

LICENSE AGREEMENT

THIS Agreement ("License"), is made by and between DALLAS AREA RAPID TRANSIT ("Licensor"), a regional transportation authority, created, organized and existing pursuant to Chapter 452, Texas Transportation Code, as amended (the "Act") and City of Plano ("Licensee"), a Texas home rule municipal corporation acting herein by and through its duly authorized official, whose mailing address is P.O. Box 860358, Plano, Texas 75086.

Pursuant to an agreement between Licensor and Kansas City Southern Railway, (hereinafter the "Railroad"), freight railroad operations exist on Licensor's corridor.

1. **Purpose.** Licensor hereby grants a license (the "License") to Licensee for the purposes of installing, maintaining and operating two wayside horns and underground electric and signal control wire that will be inside an existing 3.5-inch PVC pipe encased inside a 6.625-inch steel casing pipe at E. Plano Parkway and US 75 (the "Permitted Improvement") crossing the Cotton Belt Line at Mile Post 590.19, (**Latitude: 33.009004, Longitude: -96.707105**) in Plano, Collin County, Texas, more particularly described as shown in Exhibits "A-1" through "A-8", dated August 22, 2019, attached hereto and incorporated herein for all pertinent purposes, (the "Property").

The Property shall be used by Licensee solely for the purpose of operating and maintaining the Permitted Improvement (the "Permitted Use"). Licensee's right to enter upon and use the Property shall be limited solely to the Permitted Use and the Permitted Improvement.

2. **Term.** This License shall begin on the date of the last signature upon this License Agreement and continue thereafter until terminated by either party as provided herein (the "Term"). It is the parties' current intention that this Agreement be ratified by the Licensee's council (Plano City Council) after the Agreement goes into effect. In the event it is not ratified on or before November 1, 2019, by the Council, Section 20 hereof will govern the parties.

3. **Consideration.** The consideration for the granting of this License shall be (a) **TEN AND NO/100 (\$10.00) DOLLARS** cash in hand paid by Licensee to Licensor, the sufficiency and receipt, of which is hereby acknowledged, and (b) the faithful performance by Licensee of all of the covenants and agreements undertaken by Licensee in this License.

4. **Non- Exclusive License.** This License is non-exclusive and is subject to (a) any existing utility, drainage or communication facility located in, on, under, or upon the Property owned by Licensor, any Railroad, utility, or communication company, public or private; (b) all vested rights presently owned by any Railroad, utility or communication company, located within the boundaries of the Property; and (c) any existing lease, license or other interest in the Property granted by Licensor to any individual, corporation or other entity, public or private.

5. **Design, Construction, Operation and Maintenance.** Licensor's use of the Property and adjoining property may include the use of electrically powered equipment. Notwithstanding Licensor's inclusion within its system of measures designed to reduce stray current which may cause corrosion, **Licensee is hereby warned that such measures may not prevent electrical current being present in proximity to the Permitted Improvement and that such presence could produce corrosive effects to the Permitted Improvement. Licensee waives any claim and releases Licensor with regard to any claim arising from such corrosion.**

5.01. All design, construction, reconstruction, replacement, removal, operation and maintenance of the Permitted Improvement on the Property shall be done in such a manner so as not to interfere in any

way with the operations of Licensor or other Railroad operations. In particular, cathodic protection or other stray current corrosion control measures of the Permitted Improvement as required shall be made a part of the design and construction of the Permitted Improvement.

5.02. During the design phase and prior to commencing any construction on the Property, a copy of the construction plans showing the exact location, type and depth of the construction, any cathodic protection measures and any working area, shall be submitted for written approval to Licensor and Railroad. Such approval shall not be unreasonably withheld. No work shall commence until said plans have been approved by Licensor.

5.03. Licensee agrees to design, construct and maintain the Permitted Improvement in such a manner so as not to create a hazard to the use of the Property, and, without waiver of immunities applicable to Licensee, further agrees to pay any damages which may arise by reason of Licensee's use of the Property.

5.04. Licensee covenants and agrees to institute and maintain a reasonable testing program to determine whether or not additional cathodic protection of its Permitted Improvement is necessary and if it is or should become necessary, such protection shall be immediately instituted by Licensee at its sole cost and expense.

5.05. **Licensor makes no warranty regarding subsurface installations on the Property. Licensee shall conduct its own inspection of same and will not rely on the absence or presence of markers.**

5.06. **Licensee shall provide to Licensor final construction drawings ("as-builts") that are signed and sealed by a Texas Professional Engineer within sixty (60) days after the last date of construction work on the Property by Licensee or Licensee's Contractor. Licensor and Licensee agree that it is impossible to determine the amount of damages in certain circumstances hereunder. Accordingly, the Parties agree, not as a penalty but as a measure of reasonable damages, that a fee of \$500 per month (prorated as applicable) represents reasonable compensation for Licensor's actual damages in lieu of receiving as-builts from Licensee within sixty (60) days of completion**

6. **Governmental Approvals.** Licensee, at its sole cost and expense, shall be responsible for and shall obtain, any and all licenses, permits, or other approvals from any and all governmental agencies, federal, state or local, required to carry on any activity permitted herein.

7. **Licensor's Standard Contract and Insurance.** No work on the Property shall be commenced by Licensee or any contractor for Licensee ("Contractor") until Licensee or Contractor shall have executed Licensor's Construction Agreement and Contractor's Right of Entry covering such work and has furnished insurance coverage in such amounts and types as shall be satisfactory to Licensor. A company-issued photo identification of Licensee's employees, contractors or agents shall be required to work on the Property.

7.02 Licensee shall provide to Licensor for Licensor's approval, r before commencing any work on the Property, a current certificate of insurance, certified by Licensee as accurate and evidencing the self-insurance coverage maintained by Licensee, which shall be extended by Licensee to cover the Property for general liability purposes. Licensee covenants to maintain said insurance coverage on the Property throughout the Term of this Agreement.

8. **Duty of Care in Construction.** Licensee shall and shall cause the Contractor to use reasonable care during the construction period and thereafter, to avoid damaging any existing buildings, equipment and vegetation on or about the Property and any adjacent property owned by or under the control of Licensor.

a) If the Licensee or its Contractor causes damage to the Property or any adjacent property, Licensee shall or shall cause the Contractor to immediately replace or repair the damage at no cost or expense to Licensor.

b) If Licensee fails or refuses to make or effect any such repair or replacement, Licensor shall have the

right, but not the obligation, to make or effect any such repair or replacement at the sole cost and expense of Licensee, which cost and expense Licensee agrees to pay to Licensor upon demand.

9. Environmental Protection.

9.01. Licensee shall not use or permit the use of the Property for any purpose that may be in violation of any local, state or federal laws pertaining to health or the environment, including but not limited to, the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), the Resource Conservation and Recovery Act ("RCRA"), the Clean Water Act ("CWA") and the Clean Air Act ("CAA").

9.02. Licensee warrants that the Permitted Use of the Property will not result in the disposal or other release of any hazardous substance or solid waste on or to the Property, and that it will take all steps necessary to ensure that no such hazardous substance or solid waste will ever be discharged onto the Property by Licensee or its Contractors.

9.03. The terms "hazardous substance" and "release" shall have the meanings specified in CERCLA and the terms "solid waste" and "disposal" (or "disposed") shall have the meanings specified in the RCRA; PROVIDED, HOWEVER, that in the event either CERCLA or RCRA is amended so as to broaden the meaning of any term defined thereby, such broader meaning shall apply subsequent to the effective date of such amendment; and PROVIDED FURTHER, that to the extent that the laws of the State of Texas establish a meaning for "hazardous substance", "release", "solid waste", or "disposal", which is broader than that specified in either CERCLA or RCRA, such broader meaning shall apply.

9.04. To the extent permitted by law, Licensee shall indemnify, defend and hold Licensor and Railroad harmless against all cost of environmental clean up to the Property resulting from Licensee's use of the Property under this License.

10. Mechanic's Liens Not Permitted. Licensee shall fully pay for all labor and materials used in, on, or about the Property and will not permit or suffer any mechanic's or materialmen's liens of any nature to be affixed against the Property by reason of any work done or materials furnished to the Property at Licensee's instance or request.

11. Maintenance of Completed Improvements. The Permitted Improvement shall be maintained by the Licensee in such a manner as to keep the Property in a good and safe condition with respect to Licensee's use.

a) In the event the Licensee fails to maintain the Property as required, upon discovery, Licensor shall notify Licensee of such occurrence in writing.

b) In the event Licensee shall not have remedied the failure within ten (10) days from the date of such notice, Licensor shall have the right, but not the obligation to remedy such failure at the sole cost and expense of Licensee. In the event Licensor exercises its right to remedy Licensee's failure, Licensee agrees to immediately pay to Licensor all costs incurred by Licensor upon demand.

12. Future Use by Licensor.

12.01. This License is made expressly subject and subordinate to the right of Licensor to use the Property for any purpose whatsoever.

12.02. In the event that Licensor shall, at any time subsequent to the date of this License, at its sole discretion, determine that the relocation of the Permitted Improvement shall be necessary or convenient for Licensor's use of the Property, Licensee shall, at its sole cost and expense relocate said Permitted Improvement so as not to interfere with Licensor's or Licensor's assigns use of the Property. In this regard, Licensor may, but is not obligated to, designate other property for the relocation of the Permitted Improvement. Licensor shall give a minimum of thirty (30) days written notice of any required relocation.

Licensee shall promptly commence to make the required changes thereafter and shall diligently complete the relocation as required within a reasonable period.

13. **Relocation Benefits.** The parties hereto agree that the construction of the Permitted Improvement on the Property shall be subsequent to the acquisition of the Property by Licensor and that Licensee does hereby waive any and all claim that it may have under the Act, or otherwise, regarding the payment of any and all relocation benefits and that all costs associated with any relocation of such Improvements shall be borne by Licensee.

14. **Duration of License.** This License shall terminate and be of no further force and effect (a) in the event Licensee shall discontinue or abandon the use of the Permitted Improvement; (b) in the event Licensee shall relocate the Permitted Improvement from the Property; (c) upon termination in accordance with paragraph 19 of this License, whichever event first occurs.

15. **Compliance With Laws and Regulations.** Licensee agrees to abide by and be governed by all laws, ordinances and regulations of any and all governmental entities having jurisdiction over the Licensee and by railroad regulations, policies and operating procedures established by the Railroad, or other applicable railroad regulating bodies, and Licensee agrees to indemnify and hold Licensor harmless from any failure to so abide and all actions resulting therefrom.

16. **INDEMNITY AND SHIFTING OF RISK.** TO THE EXTENT ALLOWED BY LAW, REGARDLESS OF FAULT OR OF ANY FAULT OR NEGLIGENCE OF LICENSOR, LICENSEE AGREES TO RELEASE, DEFEND AND INDEMNIFY DALLAS AREA RAPID TRANSIT AND ITS CONTRACTORS, EMPLOYEES AND AGENTS, AS WELL AS HERZOG TRANSIT SERVICES, INC., HERZOG TECHNOLOGIES, INC., AND RAILROAD (COLLECTIVELY "INDEMNITEES") FROM AND AGAINST ALL LOSS, DAMAGE, CLAIMS, COSTS, EXPENSES, INCLUDING ATTORNEY'S FEES, AND LIABILITY FOR BODILY INJURY TO OR DEATH OF ANY PERSONS AND LOSS OF OR DAMAGE TO ANY PROPERTY AND LOSS OF USE THEREOF, ARISING OUT OF, INCIDENT TO OR RESULTING FROM LICENSEE'S OR CONTRACTOR'S ENTRY ON THE PROPERTY OR ACTIVITY THEREON, INCLUDING ENTRY OR ACTIVITY BY LICENSEE'S EMPLOYEES, SUBCONTRACTORS, AGENTS OR INVITEES (COLLECTIVELY, TOGETHER WITH THE TERM LICENSEE, REFERRED TO HEREIN AS LICENSEE PARTIES") OR ARISING FROM LICENSEE PARTIES' PERFORMANCE OR FAILURE TO PERFORM UNDER THIS AGREEMENT, EVEN THOUGH CAUSED IN WHOLE OR PART BY A PRE-EXISTING DEFECT, THE NEGLIGENCE (WHETHER SOLE, JOINT OR CONCURRENT) OF ONE OR MORE INDEMNITEES. IN THE EVENT ANY PART OF THE PROVISIONS OF THIS SECTION ARE DETERMINED BY STATUTORY AUTHORITY OR JUDICIAL DECISION TO BE VOID OR UNENFORCEABLE, THEN THIS SECTION SHALL NOT FAIL IN ITS ENTIRETY, BUT WILL BE ENFORCEABLE TO THE EXTENT PERMITTED BY LAW. FOR THE PURPOSES OF THIS SECTION, THE TERM "RAILROAD" SHALL INCLUDE ANY OTHER RAILROAD COMPANY USING THE PROPERTY WITH DART'S CONSENT AND LESSEE OF DART.

17. **Termination of License.** At such time as this License may be terminated or canceled for any reason whatsoever, Licensee, upon request by Licensor, shall remove all improvements and appurtenances owned by it, situated in, on, under or attached to the Property, regardless of whether or not such improvements were placed thereon by Licensee, and shall restore the Property to a condition satisfactory to Licensor, at Licensee's sole expense.

18. **Assignment.** Licensee shall not assign or transfer its rights under this License in whole or in part, or permit any other person or entity to use the License hereby granted without the prior written consent of

Licensors which Licensor is **under no obligation to grant.**

19. **Methods of Termination.** This License may be terminated in either of the following ways:

19.01. By written agreement of both parties; or

19.02. By either party giving the other party thirty (30) days written notice.

20. **Miscellaneous.**

20.01. Notice. When notice is permitted or required by this License, it shall be in writing and shall be deemed delivered when delivered in person or when placed, postage prepaid, in the U.S. Mail, Certified, Return Receipt Requested, and addressed to the parties at the following addresses:

LICENSOR:	Dallas Area Rapid Transit	<i>OR</i>	
	1401 Pacific Avenue		P. O. Box 660163
	Dallas, Texas 75202-7210		Dallas, Texas 75266-7210
	ATTN: Railroad Management		

LICENSEE:	City of Plano
	P.O. Box 860358
	Plano, Texas 75086
	Attn: Director of Engineering

Either party may from time to time designate another and different address for receipt of notice by giving written notice of such change of address.

20.02. Governing Law. This License shall be construed under and in accordance with the laws of the State of Texas, with venue in Collin County, Texas.

20.03. Entirety and Amendments. This License embodies the entire agreement between the parties and supersedes all prior agreements and understandings, if any, relating to the Property and the matters addressed herein, and may be amended or supplemented only by a written instrument executed by the party against whom enforcement is sought.

20.04. Parties Bound. This License shall be binding upon and inure to the benefit of the executing parties and their respective heirs, personal representatives, successors and assigns.

20.05. Number and Gender. Words of any gender used in this License shall be held and construed to include any other gender; and words in the singular shall include the plural and vice versa, unless the text clearly requires otherwise.

20.06. No Joint Enterprise. The parties do not intend that this License be construed as finding that the parties have formed a joint enterprise. The purposes for which each party has entered into this License are separate and distinct. It is not the intent of any of the parties that a joint enterprise relationship is being entered into and the parties hereto specifically disclaim such relationship. This License does not constitute a joint enterprise, as there are no common pecuniary interests, no common purpose and no equal right of control among the parties hereto.

20.07. Counterparts. The parties may execute this Agreement in multiple originals and when taken together, those originals constitute a whole.

20.08. Severability. The parties agree that provisions in Sections 8 (a) and (b), and 11(a) and (b) may be severed if the Plano City Council fails to ratify this License by November 1, 2019; and, if the License is so severed, the remaining provisions of this Agreement shall be enforceable and the Licensee agrees to remove the Permitted Improvements to the extent already installed and restore the Property to its original condition or better (in Licensor's reasonable judgment) no later than November 10, 2019, with costs to Licensee for removal and restoration capped at fifty thousand dollars (\$50,000.00). In this event, Licensee shall continue insurance coverage on the Permitted Improvements as required herein until the Property is fully restored.

(SIGNATURES ON FOLLOWING PAGE)

IN WITNESS WHEREOF, the parties have executed this License on the date last signed.

LICENSOR:

DALLAS AREA RAPID TRANSIT

BY: Bonnie Murphy
BONNIE MURPHY
Vice President
Commuter Rail and Railroad Management

Date: 10-4-19

LICENSEE:

CITY OF PLANO

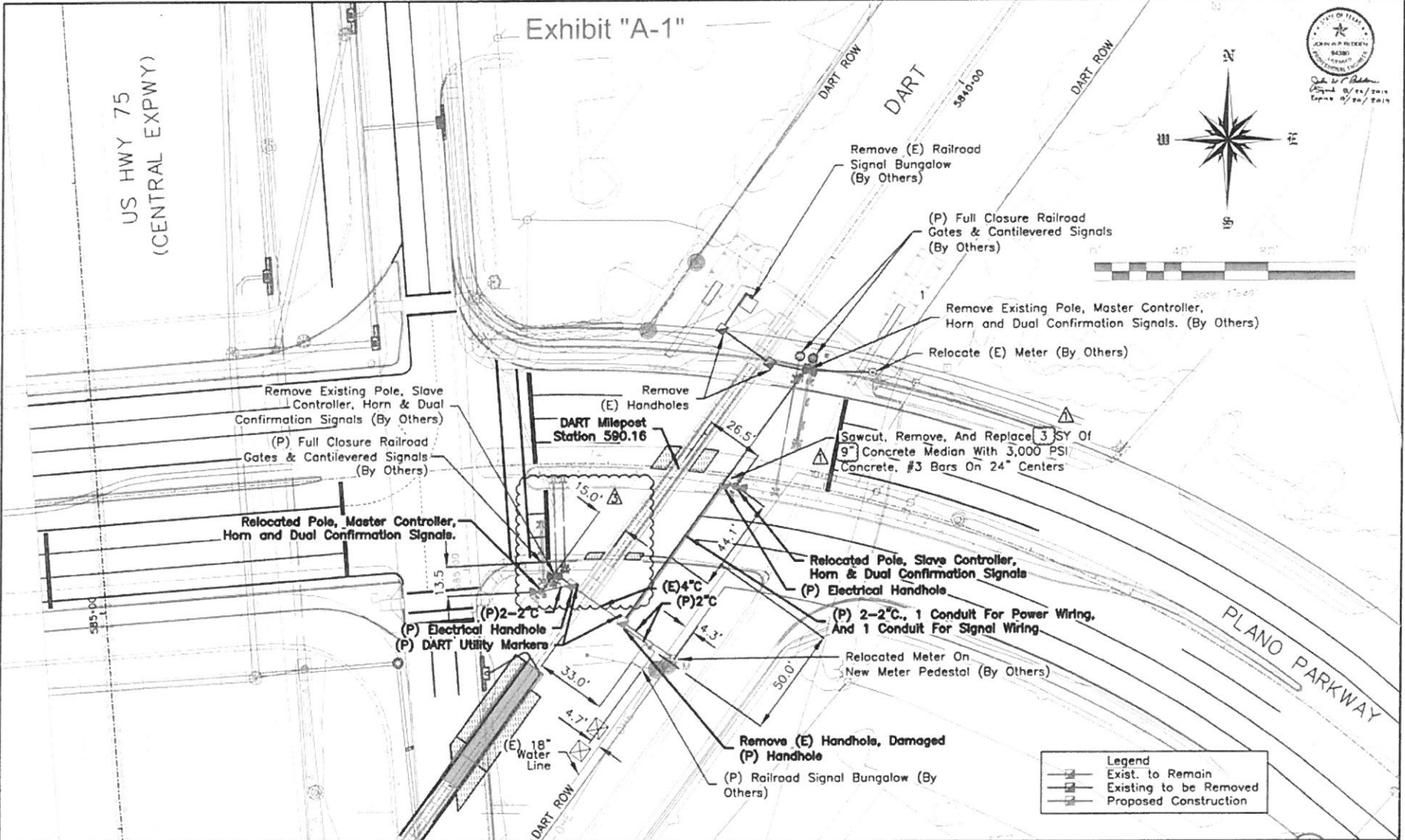
BY: Jack Carr
Printed Name: Jack Carr
Title: Deputy City Manager
Date: 10-3-19

APPROVED AS TO FORM:

BY: Michelle DiAndrea
for: Paige Mims, City Attorney

Exhibit "A-1"

US HWY 75
(CENTRAL EXPWY)



Legend	
	Exist. to Remain
	Existing to be Removed
	Proposed Construction

REVISIONS			
NO.	DATE	BY	APP.
1	08/28/14	JPR	JPR
2	09/25/14	JPR	JPR

CITY OF PLANO
1520 AVENUE K
PLANO, TEXAS 75076



DESIGNED	J.P.R.
CHECKED	K.N.L.
IN CHARGE	C.L.C.
DRAWN	K.N.L.

WAYSIDE HORNS AT PLANO
PARKWAY PROJECT No. 6758 - 5590.1
PLANO, TEXAS

SHEET	OF 1
DATE	08/04/14
DATE	05/13/2019

PLANNING & DESIGN SERVICES, INC. 1520 AVENUE K, PLANO, TEXAS 75076
 PROJECT NO. 6758 - 5590.1
 SHEET NO. 6758 - 5590.1 - 1
 DATE: 08/28/14

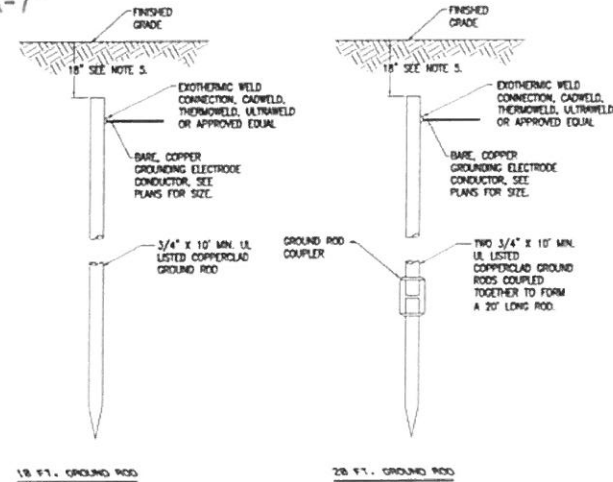
GROUNDING NOTES

- THE CONTRACTOR SHALL FURNISH AND INSTALL ALL GROUNDING AS MAY BE NECESSARY OR REQUIRED TO MAKE A COMPLETE GROUNDING SYSTEM AS REQUIRED BY THE LATEST NATIONAL ELECTRICAL CODE (NFPA 70) IN FORCE. THE RELIABILITY OF THE GROUNDING SYSTEM IS DEPENDENT ON CAREFUL, PROPER INSTALLATION AND CHOICE OF MATERIALS. IMPROPER PREPARATION OF SURFACES TO BE JOINED TO MAKE AN ELECTRICAL PATH, LOOSE JOINTS OR CORROSION CAN INTRODUCE IMPEDANCE THAT WILL SERIOUSLY IMPAIR THE ABILITY OF THE GROUND PATH TO PROTECT PERSONNEL AND EQUIPMENT AND TO ABSORB TRANSIENTS THAT CAN CAUSE NOISE IN COMMUNICATIONS CIRCUITS. THE FOLLOWING FUNCTIONS ARE PARTICULARLY IMPORTANT TO ENSURE A RELIABLE GROUND SYSTEM:
- FURNISH AND INSTALL GROUND RODS AS DETAILED HEREIN. GROUND RODS FOR ELECTRIC SERVICE FOR WAYSIDE HORNS AND FOR WAYSIDE HORNS MOUNTING POLE SHALL BE MINIMUM 3/4-IN. DIAMETER BY 10-FT LONG, UL-LISTED COPPER CLAD WITH 10-MIL MINIMUM COPPER COATING. GROUND RODS FOR OTHER APPLICATIONS SHALL BE MINIMUM 3/4-IN. DIAMETER BY 10-FT LONG, UL-LISTED, COPPER CLAD WITH 10-MIL MINIMUM COPPER COATING. WHERE NECESSARY TO MEET GROUND RESISTANCE REQUIREMENTS, LONGER GROUND RODS OR ADDITIONAL GROUND RODS MAY BE REQUIRED. GROUND RODS SHALL BE SPACED OR AS DETAILED ON THE RESPECTIVE PLANS, AND IN NO CASE SPACED LESS THAN ONE ROD LENGTH APART. ALL CONNECTIONS TO GROUND RODS AND THE GROUND RING SHALL BE MADE WITH EXOTHERMIC WELD TYPE CONNECTORS, CADWELD BY FORTAIR EXCO PRODUCTS, INC., THERMOWELD BY CONTRACTUAL INDUSTRIES, INC., ULTRAWELD BY HARGER, OR APPROVED EQUAL. EXOTHERMIC WELD CONNECTIONS SHALL BE INSTALLED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S DIRECTIONS USING MOLDS AS REQUIRED FOR EACH RESPECTIVE APPLICATION. BOLTED CONNECTIONS WILL NOT BE PERMITTED AT GROUND RODS OR AT BURIED GROUNDING ELECTRODE CONDUCTORS.
- CONTRACTOR SHALL TEST EACH MADE ELECTRODE GROUND ROD/GROUND FIELD/GROUND RING WITH AN INSTRUMENT SPECIFICALLY DESIGNED FOR TESTING GROUND FIELD SYSTEMS. IF GROUND RESISTANCE EXCEEDS 25 OHMS, CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTION. COPIES OF GROUND ROD TEST RESULTS SHALL BE FURNISHED TO THE PROJECT ENGINEER AND/OR OWNER'S REPRESENTATIVE.
- ALL PRODUCTS ASSOCIATED WITH THE GROUNDING SYSTEM SHALL BE UL-LISTED AND LABELED.
- ALL BOLTED OR MECHANICAL CONNECTIONS SHALL BE COATED WITH A CORROSION PREVENTATIVE COMPOUND BEFORE JOINING, SAATCHI INC. 700-0X-10 A-SPECIAL COMPOUND, BURNDY PONECROX E, OR EQUAL.
- METALLIC SURFACES TO BE JOINED SHALL BE PREPARED BY THE REMOVAL OF ALL NON-CONDUCTIVE MATERIAL PER 2017 NATIONAL ELECTRICAL CODE ARTICLE 250-12. ALL COPPER BUS BARS MUST BE CLEANED PRIOR TO MAKING CONNECTIONS TO REMOVE SURFACE OXIDATION.
- METALLIC RACEWAY FITTINGS SHALL BE MADE UP TIGHT TO PROVIDE A PERMANENT LOW IMPEDANCE PATH FOR ALL CIRCUITS. METAL CONDUIT TERMINATIONS IN ENCLOSURES SHALL BE BONDED TO THE ENCLOSURE WITH UL-LISTED FITTINGS SUITABLE FOR GROUNDING. PROVIDE GROUNDING BUSBARS WITH BONDING JUMPERS FOR ALL METAL CONDUITS ENTERING SERVICE EQUIPMENT (NEUTR BASE, CT CABINET, MAIN SERVICE BREAKER ENCLOSURE, ETC.). PROVIDE GROUNDING BUSBARS WITH BONDING JUMPERS FOR ALL METAL CONDUITS ENTERING AN ENCLOSURE THROUGH CONCENTRIC OR ECCENTRIC KNOCKOUTS THAT ARE PUNCHED OR OTHERWISE FORMED 50 AS TO IMPAIR THE ELECTRICAL CONNECTION TO GROUND. STANDARD LOCKNUTS OR BUSBARS SHALL NOT BE THE SOLE MEANS FOR BONDING WHERE A CONDUIT ENTERS AN ENCLOSURE THROUGH A CONCENTRIC OR ECCENTRIC KNOCKOUT.
- ALL CONNECTIONS, LOCATED ABOVE GRADE, BETWEEN THE DIFFERENT TYPES OF GROUNDING CONDUCTORS SHALL BE MADE USING UL-LISTED DOUBLE COMPRESSION CRIMP TYPE CONNECTORS OR UL-LISTED BOLTED GROUND CONNECTORS. FOR GROUND CONNECTIONS TO ENCLOSURES, CASES AND FRAMES OF ELECTRICAL EQUIPMENT NOT SUPPLIED WITH GROUND LUGS THE CONTRACTOR SHALL DRILL REQUIRED HOLES FOR MOUNTING A BOLTED GROUND CONNECTOR. ALL BOLTED GROUND CONNECTORS SHALL BE BURNDY, THOMAS AND BETTS, OR EQUAL. TIGHTEN CONNECTIONS TO COMPLY WITH TIGHTENING TORQUES IN UL STANDARD 484A TO ASSURE PERMANENT AND EFFECTIVE GROUNDING.
- ALL METAL EQUIPMENT ENCLOSURES, CONDUITS, CABINETS, BOXES, RECEPTACLES, MOTORS, ETC. SHALL BE BONDED TO THE RESPECTIVE GROUNDING SYSTEM.
- PROVIDE ALL BOXES FOR PROPOSED OUTLETS, SWITCHES, CIRCUIT BREAKERS, ETC. WITH GROUNDING SCREWS. PROVIDE ALL PANELBOARD, SWITCHGEAR, ETC., ENCLOSURES WITH GROUNDING BARS WITH INDIVIDUAL SCREWS, LUGS, CLAMPS, ETC., FOR EACH OF THE GROUNDING CONDUCTORS THAT ENTER THEIR RESPECTIVE ENCLOSURES.
- EACH NEW FEEDER CIRCUIT AND/OR BRANCH CIRCUIT SHALL INCLUDE AN EQUIPMENT GROUND WIRE. METAL RACEWAY OR CONDUIT SHALL NOT MEET THIS REQUIREMENT. THE EQUIPMENT GROUND WIRE FROM EQUIPMENT SHALL NOT BE SMALLER THAN ALLOWED BY 2017 NEC TABLE 250-122 "MINIMUM SIZE CONDUCTORS OR GROUNDING RACEWAY AND EQUIPMENT." WHEN CONDUCTORS ARE ADJUSTED IN SIZE TO COMPENSATE FOR VOLTAGE DROP, EQUIPMENT-GROUNDING CONDUCTORS SHALL BE ADJUSTED PROPORTIONATELY ACCORDING TO CIRCULAR MIL AREA. ALL EQUIPMENT GROUND WIRES SHALL BE COPPER, OTHER BARE OR INSULATED GREEN IN COLOR. WHERE THE EQUIPMENT GROUNDING CONDUCTORS ARE INSULATED, THEY SHALL BE IDENTIFIED BY THE COLOR GREEN, AND SHALL BE THE SAME INSULATION TYPE AS THE PHASE CONDUCTORS.

GROUNDING NOTES-CONTINUED

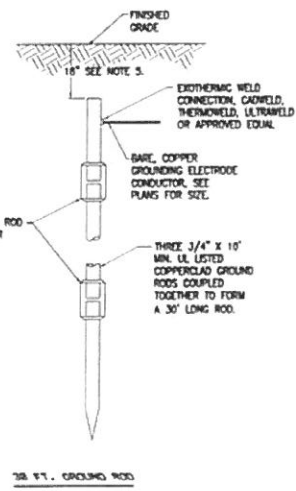
- ALL EXTERIOR METAL CONDUIT, WHERE NOT ELECTRICALLY CONTINUOUS BECAUSE OF MANHOLES, HANDHOLES, NON-METALLIC JUNCTION BOXES, ETC., SHALL BE BONDED TO ALL OTHER METAL CONDUIT IN THE RESPECTIVE DUCT RUN, AND AT EACH END, WITH A COPPER-BONDING JUMPER SIZED IN CONFORMANCE WITH 2017 NEC 250-102. WHERE METAL CONDUITS TERMINATE IN AN ENCLOSURE (SUCH AS A MOTOR CONTROL CENTER, SWITCHGEAR, ETC.) WHERE THERE IS NOT ELECTRICAL CONTINUITY WITH THE CONDUIT AND THE RESPECTIVE ENCLOSURE, PROVIDE A BONDING JUMPER FROM THE RESPECTIVE ENCLOSURE GROUND BUS TO THE CONDUIT SIZED PER 2017 NEC 250-102.
- IT IS THE INTENT OF THIS SPECIFICATION THAT ALL MOTOR FRAMES, PUMP BASES ELECTRICAL EQUIPMENT ENCLOSURES, PANEL HOUSINGS, CONDUITS, BOXES, ETC. HAVE A CONTINUOUS COPPER WIRE GROUND CONNECTION AND SHALL BE POSITIVELY BONDED TO THE RESPECTIVE GROUNDING SYSTEM. CONDUIT CONNECTORS WILL NOT BE CONSIDERED AS ADEQUATE GROUNDING.
- PROVIDE A POSITIVE GROUND BOND FOR ALL OUTLET BOXES, ELECTRICAL EQUIPMENT ENCLOSURES, GROUNDING RECEPTACLES, TOGGLE SWITCHES, ETC. INSTALL A GROUNDING CONDUCTOR IN ALL WIRE AND CABLE RACEWAYS. GROUND CONDUCTOR TO HAVE 800-VOLT INSULATION AND BE IDENTIFIED BY A CONTINUOUS GREEN COLOR COATING. THEY SHALL BE USED SOLELY FOR GROUNDING PURPOSES AND BE ENTIRELY SEPARATE FROM WHITE GROUNDING NEUTRAL CONDUCTOR, EXCEPT AT SUPPLY SIDE OF SERVICE DISCONNECTING MEANS, WHERE GROUNDING AND NEUTRAL SYSTEMS ARE TO BE CONNECTED TO SERVICE GROUND.
- EACH AND ALL GROUNDED CASED AND METAL PARTS ASSOCIATED WITH ELECTRICAL EQUIPMENT SHALL BE TESTED FOR CONTINUITY OF CONNECTION WITH GROUND BUS SYSTEM BY CONTRACTOR IN PRESENCE OF OWNER'S REPRESENTATIVE.
- ALL CONNECTIONS BETWEEN THE DIFFERENT TYPES OF GROUNDING CONDUCTORS ABOVE GRADE SHALL BE MADE USING BOLTED GROUND CONNECTORS. GROUND LUGS SHALL BE PROVIDED IN ALL ENCLOSURES AND WIRING TERMINATION JUNCTION BOXES. EQUIPMENT GROUNDING AND GROUNDING CONDUCTOR SHALL BE CONNECTED TO THESE GROUND LUGS FOR GROUND CONNECTIONS TO ENCLOSURES, CASES AND FRAMES OF ELECTRICAL EQUIPMENT NOT SUPPLIED WITH GROUND LUGS THE CONTRACTOR SHALL DRILL REQUIRED HOLES FOR MOUNTING A BOLTED GROUND CONNECTOR. ALL BOLTED GROUND CONNECTORS SHALL BE BURNDY, OR EQUAL.
- BOND ALL NONCURRENT-CARRYING PARTS OF METAL EQUIPMENT TO GROUND SYSTEM.
- BUILDING STRUCTURAL STEEL SYSTEM SHALL BE BONDED TO ELECTRICAL GROUND SYSTEM.
- INSTALL GROUNDING ELECTRODE CONDUCTORS, LIGHTNING PROTECTION DOWN CONDUCTORS AND SEPARATE GROUND CONDUCTORS IN SCHEDULE 40 OR SCHEDULE 80 PVC CONDUIT OR EXPOSED WHERE ACCEPTABLE TO LOCAL CODES. WHERE GROUNDING ELECTRODE CONDUCTORS, LIGHTNING PROTECTION DOWN CONDUCTORS OR INDIVIDUAL GROUND CONDUCTORS ARE RUN IN PVC CONDUIT, DO NOT COMPLETELY ENCLOSE CONDUIT WITH FERROUS AND/OR MAGNETIC MATERIALS. USE NON-METALLIC REINFORCED FIBERGLASS STRUT SUPPORT. WHERE METAL CONDUIT CLAMPS ARE INSTALLED, USE NYLON BOLTS, NUTS, WASHERS AND SPACERS TO INTERRUPT A COMPLETE METALLIC PATH FROM ENVELOPING THE CONDUIT. THIS IS REQUIRED TO AVOID GROUNDING OF CONDUIT CONDUCTORS. GROUNDING OF A GROUND CONDUCTOR IS THE RESULT OF PLACING THE CONDUCTOR IN A RING OF MAGNETIC MATERIAL. THIS RING COULD BE A METALLIC CONDUIT, U-BOLT OR STRUT SUPPORT PIPE CLAMP, OR OTHER SUPPORT HARDWARE. THE RESULT OF GROUNDING CONDUCTORS SIGNIFICANTLY INCREASES THE INDUCTIVE IMPEDANCE OF THE GROUNDING CONDUCTOR. INDUCTIVE AND CAPACITIVE IMPEDANCE IS A TYPE OF RESISTANCE THAT OPPOSES THE FLOW OF ALTERNATING CURRENT. ANY INCREASE IN THE IMPEDANCE OF A GROUND CONDUCTOR REDUCES ITS ABILITY TO EFFECTIVELY MITIGATE RADIO FREQUENCY NOISE IN THE GROUND SYSTEM. THE CONDITION WHERE A GROUND CONDUCTOR IS CIRCLED DURING A LIGHTNING STRIKE, RESULTS IN PHENOMENA KNOWN AS SURGE IMPEDANCE LOADING. SURGE IMPEDANCE LOADING IS A RESULT OF VOLTAGE AND CURRENT REACHING 50,000 VOLTS AND 10,000 AMPS FOR A SHORT DURATION. CIRCLING FURTHER INCREASES THE IMPEDANCE AT LIGHTNING FREQUENCIES OF 100 KILOHERTZ TO 100 MEGAHERTZ. AT THESE POWER AND FREQUENCY LEVELS ANY INCREASE IN THE IMPEDANCE OF THE GROUND CONDUCTOR MUST BE CONTROLLED. DURING LIGHTNING DISCHARGE CONDITIONS A LOW INDUCTIVE IMPEDANCE PATH IS MORE IMPORTANT THAN A LOW DC RESISTANCE PATH.
- IF LOCAL CODES DICTATE THAT INDIVIDUAL GROUNDING CONDUCTORS MUST BE RUN IN METAL CONDUIT OR RACEWAY, THE CONDUIT OR RACEWAY MUST BE BONDED AT EACH END OF THE RUN WITH A BONDING JUMPER SIZED EQUAL TO THE INDIVIDUAL GROUNDING CONDUCTOR OR AS REQUIRED BY 2017 NEC 250-102. NOTE THIS DOES NOT APPLY TO AC EQUIPMENT GROUNDING CONDUCTORS RUN WITH AC CIRCUITS.
- NEVER REMOVE, ALTER, OR ATTEMPT TO REPAIR CONDUCTORS OR CONDUIT SYSTEMS PROVIDING GROUNDING OR ELECTRICAL BONDING FOR ANY ELECTRICAL EQUIPMENT UNTIL ALL POWER IS REMOVED FROM THE EQUIPMENT. WARN ALL PERSONNEL OF THE UNEXPECTED CONDITION OF THE EQUIPMENT, DISPLAY APPROPRIATE WARNING SIGNS, SUCH AS DANGER TAGS, TO WARN PERSONNEL OF THE POSSIBLE HAZARDS.
- WHERE A CONFLICT IS DETERMINED WITH RESPECT TO GROUNDING REQUIREMENTS PER MANUFACTURER INSTALLATION INSTRUCTIONS, NEC, AND/OR THE CONTRACT DOCUMENTS, CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTIONS.

Exhibit "A-7"



1/2" Ø . GROUND ROD

2Ø 3/4" Ø . GROUND ROD



3Ø 3/4" Ø . GROUND ROD

- NOTES**
- TYPE AND MINIMUM NUMBER OF GROUND RODS SHALL BE AS SPECIFIED ON THE PLAN.
 - THE RESISTANCE TO GROUNDING OF THE GROUNDING SYSTEM SHALL NOT EXCEED 25 OHMS.
 - COST OF GROUND RODS IS INCIDENTAL TO THE ASSOCIATED FITTING, INCLUDING GROUNDING UNLESS OTHERWISE SPECIFIED.
 - GROUND RODS SHALL BE SPACED AS DETAILED ON THE PLANS AND SHALL NOT BE SPACED LESS THAN ONE ROD LENGTH APART.
 - TOP OF GROUND RODS SHALL BE 18" MINIMUM BELOW GRADE UNLESS DETAILED OTHERWISE HEREIN.

GROUNDING RODS (NOT TO SCALE)



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 USER: shanson
 PLOT: 05/13/2019 11:54:28 AM

REVISIONS			
NO.	DESCRIPTION	DATE	BY

CITY OF PLANO
 1520 AVENUE K
 PLANO, TX 75076



- _____ K.A.L.
- _____ J.P.R.
- _____ C.L.C.
- _____ J.P.R.

GROUNDING NOTES
 WAYSIDE HORNS AT PLANO
 PARKWAY PROJECT No. 6758 - 5590.1
 PLANO, TEXAS

SHEET 7 OF 7
 FILE NO. 60020-1
 DATE 05/13/2019



DIXIE PRECAST, INC.

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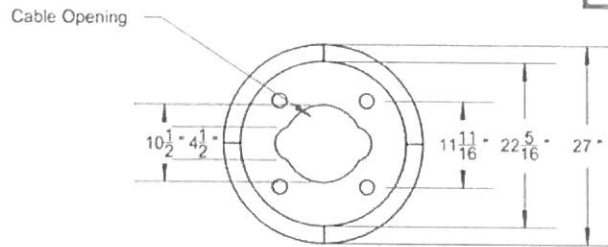
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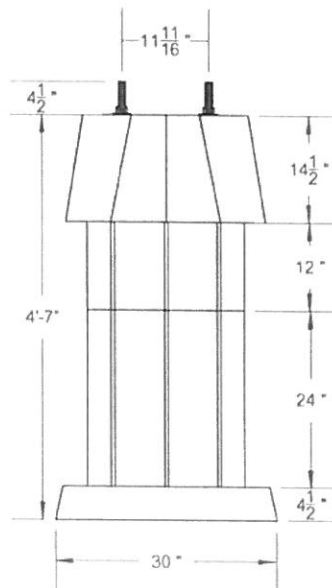
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Exhibit "A-8"



Plan View



Elevation View

Note:

1. Galvanized steel anchor bolts on 11 11/16" x 11 11/16" centers.
2. 1" x 57" Bolts with 1 flat washer and 1 nut each.
3. Net weight 1,800 lbs.
4. Foundation shipped fully assembled.

DPS-2A Gate/Wayside Signal Foundation

View 4' - 7"