

OWNER SIGNATURE

ORCHARD & GREENWOOD LLC
1215 4TH AVE, SUITE 600
SEATTLE, WA 98161

BY: JULIA RABBAN
TITLE: ASSET SERVICES

STATE OF
COUNTY OF } SS

THE FOREGOING CERTIFICATE OF DEDICATION AND OWNERSHIP WAS ACKNOWLEDGED BEFORE ME THIS DAY OF , 2024, BY

NOTARY PUBLIC
MY COMMISSION EXPIRES:

PLANNING AND ZONING COMMISSION

THIS PLAN APPROVED BY THE CITY OF GREENWOOD VILLAGE PLANNING AND ZONING COMMISSION THIS DAY OF , 2024.

BY: CHAIRMAN

PLANNING AND ZONING COMMISSION

THIS PLAN WAS FILED FOR RECORD IN THE OFFICE OF THE COUNTY CLERK AND RECORDER OF ARAPAHOE COUNTY AT ON THE DAY OF , 2024 IN BOOK , PAGE , MAP , RECEPTION NO.

COUNT CLERK AND RECORDER
BY: DEPUTY

LEGAL DESCRIPTION

LOT 1 BLK 1 HARLEQUIN PLAZA SUB

PROPERTY OWNER

ORCHARD & GREENWOOD LLC
1215 4TH AVE, SUITE 600
SEATTLE, WA 98161

LEASE HOLDER

HION EV
WEST 63RD STREET, SUITE 301
SHAWNEE, KS 66216

ENGINEERING / CONSULTANTS

SSC, INC.
7171 W 95TH ST, SUITE 600
OVERLAND PARK, KANSAS 66212
PHONE: 913-4387770
FAX: 913-438-7777

HISTORY OF AMENDMENTS

THE SDP WAS AMENDED IN 2004 TO PROVIDE A DRIVE THRU ATM ALONG THE WEST ELEVATION FOR BELCO CREDIT UNION.

THE SDP WAS AMENDED IN 2023 TO PROVIDE AN ATM DRIVE THROUGH FOR A TENANT IN QUEBEC COURT III MASTER DEVELOPMENT, WITHIN THE NORTH AISLE OF THE EXISTING PARKING LOT.

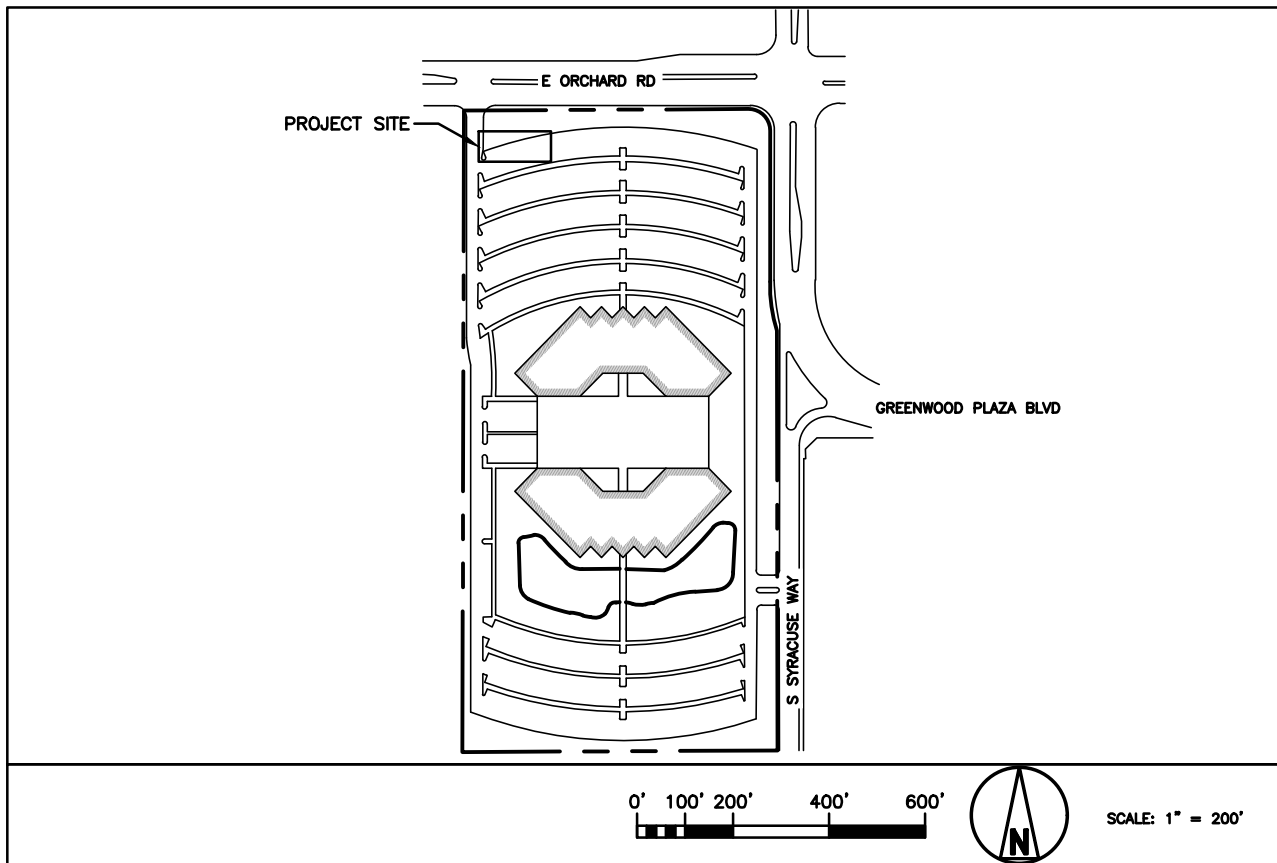
PURPOSE OF AMENDMENT

TO PROVIDE (4) ELECTRIC VEHICLE STALLS WITHIN THE NORTH AISLE OF THE EXISTING PARKING LOT.

Table with 2 columns: PROPERTY OWNER, PLANNING & ZONING CERTIFICATE, CLERK & RECORDER CERTIFICATE. Contains signature lines and dates for Orchard & Greenwood LLC and City of Greenwood Village.

QUEBEC COURT III

SITE DEVELOPMENT PLAN AMENDMENT 3
BEING A PORTION OF LOTS 7 AND 10, CLARK COLONY SUBDIVISION OF SECTION TWENTY ONE, TOWNSHIP FIVE SOUTH, RANGE SIXTY SEVEN WEST, SITUATED IN THE NORTHWEST QUARTER OF SECTION 21, TOWNSHIP 5 SOUTH, RANGE OF 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN, CITY OF GREENWOOD VILLAGE, COUNTY OF ARAPAHOE, STATE OF COLORADO



PROJECT/SITE DATA TABLE:

Table with 2 columns: ZONING, GOVERNING MASTER DEVELOPMENT PLAN, SITE AREA, LAND USE. Values include B-1 PUD, QUEBEC COURT III, 18.07 ACRES / DISTURBED AREA: 705 SF, OFFICE.

DEVELOPMENT STANDARDS TABLE:

Table with 4 columns: DEVELOPMENT STANDARDS, EXISTING SITE CONFIGURATION, PROPOSED SDP, PERCENT CHANGE. Rows include Gross Building Area, ATM Canopy Height, Building Setbacks, ATM Canopy Setback, Open Space Coverage, Parking/Drive Aisle Coverage, Building Footprint, Drive-Thru Footprint, Total Site Area.

PARKING TABLE:

Table with 4 columns: PARKING SPACE, EXISTING, PROPOSED, REQUIRED. Rows include Standard (9'x18'), Compact (8.5'x18'), Long Term (8.5'x18'), Accessible (9'x18'), Motorcycle, Bicycle, Total (Excl. Bicycle).

SHEET INDEX:

Table with 2 columns: SHEET NUMBER, SHEET DESCRIPTION. Lists sheets T-1.0 through SP-2.1 including Cover Sheet, Title Sheet, General Notes, Overall Site Plan, Existing Site Plan, Equipment Elevation, Equipment Plan, Equipment Details, Landscape Plan & Details, Utility Plan, Electrical One-Line Diagram, Panel Schedule, Electrical Details, Specifications (1-5).

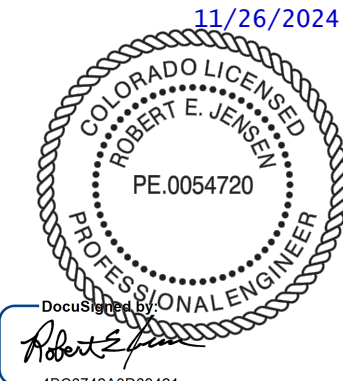


Table with 3 columns: #, DATE, DESCRIPTION. Lists revision dates and descriptions for SDP Amendment V1, V2, and V3.



PROJECT: QUEBEC COURT III EV CHARGING STATION ADDITION

7600 E ORCHARD RD, GREENWOOD VILLAGE, CO 80111

DATE: 11/25/2024

DESIGNED: IBA

DRAWN: IBA

REVIEWED: EDA

SHEET TITLE: COVER SHEET

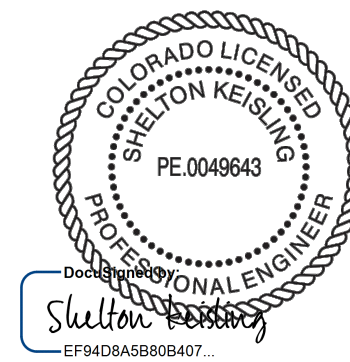
SHEET NUMBER:

T-1.0

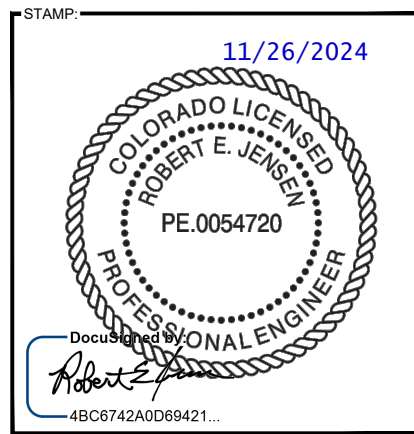


APPLICANT SITE NAME:
DENVER TECH CTR

11/26/2024



DocuSigned by:
Shelton Keisling
EF94D8A5B80B407...

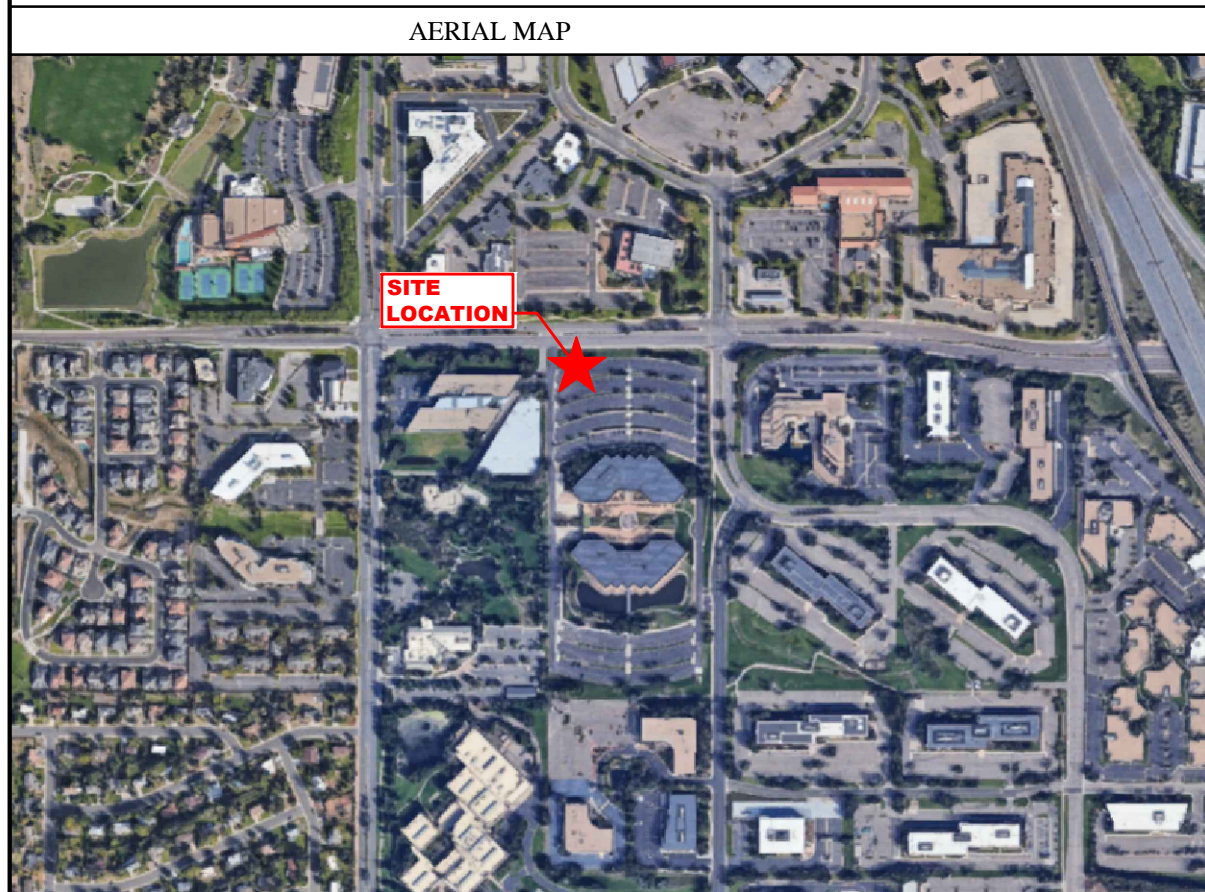


DocuSigned by:
Robert E. Jensen
4BC6742A0D69421...

PROJECT:
CHARGING STATION
ADDITION

DRAWING DESCRIPTION:
FINAL CD100

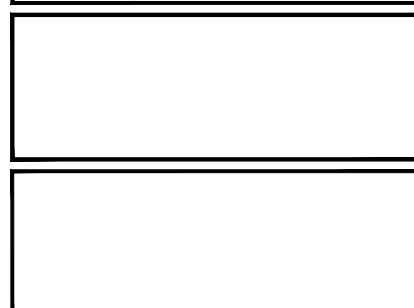
ENGINEERING LICENSE: STATE OF COLORADO		
STATE CERTIFICATE OF AUTHORIZATION # 20041302439		
ENGINEER:	PE#:	DISCIPLINE:
KMV KEVIN M. VANMAELE	53946	CIVIL
REJ ROBERT E. JENSEN	54720	CIVIL
SDK SHELTON D. KEISLING	49643	ELECTRICAL
TMS TERRANCE M. SUPER	36490	ELECTRICAL



SITE INFORMATION	
<u>SITE ADDRESS:</u>	7600 E. ORCHARD RD. GREENWOOD VILLAGE, CO 80111
<u>COUNTY:</u>	ARAPAHOE
<u>PROPERTY OWNER:</u>	ORCHARD & GREENWOOD LLC
<u>SITE INFORMATION:</u>	
LATTITUDE:	39° 36' 33.24" N (NAD 83)
LONGITUDE:	104° 54' 5.64" W (NAD 83)
GROUND ELEV:	5673.0' AMSL
<u>APPLICANT:</u>	HiON WEST 63RD ST, SUITE 301 SHAWNEE, KANSAS 66216

DRAWING INDEX		
SHEET NO.	SHEET TITLE	DISC.
T-1.0	COVER SHEET	
T-1.1	TITLE SHEET	C/E
GN-1.0	GENERAL NOTES	C
	SURVEY (BY OTHERS)	
C-1.0	OVERALL SITE PLAN	C
C-1.1	EXISTING SITE PLAN	C
C-1.2	ENLARGED SITE PLAN	C
C-1.3	EQUIPMENT ELEVATION	C
C-2.0	EQUIPMENT PLAN	C
C-3.0	EQUIPMENT DETAILS (1 OF 2)	C
C-3.1	EQUIPMENT DETAILS (2 OF 2)	C
L-1.0	LANDSCAPE PLAN & DETAILS	C
E-1.0	UTILITY PLAN	E
E-2.0	ELECTRICAL ONE-LINE DIAGRAM	E
E-2.1	PANEL SCHEDULE	E
E-3.0	ELECTRICAL DETAILS	E
SP-1.0	SPECIFICATIONS (1 OF 5)	C
SP-1.1	SPECIFICATIONS (2 OF 5)	C
SP-1.2	SPECIFICATIONS (3 OF 5)	C
SP-2.0	SPECIFICATIONS (4 OF 5)	E
SP-2.1	SPECIFICATIONS (5 OF 5)	E

CONSULTING TEAM	
<u>ENGINEERING:</u>	CLIENT MANAGER: D.C. PELLAND
SSC, INC. 7171 WEST 95TH STREET, SUITE 600 OVERLAND PARK, KANSAS 66212 PHONE: (913) 438-7700 FAX: (913) 438-7777	A&E PROJECT MANAGER: A.M. WHYTE
	LEAD ENGINEER: R.E. JENSEN
	LEAD ELECTRICAL: S.D. KEISLING



DRAWING NOTICE:
THIS DRAWING HAS NOT BEEN PUBLISHED AND IS THE SOLE PROPERTY OF SSC, INC. AND IS LENT TO THE BORROWER FOR THEIR CONFIDENTIAL USE ONLY, AND IN CONSIDERATION OF THE LOAN OF THIS DRAWING, THE BORROWER PROMISES AND AGREES TO RETURN IT UPON REQUEST AND AGREES THAT IT WILL NOT BE REPRODUCED, COPIED, LENT OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY, NOR USED FOR ANY PURPOSE OTHER THAN FOR WHICH IT IS FURNISHED.

DESCRIPTION	DATE	BY	REV
REVISED PER AHJ COMMENTS	11/25/24	DCP	8

JURISDICTION COMPLIANCE

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

- INTERNATIONAL BUILDING CODE
- INTERNATIONAL MECHANICAL CODE
- ANSI/TIA-222 STRUCTURAL STANDARD
- NFPA 780 - LIGHTNING PROTECTION CODE
- NATIONAL ELECTRICAL CODE
- CDOT SPECIFICATIONS

THE UTILITIES AS SHOWN ON THIS SET OF DRAWINGS WERE DEVELOPED FROM THE INFORMATION AVAILABLE. THE INFORMATION PROVIDED IS NOT IMPLIED NOR INTENDED TO BE THE COMPLETE INVENTORY OF UTILITIES IN THIS AREA. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF ALL UTILITIES (WHETHER SHOWN OR NOT) AND PROTECT SAID UTILITIES FROM ANY DAMAGE CAUSED BY CONTRACTOR'S ACTIVITIES.

Know what's below.
Call before you dig.
www.call811.com

PROJECT DESCRIPTION
<ul style="list-style-type: none"> INSTALL (2) ABB T400 UL EV CHARGING STATIONS INSTALL SWITCHBOARD WITH FOUNDATION (BY UTILITY COMPANY) INSTALL TRANSFORMER WITH FOUNDATION (BY UTILITY COMPANY)

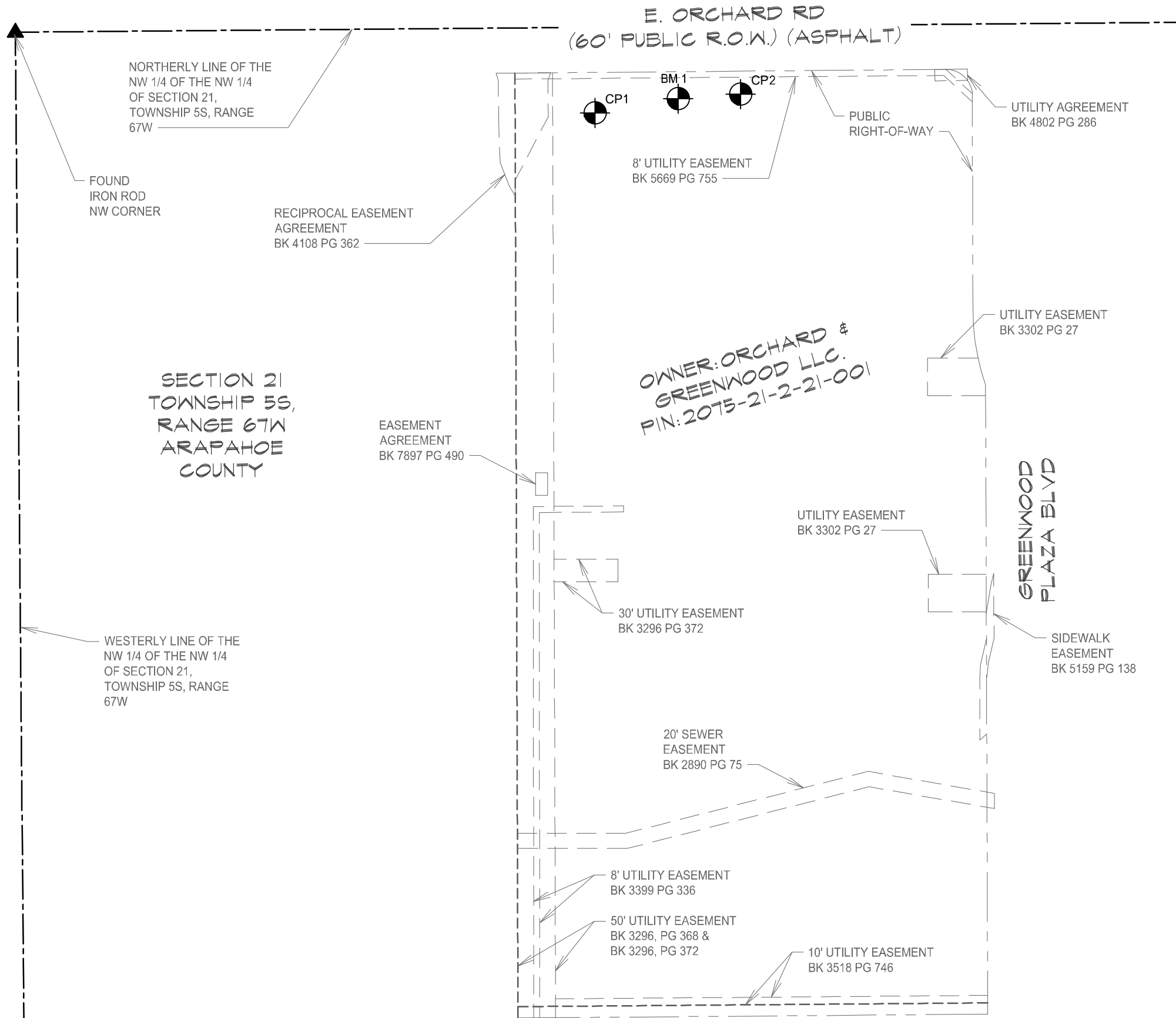
SITE LOCATION QR CODE

APPLICANT SITE NAME:
DENVER TECH CTR

APPLICANT SITE NUMBER:
HN21021

SITE ADDRESS:
7600 E. ORCHARD RD.
GREENWOOD VILLAGE, CO 80111

SHEET DESCRIPTION: TITLE SHEET	SHEET #: T-1.1
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SURVEYOR NOTES

NO SEARCH OF PUBLIC RECORDS HAS BEEN COMPLETED TO DETERMINE ANY DEFECTS AND/OR AMBIGUITIES IN THE TITLE OF THE PARENT PARCEL.

THIS PROPERTY IS SUBJECT TO ANY RECORD EASEMENTS AND/OR RIGHT OF WAY SHOWN HEREON OR NOT.

SURVEYOR HAS NOT PERFORMED A SEARCH OF PUBLIC RECORDS TO DETERMINE ANY DEFECT IN TITLE ISSUED.

THE BOUNDARY SHOWN HEREON IS PLOTTED FROM RECORD INFORMATION AND DOES NOT CONSTITUTE A BOUNDARY SURVEY OF THE PROPERTY.

NO UTILITIES UNDERGROUND OR ABOVE GROUND WERE LOCATED EXCEPT AS SHOWN HEREON.

UNDERGROUND UTILITY PAINT MARKS SHOWN HEREON WERE MADE BY OTHERS IN RESPONSE TO A 811 ONE CALL TICKET, MADE BY OTHERS, AND ARE SHOWN FOR GRAPHICAL PURPOSES ONLY. THIS SURVEYOR TAKES NO RESPONSIBILITY FOR THEIR ACCURACY OR FOR THE LACK OF RESPONSE BY ANY UTILITY LOCATE COMPANIES.

THIS SURVEY WAS PREPARED WITH THE AID OF A SEARCH REPORT, PREPARED BY AMC SETTLEMENT SERVICES, AS REPORT NUMBER 50031956, WITH AN EFFECTIVE DATE OF 01/24/2024 WHICH SHOWS DEEDS, CHAIN OF TITLE, TAXES, AND EASEMENTS OF RECORD ON THE DESCRIBED PARENT PARCEL

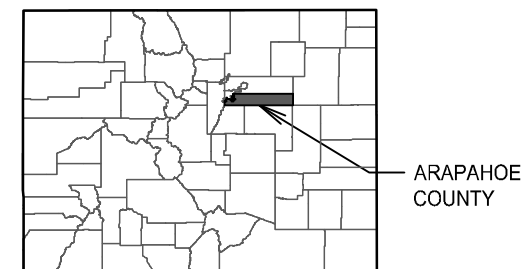
PARENT PARCEL

ALL THAT PARCEL OF LAND IN THE IN THE COUNTY OF ARAPAHOE AND STATE OF COLORADO AS MORE FULLY DESCRIBED IN DEED RECEPTION # D2121200 AND PARCEL # 2075-21-2-21-001, BEING KNOWN AND DESIGNATED AS:

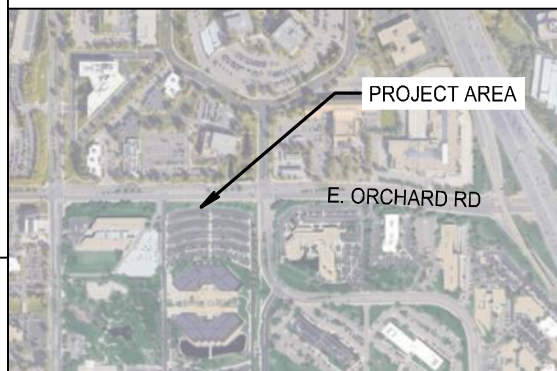
LOT 1, BLOCK 1
HARLEQUIN PLAZA SUBDIVISION PLAT
COUNTY OF ARAPAHOE
STATE OF COLORADO

PARCEL NUMBER: 2075-21-2-21-001

BEING THE SAME PROPERTY ACQUIRED BY ORCHARD & GREENWOOD LLC, A DELAWARE LIMITED LIABILITY COMPANY BY DEED OF JER COP HARLEQUIN, LLC, A DELAWARE LIMITED LIABILITY COMPANY, DATED 10/16/2012 AND RECORDED 10/23/2012 IN RECEPTION #: D2121200



STATE MAP LOCATION



SITE MAP

UTILITY NOTES

SURVEYOR DOES NOT GUARANTEE THAT ALL UTILITIES ARE SHOWN OR THEIR LOCATIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND DEVELOPER TO CONTACT LOCAL 811 AND ANY OTHER INVOLVED AGENCIES TO LOCATE ALL UTILITIES PRIOR TO CONSTRUCTION. REMOVAL, RELOCATION AND/ OR REPLACEMENT IS THE RESPONSIBILITY OF THE CONTRACTOR.

BENCHMARK

BM 1 - TOP OF CONC. LIGHT FOOTING - ELEV. 5668.66'

SET CONTROL

CP1 - TOP OF LARGE NAIL SET IN GRASS AREA- ELEV. 5664.89'
CP2 - LARGE NAIL SET IN GRASS AREA - ELEV. 5669.52'

BASIS OF BEARINGS

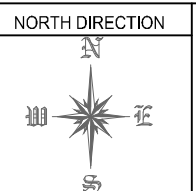
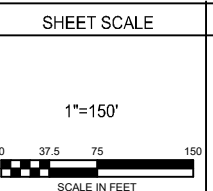
BEARINGS SHOWN HEREON ARE BASED UPON U.S. STATE PLANE NAD83 COORDINATE SYSTEM COLORADO STATE PLANES, COLORADO CENTRAL ZONE, U.S. FEET, DETERMINED BY GPS OBSERVATIONS, COMPLETED ON 02/15/2024

FLOOD INFORMATION

THE TOWER AREA SHOWN HEREON IS NOT LOCATED IN A 100-YEAR FLOOD PLAIN PER FLOOD HAZARD BOUNDARY MAP, COMMUNITY-PANEL NO. 08005C0457K, DATED 12/17/2010. THE TOWER AREA IS LOCATED IN ZONE "X"

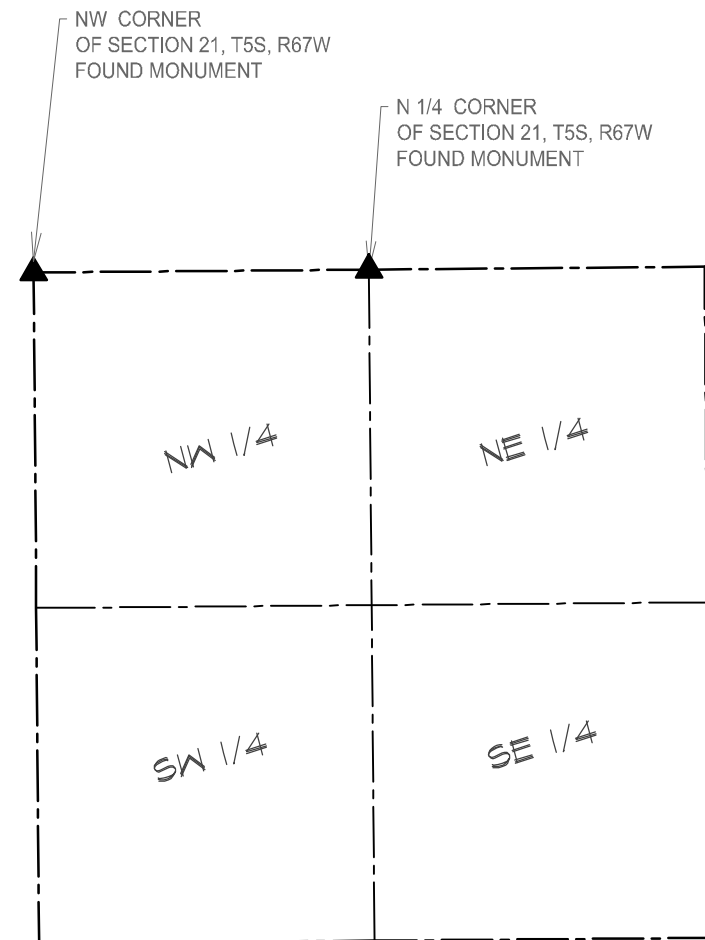
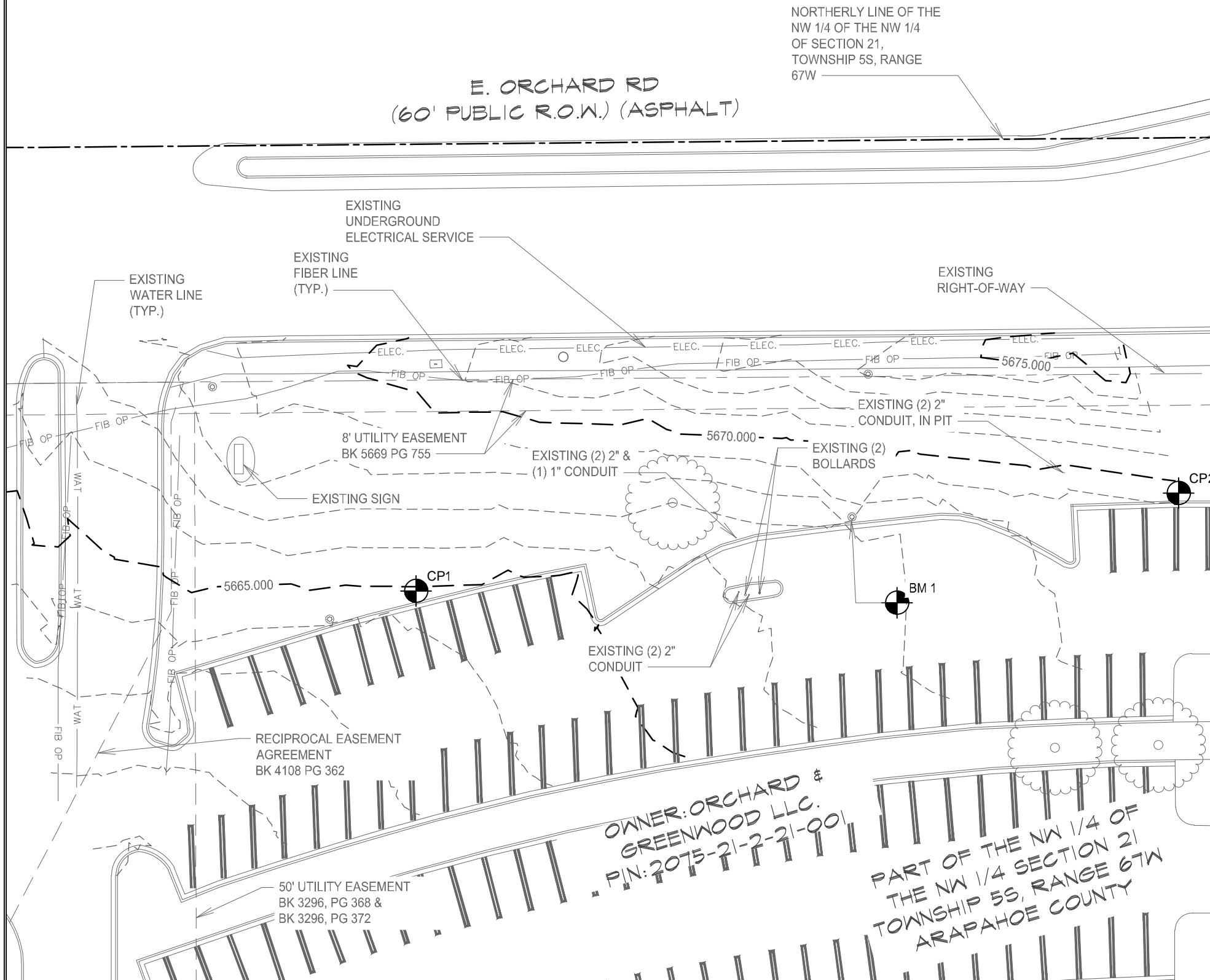
REV NUMBER	SHEET TITLE
A	SITE SURVEY
SHEET NUMBER	1 OF 2

SITE NAME: DENVER TECH 7600 E ORCHARD RD. GREENWOOD VILLAGE, CO - ARAPAHOE COUNTY	
DATE: 02/20/24	PROJECT NUMBER: 24-03-0002
DRAWN BY: WAVELENGTH	A 50% REVIEW - 02/20/24
APPROVED: WCB	-



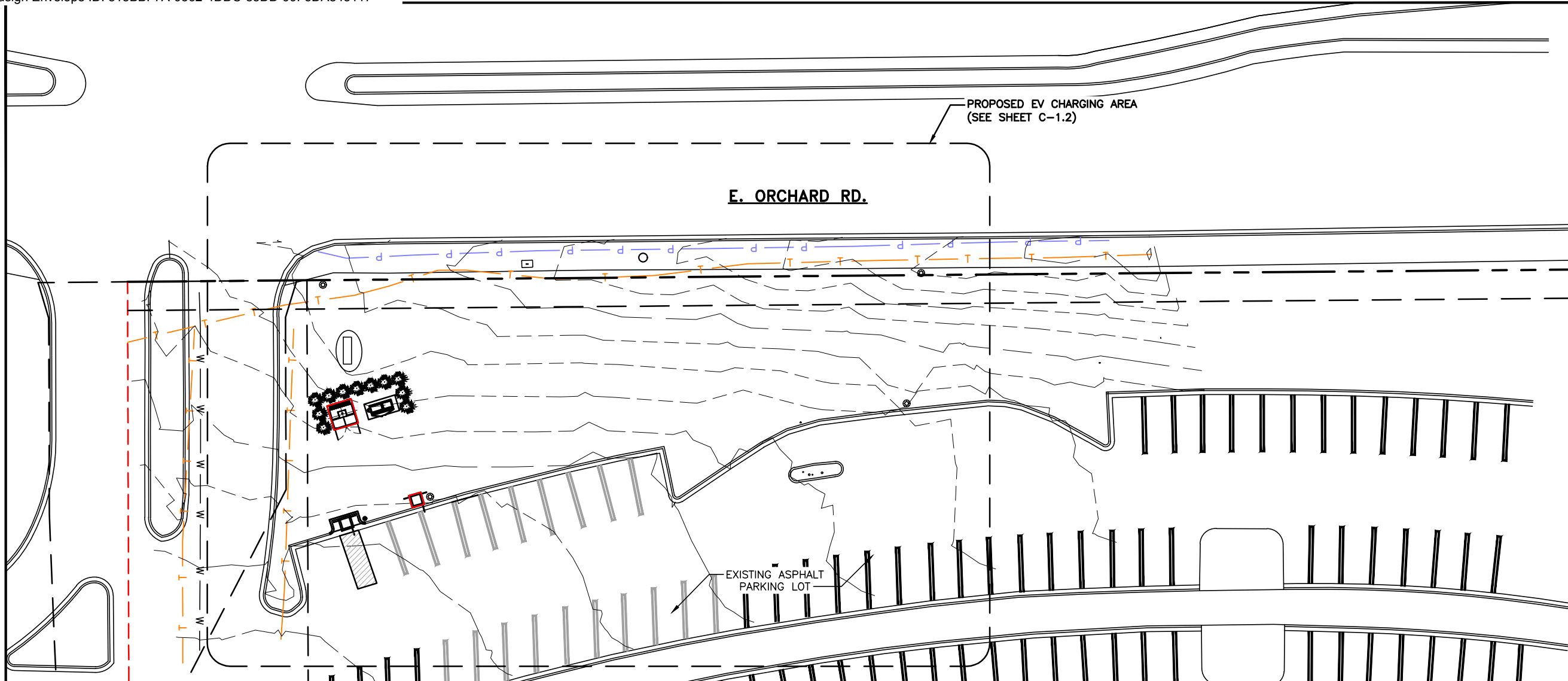
GENERAL LEGEND:

	TRANSFORMER		OH ELEC	OVERHEAD ELECTRIC
	FOUND MONUMENT		---	RIGHT-OF-WAY
	CONTROL POINT		- - - - -	PROPERTY/ LOT LINE
	BENCHMARK		- - - - -	P.U.E. / EASEMENT
	FIRE HYDRANT		---	SECTION LINE
	WATER IRRIGATION VALVE		---	QUARTER SECTION LINE
			- SAN - SAN -	SANITARY
			- ELEC. - ELEC. -	UNDERGROUND ELECTRIC
			- TEL - TEL -	UNDERGROUND TELEPHONE
			- GAS - GAS -	GAS MAIN
			- WAT - WAT -	WATER MAIN



SECTION 21
TOWNSHIP 5S, RANGE 67W
ARAPAHOE COUNTY

REV NUMBER	SHEET TITLE	SITE NAME: DENVER TECH 7600 E ORCHARD RD. GREENWOOD VILLAGE, CO - ARAPAHOE COUNTY		 1-800-422-4133	SHEET SCALE	NORTH DIRECTION		
A	SITE PLAN	DATE: 02/20/24	PROJECT NUMBER: 24-03-0002		1"=30'			
SHEET NUMBER		DRAWN BY: WAVELENGTH	A 50% REVIEW - 02/20/24		 SCALE IN FEET			
2 OF 2		APPROVED: WCB						



AIR QUALITY NOTE:
 AS WITH ALL PROJECTS LOCATED IN PROXIMITY TO RESIDENTIAL DEVELOPMENT, CARE SHOULD BE GIVEN DURING CONSTRUCTION TO IMPLEMENTATION OF DUST SUPPRESSION BEST MANAGEMENT PRACTICES. DIESEL PARTICULATE MATTER EMISSIONS FROM HEAVY EQUIPMENT/VEHICLES SHOULD BE MINIMIZED AS PRACTICAL BY REDUCING IDLING DURING NON-ACTIVE AND WARM-UP PERIODS.

NOISE NOTE:
 PROVISIONS SHOULD BE INCLUDED IN THE PLANS AND SPECIFICATIONS THAT REQUIRE THE CONTRACTOR TO MAKE EVERY REASONABLE EFFORT TO MINIMIZE CONSTRUCTION NOISE THROUGH ABATEMENT MEASURES SUCH AS WORK-HOUR CONTROLS AND PROPER MAINTENANCE OF MUFFLER SYSTEMS. COLORADO NOISE STATUTE 25-12-103 ADDRESSES MAXIMUM PERMISSIBLE NOISE LEVELS FROM CONSTRUCTION PROJECTS. THE APPLICABLE LOCAL GOVERNMENT AGENCY MAY ALSO HAVE MORE RESTRICTIVE REQUIREMENTS REGARDING CONSTRUCTION NOISE, WHICH WOULD SUPERSEDE THE STATE STATUTE.

HAZARDOUS MATERIALS NOTES FOR CHERRY CREEK SITE (DUE TO HIGH POTENTIAL TO ENCOUNTER ASBESTOS CONTAINING MATERIAL):

1. DURING ALL SUBSURFACE ACTIVITIES, WORKERS SHALL BE ALERT FOR VISUAL AND OLFACTORY SIGNS OF CONTAMINATION. IF CONTAMINATION IS ENCOUNTERED, WORK SHALL STOP AND PROCEDURES ESTABLISHED IN THE CDOT 250 SPEC SHALL BE FOLLOWED. ANY CONTAMINATED SOILS OR LANDFILL MATERIAL SHALL BE PROPERLY HANDLED SAMPLED PRIOR TO DISPOSAL.
2. A MATERIALS HANDLING PLAN SHOULD BE PREPARED TO ADDRESS ANY CONTAMINATED SOIL THAT MAY BE ENCOUNTERED.
3. THE CDOT 250 STANDARD SPECIFICATION BEGINS ON PAGE 95 HERE:
[HTTPS://WWW.CODOT.GOV/BUSINESS/DESIGNSUPPORT/CDOT-CONSTRUCTION-SPECIFICATIONS/2021-CONSTRUCTION-SPECIFICATIONS/2021-SPECS-BOOK/2021-DIVISION-200](https://www.codot.gov/business/designsupport/cdot-construction-specifications/2021-construction-specifications/2021-specs-book/2021-division-200)

ADDITIONAL HAZARDOUS MATERIALS NOTES FOR CHERRY CREEK SITE (DUE TO HIGH POTENTIAL TO ENCOUNTER ASBESTOS CONTAINING MATERIAL):

4. A STATE CERTIFIED ASBESTOS BUILDING INSPECTOR (CABI) SHOULD INSPECT FOR THE PRESENCE OF ASBESTOS PRIOR AND/OR DURING STRUCTURAL OR SUBSURFACE DISTURBANCE (IF BUILDING/CONSTRUCTION DEBRIS IS ENCOUNTERED). IF ASBESTOS IS FOUND, ALL FURTHER WORK SHALL PROCEED IN ACCORDANCE WITH THE CDOT 250 250 SPEC AND THE AIR QUALITY CONTROL COMMISSION REGULATION NO. 8 PART B.

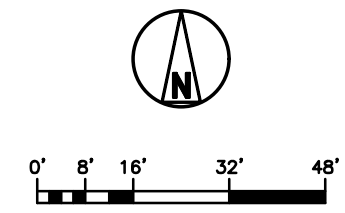
PALEONTOLOGY NOTES:
 IF PALEONTOLOGICAL RESOURCES ARE UNCOVERED DURING PROJECT CONSTRUCTION, WORK IN THE IMMEDIATE AREA OF THE FIND SHOULD CEASE AND NICOLE PEAVEY, STAFF PALEONTOLOGIST (303-757-9632) SHOULD BE NOTIFIED AS SOON AS POSSIBLE PER SECTION 101.23 OF THE STANDARD SPECIFICATIONS.

WILDLIFE NOTES:
 IN ORDER TO AVOID VIOLATING THE MIGRATORY BIRD TREATY ACT OF 1918, IF ANY TREES OR SHRUBS ARE TO BE REMOVED OR WORK ON/UNDER BRIDGES OF OTHER STRUCTURES THAT NESTING OCCURS IS TO BE COMPLETED BETWEEN APRIL 1 AND AUGUST 31, A SURVEY MUST BE COMPLETED FOR ACTIVE NESTS. IF AN ACTIVE NEST(S) IS FOUND, NO WORK MAY BE DONE WITHIN 50' OF THE NEST(S) UNTIL THE NEST(S) BECOMES INACTIVE. TO AVOID THE SURVEY REQUIREMENT, IT IS RECOMMENDED THAT ALL VEGETATION THAT NEEDS TO BE REMOVED, BE REMOVED AFTER AUGUST 31 AND BEFORE APRIL 1. SEE SPEC 240 FOR DETAILS.

STORMWATER NOTES:

1. IDENTIFY ANY NEARBY INLETS AND ANY WATER BODIES (E.G., STREAMS, LAKES). CONTRACTORS NEED TO PREPARE AND IMPLEMENT A PROGRAM TO EFFECTIVELY CONTROL WATER POLLUTION DURING THE CONSTRUCTION OF ALL PROJECTS. STORMWATER POLLUTION CONTROL REQUIREMENTS ARE INTENDED TO BE IMPLEMENTED ON A YEAR-ROUND BASIS AT AN APPROPRIATE LEVEL. THE REQUIREMENTS MUST BE IMPLEMENTED IN A PROACTIVE MANNER DURING ALL SEASONS WHILE CONSTRUCTION IS ONGOING. APPROPRIATE WATER POLLUTION CONTROL INCLUDES THE IMPLEMENTATION OF AN EFFECTIVE COMBINATION OF BOTH SOIL STABILIZATION AND SEDIMENT CONTROLS, IMPLEMENTATION OF WIND EROSION, TRACKING CONTROLS, NON-STORMWATER AND WASTE MANAGEMENT, AND MATERIAL POLLUTION BEST MANAGEMENT PRACTICES (BMPS). SOME BMPS CAN BE IMPLEMENTED AS A STAND-ALONE DEVICE WHILE OTHERS CAN BE COMBINED TO IMPROVE EFFECTIVENESS AND COMPLIANCE.
2. ALL CONCRETE WASTE/RESIDUE SHALL BE PROPERLY CONTAINED AND DISPOSED OF.
3. ALL SEDIMENT NEEDS TO BE CONTAINED AND BMPS INSTALLED.
4. SEE REVISED SPEC 107.25- WATER QUALITY CONTROL AND SPEC 208- EROSION CONTROL FOR ADDITIONAL DETAILS AND REQUIREMENTS.

THE CDOT 2021 STANDARD SPECIFICATION BOOK:
[HTTPS://WWW.CODOT.GOV/BUSINESS/DESIGNSUPPORT/CDOT-CONSTRUCTION-SPECIFICATIONS/2021-CONSTRUCTION-SPECIFICATIONS/2021-SPECS-BOOK/](https://www.codot.gov/business/designsupport/cdot-construction-specifications/2021-construction-specifications/2021-specs-book/)



OVERALL SITE PLAN

STAMP: 11/26/2024

DocuSigned by:
 Robert E. Jensen
 4BC6742A0D69421...

ENGINEERING LICENSE:
 STATE OF COLORADO
 STATE CERTIFICATE OF AUTHORIZATION # 20041302439

ENGINEER:	PE#:	DISCIPLINE:
KMV KEVIN M. VANMAELE	53946	CIVIL
REJ ROBERT E. JENSEN	54720	CIVIL
SDK SHELTON D. KEISLING	49643	ELECTRICAL
TMS TERRANCE M. SUPER	36490	ELECTRICAL

PLANS PREPARED FOR:

PLANS PREPARED BY:

DRAWING NOTICE:
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SUBMITTALS:

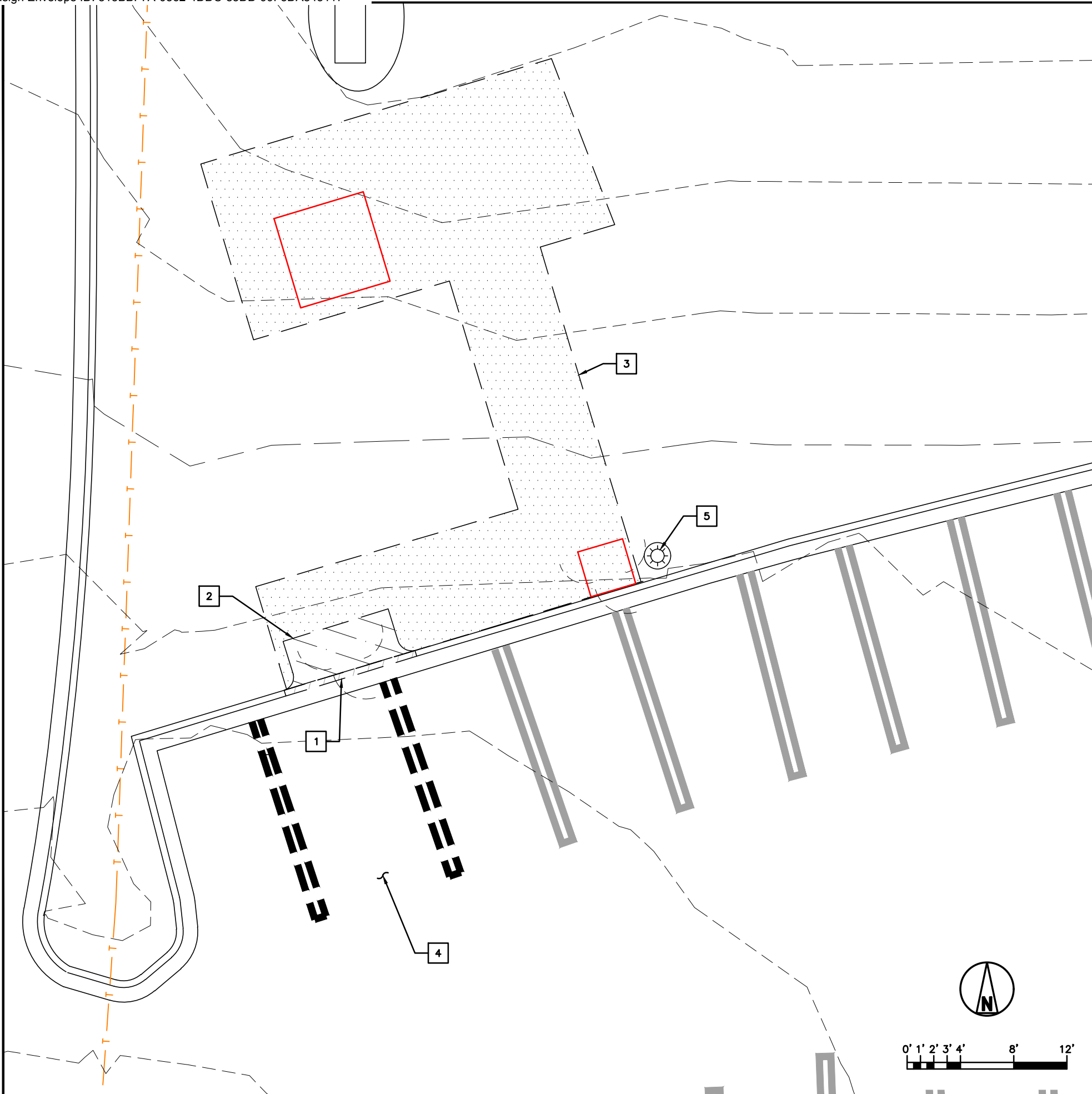
DESCRIPTION	DATE	BY	REV
REVISED PER AHJ COMMENTS	11/25/24	DCP	8

APPLICANT SITE NAME:
 DENVER TECH CTR

APPLICANT SITE NUMBER:
 HN21021




SITE ADDRESS:
 7600 E. ORCHARD RD.
 GREENWOOD VILLAGE, CO 80111

SHEET DESCRIPTION: OVERALL SITE PLAN	SHEET #: C-1.0
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EXISTING SITE PLAN

TOTAL AREA LEGEND:

-  REMOVED CURB LENGTH
10± LN. FT
-  REMOVED PERVIOUS AREA
20± SQ. FT
-  DISTURBED PERVIOUS AREA
705± SQ. FT

KEYED NOTES:

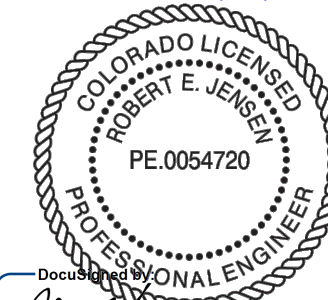
- 1 APPROX. 10 LN. FT. REMOVED CURB LENGTH FOR PROPOSED EQUIPMENT & CONDUIT ROUTING
- 2 APPROX. 20 SQ. FT. REMOVED PERVIOUS AREA FOR PROPOSED EQUIPMENT & CONDUIT ROUTING
- 3 APPROX. 705 SQ. FT. DISTURBED PERVIOUS AREA FOR PROPOSED EQUIPMENT & CONDUIT ROUTING
- 4 EXISTING PARKING STALL TO BE RESTRIPE (TYP OF 3)
- 5 EXISTING LIGHT POLE TO BE RELOCATED

GREEN SPACE CALCULATIONS

TOTAL PARCEL GREEN SPACE	206,000 SF
DISTURBED AREA	725 SF
PERCENT DISTURBED	0.35%

STAMP:

11/26/2024



Docusign
Robert E. Jensen
4BC6742A0D69421...

ENGINEERING LICENSE:

STATE OF COLORADO
STATE CERTIFICATE OF AUTHORIZATION # 20041302439
ENGINEER: PE#: DISCIPLINE:
KMY KEVIN M. VANMAELE 53946 CIVIL CC
REJ ROBERT E. JENSEN 54720 CIVIL ME
SDK SHELTON D. KEISLING 49643 ELECTRICAL
TMS TERRANCE M. SUPER 36490 ELECTRICAL

PLANS PREPARED FOR:



PLANS PREPARED BY:



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SUBMITTALS:

DESCRIPTION	DATE	BY	REV
REVISED PER AHJ COMMENTS	11/25/24	DCP	8

APPLICANT SITE NAME:
DENVER TECH CTR

APPLICANT SITE NUMBER:
HN21021

SITE ADDRESS:
7600 E. ORCHARD RD.
GREENWOOD VILLAGE, CO 80111

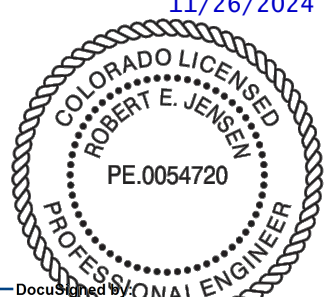
SHEET DESCRIPTION: EXISTING SITE PLAN
SHEET #: C-1.1

PARKING STALL LEGEND	
DESCRIPTION	SYMBOL
PROPOSED PARKING STALL	#

GENERAL NOTES:

1. ALL STRIPING AND STENCILING TO MATCH EXISTING COLOR ON SITE.
2. ALL STENCIL LETTERING SHALL BE 12" TALL.
3. CONTRACTOR TO LIMIT DISTURBANCE TO EXISTING LANDSCAPING. IF REQUIRED FOR CONSTRUCTION THEN THE LANDSCAPING IS TO BE REPLACED OR RESTORED TO ITS ORIGINAL STATE.
4. UTILITY COORDINATION IS REQUIRED. CONTRACTOR SHALL COORDINATE WITH UTILITY PROVIDER TO ENSURE POWER IS PROVIDED TO THE SITE.
5. CONDUITS FROM THE POWER SOURCE TO THE PROPOSED TRANSFORMER & METER TO BE TRENCHED IN A 2'-0" WIDE x 3'-6" DEEP TRENCH.
6. CONDUITS FROM THE SWITCHBOARD TO THE DISPENSERS TO BE TRENCHED SIMILAR TO NOTE #5.
7. STORM WATER CONTROL PRACTICES SHALL BE IMPLEMENTED DURING CONSTRUCTION TO PREVENT SEDIMENT FROM LEAVING THE WORK SITE.
8. PROPOSED CURB TO MATCH EXISTING. CONTRACTOR SHALL INSTALL PER LOCAL JURISDICTIONAL STANDARDS AND REQUIREMENTS.

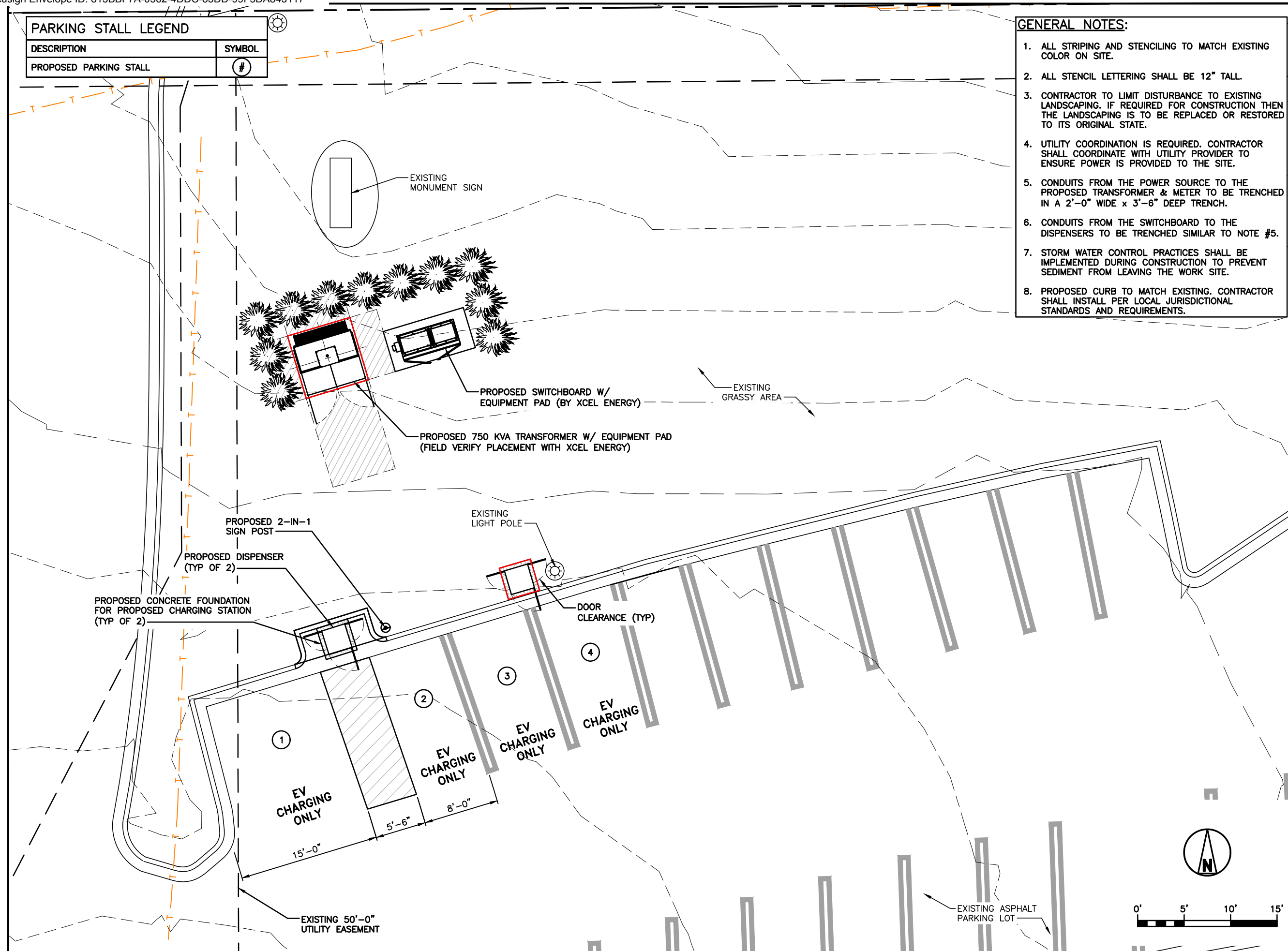
STAMP: 11/26/2024



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REJ ROBERT E. JENSEN	54720	CIVIL	CC
SDK SHELTON D. KEISLING	49643	ELECTRICAL	ME
TMS TERRANCE M. SUPER	36490	ELECTRICAL	ME



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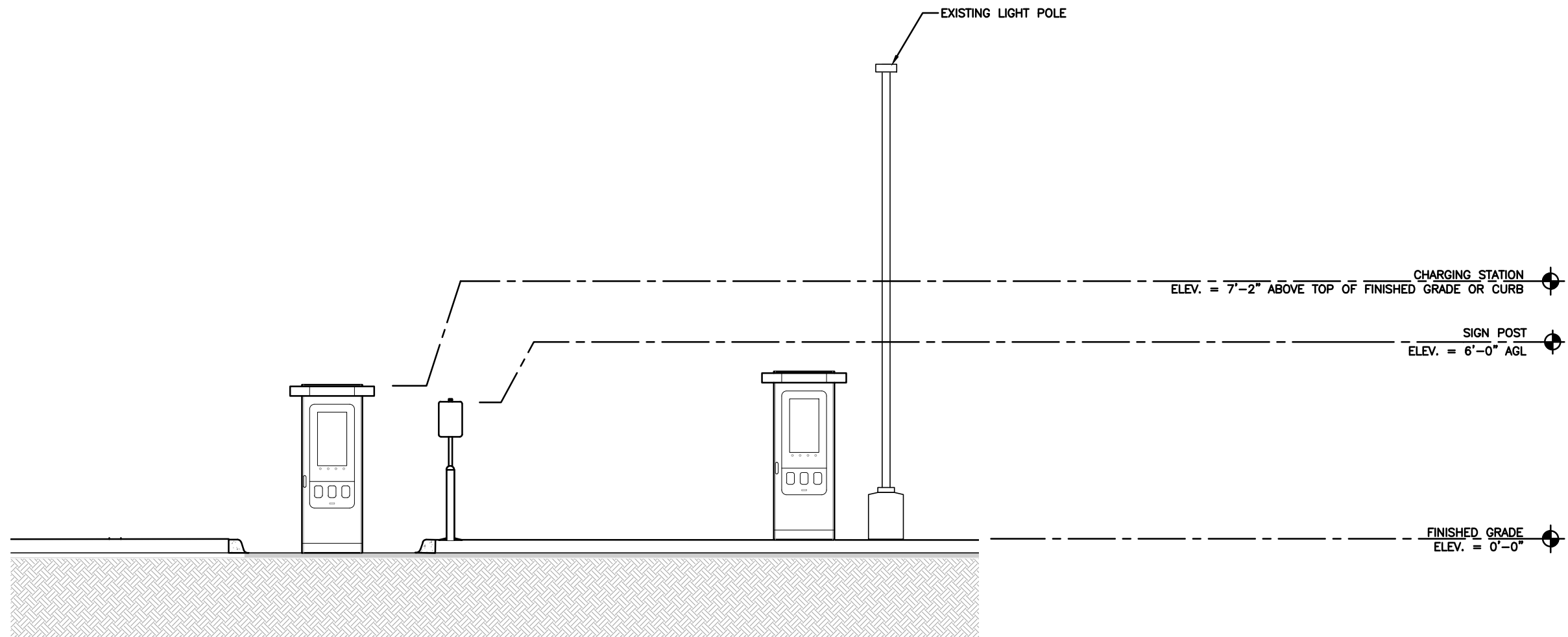
APPLICANT SITE NUMBER:
HN21021

SITE ADDRESS:
**7600 E. ORCHARD RD.
GREENWOOD VILLAGE, CO 80111**

SHEET DESCRIPTION: ENLARGED SITE PLAN	SHEET #: C-1.2
---	--------------------------

ENLARGED SITE PLAN

NOTE:
THE SITE WILL REQUIRE AN INSPECTION BY THE COUNTY TO VERIFY ELEVATION.



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4BC6742A0D69421...

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SDK SHELTON D. KEISLING	49643	ELECTRICAL	EE
TMS TERRANCE M. SUPER	36490	ELECTRICAL	EE

PLANS PREPARED FOR:



PLANS PREPARED BY:



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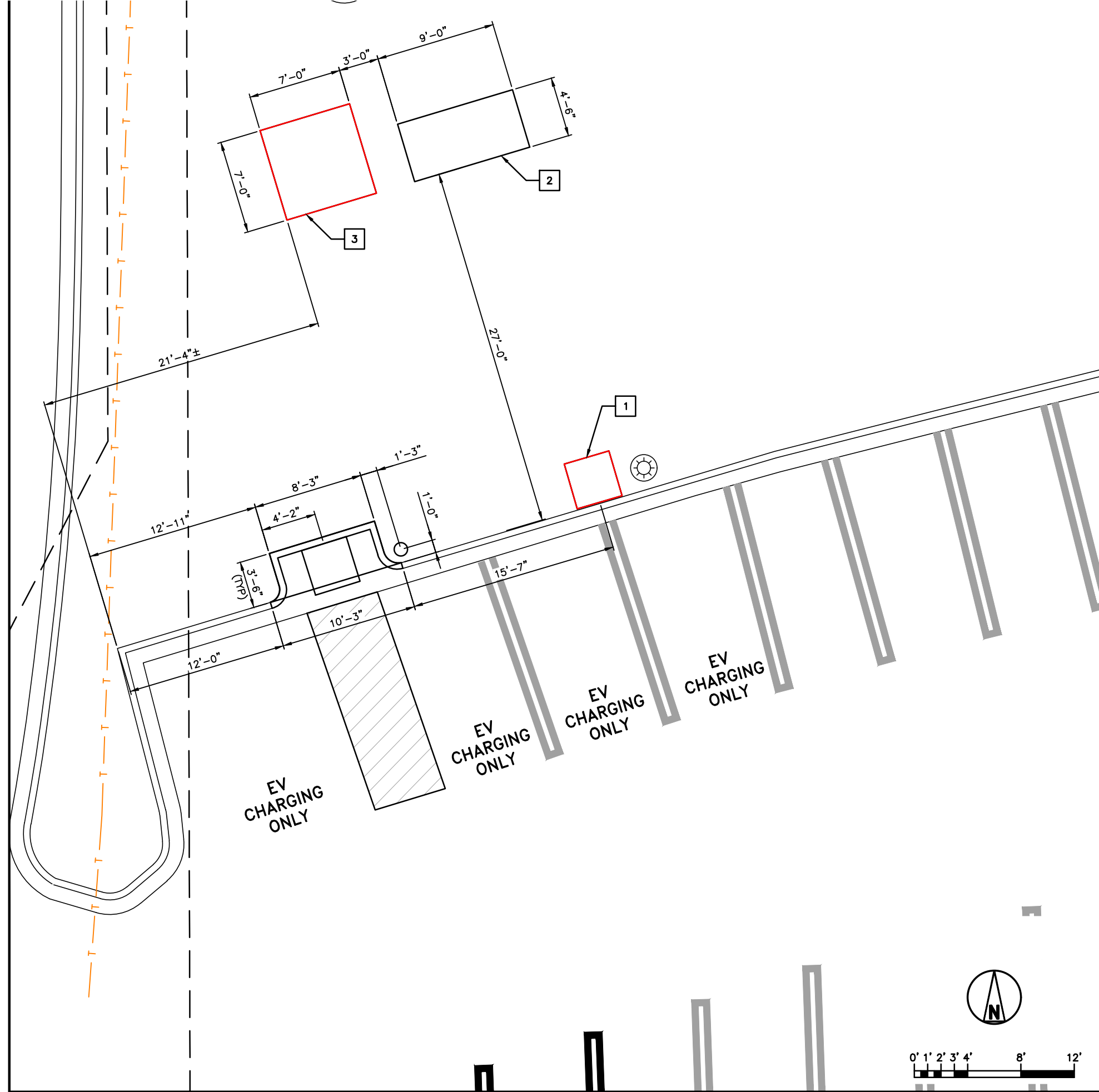
DESCRIPTION	DATE	BY	REV
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DENVER TECH CTR

APPLICANT SITE NUMBER:
HN21021

SITE ADDRESS:
**7600 E. ORCHARD RD.
GREENWOOD VILLAGE, CO 80111**

SHEET DESCRIPTION:	SHEET #:
EQUIPMENT ELEVATION	C-1.3



EQUIPMENT PLAN

KEYED NOTES:

- 1 PROPOSED 3'-6" x 3'-6" PAD FOR DISPENSER
- 2 PROPOSED 9'-0" x 4'-6" PAD FOR SWITCHBOARD (SEE SHEET C-3.0, DETAIL 4)
- 3 PROPOSED 7'-0" x 7'-0" TRANSFORMER FOUNDATION

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PLANS PREPARED FOR:

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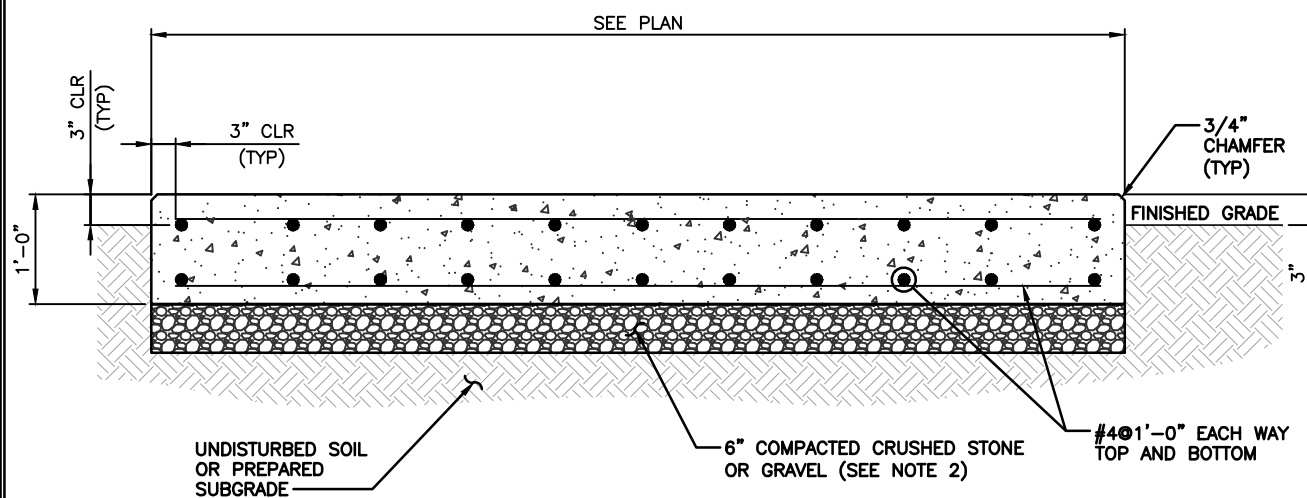
APPLICANT SITE NUMBER:
HN21021

SITE ADDRESS:
**7600 E. ORCHARD RD.
GREENWOOD VILLAGE, CO 80111**

SHEET DESCRIPTION: EQUIPMENT PLAN	SHEET #: C-2.0
---	--------------------------

NOTES:

1. CONCRETE PAD REQUIRED COMPACTION TESTING. REFER TO SHEET SP-1.2 FOR DETAILS
2. GRAVEL SHALL BE NATURAL OR CRUSHED STONE WITH 100 PERCENT PASSING 1 INCH SIEVE

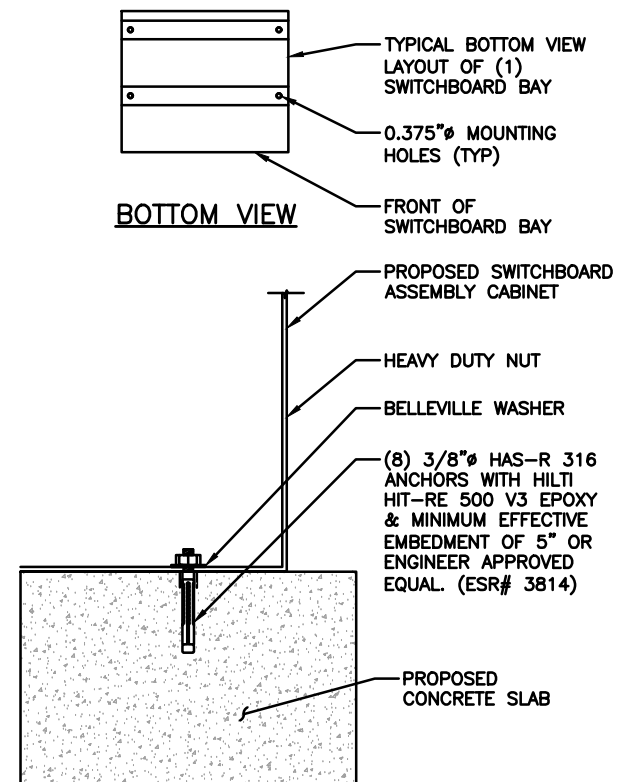


EQUIPMENT FOUNDATION DETAIL

1

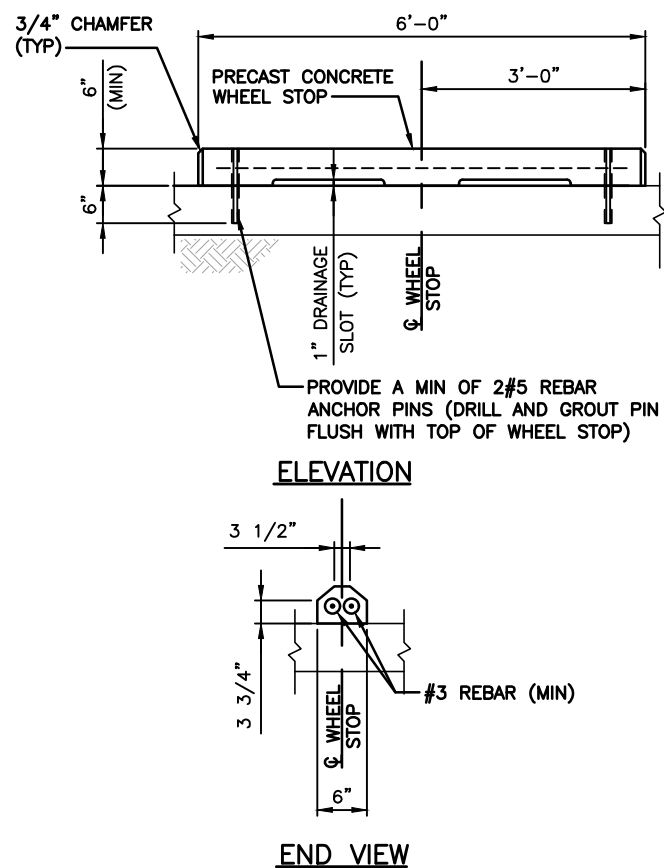
NOTE:

1. MINIMUM CONCRETE EDGE DISTANCE FOR ANCHOR IS 6 INCHES.



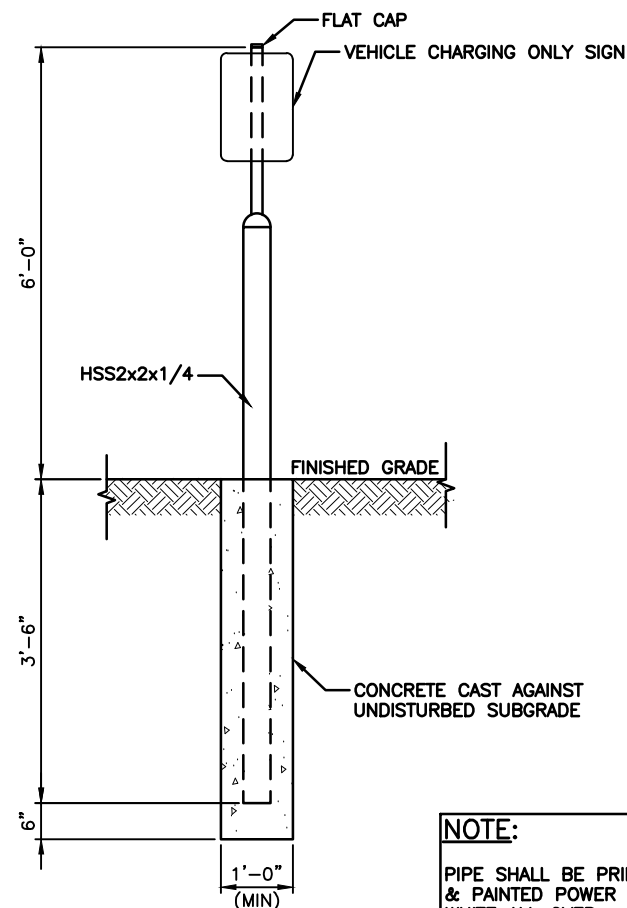
EQUIPMENT ANCHOR ROD INSTALLATION DETAIL

2



WHEEL STOP DETAIL

5

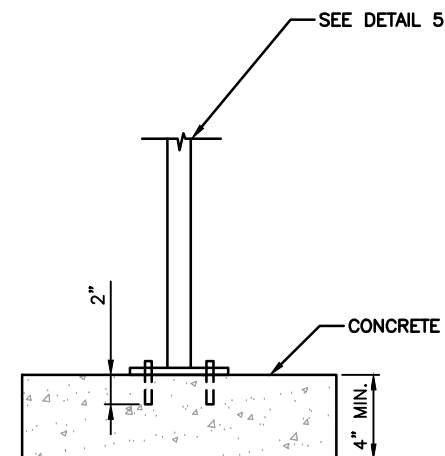


SIGN POST DETAIL

4

BOLT DOWN BASE PLATE NOTES:

1. CONTRACTOR TO PROVIDE AND INSTALL BASE PLATE ASSEMBLY, EXPANSION ANCHORS, AND 1/2 inch A307 BOLT.
2. BASE PLATE ASSEMBLY TO BE HOT DIPPED GALVANIZED. PAINT TO MATCH SIGN POST.
3. PROVIDE 1/4 inch DRAIN HOLE TO PREVENT WATER FROM COLLECTING IN HSS.



SIGN POST INSTALLATION DETAIL

3

STAMP: 11/26/2024

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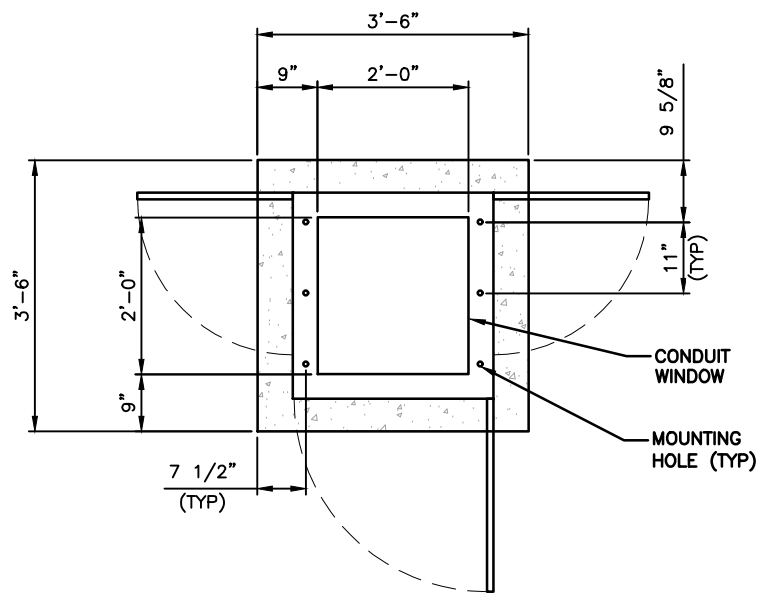
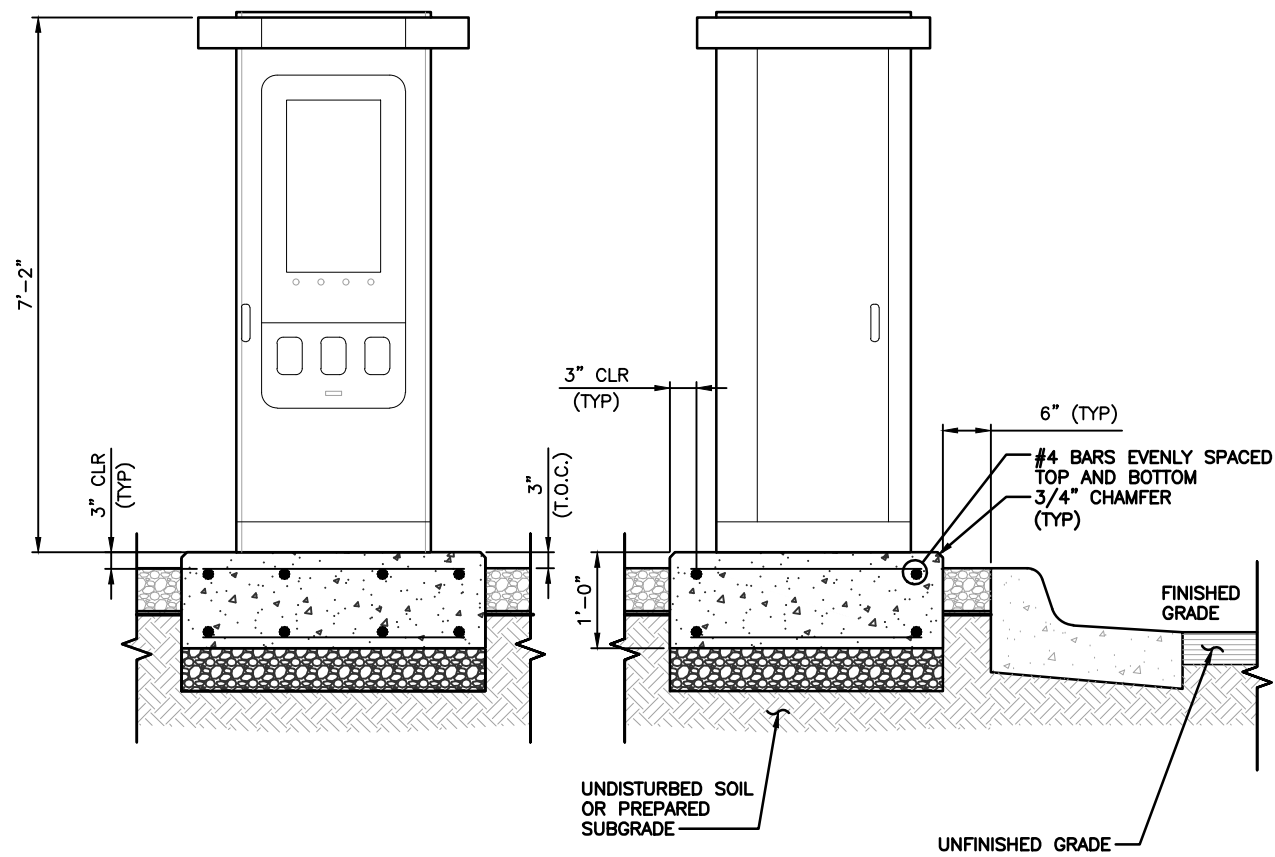
SITE ADDRESS:
7600 E. ORCHARD RD.
GREENWOOD VILLAGE, CO 80111

SHEET DESCRIPTION:	SHEET #:
EQUIPMENT DETAILS (1 OF 2)	C-3.0

GRAVEL NOTE:
GRAVEL SHALL BE NATURAL OR CRUSHED STONE WITH 100 PERCENT PASSING 1 INCH SIEVE.

FOUNDATION NOTE:
MINIMUM SOIL BEARING CAPACITY OF 1500 PSF IS ASSUMED IN ALL FOUNDATIONS AND SLAB AREAS. (GENERAL CONTRACTOR SHALL VERIFY PRIOR TO CONSTRUCTION)

SPECIFICATIONS:
DIMENSIONS (HxDxW):
DISPENSER: 69.5"x22.5"x13.5"

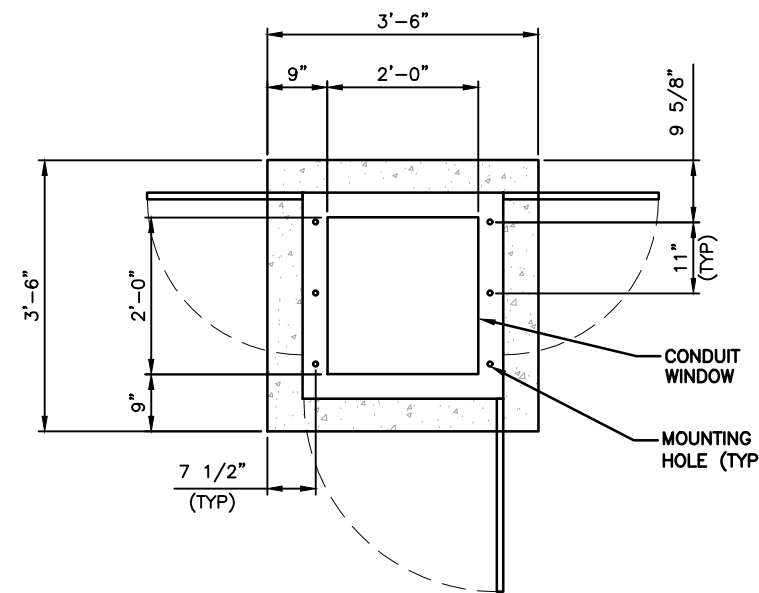
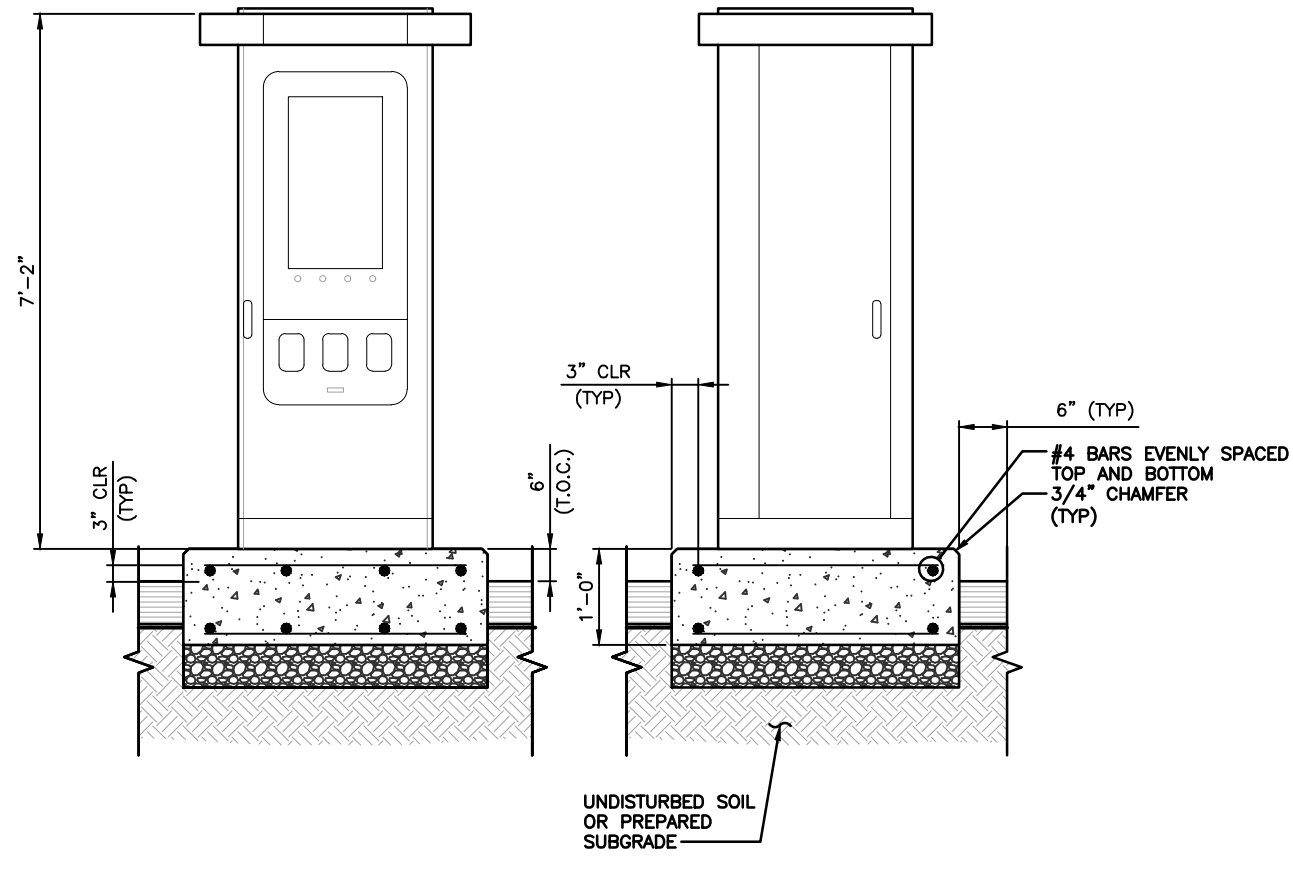


DCFC DISPENSER DETAIL

GRAVEL NOTE:
GRAVEL SHALL BE NATURAL OR CRUSHED STONE WITH 100 PERCENT PASSING 1 INCH SIEVE.

FOUNDATION NOTE:
MINIMUM SOIL BEARING CAPACITY OF 1500 PSF IS ASSUMED IN ALL FOUNDATIONS AND SLAB AREAS. (GENERAL CONTRACTOR SHALL VERIFY PRIOR TO CONSTRUCTION)

SPECIFICATIONS:
DIMENSIONS (HxDxW):
DISPENSER: 69.5"x22.5"x13.5"



ADA DCFC DISPENSER DETAIL

STAMP: 11/26/2024

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Robert E. Jensen
4BC6742A0D69421...

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STATE OF COLORADO
STATE CERTIFICATE OF AUTHORIZATION # 20041302439

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TMS TERRANCE M. SUPER	36490	ELECTRICAL	

PLANS PREPARED FOR:

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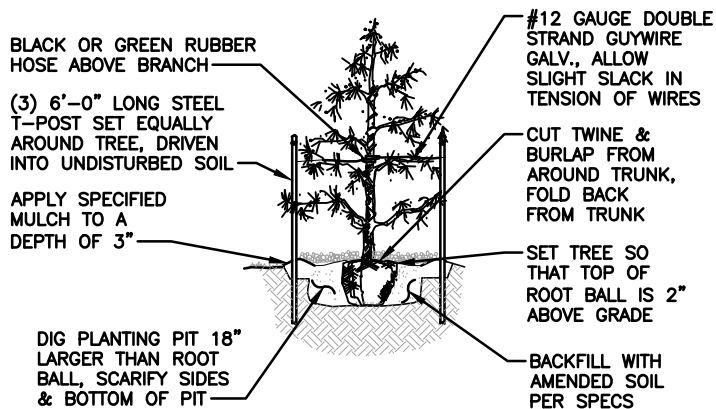
SHEET DESCRIPTION:	SHEET #:
EQUIPMENT DETAILS (2 OF 2)	C-3.1

LANDSCAPE PLAN NOTES:

- EXISTING UNDERGROUND (U/G), OVERHEAD (O.H.) UTILITIES AND DRAINAGE STRUCTURES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. IT IS THE RESPONSIBILITY OF THE INDIVIDUAL CONTRACTORS TO VERIFY EXISTENCE AND LOCATION OF ALL UTILITIES BEFORE STARTING ANY WORK.
- PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL GIVE 72 HOURS ADVANCED NOTICE TO ALL THOSE COMPANIES/UTILITIES WHICH HAVE FACILITIES IN THE NEAR VICINITY OF THE CONSTRUCTION SITE. CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT THE LIGHTING WIRE IS REPLACED OR REPAIRED, IF IT IS BROKEN.
- CONTRACTOR SHALL VERIFY ALL LANDSCAPE MATERIAL QUANTITIES AND SHALL REPORT ANY DISCREPANCIES IMMEDIATELY TO THE LANDSCAPE ARCHITECT & GREENWOOD VILLAGE
- CONTRACTOR SHALL STAKE/LAYOUT PLANT LOCATIONS IN THE FIELD & HAVE APPROVAL BY LANDSCAPE ARCHITECT BEFORE PROCEEDING WITH INSTALLATION.
- NO SUBSTITUTIONS (INCL. CULTIVARS) SHALL BE ACCEPTED WITHOUT WRITTEN APPROVAL PER SPECIFICATIONS. PROPOSED PLANT SUBSTITUTIONS REQUIRE APPROVAL OF BOTH THE LANDSCAPE ARCHITECT AND GREENWOOD VILLAGE STAFF.
- ALL PLANT MATERIAL SHALL BE OF EXCELLENT QUALITY, FREE OF DISEASE AND INFESTATION, AND TRUE TO TYPE, VARIETY, SIZE SPECIFIED, AND FORM PER AMERICAN NURSERY ASSOCIATION STANDARDS.
- ALL PROPOSED TREES AND SHRUBS SHALL BE LAID OUT IN A UNIFORM AND CONSISTENT PATTERN, FOLLOWING THE LANDSCAPE PLAN ACCURATELY.
- INSTALL ALL PLANTS PER PLANTING DETAILS.
- ALL TREES AND MULCH BEDS SHALL RECEIVE 3" OF SHREDDED DARK PREMIUM HARDWOOD MULCH, AS DETAILED. ADD PREEN OR SNAPSHOT TO BEDS BEFORE AND AFTER MULCHING, UNLESS SPECIFIED AS ROCK OR OTHER.
- TREE TIES SHALL BE DEWITT 20" STRAPS FOR TREE STAKING. USE 10 GAUGE ELECTRIC WIRE. STAKES SHALL BE STRAIGHT AND TAUGHT.
- CONTRACTOR SHALL THOROUGHLY WATER-IN EACH PLANT IMMEDIATELY FOLLOWING INSTALLATION AND CONTINUE WATERING UNTIL SUBSTANTIAL COMPLETION. COORDINATE WATERING WITH THE OWNER AFTER COMPLETION FOR THE FIRST 90 DAYS.
- CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO PLANTING AND ANY MODIFICATIONS TO TREE LOCATIONS SHALL BE COORDINATED WITH THE LANDSCAPE ARCHITECT AND APPROVED BY CITY OF GREENWOOD VILLAGE PRIOR TO PLANTING.
- ALL PLANT MATERIALS SHALL BE GUARANTEED FOR 1 YEAR FROM DATE OF SUBSTANTIAL COMPLETION. PLANT MATERIALS WILL BE ONE TIME REPLACEMENT AND SHALL BE DOCUMENTED BY THE CONTRACTOR AFTER ANY REPLACEMENTS.
- ALL VEGETATION SHALL BE 6" ABOVE THE FINISHED GRADE OF THE UTILITY BOX AT THE TIME OF PLANTING.
- SUGGESTED MAINTENANCE PROGRAM MINIMUMS FOR CONTRACTOR TO SUPPLY TO CLIENT. THE FOLLOWING SPECS ARE THE BARE MINIMUM REQUIREMENTS:
 - MINIMUM VISITS 6
 - SPRING CLEAN-UP TO INCLUDE TRIMMING OF PLANT MATERIAL, WEEDING, SNAPSHOT, AND FRESH PREMIUM HARDWOOD MULCH AT 2" THICK.
 - FALL CLEAN-UP TO INCLUDE TRIMMING OF PLANT MATERIAL AS NEEDED, WEEDING, SNAPSHOT, AND LIGHT DRESSING OF PREMIUM HARDWOOD MULCH AT .5 - 1" DEPTH.
 - 4 VISITS TO FALL BETWEEN SPRING AND FALL CLEAN-UP TO KEEP BEDS CLEAN OF WEEDS, AT LEAST 1 ADDITIONAL SNAPSHOT APPLICATION AND ALL DEBRIS.

NOTES:

- SET TRESS AT SAME GRADE AS GROWN IN NURSERY.
- PRUNE ALL DAMAGED OR DEAD WOOD PRIOR TO PLANTING.



TREE PLANTING DETAIL



UTILITY NOTES:

- THE UTILITY LOCATIONS SHOWN ON THESE PLANS ARE TAKEN FROM UTILITY COMPANY RECORDS AND ARE APPROXIMATE ONLY. THEY DO NOT CONSTITUTE ACTUAL FIELD LOCATIONS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL ADHERE TO THE PROVISIONS OF THE STATE OF CO. ANY PERSON OR FIRM DOING EXCAVATION ON PUBLIC RIGHT-OF-WAY DO SO ONLY AFTER GIVING NOTICE TO, AND OBTAINING INFORMATION FROM, UTILITY COMPANIES. STATE LAW REQUIRES 4 DAYS ADVANCE NOTICE.

WASTEWATER NOTE:

IN THE EVENT OF WORK ON THE WASTEWATER SANITARY MAIN, ANY TREES OR PLANTINGS PLACED WITHIN THE SEWER EASEMENT MAY BE REMOVED WITHOUT REPLACEMENT OR COMPENSATION THERE-OF. THE OWNER WILL BE RESPONSIBLE FOR REPLACING ANY REMOVED PLANT MATERIAL.

INSTALLATION NOTES:

- STRIP OFF ANY GRASS AND WEEDS PRIOR TO CREATING OR AMENDING BED AREAS.
- INSTALL VEE CUT EDGING AROUND ALL BEDS. CAREFULLY HAND DIG OVER AND AROUND ANY LOCATED UTILITY LINES. EDGES SHALL BE SMOOTH AND CONFORM TO LANDSCAPE PLAN.
- APPLY COTTON BUR COMPOST OR BACK TO NATURE MIX AT A RATE OF 1 BAG FOR EVERY 25 S.F. OF BED AREA (BAGS ARE 2 C.F.). LIGHTLY HAND SPADE. DO NOT ROTOTILL (FIBEROPTICS).
- PLANT AT PROPER DEPTH AT FLARE ROOT. ROOTBALLS SHALL BE PLANTED 1" HIGHER THAN SURFACE.
- EITHER INSTALL DEWITT PRO 5 WEED BARRIER WITH COMPANION PINS (PIN WELL) OR PRE-EMERGENT.
- HARDWOOD MULCH SHALL EITHER MATCH EXISTING OR BE DARK BROWN HARDWOOD. 3" MIN. ALL AREAS.
- INSTALL MULCH TO 3" DEPTH AROUND ANY INDIVIDUAL PLANTS IN A RING FOR NATURAL APPEARANCE.
- DO NOT DISTURB ANY EXISTING TREES DURING INSTALLATION.

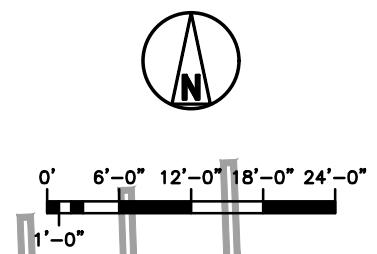
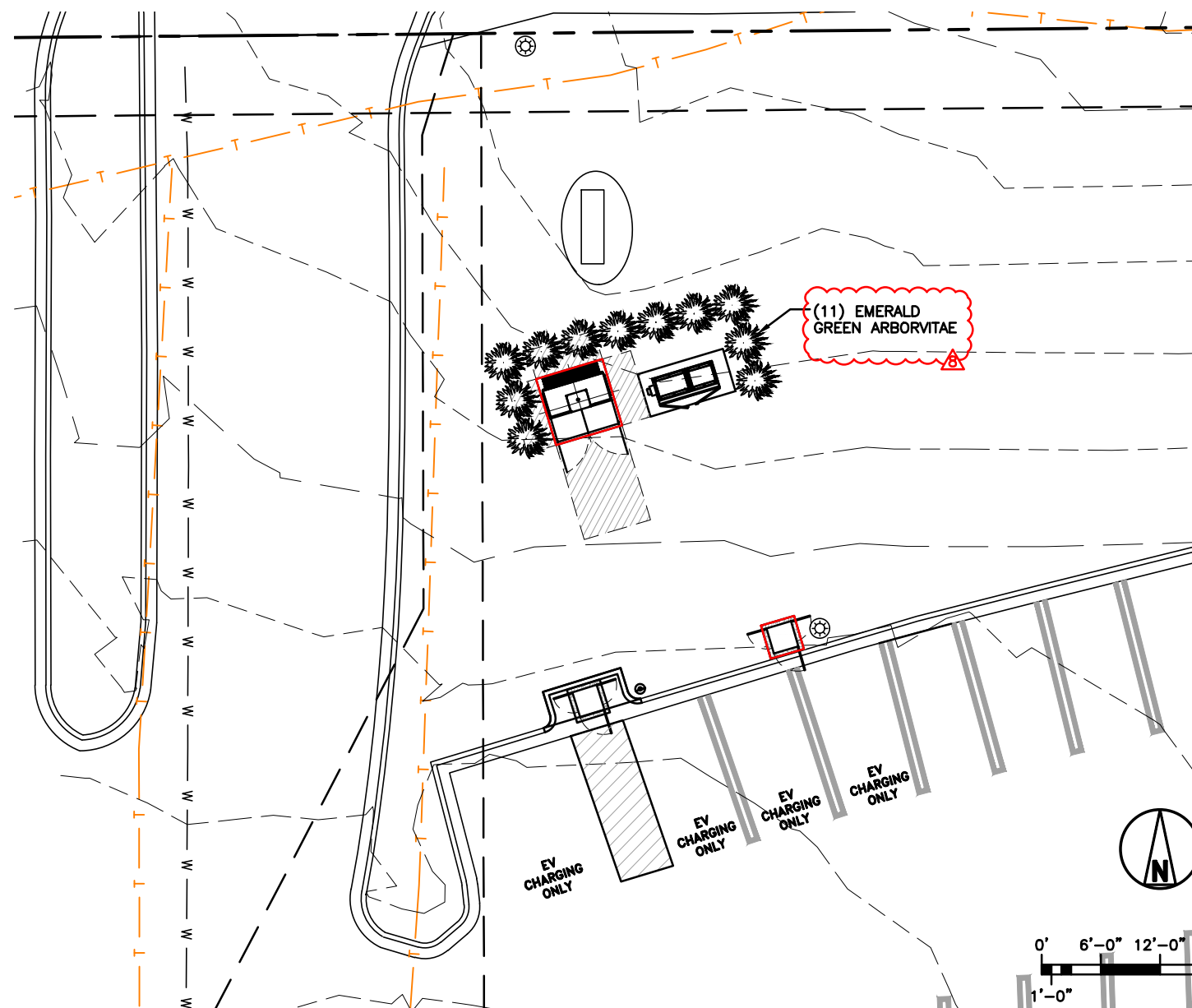
CAUTION !!!

ALL ELECTRIC, TELEPHONE, GAS, WATER, STEAM, SEWER, AND OTHER SERVICE LINES SHOULD BE SHUT OFF, CAPPED, OR OTHERWISE CONTROLLED, AT OR OUTSIDE THE EXISTING BUILDING BEFORE DEMOLITION WORK IS STARTED. IN EACH CASE, ANY UTILITY COMPANY WHICH IS INVOLVED SHOULD BE NOTIFIED IN ADVANCE.

PLANT_SCHEDULE

TREES

ICON	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	QTY	NOTES
	THUJA OCCIDENTALIS 'SMARAGD'	EMERALD GREEN ARBORVITAE	5'-0"	3 GAL.	11	N/A



STAMP: 11/26/2024

DocuSigned by: Robert E. Jensen

4BC6742A0D69421...

ENGINEERING LICENSE: STATE OF COLORADO
STATE CERTIFICATE OF AUTHORIZATION # 20041302439

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PLANS PREPARED FOR:

PLANS PREPARED BY:

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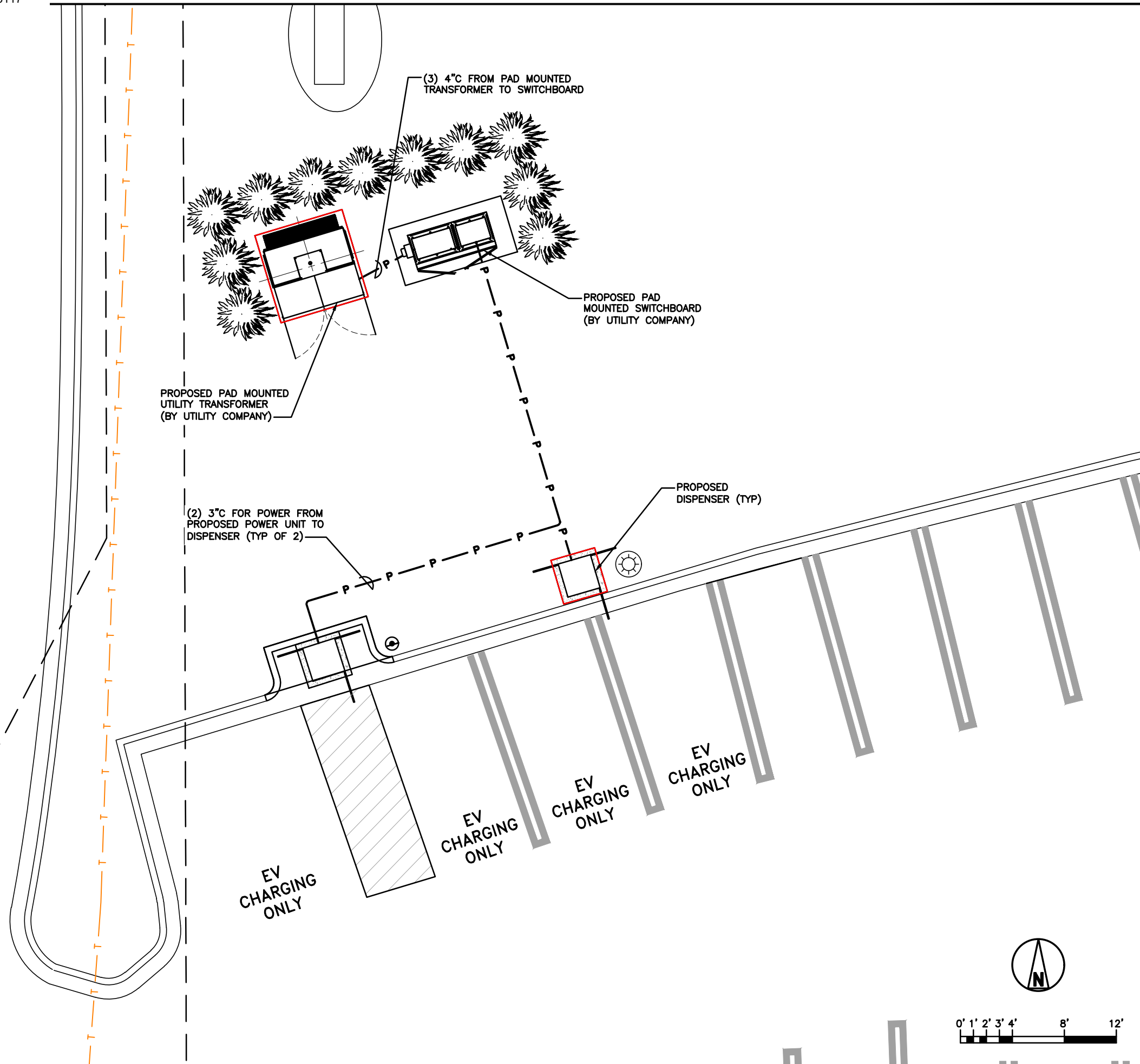
APPLICANT SITE NUMBER: HN21021

SITE ADDRESS: 7600 E. ORCHARD RD. GREENWOOD VILLAGE, CO 80111

SHEET DESCRIPTION: LANDSCAPE PLAN & DETAILS

SHEET #: L-1.0

NOTE:
EXISTING LANDSCAPING
TO BE REMOVED/ADDED
AS REQUIRED.



STAMP: 11/26/2024

DocuSigned by:
Shelton Keisling
EF94D8A5B80B407...

ENGINEERING LICENSE:
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PLANS PREPARED FOR:



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SUBMITTALS:

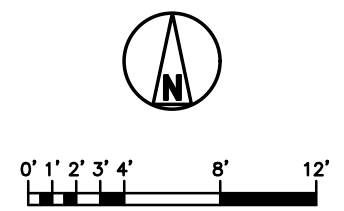
DESCRIPTION	DATE	BY	REV
REVISED PER AHJ COMMENTS	11/25/24	DCP	8

APPLICANT SITE NAME:
DENVER TECH CTR

APPLICANT SITE NUMBER:
HN21021

SITE ADDRESS:
7600 E. ORCHARD RD.
GREENWOOD VILLAGE, CO 80111

SHEET DESCRIPTION: UTILITY PLAN	SHEET #: E-1.0
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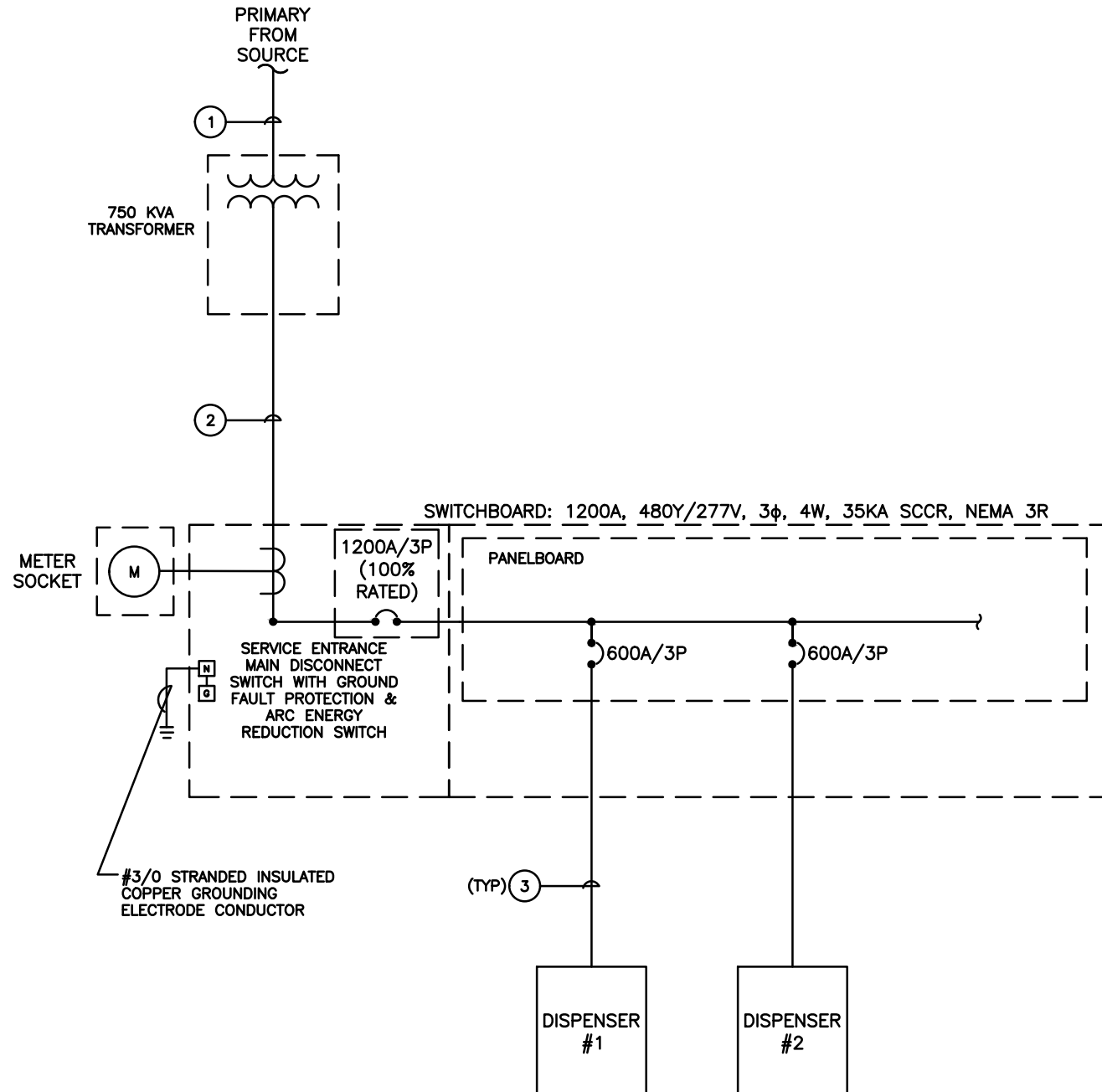


UTILITY PLAN

GENERAL NOTES:

1. ALL OCPDS, CONDUCTOR AND CONDUIT SIZES STATED HERE ARE PROVIDED BY TBD FOR REFERENCE ONLY. SITE SPECIFIC WIRING SIZING SHALL BE PERFORMED BY THE INSTALLATION CONTRACTOR TAKING INTO ACCOUNT SITE SPECIFIC CONDITIONS AND LOCAL CODES AND STANDARDS.
2. CONDUCTORS LANDING ON EQUIPMENT SHALL BE STRANDED INSULATED COPPER.
3. AC CONDUCTORS SHALL BE 600V, 90°C, TYPE THHN/THWN-2 UNLESS NOTED OTHERWISE.
4. DC CONDUCTORS SHALL BE 1000V, 90°C, TYPE XHHW-2 UNLESS NOTED OTHERWISE.

NO.	FROM	TO	CONFIGURATION	FUNCTION
①	SOURCE	TRANSFORMER	(BY UTILITY COMPANY)	PRIMARY
②	TRANSFORMER	1200A SWITCHBOARD	3 SETS OF 4-600 KCML CU, EACH IN 4°C	SERVICE LATERAL
③	1200A SWITCHBOARD	DISPENSER	2 SETS OF 3-350 KCML CU, 1#1G, EACH IN 3°C	POWER FEEDER TO DISPENSER



STAMP: 11/26/2024

DocuSigned by:
Shelton Keisling
EF94D8A5B80B407...

ENGINEERING LICENSE:
STATE OF COLORADO
STATE CERTIFICATE OF AUTHORIZATION # 20041302439

ENGINEER:	PE#:	DISCIPLINE:	
KMV KEVIN M. VANMAELE	53946	CIVIL	C
REJ ROBERT E. JENSEN	54720	CIVIL	
SDK SHELTON D. KEISLING	49643	ELECTRICAL	EE
TMS TERRANCE M. SUPER	36490	ELECTRICAL	



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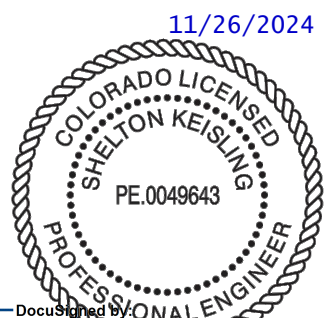
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HN21021

SITE ADDRESS:
7600 E. ORCHARD RD.
GREENWOOD VILLAGE, CO 80111

SHEET DESCRIPTION:	SHEET #:
ELECTRICAL ONE-LINE DIAGRAM	E-2.0

STAMP: 11/26/2024



DocuSigned by:
Shelton Keisling
EF94D8A5B80B407...

ENGINEERING LICENSE:
STATE OF COLORADO
STATE CERTIFICATE OF AUTHORIZATION # 20041302439
ENGINEER: PE#: DISCIPLINE:
KMV KEVIN M. VANMAELE 53946 CIVIL CC
REJ ROBERT E. JENSEN 54720 CIVIL ME
SDK SHELTON D. KEISLING 49643 ELECTRICAL
TMS TERRANCE M. SUPER 36490 ELECTRICAL

PANEL NAME:	SWITCHBOARD	MAINS TYPE:	MCB	DISTRIBUTION TYPE:	277/480Y, 3-PH, 4-WIRE
STATUS:	NEW	MAINS RATING (A):	1200	RATED FAULT CURRENT:	65 KAIC (VERIFY W/ UTILITY PRIOR TO ORDERING)
LOCATION:	OUTSIDE	BUS RATING (A):	1200	RATING TYPE:	FULLY RATED
SUPPLY FROM:	TRANSFORMER	ENCLOSURE:	NEMA 3R	SERVICE ENTRANCE RATED:	YES
		MOUNTING:	PAD-MOUNTED	ISOLATED GND BAR:	NO

CKT #	LOAD					DESCRIPTION	NOTE	AMP	POLE	TOTAL PER PHASE IN KVA			AMP	POLE	NOTE	LOAD					CKT #					
	L	R	HV	M	C					A	B	C				L	R	HV	M	C						
1					142.00	PROPOSED DISPENSER #1		600	3	284.00			600	3		PROPOSED DISPENSER #2				142.00	2					
3				142.00			284.00																		142.00	4
5				142.00								284.00														142.00
TOTAL KVA =										284.00	284.00	284.00	852.00 TOTAL CONN KVA													
TOTAL AMPS =										1,025.3	1,025.3	1,025.3	1024.80 TOTAL CONN AMPS													
										DEMAND FACTOR			TOTAL			NOTES										
LIGHTING										1.25	0.00	0.00	0.00	0.00												
FIRST 10KVA RECEPTACLES (3.33 KVA PER PHASE)										1.00	0.00	0.00	0.00	0.00												
REMAINING RECEPTACLES										0.50	0.00	0.00	0.00	0.00												
HVAC EQUIP										1.00	0.00	0.00	0.00	0.00												
25% OF LARGEST MOTOR										0.25	0.00	0.00	0.00	0.00												
MISCELLANEOUS										1.00	0.00	0.00	0.00	0.00												
CONTINUOUS										1.25	355.00	355.00	355.00	1065.00												
TOTALS (KVA)										355.00	355.00	355.00	1065.00													
TOTALS (A)										1281.59	1281.59	1281.59	1281.00													

PLANS PREPARED FOR:



PLANS PREPARED BY:



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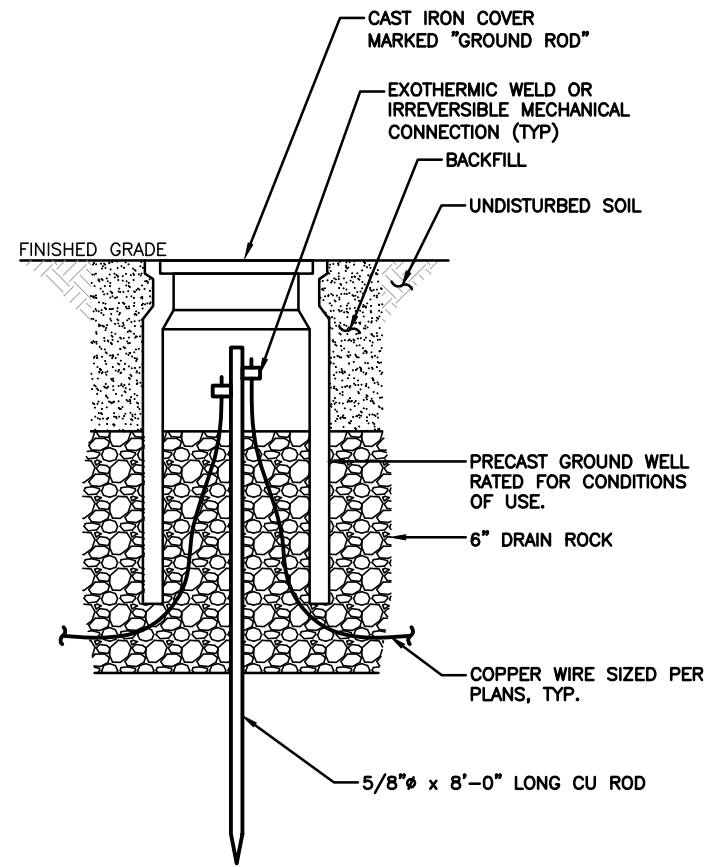
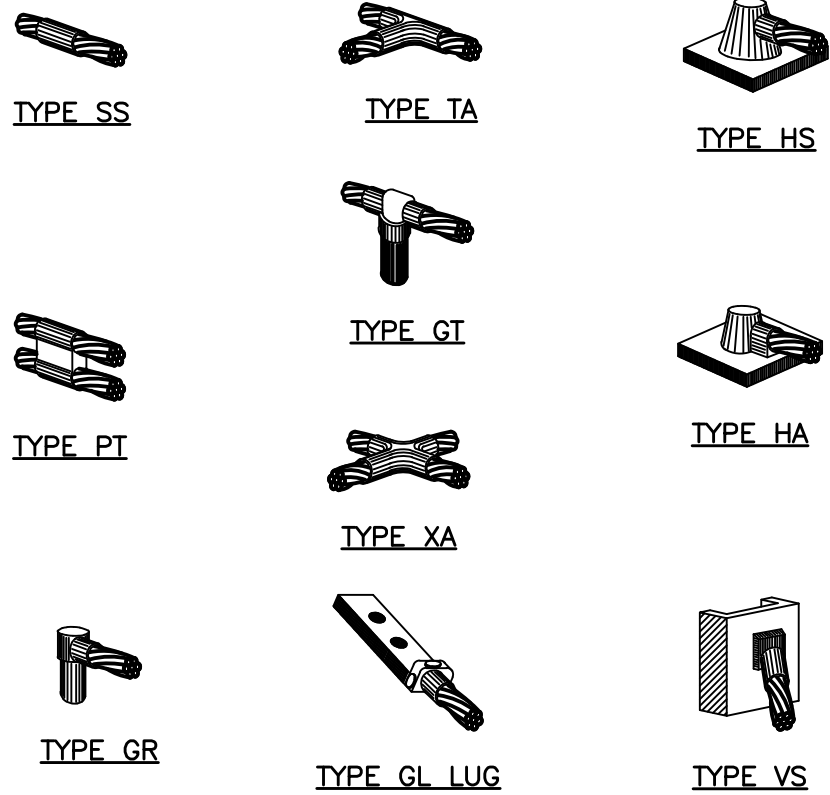
PANEL SCHEDULE

SHEET #:

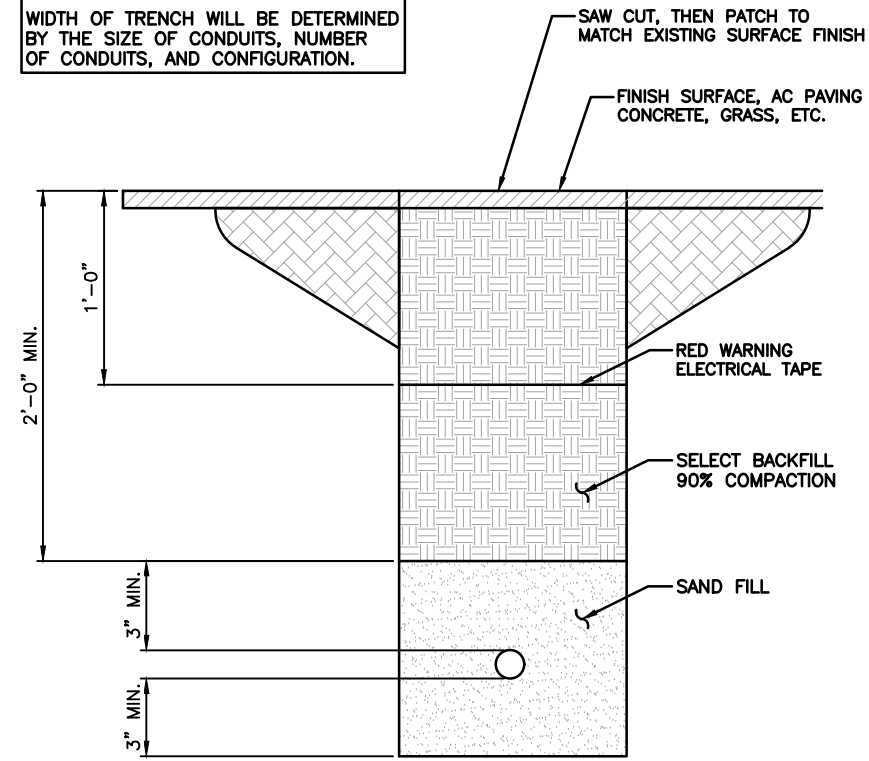
E-2.1

PANELBOARD NOTES:

- PROVIDE EQUIPMENT WITH SUFFICIENT INTERRUPTING CAPACITY (AIC) REQUIRED FOR A SAFE INSTALLATION. AIC RATING NOTED ON EACH PANELBOARD SCHEDULE IS MINIMUM RATING ACCEPTED WITHOUT ADDITIONAL DOCUMENTATION THAT INDICATES OTHERWISE.
- CIRCUITS SHALL BE REARRANGED AS REQUIRED TO MAINTAIN THE MOST BALANCED LOADS ON EACH PHASE WITHIN EACH PANEL. PROVIDE TYPED PANEL DIRECTORY MOUNTED PER MANUFACTURER'S RECOMMENDATIONS.



NOTE:
WIDTH OF TRENCH WILL BE DETERMINED BY THE SIZE OF CONDUITS, NUMBER OF CONDUITS, AND CONFIGURATION.



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DocuSigned by:
Shelton Keisling
EF94D8A5B80B407...

ENGINEERING LICENSE:
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STATE CERTIFICATE OF AUTHORIZATION # 20041302439

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PLANS PREPARED FOR:

PLANS PREPARED BY:

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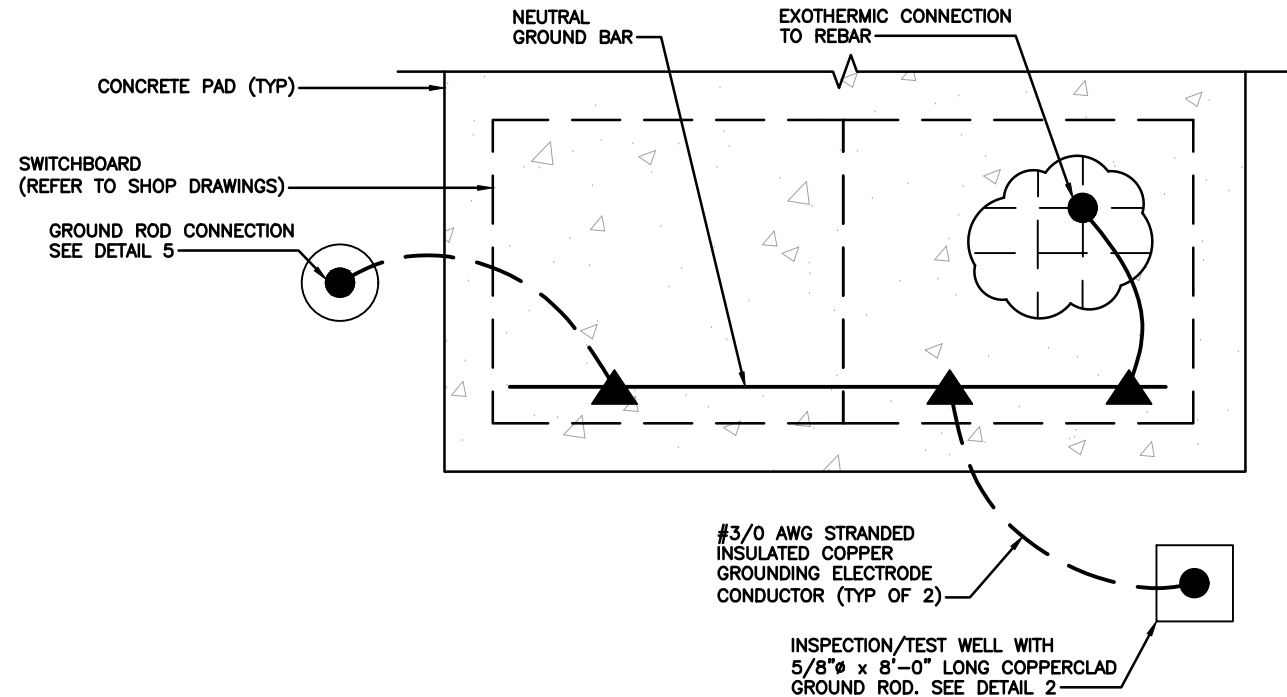
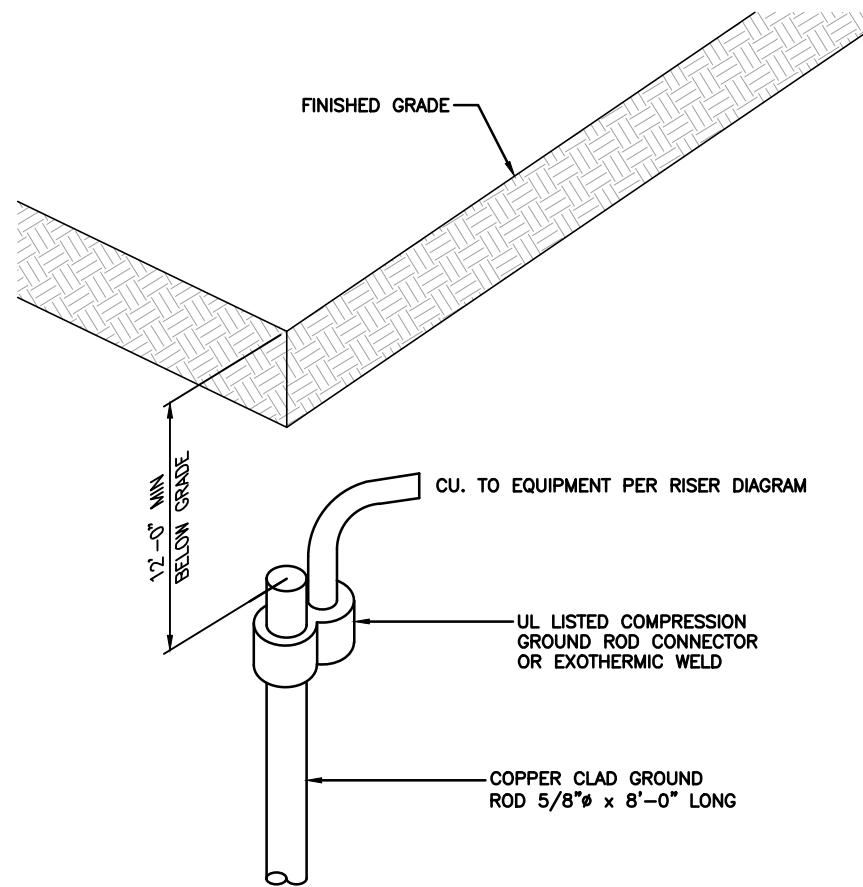
SITE ADDRESS:
**7600 E. ORCHARD RD.
GREENWOOD VILLAGE, CO 80111**

SHEET DESCRIPTION: CONDUIT DETAILS	SHEET #: E-3.0
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EXOTHERMIC CONNECTION DETAILS

INSPECTION/TEST WELL DETAIL

CONDUIT TRENCH DETAIL



LEGEND:
● EXOTHERMIC CONNECTION
▲ MECHANICAL CONNECTION

GROUND ROD DETAIL

TYPICAL SWITCHBOARD FOUNDATION GROUNDING PLAN

GENERAL REQUIREMENTS

PART 1: GENERAL

1.1 INTENT:

- A. THESE SPECIFICATIONS AND CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE DONE AND THE MATERIALS TO BE FURNISHED FOR CONSTRUCTION. PLANS ARE NOT TO BE SCALED.
- B. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO BE FULLY EXPLANATORY AND SUPPLEMENTARY, HOWEVER, SHOULD ANYTHING BE SHOWN, INDICATED OR SPECIFIED ON ONE AND NOT THE OTHER, IT SHALL BE DONE THE SAME AS IF SHOWN, INDICATED OR SPECIFIED IN BOTH.
- C. THE INTENTION OF DOCUMENTS IS TO INCLUDE ALL LABOR AND MATERIALS REASONABLY NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK AS STIPULATED IN THE CONTRACT.
- D. CONFLICTS: THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL MEASUREMENTS AT THE SITE BEFORE ORDERING MATERIALS OR DOING ANY WORK. NO COMPENSATION SHALL BE ALLOWED DUE TO DIFFERENCES BETWEEN ACTUAL DIMENSIONS AND THOSE ON THE DOCUMENTS. ANY DISCREPANCY SHALL BE REPORTED TO THE OWNER OR THEIR AGENT FOR CONSIDERATION.

1.2 LICENSING REQUIREMENTS:

- A. THE CONTRACTOR IS RESPONSIBLE FOR PROCUREMENT AND MAINTAINING ALL APPLICABLE LICENSES AND BONDS.

1.3 STORAGE:

- A. ALL MATERIALS MUST BE STORED IN A LEVEL AND DRY FASHION THAT DOES NOT OBSTRUCT THE FLOW OF OTHER WORK. ANY STORAGE METHOD MUST MEET ALL RECOMMENDATIONS OF THE ASSOCIATED MANUFACTURER.

1.4 CLEAN UP:

- A. THE CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATION OF WASTE MATERIALS OR RUBBISH AT ALL TIMES.

1.5 QUALITY ASSURANCE:

- A. ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS.

PART 2: PRODUCTS – NOT APPLICABLE TO THIS SECTION

PART 3: EXECUTION – NOT APPLICABLE TO THIS SECTION

END OF SECTION

SITE CLEARING/EROSION CONTROL

PART 1: GENERAL

1.1 SUMMARY:

- A. PROVIDE SITE-CLEARING AS REQUIRED TO COMPLETE WORK AS SHOWN ON CONTRACT DOCUMENTS INCLUDING CLEARING, GRUBBING, STRIPPING, EROSION AND SILTATION CONTROL, AND PROTECTION OF LANDSCAPE MATERIALS DESIGNATED TO BE PROTECTED DURING CONSTRUCTION.

1.2 QUALITY ASSURANCE:

- A. COMPLY WITH GOVERNING CODES AND REGULATIONS.
- B. SITE PROTECTION: PROVIDE ALL NECESSARY JOB SITE MAINTENANCE FROM COMMENCEMENT OF WORK UNTIL COMPLETION OF THE SUBCONTRACT
- C. AVOID DAMAGE TO THE SITE AND TO EXISTING FACILITIES, STRUCTURES, TREES, AND SHRUBS DESIGNATED TO REMAIN. TAKE PROTECTIVE MEASURES TO PREVENT EXISTING FACILITIES THAT ARE NOT DESIGNATED FOR REMOVAL FROM BEING DAMAGED BY THE WORK.
- D. ANY AND ALL WASTE MATERIALS (E.G., CONCRETE WASTE) AND SOIL ARE PROHIBITED FROM BEING DISCHARGED OFF OF THE WORK SITE AND/OR ENTERING STORM DRAINS.

PART 2: PRODUCTS

2.1 MATERIALS:

- A. TREE PROTECTION, EROSION CONTROL, SILTATION CONTROL, AND DUST CONTROL MATERIALS SUITABLE FOR SITE CONDITIONS.

PART 3: EXECUTION

3.1 SITE CLEARING OPERATIONS:

- A. PROTECTION OF EXISTING TREES, VEGETATION, LANDSCAPING, AND SITE IMPROVEMENTS NOT SCHEDULED FOR CLEARING WHICH MIGHT BE DAMAGED BY CONSTRUCTION ACTIVITIES.
- B. TRIMMING OF EXISTING TREES AND VEGETATION AS RECOMMENDED BY ARBORIST FOR PROTECTION DURING CONSTRUCTION ACTIVITIES.
- C. CLEARING AND GRUBBING OF STUMPS AND VEGETATION, AND REMOVAL AND DISPOSAL OF DEBRIS, RUBBISH, DESIGNATED TREES, AND SITE IMPROVEMENTS.
- D. TOPSOIL STRIPPING AND STOCKPILING.
- E. TEMPORARY EROSION CONTROL, SILTATION CONTROL, AND DUST CONTROL.
- F. TEMPORARY PROTECTION OF ADJACENT PROPERTY, STRUCTURES, BENCHMARKS, AND MONUMENTS.
- G. WATERING OF TREES AND VEGETATION DURING CONSTRUCTION ACTIVITIES.
- H. REMOVAL AND LEGAL DISPOSAL OF CLEARED MATERIALS.
- I. MAINTAIN ALL EXISTING FENCING AND GATES TO MAINTAIN A SECURE SITE AT ALL TIMES.
- J. PROVIDE AND MAINTAIN ALL TEMPORARY FENCING, BARRICADES, WARNING SIGNALS AND SIMILAR DEVICES NECESSARY TO PROTECT LIFE AND PROPERTY DURING THE ENTIRE PERIOD OF CONSTRUCTION. REMOVE ALL SUCH DEVICES UPON COMPLETION OF THE WORK.

3.2 CLEARING:

- A. PREVENT DAMAGE TO EXISTING IMPROVEMENTS INDICATED TO REMAIN, INCLUDING ON AND OFF SITE. PROTECT EXISTING TREES AND VEGETATION INDICATED TO REMAIN. DO NOT STOCKPILE MATERIALS AND RESTRICT TRAFFIC WITHIN DRIP LINE OF EXISTING TREES TO REMAIN OR THAT INTERFERE WITH ACCESS TO SITE. PROVIDE AND MAINTAIN TEMPORARY GUARDS TO ENCIRCLE TREES OR GROUPS OF TREES TO REMAIN; OBTAIN APPROVAL BEFORE BEGINNING WORK.
- B. WATER VEGETATION AS REQUIRED TO MAINTAIN HEALTH. COVER TEMPORARILY EXPOSED ROOTS WITH WET BURLAP AND BACKFILL AS SOON AS POSSIBLE. COAT CUT PLANT SURFACES WITH APPROVED EMULSIFIED ASPHALT PLANT COATING.
- C. REPAIR OR REPLACE VEGETATION DESIGNATED FOR REUSE, WHICH HAS BEEN DAMAGED. REMOVE HEAVY GROWTHS OF GRASS BEFORE STRIPPING. STOCKPILE SATISFACTORY TOPSOIL CONTAINING NO LARGE STONES, FOREIGN MATTER AND WEEDS ON SITE FOR REUSE.
- D. COMPLETELY REMOVE ALL IMPROVEMENTS, STUMPS AND DEBRIS EXCEPT FOR THOSE INDICATED TO REMAIN. REMOVE BELOW GRADE IMPROVEMENTS AT LEAST 12" BELOW FINISH GRADE SO AS NOT TO INTERFERE WITH NEW CONSTRUCTION. REMOVE ABANDONED MECHANICAL AND ELECTRICAL WORK AS REQUIRED.
- E. PREVENT EROSION AND SILTATION OF STREETS, CATCH BASINS AND PIPING. CONTROL WINDBLOWN DUST. REMOVE WASTE MATERIALS AND UNSUITABLE SOIL FROM SITE AND DISPOSE OF IN A LEGAL MANNER. ALL MATERIAL SHALL BE CONTAINED BY APPROPRIATE CONTROLS.
- F. EXCEPT WHERE EXCAVATION TO GREATER DEPTH IS INDICATED, FILL DEPRESSIONS RESULTING FROM CLEARING, GRUBBING AND DEMOLITION WORK COMPLETELY WITH SUITABLE FILL AND COMPACT AS REQUIRED.

3.3 EROSION CONTROL:

- A. PROVIDE EROSION AND SILTATION CONTROL AS REQUIRED TO MEET ALL LOCAL

AND STATE REQUIREMENTS.
END OF SECTION

STAMP:



ENGINEERING LICENSE:
STATE OF COLORADO
STATE CERTIFICATE OF AUTHORIZATION # 20041302439

ENGINEER:	PE#:	DISCIPLINE:	
KMV KEVIN M. VANMAELE	53946	CIVIL	C
REJ ROBERT E. JENSEN	54720	CIVIL	C
SDK SHELTON D. KEISLING	49643	ELECTRICAL	E
TMS TERRANCE M. SUPER	36490	ELECTRICAL	E



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DENVER TECH CTR

APPLICANT SITE NUMBER:
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SITE ADDRESS:
7600 E. ORCHARD RD.
GREENWOOD VILLAGE, CO 80111

SHEET DESCRIPTION: SPECIFICATIONS (1 OF 5)	SHEET #: SP-1.0
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CAST-IN-PLACE-CONCRETE

PART 1: GENERAL

1.1 SUMMARY:

- A. FURNISH AND INSTALL ALL CAST-IN-PLACE CONCRETE, REINFORCING AND ACCESSORIES, AS SPECIFIED HEREIN AND AS SHOWN ON THE DRAWINGS.

1.2 SUBMITTALS:

- A. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.
- B. SHOP DRAWINGS: SUBMIT SHOP DRAWINGS INDICATING MATERIAL CHARACTERISTICS, DETAILS OF CONSTRUCTION, CONNECTIONS, AND RELATIONSHIP WITH ADJACENT CONSTRUCTION.
 - 1. SHOP DRAWINGS SHALL BE PREPARED AND STAMPED BY A QUALIFIED ENGINEER LICENSED IN THE JURISDICTION OF THE PROJECT.
- C. MIX DESIGN: SUBMIT FOR APPROVAL MIX DESIGN PROPOSED FOR USE.

1.3 QUALITY ASSURANCE:

- A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR A MINIMUM OF THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- B. TESTING: EMPLOY AN INDEPENDENT TESTING AGENCY ACCEPTABLE TO OWNER TO DESIGN CONCRETE MIXES AND TO PERFORM MATERIAL EVALUATION TESTS. PROVIDE 4 AND 28 DAY CYLINDER TESTS. COMPLY WITH ASTM C 143, C 173, C 31 AND C 39.
- C. STANDARDS
 - 1. ACI 301, SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS.
 - 2. ACI 318, BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, AND CRSI MANUAL OF STANDARD PRACTICE.

PART 2: PRODUCTS

2.1 MATERIALS:

- A. MATERIALS SHALL CONFORM TO THE RESPECTIVE PUBLICATIONS AND OTHER REQUIREMENTS SPECIFIED HEREIN.
- B. CEMENT: CEMENT SHALL CONFORM TO ASTM C150, TYPE 1. CEMENT MAY BE BAGGED OR BULK. CEMENT SHALL BE USED FROM ONLY ONE MILL THROUGHOUT PROJECT.
- C. FINE AGGREGATE: FINE AGGREGATE SHALL CONFORM TO ASTM C33-08 AND SHALL BE UNIFORMLY GRADED, CLEAN, SHARP, WASHED MATERIAL OR CRUSHED SAND, FREE FROM ORGANIC IMPURITIES.
- D. COURSE AGGREGATE: COURSE AGGREGATE SHALL CONFORM TO ASTM C33-08 AND SHALL BE NATURAL WASHED GRAVEL OR WASHED CRUSHED ROCK HAVING HARD, STRONG, DURABLE PIECES, FREE FORM ADHERENT COATINGS, THE MAXIMUM SIZE OF COARSE AGGREGATE SHALL BE 3/4" IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM C33-08; GRADATION SIZE NO. 67.
- E. WATER: WATER USED IN THE CONCRETE MIX SHALL BE POTABLE, CLEAN, AND FREE FROM OILS, ACIDS, SALTS, CHLORIDES, ALKALI, SUGAR, VEGETABLE, OR OTHER INJURIOUS SUBSTANCES.
- F. REINFORCING STEEL: ALL BARS ARE TO BE NEW BILLET STEEL CONFORMING TO ASTM A615, GRADE 60. BENDING DETAILS ARE TO CONFORM TO THE STANDARDS OF ACI 318.
- G. FORMS: THE FORMS SHALL BE TRUE AND RIGID AND CONFORM TO SHAPE, LINE AND DIMENSIONS AS SHOWN ON THE DRAWINGS. ALL FORMS SHALL BE RIGIDLY CONSTRUCTED, BRACED AND TIED TO PREVENT ANY DEFLECTION OR DISPLACEMENT DURING PLACING OF CONCRETE. ALL EXPOSED CORNERS AND EDGES SHALL HAVE 3/4" FILLETS. ALL JOINTS SHALL BE MORTAR TIGHT; OPEN JOINTS SHALL BE SEALED AS REQUIRED.
- H. CONCRETE:
 - 1. PROPORTIONING: CONCRETE SHALL CONFORM TO THE FOLLOWING:
 - a. CEMENT-6 SACKS PER CUBIC YARD, MINIMUM
 - b. WATER SHALL BE KEPT TO AN ABSOLUTE MINIMUM TO MAINTAIN SLUMP AS SPECIFIED
 - c. AGGREGATE; SAND FACTOR SHALL BE AS REQUIRED TO GIVE THE BEST WORKABLE MIX WITHIN THE RANGE OF 46% TO 52% OF TOTAL AGGREGATE.
 - d. STRENGTH-4,000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE
 - e. ALL CONCRETE SHALL CONTAIN A WATER-REDUCING AGENT AND SHALL HAVE THREE (3) TO FIVE (5) PERCENT ENTRAINED AIR.

2.2 SLUMP:

- A. THE MAXIMUM SLUMP SHALL NOT EXCEED 3" EXCEPT FOR CONCRETE TO BE PLACED IN FORMS 8" WIDE OR LESS, WHERE THE MAXIMUM SLUMP SHALL BE 4".
- B. THE DETERMINATION OF SLUMP SHALL CONFORM TO ASTM C143.

2.3 MIXING:

- A. THE CONTRACTOR SHALL USE READY-MIXED CONCRETE, MIXED AND DELIVERED IN CONFORMANCE WITH ASTM C94.

2.4 MIXTURES:

- A. THE CONCRETE SHALL CONTAIN AN AIR-ENTRAINING ADMIXTURE COMPLYING WITH THE REQUIREMENTS OF ASTM C-260 AND ACI 212.1R AND A WATER-REDUCING ADMIXTURE COMPLYING WITH THE REQUIREMENTS OF ASTM C-494 AND ACI 212.1R. ADMIXTURES SHALL BE PURCHASE AND BATCHED IN LIQUID SOLUTION. THE USE OF CALCIUM CHLORIDE OR AN ADMIXTURE CONTAINING CALCIUM CHLORIDE IS PROHIBITED.
- B. ADMIXTURES SHALL BE OF THE SAME MANUFACTURER TO ASSURE COMPATIBILITY.
- C. ACCEPTABLE MANUFACTURERS ARE:
 - 1. W.R. GRACE 3. MASTER BUILDERS
 - 2. SIKA GROUP 4. EUCLID CHEMICAL CO

2.5 CURING COMPOUNDS:

- A. CURING COMPOUNDS SHALL CONFORM TO ASTM C309, TYPE 1, ID, CLASS A AND B AND ASTM C171 AS APPLICABLE

PART 3: EXECUTION

3.1 GENERAL:

- A. CONSTRUCT AND ERECT FORMWORK IN ACCORDANCE WITH ACI 301 ACI 347.
- B. COLD-WEATHER CONCRETING SHALL BE IN ACCORDANCE WITH ACI 306.
- C. HOT-WEATHER CONCRETING SHALL BE IN ACCORDANCE WITH ACI 305.

3.2 INSERTS, EMBEDDED COMPONENTS AND OPENINGS:

- A. CONTRACTOR SHALL CHECK ALL CIVIL, ARCHITECTURAL, STRUCTURAL, AND ELECTRICAL DRAWINGS FOR OPENINGS, SLEEVES, ANCHOR BOLTS, INSERTS AND OTHER ITEMS TO BE BUILT INTO THE CONCRETE WORK.
- B. COORDINATE THE WORK OF OTHER SECTIONS IN FORMING AND SETTING OPENINGS, RECESSES, SLOTS, CHASES, ANCHORS, INSERTS AND OTHER ITEMS TO BE EMBEDDED.
- C. EMBEDDED ITEMS SHALL BE SET ACCURATELY IN LOCATION, ALIGNMENT, ELEVATION, AND PLUMBNESS. LOCATE AND MEASURE FROM ESTABLISHED SURVEYED REFERENCE BENCHMARKS.
- D. EMBEDDED ITEMS SHALL BE ANCHORED INTO PLACE AS REQUIRED TO PREVENT MOVEMENT DURING CONCRETE PLACEMENT AND CONSOLIDATION. COMPONENTS FORMING A PART OF A COMPLETE ASSEMBLY SHALL BE ALIGNED BEFORE ANCHORING. PROVIDE TEMPORARY BRACING, ANCHORAGE, AND TEMPLATES AS REQUIRED TO MAINTAIN THE SETTING AND ALIGNMENT.

3.3 REINFORCEMENT PLACEMENT:

- A. REINFORCEMENT SHALL BE PLACED IN ACCORDANCE WITH CHECKED AND RELEASED DRAWINGS AND ACI 301 AND ACI 315; SECURELY WIRE-TIE REINFORCEMENT AT ALL INTERSECTIONS.
- B. ACCURATELY POSITION, SUPPORT AND SECURE REINFORCEMENT AGAINST DISPLACEMENT FROM FORMWORK CONSTRUCTION OR CONCRETE PLACEMENT AND CONSOLIDATION. REINFORCING SHALL BE SUPPORTED ON METAL CHAIRS, RUNNERS, BOLSTERS, SPACERS, AND HANGERS.
- C. SPLICES OF REINFORCING BARS SHALL BE CLASS B UNLESS SHOWN OTHERWISE. SPLICES SHALL BE STAGGERED. FULL DEVELOPMENT LENGTH SHALL BE PROVIDED ACROSS JOINTS.
- D. LOCATE REINFORCING TO PROVIDE CONCRETE COVER AND SPACING SHOWN ON THE DRAWINGS. MINIMUM COVER SHALL BE AS REQUIRED BY ACI 318.
- E. WELDING OF AND TO ANY REINFORCING MATERIALS INCLUDING TACK WELDING OF CROSSING BARS IS STRICTLY PROHIBITED. BARS SHALL BE FREE OF FLAKY OR SCALY RUST AT THE TIME THE CONCRETE IS PLACED.

3.4 CONCRETE PLACEMENT:

- A. PRIOR TO PLACING CONCRETE, FORMS AND REINFORCEMENT SHALL BE THOROUGHLY INSPECTED. ALL WOOD CHIPS, DIRT, ETC., AS WELL AS ALL TEMPORARY BRACING, TIES, AND CLEATS REMOVED, AND ALL OPENINGS FOR UTILITIES PROPERLY BOXED, ALL FORMS SHALL BE PROPERLY SECURED IN THEIR CORRECT POSITION AND MADE TIGHT. ALL REINFORCING AND EMBEDDED ITEMS SHALL BE SECURED IN THEIR PROPER LOCATIONS.. ALL OLD AND DRY CONCRETE AND DIRT SHALL BE CLEANED AND ALL STANDING WATER AND OTHER FOREIGN MATTER REMOVED.

- B. PLACING CONCRETE SHALL BE IN ACCORDANCE WITH ACI 301 AND ACI 304 AND SHALL BE CARRIED OUT AT SUCH A RATE THAT THE CONCRETE PREVIOUSLY PLACED IS STILL PLASTIC AND INTEGRATED WITH THE FRESHLY PLACE CONCRETE. CONCRETING, ONCE STARTED, SHALL BE CARRIED ON AS A CONTINUOUS OPERATION UNTIL THE SECTION IS COMPLETED. NO COLD JOINTS SHALL BE ALLOWED.
- C. CONSTRUCTION JOINTS: USE KEYWAYS, CONTINUE REINFORCEMENT THROUGH JOINT.
- D. EXPANSION JOINTS: FOR EXTERIOR WORK, LOCATE AT 30'-0" O.C. MAXIMUM, AT APPROVED LOCATIONS. PROVIDE SMOOTH DOWELS ACROSS JOINT WHICH PERMIT 1" HORIZONTAL MOVEMENT AND NO VERTICAL SHEAR MOVEMENT.
- E. ISOLATION JOINTS: PROVIDE BETWEEN SLABS AND VERTICAL ELEMENTS SUCH AS COLUMNS AND STRUCTURAL WALLS.
- F. CONTROL JOINTS: PROVIDE SAWN OR TOOLED JOINTS OR REMOVABLE INSERT STRIPS; DEPTH EQUAL TO 1/4" SLAB THICKNESS. SPACING SHALL BE AS REQUIRED AND APPROVED.
- G. ALL CONCRETE SHALL BE THOROUGHLY CONSOLIDATED AND COMPACTED BY VIBRATION, SPADING, RODDING, OR FORKING DURING THE OPERATION OF PLACING AND DEPOSITING IN ACCORDANCE WITH ACI 309. THE CONCRETE SHALL BE WORKED AROUND REINFORCEMENT, EMBEDDED ITEMS, AND INTO THE CORNERS OF THE FORMS SO AS TO ELIMINATE ALL AIR AND STONE POCKETS.

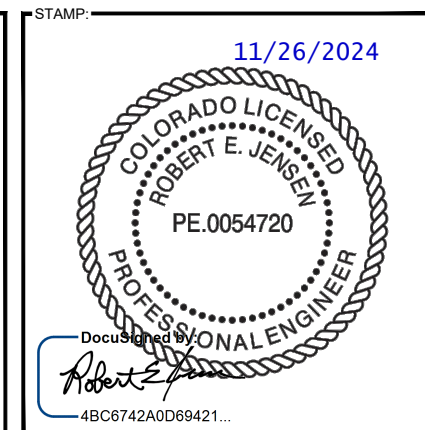
3.5 FINISHING:

- A. FINISHING OF ALL SLABS SHALL BE IN ACCORDANCE WITH ACI 302.1; SECTION 7.2 WITH A MINIMUM OF THREE TROWELINGS.
 - 1. INTERIOR SLAB FINISH TOLERANCE AS MEASURED IN ACCORDANCE WITH ASTM E 1155, SHALL HAVE AN OVERALL TEST F NUMBER FOR FLATNESS, FF=20 AND FOR LEVEL, FL=15. THE MINIMUM LOCAL NUMBER FOR FLATNESS, FF=15 AND FOR LEVEL, FL=10.
 - 2. EXTERIOR SLAB FINISH SHALL BE FLAT (FF=20) AND SHALL BE SLOPED A MINIMUM OF 1/8" PER FOOT TO A MAXIMUM OF 1/4" PER FOOT TO PREVENT PONDING WATER.
- B. SURFACES OF SLABS SHALL RECEIVE TWO COATS OF CLEAR SEALER/HARDENER.
- C. ABOVE GRADE WALL SURFACES SHALL HAVE A SMOOTH FORM FINISH AS DEFINED IN CHAPTER 10 OF ACI 301.

3.6 CURING:

- A. FRESHLY DEPOSITED CONCRETE SHALL BE PROTECTED FROM PREMATURE DRYING AND EXCESSIVELY HOT OR COLD TEMPERATURES AND SHALL BE MAINTAINED WITH MINIMAL MOISTURE LOSS AT A RELATIVELY CONSTANT TEMPERATURE FOR A PERIOD OF TIME NECESSARY FOR THE HYDRATION OF THE CEMENT AND PROPER HARDENING OF THE CONCRETE.
- B. CURING SHALL IMMEDIATELY FOLLOW THE FINISH OPERATION. CONCRETE SHALL BE KEPT CONTINUOUSLY MOIST AT LEAST OVERNIGHT, IMMEDIATELY FOLLOWING THE INITIAL CURING. BEFORE THE CONCRETE HAS DRIED, ADDITIONAL CURING SHALL BE ACCOMPLISHED BY ONE OF THE FOLLOWING MATERIALS OR METHODS:
 - 1. PONDING OR CONTINUOUS SPRINKLING
 - 2. ABSORPTIVE MAT OR FABRIC KEPT CONTINUOUSLY WET
 - 3. NON-ABSORPTIVE FILM (POLYETHYLENE) OVER A PREVIOUSLY SPRINKLED SURFACE
 - 4. SAND OR OTHER COVERING KEPT CONTINUOUSLY WET
 - 5. CONTINUOUS STEAM (NOT EXCEEDING 150 DEGREES F) OR VAPOR MIST BATH.
 - 6. SPRAYED-ON CURING COMPOUND APPLIED IN TWO COATES, SPRAYED IN PERPENDICULAR DIRECTIONS.
- C. THE FINAL CURING SHALL CONTINUE UNTIL THE CUMULATIVE NUMBER OF DAYS OR FRACTION THEREOF, NOT NECESSARILY CONSECUTIVE, DURING WHICH TEMPERATURE OF THE AIR IN CONTACT WITH CONCRETE IS ABOVE 50 DEGREES F HAS TOTALED SEVEN (7) DAYS. CONCRETE SHALL NOT BE PERMITTED TO FREEZE DURING THE CURING PERIOD. RAPID DRYING AT THE END OF THE CURING PERIOD SHALL BE PREVENTED.

END OF SECTION



ENGINEERING LICENSE:		
STATE OF COLORADO		
STATE CERTIFICATE OF AUTHORIZATION # 20041302439		
ENGINEER:	PE#:	DISCIPLINE:
KMV KEVIN M. VANMAELE REJ ROBERT E. JENSEN	53946 54720	CIVIL CIVIL
SDK SHELTON D. KEISLING TMS TERRANCE M. SUPER	49643 36490	ELECTRICAL ELECTRICAL



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SUBMITTALS:				
	DESCRIPTION	DATE	BY	REV
	REVISED PER AHJ COMMENTS	11/25/24	DCP	8

APPLICANT SITE NAME:
DENVER TECH CTR

APPLICANT SITE NUMBER:
HN21021

SITE ADDRESS:
**7600 E. ORCHARD RD.
GREENWOOD VILLAGE, CO 80111**

SHEET DESCRIPTION: **SPECIFICATIONS (2 OF 5)** SHEET #: **SP-1.1**

EARTH MOVING/EXCAVATION/BACKFILLING SECTION

PART 1: GENERAL

1.1 SUMMARY:

- A. PROVIDE EARTHWORK OPERATIONS INCLUDING BUT NOT LIMITED TO EXCAVATION, GRADING, TRENCHING AND COMPACTION.

1.2 QUALITY ASSURANCE COMPACTION:

- A. UNDER STRUCTURES, BUILDING SLABS, STEPS, PAVEMENTS, AND WALKWAYS, 95% MAXIMUM DENSITY, ASTM D 1557.
 - 1. GRADING TOLERANCES:
 - a. LAWNS, UNPAVED AREAS, AND WALKS, PLUS OR MINUS 1".
 - b. KEEP SITE FREE FROM ANY PONDING WATER
 - c. GRADING TOLERANCE FOR FILL UNDER BUILDING OR EQUIPMENT SLABS: PLUS OR MINUS 1/4" MEASURED WITH 10'-0" STRAIGHTEDGE.
 - 2. TESTING: FIELD TESTING OF EARTHWORK AND COMPACTION SHALL BE PERFORMED BY OWNER'S INDEPENDENT TESTING LAB. THIS WORK IS TO BE COORDINATED BY THE CONTRACTOR.
 - 3. ALL WORK SHALL BE INSPECTED AND RELEASED BY THE OWNER OR HIS AGENT WHO SHALL CARRY OUT THE GENERAL INSPECTION OF THE WORK AS SPECIFIED AND/OR CALLED OUT BY THE CONSTRUCTION DOCUMENTS. PROVIDE A MINIMUM OF 48 HOURS NOTICE PRIOR TO ANY PLACEMENT OF CONCRETE OR BACKFILLING OF TRENCHES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REQUEST TIMELY INSPECTIONS PRIOR TO PROCEEDING WITH FURTHER WORK THAT WOULD MAKE PARTS OF WORK INACCESSIBLE OR DIFFICULT TO INSPECT.
 - 4. EXISTING UTILITIES: DO NOT INTERRUPT EXISTING UTILITIES SERVING FACILITIES OCCUPIED BY THE OWNER OR OTHERS, EXCEPT WHEN PERMITTED IN WRITING BY OWNER OR HIS AGENT AND THEN ONLY AFTER ACCEPTABLE TEMPORARY UTILITY SERVICES HAVE BEEN PROVIDED.

PART 2: PRODUCTS

2.1 GENERAL:

- A. UTILITY TRENCH: PROVIDE WELL GRADED SAND (SW-SM) FROM BASE OF TRENCH TO MINIMUM ABOVE THE HIGHEST CONDUIT WITHIN TRENCH. REMAINDER OF TRENCH AREA CAN BE EITHER AB 3 OR CLEAN GRAVEL AS DESCRIBED HEREIN. COMPACT AS REQUIRED TO PREVENT SETTLING.
- B. ACCESS ROADS: 6" MINIMUM (UNLESS NOTED OTHERWISE ON DRAWINGS) COMPACTED AB 3 OR APPROVED EQUAL (UNWASHED CRUSHED LIMESTONE GRAVEL CONSISTING OF MULTIPLE AGGREGATE SIZES, ROCK CHIPS, AND ROCK DUST.)
- C. COMPOUND (NEW CONSTRUCTION): 2" THICK CLEAN GRAVEL, WITH 100% PASSING THROUGH A 1" SIEVE OVER 4" COMPACTED AB 3.
- D. COMPOUND (EXISTING): PROVIDE CLEAN GRAVEL WITH 100% PASSING THROUGH A 1" SIEVE AS REQUIRED TO BRING COMPOUND TO PROPER GRADE OR REPAIR EXISTING DAMAGED AREAS.
- E. STRUCTURAL FILL: PROVIDE 4" MINIMUM AB 3 BELOW STRUCTURES OR SLABS

2.2 MATERIALS:

- A. GEOTEXTILE FABRIC: PROVIDE MIRAFI 500X OR APPROVED EQUAL.
- B. PLASTIC MARKING TAPE: SHALL BE ACID AND ALKALI RESISTANT POLYETHYLENE FILM SPECIFICALLY MANUFACTURED FOR MARKING AND LOCATING UNDERGROUND UTILITIES, 6" WIDE WITH A MINIMUM THICKNESS OF 0.004". TAPE SHALL HAVE MINIMUM STRENGTH OF 1500 PSI IN BOTH DIRECTIONS AND MANUFACTURED WITH INTEGRAL WIRES OR OTHER MEANS TO ENABLE DETECTION BY A METAL DETECTOR WHEN BURIED UP TO 3'-0" DEEP. THE CORE OF THE TAPE SHALL BE ENCASED IN A PROTECTIVE JACKET OR OTHER MEANS TO PROTECT FROM CORROSION. TAPE COLOR SHALL BE RED FOR ELECTRIC UTILITIES AND ORANGE FOR TELECOMMUNICATION

PART 3: EXECUTION

3.1 INSTALLATION:

- A. PRIOR TO EXCAVATING, THOROUGHLY EXAMINE AREA TO BE EXCAVATED AND/OR TRENCHED TO VERIFY THE LOCATIONS OF FEATURES ON THE DRAWINGS AND TO ASCERTAIN THE EXISTENCE OF ANY STRUCTURE NOT SHOWN THAT MIGHT INTERFERE WITH NEW CONSTRUCTION. NOTIFY THE OWNER OR HIS AGENT OF ANY OBSTRUCTIONS THAT WILL PREVENT ACCOMPLISHMENT OF THE WORK AS INDICATED ON THE DRAWINGS.
- B. EXCAVATION IS UNCLASSIFIED AND INCLUDES EXCAVATION TO SUBGRADE REGARDLESS OF MATERIALS. REPAIR EXCAVATIONS BEYOND ELEVATIONS AND DIMENSIONS INDICATED AS REQUIRED.
- C. MAINTAIN STABILITY OF EXCAVATIONS; COORDINATE SHORING AND BRACING AS REQUIRED BY AUTHORITIES HAVING JURISDICTION. PREVENT SURFACE AND SUBSURFACE WATER FROM ACCUMULATING IN EXCAVATIONS. STOCKPILE SATISFACTORY MATERIALS FOR REUSE, ALLOW FOR PROPER DRAINAGE.

- D. COMPACT MATERIALS AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D 1557 BY AERATION OR WETTING TO 95% OF MAXIMUM DRY DENSITY TO SUITABLE DEPTH.
- E. PLACE ACCEPTABLE MATERIALS IN LAYERS NOT MORE THAN 8" LOOSE DEPTH FOR MATERIALS COMPACTED BY HEAVY EQUIPMENT AND NOT MORE THAN 4" LOOSE DEPTH FOR MATERIALS COMPACTED BY HAND EQUIPMENT TO SUBGRADES INDICATED AS FOLLOWS:
 - 1. STRUCTURAL FILL: USE UNDER FOUNDATIONS, SLABS ON GRADE IN LAYERS AS INDICATED.
 - 2. DRAINAGE FILL: USE UNDER DESIGNATED BUILDING SLABS, AT FOUNDATION DRAINAGE AND ELSEWHERE AS INDICATED.
 - 3. COMMON FILL: USE UNDER UNPAVED AREAS.
 - 4. SUBBASE MATERIAL: USE UNDER GENERAL COMPOUND AREA. IF THICKNESS OF LIFT IS GREATER THAN 6" SPREAD AND COMPACT THE CRUSHED STONE IN MULTIPLE LIFTS OF EQUAL THICKNESS WITH A MAXIMUM LIFT OF 6"
- F. GRADE TO 1/2" ABOVE OR BELOW REQUIRED SUBGRADE AND TO A TOLERANCE OF 1/4" IN 10'-0".
- G. PROTECT NEWLY GRADED AREAS FROM TRAFFIC AND EROSION. RE-COMPACT AND RE-GRADE SETTLED, DISTURBED AND DAMAGED AREAS TO RESTORE QUALITY, APPEARANCE, AND CONDITION.
- H. CONTROL EROSION TO PREVENT RUNOFF INTO SEWERS OR DAMAGE TO AREAS.
- I. CONTROL DUST TO PREVENT HAZARDS TO ADJACENT PROPERTIES AND VEHICLES. IMMEDIATELY REPAIR OR REMEDY DAMAGE CAUSED BY DUST INCLUDING AIR FILTERS IN EQUIPMENT AND VEHICLES. CLEAN SOILED SURFACES.
- J. DISPOSE OF WASTE AND UNSUITABLE MATERIALS OFF-SITE IN A LEGAL MANNER.

3.2 BACKFILL:

- A. AS SOON AS PRACTICAL AFTER COMPLETING CONSTRUCTION OF THE RELATED STRUCTURE, INCLUDING THE SPECIFIED MINIMUM CURING PERIOD FOR CAST-IN-PLACE CONCRETE, BACKFILL THE EXCAVATION WITH APPROVED MATERIAL TO RESTORE THE REQUIRED FINISHED GRADE.
 - 1. PRIOR TO PLACING BACKFILL AROUND STRUCTURES, ALL FORMS SHALL HAVE BEEN REMOVED AND THE EXCAVATION CLEANED OF ALL TRASH, DEBRIS, AND UNSUITABLE MATERIALS.
 - 2. BACKFILL BY PLACING AND COMPACTING SUITABLE BACKFILL MATERIAL OR SELECT GRANULAR BACKFILL MATERIAL, WHEN REQUIRED IN UNIFORM HORIZONTAL LAYERS OF NO GREATER THAN 8" LOOSE THICKNESS. WHERE HAND OPERATED COMPACTORS ARE USED, THE FILL MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED 4" IN LOOSE DEPTH.
 - 3. IF THE DENSITY TESTING INDICATES THAT THE SPECIFIED DENSITY, THE SUCCEEDING LAYER SHALL NOT BE PLACED UNTIL THE SPECIFICATION REQUIREMENTS ARE MET UNLESS AUTHORIZED BY THE GEO-TECHNICAL ENGINEER. THE CONTRACTOR SHALL TAKE WHATEVER APPROPRIATE ACTION IS NECESSARY TO OBTAIN PROPER COMPACTION.
- B. COMPACT EACH LAYER OF BACKFILL TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE STANDARD PROCTOR TEST, ASTM D 698.

3.3 TRENCH EXCAVATION:

- A. UTILITY TRENCHES SHALL BE EXCAVATED TO THE LINES AND GRADES SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE OWNER OR HIS AGENT. PROVIDE SHORING, SHEETING AND BRACING AS REQUIRED TO PREVENT CAVING OR SLOUGHING OF THE TRENCH WALLS.
- B. EXTEND THE TRENCH WIDTH A MINIMUM OF 6" BEYOND THE OUTSIDE EDGE OF THE OUTER-MOST CONDUIT.
- C. WHEN SOFT, YIELDING, OR OTHERWISE UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED, BACKFILL AT THE REQUIRED TRENCH TO A DEPTH OF NO LESS THAN 12" BELOW THE REQUIRED ELEVATION AND BACKFILL WITH GRANULAR BEDDING MATERIAL.

3.4 TRENCH BACKFILL:

- A. PROVIDE GRANULAR BEDDING MATERIAL (WELL GRADED SAND) IN ACCORDANCE WITH THE DRAWINGS AND THE UTILITY REQUIREMENTS.
- B. NOTIFY THE OWNER OR HIS AGENT 24 HOURS IN ADVANCE OF BACKFILLING.
- C. CONDUCT UTILITY CHECK TESTS BEFORE BACKFILLING. BACKFILL AND COMPACT TRENCH BEFORE ACCEPTANCE TESTING.
- D. PLACE GRANULAR TRENCH BACKFILL UNIFORMLY ON BOTH SIDES OF THE CONDUITS IN 6" UNCOMPACTED LIFTS UNTIL 6" OVER THE CONDUITS. SOLIDLY RAM AND TAMP BACKFILL INTO SPACES AROUND CONDUITS.
- E. PROTECT CONDUIT FROM LATERAL MOVEMENT, IMPACT DAMAGE, OR UNBALANCED LOADING.

- F. ABOVE THE CONDUIT EMBEDMENT ZONE, PLACE AND COMPACT BACKFILL MATERIAL IN 8" MAXIMUM LOOSE THICKNESS LIFTS TO RESTORE THE REQUIRED FINISHED SURFACE GRADE.
- G. COMPACT FINAL TRENCH BACKFILL TO A DENSITY EQUAL TO OR GREATER THAN EXISTING UNDISTURBED MATERIAL ADJACENT TO THE TRENCH BUT NO LESS THAN A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE STANDARD PROCTOR TEST, ASTM D 698.

3.5 AGGREGATE ACCESS ROAD (IF APPLICABLE):

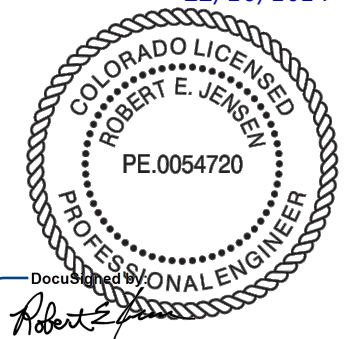
- A. CLEAR, GRUB, STRIP AND EXCAVATE FOR ACCESS ROAD TO THE LINES AND GRADES INDICATED ON DRAWINGS. SCARIFY TO A DEPTH OF 6" AND PROOF-ROLL ALL HOLES, RUTS, SOFT PLACES AND OTHER DEFECTS.
- B. THE ENTIRE SUBGRADE SHALL BE COMPACTED TO NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE STANDARD PROCTOR TEST, ASTM D 1557.
- C. AFTER PREPARATION OF THE SUBGRADE IS COMPLETE, THE GEOTEXTILE FABRIC (MIRAFI 500X) SHALL BE INSTALLED TO THE LIMITS INDICATED ON DRAWINGS BY ROLLING THE FABRIC OUT LONGITUDINALLY ALONG ROADWAY. THE FABRIC SHALL NOT BE DRAGGED ACROSS THE SUBGRADE. PLACE THE ENTIRE ROLL IN A SINGLE OPERATION, AS SMOOTHLY AS POSSIBLE.
 - 1. OVERLAPS PARALLEL TO THE ROADWAY WILL BE PERMITTED AT THE CENTERLINE AND AT LOCATIONS BEYOND THE ROADWAY SURFACE WIDTH. NO LONGITUDINAL OVERLAPS SHALL BE LOCATED BETWEEN THE CENTERLINE AND THE SHOULDER. PARALLEL OVERLAPS SHALL BE A MINIMUM OF 3'-0" WIDE.
 - 2. TRANSVERSE OR PERPENDICULAR OVERLAPS AT THE END OF A ROLL SHALL OVERLAP IN THE DIRECTION OF THE AGGREGATE PLACEMENT (PREVIOUS ROLL ON TOP) AND SHALL HAVE A MINIMUM LENGTH OF 3'-0".
 - 3. ALL OVERLAPS SHALL BE PINNED WITH STAPLES OR NAILS BETWEEN 10" AND 12" LONG TO INSURE POSITIONING DURING PLACEMENT OF AGGREGATE. PIN LONGITUDINAL SEAMS AT 25'-0" O.C. AND TRANSVERSE SEAMS EVERY 5'-0" O.C.
- D. THE AGGREGATE BASE AND SURFACE COURSES SHALL BE CONSTRUCTED IN LAYERS OF AT LEAST 6" (COMPACTED) THICKNESS. AGGREGATE TO BE PLACED ON GEOTEXTILE FABRIC AND SHALL BE END-DUMPED ON THE FABRIC FROM THE FREE END OF THE FABRIC OR OVER PREVIOUSLY PLACED AGGREGATE. AT NO TIME SHALL EQUIPMENT BE PERMITTED ON THE ROADWAY WITH LESS THAN 6" OF MATERIAL COVERING THE FABRIC.
- E. THE AGGREGATE SHALL BE IMMEDIATELY COMPACTED TO NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE PROCTOR TEST, ASTM D 1557 WITH A TAMPING ROLLER, A PNEUMATIC-TIRED ROLLER, OR WITH A VIBRATORY MACHINE OR ANY COMBINATION OF THE ABOVE. THE TOP LAYER SHALL BE GIVEN A FINAL ROLLING WITH A THREE-WHEEL OR TANDEM ROLLER.

3.6 FINISH GRADING:

- A. PERFORM ALL GRADING TO PROVIDE SMOOTH, EVEN SURFACE DRAINAGE OF THE ENTIRE AREA WITHIN THE LIMITS OF CONSTRUCTION. GRADING SHALL BE COMPATIBLE WITH ALL SURROUNDING TOPOGRAPHY AND STRUCTURES.
- B. UTILIZE SATISFACTORY FILL MATERIALS RESULTING FROM THE EXCAVATION WORK IN THE CONSTRUCTION OF FILLS, EMBANKMENTS AND FOR THE REPLACEMENT OF REMOVED UNSUITABLE MATERIALS.
- C. ACHIEVE FINISHED GRADE BY PLACING A MINIMUM OF 6" OF AB 3 ON TOP OF SOIL STABILIZER FABRIC.
- D. REPAIR ALL ACCESS ROADS AND SURROUNDING AREAS USED DURING THE COURSE OF THIS WORK TO THEIR ORIGINAL CONDITION.

END OF SECTION

STAMP: 11/26/2024




DocuSigned by:
Robert E. Jensen
4BC6742A0D69421...


ENGINEERING LICENSE:
STATE OF COLORADO
STATE CERTIFICATE OF AUTHORIZATION # 20041302439

ENGINEER:	PE#:	DISCIPLINE:	
KMV KEVIN M. VANMAELE REJ ROBERT E. JENSEN	53946 54720	CIVIL CIVIL	CC
SDK SHELTON D. KEISLING TMS TERRANCE M. SUPER	49643 36490	ELECTRICAL ELECTRICAL	EME

PLANS PREPARED FOR:



PLANS PREPARED BY:



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SUBMITTALS:

	DESCRIPTION	DATE	BY	REV
REVISED PER	AHJ COMMENTS	11/25/24	DCP	8

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DENVER TECH CTR

APPLICANT SITE NUMBER:
HN21021

SITE ADDRESS:
**7600 E. ORCHARD RD.
GREENWOOD VILLAGE, CO 80111**

SHEET DESCRIPTION: SPECIFICATIONS (3 OF 5)	SHEET #: SP-1.2
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ELECTRICAL

PART 1: GENERAL

1.1 GENERAL CONDITIONS:

- A. THE CONTRACTOR SHALL INSPECT THE SITE WHERE THIS WORK IS TO BE PERFORMED AND FULLY FAMILIARIZE HIMSELF WITH ALL CONDITIONS RELATED TO THIS PROJECT.
- B. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND LICENSES AND SHALL MAKE ALL DEPOSITS AND PAY ALL FEES REQUIRED FOR THE PERFORMANCE OF WORK UNDER THIS SECTION.
- C. DRAWINGS SHOW THE GENERAL ARRANGEMENT OF ALL SYSTEMS AND COMPONENTS COVERED UNDER THIS SECTION. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS. DRAWINGS SHALL NOT BE SCALED TO DETERMINE DIMENSIONS.

1.2 LAWS, REGULATIONS, ORDINANCES, STATUTES AND CODES:

- A. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, AND ALL APPLICABLE LOCAL LAWS, REGULATIONS, ORDINANCES, STATUTES AND CODES.

1.3 REFERENCES:

- A. THE PUBLICATIONS LISTED BELOW FORM PART OF THIS SPECIFICATION. EACH PUBLICATION SHALL BE THE LATEST REVISION AND ADDENDUM IN EFFECT ON THE DATE THIS SPECIFICATION IS ISSUED FOR CONSTRUCTION UNLESS NOTED OTHERWISE. EXCEPT AS MODIFIED BY THE REQUIREMENTS SPECIFIED HEREIN OR THE DETAILS OF THE DRAWINGS, WORK INCLUDED IN THIS SPECIFICATION SHALL CONFORM TO THE APPLICABLE PROVISIONS OF THESE PUBLICATIONS.

1. NEC (NATIONAL ELECTRICAL CODE)
2. ANSI/IEEE (AMERICAN NATIONAL STANDARDS INSTITUTE)
3. IEEE (INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS)
4. ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS)
5. ICEA (INSULATED CABLE ENGINEERS ASSOCIATION)
6. NEMA (NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION)
7. NFPA (NATIONAL FIRE PROTECTION ASSOCIATION)
8. OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION)
9. UL (UNDERWRITERS LABORATORIES, INC.)

1.4 SCOPE OF WORK:

- A. WORK UNDER THIS SECTION SHALL CONSIST OF FURNISHING ALL LABOR, MATERIAL AND ASSOCIATED SERVICES REQUIRED TO COMPLETELY CONSTRUCT AND LEAVE READY FOR OPERATION SYSTEMS AS SHOWN ON THE DRAWINGS AND HEREIN DESCRIBED.
- B. ALL ELECTRICAL EQUIPMENT UNDER THIS CONTRACT SHALL BE PROPERLY TESTED, ADJUSTED, AND ALIGNED BY THE CONTRACTOR.
- C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXCAVATING, DRAINING, TRENCHES, BACKFILLING, AND REMOVAL OF EXCESS DIRT.
- D. THE CONTRACTOR SHALL FURNISH TO THE OWNER, CERTIFICATES OF FINAL INSPECTION AND APPROVAL FROM THE INSPECTION AUTHORITIES HAVING JURISDICTION.

PART 2: PRODUCTS

2.1 GENERAL:

- A. ALL ITEMS OF MATERIALS AND EQUIPMENT SHALL BE NEW, FREE FROM DEFECTS AND OF THE BEST QUALITY NORMALLY USED FOR THE PURPOSE IN GOOD COMMERCIAL PRACTICE.
- B. ALL MATERIALS AND EQUIPMENT SHALL BE ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION AS SUITABLE FOR THE USE INTENDED.
- C. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE.
- D. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING RATING EQUAL TO OR GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 10,000 AIC MINIMUM. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT.

2.2 MATERIALS AND EQUIPMENT:

A. CONDUIT:

1. RIGID GALVANIZED STEEL CONDUIT (RGS) SHALL BE HOT-DIP GALVANIZED INSIDE AND OUTSIDE INCLUDING ENDS AND THREADS AND ENAMELED OR LACQUERED INSIDE IN ADDITION TO GALVANIZING.
2. FLEXIBLE METAL CONDUIT SHALL BE GALVANIZED, ZINC-COATED STEEL, PVC COATED FOR OUTDOOR APPLICATIONS.
3. CONDUIT CLAMPS, STRAPS AND SUPPORTS SHALL BE STEEL OR MALLEABLE IRON. ALL FITTINGS SHALL BE COMPRESSION TYPE AND WATERTIGHT.
4. NON-METALLIC CONDUIT AND FITTINGS SHALL BE SCHEDULE 40 PVC, HEAVY-WALL RIGID WITH SOLVENT-CEMENT-TYPE JOINTS AS RECOMMENDED BY THE MANUFACTURER.

B. WIRE AND CABLE:

1. WIRE AND CABLE SHALL BE FLAME-RETARDANT, MOISTURE AND HEAT RESISTANT THERMOPLASTIC, SINGLE CONDUCTOR, COPPER, TYPE THHN/THWN-2, 600 VOLT, SIZES AS INDICATED, #12 AWG MINIMUM.
2. #10 AWG AND SMALLER CONDUCTORS SHALL BE SOLID AND #8 AWG AND LARGER CONDUCTORS SHALL BE STRANDED.
3. SOLDERLESS, PRESSURE-TYPE CONNECTORS CONSTRUCTED OF HIGH-STRENGTH, NON-CORRODIBLE, TIN-PLATED COPPER DESIGNED TO FURNISH HIGH-PULLOUT STRENGTH AND HIGH CONDUCTIVITY JOINTS SHALL BE USED.
4. SUPPORT GRIPS SHALL BE SINGLE WEAVE, CLOSED MESH, HIGH-GRADE, NON-MAGNETIC, TIN-COATED BRONZE CAPABLE OF SUPPORTING TEN TIMES THE CABLE DEAD WEIGHT, HUBBELL KELLEMS OR APPROVED EQUAL.

C. DISCONNECT SWITCHES:

1. DISCONNECT SWITCHES SHALL BE HEAVY DUTY, DEAD-FRONT, QUICK-MAKE, QUICK-BREAK, EXTERNALLY OPERABLE, HANDLE LOCKABLE AND INTERLOCKED WITH COVER IN CLOSED POSITION, RATING AS INDICATED, UL LABELED FURNISHED IN NEMA 3R ENCLOSURE, SQUARE D CLASS 3110 OR APPROVED EQUAL.

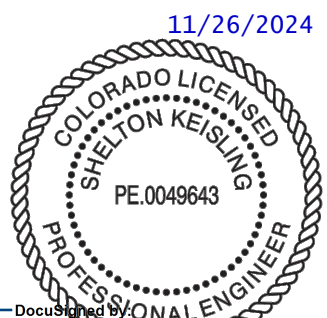
D. SYSTEM GROUNDING:

1. GROUNDING CONDUCTOR SHALL BE SOLID TINNED BARE COPPER, SIZE AS INDICATED, EXCEPT ABOVE GROUND GROUNDING CONDUCTORS SHALL BE STRANDED INSULATED.
2. GROUND BUSES SHALL BE GALVANIZED STEEL BARS OF RECTANGULAR CROSS SECTION.
3. CONNECTORS SHALL BE HIGH-CONDUCTIVITY, HEAVY DUTY, LISTED AND LABELED AS GROUNDING CONNECTORS FOR THE MATERIALS USED. USE TWO-HOLE COMPRESSION LUGS WITH HEAT SHRINK FOR MECHANICAL CONNECTIONS.
4. EXOTHERMIC WELDED CONNECTIONS SHALL BE PROVIDED IN KIT FORM AND SELECTED FOR THE SPECIFIC TYPES, SIZES, AND COMBINATIONS OF CONDUCTORS AND OTHER ITEMS TO BE CONNECTED.
5. GROUND RODS SHALL BE COPPER-CLAD STEEL WITH HIGH-STRENGTH STEEL CORE AND ELECTROLYTIC-GRADE COPPER OUTER SHEATH, MOLTEN WELDED TO CORE, 3/4" x 10'-0".

E. OTHER MATERIALS:

1. THE CONTRACTOR SHALL PROVIDE OTHER MATERIALS, THOUGH NOT SPECIFICALLY DESCRIBED, WHICH ARE REQUIRED FOR A COMPLETELY OPERATIONAL SYSTEM AND PROPER INSTALLATION OF THE WORK.

STAMP: 11/26/2024



DocuSigned by:
Shelton Keisling
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ENGINEERING LICENSE:
STATE OF COLORADO
STATE CERTIFICATE OF AUTHORIZATION # 20041302439

ENGINEER:	PE#:	DISCIPLINE:	
KMV KEVIN M. VANMAELE	53946	CIVIL	C
REJ ROBERT E. JENSEN	54720	CIVIL	C
SDK SHELTON D. KEISLING	49643	ELECTRICAL	E
TMS TERRANCE M. SUPER	36490	ELECTRICAL	E



PLANS PREPARED FOR:



PLANS PREPARED BY:



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SUBMITTALS:

	DESCRIPTION	DATE	BY	REV
	REVISED PER AHJ COMMENTS	11/25/24	DCP	8

APPLICANT SITE NAME:
DENVER TECH CTR

APPLICANT SITE NUMBER:
HN21021

SITE ADDRESS:
7600 E. ORCHARD RD.
GREENWOOD VILLAGE, CO 80111

SHEET DESCRIPTION: SPECIFICATIONS (4 OF 5)	SHEET #: SP-2.0
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PART 3: EXECUTION

3.1 GENERAL:

- A. ALL MATERIALS AND EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- B. EQUIPMENT SHALL BE TIGHTLY COVERED AND PROTECTED AGAINST DIRT OR WATER, AND AGAINST CHEMICAL OR MECHANICAL INJURY DURING INSTALLATION AND CONSTRUCTION PERIODS.

3.2 LABOR AND WORKMANSHIP:

- A. ALL LABOR FOR THE INSTALLATION OF MATERIALS AND EQUIPMENT FURNISHED FOR THE ELECTRICAL SYSTEM SHALL BE DONE BY EXPERIENCED MECHANICS OF THE PROPER TRADES.
- B. ALL ELECTRICAL EQUIPMENT FURNISHED SHALL BE ADJUSTED, ALIGNED AND TESTED BY THE CONTRACTOR AS REQUIRED TO PRODUCE THE INTENDED PERFORMANCE.
- C. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL THOROUGHLY CLEAN ALL EXPOSED EQUIPMENT, REMOVE ALL LABELS AND ANY DEBRIS, CRATING OR CARTONS AND LEAVE THE INSTALLATION FINISHED AND READY FOR OPERATION.

3.3 COORDINATION:

- A. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ELECTRICAL ITEMS WITH THE OWNER-FURNISHED EQUIPMENT DELIVERY SCHEDULE TO PREVENT UNNECESSARY DELAYS IN THE TOTAL WORK.

3.4 INSTALLATION:

- A. CONDUIT:
 - 1. ALL ELECTRICAL WIRING SHALL BE INSTALLED IN CONDUIT AS HEREIN SPECIFIED. NO CONDUIT OR TUBING OF LESS THAN 3/4" NOMINAL SIZE SHALL BE USED.
 - 2. PROVIDE RGS CONDUIT FOR ALL EXPOSED, EXTERIOR CONDUIT.
 - 3. PROVIDE SCHEDULE 40 PVC OR RGS CONDUIT BELOW GRADE, 1" MINIMUM, UNLESS NOTED OTHERWISE. ALL 90 DEGREE BENDS TO ABOVE GRADE SHALL BE RGS. MINIMUM BURIAL DEPTH SHALL BE 24" CLEAR TO TOP OF CONDUIT, UNLESS NOTED OTHERWISE.
 - 4. USE GALVANIZED FLEXIBLE STEEL CONDUIT WHERE DIRECT CONNECTION IS NOT DESIRABLE FOR REASONS OF EQUIPMENT MOVEMENT, VIBRATION, OR FOR EASE OF MAINTENANCE. USE LIQUIDTIGHT, PVC COATED FLEXIBLE METAL CONDUIT FOR OUTDOOR APPLICATIONS.
 - 5. INSTALL GALVANIZED FLEXIBLE STEEL CONDUIT AT ALL POINTS OF CONNECTION TO EQUIPMENT MOUNTED ON SUPPORTS TO ALLOW FOR EXPANSION AND CONTRACTION.
 - 6. A RUN OF CONDUIT BETWEEN BOXES OR FITTINGS SHALL NOT CONTAIN MORE THAN THE EQUIVALENT OF FOUR QUARTER-BENDS INCLUDING THOSE BENDS LOCATED IMMEDIATELY AT THE BOX OR FITTING. THE RADIUS OF BENDS SHALL NEVER BE SHORTER THAN THAT OF THE CORRESPONDING TRADE ELBOW.
 - 7. WHERE CONDUIT HAS TO BE CUT IN THE FIELD, IT SHALL BE CUT SQUARE WITH A PIPE CUTTER USING CUTTING KNIVES.
 - 8. ALL CONDUITS SHALL BE SWABBED CLEAN BY PULLING AN APPROPRIATE SIZE MANDREL THROUGH THE CONDUIT BEFORE INSTALLATION OF WIRE OR CABLE. CLEAR ALL BLOCKAGES AND REMOVE BURRS, DIRT, AND DEBRIS.
 - 9. INSTALL PULL STRINGS IN ALL EMPTY CONDUITS. IDENTIFY PULL STRINGS AT EACH END WITH ITS DESTINATION.
 - 10. PROVIDE INSULATED GROUNDING BUSHINGS FOR ALL CONDUITS STUBBED INTO EQUIPMENT ENCLOSURES OR STUBBED OUT FOR FUTURE USE BY OTHERS.
 - 11. CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL CONDUITS DURING CONSTRUCTION. TEMPORARY OPENINGS IN THE CONDUIT SYSTEM SHALL BE PLUGGED OR CAPPED TO PREVENT ENTRANCE OF MOISTURE OR FOREIGN MATTER. CONTRACTOR SHALL REPLACE ANY CONDUITS CONTAINING FOREIGN MATERIALS THAT CANNOT BE REMOVED.
 - 12. INSTALL 2" ORANGE DETECTABLE TAPE 12" ABOVE ALL UNDERGROUND CONDUIT AND WIRE.
 - 13. CONDUITS SHALL BE INSTALLED IN SUCH A MANNER AS TO INSURE AGAINST COLLECTION OF TRAPPED CONDENSATION.
- B. WIRE AND CABLE:
 - 1. ALL POWER WIRING SHALL BE COLOR CODED AS FOLLOWS:

DESCRIPTION	120/240V	208Y/120V	480Y/277V
PHASE A	BLACK	BLACK	BROWN
PHASE B	RED	RED	ORANGE
PHASE C		BLUE	YELLOW
NEUTRAL	WHITE	WHITE	GRAY
GROUND	GREEN	GREEN	GREEN

- 2. SPLICES SHALL BE MADE ONLY AT OUTLETS, JUNCTION BOXES, OR ACCESSIBLE RACEWAYS WITH PRESSURE-TYPE CONNECTORS.
- 3. PULLING LUBRICANTS SHALL BE SOAPSTONE POWDER, POWDERED TALC, OR A COMMERCIAL PULLING COMPOUND. NO SOAP SUDS, SOAP FLAKES, OIL, OR GREASE SHALL BE USED, AS THESE MAY BE HARMFUL TO CABLE INSULATION. CONTRACTOR SHALL USE NYLON OR HEMP ROPE FOR PULLING CABLE TO AVOID SCORING THE CONDUIT.
- 4. CABLES SHALL BE NEATLY TRAINED, WITHOUT INTERLACING, AND BE OF SUFFICIENT LENGTH IN ALL BOXES, EQUIPMENT, ETC. TO PERMIT MAKING A NEAT ARRANGEMENT. CABLES SHALL BE SECURED IN A MANNER TO AVOID TENSION ON CONDUCTORS OR TERMINALS, AND SHALL BE PROTECTED FROM MECHANICAL INJURY AND FROM MOISTURE. SHARP BENDS OVER CONDUIT BUSHINGS ARE PROHIBITED. DAMAGED CABLES SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.

C. DISCONNECT SWITCHES:

- 1. INSTALL DISCONNECT SWITCHES LEVEL AND PLUMB. CONNECT TO WIRING SYSTEM AND GROUND AS INDICATED.

D. GROUNDING:

- 1. ALL METALLIC PARTS OF ELECTRICAL EQUIPMENT WHICH DO NOT CARRY CURRENT SHALL BE GROUNDED IN ACCORDANCE WITH THE REQUIREMENTS OF ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE.
- 2. PROVIDE ELECTRICAL GROUNDING AND BONDING SYSTEMS INDICATED WITH ASSEMBLY OF MATERIALS, INCLUDING GROUNDING ELECTRODES, BONDING JUMPERS AND ADDITIONAL ACCESSORIES AS REQUIRED FOR A COMPLETE INSTALLATION.
- 3. ROUTE GROUNDING CONNECTIONS AND CONDUCTORS TO GROUND IN THE SHORTEST AND STRAIGHTEST PATHS POSSIBLE TO MINIMIZE TRANSIENT VOLTAGE RISES.
- 4. TIGHTEN GROUNDING AND BONDING CONNECTORS, INCLUDING SCREWS AND BOLTS, IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED TORQUE TIGHTENING VALUES FOR CONNECTORS AND BOLTS. WHERE MANUFACTURER'S TORQUING REQUIREMENTS ARE NOT AVAILABLE, TIGHTEN CONNECTIONS TO COMPLY WITH TIGHTENING TORQUE VALUES SPECIFIED IN UL 486A TO ASSURE PERMANENT AND EFFECTIVE GROUNDING.
- 5. ALL UNDERGROUND GROUNDING CONNECTIONS SHALL BE MADE BY THE EXOTHERMIC WELD PROCESS AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
- 6. ALL GROUND CONNECTIONS SHALL BE INSPECTED FOR TIGHTNESS. EXOTHERMIC-WELDED CONNECTIONS SHALL BE APPROVED BY THE CONSTRUCTION INSPECTOR BEFORE BEING PERMANENTLY CONCEALED.
- 7. APPLY CORROSION-RESISTANT FINISH TO FIELD CONNECTIONS, AND PLACES WHERE FACTORY APPLIED PROTECTIVE COATINGS HAVE BEEN DESTROYED. USE COPPER-BASED "NO-OX" OR APPROVED EQUAL.
- 8. A SEPARATE, CONTINUOUS, INSULATED EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSTALLED IN ALL FEEDER AND BRANCH CIRCUITS
- 9. BOND ALL INSULATED GROUNDING BUSHINGS WITH A BARE #6 AWG GROUNDING CONDUCTOR TO A GROUND BUS OR GROUNDING LUG IN ENCLOSURE.
- 10. DIRECT BURIED GROUND CONDUCTORS SHALL BE INSTALLED AT A NOMINAL DEPTH OF 30" BELOW GRADE, UNLESS NOTED OTHERWISE.
- 11. ALL GROUNDING CONDUCTORS EMBEDDED IN OR PENETRATING CONCRETE SHALL BE INSULATED OR INSTALLED IN PVC CONDUIT.
- 12. INSTALL ELECTROLYTIC GROUNDING SYSTEM IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. REMOVE SEALING TAPE FROM LEACHING AND BREATHER HOLES. INSTALL PROTECTIVE BOX FLUSH WITH GRADE.
- 13. DRIVE GROUND RODS UNTIL TOPS ARE 30" BELOW FINAL GRADE.
- 14. GROUNDING CONDUCTOR TO EQUIPMENT GROUND LUGS:
 - a. BOLTED TO EQUIPMENT HOUSING WITH STAINLESS STEEL BOLTS AND LOCK WASHERS.
 - b. ALL EQUIPMENT TO BE GROUNDED SHALL BE FREE OF PAINT OR ANY OTHER MATERIAL COVERING BARE METAL AT THE POINT OF CONNECTION.

3.5 ACCEPTANCE TESTING:

- A. PROVIDE PERSONNEL AND EQUIPMENT, MAKE REQUIRED TESTS, AND SUBMIT TEST REPORTS UPON COMPLETION OF TESTS.
- B. WHEN MATERIAL AND/OR WORKMANSHIP IS FOUND NOT TO COMPLY WITH THE SPECIFIED REQUIREMENTS, THE NONCOMPLYING ITEMS SHALL BE REMOVED FROM THE JOBSITE AND REPLACED WITH ITEMS COMPLYING WITH THE SPECIFIED REQUIREMENTS PROMPTLY AFTER RECEIPT OF NOTICE OF SUCH NON-COMPLIANCE.

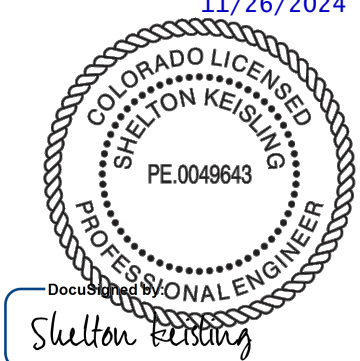
C. TEST PROCEDURES:

- 1. ALL FEEDERS SHALL HAVE THEIR INSULATION TESTED AFTER INSTALLATION, BUT BEFORE CONNECTION TO DEVICES. THE CONDUCTORS SHALL TEST FREE FROM SHORT CIRCUITS AND GROUNDS. TESTING SHALL BE FOR ONE MINUTE USING 1000V DC. INVESTIGATE ANY VALUES LESS THAN 50 MEGAOHMS.
- 2. PRIOR TO ENERGIZING CIRCUITRY, TEST WIRING DEVICES FOR ELECTRICAL CONTINUITY AND PROPER POLARITY CONNECTIONS.
- 3. MEASURE AND RECORD VOLTAGES BETWEEN PHASES AND BETWEEN PHASE WIRES AND NEUTRALS. SUBMIT A REPORT OF MAXIMUM AND MINIMUM VOLTAGES.
- 4. PERFORM GROUND TEST TO MEASURE GROUND RESISTANCE OF GROUNDING SYSTEM USING THE IEEE STANDARD 3-POINT "FALL-OF-POTENTIAL" METHOD. PROVIDE PLOTTED TEST VALUES & LOCATION SKETCH. NOTIFY THE ENGINEER IMMEDIATELY IF MEASURED VALUE IS OVER 5 OHMS.

END OF SECTION

END OF SPECIFICATION

STAMP: 11/26/2024



DocuSigned by:
Shelton Keisling
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ENGINEERING LICENSE:
STATE OF COLORADO
STATE CERTIFICATE OF AUTHORIZATION # 20041302439

ENGINEER:	PE#:	DISCIPLINE:	
KMV KEVIN M. VANMAELE	53946	CIVIL	CC
REJ ROBERT E. JENSEN	54720	CIVIL	CC
SDK SHELTON D. KEISLING	49643	ELECTRICAL	EE
TMS TERRANCE M. SUPER	36490	ELECTRICAL	EE

PLANS PREPARED FOR:



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SPECIFICATIONS (5 OF 5)	SP-2.1