LAKEWOOD BUSINESS CENTER, LOT 1

PERMIT SET

AUGUST 31, 2023

GENERAL NOTES:

1. THE CONTRACTOR SHALL SECURE AND PAY FOR GOVERNMENT LICENSES, INSPECTIONS, TESTING, TEMPORARY UTILITIES AND PERMITS AS REQUIRED BY THE CONSTRUCTION DOCUMENTS AND/OR REGULATORY BODY HAVING AUTHORITY.
2. CONTRACTORS SHALL VISIT THE SITE WHILE BIDDING AND SHALL FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND THE REQUIREMENTS OF THE PROJECT AND CONSTRUCTION DOCUMENTS PRIOR TO DEVELOPING THEIR BID, FABRICATION / CONSTRUCTION, AND PURCHASING. MATERIAL QUANTITIES SHALL BE BASED ON ACTUAL FIELD CONDITIONS AND MEASUREMENTS. DO NOT RELY ON SCALING DRAWINGS FOR ACCURATE DIMENSIONS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT OR OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES, CONFLICTS OR OMISSIONS DISCOVERED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTIONS AND/OR REPAIRS REQUIRED FOR FAILING TO DO SO.
3. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ALL CONSTRUCTION DOCUMENTS TO THEIR SUBCONTRACTORS AS REQUIRED FOR THEM TO DEVELOP A COMPLETE BID FOR THEIR WORK AND TO HAVE A COMPLETE UNDERSTANDING OF COORDINATION NEEDED WITH OTHER SUBCONTRACTORS FOR RELATED HIDDEN OR EXPOSED WORK TO ENSURE EFFICIENT AND ORDERLY INSTALLATION.
4. THE ARCHITECT ASSUMES NO LIABILITY FOR THE SERVICES AND/OR CONSTRUCTION DOCUMENTS OF DESIGN SUB-CONSULTANTS COMPILED INTO THE SET OF DOCUMENTS ISSUED BY THE ARCHITECT. THESE DESIGN SERVICES MAY INCLUDE, BUT ARE NOT LIMITED TO, CIVIL, LANDSCAPE, STRUCTURAL, MECHANICAL, PLUMBING, ELECTRICAL, PRE-ENGINEERED METAL BUILDING DESIGN, TILT-UP DESIGN, TRUSS SYSTEM DESIGN, AUTOMATIC FIRE SPRINKLER AND/OR ALARM SYSTEMS, LOW-VOLTAGE ELECTRICAL TELECOMMUNICATION AND SECURITY SYSTEMS AND GUTTER / DOWNSPOUT DESIGN.
5. UNLESS SPECIFICALLY NOTED OTHERWISE, THE CONTRACTOR SHALL PROVIDE AND PAY FOR LABOR, MATERIALS, EQUIPMENT, MACHINERY, SCAFFOLDING, SHORING, TOOLS, LAYOUT, ON-SITE DIMENSIONING, TRANSPORTATION, UTILITIES, AND OTHER FACILITIES AND SERVICES NECESSARY FOR PROPER EXECUTION AND COMPLETION OF THE WORK AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS. THIS SHALL ALSO INCLUDE NECESSARY CUTTING, PATCHING AND REPAIRING OF EXISTING CONSTRUCTION MATERIALS IN PLACE. ALL WORK AND MATERIAL SHALL COMPLY WITH THE APPLICABLE GOVERNING CODES LISTED.
6. EACH SUBCONTRACTOR SHALL PROVIDE THEIR OWN LIFTING EQUIPMENT AS REQUIRED TO COMPLETE THEIR SPECIFIC SCOPE OF WORK.
7. WHERE DETAILS AND DESIGN INTENT ARE NOT CLEAR, THE CONTRACTOR SHALL CONSULT THE ARCHITECT FOR CLARIFICATION PRIOR TO PROCEEDING WITH THE WORK.
8. THE CONTRACTOR SHALL DESIGN AND INSTALL ADEQUATE SHORING AND BRACING FOR STRUCTURAL MODIFICATIONS, INSTALLATIONS AND ERECTION.
9. CONTRACTORS SHALL TAKE CARE TO PROTECT ADJACENT AREAS FROM DUST AND DAMAGE DURING THE CONSTRUCTION PROCESS AND SHALL CLEAN UP AFTER THEMSELVES AT THE END OF EACH WORKING DAY. ANY DAMAGE DONE TO ADJACENT AREAS MUST BE REPAIRED TO MATCH ORIGINAL CONDITIONS OR TO THE OWNER'S SATISFACTION. REPAIRS ARE TO BE PAID FOR BY THE CONTRACTOR RESPONSIBLE.
10. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY ADDITIONAL WORK OR REVISIONS REQUIRED DUE TO SITE CONDITIONS OR ADDITIONAL REQUIREMENTS OF ANY REGULATORY BODIES HAVING AUTHORITY.
11. FOR THE DURATION OF THE PROJECT AND AT ALL TIMES OF EACH DAY, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR JOB SITE CONDITIONS, SECURITY AND SAFETY FOR WORKERS AND THE GENERAL PUBLIC, AS REQUIRED BY THE REGULATORY BODY HAVING AUTHORITY.
12. THE GENERAL CONTRACTOR SHALL PURCHASE AND MAINTAIN INSURANCE COVERAGE IN ACCORDANCE WITH THE REQUIREMENTS OF THE OWNER. VERIFY AND COORDINATE WITH THE OWNER'S REPRESENTATIVE FOR ANY ADDITIONAL REQUIREMENTS.
13. THE OWNER OR THE OWNER'S SUBCONTRACTORS MAY OCCUPY PORTIONS OF THE PROJECT DURING THE FINAL STAGE OF CONSTRUCTION. COORDINATE AND COOPERATE WITH THE OWNER TO MINIMIZE CONFLICT AND FACILITATE THE OWNER'S OPERATION.
14. THE CONTRACTOR SHALL PROVIDE SECURITY OF THE WORK, INCLUDING TOOLS AND UNINSTALLED MATERIALS, PROTECT THE WORK, STORED PRODUCTS, CONSTRUCTION EQUIPMENT, AND OWNER'S PROPERTY FROM THEFT AND VANDALISM, AND PROTECT THE PREMISES FROM ENTRY BY UNAUTHORIZED PERSONNEL UNTIL FINAL ACCEPTANCE BY THE OWNER.
15. CONTRACTOR SHALL COORDINATE STAGING AREAS AS REQUIRED BY THE LANDLORD / OWNER.
16. THE CONTRACTOR SHALL VERIFY THE SIZE AND LOCATION OF ALL EXISTING UTILITIES.
17. THE STRUCTURAL ENGINEER AND ARCHITECT MUST BE NOTIFIED AND MUST GIVE APPROVAL PRIOR TO ANY STRUCTURAL MEMBER(S) BEING CUT OR MODIFIED TO ACCOMMODATE THE INSTALLATION OF ANY PIPES, DUCTS OR OTHER CONSTRUCTION.
18. THE STRUCTURAL ENGINEER AND ARCHITECT MUST BE NOTIFIED AND MUST GIVE APPROVAL PRIOR TO ANY MODIFICATION TO THE ROOF SYSTEM OR ADDING ANY ADDITIONAL ROOF-MOUNTED EQUIPMENT.

CONSTRUCTION NOTES:

1. PERFORM ALL WORK IN ACCORDANCE WITH ACCEPTABLE TRADE PRACTICE TO ENSURE THE HIGHEST QUALITY FINISHED PRODUCT - EXPRESSED OR IMPLIED. PERFORM ALL WORK BY SKILLED MECHANICS IN ACCORDANCE WITH ESTABLISHED STANDARDS OF WORKMANSHIP IN EACH OF THE VARIOUS TRADES.
2. WHEN THE PROJECT REQUIREMENTS REQUIRE THAT THE INSTALLATION OF WORK SHALL COMPLY WITH MANUFACTURER'S INSTRUCTIONS, PERFORM THE WORK IN STRICT ACCORDANCE WITH THE MOST CURRENT WRITTEN MANUFACTURER'S INSTRUCTIONS.
3. ALL PRODUCTS AND EQUIPMENT SHALL BE DELIVERED IN UNDAMAGED CONDITION AND STORED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS TO AVOID DISRUPTION OF THE WORK OR DAMAGE TO THE ITEMS. REPLACE DAMAGED OR UNFIT MATERIALS, AT NO COST TO THE OWNER.
4. COORDINATE BLOCKING REQUIREMENTS WITH ADJACENT OR RELATED TRADES, ACCESSORIES, EQUIPMENT AND FIXTURES. INSTALL REQUIRED BLOCKING AT NO ADDITIONAL COST TO THE CONTRACT.
5. ALL WEATHER-EXPOSED SURFACES SHALL HAVE A WEATHER-RESISTIVE BARRIER, EXTERIOR OPENINGS SHALL BE FLASHED IN SUCH A MANNER AS TO MAKE THEM WATERPROOF.
6. REPAIR PROPERTY DAMAGE BY THE INSTALLERS TO A LIKE NEW CONDITION, OR REPLACE DAMAGED SURFACES AND MATERIALS OF THE PREVIOUSLY INSTALLED WORK BY OTHER TRADES, INSTALLERS, AND SUBCONTRACTORS.
7. ALLOWABLE TOLERANCES - UNLESS OTHERWISE NOTED OR INDICATED, THE FOLLOWING TOLERANCES SHALL APPLY TO ALL WORK:
   g. ALL VERTICAL SURFACES SHALL BE PLUMB OR CONSTRUCTED TO THE EXACT SLOPES OR ANGLES INDICATED.
   h. ALL HORIZONTAL SURFACES SHALL BE LEVEL OR CONSTRUCTED TO THE EXACT ANGLE INDICATED OR INTENDED.
   i. WALL AND SOFFIT INTERSECTIONS SHALL BE 90° OR THE EXACT ANGLE INDICATED OR INTENDED.
   j. ALL CORNERS AND EDGES SHALL BE STRAIGHT AND TRUE WITHOUT DENTS, WAVES, BULGES OR OTHER BLEMISHES.
   k. ALL JOINTS SHALL BE TIGHT, STRAIGHT, EVEN, AND SMOOTH.
   l. ALL OPERABLE ITEMS SHALL OPERATE SMOOTHLY WITHOUT STICKING OR BINDING AND WITHOUT EXCESSIVE
8. THE CONTRACTOR SHALL NOTIFY THE OWNER WHEN THE WORK IS SUBSTANTIALLY COMPLETE AND READY FOR INSPECTION. UPON INSPECTION, PROVIDE WRITTEN OPERATION AND MAINTENANCE INSTRUCTIONS AND GUARANTEES FOR ALL EQUIPMENT AND MATERIALS INSTALLED. PROVIDE WRITTEN GUARANTEES FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE WORK.

ARCHITECTURAL ABBREVIATIONS:*

*NOTE: THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY ABBREVIATIONS NOT NOTED AND REQUEST CLARIFICATIONS.

@	AT
ACT	ACOUSTIC CEILING TILE
ADJ	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
ALUM	ALUMINUM
ANOD	ANODIZED
ATT	ATTENUATION
BD	BOARD
BET	BETWEEN
BF	BARRIER FREE
BIT	BITUMINOUS
BLDG	BUILDING
BO	BOTTOM OF
BTM	BOTTOM
CPT	CARPET
CT	CERAMIC TILE
CJ	CONTROL JOINT
CL	CENTER LINE
CLG	CEILING
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COMP	COMPRESSIBLE
CONC	CONCRETE
CONT	CONTINUOUS
D	DRYER
DEG	DEGREE
DEMO	DEMOLITION
DF	DRINKING FOUNTAIN
DH	DOUBLE-HUNG
DIA	DIAMETER
DN	DOWN
DP	DEEP
DS	DOWN SPOUT
DW	DISHWASHER
EA	EACH
EJ	EXPANSION JOINT
EQ	EQUAL
ETR	EXISTING TO REMAIN
EXG	EXISTING
EXP	EXPOSED TO STRUCTURE
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER, FINISHED END
FF	FINISHED FLOOR
F&I	FURNISH AND INSTALL
FLR	FLOOR
FR	FIRE RETARDANT
FRP	FIBER-REINFORCED PLASTIC
FV	FIELD VERIFY
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GFI	GROUND FAULT CIRCUIT INTERRUPTER
GL	GLASS
GYP	GYPSUM BOARD
H	HIGH
HB	HOSE BIB
HT	HEIGHT
HDW	HARDWARE
HRDWD	HARDWOOD
HM	HOLLOW METAL
HR	HOUR
IN	INCH
INSUL	INSULATION
JT	JOINT
KS	KNEE SPACE
L	LONG
LB (#)	POUND
LVL	LAMINATED VENEER LUMBER
MAX	MAXIMUM
MDO	MEDIUM DENSITY OVERLAY
MECH	MECHANICAL
MFR	MANUFACTURER
MICRO	MICROWAVE
MIN	MINIMUM
MO	MASONRY OPENING
MR	MOISTURE RESISTANT
MTD	MOUNTED
MTL	METAL
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
O.H.	OVERHEAD or OPPOSITE HAND
OSB	ORIENTED STRAND BOARD
OZ	OUNCE
PREFAB	PREFABRICATED
PLAM	PLASTIC LAMINATE
PLYWD	PLYWOOD
PR	PAIR
PT	PRESSURE TREATED
PNT	PAINT
PEMB	PRE-ENGINEERED MTL BLDG
QTY	QUANTITY
R	RISER
RCP	REFLECTED CEILING PLAN
REF	REFRIGERATOR, REFERENCE
REINF	REINFORCED
REQD	REQUIRED
RM	ROOM
RO	ROUGH OPENING
RCB	RUBBER COVE BASE
SC	SEALED CONCRETE
SF	SQUARE FEET
SIM	SIMILAR
SQ	SQUARE
SS	STAINLESS STEEL
ST	STAIN
T	TREAD
TBD	TO BE DETERMINED
TI	TENANT IMPROVEMENT
TO	TOP OF
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
W	WASHER, WIDE
W/	WITH
WD	WOOD
WH	WATER HEATER
WIC	WALK-IN CLOSET
WWF	WELDED WIRE FABRIC

DISCLAIMER:

THESE DRAWINGS ARE CONSIDERED A "BUILDER'S SET", AND BY BEGINNING CONSTRUCTION, THE CONTRACTOR GUARANTEES TO THE ARCHITECT, THAT THE CONTRACTOR HAS THE COMPETENCE AND SKILL IN CONSTRUCTION NECESSARY TO BUILD THE PROJECT WITH THESE DRAWINGS. THE CONTRACTOR WILL BE REQUIRED TO ADAPT THE DRAWINGS TO ACTUAL FIELD CONDITIONS AND MAKE LOGICAL ADJUSTMENTS IN FIT, FORM, DIMENSION AND QUANTITY. IN THE EVENT ADDITIONAL DETAIL OR GUIDANCE IS NEEDED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT. FAILURE TO GIVE NOTICE SHALL RELIEVE THE ARCHITECT OF RESPONSIBILITY FOR ANY RESULTANT EXPENSES, REPAIRS OR ADDITIONAL WORK. IT IS UNDERSTOOD AND AGREED THAT IF THE ARCHITECT IS NOT HIRED TO DO CONSTRUCTION OBSERVATION OR ANY OTHER CONSTRUCTION PHASE SERVICES, THAT THE ARCHITECT IS NOT LIABLE FOR ANY CLAIMS THAT MAY BE IN ANY WAY CONNECTED THERETO.

ARCHITECTURAL SYMBOL LEGEND:

SYMBOL:	DESCRIPTION:
ROOM NAME / RM. #	ROOM TAG
XX/AX.XX TYP.	ELEVATION TAG
XX/AX.XX TYP.	SECTION TAG
ELEV. -000'-0"	SPOT ELEVATION TAG
A-1	PARTITION TYPE
A	WINDOW TYPE
101.1A	DOOR NUMBER
XX / A-XXX	DETAIL BUBBLE

GENERAL DIMENSIONING NOTE: ALL DIMENSIONS ARE TO THE FACE OF GYPSUM BOARD AT INTERIOR PARTITIONS AND TO THE FACE OF STEEL STRUCTURE (OR BUILDING GRID LINES) AT EXTERIOR AND DEMISING WALLS.

H4 VICINITY MAP
SCALE: =

SHEET INDEX

Architect:
MIDWEST ARCHITECTS
1120 NW Eagle Ridge Blvd.
Grain Valley, Missouri 64029
t: (816) 229-8115

Client:
Ward Development
1120 NW Eagle Ridge Blvd.
Grain Valley, Missouri 64029
t: (816) 229-8115

Consultants:
Civil Engineering:
Engineering Solutions
50 SE 30th Street
Lee's Summit, Missouri 64082
t: (816) 623-9888

Structural Engineering:
Structura Logica
18901 E. 299th Street
Harrisonville, MO 64701
t: (816) 872-4883

MEP Engineering:
JSC Engineers
1925 Central Street, Suite 201
Kansas City, MO 64108
t: (816) 272-5289

Seal:
STATE OF MISSOURI
MICHAEL MOORES
NUMBER A-2009032812
ARCHITECT
08.31.23
Michael Moores, MO Architect #2009032812

Project Number: 2307
Project Type: NEW CONSTRUCTION
Project Name and Address:
LAKEWOOD BUSINESS CENTER, LOT 1
NE Maguire Blvd
Lee's Summit, Missouri 64064

Issue:	Date:
Permit Set	08.31.23

Sheet Title:
COVER SHEET
GENERAL INFORMATION

G-100

PROPERTY DESCRIPTION

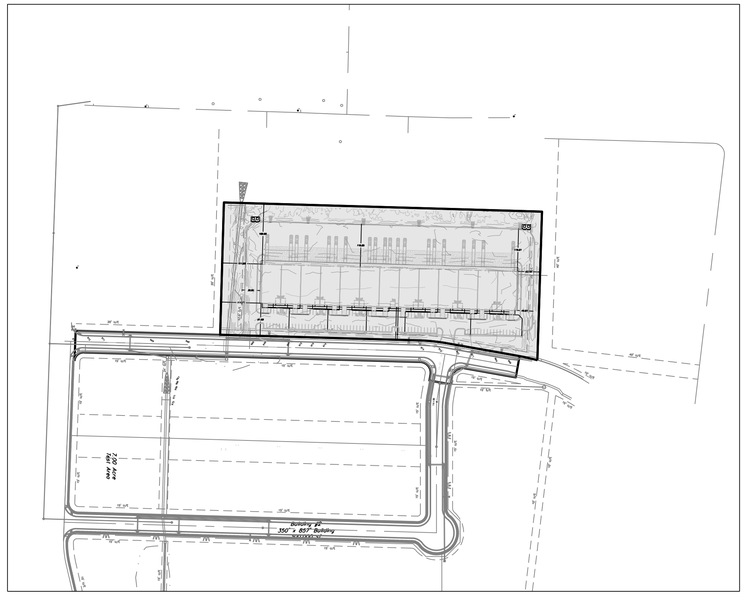
LAKEWOOD BUSINESS CENTER PLAT S

Final Development Plan

Lot 1

Part of Section 20, Township 48 North, Range 31 West

LEE'S SUMMIT, JACKSON COUNTY, MISSOURI



SITE LOCATION MAP

SCALE" 1"=200'

ALL PAVING ON THE PARKING LOT WILL COMPLY WITH THE UNIFIED DEVELOPMENT ORDINANCE ARTICLE 8 IN TERMS OF PAVING THICKNESS AND BASE

OIL - GAS WELLS
ACCORDING TO EDWARD ALTON MAY JR'S ENVIRONMENTAL IMPACT STUDY OF ABANDONED OIL AND GAS WELLS IN LEE'S SUMMIT, MISSOURI IN 1995, THERE ARE NOT OIL AND GAS WELLS WITHIN 185 FEET OF THE PROPERTY AS SURVEYED HEREON.

SURVEY AND PLAT NOTES:
THE SUBJECT PROPERTY SURVEYED LIES WITHIN A FLOOD ZONE DESIGNATED ZONE (X), AREAS LOCATED OUTSIDE THE 100 YEAR FLOOD PLAIN, PER F.E.M.A. MAP, COMMUNITY PANEL NO. 29095C0430G EFFECTIVE DATE: JANUARY 20, 2017.

UTILITY COMPANIES:

THE FOLLOWING LIST OF UTILITY COMPANIES IS PROVIDED FOR INFORMATION ONLY. WE DO NOT OFFER ANY GUARANTEE OR WARRANTY THAT THIS LIST IS COMPLETE OR ACCURATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES THAT MAY BE AFFECTED BY THE PROPOSED CONSTRUCTION AND VERIFYING THE ACTUAL LOCATION OF EACH UTILITY LINE. THE CONTRACTOR SHALL NOTIFY ENGINEERING SOLUTIONS AT 816.623.9888 OF ANY CONFLICT WITH PROPOSED IMPROVEMENTS.

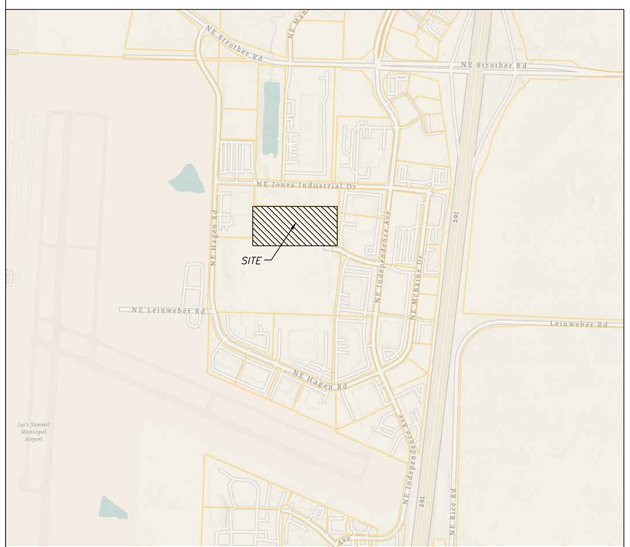
EVERGY ~ 298-1196
MISSOURI GAS ENERGY ~ 756-5261
SOUTHWESTERN BELL TELEPHONE ~ 761-5011
COMCAST CABLE ~ 795-1100
WILLIAMS PIPELINE ~ 422-6300
CITY OF LEE'S SUMMIT PUBLIC WORKS ~ 969-1800
CITY OF LEE'S SUMMIT DEVELOPMENT ENGINEERING INSPECTION AT 816.969.1200
CITY OF LEE'S SUMMIT WATER UTILITIES ~ 969-1900
MISSOURI ONE CALL (DIG RITE) ~ 1-800-344-7483

GENERAL NOTES:

1 ~ ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.
2 ~ ALL REQUIRED EASEMENTS WITHIN THE BOUNDARY OF THIS PROJECT SHALL BE PROVIDED FOR ON THE FINAL PLAT.
3 ~ ANY REQUIRED EASEMENT LOCATED OUTSIDE OF THE BOUNDARY OF THIS PROJECT SHALL BE PROVIDED FOR BY SEPARATE INSTRUMENT PRIOR TO ISSUANCE OF CONSTRUCTION PERMITS.
4 ~ THE CONTRACTOR SHALL CONTACT THE CITY'S DEVELOPMENT SERVICES ENGINEERING INSPECTION TO SCHEDULE A PRE-CONSTRUCTION MEETING WITH A FIELD ENGINEERING INSPECTOR PRIOR TO ANY LAND DISTURBANCE WORK AT (816) 969-1200.
5 ~ THE CONTRACTOR SHALL NOTIFY ENGINEERING SOLUTIONS AT 816.623.9888 OF ANY CONFLICT WITH THE IMPROVEMENTS PROPOSED BY THESE PLANS AND SITE CONDITIONS.
6 ~ THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER AND OBTAIN THE APPROPRIATE BLASTING PERMITS FOR A REQUIRED BLASTING. IF BLASTING IS ALLOWED, ALL BLASTING SHALL CONFORM TO STATE REGULATIONS AND LOCAL ORDINANCES.

NOTE :

ALL CONSTRUCTION SHALL FOLLOW THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813. WHERE DISCREPANCIES EXIST BETWEEN THESE PLANS AND THE DESIGN AND CONSTRUCTION MANUAL, THE DESIGN AND CONSTRUCTION MANUAL SHALL PREVAIL.



Vicinity Map

DEVELOPER:
NAME
NORTH OAK SAFETY STORAGE LLC
1120 NW EAGLE RIDGE BLVD
GRAIN VALLEY, MO 64029
Phone:

Summary of Quantities:

ITEM AND DESCRIPTION	UNIT	ESTIMATED QUANTITY
ASPHALT PAVING	S.Y.	17,018.00
GEOGRID	S.Y.	20,421.00
MoDOT Type 5 Base	S.Y.	20,421.00
KCMMB ENTRANCE	UNIT	2
CURBING	FT	4,370.00
ADA SIDEWALK RAMP	UNIT	4
SANITARY 8" PVC SDR 26 Service Line	FT	82.00
TRACER WIRE AND EQUIPMENT	FT	825.00
CLEARING, GRADING & GRUBBING	LS	1
SILT FENCE	FT	4,350.00
INLET PROTECTION	UNIT	10.00
SEEDING / MULCHING/ FERTILIZING	AC	7.70
CONST. ENTRANCE	UNIT	2
STORM		
15" HDPE	FT	663.21
5' x 4' STORM CURB INLET	EA	7.00
WATER		
2" Type K Soft Copper Water Service Line	FT	89.00
6" C900 PVC CLASS 200	FT	79.00
BACKFLOW VAULT	UNIT	1

INDEX OF SHEETS:

Current Zoning: PI
Proposed Zoning: PI

Site Impervious Area

Total Area	*7.70 acres (335238.11 sq. ft.)*
Site	
Site Area	*7.70 Acres*
Building	*78,038 sq. ft.*
Parking	*153,162 sq. ft*
Impervious Area	*231,200 sq. ft (68.97% of Site)*
Floor-Area-Ratio	*23.28%*

Parking:
Provided
106 Standard (__ ADA Accessible)
20 Semi-Tractor Trailer

Parking:
106 Required
106 Standard (-- ADA Accessible)
20 Semi-Tractor Trailer

Site Improvement Notes

Sanitary Sewer Improvements
-The site will connect to the existing sanitary sewer on the east side of the property on Lot 2B.

Water Main Improvements
-The site will utilize the existing water on the north side of NE Maguire Boulevard.

Storm Sewer
-Enclosed pipe systems and inlets will collect and convey the onsite storm water runoff and direct it toward the existing public storm sewer system.

Storm Water Detention
-Existing Storm Detention is on north side of property.

LEGEND:

Existing Underground Power	UGP UGP
Existing Conc. Curb & Gutter	
Existing Wood Fence	X X
Existing Gas Main	GAS
Existing Water Main	W W
Existing Storm Sewer	STM STM
Existing Sanitary Sewer	SAN SAN
Existing Underground Telephone	UGT UGT
Existing Overhead Power	OHE
Proposed Storm Sewer	ST ST ST
Proposed Sanitary Sewer	SS SS
Proposed Underground Power	UGT UGT
Proposed Gas Service	GAS
Proposed 8" D.I.P. Water	W
Proposed Electrical Service	UGP UGP

ENGINEER'S CERTIFICATION:

I HEREBY CERTIFY THAT THIS PROJECT HAS BEEN DESIGNED AND THESE PLANS PREPARED IN ACCORDANCE WITH THE CURRENT DESIGN CRITERIA OF THE CITY OF LEE'S SUMMIT, MISSOURI AND THE STATE OF MISSOURI. I FURTHER CERTIFY THAT THESE PLANS WERE DESIGNED IN ACCORDANCE TO AASHTO STANDARDS.

ENGINEERING SOLUTIONS
ENGINEERING & SURVEYING
50 SE 30TH STREET
LEE'S SUMMIT, MO 64082
P:(816) 623-9888 F:(816)623-9849

Professional Registration
Missouri
Engineering 2005002186-D
Surveying 2005008319-D
Kansas
Engineering E-1695
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

Lakewood Industrial
Lee's Summit, Jackson County, Missouri

Project: LAKEWOOD BUSINESS CENTER PLAT S, LSMO
Issue Date: May 5, 2023

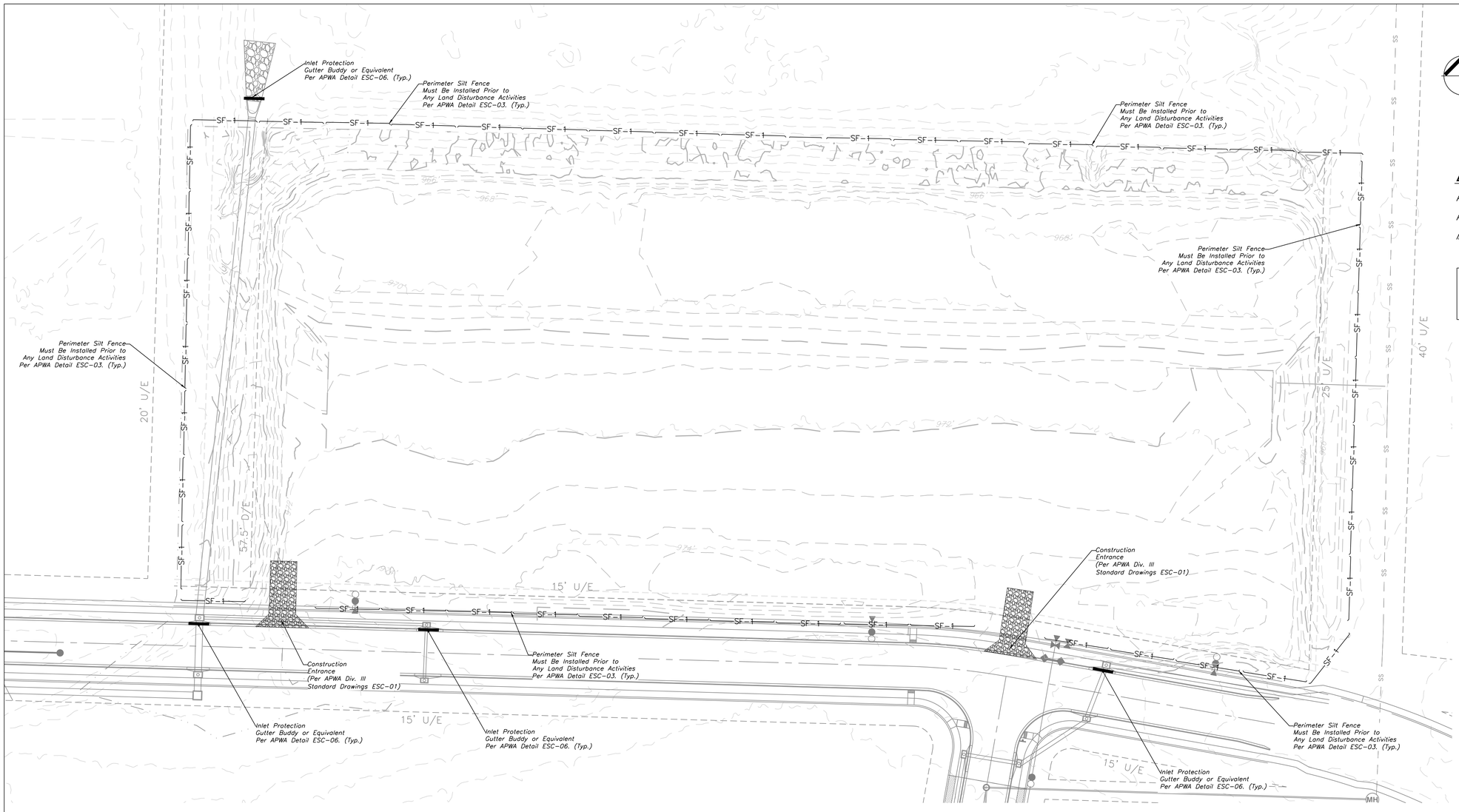
FINAL DEVELOPMENT PLAN
Construction Plans for:
Lakewood Industrial
Lee's Summit, Jackson County, Missouri

STATE OF MISSOURI
MATTHEW J. SCHLICHT
NUMBER PE-2006019708
PROFESSIONAL ENGINEER

Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25226

REVISIONS

C.001



0 20' 40' 80'

ESC PHASE 1

SCALE: 1" = 40'

SILT FENCE PROTECTION
TO BE MAINTAINED BY CONTRACTOR

LEGEND

PHASE 1 SILT FENCE — SF-1 — SF-1

PHASE 2 SILT FENCE — SF-2 — SF-2

INLET PROTECTION

DURING ALL PHASES OF CONSTRUCTION, INACTIVE AREA STABILIZATION METHODS AS DESCRIBED IN APWA SECTION 5111.3 SHALL BE USED TO CONTROL EROSION AND SILTATION.

NOTES: The Land Disturbance Plans indicates the Final placement of erosion control devices. The contractor(s) may proceed with construction prior to the final placement of these devices by providing additional devices to control erosion on their items of work. These devices shall be maintained until the final devices are in place.

ENGINEERING SOLUTIONS
ENGINEERING & SURVEYING
50 SE 30TH STREET
LEE'S SUMMIT, MO 64082
P:(816) 623-9888 F:(816)623-9849

Professional Registration
Missouri
Engineering 2005002186-D
Surveying 2005008319-D
Kansas
Engineering E-1695
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

Lakewood Industrial
Lee's Summit, Jackson County, Missouri

Project:
LAKEWOOD
BUSINESS CENTER
PLAT S, LSMO

Issue Date:
May 5, 2023

ESC PHASE 1 – Pre Clearing Plan
Construction Plans for:
Lakewood Industrial
Lee's Summit, Jackson County, Missouri

STATE OF MISSOURI
MATTHEW J. SCHLICHT
NUMBER
PE-2006019708
PROFESSIONAL ENGINEER

Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25226

REVISIONS

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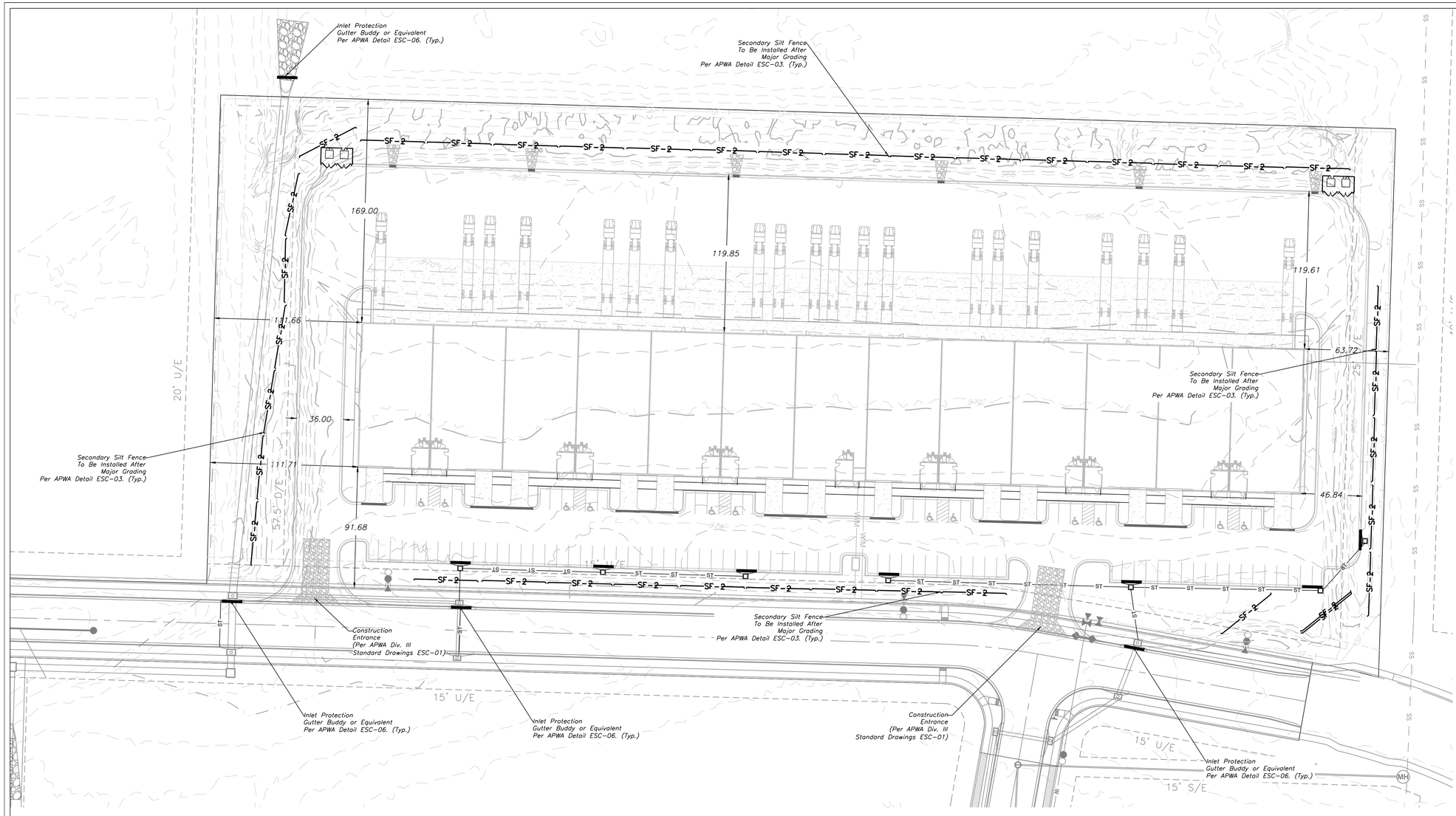

0 10' 20' 40'

ESC PHASE 2

SCALE: 1" = 20'

SILT FENCE PROTECTION
TO BE MAINTAINED BY CONTRACTOR

LEGEND

PHASE 1 SILT FENCE ——SF-1——SF-1——

PHASE 2 SILT FENCE ——SF-2——SF-2——

INLET PROTECTION ▬

DURING ALL PHASES OF CONSTRUCTION, INACTIVE AREA STABILIZATION METHODS AS DESCRIBED IN APWA SECTION 5111.3 SHALL BE USED TO CONTROL EROSION AND SILTATION.

NOTES: The Land Disturbance Plans indicates the Final placement of erosion control devices. The contractor(s) may proceed with construction prior to the final placement of these devices by providing additional devices to control erosion on their items of work. These devices shall be maintained until the final devices are in place.

EROSION CONTROL DESCRIPTION:

1.) SILT FENCE SHALL BE PLACE AT THE PERIMETER OF THE GRADING AND AT INTERMEDIATE AREAS THROUGHOUT THE SITE AS SHOWN ON THE PLAN. INLET SEDIMENT TRAPS SHALL BE PLACED SURROUNDING ALL STORM INLETS

2.) INSTALL TEMPORARY CONSTRUCTION ENTRANCE AS SHOWN ON PLAN

EROSION CONTROL PROCEDURE:

1.) SILT FENCE AND TEMPORARY CONSTRUCTION ENTRANCE SHALL BE INSTALLED AT THE PERIMETER OF THE GRADED AREAS PRIOR TO BEGINNING OF CLEARING OR DEMOLITION OPERATIONS. THE CONTRACTOR SHALL INSTALL SILT FENCE AS SHOWN ON PLANS AS GRADING PROGRESSES.

TEMPORARY CONSTRUCTION ENTRANCE NOTES:

A.) INSTALLATION
1.) AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC STREETS. IF POSSIBLE, LOCATE WHERE PERMANENT ROADS WILL EVENTUALLY BE CONSTRUCTED
2.) REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE AND CROWN FOR POSITIVE DRAINAGE.
3.) IF SLOPE TOWARDS THE PUBIC ROAD EXCEED 2% CONSTRUCT A 6 TO 8 INCH HIGH RIDGE WITH 3H : 1V SIDE SLOPES ACROSS THE FOUNDATION APPROXIMATELY 15 FEET FROM THE EDGE OF THE PUBLIC ROAD TO DIVERT RUNOFF AWAY FROM IT.
4.) INSTALL PIPE UNDER THE ENTRANCE IF NEEDED TO MAINTAIN DRAINAGE DITCHES ALONG PUBLIC ROADS
5.) PLACE STONE TO DIMENSIONS AND GRADES AS SHOWN ON PLANS. LEAVE SURFACE SMOOTH AND SLOPED FOR DRAINAGE
6.) DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE ENTRANCE TO A SEDIMENT CONTROL DEVICE
7.) IF WET CONDITIONS ARE ANTICIPATED PLACE GEOTEXTILE FABRIC ON THE GRADED FOUNDATION TO IMPROVE STABILITY

B.) TROUBLESHOOTING
1.) CONSULT WITH A QUALIFIED DESIGN PROFESSIONAL IF ANY OF THE FOLLOWING OCCUR:
-INADEQUATE RUNOFF CONTROLS TO THE EXTENT THAT SEDIMENT WASHES ONTO PUBLIC ROADS
- INSTALL DIVERSIONS OR OTHER RUNOFF CONTROL MEASURES
-SMALL STONE, THIN PAD, OR ABSENCE OF GEOTEXTILE FABRIC RESULTS IN RUTS AND MUDDY CONDITIONS AS STONE IS PRESSED INTO SOIL - INCREASE STONE SIZE OR PAD THICKNESS OR ADD GEOTEXTILE FABRIC
-PAD TOO SHORT FOR HEAVY CONSTRUCTION TRAFFIC - EXTEND PAD BEYOND THE MINIMUM 50 FOOT LENGTH AS NECESSARY

C.) INSPECTION AND MAINTENANCE
1.) INSPECT STONE PAD AND SEDIMENT DISPOSAL AREA WEEKLY AND AFTER ANY RAIN EVENT
2.) RESHAPE PAD AS NEEDED FOR PROPER DRAINAGE AND RUNOFF CONTROL
3.) TOP DRESS WITH CLEAN 2 AND 3 INCH STONE AS NEEDED
4.) IMMEDIATELY REMOVE MUD OR SEDIMENT TRACKED OR WASHED ONTO PUBLIC ROADWAY. REPAIR ANY BROKEN ROAD PAVEMENT IMMEDIATELY
5.) REMOVE ALL TEMPORARY ROAD MATERIALS FROM AREAS WHERE PERMANENT VEGETATION WILL BE ESTABLISHED

MAINTENANCE:

TO MAINTAIN THE EROSION AND SEDIMENT CONTROLS, THE FOLLOWING PROCEDURES WILL BE PERFORMED:
SEDIMENT CAPTURE DEVICES: SEDIMENT WILL BE REMOVED FROM THE UPSTREAM OR UPSLOPE SIDE OF THE FILTER FABRIC FENCES, WHEN THE DEPTH OF ACCUMULATED SEDIMENT REACHES ABOUT ONE-THIRD THE HEIGHT OF THE STRUCTURE.
STORM SEWER INLETS: ANY SEDIMENT IN THE STORM SEWER INLETS WILL BE REMOVED AND DISPOSED OF PROPERLY.
TEMPORARY CONTROLS: ALL TEMPORARY CONTROLS WILL BE REMOVED AFTER THE DISTURBED AREAS HAVE BEEN STABILIZED.

INSPECTION PROCEDURES:

INSPECTIONS WILL BE DONE BY THE RESPONSIBLE PERSON(S) AT LEAST ONCE EVERY WEEK AND WITHIN 24 HOURS EACH STORM EVENT PRODUCING ANY AMOUNT OF RAINFALL. AREAS THAT HAVE BEEN RESEEDED WILL BE INSPECTED REGULARLY AFTER SEED GERMINATION TO ENSURE COMPLETE COVERAGE OF EXPOSED AREAS. DISTURBED AREAS THAT HAVE NOT BEEN FINALLY STABILIZED SHALL HAVE ALL POLLUTION CONTROL MEASURES INSPECTED FOR PROPER INSTALLATION, OPERATION AND MAINTENANCE. LOCATIONS WHERE STORM WATER LEAVES THE SITE SHALL BE INSPECTED FOR EVIDENCE OF EROSION OR SEDIMENT DEPOSITION. ANY DEFICIENCIES SHALL BE NOTED IN A REPORT OF THE INSPECTION AND CORRECTED WITHIN SEVEN CALENDAR DAYS OF THE INSPECTION. THE PERMITTEE SHALL PROMPTLY NOTIFY THE SITE CONTRACTORS RESPONSIBLE FOR OPERATION AND MAINTENANCE OF POLLUTION CONTROL DEVICES OF DEFICIENCIES.

IF THE EXISTING GROUND COVER IS NATURAL GRASS, DISTURBED AREAS SHALL BE TEMPORARILY SEEDED WITH WHEAT/RYE AT A RATE OF 1.5 POUNDS PER 1000 SQUARE FEET. PERMANENT SEEDING SHALL CONSIST OF 90% IN THREE EQUAL PARTS OF THIN BLADE, TURF-TYPE, TALL FESCUE AND 10% BLUEGRASS SEED AT A RATE OF 10 POUNDS PER 1000 SQUARE FEET. BOTH TEMPORARY AND PERMANENT SEEDED AREAS SHALL BE MULCHED AND WATERED TO MAINTAIN THE PROPER MOISTURE LEVEL OF THE SOIL TO ESTABLISH GRASS. NEW GRASS SHALL BE WATERED AND MAINTAINED UNTIL IT REACHES A HEIGHT OF 3 INCHES. ANY BARE AREAS SHALL BE RESEEDED.

ALL EROSION CONTROL DEVICES SHALL BE REMOVED BY GENERAL CONTRACTOR AFTER SITE STABILIZATION IS COMPLETE AND APPROVED BY ENGINEER.

THE DEVELOPER WILL DESIGNATE A QUALIFIED PERSON OR PERSONS TO PERFORM THE FOLLOWING INSPECTIONS:
STABILIZATION MEASURES: DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION WILL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM. AFTER A PORTION OF THE SITE IS FINALLY STABILIZED, INSPECTIONS WILL BE CONDUCTED AT LEAST ONCE EVERY MONTH THROUGHOUT THE LIFE OF THE PROJECT. CONTRACTOR CAN CONTACT ENGINEERING SOLUTIONS FOR COPIES OF THE INSPECTION FORM TO BE USED FOR STABILIZATION MEASURES.
STRUCTURAL CONTROLS: FILTER FABRIC FENCES AND ALL OTHER EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN WILL BE INSPECTED REGULARLY FOR PROPER POSITIONING, ANCHORING, AND EFFECTIVENESS IN TRAPPING SEDIMENTS. SEDIMENT WILL BE REMOVED FROM THE UPSTREAM OR UPSLOPE SIDE OF THE FILTER FABRIC. CONTRACTOR CAN CONTACT ENGINEERING SOLUTIONS FOR COPIES OF THE INSPECTION FORM TO BE USED FOR STABILIZATION MEASURES.
DISCHARGE POINTS: DISCHARGE POINTS OR LOCATIONS WILL BE INSPECTED TO DETERMINE WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT AMOUNTS OF POLLUTANTS FROM ENTERING RECEIVING WATERS.
CONSTRUCTION ENTRANCE: LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE WILL BE INSPECTED FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING.

A LOG OF EACH INSPECTION SHALL BE KEPT. THE INSPECTION REPORT IS TO INCLUDE THE FOLLOWING MINIMUM INFORMATION: INSPECTOR'S NAME, DATE OF INSPECTION, OBSERVATIONS RELATIVE TO THE EFFECTIVENESS OF THE POLLUTION CONTROL DEVICES, ACTIONS TAKEN OR NECESSARY TO CORRECT DEFICIENCIES, AND LISTING OF AREAS WHERE LAND DISTURBANCE OPERATIONS HAVE PERMANENTLY OR TEMPORARILY STOPPED. THE INSPECTION REPORT SHALL BE SIGNED BY THE PERMITTEE OR BY THE PERSON PERFORMING THE INSPECTION IF DULY AUTHORIZED TO DO SO.

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Engineering CA2821

Project: LAKEWOOD INDUSTRIAL CENTER PLAT S, LSMO

Issue Date: May 5, 2023

ESC PHASE 2
Inactive Area Stabilization Plan
Construction Plans for:
Lakewood Industrial
Lee's Summit, Jackson County, Missouri

Matthew J. Schlicht
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KS PE 19071
OK PE 25226

REVISIONS

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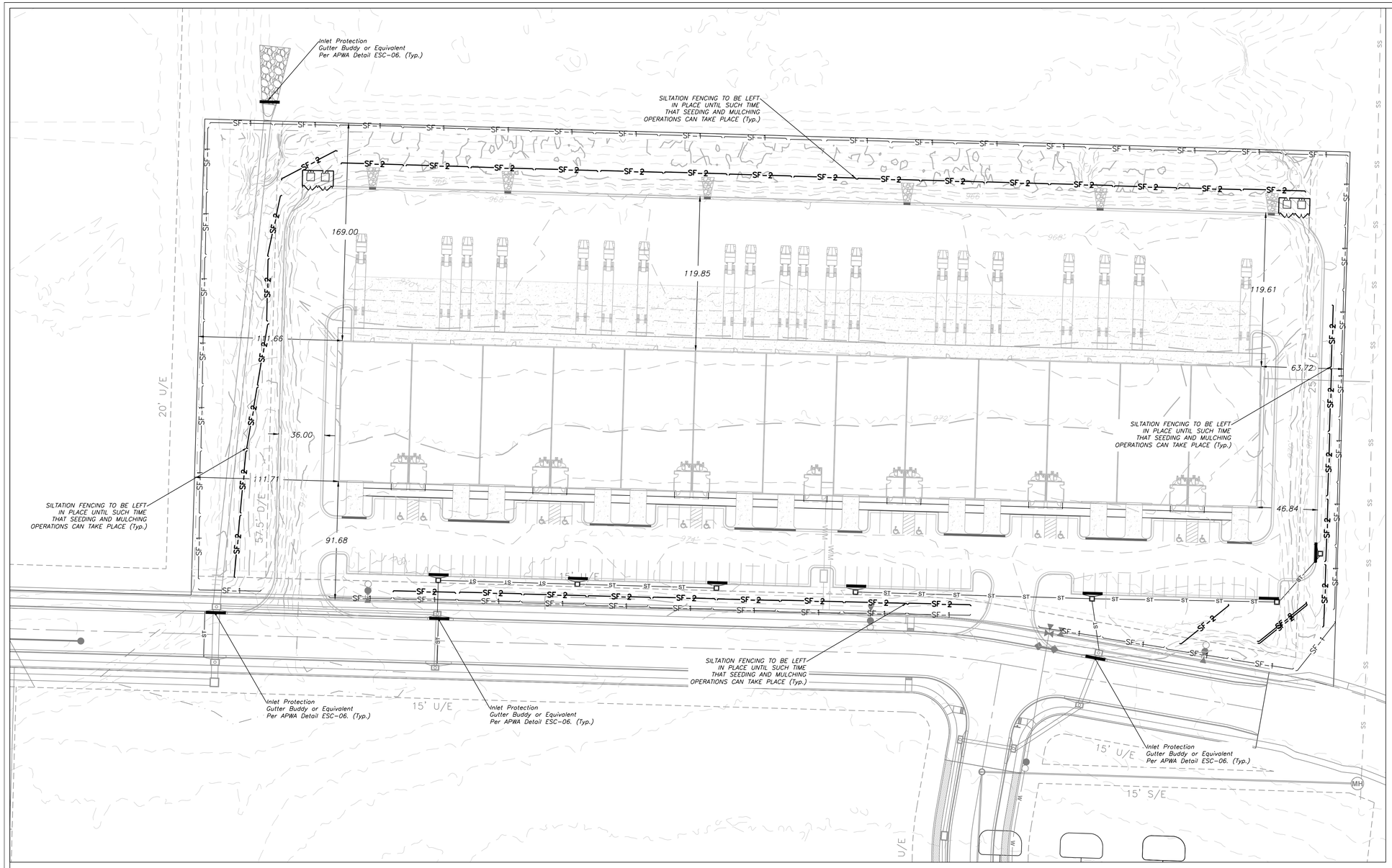

0 10' 20' 40'

ESC PHASE FINAL

SCALE: 1" = 20'

SILT FENCE PROTECTION TO BE MAINTAINED BY CONTRACTOR

LEGEND

PHASE 1 SILT FENCE ——SF-1——SF-1——

PHASE 2 SILT FENCE ——SF-2——SF-2——

INLET PROTECTION ▬

DURING ALL PHASES OF CONSTRUCTION, INACTIVE AREA STABILIZATION METHODS AS DESCRIBED IN APWA SECTION 5111.3 SHALL BE USED TO CONTROL EROSION AND SILTATION.

NOTES: The Land Disturbance Plans indicates the Final placement of erosion control devices. The contractor(s) may proceed with construction prior to the final placement of these devices by providing additional devices to control erosion on their items of work. These devices shall be maintained until the final devices are in place.

SEED AND MULCH NOTES:

All areas disturbed by construction activities shall be seeded and mulched. Seeding shall be done before the proposed seedbed becomes eroded, crusted over, or dried out and shall not be done when the ground is frozen, or covered with snow. The seed shall comply with the requirements of the Missouri Seed Law and the Federal Seed Act. Also, it shall contain no seed of any plant on the Federal Noxious Weed List. Other weed seeds shall not exceed one percent by weight of mix

Seed and Fertilizer Rate:
Mix I – Rye Grass / Blue Grass ---------- 100 lbs. per Acre
Mix II – Tall Fescue / Blue Grass ------- 195 lbs. per Acre
Lime ---------- 2000 lbs per Acre (50 lbs. per 1000 sq. ft.)
Fertilizer ---------- 800 to 1200 lbs per Acre (25 lbs per 1000 sq. ft.)

During the dates December 15th through May 31 ALL lime fertilizer, seed and mulch shall be applied to finished slopes of disturbed areas. During the months of June, July, October and November 1st through December 15th, lime fertilizer, seed and mulch shall be applied at the following rates:
Lime – 100% of specified quantity
Fertilizer – 75% of the specified quantity
Seed – 50% of the specified quantity
Mulch – 100% of the specified quantity

Mulch shall be Vegetative type, cereal straw from stalks of oats, rye, or barley, or approved equal. The straw shall be free of prohibited weed seed and relatively free of all other noxious and undesirable seed. Mulch shall be applied at the rate of 2 tons per acre, (70 to 90 lbs per 1000 sq. ft.). Mulch shall be embedded by a mulch anchoring tool or disk type roller having flat serrated disks spaced not more than 10 inches apart and cleaning scrapers shall be provided

ONCE SITE IS 90% VEGETATED ALL ESC DEVICES SHALL BE REMOVED AND ANY DISTURBED AREAS SHALL BE RESTORED

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Project: LAKEWOOD BUSINESS CENTER PLAT 5, LSMO

Issue Date: May 5, 2023

ESC PHASE 3 – Final Restoration Plan

Construction Plans for:
Lakewood Industrial
Lee's Summit, Jackson County, Missouri

STATE OF MISSOURI
MATTHEW J. SCHLICHT
NUMBER PE-2006019708
PROFESSIONAL ENGINEER

Matthew J. Schlicht
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REVISIONS

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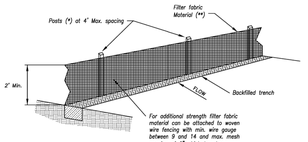
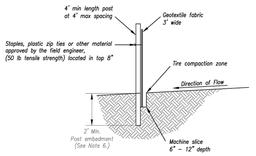




(*) POSTS
- MIN. LENGTH 4'
- HARDWOOD 1 ⅛" x 1 ⅛"
- NO.2 SOUTHERN PINE 2 ⅛" x 2 ⅛"
- STEEL 1.33 LB/FT

(**) – Geotextile Fabric shall meet the requirements of AASHTO M288

Notes:

1. In order to contain water, the ends of the silt fence must be turned uphill (Figure A).
2. Long perimeter runs of silt fence must be limited to 100'. Runs should be broken up into several smaller segments to minimize water concentrations (Figure A).
3. Long slopes should be broken up with intermediate rows of silt fence to slow runoff velocities.
4. Attach fabric to upstream side of post.
5. Install posts a minimum of 2" into the ground.
6. Trenching will only be allowed for small or difficult installation, where slicing machine cannot be reasonably used.

Maintenance:

1. Remove and dispose of sediment deposits when the deposit approaches ½ the height of silt fence.
2. Repair as necessary to maintain function and structure.

SILT FENCE DETAILS
Not to Scale

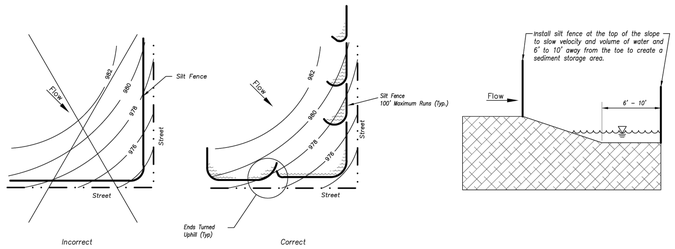
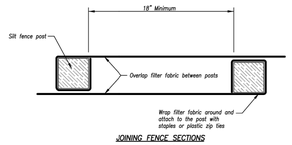


Figure A



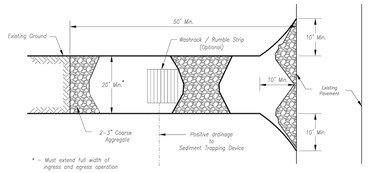
JOINING FENCE SECTIONS
Not to Scale

SILT FENCE LAYOUT
Not to Scale

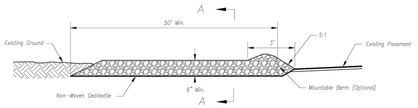
Modified from 2015 Overland Park Standard Details for Erosion and Sediment Control.

AMERICAN PUBLIC WORKS ASSOCIATION
Kansas City Metro Chapter
KANSAS CITY METRO CHAPTER

SILT FENCE	STANDARD DRAWING NUMBER ESC-03
	ADOPTED: 10/24/2016



Plan View
Not to Scale



Side Elevation
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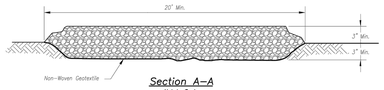


Section A–A
Not to Scale

Notes for Construction Entrance:

1. Avoid locating on steep slopes, at curves on public roads, or downhill of disturbed area.
2. Remove all vegetation and other unsuitable material from the foundation area, grade, and crown for positive drainage.
3. If slope towards the public road exceeds 2%, construct a 6– to 8–inch high ridge with 3H:1V side slopes across the foundation approximately 15 feet from the edge of the public road to divert runoff from it.
4. Install pipe under the entrance if needed to maintain drainage ditches along public roads.
5. Place stone to dimensions and grade as shown on plans. Leave surface sloped for drainage.
6. Divert all surface runoff and drainage from the entrance to a sediment control device.
7. If conditions warrant, place geotextile fabric on the graded foundation to improve stability.

Maintenance for Construction Entrance:

1. Reshape entrance as needed to maintain function and integrity of installation. Top dress with clean aggregate as needed.

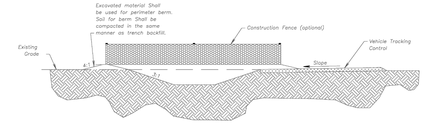
CONSTRUCTION ENTRANCE

Notes for Concrete Washout:

1. Concrete washout areas shall be installed prior to any concrete placement on site.
2. Concrete washout area shall include a flat subsurface pit sized relative to the amount of concrete to be placed on site. The slopes leading out of the subsurface pit shall be 3:1. The vehicle tracking pad shall be sloped towards the concrete washout area.
3. Vehicle tracking control is required at the access point to all concrete washout areas.
4. Signs shall be placed at the construction site entrance, washout area and elsewhere as necessary to clearly indicate the location(s) of the concrete washout area(s) to operators of concrete truck and pump rips.
5. A one–piece impervious liner may be required along the bottom and sides of the subsurface pit in sandy or gravelly soils.

Maintenance for Concrete Washout:

1. Concrete washout materials shall be removed once the materials have filled the washout to approximately 75% full.
2. Concrete washout areas shall be enlarged as necessary to maintain capacity for wasted concrete.
3. Concrete washout water, wasted pieces of concrete and all other debris in the subsurface pit shall be transported from the job site in a water–tight container and disposed of properly.
4. Concrete washout areas shall remain in place until all concrete for the project is placed.
5. When concrete washout areas are removed, excavations shall be filled with suitable compacted backfill and topsoil, any disturbed areas associated with the installation, maintenance, and/or removal of the concrete washout areas shall be stabilized.



CONCRETE WASHOUT

Construction Entrance modified from 2015 Overland Park Standard Details for Erosion and Sediment Control; Concrete Washout modified from 2009 City of Great Bend Standard Drawings.

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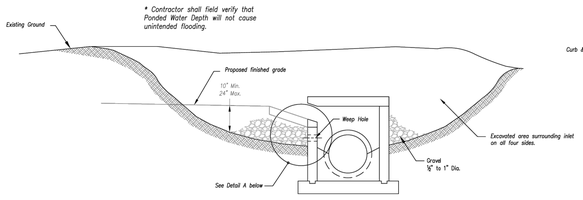
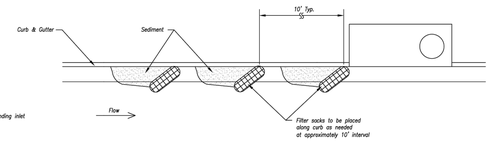
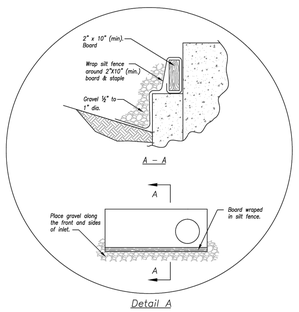
Kansas City Metro Chapter
KANSAS CITY METRO CHAPTER

CONSTRUCTION ENTRANCE AND CONCRETE WASHOUT	STANDARD DRAWING NUMBER ESC-01
	ADOPTED: 10/24/2016





On Grade Curb Inlet Protection



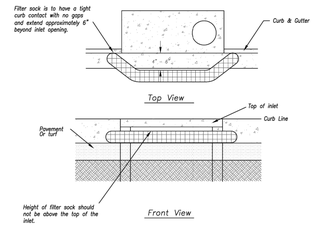
EARLY STAGE CURB INLET
(Open Box and Prior to Pouring Curb and Inlet Throat)

Notes:

1. Immediately following inlet construction and prior to construction of curb and inlet throat, protect inlet opening by installing 2" x 10" (min.) board wrapped in silt fence. Structures shall have excavated storage area on all four sides to allow settling of sediment (Early Stage Curb Inlet).
2. When inlet is completed and curb poured, filter socks or approved equal should be used (Late Stage Curb Inlet). Straw wattles are not approved for curb inlet use.
3. Contractor to field verify ponding water shall not create a traffic hazard.

Maintenance:

1. Remove deposited sediment from excavated storage areas when available storage has been reduced by 20%.
2. Remove deposited sediment from filter socks or similar when any accumulation of sediment is visible.
3. Repair or replace as necessary to maintain function and integrity of installation.



Sump Inlet Sediment Filter

LATE STAGE CURB INLET
(After Pouring Curb and Inlet Throat)

Modified from 2015 Overland Park Standard Details for Erosion and Sediment Control.

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Kansas City Metro Chapter
KANSAS CITY METRO CHAPTER

CURB INLET PROTECTION	STANDARD DRAWING NUMBER ESC-06
	ADOPTED: 10/24/2016

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Lakewood Industrial
Lee's Summit, Jackson County, Missouri

Project: LAKEWOOD BUSINESS CENTER PLAT 5, LSMO

Issue Date: May 5, 2023

ESC – Standard Details
Construction Plans for:
Lakewood Industrial
Lee's Summit, Jackson County, Missouri

STATE OF MISSOURI
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REVISIONS

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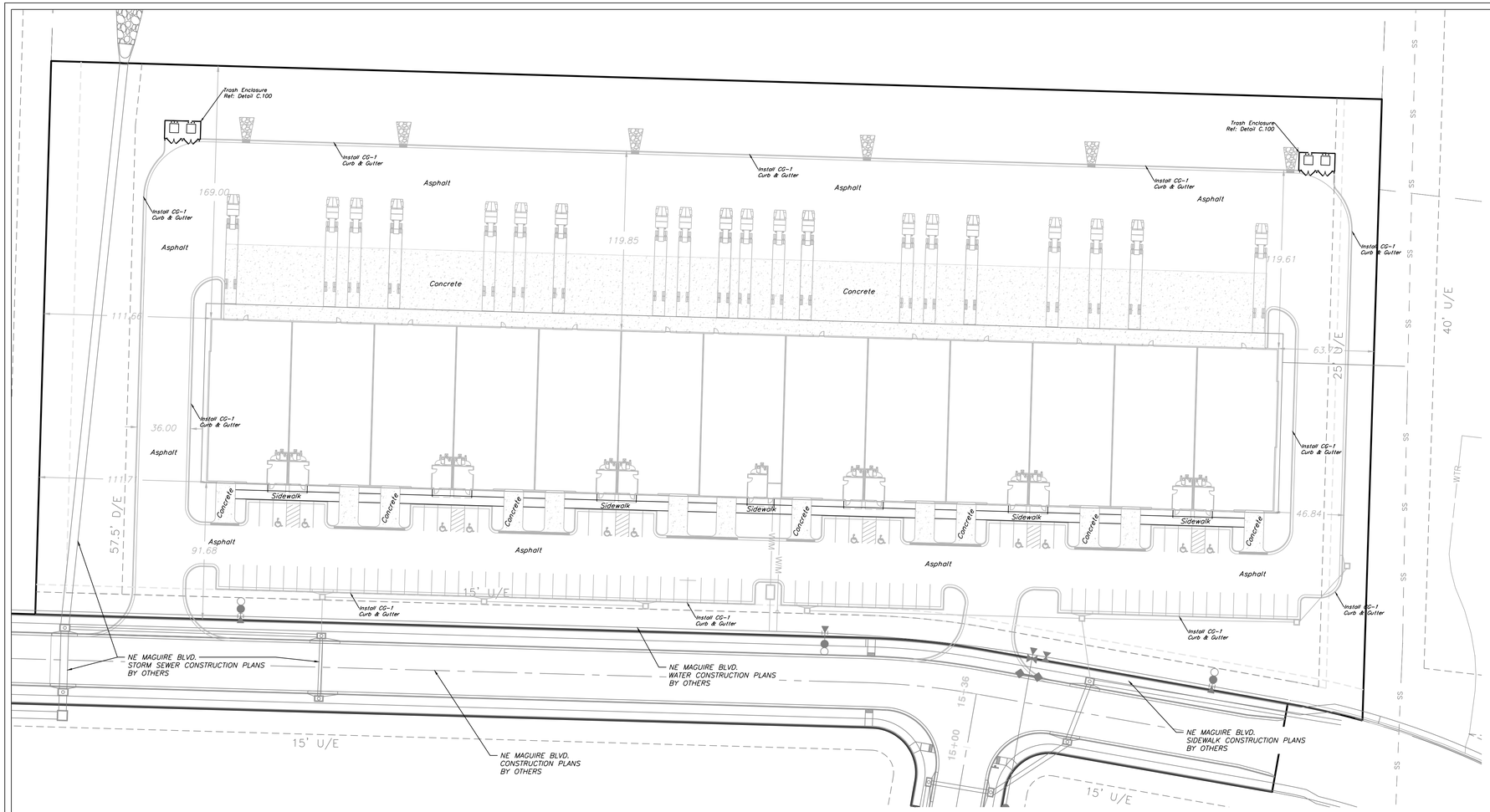
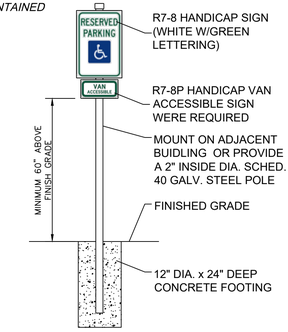


GRAPHIC SCALE
0 20' 40' 80'

North

SITE PLAN
SCALE: 1" = 40'

SIGN MAY BE WALL MOUNTED DIRECTLY TO BUILDING. DIMENSIONS MUST BE MAINTAINED



HANDICAP SIGN DETAIL
NOT TO SCALE

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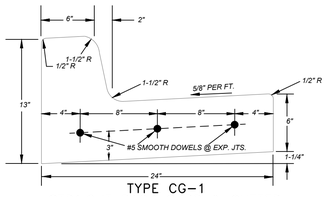
Project:
LAKEWOOD
BUSINESS CENTER
PLAT S, LSMO

Issue Date:
May 5, 2023

Site Plan
Construction Plans for:
Lakewood Industrial
Lee's Summit, Jackson County, Missouri



TYPE CG-1
STRAIGHT BACK CURB & GUTTER N.T.S.
(WET)

Notes:
– Trash enclosures shall be constructed of masonry walls or steel architecturally designed walls with either a solid steel opaque gate painted to be compatible with the color of the masonry or steel walls and building it is to serve or a steel framed semi-opaque gate with a screen mesh material approved by the Director that provides an appropriate visual barrier.
– Trash enclosure areas shall be improved with a Portland cement concrete pad and a Portland cement concrete approach 30 feet in length, measured from the enclosure opening. The pad and approach shall be improved with a minimum six inches of full depth unreinforced Portland cement concrete constructed on a sub-grade of four inches of granular base course.

1.1 JOINTS

Coordinate joint types, descriptions, and locations with Drawings. Three types of joints and tool edgings have been consolidated in this Article for consistency rather than for strict sequence of installation.

A. General: Form construction, isolation, and contraction joints and tool edgings true to line with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline, unless otherwise indicated.
   1. When joining existing pavement, place transverse joints to align with previously placed joints, unless otherwise indicated.

B. Construction Joints: Set construction joints at side and end terminations of pavement and at locations where pavement operations are stopped for more than one-half hour unless pavement terminates at isolation joints.
   1. Continue steel reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of pavement strips, unless otherwise indicated.

Retain subparagraph below for load-transfer doweled joints. Revise if precoated dowels are required.

   2. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt-coat one-half of dowel length to prevent concrete bonding to one side of joint.

C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, walks, other fixed objects, and where indicated.

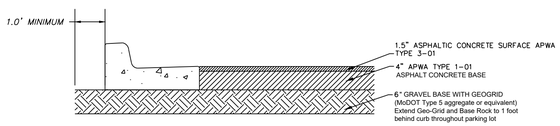
Expansion joints are types of isolation joints. Revise spacing in first subparagraph below to suit Project or delete if not required.

1. Locate expansion joints at intervals of **50 feet**, unless otherwise indicated.
2. Extend joint fillers full width and depth of joint.
3. Terminate joint filler not less than 1/2 inch or more than 1 inch below finished surface if joint sealant is indicated.
4. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
5. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
6. Protect top edge of joint filler during concrete placement with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.

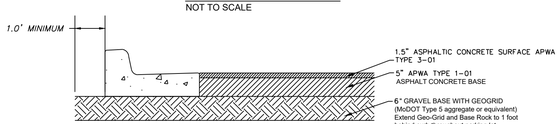
Edging is included in this Article for its similarity to jointing. Timing of edging after initial floating is critical.

D. Edging: Tool edges of pavement, gutters, curbs, and joints in concrete after initial floating with an edging tool to a **1/4-inch** radius. Repeat tooling of edges after applying surface finishes. Eliminate tool marks on concrete surfaces.

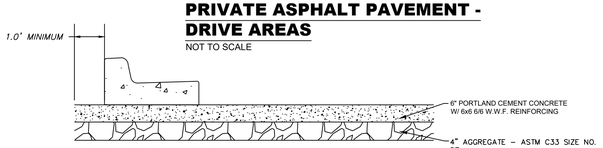
EXTERIOR ELEVATION
5 TRASH ENCLOSURE - FRONT ELEVATION



PRIVATE ASPHALT PAVEMENT - PARKING AREAS
NOT TO SCALE

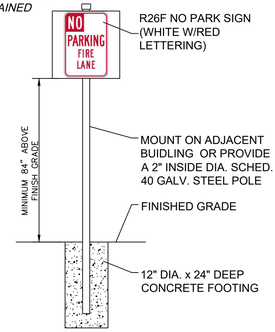


PRIVATE ASPHALT PAVEMENT - DRIVE AREAS
NOT TO SCALE



CONCRETE PAVEMENT
NOT TO SCALE

SIGN MAY BE WALL MOUNTED DIRECTLY TO BUILDING. DIMENSIONS MUST BE MAINTAINED



"FIRE LANE-NO PARKING" SIGN DETAIL
NOT TO SCALE

STATE OF MISSOURI
MATTHEW J. SCHLICHT
NUMBER PE-2006019708
PROFESSIONAL ENGINEER

Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25226

REVISIONS

C.100

GRAPHIC SCALE
0 20' 40' 80'

North

DIMENSION PLAN
SCALE: 1" = 40'

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Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

Lakewood Industrial
Lee's Summit, Jackson County, Missouri

Project: LAKEWOOD BUSINESS CENTER PLAT 5, LSMO

Issue Date: May 5, 2023

Dimension Plan
Construction Plans for:
Lakewood Industrial
Lee's Summit, Jackson County, Missouri

STATE OF MISSOURI
MATTHEW J. SCHLICHT
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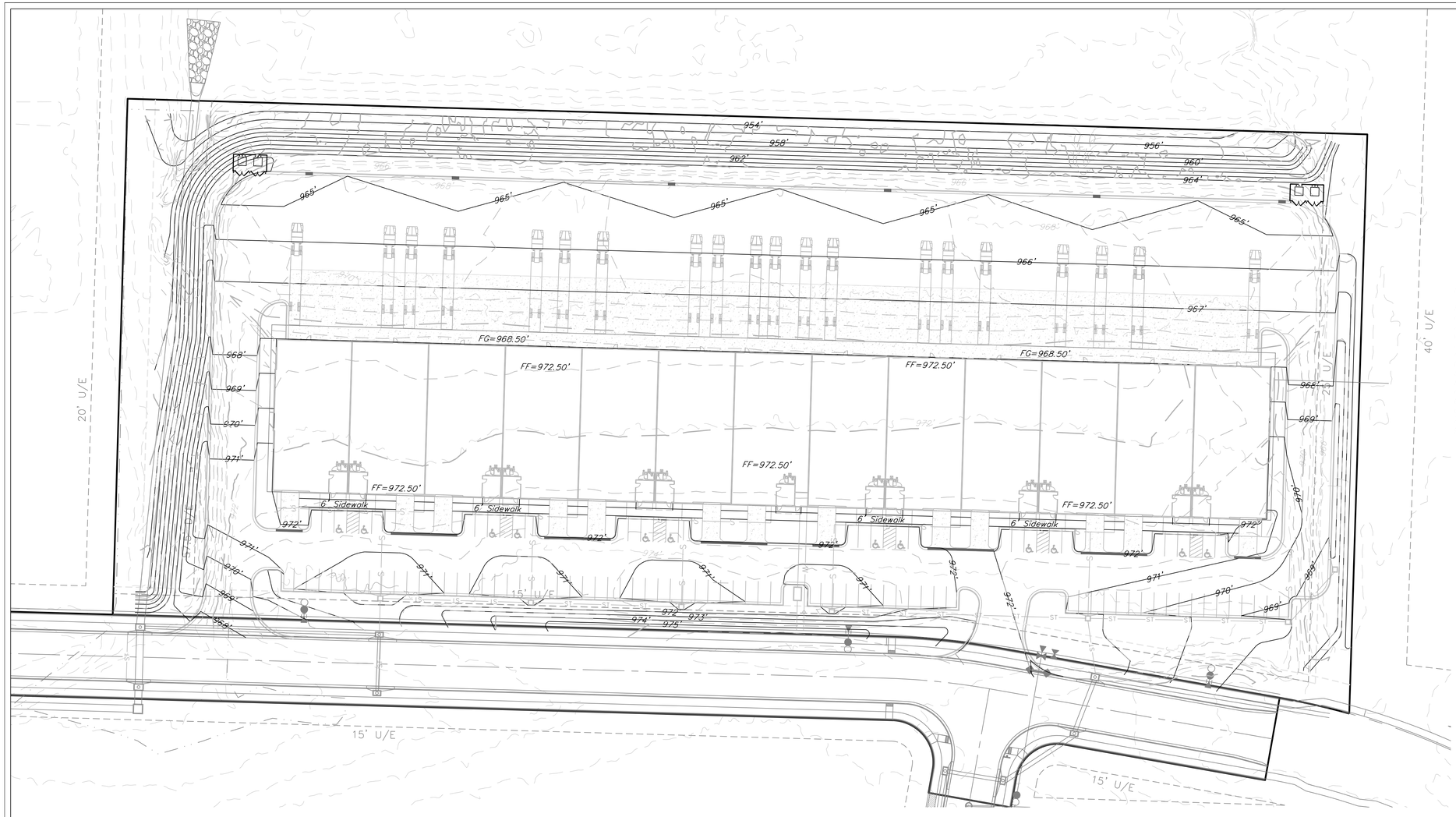
C.104



Notes

1. Contractor is responsible for verifying all existing utility locations prior to excavation
2. There are no known natural or artificial water storage detention areas, or wetlands in the area designated for construction
3. No part of the project lies within the 100 year flood plain
4. All erosion and sediment control measures need to be implemented prior to construction
5. Additional erosion control may be required by the CIty Engineer, Design Engineer or Owner at any time problematic areas are noted in the field or existing measures are found to be ineffective
6. Soil Stabilization of disturbed areas shall be completed within 14 days of construction inactivity
7. Contractor responsible for all density testing of roadway subgrade and granular base.

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Nebraska
Engineering CA2821

Lakewood Industrial
Lee's Summit, Jackson County, Missouri

Project:
LAKEWOOD BUSINESS CENTER PLAT 5, LSMO

Issue Date:
May 5, 2023

Grading Plan
Construction Plans for:
Lakewood Industrial
Lee's Summit, Jackson County, Missouri

STATE OF MISSOURI
MATTHEW J SCHLICHT
NUMBER PE-2006019708
PROFESSIONAL ENGINEER

Matthew J. Schlicht
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KS PE 19071
OK PE 25226

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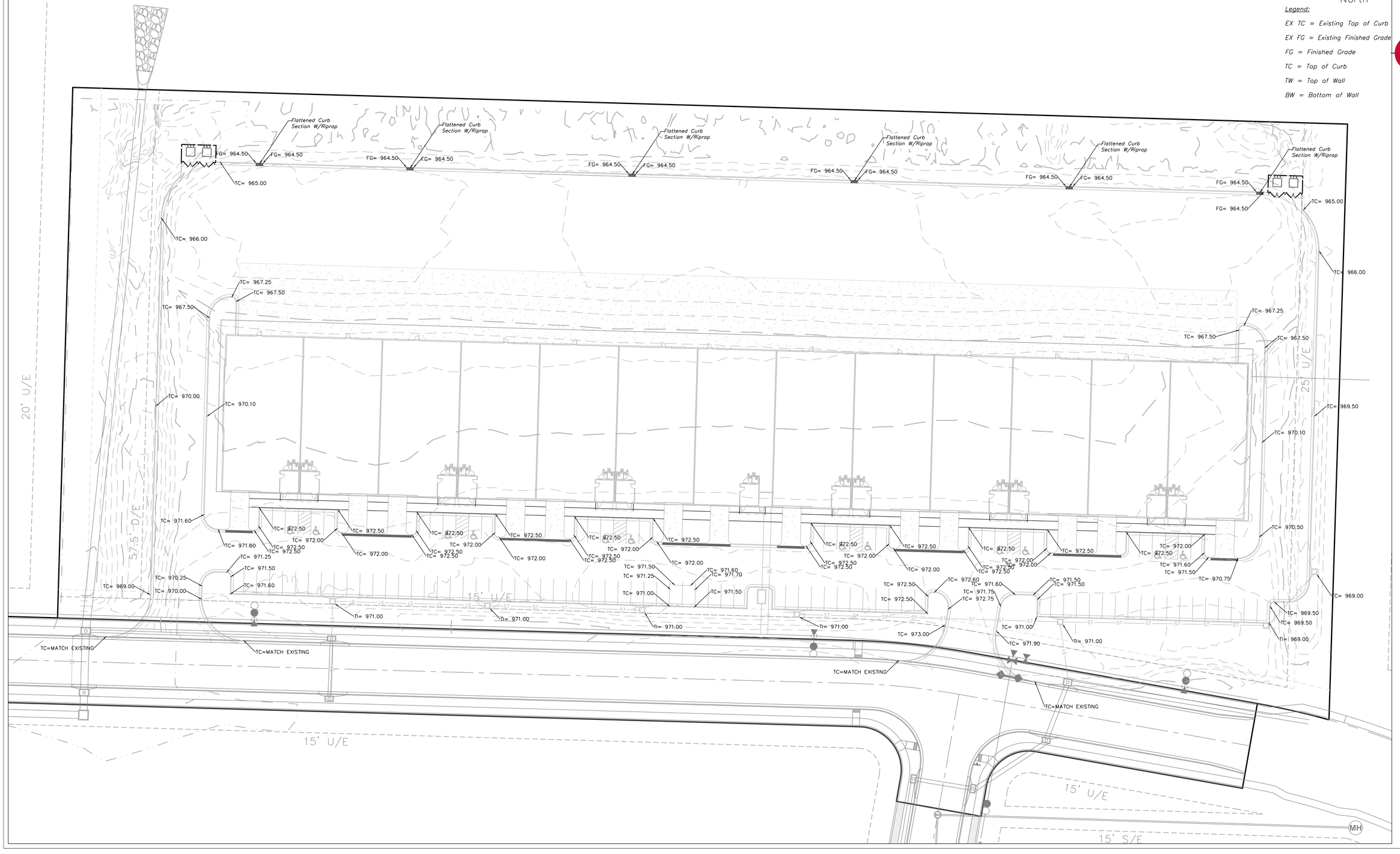
C.200



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Surveying LS-218
Oklahoma
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Nebraska
Engineering CA2821

Lakewood Industrial
Lee's Summit, Jackson County, Missouri

Project: LAKEWOOD BUSINESS CENTER PLAT 5; LSMO

Issue Date: May 5, 2023

Spot Elevations
Construction Plans for:
Lakewood Industrial
Lee's Summit, Jackson County, Missouri

STATE OF MISSOURI
MATTHEW J. SCHLICHT
NUMBER PE-2006019708
PROFESSIONAL ENGINEER

Matthew J. Schlicht
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KS PE 19071
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REVISIONS

C.201A

STORM SEWER GENERAL LAYOUT

SCALE: 1" = 60'

0 30' 60' 120'

North

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Engineering CA2821

Lakewood Industrial
Lee's Summit, Jackson County, Missouri

Project:
LAKEWOOD
BUSINESS CENTER
PLAT S, LSMO

Issue Date:
May 5, 2023

Storm Sewer General Layout
Construction Plans for:
Lakewood Industrial
Lee's Summit, Jackson County, Missouri

STATE OF MISSOURI
MATTHEW J. SCHLICHT
NUMBER PE-2006019708
PROFESSIONAL ENGINEER

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REVISIONS

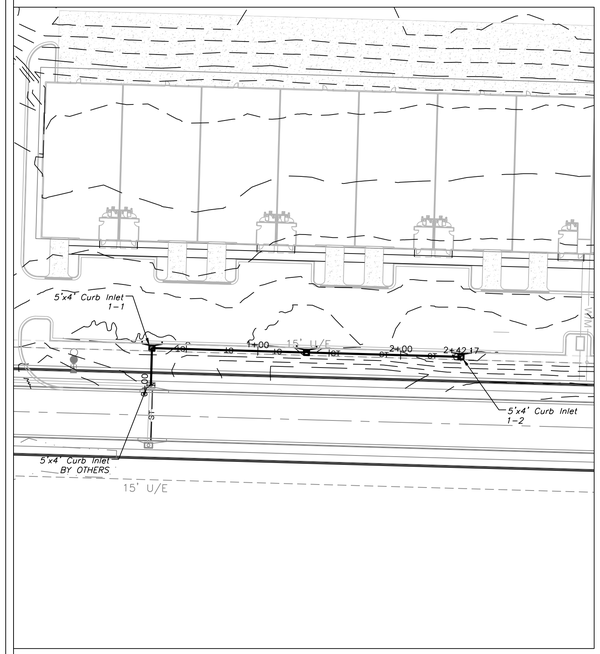
C.300

STORM SEWER PLAN AND PROFILE

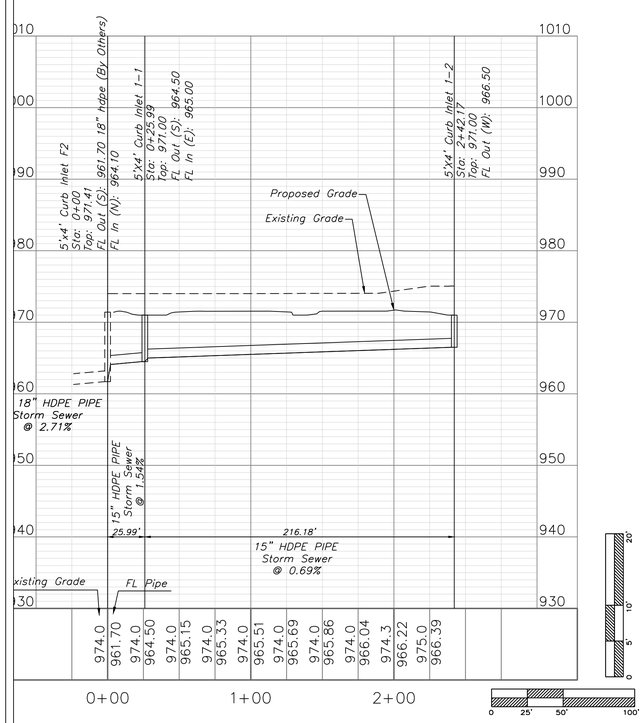
SCALE: 1" = 30'

North

0 15' 30' 60'



STORM LINE 1

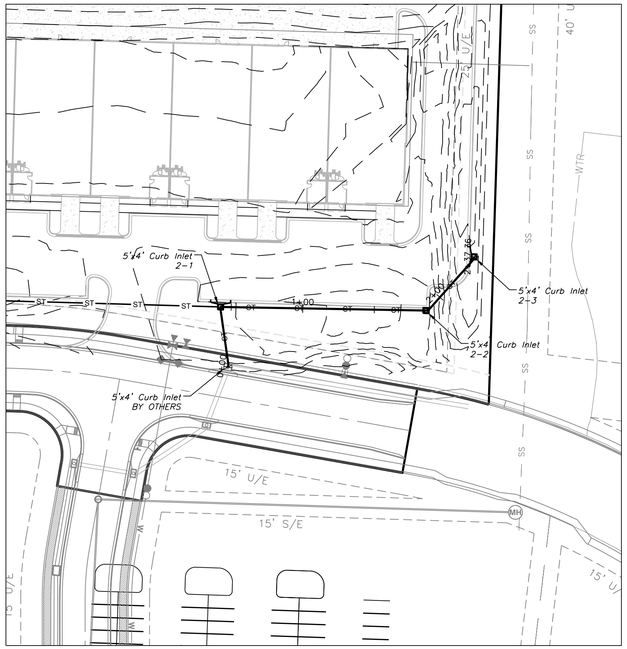


STORM SEWER PLAN AND PROFILE

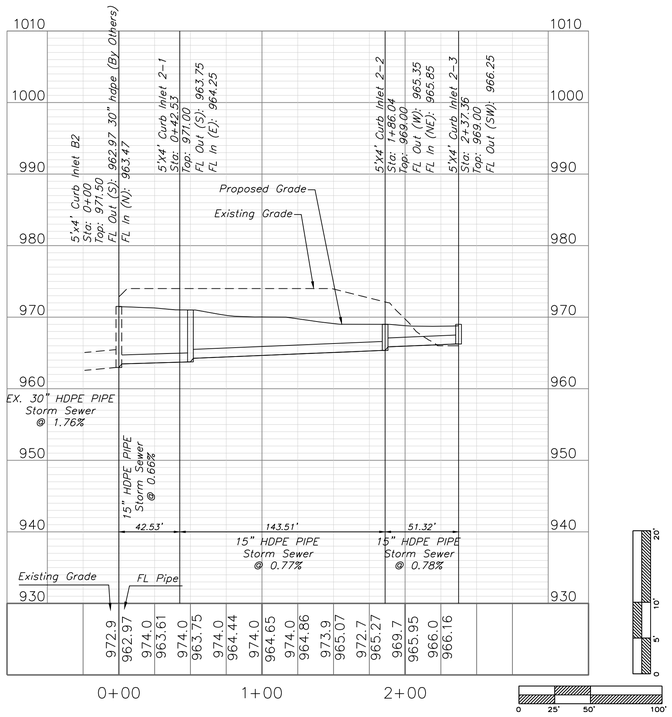
SCALE: 1" = 30'

North

0 15' 30' 60'



STORM LINE 2

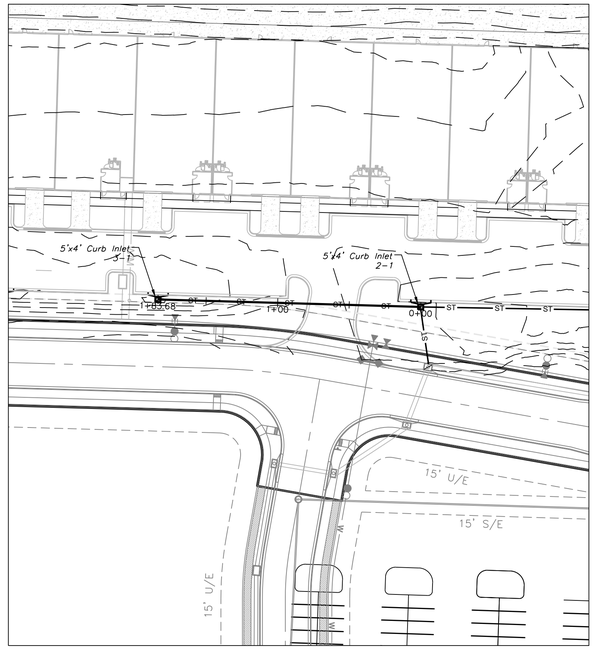


STORM SEWER PLAN AND PROFILE

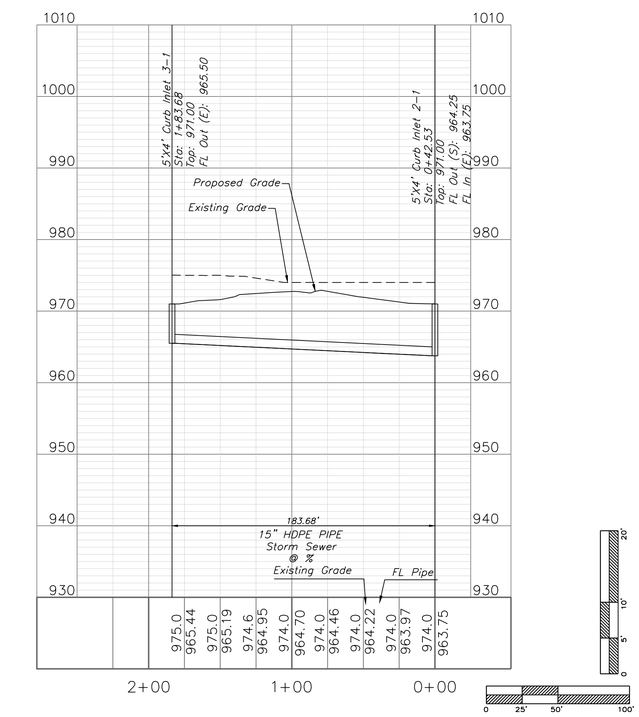
SCALE: 1" = 30'

North

0 15' 30' 60'



STORM LINE 3



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Engineering 6254
Nebraska
Engineering CA2821

Project: LAKEWOOD BUSINESS CENTER PLAT S, LSMO

Issue Date: May 5, 2023

Storm Sewer Plan and Profile
Construction Plans for:
Lakewood Industrial
Lee's Summit, Jackson County, Missouri

Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25226

REVISIONS

SANITARY SERVICE PLAN

SCALE: 1" = 30'

North

0 15' 30' 60'

Existing City Manhole
#14-065
TOP = 965.05
EX. FL OUT (W) = 953.35
EX. FL IN S) = 953.55

Existing 10" PVC
Sanitary Sewer

388.82'
@ 1.09%

New Wye
Lateral San.
Stub Connection
EX. FL = 957.49

25.70'

Sanitary Service Line
FL=959.13

Install 82' of
8" SDR-26 PVC Sanitary Sewer
Service Line @ 2.00% Slope

Existing City Manhole
#14-066
TOP = 966.67
EX. FL OUT (N) = 957.77
EX. FL IN (S) = 957.77

Existing 10" PVC
Sanitary Sewer

15' U/E

40' U/E

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Surveying 2005008319-D
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Engineering E-1695
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

Lakewood Industrial
Lee's Summit, Jackson County, Missouri

Project:
LAKEWOOD
BUSINESS CENTER
PLAT IS, LSMO

Issue Date:
May 5, 2023

Sanitary Service Plan
Construction Plans for:
Lakewood Industrial
Lee's Summit, Jackson County, Missouri

STATE OF MISSOURI
MATTHEW J. SCHLICHT
NUMBER
PE-2006019708
PROFESSIONAL ENGINEER

Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25226

REVISIONS

WATER SERVICE PLAN

SCALE: 1" = 40'

0 20' 40' 80'

North

FDC
4 inch Storz type fitting located within 100 feet of a fire hydrant

RPZ TO BE INSTALLED INSIDE THE BUILDING

58 L.F. New 6" Fire Line

New 89' of 2" Type K Soft Copper Water Service Line

8" Water (By Others)

New Backflow Vault

8" Water (By Others)

21 L.F. New 6" Fire Line

Install 2" Water Meter

CONNECT TO NEW PUBLIC 8" TEE
2 - 8" GATE VALVES (W.E)
1 - THRUST BLOCK (BY OTHERS)

20' U/E

15' U/E

40' U/E

SS

ST

W

WTR

MH

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Nebraska
Engineering CA2821

Project:
LAKEWOOD BUSINESS CENTER
PLAT II, LSMO

Issue Date:
May 5, 2023

Water Service Plan
Construction Plans for:
Lakewood Industrial
Lee's Summit, Jackson County, Missouri

STATE OF MISSOURI
MATTHEW J. SCHLICHT
NOTARY PUBLIC
PE2006019708
PROFESSIONAL ENGINEER

Matthew J. Schlicht
MO PE 2006019708
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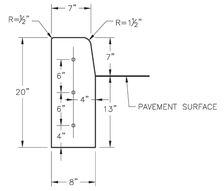
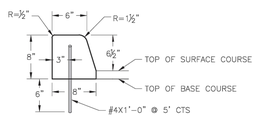
OK PE 25226

REVISIONS

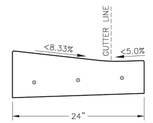
C.500



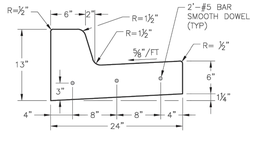
STRAIGHT CURB
(TYPE C-1)



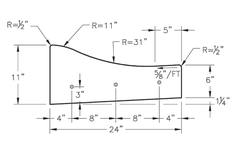
DOWELLED CURB
(TYPE DC)



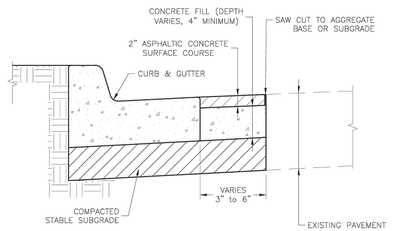
CURB & GUTTER DETAIL AT RAMP
(ADA SLOPE REQUIREMENTS)



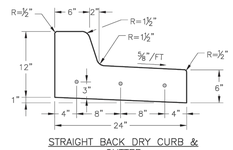
STRAIGHT BACK CURB & GUTTER
(TYPE CG-1)



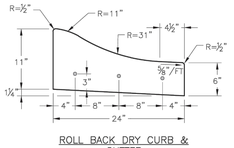
ROLL BACK CURB & GUTTER
(TYPE CG-2)



CURB REPLACEMENT DETAIL



STRAIGHT BACK DRY CURB & GUTTER
(TYPE CG-1 DRY)



ROLL BACK DRY CURB & GUTTER
(TYPE CG-2 DRY)

GENERAL NOTES

1. ¾" ISOLATION JOINTS WITH 3 (2'-#5 BAR) SMOOTH DOWELS SHALL BE PLACED AT RADIUS POINTS AND AT 150' INTERVALS. THESE DOWEL BARS SHALL BE GREASED AND WRAPPED ON ONE END WITH EXPANSION TUBES.
2. 3" DEEP CONTRACTION JOINTS SHALL BE INSTALLED AT APPROXIMATELY 10' INTERVALS. THESE JOINTS SHALL PASS ACROSS THE ENTIRE CURB SECTION.
3. CONCRETE FILL SHALL HAVE UNIFORM AND SMOOTH FINISH
4. KCMMB 4K CONCRETE SHALL BE USED FOR ALL CURB.
5. ASPHALTIC CONCRETE SURFACE COURSE SHALL CONFORM TO STANDARD SPECIFICATIONS SECTION 2205.2.
6. CURBS FOR NEW STREETS SHALL BE BUILT ON ASPHALT OR AGGREGATE BASE AS SHOWN IN TYPICAL SECTION DETAIL.
7. WHITE CURING COMPOUND MUST BE APPLIED UNIFORMLY TO THE CONCRETE SURFACE IMMEDIATELY AFTER FINAL FINISHING.
8. ALL DOWELS & TIE BARS SHALL BE EPOXY COATED.

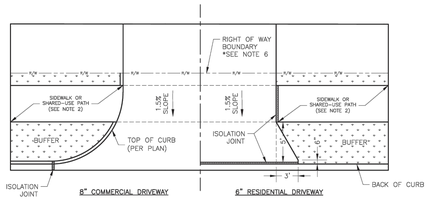
LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

Project: STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO

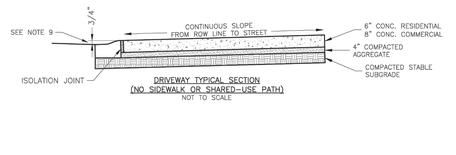
Date/Name: CURB & GUTTER DETAIL

Drawn By: MIF
Checked By: DL
Date: 05/2021
Proj. #:

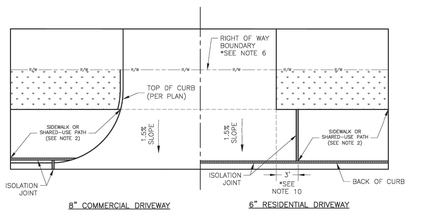
GEN-4



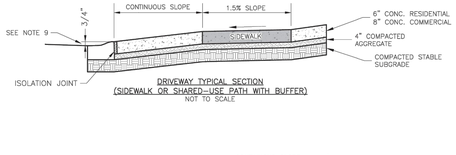
DRIVEWAY WITH BUFFER
NOT TO SCALE



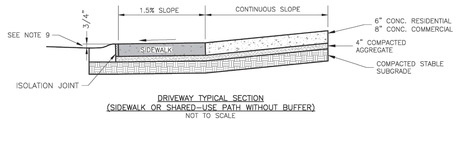
DRIVEWAY TYPICAL SECTION
(NO SIDEWALK OR SHARED-USE PATH)
NOT TO SCALE



DRIVEWAY WITHOUT BUFFER
NOT TO SCALE



DRIVEWAY TYPICAL SECTION
(SIDEWALK OR SHARED-USE PATH WITH BUFFER)
NOT TO SCALE



DRIVEWAY TYPICAL SECTION
(SIDEWALK OR SHARED-USE PATH WITHOUT BUFFER)
NOT TO SCALE

GENERAL NOTES

1. SUBGRADE SHALL BE STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
2. ALL DRIVE APPROACHES SHALL MEET CURRENT PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG) FOR SLOPE REQUIREMENTS WHEN SIDEWALK IS REQUIRED (SEE ADA RAMP RETROFIT DETAIL GEN-38, SIDEWALK/SHARED USE PATH RAMP AT DRIVEWAY DETAIL).
3. JOINT AT BACK OF CURB LINE SHALL BE AN ISOLATION JOINT FOR RESIDENTIAL DRIVEWAYS.
4. KCMMB 4K CONCRETE MIX IS REQUIRED FOR ALL CURBS.
5. COMMERCIAL DRIVEWAYS, IN THE PUBLIC RIGHT OF WAY, SHALL BE KCMMB 4K CONCRETE MIX.
6. RESIDENTIAL DRIVEWAYS, IN THE PUBLIC RIGHT OF WAY, KCMMB 4K CONCRETE MIX IS RECOMMENDED. OTHER CONCRETE MIXES NEED TO BE APPROVED BY CITY INSPECTOR.
7. A JOINT MUST BE INSTALLED AT THE RIGHT OF WAY BOUNDARY FOR PROPERTY DELINEATION.
8. WHITE CURING COMPOUND MUST BE APPLIED UNIFORMLY TO THE CONCRETE SURFACE IMMEDIATELY AFTER FINAL FINISHING.
9. ¾" FROM TOP OF CURB TO FLOWLINE AT DRIVEWAY (TYPE CG-1 CURB ONLY). MUST MAINTAIN ORIGINAL FLOWLINE OF CURB.
10. SIDEWALK ADJOINING CURB SHALL BE 6" THICK, EXTENDING 3' FROM THE DRIVEWAY.
11. THE MAXIMUM WIDTH OF A RESIDENTIAL DRIVEWAY IS 36 FEET WITHIN THE RIGHT OF WAY.

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

Project: STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO

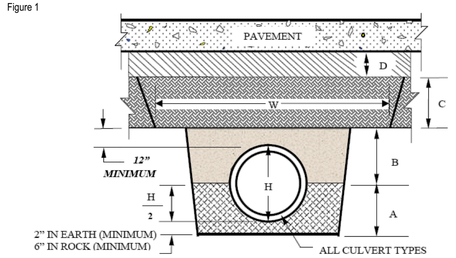
Date/Name: DRIVEWAY DETAIL

Drawn By: MIF
Checked By: DL
Date: 05/2021
Proj. #:

GEN-1

SECTION 2104 BACKFILL DETAILS

Figure 1



A- Consolidated granular bedding material.

B- Granular bedding material or Flowable Backfill (CLSM).

C – Compacted Embankment - 2102.6. Lift thickness shall not exceed the capability of the equipment being utilized to achieve the proper density and consolidation, and in no case shall a lift exceed twelve inches for soil. The minimum width, W, shall be two feet wider than the width of the required compaction device, or five feet, whichever is greater.

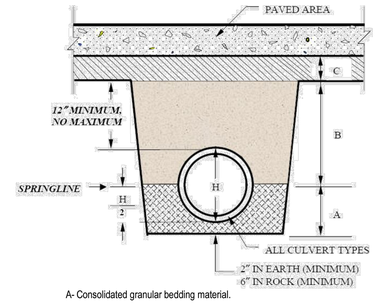
D – Compacted Subgrade - Subgrade thickness shall be as specified in Table 1 of Section 5206 and as directed by the Engineer. Subgrade preparation shall be done in accordance with Section 2201 and shall consist of aggregate for base course, stabilized subgrade, or compacted soil – in accordance with the associated Sections 2201, 2202, and 2203.

Figure 1
(Deep Sewer Lines Using Earth Compaction Equipment, or in Depths Exceeding 30" of Cover)

Figure 2

The following cross-sectional view of typical storm sewer trench construction under street, alley pavements, and entrances Figure 2, shall apply to all storm sewer backfill areas where deep trenches are not widened to allow heavy roadway compaction equipment. Figure 2 shall also apply to shallow (30" to 18" from top of pipe to bottom of pavement) roadway trenches:

Backfilling shall be placed as shown in Figure 2.

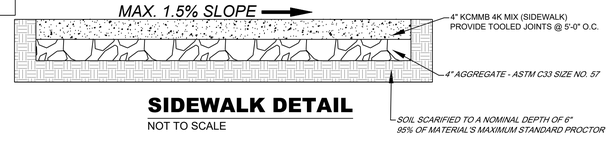


A- Consolidated granular bedding material.

B- Granular bedding material, hand compacted soil - 95% of max. density using ASTM D 698, or Flowable Backfill (CLSM). Maximum lift thickness 6". Granular bedding material shall be used in Zone B for all pipe except reinforced concrete pipe.

C – Compacted Subgrade - Subgrade thickness shall be as specified in Table 1 of Section 5206 and as directed by the Engineer. Subgrade preparation shall be done in accordance with Section 2201 and shall consist of aggregate for base course, stabilized subgrade, or compacted soil – in accordance with the associated Sections 2201, 2202, and 2203.

Figure 2
(For Deep Trenches Without Roadway Compaction Equipment, or Shallow Trenches Having Less than 30" of Cover)



SIDEWALK DETAIL
NOT TO SCALE

GENERAL NOTE:
1 – ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.

ENGINEERING SOLUTIONS
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Professional Registration
Missouri
Engineering 2005002186-D
Surveying 2005008319-D
Kansas
Engineering E-1695
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

Project:
LAKEWOOD BUSINESS CENTER PLAT II, LSMO

Issue Date:
May 5, 2023

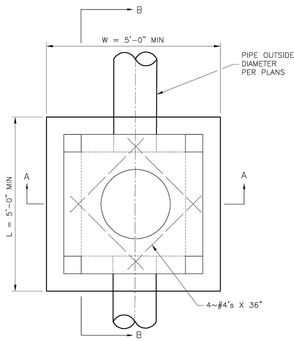
Standard Details
Construction Plans for:
Lakewood Industrial
Lee's Summit, Jackson County, Missouri

STATE OF MISSOURI
MATTHEW J. SCHLICHT
NUMBER PE-2006019708
PROFESSIONAL ENGINEER

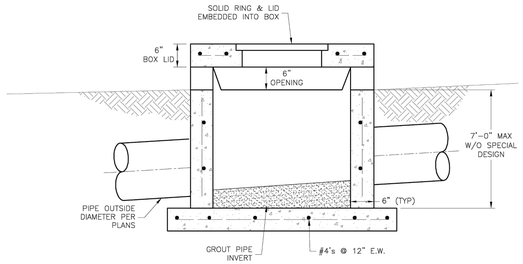
Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25226

REVISIONS

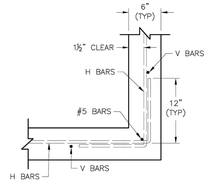
C.600



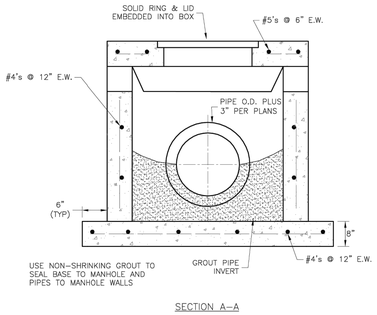
PLAN VIEW



SECTION B–B



WALL CORNER DETAIL



SECTION A–A

GENERAL NOTES:

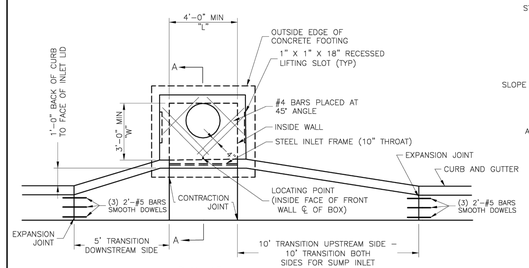
1. LOCATE RING AND COVER OVER OUTLET ON BLANK WALL.
2. USE ¾" CHAMFER ON ALL EXPOSED CONCRETE CORNERS.
3. FLOOR OF INLET GROUTED AND SHAPED TO MATCH PIPE INVERT TO PROVIDE SMOOTH FLOW.
4. STEPS REQUIRED AT 16" O.C. WHEN DEPTH FROM TOP OF CASTING TO INVERT EXCEEDS 3' ON BLANK WALL IF POSSIBLE.
5. BOXOUTS WILL NOT BE ALLOWED TO PROJECT THROUGH THE CORNERS OF THE STRUCTURE.
6. THE MINIMUM REINFORCING SHALL BE 1 H–BAR OVER A CAST–IN–PLACE PIPE AND 2 H–BARS OVER A PRECAST BOXOUT.
7. SHOW FIELD INLET ORIENTATION ON PLANS PLUS NUMBER AND SIDE OF OPENINGS.
8. PRECAST LIDS SHALL BE PINNED, SEALED WITH NON–SHRINKABLE GROUT AND REMOVABLE FOR FUTURE MAINTENANCE.
9. FOR RING AND COVER SEE THE STORMWATER APPROVED PRODUCT LIST.

LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

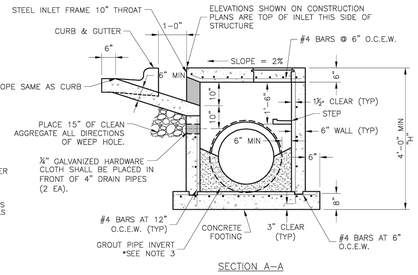
Project: STANDARD DETAILS CITY OF LEE'S SUMMIT, MO LEE'S SUMMIT, JACKSON COUNTY, MO
Sheet Name: FIELD INLET DETAIL

Drawn By: MJF
Checked By: DL
Date: 04/17
Proj. #:

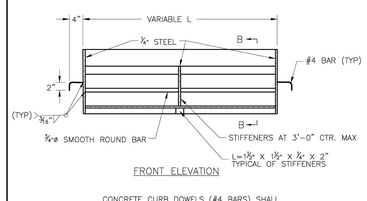
STM-2



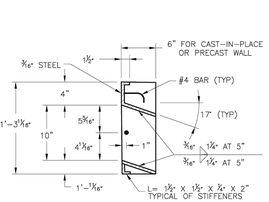
PLAN VIEW



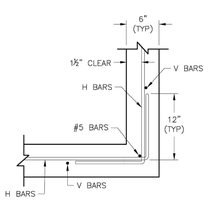
SECTION A–A



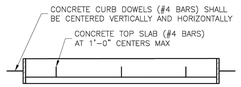
FRONT ELEVATION



SECTION B–B



WALL CORNER DETAIL



PLAN VIEW

STEEL FRAME NOTES:

1. ALL WELDS SHALL BE PERFORMED IN ACCORDANCE WITH APPROPRIATE AWS SPECIFICATIONS AND PROCEDURES.
2. ALL WELDS ON EXPOSED SURFACES SHALL BE DRESSED SO AS TO PROVIDE A PLEASING FINISHED APPEARANCE.
3. THE ENTIRE FRAME SHALL BE PAINTED A SINGLE COAT OF CHEM–PRIME #37H–78 PRIMER (GRAY) OR EQUAL.

GENERAL NOTES:

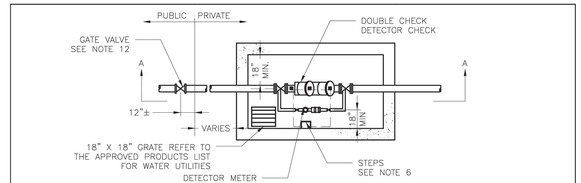
1. THE FIRST DIMENSION LISTED IN THE CONSTRUCTION NOTES IS THE "L" DIMENSION. THE SECOND DIMENSION IS THE "W" DIMENSION.
2. FLOW LINES LISTED ON THE PROJECT PLANS ARE LISTED AT THE INSIDE FACE OF THE WALL.
3. FLOOR OF INLET GROUTED AND SHAPED TO MATCH PIPE INVERT TO PROVIDE SMOOTH FLOW.
4. LOCATE MH RING AND COVER ON BLANK WALL IF POSSIBLE.
5. STEPS SHALL BE SPACED AT 1'–4" O.C. VERTICALLY ON BLANK WALL IF POSSIBLE.
6. BEVEL ALL EXPOSED EDGES WITH ⅜"CHAMFER OR ½" TOOLED EDGE.
7. ON–GRADE INLETS SHALL CONFORM TO THE STREET GRADE AND SUMP INLETS SHALL BE LEVEL.
8. PRECAST LIDS SHALL BE PINNED, SEALED WITH NON–SHRINKABLE GROUT AND REMOVABLE FOR FUTURE MAINTENANCE.
9. LIFTING RINGS SHALL BE REMOVED AND SEALED WITH NON–SHRINKABLE GROUT
10. FOR RING AND COVER SEE THE STORMWATER APPROVED PRODUCT LIST.

LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

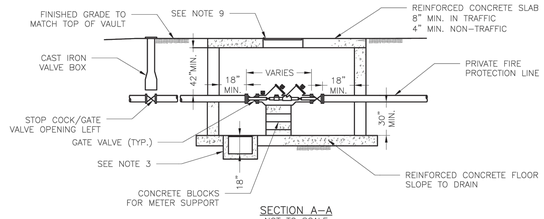
Project: STANDARD DETAILS CITY OF LEE'S SUMMIT, MO LEE'S SUMMIT, JACKSON COUNTY, MO
Sheet Name: CURB INLET DETAIL

Drawn By: MJF
Checked By: DL
Date: 04/17
Proj. #:

STM-1



PLAN VIEW
NOT TO SCALE



SECTION A–A
NOT TO SCALE

GENERAL NOTES:

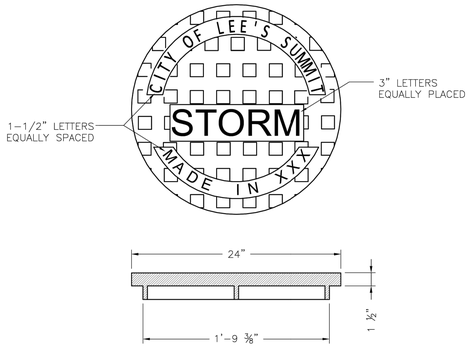
1. METER VAULT WALLS TO BE POURED OR PRECAST CONCRETE.
2. METER VAULT ROOF TO BE REINFORCED CONCRETE OPENING CENTERED OVER DETECTOR METER.
3. METER VAULT TO BE LOCATED, WHEN POSSIBLE, OUTSIDE TRAFFIC AREA WHERE SURFACE WATER WILL NOT DRAIN INTO IT. VAULT MUST BE KEPT FREE OF WATER. PROVIDE CONCRETE SUMP AS A MINIMUM. WHERE PRACTICAL, PROVIDE A 2" PIPE DRAIN WITH AN ABOVE–GROUND DISCHARGE POINT. PROJECT OWNER MAY DESIRE A PERMANENTLY INSTALLED SUMP PUMP.
4. ALL PIPE SHALL BE DUCTILE IRON CLASS 50. ALL PIPE FITTINGS FROM THE CITY WATER MAIN THROUGH THE VAULT SHALL BE PROVIDED WITH RESTRAINED JOINT FITTINGS.
5. ALL FITTINGS TO BE BRASS.
6. STEPS SHALL BE IN ACCORDANCE WITH THE APPROVED PRODUCTS LIST FOR WATER UTILITIES AND SHALL BE ON 16" CENTERS.
7. A DEPARTMENT OF NATURAL RESOURCES APPROVED DOUBLE CHECK DETECTOR CHECK BACKFLOW PREVENTER MUST BE USED. FOR A COPY OF THE MISSOURI DEPARTMENT OF NATURAL RESOURCES APPROVED BACKFLOW PREVENTION ASSEMBLIES, CONTACT THE WATER UTILITIES OPERATIONS DIVISION AT 816–969–1940. AS OF JANUARY 1, 1987, THE DNR REQUIRES FIRE SPRINKLER SYSTEMS USING CHEMICALS TO HAVE A DNR APPROVED PRESSURE BACKFLOW PREVENTER INSTALLED, PRIOR TO THE MIXING POINT.
8. ALL VALVES SHALL HAVE RISING STEMS.
9. FOR MANHOLE COVERS, SELECT A MANHOLE FROM THE APPROVED PRODUCTS LIST FOR WATER UTILITIES SUITABLE FOR EITHER TRAFFIC OR NON–TRAFFIC CONDITIONS.
10. A MINIMUM OF 18" CLEARANCE SHALL BE PROVIDED AROUND ALL PIPING, VALVES, APPURTENANCES, ETC.
11. METER SHALL BE OWNED AND MAINTAINED BY THE WATER UTILITIES DEPARTMENT.
12. IF PUBLIC WATER IS LOCATED ON THE OPPOSITE SIDE OF THE STREET, THEN THE PUBLIC WATER MAIN RESPONSIBILITY OF THE WATER UTILITIES DEPARTMENT ENDS AT THE GATE VALVE NEAREST THE VAULT.

LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

VAULT FOR DOUBLE CHECK DETECTOR CHECK

Date: 02/2016
Drawn By: JN
Checked By: DL

WAT-12



STANDARD 24" MANHOLE COVER
MINIMUM WEIGHT = 160 LB
NOTE: PICK HOLES NOT SHOWN

*COVER AND FRAME MODEL INFORMATION REFER TO THE STORMWATER APPROVED PRODUCT LIST.

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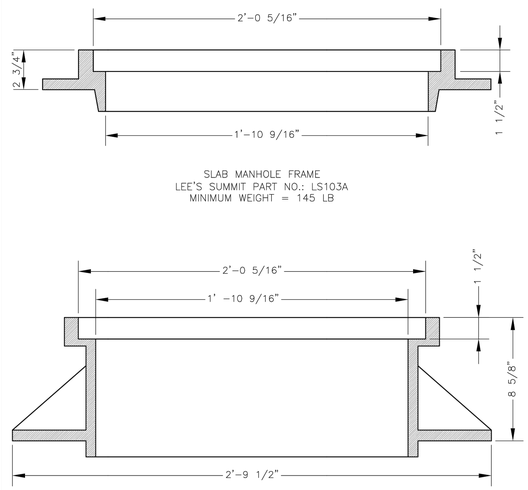
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

STORM MANHOLE COVER DETAIL

Date: 04/17
Drawn By: MJF
Checked By: DL

STM-6



*COVER AND FRAME MODEL INFORMATION REFER TO THE STORMWATER APPROVED PRODUCTS LIST.

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PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

STORM MANHOLE FRAME DETAIL

Date: 04/17
Drawn By: MJF
Checked By: DL

STM-7

GENERAL NOTE:
1 ~ ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.

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Engineering CA2821

Lakewood Industrial
Lee's Summit, Jackson County, Missouri

Project: LAKEWOOD BUSINESS CENTER PLAT 9, LSMO
Issue Date: May 5, 2023

Standard Details
Construction Plans for:
Lakewood Industrial
Lee's Summit, Jackson County, Missouri

Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25226

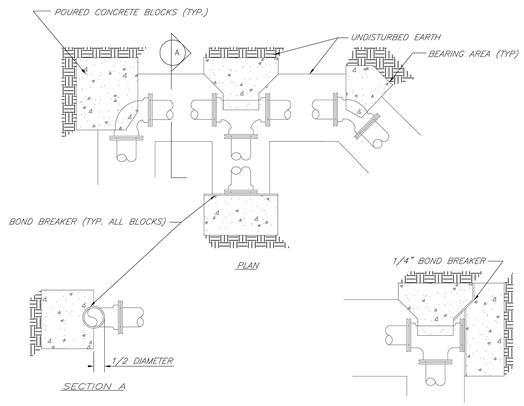
REVISIONS

C.601

REQUIRED CONCRETE BEARING AREA (SQUARE FEET – SF)

NOM. DIA. (INCHES)	180 TEE, PLUG	90 BEND	45 BEND	22.5 BEND	11.25 BEND
6	4.7	6.7	4.0	4.0	4.0
8	8.4	11.8	6.4	4.0	4.0
10	13.1	18.5	10.0	5.1	4.0
12	18.8	26.7	14.4	7.4	4.0
14	25.7	36.3	19.6	10.0	5.0
16	33.5	47.4	25.6	13.1	6.6
18	42.4	REST. JT.	32.5	16.5	8.3
20	REST. JT.	REST. JT.	40.1	20.4	10.3
24	REST. JT.	REST. JT.	REST. JT.	29.4	14.8

NOTES:
1. ALL BENDS WITHOUT RESTRAINED JOINTS SHALL HAVE CONCRETE THRUST BLOCKS INSTALLED FOR RESTRAINT.
2. MEGA LUGS MAY BE USED ONLY IN CONJUNCTION WITH CONCRETE THRUST BLOCKING.
3. BEARING AREA MUST BE AGAINST UNDISTURBED SOIL.
4. DO NOT COVER JOINTS OR BOLTS (WHERE APPLICABLE) WITH CONCRETE.



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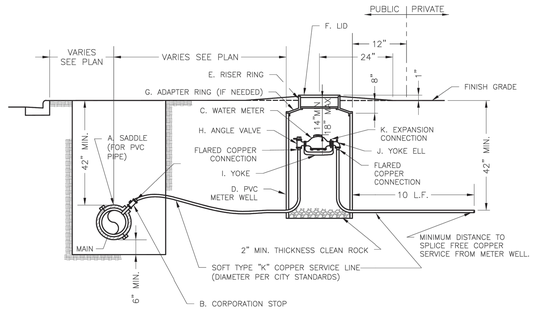
HORIZONTAL THRUST BLOCKS

Date: 02/13
Drawn By: JN
Checked By: DL
FILE: WAT-1
Rev: 1/14
Rev:



NOTES:
1. METER INSTALLATION SHALL NOT BE LOCATED IN AREAS SUBJECT TO VEHICULAR TRAFFIC OR IN CONCRETE PAVEMENT WITHOUT CITY APPROVAL.
2. IF METER IS TO BE LOCATED OTHER THAN IN FRONT OF PROPERTY LINE, CITY APPROVAL SHALL BE OBTAINED.
3. CITY TO FURNISH ITEMS A–K.
4. NO OTHER EQUIPMENT SHALL BE INSTALLED IN THIS PIT.
5. 42" MINIMUM BURY DEPTH FOR ALL SERVICE LINES.
6. EXCAVATION FOR TAP TO EXPOSE 4 LINEAR FEET OF MAIN.
7. NO SPLICES ALLOWED BETWEEN METER AND MAIN.
8. SERVICE CONNECTION TAP AT APPROXIMATELY 45 DEGREES.
9 LID AND RISER RING SHALL BE SET SO THAT GROUND WATER WILL DRAIN AWAY FROM THE WELL.
10. CONTACT WATER UTILITIES, 816–969–1900, FOR REQUIREMENTS OF A METER LARGER THAN 2"

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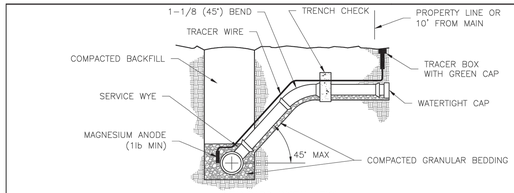
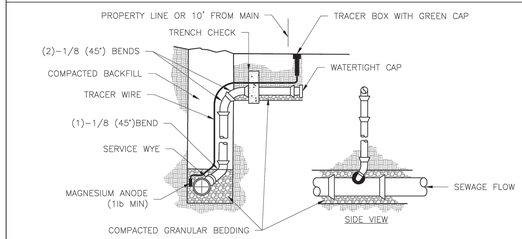
SERVICE CONNECTION WITH METER WELL

Date: 06/2015
Drawn By: JN
Checked By: DL

WAT-11



STANDARD INSTALLATION
NOT TO SCALE



VERTICAL RISER
NOT TO SCALE

NOTES:
1. ALL SEWER STUBS SHALL BE CONSTRUCTED TO PROPERTY LINE OR 10' MINIMUM FROM THE MAIN, WHICHEVER IS GREATER. WHERE SIDEWALKS ARE PRESENT, CONTRACTOR SHALL EXTEND SERVICE LINE UNDER EXISTING SIDEWALK TO TWO FEET BEYOND.
2. IMPERVIOUS TRENCH CHECKS SHALL BE PLACED ON BUILDING SEWER STUBS (AT LEAST 5' AWAY FROM THE SANITARY SEWER MAIN).
3. TRENCH CHECKS ON THE BUILDING SEWER STUBS SHALL EXTEND 6" BELOW THE BOTTOM OF THE PIPE. LENGTH SHALL BE A MINIMUM OF 12", THE HEIGHT OF THE TRENCH CHECK SHALL EXTEND 12" ABOVE THE TOP OF THE PIPE. THE WIDTH OF THE TRENCH CHECK SHALL BE THE WIDTH OF THE TRENCH.
4. SEE SPECIFICATION SECTION 2100 FOR SEWER MAIN BEDDING AND BACKFILL.
5. #12 GAUGE GREEN INSULATED COPPER TRACER WIRE SHALL BE INSTALLED. TRACER WIRE TERMINAL BOXES SHALL BE INSTALLED DIRECTLY ABOVE THE SEWER SERVICE OR AS DETERMINED BY THE ENGINEER.
6. FOR SERVICES, TRACER WIRE SHALL RUN FROM THE WYE AND TERMINATE IN A FLUSH MOUNTED TRACER BOX WITH A GREEN CAST IRON LOCKABLE TOP. WIRE SHALL BE TAPED OR TIED TO THE PIPE AT 5' INTERVALS.
7. TRACER WIRE BOX SHALL BE INSTALLED WITHIN 1.0' OF PROPERTY LINE.
8. THE TRACER WIRE SHALL REMAIN CONTINUOUS TO THE GREATEST EXTENT POSSIBLE. SPLICES IN THE TRACER WIRE SHOULD BE MADE WITH SPLIT BOLT CONNECTORS. WIRE NUTS SHALL NOT BE USED. A WATER–PROOF CONNECTION IS NECESSARY TO PREVENT CORROSION.

LEE'S SUMMIT
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PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

SANITARY SEWER STUB DETAIL

Date: 12/2015
Drawn By: MJF
Checked By: DL

SAN-1

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Surveying 2005008319-D
Kansas
Engineering E-1695
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

Lakewood Industrial
Lee's Summit, Jackson County, Missouri

Project: LAKEWOOD BUSINESS CENTER PLAT S, LSMO
Issue Date: May 5, 2023

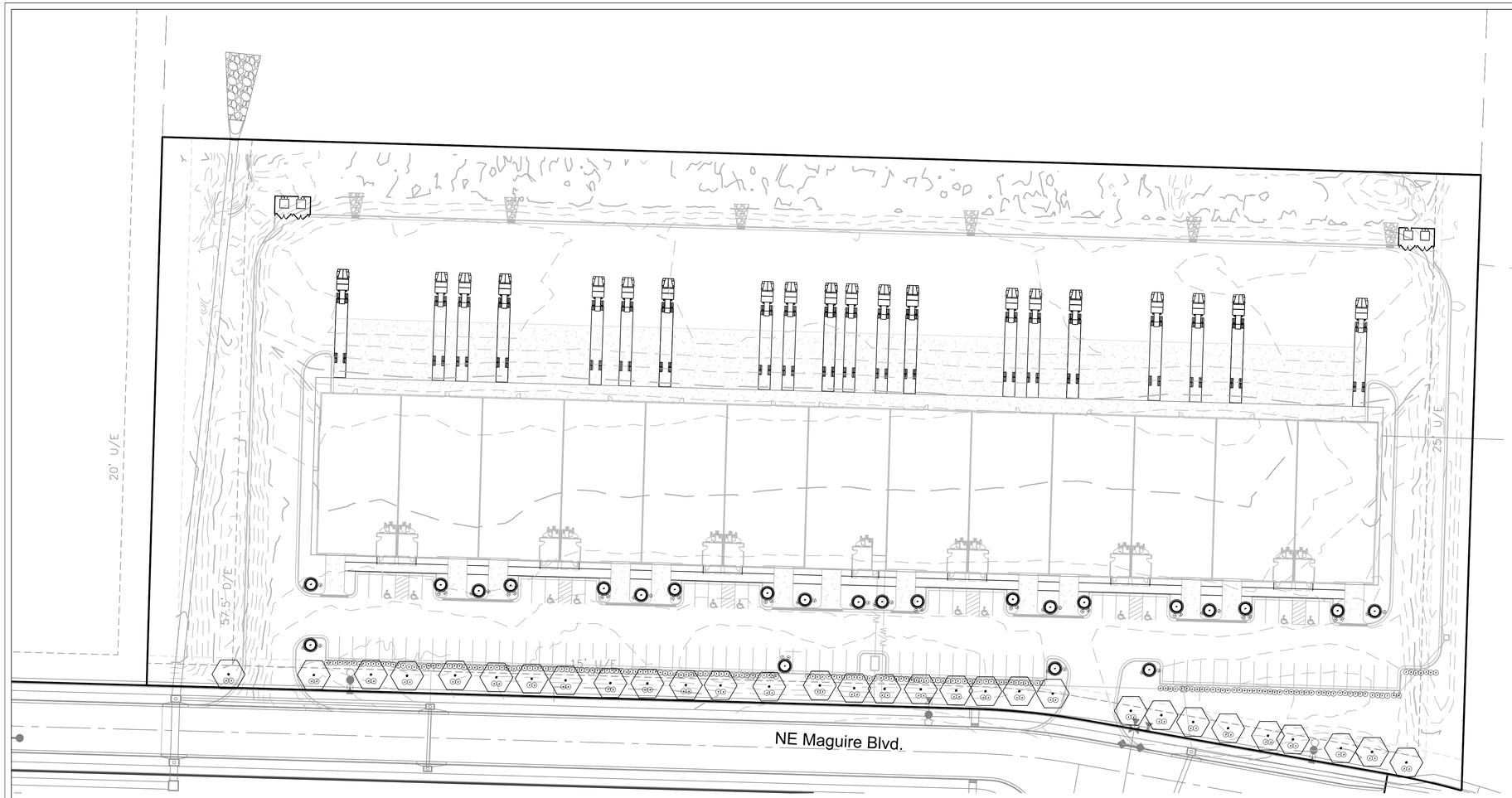
Standard Details
Construction Plans for:
Lakewood Industrial
Lee's Summit, Jackson County, Missouri

STATE OF MISSOURI
MATTHEW J. SCHLICHT
NUMBER PE-2006019708
PROFESSIONAL ENGINEER

Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25226

REVISIONS

C.602



North

0 20' 40' 80'

LANDSCAPE PLAN
SCALE: 1" = 40'

LANDSCAPE WORKSHEET

	ORDINANCE REQUIREMENT	REQUIRED FOR THIS SITE	PROPOSED LANDSCAPE
14.090.A.1 Street Frontage Trees (NE Maguire Blvd.)	1 tree per 30 feet of street frontage	890 ft. of street frontage /30= 30 trees required	30 Trees Provided
14.090.A.3 Street Frontage Shrubs (NE Maguire Blvd.)	1 shrub per 20 feet of street frontage	890 ft. of street frontage /20= 45 shrubs required	60 shrubs provided
14.090.B.1 Open Yard Shrubs	2 shrubs per 5000 sq. ft. of total lot area, excludes single family and duplex developments, excluding building and parking.	335,238 sq. ft. of total lot area minus 231,200 sq.ft. of bldg. & parking= 104,038 sq.ft. /5,000 x 2 = 42 shrubs	48 shrubs
14.090.B.3 Open Yard Trees	1 tree per 5000 sq. ft. of total lot area excluding building and parking.	335,238 sq. ft. of total lot area minus 231,200 sq. ft. of bldg. & parking= 104,038 sq. ft./5,000 = 21 trees	24 Provided
14.110. Parking Lot Landscape	5% of entire parking area (spaces, aisles &: drives); 1 island at end of every parking bay, min. 9' wide	153,162 sq. ft. of parking area x .05 = 7,658 sq. ft. of landscape parking lot islands required	7,700 sq. ft.
14.120 Screening of Parking Lot, Road	12 shrubs per 40 linear feet (must be 2.5 feet tall; berms may be combined with shrubs)	632 linear feet/40 x 12 190 shrubs required.	190 shrubs provided

•STREET SHRUBS ARE SATISFIED WITH PARKING LOT SCREENING REQUIREMENTS.

PLANTING SCHEDULE:

IS FOR PHASE 1 ONLY. AT FULL BUILD THE UNIFIED DEVELOPMENT ORDINANCE REQUIREMENTS SHALL BE MEET.

	SYMBOL	QUANT.	KEY	NAME	SIZE
tree	⬠	30	TA	AMERICAN BASSWOOD LINDEN TILIA AMERICANA	3.0" CAL.
evergreen	⊙	--	SR	SKYROCKET JUNIPER JUNIPERUS SCOPULORUM "SKYROCKET"	8' Ht.
tree	⊙	24	RB	OKLAHOMA REDBUD CERCIS RENIFORMIS "OKLAHOMA"	3.0" CAL.
shrub	·	298	BB	BURNING BUSH EUONYMUS ALATA "COMPACTUS"	2 Gallon Pot

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Lakewood Industrial
Lee's Summit, Jackson County, Missouri

Project: LAKEWOOD BUSINESS CENTER PLAT 'B', LSMO

Issue Date: May 5, 2023

LANDSCAPE PLAN
Construction Plans for:
Lakewood Industrial
Lee's Summit, Jackson County, Missouri

STATE OF MISSOURI
MATTHEW J. SCHLICHT
NUMBER PE-2006019708
PROFESSIONAL ENGINEER

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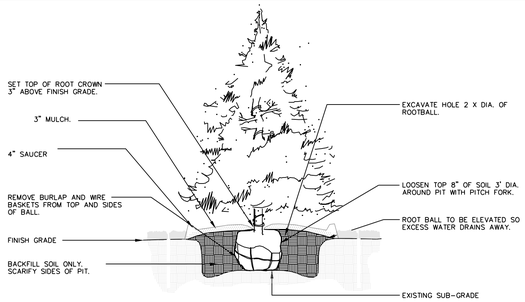
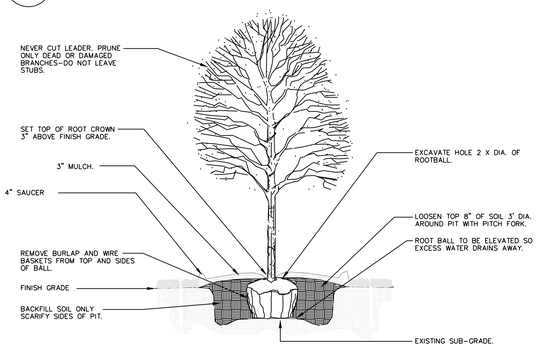
KS PE 19071
OK PE 25226

REVISIONS



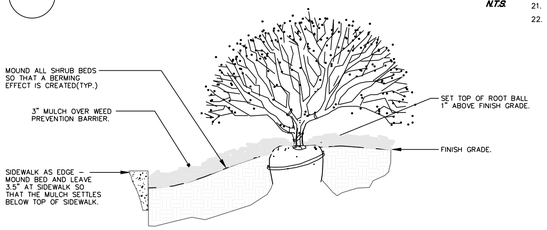
1 EVERGREEN TREE PLANTING

N.T.S.



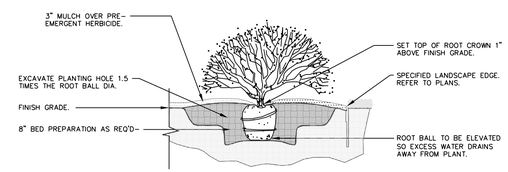
2 DECIDUOUS TREE PLANTING

N.T.S.



3 SIDEWALK EDGE AT PLANT BED

N.T.S.



4 SHRUB PLANTING

N.T.S.

GENERAL LANDSCAPE NOTES:

PLANT MATERIAL

1. ALL PLANT MATERIAL SHALL BE FIRST CLASS REPRESENTATIVES OF SPECIFIED SPECIES, VARIETY OR CULTIVAR, IN HEALTHY CONDITION WITH NORMAL WELL DEVELOPED BRANCHES AND ROOT PATERNS. PLANT MATERIAL MUST BE FREE OF OBJECTIONABLE FEATURES. PLANTS SHALL COMPLY IN ALL APPLICABLE RESPECTS WITH PROPER STANDARDS AS SET FORTH IN THE AMERICAN ASSOCIATION OF NURSERYMEN'S "AMERICAN STANDARD OF NURSERY STOCK", ANSI Z60.1-2004.
2. SHRUBS SHALL BE CONTAINER GROWN AND WILL BE FREE OF DISEASE AND PESTS. NO BARE ROOT. ALL PLANT BEDS TO BE MULCHED TO A DEPTH OF 3" WITH DARK BROWN, HARDWOOD MULCH. PLANTING BEDS ARE TO BE FREE OF WEEDS AND GRASS. TREAT BEDS WITH A PRE-EMERGENT HERBICIDE PRIOR TO PLANTING AND MULCH PLACEMENT. APPLY IN ACCORDANCE WITH STANDARD TRADE PRACTICE.
3. HOLE AREA FOR TREE TO BE TWICE (2x) THE DIAMETER OF THE ROOT BALL AND ROOT BALL SHALL BE SLIGHTLY MOUNDED FOR WATER RUN-OFF.
4. ALL PLANT MATERIALS SHALL BE PROTECTED FROM THE DRYING ACTION OF THE SUN AND WIND AFTER BEING DUG, WHILE BEING TRANSPORTED, AND WHILE AWAITING PLANTING. BALLS OF PLANTS WHICH CANNOT BE PLANTED IMMEDIATELY SHALL BE PROTECTED FROM DRYING ACTION BY COVERING THEM WITH MOIST MULCH. PERIODICALLY, APPLY WATER TO MULCH-COVERED BALLS TO KEEP MOIST. IF PLANTING SHOULD OCCUR DURING GROWING SEASON, APPLY ANTI-DESICCANT TO LEAVES BEFORE TRANSPORT TO REDUCE THE LIKELIHOOD OF WINDBURN. REAPPLY ANTI- DESICCANT AFTER PLANTING TO REDUCE TRANSPIRATION. REMOVE TWINE AND BURLAP FROM ROOT BALLS. SOIL ON TOP OF CONTAINERIZED OR BALLED PLANTS IS TO BE REMOVED UNTIL ALL PLANTS' ROOT FLARES ARE EXPOSED. THIS IS THE NATIVE SOIL LINE AT WHICH PLANTING DEPTHS SHOULD BE MEASURED.
5. AFTER PLANTING IS COMPLETED, PRUNE MINIMALLY TO REMOVE DEAD OR INJURED TWIGS AND BRANCHES. PRUNE IN SUCH A MANNER AS NOT TO CHANGE THE NATURAL HABIT OR SHAPE OF THE PLANT. MAKE CUTS BACK TO BRANCH COLLAR, NOT FLUSH. DO NOT PAINT ANY CUTS WITH WITH TREE PAINT. CENTRAL LEADERS SHALL NOT BE REMOVED.
6. GUARANTEE TREES, SHRUBS, GROUND COVER PLANTS FOR ONE CALENDAR YEAR FOLLOWING PROVISIONAL ACCEPTANCE OF THE OVERALL PROJECT. DURING THE GUARANTEE PERIOD, PLANTS THAT DIE DUE TO NATURAL CAUSES OR THAT ARE UNHEALTHY OR UNSIGHTLY IN CONDITION, SHALL BE REPLACED BY THE CONTRACTOR.

LAWN AND TURF AREAS

7. ALL LAWN AREAS TO BE SODDED AS SHOWN ON PLANS. SOD SHALL COMPLY WITH US DEPT. OF AGRICULTURE RULES AND REGULATIONS UNDER THE FEDERAL SEED ACT AND EQUAL IN QUALITY TO STANDARDS FOR CERTIFIED SEED. SOD SHALL BE HEALTHY, THICK TURF HAVING UNDERGONE A PROGRAM OF REGULAR FERTILIZING, MOWING AND WEED CONTROL. SEED AND SOD SHALL BE A TURF-TYPE TALL FESCUE (3 WAY) BLEND. SEED BLEND SHALL CONSIST OF THE FOLLOWING:

TURF-TYPE TALL FESCUE	90%
KENTUCKY BLUEGRASS	10%

8. ALL SODDED AREAS ARE TO BE MULCHED WITH STRAW OR HYDROMULCH AT TIME OF INSTALLATION UNTIL SOD HAS ESTABLISHED.

INSTALLATION

9. THE INSTALLATION OF ALL PLANT MATERIALS SHALL BE IN COMPLIANCE WITH THE REQUIREMENTS OF THE CITY OF LEE'S SUMMIT, MO. AND LANDSCAPE INDUSTRY STANDARDS.
10. ALL LANDSCAPE AREAS TO BE FREE OF ALL BUILDING DEBRIS AND TRASH, BACK FILLED WITH CLEAN FILL SOIL AND TOP DRESSED WITH 4" OF TOPSOIL. TOPSOIL SHALL HAVE A pH RANGE OF 5.5 TO 7 AND A 4% ORGANIC MATERIAL MINIMUM, ASTM D5268.
11. PLANT BEDS TO BE "MOUNDED". ALL PLANT MATERIAL, PLANT BEDS, MULCH AND DUG EDGE ARE TO BE INSTALLED PER LANDSCAPE PLANS, DETAILS, AND MANUFACTURER'S RECOMMENDATIONS.
12. REESTABLISH FINISH GRADES TO WITHIN ALLOWABLE TOLERANCES ALLOWING 3/4" FOR SOD AND 3" FOR MULCH IN PLANT BEDS. HAND RAKE ALL AREAS TO SMOOTH EVEN SURFACES FREE OF DEBRIS, CLODS, ROCKS, AND VEGETATIVE MATTER GREATER THAN 1".
13. ALL PLANT BEDS, SHRUBS AND TREES SHALL BE MULCHED WITH 3" OF DARK BROWN, HARDWOOD MULCH, EXCEPT IF NOTED AS ROCK. DARK BROWN, HARDWOOD MULCH SHALL BE INSTALLED OVER DEWITT PRO 5 WEED CONTROL FABRIC IN PLANT BEDS ONLY.
14. CONTRACTOR IS RESPONSIBLE FOR INITIAL WATERING UPON INSTALLATION.
15. DUG EDGES ARE TO BE DUG WHERE MULCH BEDS ARE ADJACENT TO TURF AREAS. NO EDGING IS REQUIRED ADJACENT TO PAVEMENT OR CURB.
16. THE EXACT LOCATION OF ALL UTILITIES, STRUCTURES, AND UNDERGROUND UTILITIES SHALL BE DETERMINED AND VERIFIED ON SITE BY THE LANDSCAPE CONTRACTOR PRIOR TO INSTALLATION OF THE MATERIALS. DAMAGE TO EXISTING UTILITIES AND OR STRUCTURES SHALL BE REPLACED TO THEIR ORIGINAL CONDITION BY THE LANDSCAPE CONTRACTOR AT NO COST TO THE OWNER.
17. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR OBTAINING NECESSARY PERMITS AND APPROVALS AND REQ'D INSPECTIONS BY LEGAL AUTHORITIES.
18. PROVISIONS SHALL BE MADE FOR READILY ACCESSIBLE IRRIGATION WITHIN 100' MAX. OF ALL LANDSCAPED AREAS INCLUDING ALL PLANT BEDS, INDIVIDUAL TREES, AND TURF AREAS. ALL LAWN AREAS (AS SHOWN ON PLANS) WILL BE IRRIGATED BY AN AUTOMATIC SPRINKLER SYSTEM. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF ALL IRRIGATION COMPONENTS, SLEEVING, PIPE AND CONTROL. DESIGN DRAWINGS OF IRRIGATION SYSTEM SHALL BE SUBMITTED TO THE LANDSCAPE ARCHITECT AND OWNER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
19. ANY SUBSTITUTIONS OR DEVIATIONS SHALL BE REQUESTED IN WRITING BY THE CONTRACTOR FOR APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION OF PLANT MATERIALS. ALL PLANTS ARE TO BE LOCATED AS SPECIFIED ON DRAWINGS.

MAINTENANCE BY OWNER

20. ALL SHRUBS ARE TO BE MAINTAINED IN THEIR NATURAL SHAPE TO ALLOW EVENTUAL GROWTH INTO A HEDGE.
21. MAINTAIN NATURAL HABIT OF ALL SPECIFIED PLANT MATERIAL.
22. NEW SOD TO BE THOROUGHLY WATERED UNTIL ROOTS "TAKE HOLD" OF SOD BED. CONTINUE WATERING AS REQUIRED, UNTIL COMPLETELY ESTABISHED.

IRRIGATION PERFORMANCE SPECIFICATION:

THE FOLLOWING CRITERIA SHALL BE CONSIDERED MINIMUM STANDARDS FOR DESIGN AND INSTALLATIONOF LANDSCAPE IRRIGATION SYSTEM:

1. GENERAL - IRRIGATION SYSTEM TO INCLUDE DRIP IRTRIGATION OF SHRUB BEDS ADJACENT TO BUILDINGS, SPRAY HEADS IN THE PARKING ISLANDS, AND ROTORS AROUND THE PERIMETER OF THE PARKING LOTS. HEADS SHALL THROW AWAY FROM BUILDING AND ACCOID SPRAYING OVER SIDEWALKS.
2. IRRIGATION SYSTEM SHALL CONFORM TO ALL INDUSTRY STANDARDS AND ALL FEDERAL, STATE AND LOCAL LAWS GOVERNING DESIGN AND INSTALLATION.
3. WATERLINE TYPW, SIZE LOCATION, PRESSURE AND FLOW SHALL BE FIELD VERIFIED PRIOR TO SYSTEM DESIGN AND INSTALLATION.
4. ALL MATERIALS SHALL BE FROM NEW STOCK FREE OF DEFECTS AND CARRY A MINIMUM ONE YEAR WARRANTY FROM THE DATE OF SUBSTANTIAL COMPLETION.
5. THE IRRIGATION SYSTEM SHALL BE DESIGNED AND INSTALLED IN SUCH A WAY THAT ALL SYSTEM COMPONENTS OPERATE WITHIN THE GUIDELINES ESTABLISHED BY THE MANUFACTURER.
6. LAWN AREA AND SHRUB BEDS SHALLBE ON SEPARATE CIRCUITS.
7. PROVIDE WATER TAP, METER SET, METER VAULT AND ALL OTHER OPERATIONS NECESSARY TO PROVIDE WATER FOR IRRIGATION SHALL CONFORM TO LOCAL WATER GOVERNING AUTHORITY CUIDELINES AND STANDARDS.
8. BACKFLOW PREVENTION SHALL BE PROVIDED IN ACCORDANCE WITH STATE AND LOCAL REQUIATIONS.
9. IRRIGATION CONTROLLER TO BE LOCATED IN UTILITY ROOM INSIDE BUILDING, AS IDENTIFIED BY OWNER.
10. IRRIGATION CONTROLLER STATIONS SHALL BE LABELED TO CORRESPOND WITH THE CIRCUIT IT CONTROLS.
11. CONTRACTOR SHALL PROVIDE TO THE OWNER WRITTEN OPERATION INFORMATION FOR ALL SYSTEM COMPONENTS.
12. CONTRACTOR SHALL PROVIDE O THE OWNER ALL KEYS, ACCESS TOOLS, WRENCHES AND ADJUSTING TOOLS NECESSARY TO GAIN ACCESS, ADJUST AND CONTROL THE SYSTEM.
13. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS TO THE OWNER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
14. AN AUTOMATIC RAIN SHUT-OFF OR MOISTURE DEVICE SHALL BE INSTALLED.
15. INSTALL SCHEDULE 40 PVC SLEEVES UNDER ALL CURBS, PAVING AND SIDEWALKS. SLEEVES TO BE TWICE THE SIZE OF THE LINE IT HOUSES.
16. INSTALL MANUAL DRAIN BALBES AT LOWEST POSSIBLE ELEVATION ON IRRIGATION MAIN TO ALLOW GRAVITY DRAINING OF MAIN DURING WINTER MONTHS. PROVIE QUICK COUPLERS AT MULTIPLE LOCATIONS TO ALLOW FOR EASY "BLOWING OUT" OF LATERAL AND MAIN LINES.
17. ZONES OR NOZZLES SHALL BE DESIGNED WITH MATCHED PRECIPITATION RATES.
18. MINIMUM LATERAL DEPTH IS 15" AND MAIN DEPTH IS 18".
19. SUBMIT DESGN DRAWING WITH BID TO ALLOW OWNER TO EVALUATE SYSTEM. INCLUDE CUT SHEETS OF ALL COMPONENTS AND ZONE TABLE ILLUSTRATING FLOWS AND ANTICIPATED PRESSURE AT FURTHEST HEAD.
20. AN "AS-BUILT" SCALED DRAWING SHALL BE PROVIDED TO THE OWNER BY THE CONTRACTOR AND SHALL INCLUDE UT NOT BE LIMITED TO THE FOLLOWING:
    a. AS CONSTRUCTED LOCATION OF ALL COMPONENTS
    b. COMPONENT NAME, MANUFACTURER, MODEL INFORMATION, SIZE AND QUANTITY
    c. PIPE SIZE AND QUANTITY
    d. INDICATION OF SPRINKLER HEAD SPRAY PATTERN
    e. CIRCUIT IDENTIFICATION SYSTEM
    f. DETAILED METHOD OF WINTERIZED SYSTEM

SUBMIT AS-BUILT DRAWING IN FULL SIZE DRAWING FORM AS WELL AS PDF ELECTRONIC FORMAT. (SCANNING FULL SIZE COPY OF PLAN IS ACCEPTABLE IF IT CAN BE PRINTED TO SCALE.

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Kansas
Engineering E-1695
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

Lakewood Industrial
Lee's Summit, Jackson County, Missouri

Project: LAKEWOOD BUSINESS CENTER PLAT II, LSMO
Issue Date: May 5, 2023

LANDSCAPE PLAN DETAILS
Construction Plans for:
Lakewood Industrial
Lee's Summit, Jackson County, Missouri

STATE OF MISSOURI
MATTHEW J. SCHLICHT
NOTARY PUBLIC
COMMISSION # 20060197081
PROFESSIONAL ENGINEER

Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
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REVISIONS

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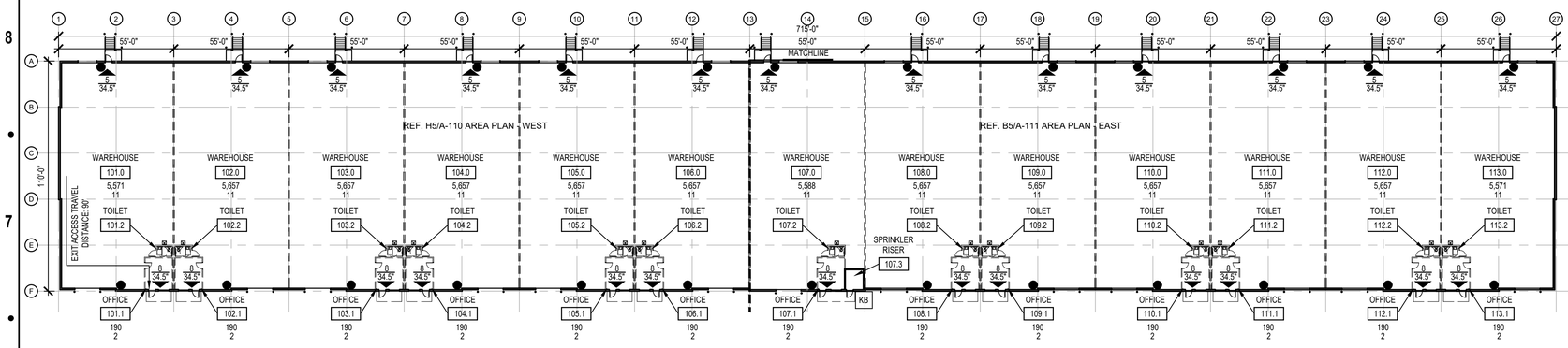
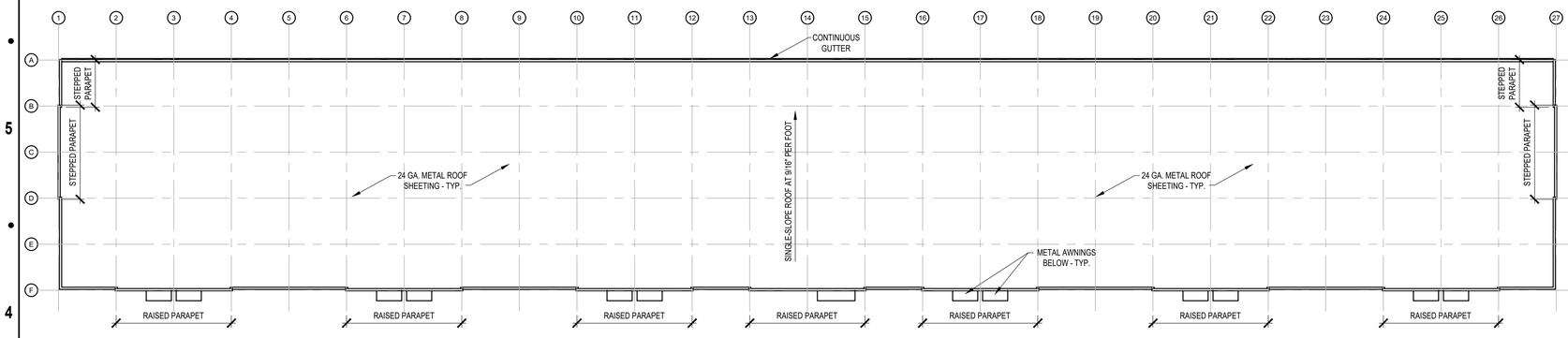


D6 CODE / FULL PLAN

SCALE: 1/32" = 1'-0"

PROJECT NORTH



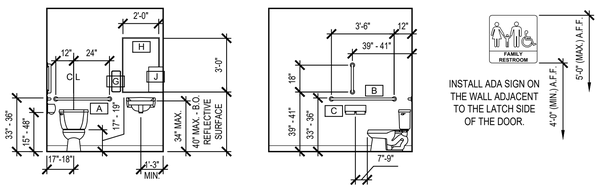
D4 ROOF PLAN

SCALE: 1/32" = 1'-0"

PROJECT NORTH

ACCESSIBILITY NOTES

1. ACCESS TO THESE FACILITIES SHALL BE PROVIDED AT PRIMARY ENTRANCES, AS REQUIRED BY ADA.
2. WALKS & SIDEWALKS SHALL HAVE A CONTINUOUS COMMON SURFACE NOT INTERRUPTED BY STEPS OR BY ABRUPT CHANGES IN LEVEL EXCEEDING 1/2" AND SHALL BE A MIN. OF 36" IN WIDTH.
3. SURFACES WITH A SLOPE OF LESS THAN 6% GRADIENT SHALL BE AT LEAST AS SLIP RESISTANT AS THAT DESCRIBED AS A MEDIUM SALTED FINISH.
4. SURFACES WITH A SLOPE OF 6% GRADIENT OR GREATER SHALL BE SLIP RESISTANT.
5. SURFACE CROSS SLOPES SHALL NOT EXCEED 1/4" PER FOOT.
6. WALKS, SIDEWALKS & PEDESTRIAN WAYS SHALL BE FREE OF GRATING WHENEVER POSSIBLE. FOR GRATINGS LOCATED IN THE SURFACE OF ANY OF THESE AREAS, GRID OPENINGS IN THE GRATINGS SHALL BE LIMITED TO 1/2" IN THE DIRECTION OF TRAFFIC FLOW.
7. WHEN THE SLOPE IN THE DIRECTION OF TRAVEL OF ANY WALK EXCEEDS 1 VERTICAL TO 20 HORIZONTAL, IT SHALL COMPLY WITH THE PROVISIONS OF A PEDESTRIAN RAMP.
8. ABRUPT CHANGES IN LEVEL ALONG ANY ACCESSIBLE ROUTE SHALL NOT EXCEED 1/2". WHEN CHANGES IN LEVEL DO OCCUR, THEY SHALL BE BEVELED WITH A SLOPE NO GREATER THAN 1:2, EXCEPT THAT LEVEL CHANGES NOT EXCEEDING 1/4" MAY BE VERTICAL. WHEN CHANGES IN LEVELS GREATER THAN 1/2" ARE NECESSARY, THEY SHALL COMPLY WITH THE REQUIREMENTS FOR CURB OR PEDESTRIAN RAMPS.
9. EVERY REQUIRED EXIT DOORWAY SHALL BE SIZED FOR A DOOR NOT LESS THAN 3 FT. WIDE BY NOT LESS THAN 6'-8" HIGH CAPABLE OF OPENING 90° AND MOUNTED SO THAT THE CLEAR WIDTH OF THE EXIT WAY IS 32" MIN.
10. THRESHOLDS MAY BE A MAX. 1/2" ABOVE ADJACENT FINISH FLOOR.
11. MAXIMUM EFFORT TO OPERATE DOORS SHALL NOT EXCEED 8 1/2 LBS. FOR EXTERIOR DOORS AND 5 LBS. FOR INTERIOR DOORS, SUCH PULL OR PUSH EFFORT BEING APPLIED AT RIGHT ANGLES TO HINGED DOORS AND AT THE CENTER PLANE OF SLIDING OR FOLDING DOORS. COMPENSATING DEVICES OR AUTOMATIC DOOR OPERATORS MAY BE UTILIZED TO MEET THE ABOVE STANDARDS. WHEN FIRE DOORS ARE REQUIRED, THE MAXIMUM EFFORT TO OPERATE THE DOOR MAY BE INCREASED TO THE MAXIMUM ALLOWABLE BY THE APPROPRIATE ADMINISTRATIVE AUTHORITY, NOT TO EXCEED 15 LBS.
12. THE BOTTOM 10" OF ALL DOORS, EXCEPT AUTOMATIC AND SLIDING, SHALL HAVE A SMOOTH UNINTERRUPTED SURFACE.
13. PROVIDE LEVER-TYPE HARDWARE, PANIC BARS, PUSH - PULL ACTIVATING BARS OR OTHER HARDWARE DESIGNED TO PROVIDE PASSAGE WITHOUT REQUIRING TIGHT GRASPING, TIGHT PINCHING, OR TWISTING OF THE WRIST TO OPERATE THE HARDWARE. (34" TO 48" A.F.F.)
14. PROVIDE 17" (MIN.) OR 18" (MAX.) FROM ADJACENT WALL TO CENTERLINE OF WATER CLOSET.
15. PROVIDE A 30"x48" CLEAR SPACE WITHIN THE TOILET ROOM THAT DOES NOT ENCROACH INTO THE DOOR SWING.
16. GRAB BARS LOCATED ON EACH SIDE, OR ONE SIDE AND THE BACK OF PHYSICALLY DISABLED TOILET COMPARTMENTS SHALL BE SECURELY ATTACHED 33" MIN. AND 36" MAX. FROM THE FINISHED FLOOR TO THE TOP OF THE GRAB BAR AND PARALLEL TO THE FLOOR. THE SPACE BETWEEN WALL-MOUNTED GRAB BARS AND THE WALL SHALL BE 1 1/2". GRAB BARS AT THE SIDE SHALL BE 42" LONG, AND THE BACK END SHALL BE LOCATED 12" FROM THE BACK WALL. GRAB BARS AT THE BACK SHALL BE NOT LESS THAN 36" LONG WITH THE END CLOSEST TO THE SIDE WALL MOUNTED 12" FROM THE CENTER OF THE WATER CLOSET. THE DIAMETER OR WIDTH OF THE GRIPPING SURFACES OF A GRAB BAR SHALL BE 1 1/4" TO 1 1/2" OR THE SHAPE SHALL PROVIDE AN EQUIVALENT GRIPPING SURFACE.
17. WATER CLOSET HEIGHT SHALL BE 17" (MIN.) OR 19" (MAX.) MEASURED TO THE TOP OF THE TOILET SEAT TO THE FINISHED FLOOR. CONTROLS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST. CONTROLS FOR FLUSH VALVES SHALL BE MOUNTED ON THE WIDE SIDE OF TOILET AREAS, NO MORE THAN 44" A.F.F. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 5 LBS. OF FORCE.
18. URINALS SHALL BE 17" (MAX.) ABOVE THE FLOOR AND PROJECT 13 1/2" FROM THE WALL. URINALS SHALL HAVE A CLEAR SPACE OF 30"X48" IN FRONT. FLUSH VALVES SHALL BE AUTOMATIC OR MOUNTED NO MORE THAN 44" A.F.F. IF HAND-OPERATED.
19. IN FRONT OF LAVATORIES, PROVIDE A 30"x48" CLEAR SPACE LOCATED 25" (MAX.) FROM THE LEADING EDGE OF THE LAVATORY TOWARD THE MOUNTING WALL. KNEE CLEARANCE SHALL BE 11" DEEP (MIN.) AT 9" A.F.F. AND 8" DEEP (MIN.) AT 27" A.F.F. BETWEEN 9" AND 27" A.F.F., THE KNEE CLEARANCE SHALL BE PERMITTED TO REDUCE AT A RATE OF 1" IN DEPTH FOR EACH 6" IN HEIGHT.
20. ALL ACCESSIBLE LAVATORIES SHALL BE MOUNTED WITH THE RIM OR COUNTER SURFACE NO HIGHER THAN 34" A.F.F.
21. HOT WATER AND DRAIN PIPES UNDER LAVATORIES SHALL BE INSULATED OR OTHERWISE COVERED. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER LAVATORIES.
22. FAUCET CONTROLS AND OPERATING MECHANISMS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 5 LBS. LEVER-OPERATED, PUSH-TYPE, AND ELECTRONIC CONTROLLED MECHANISMS ARE EXAMPLES OF ACCEPTABLE DESIGNS. SELF-CLOSING VALVES ARE ALLOWED IF THE FAUCET IS OPEN FOR AT LEAST 10 SECONDS.
23. LOCATE PAPER TOWEL DISPENSERS, SOAP DISPENSERS, SANITARY NAPKIN DISPENSERS, AND WASTE RECEPTACLES WITH ALL OPERABLE PARTS BETWEEN 15" AND 48" A.F.F.
24. LOCATE TISSUE DISPENSERS ON THE WALL 7" (MIN.) AND 9" (MAX.) FROM THE FRONT EDGE OF THE TOILET SEAT TO THE CENTERLINE OF DISPENSER WITH THE OUTLET BETWEEN 15" AND 48" A.F.F.
25. ACCESSIBLE RESTROOMS SHALL BE PROVIDED WITH SIGNAGE DESIGNED AND LOCATED PER SECTION 703 OF THE ADA DESIGN GUIDELINES.
26. DOORS IN ACCESSIBLE ROUTES SHALL BE DESIGNED TO MEET CLEARANCE REQUIREMENTS PER SECTION 404 OF THE ADA DESIGN GUIDELINES.
27. WALKS, HALLS, CORRIDORS, PASSAGEWAYS, AISLES OR OTHER CIRCULATION SPACES SHALL HAVE 80" MINIMUM CLEAR HEADROOM.
28. OBJECTS PROJECTING FROM WALLS WITH THEIR LEADING EDGES BETWEEN 27" AND 80" ABOVE THE FINISH FLOOR SHALL PROTRUDE NO MORE THAN 4" INTO WALKS, HALLS, CORRIDORS, PASSAGEWAYS OR AISLES. OBJECTS MOUNTED AT OR BELOW 27" ABOVE FINISH FLOOR MAY PROTRUDE ANY AMOUNT.
29. OBJECTS THAT ARE BETWEEN 27" AND 80" A.F.F. AND MOUNTED ON POSTS MAY EXTEND BEYOND THE POSTS A MAXIMUM OF 12". OBJECTS MOUNTED BETWEEN POSTS, WHERE THE SPACE BETWEEN THE POSTS IS GREATER THAN 12", THE LOWEST EDGE OF THE OBJECT SHALL BE LOCATED 27" MAX. AND 80" MIN. A.F.F.
30. IF CARPET OR CARPET TILE IS USED ON A GROUND OR FLOOR SURFACE IN A COMMON USE AREA, IT SHALL HAVE FIRM BACKING OR NO BACKING. THE MAXIMUM PILE HEIGHT SHALL BE 1/2". EXPOSED EDGES OF CARPET SHALL BE FASTENED TO FLOOR SURFACES AND HAVE TRIM ALONG THE EXPOSED EDGE, AND TRIM SHALL COMPLY WITH THE REQUIREMENTS FOR CHANGES IN LEVEL.



INSTALL ADA SIGN ON THE WALL ADJACENT TO THE LATCH SIDE OF THE DOOR.

D1 TYP. ADA TOILET DIMENSIONS

SCALE: =

PROJECT SUMMARY

THIS IS A NEW SPEC. SHELL BUILDING ALLOWING FOR THE POSSIBLE FUTURE INSTALLATION OF 13 WAREHOUSE / OFFICE SUITES AS TENANT IMPROVEMENTS AS NEEDED.

LIFE SAFETY LEGEND

OFFICE — ROOM / SPACE NAME
110 — ROOM / SPACE NUMBER
174 SF — ROOM / SPACE AREA
2 — ROOM / SPACE OCCUPANT LOAD

5 / 34.5" — OCCUPANT LOAD AND WIDTH AT EXIT POINT

2A10BC FIRE EXTINGUISHER, DISTRIBUTE EXTINGUISHERS PER NFPA 101 SUCH THAT ONE CAN BE REACHED BY A TRAVEL DISTANCE OF NO MORE THAN 75' (IFC TABLE 906.3(1)). MOUNT TOP OF EXTINGUISHERS 48" A.F.F. (MAX.) AND WITH STATE FIRE MARSHALL INSPECTION TAG ATTACHED. VERIFY FINAL SIZES AND LOCATIONS WITH THE REGULATORY BODY HAVING AUTHORITY.

KB — KNOX BOX, MOUNT TOP OF BOX AT 60" - 78" ABOVE GRADE, AND VERIFY FINAL LOCATION WITH THE REGULATORY BODY HAVING AUTHORITY

DEFERRED SUBMITTALS:

1. PRE-ENGINEERED METAL BUILDING CONSTRUCTION DRAWINGS
2. AUTOMATIC FIRE ALARM SYSTEM CONSTRUCTION DRAWINGS, IF SYSTEM IS REQUIRED
3. AUTOMATIC FIRE SPRINKLER SYSTEM CONSTRUCTION DRAWINGS, IF SYSTEM IS REQUIRED

LIFE SAFETY / FIRE DEPARTMENT GENERAL NOTES

1. PROVIDE FIRE EXTINGUISHERS AS REQUIRED BY THE FIRE DEPARTMENT FIELD INSPECTOR DURING CONSTRUCTION AND FOR COMPLETED PROJECT. EXTINGUISHERS SHALL ALSO BE COMPATIBLE WITH ANY CHEMICALS PRESENT IN THE SPACE.
2. AN OCCUPANT LOAD SIGN SHALL BE POSTED IN EACH ASSEMBLY ROOM OR SPACE. THE SIGN IS TO BE POSTED CONSPICUOUSLY NEAR THE ENTRANCE. COORDINATE FINAL LOCATION OF SIGN WITH THE FIRE DEPARTMENT FIELD INSPECTOR. THE SIGN IS TO BE PROVIDED AND INSTALLED BY THE OWNER'S REPRESENTATIVE.
3. PROVIDE INTERNALLY ILLUMINATED EXIT SIGNS ABOVE EXITS WITH 3/4" x 6" (MIN.) LETTERS LIGHTED ON CONTRASTING BACKGROUND. PROVIDE TWO (2) SEPARATE POWER SUPPLIES CONFORMING TO ADOPTED CODE. VERIFY FINAL LOCATIONS WITH THE BUILDING INSPECTOR.
4. PROVIDE EMERGENCY EXIT LIGHTING LEVEL PER CODE (ONE FOOT-CANDLE AT FLOOR LEVEL - MINIMUM).
5. FINISHES SHALL NOT EXCEED CLASS A, B, OR C AS INDICATED IN THE BUILDING CODE.
6. UNLESS ALREADY EXISTING, AN APPROVED SET OF NUMERALS, MINIMUM 6" HIGH (4" FOR REAR ENTRANCE) WITH A STROKE WIDTH OF NOT LESS THAN 1 INCH, SHALL BE PLACED ON OR NEAR THE ENTRANCE. THE NUMBERING SHALL BE PLACED IN SUCH A POSITION AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET OR ROAD FRONTING THE PROPERTY. SAID NUMERALS SHALL CONTRAST WITH THEIR BACKGROUND. VERIFY REQUIREMENTS WITH THE REGULATORY BODY HAVING AUTHORITY.
7. GENERAL CONTRACTOR SHALL SECURE PERMITS AND INSPECTION APPROVALS REQUIRED BY THE FIRE DEPARTMENT PRIOR TO OCCUPYING THIS BUILDING.
8. STORAGE, DISPENSING, OR USE OF ANY FLAMMABLE AND/OR COMBUSTIBLE LIQUIDS, FLAMMABLE AND COMPRESSED GASES AND OTHER HAZARDOUS MATERIALS SHALL COMPLY WITH ADOPTED BUILDING CODE REGULATIONS.
9. IF AN AUTOMATIC FIRE SPRINKLER SYSTEM OR FIRE ALARM SYSTEM IS REQUIRED, THE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE ADOPTED BUILDING CODE. SYSTEM DESIGN DRAWINGS SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT FOR REVIEW PRIOR TO INSTALLATION. THIS INCLUDES DETECTION AND SUPPRESSION SYSTEMS FOR KITCHEN HOODS.
10. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO IDENTIFY AND COORDINATE DEFERRED SUBMITTALS.
11. CODE-REQUIRED SMOKE DETECTORS IN RETURN AIR DUCTS SHALL HAVE REMOTE INDICATORS IF IN CONCEALED SPACES OR MORE THAN 10' ABOVE THE FINISHED FLOOR. SMOKE DETECTORS MUST BE READILY VISIBLE TO THE FIRE DEPARTMENT PERSONNEL.
12. INSTALL A 'NO SMOKING' SIGN PER LOCAL ORDINANCES CONSPICUOUSLY POSTED AT EVERY ENTRANCE, AS REQUIRED.

MIN. # OF REQ'D PLUMBING FIXTURES (2902.1)

WATER CLOSETS (PER SUITE)

REQUIRED		PROVIDED (EXCEPTION #2)
MEN (1 / 100)	WOMEN (1 / 100)	MEN / WOMEN
1	1	1

LAVATORIES (PER SUITE)

REQUIRED		PROVIDED (EXCEPTION #2)
MEN (1 / 100)	WOMEN (1 / 100)	MEN / WOMEN
1	1	1

DRINKING FOUNTAIN (2902.6)	
REQUIRED	PROVIDED
0	0

SERVICE SINK	
REQUIRED	PROVIDED
1 / SUITE	1 / SUITE

CODE ANALYSIS

APPLICABLE GOVERNING CODES

2018	INTERNATIONAL BUILDING CODE
2018	INTERNATIONAL PLUMBING CODE
2018	INTERNATIONAL MECHANICAL CODE
2018	INTERNATIONAL FUEL GAS CODE
2018	INTERNATIONAL FIRE CODE
2017	NATIONAL ELECTRICAL CODE
CURRENT	ICC / ANSI A117.1 - 2009, ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES

OCCUPANCY CLASSIFICATION

MAIN OCCUPANCY:
GROUP S-1 MODERATE HAZARD STORAGE (311.2)

ACCESSORY OCCUPANCY (508.2.1):
GROUP B BUSINESS (304)

TYPE OF CONSTRUCTION

II-B (602.2)

BUILDING HEIGHT LIMITATIONS

GROUP S-1 (S)
ALLOWABLE HEIGHT IN FEET (TABLE 504.3) 75'
ACTUAL HEIGHT IN FEET 31'

ALLOWABLE # OF STORIES (TABLE 504.4) 3
ACTUAL # OF STORIES 1

ACCESSORY GROUP B (S)
MAIN OCCUPANCY SHALL GOVERN (508.2.2)

BUILDING AREA LIMITATIONS

GROUP S-1 (S)
ALLOWABLE AREA (TABLE 506.2) 70,000 SF
ALLOWABLE AREA INCREASE (EQUATION 5-5)
DUE TO FRONTAGE 52,500 SF*
ADJUSTED ALLOWABLE AREA 122,500 SF

*EQUATION 5-5:
(1,650 / 1,650 - 0.25) 30/30 = .75
.75 x 70,000 = 52,500

ACTUAL AREA 78,345 SF

ACCESSORY GROUP B (S)
ALLOWABLE AREA 7,835 SF*
ACTUAL AREA (ESTIMATED PROJECTION) 2,474 SF
*SHALL NOT OCCUPY MORE THAN 10 PERCENT OF THE MAIN OCCUPANCY (508.2.3)

FIRE RESISTANCE

RATING REQUIREMENTS FOR BUILDING ELEMENTS (TABLE 601)

ELEMENT	RATING (HRS)
PRIMARY STRUCTURAL FRAME	0
BEARING WALLS	
EXTERIOR	0
INTERIOR	0
NONBEARING WALLS & PARTITIONS - EXTERIOR (TABLE 602) FIRE SEPARATION DISTANCE = X (FEET)	
X < 5	2
5 <= X < 10	1
10 <= X < 30	0
X >= 30	0
NONBEARING WALLS & PARTITIONS - INTERIOR	0
FLOOR CONSTRUCTION	0
ROOF CONSTRUCTION	0

AUTOMATIC SPRINKLER SYSTEM (903.2.9)
REQUIRED: YES
PROVIDED: YES

MEANS OF EGRESS

OCCUPANT LOAD (TABLE 1004.5)
MAXIMUM FLOOR ALLOWANCE PER OCCUPANT

SPACE	AREA / LOAD FACTOR	OCCUPANTS
STORAGE (POTENTIAL WAREHOUSE SPACES)		
101.0, 113.0	5,571 SF / 500 GROSS	11 x 2 = 22
102.0 - 106.0	5,657 SF / 500 GROSS	11 x 5 = 55
107.0	5,588 SF / 500 GROSS	11 x 1 = 11
108.0 - 112.0	5,657 SF / 500 GROSS	11 x 5 = 55
BUSINESS (POTENTIAL OFFICE SPACES)		
101.1 - 113.1	190 SF / 150 GROSS	2 x 13 = 26
TOTAL		169

EXITS (PER SUITE) (CHAPTER 10)
EGRESS WIDTH (1005.3.2)

MINIMUM REQUIRED (13 OCCUPANTS x 0.2"): 2.6"
PROVIDED (2 DOORS x 34.5" CLR. WIDTH/DOOR): 69.0"

COMMON PATH OF EGRESS TRAVEL (TABLE 1006.2.1)
MAXIMUM ALLOWED 100'
PROVIDED <100'

NUMBER OF EXITS (1006.3.2)
MINIMUM REQUIRED 2
PROVIDED 2

EXIT ACCESS TRAVEL DISTANCE (1017.2)
MAXIMUM ALLOWED 250'
PROVIDED 90'

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Seal:

STATE OF MISSOURI
MICHAEL MOORES
NUMBER A-2009032812
ARCHITECT
08.31.23

Michael Moores, MO Architect #2009032812

Project Number: 2307

Project Type: NEW CONSTRUCTION

Project Name and Address:

LAKEWOOD BUSINESS CENTER, LOT 1

NE Maguire Blvd
Lee's Summit, Missouri 64064

Issue:	Date:
Permit Set	08.31.23

Sheet Title:

LIFE SAFETY PLAN
ROOF PLAN
CODE INFORMATION

A-001

HARDWARE SETS

1. 1 1/2 PAIR BUTT HINGES, 1" PUSH / PULL SET, KEYED CYLINDER LOCK, SURFACE-MOUNTED CLOSER, ALUMINUM THRESHOLD, SWEEP AND PILE WEATHERSEAL SET
2. 1 1/2 PAIR BUTT HINGES, LEVER-HANDLE CLASSROOM FUNCTION LOCKSET, WALL STOP
3. 1 1/2 PAIR BUTT HINGES, LEVER-HANDLE PRIVACY FUNCTION LOCKSET, WALL STOP
4. 1 1/2 PAIR BUTT HINGES, LEVER-HANDLE ENTRY FUNCTION LOCKSET, SURFACE-MOUNTED CLOSER, ALUMINUM THRESHOLD, SWEEP AND WEATHERSEAL SET
5. BY MANUFACTURER
6. BY MANUFACTURER (INCLUDE A REMOTE OPERATOR)

DOOR NOTES

DOORS SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS:

1. ALL DOOR HANDLES TO BE LEVER TYPE.
2. EGRESS DOORS SHALL BE READILY OPENABLE FROM THE EGRESS SIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT.
3. PROVIDE DOOR STOPS OF APPROPRIATE TYPE FOR ALL INTERIOR DOORS, MATCH ADJACENT HARDWARE FINISH.
4. DOOR CLOSERS SHALL BE ADJUSTED SO THAT FROM AN OPEN POSITION OF 90 DEGREES, THE TIME REQUIRED TO MOVE THE DOOR TO AN OPEN POSITION OF 12 DEGREES WILL BE 5 SECONDS MINIMUM.
5. MAXIMUM EFFORT TO OPERATE DOORS SHALL NOT EXCEED 1/2 POUNDS FOR EXTERIOR DOORS AND 5 POUNDS FOR INTERIOR DOORS, SUCH PULL OR PUSH EFFORT BEING APPLIED AT RIGHT ANGLES TO HINGED DOORS AND AT THE CENTER PLANE OF SLIDING OR FOLDING DOORS. COMPENSATING DEVICES OR AUTOMATIC DOOR OPERATORS MAY BE UTILIZED TO MEET THE ABOVE STANDARDS. WHEN FIRE DOORS ARE REQUIRED, THE MAXIMUM EFFORT TO OPERATE THE DOOR MAY BE INCREASED TO THE MAXIMUM ALLOWABLE BY THE APPROPRIATE ADMINISTRATIVE AUTHORITY, NOT TO EXCEED 15 POUNDS.
6. THE BOTTOM 10" OF ALL DOORS EXCEPT AUTOMATIC DOORS, POWER ASSISTED DOORS, AND SLIDING DOORS SHALL HAVE A SMOOTH, UNINTERRUPTED SURFACE TO ALLOW THE DOOR TO BE OPENED BY A WHEELCHAIR FOOTREST WITHOUT CREATING A TRAP OR HAZARDOUS CONDITION.
7. EXIT DOORS IN ASSEMBLY AND EDUCATION OCCUPANCIES SERVING AN OCCUPANT LOAD OF 50 OR MORE SHALL BE EQUIPPED WITH PANIC HARDWARE, WITH THE EXCEPTION BELOW (NOTE 7).
8. MAIN EXIT DOORS HAVING KEY-OPERATED LOCKING DEVICES ON THE EGRESS SIDE IN GROUP A OCCUPANCIES (SERVING 300 OCCUPANTS OR LESS), GROUPS B, F, M, S, AND PLACES OF RELIGIOUS WORSHIP SHALL HAVE DURABLE SIGNAGE ABOVE THE DOOR IN 1" HIGH LETTERS ON CONTRASTING BACKGROUND STATING: "THIS DOOR TO REMAIN UNLOCKED WHEN THIS SPACE IS OCCUPIED". LOCKING DEVICES SHALL BE READILY DISTINGUISHABLE AS LOCKED.
9. LATCHING AND LOCKING DOORS THAT ARE HAND ACTIVATED AND WHICH ARE IN THE PATH OF TRAVEL SHALL BE OPERABLE WITH A SINGLE EFFORT BY LEVER TYPE HARDWARE, PANIC BARS, PUSH-PULL ACTIVATING BARS OR OTHER HARDWARE DESIGNED TO PROVIDE PASSAGE WITHOUT REQUIRING THE ABILITY TO GRASP THE OPENING HARDWARE. LOCKABLE EXIT DOORS SHALL OPERATE AS ABOVE IN EGRESS DIRECTION.
10. HAND-ACTIVATED DOOR OPENING HARDWARE TO BE CENTERED BETWEEN 34" AND 44" ABOVE THE FLOOR.
11. EVERY DOORWAY WHICH IS LOCATED WITHIN AN ACCESSIBLE PATH OF TRAVEL SHALL BE OF A SIZE AS TO PERMIT THE INSTALLATION OF A DOOR NOT LESS THAN 3'-0" IN WIDTH AND NOT LESS THAN 6'-8" IN HEIGHT. WHEN INSTALLED, EXIT DOORS SHALL BE CAPABLE OF OPENING SO THAT THE CLEAR WIDTH OF THE EXIT IS NOT LESS THAT 32", MEASURED BETWEEN THE FACE OF THE OPENED DOOR AND THE OPPOSITE STOP.
12. MINIMUM MANEUVERING CLEARANCES AT DOORS SHALL BE AS REQUIRED BY THE ICC/ANSI A117.1 ACCESSIBILITY CODE. THE FLOOR OR GROUND AREA WITHIN THE REQUIRED CLEARANCES SHALL BE LEVEL AND CLEAR. THE FLOOR OR LANDING SHALL BE NOT MORE THAN 1/2" LOWER THAN THE THRESHOLD OF THE DOORWAY.
13. DOORS SHALL NOT PROJECT MORE THAN 7" INTO THE REQUIRED CORRIDOR WIDTH WHEN FULLY OPENED OR MORE THAN ONE HALF INTO THE REQUIRED WIDTH WHEN IN ANY POSITION.
14. WHERE A PAIR OF DOORS IS UTILIZED, AT LEAST ONE OF THE DOORS SHALL PROVIDE A CLEAR, UNOBSTRUCTED OPENING WIDTH OF 32" WITH THE LEAF POSITIONED AT AN ANGLE OF 90° FROM ITS CLOSED POSITION.
15. EXIT DOORS SHALL SWING IN THE DIRECTION OF EXIT TRAVEL WHEN SERVING 50 OR MORE OCCUPANTS.

DOOR SCHEDULE

DOOR NO.	DOOR TYPE	DOOR SIZE	DOOR MATERIAL	DOOR PUSH FINISH	DOOR PULL FINISH	FRAME MATERIAL	FRAME PUSH FINISH	FRAME PULL FINISH	DETAILS - (SEE SHEET A-003) HEAD	DETAILS JAMB	DETAILS THRESHOLD	HARD-WARE	COMMENTS
101.0A	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	4	MATCH ADJACENT EXTERIOR WALL COLOR
101.0B	D	9'-0" WIDE X 10'-0" HIGH	STL	PNT	PNT	-	PNT	PNT	-	-	-	5	COLOR: CLOPAY 'STANDARD WHITE'
101.0C	C	12'-0" WIDE X 14'-0" HIGH	STL	PNT	PNT	-	PNT	PNT	-	-	-	6	COLOR: CLOPAY 'GRAY'
101.1A	A	1 3/4" X 3'-0" X 7'-0"	AL	ANOD	ANOD	AL	ANOD	ANOD	-	-	-	1	COLOR: BLACK
101.1B	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	2	INCLUDE IN T.I. ADD-ALTERNATE
101.2	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	3	INCLUDE IN T.I. ADD-ALTERNATE
102.0A	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	4	MATCH ADJACENT EXTERIOR WALL COLOR
102.0B	D	9'-0" WIDE X 10'-0" HIGH	STL	PNT	PNT	-	PNT	PNT	-	-	-	5	COLOR: CLOPAY 'STANDARD WHITE'
102.0C	C	12'-0" WIDE X 14'-0" HIGH	STL	PNT	PNT	-	PNT	PNT	-	-	-	6	COLOR: CLOPAY 'GRAY'
102.1A	A	1 3/4" X 3'-0" X 7'-0"	AL	ANOD	ANOD	AL	ANOD	ANOD	-	-	-	1	COLOR: BLACK
102.1B	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	2	INCLUDE IN T.I. ADD-ALTERNATE
102.2	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	3	INCLUDE IN T.I. ADD-ALTERNATE
103.0A	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	4	MATCH ADJACENT EXTERIOR WALL COLOR
103.0B	D	9'-0" WIDE X 10'-0" HIGH	STL	PNT	PNT	-	PNT	PNT	-	-	-	5	COLOR: CLOPAY 'STANDARD WHITE'
103.0C	C	12'-0" WIDE X 14'-0" HIGH	STL	PNT	PNT	-	PNT	PNT	-	-	-	6	COLOR: CLOPAY 'GRAY'
103.1A	A	1 3/4" X 3'-0" X 7'-0"	AL	ANOD	ANOD	AL	ANOD	ANOD	-	-	-	1	COLOR: BLACK
103.1B	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	2	INCLUDE IN T.I. ADD-ALTERNATE
103.2	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	3	INCLUDE IN T.I. ADD-ALTERNATE
104.0A	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	4	MATCH ADJACENT EXTERIOR WALL COLOR
104.0B	D	9'-0" WIDE X 10'-0" HIGH	STL	PNT	PNT	-	PNT	PNT	-	-	-	5	COLOR: CLOPAY 'STANDARD WHITE'
104.0C	C	12'-0" WIDE X 14'-0" HIGH	STL	PNT	PNT	-	PNT	PNT	-	-	-	6	COLOR: CLOPAY 'GRAY'
104.1A	A	1 3/4" X 3'-0" X 7'-0"	AL	ANOD	ANOD	AL	ANOD	ANOD	-	-	-	1	COLOR: BLACK
104.1B	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	2	INCLUDE IN T.I. ADD-ALTERNATE
104.2	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	3	INCLUDE IN T.I. ADD-ALTERNATE
105.0A	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	4	MATCH ADJACENT EXTERIOR WALL COLOR
105.0B	D	9'-0" WIDE X 10'-0" HIGH	STL	PNT	PNT	-	PNT	PNT	-	-	-	5	COLOR: CLOPAY 'STANDARD WHITE'
105.0C	C	12'-0" WIDE X 14'-0" HIGH	STL	PNT	PNT	-	PNT	PNT	-	-	-	6	COLOR: CLOPAY 'GRAY'
105.1A	A	1 3/4" X 3'-0" X 7'-0"	AL	ANOD	ANOD	AL	ANOD	ANOD	-	-	-	1	COLOR: BLACK
105.1B	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	2	INCLUDE IN T.I. ADD-ALTERNATE
105.2	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	3	INCLUDE IN T.I. ADD-ALTERNATE
106.0A	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	4	MATCH ADJACENT EXTERIOR WALL COLOR
106.0B	D	9'-0" WIDE X 10'-0" HIGH	STL	PNT	PNT	-	PNT	PNT	-	-	-	5	COLOR: CLOPAY 'STANDARD WHITE'
106.0C	C	12'-0" WIDE X 14'-0" HIGH	STL	PNT	PNT	-	PNT	PNT	-	-	-	6	COLOR: CLOPAY 'GRAY'
106.1A	A	1 3/4" X 3'-0" X 7'-0"	AL	ANOD	ANOD	AL	ANOD	ANOD	-	-	-	1	COLOR: BLACK
106.1B	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	2	INCLUDE IN T.I. ADD-ALTERNATE
106.2	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	3	INCLUDE IN T.I. ADD-ALTERNATE
107.0A	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	4	MATCH ADJACENT EXTERIOR WALL COLOR
107.0B	D	9'-0" WIDE X 10'-0" HIGH	STL	PNT	PNT	-	PNT	PNT	-	-	-	5	COLOR: CLOPAY 'STANDARD WHITE'
107.0C	C	12'-0" WIDE X 14'-0" HIGH	STL	PNT	PNT	-	PNT	PNT	-	-	-	6	COLOR: CLOPAY 'GRAY'
107.1A	A	1 3/4" X 3'-0" X 7'-0"	AL	ANOD	ANOD	AL	ANOD	ANOD	-	-	-	1	COLOR: BLACK
107.1B	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	2	INCLUDE IN T.I. ADD-ALTERNATE
107.2	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	3	INCLUDE IN T.I. ADD-ALTERNATE
107.3	A	1 3/4" X 3'-0" X 7'-0"	AL	ANOD	ANOD	AL	ANOD	ANOD	-	-	-	1	COLOR: BLACK, OPAQUE GLASS/FILM

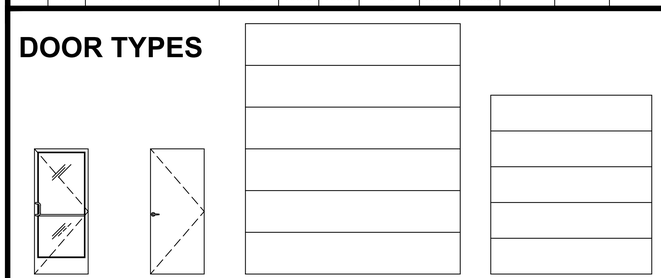
DOOR SCHEDULE (CONTINUED)

DOOR NO.	DOOR TYPE	DOOR SIZE	DOOR MATERIAL	DOOR PUSH FINISH	DOOR PULL FINISH	FRAME MATERIAL	FRAME PUSH FINISH	FRAME PULL FINISH	DETAILS - (SEE SHEET A-003) HEAD	DETAILS JAMB	DETAILS THRESHOLD	HARD-WARE	COMMENTS
108.0A	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	4	MATCH ADJACENT EXTERIOR WALL COLOR
108.0B	D	9'-0" WIDE X 10'-0" HIGH	STL	PNT	PNT	-	PNT	PNT	-	-	-	5	COLOR: CLOPAY 'STANDARD WHITE'
108.0C	C	12'-0" WIDE X 14'-0" HIGH	STL	PNT	PNT	-	PNT	PNT	-	-	-	6	COLOR: CLOPAY 'GRAY'
108.1A	A	1 3/4" X 3'-0" X 7'-0"	AL	ANOD	ANOD	AL	ANOD	ANOD	-	-	-	1	COLOR: BLACK
108.1B	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	2	INCLUDE IN T.I. ADD-ALTERNATE
108.2	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	3	INCLUDE IN T.I. ADD-ALTERNATE
109.0A	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	4	MATCH ADJACENT EXTERIOR WALL COLOR
109.0B	D	9'-0" WIDE X 10'-0" HIGH	STL	PNT	PNT	-	PNT	PNT	-	-	-	5	COLOR: CLOPAY 'STANDARD WHITE'
109.0C	C	12'-0" WIDE X 14'-0" HIGH	STL	PNT	PNT	-	PNT	PNT	-	-	-	6	COLOR: CLOPAY 'GRAY'
109.1A	A	1 3/4" X 3'-0" X 7'-0"	AL	ANOD	ANOD	AL	ANOD	ANOD	-	-	-	1	COLOR: BLACK
109.1B	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	2	INCLUDE IN T.I. ADD-ALTERNATE
109.2	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	3	INCLUDE IN T.I. ADD-ALTERNATE
110.0A	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	4	MATCH ADJACENT EXTERIOR WALL COLOR
110.0B	D	9'-0" WIDE X 10'-0" HIGH	STL	PNT	PNT	-	PNT	PNT	-	-	-	5	COLOR: CLOPAY 'STANDARD WHITE'
110.0C	C	12'-0" WIDE X 14'-0" HIGH	STL	PNT	PNT	-	PNT	PNT	-	-	-	6	COLOR: CLOPAY 'GRAY'
110.1A	A	1 3/4" X 3'-0" X 7'-0"	AL	ANOD	ANOD	AL	ANOD	ANOD	-	-	-	1	COLOR: BLACK
110.1B	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	2	INCLUDE IN T.I. ADD-ALTERNATE
110.2	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	3	INCLUDE IN T.I. ADD-ALTERNATE
111.0A	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	4	MATCH ADJACENT EXTERIOR WALL COLOR
111.0B	D	9'-0" WIDE X 10'-0" HIGH	STL	PNT	PNT	-	PNT	PNT	-	-	-	5	COLOR: CLOPAY 'STANDARD WHITE'
111.0C	C	12'-0" WIDE X 14'-0" HIGH	STL	PNT	PNT	-	PNT	PNT	-	-	-	6	COLOR: CLOPAY 'GRAY'
111.1A	A	1 3/4" X 3'-0" X 7'-0"	AL	ANOD	ANOD	AL	ANOD	ANOD	-	-	-	1	COLOR: BLACK
111.1B	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	2	INCLUDE IN T.I. ADD-ALTERNATE
111.2	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	3	INCLUDE IN T.I. ADD-ALTERNATE
112.0A	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	4	MATCH ADJACENT EXTERIOR WALL COLOR
112.0B	D	9'-0" WIDE X 10'-0" HIGH	STL	PNT	PNT	-	PNT	PNT	-	-	-	5	COLOR: CLOPAY 'STANDARD WHITE'
112.0C	C	12'-0" WIDE X 14'-0" HIGH	STL	PNT	PNT	-	PNT	PNT	-	-	-	6	COLOR: CLOPAY 'GRAY'
112.1A	A	1 3/4" X 3'-0" X 7'-0"	AL	ANOD	ANOD	AL	ANOD	ANOD	-	-	-	1	COLOR: BLACK
112.1B	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	2	INCLUDE IN T.I. ADD-ALTERNATE
112.2	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	3	INCLUDE IN T.I. ADD-ALTERNATE
113.0A	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	4	MATCH ADJACENT EXTERIOR WALL COLOR
113.0B	D	9'-0" WIDE X 10'-0" HIGH	STL	PNT	PNT	-	PNT	PNT	-	-	-	5	COLOR: CLOPAY 'STANDARD WHITE'
113.0C	C	12'-0" WIDE X 14'-0" HIGH	STL	PNT	PNT	-	PNT	PNT	-	-	-	6	COLOR: CLOPAY 'GRAY'
113.1A	A	1 3/4" X 3'-0" X 7'-0"	AL	ANOD	ANOD	AL	ANOD	ANOD	-	-	-	1	COLOR: BLACK
113.1B	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	2	INCLUDE IN T.I. ADD-ALTERNATE
113.2	B	1 3/4" X 3'-0" X 7'-0"	HM	PNT	PNT	HM	PNT	PNT	-	-	-	3	INCLUDE IN T.I. ADD-ALTERNATE

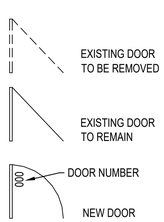
ROOM FINISH SCHEDULE (OFFICES/TOILETS IN T.I. ADD ALTERNATE)

ROOM NUMBER	QUANTITY	ROOM NAME	FLOOR MATERIAL	BASE MATERIAL	WALL FINISH (NORTH)	WALL FINISH (EAST)	WALL FINISH (SOUTH)	WALL FINISH (WEST)	CEILING MATERIAL	CEILING FINISH	COMMENTS
101.0-113.0	13	WAREHOUSE	CONC	-	-	-	-	-	EXP	-	
101.1-113.1	13	OFFICE	CONC	RCB	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	-	
101.2-113.2	13	TOILET	CONC	RCB	PNT-1	PNT-1	PNT-1	PNT-1	ACT-1	-	
107.3	1	SPRINKLER RISER	CONC	RCB	PNT-1	PNT-1	PNT-1	PNT-1	EXP	-	

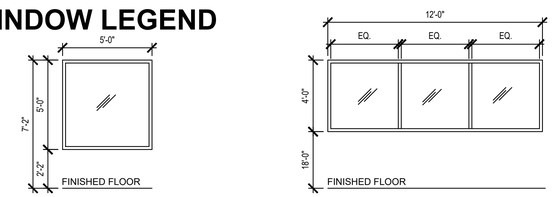
DOOR TYPES



DOOR SYMBOLS



WINDOW LEGEND



2" x 4 1/2" THERMALLY BROKEN BLACK ANODIZED ALUMINUM STOREFRONT WITH 1" LOW-E INSULATED CLEAR TEMPERED GLASS, TUBELITE (OR EQUAL), SEE SHEET A-003 FOR DETAILS.

2" x 4 1/2" THERMALLY BROKEN BLACK ANODIZED ALUMINUM STOREFRONT WITH 1" LOW-E INSULATED CLEAR TEMPERED GLASS, TUBELITE (OR EQUAL), SEE SHEET A-003 FOR DETAILS.

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08.31.23

Michael Moores, MO Architect #2009032812

Project Number: 2307

Project Type: NEW CONSTRUCTION

Project Name and Address:

LAKEWOOD BUSINESS CENTER, LOT 1

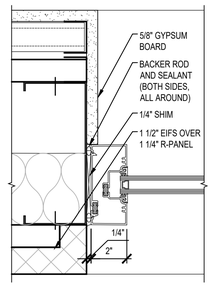
NE Maguire Blvd
Lee's Summit, Missouri 64064

Issue:	Date:
Permit Set	08.31.23

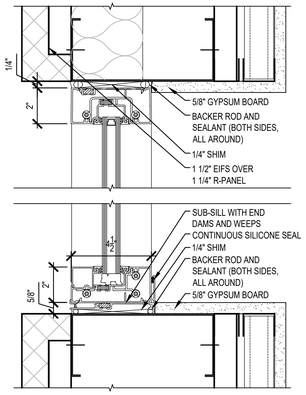
Sheet Title:

DOOR, WINDOW, & FINISH SCHEDULES

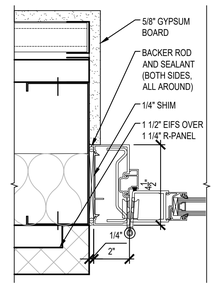
A-002



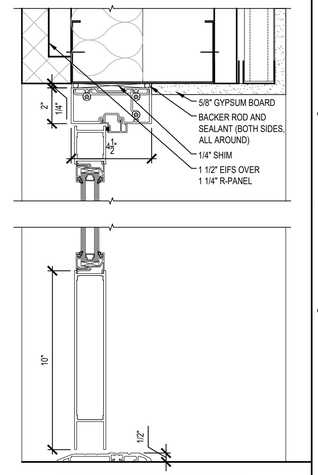
ALUMINUM STOREFRONT JAMB DETAIL



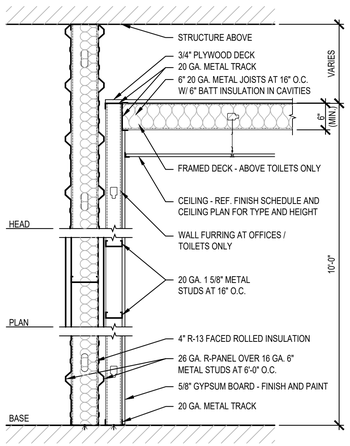
ALUMINUM STOREFRONT HEAD / SILL DETAILS



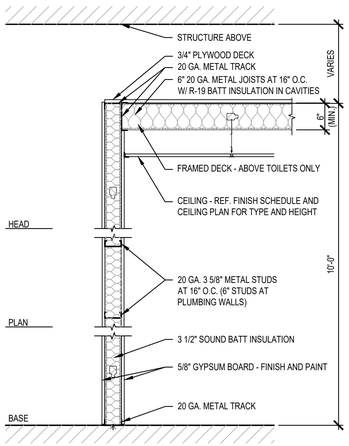
ALUMINUM DOOR FRAME JAMB DETAIL



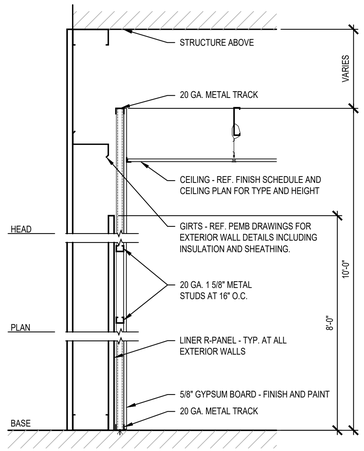
ALUMINUM DOOR FRAME HEAD / THRESHOLD DETAILS



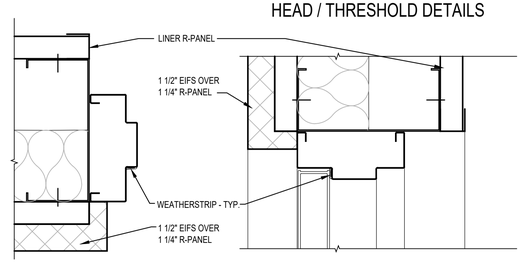
PARTITION TYPE A-1



PARTITION TYPE B-1

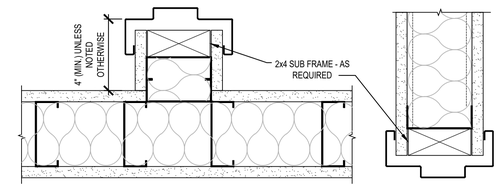


PARTITION TYPE C-1



EXTERIOR HOLLOW METAL DOOR FRAME JAMB DETAIL

EXTERIOR HOLLOW METAL DOOR FRAME HEAD DETAIL



HOLLOW METAL DOOR FRAME JAMB DETAIL

HOLLOW METAL DOOR FRAME HEAD DETAIL

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NUMBER A-2009032812
ARCHITECT

08.31.23

Michael Moores, MO Architect #2009032812

Project Number: 2307

Project Type: NEW CONSTRUCTION

Project Name and Address:

LAKEWOOD BUSINESS CENTER, LOT 1

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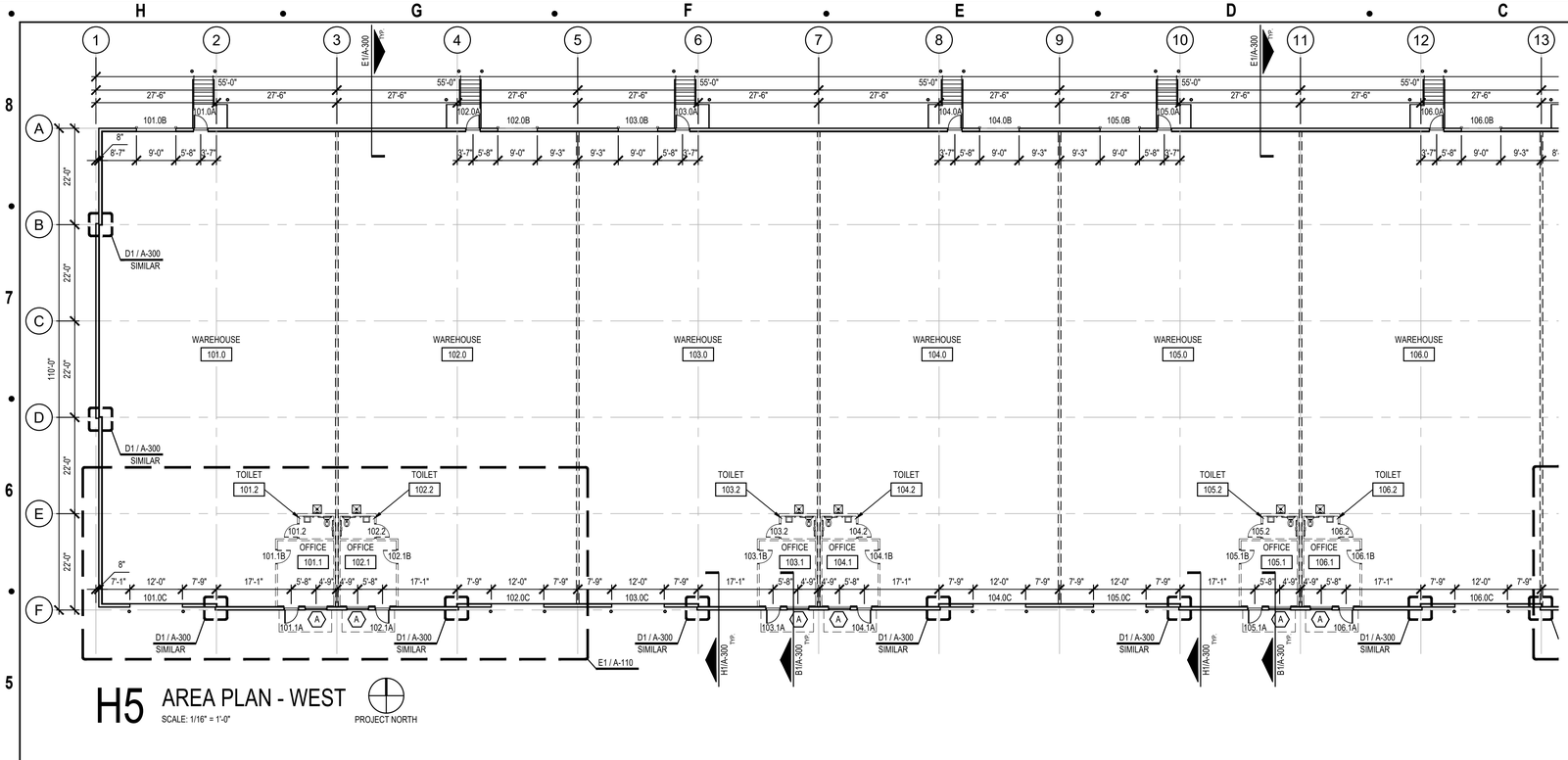
Lee's Summit, Missouri 64064

Issue:	Date:
Permit Set	08.31.23

Sheet Title:

DOOR AND WINDOW DETAILS
PARTITION TYPES

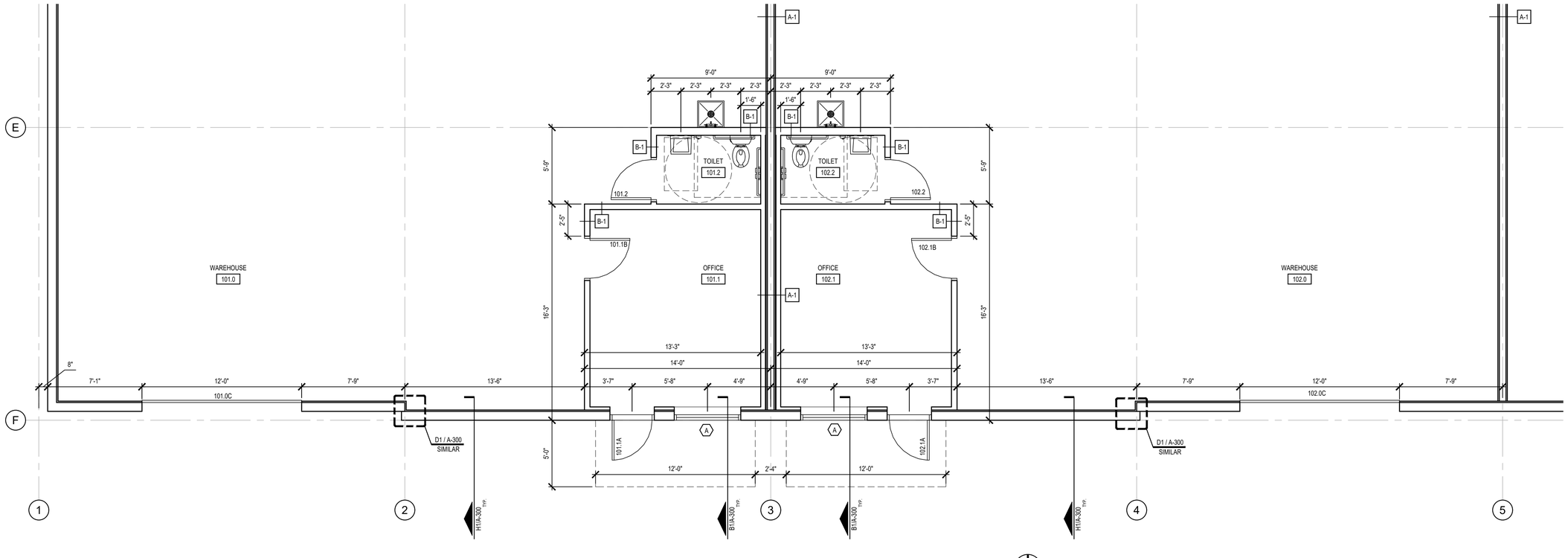
A-003



H5 AREA PLAN - WEST

SCALE: 1/16" = 1'-0"

PROJECT NORTH



E1 FUTURE OFFICES (BID AS T.I. ADD ALTERNATE), TYP. OF 13

SCALE: 1/4" = 1'-0"

PROJECT NORTH

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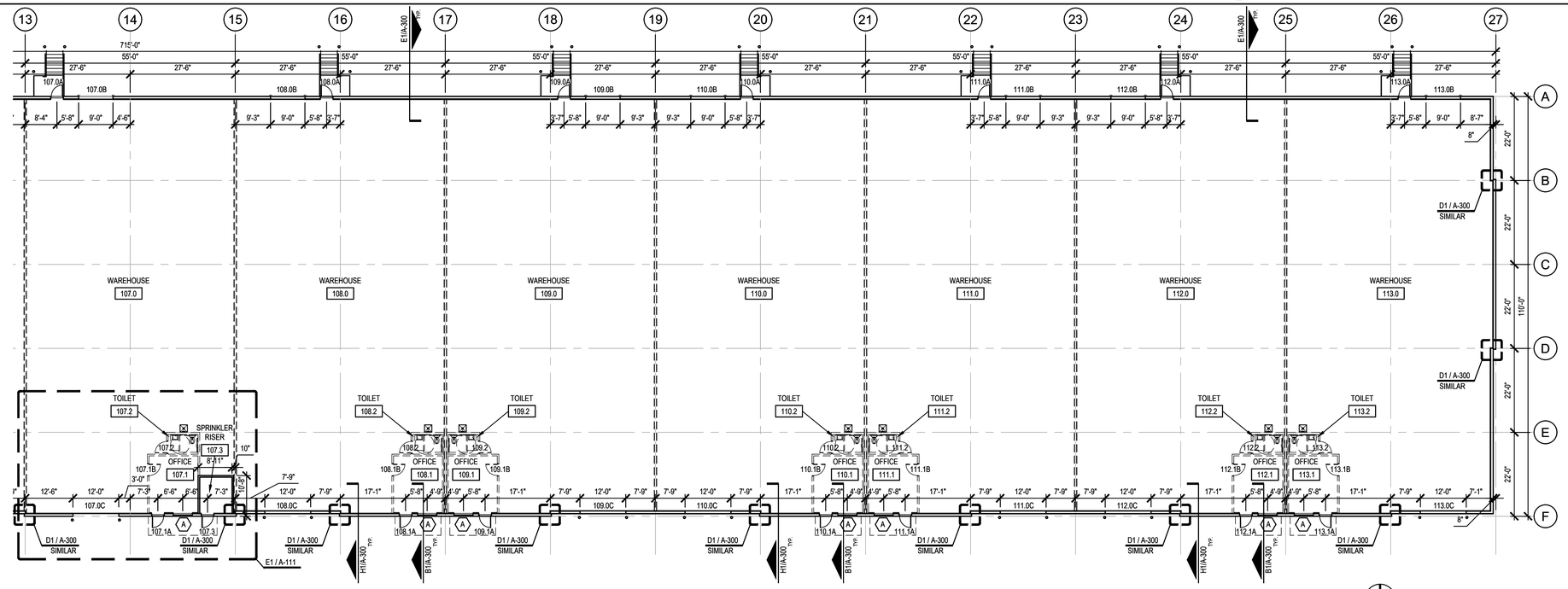
AREA PLAN - WEST

ENLARGED PLAN

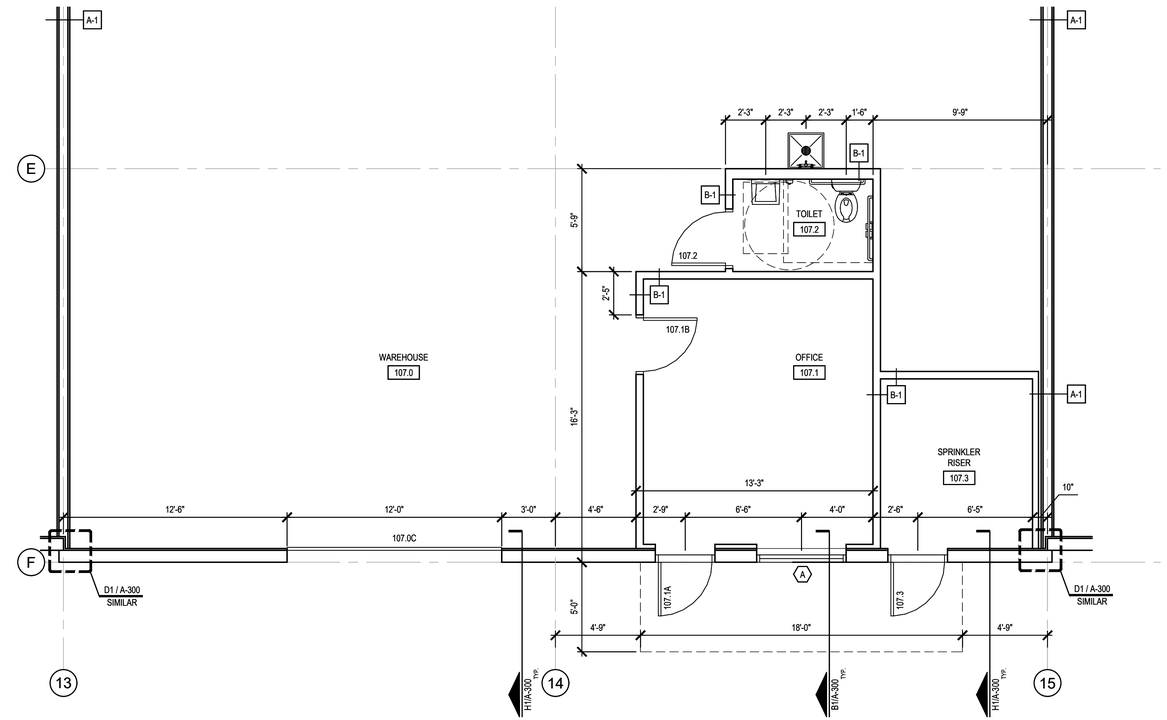
A-110



B5 AREA PLAN - EAST

SCALE: 1/16" = 1'-0"

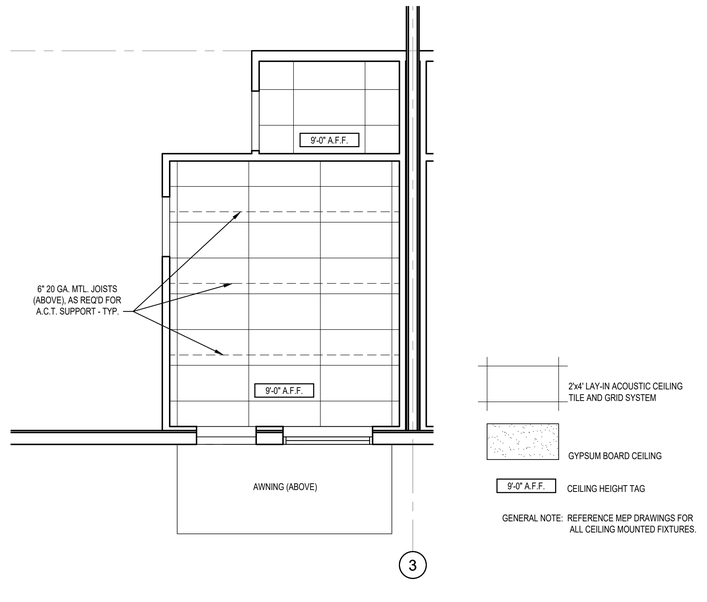
PROJECT NORTH



E1 ENLARGED PLAN - AT RISER ROOM

SCALE: 1/4" = 1'-0"

PROJECT NORTH



C1 CEILING PLAN (BID AS T.I. ADD ALTERNATE), TYP. OF 13

SCALE: 1/4" = 1'-0"

PROJECT NORTH

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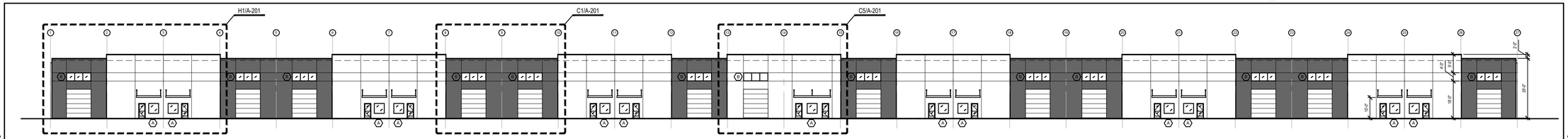
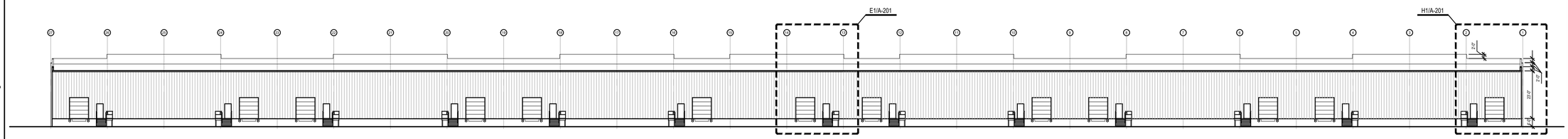
Sheet Title:

AREA PLAN - EAST
ENLARGED PLAN
CEILING PLAN

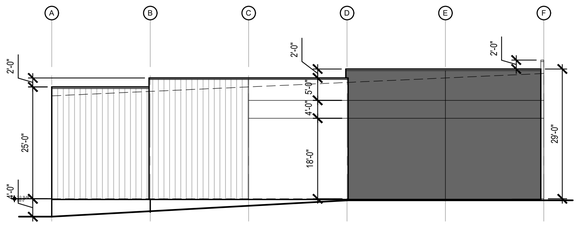
A-111



H7 SOUTH ELEVATION
SCALE: = N.T.S.



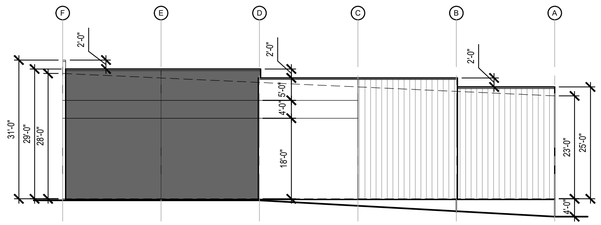
H6 NORTH ELEVATION
SCALE: = N.T.S.



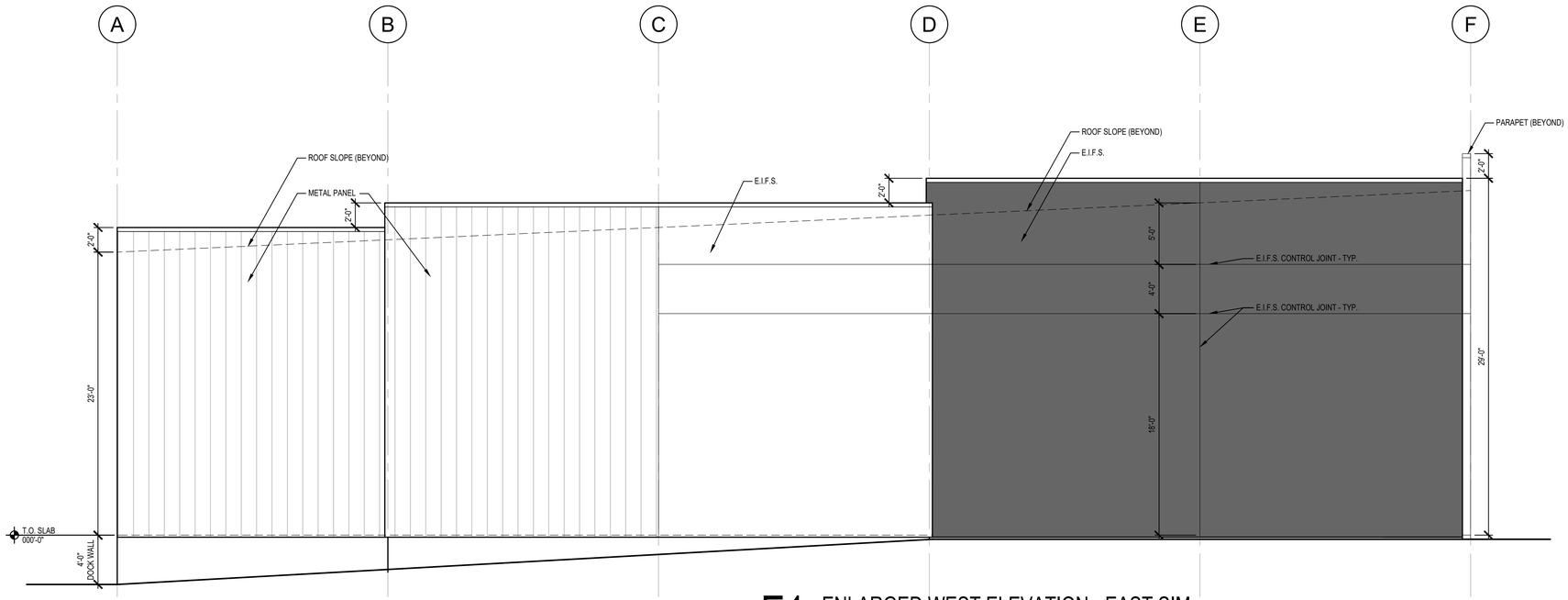
H4 WEST ELEVATION
SCALE: 1/16" = 1'-0"

PNT-1 (NO HATCH):
SW 7070 'SITE WHITE' (E.I.F.S.)
OR STANDARD WHITE (METAL PANEL)

PNT-3:
SW 7076 'CYBERSPACE' (E.I.F.S.)



B4 EAST ELEVATION
SCALE: 1/16" = 1'-0"



E1 ENLARGED WEST ELEVATION - EAST SIM.
SCALE: 3/16" = 1'-0"

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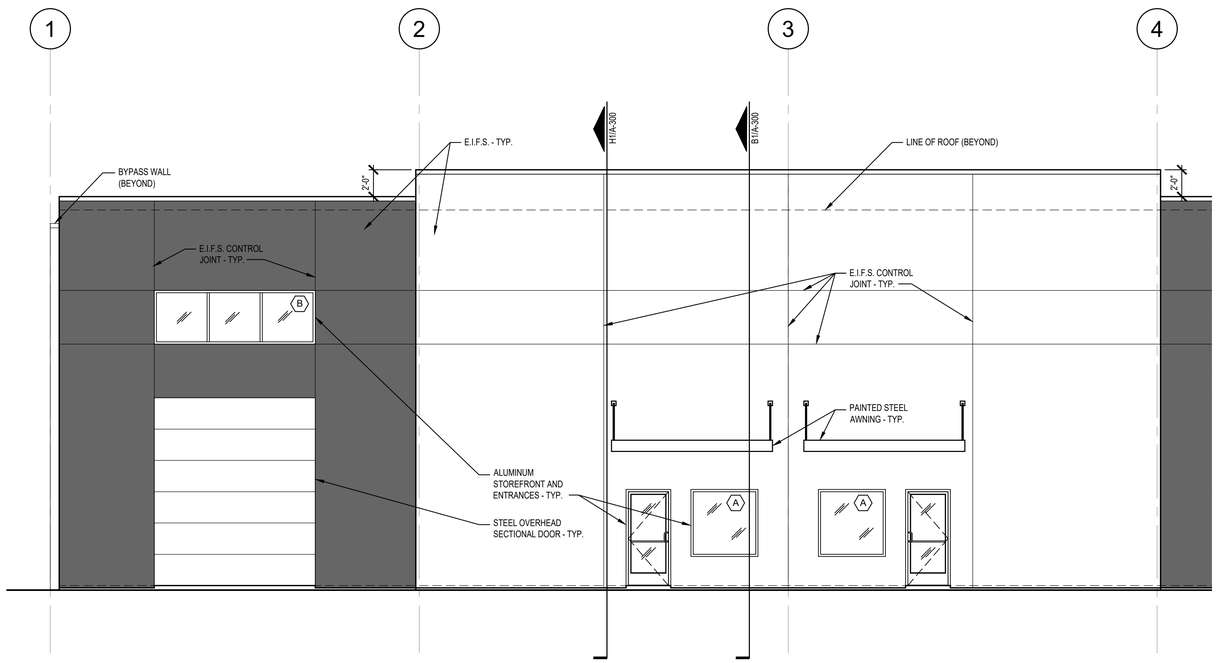
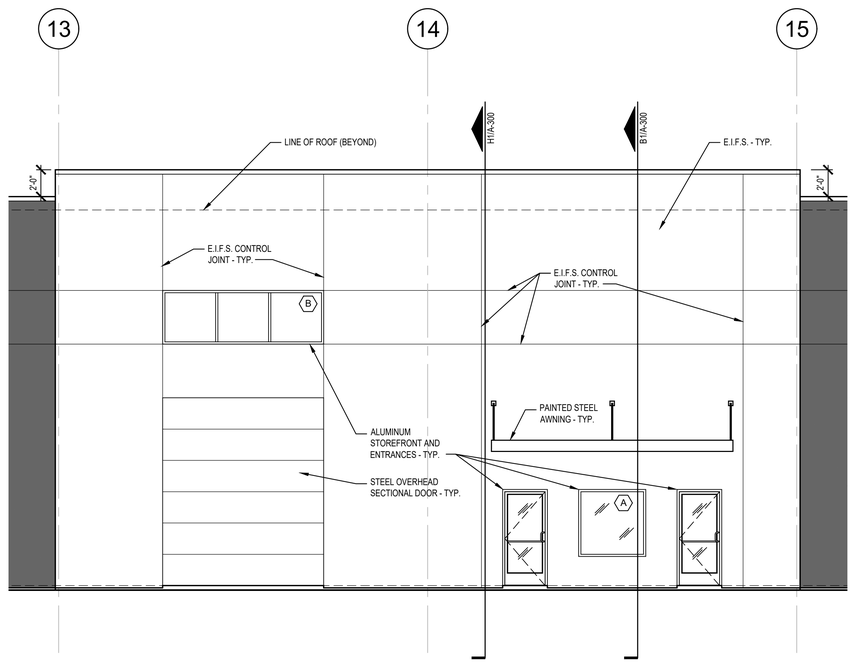
EXTERIOR ELEVATIONS

A-200



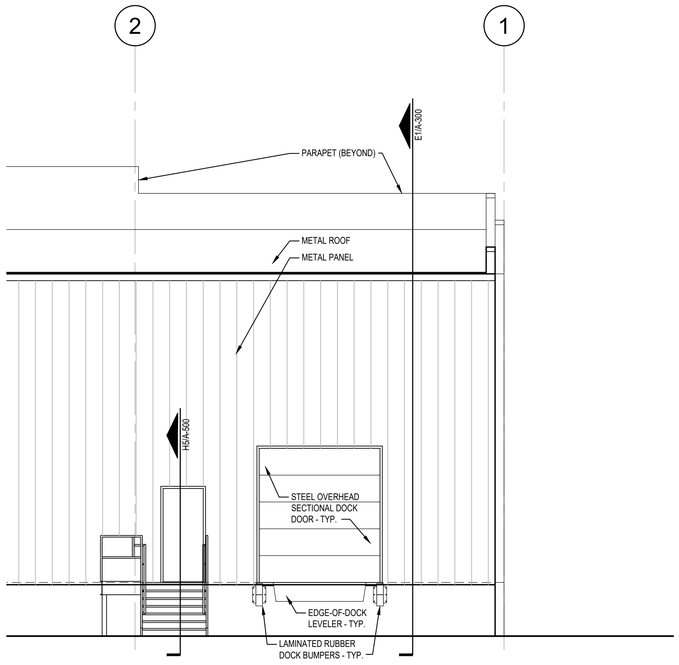
H5 ENLARGED SOUTH ELEVATION

SCALE: 3/16" = 1'-0"



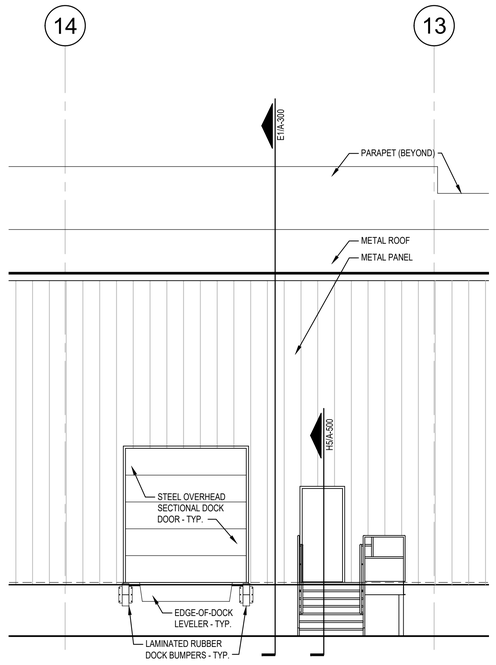
C5 ENLARGED SOUTH ELEVATION

SCALE: 3/16" = 1'-0"



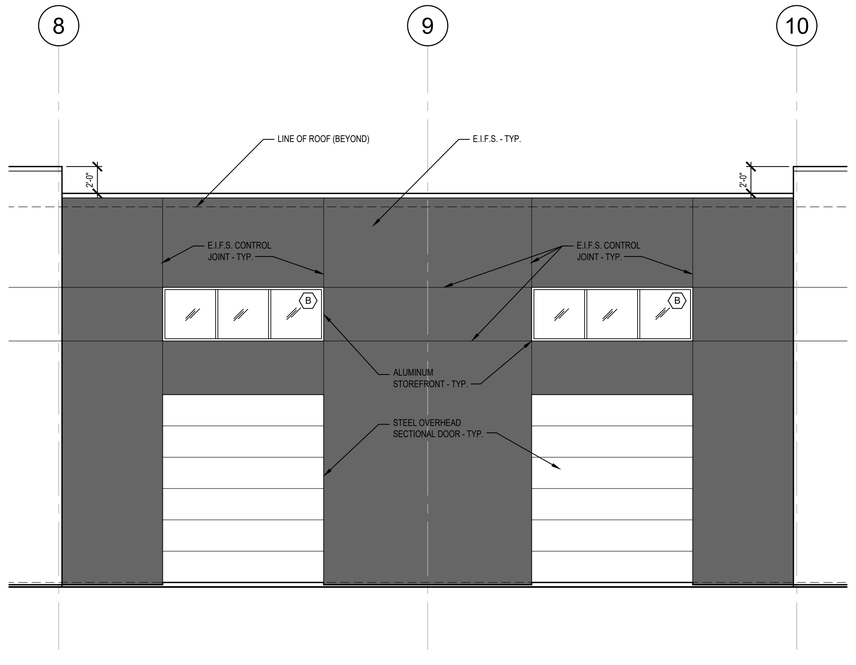
H1 ENLARGED NORTH ELEVATION

SCALE: 3/16" = 1'-0"



E1 ENLARGED NORTH ELEVATION

SCALE: 3/16" = 1'-0"



C1 ENLARGED SOUTH ELEVATION

SCALE: 3/16" = 1'-0"

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Project Number: 2307

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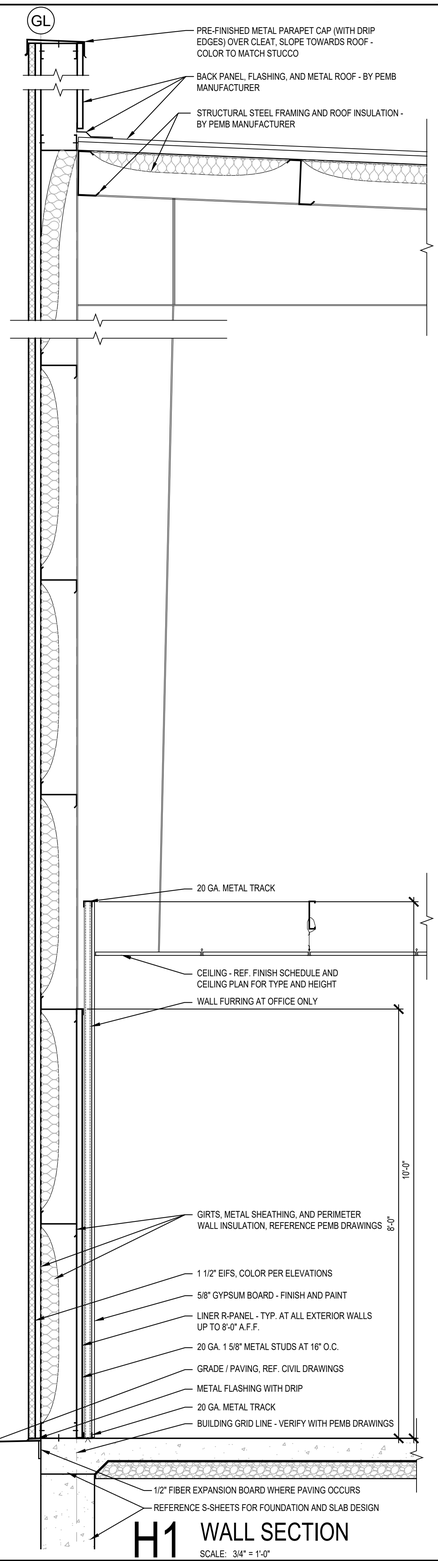
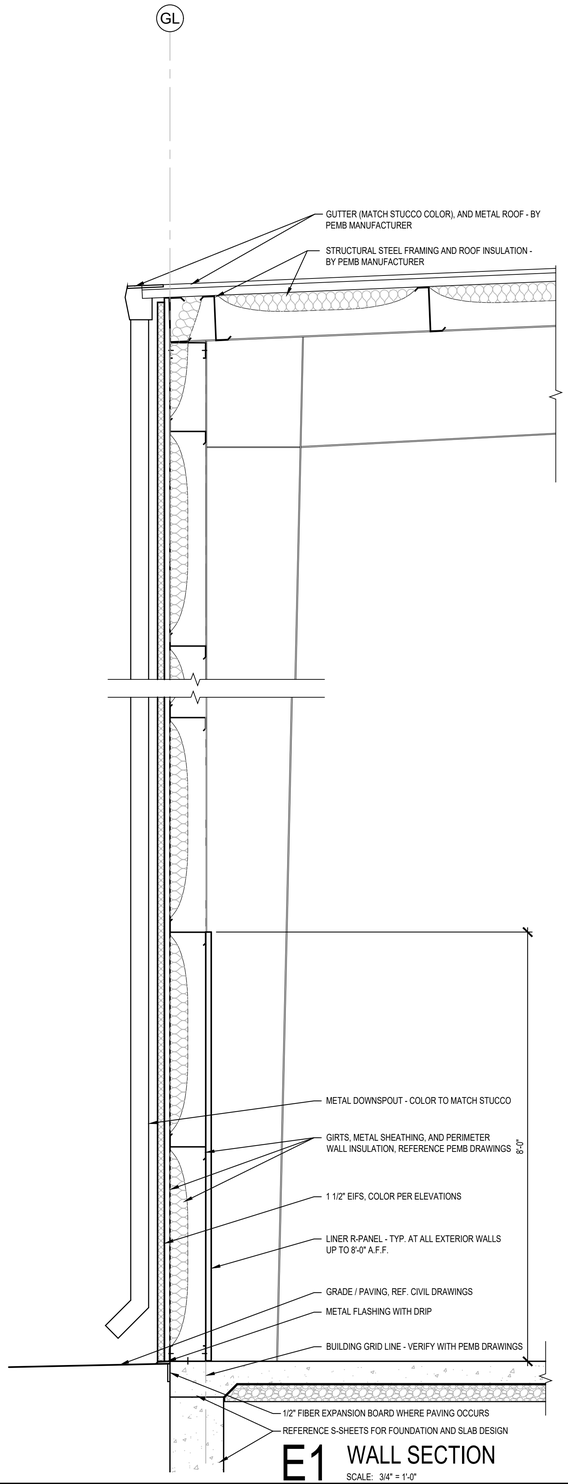
Sheet Title:

ENLARGED EXTERIOR ELEVATIONS

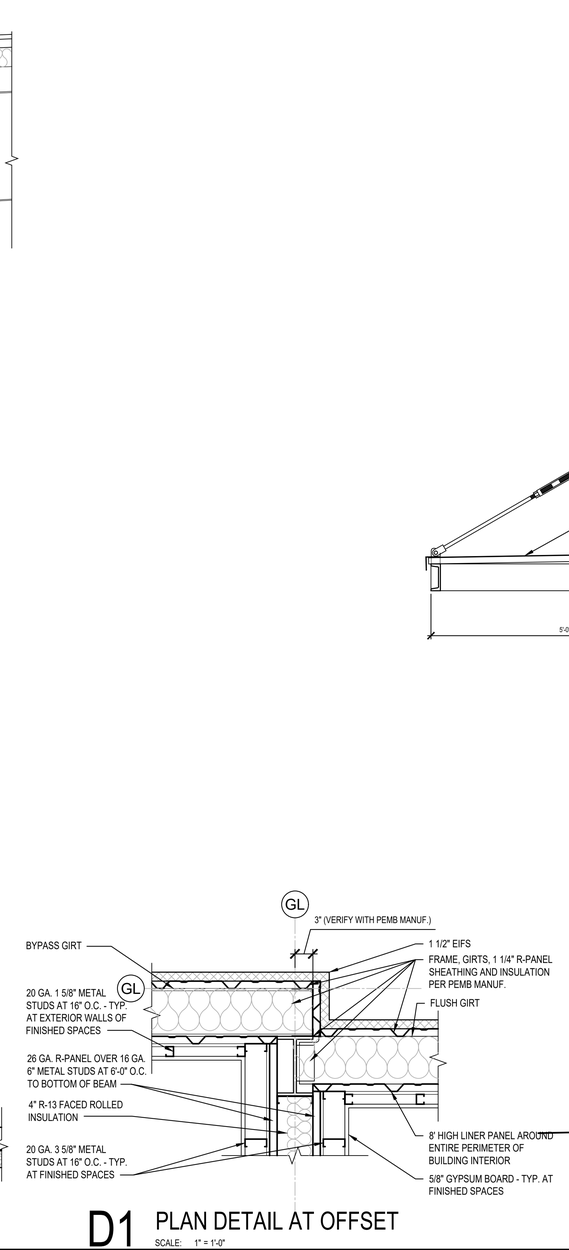
A-201



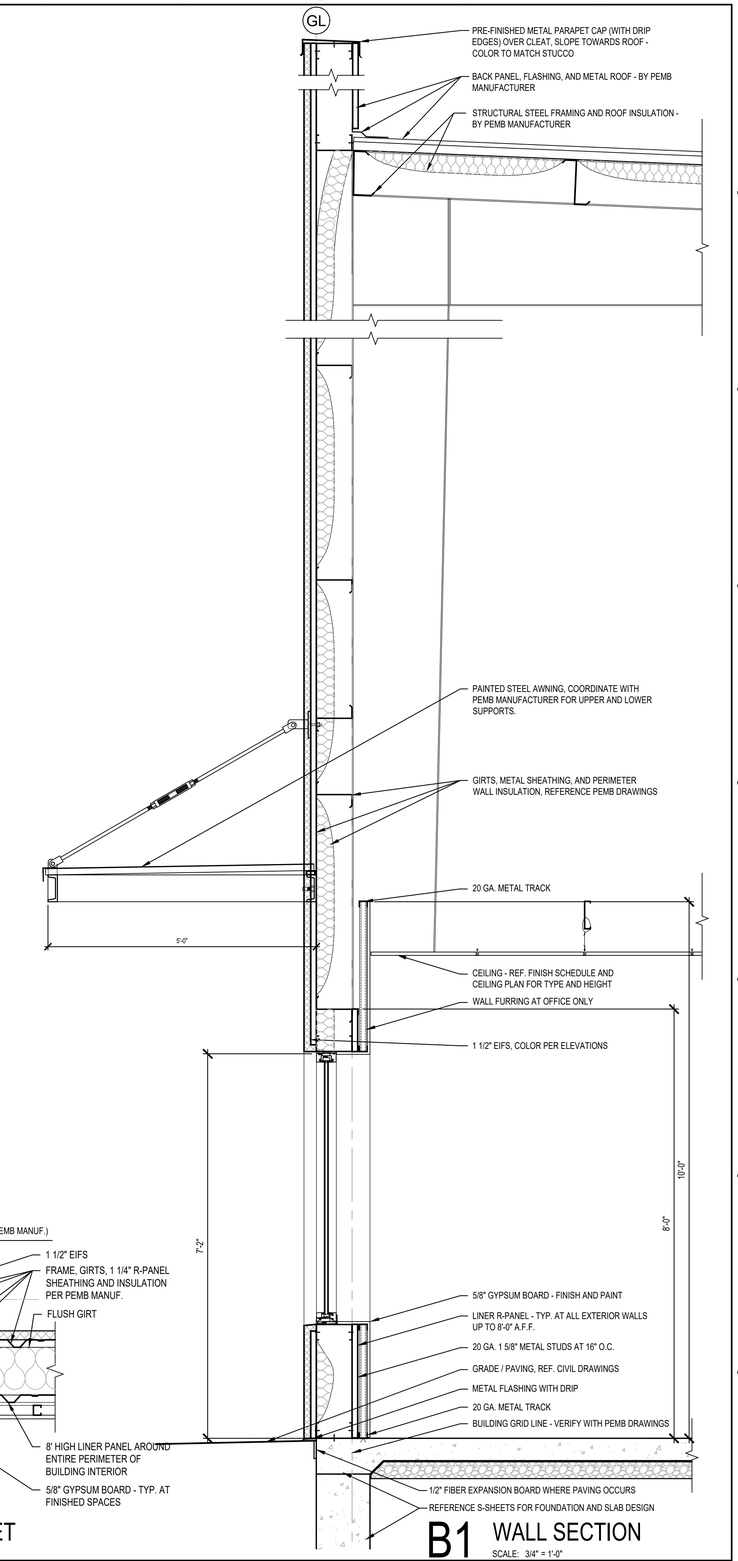
H1 WALL SECTION
SCALE: 3/4" = 1'-0"



E1 WALL SECTION
SCALE: 3/4" = 1'-0"



D1 PLAN DETAIL AT OFFSET
SCALE: 1" = 1'-0"



B1 WALL SECTION
SCALE: 3/4" = 1'-0"

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NUMBER A-2009032812
ARCHITECT
08.31.23
Michael Moores, MO Architect #2009032812

Project Number: 2307
Project Type: NEW CONSTRUCTION
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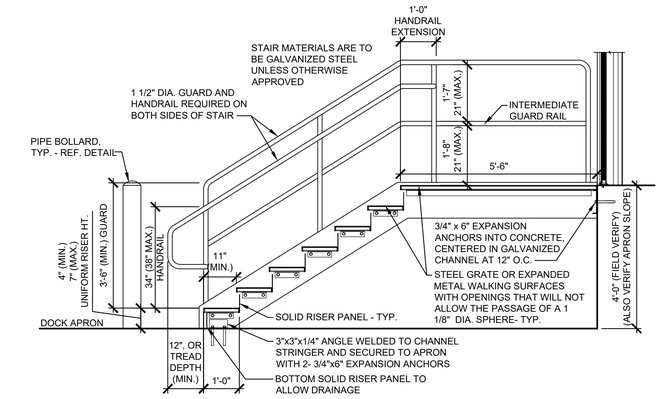
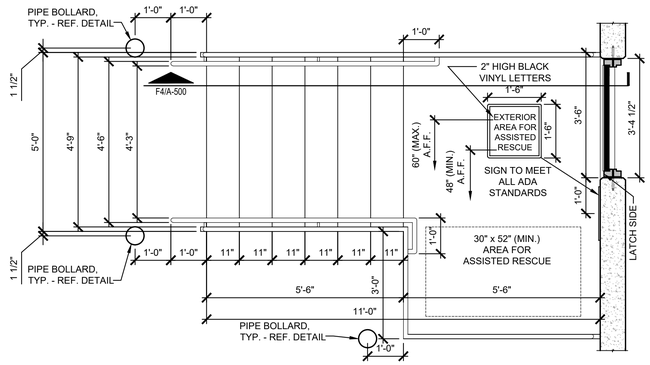
Sheet Title:
WALL SECTIONS AND PLAN DETAIL

A-300



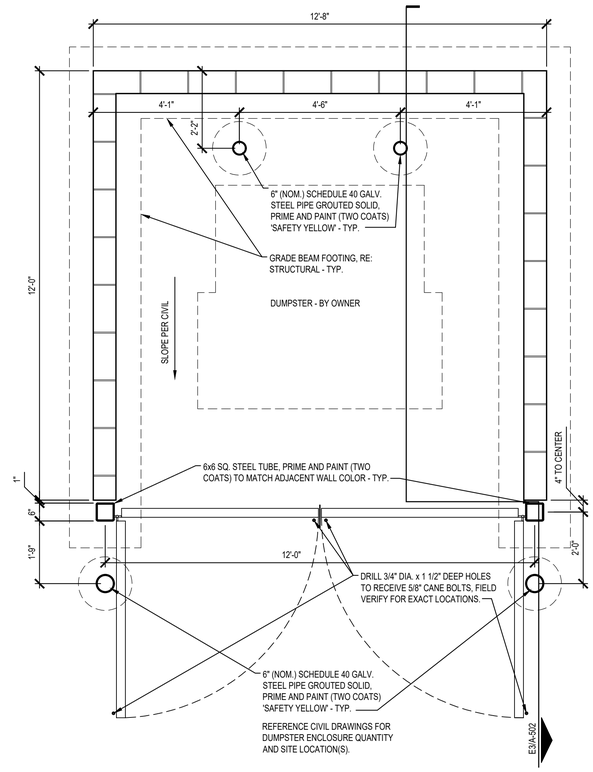
H5 DOCK STAIR SECTION DETAIL

SCALE: 1/2" = 1'-0"



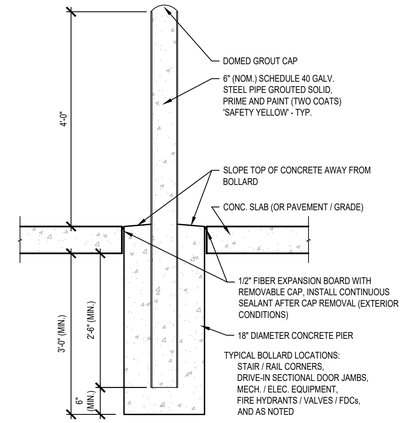
H3 DOCK STAIR PLAN DETAIL W/ ASSISTED RESCUE

SCALE: 1/2" = 1'-0"



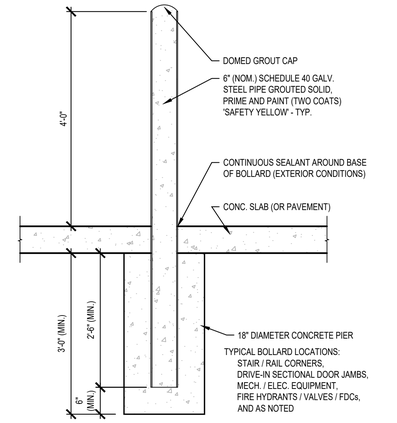
E3 DUMPSTER ENCLOSURE PLAN

SCALE: 1/2" = 1'-0"



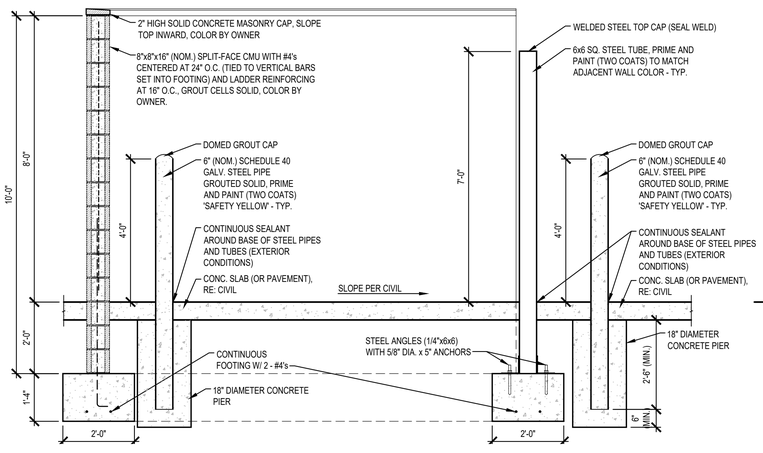
B6 ALTERNATE 6" BOLLARD DETAIL (U.N.O.)

SCALE: 3/4" = 1'-0"



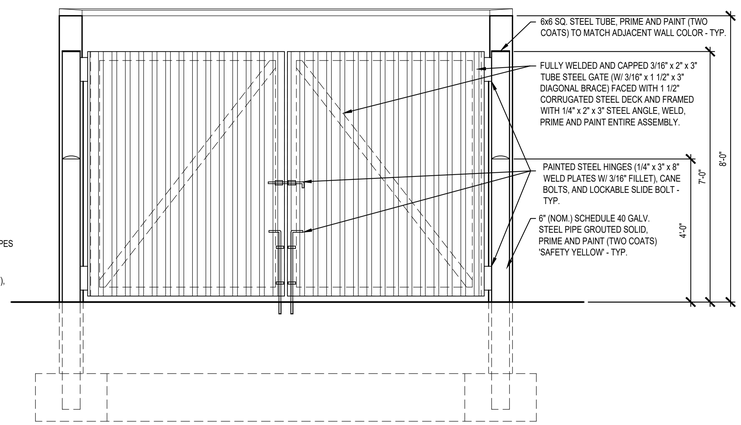
B3 TYP. 6" BOLLARD DETAIL (U.N.O.)

SCALE: 3/4" = 1'-0"



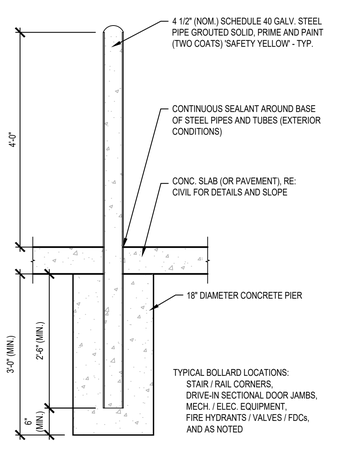
H1 DUMPSTER ENCLOSURE SECTION

SCALE: 1/2" = 1'-0"



E1 DUMPSTER ENCLOSURE ELEVATION

SCALE: 1/2" = 1'-0"



B1 TYP. 4 1/2" BOLLARD DETAIL (U.N.O.)

SCALE: 3/4" = 1'-0"

Architect:
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Seal:

STATE OF MISSOURI
MICHAEL MOORES
NUMBER A-2009032812
ARCHITECT
08.31.23

Michael Moores, MO Architect #2009032812

Project Number: 2307
Project Type: NEW CONSTRUCTION
Project Name and Address:

LAKEWOOD BUSINESS CENTER, LOT 1
NE Maguire Blvd
Lee's Summit, Missouri 64064

Issue:	Date:
Permit Set	08.31.23

Sheet Title:

DOCK STAIR, BOLLARD, DUMPSTER ENCLOSURE DETAILS

A-500

DESIGN STATUS:

THIS PLAN AND DETAILS IS FOR THE PURPOSE OF PLAN REVIEW AND COORDINATION. IT IS NOT SUITABLE FOR CONSTRUCTION. THE FINAL DESIGN FROM THE STEEL FABRICATOR TO BE REVIEWED WITH LOADING AND DESIGN CONFIRMED.

1. GENERAL

A. The contractor shall verify dimensions and conditions and notify the architect/engineer of any discrepancies, inconsistencies, or difficulties affecting cost of work before proceeding.
B. The contractor shall coordinate all disciplines, verifying size and location of all openings. All conflicts, inconsistencies, or other difficulties affecting structural work shall be called to the attention of the architect or engineer for direction before proceeding.
C. All design and construction for this project shall conform to the requirements of the 2018 International Building Code (IBC), as adopted and amended.
D. These drawings are for this specific project, and no other use is authorized.

2. CONCRETE:

A. All trench footing concrete shall develop a minimum compressive design strength of 3,500 psi in 28 days.
All formed and slab concrete to be a minimum compressive design strength of 4,000 psi in 28 days.
B. Concrete exposed to weather shall have a 6% +/- 1% air entrainment.
C. Contractor shall verify that all concrete inserts, reinforcing and embedded items are correctly located and rigidly secured prior to concrete placement.
D. No aluminum items shall be embedded in any concrete.
E. Provide concrete design submittal for approval.
F. Anchor bolts or threaded rods per ASTM F1554 Grade 36. A.B. $\frac{3}{4}$" Dia.x24" Long at end walls, along gridlines 1, 27. A.B. $\frac{3}{4}$" Dia.x30" long at longitudinal walls, along gridlines A, F.
G. Epoxy anchors are not acceptable as a substitute for tension loading conditions and major column bases. Anchors and fasteners smaller than $\frac{3}{4}$" diameter may be epoxy or Kwik bolt style fasteners. See Detail B2/S0.

3. REINFORCING STEEL:

A. All reinforcing steel shall conform to the requirements of ASTM A615 Grade 60.
B. Stirrups & ties shall conform to the requirements of ASTM A615 Grade 40.
C. Clear minimum coverage of concrete over reinforcing steel shall be as follows:
Concrete placed against earth 3"
Formed concrete against earth 2"
D. All dowels shall be the same size and spacing as adjoining main bars.
E. Splice laps, hooks and bends per ACI and detailed herein.
F. Wire tie steel prior to pour to insure steel remains in place when concrete is poured.
G. Provide reinforcing steel submittal for approval.

4. SOIL PREPARATIONS AND CONDITIONS:

A. Contractor to maintain OSHA safety precautions for workers.
B. Excavate and remove all organic soil material below pad base per Geotechnical Report. Geotectnical Report dated August 28, 2023 by Alpha-Omega Geotech.
C. Excavate and remove soft soil per Geotechnical Report. This design is based upon the soil conditions providing a minimum capacity of 2,500 psf. Individual interior pier footings may use 3,000 psf.
D. This structural design assumes geotechnical recommendations will be incorporated into the site, slab, fill placement and building pad.

5. STEEL BUILDING

A. Steel building plans take precedence over these plans. Contractor to verify baseplate and anchor bolt locations and projections.

6. SPECIAL INSPECTIONS

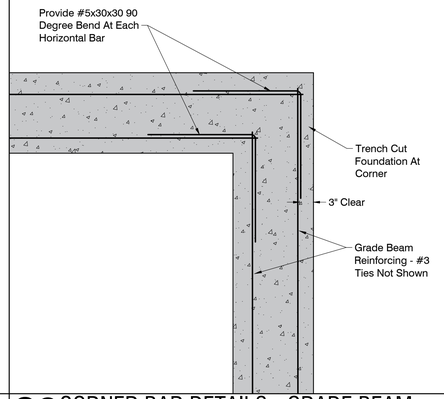
A. High strength bolts - ASTM A325
B. Testing of concrete: Lab testing footing, and pier concrete required.

ABBREVIATIONS:

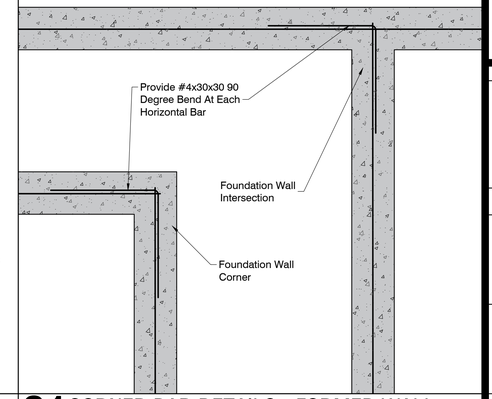
A.B.	Anchor Bolts
@	At
E.W.	Each Way
ELEV.	Elevation (Relative Grade Height)
#	Number
Sq.Ft.	Square Feet
T.O.B.	Top Of Beam
T.O.F.	Top Of Footing
T.O.W.	Top Of Wall
O.C.	On Center Spacing
U.N.O.	Unless Noted Otherwise

A5 GENERAL STRUCTURAL NOTES & ABBREVIATIONS
NO SCALE

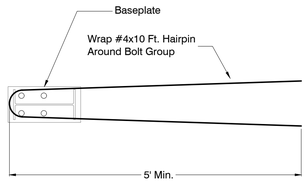
C3 NOT USED
SCALE: 1 1/2" = 1'-0"



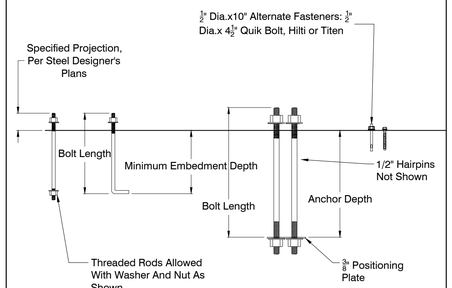
C2 CORNER BAR DETAILS - GRADE BEAM
SCALE: 3/4" = 1'-0"



C1 CORNER BAR DETAILS - FORMED WALL
SCALE: 3/4" = 1'-0"

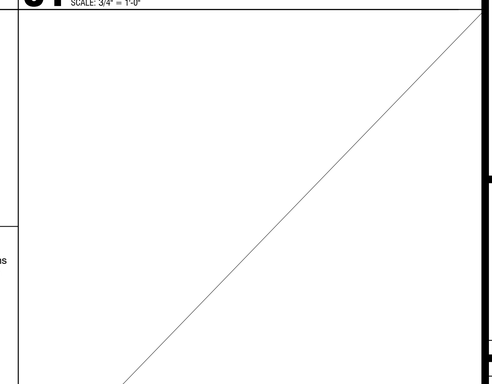


B3 HAIR PIN DETAIL (PLAN VIEW)
SCALE: 3/4" = 1'-0"



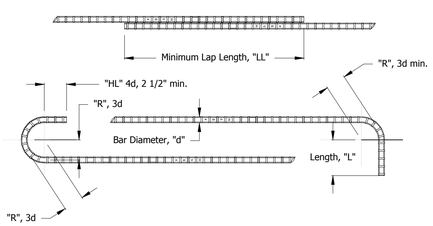
Notes:
Anchor Bolts Or Threaded Rods Per ASTM F1554, Grade 36
Post Installed Systems Such As Epoxy Anchors Are Not Allowed Except At Door Jambs.
Anchor Bolts & Baseplates Installed Per Steel Designer's Plans.

B2 ANCHOR BOLT SPECIFICATIONS
SCALE: 3/4" = 1'-0"

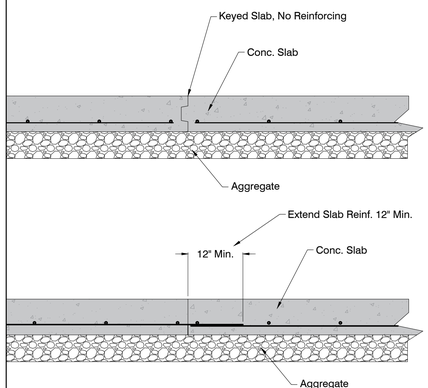


B1 TYPICAL DETAIL
SCALE: 3/4" = 1'-0"

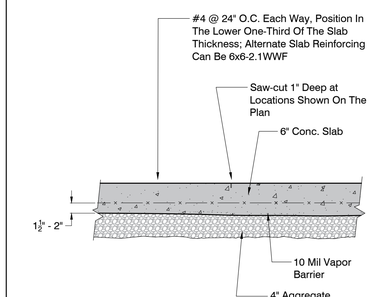
STANDARD REINFORCING LAPS, BENDS AND HOOKS				
BAR Diameter, d	LAP LENGTH, "LL"	LENGTH "L", 12d	RADIUS "R", 3d	HOOK LENGTH "HL", 4d
3	24	4 1/2	1	2 1/2
4	24	6	1 1/2	2 1/2
5	25	7 1/2	2	2 1/2



A3 LAPS & HOOK DETAILS
SCALE: 1 1/2" = 1'-0"



A2 TYPICAL SLAB STOP & WWF LAP
SCALE: 3/4" = 1'-0"



A1 TYPICAL SLAB CONSTRUCTION DETAIL
SCALE: 3/4" = 1'-0"

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Seal:

STATE OF MISSOURI
ANTHONY C MEISTER
NUMBER PE-024609
PROFESSIONAL ENGINEER

Michael Moores, MO Architect #2009032812

Project Number: 2307
Project Type: NEW CONSTRUCTION
Project Name and Address:

LAKEWOOD BUSINESS CENTER, LOT 1
NE Maguire Blvd
Lee's Summit, Missouri 64064

Issue:	Date:
Bid Set	6.22.23
Bid Set-Contractor Comments	8.31.23

Sheet Title:

NOTES & DETAILS

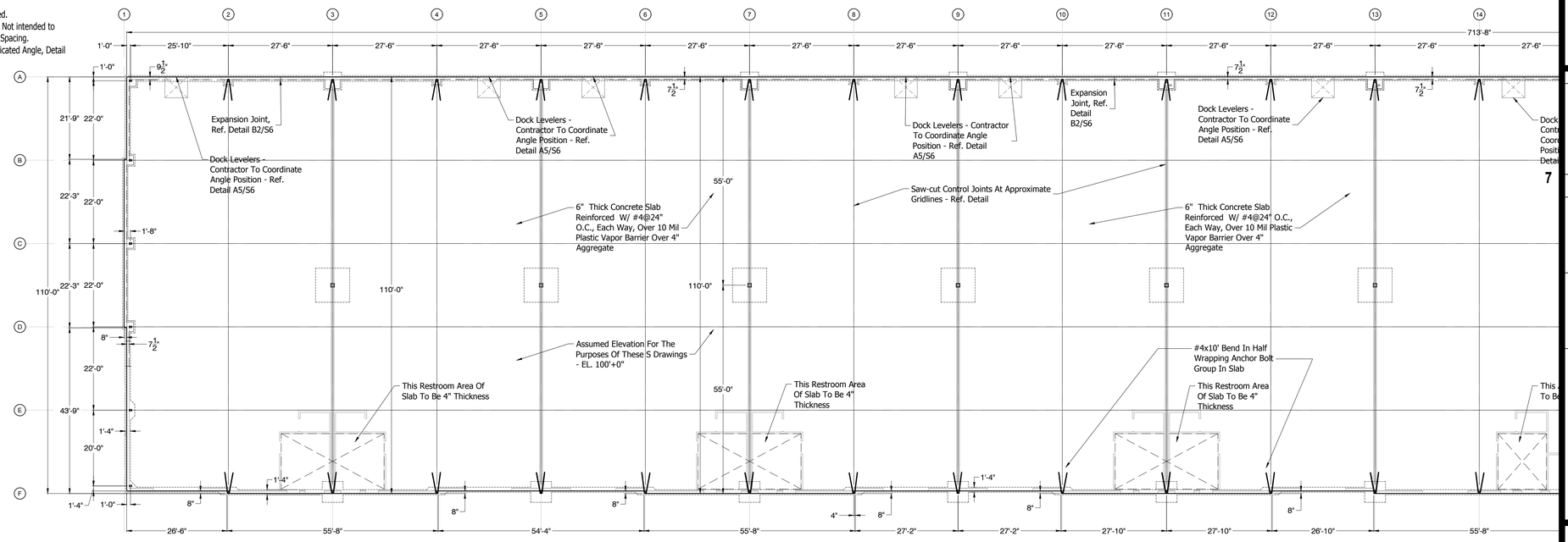
S0

CONSTRUCTION NOTES:

1. Baseplate Size, Configuration And Location To Be In Accordance With Steel Designer's Design. Steel Designer's Design Takes Precedence Over These Drawings.
2. Provide Depressed Threshold Per Steel Designer's Design.
3. Dimensions This Sheet Edge Of Slab Locations & Footing Locations Where Indicated.
4. Expansion Joints In Formed Wall Spaced Approximately 220 Ft. Along Grid A Only. Not intended to Extend Into The Interior Slab. Contractor to Field Locate With A 220 Ft. Maximum Spacing.
5. Coordinate Installation Of Angle For Exterior Mount Dock Levelers. Reference Fabricated Angle, Detail A5/S6.

PRELIMINARY DESIGN:

THIS PLAN AND DETAILS IS PRELIMINARY FOR THE PURPOSE OF BIDDING, PLAN REVIEW AND COORDINATION. IT IS NOT SUITABLE FOR CONSTRUCTION. THE FINAL DESIGN FROM THE STEEL FABRICATOR TO BE REVIEWED WITH LOADING AND DESIGN CONFIRMED.



C1 16" SCALE SLAB PLAN - GRIDS 1-14

SCALE: 1/16" = 1'-0"

CONSTRUCTION NOTES:

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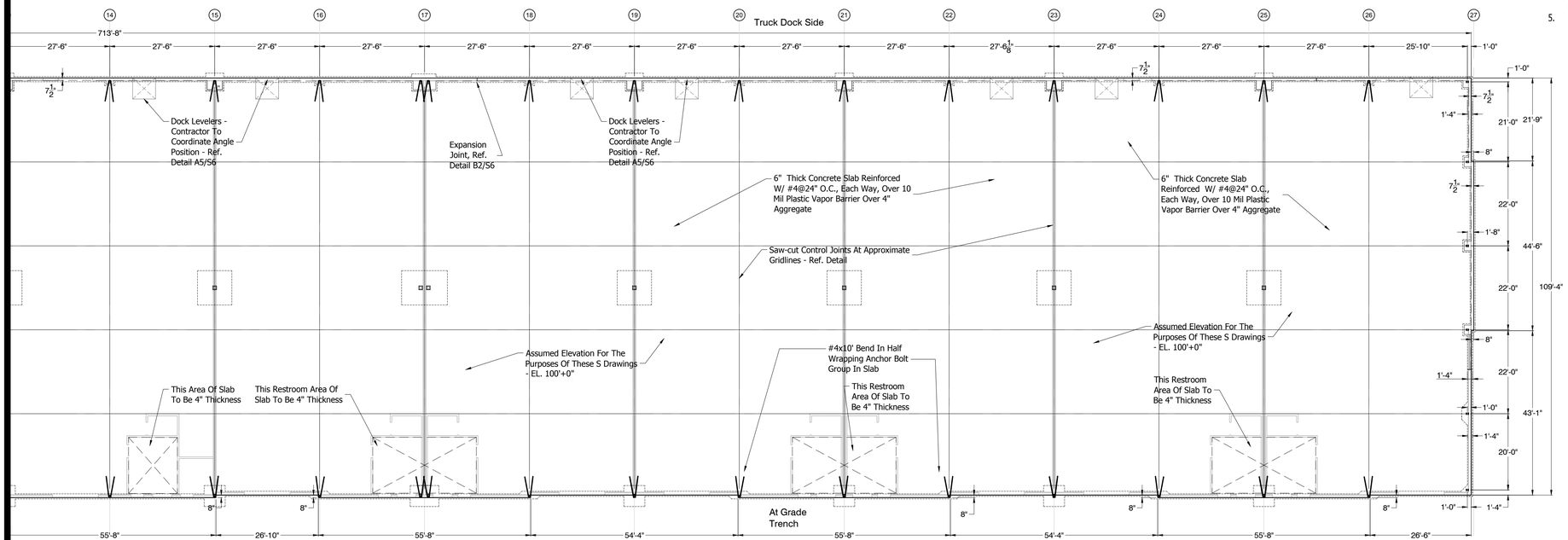

A1 16" SCALE SLAB PLAN - GRIDS 15-27

SCALE: 1/16" = 1'-0"

Architect:

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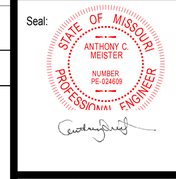

Project Number: 2307

Project Type: NEW CONSTRUCTION

Project Name and Address:

LAKEWOOD BUSINESS CENTER, LOT 1

NE Maguire Blvd
Lee's Summit, Missouri 64064

Issue:	Date:
Bid Set	6.22.23
Bid Set-Contractor Comments	8.31.23

Sheet Title:

SLAB PLAN

S1

PRELIMINARY DESIGN:

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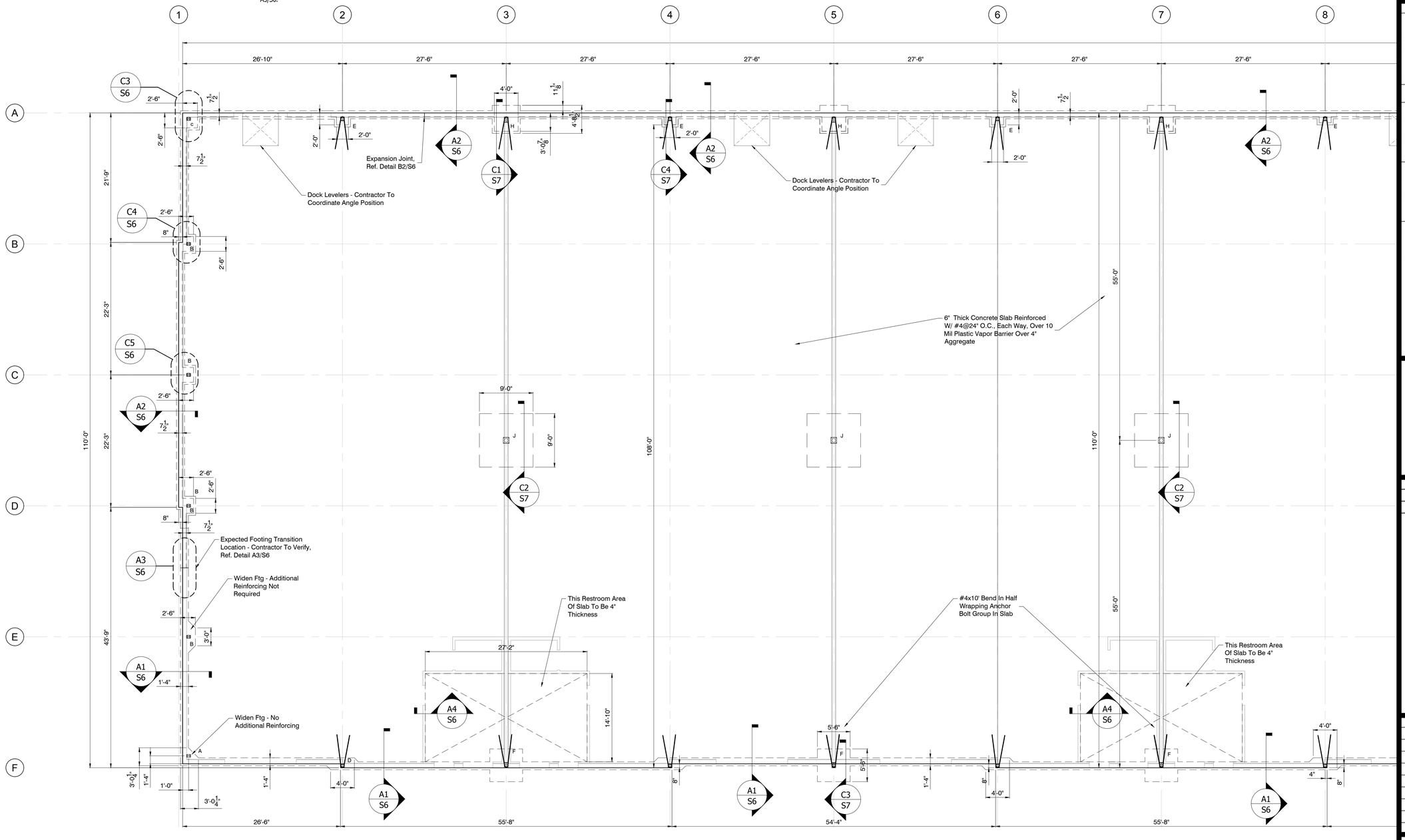
CONSTRUCTION NOTES:

1. Baseplate Size, Configuration And Location To Be In Accordance With Steel Designer's Design. Steel Designer's Design Takes Precedence Over These Drawings.
2. Provide Depressed Threshold Per Steel Designer's Design.
3. Dimensions This Sheet Edge Of Slab Locations & Footing Locations Where Indicated.
4. Expansion Joints In Formed Wall Spaced Approximately 220 Ft. Along Grid A Only. Not intended to Extend Into The Interior Slab. Contractor to Field Locate With A 220 Ft. Maximum Spacing.
5. Coordinate Installation Of Angle For Exterior Mount Dock Levelers. Reference Fabricated Angle, Detail A5/S6.

Anchor Bolt Schedule:

Baseplates	Diameter	Length	Projection	Embedment
A-E	5/8"	18"	3"	15"
F-I	3/4"	24"	3"	21"
J	3/4"	30"	3"	27"

Anchor Bolts And All-thread Materials To Be Provided And Installed Per ASTM F1554.



A1 8TH SCALE FOUNDATION PLAN - GRIDS 1-8
SCALE: 1/8" = 1'-0"

Architect:

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NUMBER PE-024809
PROFESSIONAL ENGINEER

Project Number: 2307
Project Type: NEW CONSTRUCTION
Project Name and Address:

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Lee's Summit, Missouri 64064

Issue:	Date:
Bid Set	6.22.23
Bid Set-Contractor Comments	8.31.23

Sheet Title:

FOUNDATION PLAN

S2

PRELIMINARY DESIGN:

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CONSTRUCTION NOTES:

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Anchor Bolt Schedule:

Baseplates	Diameter	Length	Projection	Embedment
A-E	5/8"	18"	3"	15"
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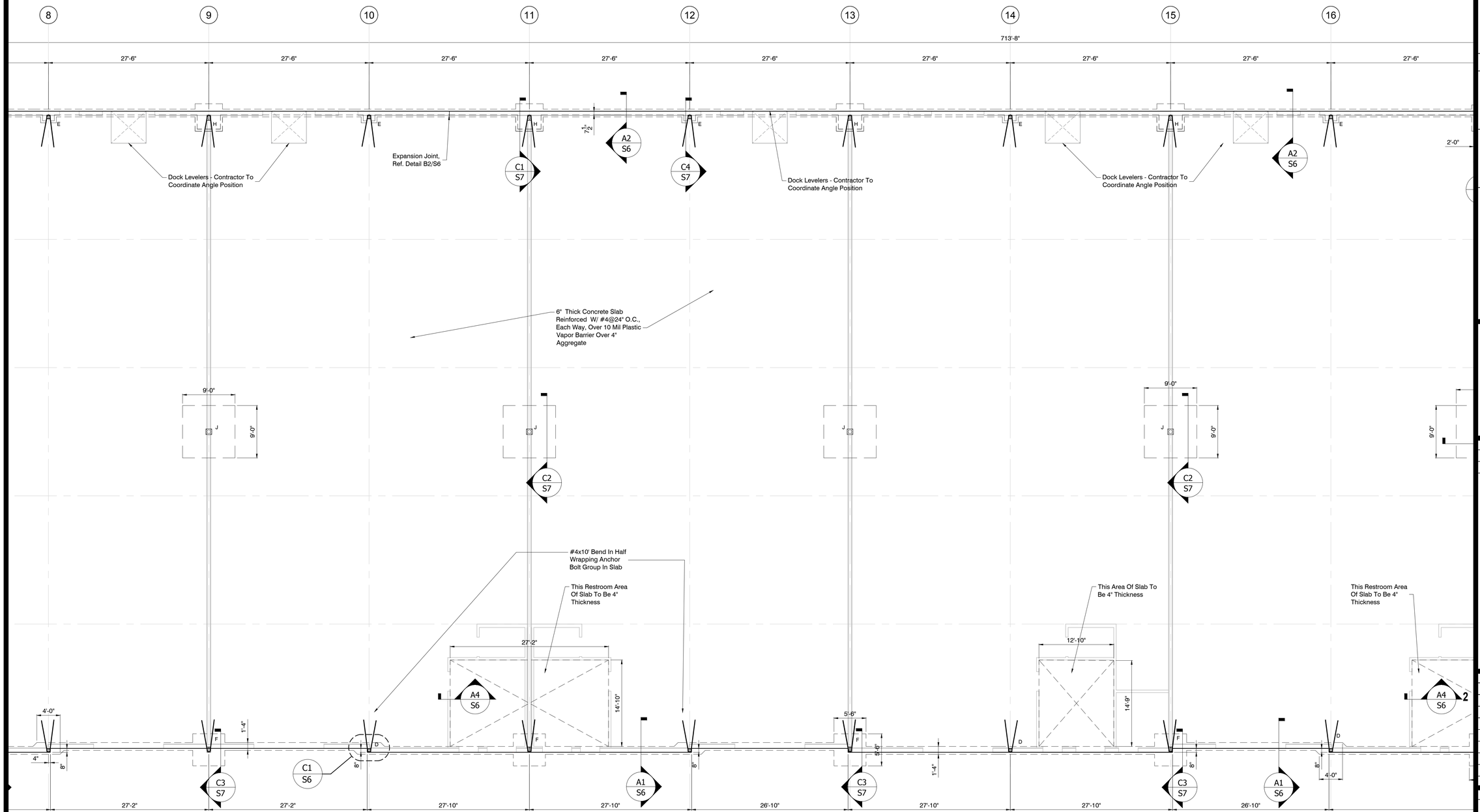
J	3/4"	30"	3"	27"

Anchor Bolts And All-thread Materials To Be Provided And Installed Per ASTM F1554.



A1 8TH SCALE FOUNDATION PLAN - GRIDS 9-16
SCALE: 1/8" = 1'-0"

Architect:

MIDWEST ARCHITECTS
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Seal:

STATE OF MISSOURI
ANTHONY C MEISTER
NUMBER PE-024609
PROFESSIONAL ENGINEER

Project Number: 2307
Project Type: NEW CONSTRUCTION
Project Name and Address:

LAKEWOOD BUSINESS CENTER, LOT 1
NE Maguire Blvd
Lee's Summit, Missouri 64064

Issue:	Date:
Bid Set	6.22.23
Bid Set-Contractor Comments	8.31.23

Sheet Title:

FOUNDATION PLAN

S3

PRELIMINARY DESIGN:

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CONSTRUCTION NOTES:

1. Baseplate Size, Configuration And Location To Be In Accordance With Steel Designer's Design. Steel Designer's Design Takes Precedence Over These Drawings.
2. Provide Depressed Threshold Per Steel Designer's Design.
3. Dimensions This Sheet Edge Of Slab Locations & Footing Locations Where Indicated.
4. Expansion Joints In Formed Wall Spaced Approximately 220 Ft. Along Grid A Only. Not intended to Extend Into The Interior Slab. Contractor to Field Locate With A 220 Ft. Maximum Spacing.
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Anchor Bolt Schedule:

Baseplates	Diameter	Length	Projection	Embedment
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F-I	3/4"	24"	3"	21"
J	3/4"	30"	3"	27"

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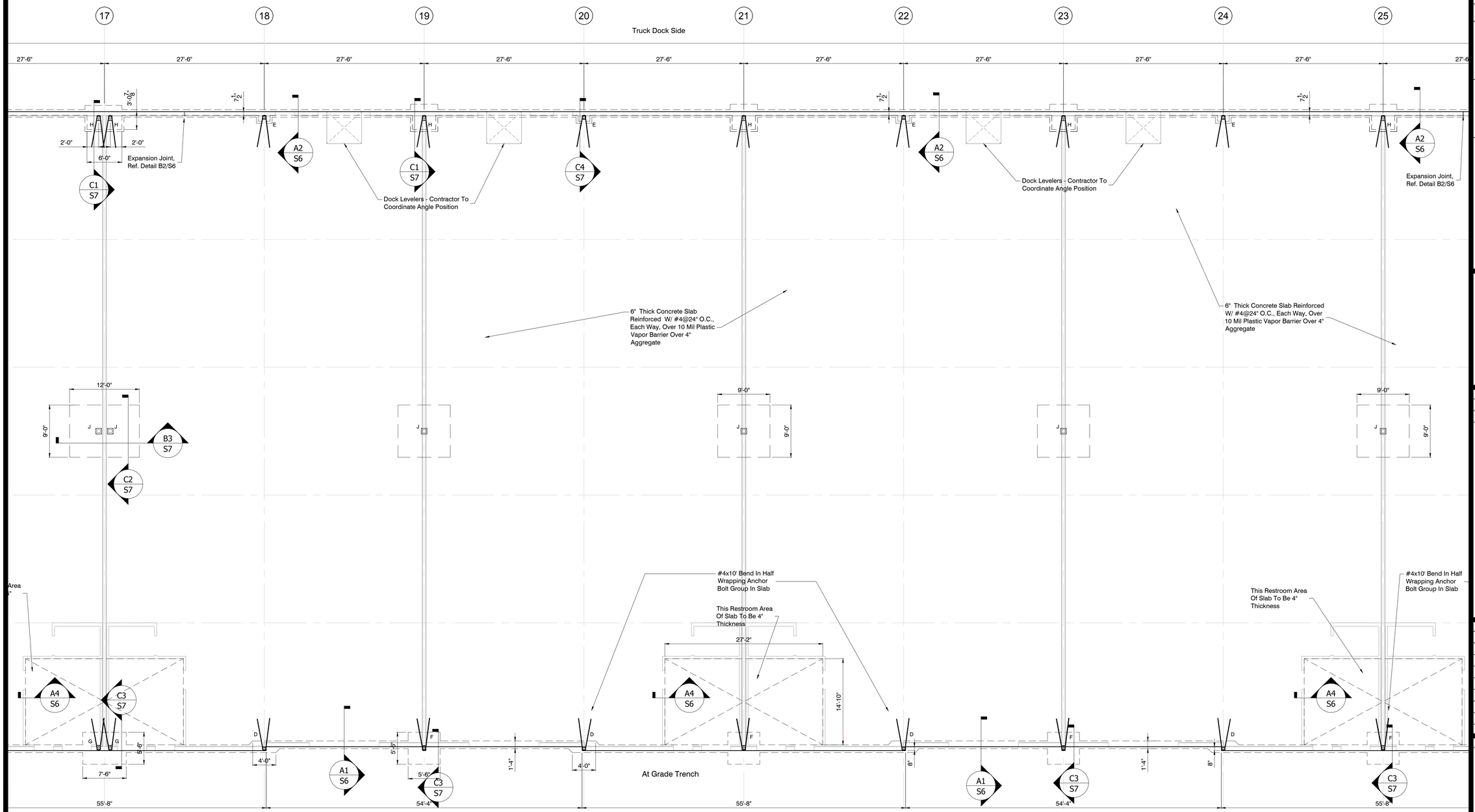

A1 8TH SCALE FOUNDATION PLAN - GRIDS 17-24
SCALE: 1/8" = 1'-0"

Architect:

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1120 NW EAGLE RIDGE BLVD
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Seal:

STATE OF MISSOURI
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NUMBER PE-024609
PROFESSIONAL ENGINEER

Project Number: 2307
Project Type: NEW CONSTRUCTION
Project Name and Address:

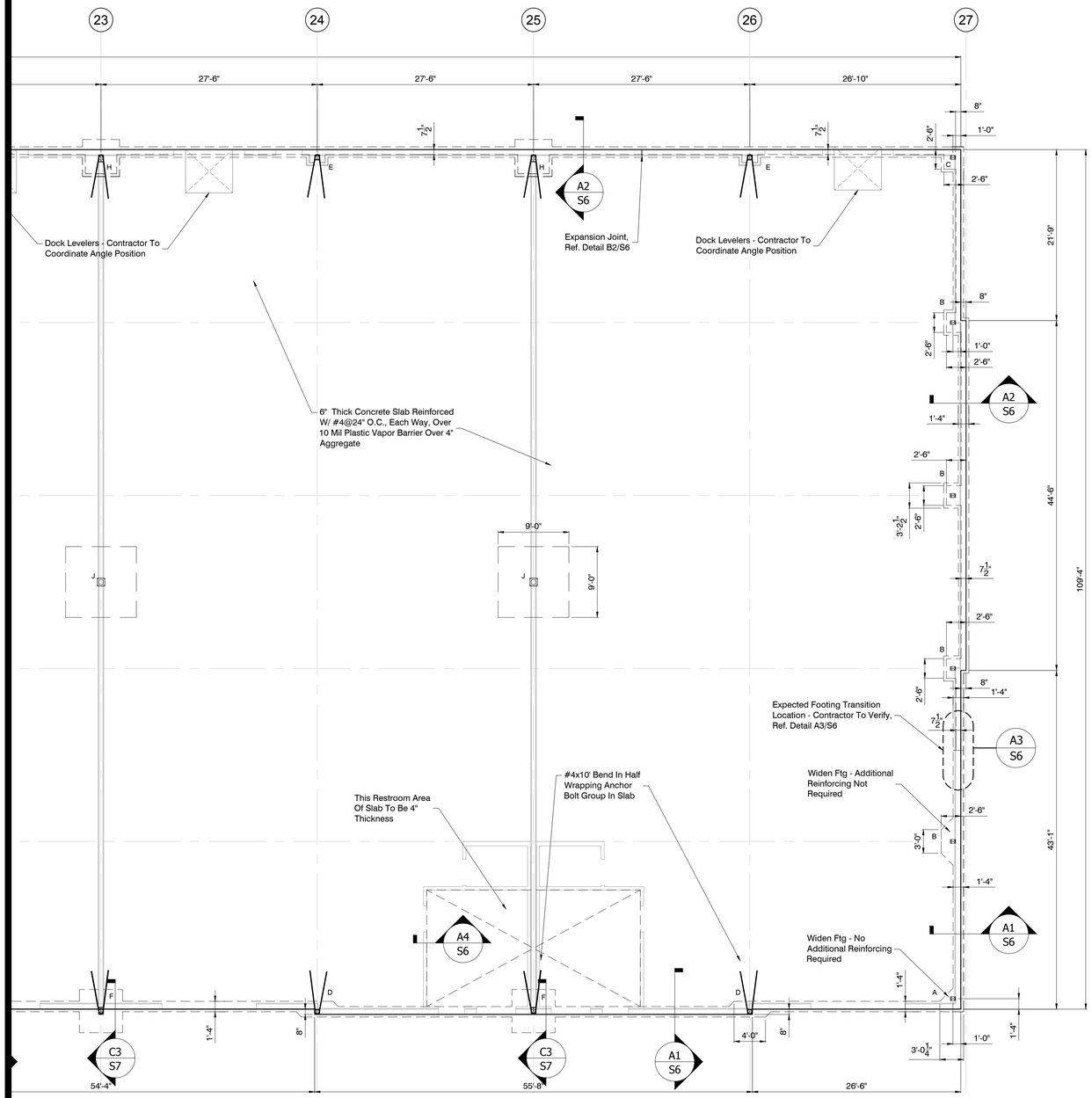
LAKEWOOD BUSINESS CENTER, LOT 1
NE Maguire Blvd
Lee's Summit, Missouri 64064

Issue:	Date:
Bid Set	6.22.23
Bid Set-Contractor Comments	8.31.23

Sheet Title:

FOUNDATION PLAN

S4



1

PRELIMINARY DESIGN:

THIS PLAN AND DETAILS IS PRELIMINARY FOR THE PURPOSE OF PLAN REVIEW AND COORDINATION. IT IS NOT SUITABLE FOR CONSTRUCTION. THE FINAL DESIGN FROM THE STEEL FABRICATOR TO BE REVIEWED WITH LOADING AND DESIGN CONFIRMED.

Anchor Bolt Schedule:

Baseplates	Diameter	Length	Projection	Embedment
A-E	5/8"	18"	3"	15"
F-I	3/4"	24"	3"	21"
J	3/4"	30"	3"	27"

Anchor Bolts And All-thread Materials To Be Provided And Installed Per ASTM F1554.

CONSTRUCTION NOTES:

1. Baseplate Size, Configuration And Location To Be In Accordance With Steel Designer's Design. Steel Designer's Design Takes Precedence Over These Drawings.
2. Provide Depressed Threshold Per Steel Designer's Design.
3. Dimensions This Sheet Edge Of Slab Locations & Footing Locations Where Indicated.
4. Expansion Joints In Formed Wall Spaced Approximately 220 Ft. Along Grid A Only. Not intended to Extend Into The Interior Slab. Contractor to Field Locate With A 220 Ft. Maximum Spacing.
5. Coordinate Installation Of Angle For Exterior Mount Dock Levelers. Reference Fabricated Angle, Detail A5/S6.

A1 8TH SCALE FOUNDATION PLAN - GRIDS 25-27
SCALE: 1/8" = 1'-0"

Architect:

MIDWEST ARCHITECTS
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Seal:

STATE OF MISSOURI
ANTHONY C. MEISTER
NUMBER PE-024609
PROFESSIONAL ENGINEER

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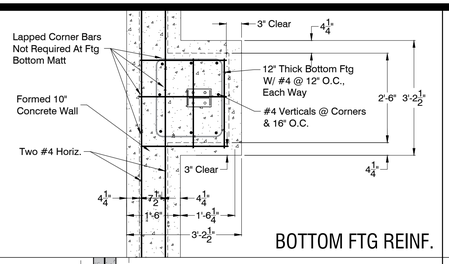
FOUNDATION PLAN

S5



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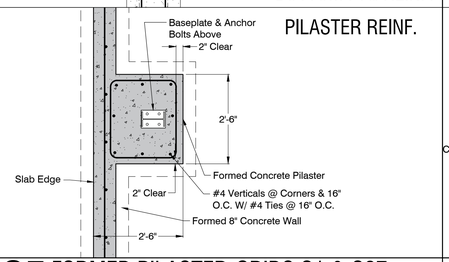
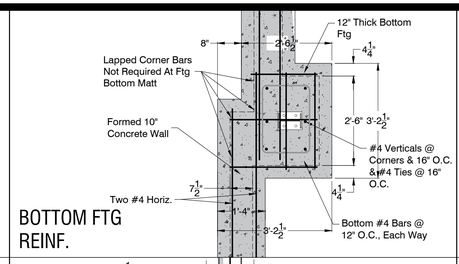


PILASTER REINF.

C5 FORMED PILASTER-GRIDS C1 & C27
SCALE: 1/2" = 1'-0"



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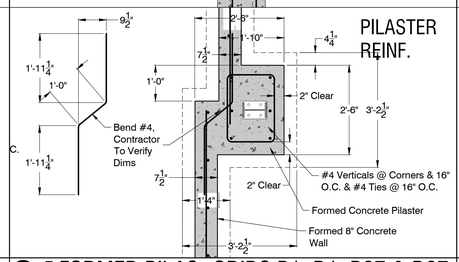
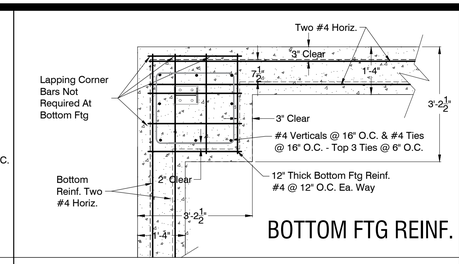


PILASTER REINF.

C4 FORMED PILAS.-GRIDS B1, D1, B27 & D27
SCALE: 1/2" = 1'-0"



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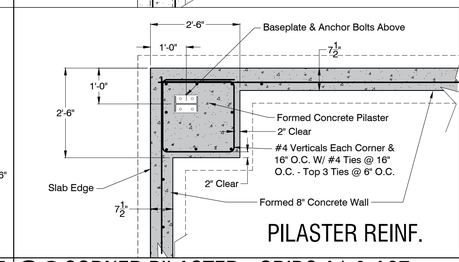
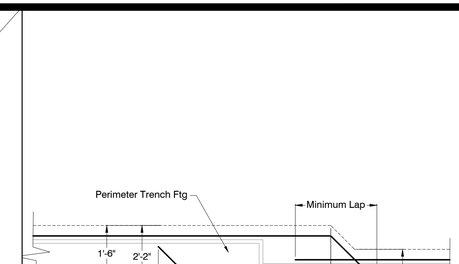


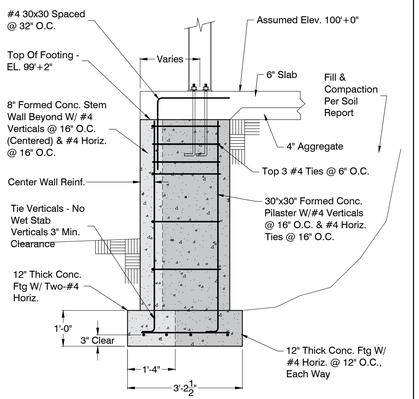
PILASTER REINF.

C3 CORNER PILASTER - GRIDS A1 & A27
SCALE: 1/2" = 1'-0"

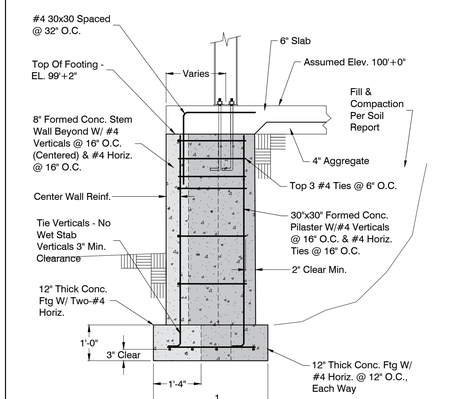
C2 DETAIL
SCALE: 3/4" = 1'-0"



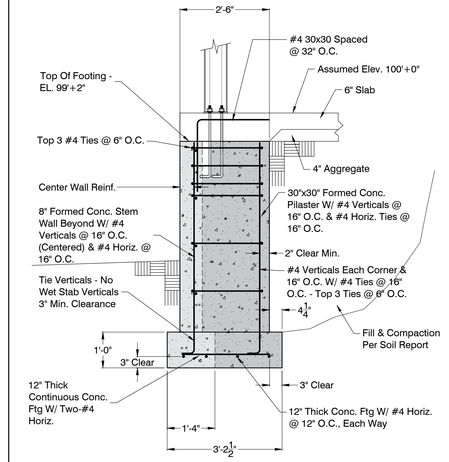
C1 OFF-SET FOOTING DETAIL
SCALE: 1/2" = 1'-0"



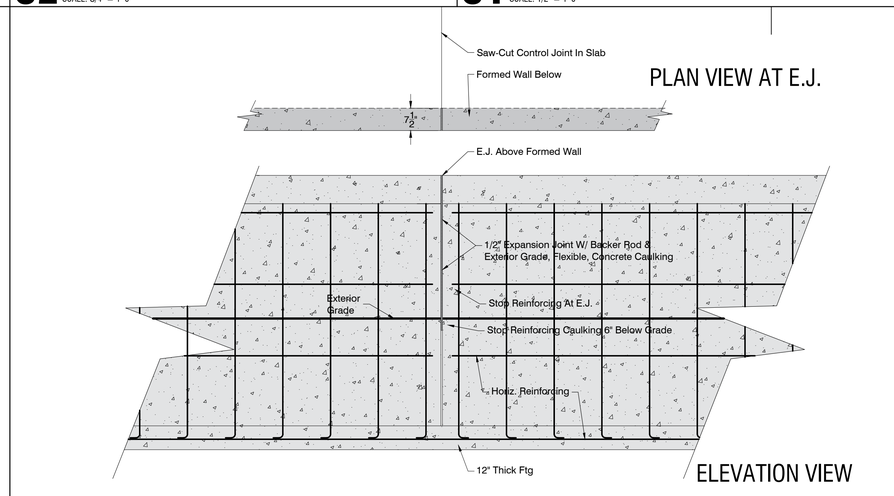
B5 FORMED PILASTER-GRIDS C1 & C27
SCALE: 1/2" = 1'-0"



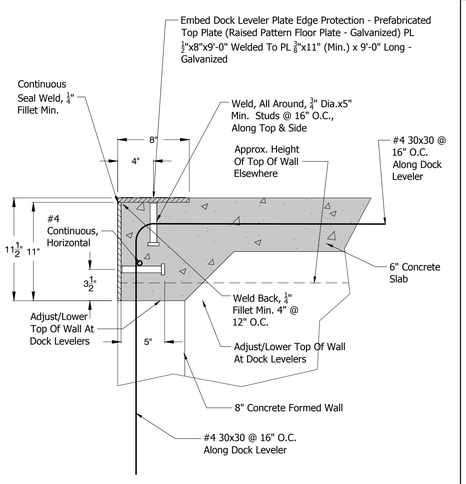
B4 FORMED PILAS.-GRIDS B1, D1, B27 & D27
SCALE: 1/2" = 1'-0"



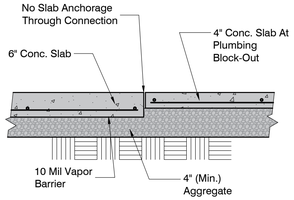
B3 CORNER PILASTER - GRIDS A1 & A27
SCALE: 1/2" = 1'-0"



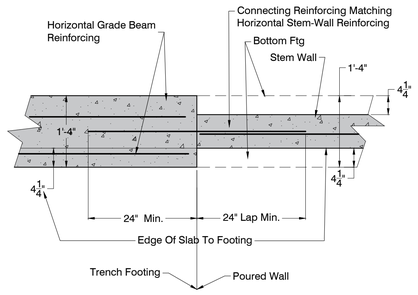
B2 EXPANSION JOINT AT FORMED WALL DETAIL
SCALE: 1/2" = 1'-0"



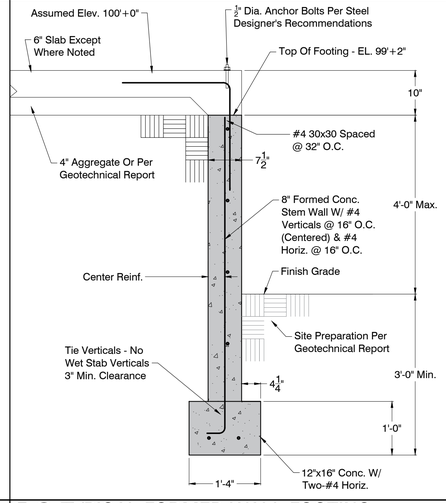
A5 DOCK LEVELER ANGLE DETAIL
SCALE: 1 1/2" = 1'-0"



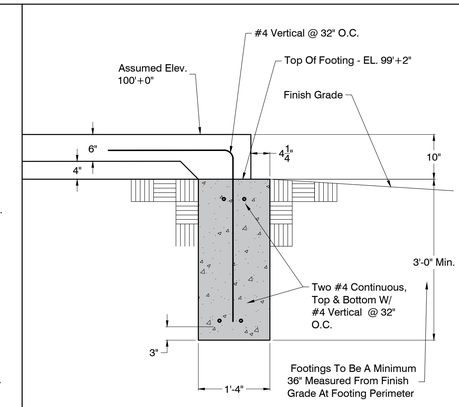
A4 6" TO 4" SLAB TRANSITION
SCALE: 3/4" = 1'-0"



A3 TRANSITION TRENCH TO FORMED WALL
SCALE: 3/4" = 1'-0"



A2 TYPICAL FORMED WALL FOOTING
SCALE: 3/4" = 1'-0"



A1 TYPICAL TRENCH FOOTING
SCALE: 3/4" = 1'-0"

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Seal:

STATE OF MISSOURI — ANTHONY C. MEISTER — NUMBER PE-024639 — PROFESSIONAL ENGINEER

Project Number: 2307
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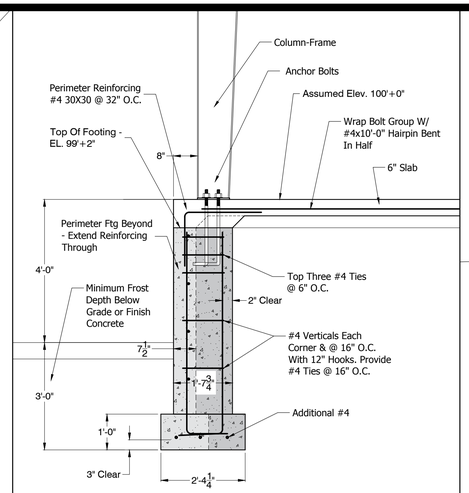
FOUNDATION DETAILS

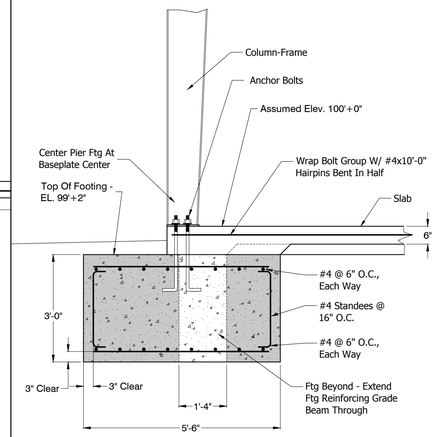
S6

C5 DETAIL
SCALE: 1/2" = 1'-0"

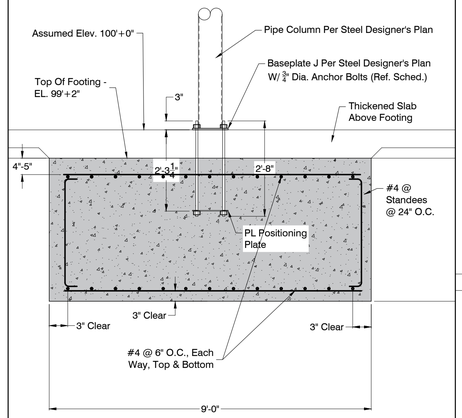
C4 SMALL FORMED PIER AT GRID A
SCALE: 1/2" = 1'-0"



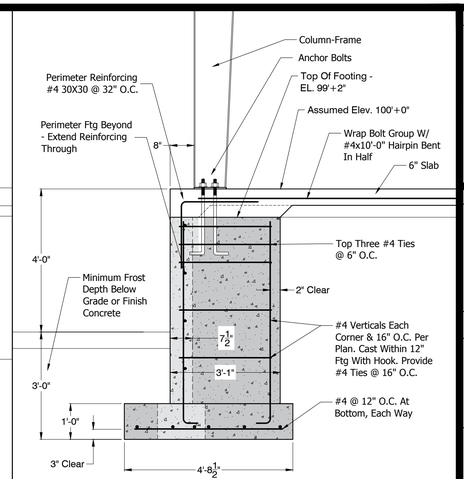
C3 PIER FTG AT TRENCH - ALONG GRID F
SCALE: 1/2" = 1'-0"



C2 TYPICAL CENTER PIER FOOTING - GRID CD
SCALE: 1/2" = 1'-0"

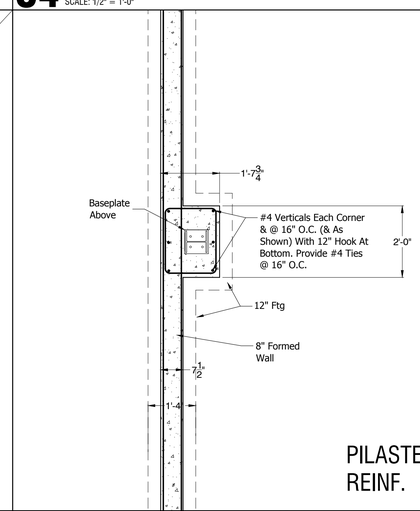


C1 PIER FOOTING (Formed Wall) GRID A
SCALE: 1/2" = 1'-0"



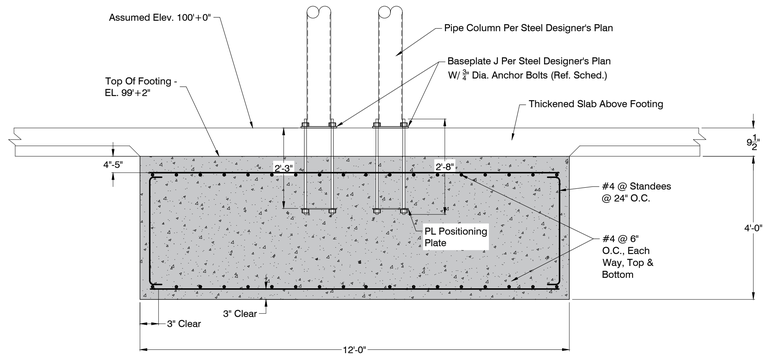
B5 DETAIL
SCALE: 1/2" = 1'-0"

B4 PLAN VIEW OF DET. C4/S7
SCALE: 1/2" = 1'-0"

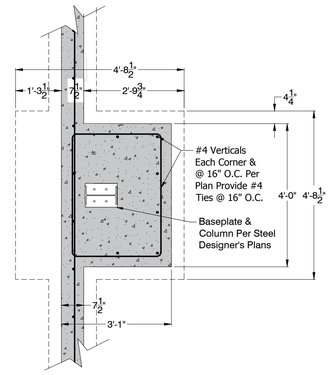


PILASTER REINF.

B3 PIER AT GRIDS 17 C & D
SCALE: 1/2" = 1'-0"



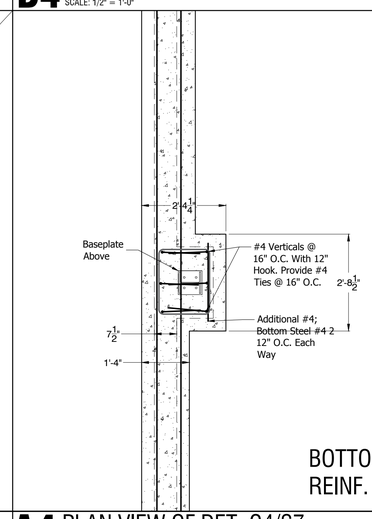
B1 PLAN VIEW OF DETAIL C1/S7 PEDESTAL
SCALE: 1/2" = 1'-0"



PILASTER REINF.

A5 DETAIL
SCALE: 1 1/2" = 1'-0"

A4 PLAN VIEW OF DET. C4/S7
SCALE: 1/2" = 1'-0"

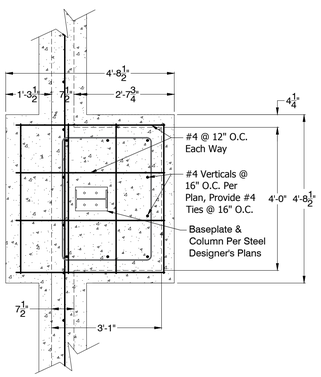


BOTTOM FTG REINF.

A3 detail
SCALE: 3/4" = 1'-0"

A2 detail
SCALE: 3/4" = 1'-0"

A1 PLAN VIEW OF DET. C1/S7 PIER FOOTING
SCALE: 1/2" = 1'-0"



BOTTOM FTG REINF.

Architect:

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Seal:

STATE OF MISSOURI
ANTHONY C. MEISTER
NUMBER PE-024609
PROFESSIONAL ENGINEER

Project Number: 2307

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FOUNDATION DETAILS

S7

MECHANICAL SPECIFICATIONS

1. GENERAL PROVISIONS:
   A. PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR THE COMPLETE INSTALLATION OF THE MECHANICAL SYSTEMS OUTLINED.
   B. OBTAIN ALL PERMITS, FEES, LICENSES, INSPECTIONS, AND CERTIFICATIONS OF COMPLIANCE OR APPROVAL AS REQUIRED BY AUTHORITIES.
   C. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES AND REGULATIONS OF THE GOVERNMENTAL BODIES HAVING JURISDICTION OVER THE SITE.
   D. ALL TESTING REQUIRED BY AUTHORITIES SHALL BE CONSIDERED PART OF THIS WORK.
   E. DURING CONSTRUCTION, ALL FIXTURES, EQUIPMENT, PIPE, DUCT, ETC. SHALL BE COVERED, PLUGGED, OR CAPPED AS REQUIRED TO KEEP CLEAN AND UNDAMAGED. ALL DAMAGED ITEMS SHALL BE RESTORED TO ORIGINAL CONDITION OR REPLACED. ALL PROTECTIVE COVERING SHALL BE REMOVED BEFORE FINAL ACCEPTANCE.
   F. PROVIDE ALL NECESSARY CUTTING AND PATCHING OF WALLS, FLOORS, CEILINGS, AND ROOFS AS NECESSARY. PATCH AROUND ALL OPENINGS SHALL MATCH ADJACENT AREA. COORDINATE ALL ROOFING WORK WITH OWNER OR RESPONSIBLE PARTY, SO THAT THE EXISTING ROOFING WARRANTY WILL BE MAINTAINED.
   G. CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS AGAINST DEFECT FOR A PERIOD OF ONE YEAR FROM FINAL ACCEPTANCE.
   H. INSPECTION OF THE SITE: THIS CONTRACTOR SHALL THOROUGHLY ACQUAINT HIMSELF WITH THE MEP DRAWINGS, SPECIFICATIONS, DETAIL, AND THE SITE. THIS CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY SPECIAL OR UNUSUAL PROBLEMS, CONFLICTS, OR OBSTRUCTIONS THAT AFFECT HIS BID.
   I. FOR THE PURPOSE OF CLEARNESS AND LEGIBILITY, THE MECHANICAL AND PLUMBING DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC AND DO NOT SHOW ALL OFFSETS AND FITTINGS REQUIRED FOR INSTALLATION. DO NOT SCALE DRAWINGS. THE SIZE AND LOCATION OF EQUIPMENT IS SHOWN TO SCALE WHEREVER POSSIBLE. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DATA AS INDICATED ON THE DRAWINGS AND IN THE SPECIFICATION SECTIONS WHERE MECHANICAL WORK INTERFACES WITH OTHER TRADES.
   J. IN THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN ITEMS INDICATED ON THE PLANS OR WITH CODE REQUIREMENTS, THE NOTE OR CODE WHICH PRESCRIBES AND ESTABLISHES THE MORE COMPLETE JOB OR HIGHER STANDARD SHALL PREVAIL.
   K. INSTALL MATERIALS AND SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED SUBMITTALS. INSTALL MATERIALS IN PROPER RELATION WITH ADJACENT CONSTRUCTION AND WITH UNIFORM APPEARANCE FOR EXPOSED WORK. COORDINATE WITH WORK OF OTHER SECTIONS. COMPLY WITH APPLICABLE REGULATIONS AND CODE REQUIREMENTS. PROVIDE PROPER CLEARANCES FOR SERVICING.
   L. INCLUDE ALL BASIC MATERIALS AND CONSTRUCTION METHODS INCLUDING PIPES, PIPE FITTINGS, AND SPECIALTIES AND SUPPORTING DEVICES, VALVES, PIPE AND VALVE IDENTIFICATION, PUMPS, VIBRATION ISOLATION, ETC.
   M. FURNISH ADEQUATE ACCESS PANELS AND DOORS TO ALLOW FOR FUTURE PIPING ALTERATIONS, REPLACEMENT, AND MAINTENANCE OF PIPING. PROPERLY IDENTIFY ALL ACCESS PANELS AND DOORS.

2. OPERATION AND MAINTENANCE MANUALS:
   A. DURING THE COURSE OF CONSTRUCTION, COLLECT AND COMPILE OPERATING INSTRUCTIONS, WIRING DIAGRAMS, CATALOG CUTS, LUBRICATION AND PREVENTIVE MAINTENANCE INSTRUCTIONS, PARTS LISTS, ETC. FOR ALL EQUIPMENT FURNISHED UNDER THIS CONTRACT.
   B. ALL LITERATURE AND INSTRUCTIONS SHIPPED WITH THE EQUIPMENT SHALL BE SAVED FOR INCLUSION IN THE OPERATING AND MAINTENANCE MANUALS.
   C. ALL LITERATURE LISTED ABOVE AND ALL PAPERS LISTING WARRANTIES, ETC. SHALL BE BOUND IN A 3-RING BINDER AND LABELED WITH THE PROJECT NAME, ADDRESS, ARCHITECT, ENGINEER AND CONTRACTORS.

3. MANUFACTURERS:
   A. MANUFACTURERS, MODEL NUMBERS, ETC. INDICATED OR SCHEDULED ON THE DRAWINGS SHALL BE INTERPRETED AS HAVING ESTABLISHED A STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS LIMITING COMPETITION. ARTICLES, FIXTURES, ETC. OF EQUAL QUALITY BY MANUFACTURERS SHALL BE ACCEPTABLE, SUBJECT TO STRUCTURAL AND ELECTRICAL CONSTRAINTS OF THE PROJECT DESIGN.
   B. THE ELECTRICAL SYSTEM DESIGN IS BASED IN PART ON THE SPECIFIED EQUIPMENT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE ELECTRICAL REQUIREMENTS OF THE EQUIPMENT BEING FURNISHED. ANY CHANGES TO THE ELECTRICAL SYSTEM DUE TO HVAC EQUIPMENT OTHER THAN THE SPECIFIED EQUIPMENT BEING FURNISHED SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

4. MOTORS:
   A. PROVIDE THERMAL OVERLOAD PROTECTION FOR EACH MOTOR PROVIDED BY THIS WORK.

5. PIPING
   A. CONDENSATE DRAIN AND INDIRECT WASTE (ABOVEGROUND)
      1. PVC DWV PIPE, SCHEDULE 40, SOLVENT JOINT.
      2. INSTALL AT 1/8" PER FOOT SLOPE.
   B. REFRIGERANT
      1. ASTM B 280, TYPE ACR, HARD DRAWN STRAIGHT LENGTHS, AND SOFT-ANNEALED COILS, SEAMLESS COPPER TUBING.
      2. WROUGHT COPPER, ANSI B16.22, STREAMLINED PATTERN, FITTINGS. BRAZED JOINTS, AWS A 5.8 CLASSIFICATION BAG-1 (SILVER).
      3. TUBING TO BE FACTORY CLEANED, READY FOR INSTALLATION, AND HAVE ENDS CAPPED TO PROTECT CLEANLINESS OF PIPE INTERIORS PRIOR TO SHIPPING.
      4. SIZE AND INSTALLATION OF PIPING SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

6. INSULATION AND DUCT LINING:
   A. ALL INSULATIONS AND ACCESSORIES SHALL HAVE A FIRE HAZARD CLASSIFICATION WITH A FLAME SPREAD RATING OF NOT OVER 25, A FUEL CONTRIBUTION RATING OF NOT OVER 50, AND A SMOKE DEVELOPMENT RATING OF NOT OVER 50, IN ACCORDANCE WITH NFPA.
   B. PIPE INSULATION (ABOVE GRADE):
      1. THE PIPE INSULATION USED SHALL HAVE A THERMAL CONDUCTIVITY OF 0.27 BTU PER IN/HR*SQ-FT*°F OR LESS.
      2. FLEXIBLE CLOSED CELL ELASTOMERIC THERMAL INSULATION, UNSLIT OR PRESLIT WITH PRESSURE SENSITIVE ADHESIVE SYSTEM FOR CLOSURE AND VAPOR SEALING, EQUAL TO ARMSTRONG AP ARMAFLEX OR ARMAFLEX 2000.
      3. INSULATION SCHEDULE:
         a. REFRIGERANT SUCTION: 1-1/2" FOR PIPING UP TO 1-1/2"ø, 2" FOR PIPING 1-1/2"ø AND LARGER.
   C. DUCTWORK INSULATION:
      1. DUCT COVERING: 3/4 LB/CF, FIBERGLASS BLANKET WITH FACTORY APPLIED VAPOR BARRIER AND FACING. THICKNESS AS SCHEDULED, INSTALLATION IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. DUCT COVERING SHALL BE MINIMUM R-6.
         a. SUPPLY AIR DUCT: 2"
         b. RETURN AIR DUCT: 2"

7. TESTING, BALANCING AND CLEANING:
   A. ALL PIPING SHALL BE TESTED FOR LEAKS BEFORE BEING CONCEALED IN WALL CONSTRUCTION OR COVERED WITH INSULATION.
   B. DUCTWORK AND PIPING SHALL BE BALANCED BY QUALIFIED BALANCING PERSONNEL WHO HAVE PREVIOUS EXPERIENCE WITH BALANCING PROCEDURES AND ARE FAMILIAR WITH TESTING AND BALANCING PROCEDURES OF THE ASSOCIATED AIR BALANCE COUNCIL (AABC) OR NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB).
      1. BALANCING SHALL INCLUDE THE BALANCING OF THE EQUIPMENT AND AIR DISTRIBUTION SYSTEMS TO PROVIDE DESIGN QUANTITIES INDICATED AND VERIFICATION PERFORMANCE OF ALL EQUIPMENT AND AUTOMATIC CONTROLS.
      2. WITH IN 30 DAYS OF THE COMPLETION OF THE TESTING AND BALANCING WORK, SUBMIT THE TEST AND BALANCING REPORT BEARING THE SIGNATURE OF THE TEST AND BALANCE ENGINEER. THE REPORTS SHALL BE CERTIFIED PROOF THAT THE SYSTEMS HAVE BEEN TESTED, ADJUSTED, AND BALANCED IN ACCORDANCE WITH THE REFERENCED STANDARDS; ARE AN ACCURATE REPRESENTATION OF HOW THE SYSTEMS HAVE BEEN INSTALLED AND ARE OPERATING. REPORTS SHALL BE BOUND IN A VINYL BINDER AND THE BINDER LABELLED OR MAY BE AN ELECTRONIC PDF SUBMITTAL.

8. DUCTWORK:
   A. ALL DUCTWORK UNLESS OTHERWISE INDICATED SHALL BE FABRICATED FROM GALVANIZED SHEET STEEL COMPLYING WITH ASTM A 527, LOCKFORMING QUALITY, WITH G60 ZINC COATING IN ACCORDANCE WITH ASTM A 525, AND MILL PHOSPHATIZED FOR EXPOSED LOCATIONS.
   B. DUCTWORK METAL GAUGES, REINFORCING, ETC SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS," LATEST EDITION FOR A 2" WATER GAUGE STATIC PRESSURE.
   C. ALL FITTINGS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS," LATEST EDITION.
   D. RECTANGULAR DUCT:
      1. ELBOWS, UNLESS INDICATED OTHERWISE, SHALL BE CONSTRUCTED WITH CENTERLINE RADIUS OF NOT LESS THAN 1.5 DUCT WIDTH OR SQUARE ELBOWS WITH DOUBLE WALL STREAMLINE ELBOWS.
      2. TAKE-OFF FITTINGS: BRANCH DUCT TAKE-OFF FITTINGS FOR SUPPLY AND EXHAUST DIFFUSER/REGISTERS SHALL INCLUDE AN INTEGRAL MANUAL VOLUME DAMPER WITH LOCKING QUADRANT, DAMPER NOT REQUIRED ON RETURN AIR. FOR RECTANGULAR TO ROUND TAKE-OFFS, UTILIZE A "BUCKLEY" MODEL 3300 & 3300D OR EQUAL.
      3. RETURN AIR ACOUSTIC ELBOWS AND SOUND BOOTS SHALL BE A SQUARE ELBOW WITH NO TURNING VANES.
      4. SLOPES FOR TRANSITIONS OR OTHER CHANGES IN DIMENSIONS SHALL BE A MINIMUM 1 TO 3.
   E. ROUND DUCT (SEE INSULATION SECTION FOR SPIRAL DUCT):
      1. PROVIDE RADIUS TYPE FITTINGS FABRICATED OF MULTIPLE SECTIONS WITH MAXIMUM 15 DEGREE CHANGE OF DIRECTION PER SECTION. UNLESS SPECIFICALLY DETAILED OTHERWISE, USE 45 DEGREE LATERALS FOR BRANCH TAKEOFF CONNECTIONS. WHERE 90 DEGREE BRANCHES ARE INDICATED PROVIDE CONICAL TYPE TEES.
      2. SLOPES FOR TRANSITIONS OR OTHER CHANGES IN DIMENSIONS SHALL BE MINIMUM 1 TO 3.
      3. ROUND LONGITUDINAL SEAM DUCT: USE FOR RIGID METAL DUCT ON LEAVING SIDE OF DUCT IN CONCEALED LOCATIONS FOR EXTENSION TO FLEX FOR DIFFUSERS.
   F. SEAL ALL CONCEALED DUCTWORK JOINTS WITH NON-HARDENING, NON-MIGRATING MASTIC SEALANT, AS RECOMMENDED FOR SEALING SEAMS AND JOINTS IN DUCTWORK. OIL BASED CAULKING AND GLAZING COMPOUNDS SHALL NOT BE ACCEPTABLE. DUCTS SHALL BE SEALED TO THE CLASS LEVEL LISTED BELOW:

(1) UNCONDITIONED SPACES:	CLASS B	CLASS C	CLASS B	
(2) CONDITIONED SPACES (PLENUM):	CLASS C	CLASS B	CLASS C	
	SUPPLY 2"WC OR LESS		EXHAUST	RETURN

   G. DUCT SIZES SHOWN ON THE DRAWINGS ARE SHEET METAL SIZES. INCREASE SHEET METAL SIZES ACCORDINGLY TO ACCOUNT FOR THICKNESS OF DUCT LINER.
   H. WHETHER SHOWN ON PLANS OR NOT, PROVIDE MANUAL VOLUME DAMPERS IN EACH RUNOUT TO EACH SUPPLY DIFFUSER OR REGISTER. PROVIDE ACCESS PANELS TO DAMPERS LOCATED ABOVE HARD CEILINGS.
   I. PROVIDE AUXILIARY STEEL AS REQUIRED TO ADEQUATELY SUPPORT DUCTWORK.
   J. WHERE DUCTS PASS THROUGH FIRE-RATED FLOORS, WALLS, OR PARTITIONS, PROVIDE FIRESTOPPING BETWEEN DUCT AND WALL.
   K. WHERE DUCTS PASS THROUGH INTERIOR PARTITIONS OR EXTERIOR WALLS, AND ARE EXPOSED TO VIEW, CONCEAL SPACE BETWEEN OPENING AND DUCT OR DUCT INSULATION WITH SHEET METAL FLANGES OF SAME GAUGE AS DUCT. OVERLAP OPENING ON 4 SIDES BY AT LEAST 1-1/2". FASTEN TO DUCT AND WALL.

9. FLEXIBLE DUCT:
   A. ATCO #086 (R-6), OR EQUAL.
   B. FACTORY APPLIED INSULATION AND VAPOR BARRIER, 1-1/2" THICK.
   C. MAXIMUM LENGTH OF 6'-0".

10. FLUES AND ACCESSORIES:
   A. PROVIDE MANUFACTURER'S STANDARD ACCESSORY ITEMS INCLUDING BIRD PROOF TOP, STORM COLLAR, ROOF THIMBLE, ETC. AS REQUIRED FOR A COMPLETE INSTALLATION. ROOF THIMBLES THROUGH THE BUILDING ROOF SHALL BE SUITABLE FOR USE WITH THE ROOF PROVIDED.
   B. FLUES FOR HEATERS SHALL BE DOUBLE WALL TYPE B EQUAL TO METALBESTOS. PROVIDE MANUFACTURER'S STANDARD FITTING AND ACCESSORIES (ROOF THIMBLE, STORM COLLAR, COUNTER FLASHING, ETC.) AS REQUIRED FOR A COMPLETE INSTALLATION.

11. EXHAUST FANS:
   A. CENTRIFUGAL CEILING EXHAUSTERS SHALL BE ELECTRICALLY POWERED CENTRIFUGAL TYPE FAN SUITABLE FOR MOUNTING IN THE CEILING WITH A PERFORATED OFF-WHITE METAL GRILLE WITH A THUMBSCREW ATTACHMENT FOR EASY ACCESS TO FAN HOUSING. UNIT SHALL CONSIST OF A GALVANIZED STEEL HOUSING LINED WITH ACOUSTICAL INSULATION AND SHALL INCLUDE AN INTEGRAL BACKDRAFT DAMPER ON FAN DISCHARGE. MOTOR SHALL BE A PERMANENT SPLIT-CAPACITOR TYPE MOTOR, PERMANENTLY LUBRICATED WITH THERMAL OVERLOAD PROTECTION. PROVIDE DISCONNECT SWITCH OR OTHER MEANS OF DISCONNECT AT MOTOR IN FAN HOUSING.

12. FURNACE AND CONDENSING UNIT:
   A. CONDENSING FURNACES:
      1. GAS FIRED FURNACE SHALL BE FACTORY ASSEMBLED, PRE-WIRED UNIT CONSISTING OF SHEETMETAL CASING, SUPPLY FAN, GAS FIRED HEAT EXCHANGER, AND CONTROLS. CAPACITY SHALL BE AS SCHEDULED.
      2. THE PRIMARY HEAT EXCHANGER SHALL BE ALUMINIZED STEEL CONSTRUCTION WITH A STAINLESS STEEL SECONDARY HEAT EXCHANGER.
      3. THE FURNACE SHALL BE OF THE CONDENSING TYPE, UTILIZING A SEALED COMBUSTION CHAMBER. UNIT SHALL INCLUDE FINNED CAST IRON HEAT EXCHANGER, ALUMINIZED STEEL EXHAUST DECOUPLER SECTION AND FINNED STAINLESS STEEL TUBE CONDENSER SECTION.
      4. THE UNIT SHALL BE EQUIPPED WITH THE MANUFACTURER'S STANDARD CONTROLS INCLUDING 24V CONTROL TRANSFORMER, AUTOMATIC SPARK IGNITION, AUTOMATIC GAS VALVE TRAIN, HIGH TEMPERATURE LIMIT SWITCH, AND FAN TIMED DELAY RELAY.
      5. RETURN AIR INLET ON UNIT SHALL BE PROVIDED WITH 1" THROWAWAY TYPE FILTER AND SLIDE IN FRAME, MOUNTED ON THE UNIT.
      6. FAN SHALL BE A DIRECT DRIVE MULTI-SPEED BLOWER, RESILIENTLY MOUNTED IN THE CASING. MOTOR SHALL BE PROVIDED WITH AUTOMATIC THERMAL OVERLOAD PROTECTION.
      7. FURNACE SHALL BE ACA APPROVED.
   B. CONDENSING UNIT SHALL BE FACTORY ASSEMBLED AND TESTED AIR-COOLED CONDENSING UNIT CONSISTING OF COMPRESSOR, CONDENSER COIL, FAN, MOTOR, REFRIGERANT RESERVOIR, OPERATING CONTROLS, ETC. CAPACITY AND ELECTRICAL CHARACTERISTICS SHALL BE AS SCHEDULED.
      1. COMPRESSOR: HERMETICALLY SEALED WITH BUILT-IN OVERLOADS AND VIBRATION ISOLATION. COMPRESSOR MOTOR SHALL HAVE THERMAL AND CURRENT SENSITIVE OVERLOAD DEVICES, INTERNAL HIGH PRESSURE PROTECTION, HIGH AND LOW PRESSURE CUTOUT SWITCHES, START CAPACITOR AND RELAY, 2-POLE CONTACTOR, CRANKCASE HEATER, AND TEMPERATURE ACTUATED SWITCH AND TIMER TO PREVENT COMPRESSOR RAPID CYCLE.
      2. COIL SHALL BE COPPER TUBING WITH ALUMINUM FINS: COMPLETE WITH LIQUID ACCUMULATOR AND LIQUID SUBCOOLER. UNIT SHALL INCLUDE FILTER DRYER, SIGHT GLASS, COMPRESSOR SERVICE VALVE, LIQUID LINE SERVICE VALVE, AND REFRIGERANT PIPING EXTENDED TO EXTERIOR OF CASING.

13. ELECTRIC WALL HEATERS
   A. UNIT SHALL INCLUDE ELECTRIC HEATING ELEMENTS WITH SAFETY AND DISCONNECT DEVICES AS REQUIRED BY NEC, INCLUDING RELAYS, CONTROLLERS AND REQUIRED EQUIPMENT TO FORM A COMPLETE AND FUNCTIONAL HEATER.
   B. ELEMENTS SHALL BE HEAVY DUTY ALUMINUM-FINNED, COPPER CLAD STEEL SHEATH. PROVIDE AUTOMATIC RESET THERMAL OVER-HEAT PROTECTION. THERMAL PROTECTOR SHALL BE LINEAR TYPE TO SENSE TEMPERATURES THE ENTIRE LENGTH OF HEATING ELEMENT.
   C. FANS SHALL BE DIRECT DRIVE USING PERMANENT SPLIT CAPACITOR TYPE MOTORS WITH BUILT-IN AUTOMATIC RESET MOTOR OVERLOAD PROTECTION.
   D. FURNISH INTEGRAL FAN DELAY SWITCH TO PREVENT DISCHARGE OF COLD AIR, BY DELAYING START-UP OF THE FAN MOTOR UNTIL HEATING ELEMENTS HAVE WARMED UP. FAN DELAY SWITCH SHALL MAINTAIN MOTOR OPERATION AFTER HEATING ELEMENTS HAVE BEEN DE-ENERGIZED TO DISSIPATE ANY RESIDUAL HEAT.

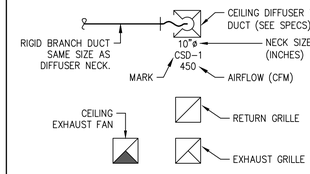
MECHANICAL SYMBOLS

THIS IS A MASTER LEGEND AND NOT ALL SYMBOLS, ETC, ARE NECESSARILY USED ON THE DRAWINGS.

HVAC EQUIPMENT & DUCTWORK

- SPIN-IN FITTING WITH MANUAL VOLUME DAMPER
- BRANCH DUCT WITH 45° RECTANGLE-ROUND BRANCH FITTING AND MANUAL VOLUME DAMPER
- ELBOW WITH TURNING VANES
- RETURN, EXHAUST, OR OUTSIDE AIR DUCT UP
- RETURN, EXHAUST, OR OUTSIDE AIR DUCT DOWN
- SUPPLY AIR DUCT UP
- SUPPLY AIR DUCT DOWN
- EQUIPMENT WITH FLEXIBLE DUCT CONNECTION
- MANUAL VOLUME DAMPER
- SQUARE TO ROUND TRANSITION
- DUCT TRANSITION
- BRANCH DUCT
- DUCT MOUNTED SMOKE DETECTOR

FD	FIRE DAMPER	CO2	CARBON DIOXIDE SENSOR
FSD	FIRE SMOKE DAMPER	HS	HUMIDITY SENSOR
SD	SMOKE DAMPER	SP	STATIC PRESSURE SENSOR
MD	MOTORIZED DAMPER	TS	TEMPERATURE SENSOR
BD	BACKDRAFT DAMPER	H	HUMIDISTAT
VD	VOLUME DAMPER	T	THERMOSTAT



ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	MC	MECHANICAL CONTRACTOR
BAS	BUILDING AUTOMATION SYSTEM	MIN	MINIMUM
BD	BACKDRAFT	NC	NOISE CRITERIA
CFM	CUBIC FEET PER MINUTE	OA	OUTSIDE AIR
DDC	DIRECT DIGITAL CONTROL	RA	RETURN AIR
DX	DIRECT EXPANSION	SA	SUPPLY AIR
EA	EXHAUST AIR	SD	SMOKE DUCT DETECTOR
FFA	FROM FLOOR ABOVE	TFA	TO FLOOR ABOVE
FFB	FROM FLOOR BELOW	TFB	TO FLOOR BELOW
GPM	GALLONS PER MINUTE	TYP	TYPICAL
IN WC	INCHES OF WATER COLUMN	UNO	UNLESS NOTED OTHERWISE
MAX	MAXIMUM	W/	WITH
MBH	1000 BTU PER HOUR	W/O	WITHOUT

STANDARD MOUNTING HEIGHTS

(AFF, UNLESS NOTES OTHERWISE)

THERMOSTATS (USER ADJUSTABLE) (TOP OF DEVICE)	48"
CONTROLS (TOP OF DEVICE)	48"

ANNOTATION

- (#) PLAN WORK NOTE
- (RTU 1) MECHANICAL EQUIPMENT DESIGNATION (CONTRACTOR FURNISHED AND INSTALLED UNLESS NOTED OTHERWISE)
- CONNECTION POINT OF NEW WORK TO EXISTING
- (A / M1) DETAIL REFERENCE UPPER NUMBER INDICATED DETAIL NUMBER LOWER NUMBER INDICATES SHEET NUMBER
- (1 / M1) SECTION CUT DESIGNATION

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Issue:	Date:
Permit Set	08.31.23

Sheet Title:
MECHANICAL SPECIFICATIONS AND SYMBOLS

M-001

GAS FURNACE SCHEDULE

GENERAL DATA						HEATING				FAN DATA				ELECTRICAL					
TAG	BASIS OF DESIGN MFR/MODEL	FLOW DIRECTION	WEIGHT (LBS)	DIMENSIONS (WxDxH)	OUTSIDE AIR (CFM)	INPUT (BTUH)	OUTPUT (BTUH)	AFUE	VENT	TYPE	HP	CFM	ESP (IN WG)	VOLT	PHASE	HZ	MOCP	MCA	NOTES
F-1	LENNOX / EL296UH070XV36B	HORIZONTAL	136	29.25x33x17.5	0	66,000	62,000	96	CONCENTRIC	VARIABLE	1/2	840	0.5	120	1	60	15	7.7	A,B,C,D,E

NOTES:
A. EXTERNAL STATIC PRESSURE LISTED REPRESENTS STATIC PRESSURE REQUIRED FOR DUCTWORK AND DIFFUSERS OUTSIDE THE HVAC UNIT COMPLETELY INDEPENDENT OF ANY PRESSURE DROP THROUGH THE HVAC EQUIPMENT INCLUDING FILTER AND COIL.
B. PROVIDE UNIT WITH 7-DAY PROGRAMMABLE HEAT/COOL/AUTO CHANGEOVER MULTISTAGE THERMOSTAT.
C. PROVIDE MANUFACTURER'S CONCENTRIC VENT KIT. SIZE AND INSTALL PER MANUFACTURER'S WRITTEN INSTRUCTIONS WHILE ADHERING TO LENGTH AND FITTING LIMITATIONS.
D. PROVIDE END RETURN FILTER KIT.
E. ADJUST FACTORY DEFAULT SETTINGS TO LIMIT BLOWER SPEED TO 840 CFM.

CONDENSING UNIT SCHEDULE

GENERAL DATA						ELECTRICAL					COOLING COIL & MISC.		NOTES
TAG	BASIS OF DESIGN MFR/MODEL	LOCATION	WEIGHT (LBS)	DIMENSIONS (WxDxH) (IN.)	NOMINAL CAP. (MBH)	VOLT	PHASE	HZ	MOCP	MCA	REFR.	EVAP COIL MODEL #	
CU-1	LENNOX / XC20-024-230	ROOF	243	35.5x39.5x39	24	208	1	60	30	19.1	R410A	CH35-24B-2F	A,B,C

NOTES:
A. PROVIDE TIME DELAY ON COMPRESSOR RE-START KIT, CRANKCASE HEATER, AND COMPRESSOR LOCK-OUT WITH AMBIENT BELOW 35F.
B. MECHANICAL CONTRACTOR SHALL COORDINATE ALL UNIT MOCP'S OF ACTUAL INSTALLED EQUIPMENT WITH ELECTRICAL CONTRACTOR.
C. PROVIDE MIN. 4" TALL PRE-MANUFACTURED POLYOLEFIN PAD.

EXHAUST FAN SCHEDULE

MARK	AREA SERVED	MANUFACTURER OR APPROVED EQUAL	MODEL	MOUNTING LOCATION	CFM	ESP (IN)	DRIVE	HP	ELECTRICAL VOLTS	ELECTRICAL PHASE	WEIGHT	NOTES
EF-1	RESTROOM	PANASONIC	FV-0511VK2	CEILING / CABINET	110	0.375	DIRECT	9.9 W	120	1	12	A, B,C

NOTES:
A. INSTALL EXHAUST FAN PER MANUFACTUER'S WRITTEN INSTRUCTIONS.
B. INTERLOCK FAN OPERATION WITH LIGHT SWITCH.
C. PROVIDE GRAVITY BACKDRAFT DAMPER AND INTERGRAL DISCONNECT.

GAS UNIT HEATER SCHEDULE

PLAN MARK	MANUFACTURER OR APPROVED EQUAL	MODEL	CFM	MOTOR HP	INPUT (MBH)	OUTPUT (MBH)	EFF.	ELECTRICAL	REMARKS
UH-1	MODINE	HD	1,980	1/8	125	102.5	83.00%	115V/1PH	1,2

REMARKS:
1. PROVIDE WITH UNIT-MOUNTED THERMOSTAT, CONTROL TRANSFORMER, 30 DEGREE DISCHARGE HOOD.
2. PROVIDE WITH INTEGRAL FUSED DISCONNECT.

ELECTRIC UNIT HEATER SCHEDULE

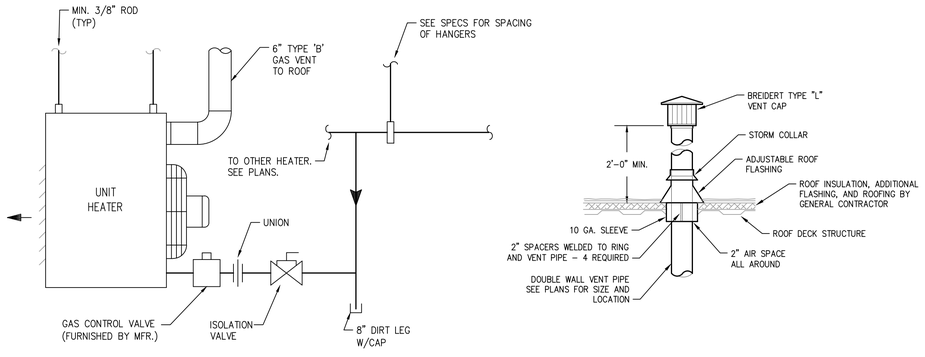
MARK	MANUFACTURER OR APPROVED EQUAL	MODEL	WEIGHT	CFM	KW	VOLTAGE/PH	REMARKS
EH-1	QMARK	MUH0371	27 LBS	350	3	277/1	1,2

REMARKS:
1. PROVIDE WALL MOUNT BRACKET, MOUNT 10' AFF.
2. PROVIDE WITH INTEGRAL THERMOSTAT AND DISCONNECT.

DIFFUSER, REGISTER AND GRILLE SCHEDULE

MARK	MANUFACTURER	MODEL	FACE TYPE	MOUNTING TYPE	FACE SIZE (IN.)	MAX NC	NOTES
SUPPLY							
CSD-1	TITUS	OMNI	PLAQUE FACE	LAY-IN	24x24	25	A,B,C
CSD-2	TITUS	TDC	LOUVERED	SURFACE	12.5x12.5	25	A,B,C
RETURN							
CRG-1	TITUS	50F	EGGCRATE	LAY-IN	24x24	25	A,B,C,D

NOTES:
A. NECK SIZE SHOWN ON DRAWINGS.
B. BAKED ENAMEL FINISH, WHITE
C. FRAME TYPE TO MATCH CEILING CONSTRUCTION, COORDINATE WITH ARCHITECTURAL REFLECTED CEILING PLAN.
D. PAINT THE INSIDE OF CANS FLAT BLACK.



GAS FIRED UNIT HEATER

SCALE : NO SCALE

1

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Permit Set	08.31.23

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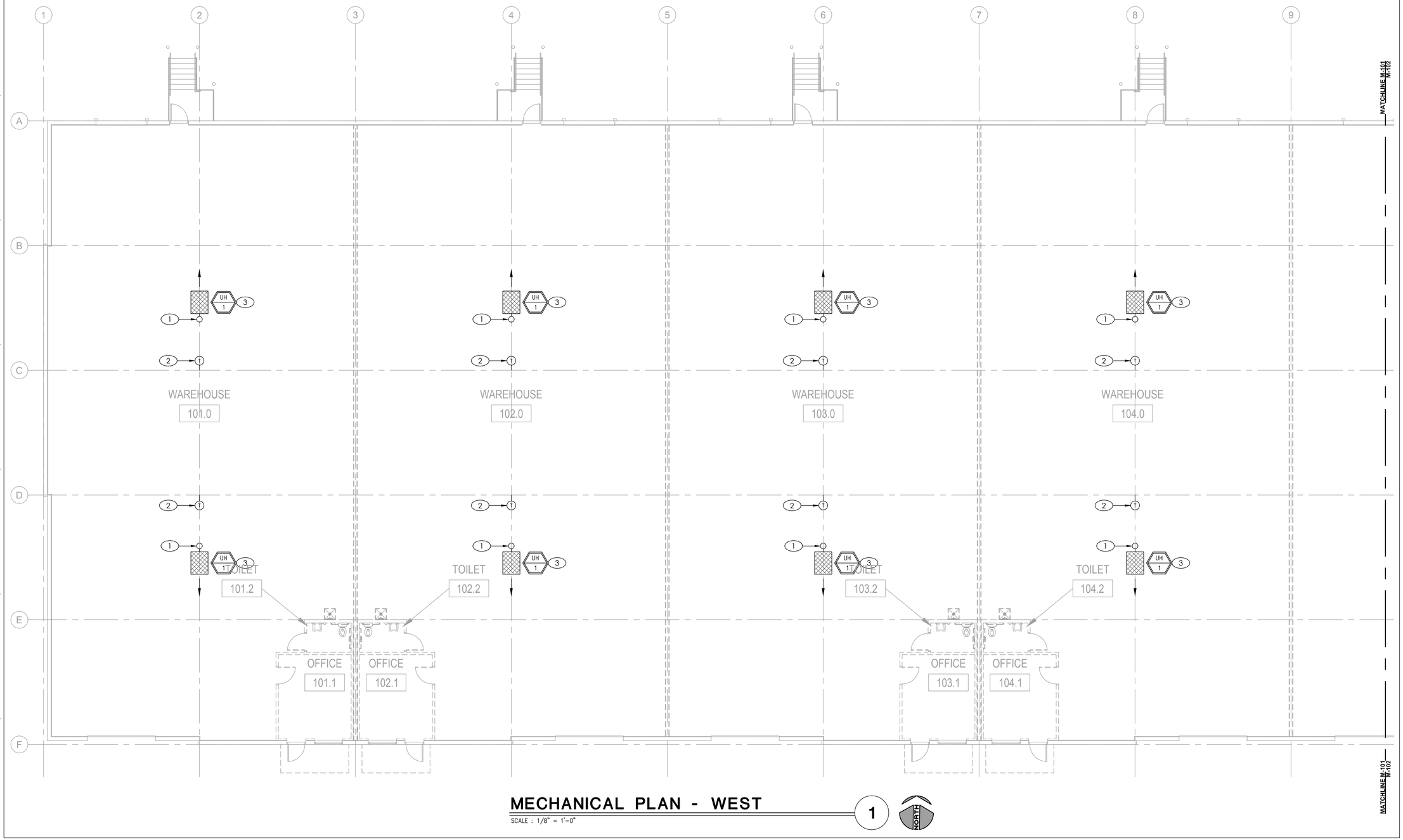
MECHANICAL SCHEDULES AND DETAILS

M-002

(#) KEYED PLAN NOTES

1. 6" DIA FLUE THROUGH ROOF. COORDINATE PENETRATION THROUGH ROOF AND ROOFING MEMBRANE WITH ROOFING CONTRACTOR SO NOT TO VOID ROOF WARRANTY. SEAL ROOF PENETRATION WEATHERTIGHT.
2. UNIT HEATER THERMOSTAT MOUNTED AT 54" AFF. ROUTE ALL CONTROL WIRING IN 3/4" CONDUIT DOWN COLUMN. MOUNT ON NORTH/SOUTH SIDE OF COLUMN.
3. GAS FIRED UNIT HEATER, LOCATED 10' FROM COLUMN. SUPPORT FROM OVERHEAD STRUCTURE AS REQUIRED. PROVIDE ANY SUPPLEMENTAL STEEL REQUIRED.



MECHANICAL PLAN - WEST

SCALE : 1/8" = 1'-0"

1

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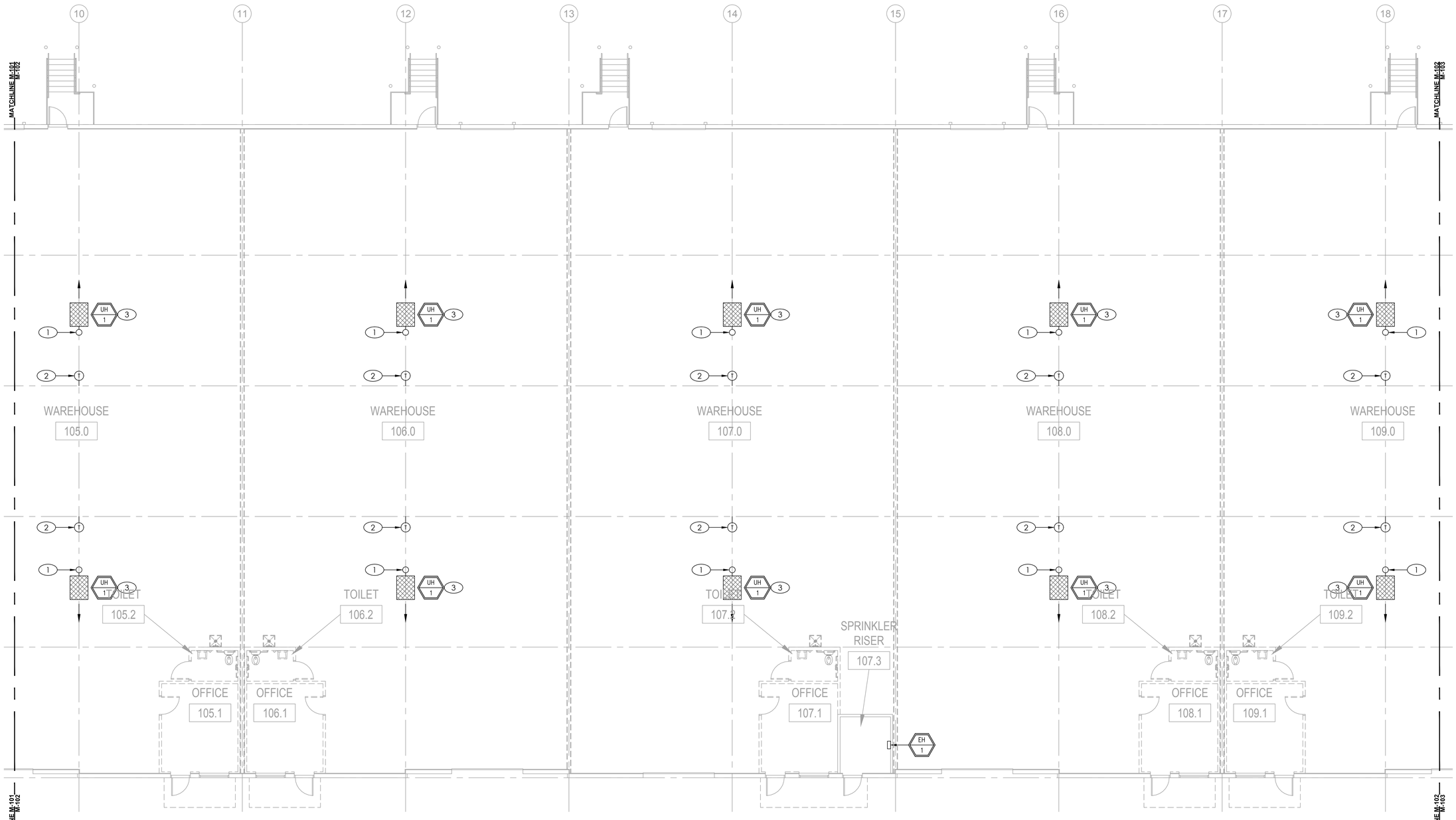
PARTIAL MECHANICAL PLAN - WEST

M-101

(#) KEYED PLAN NOTES

1. 6" DIA FLUE THROUGH ROOF. COORDINATE PENETRATION THROUGH ROOF AND ROOFING MEMBRANE WITH ROOFING CONTRACTOR SO NOT TO VOID ROOF WARRANTY. SEAL ROOF PENETRATION WEATHERTIGHT.
2. UNIT HEATER THERMOSTAT MOUNTED AT 54" AFF. ROUTE ALL CONTROL WIRING IN 3/4" CONDUIT DOWN COLUMN. MOUNT ON NORTH/SOUTH SIDE OF COLUMN.
3. GAS FIRED UNIT HEATER, LOCATED 10' FROM COLUMN. SUPPORT FROM OVERHEAD STRUCTURE AS REQUIRED. PROVIDE ANY SUPPLEMENTAL STEEL REQUIRED.



MECHANICAL PLAN - CENTER

SCALE : 1/8" = 1'-0"

1

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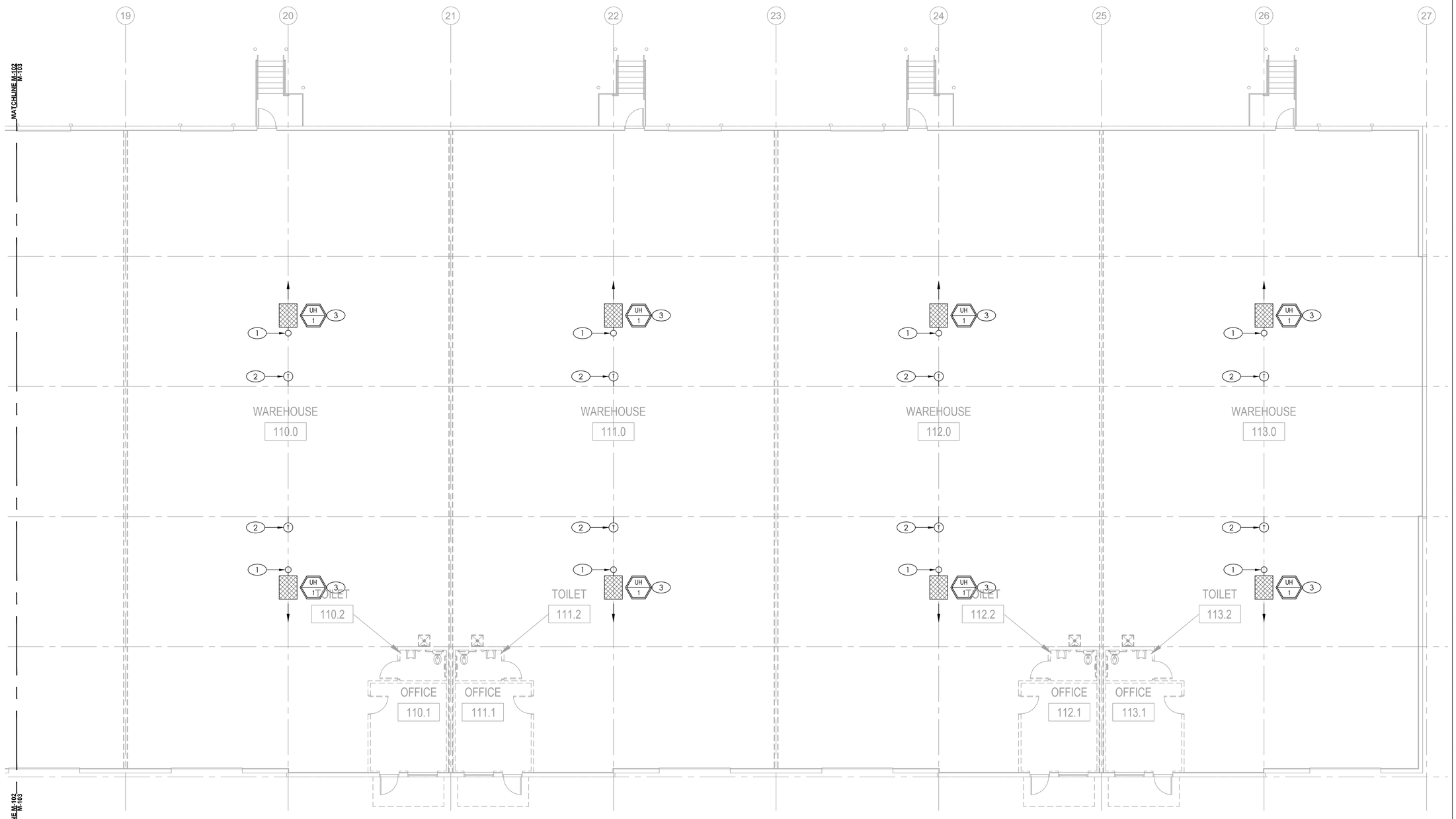
Sheet Title:

PARTIAL MECHANICAL PLAN - CENTER

M-102

KEYED PLAN NOTES

1. 6" DIA FLUE THROUGH ROOF. COORDINATE PENETRATION THROUGH ROOF AND ROOFING MEMBRANE WITH ROOFING CONTRACTOR SO NOT TO VOID ROOF WARRANTY. SEAL ROOF PENETRATION WEATHERTIGHT.
2. UNIT HEATER THERMOSTAT MOUNTED AT 54" AFF. ROUTE ALL CONTROL WIRING IN 3/4" CONDUIT DOWN COLUMN. MOUNT ON NORTH/SOUTH SIDE OF COLUMN.
3. GAS FIRED UNIT HEATER, LOCATED 10' FROM COLUMN. SUPPORT FROM OVERHEAD STRUCTURE AS REQUIRED. PROVIDE ANY SUPPLEMENTAL STEEL REQUIRED.



MECHANICAL PLAN - EAST

SCALE : 1/8" = 1'-0"

1

NORTH

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Seal:

STATE OF MISSOURI
JUSTIN R. SMOTHERS
NUMBER PE-2012003568
PROFESSIONAL ENGINEER

08-31-2023

Project Number: 23-015
Project Type: NEW CONSTRUCTION
Project Name and Address:

LAKEWOOD BUSINESS CENTER, LOT 1

NE Maguire Blvd.
Lee's Summit, Missouri 64064

Issue:	Date:
Permit Set	08.31.23

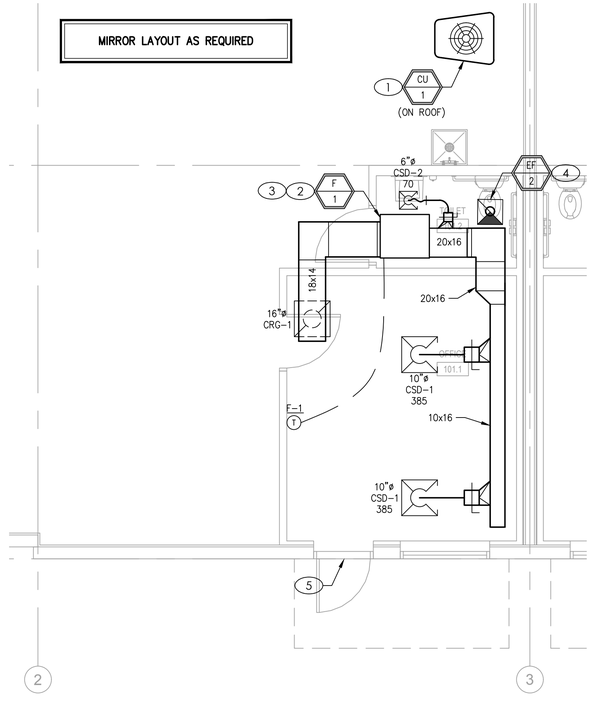
Sheet Title:

PARTIAL MECHANICAL PLAN - EAST

M-103

(#) KEYED PLAN NOTES

1. CONDENSING UNIT ON ROOF ON PREMANUFACTURED PAD. INSTALL PER MANUFACTURER'S INSTRUCTIONS MAINTAINING RECOMMENDED SERVICE CLEARANCES. WEATHER SEAL REFRIGERANT LINE PENETRATIONS OF BUILDING. PROVIDE ALL RECOMMENDED VALVES, FILTERS, FITTINGS, ETC. AND MAKE ALL NECESSARY CONNECTIONS TO COOLING COIL.
2. MOUNT HORIZONTAL FURNACE AND COIL ABOVE RESTROOM CEILING. TRANSITION DUCTWORK TO UNIT AS REQUIRED. AT RETURN PROVIDE MANUFACTURER'S END RETURN FILTER KIT AND FILTER. ROUTE CONDENSATE DRAINS FROM FURNACE AND COIL TO FLOOR DRAIN BELOW.
3. PROVIDE CONCENTRIC VENT FOR FURNACE INSTALLED PER MANUFACTURER'S WRITTEN INSTRUCTIONS. ADHERE TO SIZE AND LENGTH LIMITATIONS. ROUTE TO ROOF OR WALL. COORDINATE LOCATION WITH GC PRIOR TO INSTALLATION.
4. CEILING MOUNT EXHAUST FAN. ROUTE 6"ø EXHAUST DUCT UP THROUGH ROOF TO ROOF CAP. SEAL ROOF PENETRATION WEATHER TIGHT.
5. VENTILATION AIR FOR OFFICE IS BY OPERABLE DOOR. 3'X7' DOOR PROVIDES 21 SQFT OF OPEN AREA. BY THE 4% RULE PER IMC SECTION 402, MIN REQUIRED VENTILATION AREA IS 0.04*190 SQFT=7.6 SQFT.



FUTURE OFFICES (BID AS T.I. ADD ALTERNATIVE) 1

SCALE : 1/4" = 1'-0"

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ENLARGED MECHANICAL PLAN

M-104

PLUMBING SPECIFICATIONS

1. GENERAL PROVISIONS:
   A. PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR THE COMPLETE INSTALLATION OF THE PLUMBING SYSTEMS OUTLINED.
   B. OBTAIN ALL PERMITS, FEES, LICENSES, INSPECTIONS, AND CERTIFICATIONS OF COMPLIANCE OR APPROVAL AS REQUIRED BY AUTHORITIES.
   C. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES AND REGULATIONS OF THE GOVERNMENTAL BODIES HAVING JURISDICTION OVER THE SITE.
   D. ALL TESTING REQUIRED BY AUTHORITIES SHALL BE CONSIDERED PART OF THIS WORK.
   E. DURING CONSTRUCTION, ALL FIXTURES, EQUIPMENT, PIPE, DUCT, ETC. SHALL BE COVERED, PLUGGED, OR CAPPED AS REQUIRED TO KEEP CLEAN AND UNDAMAGED. ALL DAMAGED ITEMS SHALL BE RESTORED TO ORIGINAL CONDITION OR REPLACED. ALL PROTECTIVE COVERING SHALL BE REMOVED BEFORE FINAL ACCEPTANCE.
   F. PROVIDE ALL NECESSARY CUTTING AND PATCHING OF WALLS, FLOORS, CEILINGS, AND ROOFS AS NECESSARY. PATCH AROUND ALL OPENINGS SHALL MATCH ADJACENT AREA. COORDINATE ALL ROOFING WORK WITH OWNER OR RESPONSIBLE PARTY, SO THAT THE EXISTING ROOFING WARRANTY WILL BE MAINTAINED.
   G. CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS AGAINST DEFECT FOR A PERIOD OF ONE YEAR FROM FINAL ACCEPTANCE.
   H. INSPECTION OF THE SITE: THIS CONTRACTOR SHALL THOROUGHLY ACQUAINT HIMSELF WITH THE MEP DRAWINGS, SPECIFICATIONS, DETAIL, AND THE SITE. THIS CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY SPECIAL OR UNUSUAL PROBLEMS, CONFLICTS, OR OBSTRUCTIONS THAT AFFECT HIS BID.
   I. FOR THE PURPOSE OF CLEARNESS AND LEGIBILITY, THE MECHANICAL AND PLUMBING DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC AND DO NOT SHOW ALL OFFSETS AND FITTINGS REQUIRED FOR INSTALLATION. DO NOT SCALE DRAWINGS. THE SIZE AND LOCATION OF EQUIPMENT IS SHOWN TO SCALE WHEREVER POSSIBLE. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DATA AS INDICATED ON THE DRAWINGS AND IN THE SPECIFICATION SECTIONS WHERE MECHANICAL WORK INTERFACES WITH OTHER TRADES.
   J. IN THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN ITEMS INDICATED ON THE PLANS OR WITH CODE REQUIREMENTS, THE NOTE OR CODE WHICH PRESCRIBES AND ESTABLISHES THE MORE COMPLETE JOB OR HIGHER STANDARD SHALL PREVAIL.
   K. INSTALL MATERIALS AND SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED SUBMITTALS. INSTALL MATERIALS IN PROPER RELATION WITH ADJACENT CONSTRUCTION AND WITH UNIFORM APPEARANCE FOR EXPOSED WORK. COORDINATE WITH WORK OF OTHER SECTIONS. COMPLY WITH APPLICABLE REGULATIONS AND CODE REQUIREMENTS. PROVIDE PROPER CLEARANCES FOR SERVICING.
   L. INCLUDE ALL BASIC MATERIALS AND CONSTRUCTION METHODS INCLUDING PIPES, PIPE FITTINGS, AND SPECIALTIES AND SUPPORTING DEVICES, VALVES, PIPE AND VALVE IDENTIFICATION, PUMPS, VIBRATION ISOLATION, ETC.
   M. FURNISH ADEQUATE ACCESS PANELS AND DOORS TO ALLOW FOR FUTURE PIPING ALTERATIONS, REPLACEMENT, AND MAINTENANCE OF PIPING. PROPERLY IDENTIFY ALL ACCESS PANELS AND DOORS.

2. OPERATION AND MAINTENANCE MANUALS:
   A. DURING THE COURSE OF CONSTRUCTION, COLLECT AND COMPILE OPERATING INSTRUCTIONS, WIRING DIAGRAMS, CATALOG CUTS, LUBRICATION AND PREVENTIVE MAINTENANCE INSTRUCTIONS, PARTS LISTS, ETC. FOR ALL EQUIPMENT FURNISHED UNDER THIS CONTRACT.
   B. ALL LITERATURE AND INSTRUCTIONS SHIPPED WITH THE EQUIPMENT SHALL BE SAVED FOR INCLUSION IN THE OPERATING AND MAINTENANCE MANUALS.
   C. ALL LITERATURE LISTED ABOVE AND ALL PAPERS LISTING WARRANTIES, ETC. SHALL BE BOUND IN A 3-RING BINDER AND LABELED WITH THE PROJECT NAME, ADDRESS, ARCHITECT, ENGINEER AND CONTRACTORS.

3. MANUFACTURERS:
   A. MANUFACTURERS, MODEL NUMBERS, ETC. INDICATED OR SCHEDULED ON THE DRAWINGS SHALL BE INTERPRETED AS HAVING ESTABLISHED A STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS LIMITING COMPETITION. ARTICLES, FIXTURES, ETC. OF EQUAL QUALITY BY MANUFACTURERS SHALL BE ACCEPTABLE, SUBJECT TO STRUCTURAL AND ELECTRICAL CONSTRAINTS OF THE PROJECT DESIGN.
   B. THE ELECTRICAL SYSTEM DESIGN IS BASED IN PART ON THE SPECIFIED EQUIPMENT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE ELECTRICAL REQUIREMENTS OF THE EQUIPMENT BEING FURNISHED. ANY CHANGES TO THE ELECTRICAL SYSTEM DUE TO HVAC EQUIPMENT OTHER THAN THE SPECIFIED EQUIPMENT BEING FURNISHED SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

4. PLUMBING:
   A. PROVIDE AN APPROVED WATER HAMMER ARRESTOR FOR EACH PLUMBING FIXTURE SUPPLY AS REQUIRED BY FIXTURE MANUFACTURER.
   B. ALL EXPOSED PIPE IN FINISHED AREAS SHALL BE CHROME PLATED BRASS PIPE, NO FERROUS PIPE.
   C. PROVIDE CLEANOUTS AT EACH CHANGE IN DIRECTION AND AT 100 FOOT INTERVALS IN STRAIGHT RUNS.
   D. PROVIDE ACCESS PANELS FOR ALL CONCEALED VALVES AND TRAPS.
   E. CLEANOUTS:
      1. VINYL TILE FLOOR (FCO): JR SMITH #4140, OR EQUAL.
      2. QUARRY TILE FLOOR (FCO): JR SMITH #4200, OR EQUAL.
      3. CARPETED FLOOR (FCO): JR SMITH #4020-Y, OR EQUAL.
      4. UNFINISHED FLOOR (FCO): JR SMITH #4020, OR EQUAL.
      5. WALL (WCO): JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR.
      6. GRADE (GCO): JR SMITH #4256, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND COVER.
   F. ALL SEWER PIPING LOCATED INSIDE THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES.
      1. INSTALL 3" TO 6" PIPE AT 1/8" PER FOOT FALL.
      2. INSTALL 8" PIPE AT 1/16" PER FOOT FALL.
      3. CONDENSATE DRAIN SHALL BE INSTALLED AT 1/8" PER FOOT FALL.
   G. PROVIDE DIELECTRIC UNIONS WITH APPROPRIATE END CONNECTION TO MATCH THE PIPE SYSTEM IN WHICH INSTALLED (SCREWED, SOLDERED, OR FLANGED). PROVIDE DIELECTRIC UNIONS ON ALL PIPING CONNECTIONS TO HOT WATER HEATERS AND EXPANSION JOINTS.
   H. ALL SEWER PIPING LOCATED EXTERIOR TO THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES.
      1. INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 2% SLOPE.
      2. INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE.

5. PIPING
   A. DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING (ABOVEGROUND).
      1. TYPE L HARD DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERED FITTINGS.
      2. GATE VALVE: CRANE #428 OR EQUAL.
      3. GLOBE VALVE: CRANE #7 OR EQUAL.
      4. BALL VALVE: CRANE #932 OR EQUAL.
   B. DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING, 1"-3" (UNDERGROUND).
      1. TYPE K HARD OR SOFT DRAWN COPPER TUBING, ASTM B-88 WITH WROUGHT BRONZE SOLDERING FITTINGS.
      2. HDPE, PIGMENT BLUE THROUGHOUT, CTS SIZES: 2" AWWA C901 4710 DR9 PC250, IPS SIZES: AWWA C901 4710 DR11 PC200.
   C. DOMESTIC COLD WATER AND FIRE WATER, 3" OR LARGER (UNDERGROUND).
      1. DUCTILE IRON PIPE AND FITTINGS, AWWA C151, CLASS 50, CEMENT LINING, SEALCOATED, AWWA C104. THRUST BLOCKS IN ACCORDANCE WITH NFPA 24.
      2. HDPE IPS SIZES PIGMENTED BLUE THROUGHOUT, 3" AWWA C901 4710 DR11 PC200, 4" AND LARGER AWWA C906 3408/4710 DR15.5 PC160. STIFFENERS MUST BE USED IN THE ENDS OF THE HDPE, APPROVED TRACE WIRE MUST BE USED.
   D. SANITARY SEWER AND VENTS (UNDERGROUND, INTERIOR TO BUILDING).
      1. WASTE, DRAIN AND VENT PIPE AND FITTINGS, THROUGHOUT THE BUILDING BELOW THE BASE SLAB TO THE LOCATIONS NOTED OUTSIDE OF THE BUILDING SHALL BE ASTM D2665 POLYVINYL CHLORIDE (PVC) DWV PIPE, SCHEDULE 40, SOLVENT JOINT.
      2. SEWER LINES SHALL BE LOCATED IN GENERAL AS SHOWN ON THE DRAWINGS. THE EXACT LOCATIONS SHALL BE DETERMINED BY THE CONTRACTOR IN SUCH A MANNER AS TO MAINTAIN PROPER CLEARANCES AND SUFFICIENT SLOPE TO ENSURE DRAINAGE.
      3. VENT STACKS SHALL BE EXTENDED FULL SIZE THROUGH THE ROOF AND FLASHED WITH 4 POUND LEAD SHEETS TURNED DOWN INTO THE STACK AT LEAST 2" AND EXTENDED 12" IN ALL DIRECTIONS FROM THE PIPE AT THE ROOF LINE. VENTS THROUGH ROOF SHALL NOT BE LESS THAN 3". PVC PIPING SHALL NOT BE USED FOR VENT PIPING THROUGH THE ROOF. WHERE APPLICABLE FOR ROOFING SYSTEM USED, PROVIDE FLASHING VIA PLEATED EPDM CONE IN LIEU OF LEAD. ALL VENT STACKS IN OR AT OUTSIDE WALLS SHALL BE OFFSET 1'-6" MINIMUM FROM OUTSIDE WALLS BEFORE GOING THROUGH THE ROOF, TO FACILITATE FLASHING.
   E. NATURAL GAS PIPING:
      1. SCHEDULE 40 BLACK STEEL PIPING: 2" AND SMALLER WITH SCREWED JOINTS AND 150 LB. MALLEABLE IRON SCREWED FITTINGS. PIPE 2-1/2" AND LARGER SHALL USE STANDARD WEIGHT BLACK STEEL WELDING FITTINGS WITH WELDED JOINTS.
      2. GAS VALVES SHALL BE ROCKWELL 142/143, PLUG VALVE.
      3. SUPPORT PIPING AT INTERVALS NOT TO EXCEED THOSE LISTED IN TABLE 415.1 OF THE I.F.G.C.
      4. PROVIDE A.G.A. APPROVED SHUT OFF VALVES AND DIRT LEGS AT CONNECTIONS TO ALL EQUIPMENT.
      5. ALL ELEVATED PRESSURE GAS PIPING (GREATER THAN 14" W.C.) SHALL BE LABELED EVERY 40' WITH SIGNS INDICATING "ELEVATED PRESSURE."
      6. EPOXY PAINT ALL EXTERIOR GAS PIPING TO PREVENT CORROSION.
   F. ALL PIPE HANGERS AND SUPPORTS SHALL BE STANDARD PRODUCTS OF GRINNELL, FEE AND MASON, OR ANVIL. HANGER SPACING SHALL BE IN ACCORDANCE WITH MSS-SP-69.

6. TESTING, BALANCING AND CLEANING:
   A. ALL PIPING SHALL BE TESTED FOR LEAKS BEFORE BEING CONCEALED IN WALL CONSTRUCTION OR COVERED WITH INSULATION.
   B. SEWER AND VENT PIPING SHALL BE HYDROSTATICALLY TESTED WITH NO LESS THAN 10 FEET OF HEAD FOR A PERIOD OF NOT LESS THAN 15 MINUTES, PER THE LOCAL PLUMBING CODE, WITH NO LEAKS.
   C. DOMESTIC WATER PIPING SHALL BE HYDROSTATICALLY TESTED AT A PRESSURE OF NOT LESS THAN 1-1/2 TIMES THE OPERATING PRESSURE, BUT NOT LESS THAN 60 PSI, FOR A PERIOD OF NOT LESS THAN 2 HOURS, WITH NO LEAKS.
   D. NATURAL GAS SYSTEMS SHALL BE TESTED WITH COMPRESSED AIR AT A PRESSURE OF NOT LESS THAN 1-1/2 TIMES THE OPERATING PRESSURE , BUT NOT LESS THAN 50 PSIG FOR A PERIOD OF 2 HOURS WITH NO LEAKS.

PLUMBING SYMBOLS

SYMBOL	DESCRIPTION
SS	SANITARY SEWER (ABOVE GRADE)
SS	SANITARY SEWER (BELOW GRADE)
GW	GREASE WASTE (BELOW GRADE)
CD	CONDENSATE DRAIN
V	VENT PIPING
G	G = GAS PIPING LESS THAN 2 PSI
MPG	MPG = GAS PIPING 2 PSI
	GAS PIPE ON ROOF, G OR MPG
CW	COLD WATER PIPING
HW	HOT WATER PIPING
HWR	RECIRCULATING HOT WATER
CA	COMPRESSED AIR
	PIPE ELBOW DOWN
	PIPE ELBOW UP
	GATE VALVE
	BACKFLOW PREVENTER
	CHECK VALVE
	BALL VALVE
	STRAINER
	PRESSURE REDUCING VALVE
	PLUG VALVE
	CONTROL VALVE
	FLOOR CLEANOUT (FCO)
	CLEANOUT AT GRADE (GCO)
	WALL CLEANOUT (WCO)
	FLOOR DRAIN
	FLOOR SINK
	CAPPED PIPE

STANDARD MOUNTING HEIGHTS

PLUMBING (AFF, AFG, UNLESS NOTED OTHERWISE)

REFER TO ARCHITECTURAL DRAWINGS FOR PLUMBING FIXTURE MOUNTING HEIGHTS. UNO, INSTALL PLUMBING FIXTURES WITH THE MOUNTING HEIGHTS AS LISTED BELOW WITH FINAL APPROVAL BY THE ARCHITECT.

ADA ACCESSIBLE LAVATORIES	34" FLOOR TO RIM
ADA ACCESSIBLE WATER CLOSET	17" TO 19" FLOOR TO TOP OF SEAT
JANITOR'S SINK FAUCET FITTINGS	42" FLOOR TO CENTERLINE

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	MIN	MINIMUM
AFG	ABOVE FINISHED GRADE	N/C	NORMALLY CLOSED
AHU	ABOVE HANDLING UNIT	N/O	NORMALLY OPEN
BFF	BELOW FINISHED FLOOR	ORD	OVERFLOW ROOF DRAIN
BFG	BELOW FINISHED GRADE	PDI	PLUMBING DRAINAGE INSTITUTE
BOP	BOTTOM OF PIPE	PVC	POLYVINYL CHLORIDE
BOS	BOTTOM OF STRUCTURE	PRV	PRESSURE REDUCING VALVE
BTU	BRITISH THERMAL UNIT	RPM	REVOLUTIONS PER MINUTE
CPVC	CHLORINATED POLYVINYL CHLORIDE	SF	SQUARE FEET, SUPPLY FAN
		TDH	TOTAL DYNAMIC HEAD
DN	DOWN	TFA	TO FLOOR ABOVE
DFU	DRAINAGE FIXTURE UNIT	TFB	TO FLOOR BELOW
ETR	EXISTING TO REMAIN	UL	UNDERWATER LABORATORIES, INC.
FD	FLOOR DRAIN		
FFA	FROM FLOOR ABOVE	UNO	UNLESS NOTED OTHERWISE
FFB	FROM FLOOR BELOW	V	VOLT(S)
FF	FINISHED FLOOR	VCP	VITRIFIED CLAY PIPE
FLA	FULL LOADS AMPS	VS	VENT STACK
FLR	FLOOR	VTR	VENT THROUGH ROOF
GPM	GALLON PER MINUTE	W/	WITH
IE	INVERTED ELEVATION	W/O	WITHOUT
IN WC	INCHES OF WATER COLUMN	WC	WATER COLUMN
kW	KILOWATT	WS	WATER STACK
MAX	MAXIMUM	WSFU	WATER SUPPLY FIXTURE UNIT
MBH	1000 BTU PER HOUR		

ANNOTATION

- (#) PLAN WORK NOTE
- (RTU 1) MECHANICAL EQUIPMENT DESIGNATION (CONTRACTOR FURNISHED AND INSTALLED UNLESS NOTED OTHERWISE)
- (-) PLUMBING FIXTURE DESIGNATION
- CONNECTION POINT OF NEW WORK TO EXISTING
- (A / M1) DETAIL REFERENCE UPPER NUMBER INDICATED DETAIL NUMBER LOWER NUMBER INDICATES SHEET NUMBER
- (1 / M1) SECTION CUT DESIGNATION

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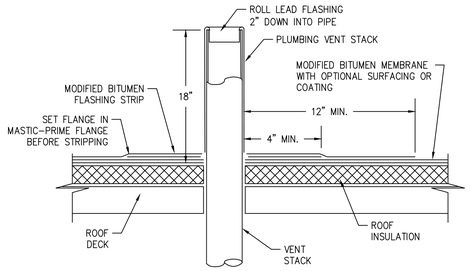
PLUMBING SPECIFICATIONS AND SYMBOLS

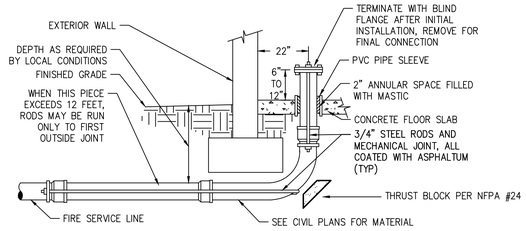
P-001



NOTES:
1. INSTALL ALL VTR'S A MINIMUM OF 10 FEET HORIZONTALLY, OR 3 FEET VERTICALLY AWAY FROM BUILDING OPENINGS OR FRESH AIR INTAKES.
2. INSTALL VTR'S ONE FOOT AWAY FROM ADJACENT VERTICAL SURFACES.
3. INSTALL VTR'S ONE FOOT ABOVE THE AVERAGE LOCAL SNOW FALL LEVEL.
4. VERIFY PROPER FLASHING PROCEDURE WITH ROOF MEMBRANE MANUFACTURER.

VENT STACK 4

SCALE : NO SCALE

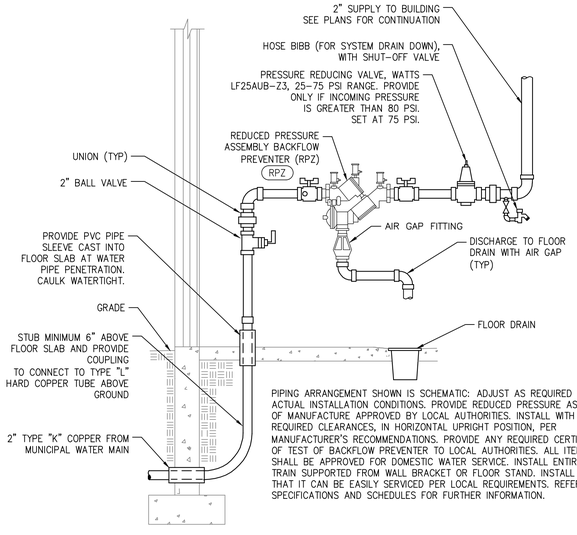


ARRANGEMENT SHOWN IS SCHEMATIC. MODIFY TO SUIT FIELD CONDITIONS AND MEET APPLICABLE CODE REQUIREMENTS. VERIFY FOUNDATION WITH ARCHITECTURAL DRAWINGS. COORDINATE WHO IS TO PROVIDE THE FIRE SERVICE ENTRY WITH THE GENERAL CONTRACTOR OR CONSTRUCTION MANAGER PRIOR TO SUBMITTING BID.

FINAL SIZE OF SERVICE LINE DETERMINED BY FIRE SPRINLER CONTRACTOR. SIZE SHOWN ON PLANS FOR BIDDING PURPOSES.

FIRE SPINKLER RISER - WET PIPE 3

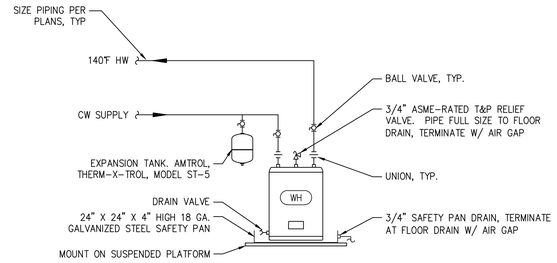
SCALE : NO SCALE



PIPING ARRANGEMENT SHOWN IS SCHEMATIC: ADJUST AS REQUIRED TO SUIT ACTUAL INSTALLATION CONDITIONS. PROVIDE REDUCED PRESSURE ASSEMBLY OF MANUFACTURE APPROVED BY LOCAL AUTHORITIES. INSTALL WITH REQUIRED CLEARANCES, IN HORIZONTAL UPRIGHT POSITION, PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE ANY REQUIRED CERTIFICATION OF TEST OF BACKFLOW PREVENTER TO LOCAL AUTHORITIES. ALL ITEMS SHALL BE APPROVED FOR DOMESTIC WATER SERVICE. INSTALL ENTIRE VALVE TRAIN SUPPORTED FROM WALL BRACKET OR FLOOR STAND. INSTALL SO THAT IT CAN BE EASILY SERVICED PER LOCAL REQUIREMENTS. REFER TO SPECIFICATIONS AND SCHEDULES FOR FURTHER INFORMATION.

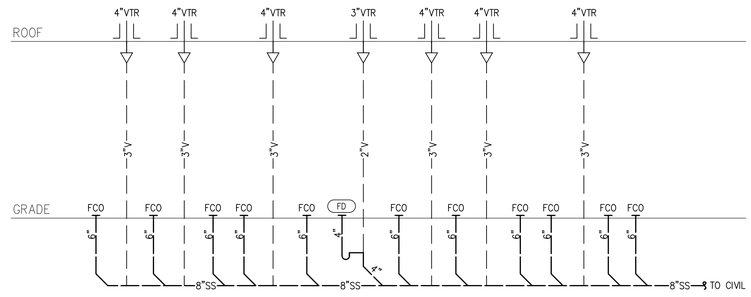
DOMESTIC WATER SERVICE ENTRY 2

SCALE : NO SCALE



ELECTRIC WATER HEATER 5

SCALE : NO SCALE



WASTE AND VENT RISER 1

SCALE : NONE

PLUMBING FIXTURE SCHEDULE

FD	FLOOR DRAIN: SIOUX CHIEF 832-36PF, PVC BODY, ADJUSTABLE 6-1/2" ROUND STAINLESS STEEL STRAINER, TRAP PRIMER CONNECTION. PROVIDE TRAP PRIMER EQUAL TO ZURN Z1022-DU.
FPWH	FREEZE PROOF WALL HYDRANT: ZURN Z1321-WC WITH INTEGRAL BACKFLOW PREVENTER, COORDINATE WITH WALL THICKNESS ON ARCHITECTURAL PLANS, 3/4" MPT INLET.
LAV	WALL-MOUNT LAVATORY: AMERICAN STANDARD LUCERNE, THREE FAUCET HOLE, 4" CENTERS, 14-7/8"X10" OVAL BASIN, VITREOUS CHINA. PROVIDE SINGLE HANDLE FAUCET EQUAL TO GLACIER BAY CONSTRUCTOR. PROVIDE FLEXIBLE SS RISERS WITH CHROME PLATED STOP VALVES, P-TRAP WITH CLEANOUT AND ESCUTCHEONS. INSULATE WITH "HANDI-LAV-GUARD" MODEL 102, OR EQUAL.
MS	MOP SINK: FIAT SB2424 OR EQUAL. 24"x24"x6" MOP BASIN WITH DRAIN. WALL MOUNT FAUCET, T&S B-0655-BSTR, WITH TWO HANDLES, VACUUM BREAKER AND 1/2" NPT THREAD. INSTALLATION BY PLUMBING CONTRACTOR.
RPZ	REDUCED PRESSURE ZONE BACKFLOW PREVENTER: WATTS LF009, 2", MEETING ASSE 1013, LEAD FREE CAST BRONZE BODY, QUARTER TURN TESTING COCKS, QUARTER TURN BALL VALVES, AND AIR GAP FITTING.
WC	FLOOR-MOUNTED ADA WATER CLOSET: KOHLER K-3519-TR-0, HANDICAP ACCESSIBLE, VIREOUS CHINA, 1.0 GPF, ELONGATED BOWL, FLOOR MOUNTED W/ 17.125" BOWL HEIGHT, WHITE, VITREOUS CHINA TANK AND COVER CONTAINING FLUSH VALVE, WHITE OPEN-FRONT SEAT, CHROME STOPS, C.P. FLEXIBLE RISER TUBE, BOLT CAPS AND ESCUTCHEON.
WH	ELECTRIC WATER HEATER: AO SMITH MODEL DEL-20, 20 GALLON CAPACITY, 3/4" CONNECTIONS, 20 GPH @ 90°F RISE, 240V/1PH, SINGLE 4500W ELEMENT. PROVIDE RELIEF VALVE AND EXPANSION TANK.

FIXTURE BRANCH CONNECTION SCHEDULE

FIXTURE	COLD WATER	HOT WATER	WASTE	VENT
FLOOR DRAIN	-	-	4"	2"
LAVATORY	1/2"	1/2"	1 1/2"	1 1/2"
MOP SINK	1/2"	1/2"	3"	2"
WALL HYDRANT	3/4"	-	-	-
WATER CLOSET (FLUSH TANK)	1/2"	-	4"	2"
NOTE:	PIPE SIZES SHOWN ARE MINIMUM. MINIMUM SANITARY SIZE UNDERGROUND IS 2".			

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08-31-2023

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LAKEWOOD BUSINESS CENTER, LOT 1

NE Maguire Blvd.
Lee's Summit, Missouri 64064

Issue:	Date:
Permit Set	08.31.23

Sheet Title:

PLUMBING SCHEDULES AND DETAILS

P-002

(#) KEYED PLAN NOTES

1. 3/4"CW TO HOSE BIBB NEAR DOOR. INSTALL HOSE BIBB AT 18"AFG. COORDINATE LOCATION WITH GC PRIOR TO INSTALLATION.
2. 3"V UP COLUMN TO 4"VTR. VERIFY 10'-0" CLEARANCE FROM ALL BUILDING OPENINGS AND MIN. 3'-0" FROM EDGE OF ROOF. SEAL ROOF PENETRATION WEATHERTIGHT.
3. PROVIDE CSA APPROVED VENTLESS GAS REGULATOR, DIRT LEG AND SHUT-OFF VALVE PRIOR TO FINAL CONNECTION. REGULATOR SHALL DROP PRESSURE TO 7" W.C.

(#) KEYED PLAN NOTES

4. PROVIDE CAPPED 1"CW LINE WITH SHUT-OFF VALVE.
5. COORDINATE WITH GAS COMPANY FOR INSTALLATION OF TENANT METER WITH CAPACITY FOR 316 MBH @ 2 PSIG. PLUMBING CONTRACTOR TO VERIFY ALL EQUIPMENT GAS CAPACITIES AND OPERATING PRESSURES PRIOR TO INSTALLATION OF ANY PIPING.
6. PROVIDE 3/4"G TO TENANT OFFICE SPACE AS REQUIRED FOR TENANT BUILD-OUT.

GENERAL NOTES

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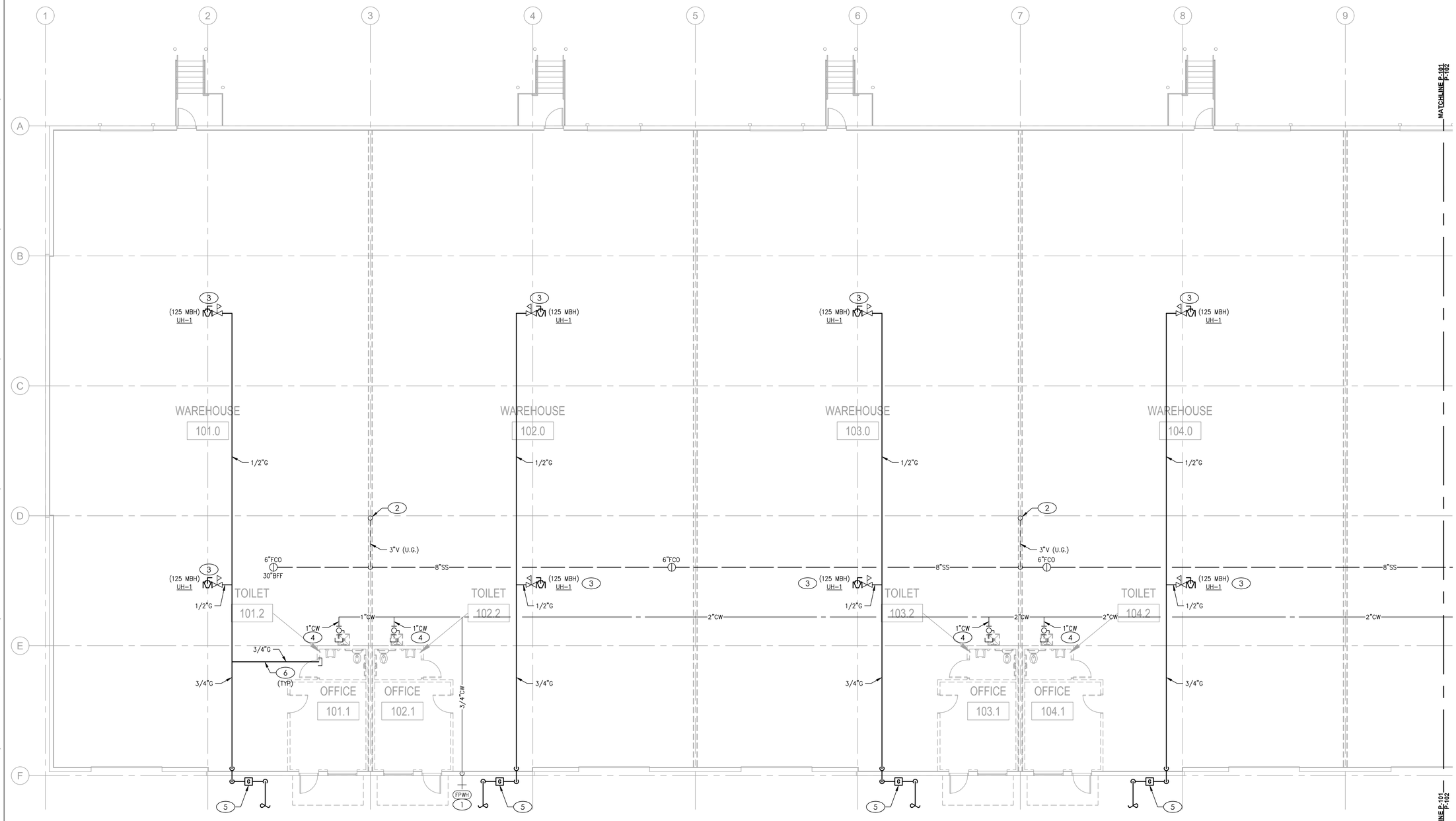
B. COORDINATE INSTALLATION OF MECHANICAL AND PLUMBING SYSTEMS WITH OTHER TRADES TO ENSURE A NEAT AND ORDERLY INSTALLATION AND AVOID CONFLICTS. INSTALL DUCTWORK AND PIPING AS TIGHT TO STRUCTURE AS POSSIBLE. COORDINATE INSTALLATION OF DUCTWORK AND PIPING TO AVOID CONFLICTS WITH ELECTRICAL PANELS, LIGHTING FIXTURES, ETC. VERIFY DUCT SPACE AVAILABLE ABOVE ALL CEILINGS PRIOR TO ANY FABRICATION OF INSTALLATION.

GENERAL NOTES

C. OVERHEAD HANGERS AND SUPPORTS FOR EQUIPMENT, DUCTWORK AND PIPING SHALL BE FASTENED TO BUILDING JOISTS OR BEAMS. DO NOT ATTACH HANGERS AND SUPPORTS TO THE ABOVE FLOOR SLAB OR ROOF.

D. ALL ROOF AND WALL PENETRATIONS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR. PROVIDE ALL REQUIRED SLEEVES, FLASHINGS, CURBS, REINFORCED ANGLES, SUPPORTING FRAMES, ETC. UNLESS THEY ARE SPECIFICALLY CALLED OUT TO BE FURNISHED BY OTHERS.



PLUMBING PLAN - WEST

SCALE : 1/8" = 1'-0"

1

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08-31-2023

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LAKEWOOD BUSINESS CENTER, LOT 1

NE Maguire Blvd.
Lee's Summit, Missouri 64064

Issue:	Date:
Permit Set	08.31.23

Sheet Title:

PARTIAL PLUMBING PLAN - WEST

P-101

KEYED PLAN NOTES

1. 3/4"CW TO HOSE BIBB NEAR DOOR. INSTALL HOSE BIBB AT 18"AFG. COORDINATE LOCATION WITH GC PRIOR TO INSTALLATION.
2. 3"V UP COLUMN TO 4"VTR. VERIFY 10'-0" CLEARANCE FROM ALL BUILDING OPENINGS AND MIN. 3'-0" FROM EDGE OF ROOF. SEAL ROOF PENETRATION WEATHERTIGHT.
3. PROVIDE CSA APPROVED VENTLESS GAS REGULATOR, DIRT LEG AND SHUT-OFF VALVE PRIOR TO FINAL CONNECTION. REGULATOR SHALL DROP PRESSURE TO 7" W.C..
4. PROVIDE CAPPED 1"CW LINE WITH SHUT-OFF VALVE.

KEYED PLAN NOTES

5. COORDINATE WITH GAS COMPANY FOR INSTALLATION OF TENANT METER WITH CAPACITY FOR 316 MBH @ 2 PSIG. PLUMBING CONTRACTOR TO VERIFY ALL EQUIPMENT GAS CAPACITIES AND OPERATING PRESSURES PRIOR TO INSTALLATION OF ANY PIPING.
6. 6" FIRE SPRINKLER RISER, TERMINATE WITH BLIND FLANGE. SEE SPECIFICATIONS AND RISER DETAIL 3/P-002.
7. 2" DOMESTIC WATER SERVICE ENTRANCE. CONTRACTOR SHALL WORK WITH THE WATER COMPANY FOR THE INSTALLATION OF A NEW WATER MAIN ENTRANCE, INCLUDING TAP, METER, METER PIT, PIPING, ETC. FOR A COMPLETE INSTALLATION. SEE CIVIL PLANS FOR CONTINUATION AND LOCATION OF WATER METER. SEE DETAIL 2/P-002.
8. 6" FIRE SERVICE TO MAIN. REFER TO CIVIL DRAWINGS.

KEYED PLAN NOTES

9. PROVIDE 2" RPZ BACKFLOW PREVENTER. INSTALL 24" A.F.F. AND 6" FROM WALL. ROUTE DRAIN FROM RPZ TO FLOOR DRAIN. TERMINATE DRAIN WITH AIR GAP. SEE DOMESTIC WATER SERVICE ENTRY DETAIL.
10. 1/2"CW TO TRAP PRIMER EQUAL TO ZURN Z1022-DU. CONTINUE WITH 1/2" CW UNDERGROUND TO FLOOR DRAIN TRAP PRIMER CONNECTION.
11. SEAL PENETRATION IN FIRE RATED WALL PER U.L. SYSTEM NO. W-L-1062. SEE ARCHITECTURAL SHEETS FOR FIRE PENETRATION DETAIL
12. 2" VENT UP WALL TO 3" VTR. LOCATE VENT MIN. 10'-0" FROM ALL BUILDING OPENINGS AND MIN. 3'-0" FROM EDGE OF ROOF. SEAL PENETRATION WEATHER TIGHT. COORDINATE WITH MECHANICAL CONTRACTOR.

GENERAL NOTES

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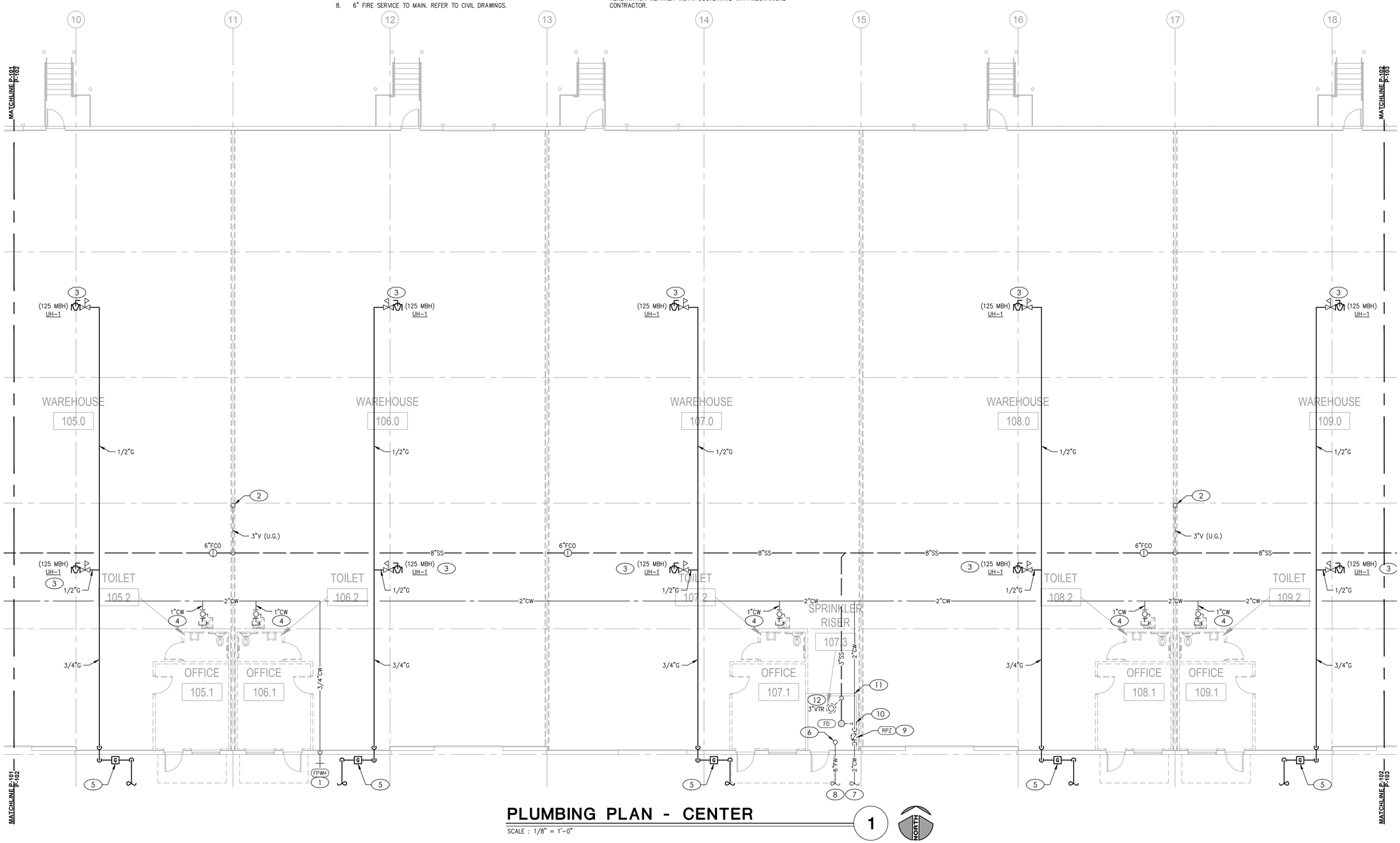
B. COORDINATE INSTALLATION OF MECHANICAL AND PLUMBING SYSTEMS WITH OTHER TRADES TO ENSURE A NEAT AND ORDERLY INSTALLATION AND AVOID CONFLICTS. INSTALL DUCTWORK AND PIPING AS TIGHT TO STRUCTURE AS POSSIBLE. COORDINATE INSTALLATION OF DUCTWORK AND PIPING TO AVOID CONFLICTS WITH ELECTRICAL PANELS, LIGHTING FIXTURES, ETC. VERIFY DUCT SPACE AVAILABLE ABOVE ALL CEILINGS PRIOR TO ANY FABRICATION OF INSTALLATION.

GENERAL NOTES

C. OVERHEAD HANGERS AND SUPPORTS FOR EQUIPMENT, DUCTWORK AND PIPING SHALL BE FASTENED TO BUILDING JOISTS OR BEAMS. DO NOT ATTACH HANGERS AND SUPPORTS TO THE ABOVE FLOOR SLAB OR ROOF.

D. ALL ROOF AND WALL PENETRATIONS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR. PROVIDE ALL REQUIRED SLEEVES, FLASHINGS, CURBS, REINFORCED ANGLES, SUPPORTING FRAMES, ETC. UNLESS THEY ARE SPECIFICALLY CALLED OUT TO BE FURNISHED BY OTHERS.



PLUMBING PLAN - CENTER

SCALE : 1/8" = 1'-0"

1

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STATE OF MISSOURI
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PROFESSIONAL ENGINEER

08-31-2023

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LAKEWOOD BUSINESS CENTER, LOT 1

NE Maguire Blvd.
Lee's Summit, Missouri 64064

Issue:	Date:
Permit Set	08.31.23

Sheet Title:

PARTIAL PLUMBING PLAN - CENTER

P-102

KEYED PLAN NOTES

1. 3/4"CW TO HOSE BIBB NEAR DOOR. INSTALL HOSE BIBB AT 18"AFG. COORDINATE LOCATION WITH GC PRIOR TO INSTALLATION.
2. 3"V UP COLUMN TO 4"VTR. VERIFY 10'-0" CLEARANCE FROM ALL BUILDING OPENINGS AND MIN. 3'-0" FROM EDGE OF ROOF. SEAL ROOF PENETRATION WEATHERTIGHT.
3. PROVIDE DIRT LEG AND SHUT-OFF VALVE PRIOR TO FINAL CONNECTION.
4. PROVIDE CAPPED 1"CW LINE WITH SHUT-OFF VALVE.

KEYED PLAN NOTES

5. COORDINATE WITH GAS COMPANY FOR INSTALLATION OF TENANT METER WITH CAPACITY FOR 316 MBH @ 11" W.C. PLUMBING CONTRACTOR TO VERIFY ALL EQUIPMENT GAS CAPACITIES AND OPERATING PRESSURES PRIOR TO INSTALLATION OF ANY PIPING.
6. 8" SANITARY TO UTILITY SERVICE. CONTRACTOR SHALL WORK WITH LOCAL WASTE WATER AUTHORITY AND BEAR ALL COST FOR INSTALLATION OF A NEW SEWER LINE CONNECTING INTO THE SEWER MAIN FOR A COMPLETE INSTALLATION. REFER TO CIVIL PLANS FOR CONTINUATION.

GENERAL NOTES

A. DRAWINGS ARE DIAGRAMMATIC ONLY AND REPRESENT THE GENERAL SCOPE OF WORK. REVIEW THE GENERAL NOTES, SPECIFICATIONS AND PLANS FOR ADDITIONAL REQUIREMENTS THAT MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY ARCHITECT, ENGINEER AND/OR OWNER OF CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.

B. COORDINATE INSTALLATION OF MECHANICAL AND PLUMBING SYSTEMS WITH OTHER TRADES TO ENSURE A NEAT AND ORDERLY INSTALLATION AND AVOID CONFLICTS. INSTALL DUCTWORK AND PIPING AS TIGHT TO STRUCTURE AS POSSIBLE. COORDINATE INSTALLATION OF DUCTWORK AND PIPING TO AVOID CONFLICTS WITH ELECTRICAL PANELS, LIGHTING FIXTURES, ETC. VERIFY DUCT SPACE AVAILABLE ABOVE ALL CEILINGS PRIOR TO ANY FABRICATION OF INSTALLATION.

GENERAL NOTES

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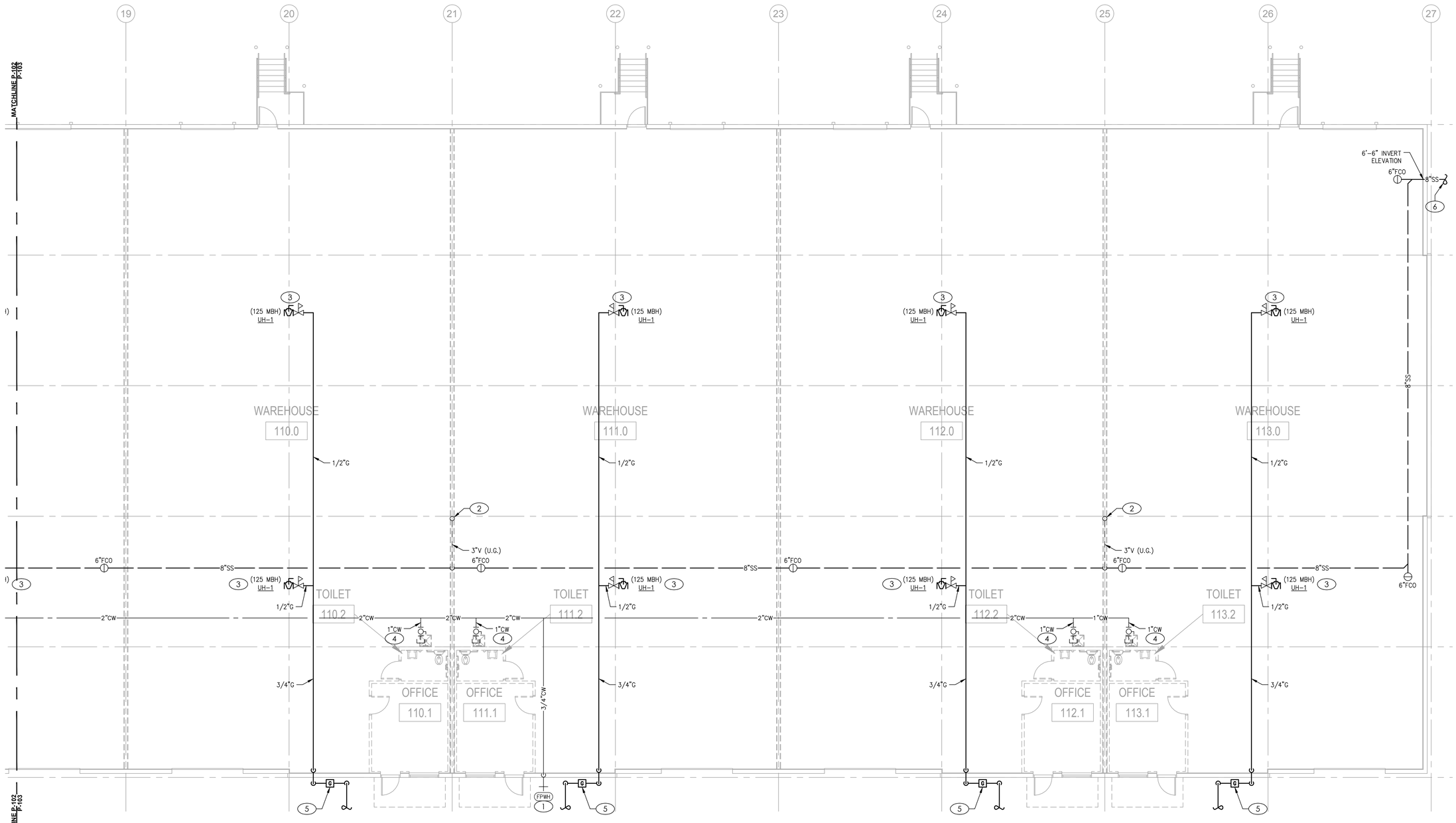

PLUMBING PLAN - EAST

SCALE : 1/8" = 1'-0"

1

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LAKEWOOD BUSINESS CENTER, LOT 1

NE Maguire Blvd.
Lee's Summit, Missouri 64064

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Permit Set	08.31.23

Sheet Title:

PARTIAL PLUMBING PLAN - EAST

P-103

(#) KEYED PLAN NOTES

1. VENT STACK UP TO 3" VTR. LOCATE MINIMUM 3'-0" FROM EDGE OF ROOF AND 10'-0" FROM ANY OUTSIDE AIR INTAKE. COORDINATE PIPE PENETRATION WITH ROOFING CONTRACTOR SO NOT TO VOID ROOF WARRANTY. SEAL ROOF PENETRATION WEATHERTIGHT.
2. SEE OVERALL PLAN FOR LOCATION OF 8"SS MAIN. PROVIDE EXTENSION AND CONNECTION TO MAIN AS REQUIRED.
3. 3/4"HW AND 3/4"CW DOWN TO MOP SINK.
4. 1/2"HW AND 1/2"CW TO LAVATORY. PROVIDE THERMOSTATIC MIXING VALVE EQUAL TO LEONARD MODEL 170. SET SUPPLY HOT WATER TEMPERATURE TO 110°F.
5. PROVIDE 1/2"CW TO WATER CLOSET.
6. PROVIDE 3/4"CW AND 3/4"HW PIPING TO WATER HEATER.
7. ELECTRIC WATER HEATER INSTALLED ABOVE CEILING ON PLATFORM FURNISHED WITH HEATER. ROUTE FULL SIZE DRAIN LINE FROM T&P RELIEF VALVE TO DRAIN PAN AND FULL SIZED DRAIN LINE FROM DRAIN PAN TO FLOOR DRAIN BELOW. SEE DETAIL 5/P-002.
8. MAKE CONNECTION TO TENANT SHUT-OFF VALVE SHOWN ON OVERALL PLAN.
9. PROVIDE 3/4" GAS TO FURNACE. SEE P-101, OFFICE 101.1 FOR TYPICAL GAS DISTRIBUTION.

GENERAL NOTES

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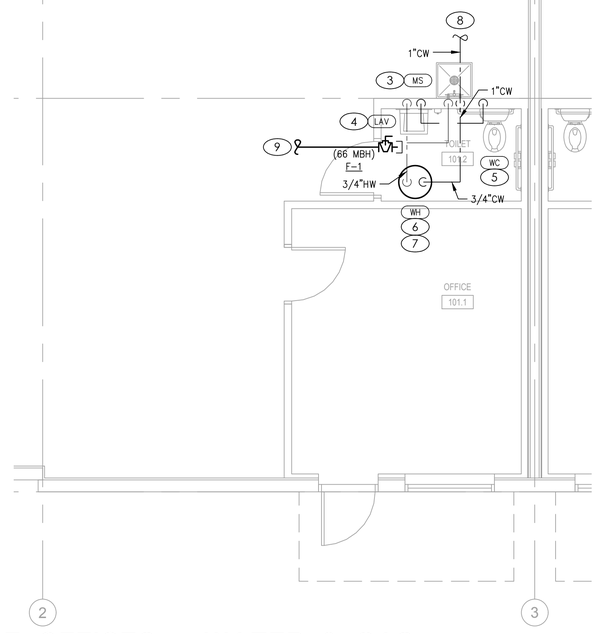
MIRROR LAYOUT AS REQUIRED



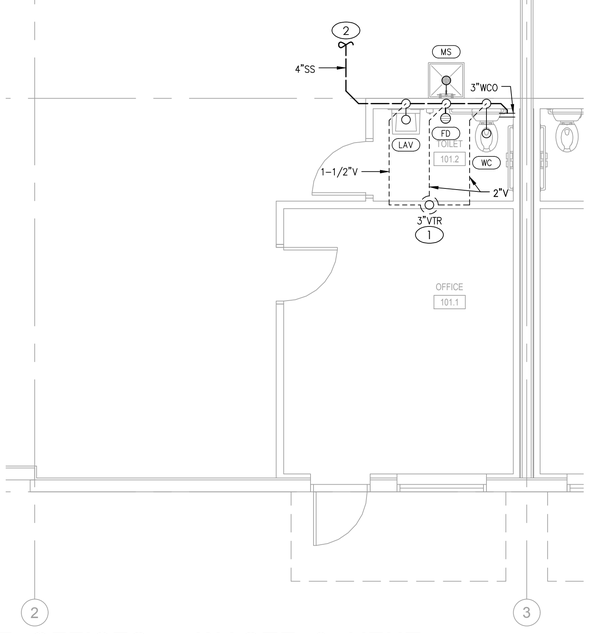
FUTURE OFFICES - WATER & GAS (BID AS T.I. ADD ALTERNATIVE)

SCALE : 1/4" = 1'-0"

1

NORTH

MIRROR LAYOUT AS REQUIRED



FUTURE OFFICES - WASTE & VENT (BID AS T.I. ADD ALTERNATIVE)

SCALE : 1/4" = 1'-0"

1

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Permit Set	08.31.23

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ENLARGED PLUMBING PLAN

P-104

ELECTRICAL SPECIFICATIONS

PART I – GENERAL

A. GENERAL
1. FURNISH AND INSTALL A COMPLETELY WIRED AND OPERATIONAL ELECTRICAL SYSTEM AS SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN, INCLUDING BUT NOT LIMITED TO, THESE MAJOR ITEMS.
   A. LIGHTING FIXTURES AS INDICATED AND SPECIFIED ON THE PLANS.
   B. ELECTRICAL PANELS, SERVICE, CONDUIT, WIRING, ETC., FOR ALL OUTLETS AND EQUIPMENT.
   C. TELEPHONE, TELEVISION, AND FIRE ALARM. OUTLETS AND CONDUIT AS INDICATED.
2. OBTAIN AND REVIEW ALL OTHER DRAWINGS INCLUDING REFLECTED CEILING PLAN, INTERIOR AND EXTERIOR ELEVATIONS, FURNITURE PLANS AND ALL MILL WORK DRAWINGS. COORDINATE INSTALLATION OF ALL ELECTRICAL DEVICES AND EQUIPMENT PRIOR TO ROUGH–IN.
3. OBTAIN SUBMITTAL AND SHOP DRAWINGS FROM OTHER TRADES AND EQUIPMENT TO COORDINATE INSTALLATION ACCORDINGLY.
4. INSTALLATION SHALL COMPLY WITH ALL CURRENT APPLICABLE CODES AND GOVERNING AGENCIES HAVING JURISDICTION.
5. FIRE ALARM SYSTEM, IF REQUIRED PER IBC, SHALL BE DESIGN–BUILD BY OWNER'S/GC'S FIRE ALARM CONTRACTOR. DESIGN SHALL BE IN ACCORDANCE WITH NFPA 72. FIRE ALARM CONTRACTOR SHALL SUBMIT STAMPED DRAWINGS TO AHJ FOR REVIEW AND APPROVAL. FIRE ALARM CONTRACTOR IS RESPONSIBLE FOR TESTING AND VERIFYING THAT THE AUDIBILITY OF THE FIRE ALARM SYSTEM MEETS A MINIMUM OF 15 DBA ABOVE AMBIENT NOISE LEVELS. ADD HORNS WHERE REQUIRED TO MAINTAIN MINIMUM LEVELS.
6. PROVIDE FIRE STOP ON ALL PIPING THAT PENETRATES RATED WALLS. METHOD OF FIRE STOP SHALL MEET WALL RATING. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION OF FIRE RATED WALLS. THIS CONTRACTOR SHALL PROVIDE FIRE RATED ENCLOSURES AROUND ALL ROUGH–IN BOXES, PANELS, ETC. THAT ARE LOCATED IN FIRE RATED WALLS AND SHALL FIRE CAULK ALL OPENINGS IN RATED ASSEMBLIES.

B. RELATED WORK BY OTHERS
1. THE ELECTRICAL CONTRACTOR SHALL PROVIDE CONDUIT, TRENCH, AND BACKFILL FOR ELECTRICAL SERVICE ENTRANCE FROM THE MAIN SERVICE TO UTILITY POINT OF ELECTRICAL SERVICE. ELECTRICAL CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE ELECTRICAL SERVICE ENTRANCE WITH SERVING UTILITY COMPANY.
2. THE ELECTRICAL CONTRACTOR SHALL PROVIDE CONDUIT, TRENCH, AND BACKFILL FOR PRIMARY PHONE AND CATV SERVICE FROM THE TELEPHONE TERMINAL BOARD OR CABINET TO THE PHONE COMPANY AND CATV COMPANY POINT OF SERVICE COORDINATE WITH LOCAL UTILITY COMPANIES.

C. CODES, REGULATIONS, AND STANDARDS
1. THE INSTALLATION SHALL COMPLY WITH APPLICABLE LOCAL AND STATE CODES AND ORDINANCES, WITH THE REGULATIONS OF THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE AND WITH THE REQUIREMENTS OF THE POWER, TELEPHONE, AND CATV COMPANIES FURNISHING SERVICES TO THIS INSTALLATION.
2. THE LATEST EDITIONS OF THE FOLLOWING INDUSTRY STANDARDS, SPECIFICATIONS, AND CODES ARE MINIMUM REQUIREMENTS:
   A. THE NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION STANDARDS.
   B. THE NATIONAL ELECTRICAL CODE, INCLUDING LOCAL AMENDMENTS.
   C. UNDERWRITER LABORATORIES INCORPORATED STANDARDS.
   D. AMERICAN NATIONAL STANDARDS INSTITUTE.
   E. INTERNATIONAL BUILDING CODE.

D. INSPECTION OF SITE
1. PRIOR TO SUBMITTING A BID FOR ELECTRICAL WORK, THE CONTRACTOR SHALL VISIT THE SITE OF THE PROPOSED CONSTRUCTION AND SHALL THOROUGHLY ACQUAINT HIMSELF WITH EXISTING UTILITIES, AND WORKING CONDITIONS TO BE ENCOUNTERED, ETC. ALLOWANCE WILL NOT BE MADE FOR NONCOMPLIANCE WITH THIS CONDITION AFTER BIDDING.
2. ELECTRICAL INSTALLATION SHALL MEET THE EXISTING CONDITIONS.

E. STORAGE AND HANDLING OF MATERIAL
1. DELIVER MATERIALS AND EQUIPMENT TO THE PROJECT IN THE MANUFACTURER'S ORIGINAL, UNOPENED, LABELED CONTAINERS. PROTECT AGAINST MOISTURE, TAMPERING, OR DAMAGE FROM IMPROPER HANDLING OR STORAGE. CONTRACTOR SHALL PROTECT AND BE RESPONSIBLE FOR ANY DAMAGE TO WORK OR MATERIALS UNTIL FINAL ACCEPTANCE BY THE OWNER, AND SHALL MAKE GOOD WITHOUT COST TO THE OWNER, ANY DAMAGE OR LOSS THAT MAY OCCUR DURING THIS PERIOD.
2. ARRANGE FOR TIMELY DELIVERY OF MATERIALS AND EQUIPMENT TO THE JOB SITE IN ORDER TO MINIMIZE THE LENGTH OF TIME BETWEEN DELIVERY AND INSTALLATION.
3. COVER AND PROTECT ANY MATERIAL WHICH MAY BE AFFECTED BY THE WEATHER WHILE IN TRANSIT OR STORED AT THE PROJECT SITE. ANY MATERIAL FOUND DEFECTIVE OR NOT INSTALLED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS MAY BE REJECTED BY THE ENGINEER.

F. CLEANUP
1. KEEP THE PREMISES FREE FROM ACCUMULATION OF WASTE MATERIALS, OR RUBBISH CAUSED BY EMPLOYEES OR WORK UNDER THIS DIVISION OF THE SPECIFICATIONS. AT THE COMPLETION OF THE WORK REMOVE ALL SURPLUS MATERIALS, TOOLS, ETC., AND LEAVE THE PREMISES BROOM–CLEAN.

G. EXCAVATION, CUTTING, AND FITTING
1. PERFORM ALL EXCAVATION AND BACK FILLING REQUIRED FOR WORK PERFORMED UNDER THIS DIVISION OF THE SPECIFICATIONS. USE EXCAVATED MATERIALS FOR BACKFILL UNLESS OFF SITE MATERIALS ARE DEEMED NECESSARY.
2. PERFORM THE EXCAVATION, CUTTING, FITTING, REPAIRING, AND FINISHING OF THE WORK NECESSARY FOR THE INSTALLATION OF THE EQUIPMENT OF THIS SECTION. HOWEVER, NO CUTTING OF THE WORK OF OTHER TRADES OR OF ANY STRUCTURAL MEMBERS SHALL BE DONE WITHOUT THE CONSENT OF THE ARCHITECT.

H. DRAWINGS
1. THE DRAWINGS INDICATE THE GENERAL ARRANGEMENT AND LOCATIONS OF THE ELECTRICAL WORK DATA PRESENTED ON THESE DRAWINGS ARE AS ACCURATE AS PLANNING CAN DETERMINE, BUT FIELD VERIFICATION OF ALL DIMENSIONS, LOCATIONS, LEVELS, ETC., TO SUIT FIELD CONDITIONS IS REQUIRED. REVIEW ALL ARCHITECTURAL, STRUCTURAL, AND MECHANICAL DRAWINGS AND ADJUST ALL WORK TO MEET THE REQUIREMENTS OF CONDITIONS SHOWN. THE ARCHITECTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER ALL OTHER DRAWINGS. DISCREPANCIES BETWEEN DIFFERENT PLANS, OR BETWEEN DRAWINGS AND SPECIFICATIONS, OR REGULATIONS AND CODES GOVERNING THE INSTALLATION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN WRITING BEFORE THE DATE OF BID OPENING. IF DISCREPANCIES ARE NOT REPORTED, THE CONTRACTOR SHALL BID THE GREATER QUANTITY OR BETTER QUALITY, AND APPROPRIATE ADJUSTMENTS WILL BE MADE AFTER CONTRACT AWARD. CONTRACTOR SHALL BE RESPONSIBLE TO FIELD MEASURE AND CONFIRM MOUNTING HEIGHTS AND LOCATION OF ELECTRICAL EQUIPMENT WITH RESPECT TO COUNTERS, RADIATION, ETC. DO NOT SCALE DISTANCES OFF THE ELECTRICAL DRAWINGS, USE ACTUAL BUILDING DIMENSIONS.

I. COOPERATION WITH OTHER CONTRACTORS
1. COOPERATE WITH THE OTHER TRADES SO THAT THE INSTALLATION OF THE ELECTRICAL OUTLETS AND EQUIPMENT WILL BE PROPERLY COORDINATED. CONDUIT, LIGHTING FIXTURES, AND OTHER EQUIPMENT LOCATIONS SHALL BE VERIFIED WITH OTHER TRADES TO AVOID CONFLICT WITH THE PIPING, DUCTWORK, STEEL, BEAMS, OR OTHER OBSTRUCTIONS.
2. CAREFULLY VERIFY THE LOCATIONS OF THE OUTLET BOXES AND DETERMINE THAT THEY HAVE NOT BEEN DISTURBED DURING THE INSTALLATION OF MATERIALS OF OTHER TRADES.
3. COORDINATE THE LOCATION OF THE TRENCHES AND CONDUITS FOR ELECTRICAL AND TELEPHONE UTILITY SERVICES WITH THE GENERAL CONTRACTOR.
4. COORDINATE HVAC AND PLUMBING EQUIPMENT CONNECTION REQUIREMENTS WITH HVAC AND PLUMBING CONTRACTORS.

J. RECORD DRAWINGS
1. THE ELECTRICAL CONTRACTOR SHALL MAINTAIN A SET OF DRAWINGS AT THE JOB SITE FOR THE EXCLUSIVE PURPOSE OF MAINTAINING A RECORD OF ALL WORK INSTALLED AND TO SHOW ANY DEVIATIONS FROM THE WORK INDICATED ON THE DRAWINGS.
2. AT THE COMPLETION OF THE PROJECT, ONE SET OF REPRODUCIBLE DRAWINGS, SHOWING ALL RECORD CONDITIONS, SHALL BE DELIVERED TO THE OWNER FOR ACCEPTANCE PRIOR TO FINAL PAYMENT.

PART II – PRODUCTS AND EXECUTION

A. MATERIALS
1. ALL MATERIALS SHALL BE NEW AND OF QUALITY AS SPECIFIED ON THE PLANS OR SPECIFICATIONS AND MUST CARRY THE UNDERWRITER'S LABORATORIES APPROVAL COVERING THE PURPOSE FOR WHICH THEY ARE USED, IN ADDITION TO MEETING ALL REQUIREMENTS OF THE CURRENT APPLICABLE CODES AND REGULATIONS.

B. SHOP DRAWINGS AND APPROVALS
1. THE ITEMS SPECIFIED HEREIN AND ON DRAWINGS ARE USED AS A STANDARD OF QUALITY. ANY MATERIALS OF EQUAL QUALITY AND AESTHETIC VALUE WILL BE GIVEN CONSIDERATION AS A SUBSTITUTE FOR THE MATERIALS SPECIFIED. NO APPROVAL WILL BE GIVEN TO A SPECIFIC CATALOG NUMBER, MODEL, OR TYPE OF EQUIPMENT, PRIOR TO BIDDING. AFTER BIDDING, THE DECISION OF THE ARCHITECT AND/OR ENGINEER DETERMINING EQUAL MATERIALS WILL BE FINAL.
2. THE CONTRACTOR SHALL SUBMIT (3) IDENTICAL BOUND SETS OF SHOP DRAWINGS ON THE FOLLOWING ITEMS TO THE G.C.:
   A. LIGHTING FIXTURE CUTS AND PERFORMANCE DATA.
   B. OUTLINE DRAWINGS AND DATA SHEETS OF EACH PANELBOARD, LOAD CENTERS, AND DISTRIBUTION PANELS.
   C. OUTLINE DRAWINGS OF ALL SWITCH GEAR COMPONENTS.
   D. WIRING DEVICES AND COVERPLATES.
   E. ALL CIRCUIT BREAKERS INSTALLED IN PANELBOARDS, LOAD CENTERS, AND DISTRIBUTION PANELS.

C. SYSTEM GROUNDING
1. GROUNDING SHALL COMPLY WITH REQUIREMENTS OF ARTICLE 250. ALL EXPOSED NONCURRENT CARRYING METALLIC PARTS OF ELECTRICAL EQUIPMENT, METALLIC RACEWAY SYSTEMS, METALLIC CABLE ARMOR, GROUNDING CONDUCTOR OF NONMETALLIC SHEATHED CABLES, GROUNDING CONDUCTOR IN NONMETALLIC RACEWAYS, AND GROUNDED CONDUCTORS OF THE WIRING SYSTEM SHALL BE GROUNDED.
2. GROUNDING CONDUCTOR (NEUTRAL) OF THE WIRING SYSTEM SHALL BE CONNECTED TO THE SYSTEM GROUNDING CONDUCTOR AT A SINGLE PLACE IN EACH SYSTEM BY REMOVABLE BONDING JUMPERS, SIZED ACCORDING TO THE APPLICABLE PROVISIONS OF THE NATIONAL ELECTRICAL CODE. THE GROUNDED CONDUCTOR (NEUTRAL) TO THE GROUNDING CONDUCTOR CONNECTION SHALL BE LOCATED IN THE ENCLOSURE FOR THE SYSTEM'S OVERCURRENT PROTECTION OR WHERE OTHERWISE INDICATED ON THE PLANS OR SPECIFICATIONS.
3. A GROUND BUS SEPARATE FROM THE NEUTRAL BUS SHALL BE PROVIDED IN ALL DISTRIBUTION PANELS AND PANELBOARDS. PROPER TORQUE ON GROUND BUS SHALL BE VERIFIED, PER MANUFACTURER'S RECOMMENDATIONS, PRIOR TO ENERGIZING EQUIPMENT.
4. GROUND BUSES AND NEUTRAL BUSES IN ALL DISTRIBUTION PANELS, LOAD CENTERS, PANELBOARDS, AND THOSE PROVIDED IN ANY EQUIPMENT SHALL BE ISOLATED EXCEPT WHERE REQUIRED TO BE CONNECTED AS SPECIFIED ABOVE FOR THE SERVICE ENTRANCE
5. WHEN INDICATED ON THE DRAWINGS, EQUIPMENT GROUNDING CONDUCTORS SHALL BE EXTENDED FROM THE GROUND BUS IN THE DISTRIBUTION EQUIPMENT TO THE RECEPTACLE, FIXTURE OR DEVICE LUGS WHERE THEY ARE PROVIDED. WHERE LUGS ARE NOT PROVIDED, EQUIPMENT GROUNDING CONDUCTORS SHALL BE CONNECTED TO EQUIPMENT ENCLOSURES. THE CONNECTIONS SHALL BE ARRANGED SUCH THAT REMOVAL OF THE RECEPTACLE, EQUIPMENT GROUND CONDUCTORS, OR GROUND JUMPERS FROM GROUND BUSING SHALL NOT AFFECT THE GROUND SYSTEM.
6. RACEWAYS MAY NOT BE USED AS A GROUNDING CONDUCTOR FOR POWER AND LIGHTING CIRCUITS. ALL CONDUIT SHALL HAVE SEPARATE CODE SIZED GREEN GROUND WIRE INSTALLED IN THE CONDUIT TO INSURE A CONTINUOUS GROUNDING PATH.
7. IN INACCESSIBLE LOCATIONS, MAKE CONNECTIONS BY EXOTHERMIC WELD PROCESS.
8. IN ACCESSIBLE LOCATIONS, CONNECTIONS SHALL BE MADE WITH BOLTED THROUGH, APPROVED SOLDERLESS BRONZE GROUNDING DEVICES.

D. WIRE
1. CONDUCTOR SIZES SHOWN ON THE DRAWINGS ARE BASED ON COPPER WIRE. UNLESS OTHERWISE SPECIFIED, ALL WIRE SHALL BE TYPE XHHW OR SE FOR FEEDERS OR BRANCH CIRCUITS LARGER THAN 4 AWG, TYPE THHN/THWN INSULATION FOR FEEDERS AND BRANCH CIRCUITS 4 AWG AND SMALLER. ALL BRANCH CIRCUIT WIRING SHALL BE COPPER.
   A. ALUMINUM CONDUCTORS MAY BE UTILIZED FOR SERVICE ENTRANCE AND PANEL FEEDERS. CONDUCTORS SHALL BE ALUMINUM ALLOW AA–8000 SERIES.
2. THE WIRES SHALL BE MARKED WITH COLOR TO SIMPLIFY CIRCUIT IDENTIFICATION. UNLESS OTHERWISE REQUIRED BY LOCAL ORDINANCES GROUND WIRES SHALL BE GREEN, NEUTRAL WIRES SHALL BE 120V–WHITE, AND LIVE WIRES 208Y/120V AND 120/240 SHALL BE BLACK (PHASE A), RED (PHASE B), AND BLUE (PHASE C). CIRCUIT SHALL BE LABELED IN EACH J–BOX.
   A. ALL CONDUCTORS SHALL BE RATED 600 VOLT.
3. SPLICES IN EXTERIOR PULL BOXES AND MANHOLES SHALL BE WEATHERPROOF USING "SCOTCHCAST" SPLICE KIT OR APPROVED EQUAL. SEAL ENDS OF CONDUITS AND DUCTS WITH "DUCTSEAL" OR APPROVED EQUAL.
4. PROVIDE SOLID CONDUCTOR FOR 12 AWG AND SMALLER.
5. NO WIRE SHALL BE INSTALLED IN THE CONDUIT SYSTEM UNTIL THE CONDUIT SYSTEM IS COMPLETE. USE MINERALAC NO. 100 OR EQUIVALENT AS A LUBRICANT TO FACILITATE THE INSTALLATION OF THE CONDUCTORS IN THE CONDUIT SYSTEM.
6. MC CABLE WITH COPPER CONDUCTORS AND GROUND WIRE MAY BE USED WHERE PERMITTED.

E. CONDUIT
1. MC CABLE MAY BE USED AS ALLOWED BY THE NEC.
2. WHERE CONDUIT ENTERS OUTLET BOXES, FIXTURES OR CABINETS, FIRMLY FASTEN WITH STEEL SET SCREW, COMPRESSION CONNECTORS, OR DOUBLE LOCKNUTS FOR GRC. ALL CONNECTIONS SHALL HAVE BUSHINGS OR INSULATED THROAT CONNECTORS. FIRMLY FASTEN CONDUIT TO THE BUILDING CONSTRUCTION. RUN EXPOSED CONDUIT PARALLEL TO THE BUILDING LINES, SUPPORTED BY APPROPRIATE HANGERS (UNISTRUT, T & B OR APPLETON, OR EQUAL).
3. CONDUIT PENETRATION THROUGH ROOF SHALL HAVE ROOF FLASHING WITH CAULK TYPE COUNTER FLASHING SLEEVE. INSTALLATION SHALL BE WATERTIGHT.
4. CONDUITS SHALL BE ROUTED PARALLEL AND PERPENDICULAR TO THE STRUCTURE.

F. OUTLET, PULL, AND JUNCTION BOXES
1. EACH SWITCH, LIGHT, RECEPTACLE OR OTHER OUTLET, SHALL BE PROVIDED WITH A CODE SIZED, STEEL OUTLET BOX. JUNCTION AND PULL BOXES SHALL BE METAL AND CODE SIZED.
2. BOXES INSTALLED IN POURED CEMENT FLOORS SHALL BE FLUSH TYPE CAST IRON OR STEEL WITH WATERTIGHT GASKETED COVERS. WHERE BOXES ARE INSTALLED IN FLOORS WITH TILE OR CARPET FLOOR COVERING, COVERS SHALL BE OF THE RECESSED TYPE TO ACCOMMODATE THE FLOOR COVERING.
3. BOXES INSTALLED FOR THE ALARM, COMPUTER, AND SECURITY SYSTEM SHALL BE PROVIDED WITH APPROPRIATE COVER PLATES.
4. BOXES FOR TELEPHONE, COMPUTER, T.V., FIRE ALARM, SECURITY, AND SIMILAR SYSTEMS SHALL BE MINIMUM 2–1/8" DEEP.

G WIRING DEVICES
1. WALL SWITCHES SHALL BE SPECIFICATION GRADE AC SILENT TYPE SWITCHES, 20A 120/277 VOLT.
2. RECEPTACLES SHALL BE SPECIFICATION GRADE, DUPLEX TYPE. NEMA5–20R, 20 AMPERE, 120VOLT GROUNDED TYPE. SPECIAL APPLICATION RECEPTACLES SHALL BE INDICATED ON PLANS. MOUNT WITH THE GROUND DOWN.
3. DEVICE PLATES SHALL BE EQUAL TO SIERRA SMOOTH–LINE PLASTIC WALL PLATES. COLOR SHALL BE WHITE, UNLESS OTHERWISE NOTED.
4. RECEPTACLES IN OUTDOOR AND WET LOCATIONS SHALL BE INSTALLED WITH A HINGED OUTLET COVER/ENCLOSURE CLEARLY MARKED AND U.L. LISTED SUITABLE FOR WET LOCATIONS WHILE IN USE, EQUAL TO TAYMAC SPECIFICATION GRADE.

H. PANEL BOARDS
1. CIRCUIT BREAKER TYPE AS INDICATED ON DRAWINGS. UNLESS INDICATED OTHERWISE, ALL PANELS SHALL HAVE PANEL HAVE PANEL BOARD TYPE CONSTRUCTION WITH BOLT–ON CIRCUIT BREAKERS FOR 3ø PANELS
2. MANUFACTURERS SHALL BE GENERAL ELECTRIC, SQUARE D, SEIMENS, CUTLER–HAMMER WITH VOLTAGE, SIZES, AND RATINGS AS INDICATED ON DRAWINGS.
3. THE CIRCUIT BREAKERS SHALL BE OPERABLE IN ANY POSITION AND BE REMOVABLE FROM THE FRONT OF THE PANEL BOARD WITHOUT DISTURBING THE ADJACENT UNITS. BRANCH BREAKERS SHALL BE OF SUCH DESIGN THAT COMBINATION OF SINGLE–POLE, DOUBLE–POLE, AND THREE–POLE BREAKERS CAN BE ASSEMBLED ON THE SAME PANEL. EACH BRANCH CIRCUIT SHALL BE CLEARLY NUMBERED. BRANCH AND MAN TERMINALS SHALL BE SOLDERLESS TYPE. HANDLE TIES TO FORM MULTI–POLE BREAKERS NOT ACCEPTABLE.

I. LIGHTING FIXTURES
1. PROVIDE ALL LIGHTING FIXTURES, WIRED AND CONNECTED. THE DRAWINGS INDICATE THE FIXTURES FOR EACH LOCATION. PROVIDE LAMPS FOR ALL FIXTURES. THE LAMPS SHALL BE BY THE SAME MANUFACTURER. VERIFY CEILING CONSTRUCTION BEFORE ORDERING RECESSED UNITS. PROVIDE PLASTER FRAMES AND HANGERS AS REQUIRED. CEILING CONSTRUCTION, ARCHITECTURAL ACCESSORIES, VOLTAGE, AND BALLASTS TO MEET THE EXISTING CEILING CONDITION.

J. TELEPHONE AND CABLE TELEVISION SYSTEMS
1. TELEPHONE WALL OUTLETS SHALL CONSIST OF STANDARD BOXES MOUNTED 18" ABOVE THE FLOOR UNLESS OTHERWISE INDICATED. PROVIDE A TERMINAL MOUNTING BOARD FOR THE INCOMING SERVICE CABLE.
2. CABLE TELEVISION OUTLETS SHALL CONSIST OF STANDARD BOXES MOUNTED 18" ABOVE THE FLOOR UNLESS OTHERWISE INDICATED. PROVIDE A TERMINAL MOUNTING BOARD FOR THE INCOMING SERVICE CABLE.

K. GUARANTEE
1. GUARANTEE ALL MATERIAL FURNISHED AND ALL WORKMANSHIP PERFORMED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE OF WORK. ANY DEFECTS DEVELOPING WITHIN THIS PERIOD, TRACEABLE TO MATERIAL FURNISHED AS A PART OF THIS SECTION OR WORKMANSHIP PERFORMED HEREUNDER, SHALL BE MADE GOOD AT NO EXPENSE TO THE OWNER.

L. FIRE SEALING NOTES
1. COORDINATE CONSTRUCTION OF OPENINGS AND PENETRATING ITEMS TO ENSURE THAT THROUGH–PENETRATION FIRESTOP SYSTEMS ARE INSTALLED ACCORDING TO SPECIFIED AND APPLICABLE UL REQUIREMENTS.
2. COORDINATE SIZING OF SLEEVES, OPENINGS, CORE–DRILLED HOLES, OR CUT OPENINGS TO ACCOMMODATE THROUGH–PENETRATION FIRESTOP SYSTEMS.
3. DO NOT COVER UP THROUGH–PENETRATION FIRESTOP SYSTEM INSTALLATIONS UNTIL EXAMINED BY INSPECTOR, IF REQUIRED BY AUTHORITIES HAVING JURISDICTION.
4. COMPATIBILITY: PROVIDE THROUGH–PENETRATION FIRESTOP SYSTEMS THAT ARE COMPATIBLE WITH ONE ANOTHER; WITH THE SUBSTRATES FORMING OPENINGS; AND WITH THE ITEMS, IF ANY, PENETRATING THROUGH–PENETRATION FIRESTOP SYSTEMS, UNDER CONDITIONS OF SERVICE AND APPLICATION, AS DEMONSTRATED BY THROUGH–PENETRATION FIRESTOP SYSTEM MANUFACTURER BASED ON TESTING AND FIELD EXPERIENCE.
5. PROVIDE COMPONENTS FOR EACH THROUGH–PENETRATION FIRESTOP SYSTEM THAT ARE NEEDED TO INSTALL FILL MATERIALS. USE ONLY COMPONENTS SPECIFIED BY THROUGH–PENETRATION FIRESTOP SYSTEM MANUFACTURER AND APPROVED BY QUALIFIED TESTING AND INSPECTING AGENCY FOR FIRESTOP SYSTEMS INDICATED.
6. PROVIDE SLEEVES THROUGH ALL FIRE–RATED WALLS AND FILL VOIDS SURROUNDING SLEEVES AND INTERIOR TO SLEEVES AROUND PIPING WITH FIRE STOP PUTTY WITH U.L. LISTED 3 HOUR RATING INSTALLED AS PER MANUFACTURERS RECOMMENDATIONS.
7. FIRE SEAL ALL PIPING, CONDUIT, CABLE, ETC PENETRATIONS ROUTED THROUGH FIRE RATED WALLS.
8. PROVIDE FIRE RATED ENCLOSURES OR WRAPS ON LIGHT FIXTURES AND OTHER ITEMS PENETRATING FIRE RATED CEILINGS, FLOOR/CEILING/ CEILING/ROOF ASSEMBLIES TO MAINTAIN UL LISTING FOR CONSTRUCTION.

M. COORDINATION STUDY & ARC FLASH REQUIREMENTS
1. THE ELECTRICAL CONTRACTOR MUST HIRE AN INDEPENDENT THIRD PARTY TO PERFORM A COORDINATION STUDY OF THE ENTIRE ELECTRICAL SYSTEM. THE COORDINATION STUDY SHALL BE PERFORMED AFTER THE ENGINEER HAS APPROVED THE SHOP DRAWINGS AND A MANUFACTURE HAS BEEN SELECTED. THE STUDY MUST BE PRESENT TO THE ENGINEER AND OWNER FOR REVIEW AND APPROVAL TO ENSURE THE ENTIRE ELECTRICAL SYSTEM IS PROPERLY COORDINATED.
2. ARC FLASH REQUIREMENTS:
   Q. PROVIDE AN ARC FLASH EVALUATION FOR THE NEW ELECTRICAL EQUIPMENT. PERFORM ALL CALCULATIONS AND WORK WITH COMMERCIALLY AVAILABLE COMPUTER SOFTWARE IN ACCORDANCE WITH IEEE DTD. 1584–2018 IEEE GUIDE FOR PERFORMING ARC–FLASH HAZARD CALCULATIONS, NFPA 70–2017 (NEC), AND NFPA 70E–2018 STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE.
   R. WHERE THE CALCULATIONS DETERMINE THAT THE SETTINGS RESULT IN PROHIBITIVE INCIDENT ENERGY LEVELS (>40 CAL/CM2) THE CONTRACTOR SHALL PROVIDE RECOMMENDED SETTINGS OR OTHER MITIGATION RECOMMENDATIONS TO REDUCE THE INCIDENT ENERGY TO A LEVEL WHERE ENERGIZED WORK IS CAPABLE OF BEING PERFORMED. THE CONTRACTOR SHALL DOCUMENT THE RECOMMENDED CHANGES AND PROVIDED TIME CURRENT CURVES INDICATING THE COORDINATION THAT REFLECTS THE RECOMMENDED SETTINGS.
   S. PROVIDE LABELS FOR EACH ELECTRICAL ENCLOSURE OR EQUIPMENT WHERE WORKERS COULD BE EXPOSED TO ENERGIZED CONDUCTORS. THESE LABELS SHALL COMPLY WITH THE REQUIREMENTS OF NFPA 70E–2018 AND INCLUDE BUT NOT LIMITED TO:
      S.1. VOLTAGE PHASE TO PHASE.
      S.2. FLASH PROTECTION BOUNDARY (INCHES)
      S.3. INCIDENT ENERGY AT THE WORKING DISTANCE (CAL/CM2)
      S.4. PPE CLASS AND DESCRIPTION (INCLUDING GLOVE RATING)
      S.5. RESTRICTED APPROACH BOUNDARY (INCHES)
      S.6. LIMITED SHOCK APPROACH BOUNDARY (INCHES)
      S.7. PROHIBTED SHOCK APPROACH BOUNDARY (INCHES)
      S.8. LOCATION IDENTIFICATION

GENERAL NOTES

A. DRAWINGS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED. REFER TO ARCHITECTURAL PLANS OR FIELD MEASUREMENTS FOR DIMENSIONS.

B. ALL WORK SHALL COMPLY WITH THE LATEST ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70) AND ALL LOCAL BUILDING CODES AND AMENDMENTS.

C. ALL ROOF AND WALL PENETRATIONS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR. PROVIDE ALL REQUIRED SLEEVES, FLASHINGS, CURBS, REINFORCED ANGLES, SUPPORTING FRAMES, ETC. UNLESS THEY ARE SPECIFICALLY CALLED OUT TO BE FURNISHED BY OTHERS.

D. COORDINATE ALL WORK WITH OTHER TRADES AS REQUIRED TO PROPERLY INSTALL ALL SYSTEMS AS INTENDED, WITHIN THE CONFINES OF THE SPACE AVAILABLE, AND WITHOUT INTERFERENCES.

E. THIS CONTRACTOR SHALL PERFORM ALL WORK INDICATED AND/OR AS REQUIRED FOR THE PROPER INSTALLATION AND OPERATION OF THE ELECTRICAL SYSTEMS.

F. ALL WIRING SHALL BE IN APPROVED RACEWAY.

G. WIRE SIZE SHALL BE MINIMUM #12 AWG, THWN SOLID COPPER UNLESS OTHERWISE NOTED. PROVIDE GROUND WIRE WHERE REQUIRED BY CODE. INCREASE WIRE SIZE TO COMPENSATE FOR VOLTAGE DROP WHERE TOTAL LENGTH OF ANY BRANCH EXCEEDS 100 FEET.

H. MAXIMUM NUMBER OF UNGROUNDED WIRES IN ANY CONDUIT SHALL BE THREE. ADDITIONAL WIRES ARE ACCEPTABLE IF WIRE SIZE IS INCREASED TO ALLOW FOR DERATING PER CODE. PROVIDE ADDITIONAL WIRES FOR SWITCHING AS REQUIRED.

I. REFER TO LIGHTING FIXTURE SCHEDULE ON E201 FOR LIGHT FIXTURE TYPES AND REQUIREMENTS.

J. CONNECT ALL EXIT SIGNS AND EMERGENCY LIGHTING UNITS TO THE INDICATED CIRCUIT WITH A SEPARATE AND UN–SWITCHED CONDUCTOR BYPASSING ALL CONTROLS AND CONTACTORS. REFER TO MANUFACTURER'S WRITTEN INSTRUCTIONS FOR PROPER INSTALLATION AND TESTING.

K. THE ELECTRICAL SYSTEM DESIGN IS BASED IN PART ON THE SPECIFIED HVAC EQUIPMENT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE EXACT LOCATIONS AND ELECTRICAL REQUIREMENTS OF ALL HVAC EQUIPMENT BEING FURNISHED. ANY CHANGES TO THE ELECTRICAL SYSTEM DUE TO HVAC EQUIPMENT SUBSTITUTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

L. FIRE ALARM, AUDIO/VIDEO AND SURVEILLANCE SYSTEMS BY OTHERS.

M. PROVIDE ALL ADDITIONAL EXTRA CONDUCTORS NEEDED FOR UNSWITCHED AND SWITCH LEGS AND TRAVELERS BETWEEN SWITCHES.

SYMBOLS LEGEND

NOTE: THIS IS A MASTER LEGEND AND NOT ALL SYMBOLS, ETC, ARE NECESSARILY USED ON THE DRAWINGS.

LIGHTING FIXTURES – SYMBOL/LETTER INDICATES LIGHT FIXTURE AS INDICATED ON FIXTURE SCHEDULE

- LED FIXTURE (SEE LIGHTING FIXTURE SCHEDULE)
- FIXTURE WITH EMERGENCY BATTERY DRIVER UNIT
- TRACK LIGHT
- DOWNLIGHT FIXTURE WITH EMERGENCY BATTERY DRIVER UNIT
- WALL MOUNTED FIXTURE WITH EMERGENCY BATTERY DRIVER UNIT
- PENDANT MOUNTED FIXTURE WITH EMERGENCY BATTERY DRIVER UNIT
- DOWNLIGHT FIXTURE
- WALL MOUNTED FIXTURE
- PENDANT MOUNTED FIXTURE
- WALL WASHER
- SINGLE FACE EXIT SIGN – UNIVERSAL MOUNTED
- SINGLE FACE EXIT SIGN W/ DIRECTIONAL ARROWS – UNIVERSAL MTD
- DOUBLE FACE EXIT SIGN W/ DIRECTIONAL ARROWS – UNIVERSAL MTD
- DUAL HEADED EMERGENCY UNIT
- COMBO DUAL HEADED EMERGENCY AND EXIT SIGN UNIT

LIGHTING CONTROLS

- S — SINGLE POLE SWITCH @ +48" UNLESS NOTED
- Sabc — SWITCH BANK @ +48" UNLESS NOTED. LOWER CASE LETTER INDICATES FIXTURE CONTROLLED.
- S3 — 3–WAY SWITCH @ +48" UNLESS NOTED
- S4 — 4–WAY SWITCH @ +48" UNLESS NOTED
- SD — DIMMER SWITCH – SIZE AS REQUIRED @ +48" UNLESS NOTED
- SM — MANUAL MOTOR STARTER
- SOS — WALL SWITCH WITH OCCUPANCY SENSOR. DIGITAL LOW VOLTAGE WALL SWITCH. SWITCH @ +48" UNLESS NOTED.
- SLV — TWO BUTTON DIGITAL LOW VOLTAGE WALL SWITCH. PROVIDES ON/OFF/0–10V DIMMING. SWITCH @ +48" UNLESS NOTED. PROVIDE EXTRA CONTROL CABLES NEEDED TO FIXTURE CONTROLLED.
- OS — LIGHTING CONTROLS CEILING MOUNT OCCUPANCY SENSOR
- PP — LIGHTING CONTROLS POWER PACK

POWER DISTRIBUTION

- SWITCHBOARD, MOTOR CONTROL CENTER OR DISTRIBUTION BOARD
- 277/480V, 3 PHASE, 4 WIRE PANELBOARD, UNO
- 120/208V, 3 PHASE, 4 WIRE PANELBOARD, UNO
- 120/240V, 1 PHASE, 3 WIRE PANELBOARD, UNO
- T — TRANSFORMER

POWER DEVICES

- SPECIAL HEAVY DUTY RECEPTACLE – SIZE AS NOTED. @ +18" UNLESS NOTED
- 1/2 SWITCHED RECEPTACLE @ +18" UNLESS NOTED
- FIRE RATED POKE THRU WITH TYPE INDICATED
- FLUSH FLOOR BOX WITH TYPE INDICATED
- SINGLE RECEPTACLE @ +18" UNLESS NOTED
- DUPLEX RECEPTACLE @ +18" UNLESS NOTED
- DOUBLE DUPLEX RECEPTACLE @ +18" UNLESS NOTED
- DUPLEX RECEPTACLE INSTALLED ABOVE COUNTERTOP
- GFI — GFCI–RATED DUPLEX RECEPTACLE
- AF — ARC FAULT RATED DUPLEX RECEPTACLE
- TR — TAMPER RESISTANT RATED DUPLEX RECEPTACLE
- WP — DUPLEX RECEPTACLE WITH WEATHERPROOF COVERPLATE @ 18" UNLESS NOTED
- J — JUNCTION BOX
- DISCONNECT SWITCH – SIZE AND TYPE NOTED
- COMBINATION FUSED STARTER DISCONNECT SWITCH FUSE SIZE AS INDICATED, STARTER SIZE '1'

AUXILIARY SYSTEMS

- EF 1 — MECHANICAL EQUIP. CONNECTION, SEE SCHED. ON MECH. PLAN
- TELEPHONE OUTLET@ +18" UNLESS NOTED
- DATA OUTLET @ +18" UNLESS NOTED
- COMBINATION TELEPHONE/DATA OUTLET @ +18" UNLESS NOTED
- TV — TELEVISION OUTLET @ +60" UNLESS NOTED
- SMOKE DETECTOR
- HEAT DETECTOR
- DUCT SMOKE DETECTOR
- RT — REMOTE TEST STATION WITH INDICATING LIGHT. MOUNT AT 48" AFF UNO.
- AUXILIARY SYSTEM TERMINAL CABINET

GENERAL

- CONDUIT RUN CONCEALED IN WALL OR ABOVE CEILING
- CONDUIT RUN BELOW FLOOR OR GRADE
- P1–3,5,7 — HOMERUN TO PANELBOARD, INFORMATION AT ARROWS ARE CIRCUIT NUMBERS AND PANELBOARD FOR TERMINATION. REFER TO ASSOCIATED NOTE FOR BRANCH CIRCUIT CONDUCTOR SIZES.
- INDICATES 1/2" CONDUIT CONCEALED IN CEILING OR WALL WITH (3) CONDUCTORS. (1) PHASE, (1) NEUTRAL AND (1) GROUND WIRE. ALL ARE #12 AWG UNLESS NOTED OTHERWISE.
- (E) OR ETR: DENOTES EXISTING ITEM/EQUIPMENT TO REMAIN

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Seal:

Project Number: 23-015
Project Type: NEW CONSTRUCTION
Project Name and Address:

LAKEWOOD BUSINESS CENTER, LOT 1
NE Maguire Blvd.
Lee's Summit, Missouri 64064

Issue:	Date:
Permit Set	08.31.23

Sheet Title:

ELECTRICAL SPECIFICATIONS, SYMBOLS, & NOTES

E-001

Luminaire Schedule				
Tag	Description	LLF	Luminaire Lumens	Luminaire Watts
S1	DSX2 LED P4 40K 70CRI BLC3	0.800	25482	272.65
S1W	DSXW2 LED 30C 1000 40K T3M MVOLT	0.800	11279	109

Calculation Summary					
Label	Units	Avg	Max	Min	Max/Min
Parking_Lot	Fc	1.76	4.6	0.2	23.00
Property_Line	Fc	0.02	0.3	0.0	N.A.
Truck_Drive	Fc	1.71	4.2	0.2	21.00

PHOTOMETRIC SCHEDULES

2

SCALE : NO SCALE

SPECIFICATIONS

1. ALL CONDUCTORS SHALL BE THHN COPPER ABOVE GRADE, XHHW-2 BELOW GRADE, MINIMUM #12.
2. ALL WIRING EXPOSED TO WEATHER OR BELOW GRADE SHALL BE IN RIGID GALVANIZED CONDUIT OR SCH. 40 PVC.
3. ALL OTHER WIRING SHALL BE IN EMT, SCH. 40 PVC OR MC CABLE, UNLESS PROTECTED AND ENCLOSED WITHIN BUILDING MATERIALS, IN WHICH CASE TYPE NM CABLE MAY BE USED.
4. THE ENTIRE SYSTEM SHALL BE ELECTRICALLY CONTINUOUS AND PROPERLY GROUNDED. EVERY FEEDER AND BRANCH CONDUIT SHALL HAVE CODE SIZED GREEN INSULATED GROUND CONDUCTOR.
5. "MH" = MOUNTING HEIGHT (IN FEET)

SYMBOLS LEGEND

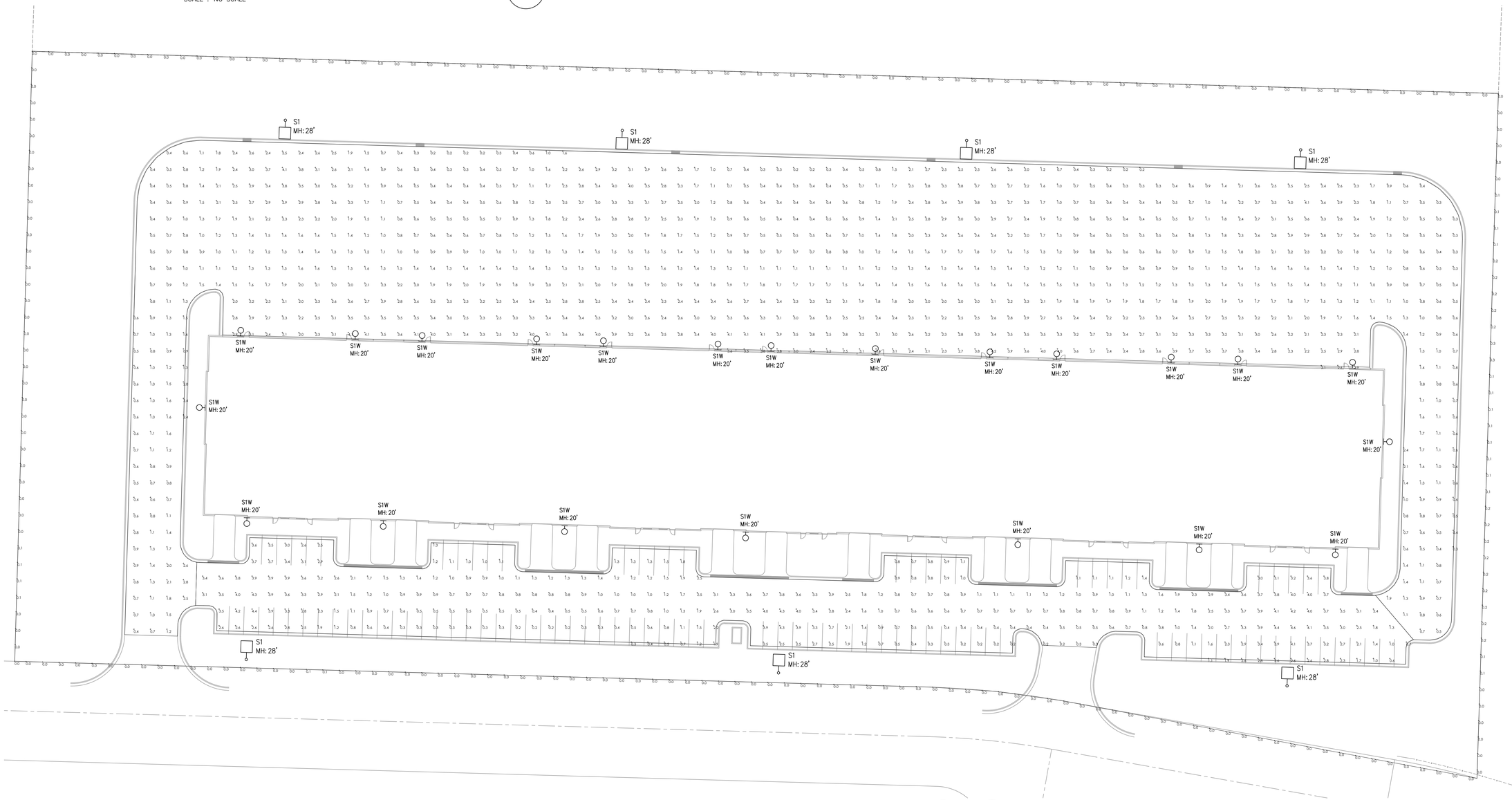
NOTE: THIS IS A MASTER LEGEND AND NOT ALL SYMBOLS, ETC, ARE NECESSARILY USED ON THE DRAWINGS.

SITE LIGHTING FIXTURE WITH HOUSE SIDE SHIELD. MOUNT AT 28'-0". BASIS OF DESIGN: LITHONIA D-SERIES.

WALL PACK FIXTURE. MOUNT AT 20'-0". BASIS OF DESIGN: LITHONIA D-SERIES.

GENERAL NOTE

1. ALL WORK SHALL COMPLY WITH THE LEE'S SUMMIT, MO UNIFIED DEVELOPMENT ORDINANCE ARTICLE 8 SUBDIVISION 5. – LIGHTING STANDARDS.
2. ALL ELECTRICAL/CONDUIT STREET CROSSINGS NEED TO BE BACKFILLED WITH AB-3 OR FLOWABLE FILL IN ACCORDANCE WITH MUNICIPAL REQUIREMENTS.



SITE LIGHTING PHOTOMETRIC

1

SCALE : 1" = 30'-0"

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PROFESSIONAL ENGINEER

08-31-2023

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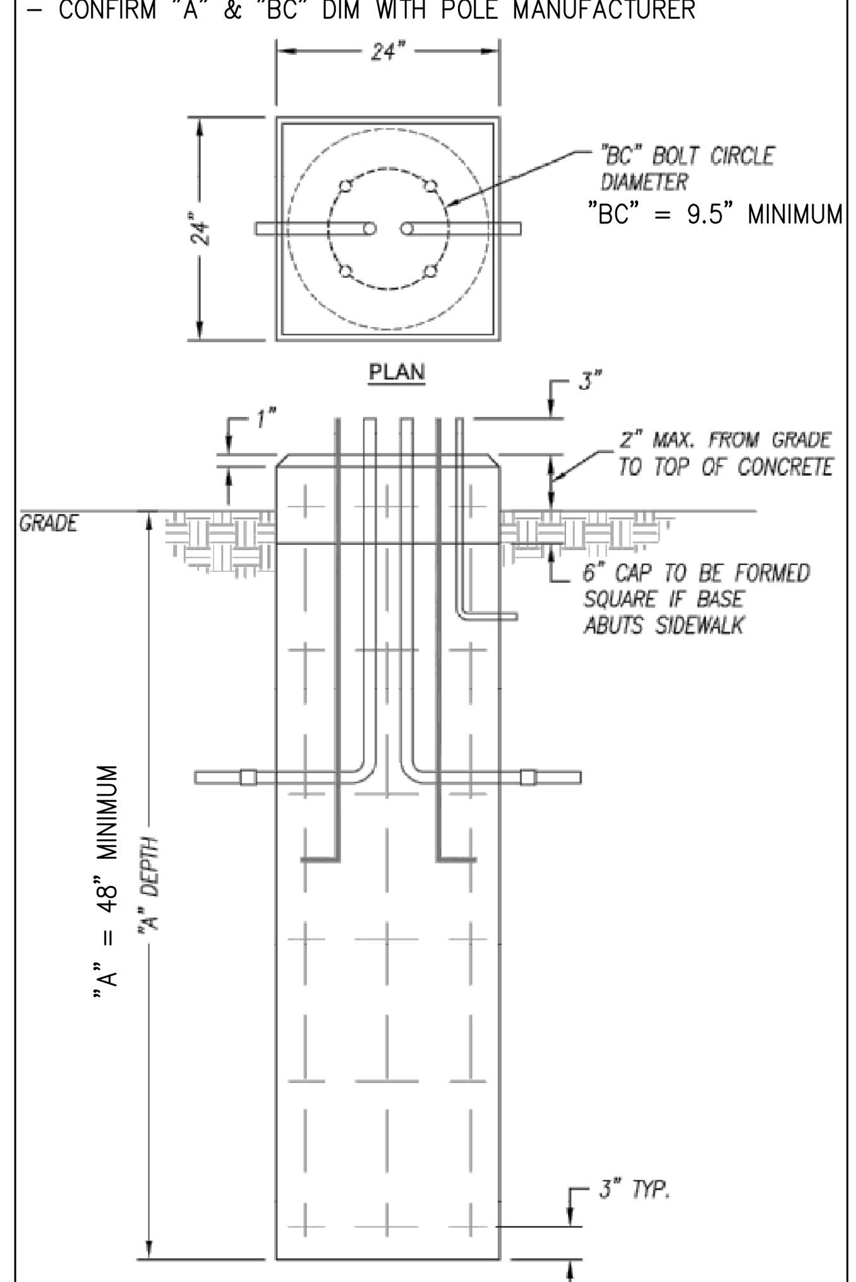
Sheet Title:

SITE LIGHTING PHOTOMETRIC

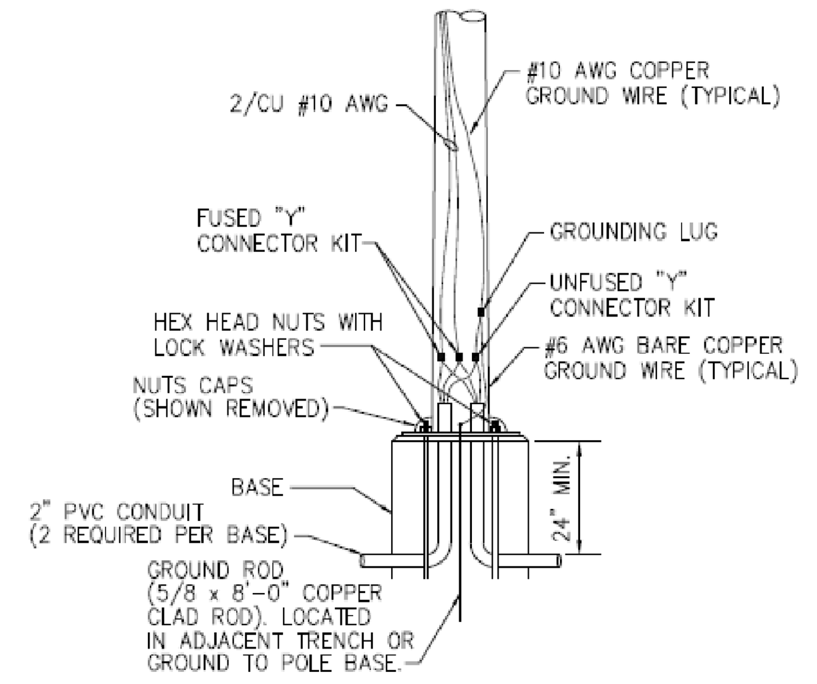
E-002

POLE BASE DETAIL
- CONFIRM "A" & "BC" DIM WITH POLE MANUFACTURER



AT-GRADE POLE BASE ELEVATION

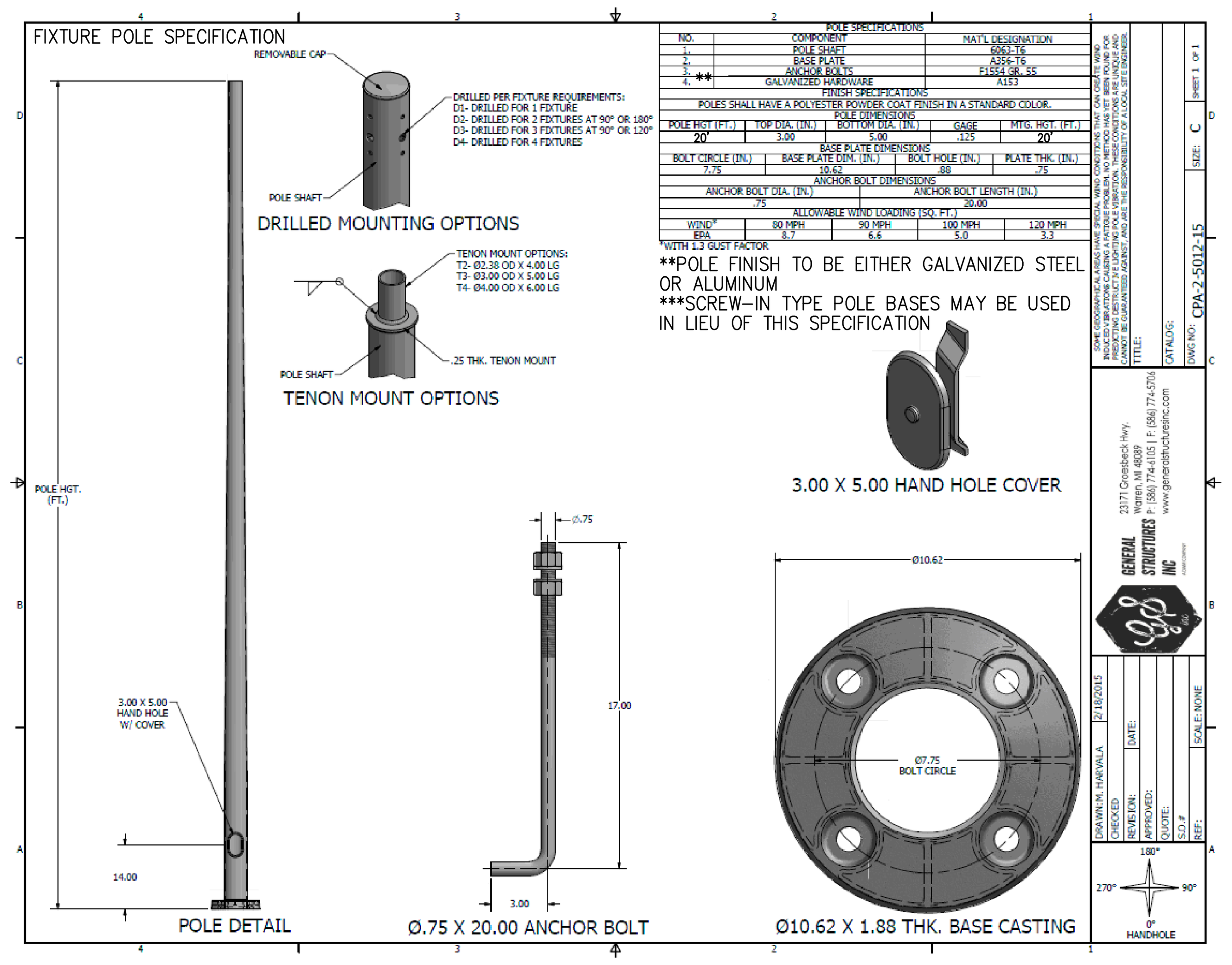
POLE-TO-BASE CONNECTION DETAIL



CAUTION!
CONTRACTOR SHALL REFER TO UTILITY NOTE (ON PLAN) WHEN INSTALLING LIGHT PEDESTAL IN VICINITY OF UTILITIES.

POLE TO BASE CONNECTIONS
NOT TO SCALE

FIXTURE POLE SPECIFICATION



POLE SPECIFICATIONS		
NO.	COMPONENT	MAT'L DESIGNATION
1.	POLE SHAFT	6063-T6
2.	BASE PLATE	A356-T6
3. **	ANCHOR BOLTS	F1554 GR. 55
4.	GALVANIZED HARDWARE	A153

FINISH SPECIFICATIONS: POLES SHALL HAVE A POLYESTER POWDER COAT FINISH IN A STANDARD COLOR.

POLE DIMENSIONS				
POLE HGT (FT.)	TOP DIA. (IN.)	BOTTOM DIA. (IN.)	GAGE	MTG. HGT. (FT.)
20'	3.00	5.00	.125	20'

BASE PLATE DIMENSIONS			
BOLT CIRCLE (IN.)	BASE PLATE DIM. (IN.)	BOLT HOLE (IN.)	PLATE THK. (IN.)
7.75	10.62	.88	.75

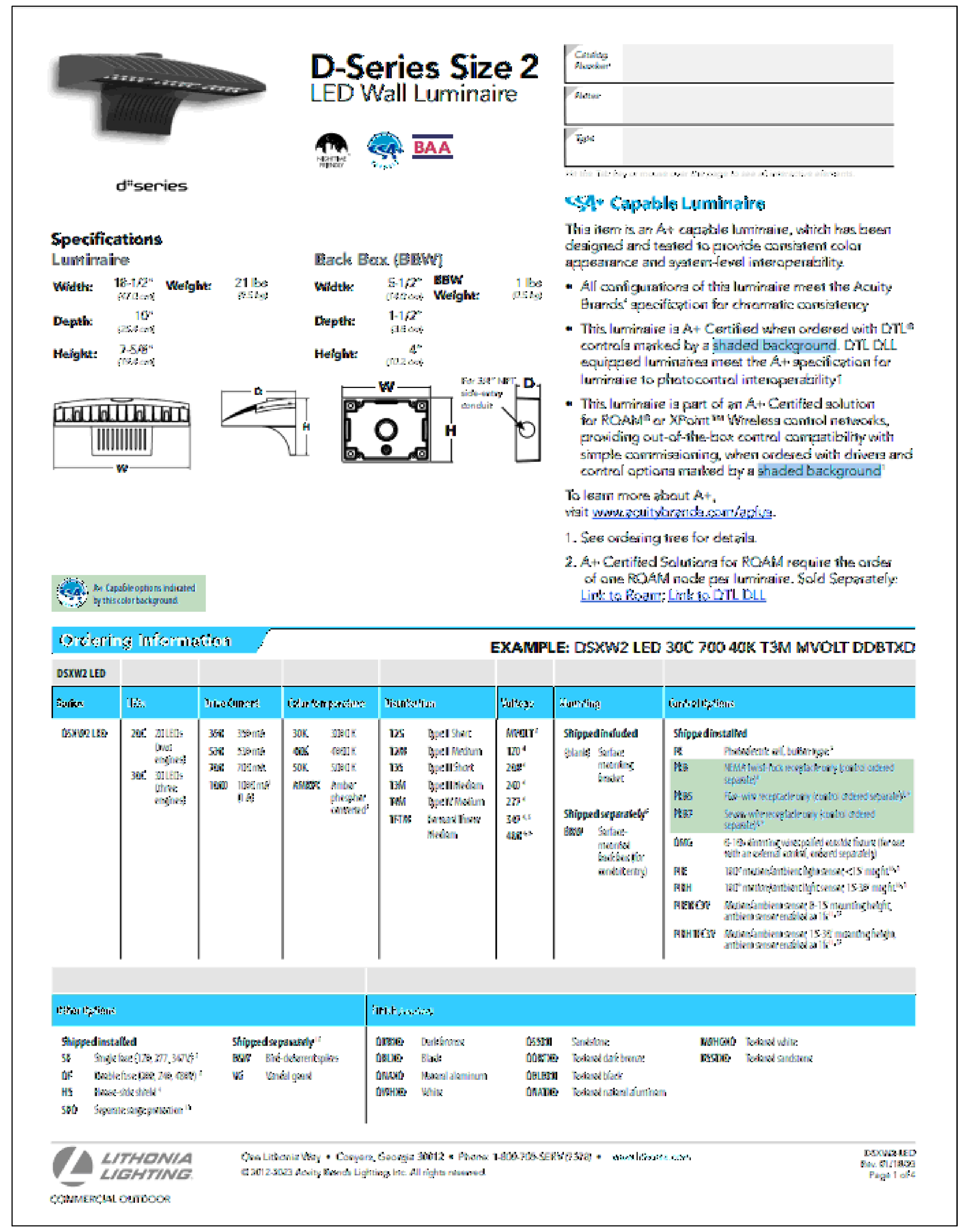
ANCHOR BOLT DIMENSIONS	
ANCHOR BOLT DIA. (IN.)	ANCHOR BOLT LENGTH (IN.)
.75	20.00

ALLOWABLE WIND LOADING (SQ. FT.)				
WIND*	80 MPH	90 MPH	100 MPH	120 MPH
EPA	8.7	6.6	5.0	3.3

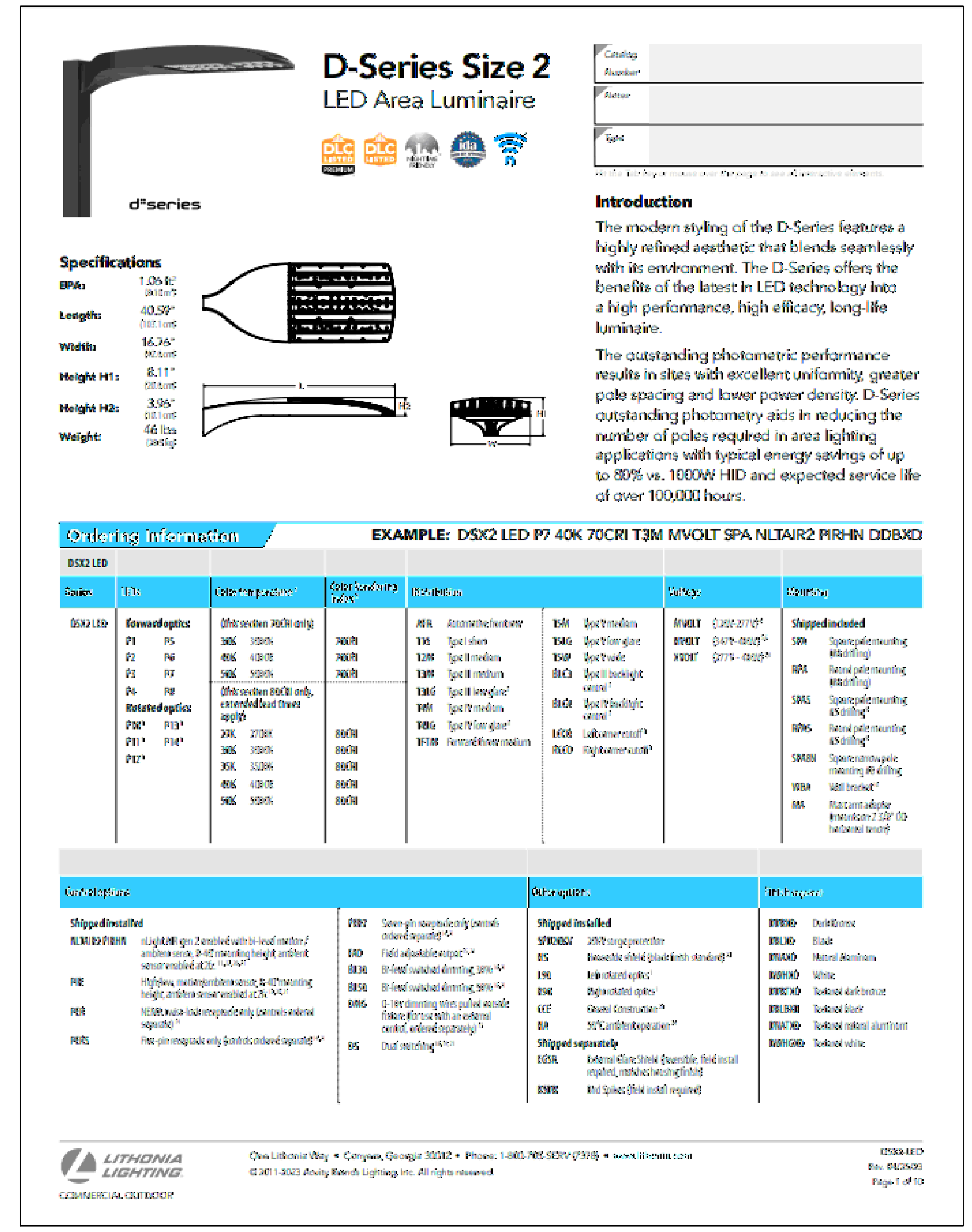
*WITH 1.3 GUST FACTOR

**POLE FINISH TO BE EITHER GALVANIZED STEEL OR ALUMINUM
***SCREW-IN TYPE POLE BASES MAY BE USED IN LIEU OF THIS SPECIFICATION

FIXTURE "S1W"



FIXTURE "S1"



FIXTURE SPECIFICATIONS (1)
SCALE : NO SCALE

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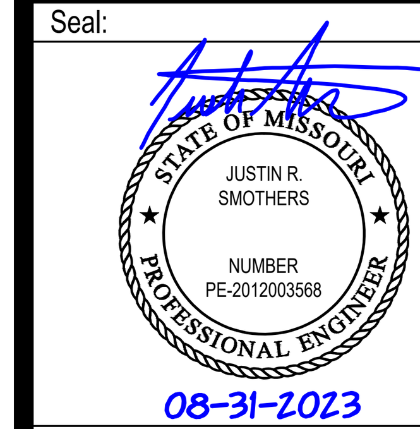
Seal:



Project Number: 23-015
Project Type: NEW CONSTRUCTION
Project Name and Address:
LAKEWOOD BUSINESS CENTER, LOT 1
NE Maguire Blvd.
Lee's Summit, Missouri 64064

Issue:	Date:
Permit Set	08.31.23

Sheet Title:
SITE LIGHTING PHOTOMETRIC
E-003

KEYED SITE PLAN NOTES

1. BUILDING MOUNTED EXTERIOR LIGHT FIXTURES SHOWN ON PLAN DRAWINGS E101, E102, AND E103.
2. PROPOSED UTILITY TRANSFORMER LOCATION. REFER TO SINGLE LINE DIAGRAM ON SHEET E201 FOR MORE INFORMATION. COORDINATE REQUIREMENT OF PAD MOUNT WITH EVERGY. PROTECT WITH BOLLARDS.
3. PROPOSED UTILITY SECONDARY CONDUIT/CONDUCTOR ROUTE. REFER TO SINGLE LINE DIAGRAM ON SHEET E201 FOR MORE INFORMATION. COORDINATE WITH UTILITY SERVICE EQUIPMENT LOCATIONS PRIOR TO CONSTRUCTION.
4. ELECTRICAL SERVICE ENTRANCE METER ENCLOSURES AND DISCONNECT. REFER TO SINGLE LINE DIAGRAM ON SHEET E201 FOR MORE INFORMATION.
5. PROPOSED UTILITY PRIMARY CONDUIT/CONDUCTOR ROUTE. REFER TO SINGLE LINE DIAGRAM ON SHEET E201 FOR MORE INFORMATION. COORDINATE WITH UTILITY PRIOR TO CONSTRUCTION.
6. SITE LIGHTING POLE. REFER TO LIGHT FIXTURE SCHEDULE ON SHEET E201 FOR MORE INFORMATION.
7. PROVIDE IN-GRADE PULLBOXES TO FACILITATE COMMUNICATIONS ROUTING TO PROPERTY LINE. QUAZITE, AASHTO H-20 RATED FOR HEAVY, DELIBERATE VEHICULAR TRAFFIC. DO NOT INSTALL AT A LOW POINT. COORDINATE ENCLOSURE DRAINING WITH CIVIL ENGINEER.
8. ROUTE CIRCUIT THROUGH SITE LIGHTING CONTACTOR.
9. (1) 1-1/2" CONDUITS WITH PULL STRINGS TO LOCATION OF MONUMENT SIGN. TERMINATE CONDUIT IN IN-GRADE QUAZITE BOX. MONUMENT SIGN WILL BE UNDER A SEPARATE PERMIT.
10. (2) 4" CONDUITS WITH PULL STRINGS FOR TEL/COM ROUTING.

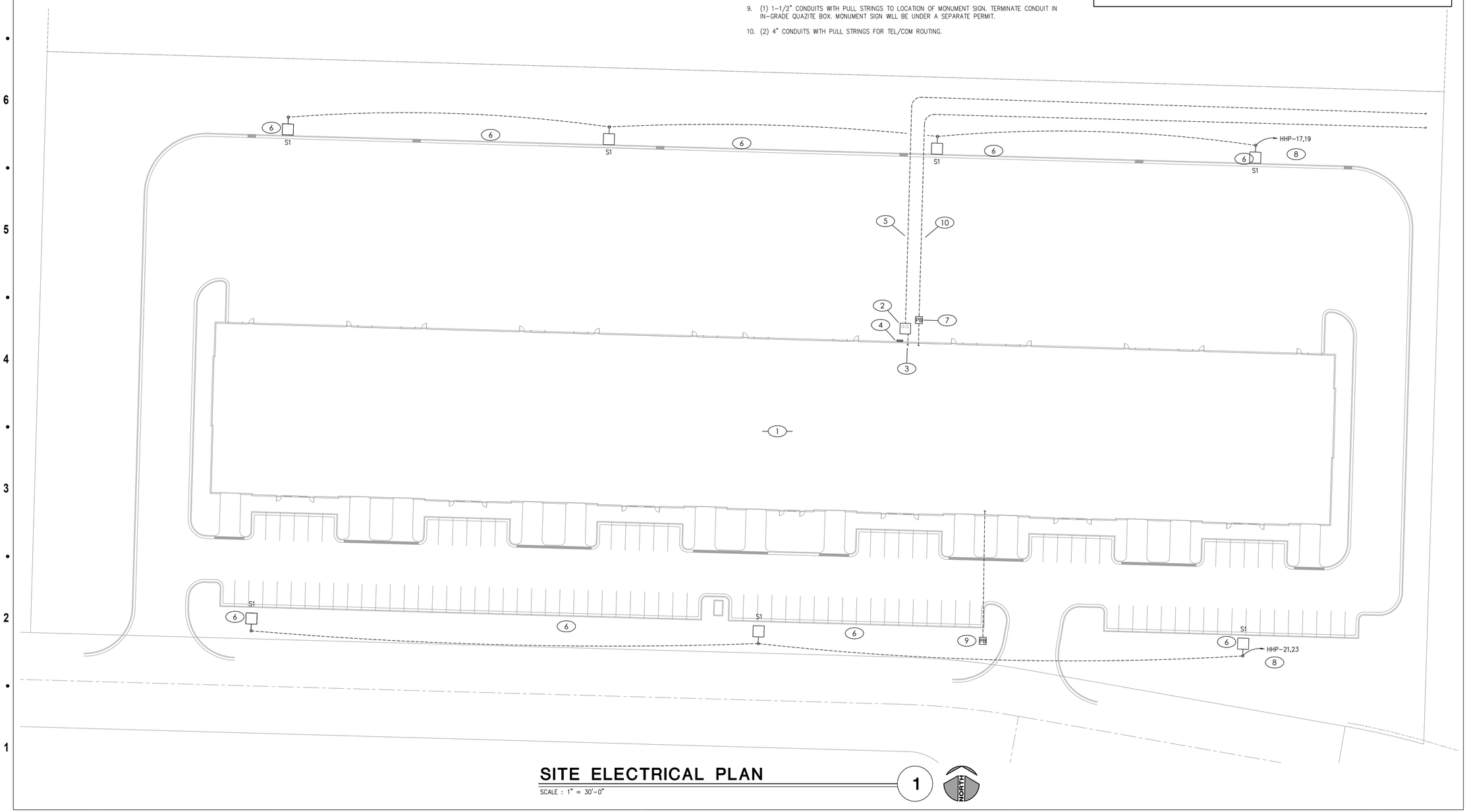
SYMBOLS LEGEND

NOTE: THIS IS A MASTER LEGEND AND NOT ALL SYMBOLS, ETC, ARE NECESSARILY USED ON THE DRAWINGS.

MRL SITE LIGHTING FIXTURE – MOUNT AT 28'-0" AFF. PROVIDE WITH METAL SITE POLE FOR MOUNTING ACCORDING TO DESIGN INTENT UNLESS NOTED OTHERWISE.

GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH THE SECTION 8.250 OF THE UNIFIED DEVELOPMENT ORDINANCE OF THE CITY OF LEE'S SUMMIT, MISSOURI AND ALL APPLICABLE SUPPLEMENTS.
2. ALL ELECTRICAL/CONDUIT STREET CROSSINGS NEED TO BE BACKFILLED WITH AB-3 OR FLOWABLE FILL IN ACCORDANCE WITH MUNICIPAL REQUIREMENTS.



SITE ELECTRICAL PLAN

SCALE : 1" = 30'-0"

1

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08-31-2023

Project Number: 23-015
Project Type: NEW CONSTRUCTION
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LAKEWOOD BUSINESS CENTER, LOT 1
NE Maguire Blvd.
Lee's Summit, Missouri 64064

Issue:	Date:
Permit Set	08.31.23

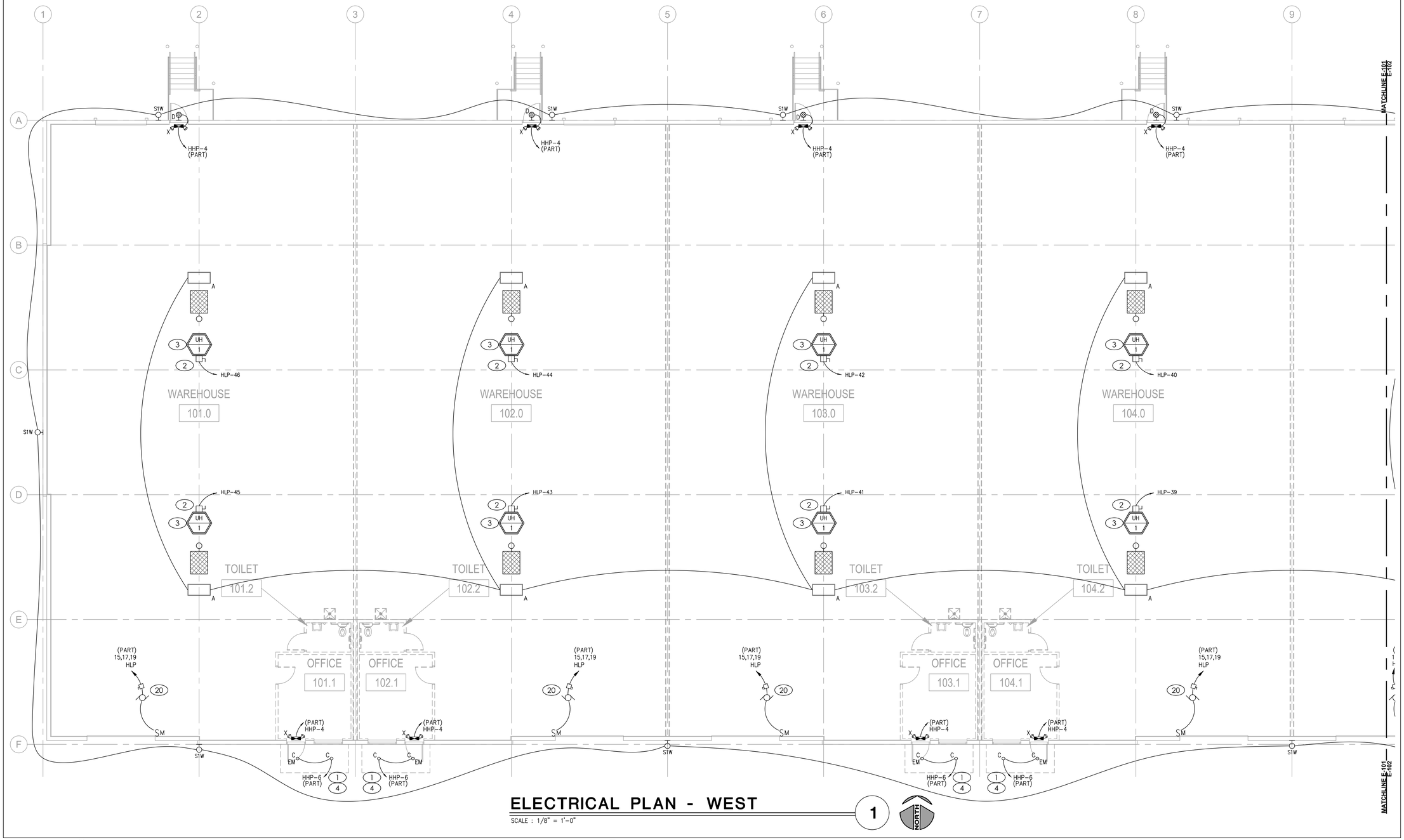
Sheet Title:

SITE ELECTRICAL PLAN

E-100

KEYED PLAN NOTES

1. CONNECT TO BUILDING EXTERIOR LIGHTING CONTACTOR.
2. PROVIDE MANUFACTURER'S MAXIMUM RECOMMENDED FUSE SIZE.
3. 1/2"C W/ PULLSTRING TO THERMOSTAT FOR HVAC CONTROLS.
4. DOWNLIGHT FIXTURES MOUNTED IN SOFFIT. COORDINATE EXACT LOCATION WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION.
5. PROVIDE POWER TO GARAGE DOOR OPERATORS AND CONTROLS ACCORDING TO MANUFACTURER'S LITERATURE AND NEC REQUIREMENTS. COORDINATE WORK WITH GARAGE DOOR INSTALLER.



ELECTRICAL PLAN - WEST

SCALE : 1/8" = 1'-0"

1

NORTH

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LAKEWOOD BUSINESS CENTER, LOT 1

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Lee's Summit, Missouri 64064

Issue:	Date:
Permit Set	08.31.23

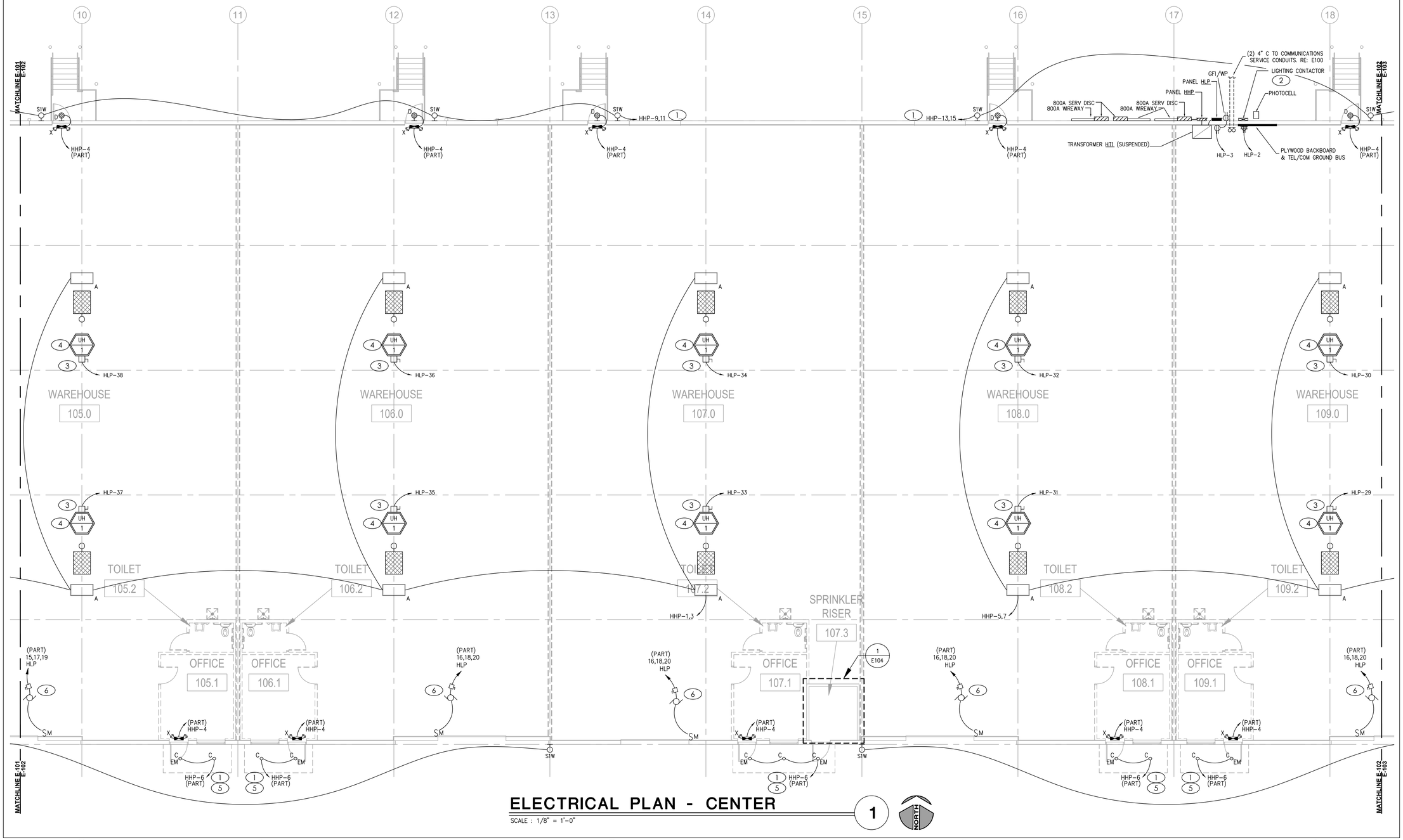
Sheet Title:

PARTIAL ELECTRICAL PLAN - WEST

E-101

KEYED PLAN NOTES

1. CONNECT TO BUILDING EXTERIOR LIGHTING CONTACTOR.
2. PROVIDE 12-POLE ELECTRICALLY OPERATED, MECHANICALLY HELD CONTACTOR FOR SITE LIGHTING. PROVIDE PHOTOCELL FOR CONTROL SUCH THAT FIXTURES ARE 'ON' AT NIGHT. MOUNT ABOVE LIGHTING PANEL.
3. PROVIDE MANUFACTURER'S MAXIMUM RECOMMENDED FUSE SIZE.
4. 1/2"C W/ PULLSTRING TO THERMOSTAT FOR HVAC CONTROLS.
5. DOWNLIGHT FIXTURES MOUNTED IN SOFFIT. COORDINATE EXACT LOCATION WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION.
6. PROVIDE POWER TO GARAGE DOOR OPERATORS AND CONTROLS ACCORDING TO MANUFACTURER'S LITERATURE AND NEC REQUIREMENTS. COORDINATE WORK WITH GARAGE DOOR INSTALLER.



ELECTRICAL PLAN - CENTER

SCALE : 1/8" = 1'-0"

1

NORTH

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Lee's Summit, Missouri 64064

Issue:	Date:
Permit Set	08.31.23

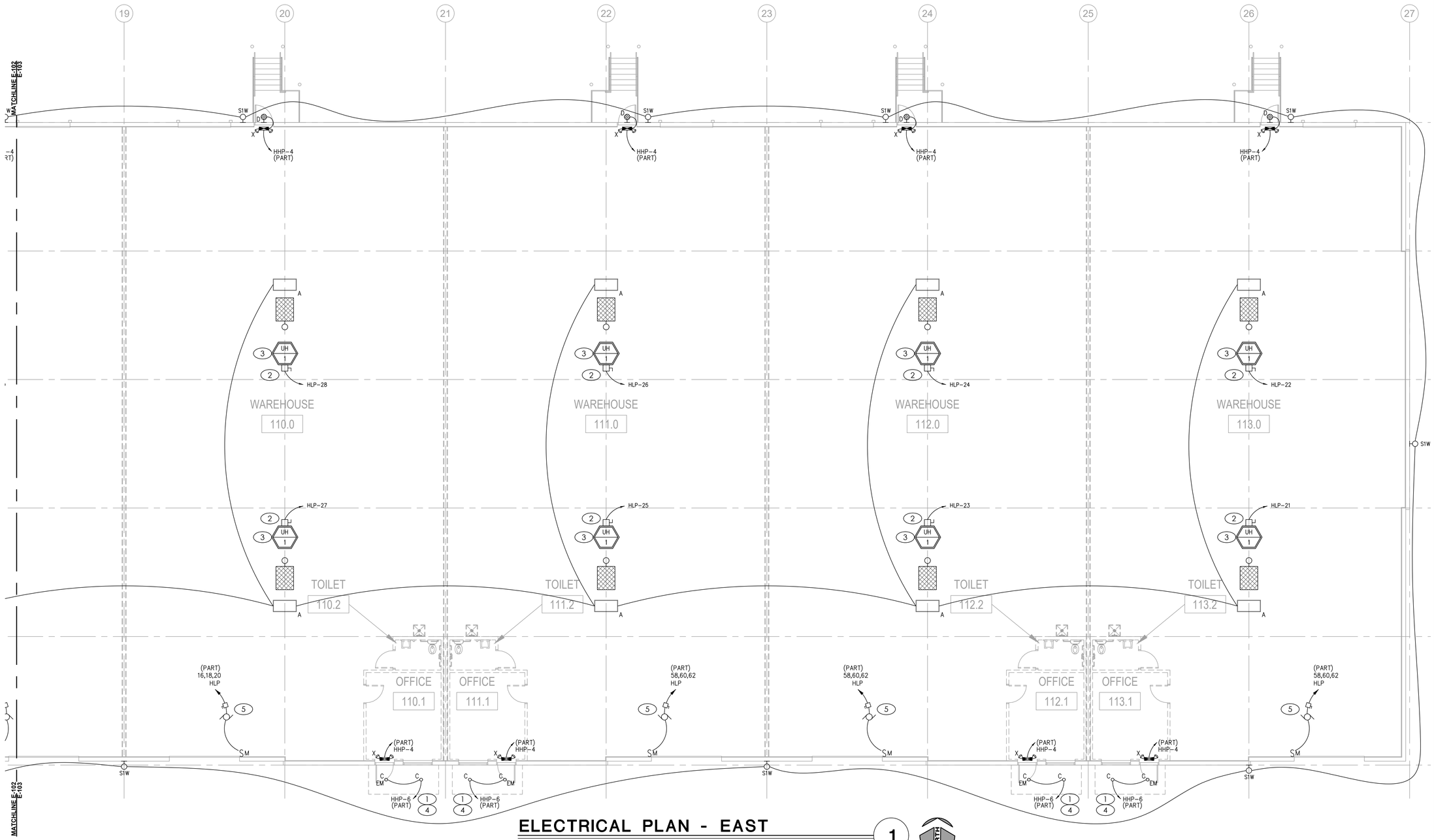
Sheet Title:

PARTIAL ELECTRICAL PLAN - CENTER

E-102

KEYED PLAN NOTES

1. CONNECT TO BUILDING EXTERIOR LIGHTING CONTACTOR.
2. PROVIDE MANUFACTURER'S MAXIMUM RECOMMENDED FUSE SIZE.
3. 1/2"C W/ PULLSTRING TO THERMOSTAT FOR HVAC CONTROLS.
4. DOWNLIGHT FIXTURES MOUNTED IN SOFFIT. COORDINATE EXACT LOCATION WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION.
5. PROVIDE POWER TO GARAGE DOOR OPERATORS AND CONTROLS ACCORDING TO MANUFACTURER'S LITERATURE AND NEC REQUIREMENTS. COORDINATE WORK WITH GARAGE DOOR INSTALLER.



ELECTRICAL PLAN - EAST

SCALE : 1/8" = 1'-0"

1

NORTH

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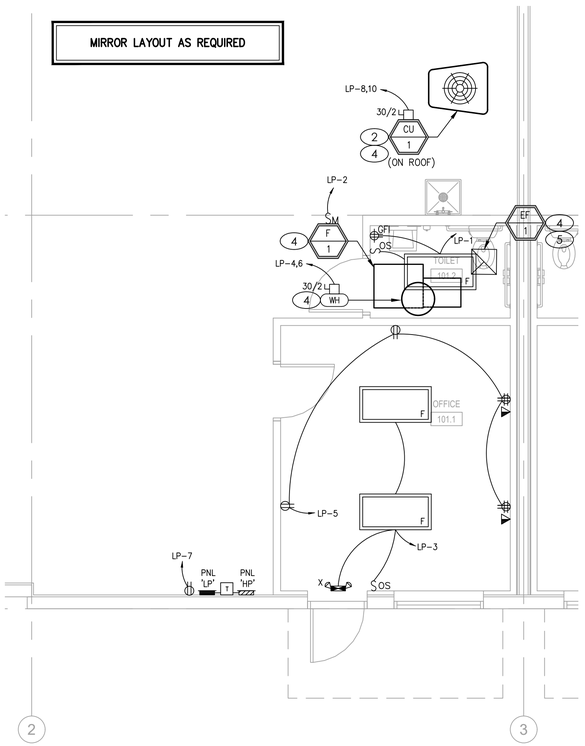
PARTIAL ELECTRICAL PLAN - EAST

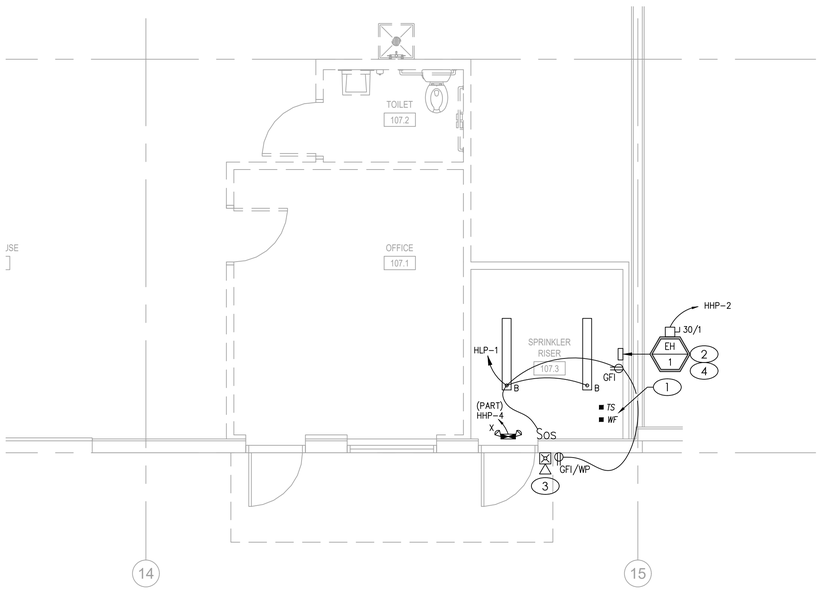
E-103

MIRROR LAYOUT AS REQUIRED



FUTURE OFFICES (BID AS T.I. ADD ALTERNATIVE) 2

SCALE : 1/4" = 1'-0"



SPRINKLER RISER ROOM 1

SCALE : 1/4" = 1'-0"

(#) KEYED PLAN NOTES

1. COORDINATE QUANTITY OF TAMPER/FLOW SWITCHES WITH FIRE PROTECTION CONTRACTOR.
2. 1/2"C W/ PULLSTRING TO THERMOSTAT FOR HVAC CONTROLS.
3. NOTIFICATION BELL FOR AUDIBLE ALARM UPON ACTIVATION BY FIRE SUPPRESSION SYSTEM. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH FIRE SUPPRESSION SYSTEM INSTALLER.
4. MAKE CONNECTION TO DIVISION 22/23 EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS AND NEC REQUIREMENTS.
5. WIRE SO THAT ON/OFF OPERATION OF EXHAUST FAN COORDINATES WITH LIGHTING IN ROOM.

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Sheet Title:
ENLARGED ELECTRICAL PLANS

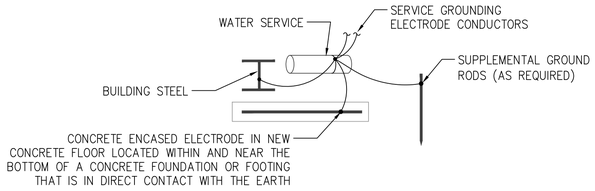
E-104

VOLTAGE DROP CRITERIA

PROVIDE WIRING PER THE TABLE BELOW, UNLESS NOTED OTHERWISE. (NOTE: DISTANCE IS ORTHOGONAL DISTANCE TO CENTER OF LOAD).

120 VOLT – 20 AMP CIRCUITS
0–100 FEET: #12
101–150 FEET: #10
151–200 FEET: #8
201–300 FEET: #6
301–450 FEET: #4
451–750 FEET: #2

277 VOLT – 20 AMP CIRCUITS
0–150 FEET: #12
151–250 FEET: #10
251–400 FEET: #8
401–600 FEET: #6
601–1000 FEET: #4



GROUNDING ELECTRODE SYSTEM DIAGRAM 2

SCALE : NO SCALE

ELECTRICAL LIGHTING SCHEDULE (OR EQUAL. VERIFY ALL SELECTIONS AND FINISHES WITH OWNER OR ARCHITECT PRIOR TO ORDERING).

FIXTURE TYPE	MANUFACTURER NAME	MANUFACTURER CATALOG NUMBER	VOLT AMPS	MOUNTING	LAMP TYPE	REMARKS	VOLT	REMARKS
A	ORACLE	*ORHB6–LED ARCHITECTURAL ROUND LED HIGH BAY*	200	CHAIN SUSPENDED	*200 WATT, 4000K, 30,000 LUMEN LED*	*ROUND LED HIGH BAY INDUSTRIAL FIXTURE, 4000K.*	MVOLT	1
B	LITHONIA	ZL1D–L48–SMR–5000LM–FST–MVOLT–40K–80CRI WITH HC36M12	41	CHAIN SUSPENDED	*41 WATT LED*	*4'–0" LONG SPECIFICATION–GRADE ROUND LENS STRIP FIXTURE. CHAIN MOUNT FROM CEILING AT 8–6" A.F.F. ALL PARTS PAINTED WHITE AFTER FABRICATION.*	277/120	1,2
C	LITHONIA	LDN6–40/25–L06–AR–LSS–MVOLT–GZ10	28.3	RECESSED	*2500 LUMEN PACKAGE, 80 CRI, 28.3 WATTS*	*6" ROUND APERTURE RECESSED LED DOWNLIGHT. CLEAR TRIM WITH SEMI–SPECULAR FINISH. RATED FOR WET LOCATION.*	277/120	1,2
D	LITHONIA	AFB–OELR–DDBTXD–WT	2.55	WALL	225 LUMEN LED	*WET LOCATION LISTED, LED, DIE–CAST ALUMINUM EMERGENCY LIGHTING UNIT FOR OUTDOOR INSTALLATION FEATURING LONG–LIFE LEDS. FINISH DARK BRONZE.*	277/120	–
F	LITHONIA	EPANL–2X4–4000LM–80CRI–40K–MIN10–ZT–MVOLT	38	CEILING GRID	38 WATT LED	*2'X4' LED FLAT PANEL, 4000 LUMEN, 4000K*	277/120	1
X	LITHONIA	LHQM–LED–R–HO–SD	4.3	WALL	TWO (2) 1.5 WATT LED LAMP HEADS.	*COMBINATION EMERGENCY LIGHTING UNIT / EXIT LIGHT. UV–STABLE THERMOPLASTIC HOUSING, FINISH WHITE. ADJUSTABLE LIGHTING HEADS FOR EMERGENCY LIGHT. EXIT SIGN TO HAVE RED LETTERS WITH DIRECTIONAL ARROWS AS INDICATED ON THE PLANS. NICKEL–CADMIUM HIGH OUTPUT BATTERY WITH SELF–DIAGNOSTICS FOR 90 MINUTE OPERATION OF LAMPS, EXIT SIGN, AND REMOTE HEAD.*	277/120	–
S1W	LITHONIA	DSXW2–LED–30C–1000–40K–T3M–480	109	WALL	109 WATT, 4000K, 70 CRI LED	*UNIVERSAL MOUNT AREA LED LIGHT. DIE CAST ALUMINUM HOUSING WITH INTEGRAL HEAT SINKS. IP65 RATED. IES TYPE III MEDIUM DISTRIBUTION. 1000mA DRIVER, 11,000 LUMEN. STANDARD POWDER COAT FINISH – COORDINATE EXACT COLOR WITH ARCHITECT.*	480	1
S1	LITHONIA	DSX2–LED–P4–40K–70CRI–BLC3–HVOLT	277	POLE	277 WATT, 4000K, 70 CRI LED	*POLE MOUNT AREA LED LIGHT. DIE CAST ALUMINUM HOUSING WITH INTEGRAL HEAT SINKS. IP66 RATED. IES TYPE III DISTRIBUTION WITH BACKLIGHT CONTROL. 1050mA DRIVER, 25,000 LUMEN. STANDARD POWDER COAT FINISH – COORDINATE EXACT COLOR WITH ARCHITECT. PROVIDE 30' TALL STEEL ROUND POLE, FINISH TO MATCH FIXTURE.*	480	1,3

REMARKS:
1. FURNISH WITH AND INSTALL ALL NECESSARY HARDWARE AND MOUNTING BRACKETS.
2. WHERE FIXTURE IS LABELED "EM", PROVIDE WITH EMERGENCY BATTERY PACK OPTION FOR 90 MINUTES OF OUTPUT.
3. POLE SHALL BE 4" SHAFT, 0.120" WALL THICKNESS, WITH HAND HOLE, GROUND LUG AND FULL BASE COVER.

Short-Circuit and Voltage Drop Calculations

Distances are for calculation purposes only and shall not be used for contractor takeoffs nor bidding - Contractor shall notify Engineer of any field condition that results in a change of 10% or greater circuit distance

The following calculations are based on the "Point-by-Point" method where:
$ISC_{Pt} = ISC_{Pt} \times M_{Pt}$
ISC_{Pt} = short circuit current at fault point 1
ISC_{Pt} = short circuit current at fault point 2
$M = 1/(1+f)$

Feeder: $f_{(3ph)} = \frac{1.732 \times L \times Isc}{C \times E}$
Feeder: $f_{(1ph)} = \frac{2 \times L \times Isc}{C \times E}$

XFMR: $f_{(3ph)} = \frac{IP(sca) \times Vp \times 1.73 \times \%Z}{100,000 \times KVA}$
XFMR: $f_{(1ph)} = \frac{IP(sca) \times Vp \times \%Z}{100,000 \times KVA}$

$IS_{(sca)} = \frac{Vp \times M \times IP_{(sca)}}{Vs}$

VOLTAGE DROP (3Ø):
%VD= ((R x cos(arccos(pf)) + X x sin (arccos(pf))) x L# x I x 1.73) / E
VOLTAGE DROP (1Ø):
%VD= ((R x cos(arccos(pf)) + X x sin(arccos(pf))) x 2 x L# x I) / E

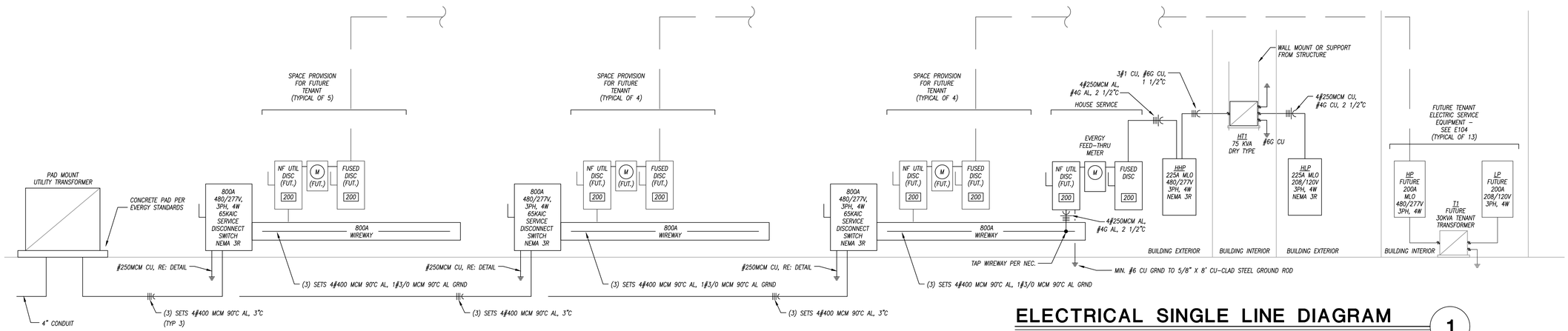
IP = Primary short circuit current
Vp = Primary voltage
IS= Secondary short circuit current
Vs= Secondary voltage
L = Length of circuit
C = "C" Factor from Bussman table where "C" = 1 / impedance per linear foot
E = Line to line volts

%VD CUM= Cumulative Voltage Drop from: Fault Point 1 to Fault Point #
R= resistance in ohms per LF
X= reactances in ohms per LF

Feeder Types =
NM - Non Magnetic Conduit, M - Magnetic Conduit, FB - Feeder Busway, PB - Plug-in Busway, TX - Transformer

Date of Calculations: 06.05.23
System Voltage: 480Y/277V - 3 phase

Fault Point (Fill)	Bus/Feeder Description	Source (Fault Point)	Phase	Source Isc (amps)	Feeder: Conduit Type/ TX	Feeder: Material	Feeder: Quantity of Parallel Sets and Bus/ Phase & Neutral Size	Conductor 'C' Value	Busway 'C' Value	L-L Voltage (E)	Circuit Length (L)	Load Power Factor (pf)	Circuit Load (Amperage)	Conductor: Resistance (R)	Conductor: Reactance (X)	Conductor: Arccos (pf) (Radians)	Transformer: Type	Degree Rise	kVA	Transformer: New Xfmr Z	Existing Xfmr Z	Secondary Voltage	Tap Setting	f	M	Fault Current (amps)	Voltage Drop (%VD)	Cumulative Voltage Drop (%VD)	Fault Point (Fill)
1	Utility Service Point	63,000 at the secondary of the utility transformer																								Source Isc + 6X Motor Contribution =		66600		1
	Motor Contribution	600 The connected full load motor amps (includes compressors) on the system																											
2	TO SERVICE DISCONNECT (TYP 3)	1	3	66600	NM	AL	3 Set(s) of	400	kcmil	18506	--	480	20	0.9	98	0.000054	0.000040	0.451027								0.087	0.92	61294	-0.02%	-0.02%	2
3	TO HOUSE MTR/DISC	2	3	61294	M	AL	1 Set(s) of	250	kcmil	12122	--	480	20	0.9	98	0.000085	0.000052	0.451027								0.365	0.73	44907	-0.07%	-0.09%	3
4	TO PNLBD 1H=P	3	3	44907	M	AL	1 Set(s) of	250	AWG	12122	--	480	20	0.9	98	0.000088	0.000052	0.451027								0.267	0.79	35433	-0.07%	-0.16%	4
5	TO XFMR 'HT1'	4	3	35433	M	AL	1 Set(s) of	2/0	AWG	7187	--	480	20	0.9	98	0.000160	0.000054	0.451027								0.356	0.74	26135	-0.12%	-0.28%	5
6	XFMR 'HT1'	5	3	26135	TX							480	70	0.9	35.5			0.451027	DOE	150	75	3.61		208		10.458	0.09	5264		-0.28%	6
7	TO PNLBD 'HLP'	6	3	5264	M	CU	1 Set(s) of	250	kcmil	16483	--	208	20	0.9	102	0.000054	0.000052	0.451027								0.053	0.95	4998	-0.12%	-0.40%	7
8	TO TENANT MTR/DISC	2	3	61294	M	AL	1 Set(s) of	250	kcmil	12122	--	480	20	0.9	13	0.000085	0.000052	0.451027								0.365	0.73	44907	-0.01%	-0.02%	8
9	TO PNLBD 1HP	8	3	44907	M	AL	1 Set(s) of	250	kcmil	12122	--	480	160	0.9	13	0.000085	0.000052	0.451027								2.139	0.32	14307	-0.09%	-0.10%	9
10	TO XFMR 'T1'	9	3	14307	M	CU	1 Set(s) of	6	AWG	2425	--	480	20	0.9	13	0.000490	0.000064	0.451027								0.426	0.70	10034	-0.04%	-0.14%	10
11	XFMR 'T1'	10	3	10034	TX							480	20	0.9	13			0.451027	DOE	150	30	2.44		208		6.785	0.13	2974		-0.14%	11
12	TO PNLBD 'LP'	11	3	2974	M	CU	1 Set(s) of	3	AWG	4774	--	208	20	0.9	31	0.000250	0.000059	0.451027								0.104	0.91	2695	-0.13%	-0.27%	12



ELECTRICAL SINGLE LINE DIAGRAM 1

SCALE : NO SCALE

Architect:
MIDWEST ARCHITECTS
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Revisions to technical submissions which are not made or approved by the licensee are prohibited.

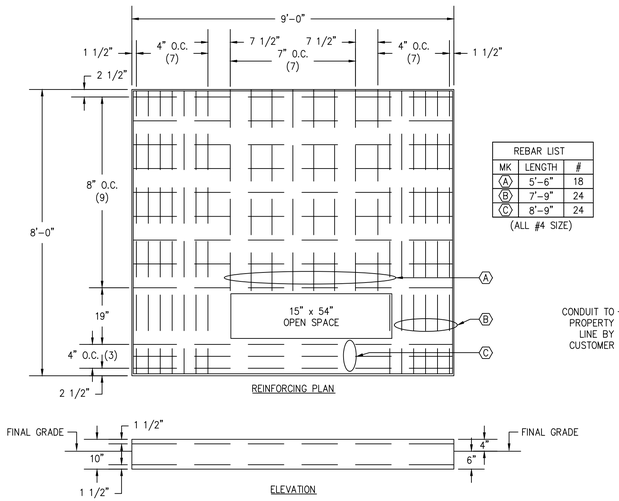
Seal:
STATE OF MISSOURI
JUSTIN R. SMOTHERS
NUMBER PE-2012003568
PROFESSIONAL ENGINEER
08-31-2023

Project Number: 23-015
Project Type: NEW CONSTRUCTION
Project Name and Address:
LAKEWOOD BUSINESS CENTER, LOT 1
NE Maguire Blvd.
Lee's Summit, Missouri 64064

Issue:	Date:
Permit Set	08.31.23

Sheet Title:
ELECTRICAL SCHEDULES AND DIAGRAMS

E-201

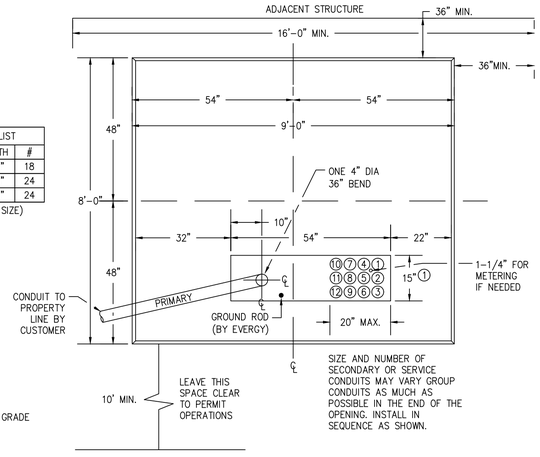


REINFORCING PLAN

REBAR LIST		
MK	LENGTH	#
Ⓐ	5'-6"	18
Ⓑ	7'-9"	24
Ⓒ	8'-9"	24

(ALL #4 SIZE)

ELEVATION



SIDE VIEW

NOTES:
A. ALL CONCRETE SHALL BE AIR ENTRAINED AND TEST 3000 psi (MIN.) IN 28 DAYS.
B. DIRECTION OF PRIMARY CONDUIT TO BE PROVIDED BY KCP&L.
C. A MINIMUM WIDTH OF 16' WORKING SPACE BETWEEN STRUCTURES WILL BE REQUIRED FOR TRANSFORMER INSTALLATION AND MAINTENANCE. A 24" MINIMUM DIMENSION ON ONE SIDE OF BASE REQUIRES A 60" MINIMUM ON THE OTHER SIDE, BUT EITHER SIDE MAY BE 24".
D. THE SIZING OF THIS PAD IS BASED UPON AVERAGE UNDISTRIBUTED EARTH. BACKFILL WITH COMPACT DIRT OR AB3 ONLY (DO NOT USE GRAVEL) TO THE BOTTOM OF THE PAD. INSTALL CONDUITS LEVEL WITH THE TOP OF THE PAD AND COVER THE ENDS OF THE CONDUITS.
E. CENTER OF BASE MUST BE WITHIN 16' OF THE EDGE OF A PAVED AREA FOR CRANE ACCESS.

EVERGY TRANSFORMER PAD DETAIL - 750 THRU 2500kVA

SCALE : NO SCALE

2

PANELBOARD: HHP (NEW)

BUS AMPS: 225A
MAIN SIZE/TYPE: MLO
VOLTS/PHASE: 480Y/277V, 3PH, 4W
SECTION: 1

FED FROM: SERVICE ENTRANCE MAIN
AIC RATING: 42000 FULLY RATED
SERVES: LOT 4
MOUNTING: SURFACE
LOCATION: ELEC SERVICE RM 102

LINE-SIDE LUGS: MECHANICAL
EQUIPMENT GROUND BUS
SERVICE ENTRANCE RATED

CKT NO.	DESCRIPTION	VOLTAMPS/PHASE A	B	C	WIRE NO.	BKR AMP	P	P	BKR AMP	WIRE NO.	VOLTAMPS/PHASE A	B	C	DESCRIPTION	CKT NO.
1	LTG - WEST INTERIOR SHELL	1,428			12	20	2	1	20	12	3,000			PWR - EH-1 (HACR)	2
3			1,428					1	20	12		189		LTG - EXIT SIGNAGE	4
5	LTG - EAST INTERIOR SHELL			1,224	12	20	2	1	20	10			765	LTG - SOFFIT CANS	6
7		1,224						1	20					SPARE	8
9	LTG - EXTERIOR BUILDING 1		1,208		10	20	2	1	20					SPARE	10
11				1,208				1	20					SPARE	12
13	LTG - EXTERIOR BUILDING 2	1,047			10	20	2	1						PROVISIONAL SPACE	14
15			1,047					1						PROVISIONAL SPACE	16
17	LTG - SITE POLES 1			693	12	20	2	1						PROVISIONAL SPACE	18
19		693						1						PROVISIONAL SPACE	20
21	LTG - SITE POLES 2		554		12	20	2	1						PROVISIONAL SPACE	22
23				554				1						PROVISIONAL SPACE	24
25	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	26
27	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	28
29	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	30
31	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	32
33	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	34
35	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	36
37		11,189						1						PROVISIONAL SPACE	38
39	SUB-FEED; PNL HLP		10,613		OL	125	3	1						PROVISIONAL SPACE	40
41				8,947				1						PROVISIONAL SPACE	42
	SUBTOTAL	15,581	14,850	12,626							3,000	189	765	SUBTOTAL	

		LOAD	CONN. VA	DF	LOAD	CONN. VA	DF	
TOTAL PHASE A - VA	18,581	COOLING		0	REFRIG		1.00	
AMPS	67	HEATING	3,000	1.00	SIGN/DISP		1.25	
TOTAL PHASE B - VA	15,039	LIGHTING	13,344	1.25	KITCHEN		1.00	
AMPS	54	RECEPTACLES	720	1.0/.5	EXISTING		1.00	
TOTAL PHASE C - VA	13,391	MOTORS	28,147	1.00	LRG MOTOR		1.25	TOTAL DEMAND
AMPS	48	SUPP HEAT		1.00	SHOW WNDW		1.25	50,347 VA
TOTAL PNLBD - VA	47,011	MISC EQUIP	1,800	1.00	LTG TRACK		1.00	61 A
AMPS	57							

PANELBOARD NOTES
"SF" = SUB-FEED
"OL" = REFER TO ONE-LINE DIAGRAM

PANELBOARD: HLP (NEW)

BUS AMPS: 225A
MAIN SIZE/TYPE: 225A MCB
VOLTS/PHASE: 208Y/120V, 3PH, 4W
SECTION: 1

FED FROM: PNL 'HHP' VIA XFMR
AIC RATING: 10000 FULLY RATED
SERVES: LOT 4
MOUNTING: SURFACE
LOCATION: ELEC SERVICE RM 102

LINE-SIDE LUGS: MECHANICAL
EQUIPMENT GROUND BUS

CKT NO.	DESCRIPTION	VOLTAMPS/PHASE A	B	C	WIRE NO.	BKR AMP	P	P	BKR AMP	WIRE NO.	VOLTAMPS/PHASE A	B	C	DESCRIPTION	CKT NO.
1	LTG - SPKLR RISER RM 107.3	442			12	20	1	1	20	12	1,800			RCPT - TELECOM SERVICE EQ	2
3	RCPT - HOUSE PANEL RECPT.		360		12	20	1	1	20					SPARE	4
5	SPARE					20	1	1	20					SPARE	6
7	SPARE					20	1	1	20					SPARE	8
9	SPARE					20	1					1,241			10
11	SPARE					20	1	3	20	6			1,241	PWR - GARAGE DOOR 1	12
13	SPARE					20	1				1,241				14
15			1,241									1,241			16
17	PWR - GARAGE DOOR 3			1,241	6	20	3	3	20	6			1,241	PWR - GARAGE DOOR 2	18
19		1,241									1,241				20
21	PWR - UH-1 (1) (HACR)		653		VD	15	1	1	15	VD		653		PWR - UH-1 (14) (HACR)	22
23	PWR - UH-1 (2) (HACR)			653	VD	15	1	1	15	VD			653	PWR - UH-1 (15) (HACR)	24
25	PWR - UH-1 (3) (HACR)	653			VD	15	1	1	15	VD	653			PWR - UH-1 (16) (HACR)	26
27	PWR - UH-1 (4) (HACR)		653		VD	15	1	1	15	VD		653		PWR - UH-1 (17) (HACR)	28
29	PWR - UH-1 (5) (HACR)			653	VD	15	1	1	15	VD			653	PWR - UH-1 (18) (HACR)	30
31	PWR - UH-1 (6) (HACR)	653			VD	15	1	1	15	VD	653			PWR - UH-1 (19) (HACR)	32
33	PWR - UH-1 (7) (HACR)		653		VD	15	1	1	15	VD		653		PWR - UH-1 (20) (HACR)	34
35	PWR - UH-1 (8) (HACR)			653	VD	15	1	1	15	VD			653	PWR - UH-1 (21) (HACR)	36
37	PWR - UH-1 (9) (HACR)	653			VD	15	1	1	15	VD	653			PWR - UH-1 (22) (HACR)	38
39	PWR - UH-1 (10) (HACR)		653		VD	15	1	1	15	VD		653		PWR - UH-1 (23) (HACR)	40
41	PWR - UH-1 (11) (HACR)			653	VD	15	1	1	15	VD			653	PWR - UH-1 (24) (HACR)	42
43	PWR - UH-1 (12) (HACR)	653			VD	15	1	1	15	VD	653			PWR - UH-1 (25) (HACR)	44
45	PWR - UH-1 (13) (HACR)		653		VD	15	1	1	15	VD		653		PWR - UH-1 (26) (HACR)	46
47	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	48
49	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	50
51	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	52
53	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	54
	SUBTOTAL	4,295	4,866	3,853							6,894	5,747	5,094	SUBTOTAL	

		LOAD	CONN. VA	DF	LOAD	CONN. VA	DF	
TOTAL PHASE A - VA	11,189	COOLING		1.00	REFRIG		1.00	
AMPS	93	HEATING		0	SIGN/DISP		1.25	
TOTAL PHASE B - VA	10,613	LIGHTING	82	1.25	KITCHEN		1.00	
AMPS	88	RECEPTACLES	720	1.0/.5	EXISTING		1.00	
TOTAL PHASE C - VA	8,947	MOTORS	28,147	1.00	LRG MOTOR		1.25	TOTAL DEMAND
AMPS	75	SUPP HEAT		1.00	SHOW WNDW		1.25	30,770 VA
TOTAL PNLBD - VA	30,749	MISC EQUIP	1,800	1.00	LTG TRACK		1.00	85 A
AMPS	85							

PANELBOARD NOTES
VD = CONSULT VOLTAGE DROP CRITERIA

PANELBOARD: HP (TYP. 13) (NEW)

BUS AMPS: 225A
MAIN SIZE/TYPE: 225A MCB
VOLTS/PHASE: 480Y/277V, 3PH, 4W
SECTION: 1

FED FROM: NEW SE METER/DISC.
AIC RATING: 42000 FULLY RATED
SERVES: FUTURE OFFICES
MOUNTING: SURFACE
LOCATION: SOUTH INTERIOR WALL

LINE-SIDE LUGS: MECHANICAL
EQUIPMENT GROUND BUS

CKT NO.	DESCRIPTION	VOLTAMPS/PHASE A	B	C	WIRE NO.	BKR AMP	P	P	BKR AMP	WIRE NO.	VOLTAMPS/PHASE A	B	C	DESCRIPTION	CKT NO.
1	SUBFEED TO	3,312					1							PROVISIONAL SPACE	2
3	PANELBOARD LP (TYP. 13)		4,317		6	50	3	1						PROVISIONAL SPACE	4
5	VIA XFMR			3,330				1						PROVISIONAL SPACE	6
7	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	8
9	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	10
11	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	12
13	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	14
15	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	16
17	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	18
19	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	20
21	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	22
23	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	24
25	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	26
27	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	28
29	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	30
	SUBTOTAL	3,312	4,317	3,330										SUBTOTAL	

		LOAD	CONN. VA	DF	LOAD	CONN. VA	DF	
TOTAL PHASE A - VA	3,312	COOLING	4,898	1.00	REFRIG		1.00	
AMPS	12	HEATING		0	SIGN/DISP		1.25	
TOTAL PHASE B - VA	4,317	LIGHTING	121	1.25	KITCHEN		1.00	
AMPS	16	RECEPTACLES	1,440	1.0/.5	EXISTING		1.00	
TOTAL PHASE C - VA	3,330	MOTORS		1.00	LRG MOTOR		1.25	TOTAL DEMAND
AMPS	12	SUPP HEAT	4,500	1.00	SHOW WNDW		1.25	10,989 VA
TOTAL PNLBD - VA	10,959	MISC EQUIP		1.00	LTG TRACK		1.00	13 A
AMPS	13							

PANELBOARD NOTES

PANELBOARD: LP (TYP.13) (NEW)

BUS AMPS: 100A
MAIN SIZE/TYPE: MLO
VOLTS/PHASE: 208Y/120V, 3PH, 4W
SECTION: 1

FED FROM: HP (TYP. 13)
AIC RATING: 10000 FULLY RATED
SERVES: FUTURE OFFICES
MOUNTING: SURFACE
LOCATION: SOUTH INTERIOR WALL

LINE-SIDE LUGS: MECHANICAL
EQUIPMENT GROUND BUS

CKT NO.	DESCRIPTION	VOLTAMPS/PHASE A	B	C	WIRE NO.	BKR AMP	P	P	BKR AMP	WIRE NO.	VOLTAMPS/PHASE A	B	C	DESCRIPTION	CKT NO.
1	LTG/RCPT - TOILET	221			12	20	1	1	15	12	924			PWR - FU-1 (HACR)	2
3	LTG - OFFICE		80		12	20	1	2	30	10		2,250		PWR - WH	4
5	RCPT - OFFICE			1,080	12	20	1						2,250		6
7	RCPT - PANEL CONVENIENCE	180			12	20	1	2	30	10	1,987			PWR - CU-1	8
9	SPARE					20	1					1,987		(HACR)	10
11	SPARE					20	1	1	20					SPARE	12
13	SPARE					20	1	1	20					SPARE	14
15	SPARE					20	1	1	20					SPARE	16
17	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	18
19	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	20
21	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	22
23	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	24
25	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	26
27	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	28
29	PROVISIONAL SPACE						1	1						PROVISIONAL SPACE	30
	SUBTOTAL	401	80	1,080							2,911	4,237	2,250	SUBTOTAL	

		LOAD	CONN. VA	DF	LOAD	CONN. VA	DF	
TOTAL PHASE A - VA	3,312	COOLING	4,898	1.00	REFRIG		1.00	
AMPS	28	HEATING		0	SIGN/DISP		1.25	
TOTAL PHASE B - VA	4,317	LIGHTING	121	1.25	KITCHEN		1.00	
AMPS	36	RECEPTACLES	1,440	1.0/.5	EXISTING		1.00	
TOTAL PHASE C - VA	3,330	MOTORS		1.00	LRG MOTOR		1.25	TOTAL DEMAND
AMPS	28	SUPP HEAT	4,500	1.00	SHOW WNDW		1.25	10,989 VA
TOTAL PNLBD - VA	10,959	MISC EQUIP		1.00	LTG TRACK		1.00	31 A
AMPS	30							

PANELBOARD NOTES

PANELBOARD SCHEDULES

SCALE : NO SCALE

1

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Seal:

Project Number: 23-015
Project Type: NEW CONSTRUCTION
Project Name and Address:
LAKEWOOD BUSINESS CENTER, LOT 1
NE Maguire Blvd.
Lee's Summit, Missouri 64064

Issue: Date:
Permit Set 08.31.23

Sheet Title:
ELECTRICAL SCHEDULES

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