GENERAL NOTES:

1. THE SUBMISSION OF A BID BY THE CONTRACTOR IS NOTIFICATION THAT THE CONTRACTOR HAS TOTALLY FAMILIARIZED HIMSELF WITH THE CONTRACT DOCUMENTS AND EXISTING SITE CONDITIONS AND HAS AGREED TO PROVIDE THE NECESSARY LABOR AND MATERIAL FOR THE COMPLETE INSTALLATION OF EACH SYSTEM IN A NEAT AND WORKMANLIKE MANNER IN ACCORDANCE WITH THE BEST PRACTICES OF THE INDUSTRY AND IN COMPLIANCE WITH ALL AUTHORITIES HAVING JURISDICTION.

2. THESE DRAWINGS ARE PRESENTED TO THE CONTRACTOR WITH THE UNDERSTANDING THAT THE CONTRACTOR IS AN EXPERT AND COMPETENT IN THE PREPARATION OF CONTRACT BID PRICES ON THE BASIS OF INFORMATION SUCH AS IS CONTAINED IN THESE DOCUMENTS. IT IS THE INTENT OF THE DRAWINGS AND SPECIFICATIONS TO CALL FOR FINISHED WORK, TESTED AND READY FOR OPERATION AND IN COMPLETE CONFORMANCE WITH ALL APPLICABLE CODES, RULES, AND REGULATIONS. MINOR ITEMS NOT USUALLY SHOWN OR SPECIFIED, BUT MANIFESTLY NECESSARY FOR THE PROPER INSTALLATION AND OPERATION OF THE VARIOUS SYSTEMS, SHALL BE INCLUDED IN THE WORK AND IN THE PROPOSAL THE SAME AS IF SPECIFIED OR SHOWN ON THE DRAWINGS. IF ANY DEPARTURES FROM THE DRAWINGS ARE DEEMED NECESSARY, DETAILS OF SUCH DEPARTURES AND THE REASONS THEREFORE SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. NO DEPARTURES SHALL BE MADE WITHOUT PRIOR APPROVAL.

3. THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL DIMENSIONS IN THE FIELD, AND SHALL ADVISE THE OWNER OF ANY DISCREPANCIES BEFORE PERFORMING THE WORK.

4. THE DRAWINGS INDICATE ARRANGEMENTS AND APPROXIMATE SIZES AND RELATIVE LOCATIONS OF PRINCIPAL APPARATUS, EQUIPMENT, DEVICES, AND SERVICES TO BE PROVIDED. DRAWINGS ARE DIAGRAMMATIC AND ARE A GRAPHIC REPRESENTATION OF CONTRACT REQUIREMENTS BASED ON THE INFORMATION PROVIDED BY THE MANUFACTURER IDENTIFIED IN THE EQUIPMENT SCHEDULE AT THE SCALE INDICATED.

5. LAYOUT OF EQUIPMENT INDICATED ON THE DRAWINGS SHALL BE CHECKED AND COMPARED AGAINST ALL DRAWINGS AND SPECIFICATIONS OF ALL TRADES AND EXACT LOCATIONS DETERMINED USING APPROVED SHOP DRAWINGS OF SUCH EQUIPMENT. WHERE PHYSICAL INTERFERENCES OCCUR, CONSULT WITH THE OWNER AND PREPARE DATED, DIMENSIONED DRAWINGS COORDINATED WITH ALL OTHER TRADES WORKING IN THIS AREA AND CORRECTING SUCH INTERFERENCE.

6. THE CONTRACTOR SHALL SCHEDULE THEIR WORK IN ACCORDANCE WITH THE CONSTRUCTION SCHEDULE SO THAT ALL OF THEIR WORK CAN BE INSTALLED WITHOUT DELAYING THE PROJECT. ALL WORK RELATED TO SHUTDOWN OF EXISTING SERVICES SHALL BE PERFORMED AT THE HOURS DESIGNATED BY THE OWNER WITH ALL ASSOCIATED COSTS BORNE BY THE CONTRACTOR AT NO COST TO THE OWNER. PROVIDE ANY TEMPORARY FACILITIES REQUIRED TO PERMIT OWNER'S USE OF EXISTING FACILITIES AND SYSTEMS TO REMAIN UNDISTURBED. COORDINATE ALL WORK, INCLUDING ALL SHUTDOWNS THAT AFFECT SYSTEMS AND/OR PORTIONS OF THE BUILDING THAT MUST REMAIN IN OPERATION, WITH OWNER.

7. THE CONTRACTOR SHALL SECURE AND PAY ALL FEES, LICENSES, INSPECTIONS, AND PERMITS PERTAINING TO THE CONTRACT. SUBMIT TO OWNER DUPLICATE CERTIFICATES OF INSPECTION FROM APPROVED INSPECTION AGENCY.

8. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT COMPLIANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR WORKMEN'S IDENTIFICATION AND BADGING, SAFETY AND FIRE PROTECTION, BARRICADES, WARNING SIGNS, TRASH REMOVAL, CUTTING AND PATCHING.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RIGGING, HANDLING, AND PROTECTION OF MATERIALS. ALL EQUIPMENT AND MATERIALS SHALL BE NEW AND WITHOUT BLEMISH OR DEFECT. ALL EQUIPMENT INSTALLED SHALL BEAR THE LABEL OF AN APPROVED AGENCY.

11. THE CONTRACTOR SHALL PROVIDE LABOR TO RECEIVE, UNLOAD, STORE, PROTECT, AND TRANSFER TO POINT OF INSTALLATION FOR ALL FURNISHED ITEMS.

12. WHERE CONDUIT, CABLES, DUCTWORK, OR PIPING PASSES THROUGH FIRE RATED FLOORS OR WALLS, THE PENETRATION SHALL BE COMPLETELY SEALED WITH A FIRE STOP MATERIAL THAT IS UL LISTED AND ACCEPTED BY THE BUILDING DEPARTMENT AND FIRE DEPARTMENT AS BEING SUITABLE FOR THIS SERVICE. THIS MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE MANUFACTURER TO MAINTAIN THE UL LISTED FIRE RATING OF THE PENETRATED WALL OR FLOOR.

13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SLAB OPENINGS, WALL OPENINGS, BEAM PENETRATIONS, AND CORING AS IT RELATES TO THEIR WORK. THE CONTRACTOR SHALL SUBMIT SIZE AND LOCATION FOR REVIEW AND APPROVAL.

14. ALL EXTERIOR WALL OPENINGS SHALL BE SLEEVED, PROPERLY CAULKED, AND SEALED WITH A HIGH QUALITY SEALANT TO PREVENT INFILTRATION OF MOISTURE AND OUTSIDE AIR.

15. THE CONTRACTOR SHALL SUBMIT SCHEDULE OF SUBMITTALS PRIOR TO SUBMITTING ANY SHOP DRAWINGS, ETC. TO BE SUBMITTED FOR THIS PROJECT, INCLUDING THE ANTICIPATED DATE OF EACH SUBMISSION. CONTRACTORS SHALL SUBMIT AN ELECTRONIC COPY OF THE COMPLETE SHOP DRAWINGS AND CATALOG CUTS, WIRING DIAGRAMS AND ASSOCIATED DATA TO THE OWNER FOR APPROVAL PRIOR TO PURCHASING EQUIPMENT OR STARTING ANY WORK. ANY WORK INSTALLED OR EQUIPMENT PURCHASED PRIOR TO RECEIPT OF OWNER APPROVED SUBMITTALS SHOP DRAWINGS THAT REQUIRES CHANGES SHALL BE REPLACED AT CONTRACTOR'S EXPENSE.

16. SUBMIT CATALOG INFORMATION, FACTORY ASSEMBLY DRAWINGS AND FIELD INSTALLATION DRAWINGS AS REQUIRED FOR A COMPLETE EXPLANATION AND DESCRIPTION OF ALL ITEMS TO BE PROVIDED. THE CONTRACTOR SHALL REVIEW AND APPROVE ALL SHOP DRAWINGS. NO SUBMISSION WILL BE ACCEPTED WITHOUT THE SIGNED APPROVAL OF THE CONTRACTOR. THE CONTRACTOR SHALL CHECK AND VERIFY ALL FIELD MEASUREMENTS.

17. UPON COMPLETION OF CONSTRUCTION, CONTRACTOR SHALL SUPPLY THE OWNER WITH (3) COMPLETE BOUND COPIES OF ALL OWNER APPROVED SUBMITTALS AND ALL OPERATION AND MAINTENANCE MANUALS

18. ALL WORK FURNISHED UNDER THE CONTRACT SHALL BE GUARANTEED AGAINST ANY AND ALL DEFECTS IN WORKMANSHIP AND/OR MATERIALS FOR A PERIOD OF NOT LESS THAN (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE INSTALLATION, UNLESS NOTED OTHERWISE IN THE PROJECT SPECIFICATIONS, AND ANY DEFECTS OF WORKMANSHIP DEVELOPING DURING THIS PERIOD SHALL BE REMEDIED AND ANY DEFECTIVE MATERIAL REPLACED WITHOUT ADDITIONAL COST TO THE OWNER.

19. INSTALLED SYSTEMS SHALL OPERATE UNDER ALL CONDITIONS OF LOAD WITHOUT SOUND OR VIBRATION THAT IS OBJECTABLE TO THE OWNER, OBJECTABLE SOUND OR VIBRATION CONDITIONS DUE TO WORKMANSHIP SHALL BE CORRECTED IN APPROVED MANNER BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.

20. THE CONTRACTOR SHALL SIMILARLY NOTIFY OWNER OF COMPLETION OF ALL WORK, INDICATING THE CONTRACTOR IS READY FOR THE OWNER TO PERFORM THE FINAL PUNCHLIST INSPECTION.

21. UPON COMPLETION OF ALL UNFINISHED OR FAULTY WORK NOTED IN THE OWNER'S FINAL PUNCH LIST, THE CONTRACTOR SHALL SUBMIT TO THE OWNER IN WRITING A LETTER OF COMPLETION CERTIFYING THAT ALL PUNCH LIST ITEMS HAVE BEEN COMPLETED AND ALL AS-BUILTS, MANUALS, ETC. HAVE BEEN SUBMITTED.

22. SHOULD A CONTRACTOR REQUIRE REMOVAL, RELOCATION, OR REROUTING OF ANOTHER TRADE'S WORK THAT IS NOT INDICATED ON DRAWINGS, THE CONTRACTOR REQUIRING SUCH WORK SHALL BE RESPONSIBLE FOR THAT WORK, AND PAY ALL REQUIRED COSTS.

23. ALL WORK INVOLVING ALTERATIONS TO EXISTING SYSTEMS, EQUIPMENT, AND MATERIALS SHALL BE REVIEWED WITH THE OWNER BEFORE BEGINNING WORK.

24. DEFINITION: UNLESS OTHERWISE NOTED, ALL WORK SPECIFIED HEREIN OR NOTED ON DRAWINGS, SHALL BE BY THE CONTRACTOR. THE TERM "PROVIDE" WHENEVER ENCOUNTERED ON DRAWINGS OR IN THESE SPECIFICATIONS, SHALL MEAN "FURNISH AND INSTALL."

25. CODES AND STANDARDS: ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE, ALL APPLICABLE CODES, SPECIFICATIONS, LOCAL ORDINANCES, INDUSTRY STANDARDS, UTILITY COMPANY REGULATIONS AND FIRE INSURANCE CARRIER'S REQUIREMENTS.

26. MATERIALS: ALL MATERIALS FURNISHED BY THIS CONTRACTOR, SHALL BE NEW AND BEAR THE LABEL OR LISTING OF A NATIONALLY RECOGNIZED INDEPENDENT TESTING LABORATORY.

27. OUTLET AND SWITCH BOXES: PROVIDE AND INSTALL OUTLET BOXES OF PROPER TYPE AND SIZE AS REQUIRED AT ALL OUTLETS WHERE SHOWN. SECURED FIRMLY IN PLACE AND SET TRUE AND SQUARE AND FLUSH WITH THE FINISHED SURFACE.

28. WIRING: WIRES SHALL BE COPPER AND RATED FOR THE LOCATIONS IN WHICH THEY ARE INSTALLED. ALL RACEWAYS ARE SHOWN DIAGRAMMATICALLY, EXACT LOCATION TO BE DETERMINED ON THE JOB. CONTRACTOR SHALL ARRANGE ALL NEW CIRCUITS IN PANELS SO AS TO BALANCE THE LOAD ON ALL PHASES.

29. A TYPED DIRECTORY CARD SHALL BE PROVIDED IN EACH PANEL WITH ADDED CIRCUITS TO INDICATE THE LOADS ACTUALLY SERVED.

30. GROUNDING: SHALL BE IN STRICT ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE ARTICLE 250. PROVIDE GROUND WIRES AS REQUIRED AND RESIZE CONDUIT IF NECESSARY.

31. DEMONSTRATION OF COMPLETE ELECTRICAL SYSTEMS: UPON COMPLETION OF THE WORK THE CONTRACTOR SHALL OBTAIN A CERTIFICATE OF APPROVAL FROM THE RESPECTIVE INSPECTION AGENCIES. CONTRACTOR SHALL NOTIFY AND MAKE ALL THE NECESSARY ARRANGEMENTS WITH THE INSPECTING AGENCY AND LOCAL AUTHORITIES SO THAT INSPECTION MAY BE CARRIED OUT AT THE PROPER TIME.

32. ENCLOSURES: INSTALL ENCLOSURES AND BOXES PLUMB. ANCHOR SECURELY TO WALL OR STRUCTURAL SUPPORTS AT EACH CORNER. USE MANUFACTURER RECOMMENDED ANCHOR BOLTS FOR VARIOUS STRUCTURES.

33. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES, WHETHER PRIVATE OR PUBLIC, PRIOR TO EXCAVATION. THE INFORMATION AND DATA SHOWN WITH RESPECT TO EXISTING UNDERGROUND FACILITIES AT OR CONTIGUOUS TO THE SITE IS APPROXIMATE AND BASED ON INFORMATION FURNISHED BY THE OWNERS OF SUCH UNDERGROUND FACILITIES OR ON PHYSICAL APPURTENANCES OBSERVED IN THE FIELD. THE OWNER AND ENGINEER SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ANY SUCH INFORMATION OR DATA, AND THE CONTRACTOR SHALL HAVE THE FULL RESPONSIBILITY FOR REVIEWING AND CHECKING ALL SUCH INFORMATION AND DATA, FOR LOCATING ALL UNDERGROUND FACILITIES, FOR COORDINATION OF THE WORK WITH THE OWNERS OF SUCH UNDERGROUND FACILITIES DURING CONSTRUCTION, FOR THE SAFETY AND PROTECTION THEREOF, AND FOR REPAIRING ANY DAMAGE THERETO RESULTING FROM THE WORK. THE COST OF ALL WILL BE CONSIDERED AS HAVING BEEN INCLUDED IN THE CONTRACT PRICE. THE CONTRACTOR SHALL NOTIFY ANY AFFECTED UTILITY COMPANIES OR AGENCIES IN WRITING AT LEAST 48 HOURS PRIOR TO THE BEGINNING OF CONSTRUCTION SO THAT THE LOCATION OF UNDERGROUND UTILITIES CAN BE MARKED.

34. EXISTING GAS LINES ARE LOCATED IN THE RIGHT-OF-WAY. CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO AVOID THE POTENTIALLY SHALLOW LINES. CONTACT ATMOS PRIOR TO CONSTRUCTION IN VICINITY OF EXISTING GAS LINE.

35. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PROJECT DETAILS AND TECHNICAL SPECIFICATIONS UNLESS NOTED OTHERWISE.

36. THE CONTRACTOR IS RESPONSIBLE FOR KEEPING STREETS AND DRIVEWAYS ADJACENT TO THE PROJECT FREE OF MUD AND DEBRIS FROM THE CONSTRUCTION AT ALL TIMES. NO SEPARATE PAY.

37. ALL DISTURBED AREAS SHALL BE SOLID SODDED UNLESS OTHERWISE NOTED. AREAS THAT ARE HYDROMULCHED AND/OR SODDED SHALL BE CHECKED PERIODICALLY TO SEE THAT GRASS COVERAGE IS PROPERLY MAINTAINED. RESTORED AREAS SHALL BE WATERED, FERTILIZED, AND HYDROMULCHED AND/OR RESODDED, IF NECESSARY.

38. ALL IRRIGATION SYSTEMS SHALL BE RESTORED TO EQUAL OR BETTER CONDITION THAN WHICH IT WAS FOUND BEFORE SUCH WORK WAS UNDERTAKEN. ALL MODIFICATIONS SHALL BE COMPLETED BY LICENSED IRRIGATOR. NO SEPARATE PAY.

39. THE CONTRACTOR SHALL IMMEDIATELY REPAIR OR REPLACE ANY DAMAGES TO EXISTING IMPROVEMENTS, INCLUDING, BUT NOT LIMITED TO, FENCES, WALLS, PAVEMENT, IRRIGATION, LANDSCAPE, GRASS, AND TREES, AT NO ADDITIONAL COST TO THE OWNER. THIS WORK SHALL BE SUBSIDIARY TO THE CONTRACT AMOUNT. ALL ADJACENT PROPERTY DAMAGED BY THE PROPOSED CONSTRUCTION SHALL BE RESTORED TO EQUAL OR BETTER CONDITION THAN WHICH IT WAS FOUND BEFORE SUCH WORK WAS UNDERTAKEN, NO SEPARATE PAY.

40. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN A NEAT AND ACCURATE RECORD OF CONSTRUCTION FOR THE OWNER'S RECORDS. AT THE CONCLUSION OF THE PROJECT, THE CONTRACTOR SHALL PROVIDE THE OWNER FULL SIZE MARKUPS THAT RECORD ALL CONSTRUCTION DEVIATING FROM THE PLANS AND ALL EXISTING PRIVATE UTILITIES ENCOUNTERED, BOTH HORIZONTALLY AND VERTICALLY.

41. THE CONTRACTOR SHALL TAKE ALL AVAILABLE PRECAUTIONS TO CONTROL DUST. CONTRACTOR SHALL CONTROL DUST BY SPRINKLING WATER, OR AS APPROVED BY THE OWNER. NO SEPARATE PAY.

42. WHERE APPLICABLE, THE CONTRACTOR SHALL PROTECT EXISTING PAVEMENT BY PLACING RUBBER MATS OR EARTH ON THE PAVEMENT TO PROTECT IT FROM TRACK MARKS AND/OR CRACKING DURING CONSTRUCTION (NON-PAY ITEM).

43. THE CONTRACTOR SHALL VERIFY THE ELEVATION OF ALL UTILITY CROSSINGS IN ADVANCE OF THE INSTALLATION OF ANY CONDUIT IN ORDER TO ALLOW FOR ADEQUATE TIME FOR REQUIRED RELOCATIONS FOR ADJUSTMENTS. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY DELAYS RESULTING FROM HIS FAILURE TO IDENTIFY CONFLICTS.

44. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SITE TRENCH SAFETY REQUIREMENTS IN ACCORDANCE WITH OWNER'S STANDARDS, TEXAS STATE LAW, AND O.S.H.A. STANDARDS FOR ALL EXCAVATION.

45. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL PUBLIC AND PRIVATE UTILITIES, PAVEMENT TO REMAIN, CURBS, SIDEWALKS, SIGNS, TREES, ETC., IN THE CONSTRUCTION OF THIS PROJECT. ALL MANHOLES, CLEAN-OUTS, VALVE BOXES, FIRE HYDRANTS, ETC. ALL APPURTENANCES WILL BE ASSUMED TO BE IN GOOD CONDITION UNLESS OTHERWISE CONFIRMED IN WRITING PRIOR TO COMMENCEMENT OF WORK.

46. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ADEQUATE AND POSITIVE DRAINAGE AT ALL TIMES DURING CONSTRUCTION OF PROPOSED FACILITIES AS APPLICABLE.

47. CONTRACTOR IS TO MAINTAIN A CLEAN PROJECT AREA, FREE FROM WORKMAN TRASH AND REFUSE, AT ALL TIMES.

48. EXCAVATION / TRENCHING AND BACKFILLING OPERATIONS SHALL BE COORDINATED SUCH THAT NO MORE THAN 200 LINEAR FEET OF TRENCH IS OPEN AT ANY ONE TIME. ALL OPEN EXCAVATIONS SHALL BE PROPERLY LIGHTED AND BARRICADED DURING HOURS CONTRACTOR IS NOT ON SITE.

49. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL MANHOLES AT ALL TIMES DURING CONSTRUCTION. NO STORAGE LOCATIONS SHALL OBSTRUCT ACCESS.

50. NO EXCESS EXCAVATED MATERIAL SHALL BE DEPOSITED IN LOW AREAS OR ALONG NATURAL DRAINAGE WAYS, WITHOUT WRITTEN PERMISSION FROM THE LOCAL JURISDICTION. IF THE CONTRACTOR PLACES EXCESS MATERIAL IN AREAS WITHOUT WRITTEN PERMISSION, HE SHALL BE RESPONSIBLE FOR ALL DAMAGE RESULTING FROM SUCH FILL AND HE SHALL REMOVE THE MATERIAL AT HIS OWN COST IF THE OWNER SO DIRECTS.

51. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OFF-SITE DISPOSAL OF ALL EXCESS EXCAVATION. THE CONTRACTOR SHALL SUBMIT A "STOCKPILE PLAN" THAT SHOULD DESIGNATE LOCATIONS FOR TEMPORARY STORAGE OF THE EXCAVATED SOIL. THIS STOCKPILE PLAN SHALL BE SUBMITTED TO THE OWNER FOR REVIEW AND APPROVAL PRIOR TO THE START OF WORK. THE CONTRACTOR SHALL NOT BE ALLOWED TO STRING PIPE, FITTINGS, OR APPURTENANCES ALONG THE PROJECT.

52. THE CONTRACTOR SHALL NOT BE ALLOWED TO STAGE OR STOCKPILE ANY SPOILS, EXCAVATED MATERIAL, OR FILL MATERIAL WITHIN PROJECT LIMITS WITHOUT PRIOR APPROVAL OF THE OWNER. CONTRACTOR SHALL BE REQUIRED TO TRANSPORT (IN/OUT) SPOILS AND FILL MATERIAL AS NECESSARY. CONTRACTOR SHALL BE REQUIRED TO COORDINATE WITH THE OWNER IF HE INTENDS TO STOCKPILE OR DELIVER SPOILS AT OR TO ANY LOCATION WITHIN THE PROPERTY.

53. THE CONTRACTOR SHALL REVEGETATE ALL DISTURBED AREAS. REVEGETATION SHALL BE PERFORMED IN ACCORDANCE WITH TECHNICAL SPECIFICATIONS UNLESS OTHERWISE DIRECTED. REVEGETATION SHALL BE ACCEPTABLE WHEN VEGETATION GROWTH ACHIEVES ONE INCH IN HEIGHT, WITH 85% COVERAGE, AND LESS THAN 10 SQUARE FEET BARE. LANDSCAPING SHALL BE REPLACED EQUAL OR BETTER THAN EXISTING CONDITIONS. REVEGETATION SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT COST AND REFLECTED IN THE UNIT BID PRICES FOR THE VARIOUS ITEMS LISTED IN THE PROPOSAL.

54. AT PROJECT COMPLETION, THE CONTRACTOR SHALL CLEAN UP AND RESTORE THE AREA OF OPERATIONS TO A CONDITION AS GOOD OR BETTER THAN THAT WHICH EXISTED PRIOR TO INSTALLATION OF THE UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RETURNING THE FINISHED GRADE ELEVATIONS TO THE SAME ELEVATIONS THAT EXISTED PRIOR TO INSTALLATION OR TO THOSE SHOWN ON THE PLANS. A FINAL INSPECTION AND APPROVAL BY THE OWNER'S ON-SITE REPRESENTATIVE SHALL BE SECURED BEFORE THE CONTRACTOR MAY DEMOBILIZE THE JOB SITE. FOR CONCRETE PAVEMENT REPAIR, THE CONTRACTOR SHALL NEATLY SAWCUT SURFACES AT THE NEAREST JOINT PRIOR TO EXCAVATION. CONTRACTOR SHALL REMOVE AND REPAIR FULL PANELS. ANY ADDITIONAL DAMAGE TO PAVEMENT AND/OR CURB AND GUTTER SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

COLORADO REGISTERED
DUSTIN W. COLWELL
54946
PROFESSIONAL ENGINEER

PROJECT NO.:096888020

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QuikTrip No. 4251
STATION 60 FILING NO. 1
E. COLFAX AVE & N. AIRPORT BLVD
AURORA, CO
165464 E 16TH PL

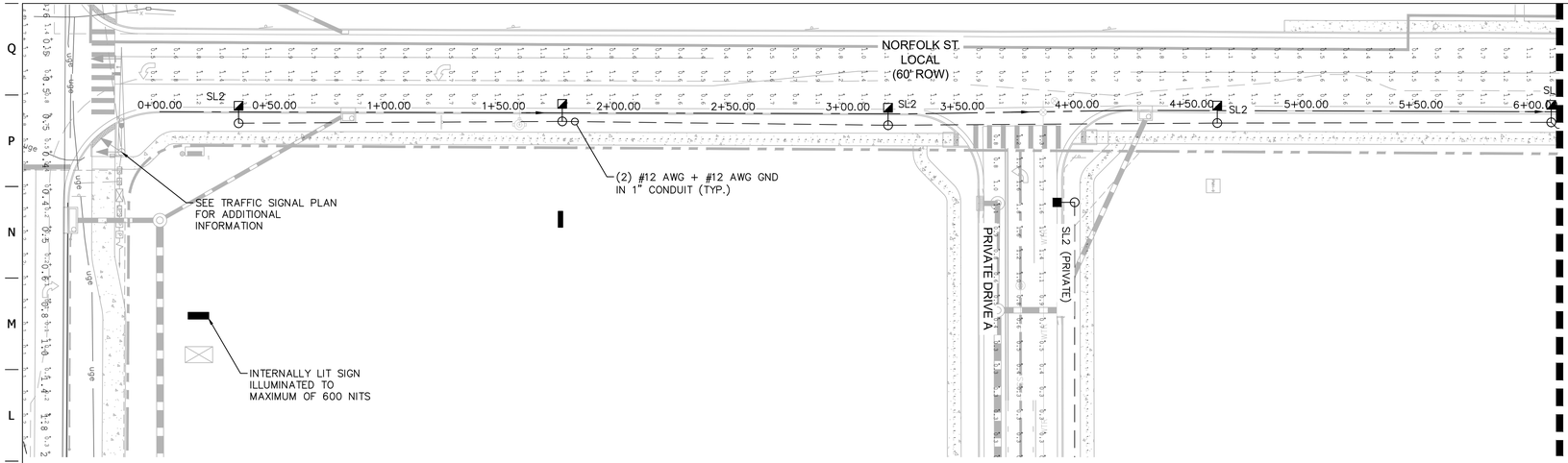
PROTOTYPE: N/A
DIVISION: COLORADO
VERSION: 002
DESIGNED BY: SAM
DRAWN BY: DEK
REVIEWED BY: SAM

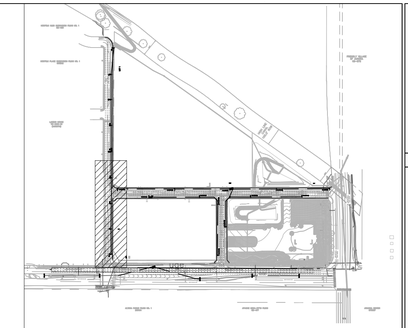
REV	DATE	DESCRIPTION
A	12/19/23	HLC CROSSING PLANS
A	09/18/23	RFI NO.7 MICROPOOL
A	07/28/23	SANITARY CASING & STORM H
A	07/19/23	LOT 3 STORM LINE D
A	06/26/23	WATER STUB SHIFT
A	06/09/23	STORM INSERTA-TEE CONNECTION
A	05/31/23	WATER SERVICE LINES

ORIGINAL ISSUE DATE: 09/15/22

SHEET TITLE:
ELECTRICAL NOTES

SHEET NUMBER:
65





KEY MAP

1" = 400'

NORTH

PRIVATE STREET LIGHTS WILL REMAIN PRIVATELY OWNED AND MAINTAINED IN PERPETUITY

LUMINAIRE SCHEDULE

SYMBOL	QTY	ARRANGEMENT	LLF	DESCRIPTION	ARR. WATTS	ARR. LUMENS	LAMP
	12	SINGLE	0.9	GAN-SA1D-730-U-T2R-BK	67	7707	LED
	9	SINGLE	0.9	ARCH-M-PA2-50-730-U-T2R-AP-PR7-10K	48	7342	LED

CITY CRITERIA

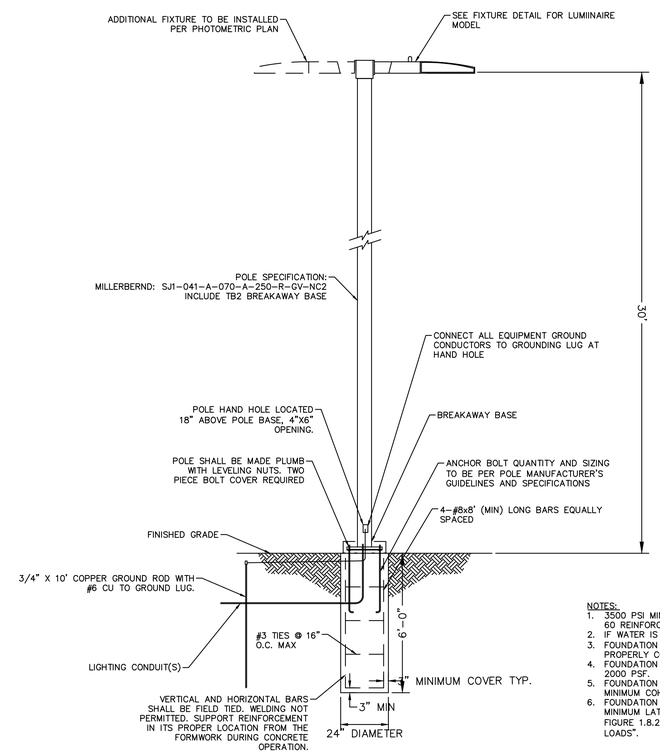
STREET	LOCAL SIDEWALKS
ILLUMINANCE (CD/SQM)	ILLUMINANCE (FC)
AVERAGE = 0.4	AVERAGE = 0.2
AVG/MIN = 6.0	

CALCULATION SUMMARY

NORFOLK (LOCAL)	PRIVATE DRIVE A (LOCAL)	PRIVATE DRIVE B (LOCAL)	NORFOLK SIDEWALK
LUMINANCE (CD/SQM)	LUMINANCE (CD/SQM)	LUMINANCE (CD/SQM)	LUMINANCE (CD/SQM)
MINIMUM = 0.20	MINIMUM = 0.30	MINIMUM = 0.30	MINIMUM = 0.0
MAXIMUM = 1.40	MAXIMUM = 1.30	MAXIMUM = 1.30	MAXIMUM = 1.5
AVERAGE = 0.62	AVERAGE = 0.63	AVERAGE = 0.58	AVERAGE = 0.32
AVG/MIN = 3.1	AVG/MIN = 2.10	AVG/MIN = 1.93	AVG/MIN = N/A

LEGEND

SYMBOL	DESCRIPTION
	PRIVATE LIGHT
	SL2 LIGHT
	SL3 LIGHT
	SCH 40 PVC
P	NEW METER PEDESTAL
J	ELECTRICAL PULL BOX



NOTES:
1. 3500 PSI MIN. 28 DAY COMPRESSIVE STRENGTH CONCRETE WITH GRADE 60 REINFORCING STEEL
2. IF WATER IS PRESENT IN HOLE, REMOVE BEFORE POURING CONCRETE.
3. FOUNDATION EXCAVATION SHALL BE BY 24" AUGER IN UNDISTURBED OR PROPERLY COMPACTED FILL PER SPECIFICATIONS.
4. FOUNDATION SHALL HAVE A MINIMUM ALLOWABLE END BEARING OF 2000 PSF.
5. FOUNDATION HAS BEEN DESIGNED FOR A COHESIVE SOIL BASED ON A MINIMUM COHESIVE VALUE OF 1000 PSF.
6. FOUNDATION HAS BEEN DESIGNED FOR A GRANULAR SOIL BASED ON A MINIMUM LATERAL SOIL PRESSURE OF 1000 PSF, UTILIZING AASHTO FIGURE 1.8.2C(4) OF "EMBEDMENT OF POSTS WITH OVERTURNING LOADS".

1 / 66 POLE FOUNDATION DETAIL

N.T.S.

NORTH

GRAPHIC SCALE IN FEET
0 15 30 60

PRIVATE STREET LIGHTS WILL REMAIN PRIVATELY OWNED AND MAINTAINED IN PERPETUITY

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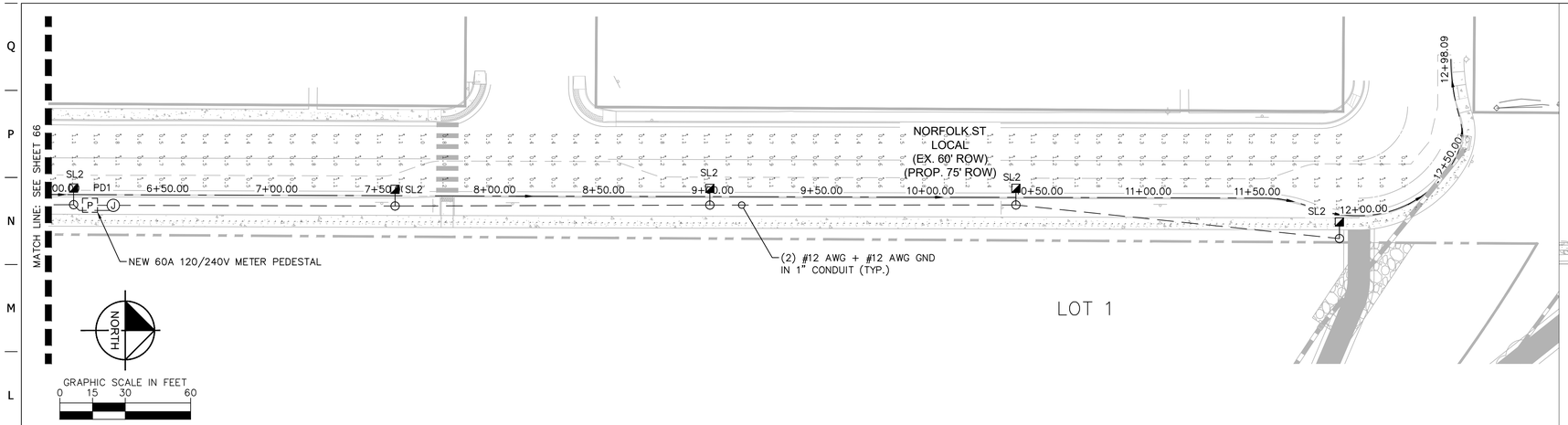
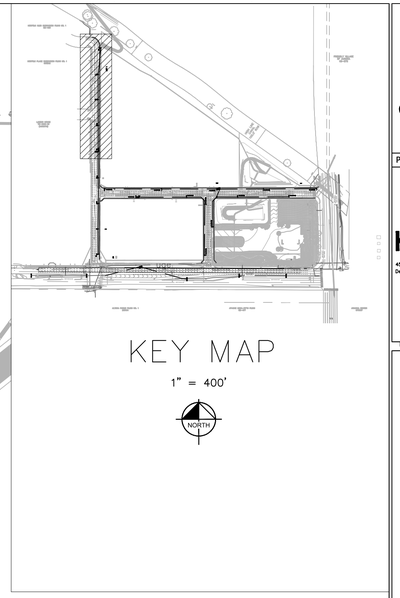
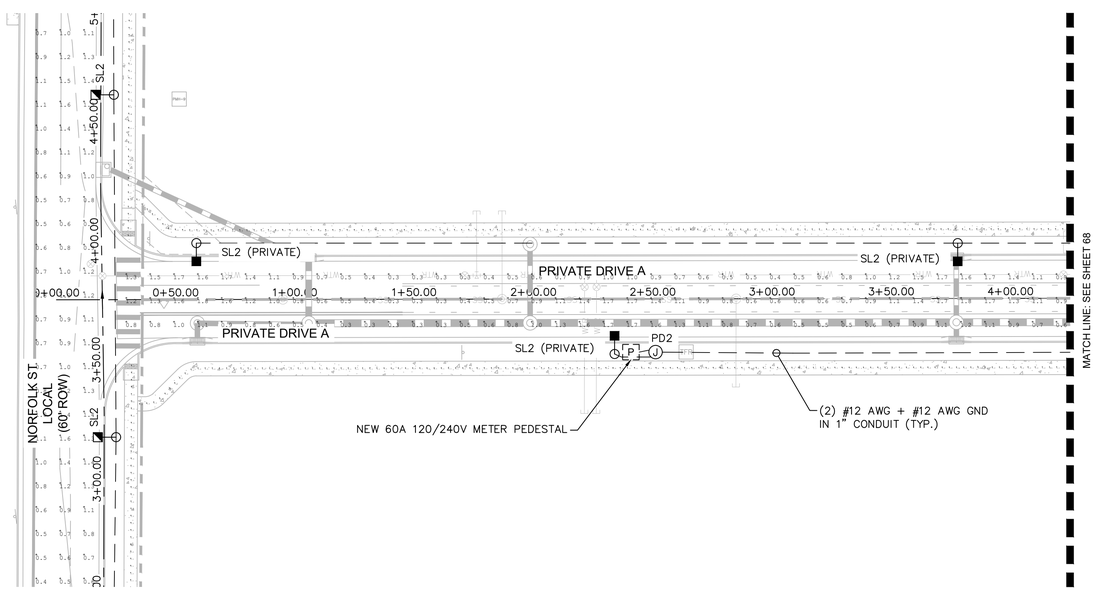
ORIGINAL ISSUE DATE: 09/15/22

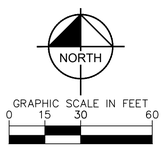
SHEET TITLE:
PHOTOMETRIC PLANS

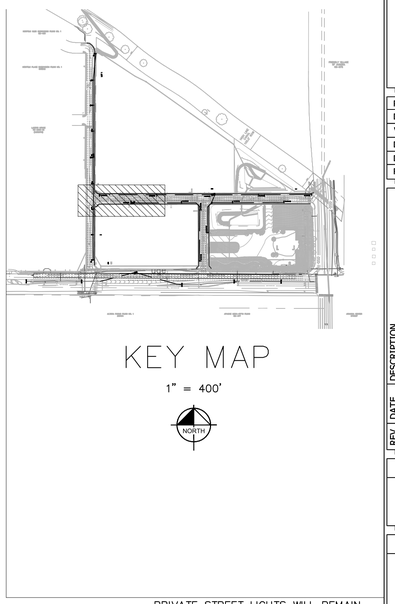
SHEET NUMBER:
66











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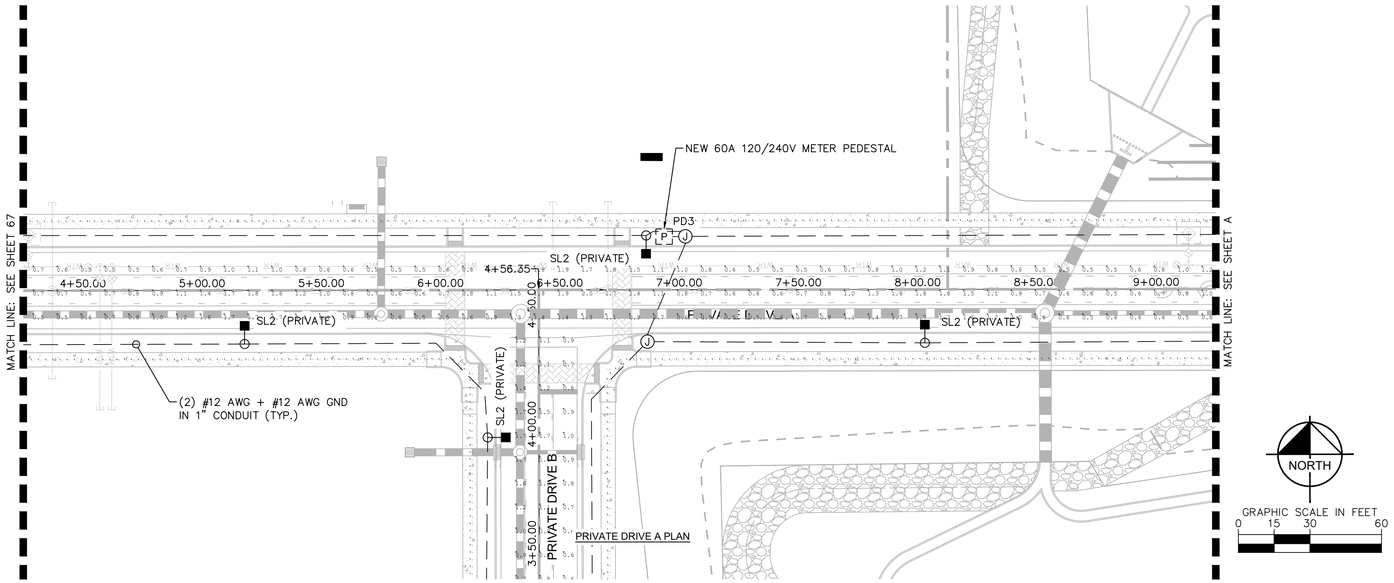
DIVISION: COLORADO
VERSION: 002
DESIGNED BY: SAM
DRAWN BY: DEK
REVIEWED BY: SAM

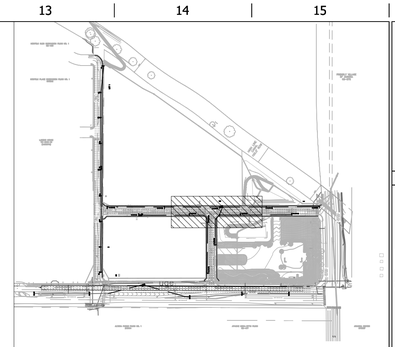
REV	DATE	DESCRIPTION
A	12/19/23	HLC CROSSING PLANS
A	09/18/23	RFI NO.7 MICROPOOL
A	07/28/23	SANITARY CASING & STORM H
A	07/19/23	LOT 3 STORM LINE D
A	06/26/23	WATER STUB SHIFT
A	06/08/23	STORM INSERTA-TEE CONNECTION
A	05/31/23	WATER SERVICE LINES

ORIGINAL ISSUE DATE: 09/15/22

SHEET TITLE:
PHOTOMETRIC PLANS

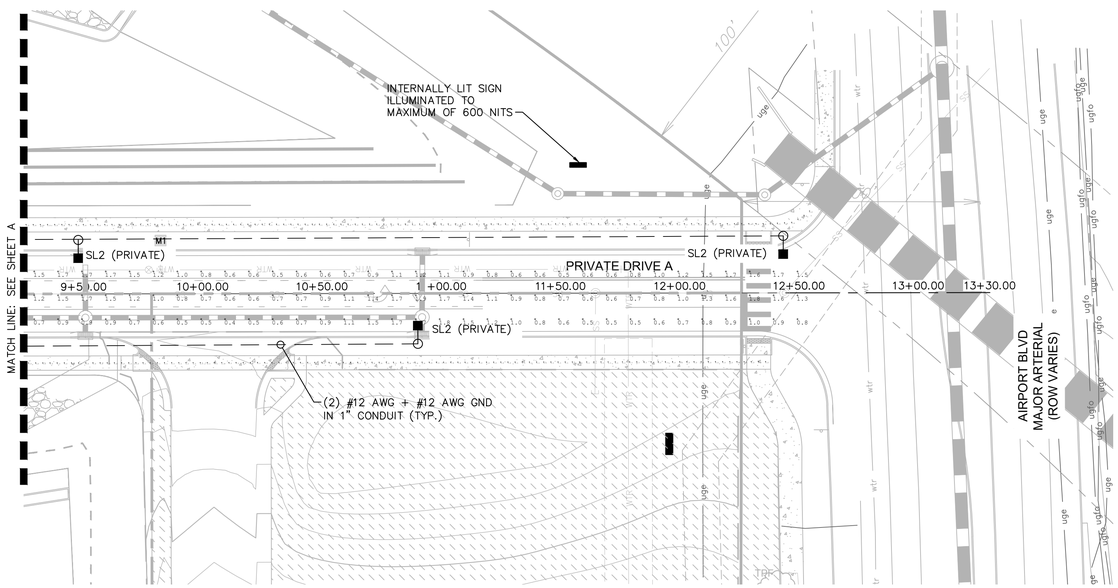
SHEET NUMBER:
67



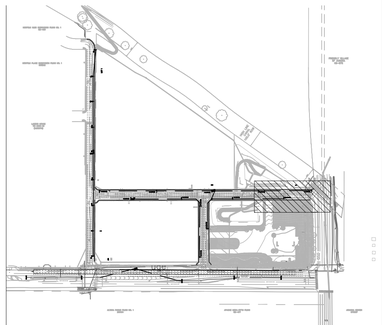


KEY MAP

1" = 400'



PRIVATE DRIVE A PLAN



KEY MAP

1" = 400'

PRIVATE STREET LIGHTS WILL REMAIN PRIVATELY OWNED AND MAINTAINED IN PERPETUITY

COLORADO REGISTERED PROFESSIONAL ENGINEER
DUSTIN W. COLMAN
54946

PROJECT NO.:096888020

Kimley»Horn
4582 South Ulster Street, Suite 1500
Denver, Colorado 80237 (303) 228-2300

QuikTrip No. 4251

STATION 60 FILING NO. 1
E. COLFAX AVE & N. AIRPORT BLVD
AURORA, CO
165464 E 16TH PL

PROTOTYPE: N/A
DIVISION: COLORADO
VERSION: 002
DESIGNED BY: SAM
DRAWN BY: DEK
REVIEWED BY: SAM

REV	DATE	DESCRIPTION
A	12/19/23	HLC CROSSING PLANS
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A	06/08/23	STORM INSERTA-TEE CONNECTION
A	05/31/23	WATER SERVICE LINES

ORIGINAL ISSUE DATE: 09/15/22

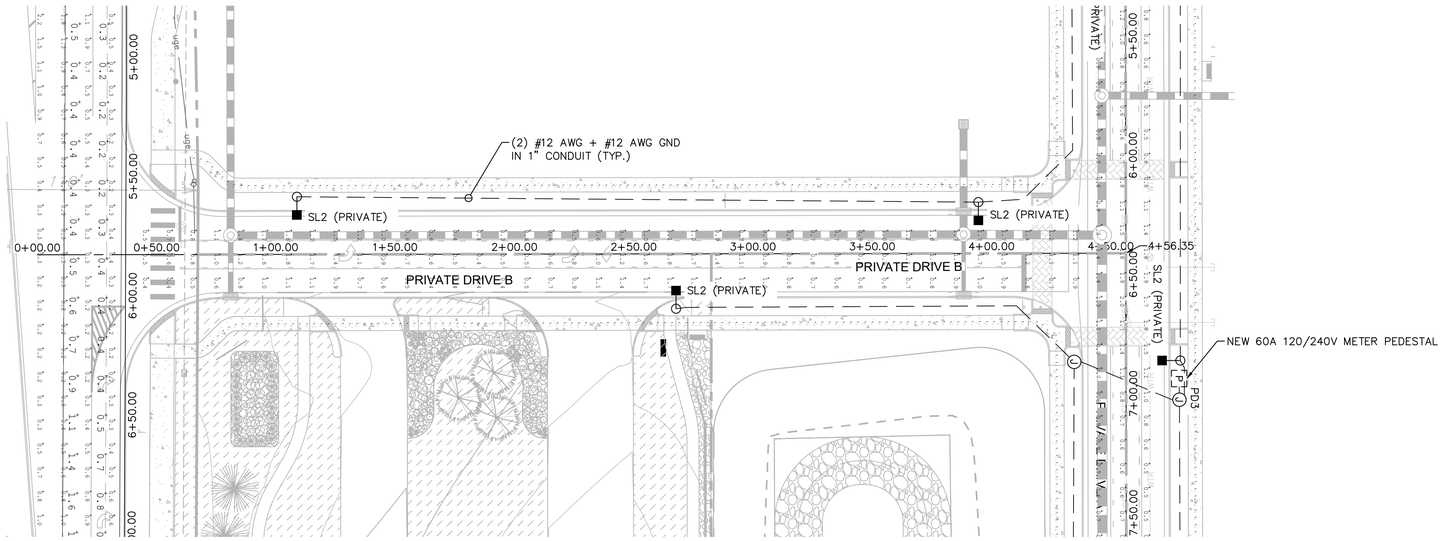
SHEET TITLE:

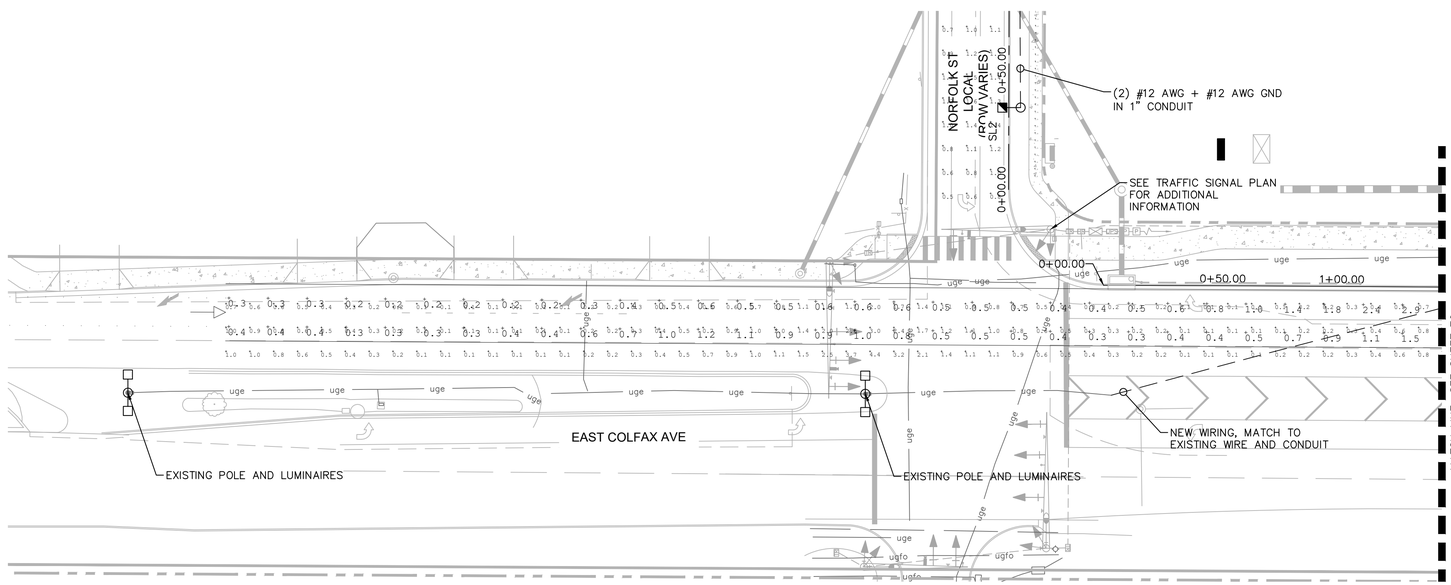
PHOTOMETRIC PLANS

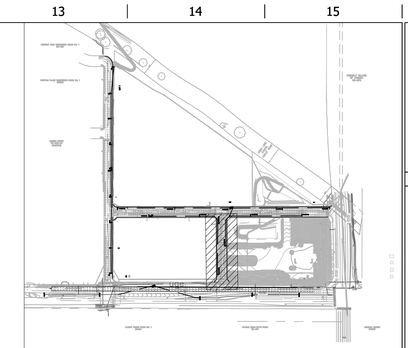
SHEET NUMBER:

68

PRIVATE DRIVE B PLAN



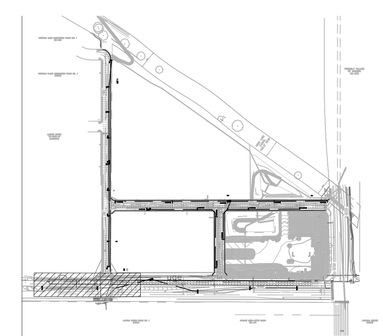




KEY MAP

1" = 400'

NORTH



KEY MAP

1" = 400'

NORTH

NORTH

GRAPHIC SCALE IN FEET

0 15 30 60

PRIVATE STREET LIGHTS WILL REMAIN PRIVATELY OWNED AND MAINTAINED IN PERPETUITY

COLORADO REGISTERED PROFESSIONAL ENGINEER
DUSTIN W. COLLINS
54946

PROJECT NO.:096888020

Kimley»Horn
4582 South Ulster Street, Suite 1500
Denver, Colorado 80237 (303) 228-2300

QuikTrip No. 4251

STATION 60 FILING NO. 1
E. COLFAX AVE & N. AIRPORT BLVD
AURORA, CO
165464 E 16TH PL

PROTOTYPE: N/A
DIVISION: COLORADO
VERSION: 002
DESIGNED BY: SAM
DRAWN BY: DEK
REVIEWED BY: SAM

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A	06/08/23	STORM INSERTA-TEE CONNECTION
A	05/31/23	WATER SERVICE LINES

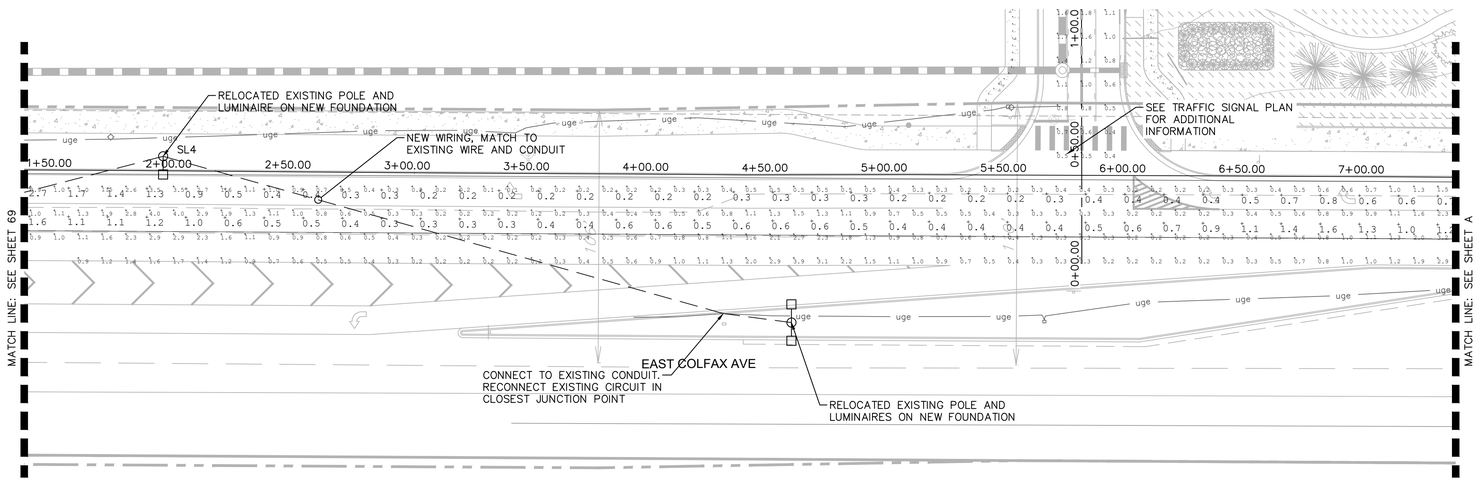
ORIGINAL ISSUE DATE: 09/15/22

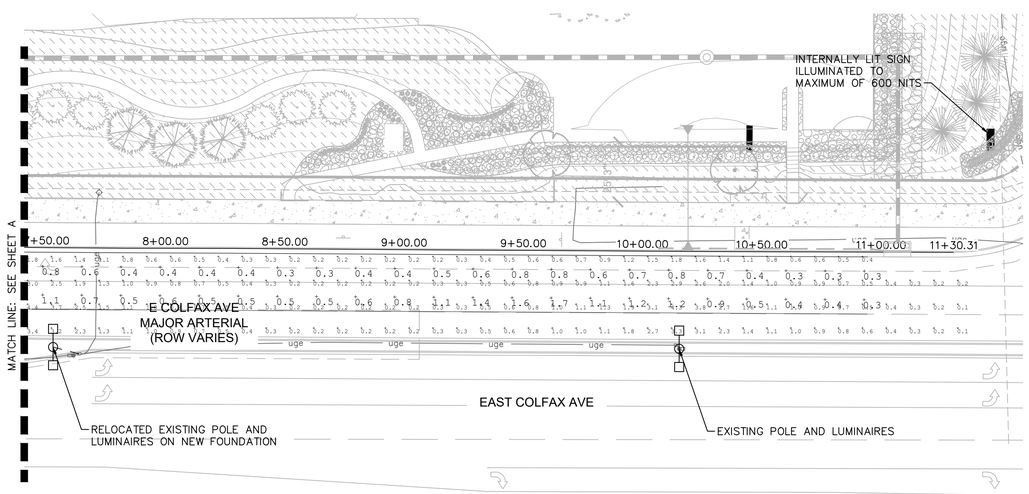
SHEET TITLE:

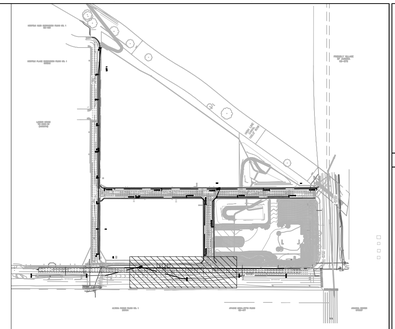
PHOTOMETRIC PLANS

SHEET NUMBER:

69



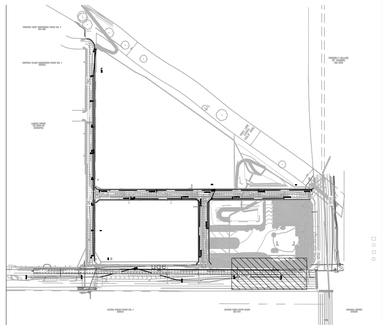




KEY MAP

1" = 400'

NORTH



KEY MAP

1" = 400'

NORTH

PRIVATE STREET LIGHTS WILL REMAIN PRIVATELY OWNED AND MAINTAINED IN PERPETUITY

COLORADO REGISTERED PROFESSIONAL ENGINEER
DUSTIN W. COLMAN
54946

PROJECT NO.:096888020

Kimley»Horn
4582 South Ulster Street, Suite 1500
Denver, Colorado 80237 (303) 228-2300

QuikTrip No. 4251

STATION 60 FILING NO. 1
E. COLFAX AVE & N. AIRPORT BLVD
AURORA, CO
165464 E 16TH PL

PROTOTYPE: N/A
DIVISION: COLORADO
VERSION: 002
DESIGNED BY: SAM
DRAWN BY: DEK
REVIEWED BY: SAM

REV	DATE	DESCRIPTION
A	12/19/23	HLC CROSSING PLANS
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A	06/08/23	STORM INSERTA-TEE CONNECTION
A	05/31/23	WATER SERVICE LINES

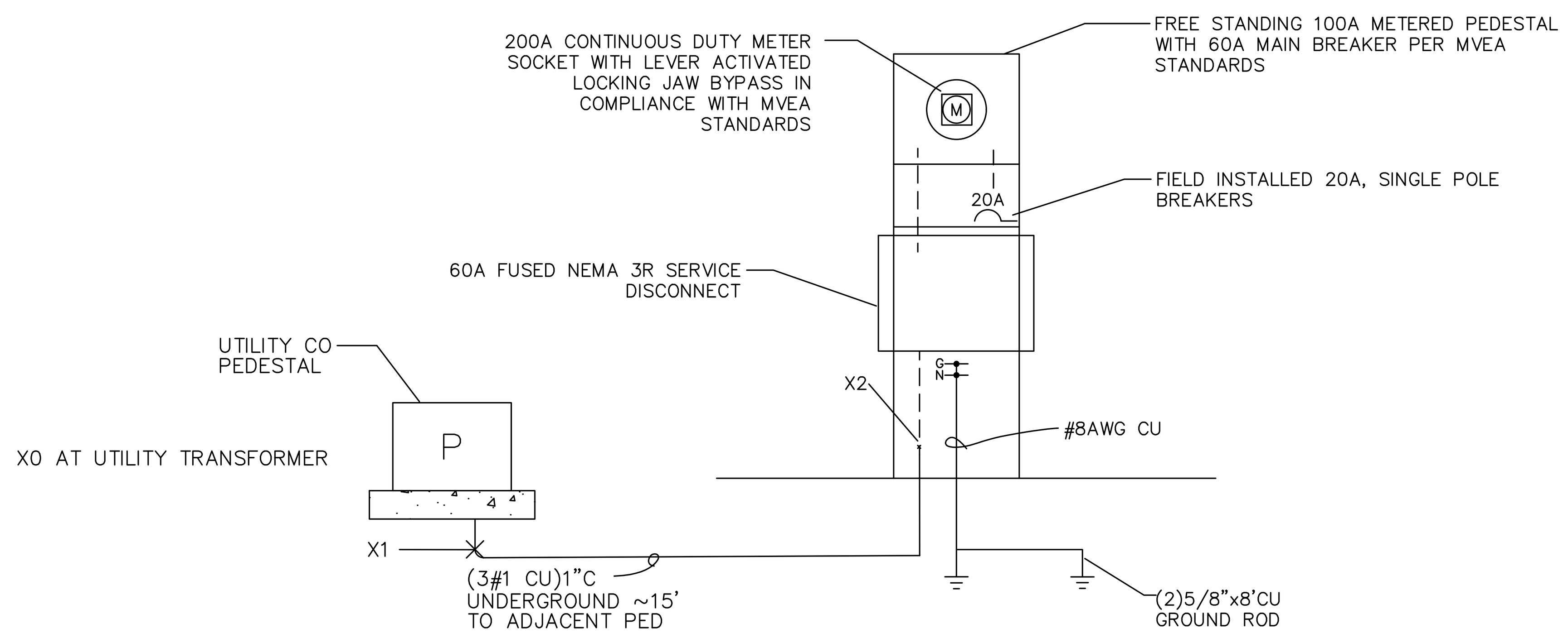
ORIGINAL ISSUE DATE: 09/15/22

SHEET TITLE:

PHOTOMETRIC PLANS

SHEET NUMBER:

70



Short Circuit Calculation Copper Conductors

Fault "X"	Isc Available	Feeder Wire Size	Conduit Steel	Conduit PVC	Wire Type	Constant "C"	Number of Sets	Length	Volts L to L	"f" Factor	"M" multiplier	Isc at Fault	Fault "X"
X0	14,800	350		X	Copper	22736	1	30	240	0.1409	0.8765	12,972	X1
X1	12,972	1		X	Copper	7493	1	15	240	0.1874	0.8422	10,925	X2

PANEL PD1

Mounting Method		Panel Status		Panel Information			
		RELOCATED	☐	Volt:	240/120	Bus Rating	60A
SURFACE	☑	NEW	☑	Phase	1	Main Breaker:	60A
FLUSH	☐	EXISTING	☐	Wire	3	AIC Rating:	14,000
				Feeder	-	Feed From	UTILITY

Ckt #	New BKR	Code	Description	Load VA	Bkr	P	Ph A	Ph B	P	Bkr	Load VA	Description	Code	New BKR	Ckt #
1	☐	1	LIGHTING CIRCUIT #1	540	20	1	•			-		SPACE	1	☐	2
3	☐	1	SPACE		-			•	1	20	500	IRRIGATION CONTROLLER	2	☐	4
5	☐	1	SPACE		-		•			-		SPACE		☐	6
7	☐	1	SPACE		-			•		-		SPACE		☐	8

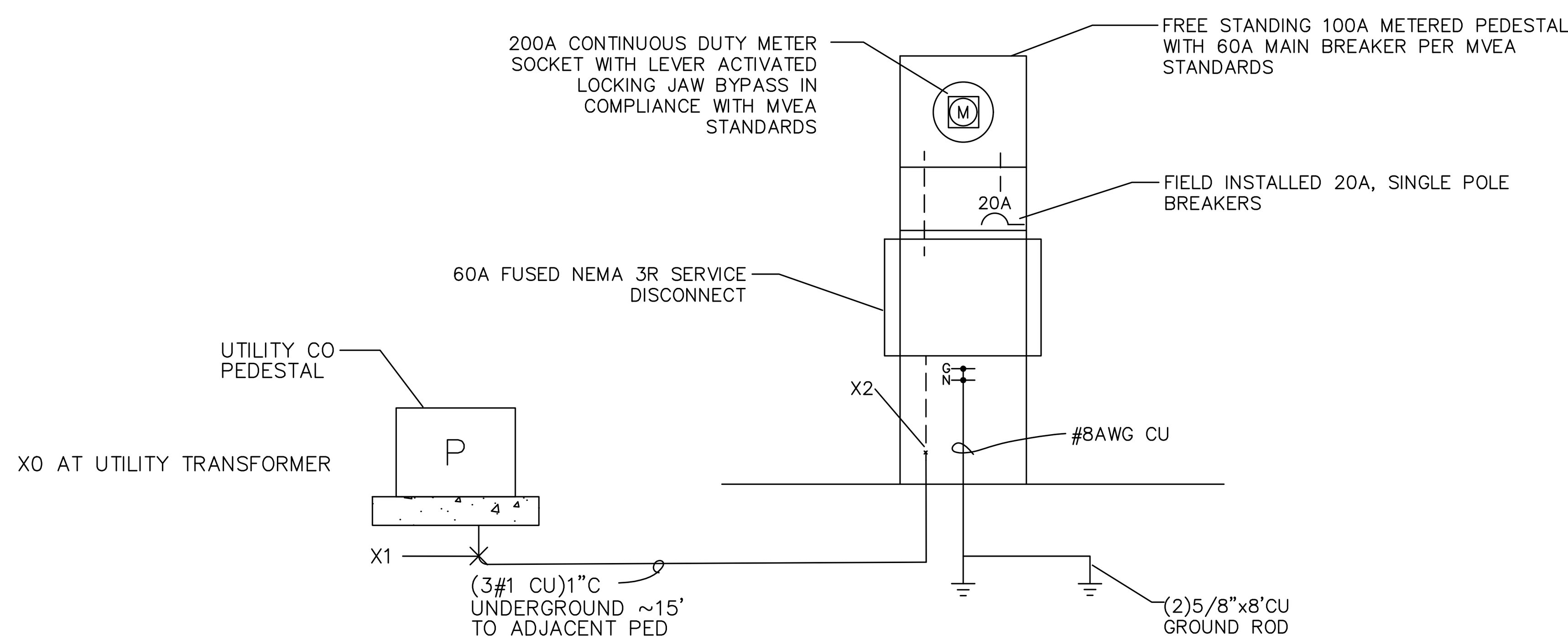
Code	Description	Load VA	Dem	Load Summary		
				Per	Phase	
1	Lighting	540	125%	Ph A	540 VA	
2	Rec up to 10,000	500	100%	Ph B	500 VA	
	Rec over 10,000		50%			
3	Motor		100%			
	Largest Motor		125%			
4	Heater		100%	Connected		1040 VA
5	Kitchen		100%	Code Demand		1175 VA
6	Other		100%			
7	Sub Panel		100%	Code Demand		4.90 Amps

CIRCUIT PD1-1 VOLTAGE DROP SUMMARY:

	MAX VOLTAGE DROP	%
PD1-1	3.72	3.10%

PANEL ADDRESS: 1670 N NORFOLK ST

A PANEL PD1
NO SCALE



Short Circuit Calculation Copper Conductors

Fault "X"	Isc Available	Feeder Wire Size	Conduit Steel	Conduit PVC	Wire Type	Constant "C"	Number of Sets	Length	Volts L to L	"f" Factor	"M" multiplier	Isc at Fault	Fault "X"
X0	14,800	350		X	Copper	22736	1	45	240	0.2114	0.8255	12,217	X1
X1	12,217	1		X	Copper	7493	1	15	240	0.1765	0.8500	10,384	X2

PANEL PD2

Mounting Method		Panel Status		Panel Information			
		RELOCATED	☐	Volt:	240/120	Bus Rating	60A
SURFACE	☑	NEW	☑	Phase	1	Main Breaker:	60A
FLUSH	☐	EXISTING	☐	Wire	3	AIC Rating:	14,000
				Feeder	-	Feed From	UTILITY

Ckt #	New BKR	Code	Description	Load VA	Bkr	P	Ph A	Ph B	P	Bkr	Load VA	Description	Code	New BKR	Ckt #
1	☐	1	LIGHTING CIRCUIT #1	268	20	1	•			-		SPACE	1	☐	2
3	☐	1	SPACE		-			•		-		SPACE		☐	4
5	☐	1	SPACE		-		•			-		SPACE		☐	6
7	☐	1	SPACE		-			•		-		SPACE		☐	8

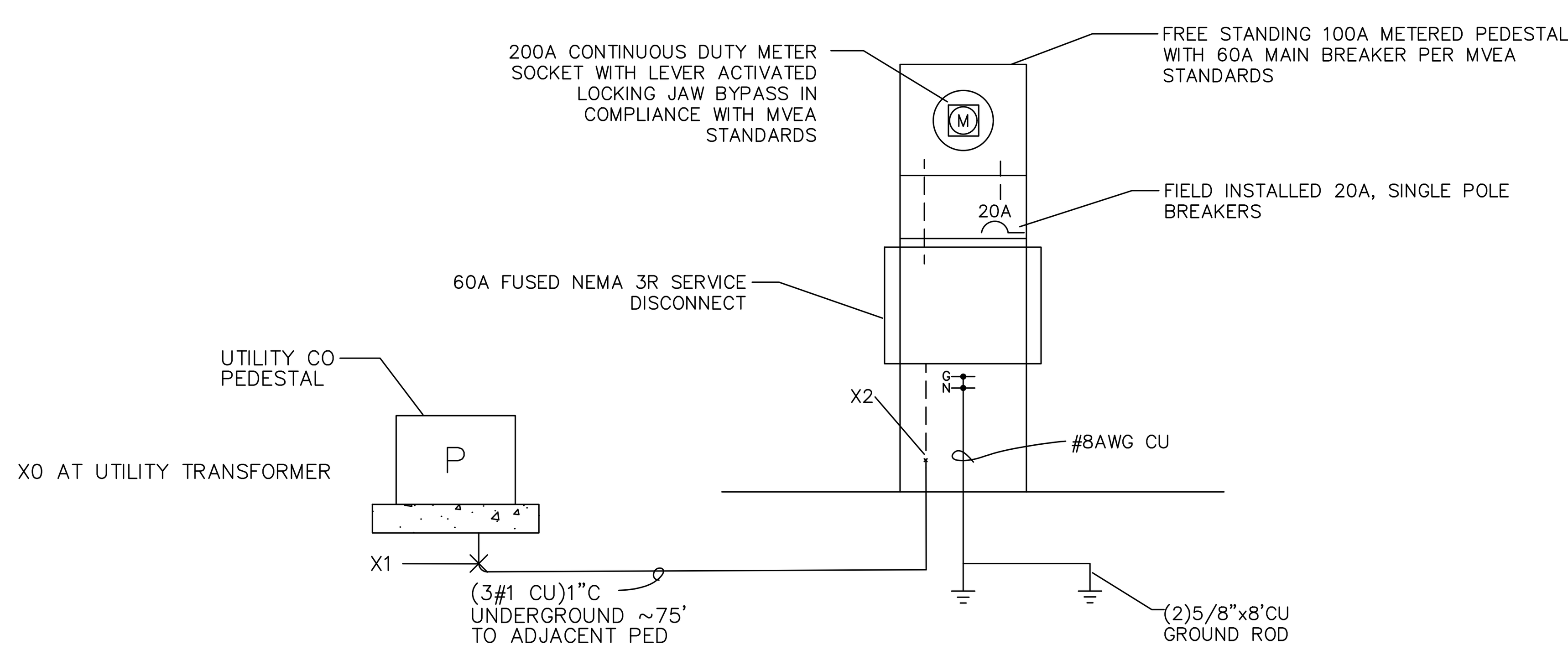
Code	Description	Load VA	Dem	Load Summary		
				Per	Phase	
1	Lighting	268	125%	Ph A	268 VA	
2	Rec up to 10,000		100%	Ph B	VA	
	Rec over 10,000		50%			
3	Motor		100%			
	Largest Motor		125%			
4	Heater		100%	Connected		268 VA
5	Kitchen		100%	Code Demand		335 VA
6	Other		100%			
7	Sub Panel		100%	Code Demand		1.40 Amps

CIRCUIT PD2-1 VOLTAGE DROP SUMMARY:

	MAX VOLTAGE DROP	%
PD2-1	0.65	0.54%

PANEL ADDRESS: 16564 E 16TH PLACE

B PANEL PD2
NO SCALE



Short Circuit Calculation Copper Conductors

Fault "X"	Isc Available	Feeder Wire Size	Conduit Steel	Conduit PVC	Wire Type	Constant "C"	Number of Sets	Length	Volts L to L	"f" Factor	"M" multiplier	Isc at Fault	Fault "X"
X0	14,800	350		X	Copper	22736	1	165	240	0.7751	0.5633	8,337	X1
X1	8,337	1		X	Copper	7493	1	15	240	0.1204	0.8925	7,441	X2

PANEL PD3

Mounting Method		Panel Status		Panel Information			
		RELOCATED	☐	Volt:	240/120	Bus Rating	60A
SURFACE	☑	NEW	☑	Phase	1	Main Breaker:	60A
FLUSH	☐	EXISTING	☐	Wire	3	AIC Rating:	14,000
				Feeder	-	Feed From	UTILITY

Ckt #	New BKR	Code	Description	Load VA	Bkr	P	Ph A	Ph B	P	Bkr	Load VA	Description	Code	New BKR	Ckt #
1	☐	1	LIGHTING CIRCUIT #1	536	20	1	•			-		SPACE	1	☐	2
3	☐	1	IRRIGATION CONTROLLER	500	20	1		•		-		SPACE		☐	4
5	☐	1	SPACE		-		•			-		SPACE		☐	6
7	☐	1	SPACE		-			•		-		SPACE		☐	8

Code	Description	Load VA	Dem	Load Summary		
				Per	Phase	
1	Lighting	1036	125%	Ph A	536 VA	
2	Rec up to 10,000		100%	Ph B	500 VA	
	Rec over 10,000		50%			
3	Motor		100%			
	Largest Motor		125%			
4	Heater		100%	Connected		1036 VA
5	Kitchen		100%	Code Demand		1295 VA
6	Other		100%			
7	Sub Panel		100%	Code Demand		5.40 Amps

CIRCUIT PD3-1 VOLTAGE DROP SUMMARY:

	MAX VOLTAGE DROP	%
PD3-1	0.71	0.59%

PANEL ADDRESS: 16703 E 16TH PLACE

C PANEL PD3
NO SCALE

COLORADO REGISTERED PROFESSIONAL ENGINEER DUSTIN J. COLWELL 54946

PROJECT NO.:096888020

Kimley»Horn
4582 South Ulster Street, Suite 1500
Denver, Colorado 80237 (303) 228-2300

QuikTrip No. 4251

STATION 60 FILING NO. 1
E. COLFAX AVE & N. AIRPORT BLVD
AURORA, CO
165464 E 16TH PL

PROTOTYPE: N/A
DIVISION: COLORADO
VERSION: 002
DESIGNED BY: SAM
DRAWN BY: DEK
REVIEWED BY: SAM

REV	DATE	DESCRIPTION
9	12/19/23	HLC CROSSING PLANS
8	09/18/23	RFI NO.7 MICROPOOL
7	07/28/23	SANITARY CASING & STORM H
6	07/19/23	LOT 3 STORM LINE D
5	06/26/23	WATER STUB SHIFT
4	06/08/23	STORM INSERTA-TEE CONNECTION
3	05/31/23	WATER SERVICE LINES

ORIGINAL ISSUE DATE: 09/15/22

SHEET TITLE: ELECTRICAL DETAILS

SHEET NUMBER: 71

Project		Catalog #		Type	
Prepared by		Notes		Date	

Streetworks

GAN Galleon

Area / Roadway Luminaire

Product Features

LumenSafe Technology · Light ARchitect™ · BAA

Product Certifications

Interactive Menu

- Ordering Information page 2
- Mounting Details page 3
- Optical Distributions page 4
- Product Specifications page 4
- Energy and Performance Data page 4
- Control Options page 9

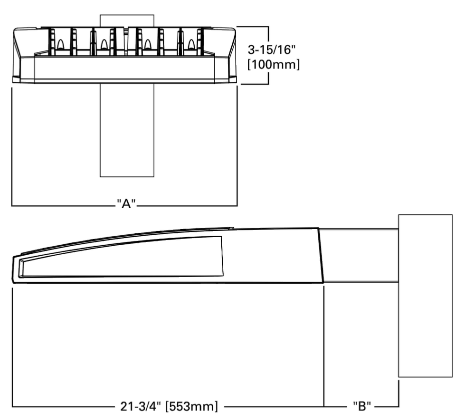
Quick Facts

- Lumen packages range from 4,200 - 80,800 (34W - 640W)
- Efficacy up to 156 lumens per watt
- Options to meet Buy American and other domestic preference requirements

Connected Systems

- WaveLinx
- Enlighted

Dimensional Details



Number of Light Squares	"A" Width	"B" Standard Arm Length	"B" Extended Arm Length[1]	"B" Quick Mount Arm Length	"B" Quick Mount Extended Arm Length
1-4	15-1/2"	7"	10"	10-5/8"	16-9/16"
5-6	21-5/8"	7"	10"	10-5/8"	16-9/16"
7-8	27-5/8"	7"	13"	10-5/8"	--
9-10	33-3/4"	7"	16"	--	--

NOTES:
For arm selection requirements and additional line art, see Mounting Details section.

NOTES:
1. Visit https://www.designlights.org/search/ to confirm qualification. Not all product variations are DLC qualified.
2. IDA Certified for 3000K CCT and warmer only.

Streetworks GAN Galleon

Ordering Information

SAMPLE NUMBER: GAN-SA4C-740-U-T4FT-GM

Product Family[1, 2]	Light Engine: Configuration	Light Engine: Drive Current	Color Temperature	Voltage	Distribution	Mounting	Finish
GAN=Galleon **BAA-GAN**=Galleon Buy Act Compliant[34] **TAA-GAN**=Galleon Trade Agreements Act Compliant[34]	**SA1**=1 Square **SA2**=2 Squares **SA3**=3 Squares **SA4**=4 Squares **SA5**=5 Squares[4] **SA6**=6 Squares **SA7**=7 Squares[5] **SA8**=8 Squares[5] **SA9**=9 Squares[6] **SA0**=10 Squares[6]	**A**=600mA **B**=800mA **C**=1000mA **D**=1200mA[16]	**722**=70CRI, 2200K **727**=70CRI, 2700K **730**=70CRI, 3000K **735**=70CRI, 3500K **740**=70CRI, 4000K **750**=70CRI, 5000K **760**=70CRI, 6000K **827**=80CRI, 2700K **830**=80CRI, 3000K **AMB**=Amber, 590nm[14, 16]	**U**=120-277V **1**=120V **2**=208V **3**=240V **4**=277V **8**=480V[7, 8] **9**=347V[7]	**T2**=Type II **T2R**=Type II Roadway **T3**=Type III **T3R**=Type III Roadway **T4FT**=Type IV Forward Throw **T4W**=Type IV Wide **5NQ**=Type V Narrow **5MQ**=Type V Square Medium **5WQ**=Type V Square Wide **SL2**=Type II w/Spill Control **SL3**=Type III w/Spill Control **SL4**=Type IV w/Spill Control **SLL**=90° Spill Light Eliminator Left **SLR**=90° Spill Light Eliminator Right **RW**=Rectangular Wide Type I **AFL**=Automotive Frontline	**[Blank]**=Arm for Round or Square Pole **EA**=Extended Arm[9] **MA**=Mast Arm Adapter[10] **WM**=Wall Mount **QM**=Quick Mount Arm (Standard Length)[11] **QML**=Quick Mount Arm (Standard Length, Large)[35] **QMEA**=Quick Mount Arm (Extended Length)[12]	**AP**=Grey **BZ**=Bronze **BK**=Black **DP**=Dark Platinum **GM**=Graphite Metallic **WH**=White

Options (Add as Suffix)

DIM=External 0-10V Dimming Leads[19, 20]
F=Single Fuse (120, 277 or 347V Specify Voltage)
FF=Double Fuse (208, 240 or 480V Specify Voltage)
20K=20kV UL 1449 fused surge protective device
2L=Two Circuits[17, 18]
3=Three-Position Terminal Block
HA=50°C High Ambient
HSS=Installed House Side Shield[28]
GRSBK=Glare Reducing Shield, Black[23]
GRSWH=Glare Reducing Shield, White[23]
LCF=Light Square Trim Painted to Match Housing[27]
MT=Installed Mesh Top
TH=Tool-less Door Hardware
CC=Coastal Construction finish[3]
L90=Optics Rotated 90° Left
R90=Optics Rotated 90° Right
CE=CE Marking[29]
AHD145=After Hours Dim, 5 Hours[22]
AHD245=After Hours Dim, 6 Hours[22]
AHD255=After Hours Dim, 7 Hours[22]
AHD355=After Hours Dim, 8 Hours[22]
DALI=DALI Drivers

Controls and Systems Options (Add as Suffix)

BPC=Button Type Photocontrol
PR=NEMA 3-PIN Photocontrol Receptacle
PR7=NEMA 7-PIN Photocontrol Receptacle[21]
MS-L08=Motion Sensor for ON/OFF Operation, Maximum 8' Mounting Height[24]
MS-L20=Motion Sensor for ON/OFF Operation, 9' - 20' Mounting Height[24]
MS-L40W=Motion Sensor for ON/OFF Operation, 21' - 40' Mounting Height[24]
MS/X-L08=Bi-Level Motion Sensor, Maximum 8' Mounting Height[24, 25]
MS/X-L20=Bi-Level Motion Sensor, 9' - 20' Mounting Height[24, 25]
MS/X-L40W=Bi-Level Motion Sensor, 21' - 40' Mounting Height[24, 25]
MS/DIM-L20=Motion Sensor for Dimming Operation, 9' - 20' Mounting Height[24]
MS/DIM-L40W=Motion Sensor for Dimming Operation, 21' - 40' Mounting Height[24]
ZW=WaveLinx-enabled 4-PIN Twistlock Receptacle
ZD=SR Driver-enabled 4-PIN Twistlock Receptacle
ZW-WOBXX=WaveLinx Lite, Dimming Motion and Daylight, Bluetooth Programmable, 7' - 15' Mounting[13,32]
ZW-WOFXX=WaveLinx Lite, Dimming Motion and Daylight, Bluetooth Programmable, 15' - 40' Mounting[13,32]
ZD-WOBXX=WaveLinx Lite, SR Driver, Dimming Motion and Daylight, Bluetooth Programmable, 7' - 15' Mounting[13,32]
ZD-WOFXX=WaveLinx Lite, SR Driver, Dimming Motion and Daylight, Bluetooth Programmable, 15' - 40' Mounting[13,32]
ZW-SWPD4XX=WaveLinx Pro, Dimming Motion and Daylight, WAC Programmable, 7' - 15' Mounting[13,32,33]
ZW-SWPD5XX=WaveLinx Pro, Dimming Motion and Daylight, WAC Programmable, 15' - 40' Mounting[13,32,33]
ZD-SWPD4XX=WaveLinx Pro, SR Driver, Dimming Motion and Daylight, WAC Programmable, 7' - 15' Mounting[13,32,33]
ZD-SWPD5XX=WaveLinx Pro, SR Driver, Dimming Motion and Daylight, WAC Programmable, 15' - 40' Mounting[13,32,33]
LWR-LW=Enlighted Sensor, 8'–16' Mounting Height[26]
LWR-LN=Enlighted Sensor, 16'–40' Mounting Height[26]
DIM10-MS/DIM-L08=Synapse Occupancy Sensor (<8' Mounting)[19]
DIM10-MS/DIM-L20=Synapse Occupancy Sensor (9'-20' Mounting)[19]
DIM10-MS/DIM-L40=Synapse Occupancy Sensor (21'-40' Mounting)[19]

Accessories (Order Separately)[35]

OA/RA1016=NEMA Photocontrol Multi-Tap - 105-285V
OA/RA1027=NEMA Photocontrol - 480V
OA/RA1201=NEMA Photocontrol - 347V
OA/RA1013=Photocontrol Shorting Cap
OA/RA1014=120V Photocontrol
MA1252=10kV Surge Module Replacement
MA1036-XX=Single Tenon Adapter for 2-3/8" O.D. Tenon
MA1037-XX=2@180° Tenon Adapter for 2-3/8" O.D. Tenon
MA1197-XX=3@120° Tenon Adapter for 2-3/8" O.D. Tenon
MA1188-XX=4@90° Tenon Adapter for 2-3/8" O.D. Tenon
MA1189-XX=2@90° Tenon Adapter for 2-3/8" O.D. Tenon
MA1190-XX=3@90° Tenon Adapter for 2-3/8" O.D. Tenon
MA1191-XX=2@120° Tenon Adapter for 2-3/8" O.D. Tenon
MA1038-XX=Single Tenon Adapter for 3-1/2" O.D. Tenon
MA1039-XX=2@180° Tenon Adapter for 3-1/2" O.D. Tenon
MA1192-XX=3@120° Tenon Adapter for 3-1/2" O.D. Tenon
MA1193-XX=4@90° Tenon Adapter for 3-1/2" O.D. Tenon
MA1194-XX=2@90° Tenon Adapter for 3-1/2" O.D. Tenon
MA1195-XX=3@90° Tenon Adapter for 3-1/2" O.D. Tenon
FSIR-100=Wireless Configuration Tool for Occupancy Sensor[24]
GAN-MT1=Field Installed Mesh Top for 1-4 Light Squares
GAN-MT2=Field Installed Mesh Top for 5-6 Light Squares
GAN-MT3=Field Installed Mesh Top for 7-8 Light Squares
GAN-MT4=Field Installed Mesh Top for 9-10 Light Squares
GAN-QM=Quick Mount Arm Kit[11]
GAN-QMEA=Quick Mount Extended Arm Kit[12]
LS/HSS=Field Installed House Side Shield[28, 30]
LS/GRSBK-2PK =Glare Reducing Shield, Black[23, 30]
LS/GRSWH-2PK =Glare Reducing Shield, White[23, 30]
LS/PFS=Perimeter Shield, Black[15]
WOLC-7P-10A=WaveLinx Outdoor Control Module[19, 31]
WOB-XX= WaveLinx Lite Sensor, Dimming Motion and Daylight, Bluetooth Programmable, 7' - 15' Mounting[13,32]
WOF-XX= WaveLinx Lite Sensor, Dimming Motion and Daylight, Bluetooth Programmable, 15' - 40' Mounting[13,32]
SWPD4-XX= WaveLinx Sensor, Dimming Motion and Daylight, WAC Programmable, 7' - 15' Mounting[13,32,33]
SWPD5-XX= WaveLinx Sensor, Dimming Motion and Daylight, WAC Programmable, 15' - 40' Mounting[13,32,33]

NOTES:
1. Customer is responsible for engineering analysis to confirm pole and fixture compatibility for all applications. Refer to our white paper WP513001EN for additional support information.
2. DesignLights Consortium® Qualified. Refer to www.designlights.org Qualified Products List under Family Models for details.
3. Coastal construction finish salt spray tested to over 5,000-hours per ASTM B117, with a scribe rating of 9 per ASTM D1654. Not available with TH option.
4. Not compatible with MS/4-LXX or MS/1-LXX sensors.
5. Not compatible with extended quick mount arm (QMEA).
6. Not compatible with standard quick mount arm (QM) or extended quick mount arm (QMEA).
7. Requires the use of an internal step down transformer when combined with sensor options. Not available with sensor at 1200mA. Not available in combination with the HA high ambient and sensor options at 1A.
8. 480V must utilize Wye system only. Per NEC, not for use with ungrounded systems, impedance grounded systems or corner grounded systems (commonly known as Three Phase Three Wire Delta, Three Phase High Leg Delta and Three Phase Corner Grounded Delta systems.)
9. May be required when two or more luminaires are oriented on a 90° or 120° drilling pattern. Refer to arm mounting requirement table.
10. Factory installed.
11. Maximum 8 light squares.
12. Maximum 6 light squares.
13. Requires ZW or ZD receptacle.
14. Narrow-band 590nm +/- 5nm for wildlife and observatory use. Choose drive current A; supplied at 500mA drive current only.Available with 5WQ, 5MQ, SL2, SL3 and SL4 distributions. Can be used with HSS option.
15. Set of 4 pcs. One set required per Light Square.
16. Not available with HA option.
17. 2L is not available with MS, MS/X or MS/DIM at 347V or 480V. 2L in SA2 through SA4 requires a larger housing, normally used for SA5 or SA6. Extended arm option may be required when mounting two or more fixtures per pole at 90° or 120°. Refer to arm mounting requirement table.
18. Not available with Enlighted wireless sensors.
19. Cannot be used with other control options.
20. Low voltage control lead brought out 18" outside fixture.
21. Not available if any "MS" sensor is selected. Motion sensor has an integral photocell.
22. Requires the use of BPC photocontrol or the PR7 or PR photocontrol receptacle with photocontrol accessory. See After Hours Dim supplemental guide for additional information.
23. Not for use with T4FT, T4W or SL4 optics. See IES files for details.
24. The FSIR-100 configuration tool is required to adjust parameters including high and low modes, sensitivity, time delay, cutoff and more. Consult your lighting representative at Cooper Lighting Solutions for more information.
25. Replace X with number of Light Squares operating in low output mode.
26. Enlighted wireless sensors are factory installed only requiring network components LWP-EM-1, LWP-GW-1 and LWP-PoE8 in appropriate quantities.
27. Not available with house side shield (HSS).
28. Not for use with 5NQ, 5MQ, 5WQ or RW optics. A black trim plate is used when HSS is selected.
29. CE is not available with the LWR, MS, MS/X, MS/DIM, BPC, PR or PR7 options. Available in 120-277V only.
30. One required for each Light Square.
31. Requires PR7.
32. Replace XX with sensor color (WH, BZ or BK.)
33. WAC Gateway required to enable field-configurability: Order WAC-PoE and WPOE-120 (10V to PoE injector) power supply if needed.
34. Only product configurations with these designated prefixes are built to be compliant with the Buy American Act of 1933 (BAA) or Trade Agreements Act of 1979 (TAA), respectively. Please refer to DOMESTIC PREFERENCES website for more information. Components shipped separately may be separately analyzed under domestic preference requirements.
35. Accessories sold separately will be separately analyzed under domestic preference requirements. Consult factory for further information.

LumenSafe Integrated Network Security Camera Technology Options (Add as Suffix)

Product Family	Camera Type	Data Backhaul	
L=LumenSafe Technology	**D**=Standard Dome Camera **H**=Hi-Res Dome Camera **Z**=Remote PTZ Camera	**C**=Cellular, No SIM **A**=Cellular, AT&T **V**=Cellular, Verizon **S**=Cellular, Sprint	**R**=Cellular, Rogers **W**=Wi-Fi Networking w/ Omni-Directional Antenna **E**=Ethernet Networking

Streetworks Archeon Medium

Ordering Information

SAMPLE ORDER NUMBER: ARCH-M-PA2-40-740-U-T2R-A15-AP-10K-PR

Product Family[1, 2]	Light Engine	Wattage Bucket	Color Temperature	Voltage	Distribution	Mounting	Finish
ARCH-M=Archeon Medium **BAA-ARCH-M**=Archeon Medium Buy American Act Compliant[29] **TAA-ARCH-M**=Archeon Medium Trade Agreements Act Compliant[29]	**PA2**=(2) Direct Mount Rectangle (48 LED)	40 50 60 70 80 90 100 110 120 130 140 150 160	**722**=70CRI, 2200K **727**=70CRI, 2700K **730**=70CRI, 3000K **735**=70CRI, 3500K **740**=70CRI, 4000K **750**=70CRI, 5000K **827**=80CRI, 2700K[6] **AMB**=Amber, 590nm[18, 25]	**U**=Universal (120-277V) **8**=480V[4, 5] **9**=347V[4] **DV**=277-480V DuraVolt Drivers[4, 5, 31]	**T2R**=Type II Roadway **T2U**=Type II Urban **T3**=Type III **T4W**=Type IV Wide **5WQ**=Type V Square Wide	**[Blank]**=None **A15**=15" Straight Mast Arm[14] **ASJS15**=Adjustable Slipfitter (Factory set at 15° degrees) **ASJS25**=Adjustable Slipfitter (Factory set at 25° degrees) **ASJS45**=Adjustable Slipfitter (Factory set at 45° degrees)	**AP**=Grey **BZ**=Bronze **BK**=Black **DP**=Dark Platinum **WH**=White

Options (Add as Suffix)

10K=Series 10kV UL 1449 Surge Protective Device
20K=Series 20kV UL 1449 Surge Protective Device
20KI=Series 20kV UL 1449 Surge Protective Device with light indicator
10MSP=Parallel 10kV MOV Surge Protective Device
20MSP=Parallel 20kV MOV Surge Protective Device
K=Level Indicator
HA=50°C High Ambient Temperature
HSS=Factory Install House Side Shield[13]
PSC=Photocontrol Shorting Cap
NPC=NEMA Photocontrol - Multi-Tap
LLPC=Longlife Photocontrol Included
IP66=IP66 Rated Housing
FADC=Field Adjustable Dimming Controller[26]
CC=Coastal Construction[27]
DXXXXX=Department of Transportation - Customer specific details[32]
UXXXXX=Utility - Customer specific details[32]

Controls

PR=NEMA 3-PIN Twistlock Photocontrol Receptacle[7]
PR7=NEMA 7-PIN Twistlock Photocontrol Receptacle
SPB1=Dimming Occupancy Sensor with Bluetooth Interface, <8' Mounting[28]
SPB2=Dimming Occupancy Sensor with Bluetooth Interface, 8'-20' Mounting[28]
SPB4=Dimming Occupancy Sensor with Bluetooth Interface, 21'-40' Mounting[28]
MS/DIM-L08=Motion Sensor for Dimming Operation, Maximum 8' Mounting Height[8, 9]
MS/DIM-L20=Motion Sensor for Dimming Operation, Maximum 9' - 20' Mounting Height[8, 9]
MS/DIM-L40=Motion Sensor for Dimming Operation, Maximum 21' - 40' Mounting Height[8, 9]
LWR-LW=Enlighted Wireless Sensor, Wide Lens for 8' - 16' Mounting Heights[8, 10, 11]
LWR-LN=Enlighted Wireless Sensor, Narrow Lens for 16' - 40' Mounting Heights[8, 10, 11]
5LTD=DALI[3]
ZD=DALI-enabled 4-PIN Twistlock Receptacle[19, 20]
ZW=WaveLinx-enabled 4-PIN Twistlock Receptacle[19, 20]
SWPD4XX=WaveLinx Wireless Sensor, 7' - 15' Mounting Height[21, 22, 23, 24]
SWPD5XX=WaveLinx Wireless Sensor, 15' - 40' Mounting Height[21, 22, 23, 24]

Accessories (Order Separately)[17,30]

OA / RA1013=Photocontrol Shorting Cap OA1223=10kV Surge Module Replacement
OA/RA1014=NEMA Photocontrol - 120V
OA/RA1016=NEMA Photocontrol - Multi-Tap
OA/RA1027=NEMA Photocontrol - 480V
OA/RA1201=NEMA Photocontrol - 347V
OA1223=10kV Surge Module Replacement
A15-XX=Arm (15" Straight Arm)[14, 16]
ASJS15-XX=Adjustable slipfitter (Factory set at 15 degrees)[16]
ASJS25-XX=Adjustable slipfitter (Factory set at 25 degrees)[16]
ASJS45-XX=Adjustable slipfitter (Factory set at 45 degrees)[16]
FSIR-100=Wireless Configuration Tool for Occupancy Sensor[17]
HS-ARCH=Field Install ARCH House Side Shield[13, 15]
SWPD4XX=WaveLinx Wireless Sensor, 7' - 15' Mounting Height[21, 22, 23, 24]
SWPD5XX=WaveLinx Wireless Sensor, 15' - 40' Mounting Height[21, 22, 23, 24]
VGS-ARCH=Short Vertical Drop Shield
VGL-ARCH=Long Vertical Drop Shield

NOTES:
1. Customer is responsible for engineering analysis to confirm pole and fixture compatibility for all applications. Refer to our white paper WP513001EN for additional support information.
2. Nominal wattage values will be labeled on fixture as per ANSI C136.15. For specific fixture wattage, refer to Power and Lumens table.
3. Only available in universal voltage.
4. Not available at 40W or 50W.
5. 480V not to be used with ungrounded or impedance grounded systems.
6. Extended lead times may apply.
7. If "PR" selected, dimming functionality not available. Dimming leads will be capped.
8. Only available in Universal voltage.
9. The FSIR-100 accessory is required to adjust parameters.
10. Enlighted wireless system is not available with photocontrol receptacle (not required)
11. Enlighted wireless sensors are factory installed and require network components LWP-EM-1, LWP-GW-1, and LWP-PoE8 in appropriate quantities. See website for Enlighted application information.
12. HA option not available with the following configurations, 347/480V 150W and 160W if paired with HS-ARCH or 5TLD 140 160W.
13. HSS not available with 5WQ distribution.
14. Round pole adapter and mounting hardware included. "M" drill pattern.
15. Archeon Medium requires two house side shields.
16. Replace XX with color designation.
17. This tool enables adjustment of parameters including high and low modes, sensitivity, time delay, cutoff and more. Consult your lighting representative at Cooper Lighting Solutions for more information.
18. Amber 590nm +/- 5nm for wildlife and observatory use. Supplied in PA2-60 wattage bucket only.
19. Utilizes internal step-down transformer when 347V or 480V is selected.
20. Controls system is not available with photocontrol (BPC), photocontrol receptacle (PR or PR7), or other controls systems (MS, ZD, ZW, LWR, DALI, or DIM).
21. Requires 4-PIN twistlock receptacle (ZD or ZW) option.
22. Replace XX with sensor color (WH, BZ or BK).
23. Sensor passive infrared (PIR) may be overly sensitive with operating below -20°C (-4°F).
24. For this device to be field-configurable, requires WAC Gateway components WAC-PoE and WPOE-120 in appropriate quantities. Only compatible with WaveLinx system and software and requires system components to be installed for operation. See website for more WaveLinx application information.
25. Not available with HA option.
26. Cannot be used with PR7 or other motion response control options.
27. Coastal construction finish salt spray tested to over 5,000-hours per ASTM B117, with a scribe rating of 9 per ASTM D1654.
28. Smart device with Sensor Configuration mobile application by Wattstopper required to change system defaults.
29. Only product configurations with these designated prefixes are built to be compliant with the Buy American Act of 1933 (BAA) or Trade Agreements Act of 1979 (TAA), respectively. Please refer to DOMESTIC PREFERENCES website for more information. Components shipped separately may be separately analyzed under domestic preference requirements.
30. Accessories sold separately will be separately analyzed under domestic preference requirements. Consult factory for further information.
31. DuraVolt drivers feature added protection from power quality issues such as loss of neutral, transients and voltage fluctuations. Visit www.signify.com/duravolt for more information. Not available in 70W or below. Not available with any control option except SPB.
32. Customer specific specifications utilizes standard products with small adjustments to meet unique requirements such as packaging, labels, wattage adjustments, etc.

1 / 72 LUMINAIRE CUTSHEET

N.T.S.

COLORADO REGISTERED PROFESSIONAL ENGINEER DUSTIN J. COLWELL 54946

PROJECT NO.:096888020

Kimley»Horn
4582 South Ulster Street, Suite 1500
Denver, Colorado 80237 (303) 228-2300

QuikTrip No. 4251
STATION 60 FILING NO. 1
E. COLFAX AVE & N. AIRPORT BLVD
AURORA, CO
165464 E 16TH PL

PROTOTYPE: N/A
DIVISION: COLORADO
VERSION: 002
DESIGNED BY: SAM
DRAWN BY: DEK
REVIEWED BY: SAM

REV	DATE	DESCRIPTION
9	12/19/23	HLC CROSSING PLANS
8	09/18/23	RFI NO.7 MICROPOOL
7	07/28/23	SANITARY CASING & STORM H
6	07/19/23	LOT 3 STORM LINE D
5	06/26/23	WATER STUB SHIFT
4	06/08/23	STORM INSERTA-TEE CONNECTION
3	05/31/23	WATER SERVICE LINES

ORIGINAL ISSUE DATE: 09/15/22

SHEET TITLE:
ELECTRICAL DETAILS

SHEET NUMBER:
72