.00 TC	TOP OF CURB ELEVATION
0000.00 TP	TOP OF PAVEMENT ELEVATION
0000.00 TW	FG @ TOP OF RETAINING WALL
0000.00 BW	FG @ BOTTOM OF RETAINING WALL
0000.00 ME	MATCH EXISTING GRADE
0000.00 TE	TOP ELEVATION OF STRUCTURE
0000.00 XX HIGH POINT	HIGH POINT AT SPECIFIC CALLOUT
0000.00 XX LOW POINT	LOW POINT AT SPECIFIC CALLOUT
1.00%	SLOPE INDICATOR







1. Contractor shall refer to all specifications, guidelines, and installation drawings from utility contacts for the installation of all service lines.

2. The information shown on these plans concerning the type and location of underground utilities is r guaranteed to be accurate or all inclusive. The contractor is responsible for contacting all utility companies for field location of all underground utility lines prior to any excavation and for making his own verification as to type and location of underground utilities as may be necessary to avoid damage thereto. 3. Contractor to ensure 18" minimum separation between utilities at crossings. Contractor to call engineer if any conflicts between utilities are found.

4. Fire Line Notes:

4.1. All private fire lines shall be installed in accordance with NFPA 24, and other applicable codes and standards.

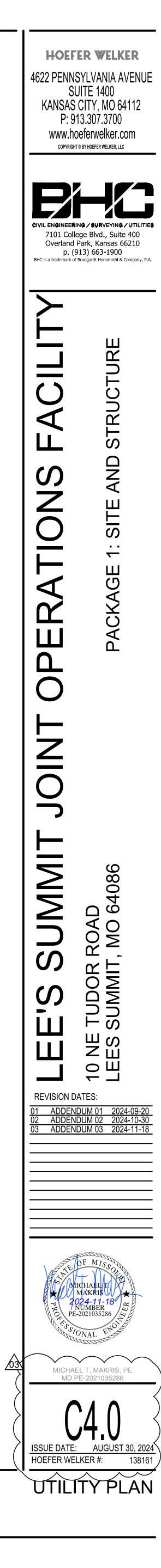
4.2. Contact the Fire Department to schedule inspections <u>prior to</u> private fire lines being backfilled. 4.3. Contact the Fire Department to witness scheduled hydrostatic tests and flushes of private fire lines. 5. Stub all connections to within 5' of the building to provide connection into the building by mechanical/plumbing contractor.

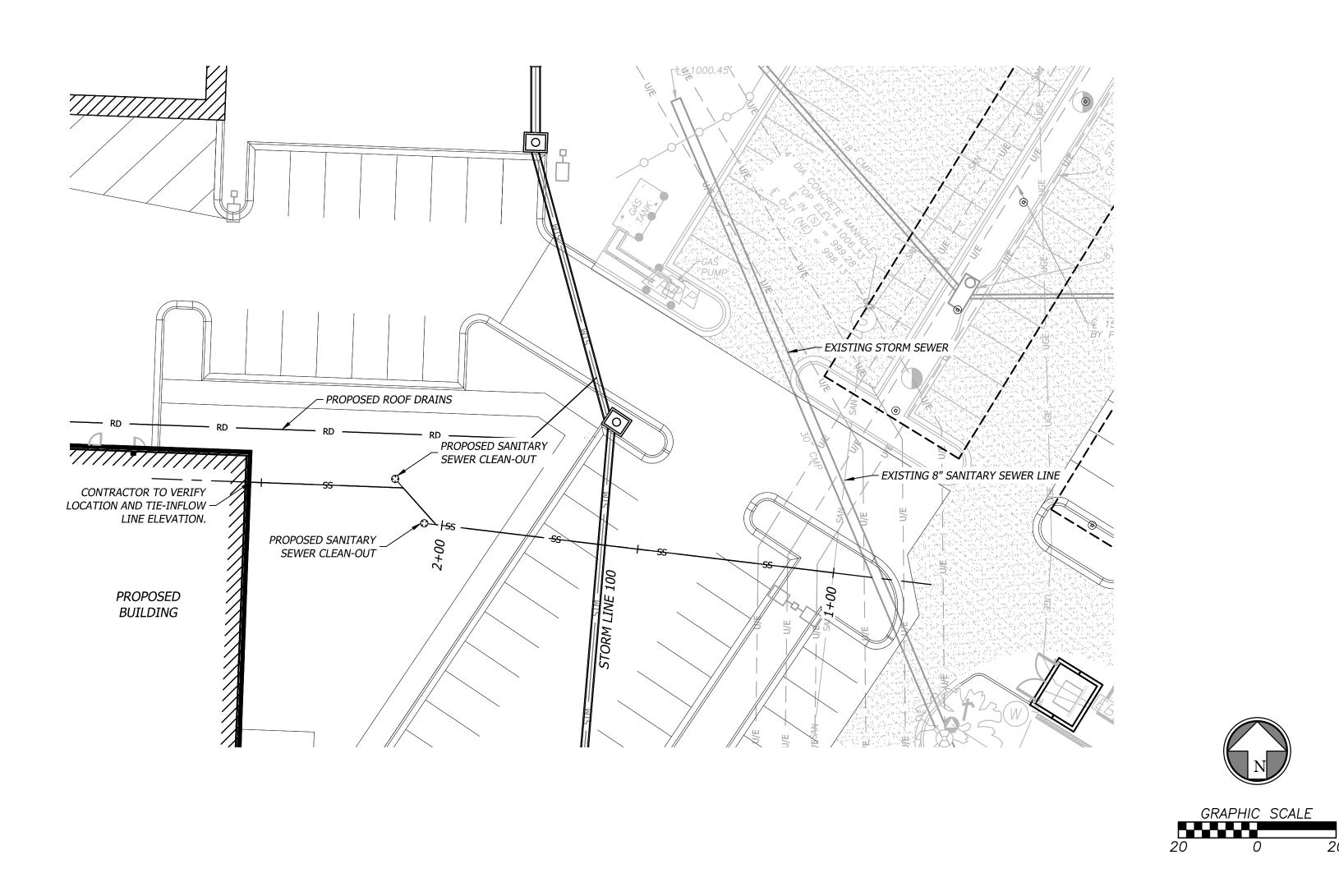
	5 TOP	the	
5	not		

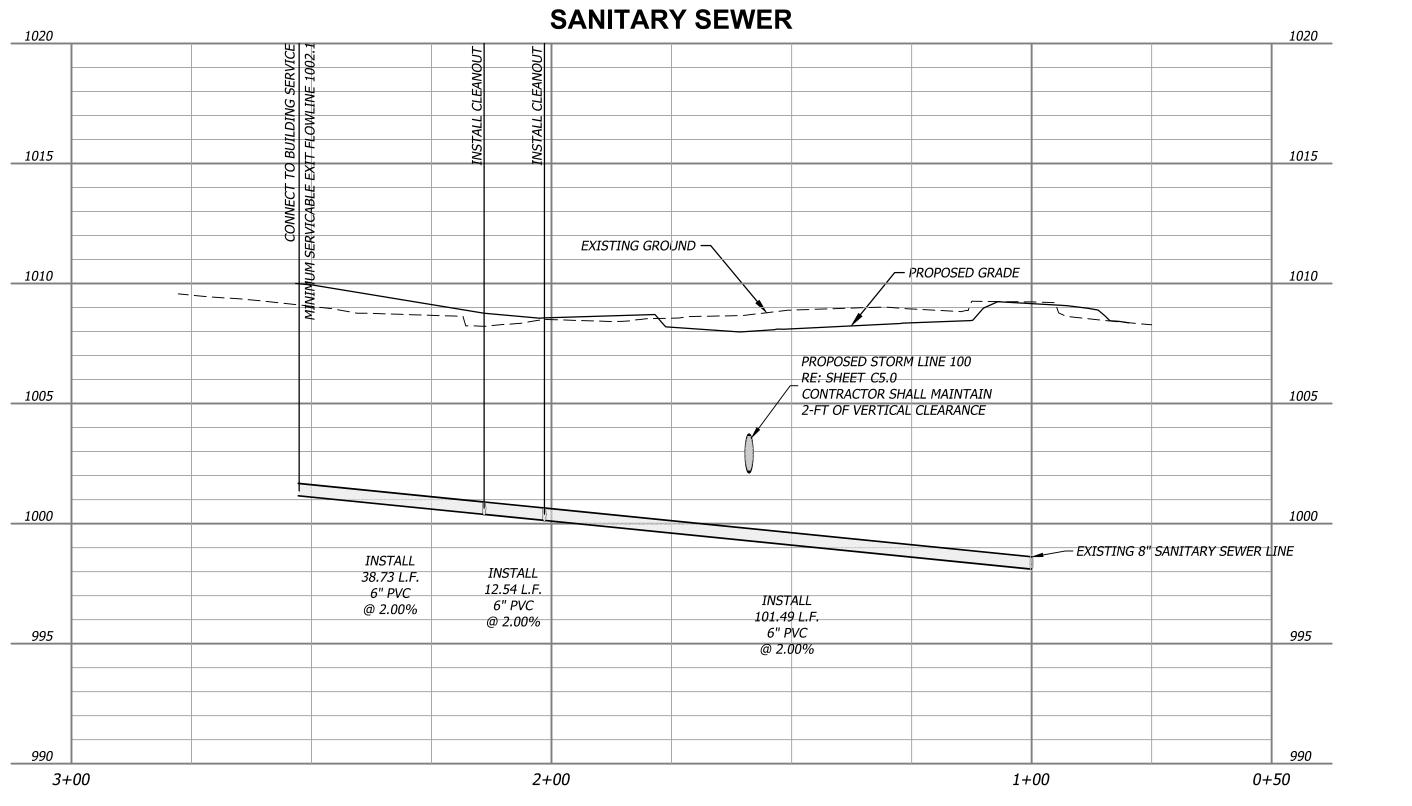
# **ROOF DRAIN LEGEND**

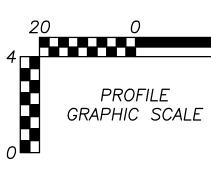
PROPOSED ROOF LINE DRAIN
PROPOSED STORM SEWER LINE
RIGHT-OF-WAY LINE
PROPERTY LINE
PROPOSED WATER LINE
PROPOSED SANITARY SEWER LINE
PROPOSED NATURAL GAS LINE

DEVELOPMENT. (DESIGN PENDING ACCEPTANCE OF FINAL STORMWATER REPORT BY THE CITY OF LEE'S







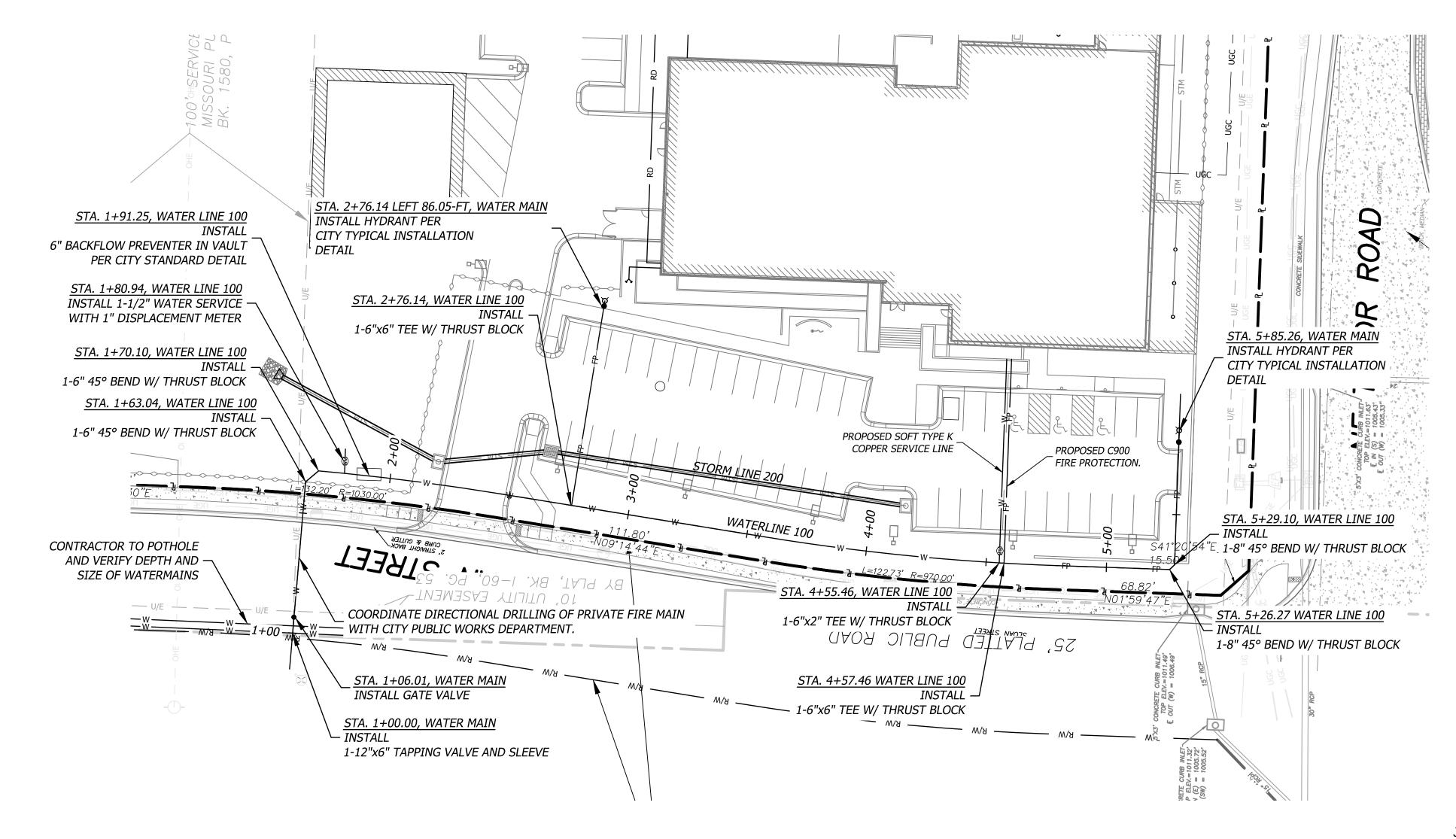


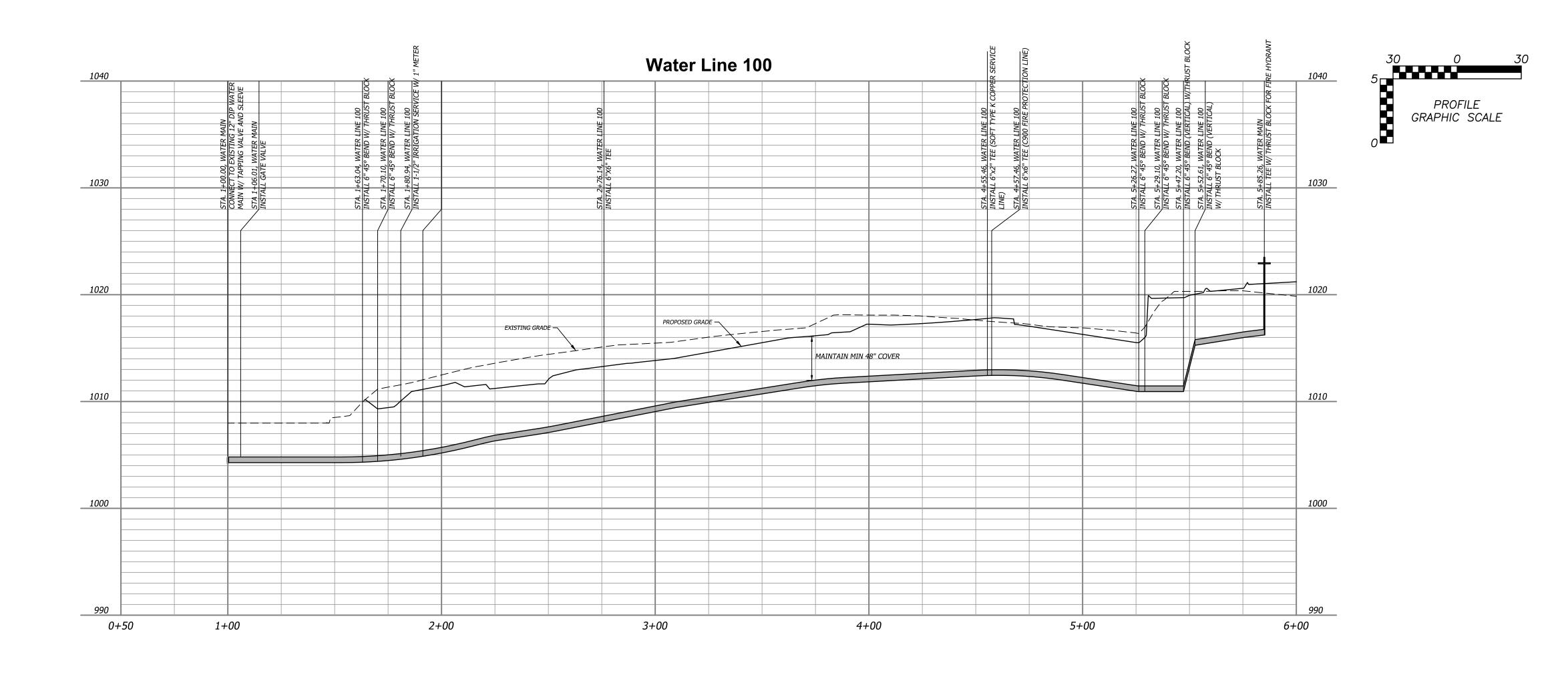
**STORM NOTE** All Northings, Eastings, and alignment stationing for storm structures are to center of structure unless stated otherwise.

# SANITARY PROFILE NOTE

SANITARY PROFILE IS BASED ON MINIMUM SERVICEABLE ELEVATION FOR EXIT OF BUILDING SERVICE. CONTRACTOR SHALL MAINTAIN FIELD REDLINES OF CONSTRUCTED ELEVATIONS.

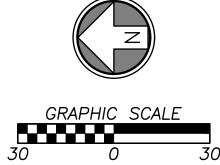


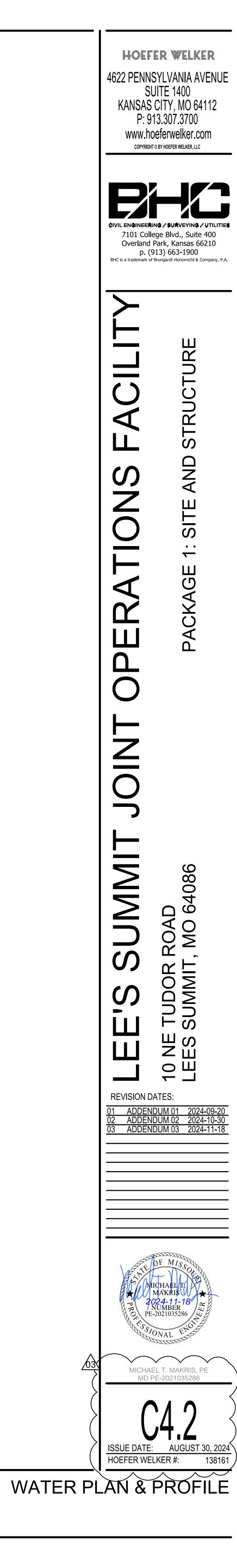


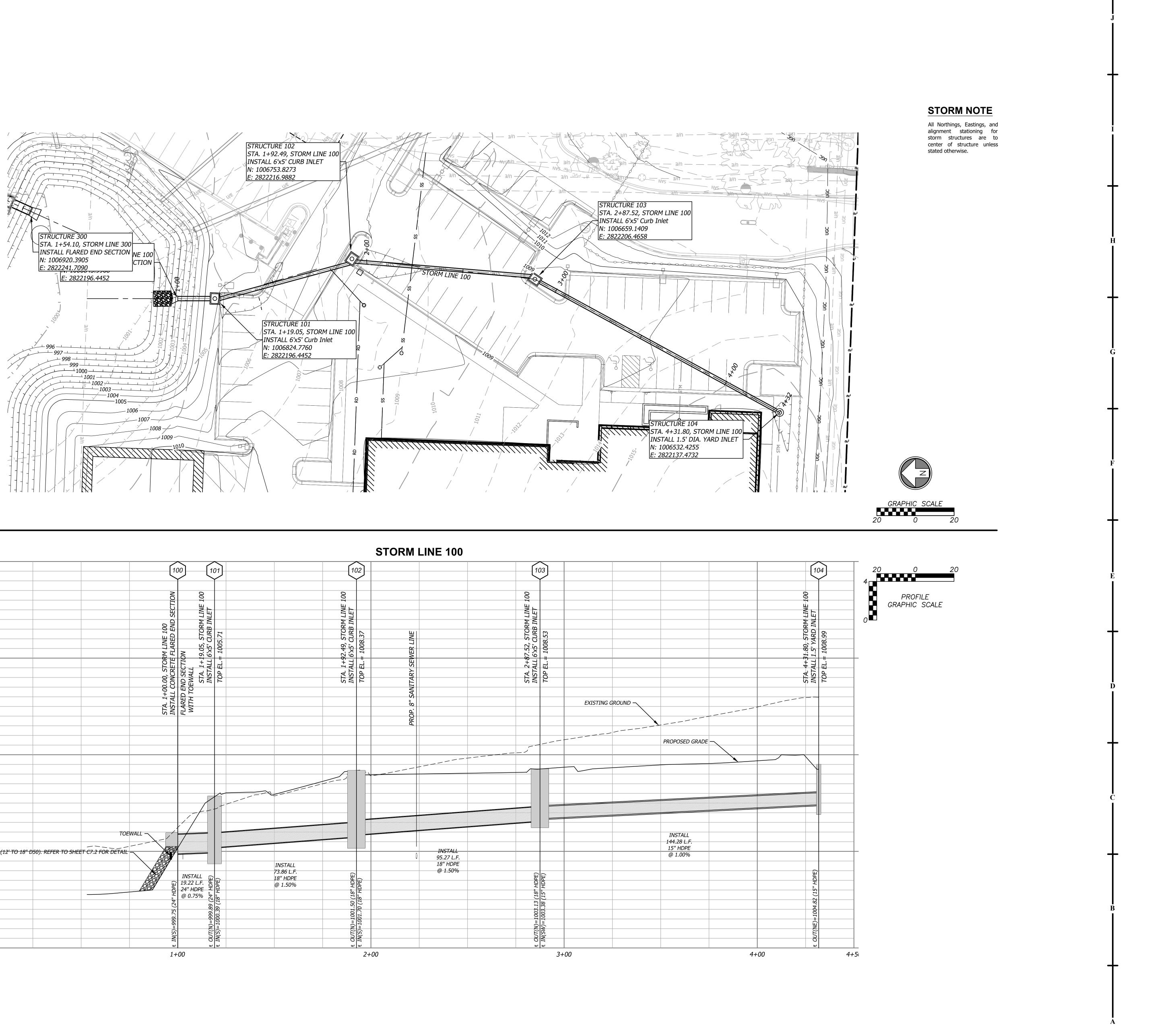


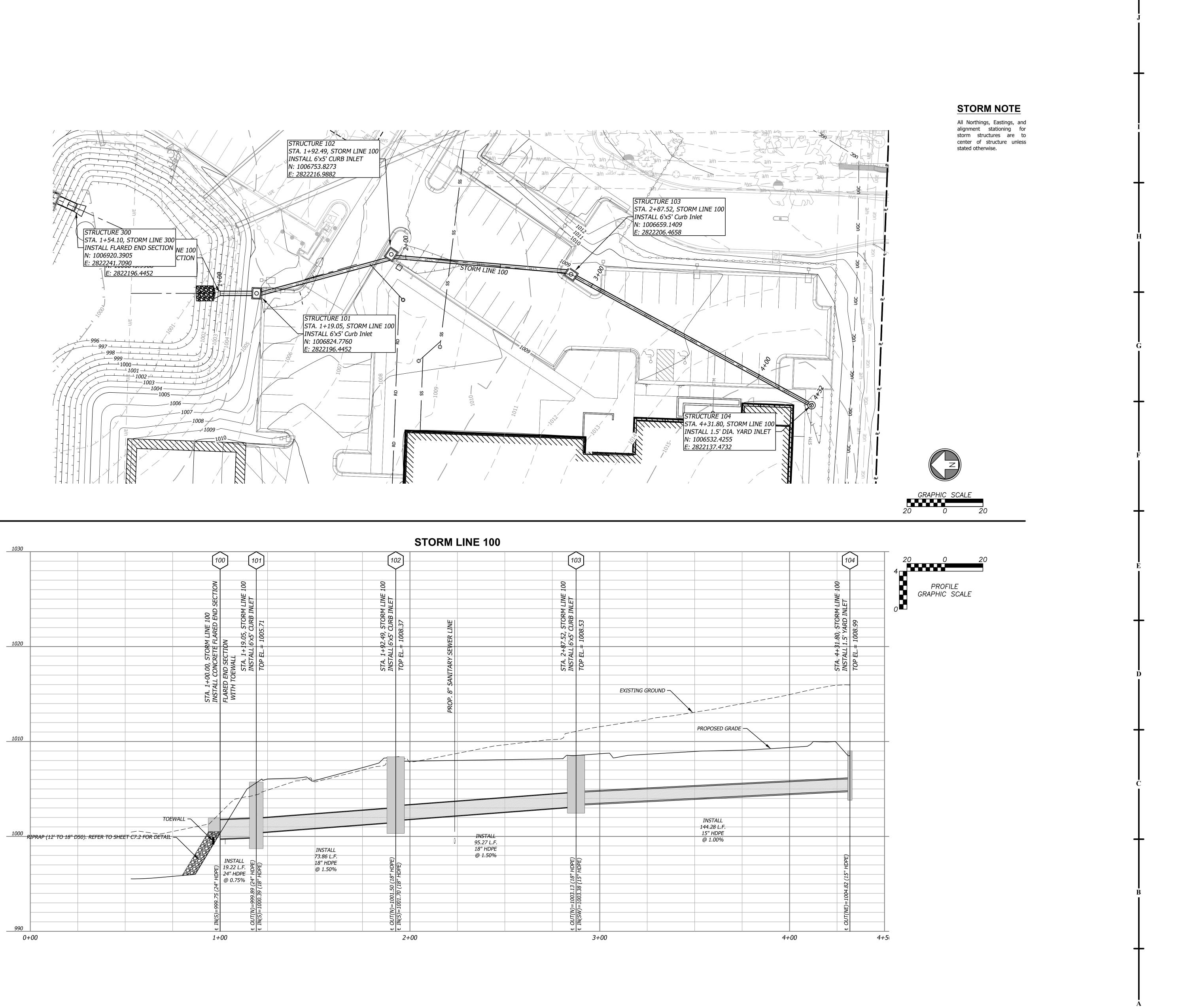
### **GENERAL NOTES:**

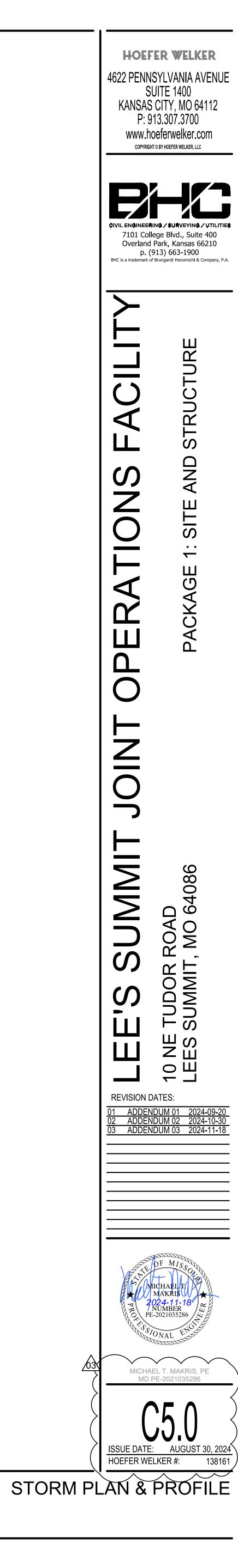
- All northings, eastings, and alignment stationing for pressure network are to center of pressure network fitting/appurtences unless stated otherwise.
- All DIP material shall be conforming to the current AWWA Specification C151, Class 50. Joints shall be mechanical or push on type.
- 3. Maintain a minimum of 18" vertical separation between waterline and storm sewer line.
- 4. All PVC pipe material shall be conforming to the current AWWA Specification C900, Class 150, DR 18.

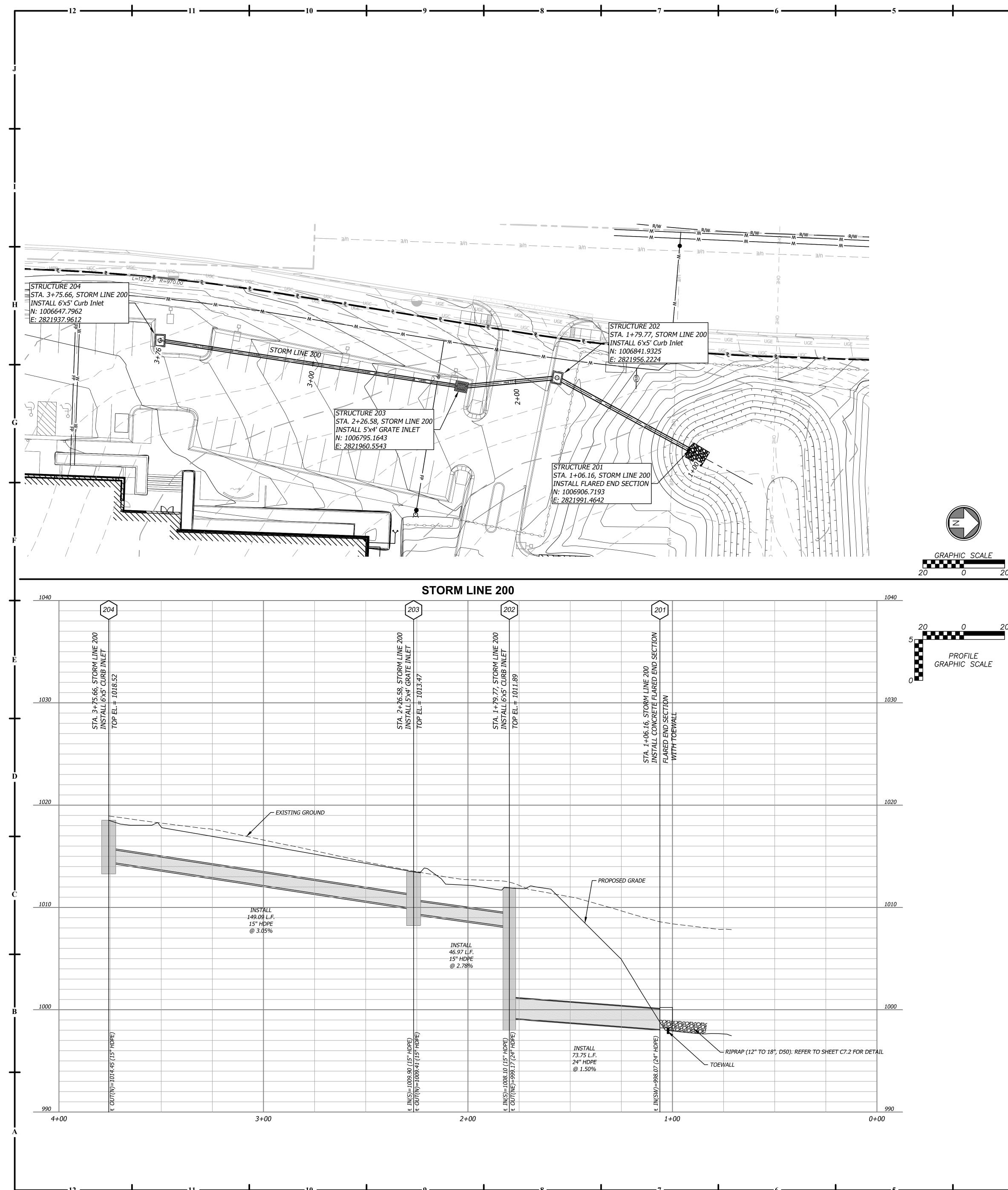










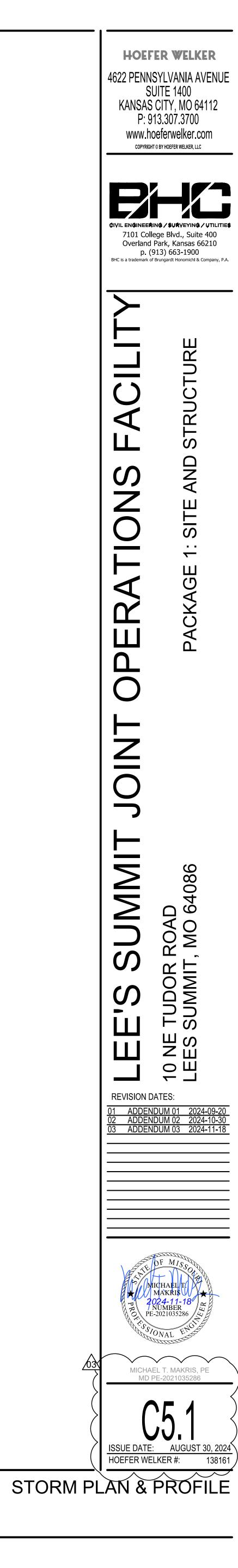


### **STORM NOTE**

All Northings, Eastings, and alignment stationing for storm structures are to center of structure unless stated otherwise.

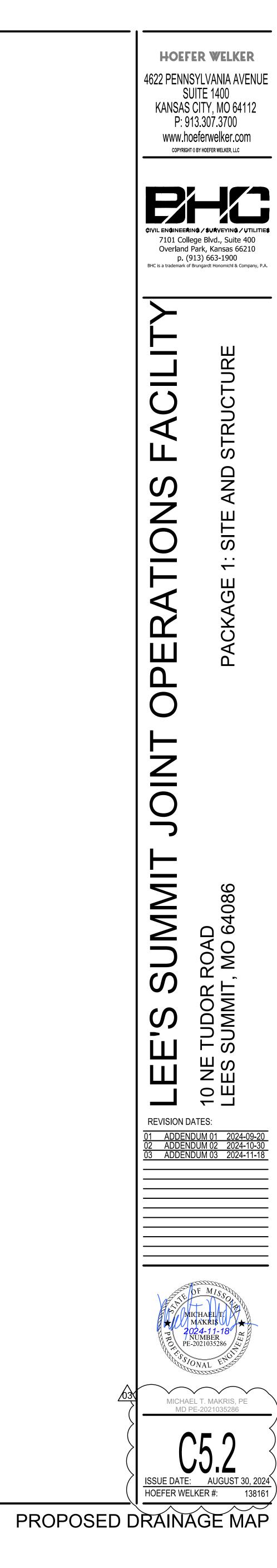








OPOSED DR. Basin ID	AINAGE AREAS AREA		PERVIOUS		IMPERVIOUS		
DA 01	14,027.98 SF	(0.32 ac)	13,507.96 SF	(0.31 ac)	520.02	SF	(0.01
DA 01A	23,076.92 SF	(0.53 ac)	5,036.67 SF	(0.12 ac)	18,040.25		(0.41
DA 02	7,299.46 SF	(0.17 ac)	396.70 SF	(0.01 ac)	6,902.76		(0.16
DA 03	14,552.08 SF	(0.33 ac)	3,086.00 SF	(0.07 ac)	11,466.08		(0.26
DA 04	1,957.19 SF	(0.04 ac)	254.42 SF	(0.01 ac)	1,702.77		(0.04
DA 05	22,611.15 SF	(0.52 ac)	6,936.70 SF	(0.16 ac)	15,674.45		(0.36
DA 05B	22,976.29 SF	(0.53 ac)	000.00 SF	(0.00 ac)	22,976.29		(0.53
DA 06	9,306.97 SF	(0.21 ac)	925.83 SF	(0.02 ac)	8,381.14		(0.19
DA 07	16,975.86 SF	(0.39 ac)	8,587.40 SF	(0.20 ac)	8,388.46		(0.19
DA 07A	970.05 SF	(0.02 ac)	970.05 SF	(0.02 ac)	000.00		(0.00
DA 08	352.15 SF	(0.01 ac)	352.15 SF	(0.01 ac)	000.00	SF	(0.00
DA 08A	19,121.21 SF	(0.44 ac)	4,941.76 SF	(0.11 ac)	14,179.45	SF	(0.33
DA 09	8,360.61 SF	(0.19 ac)	3,141.70 SF	(0.07 ac)	5,218.90	SF	(0.12
DA 10	21,721.11 SF	(0.50 ac)	21,110.87 SF	(0.48 ac)	610.24	SF	(0.01
DA 10A	2,957.19 SF	(0.07 ac)	2,957.19 SF	(0.07 ac)	000.00	SF	(0.00
DA 11	20,767.36 SF	(0.48 ac)	4,447.32 SF	(0.10 ac)	16,320.04	SF	(0.37
DA 12	36,472.72 SF	(0.84 ac)	2,383.86 SF	(0.05 ac)	34,088.86	SF	(0.78
DA 13	79,271.39 SF	(1.82 ac)	55,914.99 SF	(1.28 ac)	23,356.41	SF	(0.54
DA 13A	585.81 SF	(0.01 ac)	194.90 SF	(0.00 ac)	390.91	SF	(0.01
DA 14	23,415.46 SF	(0.54 ac)	1,575.29 SF	(0.04 ac)	21,840.17	SF	(0.50
DA 15	32,909.54 SF	(0.76 ac)	5,014.71 SF	(0.12 ac)	27,894.84	SF	(0.64
DA 16	12,282.50 SF	(0.28 ac)	4,615.27 SF	(0.11 ac)	7,667.23	SF	(0.18
DA 16A	641.15 SF	(0.01 ac)	452.19 SF	(0.01 ac)	188.96	SF	(0.00
DA 17	11,909.74 SF	(0.27 ac)	3,189.25 SF	(0.07 ac)	8,720.49	SF	(0.20
DA 18	21,451.70 SF	(0.49 ac)	12,963.09 SF	(0.30 ac)	8,488.61	SF	(0.19
DA 18A	3,825.88 SF	(0.09 ac)	2,920.72 SF	(0.07 ac)	905.16	SF	(0.02
DA 19	729.59 SF	(0.02 ac)	729.59 SF	(0.02 ac)	000.00	SF	(0.00
DA 19A	23,442.66 SF	(0.54 ac)	10,216.32 SF	(0.23 ac)	13,226.33	SF	(0.30
DA 20	3,384.09 SF	(0.08 ac)	573.85 SF	(0.01 ac)	2,810.23	SF	(0.06
DA 21	754.26 SF	(0.02 ac)	650.90 SF	(0.01 ac)	103.36	SF	(0.00
DA 21A	8,206.78 SF	(0.19 ac)	1,960.56 SF	(0.05 ac)	6,246.22	SF	(0.14
DA 22	101,945.41 SF	(2.34 ac)	36,942.36 SF	(0.85 ac)	65,003.06	SF	(1.49
DA 22A	274.53 SF	(0.01 ac)	274.53 SF	(0.01 ac)	000.00	SF	(0.00
DA 23	3,573.43 SF	(0.08 ac)	3,519.34 SF	(0.08 ac)	054.09	SF	(0.00
DA 23A	12,813.96 SF	(0.29 ac)	2,626.09 SF	(0.06 ac)	10,187.87	SF	(0.23
DA 24	247.27 SF	(0.01 ac)	039.97 SF	(0.00 ac)	207.29	SF	(0.00
DA 24A	12,671.21 SF	(0.29 ac)	2,758.35 SF	(0.06 ac)	9,912.86	SF	(0.23
DA 25	26,742.33 SF	(0.61 ac)	559.28 SF	(0.01 ac)	26,183.05	SF	(0.60
DA 26	8,119.49 SF	(0.19 ac)	145.86 SF	(0.00 ac)	7,973.63	SE	(0.18

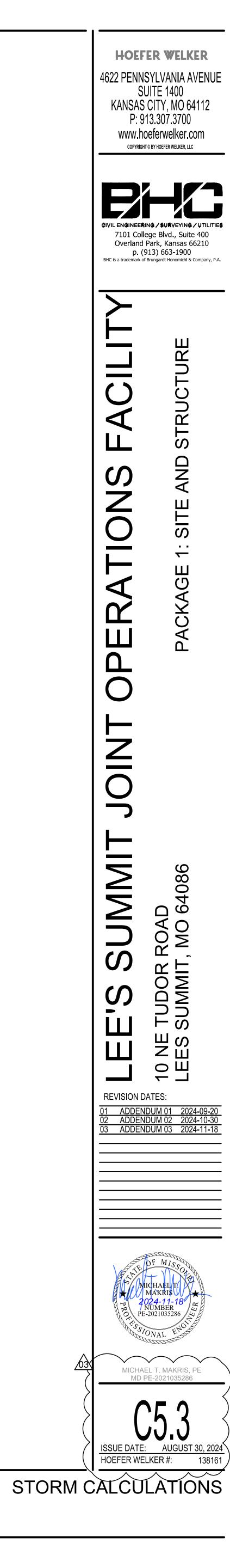


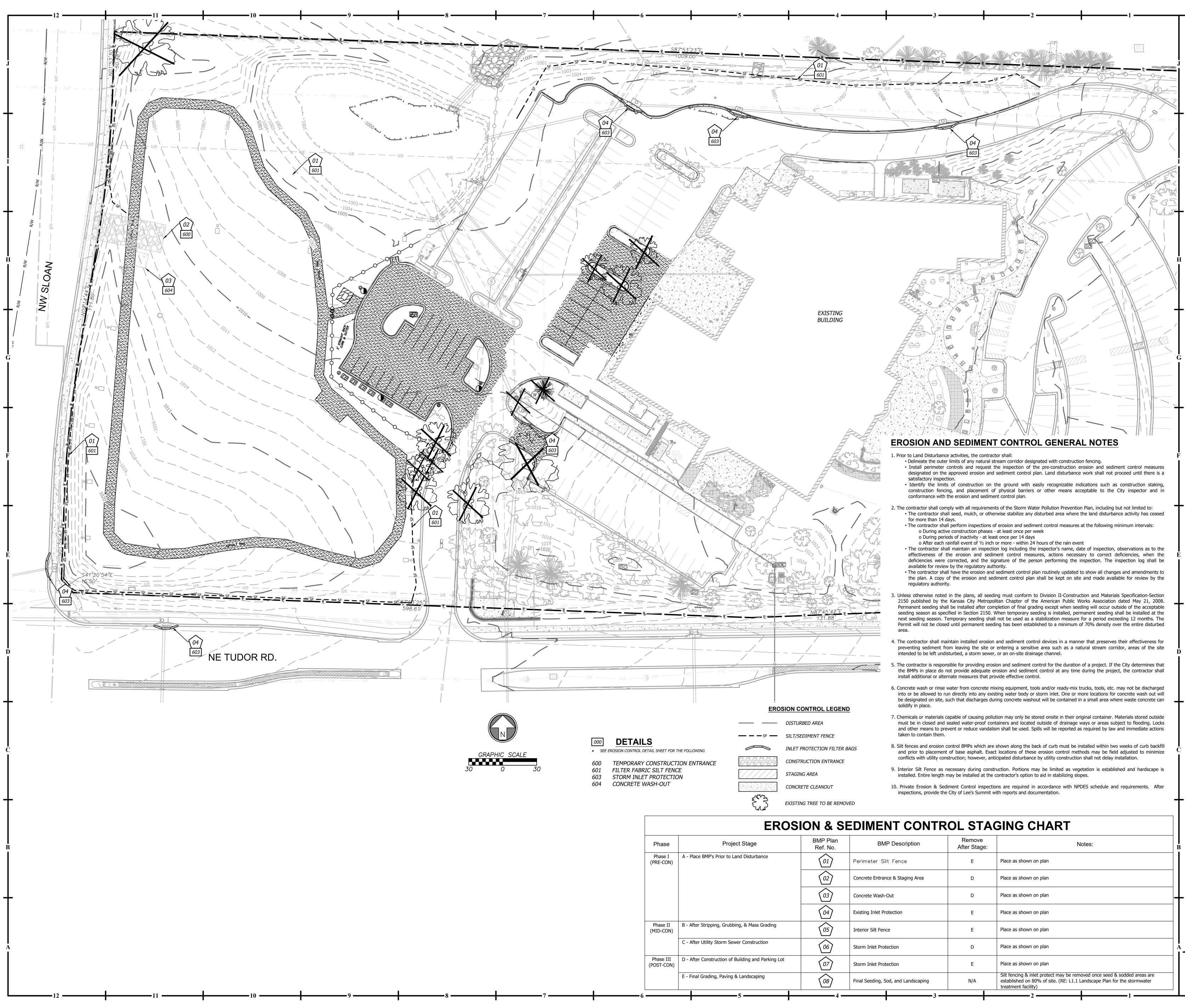
Desi	ign Storm:		10																										
	"K" Value:		1.00																										
	F" Factor:		1.00																										
Runoff Calculations														F	Pipe Properties												Design Ch	hecks	
			Cumul.				Runoff				Up	Up	Up									Drop					Pipe	Head-	
Inlet	Area	"C"	Area	Cumul.			То	Cumul.	Pipe	Pipe	Piped	Piped	Area	Up	Up	Down	Pipe	"n"	Pipe		Slope	In			Inlet	HGL	Depth	Water	
#	(acres)	Value	(acres)	CxA	Tc	Intensity	Inlet	Runoff	Cap.	Vel.	Inlets	Inlets	(acres)	CxA	Inlet	Inlet	Туре	Value	Size	Length	ı %	Inlet	FL Up	FL Down	Тор	Elev.	Check	Check	Station
LINE 100																									DS TAILWATER @ STR #	1002.75			
101	1.05	0.81	1.65	1.26	5.1	7.33	6.23	9.24	21.22	6.76			0.00	0.00	101		PEP	0.012	24	19.22	0.75	0.50	999.89	999.75	1005.71	1002.85	3.57	Ok	19.22
102	0.21	0.84	0.60	0.41	5.1	7.34	1.29	3.01	13.94	7.89			0.00	0.00	102	101	PEP	0.012	18	10.00	1.50	0.50	1000.54	1000.39	1008.37	1002.88	5.58	Ok	29.22
103	0.20	0.60	0.39	0.23	5.0	7.34	0.88	1.72	13.94	7.89			0.00	0.00	103	102	PEP	0.012	18	10.00	1.50	0.50	1001.19	1001.04	1008.53	1002.89	5.34	Ok	39.22
104	0.19	0.60	0.19	0.11	5.0	7.35	0.84	0.84	7.00	5.70			0.00	0.00	104	103	PEP	0.012	15	10.00	1.00	N/A	1001.79	1001.69	1008.99	1002.89	5.70	Ok	49.22
LINE 200																									DS TAILWATER @ STR #	1002.75			
201	0.04	0.82	0.54	0.43	5.6	7.18	0.24	3.12	30.02	9.55			0.00	0.00	201		PEP	0.012	24	73.75	1.50	0.75	999.18	998.07	1011.89	1002.77	10.46	Ok	73.75
202	0.33	0.77	0.50	0.40	5.4	7.22	1.83	2.90	7.00	5.70			0.00	0.00	202	201	PEP	0.012	15	46.97	1.00	0.50	1000.40	999.93	1013.47	1002.90	11.07	Ok	120.72
203	0.17	0.87	0.17	0.15	5.0	7.35	1.09	1.09	7.00	5.70			0.00	0.00	203	202	PEP	0.012	15	149.09	1.00	N/A	1002.39	1000.90	1018.52	1002.94	14.63	Ok	269.81

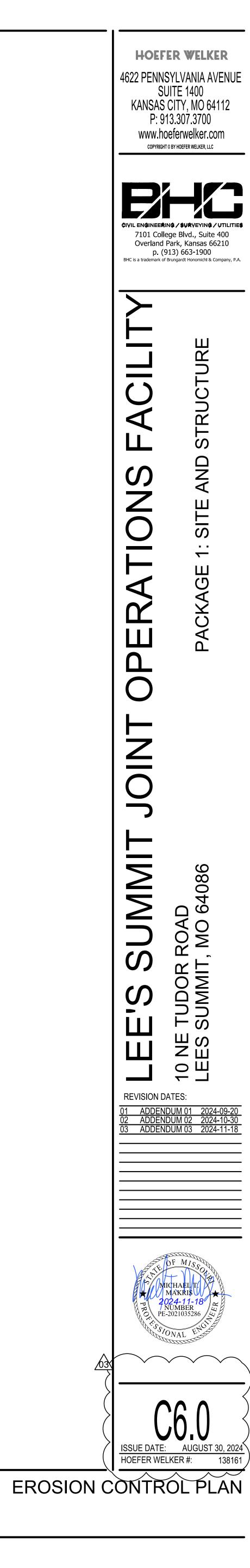
Des	ion Storm:		100																							
	"K" Value:		1.25																							
	'F" Factor:		1.00																							
Runoff Calculations															Pipe Properties											
			Cumul.				Runoff				Up	Up	Up									Drop				
Inlet	Area	"C"	Area	Cumul.			То	Cumul.	Pipe	Pipe	Piped	Piped	Area	Up	Up	Down	Pipe	"n"	Pipe		Slope	In			Inlet	HGL
#	(acres)	Value	(acres)	CxA	Тс	Intensity	Inlet	Runoff	Cap.	Vel.	Inlets	Inlets	(acres)	CxA	Inlet	Inlet	Туре	Value	Size	Length	%	Inlet	FL Up	FL Down	Тор	Elev.
LINE 100																									DS TAILWATER @ STR #	1002.75
101	1.05	0.81	1.65	1.26	5.1	10.29	10.94	16.22	21.22	6.76			0.00	0.00	101		PEP	0.012	24	19.22	0.75	0.50	999.89	999.75	1005.71	1003.05
102	0.21	0.84	0.60	0.41	5.1	10.30	2.27	5.28	13.94	7.89			0.00	0.00	102	101	PEP	0.012	18	10.00	1.50	0.50	1000.54	1000.39	1008.37	1003.14
103	0.20	0.60	0.39	0.23	5.0	10.31	1.55	3.02	13.94	7.89			0.00	0.00	103	102	PEP	0.012	18	10.00	1.50	0.50	1001.19	1001.04	1008.53	1003.17
104	0.19	0.60	0.19	0.11	5.0	10.32	1.47	1.47	7.00	5.70			0.00	0.00	104	103	PEP	0.012	15	10.00	1.00	N/A	1001.79	1001.69	1008.99	1003.18
LINE 200																									DS TAILWATER @ STR #	1002.75
201	0.04	0.82	0.54	0.43	5.6	10.09	0.41	5.48	30.02	9.55			0.00	0.00	201		PEP	0.012	24	73.75	1.50	0.75	999.18	998.07	1011.89	1002.81
202	0.33	0.77	0.50	0.40	5.4	10.14	3.22	5.10	7.00	5.70			0.00	0.00	202	201	PEP	0.012	15	46.97	1.00	0.50	1000.40	999.93	1013.47	1003.20
203	0.17	0.87	0.17	0.15	5.0		1.91	1.91	7.00	5.70			0.00	0.00	203	202	PEP	0.012	15	149.09		N/A	1002.39	1000.90	1018.52	1003.32

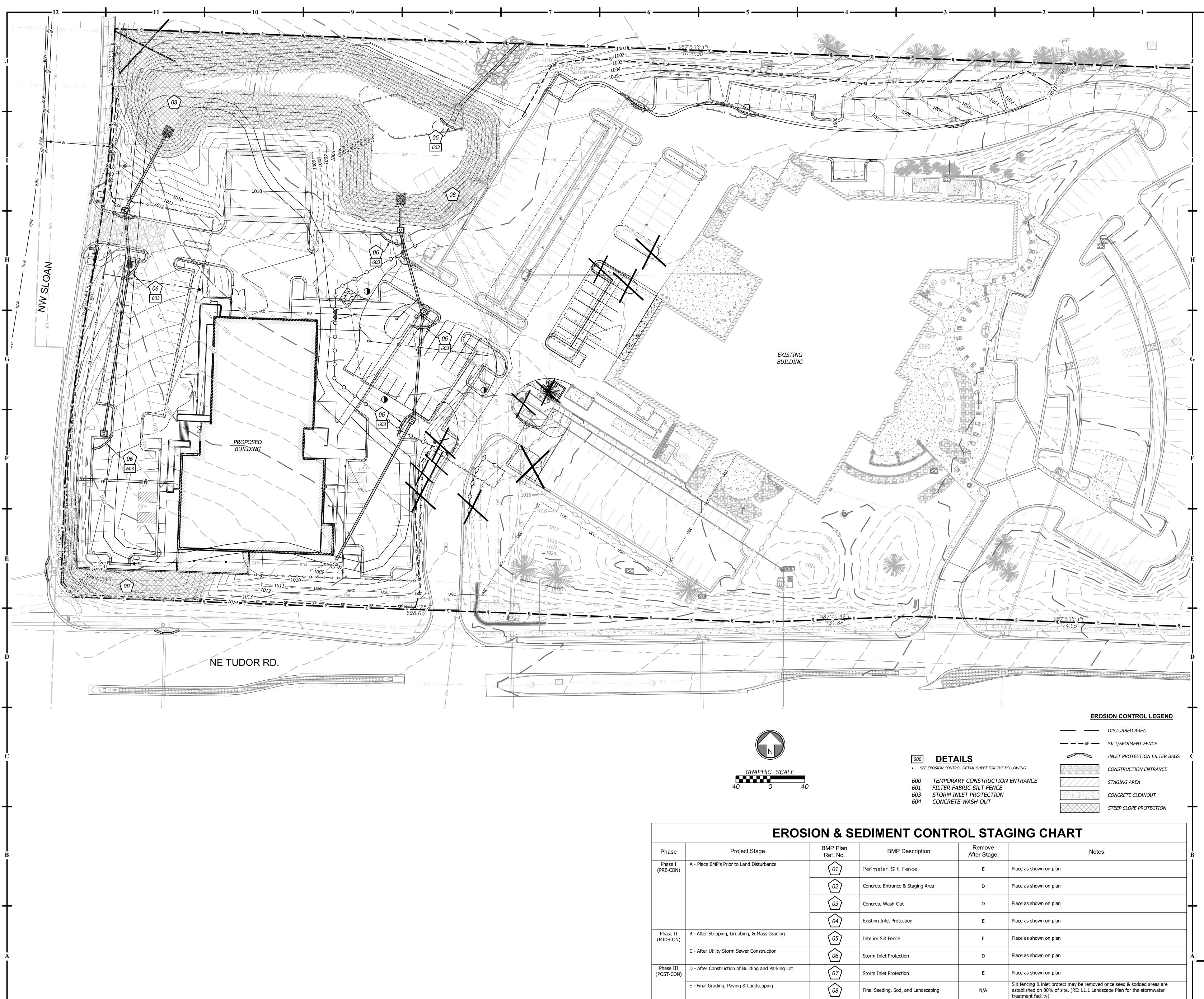
## **10-YEAR STORM CALCULATIONS**

# **100-YEAR STORM CALCULATIONS**

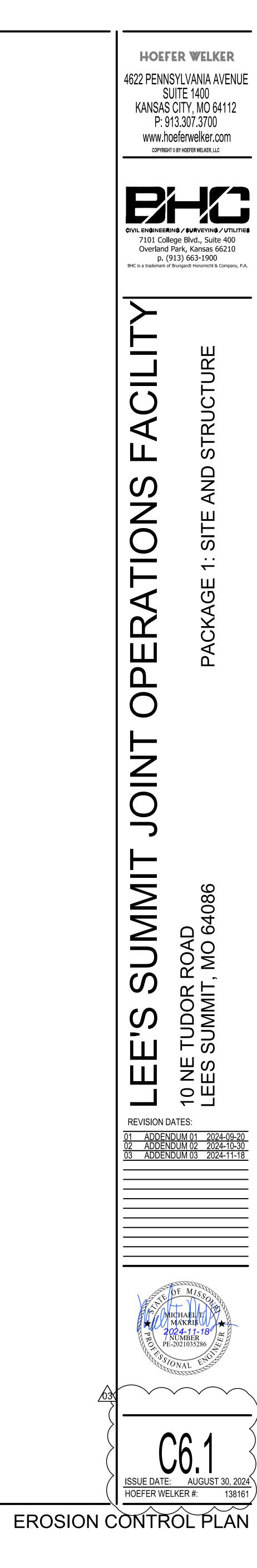


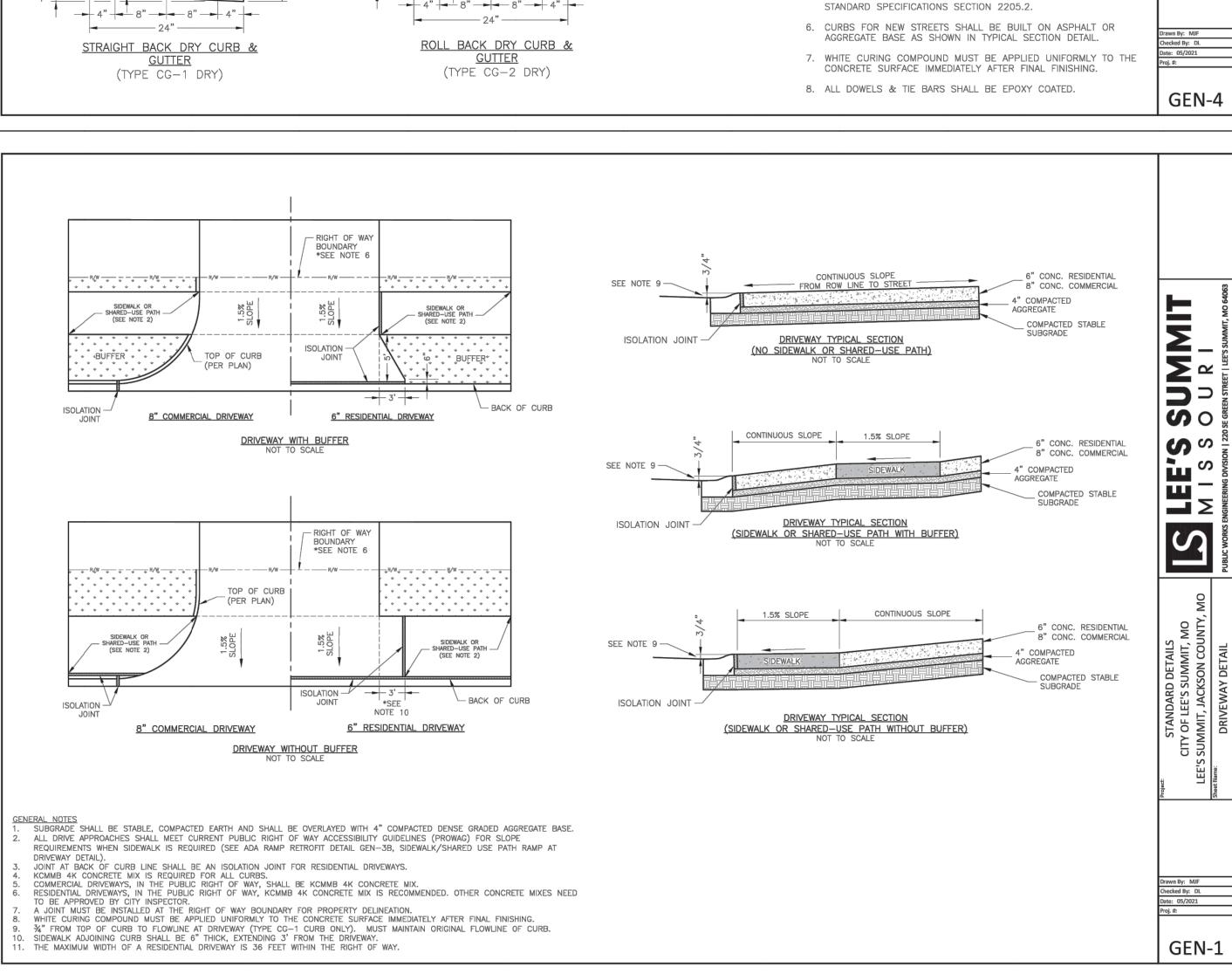


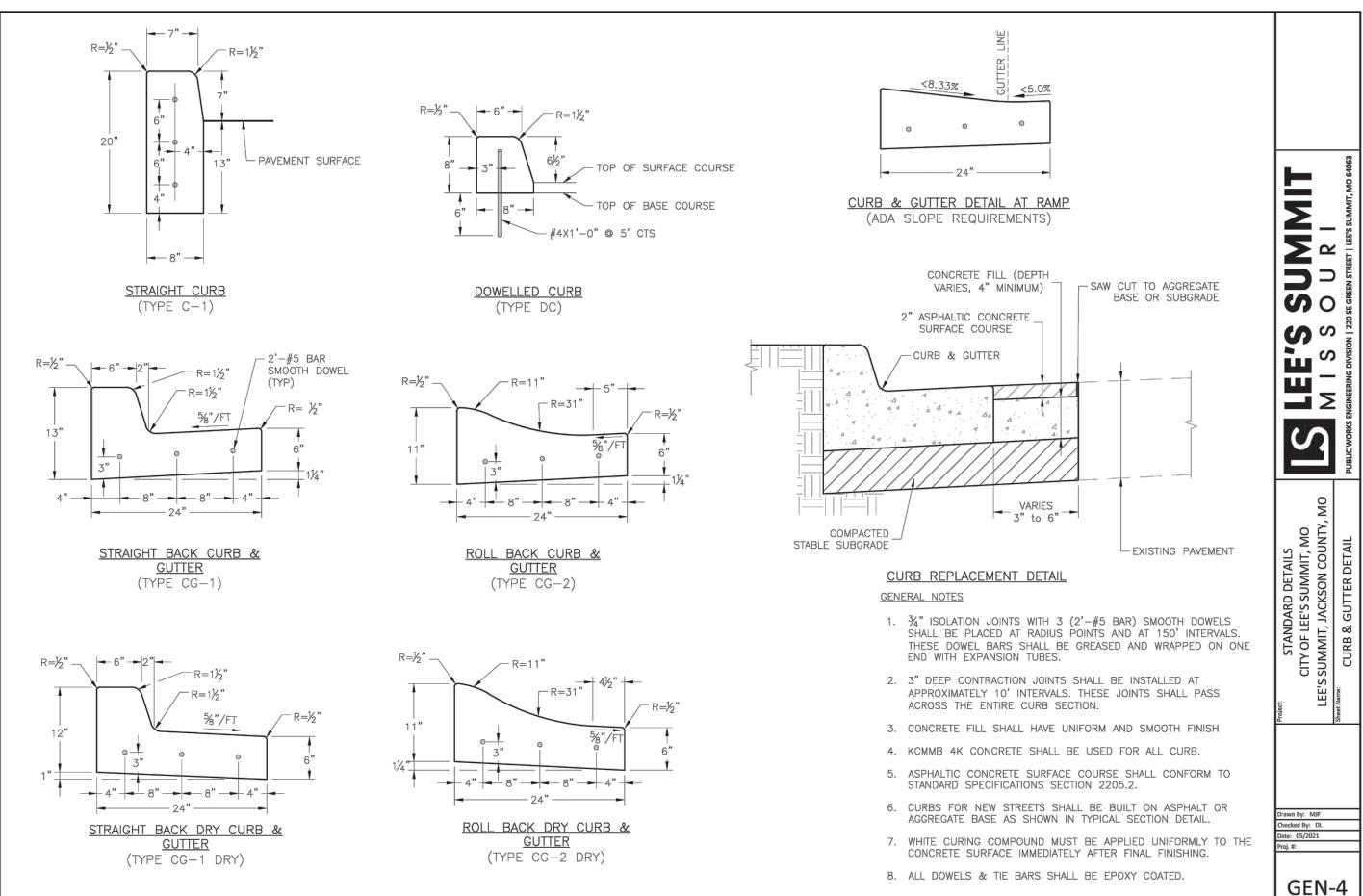


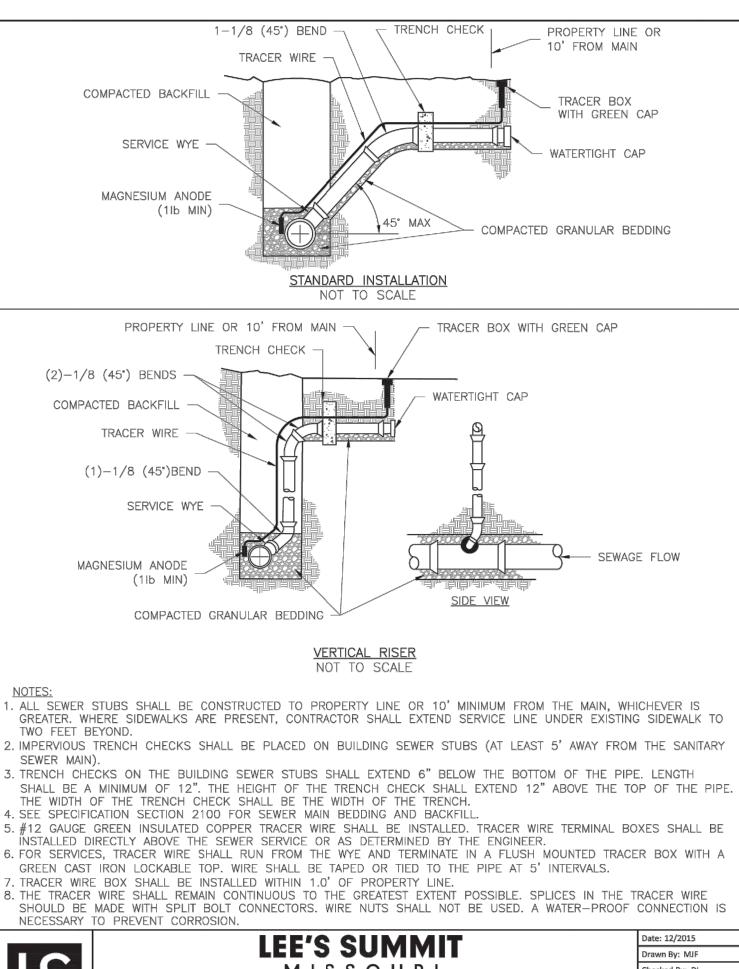


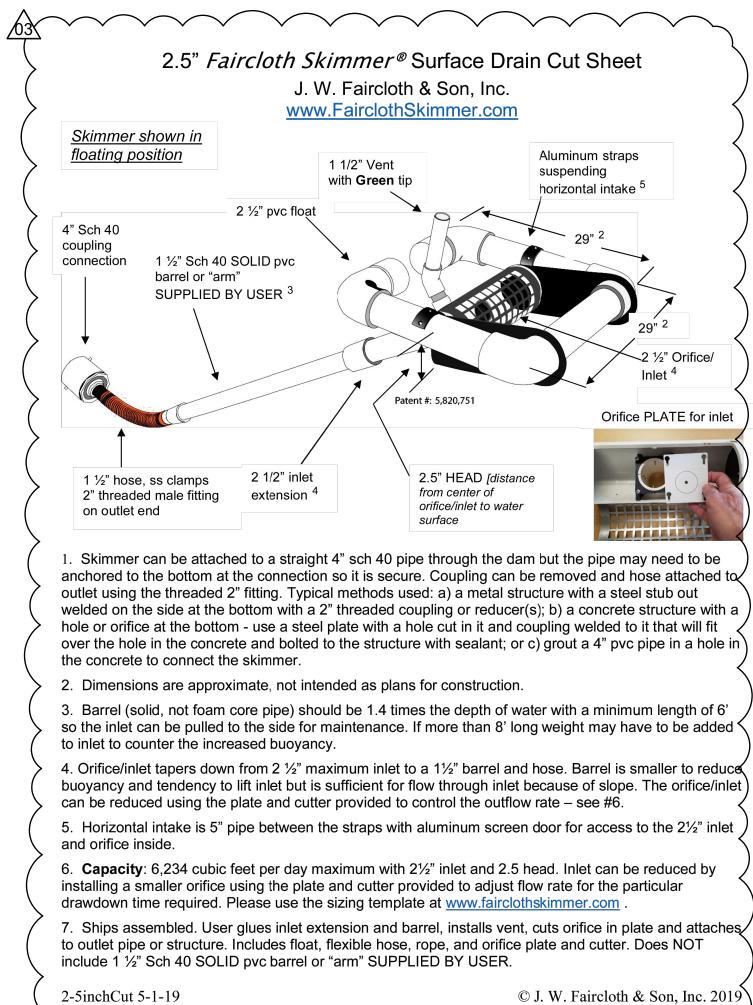
	EROS	SION & SE
Phase	Project Stage	BMP Plan Ref. No.
Phase I (PRE-CON)	A - Place BMP's Prior to Land Disturbance	01
		02
		03
		04
Phase II (MID-CON)	B - After Stripping, Grubbing, & Mass Grading	05
	C - After Utility Storm Sewer Construction	06
Phase III (POST-CON)	D - After Construction of Building and Parking Lot	07
	E - Final Grading, Paving & Landscaping	08
	5	4



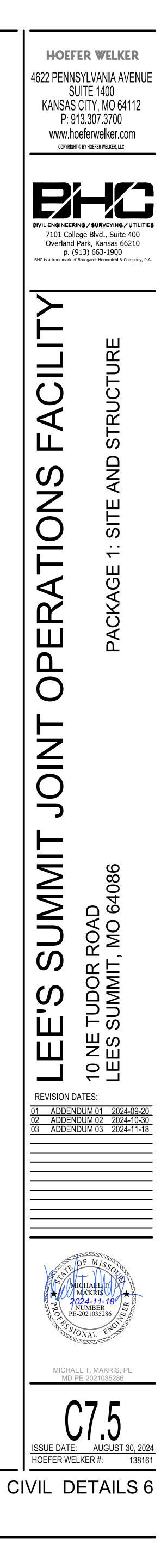


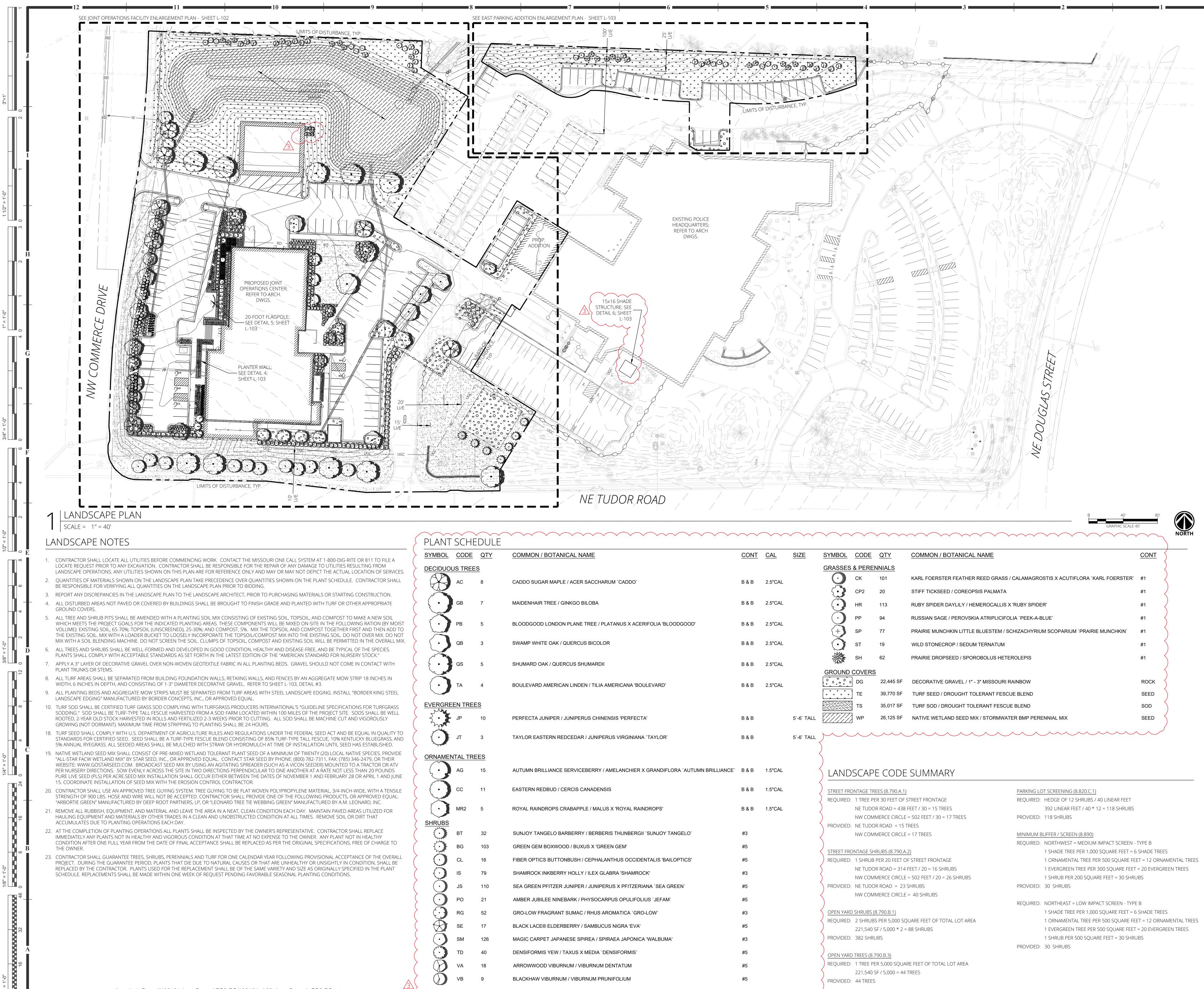






DRROSION.			
LEE'S SUMMIT	Date: 12/2015		
LEE 5 SUIVIIVIII	Drawn By: MJF		
MISSOURI	Checked By: DL		
PUBLIC WORKS ENGINEERING DIVISION   220 SE GREEN STREET   LEE'S SUMMIT, MO 64063			
SANITARY SEWER STUB DETAIL	SAN-1		

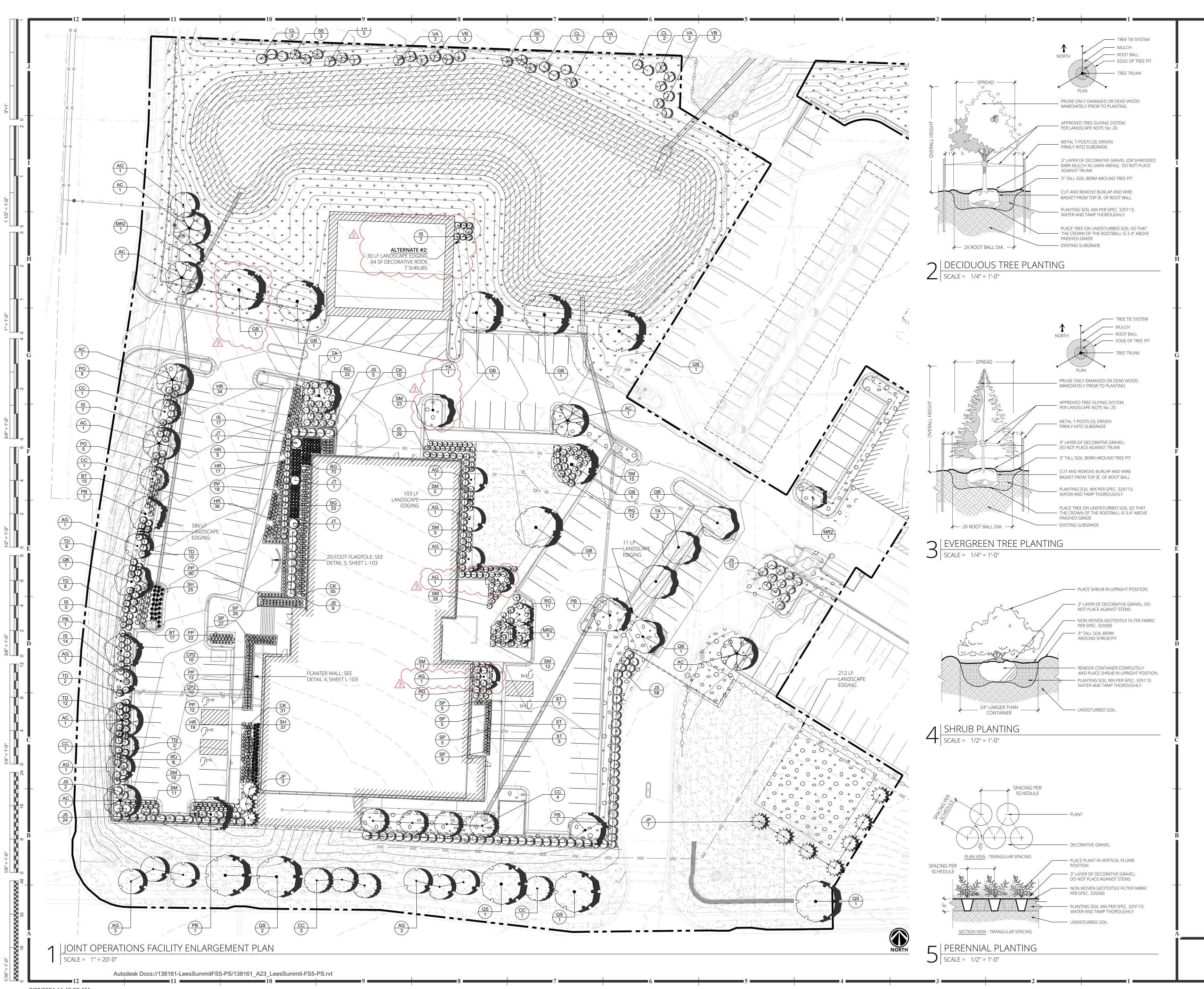




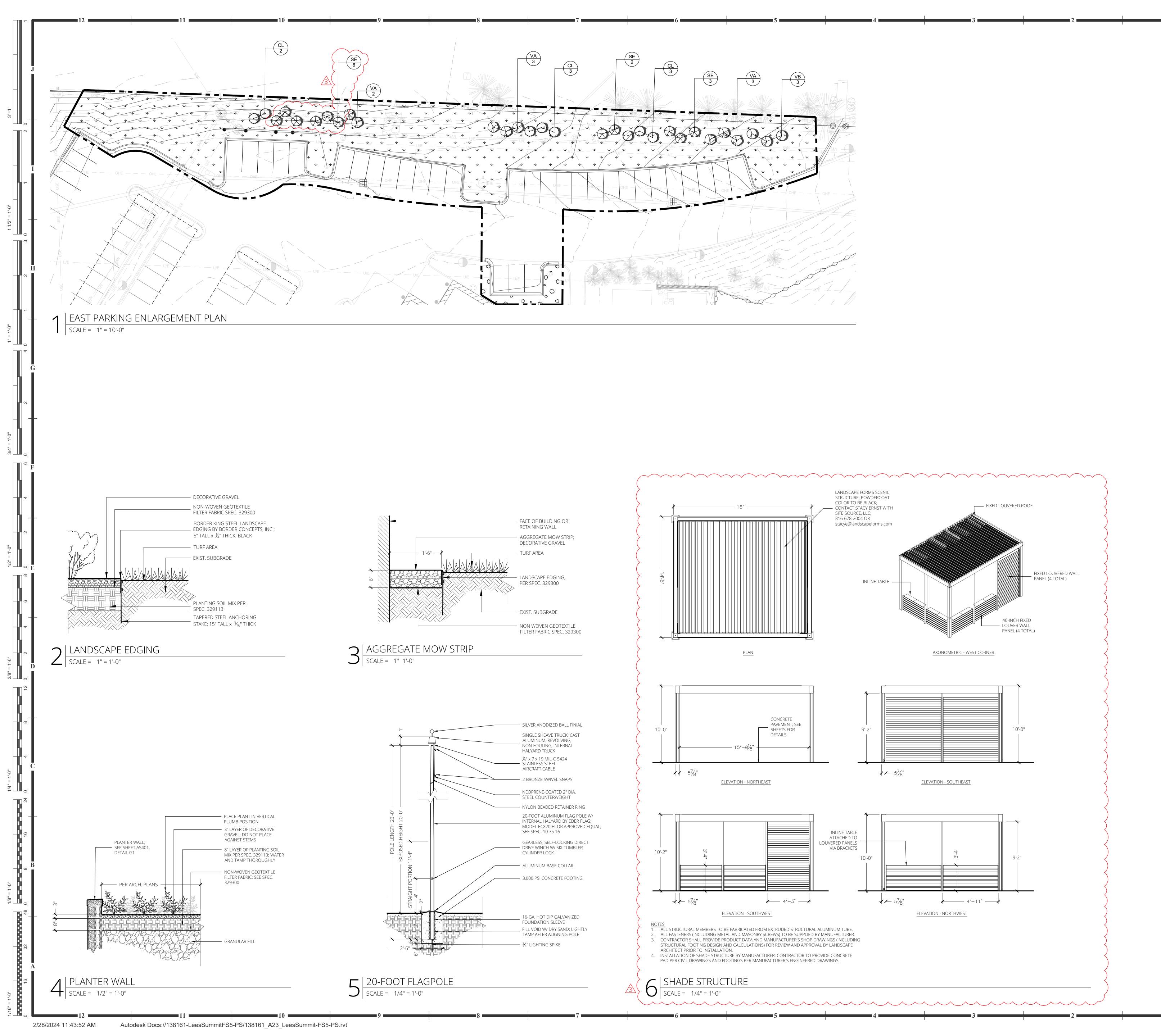
PLANT Symbol	CODE	QTY	COMMON / BOTANICAL NAME	CONT	CAL	SIZE	SYMBOL	С
DECIDUO				<u></u>	<u></u>		GRASSES	
	AC	8	CADDO SUGAR MAPLE / ACER SACCHARUM `CADDO`	B & B	2.5"CAL		NUNUVUGUAU	C
	GB	7	MAIDENHAIR TREE / GINKGO BILOBA	B & B	2.5"CAL		$\mathbf{\tilde{\mathbf{O}}}$	н
$\bigcirc$	РВ	5	BLOODGOOD LONDON PLANE TREE / PLATANUS X ACERIFOLIA 'BLOODGOOD'	B & B	2.5"CAL		$(\cdot)$	P S
$\odot$	QB	3	SWAMP WHITE OAK / QUERCUS BICOLOR	B & B	2.5"CAL			S
	QS	5	SHUMARD OAK / QUERCUS SHUMARDII	B & B	2.5"CAL		GROUND	s 
$\bigcirc$	ТА	4	BOULEVARD AMERICAN LINDEN / TILIA AMERICANA 'BOULEVARD'	B & B	2.5"CAL			] כ ] ו
EVERGRE	EN TREE	<u>ES</u>						ן ד
	JP	10	PERFECTA JUNIPER / JUNIPERUS CHINENSIS 'PERFECTA'	B & B		5`-6` TALL		] v
$\bigcirc$	JT	3	TAYLOR EASTERN REDCEDAR / JUNIPERUS VIRGINIANA `TAYLOR`	B & B		5`-6` TALL		<u></u>
	ITAL TRE	EES				<		
$\odot$	AG	15	AUTUMN BRILLIANCE SERVICEBERRY / AMELANCHIER X GRANDIFLORA `AUTUMN BRILLIANCE`	B & B	1.5"CAL	<		)S
$(\cdot)$	СС	11	EASTERN REDBUD / CERCIS CANADENSIS	B & B	1.5"CAL	<	STREET FRO	
	MR2	5	ROYAL RAINDROPS CRABAPPLE / MALUS X 'ROYAL RAINDROPS'	B & B	1.5"CAL	<	)	N N
SHRUBS	BT	32	SUNJOY TANGELO BARBERRY / BERBERIS THUNBERGII `SUNJOY TANGELO`	#3		•	PROVIDED:	: N N
ີງໝີ {•••	BG	103	GREEN GEM BOXWOOD / BUXUS X 'GREEN GEM'	#5			Ś	
$\overline{\mathbf{O}}$	CL	16	FIBER OPTICS BUTTONBUSH / CEPHALANTHUS OCCIDENTALIS 'BAILOPTICS'	#5		•	REQUIRED:	
ă	IS	79	SHAMROCK INKBERRY HOLLY / ILEX GLABRA 'SHAMROCK'	#3		•	Ś	N
$\overline{\mathbf{\cdot}}$	JS	110	SEA GREEN PFITZER JUNIPER / JUNIPERUS X PFITZERIANA `SEA GREEN`	#5				N : N
$\tilde{(\cdot)}$	PO	21	AMBER JUBILEE NINEBARK / PHYSOCARPUS OPULIFOLIUS `JEFAM`	#5			$\langle $	Ν
	RG	52	GRO-LOW FRAGRANT SUMAC / RHUS AROMATICA `GRO-LOW`	#3				D Sł
$\mathbf{A}$	SE	17	BLACK LACE® ELDERBERRY / SAMBUCUS NIGRA 'EVA'	#5				
$\overline{\mathbf{\cdot}}$	SM	126	MAGIC CARPET JAPANESE SPIREA / SPIRAEA JAPONICA 'WALBUMA'	#3			PROVIDED:	2: : 3
	TD	40	DENSIFORMIS YEW / TAXUS X MEDIA `DENSIFORMIS`	#5				
	VA	18	ARROWWOOD VIBURNUM / VIBURNUM DENTATUM	#5			COPEN YARE REQUIRED:	
$\sim$	VB	9	BLACKHAW VIBURNUM / VIBURNUM PRUNIFOLIUM	#5			PROVIDED:	2
V4								. 4

NTAGE TREES (8.790.A.1)	PARKING LOT SCREENING (8.820.C.1)
1 TREE PER 30 FEET OF STREET FRONTAGE	REQUIRED: HEDGE OF 12 SHRUBS / 40 LINEAR FEET
NE TUDOR ROAD = 438 FEET / 30 = 15 TREES	392 LINEAR FEET / 40 * 12 = 118 SHRUBS
NW COMMERCE CIRCLE = 502 FEET / 30 = 17 TREES	PROVIDED: 118 SHRUBS
NE TUDOR ROAD = 15 TREES	
NW COMMERCE CIRCLE = 17 TREES	MINIMUM BUFFER / SCREEN (8.890)
	REQUIRED: NORTHWEST = MEDIUM IMPACT SCREEN - TYPE B
NTAGE SHRUBS (8.790.A.2)	1 SHADE TREE PER 1,000 SQUARE FEET = 6 SHADE TREES
1 SHRUB PER 20 FEET OF STREET FRONTAGE	1 ORNAMENTAL TREE PER 500 SQUARE FEET = 12 ORNAMENTAL TREES
NE TUDOR ROAD = 314 FEET / 20 = 16 SHRUBS	1 EVERGREEN TREE PER 300 SQUARE FEET = 20 EVERGREEN TREES
NW COMMERCE CIRCLE = 502 FEET / 20 = 26 SHRUBS	1 SHRUB PER 200 SQUARE FEET = 30 SHRUBS
NE TUDOR ROAD = 23 SHRUBS	PROVIDED: 30 SHRUBS
NW COMMERCE CIRCLE = 40 SHRUBS	
	REQUIRED: NORTHEAST = LOW IMPACT SCREEN - TYPE B
SHRUBS (8.790.B.1)	1 SHADE TREE PER 1,000 SQUARE FEET = 6 SHADE TREES
2 SHRUBS PER 5,000 SQUARE FEET OF TOTAL LOT AREA	1 ORNAMENTAL TREE PER 500 SQUARE FEET = 12 ORNAMENTAL TREES
221,540 SF / 5,000 * 2 = 88 SHRUBS	1 EVERGREEN TREE PER 500 SQUARE FEET = 20 EVERGREEN TREES
382 SHRUBS	1 SHRUB PER 500 SQUARE FEET = 30 SHRUBS
	PROVIDED: 30 SHRUBS
TREES (8.790.B.3)	
1 TREE PER 5,000 SQUARE FEET OF TOTAL LOT AREA	
221 540 SE / 5 000 = 44 TREES	

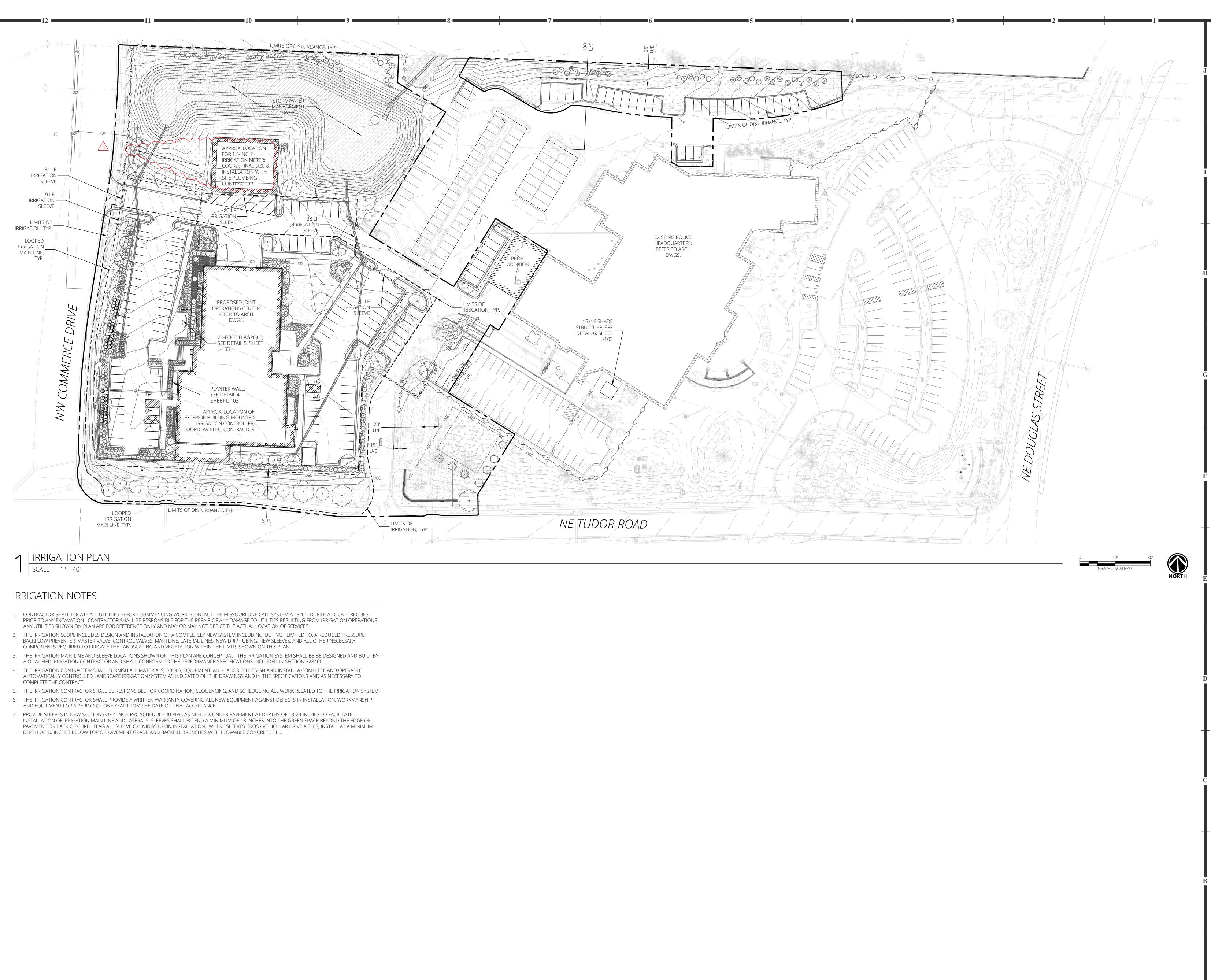
**HOEFER WELKER** 4622 PENNSYLVANIA AVENUE SUITE 1400 KANSAS CITY, MO 64112 P: 913.307.3700 www.hoeterwelker.com COPYRIGHT © BY HOEFER WELKER, LLC landworks STUDIO Landscape Architecture + Planning 102 S. Cherry St., Olathe KS, 66061 913-780-6707 www.landworksstudio.com S NOI. ONS N N N ΞH  $\sim$   $\square$ **REVISION DATES:** 3 ADDENDUM #3 11/18/24 LK-1999137914 PROFESSIONAL SEAL ISSUE DATE: OCT. 11, 2024 HOEFER WELKER #: 138191 LANDSCAPE PLAN



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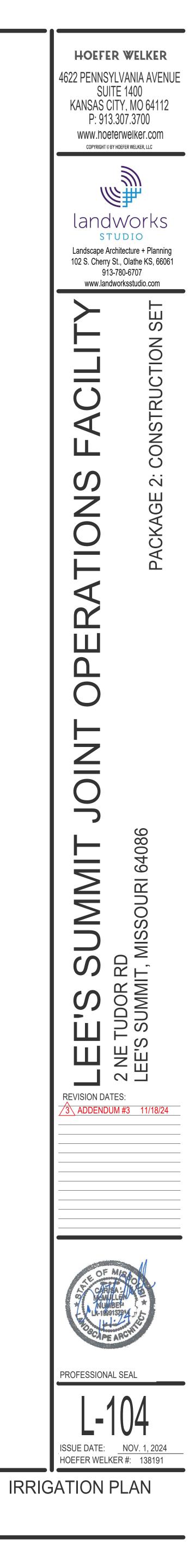


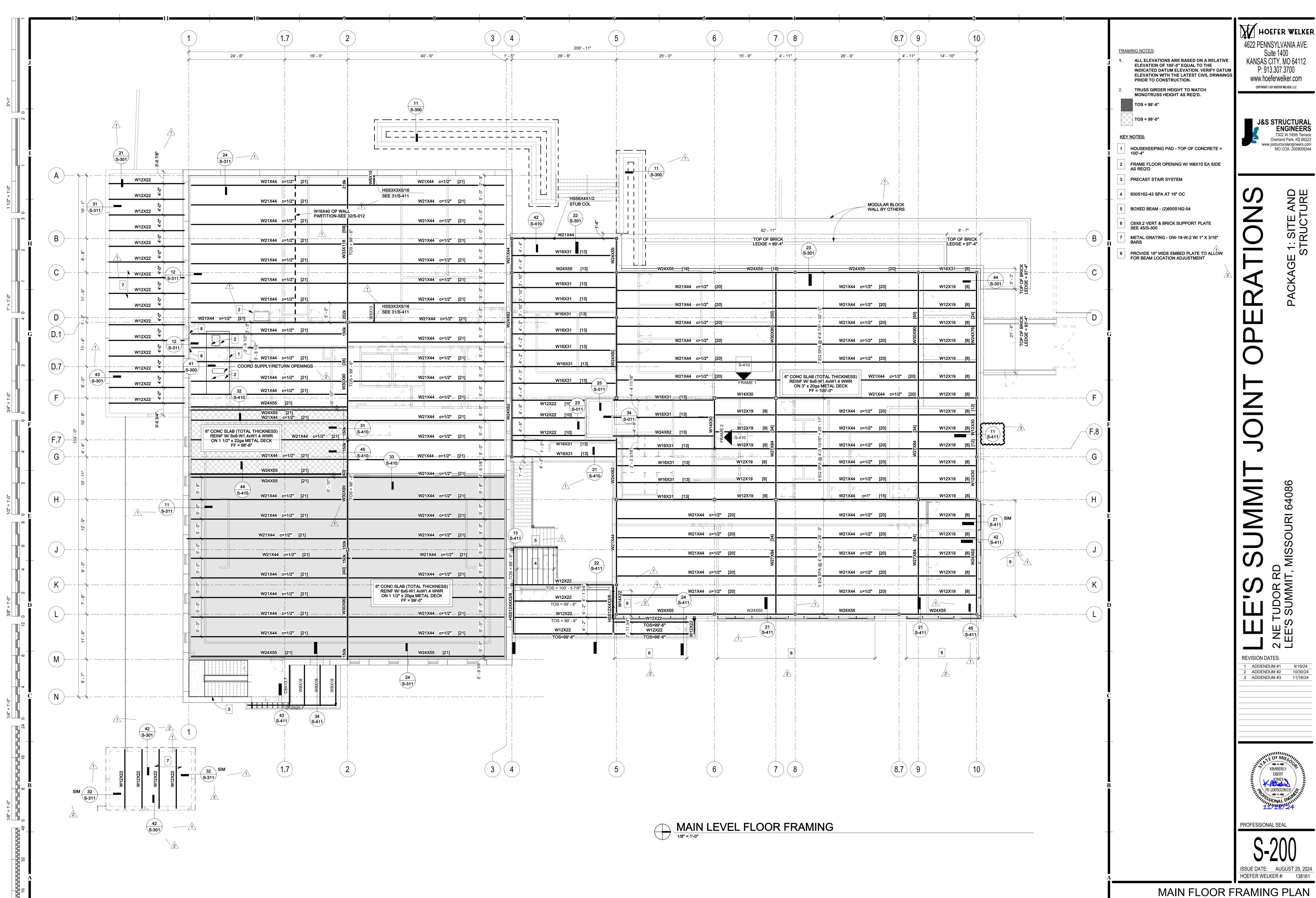
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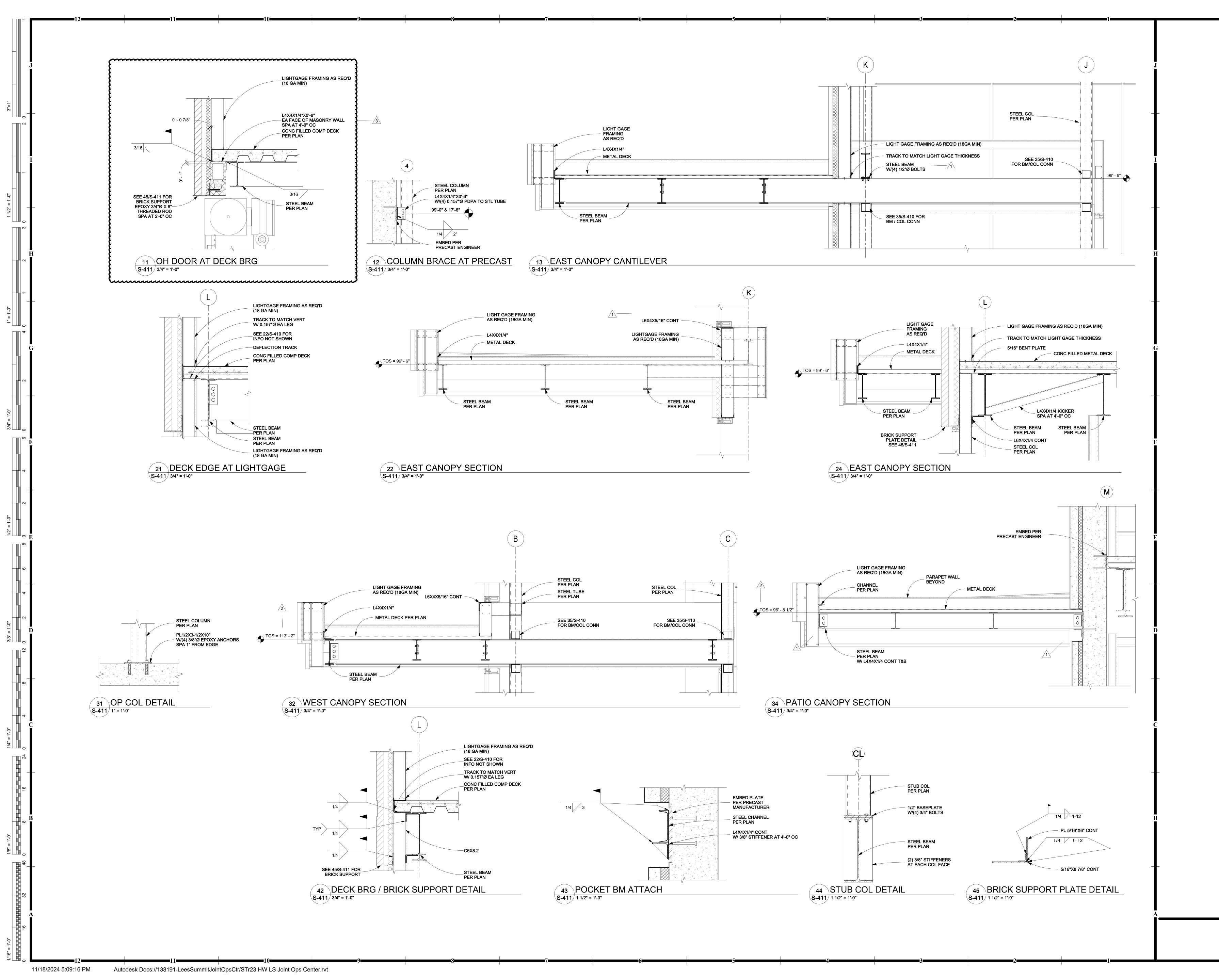
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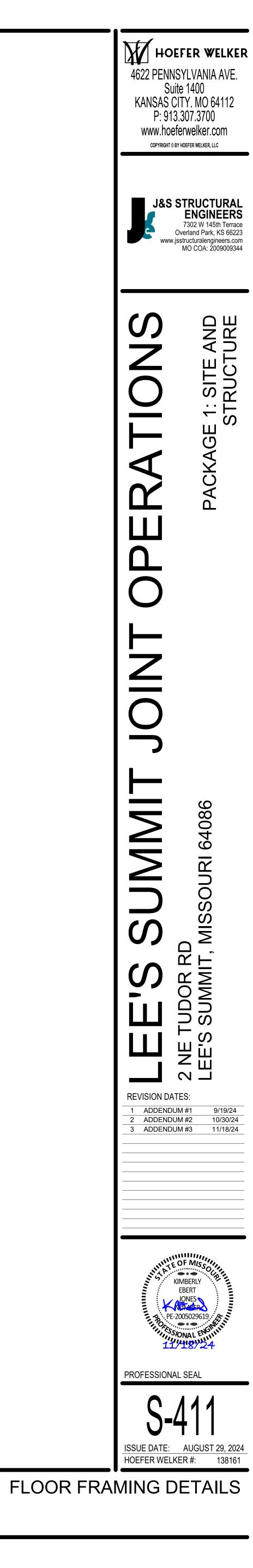
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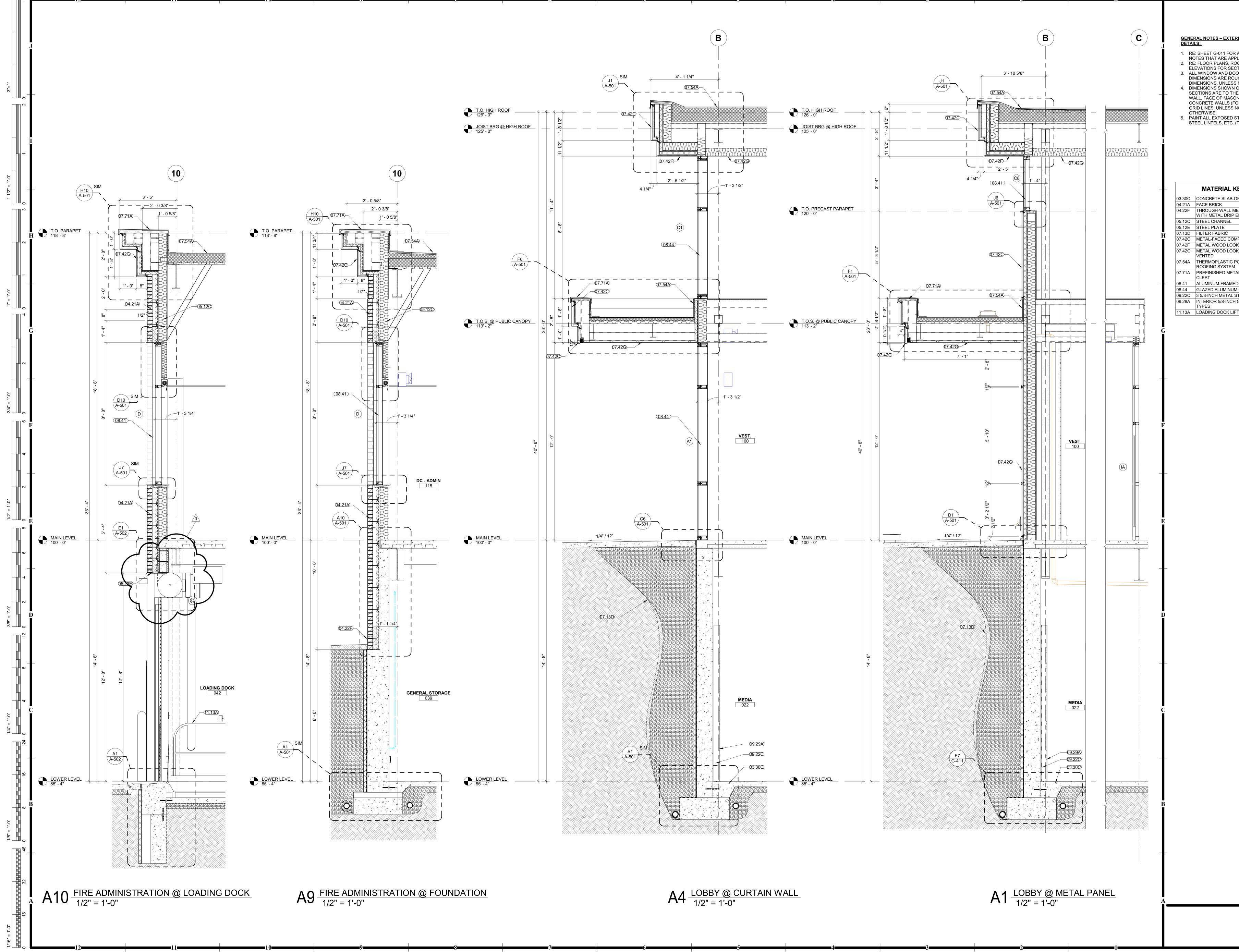
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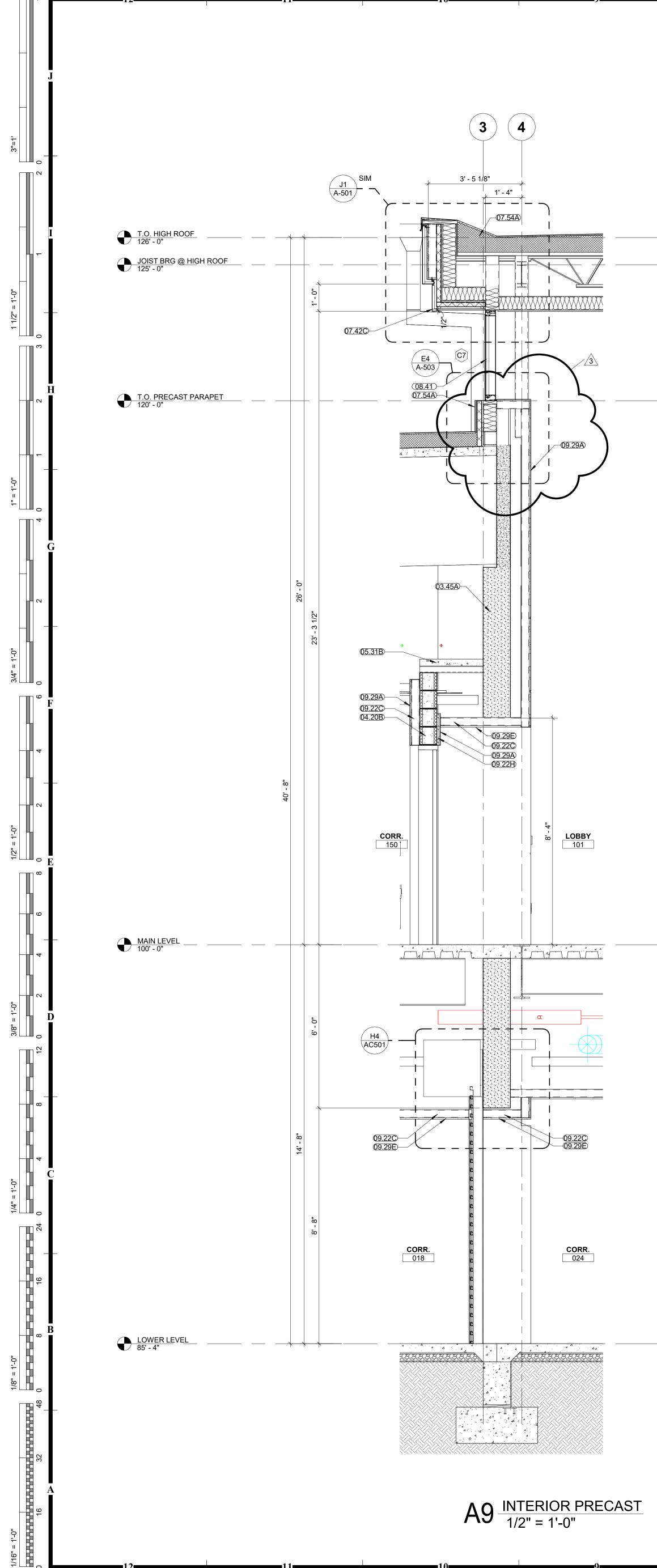




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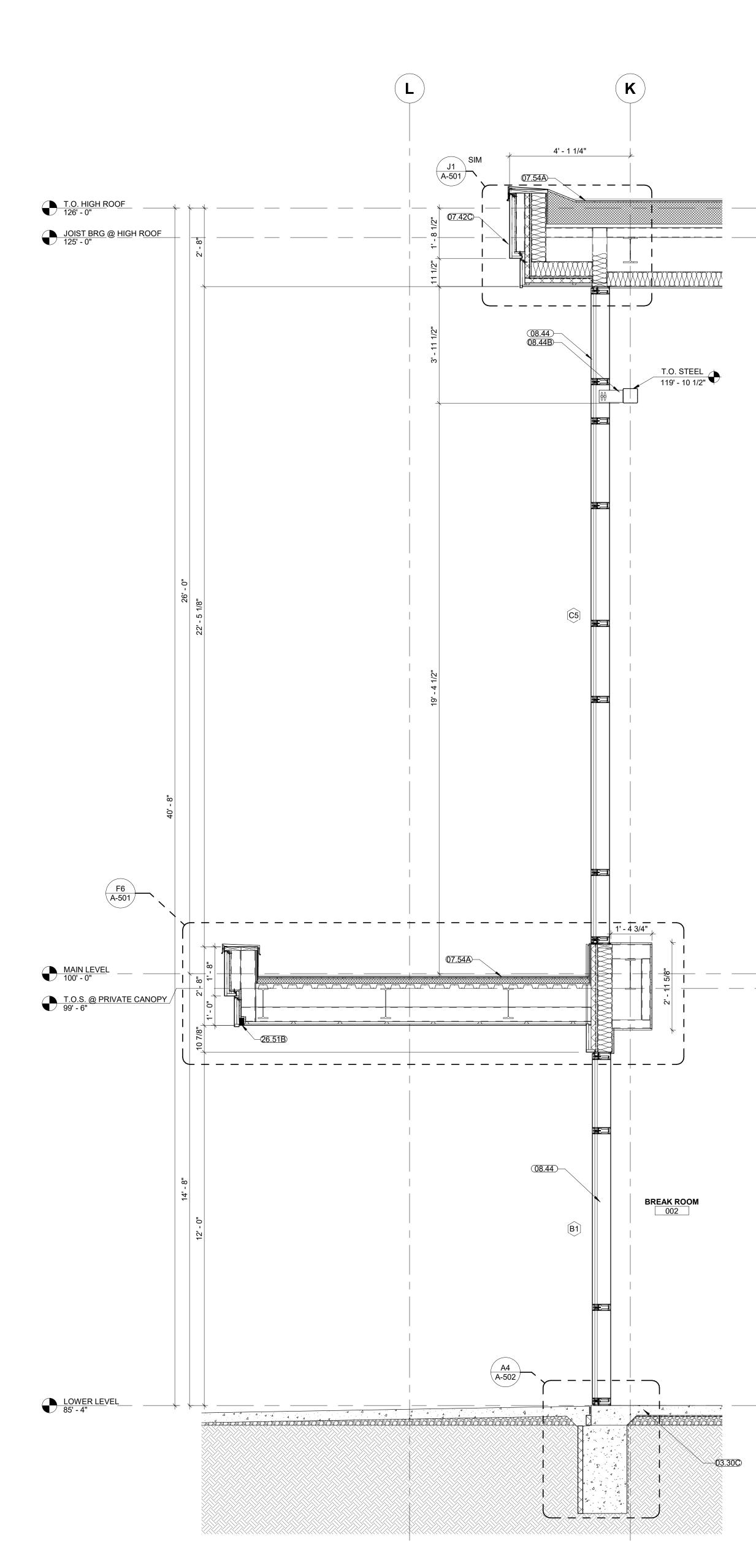
ERIOR WALL SECTIONS/ OR ADDITIONAL GENERAL PPLICABLE. ROOF PLAN AND ECTION CUT LOCATIONS. OOR OPENING OUGH OPENING SS NOTED OTHERWISE. N ON THE WALL THE FACE OF EXTERIOR SONRY (FOM), FACE OF (FOC), AND COLUMN S NOTED OR SHOWN O STEEL, INCLUDING 2. (TYP.)	HOEFER WELKER 4622 PENNSYLVANIA AVENUE SUITE 1400 KANSAS CITY. MO 64112 P: 913.307.3700 WWW.hoeferwelker.com
KEYNOTES	LEE'S SUMMIT JOINT OPERATIONS FACILITY LEE'S SUMMIT, MISSOURI 64086 RACKAGE 2: CONSTRUCTION SET
	PROFESSIONAL SEAL
 WA	A-321 ISSUE DATE: NOVEMBER 1, 2024 HOEFER WELKER #: 138191 ALL SECTIONS



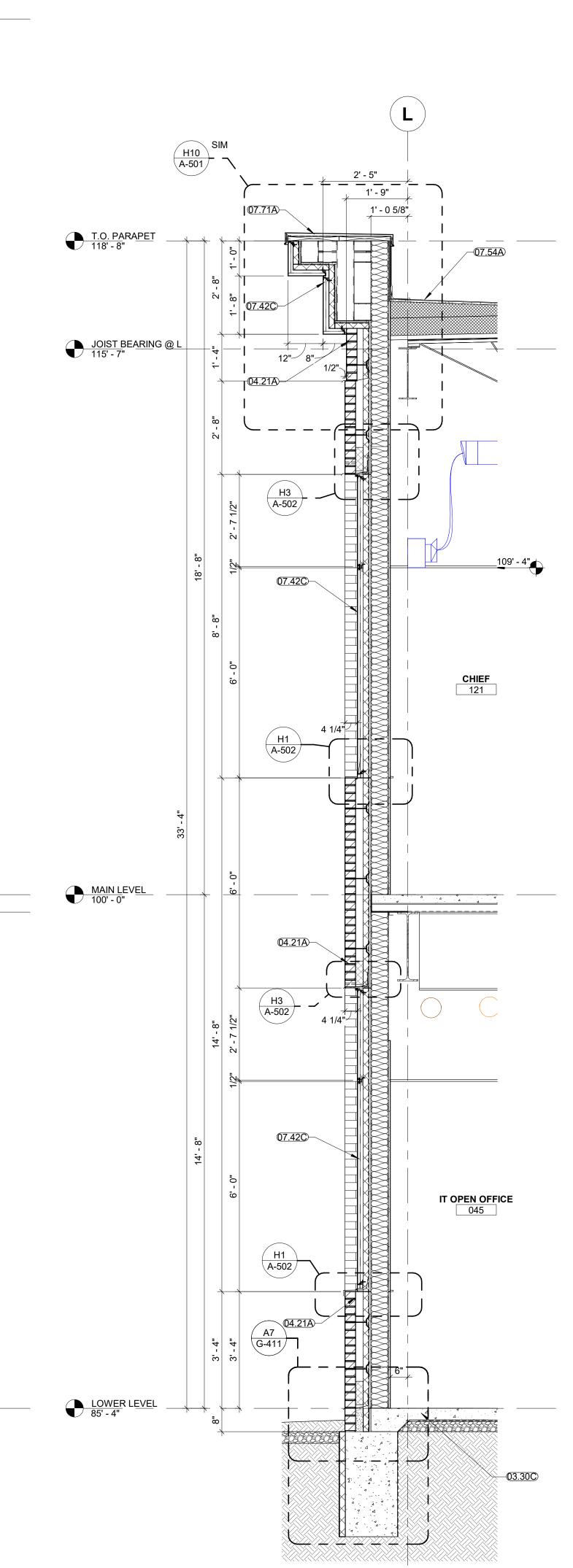
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# A4 STAFF ENTRY @ CURTAIN WALL $\frac{1}{2} = 1-0$



# A1 FIRE ADMINISTRATION SECTION $\frac{1}{2} = 1-0$



WALL, FACE OF MASONRY (FOM), FACE OF WALL, FACE OF MASONRY (FOM), FACE OF CONCRETE WALLS (FOC), AND COLUMN GRID LINES, UNLESS NOTED OR SHOWN OTHERWISE.
5. PAINT ALL EXPOSED STEEL, INCLUDING STEEL LINTELS, ETC. (TYP.) MATERIAL KEYNOTES 03.30CCONCRETE SLAB-ON-GRADE03.45APRECAST ARCHITECTURAL COI04.20BCONCRETE MASONRY UNIT (CM<br/>INCH 04.21A FACE BRICK 05.31B COMPOSITE FLOOR DECK 07.42C METAL-FACED COMPOSITE WALL PANELS 07.54A THERMOPLASTIC POLYOLEFIN (TPO) ROOFING SYSTEM 07.71A PREFINISHED METAL COPING & CONT. CLEAT 08.41 ALUMINUM-FRAMED STOREFRONT SYSTEM 08.44GLAZED ALUMINUM CURTAIN WALL08.44BCURTAIN WALL SLIP CONNECTION

<u>GENERAL NOTES – EXTERIOR WALL SECTIONS/</u> DETAILS:

 RE: SHEET G-011 FOR ADDITIONAL GENERAL NOTES THAT ARE APPLICABLE.
 RE: FLOOR PLANS, ROOF PLAN AND ELEVATIONS FOR SECTION CUT LOCATIONS. 3. ALL WINDOW AND DOOR OPENING DIMENSIONS ARE ROUGH OPENING DIMENSIONS, UNLESS NOTED OTHERWISE 4. DIMENSIONS SHOWN ON THE WALL SECTIONS ARE TO THE FACE OF EXTERIOR

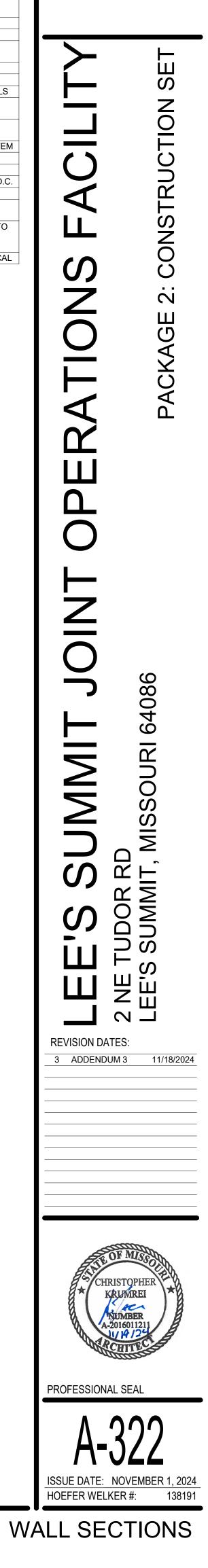
TURAL CONCRETE
RY UNIT (CMU) - 3 5/8

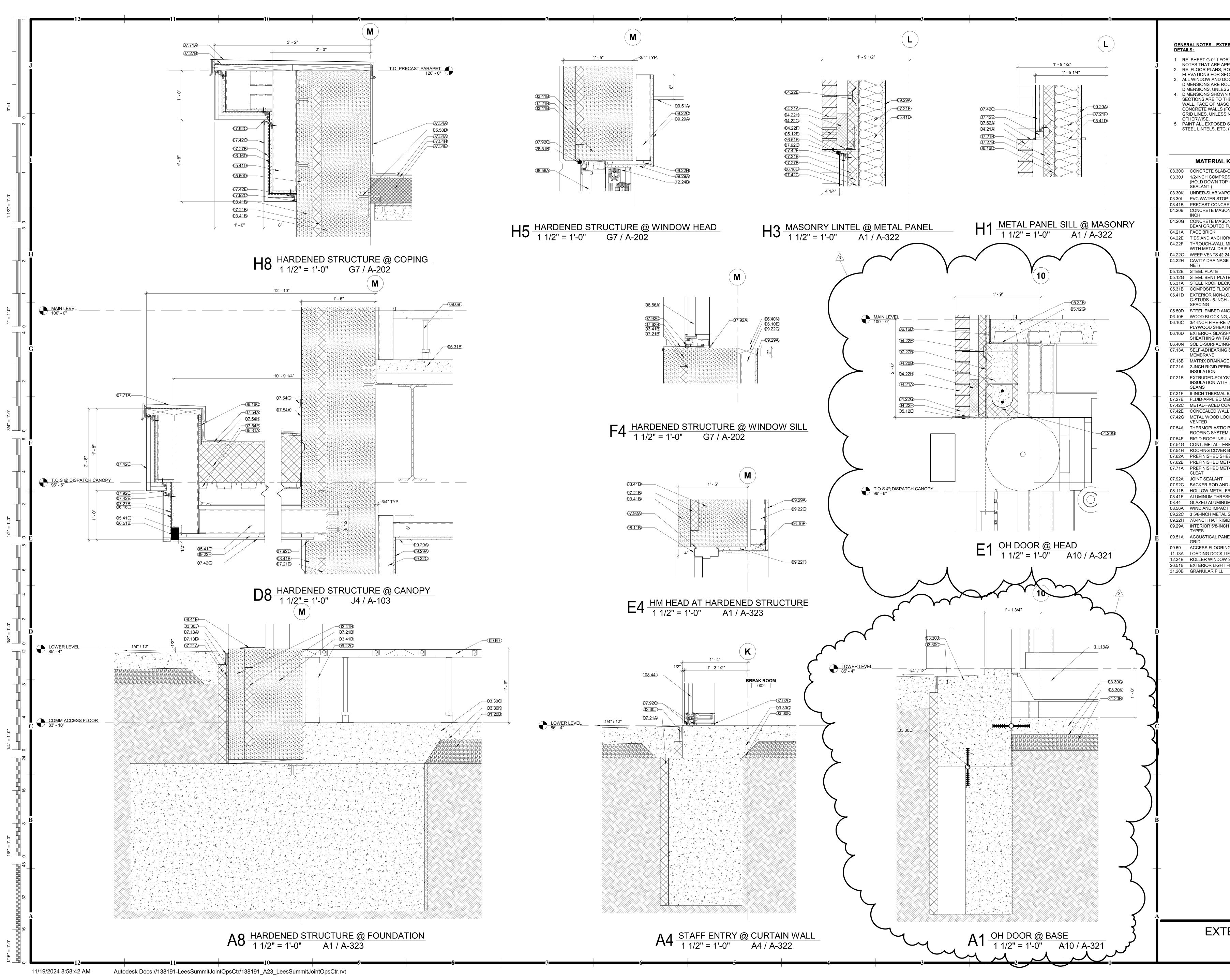
09.22C 3 5/8-INCH METAL STUDS @ 16-INCHES O.C. 09.22H 7/8-INCH HAT RIGID CHANNEL

09.29A INTERIOR 5/8-INCH GYP. BD. REF: WALL TYPES 09.29E INTERIOR 5/8-INCH GYP. BD., EXTENDS TO UNDERSIDE OF ROOF OR FLOOR ASSEMBLY, REF: WALL SCHEDULE

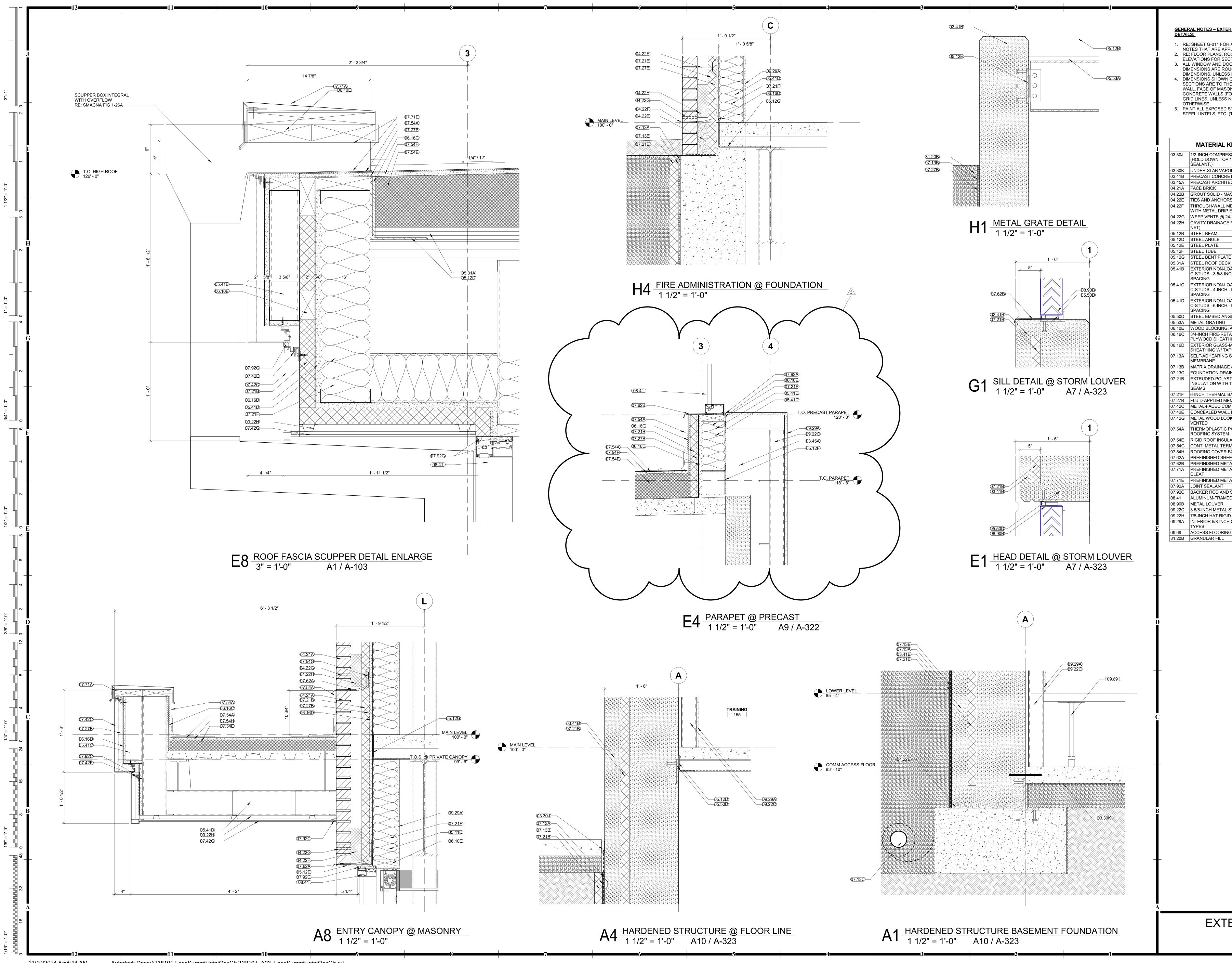
26.51B EXTERIOR LIGHT FIXTURE RE: ELECTRICAL

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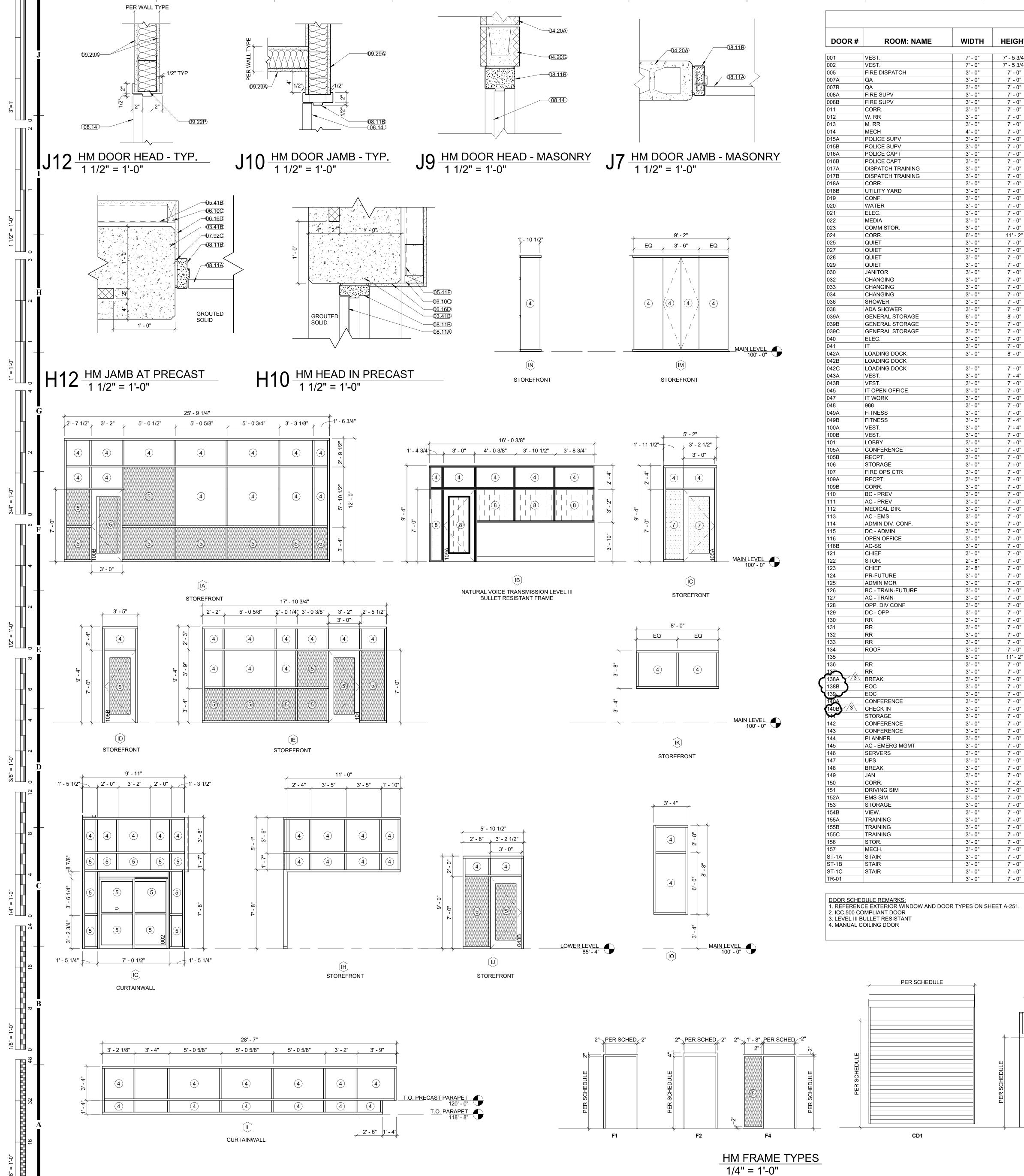
ERIOR WALL SECTIONS/ PRADDITIONAL GENERAL PPLICABLE. ROOF PLAN AND ECTION CUT LOCATIONS. OOR OPENING DUGH OPENING SS NOTED OTHERWISE. N ON THE WALL HE FACE OF EXTERIOR ONRY (FOM), FACE OF FOC), AND COLUMN S NOTED OR SHOWN STEEL, INCLUDING . (TYP.)	HOEFER WELKER 4622 PENNSYLVANIA AVENUE SUITE 1400 KANSAS CITY. MO 64112 P: 913.307.3700 WWW.hoeferwelker.com
KEYNOTES-ON-GRADESSIBLE JOINT FILLERP 1/2-INCH - FILL W/POR RETARDERPRETE WALLDNRY UNIT (CMU) BONDFULLONRY UNIT (CMU) BONDFULLRSMEMBRANE FLASHINGP EDGE24-INCH O.C.E MATERIAL (MORTARTECKOR DECKOAD-BEARING MTL RE: STRUCT. FORIGLE/ PLATES, AS REQUIREDTARDANT-TREATEDTHINGSMAT GYPSUM WALLAPED AND SEALED SEAMSG-MATERIAL COUNTERTOPS SHEET WATERPROOFINGSTYRENE BOARD+ TAPED AND SEALEDBATT INSULATIONEMBRANE AIR BARRIERDMPOSITE WALL PANELSL PANEL FASTENERSOK SOFFIT PANEL -POLYOLEFIN (TPO)MINATION BARBOARDECT METAL FLASHINGTAL COPING & CONT.D SEALANTFRAMESHOLDJM CURTAIN WALLT SECURITY WINDOWSSTUDS @ 16-INCHES O.C.ID CHANNELH GYP. BD. REF: WALLVEL CEILING W/ EXPOSEDNGIFT/ SHADE - DOUBLE SHADEFIXTURE RE: ELECTRICAL	LEE'S SUMMIT JOINT OPERATIONS FACILITY 2 NE TUDOR RD LEE'S SUMMIT, MISSOURI 64086 PACKAGE 2: CONSTRUCTION SET
	PROFESSIONAL SEAL
ERIOR SEC	A-502 <u>ISSUE DATE: NOVEMBER 1, 2024</u> HOEFER WELKER #: 138191 TION DETAILS



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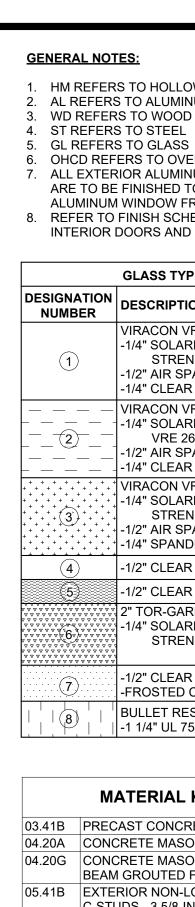
OTES – EXTERIOR WALL SECTIONS/ ET G-011 FOR ADDITIONAL GENERAL HAT ARE APPLICABLE. OR PLANS, ROOF PLAN AND ONS FOR SECTION CUT LOCATIONS. DOW AND DOOR OPENING ONS ARE ROUGH OPENING ONS, UNLESS NOTED OTHERWISE. ONS SHOWN ON THE WALL IS ARE TO THE FACE OF EXTERIOR ACE OF MASONRY (FOM), FACE OF ETE WALLS (FOC), AND COLUMN IES, UNLESS NOTED OR SHOWN VISE. L EXPOSED STEEL, INCLUDING INTELS, ETC. (TYP.)	HOEFER WELKER 4622 PENNSYLVANIA AVENUE SUITE 1400 KANSAS CITY. MO 64112 P: 913.307.3700 WWW.hoeferwelker.com Copyright © by hoefer welker, llc
ATERIAL KEYNOTES ACTION AND ALL PARENTS ACTION AND AND AND AND AND AND AND AND AND AN	LEE'S SUMMIT JOINT OPERATIONS FACILITY 2 NE TUDOR RD LEE'S SUMMIT, MISSOURI 64086 PACKAGE 2: CONSTRUCTION SET
	CHRISTOPHER KRUWREI NUMBER A-2016011211
EXTERIOR SEC	PROFESSIONAL SEAL A-503 ISSUE DATE: NOVEMBER 1, 2024 HOEFER WELKER #: 138191 TION DETAILS



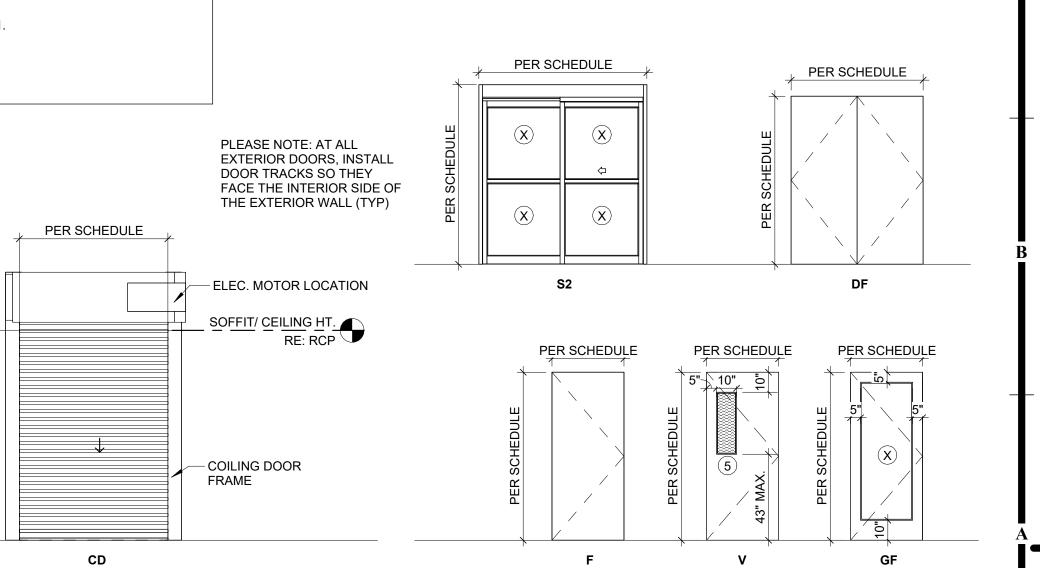
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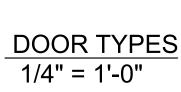
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	5			4	Ì		3		2	Ì		
					DOC	R SCHEDULE						
DOOR #	ROOM: NAME	WIDTH	HEIGHT	DOOR MATERIAL	DOOR TYPE	FRAME MATERIAL	FRAME TYPE	FIRE RATING	AAOS Project HW Set	HEAD	JAMB	REMARKS
001 002	VEST. VEST.	7' - 0" 7' - 0"	7' - 5 3/4" 7' - 5 3/4"	ALUM ALUM	S2 S2	ALUM ALUM	B2 IG		2.0 2.0		A1/A-522	1
	FIRE DISPATCH QA	3' - 0" 3' - 0"	7' - 0" 7' - 0"	 WD	F F	 HM	F1 F4		4.0 17.0	A4 / A-503 J12 / A-601	A6 / A-522 J10 / A-601	2
	QA FIRE SUPV	3' - 0" 3' - 0"	7' - 0" 7' - 0"	WD WD	F	HM HM	F1 F4		10.0 17.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	
008B 011	FIRE SUPV CORR.	3' - 0" 3' - 0"	7' - 0" 7' - 0"	WD WD	F	HM HM	F1 F4		10.0 10.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	
012	W. RR M. RR	3' - 0" 3' - 0"	7' - 0" 7' - 0"	WD WD	F	HM HM	F1 F1		30.0 30.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	
014	MECH	4' - 0"	7' - 0"	WD	F	НМ	F1		21.0	J12 / A-601	J10 / A-601	
	POLICE SUPV POLICE SUPV	3' - 0" 3' - 0"	7' - 0" 7' - 0"	WD WD	F F	HM HM	F4 F1		17.0 10.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	
	POLICE CAPT POLICE CAPT	3' - 0" 3' - 0"	7' - 0" 7' - 0"	WD WD	F F	HM HM	F4 F1		17.0 10.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	
	DISPATCH TRAINING DISPATCH TRAINING	3' - 0" 3' - 0"	7' - 0" 7' - 0"	WD WD	F	HM HM	F1 F1		10.0 10.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	
018A	CORR.	3' - 0"	7' - 0" 7' - 0"		F		F1		3.0	A4 / A-503	A6 / A-522	2
019	UTILITY YARD CONF.	3' - 0" 3' - 0"	7' - 0"	HM WD	F	HM HM	F1 F4		5.0 17.0	J12 / A-601	A4 / A-522 J10 / A-601	2
020 021	WATER ELEC.	3' - 0" 3' - 0"	7' - 0" 7' - 0"	HM HM	F F	HM HM	F1 F1		20.0 24.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	
022 023	MEDIA COMM STOR.	3' - 0" 3' - 0"	7' - 0" 7' - 0"	WD WD	F	HM HM	F1 F1		17.0 17.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	
024 025	CORR. QUIET	6' - 0" 3' - 0"	11' - 2" 7' - 0"	ST WD	CD F	ST HM	CD F1	90 MIN	1.0 30.0	J12 / A-601	J10 / A-601	2
027	QUIET	3' - 0"	7' - 0"	WD	F	НМ	F1		30.0	J12 / A-601	J10 / A-601	
028 029	QUIET QUIET	3' - 0" 3' - 0"	7' - 0" 7' - 0"	WD WD	F	HM HM	F1 F1		30.0 30.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	
030 032	JANITOR CHANGING	3' - 0" 3' - 0"	7' - 0" 7' - 0"	HM WD	F F	HM HM	F1 F1		35.0 31.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	
033 034	CHANGING CHANGING	3' - 0" 3' - 0"	7' - 0" 7' - 0"	WD WD	F	HM HM	F1 F1		31.0 31.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	
036	SHOWER ADA SHOWER	3' - 0" 3' - 0"	7' - 0" 7' - 0"	WD WD	F	HM	F1 F1		30.0 30.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	
039A	GENERAL STORAGE	6' - 0"	8' - 0"	ST	CD1	ST			1.0			4
039B 039C	GENERAL STORAGE GENERAL STORAGE	3' - 0" 3' - 0"	7' - 0" 7' - 0"	HM HM	F F	HM HM	F1 F1		18.0 18.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	
040 041	ELEC.	3' - 0" 3' - 0"	7' - 0" 7' - 0"	HM HM	F	HM HM	F1 F1		22.0 10.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	
042A 042B	LOADING DOCK LOADING DOCK	3' - 0"	8' - 0"	HM ST	DF CD1	HM ST	F2 CD1		25.0 1.0	J9 / A-601 H1 / A-502	J7 / A-601 D1 / A-522	
042C 043A	LOADING DOCK VEST.	3' - 0" 3' - 0"	7' - 0" 7' - 4"	HM ALUM	F GF	HM ALUM	F2 H		8.0			
043B	VEST.	3' - 0"	7' - 0"	ALUM	GF	ALUM	IJ		38.0			
	IT OPEN OFFICE IT WORK	3' - 0" 3' - 0"	7' - 0" 7' - 0"	WD WD	DF DF	HM HM	F1 F1		15.0 28.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	
048 049A	988 FITNESS	3' - 0" 3' - 0"	7' - 0" 7' - 0"	WD WD	F F	HM HM	F1 F4		27.0 36.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	
049B 100A	FITNESS VEST.	3' - 0" 3' - 0"	7' - 4" 7' - 4"	ALUM ALUM	GF GF	ALUM ALUM	L1 A1		6.0 7.0	F6 / A-501		
100B 101	VEST. LOBBY	3' - 0" 3' - 0"	7' - 0" 7' - 0"	ALUM	GF	ALUM	IA		39.0 11.0			
105A	CONFERENCE	3' - 0"	7' - 0"	ALUM	GF	ALUM	IC		17.1			
	RECPT. STORAGE	3' - 0" 3' - 0"	7' - 0" 7' - 0"	ALUM WD	GF F	ALUM HM	ID F1		13.0 17.0	J12 / A-601	J10 / A-601	
107 109A	FIRE OPS CTR RECPT.	3' - 0" 3' - 0"	7' - 0" 7' - 0"	WD ALUM	F GF	HM ALUM	F1 IB		10.0 12.0	J12 / A-601	J10 / A-601	3
109B 110	CORR. BC - PREV	3' - 0" 3' - 0"	7' - 0" 7' - 0"	WD WD	F	HM HM	F1 F1		9.0 17.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	
111	AC - PREV	3' - 0"	7' - 0"	WD	F	HM HM	F1		17.0	J12 / A-601	J10 / A-601	
113	MEDICAL DIR. AC - EMS	3' - 0" 3' - 0"	7' - 0" 7' - 0"	WD WD	F	НМ	F1 F1		17.0 17.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	
	ADMIN DIV. CONF. DC - ADMIN	3' - 0" 3' - 0"	7' - 0" 7' - 0"	WD WD	F F	HM HM	F1 F1		17.0 17.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	
	OPEN OFFICE AC-SS	3' - 0" 3' - 0"	7' - 0" 7' - 0"	WD WD	F F	HM HM	F1 F1		17.0 23.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	
121 122	CHIEF STOR.	3' - 0" 2' - 8"	7' - 0" 7' - 0"	WD WD	F	HM HM	F1 F1		17.0 23.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	
123	CHIEF	2' - 8"	7' - 0"	WD	F	НМ	F1		31.0	J12 / A-601	J10 / A-601	
124 125	PR-FUTURE ADMIN MGR	3' - 0" 3' - 0"	7' - 0" 7' - 0"	WD WD	F	HM HM	F1 F1		17.0 17.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	
	BC - TRAIN-FUTURE AC - TRAIN	3' - 0" 3' - 0"	7' - 0" 7' - 0"	WD WD	F F	HM HM	F1 F1		17.0 17.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	
	OPP. DIV CONF DC - OPP	3' - 0" 3' - 0"	7' - 0" 7' - 0"	WD WD	F	HM HM	F1 F1		17.0 17.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	
130	RR RR	3' - 0" 3' - 0"	7' - 0" 7' - 0"	WD WD	F F	HM HM	F1 F1		30.0 30.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	
132	RR	3' - 0"	7' - 0"	WD	F	НМ	F1		30.0	J12 / A-601	J10 / A-601	
134	RR ROOF	3' - 0" 3' - 0"	7' - 0" 7' - 0"	WD WD	F	HM HM	F1 F1		30.0 19.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	<u> </u>
	RR	5' - 0" 3' - 0"	11' - 2" 7' - 0"	ST WD	CD F	ST HM	CD F1	90 MIN	1.0 30.0	J12 / A-601	J10 / A-601	2
137	RR BREAK	3' - 0" 3' - 0"	7' - 0" 7' - 0"	WD WD	F	HM HM	F1 F1		30.0 22.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	
	EOC	3' - 0" 3' - 0"	7' - 0" 7' - 0"	WD WD	F	HM HM	F1 F1		10.0 33.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	
140A	CONFERENCE	3' - 0"	7' - 0"	WD	F	НМ	F4		10.0	J12 / A-601	J10 / A-601	
140B <u>3</u>	CHECK IN STORAGE	3' - 0" 3' - 0"	7' - 0" 7' - 0"	WD WD	V F	HM HM	F1 F1		27.0 17.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	
142 143	CONFERENCE CONFERENCE	3' - 0" 3' - 0"	7' - 0" 7' - 0"	WD WD	V V	HM HM	F1 F1		17.0 17.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	
	PLANNER AC - EMERG MGMT	3' - 0" 3' - 0"	7' - 0" 7' - 0"	WD WD	V V	HM HM	F1 F1		17.0 17.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	
146	SERVERS UPS	3' - 0" 3' - 0"	7' - 0" 7' - 0" 7' - 0"	WD WD	F	HM HM	F1 F1		10.0 32.0	J12 / A-601 J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601 J10 / A-601	+
148	BREAK	3' - 0"	7' - 0"	WD	F	НМ	F1		10.0	J12 / A-601	J10 / A-601	
149 150	JAN CORR.	3' - 0" 3' - 0"	7' - 0" 7' - 2"	HM 3	F	HM HM	F1 F2	90 MIN	22.0 41.0	J12 / A-601	J10 / A-601	2
	DRIVING SIM EMS SIM	3' - 0" 3' - 0"	7' - 0" 7' - 0"	WD WD	F F	HM HM	F1 F1		10.0 14.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	
	STORAGE VIEW.	3' - 0" 3' - 0"	7' - 0" 7' - 0"	WD WD	F	HM HM	F1 F1		14 0 26.0 34.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	
155A	TRAINING	3' - 0"	7' - 0"	WD	V	НМ	F1		29.0	J12 / A-601	J10 / A-601	
155B 155C	TRAINING TRAINING	3' - 0" 3' - 0"	7' - 0" 7' - 0"	WD HM	V F	HM HM	F1 F1		29.0 3.0	J12 / A-601 E4 / A-502	J10 / A-601 A1/A-521	2
156 157	STOR. MECH.	3' - 0" 3' - 0"	7' - 0" 7' - 0"	WD HM	DF F	HM HM	F1 F1		26.0 22.0	J12 / A-601 J12 / A-601	J10 / A-601 J10 / A-601	
ST-1A ST-1B	STAIR STAIR	3' - 0" 3' - 0"	7' - 0" 7' - 0"	HM HM	F F	HM HM	F1 F1		3.0 37.0	H10 / A-601 J12 / A-601	A6 / A-522 J10 / A-601	2
ST-1C	STAIR	3' - 0"	7' - 0" 7' - 0" 7' - 0"	WD HM	F F F	HM HM	F1		16.0	J12 / A-601	J10 / A-601	
TR-01	I	3' - 0"	7 - 0			1 1171	F2	<u> </u>	8.1		1	



C-STUDS - 3 5/8-I SPACING 05.41F EXTERIOR NON-**BEAM HEADER** 06.10C FIRE-RETARDEN BLOCKING, CON 06.16D EXTERIOR GLAS SHEATHING W/ T 07.92C BACKER ROD AN 08.11A HOLLOW METAL 08.11B HOLLOW METAL I 08.14 WOOD DOOR 09.22P 3 5/8-INCH BOX B 09.29A INTERIOR 5/8-INC TYPES

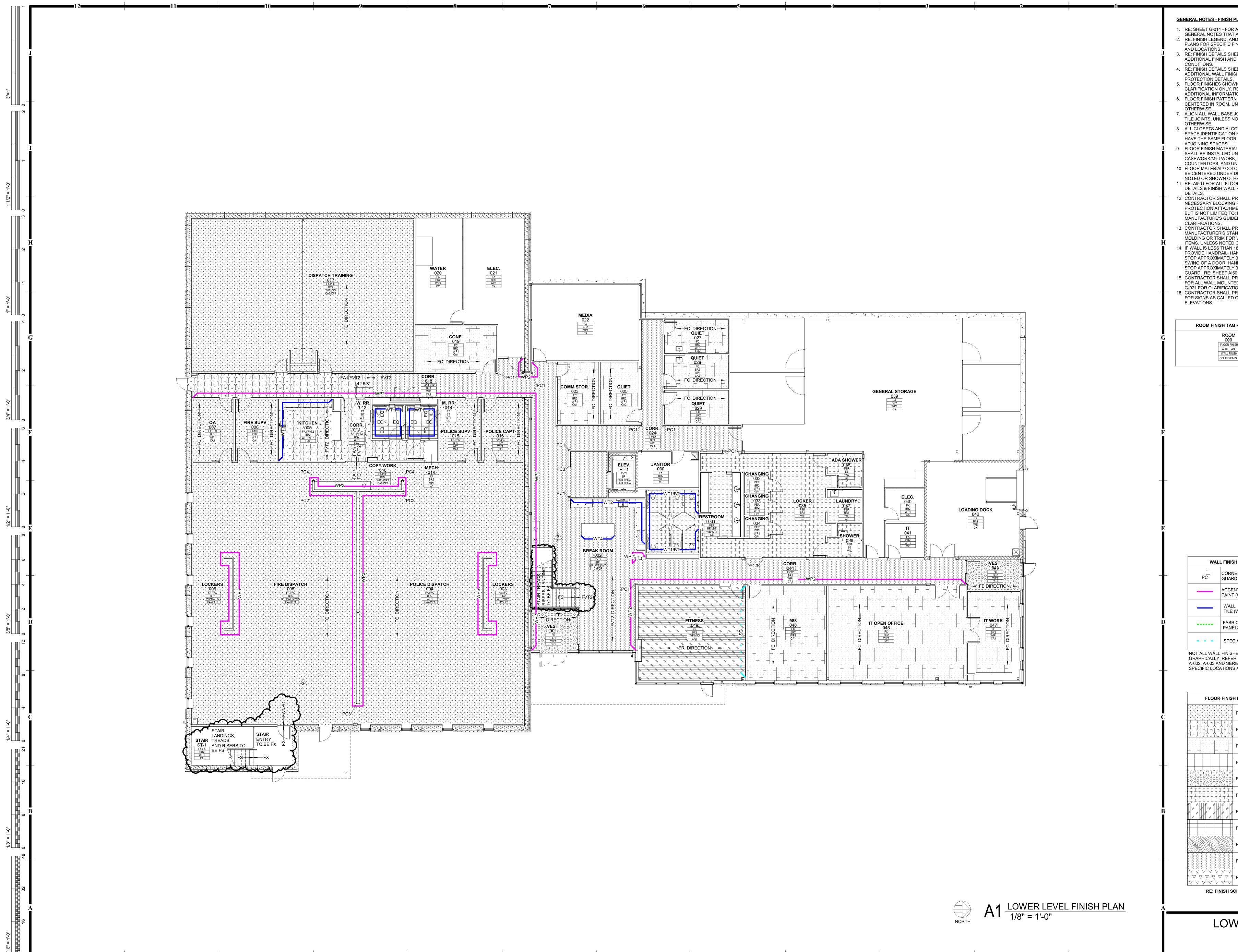




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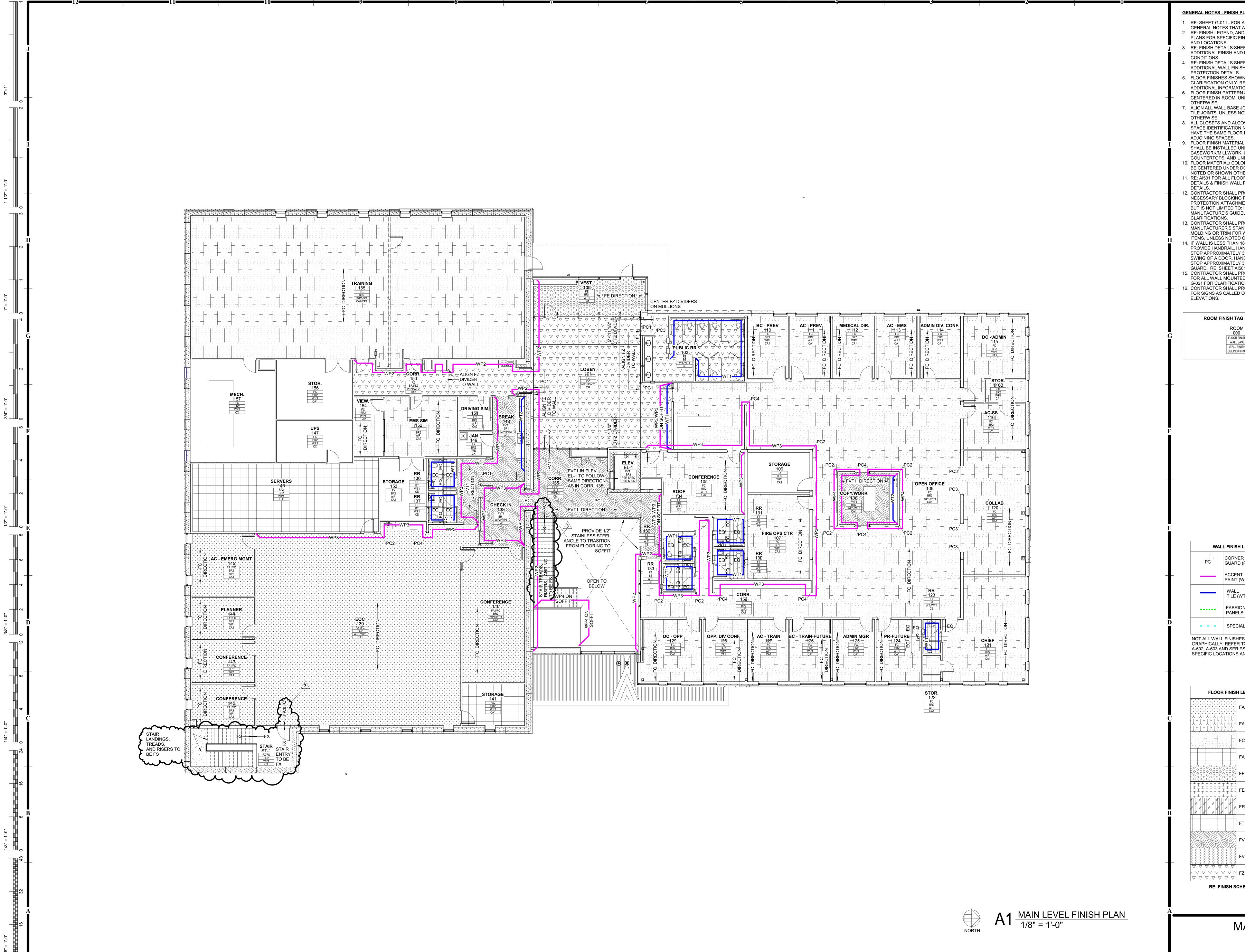
LOW METAL MINUM DD SL SS VERHEAD COILING DOOR MINUM DOORS & FRAMES D TO MATCH ADJACENT FRAME, UNO CHEDULE FOR FINISH OF ND FRAMES.	HOEFER WELKER 4622 PENNSYLVANIA AVENUE SUITE 1400 KANSAS CITY, MO 64112 P: 913.307.3700 WWW.hoeferwelker.com COPYRIGHT © BY HOEFER WELKER, LLC
YPE LEGEND TION VRE 26-38 ARBLUE HEAT ENGTHENED VRE 26-38 #2 SPACE AR HEAT-STRENGTHENED VRE 26-38 TEMPERED 26-38 #2 SPACE AR TEMPERED VRE 26-38 AR BLUE HEAT	
ENGTHENED VRE 26-38 #2 SPACE NDREL V908 AR GLASS AR GLASS TEMPERED ARD 30 IG GLAZING ARBLUE HEAT ENGTHENED VRE 26-38 #2 AR GLASS TEMPERED D CLEAR FILM SWF RESISTANT 752 LEVEL 3 <b>L KEYNOTES</b> CRETE WALL SONRY UNIT (CMU) SONRY UNIT (CMU) BOND D FULL I-LOAD-BEARING MTL. INCH - RE: STRUCT. FOR I-LOAD-BEARING MTL. BOX NT-TREATED WOOD NTINUOUS SS-MAT GYPSUM WALL TAPED AND SEALED SEAMS ND SEALANT L DOOR L FRAME BEAM HEADER ICH GYP. BD. REF: WALL	NT OPERATIONS FACILITY PACKAGE 2: CONSTRUCTION SET
	Solution pates:
	PROFESSIONAL SEAL
	A-6601 ISSUE DATE: NOVEMBER 1, 2024 HOEFER WELKER #: 138191
•	DETAILS, AND

INT. WIN. TYPES

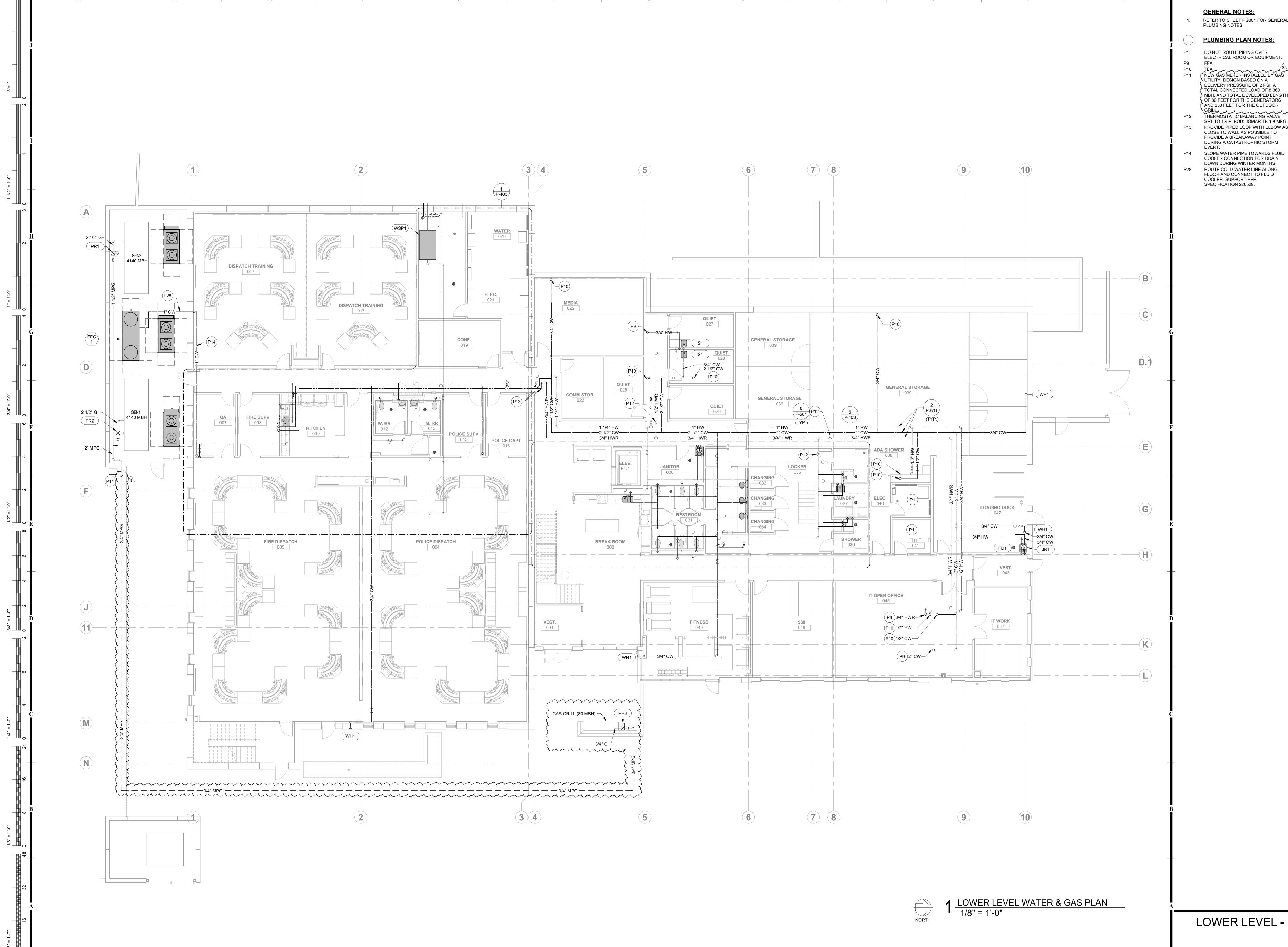


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ES - FINISH PLANS: G-011 - FOR ADDITIONAL	HOEFER WELKER
NOTES THAT ARE APPLICABLE. LEGEND, AND FLOOR FINISH	4622 PENNSYLVANIA AVENUE
R SPECIFIC FINISH INFORMATION TIONS. DETAILS SHEET AI501 FOR	SUITE 1400 KANSAS CITY, MO 64112
AL FINISH AND FLOOR TRANSITION NS. DETAILS SHEET AI501 FOR	P: 913.307.3700
L WALL FINISH / WALL ON DETAILS.	WWW.hoeferwelker.com copyright © by hoefer welker, LLC
ISHES SHOWN ARE FOR ACCENT TION ONLY. RE: FINISH TAGS FOR AL INFORMATION.	
ISH PATTERN SHALL BE ) IN ROOM, UNLESS NOTED )E.	
WALL BASE JOINTS WITH FLOOR S, UNLESS NOTED OR SHOWN	
E. TS AND ALCOVES WITHOUT A NTIFICATION NUMBER SHALL	
SAME FLOOR FINISHES AS S SPACES. ISH MATERIAL AND/ OR PATTERN	
NSTALLED UNDER TOE KICKS OF K/MILLWORK, UNDER OPEN	
TOPS, AND UNDER EQUIPMENT. TERIAL/ COLOR TRANSITIONS TO RED UNDER DOOR, UNLESS	
SHOWN OTHERWISE.	
FINISH WALL PROTECTION	Si 📕
RY BLOCKING FOR WALL ON ATTACHMENT. THIS INCLUDES, I LIMITED TO: HANDRAILS. RE:	
TURE'S GUIDELINES FOR TIONS.	S FACILI construction
FOR SHALL PROVIDE FURER'S STANDARD ACCESSORY OR TRIM FOR WALL PROTECTION	
LESS NOTED OTHERWISE. LESS THAN 18" WIDE DO NOT IANDRAIL. HANDRAILS SHOULD	RL RL
ROXIMATELY 3" FROM THE OPEN A DOOR. HANDRAILS SHOULD	
ROXIMATELY 3" FROM A CORNER E: SHEET AI501 FOR SHALL PROVIDE BLOCKING	
ALL MOUNTED EQUIPMENT. RE CLARIFICATION.	S S
FOR SHALL PROVIDE BLOCKING S AS CALLED OUT ON NS.	<b>Z</b>
I FINISH TAG KEY LEGEND	O Q
ROOM 000	
FLOOR FINISH WALL BASE WALL FINISH	ATIOI PACKAGE
CEILING FINISH	
	$\square$
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	<b>1</b> 804
	07
	RI RI
	R RD MIT, MISSOURI 64086
WALL FINISH LEGEND	
GUARD (PC)	
PAINT (WP)	
WALL TILE (WT)	<pre>CO B</pre>
FABRIC WRAPPED PANELS (SF)	
<ul> <li>SPECIALTY WALLS (S-)</li> </ul>	$\square \square = 0$
WALL FINISHES ARE SHOWN	ШЩ
CALLY. REFER TO SHEETS A-601, 603 AND SERIES A-45100 FOR	
CLOCATIONS AND MATERIALS	REVISION DATES:
	3 ADDENDUM 3 11/18/2024
FA1/FC	
└ └ └ └ └ ↓ └ └ └ └ ↓ ↓ ↓ FA1/FVT2	
FA2	
FE	STREE MUSIC
	STATE OF MUSSOLE
	KRUMIREI
FR FR	NUMBER A-2016011211
FT	A-2016011211 IV/A-129 IRCHITEC
FVT1	
FVT2	PROFESSIONAL SEAL
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$ \begin{array}{c c} & \nabla & \nabla & \nabla \\ \hline & \nabla & \nabla & \nabla \end{array} $ FZ	AI101
RE: FINISH SCHEDULE	ISSUE DATE: NOVEMBER 1, 2024
	HOEFER WELKER #: 138191
LOWER LEVEL	- FINISH PLAN

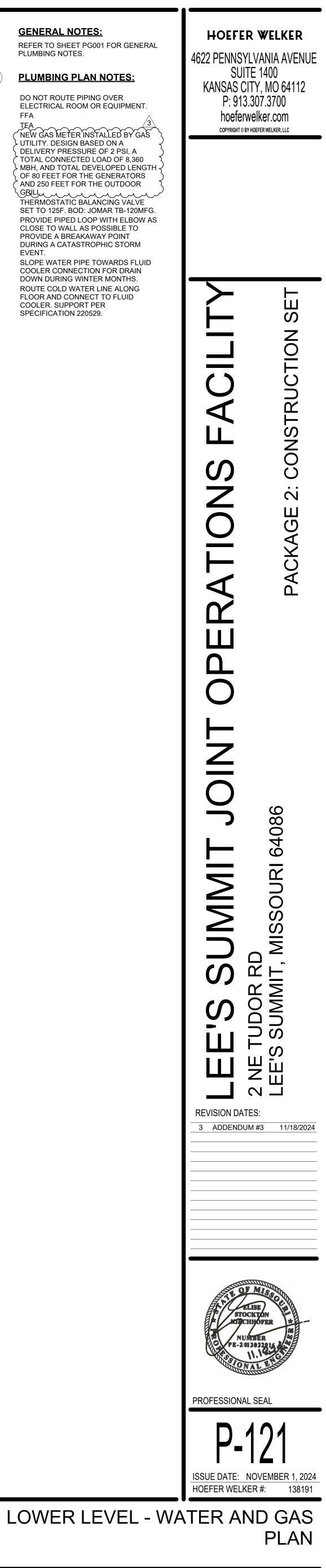


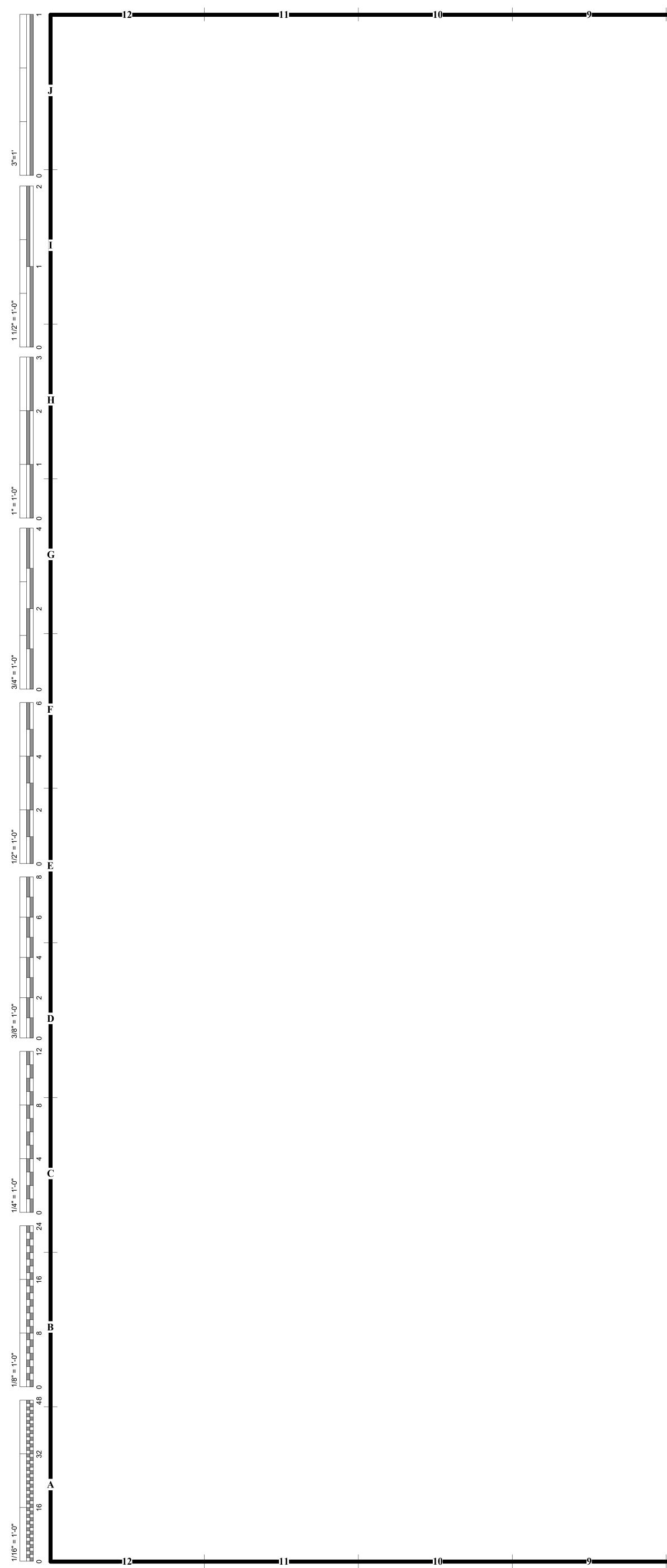
	•	
<u>6 - FINISH PLANS:</u> -011 - FOR ADDITIONAL TES THAT ARE APPLICABLE. -GEND, AND FLOOR FINISH -PECIFIC FINISH INFORMATION -DNS.	HOEFER 4622 PENNSYLV SUITE	/ANIA AVENUE
TAILS SHEET AI501 FOR FINISH AND FLOOR TRANSITION ETAILS SHEET AI501 FOR	KANSAS CIT P: 913.3	Y. MO 64112 07.3700
WALL FINISH / WALL DETAILS. HES SHOWN ARE FOR ACCENT DN ONLY. RE: FINISH TAGS FOR NFORMATION.	WWW.hoefer COPYRIGHT © BY HO	
H PATTERN SHALL BE I ROOM, UNLESS NOTED ALL BASE JOINTS WITH FLOOR		
UNLESS NOTED OR SHOWN AND ALCOVES WITHOUT A IFICATION NUMBER SHALL		
ME FLOOR FINISHES AS PACES. H MATERIAL AND/ OR PATTERN STALLED UNDER TOE KICKS OF MILLWORK, UNDER OPEN		
PS, AND UNDER EQUIPMENT. RIAL/ COLOR TRANSITIONS TO D UNDER DOOR, UNLESS 10WN OTHERWISE.		
R ALL FLOORING TRANSITION NISH WALL PROTECTION R SHALL PROVIDE ALL		SEI
BLOCKING FOR WALL ATTACHMENT. THIS INCLUDES, IMITED TO: HANDRAILS. RE: RE'S GUIDELINES FOR DNS.		NOI
R SHALL PROVIDE RER'S STANDARD ACCESSORY TRIM FOR WALL PROTECTION SS NOTED OTHERWISE.	U U	CONSTRUCTION
SS THAN 18" WIDE DO NOT NDRAIL. HANDRAILS SHOULD XIMATELY 3" FROM THE OPEN DOOR. HANDRAILS SHOULD		STR
XIMATELY 3" FROM A CORNER SHEET AI501 R SHALL PROVIDE BLOCKING L MOUNTED EQUIPMENT. RE ARIFICATION.		NO:
R SHALL PROVIDE BLOCKING S CALLED OUT ON		5: 0
FINISH TAG KEY LEGEND	Ō	JGE
ROOM 000 FLOOR FINISH WALL BASE WALL FINISH		PACKAGE
CEILING FINISH	$\triangleleft$	РА
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		URI
CORNER GUARD (PC)		SSOURI
ACCENT PAINT (WP)	15.	ͺΞ
WALL TILE (WT)		MIT,
FABRIC WRAPPED PANELS (SF) SPECIALTY WALLS (S-)		NU%
LL FINISHES ARE SHOWN Y. REFER TO SHEETS A-601, AND SERIES A-45100 FOR		- S - S - S
CATIONS AND MATERIALS		
OR FINISH LEGEND	REVISION DATES	
FA1/FC		
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FR FR		
FVT1		
FVT2	PROFESSIONAL S	SEAL
$ \begin{array}{c} \hline & & \\ \hline \end{array} $	Al1	02
FINISH SCHEDULE	ISSUE DATE: NC	VEMBER 1, 2024
	HOEFER WELKER	R #: 138191
MAIN LEVEL	111151	



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			PLUMR	ING FIXTURE SCHEDULE							
<b>DI ANI</b>					DIII	MBING C		TIONS	(1NI)		
PLAN MARK	UNIT TYPE	MANUFACTURER	MODEL	FLUSH VALVE/FAUCET	CW		WAS1		• •	OPTIONS	NOTES
BP1	REDUCED PRESSURE BACKFLOW PREVENTER	WATTS	LF909	N/A	2.5		0		0		
BP2 BP3	DOUBLE CHECK BACKFLOW PREVENTER DOUBLE CHECK BACKFLOW PREVENTER	WATTS WATTS	007-M1-QT-S LF007	N/A N/A	2 0.75	0	0		0		
BP4	DUAL CHECK BACKFLOW PREVENTER	WATTS	SD-3	N/A	0.5	0	0		0		
EWC1 IMB1	HI-LO WATER COOLER WITH BOTTLE FILLER ICE MAKER BOX	ELKAY GUY GRAY	EZSTL8WSLK BIM875	N/A N/A	0.5		2		1.5   0	BF,SB	1
JB1	JANITOR'S BASIN	ZURN	Z1996-24-HH-MH-WG	ZURN MODEL Z1996-SF	0.75				1.5		
	ERCOUNTER MOUNT, BATTERY-POWERED AUTOMATIC FAUCET LAVATORY	ZURN ZURN	Z5220 Z5220	ZURN MODEL Z6915-XL, 0.5 GPM	0.5		2			AE5,GD,SV,T AE5,GD,SV,T	
L2 L3	UNDERCOUNTER MOUNT, MANUAL FAUCET LAVATORY WALL MOUNTED, BATTERY-POWERED AUTOMATIC FAUCET LAVATORY	ZURN	Z5220 Z5360	ZURN MODEL Z7440-XL, 0.5 GPM ZURN MODEL Z6915-XL, 0.5 GPM	0.5	0.5	2	-		AE5,GD,SV,T	1
MMV1	DIGITAL MASTER MIXING VALVE	LEONARD	PNV-125	N/A	1	1	0		-	MSP	
S1	15X15 SINGLE COMPARTMENT, UNDERMOUNT BLACK QUARTZ SINK	ELKAY	ELG1616	KOHLER MODEL K-7505, 1.5 GPM, SWIVEL FLAT GOOSENECK FAUCET, VIBR. STAINLESS FINISH	NT 0.5	0.5	2	1	1.5	BS,SV,T	
S2 15X15	SINGLE COMPARTMENT, UNDERMOUNT BLACK QUARTZ SINK WITH GARBA DISPOSAL	GE ELKAY	ELG1616	KOHLER MODEL K-7505, 1.5 GPM, SWIVEL FLAT GOOSENECK FAUCET	0.5	0.5	2	1	1.5	BS,SV,T,BGD	
S3	24X17 SINGLE COMPARTMENT, UNDERMOUNT BLACK QUARTZ SINK	ELKAY	ELGU251912PD	KOHLER MODEL K-7505, 1.5 GPM, SWIVEL FLAT GOOSENECK FAUCET	0.5	0.5	2	1	1.5	BS,SV,T	
S4 33X19 [	DOUBLE COMPARTMENT, UNDERMOUNT BLACK QUARTZ SINK WITH GARBA DISPOSAL	GE ELKAY	ELGDULB3322	KOHLER MODEL K-596-CP, 1.5 GPM, SWIVEL GOOSENECK PULL DOWN FAU	ET 0.5	0.5	2	1	1.5	BS,SV,T,BGD	
SV1	ADA SHOWER VALVE	DELTA	T17TH325	N/A	0.5	0.5	0		0		1
SV2	SHOWER VALVE	DELTA	T13H122	N/A	0.5	0.5	0		0		1
R1	ICC 500 COMPLIANT VENT-THRU-ROOF	ROOF PENETRATION HOUSING	CVTR								
B1		GUY GRAY	B200	N/A	0.5				1.5	501.0.01	
C1 ADA FL	OOR MOUNT, BACK OUTLET, BATTERY POWERED AUTOMATIC 1.28 GPF FLU VALVE WATER CLOSET	JSH ZURN	Z5645-BWL	SLOAN ECOS 8111-1.28	1.25	0	4		2	ESLC,SV	2
C2 FLOC	DR MOUNT, BACK OUTLET, BATTERY POWERED AUTOMATIC 1.28 GPF FLUS	H ZURN	Z5635-BWL	SLOAN ECOS 8111-1.28	1.25	0	4		2	ESLC,SV	2
'H1	VALVE WATER CLOSET FREEZE PROOF WALL HYDRANT	ZURN	Z1321-C	N/A	0.75	0	0		0		
ES:					0.10	Ŭ			I		
	O ARCHITECTURAL PLANS FOR MOUNTING HEIGHTS. O ARCHITECTURAL PLANS FOR ADA REQUIRED GRAB BARS.										
								-			
				DRAINAG	FIXTUR	E SCH	EDULE				
				PLAN MARK TYPE MANUFA	TUDED		MOI	ושר		OPTIONS	NOTES
				DN1 DOWNSPOUT NOZZLE ZUF	-		Z1			OFTIONS	NOTES
				DN2 DOWNSPOUT NOZZLE ZUF			Z1				
				FC01FLOOR CLEANOUTJAY RFD1FLOOR DRAIN - ROUNDJAY R			403			CC,NBS,TG	
				GCO2 TWO-WAY FINISHED GRADE CLEANOUT JAY R	MITH		426	61L			
				ORD1         OVERFLOW ROOF DRAIN         ZUF           ORD2         ICC 500 COMPLIANT OVERFLOW ROOF DRAIN         ROOF PENETRATION		IGS	Z100 COF				
				RD1ROOF DRAINZUF			Z1	00			
				RD2ICC 500 COMPLIANT ROOF DRAINROOF PENETRATIONWC01WALL CLEANOUTJAY R		IGS	CF 453				
				WGOT WALL CLEANOUT JAT KS			403	003			
				SUMP PUMP SCH							
				PUMP BASIN							
			PLAN	MIN FLOW HEAD MAX DIAMETER HEIGHT		ELEC1					
				MODEL UNIT TYPE RATE (GPM) (FT) HP RPM (IN) (IN)	VOLTAGE	PHASE				OPTIONS	NOTES
			SP1 WEIL	1411-538 ELEVATOR 50 20 0.5 1750 24" 36"	120	1	3.1	3.1	15		
				RECIRCULA		IP SCH	EDUL	E			
				FLOW		ELECT					
				PLAN RATE HEAD							
				MARKMANUFACTURERMODELSIZEMOUNTING(GPM)(FT)RP1GRUNDFOSALPLHA3/4"INLINE2.015	VOLTAGE I 120		FLA M 0.3 0		<b>OCP</b> 15	OPTIONS	NOTES
				15-58 F	120	•	0.0 0	.0			
				WATER HEATER SCHEDU	E						
						FRICAL					
		PLAN		TANK     GPH @ 100       VOLUME     DEG.F TEMP							
		MARK MANU EWH1 LOO	FACTURER MODEL CHINVAR CHPA120PE	TYPE         (GAL)         RISE         VOLTAGE         PH           D         AIR-SOURCE HEAT PUMP         120         50         208         1		. ,	<b>FLA N</b> 21.6 2				NOTES
				WATER HEATER	120						
		EWH2 LOC	CHINVAR CHPA120PE	D AIR-SOURCE HEAT PUMP 120 50 208 WATER HEATER	120	000	21.6 2	21.6	30	HSP	
			1		1		<u> </u>		[		1
				PRESSURE REGULATOR SCHEDULE							
	PLAN M	ARK MANUFACTURE	R MODEL SYST	EM MAX CAPACITY (MBH) INLET PRESSURE (PSIG) OUTLET PR	ESSURE (IN.	W.C.)	VALVE	SIZE (	(IN)	OPTIONS	NOTES
	PR1	PIETRO FIORENTI	NI 31156/F NATURA	L GAS 4140 2	7			2.5	. /		
		PIETRO-FIORENTI	NI 31156/F NATUBA NI 31052 NATURA	$ \begin{array}{c} L GAS & & 4140 \\ L GAS & & 80 \end{array} $	$\gamma_{\overline{7}}^{\overline{7}}$	$\sim\sim$	$\sim$	2,5 ).75	$\sim$	$\sim \sim $	$\rightarrow$
					ún				$\sim$	······	Lun
			TER STORAGE PUM	P/FILTRATION SCHEDULE							
		WA			RICAL						
	PUMP	WA <sup>-</sup>		PROCESSING ELEC							
	NUMBER OF FLOW RATE	OUTLET BLAI		FILTRATION SANITATION SANITATION		MOCP		ENGTU	,		NOTES
	UNIT TYPE MANUFACTURER MODEL NUMBER OF FLOW RATE (GPM)	OUTLET BLAI PRESSURE (PSI) VOL	UME (GAL) FILTER T	FILTRATION YPESANITATION TYPESANITATION LEVELVOLTAGEPH	SE	<b>MOCP</b> 30	LI	ENGTH	1	WIDTH OPTIONS	<b>NOTES</b>
WATER PUM	UNIT TYPE MANUFACTURER MODEL NUMBER OF FLOW RATE (GPM)	OUTLET BLAI	UME (GAL) FILTER T	FILTRATION YPESANITATION TYPESANITATION LEVELVOLTAGEPH	SE		LI		1		<b>NOTES</b> 1,2,3,4
WATER PUM GE	UNIT TYPEMANUFACTURERMODELNUMBER OF PUMPSFLOW RATE (GPM)IP/FILTRATION SKIDWAHASOCUSTOM250	OUTLET BLAI PRESSURE (PSI) VOL 60	UME (GAL)FILTER TY26BAG FILT	FILTRATION YPESANITATION TYPESANITATION LEVELVOLTAGEPH	SE		LI		1		
WATER PUM BE ER TO MOUNT MONITOR AN	UNIT TYPE       MANUFACTURER       MODEL       NUMBER OF PUMPS       FLOW RATE (GPM)         IP/FILTRATION SKID       WAHASO       CUSTOM       2       50         'BOOSTER PUMP, FILTRATION, AND CONTROLS ON SINGLE SKID. SKID TO E D REPORT TANK LEVEL TO CONTROL PANEL AND BAS, OPERATE PUMPS AND	OUTLET PRESSURE (PSI) 60 BE PRE-PIPED AND WIRED AND VFDs, MONITOR DIFFERE	UME (GAL)     FILTER TY       26     BAG FILT       .T THE FACTORY.       ENTIAL PRESSURE ACROS	FILTRATION YPESANITATION TYPESANITATION LEVELVOLTAGEPH	SE	30		84		48	
VATER PUM E PUM R TO MOUNT MONITOR AN EVENT STAGI	UNIT TYPEMANUFACTURERMODELNUMBER OF PUMPSFLOW RATE (GPM)IP/FILTRATION SKIDWAHASOCUSTOM250* BOOSTER PUMP, FILTRATION, AND CONTROLS ON SINGLE SKID. SKID TO E	OUTLET PRESSURE (PSI) 60 BE PRE-PIPED AND WIRED AND VFDs, MONITOR DIFFERE	UME (GAL)     FILTER TY       26     BAG FILT       .T THE FACTORY.       ENTIAL PRESSURE ACROS	FILTRATION LEVELSANITATION TYPESANITATION LEVELVOLTAGEPH'ER5 MICRONULTRAVIOLET40 mJ/cm2480	SE	30		84		48	
WATER PUM E PUM ER TO MOUNT MONITOR AN EVENT STAGI	UNIT TYPE       MANUFACTURER       MODEL       NUMBER OF PUMPS       FLOW RATE (GPM)         IP/FILTRATION SKID       WAHASO       CUSTOM       2       50         * BOOSTER PUMP, FILTRATION, AND CONTROLS ON SINGLE SKID. SKID TO E D REPORT TANK LEVEL TO CONTROL PANEL AND BAS, OPERATE PUMPS AN NATION WITH RECIRCULATION OF WATER. RECIRC WATER TO BE TREATED	OUTLET PRESSURE (PSI) 60 BE PRE-PIPED AND WIRED AND VFDs, MONITOR DIFFERE	UME (GAL)     FILTER TY       26     BAG FILT       .T THE FACTORY.       ENTIAL PRESSURE ACROS	FILTRATION LEVELSANITATION TYPESANITATION LEVELVOLTAGEPH'ER5 MICRONULTRAVIOLET40 mJ/cm2480	SE	30		84		48	
WATER PUM E PUM ER TO MOUNT MONITOR AN EVENT STAGI	UNIT TYPE       MANUFACTURER       MODEL       NUMBER OF PUMPS       FLOW RATE (GPM)         IP/FILTRATION SKID       WAHASO       CUSTOM       2       50         * BOOSTER PUMP, FILTRATION, AND CONTROLS ON SINGLE SKID. SKID TO E D REPORT TANK LEVEL TO CONTROL PANEL AND BAS, OPERATE PUMPS AN NATION WITH RECIRCULATION OF WATER. RECIRC WATER TO BE TREATED	OUTLET PRESSURE (PSI) 60 BE PRE-PIPED AND WIRED AND VFDs, MONITOR DIFFERE	UME (GAL)     FILTER TY       26     BAG FILT       .T THE FACTORY.       ENTIAL PRESSURE ACROS	FILTRATION LEVELSANITATION TYPESANITATION LEVELVOLTAGEPH'ER5 MICRONULTRAVIOLET40 mJ/cm2480	SE	30		84		48	
WATER PUM E PUM ER TO MOUNT MONITOR AN EVENT STAGI	UNIT TYPE       MANUFACTURER       MODEL       NUMBER OF PUMPS       FLOW RATE (GPM)         IP/FILTRATION SKID       WAHASO       CUSTOM       2       50         * BOOSTER PUMP, FILTRATION, AND CONTROLS ON SINGLE SKID. SKID TO E D REPORT TANK LEVEL TO CONTROL PANEL AND BAS, OPERATE PUMPS AN NATION WITH RECIRCULATION OF WATER. RECIRC WATER TO BE TREATED	OUTLET PRESSURE (PSI) 60 BE PRE-PIPED AND WIRED AND VFDs, MONITOR DIFFERE	UME (GAL)     FILTER TY       26     BAG FILT       .T THE FACTORY.       ENTIAL PRESSURE ACROS	FILTRATION LEVELSANITATION TYPESANITATION LEVELVOLTAGEPH'ER5 MICRONULTRAVIOLET40 mJ/cm2480	SE	30		84		48	
VATER PUM E PUM R TO MOUNT MONITOR AN EVENT STAGI	UNIT TYPE       MANUFACTURER       MODEL       NUMBER OF PUMPS       FLOW RATE (GPM)         IP/FILTRATION SKID       WAHASO       CUSTOM       2       50         * BOOSTER PUMP, FILTRATION, AND CONTROLS ON SINGLE SKID. SKID TO E D REPORT TANK LEVEL TO CONTROL PANEL AND BAS, OPERATE PUMPS AN NATION WITH RECIRCULATION OF WATER. RECIRC WATER TO BE TREATED	OUTLET PRESSURE (PSI) 60 BE PRE-PIPED AND WIRED AND VFDs, MONITOR DIFFERE	UME (GAL)     FILTER TY       26     BAG FILT       .T THE FACTORY.       ENTIAL PRESSURE ACROS	FILTRATION LEVELSANITATION TYPESANITATION LEVELVOLTAGEPH'ER5 MICRONULTRAVIOLET40 mJ/cm2480	SE	30 FAL GALI		84		48	
ATER PUM	UNIT TYPE       MANUFACTURER       MODEL       NUMBER OF PUMPS       FLOW RATE (GPM)         IP/FILTRATION SKID       WAHASO       CUSTOM       2       50         * BOOSTER PUMP, FILTRATION, AND CONTROLS ON SINGLE SKID. SKID TO E D REPORT TANK LEVEL TO CONTROL PANEL AND BAS, OPERATE PUMPS AN NATION WITH RECIRCULATION OF WATER. RECIRC WATER TO BE TREATED	OUTLET PRESSURE (PSI) 60 BE PRE-PIPED AND WIRED AND VFDs, MONITOR DIFFERE	UME (GAL) FILTER TY 26 BAG FILT T THE FACTORY. ENTIAL PRESSURE ACROS ATION.	FILTRATION       SANITATION       SANITATION       VOLTAGE       PH         TER       5 MICRON       ULTRAVIOLET       40 mJ/cm2       480       480         SS FILTERS, TRACK HOURS OF USAGE AND REMAINING LIFE OF UV BULBS, AND       PH       PH       PH         PLUMBING STORAGE TA       PH       PH       PH       PH		30 FAL GALI	ONS OF	84 WATE	ER USE	48 ED.	1,2,3,4
ATER PUM	UNIT TYPE       MANUFACTURER       MODEL       NUMBER OF PUMPS       FLOW RATE (GPM)         IP/FILTRATION SKID       WAHASO       CUSTOM       2       50         * BOOSTER PUMP, FILTRATION, AND CONTROLS ON SINGLE SKID. SKID TO E D REPORT TANK LEVEL TO CONTROL PANEL AND BAS, OPERATE PUMPS AN NATION WITH RECIRCULATION OF WATER. RECIRC WATER TO BE TREATED	OUTLET PRESSURE (PSI) 60 BE PRE-PIPED AND WIRED AND VFDs, MONITOR DIFFERE	UME (GAL)     FILTER TY       26     BAG FILT       26     BAG FILT         T THE FACTORY.       ENTIAL PRESSURE ACROS       ATION.         PLAN MARK	FILTRATION LEVEL       SANITATION TYPE       SANITATION LEVEL       VOLTAGE       PH         ER       5 MICRON       ULTRAVIOLET       40 mJ/cm2       480       480         SS FILTERS, TRACK HOURS OF USAGE AND REMAINING LIFE OF UV BULBS, AND       SS FILTERS, TRACK HOURS OF USAGE AND REMAINING LIFE OF UV BULBS, AND         PLUMBING STORAGE TA         SERVICE       MANUFACTURER       MODEL       VOLUME (GAL)       LEN		30 FAL GALI	ONS OF	84	ER USE	48	

PLAN MARK	
DN1	
DN2	
FCO1	
FD1	
GCO2	
ORD1	
ORD2	IC
RD1	
RD2	
WCO1	

	PLUMBING	FIXTURE SCHEDULE	<b>.</b>				<b></b> ,		× 1×		1		
MODEL	_	F	LUSH VALVE/FA	AUCET			PLUME CW	BING CC	WASTE		0	PTIONS	NOTES
LF909			N/A				2.5	0	0	0			
007-M1-Q LF007	1-5		N/A N/A				2 0.75	0	0	0			
SD-3			N/A				0.5	0	0	0			
											BF,SB		1
		Z		996-SF			0.75	0.75	3	1.5			
Z5220							0.5	0.5	2	1.5	AE5,GD,SV,T		
Z5220 Z5360				,			0.5	0.5					1
			N/A				1	1	0	0	MSP		
ELG1616	6 KC	OHLER MODEL K-7505, 1.5 G			( FAUCET, VIB	RANT	0.5	0.5	2	1.5	BS,SV,T		
ELG1616	6	KOHLER MODEL K-7505,	1.5 GPM, SWIVE	EL FLAT GOOSEN	NECK FAUCE	-	0.5	0.5	2	1.5	BS,SV,T,BGD		
ELGU25191	I2PD	KOHLER MODEL K-7505,	1.5 GPM, SWIVE	EL FLAT GOOSEN	NECK FAUCE	-	0.5	0.5	2	1.5	BS,SV,T		
		,					0.5	0.5	2	1.5	BS,SV,T,BGD		
	25		N/A				0.5	0.5	0	0			1
T13H122	2		N/A				0.5	0.5	0	0			1
I CVTR													
B200			N/A				0.5	0.5	2	1.5			
Z5645-BV	VL	S	LOAN ECOS 811	11-1.28			1.25	0	4	2	ESLC,SV		2
Z5635-BV	VL	S	LOAN ECOS 811	11-1.28			1.25	0	4	2	ESLC,SV		2
74004.0							0.75						
21521-0	,		IN/A				0.75	0	0	0			
		PLAN			DRAINA	GE FIXT	URE	SCHE	DULE				
		MARK	ТҮРЕ				2			-	0	PTIONS	NOTES
											CC,NBS,TG		
										9			
							USING	S					
									Z100				
				urain R			บอเNG	<b>с</b>					
				SUMP	PUMP SC	HEDULE	Ξ						
			PUMP		BASIN			ELECTR					
PLAN			OW HEAD M		METER HEIG								
			, , , ,								0	PTIONS	NOTES
			20 0	1.0 1100	24 50	120	5	I	5.1 5.1	10			
				F			ымр	SCHE	DULE				
					RECIRCUL	ATION F							
	-			F	FLOW			LECTRI					
		PLAN MARK MANUFACTURER M	MODEL SIZE	F		<b>D</b>	E			МОСР	0	PTIONS	NOTES
	Ν	MARKMANUFACTURERMRP1GRUNDFOSA	ALPLHA 3/4"	F I MOUNTING (	FLOW RATE HEAI	<b>D</b>	E	ASE F	CAL	<b>MOCP</b> 15	O AS	PTIONS	NOTES
	Ν	MARKMANUFACTURERMRP1GRUNDFOSA		F I MOUNTING (	FLOW RATE HEA (GPM) (FT)	VOLTA	E	ASE F	CAL LA MCA			PTIONS	NOTES
	Ν	MARKMANUFACTURERMRP1GRUNDFOSA	ALPLHA 3/4" 15-58 F	MOUNTING ( INLINE	FLOW RATE HEA (GPM) (FT) 2.0 15	<b>VOLTA</b> 120	E	ASE F	CAL LA MCA			PTIONS	NOTES
	Ν	MARKMANUFACTURERMRP1GRUNDFOSA	ALPLHA 3/4" 15-58 F	MOUNTING ( INLINE	FLOW RATE HEA (GPM) (FT) 2.0 15	VOLTA 120	GE PH	1 0	CAL LA MCA			PTIONS	NOTES
		MARK MANUFACTURER M RP1 GRUNDFOS A	ALPLHA 3/4" 15-58 F W TANK VOLUME	ATER HEATI	FLOW RATE HEAI (GPM) (FT) 2.0 15 ER SCHED	VOLTA 120 ULE E		IASE FI 1 0	CAL LA MCA .3 0.8	15	AS		
	MODEL	MARK MANUFACTURER M RP1 GRUNDFOS A TYPE	ALPLHA 3/4" 15-58 F W TANK VOLUME (GAL)	ATER HEATI GPH @ 100 DEG.F TEMP RISE	FLOW RATE HEAI (GPM) (FT) 2.0 15 ER SCHED	VOLTA 120 ULE E		IASE FI 1 0 ICAL L (W) F	CAL LA MCA .3 0.8 ■	15	AS	PTIONS	
		MARK MANUFACTURER M RP1 GRUNDFOS A	ALPLHA 3/4" 15-58 F W TANK VOLUME (GAL)	ATER HEATI	FLOW RATE HEAI (GPM) (FT) 2.0 15 ER SCHED	VOLTA 120 ULE E		IASE FI 1 0 ICAL L (W) F	CAL LA MCA .3 0.8	15	AS		NOTES
OCHINVAR C	MODEL	MARK MANUFACTURER M RP1 GRUNDFOS A TYPE AIR-SOURCE HEAT PUMP WATER HEATER AIR-SOURCE HEAT PUMP	ALPLHA 3/4" 15-58 F W TANK VOLUME (GAL) 120	ATER HEATI GPH @ 100 DEG.F TEMP RISE	FLOW RATE HEAI (GPM) (FT) 2.0 15 ER SCHED	VOLTA 120 ULE E		IASE FI 1 0 ICAL L (W) I 2 2	CAL LA MCA .3 0.8 ■	15 A MOCF 3 30	AS		
OCHINVAR C	MODEL CHPA120PD	MARK MANUFACTURER M RP1 GRUNDFOS A TYPE AIR-SOURCE HEAT PUMP WATER HEATER	ALPLHA 3/4" 15-58 F W TANK VOLUME (GAL) 120	ATER HEATI GPH @ 100 DEG.F TEMP RISE 50	FLOW RATE (GPM) (FT) 2.0 15 ER SCHED VOLTAGE P 208	VOLTA 120 ULE E HASE N 1	GE PH	IASE FI 1 0 ICAL L (W) I 2 2	CAL           MCA           .3         0.8           FLA         MCA           21.6         21.6	15 A MOCF 3 30	AS O HSP,ET		
OCHINVAR C	MODEL CHPA120PD	MARK MANUFACTURER M RP1 GRUNDFOS A TYPE AIR-SOURCE HEAT PUMP WATER HEATER AIR-SOURCE HEAT PUMP	ALPLHA 3/4" 15-58 F W TANK VOLUME (GAL) 120	ATER HEATI GPH @ 100 DEG.F TEMP RISE 50	FLOW RATE (GPM) (FT) 2.0 15 ER SCHED VOLTAGE P 208	VOLTA 120 ULE E HASE N 1	GE PH	IASE FI 1 0 ICAL L (W) I 2 2	CAL           MCA           .3         0.8           FLA         MCA           21.6         21.6	15 A MOCF 3 30	AS O HSP,ET		
OCHINVAR C	MODEL CHPA120PD	MARK     MANUFACTURER     M       RP1     GRUNDFOS     A       GRUNDFOS     A       AIR-SOURCE HEAT PUMP       WATER HEATER       AIR-SOURCE HEAT PUMP       WATER HEATER	ALPLHA 3/4" 15-58 F W TANK VOLUME (GAL) 120 120	ATER HEATI GPH @ 100 DEG.F TEMP RISE 50	FLOW     HEAI       (GPM)     (FT)       2.0     15       ER SCHED       VOLTAGE     P       208     208	VOLTA 120 ULE E HASE N 1	GE PH	IASE FI 1 0 ICAL L (W) I 2 2	CAL           MCA           .3         0.8           FLA         MCA           21.6         21.6	15 A MOCF 3 30	AS O HSP,ET		
DCHINVAR C DCHINVAR C ER MODEL	MODEL CHPA120PD CHPA120PD	MARK MANUFACTURER M RP1 GRUNDFOS A TYPE AIR-SOURCE HEAT PUMP WATER HEATER AIR-SOURCE HEAT PUMP WATER HEATER PRI MAX CAPACITY (MBH	LPLHA     3/4"       15-58 F     W       TANK     VOLUME       (GAL)     120       120     120	ATER HEATI GPH @ 100 DEG.F TEMP RISE 50 50 GULATOR SO RESSURE (PSIG)	FLOW RATE (GPM) (FT) 2.0 15 ER SCHED VOLTAGE P 208 208 CHEDULE	VOLTA       120       ULE       E       HASE     Nu       1     1	E GE PH LECTRI 0MINAL 12000	IASE FI 1 0 ICAL (W) I 0 2 0 2	CAL LA MCA .3 0.8 FLA MC/ 21.6 21.6 21.6 21.6 VALVE SI	15         A       MOCF         3       30         5       30         6       30	AS O HSP,ET HSP		
DCHINVAR C DCHINVAR C ER MODEL TINI 31156/F	MODEL CHPA120PD CHPA120PD CHPA120PD	MARK     MANUFACTURER     M       RP1     GRUNDFOS     A       GRUNDFOS     A       AIR-SOURCE HEAT PUMP       WATER HEATER       AIR-SOURCE HEAT PUMP       WATER HEATER       AIR-SOURCE HEAT PUMP       WATER HEATER	LPLHA     3/4"       15-58 F     W       TANK     VOLUME       (GAL)     120       120     120	ATER HEATI GPH @ 100 DEG.F TEMP RISE 50 50 50	FLOW RATE (GPM) (FT) 2.0 15 ER SCHED VOLTAGE P 208 208 CHEDULE	VOLTA 120 VOLTA 120 ULE E HASE N 1 1 1 PRESSURI 7 7	E (IN. W	IASE FI 1 0 ICAL (W) I 0 2 0 2 0 2 1.C.)	CAL         LA       MCA         .3       0.8         FLA       MC/         21.6       21.6         21.6       21.6         21.6       21.6         21.6       21.6         21.6       21.6         21.6       21.6	15         A       MOCF         30       30         5       30         5       30	AS O HSP,ET HSP	PTIONS	NOTES
DCHINVAR C DCHINVAR C ER MODEL TINI 31156/F	MODEL CHPA120PD CHPA120PD	MARK     MANUFACTURER     M       RP1     GRUNDFOS     A       GRUNDFOS     A       AIR-SOURCE HEAT PUMP       WATER HEATER       AIR-SOURCE HEAT PUMP       WATER HEATER	LPLHA     3/4"       15-58 F     W       TANK     VOLUME       (GAL)     120       120     120	ATER HEATI GPH @ 100 DEG.F TEMP RISE 50 50 GULATOR SO RESSURE (PSIG)	FLOW RATE (GPM) (FT) 2.0 15 ER SCHED VOLTAGE P 208 208 CHEDULE	VOLTA 120 VOLTA 120 ULE E HASE N 1 1 1 PRESSURI 7 7	E GE PH LECTRI 0MINAL 12000	IASE FI 1 0 ICAL (W) I 0 2 0 2 0 2 1.C.)	CAL         LA       MCA         .3       0.8         FLA       MC/         21.6       21.6         21.6       21.6         21.6       21.6         21.6       21.6         21.6       21.6         21.6       21.6	15         A       MOCF         3       30         3       30         3       30	AS O HSP,ET HSP	PTIONS	NOTES
CHINVAR C CHINVAR C C CHINVAR C ER MODEL TINI 31156/F TINI 31156/F	MODEL CHPA120PD CHPA120PD CHPA120PD CHPA120PD CHPA120PD CHPA120PD	MARK     MANUFACTURER     M       RP1     GRUNDFOS     A       GRUNDFOS     A       AIR-SOURCE HEAT PUMP       WATER HEATER       AIR-SOURCE HEAT PUMP       WATER HEATER	LPLHA     3/4"       15-58 F     W       TANK     VOLUME       (GAL)     120       120     120	ATER HEATI GPH @ 100 DEG.F TEMP RISE 50 50 GULATOR SO RESSURE (PSIG)	FLOW RATE (GPM) (FT) 2.0 15 ER SCHED VOLTAGE P 208 208 CHEDULE	VOLTA 120 VOLTA 120 ULE E HASE N 1 1 1 PRESSURI 7 7	E (IN. W	IASE FI 1 0 ICAL (W) I 0 2 0 2 0 2 1.C.)	CAL LA MCA .3 0.8 FLA MCA 21.6 21.6 21.6 21.6 21.6 21.6 VALVE SI 2.5 ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	15         A       MOCF         3       30         3       30         3       30	AS O HSP,ET HSP	PTIONS	NOTES
DCHINVAR         C           DCHINVAR         C           DCHINVAR         C           DCHINVAR         C           TINI         31156/F           TINI         31156/F           TINI         31052	MODEL CHPA120PD CHPA120PD CHPA120PD CHPA120PD CHPA120PD CHPA120PD CHPA120PD	MARK     MANUFACTURER     M       RP1     GRUNDFOS     A       GRUNDFOS     A       AIR-SOURCE HEAT PUMP       WATER HEATER       AIR-SOURCE HEAT PUMP       WATER HEATER	IDELETINA     3/4"       IDELETINA     3/4"       IDELETINA     3/4"       W     IDELETINA       IDELETINA     IDELETINA	ATER HEATI GPH @ 100 DEG.F TEMP RISE 50 50 GULATOR SO RESSURE (PSIG)	FLOW RATE (GPM) (FT) 2.0 15 ER SCHED VOLTAGE P 208 208 CHEDULE	VOLTA 120 VOLTA 120 ULE E HASE N 1 1 1 PRESSURI 7 7	E (IN. W	IASE FI 1 0 ICAL (W) I 0 2 0 2 0 2 1.C.)	CAL LA MCA .3 0.8 FLA MCA 21.6 21.6 21.6 21.6 21.6 21.6 VALVE SI 2.5 ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	15         A       MOCF         3       30         3       30         3       30	AS O HSP,ET HSP	PTIONS	NOTES
DCHINVAR         C           DCHINVAR         C           DCHINVAR         C           DCHINVAR         C           TINI         31156/F           TINI         31156/F           TINI         31052	MODEL CHPA120PD CHPA120PD CHPA120PD CHPA120PD CHPA120PD CHPA120PD CHPA120PD	MARK     MANUFACTURER     M       RP1     GRUNDFOS     A       S     GRUNDFOS     A       AIR-SOURCE HEAT PUMP     WATER HEATER       ILTRATION SCHEDUL     PROCESSING	IDELETINA     3/4"       IDELETINA     3/4"       IDELETINA     3/4"       W     IDELETINA       IDELETINA     IDELETINA	ATER HEATI GPH @ 100 DEG.F TEMP RISE 50 50 GULATOR SO RESSURE (PSIG)	FLOW     HEAI       (GPM)     (FT)       2.0     15       ER SCHED       VOLTAGE     P       208     208	VOLTA 120 VOLTA 120 ULE E HASE N 1 1 1 PRESSURI 7 7	E (IN. W	IASE FI 1 0 ICAL (W) I 0 2 0 2 0 2 1.C.)	CAL LA MCA .3 0.8 FLA MCA 21.6 21.6 21.6 21.6 21.6 21.6 VALVE SI 2.5 ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	15         A       MOCF         3       30         3       30         3       30	AS O HSP,ET HSP	PTIONS	NOTES
CHINVAR C DCHINVAR C DCHINVAR C TINI 31156/F TINI 31156/F TINI 31052 ATER STORAC	MODEL CHPA120PD CHPA120PD CHPA120PD CHPA120PD CHPA120PD CHPA120PD CHPA120PD	MARK     MANUFACTURER     M       RP1     GRUNDFOS     A       TYPE       AIR-SOURCE HEAT PUMP       WATER HEATER       AIR-SOURCE HEAT PUMP       WATER HEATER         PRI         MAX CAPACITY (MBH)       S     4140       S     4140         S     80	IDPLHA     3/4"       15-58 F     W       TANK     VOLUME       (GAL)     120       120     120       120     120	ATION	FLOW     HEAI       (GPM)     (FT)       2.0     15       ER SCHED       VOLTAGE     P       208     208	VOLTA 120 ULE E HASE N 1 1 1 PRESSURI 7 7 7	E (IN. W	IASE FI 1 0 ICAL (W) I 0 2 0 2 0 2 1.C.)	CAL LA MCA .3 0.8 FLA MCA 21.6 21.6 21.6 21.6 21.6 21.6 VALVE SI 2.5 ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	15 A MOCF 3 30 3 30 3 30 ZE (IN)	AS O HSP,ET HSP	PTIONS	NOTES
	SD-3         EZSTL8WS         BIM875         Z1996-24-HH-I         Z5220         Z5360         PNV-129         ELG1610         ELG1610         ELG125191         ELGU25191         ELGDULB3         T17TH32         T13H122         N         CVTR         B200         Z5645-BW         Z5635-BW         Z1321-C	SD-3       EZSTL8WSLK         BIM875       Z1996-24-HH-MH-WG         Z5220       Z5220         Z5520       Z5360         PNV-125       ELG1616         K0       ELG1616         ELGU251912PD       ELGU251912PD         ELGU251912PD       CVTR         B200       Z5645-BWL         Z5635-BWL       Z1321-C	SD-3         EZSTL8WSLK           BIM875         Z1996-24-HI-MH-WG         Z           Z5220         ZURN           Z520         ZURN           PNV-125         ELG1616           KOHLER MODEL K-7505, 1.5 G           ELGU251912PD         KOHLER MODEL K-7505,           ELGDULB3322         KOHLER MODEL K-596-CP, 1.           T17TH325         T13H122           V         CVTR           B200         S           Z5635-BWL         S           Z1321-C         S           Z1321-C         S           Z1321-C         S           CVTR         S           Z1321-C         S           Z100WN         N	SD-3         N/A           EZSTL8WSLK         N/A           BIM875         N/A           Z1996-24-H1-MH-WG         ZURN MODEL Z915-)           Z5220         ZURN MODEL Z915-)           Z5220         ZURN MODEL Z915-)           Z5220         ZURN MODEL Z915-)           Z5360         ZURN MODEL Z915-)           PNV-125         N/A           ELG1616         KOHLER MODEL K-7505, 1.5 GPM, SWIVEL STAINLESS FI           ELG1616         KOHLER MODEL K-7505, 1.5 GPM, SWIVEL           ELGDULB3322         KOHLER MODEL K-7505, 1.5 GPM, SWIVEL           T17TH325         N/A           T13H122         N/A           V         CVTR           B200         N/A           Z5635-BWL         SLOAN ECOS 81'           Z1321-C         N/A           V         CVTR           B200         N/A           Z5635-BWL         SLOAN ECOS 81'           Z1321-C         N/A           V         CVTR           C11         FLOOR DRAIN - ROUN           GC02         TWO-WAY FINISHED GRADE C           ORD1         OVERLOW ROOF DRAIN           RC50 DRAIN - ROUN         ROOF DRAIN           RD2	SD-3         N/A           EZSTL8WSLK         N/A           BIM875         N/A           Z1996-24-HI-MH-WG         ZURN MODEL Z1996-SF           Z5220         ZURN MODEL Z1996-SF           Z5220         ZURN MODEL Z404-X, 0.5 GPM           Z5360         ZURN MODEL Z440-X, 0.5 GPM           PNV-125         N/A           ELG1616         KOHLER MODEL K-7505, 1.5 GPM, SWIVEL FLAT GOOSENECK           ELG1616         KOHLER MODEL K-7505, 1.5 GPM, SWIVEL FLAT GOOSENECK PI           ELGU251912PD         KOHLER MODEL K-7505, 1.5 GPM, SWIVEL GOOSENECK PI           T17TH325         N/A           T13H122         N/A           V         CVTR           B200         N/A           Z5635-BWL         SLOAN ECOS 8111-1.28           Z5635-BWL         SLOAN ECOS 8111-1.28           Z1321-C         N/A           FO1         FLOOR CLANOUT           FO1         FLOOR CLANOUT           GC2         TWO-WAY FINISHED GRADE CLEANOUT           ORD1	SD-3         N/A           EZSTL8WSLK         N/A           BIM875         UN MODEL 21996-SF           Z1996-24-HH-MI-WG         ZURN MODEL 26916-XL, 0.5 GPM           Z5320         ZURN MODEL 27440-XL, 0.5 GPM           Z5380         ZURN MODEL 26916-XL, 0.5 GPM           Z5380         ZURN MODEL 26916-XL, 0.5 GPM           Z5320         ZURN MODEL 26916-XL, 0.5 GPM           PNV-125         N/A           PNV-125         N/A           ELG1816         KOHLER MODEL K-7505, 1.5 GPM, SWIVEL FLAT GOOSENECK FAUCET, VIB STAINLESS FINISH           ELG1616         KOHLER MODEL K-7505, 1.5 GPM, SWIVEL FLAT GOOSENECK FAUCET           ELGU251912PD         KOHLER MODEL K-596-CP, 1.5 GPM, SWIVEL GOOSENECK PULL DOWN FAI           T171H325         N/A           T13H122         N/A           V         CVTR           B200         N/A           Z5645-BWL         SLOAN ECOS 8111-1.28           Z1321-C         N/A           VI         DVM SPOUT NOZZLE           Z1321-C         N/A           VI         DVMSPOUT NOZZLE           Z1321-C         N/A           VI         DOWNSPOUT NOZZLE           DN1         DOWNSPOUT NOZZLE           DN2         <	SD-3         NA           EZSTL8WSLK         N/A           BIM875         ZURN MODEL Z1996-SF           Z520         ZURN MODEL Z4195-XL, 0.5 GPM           Z520         ZURN MODEL Z4194-XL, 0.5 GPM           Z5300         ZURN MODEL Z4194-XL, 0.5 GPM           Z5300         ZURN MODEL Z415-XL, 0.5 GPM           Z5300         ZURN MODEL Z415-XL, 0.5 GPM           Z5300         ZURN MODEL Z415-XL, 0.5 GPM           Z5300         STANLESS FINISH           ELG1616         KOHLER MODEL K-7505, 1.5 GPM, SWIVEL FLAT GOOSENECK FAUCET           ELG10151912PD         KOHLER MODEL K-7505, 1.5 GPM, SWIVEL FLAT GOOSENECK FAUCET           ELG0251912PD         KOHLER MODEL K-598-CP, 1.5 GPM, SWIVEL FLAT GOOSENECK FAUCET           T17TH325         N/A           T13H122         N/A           4         CVTR           B200         N/A           Z5663-BWL         SLOAN ECOS 8111-1.28           Z1321-G         N/A           DN1         DOWISPOUT NOZZLE         ZURN           FC01         FLOOR DRAIN         ZURN           FC01         FLOOR CLEANOUT         JAY R SMITH           GC02         TWO-WAY FINISHED GRADE CLEANOUT         JAY R SMITH           GC02         TWO-WAY FI	SD-3         N/A         0.5           EXTINUEWSIK         N/A         0.5           Z1996-24-HH-MH-WG         ZURN MODEL Z1996-SF         0.75           Z520         ZURN MODEL Z1996-SF         0.75           Z520         ZURN MODEL Z1996-SF         0.75           Z520         ZURN MODEL Z1996-SF         0.75           Z530         ZURN MODEL Z1996-SF         0.5           PNV-125         NA         1           ELG1616         KOHLER MODEL K-7505, 1.5 GPM, SWIVEL FLAT GOOSENECK FAUCET, VIBRANT         0.5           ELG1916         KOHLER MODEL K-7505, 1.5 GPM, SWIVEL FLAT GOOSENECK FAUCET         0.5           ELGUZIS192PD         KOHLER MODEL K-7505, 1.5 GPM, SWIVEL FLAT GOOSENECK FAUCET         0.5           T17TH325         N/A         0.5           T18H122         N/A         0.5           VT17H325         N/A         0.5           T19H122         N/A         0.5           SLOAN ECOS B111-1.28         1.25           Z5645-BWL         SLOAN ECOS B111-1.28         1.25           Z1321-C         N/A         0.5           DN2         DOMNSPOUT NOZZLE         ZURN           DN2         DOMNSPOUT NOZZLE         ZURN           DN2	SD-3         NA         0.5         0.           EXTENSELK         NA         0.5         0           Z1996-24-HH-MH-WG         ZURN MODEL Z815-KL, 0.5 GPM         0.5         0.5           Z5220         ZURN MODEL Z815-KL, 0.5 GPM         0.5         0.5           Z5220         ZURN MODEL Z816-SF         0.75         0.5         0.5           Z5220         ZURN MODEL Z816-SF         0.5         0.5         0.5           Z5220         ZURN MODEL Z816-SF         0.5         0.5         0.5           Z5220         ZURN MODEL Z816-SF         0.5         0.5         0.5           PRV-125         NA         1         1         1         1           ELG1616         KOHLER MODEL K-7505, 1.5 GPM, SWIVEL FLAT GOOSENECK FAUCET         0.5         0.5           ELG9UL83322         KOHLER MODEL K-7505, 1.5 GPM, SWIVEL FLAT GOOSENECK PAUCET         0.5         0.5           T171H325         NA         0.5         0.5         0.5           T171H325         NA         0.5         0.5         0.5           Z5845-BWL         SLOAN ECOS 8111-128         1.25         0           Z5845-BWL         SLOAN ECOS 8111-128         1.25         0           Z1321-C<	SD-3         N/A         0.5         0         0         0           EZST18/WSUK         N/A         0.5         0         0         2           BIM875         N/A         0.5         0         0         0           Z1996.24F-MH-WIG         ZURN MODEL Z916.5F         0.75         0.75         3           Z5220         ZURN MODEL Z915.5L, 0.5 GPM         0.5         0.5         2           Z5230         ZURN MODEL Z915.5L, 0.5 GPM         0.5         0.5         2           Z5300         ZURN MODEL Z915.5L, 0.5 GPM         0.5         0.5         2           PNV-123         N/A         0.5         0.5         2           PNV-123         N/A         0.5         0.5         2           ELG1616         KOHLER MODEL K-7505, 1.5 GPM, SWIVEL FLAT GOOSENECK FAUCET         0.5         0.5         2           ELG1818         KOHLER MODEL K-7505, 1.5 GPM, SWIVEL FLAT GOOSENECK FAUCET         0.5         0.5         2           ELG1818         KOHLER MODEL K-7505, 1.5 GPM, SWIVEL FLAT GOOSENECK FAUCET         0.5         0.5         2           T17171325         N/A         0.5         0.5         0         0         1           T17171325         N/A	SD-3         NA         0.5         0         0         0         0           IZ35210WSUK         NA         0.5         0         2         1.5           BIM875         NA         0.5         0         0.5         0.5         0.5         2         1.5           Z1996 2-HH-MH-WG         ZURN MODEL 2015-XL, 0.5 GPM         0.5         0.5         2         1.5           Z5220         ZURN MODEL 2015-XL, 0.5 GPM         0.5         0.5         2         1.5           Z5300         ZURN MODEL 2015-XL, 0.5 GPM         0.5         0.5         2         1.5           Z5300         ZURN MODEL X915-XL, 0.5 GPM         0.5         0.5         2         1.5           PNV-125         NA         1         1         1         0         0           ELG1616         KOHLER MODEL K-7505, 1.5 GPM, SWIVEL FLAT GOOSENECK FAUCET         0.5         0.5         2         1.5           ELG010.B3322         KOHLER MODEL K-7505, 1.5 GPM, SWIVEL FLAT GOOSENECK FAUCET         0.5         0.5         2         1.5           T17H1925         NA         0.5         0.5         0         0         0         0           T17H1925         N/A         0.5         0.5 </td <td>SD-3         NA         0.5         0         0         0         0           ESTSUNSIK         NIA         0.5         0         2         1.5         PESR           BIMB75         NIA         0.5         0         0         0         0           Z1996.24HH-MH-MVQ         ZURN MODEL 2995.5F         0.75         0.5         2         1.5         AES.0D.SV.T           Z5220         ZURN MODEL 2915.4V.0.5 GPM         0.5         0.5         2         1.5         AES.0D.SV.T           Z5230         ZURN MODEL 2915.4V.0.5 GPM         0.5         0.5         2         1.5         AES.0D.SV.T           Z5300         ZURN MODEL 2915.4V.0.5 GPM         0.5         0.5         2         1.5         AES.0D.SV.T           PNV-125         NA         1         1         0.5         0.5         2         1.5         BS.SV.T.BCD           ELG1016         KOHLER MODEL K-7505.15 GPM. SWIVEL FLAT GOOSENECK FAUCET         0.5         0.5         2         1.5         BS.SV.T.BCD           ELG101612         KOHLER MODEL K-7505.15 GPM. SWIVEL FLAT GOOSENECK FAUCET         0.5         0.5         2         1.5         BS.SV.T.BCD           T171H122         NA         0.5         0.</td> <td>SD-3 EZSTEWSLK         NA         0.5 NA         0 0.5 0         0 0         0 0</td>	SD-3         NA         0.5         0         0         0         0           ESTSUNSIK         NIA         0.5         0         2         1.5         PESR           BIMB75         NIA         0.5         0         0         0         0           Z1996.24HH-MH-MVQ         ZURN MODEL 2995.5F         0.75         0.5         2         1.5         AES.0D.SV.T           Z5220         ZURN MODEL 2915.4V.0.5 GPM         0.5         0.5         2         1.5         AES.0D.SV.T           Z5230         ZURN MODEL 2915.4V.0.5 GPM         0.5         0.5         2         1.5         AES.0D.SV.T           Z5300         ZURN MODEL 2915.4V.0.5 GPM         0.5         0.5         2         1.5         AES.0D.SV.T           PNV-125         NA         1         1         0.5         0.5         2         1.5         BS.SV.T.BCD           ELG1016         KOHLER MODEL K-7505.15 GPM. SWIVEL FLAT GOOSENECK FAUCET         0.5         0.5         2         1.5         BS.SV.T.BCD           ELG101612         KOHLER MODEL K-7505.15 GPM. SWIVEL FLAT GOOSENECK FAUCET         0.5         0.5         2         1.5         BS.SV.T.BCD           T171H122         NA         0.5         0.	SD-3 EZSTEWSLK         NA         0.5 NA         0 0.5 0         0 0         0 0

		PI IIMF	BING FIXTURE SCHEDULE							
		F LOWL		PLUM		ONNECT	IONS (IN)			
	MANUFACTURER	MODEL	FLUSH VALVE/FAUCET	CW	HW	WASTE	VENT	-	OPTIONS	NOTES
	WATTS WATTS	LF909 007-M1-QT-S	N/A N/A	2.5 2	0	0	0			
	WATTS	LF007	N/A	0.75	0	0	0			
	WATTS ELKAY	SD-3 EZSTL8WSLK	N/A N/A	0.5	0	0	0	BF,SB		1
	GUY GRAY	BIM875	N/A	0.5	0	0	0			
LAVATORY	ZURN ZURN	Z1996-24-HH-MH-WG Z5220	ZURN MODEL Z1996-SF ZURN MODEL Z6915-XL, 0.5 GPM	0.75	0.75	3	1.5 1.5	AE5,GD,SV,T		
	ZURN	Z5220	ZURN MODEL Z7440-XL, 0.5 GPM	0.5	0.5	2	1.5	AE5,GD,SV,T		
ATORY	ZURN LEONARD	Z5360 PNV-125	ZURN MODEL Z6915-XL, 0.5 GPM N/A	0.5	0.5	2	1.5 0	AE5,GD,SV,T MSP		1
SINK	ELKAY	ELG1616	KOHLER MODEL K-7505, 1.5 GPM, SWIVEL FLAT GOOSENECK FAUCET, VIBRANT	0.5	0.5	2	1.5	BS,SV,T		
ITH GARBAGE	ELKAY	ELG1616	STAINLESS FINISH KOHLER MODEL K-7505, 1.5 GPM, SWIVEL FLAT GOOSENECK FAUCET	0.5	0.5	2	1.5	BS,SV,T,BGD		
SINK	ELKAY	ELGU251912PD	KOHLER MODEL K-7505, 1.5 GPM, SWIVEL FLAT GOOSENECK FAUCET	0.5	0.5	2	1.5	BS,SV,T		
ITH GARBAGE		ELGDULB3322	KOHLER MODEL K-596-CP, 1.5 GPM, SWIVEL GOOSENECK PULL DOWN FAUCET	0.5	0.5	2	1.5	BS,SV,T,BGD	1	
	DELTA	T17TH325	Ν/Α	0.5	0.5	0	0			1
	DELTA	T13H122	N/A	0.5	0.5	0	0			1
	ROOF PENETRATION HOUSING	CVTR								
	GUY GRAY	B200	N/A	0.5	0.5	2	1.5			
28 GPF FLUSH	L ZURN	Z5645-BWL	SLOAN ECOS 8111-1.28	1.25	0	4	2	ESLC,SV		2
GPF FLUSH	ZURN	Z5635-BWL	SLOAN ECOS 8111-1.28	1.25	0	4	2	ESLC,SV		2
	ZURN	Z1321-C	N/A	0.75	0	0	0			
			DRAINAGE FI	IXTURE	SCHE	DULE				
			PLAN MARK TYPE MANUFACTUR	RER		MOD	EL		OPTIONS	NOTES
			DN1 DOWNSPOUT NOZZLE ZURN			Z19	9			
			DN2DOWNSPOUT NOZZLEZURNFC01FLOOR CLEANOUTJAY R SMIT	н		Z19 4031				
			FD1FLOOR DRAIN - ROUNDJAY R SMIT			2005		CC,NBS,TG		
			GC02 TWO-WAY FINISHED GRADE CLEANOUT JAY R SMIT	Н		4261				
			ORD1OVERFLOW ROOF DRAINZURNORD2ICC 500 COMPLIANT OVERFLOW ROOF DRAINROOF PENETRATION	HOUSING	S	Z100- COFF				
			RD1 ROOF DRAIN ZURN			Z10	0			
			RD2ICC 500 COMPLIANT ROOF DRAINROOF PENETRATIONWC01WALL CLEANOUTJAY R SMIT		is	CRI 4530				
			SUMP PUMP SCHEDU	JLE						
			PUMP BASIN		ELECT	RICAL				
		PLAN MARK MANUFACTURE		<b>DLTAGE F</b> 120	PHASE	<b>FLA M</b> ( 3.1 3.		• (	OPTIONS	NOTES
			RECIRCULATIO	N PUMF	P SCH	EDULE				
			FLOW		ELECTR	RICAL				
			PLAN RATE HEAD	TAGE PI	HASE		А МОСР	, c	OPTIONS	NOTES
			PLAN MARKMANUFACTURERMODELSIZEMOUNTINGRATE (GPM)HEAD (FT)VOLRP1GRUNDFOSALPLHA3/4"INLINE2.0151	<b>TAGE PI</b> 120		<b>ELA MC</b>		AS	OPTIONS	NOTES
			PLAN     RATE     HEAD       MARK     MANUFACTURER     MODEL     SIZE     MOUNTING     (GPM)     (FT)     VOL						OPTIONS	NOTES
			PLAN MARKMANUFACTURERMODELSIZEMOUNTINGRATE (GPM)HEAD (FT)VOLRP1GRUNDFOSALPLHA 15-58 F3/4"INLINE2.0151						OPTIONS	NOTES
			PLAN MARK     MANUFACTURER     MODEL     SIZE     MOUNTING     RATE (GPM)     HEAD (FT)     VOL       RP1     GRUNDFOS     ALPLHA 15-58 F     3/4"     INLINE     2.0     15     1	120	1				OPTIONS	NOTES
	PLAN		PLAN MARKMANUFACTURERMODELSIZEMOUNTINGRATE (GPM)HEAD (FT)VOLRP1GRUNDFOSALPLHA 15-58 F3/4"INLINE2.0151		1				DPTIONS	NOTES
	MARK MANU	FACTURER MODEL	PLAN MARK       MANUFACTURER       MODEL       SIZE       MOUNTING       RATE (GPM)       HEAD (FT)       VOL         RP1       GRUNDFOS       ALPLHA 15-58 F       3/4"       INLINE       2.0       15       1         WATER HEATER SCHEDULE	ELECTF	1 RICAL	0.3 0.8	3 15 CA MOCF	AS	OPTIONS	NOTES
	MARKMANUEWH1LOC	CHINVAR CHPA120F	PLAN MARKMANUFACTURERMODELSIZEMOUNTINGRATE (GPM)HEAD (FT)VOLRP1GRUNDFOSALPLHA 15-58 F3/4"INLINE2.0151WATER HEATER SCHEDULETYPETANK (GAL)GPH @ 100 DEG.F TEMP (GAL)502081OL AIR-SOURCE HEAT PUMP WATER HEATER	ELECTF NOMINA 1200	1 RICAL SL (W) 00	0.3 0.8 FLA MC 21.6 21	<ul> <li>3 15</li> <li>CA MOCF</li> <li>.6 30</li> </ul>	AS AS (HSP,ET		
	MARKMANUEWH1LOC		PLAN MARKMANUFACTURERMODELSIZEMOUNTINGRATE (GPM)HEAD (FT)VOLRP1GRUNDFOSALPLHA 15-58 F3/4"INLINE2.0151WATER HEATER SCHEDULETYPETANK (GAL)GPH @ 100 DEG.F TEMP (GAL)	ELECTF	1 RICAL SL (W) 00	0.3 0.8	<ul> <li>3 15</li> <li>CA MOCF</li> <li>.6 30</li> </ul>	AS		
	MARKMANUEWH1LOC	CHINVAR CHPA120F	PLAN MARKMANUFACTURERMODELSIZEMOUNTINGRATE (GPM)HEAD (FT)VOLRP1GRUNDFOSALPLHA 15-58 F3/4"INLINE2.0151WATER HEATER SCHEDULETYPETANK (GAL)GPH @ 100 DEG.F TEMP (GAL)502081OL AIR-SOURCE HEAT PUMP WATER HEATER	ELECTF NOMINA 1200	1 RICAL SL (W) 00	0.3 0.8 FLA MC 21.6 21	<ul> <li>3 15</li> <li>CA MOCF</li> <li>.6 30</li> </ul>	AS AS (HSP,ET		
	MARKMANUEWH1LOC	CHINVAR CHPA120F	PLAN MARKMANUFACTURERMODELSIZEMOUNTINGRATE (GPM)HEAD (FT)VOLRP1GRUNDFOSALPLHA 15-58 F3/4"INLINE2.0151WATER HEATER SCHEDULETYPETANK (GAL)GPH @ 100 DEG.F TEMP (GAL)	ELECTF NOMINA 1200	1 RICAL SL (W) 00	0.3 0.8 FLA MC 21.6 21	<ul> <li>3 15</li> <li>CA MOCF</li> <li>.6 30</li> </ul>	AS AS (HSP,ET		
	MARKMANUEWH1LOC	CHINVAR CHPA120F	PLAN MARKMANUFACTURERMODELSIZEMOUNTINGRATE (GPM)HEAD (FT)VOL VOLRP1GRUNDFOSALPLHA 15-58 F3/4"INLINE2.0151WATER HEATER SCHEDULETYPETANK VOLUME (GAL)GPH @ 100 DEG.F TEMP RISEVOLTAGEPHASEDAIR-SOURCE HEAT PUMP WATER HEATER120502081DAIR-SOURCE HEAT PUMP WATER HEATER120502081	ELECTF NOMINA 1200	1 RICAL SL (W) 00	0.3 0.8 FLA MC 21.6 21	<ul> <li>3 15</li> <li>CA MOCF</li> <li>.6 30</li> </ul>	AS AS (HSP,ET		
	MARKMANUEWH1LOC	CHINVAR CHPA120F	PLAN MARKMANUFACTURERMODELSIZEMOUNTINGRATE (GPM)HEAD (FT)VOLRP1GRUNDFOSALPLHA 15-58 F3/4"INLINE2.0151WATER HEATER SCHEDULETYPETANK (GAL)GPH @ 100 DEG.F TEMP (GAL)	ELECTF NOMINA 1200	1 RICAL SL (W) 00	0.3 0.8 FLA MC 21.6 21	<ul> <li>3 15</li> <li>CA MOCF</li> <li>.6 30</li> </ul>	AS AS (HSP,ET		
PLAN MARK	MARK     MANU       EWH1     LOC       EWH2     LOC	CHINVAR CHPA120F CHINVAR CHPA120F R MODEL SYST	PLAN MARKMANUFACTURERMODELSIZEMOUNTINGRATE (GPM)HEAD (FT)VOLRP1GRUNDFOSALPLHA 15-58 F3/4"INLINE2.0151WATER HEATER SCHEDULETYPETANK VOLUME (GAL)GPH @ 100 DEG.F TEMP (GAL)VOLTAGEPHASEDAIR-SOURCE HEAT PUMP WATER HEATER120502081DAIR-SOURCE HEAT PUMP WATER HEATER120502081DAIR-SOURCE HEAT PUMP WATER HEATER120502081PRESSURE REGULATOR SCHEDULEFRESSURE REGULATOR SCHEDULE	ELECTF NOMINA 1200	1 RICAL ML (W) 00	FLA         M(           21.6         21           21.6         21           VALVE         1	3     15       CA     MOCF       .6     30       .6     30       SIZE (IN)	AS HSP,ET HSP		NOTES
PR1	MARK       MANU         EWH1       LOC         EWH2       LOC         K       MANUFACTUREI         PIETRO FIORENTI	CHINVAR CHPA120F CHINVAR CHPA120F R MODEL SYST INI 31156/F NATUR/	PLAN MARKMANUFACTURERMODELSIZEMOUNTINGRATE (GPM)HEAD (FT)VOLRP1GRUNDFOSALPLHA 15-58 F3/4"INLINE2.0151WATER HEATER SCHEDULEVATER HEATER SCHEDULETYPETANK VOLUME (GAL)GPH @ 100 DEG.F TEMP (GAL)DAIR-SOURCE HEAT PUMP WATER HEATER120502081DAIR-SOURCE HEAT PUMP WATER HEATER120502081PRESSURE REGULATOR SCHEDULEFRESSURE REGULATOR SCHEDULECOUTLET PRESSURE (PSIG)OUTLET PRESS AL GAS	ELECTF NOMINA 1200 1200	1 RICAL L (W) 00 00	0.3 0.8 FLA M0 21.6 21 21.6 21 VALVE 3 22 22 22 22 22 22 22 22 22 2	3     15       CA     MOCF       .6     30       .6     30       .6     30	AS HSP,ET HSP	OPTIONS	NOTES
	MARK     MANU       EWH1     LOC       EWH2     LOC	CHINVAR CHPA120F CHINVAR CHPA120F CHINVAR CHPA120F R MODEL SYST INI 31156/F NATUR/ INI 31156/F NATUR/ INI 31052 NATUR/	PLAN MARK       MANUFACTURER       MODEL       SIZE       MOUNTING       RATE (GPM)       HEAD (FT)       VOL         RP1       GRUNDFOS       ALPLHA 15-58 F       3/4"       INLINE       2.0       15       1         WATER HEATER SCHEDULE         VOLTAGE PHASE         TYPE       TANK VOLUME (GAL)       GPH @ 100 DEG.F TEMP RISE       VOLTAGE       PHASE         D       AIR-SOURCE HEAT PUMP       120       50       208       1         D       AIR-SOURCE HEAT PUMP       120       50       208       1         D       AIR-SOURCE HEAT PUMP       120       50       208       1         WATER HEATER       MATER HEATER       120       50       208       1         PRESSURE REGULATOR SCHEDULE         FRESSURE (PSIG) OUTLET PRESS AL GAS         AL GAS       80       2       7	ELECTF NOMINA 1200 1200	1 RICAL L (W) 00 00	0.3 0.8 FLA M( 21.6 21 21.6 21.6 21 21.6 21 21.6 21 21.6 21 21.6 21 21.6 21	3     15       CA     MOCF       .6     30       .6     30       .6     30	AS HSP,ET HSP	OPTIONS	NOTES
PR1	MARK       MANU         EWH1       LOC         EWH2       LOC         EWH2       LOC         EWH2       LOC         PIETRO FIORENTI         PIETRO FIORENTI         PIETRO-FIORENTI	CHINVAR CHPA120F CHINVAR CHPA120F CHINVAR CHPA120F R MODEL SYST INI 31156/F NATUR/ INI 31156/F NATUR/ INI 31052 NATUR/	PLAN MARK       MANUFACTURER       MODEL       SIZE       MOUNTING       RATE (GPM)       HEAD (FT)       VOL         RP1       GRUNDFOS       ALPLHA 15-58 F       3/4"       INLINE       2.0       15       1         WATER HEATER SCHEDULE         TYPE (GAL)       GPH @ 100 VOLUME (GAL)       GPH @ 100 DEG.F TEMP RISE       VOLTAGE       PHASE         D       AIR-SOURCE HEAT PUMP       120       50       208       1         D       AIR-SOURCE HEAT PUMP       120       50       208       1         D       AIR-SOURCE HEAT PUMP       120       50       208       1         PRESSURE REGULATOR SCHEDULE         PRESSURE REGULATOR SCHEDULE         MAX CAPACITY (MBH)       INLET PRESSURE (PSIG)       OUTLET PRESSURE (PSIG)         AL GAS       4140       2       7	ELECTF NOMINA 1200 1200	1 RICAL L (W) 00 00	0.3 0.8 FLA M( 21.6 21 21.6 21.6 21 21.6 21 21.6 21 21.6 21 21.6 21 21.6 21	3       15         CA       MOCF         .6       30         .6       30         .6       30         .5       5	AS HSP,ET HSP	OPTIONS	NOTES
	MARK     MANU       EWH1     LOC       EWH2     LOC       EWH2     LOC	CHINVAR CHPA120F CHINVAR CHPA120F CHINVAR CHPA120F R MODEL SYST INI 31156/F NATUR/ INI 31156/F NATUR/ INI 31052 NATUR/	PLAN MARK       MANUFACTURER       MODEL       SIZE       MOUNTING       RATE (GPM)       HEAD (FT)       VOL         RP1       GRUNDFOS       ALPLHA 15-58 F       3/4"       INLINE       2.0       15       1         WATER HEATER SCHEDULE         VOLTAGE PHASE         TYPE       TANK VOLUME (GAL)       GPH @ 100 DEG.F TEMP RISE       VOLTAGE       PHASE         D       AIR-SOURCE HEAT PUMP       120       50       208       1         D       AIR-SOURCE HEAT PUMP       120       50       208       1         D       AIR-SOURCE HEAT PUMP       120       50       208       1         VATER HEATER       MATER HEATER       120       50       208       1         PRESSURE REGULATOR SCHEDULE         FRESURE REGULATOR SCHEDULE         GAS 4140       2       7         AL GAS       80       2       7       7	ELECTF NOMINA 1200 1200	1 RICAL L (W) 00 00	0.3 0.8 FLA M( 21.6 21 21.6 21.6 21 21.6 21 21.6 21 21.6 21 21.6 21 21.6 21	3       15         CA       MOCF         .6       30         .6       30         .6       30         .5       5	AS HSP,ET HSP	OPTIONS	NOTES
PR1 PR2 PR3 PR3	MARK     MANU       EWH1     LOC       EWH2     LOC       EWH2     LOC	CHINVAR CHPA120F CHINVAR CHPA120F CHINVAR CHPA120F R MODEL SYST INI 31156/F NATUR/ INI 31156/F NATUR/ INI 31052 NATUR/	PLAN MARK       MANUFACTURER       MODEL       SIZE       MOUNTING       RATE (GPM)       HEAD (FT)       VOL VOL         RP1       GRUNDFOS       ALPLHA 15-58 F       3/4"       INLINE       2.0       15       1         WATER HEATER SCHEDULE         TANK VOLUME (GAL)       GPH @ 100 DEG.F TEMP (GAL)       TANK RISE       VOLTAGE       PHASE         D       AIR-SOURCE HEAT PUMP WATER HEATER       120       50       208       1         D       AIR-SOURCE HEAT PUMP WATER HEATER       120       50       208       1         PRESSURE REGULATOR SCHEDULE         PRESSURE REGULATOR SCHEDULE         MAX CAPACITY (MBH)       INLET PRESSURE (PSIG)       OUTLET PRESS 0         AIAO       2       7         MGAS       4140       2       7         MEAS       80       2       7         AIGAS       4140         PHASE         MAX       CAPACITY (MBH)       INLET PRESSURE (PSIG)       OUTLET PRESS         AL GAS       80       2       7       7         MAGAS       80       2       7       7         MAGAS <td< td=""><td>ELECTF NOMINA 1200 1200</td><td>1 RICAL L (W) 00 00</td><td>0.3 0.8 FLA M( 21.6 21 21.6 21.6 21 21.6 21 21.6 21 21.6 21 21.6 21 21.6 21</td><td>3       15         CA       MOCF         .6       30         .6       30         .6       30         .5       5</td><td>AS HSP,ET HSP</td><td>OPTIONS</td><td>NOTES</td></td<>	ELECTF NOMINA 1200 1200	1 RICAL L (W) 00 00	0.3 0.8 FLA M( 21.6 21 21.6 21.6 21 21.6 21 21.6 21 21.6 21 21.6 21 21.6 21	3       15         CA       MOCF         .6       30         .6       30         .6       30         .5       5	AS HSP,ET HSP	OPTIONS	NOTES
PR1 PR2 PR3 PR3 PUMP DW RATE	MARK     MANU       EWH1     LOC       EWH2     LOC       EWH2     LOC	CHINVAR CHPA120F CHINVAR CHPA120F R MODEL SYST INI 31156/F NATUR/ INI 31156/F NATUR/ INI 31052 NATUR/ INI 31052 NATUR/ TER STORAGE PUN	PLAN MARK       MANUFACTURER       MODEL       SIZE       MOUNTING       RATE (GPM)       HEAD (FT)       VOL (FT)         RP1       GRUNDFOS       ALPLHA       3/4"       INLINE       2.0       15       1         WATER HEATER SCHEDULE         TANK VOLUME (GAL)       GPH @ 100 DEG.F TEMP (GAL)       TANK DEG.F TEMP (GAL)       OUTAGE       PHASE         D       AIR-SOURCE HEAT PUMP (GAL)       120       50       208       1         D       AIR-SOURCE HEAT PUMP (GAL)       120       50       208       1         D       AIR-SOURCE HEAT PUMP WATER HEATER       120       50       208       1         PRESSURE REGULATOR SCHEDULE         PRESSURE REGULATOR SCHEDULE         IP/FILTRATION SCHEDULE         IP/FILTRATION SCHEDULE	ELECTF NOMINA 1200 1200 URE (IN. V	1 RICAL L (W) 00 00	0.3 0.8 FLA M0 21.6 21 21.6 21.6 21 21.6 21.6 21 21.6 21.6 21 21.6 21 21.6 21 21.6 21 21.6 21 21.6 21 21.6 21	3       15         CA       MOCF         .6       30         .6       30         SIZE (IN)       .5         .5       .5         .75	AS HSP,ET HSP	OPTIONS OPTIONS	
PR1 PR2 PR3 PR3 PUMP DW RATE (GPM) PI	MARK     MANU       EWH1     LOC       EWH2     LOC       EWH2     LOC	CHINVAR CHPA120F CHINVAR CHPA120F CHINVAR CHPA120F INI 31156/F NATUR/ INI 31156/F NATUR/ INI 31052 NATUR/ INI 31052 NATUR/ INI 31052 NATUR/ INI 31052 NATUR/ INI 31052 NATUR/ INI 51156/F NATUR/ INI 51157 NATUR/ INI 51157 NATUR/ INI 51157 NATUR/	PLAN MARK       MANUFACTURER       MODEL ALPLHA       SIZE 3/4"       MOUNTING INLINE       RATE (GPM)       HEAD (FT)       VOL (FT)         RP1       GRUNDFOS       ALPLHA 15-58 F       3/4"       INLINE       2.0       15       1         WATER HEATER SCHEDULE         TANK VOLUME (GAL)       GPH @ 100 DEG. FTEMP (GAL)       D         D       AIR-SOURCE HEAT PUMP WATER HEATER       120       50       208       1         D         AIR-SOURCE HEAT PUMP WATER HEATER       120       50       208       1         D       AIR-SOURCE HEAT PUMP WATER HEATER       120       50       208       1         PRESSURE REGULATOR SCHEDULE         IP/FILTRATION SCHEDULE         PROCESSING 20       0         IP/FILTRATION SCHEDULE         PROCESSING 20       ELECTRIC         YPE       SANITATION LEVEL       VOLTAGE       PHASE	ELECTF NOMINA 1200 1200 URE (IN. V	1 RICAL L (W) 00 00 N.C.)	0.3 0.8 FLA M( 21.6 21 21.6 21 21.6 21 21.6 21 LE	3       15         CA       MOCF         .6       30         .6       30         .5       .5         .6       .5         .5       .5         .5       .5         .5       .5         .5       .5         .5       .5         .5       .5 <td>AS HSP,ET HSP</td> <td>OPTIONS</td> <td></td>	AS HSP,ET HSP	OPTIONS	
PR1 PR2 PR3 PR3 PUMP DW RATE	MARK       MANU         EWH1       LOC         EWH2       LOC         EWH2       LOC         EWH2       LOC         PIETRO FIORENTI         PIETRO FIORENTI         PIETRO FIORENTI         PIETRO FIORENTI         VIATORIA         WATOR         OUTLET       BLAI	CHINVAR CHPA120F CHINVAR CHPA120F R MODEL SYST INI 31156/F NATUR/ INI 31156/F NATUR/ INI 31052 NATUR/ INI 31052 NATUR/ INI 31052 NATUR/ TER STORAGE PUN	PLAN MARK       MANUFACTURER       MODEL ALPLHA       SIZE 3/4"       MOUNTING INLINE       RATE (GPM)       HEAD (FT)       VOL (FT)         RP1       GRUNDFOS       ALPLHA 15-58 F       3/4"       INLINE       2.0       15       1         WATER HEATER SCHEDULE         TANK VOLUME (GAL)       GPH @ 100 DEG. FTEMP (GAL)       TANK DEG. FTEMP (GAL)       OLTAGE       PHASE         D       AIR-SOURCE HEAT PUMP WATER HEATER       120       50       208       1         D       AIR-SOURCE HEAT PUMP WATER HEATER       120       50       208       1         D       AIR-SOURCE HEAT PUMP WATER HEATER       120       50       208       1         PRESSURE REGULATOR SCHEDULE         IP/FILTRATION SCHEDULE         PROCESSING 16/43       2       7         AIRATION 2       7         ALGAS       4140 2       7         AIGAS       4140 2       7         AIGAS       80       2       7         IP/FILTRATION SCHEDULE         PROCESSING       ELECTRIC.         YPE       VOLTAGE       PHASE </td <td>ELECTF NOMINA 1200 1200 URE (IN. V</td> <td>1 RICAL L (W) 00 00</td> <td>0.3 0.8 FLA M( 21.6 21 21.6 21 21.6 21 21.6 21 LE</td> <td>3       15         CA       MOCF         .6       30         .6       30         SIZE (IN)       .5         .5       .5         .75      </td> <td>AS HSP,ET HSP</td> <td>OPTIONS OPTIONS</td> <td></td>	ELECTF NOMINA 1200 1200 URE (IN. V	1 RICAL L (W) 00 00	0.3 0.8 FLA M( 21.6 21 21.6 21 21.6 21 21.6 21 LE	3       15         CA       MOCF         .6       30         .6       30         SIZE (IN)       .5         .5       .5         .75	AS HSP,ET HSP	OPTIONS OPTIONS	
PR1 PR2 PR3 PR3 PUMP DW RATE (GPM) PI 50	MARK       MANU         EWH1       LOC         EWH2       LOC         EWH2       LOC         WH2       LOC         K       MANUFACTUREI         PIETRO FIORENTI       PIETRO FIORENTI         PIETRO FIORENTI       PIETRO FIORENTI         VILET       RESSURE (PSI)         60       60	CHINVAR CHPA120F CHINVAR CHPA120F CHINVAR CHPA120F R MODEL SYST INI 31156/F NATUR/ INI 31156/F NATUR/ INI 31052 NATUR/ TER STORAGE PUN DDER TANK UME (GAL) FILTER T 26 BAG FIL	PLAN MARK       MANUFACTURER       MODEL ALPLHA       SIZE 3/4"       MOUNTING INLINE       RATE (GPM)       HEAD (FT)       VOL (FT)         RP1       GRUNDFOS       ALPLHA 15-58 F       3/4"       INLINE       2.0       15       1         WATER HEATER SCHEDULE         TANK VOLUME (GAL)       GPH @ 100 DEG. FTEMP (GAL)       D         D       AIR-SOURCE HEAT PUMP WATER HEATER       120       50       208       1         D         AIR-SOURCE HEAT PUMP WATER HEATER       120       50       208       1         D       AIR-SOURCE HEAT PUMP WATER HEATER       120       50       208       1         PRESSURE REGULATOR SCHEDULE         IP/FILTRATION SCHEDULE         PROCESSING 20       0         IP/FILTRATION SCHEDULE         PROCESSING 20       ELECTRIC         YPE       SANITATION LEVEL       VOLTAGE       PHASE	ELECTF NOMINA 1200 1200 URE (IN. V	1 RICAL L (W) 00 00 N.C.)	0.3 0.8 FLA M( 21.6 21 21.6 21 21.6 21 21.6 21 LE	3       15         CA       MOCF         .6       30         .6       30         .5       .5         .6       .5         .5       .5         .5       .5         .5       .5         .5       .5         .5       .5         .5       .5 <td>AS HSP,ET HSP</td> <td>OPTIONS OPTIONS</td> <td></td>	AS HSP,ET HSP	OPTIONS OPTIONS	
PR1 PR2 PR3 PR3 PR3 PUMP DW RATE (GPM) 50 SKID TO BE F PUMPS AND	MARK       MANU         EWH1       LOC         EWH2       LOC         PIETRO FIORENTI       PIETRO FIORENTI         PIETRO FIORENTI       PIETRO FIORENTI         PIETRO FIORENTI       PIETRO FIORENTI         OUTLET       BLAI         YOL       60         PRE-PIPED AND WIRED A       VOL         PRE-PIPED AND WIRED A       VFDs, MONITOR DIFFERE	CHINVAR CHPA120F CHINVAR CHPA120F CHINVAR CHPA120F R MODEL SYST INI 31156/F NATUR/ INI 31156/F NATUR/ INI 31052 NATUR/	PLAN MARK       MANUFACTURER       MODEL ALPLHA       SIZE 3/4"       MOUNTING INLINE       RATE (GPM)       HEAD (FT)       VOL (FT)         RP1       GRUNDFOS       ALPLHA 15-58 F       3/4"       INLINE       2.0       15       1         WATER HEATER SCHEDULE         TANK VOLUME (GAL)       GPH @ 100 DEG. FTEMP (GAL)       D         D       AIR-SOURCE HEAT PUMP WATER HEATER       120       50       208       1         D         AIR-SOURCE HEAT PUMP WATER HEATER       120       50       208       1         D       AIR-SOURCE HEAT PUMP WATER HEATER       120       50       208       1         PRESSURE REGULATOR SCHEDULE         IP/FILTRATION SCHEDULE         PROCESSING 20       0         IP/FILTRATION SCHEDULE         PROCESSING 20       ELECTRIC         YPE       SANITATION LEVEL       VOLTAGE       PHASE	ELECTF NOMINA 1200 1200 URE (IN. V	1 RICAL L (W) 00 00 00 00 00 00 00 00 00 0	0.3 0.8 FLA M( 21.6 21 21.6 21 21.6 21 21.6 21 LE	3       15         CA       MOCF         .6       30         .6       30         .6       30         .6       30         .6       30         .6       30         .6       30         .6       30         .75	AS HSP,ET HSP WIDTH 48	OPTIONS OPTIONS	
PR1 PR2 PR3 PR3 PR3 PUMP DW RATE (GPM) PI 50 SKID TO BE F PUMPS AND V	MARK       MANU         EWH1       LOC         EWH2       LOC         EWH2       LOC         EWH2       LOC         EWH2       LOC         PIETRO FIORENTI       PIETRO FIORENTI         PIETRO FIORENTI       PIETRO FIORENTI         PIETRO FIORENTI       PIETRO FIORENTI         OUTLET       BLAI         YOL       60	CHINVAR CHPA120F CHINVAR CHPA120F CHINVAR CHPA120F R MODEL SYST INI 31156/F NATUR/ INI 31156/F NATUR/ INI 31052 NATUR/	PLAN MARK       MANUFACTURER       MODEL       SIZE       MOUNTING       RATE (GPM)       HEAD (FT)       VOL (FT)         RP1       GRUNDFOS       ALPLHA       3/4"       INLINE       2.0       15       1         WATER HEATER SCHEDULE         TANK VOLUME (GAL)       GPH @ 100 DEG.F TEMP RISE       VOLTAGE       PHASE         D       AIR-SOURCE HEAT PUMP WATER HEATER       120       50       208       1         D       AIR-SOURCE HEAT PUMP WATER HEATER       120       50       208       1         D       AIR-SOURCE HEAT PUMP WATER HEATER       120       50       208       1         PRESSURE REGULATOR SCHEDULE         IP/FILTRATION SCHEDULE         PROCESSING       ELECTRIC         YPE       ILEVEL       VOLTAGE       PHASE         TYPE       SANITATION LEVEL       VOLTAGE       PHASE	ELECTF NOMINA 1200 1200 URE (IN. V	1 RICAL L (W) 00 00 00 00 00 00 00 00 00 0	0.3 0.8 FLA M( 21.6 21 21.6 21 21.6 21 21.6 21 LE	3       15         CA       MOCF         .6       30         .6       30         .6       30         .6       30         .6       30         .6       30         .6       30         .6       30         .75	AS HSP,ET HSP WIDTH 48	OPTIONS OPTIONS	
PR1 PR2 PR3 PR3 PWMP W RATE GPM) PI 50 SKID TO BE F PUMPS AND V	MARK       MANU         EWH1       LOC         EWH2       LOC         PIETRO FIORENTI       PIETRO FIORENTI         PIETRO FIORENTI       PIETRO FIORENTI         PIETRO FIORENTI       PIETRO FIORENTI         OUTLET       BLAI         YOL       60         PRE-PIPED AND WIRED A       VOL         PRE-PIPED AND WIRED A       VFDs, MONITOR DIFFERE	CHINVAR CHPA120F CHINVAR CHPA120F CHINVAR CHPA120F R MODEL SYST INI 31156/F NATUR/ INI 31156/F NATUR/ INI 31052 NATUR/	PLAN MARK       MANUFACTURER       MODEL       SIZE       MOUNTING       RATE (GPM)       HEAD (FT)       VOL (FT)         RP1       GRUNDFOS       ALPLHA       3/4"       INLINE       2.0       15       1         WATER HEATER SCHEDULE         TANK VOLUME (GAL)       GPH @ 100 DEG.F TEMP RISE       VOLTAGE       PHASE         D       AIR-SOURCE HEAT PUMP WATER HEATER       120       50       208       1         D       AIR-SOURCE HEAT PUMP WATER HEATER       120       50       208       1         D       AIR-SOURCE HEAT PUMP WATER HEATER       120       50       208       1         PRESSURE REGULATOR SCHEDULE         IP/FILTRATION SCHEDULE         PROCESSING       ELECTRIC         YPE       ILEVEL       VOLTAGE       PHASE         TYPE       SANITATION LEVEL       VOLTAGE       PHASE	ELECTF NOMINA 1200 1200 URE (IN. V	1 RICAL L (W) 00 00 00 00 00 00 00 00 00 0	0.3 0.8 FLA M( 21.6 21 21.6 21 21.6 21 21.6 21 LE	3       15         CA       MOCF         .6       30         .6       30         .6       30         .6       30         .6       30         .6       30         .6       30         .6       30         .75	AS HSP,ET HSP WIDTH 48	OPTIONS OPTIONS	
PR1 PR2 PR3 PR3 PUMP W RATE GPM) PI 50 SKID TO BE F PUMPS AND V	MARK       MANU         EWH1       LOC         EWH2       LOC         PIETRO FIORENTI       PIETRO FIORENTI         PIETRO FIORENTI       PIETRO FIORENTI         PIETRO FIORENTI       PIETRO FIORENTI         OUTLET       BLAI         YOL       60         PRE-PIPED AND WIRED A       VOL         PRE-PIPED AND WIRED A       VFDs, MONITOR DIFFERE	CHINVAR CHPA120F CHINVAR CHPA120F CHINVAR CHPA120F R MODEL SYST INI 31156/F NATUR/ INI 31156/F NATUR/ INI 31052 NATUR/	PLAN MARK       MANUFACTURER       MODEL       SIZE       MOUNTING       RATE (GPM)       HEAD (FT)       VOL (FT)         RP1       GRUNDFOS       ALPLHA       3/4"       INLINE       2.0       15       1         WATER HEATER SCHEDULE         TANK VOLUME (GAL)       GPH @ 100 DEG.F TEMP RISE       VOLTAGE       PHASE         D       AIR-SOURCE HEAT PUMP WATER HEATER       120       50       208       1         D       AIR-SOURCE HEAT PUMP WATER HEATER       120       50       208       1         D       AIR-SOURCE HEAT PUMP WATER HEATER       120       50       208       1         PRESSURE REGULATOR SCHEDULE         IP/FILTRATION SCHEDULE         PROCESSING       ELECTRIC         YPE       ILEVEL       VOLTAGE       PHASE         TYPE       SANITATION LEVEL       VOLTAGE       PHASE	ELECTF NOMINA 1200 1200 URE (IN. V	1 RICAL L (W) 00 00 00 00 00 00 00 00 00 0	0.3 0.8 FLA M( 21.6 21 21.6 21 21.6 21 21.6 21 LE	3       15         CA       MOCF         .6       30         .6       30         .6       30         .6       30         .6       30         .6       30         .6       30         .6       30         .75	AS HSP,ET HSP WIDTH 48	OPTIONS OPTIONS	
PR1 PR2 PR3 PR3 PUMP W RATE GPM) PI 50 SKID TO BE F PUMPS AND V	MARK       MANU         EWH1       LOC         EWH2       LOC         PIETRO FIORENTI       PIETRO FIORENTI         PIETRO FIORENTI       PIETRO FIORENTI         PIETRO FIORENTI       PIETRO FIORENTI         OUTLET       BLAI         YOL       60         PRE-PIPED AND WIRED A       VOL         PRE-PIPED AND WIRED A       VFDs, MONITOR DIFFERE	CHINVAR CHPA120F CHINVAR CHPA120F CHINVAR CHPA120F R MODEL SYST INI 31156/F NATUR/ INI 31156/F NATUR/ INI 31052 NATUR/	PLAN MARK       MANUFACTURER       MODEL       SIZE       MOUNTING       RATE (GPM)       HEAD (FT)       VOL (FT)         RP1       GRUNDFOS       ALPLHA       3/4"       INLINE       2.0       15       1         WATER HEATER SCHEDULE         TANK VOLUME (GAL)       GPH @ 100 DEG.F TEMP RISE       VOLTAGE       PHASE         D       AIR-SOURCE HEAT PUMP WATER HEATER       120       50       208       1         D       AIR-SOURCE HEAT PUMP WATER HEATER       120       50       208       1         D       AIR-SOURCE HEAT PUMP WATER HEATER       120       50       208       1         PRESSURE REGULATOR SCHEDULE         IP/FILTRATION SCHEDULE         PROCESSING       ELECTRIC         YPE       ILEVEL       VOLTAGE       PHASE         TYPE       SANITATION LEVEL       VOLTAGE       PHASE	ELECTF NOMINA 1200 1200 URE (IN. V	1 RICAL L (W) 00 00 00 00 00 00 00 00 00 0	0.3 0.8 FLA M( 21.6 21 21.6 21 21.6 21 21.6 21 LE	3       15         CA       MOCF         .6       30         .6       30         .6       30         .6       30         .6       30         .6       30         .6       30         .6       30         .75	AS HSP,ET HSP WIDTH 48	OPTIONS OPTIONS	
PR1 PR2 PR3 PR3 PUMP W RATE SFM) PI 50 PUMPS AND V	MARK       MANU         EWH1       LOC         EWH2       LOC         PIETRO FIORENTI       PIETRO FIORENTI         PIETRO FIORENTI       PIETRO FIORENTI         PIETRO FIORENTI       PIETRO FIORENTI         OUTLET       BLAI         YOL       60         PRE-PIPED AND WIRED A       VOL         PRE-PIPED AND WIRED A       VFDs, MONITOR DIFFERE	CHINVAR CHPA120F CHINVAR CHPA120F CHINVAR CHPA120F R MODEL SYST INI 31156/F NATUR/ INI 31156/F NATUR/ INI 31052 NATUR/	PLAN MARK       MANUFACTURER       MODEL       SIZE       MOUNTING       RATE (GPM)       HEAD (FT)       VOL (FT)         RP1       GRUNDFOS       ALPLHA       3/4"       INLINE       2.0       15       1         WATER HEATER SCHEDULE         TANK VOLUME (GAL)       GPH @ 100 DEG.F TEMP RISE       VOLTAGE       PHASE         D       AIR-SOURCE HEAT PUMP WATER HEATER       120       50       208       1         D       AIR-SOURCE HEAT PUMP WATER HEATER       120       50       208       1         D       AIR-SOURCE HEAT PUMP WATER HEATER       120       50       208       1         PRESSURE REGULATOR SCHEDULE         IP/FILTRATION SCHEDULE         PROCESSING       ELECTRIC         YPE       ILEVEL       VOLTAGE       PHASE         TYPE       SANITATION LEVEL       VOLTAGE       PHASE		1 RICAL L (W) 00 00 00 N.C.) 1 OCP 30 L GALL	0.3 0.8 FLA M( 21.6 21 21.6 21 21.6 21 21.6 21 LE	3       15         CA       MOCF         .6       30         .6       30         .6       30         .6       30         .6       30         .6       30         .6       30         .6       30         .75	AS HSP,ET HSP WIDTH 48	OPTIONS OPTIONS	

			PLUMB	ING FIXTURE SCHEDULE							
PLAN					PLU	MBING (	CONNECT	IONS (IN	N)		
MARK BP1		MANUFACTURER	MODEL	FLUSH VALVE/FAUCET			WAST		T OPTIONS	N	
BP1 BP2	REDUCED PRESSURE BACKFLOW PREVENTER DOUBLE CHECK BACKFLOW PREVENTER	WATTS WATTS	LF909 007-M1-QT-S	N/A N/A	2.5	0	0	0			
BP3	DOUBLE CHECK BACKFLOW PREVENTER	WATTS	LF007	N/A	0.75		0	0			
BP4 EWC1	DUAL CHECK BACKFLOW PREVENTER HI-LO WATER COOLER WITH BOTTLE FILLER	WATTS ELKAY	SD-3 EZSTL8WSLK	N/A N/A	0.5		0	0	BF,SB	1	
IMB1	ICE MAKER BOX	GUY GRAY	BIM875	N/A N/A	0.5	_	0	0			
JB1	JANITOR'S BASIN	ZURN	Z1996-24-HH-MH-WG	ZURN MODEL Z1996-SF		0.75		1.5			
L1 L2	UNDERCOUNTER MOUNT, BATTERY-POWERED AUTOMATIC FAUCET LAVATORY UNDERCOUNTER MOUNT, MANUAL FAUCET LAVATORY	ZURN ZURN	Z5220 Z5220	ZURN MODEL Z6915-XL, 0.5 GPM ZURN MODEL Z7440-XL, 0.5 GPM	0.5	0.5	2	1.5	AE5,GD,SV,T AE5,GD,SV,T		
L2 L3	WALL MOUNTED, BATTERY-POWERED AUTOMATIC FAUCET LAVATORY	ZURN	Z5360	ZURN MODEL Z6915-XL, 0.5 GPM	0.5	0.5	2		AE5,GD,SV,T	1	
MMV1		LEONARD	PNV-125		1	1	0	0	MSP		
S1	15X15 SINGLE COMPARTMENT, UNDERMOUNT BLACK QUARTZ SINK	ELKAY	ELG1616	KOHLER MODEL K-7505, 1.5 GPM, SWIVEL FLAT GOOSENECK FAUCET, VIBR STAINLESS FINISH	ANT 0.5	0.5	2	1.5	BS,SV,T		
S2	15X15 SINGLE COMPARTMENT, UNDERMOUNT BLACK QUARTZ SINK WITH GARBAGE DISPOSAL	ELKAY	ELG1616	KOHLER MODEL K-7505, 1.5 GPM, SWIVEL FLAT GOOSENECK FAUCET	0.5	0.5	2	1.5	BS,SV,T,BGD		
S3	24X17 SINGLE COMPARTMENT, UNDERMOUNT BLACK QUARTZ SINK	ELKAY	ELGU251912PD	KOHLER MODEL K-7505, 1.5 GPM, SWIVEL FLAT GOOSENECK FAUCET	0.5	0.5	2	1.5	BS,SV,T		
S4	33X19 DOUBLE COMPARTMENT, UNDERMOUNT BLACK QUARTZ SINK WITH GARBAGE	ELKAY	ELGDULB3322	KOHLER MODEL K-596-CP, 1.5 GPM, SWIVEL GOOSENECK PULL DOWN FAU		_		1.5	BS,SV,T,BGD		
SV1	DISPOSAL ADA SHOWER VALVE	DELTA	T17TH325	N/A	0.5	0.5	0	0		1	
SV2	SHOWER VALVE	DELTA	T13H122	N/A	0.5	_		0		1	
VTR1	ICC 500 COMPLIANT VENT-THRU-ROOF	ROOF PENETRATION HOUSING	CVTR								
WB1	WASHER BOX	GUY GRAY	B200	N/A	0.5	0.5	2	1.5			
	ADA FLOOR MOUNT, BACK OUTLET, BATTERY POWERED AUTOMATIC 1.28 GPF FLUSH	ZURN	Z5645-BWL	SLOAN ECOS 8111-1.28	1.25		4	2	ESLC,SV	2	
WC2	VALVE WATER CLOSET FLOOR MOUNT, BACK OUTLET, BATTERY POWERED AUTOMATIC 1.28 GPF FLUSH	ZURN	Z5635-BWL	SLOAN ECOS 8111-1.28	1.25	0	4	2	ESLC,SV	2	
W02	VALVE WATER CLOSET	20111		0E0AN 2000 0111-1.20	1.20		-	2		2	
WH1	FREEZE PROOF WALL HYDRANT	ZURN	Z1321-C	N/A	0.75	0	0	0			
	REFER TO ARCHITECTURAL PLANS FOR MOUNTING HEIGHTS. REFER TO ARCHITECTURAL PLANS FOR ADA REQUIRED GRAB BARS.										
2. 1	THE ER TO ARCHITECTURAL FLANSTOR ADA REQUIRED GRAD DARS.										
				DRAINAG	E FIXTURE	E SCH	EDULE				
				PLAN							
				MARKTYPEMANUFADN1DOWNSPOUT NOZZLEZUF			MOD Z19		OPTIONS	NC	
				DN1 DOWNSPOOT NOZZEE ZUF DN2 DOWNSPOUT NOZZEE ZUF			Z19 Z19				
				FCO1 FLOOR CLEANOUT JAY R	SMITH		403	1L			
				FD1FLOOR DRAIN - ROUNDJAY R SGC02TWO-WAY FINISHED GRADE CLEANOUTJAY R S			2005 426		CC,NBS,TG		
				ORD1         OVERFLOW ROOF DRAIN         ZUF			Z100-				
				ORD2 ICC 500 COMPLIANT OVERFLOW ROOF DRAIN ROOF PENETRA		GS	COFI				
				RD1 ROOF DRAIN ZUF		<u></u>	Z10				
				RD2         ICC 500 COMPLIANT ROOF DRAIN         ROOF PENETRATION           WC01         WALL CLEANOUT         JAY R S		65	CR 4530				
								-			
				SUMP PUMP SCH	EDULE						
				PUMP BASIN	-	ELEC	RICAL				
			PLAN		-				CP OPTIONS		
				MODELUNIT TYPEMIN FLOW RATE (GPM)HEAD (FT)MAX HPDIAMETER RPMHEIGHT (IN)1411-538ELEVATOR50200.5175024"36"	<b>VOLTAGE</b> 120		FLA         M           3.1         3			NC	
			MARK MANUFACTURER	R         MODEL         UNIT TYPE         RATE (GPM)         (FT)         HP         RPM         (IN)         (IN)           1411-538         ELEVATOR         50         20         0.5         1750         24"         36"	<b>VOLTAGE</b> 120	1	3.1 3	.1 15		NC	
			MARK MANUFACTURER	R         MODEL         UNIT TYPE         RATE (GPM)         (FT)         HP         RPM         (IN)         (IN)           1411-538         ELEVATOR         50         20         0.5         1750         24"         36"	VOLTAGE 120	1 P SCH	3.1 3	.1 15		NC	
			MARK MANUFACTURER	R         MODEL         UNIT TYPE         RATE (GPM)         (FT)         HP         RPM         (IN)         (IN)           1411-538         ELEVATOR         50         20         0.5         1750         24"         36"	VOLTAGE 120	1 P SCH ELECT	3.1 3	.1 15	<u> </u>		
			MARK MANUFACTURER	R         MODEL         UNIT TYPE         RATE (GPM)         (FT)         HP         RPM         (IN)         (IN)           1411-538         ELEVATOR         50         20         0.5         1750         24"         36"	VOLTAGE 120	1 P SCH ELECT PHASE	3.1 3	.1 15 E A MOC	<u> </u>		
			MARK MANUFACTURER	RMODELUNIT TYPERATE (GPM)(FT)HPRPM(IN)(IN)1411-538ELEVATOR50200.5175024"36"RECIRCULAPLAN MARKMANUFACTURERMODELSIZEMOUNTINGFLOW (GPM)HEAD (FT)RP1GRUNDFOSALPLHA3/4"INLINE2.015	VOLTAGE 120 TION PUM VOLTAGE F	1 P SCH ELECT PHASE	3.1 3 IEDULE RICAL FLA MC	.1 15 E A MOC	DPTIONS		
			MARK MANUFACTURER	RMODELUNIT TYPERATE (GPM)(FT)HPRPM(IN)(IN)1411-538ELEVATOR50200.5175024"36"RECIRCULAPLAN MARKMANUFACTURERMODELSIZEMOUNTINGFLOW (GPM)HEAD (FT)RP1GRUNDFOSALPLHA3/4"INLINE2.015	VOLTAGE 120 TION PUM VOLTAGE F 120	1 P SCH ELECT PHASE	3.1 3 IEDULE RICAL FLA MC	.1 15 E A MOC	DPTIONS		
			MARK MANUFACTURER	R       MODEL       UNIT TYPE       RATE (GPM)       (FT)       HP       RPM       (IN)       (IN)         1411-538       ELEVATOR       50       20       0.5       1750       24"       36"         PLAN       MANUFACTURER       MODEL       SIZE       MOUNTING       (GPM)       HEAD (FT)         RP1       GRUNDFOS       ALPLHA 15-58 F       3/4"       INLINE       2.0       15         WATER HEATER SCHEDU         TANK       GPH @ 100	VOLTAGE 120 TION PUM VOLTAGE F 120	1 PSCH ELECT PHASE 1	3.1 3 IEDULE RICAL FLA MC	.1 15 E A MOC	DPTIONS		
		PLAN	MARK MANUFACTURER	R         MODEL         UNIT TYPE         RATE (GPM)         (FT)         HP         RPM         (IN)         (IN)           1411-538         ELEVATOR         50         20         0.5         1750         24"         36"           PLAN         MANUFACTURER         MODEL         SIZE         MOUNTING         (GPM)         HEAD (FT)           RP1         GRUNDFOS         ALPLHA         3/4"         INLINE         2.0         15	VOLTAGE 120 TION PUM VOLTAGE 120 LE ELECT	1 P SCH ELECT PHASE 1 RICAL	3.1 3 IEDULE RICAL FLA MC	.1 15 E MOC 8 15	Deprions AS		
		PLAN MARK MANUI	MARK MANUFACTURER	R       MODEL       UNIT TYPE       RATE (GPM)       (FT)       HP       RPM       (IN)       (IN)         1411-538       ELEVATOR       50       20       0.5       1750       24"       36"         PLAN       MANUFACTURER       MODEL       SIZE       MOUNTING       FLOW RATE (GPM)       HEAD (FT)         RP1       GRUNDFOS       ALPLHA 15-58 F       3/4"       INLINE       2.0       15         VOLTAGE PH OL         MARK       MANUFACTURER       MODEL 15-58 F       SIZE       MOUNTING       FLOW RATE (GPM)       HEAD (FT)         RP1       GRUNDFOS       ALPLHA 15-58 F       3/4"       INLINE       2.0       15         VOLUME       TANK VOLUME       GPH @ 100 DEG.F TEMP RISE       VOLTAGE       PH         D       AIR-SOURCE HEAT PUMP       120       50       208       100	VOLTAGE 120 TION PUM VOLTAGE 120 LE ELECT	1 P SCH ELECT PHASE 1 RICAL AL (W)	3.1     3       IEDULE       RICAL       FLA     MC       0.3     0.8	.1 15 <b>A MOC</b> 8 15 <b>CA MOC</b>	Deprions AS	NC	
		PLAN MARK MANUI EWH1 LOC	MARK MANUFACTURER	RMODELUNIT TYPERATE (GPM)(FT)HPRPM(IN)(IN)1411-538ELEVATOR50200.5175024"36"PLAN MARKMANUFACTURERMODELSIZEMOUNTINGFLOW RATE (GPM)HEAD (FT)RP1GRUNDFOSALPLHA 15-58 F3/4"INLINE2.015VOLTAGE PH OL AIR-SOURCE HEAT PUMP VATER HEATERDAIR-SOURCE HEAT PUMP12050208	VOLTAGE 120 TION PUM VOLTAGE 120 LE ELECT ASE NOMIN	1 PSCH ELECT PHASE 1 RICAL AL (W) 000	3.1     3       IEDULE       RICAL       FLA     MC       0.3     0.8	.1 15 <b>A MOC</b> 8 15 <b>CA MOC</b> 1.6 30	Deprions AS CP OPTIONS AS CP OPTIONS ) HSP,ET		
		PLAN MARK MANUI EWH1 LOC	MARK       MANUFACTUREF         SP1       WEIL         FACTURER       MODEL         CHINVAR       CHPA120PI	RMODELUNIT TYPERATE (GPM)(FT)HPRPM(IN)(IN)1411-538ELEVATOR50200.5175024"36"PLAN MARKMANUFACTURERMODELSIZEMOUNTINGFLOW RATE (GPM)HEAD (FT)RP1GRUNDFOSALPLHA 15-58 F3/4"INLINE2.015VOLTAGE D AIR-SOURCE HEAT PUMP WATER HEATERDAIR-SOURCE HEAT PUMP WATER HEATER12050208	VOLTAGE 120 TION PUM VOLTAGE 120 LE ELECT ASE NOMIN 1 120	1 PSCH ELECT PHASE 1 RICAL AL (W) 000	3.1     3       IEDULE       RICAL       FLA     MC       0.3     0.8       FLA     M       21.6     2 <sup>-1</sup>	.1 15 <b>A MOC</b> 8 15 <b>CA MOC</b> 1.6 30	Deprions AS CP OPTIONS AS CP OPTIONS ) HSP,ET		
		PLAN MARK MANUI EWH1 LOC	MARK       MANUFACTUREF         SP1       WEIL         FACTURER       MODEL         CHINVAR       CHPA120PI	RMODELUNIT TYPERATE (GPM)(FT)HPRPM(IN)(IN)1411-538ELEVATOR50200.5175024"36"PLAN MARKMANUFACTURERMODELSIZEMOUNTINGFLOW RATE (GPM)HEAD (FT)RP1GRUNDFOSALPLHA 15-58 F3/4"INLINE2.015VOLTAGE PH OL AIR-SOURCE HEAT PUMP VATER HEATERDAIR-SOURCE HEAT PUMP12050208	VOLTAGE 120 TION PUM VOLTAGE 120 LE ELECT ASE NOMIN 1 120	1 PSCH ELECT PHASE 1 RICAL AL (W) 000	3.1     3       IEDULE       RICAL       FLA     MC       0.3     0.8       FLA     M       21.6     2 <sup>-1</sup>	.1 15 <b>A MOC</b> 8 15 <b>CA MOC</b> 1.6 30	Deprions AS CP OPTIONS AS CP OPTIONS ) HSP,ET		
		PLAN MARK MANUI EWH1 LOC	MARK       MANUFACTUREF         SP1       WEIL         FACTURER       MODEL         CHINVAR       CHPA120PI	RMODELUNIT TYPERATE (GPM)(FT)HPRPM(IN)(IN)1411-538ELEVATOR50200.5175024"36"PLAN MARKMANUFACTURERMODELSIZEMOUNTINGFLOW RATE (GPM)HEAD (FT)RP1GRUNDFOSALPLHA 15-58 F3/4"INLINE2.015VOLTAGE PH OL AIR-SOURCE HEAT PUMP VATER HEATERDAIR-SOURCE HEAT PUMP12050208	VOLTAGE 120 TION PUM VOLTAGE 120 LE ELECT ASE NOMIN 1 120	1 PSCH ELECT PHASE 1 RICAL AL (W) 000	3.1     3       IEDULE       RICAL       FLA     MC       0.3     0.8       FLA     M       21.6     2 <sup>-1</sup>	.1 15 <b>A MOC</b> 8 15 <b>CA MOC</b> 1.6 30	Deprions AS CP OPTIONS AS CP OPTIONS ) HSP,ET		
	PLAN MARK	PLAN MARK MANUI EWH1 LOC	MARK       MANUFACTURER         SP1       WEIL         FACTURER       MODEL         CHINVAR       CHPA120PI         CHINVAR       CHPA120PI	MODEL       UNIT TYPE       RATE (GPM)       (FT)       HP       RPM       (IN)       (IN)         1411-538       ELEVATOR       50       20       0.5       1750       24"       36"         PLAN       MANUFACTURER       MODEL       SIZE       MOUNTING       (GPM)       (FT)         PLAN       MANUFACTURER       MODEL       SIZE       MOUNTING       (GPM)       (FT)         RP1       GRUNDFOS       ALPLHA       3/4"       INLINE       2.0       15         TANK VOLUME (GAL)       MOUNTING       GPH @ 100       0         TYPE       TANK VOLUME (GAL)       GPH @ 100       VOLTAGE       PH         D       AIR-SOURCE HEAT PUMP       120       50       208       0         MATER HEATER       PUMP       120       50       208       0         PRESSURE REGULATOR SCHEDULE	VOLTAGE           120           TION PUM           VOLTAGE         F           120         F           LE         ELECT           ASE         NOMIN           1         120	1 <b>P SCH</b> <b>ELECT</b> <b>PHASE</b> 1 <b>RICAL</b> <b>AL (W)</b> 000 000	3.1     3       IEDULE       RICAL       FLA     MC       0.3     0.8       FLA     M       21.6     2 <sup>-1</sup>	.1 15 <b>A MOC</b> 8 15 <b>CA MOC</b> 1.6 30 1.6 30	Definitions CP OPTIONS AS CP OPTIONS HSP,ET HSP		
	PR1	PLAN MARK MANUI EWH1 LOC EWH2 LOC EWH2 LOC	MARK       MANUFACTURER         SP1       WEIL         FACTURER       MODEL         CHINVAR       CHPA120PI         CHINVAR       CHPA120PI         CHINVAR       CHPA120PI         CHINVAR       CHPA120PI         CHINVAR       SYST         NI       31156/F       NATURA	MODEL         UNIT TYPE         RATE (GPM)         (FT)         HP         RPM         (IN)         (IN)           1411-538         ELEVATOR         50         20         0.5         1750         24"         36"           PLAN MARK         MANUFACTURER MARK         MODEL SIZE         SIZE         MOUNTING         FLOW RATE (GPM)         HEAD (FT)           PLAN MARK         MANUFACTURER         MODEL SIZE         SIZE         MOUNTING         (GPM)         (FT)           RP1         GRUNDFOS         ALPLHA 15-58 F         3/4"         INLINE         2.0         15           VOLTAGE PH (GAL)           TYPE         TANK (GAL)         GPH @ 100 DEG.F TEMP (GAL)         VOLTAGE         PH PH           D         AIR-SOURCE HEAT PUMP (GAL)         120         50         208         PH           D         AIR-SOURCE HEAT PUMP WATER HEATER         120         50         208         PH           D         AIR-SOURCE HEAT PUMP WATER HEATER         120         50         208         PH           PRESSURE REGULATOR SCHEDULE	VOLTAGE         120         TION PUM         VOLTAGE         120         LE         ELECT         ASE         NOMIN         1         120	1 <b>P SCH</b> <b>ELECT</b> <b>PHASE</b> 1 <b>RICAL</b> <b>AL (W)</b> 000 000 000	3.1     3       IEDULE       RICAL       FLA     MC       0.3     0.8       FLA     M       21.6     2°       21.6     2°       VALVE     2	.1 15 	Deprions AS CP OPTIONS AS CP OPTIONS ) HSP,ET ) HSP		
		PLAN MARK MANUI EWH1 LOC EWH2 LOC EWH2 LOC	MARK       MANUFACTURER         SP1       WEIL         FACTURER       MODEL         CHINVAR       CHPA120PI         CHINVAR       CHINVAR         CHINVAR       CHINVAR         CHINVAR       CHINVAR         CHINVAR       CHINVAR         CHINVAR       CHINVAR	MODEL       UNIT TYPE       RATE (GPM)       (FT)       HP       RPM       (IN)       (IN)         1411-538       ELEVATOR       50       20       0.5       1750       24"       36"         PLAN       MANUFACTURER       MODEL       SIZE       MOUNTING       (GPM)       (FT)         PLAN       MARK       MANUFACTURER       MODEL       SIZE       MOUNTING       (GPM)       (FT)         RP1       GRUNDFOS       ALPLHA       3/4"       INLINE       2.0       15         VOLTAGE PH         TYPE       TANK       GPH @ 100       TANK       FLOW         VOLUME       ISSE       VOLTAGE       PH         D       AIR-SOURCE HEAT PUMP       120       50       208       208         D       AIR-SOURCE HEAT PUMP       120       50       208       208       208         PRESSURE REGULATOR SCHEDULE         MAX CAPACITY (MBH)       INLET PRESSURE (PSIG)       OUTLET PF         L GAS       4140       2       4140       2       4140	VOLTAGE         120         TION PUM         VOLTAGE         120         LE         ELECT         ASE         NOMIN         1         120	1 <b>P SCH</b> <b>ELECT</b> <b>PHASE</b> 1 <b>RICAL</b> <b>AL (W)</b> 000 000 000	3.1     3       IEDULE       RICAL       FLA     MC       0.3     0.8       21.6     2°       21.6     2°       21.6     2°       21.6     2°       21.6     2°	.1     15 <b>:A</b> MOC       8     15 <b>CA</b> MOC       1.6     30       1.6     30       1.6     30       2.5     2.5	Deprions AS CP OPTIONS AS CP OPTIONS ) HSP,ET ) HSP		
	PR1	PLAN MARK       MANUI         EWH1       LOC         EWH2       LOC         EWH2       LOC         PIETRO FIORENTI       PIETRO FIORENTI         PIETRO FIORENTI       PIETRO FIORENTI         PIETRO FIORENTI       PIETRO FIORENTI	MARK       MANUFACTURER         SP1       WEIL         FACTURER       MODEL         CHINVAR       CHPA120PI         CHINVAR       CHINVAR         CHINVAR       CHINVAR         CHINVAR       CHINVAR         CHINVAR       CHINVAR	MODEL       UNIT TYPE       RATE (GPM)       (FT)       HP       RPM       (IN)       (IN)         1411-538       ELEVATOR       50       20       0.5       1750       24"       36"         PLAN       MANUFACTURER       MODEL       SIZE       MOUNTING       (GPM)       (FT)         PLAN       MARK       MANUFACTURER       MODEL       SIZE       MOUNTING       (GPM)       (FT)         RP1       GRUNDFOS       ALPLHA       3/4"       INLINE       2.0       15         VOLTAGE PH         TYPE       TANK       GPH @ 100       TANK       FLOW         VOLUME       ISSE       VOLTAGE       PH         D       AIR-SOURCE HEAT PUMP       120       50       208       208         D       AIR-SOURCE HEAT PUMP       120       50       208       208       208         PRESSURE REGULATOR SCHEDULE         MAX CAPACITY (MBH)       INLET PRESSURE (PSIG)       OUTLET PF         L GAS       4140       2       4140       2       4140	VOLTAGE         120         TION PUM         VOLTAGE         120         LE         ELECT         ASE         NOMIN         1         120	1 P SCF ELECT PHASE 1 RICAL AL (W) 000 000 000	3.1     3       IEDULE       RICAL       FLA     MC       0.3     0.8       21.6     2°       21.6     2°       21.6     2°       21.6     2°       21.6     2°	.1     15 <b>CA</b> MOC       8     15       0     1.6       30     30       1.6     30       1.6     30       2.5     75	Definitions AS CP OPTIONS AS CP OPTIONS HSP,ET ) HSP ) HSP		
	PR1	PLAN MARK       MANUI         EWH1       LOC         EWH2       LOC         EWH2       LOC         MANUFACTUREF       PIETRO FIORENTI         PIETRO FIORENTI       PIETRO FIORENTI         PIETRO FIORENTI       PIETRO FIORENTI	MARK       MANUFACTURER         SP1       WEIL         FACTURER       MODEL         CHINVAR       CHPA120PI         CHINVAR       CHINVAR         CHINVAR       CHINVAR         CHINVAR       CHINVAR         CHINVAR       CHINVAR	MODEL         UNIT TYPE         RATE (GPM)         (FT)         HP         RPM         (IN)         (IN)           1411-538         ELEVATOR         50         20         0.5         1750         24"         36"           PLAN         MANUFACTURER         MODEL         SIZE         MOUNTING         FLOW RATE         HEAD (FT)           PLAN         MANUFACTURER         MODEL         SIZE         MOUNTING         (GPM)         (FT)           RP1         GRUNDFOS         ALPLHA         3/4"         INLINE         2.0         15           VATER HEATER SCHEDU           TYPE         TANK (GAL)         GPH @ 100 DEG.F TEMP (GAL)         VOLTAGE         PH           D         AIR-SOURCE HEAT PUMP WATER HEATER         120         50         208         208           D         AIR-SOURCE HEAT PUMP WATER HEATER         120         50         208         208           PRESSURE REGULATOR SCHEDULE           MAX CAPACITY (MBH)         INLET PRESSURE (PSIG)         OUTLET PF           L GAS         4140         2         2         2         2           L GAS         4140         2         2         2         2	VOLTAGE         120         TION PUM         VOLTAGE         120         LE         ELECT         ASE         NOMIN         1         120	1 P SCF ELECT PHASE 1 RICAL AL (W) 000 000 000	3.1     3       IEDULE       RICAL       FLA     MC       0.3     0.8       21.6     2°       21.6     2°       21.6     2°       21.6     2°       21.6     2°	.1     15 <b>CA</b> MOC       8     15       0     1.6       30     30       1.6     30       1.6     30       2.5     75	Definitions AS CP OPTIONS AS CP OPTIONS HSP,ET ) HSP ) HSP		
	PR1	PLAN MARK       MANUI         EWH1       LOC         EWH2       LOC         EWH2       LOC         MANUFACTUREF       PIETRO FIORENTI         PIETRO FIORENTI       PIETRO FIORENTI         PIETRO FIORENTI       PIETRO FIORENTI	MARK       MANUFACTURER         SP1       WEIL         FACTURER       MODEL         CHINVAR       CHPA120PI         CHINVAR       CHINVAR         CHINVAR       CHINVAR         CHINVAR       CHINVAR         CHINVAR       CHINVAR	MODEL         UNIT TYPE         RATE (GPM)         (FT)         HP         RPM         (IN)         (IN)           1411-538         ELEVATOR         50         20         0.5         1750         24"         36"           PLAN         MANUFACTURER         MODEL         SIZE         MOUNTING         (GPM)         (FT)           RP1         GRUNDFOS         ALPLHA         3/4"         INLINE         2.0         15           VOLTAGE PH           TYPE         TANK         GPH @ 100         C(GPM)           D         AIR-SOURCE HEAT PUMP         120         50         208         PH           D         AIR-SOURCE HEAT PUMP         120         50         208         Colspan="4">Colspan="4">Colspan="4">Colspan="4">Colspan="4">Colspan="4">Colspan="4">Colspan= 4140           D         AIR-SOURCE HEAT PUMP         120         50         208         Colspan="4">Colspan= 4140           PRESSURE REGULATOR SCHEDULE           MAX CAPACITY (MBH)         INLET PRESSURE (PSIG)         OUTLET PR           L GAS         4140         2         2         2         2	VOLTAGE         120           TION PUM         VOLTAGE         F           120         F         120           LE         ELECT         ASE           NOMIN         120         1           1         120         1           ESSURE (IN. 7         7         7           7         7         7	1 P SCF ELECT PHASE 1 RICAL AL (W) 000 000 000	3.1     3       IEDULE       RICAL       FLA     MC       0.3     0.8       21.6     2°       21.6     2°       21.6     2°       21.6     2°       21.6     2°	.1     15 <b>CA</b> MOC       8     15       0     1.6       30     30       1.6     30       1.6     30       2.5     75	Definitions AS CP OPTIONS AS CP OPTIONS HSP,ET ) HSP ) HSP		
	PR1 PB2 PR3 PR3 PR3 PR3 PR3 PR3 PR3 PR3	PLAN MARK MANUI EWH1       MANUI LOC         EWH1       LOC         EWH2       LOC         EWH2       LOC         MANUFACTUREF PIETRO FIORENTI PIETRO FIORENTI PIETRO FIORENTI         WAT         OUTLET       BLAD	MARK       MANUFACTURER         SP1       WEIL         FACTURER       MODEL         CHPA120PI       CHPA120PI         CHINVAR       SYST         NI       31156/F         NATURA       NATURA         CHER STORAGE PUM         ODER TANK       SYST	Init Type       RATE (GPM)       (FT)       HP       RPM       (IN)       (IN)         1411-538       ELEVATOR       50       20       0.5       1750       24"       36"         PLAN       MARK       MANUFACTURER       MODEL       SIZE       MOUNTING       (GPM)       (FT)         PLAN       MARK       MANUFACTURER       MODEL       SIZE       MOUNTING       (GPM)       (FT)         RP1       GRUNDFOS       ALPLHA       3/4"       INLINE       2.0       15         WATER HEATER SCHEDU         TANK VOLUME (GAL)       GPH @ 100 DEG.F TEMP (GAL)         WATER HEATER       120       50       208       0         D       AIR-SOURCE HEAT PUMP (GAL)       120       50       208       0         D       AIR-SOURCE HEAT PUMP 120       50       208       0       0         PROUNCE HEAT PUMP 120       50       208       0         MAX CAPACITY (MBH)       INLET PRESSURE (PSIG)       OUTLET PF         L GAS       4140       2       2       2       2         COLSPAN= 4140       2         COLSPAN       2 <td cols<="" td=""><td>VOLTAGE         120         TION PUM         VOLTAGE         I20         I20         LE         ELECT         ASE         NOMIN         1         120</td><td>1 P SCH ELECT PHASE 1 RICAL AL (W) 000 000 W.C.)</td><td>3.1     3       IEDULE       RICAL       FLA     MC       0.3     0.8       FLA     M2       21.6     2°       21.6     2°       VALVE     2°       0.3     0.8</td><td>.1     15       :A     MOC       B     15       CA     MOC       1.6     30       1.6     30       SIZE (IN       2.5       .75</td><td>Deprions AS CP OPTIONS CP OPTIONS ) HSP,ET ) HSP</td><td></td></td>	<td>VOLTAGE         120         TION PUM         VOLTAGE         I20         I20         LE         ELECT         ASE         NOMIN         1         120</td> <td>1 P SCH ELECT PHASE 1 RICAL AL (W) 000 000 W.C.)</td> <td>3.1     3       IEDULE       RICAL       FLA     MC       0.3     0.8       FLA     M2       21.6     2°       21.6     2°       VALVE     2°       0.3     0.8</td> <td>.1     15       :A     MOC       B     15       CA     MOC       1.6     30       1.6     30       SIZE (IN       2.5       .75</td> <td>Deprions AS CP OPTIONS CP OPTIONS ) HSP,ET ) HSP</td> <td></td>	VOLTAGE         120         TION PUM         VOLTAGE         I20         I20         LE         ELECT         ASE         NOMIN         1         120	1 P SCH ELECT PHASE 1 RICAL AL (W) 000 000 W.C.)	3.1     3       IEDULE       RICAL       FLA     MC       0.3     0.8       FLA     M2       21.6     2°       21.6     2°       VALVE     2°       0.3     0.8	.1     15       :A     MOC       B     15       CA     MOC       1.6     30       1.6     30       SIZE (IN       2.5       .75	Deprions AS CP OPTIONS CP OPTIONS ) HSP,ET ) HSP	
	PR1 PB2 PR3 3 PR3 PR3 PR3 PR3 PR3 PR3	PLAN MARK       MANUI         EWH1       LOC         EWH2       LOC         EWH2       LOC         MANUFACTUREF       PIETRO FIORENTI         PIETRO FIORENTI       PIETRO FIORENTI         PIETRO FIORENTI       PIETRO FIORENTI         VAT       WAT         OUTLET       BLAE         SSURE (PSI)       VOL	MARK       MANUFACTURER         SP1       WEIL         FACTURER       MODEL         CHINVAR       CHPA120PI         CHINVAR       SYST         NI       31156/F         NI       31052         CHINVAR       CHINURA         CHINVAR       CHINURA         MI       31052         CHINURA       CHINURA         CHINURA       SILITER T	R         MODEL         UNIT TYPE         RATE (GPM)         (FT)         HP         RPM         (IN)         (IN)           1411-538         ELEVATOR         50         20         0.5         1750         24"         36"           PLAN         MANUFACTURER         MODEL         SIZE         MOUNTING         (GPM)         (FT)           RP1         GRUNDFOS         ALPLHA         3/4"         INLINE         2.0         15           VATER HEATER SCHEDU           TYPE         TANK         GPH @ 100         DEG, F TEMP           VOLUME         GRAL         RISE         VOLTAGE         PH           D         AIR-SOURCE HEAT PUMP         120         50         208         208           P         MAX CAPACITY (MBH)         INLET PRESSURE REGULATOR SCHEDULE         EM           AIAS OURCE HEAT PUMP         120         50         208           O           MAX CAPACITY (MBH)         INLET PRESSURE (PSIG)         OUTLET PE           EM         MAX CAPACITY (MBH)         INLET PRESSURE (PSIG)         OUTLET PE           PH         GAS         4140         2         2           GAS         4140         2	VOLTAGE         120           TION PUM           VOLTAGE         F           120         F           LE         ELECT           ASE         NOMIN           1         120           F         120	1 P SCH ELECT PHASE 1 RICAL AL (W) 000 000 W.C.) W.C.)	3.1     3       IEDULE       RICAL       FLA     MC       0.3     0.8       21.6     2°       21.6     2°       21.6     2°       0.3     0.8	.1 15 	CP OPTIONS   AS     CP   OPTIONS   HSP     )   OPTIONS     WIDTH   OPTIONS		
	PR1 PB2 PR3 PR3 PR3 PR3 PR3 PR3 PR3 PR3	PLAN MARK MANUI EWH1       MANUI LOC         EWH1       LOC         EWH2       LOC         EWH2       LOC         MANUFACTUREF PIETRO FIORENTI PIETRO FIORENTI PIETRO FIORENTI         WAT         OUTLET       BLAD	MARK       MANUFACTURER         SP1       WEIL         FACTURER       MODEL         CHPA120PI       CHPA120PI         CHINVAR       SYST         NI       31156/F         NATURA       NATURA         CHER STORAGE PUM         ODER TANK       SYST	R         MODEL         UNIT TYPE         RATE (GPM)         (FT)         HP         RPM         (IN)         (IN)           1411-538         ELEVATOR         50         20         0.5         1750         24"         36"           PLAN         MANUFACTURER         MODEL         SIZE         MOUNTING         FLOW RATE         HEAD (GPM)           PLAN         MARK         MANUFACTURER         MODEL         SIZE         MOUNTING         GPM)         (FT)           RP1         GRUNDFOS         ALPLHA         3/4"         INLINE         2.0         15           VATER HEATER SCHEDU           VOLUME         GPH @ 100 DEG, F TEMP (GAL)         VOLTAGE         PH           D         AIR-SOURCE HEAT PUMP WATER HEATER         120         50         208         208           D         AIR-SOURCE HEAT PUMP WATER HEATER         120         50         208         208         200           PRESSURE REGULATOR SCHEDULE           EM           A140         2           QAIR-SOURCE HEAT PUMP         120         50         208         20           PRESSURE REGULATOR SCHEDULE           PH         <	VOLTAGE         120         TION PUM         VOLTAGE         I20         I20         LE         ELECT         ASE         NOMIN         1         120	1 P SCH ELECT PHASE 1 RICAL AL (W) 000 000 W.C.)	3.1     3       IEDULE       RICAL       FLA     MC       0.3     0.8       21.6     2°       21.6     2°       21.6     2°       0.3     0.8	.1     15       :A     MOC       B     15       CA     MOC       1.6     30       1.6     30       SIZE (IN       2.5       .75	Deprions AS CP OPTIONS CP OPTIONS ) HSP,ET ) HSP		
NCY WATE PRAGE TURER TO S TO MONI O PREVEN	PR1 PB2 PR3 3 PR3 3 PR1 PB2 PR3 3 PR3 PR3 PR3 PR3 PR3 PR3	PLAN MARK       MANUI         EWH1       LOC         EWH2       LOC         EWH2       LOC         EWH2       LOC         EWH2       LOC         EWH2       LOC         WH1       LOC         EWH2       LOC         WH1       LOC         EWH2       LOC         WH1       PIETRO FIORENTI         PIETRO FIORENTI       PIETRO FIORENTI         PIETRO FIORENTI       PIETRO FIORENTI         OUTLET       BLAE         SSURE (PSI)       OUT         60       LOC	MARK       MANUFACTURER         SP1       WEIL         FACTURER       MODEL         CHINVAR       CHPA120PI         CHINVAR       SYST         NI       31156/F         NATURA       NATURA         CHER       STORAGE PUM         ODER TANK       FILTER T         Z6       BAG FILT         T THE FACTORY.       SUBAG FILT	NODEL       UNIT TYPE       RATE (GPM)       (FT)       HP       RPM       (IN)       (IN)         1411-538       ELEVATOR       50       20       0.5       1750       24"       36"         PLAN       MARK       MANUFACTURER       MODEL       Size       MOUNTING       (GPM)       (FT)         RP1       GRUNDFOS       ALPLHA       3/4"       INLINE       2.0       15         WATER HEATER SCHEDU         VOLTAGE       PH       (GAL)       GPH @ 100       OEG, F TEMP         VOLTAGE       PHEATER       120       50       208       O         D       AIR-SOURCE HEAT PUMP       120       50       208       O         D       AIR-SOURCE HEAT PUMP       120       50       208       O         PRESSURE REGULATOR SCHEDULE         PRESSURE REGULATOR SCHEDULE         PI/FILTRATION SCHEDULE         P/FILTRATION SCHEDULE       SANITATION       SANITATION       SANITATION       VOLTAGE       PH         PROCESSING       ELEVEL       VOLTAGE       PH         ER       5 MICRON       ULTRAVIOLET       40 mJ/cm2       480       PH	VOLTAGE         120         TION PUM         VOLTAGE       F         120       F         120       F         120       F         1       120         ESSURE (IN. 7       7         7	1 P SCH ELECT PHASE 1 RICAL AL (W) 000 000 W.C.) W.C.) MOCP 30	3.1     3       IEDULE       RICAL       FLA     MC       0.3     0.8       PLA     M       21.6     2°       21.6     2°       VALVE     2°       0.3     1	.1     15       :A     MOC       B     15       CA     MOC       1.6     30       1.6     30       1.6     30       SIZE (IN       2.5       .75       .75       .75       .75       .75       .75       .75	CP OPTIONS   AS     CP   OPTIONS   HSP,ET   )   HSP     )   OPTIONS     WIDTH   OPTIONS   48	N	
NCY WATE PRAGE TURER TO S TO MONI O PREVEN	PR1         PB2         PR3         ONE       PUMP         NUMBER OF       FLOW RATE         PUMP/FILTRATION       WAHASO       CUSTOM       2       50         OMOUNT BOOSTER PUMP, FILTRATION, AND CONTROLS ON SINGLE SKID. SKID TO BE PRINTOR AND REPORT TANK LEVEL TO CONTROL PANEL AND BAS, OPERATE PUMPS AND VENT STAGNATION WITH RECIRCULATION OF WATER. RECIRC WATER TO BE TREATED BY F	PLAN MARK       MANUI         EWH1       LOC         EWH2       LOC         EWH2       LOC         EWH2       LOC         EWH2       LOC         EWH2       LOC         WH1       LOC         EWH2       LOC         WH1       LOC         EWH2       LOC         WH1       PIETRO FIORENTI         PIETRO FIORENTI       PIETRO FIORENTI         PIETRO FIORENTI       PIETRO FIORENTI         OUTLET       BLAE         SSURE (PSI)       OUT         60       LOC	MARK       MANUFACTURER         SP1       WEIL         FACTURER       MODEL         CHINVAR       CHPA120PI         CHINVAR       SYST         NI       31156/F         NATURA       NATURA         CHER       STORAGE PUM         ODER TANK       FILTER T         Z6       BAG FILT         T THE FACTORY.       SUBAG FILT	NODEL       UNIT TYPE       RATE (GPM)       (FT)       HP       RPM       (IN)       (IN)         1411-538       ELEVATOR       50       20       0.5       1750       24"       36"         PLAN       MARK       MANUFACTURER       MODEL       Size       MOUNTING       (GPM)       (FT)         RP1       GRUNDFOS       ALPLHA       3/4"       INLINE       2.0       15         WATER HEATER SCHEDU         VOLTAGE       PH       (GAL)       GPH @ 100       OEG, F TEMP         VOLTAGE       PHEATER       120       50       208       O         D       AIR-SOURCE HEAT PUMP       120       50       208       O         D       AIR-SOURCE HEAT PUMP       120       50       208       O         PRESSURE REGULATOR SCHEDULE         PRESSURE REGULATOR SCHEDULE         PI/FILTRATION SCHEDULE         P/FILTRATION SCHEDULE       SANITATION       SANITATION       SANITATION       VOLTAGE       PH         PROCESSING       ELEVEL       VOLTAGE       PH         ER       5 MICRON       ULTRAVIOLET       40 mJ/cm2       480       PH	VOLTAGE         120         TION PUM         VOLTAGE       F         120       F         120       F         120       F         1       120         ESSURE (IN. 7       7         7	1 P SCH ELECT PHASE 1 RICAL AL (W) 000 000 W.C.) W.C.) MOCP 30	3.1     3       IEDULE       RICAL       FLA     MC       0.3     0.8       PLA     M       21.6     2°       21.6     2°       VALVE     2°       0.3     1	.1     15       :A     MOC       B     15       CA     MOC       1.6     30       1.6     30       1.6     30       SIZE (IN       2.5       .75       .75       .75       .75       .75       .75       .75	CP OPTIONS   AS     CP   OPTIONS   HSP,ET   )   HSP     )   OPTIONS     WIDTH   OPTIONS   48		
NCY WATE PRAGE TURER TO S TO MONI O PREVEN	PR1         PB2         PR3         ONE       PUMP         NUMBER OF       FLOW RATE         PUMP/FILTRATION       WAHASO       CUSTOM       2       50         OMOUNT BOOSTER PUMP, FILTRATION, AND CONTROLS ON SINGLE SKID. SKID TO BE PRINTOR AND REPORT TANK LEVEL TO CONTROL PANEL AND BAS, OPERATE PUMPS AND VENT STAGNATION WITH RECIRCULATION OF WATER. RECIRC WATER TO BE TREATED BY F	PLAN MARK       MANUI         EWH1       LOC         EWH2       LOC         EWH2       LOC         EWH2       LOC         EWH2       LOC         EWH2       LOC         WH1       LOC         EWH2       LOC         WH1       LOC         EWH2       LOC         WH1       PIETRO FIORENTI         PIETRO FIORENTI       PIETRO FIORENTI         PIETRO FIORENTI       PIETRO FIORENTI         OUTLET       BLAE         SSURE (PSI)       OUT         60       LOC	MARK       MANUFACTURER         SP1       WEIL         FACTURER       MODEL         CHINVAR       CHPA120PI         CHINVAR       SYST         NI       31156/F         NATURA       NATURA         CHER       STORAGE PUM         ODER TANK       FILTER T         Z6       BAG FILT         T THE FACTORY.       SUBAG FILT	NODEL       UNIT TYPE       RATE (GPM)       (FT)       HP       RPM       (IN)       (IN)         1411-538       ELEVATOR       50       20       0.5       1750       24"       36"         PLAN       MARK       MANUFACTURER       MODEL       Size       MOUNTING       (GPM)       (FT)         RP1       GRUNDFOS       ALPLHA       3/4"       INLINE       2.0       15         WATER HEATER SCHEDU         VOLTAGE       PH       (GAL)       GPH @ 100       OEG, F TEMP         VOLTAGE       PHEATER       120       50       208       O         D       AIR-SOURCE HEAT PUMP       120       50       208       O         D       AIR-SOURCE HEAT PUMP       120       50       208       O         PRESSURE REGULATOR SCHEDULE         PRESSURE REGULATOR SCHEDULE         PI/FILTRATION SCHEDULE         P/FILTRATION SCHEDULE       SANITATION       SANITATION       SANITATION       VOLTAGE       PH         PROCESSING       ELEVEL       VOLTAGE       PH         ER       5 MICRON       ULTRAVIOLET       40 mJ/cm2       480       PH	VOLTAGE         120         TION PUM         VOLTAGE       F         120       F         120       F         120       F         120       F         1       120         1       1	1 P SCH ELECT PHASE 1 RICAL AL (W) 000 000 W.C.) W.C.) MOCP 30 AL GAL	3.1     3       IEDULE       RICAL       FLA     MC       0.3     0.8       PLA     M       21.6     2°       21.6     2°       VALVE     2°       0.3     1	.1     15       :A     MOC       B     15       CA     MOC       1.6     30       1.6     30       1.6     30       SIZE (IN       2.5       .75       .75       .75       .75       .75       .75       .75	CP OPTIONS   AS     CP   OPTIONS   HSP,ET   )   HSP     )   OPTIONS     WIDTH   OPTIONS   48		

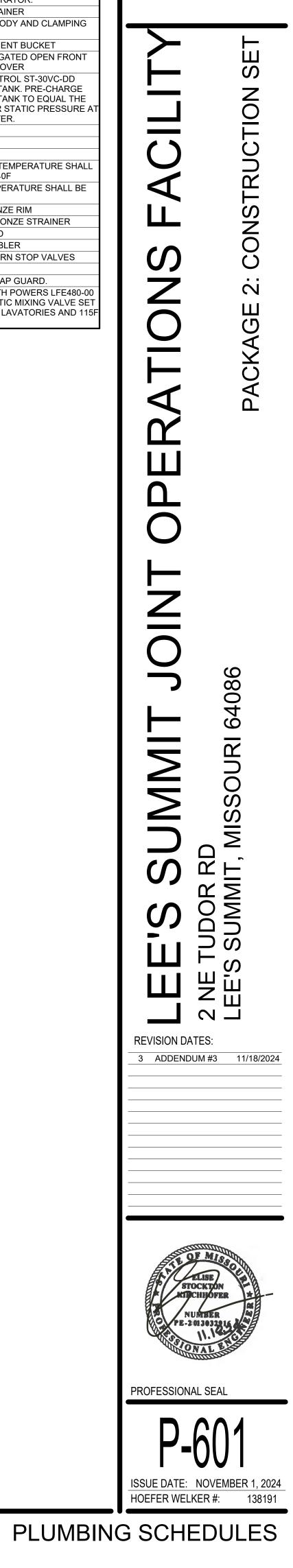
PLUMBING PRESSURIZED STORAGE TANK SCHEDULE										
PLAN MARK	MANUFACTURER	MODEL	MOUNTING	VOLUME (GAL)	DRAWDOWN (GAL)	OPERATING PRESSURE (PSI)	DIAMETER (IN)	HEIGHT(IN)	WEIGHT (LB)	
ST1	FLEXCON	FT 35(S)	SIDEWAYS, ABOVE CEILING	9	2.16	60	12.5	19	90	
ST2	FLEXCON	FT 35(S)	SIDEWAYS, ABOVE CEILING	9	2.16	60	12.5	19	90	

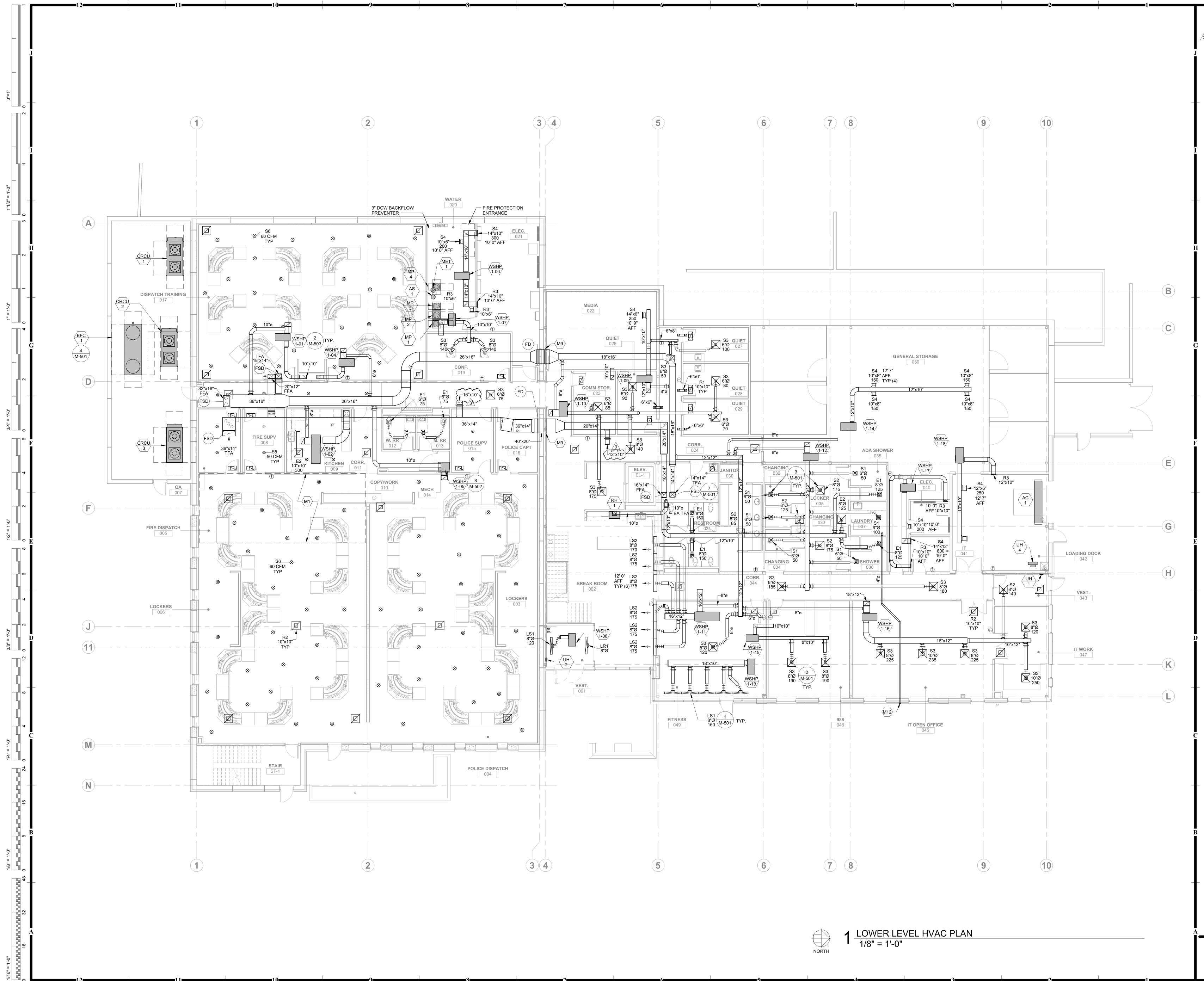
GENERAL NOTE	ES
1	THE MANUF
· ·	BE CONSIDI
	DESIGN. EQ
	ACCESSOR
	IN ACCORD
	SCHEDULE
	DETAILS, AN
	THE MECHA
	SHALL BE R
	ADDITIONAL
	COORDINAT
	OF DESIGN
	PROVIDED.
	PROVIDED.
OPTIONS	
AE5	0.5 GPM AE
AS	PROVIDE A
	MOUNTED A
	L6006C. SET
	OFF RECIRC
	AND ON AT
BF	BOTTLE FIL
BGD	INSINKERAT
	GARBAGE D
	CHROME FI
	BUTTON OP
BS	BASKET STI
CC	CAST IRON
	COLLAR
DSB	DRAIN SEDI
ESLC	WHITE ELOI
	SEAT LESS
ET	PROVIDE A
	EXPANSION
	EXPANSION
	-
	COLD WATE
	WATER HEA
FG	FULL GRATI
GD	GRID DRAIN
HG	HALF GRAT
HSP	
	OPERATING
	BE SET TO
MSP	MIXING TEM
	SET TO 130
NBR	NICKEL BRO
NBS	6" NICKEL B
PS	PIPE SHROU
SB	SAFETY BU
SV	QUARTER T
Т	TRAP
TG	PROVENT T
TMV	PROVIDE W
	THERMOST
	TO 105F FO
	FOR SINKS

PLUMBING ABBREVIATION LIST						
SENERAL NOTE	ES					
1	THE MANUFACTURER LISTED SHALL BE CONSIDERED THE BASIS OF DESIGN. EQUIPMENT AND ACCESSORIES SHALL BE SUPPLIED IN ACCORDANCE WITH THE SCHEDULED VALUES, NOTES, DETAILS, AND SPECIFICATIONS. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ADDITIONAL COST AND COORDINATION WHEN NON BASIS OF DESIGN EQUIPMENT IS PROVIDED.					
PTIONS						
AE5	0.5 GPM AERATOR					
AS	PROVIDE ADJUSTABLE, SURFACE MOUNTED AQUASTAT - HONEYWELL L6006C. SET AQUASTAT TO SHUT OFF RECIRCULATION PUMP AT 130F AND ON AT 125F.					
BF	BOTTLE FILLER					
BGD	INSINKERATOR BADGER 5XP, 3/4 HP GARBAGE DISPOSAL AND 73274K CHROME FINISH SINK TOP SWITCH BUTTON OPERATOR.					
BS	BASKET STRAINER					
CC	CAST IRON BODY AND CLAMPING COLLAR					
DSB	DRAIN SEDIMENT BUCKET					
ESLC	WHITE ELONGATED OPEN FRONT SEAT LESS COVER					
ET	PROVIDE AMTROL ST-30VC-DD EXPANSION TANK. PRE-CHARGE EXPANSION TANK TO EQUAL THE COLD WATER STATIC PRESSURE AT WATER HEATER.					
FG	FULL GRATE					
GD	GRID DRAIN					
HG	HALF GRATE					
HSP	OPERATING TEMPERATURE SHALL BE SET TO 140F					
MSP	MIXING TEMPERATURE SHALL BE SET TO 130F					
NBR	NICKEL BRONZE RIM					
NBS	6" NICKEL BRONZE STRAINER					
PS	PIPE SHROUD					
SB	SAFETY BUBBLER					
SV	QUARTER TURN STOP VALVES					
Т	TRAP					
TG	PROVENT TRAP GUARD.					
TMV	PROVIDE WITH POWERS LFE480-00 THERMOSTATIC MIXING VALVE SET					

STATIC MIXING VALVE SET FOR LAVATORIES AND 115F

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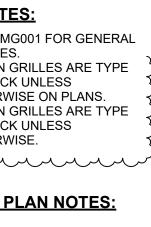




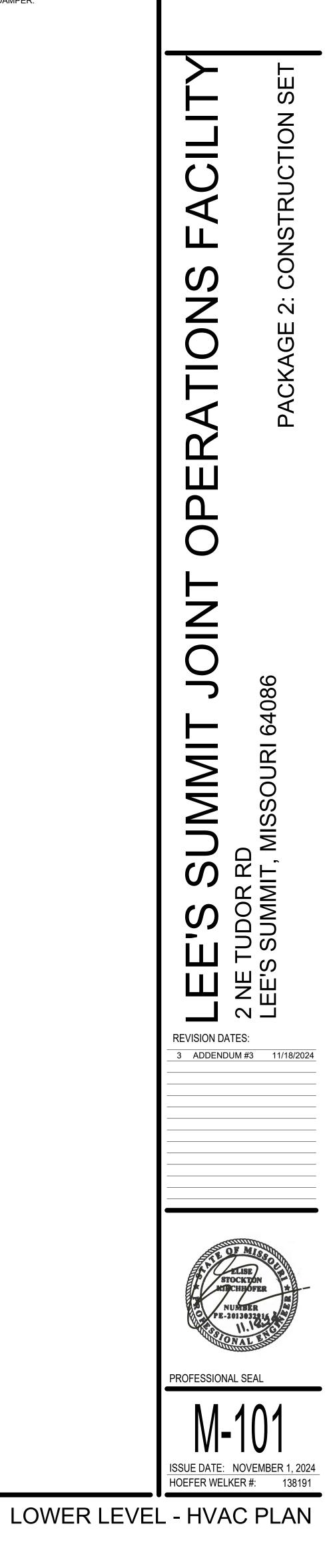
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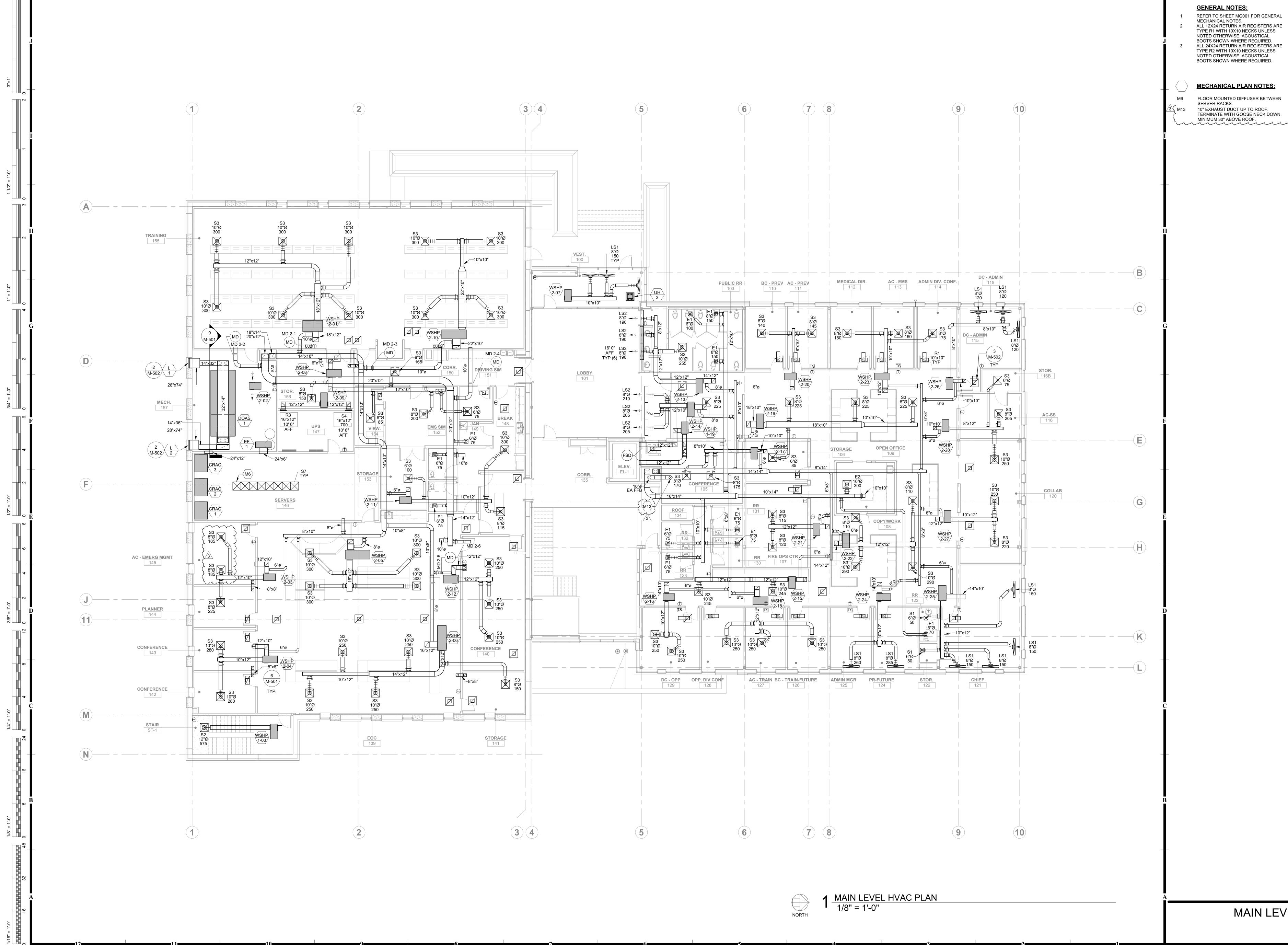
Autodesk Docs://138191-LeesSummitJointOpsCtr/138191\_MEP23\_LeesSummitJointOpsCtr.rvt

<u>GENERAL NOTES:</u> REFER TO SHEET MG001 FOR GENERAL MECHANICAL NOTES. ALL 12X24 RETURN GRILLES ARE TYPE R1 WITH 10X10 NECK UNLESS INDICATED OTHERWISE ON PLANS. ALL 24X24 RETURN GRILLES ARE TYPE R2 WITH 10X10 NECK UNLESS INDICATED OTHERWISE. hunn MECHANICAL PLAN NOTES: LOWER STRUCTURE IN THIS AREA FOR M1 SERVER ROOM UNDER FLOOR AIR DISTRIBUTION SYSTEM ABOVE. M9 PROVIDE FIRE DAMPER, ICC 500 RATED STORM LOUVER, AND FLEXIBLE CONNECTION FOR DUCT PENETRATION THROUGH ICC 500 RATED STORM SHELTER WALL. M12 PROVIDE BLACK WALL CAP WITH BACK DRAFT DAMPER.



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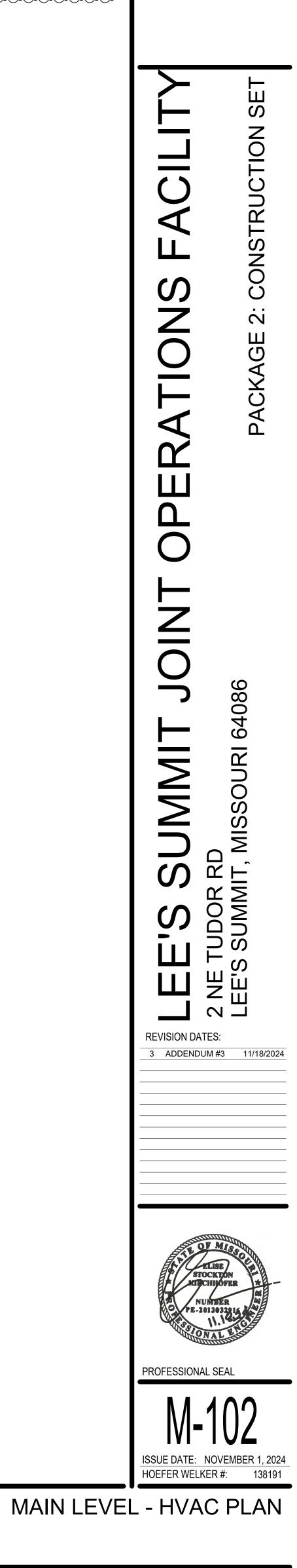
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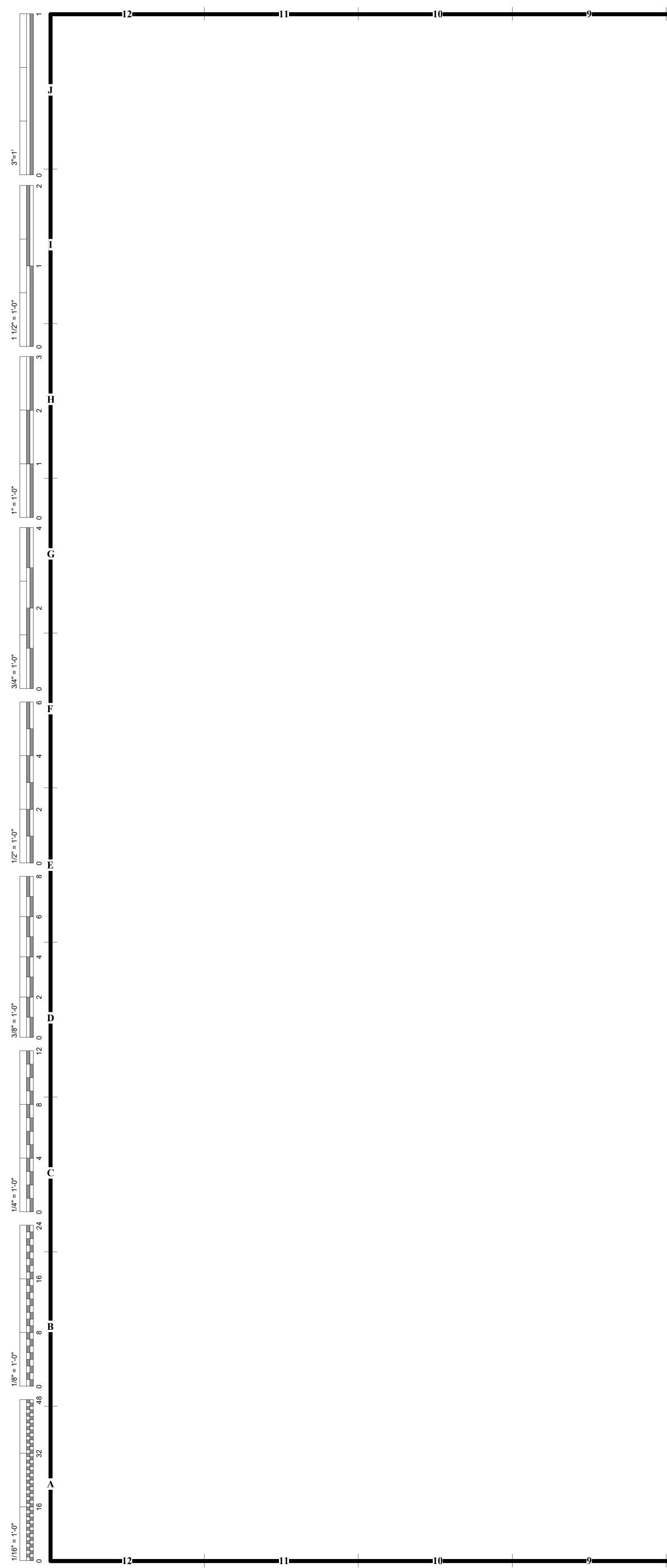
Autodesk Docs://138191-LeesSummitJointOpsCtr/138191\_MEP23\_LeesSummitJointOpsCtr.rvt

REFER TO SHEET MG001 FOR GENERAL MECHANICAL NOTES. ALL 12X24 RETURN AIR REGISTERS ARE TYPE R1 WITH 10X10 NECKS UNLESS NOTED OTHERWISE. ACOUSTICAL BOOTS SHOWN WHERE REQUIRED. ALL 24X24 RETURN AIR REGISTERS ARE TYPE R2 WITH 10X10 NECKS UNLESS NOTED OTHERWISE. ACOUSTICAL

MECHANICAL PLAN NOTES:

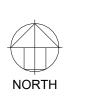
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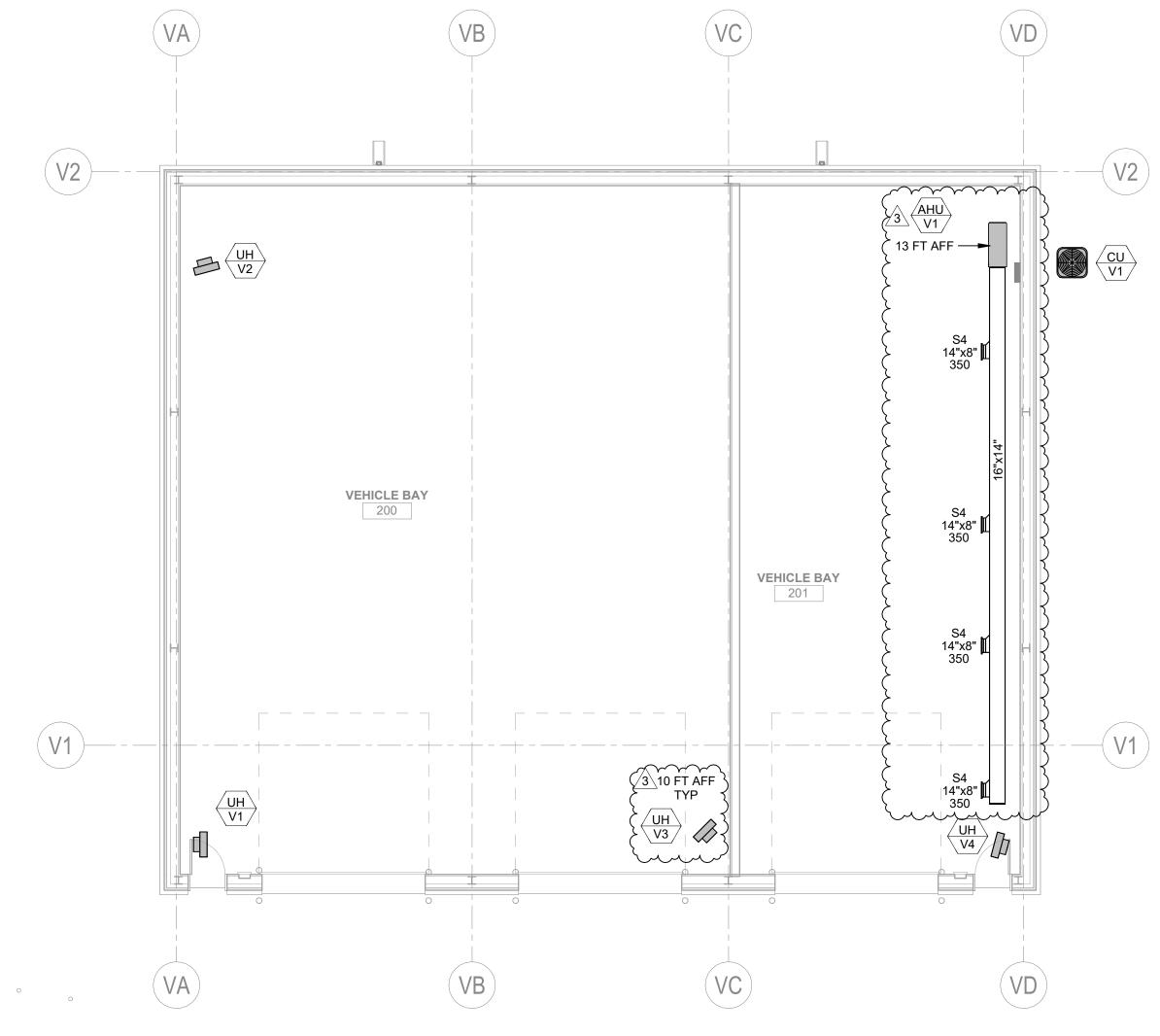


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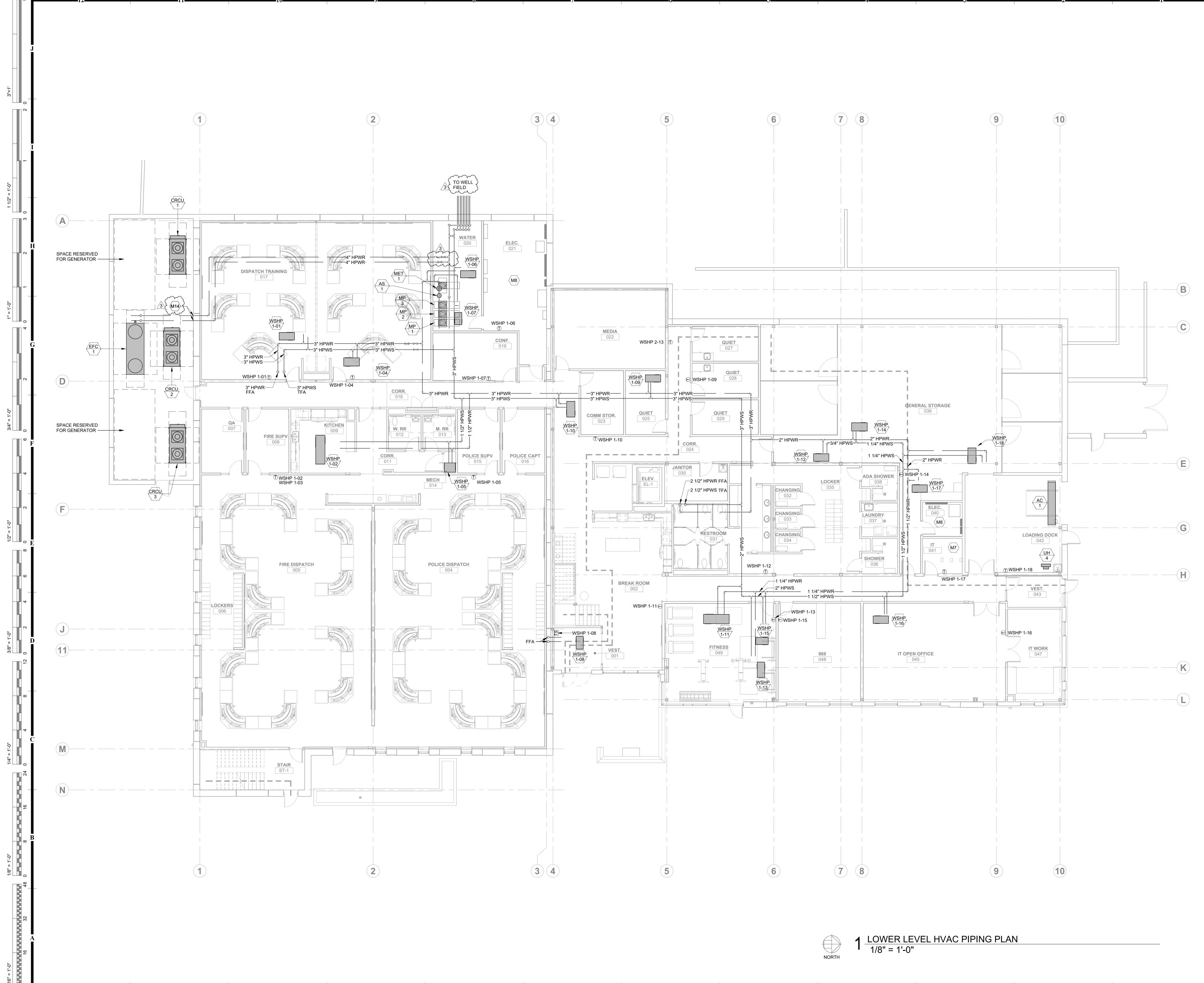
Autodesk Docs://138191-LeesSummitJointOpsCtr/138191\_MEP23\_LeesSummitJointOpsCtr.rvt



## 1 VEHICLE BUILDING - MECHANICAL PLAN 1/8" = 1'-0"







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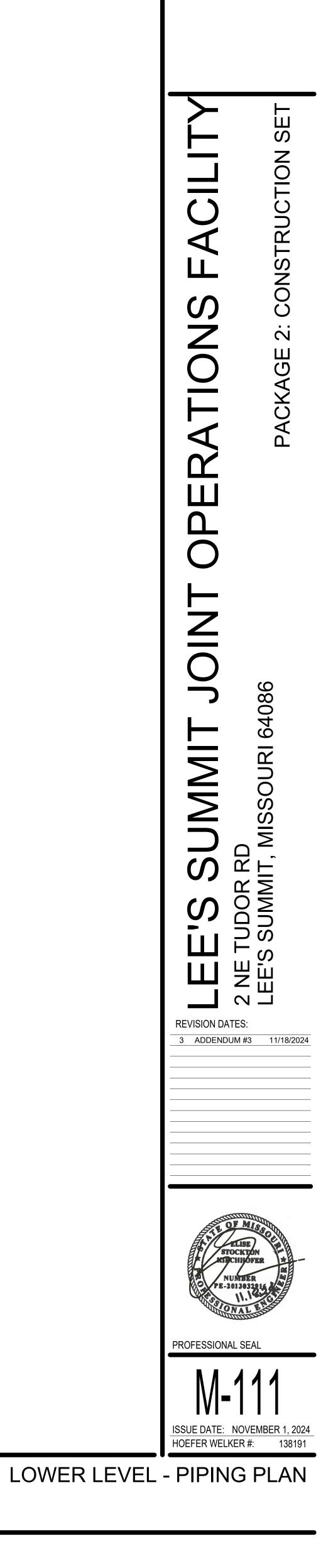
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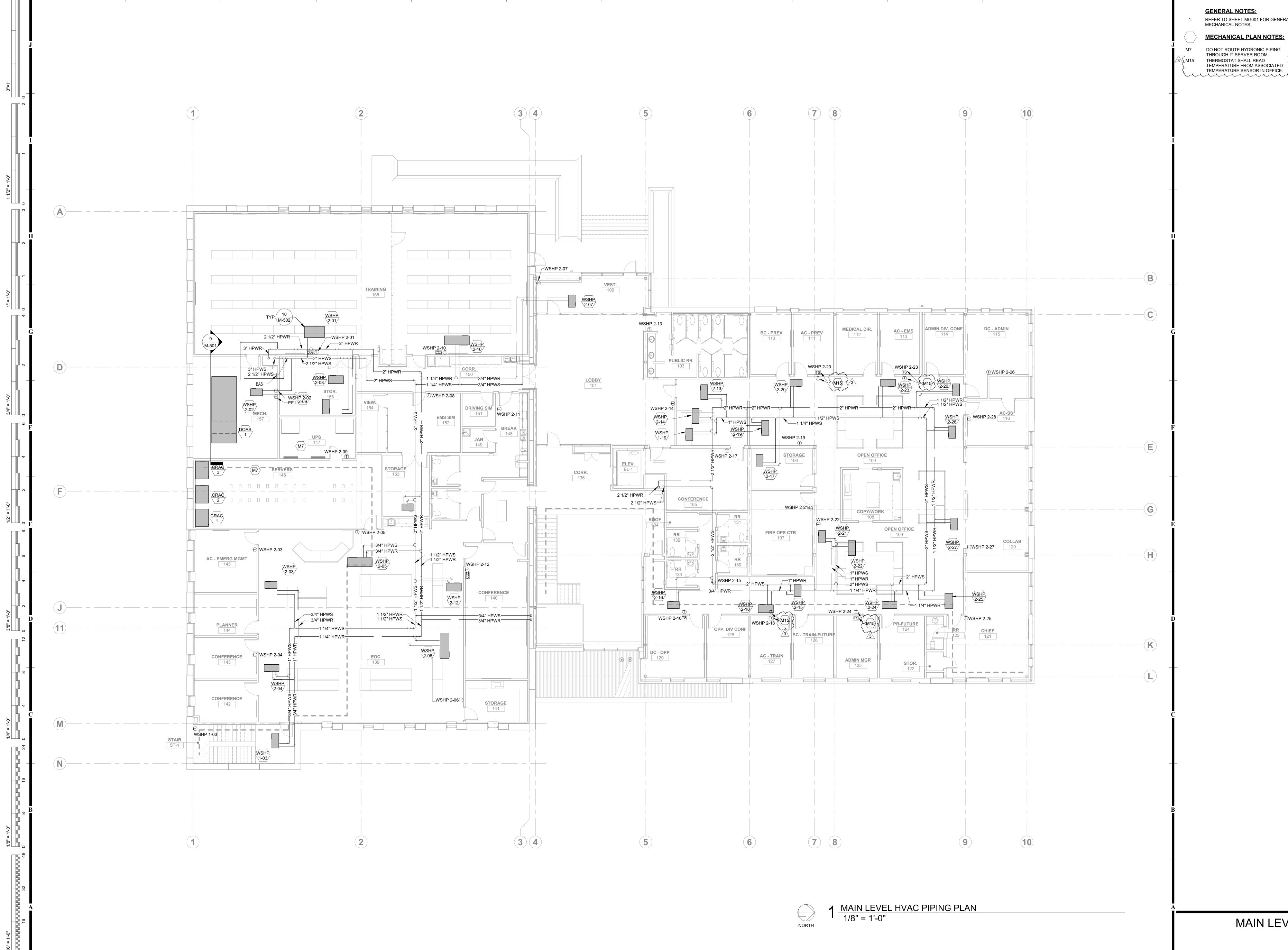
**GENERAL NOTES:** MECHANICAL NOTES.

M7 M8 M14

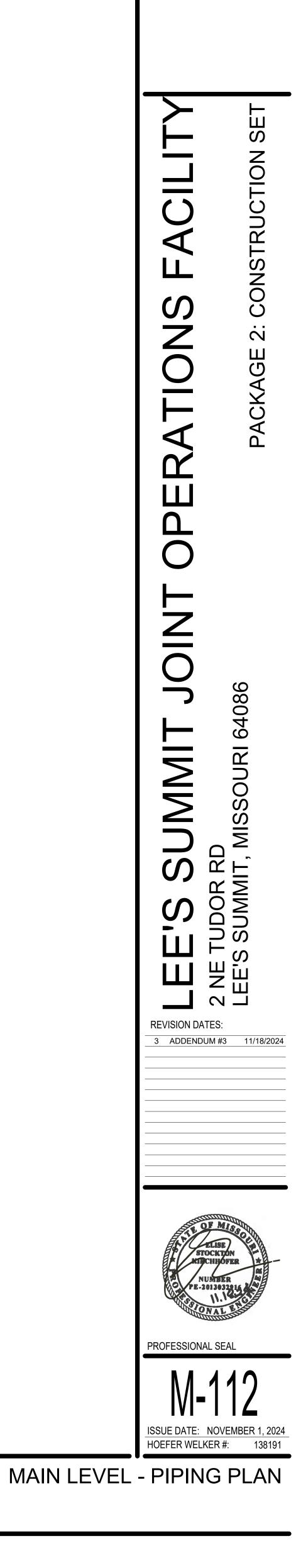
REFER TO SHEET MG001 FOR GENERAL

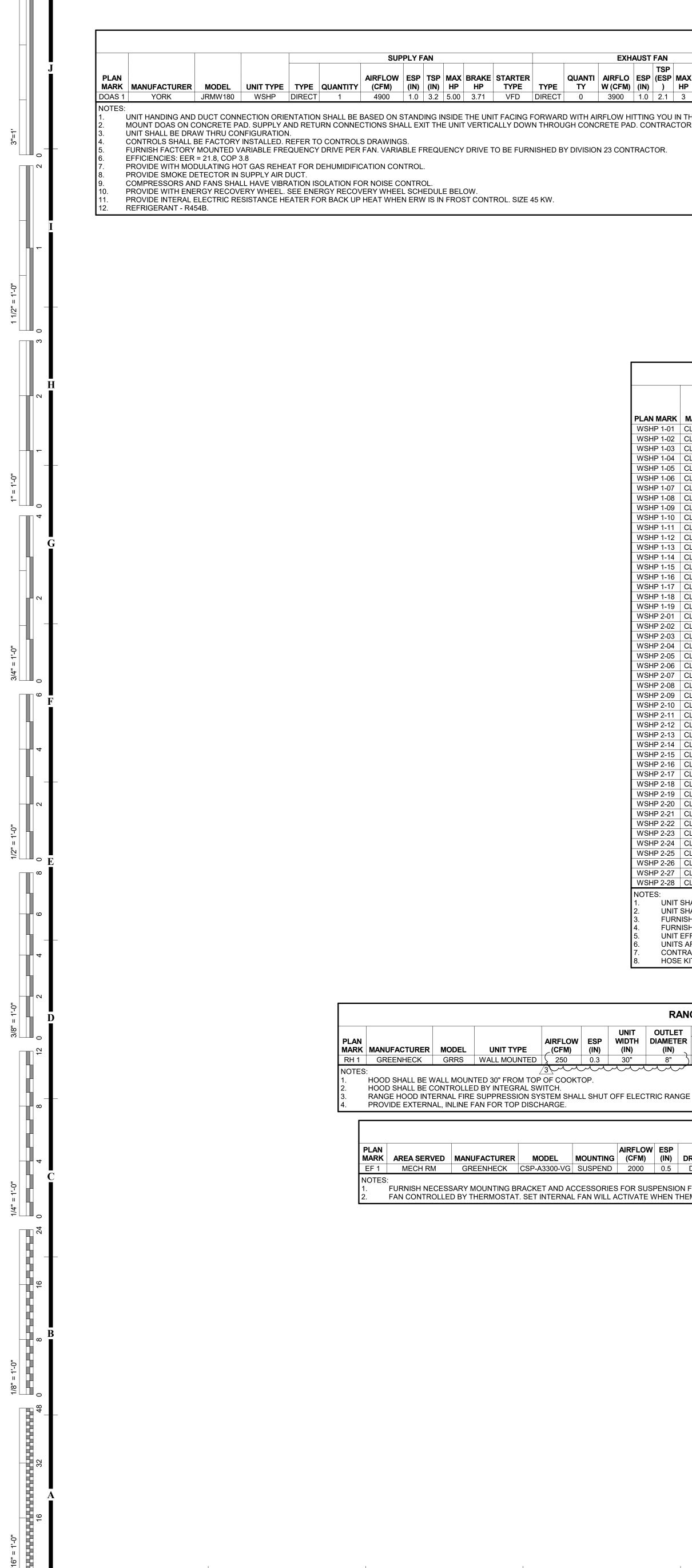
**MECHANICAL PLAN NOTES:** DO NOT ROUTE HYDRONIC PIPING THROUGH IT SERVER ROOM. DO NOT ROUTE HYDRONIC PIPING THROUGH ELECTRICAL ROOM. PROVIDE ICC 500 RATED WALL SHROUD FOR LARGE PIPES EXITING STORM SHELTER.





REFER TO SHEET MG001 FOR GENERAL





11/18/2024 9:21:14 AM

8		7				<b>16</b>		—		45 <b></b>			—		4				<b></b> 3 <b></b>					12			<b></b> 1
	D	DEDICATED		R AIR SU	JPPLY UNI	T SCHED!	ULE																				
MAX BRAK STARTE TOTAL SENS HP E HP R TYPE (MBH) (MI		COOLING C LAT DB WE ) (DEG.F) (DEG	FLOW VB RATE (		NT WPD VE		IRFLOW OUT		EAT LAT DEG.F) (DEG.		v			ONTROL	FILTE PREFII D MERV	ILTER DIRTY SP	VOLTAGE	ELECT			LENGT	PHYSICAL I			 OP'	TIONS	NOTES
3 2.37 VFD 214 1:	139 84.6 69.7	56.0 55.0	5.0 72.0	80.0 90.0		. , ,	. , .		37.5 64.0	, , ,	· ·	, `	, ,		13	0.8	460			12.0 125		6"	6"		CAB,DSE,SSDP		1-12
CTOR TO VERIFY SIZE AND LOCATION	N OF OPENINGS BEFURE	E POURING SL	_AB.																								
								SUPPLY	Y EXHAUST			FILTERS			ERGY REC		SUMMER	R					NTER				
				м	PLAN MARK MANUF			AIRFLOW (CFM) 4900	(CFM)	w	A FILTER DIRTY LOSS 0.4	"Y SP S (IN) ME	IERV LO	IRTY SP OSS (IN) ([	EXHAUST DB WE (DEG.F) (DEG 75.0 64.	VB DB G.F) (DEG.F	.F) (DEG.F)	DB (DEG.F)		F) (BTUH)	EXHAUST DB (DEG.F) 70.0	DB	SUPPLY DB (DEG.F) 37.5	ТН	OP <sup>*</sup>	TIONS	<b>NOTES</b>
					NOTES: 1. TOTAL   2. PROVID	ENERGY REG	ECOVERY WHE	HEEL SHA ROL AND	IALL BE INTEG D BYPASS DAN	AMPERS.	0.1		U III	I	10.0												
				3. 4.			VENESS: TOTA																				
								W	IATER SOL					JLE													
K MANUFACTURER MODEL	SUPPLY FAN AIRFLOW ESP STARTE (CFM) (IN) TYPE			EAT	COOLING COIL LA WB DB EG.F) (DEG.F)	AT FLC WB RA					LAT E		LWT V			MIN O/A AIRFLOW (CFM)	VOLTAGE	ELECTI			LENGT	PHYSICAL I		WEIGHT	- ~ ~ OP		NOTES
K         MANUFACTURER         MODEL           CLIMATE MASTER         SC-024           2         CLIMATE MASTER         SE-060           3         CLIMATE MASTER         SC-015	(CFM)         (IN)         TYPE           900         0.5         ECM           1800         0.5         ECM           700         0.5         ECM	M 20.3 M 45.5	18.0 38.8	75.0     63.       75.0     63.	EG.F)         (DEG.F)           3.0         55.0           3.0         55.0           3.0         55.0	53.0         5.           53.0         12	5.0         80.0           2.5         80.0	90.0 90.0 90.0 90.0	8.4         6           5.3         6	68.09068.090	90.0 { 90.0 {	50.0 50.0	40.0 1 40.0 1	(FI)         (SIA)           11.0         11.0           11.0         11.0	2 2 1	(CFM) 110 345 0	460 460 277	= PHASE 3 3 1	5.0 6 12.5 1	MCA         MOC           6.0         15           14.1         15           8.2         15	43" 81"	(IN) 21" 26" 20"	(IN) 18" 22" 18"	175 C L 475 C L	OP,DSN,ESM,HK, DP,DSN,ESM,HK, DP,DSN,ESM,HK,	<pre>&lt;,PFB,RDS } &lt;,PFB,RDS {</pre>	2-8 2-8 2-8 2-8
CLIMATE MASTER     SC-015       CLIMATE MASTER     SC-018       CLIMATE MASTER     SC-048       CLIMATE MASTER     SC-048       CLIMATE MASTER     SC-015	700         0.3         ECM           750         0.5         ECM           1200         0.5         ECM           700         0.5         ECM	M 16.1 M 31.8	14.3 28.0	75.0       63.         75.0       63.	3.0         55.0           3.0         55.0           3.0         55.0           3.0         55.0           3.0         55.0	53.03.53.010	3.880.00.080.0	90.0 90.0 90.0 90.0	4.8 6 3.6 6	68.09068.090	90.0 <u></u> 90.0	50.0 50.0	40.0 1 40.0 1	11.0 11.0 11.0 11.0	1 2 1	110 310 55	277 277 460 277	1 1 3 1	8.4 1 11.6 1	8.2         15           10.0         15           13.3         15           8.2         15	6 44" 6 55"	20 23" 31" 20"	18" 18" 26" 18"	160 { E 450 ( E	DP,DSN,ESM,HK, DP,DSN,ESM,HK, DP,DSN,ESM,HK, DP,DSN,ESM,HK,	<pre>&lt;,PFB,RDS  </pre>	2-6 2-8 1,3-8 2-8
CLIMATE MASTERSC-009CLIMATE MASTERSC-006	300         0.5         ECM           200         0.5         ECM	M 7.0 M 3.7	5.0 7 2.0 7	75.063.75.063.	3.055.03.055.0	53.01.53.01.	1.980.01.380.0	90.0 90.0	1.6         6           1.4         6	68.09068.090	90.0 { 90.0 {	50.0 50.0	40.0 1 40.0 1	11.0 11.0		90 0	277 277		5.9 6 4.9 5	6.8155.615	5 34" 5 36"	20" 20"	12" 12"	110 C	DP,DSN,ESM,HK, DP,DSN,ESM,HK,	K,PFB,RDS )	2-8 2-8
O         CLIMATE MASTER         SC-015           O         CLIMATE MASTER         SC-018           CLIMATE MASTER         SC-036	700         0.5         ECM           750         0.5         ECM           1350         0.5         ECM	M 16.3 M 21.7	13.3 20.0	75.0       63.         75.0       63.	3.0         55.0           3.0         55.0           3.0         55.0           3.0         55.0	53.0 7.	3.880.07.580.0	90.0 90.0 90.0	5.4613.96	68.09068.090	90.0 ( 90.0 (	50.0 50.0	40.0 1 40.0 1	11.0       11.0       11.0	1 1 2	135 150 100	277 277 460	1 1 3	8.4 1 9.3 1	8.21510.01510.415	6 44" 6 72"	20" 23" 26"	18" 18" 22"	160 } [ 360 } [	DP,DSN,ESM,HK, DP,DSN,ESM,HK, DP,DSN,ESM,HK,	<,PFB,RDS { <,PFB,RDS }	2-8 2-8 2-8
CLIMATE MASTERSC-024CLIMATE MASTERSC-024CLIMATE MASTERSC-018	900         0.5         ECM           900         0.5         ECM           750         0.5         ECM	M 23.8	14.4	75.0 63.	3.055.03.055.03.055.0	53.0 5.	5.0 80.0	90.0 90.0 90.0	8.2 6	68.0 90	90.0	50.0	40.0 1	11.0 11.0 11.0	2 2 1	100 180 195	460 460 277	3 3 1	5.0 6	6.0156.01510.015	i 43"		18" 18" 18"	175 6	DP,DSN,ESM,HK, DP,DSN,ESM,HK, DP,DSN,ESM,HK,	K,PFB,RDS	2-8 2-8 2-8
GCLIMATE MASTERSC-012GCLIMATE MASTERSC-024CCLIMATE MASTERSC-024	400         0.5         ECM           900         0.5         ECM           900         0.5         ECM	M 7.9 M 19.4	6.8 7 16.7 7	75.063.75.063.	3.0         55.0           3.0         55.0           3.0         55.0           3.0         55.0	53.02.53.05.	2.580.05.080.0	90.0 90.0 90.0	2.7 6 10.2 6	68.09068.090	90.0 <u></u> 90.0	50.0 50.0	40.0 1 40.0 1	11.0 11.0 11.0	1 2 2	60 150 0	277 460 460	1 3 3	6.5 7 5.0 6	7.6         15           6.0         15           6.0         15	5 35" 5 43"	20" 21" 21"	12" 18" 18"	120 { [ 175 ( [	DP,DSN,ESM,HK, DP,DSN,ESM,HK, DP,DSN,ESM,HK,	<pre>&lt;,PFB,RDS /</pre>	2-8 2-8 2-8 2-8
BCLIMATE MASTERSC-0180CLIMATE MASTERSC-012	750         0.5         ECM           400         0.3         ECM	M 17.9 M 10.7	8.9 10.6	75.0       63.         75.0       63.	3.055.03.055.0	53.03.53.02.	3.880.02.580.0	90.0 90.0	10.7         6           0.5         6	68.09068.090	90.0 <u></u> 90.0	50.0 50.0	40.0 1 40.0 1	11.0 11.0		0 0	277 277	1 1	8.4 1 6.5 7	10.0 15 7.6 15	5 44" 5 35"	23" 20"	18" 12"	160 } [ 120 { [	DP,DSN,ESM,HK, DP,DSN,ESM,HK,	<pre>&lt;,PFB,RDS { &lt;,PFB,RDS } </pre>	2-8 1,3-8
CLIMATE MASTER     SE-048       2     CLIMATE MASTER     SC-012       3     CLIMATE MASTER     SC-012	1600         0.5         ECM           400         0.5         ECM           400         0.5         ECM	M 6.4 M 10.4	6.0 7 9.1 7	75.0       63.         75.0       63.	3.0         55.0           3.0         55.0           3.0         55.0           3.0         55.0	53.02.53.02.	2.580.02.580.0	90.0 90.0 90.0	4.2 6 6.3 6	68.09068.090	90.0 <u></u> 90.0	50.0 50.0	40.0 1 40.0 1	11.0 11.0 11.0	$\begin{array}{c c} 2 \\ \hline 1 \\ \hline 1 \\ \hline \end{array}$	490 0 50	460 277 277	<u>3</u> <u>1</u> 1	6.5 7 6.5 7	13.3         15           7.6         15           7.6         15	5 35" 5 35"	33" 20" 20"	21" 12" 12"	120 C	DP,DSN,ESM,HK, DP,DSN,ESM,HK, DP,DSN,ESM,HK,	<,PFB,RDS { <,PFB,RDS }	2-8 2-8 2-8
CLIMATE MASTERSC-015CLIMATE MASTERSC-036CLIMATE MASTERSC-036	700         0.5         ECM           1350         0.5         ECM           1350         0.5         ECM	M 27.1	21.6	75.0 63.	3.055.03.055.03.055.0	53.0 7.		90.0 90.0 90.0	8.0 6	68.0 90	90.0 క	50.0		11.0 11.0 11.0	1 2 2	125 160 170	277 460 460	1 3 3	+	8.21510.41510.415	5 72"	20" 26" 26"	18" 22" 22"	360 (	DP,DSN,ESM,HK, DP,DSN,ESM,HK, DP,DSN,ESM,HK,	K,PFB,RDS	2-8 2-8 2-8
CLIMATE MASTER     SC-012       CLIMATE MASTER     SC-018       CLIMATE MASTER     SC-015	400         0.5         ECM           750         0.5         ECM           700         0.5         ECM	M 8.4 M 15.6	8.1 7 13.7 7	75.0       63.         75.0       63.	3.0         55.0           3.0         55.0           3.0         55.0           3.0         55.0	53.0         2.           53.0         3.	2.580.03.880.0	90.0 90.0 90.0	4.6 6 7.5 6	68.09068.090	90.0 { 90.0 {	50.0 50.0	40.0 1 40.0 1	11.0 11.0 11.0	<u>-</u> <u>1</u> <u>1</u> 1	0 125 50	277 277 277 277		6.5 7 8.4 1		5 35" 5 44"	20" 23"	12" 18" 18"	120 { E 160 { E	DP,DSN,ESM,HK, DP,DSN,ESM,HK, DP,DSN,ESM,HK,	<pre>&lt;,PFB,RDS ) &lt;,PFB,RDS }</pre>	2-8 2-8 2-8 2-8
CLIMATE MASTER     SC-015       CLIMATE MASTER     SC-036       CLIMATE MASTER     SC-012       CLIMATE MASTER     SC-018	1350         0.5         ECM           400         0.5         ECM	M 36.5 M 9.5	27.0 7.1 7	75.063.75.063.	3.055.03.055.0	53.07.53.02.	7.580.02.580.0	90.0 90.0 90.0 90.0	12.9 6 4.7 6	68.09068.090	90.0 { 90.0 {	50.0 50.0	40.0 1 40.0 1	11.0 11.0		360 60	460 277 277	1 3 1 1	9.3 1 6.5 7	10.4157.615	5 72" 5 35"	26" 20"	22" 12"	360 } [ 120 { [	DP,DSN,ESM,HK, DP,DSN,ESM,HK, DP,DSN,ESM,HK, DP,DSN,ESM,HK,	<pre>&lt;,PFB,RDS </pre>	2-8 2-8 2-8 2-8
B         CLIMATE MASTER         SC-015           CLIMATE MASTER         SC-015	700         0.5         ECM           700         0.5         ECM	M 14.4 M 12.0	13.3 10.8	75.0       63.         75.0       63.	3.055.03.055.0	53.03.53.03.	3.180.03.180.0	90.0 90.0	5.6 6 2.8 6	68.09068.090	90.0 { 90.0 {	50.0 50.0		11.0 11.0		165 60 95	277 277		6.9 8 6.9 8	8.2158.215	i 43" i 43"	23" 20" 20"	18" 18" 18"	155 C	DP,DSN,ESM,HK, DP,DSN,ESM,HK,	<,PFB,RDS { <,PFB,RDS }	2-8 2-8
6CLIMATE MASTERSC-0126CLIMATE MASTERSC-0097CLIMATE MASTERSC-009	400         0.5         ECM           300         0.5         ECM           300         0.5         ECM	M 8.2 M 8.8	7.5 7.6.1 7.5	75.0 63.	3.055.03.055.0	53.01.53.01.	1.980.01.980.0	90.0 90.0 90.0	5.3 6 1.8 6	68.09068.090	90.0 <u></u> 90.0	50.0 50.0	40.0 1 40.0 1	11.0       11.0       11.0	1 1 1	55 50 90	277 277 277		5.9 6 5.9 6	7.6156.8156.815	5 34" 5 34"	20" 20"	12" 12" 12"	110 C 110 C	DP,DSN,ESM,HK, DP,DSN,ESM,HK, DP,DSN,ESM,HK,	<pre>&lt;,PFB,RDS { &lt;,PFB,RDS { </pre>	2-8 2-8 2-8
BCLIMATE MASTERSC-0180CLIMATE MASTERSC-0240CLIMATE MASTERSC-012	750         0.5         ECM           900         0.5         ECM           400         0.5         ECM	M 20.9	17.3	75.0 63.	3.055.03.055.03.055.0	53.0 5.	5.0 80.0	90.0 90.0 90.0	8.2 6	68.0 90	90.0 క	50.0		11.0 11.0 11.0	1 2 1	60 150 50	277 460 277	1 3 1	5.0 6	10.0156.0157.615	6 43"	23" 21" 20"	18" 18" 12"	175 { C	DP,DSN,ESM,HK, DP,DSN,ESM,HK, DP,DSN,ESM,HK,	K,PFB,RDS	2-8 2-8 2-8
CLIMATE MASTER SC-006 CLIMATE MASTER SC-024 CLIMATE MASTER SC-015	200         0.5         ECM           900         0.5         ECM           700         0.5         ECM	M 5.8 M 21.2	4.5 16.7	75.0       63.         75.0       63.	33.0         55.0           33.0         55.0           33.0         55.0           33.0         55.0	53.01.53.05.	1.380.05.080.0	90.0 90.0 90.0	1.6         6           7.1         6	68.09068.090	90.0 { 90.0 {	50.0 50.0	40.0 1 40.0 1	11.0 11.0 11.0	1 2 1	60 140 55	277 460 277	1 3 1	4.9 5.0 6	5.6         15           6.0         15           8.2         15	5 36" 5 43"	20" 21"	12" 18" 18"	110 } [ 175 ] [	DP,DSN,ESM,HK, DP,DSN,ESM,HK, DP,DSN,ESM,HK,	<pre>&lt;,PFB,RDS { &lt;,PFB,RDS } </pre>	2-8 2-8 2-8 2-8
CLIMATE MASTERSC-015CLIMATE MASTERSC-018	700         0.5         ECM           750         0.5         ECM	M 10.9 M 9.7	9.6 9.0	75.0       63.         75.0       63.	3.055.03.055.0	53.03.53.03.	3.180.03.880.0	90.0 90.0	6.0 6 8.8 6	68.09068.090	90.0 { 90.0 {	50.0 50.0	40.0 1 40.0 1	11.0 11.0		50 50	277 277		6.9 8 8.4 1	8.21510.015	6 43" 6 44"	20" 23"	18" 18"	155 C	DP,DSN,ESM,HK, DP,DSN,ESM,HK,	<pre>&lt;,PFB,RDS { &lt;,PFB,RDS { </pre>	2-8 2-8
CLIMATE MASTERSC-012CLIMATE MASTERSC-012CLIMATE MASTERSC-012	400         0.5         ECM           400         0.5         ECM           400         0.5         ECM	M 10.5	8.3	75.0       63.         75.0       63.         75.0       63.         75.0       63.		53.0 2.	2.5 80.0	90.0 90.0 90.0	5.4 6	68.0 90	90.0 క	50.0		11.0       11.0       11.0	1 1 1	50 80 75	277 277 277			7.6157.6157.615	35"	20" 20" 20"	12" 12" 12"	120 🕻 🛙	DP,DSN,ESM,HK, DP,DSN,ESM,HK, DP,DSN,ESM,HK,	K,PFB,RDS	2-8 2-8 2-8
T SHALL BE FLOOR MOUNTED WITH T SHALL BE HUNG FROM STRUCTUF RNISH WITH 1" FILTER RACK. PROVID	IRE WITH HORIZONTAL DIS	DISCHARGE. REI	REFER TO DETA	TAIL XXX.			ESSARY FOR	₹ EACH (	INIT.															ر	·····	مىبىر	
RNISH WITH TERMINAL STRIP FOR BA T EFFICIENCIES: EER = 15, COP = 4.9 TS ARE SIZED FOR 100% WATER. NO NTRACTOR TO VERIFY AIRFLOW DIR	BACNET CONNECTION TO .9 IO GLYCOL.	O BAS. BAS SHA	HALL MONITOR	OR UNIT POIN				-																			
SE KIT TO INCLUDE: STAINLESS STEI					.D BALANCING	3 VALVE, ANI	J Y STRAINEF	<u>२.</u>																			
							-	<b></b>																			
ET ELECTRICAL		L PROPERTIES					_	PLAN							DUNTING LE	.ENGTH A	MAX AIRFLOW		AL FA	AN MO	OTOR		ECTRICAL				
VOLTAGE         PHASE         FLA         MC           120         1         1.6         1.	ICA MOCP (IN)	(IN) (IN)	)	OPTIONS ,SFS,SS,UIT		<b>NOTES</b>		AC 1 NOTES	K AREA SER LOADING E	DOCK PO	OWERED	ED AIRE	1	EL LOC 120 SUS	USPEND	(IN)	(CFM) 3218	(KW) 0.0		NTITY	HP VO	DLTAGE P 120			OPT DSN,MDC,STC	TIONS	<b>NOTES</b>
NGE ON ACTIVATION.								1.	SUSPEND A						DOOR. VIA MAGNETI	IC DOOR S	WITCH. F#	ANS SHAL	L BE OV	'ERRIDDE	N BY OCC	UPANTS A	AT SMART	TOUCH CO	NTOLLER.		
FAN SCHEDULE										ſ									LOU\	VER SC	HEDULE	E					
DRIVE HP HP RPM	TYPE VOLTAGE PHAS	ASE FLA MOCH		OPTIONS		NOTES					PLAN MARK	AREA S	SERVED				MODEL	(IN)	(IN)	(CFM)		REE VEI (SF) (	(FPM)	MAX APD (IN WC)		TIONS	NOTES
DD         0.39         0.39         1080           ION FROM STRUCTURE.	3	8.0 15				1,2	-			ŀ	L 1 L 2 NOTES:	DO S:	OAS OAS	INTAKE RELIEF	F RUS	SKIN	AFL 501 AFL 501	30"	76" 76"	4500 4500	7.41	11	800 800	0.10 A 0.10 A	AC,BS AC,BS		1-3 1-3
THEMOSTAT READS 70 DEGREES O	R LOWER.										1. 2.	COORDII COLOR=	STATUA		ZE AND JAMB NZE. CONFIRM 00 RATED.						JZE OF OP	PENINGS.					
												PLAN MARK		SERVED	MANUFACT					.OW NOM	MINAL	C SCHEI ELE OLTAGE P	ECTRICAL			TIONS	NOTES
												UH 1 UH 2	VES VES	ST 043 ST 001	RAYWA RAYWA	ALL AI ALL AI	AFA	WALL	175 175	5 1 5 1	1.5 1.5	277 277	1 4. 1 4.	.1 15 C	DSN,TI DSN,TI		1,2 1,2
													LOADIN			ALL 51	800 RE		600 400	) 3	3.3	277	1 11	1.9 15 C	DSN,TI		1,2
												UH V1 UH V2 UH V3	2 VEHIC	CLE BAY CLE BAY CLE BAY	RAYWA RAYWA RAYWA		3FUH SL		575 575 575	5 7	7.5	208 208 208	3 20	0.8 30 E 0.8 30 E 0.8 30 E	DSN,TI		1,3,4 1,3,4 1,3,4

9	).0	11 4	50	3900		41 ;	37.5 6	64.0 7	2.0 5	0.0 40	).0		13	0.8	460	3	102.0 1	12.0 125	16"	6"	6"	3400	CAB,DSE,SSDP	1-12
						SUPPLY	EXHA	UST		FILTEF	RS	E	ENERGY F	RECOVER	Y WHEEI SUMME		DULE			WIN	TER			
Ī	OAS1	MANUFAC YOR		MOI ECW	DEL	<b>AIRFLOW</b> (CFM) 4900	V AIRFL (CFI 390	VI) ME	RV LO	TY SP		ILTER DIRTY S LOSS (II 0.4		WB D DEG.F) (DE	O/A B WB G.F) (DEG.F 5.0 75.3	DB	PPLY WB (DEG.F 69.7	<b>TH</b> <b>(BTUH)</b> 140	EXHAUS DB (DEG.F) 70.0	<b>O/A</b> <b>DB</b> <b>(DEG.F)</b> 0.0	SUPPLY DB (DEG.F) 37.5	<b>TH</b> (BTUH) 276	OPTIONS	<b>NOTES</b>
	NOTES  . 2. 3.	TOTAL EN PROVIDE COOLING	VFD DE EFFEC	FROST FIVENE	CONTE SS: TO	ROL AND FAL=72%,	BYPASS SENSIBL	DAMPER: .E=74%.		OAS 1 SH	OWN A	BOVE.												
Ľ	ŀ.	HEATING I	EFFEGI	IVENE	55: 101	AL=77%,	SENSIBL	E=80%.																
AT	COOLIN	NG COIL			EWT	W		OURCE								ELEC			F	HYSICAL	PROPERT	IES		
) (D	<b>VB</b> <b>EG.F) (</b> 3.0	DB (DEG.F) (DI	WB F EG.F) (		EWT (DEG. F) 80.0		MIN. OUTPUT (BTUH) 8.4	EAT (DEG.F) 68.0	<b>LAT</b> (DEG.F) 90.0	<b>EWT</b> (DEG.F) 50.0	<b>LWT</b> (DEG.F 40.0	MAX WPD ) (FT) 11.0	CONTROL (STAGED/MO	MIN 0// AIRFLO (CFM) 110	w	E PHASE		<b>MCA MOC</b> 6.0 15		H WIDTH (IN) 21"	HEIGHT (IN) 18"	<b>WEIGHT</b> (LBS) 175 (	DP,DSN,ESM,HK,PFB,RDS	<b>NOTES</b>
6	3.0 3.0	55.0 5 55.0 5	53.0 53.0	12.5 3.1	80.0 80.0	90.0 90.0	5.3 11.7	68.0 68.0	90.0 90.0	50.0 50.0	40.0 40.0	11.0 11.0	2 2 1 1	345 0	460 277	3 3 1	12.5 6.9	14.1 15 8.2 15	81" 43"	26" 20"	22" 18"	475	DP,DSN,ESM,HK,PFB,RDS	2-8 2-8
6	3.0 3.0 3.0	55.0 5	53.0 53.0 53.0	3.8 10.0 3.1	80.0 80.0 80.0	90.0 90.0 90.0	4.8 3.6 3.3	68.0 68.0 68.0	90.0 90.0 90.0	50.0 50.0 50.0	40.0 40.0 40.0	11.0 11.0 11.0	1 2 1	110 310 55	277 460 277	1 3 1	11.6	10.01513.3158.215	44" 55" 43"	23" 31" 20"	18" 26" 18"	160 { 450 ( 155 <i>}</i>	DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS	2-8 1,3-8 2-8
6	3.0 3.0	55.0 5	53.0 53.0	1.9 1.3	80.0 80.0	90.0 90.0	1.6 1.4	68.0 68.0	90.0 90.0	50.0 50.0	40.0	11.0 11.0	1	90 0	277 277	1	4.9	6.8 15 5.6 15	34" 36"	20" 20"	12" 12"	110	DP,DSN,ESM,HK,PFB,RDS	2-8 2-8
6	3.0 3.0 3.0	55.0 5	53.0 53.0 53.0	3.1 3.8 7.5	80.0 80.0 80.0	90.0 90.0 90.0	7.3 5.4 13.9	68.0 68.0 68.0	90.0 90.0 90.0	50.0 50.0 50.0	40.0 40.0 40.0	11.0 11.0 11.0	1 1 2	135 150 100	277 277 460	1 1 3	8.4	8.21510.01510.415	43" 44" 72"	20" 23" 26"	18" 18" 22"	155 ( 160 } 360 {	DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS	2-8 2-8 2-8
6	3.0 3.0	55.0 5		5.0 5.0	80.0 80.0	90.0 90.0 90.0	8.5 8.2	68.0 68.0	90.0 90.0	50.0 50.0	40.0	11.0 11.0 11.0	2 2	100 100 180	460 460	3	5.0	6.0         15           6.0         15           6.0         15	43" 43"	21" 21"	18" 18"	175 ( 175 (	DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS	2-8 2-8
6	3.0 3.0	55.0 5	53.0 53.0	3.8 2.5	80.0 80.0	90.0 90.0	8.1 2.7	68.0 68.0	90.0 90.0	50.0 50.0	40.0	11.0 11.0	1	195 60	277 277	1	6.5	10.0         15           7.6         15	44" 35"	23" 20"	18" 12"	160 } 120 }	DP,DSN,ESM,HK,PFB,RDS	2-8 2-8
6	3.0 3.0 3.0	55.0 5		5.0 5.0 3.8	80.0 80.0 80.0	90.0 90.0 90.0	10.2 1.0 10.7	68.0 68.0 68.0	90.0 90.0 90.0	50.0 50.0 50.0	40.0 40.0 40.0	11.0 11.0 11.0	2 2 1	150 0 0	460 460 277	3 3 1	5.0	6.0156.01510.015	43" 43" 44"	21" 21" 23"	18" 18" 18"	175 ( 175 ( 160 )	DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS	2-8 2-8 2-8
6	3.0 3.0	55.0 5	53.0	2.5 10.0	80.0 80.0	90.0 90.0	0.5	68.0 68.0	90.0 90.0	50.0 50.0	40.0	11.0 11.0 11.0	1 2	0 490	277 460	1 3	6.5	7.6         15           13.3         15	35" 58"	20" 20" 33"	12" 21"	120 450	DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS	1,3-8 2-8
6	3.0 3.0	55.0 5	53.0 53.0	2.5 2.5	80.0 80.0	90.0 90.0	4.2 6.3	68.0 68.0	90.0 90.0	50.0 50.0	40.0	11.0 11.0	1	0 50	277 277	1	6.5	7.6         15           7.6         15           0.0         15	35" 35"	20" 20"	12" 12"	120	DP,DSN,ESM,HK,PFB,RDS {	2-8 2-8
6	3.0 3.0 3.0	55.0 5		3.1 7.5 7.5	80.0 80.0 80.0	90.0 90.0 90.0	5.2 8.0 14.5	68.0 68.0 68.0	90.0 90.0 90.0	50.0 50.0 50.0	40.0 40.0 40.0	11.0 11.0 11.0	1 2 2	125 160 170	277 460 460	1 3 3	9.3	8.21510.41510.415	43" 72" 72"	20" 26" 26"	18" 22" 22"	155 360 360	DP,DSN,ESM,HK,PFB,RDS	2-8 2-8 2-8
6	3.0 3.0	55.0 5	53.0	2.5 3.8	80.0 80.0	90.0 90.0	4.6 7.5	68.0 68.0	90.0 90.0	50.0 50.0	40.0	11.0 11.0	1 1	0 125	277	1 1	6.5	7.61510.015	35" 44"	20" 23"	12" 18"	120 { 160 (	DP,DSN,ESM,HK,PFB,RDS	2-8 2-8
6	3.0 3.0	55.0 5	53.0	3.1 7.5	80.0 80.0	90.0 90.0	0.0	68.0 68.0	90.0 90.0	50.0 50.0	40.0	11.0	1 2 1	50 360	277 460	1 3	9.3	8.2         15           10.4         15           7.0         15	43" 72"	20" 26"	18" 22"	155 360	DP,DSN,ESM,HK,PFB,RDS	2-8 2-8
6	3.0 3.0 3.0	55.0 5	53.0	2.5 3.8 3.1	80.0 80.0 80.0	90.0 90.0 90.0	4.7 2.3 5.6	68.0 68.0 68.0	90.0 90.0 90.0	50.0 50.0 50.0	40.0 40.0 40.0	11.0 11.0 11.0	1 1 1	60 165 60	277 277 277	1 1 1	8.4	7.61510.0158.215	35" 44" 43"	20" 23" 20"	12" 18" 18"	120 { 160 ( 155 <i>}</i>	DP,DSN,ESM,HK,PFB,RDS ) DP,DSN,ESM,HK,PFB,RDS } DP,DSN,ESM,HK,PFB,RDS {	2-8 2-8 2-8
6	3.0 3.0	55.0 5 55.0 5	53.0 53.0	3.1 2.5	80.0 80.0	90.0 90.0	2.8 7.0	68.0 68.0	90.0 90.0	50.0 50.0	40.0 40.0	11.0 11.0	1 1	95 55	277 277	1 1	6.9 6.5	8.2157.615	43" 35"	20" 20"	18" 12"	155 120	DP,DSN,ESM,HK,PFB,RDS	2-8 2-8
6	3.0 3.0 3.0	55.0 5	53.0	1.9 1.9 3.8	80.0 80.0 80.0	90.0 90.0 90.0	5.3 1.8 8.2	68.0 68.0 68.0	90.0 90.0 90.0	50.0 50.0 50.0	40.0 40.0 40.0	11.0 11.0 11.0	1 1 1	50 90 60	277 277 277	1 1 1	5.9	6.8156.81510.015	34" 34" 44"	20" 20" 23"	12" 12" 18"	110 ( 110 } 160 }	DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS	2-8 2-8 2-8
6	3.0 3.0	55.0 5	53.0	5.0 2.5	80.0 80.0	90.0 90.0 90.0	8.2 5.1	68.0 68.0	90.0 90.0	50.0 50.0	40.0	11.0 11.0 11.0	2	150 50	460	3	5.0	6.0         15           7.6         15	43" 35"	20"	18" 12"	175 🤇	DP,DSN,ESM,HK,PFB,RDS	2-8 2-8
6	3.0 3.0	55.0 5	53.0	1.3 5.0	80.0 80.0	90.0 90.0	1.6 7.1	68.0 68.0	90.0 90.0	50.0 50.0	40.0	11.0 11.0	1 2	60 140	277 460	1 3	5.0	5.6         15           6.0         15           0.0         15	36" 43"	20" 21"	12" 18"	110	DP,DSN,ESM,HK,PFB,RDS DP,DSN,FSM,HK,PFB,RDS DP,DSN,FSM,HK,PFB,RDS DP,DSN,FSM,HK,PFB,RDS DP,DSN,FSM,HK,PFB,RDS DP,DSN,FSM,HK,PFB,RDS DP,DSN,FSM,HK,PFB,RDS DP,DSN,FSM,HK,PFB,RDS DP,DSN,FSM,HK,PFB,RDS DP,DSN,FSM,HK,PFB,RDS DP,DSN,FSM,HK,PFB,RDS DP,DSN,FSM,HK,PFB,FSM,HK,PFB,FSM,HK,PFB,FSM,HK,PFB,FSM,HK,PFB,FSM,HK,PFB,FSM,HK,PFB,FSM,HK,PFB,FSM,HK,FSM,HK,FSM,HK,FSM,HK,FK,FSM,HK,FK,FK,FK,FK,FK,FK,FK,FK,FK,FK,FK,FK,FK	2-8 2-8
6	3.0 3.0 3.0	55.0 5	53.0	3.1 3.1 3.8	80.0 80.0 80.0	90.0 90.0 90.0	8.2 6.0 8.8	68.0 68.0 68.0	90.0 90.0 90.0	50.0 50.0 50.0	40.0 40.0 40.0	11.0 11.0 11.0	1	55 50 50	277 277 277	1	6.9	8.2158.21510.015	43" 43" 44"	20" 20" 23"	18" 18" 18"	155 ( 155 ( 160 )	DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS	2-8 2-8 2-8
6	3.0 3.0	55.0 5	53.0	2.5 2.5	80.0 80.0	90.0 90.0	6.4 5.4	68.0 68.0	90.0 90.0	50.0 50.0	40.0	11.0 11.0	1 1	50 50 80	277 277	1	6.5	7.6157.615	35" 35"	20" 20"	12" 12"	120 { 120 {	DP,DSN,ESM,HK,PFB,RDS	2-8 2-8
	3.0	55.0 5	I	2.5	80.0	90.0	4.8	68.0	90.0	50.0	40.0	11.0	1	75	277	1	6.5	7.6 15	35"	20"	12"	120	DP,DSN,ESM,HK,PFB,RDS {	2-8
DR	FRAME	E FILTERS /	ARE NE			R EACH U	NIT.																	
5.																								
	ED BAL	ANCING V	ALVE, A	ND Y S	TRAINE	R.																		
									1		1					CURTAI	N SCH	EDULE						
ON	S		NOTES	;		PLAN MARK		SERVED	MANUF	ACTURER	мс	DEL	MOUNTING LOCATION	OVERALL LENGTH (IN)	MAX AIRFLOW (CFM)	NOMINA (KW)			DTOR HP VC		ECTRICAL PHASE FL		OPTIONS	NOTES
UIT		1-4				AC 1 NOTES	5:		1		1	2-120	SUSPEND	120"	3218	0.0		2 (	).20	120	1 8.	8 15	DSN,MDC,STC	1-2
						1. 2.							up door. Ens via magi	NETIC DOOF	R SWITCH. F	ANS SHAL	L BE OV	/ERRIDDE	N BY OCC	UPANTS A	AT SMART	ТОИСН С	ONTOLLER.	
																		VER SC	אבייייי					
																					MAX			
ON	S	1,2	NOTES	5					PLA MAR L 1	K AREA	SERVE		RVICE MAN	<b>UFACTURE</b> RUSKIN	AFL 501	WIDTH (IN) 30"	HEIGH (IN) 76"	AIRFLO           (CFM)           4500		(SF) (	<b>LOCITY</b> ( <b>FPM)</b> 800	MAX APD (IN WC) 0.10	OPTIONS AC,BS	<b>NOTES</b>
									L 2 NOT	ES:					AFL 501	30"	76"	4500	7.4		800		AC,BS	1-3
									1. 2. 3.	COLOF	R=STAT	UARY BF	R SIZE AND J. RONZE. CON C 500 RATED	FIRM COLO						′ENINGS.				
												-					-	-			-			
													I		I			TER - El					1	
										PLAN MARE UH 1	K ARE	<b>EA SERV</b> /EST 043	_	ACTURER		OUNTING TYPE WALL	AIRFL (CFN	, ,			ECTRICAL PHASE FL	A MOCP	OPTIONS DSN,TI	<b>NOTES</b>
										UH 2 UH 3	V	/EST 043 /EST 001 N FLR VE	RA	/WALL /WALL	AFA		175	5 1	.5 .5 .0	277 277 277	1 4. 1 4. 1 7.	1 15	DSN,TI DSN,TI DSN,TI	1,2 1,2 1,2
										•							000	·   -		1		-	,	
										UH 4 UH V	LOA	DING DC HICLE BA	OCK RAY	/WALL	5100 S	ECESSED USPEND USPEND	400	) 3	.3	277 208	1 11 3 20	.9 15	DSN,TI DSN,TI	1,3,4

87777	6	5	4	3	
DEDICATED OUTDOOR A	AIR SUPPLY UNIT SCHEDULE				
COOLING COIL       MAX     BRAK     STARTE     TOTAL     SENSIBLE     DB     WB     DB     WB     RATE     (DE       HP     E HP     R TYPE     (MBH)     (MBH)     (DEG.F)     (DE     (DE<	G. LWT WPD VELOCITY AIRFLOW OUT	HEATING 11N. FLC TPUT EAT LAT RA TUH) (DEG.F) (DEG.F) (GP	EWT         LWT         CONTROL         PREFILTER	P LENGTH	HYSICAL PROPERTIES I WIDTH HEIGHT WEIGHT (FT) (FT) (LBS) OPTIONS NOTES
3         2.37         VFD         214         139         84.6         69.7         56.0         55.0         72.0         80.           N THE BACK OF THE HEAD.         Image: Second		41 37.5 64.0 72		460 3 102.0 112.0 125 16"	6" 6" 3400 CAB,DSE,SSDP 1-12
TOR TO VERIFY SIZE AND LOCATION OF OPENINGS BEFORE POURING SLAB.					
			ENERGY RECOVER	RY WHEEL SCHEDULE	
	PLAN	AIRFLOW AIRFLOW		SUMMER       O/A     SUPPLY     EXHAUST       DB     WB     DB     WB     TH     DB       CD     (DEC E)     (DEC E)     (DEC E)     (DEC E)	WINTER O/A SUPPLY DB DB TH (DEC E) (DTIUL) ODTIONO
	MARK         MANUFACTURER         MODEL           DOAS1         YORK         ECW 484           NOTES:         TOTAL ENERGY DECOMERY MILL	(CFM)         (CFM)         MEF           4900         3900         8	0.4 8 0.4 75.0 64.0 9	EG.F)         (DEG.F)         (DEG.F)         (BTUH)         (DEG.F)           96.0         75.3         84.6         69.7         140         70.0	(DEG.F)         (DEG.F)         (BTUH)         OPTIONS         NOTES           0.0         37.5         276         1-4
	<ol> <li>TOTAL ENERGY RECOVERY WH</li> <li>PROVIDE VFD DEFROST CONTR</li> <li>COOLING EFFECTIVENESS: TOT</li> <li>HEATING EFFECTIVENESS: TOT</li> </ol>	ROL AND BYPASS DAMPERS FAL=72%, SENSIBLE=74%.	TO DOAS 1 SHOWN ABOVE.		
SUPPLY FAN			EAT PUMP SCHEDULE		HYSICAL PROPERTIES
MANUFACTURER     MODEL     AIRFLOW (CFM)     ESP (IN)     STARTER TYPE     TOTAL (MBH)     SENSIBLE (MBH)       CLIMATE MASTER     SC 024     000     0.5     FCM     20.2     18.0     75.0	6.F) (DEG.F) (DEG.F) (DEG.F) (GPM) `F) (		AT EWT LWT WPD CONTROL G.F) (DEG.F) (DEG.F) (FT) (STAGED/MOD) (CFM)	DW     LENGTH       )     VOLTAGE     PHASE     FLA     MCA     MOCP     (IN)	I     WIDTH     HEIGHT     WEIGHT       (IN)     (IN)     (LBS)       24//     48//     475
CLIMATE MASTER         SC-024         900         0.5         ECM         20.3         18.0         75.0           CLIMATE MASTER         SE-060         1800         0.5         ECM         45.5         38.8         75.0           CLIMATE MASTER         SE-060         1800         0.5         ECM         45.5         38.8         75.0           CLIMATE MASTER         SC-015         700         0.5         ECM         12.1         7.7         75.0	0         63.0         55.0         53.0         12.5         80.0           0         63.0         55.0         53.0         3.1         80.0	90.0         8.4         68.0           90.0         5.3         68.0           90.0         11.7         68.0	0.0         50.0         40.0         11.0         2         110           0.0         50.0         40.0         11.0         2         345           0.0         50.0         40.0         11.0         1         0	460         3         5.0         6.0         15         43"           460         3         12.5         14.1         15         81"           2777         1         6.9         8.2         15         43"	21"         18"         175 (DP,DSN,ESM,HK,PFB,RDS)         2-8           26"         22"         475 (DP,DSN,ESM,HK,PFB,RDS)         2-8           20"         18"         155 (DP,DSN,ESM,HK,PFB,RDS)         2-8
CLIMATE MASTER         SC-018         750         0.5         ECM         16.1         14.3         75.0           CLIMATE MASTER         SE-048         1200         0.5         ECM         31.8         28.0         75.0           CLIMATE MASTER         SC-015         700         0.5         ECM         10.4         10.1         75.0	0 63.0 55.0 53.0 10.0 80.0	90.0         4.8         68.0           90.0         3.6         68.0           90.0         3.3         68.0	0.0         50.0         40.0         11.0         1         110           0.0         50.0         40.0         11.0         2         310           0.0         50.0         40.0         11.0         1         55	277         1         8.4         10.0         15         44"           460         3         11.6         13.3         15         55"           277         1         6.9         8.2         15         43"	23"       18"       160 \ DP,DSN,ESM,HK,PFB,RDS \)       2-8         31"       26"       450 (DP,DSN,ESM,HK,PFB,RDS \)       1,3-8         20"       18"       155 \ DP,DSN,ESM,HK,PFB,RDS \)       2-8
CLIMATE MASTER         SC-009         300         0.5         ECM         7.0         5.0         75.0           CLIMATE MASTER         SC-006         200         0.5         ECM         3.7         2.0         75.0	0         63.0         55.0         53.0         1.9         80.0           0         63.0         55.0         53.0         1.3         80.0	90.01.668.090.01.468.0	0.0         50.0         40.0         11.0         1         90           0.0         50.0         40.0         11.0         1         0	277         1         5.9         6.8         15         34"           277         1         4.9         5.6         15         36"	20"         12"         110         DP,DSN,ESM,HK,PFB,RDS         2-8           20"         12"         110         DP,DSN,ESM,HK,PFB,RDS         2-8
CLIMATE MASTER         SC-015         700         0.5         ECM         11.0         9.5         75.0           CLIMATE MASTER         SC-018         750         0.5         ECM         16.3         13.3         75.0           CLIMATE MASTER         SC-036         1350         0.5         ECM         21.7         20.0         75.0	0         63.0         55.0         53.0         3.8         80.0           0         63.0         55.0         53.0         7.5         80.0	90.0         7.3         68.0           90.0         5.4         68.0           90.0         13.9         68.0	0.0         50.0         40.0         11.0         1         135           0.0         50.0         40.0         11.0         1         150           0.0         50.0         40.0         11.0         2         100	277         1         6.9         8.2         15         43"           277         1         8.4         10.0         15         44"           460         3         9.3         10.4         15         72"	20"         18"         155         DP,DSN,ESM,HK,PFB,RDS         2-8           23"         18"         160         DP,DSN,ESM,HK,PFB,RDS         2-8           26"         22"         360         DP,DSN,ESM,HK,PFB,RDS         2-8
CLIMATE MASTER         SC-024         900         0.5         ECM         19.8         18.7         75.0           CLIMATE MASTER         SC-024         900         0.5         ECM         23.8         14.4         75.0           CLIMATE MASTER         SC-018         750         0.5         ECM         13.8         13.4         75.0	0 63.0 55.0 53.0 5.0 80.0	90.0         8.5         68.0           90.0         8.2         68.0           90.0         8.1         68.0	0.0         50.0         40.0         11.0         2         100           0.0         50.0         40.0         11.0         2         180           0.0         50.0         40.0         11.0         1         195	460         3         5.0         6.0         15         43"           460         3         5.0         6.0         15         43"           277         1         8.4         10.0         15         44"	21"       18"       175 (DP,DSN,ESM,HK,PFB,RDS)       2-8         21"       18"       175 (DP,DSN,ESM,HK,PFB,RDS)       2-8         23"       18"       160 (DP,DSN,ESM,HK,PFB,RDS)       2-8
CLIMATE MASTER         SC-012         400         0.5         ECM         7.9         6.8         75.0           CLIMATE MASTER         SC-024         900         0.5         ECM         19.4         16.7         75.0           CLIMATE MASTER         SC-024         900         0.5         ECM         19.4         16.7         75.0           CLIMATE MASTER         SC-024         900         0.5         ECM         16.7         16.1         75.0	0 63.0 55.0 53.0 5.0 80.0	90.0         2.7         68.0           90.0         10.2         68.0           90.0         1.0         68.0	0.0         50.0         40.0         11.0         1         60           0.0         50.0         40.0         11.0         2         150           0.0         50.0         40.0         11.0         2         0	277         1         6.5         7.6         15         35"           460         3         5.0         6.0         15         43"           460         3         5.0         6.0         15         43"	20"         12"         120         DP,DSN,ESM,HK,PFB,RDS         2-8           21"         18"         175         DP,DSN,ESM,HK,PFB,RDS         2-8           21"         18"         175         DP,DSN,ESM,HK,PFB,RDS         2-8           21"         18"         175         DP,DSN,ESM,HK,PFB,RDS         2-8
CLIMATE MASTER         SC-018         750         0.5         ECM         17.9         8.9         75.0           CLIMATE MASTER         SC-012         400         0.3         ECM         10.7         10.6         75.0	0         63.0         55.0         53.0         3.8         80.0           0         63.0         55.0         53.0         2.5         80.0	90.010.768.090.00.568.0	0.0         50.0         40.0         11.0         1         0           0.0         50.0         40.0         11.0         1         0	277         1         8.4         10.0         15         44"           277         1         6.5         7.6         15         35"	23"         18"         160         DP,DSN,ESM,HK,PFB,RDS         2-8           20"         12"         120         DP,DSN,ESM,HK,PFB,RDS         1,3-8
CLIMATE MASTER         SE-048         1600         0.5         ECM         49.0         36.4         0.0           CLIMATE MASTER         SC-012         400         0.5         ECM         6.4         6.0         75.0           CLIMATE MASTER         SC-012         400         0.5         ECM         10.4         9.1         75.0	0 63.0 55.0 53.0 2.5 80.0	90.0         20.0         68.0           90.0         4.2         68.0           90.0         6.3         68.0	0.0         50.0         40.0         11.0         2         490           0.0         50.0         40.0         11.0         1         0           0.0         50.0         40.0         11.0         1         50	460         3         11.6         13.3         15         58"           277         1         6.5         7.6         15         35"           277         1         6.5         7.6         15         35"	33"       21"       450 (DP,DSN,ESM,HK,PFB,RDS )       2-8         20"       12"       120 DP,DSN,ESM,HK,PFB,RDS )       2-8         20"       12"       120 DP,DSN,ESM,HK,PFB,RDS )       2-8         20"       12"       120 DP,DSN,ESM,HK,PFB,RDS )       2-8
CLIMATE MASTER         SC-015         700         0.5         ECM         13.4         9.8         75.0           CLIMATE MASTER         SC-036         1350         0.5         ECM         27.1         21.6         75.0           CLIMATE MASTER         SC-036         1350         0.5         ECM         27.9         23.0         75.0	0 63.0 55.0 53.0 7.5 80.0	90.0         5.2         68.0           90.0         8.0         68.0           90.0         14.5         68.0	0.0         50.0         40.0         11.0         1         125           0.0         50.0         40.0         11.0         2         160           0.0         50.0         40.0         11.0         2         170	277         1         6.9         8.2         15         43"           460         3         9.3         10.4         15         72"           460         3         9.3         10.4         15         72"	20"       18"       155 {       DP,DSN,ESM,HK,PFB,RDS }       2-8         26"       22"       360 {       DP,DSN,ESM,HK,PFB,RDS }       2-8         26"       22"       360 {       DP,DSN,ESM,HK,PFB,RDS }       2-8         26"       22"       360 {       DP,DSN,ESM,HK,PFB,RDS }       2-8
CLIMATE MASTER         SC-012         400         0.5         ECM         8.4         8.1         75.0           CLIMATE MASTER         SC-018         750         0.5         ECM         15.6         13.7         75.0	0         63.0         55.0         53.0         2.5         80.0           0         63.0         55.0         53.0         3.8         80.0	90.0         4.6         68.0           90.0         7.5         68.0	0.0         50.0         40.0         11.0         1         0           0.0         50.0         40.0         11.0         1         125	277         1         6.5         7.6         15         35"           277         1         8.4         10.0         15         44"	20"         12"         120 {         DP,DSN,ESM,HK,PFB,RDS }         2-8           23"         18"         160 {         DP,DSN,ESM,HK,PFB,RDS }         2-8
CLIMATE MASTER         SC-036         1350         0.5         ECM         36.5         27.0         75.0           CLIMATE MASTER         SC-012         400         0.5         ECM         9.5         7.1         75.0	0         63.0         55.0         53.0         7.5         80.0           0         63.0         55.0         53.0         2.5         80.0	90.0         0.0         68.0           90.0         12.9         68.0           90.0         4.7         68.0	0.0         50.0         40.0         11.0         2         360           0.0         50.0         40.0         11.0         1         60	277         1         6.9         8.2         15         43"           460         3         9.3         10.4         15         72"           277         1         6.5         7.6         15         35"	26"         22"         360         DP,DSN,ESM,HK,PFB,RDS         2-8           20"         12"         120         DP,DSN,ESM,HK,PFB,RDS         2-8
CLIMATE MASTER         SC-018         750         0.5         ECM         7.4         7.1         75.0           CLIMATE MASTER         SC-015         700         0.5         ECM         14.4         13.3         75.0           CLIMATE MASTER         SC-015         700         0.5         ECM         14.4         13.3         75.0	0 63.0 55.0 53.0 3.1 80.0	90.0         2.3         68.0           90.0         5.6         68.0           90.0         2.8         68.0	0.0         50.0         40.0         11.0         1         165           0.0         50.0         40.0         11.0         1         60           0.0         50.0         40.0         11.0         1         95	277         1         8.4         10.0         15         44"           277         1         6.9         8.2         15         43"           277         1         6.9         8.2         15         43"	23"       18"       160 ( DP,DSN,ESM,HK,PFB,RDS )       2-8         20"       18"       155 / DP,DSN,ESM,HK,PFB,RDS /       2-8         20"       18"       155 / DP,DSN,ESM,HK,PFB,RDS /       2-8
CLIMATE MASTER         SC-012         400         0.5         ECM         8.9         8.0         75.0           CLIMATE MASTER         SC-009         300         0.5         ECM         8.2         7.5         75.0           CLIMATE MASTER         SC-009         300         0.5         ECM         8.8         6.1         75.0	0 63.0 55.0 53.0 1.9 80.0	90.0         7.0         68.0           90.0         5.3         68.0           90.0         1.8         68.0	0.0         50.0         40.0         11.0         1         55           0.0         50.0         40.0         11.0         1         50           0.0         50.0         40.0         11.0         1         50           0.0         50.0         40.0         11.0         1         90	277         1         6.5         7.6         15         35"           277         1         5.9         6.8         15         34"           277         1         5.9         6.8         15         34"	20"       12"       120 {       DP,DSN,ESM,HK,PFB,RDS }       2-8         20"       12"       110 {       DP,DSN,ESM,HK,PFB,RDS }       2-8         20"       12"       110 {       DP,DSN,ESM,HK,PFB,RDS }       2-8         20"       12"       110 {       DP,DSN,ESM,HK,PFB,RDS }       2-8
CLIMATE MASTER         SC-018         750         0.5         ECM         14.8         13.1         75.0           CLIMATE MASTER         SC-024         900         0.5         ECM         20.9         17.3         75.0           CLIMATE MASTER         SC-012         400         0.5         ECM         9.2         8.0         75.0	0         63.0         55.0         53.0         3.8         80.0           0         63.0         55.0         53.0         5.0         80.0	90.0         8.2         68.0           90.0         8.2         68.0           90.0         5.1         68.0	0.0         50.0         40.0         11.0         1         60           0.0         50.0         40.0         11.0         2         150           0.0         50.0         40.0         11.0         2         150           0.0         50.0         40.0         11.0         1         50	277         1         8.4         10.0         15         44"           460         3         5.0         6.0         15         43"           277         1         6.5         7.6         15         35"	23"       18"       160       DP,DSN,ESM,HK,PFB,RDS       2-8         21"       18"       175       DP,DSN,ESM,HK,PFB,RDS       2-8         20"       12"       120       DP,DSN,ESM,HK,PFB,RDS       2-8
CLIMATE MASTER         SC-006         200         0.5         ECM         5.8         4.5         75.0           CLIMATE MASTER         SC-024         900         0.5         ECM         21.2         16.7         75.0	0         63.0         55.0         53.0         1.3         80.0           0         63.0         55.0         53.0         5.0         80.0	90.01.668.090.07.168.0	0.050.040.011.01600.050.040.011.02140	277         1         4.9         5.6         15         36"           460         3         5.0         6.0         15         43"	20"         12"         110         DP,DSN,ESM,HK,PFB,RDS         2-8           21"         18"         175         DP,DSN,ESM,HK,PFB,RDS         2-8
CLIMATE MASTER         SC-015         700         0.5         ECM         14.3         12.6         75.0           CLIMATE MASTER         SC-015         700         0.5         ECM         10.9         9.6         75.0           CLIMATE MASTER         SC-018         750         0.5         ECM         9.7         9.0         75.0	0 63.0 55.0 53.0 3.1 80.0	90.0         8.2         68.0           90.0         6.0         68.0           90.0         8.8         68.0	0.0         50.0         40.0         11.0         1         55           0.0         50.0         40.0         11.0         1         50           0.0         50.0         40.0         11.0         1         50           0.0         50.0         40.0         11.0         1         50	277         1         6.9         8.2         15         43"           277         1         6.9         8.2         15         43"           277         1         8.4         10.0         15         44"	20"         18"         155 (         DP,DSN,ESM,HK,PFB,RDS )         2-8           20"         18"         155 (         DP,DSN,ESM,HK,PFB,RDS )         2-8           23"         18"         160 )         DP,DSN,ESM,HK,PFB,RDS )         2-8
CLIMATE MASTER         SC-012         400         0.5         ECM         8.0         7.3         75.0           CLIMATE MASTER         SC-012         400         0.5         ECM         10.5         8.3         75.0           CLIMATE MASTER         SC-012         400         0.5         ECM         9.3         4.1         75.0	0 63.0 55.0 53.0 2.5 80.0	90.0         6.4         68.0           90.0         5.4         68.0           90.0         4.8         68.0	0.0         50.0         40.0         11.0         1         50           0.0         50.0         40.0         11.0         1         80           0.0         50.0         40.0         11.0         1         75	277         1         6.5         7.6         15         35"           277         1         6.5         7.6         15         35"           277         1         6.5         7.6         15         35"           277         1         6.5         7.6         15         35"	20"         12"         120 {         DP,DSN,ESM,HK,PFB,RDS }         2-8           20"         12"         120 (         DP,DSN,ESM,HK,PFB,RDS }         2-8           20"         12"         120 (         DP,DSN,ESM,HK,PFB,RDS ;         2-8           20"         12"         120 (         DP,DSN,ESM,HK,PFB,RDS ;         2-8
SHALL BE FLOOR MOUNTED WITH DOWN FLOW DISCHARGE INTO UNDER FLOOR AIR PL SHALL BE HUNG FROM STRUCTURE WITH HORIZONTAL DISCHARGE. REFER TO DETAIL	XXX.				Lunn
NISH WITH 1" FILTER RACK. PROVIDE MERV 11 FILTER. CONTRACTOR TO CONFIRM IF RAI NISH WITH TERMINAL STRIP FOR BACNET CONNECTION TO BAS. BAS SHALL MONITOR UI TEFFICIENCIES: EER = 15, COP = 4.9 TS ARE SIZED FOR 100% WATER. NO GLYCOL.		REACH UNIT.			
TRACTOR TO VERIFY AIRFLOW DIRECTIONS AND CONTROLS LOCATIONS WITH FLOOR P E KIT TO INCLUDE: STAINLESS STEEL BRAIDED FLEXIBLE HOSE, 2 SHUT OFF VALVES, MC		R.			
ANGE HOOD SCHEDULE				AIR CURTAIN SCHEDULE	
	OPTIONS NOTES	PLAN MARK AREA SERVED		AIRFLOW NOMINAL FAN MOTOR (CFM) (KW) QUANTITY HP VOI	ELECTRICAL LTAGE PHASE FLA MOCP OPTIONS NOTES
کر 120   1   1.6   15   20"   30"   28"  DSN,EEF,SFS مر	S,SS,UIT  1-4		IN AT SAME HEIGHT AS ROLL UP DOOR.		120 1 8.8 15 DSN,MDC,STC 1-2
NGE ON ACTIVATION.		2. FANS SHALL ACTIV	E WHEN ROLLING DOOR OPENS VIA MAGNETIC DOO	R SWITCH. FANS SHALL BE OVERRIDDEN BY OCCU	PANTS AT SMART TOUCH CONTOLLER.
FAN SCHEDULE				LOUVER SCHEDULE	
	OPTIONS NOTES		PLAN MARK     AREA SERVED     SERVICE     MANUFACTURE       L 1     DOAS     INTAKE     RUSKIN	MODELWIDTHHEIGHTAIRFLOWMIN FR(IN)(IN)(IN)(CFM)AREA (3)AFL 50130"76"45007.41	SF) (FPM) (IN WC) OPTIONS NOTES
DN FROM STRUCTURE.	1,2		L 2 DOAS RELIEF RUSKIN	AFL 501         30"         76"         4500         7.41	800 0.10 AC,BS 1-3
THEMOSTAT READS 70 DEGREES OR LOWER.			<ol> <li>COORDINATE LOUVER SIZE AND JAMB WITH A</li> <li>COLOR=STATUARY BRONZE. CONFIRM COLO</li> <li>LOUVER SHALL BE ICC 500 RATED.</li> </ol>	ARCHITECT. CONTRACTOR TO VERIFY SIZE OF OPI OR SELECTION WITH ARCHITECTS.	:NINGS.
					ELECTRICAL
			MARKAREA SERVEDMANUFACTURERUH 1VEST 043RAYWALLUH 2VEST 001RAYWALL	AFA         WALL         175         1.5           AFA         WALL         175         1.5	LTAGE         PHASE         FLA         MOCP         OPTIONS         NOTES           277         1         4.1         15         DSN,TI         1,2           277         1         4.1         15         DSN,TI         1,2           277         1         4.1         15         DSN,TI         1,2
			UH 3     MAIN FLR VEST     RAYWALL       UH 4     LOADING DOCK     RAYWALL	RECESSED         400         3.3	277         1         7.2         15         DSN,TI         1,2           277         1         11.9         15         DSN,TI         1,3,4
				F3FUH SUSPEND 575 7.5	208         3         20.8         30         DSN,TI         1,3,4

		ELEC	TRICA	-		PHYSI	CAL PROP	PERTIES		
2	VOLTAGE	PHASE	FLA	МСА	МОСР	LENGTH (IN)	H WIDTH (IN)	HEIGHT (IN)	OPTIONS	NOTES
5	120	1	1.6	1.6	15	20"	30"	28"	DSN,EEF,SFS,SS,UIT	1-4
_										
_	FAN SC	HEDU	LE							
	FAN SO			START	ER	ELE	ECTRICAL			
R							ECTRICAL HASE   FL		OPTIONS	NOTES

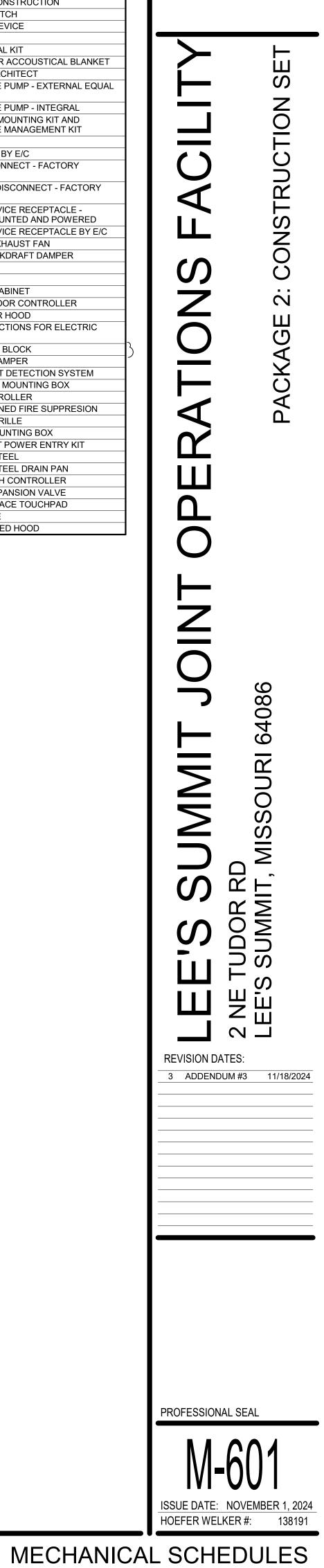
| KHAUST           RFLOW           (CFM)           3900            | OA FILTER   | FILTERS   |   |   
  |  
   |  | SUMME  
   |   |   |   
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  | TER   |  
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|  |   | 'SP<br>(IN) Me  |   | IRTY SP   
  | (DEG.F) (DE  
   | VB DB  | .F) (DEG.F)  
   | DB  | PPLY<br>WI<br>) (DEC<br>69.   | 6.F) (BT  
   | H<br>JH) (  
   | <b>XHAUST</b><br><b>DB</b><br>( <b>DEG.F)</b><br>70.0   | O/A<br>DB<br>(DEG.F)<br>0.0   
  | SUPPLY<br>DB<br>(DEG.F)<br>37.5   | TH   
   | OPTIONS  | <b>NOTES</b>  |
| E INTEGRATEI<br>SS DAMPERS<br>SIBLE=74%.                         |   | AS 1 SHO  | WN ABC  | OVE.  
  |  
   |  |  
   |   |   |   
   |   
   |   |   
  |   |  
   |  |   |
| SIBLE=80%.   |   |   |   |   
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   |  |   |
|  |   |   | DIL   | _   
  |  
   |  |  
   | ELEC  | TRICAL  | -   
   |   
   | PH  |   
  | PROPERT   | TIES   
   |  |   |
| PUT EAT<br>IH) (DEG.F)   | (DEG.F) (D  | EG.F) (I  | LWT<br>DEG.F)   | WPD (<br>(FT) (ST   
  | AGED/MOD)  
   | AIRFLOW<br>(CFM)   | VOLTAGE  
   |   | _   |   
   |   
   | (IN)  | (IN)  
  | (IN)  | (LBS)  
   |  | NOTES   |
| 3         68.0           7         68.0                          | 90.0<br>90.0  | 50.0<br>50.0  | 40.0<br>40.0  | 11.0<br>11.0  
  | 2<br>1   
   | 345<br>0   | 460<br>277   
   | 3<br>1  | 12.5<br>6.9   | 14.1<br>8.2   
   | 15<br>15  
   | 81"<br>43"  | 26"<br>20"  
  | 22"<br>18"  | 475 {<br>155 }   
   | DP,DSN,ESM,HK,PFB,RDS  | 2-8<br>2-8<br>2-8   |
| 3         68.0           5         68.0           3         68.0 | 90.0  | 50.0  | 40.0  | 11.0<br>11.0<br>11.0  
  | 1<br>2<br>1  
   | 110<br>310<br>55   | 277<br>460<br>277  
   | 1<br>3<br>1   | 8.4<br>11.6<br>6.9  | 10.0<br>13.3<br>8.2   
   | 15<br>15<br>15  
   | 44"<br>55"<br>43"   | 23"<br>31"<br>20"   
  | 18"<br>26"<br>18"   | 450 🤇  
   | DP,DSN,ESM,HK,PFB,RDS  | 2-8<br>1,3-8<br>2-8   |
| 68.0<br>68.0   | 90.0<br>90.0  | 50.0<br>50.0  | 40.0<br>40.0  | 11.0<br>11.0  
  | 1<br>1<br>1  
   | 90<br>0  | 277<br>277   
   | 1   | 5.9<br>4.9  | 6.8<br>5.6  
   | 15<br>15  
   | 34"<br>36"  | 20"<br>20"  
  | 12"<br>12"  | 110 }<br>110 {   
   | DP,DSN,ESM,HK,PFB,RDS<br>DP,DSN,ESM,HK,PFB,RDS   | 2-8<br>2-8  |
| 68.0   | 90.0  | 50.0  | 40.0  | 11.0  
  | 1<br>1<br>2  
   | 150  | 277  
   | 1<br>1<br>3   | 8.4   | 10.0  
   | 15  
   | 44"   | 23"   
  | 18"   | 160 }  
   | DP,DSN,ESM,HK,PFB,RDS  | 2-8<br>2-8<br>2-8   |
| 68.0           2         68.0                                    | 90.0<br>90.0  | 50.0<br>50.0  | 40.0<br>40.0  | 11.0<br>11.0  
  | 2<br>2<br>2  
   | 100<br>180   | 460<br>460   
   | 3<br>3  | 5.0<br>5.0  | 6.0<br>6.0  
   | 15<br>15  
   | 43"<br>43"  | 21"<br>21"  
  | 18"<br>18"  | 175 (<br>175 (   
   | DP,DSN,ESM,HK,PFB,RDS  | 2-8<br>2-8  |
| 68.0   | 90.0  | 50.0  | 40.0  | 11.0  
  | 1  
   | 60   | 277  
   | 1<br>1<br>3   | 6.5   | 7.6   
   | 15  
   | 35"   | 20"   
  | 12"   | 120 {  
   | DP,DSN,ESM,HK,PFB,RDS  | 2-8<br>2-8<br>2-8   |
| ) 68.0<br>7 68.0   | 90.0<br>90.0  | 50.0<br>50.0  | 40.0<br>40.0  | 11.0<br>11.0  
  | 2<br>1   
   | 0<br>0   | 460<br>277   
   | 3<br>1  | 5.0<br>8.4  | 6.0<br>10.0   
   | 15<br>15  
   | 43"<br>44"  | 21"<br>23"  
  | 18"<br>18"  | 175<br>160   
   | DP,DSN,ESM,HK,PFB,RDS {<br>DP,DSN,ESM,HK,PFB,RDS {   | 2-8<br>2-8  |
| 0 68.0   | 90.0  | 50.0  | 40.0  | 11.0  
  | 1<br>2<br>1  
   | 0<br>490   | 460  
   | 1<br>3<br>1   | 11.6  | 13.3  
   | 15  
   | 58"   | 33"   
  | 21"   | 450 🤇  
   | DP,DSN,ESM,HK,PFB,RDS  | 1,3-8<br>2-8<br>2-8   |
| 68.0           68.0           68.0                               | 90.0  | 50.0  | 40.0  | 11.0<br>11.0<br>11.0  
  | 1<br>1   
   | 50<br>125  | 277<br>277<br>277  
   | 1<br>1<br>1   | 6.5<br>6.9  | 7.6<br>8.2  
   | 15<br>15<br>15  
   | 35"<br>43"  | 20"<br>20"<br>20"   
  | 12"<br>12"<br>18"   | 120  
   | DP,DSN,ESM,HK,PFB,RDS  | 2-8<br>2-8  |
| 68.0           5         68.0           68.0         68.0        | 90.0  | 50.0  | 40.0  | 11.0<br>11.0  
  | 2 2  
   | 160<br>170   | 460<br>460   
   | 3 3 1   | 9.3<br>9.3  | 10.4<br>10.4  
   | 15<br>15<br>15  
   | 72"<br>72"  | 26"<br>26"  
  | 22"<br>22"  | 360 >  
   | DP,DSN,ESM,HK,PFB,RDS  | 2-8<br>2-8<br>2-8   |
| 68.0           68.0           68.0                               | 90.0  | 50.0  | 40.0  | 11.0<br>11.0<br>11.0  
  | 1<br>1<br>1  
   | 125<br>50  | 277<br>277<br>277  
   | 1<br>1<br>1   | 8.4<br>6.9  | 10.0<br>8.2   
   | 15<br>15<br>15  
   | 44"<br>43"  | 20<br>23"<br>20"  
  | 12<br>18"<br>18"  | 160 🤇  
   | DP,DSN,ESM,HK,PFB,RDS  | 2-8<br>2-8  |
| 9 68.0<br>7 68.0<br>8 68.0                                       | 90.0  | 50.0  | 40.0  | 11.0<br>11.0  
  | 2 1 1  
   | 360<br>60  | 460<br>277<br>277  
   | 3   | 9.3<br>6.5  | 10.4<br>7.6   
   | 15<br>15<br>15  
   | 72"<br>35"  | 26"<br>20"  
  | 22"<br>12"  | 120 {  
   | DP,DSN,ESM,HK,PFB,RDS  | 2-8<br>2-8<br>2-8   |
| 68.0           68.0           68.0                               | 90.0  | 50.0  | 40.0  | 11.0<br>11.0<br>11.0  
  | 1<br>1<br>1  
   | 60<br>95   | 277<br>277<br>277  
   | 1<br>1<br>1   | 6.9<br>6.9  | 8.2<br>8.2  
   | 15<br>15<br>15  
   | 43"<br>43"  | 20"<br>20"  
  | 18"<br>18"  | 155  
   | DP,DSN,ESM,HK,PFB,RDS  | 2-8<br>2-8  |
| 68.0           68.0           68.0           68.0                | 90.0  | 50.0  | 40.0  | 11.0<br>11.0<br>11.0  
  | 1<br>1<br>1  
   | 55<br>50   | 277<br>277<br>277  
   | 1<br>1<br>1   | 6.5<br>5.9  | 7.6<br>6.8  
   | 15<br>15<br>15  
   | 34"   | 20"<br>20"<br>20"   
  | 12"   | 110  
   | DP,DSN,ESM,HK,PFB,RDS  | 2-8<br>2-8<br>2-8   |
| 2         68.0           2         68.0                          | 90.0<br>90.0  | 50.0<br>50.0  | 40.0<br>40.0  | 11.0<br>11.0  
  | 1<br>2   
   | 60<br>150  | 277<br>460   
   | 1 3   | 8.4<br>5.0  | 10.0<br>6.0   
   | 15<br>15  
   | 44"<br>43"  | 23"<br>21"  
  | 18"<br>18"  | 160<br>175 {   
   | DP,DSN,ESM,HK,PFB,RDS  | 2-8<br>2-8  |
| 68.0   | 90.0  | 50.0  | 40.0  | 11.0  
  | 1  
   | 60   | 277  
   | 1<br>1<br>3   | 4.9   | 5.6   
   | 15  
   | 36"   | 20"   
  | 12"   | 110 }  
   | DP,DSN,ESM,HK,PFB,RDS  | 2-8<br>2-8<br>2-8   |
| 2 68.0<br>0 68.0   | 90.0<br>90.0  | 50.0<br>50.0  | 40.0<br>40.0  | 11.0<br>11.0  
  | 1<br>1   
   | 55<br>50   | 277<br>277   
   | 1   | 6.9<br>6.9  | 8.2<br>8.2  
   | 15<br>15  
   | 43"<br>43"  | 20"<br>20"  
  | 18"<br>18"  | 155 (<br>155 <i>(</i>  
   | DP,DSN,ESM,HK,PFB,RDS  | 2-8<br>2-8  |
| 68.0   | 90.0  | 50.0  | 40.0  | 11.0  
  | 1<br>1<br>1  
   | 50   | 277  
   | 1<br>1<br>1   | 6.5   | 7.6   
   | 15  
   | 35"   | 20"   
  | 12"   | 120 {  
   | DP,DSN,ESM,HK,PFB,RDS  | 2-8<br>2-8<br>2-8   |
| 8 68.0   |   |   |   | 11.0  
  | 1  
   | 75   | 277  
   | 1   | 6.5   | 7.6   
   | 15  
   | 35"   | 20"   
  | 12"   | · · · · · · · · · · · · · · · · · · ·  
   |  | 2-8   |
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  | DUNTING L  
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   | OPTIONS  | NOTES   |
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   | 120"   | 3218   
   | 0.0   |   | 2   
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   | DSN,MDC,STC  | 1-2   |
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|  | PLAN<br>MARK  | ARFA  | SERVED  | SERVI   
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   | ACTURFR  | MODEL  
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   |   | EE VEI  
  | LOCITY  | MAX APD<br>(IN WC)   
   | OPTIONS  | NOTES   |
|  | L 1<br>L 2  | DC  | DAS   | INTAK   
  | E RU   
   | SKIN   | AFL 501<br>AFL 501   
   | 30"<br>30"  | 76"   | 4   
   | 500   
   | 7.41<br>7.41  | , , ,   
  | 800   | 0.10   
   | AC,BS  | 1-3<br>1-3  |
|  | EAT<br>(DEG.F)         68.0 | UT       EAT       LAT       I         68.0       90.0       1         68.0       90. | HEATING CO           UT         EAT         LAT         EWT         (DEG.F)         (U           68.0         90.0         50.0         68.0         90.0         50. | HEATING COIL           UT         EAT         LAT         EWT         LWT           (DEG.F)         (DEG.F)         (DEG.F)         (DEG.F)           68.0         90.0         50.0         40.0           68.0         90.0         50.0         40.0           68.0         90.0         50.0         40.0           68.0         90.0         50.0         40.0           68.0         90.0         50.0         40.0           68.0         90.0         50.0         40.0           68.0         90.0         50.0         40.0           68.0         90.0         50.0         40.0           68.0         90.0         50.0         40.0           68.0         90.0         50.0         40.0           68.0         90.0         50.0         40.0           68.0         90.0         50.0         40.0           68.0         90.0         50.0         40.0           68.0         90.0         50.0         40.0           68.0         90.0         50.0         40.0           68.0         90.0         50.0         40.0           68.0 <t< td=""><td>UT         EAT<br/>(DES,F)         LAT<br/>(DES,F)         EWT<br/>(DES,F)         LWT<br/>(DES,F)         MAX<br/>(PF)<br/>(FT)<br/>(ST)           68.0         90.0         50.0         40.0         11.0           68.0         90.0         50.0         40.0         11.0           68.0         90.0         50.0         40.0         11.0           68.0         90.0         50.0         40.0         11.0           68.0         90.0         50.0         40.0         11.0           68.0         90.0         50.0         40.0         11.0           68.0         90.0         50.0         40.0         11.0           68.0         90.0         50.0         40.0         11.0           68.0         90.0         50.0         40.0         11.0           68.0         90.0         50.0         40.0         11.0           68.0         90.0         50.0         40.0         11.0           68.0         90.0         50.0         40.0         11.0           68.0         90.0         50.0         40.0         11.0           68.0         90.0         50.0         40.0         11.0           68.0         90.0</td><td>HEATING COLL           UT         EAT<br/>(DEG.F)         LWT<br/>(DEG.F)         MAX<br/>(DEG.F)         CONTROL<br/>(DEG.F)           68.0         90.0         50.0         40.0         11.0         2           68.0         90.0         50.0         40.0         11.0         2           68.0         90.0         50.0         40.0         11.0         1           68.0         90.0         50.0         40.0         11.0         1           68.0         90.0         50.0         40.0         11.0         1           68.0         90.0         50.0         40.0         11.0         1           68.0         90.0         50.0         40.0         11.0         1           68.0         90.0         50.0         40.0         11.0         1           68.0         90.0         50.0         40.0         11.0         1           68.0         90.0         50.0         40.0         11.0         1           68.0         90.0         50.0         40.0         11.0         1           68.0         90.0         50.0         40.0         11.0         1           68.0         90.0&lt;</td><td>HEATING COL.         MAX<br/>(P)         COS.F)<br/>(DEG.F)         (USC.F)<br/>(DEG.F)<br/>(DEG.F)         (DEG.F)<br/>(FT)         (STAGED/MOD)<br/>(STAGED/MOD)         AIRFLOW<br/>(CFM)           68.0         90.0         50.0         40.0         11.0         2         110           68.0         90.0         50.0         40.0         11.0         2         310           68.0         90.0         50.0         40.0         11.0         1         0           68.0         90.0         50.0         40.0         11.0         1         100           68.0         90.0         50.0         40.0         11.0         1         155           68.0         90.0         50.0         40.0         11.0         1         155           68.0         90.0         50.0         40.0         11.0         2         100           68.0         90.0         50.0         40.0         11.0         1         195           68.0         90.0         50.0         40.0         11.0         1         10           68.0         90.0         50.0         40.0         11.0         1         10           68.0         90.0         50.0         40.0         <t< td=""><td>HEATING COL.         MAX         CONTROL         MIN U/A         VI (JEG.F)         LWT         W/P         CONTROL         MIN U/A         VOLTAGE           68.0         90.0         50.0         40.0         11.0         2         316         460           68.0         90.0         50.0         40.0         11.0         1         0         277           68.0         90.0         50.0         40.0         11.0         1         100         2771           68.0         90.0         50.0         40.0         11.0         1         100         2771           68.0         90.0         50.0         40.0         11.0         1         100         2771           68.0         90.0         50.0         40.0         11.0         1         105         2777           68.0         90.0         50.0         40.0         11.0         2         100         460           68.0         90.0         50.0         40.0         11.0         1         10         2777           68.0         90.0         50.0         40.0         11.0         1         10         2777           68.0         90.0         50</td><td>HEATING COL         FUT         JUT         FUT         JUT         MAX<br/>(CPM)         CONTROL<br/>(CPM)         MIN 0/A<br/>VOLTAGE         PHAGE           080         90.0         50.0         40.0         11.0         2         11.0         2         11.0         2         11.0         345         460         33           080         90.0         80.0         40.0         11.0         1         1         0         277         1           080.0         90.0         80.0         40.0         11.0         1         190         277         1           080.0         90.0         80.0         40.0         11.0         1         190         277         1           080.0         90.0         50.0         40.0         11.0         1         195         277         1           080.0         90.0         50.0         40.0         11.0         2         100         460         3           080.0         90.0         50.0         40.0         11.0         2         160         460         3           080.0         90.0         50.0         40.0         11.0         1         10         277         1</td><td>HEATING COLL         CONTROL<br/>MPD         AMN CA<br/>CONTROL<br/>CPM         VIN CA<br/>VOLTAGE         PHASE         FLA           10         DEG 57         (FD 400         110         2         345         460         3         12           68.0         90.0         50.0         40.0         110         2         345         460         3         12           68.0         90.0         50.0         40.0         110         1         10         2277         1         8.4           68.0         90.0         50.0         40.0         110         1         65.0         777         1         6.5           68.0         90.0         50.0         40.0         110         1         165         2777         1         6.5           68.0         90.0         50.0         40.0         110         1         165         2777         1         8.4           68.0         90.0         50.0         40.0         110         1         10         2777         1         8.4           68.0         90.0         50.0         40.0         110         1         0         2777         1         8.5           68.0         <t< td=""><td>HATING COL         ELECTRICAL<br/>(NO         ELECTRICAL</td><td>HATING COL         ELECTRICAL           UP         LAT         INT         MAX         SCATTEOL         MIN CA         PERSE         FLA         RCA         NOCA           100507         10507         10507         110         <t< td=""><td>HEATING COL         DELCTICCAL         PP           UT         ALT         PERT         MAX         CONTROL         MAX         VOLTAGE         PHARE         FLA         MAX         MAX           01000         500         400         110         2         110         400         3         16.0         16         437           020         500         400         110         1         040         3         11.6         15.1         16         437           020         500         400         110         1         100         277         1         6.0         82         16         437           020         600         400         110         1         100         277         1         6.0         82         16         437           020         600         400         110         1         190         277         1         8.4         100         16         427           020         600         600         400         110         2         100         460         3         5.0         16         437           020         600         400         110         2         100<td>HEATING COL         ELECTRICAL         PELSCAL         PHYSICAL           UT         63.0         90.0         50.2         40.5         11.0         2         11.0         40.0         3         5.0         6.0         60.0         40.0         11.0         2         11.0         40.0         3         1.0         1.0         2         11.0         1.0         1.0         2         11.0         1.0<!--</td--><td>HEATING COLL         ELECTRICAL         PUT SCAL POPERI<br/>INT CAT         PUT SCAL POPERI<br/>INT CAT        &lt;</td><td>HEATING COLL         NAX         CONTROL         PLACE         PLACE</td><td>Harms Colk         ELECTROAL         PRESCURPTION           UF         EX         <td< td=""></td<></td></td></td></t<></td></t<></td></t<></td></t<> | UT         EAT<br>(DES,F)         LAT<br>(DES,F)         EWT<br>(DES,F)         LWT<br>(DES,F)         MAX<br>(PF)<br>(FT)<br>(ST)           68.0         90.0         50.0         40.0         11.0           68.0         90.0         50.0         40.0         11.0           68.0         90.0         50.0         40.0         11.0           68.0         90.0         50.0         40.0         11.0           68.0         90.0         50.0         40.0         11.0           68.0         90.0         50.0         40.0         11.0           68.0         90.0         50.0         40.0         11.0           68.0         90.0         50.0         40.0         11.0           68.0         90.0         50.0         40.0         11.0           68.0         90.0         50.0         40.0         11.0           68.0         90.0         50.0         40.0         11.0           68.0         90.0         50.0         40.0         11.0           68.0         90.0         50.0         40.0         11.0           68.0         90.0         50.0         40.0         11.0           68.0         90.0 | HEATING COLL           UT         EAT<br>(DEG.F)         LWT<br>(DEG.F)         MAX<br>(DEG.F)         CONTROL<br>(DEG.F)           68.0         90.0         50.0         40.0         11.0         2           68.0         90.0         50.0         40.0         11.0         2           68.0         90.0         50.0         40.0         11.0         1           68.0         90.0         50.0         40.0         11.0         1           68.0         90.0         50.0         40.0         11.0         1           68.0         90.0         50.0         40.0         11.0         1           68.0         90.0         50.0         40.0         11.0         1           68.0         90.0         50.0         40.0         11.0         1           68.0         90.0         50.0         40.0         11.0         1           68.0         90.0         50.0         40.0         11.0         1           68.0         90.0         50.0         40.0         11.0         1           68.0         90.0         50.0         40.0         11.0         1           68.0         90.0< | HEATING COL.         MAX<br>(P)         COS.F)<br>(DEG.F)         (USC.F)<br>(DEG.F)<br>(DEG.F)         (DEG.F)<br>(FT)         (STAGED/MOD)<br>(STAGED/MOD)         AIRFLOW<br>(CFM)           68.0         90.0         50.0         40.0         11.0         2         110           68.0         90.0         50.0         40.0         11.0         2         310           68.0         90.0         50.0         40.0         11.0         1         0           68.0         90.0         50.0         40.0         11.0         1         100           68.0         90.0         50.0         40.0         11.0         1         155           68.0         90.0         50.0         40.0         11.0         1         155           68.0         90.0         50.0         40.0         11.0         2         100           68.0         90.0         50.0         40.0         11.0         1         195           68.0         90.0         50.0         40.0         11.0         1         10           68.0         90.0         50.0         40.0         11.0         1         10           68.0         90.0         50.0         40.0 <t< td=""><td>HEATING COL.         MAX         CONTROL         MIN U/A         VI (JEG.F)         LWT         W/P         CONTROL         MIN U/A         VOLTAGE           68.0         90.0         50.0         40.0         11.0         2         316         460           68.0         90.0         50.0         40.0         11.0         1         0         277           68.0         90.0         50.0         40.0         11.0         1         100         2771           68.0         90.0         50.0         40.0         11.0         1         100         2771           68.0         90.0         50.0         40.0         11.0         1         100         2771           68.0         90.0         50.0         40.0         11.0         1         105         2777           68.0         90.0         50.0         40.0         11.0         2         100         460           68.0         90.0         50.0         40.0         11.0         1         10         2777           68.0         90.0         50.0         40.0         11.0         1         10         2777           68.0         90.0         50</td><td>HEATING COL         FUT         JUT         FUT         JUT         MAX<br/>(CPM)         CONTROL<br/>(CPM)         MIN 0/A<br/>VOLTAGE         PHAGE           080         90.0         50.0         40.0         11.0         2         11.0         2         11.0         2         11.0         345         460         33           080         90.0         80.0         40.0         11.0         1         1         0         277         1           080.0         90.0         80.0         40.0         11.0         1         190         277         1           080.0         90.0         80.0         40.0         11.0         1         190         277         1           080.0         90.0         50.0         40.0         11.0         1         195         277         1           080.0         90.0         50.0         40.0         11.0         2         100         460         3           080.0         90.0         50.0         40.0         11.0         2         160         460         3           080.0         90.0         50.0         40.0         11.0         1         10         277         1</td><td>HEATING COLL         CONTROL<br/>MPD         AMN CA<br/>CONTROL<br/>CPM         VIN CA<br/>VOLTAGE         PHASE         FLA           10         DEG 57         (FD 400         110         2         345         460         3         12           68.0         90.0         50.0         40.0         110         2         345         460         3         12           68.0         90.0         50.0         40.0         110         1         10         2277         1         8.4           68.0         90.0         50.0         40.0         110         1         65.0         777         1         6.5           68.0         90.0         50.0         40.0         110         1         165         2777         1         6.5           68.0         90.0         50.0         40.0         110         1         165         2777         1         8.4           68.0         90.0         50.0         40.0         110         1         10         2777         1         8.4           68.0         90.0         50.0         40.0         110         1         0         2777         1         8.5           68.0         <t< td=""><td>HATING COL         ELECTRICAL<br/>(NO         ELECTRICAL</td><td>HATING COL         ELECTRICAL           UP         LAT         INT         MAX         SCATTEOL         MIN CA         PERSE         FLA         RCA         NOCA           100507         10507         10507         110         <t< td=""><td>HEATING COL         DELCTICCAL         PP           UT         ALT         PERT         MAX         CONTROL         MAX         VOLTAGE         PHARE         FLA         MAX         MAX           01000         500         400         110         2         110         400         3         16.0         16         437           020         500         400         110         1         040         3         11.6         15.1         16         437           020         500         400         110         1         100         277         1         6.0         82         16         437           020         600         400         110         1         100         277         1         6.0         82         16         437           020         600         400         110         1         190         277         1         8.4         100         16         427           020         600         600         400         110         2         100         460         3         5.0         16         437           020         600         400         110         2         100<td>HEATING COL         ELECTRICAL         PELSCAL         PHYSICAL           UT         63.0         90.0         50.2         40.5         11.0         2         11.0         40.0         3         5.0         6.0         60.0         40.0         11.0         2         11.0         40.0         3         1.0         1.0         2         11.0         1.0         1.0         2         11.0         1.0<!--</td--><td>HEATING COLL         ELECTRICAL         PUT SCAL POPERI<br/>INT CAT         PUT SCAL POPERI<br/>INT CAT        &lt;</td><td>HEATING COLL         NAX         CONTROL         PLACE         PLACE</td><td>Harms Colk         ELECTROAL         PRESCURPTION           UF         EX         <td< td=""></td<></td></td></td></t<></td></t<></td></t<> | HEATING COL.         MAX         CONTROL         MIN U/A         VI (JEG.F)         LWT         W/P         CONTROL         MIN U/A         VOLTAGE           68.0         90.0         50.0         40.0         11.0         2         316         460           68.0         90.0         50.0         40.0         11.0         1         0         277           68.0         90.0         50.0         40.0         11.0         1         100         2771           68.0         90.0         50.0         40.0         11.0         1         100         2771           68.0         90.0         50.0         40.0         11.0         1         100         2771           68.0         90.0         50.0         40.0         11.0         1         105         2777           68.0         90.0         50.0         40.0         11.0         2         100         460           68.0         90.0         50.0         40.0         11.0         1         10         2777           68.0         90.0         50.0         40.0         11.0         1         10         2777           68.0         90.0         50 | HEATING COL         FUT         JUT         FUT         JUT         MAX<br>(CPM)         CONTROL<br>(CPM)         MIN 0/A<br>VOLTAGE         PHAGE           080         90.0         50.0         40.0         11.0         2         11.0         2         11.0         2         11.0         345         460         33           080         90.0         80.0         40.0         11.0         1         1         0         277         1           080.0         90.0         80.0         40.0         11.0         1         190         277         1           080.0         90.0         80.0         40.0         11.0         1         190         277         1           080.0         90.0         50.0         40.0         11.0         1         195         277         1           080.0         90.0         50.0         40.0         11.0         2         100         460         3           080.0         90.0         50.0         40.0         11.0         2         160         460         3           080.0         90.0         50.0         40.0         11.0         1         10         277         1 | HEATING COLL         CONTROL<br>MPD         AMN CA<br>CONTROL<br>CPM         VIN CA<br>VOLTAGE         PHASE         FLA           10         DEG 57         (FD 400         110         2         345         460         3         12           68.0         90.0         50.0         40.0         110         2         345         460         3         12           68.0         90.0         50.0         40.0         110         1         10         2277         1         8.4           68.0         90.0         50.0         40.0         110         1         65.0         777         1         6.5           68.0         90.0         50.0         40.0         110         1         165         2777         1         6.5           68.0         90.0         50.0         40.0         110         1         165         2777         1         8.4           68.0         90.0         50.0         40.0         110         1         10         2777         1         8.4           68.0         90.0         50.0         40.0         110         1         0         2777         1         8.5           68.0 <t< td=""><td>HATING COL         ELECTRICAL<br/>(NO         ELECTRICAL</td><td>HATING COL         ELECTRICAL           UP         LAT         INT         MAX         SCATTEOL         MIN CA         PERSE         FLA         RCA         NOCA           100507         10507         10507         110         <t< td=""><td>HEATING COL         DELCTICCAL         PP           UT         ALT         PERT         MAX         CONTROL         MAX         VOLTAGE         PHARE         FLA         MAX         MAX           01000         500         400         110         2         110         400         3         16.0         16         437           020         500         400         110         1         040         3         11.6         15.1         16         437           020         500         400         110         1         100         277         1         6.0         82         16         437           020         600         400         110         1         100         277         1         6.0         82         16         437           020         600         400         110         1         190         277         1         8.4         100         16         427           020         600         600         400         110         2         100         460         3         5.0         16         437           020         600         400         110         2         100<td>HEATING COL         ELECTRICAL         PELSCAL         PHYSICAL           UT         63.0         90.0         50.2         40.5         11.0         2         11.0         40.0         3         5.0         6.0         60.0         40.0         11.0         2         11.0         40.0         3         1.0         1.0         2         11.0         1.0         1.0         2         11.0         1.0<!--</td--><td>HEATING COLL         ELECTRICAL         PUT SCAL POPERI<br/>INT CAT         PUT SCAL POPERI<br/>INT CAT        &lt;</td><td>HEATING COLL         NAX         CONTROL         PLACE         PLACE</td><td>Harms Colk         ELECTROAL         PRESCURPTION           UF         EX         <td< td=""></td<></td></td></td></t<></td></t<> | HATING COL         ELECTRICAL<br>(NO         ELECTRICAL | HATING COL         ELECTRICAL           UP         LAT         INT         MAX         SCATTEOL         MIN CA         PERSE         FLA         RCA         NOCA           100507         10507         10507         110         10 <t< td=""><td>HEATING COL         DELCTICCAL         PP           UT         ALT         PERT         MAX         CONTROL         MAX         VOLTAGE         PHARE         FLA         MAX         MAX           01000         500         400         110         2         110         400         3         16.0         16         437           020         500         400         110         1         040         3         11.6         15.1         16         437           020         500         400         110         1         100         277         1         6.0         82         16         437           020         600         400         110         1         100         277         1         6.0         82         16         437           020         600         400         110         1         190         277         1         8.4         100         16         427           020         600         600         400         110         2         100         460         3         5.0         16         437           020         600         400         110         2         100<td>HEATING COL         ELECTRICAL         PELSCAL         PHYSICAL           UT         63.0         90.0         50.2         40.5         11.0         2         11.0         40.0         3         5.0         6.0         60.0         40.0         11.0         2         11.0         40.0         3         1.0         1.0         2         11.0         1.0         1.0         2         11.0         1.0<!--</td--><td>HEATING COLL         ELECTRICAL         PUT SCAL POPERI<br/>INT CAT         PUT SCAL POPERI<br/>INT CAT        &lt;</td><td>HEATING COLL         NAX         CONTROL         PLACE         PLACE</td><td>Harms Colk         ELECTROAL         PRESCURPTION           UF         EX         <td< td=""></td<></td></td></td></t<> | HEATING COL         DELCTICCAL         PP           UT         ALT         PERT         MAX         CONTROL         MAX         VOLTAGE         PHARE         FLA         MAX         MAX           01000         500         400         110         2         110         400         3         16.0         16         437           020         500         400         110         1         040         3         11.6         15.1         16         437           020         500         400         110         1         100         277         1         6.0         82         16         437           020         600         400         110         1         100         277         1         6.0         82         16         437           020         600         400         110         1         190         277         1         8.4         100         16         427           020         600         600         400         110         2         100         460         3         5.0         16         437           020         600         400         110         2         100 <td>HEATING COL         ELECTRICAL         PELSCAL         PHYSICAL           UT         63.0         90.0         50.2         40.5         11.0         2         11.0         40.0         3         5.0         6.0         60.0         40.0         11.0         2         11.0         40.0         3         1.0         1.0         2         11.0         1.0         1.0         2         11.0         1.0<!--</td--><td>HEATING COLL         ELECTRICAL         PUT SCAL POPERI<br/>INT CAT         PUT SCAL POPERI<br/>INT CAT        &lt;</td><td>HEATING COLL         NAX         CONTROL         PLACE         PLACE</td><td>Harms Colk         ELECTROAL         PRESCURPTION           UF         EX         <td< td=""></td<></td></td> | HEATING COL         ELECTRICAL         PELSCAL         PHYSICAL           UT         63.0         90.0         50.2         40.5         11.0         2         11.0         40.0         3         5.0         6.0         60.0         40.0         11.0         2         11.0         40.0         3         1.0         1.0         2         11.0         1.0         1.0         2         11.0         1.0 </td <td>HEATING COLL         ELECTRICAL         PUT SCAL POPERI<br/>INT CAT         PUT SCAL POPERI<br/>INT CAT        &lt;</td> <td>HEATING COLL         NAX         CONTROL         PLACE         PLACE</td> <td>Harms Colk         ELECTROAL         PRESCURPTION           UF         EX         <td< td=""></td<></td> | HEATING COLL         ELECTRICAL         PUT SCAL POPERI<br>INT CAT         PUT SCAL POPERI<br>INT CAT        < | HEATING COLL         NAX         CONTROL         PLACE         PLACE | Harms Colk         ELECTROAL         PRESCURPTION           UF         EX         EX <td< td=""></td<> |

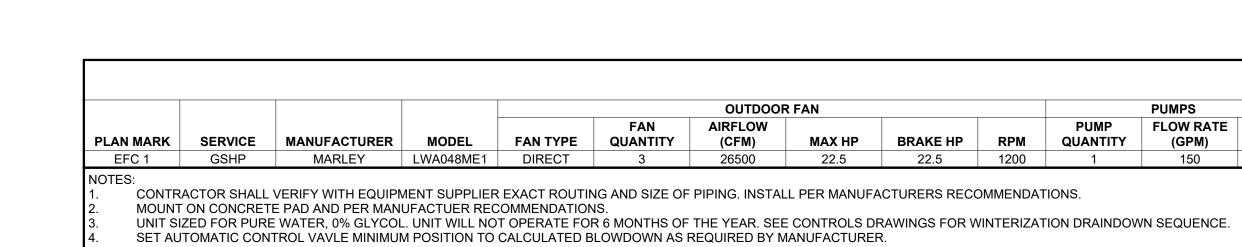
NOTES	OPTIONS		VEIGHT (LBS)	)	HEIGH (FT)	(FT)	LENGTH (FT)	моср			+ +	VOLTAGE		DL MOD) MERV	CONTRO AGED/N	G.F) (ST	G.F) (DE	1) (C
-12	או	CAB,DSE,SSDP	3400		6"	6"	16"	125	112.0	102.0	3	460	0.8	13		0.0	0.0   40	)
					NTER	WIN				DULE			COVER		E	RS	FILTEF	
NOTES	OPTIONS	OP	<b>TH</b> ( <b>BTUH)</b> 276	3 6.F) (	SUPPL DB	O/A DB (DEG.F)	KHAUST DB DEG.F) 70.0	тн	i.F) (B	PPLY Wi (DEC) 69.	SUF DB	O/A WB .F) (DEG.F)	VB DE	I) (DEG.F) (DE	TER NRTY SI OSS (IN 0.4	RA FIL	ER TY SP	
<u></u>			270	5	01.0	0.0	10.0	140	<u> </u>	03.	04.0	5   73.5	4.0   30.	73.0 0			OAS 1 SH	NTO
			S	ERTIE	. PROPE	YSICAL	PH		•	RICAL	ELECT		_					IEA
NOTES		OP		)	HEIGH (IN)	(IN)	LENGTH (IN)	моср		FLA		VOLTAGE	. ,	CONTROL STAGED/MOD)	. , .	(DEG.F)	. ,	LAT EG.F
2-8 2-8 2-8	HK,PFB,RDS	DP,DSN,ESM,HH DP,DSN,ESM,HH DP,DSN,ESM,HH	475	•	18" 22" 18"	21" 26" 20"	43" 81" 43"	15 15 15	6.0 14.1 8.2	5.0 12.5 6.9	3 3 1	460 460 277	110 345 0	2 2 1	11.0 11.0 11.0	40.0 40.0 40.0	50.0 50.0 50.0	90.0 90.0 90.0
2-8 ,3-8	HK,PFB,RDS	DP,DSN,ESM,H DP,DSN,ESM,H	160 {	•	18" 26"	23" 31"	44" 55"	15 15 15	10.0 13.3	8.4 11.6	1 3	277 460	110 310	1 2	11.0 11.0	40.0 40.0	50.0 50.0	0.0
2-8 2-8		DP,DSN,ESM,HH DP,DSN,ESM,HH	110	'	18" 12"	20" 20"	43" 34"	15 15	8.2 6.8	6.9 5.9	1	277 277	55 90	1	11.0 11.0	40.0 40.0	50.0 50.0	0.0
2-8 2-8 2-8	HK,PFB,RDS	DP,DSN,ESM,HH DP,DSN,ESM,HH DP,DSN,ESM,HH	155	'	12" 18" 18"	20" 20" 23"	36" 43" 44"	15 15 15	5.6 8.2 10.0	4.9 6.9 8.4	1 1 1	277 277 277	0 135 150	1 1 1	11.0 11.0 11.0	40.0 40.0 40.0	50.0 50.0 50.0	0.0 0.0 0.0
2-8 2-8	HK,PFB,RDS	DP,DSN,ESM,HH DP,DSN,ESM,HH	360 { 175 {	1	22" 18"	26" 21"	72" 43"	15 15	10.4 6.0	9.3 5.0	3	460 460	100 100	2	11.0 11.0	40.0 40.0	50.0 50.0 50.0	0.0 0.0
2-8 2-8	HK,PFB,RDS	DP,DSN,ESM,HH DP,DSN,ESM,HH	175 ( 160 /	1 1	18" 18"	21" 23"	43" 44"	15 15	6.0 10.0	5.0 8.4	3 1	460 277	180 195	2 1	11.0 11.0	40.0 40.0	50.0 50.0	0.0 0.0
2-8 2-8 2-8		DP,DSN,ESM,HH DP,DSN,ESM,HH DP,DSN,ESM,HH	175 🤇	•	12" 18" 18"	20" 21" 21"	35" 43" 43"	15 15 15	7.6 6.0 6.0	6.5 5.0 5.0	1 3 3	277 460 460	60 150 0	1 2 2	11.0 11.0 11.0	40.0 40.0 40.0	50.0 50.0 50.0	0.0 0.0 0.0
2-8 ,3-8	HK,PFB,RDS	DP,DSN,ESM,H DP,DSN,ESM,H DP,DSN,ESM,H	160	•	18" 18" 12"	23" 20"	44"	15 15 15	10.0 7.6	8.4 6.5	1 1 1	277 277	0	1 1	11.0 11.0 11.0	40.0 40.0 40.0	50.0 50.0 50.0	).0 ).0 ).0
2-8 2-8	HK,PFB,RDS	DP,DSN,ESM,HH DP,DSN,ESM,HH	450 ( 120 <i>/</i>	•	21" 12"	33" 20"	58" 35"	15 15	13.3 7.6	11.6 6.5	3 1	460 277	490 0	2 1	11.0 11.0	40.0 40.0	50.0 50.0	0.0 0.0
2-8 2-8 2-8	HK,PFB,RDS	DP,DSN,ESM,HH DP,DSN,ESM,HH DP,DSN,ESM,HH	155	'	12" 18" 22"	20" 20" 26"	35" 43" 72"	15 15 15	7.6 8.2 10.4	6.5 6.9 9.3	1 1 3	277 277 460	50 125 160	1 1 2	11.0 11.0 11.0	40.0 40.0 40.0	50.0 50.0 50.0	0.0 0.0 0.0
2-8 2-8 2-8	HK,PFB,RDS	DP,DSN,ESM,H DP,DSN,ESM,H DP,DSN,ESM,H	360 >	•	22 22" 12"	26" 26" 20"	72"	15 15 15	10.4 10.4 7.6	9.3 9.3 6.5	3 3 1	460 460 277	170 0	2 2 1	11.0 11.0 11.0	40.0 40.0 40.0	50.0 50.0 50.0	).0 ).0 ).0
2-8 2-8		DP,DSN,ESM,HH DP,DSN,ESM,HH	160 🤇	•	18" 18"	23" 20"	44" 43"	15 15	10.0 8.2	8.4 6.9	1	277 277	125 50	1	11.0 11.0	40.0 40.0	50.0 50.0	.0
2-8 2-8	HK,PFB,RDS	DP,DSN,ESM,H	120 {	•	22" 12"	26" 20"	72" 35" 44"	15 15	10.4 7.6	9.3 6.5	3	460 277	360 60	2 1 1	11.0 11.0	40.0 40.0	50.0 50.0	0.0
2-8 2-8 2-8	HK,PFB,RDS	DP,DSN,ESM,HH DP,DSN,ESM,HH DP,DSN,ESM,HH	155 🕹	•	18" 18" 18"	23" 20" 20"	44" 43" 43"	15 15 15	10.0 8.2 8.2	8.4 6.9 6.9	1 1 1	277 277 277	165 60 95	<u> </u>	11.0 11.0 11.0	40.0 40.0 40.0	50.0 50.0 50.0	).0 ).0 ).0
2-8 2-8	HK,PFB,RDS	DP,DSN,ESM,HH DP,DSN,ESM,HH	110	'	12" 12"	20" 20"	35" 34"	15 15	7.6 6.8	6.5 5.9	1 1	277 277	55 50	1 1	11.0 11.0	40.0 40.0	50.0 50.0	0.0 0.0
2-8 2-8 2-8	HK,PFB,RDS	DP,DSN,ESM,HH DP,DSN,ESM,HH DP,DSN,ESM,HH	160 }	'	12" 18" 18"	20" 23" 21"	34" 44" 43"	15 15 15	6.8 10.0 6.0	5.9 8.4 5.0	1 1 3	277 277 460	90 60 150	1 1 2	11.0 11.0 11.0	40.0 40.0 40.0	50.0 50.0 50.0	0.0 0.0 0.0
2-8 2-8	HK,PFB,RDS (	DP,DSN,ESM,HI DP,DSN,ESM,HI DP,DSN,ESM,HI	120	'	12" 12"	20" 20"	35" 36"	15 15 15	7.6 5.6	6.5 4.9	1 1	277 277	50 60	1 1	11.0 11.0 11.0	40.0 40.0 40.0	50.0 50.0 50.0	0.0
2-8 2-8	HK,PFB,RDS	DP,DSN,ESM,HH DP,DSN,ESM,HH	155 🤇	•	18" 18"	21" 20"	43" 43"	15 15	6.0 8.2	5.0 6.9	3 1	460 277	140 55	2 1	11.0 11.0	40.0 40.0	50.0 50.0	0.0 0.0
2-8 2-8	HK,PFB,RDS	DP,DSN,ESM,HH DP,DSN,ESM,HH	160 }	•	18" 18"	20" 23" 20"	43" 44"	15 15	8.2 10.0	6.9 8.4	1	277 277 277	50 50	1 1 1	11.0 11.0	40.0 40.0	50.0 50.0	0.0
2-8 2-8	HK,PFB,RDS	DP,DSN,ESM,H DP,DSN,ESM,H DP,DSN,ESM,H	120 🤇	•	12" 12"	20" 20" 20"	35" 35"	15 15 15	7.6 7.6 7.6	6.5 6.5	1 1 1	277 277 277	80 75	1 1 1	11.0 11.0 11.0	40.0 40.0 40.0	50.0 50.0 50.0	0.0
2-8 2-8	HK,PFB,RDS HK,PFB,RDS HK,PFB,RDS	DP,DSN,ESM,HH DP,DSN,ESM,HH	120 { 120 (	' '	12" 12"	20" 20"	35" 35"	15 15 15	7.6 7.6 7.6	6.5 6.5 6.5	1	277 277 277	50 80	1 1	11.0 11.0	40.0 40.0	50.0 50.0	0.0 0.0 0.0 0.0 0.0
										りひょ				C			ACTURER	
	OPTIONS	OP	MOCR				-		FAN	L		MAX AIRFLOW (CEM)		MOUNTING L			RED AIRE	
NOTES	<b>DPTIONS</b>	OP DSN,MDC,STC			PHASE		VOL.	-		L	NOMINA (KW) 0.0			MOUNTING LOCATIONISUSPEND	•120	MP-2-		
		DSN,MDC,STC	15	<b>FLA</b> 8.8	PHASE 1	TAGE F	<b>VOL</b>	Y HF 0.2	FAN ANTIT 2	QU	(KW) 0.0	AIRFLOW (CFM) 3218	<b>LENGTH</b> (IN) 120"	MOUNTING LOCATION	•120 • ROLL 1	EIGHT AS	SAME HE	AIN /
		DSN,MDC,STC	15	<b>FLA</b> 8.8	PHASE 1 AT SMAF	TAGE F 20	<b>VOL</b>	Y HF 0.2	FAN ANTIT 2	L BE C	(KW) 0.0	AIRFLOW (CFM) 3218	<b>LENGTH</b> (IN) 120"	MOUNTING LOCATIONISUSPENDJP DOOR.	•120 • ROLL 1	EIGHT AS	SAME HE	AIN /
-2	2	DSN,MDC,STC	15 OUCH C AX APD	FLA 8.8	PHASE 1 AT SMAF MAX ELOCITY	TAGE F 20 PANTS /	EDULE MIN FRE	Y HF 0.2 IDDEN F SCHE	FAN ANTIT 2 DVERR JVER		(KW) 0.0 ANS SHAL	AIRFLOW (CFM) 3218 SWITCH. FA	LENGTH (IN) 120" TIC DOOR	MOUNTING LOCATION SUSPEND JP DOOR. NS VIA MAGNE	EL 120 ROLL OPE	EIGHT AS LING DOC	SAME HE	AIN / TE V
		DSN,MDC,STC	15 DUCH C AX APD IN WC) 0.10	FLA 8.8 ART TO Y M.	PHASE 1 AT SMAF	TAGE F 20 PANTS /	EDULE	IDDEN E	FAN ANTIT 2 DVERR JVER		(KW) 0.0	AIRFLOW (CFM) 3218	<b>LENGTH</b> (IN) 120"	MOUNTING     I       LOCATION     I       SUSPEND     I       JP DOOR.     I       NS VIA MAGNE     I       KVICE     MANUF       AKE     RU	DEL 120 ROLL OPEN DR OPEN SER INT	EIGHT AS	N AREA	AIN / TE V
NOTES	2	DSN,MDC,STC ONTOLLER. OP AC,BS	15 DUCH C AX APD IN WC) 0.10	FLA 8.8 ART TO Y M.	PHASE 1 AT SMAF MAX ELOCITY (FPM) 800 800	TAGE F 20 PANTS /	VOL           3Y OCCUF           BY OCUF           BY OCUF	Y         HF           0.2           IDDEN F           SCHE           RFLOW           CFM)           4500           4500		L BE C LOU HEIGI (IN) 76" 76"	(KW) 0.0 ANS SHAL WIDTH (IN) 30" 30" CONTRAC	AIRFLOW (CFM) 3218 SWITCH. FA SWITCH. FA AFL 501 AFL 501 AFL 501	ACTURER ISKIN IB WITH AF	MOUNTING       I         LOCATION       SUSPEND         SUSPEND       JP DOOR.         JP DOOR.       MAGNE         VIA MAGNE       AGNE         AKE       RU         LIEF       RU         SIZE AND JAM         ONZE. CONFIF	DEL 120 ROLL O ROPER O SER INT RE OUVER ARY BR	EIGHT AS LING DOC A SERVED DOAS DOAS DINATE L R=STATU	N AREA ES: COORI	PL PL MA L L NO 1. 2.
NOTES	2	DSN,MDC,STC ONTOLLER. OP AC,BS	15 DUCH C AX APD IN WC) 0.10	FLA 8.8 ART TO Y M.	PHASE 1 AT SMAF MAX ELOCITY (FPM) 800 800	TAGE F 20 PANTS /	VOL           3Y OCCUF           BY OCUF           BY OCUF	Y         HF           0.2           IDDEN F           SCHE           RFLOW           CFM)           4500           4500		L BE C LOU HEIGI (IN) 76" 76"	(KW) 0.0 ANS SHAL WIDTH (IN) 30" 30" CONTRAC	AIRFLOW (CFM) 3218 SWITCH. FA SWITCH. FA AFL 501 AFL 501 AFL 501	ACTURER ISKIN IB WITH AF	MOUNTING       I         SUSPEND       I         JP DOOR.       I         NS VIA MAGNE       I         KVICE       MANUF         AKE       RU         LIEF       RU         SIZE AND JAN	DEL 120 ROLL O ROPER O SER INT RE OUVER ARY BR	EIGHT AS LING DOC A SERVED DOAS DOAS DINATE L R=STATU	N AREA ES: COORI	PL MA L L NO 1. 2.
NOTES	2	DSN,MDC,STC ONTOLLER. OP AC,BS	15 DUCH C AX APD IN WC) 0.10	FLA 8.8 ART TO Y M. (I	PHASE 1 AT SMAF ELOCITY (FPM) 800 800	TAGE   F 20 PANTS / EE VE F)	VOL           3Y OCCUF           BY OCUF           BY OCUF	Y         HF           0.2         0.2           IDDEN F         0.2           SCHE         0.2           RFLOW         0.2           4500         4500           4500         0.2	FAN ANTIT 2 DVERR JVER HT AII (	L BE C LOU HEIGI (IN) 76" 76"	(KW) 0.0 ANS SHAL WIDTH (IN) 30" 30" CONTRAC N WITH AR	AIRFLOW (CFM) 3218 SWITCH. FA SWITCH. FA AFL 501 AFL 501 AFL 501	ACTURER ISKIN IB WITH AF	MOUNTING       I         LOCATION       SUSPEND         SUSPEND       JP DOOR.         JP DOOR.       MAGNE         VIA MAGNE       AGNE         AKE       RU         LIEF       RU         SIZE AND JAM         ONZE. CONFIF	DEL 120 ROLL O ROPER O SER INT RE OUVER ARY BR	EIGHT AS LING DOC A SERVED DOAS DOAS DINATE L R=STATU	N AREA ES: COORI	AIN / TE V PL MA
NOTES	2	DSN,MDC,STC ONTOLLER. OP AC,BS AC,BS OP	15 DUCH C AX APD IN WC) 0.10 0.10	FLA 8.8 RT TO Y M. (1	PHASE 1 AT SMAF MAX ELOCITY (FPM) 800 800 EDULE ECTRIC/ PHASE	TAGE   PANTS / PANTS / EE VE SF)   .	EDULE MIN FRE AREA (S 7.41 7.41 E OF OPE	Y         HF           0.2         0.2           IDDEN F         0.2           RFLOW         CFM)           4500         4500           RIFY SIZE         CHE           NOMIN         (KW)			(KW) 0.0 ANS SHAL WIDTH (IN) 30" 30" 30" CONTRAC WITH AR UNIT DUNTING TYPE	AIRFLOW (CFM) 3218 SWITCH. FA SWITCH. FA AFL 501 AFL 501 AFL 501 CHITECT. C SELECTION	ACTURER ISKIN IB WITH AF M COLOR	MOUNTING LOCATION SUSPEND JP DOOR. NS VIA MAGNE AKE AKE AKE SIZE AND JAN CONZE. CONFIF 500 RATED.	PEL       120       ROLL I       ROPEI       ROPEI	EIGHT AS ING DOC A SERVED DOAS DOAS DINATE L R=STATU ER SHALL	N AREA ES: COORI	AIN / TE V PL MA L L NO 1. 2.
NOTES	DPTIONS	DSN,MDC,STC ONTOLLER. OP AC,BS AC,BS AC,BS OP DSN,TI DSN,TI DSN,TI	15 DUCH C <b>AX APD</b> <b>IN WC)</b> 0.10 0.10 0.10	FLA 8.8 RT TC Y M (I (I (I (I (I (I (I (I (I (I (I (I (I	PHASE         1         AT SMAF         MAX         ELOCITY         (FPM)         800         800         B00         B00	TAGE       F         20       20         PANTS       20         PANTS       20         EE       VE         SF)       20         NINGS.       20         SCHE       EL         TAGE       1         777       77	VOL           11           3Y OCCUF           BY OCUF           CTRIC           AL           VOL           2	Y         HF           0.2           IDDEN F           SCHE           RFLOW           CFM)           4500           4500           RFLOW           CFM)           4500           RFLOW           CFM)           4500           RFLOW           CFM)           4500           RFLOW           CFM)           4500           ASO           ASO           RFLOW           CFM)           4500           ASO           ASO </td <td>FAN ANTIT 2 DVERR JVER JVER ATER</td> <td>L BE ( LOU HEIGI (IN) 76" 76" 76" 76" 76" 76" 76" 76" 76" 76"</td> <td>(KW) 0.0 ANS SHAL WIDTH (IN) 30" 30" CONTRAC VITH AR UNIT DUNTING TYPE WALL WALL</td> <td>AIRFLOW (CFM) 3218 SWITCH. FA SWITCH. FA AFL 501 AFL 501 AFL 501 CHITECT. C SELECTION CODEL AFA AFA</td> <td>ACTURER ISKIN</td> <td>MOUNTING       I         SUSPEND       I         JP DOOR.       I         NS VIA MAGNE       I         AKE       RU         AKE       RU         SIZE AND JAN       I         CONZE. CONFIF       500 RATED.         MANUFAC       RAYW         RAYW       RAYW</td> <td>DEL       120       ROLL I       ROPEI       ROPEI       INT       RE       OUVER       ARY BR       BE ICC       ST 043       ST 001</td> <td>EIGHT AS LING DOC A SERVED DOAS DOAS DOAS DINATE L R=STATU ER SHALL R=STATU ER SHALL</td> <td>SAME HE HEN ROLL</td> <td>PL MA L NO 1. 2.</td>	FAN ANTIT 2 DVERR JVER JVER ATER	L BE ( LOU HEIGI (IN) 76" 76" 76" 76" 76" 76" 76" 76" 76" 76"	(KW) 0.0 ANS SHAL WIDTH (IN) 30" 30" CONTRAC VITH AR UNIT DUNTING TYPE WALL WALL	AIRFLOW (CFM) 3218 SWITCH. FA SWITCH. FA AFL 501 AFL 501 AFL 501 CHITECT. C SELECTION CODEL AFA AFA	ACTURER ISKIN	MOUNTING       I         SUSPEND       I         JP DOOR.       I         NS VIA MAGNE       I         AKE       RU         AKE       RU         SIZE AND JAN       I         CONZE. CONFIF       500 RATED.         MANUFAC       RAYW         RAYW       RAYW	DEL       120       ROLL I       ROPEI       ROPEI       INT       RE       OUVER       ARY BR       BE ICC       ST 043       ST 001	EIGHT AS LING DOC A SERVED DOAS DOAS DOAS DINATE L R=STATU ER SHALL R=STATU ER SHALL	SAME HE HEN ROLL	PL MA L NO 1. 2.
NOTES	DPTIONS	DSN,MDC,STC ONTOLLER. OP AC,BS AC,BS AC,BS OP DSN,TI	15 DUCH C <b>AX APD</b> <b>IN WC)</b> 0.10 0.10 0.10 0.10	FLA 8.8 RT TC Y M. (I (I ) CAL FLA 4.1	PHASE         1         AT SMAF         MAX         ELOCITY         (FPM)         800         800         B00	TAGE       F         20       1         PANTS       1         EE       VE         F)       1         NINGS.       1         SCHE       EL         TAGE       1         77       1	VOL:         0       1:         3Y OCCUF         BY OCCUF         AL         POL         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2	Y         HF           0.2         0.2           IDDEN F         0.2           IDDEN F         0.2           SCHE         0.2           RFLOW         CFM)           4500         4500           4500         0.2           RFLOW         CFM)           4500         4500           RIFY SIZE	FAN ANTIT 2 DVERR JVER JVER IT AII ( 0 COVER CTS.	L BE ( LOU HEIGI (IN) 76" 76" 76" 76" 76" 76" 76" 76" 76" 76"	(KW) 0.0 ANS SHAL WIDTH (IN) 30" 30" 30" CONTRAC NUTH AR UNIT DUNTING TYPE WALL	AIRFLOW (CFM) 3218 SWITCH. FA SWITCH. FA AFL 501 AFL 501 AFL 501 AFL 501 CHITECT. C SELECTION AFA AFA AFA AFA AFA AFA C RCH C RE	ACTURER ISKIN ISKIN ISKIN ISKIN ISKIN IB WITH AF RM COLOR CTURER M ALL ALL ALL ALL	MOUNTING       I         SUSPEND       I         JP DOOR.       I         NS VIA MAGNE       I         AKE       RU         AKE       RU         IEF       RU         SIZE AND JAN       I         CONZE. CONFIF       500 RATED.         ED       MANUFAC         RAYW       RAYW         ST       RAYW	EL       120       ROLL I       ROPEI       ROPEI       INT       RE       OUVER       ARY BR       BE ICC       SERVE       ST 043	EIGHT AS LING DOC A SERVED DOAS DOAS DOAS DINATE L R=STATU ER SHALL N K AREA 1 VE 2 VE 3 MAIN	N AREA SAME HE HEN ROLL N AREA COORI COLOF LOUVE PLAN MARP UH 1	AIN / TE V PL MA L L NO 1. 2.

	RA FII			COVERT		SCHED	ULE				WIN	ſER			
\S 1 SI	C	LTER DIRTY S OSS (I 0.4	N) (DEG.F) (DE	VB DB	.F) (DEG.F)	SUP DB (DEG.F) 84.6	WB	.F) (BT	'H 'UH) (DI	IAUST DB EG.F) ( 0.0	<b>O/A</b> <b>DB</b> ( <b>DEG.F)</b> 0.0	SUPPLY DB (DEG.F) 37.5	<b>TH</b> (BTUH) 276	OPTIONS	<b>NOTES</b>
	HOWN AB	OVE.													
				MIN O/A		ELECT	RICAL			PH	(SICAL F	PROPERT	IES	_	
<b>EWT</b> <b>EG.F)</b> 50.0 50.0	<b>LWT</b> (DEG.F) 40.0 40.0	WPD	CONTROL (STAGED/MOD) 2 2	AIRFLOW	<b>VOLTAGE</b> 460 460	<b>PHASE</b> 3 3	<b>FLA</b> 5.0 12.5	<b>MCA I</b> 6.0 14.1		<b>ENGTH</b> (IN) 43" 81"	<b>WIDTH</b> (IN) 21" 26"	HEIGHT (IN) 18" 22"	WEIGHT (LBS) 175 ( 475 (	DP,DSN,ESM,HK,PFB,RDS	<b>NOTES</b> 2-8 2-8
0.0 0.0 0.0	40.0 40.0 40.0	11.0 11.0 11.0	1 1 2	0 110 310	277 277 460	3 1 1 3	6.9 8.4 11.6	8.2 10.0 13.3	15 15 15	43" 44" 55"	20" 23" 31"	18" 18" 26"	155 160 450 (	DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS	2-8 2-8 1,3-8
0.0 0.0 0.0 0.0	40.0 40.0 40.0 40.0	11.0 11.0 11.0 11.0	1 1 1 1	55 90 0 135	277 277 277 277 277	1 1 1 1	6.9 5.9 4.9 6.9	8.2 6.8 5.6 8.2	15 15 15 15	43" 34" 36" 43"	20" 20" 20" 20"	18" 12" 12" 18"	155 110 110 155 (	DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS	2-8 2-8 2-8 2-8 2-8
0.0 60.0 60.0	40.0 40.0 40.0	11.0 11.0 11.0	1 2 2	150 100 100	277 460 460	1 3 3	8.4 9.3 5.0	10.0 10.4 6.0	15 15 15	44" 72" 43"	23" 26" 21"	18" 22" 18"	160 360 175	DP,DSN,ESM,HK,PFB,RDS	2-8 2-8 2-8
50.0 50.0 50.0 50.0	40.0 40.0 40.0 40.0	11.0 11.0 11.0 11.0	2 1 1 2	180 195 60 150	460 277 277 460	3 1 1 3	5.0 8.4 6.5 5.0	6.0 10.0 7.6 6.0	15 15 15 15	43" 44" 35" 43"	21" 23" 20" 21"	18" 18" 12" 18"	175 160 120 175	DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS	2-8 2-8 2-8 2-8 2-8
50.0 50.0 50.0 50.0	40.0 40.0 40.0 40.0	11.0 11.0 11.0 11.0	2 1 1 2	0 0 0 490	460 277 277 460	3 1 1 3	5.0 8.4 6.5 11.6	6.0 10.0 7.6 13.3	15       15       15       15       15	43" 44" 35" 58"	21" 23" 20" 33"	18" 18" 12" 21"	175 160 120 450	DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS	2-8 2-8 1,3-8 2-8
50.0 50.0 50.0 50.0	40.0 40.0 40.0	11.0 11.0 11.0	1 1 1	0 50 125	277 277 277 460	1 1 1	6.5 6.5 6.9	7.6 7.6 8.2	15 15 15	35" 35" 43" 72"	20" 20" 20" 20"	12" 12" 18" 22"	120 120 155 360	DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS	2-8 2-8 2-8
0.0 0.0 0.0	40.0 40.0 40.0 40.0	11.0 11.0 11.0 11.0	1 1	160 170 0 125	460 277 277	3 3 1 1	9.3 9.3 6.5 8.4	7.6 10.0	15 15 15 15	72" 35" 44"	26" 20" 23"	22" 12" 18"	360 120 160	DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS	2-8 2-8 2-8 2-8 2-8
50.0 50.0 50.0 50.0	40.0 40.0 40.0 40.0	11.0 11.0 11.0 11.0	1 2 1 1	50 360 60 165	277 460 277 277	1 3 1 1	6.9 9.3 6.5 8.4	8.2 10.4 7.6 10.0	15 15 15 15	43" 72" 35" 44"	20" 26" 20" 23"	18" 22" 12" 18"	155 360 120 160	DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS	2-8 2-8 2-8 2-8 2-8
50.0 50.0 50.0	40.0 40.0 40.0	11.0 11.0 11.0	1 1 1	60 95 55	277 277 277	1 1 1	6.9 6.9 6.5	8.2 8.2 7.6	15 15 15	43" 43" 35"	20" 20" 20"	18" 18" 12"	155 155 120	DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS	2-8 2-8 2-8
50.0 50.0 50.0 50.0	40.0 40.0 40.0 40.0	11.0 11.0 11.0 11.0	1 1 1 2	50 90 60 150	277 277 277 460	1 1 1 3	5.9 5.9 8.4 5.0	6.86.810.06.0	15 15 15 15	34" 34" 44" 43"	20" 20" 23" 21"	12" 12" 18" 18"	160 175 (	DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS	2-8 2-8 2-8 2-8 2-8
50.0 50.0 50.0 50.0	40.0 40.0 40.0 40.0	11.0 11.0 11.0 11.0	1 1 2 1	50 60 140 55	277 277 460 277	1 1 3 1	6.5 4.9 5.0 6.9	7.6 5.6 6.0 8.2	15 15 15 15	35" 36" 43" 43"	20" 20" 21" 20"	12" 12" 18" 18"	120 110 175 155 (	DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS	2-8 2-8 2-8 2-8 2-8
50.0 50.0 50.0	40.0 40.0 40.0	11.0 11.0 11.0	1 1 1	50 50 50	277 277 277 277	1 1 1	6.9 8.4 6.5	8.2 10.0 7.6	15 15 15 15	43" 44" 35" 35"	20" 23" 20" 20"	18" 18" 12" 12"	120 {	DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS	2-8 2-8 2-8
50.0 50.0	40.0 40.0	11.0 11.0	1	80 75	277 277	1	6.5 6.5	7.6 7.6	15 15	35"	20"	12"	120 ( 120 (	DP,DSN,ESM,HK,PFB,RDS DP,DSN,ESM,HK,PFB,RDS	2-8 2-8
ſUREI		)FI		VERALL ENGTH (IN)	AIR C MAX AIRFLOW (CFM)		L		мото					OPTIONS	NOTES
D AIRE	IEIGHT AS	-120 S ROLL	SUSPEND	120"	3218	0.0		2	0.20	12	0	1 8.	8 15	DSN,MDC,STC	1-2
• RUL			ENS VIA MAGNE		. FA	JIND OMALI									
ARF	A SERVEI	) <u>s</u> f		ACTURER	MODEL	WIDTH (IN)				OULE MIN FRE AREA (SI	E VEL	MAX .OCITY FPM)	MAX APE (IN WC)	OPTIONS	NOTES
	DOAS DOAS	IN RI	ITAKE RU ELIEF RU	ISKIN ISKIN	AFL 501 AFL 501	30" 30"	76" 76"	4	-500 -500	7.41 7.41		800 800	0.10	AC,BS AC,BS	1-3 1-3
COLC	R=STATU	ARY B	R SIZE AND JAM RONZE. CONFIF C 500 RATED.						FY SIZE (		NINGS.				
									- ELEC						
PLA	AREA1	A SERV EST 043 EST 001	3 RAYW		ODEL	UNTING TYPE WALL WALL	AIRF (CF 17 17	<b>M)</b> 75	NOMINAI (KW) 1.5 1.5		<b>AGE PI</b>	CTRICALHASEFL14.114.1	A MOCP 1 15	DSN,TI DSN,TI	<b>NOTES</b> 1,2 1,2
MAF UH UH					RCH C	EILING CESSED	60	00	2.0	27	7	1 7.: 1 11.	2 15	DSN,TI DSN,TI	1,2
MAF UH	3 MAIN 4 LOAD	ING DO			5100 SL	JSPEND JSPEND	40		7.5	20		3 20.		DSN,TI	1,3,4

SUPPLIED IN ACCORDANCE WITH SCHEDULED VALUES, NOTES, DET AND SPECIFICATIONS. THE MECH. CONTRACTOR SHALL BE RESPON FOR ALL ADDITIONAL COST AND COORDINATION WHEN NON BASIS DESIGN EQUIPMENT IS PROVIDED2ALL PERFORMANCE SHALL BE BA EQUIPMENT OPERATING AT AN ELEVATION OF 1,086 FEET ABOVE LEVEL.3SPECIFIED FAN ESP INCLUDES DU EQUIPMENT LOSSES EXTERNAL T SCHEDULED FAN TSP INCLUDES EXTERNAL LOSSES PLUS INTERNAL LOSSES DUE TO COILS, FILTERS A CONDITIONS, ETC.0PTIONSACACALUMINUM CONSTRUCTION AS AIRFLOW SWITCHASDAIR SCOOP DEVICEBSBIRDSCREENBSKBREAKER SEAL KITCABCOMPRESSOR ACCOUSTICAL BLA CLCLCOLOR BY ARCHITECTCPECONDENSATE PUMP - EXTERNAL TO ??CPICONDENSATE PUMP - INTEGRAL DMKDMKDOWNFLOW MOUNTING KIT AND CONDENSATE MANAGEMENT KITDPDRAIN PANDSEDISCONNECT BY E/CDSFFUSED DISCONNECT - FACTORY MOUNTEDDSRDUPLEX SERVICE RECEPTACLE F FACTORY MOUNTED AND POWERDSREDUPLEX SERVICE RECEPTACLE BEEFEXTERNAL EXHAUST FANGBDGRAVITY BACKDRAFT DAMPERHGHAIL GUARDHKHOSE KITICINSULATED CABINETMDCMAGNETIC DOOR CONTROLLEROAHOUTDOOR AIR HOOD		HANICAL ABBREVIATION LIST
<ul> <li>CONSIDERED THE BASIS OF DESILEQUIPMENT AND ACCESSORIES SUPPLIED IN ACCORDANCE WITH SCHEDULED VALUES, NOTES, DE AND SPECIFICATIONS. THE MECH, CONTRACTOR SHALL BE RESPON</li> <li>FOR ALL ADDITIONAL COST AND COORDINATION WHEN NON BASIS DESIGN EQUIPMENT IS PROVIDED</li> <li>ALL PERFORMANCE SHALL BE BA EQUIPMENT OPERATING AT AN ELEVATION OF 1,086 FEET ABOVE LEVEL.</li> <li>SPECIFIED FAN ESP INCLUDES DU EQUIPMENT LOSSES EXTERNAL LOSSES PLUS INTERN, LOSSES DUE TO COILS, FILTERS / CONDITIONS, ETC.</li> <li>OPTIONS</li> <li>AC ALUMINUM CONSTRUCTION</li> <li>AS AIRFLOW SWITCH</li> <li>ASD AIR SCOOP DEVICE</li> <li>BS BIRDSCREEN</li> <li>BSK BREAKER SEAL KIT</li> <li>CAB COMPENSATE PUMP - EXTERNAL TO ??</li> <li>CPI CONDENSATE PUMP - EXTERNAL TO ??</li> <li>CPI CONDENSATE PUMP - INTEGRAL TO ??</li> <li>CPI DISCONNECT BY E/C</li> <li>DSF FUSED DISCONNECT - FACTORY MOUNTED</li> <li>DSN NON-FUSED DISCONNECT - FACTORY MOUNTED</li> <li>DSR DUPLEX SERVICE RECEPTACLE - FACTORY MOUNTED AND POWER</li> <li>DISE DISCONNECT BY E/C</li> <li>DSF FUSED DISCONNECT - FACTORY MOUNTED</li> <li>DSN NON-FUSE DISCONNECT - FACTORY MOUNTED</li> <li>DSR DUPLEX SERVICE RECEPTACLE BEEF EXTERNAL EXHAUST FAN</li> <li>GBD GRAVITY BACKDRAFT DAMPER</li> <li>HG HAIL GUARD</li> <li>HK HOSE KIT</li> <li>IC INSULATED CABINET</li> <li>MDC MAGNETIC DOOR CONTROLLER</li> <li>OAH OUTDOOR AIR HOOD</li> <li>PC PLUG CONNECTIONS FOR ELECTFINER</li> <li>REFRIGERANT DETECTION SYSTER</li> <li>RMB 2" RECESSED MOUNTING BOX</li> <li>SC SPEED CONTAINED FIRE SUPPRESI SG STANDARD GRILLE</li> <li>SMB SURFACE MOUNTING BOX</li> <li>SC SPEED CONTAINED FIRE SUPPRESI SG STANDARD GRILLE</li> <li>SMB SURFACE MOUNTING BOX</li> <li>SP SITAINLESS STEEL DRAIN PAN</li> <li>STAINLESS STEEL D</li></ul>		
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PFBPOWER FUSE BLOCKRDRADIATION DAMPERRDSREFRIGERANT DETECTION SYSTERMB2" RECESSED MOUNTING BOXSCSPEED CONTROLLERSFSSELF CONTAINED FIRE SUPPRESISGSTANDARD GRILLESMBSURFACE MOUNTING BOXSPPSINGLE POINT POWER ENTRY KITSSSTAINLESS STEELSSDPSTAINLESS STEEL DRAIN PANSTCSMART TOUCH CONTROLLERTEVTHERMAL EXPANSION VALVE	-	
RDRADIATION DAMPERRDSREFRIGERANT DETECTION SYSTERMB2" RECESSED MOUNTING BOXSCSPEED CONTROLLERSFSSELF CONTAINED FIRE SUPPRESISGSTANDARD GRILLESMBSURFACE MOUNTING BOXSPPSINGLE POINT POWER ENTRY KITSSSTAINLESS STEELSSDPSTAINLESS STEEL DRAIN PANSTCSMART TOUCH CONTROLLERTEVTHERMAL EXPANSION VALVE		
RDSREFRIGERANT DETECTION SYSTERMB2" RECESSED MOUNTING BOXSCSPEED CONTROLLERSFSSELF CONTAINED FIRE SUPPRESISGSTANDARD GRILLESMBSURFACE MOUNTING BOXSPPSINGLE POINT POWER ENTRY KITSSSTAINLESS STEELSSDPSTAINLESS STEEL DRAIN PANSTCSMART TOUCH CONTROLLERTEVTHERMAL EXPANSION VALVE		
RMB2" RECESSED MOUNTING BOXSCSPEED CONTROLLERSFSSELF CONTAINED FIRE SUPPRESISGSTANDARD GRILLESMBSURFACE MOUNTING BOXSPPSINGLE POINT POWER ENTRY KITSSSTAINLESS STEELSSDPSTAINLESS STEEL DRAIN PANSTCSMART TOUCH CONTROLLERTEVTHERMAL EXPANSION VALVE		
SCSPEED CONTROLLERSFSSELF CONTAINED FIRE SUPPRESISGSTANDARD GRILLESMBSURFACE MOUNTING BOXSPPSINGLE POINT POWER ENTRY KITSSSTAINLESS STEELSSDPSTAINLESS STEEL DRAIN PANSTCSMART TOUCH CONTROLLERTEVTHERMAL EXPANSION VALVE		
SFSSELF CONTAINED FIRE SUPPRESISGSTANDARD GRILLESMBSURFACE MOUNTING BOXSPPSINGLE POINT POWER ENTRY KITSSSTAINLESS STEELSSDPSTAINLESS STEEL DRAIN PANSTCSMART TOUCH CONTROLLERTEVTHERMAL EXPANSION VALVE		
SGSTANDARD GRILLESMBSURFACE MOUNTING BOXSPPSINGLE POINT POWER ENTRY KITSSSTAINLESS STEELSSDPSTAINLESS STEEL DRAIN PANSTCSMART TOUCH CONTROLLERTEVTHERMAL EXPANSION VALVE	-	
SMBSURFACE MOUNTING BOXSPPSINGLE POINT POWER ENTRY KITSSSTAINLESS STEELSSDPSTAINLESS STEEL DRAIN PANSTCSMART TOUCH CONTROLLERTEVTHERMAL EXPANSION VALVE		
SPPSINGLE POINT POWER ENTRY KITSSSTAINLESS STEELSSDPSTAINLESS STEEL DRAIN PANSTCSMART TOUCH CONTROLLERTEVTHERMAL EXPANSION VALVE		
SSSTAINLESS STEELSSDPSTAINLESS STEEL DRAIN PANSTCSMART TOUCH CONTROLLERTEVTHERMAL EXPANSION VALVE	SMB S	URFACE MOUNTING BOX
SSDPSTAINLESS STEEL DRAIN PANSTCSMART TOUCH CONTROLLERTEVTHERMAL EXPANSION VALVE	SPP S	INGLE POINT POWER ENTRY KIT
STCSMART TOUCH CONTROLLERTEVTHERMAL EXPANSION VALVE	SS S	TAINLESS STEEL
STCSMART TOUCH CONTROLLERTEVTHERMAL EXPANSION VALVE	SDP S	TAINLESS STEEL DRAIN PAN
TEV THERMAL EXPANSION VALVE		
UN USEN INTERFACE TOUCHPAD		
WS WALL SLEEVE		

( -





PLAN MARK	SERVICE	MANUFACTURER	MODEL	UNIT TYPE	ТҮРЕ
AHU V1	VEHICLE BAY	TRANE	TEM4A0C048	SINGLE	DD
2. SI 3. UI 4. FU	NIT SHALL BE BLO JRNISH 1" FILTER	R COIL BASED ON A	JRATION.		

						OUTDO	OR FAN			COOLING COIL	L	CONNEC	TION SIZES		ELECT	RICAL			PHYSICAL I	ROPERTIES				
					FAN	AIRFLOW				LOW AMB	HIGH AMB	LIQUID LINE	HOT GAS LINE					MAX LENGTH	MAX WIDTH	MAX HEIGHT	MAX WEIGHT			
PLAN MARK	AREA SERVED M	ANUFACTURER	MODEL	REFRIGERANT	QUANTITY	(CFM)	MAX HP	RPM	TH (MBH)	TEMP (DEG. F)	) TEMP (DEG. F)	(IN)	(IN)	VOLTAGE	PHASE	MCA	MOCP	(IN)	(IN)	(IN)	(LBS)	0	PTIONS	NOTES
CRCU 1	SERVER 146	STULZ	SCS-252-SEC	407C	2	18400	7.7	1500	204	-15	105	1 1/8"	1 3/8"	460	3	9.3	15	9' - 1"	4' - 0"	3' - 5"	500	DSN		1-3
CRCU 2	SERVER 146	STULZ	SCS-252-SEC	407C	2	18400	7.7	1500	204	-15	105	1 1/8"	1 3/8"	460	3	9.3	15	9' - 1"	4' - 0"	3' - 5"	500	DSN		1-3
CRCU 3	SERVER 146	STULZ	SCS-252-SEC	407C	2	18400	7.7	1500	204	-15	105	1 1/8"	1 3/8"	460	3	9.3	15	9' - 1"	4' - 0"	3' - 5"	500	DSN		1-3

1/8" = 1<sup>-</sup>

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					EVAPO				DULE															
		PUMPS			COOLNO	G COIL			V	VATER REQUIF	REMENTS		E	ELECTRIC	CAL			PHYSICAL	PROPERTIES					
	PUMP	FLOW RATE			LOW AMB	HIGH AMB DB	HIGH AMB WB				DOMESTIC WATER						MAX LENGTH	MAX WIDTH	MAX HEIGHT					
N	QUANTITY	(GPM)	MAX HP	TH (MBH)	TEMP (DEG. F)	(DEG. F)	(DEG. F)	EWT	LWT	WPD (FT)	CONNECTION SIZE (IN)	VOLTAGE	PHASE	FLA	MCA	MOCP	(FT)	(FT)	(FT)	WEIGHT (LBS)		OPTIONS	NOTES	
0	1	150	1.5	600	50	95	76	90	80	9.3	0"	480	3	17	22	25	12' - 0"	4' - 2"	10' - 4"	7500	DSE		1-3	
IDAT	IONS.																							

													SPLIT SY	STEM	AIR HAN	DLER S	CHED	ULE																
		SUP		AN					coo						HEATIN	G COIL		1		F	ILTER		ELECTRICA	AL.				PI	HYSICAL	PROPER	TIES			
										EAT	L	.AT						CONTROL	MIN O/A															
	AIRFLOW	ESP <sup>-</sup>	ISP   I	MAX B	RAKE	STARTER	R TH	SH	DB	WB	DB	WB	AIRFLOW	TH	NOMINAL	EAT	LAT	(STAGED/			DIRTY SP								WIDTH	HEIGHT				
PE	(CFM)	(IN)	(IN)	HP	HP	TYPE	(BTUH	I) (BTUI	l) (DEG.I	F) (DEG.I	<sup>=</sup> ) (DEG.F)	(DEG.F)	(CFM)	(BTUH)	(KW)	(DEG.F)	(DEG.F)	MOD)	(CFM)	MERV	LOSS (IN)	VOLTAG	E PHASE FLA	MCA	MOCP	SUPPLY	RETURN	(IN)	(IN)	(IN)	(LBS)		OPTIONS	NOTES
D	1600	0.5	0.0	0.75		INTEGRA	48800	3450	) 80.0	67.0	55.0	53.0	1600	36800	10.8	60.0	81.0	1 STAGE	0	8	0.4	208	1 68.0	91.0	100	FRONT	REAR	21"	23"	51"	300	DSE,IC		1-5

 $\cdots$ ERMOSTAT. SET UNIT TO MAINTAIN TEMPERATURE BETWEEN 60 AND 78 DEGREES.  $\sqrt[1]{3}$ 

				SPI		<b>БТЕМ С</b>	ONDENS		r sche	DUL	.E					
PLAN					тн	SH	AMB TEMP		ELECT	RICAI			MIN			
MARK	SERVICE	MANUFACTURER	MODEL	REFRIGERANT	(BTUH)	(BTUH)	(DEG.F)	VOLTAGE	PHASE	FLA	MCA	МОСР	SEER		OPTIONS	NOTES
CU V1	VEHICLE BAY	TRANE	4TTA3048	R454B	48800	34500	105	208	3	18.0	18.0	30	14	DSE,HG		1,2
NOTES 1. 2.		SHALL VERIFY WITH NCRETE PAD.	H EQUIPMENT	SUPPLIER EXAG	CT ROUTI	NG AND	SIZE OF IN	SULATED RE	FRIGER	ANT F	PIPING.	INSTA	LL PER	MANUFAC		IENDATIONS.

MOUNT ON CONCRETE PAD WITH NEOPRENE VIBRATION ISOLATION PAD AND PER MANUFACTUER IOM INSTRUCTIONS.

				SUPPLY	FAN	CO	OLING	HUMIDIFCATION			ELECTRI	CAL				
PLAN MARK	MANUFACTURER	MODEL	UNIT TYPE	AIRFLOW (CFM)	ESP (IN)	TOTAL (MBH)	SENSIBLE (MBH)	CAPACITY (LBS/HR)	FILTER MERV	VOLTAGE	PHASE	МСА	моср		OPTIONS	NOTES
CRAC 1	STULZ	COS-120-AR-D-EC	DOWNFLOW	4800	0.5	111	92	15	11	480	3	33.7	50	DSN		1-2
CRAC 2	STULZ	COS-120-AR-D-EC	DOWNFLOW	4800	0.5	111	92	15	11	480	3	33.7	50	DSN		1-2
CRAC 3	STULZ	COS-120-AR-D-EC	DOWNFLOW	4800	0.5	111	92	15	11	480	3	33.7	50	DSN		1-2

PLAN MARK	SERVICE	MANUFACTURER	MODEL
MP 1	GSHP	GRUNDFOS	DELTA HCU 3CREH
MP 2	GSHP	GRUNDFOS	DELTA HCU 3CREH
MP 3	GSHP	GRUNDFOS	DELTA HCU 3CREH
MP 4	GSHP	GRUNDFOS	TPE3 D 80-120
1. 2. 3.	PROVIDE		E SHALL BE 125 PSI. M WITH PUMPS, BAS

					MECHA	NICAL E	EXPANSION	TANK S	CHED	ULE			
PLAN MARK	SERVICE	MANUFACTURER	MODEL	LOCATION	MOUNTING		ACCEPTANCE (GAL)	MIN TEMP (DEG.F)	MAX TEMP (DEG.F)	MIN PRESSURE (PSIG)	WEIGHT (LBS)	OPTIONS	NOTES
MET 1	GSHP	AMTROL	AX-40V-DD	MECH RM	FLOOR	23	11	40	100	18	200		1-3
2.	HYDRONIC	TANK SHALL BE SI SYSTEM IS 100% W BE ASME RATED, 7	ATER.	ROM STRUCT	URE ABOVE F	PER DETA	IL.						

PLA MAF		MANUFACTURER
E1		PRICE
E2		PRICE
LR	1	PRICE
LS	1	PRICE
LS2	2	PRICE
R1		PRICE
R2	2	PRICE
R3	;	PRICE
S1		PRICE
S2	!	PRICE
S3		PRICE
S4		PRICE
S5		PRICE
S6		PRICE
S7	'	PRICE
NOT 1. 2.	ES:	NECK SIZE SHOW 4-WAY THROW PA
3. 4. 5.		DOUBLE DEFLECT FRONT BLADES P ALUMINUM CONS
6. 7.		SINGLE SLOT DIFI
8.		TWO SLOT DIFFUS
9.		PROVIDE ACOUST ACOUSTICAL BOC
10. 11.		PROVIDE BASKET
L		

		ME		ICAL	PUMI	P SCH	EDULE						
		FLOW						ELEC	RICA	L			
	MOUNTING	RATE (GPM)	HEAD (FT)	NPSH (FT)	MAX HP	RPM	VOLTAGE	PHASE	FLA	МСА	моср	OPTIONS	NOTES
32-1	FLOOR	125.0	63	0	5	3600	480	3	19.6	24.7	30	DSN	1-7
32-1	FLOOR	125.0	63	0	5	3600	480	3	19.6	24.7	30	DSN	1-7
32-1	FLOOR	125.0	63	0	5	3600	480	3	19.6	24.7	30	DSN	1-7
	FLOOR	150.0	21	9	1.5	2650	480	3	2.1	0.0	15	DSN	1-4,8

MAX OPERATING TEMPERATURE SHALL BE 120 DEG.F. SE, VALVES, GAUGES, PRESSURE TRANSDUCERS, SUCTION & DISCHARGE HEADERS, CONTROLS AND DRIVES. GNET, TEFC MOTORS WITH INTEGRAL VFD. MOTOR AND VFD ASSEMBLY TO MEET IES EFFICIENCY LEVELS. RESSURE SENSOR WITH DRY RUN PROTECTION AND OVER PRESSURIZATION FEATURES. Y-WIRED AND TESTED PUMP CONTROLLER UTILIZING OPTIMAL POWER PUMP SEQUENCING. AND SHALL NOT REQUIRE ALIGNMENT

TORS. MOTORS HAVE SEPARATE VFDS AND ELECTRICAL CONNECTIONS.

PLAN MARK	SYSTEM	MANUFACTURER	MODEL	FLOW RATE (GPM)	PRESSURE DROP (FT)	SIZE (IN)	OPTIONS	NOTES
AS 1	WSHP	AMTROL	4-ADS	250.0	1.0	4"		1,2

							R SCHEDUL			
URER	MODEL	FACE TYPE		COLOR	OBD	FACE SIZE (IN)	MAX PRESS DROP (IN WC)	MAX NC	OPTIONS	NOTES
	80	EGG CRATE	GYP CEILING	WHITE	YES	12"x12"	0.1	30		1,5
-	80	EGG CRATE	GYP CEILING	WHITE	MVOLT	24"x24"	0.1	30		1
<u> </u>	SDR	LINEAR	CEILING	WHITE	NO	48"x6"	0.1	30		7
<u> </u>	SDS	LINEAR	CEILING	WHITE	NO	48"x6"	0.1	30	FFI	1,6
-	SDS	LINEAR	CEILING	WHITE	NO	48"x6"	0.1	30	FFI	1,8
:	80	EGG CRATE	LAY-IN	WHITE	NO	24"x12"	0.1	30		9
<u> </u>	80	EGG CRATE	LAY-IN	WHITE	NO	24"x24"	0.1	30		9
:	530	DOUBLE DEFLECTION	WALL	WHITE	NO	SEE DWG	0.1	30		1,4
-	SPD	PLAQUE	GYP CEILING	WHITE	YES	12"x12"	0.1	30		1,2,5
:	SPD	PLAQUE	GYP CEILING	WHITE	YES	24"x24"	0.1	30		1,2
<u> </u>	SPD	PLAQUE	LAY-IN	WHITE	NO	12"x12"	0.1	30		1,2
:	520	DOUBLE DEFLECTION	WALL	WHITE	YES	SEE DWG	0.1	30		1,3,4
	MFD	DISPLACEMENT	FLOOR	BLACK	YES	8 INCHES	0.1	30		10
-	MFD	DISPLACEMENT	FLOOR	BLACK	YES	10 INCHES	0.1	30		10
	PDDR	PERFORATED	FLOOR	WHITE	NO	24"x24"	0.1	30		11

HOWN ON DRAWINGS - BRANCH DUCT SIZE SHALL BE SAME AS NECK SIZE UNLESS OTHERWISE NOTED. W PATTERN UNLESS OTHERWISE SHOWN ON DRAWINGS AND LEGEND.

LECTION BARS SHALL BE ADJUSTABLE. ADJUST TO DEFLECT AIR DOWN AND EVENLY TO THE SIDE. ES PARALLEL TO LONG DIMENSION.

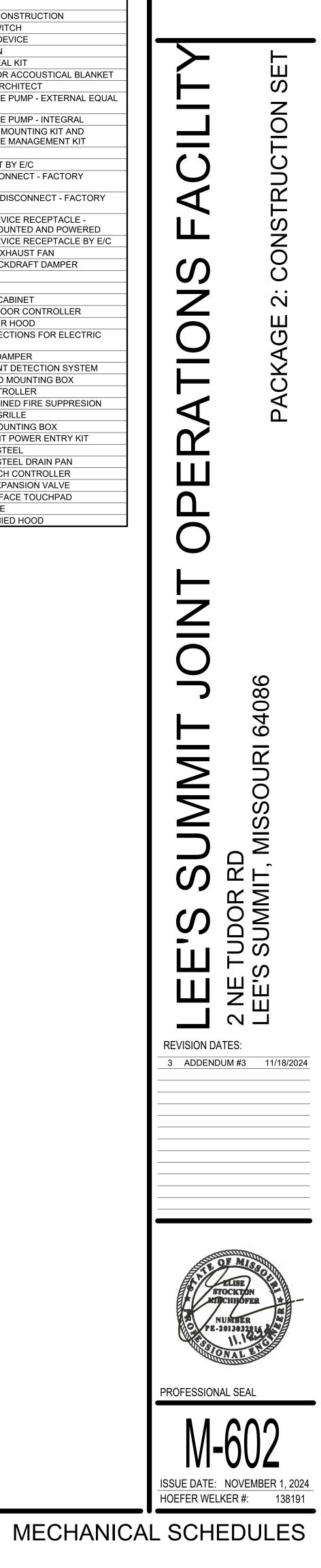
## ONSTRUCTION.

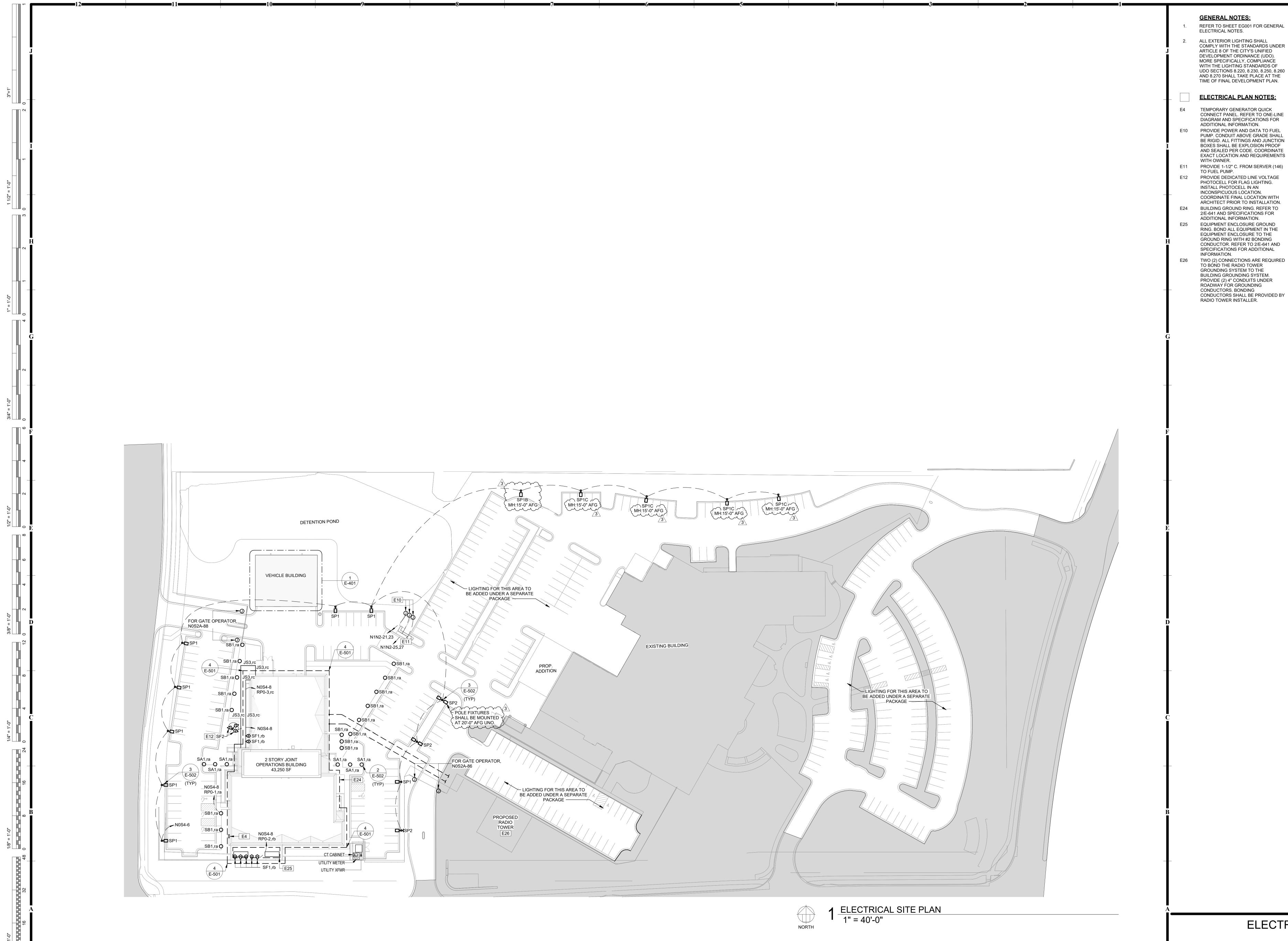
T DIFFUSER, 1.5" WIDE. PROVIDE SDB PLENUM. T DIFFUSER, 1.5" WIDE. PROVIDE LIGHT SHIELD. DIFFUSER, 1.5" WIDE. PROVIDE SDB PLENUM.

DUSTICAL BOOTS FOR ALL RETURN REGISTERS WHERE SHOWN ON DRAWINGS. PROVIDE LIGHT SHIELDS FOR ALL REGISTER NOT UTILIZING BOOTS.

SKET AND FACE OPERATED DAMPER. D FLOOR TILE SHALL INTEGRATE INTO MANFUACTURE'S FLOOR PLENUM SYSTEM. TILE SHALL BE CAPABLE OF WALKING ON.

ME	CHANICAL ABBREVIATION LIST
GENEF 1	AL NOTES THE MANUFACTURER LISTED SHALL BE CONSIDERED THE BASIS OF DESIGN. EQUIPMENT AND ACCESSORIES SHALL BE SUPPLIED IN ACCORDANCE WITH THE SCHEDULED VALUES, NOTES, DETAILS, AND SPECIFICATIONS. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ADDITIONAL COST AND COORDINATION WHEN NON BASIS OF DESIGN EQUIPMENT IS PROVIDED.
2	ALL PERFORMANCE SHALL BE BASED ON EQUIPMENT OPERATING AT AN ELEVATION OF 1,086 FEET ABOVE SEA LEVEL.
3	SPECIFIED FAN ESP INCLUDES DUCT AND EQUIPMENT LOSSES EXTERNAL TO UNIT. SCHEDULED FAN TSP INCLUDES EXTERNAL LOSSES PLUS INTERNAL UNIT LOSSES DUE TO COILS, FILTERS AT DIRTY CONDITIONS, ETC.
OPTIO	
AC	ALUMINUM CONSTRUCTION
AS	AIRFLOW SWITCH
ASD	
BS	BIRDSCREEN
BSK	BREAKER SEAL KIT
CAB	COMPRESSOR ACCOUSTICAL BLANKET
CL	
CPE	CONDENSATE PUMP - EXTERNAL EQUAL
CPI	TO ?? CONDENSATE PUMP - INTEGRAL
DMK	DOWNFLOW MOUNTING KIT AND
Divir	CONDENSATE MANAGEMENT KIT
DP	
DSE	DISCONNECT BY E/C
DSF	FUSED DISCONNECT - FACTORY MOUNTED
DSN	NON-FUSED DISCONNECT - FACTORY MOUNTED
DSR	DUPLEX SERVICE RECEPTACLE - FACTORY MOUNTED AND POWERED
DSRE	DUPLEX SERVICE RECEPTACLE BY E/C
EEF	EXTERNAL EXHAUST FAN
GBD	GRAVITY BACKDRAFT DAMPER
HG	HAIL GUARD
HK	
IC MDC	INSULATED CABINET MAGNETIC DOOR CONTROLLER
OAH	OUTDOOR AIR HOOD
PC	PLUG CONNECTIONS FOR ELECTRIC
	HEATER
RD	RADIATION DAMPER
RDS	REFRIGERANT DETECTION SYSTEM
RMB	2" RECESSED MOUNTING BOX
SC	SPEED CONTROLLER
SFS	SELF CONTAINED FIRE SUPPRESION
SG	STANDARD GRILLE
SMB	SURFACE MOUNTING BOX
SPP	SINGLE POINT POWER ENTRY KIT
SS	STAINLESS STEEL
SSDP	STAINLESS STEEL DRAIN PAN
STC	SMART TOUCH CONTROLLER
TEV	THERMAL EXPANSION VALVE
UIT	USER INTERFACE TOUCHPAD
WS	WALL SLEEVE
WSH	WEATHERSHIED HOOD



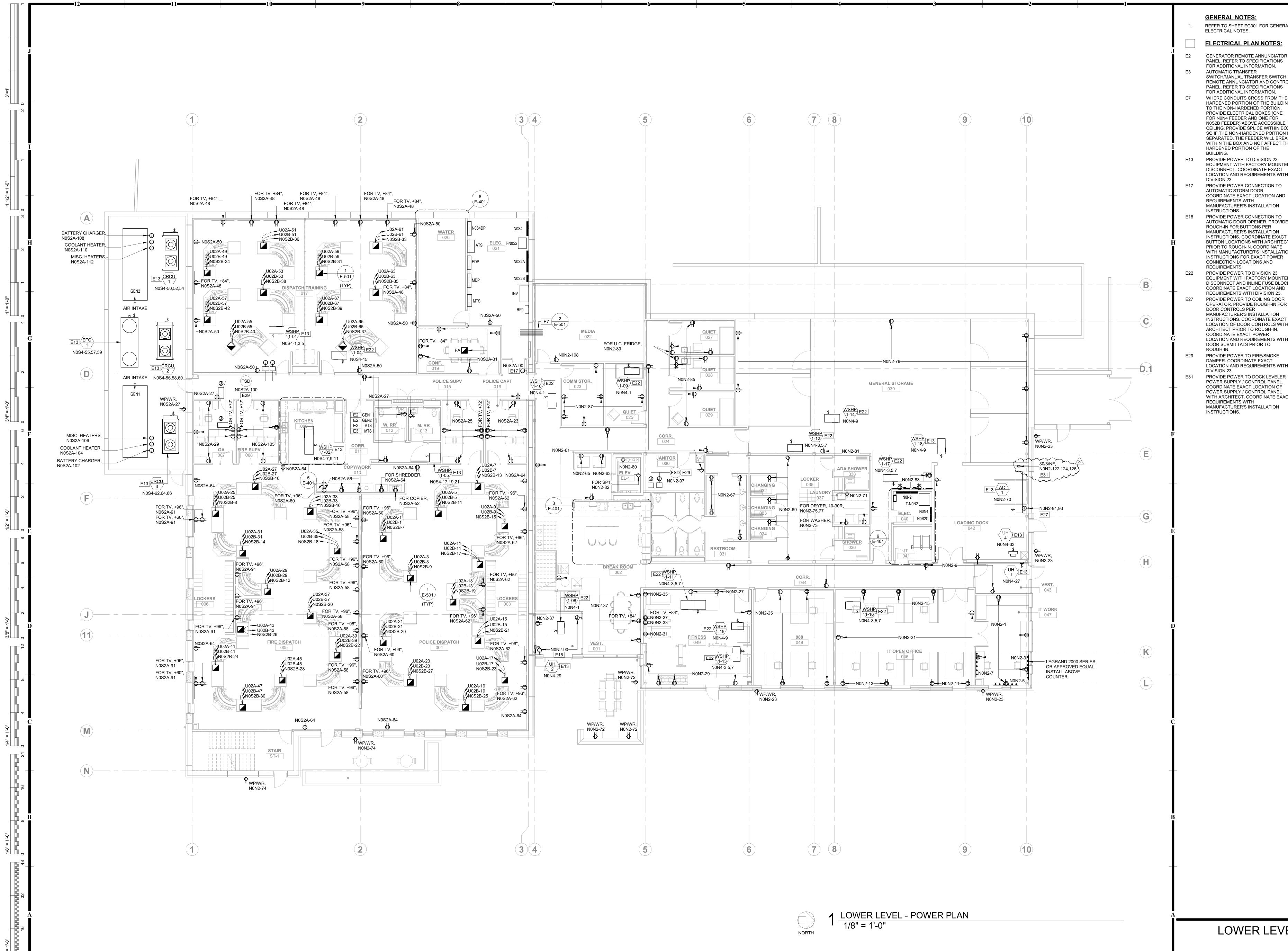


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HOEFER WELKER REFER TO SHEET EG001 FOR GENERAL 4622 PENNSYLVANIA AVENUE **SUITE 1400** COMPLY WITH THE STANDARDS UNDER KANSAS CITY, MO 64112 ARTICLE 8 OF THE CITY'S UNIFIED DEVELOPMENT ORDINANCE (UDO). P: 913.307.3700 MORE SPECIFICALLY, COMPLIANCE WITH THE LIGHTING STANDARDS OF hoeferwelker.com UDO SECTIONS 8.220, 8.230, 8.250, 8.260 AND 8.270 SHALL TAKE PLACE AT THE COPYRIGHT © BY HOEFER WELKER, LLC TIME OF FINAL DEVELOPMENT PLAN. ELECTRICAL PLAN NOTES: TEMPORARY GENERATOR QUICK CONNECT PANEL. REFER TO ONE-LINE DIAGRAM AND SPECIFICATIONS FOR PUMP. CONDUIT ABOVE GRADE SHALL BE RIGID. ALL FITTINGS AND JUNCTION BOXES SHALL BE EXPLOSION PROOF AND SEALED PER CODE. COORDINATE EXACT LOCATION AND REQUIREMENTS PHOTOCELL FOR FLAG LIGHTING. Ы S COORDINATE FINAL LOCATION WITH TRUCTION ARCHITECT PRIOR TO INSTALLATION. 2/E-641 AND SPECIFICATIONS FOR RING. BOND ALL EQUIPMENT IN THE EQUIPMENT ENCLOSURE TO THE GROUND RING WITH #2 BONDING CONDUCTOR. REFER TO 2/E-641 AND SPECIFICATIONS FOR ADDITIONAL CONS<sup>-</sup> PROVIDE (2) 4" CONDUITS UNDER  $\mathcal{O}$ CONDUCTORS SHALL BE PROVIDED BY 2. ACKAGE 086 RD . MISSOURI  $\geq$ S **FUDOR RI** SUMMIT, S S  $\Box$   $\sim$ **REVISION DATES:** 3 ADDENDUM #3 11/18/2024 JONATHON M. LEE NUMBER PE-2021003162 PROFESSIONAL SEAL ES101 ISSUE DATE:NOVEMBER 1, 2024HOEFER WELKER #:138191

ELECTRICAL SITE PLAN



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## **GENERAL NOTES:**

## REFER TO SHEET EG001 FOR GENERAL

# **ELECTRICAL PLAN NOTES:**

PANEL. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION. AUTOMATIC TRANSFER SWITCH/MANUAL TRANSFER SWITCH

REMOTE ANNUNCIATOR AND CONTROL PANEL. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION. WHERE CONDUITS CROSS FROM THE

HARDENED PORTION OF THE BUILDING TO THE NON-HARDENED PORTION. PROVIDE ELECTRICAL BOXES (ONE FOR N0N4 FEEDER AND ONE FOR N0S2B FEEDER) ABOVE ACCESSIBLE CEILING. PROVIDE SPLICE WITHIN BOX SO IF THE NON-HARDENED PORTION IS

SEPARATED, THE FEEDER WILL BREAK WITHIN THE BOX AND NOT AFFECT THE HARDENED PORTION OF THE E13 PROVIDE POWER TO DIVISION 23

> EQUIPMENT WITH FACTORY MOUNTED DISCONNECT. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH

AUTOMATIC STORM DOOR. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH MANUFACTURER'S INSTALLATION

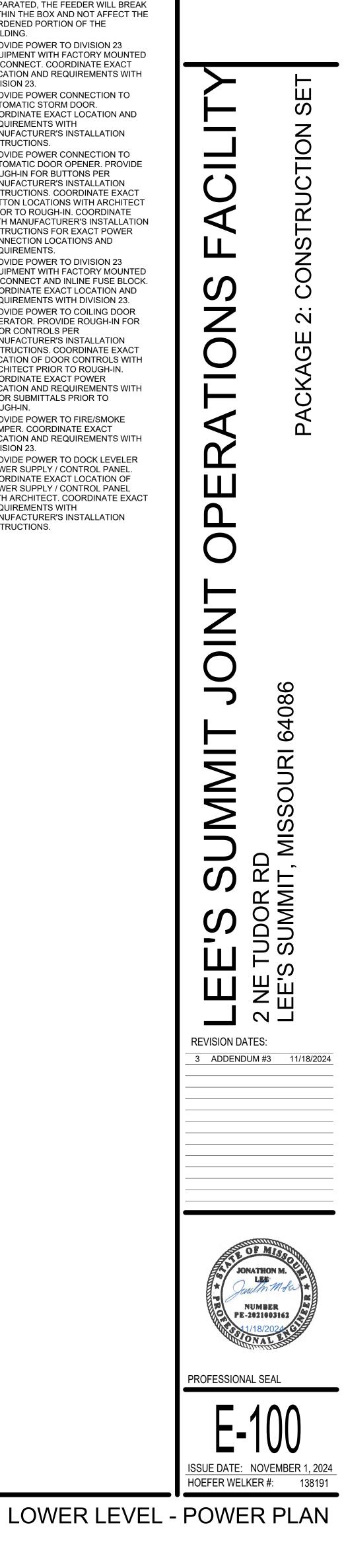
E18 PROVIDE POWER CONNECTION TO AUTOMATIC DOOR OPENER. PROVIDE ROUGH-IN FOR BUTTONS PER MANUFACTURER'S INSTALLATION INSTRUCTIONS, COORDINATE EXACT BUTTON LOCATIONS WITH ARCHITECT PRIOR TO ROUGH-IN. COORDINATE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR EXACT POWER CONNECTION LOCATIONS AND

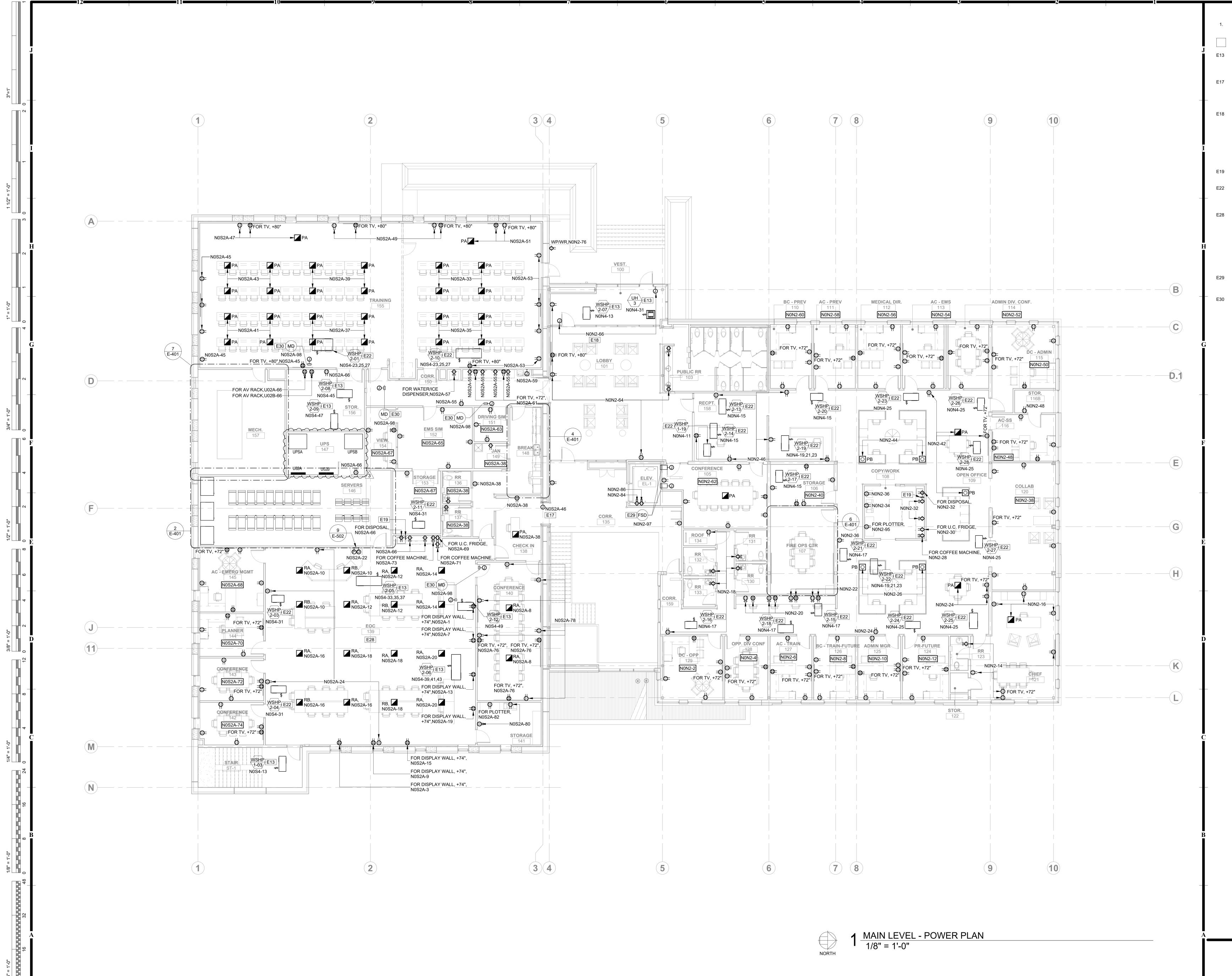
> PROVIDE POWER TO DIVISION 23 EQUIPMENT WITH FACTORY MOUNTED DISCONNECT AND INLINE FUSE BLOCK. COORDINATE EXACT LOCATION AND **REQUIREMENTS WITH DIVISION 23.** PROVIDE POWER TO COILING DOOR OPERATOR. PROVIDE ROUGH-IN FOR

MANUFACTURER'S INSTALLATION INSTRUCTIONS. COORDINATE EXACT LOCATION OF DOOR CONTROLS WITH ARCHITECT PRIOR TO ROUGH-IN. COORDINATE EXACT POWER LOCATION AND REQUIREMENTS WITH DOOR SUBMITTALS PRIOR TO

PROVIDE POWER TO FIRE/SMOKE DAMPER. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH

PROVIDE POWER TO DOCK LEVELER POWER SUPPLY / CONTROL PANEL. COORDINATE EXACT LOCATION OF POWER SUPPLY / CONTROL PANEL WITH ARCHITECT. COORDINATE EXACT REQUIREMENTS WITH MANUFACTURER'S INSTALLATION





**GENERAL NOTES:** REFER TO SHEET EG001 FOR GENERAL ELECTRICAL NOTES.

## **ELECTRICAL PLAN NOTES:**

E13 PROVIDE POWER TO DIVISION 23 EQUIPMENT WITH FACTORY MOUNTED DISCONNECT. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH

> PROVIDE POWER CONNECTION TO AUTOMATIC STORM DOOR. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH MANUFACTURER'S INSTALLATION

DIVISION 23.

INSTRUCTIONS.

REQUIREMENTS.

REVIEW.

DIVISION 23.

DIVISION 23.

E18 PROVIDE POWER CONNECTION TO AUTOMATIC DOOR OPENER. PROVIDE ROUGH-IN FOR BUTTONS PER

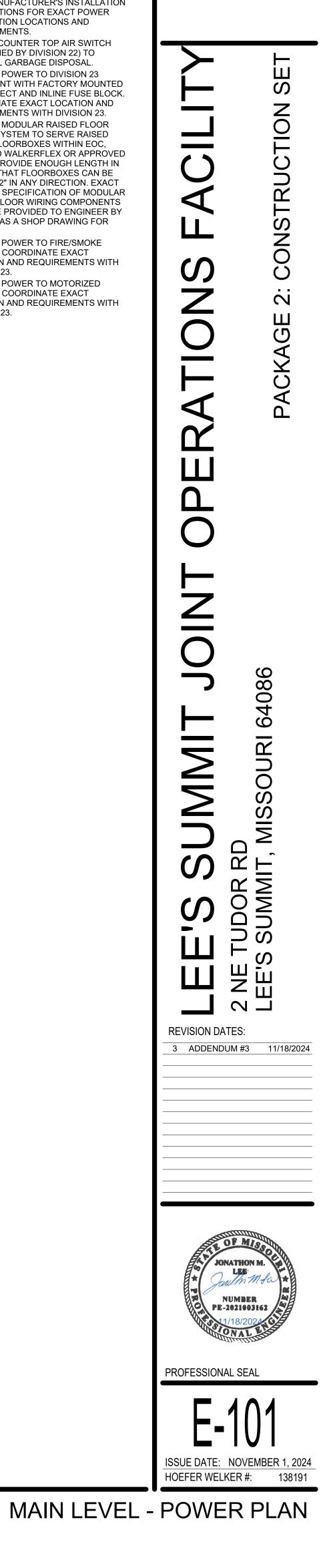
MANUFACTURER'S INSTALLATION INSTRUCTIONS. COORDINATE EXACT BUTTON LOCATIONS WITH ARCHITECT PRIOR TO ROUGH-IN. COORDINATE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR EXACT POWER CONNECTION LOCATIONS AND

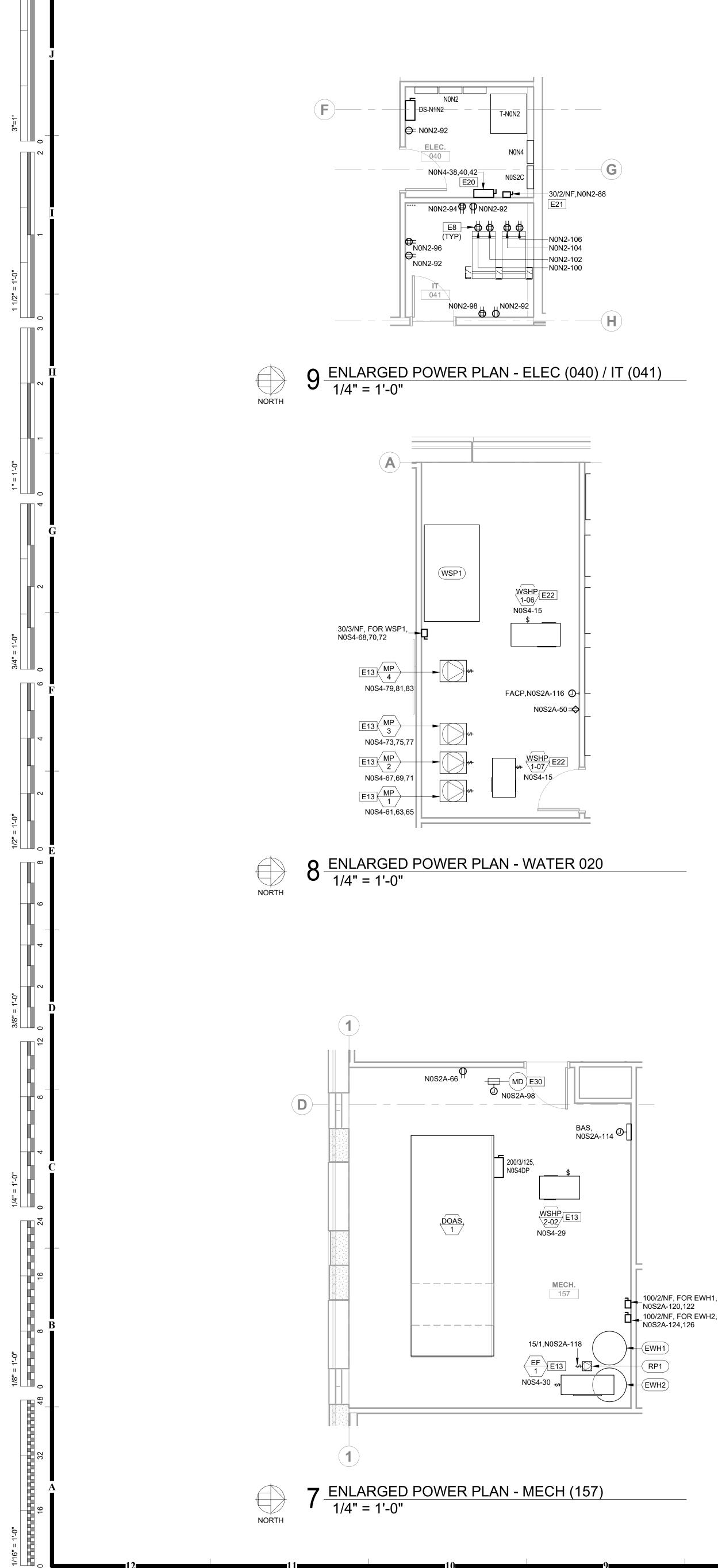
INSTALL COUNTER TOP AIR SWITCH (FURNISHED BY DIVISION 22) TO CONTROL GARBAGE DISPOSAL. PROVIDE POWER TO DIVISION 23 EQUIPMENT WITH FACTORY MOUNTED DISCONNECT AND INLINE FUSE BLOCK. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH DIVISION 23. E28 PROVIDE MODULAR RAISED FLOOR WIRING SYSTEM TO SERVE RAISED FLOOR FLOORBOXES WITHIN EOC, LEGRAND WALKERFLEX OR APPROVED EQUAL. PROVIDE ENOUGH LENGTH IN CABLES THAT FLOORBOXES CAN BE MOVED 72" IN ANY DIRECTION. EXACT

LAYOUT / SPECIFICATION OF MODULAR RAISED FLOOR WIRING COMPONENTS SHALL BE PROVIDED TO ENGINEER BY VENDOR AS A SHOP DRAWING FOR PROVIDE POWER TO FIRE/SMOKE

DAMPER. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH E30 PROVIDE POWER TO MOTORIZED

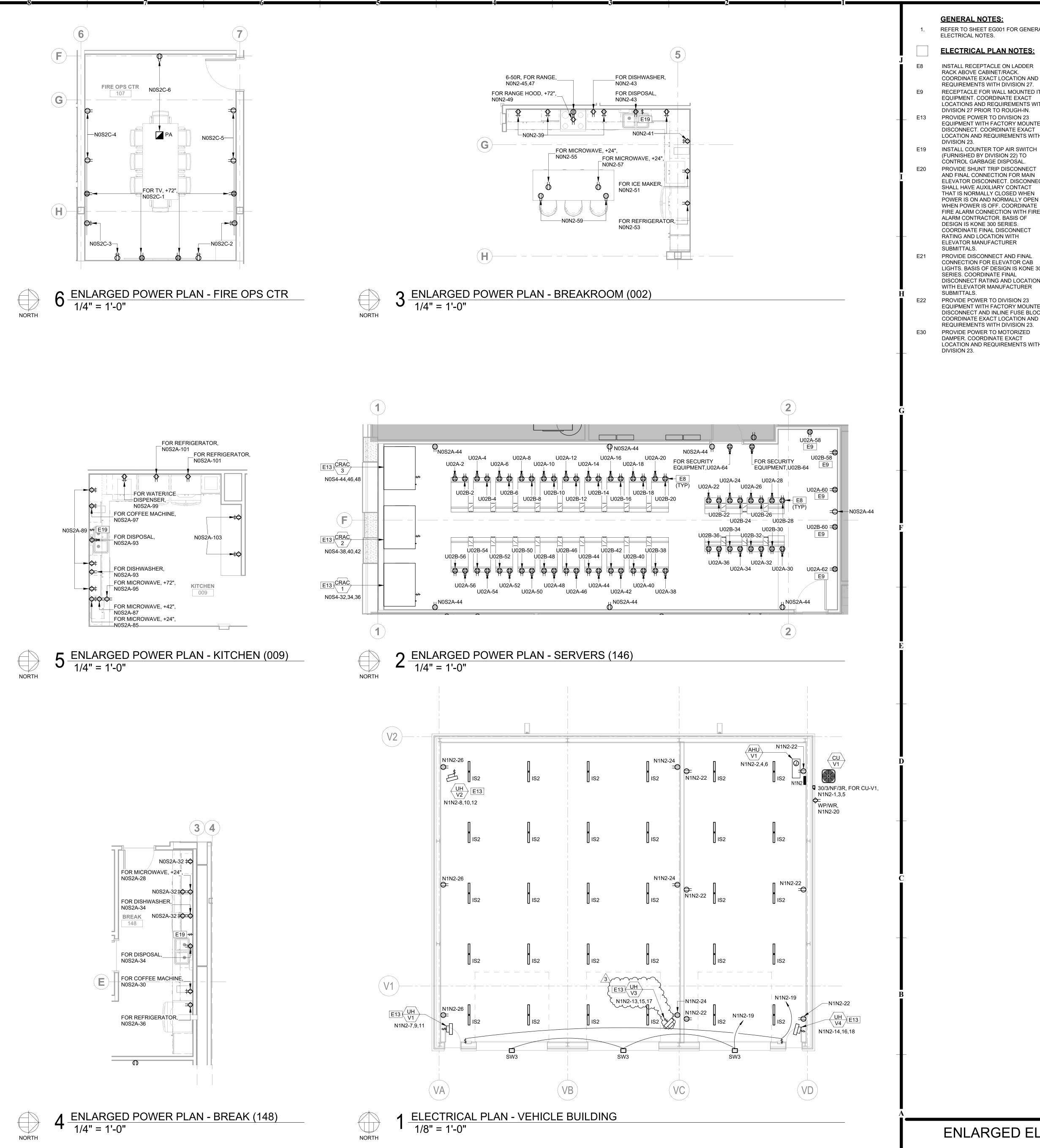
DAMPER. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH





11/18/2024 9:22:00 AM

Autodesk Docs://138191-LeesSummitJointOpsCtr/138191\_MEP23\_LeesSummitJointOpsCtr.rvt



**GENERAL NOTES:** REFER TO SHEET EG001 FOR GENERAL ELECTRICAL NOTES.

**ELECTRICAL PLAN NOTES:** INSTALL RECEPTACLE ON LADDER RACK ABOVE CABINET/RACK. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH DIVISION 27. RECEPTACLE FOR WALL MOUNTED IT EQUIPMENT. COORDINATE EXACT LOCATIONS AND REQUIREMENTS WITH DIVISION 27 PRIOR TO ROUGH-IN. PROVIDE POWER TO DIVISION 23 EQUIPMENT WITH FACTORY MOUNTED DISCONNECT. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH

DIVISION 23.

SUBMITTALS.

SUBMITTALS.

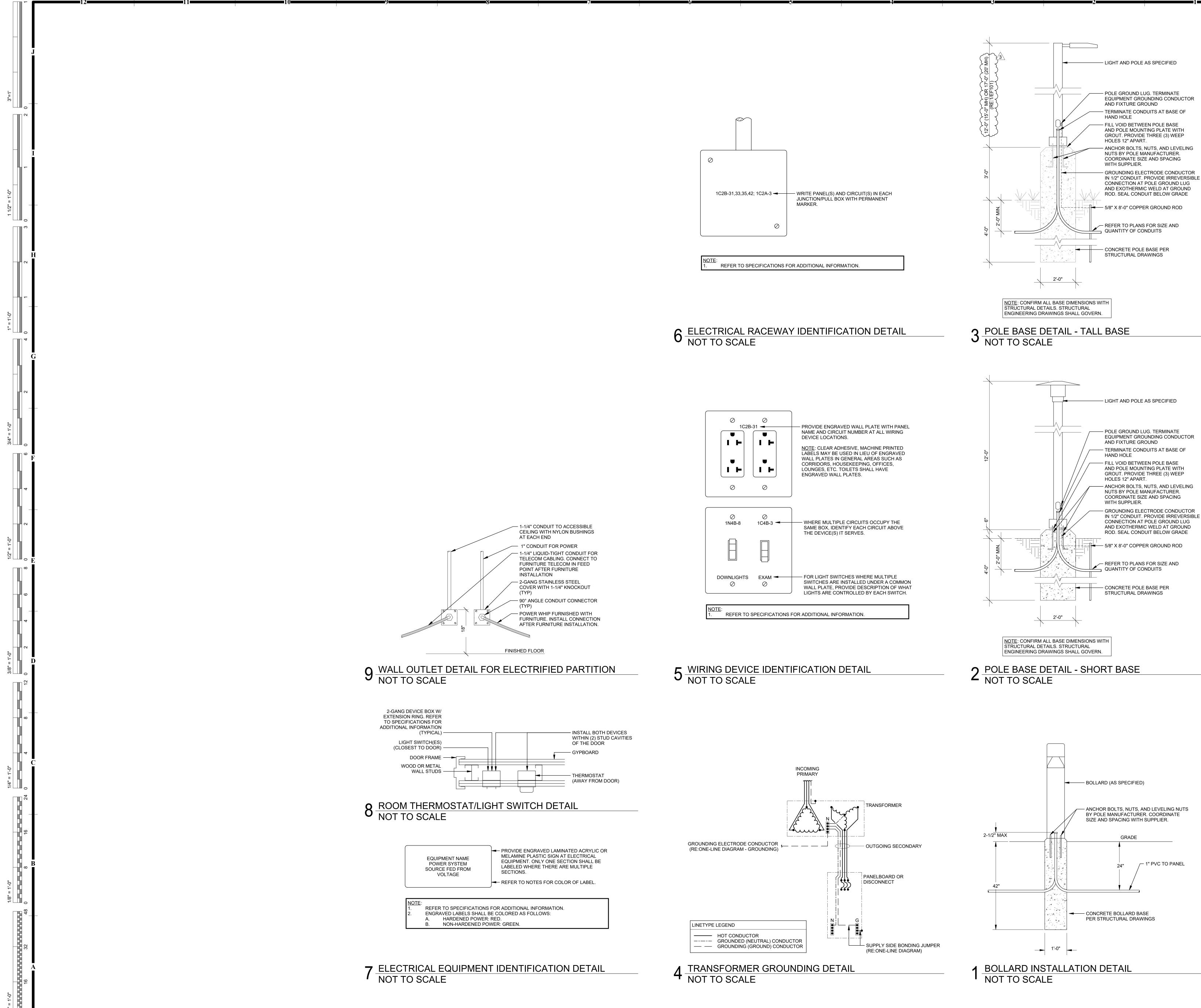
DIVISION 23.

(FURNISHED BY DIVISION 22) TO CONTROL GARBAGE DISPOSAL. E20 PROVIDE SHUNT TRIP DISCONNECT AND FINAL CONNECTION FOR MAIN ELEVATOR DISCONNECT. DISCONNECT SHALL HAVE AUXILIARY CONTACT THAT IS NORMALLY CLOSED WHEN POWER IS ON AND NORMALLY OPEN WHEN POWER IS OFF. COORDINATE FIRE ALARM CONNECTION WITH FIRE ALARM CONTRACTOR. BASIS OF DESIGN IS KONE 300 SERIES. COORDINATE FINAL DISCONNECT RATING AND LOCATION WITH ELEVATOR MANUFACTURER

> PROVIDE DISCONNECT AND FINAL CONNECTION FOR ELEVATOR CAB LIGHTS. BASIS OF DESIGN IS KONE 300 SERIES. COORDINATE FINAL DISCONNECT RATING AND LOCATION WITH ELEVATOR MANUFACTURER

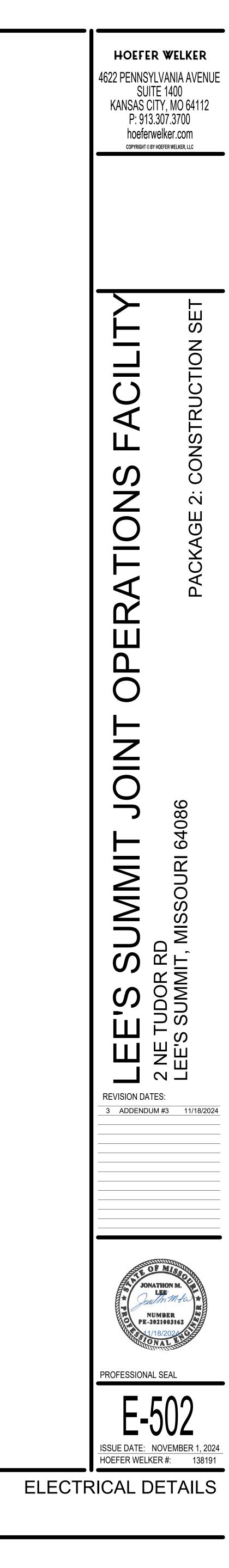
PROVIDE POWER TO DIVISION 23 EQUIPMENT WITH FACTORY MOUNTED DISCONNECT AND INLINE FUSE BLOCK. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH DIVISION 23. PROVIDE POWER TO MOTORIZED DAMPER. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH

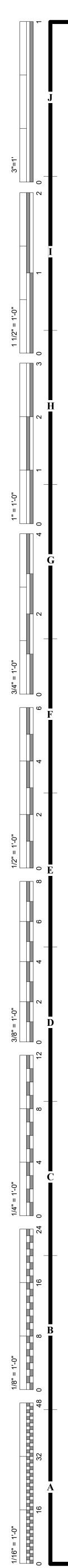




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	MAIN SIZE/TYP	SE: 480Y/277 V, 3	3PH, 4W					FAULT CU UM. VOLT MO	RATING: 2 JRRENT: 2 T. DROP: 0 UNTING: S CATION: E	0,071 A .94% SURFACE	
CKT NO.	DESCRIPTIO	N	NOTES	WIRE SIZE		BKF AMF	R P P		A		В
1 3 5	WSHP 1-01					15	3	1383	4655	1383	90
7 9 11	WSHP 1-02					15	3	3458	1862	3458	2053
13	WSHP 1-03					15	1	1911	1330		
15 17	WSHP 1-04, 06, 07			10	10	30	1			5872	1616
19 21 23	WSHP 1-05					15	3	3209	0	3209	0
25 27	WSHP 2-01, 10			10	10	30	3	5782	0	5782	0
29	WSHP 2-02					15	1		-		
31 33 35	WSHP 2-03, 04, 11 WSHP 2-05			10	10	30 15	1	5512	9	2573	9
37 39								2573	9	2573	9
41 43 45	WSHP 2-06 WSHP 2-08					15 15	3	2573	9	2327	9
47	WSHP 2-09					15	1			2021	5
49	WSHP 2-12					15	1	1801	2573		
51	EQUIPPED SPACE						1				2573
53	EQUIPPED SPACE						1				
55 57	EFC-1			10	10	25	3	4703	2573	4703	2573
59 61 63	MP-1			10	10	30	3	5423	2573	5423	2573
65 67 69	MP-2			10	10	30	3	5423	2904	5423	2904
71 73				10		30	5	5423		5425	2904
75 77	MP-3			10	10	30	3			5423	
79 81	MP-4					20	3	581	53480	581	50060
83	1				TOT				33 VA		99 VA
			-	L	TOT/ OAD B				3 A )4%		9 A 93%
	CLASSIFICATION	CONN. LOAD	DEMANI FACTOF		STIMAT DEMAN			BOAPD	GENERAL		
COOL		14110 VA	100.00						JND SIZE SH		
								AND GROU	JIND SIZE SF	IALL DE #12	UNLESS UI
LIGHT MOTC		18983 VA 60379 VA	125.00		23728						
					60379						
	PTACLES EQUIP	120140 VA 140031 VA	54.16 100.00		65070 40031						
		140031 VA	100.00	ט/ נ	1-0031	v A					

MISC	EQUIP 140031	VA 100	.00% 1	40031	VA					
		I								
F	PANELBOARD: N0S	2A								
	<b>BUS AMPS:</b> 400 A						AIC	RATING: 1	0,000 AIC	
	MAIN SIZE/TYPE: 400A MC	СВ					FAULT CL	JRRENT: 4	,876 A	
	<b>VOLTS/PHASE:</b> 208Y/12	0 V, 3PH, 4V	V			C	UM. VOL	<b>T. DROP:</b> 1	.25%	
	SUPPLIED BY: T-N0S2						МО	UNTING: S	SURFACE	
								CATION: E		
СКТ			WIRE	GND	BKR					
NO.	DESCRIPTION	NOTES						A	В	3
1	RCPT-139-EOC DISP. WALL N. A				20	1	460	0		
3	RCPT-139-EOC DISP. WALL E. A				20	1			460	
5	SPARE				20	1				
7	RCPT-139-EOC DISP. WALL N. B				20	1	460	720		
9	RCPT-139-EOC DISP. WALL E. B				20	1			460	
11	SPARE				20	1				

СКТ	DEGADISTICS		NOTES		GND SIZE				•	_	_		<b>^</b>	1	BKR GND AMP SIZE		NOTES	DEGODIDTION	CK
<b>NO</b> . 1	DESCRIPTION RCPT-139-EOC DISP. WALL I		NOTES	SIZE	SIZE	20		460	<b>a</b> 0	E	3			P		SIZE	NOTES	DESCRIPTION	<b>N</b>
3	RCPT-139-EOC DISP. WALL					20	1		-	460	0			3	30			SPD	4
	SPARE					20		400	700			0	0						6
	RCPT-139-EOC DISP. WALL I RCPT-139-EOC DISP. WALL I					20 20		460	720	460	1080			1	20 20			RCPT - CONFERENCE 140 FLR RCPT-139-EOC FLR A	1
	SPARE	D				20				+00	1000	0	1080	1				RCPT-139-EOC FLR B	1
	RCPT-139-EOC DISP. WALL I	N. C				20		460	720					1	20			RCPT-139-EOC FLR C	1
	RCPT-139-EOC DISP. WALL	E. C				20				460	1080			1	20			RCPT-139-EOC FLR D	1
	SPARE					20		460	700			0	1080	1	20			RCPT-139-EOC FLR E	1
	RCPT-139-EOC DISP. WALL I SPARE	N. D				20 20		460	720	0	500			1	20 20			RCPT-139-EOC FLR F RCPT-139-EOC DESK	2
	RCPT-016-POLICE CAPT.					20				0	500	1260	720	1				RCPT-139-EOC	
	RCPT-015-POLICE SUPV					20		1260	0					1				SPARE	2
	RCPT-011-CORR./012-013 RF	2				20				1260	1200		1700	1	20			RCPT-148-BREAK MICROWAVE	
	RCPT-007-QA RCPT-019-CONFERENCE					20 20		1260	540			1260	1500	1	20 20			RCPT-148-BREAK COFFEE RCPT-148-BREAK COUNTER	
-	RCPT-019-CONFERENCE	S 1				20		1200	540	1440	1380			1	20			RCPT-148-BREAK COUNTER RCPT-148-BREAK DISHWASHER	
	RCPT-155-TRAINING FLR BX					20				1440	1000	1440	800	1	20			RCPT-148-BREAK FRIDGE	
	RCPT-155-TRAINING FLR BX					20		1440	1440					1	20			RCPT-136,137,138,149	
	RCPT-155-TRAINING FLR BX					20				1440	0			1	20			SPARE	4
	RCPT-155-TRAINING FLR BX					20		1110	4000			1440	0	1	-			SPARE	
	RCPT-155-TRAINING FLR BX RCPT-155-SOUTH WALL	30				20 20		1440	1260	1080	600			1	20 20			RCPT-146-SERVER GENERAL PWR-135/138 STORM DOOR	
	RCPT-155-SOUTH WALL RCPT-155-S.W. DISPLAY/POI					20				1000	000	900	1440	1		-		RCPT-017-TRAINING TVs	
	RCPT-155-WEST WALL/DISP					20		1080	1440					1	20			RCPT-017-DISPATCH TRAINING	
1	RCPT-155-N.W. DISPLAY/PO					20	1			900	1200			1	20			RCPT-010-COPIER	
	RCPT-155 NORTH WALL					20						1080	1200	1	-			RCPT-010-SHREDDER	
	RCPT-150-CORR. CREDENZ					20	1	900	540	000	1110			1	20			RCPT-010-COPY/WORK	
	RCPT-150-CORR. WATER/ICI RCPT-150-CORR. WATER/FIL		GF			20 20				800	1440	600	900	1	-			RCPT-005-FIRE DISPATCH N TVs RCPT-004-POLICE DISPATCH S TVs	
	RCPT-150-CORR. DISPLAYS		01			20		720	1080			000	900	1	20			RCPT-004-POLICE DISPATCH N TVs	
	RCPT-151-DRIVING SIM					20		120	1000	540	1440			1	20			RCPT-004,005-DISPATCH GEN	
	RCPT-152-EMS SIM 1					20						720	1080	1	20			RCPT-147 UPS/156 STOR.	
	RCPT-154-VIEWING					20		900	1260					1	20			RCPT-145 AC - EMERG. MGMT	
	RCPT-139-EOC U.C. FRIDGE					20				400	1080	4000	1000	1	20			RCPT-144-PLANNER	
	RCPT-139-EOC COFFEE 1 RCPT-139-EOC COFFEE 2					20 20		1600	1080			1600	1080	1	20 20			RCPT-143-CONFERENCE RCPT-142-CONFERENCE	
	SPARE					20		1000	1000	0	1080			1	20			RCPT-140-CONF. DISP.	-
	SPARE					20						0	1080	1				RCPT-140-CONFERENCE	
	SPARE					20		0	360					1	20			RCPT-141-STORAGE COPIER	
	SPARE					20				0	1200	0	0	1	20			RCPT-141-PLOTTER	
	SPARE RCPT-009-MICROWAVE 3					20 20		1200	600			0	0	1	20 20			SPARE PWR-EAST GATE	
	RCPT-009-MICROWAVE 2					20		1200	000	1200	600			1	20			PWR-WEST GATE	
	RCPT-009-COUNTER RCPTS					20						540	600	1				PWR - STORM DOOR	
	RCPT-005-FIRE DISPATCH S	TVs				20		1260	0					1	-			SPARE	
	RCPT-009-DISHWASHER					20				1380	0	4000		1	20			SPARE	_
	RCPT-009-MICROWAVE 1 RCPT-009-COFFEE					20 20		1500	300			1200	0	1	20 20			SPARE PWR - MOTORIZED DAMPERS	
	RCPT-009-COFFEE RCPT-009-WATER/ICE DISPE	NSER				20		1300	300	180	200			1	20			PWR - FIRE/SMOKE DAMPERS	-
	RCPT-009-FRIDGE 1					20				100	200	1600	1200	1				GEN 1 - BATTERY CHARGER	
)3	<b>RCPT-009-COUNTER RCPTS</b>	2				20	1	360	1500					1	20			GEN 1 - COOLANT HEATER	
	RCPT-009-FIRE SUPV					20				1260	500			1	-			GEN 1 - MISC HEATERS	
						20			4500			0	1200	1	-			GEN 2 - BATTERY CHARGER	_
	EQUIPPED SPACE						1		1500		500			1	20 20			GEN 2 - COOLANT HEATER GEN 2 - MISC HEATERS	
	EQUIPPED SPACE						1				500		600	1		-		PWR-157-BAS	-
	EQUIPPED SPACE						1		500					1	20			PWR-020-FACP	
7	EQUIPPED SPACE						1				600			1				RP1 & AQUASTAT	
	EQUIPPED SPACE						1						6000	2	80			EWH1	
	EQUIPPED SPACE						1		6000		6000			<u> </u>					
	EQUIPPED SPACE						1				0000		6000	2	80			EWH2	-
								4028	80 VA	3566	0 VA		1 0000 30 VA			L		1	
									2 A		7 A		8 A						
				L	OAD B	ALAN	ICE:	4.1	0%	-9.4	14%	9.1	8%						
<u>م</u> ۸	CLASSIFICATION	CONN. LOAD	DEMAN FACTO						GENERAL	NOTES								PANELBOARD TOTALS	
	ING	160 VA	125.0								UNLESS OTH								ຊາາ
							VVIRE	AND GROU	UND SIZE SF	IALL BE #12	UNLESS UT		UIED.						822
		79340 VA	56.3		44670														33590
$\sim$	EQUIP	38720 VA	100.0	JU%	38720	VA												TOTAL CONN. CURRENT:	3
SC																	-	OTAL EST. DEMAND CURRENT:	2

		С	Р	BKR AMP	GND SIZE	WIRE SIZE	NOTES	DESCRIPTION	CKT NO.
			1	40	10	8		INV	2
90			1	20				LTG-STAIR (ST-1)	4
	1383	1250	1	20				LTG-EXTERIOR PARKING	6
			1	20				LTG-EXTERIOR AREA & FLAG	8
2053			1	20				LTG-CORRIDORS	10
	3458	3502	1	20				LTG-LOWER LEVEL DISPATCH	12
			1	20				LTG-LOWER LEVEL TRAINING	14
1616			1	20				LTG-TRAINING	16
	3209	2466	1	20				LTG-EOC & SUPPORT	18
			1	20				SPARE	20
0			1	20				SPARE	22
	5782	0	1	20				SPARE	24
			1	20				SPARE	26
0			1	20				SPARE	28
-	1801	1120	1	15				EF-1	30
									32
9			3	50				CRAC-1	34
-	2573	9							36
									38
9			3	50				CRAC-2	40
-	2573	9							42
				44					
9			3	50				CRAC-3	46
	1911	9 3 50 CRAC-3		48					
									50
2573			3	15				CRCU-1	52
		2573							54
									56
2573			3	15				CRCU-2	58
	4703	2573	Ť						60
		2010							62
2573			3	15				CRCU-3	64
	5423	2573	Ť						66
	0.20								68
2904			3	30	10	10		WSP1	70
	5423	2904	Ť						72
									74
			3					EQUIPPED SPACE	76
	5423		Ĩ						78
	5.20								80
50060			3	250		350	OL	T-N0S2	82
	581	55480	Ť				~-		84
VA		11 VA	1					1	
•/ \			-						
		2 A	4						
6	1.4	7%							
	-								
								PANELBOARD TOTALS	
LESS OTH	HERWISE N	OTED.						TOTAL CONN. LOAD:	353643 VA
								TOTAL EST. DEMAND LOAD:	303318 VA

60A, 3P SUBFEED BREAKER

425 A

365 A

TOTAL CONN. CURRENT:

TOTAL EST. DEMAND CURRENT:

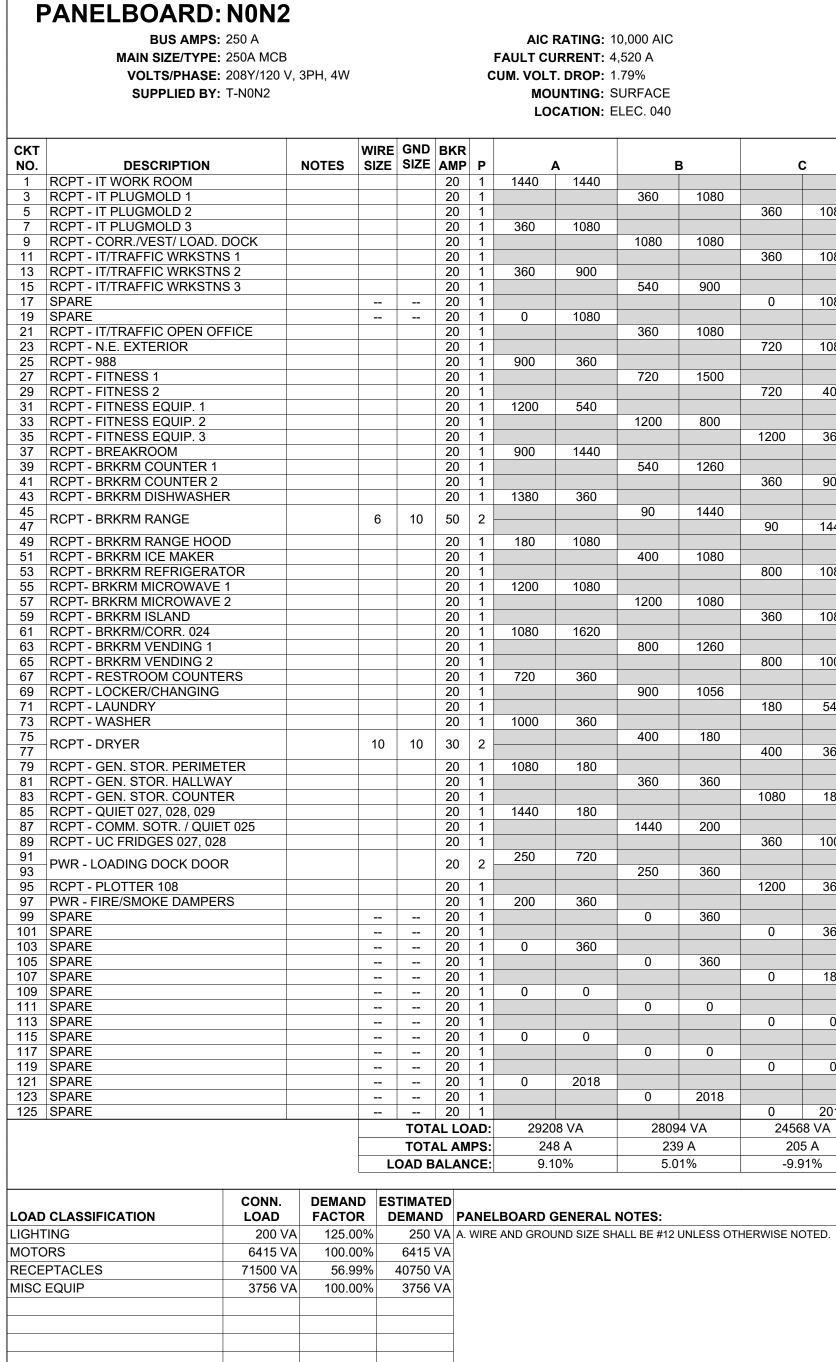
PANELBOARD: N0N4
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RECEPTACLES MISC EQUIP

73840 VA 56.77% 41920 VA

96211 VA 100.00% 96211 VA

	ANELDUARD.																			
	BUS AMPS: 4	400 A						AIC I	RATING: 2	22,000 AIC										
	MAIN SIZE/TYPE: N	ALO.						FAULT CU	IRRENT: 1	13.616 A										
	VOLTS/PHASE: 4		3DH Л/М					UM. VOLT												
			JFTI, 4VV				Ŭ													
	SUPPLIED BY: N	WI 5							UNTING: S											
								LO	CATION: E	LEC. 040										
																			1	
СКТ					GND												WIRE			СКТ
NO.	DESCRIPTION		NOTES	SIZE	SIZE	AMP	P		4	E	3		C	Ρ	AMP	SIZE	SIZE	NOTES	DESCRIPTION	NO.
	WSHP 1-08, 09, 10			10	10	30	1	5595	84					1	20				LTG-ELEVATOR SHAFT	2
3										8106	1575			1	20				LTG-GENERAL STORAGE	4
5	WSHP 1-11, 12, 13, 16, 17			8	10	40	3					8106	2631	1	20				LTG-LOWER LEVEL	6
7								8106	2731					1	20				LTG-OPEN OFFICE	8
	WSHP 1-14, 15, 18			10	10	30				6454	1954			1	20				LTG-PERIMETER OFFICES	10
	WSHP 1-19					15						1801	0	1	20				SPARE	12
	WSHP 2-07					15		1801	0					1	20				SPARE	14
	WSHP 2-13, 14, 17, 20			8	10	40				7257	0		-	1	20				SPARE	16
-	WSHP 2-15, 16, 18, 21			8	10	40	1					7119	0	1	20				SPARE	18
19								2767	0					1	20				SPARE	20
	WSHP 2-19, 22					15	3			2767	0	0707	0	1	20				SPARE	22
23					10	50	1	44405	0			2767	0	1	20				SPARE	24
	WSHP 2-23, 24, 25, 26, 27, 28			6	10	50	-	11135	0	4500	0			1	20				SPARE	26
	UH-1 UH-2					15	1			1500	0	1500	0	1	20				SPARE SPARE	28
	UH-2 UH-3					15 15	1	997	0			1500	0	1	20 20				SPARE	30 32
	UH-4					15		997	0	3300	0			1	20				SPARE	32
	SPARE					20				3300	0	0	0	1	20				SPARE	36
37	SFARE					20		46491	5478			0	0	<u> </u>	20				SFARL	38
	T-N0N2		OL	250		200	3	40431	5470	45074	5478			3	50	10	6		ELEVATOR EL-1	40
41			0L	200		200				43074	5470	40488	5478		50		U			40
					тот		)AD:	8518	S5 VA	8346	5 VA		0 VA							12
									5 A		9 A		2 A	1						
			-		OAD B				2%	7.6			06%	-						
							ICL.	3.0	2 /0	1.0	570	-12.	0070							
		00000	DEMAN		-															
LOAD	CLASSIFICATION	CONN. LOAD	DEMANI FACTOF		TIMAT DEMAN		ANEI	BOARD	GENERAL	NOTES:									PANELBOARD TOTALS	
COOL	ING	6480 VA	100.00	)%	6480	VA A.	WIRE	AND GROU	JND SIZE SH	HALL BE #12	UNLESS OTI	HERWISE NO	OTED.						TOTAL CONN. LOAD:	238540 VA
HEATI	NG	43897 VA	100.00	)%	43897	VA													TOTAL EST. DEMAND LOAD:	209230 VA
LIGHT	ING	10437 VA	125.00	)%	13046	VA													TOTAL CONN. CURRENT:	287 A
мото	RS	7675 VA	100.00	)%	7675	VA												Т	OTAL EST. DEMAND CURRENT:	252 A



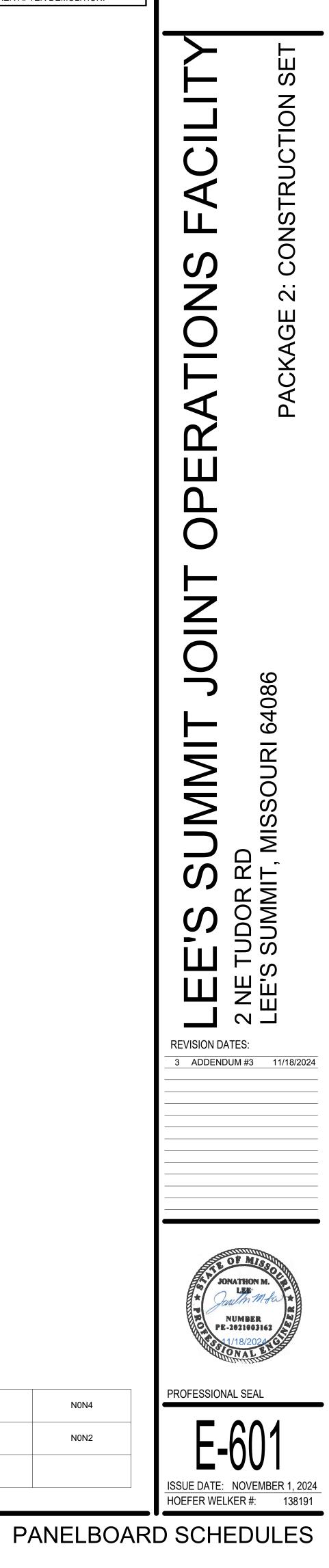
			F		RATING: 1 IRRENT: 4											
			C		T. DROP: 1 UNTING: S											
					CATION: E											
		BKR AMP	Р		<b>A</b>		3	(	<b>.</b>	Р			WIRE SIZE	NOTES	DESCRIPTION	CKT NO.
		20 20	1	1440	1440	360	1080			1	20 20				RCPT-129-DC-OPP RCPT-128-OPP. DIV CONF ROOM	2
		20	1			300	1000	360	1080	1	20				RCPT-127-AC - TRAIN	6
		20	1	360	1080	1000	1000			1	20 20				RCPT-126-BC - TRAIN-FUT. RCPT-125-ADMIN MGR	8 10
		20 20	1			1080	1080	360	1080	1	20				RCPT-125-ADMIN MGR RCPT-124-PR - FUTURE	10
		20	1	360	900					1	20				RCPT-121-CHIEF	14
		20 20	1			540	900	0	1080	1	20 20				RCPT-121-CHIEF'S DESK RCPT-130-133-RR/134 ROOF	16 18
		20	1	0	1080			0	1000	1	20				RCPT-159-CORR. WORKSTATIONS 1	20
		20	1			360	1080	700	4000	1	20				RCPT-159-CORR. WORKSTATIONS 2	22
		20 20	1	900	360			720	1080	1	20 20				RCPT-109-OPEN OFFICE N.E CORNER RCPT-109-OPEN OFFICE WRKSTN 2	24 26
		20	1			720	1500			1	20				RCPT-108-COFFEE	28
		20	1	1000	E40			720	400	1	20				RCPT-108-U.C. FRIDGE	30
		20 20	1	1200	540	1200	800			1	20 20				RCPT-108-COUNTER RCPT-108-COPIER	32 34
		20	1					1200	360	1	20				RCPT-108-COPY/WORK	36
		20 20	1	900	1440	540	1260			1	20 20				RCPT-120-COLLAB RCPT-106-STORAGE	38 40
		20	1			540	1200	360	900	1	20				RCPT-109-OPEN OFFICE N.W CORNER	
		20	1	1380	360					1	20				RCPT-109-OPEN OFFICE WRKSTN 1	44
6	10	50	2			90	1440	90	1440	1	20 20				RCPT-158-RECEPTION RCPT-116-AC-SS	46
		20	1	180	1080			50	1440	1	20				RCPT-115-DC - ADMIN	50
		20	1			400	1080	000	4000	1	20				RCPT-114-ADMIN DIV CONF.	52
		20 20	1	1200	1080			800	1080	1	20 20				RCPT-113-AC - EMS RCPT-112-MED. DIRECTOR	54 56
		20	1			1200	1080			1	20				RCPT-111-AC - PREV	58
		20 20	1	1080	1620			360	1080	1	20 20				RCPT-110-BC - PREV RCPT-105-CONFERENCE	60 62
		20	1	1000	1020	800	1260			1	20				RCPT-101/103 - LOBBY/RR	64
		20	1					800	1000	1	20				PWR - W VEST. DOORS	66
		20 20	1	720	360	900	1056			1	20 15				RCPT - ROOF AC-1	68 70
		20	1			000	1000	180	540	1	20				RCPT - E. EXTERIOR PATIO	72
		20	1	1000	360	400	100			1	20				RCPT - E. EXTERIOR DISPATCH	74
10	10	30	2			400	180	400	360	1	20 20				RCPT - W. EXTERIOR RCPT-135-CORR	76 78
		20	1	1080	180					1	20				RCPT-EL-1-ELEVATOR PIT	80
		20 20	1			360	360	1080	180	1	20 20				RCPT-EL-1-SP1 RCPT-EL-1-TOP OF SHAFT	82 84
_		20	1	1440	180			1060	100	1	20				RCPT-EL-1-TOP OF SHAFT RCPT-EL-1-ELEVATOR COMM	86
		20	1			1440	200			1	20				LTG-EL-1-CAB LIGHTS	88
		20	1	250	720			360	1000	1	20 20				PWR-001-VEST AUTO OPENERS RCPT-040/041-ELEC, IT	90 92
		20	2	200	120	250	360			1	20				RCPT-041-IT W. WALL	94
		20	1	200	260			1200	360	1	20				RCPT-041-IT S. WALL	96
		20 20	1	200	360	0	360			1	20 20				RCPT-041-IT E. WALL RCPT-041-RACK 1 A	98 100
		20	1					0	360	1	20				RCPT-041-RACK 1 B	102
		20 20	1	0	360	0	360			1	20 20				RCPT-041-RACK 2 A RCPT-041-RACK 2 B	104
		20	1			0	500	0	180	1	20				RCPT-022-MEDIA	108
		20	1	0	0					1	20				SPARE	110
		20 20	1			0	0	0	0	1	20 20				SPARE SPARE	112 114
		20	1	0	0					1	20				SPARE	116
		20	1			0	0		0	1	20				SPARE	118
		20 20	1	0	2018			0	0	1	20				SPARE	120 122
		20	1			0	2018			5 3	20				PWR - DOCK LEVELER	124
		20	1	2000	8 VA	0000		0	2018 \ 8 VA	4	L.		Land		Lananananana	126
		AL LO			8 VA 8 A		9 A		5 A	+		~				
		AL AM BALAN			8 A 0%		9 A 1%		5 A 91%	-						

PANELBOARD TOTALS TOTAL CONN. LOAD: 81871 VA TOTAL EST. DEMAND LOAD: 51171 VA TOTAL CONN. CURRENT: 227 A TOTAL EST. DEMAND CURRENT: 142 A

PANELBOARD NOTES: THIS IS A MASTER LIST THAT APPLIES TO ALL PANELBOARDS. NOT ALL NOTES MAY BE USED. AF ARC FAULT CIRCUIT INTERRUPTER (AFCI) BREAKER. ROUTE CIRCUIT THROUGH CONTACTOR #. C# EMERGENCY LIGHTING HANDLE ON CLAMP. EM EXISTING TO REMAIN. EX FIRE ALARM CIRCUIT. RED HANDLE, HANDLE FA ON CLAMP. GROUND FAULT CIRCUIT INTERRUPTER (GFCI) BREAKER. PROVIDE HANDLE TIES TO COMPLY WITH NEC HT# 210.4(B). # INDICATES GROUPING (I.E. GROUP 1 TOGETHER, ETC.). HANDLE PADLOCKABLE OFF DEVICE. HANDLE ON CLAMP. PROVIDE NEW BREAKER IN EXISTING NB PANELBOARD. AIC RATING OF NEW BREAKER SHALL MATCH THE PANELBOARD AIC RATING. TB# TANDEM 20A BREAKER. # INDICATES GROUPING. REFER TO ONE-LINE DIAGRAM FOR FEEDER INFORMATION. REUSE EXISTING BREAKER TO SERVE NEW RB LOAD. SD SPARE BREAKER AFTER DEMOLITION.

N0S4

N0S2A



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			UNIT	MATIC	ONIOF	ONIOF			SING	NING	ST SU ICI	
ROOM NAME	DE	alon NO	AUTO	ANNIA N	ONOF ONOF	SCUP	DCUPP	N CANCE AND CANCEL	AT. PH	T. OH	NHR OTHER NOTES	
ALL SPACES (UNO)	30		•				•					
CONFERENCE ROOMS	50			•			•					
CORRIDORS, LOBBIES, VESTIBULES	20				•			•		•		
DISPATCH, DISPATCH TRAINING	30	•		•								
ELEC, IT, AND MECH ROOMS	30	•	•									
EOC	50			•			•			•		
EXTERIOR AREA, POLE-MOUNTED	1.5								•		1,4	
EXTERIOR FACADE, SCONCES	N/A								•		2,4	
EXTERIOR PLANTERS, WINDOWS	N/A								•		3,4	
LOCKERS, RESTROOMS, TOILETS	10				•							
OPEN OFFICES	30		•		•							
SIMULATORS	30	•		•								

A. NO AUTOMATIC CONTROL: NO AUTOMATIC CONTROL OF LIGHT FIXTURES PROVIDED DUE TO C405.2.2 EXCEPTION 1. B. MANUAL ON/OFF CONTROL: MANUAL CONTROL LOCATED WITHIN THE SPACE FOR OCCUPANT ON/OFF LIGHTING CONTROL.

- . MANUAL ON/OFF/DIMMING CONTROL: MANUAL CONTROL LOCATED WITHIN THE SPACE FOR OCCUPANT ON, OFF, RAISE, AND LOWER LIGHTING CONTROL. D. OCCUPANCY SENSOR, AUTO ON (100%): UPON DETECTING OCCUPANCY, LIGHTS SHALL AUTOMATICALLY TURN ON AT FULL OUTPUT (ADJ), EITHER PER C405.2.1.1 EXCEPTION OR FOR OPEN OFFICES. UPON NOT DETECTING
- OCCUPANCY FOR 20 MINUTES, LIGHTS SHALL AUTOMATICALLY TURN OFF. OCCUPANCY SENSOR, AUTO ON (50%): UPON DETECTING OCCUPANCY, LIGHTS SHALL AUTOMATICALLY TURN ON AT 50% OUTPUT (ADJ, MAX 50%). UPON NOT DETECTING OCCUPANCY FOR 20 MINUTES, LIGHTS SHALL AUTOMATICALLY
- TURN OFF. F. VACANCY SENSOR: LIGHTS SHALL NOT TURN ON AUTOMATICALLY. UPON NOT DETECTING OCCUPANCY FOR 20 MINUTES, LIGHTS SHALL AUTOMATICALLY TURN OFF.
- INTERIOR (INT.) DIMMING SCHEDULE CONTROLS: LIGHT FIXTURES SHALL BE ON 24/7. DURING DAYLIGHT HOURS, LIGHTS SHALL BE ON AT 100% OUTPUT (ADJ). DURING NIGHT HOURS, LIGHTS SHALL DIM TO 75% OUTPUT (ADJ). DIMMING SHALL OCCUR OVER A 10-MINÙTE (ADJ) INTERVAL.
- EXTERIOR (EXT.) DIMMING SCHEDULE CONTROLS : DURING DAYLIGHT HOURS, LIGHTS SHALL BE OFF. DURING EARLY NIGHT HOURS, LIGHTS SHALL AUTOMATICALLY TURN ON TO 100% OUTPUT (ADJ). DURING LATE NIGHT HOURS, LIGHTS SHALL AUTOMATICALLY DIM TO LEVELS NOTED PER LEE'S SUMMIT UNIFIED DEVELOPMENT
- ORDINANCE 8.250(K). DIMMING SHALL OCCUR OVER A 10-MINUTE (ADJ) INTERVAL. EMERGENCY LIGHTING CONTROL: UPON A LOSS OF NORMAL POWER (BROWNOUT OR BLACKOUT), LIGHTS DESIGNATED AS EMERGENCY SHALL TURN ON TO FULL OUTPUT UNTIL POWER IS FULLY RESTORED. UPON RESTORATION OF NORMAL POWER, NORMAL LIGHTING CONTROL SHALL RESUME. EMERGENCY POWER IS PROVIDED BY BATTERIES INTEGRAL TO LIGHT FIXTURES.
- LIGHTING CONTROLS SEQUENCE OF OPERATION NOTES: 1. EXTERIOR AREA AND POLE-MOUNTED LIGHT FIXTURES SHALL DIM TO 65% OUTPUT (ADJ). 2. EXTERIOR FACADE SPOTLIGHTS AND SCONCES SHALL DIM TO 50% OUTPUT (ADJ).
- . EXTERIOR PLATER AND WINDOW WELL LIGHTS SHALL DIM TO 30% OUTPUT (ADJ). 4. TOTAL WATTAGE DIMMED VS UNDIMMED SHALL EQUAL 50% PER UDO 8.250(K).
- LIGHTING CONTROLS SEQUENCE OF OPERATION SCHEDULES: • DAYLIGHT HOURS: DAWN TO DUSK.
- NIGHT HOURS: DUSK TO DAWN. • EARLY NIGHT HOURS: DUSK TO MIDNIGHT.

3/4

• LATE NIGHT HOURS: MIDNIGHT TO DAWN.

FEATU	
RELAY	C٢
No.	
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		LIGH		DEVICE SCHEDULE	
LABEL	MANUFACTURER	MODEL	APPROVED EQUIVALENT	DESCRIPTION	NOTES
	OLTAGE DIMMERS				
D	LEVITON	DS710-10Z	ACUITY, HUBBEL, LUTRON	0-10V DIMMING SWITCH.	
LOW V	OLTAGE SWITCHES				
LV	ACUITY nLIGHT	nPODMA	ETC NX CONTROLS WATTSTOPPER	LOW VOLTAGE WALL SWITCH WITH ON/OFF BUTTONS AND INDICATOR LIGHT.	1
LVD	ACUITY nLIGHT	nPODMA DX	ETC NX CONTROLS WATTSTOPPER	LOW VOLTAGE SWITCH WITH ON/OFF, RAISE, AND LOWER BUTTONS AND INDICATOR LIGHTS.	1
OCCUF	ANCY SENSORS				
OA	ACUITY nLIGHT	rCM PDT 10 RJB	ETC NX CONTROLS WATTSTOPPER	DUAL TECHNOLOGY, LOW VOLTAGE CEILING OCCUPANCY SENSOR.	1
RELAY	S				
RA	ACUITY nLIGHT	nPP16	ETC NX CONTROLS WATTSTOPPER	ON/OFF ROOM CONTROLLER.	1
RD	ACUITY nLIGHT	nPP16 D	ETC NX CONTROLS WATTSTOPPER	0-10V DIMMING ROOM CONTROLLER.	1
RE	ACUITY nLIGHT	nPP16 D ER	ETC NX CONTROLS WATTSTOPPER	UL924 ROOM CONTROLLER WITH 0-10V DIMMING OVERRIDE.	1
WALL S	WITCH OCCUPANCY S	ENSORS			
OS	ACUITY nLIGHT	nWSX PDT LV		DUAL TECHNOLOGYH OCCUPANCY SENSOR WITH INTEGRAL ON/OFF SWITCH.	1
OSD	ACUITY nLIGHT	nWSX PDT D	ETC NX CONTROLS WATTSTOPPER	DUAL TECHNOLIGY OCCUPANCY SENSOR WITH RAISE/LOWER BUTTONS.	1
<u>LIGHTI</u>	NG CONTROL DEVICE S	CHEDULE GENERAL NO	<u>DTES:</u>		
A.	SHALL ONLY BE ACCE	PTED IF SUBMITTED W	TH AN APPROVED SUB	AND MODELS OR APPROVED EQUIVALENTS. ADDITIONAL CON STITUTION FORM. LIGHTING CONTROLS BID WITHOUT BEING L OVAL OF THE ARCHITECT AND ENGINEER ARE AT THE CONTRA	ISTED
B.		TINGS AND LOCATIONS			
C.	PROJECTORS, OR OTH	HER CEILING-MOUNTED	OBSTRUCTIONS.	ED WITHIN FOUR FEET OF DIFFUSERS, CEILING MOUNTED	
D.		D FULLY COMMISSIONE		IONS WITH OWNER PRIOR TO SUBSTANTIAL COMPLETION. COM	NTRULS
LIGHTI	NG CONTROL DEVICE S	CHEDULE NOTES:			
<u>1.</u>		A SINGLE MANUFACTU	JRER AND COMPATIBLE	E AS A SYSTEM.	

## **INVERTER: INV**

MANUFACTURER: IOTA MODEL: IISCN 8000 277IN 277OUT 90M VOLTS/PHASE IN: 277 V VOLTS/PHASE OUT: 277 ∨

WATTAGE: 8 KW

СКТ		DE	SCRIPTION		
1	LTG-MAIN ELEC	CTRICAL (021)	)		
2	LTG-LOWER LE	VEL EM			
3	LTG-MAIN LEVE	EL EM			
4	LTG-EXTERIOR	REM			
5	SPARE				
6	SPARE				
7	SPARE				
8	SPARE				
		CONN.	DEMAND	ESTIMATED	
LOAD CLASS	SIFICATION	LOAD	FACTOR	DEMAND	INVERTER
LIGHTING		4655 VA	125.00%	5818 VA	A. WIRE &
					B. REFER

	BASIS OF	DESIGN		NUMBER OF					
TYPE	MANUFACTURER	MODEL	COMPARTMENTS	DUPLEX RECEPTACLES	DATA KNOCKOUTS	COVER	ACCESSORIES	DESCRIPTION	NOTE
FA	LEGRAND	EFB45S-OG	4	2	2	EFB45BTC##TR	EFB8-MB	ON GRADE FLOOR BOX. SURFACE STYLE COVER WITH SOLID LID.	1,2
PA	LEGRAND	6ATCSP	2	2	2	6AT2PPCR##	EFB8-MB	FIRE RATED POKE-THRU. PRE-WIRED DUPLEX RECEPTACLE OUTLETS AND CENTER BRACKET FOR DATA.	1
PB	LEGRAND	6ATCFF	2	0	0	6CFFTCFF##	5PTHA, 12FFHA, 575CHA	FIRE RATED POKE-THRU. FURNITURE FEED COVER.	1,2
RA	LEGRAND	AF2KC2111PA	4	2	2	N/A	N/A	RAISED FLOOR BOX. FLUSH STYLE COVER WITH CARPET LID INSERT.	1,2,3
RB	LEGRAND	NCW111AL_M	0	0	0	N/A	N/A	FURNITURE POWER WHIP FROM RAISED FLOOR.	1,2,3
A. B. C.	WITHOUT THE WR DATA KNOCKOUTS COORDINATE FINA	DKE-THRUS LIST ITTEN APPROVA S REFERS TO TH AL, DIMENSIONE	ED ARE THE BASIS AL OF THE ARCHITE HE MAXIMUM NUMB D, LOCATIONS OF F	CT AND ENGINEEF	R ARE AT THE CO ETS THAT MAY BE	NTRACTOR'S RISI E INSTALLED IN TI	۲.	QUIREMENTS MAY BE SUBMITTED FOR REVIEW. CONTROL DEVIC	
FLOOR	BOX / POKE-THRU								
1.						S IN AREA WHERE	BOXES ARE INSTALLED.		
	COORDINATE EXA	CT A/V BRACKE	T WITH A/V VENDO	R PRIOR TO ORDE	RING.				
2.			FLOOR WIRING SY		-				

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1/8" = 1'-0" 0

NAME:													
MANUF	ACTURER:	ACUITY											
MODEL	-	ARP INTENC08 8FCR MVOLT 1	B HLK SM I	DTC									
FEATU	RES:	INTEGRAL TIME CLOCK, UL924	TEGRAL TIME CLOCK, UL924 RATING, VOLTAGE BARRIER										
RELAY	CKT & SWITCH		DIMMING		CC	NTROL							
No.	ID	DESCRIPTION	TYPE	VOLTAGE	ON	OFF	DIM	EM	NOTES				
1	N0S4-8, ra	EXTERIOR AREA LIGHTING	0-10V	277V	тс	TC	тс	NO					
2	N0S4-8, rb	EXTERIOR FACADE SPOTLIGHTS	0-10V	277V	TC	тс	N/A	NO					
3	N0S4-8, rc	EXTERIOR PLANTERS	0-10V	277V	тс	TC	тс	NO					
4	N0S4-8, rd	EXTERIOR SCONCES	0-10V	277V	тс	TC	тс	NO					
5	N0S4-8, re	EXTERIOR WINDOW WELLS	0-10V	277V	тс	TC	тс	NO					
6	N0S4-10, rf	DISPLAY CABINETS	0-10V	277V	N/A	N/A	тс	NO					
7	N0S4-10, rg	LOWER LEVEL CORRIDORS	0-10V	277V	N/A	N/A	тс	NO					
8	N0S4-10, rh	MAIN LEVEL CORRIDORS	0-10V	277V	N/A	N/A	тс	NO					
9	N0S4-10, rj	LOBBY UPLIGHT	0-10V	277V	N/A	N/A	тс	NO					
10	rk	SPARE	0-10V										
11	INV-2, rm	LOWER LEVEL EM LTG	0-10V	277V	N/A	N/A	тс	YES					
12	INV-3, rn	MAIN LEVEL EM LTG	0-10V	277V	N/A	N/A	тс	YES					
13	INV-3, ro	LOBBY UPLIGHT EM	0-10V	277V	N/A	N/A	тс	YES					
14	INV-4, rp	EXTERIOR EM	0-10V	277V	тс	TC	тс	YES					
15	rq	SPARE	0-10V					YES					
16	rs	SPARE	0-10V					YES					
GENEF	RAL NOTES:												

MANUFACTURER AND MODEL NUMBER LISTED ARE THE BASIS OF DESIGN. REFER TO SPECIFICATIONS FOR A LIST OF ALTERNATE MANUFACTURERS. ADDITIONAL MANUFACTURERS OF EQUAL QUALITY AND MEETING LISTED REQUIREMENTS AND SEQUENCE OF OPERATIONS MAY BE SUBMITTED FOR REVIEW. EQUIPMENT BID WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECT AND ENGINEER ARE AT THE CONTRACTOR'S

RELAYS WITH MATCHING CONTROL ZONES SHALL BE CONTROLLED TOGETHER. RELAYS WITH A CONTROL ZONE OF "N/A" SHALL BE CONTROLLED INDEPENDENTLY OF OTHER RELAYS.

### <u>G CODES:</u> )-10V DIMMING HASE DIMMING DMX DIMMING CONTROL

DMX DIMMING AND COLOR (RGB, RGBA, RGBW, ETC.) CONTROL

### <u>)L CODES:</u> MANUAL CONTROL CCUPANCY SENSOR CONTROL HOTOCELL CONTROL

FIMECLOCK CONTROL IRCADIAN RHYTHM CONTROL IL924 EMERGENCY LIGHTING OVERRIDE CONTROL (YES OR NO)

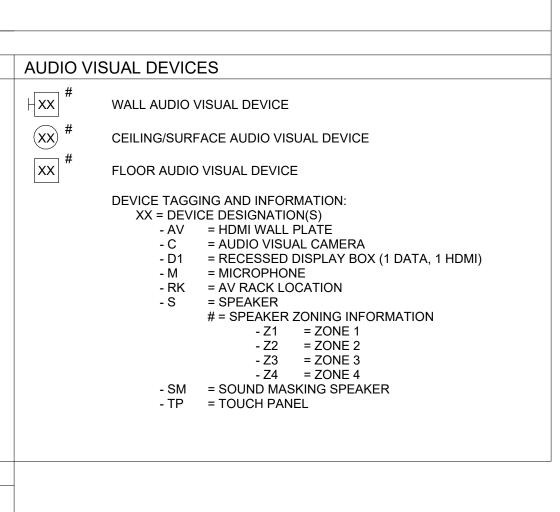
AIC RATING: 65,000 AIC FAULT CURRENT: 0 A SUPPLIED BY: N0S4 MOUNTING: SURFACE LOCATION: ELEC. 021							ESSORIES & OPTIONS ASS, BACNET	
	NO. POLES	TRIP RATING	WIRE SIZE		LOAD		NOTES	
	1	20 A	WIRE SIZE	GND SIZE			NOTES	
	1	20 A			1566			
	1	20 A			2316			
	1	20 A			703			
	1	20 A			0			
	1	20 A			0			
	1	20 A			0			
	1	20 A			0			
		-	то	TAL LOAD:	4655 V	A		
			то	TAL AMPS:	17 A		-	
& G		BE #12 UN	LESS OTHE			то	INVERTER TOTALS TOTAL CONN. LOAD: TOTAL EST. DEMAND: TOTAL CONN. CURRENT: DTAL EST. DEMAND CURRENT:	4655 VA 5818 VA 17 A

LL42WET CHANNEI EC803-L1 4T LQ627-L1 35702.023 35174.023 DSX1-P1- 2-PIRH-D DSX1-P1- 2-PIRH-D DSX1-P1- 2-PIRH-D DSX1-P1- 2-PIRH-D DSX1-P1- 2-PIRH-D USX1-P1- 2-PIRH-D USX1-P1- 2-PIRH-D SSR1-P2- 2-PIRH-D USX1-P1-	M_ LS 30 CRI U HE F B D T-T-SO-30K-SL68, KXL-F EL, PS010V-96-24-LOG 1W30R1-R5-277V-BKT-K3-ECM 1L10-R5-277V-BKT-K3 3 3 3 3 3 -3 -30K-T4M-MVOLT-SPA-NLTAIR -30K-T4M-MVOLT-SPA-NLTAIR DBLXD-G1 -30K-T4M-MVOLT-SPA-NLTAIR DBLXD-G1 -30K-T4M-MVOLT-SPA-NLTAIR DBLXD-G1 -30K-T4M-MVOLT-SPA-NLTAIR DBLXD-G1 -30K-T4M-MVOLT-SPA-NLTAIR DBLXD-G1 -30K-T4M-MVOLT-SPA-NLTAIR -30K-T4M-MVOLT-SPA-NLT	AREA LIGHTING SLD2, HEPER TERRA, SOLERA OTAY BEGA B84063, HEPER NORMA, SOLERA SSQB HEPER VEGA, LUMENPULSE LQS, TARGETTI DAM GRIVEN MOON, HEPER ZEROX S HYBRID, TARGETH KPL COOPER GALN, LSI MRM BEACON VP, COOPER GALN, SOLERA SLIM BEACON VPW1, LSI XWS SIL, SPITZER LIGHTING WPFP	LED LED LED LED LED LED LED LED LED LED	0-10V 0-10V 0-10V 0-10V 0-10V 0-10V 0-10V WIRELESS WIRELESS WIRELESS WIRELESS 0-10V 0-10V 0-10V 0-10V	6000 lm 6000 lm	3000 K 3000 K	277 V 277 V	8 VA 70 VA 54 VA 54 VA 140 VA 50 VA 15 VA 15 VA 15 VA	EXTERIOR RATED LED EXIT SIGN WITH EXIT LIGHTS AND COLD WEATHER BATTERY. REFER TO DRAWINGS FOR NUMBER AND DIRECTION OF CHEVRONS. SURFACE MOUNTED LINEAR LED. EXTERIOR AND VERTICAL RATED. BLACK FINISH.	
LL42WET CHANNEI EC803-L1 4T LQ627-L1 35702.023 35174.023 DSX1-P1- 2-PIRH-D DSX1-P1- 2-PIRH-D DSX1-P1- 2-PIRH-D DSX1-P1- 2-PIRH-D DSX1-P1- 2-PIRH-D USX1-P1- 2-PIRH-D USX1-P1- 2-PIRH-D SSR1-P2- 2-PIRH-D USX1-P1-	M_ LS 30 CRI U HE F B D T-T-SO-30K-SL68, KXL-F EL, PS010V-96-24-LOG 1W30R1-R5-277V-BKT-K3-ECM 1L10-R5-277V-BKT-K3 3 3 	AXIS EX2S, BARTCO LIGHTING BSW208, LSI LAW2 DIODELED DI24VVL2, KELVIX UNI3, TIVOLI TPLFS ARCHITECTURAL AREA LIGHTING SLD2, HEPER TERRA, SOLERA OTAY BEGA B84063, HEPER NORMA, SOLERA SSQB HEPER VEGA, LUMENPULSE LQS, TARGETTI DAM GRIVEN MOON, HEPER ZEROX S HYBRID, <b>JARGETITI DAM</b> GRIVEN MOON, HEPER ZEROX S HYBRID, <b>JARGETITI KPL</b> BEACON VP, COOPER GALN, LSI MRM BEACON VPW1, LSI XWS SIL, SPITZER LIGHTING WPFP BEACON VPW1, LSI XWS SIL, SPITZER LIGHTING WPFP	LED LED LED LED LED LED LED LED LED LED	0-10V 0-10V 0-10V 0-10V 0-10V WIRELESS WIRELESS WIRELESS WIRELESS 0-10V 0-10V 0-10V	119 lm 3700 lm 1200 lm 2000 lm 950 lm 6000 lm 6000 lm 16000 lm 2000 lm 2000 lm 2000 lm 2000 lm	3000 K 3000 K	277 V 277 V	1 VA 38 VA 13 VA 13 VA 19 VA 8 VA 70 VA 54 VA 54 VA 140 VA 15 VA 15 VA 15 VA 15 VA	NUMBER AND DIRECTION OF CHEVRONS.         SURFACE MOUNTED LINEAR LED. EXTERIOR AND VERTICAL RATED. BLACK FINISH.         IP68-RATED LED TAPE WITH FROSTED LENSED CHANNEL. EXTERIOR RATED. PROVIDE WITH POWER SUPPLY SIZED FOR TOTAL LENGTH.         POST TOP LED FIXTURE WITH DECORATIVE TOP COVER. EXTERIOR RATED. PROVIDE WITH 10'-0" TALL, 4" DIAMETER ROUND POLE. BLACK FINISH.         SQUARE LED BOLLARD. EXTERIOR RATED. 6" SQUARE BY 42" TALL. BLACK FINISH.         SURFACE MOUNTED LED WALL WASH FLOOD. EXTERIOR RATED. BLACK FINISH.         AIMABLE LED WELL LIGHT. NARROW SPOT. EXTERIOR RATED. BLACK FINISH.         RECTANGULAR LED AREA LIGHT. EXTERIOR RATED. TYPE 4 DISTRIBUTION. BLACK FINISH. PROVIDE WITH 6" WIDE SQUARE POLE. POLE HEIGHT. INCLUDING CONCRETE BASE, SHALL NOT EXCEED 15'-0" OR 20'-0" AFG (RE:ES101).         WIRELESS CONTROLS FOR AUTOMATIC DIMMING.         SIMILAR TO TYPE SP1, EXCEPT LOWER LUMEN PACKAGE, TYPE FORWARD THROW DISTRIBUTION, AND HOUSE SIDE SHIELD.         SIMILAR TO TYPE SP1, EXCEPT WITH (2) HEADS AT 180 DEGREES ON THE SAME POLE.         VERTICAL WALL SCONCE WITH FLAT METAL BODY. EXTERIOR RATED. BLACK FINISH.         LED EXTERIOR WALL PACK. BLACK FINISH.         LED EXTERIOR WALL PACK. BLACK FINISH.         SIMILAR TO TYPE SW2, EXCEPT WITH INTEGRAL PHOTOCELL FOR ON/OFF CONTROL.         SIMILAR TO TYPE DR1, EXCEPT RATED FOR SHOWERS.         SIMILAR TO TYPE DR1, EXCEPT RATED FOR SHOWERS.         EDGE LIT LED EXIT SIGN WITH RED LETTERS ON A MIRROR	1,2
CHANNEI EC803-L1 4T LQ627-L1 35702.023 35702.023 35174.023 DSX1-P1- 2-PIRH-D DSX1-P1- 2-PIRH-D DSX1-P1- 2-PIR-HS DSX1-P1- 2-PIRH-D DSX1-P1- 2-PIRH-D DSX1-P1- 2-PIRH-D SX1-P2- 2-PIRH-D SX1-P1- S	T-T-SO-30K-SL68, KXL-F EL, PS010V-96-24-LOG 1W30R1-R5-277V-BKT-K3-ECM 1L10-R5-277V-BKT-K3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	LSI LAW2 DIODELED DI24VVL2, KELVIX UNI3, TIVOLI TPLFS ARCHITECTURAL AREA LIGHTING SLD2, HEPER TERRA, SOLERA OTAY BEGA B84063, HEPER NORMA, SOLERA SSQB HEPER VEGA, LUMENPULSE LQS, TARGETTI DAM GRIVEN MOON, HEPER ZEROX S HYBRID, TARGETTI KPL BEACON VP, COOPER GALN, LSI MRM BEACON VPW1, LSI XWS SIL, SPITZER LIGHTING WPFP BEACON VPW1, LSI XWS SIL, SPITZER LIGHTING UD4L-LITE LES, LSL LSX, MULE CEL DUAL-LITE LES, LSL LSX, MULE CEL DUAL-LITE LES, LSL LSX, MULE CEL DUAL-LITE LES, LSL LSX, MULE CEL	LED LED LED LED LED LED LED LED LED LED	0-10V 0-10V 0-10V 0-10V WIRELESS WIRELESS WIRELESS WIRELESS 0-10V 0-10V 0-10V	3700 lm 1200 lm 2000 lm 950 lm 6000 lm 6000 lm 16000 lm 2000 lm 2000 lm 2000 lm 2000 lm	3000 K 3000 K	277 V 277 V	38 VA 13 VA 13 VA 19 VA 8 VA 70 VA 54 VA 54 VA 140 VA 15 VA 15 VA 15 VA 15 VA	EXTERIOR RATED. PROVIDE WITH POWER SUPPLY SIZED FOR TOTAL LENGTH. POST TOP LED FIXTURE WITH DECORATIVE TOP COVER. EXTERIOR RATED. PROVIDE WITH 10'-0" TALL, 4" DIAMETER ROUND POLE. BLACK FINISH. SQUARE LED BOLLARD. EXTERIOR RATED. 6" SQUARE BY 42" TALL. BLACK FINISH. SURFACE MOUNTED LED WALL WASH FLOOD. EXTERIOR RATED. BLACK FINISH. AIMABLE LED WELL LIGHT. NARROW SPOT. EXTERIOR RATED. BLACK FINISH. AIMABLE NED WELL LIGHT. NARROW SPOT. EXTERIOR RATED. BLACK FINISH. MILAR LED AREA LIGHT. EXTERIOR RATED. TYPE 4 DISTRIBUTION. BLACK FINISH. SQUARE POLE. POLE HEIGHT, INCLUDING CONCRETE BASE, SHALL NOT EXCEED 15'-0" OR 20'-0" AFG (RE:ES101). WIRELESS CONTROLS FOR AUTOMATIC DIMMING. SIMILAR TO TYPE SP1, EXCEPT LOWER LUMEN PACKAGE AND HOUSE SIDE SHIELD. SIMILAR TO TYPE SP1, EXCEPT LOWER LUMEN PACKAGE, TYPE FORWARD THROW DISTRIBUTION, AND HOUSE SIDE SHIELD. SIMILAR TO TYPE SP1, EXCEPT WITH (2) HEADS AT 180 DEGREES ON THE SAME POLE. VERTICAL WALL SCONCE WITH FLAT METAL BODY. EXTERIOR RATED. BLACK FINISH. LED EXTERIOR WALL PACK. BLACK FINISH. EDGE LIT LED DOWNLIGHT. CLEAR SEMI SPECULAR REFLECTOR AND TRIM. SIMILAR TO TYPE DR1, EXCEPT RATED FOR SHOWERS. EDGE LIT LED EXIT SIGN WITH RED LETTERS ON A MIRROR	
4T LQ627-L1 35702.023 35702.023 35174.023 DSX1-P2- 2-PIRH-D DSX1-P1- 2-PIR-HS DSX1-P1- 2-PIR-HS DSX1-P2- 2-PIRH-D USX1-P2- 2-PIRH-D USX1-P2- 2-PIRH-D USX1-P2- 2-PIRH-D USX1-P1- 2-PIR-HS DSX1-P2- 2-PIRH-D USX1-P1- 2-PIR-HS DSX1-P1- 2-PIR-HS DSX1-P1- 2-PIR-HS DSX1-P2- 2-PIRH-D USX1-P2- 2-PIRH-D USX1-P2- 2-PIRH-D USX1-P2- 2-PIRH-D USX1-P1- 2-PIR-HS DSX1-P2- 2-PIRH-D USX1-P1- 2-PIRH-D USX1-P2- 2-PIRH-D DSX1-P2- 2-PIRH-D DSX1-P2- 2-PIRH-D DSX1-P2- 2-PIRH-D DSX1-P2- 2-PIRH-D DSX1-P2- 2-PIRH-D DSX1-P2- 2-PIRH-D DSX1-P2- 2-PIRH-D DSX1-P2- 2-PIRH-D USX1-P2- 2-PIRH-D USX1-P2- 2-PIRH-D DSX1-P2- 2-PIRH-D	1W30R1-R5-277V-BKT-K3-ECM 1L10-R5-277V-BKT-K3 3 3 3 	ARCHITECTURAL AREA LIGHTING SLD2, HEPER TERRA, SOLERA OTAY BEGA B84063, HEPER NORMA, SOLERA SSQB HEPER VEGA, LUMENPULSE LQS, TARGETTI DAM GRIVEN MOON, HEPER ZEROX S HYBRID, TARGETTI KPL BEACON VP, COOPER GALN, LSI MRM BEACON VPW1, LSI XWS SIL, SPITZER LIGHTING WPFP BEACON VPW1, LSI XWS SIL, SPITZER LIGHTING UD4LITE LES, LSL LSX, MULE CEL DUAL-LITE LES, LSL LSX, MULE CEL DUAL-LITE LES,	LED LED LED LED LED LED LED LED LED LED	0-10V 0-10V 0-10V WIRELESS WIRELESS WIRELESS WIRELESS 0-10V 0-10V 0-10V	1200 lm 2000 lm 950 lm 6000 lm 6000 lm 16000 lm 2000 lm 2000 lm 2000 lm 2000 lm	3000 K 3000 K	277 V 277 V	13 VA 19 VA 8 VA 70 VA 54 VA 54 VA 140 VA 15 VA 15 VA 15 VA 16 VA	POST TOP LED FIXTURE WITH DECORATIVE TOP COVER. EXTERIOR RATED. PROVIDE WITH 10'-0" TALL, 4" DIAMETER ROUND POLE. BLACK FINISH. SQUARE LED BOLLARD. EXTERIOR RATED. 6" SQUARE BY 42" TALL. BLACK FINISH. SURFACE MOUNTED LED WALL WASH FLOOD. EXTERIOR RATED. BLACK FINISH. AIMABLE LED WELL LIGHT. NARROW SPOT. EXTERIOR RATED. BLACK FINISH. RECTANGULAR LED AREA LIGHT. EXTERIOR RATED. TYPE 4 DISTRIBUTION. BLACK FINISH. PROVIDE WITH 6" WIDE SQUARE POLE. POLE HEIGHT, INCLUDING CONCRETE BASE, SHALL NOT EXCEED 15'-0" OR 20'-0" AFG (RE:ES101). WIRELESS CONTROLS FOR AUTOMATIC DIMMING. SIMILAR TO TYPE SP1, EXCEPT LOWER LUMEN PACKAGE AND HOUSE SIDE SHIELD. SIMILAR TO TYPE SP1, EXCEPT LOWER LUMEN PACKAGE, TYPE FORWARD THROW DISTRIBUTION, AND HOUSE SIDE SHIELD. SIMILAR TO TYPE SP1, EXCEPT WITH (2) HEADS AT 180 DEGREES ON THE SAME POLE. VERTICAL WALL SCONCE WITH FLAT METAL BODY. EXTERIOR RATED. BLACK FINISH. LED EXTERIOR WALL PACK. BLACK FINISH. LED EXTERIOR WALL PACK. BLACK FINISH. SIMILAR TO TYPE SW2, EXCEPT WITH INTEGRAL PHOTOCELL FOR ON/OFF CONTROL.	
35702.023 35174.023 DSX1-P2- 2-PIRH-D DSX1-P1- 2-PIRH-D DSX1-P1- 2-PIRH-D DSX1-P1- 2-PIRH-D DSX1-P1- 2-PIRH-D DSX1-P1- 2-PIRH-D USX1-P1- 2-PIRH-D SSX1-P2- 2-PIRH-D USX1-P1- 82-PIR-H DSX1-P1- 2-PIRH-D USX1-P1- 2-PIRH-D SSX1-P1- 2-PIRH-D USX1-P1- 2-PIRH-D SSX1-P1- 2-PIRH-D USX1-P1- 2-PIRH-D SSX1-P1- 2-PIRH-D USX1-P1- 2-PIRH-D USX1-P1- 2-PIRH-D SSX1-P1- 2-PIRH-D USX1-P1- 2-PIRH-D USX1-P1- 2-PIRH-D SSX1-P1- 2-PIRH-D USX1-P1- 2-PIRH-D DSX1-P1- 2-PIRH-D DSX1-P1- 2-PIRH-D DSX1-P1- 2-PIRH-D DSX1-P1- 2-PIRH-D DSX1-P1- 2-PIRH-D DSX1-P1- 2-PIRH-D DSX1-P1- 2-PIRH-D DSX1-P1- 2-PIRH-D DSX1-P1- 2-PIRH-D DSX1-P1- 2-PIRH-D DSX1-P1- 2-PIRH-D DSX1-P1- 2-PIRH-D DSX1-P1- 2-PIRH-D DSX1-P1- 2-PIRH-D DSX1-P1- 2-PIRH-D DSX1-P1- 2-PIRH-D DSX1-P1- 2-PIRH-D DSX1-P1- D	1L10-R5-277V-BKT-K3         3         3         3         3         -30K-T4M-MVOLT-SPA-NLTAIR         -30K-T4M-MVOLT-SPA-NLTAIR         -30K-TFTM-MVOLT-SPA-NLTAIR         -30K-TFTM-MVOLT-SPA-NLTAIR         -30K-T4M-MVOLT-SPA-NLTAIR         -30K-T4M-MVOLT-SPA-NLTAIR         -30K-T4M-MVOLT-SPA-NLTAIR         -30K-T4M-MVOLT-SPA-NLTAIR         -30K-T4M-MVOLT-SPA-NLTAIR         DBLXD-G1         -30K-T4M-MVOLT-SPA-NLTAIR         DBLXD-G1         -200-30K-CLV-MV-PSB         LED P2 30K 90CRI VW MVOLT         G DBLXD         15LM 35K 90CRI VW MVOLT         DMG DBLXD         15LM 35K 90CRI MD MIN1         2T NCH P AR LSS F         35/15 DFR SOL MVOLT EZ1         R EL         MR EL         EL	BEGA B84063, HEPER NORMA, SOLERA SSQB HEPER VEGA, LUMENPULSE LQS, TARGETTI DAM GRIVEN MOON, HEPER ZEROX S HYBRID, TARGETH KPL BEACON VP, COOPER GALN, LSI MRM BEACON VPW1, LSI XWS SIL, SPITZER LIGHTING WPFP BEACON VPW1, LSI XWS SIL, SPITZER LIGHTING UPFP BEACON VPW1, LSI XWS SIL, SPITZER LIGHTING UPFP	LED LED LED LED LED LED LED LED LED	0-10V 0-10V WIRELESS WIRELESS WIRELESS WIRELESS 0-10V 0-10V 0-10V	2000 lm 950 lm 8000 lm 6000 lm 6000 lm 16000 lm 2000 lm 2000 lm 2000 lm 2000 lm	3000 K 3000 K 3000 K 3000 K 3000 K 3000 K 3000 K 3000 K 3000 K 3000 K	277 V 277 V	19 VA 8 VA 70 VA 54 VA 54 VA 140 VA 15 VA 15 VA 15 VA 15 VA	TALL. BLACK FINISH.         SURFACE MOUNTED LED WALL WASH FLOOD. EXTERIOR RATED. BLACK FINISH.         AIMABLE LED WELL LIGHT. NARROW SPOT. EXTERIOR RATED. BLACK FINISH.         RECTANGULAR LED AREA LIGHT. EXTERIOR RATED. TYPE 4 DISTRIBUTION. BLACK FINISH. PROVIDE WITH 6" WIDE SQUARE POLE. POLE HEIGHT, INCLUDING CONCRETE BASE, SHALL NOT EXCEED 15-0" OR 20-0" AFG (RE:ES101).         WIRELESS CONTROLS FOR AUTOMATIC DIMMING.         SIMILAR TO TYPE SP1, EXCEPT LOWER LUMEN PACKAGE AND HOUSE SIDE SHIELD.         SIMILAR TO TYPE SP1, EXCEPT WITH (2) HEADS AT 180 DEGREES ON THE SAME POLE.         VERTICAL WALL SCONCE WITH FLAT METAL BODY. EXTERIOR RATED. BLACK FINISH.         LED EXTERIOR WALL PACK. BLACK FINISH.         LED EXTERIOR WALL PACK. BLACK FINISH.         SIMILAR TO TYPE SW2, EXCEPT WITH INTEGRAL PHOTOCELL FOR ON/OFF CONTROL.         ROUND 4" LED DOWNLIGHT. CLEAR SEMI SPECULAR REFLECTOR AND TRIM.         SIMILAR TO TYPE DR1, EXCEPT RATED FOR SHOWERS.         EDGE LIT LED EXIT SIGN WITH RED LETTERS ON A MIRROR	
35174.023 DSX1-P2- 2-PIRH-D DSX1-P1- 2-PIR-HS DSX1-P1- R2-PIR-H DSX1-P2- 2-PIRH-D DSX1-P2- 2-PIRH-D USX1-P2- 2-PIRH-D USX1-P2- 2-PIRH-D USX1-P2- 2-PIRH-D USX1-P2- 2-PIRH-D USX1-P2- 2-PIR-H SRM DMC UVG10-61 SRM DMC SRM DMC SRM DMC SRM DMC SRM DMC SRM DMC SRM PE I SRM DMC SRM	3 3 -30K-T4M-MVOLT-SPA-NLTAIR DBLXD-G1 -30K-T4M-MVOLT-SPA-NLTAIR DBLXD-G1 -30K-TFTM-MVOLT-SPA-NLTAIR DBLXD-G1 -30K-T4M-MVOLT-SPA-NLTAIR DBLXD-G1 -30K-CLV-MV-PSB LED P2 30K 90CRI VW MVOLT G DBLXD LED P2 30K 90CRI VW MVOLT DMG DBLXD 15LM 35K 90CRI MD MIN1 T NCH P AR LSS F 35/15 DFR SOL MVOLT EZ1 R EL MR EL EL	HEPER VEGA, LUMENPULSE LQS, TARGETTI DAM GRIVEN MOON, HEPER ZEROX S HYBRID, TARGETH KPL BEACON VP, COOPER GALN, LSI MRM BEACON VPW1, LSI XWS SIL, SPITZER LIGHTING WPFP BEACON VPW1, LSI XWS SIL, SPITZER LIGHTING WPFP BEACON VPW1, LSI XWS SIL, SPITZER LIGHTING WPFP BEACON VPW1, LSI XWS SIL, SPITZER LIGHTING WPFP BEACON VPW1, LSI XWS SIL, SPITZER LIGHTING WPFP DEACON VPW1, LSI XWS SIL, SPITZER LIGHTING WPFP DUAL-LITE LES, LSL LSX, MULE CEL DUAL-LITE LES, LSL LSX, MULE CEL DUAL-LITE LES,	LED LED LED LED LED LED LED LED	0-10V WIRELESS WIRELESS WIRELESS WIRELESS 0-10V 0-10V 0-10V	950 lm 8000 lm 6000 lm 6000 lm 16000 lm 2000 lm 2000 lm 2000 lm 1500 lm	3000 K 3000 K 3000 K 3000 K 3000 K 3000 K 3000 K 3000 K 3000 K	277 V 277 V	8 VA 70 VA 54 VA 54 VA 140 VA 140 VA 15 VA 15 VA 15 VA 16 VA 14 VA	RATED. BLACK FINISH. AIMABLE LED WELL LIGHT. NARROW SPOT. EXTERIOR RATED. BLACK FINISH. RECTANGULAR LED AREA LIGHT. EXTERIOR RATED. TYPE 4 DISTRIBUTION. BLACK FINISH. PROVIDE WITH 6" WIDE SQUARE POLE. POLE HEIGHT, INCLUDING CONCRETE BASE, SHALL NOT EXCEED 15'-0" OR 20'-0" AFG (RE:ES101). WIRELESS CONTROLS FOR AUTOMATIC DIMMING. SIMILAR TO TYPE SP1, EXCEPT LOWER LUMEN PACKAGE AND HOUSE SIDE SHIELD. SIMILAR TO TYPE SP1, EXCEPT LOWER LUMEN PACKAGE, TYPE FORWARD THROW DISTRIBUTION, AND HOUSE SIDE SHIELD. SIMILAR TO TYPE SP1, EXCEPT WITH (2) HEADS AT 180 DEGREES ON THE SAME POLE. VERTICAL WALL SCONCE WITH FLAT METAL BODY. EXTERIOR RATED. BLACK FINISH. LED EXTERIOR WALL PACK. BLACK FINISH. SIMILAR TO TYPE SW2, EXCEPT WITH INTEGRAL PHOTOCELL FOR ON/OFF CONTROL. ROUND 4" LED DOWNLIGHT. CLEAR SEMI SPECULAR REFLECTOR AND TRIM. SIMILAR TO TYPE DR1, EXCEPT RATED FOR SHOWERS. EDGE LIT LED EXIT SIGN WITH RED LETTERS ON A MIRROR	~~~~
DSX1-P2- 2-PIRH-D DSX1-P1- 2-PIR-HS DSX1-P1- R2-PIR-H DSX1-P2- 2-PIRH-D USX1-P2- 2-PIRH-D USX1-P2- 2-PIRH-D USX1-P2- 2-PIRH-D USX1-P2- 2-PIRH-D USX1-P2- 2-PIRH-D USX1-P2- 2-PIRH-D USX1-P2- 2-PIRH-D USX1-P1- R2-PIR-H SRM DMC USX1-P1- R2-PIR-H SRM DMC USX1-P1- R2-PIR-H SSX1-P1- R2-PIR-H USX1-P1- R2-PIR-H USX1-P1- R2-PIR-H USX1-P1- R2-PIR-H USX1-P1- R2-PIR-H USX1-P1- R2-PIR-H USX1-P1- R2-PIR-H USX1-P1- R2-PIR-H USX1-P1- R2-PIR-H USX1-P2- 2-PIRH-D USX1-P2- DSX1-		HEPER ZEROX S HYBRID, JARGEJJIKKPL BEACON VP, COOPER GALN, LSI MRM BEACON VPW1, LSI XWS SIL, SPITZER LIGHTING WPFP BEACON VPW1, LSI XWS SIL, SPITZER LIGHTING UPFP BEACON VPW1, LSI XWS SIL, SPITZER LIGHTING UPFP BEACON VPW1, LSI XWS SIL, SPITZER LIGHTING UPFP DUAL-LITE LE, LSL LSX, MULE CEL DUAL-LITE LES, LSL LSX, MULE CEL DUAL-LITE LES,	LED LED LED LED LED LED LED	WIRELESS WIRELESS WIRELESS WIRELESS UIRELESS UIR	8000 lm 6000 lm 6000 lm 16000 lm 2000 lm 2000 lm 2000 lm	3000 K 3000 K 3000 K 3000 K 3000 K 3000 K 3000 K 3000 K	277 V 277 V 277 V 277 V 277 V 277 V 277 V 120 V 277 V 277 V	70 VA 54 VA 54 VA 140 VA 140 VA 15 VA 15 VA 16 VA 14 VA	RATED. BLACK FINISH. RECTANGULAR LED AREA LIGHT. EXTERIOR RATED. TYPE 4 DISTRIBUTION. BLACK FINISH. PROVIDE WITH 6" WIDE SQUARE POLE. POLE HEIGHT, INCLUDING CONCRETE BASE, SHALL NOT EXCEED 15'-0" OR 20'-0" AFG (RE:ES101). WIRELESS CONTROLS FOR AUTOMATIC DIMMING. SIMILAR TO TYPE SP1, EXCEPT LOWER LUMEN PACKAGE AND HOUSE SIDE SHIELD. SIMILAR TO TYPE SP1, EXCEPT LOWER LUMEN PACKAGE, TYPE FORWARD THROW DISTRIBUTION, AND HOUSE SIDE SHIELD. SIMILAR TO TYPE SP1, EXCEPT WITH (2) HEADS AT 180 DEGREES ON THE SAME POLE. VERTICAL WALL SCONCE WITH FLAT METAL BODY. EXTERIOR RATED. BLACK FINISH. LED EXTERIOR WALL PACK. BLACK FINISH. SIMILAR TO TYPE SW2, EXCEPT WITH INTEGRAL PHOTOCELL FOR ON/OFF CONTROL. ROUND 4" LED DOWNLIGHT. CLEAR SEMI SPECULAR REFLECTOR AND TRIM. SIMILAR TO TYPE DR1, EXCEPT RATED FOR SHOWERS. EDGE LIT LED EXIT SIGN WITH RED LETTERS ON A MIRROR	~~~~
2-PIRH-D DSX1-P1- 2-PIR-HS DSX1-P1- R2-PIR-H DSX1-P2- 2-PIRH-D USX1-P2- 2-PIRH-D USX1-P2- 2-PIRH-D USX1-P2- 2-PIRH-D USX1-P2- 2-PIRH-D USX1-P1- R2-PIR-H SRM-P2 2-PIRH-D USX1-P1- R2-PIR-H SRM-P2 2-PIRH-D USX1-P1- R2-PIR-HS USX1-P1- R2-PIR-HS USX1-P1- R2-PIR-HS USX1-P1- R2-PIR-HS USX1-P1- R2-PIR-HS USX1-P1- R2-PIR-HS USX1-P1- R2-PIR-HS USX1-P1- R2-PIR-HS USX1-P1- R2-PIR-HS USX1-P1- R2-PIR-HS USX1-P1- R2-PIR-HS USX1-P1- R2-PIR-HS USX1-P1- R2-PIR-HS USX1-P1- R2-PIR-HS USX1-P1- R2-PIR-HS USX1-P1- R2-PIR-HS USX1-P2- ST USX1-P2- ST USX1-P2-	298LXD-G1 -30K-T4M-MVOLT-SPA-NLTAIR S-DBLXD-G1 -30K-TFTM-MVOLT-SPA-NLTAIR 15-DBLXD-G1 -30K-T4M-MVOLT-SPA-NLTAIR 20-30K-CLV-MV-PSB LED P2 30K 90CRI VW MVOLT G DBLXD LED P2 30K 90CRI VW MVOLT DMG DBLXD 15LM 35K 90CRI MD MIN1 T NCH P AR LSS F 35/15 DFR SOL MVOLT EZ1 R EL MR EL EL	COOPER GALN, LSI MRM BEACON VP, COOPER GALN, LSI MRM BEACON VP, COOPER GALN, LSI MRM BEACON VP, COOPER GALN, LSI MRM BEACON VP, COOPER GALN, LSI MRM BEACON VPW1, LSI XWS SIL, SPITZER LIGHTING WPFP BEACON VPW1, LSI XWS SIL, SPITZER LIGHTING WPFP BEACON VPW1, LSI XWS SIL, SPITZER LIGHTING WPFP BEACON VPW1, LSI XWS SIL, SPITZER LIGHTING WPFP INTENSE LIGHTING LD4, WILLIAMS 4PR ALPHABET NU4, INTENSE LIGHTING LD4, WILLIAMS 4PR DUAL-LITE LE, LSL LSX, MULE CEL DUAL-LITE LES, LSL LSX, MULE CEL	LED LED LED LED LED LED	WIRELESS WIRELESS WIRELESS 0-10V 0-10V 0-10V	6000 lm 6000 lm 16000 lm 16000 lm 2000 lm 2000 lm	3000 K 3000 K 3000 K 3000 K 3000 K 3000 K 3000 K	277 V 277 V 277 V 277 V 277 V 277 V 120 V 277 V 2277 V	54 VA 54 VA 140 VA 50 VA 15 VA 15 VA 16 VA	DISTRIBUTION. BLACK FINISH. PROVIDE WITH 6" WIDE SQUARE POLE. POLE HEIGHT, INCLUDING CONCRETE BASE, SHALL NOT EXCEED 15-0" OR 20'-0" AFG (RE:ES101). WIRELESS CONTROLS FOR AUTOMATIC DIMMING. SIMILAR TO TYPE SP1, EXCEPT LOWER LUMEN PACKAGE AND HOUSE SIDE SHIELD. SIMILAR TO TYPE SP1, EXCEPT LOWER LUMEN PACKAGE, TYPE FORWARD THROW DISTRIBUTION, AND HOUSE SIDE SHIELD. SIMILAR TO TYPE SP1, EXCEPT WITH (2) HEADS AT 180 DEGREES ON THE SAME POLE. VERTICAL WALL SCONCE WITH FLAT METAL BODY. EXTERIOR RATED. BLACK FINISH. LED EXTERIOR WALL PACK. BLACK FINISH. SIMILAR TO TYPE SW2, EXCEPT WITH INTEGRAL PHOTOCELL FOR ON/OFF CONTROL.	
2-PIR-HS DSX1-P1- R2-PIR-H DSX1-P2- 2-PIRH-D USX1-P2- 2-PIRH-D WDGE2 L SRM DMG WDGE2 L SRM DMG WDGE2 L SRM PE I SRM PE I	S-DBLXD-G1 -30K-TFTM-MVOLT-SPA-NLTAI IS-DBLXD-G1 -30K-T4M-MVOLT-SPA-NLTAIR DBLXD-G1 	COOPER GALN, LSI MRM BEACON VP, COOPER GALN, LSI MRM BEACON VP, COOPER GALN, LSI MRM LIGHTWAY BLCW, SOLERA SLIM BEACON VPW1, LSI XWS SIL, SPITZER LIGHTING WPFP BEACON VPW1, LSI XWS SIL, SPITZER LIGHTING WPFP BEACON VPW1, LSI XWS SIL, SPITZER LIGHTING WPFP INTENSE LIGHTING LD4, WILLIAMS 4PR ALPHABET NU4, INTENSE LIGHTING LD4, WILLIAMS 4PR DUAL-LITE LE, LSL LSX, MULE CEL DUAL-LITE LES, LSL LSX, MULE CEL	LED LED LED LED LED	WIRELESS WIRELESS 0-10V 0-10V 0-10V 0-10V	6000 lm 16000 lm 4400 lm 2000 lm 2000 lm 1500 lm	3000 K 3000 K 3000 K 3000 K 3000 K	277 V 277 V 277 V 277 V 277 V 120 V 277 V 277 V	54 VA 140 VA 50 VA 15 VA 15 VA 16 VA	AND HOUSE SIDE SHIELD. SIMILAR TO TYPE SP1, EXCEPT LOWER LUMEN PACKAGE, TYPE FORWARD THROW DISTRIBUTION, AND HOUSE SIDE SHIELD. SIMILAR TO TYPE SP1, EXCEPT WITH (2) HEADS AT 180 DEGREES ON THE SAME POLE. VERTICAL WALL SCONCE WITH FLAT METAL BODY. EXTERIOR RATED. BLACK FINISH. LED EXTERIOR WALL PACK. BLACK FINISH. SIMILAR TO TYPE SW2, EXCEPT WITH INTEGRAL PHOTOCELL FOR ON/OFF CONTROL. ROUND 4" LED DOWNLIGHT. CLEAR SEMI SPECULAR REFLECTOR AND TRIM. SIMILAR TO TYPE DR1, EXCEPT RATED FOR SHOWERS. EDGE LIT LED EXIT SIGN WITH RED LETTERS ON A MIRROR	
R2-PIR-H DSX1-P2- 2-PIRH-D UGHTING OW610-6 WDGE2 L SRM DMC WDGE2 L SRM PE I SRM PE I SRM PE I SRM PE I EVO4S D MVOLT Z EVO4SH 90CRI EDGR 1 F EDG 2 RM	IS-DBLXD-G1 -30K-T4M-MVOLT-SPA-NLTAIR DBLXD-G1 	COOPER GALN, LSI MRM BEACON VP, COOPER GALN, LSI,MRM LIGHTWAY BLCW, SOLERA SLIM BEACON VPW1, LSI XWS SIL, SPITZER LIGHTING WPFP BEACON VPW1, LSI XWS SIL, SPITZER LIGHTING WPFP INTENSE LIGHTING LD4, PRESCOLITE LFR-4RDS, WILLIAMS 4PR ALPHABET NU4, INTENSE LIGHTING LD4, WILLIAMS 4PR ALPHABET NU4, INTENSE LIGHTING LD4, WILLIAMS 4PR DUAL-LITE LE, LSL LSX, MULE CEL DUAL-LITE LES, LSL LSX, MULE CEL	LED LED LED LED LED	WIRELESS 0-10V 0-10V 0-10V 0-10V	16000 lm <u>4400 lm</u> 2000 lm 2000 lm 1500 lm	3000 K 3000 K 3000 K 3000 K 3000 K	277 V 277 V 277 V 120 V 277 V 277 V	140 VA 50 VA 15 VA 15 VA 15 VA	TYPE FORWARD THROW DISTRIBUTION, AND HOUSE SIDE SHIELD. SIMILAR TO TYPE SP1, EXCEPT WITH (2) HEADS AT 180 DEGREES ON THE SAME POLE. VERTICAL WALL SCONCE WITH FLAT METAL BODY. EXTERIOR RATED. BLACK FINISH. LED EXTERIOR WALL PACK. BLACK FINISH. SIMILAR TO TYPE SW2, EXCEPT WITH INTEGRAL PHOTOCELL FOR ON/OFF CONTROL. ROUND 4" LED DOWNLIGHT. CLEAR SEMI SPECULAR REFLECTOR AND TRIM. SIMILAR TO TYPE DR1, EXCEPT RATED FOR SHOWERS. EDGE LIT LED EXIT SIGN WITH RED LETTERS ON A MIRROR	
2-PIRH-D LIGHTING OW610-60 WDGE2 L SRM DMG WDGE2 L SRM DMG WDGE2 L SRM PE I SRM PE I SRM PE I EVO4SH 90CRI EDGR 1 F EDGR 1 R EDG 2 RM	DBLXD-G1 DBLXD-S0-30K-CLV-MV-PSB LED P2 30K 90CRI VW MVOLT G DBLXD LED P2 30K 90CRI VW MVOLT DMG DBLXD 15LM 35K 90CRI MD MIN1 T NCH P AR LSS F 35/15 DFR SOL MVOLT EZ1 R EL MR EL EL	COOPER GALN, LSI,MRM LIGHTWAY BLCW, SOLERA SLIM BEACON VPW1, LSI XWS SIL, SPITZER LIGHTING WPFP BEACON VPW1, LSI XWS SIL, SPITZER LIGHTING WPFP INTENSE LIGHTING LD4, PRESCOLITE LFR-4RDS, WILLIAMS 4PR ALPHABET NU4, INTENSE LIGHTING LD4, WILLIAMS 4PR ALPHABET NU4, INTENSE LIGHTING LD4, WILLIAMS 4PR DUAL-LITE LE, LSL LSX, MULE CEL DUAL-LITE LES, LSL LSX, MULE CEL DUAL-LITE LES,	LED LED	0-10V 0-10V 0-10V	4400 lm 2000 lm 2000 lm	3000 K 3000 K 3000 K 3000 K	277 V 277 V 120 V 277 V 277 V 277 V	50 VA 15 VA 15 VA 15 VA	DEGREES ON THE SAME POLE. VERTICAL WALL SCONCE WITH FLAT METAL BODY. EXTERIOR RATED. BLACK FINISH. LED EXTERIOR WALL PACK. BLACK FINISH. SIMILAR TO TYPE SW2, EXCEPT WITH INTEGRAL PHOTOCELL FOR ON/OFF CONTROL. ROUND 4" LED DOWNLIGHT. CLEAR SEMI SPECULAR REFLECTOR AND TRIM. SIMILAR TO TYPE DR1, EXCEPT RATED FOR SHOWERS. EDGE LIT LED EXIT SIGN WITH RED LETTERS ON A MIRROR	
<ul> <li>WDGE2 L SRM DMG</li> <li>WDGE2 L SRM PE L</li> <li>WDGE2 L SRM PE L</li> <li>WDGE2 L SRM PE L</li> <li>EVO4SD MVOLT Z</li> <li>EVO4SH 90CRI</li> <li>EDGR 1 F</li> <li>EDG 2 RM</li> <li>EDG 1 R I</li> <li>MR3 D5 S</li> </ul>	LED P2 30K 90CRI VW MVOLT G DBLXD LED P2 30K 90CRI VW MVOLT DMG DBLXD 15LM 35K 90CRI MD MIN1 2T NCH P AR LSS F 35/15 DFR SOL MVOLT EZ1 R EL MR EL EL	SOLERA SLIM BEACON VPW1, LSI XWS SIL, SPITZER LIGHTING WPFP BEACON VPW1, LSI XWS SIL, SPITZER LIGHTING WPFP INTENSE LIGHTING LD4, PRESCOLITE LFR-4RDS, WILLIAMS 4PR ALPHABET NU4, INTENSE LIGHTING LD4, WILLIAMS 4PR DUAL-LITE LE, LSL LSX, MULE CEL DUAL-LITE LES, LSL LSX, MULE CEL	LED	0-10V 0-10V 0-10V	2000 lm 2000 lm 1500 lm	3000 K 3000 K 3500 K	277 V 120 V 277 V 277 V	15 VA 15 VA 16 VA 14 VA	EXTERIOR RATED. BLACK FINISH. LED EXTERIOR WALL PACK. BLACK FINISH. SIMILAR TO TYPE SW2, EXCEPT WITH INTEGRAL PHOTOCELL FOR ON/OFF CONTROL. ROUND 4" LED DOWNLIGHT. CLEAR SEMI SPECULAR REFLECTOR AND TRIM. SIMILAR TO TYPE DR1, EXCEPT RATED FOR SHOWERS. EDGE LIT LED EXIT SIGN WITH RED LETTERS ON A MIRROR	
SRM PE I SRM PE I VO4S D MVOLT Z EVO4SH 90CRI EDGR 1 F EDG 2 RM EDG 1 R MR3 D5 S	LED P2 30K 90CRI VW MVOLT DMG DBLXD 15LM 35K 90CRI MD MIN1 2T NCH P AR LSS F 35/15 DFR SOL MVOLT EZ1 R EL MR EL EL	WPFP BEACON VPW1, LSI XWS SIL, SPITZER LIGHTING WPFP INTENSE LIGHTING LD4, PRESCOLITE LFR-4RDS, WILLIAMS 4PR ALPHABET NU4, INTENSE LIGHTING LD4, WILLIAMS 4PR DUAL-LITE LE, LSL LSX, MULE CEL DUAL-LITE LES, LSL LSX, MULE CEL	LED	0-10V	1500 lm	3500 K	277 V 277 V	16 VA 14 VA	FOR ON/OFF CONTROL. ROUND 4" LED DOWNLIGHT. CLEAR SEMI SPECULAR REFLECTOR AND TRIM. SIMILAR TO TYPE DR1, EXCEPT RATED FOR SHOWERS. EDGE LIT LED EXIT SIGN WITH RED LETTERS ON A MIRROR	
IVO4S D MVOLT Z EVO4SH 90CRI EDGR 1 F EDG 2 RM EDG 1 R MR3 D5 S	15LM 35K 90CRI MD MIN1 2T NCH P AR LSS F 35/15 DFR SOL MVOLT EZ1 R EL MR EL	INTENSE LIGHTING LD4, PRESCOLITE LFR-4RDS, WILLIAMS 4PR ALPHABET NU4, INTENSE LIGHTING LD4, WILLIAMS 4PR DUAL-LITE LE, LSL LSX, MULE CEL DUAL-LITE LES, LSL LSX, MULE CEL DUAL-LITE LES,	LED				277 V	14 VA	REFLECTOR AND TRIM. SIMILAR TO TYPE DR1, EXCEPT RATED FOR SHOWERS. EDGE LIT LED EXIT SIGN WITH RED LETTERS ON A MIRROR	
MVOLT Z EVO4SH 90CRI EDGR 1 F EDG 2 RM EDG 1 R MR3 D5 S	2T NCH P AR LSS F 35/15 DFR SOL MVOLT EZ1 R EL MR EL	LD4, PRESCOLITE LFR-4RDS, WILLIAMS 4PR ALPHABET NU4, INTENSE LIGHTING LD4, WILLIAMS 4PR DUAL-LITE LE, LSL LSX, MULE CEL DUAL-LITE LES, LSL LSX, MULE CEL DUAL-LITE LES,	LED				277 V	14 VA	REFLECTOR AND TRIM. SIMILAR TO TYPE DR1, EXCEPT RATED FOR SHOWERS. EDGE LIT LED EXIT SIGN WITH RED LETTERS ON A MIRROR	
90CRI EDGR 1 F EDG 2 RM EDG 1 R MR3 D5 S	35/15 DFR SOL MVOLT EZ1 R EL MR EL EL	ALPHABET NU4, INTENSE LIGHTING LD4, WILLIAMS 4PR DUAL-LITE LE, LSL LSX, MULE CEL DUAL-LITE LES, LSL LSX, MULE CEL DUAL-LITE LES,	LED	0-10V	1500 lm	3500 K			EDGE LIT LED EXIT SIGN WITH RED LETTERS ON A MIRROR	
EDG 2 RM EDG 1 R MR3 D5 S	R EL MR EL EL	DUAL-LITE LE, LSL LSX, MULE CEL DUAL-LITE LES, LSL LSX, MULE CEL DUAL-LITE LES,					277 V	5 VA		
EDG 1 R MR3 D5 S	EL	LSL LSX, MULE CEL DUAL-LITE LES,	LED						CEILING ABOVE AND CENTERED ABOVE DOOR. REFER TO DRAWINGS FOR NUMBER AND DIRECTION OF CHEVRONS.	
MR3 D5 S			1				277 V	5 VA	EDGE LIT LED EXIT SIGN WITH RED LETTERS ON A MIRROR PANEL. INTEGRAL BATTERY POWER. SIDE MOUNTED TO WALL. REFER TO DRAWINGS FOR NUMBER AND DIRECTION OF CHEVRONS.	
		MULE CÉL	LED				277 V	5 VA	EDGE LIT LED EXIT SIGN WITH RED LETTERS ON A MIRROR PANEL. INTEGRAL BATTERY POWER. BACK MOUNTED TO WALL ABOVE AND CENTERED ABOVE DOOR. REFER TO DRAWINGS FOR NUMBER AND DIRECTION OF CHEVRONS.	
		BASO CIRCLE 2.5, GLIGHTING GL-2308, LUMENWERX CURV3RIP, OCL SL1	LED	0-10V	17700 lm	3500 K	277 V	183 VA	5 FOOT RADIUS, CIRCULAR DECORATIVE PENDANT. SEPARATE CONTROLS FOR DIRECT AND INDIRECT. BLACK FINISH.	
	SS HI 90 3500K V00 LENS MIN ( V00 N SB UNV N N		LED	0-10V	14200 lm	3500 K	277 V	145 VA	SIMILAR TO TYPE GP1, EXCEPT 4 FOOT RADIUS.	
CSS L48	4000LM MVOLT 35K 80CRI	COLUMBIA MPS, SIGNIFY SDS, WILLIAMS FS	LED	0-10V	4000 lm	3500 K	277 V	35 VA	4 FOOT SURFACE MOUNTED STRIPLIGHT WITH LENS.	
CSVT L48	8 5000LM MVOLT 35K 80CRI	COLUMBIA LXEM, DAY-BRITE V3W, WILLIAMS 96	LED	NON-DIM	5000 lm	3500 K	MVOLT	42 VA	4 FOOT VAPORTIGHT STRIPLIGHT WITH LENS.	
	96-24-LÓG	DIODELED DI24VBLBSC1, KELVIX UNI3, TIVOLI TPLE	LED	0-10V	100 lm	3500 K	277 V	1 VA	TAPE LIGHT WITH 45 DEGREE FROSTED LENSED CHANNEL. PROVIDE WITH POWER SUPPLY SIZED FOR TOTAL LENGTH.	1,2
UNV DB V SJ-WHT	RP UPDN XX 35 MED MED W AC AVI BAT WFL NA DC	AXIS TB2DILED, NULITE LP13-B, SIGNIFY TM0	LED	0-10V	1200 lm	3500 K	277 V	14 VA	SUSPENDED LINEAR LED WITH 2" APERTURE AND LOUVERS FOR CUTOFF. SEPARATE CONTROLS FOR DIRECT AND INDIRECT. WHITE FINISH.	1,2
NA SJ-Wł	НТ	LUX ILLUMINAIRE EOS 3.0m-P-D, NULITE RP44						8 VA		1,2
CR/ASY S	SW	LEDALITE 3901L, LUMENWERX VIA4R	LED	0-10V	350 lm	3500 K	277 V	3 VA	RECESSED LED PERIMETER LINEAR WITH ASYMMETRIC OUTPUT. AIM ASYMMETRIC OUTPUT OUT FROM WALL.	1,2
NT WFL N	NA NA NA	LEDALITE TM0, NULITE LM1-D OCL DA1	LED	0-10V 0-10V	609 lm 400 lm	3500 K 3500 K	277 V 277 V	7 VA 7 VA	FOR CUTOFF. WHITE FINISH WALL MOUNTED AIMABLE SIGN LIGHT. BRUSHED NICKEL	1,2 1,2
2ALL4 48		COLUMBIA LCAT24-S, FINELITE HPR, PINNACLE TR24, SIGNIEY FEX	LED	0-10V	4750 lm	3500 K	MVOLT	40 VA	RECESSED LED 2x4 TROFFER WITH CENTER ACRYLIC LENS.	
UNLE 2 3	35K WH TDE-WH UN100i	AXIS BCUC, SSL LINC, VODE LIGHTING	LED	0-10V	600 lm	3500 K	277 V	12 VA	LED UNDERCABINET LIGHT FIXTURE WITH INTEGRAL ON/OFF SWITCH. 24" LONG. PROVIDE ALL ACCESSORIES NECESSARY FOR A COMPLETE AND FUNCTIONAL INSTALLATION.	
WL4 30L	EZ1 LP835 MSD7 DIM1 EL7L	707-Z2 COLUMBIA MPS, SIGNIFY FLP, WILLIAMS SLF	LED	NON-DIM	3000 lm	3500 K	277 V	28 VA	LIGHTING. INTEGRAL OCCUPANCY SENSOR. LIGHT FIXTURE SHALL DIM TO 10% WHEN NO OCCUPANCY DETECTED BUT	
VBOM-22 NICKEL		DALS LEDVAN003, VISUAL COMFORT & CO 700BCBAU	LED	0-10V	1400 lm	3500 K	277 V	18 VA	HORIZONTAL WALL SCONCE WITH FLAT METAL BODY. NICKEL FINISH.	
LIGHTING OW610-3	36-35K-CLV-MV-PNL	LIGHTWAY BLCW, OCL IL1, SOLERA SLIM	LED	0-10V	2400 lm	3500 K	277 V	30 VA	VERTICAL WALL SCONCE WITH FLAT METAL BODY. NICKEL FINISH.	
	LS3 XX 3 NA SJ-WI SP4R/PR CR/ASY S LS1R SH NT WFL 1 RUNW 48 2ALL4 48 2ALL4 48 UNLE 2 3 UNLE 2 3 UNLE 2 3 WL4 30L WL4 30L WBOM-22 NICKEL GHTING OW610-3 HEDULE GENERAL N IGHT FIXTURES FRC IT FIXTURES BID WI LL MOUNTING AND S	LS3 XX 35 HIGH UNV DB W AC FL NA NA SJ-WHT         SP4R/PR3 MUD SMIN 90 3500K V01 CR/ASY SW         LS1R SHARP XX 35 MED UNV DB W W NT WFL NA NA NA RUNW 48" 60X2HO 35K F 6 WN         2ALL4 48L EZ1 LP835         UNLE 2 35K WH TDE-WH UN100i         WL4 30L EZ1 LP835 MSD7 DIM1 EL7L         VBOM-22-18-DV-3CCT-BRUSHED NICKEL         GHTING       OW610-36-35K-CLV-MV-PNL         HEDULE GENERAL NOTES: IGHT FIXTURES FROM THE LIST OF MANUFACTURATION         HEDULE GENERAL NOTES: IGHT FIXTURES FROM THE LIST OF MANUFACTURATION         HEDULE GENERAL NOTES: IGHT FIXTURES FROM THE LIST OF MANUFACTURATION	LS3 XX 35 HIGH UNV DB W AC FL NA NA SJ-WHT       AXIS TB3DLED, LUX ILLUMINAIRE EOS 3.0m-P-D, NULITE RP44         SP4R/PR3 MUD SMIN 90 3500K V01       AXIS BBPRLED, LEDALITE 3901L, LUMENWERX VIA4R         LS1R SHARP XX 35 MED UNV DB W W NT WFL NA NA NA       LEDALITE TM0, NULITE LM1-D         RUNW 48" 60X2HO 35K F 6 WN       OCL DA1         2ALL4 48L EZ1 LP835       COLUMBIA LCAT24-S, FINELITE HPR, PINNACLE TR24, SIGNIFY FFX         UNLE 2 35K WH TDE-WH UN100i       AXIS BCUC, SSL LINC, VODE LIGHTING 707-Z2         WL4 30L EZ1 LP835 MSD7 DIM1 EL7L       COLUMBIA MPS, SIGNIFY FLP, WILLIAMS SLF         VBOM-22-18-DV-3CCT-BRUSHED NICKEL       DALS LEDVAN003, VISUAL COMFORT & CO 700BCBAU         GHTING       OW610-36-35K-CLV-MV-PNL       LIGHTWAY BLCW, OCL IL1, SOLERA SLIM         HEDULE GENERAL NOTES: IGHT FIXTURES FROM THE LIST OF MANUFACTURERS AND MODELS OR AT FIXTURES BID WITHOUT BEING LISTED AS AN APPROVED EQUIVALEN LL MOUNTING AND SUPPORT HARDWARE AS REQUIRED PER THE MANU	LS3 XX 35 HIGH UNV DB W AC FL NA NA SJ-WHT       AXIS TB3DLED, LUX ILLUMINAIRE EOS 3.0m-P-D, NULITE RP44       LED         SP4R/PR3 MUD SMIN 90 3500K V01 CR/ASY SW       AXIS BBPRLED, LEDALITE 3901L, LUMENWERX VIA4R       LED         LS1R SHARP XX 35 MED UNV DB W W NT WFL NA NA NA       LEDALITE TM0, NULITE LM1-D       LED         RUNW 48" 60X2HO 35K F 6 WN       OCL DA1       LED         2ALL4 48L EZ1 LP835       COLUMBIA LCAT24-S, FINELITE HPR, PINNACLE TR24, SIGNIFY FFX       LED         WL4 20L EZ1 LP835 MSD7 DIM1 EL7L       COLUMBIA MPS, VODE LIGHTING 707-Z2       LED         WL4 30L EZ1 LP835 MSD7 DIM1 EL7L       COLUMBIA MPS, SIGNIFY FLP, WILLIAMS SLF       LED         VBOM-22-18-DV-3CCT-BRUSHED NICKEL       DALS LEDVAN003, VISUAL COMFORT & CO 700BCBAU       LED         GHTING OW610-36-35K-CLV-MV-PNL       LIGHTWAY BLCW, OCL IL1, SOLERA SLIM       LED         HEDULE GENERAL NOTES: GHT FIXTURES FROM THE LIST OF MANUFACTURERS AND MODELS OR APPROVED IT FIXTURES BID WITHOUT BEING LISTED AS AN APPROVED EQUIVALENT AND WITIL LI MOUNTING AND SUPPORT HARDWARE AS REQUIRED PER THE MANUFACTUREF	LS3 XX 35 HIGH UNV DB W AC FL NA NA SJ-WHTAXIS TB3DLED, LUX ILLUMINAIRE EOS 3.0m-P-D, NULITE RP44LED0-10VSP4R/PR3 MUD S_ MIN 90 3500K V01 CR/ASY SWAXIS BBPRLED, LUMENWERX VIA4RLED0-10VLS1R SHARP XX 35 MED UNV DB W W NT WFL NA NA NALEDALITE 3901L, LUMENWERX VIA4RLED0-10VRUNW 48" 60X2HO 35K F 6 WNOCL DA1LED0-10V2ALL4 48L EZ1 LP835COLUMBIA LCAT24-S, FINELITE HPR, PINNACLE TR24, SIGNIFY FFXLED0-10VUNLE 2 35K WH TDE-WH UN100iAXIS BCUC, SSL LINC, VODE LIGHTING 707-Z2LED0-10VWL4 30L EZ1 LP835 MSD7 DIM1 EL7L NICKELCOLUMBIA MPS, SIGNIFY FFXLED0-10VWL4 30L EZ1 LP835 MSD7 DIM1 EL7L NICKELDALS LEDVAN003, VISUAL COMFORT & CO 700BCBAULED0-10VGHT ING GW610-36-35K-CLV-MV-PNLLIGHTWAY BLCW, OL IL1, SOLERA SLIMLED0-10VHEDULE GENERAL NOTES: IGHT FIXTURES FROM THE LIST OF MANUFACTURERS AND MODELS OR APPROVED EQUIVALENT TH FIXTURES BID WITHOUT BEING LISTED AS AN APPROVED EQUIVALENT AND WITHOUT THE W LI MOUNTING AND SUPPORT HARDWARE AS REQUIRED PER THE MANUFACTURER INSTALLATI'	LS3 XX 35 HIGH UNV DB W AC FL NA NA SJ-WHTAXIS TB3DLED, LUX ILLUMINAIRE EOS S.0m-P-D, NULITE RP44LED0-10V800 lmSP4R/PR3 MUD SMIN 90 3500K V01 CR/ASY SWAXIS BBPRLED, LEDALITE 3901L, LUMENWERX VIA4RLED0-10V350 lmLS1R SHARP XX 35 MED UNV DB W W NT WFL NA NA NA RUNW 48" 60X2HO 35K F 6 WNLEDALITE 1M0, NULITE LM1-DLED0-10V609 lmRUNW 48" 60X2HO 35K F 6 WNOCL DA1LED0-10V400 lm2ALL4 48L EZ1 LP835COLUMBIA LCAT24-S, FINELITE HPR, PINNACLE TR24, SIGNIFY FFXLED0-10V4750 lmWL4 30L EZ1 LP835 MSD7 DIM1 EL7LCOLUMBIA MPS, SIGNIFY FFXLED0-10V600 lmWL4 30L EZ1 LP835 MSD7 DIM1 EL7LCOLUMBIA MPS, SIGNIFY FFXLED0-10V400 lmWL4 30L EZ1 LP835 MSD7 DIM1 EL7LCOLUMBIA MPS, SIGNIFY FLP, WILLIAMS SLFLED0-10V1400 lmGHTINGOW610-36-35K-CLV-MV-PNLLIGHTWAY BLCW, OCL IL1, SOLERA SLIMLED0-10V2400 lmHEDULE GENERAL NOTES: IGHT FIXTURES FROM THE LIST OF MANUFACTURERS AND MODELS OR APPROVED EQUIVALENTS. ADDITIO TIF TXTURES BID WITHOUT BEING LISTED AS AN APPROVED EQUIVALENT AND WITHOUT THE WRITTEN APFHEDULE GENERAL NOTES: IGHT FIXTURES BID WITHOUT BEING LISTED AS AN APPROVED EQUIVALENT AND WITHOUT THE WRITTEN APF	LS3 XX 35 HIGH UNV DB W AC FL NA NA SJ-WHTAXIS TB3DLED, LUX ILLUMINAIRE EOS 3.0m-P.D, NULITE RP44LED0-10V800 lm3500 KSP4R/PR3 MUD SMIN 90 3500K V01 CR/ASY SWAXIS BBPRLED, LEDALITE 3901L, LUMENWERX VIA4RLED0-10V350 lm3500 KLS1R SHARP XX 35 MED UNV DB W W LEDALITE 1401L, EDALITE 1401L, EDALITE 1401-DLED0-10V609 lm3500 KRUNW 48" 60X2HO 35K F 6 WNOCL DA1LED0-10V400 lm3500 KRUNW 48" 60X2HO 35K F 6 WNOCL DA1LED0-10V4750 lm3500 KRUNW 48" 60X2HO 35K F 6 WNOCL DA1LED0-10V4750 lm3500 KRUNU 48" 60X2HO 35K F 6 WNOCL DA1LED0-10V4750 lm3500 KUNLE 2 35K WH TDE-WH UN100iAXIS BCUC, SIGNIFY FFXLED0-10V600 lm3500 KWL4 30L EZ1 LP835 MSD7 DIM1 EL7LCOLUMBIA MPS, SIGNIFY FLP, WILLIAMS SLFLED0-10V1400 lm3500 KVBOM-22-18-DV-3CCT-BRUSHED NICKELDALS LEDVAN003, VISUAL COMFORT & CO 700BCBAULED0-10V1400 lm3500 KGHTINGOW610-36-35K-CLV-MV-PNLLIGHTWAY BLCW, OCL II 1, SOLERA SLIMLED0-10V2400 lm3500 KHEDULE GENERAL NOTES: IGHT FIXTURES FROM THE LIST OF MANUFACTURERS AND MODELS OR APPROVED EQUIVALENTS. ADDITIONAL LIGHT HT FIXTURES BID WITHOUT BEING LISTED AS AN APPROVED EQUIVALENT AND WITHOUT THE WRITTEN APPROVAL OF HEDULE GENERAL NOTES: IGHT FIXTURES BID WITHOUT BEING LISTED AS REQUIRED PER THE MANUFACTURER INSTALLATION REQUIREMENTS AN <td>LS3 XX 35 HIGH UNV DB W AC FL NA NA SJ-WHTAXIS TB3DLED, LUX ILLUMINAIRE EOS .0, m-P,D, NULITE RP44LED0-10V800 lm3500 K277 VSP4R/PR3 MUD SMIN 90 3500K V01 CR/ASY SWAXIS BBPRLED, LEDALITE 3901L, LEDALITE 3901L, LEDALITE 3901L, LUMENWERX VIAAR0-10V350 lm3500 K277 VLS1R SHARP XX 35 MED UNV DB W W NT WFL NA NA NA RUNW 48° 60X2HO 35K F 6 WNOCL DA1LED0-10V609 lm3500 K277 VQALL4 48L E21 LP835COLUMBIA LCAT24-S, FINELITE HPR, PINNACLE TR24, SIGNIFY FFXLED0-10V4750 lm3500 K277 VUNLE 2 35K WH TDE-WH UN100i NICKELAXIS BCUC, SSL LINC, VODE LIGHTING T07-Z2LED0-10V600 lm3500 K277 VWL4 30L E21 LP835 MSD7 DIM1 EL7L NICKELCOLUMBIA MPS, SIGNIFY FLP, WILLIAMS SLFLED0-10V400 lm3500 K277 VWL4 30L E21 LP835 MSD7 DIM1 EL7L NICKELCOLUMBIA MPS, SIGNIFY FLP, WILLIAMS SLFLED0-10V1400 lm3500 K277 VWL4 30L E21 LP835 MSD7 DIM1 EL7L NICKELCOLUMBIA MPS, SIGNIFY FLP, WILLIAMS SLFLED0-10V1400 lm3500 K277 VWH4 30L E21 LP835 MSD7 DIM1 EL7L NICKELCOLUMBIA MPS, SIGNIFY FLP, WILLIAMS SLFLED0-10V1400 lm3500 K277 VWL4 30L E21 LP835 MSD7 DIM1 EL7L NICKELCOLUMBIA MPS, SIGNIFY FLP, WILLIAMS SLFLED0-10V1400 lm3500 K277 VUNCKELVBOM-22-18-DV-3CCT-BRUSHED NICKELDALS LEDVAN003, VISUAL COMFOR</td> <td>LS3 XX 35 HIGH UNV DB W AC FL NA NA SJ-WHTAXIS TBSDLED, LUX ILLUMINAIRE EOS 3.0m-P-D, NULTE RP44LED0-10V800 lm3500 K277 V8 VASP4R/PR3 MUD SMIN 90 3500K V01 CR/ASY SWAXIS BBRLED, LEDALITE 3901L, LUMENWERX VIA4RLED0-10V350 lm3500 K277 V3 VALS1R SHARP XX 35 MED UNV DB W W NT WFL NA NA NA NULTE LM1-DLEDALITE 100, LEDALITE 100, NULTE LM1-DLED0-10V609 lm3500 K277 V7 VARUNW 48" 60X2HO 35K F 6 WNOCL DA1LED0-10V400 lm3500 K277 V7 VA2ALL4 48L EZ1 LP835COLUMBIA LCAT24-S, FINELITE HPR, PINNACLE TR24, SIGNIFY FFXLED0-10V4750 lm3500 K277 V12 VAWL4 30L EZ1 LP835 MSD7 DIM1 EL7LCOLUMBIA MPS, SIGNIFY FLP, WILLIAMS SLFLED0-10V600 lm3500 K277 V12 VAW4 30L EZ1 LP835 MSD7 DIM1 EL7LCOLUMBIA MPS, SIGNIFY FLP, WILLIAMS SLFLED0-10V1400 lm3500 K277 V28 VAWL4 30L EZ1 LP835 MSD7 DIM1 EL7LCOLUMBIA MPS, SIGNIFY FLP, WILLIAMS SLFLED0-10V1400 lm3500 K277 V18 VAGHTINGOW610-36-35K-CLV-MV-PNLLIGHTWAY BLCW, COL LI1, SOLERA SLIMLED0-10V2400 lm3500 K277 V30 VAHEDULE GENERAL NOTES: GHT FIXTURES BROM THE LIST OF MANUFACTURERS AND MODELS OR APPROVED EQUIVALENTS. ADDITIONAL LIGHT FIXTURES SHALL ONL' TH EWNTHOUT BEING LISTED AS AN APPROVED EQUIVALENT AND WITHOUT HE WRITTEN APPROVAL OF THE ARCHITECT AND D&lt;</td> <td>Image: Signed bundly and constraints of the system of t</td>	LS3 XX 35 HIGH UNV DB W AC FL NA NA SJ-WHTAXIS TB3DLED, LUX ILLUMINAIRE EOS .0, m-P,D, NULITE RP44LED0-10V800 lm3500 K277 VSP4R/PR3 MUD SMIN 90 3500K V01 CR/ASY SWAXIS BBPRLED, LEDALITE 3901L, LEDALITE 3901L, LEDALITE 3901L, LUMENWERX VIAAR0-10V350 lm3500 K277 VLS1R SHARP XX 35 MED UNV DB W W NT WFL NA NA NA RUNW 48° 60X2HO 35K F 6 WNOCL DA1LED0-10V609 lm3500 K277 VQALL4 48L E21 LP835COLUMBIA LCAT24-S, FINELITE HPR, PINNACLE TR24, SIGNIFY FFXLED0-10V4750 lm3500 K277 VUNLE 2 35K WH TDE-WH UN100i NICKELAXIS BCUC, SSL LINC, VODE LIGHTING T07-Z2LED0-10V600 lm3500 K277 VWL4 30L E21 LP835 MSD7 DIM1 EL7L NICKELCOLUMBIA MPS, SIGNIFY FLP, WILLIAMS SLFLED0-10V400 lm3500 K277 VWL4 30L E21 LP835 MSD7 DIM1 EL7L NICKELCOLUMBIA MPS, SIGNIFY FLP, WILLIAMS SLFLED0-10V1400 lm3500 K277 VWL4 30L E21 LP835 MSD7 DIM1 EL7L NICKELCOLUMBIA MPS, SIGNIFY FLP, WILLIAMS SLFLED0-10V1400 lm3500 K277 VWH4 30L E21 LP835 MSD7 DIM1 EL7L NICKELCOLUMBIA MPS, SIGNIFY FLP, WILLIAMS SLFLED0-10V1400 lm3500 K277 VWL4 30L E21 LP835 MSD7 DIM1 EL7L NICKELCOLUMBIA MPS, SIGNIFY FLP, WILLIAMS SLFLED0-10V1400 lm3500 K277 VUNCKELVBOM-22-18-DV-3CCT-BRUSHED NICKELDALS LEDVAN003, VISUAL COMFOR	LS3 XX 35 HIGH UNV DB W AC FL NA NA SJ-WHTAXIS TBSDLED, LUX ILLUMINAIRE EOS 3.0m-P-D, NULTE RP44LED0-10V800 lm3500 K277 V8 VASP4R/PR3 MUD SMIN 90 3500K V01 CR/ASY SWAXIS BBRLED, LEDALITE 3901L, LUMENWERX VIA4RLED0-10V350 lm3500 K277 V3 VALS1R SHARP XX 35 MED UNV DB W W NT WFL NA NA NA NULTE LM1-DLEDALITE 100, LEDALITE 100, NULTE LM1-DLED0-10V609 lm3500 K277 V7 VARUNW 48" 60X2HO 35K F 6 WNOCL DA1LED0-10V400 lm3500 K277 V7 VA2ALL4 48L EZ1 LP835COLUMBIA LCAT24-S, FINELITE HPR, PINNACLE TR24, SIGNIFY FFXLED0-10V4750 lm3500 K277 V12 VAWL4 30L EZ1 LP835 MSD7 DIM1 EL7LCOLUMBIA MPS, SIGNIFY FLP, WILLIAMS SLFLED0-10V600 lm3500 K277 V12 VAW4 30L EZ1 LP835 MSD7 DIM1 EL7LCOLUMBIA MPS, SIGNIFY FLP, WILLIAMS SLFLED0-10V1400 lm3500 K277 V28 VAWL4 30L EZ1 LP835 MSD7 DIM1 EL7LCOLUMBIA MPS, SIGNIFY FLP, WILLIAMS SLFLED0-10V1400 lm3500 K277 V18 VAGHTINGOW610-36-35K-CLV-MV-PNLLIGHTWAY BLCW, COL LI1, SOLERA SLIMLED0-10V2400 lm3500 K277 V30 VAHEDULE GENERAL NOTES: GHT FIXTURES BROM THE LIST OF MANUFACTURERS AND MODELS OR APPROVED EQUIVALENTS. ADDITIONAL LIGHT FIXTURES SHALL ONL' TH EWNTHOUT BEING LISTED AS AN APPROVED EQUIVALENT AND WITHOUT HE WRITTEN APPROVAL OF THE ARCHITECT AND D<	Image: Signed bundly and constraints of the system of t



TELECOM BACKBOARD100"LADDER RACK IN TELECOM ROOMS90"TELEPHONE WALL OUTLET48"TELEPHONE, DATA OUTLETSAME AS ADJACENT DEVICE, UNOTELEVISION OUTLETSREFER TO ARCH DRAWINGSPBB/SBB98"WALL CLOCK84"INTERCOM48"CARD READER48"USE THE DEFAULT MOUNTING HEIGHTS SHOWN ABOVE UNLESSOTHERWIGE NOTED IN THE CONSTRUCTION POOL IMENTS MOUNTING			W"XF	" C.	WIRE MESH CABLE TRAY (W"=WIDTH, "H"=HEIGHT) UNDERGROUND CONDUIT ("#"=QUANTITY, "D"=CONDUIT DIAM CONDUIT ("#"=QUANTITY, "D"=CONDUIT DIAM CABLE SUPPORTS OR J-HOOKS
OTHER HEIGHT TO TOF	WISE NOTED IN THE CONSTRU	JCTION DOCUMENTS. MOUNTING ED FLOOR OR ABOVE FINISHED GRADE ES SHALL BE INSTALLED IN	++; ++;	(#) D" SLEEVE (#) D" FS	CONDUIT SLEEVE ("#"=QUANTITY, "D"=CONDUIT DIAM (PROVIDE 40% FILL FOR CABLING) UL FIRESTOP SYSTEM ASSEMBLY
	AMPERES	LCC LIMITED COMBUSTIBLE	PE	_	("#"=QUANTITY, "D"=CONDUIT DIAI PULL BOX
ACP	ABOVE COUNTER ACCESS CONTROL PANEL AMERICANS WITH	CABLE LEC LOCAL EXCHANGE CARRIER LED LIGHT-EMITTING DIODE	sc		SPLICE
AFC	DISABILITIES ACT ABOVE FINISHED CEILING ABOVE FINISHED FLOOR	LF LINEAR FEET MAN METROPOLITAN AREA NETWORK	W"XF	<u> </u>	LADDER RACK (W"=WIDTH, "H"=HEIGHT)
AFG AHJ	ABOVE FINISHED GRADE AUTHORITY HAVING	MATV MASTER ANTENNA TELEVISION	ROUGH-	IN OUTLETS	
ANSI	JURISDICTION AMERICAN NATIONAL STANDARDS INSTITUTE	MBS MAINTENANCE BYPASS SWITCH MC MAIN CROSS-CONNECT	⊢ R	WALL BOX ROUGH	I-IN
AV	ACCESS POINT AUDIO-VIDEO AMERICAN WIRE GAUGE	MDF MAIN DISTRIBUTION FRAME MFR MANUFACTURER MH MAINTENANCE HOLE		FLOOR BOX ROUG	
BAS	BUILDING AUTOMATION SYSTEM BUILDING DISTRIBUTOR	MM MULTIMODE MPOE MAIN POINT OF ENTRANCE MPOP MAIN POINT OF PRESENCE	(R)	POKE THROUGH R	
BDF	BUILDING DISTRIBUTION FRAME	MTD MOUNTED N/A NOT APPLICABLE			
BR	BELOW FINISHED CEILING BIOMETRIC READER CONDUIT	NEC NATIONAL ELECTRICAL CODE NFPA NATIONAL FIRE PROTECTION		- AR = R - AV = A	ESIGNATION(S) RESCUE ASSISTANCE AUDIOVISUAL
CC	CENTRAL CONTROL DOOR CONTROL SYSTEM CATEGORY	ASSOCATION NIC NOT IN CONTRACT		- CR = C	ECURITY CAMERA CARD READER DATA
CATV	COMMUNITY ANTENNA TELEVISION	NRTL NATIONALLY RECOGNIZED TESTING LAB		- F = F - IC = V	URNITURE FEED IDEO INTERCOM
	CLOSED CIRCUIT TELEVISION CAMPUS DISTRIBUTOR	NVR NETWORK VIDEO RECORDER OC ON CENTER		- MD = N - MP = N	EYPAD IOTION DETECTOR IICROPHONE
CMP	COMMUNICATIONS PLENUM JACKET	OSHA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION		- PB = P - RE = R	PANIC BUTTON REQUEST TO EXIT SPEAKER
DAS	COMMUNICATIONS RISER JACKET DISTRIBUTED ANTENNA	PBB PRIMARY BONDING BUSBAR PBX PRIVATE BRANCH			ELEVISION
dB	SYSTEM DECIBELS DOOR CONTROL SYSTEM	EXCHANGE POE POWER OVER ETHERNET PON PASSIVE OPTICAL NETWORK	TELECO	M SYMBOLS LEG	END
DEMO DSP	DEMOLITION DIGITAL VIDEO RECORDER DIGITAL VIDEO RECORDER	POTS PLAIN OLD TELEPHONE SERVICE PSTN PUBLIC SWITCHED	xx V	WALL PHONE OU <sup>-</sup> PORTS.	TLET, "XX" INDICATES NUMBER OF P
(E) EC	EXISTING ELECTRICAL	TELEPHONE NETWORK QTY QUANTITY	P/D		TA OUTLET, "P" INDICATES NUMBER (
ECIA	CONTRACTOR ELECTRONIC COMPONENTS INDUSTRY	RCDD REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER			D" INDICATES NUMBER OF DATA POP
EMI	ASSOCIATION ELECTROMAGNETIC	RMC RIGID METAL CONDUIT RMS REMOTE MONITORING	XX	WALL DATA OUTL	.ET, "XX" INDICATES TYPE/NUMBER (
EMS	INTERFERENCE ENERGY MANAGEMENT SYSTEM	STATION RU RACK UNIT SBB SECONDARY BONDING		PORTS.	JTLET, "XX" INDICATES TYPE/NUMBE
	ELECTRICAL METALLIC TUBING EQUIPMENT ROOM	BUSBAR SCS STRUCTURED CABLING SYSTEM	XX	DATA PORTS. WIRING DEVICE T	AGGING AND INFORMATION:
F	EXISTING TO REMAIN DOOR FRAME MOUNTED DEVICE	SF SQUARE FEET SM SINGLEMODE SP SCRAMBLE PAD		- #D =	DESIGNATION(S) DISPATCH FEED, # INDICATES NUMB PORTS
FAAP	FIRE ALARM ANNUNCIATOR PANEL	TBB TELECOMMUNICATIONS BONDING BACKBONE			FURNITURE FEED, # INDICATES NUM PORTS DISPLAY WALL AV BACKBOX
	FIRE ALARM CONTROL PANEL FLOOR DISTRIBUTOR	TBD TO BE DETERMINED TIA TELECOMMUNICATIONS INDUSTRY ASSOCIATION		- TV = 2 - WAP = 2	2 PORT DATA WITH 1 COAX FOR TEL 2 PORT DATA FOR WIRELESS ACCES
FOR	FLEXIBLE METAL CONDUIT FIBER OPTIC RACK FIRE STOP SYSTEM	TGB TELECOMMUNICATIONS GROUND BUS BAR TMGB TELECOMMUNICATIONS		- WPO =	WALL PHONE OUTLET
FLR F/UTP	FLOOR SCREEN TWISTED PAIR (SHIELDED)	MAIN GROUND BUS BAR TR TELECOMMUNICATIONS	#		LET, "#" INDICATES NUMBER OF DAT
GC GE	GENERAL CONTRACTOR GROUNDING EQUALIZER	ROOM TYP TYPICAL	P/D	PORTS.	
	GUARD TOUR CARD READER GYPSUM BOARD	UNO UNLESS NOTED OTHERWISE UL UNDERWRITER LABORATORIES, INC.			ATA OUTLET, "P" INDICATES NUMBEF D" INDICATES NUMBER OF DATA POF
-	HORIZONTAL CROSS- CONNECT HORIZONTAL CABLE	UPS UNINTERRUPTIBLE POWER SUPPLY UPSDP UNINTERRUPTIBLE POWER	EQUIPM	ENT SYMBOLS LI	EGEND
НН	MANAGER HAND HOLE	SUPPLY DISRTRIBUTION PANEL			" INDICATES TYPE. CHECK ABBREVI
ICS	HERTZ INTERCOM CONTROL SYSTEM	U/UTP UNSHIELDED TWISTED PAIR V VOLT(S) VCM VERTICAL CABLE MANAGER		LIST FOR TYPE.	INDICATES TIPE. CHECK ADDREVI
	INTERMEDIATE METAL CONDUIT INTERNET PROTOCOL	VCS VIDEO CONTROL SYSTEM VMS VIDEO MANAGEMENT SYSTEM		4-POST RACK	
ISP	INTERNET SERVICE PROVIDER	W WIRE WAN WIDE AREA NETWORK			
K	INSIDE PLANT CABLE ELECTRICALLLY OPERATED BY KEY	WAO WORK AREA OUTLET WAP WIRELESS ACCESS POINT WP WEATHER PROOF		2-POST RACK	
KVM	KEY PAD KEYBOARD VIDEO MOUSE SWITCH	WPO WALL PHONE OUTLET WR WEATHER RESISTANT WT WATERTIGHT		210011000	
JB J-BOX	JUNCTION BOX JUNCTION BOX	XP EXPLOSION-PROOF	SECURI	TY SYMBOLS LEG	GEND
LAN	LOCAL AREA NETWORK			CAMERA, ARC RE	PRESENTS VIEWING ANGLE AND DIF
					CAMERA NUMBER
				G-XX Y YY: C	CAMERA TYPE
ANNO	TATION			ZZ: C	AMERA HEIGHT (IF APPLICABLE)
	TECHNOLOGY PLAN CALLO	UT		WALL MOUNT SY	MBOL
1	EQUIPMENT DESIGATION		• XX #	PEDESTAL MOUN	T SYMBOI
		NUMBER INDICATES DETAIL	- ···	LULSTAL MOUN	
$\begin{pmatrix} 1 \\ T1 \end{pmatrix}$		INDICATES SHEET NUMBER	xx #	CEILING/SURFAC	E MOUNT SYMBOL
	SECTION CUT DESIGNATION	Ν			AND INFORMATION DESIGNATION(S)
	YPE LEGEND			-AR =	RESCUE ASSISTANCE TWO-WAY COMMUNICATOR PROXIMITY CARD READER
COMBI	NATION WITH THE SYMBOLS T	RENT LINE-TYPES ARE USED IN O INDICATE THE STATUS OF ITEMS AS E INCLUDED AS PART OF THE NEW		# = CA - 1	ARD READER DESIGNATION(S) I = MULLION MOUNT CARD READER
WORK FUTUR	AND/OR ITEMS WHICH ARE AN E. THE STATUS OF ITEMS USIN	ITICIPATED TO BE PROVIDED IN THE NG THESE LINETYPES ARE RELATIVE TO		-DR = -DS =	2 = SINGLE GANG CARD READER DOOR RELEASE DOOR CONTACT/DOOR POSITION SV
INTENE WHICH	DED TO FULLY DESCRIBE ALL I IS DETERMINED BY THE CON			-ER = -GB =	EMERGENCY PHONE GLASS BREAK SENSOR VIDEO INTERCOM
RESPO DOCUN	NSIBILITIES. ANY SUCH PHASI IENTS ARE GENERAL AND ON	ES DESCRIBED IN THE CONSTRUCTION LY INTENDED TO INDICATE A BROAD NG THE PROJECT. THE FOLLOWING		# = VII - 1	DEO INTERCOM DESIGNATION(S) I = VIDEO INTERCOM
		EVICE, EQUIPMENT, NOTE, LINE, SHAPE,		-IH =	2 = VIDEO INTERCOM W/ CARD READ INTRUSION ALARM HUB INTRUSION ALARM KEYPAD
EXISTIN	NG	NEW		-IS = -MD =	INTRUSION ALARM SPEAKER MOTION DETECTOR
DEMOL	ISH — — — — —	FUTURE		-RE =	PANIC BUTTON REQUEST TO EXIT TRAFFIC ARM PUSHBUTTON - OPEN/

1/8" =



		INFRASTRUCTURE SCHEDULE	
DEVICE TYPE	DEVICE DESCRIPTION	INFRASTRUCTURE BOX	INFRASTRUCTURE CONDUIT
2	2 PORT DATA FLOOR OUTLET	4 SQUARE WITH 1 GANG MUD-RING, FLUSH MOUNTED, 2-1/8" DEEP BACKBOX	(1) 1" C. TO ACCESSIBLE CEILING
2	2 PORT DATA WALL OUTLET	4 SQUARE WITH 1 GANG MUD-RING, FLUSH MOUNTED, 2-1/8" DEEP BACKBOX	(1) 1" C. TO ACCESSIBLE CEILING
4	4 PORT DATA FLOOR OUTLET	4 SQUARE WITH 1 GANG MUD-RING, FLUSH MOUNTED, 2-1/8" DEEP BACKBOX	(1) 1" C. TO ACCESSIBLE CEILING
4F	4 PORT DATA FURNITURE FEED	N/A	(1) 1" C. TO ACCESSIBLE CEILING
5	5 PORT DATA WALL OUTLET	4 SQUARE WITH 1 GANG MUD-RING, FLUSH MOUNTED, 2-1/8" DEEP BACKBOX	(1) 1" C. TO ACCESSIBLE CEILING
7	7 PORT DATA WALL OUTLET	4 SQUARE WITH 1 GANG MUD-RING, FLUSH MOUNTED, 2-1/8" DEEP BACKBOX	(1) 1" C. TO ACCESSIBLE CEILING
8D	8 PORT DATA FLOOR FEED FOR DISPATCH STATION	N/A	(1) 2" C. TO UNDERFLOOR RACEWAY
8F	8 PORT DATA FURNITURE FEED	N/A	(1) 2" C. TO UNDERFLOOR RACEWAY
9D	9 PORT DATA FLOOR FEED FOR DISPATCH STATION	N/A	(1) 2" C. TO UNDERFLOOR RACEWAY
10	10 PORT DATA WALL OUTLET	4 SQUARE WITH 2 GANG MUD-RING, FLUSH MOUNTED, 2-1/8" DEEP BACKBOX	(2) 1" C. TO ACCESSIBLE CEILING
11	11 PORT DATA WALL OUTLET	4 SQUARE WITH 2 GANG MUD-RING, FLUSH MOUNTED, 2-1/8" DEEP BACKBOX	(2) 1" C. TO ACCESSIBLE CEILING
16F	16 PORT DATA FLOOR FURNITURE FEED	4 SQUARE WITH 2 GANG MUD-RING, FLUSH MOUNTED, 2-1/8" DEEP BACKBOX	(2) 1" C. TO ACCESSIBLE CEILING
AV	AV BACKBOX (2 DATA, 1 HDMI)	4 SQUARE WITH 2 GANG MUD-RING, FLUSH MOUNTED, 2-1/8" DEEP BACKBOX	(2) 1" C. TO ACCESSIBLE CEILING
С	AUDIO VISUAL CAMERA	4 SQUARE WITH 1 GANG MUD-RING, FLUSH MOUNTED, 2-1/8" DEEP BACKBOX	(1) 1" C. TO ACCESSIBLE CEILING
CR1	MULLION CARD READER	N/A	(1) 1" C. TO ACCESSIBLE CEILING
CR2	SINGLE GANG CARD READER	1 GANG, FLUSH MOUNTED, 2-1/8" DEEP BACK BOX	(1) 1" C. TO ACCESSIBLE CEILING
DW	2 PORT DATA WALL OUTLET FOR DISPLAY WALL	4 SQUARE WITH 1 GANG MUD-RING, FLUSH MOUNTED, 2-1/8" DEEP BACKBOX	(1) 1" C. TO ACCESSIBLE CEILING
ED	EXTERIOR DOME CAMERA	4 SQUARE WITH 1 GANG MUD-RING, FLUSH MOUNTED, 2-1/8" DEEP BACKBOX	(1) 1" C. TO ACCESSIBLE CEILING
IC2	VIDEO INTERCOM WITH CARD READER	4 SQUARE WITH 1 GANG MUD-RING, FLUSH MOUNTED, 2-1/8" DEEP BACKBOX	(1) 1" C. TO ACCESSIBLE CEILING
ID	INTERIOR DOME CAMERA	4 SQUARE WITH 1 GANG MUD-RING, FLUSH MOUNTED, 2-1/8" DEEP BACKBOX	(1) 1" C. TO ACCESSIBLE CEILING
RK	AV RACK LOCATION	4 SQUARE WITH 1 GANG MUD-RING, FLUSH MOUNTED, 2-1/8" DEEP BACKBOX	(2) 1" C. TO ACCESSIBLE CEILING
S	SPEAKER	INSTALL AV PROVIDER'S SPEAKER BACK CAN	(1) 3/4" C. BETWEEN DEVICES AND (1) 3/4" C. HOMERUN TO ACCESSIBLE CEILING
SM	SOUND MASKING SPEAKER	INSTALL AV PROVIDER'S SPEAKER BACK CAN	(1) 3/4" C. BETWEEN DEVICES AND (1) 3/4" C. HOMERUN TO ACCESSIBLE CEILING
TP	WALL MOUNT TOUCHPANEL	INSTALL AV PROVIDER'S BOX INCLUDED WITH TOUCH PANEL	(2) 1" C. TO ACCESSIBLE CEILING
TV	2 PORT DATA WALL OUTLET FOR TELEVISION	CHIEF #WMPAC526 BACKBOX	(1) 1" C. TO ACCESSIBLE CEILING
WAP	<b>3 PORT DATA OUTLET FOR WIRELESS ACCESS POINT</b>	4 SQUARE WITH 1 GANG MUD-RING, FLUSH MOUNTED, 2-1/8" DEEP BACKBO>	(1) 1" C. TO ACCESSIBLE CEILING
WPO	1 PORT DATA WALL PHONE OUTLET	4 SQUARE WITH 1 GANG MUD-RING, FLUSH MOUNTED, 2-1/8" DEEP BACKBO>	(1) 1" C. TO ACCESSIBLE CEILING

		SCOPE AND RESPONS	IBILITY MAT	RIX		
CATEGORY	SYSTEM	DESCRIPTION	DESIGN	DOCUMENT	FURNISH	INSTALL
	ROUGH-IN	UNDERGROUND CONDUITS, MANHOLES	GC	HW	GC	GC
SITE UTILITIES	CABLING	FIBER	VENDOR	HW	VENDOR	VENDOR
	COORDINATION	COORDINATION WITH SERVICE PROVIDER		OW	NER	
	ROUGH-IN	RACEWAYS, BOXES	HW	HW	GC	GC
	CABLING	HORIZONTAL & VERTICAL CABLING, CABLE TERMINATIONS, FACE PLATES	HW	HW	GC	GC
TELECOMMUNICATIONS	RACK INFRASTRUCTURE	RACKS, CABINETS, PATCH PANELS	HW	HW	GC	GC
	EQUIPMENT	SERVERS AND SWITCHES	OWNER	OWNER	OWNER	OWNER
	UPS	UPS EQUIPMENT	HW/OWNER	HW	GC	GC
	FIBER	ROUTE/ACCESS TO BUILDING	VENDOR	HW	VENDOR	VENDOR
	PHONE SYSTEM VOIP CABLING AND INFRASTRUCTURE OWNER/HW HW		HW	GC	GC	
	WIRELESS DATA/INTERNET (WI-FI) WIRELESS ACCESS POINTS OWNER		HW	OWNER	OWNER	
	CELLULAR WIRELESS (DAS)	ROUGH-IN, EQUIPMENT, AND CABLING	VENDOR	HW	VENDOR VENDO	
DAS	RADIO TOWER	TOWER, STRUCTURE, ECT.	VENDOR	VENDOR	VENDOR	VENDOR
	EMERGENCY RESPONDER (DAS)	ROUGH-IN, EQUIPMENT, AND CABLING FOR POLICE, FIRE, AMBULANCE COMMUNICATIONS	VENDOR	HW	VENDOR	VENDOR
	ROUGH-IN	RACEWAYS, BOXES	HW	HW	GC	GC
	POWER SUPPLIES	120V/24V OR 12V	VENDOR	HW	VENDOR	VENDOR
	CABLING	SECURITY CABLING	VENDOR	HW	GC	GC
SECURITY SYSTEMS	EQUIPMENT	CAMERAS, CARD READERS, SENSORS, ECT.	VENDOR	HW	VENDOR	VENDOR
	SOFTWARE	APPLICATIONS	OWNER			1
	COMMISSIONING	VERIFY OPERATION AFTER INSTALLATION	OWNER			
	ROUGH-IN	RACEWAYS, BOXES	HW	HW	GC	GC
	CABLING	CABLING, CABLE TERMINATIONS, FACE PLATES	HW	HW	GC	GC
	RACK INFRASTRUCTURE	RACKS, CABINETS, PATCH PANELS	HW	HW	GC	GC
AUDIO/VISUAL	EQUIPMENT	SERVERS, TELEVISIONS, PAGING, ECT.	HW	HW	GC	GC
	SOFTWARE	APPLICATIONS, PROGRAMMING	OWNER			
	COMMISSIONING	VERIFY OPERATION AFTER INSTALLATION	GC/VENDOR			
	ROUGH-IN	RACEWAYS, BOXES	HW	HW	GC	GC
	CABLING	CABLING, CABLE TERMINATIONS, FACE PLATES	HW	HW	GC	GC
	RACK INFRASTRUCTURE	DSP/AMP	HW	HW	GC	GC
SOUND MASKING	EQUIPMENT	SPEAKERS/EMITTERS	HW	HW	GC	GC
	SOFTWARE	APPLICATIONS, PROGRAMMING		OW	GCGCGCGCOWNEROVGCVENDORVEGCOWNEROVVENDORVEVENDORVEVENDORVEGCOVVENDORVEGCOVNERGC	
	COMMISSIONING	VERIFY OPERATION AFTER INSTALLATION		GC/VE	NDOR	
	·					

<u>E</u>	NERAL LO	W VOLTAGE NO	DTES:							
	FEDERAL,	, STATE, LOCAL	, MUNICIPAL	AND UTILITY	COMPANY	CODES,	RULES AND	REGULATIO	ONS APPLY	UNLESS

VOLTAGE DEVICES PRIOR TO ROUGH-IN.

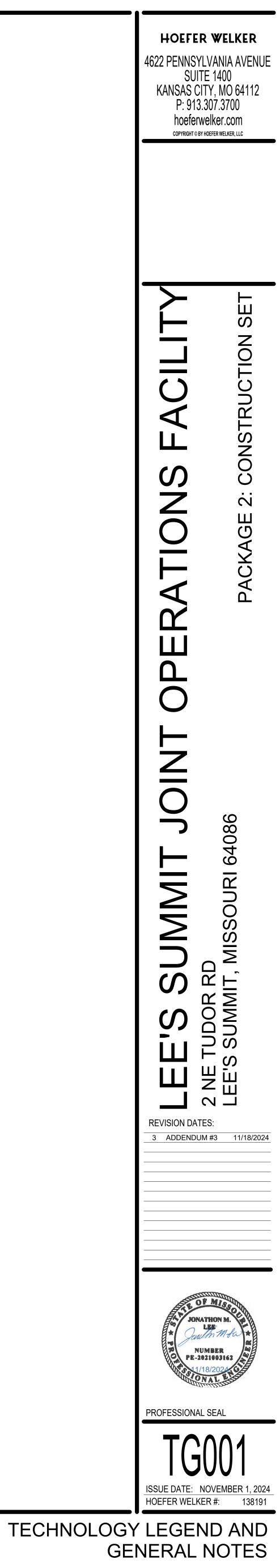
- EXCEEDED BY THIS DESIGN. 2. NO WORK SHALL BE PERFORMED PRIOR TO REVIEW AND APPROVAL OF ALL REQUIRED SHOP DRAWINGS,
- PRODUCT MATERIAL AND EQUIPMENT SUBMITTALS. ANY WORK INSTALLED PRIOR TO MEETING THESE REQUIREMENTS SHALL BE REMOVED BY CONTRACTOR WHERE DIRECTED BY CONTRACT ADMINISTRATOR.
- 3. PRIOR TO SUBMITTING BID, THE CONTRACTOR AND SUB-CONTRACTORS SHALL VISIT THE JOB SITE AND BECOME FULLY ACQUAINTED WITH THE EXISTING CONDITIONS OF THE PROJECT. THE CONTRACTOR AND SUB-CONTRACTORS SHALL BE RESPONSIBLE FOR REVIEW OF THE GENERAL NOTES, SPECIFICATIONS AND ALL OTHER DRAWINGS FOR ADDITIONAL REQUIREMENTS WHICH MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY CONTRACT ADMINISTRATOR OF ANY DISCREPANCIES PRIOR TO SUBMISSION OF BID.
- 4. DRAWINGS ARE DIAGRAMMATIC ONLY AND REPRESENT THE GENERAL SCOPE OF THE WORK.
- 5. THE DRAWINGS REPRESENT THE BEST INFORMATION AVAILABLE TO THE ENGINEER. ALL DIMENSIONS AND SIZES SHALL BE FIELD VERIFIED. SMALL DEVIATIONS BETWEEN THE DRAWINGS AND ACTUAL CONDITIONS ENCOUNTERED SHALL BE RECONCILED DURING THE PERFORMANCE OF THE WORK AND SHALL NOT CONSTITUTE REASON FOR ADDITIONAL COMPENSATION TO THE CONTRACTOR. NOTIFY THE CONTRACT ADMINISTRATOR IF ACTUAL CONDITIONS DEVIATE SUBSTANTIALLY FROM THOSE INDICATED ON THE DRAWINGS.
- 6. ALL FEES AND OTHER COSTS TO UTILITY COMPANIES, MUNICIPALITIES, INSPECTORS, REVIEWING AGENCIES, ETC. ARE TO BE INCLUDED AS A PART OF THIS CONTRACT.
- 7. COORDINATE WITH ALL OTHER TRADES, MAKE ADJUSTMENTS AND OFFSETS WHERE NEEDED FOR CLEARANCE REQUIREMENTS. REFER TO ALL OTHER DISCIPLINE DRAWINGS FOR COORDINATION. 8. COORDINATE ALL OPENINGS IN WALLS, FLOORS, ROOFS AND FOUNDATIONS WITH OTHER CONTRACTORS.
- PROVIDE UL RATED FIRE STOPPING ASSEMBLIES AT ALL PENETRATIONS OF FIRE RATED CONSTRUCTION. SEAL ALL PENETRATIONS OF SMOKE WALLS SMOKE TIGHT. 9. CONTRACTOR SHALL REPAIR ALL DAMAGE TO THE BUILDING, FIXTURES AND FINISHES CAUSED BY CONTRACTOR
- DURING THE PERFORMANCE OF THE WORK. REPAIRS SHALL BE PERFORMED BY QUALIFIED TRADESMEN AND SHALL BE COMPLETED IN A MANNER ACCEPTABLE TO THE CONTRACT ADMINISTRATOR. 10. REFER TO ARCHITECTURAL PLANS ELEVATIONS AND DETAILS FOR EXACT MOUNTING REQUIREMENTS OF LOW
- 11. SPECIAL ATTENTION SHALL BE GIVEN TO ALL RACEWAYS WITHIN FINISHED AREAS WITHOUT CEILING AND EXPOSED TO STRUCTURE. IN GENERAL, ALL RACEWAYS SHALL BE CONCEALED WITHIN WALLS, BELOW FLOOR SLABS. WHERE EXPOSED CONDITIONS ARE NECESSARY OR UNAVOIDABLE DUE TO OTHER CONDITIONS, THE BID SHALL INCLUDE ANY REASONABLE MEANS TO MINIMIZE THE AMOUNT OF SURFACE MOUNTED EQUIPMENT. PRIOR TO ROUGH-IN, COORDINATE ALL EXPOSED RACEWAY AND BOX CONDITIONS WITH ARCHITECT PRIOR TO CONSTRUCTION OF WALLS, FLOOR SLABS, OR ROOF DECK.
- 12. NON-COMPLIANT INSTALLATIONS OF RACEWAY AND CABLE WILL NOT BE ACCEPTED AND WILL BE REQUIRED TO BE BROUGHT TO COMPLIANCE AT NO COST TO THE OWNER PRIOR TO COMPLETION OF WORK.
- 13. ALL EXPOSED CONDUIT AND BOXES WITHIN EXPOSED CEILING SPACES SHALL BE PAINTED TO MATCH SURROUNDING CEILING AND STRUCTURE. PROVIDE CONDUIT PARALLEL TO STRUCTURAL LINES IN A NEAT MANNER.
- 14. ALL CEILING MOUNTED DEVICES INSTALLED IN ACOUSTICAL TILE CEILINGS SHALL BE CENTERED WITHIN THE ACOUSTICAL TILE.
- 15. REQUEST DIMENSIONED LOCATIONS OF ALL FLOOR DEVICES FROM ARCHITECT PRIOR TO ROUGH-IN.
- 16. ALL DEVICES SHOWN DIRECTLY ADJACENT TO EACH OTHER SHALL BE INSTALLED DIRECTLY ADJACENT TO EACH OTHER. ADJACENT DEVICES OF SIMILAR TYPE SHALL BE PROVIDED WITH SINGLE FACEPLATE WHERE FEASIBLE. 17. DEVICES SHOWN BACK-TO-BACK SHALL BE OFFSET A MINIMUM OF TWELVE (12) INCHES TO REDUCE SOUND
- TRANSMISSION. 18. PROVIDE PULL STRINGS IN ALL CONDUITS AND PROTECTIVE BUSHINGS AT OPENINGS. CAP CONDUITS WHERE
- LOCATED BELOW GRADE OR EXPOSED TO THE ELEMENTS IF RESERVED FOR FUTURE USE. 19. VERIFY EXACT LOCATION OF EQUIPMENT TO BE FURNISHED BY OTHERS PRIOR TO ROUGH-IN.
- 20. IF THE ENCLOSURE, BOXES, AND CABINETS SPECIFIED ARE NOT PROVIDED FROM THE MANUFACTURER WITH THE REQUIRED KNOCKOUTS FOR THE SPECIFIED CONDUIT, FIELD CUT ALL REQUIRED KNOCKOUTS TO TERMINATE THE QUANTITY AND SIZE OF THE SPECIFIED CONDUITS.
- 21. INSTALL ALL EQUIPMENT IN COMPLIANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS, SEISMIC CODES, AND INDUSTRY ACCEPTED RIGGING PRACTICES. SUPPORT EQUIPMENT WEIGHT FROM STRUCTURE ABOVE CEILINGS. DURING THE SUBMITTAL PROCESS, PROVIDE SHOP DRAWINGS WHICH DETAIL PROPOSED MOUNTING FOR ALL SUCH EQUIPMENT.

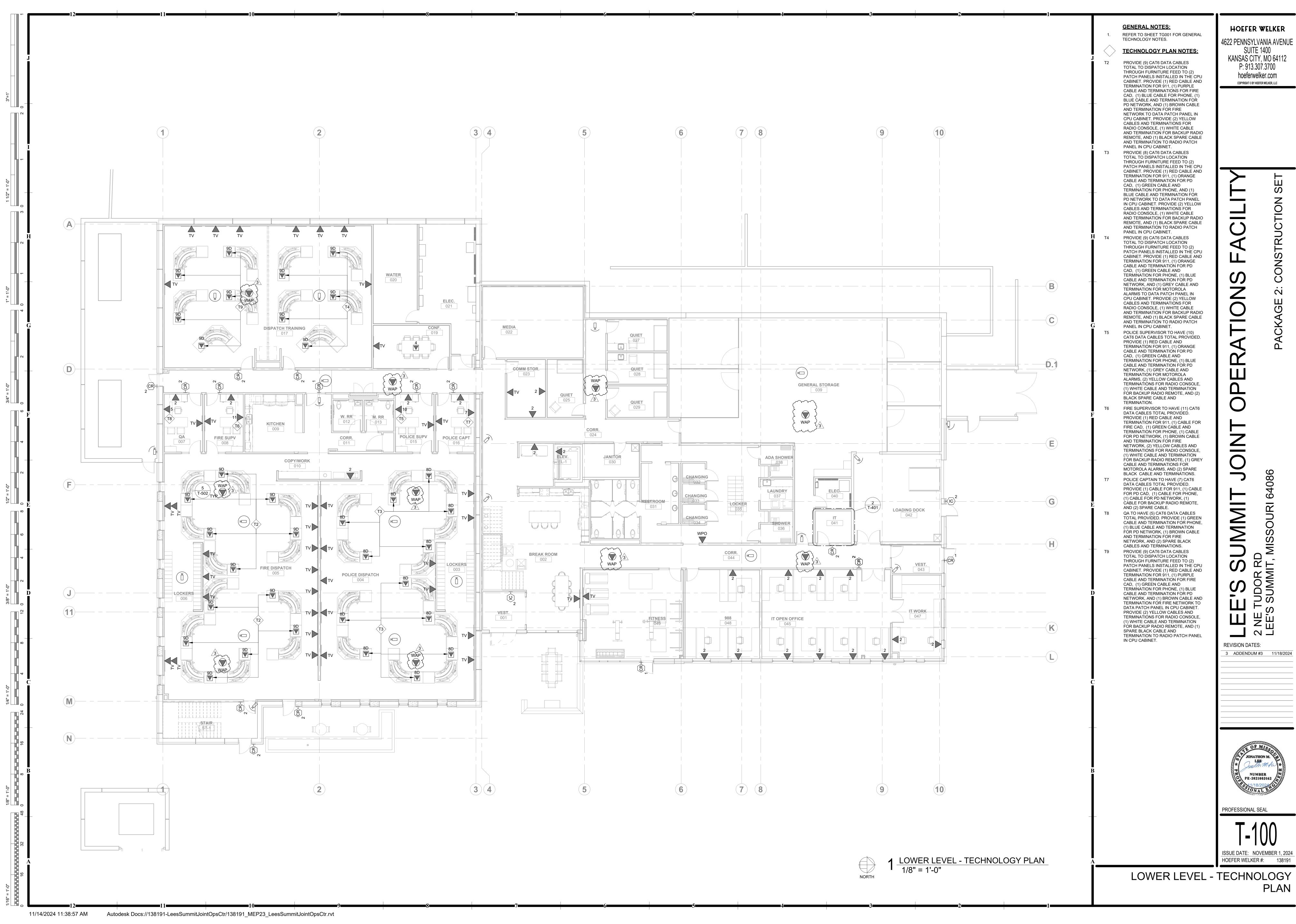
TECHNOLOGY SHEET INDEX				
SHEET NUMBER	SHEET NAME			
TG001	TECHNOLOGY LEGEND AND GENERAL NOTES			
TS100	TECHNOLOGY SITE PLAN			
T-100	LOWER LEVEL - TECHNOLOGY PLAN			
T-101	MAIN LEVEL - TECHNOLOGY PLAN			
T-110	LOWER LEVEL - TECHNOLOGY CABLE TRAY PLAN			
T-111	MAIN LEVEL - TECHNOLOGY CABLE TRAY PLAN			
T-120	LOWER LEVEL - TECHNOLOGY UNDERFLOOR CABLE TRAY PLAN			
T-121	MAIN LEVEL - TECHNOLOGY UNDERFLOOR CABLE TRAY PLAN			
T-200	LOWER LEVEL - TECHNOLOGY ALTERNATE PLAN			
T-201	MAIN LEVEL - TECHNOLOGY ALTERNATE PLAN			
T-401	ENLARGED TECHNOLOGY PLANS			
T-501	TECHNOLOGY DETAILS			
T-502	TECHNOLOGY DETAILS			

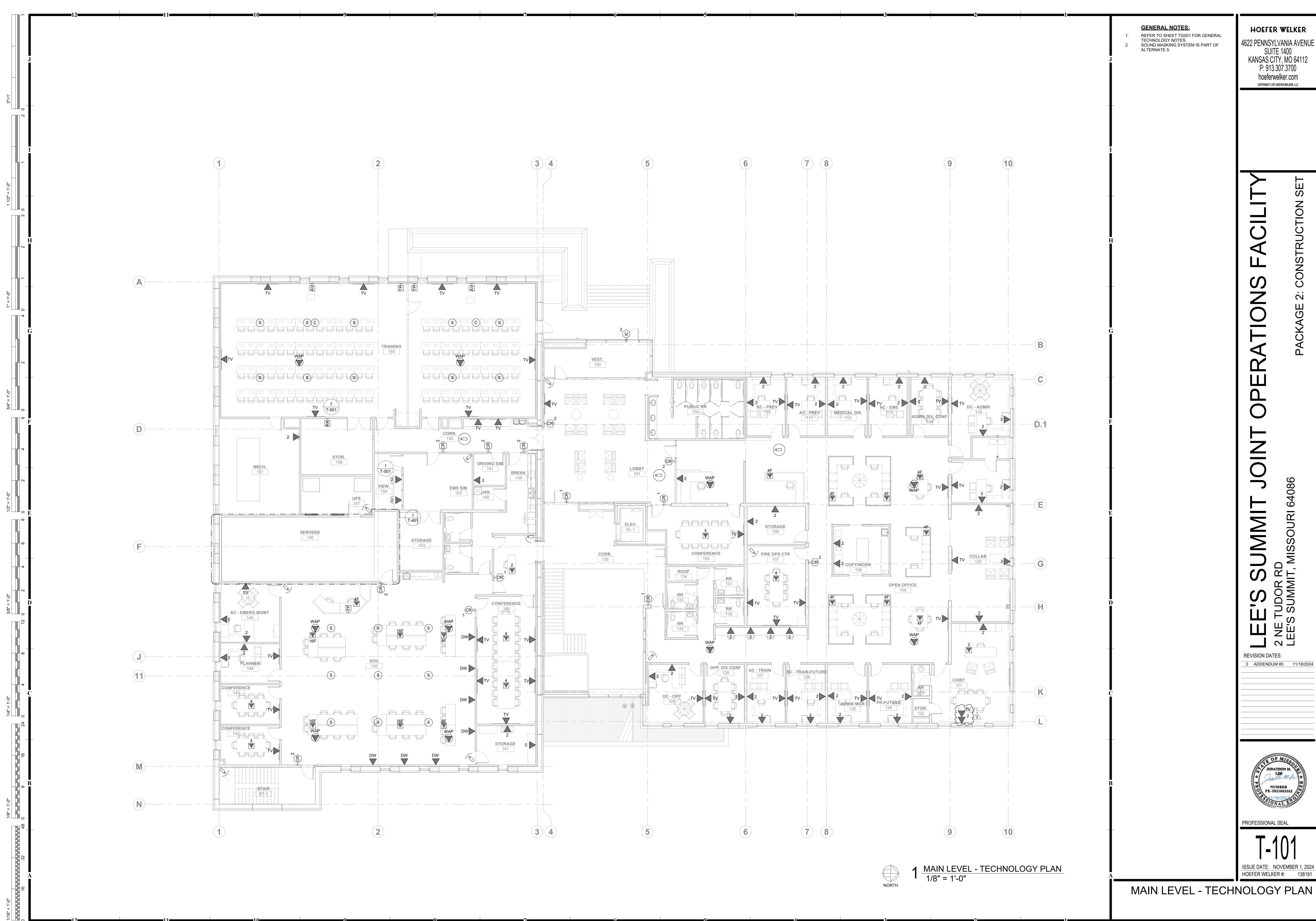
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COMMENTS
XX
VENDOR IS MARTIN UNDERGROUND
XX
HW TO DOCUMENT CONDUIT ONLY. (4)-4" CONDUIT WITH INTERDUCT
XX
INFRASTRUCTURE AND CABLING BY GC
XX
SOUND MASKING IS AN ALTERNATE

	LEGEND
OWNER	OWNER SUPPLY CHAIN
HW	HOEFER WELKER
GC	GENERAL CONTRACTOR/SUB CONTRACTORS
LV	LOW VOLTAGE DESIGNER
VENDOR	EQUIPMENT VENDOR
(BLANK)	NOT APPLICABLE TO THIS PROJECT

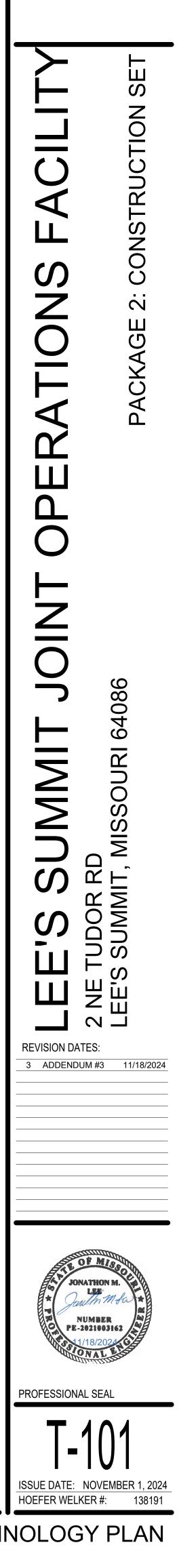


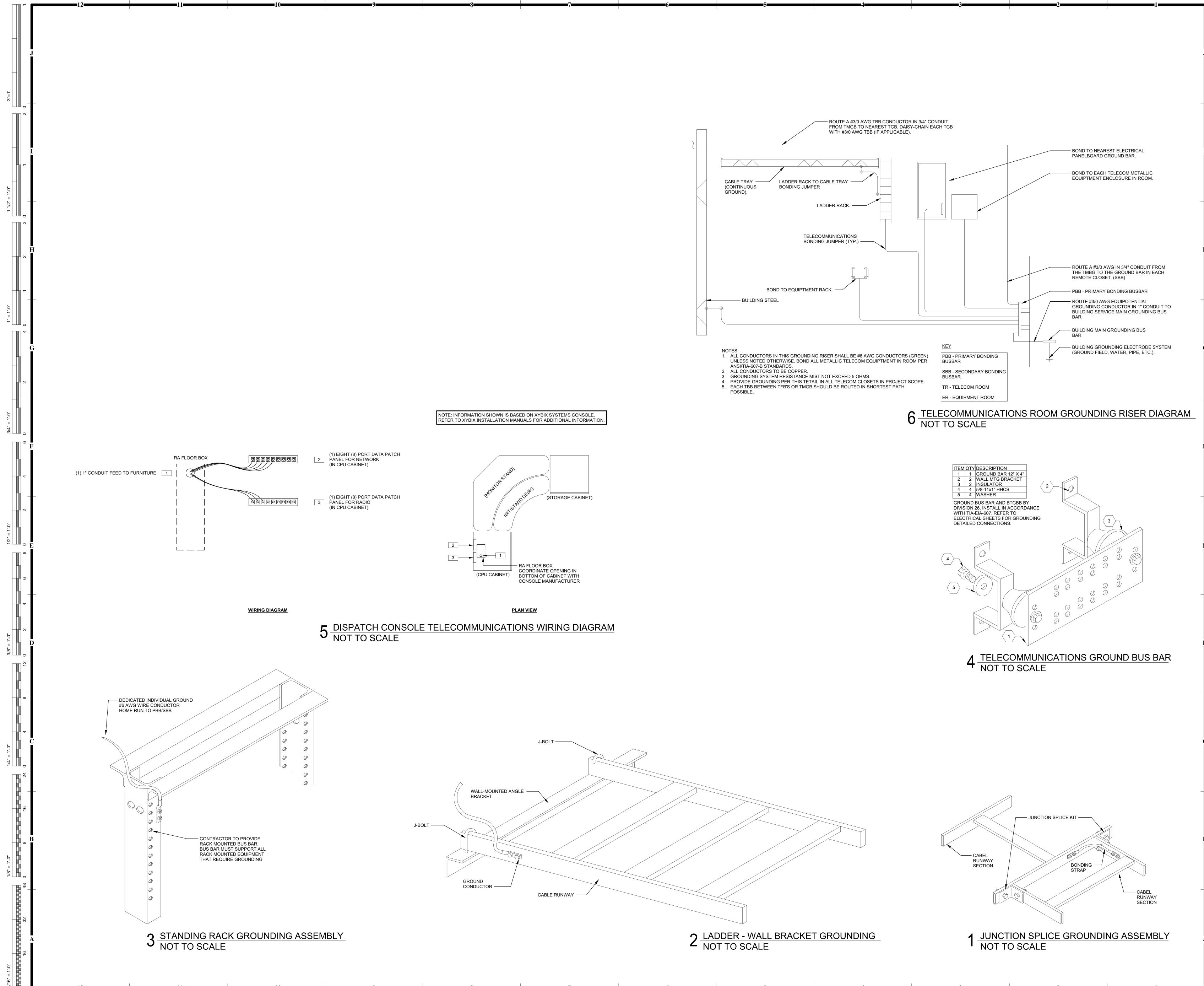




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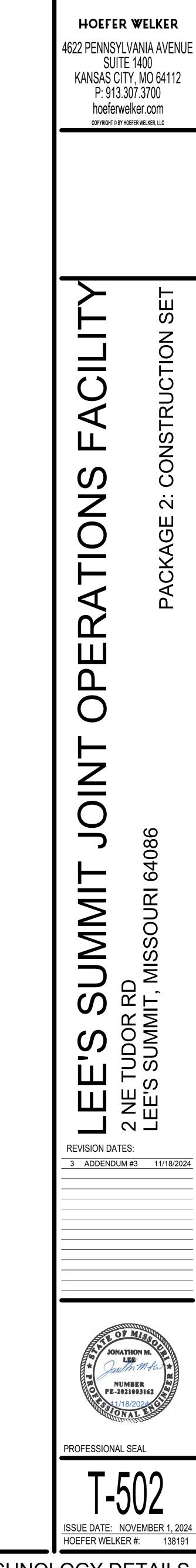
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**TECHNOLOGY DETAILS**