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CITY OF WORCESTER



KELLEY SQUARE PYLON WORCESTER, MA 01604

SEPTEMBER 18, 2025

BID DOCUMENTS



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1.0 GENERAL NOTES:

- 1.1 TOPOGRAPHICAL INFORMATION SHOWN WAS DIGITIZED FROM THE CONSTRUCTION PLAN SET "KELLEY SQUARE SAFETY IMPROVEMENTS ON MADISON STREET AND VERNON STREET" BY MASSDOT HIGHWAY DIVISION ON JULY 15, 2019. THE INFORMATION WAS GEOGRAPHICALLY REFERENCED USING AutoCADs GEOLOCATION FEATURE.
- 1.2 THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. THE CONTRACTOR SHALL DIG TEST PITS WITH THE LOCATIONS BEING APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF WORK TO EXACTLY LOCATE EXISTING UTILITIES
- 1.3 WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
- 1.4 THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF ELECTRIC AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY OWNER. ANY ALTERATIONS SHALL BE INCIDENTAL TO THE PROJECT.
- 1.5 AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
- 1.6 THE TERM "PROPOSED (PROP)" INDICATES WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RESET (R&R)".
- 1.7 ALL EXCESS MATERIAL FROM THE EXCAVATION PROCESS SHALL BE REUSED ON SITE OR REMOVED FROM THE SITE AND
- 1.8 THE CONTRACTOR SHALL CALL DIGSAFE AT 1-888-344-7233 AT LEAST 72 HOURS, SATURDAYS, AND HOLIDAYS EXCLUDED PRIOR TO EXCAVATING AT ANY LOCATION. A COPY OF THE DIGSAFE PROJECT REFERENCE NUMBER(S) SHALL BE GIVEN TO THE TOWN PRIOR TO EXCAVATION.
- 1.9 THE CONTRACTOR SHALL VERIFY BY TEST PIT, THE LOCATION OF EXISTING UTILITIES WHICH MAY CONFLICT WITH THE PROPOSED FOUNDATION. ANY FIELD ADJUSTMENTS REQUIRED WILL BE MADE AS APPROVED OR DIRECTED BY THE ENGINEER. ONLY AFTER THE CONTRACTOR VERIFIES ELEVATIONS FOR THE CONSTRUCTABILITY OF THE FOUNDATION, THE MATERIALS SHALL BE ORDERED.
- 1.10 THE CONTRACTOR SHALL BE AWARE THAT ONLY CITY PERSONNEL ARE ALLOWED TO OPERATE WATER GATES AND HYDRANTS. ANY REQUESTS TO OPERATE THE HYDRANTS SHALL BE COORDINATED THROUGH THE CITY.
- 1.11 THE CONTRACTOR SHALL COORDINATE ANY WORK FOR THE PROJECT WITH ALL ADJACENT/CONCURRENT PROJECTS AND CONTRACTORS.
- 1.12 THE CONTRACTOR SHALL INSTALL PRIOR TO COMMENCEMENT OF WORK, MAINTAIN, AND REMOVE AT THE END OF THE PROJECT INLET SEDIMENT CONTROL BAGS IN ALL CATCH BASINS, WITHIN OR ADJACENT TO THE PROJECT LIMITS. THE CONTRACTOR SHALL ALSO MAINTAIN SILT FENCE AND COMPOST FILTER TUBES AS SHOWN ON THE PLANS THROUGHOUT THE DURATION OF THE PROJECT AND REMOVE AT THE END.
- 1.13 ANY GRASS AREAS DISTURBED BY THE WORK SHALL BE RESTORED WITH LOAM AND SEED.

DISPOSED OF IN A LEGAL AND PROPER MANNER.

- 1.14 ANY LANDSCAPED AREAS DISTURBED BY THE WORK SHALL BE RESTORED TO EXISTING CONDITIONS WITH EXISTING OR NEW GROUND COVER MATERIALS AS DIRECTED BY THE ENGINEER. ANY PLANTS, SHRUBS, OR FLOWERS DISTURBED BY THE WORK SHALL BE RESET TO EXISTING CONDITIONS OR REPLACED WITH NEW PLANTS, SHRUBS, OR FLOWERS AS DIRECTED BY THE ENGINEER. ALL WORK TO RESTORE LANDSCAPE AREAS, NEW GROUND COVER MATERIALS, NEW PLANTS. NEW SHRUBS. OR NEW FLOWERS REQUIRED BY THE ENGINEER SHALL BE INCIDENTAL TO THE PROJECT
- 1.15 THE STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ALL OTHER CONTRACT DRAWINGS AND SPECIFICATIONS. REFER TO CIVIL, ARCHITECTURAL, AND ELECTRICAL DRAWINGS FOR LOCATION, DIMENSIONS, AND
- 1.16 THE CONTRACTOR IS RESPONSIBLE FOR CHECKING, COORDINATING AND VERIFYING ALL DIMENSIONS IN THE FIELD PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL IMMEDIATELY REPORT ANY DISCREPANCY TO THE ENGINEER AS A REQUEST FOR INFORMATION (RFI) BEFORE PROCEEDING WITH WORK.
- 1.17 THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING IN THE FIELD THE EXISTENCE AND LOCATION OF OVERHEAD, BURIED AND/OR EMBEDDED UTILITIES AFFECTED BY THE WORK OF THIS CONTRACT.
- 1.18 ALL WORK IS TO CONFORM WITH THE FOLLOWING CODES AND STANDARDS:
- "780 CMR: MASSACHUSETTS AMENDMENTS MASSACHUSETTS STATE BUILDING CODE" 10TH EDITION (MSBC)
- INTERNATIONAL BUILDING CODE, (IBC 2021)
 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" AMERICAN CONCRETE INSTITUTE (ACI 318)
 "MANUAL OF STEEL CONSTRUCTION" AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC 360)
 "STRUCTURAL WELDING CODE STEEL" AMERICAN WELDING SOCIETY (AWS D1.1)
 "LRFD STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS" 2015 AASHTO FOR ADDITIONAL CODES AND STANDARDS REFER TO SPECIFICATIONS.

- 1.19 THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF UNFORESEEN CONDITIONS THAT MAY BE UNCOVERED DURING CONSTRUCTION AS A REQUEST FOR INFORMATION (RFI) BEFORE PROCEEDING WITH WORK.
- 1.20 DETAILS AND NOTES SHOWN ON STRUCTURAL DRAWINGS SHALL BE APPLICABLE TO ALL PARTS OF THE STRUCTURAL WORK EXCEPT WHERE SPECIFICALLY REQUIRED OTHERWISE BY CONTRACT DOCUMENTS. CONDITIONS NOT SPECIFICALLY SHOWN SHALL BE SIMILAR TO THOSE SHOWN FOR LIKE CONDITIONS AS DETERMINED BY THE ENGINEER.
- 1.21 IN ACCORDANCE WITH SPECIFICATION SECTION 01 45 23, TESTING AND INSPECTION OF STRUCTURAL WORK SHALL BE PERFORMED BY AN INDIVIDUAL TESTING AGENCY HIRED BY THE OWNER (CITY). THE COSTS FOR TESTING AND INSPECTIONS WILL BE PAID BY THE OWNER (CITY). THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A 48-HOUR NOTICE PRIOR TO ANY 3RD PARTY TESTING AND INSPÈCTIÓNS.
- 1.22 THE CONTRACTOR SHALL DESIGN AND PROVIDE ALL REQUIRED SHORING AND TEMPORARY BRACING TO RESIST FORCES ON THE STRUCTURE THROUGHOUT THE CONSTRUCTION PERIOD

2.0 - FOUNDATIONS

- 2.01 THE CONTRACTOR SHALL DESIGN AND PROVIDE ALL TEMPORARY EARTH SUPPORT, SHORING AND BRACING REQUIRED TO PERFORM THE WORK IN ACCORDANCE WITH OSHA, STATE AND LOCAL REQUIREMENTS.
- 2.02 THE CONTRACTOR SHALL DESIGN AND PROVIDE SHEETING, SHORING, BRACING, AND/OR UNDERPINNING IN ORDER TO PROTECT EXISTING UTILITIES FROM EXCESSIVE MOVEMENTS DURING THE CONSTRUCTION PERIOD, IN ACCORDANCE WITH OSHA, STATE & LOCAL REQUIREMENTS.
- 2.03 THE CONTRACTOR SHALL CARRY OUT CONTINUOUS CONTROL OF SURFACE AND SUBSURFACE WATER. DEWATER ANY AREAS REQUIRING EXCAVATION IN ADVANCE OF PERFORMING EXCAVATION. MAINTAIN GROUNDWATER LEVELS AT LEAST 2 FEET BELOW PLANNED SUBGRADES
- 2.04 ALL SUBGRADES TO RECEIVE FILL MATERIALS, FOUNDATIONS, SLABS OR OTHER CONSTRUCTION SHALL BE FREE OF RUNNING OR STANDING WATER PRIOR TO PLACEMENT.
- 2.05 FOUNDATIONS SHALL BE INSTALLED IN THE GEOMETRY SHOWN IN THE PLANS, ANY ROCK ENCOUNTERED DURING EXCAVATION SHALL BE REMOVED TO CLEAR THE REQUIRED FOUNDATION GEOMETRY

3.0 - CAST IN PLACE CONCRETE

- 3.01 CONCRETE WORK SHALL CONFORM TO "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318) AND "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" (ACI 301).
- 3.02 CONCRETE SHALL BE CONTROLLED CONCRETE, PROPORTIONED, MIXED AND PLACED IN THE PRESENCE OF A REPRESENTATIVE OF AN APPROVED TESTING AGENCY.
- 3.03 UNLESS NOTED OTHERWISE, CONCRETE SHALL BE NORMAL WEIGHT AND HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH AS FOLLOWS:
- ALL STRUCTURAL CONCRETE: 4000 PSI
- 3.04 ALL PERMANENTLY EXPOSED VERTICAL AND HORIZONTAL CONCRETE SURFACES SHALL BE TREATED OR SEALED IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
- 3.05 CONCRETE EXPOSED TO WEATHER (FREEZE-THAW CONDITIONS) IN THE FINISHED PROJECT SHALL BE AIR ENTRAINED PER SPECIFICATIONS REQUIREMENTS.
- 3.06 ALL CONCRETE SHALL BE WATER CURED UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER
- 3.07 NON-SHRINK, NON-METALLIC, GROUT SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 7,500 PSI (ASTM C942) AND A MINIMUM BOND STRENGTH OF 2,000 PSI AT 28-DAYS (ASTM C882). GROUT MAY BE EXTENDED WITH COARSE AGGREGATE PER THE MANUFACTURER'S RECOMMENDATIONS.
- 4.0 CAST IN PLACE CONCRETE REINFORCEMENT
- 4.01 REINFORCEMENT DETAILING, FABRICATION, AND ERECTION SHALL CONFORM TO "ACI DETAILING MANUAL" SP-66, "CRSI MANUAL OF STANDARD PRACTICE".
- 4.02 STEEL REINFORCEMENT, UNLESS NOTED OTHERWISE, SHALL CONFORM TO THE FOLLOWING:
- BARS, TIES, AND STIRRUPS ASTM A615 GRADE 60
- 4.03 REINFORCING STEEL SHALL BE UNCOATED AND DEFORMED.
- 4.04 MINIMUM CONCRETE PROTECTIVE COVERING FOR REINFORCEMENT, UNLESS REQUIRED FOR FIRE PROTECTION OR NOTED OTHERWISE, SHALL BE AS FOLLOWS:
- CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH:____3"
 CONCRETE EXPOSED TO EARTH OR WEATHER:
 NO. 6 THRU NO. 18 BARS ___2"
 NO. 5 BAR, W31 OR D31 WIRE AND SMALLER____2"

- 4.05 REINFORCING STEEL SHALL BE CONTINUOUS THROUGH ALL CONSTRUCTION JOINTS, CORNERS, AND INTERSECTIONS UNLESS OTHERWISE NOTED. REINFORCING SHALL BE LAPPED AT NECESSARY SPLICES OR HOOKED AT DISCONTINUOUS ENDS, UNLESS OTHERWISE NOTED.
- 4.06 FOR REINFORCING STEEL SPLICE LAP LENGTHS REFER TO THE TABLE PROVIDED UNLESS OTHERWISE INDICATED.
- MECHANICAL SPLICES SHALL BE PERMITTED SUBJECT TO APPROVAL BY THE ENGINEER. MECHANICAL SPLICES SHALL DEVELOP AT LEAST 125 PERCENT OF THE SPECIFIED YIELD STRENGTH OF THE BAR. NO WELDED CONNECTIONS ARE PERMITTED.
- 4.08 REINFORCEMENT SHALL NOT BE TACK WELDED.
- 4.09 NOTIFY THE TESTING LAB AND ENGINEER A MINIMUM OF 48 HOURS PRIOR TO SCHEDULED CONCRETE PLACEMENT IN ORDER TO ACCOMMODATE INSPECTION OF REINFORCEMENT AND CONCRETE TESTING. NO CONCRETE SHALL BE PLACED WITHIN 48 HOURS OF SUCH NOTIFICATION.
- 5.0 STRUCTURAL STEEL
- 5.01 STRUCTURAL STEEL DESIGN, FABRICATION AND ERECTION SHALL CONFORM TO THE AISC "MANUAL OF STEEL CONSTRUCTION", "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS AND BRIDGES" (ANSI/AISC 360-10), AND "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES" (ANSI/AISC 303-10).
- 5.02 STRUCTURAL STEEL SHALL BE NEW STEEL CONFORMING TO THE FOLLOWING: (A) WIDE FLANGE SHAPES: ASTM A992
- OTHER STEEL SHAPES, PLATES AND BARS: ASTM A572 OR ASTM A36.
- 5.03 ALL WELDED CONNECTIONS SHALL BE MADE BY APPROVED CERTIFIED WELDERS AND SHALL CONFORM TO A.W.S. SPECIFICATIONS AMENDED TO DATE. ELECTRODES SHALL BE E70XX.
- 5.04 BOLTS SHALL CONFORM TO ASTM A325 AND BE INSTALLED SNUG-TIGHT UNLESS NOTED OTHERWISE
- 5.05 STRUCTURAL STEEL FRAMING SHALL BE WITHIN TOLERANCE BEFORE CONNECTIONS ARE FINALLY BOLTED OR WELDED
- 5.06 FIELD CUTTING OF STRUCTURAL STEEL OR ANY FIELD MODIFICATIONS OF STRUCTURAL STEEL SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL BY THE ENGINEER FOR EACH SPECIFIC USE.
- 5.07 STRUCTURAL STEEL SHAPES AND PLATES SHALL BE HOT-DIPPED GALVANIZED PER ASTM A123 U.N.O. FASTENERS SHALL BE HOT-DIPPED GALVANIZED PER ASTM A153 U.N.O. HOT-DIPPED GALVANIZING SHALL ALSO CONFORM TO ASTM A385. THE GALVANIZER SHALL SUBMIT A CERTIFICATE OF CONFORMANCE FOR RECORD.
- 5.08 PROVIDE FIELD TOUCH-UP AND REPAIR OF GALVANIZING AS REQUIRED PER ASTM A780 USING AN INORGANIC ZINC-RICH
- 5.09 WHEN DISSIMILAR METALS ARE IN CONTACT (E.G. STAINLESS STEEL IN CONTACT WITH GALVANIZED STEEL), COAT SURFACE WITH COAL TAR EPOXY OR PROVIDE OTHER APPROVED MEANS TO PROVIDE A BARRIER.
- 5.10 WELDS SHALL BE 1/4" FILLET WELDS MINIMUM UNLESS NOTED OTHERWISE ON THE DRAWINGS.
 5.11 PROVIDE TEMPORARY ERECTION BRACING AND SUPPORTS TO HOLD STRUCTURAL STEEL FRAMING SECURELY IN POSITION. SUCH TEMPORARY BRACING AND SUPPORTS SHALL NOT BE REMOVED UNTIL PERMANENT BRACING HAS BEEN INSTALLED.
- 5.12 SUBMIT SHOP DRAWINGS AND PRODUCT DATA FOR APPROVAL PRIOR TO FABRICATION

6.0 DESIGN LOADS

4. GROUND SNOW LOAD

LOADS, LOADING CONDITIONS, AND COMBINATIONS SHALL BE IN ACCORDANCE WITH THE MASSACHUSETTS STATE BUILDING CODE 10th EDITION, IBC 2021, AND ASCE 7-16 AS APPLICABLE

LOADS DESIGNATED BY "PSF" ARE UNIFORM LOADS, THOSE DESIGNATED BY "LB" ARE CONCENTRATED LOADINGS AND SHALL BE APPLIED AS REQUIRED BY THE MA STATE BUILDING

BUIL	DING OCCUPANCY CATEGORY	I	I
	DEAD LOADS		

1.1. SELF WEIGHT OF ALL STRUCTURAL ELEMENTS, CONSULT APPLICABLE DRAWINGS AND TRADES FOR FURTHER INFORMATION.

2.	WIND DESIGN DATA 2.1. BASIC WIND SPEED, V 2.2. WIND EXPOSURE FACTOR		118 MPH C
3.	EARTHQUAKE DESIGN DATA 3.1. SEISMIC IMPORTANCE FACT 3.2. MAPPED SPECTRAL RESPO 3.3. SITE CLASS 3.4. DESIGN SPECTRAL RESPON	NSE ACCELERATIONS, S/S, S/1 ISE ACCELERATION PARAMETERS, SDS, SD1	1.0 0.180, 0.066 D 0.224, 0.095
	3.5. SEISMIC DESIGN CATEGOR'	Y	В

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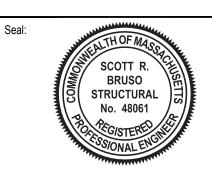
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Scale:	AS NOTED
Date:	September 18, 2025
Drawn By:	BUD
Reviewed By:	QS

SRB

ENG21-1211

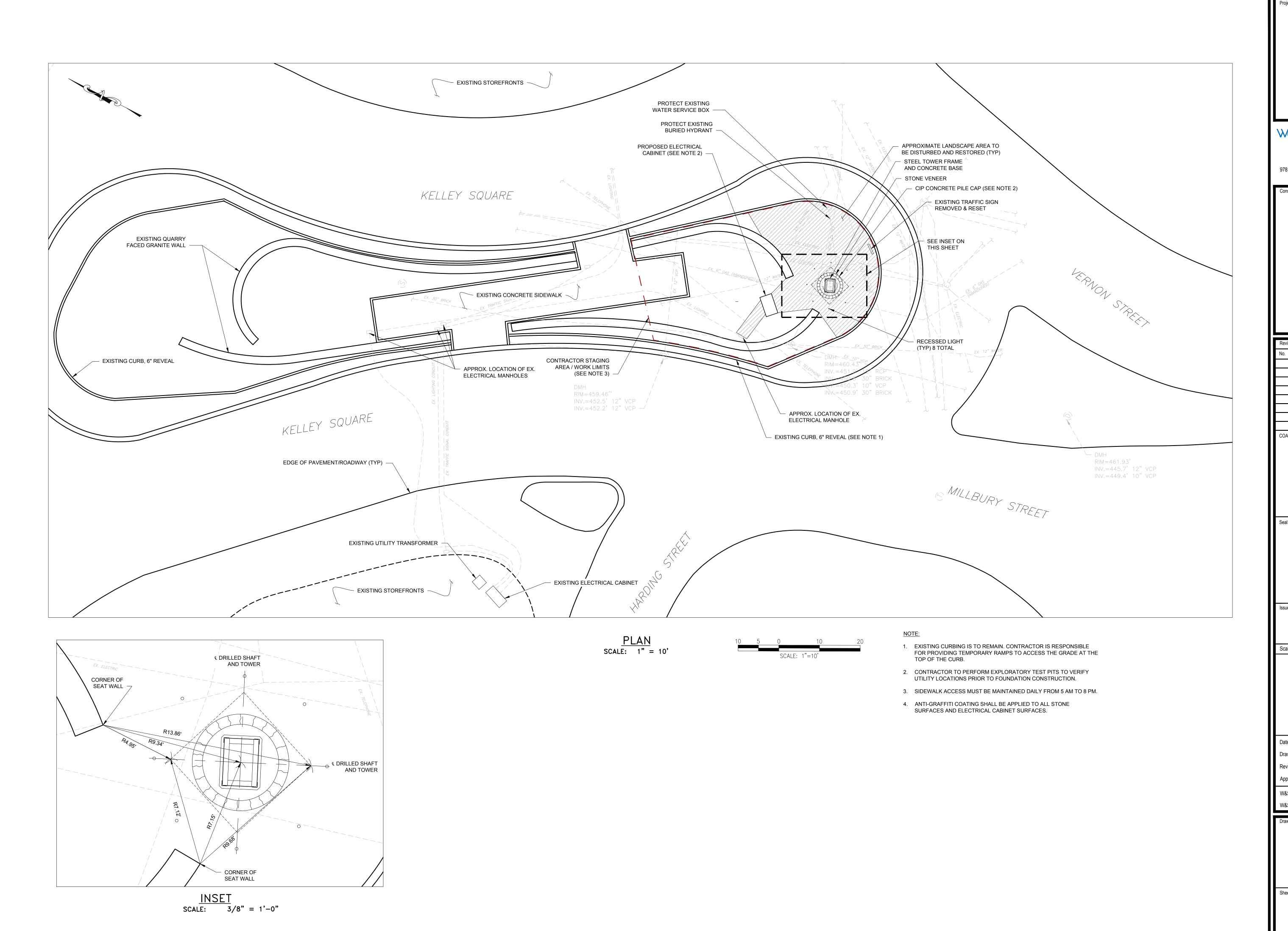
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GENERAL NOTES

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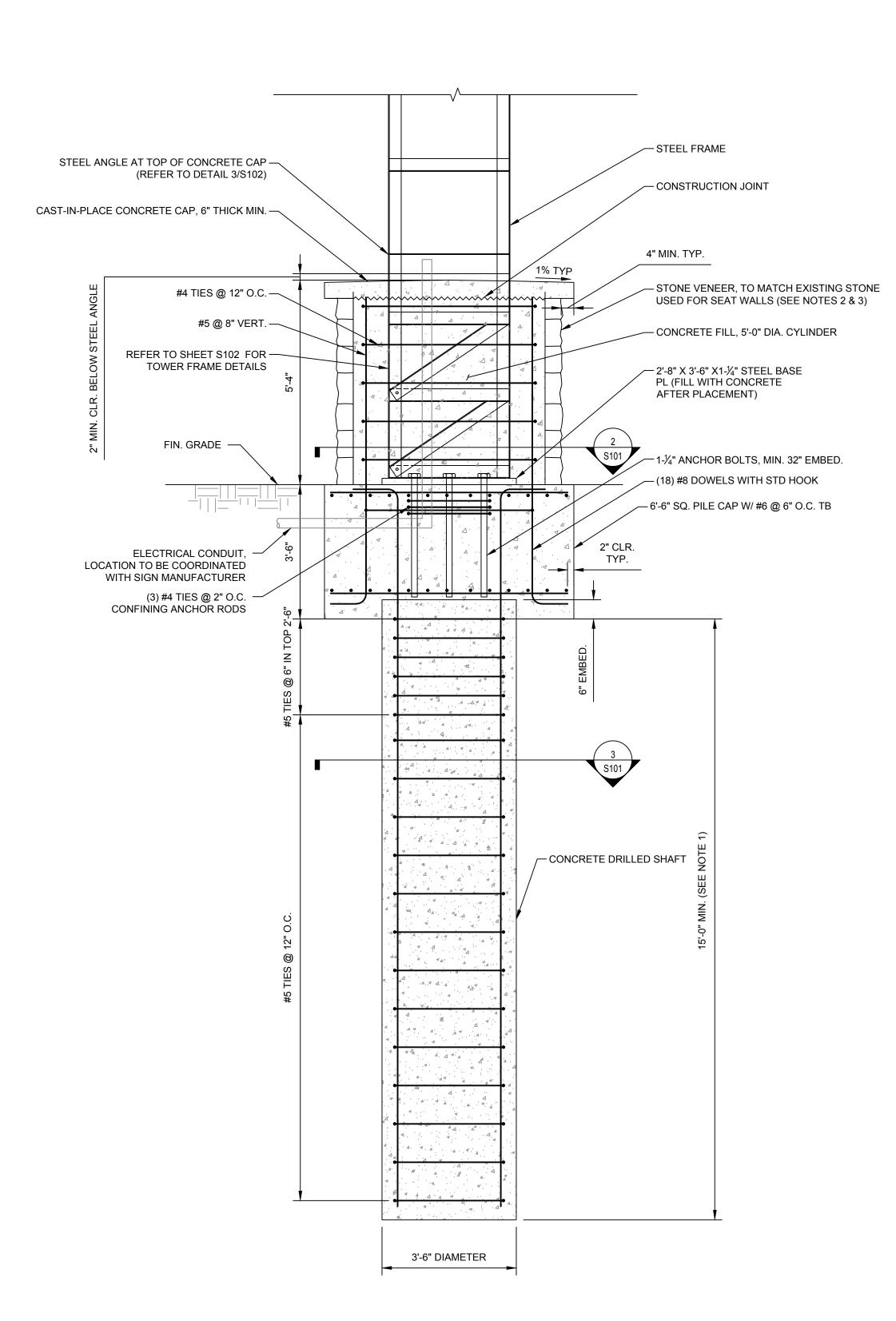
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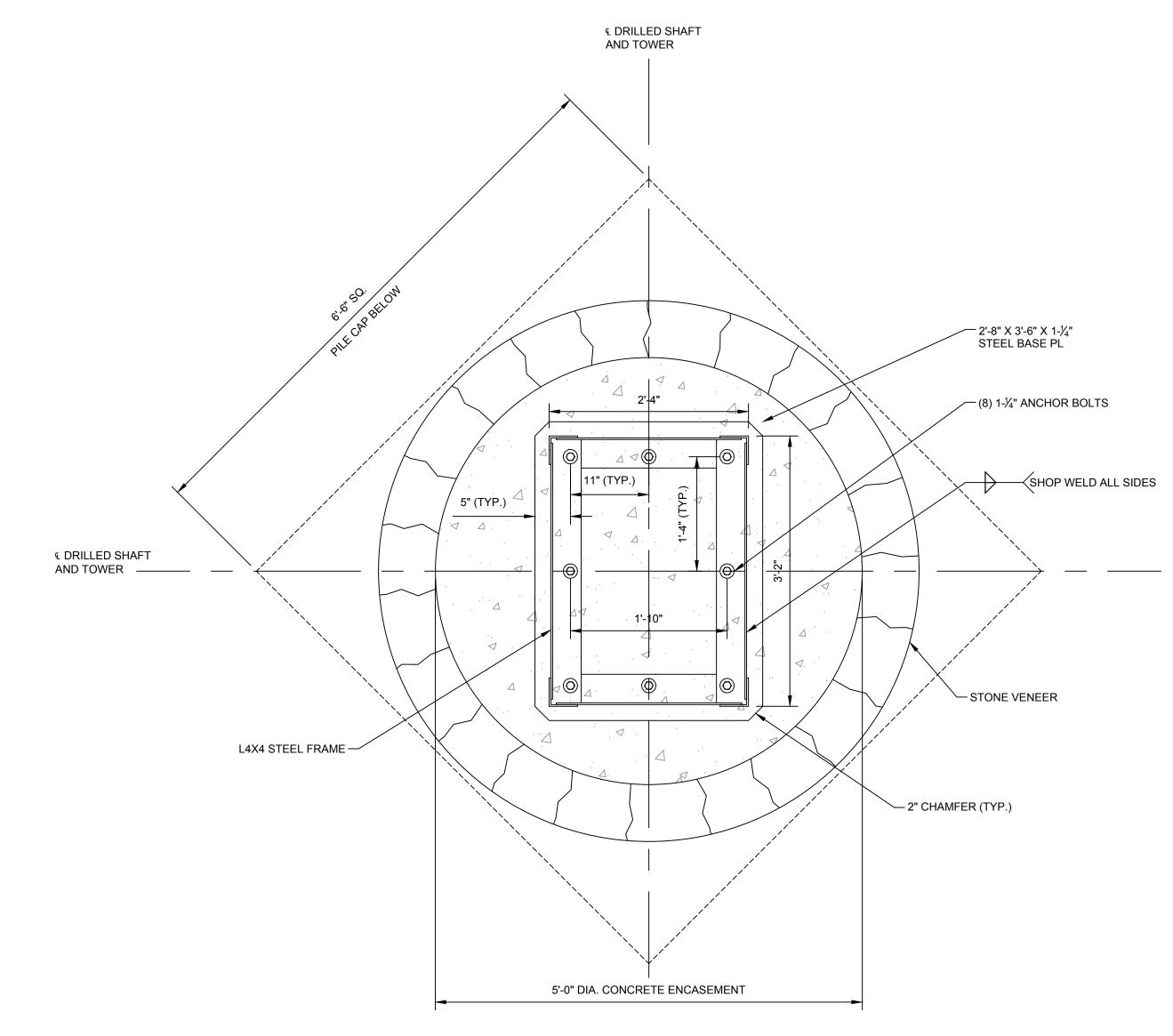
SITE PLAN AND **GENERAL NOTES**





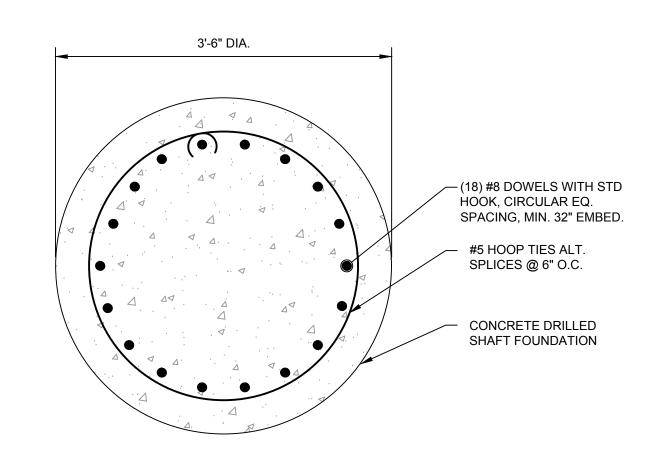
NOTES

- CONTRACTOR TO PERFORM ONE EXPLORATORY BORING AND PROVIDE RESULTS TO ENGINEER OF RECORD. BORING SHALL BE TO A DEPTH OF 15 FEET OR REFUSAL, WHICHEVER IS LESS. BORINGS SHALL BE BACKFILLED WITH SOIL CUTTINGS. METHOD OF SAMPLING INCLUDES STANDARD PENETRATION TEST (SPT).
- 2. CONTRACTOR TO SUBMIT STONE VENEER SAMPLE FOR CLIENT APPROVAL.
- 3. MASONRY VENEER WEEP HOLES TO BE PROVIDED PER MANUFACTURER RECOMMENDATIONS.
- 4. FULL LETTER MOCKUP TO BE PLACED AT APPROXIMATELY 12 FEET ABOVE GRADE AT THE LOCATION OF THE STRUCTURE TO CONFIRM ORIENTATION WITH CLIENT AND ENGINEER PRIOR TO INSTALLATION. REFER TO SPECIFICATION 10 14 00 EXTERIOR SIGNAGE.



BASE PLATE AND ANCHOR BOLT LAYOUT

SCALE: 1"=1'-0"



3 CONCRETE DRILLED SHAFT REBAR LAYOUT

SCALE: 1"=1'-0"

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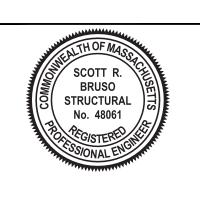
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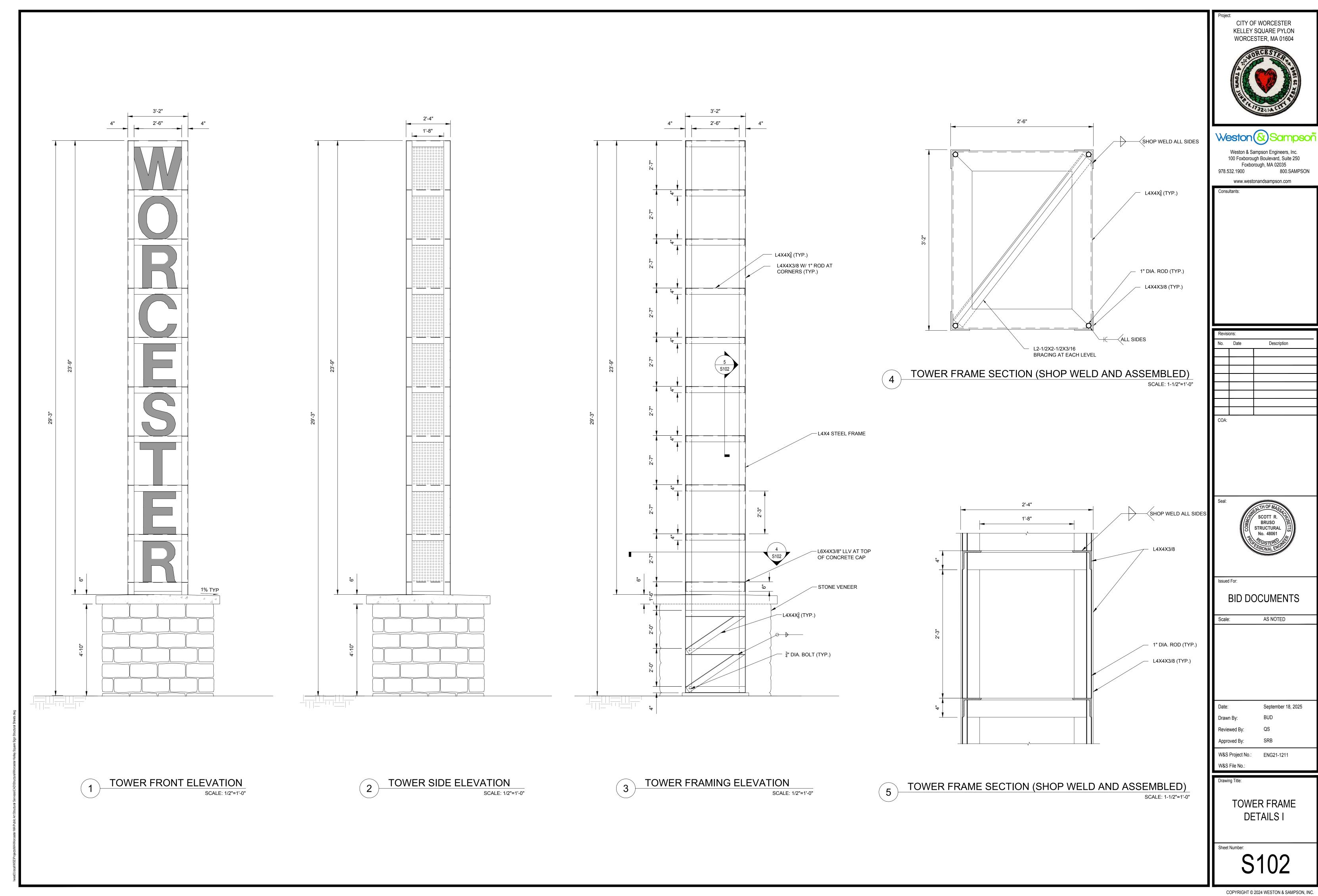
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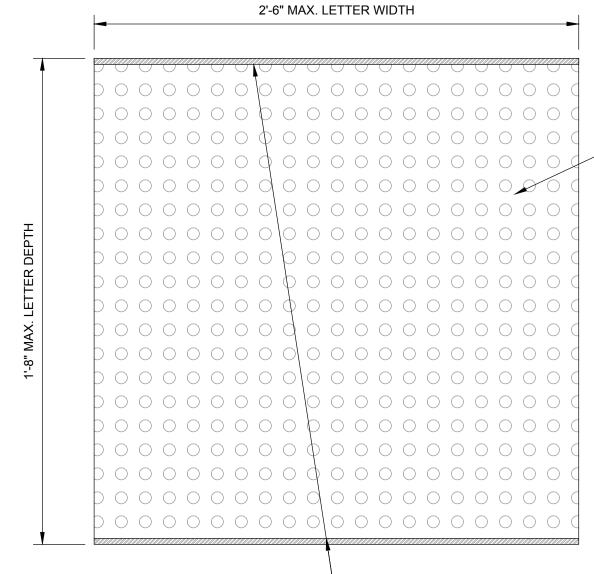
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TOWER AND FOUNDATION DETAILS

Sheet Nu

S101





1/4" STAINLESS STEEL PANEL ATTACHED TO FACE. 1/8" STAINLESS STEEL PANEL ATTACHED TO BACK. PANELS ATTACHED TO STRUCTURAL SKELETON OF LETTER. BACK PANEL TO BE REMOVABLE FOR MAINTENANCE

FRONT VIEW

PERFORATED STAINLESS STEEL 1/2" DIA., 11/16" CTRS., 48% OPEN AREA OR SIMILAR

- ONE COMPLETE FULL SIZE LETTER WITH ILLUMINATION TO BE PRODUCED FOR APPROVAL BEFORE BEING RELEASED TO PRODUCE REMAINING LETTERS.
- ALL EXPOSED SCREWS SHALL BE STAINLESS STEEL, FLAT, AND MOUNTED FLUSH TO THE LETTERS AND FRAMING.
- 3. BOTTOMS OF LETTER ARE NOT PERFORATED, AND NOT ILLUMINATED.
- FULL COLOR PROGRAMMABLE LED LIGHTS AND SEPARATE WARM WHITE LED LIGHTS, AS WELL AS CONTROL MODULES WITH 36 NON-ANIMATED PRESETS, SHALL BE PROVIDED BY THE SIGN FABRICATOR.
- ADDITIONAL INTERNAL SUPPORTS SHALL BE ADDED INSIDE FRAME AS NECESSARY. SUPPORTS SHALL BE PLACED AWAY FROM EDGE TO AVOID BLOCKING ILLUMINATION. THICKNESS AND MATERIAL DETERMINED BY SIGN FABRICATOR.
- THICKNESS OF INTERNAL SUPPORTS OUTLINING LETTER FACE SHALL BE DETERMINED BY
- THE ONLY HORIZONTAL CROSS MEMBERS TO BE AT THE OUTSIDE EDGE OF THE LETTERS SHOULD BE AT THE BOTTOM OF THE LETTER. THICKNESS AND MATERIAL SHALL BE DETERMINED BY SIGN FABRICATOR.



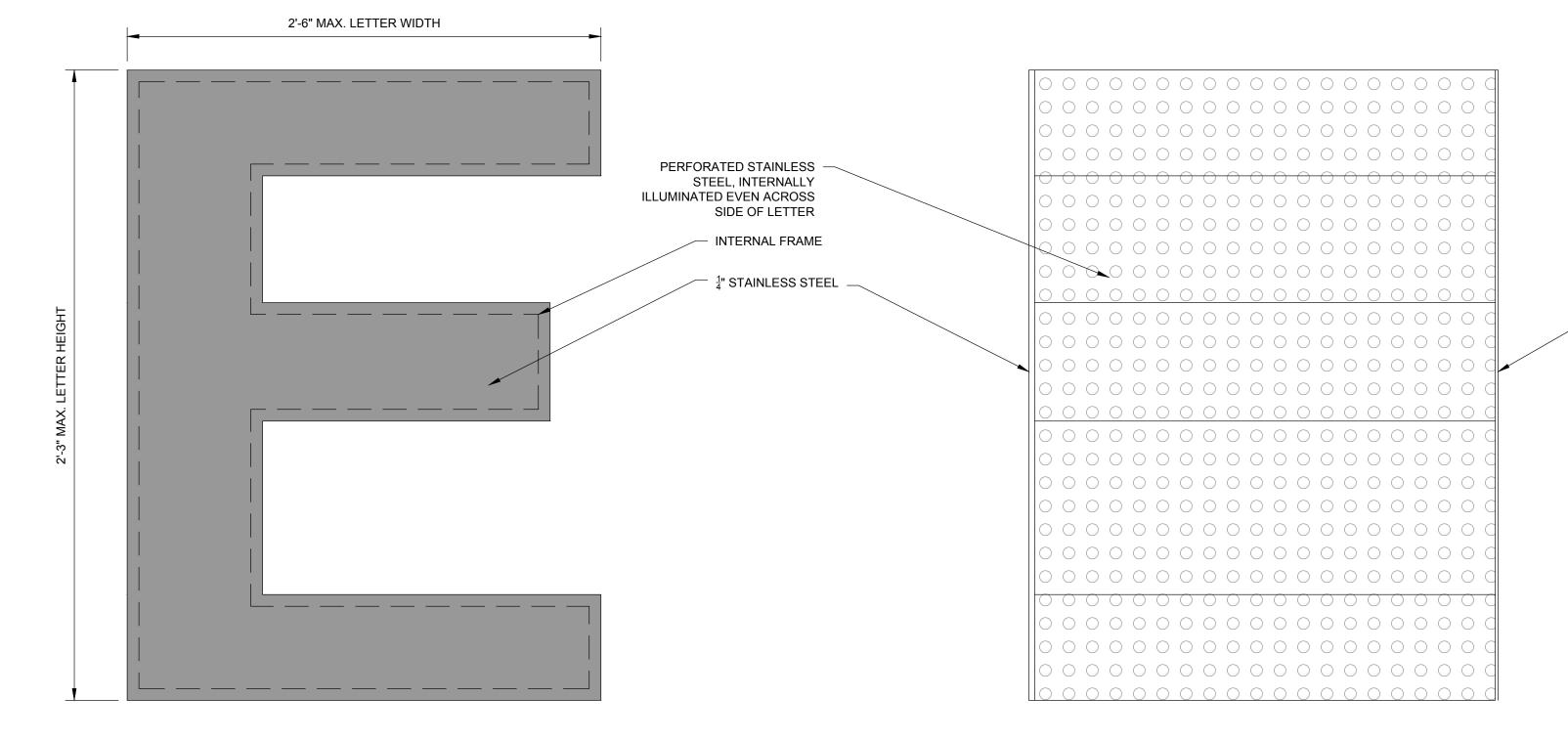
TOWER FRAME CONCEPT RENDERING

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_ _ _ _ _ _ _ _ _ _

¹" STAINLESS STEEL





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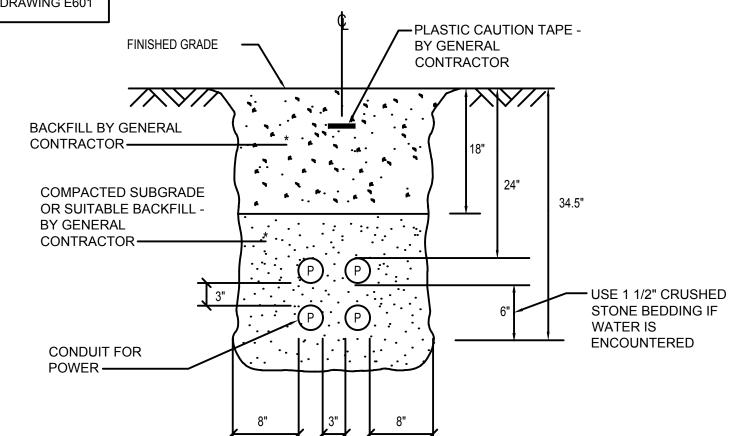
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TOWER FRAME **DETAILS II**

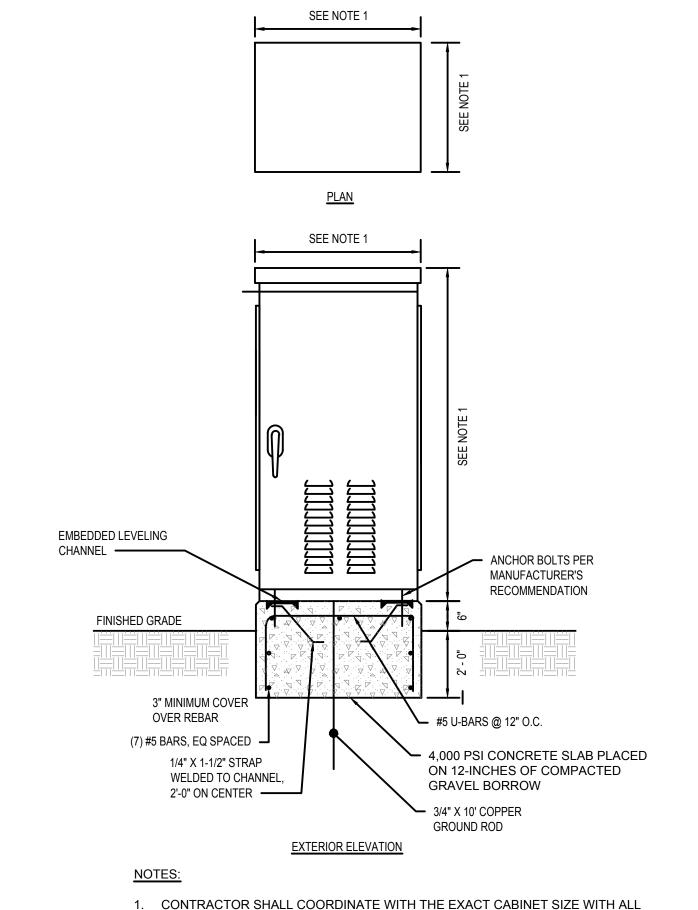
ELECTRICAL ABBREVIATIONS LIST 1 POLE (2P, 3P, 4P, ETC.) SAFETY DISCONNECT SWITCH FIXT HEATING MOTOR STARTER PANELBOARD PUBLIC ADDRESS ROOM SYMMETRICAL UNIT VENTILATOR ANGLE FLR FLOOR LTNG LIGHTNING AMP TRIP HEATER PULL BOX OR PUSHBUTTON RSC RIGID STEEL CONDUIT SYS AMPERE CONN CONNECTION DOUBLE THROW HTR MSBD MAIN SWITCHBOARD SYSTEM OR ULTRAVIOLET ABOVE COUNTER OR AIR HIGH VOLTAGE LV LOW VOLTAGE ATS AUTOMATIC TRANSFER SWITCH CONST CONSTRUCTION DWG DRAWING FLUOR FLUORESCENT MOUNT PNEUMATIC ELECTRIC RTU ROOF TOP UNIT **TELEPHONE** VOLT DELTA CONDITIONER AUTO AUTOMATIC CONT CONTINUATION OR CONTINUOUS ELECTRICAL CONTRACTOR FUSE HEATING, VENTILATING AND AIR MAX MAXIMUM EMPTY CONDUIT PEDESTAL SURFACE CONDUIT TEL/DATA TELEPHONE/DATA **VOLT-AMPERES** FEET ELEC **FUDS** POWER FACTOR ACLG ABOVE CEILING AUX CONTR CONTRACTOR ELECTRIC, ELECTRICAL FUSED SAFETY DISCONNECT SWITCH MAG.S MAGNETIC STARTER SECONDARY AUXILIAR' CONDITIONING MANUAL TRANSFER SWITCH TERM TERMINAL VDT VIDEO DISPLAY TERMINAL INCHES ELEV ADO AUTOMATIC DOOR OPENER AUDIO VISUAL CONV CONVECTOR ELEVATOR GA GAUGE HYDRONIC WATER PUMP MOMENTARY CONTACT MTR MOTOR, MOTORIZED PH SHEET TWIST LOCK VERT VERTICAL NUMBER AMP FRAME AWG AMERICAN WIRE GAUGE CP CIRCULATING PUMP EM **EMERGENCY** GALLON INTERRUPTING CAPACITY MECHANICAL CONTRACTOR N.C. NORMALLY CLOSED PIV POST INDICATING VALVE SIM SIMILAR TAMPER RESISTANT VFD VARIABLE FREQUENCY DRIVE PHASE ABOVE FINISHED FLOOR ISOLATED GROUND BATT TSP BATTERY CRT CATHODE-RAY TUBE EMS ENERGY MANAGEMENT SYSTEM MCB MAIN CIRCUIT BREAKER NATIONAL ELECTRICAL CODE SOLID NEUTRAL TWISTED SHIELDED PAIR VOL GALV GALVANIZED PNL PANEL VOLUME CENTER LINE CURRENT TRANSFORMER ELECTRICAL METALLIC TUBING NEMA NATIONAL ELECTRICAL POWER POLE SPEC SPECIFICATION AFG ABOVE FINISHED GRADE CT EMT GENERAL CONTRACTOR INTERMEDIATE METAL CONDUIT MCC MOTOR CONTROL CENTER T-STAT THERMOSTAT WATT BOARD GC PLATE INCAND INCANDESCENT ARC FAULT CIRCUIT BLDG BUILDING CTR CENTER ELECTRIC PNEUMATIC GENERATOR MDC MAIN DISTRIBUTION CENTER MANUFACTURER'S ASSOCIATION PR SPEAKER TTC TELEPHONE TERMINAL CABINET EQUIP EQUIPMENT MAIN DISTRIBUTION PANEL NON-FUSED SAFETY DISCONNECT PRI PRIMARY WIRE GUARD INTERRUPTER BUILDING MANAGEMENT SYSTEM CU COPPER GROUND FAULT CIRCUIT INTERRUPTER IR INFRARED MDP SPARE TELEVISION AIR HANDLING UNIT CONDUIT DCP DOMESTIC WATER CIRCULATING EWC ELECTRIC WATER COOLER GFP GROUND FAULT PROTECTOR INTERLOCK WITH MFR PROJ PROJECTION SURFACE RACEWAY TVTC TELEVISION TERMINAL CABINET MANUFACTURER WATER HEATER CABINET PUMP MFS MAIN FUSED DISCONNECT SWITCH NOT IN CONTRACT PRV POWER ROOF VENTILATOR STAINLESS STEEL TYP WITHOUT ALUMINUM CAB EXIST EXISTING GROUND J-BOX JUNCTION BOX NIC W/O CAT CATALOG UC ALTERNATE DEPARTMENT EXH EXHAUST GALVANIZED RIGID STEEL (CONDUIT) K۷ KILOVOLT MANHOLE NIGHT LIGHT POTENTIAL TRANSFORMER SSW SELECTOR SWITCH UNDER COUNTER WP WEATHERPROOF STOP/START PUSHBUTTONS UE UNDERGROUND ELECTRICAL AMP AMPERE CATV CABLE TELEVISION DET DETAIL EXP EXPLOSION PROOF GYP BD GYPSUM BOARD KVA KILOVOLT-AMPERE MIC MICROPHONE NORMALLY OPEN PVC POLYVINYL CHLORIDE (CONDUIT) S/S XFMR TRANSFORMER N.O. KVAR KILOVOLT-AMPERE REACTIVE AMPL AMPLIFIER CB CIRCUIT BREAKER DIAMETER FIRE ALARM HOA HANDS-OFF-AUTOMATIC SWITCH MINIMUM NORMAL POWER FACTOR PWR POWER UNDERGROUND XFR TRANSFER ANNUN ANNUNCIATOR CCTV CLOSED CIRCUIT TELEVISION DISC DISCONNECT FABP FIRE ALARM BOOSTER POWER HORIZ HORIZONTAL KW KILOWATT MISC MISCELLANEOUS NTS NOT TO SCALE QUAN QUANTITY STD STANDARD UNIT HEATER KILOWATT HOUR RCPT RECEPTACLE CKT DIST MLO SURF SURFACE MOUNTED UT APPROX APPROXIMATELY CIRCUIT DISTRIBUTION SUPPLY PANEL HORSEPOWER KWH MAIN LUGS ONLY OH OVERHEAD UNDERGROUND TELEPHONE FIRE ALARM CONTROL PANEL LOCATE OR LOCATION AQ-STAT AQUASTAT CLG CEILING HPF HIGH POWER FACTOR MMS MANUAL MOTOR STARTER OHD OVERHEAD DOOR REQD REQUIRED SW SWITCH UTIL UTILITY DOWN LOC ARCH ARCHITECT, ARCHITECTURAL COMB COMBINATION DPR DAMPER FCU FAN COIL UNIT HEIGHT LT LIGHT MOA MULTIOUTLET ASSEMBLY OL OVERLOADS RM ROOM SWBD SWITCHBOARD

RACEWAY LEGEND ONE LINE DIAGRAM LEGEND CABINET LIGHTING FIXTURE GFI RECEPTACLE, MOUNTED 18" AFF, UNLESS OTHERWISE NOTED ADJACENT TO SYMBOL "WP" = WEATHERPROOF S TOGGLE TYPE LIGHT SWITCH YG1 N-GROUND LIGHTING FIXTURE TYPE "YG1." REFER TO LIGHTING FIXTURE SCHEDULE ON DRAWING E601



TYPICAL DIRECT BURIED MULTIPLE CONDUIT DETAIL

NOT TO SCALE



ELECTRICAL CABINET ENCLOSURE DETAIL

MANUFACTURER EQUIPMENT SIZES PRIOR TO SUBMITTING THE CABINET FOR

APPROVAL. PROVIDE A SCALED DRAWING SHOWING ALL EQUIPMENT.

NOT TO SCALE

GENERAL ELECTRICAL NOTES

- 1. DRAWINGS ARE DIAGRAMMATIC ONLY. THE EXACT LOCATION, MOUNTING HEIGHTS, SIZE OF EQUIPMENT AND ROUTING OF RACEWAYS SHALL BE COORDINATED AND DETERMINED IN THE FIELD.
- 2. ALL STRAIGHT FEEDER, BRANCH CIRCUIT AND AUXILIARY SYSTEM CONDUIT RUNS SHALL BE PROVIDED WITH SUFFICIENT PULL BOXES TO LIMIT THE MAXIMUM LENGTH OF ANY SINGLE CABLE PULL TO 150 FEET. EXACT SIZES OF PULL BOXES AND LOCATIONS TO BE DETERMINED IN THE FIELD BY THE ELECTRICAL CONTRACTOR.
- 3. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR AS APPLICABLE AS TO THE EXACT LOCATION OF THEIR RESPECTIVE EQUIPMENT; THE POWER WIRING, CONTROL WIRING AND ALL ELECTRICAL CONNECTIONS AND CONDUIT TURN-UPS SHALL BE COORDINATED WITH THE RESPECTIVE CONTRACTORS BEFORE THE START OF CONSTRUCTION IN THE FIELD.
- 4. SLEEVES ARE TO BE UTILIZED FOR PASSAGE OF CONDUITS THROUGH FLOORS OR WALLS. CONDUITS AND BOXES ARE TO BE SUPPORTED BY THE USE OF PRESET FASTENERS INSTALLED IN FLOORS, WALLS OR COLUMNS. CONDUITS AND BOXES ARE TO BE INSTALLED CONCEALED IN MASONRY WALLS AND ABOVE HUNG CEILINGS. ALL SLEEVES ARE TO BE SEALED WITH APPROVED FIRE STOPPING SEALANT.
- 5. COMBINED HOMERUNS OF TWO (2) OR THREE (3) CIRCUITS MAY BE UTILIZED. HOWEVER, THE NEUTRAL CONDUCTOR IS TO BE INCREASED TO #10AWG. COMBINED HOMERUNS ARE TO BE LIMITED TO 20A, LIGHTING AND POWER CIRCUITS
- 6. WORK SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE WITH MASSACHUSETTS AMENDMENTS, MASSACHUSETTS BUILDING CODE, NFPA AND REQUIREMENTS OF LOCAL AUTHORITIES HAVING JURISDICTION.
- 7. THE WORD "CONTRACTOR" AS USED IN THE "ELECTRICAL WORK" SHALL MEAN THE ELECTRICAL CONTRACTOR.
- 8. CONTRACTOR SHALL PAY FOR ALL PERMITS, INSURANCE AND TESTS, AND SHALL PROVIDE LABOR AND MATERIAL TO COMPLETE THE ELECTRICAL WORK SHOWN.
- 9. EXCEPT AS OTHERWISE NOTED, THE ELECTRICAL WORK SHALL INCLUDE PANELBOARDS, CIRCUIT BREAKERS, FEEDERS, WIRING, RACEWAYS AND CONNECTION NECESSARY TO OPERATE MOTORS AND OTHER EQUIPMENT.
- 10. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY LIGHTING AND POWER AND THE GENERAL CONTRACTOR SHALL PAY ALL ENERGY CHARGES FOR TEMPORARY POWER AND LIGHTING.
- 11. DURING CONSTRUCTION, THE ELECTRICAL CONTRACTOR SHALL KEEP HIS PORTION OF THE WORK NEAT, CLEAN AND ORDERLY.
- 12. ALL SYSTEMS SHALL BE TESTED FOR SHORT CIRCUIT AND GROUNDS PRIOR TO ENERGIZING AND ANY DEFECTS SHALL BE CORRECTED.
- 13. COMPLETE SHOP DRAWINGS SHALL BE SUBMITTED FOR ELECTRICAL EQUIPMENT. WHERE SPECIFIED ELECTRICAL EQUIPMENT IS SUBSTITUTED, THE ELECTRICAL CONTRACTOR SHALL SUBMIT COMPLETE SPECIFICATIONS ON THE SUBSTITUTE AS WELL AS THE ITEM ORIGINALLY SPECIFIED.
- 14. MATERIALS SHALL BE SPECIFICATION GRADE AND UL LISTED.
- 15. WHERE MATERIAL IS CALLED OUT IN THE LEGEND BY MANUFACTURER, TYPE OR CATALOG NUMBER, SUCH DESIGNATIONS ARE TO ESTABLISH STANDARDS OR DESIRED QUALITY. ACCEPTANCE OR REJECTIONS OF PROPOSED SUBSTITUTIONS SHALL BE SUBJECT TO THE APPROVAL OF THE OWNER.
- 16. WORK SHALL BE COORDINATED WITH THAT OF OTHER TRADES TO ELIMINATE INTERFERENCES.
- 17. ELECTRICAL WORK SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL COMPLETION.
- 18. WORK SHALL BE GROUNDED IN ACCORDANCE WITH CODE REQUIREMENTS. COMPLETE EQUIPMENT (INSULATED GREEN WIRE) GROUNDING SYSTEM SHALL BE INSTALLED.
- 19 WIRING METHODS:
- 19. WIRING METHODS:A. EXTERIOR UNDERGROUND FEEDERS SHALL BE PVC SCHEDULE 80 FOR DIRECT BURIED AND PVC SCHEDULE 40 FOR CONCRETE ENCASED.
- B. EXTERIOR ABOVE GRADE FEEDERS SHALL BE RGS CONDUIT.C. INTERIOR FEEDERS EXPOSED SHALL BE RGS CONDUIT.
- 20. CONDUIT AND TUBING SHALL BE SUPPORTED ON GALVANIZED WALL BRACKETS. TRAPEZE HANGERS OR PIPE STRAPS SECURED BY MEANS OF TOGGLE BOLTS OR INSERTS IN WOOD CONSTRUCTION.
- 21. FEEDER TAPS WILL NOT BE ALLOWED IN PANELBOARD GUTTERS.
- 22. CONTRACTOR SHALL CHECK EXISTING CONDITIONS TO DETERMINE EXACT EXTENT OF WORK TO BE PERFORMED PRIOR TO BIDDING. DIMENSIONS RELEVANT TO EXISTING WORK SHALL BE VERIFIED IN THE
- 23. IN AREAS NOT AFFECTED BY THIS RENOVATION, THIS SUBCONTRACTOR SHALL MAINTAIN CONTINUITY OF ELECTRIC SERVICE.
- 24. WHERE CONNECTIONS ARE MADE IN EXISTING PANELS, THE PANEL INDEX SHALL BE REVISED TO INDICATE THE NEW LOADS SERVED. NEW CIRCUIT BREAKERS ADDED TO EXISTING PANELS SHALL BE THE SAME FRAME SIZE, VOLTAGE RATING AND INTERRUPTING CAPACITY AS EXISTING PANEL AND CIRCUIT BREAKERS.
- 25. ELECTRICAL SHUTDOWN SHALL BE AT A TIME AND DATE APPROVED BY THE OWNER.
- 26. PROVIDE AS-BUILT "CADD" DRAWINGS AT THE COMPLETION OF THE PROJECT.
- 27. ELECTRICAL CONTRACTOR SHALL LABEL ALL ELECTRICAL DEVICES INCLUDING BUT NOT LIMITED TO RECEPTACLES, PANELBOARDS, CONTROL PANELS, JUNCTION BOXES, ETC.
- A. RECEPTACLES PANEL NAME AND CIRCUIT DESIGNATION
- B. PANELBOARDS PANEL NAME, VOLTAGE, AMPERAGE, PHASE AS WELL AS PANEL AND CIRCUIT IT IS FED FROM.
- C. CONTROL PANEL PANEL NAME AND CIRCUIT DESIGNATIOND. JUNCTION BOXES PANEL NAME AND CIRCUIT DESIGNATION
- 28. ADDRESS QUESTIONS TO THE ENGINEER IN WRITING BEFORE AWARD OF CONTRACT, OTHERWISE ENGINEER INTERPERTATION OF MEANING AND INTENT OF DRAWINGS SHALL BE FINAL.

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Consultants:

Revisions:		

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BID DOCUMENTS

: AS NOTED

Date: September 18, 2025
Drawn By: DCH
Reviewed By: RFM

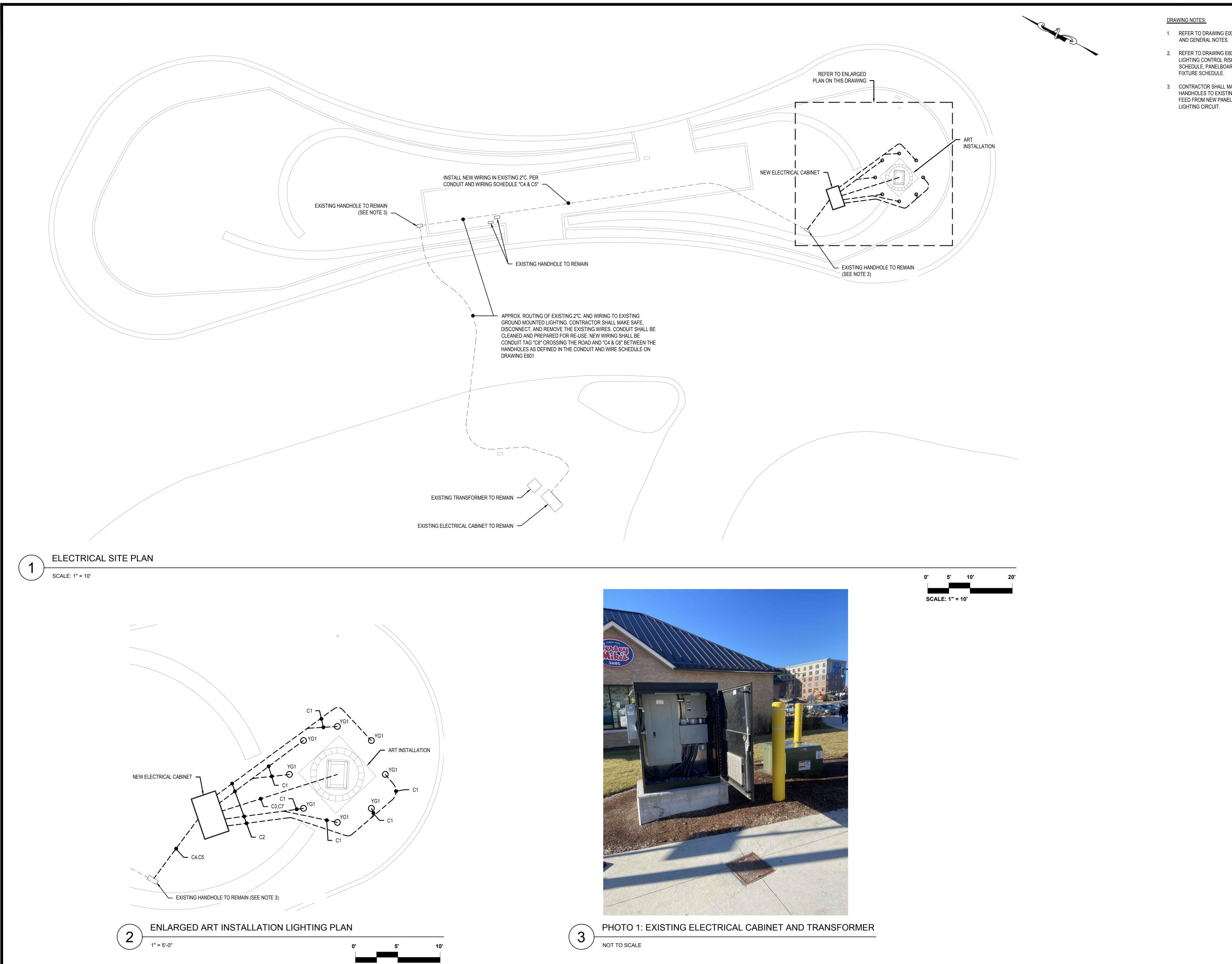
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W&S File No.:

Approved By:

ELECTRICAL LEGEND, ABBREVIATIONS, AND GENERAL NOTES

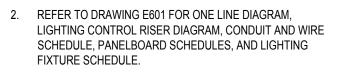
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E001



SCALE: 1" = 5'

1. REFER TO DRAWING E001 FOR LEGEND, ABBREVIATIONS,



3. CONTRACTOR SHALL MAINTAIN EXISTING WIRING FROM HANDHOLES TO EXISTING GROUND LIGHTS FOR BACK FEED FROM NEW PANELP2G1 TO EXISTING GROUND LIGHTING CIRCUIT.



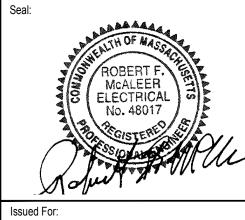
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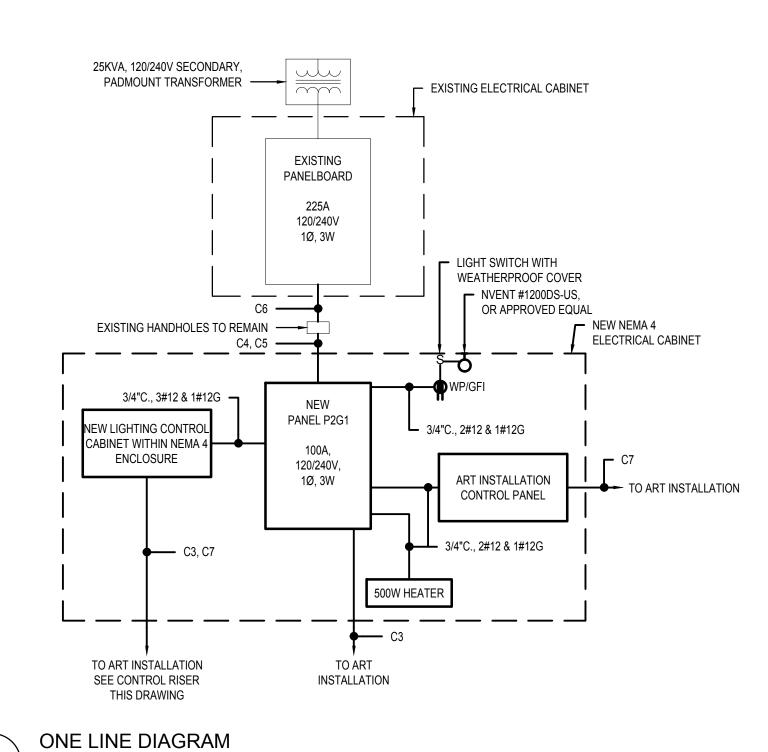
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September 18, 2025

W&S Project No.: ENG21-1211

ELECTRICAL SITE PLAN



NOT TO SCALE

		PAI	NELB(OAF	RD	SCHE	DULE	
	DES	IGNATION: EXISTING PANELBOARD	S.C. RAT	ING: EX	XISTIN	IG	REMARKS:	
		ATION: EXISTING ELECTRICAL ENCLOSURE	SERVICE	: 120/2	40V, 1	Ø, 3vv		
	RATI	ING: 225 A	MOUNTIN	NG: SU	RFAC	E		
	MAIN	N: 100 A MCB						
	CKT. NO.	LOAD DESIGNATION	CIRCUIT BREAKER	LO <i>A</i>	AD B	CIRCUIT BREAKER	LOAD DESIGNATION	CKT. NO.
	1	HARDING ST W OUTLETS	20			20	HARDING ST W LIGHTING	2
	3	HARDING ST W OUTLETS	20				HARDING ST W LIGHTING	4
	5	HARDING ST E OUTLETS	20			20	HARDING ST E LIGHTING	6
	7	HARDING ST E OUTLETS	20			20	HARDING 31 L LIGHTING	8
	9	KELLEY SQ N OUTLETS	20			20	KELLEY SQ N LIGHTING	10
	11	KELLEY SQ N OUTLETS	20			20	NEELET OWN LIGHTING	12
	13	KELLEY SQ S OUTLETS	20			20	KELLEY SQ S LIGHTING	14
CONTRACTOR SHALL MAKE SAFE AND DISCONNECT EXISITING WIRES ONNECTED TO EXISTING 20A-1P CIRCUIT BREAKER LABELED "GROUND	15	KELLEY SQ S OUTLETS	20			20	NEELET OQ O EIGITIIVO	16
	17	HARDING ST S OUTLETS	20			20	KELLEY SQ N LIGHTING	18
LIGHTING." EXISTING BREAKER SHALL BE RE-LABELED AS "SPARE"	19	SPARE	20			20		20
	21	CABINET LIGHT AND GFI	20			20	KELLEY SQ N LIGHTING	22
	23	CONTACTOR CONTROLS	20			20	NEELET OWN LIGHTING	24
	25	RRFB EAST	20			20	KELLEY SQ S LIGHTING	26
	27	RRFB MIDDLE	20				RELEET OF O FIGURES	28
	29	RRFB WEST	20			20	KELLEY SQ S LIGHTING	30
	31	PEANUT PEDESTAL	50				NEELET OG O EIGITIIGO	32
	33	FLANOTIEDEGIAE	30			20	HARDING ST S LIGHTING	34
	35	NEW PANEL P2G1	30				HARDING 31 3 LIGHTING	36
	37	NEW PANEL FZG1	30				SPACE	38
	39	SPACE					SPACE	40
	41	SPACE					SPACE	42
			JB-TOTAL					
			TOTAL		KVA			
		ESTIMATED DEMA	AD LOAD		KVA			
		TOTAL DEMAND CU	JRRENT	Α	MPS			
						•		

	PA	NELB	OAF	RD	SCHE	DULE	
DESIGNATION: NEW PANEL P2G1 S.C. RA				0,000 A	AIC	REMARKS:	
LOCATION: NEW ELECTRICAL		SERVICE	E: 120/:	240V, 1	Ø, 3W		
	ING: 100 A	MOUNTI					
MAIN	N: 60 A MCB	MOGIVII		J111710	_		
CKT.	LOAD	CIRCUIT	CUIT LOAD CIRCUIT			LOAD	CK ^T NO
NO.	DESIGNATION	BREAKER	Α	В	BREAKER	DESIGNATION	
1	ART INSTALLATION	20	0.80		20	SPARE	2
3	SPARE	20		1.92	20	CABINET LIGHT AND GFI	4
5	CABINET HEATER	20	0.50		20	SPARE	6
7	POE NETWORK SWITCH	20 1.00		20	DMX CONTROLLED RELAY	8	
9	EXISTING GROUND LIGHTING	20			20	ART INSTALLATION CONTROL PANEL	10
11	SPACE	20			20	SPACE	12
13	SPACE	20			20	SPACE	14
15	SPACE	20			20	SPACE	16
17	SPACE	20			20	SPACE	18
	S	UB-TOTAL	1.30	2.92			
		TOTAL	4.22	KVA			
	ESTIMATED DEM	AD LOAD	3.80	KVA			
	TOTAL DEMAND C	URRENT	15.8	AMPS			

CONDUIT AND WIRE SCHEDULE									
CONDUIT TAG	FEEDER	FROM	ТО	REMARKS					
C1	1"C., REFER TO LIGHITNG CONTROL RISER DIAGRAM ON THIS DRAWING	DMX DRIVER	FIXTURE YG1	DIRECT BURIED					
C2	(2) 1"C., REFER TO LIGHTING CONTROL RISER DIAGRAM ON THIS DRAWING	DMX DRIVER	FIXTURE YG1	DIRECT BURIED					
C3	1"C., 2#12 & 1#12G	P2G1-1	ART INSTALLATION	DIRECT BURIED					
C4	2"C., WIRING TO MATCH EXISTING GROUND LIGHTING WIRING IN SIZE AND TYPE	P2G1-9	EXISTING HANDHOLE	DIRECT BURIED					
C5	1"C., 3#6 & 1#10G	EXISTING HANDHOLE	PANEL P2G1 MAIN	DIRECT BURIED					
C6	3#6 & 1#10G INSTALLED IN EXISTING 2"C.	EXISTING ELECTRICAL CABINET PANEL CKT NO. 35,37	EXISTING HANDHOLE	NEW WIRES IN EXISTING CONDUIT					
C7	1"C., EMPTY WITH NYLON PULLSTRING	ART INSTALLATION CONTROL PANEL	ART INSTALLATION	DIRECT BURIED					

	LIGHTING FIXTURE SCHEDULE										
FIXTURE TYPE	DESCRIPTION	MANUFACTURER	LAMP TYPE	VOLTAGE	LOAD	MOUNTING	NOTES				
YG1	GROUND RECESSED ASYMMETRIC UPLIGHT, IP68, NOMINAL 2.25" DIAMETER, REMOTE DRIVER	ERCO #B2000328	LED 137 LUMENS 3000K	120	3W	IN-GRADE					

ALL COMPONENT TO BE INSTALLED IN A NEMA 4 ENCLOSURE AND INSTALLED WITHIN THE NEW ELECTRICAL CABINET CONTROL 8 P1 P2G1-7 P1 LINE VOLTAGE, 20A, 120V 1"C., 2#12 & 1#12G P2 LINE VOLTAGE, 10A, 120V 1"C., 2#12 & 1#12G (CONTROLLED VIA RELAY) P3 LOW VOLTAGE, 24V (INSTALLED IN 1" CONDUIT) POE CAT 6 ETHERNET WITH POE CONTROL 2 DMX, BELDEN #9729 OR EQUAL CONTROL 1 TIME CLOCK CONTROL 2 TYPE CONTROL 2 DMX GATEWAY TYPE CONTROL 8 PoE NETWORK SWITCH CONTROL 8 CONTROL 13 (DRIVER 1) CONTROL 14 TYPE CONTROL 9 BUTTON STATION CONTROL 9 CONTROL 13

TYPE CONTROL 13

DMX DRIVER FOR TYPE YG1 CONTROL 14

TYPE CONTROL 14

DMX-CONTROLLED RELAY CONTROL 13 (DRIVER 2) CONTROL 14 CONTROL 13 (DRIVER 3) CONTROL 14 CONTROL 13 (DRIVER 4) CONTROL 14

LIGHTING CONTROL RISER DIAGRAM NOT TO SCALE

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W&S Project No.: ENG21-1211

ELECTRICAL SCHEDULES AND DIAGRAMS