

# MADISON MUNICIPAL BUILDING FLAGPOLE REPLACEMENT

CONTRACT #9745

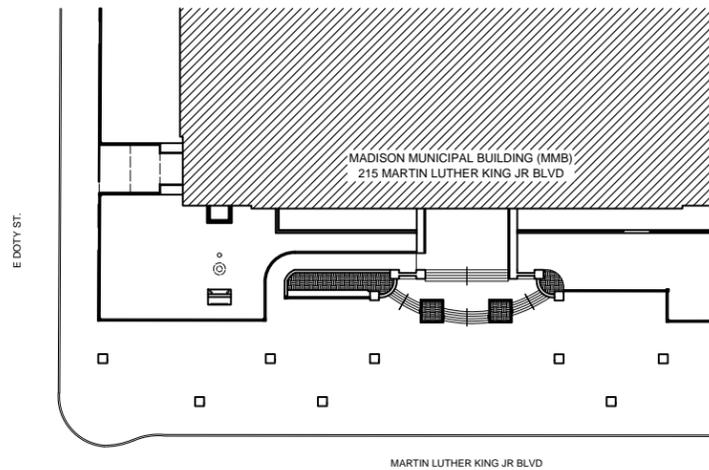
215 MARTIN LUTHER KING JR. BLVD  
MADISON, WI 53703

JANUARY 22, 2026



CITY OF MADISON  
DEPT OF PUBLIC WORKS  
ENGINEERING DIVISION  
CITY COUNTY BLDG RM 115  
210 MARTIN LUTHER KING JR BLVD  
MADISON, WI 53703  
PHONE: 608-266-4751

MADISON MUNICIPAL BUILDING  
FLAGPOLE REPLACEMENT  
215 MARTIN LUTHER KING JR. BLVD 53703



**GENERAL NOTES:**

1. UNLESS SPECIFICALLY NOTED IN THE PLANS AND SPECIFICATIONS AS WORK OR MATERIALS BY OTHERS, THE CONTRACTOR SHALL ASSUME THE RESPONSIBILITIES OF WORK AND MATERIALS FOR THIS CONTRACT.
2. THE CONTRACTOR SHALL FURNISH ANY APPARATUS, APPLIANCE, MATERIAL, OR LABOR THAT MAY BE NECESSARY TO COMPLETE THE WORK, IN ACCORDANCE WITH THE INTENT OF THIS CONTRACT.
3. THE CONTRACTOR SHALL USE PROPERLY FUNCTIONING EQUIPMENT CAPABLE OF PERFORMING THE TASKS REQUIRED.
4. THE CONTRACTOR SHALL FURNISH WORKERS WHO PERFORM QUALITY WORK AND WHO ARE EXPERIENCED AND KNOWLEDGEABLE IN THE WORK PROPOSED.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION AND RESTORATION OF ALL NEW AND EXISTING WORK, INCLUDING EXISTING WALKWAYS FROM THE DESIGNATED BUILDING ENTRANCE TO THE PUBLIC SIDEWALK, WHICH SHALL REMAIN FREE OF DIRT, MUD, SNOW, SPILLS, SPLATTERS AND PHYSICAL DAMAGE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING THE IMMEDIATE AREA AROUND THE PROJECT LIMITS AND ENTRY DOORS CLEAN AND FREE OF CONSTRUCTION MATERIALS AND DEBRIS. THE CONTRACTOR SHALL INSTALL TEMPORARY TARPING, FENCING AND PROTECTION PANELS AS NEEDED TO KEEP ALL CONSTRUCTION DEBRIS CONFINED TO THE IMMEDIATE PROJECT AREA.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL CLEAN UP OF ALL AREAS AFFECTED BY THIS CONTRACT BEFORE FINAL CONTRACT CLOSEOUT.
8. THE CONTRACTOR SHALL NOT TAKE ADVANTAGE OF ANY DISCREPANCY IN THE PLANS OR SPECIFICATIONS. THIS SHALL INCLUDE BUT NOT BE LIMITED TO APPARENT ERRORS, OMISSIONS, AND INTERPRETATIONS INVOLVING CODES, REGULATIONS, AND STANDARDS.
9. ANY CONTRACTOR WHO IDENTIFIES SUCH A DISCREPANCY DURING THE BIDDING PROCESS SHALL NOTIFY THE CITY PROJECT MANAGER OF THE DISCREPANCY.
10. ANY CONTRACTOR WHO IDENTIFIES SUCH A DISCREPANCY AFTER THE BIDDING PROCESS AND/OR AFTER CONTRACT SIGNING SHALL IMMEDIATELY NOTIFY THE CITY PROJECT

MANAGER IN WRITING AND REQUEST CLARIFICATION ON HOW TO PROCEED.

11. ALL DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL LOCAL AND STATE OF WISCONSIN BUILDING CODES LATEST EDITION.
12. THE CITY OF MADISON ELECTRICAL PERMIT WILL BE PAID BY THE OWNER. THE CONTRACTOR SHALL BE REQUIRED TO APPLY FOR AND OBTAIN ALL PERMITS OR LICENSES THAT MAY BE REQUIRED BY THESE CONTRACT DOCUMENTS REGARDLESS OF ORDINANCE, STATUTE, OR OTHER REGULATORY REQUIREMENT.
13. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL INSPECTIONS RELATED TO ALL PERMITS AND LICENSES. RE-INSPECTION FEES ASSOCIATED WITH NON-COMPLAINT OR INCOMPLETE WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
14. EXISTING INFORMATION SHOWN ON DRAWINGS IS BASED ON RECORD DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ACCURACY OF EXISTING INFORMATION AS REQUIRED TO ACCOMMODATE NEW CONSTRUCTION.
15. THERE IS A WATER CONNECTION AND NO ELECTRIC CONNECTION ON SITE.

**LANDS FOR WORK:**

1. NO TOBACCO PRODUCT USE IS ALLOWED ON THE PROPERTY.
2. WORK SHALL BE PERFORMED MONDAY- FRIDAY BETWEEN THE HOURS OF 7:00 A.M. TO 5:00 P.M. UNLESS OTHERWISE APPROVED BY THE CITY PROJECT MANAGER

**SHEET INDEX:**

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- S1 STRUCTURAL PLAN
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- E0 ELECTRICAL COVERSHEET
- E1 ELECTRICAL DEMO PLAN
- E2 ELECTRICAL PLAN
- E3 ELECTRICAL SPECIFICATIONS
- A2 PERSPECTIVE



*Justin Stuchlik*  
1/22/2026



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MUNIS	#15642
DRWN BY:	JPE
DATE	01/22/2026
REV:	01/22/2026

SHT

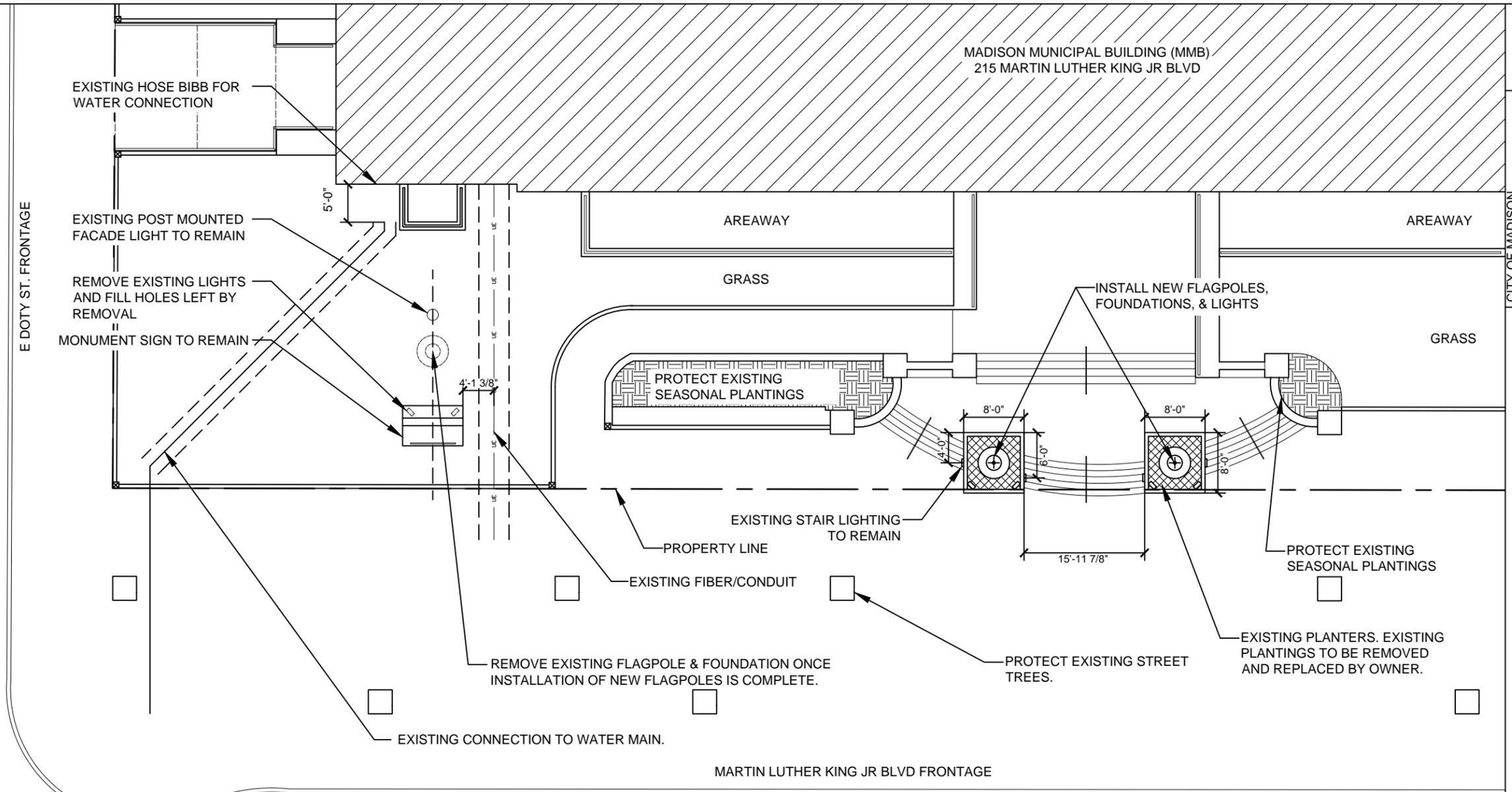
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### DEMOLITION & PROPOSED SITE PLAN

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

#### PROPOSED

1. CONTRACTOR SHALL DETERMINE CRANE LOCATION/PLACEMENT & ADJUST SAFETY FENCE ACCORDINGLY WHILE MAINTAINING REQUIRED CLEARANCES. SEE LANDS FOR WORK DIAGRAM FOR CLEARANCES.
2. REPAIR/REPLACE IN KIND THOSE CONCRETE ELEMENTS THAT WERE MODIFIED FOR THE WORK OF THE CONTRACT.
3. ALL DIMENSIONS AND SITE CONDITIONS TO BE VERIFIED BY CONTRACTOR BEFORE COMMENCEMENT OF WORK.
4. FIBER CONDUIT AND WATER MAIN SHALL BE PROTECTED DURING ALL ASPECTS OF WORK.
5. FLAGPOLE BASIS OF DESIGN: EDER FLAG COMPANY, 6063T6 ALUMINUM FLAGPOLE 66' LONG WITH 10" BUTT DIAM, 4" TOP DIAM, AND 0.188" THICK. FINISH TO BE BLACK OR BRONZE ANODIZED WITH AN INTERNAL (M-WINCH) HALYARD TYPE.
6. APPLY COATING TO BOTTOM 7'-0" OF FLAGPOLE. FOLLOW MFR. INSTRUCTIONS FOR SURFACE PREP AND APPLICATION. BASIS OF DESIGN: KARNAK 118 BLACK ASPHALTUM

#### DEMO

1. REMOVE EXISTING FLAGPOLE, FOUNDATION, AND LIGHTING AFTER NEW FLAGPOLES ARE INSTALLED AND OPERATIONAL.
2. PATCH/FILL HOLES LEFT BY LIGHT REMOVAL ON MONUMENT SIGN WITH CONCRETE. CLEAN OFF ANY EXCESS CONCRETE SO THAT POROUS STONE SURFACE REMAINS.
3. ENSURE PROTECTION OF EXISTING UTILITIES IN THE WORK AREA.
4. PROVIDE FILL AND REINSTATE LEVEL GRADE CONDITION IN AREA OF EXCAVATION. COMPACT FILL TO ENSURE AREA WILL PROVIDE STABLE SUBSURFACE THAT WILL NOT SETTLE.
5. SEED OVER ALL DISTURBED AREAS. PROVIDE 6" (MIN.) TOPSOIL PRIOR TO SEEDING WHERE DISTURBANCE HAS REMOVED EXISTING TOPSOIL. OVERSEED EXISTING, UNDISTURBED LAWN AREAS AS NECESSARY. APPLY EROSION CONTROL MAT, CLASS 1- TYPE A URBAN OVER ALL AREAS TO BE SEEDED.
6. PROVIDE APPROPRIATE EROSION CONTROL PROTECTIONS IN WORK AREAS.

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SHT  
**A2**

REMOVE EXISTING FLAGPOLE,  
 FOUNDATION, AND LIGHTING

INSTALL NEW FLAGPOLES,  
 FOUNDATIONS, AND LIGHTING



RENDERING OF PROPOSAL

## DESIGN CRITERIA

- STRUCTURE HAS BEEN DESIGNED TO COMPLY WITH IBC 2015, WISCONSIN BUILDING CODE 2015 AND SUBSEQUENT REFERENCE STANDARDS, FLAGPOLE WIND LOADS PER NAAM/FPF 1001-07
- RISK CATEGORY: II
- WIND:

BASIC WIND SPEED	VULT = 115 MPH VASD = 90 MPH
EXPOSURE CLASS	B
FLAGPOLE WIND PRESSURE, (ASD)	19 PSF
WIND DRAG ON FLAG, (ASD)	5 PSF

## GENERAL

- DURING THE CONSTRUCTION PERIOD, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF PERSONNEL AND PROPERTY ON AND AROUND THE JOBSITE. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING, BRACING, GUYS, ETC. IN ACCORDANCE WITH ALL NATIONAL, STATE, AND LOCAL SAFETY ORDINANCES. TEMPORARY BRACING, SHORING, GUYING, ETC. SHALL AVOID EXCESSIVE STRESSES AND HOLD STRUCTURAL ELEMENTS IN PLACE DURING CONSTRUCTION. THE STRUCTURE SHOULD NOT BE CONSIDERED STABLE UNTIL ALL STRUCTURAL ELEMENTS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- ALL DRAWINGS AND SPECIFICATIONS ARE CONSIDERED TO BE A PART OF THE CONTRACT DOCUMENTS. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVIEW AND COORDINATION OF ALL DRAWINGS PRIOR TO THE START OF CONSTRUCTION, ANY DISCREPANCIES OR OMISSIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE START OF CONSTRUCTION SO A CLARIFICATION CAN BE ISSUED. ANY WORK THAT DEVIATES FROM OR IS PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS OR ANY CODE REQUIREMENTS SHALL BE CORRECTED BY THE CONTRACTOR AT THEIR OWN EXPENSE AND AT NO EXPENSE TO THE OWNER OR THE DESIGN PROFESSIONALS.
- THE CONTRACT DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING LOADABLE CONSTRUCTION LOADS AND FOR DETERMINING SEQUENCES OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE AND SAFETY OF WORKERS DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO: FALSEWORK, FORMWORK, STAGING, BRACING, AND SHORING FOR LOADS DUE TO THE CONSTRUCTION EQUIPMENT ETC. OBSERVATION VISITS TO THE SITE BY THE ENGINEER SHALL NOT INCLUDE INSPECTION OR APPROVAL OF THE ABOVE ITEMS AND DO NOT IN ANY WAY RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITIES FOR THE ABOVE. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO MAINTAIN AND ENSURE THE INTEGRITY OF THE STRUCTURE AT ALL STAGES OF CONSTRUCTION.
- ALL DIMENSIONS AND SITE CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE JOBSITE PRIOR TO BID SUBMITTAL. START OF SHOP DRAWINGS, START OF CONSTRUCTION, AND/OR FABRICATION OF MATERIALS. IF DISCREPANCIES ARE ENCOUNTERED, OR CONDITIONS DEVELOP THAT ARE NOT COVERED BY THE CONTRACT DOCUMENTS, THE ENGINEER SHALL BE NOTIFIED FOR CLARIFICATION.
- STRUCTURAL SUBSTITUTIONS MAY BE ALLOWED WITH THE APPROVAL OF THE STRUCTURAL ENGINEER. SUPPLIER SHALL PROVIDE SIGNED AND SEALED DESIGN CALCULATIONS OR SUITABLE PRODUCT LITERATURE FOR THE COMPONENTS. ALL PRODUCT SUBSTITUTIONS SHALL INCLUDE A CODE EVALUATION REPORT SPECIFIC TO THE BUILDING CODE LISTED IN THE DESIGN CRITERIA.
- STRUCTURAL DRAWINGS INCLUDE DESIGN REQUIREMENTS AND DIMENSIONS FOR STRUCTURAL INTEGRITY BUT DO NOT SHOW ALL DETAIL DIMENSIONS TO FIT INTRICATE MEP DETAILS. CONTRACTOR SHALL CONSTRUCT THE WORK SO IT WILL CONFORM TO THE CLEARANCES REQUIRED BY ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DESIGN.
- ALL SYMBOLS AND ABBREVIATIONS USED ON THE DRAWINGS ARE CONSIDERED TO BE CONSTRUCTION STANDARDS. IF CLARIFICATION IS REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK.
- DO NOT SCALE DRAWINGS. PRINTED DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS AND LARGER SCALE OVER SMALLER SCALE DRAWINGS. CONTRACTOR TO DETERMINE FINAL DIMENSIONS WITH ENGINEER.
- TYPICAL DETAILS SHALL APPLY TO SITUATIONS OCCURRING ON THE PROJECT THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY REFERENCED, WHERE NO DETAILS ARE GIVEN, CONSTRUCTION SHALL BE AS SHOWN FOR SIMILAR WORK.
- SEE ELECTRICAL AND MECHANICAL DRAWINGS FOR SLEEVES, ITEMS TO BE EMBEDDED OR ATTACHED TO STRUCTURAL ELEMENTS, ETC., NOT SHOWN ON THE STRUCTURAL DRAWINGS. FOR THESE NON-STRUCTURAL ELEMENTS SHOWN ON STRUCTURAL DRAWINGS, THEY ARE FOR GENERAL INFORMATION ONLY.
- ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR MECHANICAL, ELECTRICAL, AND PLUMBING WITH APPROPRIATE TRADE CONTRACTORS, OPENING SIZES AND LOCATIONS SHOWN FOR PIPE, INSERTS, AND OTHER PENETRATIONS WHEN SHOWN ARE FOR GENERAL INFORMATION ONLY AND SHALL BE VERIFIED PRIOR TO FORMING.
- NO HOLES, NOTCHES, BLOCK-OUTS, ETC. ARE ALLOWED IN STRUCTURAL ELEMENTS UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE STRUCTURAL ENGINEER.
- PENETRATIONS IN CONCRETE SHALL BE CAST-IN-PLACE AND SHALL NOT BE PERMITTED EXCEPT AS SHOWN IN THE STRUCTURAL DRAWINGS.
- BEFORE SUBMITTING A PROPOSAL FOR THIS WORK, CONTRACTOR SHALL VISIT THE PREMISES AND BECOME FULLY ACQUAINTED WITH FIELD CONDITIONS, TEMPORARY CONSTRUCTION REQUIRED, QUANTITIES AND TYPE OF EQUIPMENT, ETC. THE PROPOSAL SHALL INCLUDE ALL SUMS REQUIRED TO DO THE WORK.

## SUBMITTALS

- SUBMITTALS ARE:
  - CONCRETE MIX DESIGNS
  - MATERIAL PRODUCT DATE FOR STRUCTURAL MATERIALS
  - CONCRETE REINFORCING
  - FLAGPOLES
  - EXCAVATION METHODS SUMMARY
- SUBMITTALS SHALL BE REVIEWED AND COORDINATED PRIOR TO SUBMITTING TO THE ENGINEER. EACH SHOP DRAWING SUBMITTED SHALL BE STAMPED INDICATING REVIEW BY THE CONSTRUCTION MANAGER/GENERAL CONTRACTOR AND REVIEW BY THE ENGINEER SHALL NOT BEGIN UNTIL THIS IS COMPLETE. WORK SHALL NOT BEGIN WITHOUT REVIEW BY THE DESIGN PROFESSIONALS.
- SUBMITTALS SHALL BE REVIEWED BY THE DESIGN PROFESSIONALS FOR GENERAL CONFORMANCE WITH DESIGN CONCEPT ONLY. NOTATIONS MADE BY THE DESIGN PROFESSIONALS ON THE SHOP DRAWINGS DO NOT RELIEVE THE CONTRACTOR FROM COMPLYING WITH THE REQUIREMENTS OF THE DRAWINGS.
- FOR ADDITIONAL INFORMATION ON REQUIRED SUBMITTALS, SEE INDIVIDUAL MATERIAL SECTIONS.

## STRUCTURAL SHEET INDEX

SHEET NUMBER	SHEET NAME
S0	GENERAL NOTES
S1	MUNICIPAL BUILDING ENTRANCE LAYOUT PLAN
S2	DETAILS
GRAND TOTAL: 3	

## DELEGATED DESIGN

- DELEGATED DESIGNS SHALL BE SUBMITTED TO THE BUILDING OFFICIAL AND THE DESIGN PROFESSIONAL AND REVIEWED PRIOR TO INSTALLATION.
- DELEGATED DESIGNS ARE:
  - EXCAVATION, SHORING, AND UNDERPINNING
  - FLAGPOLE AND ITS ANCHORAGE OR CONNECTION WITH FOUNDATION
- ALL DELEGATED DESIGNS SHALL BE SIGNED AND SEALED BY AN ENGINEER LICENSED IN THE PROJECT'S JURISDICTION RESPONSIBLE FOR THE PREPARATION OF THESE DOCUMENTS.

## EXISTING CONDITIONS / DEMOLITION

- EXISTING CONDITIONS:
  - ALL INFORMATION SHOWN ON THE DRAWINGS RELATIVE TO EXISTING CONDITIONS IS GIVEN AS THE BEST PRESENT KNOWLEDGE. CONTRACTOR TO VERIFY EXISTING INFORMATION, DIMENSIONS, AND SIZES AS REQUIRED TO COMPLETE THEIR WORK, WHERE ACTUAL CONDITIONS CONFLICT WITH THE DRAWINGS, THEY SHALL BE REPORTED TO THE ENGINEER SO CLARIFICATION MAY BE MADE. MODIFICATION OF CONSTRUCTION DETAILS SHALL NOT BE MADE WITHOUT WRITTEN APPROVAL OF THE ENGINEER.
- EXISTING BUILDING MATERIAL PROPERTIES:
  - CONCRETE FOUNDATION WALLS AND FOUNDATIONS  $f_c = 3,000$  psi
- ALL DEMOLITION SHALL BE CARRIED OUT IN SUCH A WAY TO PREVENT DAMAGE TO EXISTING ELEMENTS WHICH ARE TO REMAIN.
- ALL ELEMENTS WHICH ARE TO REMAIN AND WHICH ARE DAMAGED DURING DEMOLITION WORK SHALL BE REPLACED AT NO ADDED COST. CONTRACTOR SHALL PROVIDE AND BE RESPONSIBLE FOR THE PROTECTION AND REPAIR OF ADJACENT EXISTING SURFACES AND AREAS WHICH MAY BE DAMAGED AS A RESULT OF NEW WORK.
- CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS OF EXISTING STRUCTURE AND SITES THAT ARE AFFECTED BY NEW WORK BEFORE PROCEEDING WITH FABRICATION AND CONSTRUCTION.
- ALL CONSTRUCTION IS NEW UNLESS IDENTIFIED AS EXISTING. "EY". THE CONTRACTOR SHALL VERIFY ALL EXISTING BUILDING INFORMATION AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO FABRICATION OF ANY STRUCTURAL COMPONENT. NEW SLABS ARE TO BE AT THE SAME ELEVATIONS AS ADJACENT EXISTING SLABS UNLESS FOUNDATION ELEVATIONS OR COLUMN LENGTHS SHALL BE ADJUSTED WITH THE APPROVAL OF THE STRUCTURAL ENGINEER TO ACHIEVE MATCHING SLAB ELEVATIONS.
- REINFORCING STEEL IN EXISTING CONCRETE SHALL BE LOCATED PRIOR TO INSTALLATION OF NEW OPENINGS OR CORING OF HOLES IN THE CONCRETE. REINFORCING STEEL MAY NOT BE CUT WITHOUT APPROVAL FROM THE ENGINEER.
- SHORING:
  - SHORING DRAWINGS AND CALCULATIONS BY OTHERS, AS REQUIRED, ARE NOT INCLUDED IN THIS PACKAGE. SHORING DRAWINGS AND STRUCTURAL CALCULATIONS SHALL BE PROVIDED BY CONTRACTOR FOR REVIEW.
  - SHORING / UNDERPINNING OF EXISTING BUILDINGS OR IMPROVEMENTS SHALL BE PROVIDED BEFORE EXISTING SUPPORTING WALLS, SLABS, FOUNDATIONS, PAVEMENT ETC. ARE CUT, MODIFIED, OR REMOVED.

## EARTHWORK

- FOUNDATION DESIGN IS IN ACCORDANCE WITH THE BUILDING CODE ALLOWABLE BEARING PRESSURES. NO NEW GEOTECHNICAL REPORT HAS BEEN PROVIDED BY THE OWNER FOR THIS PROJECT.
- SOIL PROPERTIES:

FROST DEPTH	5 FT (UNHEATED)
COEFFICIENT OF FRICTION	0.3
PASSIVE	100 PSF/FT OF DEPTH (ASSUMED)
- A GEOTECHNICAL ENGINEER SHALL BE EMPLOYED TO VERIFY THAT THE PRESUMED ALLOWABLE BEARING PRESSURE WILL BE ACHIEVED PRIOR TO CONSTRUCTION. GEOTECHNICAL ENGINEERING SERVICES SHALL BE PROVIDED BY CGC AND INVOICED TO THE CITY.
- ANY TESTS, INSPECTIONS, FIELD OBSERVATIONS, OR APPROVAL FROM THE GEOTECHNICAL ENGINEER SHALL BE PERFORMED PRIOR TO PLACEMENT OF CONCRETE. ALTERATIONS TO SITE PREPARATION OR GRADING SHALL BE REPORTED TO THE GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL PROVIDE DE-WATERING OF EXCAVATIONS FROM SURFACE WATER, GROUNDWATER, OR SEEPAGE. DETAILS OF GROUNDWATER INFORMATION SHALL BE OBTAINED FROM THE GEOTECHNICAL REPORT. IF GROUNDWATER IS ENCOUNTERED DURING EXCAVATION, PROCEDURES SHALL BE IMPLEMENTED AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER.
- PROVIDE SHORING WHERE THERE IS INSUFFICIENT SPACE FOR STABLE-SLOPED EMBANKMENTS.
- CONTRACTOR SHALL INVESTIGATE SITE DURING CLEARING AND EARTHWORK OPERATIONS FOR FILL MATERIAL OR BURIED STRUCTURES SUCH AS CESSPOOLS, CISTERNS, AND FOUNDATIONS. IF ANY SUCH MATERIAL OR STRUCTURES ARE FOUND, ENGINEER SHALL BE NOTIFIED IMMEDIATELY.
- ANY REQUIRED IMPORT FILL SHALL HAVE A LOW POTENTIAL FOR EXPANSION AND SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO IMPORTING.
- UTILITY LINES SHALL NOT BE PLACED THROUGH OR BELOW FOUNDATIONS WITHOUT THE STRUCTURAL ENGINEER'S APPROVAL. BELOW GRADE UTILITY OR PIPE ELEVATIONS, WHERE SHOWN, ARE INDICATED FOR REFERENCE ONLY. REQUIRED ELEVATIONS SHALL BE DETERMINED BY OTHERS AND COORDINATED WITH THE FOUNDATIONS.
- WHERE GRADE ELEVATIONS ARE APPROXIMATELY EQUAL ON BOTH SIDES OF WALLS, BACKFILL SHALL BE PLACED SO THAT IT IS NOT UNBALANCED BY MORE THAN 2 FEET ON EITHER SIDE.
- ALL REQUIRED BACKFILL AND UTILITY TRENCH BACKFILL WITHIN THE BUILDING AREA SHALL BE COMPACTED MECHANICALLY COMPACTED IN LAYERS TO 95% MAXIMUM DRY DENSITY PER ASTM D1557 AND TO THE APPROVAL OF THE INSPECTION AGENCY.

## SHALLOW FOUNDATIONS

- SEE THE GEOTECHNICAL REPORT FOR SHALLOW FOUNDATION REQUIREMENTS.
- SHALLOW FOUNDATIONS SHALL HAVE THE FOLLOWING MINIMUM NET ALLOWABLE SERVICE LOAD BEARING PRESSURES:

SERVICE LOAD BEARING PRESSURES:	
NET ALLOWABLE BEARING PRESSURE	1500 PSF (ASSUMED)
- FOUNDATION ELEVATIONS SHOWN INDICATED LOCATIONS WHERE ADEQUATE SOIL BEARING PRESSURE IS ANTICIPATED. IF INADEQUATE BEARING CAPACITY IS ENCOUNTERED, CONTRACT STRUCTURAL ENGINEERING FOR RESOLUTION. BEARING ELEVATIONS ARE ESTIMATED FROM SOIL BORING DATA INDICATED IN THE GEOTECHNICAL REPORT. DETERMINATION OF FINAL BEARING ELEVATIONS AND FIELD VERIFICATION OF ALLOWABLE BEARING PRESSURE SHALL BE MADE BY AN EXPERIENCED, QUALIFIED GEOTECHNICAL ENGINEER PRIOR TO PLACE FOUNDATIONS.
- ALL FOUNDATIONS SHALL BEAR BELOW THE FROST DEPTH, OR LOWER WHERE INDICATED ON FOUNDATION PLAN. IN CASE OF CONFLICT, NOTIFY THE DESIGN PROFESSIONALS IN ADVANCE OF ANY CONSTRUCTION TO ALLOW FOR ADJUSTMENT.
- FOUNDATIONS SHALL BE PLACED ON UNDISTURBED SOIL OR COMPACTED STRUCTURAL FILL, AND CLEAN AND FREE OF LOOSE DEBRIS AND STANDING WATER AT TIME OF CONCRETE PLACEMENT.
- WHERE FOUNDATIONS BEAR ON ROCK, FOUNDATIONS SHALL BEAR ON THAT ROCK OR ON LEAN CONCRETE FILL.
- NEW FOOTING BEARING ELEVATIONS SHALL MATCH ADJACENT EXISTING FOOTING BEARING ELEVATIONS WHERE OCCURRING UNON.

## REINFORCING STEEL

- ALL REINFORCING STEEL SHALL BE DETAILED AND PLACED IN CONFORMANCE WITH ACI 318, "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", AND ACI 301, "SPECIFICATIONS FOR STRUCTURAL CONCRETE", UON.
- CONCRETE REINFORCING STEEL SHALL CONFORM TO THE FOLLOWING STANDARDS:

REINFORCING STEEL	ASTM A615, GR 60	Fy=60 KSI
EPOXY-COATED REINFORCING STEEL (UON)	ASTM A775	Fy=60 KSI
MECHANICAL COUPLERS	TYPE 2	Fy=1.25xDEFORMED BAR TENSILE STRENGTH
- MINIMUM CONCRETE COVER SHALL BE PROVIDED AS FOLLOWS TO THE OUTERMOST REINFORCING BARS:

CONCRETE EXPOSURE	MEMBER	REINFORCE MENT	COVER (IN)
CAST AGAINST AND PERMANENTLY IN CONTACT WITH GROUND	ALL	ALL	3
		#6 TO #18	2
EXPOSED TO WEATHER OR IN CONTACT WITH GROUND	ALL	#5 AND SMALLER	1 1/2
		#5 AND SMALLER	1 1/2
- REINFORCING STEEL SHALL BE INSTALLED TO WITHIN THE FOLLOWING TOLERANCES. INDICATED TOLERANCES ARE PER ACI 117. "SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS".

ITEM FOR WHICH TOLERANCE IS BEING MEASURED	PERMITTED TOLERANCE
CONCRETE COVER FOR SLAB TOP AND BOTTOM BARS	± 1/4"
COVER FOR OTHER REINFORCING STEEL	± 3/8"
HORIZONTAL DEVIATION FROM SPECIFIED LOCATION UON	± 3"
SPACING AND LOCATION OF COLUMN TIES	± (MINIMUM COLUMN DIMENSION IN INCHES/12) X 1"

THE ABOVE LIST OF PERMITTED TOLERANCES SHALL BE PROVIDED ON ALL REINFORCING STEEL PLACING DRAWINGS. PLACING DRAWINGS THAT DO NOT PROVIDE THIS LIST OF TOLERANCES WILL BE REJECTED.
- FIELD BENDING OF REINFORCING STEEL IS NOT PERMITTED UON.
- SUPPORTS AND TIE WIRE FOR COATED REINFORCING SHALL BE PLASTIC PROTECTED. SUPPORTS AND TIE WIRE FOR STAINLESS OR GALVANIZED REINFORCING SHALL BE STAINLESS OR GALVANIZED STEEL PROTECTED RESPECTIVELY. SUPPORTS AND TIE WIRE FOR UNCOATING REINFORCING SHALL BE PLAIN WIRE, NO PROTECTION.
- SPlicing:
  - SPICES IN REINFORCING STEEL SHALL BE MADE ONLY AT THOSE LOCATIONS WHERE SPICES ARE SHOWN ON THE STRUCTURAL DRAWINGS AND AT THOSE LOCATIONS WHERE SPICES HAVE BEEN DETAILED ON THE REINFORCING STEEL PLACING DRAWINGS THAT HAVE BEEN REVIEWED AND APPROVED BY THE STRUCTURAL ENGINEER. ALL SPICES SHALL BE CLASS B TENSION LAP SPICES UON.
  - MECHANICAL SPICE COUPLERS MAY BE USED INSTEAD OF TENSION LAP SPICES AT THE CONTRACTOR'S OPTION AT ANY LOCATION. MECHANICAL SPICE COUPLERS MUST BE USED WHERE SPICING #14 AND LARGER BARS, INCLUDING WHERE SPICING #14 AND LARGER BARS TO #11 AND SMALLER BARS, STAGGER MECHANICAL SPICES IN ADJACENT BARS 30" MINIMUM.
  - COMPRESSION LAP SPICES MAY BE USED ONLY AT THOSE LOCATIONS WHERE SUCH SPICES ARE SPECIFICALLY INDICATED. STAGGER SPICES WHERE REQUIRED TO PROVIDE 1 1/2" MINIMUM CLEAR SPACING BETWEEN REINFORCING STEEL AT SPICE LOCATIONS.
- FIELD CUTTING OR REINFORCING STEEL IS PROHIBITED UNLESS INDICATED ON THE REINFORCING PLACING DRAWINGS.
- HEATING OF BARS FOR BENDING IS PROHIBITED.
- REINFORCING STEEL PLACING DRAWINGS SHALL BE PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF ACI 315. THE PLACING DRAWINGS SHALL SHOW ALL INFORMATION NECESSARY TO FABRICATE AND PLACE THE REINFORCING STEEL.
- REINFORCING STEEL SPACINGS ARE CENTER-TO-CENTER DIMENSIONS UON. REINFORCING STEEL SHOWN IN SECTION PERPENDICULAR TO THE CUT ARE CONTINUOUS UON.
- THE SPACING OF ALL REINFORCING STEEL MUST BE COMPUTED BY THE REINFORCING STEEL DETAILER AND MUST BE INDICATED ON THE PLACING DRAWINGS. EXTENT ARROWS MUST BE USED TO CLEARLY INDICATED THE LOCATIONS WHERE GROUPS OF REINFORCING BARS ARE TO BE INSTALLED.
- A LIST OF ALL APPLICABLE REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE INDICATED ON ALL REINFORCING STEEL PLACING DRAWINGS. PLACING DRAWINGS THAT DO NOT SHOW SUFFICIENT INFORMATION NEEDED TO PLACE THE REINFORCING STEEL WILL BE REJECTED.
- CONTRACTOR SHALL NOTIFY THE TESTING AND INSPECTION AGENCY AND STRUCTURAL ENGINEER A MINIMUM OF 48 HOURS PRIOR TO ALL CONCRETE POURS IN ORDER TO PERMIT REINFORCING STEEL REVIEW IF REQUIRED BY THE STRUCTURAL ENGINEER.

## CAST-IN-PLACE CONCRETE

- ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF ACI 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, AND ACI 301, SPECIFICATIONS FOR STRUCTURAL CONCRETE UON.
- CONCRETE MATERIALS SHALL CONFORM TO:

PORTLAND LIMESTONE CEMENT	ASTM C595, TYPE II
FLY ASH	ASTM C618, TYPE C OR F
SLAG CEMENT	ASTM C989
FINE AND COARSE AGGREGATE	ASTM C33
WATER	POTABLE
AIR-ENTRAINING ADMIXTURE	ASTM C260
WATER REDUCING ADMIXTURE	ASTM C494
- CONCRETE STRENGTHS SHALL CONFORM TO:

LOCATION	f <sub>c</sub> AT 28 DAYS (PSI)	MAX PERMITTED W/C	EXPOSURE CLASS
ALL FOUNDATION CONCRETE UON	4500	0.45	F2 S0 W0 C0
- REQUIRED NOMINAL MAXIMUM COARSE AGGREGATE SIZE:

CONCRETE ELEMENT	REQUIRED NOMINAL MAXIMUM COARSE AGGREGATE SIZE*
ALL CONCRETE UON	1"

\*SMALLER NOMINAL MAXIMUM COARSE AGGREGATE SIZE SHALL BE USED WHERE REQUIRED PER ACI 318.
- CONTRACTOR SHALL SUBMIT PROPOSED LOCATIONS OF ALL CONSTRUCTION JOINTS WHERE JOINTS ARE NOT INDICATED ON THE DRAWINGS.
- PROVIDE TEMPLATES TO SET EMBEDDED ITEMS.
- INSTALLATION OF ELECTRICAL CABLE, CONDUIT, AND PIPING IN OR THROUGH CONCRETE COLUMNS AND WALLS IS PROHIBITED UNLESS APPROVED BY THE STRUCTURAL ENGINEER PRIOR TO INSTALLATION. INSTALLATION OF PIPING IN CAST-IN-PLACE CONCRETE IS PROHIBITED UNLESS APPROVED BY STRUCTURAL ENGINEER PRIOR TO INSTALLATION. DRAWINGS SHALL BE SUBMITTED FOR REVIEW SHOWING PROPOSED PLACEMENT OF ELECTRICAL CABLE AND CONDUIT IN SLABS. THOSE DRAWINGS SHALL SHOW SIZES AND DIMENSIONED LOCATIONS OF ALL CABLE AND CONDUIT.
- NOTIFY THE ENGINEER 48 HOURS MINIMUM PRIOR TO ALL POURS.
- CONTRACTOR SHALL SURVEY ALL CONCRETE WORK WITHIN 48 HOURS OF PLACING CONCRETE TO ENSURE PLACEMENT IS IN ACCORDANCE WITH PROJECT REQUIREMENTS.
- CORING OF CONCRETE IS NOT PERMITTED UNLESS APPROVED BY THE STRUCTURAL ENGINEER. SUBMIT LOCATIONS OF PROPOSED CONCRETE CORES.
- REINFORCING STEEL SHALL NOT BE DAMAGED WHEN DRILLING CONCRETE.
- ADHERE TO ACI 305R AND ACI 306R FOR HOT AND COLD WEATHER CONCRETE CONSTRUCTION.
- THE PROPOSED MATERIALS AND MIX DESIGN SHALL BE FULLY DOCUMENTED AND REVIEWED BY THE TESTING AND INSPECTION AGENCY. RESPONSIBILITY FOR OBTAINING THE REQUIRED DESIGN STRENGTH IS THE CONTRACTOR'S SUBMIT TEST DATA ON EACH PROPOSED MIX FOR REVIEW IN ACCORDANCE WITH THE APPLICABLE CODE. MIX DESIGNS SUBMITTED WITHOUT THE REQUIRED TEST DATA WILL BE RETURNED WITHOUT REVIEW.

## STRUCTURAL ABBREVIATION KEY

ABBR:	DESCRIPTION:	ABBR:	DESCRIPTION:
#	NUMBER OF POUNDS	KSF	KIPS PER SQUARE FOOT
@	AT	KSI	KIPS PER SQUARE INCH
°	DEGREE	L	LENGTH
Ø	DIAMETER	LBS	POUNDS
(E)	EXISTING	LL	LIVE LOAD
ANCH	ANCHOR BOLT	LH	LONG LEG HORIZONTAL
ARCH	ARCHITECT -URE, -URAL	LLV	LONG LEG VERTICAL
B.O.	BOTTOM OF	LONG.	LONGITUDINAL
b <sub>f</sub>	BEAM FLANGE WIDTH	LSH	LONG SIDE HORIZONTAL
BF	BRACE FRAME	LSV	LONG SIDE VERTICAL
BM	BEAM	LT WT	LIGHTWEIGHT
B.N.	BOUNDARY NAILING	MAX	MAXIMUM
BOTT	BOTTOM	MECH	MECHANICAL
BTWN	BETWEEN	MANUF	MANUFACTURER
CFSF	COLD FORM STEEL FRAMING	MIN	MINIMUM
CGS	CENTER OF GRAVITY OF THE TENDON	NIC	NOT IN CONTRACT
CJP	COMPLETE JOINT PENETRATION WELD	NTS	NOT TO SCALE
CLR	CLEAR	OH	OPPOSITE HAND
CL	CENTERLINE	OPNG	OPENING
CMU	CONCRETE MASONRY UNIT	OSB	ORIENTED STRAND BOARD
COL	COLUMN	PCF	POUNDS PER CUBIC FOOT
CONC	CONCRETE	P.H.	PENTHOUSE
CONN	CONNECTION	PJP	PARTIAL JOINT PENETRATION WELD
CONST	CONSTRUCTION	PLT	PLATE
CONT	CONTINUOUS	PLF	POUNDS PER LINEAR FOOT
COORD	COORDINATION	PSF	POUNDS PER SQUARE FOOT
DIA	DIAMETER	PSI	POUNDS PER SQUARE INCH
DL	DEAD LOAD	PT	POST-TENSION, -ED, -ING
DET	DETAIL	R	RADIUS
DWNG	DRAWING	REINF	REINFORCING, -MENT, -ED
DWL	DOWEL	REQD	REQUIRED
EA	EACH	RTU	ROOF TOP UNIT
EF	EACH FACE	SC	SLIP CRITICAL
EFF	EFFECTIVE	SCHED	SCHEDULE
EL	ELEVATION	SFRS	SEISMIC FORCE-RESISTING SYSTEM
ELEC	ELECTRIC	SLM	SIMILAR
EMBED	EMBEDMENT	SL	SNOW LOAD
E.N.	EDGE NAILING	S.M.S	SHEET METAL SCREW
EOD	EDGE OF DECK	SP	SPACE(S)
EOS	EDGE OF SLAB	SPECS	SPECIFICATION(S)
EQ	EQUAL	SQ	SQUARE
EQUIP	EQUIPMENT	STIFF	STIFFENER
ETC	ETCETERA	STL	STEEL
EW	EACH WAY	SYM	SYMMETRICAL
EXP	EXPANSION	T&B	TOP AND BOTTOM
EXT	EXTERIOR	T.O.	TOP OF
f <sub>c</sub>	CONCRETE COMPRESSIVE STRENGTH	TC	PRE-TENSIONED BOLT
FDN	FOUNDATION	TEMP	TEMPERATURE
F.N.	FIELD NAILING	IF	BEAM FLANGE THICKNESS
FT	FOOT	THK	THICK
FTG	FOOTING	TRANS	TRANSVERSE
Fy	YIELD STRESS	TYP	TYPICAL
GA	GAGE OR GAUGE	UON	UNLESS OTHERWISE NOTED
GALV	GALVANIZED	VERT	VERTICAL
GLB	GLULAM BEAM	VF	VERIFY IN FIELD
GT	GRIDDER TRUSS	W	WITH
HORIZ	HORIZONTAL	WP	WORK POINT
HSA	HEADED STUD ANCHOR	WT	WEIGHT
HSB	HIGH STRENGTH BOLT	WWR	WELDED WIRE REINFORCING
JT	JOINT		
K, KIP	KILOPOUND (1,000 POUNDS)		



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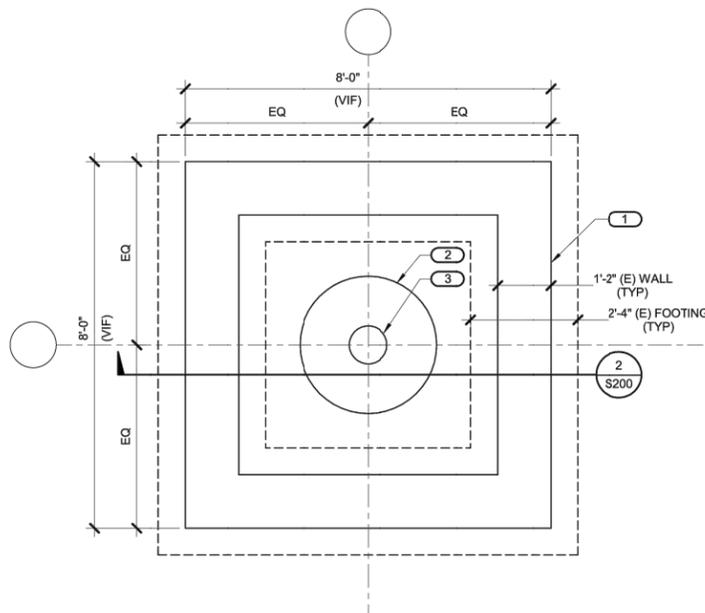
MADISON MUNICIPAL BUILDING  
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215 MARTIN LUTHER KING JR. BLVD 53703

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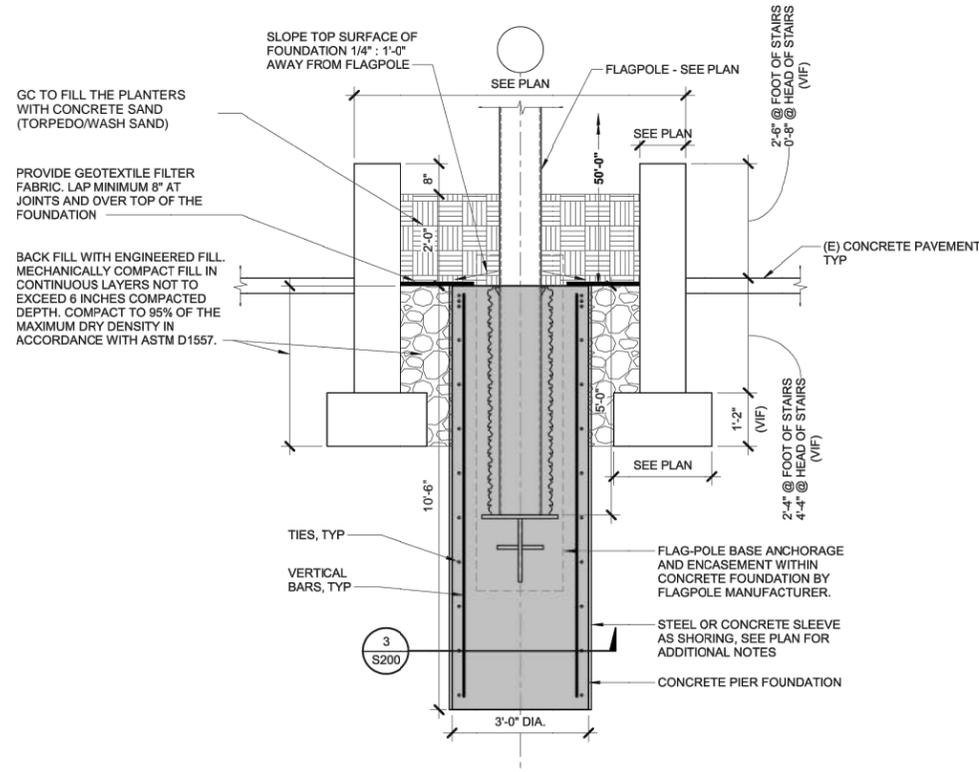




### 1 TYPICAL EXISTING PLANTER WITH NEW FLAGPOLE

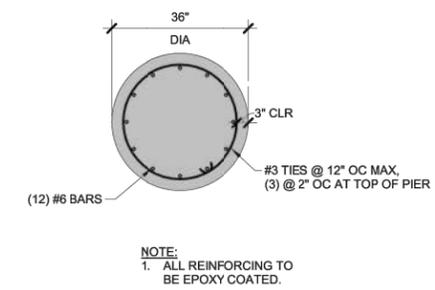
1/4" = 1'-0"

- KEYNOTES:** #
- (E) 1'-2" FOUNDATION WALL TO REMAIN. CONTRACTOR TO EXERCISE ALL NECESSARY CARE TO PRESERVE FOUNDATION WALL AND AVOID DAMAGING IT. ANY DAMAGE TO (E) WALL WILL BE REPAIRED AT CONTRACTOR'S COST TO THE SATISFACTION OF THE OWNER.
  - CONCRETE PIER FOUNDATION. 3'-0" DIAMETER x 10'-6" TALL.
  - BASIS OF DESIGN FLAGPOLE: "EDER FLAG COMPANY" 6063T6 ALUMINUM FLAGPOLE, 10" BUTT DIAMETER, 4" TOP DIAMETER, 0.188" THICK. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL DETAILS.
- SHEET NOTES:**
- CONTRACTOR SHALL EXCAVATE VIA HYDROVAC OR SIMILAR EXCAVATION METHOD DOWN TO THE ELEVATION OF THE BOTTOM OF THE EXISTING FOUNDATIONS AND NOT LOWER. EXCAVATION METHOD IS INTENDED TO BE DONE IN SUCH A WAY THAT ALL PRESENT SOILS WITHIN THE PLANTER DOWN TO THIS PLANE ARE REMOVED AND DAMAGE TO THE EXISTING FOUNDATION IS MINIMIZED. THE SELECTED CONTRACTOR MAY PROPOSE ALTERNATIVE EXCAVATION METHOD TO THE OWNER/ENGINEER FOR APPROVAL.
  - THE EXCAVATION WILL FURTHER PROCEED DOWN TO THE FINAL BEARING ELEVATION BY MEANS/METHOD AS PROPOSED BY THE SELECTED CONTRACTOR. A STEEL OR CONCRETE SLEEVE SHALL BE USED AT THE DIAMETER OF THE FOUNDATION REQUIRED TO RESIST ANY CAVING FORCES BY SOILS BENEATH THE EXISTING FOUNDATION. THE DESIGN OF THIS SLEEVE (SHORING) IS A DELEGATED DESIGN TO BE PROVIDED FOR REVIEW TO THE ENGINEERING TEAM BY THE SELECTED CONTRACTOR.



### 2 FLAGPOLE AND PLANTER SECTION

1/4" = 1'-0"



### 3 PIER REINFORCEMENT

1/4" = 1'-0"

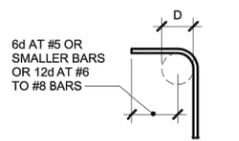
### CLASS B TENSION LAP SPLICE LENGTH

REINF STEEL, Fy	BAR SIZE	BAR LOCATION	CONCRETE STRENGTH, Fc							
			3 KSI	4 KSI	5 KSI	6 KSI	7 KSI	8 KSI	9 KSI	10 KSI
60 KSI	#3	TOP	2'-4"	2'-1"	1'-10"	1'-8"	1'-7"	1'-6"	1'-5"	1'-4"
		OTHER	1'-10"	1'-7"	1'-5"	1'-4"	1'-2"	1'-2"	1'-1"	1'-0"
	#4	TOP	3'-2"	2'-9"	2'-5"	2'-3"	2'-1"	1'-11"	1'-10"	1'-9"
		OTHER	2'-5"	2'-1"	1'-11"	1'-9"	1'-7"	1'-6"	1'-5"	1'-4"
	#5	TOP	3'-11"	3'-5"	3'-0"	2'-9"	2'-7"	2'-5"	2'-3"	2'-2"
		OTHER	3'-0"	2'-7"	2'-4"	2'-2"	2'-0"	1'-10"	1'-9"	1'-8"
	#6	TOP	4'-8"	4'-1"	3'-8"	3'-4"	3'-1"	2'-11"	2'-9"	2'-7"
		OTHER	3'-7"	3'-1"	2'-10"	2'-7"	2'-4"	2'-3"	2'-1"	2'-0"
	#7	TOP	6'-9"	5'-11"	5'-3"	4'-10"	4'-6"	4'-2"	3'-11"	3'-9"
		OTHER	5'-3"	4'-6"	4'-1"	3'-9"	3'-5"	3'-3"	3'-0"	2'-11"
	#8	TOP	7'-9"	6'-9"	6'-0"	5'-6"	5'-1"	4'-9"	4'-6"	4'-3"
		OTHER	6'-0"	5'-2"	4'-8"	4'-3"	3'-11"	3'-8"	3'-6"	3'-3"
	#9	TOP	8'-9"	7'-7"	6'-9"	6'-2"	5'-9"	5'-4"	5'-1"	4'-10"
		OTHER	6'-9"	5'-10"	5'-3"	4'-9"	4'-5"	4'-2"	3'-11"	3'-8"
	#10	TOP	9'-10"	8'-6"	7'-8"	7'-0"	6'-5"	6'-0"	5'-8"	5'-5"
		OTHER	7'-7"	6'-7"	5'-11"	5'-4"	5'-0"	4'-8"	4'-5"	4'-2"
	#11	TOP	10'-11"	9'-6"	8'-6"	7'-9"	7'-2"	6'-8"	6'-4"	6'-0"
		OTHER	8'-5"	7'-3"	6'-6"	5'-11"	5'-6"	5'-2"	4'-10"	4'-7"

- NOTES:**
- SPLICE LENGTHS SHOWN ARE APPLICABLE FOR SPLICES OCCURRING UNDER THE FOLLOWING CONDITIONS.
    - NORMAL-WEIGHT CONCRETE
    - MIN BAR SPACING REQUIREMENTS:
      - CLEAR SPACING BETWEEN BARS AT SPLICE LOCATION > BAR DIAMETER, CLEAR COVER TO BARS ≥ BAR DIAMETER, AND TIES OR STIRRUPS OCCUR PER CODE SPACING WITHIN LENGTH OF SPLICE; OR
      - CLEAR SPACING BETWEEN BARS AT SPLICE ≥ 2 x BAR DIAMETER AND CLEAR COVER ≥ BAR DIAMETER
  - INDICATED SPLICE LENGTHS SHALL BE INCREASED BY THE LISTED FACTORS WHERE THE FOLLOWING CONDITIONS EXIST.
 

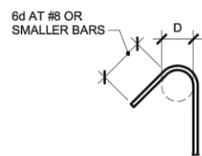
CONDITION	SPLICE LENGTH MULTIPLIER*
A. BAR SPACING OR CLEAR COVER IS LESS THAN REQUIRED PER NOTE	1.5
B. EPOXY COATED REINF WITH COVER < 3 x BAR DIAMETER OR CLEAR SPACING < 6 x BAR DIAMETER	1.5
C. ALL OTHER EPOXY COATED BARS	1.2

\*WHERE MULTIPLE CONDITIONS EXIST, APPLY EACH OF THE APPLICABLE FACTORS TO THE TABULATED TENSION LAP SPLICE LENGTH TO OBTAIN THE REQUIRED SPLICE LENGTH.
  - TOP BARS ARE HORIZ BARS LOCATED WHERE MORE THAN 12" OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE BARS.
  - USE SMALLER BAR SIZE TO DETERMINE LENGTH WHERE SPLICING BARS OF DIFFERENT SIZES.

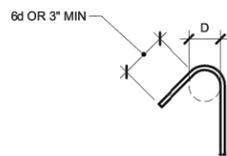


- TYPICAL TIE OR STIRRUP NOTES**
- D = 1 1/2" FOR #3
  - D = 2" FOR #4
  - D = 2 1/2" FOR #5
  - D = 4 1/2" FOR #6
  - D = 5 1/4" FOR #7
  - D = 6" FOR #8

#### 90° HOOK TIE OR STIRRUP

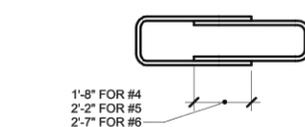


#### 135° HOOK TIE OR STIRRUP

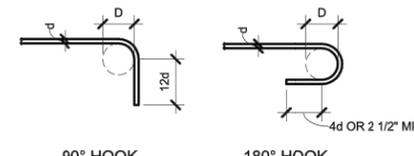


- NOTES:**
- ALL BENDS SHALL BE MADE COLD.
  - #14 AND #18 BARS SHALL BE BEND-TESTED AND APPROVED PRIOR TO BENDING.

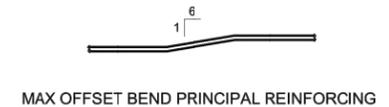
- TYPICAL TIE OR STIRRUP NOTES**
- D = 6d FOR #3 THRU #8
  - D = 8d FOR #9 THRU #11
  - D = 10d FOR #14 THRU #18



#### TIE LAP AT FRAME COL AND GIRDERS



#### 90° HOOK 180° HOOK



#### MAX OFFSET BEND PRINCIPAL REINFORCING

### 4 CLASS B TENSION LAP SPLICE LENGTHS

1/4" = 1'-0"

### 5 STANDARD HOOK AND TIE DIMENSIONS

1/4" = 1'-0"



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MADISON MUNICIPAL BUILDING  
FLAGPOLE INSTALLATION

215 MARTIN LUTHER KING JR. BLVD 53703

CONTRACT #9745  
MUNIS #15642  
DRWN BY: JPE  
DATE 01/22/2026  
REV: 01/22/2026

SHT

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LUMINAIRE SCHEDULE LEGEND		
<b>DESCRIPTION:</b>		
PAF - PAINT AFTER FABRICATION		
CFSA - COLOR FINISH SELECTION BY ARCHITECT		
CCFSA - CUSTOM COLOR FINISH SELECTED BY ARCHITECT		
CONFIRM ALL COLORS AND FINISHES OF ALL LUMINAIRE COMPONENTS WITH OWNER PRIOR TO THE RELEASE OF THE LUMINAIRE ORDER		
<b>OPTICS:</b>		
BEAM ANGLE		
##° or ## DEG - BEAM ANGLE IN DEGREES		
VNSP - VERY NARROW SPOT	NFL - NARROW FLOOD	
NSP - NARROW SPOT	FL - FLOOD	
SP - SPOT	WFL - WIDE FLOOD	
WSP - WIDE SPOT	VWF - VERY WIDE FLOOD	
VWSP - VERY WIDE SPOT		
<b>MOUNTING (MTG):</b>		
CL - CEILING	P - PERIMETER	SU - SURFACE
CV - COVE	PL - POLE	UC - UNDER CABINET
G - GROUND SURFACE	RE - RECESSED	WL - WALL
IG - IN GRADE	SP - SUSPENDED	O - OTHER (SEE DESCRIPTION)
VERIFY AND COORDINATE MOUNTING COMPONENTS WITH INSTALLATION CONDITIONS PRIOR TO ORDERING		
<b>DIMENSIONS:</b>		
L - LENGTH	W - WIDTH	H - HEIGHT
D - DEPTH	Ø - DIAMETER	
VAR. - DIMENSION VARIES, SEE ARCHITECTURAL PLANS.		
<b>LIGHT SOURCE:</b>		
SOURCE TYPE	LED - INTEGRAL LIGHT EMITTING DIODE DLED - DYNAMIC TUNABLE WHITE LED RLED - RETROFIT LED LAMP WLED - WARM DIM LED	
CCT / CRI	EXTERIOR CORRELATED COLOR TEMPERATURE 4000/4100K, COLOR RENDERING INDEX (CRI) AT OR ABOVE 80, UNLESS NOTED OTHERWISE.	
<b>DELIVERED LUMENS:</b>		
LUMENS INDICATED ARE MINIMUM INITIAL DELIVERED LUMENS AT SPECIFIED CCT AND CRI.		
<b>WATTS:</b>		
MAXIMUM ANSI WATTS PER: (BLANK) = PER LUMINAIRE FT = LINEAR FOOT		
<b>POWER SUPPLY:</b>		
PS TYPE	(BLANK) - INTEGRAL UNLESS NOTED OTHERWISE REM - REMOTE EM - EMERGENCY BATTERY	
CONTROL METHOD	0-10V - 0 TO 10V DIMMING 10%, 1%, 0.1%, 0.01% AS INDICATED DALI - DIGITAL ADDRESSABLE LIGHTING INTERFACE (IEC 62386) DMX - USITT DMX512-A (ANSI E1.11) UPC - UNIVERSAL PHASE CONTROL DIMMING (PHASE ADAPTIVE) SWC - SWITCHED CONTROL O - OTHER (SEE DESCRIPTION)	
COORDINATE LUMINAIRE DRIVER WITH THE LIGHTING CONTROL SYSTEM AND CONTROL MANUFACTURER REQUIREMENTS TO ENSURE COMPATIBILITY.		
<b>MANUFACTURER - SERIES:</b>		
1. THE FIRST MANUFACTURER AND MODEL LISTED IS THE BASIS OF DESIGN. 2. THE MODEL NUMBER SHOWN SHALL NOT BE CONSIDERED COMPLETE AND MATERIAL SHALL NOT BE ORDERED BY MANUFACTURER AND MODEL NUMBER ONLY. THE COMPLETE DESCRIPTION AND THE SPECIFICATION SHALL BE COORDINATED WITH THE MODEL NUMBER TO DETERMINE THE EXACT MATERIAL AND ACCESSORIES TO BE ORDERED.		

ELECTRICAL SHEET INDEX	
E0	ELECTRICAL COVERSHEET
E1	FLAG POLE DEMOLITION PLAN - ELECTRICAL
E2	FLAG POLE PLAN - ELECTRICAL
E3	ELECTRICAL SPECIFICATIONS
GRAND TOTAL: 4	

### ELECTRICAL RENOVATION NOTES:

- THESE NOTES APPLY TO ALL ELECTRICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO, LIGHTING, POWER, FIRE ALARM, AND OTHER LOW VOLTAGE SYSTEMS.
- EXISTING CONDITIONS ARE SHOWN BASED ON INFORMATION OBTAINED FROM FIELD SURVEYS, EXISTING BUILDING DOCUMENTS. CONTRACTOR SHALL VISIT PROJECT SITE AND REVIEW EXISTING CONDITIONS AND REPORT CONFLICTS.
  - NOT ALL EXISTING EQUIPMENT, LUMINAIRES, AND CONDUIT ARE SHOWN. CONTRACTOR SHALL REVIEW EXISTING CONDITIONS AND REPORT CONFLICTS.
  - ELECTRICAL CONTRACTOR SHALL REVIEW EXISTING CONDITIONS TO VERIFY ACCESSIBILITY TO THE AREAS OF THEIR WORK INCLUDING WALLS, FLOOR, CEILINGS, CEILING TILES/GRID, AND ROOF. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO PROVIDE CUTTING, REMOVAL, PATCHING, AND REINSTALLATION OF AFFECTED AREAS ASSOCIATED WITH THEIR WORK BY COORDINATING WITH THE GENERAL CONTRACTOR OR QUALIFIED CONTRACTOR. CONTRACTOR SHALL NOTIFY THE PRIME CONTRACTOR OF AFFECTED AREAS PRIOR TO BIDDING.
  - WHERE EXISTING ELECTRICAL SYSTEMS ARE LOCATED IN AREAS THAT CONFLICT WITH NEW EQUIPMENT, PIPING, OR DUCTWORK TO BE INSTALLED, EACH CONTRACTOR SHALL EITHER ARRANGE NEW EQUIPMENT, CONDUIT, OR DUCTWORK IN SUCH A FASHION THAT IT DOES NOT CONFLICT WITH EXISTING SYSTEMS. OR REWORK EXISTING ELECTRICAL SYSTEMS TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT, PIPING, OR DUCTWORK.

ELECTRICAL SYMBOL LIST			
SYMBOL:	TAG:	SPEC SECTION:	DESCRIPTION:
	ECONN	26 05 33	ELECTRICAL CONNECTION
	JB	26 05 33	JUNCTION BOX
	PANEL ####	26 24 16	PANELBOARD - RECESS MOUNT
	PANEL ####	26 24 16	PANELBOARD - SURFACE MOUNT
	TR-#/DTR-#	26 22 00	TRANSFORMER.

LUMINAIRE SHADING KEY	
	NORMAL BRANCH LUMINAIRE
	EMERGENCY BRANCH LUMINAIRE
SHADED LUMINAIRE INDICATES LUMINAIRE IS CONNECTED TO AN EMERGENCY CIRCUIT.	

LUMINAIRE SCHEDULE										
TAG	DESCRIPTION	OPTICS	MTG	DIMENSIONS	LIGHT SOURCE	DELIVERED LUMENS	WATTS	POWER SUPPLY	MANUFACTURER - SERIES	NOTES
F1	3" ROUND COMPACT FLOOD LIGHT LUMINAIRE, 15 DEGREE BEAM SPREAD, CUT OFF VISOR, BLACK FINISH, IP66 RATED. PROVIDE WITH MANUFACTURER OUTDOOR JUNCTION BOX FOR MOUNTING.	15 DEG	G	5"L x 3.6" W x 4.7" D, 3.6" DIAM.	LED	490	7 / FIX	277	HYDREL-SAF1-LED-P1-80CRI-40K-M VOLT-15DEG	OUTPUT MUST BE LIMITED TO 500 lm TO COMPLY W/ CODE

### CONDUIT INSTALLATION SCHEDULE

THE FOLLOWING SCHEDULE SHALL BE ADHERED TO UNLESS THEY CONSTITUTE A VIOLATION OF APPLICABLE CODES OR ARE NOTED OTHERWISE ON THE DRAWINGS. THE INSTALLATION OF RMC CONDUIT WILL BE PERMITTED IN PLACE OF ALL CONDUIT SPECIFIED IN THIS SCHEDULE.

INSTALLATION TYPE	RMC	IMC	EMT	PVC	HDPE
FEEDERS: SWITCHBOARDS, DISTRIBUTION PANELS, PANELBOARDS, MOTOR CONTROL CENTERS, ETC.					
BRANCH CIRCUITS: LIGHTING, RECEPTACLES, CONTROLS, ETC.					
MECHANICAL EQUIPMENT FEEDERS: PUMPS, CHILLERS, AIR HANDLING UNITS, ETC.					
FLOOR MOUNTED EQUIPMENT FEEDERS: PUMPS, ETC. (INCLUDE NO MORE THAN 6 FEET OF LFMC TO PUMP)					
CONTROLS (LIGHTING, POWER, BUILDING AUTOMATION, ETC.)		X	X		
WET AND DAMP LOCATIONS: (CONDUIT, BOXES, FITTINGS, INSTALLED AND EQUIPPED TO PREVENT WATER ENTRY)	X				
INTERIOR LOCATIONS WITH FINISHED CEILING AND WALLS: CONCEALED IN WALLS AND ABOVE FINISHED CEILINGS					
INTERIOR LOCATIONS WITHOUT FINISHED CEILINGS: CONCEALED IN WALL, EXPOSED ABOVE CEILINGS					
EXISTING INTERIOR LOCATIONS WITH FINISHED CEILINGS AND WALLS: CONCEALED IN WALLS AND ABOVE FINISHED CEILING UNLESS OTHERWISE NOTED					
<b>UNDERGROUND SITE CONDUITS:</b>					
WITHIN 5' FROM THE PERIMETER OF A BUILDING FOUNDATION	X				
5' OR GREATER FROM THE PERIMETER OF A BUILDING FOUNDATION	X			X	
UNDER ROADS, DRIVES, AND VEHICLE TRAVELED WAYS. WHEN HDPE DIRECTIONAL BORING IS ALLOWED: PROVIDE PRESSURIZED GROUT				X	X

VIEW KEY	
	NAME → LEVEL NAME 10'-0" → HEIGHT ABOVE PROJECT 0'-0"
	KEYNOTE: INDICATES NOTE USED TO DESCRIBE ADDITIONAL INFORMATION ABOUT WORK REQUIRED, SPECIFIC TO THE SHEET AND/OR DETAIL
	INDICATES DIRECTION OF TRUE NORTH
	PLAN OR DETAIL NUMBER
	PLAN OR DETAIL NAME
	VIEW NAME
	1/8" = 1'-0" PLAN OR DETAIL SCALE
	INDICATES SIMILAR DETAIL REFERENCED IN MULTIPLE LOCATIONS
	DETAIL REFERRED TO BY SECTION CUT
	SHEET DETAIL IS LOCATED ON T101
<b>LINE TYPE AND TAG KEY:</b>	
NEW WORK BY THIS CONTRACTOR (WIDE LINE)	
--- NEW	
- - - - - EXISTING TO BE REMOVED (SHORT DASHED PATTERN)	
- - - - - NEW UNDERFLOOR OR UNDERGROUND (LONG DASHED PATTERN)	
EXISTING TO REMAIN OR WORK BY OTHERS (NARROW LINE)	
--- EXISTING	
- - - - - EXISTING TO BE REMOVED BY OTHERS (SHORT DASHED PATTERN)	
- - - - - EXISTING UNDERFLOOR OR UNDERGROUND (LONG DASHED PATTERN)	
HALFTONING DOES NOT MODIFY SCOPE.	
'TAG'-E	TAGS WITH DASH 'E' INDICATES THE REFERENCED OBJECT IS EXISTING
TAG-1	UNDERLINED TAG INDICATES OBJECT IS IN-SCOPE. IF NEW, ADDITIONAL INFORMATION IS AVAILABLE IN A SCHEDULE, MATERIAL LIST, OR SYMBOL LIST
	INDICATES AN EXISTING SYSTEM'S POINT OF CONNECTION/REMOVAL

CONTRACTOR ABBREVIATION KEY	
ABBR:	DESCRIPTION:
A.C.	ASBESTOS ABATEMENT CONTRACTOR
C.C.	CIVIL CONTRACTOR
C.M.	CONSTRUCTION MANAGER
E.C.	ELECTRICAL CONTRACTOR
G.C.	GENERAL CONTRACTOR
M.C.	MECHANICAL CONTRACTOR
P.C.	PLUMBING CONTRACTOR
V.C.	VENTILATION CONTRACTOR

ELECTRICAL ABBREVIATION KEY	
ABBR:	DESCRIPTION:
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ASR	ARCHITECTURAL SURFACE RACEWAY
C	CONDUIT (BRANCH CIRCUIT OR FEEDER CONTEXT)
CO	CONDUIT AND BOX ROUGH-IN ONLY (ROUGH-IN ONLY)
EG	EQUIPMENT GROUND
EGC	EQUIPMENT GROUNDING CONDUCTOR
NEMA #	NEMA RATING
NIC	NOT IN CONTRACTED SCOPE
NO	NORMALLY OPEN
SM	SURFACE MOUNTED
TYP	TYPICAL
UG	UNDERGROUND

### ELECTRICAL INSTALLATION NOTES:

- COMMON NEUTRALS MAY NOT BE USED FOR BRANCH CIRCUITS.
- EMERGENCY BRANCH WIRING FOR FEEDERS AND BRANCH CIRCUITS SHALL BE ROUTED IN SEPARATE RACEWAY, JUNCTION BOXES, PULL BOXES, AND CABINETS. WIRING FOR EACH BRANCH SHALL BE INDEPENDENT FROM OTHER BRANCHES, INCLUDING THE NORMAL BRANCH.
- ALL MATERIALS USED TO SEAL PENETRATIONS OF FIRE RATED WALLS AND FLOORS SHALL BE TESTED AND CERTIFIED AS A SYSTEM PER ASTM E814 STANDARDS FOR FIRE TESTS OF THROUGH-PENETRATION FIRESTOPS.
- CONTRACTOR SHALL VERIFY ALL EQUIPMENT LOCATIONS WITH OTHER TRADES, ELEVATIONS, AND REVIEWED SHOP DRAWINGS. PRIOR TO MAKING THE ACTUAL ELECTRICAL INSTALLATION, THIS CONTRACTOR SHALL ADJUST FIXTURES, OUTLETS, OR CONNECTION LOCATIONS TO ACCOMMODATE EQUIPMENT.
- ELECTRICAL EQUIPMENT SHALL BE MOUNTED TO AVOID IMPEDANCE OF OPERATION OF, AND/OR ACCESS TO ELECTRICAL AND MECHANICAL EQUIPMENT. ALL MOUNTING OF ELECTRICAL EQUIPMENT, OR EQUIPMENT SUPPLIED BY ANOTHER CONTRACTOR, SHALL BE APPROVED IN ADVANCE BY THE OTHER CONTRACTOR.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OPENINGS REQUIRED IN WALLS. ALL OPENINGS SHALL BE REPAIRED TO MATCH EXISTING BY A QUALIFIED CONTRACTOR AT THE EXPENSE OF THIS CONTRACTOR. ALL CONDUITS THROUGH WALLS SHALL BE GROUTED OR SEALED INTO OPENINGS.
- EACH CONTRACTOR IS RESPONSIBLE FOR DAMAGE CAUSED BY THEIR ACTIONS TO THE WALLS, FLOORS, CEILINGS, AND ROOFS. THE CONTRACTOR WHOSE WORK CAUSES DAMAGE IS RESPONSIBLE FOR PATCHING TO MATCH ORIGINAL CONSTRUCTION, FIRE RATING, AND FINISH.



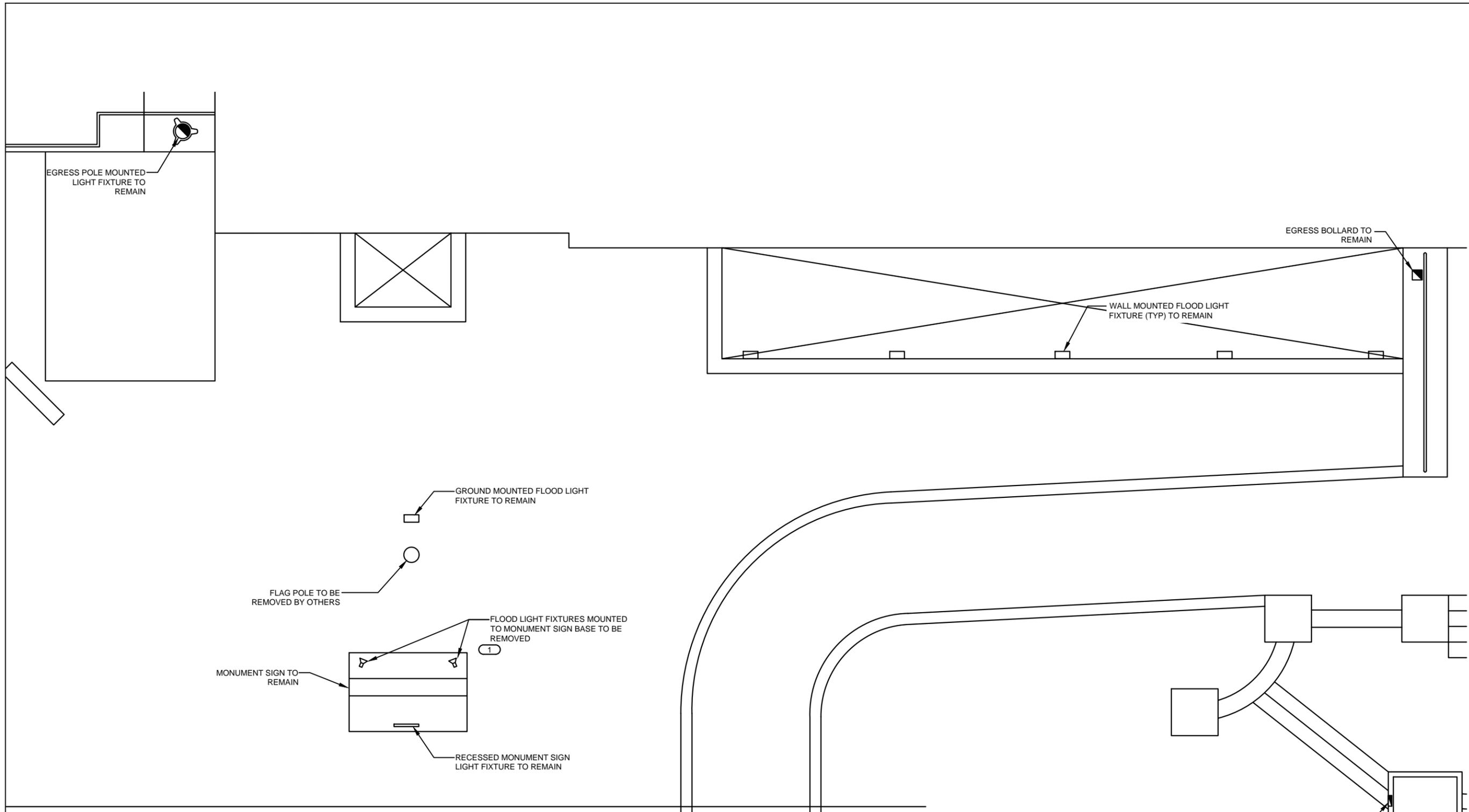
CITY OF MADISON  
 DEPT. OF PUBLIC WORKS  
 ENGINEERING DIVISION  
 CITY COUNTY BLDG RM 115  
 210 MARTIN LUTHER KING JR BLVD  
 MADISON, WI 53703  
 PHONE: 608-266-4751



MADISON MUNICIPAL BUILDING  
 FLAGPOLE INSTALLATION  
 215 MARTIN LUTHER KING JR. BLVD 53703

CONTRACT #9745  
 MUNIS #15642  
 DRWN BY: JPE  
 DATE 01/22/2026  
 REV: 01/22/2026

SHT  
**E1**



**1** FLAG POLE DEMOLITION PLAN - ELECTRICAL  
 3/32" = 1'-0"



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MADISON MUNICIPAL BUILDING  
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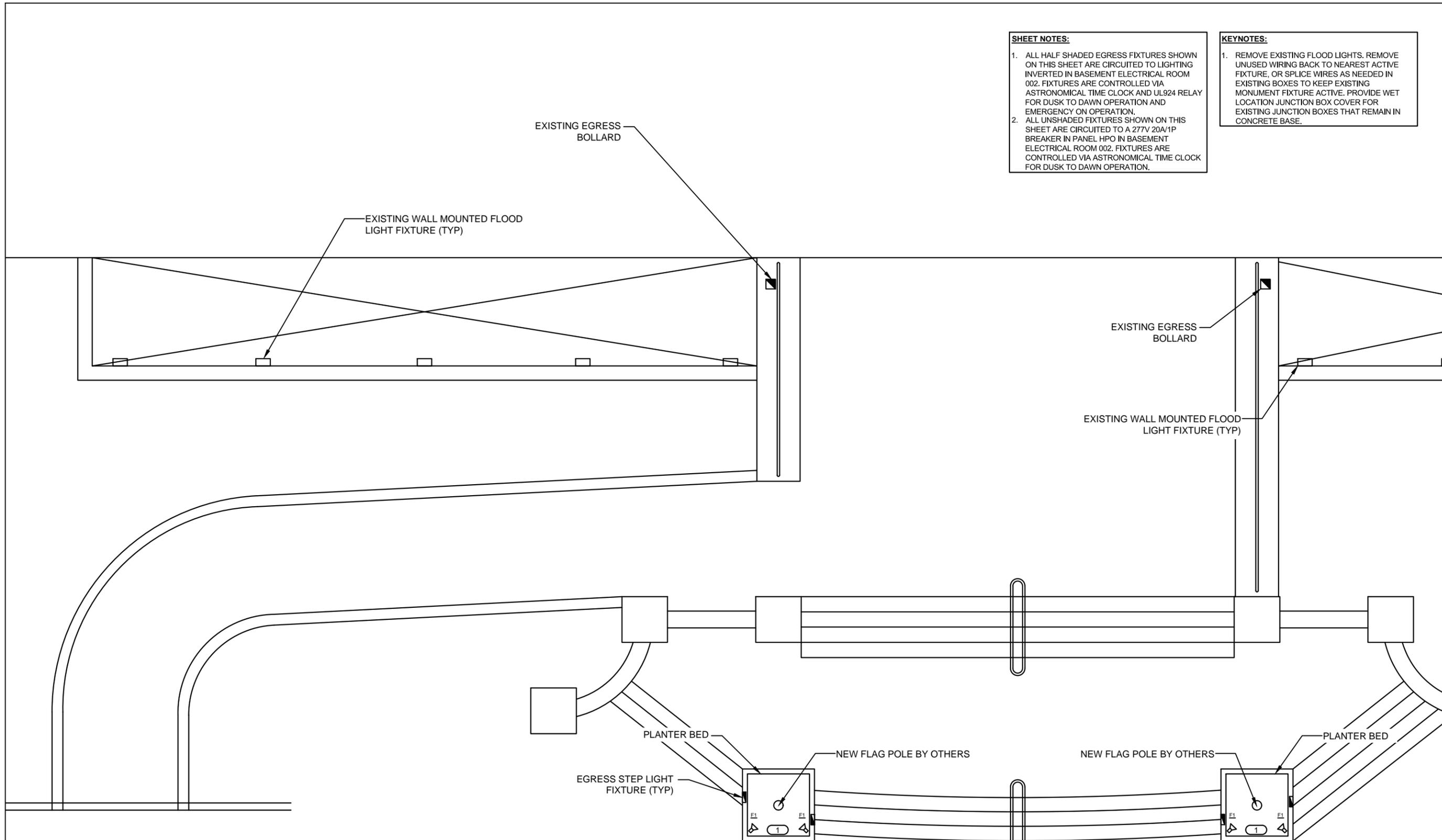
SHT  
E2

**SHEET NOTES:**

1. ALL HALF SHADED EGRESS FIXTURES SHOWN ON THIS SHEET ARE CIRCUITED TO LIGHTING INVERTED IN BASEMENT ELECTRICAL ROOM 002. FIXTURES ARE CONTROLLED VIA ASTRONOMICAL TIME CLOCK AND UL924 RELAY FOR DUSK TO DAWN OPERATION AND EMERGENCY ON OPERATION.
2. ALL UNSHADED FIXTURES SHOWN ON THIS SHEET ARE CIRCUITED TO A 277V 20A/1P BREAKER IN PANEL HPO IN BASEMENT ELECTRICAL ROOM 002. FIXTURES ARE CONTROLLED VIA ASTRONOMICAL TIME CLOCK FOR DUSK TO DAWN OPERATION.

**KEYNOTES:**

1. REMOVE EXISTING FLOOD LIGHTS. REMOVE UNUSED WIRING BACK TO NEAREST ACTIVE FIXTURE, OR SPLICE WIRES AS NEEDED IN EXISTING BOXES TO KEEP EXISTING MONUMENT FIXTURE ACTIVE. PROVIDE WET LOCATION JUNCTION BOX COVER FOR EXISTING JUNCTION BOXES THAT REMAIN IN CONCRETE BASE.



 **1** **FLAG POLE PLAN - ELECTRICAL**  
3/32" = 1'-0"

**26 05 00 BASIC ELECTRICAL REQUIREMENTS**

**SCOPE OF WORK**

THE CONTRACTOR SHALL FURNISH AND INSTALL ALL WORK MATERIALS AS INDICATED ON DRAWINGS, AND/OR IN THESE SPECIFICATIONS, AND ALL ITEMS REQUIRED TO MAKE ASSOCIATED PORTION OF THE ELECTRICAL WORK A FINISHED AND WORKING SYSTEM.

ALL WORK THAT WILL PRODUCE EXCESSIVE NOISE OR INTERFERENCE WITH NORMAL BUILDING OPERATIONS, AS DETERMINED BY THE OWNER, SHALL BE SCHEDULED WITH THE OWNER. IT MAY BE NECESSARY TO SCHEDULE SUCH WORK DURING UNOCCUPIED HOURS.

**CODES AND STANDARDS**

CONFORM TO ALL REQUIREMENTS OF THE CITY OF MADISON CODES, LAWS, ORDINANCES, AND OTHER REGULATIONS HAVING JURISDICTION OVER THIS INSTALLATION.

IF THE CONTRACTOR NOTES, AT THE TIME OF BIDDING, THAT ANY PARTS OF THE DRAWINGS OR SPECIFICATIONS DO NOT COMPLY WITH THE CODES OR REGULATIONS, CONTRACTOR SHALL INFORM THE ARCHITECT/ENGINEER IN WRITING, REQUESTING A CLARIFICATION.

**PERMITS AND FEES**

PROCURE ALL APPLICABLE PERMITS AND LICENSES, ABIDE BY LOCAL AND STATE LAWS, REGULATIONS, AND ORDINANCES. PAY ALL CHARGES FOR PERMITS OR LICENSES, PAY ALL FEES AND TAXES IMPOSED BY STATE, MUNICIPAL, AND OTHER REGULATORY BODIES. PAY ALL CHARGES ARISING OUT OF REQUIRED INSPECTIONS BY AN AUTHORIZED BODY. PAY ALL CHARGES ARISING OUT OF REQUIRED CONTRACT DOCUMENT REVIEWS ASSOCIATED WITH THE PROJECT AND AS INITIATED BY THE OWNER OR AUTHORIZED AGENCY/CONSULTANT.

WHERE APPLICABLE, ALL FIXTURES, EQUIPMENT AND MATERIALS SHALL BE LISTED BY UNDERWRITER'S LABORATORIES, INC. OR A NATIONALLY RECOGNIZED TESTING ORGANIZATION.

**DRAWINGS**

THE DRAWINGS FOR THE ELECTRICAL WORK ARE DIAGRAMMATIC, INTENDED TO CONVEY THE SCOPE OF THE WORK AND TO INDICATE THE GENERAL ARRANGEMENTS AND LOCATIONS OF EQUIPMENT, OUTLETS, ETC., AND THE APPROXIMATE SIZES OF EQUIPMENT.

CONTRACTOR SHALL DETERMINE THE EXACT LOCATIONS OF EQUIPMENT AND ROUGH-INS, AND THE EXACT ROUTING OF RACEWAYS SO AS TO BE THE BEST FIT THE LAYOUT OF THE JOB. CONDUIT ENTRY POINTS FOR ELECTRICAL EQUIPMENT INCLUDING, BUT NOT LIMITED TO, PANELBOARDS, SWITCHBOARDS, SWITCHGEAR, AND UNIT SUBSTATIONS, SHALL BE DETERMINED BY THE CONTRACTOR UNLESS NOTED IN THE CONTRACT DOCUMENTS.

CONSTRUCTION DRAWINGS FOR THIS PROJECT HAVE BEEN PREPARED UTILIZING AUTOCAD MEP REVIT. CONTRACTORS AND SUBCONTRACTORS MAY REQUEST ELECTRONIC MEDIA FILES OF THE CONTRACT DRAWINGS, THE ELECTRONIC CONTRACT DOCUMENTS CAN BE USED FOR THE PREPARATION OF SHOP DRAWINGS AND AS-BUILT DRAWINGS ONLY. THE INFORMATION MAY NOT BE USED IN WHOLE OR IN PART FOR ANY OTHER PROJECT.

VERIFY ALL PERTINENT DIMENSIONS AT THE JOB SITE BEFORE ORDERING ANY CONDUIT, CONDUCTORS, WIREWAYS, BUS DUCT, FITTINGS, ETC.

**SUBMITTALS**

SUBMITTALS SHALL BE REQUIRED WHERE REQUIRED IN THE SPECIFICATIONS OR THE DRAWINGS. THE CONTRACTOR SHALL SUBMIT ELECTRONIC COPIES OF EACH SHOP DRAWING FOR REVIEW BY THE ARCHITECT/ENGINEER BEFORE RELEASING ANY EQUIPMENT FOR MANUFACTURER OR SHIPMENT.

THE CONTRACTOR SHALL THOROUGHLY REVIEW AND APPROVE ALL SHOP DRAWINGS BEFORE SUBMITTING THEM TO THE ARCHITECT/ENGINEER. CONTRACTOR SHALL CLEARLY MARK ALL DEVIATIONS FROM THE CONTRACT DOCUMENTS ON ALL SUBMITTALS. ASSEMBLE ALL SUBMITTALS IN SETS, SUCH AS PANELBOARDS, FIRE ALARM LIGHTING, OR MOTOR CONTROL. ALL SETS SHALL BE IDENTICAL AND CONTAIN AN INDEX OF THE ITEMS ENCLOSED WITH A GENERAL TOPIC DESCRIPTION ON THE COVER, WHERE MORE THAN ONE MODEL IS SHOWN ON A MANUFACTURER'S SHEET. CLEARLY INDICATE EXACTLY WHICH ITEM AND WHICH DATA IS RELEVANT TO THE WORK. REFER TO SUBSECTIONS FOR SPECIFIC SUBMITTAL REQUIREMENTS.

**WARRANTY**

PROVIDE MINIMUM ONE-YEAR WARRANTY FOR ALL FIXTURES, EQUIPMENT, MATERIALS, AND WORKMANSHIP. REFER TO SUBSECTIONS FOR ADDITIONAL WARRANTY REQUIREMENTS.

**MATERIAL SUBSTITUTION**

WHERE SEVERAL MANUFACTURERS' NAMES ARE GIVEN, THE MANUFACTURER FOR WHICH A CATALOG NUMBER IS GIVEN IS THE BASIS OF DESIGN AND ESTABLISHES THE QUALITY REQUIRED. EQUIVALENT EQUIPMENT MANUFACTURED BY THE OTHER NAMED MANUFACTURERS MAY BE USED. CONTRACTOR SHALL ENSURE THAT ALL ITEMS SUBMITTED BY THESE OTHER MANUFACTURERS MEET ALL REQUIREMENTS OF THE DRAWING SPECIFICATIONS, AND FIT IN THE ALLOCATED SPACE. THE ARCHITECT/ENGINEER SHALL MAKE THE FINAL DETERMINATION OF WHETHER A PRODUCT IS EQUIVALENT.

ANY MATERIAL, ARTICLE, OR EQUIPMENT OF OTHER UNNAMED MANUFACTURERS WHICH WILL ADEQUATELY PERFORM THE SERVICES AND DUTIES IMPOSED BY THE DESIGN AND IS OF A QUALITY EQUAL TO OR BETTER THAN THE EQUIPMENT IDENTIFIED BY THE DRAWINGS MAY BE USED IF APPROVAL IS SECURED IN WRITING FROM THE ARCHITECT/ENGINEER VIA ADDENDUM.

**OBSERVATION OF WORK**

THE CONTRACTOR SHALL PROVIDE SEVEN (7) CALENDAR DAYS' NOTICE TO THE ARCHITECT/ENGINEER PRIOR TO COVERING INTERIOR PARTITIONS AND CHASES AND INSTALLING HARD OR SUSPENDED CEILINGS AND SOFFITS.

ALL WORK ABOVE THE CEILINGS MUST BE COMPLETE PRIOR TO THE ARCHITECT/ENGINEER'S REVIEW. THIS INCLUDES, BUT IS NOT LIMITED TO: ALL JUNCTION BOXES ARE CLOSED AND IDENTIFIED (CONDUIT INCLUDED) IN ACCORDANCE WITH ELECTRICAL IDENTIFICATION; FIRE ALARM JUNCTION BOXES ARE PAINTED RED, LUMINAIRES INCLUDING EXIT AND EMERGENCY FIXTURES ARE INSTALLED AND OPERATIONAL, FLEXIBLE CONDUIT IS SUPPORTED ABOVE AND INDEPENDENTLY OF THE CEILING, AND ALL WALL PENETRATIONS ARE SEALED.

IN ORDER TO PREVENT THE FINAL JOBSITE OBSERVATION FROM OCCURRING TOO EARLY, THE CONTRACTOR SHALL REVIEW THE COMPLETION STATUS OF THE PROJECT AND CERTIFY IN WRITING THAT JOB IS READY FOR THE FINAL JOBSITE OBSERVATION.

**PROJECT CLOSEOUT**

SUBMIT THE FOLLOWING: OPERATION AND MAINTENANCE MANUALS INCLUDING BOUND COPIES OF APPROVED SHOP DRAWINGS, RECORD DOCUMENTS INCLUDING REPRODUCIBLE DRAWINGS, SPARE PARTS AND EXTRA MATERIALS IN QUANTITIES SPECIFIED IN THESE SPECIFICATIONS, INSPECTION AND TESTING REPORT BY THE FIRE ALARM MANUFACTURER.

PROVIDE CUSTOM UPDATED/NEW TYPED CIRCUIT DIRECTORY FOR EACH EXISTING/NEW BRANCH CIRCUIT PANELBOARD INCLUDED IN THE SCOPE OF WORK. LABEL SHALL INCLUDE EQUIPMENT NAME OR FINAL APPROVED ROOM NAME, ROOM NUMBER, AND LOAD TYPE FOR EACH CIRCUIT (EXAMPLES: SUMP PUMP SP-1 OR ROOM 101 RECEPT), PRINTED COPIES OF THE BID DOCUMENT PANEL SCHEDULES ARE NOT ACCEPTABLE AS CIRCUIT DIRECTORIES.

**OPERATION AND MAINTENANCE INSTRUCTIONS**

OPERATION AND MAINTENANCE DATE SHALL CONSIST OF WRITTEN INSTRUCTIONS FOR THE CARE, MAINTENANCE, AND OPERATION OF THE EQUIPMENT AND SYSTEMS. INSTRUCTION BOOKS, CARDS, AND MANUALS FURNISHED WITH THE EQUIPMENT SHALL BE INCLUDED.

PROVIDE BOUND MANUALS WITH COPIES OF APPROVED SHOP DRAWINGS WITH TITLE PAGE AND INDEX SYSTEM SIMILAR TO OPERATION AND MAINTENANCE MANUAL.

**RECORD DOCUMENTS**

MAINTAIN AT THE JOB SITE A SEPARATE AND COMPLETE SET OF ELECTRICAL DRAWINGS AND SPECIFICATIONS WITH ALL CHANGES MADE TO THE SYSTEMS CLEARLY AND PERMANENTLY MARKED IN COMPLETE DETAIL. MARK DRAWINGS TO INDICATE APPROVED SUBSTITUTIONS, CHANGE ORDERS, AND ACTUAL EQUIPMENT AND MATERIALS USED. ALL CHANGE ORDERS, RFI RESPONSES, CLARIFICATIONS, AND OTHER SUPPLEMENTAL INSTRUCTIONS SHALL BE MARKED ON THE DOCUMENTS. RECORD DOCUMENTS THAT MERELY REFERENCE THE EXISTENCE OF THE ABOVE ITEMS ARE NOT ACCEPTABLE. RECORD CHANGES DAILY AND KEEP THE MARKED DRAWINGS AVAILABLE FOR THE ARCHITECT/ENGINEER'S EXAMINATION AT ANY NORMAL WORK TIME.

UPON COMPLETING THE JOB AND BEFORE FINAL PAYMENT IS MADE, PROVIDE REPRODUCIBLE DRAWINGS COMPLETED IN AUTOCAD TO THE ARCHITECT/ENGINEER.

**CLEANING**

THOROUGHLY CLEAN ALL EQUIPMENT AND SYSTEMS PRIOR TO THE OWNER'S FINAL ACCEPTANCE OF THE PROJECT. CLEAN ALL FOREIGN PAINT, GREASE, OIL DIRT, LABELS, STICKERS, ETC. FROM ALL EQUIPMENT. REMOVE ALL RUBBISH, DEBRIS, ETC., ACCUMULATED DURING CONSTRUCTION FROM THE PREMISES.

**26 05 05 ELECTRICAL DEMOLITION FOR REMODELING**

THE DRAWINGS ARE INTENDED TO INDICATE THE SCOPE OF WORK REQUIRED AND DO NOT INDICATE EVERY BOX, CONDUIT, OR WIRE THAT MUST BE REMOVED. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING A BID AND VERIFY EXISTING CONDITIONS.

WHERE WALLS, CEILINGS, STRUCTURES, ETC., ARE INDICATED AS BEING REMOVED ON GENERAL OR ELECTRICAL DRAWINGS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL ELECTRICAL EQUIPMENT, DEVICES, FIXTURES, RACEWAYS, WIRING SYSTEMS, ETC., FROM THE REMOVED AREA.

WHERE CEILINGS, WALLS, STRUCTURES, ETC., ARE TEMPORARILY REMOVED AND REPLACED BY OTHERS, THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL, STORAGE, AND REPLACEMENT OF EQUIPMENT, DEVICES, FIXTURES, RACEWAYS, WIRING SYSTEMS, ETC.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISCONNECTING EQUIPMENT REMOVED BY OTHER TRADES AND REMOVING ALL ASSOCIATED STARTERS, CONTROLLERS, RACEWAYS, WIRING, ETC.

VERIFY THAT ABANDONED WIRING AND EQUIPMENT SERVE ONLY ABANDONED EQUIPMENT OR FACILITIES. EXTEND CONDUIT AND WIRE TO FACILITIES AND EQUIPMENT THAT WILL REMAIN IN OPERATION FOLLOWING DEMOLITION. EXTENSION OF CONDUIT AND WIRE TO EQUIPMENT SHALL BE COMPATIBLE WITH THE SURROUNDING AREA. EXTENDED CONDUIT AND CONDUCTORS SHALL MATCH EXISTING SIZE AND MATERIAL.

COORDINATE SCOPE OF WORK WITH ALL OTHER CONTRACTORS AND THE OWNER AT THE PROJECT SITE. SCHEDULE REMOVAL OF EQUIPMENT AND ELECTRICAL SERVICE TO AVOID CONFLICTS.

BID SUBMITTAL SHALL MEAN THE CONTRACTOR HAS VISITED THE PROJECT SITE AND HAS VERIFIED EXISTING CONDITIONS AND SCOPE OF WORK.

**PREPARATION**

COORDINATE ALL OUTAGES WITH OWNER.

PROVIDE TEMPORARY WIRING AND CONNECTIONS TO MAINTAIN EXISTING SYSTEMS IN SERVICE DURING CONSTRUCTION. WHEN WORK MUST BE PERFORMED ON ENERGIZED EQUIPMENT OR CIRCUITS, USE PERSONNEL EXPERIENCED IN SUCH OPERATIONS. ASSUME ALL EQUIPMENT AND SYSTEMS MUST REMAIN OPERATION UNLESS SPECIFICALLY NOTED OTHERWISE ON DRAWINGS.

REMOVE ABANDONED WIRING AND RACEWAY TO SOURCE OF SUPPLY. EXISTING CONDUIT IN GOOD CONDITION MAY BE REUSED IN PLACE BY INCLUDING AN EQUIPMENT GROUND CONDUCTOR IN REUSED CONDUIT. REUSED CONDUIT AND BOXES SHALL HAVE SUPPORTS REVISED TO MEET CURRENT CODES. RELOCATING CONDUIT SHALL NOT BE ALLOWED.

REMOVE EXPOSED ABANDONED RACEWAY, INCLUDING ABANDONED RACEWAY ABOVE ACCESSIBLE CEILING FINISHES. CUT EMBEDDED RACEWAY FLUSH WITH WALLS AND FLOORS, AND PATCH SURFACES. REMOVE ALL ASSOCIATED CLAMPS, HANGERS, SUPPORTS, ETC.

DISCONNECT AND REMOVE ABANDONED LUMINAIRES. REMOVE BRACKETS, STEMS, HANGERS, AND OTHER ACCESSORIES.

REPAIR ADJACENT CONSTRUCTION AND FINISHES DAMAGED DURING DEMOLITION AND EXTENSION WORK. PATCH OPENINGS TO MATCH EXISTING SURROUNDING FINISHES. MAINTAIN ACCESS TO EXISTING ELECTRICAL INSTALLATIONS THAT REMAIN ACTIVE. MODIFY INSTALLATION OR PROVIDE JUNCTION BOXES AND ACCESS PANEL AS APPROPRIATE. EXTEND EXISTING INSTALLATIONS USING MATERIALS AND METHODS COMPATIBLE WITH THE EXISTING ELECTRICAL INSTALLATIONS.

FLOOR SLABS MAY CONTAIN CONDUIT SYSTEMS. THIS CONTRACTOR IS RESPONSIBLE FOR TAKING ANY MEASURES REQUIRED TO ENSURE NO CONDUITS OR OTHER SERVICES ARE DAMAGED. THIS INCLUDES X-RAY OR SIMILAR NON-DESTRUCTIVE MEANS. WHERE CONDUIT IS IN CONCRETE FLOOR, CUT CONDUIT FLUSH WITH FLOOR, PULL OUT CONDUCTORS, AND PLUG CONDUIT ENDS.

THIS CONTRACTOR IS RESPONSIBLE FOR ALL COSTS INCURRED IN REPAIR, RELOCATIONS, OR REPLACEMENT OF ANY CABLES, CONDUITS, OR OTHER SERVICES IF DAMAGED WITHOUT PROPER INVESTIGATION.

CLEAN AND REPAIR EXISTING MATERIALS AND EQUIPMENT THAT REMAIN OR ARE TO BE REUSED.

PROVIDE TYPED PANEL DIRECTORIES SHOWING REVISED CIRCUITING ARRANGEMENTS. CLEAN EXPOSED PANEL SURFACES AND CHECK TIGHTNESS OR ELECTRICAL CONNECTIONS. REPLACE DAMAGED CIRCUIT BREAKERS AND PROVIDE CLOSURE PLATES FOR VACANT POSITIONS.

ELECTRICAL ITEMS REMOVED REMAIN THE PROPERTY OF THE OWNER. CONTRACTOR SHALL PLACE ITEMS RETAINED BY THE OWNER IN A LOCATION COORDINATED WITH THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DISPOSAL OF MATERIAL THE OWNER ABANDONS.

**26 05 13 WIRE AND CABLE**

FEEDERS AND BRANCH CIRCUITS 8 AWG AND LARGER SHALL BE COPPER, STRANDED, 600 VOLT INSULATION, THHN. UNDERGROUND OR IN SLABS ON GRADE SHALL BE THWN OR XHHW-2

FEEDERS AND BRANCH CIRCUITS 10 AWG AND SMALLER: COPPER, SOLID OR STRANDED, 600 VOLT INSULATION, THHN/THWN. NOTED ON THE DRAWINGS. MINIMUM SIZE #12 AWG.

CONTROL CABLE FOR CLASS 1, CLASS 2, AND CLASS 3 CIRCUITS SHALL BE COPPER, 600 VOLT INSULATION, RATED 60°C, INDIVIDUAL CONDUCTORS TWISTED TOGETHER, SHIELDED, AND COVERED WITH PVC. MINIMUM SIZE #14 AWG.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEBATING AND SIZING CONDUCTORS AND CONDUITS TO EQUAL OR EXCEED THE AMPACITY OF NEC TABLE B.310.15(6)(2)(7) CBC TABLE 1B-27-310.77, IF METHODS OR MATERIALS OTHER THAN THE BASIS OF DESIGNED ARE USED.

USE MINIMUM # 10 AWG CONDUCTORS FOR 20 AMPERE, 120 VOLT BRANCH CIRCUIT HOME RUNS LONGER THAN 75 FEET, AND FOR 20 AMPERE, 277 VOLT BRANCH CIRCUIT HOME RUNS LONGER THAN 200 FEET.

ALL WIRES IN OUTLET BOXES NOT CONNECTED TO FIXTURES OR OTHER DEVICES SHALL BE ROLLED UP, SPLICED IF CONTINUITY OF CIRCUIT IS REQUIRED, AND INSULATED.

USE SOLDERLESS, TIN-PLATED COPPER LUGS APPLIED WITH CIRCUMFERENTIAL CRIMP FOR COPPER TERMINATIONS #8 AWG AND LARGER. USE INDENTER CRIMP #10 AWG AND SMALLER.

INSTALL EQUIPMENT GROUNDING CONDUCTORS IN ALL FEEDERS AND CIRCUITS.

EQUIPMENT GROUNDING CONDUCTORS: INSULATED WITH GREEN-COLORED INSULATION.

**26 05 27 SUPPORTING DEVICES**

APPROVED MANUFACTURERS: ALLIED, COOPER B-LINE, ERICO, HILTI, POWER FASTENERS.

SUPPORT CHANNELS SHALL BE PAINTED STEEL. PROVIDE GALVANIZED STEEL FOR WET/DAMP LOCATIONS. ALL HARDWARE TO BE CORROSION RESISTANT.

**ANCHORS AND STRUCTURAL COMPONENTS**

SUPPORTS SHALL HAVE STRUCTURAL SAFETY FACTOR STRENGTH OF TWICE THE MAXIMUM SEISMIC FORCES TO WHICH THEY WILL BE SUBJECTED. THROUGH BOLTS SHALL COMPLY WITH ASTM A 325. WELDING LUGS SHALL COMPLY WITH MSS-SP-69, TYPE 57.

BEAM CLAMPS FOR STRUCTURAL STEEL SHALL BE DOUBLE SIDED.

FASTEN CONCRETE ANCHORS PER THE REQUIREMENTS OF APPENDIX D OF ACI 318-11 CBC.

FASTEN MASONRY ANCHORS WITH EXPANSION ANCHORS OR SELF-TAPPING MASONRY SCREWS.

DO NOT EXCEED 25 LBS. PER HANGER AND A MINIMUM SPACING OF 2'-0" ON CENTER WHEN ATTACHING TO METAL ROOF DECKING.

**CONDUIT SLEEVES**

PROVIDE TO THE GENERAL CONTRACTOR FOR INSTALLATION LINTELS FOR ALL OPENINGS REQUIRED FOR THE CONTRACTOR'S WORK IN MASONRY WALLS AND CONDUIT SLEEVES FOR FLOORS.

REFER TO STRUCTURAL PLANS AND SPECIFICATIONS FOR LINTEL REQUIREMENTS AND SIZES.

SLEEVES THROUGH THE FLOORS ON EXPOSED RISES SHALL BE FLUSH WITH THE CEILING, WITH PLANED SQUARED ENDS EXTENDING 1" ABOVE THE FLOOR IN UNFINISHED AREAS, AND FLUSH WITH THE FLOOR IN FINISHED AREAS, TO ACCEPT SPRING CLOSING FLOOR PLATES.

SLEEVES SHALL NOT PENETRATE STRUCTURAL MEMBERS.

INSTALL ALL SLEEVES CONCENTRIC WITH CONDUITS. SLEEVES THROUGH CONCRETE WALLS MAY BE HIGH DENSITY POLYETHYLENE PIPE PENETRATION SLEEVE WITH A WATER STOP COLLAR, SUITABLE FOR USE WITH LINK-SEAL MECHANICAL SEALS. CENTURY-LINE MODEL CS.

SIZE SLEEVES LARGE ENOUGH TO ALLOW EXPANSION AND CONTRACTION MOVEMENT.

**26 05 33 CONDUIT AND BOXES**

**CONDUIT**

ACCEPTABLE CONDUIT MANUFACTURERS: ALLIED, LTV, STEELDUCT, WHEATLAND TUBE CO., O-Z GEDNEY.

ACCEPTABLE FITTINGS MANUFACTURERS: APPLETON ELECTRIC, O-Z GEDNEY, ELECTROLINE, RACO, BRIDGEPORT, MIDWEST, REGAL, THOMAS & BETTS, CROUSE-HINDS, KILLARK.

ELECTRIC METALLIC TUBING (EMT) MINIMUM 3/4", SHALL BE USED IN FINISHED SPACES FOR ALL BRANCH CIRCUITS.

RIGID METALLIC CONDUIT (RMC) SHALL BE USED IN WET OR DAMP LOCATIONS, HAZARDOUS LOCATIONS SLAB ON-GRADE AND ABOVE-GRADE UNDERGROUND WHERE SUBJECT TO VEHICULAR TRAFFIC.

POLYVINYL CHLORIDE (PVC) SCHEDULE 40 SCHEDULE 80, SHALL BE USED IN SLAB ON-GRADE AND ABOVE-GRADE UNDERGROUND CONCRETE ENCASED WHERE SUBJECT TO VEHICULAR TRAFFIC FOR LOW VOLTAGE SERVICE SYSTEMS.

FLEXIBLE METALLIC CONDUIT (FMC) SHALL BE USED FOR CONNECTIONS TO MOTORS AND LIGHT FIXTURES. LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT (LFMC) WITH WATERTIGHT FITTINGS SHALL BE USED IN EXTERIOR OR WET/DAMP LOCATIONS. LENGTH OF CONDUIT SHALL NOT EXCEED 6'.

EMT AND IMC CONDUIT FITTINGS SHALL BE COMPRESSION STEEL OR SET-SCREW TYPE.

CONDUIT AND CONDUCTOR SIZING SHALL BE COORDINATED TO LIMIT CONDUCTOR FILL TO LESS THAN 40%. MAINTAIN CONDUCTOR AMPERE CAPACITY AS REQUIRED BY THE NATIONAL ELECTRICAL CODE.

CONDUIT SHALL NOT CONTAIN MORE THAN FOUR (4) QUARTER BENDS (360°) BETWEEN PULL BOX POINTS. TELECOMMUNICATIONS CONDUITS SHALL HAVE NO MORE THAN TWO (2) 90° BENDS BETWEEN PULL BOX POINTS AND CONTAIN NO CONTINUOUS SECTIONS LONGER THAN 100 FEET.

ALL CONDUITS THROUGH WALLS SHALL BE GROUTED OR SEALED INTO OPENINGS, WHERE CONDUIT PENETRATES FIREWALLS AND FLOORS, SEAL WITH A UL LISTED SEALANT. SEAL INTERIOR OF CONDUIT AT EXTERIOR ENTRIES.

PROVIDE A POLYPROPYLENE PULL CORD WITH 2000 LBS. TENSILE STRENGTH IN EACH EMPTY CONDUIT.

EXPOSED CONDUIT ON EXTERIOR WALLS OR ABOVE ROOF WILL NOT BE ALLOWED.

**BOXES**

OUTLET BOXES FOR LUMINAIRES TO BE MINIMUM 1-1/2" DEEP.

LIGHT CONTROL SWITCHES, DIMMERS, AND OCCUPANCY SENSORS SHALL BE 4 INCHES SQUARE BY 2-1/8" INCHES DEEP.

MULTIPLE GANG SWITCH OUTLETS SHALL CONSIST OF THE REQUIRED NUMBER OF GANG BOXES APPROPRIATE TO THE QUANTITY OF SWITCHES COMPRISING THE GANG. PROVIDE PLASTER RINGS AND COVERS AS NEEDED.

RECEPTACLE OUTLET BOXES SHALL BE 4 INCHES SQUARE WITH RAISED COVER TO FIT FLUSH WITH FINISHED WALL LINE.

GALVANIZED STEEL BOXES MAY BE USED IN CONCEALED OR EXPOSED INTERIOR LOCATIONS, ABOVE CEILINGS, AND MIN RECESSED STUDDED PARTITIONS.

CAST BOXES SHALL BE USED IN EXTERIOR LOCATIONS, HAZARDOUS LOCATIONS, WET LOCATIONS, AND CONCRETE SLAB ON GRADE.

**[ECONN]:** ELECTRICAL CONNECTION TO EQUIPMENT AND MOTORS, SIZED PER NEC CBC.

**[JB]:** PULL AND JUNCTION BOXES, GALVANIZED STEEL, SIZED PER NEC CBC.

**26 05 53 ELECTRICAL IDENTIFICATION**

COLORED ADHESIVE MARKING TAPE FOR BANDING RACEWAYS, WIRES, AND CABLES: 3 MILS THICK BY 2" WIDTH.

PRETENSION FLEXIBLE WRAPAROUND COLORED PLASTIC SLEEVES FOR CABLE IDENTIFICATION.

WIRE/CABLE DESIGNATION TAPE MARKERS: VINYL OR VINYL-CLOTH, SELF ADHESIVE, WRAPAROUND, WITH PREPRINTED NUMBERS AND LETTER.

CABLE TIES: NYLON, 0.18" WIDTH, 50-LB MINIMUM TENSILE STRENGTH.

UNDERGROUND PLASTIC MARKERS: BRIGHT COLORED CONTINUOUSLY PRINTED PLASTIC RIBBON TAPE, 6" WIDE BY 4 MILS THICK.

SAFETY SIGNS: COMPLY WITH 29 CFR, CHAPTER XVII, PART 1910.145

JUNCTION, PULL AND CONNECTION BOXES: 3/8-INCH KROY TAPE OR BROTHER SELF-LAMINATING VINYL LABEL PERMANENT MARKER.

APPLY DESIGNATION LABELS OF ENGRAVED PLASTIC LAMINATE FOR PUSHBUTTONS, PILOT LIGHTS, ALARM/SIGNAL COMPONENTS AND SIMILAR ITEMS, EXCEPT WHERE LABELING IS SPECIFIED ELSEWHERE.

UNDERGROUND ELECTRICAL LINES: CONTINUOUS UNDERGROUND PLASTIC LINE MARKER LOCATED DIRECTLY ABOVE LINE AT 6 TO 8 INCHES BELOW GRADE.

CONDUIT IDENTIFICATION: SELF-ADHESIVE VINYL LABELS PERMANENT MARKER AT 10 20 FOOT INTERVALS TO IDENTIFY ALL CONDUITS EXPOSED OR LOCATED ABOVE ACCESSIBLE CEILINGS.

WHERE CONDUIT LEAVES A SWITCHBOARD OR PANELBOARD, IDENTIFY EACH CONDUIT INDICATING LOAD SERVED.

CONDUCTORS SHALL BE COLOR CODED TO MATCH THE EXISTING BUILDING WIRING.

FURNISH AND INSTALL FRAMED 8"x10" CHARTS OF THE COLOR IDENTIFICATION SCHEME IN ALL ELECTRICAL ROOMS AND NEXT TO THE FIRE ALARM CONTROL PANEL.

BRANCH PANELBOARDS SHALL BE PROVIDED WITH TYPED PANEL SCHEDULES UPON COMPLETION OF THE PROJECT. EXISTING PANELBOARDS SHALL HAVE THEIR EXISTING PANEL SCHEDULES TYPED. WITH ALL CIRCUIT CHANGES, ADDITIONS, OR DELETIONS ALSO TYPED ON THE PANEL SCHEDULES. HANDWRITTEN MARKINGS SHALL NOT BE ACCEPTABLE.

**26 51 00 LIGHTING**

SUBMIT PRODUCT DATA SHEETS FOR LUMINAIRES, LED AMPS, LED LIGHTING ENGINES, DRIVERS, AND POLES. INCLUDE COMPLETE PRODUCT MODEL NUMBER WITH ALL OPTIONS AS SPECIFIED. SUBMITTAL SHALL BE ARRANGED WITH LUMINAIRES LISTED IN ASCENDING ORDER, AND WITH EACH LUMINAIRE'S ASSOCIATED LED LIGHT ENGINE, DRIVER, OR POLE INFORMATION FOLLOWING LUMINAIRE'S PRODUCT DATA.

DELIVER PRODUCTS TO SITE. PROTECT LUMINAIRE FINISHES, LENSES, AND TRIMS FROM DAMAGE DURING STORAGE AND INSTALLATION. DO NOT REMOVE PROTECTIVE FILMS UNTIL CONSTRUCTION CLEANUP WITHIN EACH AREA IS COMPLETE. HANDLE SITE LIGHTING POLES CAREFULLY TO PREVENT BREAKAGE AND DAMAGE TO FINISH.

THE WARRANTY PERIOD BEGINS AT THE DATE OF SUBSTANTIAL COMPLETION. PROVIDE LED LIGHT ENGINES AND DRIVERS WITH A FIVE (5) YEAR WARRANTY. PROVIDE EMERGENCY LIGHTING UNITS AND EXIT SIGNS WITH A THREE (3) YEAR NON-PRORATED WARRANTY. PROVIDE EMERGENCY UNITS AND EXIT SIGN BATTERIES WITH SEALED LEAD ACID OR LEAD CALCIUM CELL. REQUIRING NO MAINTENANCE OR REPLACEMENT FOR TEN (10) YEARS UNDER NORMAL CONDITIONS. PROVIDE EMERGENCY LED DRIVER WITH FIVE (5) YEAR WARRANTY. PROVIDE EMERGENCY INVERTER AND BATTERY, SEALED NICKEL CADMIUM, WITH FIVE (5) YEAR NON-PRORATED WARRANTY. PROVIDE EXTERIOR FINISH ON POLES WITH THREE (3) YEAR WARRANTY. PROVIDE LED LIGHT ENGINE WITH THREE (3) YEAR WARRANTY AND ANY DRIVER WITH FIVE (5) YEAR WARRANTY.

EXTERIOR LUMINAIRES SHALL BE LISTED FOR WET OR DAMP LOCATION AS SCHEDULED. PROVIDE INGRESS PROTECTION (IP) RATING WHEN SCHEDULED. PROVIDE LOW TEMPERATURE LED DRIVERS, WITH RELIABLE STARTING TO -20°F.

LIGHT EMITTING DIODES USED IN INTERIOR APPLICATIONS SHALL HAVE A MINIMUM COLOR RENDERING INDEX (CRI) OF 80. LIGHT EMITTING DIODES USED IN EXTERIOR APPLICATIONS SHALL HAVE A MINIMUM COLOR RENDERING INDEX (CRI) OF 80. COLOR TEMPERATURE OF THE LUMINAIRES SHALL BE AS NOTED ON THE LUMINAIRE SCHEDULE. PROVIDE LIGHT SOURCE COLOR CONSISTENCY BY UTILIZING A BINNING TOLERANCE WITHIN A MAXIMIN 3-STEP MCADAM ELLIPSE UNLESS NOTED OTHERWISE. RATED LIFE SHALL BE MINIMUM OF 50,000 HOURS AT L70. LED CHIPS SHALL BE WIRED SO THAT FAILURE OF ONE CHIP DOES NOT PROHIBIT OPERATION OF THE REMAINDER OF THE CHIP ARRAY. LUMINAIRE DELIVERED LUMENS IS DEFINED AS THE ABSOLUTE LUMENS PER THE MANUFACTURER'S LM-79-09 TEST REPORT. LED LIGHT ENGINE SHALL HAVE A MAXIMUM LLD OF 0.85 AT 50,000 HOURS AT 25°C AMBIENT.

PROVIDE SOLID STATE DRIVERS WITH INTEGRAL HEAT SINK. DRIVER SHALL HAVE OVERHEAT, SHORT-CIRCUIT, AND OVERLOAD PROTECTION, POWER FACTOR 0.90 OR ABOVE, AND MAXIMUM TOTAL HARMONIC DISTORTION OF 10 20%. DIMMING SHALL CONTROL LIGHT OUTPUT IN A CONTINUOUS CURVE FROM 100% TO 10% UNLESS NOTED OTHERWISE. DRIVER SHALL HAVE A MINIMUM OF 50,000 HOURS RATED LIFE. DRIVER SHALL BE FIELD REPLACEABLE WITHOUT REMOVAL OF THE LUMINAIRE. CLASS A SOUND RATING; INAUDIBLE IN A 27 DBA AMBIENT.

LED LAMPS USED WITH DIMMING SHALL BE VERIFIED FOR COMPATIBILITY WITH DIMMER MANUFACTURER PRIOR TO ORDERING.

ADJUST AIMABLE LUMINAIRES TO OBTAIN LIGHTING LEVELS ON OBJECTS AND AREAS AS DIRECTED TO OBTAIN DESIRED LIGHTING LEVELS.

REPLACE FAILED LED LAMPS AND LIGHT ENGINE MODULES OR ARRAYS AT COMPLETION OF WORK.

ALIGN LUMINAIRES AND CLEAN LENSES AND DIFFUSERS AT COMPLETION OF WORK. CLEAN PAINT SPLATTERS, DIRT, AND DEBRIS FROM INSTALLED LUMINAIRES. TOUCH UP LUMINAIRE AND POLE FINISH AT COMPLETION OF WORK.



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CONTRACT
#9745
MUNIS
#15642
DRWN BY: JPE
DATE 01/22/2026
REV: 01/22/2026

SHT  
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