

April 26, 2019

## **ADDENDUM #3**

**Pre-Bid Revision for Contractors Incorporation into:**

Emma Wilson ES – Summer 2019

**Chico Unified School District**

DSA File No: 4-12

DSA Application Number: 02-117226

Prepared By

DLR Group

**Addendum No. 3 to Bidding Documents for the  
Emma Wilson ES – Summer 2019 Project  
Date: April 26, 2019**

**NOTICE TO BIDDERS:** The following revision is being made to the Bidding Documents for the Emma Wilson Elementary School (“Bidding Documents”). In case of a conflict between the Bidding Documents and this Addendum, this Addendum shall govern.

**Item#: Description:**

- 1) See Attached Addendum #3 – RFI log
- 2) See Attached Revised 2019 Prequalified Contractors List
- 3) Drawing revision made by narrative below:
  - A. 1L1.0: Revised site furnishings description for S-101, S-102, S-103, S-104, S-105, S-106, S-107, S-108, S-109, S-110, and S-111 to read “...Equipment is Owner furnished and Owner Installed (OFOI).”
  - B. 51/1A2.1: Revise wall type at wall between Washroom A115 and A112 from “G4” to wall type “T4”
  - C. 53/1A2.1: Revise wall type at East Wall at Wash A106 from “G6” to “T6a”
  - D. 2/1A13.1: Added note, “PAINT CLASSROOM WALLS P1”
  - E. 35/1A12.1: At Material Finish List, revise note to read “PLAM / Solid surface countertops”
  - F. 1A12.2: At Material Finish List, revise P1 Paint location to read “Classrooms, Toilet Rooms, Bldg. P1”
  - G. 1A12.2: At Material Finish List, revise Spec. Section “074113.13” to read “074293”

- H. 1A12.2: At Material Finish List, revise Code “MP2” to read “MFP-1”
  - I. 1A12.2: At Material Finish List, revise “All Exterior Doors” to read “All Exterior Doors and New HM Frames”
  - J. 1A12.2: At Material Finish List, revise “Exterior Steel” to read “Exterior Steel, Downspouts”
  - K. 1A12.2 – At Material Finish List, revised SC1 – Sealed Concrete
    - A. Spec Section – 033000
    - B. Code – SC1
    - C. Material – Sealed Concrete
    - D. Manufacturer – Curecrete, Inc.
    - E. Series – Ashford Formula
    - F. Style – Light Broom Finish
  - L. 1A12.2 – At Room Finish Schedule, revise wall material at A105 Toilet for East, South and West wall to be P1.
  - M. 1A12.2 – At Room Finish Schedule, revise wall material at A111 Toilet for North, East, and South wall to be P1.
  - N. 1A12.2 – At Room Finish Schedule, revise wall material at A114 Toilet for North, South and West wall to be P1.
  - O. 1A12.2 – At Room Finish Schedule, revise wall material at A119 Toilet for North, East, and South wall to be P1.
  - P. Remove corner guards at following locations:
    - A. At East wall at A108 Kindergarten, see detail 19/1A11.1
    - B. At West wall at A109 Kindergarten, see detail 9/1A11.1
    - C. At East wall at A116 Kindergarten, see detail 1/1A11.2
- 4) See Attached Drawing Revisions:
- A. 2C2.00: Added note, “FOR EXTENTS OF SIDEWALK REMOVAL & REPLACEMENT SEE 2A1.1” on plan and added detail B: SOLAR SHADE STRUCTURE RAIN WATER LEADER.
  - B. 1A10.3: Added annotation, references, and clarifications to details 12, 14, 22, 32, 55, and 56
- 5) Specification revision made by narrative below:
- A. Section 033000 “Cast-In-Place Concrete” edit subparagraph 2.4 B. as follows:
    - A. Chemical Hardener: Fluorosilicate solution designed for densification of cured concrete slabs. “Ashford Formula” by Curecrete, Inc, “LIQUI-HARD” W.R. Meadows Co, or equal.
  - B. Section 10100 “Visual Display Units” edit subparagraph 2.4.A.1. as follows:
    - “1. Basis-of-design product: Subject to compliance with requirements, provide Platinum Visual Systems THS, or comparable product by one of the following:
      - a. ABC School Equipment.

- 6) See Attached Specification Revisions  
A. Add Section 230901 "Systems Commissioning"

End of ADDENDUM #3

## Addendum No. 3 RFI Log

Addendum No. 3 RFI Questions		
RFI #:	Question	Response
01	Is 43/1A10.4, student toilet wall tile pattern, typical at wash area elevation 42/1A2.1 & 32/1A2.1?	Per Room Finish Schedule, wall tile pattern to be along South Wall at Wash area. See revised Room Finish for location of Wall Tile pattern in rooms A105, A111, A114, and A119
02	I'm currently working on the proposal for the Emma Wilson school in Chico, and had a question and was hoping you could assist. We are currently working on the Neal Dow project in Chico, and this appears to be similar. A couple things that came up during the Neal Dow process that I thought I would verify at this time. The countertops at sink areas, drawings (detail 35/A12.1) show that all sink areas are to be solid surface, those ended up being plastic laminate at Neal Dow. The other area is the learning walls, we had quoted those a couple ways for Neal Dow and they ended up going with the learning wall manufactured from a School equipment company that we are working with so they all fit in our casework, do you know if they are wanting to go the same route with these kindergarten rooms?	See revised note at detail 35/A12.1
03	Looking for clarification on the countertops at the sink areas. According to the finish schedule page 1A12.2, the only solid surface is at the wall cap in the collaboration room, this was also confirmed with RFI #1. This page/finish schedule refers to all other countertops to be plastic laminate, however on page 1A12.1, call out 35, it is saying solid surface at sink areas. If this is to be true there are rooms that would have both solid surface and plastic laminate countertops in the same room and on the same wall in the classrooms. Please confirm the countertop material at all sink areas.	See revised note at detail 35/A12.1
04	On plan sheet 2C2.00 for Increment 2 there is a note at the shade structure which states "CONNECT SHADE STRUCTURE DOWNSPOUTS TO EXISTING STORM DRAIN LINE", please provide a detail for these eight downspout connections to existing storm drain line.	See attached 2C2.00 sheet, detail B
05	Increment 1 plan sheet 1C2.00, demolition plan, will the entire existing play area adjacent to the new kindergarten building be turned over to our control on June 10, 2019	Construction adjacent to the new kindergarten building may start and must be completed within summer 2019 or summer 2020 schedule.
06	Looking for a substitution for section 101100 – Visual Display Units, we would like to have ABC School Equipment added as a Manufacturer. They offer the same items as the listed current manufacturers. We are currently using ABC School Equipment for the leaning walls at Neal Dow. I have attached some literature that we received from them at the time of Neal Dow. Please let me know if you have any questions or need additional information.	ABC School Equipment added as an acceptable equal.
07	Please provide a detailed description or cutsheets for item S-102, Game Time custom prime time tower play structure with canopy, on Sheet 1L1.0.	Game Time Custom play structure to be Owner Furnished, Owner Installed (OFOI)
08		
09		
10		

## PREQUALIFIED CONTRACTORS FOR 2019

[illegible]



SECTION 230901  
SYSTEMS COMMISSIONING

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**PART 1 - GENERAL**

**1.1 SUMMARY**

A. Section Includes

1. This Section includes the requirements and procedures for commissioning of the building systems.
2. The following systems shall receive commissioning services. Some of these systems may not be part of the initial construction of the core and shell, therefore will not be commissioned under this contract. The extent and scope of commissioning services for each system shall be as described in the Project Commissioning Manual.
  - a. Laboratory General Exhaust Systems
  - b. Laboratory Fume Hood System
  - c. Flammable Storage Exhaust Systems
  - d. General Exhaust Systems
  - e. Hot Water Reheat System
  - f. Domestic Water Heating System
  - g. Domestic Water Supply Systems
  - h. Humidification Systems
  - i. HVAC Controls Systems
  - j. Zone Control Systems
  - k. Ground Source Piping Systems
  - l. Heat Exchanger Systems
  - m. Heat Pump Equipment
  - n. Lighting Controls Systems

**1.2 REFERENCES**

- A. Project Commissioning Manual

1. A separate document, titled "Project Commissioning Manual" describes additional detailed requirements for the systems commissioning work. The Project Commissioning Manual shall be considered integral with these specifications, and a part of the project manual and construction Contract Documents.
2. The contractor shall become thoroughly knowledgeable of the requirements of the Project Commissioning Manual, all project specifications, and the project drawings, and shall coordinate the work of all trades in the provision of the commissioning services.

**B. Project Specifications**

1. Various sections of the project specifications require equipment start-up, testing, and adjusting services. Requirements for start-up, testing, and adjusting services specified are intended to be provided in coordination with the commissioning services and are not intended to duplicate services. The contractor shall coordinate the work required by individual specification sections with the commissioning services requirements specified herein.
2. Where individual testing, adjusting, or related services are required in the project specifications and not specifically required by this commissioning specification, or the Project Commissioning Manual, the specified services shall be provided and copies of documentation, as required by those specifications, shall be attached to the related sections of the completed project commissioning manual, and indexed for future reference.
3. Where Owner training or educational services are required and specified, these services are intended to be provided in addition to the training and educational services specified herein and in the Project Commissioning Manual.

**1.3 DEFINITIONS**

- A. Commissioning: The demonstration and education of system installation, performance, and functionality, in accordance with the design intent.
- B. Commissioning Representatives: Those members of the Contractor's staff, Equipment Manufacturer's staff, Sub-contractor's staff, Owner's staff, Architect's staff, or Owner's independent contractor assigned to participate in the commissioning process.
- C. Commissioning Authority: The Commissioning Representative of the Owner. The Commissioning Authority will manage all commissioning activities on behalf of the Owner and will serve as the Owner's agent in review and approval of commissioning related services.
- D. Commissioning Manager: The Commissioning Representative of the Contractor, appointed by the Contractor, to manage and lead the commissioning effort on behalf of the Contractor.
- E. Commissioning Plan: The detailed set of checking and testing procedures, sequences of events, schedules, staffing plans, and management or administrative procedures required to provide a comprehensive coordinated approach for commissioning the systems and equipment described herein.
- F. Commissioning Procedures: A series of checks, tests, and operational procedures, applied in specific sequences, to each system or equipment component to be commissioned and intended to demonstrate full system installation, performance, and functionality, in accordance with the design intent. The term "procedures" shall be used throughout this

specification and the Project Commissioning Manual in reference to these checking, testing, and operational procedures.

#### 1.4 ABBREVIATIONS

A. The following abbreviations are used throughout this commissioning manual.

- A/E** - The Architect and/or Engineer of Record
- CxA** - Commissioning Authority
- CxM** - Commissioning Manager
- CxR** - Commissioning representatives of the Contractor, other than the Commissioning Manager. (Commissioning representatives of the sub-contractors.)
- OxA** - Owners primary commissioning representative
- OxR** - Other commissioning representatives of the Owner
- AxR** - Other commissioning representatives of the Architect / Engineer

#### 1.5 COMMISSIONING APPROACH

A. General

1. The commissioning approach shall include a series of checks, tests, and operational procedures, applied in specific sequences, to each system or equipment component to be commissioned.
2. The contractor shall perform the procedures utilizing members of the construction staff and representatives of the equipment and system manufacturer's who are fully knowledgeable of the equipment and systems installation and operation.
3. Where vibration testing and analysis, acoustic testing, or detailed mechanical equipment alignment by laser systems is required, the contractor shall employ the services of testing agents skilled in the provision of the services specified to perform the work.
4. The specific commissioning procedures required are described in the Project Commissioning Manual. These procedures shall be performed in a specific sequence as described in the Project Commissioning Manual. The sequenced application of the procedures is intended to provide a step-wise development, proceeding from the individual component level, to the system level and ultimately to the multiple integrated level of system operation. This sequencing approach will require certain procedures to be performed earlier in the construction process than for non-commissioned construction, and is intended to help ensure that the installation is free of defects at the earliest opportunity, allowing increased time for correction or modification if defects or performance issues are found.

B. Process Management

1. The Contractor shall be responsible for the overall management of the commissioning process as well as the specific scheduling of all procedures to provide the sequenced application of the procedures. The Contractor shall be responsible for the provision of all staff necessary, tools and instrumentation, and coordination of the work, to provide an integrated and fully coordinated commissioning service. The responsibility of coordinating this work lies on the contractor due to the unique relationship he has with the project schedule.
2. Prior to the start of mechanical or electrical system installation, the Contractor shall designate a specific individual as the Commissioning Manager (CxM) to manage and lead the commissioning effort on behalf of the Contractor. The Contractor's appointed commissioning manager shall be experienced in all aspects of the construction process and in the application and management of commissioning processes. The

CxM shall provide a single point of contact and communications for all commissioning related services. The Contractor shall grant the CxM sufficient authority to manage and direct the construction staff and sub-contractors in the provision of commissioning work, to accept and provide minor changes to the work on behalf of the Contractor, and to speak on behalf of the Contractor in all commissioning related contractual matters.

3. Prior to the start of mechanical or electrical system installation, the Contractor shall designate specific individuals as commissioning representatives (CxR) for each construction trade to be associated with commissioning work. These trades shall include the mechanical contractor, the TABS contractor, the controls contractor, the electrical contractor, the plumbing contractor, and members of the design team associated with each trade. The commissioning representatives shall participate in the commissioning process as team members providing commissioning testing services, equipment operation, adjustments, and corrections if necessary. All CxRs shall be selected as individuals having sufficient authority to direct their respective staff to provide the services required, accept and provide minor changes to the work on behalf of the sub-contractors or various organizations involved, and to speak on behalf of their organizations in all commissioning related contractual matters.
4. All commissioning procedures are intended to be witnessed by representatives of the Owner and the CxA. Representatives of the Owner may include representatives of owner himself, and representatives of the building users. The Owner will designate the specific individuals to be involved in the commissioning process and will designate a single individual, as the Owner's primary representative, to serve as a single point of contact for commissioning related communication and scheduling. This individual will be designated as the Owner's Commissioning Agent (OxA).
5. Depending on the specific system commissioned and the specific procedure, representatives of the Architect may include a variety of individuals including engineers representing the design team, field observation and administration staff, the Owner's commissioning representative (OxA), and the CxA.
6. Stephen R. Witek from SEED will be designated as the Commissioning Authority (CxA) and will manage all commissioning activities on behalf of the Owner and will serve as the Owner's agent in review and approval of commissioning related services. The CxA will serve as the Owners's dual point of contact (also including the OxA) for commissioning related communication and scheduling. The CxA will additionally be responsible for interpretation of the commissioning Contract Documents on behalf of the Architect and the Owner. The CxA or designated representative will attend all commissioning related activities and procedures.

## **1.6 COMMISSIONING PLAN**

- A. Prior to the start of construction of any system required to be provided with commissioning services, the Contractor shall prepare and submit for approval, a detailed commissioning plan. Construction and installation of any system required to be provided with commissioning services shall not be initiated until the Contractor has gained approval of the commissioning plan by the CxA.
- B. The commissioning plan shall detail the overall approach to commissioning, team organization, sequence and scheduling of activities including anticipated dates, checks, tests, and procedures to be employed, coordination and integration of Owner training, methods of team communication and record keeping, and coordination with construction activities required in other Sections of the Project Specifications.
- C. The Contractor shall construct and format the commissioning plan utilizing the Project Commissioning Manual organization and format provided. All Information, procedures,

forms, drawings, and system descriptions provided in the Project Commissioning Manual may be reproduced, modified, and utilized by the Contractor, as determined appropriate by the Contractor, and for the sole purpose as use in the development of documentation required by these Contract Documents. The Project Commissioning Manual will be provided to the Contractor as computer files on diskette. Portions of the manual have been created in Microsoft Word word processing files, Microsoft Excel spread sheet files, and Autocad drawing files.

- D. Submit the commissioning plan to the CxA for review and approval. The plan shall be submitted as a complete document except that sections relating to scheduling, sequencing, and commissioning procedures shall be submitted individually. Commissioning and construction scheduling shall be submitted for information only, and will be understood that changes may occur. All plan information shall be submitted in single sided hard copy with the Architects submittal review stamp applied to the front side of the first sheet.
- E. The completed and approved commissioning plan, and all subsequent revisions to the plan provided during the construction process, shall be provided to the CxA in hard copy and in electronic media form utilizing the same computer programs and the same, or earlier, program version numbers. Plan information and development added to the plan by the Contractor, and not available or included in the Project Commissioning Manual, shall be provided through the application of the same computer programs unless such program is not relevant to the specific aspect of the plan.
- F. Detailed project scheduling information may be provided in the computer program and format preferred by the Contractor, or may be provided as hard copy only, if a computerized scheduling program is not utilized by the Contractor.
- G. The Contractor shall complete all sections of the Manual and Plan, providing sufficient detail and expanded information as required to fully describe and detail the commissioning work.

#### **1.7 COMMISSIONING PROCEDURES**

- A. The Contractor shall fully review all commissioning checks, tests, and procedures, and related sequencing requirements, provided in the Project Commissioning Manual, and become thoroughly knowledgeable of all commissioning procedure requirements. The Contractor shall thoroughly review all procedures with the respective equipment manufacturers to determine that the procedures can be provided in a manner which fully protects the equipment, the construction staff, the commissioning team members, and which maintains full equipment warranties and guarantees. The Contractor shall be fully responsible for all means, methods, and materials, required to ensure adequate job-site safety.
- B. The Contractor shall modify the commissioning procedures provided in the Project Commissioning Manual as required to adequately reflect the requirements for job-site safety and adequate protection of the systems and equipment.
- C. The Contractor shall modify the commissioning procedures as required to coordinate all scheduling and sequencing requirements.
- D. The Contractor shall modify the commissioning procedures as required to adequately reflect the actual conditions, equipment, and systems, as installed.

- E. The Contractor shall add checking, testing, or operational procedures as may be deemed necessary by the Contractor, or by the equipment manufacturers, to fully demonstrate that the equipment or system is adequately installed and fully functional.
- F. The Contractor shall add checking, testing, or operational procedures as necessary to provide a fully coordinated construction and commissioning effort and to provide the commissioning sequencing requirements.
- G. The Contractor shall add, duplicate, or otherwise provide sufficient procedure forms as necessary to provide sufficient space to record all required information for each component item and system included in the procedure. All procedure forms shall clearly indicate equipment identification numbers and descriptions coordinated with the Owner's identification system. All procedure tasks or elements shall have provision within the forms to include the procedure results directly within the computer program electronic file copy without modification of the forms or data sheets.
- H. Contractor modifications and additions to the commissioning procedures shall be fully annotated to indicate the specific changes and the reasons for the each change. Additions and modifications to the commissioning procedures shall be subject to review and approval by the CxA.
- I. All commissioning procedures shall include a specific team listing of all individuals participating in each procedure and their respective organizations or roles. Provide space for each participant to sign as verification of attendance only. Personnel signatures provided by participants, including the CxM, CxA, and OxRs shall not constitute acceptance of the procedure, equipment, or system.
- J. Submit each final commissioning procedure to the CxA for review and approval. Individual procedures, or sets of procedures, related to a specific commissioning phase or system shall be grouped as an individual submittal. Where a specific procedure will be applied multiple times for specific components or repetitive equipment or system items, the procedure may be submitted in generic form provided with appropriate explanation of the intended methods of record keeping and system identification approach. All procedures and procedure forms shall be submitted in single sided hard copy with the Architects submittal review stamp applied to the back side of the sheet. Procedures shall not be scheduled for completion prior to obtaining satisfactory review and approval by the CxA.
- K. The CxM or designated assistant shall provide all field record keeping of all procedure results. All field data, notes, and comments, shall be neatly hand labeled in the respective procedure forms during each procedure. A dated copy of the completed hand labeled form with all participant signatures shall be provided to each participant by the CxM. The CxM shall maintain a master file of all completed procedure originals and shall attach one copy of all original field annotated procedure forms to the final Commissioning Manual. The CxM shall transfer all field procedure results, comments, and annotations to the computerized file copy of the procedure and shall distribute one hard copy of the completed procedure form to each participant. Signature spaces shall be annotated as "yes" or "no" as verification of attendance in the computerized file copies.

## **1.8 TRAINING AND EDUCATION**

- A. Formalized Pre-Construction Training
  - 1. Provide formalized Owner and contractor education and training sessions as described in the Project Commissioning Manual and as described herein. The training

sessions shall be provided by the equipment and systems manufacturer's authorized representatives and shall be completed in advance of equipment installation. The training sessions shall be designed to provide for simultaneous education of the Owner's staff and the installing contractors.

2. The training sessions may be held on-site or at the manufacturer's training facility and shall include detailed instruction for the proper installation, set-up, maintenance, and operation of specific equipment and system items as described in the Project Commissioning Manual. Each training session shall include the following elements as a minimum.
    - a. Review and discussion of the equipment and component construction and attributes.
    - b. Review and instruction of recommended installation, set-up, and adjustment procedures.
    - c. Review of recommended initial start-up procedures and associated testing or verification procedures.
    - d. Review of recommended operational procedures, checks, adjustments, and observations.
    - e. Review of recommended routine maintenance, preventive maintenance, and predictive maintenance procedures.
  3. The training sessions shall be oriented to the specific equipment and systems to be provided and shall include reference materials and handouts which include all material included in the training session.
  4. Ensure the full participation of all construction staff to be involved with the installation, start-up, operation, commissioning, and continued maintenance and care of the equipment during the construction process.
  5. Provide advance notification to the OxA, the CxA, and all required participants of each training or instruction session at least 4 weeks in advance of the scheduled date of each such session. Notification shall include a detailed agenda describing the items to be included in the session.
- B. Systems Orientation and Design Philosophy
1. Additional systems orientation, design intent, and operational theory instruction shall be provided by the CxA, and shall be incorporated in the pre-procedure review meetings held in conjunction with each commissioning procedure.
- C. Equipment Adjustment and Operation Training
1. Provide detailed on-site equipment set-up, adjustment, and operation instruction and demonstrations to the commissioning procedure participants for all equipment and system components as listed in the Project Commissioning Manual.
  2. Training shall be provided by the equipment manufacturer's factory trained representative and shall be provided in conjunction with the commissioning procedure requirements for initial system set-up, start-up, adjustment, and testing procedures.
  3. Coordinate the adjustment and operation demonstrations in conjunction with the respective commissioning procedure requirements.

## **PART 2 - PRODUCTS**

### **2.1 PROJECT COMMISSIONING RECORD**

- A. Prior to final acceptance of the commissioning process, and as a condition of final acceptance of the work, the Contractor shall prepare and submit a detailed project commissioning record to the CxA for review and approval.
- B. The project commissioning record shall detail the overall approach to commissioning, team organization, sequence and scheduling of activities, checks, tests, and procedures

employed, Owner training activities, and methods of team communication and record keeping. The project commissioning record shall include a dedicated section which includes one copy of this commissioning specification section.

- C. The project commissioning record shall include all commissioning procedure results, test data, system or equipment descriptions, adjustments and set-up data, and the procedure descriptions and results of special testing, alignments, and calibrations. The record shall contain all special reports, all system adjusting and balancing reports, certifications, and meeting minutes.
- D. The Contractor shall construct and format the project commissioning record utilizing the approved Project Commissioning Plan and information contained in the Project Commissioning Manual. The Project Commissioning Manual will be provided to the Contractor as computer files on diskette. All Information, procedures, forms, drawings, and system descriptions provided in the Project Commissioning Manual may be reproduced, modified, and utilized by the Contractor, as determined appropriate by the Contractor, and for the sole purpose as use in the development of documentation required by these Contract Documents. Portions of the Manual have been created in Microsoft Word 2003 word processing files, Microsoft Excel 2003 spread sheet files, and Autocad 2002 drawing files.
- E. The completed and approved project commissioning record shall be provided in hard copy form, bound in three ring binders, and fully tabbed and indexed for easy reference. The record shall additionally be provided in electronic media form utilizing the same computer programs and the same, or later, program version numbers as the Project Commissioning Manual. Information and development added to the record by the Contractor, and not available or included in the Project Commissioning Manual, shall be provided through the application of the same computer programs unless such program is not relevant to the specific aspect of the record. Information added to the record by the contractor not produced in computer program files, such as original field notes, shall be included as scanned images and incorporated into Appendices.
- F. Provide 3 hard bound copies and a digital copy of the approved final project commissioning record to the Owner and 1 copy in each media to the CxA.

## **PART 3 - EXECUTION**

### **3.1 PRE-COMMISSIONING WORK SESSION**

- A. The CxM shall schedule and chair a pre-commissioning work session to review the Contractor's development of the Commissioning Plan. The work session shall be held prior to the initial submittals of the Commissioning Plan at a time when the Contractor has developed the plan to at least 50% completion.
- B. The work session shall be held at the Contractor's principle place of business. The CxM, CxA, OxA, the Contractor's project manager, Contractor's designated construction superintendent, and the Architect's principle construction administration representative shall be scheduled for attendance as a minimum. Sub-contractor representatives of the principle trades involved in the commissioning process should also be in attendance and may be scheduled for attendance at the discretion of the CxM.
- C. The CxM shall present and review the status and development of the plan and shall review all requirements of the plan in detail. The review shall include the Contractor's approach to management and administration of the commissioning process, reporting lines and

communications, record keeping, construction integration and coordination, commissioning procedures and sequencing, and plan format.

- D. The CxM shall record participant comments and distribute minutes of the meeting to all parties involved.

### **3.2 PRE-CONSTRUCTION COMMISSIONING REVIEW MEETING**

- A. The CxM shall schedule and chair a pre-construction commissioning review meeting to present the commissioning plan to all commissioning representatives. The meeting shall be held prior to the start of installation of any systems or equipment required to be provided with commissioning services. All commissioning representatives, associated manufacturer's representatives, outside agents involved in the commissioning process, the Contractor's field superintendent, and the Architect's principle construction administration representative shall be scheduled to attend the meeting.
- B. Provide meeting date notification of all required participants a minimum of four weeks prior to the meeting. The meeting notification shall include a detailed agenda.
- C. The review meeting shall address the following items as a minimum.
  - 1. Meeting introduction by CxM
  - 2. Introduction of participants by CxM
  - 3. Commissioning requirements review by CxA
  - 4. Commissioning plan introduction by CxM
  - 5. Approach to procedure implementation by CxM
  - 6. Commissioning management and administration review by CxM
  - 7. Contractor roles and responsibilities by CxM
  - 8. Special testing agents, outside agents, and manufacturer's participation by CxM
  - 9. Procedure sequencing and schedule review by CxM
  - 10. Comments and discussion.
- D. Meeting minutes shall be recorded and distributed to all participants by the CxM

### **3.3 COMMISSIONING PROGRESS AND COORDINATION MEETINGS**

- A. The CxM shall convene and chair bi-monthly, on-site or phone, commissioning review, progress, and coordination meetings. The meetings shall include the CxM, all Contractor's commissioning representatives, the OxA, the CxA or appointed representative, and associated special testing agents, outside agents, or manufacturer's representatives as appropriate.
- B. The regular meetings shall be initiated after completion of the pre-construction commissioning review meeting and shall be held at bi-monthly during the remaining construction duration.
- C. The CxM shall record and distribute meeting minutes to all parties.

### **3.4 PRE-PROCEDURE REVIEW MEETINGS**

- A. The CxM shall schedule and chair a procedure review meeting, held on site, immediately prior to commencing each type of procedure, for each different system included in the commissioning process. All commissioning representatives, associated manufacturer's representatives, and outside agents required for the commissioning procedure to be reviewed shall be scheduled to attend the meeting.

- B. Each procedure review meeting shall include a written agenda prepared by the CxM. The agenda shall include the following items as a minimum.
  - 1. Introduction of subject by CxM
  - 2. Introduction of participants by CxM
  - 3. System overview by Architect's Representatives
  - 4. Construction status review by CxM
  - 5. Commissioning process review by CxA
  - 6. Special system or equipment component review by manufacturer's representatives.
  - 7. Review of control system interface, status, and instructional discussion of related operations where pertinent.
  - 8. Review of equipment installation and operations manuals by manufacturer's representatives where pertinent.
- C. Procedure review meetings for the continuation of repetitive procedures, for similar systems and equipment previously commissioned, may be reduced in scope to include only a general review of the commissioning process and construction status.

### **3.5 PROCEDURE CLOSE-OUT MEETINGS**

- A. The CxM shall schedule and chair a procedure close-out meeting, held on site, immediately following each procedure. All commissioning representatives, associated manufacturer's representatives, and outside agents required for the commissioning procedure shall be scheduled to attend the meeting.
- B. The CxA shall review the commissioning procedures applied and general status and findings of the procedure.
- C. The CxM shall receive comments from the participants, and record all comments and the CxA's findings in the minutes of the meeting. The meeting minutes shall be distributed to all commissioning representatives by the CxM.
- D. The CxM shall obtain the signatures of all representatives involved as verification of procedure attendance prior to closing the meeting.

### **3.6 PROCEDURE ACCEPTANCE**

- A. On-Site Conditional Acceptance
  - 1. Upon satisfactory completion of each commissioning procedure and completion of the procedure close-out meeting, the CxA shall provide conditional acceptance of the procedure.
  - 2. Conditional acceptance shall indicate that the related installation work checked by the procedure and the related performance verified by the procedure is satisfactory, and that the required procedure has been completed, only.
  - 3. Conditional acceptance shall not imply that the equipment and systems involved with the procedure are fully approved and have been provided with final acceptance. Conditional acceptance shall additionally be subject to all notes and comments included in the field notes or test forms, and subject to the satisfactory demonstration that all associated pre-testing, special testing, special testing reports, or alignment reports have been fully completed.
  - 4. Conditional acceptance shall be indicated by the signature of the CxA on the Architect's review and approval stamp affixed to the procedure form. Conditional acceptance shall be further limited to the numeric approval rating and corresponding definitions applied to the Architect's review stamp by the CxA, as follows.

- a. An approval status of "1" shall indicate that conditional approval is granted as defined above.
- b. An approval status of "2" shall indicate that conditional approval is granted subject to the conditions noted. An approval status of "2" may be granted where only minor or limited corrections are required which would not necessitate repeating the full procedure. Corrections may be completed by the Contractor and demonstrated as complete during subsequent commissioning procedures. It shall be the responsibility of the CxM to obtain an additional separate approval signature by the CxA after adequately demonstrating full compliance with the notes, comments, and conditions. The CxA may indicate subsequent additional approvals by adding a second signature, date, and numeric rating to either the original test form approval stamp or to a copy of the original.
- c. An approval status of "3" shall indicate that the procedure has not demonstrated satisfactory installation or performance to the extent required by the procedure and in compliance with the Contract Documents. An approval status of "3" shall require the entire procedure to be repeated after corrections or modifications are provided.

B. Procedure Final Acceptance

1. Procedure final acceptance shall be provided upon satisfactory submittal of the completed procedure demonstrating an on-site conditional acceptance status of "1". Acceptance may additionally be provided for submittals having a conditional field acceptance status of "2", if the submittal is accompanied by clear demonstration of full compliance with associated notes and conditions.
2. Procedure submittals shall be provided as hard copies of each completed commissioning procedure printed from the final computerized procedure file, complete with all test data, notes, and comments. Each submittal shall be accompanied by a copy of the original field-annotated forms and the on-site approval stamp and comments.
3. All procedure submittals shall be accompanied by all associated special test reports, adjusting and balancing reports, alignment reports, vibration analysis reports, completed trend logs, reports and verification items required by the procedure, completed in final form. All attached reports, logs, or data shall be separately identified.
4. Provide a single cover sheet, imprinted with the Architect's submittal review stamp, indicating the procedure identification, procedure date, and identifying all attached reports, logs, or data. Each procedure shall be submitted to the CxA for review and approval separately and will be reviewed in conjunction with all attached reports, logs, and data.
5. Acceptance shall be indicated by the signature of the CxA on the Architect's review and approval stamp affixed to the submittal cover sheet. Acceptance shall be limited to the numeric approval rating and corresponding definitions applied to the Architect's review stamp by the CxA, as follows.
  - a. An approval status of "1" shall indicate that the related installation work checked by the procedure and the related performance verified by the procedure is in compliance with the Contract Documents, to the extent determined by the procedure, and that the required procedure has been completed and fully documented in final form with all required data and special reports.
  - b. An approval status of "2" shall indicate that conditional approval is granted subject to the conditions noted. An approval status of "2" may be granted where only minor or limited corrections are required to the supporting attached reports or accompanying data. Corrections may be completed by the Contractor and resubmittal is not required.

- c. An approval status of "3" shall indicate that the supporting data, reports, or the procedure are not complete, sufficient, or have not demonstrated satisfactory installation or performance to the extent required by the procedure and in compliance with the Contract Documents. An approval status of "3" shall require corrections and subsequent resubmittal and may require the entire procedure, or portions of the procedure, to be repeated as directed by the CxA.

C. On-Site Procedure Rejection

1. The CxA shall have the authority to reject a procedure in its entirety or to cause the procedure to be stopped if in the opinion of the CxA, any of the following conditions exist:
  - a. The pre-procedure review meeting is incomplete.
  - b. Appropriate or sufficient contractor staff is not available or required commissioning representatives are not present.
  - c. Required pre-testing or report data, such as point-to-point control verifications, alignment reports, and trend log data is not available or is incomplete.
  - d. The installation is insufficient or incomplete as required for the procedure or not in compliance with the Contract Documents.
  - e. Numerous checks or tests fail or can not be accomplished.
  - f. Installation and/or operation of equipment or systems beyond or in advance of the commissioning requirements. Installation, operation, or commissioning not in compliance with the sequencing requirements.
  - g. Indication of improper maintenance or operation.
  - h. Inadequate instrumentation
  - i. The procedure close-out meeting is incomplete.
2. The CxA shall additionally reject a procedure and require the equipment operation or procedure to be stopped if in the opinion of the CxA unsafe conditions to either staff or equipment exist. Consideration of safety issues by the CxA shall not in any way relieve the Contractor from his sole responsibility for job site safety and protection of the equipment.
3. Direction to stop the procedure or halt the operation of equipment will be given verbally. Upon notification the Contractor shall immediately stop the procedure and restore the system or equipment to a safe condition.
4. At the discretion of the CxA, the Contractor may be afforded the opportunity to correct the conditions indicated by the CxA and resume the procedure.
5. If in the opinion of the CxA corrections can not be implemented in a satisfactory manner, within the scheduled time available for the procedure and with sufficient time available to complete the procedure, the procedure shall be stopped and rescheduled by the CxM. The CxA shall provide the CxM with written notification of procedure rejection stating the cause of the action.
6. The Contractor shall be liable for all actual costs associated with the required attendance by the CxA, the Owner's and A/E's commissioning representatives, and required outside agents, resulting from rejected procedure.
7. Actual costs shall include:
  - a. Cost for the CxA and for each Owner's and A/E's commissioning representative, which are comprised of contractual billing rate as defined in the respective organization's agreement for such work, including overhead and profit. For CxA these rates will be \$110 per hour.
  - b. Travel-related expenses for the CxA and for each Owner's or A/E's commissioning representative, where such staff is required to be in attendance and not headquartered within the city limits, which are comprised of compensation for actual travel time, with an established minimum of 5 hours, and mileage rates, billed at the prevailing national government rate.

- c. Costs assessed for required outside agents, contractors, or specialists employed by the Owner or A/E at the actual contractual billing rates as defined in the respective organization's agreement for such work.
- d. Equipment rentals, special tools, and related material fees associated with the participation of contracted outside organizations and specialists.
- 8. The costs assessed will be documented by the CxA and will be deducted from the Contractor's fees or progress payments at the time of occurrence.

### **3.7 CHANGES TO THE WORK**

- A. Changes to the work shall be as directed by Change Order, Construction Change Directive, or Order for Minor Change as defined in the General Conditions of the Contract.
- B. The CxA shall have authority to issue Orders for Minor Change, on behalf of the Owner and the Architect, on-site, in conjunction with the commissioning activities. Such directions to the contractor will be provided in writing and will be signed and dated by the CxA.
- C. The CxM shall have authority to accept Orders for Minor Change on behalf of the Contractor. The CxM, if in agreement with the Order for Minor Change, shall sign and date the Order and provide one copy to the CxA for record purposes.
- D. All changes to the work shall be attached to the related procedures and shall be included as attachments to the submittals and to the final Project Commissioning Record.
- E. If in the opinion of the CxA, Change Orders or Construction Change Directives are required, or other special provisions are necessary to resolve a commissioning, construction, or performance issue, the issue and recommendations will be documented by the CxA and submitted to the Architect's construction administration staff for disposition. If the continuation of a commissioning procedure is affected by the issue, the procedure will be continued to the extent possible or as determined appropriate by the CxA. The CxA shall have full authority to stop or postpone any procedure pending disposition of commissioning, construction, or performance issues.

### **3.8 FINAL ACCEPTANCE**

- A. Final acceptance will be contingent upon satisfactory completion of all commissioning tasks and submittals, with final review and approval by the Commissioning Authority.
- B. Where specific components, equipment, or system elements are unable to comply with the specified requirements due to improper or incomplete installation, product defect, or failure of a device to perform to the manufacturer's published or advertised capabilities, final acceptance will be contingent on repair, replacement, and correction of the deficiencies by the Contractor and satisfactory completion of the commissioning procedures.
- C. Where specific components, equipment, or system elements are demonstrated to comply with the specified requirements and perform to the manufacturer's published or advertised capabilities, but are demonstrated not to provide the performance as required by the Contract Documents and the commissioning procedures, disposition of the issue and/or related modifications shall be provided as directed by the Architect. Final acceptance shall be contingent on the completion of any resulting correction work and related commissioning requirements determined as necessary in final disposition of the issue.
- D. Upon satisfactory completion of all commissioning work and resolution of all related issues, the CxA shall provide the Owner, Contractor, and the Architect with a final report

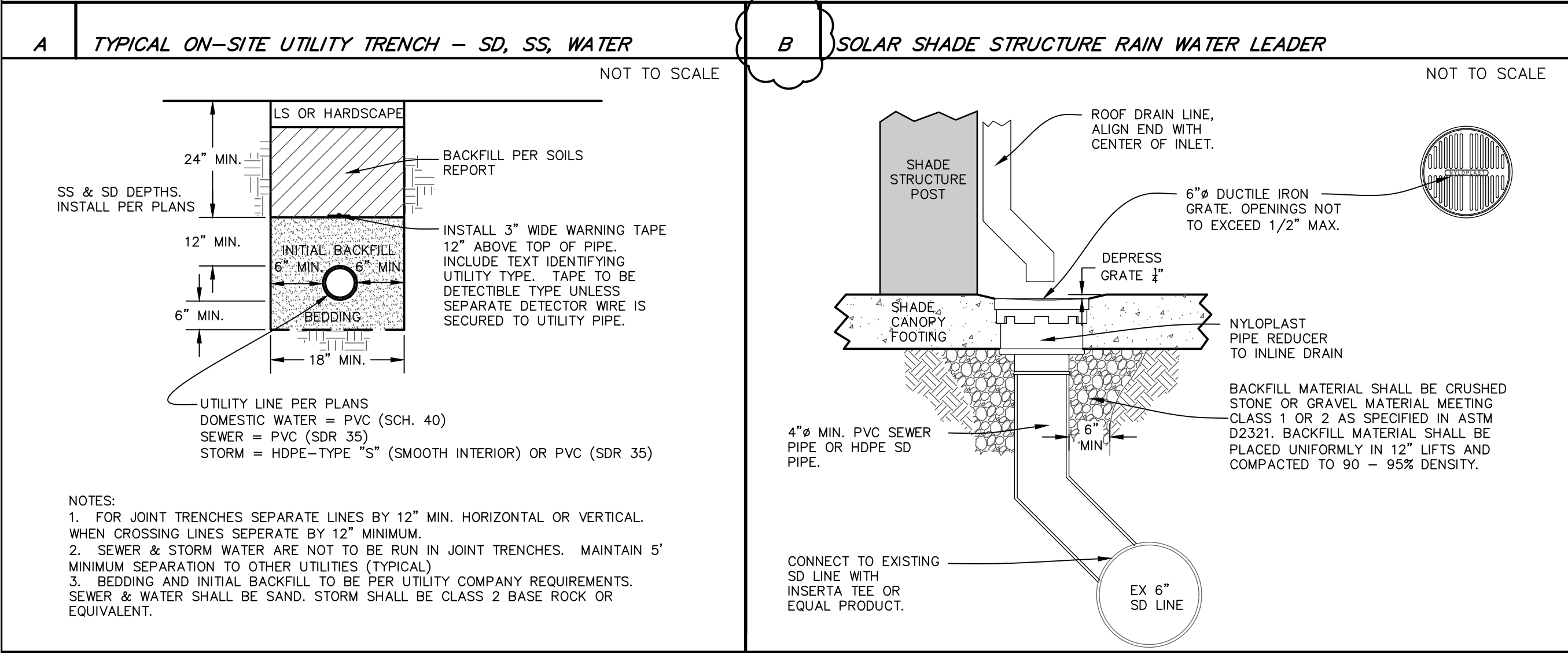
documenting recommendation for final acceptance. Recommendation for final acceptance by the CxA shall indicate that in the opinion of the CxA, and as demonstrated within the extent and scope of the commissioning process, the equipment and systems have been installed in compliance with, and function as required by the Contract Documents.

- E. The Owner may accept the recommendation of the CxA and provide final acceptance by providing the appropriate authorized signature and by providing copies of the signed acceptance to all parties involved. The Owner's final acceptance of the commissioning work shall indicate that Owner accepts that the systems and equipment, as demonstrated within the extent and scope of the commissioning process, have been installed in compliance with, and function as required by, the Contract Documents. The Owner's acceptance shall not constitute agreement that all contractual obligations are fulfilled and does not constitute final acceptance of the project under the terms and conditions of the Contract Documents.

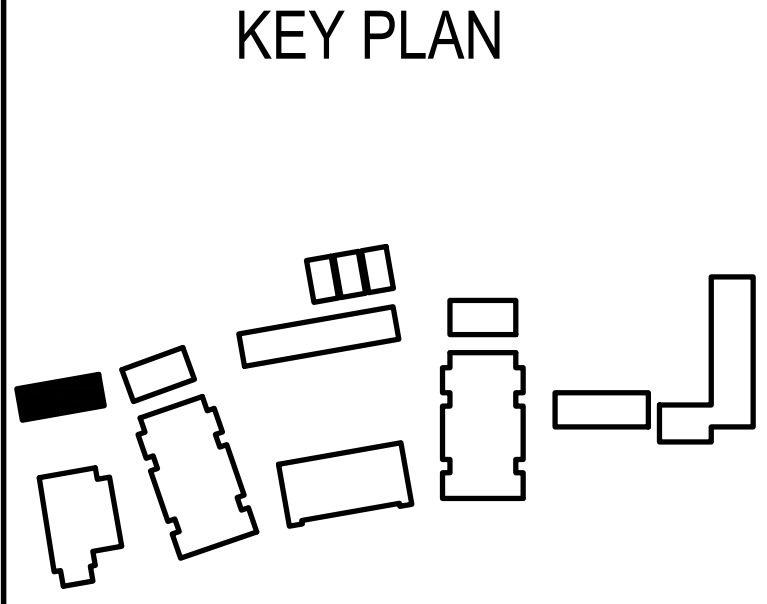
END OF SECTION



LEGEND NOTES	
	3' DOOR
	EXISTING SANITARY SEWER MANHOLE
	EXISTING SANITARY SEWER CLEAN OUT
	EXISTING STORM DRAIN MANHOLE
	EXISTING STORM DRAIN INLET
	EXISTING AREA DRAIN
	EXISTING WATER VALVE
	EXISTING HOSE BIB
	EXISTING UTILITY VALVE COVER
	EXISTING FIRE HYDRANT
	EXISTING UTILITY VAULT/BOX AS NOTED
	EXISTING UTILITY POLE
	EXISTING STREET LIGHT
	EXISTING SIGN
	EXISTING GUY ANCHOR
	EXISTING TREE
	EXISTING STEEL FENCE WITH CONCRETE COLUMNS
	EXISTING CHAIN LINK FENCE
	EXISTING BUILDING
	EXISTING CONCRETE
	EXISTING EDGE OF PAVEMENT
	EXISTING UNDERGROUND SANITARY SEWER
	EXISTING UNDERGROUND STORM DRAIN
	EXISTING UNDERGROUND WATER LINE
	EXISTING UNDERGROUND GAS LINE
	EXISTING UNDERGROUND TELECOMMUNICATION LINE
	EXISTING OVERHEAD UTILITY
	EXISTING JOINT TRENCH LINE (INTERCOM, ELECTRIC, COMMUNICATION)
	EXISTING TOP OF BANK
	EXISTING TOE OF BANK
	PROPOSED TREE PER LANDSCAPE PLANS
	PROPOSED DECOMPOSED GRANITE PER LANDSCAPE PLANS
	PROPOSED ENGINEERED WOOD PER LANDSCAPE PLANS
	PROPOSED MULCH AREA PER LANDSCAPE PLANS
	PROPOSED ASPHALT CONCRETE (C/C7.00)
	PROPOSED LANDSCAPE PER LANDSCAPE PLANS
	PROPOSED CONCRETE SIDEWALK (B/C7.00)
	PROPOSED BUILDING
	PROPOSED BUILDING OVERHANG
	PROPOSED UNDERGROUND GAS LINE (F/C7.00)
	PROPOSED UNDERGROUND WATER LINE (F/C7.00)
	PROPOSED SAWCUT LINE
	PROPOSED SANITARY SEWER LINE (F/C7.00)
	PROPOSED STORM DRAIN LINE (F/C7.00)
	PROPOSED STORM DRAIN LINE WITH INFILTRATION TRENCH (E/C7.00)
	PROPOSED STORM DRAIN INLET (C/C7.00)



- GENERAL NOTES**
- ALL WORK IN THE PUBLIC RIGHT OF WAY SHALL BE DONE IN ACCORDANCE WITH THE CITY OF CHICO IMPROVEMENT STANDARDS AND SPECIFICATIONS, AND APPLICABLE PORTIONS OF THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD PLANS AND SPECIFICATIONS DATED 2015. (APPROVAL OF CITY DIRECTOR OF PUBLIC WORKS OR THEIR AUTHORIZED REPRESENTATIVES IS REQUIRED.) CONTRACTOR SHALL HAVE SIGNED PLANS IN HIS POSSESSION PRIOR TO COMMENCEMENT OF WORK.
  - PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES AND/OR UTILITY DISTRICTS AS TO THE LOCATION OF ALL UNDERGROUND FACILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF ALL UNDERGROUND FACILITIES OR OTHER BURIED OBJECTS WHICH MAY BE ENCOUNTERED BUT WHICH ARE NOT SHOWN ON THESE PLANS. THE CONTRACTOR SHALL CALL UNDERGROUND SERVICE ALERT (USA) AT (800) 642-2444 AT LEAST 3 DAYS PRIOR TO CONSTRUCTION.
  - THE CONTRACTOR SHALL REQUEST CONSTRUCTION STAKES FOR ANY PARTICULAR PHASE OF WORK AT LEAST 72 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION. CONTRACTOR SHALL REQUEST A FORM OR GRADE STAKE PRIOR TO PLACING OF IMPROVEMENTS.
  - NORTHSTAR ASSUMES NO RESPONSIBILITY FOR ANY WORK CONSTRUCTED IF STAKED BY OTHERS.
  - PRIOR TO ANY CORRECTIVE ACTION BY THE CONTRACTOR WHICH IS NECESSARY DUE TO STAKING ERRORS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER FOR RE-STAKING AND VERIFICATION OF PREVIOUS STAKING. THE ENGINEER ASSUMES NO LIABILITY FOR THE COST INCURRED FOR THIS WORK.
  - CONTRACTOR TO BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING MONUMENTS AND OTHER SURVEY MARKERS DURING CONSTRUCTION. ALL SUCH MONUMENTS OR MARKERS DESTROYED DURING CONSTRUCTION SHALL BE REPLACED AT CONTRACTOR'S EXPENSE.
  - ALL PERMITS NECESSARY FOR THIS JOB ARE TO BE ACQUIRED BY THE CONTRACTOR.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL ESTIMATES AND QUANTITIES.
  - SHOULD CONSTRUCTION ACTIVITIES EXPOSE BURIED ARTIFACTS OR OTHER EVIDENCE OF EARLY HISTORIC OCCUPATION, A QUALIFIED ARCHEOLOGIST SHALL BE CONTACTED IMMEDIATELY. ALL CONSTRUCTION ACTIVITIES SHALL BE HALTED UNTIL HIS RECOMMENDATIONS ARE IMPLEMENTED.
  - PADS ARE TO BE COMPACTED TO 90% RELATIVE COMPACTION UNLESS OTHERWISE STATED IN SOILS REPORT.
  - EXISTING FACILITIES IN CONFLICT WITH IMPROVEMENTS ARE TO BE RELOCATED OR ADJUSTED TO GRADE AT THE DEVELOPER'S EXPENSE.
  - ANY PRIVATE FACILITIES AND UTILITIES IN CONFLICT WILL BE RELOCATED AT THE DEVELOPER'S EXPENSE.
  - CONSTRUCTION ACTIVITIES SHALL BE SCHEDULED THAT DIRECT TRAFFIC FLOW TO OFF-PEAK HOURS AS MUCH AS POSSIBLE AND TEMPORARY TRAFFIC CONTROL SHALL BE PROVIDED DURING ALL PHASES OF CONSTRUCTION TO IMPROVE TRAFFIC FLOW AS DEEMED APPROPRIATE BY THE DPW.



**100% CONSTRUCTION DOCUMENTS**

04.10.2019

INCREMENT 2

**NORTHSTAR**

...designing solutions

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PHONE (530) 898-1900 www.northstarinc.com

**UNDERGROUND PLAN**

**EMMA WILSON ELEMENTARY SCHOOL**

1530 W. 8TH AVE.  
CHICO, CA 95926

**2C2.00**

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Revisions

**REGISTERED PROFESSIONAL**

**LANDSCAPE ARCHITECT**

**STATE OF CALIFORNIA**

**CIVIL**

6851

Architecture Engineering Planning Interiors

**DLR Group**

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