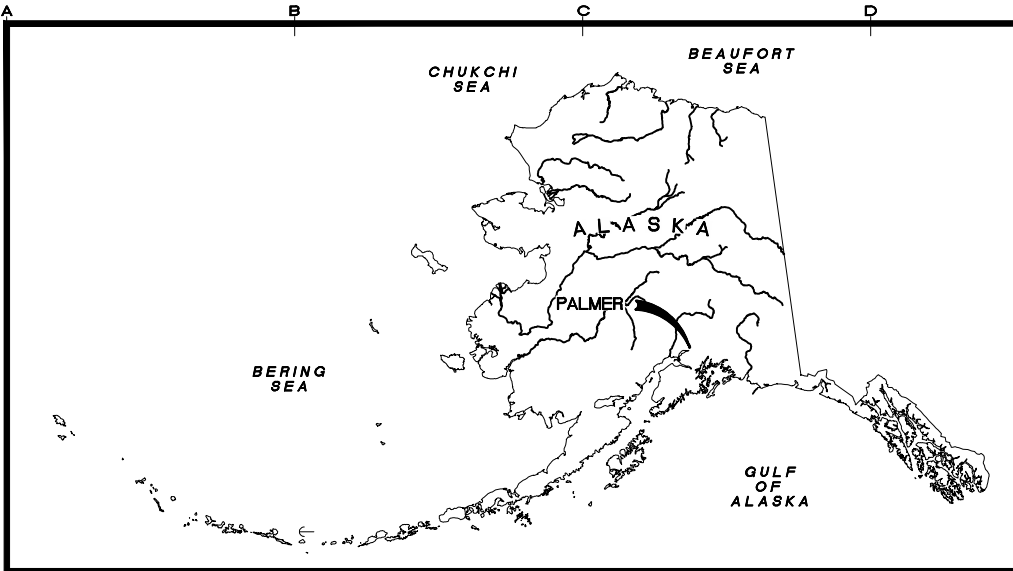


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 DATE TIME: 8/11/2022 10:59 AM
 LAYOUT: 6101



SHEET INDEX

| | |
|-------|--|
| G1.01 | COVER |
| C1.01 | TYPICAL SECTIONS |
| C2.01 | PLAN AND PROFILE |
| C3.01 | SUB-DRAIN DETAILS |
| E1.00 | ELECTRICAL LEGEND ABBREVIATIONS AND SPECIFICATIONS |
| E1.01 | ELECTRICAL SITE PLAN |
| E2.01 | ELECTRICAL DETAILS |

CITY OF PALMER

EAGLE AVENUE DRAINAGE IMPROVEMENTS

PALMER, ALASKA

| REVISIONS | MARK | DATE | DESCRIPTION |
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 www.HDLalaska.com
 AECLE81

| ABBREVIATIONS | | ABBREVIATIONS (CONT'D) | |
|---------------|---|------------------------|---|
| AC | ASPHALT CONCRETE | NIC | NOT IN CONTRACT |
| APPROX | APPROXIMATELY | NO. | NUMBER |
| ARRC | ALASKA RAILROAD CORPORATION | NTS | NOT TO SCALE |
| ASTM | AMERICAN STANDARD TESTING MATERIALS | OC | ON CENTER |
| ADOT&PF | ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES | OSHA | OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION |
| BV | BUTTERFLY VALVE | PT | POINT OF TANGENCY |
| CL | CENTERLINE | PW | PATHWAY |
| CL | CLASS | PVMT | PAVEMENT |
| CMP | CORRUGATED METAL PIPE | R | RADIUS |
| CONT'D | CONTINUED | REINF | REINFORCEMENT |
| CPEP | CORRUGATED POLYETHYLENE PIPE | REQ'D | REQUIRED |
| CPSS | CITY OF PALMER STANDARD SPECIFICATIONS | ROW | RIGHT-OF-WAY |
| CY | CUBIC YARD | RT | RIGHT |
| D | DEGREE | S | SOUTH |
| DEMO | DEMOLISH | SCH | SCHEDULE |
| DIA | DIAMETER | SD | STORM DRAIN |
| E | EASTING | SF | SQUARE FOOT |
| EA | EACH | SIM | SIMILAR |
| EL | ELEVATION | SS | STAINLESS STEEL |
| ELEC | ELECTRICAL | SSCO | SANITARY SEWER CLEANOUT |
| ELEV | ELEVATION | SSMH | SANITARY SEWER MANHOLE |
| EW | EACH WAY | STA | SURVEY STATION |
| EXIST | EXISTING | SW | SOUTHWEST, SIDEWALK |
| FG | FINISH GRADE | T | TANGENT |
| FO | FIBER OPTIC | TELE | TELEPHONE |
| F&I | FURNISH AND INSTALL | TCP | TEMPORARY CONSTRUCTION PERMIT |
| HMA | HOT MIX ASPHALT | TYP | TYPICAL |
| HORIZ | HORIZONTAL | UGE | UNDERGROUND ELECTRIC |
| L | LENGTH | UNO | UNLESS NOTED OTHERWISE |
| LT | LEFT | | |
| LF | LINEAR FEET | | |
| MAX | MAXIMUM | | |
| MEA | MATANUSKA ELECTRIC ASSOCIATION | | |
| MH | MANHOLE | | |
| MIN | MINIMUM | | |
| MSB | MATANUSKA SUSITNA BOROUGH | | |
| N | NORTH OR NORTHING | | |
| NE | NORTHEAST | | |
| NFS | NON FROST SUSCEPTIBLE | | |

SCOPE OF WORK
 ALL WORK NECESSARY TO CONSTRUCT THE IMPROVEMENTS AS INDICATED, INCLUDING LABOR, MATERIALS, EQUIPMENT, COORDINATION AND QUALITY CONTROL/ASSURANCE AS SHOWN ON THE DRAWINGS AND AS SPECIFIED.

LEGEND

| PROPOSED | EXISTING | DESCRIPTION |
|----------|----------|------------------------|
| | | FIRE HYDRANT |
| | | SANITARY SEWER MANHOLE |
| | | STORM DRAIN MANHOLE |
| | | ELECTRIC LOAD CENTER |
| | | CLEANOUT |
| | | CURB INLET |
| | | STREET LIGHT |
| | | EDGE OF PAVEMENT |
| | | PAVEMENT LIMITS |
| | | PROPERTY LINE |
| | | STORM DRAIN |
| | | WATER MAIN |
| | | SANITARY SEWER |
| | | GAS LINE |
| | | OVERHEAD TELEPHONE |
| | | UNDERGROUND TELEPHONE |
| | | OVERHEAD CABLE - TV |
| | | UNDERGROUND CABLE - TV |
| | | POROUS BACKFILL |
| | | PAVEMENT |

MISCELLANEOUS WORK ITEMS
 PROVIDE THE FOLLOWING WORK AT LOCATIONS AND QUANTITIES INDICATED ON DRAWINGS. WORK FOR THESE ITEMS SHALL BE PAID FOR UNDER THE CONTRACT UNIT PRICES PER THE BID SCHEDULE. ALL OTHER ITEMS NOT QUANTIFIED BY A MISCELLANEOUS WORK ITEM SHALL BE INCLUDED IN THE LUMP SUM PRICE FOR "CONSTRUCT EAGLE AVENUE DRAINAGE IMPROVEMENTS, COMPLETE."

- 1 REMOVE EXISTING CURB AND GUTTER (SPEC 20.08) AND INSTALL P.C.C. CURB AND GUTTER, ALL TYPES (SPEC 30.02)
- 2 REMOVE AND REPLACE EXISTING PAVEMENT (SPEC 40.11)

PROJECT NOTES

1. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY OF PALMER STANDARD SPECIFICATIONS FOR STREETS - DRAINAGE - UTILITIES - PARKS (DATED 2018) AND THE SPECIAL PROVISIONS PREPARED FOR THIS CONTRACT.
2. THE CONTRACTOR AGREES THAT, IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES AND THE GENERAL REQUIREMENTS, THE CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.
3. THE CONTRACTOR SHALL ACCEPT THE SITE IN ITS PRESENT CONDITION.
4. OTHER CONTRACTORS OR THE UTILITY COMPANIES MAY BE WORKING ON THE SAME PROJECT SITE OR IN THE VICINITY DURING THE PROGRESS OF THIS CONTRACT'S WORK. CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL OTHER CONTRACTORS OR UTILITY COMPANIES WORKING IN THE AREA.
5. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE, STATE AND FEDERAL OCCUPATIONAL HEALTH ADMINISTRATIONS (OSHA), AND ALL OTHER FEDERAL, STATE AND LOCAL LAWS, REGULATIONS AND PERMIT CONDITIONS PERTAINING TO THIS PROJECT. ANY WORK PERFORMED BY THE CONTRACTOR CONTRARY TO SUCH LAWS, REGULATIONS OR CONDITIONS SHALL BE AT THE CONTRACTOR'S SOLE RISK AND EXPENSE.
6. THE CONTRACTOR SHALL PROVIDE ALL PERMITS WHICH ARE NOT SPECIFICALLY INDICATED AS PROVIDED BY THE OWNER IN THE CONTRACT DOCUMENTS.
7. ALL SURVEYING AND LAYOUT SHALL BE PROVIDED BY THE CONTRACTOR UNLESS NOTED OTHERWISE.
8. EXISTING BURIED AND ABOVE GRADE UTILITIES ARE SHOWN IN THEIR APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL CONTACT THE LOCATE CALL CENTER OF ALASKA, AS WELL AS ANY NON-PARTICIPATING UTILITIES, INCLUDING THE CITY OF PALMER PUBLIC WORKS, TO FIELD FIELD LOCATE ALL UTILITIES PRIOR TO DIGGING. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO DIGGING, OTHERWISE CONTRACTOR IS RESPONSIBLE FOR ALL ADDITIONAL COSTS ASSOCIATED WITH WORKING AROUND UTILITIES DIFFERENT THAN WHAT IS SHOWN ON THESE PLANS.
9. THE CONTRACTOR SHALL ESTABLISH, PROVIDE, AND MAINTAIN EFFECTIVE QUALITY CONTROL IN ACCORDANCE WITH DIVISION 10.
10. THE CONTRACTOR SHALL PROVIDE ALL LIGHTS, SIGNS, BARRICADES, FLAG MEN OR OTHER DEVICES NECESSARY TO PROVIDE FOR SAFETY.

CALL BEFORE YOU DIG!
 THE CONTRACTOR SHALL NOTIFY ALL AREA UTILITY COMPANIES PRIOR TO COMMENCEMENT OF EXCAVATION
 LOCATE CALL CENTER OF ALASKA 1-800-478-3121
 CITY OF PALMER PUBLIC WORKS 745-3400

EAGLE AVENUE DRAINAGE IMPROVEMENTS
 CITY OF PALMER
 PALMER, ALASKA

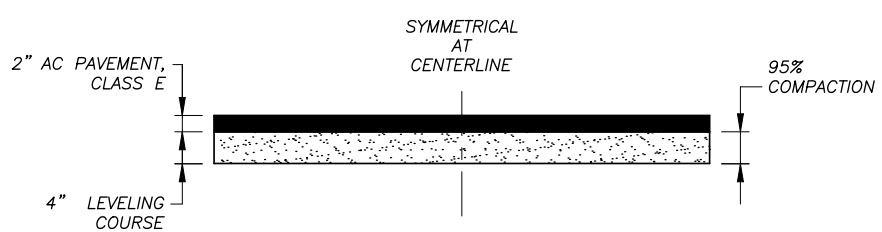
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| JOB NUMBER: 22-009 | |

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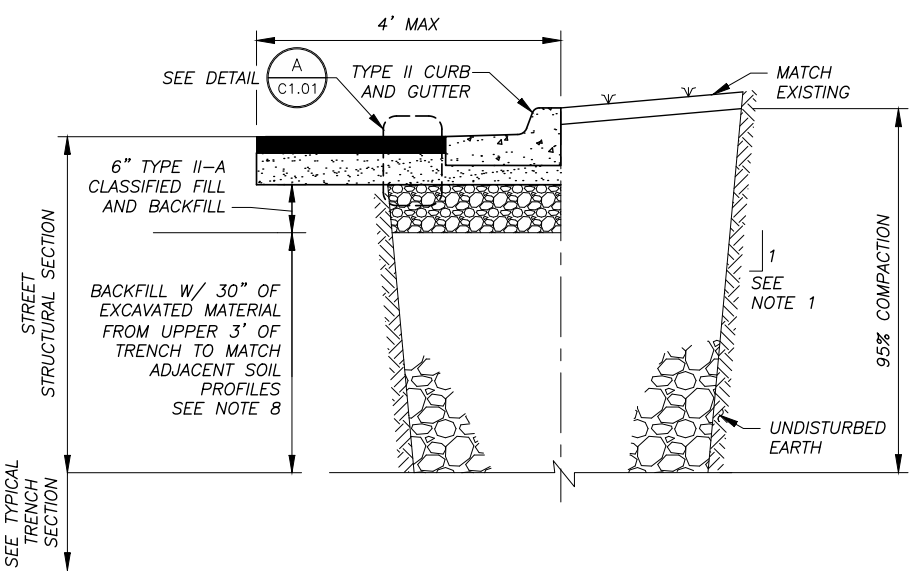
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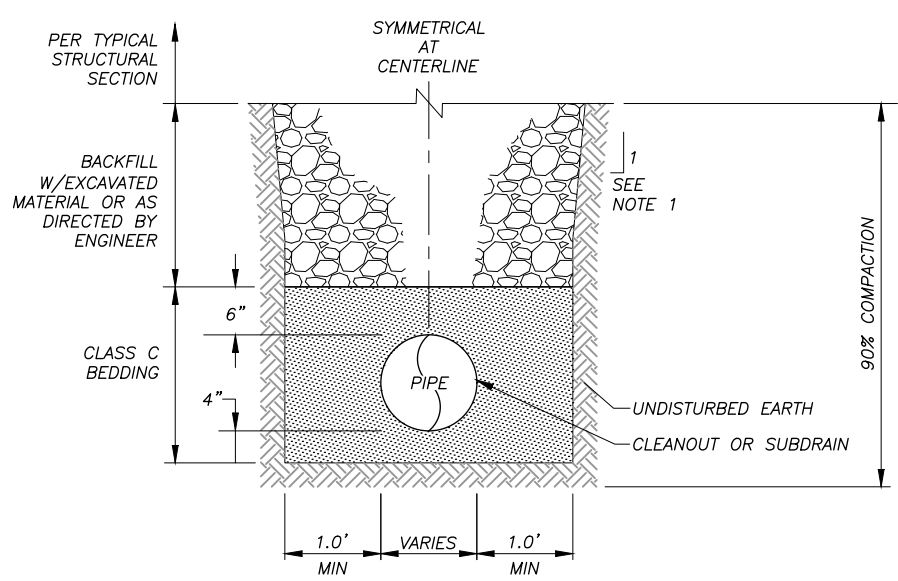
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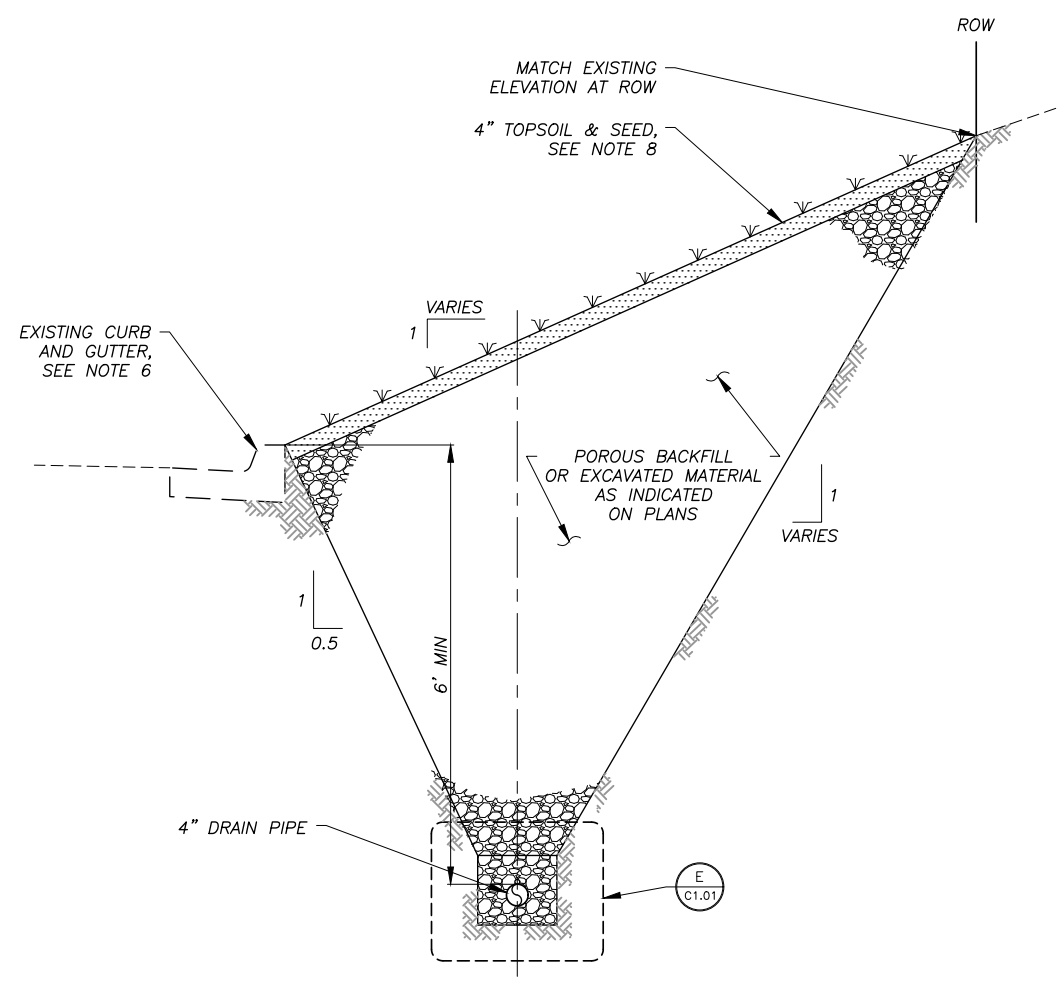
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C1.01 SCALE: NONE



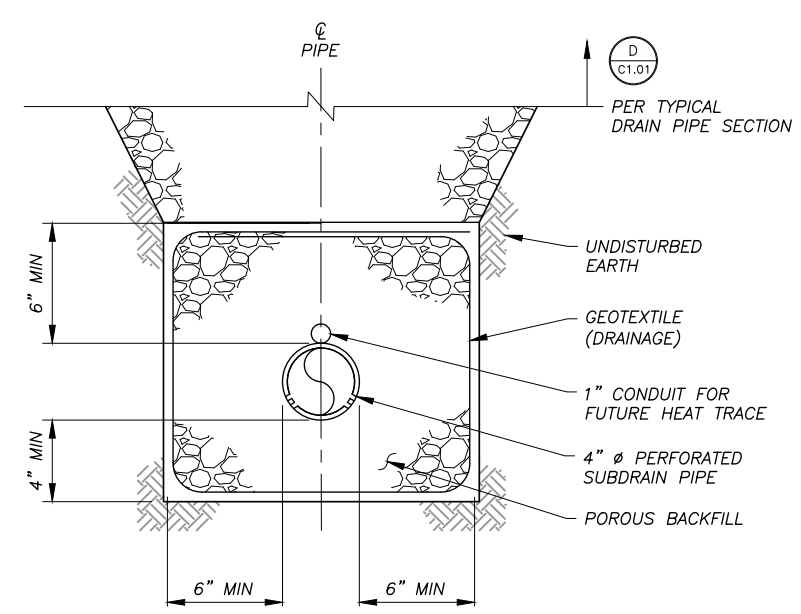
B TYPICAL CURB REPAIR SECTION
C1.01 SCALE: NONE



C TYPICAL TRENCH SECTION
C1.01 SCALE: NONE



D TYPICAL DRAIN PIPE SECTION
C1.01 SCALE: NONE



E TYPICAL PERFORATED DRAIN PIPE TRENCH SECTION
C1.01 SCALE: NONE

NOTES:

- TRENCH WALLS SHALL BE SLOPED OR SHORED AS REQUIRED FOR SAFETY, EXCEPT SHORING MUST BE USED IN EXISTING PAVED STREETS.
- ALL BEDDING, BACKFILL AND SURFACING SHALL BE COMPACTED TO THE SPECIFIED PERCENTAGE OF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D1557 METHOD D, UNLESS OTHERWISE NOTED.
- NO ORGANIC MATERIAL WILL BE ALLOWED IN TRENCH BACKFILL.
- ANY EXCESS TRENCH EXCAVATION SHALL BE REMOVED BY CONTRACTOR AT NO ADDITIONAL COST.
- DISPOSE OF UNUSABLE OR SURPLUS MATERIAL FROM EXCAVATIONS TO A CONTRACTOR-FURNISHED DISPOSAL AREA, UNLESS OTHERWISE DIRECTED BY ENGINEER.
- PROTECT EXISTING CURB & GUTTER IN PLACE UNLESS NOTED OTHERWISE.
- ON EXISTING PAVED STREETS, CONTRACTOR SHALL SEPARATE UPPER 3' OF TRENCH EXCAVATION FOR RE-USE AS SHOWN, WITHOUT CONTAMINATION WITH MATERIALS EXCAVATED LOWER IN THE TRENCH. WHERE MATERIAL IS NOT ADEQUATELY SEPARATED AND CONTAMINATION OCCURS, ENGINEER MAY REQUIRE REMOVAL OF MATERIAL AND REPLACEMENT WITH TYPE II CLASSIFIED FILL AT NO EXTRA COST TO OWNER.
- INSTALL EROSION CONTROL BLANKETS ON SLOPES TO RECEIVE TOPSOIL & SEED PRIOR TO WINTER SHUTDOWN.

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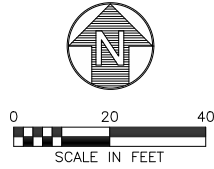
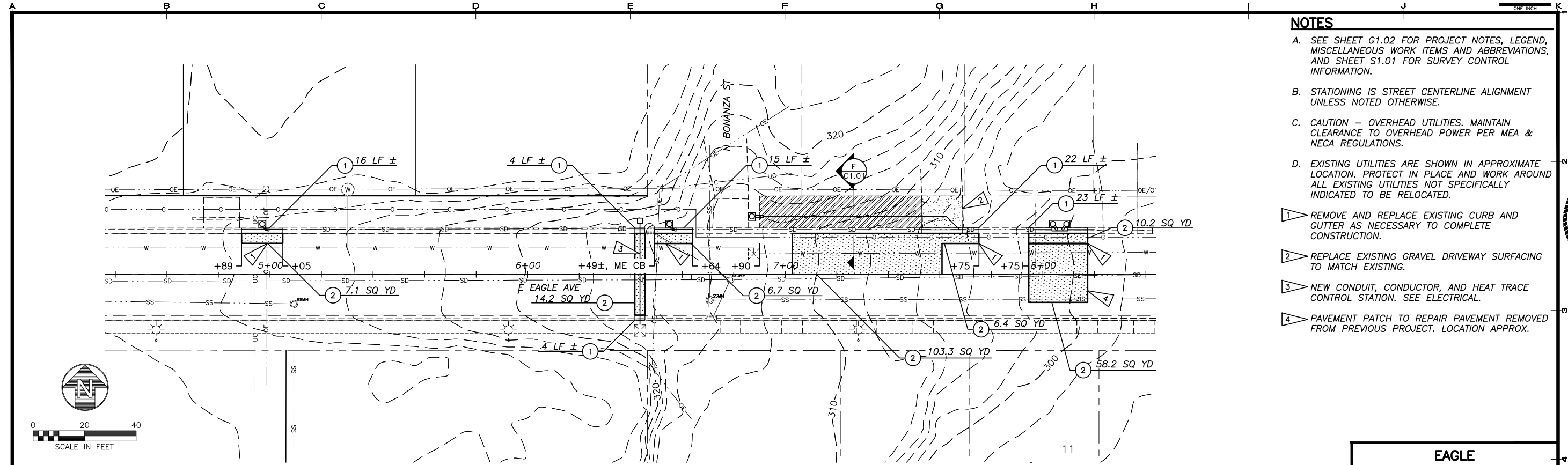
EAGLE AVENUE DRAINAGE IMPROVEMENTS
 CITY OF PALMER
 PALMER, ALASKA

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| SHEET C1.01 | |
| DRAWN BY TLC | CHECKED BY CJB |
| DATE AUG 2022 | SCALE AS NOTED |
| JOB NUMBER 22-009 | |

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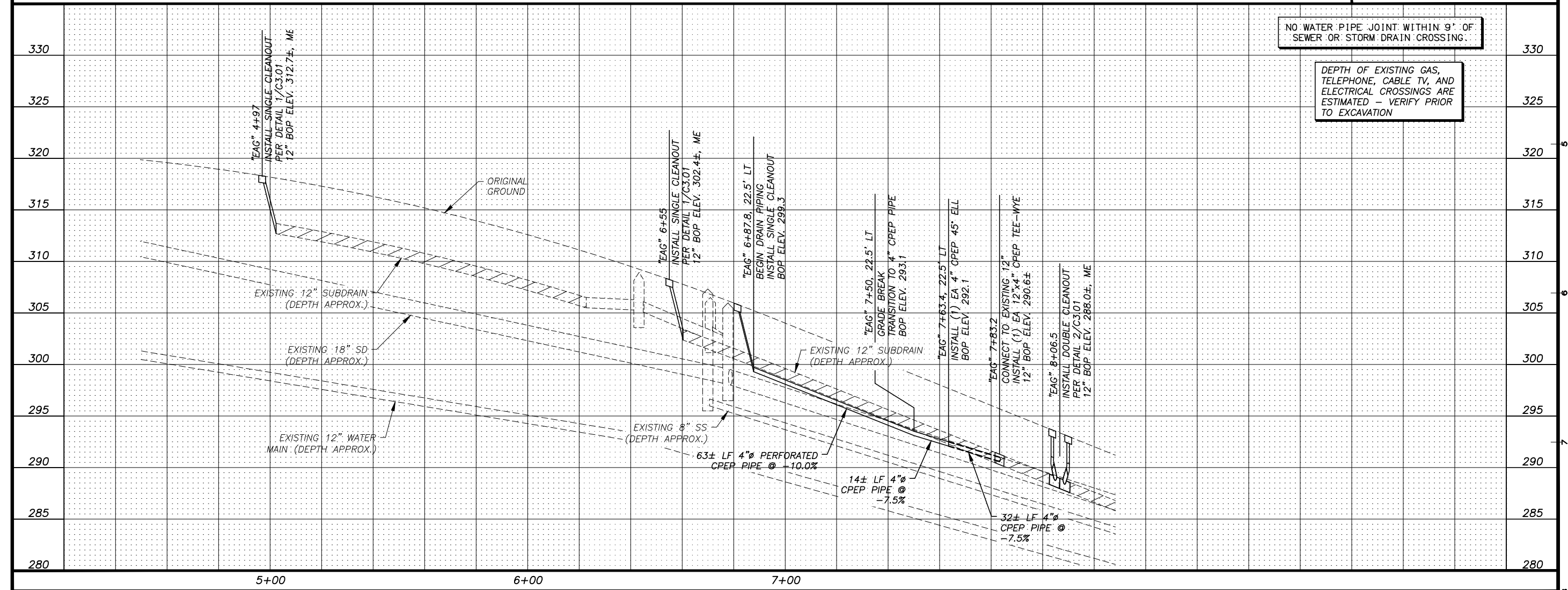
NOTES

- A. SEE SHEET G1.02 FOR PROJECT NOTES, LEGEND, MISCELLANEOUS WORK ITEMS AND ABBREVIATIONS, AND SHEET S1.01 FOR SURVEY CONTROL INFORMATION.
 - B. STATIONING IS STREET CENTERLINE ALIGNMENT UNLESS NOTED OTHERWISE.
 - C. CAUTION - OVERHEAD UTILITIES. MAINTAIN CLEARANCE TO OVERHEAD POWER PER MEA & NECA REGULATIONS.
 - D. EXISTING UTILITIES ARE SHOWN IN APPROXIMATE LOCATION. PROTECT IN PLACE AND WORK AROUND ALL EXISTING UTILITIES NOT SPECIFICALLY INDICATED TO BE RELOCATED.
- 1 REMOVE AND REPLACE EXISTING CURB AND GUTTER AS NECESSARY TO COMPLETE CONSTRUCTION.
 - 2 REPLACE EXISTING GRAVEL DRIVEWAY SURFACING TO MATCH EXISTING.
 - 3 NEW CONDUIT, CONDUCTOR, AND HEAT TRACE CONTROL STATION. SEE ELECTRICAL.
 - 4 PAVEMENT PATCH TO REPAIR PAVEMENT REMOVED FROM PREVIOUS PROJECT. LOCATION APPROX.

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 AECL861



NO WATER PIPE JOINT WITHIN 9' OF SEWER OR STORM DRAIN CROSSING.

DEPTH OF EXISTING GAS, TELEPHONE, CABLE TV, AND ELECTRICAL CROSSINGS ARE ESTIMATED - VERIFY PRIOR TO EXCAVATION

EAGLE AVENUE DRAINAGE IMPROVEMENTS
 CITY OF PALMER
 PALMER, ALASKA

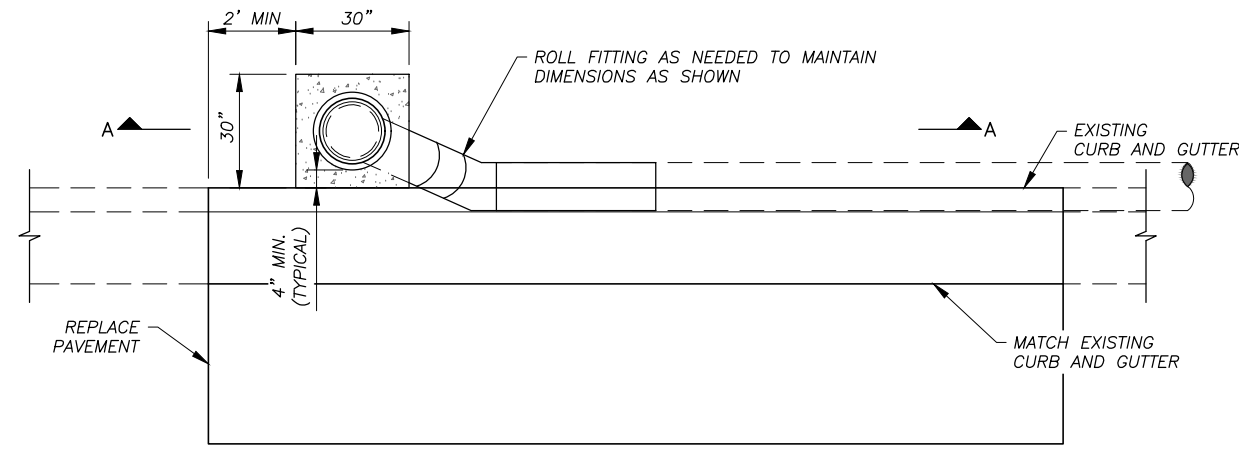
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| SHEET C2.01 | |
| DRAWN BY TLC | CHECKED BY DWL |
| DATE AUG 2022 | SCALE 1" = 20' |
| JOB NUMBER 22-009 | |

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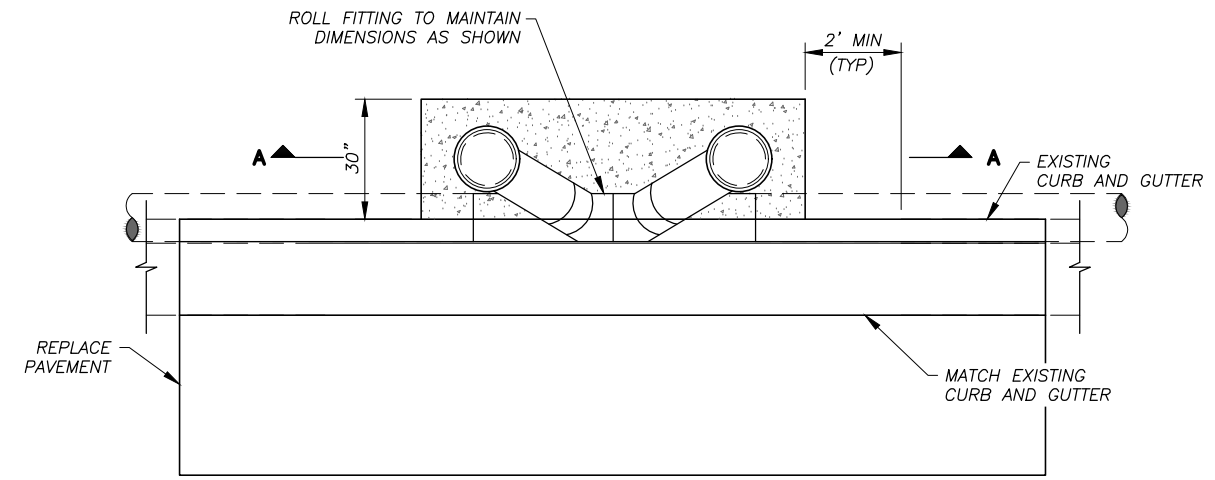
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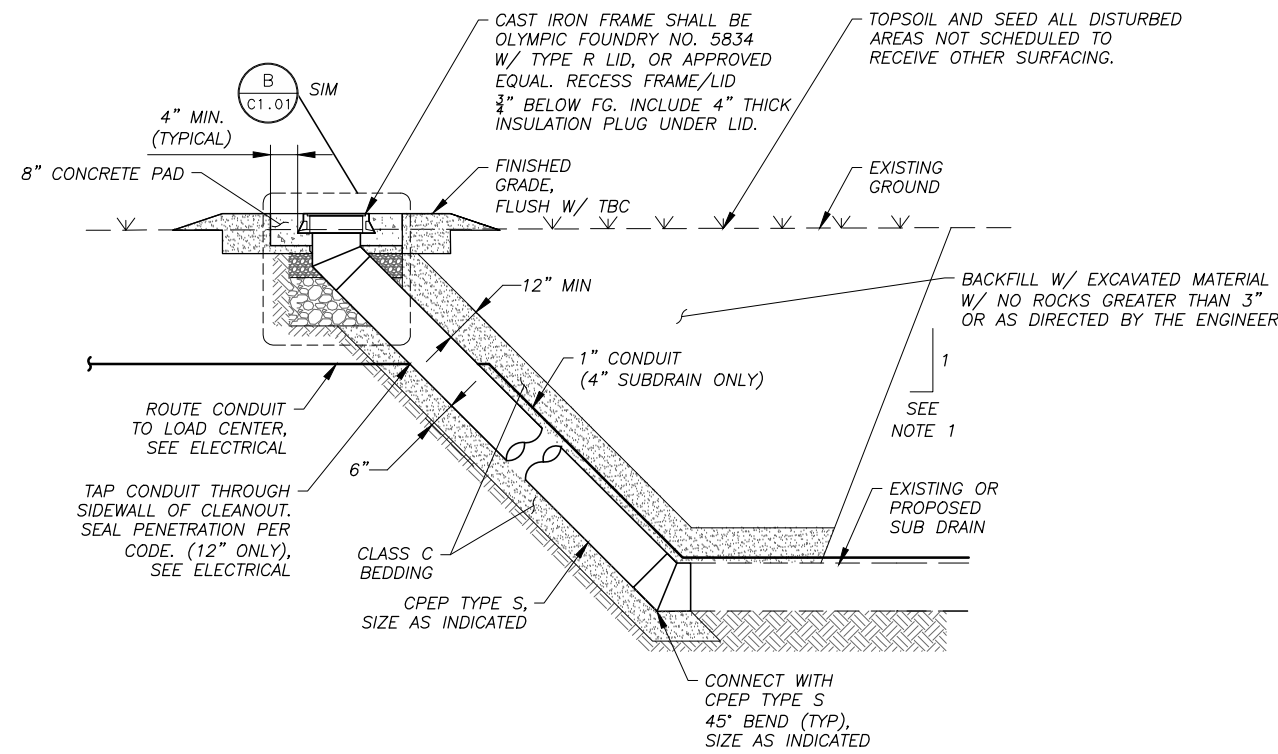
- TRENCH WALLS SHALL BE SLOPED OR SHORED AS REQUIRED FOR SAFETY, EXCEPT SHORING MUST BE USED IN EXISTING PAVED STREETS.



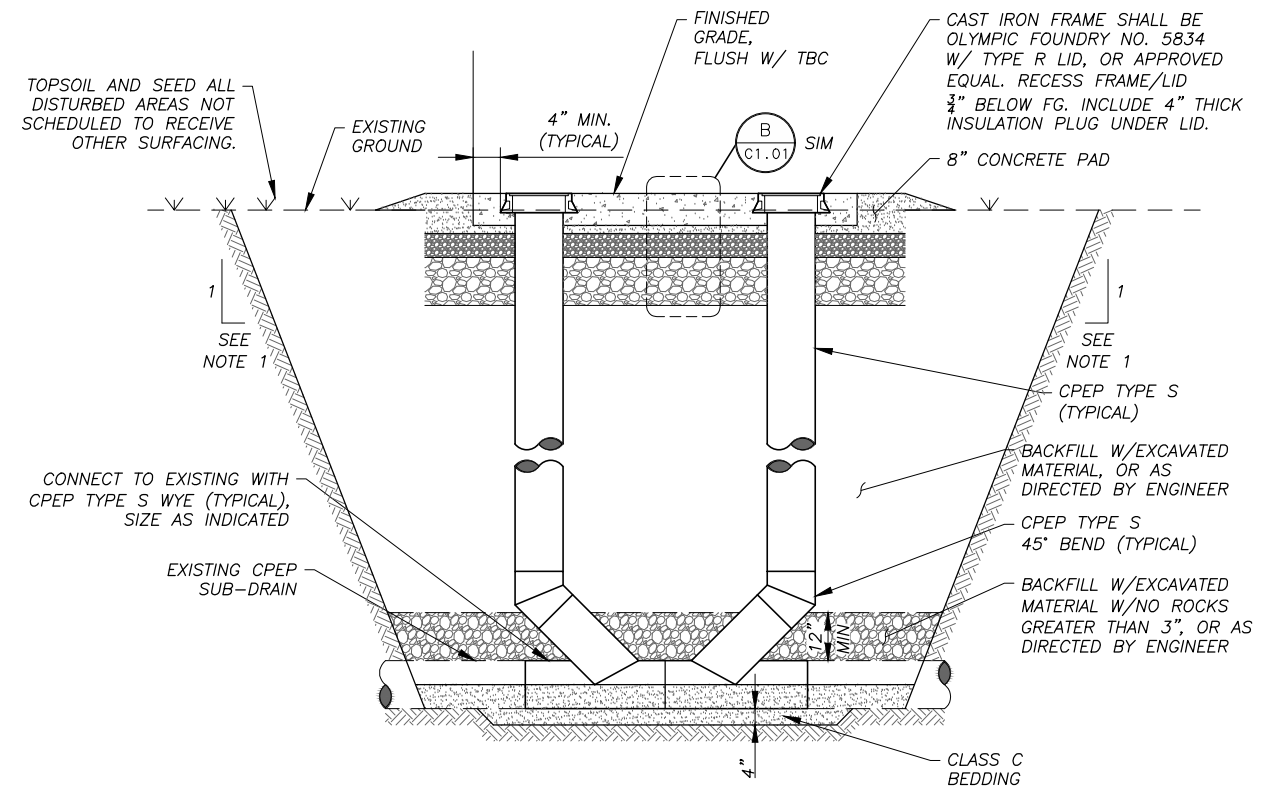
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PLAN



SECTION A-A

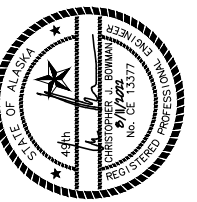


SECTION A-A

1 SUB-DRAIN SINGLE CLEANOUT DETAIL
SCALE: NTS

2 SUB-DRAIN DOUBLE CLEANOUT DETAIL
SCALE: NTS

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| SHEET TITLE | |
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| SUB-DRAIN DETAILS | |
| SHEET C3.01 | |
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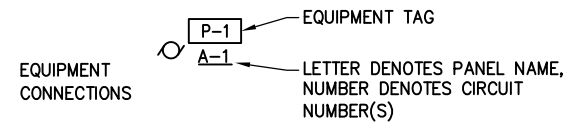
DRAWING LOCATION P:\Projects\HDL\Palmer_Eagle_Heat_Trace\Drawings\Elec\E1.00 LEGEND ABBREVIATIONS AND SPECIFICATIONS.dwg JOHN P

ELECTRICAL LEGEND

Table with 2 columns: SYMBOL and DESCRIPTION. Includes symbols for EXPOSED CONDUIT, UNDERGROUND CONDUIT, 3/4" X 10' COPPER CLAD STEEL GROUND ROD, CONDUIT RUN - CHANGE IN ELEVATION, LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT, HOME RUN, UNDERGROUND ELECTRIC, OVERHEAD ELECTRIC, WATERLINE, STORM DRAIN, UNDERGROUND TELEPHONE, PHOTOCCELL, KILOWATT-HOUR METER, PANELBOARD, MOLDED CASE CIRCUIT BREAKER, MOTOR, STARTER, DISCONNECT SWITCH, STARTER - THERMAL, GROUND FAULT INTERRUPTING (GFI) RECEPTACLE, 120V DUPLEX RECEPTACLE NEMA 5-20R, JUNCTION BOX OR FITTING, and FLOAT.

OTHER SYMBOLS ARE AS DEFINED BY NOTE.

EQUIPMENT TAG LEGEND



GENERAL NOTES

- 1. ALL ELECTRICAL WORK SHALL BE INSTALLED IN ACCORDANCE WITH ALL REQUIREMENTS OF THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE, CITY OF PALMER, AND FEDERAL LAWS, AMENDMENTS AND/OR ORDINANCES GOVERNING THE PROJECT. IF DIRECT CONFLICT ARISES BETWEEN DESIGN DOCUMENTS AND GOVERNING CODES, LAWS, AND/OR ORDINANCES, THE CODES, LAWS, AND/OR ORDINANCES SHALL HAVE JURISDICTION AND THE WORK IN QUESTION SHALL BE INSTALLED ACCORDING TO THE CODES, LAWS, AND/OR ORDINANCES. ALL WORK SHALL BE PERFORMED BY OR UNDER THE DIRECT SUPERVISION OF A STATE OF ALASKA LICENSED JOURNEYMAN ELECTRICIAN.
- 2. MATERIALS AND EQUIPMENT SHALL BE COMMERCIAL GRADE AND ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION AS SUITABLE FOR THE USE INTENDED. ALL ELECTRICAL EQUIPMENT SHALL INCLUDE THE SEAL OF A NATIONALLY RECOGNIZED TESTING LABORATORY FOR THE PURPOSE FOR WHICH IT IS INSTALLED. WHENEVER POSSIBLE, SIMILAR ITEMS SHALL BE SUPPLIED BY THE SAME MANUFACTURER THROUGHOUT THE PROJECT.
- 3. COORDINATE AND PROVIDE THE EQUIPMENT WITH THE SHORT CIRCUIT CURRENT RATING (SCCR) FOR THE AVAILABLE FAULT CURRENT AT THE POINT OF THE SYSTEM WHERE INSTALLED.
- 4. DIMENSIONS OF EQUIPMENT ARE APPROXIMATE. INSTALLATION SHALL BE VERIFIED BASED ON ACTUAL MANUFACTURER'S DATA AND SHOP DRAWINGS.
- 5. ALL SITE WORK AND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS. VERIFY ALL INSTALLATIONS PRIOR TO COMMENCEMENT OF WORK. COORDINATE ALL WORK WITH UTILITIES AS REQUIRED.
- 6. CONTRACTOR SHALL SUBMIT REQUEST FOR SUBSTITUTION IN WRITING TO THE ENGINEER.
- 7. PROVIDE SEISMIC SUPPORT AND DESIGN PER IBC REQUIREMENTS.
- 8. WHERE EXISTING UNDERGROUND UTILITIES ARE SHOWN ON THE PLANS, MULTIPLE PARALLEL LINES MAY BE ENCOUNTERED IN THE SAME TRENCH OR GENERAL AREA. SINGLE LINES WERE SHOWN FOR CLARITY.
- 9. ALL BELOW GRADE UTILITIES MAY NOT BE SHOWN. FIELD VERIFY ALL BELOW GRADE UTILITIES BEFORE DIGGING. ANY DAMAGE TO EXISTING UTILITIES OR STRUCTURES SHALL REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

ELECTRICAL ABBREVIATIONS

Table with 2 columns: Abbreviation and Description. Includes: A ANALOG SIGNAL, AMPERE; AFF ABOVE FINISH FLOOR; AFG ABOVE FINISH GRADE; BCU BARE COPPER; C CONDUIT; CP CONTROL PANEL; CT CURRENT TRANSFORMER; CU COPPER; E EMERGENCY; (E) EXISTING; EGC EQUIPMENT GROUNDING CONDUCTOR; FLA FULL LOAD AMPERES; FS FLOW SWITCH; G GROUND CONDUCTOR; GES GROUNDING ELECTRODE SYSTEM; GFI GROUND FAULT INTERRUPTING; GRC GALVANIZED RIGID (STEEL) CONDUIT; GRD GROUND; HDPE HIGH DENSITY POLYETHYLENE CONDUIT; HL HIGH LEVEL; HOA HAND-OFF-AUTO; HT HEAT TRACE; KVA KILO-VOLT-AMPERES; LTF LIQUID TIGHT FLEXIBLE CONDUIT (METALLIC); MLO MAIN LUG ONLY; MTS MANUAL TRANSFER SWITCH; (N) NEW; N.I.C. NOT IN CONTRACT; PH PHASE; PR PAIR; SS STAINLESS STEEL; STL STEEL; TYP TYPICAL; UON UNLESS OTHERWISE NOTED; V VOLTS; W WATTS; WP WEATHERPROOF; XFMR TRANSFORMER.

ELECTRICAL SPECIFICATIONS

- 26 01 26 - TESTING OF ELECTRICAL SYSTEMS**
A. TEST ALL POWER CONDUCTORS PRIOR TO TERMINATION WITH A MEGAOHM METER PER THE MANUFACTURER'S RECOMMENDATIONS. REPLACE ALL CONDUCTORS EXHIBITING LESS THAN 10 MEGAOHM IMPEDANCE. REPEAT TESTING AS REQUIRED TO VERIFY COMPLIANCE.
- 26 05 00 - COMMON WORK RESULTS FOR ELECTRICAL**
A. SYSTEM DESCRIPTION:
1. SCOPE OF WORK: FURNISH, INSTALL, TEST AND PLACE INTO SATISFACTORY AND SUCCESSFUL OPERATION ALL MATERIALS, EQUIPMENT, DEVICES AND NECESSARY APPURTENANCES TO PROVIDE COMPLETE SYSTEM POWER, AND CONTROLS AS INDICATED ON THE DRAWINGS AND SPECIFICATIONS.
2. ALL COMPONENTS FOR THE PROJECT SHALL BE LISTED OR LABELED BY UL (UNDERWRITERS LABORATORIES), FM (FACTORY MUTUAL) OR OTHER AGENCIES RECOGNIZED BY THE STATE OF ALASKA MECHANICAL INSPECTIONS DIVISION. WORK SHALL COMPLY WITH ALL LISTED AND APPLICABLE INDUSTRY STANDARDS, CODES, LOCAL ORDINANCES AND MANUFACTURER'S INSTRUCTIONS.
3. SYSTEM SHALL BE COMPLETE AND SHALL INCLUDE ALL TERMINATIONS AND SPLICES TO PROVIDE A FUNCTIONAL SYSTEM.
4. PROJECT CONDITIONS: CONTRACTOR SHALL VERIFY IN THE FIELD THAT DIMENSIONS, ROUTING AND CONNECTION LOCATIONS SHOWN ON THE DRAWINGS ARE REASONABLY ACCURATE.
- B. STANDARDS, CODES AND REGULATIONS:
1. NFPA 70 - NATIONAL ELECTRICAL CODE, LATEST ADOPTED EDITION.
2. IBC - INTERNATIONAL BUILDING CODE, LATEST ADOPTED EDITION.
3. LOCAL CODES AND AMENDMENTS.
- C. SUBMITTALS:
1. GENERAL: PROVIDE SUBMITTALS OF ALL MATERIAL AND EQUIPMENT. INCLUDE CATALOG NUMBERS, PERFORMANCE DATA, WIRING DIAGRAMS, SHOP DRAWINGS AND ROUGH-IN DIMENSIONS.
2. MANUFACTURER'S INSTALLATION INSTRUCTIONS: INCLUDE INSTRUCTIONS FOR STORAGE, HANDLING, PROTECTION, EXAMINATION, PREPARATION AND INSTALLATION OF PRODUCTS.
- D. OPERATION AND MAINTENANCE DATA:
1. PROVIDE ALL MANUFACTURER'S RELEVANT MAINTENANCE AND OPERATING INSTRUCTIONS INCLUDING PROCEDURES NECESSARY FOR SYSTEM START-UP, OPERATION, EMERGENCY OPERATION AND SHUTDOWN.
2. MANUAL SHALL BE INDEXED, LABELED AND SHALL INCLUDE MAINTENANCE INSTRUCTIONS, PRODUCT DATA, SHOP DRAWINGS AND STEP BY STEP PROCEDURES FOR INSPECTION, REPAIR, CLEANING AND CALIBRATION.
- E. EQUIPMENT CONNECTIONS:
1. PROVIDE WIRING AND CONNECTION TO EQUIPMENT REQUIRING ELECTRICAL POWER BUT SPECIFIED UNDER OTHER DIVISIONS OF THE SPECIFICATIONS. REVIEW SUBMITTALS PRIOR TO INSTALLATION AND ROUGH-IN. VERIFY SIZE, AND TYPE OF CONNECTIONS.
- F. PENETRATIONS:
1. ALL ELECTRICAL PENETRATIONS THROUGH FIRE RATED BARRIERS SHALL BE SEALED IN ACCORDANCE WITH NEC AND THE MANUFACTURER'S INSTRUCTIONS. MATERIALS SHALL BE SUITABLE FOR THE FIRE STOPPING OF PENETRATIONS AND CAPABLE OF MAINTAINING AN EFFECTIVE BARRIER AGAINST FLAME, SMOKE AND GASES IN COMPLIANCE WITH THE REQUIREMENTS OF ASTM, UL AND OTHER INDUSTRY STANDARDS.
2. THE RATING OF THE FIRE STOPS SHALL BE THE SAME

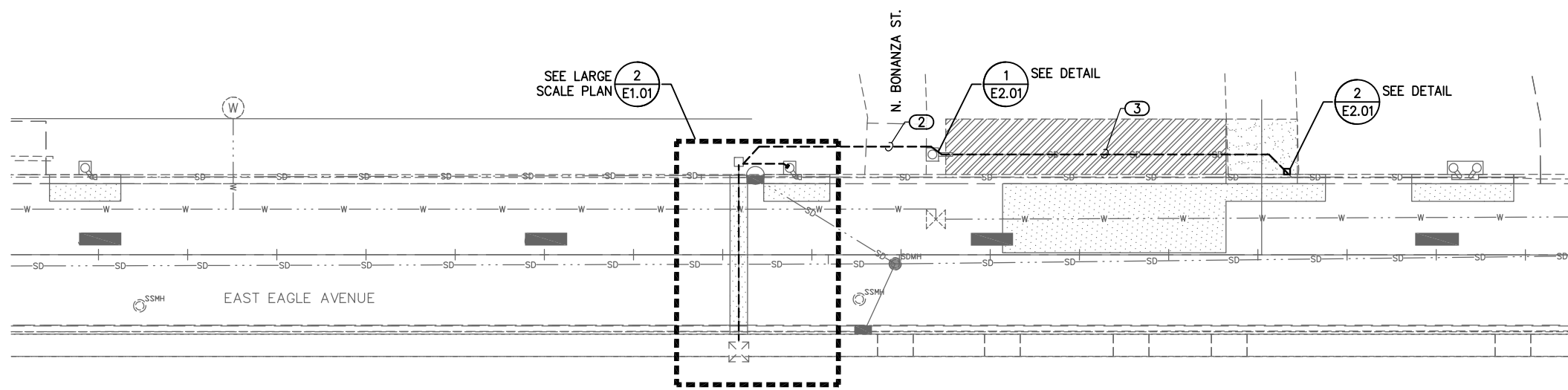
- AS THE RATED FLOOR, WALL OR CEILING ASSEMBLY.
- G. EXECUTION
1. INSTALLATION OF ALL WORK SHALL BE MADE SO THAT ALL COMPONENT PARTS ARE INSTALLED AND FUNCTION AS A COMPLETE, WORKABLE SYSTEM.
2. ALL WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC), NECA 1, AND THE STANDARDS AND CODES LISTED IN PART 1. WHERE QUESTIONS ARISE REGARDING WHICH REQUIREMENTS AND STANDARDS APPLY, THE MORE STRINGENT SHALL PREVAIL.
3. ALL WORK SHALL COMPLY WITH THE REQUIREMENTS AND RECOMMENDATIONS OF THE PRODUCT MANUFACTURER.
4. REPLACE AND/OR REPAIR TO ORIGINAL (OR BETTER) CONDITION ANY EXISTING STRUCTURES, MATERIALS, EQUIPMENT, ETC. INADVERTENTLY DAMAGED OR DEMOLISHED DURING THE COURSE OF CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.
- 25 05 19 - WIRE AND CABLE**
A. ALL EXTERIOR WIRING SHALL BE COPPER WITH TYPE XHHW-2 INSULATION UNLESS OTHERWISE NOTED.
B. MINIMUM BRANCH CIRCUIT CONDUCTOR SIZE SHALL BE #12 AWG. MINIMUM CONTROL CIRCUIT SIZE SHALL BE #14 AWG.
C. COLOR CODING SHALL BE AS FOLLOWS AND CONSISTENT THROUGHOUT THE ENTIRE INSTALLATION.
1. 120/240 V, 1PH, 3W:
PHASE A - BLACK, PHASE B - RED,
NEUTRAL - WHITE.
D. USE PROPERLY SIZED INSULATED WIRE CONNECTORS WITH PLASTIC CAPS FOR ALL CONDUCTORS #8 AWG AND SMALLER. TERMINATE #6 AND LARGER WITH CRIMP OR COMPRESSION TYPE CONNECTORS INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS AND INSULATE WITH PROPERLY SIZED 600 VOLT RATED HEAT SHRINK TUBING AND ELECTRICAL TAPE.
- 26 05 26 - GROUNDING AND BONDING:**
A. ALL GROUNDING AND BONDING SHALL COMPLY WITH NEC, STANDARDS AND CODES LISTED IN PART 1, MANUFACTURER'S RECOMMENDATIONS AND LOCAL CODES.
B. PROVIDE EQUIPMENT GROUNDING CONDUCTOR WITH ALL CIRCUITS.
- 25 05 33 - RACEWAY AND BOXES FOR ELECTRICAL SYSTEM**
A. ALL EXTERIOR OR BELOW GRADE WIRING SHALL BE INSTALLED IN GALVANIZED RIGID METALLIC CONDUIT. ALL FITTINGS, CONNECTORS, BOXES, ETC. SHALL BE APPROVED FOR USE AS GROUNDING MEANS.
B. UTILIZE SHORT EXTENSIONS (36 INCH MINIMUM) OF FLEXIBLE, LOW TEMPERATURE LIQUIDTIGHT CONDUIT FOR CONNECTIONS OF ALL MOTORS AND OTHER EQUIPMENT SUBJECT TO VIBRATION.
C. USE COMPRESSION TYPE CONNECTORS FOR EMT CONDUIT. SETSCREW TYPE NOT ALLOWED.
D. COMPLETELY AND THOROUGHLY CLEAN AND SWAB RACEWAY SYSTEM BEFORE INSTALLING CONDUCTORS.
E. ALL UNDERGROUND CONDUIT SHALL BE BURIED A MINIMUM OF 24 INCHES.
F. FOR CONDUITS WITH CONDUCTORS, USE DUCT-SEAL TO SEAL CONDUIT ENDS AND PREVENT WATER INFILTRATION.
G. JUNCTION BOXES:
1. WITH GRC: PROVIDE CAST STEEL BOXES WITH THREADED HUBS AND GASKETED COVERS, UON.
- 26 05 53 - IDENTIFICATION FOR ELECTRICAL SYSTEMS**
A. PROVIDE ENGRAVED LAMINATED PLASTIC NAMEPLATES WITH BLACK LETTERS ON A WHITE BACKGROUND TO IDENTIFY ALL ELECTRICAL DISTRIBUTION AND CONTROL EQUIPMENT,

- AND LOADS SERVED AS NOTED ON THE DRAWINGS.
- B. LETTER HEIGHTS SHALL BE 1/8 INCH FOR INDIVIDUAL SWITCHES, MOTOR STARTERS AND 1/2 INCH ON PANELBOARDS AND CONTROL PANELS. SECURE NAMEPLATES TO EQUIPMENT FRONTS USING SCREWS OR RIVETS.
- C. PROVIDE WIRE MARKERS FOR ALL POWER AND CONTROL CIRCUITS IDENTIFYING BRANCH OR FEEDER CIRCUIT AND WIRE NUMBER INDICATED ON CONTROL SYSTEM SHOP DRAWINGS.
- D. PROVIDE UPDATED TYPED PANELBOARD SCHEDULES FOR ALL MODIFIED PANELBOARDS..
- 26 24 00 - CIRCUIT BREAKERS**
A. MANUFACTURER
1. SQUARE D QO TYPE OR APPROVED EQUAL
B. CIRCUIT BREAKERS SHALL MATCH THE MOUNTING STYLE (BOLT-ON OR PLUG-IN), SHORT CIRCUIT RATING AND MANUFACTURER OF THE EXISTING PANELBOARDS THEY ARE BEING INSTALLED IN.
C. BRANCH CIRCUIT BREAKERS: NEMA AB1, MOLDED CASE, THERMAL MAGNETIC TRIP WITH COMMON TRIP HANDLE FOR ALL POLES.
- 26 24 00 - LOAD CENTERS AND PANELBOARDS**
A. MANUFACTURER
1. SQUARE D QO LOAD CENTER OR APPROVED EQUAL
B. NEMA KS1, PB1; PANELBOARD SHALL BE ENCLOSED, DEAD-FRONT CONSTRUCTION WITH COPPER BUSES, NEMA TYPE 3R, LOCKABLE ENCLOSURE.
C. DISTRIBUTION CIRCUIT BREAKERS: NEMA AB1, MOLDED CASE, INTEGRAL THERMAL AND ADJUSTABLE INSTANTANEOUS MAGNETIC TRIP FOR EACH POLE AS INDICATED IN THE PANEL SCHEDULE.
D. BRANCH CIRCUIT BREAKERS: NEMA AB1, MOLDED CASE, BOLT-ON THERMAL GENETIC TRIP WITH COMMON TRIP HANDLE FOR ALL POLES.

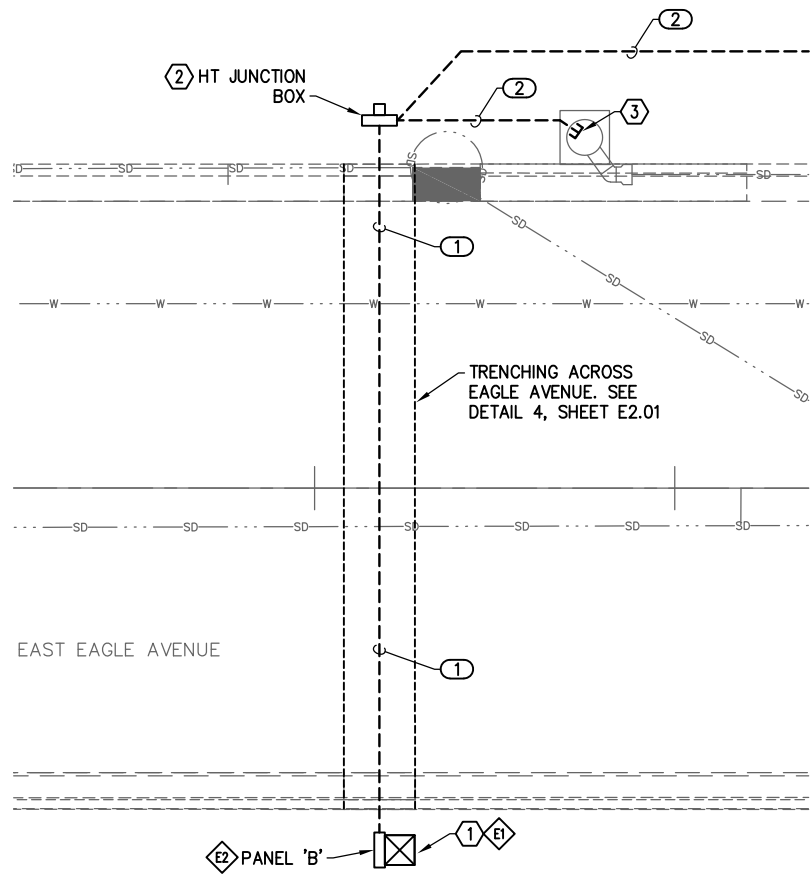
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LAYOUT DATE TIME
E1.00 8/11/2022 10:24 AM

DRAWING LOCATION
P:\Projects\HDL\Palmer Eagle Ave Heat Trace\Drawings\Elec\E1.01 ELECTRICAL SITE PLAN.dwg JOHNP

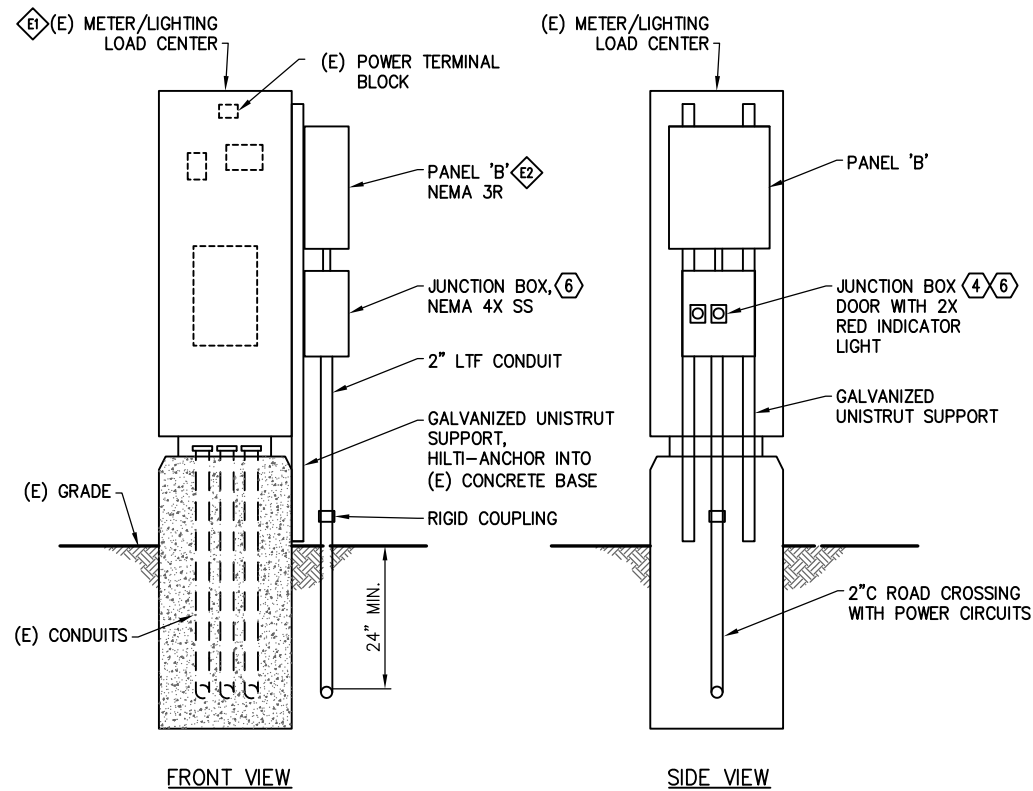


1 ELECTRICAL SITE PLAN
E1.01 SCALE: SEE CIVIL PLAN

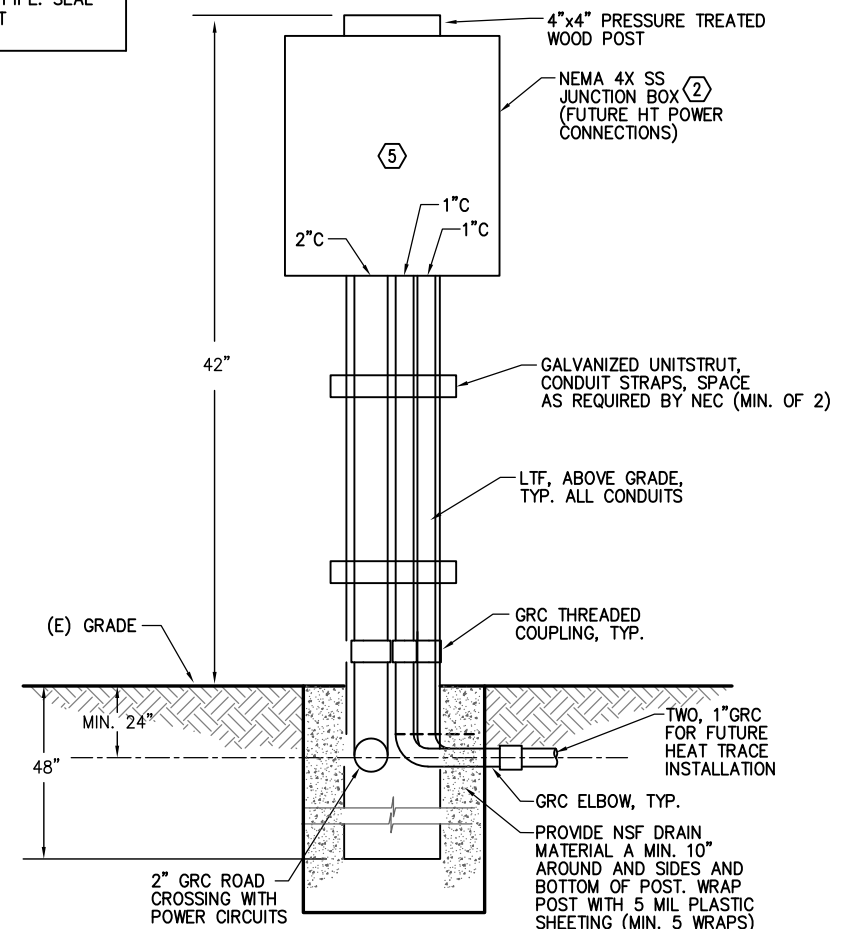


2 ELECTRICAL LARGE SCALE PLAN
E1.01 SCALE: NTS

| CIRCUIT SCHEDULE | |
|------------------|---|
| TAG | DESCRIPTION |
| ① | 2" C, 4#12 (2H, 2N), 1#10 EGC |
| ② | 1" C, EMPTY CONDUIT WITH PULL-STRING FOR FUTURE HEAT TRACE INSTALLATION. SEAL CONDUIT ENDS WATERTIGHT TO PREVENT INFILTRATION. |
| ③ | 1" C, EMPTY CONDUIT WITH PULL-STRING FOR FUTURE HEAT TRACE INSTALLATION. SECURE CONDUIT TO THE TOP SIDE OF THE NEW 4" CPEP DRAIN PIPE. SEAL CONDUIT ENDS WATERTIGHT TO PREVENT INFILTRATION. SEE CIVIL FOR DETAILS. |



3 LOADCENTER DETAIL
E1.01 SCALE: NTS

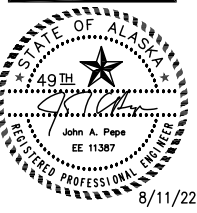


4 HEAT TRACE POWER CONNECTION DETAIL
E1.01 SCALE: NTS

SHEET NOTES

- ① (E) METER/LIGHTING LOAD CENTER. SEE DETAIL 3, THIS SHEET FOR DETAILS.
 - ② HEAT TRACE POWER JUNCTION BOX, NEMA 4X SS, POST MOUNTED (MIN. SIZE 16"Hx12"Wx8"D). SEE DETAIL 4, THIS SHEET FOR DETAILS. HOFFMAN OR EQUAL.
 - ③ STUB CONDUIT INTO NEW 4" CPEP SUB-DRAIN CLEANOUT FOR FUTURE HEAT TRACE INSTALLATION. SEAL CONDUIT WATERTIGHT WHERE IT ENTERS THE SUB-DRAIN PIPE. SEAL CONDUIT ENDS WATERTIGHT.
 - ④ PROVIDE POWER INDICATION LIGHT ON JUNCTION BOX FRONT, SEALED WEATHERPROOF FOR EACH CIRCUIT HT-1 AND HT-2. LIGHTS (2 TOTAL) SHALL BE WITH NEMA 4X, 30mm, 120VAC, RED LEXAN LENSE. INDICATOR LIGHT SHALL ILLUMINATE WHEN ANY OF THE HEAT TRACE CIRCUITS ARE ENERGIZED. ALLEN-BRADLEY OR EQUAL.
 - ⑤ PROVIDE SEALED, WATERTIGHT AND ELECTRICALLY SAFE END CAPS ON ALL CIRCUIT (HT-1, HT-2) CONDUCTORS WITHIN THE JUNCTION BOX (FOR FUTURE USE AS HEAT TRACE CIRCUITS). ENSURE ALL THE CIRCUIT BREAKERS (HT-1, HT-2) ARE IN THE 'OFF' POSITION AND THE CIRCUITS ARE DEENERGIZED AFTER TESTING AND BEFORE ACCEPTANCE BY THE CITY.
 - ⑥ JUNCTION BOX, NEMA 4X SS (MIN. SIZE 16"Hx12"Wx8"D). HOFFMAN OR EQUAL.
- ④ SEE SHEET E2.01 FOR ELECTRICAL EQUIPMENT SCHEDULE.

| REVISIONS | MARK | DATE | DESCRIPTION |
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EAGLE AVENUE DRAINAGE IMPROVEMENTS
CITY OF PALMER
PALMER, ALASKA

SHEET TITLE
ELECTRICAL SITE PLAN

SHEET
E1.01

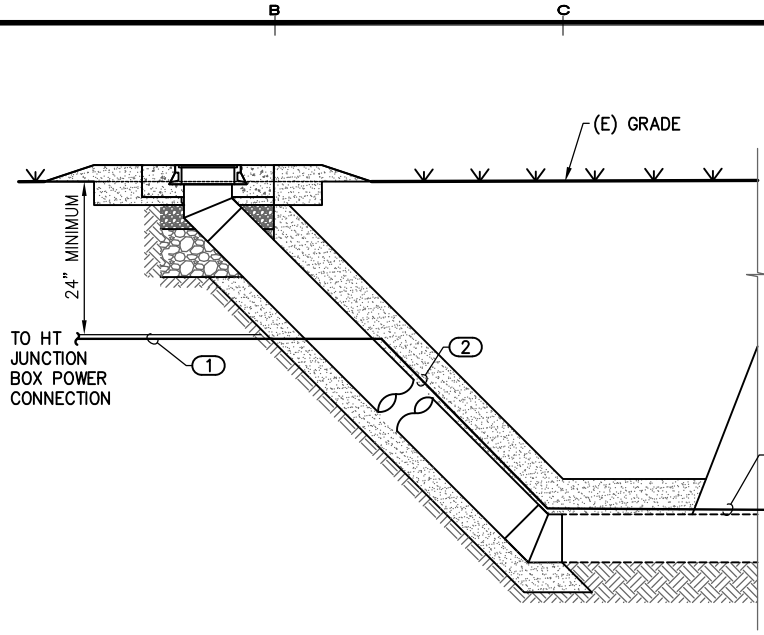
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DATE: AUG. 2022 SCALE: []

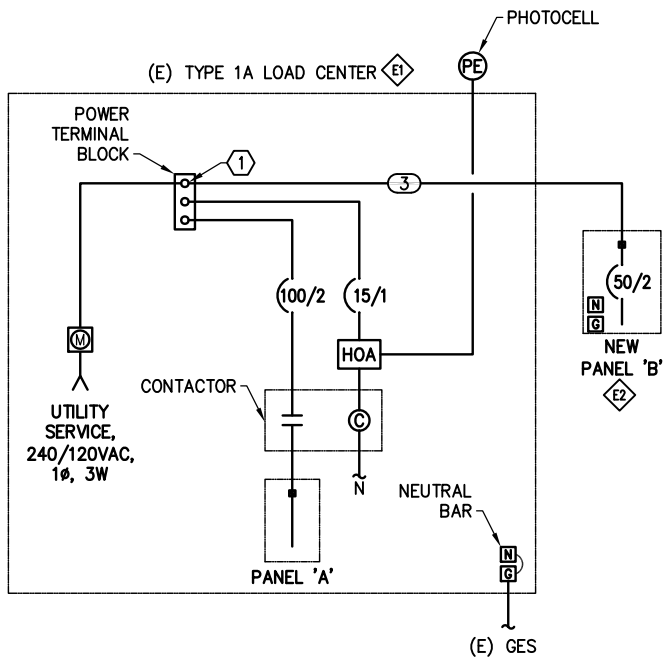
JOB NUMBER: 22-009

LAYOUT DATE TIME
E2.01 8/11/2022 10:14 AM

DRAWING LOCATION
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1 CLEANOUT HEAT TRACE DETAIL
E2.01 SCALE: NTS

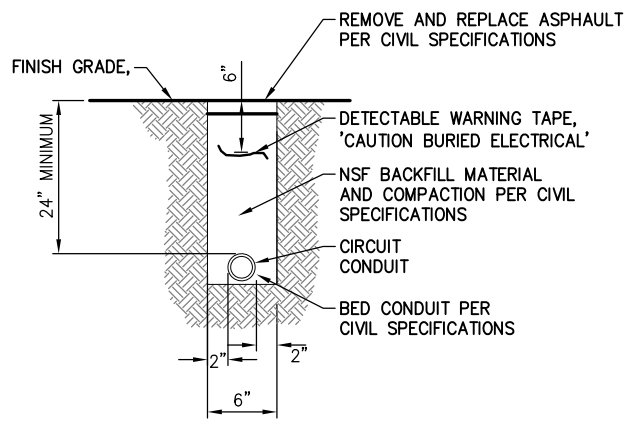


| ITEM NO. | DESCRIPTION | MANUFACTURER OR NOTES |
|----------|---|--|
| E1 | (E) TYPE 1A METER PEDESTAL AND LIGHTING LOADCENTER. 240/120VAC, 1Ø, 3W NEMA 3R ENCLOSURE, 10KAIC | COOPER B-LINE #CMP4111 MC LC "L-1" |
| E2 | PANEL 'B': 100A, 240/120V, 1Ø, 3W LOAD CENTER WITH 50A MAIN CIRCUIT BREAKER, NEMA 3R LOCKABLE ENCLOSURE, 10KAIC | SQUARE D. QO LOAD CENTER. SEE SPECIFICATIONS |

3 POWER ONE-LINE DIAGRAM
E2.01 SCALE: NTS

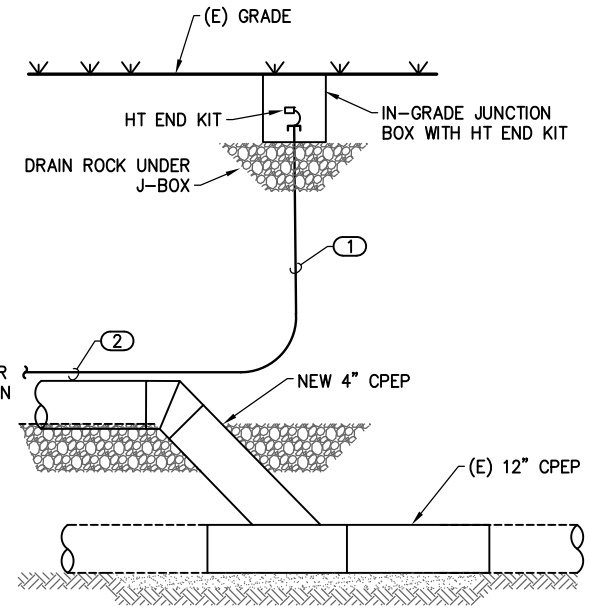
| TAG | DESCRIPTION |
|-----|--|
| 1 | 1"Ø, EMPTY CONDUIT WITH PULL-STRING FOR FUTURE HEAT TRACE INSTALLATION. SEAL CONDUIT ENDS WATERTIGHT TO PREVENT INFILTRATION. |
| 2 | 1"Ø, EMPTY CONDUIT WITH PULL-STRING FOR FUTURE HEAT TRACE INSTALLATION. SECURE CONDUIT TO THE TOP SIDE OF THE NEW 4" CPEP DRAIN PIPE. SEAL CONDUIT ENDS WATERTIGHT TO PREVENT INFILTRATION. SEE CIVIL FOR DETAILS. |
| 3 | 3/4"Ø, 3#8 (2H, N), 1#10 EGC |

SHEET NOTES
1 PROVIDE NEW 240VAC, 1-PHASE TAP CONDUCTOR CONNECTION TO (E) POWER TERMINAL BLOCK PER THE MANUFACTURER'S RECOMMENDATIONS. TORQUE LUGS AS REQUIRED.



NOTES:
1. DETAIL DIMENSIONS SHOWN ARE MINIMUM WITH EXCEPTION OF DETECTABLE WARNING TAPE, WHICH SHALL BE AS SHOWN.

4 TRENCH DETAIL
E2.01 SCALE: NTS

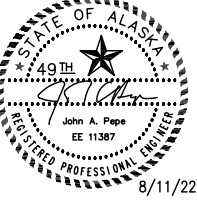


2 HEAT TRACE PIPE JUNCTION DETAIL
E2.01 SCALE: NTS

| PANEL 'B' SCHEDULE | | | | | | | | | | | |
|---|----------------|---------------------------|------|------|-------|---------|-----------|--------|------------------|------------------------------|-----|
| CKT | AMP | LOAD DESCRIPTION | KVA | LOAD | A | B | LOAD | KVA | LOAD DESCRIPTION | AMP | CKT |
| 1 | 20/1* | HEAT TRACE, HT-1 (FUTURE) | 1.2 | C | 1.2 | | | | | | 2 |
| 3 | 20/1* | HEAT TRACE, HT-2 (FUTURE) | 1.5 | C | | 1.5 | | | | | 4 |
| 5 | | | | | 0.0 | | | | | | 6 |
| 7 | | | | | | 0.0 | | | | | 8 |
| 9 | | | | | 0.0 | | | | | | 10 |
| | | | | | 1.2 | 1.5 | | | | | |
| * PROVIDE 30mA CIRCUIT BREAKERS FOR ALL HEAT TRACE CIRCUITS | | | | | | | | | | TOTAL KVA: 2.7 AMPS: 11.3 | |
| SUMMARY BY LOAD TYPE | | CONNECTED KVA | | | TOTAL | NEC% | NEC TOTAL | NOTES: | | | |
| L | LIGHTING | 0.0 | 0.0 | | 0.0 | 1.25 | 0.0 | | | | |
| R | RECEPTACLES | 0.0 | 0.0 | | 0.0 | 10K+50% | 0.0 | | | | |
| M | MOTORS | 0.0 | 0.0 | | 0.0 | 1.00 | 0.0 | | | | |
| LM | LARGEST MOTOR | 0.0 | 0.0 | | 0.0 | 1.25 | 0.0 | | | | |
| C | CONTINUOUS | 1.2 | 1.5 | | 2.7 | 1.25 | 3.4 | | | | |
| N | NON-CONTINUOUS | 0.0 | 0.0 | | 0.0 | 1.00 | 0.0 | | | | |
| S | SPARE | 0.0 | 0.0 | | 0.0 | 1.00 | 0.0 | | | | |
| X | NON-COINCIDENT | 0.0 | 0.0 | | 0.0 | 0.00 | 0.0 | | | | |
| O | OTHER | 0.0 | 0.0 | | 0.0 | 1.00 | 0.0 | | | | |
| F | FEEDER | 0.0 | 0.0 | | 0.0 | 1.00 | 0.0 | | | | |
| TOTAL KVA (PHASE) | | 1.2 | 1.5 | | 2.7 | | 3.4 | | | | |
| TOTAL AMPERES | | 10.0 | 12.5 | | 11.3 | | 14.1 | | | | |
| PHASE BALANCE, AB | | A-B | B-A | | | | | | | | |
| PERCENT | | 44 | 56 | | | | | | | | |

| NEW SERVICE LOAD CALCULATION | | | |
|--|---|--|---------------------------------|
| PROJECT: | Palmer Eagle Ave Service Load Calculation | | |
| SERVICE: | METERED BY MEA #78 632 906 | | |
| SYSTEM VOLTAGE: | 240/120V, 1-PHASE | | |
| DATE: | 8/10/2022 | | |
| | | | TOTAL (kVA) |
| (1) EXISTING DEMAND LOAD | | | |
| 30-DAY PEAK DEMAND LOAD (NEC 220.87(1)) | | | 1.90 |
| NEC FACTOR 25% (NEC 220.87(2)) | | | 0.48 |
| SUBTOTAL KVA | | | 2.38 |
| | | | LOAD FLC (AMPS) VOLTS |
| (2) DELETED LOADS | | | |
| SUBTOTAL LOAD | | | 0.00 |
| (3) LOAD NOT ACCOUNTED FOR IN 30-DAY RECORD | | | |
| SUBTOTAL LOAD | | | 0.00 |
| (4) NEW LOADS | | | |
| PANEL 'B' | | | 240 3.40 |
| | | | 0.00 |
| | | | 0.00 |
| SUBTOTAL LOAD | | | 0.00 |
| (5) TOTAL NEW SERVICE DEMAND LOAD | | | |
| LOAD 1 - LOAD 2 + LOAD 3 + LOAD 4 | | | = 5.78 kVA |
| TOTAL AMPS | | | @ 240 V, 1-PH = 24.06 A |

| REVISIONS | MARK | DATE | DESCRIPTION |
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EAGLE AVENUE DRAINAGE IMPROVEMENTS

CITY OF PALMER

PALMER, ALASKA

SHEET TITLE
ELECTRICAL DETAILS

SHEET
E2.01

DRAWN BY: CHECKED BY:
JP JP

DATE: SCALE:
AUG. 2022 1"=10'

JOB NUMBER: 22-009