	DIVISION 16 - ELECTRICAL	A. Refer to individual Sections of Division 16.	sherardized.	"SWD".	c. Furnish and install all wiring from the current source to all
	SECTION 16010		3. Flexible conduit shall be Greenfield type except, where exposed to	2. Circuit breakers shall be as manufactured by Cutler Hammer, Square	starters and from starters to motors, except in the case of factory
PART 1	GENERAL PROVISIONS	3.01 INSTALLATION/APPLICATION/PERFORMANCE/ERECTION A. Excavating and Backfilling:	4. Conduit Fittings:	utilized, new circuit breakers shall be provided of type, size, manufacturer	all prewired equipment. Wire to the line side of
1.01	RELATED DOCUMENTS	1. The Electrical Contractor shall do all excavating and backfilling	a. Rigid & IMC: Threaded.	and AIC rating to match existing.	d. Furnish and install a disconnect switch ahead of all prewired
	A. The General Conditions, Supplementary Conditions, and General Requirements	required for the installation of any and all parts of his work requiring	b. Thin-Wall: Compression Type.	M. Motors, Control Panels, Etc., Furnished by Others:	package equipment. Coordinate with Mechanical Trades Contractor.
1.02	DESCRIPTION	the installation of his work. He shall provide and operate pumping	used.	work to ascertain what equipment is furnished by others. It will	furnished under other Sections of the Specifications or by the
	A. This Section defines the General Provisions which are common to all Sections	equipment, if required, to keep the trenches free of standing water.	5. Conduit shall be as manufactured by Allied, National Electric, Republic	be this Contractor's responsibility to furnish the necessary labor	Owner. Locations of electrical outlets for this equipment are
	of Division 16.	All work shall comply with requirements given in Section 02200.	or Triangle.	and materials to receive and wire said equipment. Check the Plumbing	indicated on the Drawings in their approximate locations. The
	1. All electrical work herein specified and/or shown on Drawings unless	rock, if encountered. Contractor shall visit the premises and determine	or International Metal Hose.	for wiring by the Electrical Contractor.	accurately locating all roughing-in required for his equipment.
	noted otherwise.	for himself, by actual observations, boring, or other means, the nature	7. Minimum conduit size is 3/4". Contractor shall utilize larger	N. Motor Starters: Furnish, install, and wire all motor starters as shown	f. Receive, set and align motors which are shipped loose if local
	2. Installation shall be complete from location designated by the Electric	of the soil conditions. The cost of all such inspections, boring,	conduits where required and/or specified.	on Drawings. Characteristics are as follows:	union or trade jurisdiction practice requires doing so. Revuide all control circuit and interlock wiring and connections
	of motors, fixtures, devices, apparatus or pieces of equipment, unless	3. All excavations are to be so conducted that no walls or footings	1. All wire shall be type THHN/THWN copper.	magnetic across the line as scheduled on the Drawings. Each starter	for all mechanical equipment as indicated and scheduled on the
	modified by Drawings or these Specifications.	shall be disturbed or injured in any way.	2. Wire smaller than # 10 shall be solid; # 10 and larger, stranded.	shall have H.O.A. feature and 120 volt control transformer.	Drawings.
	3. The Electrical Drawings and Specifications shall be understood to	4. Remove all surplus earth not needed for filling and dispose of same	3. Where light fixtures are wired in continuous rows, wire pulled through	2. Each starter for 120 volt motors as shown shall be in NEMA 1 enclosure	2. If a disconnect switch is required by the enforcing code and not
	cover complete operating system. The Drawings and Specifications	as specified under architectural division of work.	fixtures shall be type SF2.	and of the thermal toggle type. Where pilot lights are indicated,	indicated on the Drawings or in the Specifications, it shall be furnished
	and not specified shall be performed or furnished as though mentioned	as is proper for the particular type of work.	 Final connections to heating equipment where shown, type SF2. Cable and wire shall be as manufactured by Alcoa, Anaconda, General 	where starters are shown in finished areas.	3. Where specific locations of switches and starters are not shown on
	in both Drawings and Specifications.	6. Where it is necessary to install work in or across roads, pavements,	Cable, Triangle, Simplex, Hatfield, Bell, Alpha, and Coleman Cable	3. Starters shall be as manufactured by Cutler Hammer, Square D, or	the Drawings, these shall be placed near the motor.
	4. Minor items and accessories reasonably inferred as necessary to the	curbs, sidewalks, etc., this Contractor shall restore the present	and Wire.	General Electric or Siemens ITE.	C. Thermostats:
	complete and proper operation of any system, shall be provided by	construction to its original or better condition if disturbed by his	C. Color Coding: Color coding shall be used throughout the entire electrical	O. Floor boxes: Furnish, install, and wire all floor boxes as shown on Drawings.	1. Refer to energy management section of specifications for thermostat
	C. Description of Systems:	B. Application. Installation:	For 120/208V., 3PH, systems	1. Floor boxes shall be stamped steel with adjustable floor leveling	system.
	1. Complete power wiring to switchboard, panels, motorized equipment,	1. In the event that conflicts, if any, cannot be settled rapidly and	1. "A" Phase - Black - all gauges.	screws as manufactured by Wiremold 885B shallow service type.	2. Provide a 4" square backbox with plaster extension ring with 3/4"
	motors, equipment cabinets, and miscellaneous outlets.	amicably between the affected trades, with work proceeding in a workmanlike	2. "B" Phase - Red - through #6. Larger black with phase markers.	2. Provide Wiremold 895TCAL 5 1/4" carpet flange for all specialty floor	conduit and associated wiring from each thermostat to appropriate
	2. General wiring for power, lighting, and miscellaneous systems.	manner, then the Architect/Engineer shall decide which work is to	3. "C" Phase - Blue - through #6. Larger black with phase markers.	installations including hardwood floor applications.	mechanical equipment. Refer to wiring diagrams on drawings for additional
	4. Motor and equipment wiring.	Contractor.	5. Grounding Wire - Green, insulated.	PART 3 - EXECUTION	C. Conductors. Cables:
	5. General and emergency lighting and power systems.	2. No measurements of a Drawing by scale shall be used as a dimension	6. Isolated Ground wire - Green with yellow stripe	3.01 PREPARATION/INSTALLATION/APPLICATION	1. Except where otherwise shown on the drawings all wiring shall be
	6. Wiring of equipment furnished by others.	to work by. The Drawings are not intended to show complete or accurate	7. Control Wire - Colors other than above.	A. Conduit:	installed in conduit.
	 Motor Starters. Empty conduit system and backboxes for telephone system 	details of the building in every respect. Exact locations and relations are to be defined in the field and shall be satisfactory to the Architect/Engineer	D. Wire Pulling Lubricant: Use of wire pulling lubricant is optional; but, if peeded to provent damage to the conductors, it must be listed by Lindenwriters.	1. Installation - conduit: a Conduit to be run exposed in unfinished areas such as mechanical	2. Conductors and cables shall not be installed in conduit or raceways until same are free from moisture and debris
	9. Reconnection of all relocated electrical equipment (where applicable).	This Contractor shall take all field measurements and shall be responsible	Laboratories and be of such consistency that it will leave no obstruction	electrical room, stock rooms, and Urban Outfilters Sales floors.	3. Leave a minimum of six inch(6") length of cable and conductor slack
	10. Power and empty conduit system and backboxes for Owners security	therefore.	or tackiness that will prevent pulling out old wires or pulling in new	All other conduit shall be concealed. Provide trapeze support	at each outlet.
	system.	3. Compare Drawings and Specifications, checking all measurements and	wires or additional wires.	structure as detailed on electrical drawings to carry all exposed	D. Expansion Fittings:
	system.	to the Architect/Engineer's attention for interpretation prior to	E. Electrical Connections, Terminals and Splicing shall be in accordance with Section 110-14 of the NEC. Connection materials and equipment must	b. Run parallel or perpendicular to exterior walls of building.	ioints. Refer to Architectural drawings for locations.
	12. Power, empty conduit system, backboxes and wiring for Owners CCTV	any installation.	be given special attention when using dissimilar metal conductors, etc.	c. Locate to avoid equipment, fixtures, ductwork, piping, etc.	E. Prohibited wiring methods:
	system.	4. The right is reserved to make any reasonable change in location of	F. Outlet, Pull and Junction Boxes:	d. Layout and install work in advance of the laying of floors,	1. BX, AC, NM, NMC, NMS, UF, USE, SE, FCC.
	13. Power and empty conduit system and backboxes for Owners sound system.	. outlets and equipment prior to roughing-in without involving additional expense Any change from the Electrical Drawings as is percessary	1. Boxes shall be 12 gauge or heavier steel, sherardized or galvanized	wails, etc., and turnish and install all sleeves that may be required for openings through floors, walls, etc.	SECTION 16400
	14. Power and empty conduit system and backboxes for Owners telephone	to make the work of this Contractor conform to the building as constructed	 Pull boxes and pull fittings shall be accessible with removable covers 	e. Where conduit is to be run exposed, furnish and install all	SERVICE AND DISTRIBUTION
	system.	and to fit the work of other trades shall be included in Contractor's	secured with machine screws.	inserts and clamps for the supporting of conduit.	PART 1 - GENERAL
	15. Power and empty conduit system and backboxes for Owners Checkpoint	Contract and installed without extra cost.	3. Junction boxes shall be minimum 4" square or octagon, not less than	t. If contractor does not properly install all sleeves and inserts	1.01 RELATED DOCUMENTS
	 EAS System. 16. Fire, smoke, and heat detection system where required by local code 	A. Testina:	∠ ueep, ueeper it required by the number of wires or construction, with appropriate covers. Provide with 3/8" stud where lighting fixture.	later at his own expense, and to the satisfaction of the Architect	A. The General Conditions, Supplementary Conditions, and General Requirements apply to the Work specified in this Section
	authorities.	1. After wires are in place and connected to devices and equipment,	is suspended from box.	g. Do not obstruct openings or passageways.	B. Section 16010, "General Provisions - Electrical", applies to the work
	17. Energy management system.	the system shall be tested for shorts and grounds.	4. All switch and receptacle outlets shall be equipped with minimum	h. Where conduit passes through floors or through smoke and fire	specified in this Section
	18. Door bell system.	2. All hot wires, if shorted or grounded, shall be removed and replaced.	4" box. Gang boxes shall be provided where groups of switches occur.	walls, space between conduit and floor or wall shall be filled	1.02 DESCRIPTION
	timecard system.	If drop in potential is excessive, Contractor will be required to	heights shown on Drawings, or as directed. The approximate location	I. Radius of bends shall be not less than six(6) times internal	 Complete electrical service and secondarv distribution system.
	20. Temporary Electrical for construction.	correct the condition by locating partly grounded conductor or high	of outlet boxes is shown on the Drawings, but care shall be taken	diameter. Any run of conduit shall not include more than the	2. All charges by the Local Utility Company for construction related
	21. All other equipment, material, devices, accessories required and/or	resistance splice.	to install all outlets with proper relation to equipment or material	equivalent of four(4) quarter bends.	work. Owner charges will be paid by the Owner.
	Snown on the Drawings. D. Definitions - As used within the Contract Documents:	 All grounds, shorts and high resistance splices shall be rectified. Any wiring device electrical apparatus or lighting fixture furnished 	to be installed by other trades. Special outlets shall have proper	J. Sales noor of Urban Outflitters shall be completely hard piped with FMT MC cable or flexible conduit shall not be utilized except where	 System Grounding per the local Utility Company and the N.E.C. Main distribution panelboards and lighting panelboards as scheduled
	1. The term "Contractor" shall be understood to mean the Electrical	under this Contract, if grounded or shorted on any integral "live"	be or proper depth to allow conduit to be installed without cutting	specifically detailed. Layout of conduit must be reviewed with general	5. Utility approved current transformers and meter fittings.
	Contractor or Electrical Subcontractor.	part, shall be removed and the trouble rectified by replacing all	of shell of blocks, etc.	contractor and UO CPM to confirm layout is acceptable.	6. Utility Company transformer support pad and primary conduit(s).
	2. "Circuitry" shall mean any electric work (not limited to light and	defective parts or materials as directed.	5. Outlet boxes shall be as manufactured by Appleton, Steel City, Raco	Conduit routing on the sales floor is an aesthetic piece of the architectural	7. Complete secondary 120/208 volt, 3 phase, 4 wire or 277/480 volt,
	power distribution) which consists of wires, cables, raceways, and/or specialty wiring method assemblies taken all together complete with	6. Service ground to be tested per National Electrical Code requirement. Grounding pole of all receptacles to be tested	or Crouse-Hinds.	and construction manager prior to any installation of conduit on the	3 phase, 4 wire 60 hertz service from the secondary side of pad mounted transformer into the building main service overcurrent protective
	associated junction boxes, pull boxes, outlet boxes, joints, couplings,	7. All motors shall be tested under load with ammeter readings taken	shall be cast iron boxes, type "FS" or "FD", as manufactured by Crouse-Hinds,	sales floor.	device.
	splices and connections, except where limited to a lesser meaning	in each phase, and the RPM of motors recorded at the time. All motors	Appleton, Pyle National, Or Killark and provided with gasketed watertight	k. Provide expansion fittings for all conduits at expansion joints.	8. Tenant metering where shown and required.
	by specific description.	shall be tested for correct direction or rotation. Electrical Contractor	covers. Fittings shall be pull type with gasketed covers.	I. MC cable may be utilized within wall cavities and back of house areas where permitted by local code authorities.	PART 2 - PRODUCTS
	4. "Package Unit" shall mean an item of equipment having one or more	that proper overload devices have been installed.	# B2529 series steel shallow floor box with # SF3925 Brass Duplex	2. Cutting Conduit:	A. Main Distribution Panelboards:
	motors or other electric energy consuming elements integrally factory	8. All meters, instruments, cable connections, equipment or apparatus	flap cover. Provide S3925 where carpet flange is not required. Provide	a. Measure and cut conduit from job site conditions, not from Drawings.	1. Shall be as scheduled on the drawings.
	mounted on a single base, complete with all associated control devices	necessary for making all tests, shall be furnished by this Contractor	all necessary trim and adjustment components.	b. Conduit shall be cut square and butted solidly into fittings.	2. Panelboard shall be enclosed in steel cabinet of rigidity and gauge
	and Interconnecting wiring. 5 "Normal Electric Work Conditions" means locations within building	at his own expense. 9 Contractor shall submit proof of all tests to the Architect before	 Flush floor boxes in floors in contact with earth shall be shall Hubbell # B2524 cast iron series shallow floor box with # SE3925 	c. On rigid conduit, cut conduit full and clean with sharp dies. Ream ends of nine after cutting and before assembly to remove	of steel per UL Standard #50 for cabinets.
	confines which are neither damp, wet, nor hazardous, and which are	final acceptance of the work.	Bras Duplex flap cover with integral carpet flange. Provide S3925	burrs.	Electric and Square D.
	not used for air handling.	3.03 ADJUST AND CLEAN	where carpet flange is not required. Provide all necessary trim and	d. Ream thin-wall conduit (EMT) after it is cut.	4. Bus structure shall be copper not exceeding density of 1000 amps
	6. "Raceway" shall mean any pipe, duct, extended enclosed, or conduit	A. Cleaning Equipment, Completed Work and Premises: After the completion	adjustment components.	3. Liquid Tight and Flexible Conduit:	per square inch of cross section. Buss supports shall be adequate
	and which is of such nature as to require that the wires be installed	all paint, oil and other foreign material. Contractor shall also clean	8. Flush mounted poke through devices shall be Hubbell # PT/FSDBRS2A with standard prewired duplex recentacle and brass duplex flap cover	that liquids tend to run off the surfaces and not drain toward	5. Provide with a copper ground bus. The ground bus shall be fastened
	by a "pulling in" procedure.	all foreign paint, grease, oil, dirt, labels and stickers, etc., from all	with carpet flange. Utilize Hubbell # PT7IGFSDBRSA with isolated	the fittings.	and bonded to the framing member in an approved manner. The ground
	7. "Concealed" (as applied to circuitry) means covered completely by	fixtures, equipment, etc. The Contractor shall remove all rubbish, debris,	ground prewired duplex receptacle and brass duplex flap cover with	b. All runs of flexible conduit shall be as short as practical,	bus shall be grounded in a manner meeting all code requirements.
	building materials, except for penetrations(by boxes or fittings)	etc., accumulated from his operations from the premises.	carpet flange.	of the same size as the conduit it extends and with enough slack	6. Panelboard shall be braced for short circuit capacities as scheduled
	specified accessibility requirements. Unless directed otherwise.	payment is made demonstrate and explain to the Using Agency's personnel.	 Utilize one piece poke through device with single 3/4" knockout for cashwrap power feeds where appropriate _ Provide Hubbell # PT7EESDGY 	flexible conduit shall be installed.	42.000 A.I.C. symmetrical.
	all outlet boxes in walls are to be concealed.	the function, operation and maintenance of all equipment and systems installed	10. Utilize large capacity poke through device with single 2" knockout	c. Where the fittings are brought into an enclosure with a knockout,	7. Each circuit breaker shall be equipped with an approved nameplate
	E. Fees and Permits:	by this Division of the work and provide a copy of all tests performed.	for cashwrap low voltage feeds where appropriate. Provide Hubbell	an insulated throat type fitting with liquid sealing "O" ring	which indicates the name of the equipment (motor, panelboard, etc.)
	 Obtain all permits and pay all inspection fees required for the complete electrical system 	C. Protect all equipment and systems against harmful exposures to, or accumulations of dust and moisture, flooding, corresion or other forms of damage and	# PT2FIT with adapter from 2" knockout to 1 1/4" conduit.	shall be used. d Elexible metal conduit shall be installed for all final equipment	to which the feeder conductors are connected. B Building Metering: For metering furnish and install on the C/T compartment
1.03	QUALITY ASSURANCE	clean and restore damaged finishes as may be required to place installations	1. Switches shall meet NEMA enclosed switch standards KS1, current edition.	connections to transformers, light fixtures (lay-in type) and	or on the exterior wall a mounting panel with all meter accessory equipment
	A. Qualifications:	in a "like-new" condition before acceptance by the Architect.	Switches shall be quick-make, quick-break so that operation of the	all other devices where so required.	for mounting thereon the associated Utility Company's meter requirements.
	1. Only new products will be acceptable unless otherwise noted.	3.04 SCHEDULES	contacts shall not be capable, during normal operation of the switch,	4. Type of Conduit:	C. Lighting and Appliance Panelboards:
	workmen who are skilled in their respective trades.	motor and equipment connections, switchboard, panelboards, distribution	of being restrained by the operating handle after the opening or closing of the contacts has started	a. The following areas shall be galvanized steel heavy wail conduit or IMC:	breakers, bolt-on branch breakers, spares and spaces as scheduled.
	3. All equipment, material, fixtures, devices, articles, accessories	equipment, and related items.	2. All safety switches shall be heavy duty of voltage matching equipment	1) In earth fill.	Ground fault interrupter (GFI) circuit breakers shall be provided
	or products included in the Contract shall be of the exact make, model	3.05 APPROVALS	served, NEMA 1 for indoor use and NEMA 3R for outdoor use. All switches	2) Exposed in wet areas.	where noted.
	or catalog number, size, form and of the characteristics specified.	A. Obtain all permits and approvals from the governing bodies which have iurisdiction over this project	shall utilize 75 C terminations. Switches shall be as manufactured	 3) Exposed outdoors (Provide watertight fittings & boxes). 4) Outside masonry walls 	2. Panels shall comply with U.S. Federal Specification WP115a, Type
	1. All electrical work shall be in accordance with the National Electrical	3.06 IDENTIFICATION AND TAGGING	H. Fuses: Furnish and install all fuses. Fuses shall be Bussman "Fusetron".	5) Within building confines run in concrete slab. Couplings	not exceeding 1000 amps per square inch.
	Code (N.E.C.), (check with local inspector for edition), and other	A. Provide all distribution switches and/or circuit breakers, starters, etc.	dual element, current limiting type, unless specifically noted otherwise.	for conduit run in poured concrete shall be concrete tight.	3. The Electrical Contractor shall balance all circuits within 10 %
	governing bodies which have jurisdiction over this project. 2 Where applicable, all fixtures, equipment and materials shall be	whether individually mounted in panelboards, switchboards, etc., with suitable identification. The designation using proper pomenclature, shall indicate	I. Switches:	D. Conduit run in dry areas within building contines shall be EMT. Dry areas are inside partitions, ceiling cavities and areas not	pnase to pnase. All conductors shall be continuous without splicing from last outlet to their terminals in cabinet. All circuit conductors
	as approved or listed by the following agencies:	the load served. Provide all feeders with suitable identification as to	in suitable outlet boxes in the walls, partitions, or as shown on	subject to damage. Outside walls are not considered drv areas.	in cabinet shall be installed with sufficient amount of length to
	a. Factory Mutual Laboratories.	their designation in all junction boxes, pull boxes, gutter spaces through	Drawings.	5. Supporting of Conduit:	reach the most remote breaker connection from its point of entrance.
	b. National Fire Protection Association.	which they pass, and at their terminal points of connection. Identification	2. Wall switches shall be located as indicated on the Drawings, arranged	a. All conduits must be independently supported from structure.	4. Panelboard fronts shall be fabricated from a flat piece of full finished
	 onderwriters Laboratories, Inc. (UL) National Electrical Manufacturers Association (NEMA) 	or distribution switches or circuit breakers in panelboards shall be by means of panelboard directories. Identification of distribution switches	singly or in gangs and at the height specified or indicated and shall have proper covers with finishes specified bergin. Switches shall	hangers, mechanical piping or their hangers	code gauge sneet steel with door cut out leaving a trim of proper width around the door. Provide a latching mechanism controlled by
	e. Americans with Disabilities Act (ADA)	or circuit breakers and starters individually mounted or in switchboards	be as follows unless otherwise called for on Drawings or hereinafter	b. All surface run conduit one inch(1") and smaller shall be supported	a chrome plated vault-handle on doors twenty-four inches(24") or over
	C. Allowable Tolerances:	shall be by means of engraved lamacoid nameplates permanently fastened	specified. (Contractor shall check architectural drawings for additional	every five feet with one hole straps with clamp backs. Perforated	in height. All Locks to be keyed alike to the panel manufactures's
	dimensions, locations, partitions and walls, structural details, and	a black background. Identification of feed cables shall be by means of	a. Light switches shall be toggle 20amn 120/277 Volt Specification	c. Hangers shall be proportioned for the weight of the conduit(s)	5. Contractor shall provide a directory of circuits for cabinet. Directory
	location of mechanical pipes and ducts so that the electrical installation	engraved fiber tags suitably fastened to the cables.	grade.	supported. All rods, clamps and/or hangers shall be galvanized,	shall be typewritten designating room or equipment and circuit numbers.
	shall be in harmony with that of the other trades.	3.07 SLEEVES	b. SPST Hubbell #1221; P & S #20AC1; Leviton #1221	bonderized, plated or painted. Where factory supplied, with	Directory frame, lock, hinges, etc., are to be secured to inside of
	2. Exact size, location, and electrical requirements of equipment furnished by other trades and wired by this Contractor shall be obtained from	A. Frovide coring in wails and floor slabs for the passage of all conduits, pipes and ducts installed.	c. 3-way Hubbell #1223; P & S #20AC3; Leviton #1223 d 30A-SPST (Motor Disconnect): Hubbell #3031; P & S #30AC1; Lovit	ton threads are to be painted and covered with a grey finishing paint	are not visible on the door panel or trim
	the Drawings of the other trades. Report all discrepancies at time	B. Cored holes in floor shall be provided with sleeves extended one inch	#3031. Coordinate location with mechanical trades.	d. Trapeze type hangers may be used where several conduits occur	6. The width and height of cabinets shall be sufficient to provide a
4	of bidding.	above finished floor level and made watertight.	3. Verify door swings before installing switchboxes and install the	at the same elevation. The spacing of such trapeze hangers shall	wiring gutter at the two sides and at the top and bottom of not less
1.04	SUBMITTALS	3.08 PAINTING	boxes on the latch side of the door unless otherwise directed by the	be determined by the electrical code spacing requirements for the smallest conduit in the run	than 4". Additional width or height shall be provided, if required
	to the general contractor a minimum of 3 weeks prior to the start of any	in baked enamel or lacquer. or as specified. Standard factory finishes	Architect. 4. Color of devices shall be black where installed on box car wood siding	e. Approved type inserts for support of work in cast or concrete	if required for main or sub-feeder cables passing through to feed
	construction.	shall be approved. Any scratches shall be neatly touched up by the installing	or ceilings and white where installed on drywall finished. Coordinate	construction.	other cabinets.
	B. Shop drawings shall consist of installation, maintenance and operating	Contractor.	all finishes with architect prior to ordering.	f. Approved type steel beam clamps in the case of steel construction.	7. Where 2 or 3 pole breaker units are called for, they shall be one
	 1. Submit cut sheets of all devices 	D. All metal work installed by this Contractor exposed to the weather and not factory finished shall be painted with two coats of oil paint of color	J. Receptacles: 1 Recentacle shall be located as shown on the Drowings and at the baiabte	 where noises or recesses must be cut in Walls, floors, cellings, or any part of the building to admit apparatus, conduit or other work 	unit with common trip and not single pole units with handle ties. Capacity of main busses shall be as shown on the Drawings
	2. Provide shop drawings for all distribution equipment including panelboards.	selected by Architect.	specified or indicated. Receptacle and power outlets shall be of	of this Contractor, he must have it done by a competent mechanic in	8. Provide with a copper ground bus. The ground bus shall be fastened
	transformers, disconnects and starters.	C. All finish painting shall comply with the Painting Section of the Specifications.	the grounding type and as manufactured by Hubbell, Pass & Seymour,	a neat and workmanlike manner. The portions cut must be restored	and bonded to the framing member in an approved manner. The ground
1 05	ع. ⊢ire alarm equipment and diagrams in accordance with section 16721. APPROVAL DRAWINGS	3.09 CUTTING AND PATCHING A Perform all cutting and patching required to complete the Work, except	or Leviton.	to their original condition at the expense of this Contractor. This Contractor shall provide for all of his own outfing and patching	bus snall be grounded in a manner meeting all code requirements.
	A. Prepare and submit for approval to local code authorities such additional	where specifically shown on the Architectural or Structural Drawings.	designation 5-20R) Specification Grade.	7. All conduits run in or below any grade slab shall be heavy wall conduit	on the panel schedules. The ground bus shall be isolated from the
	electrical drawings, diagrams, and specifications as are required by:	B. Refer to Section 01070 for additional requirements.	a. Pass & Seymour #5362	and entirely encased in 2" of concrete. In no case shall conduit	framing member in an approved manner. The ground bus shall be grounded
	1. Local Fire Prevention Bureau	3.10 TEMPORARY ELECTRIC SERVICE:	b. Leviton # 5362	be laid in fill below slab. Conduit shown as plastic shall be schedule	in a manner meeting all code requirements. Provide an isolated ground
	 Local building Department - Electrical Inspection Section Local Utility Company Metering Department 	A. The electrical contractor shall provide temporary electrical wiring for construction use as follows:	c. Hubbell # 5362 3. Special Recentacles and Floor Roves: As indicated on Drawings	40. 8. 3/4"D. minimum conduit shall be utilized	conductor to point of service ground within raceway(s) containing feeder conductors.
1.06	EXAMINATION OF THE SITE	1. Temporary service entrance and feeder as required with a fused main	 4. Color of devices shall be black where installed on box car wood siding 	9. Provide:	10. Acceptable manufacturers are Cutler Hammer, Square D, General Electric
	A. All Contractors submitting proposals for this work are requested to visit	disconnect.	or ceilings and white where installed on drywall finished. Coordinate	a. Supplementary angles, channels, plates, etc., where supports	and Siemens ITE.
	the existing site. Failure to visit the existing site will in no way relieve the successful bidder from the necessity of furnishing any materials or	2. I ne electrical contractor shall provide temporary lighting and power throughout the space as required for construction use	all finishes with architect prior to ordering.	are required between building's structural members, spanning the space and attached to building structural members, by welding	TT. Panelboards shall be braced for short circuit capacities as scheduled by the local Utility Company with no less than 14,000 AIC for 277/490
	performing any work that may be required to complete work in accordance	3. Contractor shall utilize existing electrical utilities where ever	 oround radii circuit interrupter to be provided for receptacles outdoors, in toilet rooms, and within 6' of sinks 	bolting or with concrete anchors.	volt panelboards and 10,000 AIC for 120/208 volt panelboards. All
	with Drawings and Specifications without additional cost to the Owner.	feasible.	K. Switch and Receptacle Plates:	b. All rods, angles, rails, struts, brace plates, platforms, etc.	panelboards shall be fully rated for the available fault current.
1.07	PRODUCT DELIVERY, STORAGE, AND HANDLING	3.11 STRUCTURAL CONDITIONS:	1. Plates for switches and receptacles shall be thermoplastic type and	required for suspension or support of conduit and equipment.	Series rating of panelboards is not acceptable.
	A. Exercise care in ransporting and nandling to avoid damage to fixtures, equipment and materials.	conduit, boxes, etc need to be hund from structural steel, only hand from	or tinish to match outlet or device. 2. Provide multigang or combination plates for devices grouped in gang	 outaps, damps, threaded roos, turnbuckles, anchors, etc., and all miscellaneous specialties for the attachment of hangers and 	dutv type.
	B. Store materials on the site so as to prevent damage.	top flange of beams and top chords, and only panel points of joists and	or combination.	supports to the structure.	D. TRANSFORMERS
	C. Keep fixtures, equipment and materials clean, dry and free from deleterious	trusses.	3. Provide plate with separate spring type cover for each outlet of	10. Unless otherwise noted on the Drawings, the following shall apply:	1. All transformers shall be 115 degree C temperature rise above a 40 degree
	Conditions. D Where items of electrical equipment and/or materials are furnished by	SECTION 16100 BASIC MATERIALS AND METHODS	waterproof duplex receptacles mounted on FA or FD box. All outdoor	a. Convenience outlets shall be placed on separate circuits from motor and lighting outlets	C ambient. 2 Sound levels shall not exceed Nema Standards
	others for installation by Electrical Contractor. Electrical Contractor	PART 1 - GENERAL	L. Circuit Breakers:	b. Motors shall be placed on separate circuits from lighting outlets	 Sound levels shall not exceed metha standards. All windings shall be aluminum.
	will be held responsible for the unloading of such equipment and/or materials	1.01 DESCRIPTION	1. All circuit breakers serving lighting fixtures shall be switch rated	c. Convenience outlets shall not be installed back to back.	4. All transformers shall be energy star compliant and NEMA TP-1 rated for
	from the delivery truck. He shall check equipment and/or materials upon	A. This section defines the Basic Material and Methods which are common to		B. Motor and Equipment Wiring:	energy efficiency.
	receipt and notity party turnishing item of any damaged or missing equipment. He shall coordinate installation with Contractor providing equipment	all Sections of Division 16. PART 2 - PRODUCTS		 Unless indicated or specified elsewhere perform the following: a. Connect and wire to each motor and niece of electrically operated 	b. Provide a 6" concrete pad for floor mounting of each transformer. Provide a vibration isolation pad for each transformer
1.08	GUARANTEE	2.01 MATERIALS		equipment shown on the Drawings or as specified in these Specifications.	6. Provide a conduit with grounding electrode sized per NEC to point of service
-	A. Provide one year guarantee for all fixtures, equipment, materials and	A. Conduit:		b. Furnish, install and connect all starters, controller selector	ground.
	workmanship, upon final acceptance by Owner.	1. Electrical Metallic Tubing: EMT, "Thin wall" conduit shall in general		switches, pilot lights, pushbuttons' stations for each motor	7. Acceptable manufacturers are Cutler Hammer, Square D, General Electric and
2.01	MATERIALS	2. Heavy-wall steel conduit shall be either hot dipped galvanized or		or as specified in the Specifications, unless otherwise indicated.	



SHEET NO :

SPECIFICATIONS

BID/PERMIT

SHEET TITLE : ELECTRICAL

_____ _____

REVISION :

ISSUE / DATE: 100% CHECKSET

_____ 07-11-2014 08-01-2014 _____

HEI PROJECT NUMBER: R14-1941.000

NSA PROJECT NUMBER: 2013-99 PROJECT PHASE: CD

DRAWN BY: DJQ CHECKED BY: KLS/PJF

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