



## ADDENDUM

Public Building Commission of Chicago | Richard J. Daley Center | 50 West Washington Street, Room 200 | Chicago, Illinois 60602 | (312) 744-3090 | pbccchicago.com

**ADDENDUM NO.:** 01  
**PROJECT NAME:** Read Dunning School – Site Preparation  
**PROJECT NO.:** 05165  
**CONTRACT NO.:** C1586  
**DATE OF ISSUE:** October 17, 2017

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### NOTICE OF CHANGES, MODIFICATIONS, OR CLARIFICATIONS TO CONTRACT DOCUMENTS

The following changes, modifications, or clarifications are hereby incorporated and made an integral part of the Contract Documents. Unless clearly expressed otherwise by this Addendum, all terms and conditions defined in the original Contract Documents shall continue in full force and effect and shall have the same meaning in this Addendum. Issued Addenda represent responses/clarifications to various inquiries. Contractors shall be responsible for including all associated labor/material costs in its bid. Drawings/specifications corresponding to inquiry responses will be issued with the Issue for Construction Documents, upon issuance of building permit.

**ITEM NO. 1: CHANGE TO KEY DATES**

None.

**ITEM NO. 2: REVISIONS TO BOOK 1 – PBC INSTRUCTIONS TO BIDDERS**

None.

**ITEM NO. 3: REVISIONS TO BOOK 2 – PBC STANDARD TERMS AND CONDITIONS**

None.

**ITEM NO. 4: CLARIFICATIONS**

The scope of work for the tunnels does not provide for options. The three tunnel treatments shown in the Civil documents are only to be implemented in the locations and extents indicated in the Civil Demolition drawings.

**ITEM NO. 5: REVISIONS TO BOOK 3 – TECHNICAL SPECIFICATIONS**

**Change 1 Book 3 – Volume 1 – REVISED** – Section 00 01 10 - Table of Contents

**Change 2 Book 3 – Volume 1 – ADDED** – Section 01 50 05 – Temporary Facilities and Controls

**Change 3 Book 3 – Volume 1 – ADDED** – Section 01 50 10 – Commission Representative Field Office.

**Change 4 Book 3 – Volume 1 – ADDED** – Section 22 14 26 - Facility Storm Sewer Drainage.

**Change 5 Book 3 – Volume 1 – REVISED** – Section(s) 31 22 14, 31 23 17, 32 13 13 to include pre-installation meeting.

**Change 6 Book 3 – Volume 1 – REMOVED** – Section 33 41 00 – Sewerage and Drainage.

**ITEM NO. 6: REVISIONS TO DRAWINGS**

**Change 1. REVISED** – Drawing No. G0.20, Updated drawing list to include new sheets.

**Change 2. REVISED** – ALTA/NSPS Land Title Survey - Drawing No. Survey 4 of 4, Underground utilities per Cardno locates added to drawing.

**Change 3. REVISED** – Drawing No. SP-A0.10, Contract limits adjusted at Normandy Ave and Maryville Center for Children access drive on Irving Park Road. Construction access at Normandy Ave removed.

**Change 4. REVISED** – Drawing No. SP-C0.30 Site Erosion Control Plan, Clarification that construction fence to remain in place after Site Prep. Construction access at Normandy Ave removed.

**Change 5. REVISED** – Drawing No. SP-C1.20 Site Demolition Plan Area 2, Note added on legend clarifying tunnel treatments and location of associated details.

**Change 6. REVISED** – Drawing No. SP-C1.30 Site Demolition Plan – Area 3, Contract limits at Normandy Ave revised. Note added on legend clarifying tunnel treatments and location of associated details.

- Change 7. REVISED** – Drawing No. SP-C1.50 Site Demolition Plan Area 5, Note added on legend clarifying tunnel treatments and location of associated details.
- Change 8. REVISED** – Drawing No. SP-C1.60 Site Demolition Plan Area 6, Note added on legend clarifying tunnel treatments and location of associated details.
- Change 9. REVISED** – Drawing No. SP-C2.00 Excavation Plan, 48” sewer alignment that passes through Normandy right-of-way has been removed. Alternate routing that circumvents right-of-way is sole alignment. Contract limits at Normandy Ave revised.
- Change 10. ISSUED** – Drawings No. SP-C2.10 Excavation Plan, SP-C2.20 Excavation Sections
- Change 11. REVISED** – Drawings No. SP-C3.00 Mass Grading Plan, Contract limits at Normandy Ave revised.
- Change 12. REVISED**- Drawing No. SP-C4.00 Overall Utility Relocation Plan, 48” sewer alignment that passes through Normandy right-of-way has been removed. Alternate routing that circumvents right-of-way is sole alignment. Contract limits at Normandy Ave revised.
- Change 13. REVISED** – Drawing No. SP-5.10, 48” sewer alignment that passes through Normandy right-of-way has been removed. Alternate routing that circumvents right-of-way is sole alignment.
- Change 14. REVISED** – Drawing No. SP-5.20, 48” sewer alignment that passes through Normandy right-of-way has been removed. Alternate routing that circumvents right-of-way is sole alignment.
- Change 15. REVISED** – Drawing No. SP-5.30, 48” sewer alignment that passes through Normandy right-of-way has been removed. Alternate routing that circumvents right-of-way is sole alignment.

**ITEM NO. 7: REQUESTS FOR INFORMATION**

**RFI-1.**

**Question:** It was mentioned by PBC personnel at the 10-6-17 site visit that the “Construction Fence” is to be left in place after the “Site Preparation” project is complete for use during the building construction phase.

We have not been able to find this requirement in the Bid Documents. Please confirm if this a requirement and if so, is the fencing (including any maintenance requirements) to be turned over to the owner at the completion of the “Site Preparation” project?

**Response:** Contractor shall furnish and install new construction fencing in accordance with (revised) drawing #SP-C0.30. Revised drawing #SP-C0.30 is included in this Addendum. Construction fence to remain after the Site Preparation project phase has been complete.

**RFI-2.**

**Question:** There are numerous notes on the drawings regarding removal of Electrical Items.

Please verify that all power for these items has already been disconnected.

**Response:** Contractor to perform electrical removal scope in accordance with the Contract Documents where indicated for removal. Site meetings have occurred with ComEd and OEMC present whereby ComEd and OEMC indicated they have no record of any active lines on the property except for Com Ed's overhead lines along Oak Park Ave. Contractor to verify Electrical items have been de-energized prior to removal.

**RFI-3.**

**Question:** The contract documents do not contain a specification section for Temp Facilities or for Owners Office Trailers. Are we required to have an office trailer or to provide an office trailer for the owner on this project?

If so, please issue these specification sections.

**Response:** Spec Section 01 50 05 Temporary Facilities and Controls and Spec Section 01 50 10 Commission Representative Field Office have been added and are included in this Addendum.

**List of Attachments and Drawings:**

This Addendum includes the following attached Specifications and/or Documents:

1. Section 00 01 10 – Table of Contents
2. Section 01 50 05 – Temporary Facilities and Controls
3. Section 01 50 10 – Commission Representative Field Office
4. Section 22 14 26 – Facility Storm Sewer Drainage
5. Section 31 22 14 – Earthwork
6. Section 31 23 17 – Excavating Backfilling and Compacting for Utilities
7. Section 32 13 13 – Portland Cement Concrete Paving

This Addendum includes the following attached Drawings:

1. SP-G0.20 – Drawing List dated 10/16/2017
2. ALTA/NSPS Land Title Survey - Drawing No. Survey 4 of 4
3. SP-A0.10 – Proposed Site Logistics Plan dated 10/16/2017
4. SP-C0.30 – Site Erosion Control Plan dated 10/16/2017
5. SP-C1.20 – Site Demolition Plan Area 2 dated 10/16/2017
6. SP-C1.30 – Site Demolition Plan Area 3 dated 10/16/2017
7. SP-C1.50 – Site Demolition Plan Area 5 dated 10/16/2017
8. SP-C1.60 – Site Demolition Plan Area 6 dated 10/16/2017
9. SP-C2.00 – Excavation Plan Option 1: Shoring System dated 10/16/2017
10. SP-C2.10 – Option #2: Open Cut dated 10/16/2017
11. SP-C2.20 – Option #2 Open Cut Cross-Sections dated 10/16/2017
12. SP-C3.00 – Mass Grading Plan dated 10/16/2017
13. SP-C4.00 – Overall Utility Relocation Plan date 10/16/2017
14. SP-C5.10 – Sewer Plan and Profile dated 10/16/2017
15. SP-C5.20 - Sewer Plan and Profile dated 10/16/2017
16. SP-C5.30 – Sewer Plan and Profile dated 10/16/2017

**END OF ADDENDUM NO. 01**

**SECTION 00 01 10**

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**BOOK 3**

**INTRODUCTORY INFORMATION**

| <i>Section Number</i> | <i>Section Title</i>             | <i>CPS Control Rev.</i> |
|-----------------------|----------------------------------|-------------------------|
| 00 00 00              | Project Manual Cover Page        | 01_01/01/14             |
| 00 01 10              | Table of Contents                | 01_01/01/17             |
| 00 10 20              | Information Available to Bidders | --                      |

**SPECIFICATIONS GROUP**

**GENERAL REQUIREMENTS SUBGROUP**

**DIVISION 01 – GENERAL REQUIREMENTS**

| <i>Section Number</i> | <i>Section Title</i>                                     | <i>CPS Control Rev.</i> |
|-----------------------|--|-------------------------|
| 01 14 11              | Construction Operations and Site Utilization Plan        | 01_08/14/14             |
| 01 35 60.1            | LEED® Requirements                                       | PBC 05_09/22/14         |
| 01 35 60.1a           | Attachment A – Materials Credit Documentation Sheet      | PBC 04_08/17/08         |
| 01 35 60.1c           | Attachment C – LEED® Checklist for Schools v.2009        | PBC 01_01/01/09         |
| 01 35 60.1d           | Attachment D – LEED® BD+C Materials Calculator and Table | PBC 04_08/01/12         |
| 01 35 61              | LEED® Coordinator  | PBC 02_09/22/14         |
| 01 35 62              | Erosion and Sedimentation Control                        | PBC 01_09/14/12         |
| 01 35 63              | Construction Waste Management and Disposal               | PBC 03_09/22/14         |
| <b>01 50 05</b>       | <b>Temporary Facilities and Controls</b>                 | <b>4 07/20/09</b>       |
| <b>01 50 10</b>       | <b>Commission Representative Field Office</b>            | <b>PBC 03_11/24/09</b>  |
| 01 56 11              | General Dust, Fume and Odor Control                      | 01_01/21/10             |
| 01 57 15              | Integrated Pest Management                               | PBC 01_09/11/11         |
| 01 73 10              | Cutting and Patching                                     | PBC 03_07/20/09         |

**FACILITY CONSTRUCTION SUBGROUP**

**DIVISION 02 – EXISTING CONDITIONS**

| <i>Section Number</i> | <i>Section Title</i>             | <i>CPS Control Rev.</i> |
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| 02 24 00              | Environmental Assessment         | PBC 01_09/18/12         |
| 02 26 00              | Hazardous Materials Assessment   | PBC 01_09/18/12         |
| 02 41 19              | Selective Demolition             | PBC 07/31/15            |
| 02 65 00              | Underground Storage Tank Removal | PBC 07/31/15            |
| 02 87 13.13           | Archaeological Protocols         | --                      |

**DIVISION 03 – CONCRETE (NOT USED)**

**DIVISION 04 – MASONRY (NOT USED)**

**DIVISION 05 – METALS (NOT USED)**

**DIVISION 06 – WOOD, PLASTICS, AND COMPOSITES (NOT USED)**

**DIVISION 07 – THERMAL AND MOISTURE PROTECTION (NOT USED)**

**DIVISION 08 – OPENINGS (NOT USED)**

**DIVISION 09 – FINISHES (NOT USED)**

**DIVISION 10 – SPECIALTIES (NOT USED)**

**DIVISION 11 – EQUIPMENT (NOT USED)**

**DIVISION 12 – FURNISHINGS (NOT USED)**

**DIVISION 13 – SPECIAL CONSTRUCTION (NOT USED)**

**DIVISION 14 – CONVEYING EQUIPMENT (NOT USED)**

DIVISIONS 15 – 19 – RESERVED FOR FUTURE EXPANSION

**FACILITY SERVICES SUBGROUP**

DIVISION 20 – RESERVED FOR FUTURE EXPANSION

**DIVISION 21 – FIRE SUPPRESSION (NOT USED)**

**DIVISION 22 – PLUMBING**

| <i>Section Number</i> | <i>Section Title</i>                 |
|-----------------------|--------------------------------------|
| <b>22 14 26</b>       | <b>Facility Storm Sewer Drainage</b> |

*CPS Control Rev.*  
**03\_01/21/10**

**DIVISION 23 – HEATING, VENTILATING, AND AIR-CONDITIONING (HVAC) (NOT USED)**

**DIVISION 26 – ELECTRICAL (NOT USED)**

**DIVISION 27 – COMMUNICATIONS (NOT USED)**

**DIVISION 28 – ELECTRONIC SAFETY AND SECURITY (NOT USED)**

DIVISION 29 – RESERVED FOR FUTURE EXPANSION

## **SITE AND INFRASTRUCTURE SUBGROUP**

DIVISION 30 – RESERVED FOR FUTURE EXPANSION

### **DIVISION 31 – EARTHWORK**

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| 31 13 00              | Landscape Protection and Trimming  | 01_03/29/09             |
| 31 22 14              | Earthwork  | 05_01/21/10             |
| 31 23 17              | Excavating, Backfilling, and Compacting for Utilities                              | 03_06/30/08             |
| 31 23 18.13           | Soil, Fill, Backfill, CU Structural Soil, and Construction and Demo Debris Removal | 02_04/10/11             |
| 31 23 18.14           | Clean Construction or Demolition Debris Disposal                                   | 01_11/19/10             |
| 31 23 23              | Acceptance of Backfill, Topsoil, and CU Structural Soil                            | 05_01/21/10             |

### **DIVISION 32 – EXTERIOR IMPROVEMENTS**

| <i>Section Number</i> | <i>Section Title</i>            | <i>CPS Control Rev.</i> |
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| 32 12 16              | Hot Mix Asphalt Paving          | 01_11/08/10             |
| 32 13 13              | Portland Cement Concrete Paving | 02_08/17/07             |

### **DIVISION 33 – UTILITIES**

| <i>Section Number</i> | <i>Section Title</i>             | <i>CPS Control Rev.</i> |
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| 33 10 13              | Water Service                    | 03_01/21/08             |
| <del>33 41 00</del>   | <del>Sewerage and Drainage</del> |                         |

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DIVISION 34 – TRANSPORTATION (NOT USED)

DIVISION 35 – WATERWAY AND MARINE CONSTRUCTION (NOT USED)

DIVISION 36 – 39 – RESERVED FOR FUTURE EXPANSION

## **PROCESS EQUIPMENT SUBGROUP**

DIVISION 40 – PROCESS INTEGRATION (NOT USED)

DIVISION 41 – MATERIAL PROCESSING AND HANDLING EQUIPMENT (NOT USED)

DIVISION 42 – PROCESS HEATING, COOLING, AND DRYING EQUIPMENT (NOT USED)

DIVISION 43 – PROCESS GAS AND LIQUID HANDLING, PURIFICATION AND STORAGE EQUIPMENT (NOT USED)

DIVISION 44 – POLLUTION AND WASTE CONTROL EQUIPMENT (NOT USED)

DIVISION 45 – INDUSTRY-SPECIFIC MANUFACTURING EQUIPMENT (NOT USED)

DIVISION 46 – WATER AND WASTE WATER EQUIPMENT (NOT USED)

DIVISION 47 – RESERVED FOR FUTURE EXPANSION

DIVISION 48 – ELECTRICAL POWER GENERATION (NOT USED)

DIVISION 49 – RESERVED FOR FUTURE EXPANSION

**REPORTS ISSUED UNDER SEPARATE COVER**

**OWNER REPORTS**

|   |                    |
|---|--------------------|
| 1: GEOPHYSICAL SURVEY REPORT                          | February 2017      |
| 2: PHASE I ENVIRONMENTAL SITE ASSESSMENT – NORTHEAST  | February 2017      |
| 3: PHASE I ENVIRONMENTAL SITE ASSESSMENT – SOUTHWEST  | February 2017      |
| 4: PRELIMINARY GEOTECHNICAL REPORT                    | February 2017      |
| 5: PHASE II ENVIRONMENTAL SITE ASSESSMENT – NORTHEAST | March 2017         |
| 6: PHASE II ENVIRONMENTAL SITE ASSESSMENT – SOUTHWEST | March 2017         |
| 7: GEOTECHNICAL INVESTIGATION REPORT                  | March 2017         |
| 8: EXPLORATORY TEST PIT SUMMARY REPORT                | March 2017         |
| 9: COMPREHENSIVE SIR ROR RAP NE PARCEL                | July 2017          |
| 10: COMPREHENSIVE SIR ROR RAP SW PARCEL               | July 2017          |
| 11: ASBESTOS SURVEY REPORT: UTILITY TUNNELS           | July 2017          |
| 12: ASBESTOS SURVEY REPORT: FOUNDATION PADS           | August 2017        |
| 13: ASBESTOS SURVEY REPORT: STEAM PIPES               | September 14, 2017 |

**ADDITIONAL REPORTS:**

|  |                        |
|--|------------------------|
| 14: ARCHAEOLOGICAL WEEKLY DIG REPORTS                        | August -September 2017 |
| 15: ARCHAEOLOGICAL INVESTIGATIONS                            | September 2017         |
| 16: TRAFFIC IMPACT STUDY –PROPOSED MIDDLE SCHOOL DEVELOPMENT | September 2017         |

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## SECTION 01 50 05

### TEMPORARY FACILITIES AND CONTROLS

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. Section includes requirements for temporary facilities and controls, including temporary utilities, support facilities, and security and protection facilities.
- B. Temporary utilities include, but are not limited to, the following:
  - 1. Sewers and drainage.
  - 2. Water service and distribution.
  - 3. Sanitary facilities, including toilets, wash facilities, and drinking-water facilities.
  - 4. Heating and cooling facilities.
  - 5. Ventilation.
  - 6. Electric power service.
  - 7. Lighting.
  - 8. Telephone service.
- C. Support facilities include, but are not limited to, the following:
  - 1. Temporary roads and paving.
  - 2. Dewatering facilities and drains.
  - 3. Project identification and temporary signs.
  - 4. Waste disposal facilities.
  - 5. Field offices.
  - 6. Storage and fabrication sheds.
  - 7. Lifts and hoists.
  - 8. Construction aids and miscellaneous services and facilities.
- D. Security and protection facilities include, but are not limited to, the following:
  - 1. Environmental protection.
  - 2. Stormwater control.
  - 3. Tree and plant protection.
  - 4. Pest control.
  - 5. Site enclosure fence.
  - 6. Security enclosure and lockup.
  - 7. Barricades, warning signs, and lights.
  - 8. Covered walkways.
  - 9. Temporary enclosures.



## 1.2 DEFINITIONS

- A. Permanent Enclosure: As determined by Architect, permanent or temporary roofing is complete, insulated, and weathertight; exterior walls are insulated and weathertight; and all openings are closed with permanent construction or substantial temporary closures.

## 1.3 USE CHARGES

- A. General: Cost or use charges for temporary facilities are not chargeable to the Commission or Architect and shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, the following:
  - 1. The Commission's construction forces.
  - 2. Occupants of Project.
  - 3. Architect.
  - 4. Testing agencies.
  - 5. Personnel of authorities having jurisdiction.
- B. Sewer Service: Pay sewer service use charges for sewer usage, by all parties engaged in construction, at Project site.
- C. Water Service: Pay water service use charges, whether metered or otherwise, for water used by all entities engaged in construction activities at Project site.
- D. Electric Power Service: Pay electric power service use charges, whether metered or otherwise, for electricity used by all entities engaged in construction activities at Project site.

## 1.1 SUBMITTALS

- E. Temporary Utility Reports: Submit reports of tests, inspections, meter readings, and similar procedures performed on temporary utilities.
- F. Implementation and Termination Schedule: Within 15 days of date established for submittal of Contractor's Construction Schedule, submit a schedule indicating implementation and termination of each temporary utility.

## 1.4 QUALITY ASSURANCE

- A. Standards: Comply with ANSI A10.6, NECA's "Temporary Electrical Facilities," and NFPA 241.
  - 1. Trade Jurisdictions: Assigned responsibilities for installation and operation of temporary utilities are not intended to interfere with trade regulations and union jurisdictions.
  - 2. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

## 1.5 PROJECT CONDITIONS

- A. Temporary Utilities: At earliest feasible time, when acceptable to the Commission, change over from use of temporary service to use of permanent service.
  - 1. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before the Commission's acceptance, regardless of previously assigned responsibilities.
- B. Conditions of Use: The following conditions apply to use of temporary services and facilities by all parties engaged in the Work:
  - 1. Keep temporary services and facilities clean and neat.
  - 2. Relocate temporary services and facilities as required by progress of the Work.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. General: Provide new materials. Undamaged, previously used materials in serviceable condition may be used if approved by Architect. Provide materials suitable for use intended.
- B. Chain-Link Fencing: Minimum 2-inch, 0.148-inch thick, galvanized steel, chain-link fabric fencing; minimum 8 feet high with galvanized steel pipe posts; minimum 2-3/8-inch- OD line posts and 2-7/8-inch-OD corner and pull posts, with 1-5/8-inch-OD top rails.
- C. Water: Potable.

### 2.2 EQUIPMENT

- A. General: Provide equipment suitable for use intended.
- B. Field Offices: Mobile units with lockable entrances, operable windows, and serviceable finishes; heated and air conditioned; on foundations adequate for normal loading
- C. Fire Extinguishers: Hand carried, portable, UL rated. Provide class and extinguishing agent as indicated or a combination of extinguishers of NFPA-recommended classes for exposures.
  - 1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.
- D. Self-Contained Toilet Units: Single-occupant units of chemical, aerated recirculation, or combustion type; vented; fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.
- E. Drinking-Water Fixtures: [Containerized, tap-dispenser, bottled-water drinking-water units], including paper cup supply.
  - 1. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45 to 55 deg F.

- F. Heating Equipment: Unless the Commission authorizes use of permanent heating system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
  - 1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
  - 2. Heating Units: Listed and labeled, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use for type of fuel being consumed.
- G. Electrical Outlets: Properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-V plugs into higher-voltage outlets; equipped with ground-fault circuit interrupters, reset button, and pilot light.
- H. Power Distribution System Circuits: Where permitted and overhead and exposed for surveillance, wiring circuits, not exceeding 125-V ac, 20-A rating, and lighting circuits may be nonmetallic sheathed cable.

### **PART 3 - EXECUTION**

#### **3.1 INSTALLATION, GENERAL**

- A. Locate facilities where they shall serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
- B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

#### **3.2 TEMPORARY UTILITY INSTALLATION**

- A. General: Engage appropriate local utility company to install temporary service or connect to existing service. Where utility company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with utility company recommendations.
  - 1. Arrange with utility company, the Commission, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
  - 2. Provide adequate capacity at each stage of construction. Before temporary utility is available, provide trucked-in services.
  - 3. Obtain easements to bring temporary utilities to Project site where the Commission's easements cannot be used for that purpose.
- B. Sewers and Drainage: If sewers are available, provide temporary connections to remove effluent that can be discharged lawfully. If sewers are not available or cannot be used, provide drainage ditches, dry wells, stabilization ponds, and similar facilities. If neither sewers nor drainage facilities can be lawfully used for discharge of effluent, provide containers to remove and dispose of effluent off-site in a lawful manner.
  - 1. Filter out excessive soil, construction debris, chemicals, oils, and similar contaminants that might clog sewers or pollute waterways before discharge.

2. Connect temporary sewers to municipal system as directed by sewer department officials.
  3. Maintain temporary sewers and drainage facilities in a clean, sanitary condition. After heavy use, restore normal conditions promptly.
  4. Provide temporary filter beds, settlement tanks, separators, and similar devices to purify effluent to levels acceptable to authorities having jurisdiction.
- C. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction until permanent water service is in use. Sterilize temporary water piping before use.
- D. Water Service: Use of the Commission's existing water service facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to the Commission. At Substantial Completion, restore these facilities to condition existing before initial use.
1. Provide rubber hoses as necessary to serve Project site.
  2. As soon as water is required at each level, extend service to form a temporary water- and fire-protection standpipe. Provide distribution piping. Space outlets so water can be reached with a 100-foot hose. Provide one hose at each outlet.
  3. Where installations below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize water damage. Drain accumulated water promptly from pans.
  4. Provide pumps to supply a minimum of 30-psi static pressure at highest point. Equip pumps with surge and storage tanks and automatic controls to supply water uniformly at reasonable pressures.
- E. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking-water fixtures. Comply with regulations and health codes for type, number, location, operation, and maintenance of fixtures and facilities.
1. Disposable Supplies: Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Maintain adequate supply. Provide covered waste containers for disposal of used material.
  2. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy. [Provide separate facilities for male and female personnel.] Provide lavatories, mirrors, urinals, and water closets. Provide only potable-water connections. Provide individual compartments for water closets. Provide suitable enclosure with nonabsorbent sanitary finish materials and adequate heat, ventilation, and lighting.
  3. Wash Facilities: Install wash facilities supplied with potable water at convenient locations for personnel who handle materials that require wash up. Dispose of drainage properly. Supply cleaning compounds appropriate for each type of material handled.
    - a. Provide safety showers, eyewash fountains, and similar facilities for convenience, safety, and sanitation of personnel.
  4. Drinking-Water Facilities: Provide bottled-water, drinking-water units.
    - a. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45 to 55 deg F.
  5. Locate toilets and drinking-water fixtures so personnel need not walk more than 200 feet horizontally to facilities.

- F. **Heating and Cooling:** Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment from that specified that shall not have a harmful effect on completed installations or elements being installed.
1. Maintain a minimum temperature of 50 deg F in permanently enclosed portions of building for normal construction activities, and 65 deg F for finishing activities and areas where finished Work has been installed.
- G. **Ventilation and Humidity Control:** Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment from that specified that shall not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.
- H. **Electric Power Service:** Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload-protected disconnecting means, automatic ground-fault interrupters, and main distribution switchgear.
1. Install electric power service underground, unless overhead service must be used.
  2. Install power distribution wiring overhead and rise vertically where least exposed to damage.
  3. Connect temporary service to the Commission's existing power source, as directed by electric company officials.
- I. **Electric Distribution:** Provide receptacle outlets adequate for connection of power tools and equipment.
1. Provide waterproof connectors to connect separate lengths of electrical power cords if single lengths shall not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.
  2. Provide warning signs at power outlets other than 110 to 120 V.
  3. Provide metal conduit, tubing, or metallic cable for wiring exposed to possible damage. Provide rigid steel conduits for wiring exposed on grades, floors, decks, or other traffic areas.
  4. Provide metal conduit enclosures or boxes for wiring devices.
  5. Provide 4-gang outlets, spaced so 100-foot extension cord can reach each area for power hand tools and task lighting. Provide a separate 125-V ac, 20-A circuit for each outlet.
- J. **Lighting:** Provide temporary lighting with local switching that provides adequate illumination for construction operations and traffic conditions.
1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
  2. Provide one 100-W incandescent lamp per 500 sq. ft., uniformly distributed, for general lighting, or equivalent illumination.
  3. Provide one 100-W incandescent lamp every 50 feet in traffic areas.
  4. Provide one 100-W incandescent lamp per story in stairways and ladder runs, located to illuminate each landing and flight.

5. Install exterior-yard site lighting that shall provide adequate illumination for construction operations, traffic conditions, and signage visibility when the Work is being performed.
  6. Install lighting for Project identification sign.
- K. Telephone Service: Provide temporary telephone service throughout construction period for common-use facilities used by all personnel engaged in construction activities. Install separate telephone line for each field office and first-aid station.
1. Provide additional telephone lines for the following:
    - a. In field office with more than two occupants, install a telephone for each additional occupant or pair of occupants.
    - b. Provide a dedicated telephone line for each facsimile machine and computer with modem in each field office.
  2. At each telephone, post a list of important telephone numbers.
    - a. Police and fire departments.
    - b. Ambulance service.
    - c. Contractor's home office.
    - d. Architect's office.
    - e. Engineers' offices.
    - f. The Commission's office.
    - g. Principal subcontractors' field and home offices.
  3. Provide voice-mail service on superintendent's telephone.
  4. Provide a portable cellular telephone for superintendent's use in making and receiving telephone calls when away from field office.

### 3.3 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
1. Locate field offices, storage sheds, sanitary facilities, and other temporary construction and support facilities for easy access.
  2. Provide incombustible construction for offices, shops, and sheds located within construction area or within 30 feet of building lines. Comply with NFPA 241.
  3. Maintain support facilities until near Substantial Completion. Remove before Substantial Completion.
- B. Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate to support loads and to withstand exposure to traffic during construction period. Locate temporary roads and paved areas within construction limits indicated on Drawings.
1. Provide a reasonably level, graded, well-drained subgrade of satisfactory soil material, compacted to not less than 95 percent of maximum dry density in the top 6 inches.
  2. Provide gravel paving course of subbase material not less than 3 inches thick; roller compacted to a level, smooth, dense surface.
  3. Provide dust-control treatment that is nonpolluting and nontracking. Reapply treatment as required to minimize dust.

- C. **Traffic Controls:** Provide temporary traffic controls at junction of temporary roads with public roads. Include warning signs for public traffic and "STOP" signs for entrance onto public roads. Comply with requirements of authorities having jurisdiction.
- D. **Dewatering Facilities and Drains:** Comply with requirements in applicable Division 02 Sections for temporary drainage and dewatering facilities and operations not directly associated with construction activities included in individual Sections. Where feasible, use same facilities. Maintain Project site, excavations, and construction free of water.
  - 1. Dispose of rainwater in a lawful manner that shall not result in flooding Project or adjoining property nor endanger permanent Work or temporary facilities.
  - 2. Before connection and operation of permanent drainage piping system, provide temporary drainage where roofing or similar waterproof deck construction is completed.
  - 3. Remove snow and ice as required to minimize accumulations.
- E. **Project Identification and Temporary Signs:** Prepare Project identification and other signs in sizes indicated. Install signs where indicated to inform public and persons seeking entrance to Project. Do not permit installation of unauthorized signs.
  - 1. Prepare temporary signs to provide directional information to construction personnel and visitors.
  - 2. Construct signs of exterior-type Grade B-B high-density concrete form overlay plywood in sizes and thicknesses indicated. Support on posts or framing of preservative-treated wood or steel.
  - 3. Paint sign panel and applied graphics with exterior-grade alkyd gloss enamel over exterior primer.
- F. **Waste Disposal Facilities:** Provide waste-collection containers in sizes adequate to handle waste from construction operations. Containerize and clearly label hazardous, dangerous, or unsanitary waste materials separately from other waste.
  - 1. If required by authorities having jurisdiction, provide separate containers, clearly labeled, for each type of waste material to be deposited.
  - 2. Develop a waste management plan for Work performed on Project. Indicate types of waste materials Project shall produce and estimate quantities of each type. Provide detailed information for on-site waste storage and separation of recyclable materials. Provide information on destination of each type of waste material and means to be used to dispose of all waste materials.
- G. **Janitorial Services:** Provide janitorial services on a daily basis for temporary offices, first-aid stations, toilets, wash facilities, lunchrooms, and similar areas.
- H. **Common-Use Field Office:** Provide an insulated, weathertight, air-conditioned field office for use as a common facility by all personnel engaged in construction activities; of sufficient size to accommodate required office personnel and meetings of ten (10) persons at Project site. Keep office clean and orderly.
  - 1. Furnish and equip offices as follows:
    - a. Desk and four chairs, four-drawer file cabinet, a plan table, a plan rack, and bookcase.

- b. Water cooler and private toilet complete with water closet, lavatory, and medicine cabinet with mirror.
  - c. Coffee machine and supplies, including regular and decaffeinated coffee, filters, cups, stirring sticks, creamer, sugar, and sugar substitute.
  - d. Provide a room of not less than 240 sq. ft. for Project meetings. Furnish room with conference table, twelve (12) folding chairs, and 4-foot- square tack Commission.
2. Provide an electric heater with thermostat capable of maintaining a uniform indoor temperature of 68 deg F. Provide an air-conditioning unit capable of maintaining an indoor temperature of 72 deg F.
  3. Provide fluorescent light fixtures capable of maintaining average illumination of 20 fc at desk height. Provide 110- to 120-V duplex outlets spaced at not more than 12-foot intervals, 1 per wall in each room.

### 3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects. Avoid using tools and equipment that produce harmful noise. Restrict use of noisemaking tools and equipment to hours that shall minimize complaints from persons or firms near Project site.
- B. Stormwater Control: Provide earthen embankments and similar barriers in and around excavations and subgrade construction, sufficient to prevent flooding by runoff of stormwater from heavy rains.
- C. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from construction damage. Protect tree root systems from damage, flooding, and erosion.
- D. Tree and Plant Protection: Comply with requirements in Division 31 Section "Landscape Protection and Trimming."
- E. Pest Control: Before deep foundation work has been completed, retain a local exterminator or pest-control company to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests. Engage this pest-control service to perform extermination and control procedures at regular intervals so Project shall be free of pests and their residues at Substantial Completion. Obtain extended warranty for the Commission. Perform control operations lawfully, using environmentally safe materials.
- F. Site Enclosure Fence: Before construction operations begin, install chain-link enclosure fence with lockable entrance gates. Locate where indicated, or enclose entire Project site or portion determined sufficient to accommodate construction operations. Install in a manner that shall prevent people, dogs, and other animals from easily entering site except by entrance gates.
  1. Set fence posts in compacted mixture of gravel and earth.
  2. Provide gates in sizes and at locations necessary to accommodate delivery vehicles and other construction operations.



3. Maintain security by limiting number of keys and restricting distribution to authorized personnel. [Provide the Commission with one set of keys.]
- G. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.
- H. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erecting structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and public of possible hazard. Where appropriate and needed, provide lighting, including flashing red or amber lights.
  1. For safety barriers, sidewalk bridges, and similar uses, provide minimum 5/8-inch- thick exterior plywood.

### 3.5 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage caused by freezing temperatures and similar elements.
  1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
  2. Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.
- C. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
  1. Materials and facilities that constitute temporary facilities are the property of Contractor. The Commission reserves right to take possession of Project identification signs.
  2. Remove temporary paving not intended for or acceptable for integration into permanent paving. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.

**END OF SECTION**

## SECTION 01 50 10

### COMMISSION REPRESENTATIVE FIELD OFFICE

#### PART 1 GENERAL

##### 1.1 RELATED DOCUMENTS

###### A. Drawings

##### 1.2 COMMISSION REPRESENTATIVE'S FIELD OFFICE

- A. Furnish, erect and maintain a clean, weather-tight office at the site of the Work for the duration of the Contract, through final completion, for the sole and exclusive use of the Commission. No on-site Work may commence until the Commission Representative's Field Office required by this Subsection is in place, fully functional and approved by the Commission. The proposed location of the Commission Representative's Field Office and the pedestrian gate for access to the fenced site is indicated on the Drawings.
- B. Provide the Commission Representative's Field Office and toilet entirely separate from, unconnected to, and not to be shared with the Contractor's Field Office.
- C. Provide the Commission Representative's Field Office not less than 600 square feet in area and with a ceiling not less than 7 feet high with a minimum of two private offices and one common area, and integral toilet. The two private offices and common area shall be equipped with minimum of (4) 110-120v 20amp 3-prong grounded duplex receptacles each section, equally distributed across (2) power circuits each section. The field office shall be equipped with a minimum of 100 amp electrical service. The field office shall be painted, heated, air-conditioned, lighted, provided with lockable windows with blinds or shades that operate, and doors with cylinder locks and deadbolt locks. Enclose the air space beneath the trailer with exterior grade plywood panel siding painted to match office exterior. Provide hinged access doors at utility connection area. Provide fully accessible stair / ramp access with handrails per code requirements.
- D. Provide weekly janitorial service for the Commission Representative's Field Office and toilet.
- E. Pay all expenses in connection with the Commission Representative's Field Office, including but not limited to, the installation and use of telephone / data service, heat, air-conditioning, light, water, sewerage, janitorial services, equipment, set up and take down. Contractor will provide all paper, toner, etc. for printers. HVAC filters shall be replaced every month.
- F. Furnish the following equipment and furniture.
  - 1. (4) - 60" x 30" desks with two 2 drawer (one file and one miscellaneous) pedestal file cabinets and 4 nonfolding chairs with upholstered seat and back.

2. (4) - 2 drawer lateral file cabinets.
3. (1) - layout table with minimum top size of 36" x 48". An adjustable height drafting stool with upholstered seat and back shall be provided.
4. (2) - 8' x 3' conference tables and 20 folding chairs.
5. (1) - equipment cabinet with lock of minimum inside dimensions of 44" high x 24" wide x 30" deep. The walls shall be of steel with a 3/32" minimum thickness with concealed hinges and enclosed lock constructed to prevent entry by force.
6. At each desk and center conference table, provide one 2- line phone.
7. (4) - wall mounted mail holders
8. (1) - first aid cabinet fully equipped and maintained on monthly basis.
9. (1) - 5 gallon hot and cold water dispenser with cup dispenser, cups and bottled drinking water supply service.
10. Central heating and air conditioning appropriate to trailer size and construction per ASHRAE 90.1 efficiency requirement.
11. (1) - 6 cubic feet refrigerator with freezer compartment.
12. (1) - plan rack with (12) 42" capacity hanging clamps.
13. (1) - fire extinguisher.
14. (1) - digital camera (minimum 6.0 mega-pixel capability) with software and cables. Include rechargeable batteries and battery charger compatible with the type used in camera.
15. Printer: Provide a multifunction color printer (fax, copy, scan and print) the latest version with toner cartridges, paper, and a maintenance service contract for the duration of project.
  - a. Canon Color Laser Multifunction ImageCLASS C5000-Series or equal (Dual Tray - 8-1/2" x 11" and 11" x 17" format) with scanning capability (PDF format)
  - b. Provide initial spare toner cartridge.
16. Network: Network the owner's computers together with the modem to provide peer-to-peer communication and Internet access from any computer. Network the printer to the workstations to enable printing directly from any workstation.
17. Provide separate full service telephone lines with local and long distance access for each of the following:

- (2) Voice Telephone
- (1) FAX line
- (1) Computer DSL line

18. Internet Access: Provide an unlimited DSL Internet access account to achieve a minimum of 6MB per second with all associated equipment, drops, patch cords, power cords, etc and an Internet Service Provider for the duration of the Project with at least one active e-mail account.

G. The Commission Representative's field office and all furnishing and equipment will remain the property of the Contractor at the completion of the Project.

H. Submit five (5) copies of the site field office layout plan required for approval by the Architect and Commission Representative.

### 1.3 SUBMITTALS

A. Unless provided for elsewhere in the contract documents, prior to any onsite work, the Contractor is to prepare and submit to the Architect for approval the Commission Representative's Site Field Office Location Plan showing field offices and related temporary support facilities. If requested by the Contractor, a preliminary meeting to review site elements and construction operations including trailer and gates location with the Architect and Commission Representative prior to submission of the Plan will be held.

B. The Site Field Office Location Plan shall be provided on 11"x17" size and shall at a minimum include the following elements:

- a. Title block information including at minimum Project Name, Address, Contract Number, Contractor, Owner, Architect Names, Date, Title, Scale.
- b. Building footprint(s) of both new and existing buildings, trees, landscaping, paving, roads, public streets, north arrow, other important site features, limits of construction, construction fencing, areas allowed for construction personnel parking, material storage and staging, other temporary construction trailer(s), site access gates, all temporary exits and path of travel to scale.

## PART 2 PRODUCTS

2.1 Provide new materials and equipment. Undamaged, previously used materials and equipment in serviceable condition may be used if approved by Architect. Provide materials suitable for use intended.

**PART 3 EXECUTION**

- 3.2 The proposed location of the Commission Representatives field office and the pedestrian gate for access to the fenced site is indicated on the drawings.
- 3.3 Locate field office for easy and safe access.
- 3.4 Maintain support facilities until near substantial completion or as directed by Architect and Commission Representative.
- 3.5 Construct and maintain safe temporary walkways to office trailers and sanitary facilities.

**END OF SECTION**

## **SECTION 22 14 26**

### **FACILITY STORM SEWER DRAINAGE**

#### **PART 1 - GENERAL**

##### **1.1 SUMMARY**

- A. Section includes furnishing all labor, materials, tools, and equipment required to install the storm sewer systems as established by the Contractor in continuity to the plans and specification for the complete system. The work shall include but is not limited to excavation for sewer pipes and structures, sewer pipe and structure installation, backfilling trenches, and testing of the complete systems as required.

##### **1.2 RELATED SECTIONS**

- A. Section 22 14 13 Storm Drainage Piping
- B. Section 31 23 17 Excavating, Backfilling and Compacting for Utilities
- C. Section 31 22 14 Earthwork
- D. Section 31 23 18.13 Soil, Fill, Backfill, CU Structural Soil & Construction & Demo Debris Removal
- E. Section 31 23 23 Acceptance of "Backfill, Top Soil & CU Structural Soil"

##### **1.3 DEFINITIONS:**

- A. Drainage Piping: System of sewer pipe, fittings, and appurtenances for gravity flow of storm drainage.
- B. Sewerage Piping: System of sewer pipe, fittings, and appurtenances for gravity flow of sanitary sewage.

##### **1.4 SUBMITTALS**

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 01 Section "Submittal Procedures."
- B. Shop drawings for precast concrete manholes and other structures. Include frames, covers, and grates.
- C. Inspection and test reports specified in the "Field Quality Control" Article.

##### **1.5 QUALITY ASSURANCE**

- A. Environmental Agency Compliance: Comply with regulations pertaining to sanitary sewerage and storm drainage systems.

- B. Utility Compliance: Comply with regulations pertaining to sanitary sewerage and storm drainage systems. Include standards of water and other utilities where appropriate.
- C. Product Options: Drawings indicate sizes, profiles, connections, and dimensional requirements of system components and are based on specific manufacturer types indicated. Other manufacturers' products with equal performance characteristics may be considered. Refer to Division 01 Section "Product Substitutions."

#### 1.6 PERFORMANCE REQUIREMENTS

- A. Gravity-Flow, Nonpressure-Piping Pressure Ratings: At least equal to system test pressure.

#### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Protect pipe, pipe fittings, and seals from dirt and damage.
- B. Handle precast concrete manholes and other structures according to manufacturer's rigging instructions.

#### 1.8 PROJECT CONDITIONS

- A. Site Information: Perform site survey, research public utility records, and verify existing utility locations.
- B. Existing Utilities: Do not interrupt existing utilities serving facilities occupied by the Owner or others except when permitted under the following conditions and then only after arranging to provide acceptable temporary utility services.
  - 1. Notify Architect not less than 48 hours in advance of proposed utility interruptions.
  - 2. Do not proceed with utility interruptions without receiving Architect's written permission.

#### 1.9 SEQUENCING AND SCHEDULING

- A. Coordinate with interior building drainage systems.
- B. Coordinate with other utility work.

### **PART 2 - PRODUCTS**

#### 2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements of Division 01 Sections.

#### 2.2 PIPES AND FITTINGS

- A. Vitrified Clay Pipe (VCP) and Fittings: Extra strength and fittings ASTM C700-88, Compression - Type Gasket and Gasketed Joints ASTM C425-86.
- B. Push-on-Joint, Ductile-Iron Pipe: AWWA C151, with push-on-joint bell and plain spigot end, unless grooved or flanged ends are indicated.

1. Push-on-Joint, Ductile-Iron Fittings: AWWA C110, ductile- or gray-iron standard pattern or AWWA C153, ductile-iron compact pattern.
2. Gaskets: AWWA C111, rubber.

C. Reinforced Concrete Sewer Pipe and Fittings: ASTM C 76

1. Pipe: ASTM C 76, Class III or Class IV as shown on the Drawings, Wall B, with bell and spigot or tongue and groove (elliptical pipe) ends.
2. Joints: Gasketed joints with ASTM C 443, rubber gaskets.
3. Gaskets: ASTM C 443 "O" ring rubber gasket.

## 2.3 MANHOLES

A. Precast Concrete Manholes: ASTM C 478 (ASTM C 478M), precast, reinforced concrete, of depth indicated, with provision for rubber gasket joints.

1. Ballast: Increase thickness of precast concrete sections or add concrete to base section, as required to prevent floatation.
2. Base Section: 6-inch (150-mm) minimum thickness for floor slab and 4-inch (100-mm) minimum thickness for walls and base riser section, and having a separate base slab or base section with integral floor.
3. Riser Sections: 4-inch (100-mm) minimum thickness, 48-inch (1220-mm) diameter, and lengths to provide depth indicated.
4. Top Section: Eccentric cone type, unless concentric cone or flat-slab-top type is indicated. Top of cone of size that matches grade rings.
5. Gaskets: ASTM C 443 (ASTM C 443M), rubber.
6. Grade Rings: Include 2 or 3 reinforced-concrete rings, of 6- to 9-inch (152- to 229-mm) total thickness, that match a 24-inch- (610-mm-) diameter frame and cover.
7. Steps: ASTM C 478 (ASTM C 478M) individual steps or ladder. Omit steps for manholes less than 60 inches (1500 mm) deep.
8. Pipe Connectors: ASTM C 923 (ASTM C 923M), resilient, of size required, for each pipe connecting to base section.

B. Manhole Frames and Covers: ASTM A-48, Class 35B, cast gray iron and per current city code. Include indented top design with lettering cast into cover:

1. Sanitary Sewerage Piping Systems: Raised flush letters per current city code.
2. Storm Drainage Piping Systems: Raised flush letters per current city code.

## 2.4 CATCH BASINS

A. Precast Concrete Catch Basins: ASTM C 478 (ASTM C 478M), precast, reinforced concrete, of depth indicated, with provision for rubber gasket joints.

1. Base Section: 6-inch (150-mm) minimum thickness for floor slab and 4-inch (100-mm) minimum thickness for walls and base riser section, and having a separate base slab or base section with integral floor.
2. Riser Sections: 4-inch (100-mm) minimum thickness; 48-inch (1220-mm) diameter, and lengths to provide depth indicated.
3. Top Section: Eccentric cone type, unless concentric cone or flat-slab-top type is indicated. Top of cone of size that matches grade rings.



4. Gaskets: ASTM C 443 (ASTM C 443M), rubber.
5. Grade Rings: Include 2 or 3 reinforced-concrete rings, of 6- to 9-inch (152- to 229-mm) total thickness, that match a 24-inch- (610-mm-) diameter frame and grate.
6. Steps: ASTM C 478 (ASTM C 478M) individual steps or ladder. Omit steps for catch basins less than 60 inches (1500 mm) deep.
7. Pipe Connectors: ASTM C 923 (ASTM C 923M), resilient, of size required, for each pipe connecting to base section.

B. Frames and Grates: ASTM A-48, cast gray iron per current city code. Include indented top design with lettering cast into cover:

1. Sanitary Sewerage Piping Systems: Raised flush letters per current city code.
2. Storm Drainage Piping Systems: Raised flush letters per current city code.

## 2.5 CONCRETE

A. General: Cast-in-place concrete according to ACI 318, ACI 350R, and the following:

1. Cement: ASTM C 150, Type II.
2. Fine Aggregate: ASTM C 33, sand.
3. Coarse Aggregate: ASTM C 33, crushed gravel.
4. Water: Potable.

B. Structures: Portland-cement design mix, 4000 psi (27.6 MPa) minimum, with 0.45 maximum water-cement ratio.

1. Reinforcement Fabric: ASTM A 185, steel, welded wire fabric, plain.
2. Reinforcement Bars: ASTM A 615, Grade 60 (ASTM A 615M, Grade 400), deformed steel.

## 2.6 PROTECTIVE COATINGS

A. General: Include factory- or field-applied protective coatings to structures and appurtenances according to the following:

B. Coating: 1- or 2-coat, coal-tar epoxy, 15-mil (0.381-mm) minimum thickness, except where otherwise indicated.

1. Manholes: On exterior and interior surfaces.
2. Manhole Frames and Covers: On interior surfaces.
3. Catch Basins: On exterior and interior surfaces.
4. Catch Basin Frames and Grates: On interior surfaces.

## PART 3 - EXECUTION

### 3.1 EARTHWORK

A. Excavating, trenching, and backfilling are specified in Division 31 Section "Excavating, Backfilling, and Compacting for Utilities."

### 3.2 IDENTIFICATION

- A. Install green warning tapes directly over piping and at outside edges of underground structures.
  - 1. Use warning tapes or detectable warning tape over ferrous piping.
  - 2. Use detectable warning tape over nonferrous piping and over edges of underground structures.

### 3.3 SEWERAGE PIPING APPLICATIONS

- A. General: Include watertight joints.
- B. Refer to Part 2 of this Section for detailed specifications for pipe and fitting products listed below. Use pipe, fittings, and joining methods according to the following applications.
  - 1. Pipe Size 6 and 10 Inches (150 and 250 mm): Hub-and spigot, extra strength vitrified clay pipe, and fittings; compression type gaskets; and gasketed joints for pipe outside of buildings or structures
  - 2. Push-on-Joint, Ductile-Iron Pipe: AWWA C151, with push-on-joint bell and plain spigot end for pipe below buildings or structures.

### 3.4 INSTALLATION, GENERAL

- A. General Locations and Arrangements: Drawings (plans and details) indicate the general location and arrangement of underground sewerage and drainage systems piping. Location and arrangement of piping layout take into account many design considerations. Install piping as indicated, to extent practical.
- B. Install piping beginning at low point of systems, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings according to manufacturer's recommendations for use of lubricants, cements, and other installation requirements. Maintain swab or drag in line and pull past each joint as it is completed.
- C. Install gravity-flow-systems piping at constant slope between points and elevations indicated. Install straight piping runs at constant slope, not less than that specified, where slope is not indicated.
- D. Extend piping and connect to building's drains, of sizes and in locations indicated. Terminate piping as indicated.
- E. Install piping pitched down in direction of flow, at minimum slope of 1 percent (1:100) and 36-inch (1000-mm) minimum cover, except where otherwise indicated.

### 3.5 PIPE JOINT CONSTRUCTION AND INSTALLATION

- A. General: Join and install pipe and fittings according to the following.
  - 1. Hub-and-Spigot, Vitrified Clay Pipe and Fittings: With rubber compression gaskets according to ASTM C12-86. Use gaskets that match class of pipe and fittings.

### 3.6 MANHOLE INSTALLATION

- A. General: Install manholes, complete with accessories, as indicated.
- B. Set tops of frames and covers flush with finished surface where manholes occur in pavements. Set tops 3 inches (76 mm) above finished surface elsewhere, except where otherwise indicated.
- C. Place precast concrete manhole sections as indicated, and install according to ASTM C 891.
  - 1. Provide rubber joint gasket complying with ASTM C 443 (ASTM C 443M), at joints of sections.
  - 2. Apply bituminous mastic coating at joints of sections.

### 3.7 CATCH BASIN INSTALLATION

- A. Construct catch basins to sizes and shapes indicated.
- B. Set frames and grates to elevations indicated.

### 3.8 TAP CONNECTIONS

- A. Make connections to existing piping and underground structures so finished work conforms as nearly as practical to requirements specified for new work.
- B. Use commercially manufactured wye fittings for piping branch connections. Remove section of existing pipe, install wye fitting into existing piping, and encase entire wye fitting plus 6-inch (150-mm) overlap, with not less than 6 inches (150 mm) of 3000-psi (20.7-MPa), 28-day, compressive-strength concrete.
- C. Make branch connections from side into existing piping, sizes 4 to 20 inches (100 to 500 mm) by removing a section of existing pipe and installing a wye fitting into existing piping. Encase entire wye with not less than 6 inches (150 mm) of 3000-psi (20.7-MPa), 28-day, compressive-strength concrete.
  - 1. Use concrete that shall attain a minimum 28-day compressive strength of 3000 psi (20.7 MPa), unless otherwise indicated.
  - 2. Use epoxy bonding compound as an interface between new and existing concrete and piping materials.
- D. Protect existing piping and structures to prevent concrete or debris from entering while making tap connections. Remove debris or other extraneous material that may accumulate.

### 3.9 FIELD QUALITY CONTROL

- A. Clear interior of piping and structures of dirt and superfluous material as the work progresses. Maintain swab or drag in piping and pull past each joint as it is completed.
  - 1. In large, accessible piping, brushes and brooms may be used for cleaning.
  - 2. Place plug in end of incomplete piping at end of day and whenever work stops.
  - 3. Flush piping between manholes and other structures, if required by authorities having jurisdiction, to remove collected debris.

- B. Inspect interior of piping to determine whether line displacement or other damage has occurred. Inspect after approximately 24 inches (600 mm) of backfill is in place, and again at completion of the Project.
1. Submit separate reports for each system inspection.
  2. Defects requiring correction include the following:
    - a. Alignment: Less than full diameter of inside of pipe is visual between structures.
    - b. Deflection: Flexible piping with deflection that prevents passage of a ball or cylinder of a size not less than 92.5 percent of piping diameter.
    - c. Crushed, broken, cracked, or otherwise damaged piping.
    - d. Infiltration: Water leakage into piping.
    - e. Exfiltration: Water leakage from or around piping.
  3. Replace defective piping using new materials and repeat inspections until defects are within allowances specified.
  4. Reinspect and repeat procedure until results are satisfactory.
- C. Test new piping systems and parts of existing systems that have been altered, extended, or repaired for leaks and defects.
1. Do not enclose, cover, or put into service before inspection and approval.
  2. Test completed piping systems according to authorities having jurisdiction.
  3. Schedule tests, and their inspections by authorities having jurisdiction, with at least 24 hours' advance notice.
  4. Submit separate reports for each test.
  5. Where authorities having jurisdiction do not have published procedures, perform tests as follows:
    - a. Sanitary Sewerage: Perform hydrostatic test.
      - 1) Allowable leakage is a maximum of 50 gallons per inch nominal pipe size, for every mile of pipe, during a 24-hour period.
      - 2) Allowable leakage is a maximum of 4.6 L per mm dimension nominal pipe size, for every km of pipe, during a 24-hour period.
      - 3) Close openings in system and fill with water.
      - 4) Purge air and refill with water.
      - 5) Disconnect water supply.
      - 6) Test and inspect joints for leaks.
      - 7) Option: Test ductile-iron piping according to AWWA C600, Section 4 "Hydrostatic Testing." Use test pressure of at least 10 psig (69.0 kPa).
    - b. Sanitary Sewerage: Perform air test according to UNI-B-6.
      - 1) Option: Test Poly Vinyl Chloride (PVC) according to ASTM-D1785-86.
    - c. Storm Drainage: Perform hydrostatic test.
      - 1) Allowable leakage is a maximum of 200 gallons per inch nominal pipe size, for every mile of pipe, during a 24-hour period.

- 2) Allowable leakage is a maximum of 18.4 L per mm dimension nominal pipe size, for every km of pipe, during a 24-hour period.
  - 3) Close openings in system and fill with water.
  - 4) Purge air and refill with water.
  - 5) Disconnect water supply.
  - 6) Test and inspect joints for leaks.
  - 7) Storm Drainage: Perform hydrostatic test. Close openings in system and fill with water to not less than 10-foot (3-m) head of water. Disconnect water supply. Water level must not drop for 15 minutes. Inspect joints for leaks.
- d. Storm Drainage: Perform air test according to UNI-B-6.

**END OF SECTION**

## **SECTION 31 22 14**

### **EARTHWORK**

#### **PART 1 - GENERAL**

##### **1.1 SUMMARY**

- A. Section includes earthwork required to complete the Project except as specified in related work.

##### **1.2 SUBMITTALS**

- A. Samples

- 1. Submit 10 lb samples of each material to be used. Identify source, type (use) of each material and gradation. Forward to Owner's testing agency packed tightly in containers to prevent contamination. Submit copy of transmittal to Architect.
- 2. All imported backfill materials shall also comply with Section 31 23 23 "Acceptance of Backfill, Top Soil, & CU Structural Soil.

- B. Submit directly to General Contractor invoices and delivery tickets indicating the amount and type of off-site materials delivered.

- C. Submit sediment and erosion plan, specific to the site, that complies with EPA 832/R-92-005 "Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices" or City of Chicago requirement where more restrictive.

- D. Submit Settlement monitoring reports as specified herein.

- E. Submit Earthwork surveys as specified herein.

- F. LEED Submittals:

- 1. Product Data for Credit MR 5: For products and materials that comply with requirements for regional materials, documentation indicating location and distance from Project of material manufacturer and point of extraction, harvest, or recovery for each raw material. Include statement indicating cost for each regional material and the fraction by weight that is considered regional.

##### **1.3 QUALITY ASSURANCE**

- A. Codes and Standards: Perform Work in compliance with applicable requirements of governing authorities having jurisdiction including the City of Chicago.

- B. Soil Testing and Inspection Service:

- 1. The Owner will engage a soil testing and inspection service, to include testing soil materials proposed for use in the Work and initial quality control testing during earthwork operations.

2. Furnish soil survey for satisfactory soil materials and samples of soil materials to the testing service.
3. Contractor shall only import backfill materials that comply with Section 31 23 23 "Acceptance of Backfill, Top Soil, & CU Structural Soil."

**C. Pre-excavation conference: Conduct pre-excavation conference at Project Site**

1.4 PROJECT CONDITIONS

A. Site Information

1. The Owner has had a subsurface investigation performed, the results of which are contained in a report. The report presents conclusions on the subsurface conditions based on there interpretation of the data obtained in the investigation.
2. The Contractor acknowledges that they have reviewed the report and any addenda thereto.
3. It is recognized that a subsurface investigation may not disclose all conditions as they actually exist and other conditions may change, particularly groundwater conditions, between the time of a subsurface investigation and the time of earthwork operations.
4. The data on indicated subsurface conditions are not intended as representations or warranties of the continuity of such conditions. It is expressly understood that the Owner and Architect will not be responsible for interpretations or conclusions drawn therefrom by the Contractor. The data are made available for the convenience of the Contractor.
5. Additional test borings and other exploratory operations may be made by the Contractor at no cost to the Owner.

B. Traffic: Conduct operations to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities. Do not close or obstruct streets, walks or other occupied or used facilities without permission from authorities having jurisdiction.

C. Protection of Existing Improvements:

1. Provide barricades, coverings, or other types of protection necessary to prevent damage to existing improvements to remain in place.
2. Restore damaged improvements to their original condition, as acceptable to the Owners and other parties or authorities having jurisdiction.

D. Protection of Existing Vegetation:

1. Protect existing vegetation to remain in place against unnecessary cutting, breaking or skinning of roots, skinning and bruising of bark, smothering by stockpiling construction materials or excavated materials within drip line, excess foot or vehicular traffic, or parking of vehicles within drip line. Provide temporary fences, barricades or guards as required to protect vegetation to be left standing.
2. Water as required to maintain health during the course of construction operations.
3. Protect root systems from damage due to noxious materials in solution caused by runoff or spillage during mixing and placement of construction materials, or drainage from stored materials. Protect root systems from flooding, erosion or excessive wetting resulting from dewatering operations.
4. Do not allow fires under or adjacent to plantings which are to remain.

5. Provide protection for roots over 1½" diameter that are cut during construction operations. Coat the cut faces with an emulsified asphalt or other acceptable coating especially formulated for horticultural use on cut or damaged plant tissues. Temporarily cover all exposed roots with wet burlap to prevent roots from drying out; provide earth cover as soon as possible.
  6. Repair or replace vegetation damaged by construction operations, in a manner acceptable to the Architect.
  7. Repair tree damage by a qualified tree surgeon. Replace trees, which cannot be repaired and restored to full-growth status, as determined by the tree surgeon at no cost to the Owner.
- E. Improvements on Public Property: Obtain authority for performing removal and alteration Work on public property.
- F. Existing Utilities:
1. Locate existing underground utilities in the areas of Work before starting earthwork operations. If utilities are to remain in place, provide adequate means of protection during earthwork operations.
  2. Contact D.I.G.G.E.R (312-744-7000) to verify locations of existing underground utilities before starting excavation.
  3. Should uncharted or incorrectly charted piping or other utilities be encountered during excavation, consult the Architect immediately for directions as to procedure.
  4. Cooperate with the Owner and public and private utility companies in keeping their respective services and facilities in operation.
  5. Demolish and completely remove from the site underground utilities indicated to be removed. Coordinate with local utility companies for shutoff of services if lines are active.
- G. Use of Explosives: The use of explosives shall not be permitted.
- H. Protection:
1. Protect existing improvements on and off the site from damages caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
    - a. Settlement Monitoring: Readings: Contractor shall have the surveyor take readings of the work and adjacent property at the minimum number of points indicated below. Additional monitoring points may be established as the Contractor determines to be necessary. Provide a proposed written program for settlement monitoring prior to start of excavation or foundation work. Record readings weekly until Preliminary Acceptance.
      - 1) Street and Pedestrian Pavement on Grade: one hundred (100) feet on center along each vehicular and pedestrian roadway and walkway; vertical control.
      - 2) For all adjacent properties, buildings, structures, curbs, walks, drives on all adjacent blocks, alleys, streets facing the Site: two (2) points for each location horizontal and vertical control.
      - 3) Reports: The Contractor shall submit a written report to the Board Authorized Representative and the Architect weekly.



## **PART 2 - PRODUCTS**

### **2.1 SOIL MATERIALS**

- A. All Materials: Comply with Division 31 Section 31 23 23 "Acceptance of Backfill, Top Soil & CU Structural Soil."
- B. General Fill: Provide soil materials conforming to ASTM D2487 soil groups GW, GR, GM, SW, SP or SM or a combination that are free of debris, waste, frozen materials, vegetable, organic and other deleterious matter and having maximum particle size of 2" in all dimensions.
- C. Select Fill: Clean natural or crushed stone or gravel or crushed concrete conforming to State of Illinois, Department of Transportation Gradation CA 6.
- D. Underbed Material: Naturally or artificially graded mixture of natural or crushed stone or gravel conforming to State of Illinois, Department of Transportation Specifications for Gradation CA 8, or CA 7.

## **PART 3 - EXECUTION**

### **3.1 TEMPORARY EROSION CONTROL**

- A. Before mobilizing and starting Work on the site, institute, expand as necessary, and maintain throughout the project a sediment and erosion control system that complies with EPA 832/R-92-005 and as required by authorities having jurisdiction, City of Chicago.
- B. Control erosion and sediment damage to roadways, adjacent properties and water resources through the use of basins, ditch checks, temporary ditches, mulch barriers, mulches, grasses, silt filter fences, hay or straw bales, aggregate barriers, inlet and pipe protection and other appropriate means.
- C. "Division 31 Section "Soil, Fill, Backfill, CU Structural Soil and Construction & Demolition Debris Removal" with " Section 31 23 18.13 "Contaminated Soil, Fill, General Construction & Demolition Debris Disposal" or Section 31 23 18.11 "Clean Construction or Demolition Debris and Uncontaminated Soil Disposal" as applicable.

### **3.2 CLEARING**

- A. Environmental Hazards:
  - 1. Before starting Work and thereafter as appropriate, report conditions indicative of environmental hazards to the Owner's Managing Environmental Consultant and the CPS Environmental Services Manager and proceed as directed.
- B. General:
  - 1. Comply with the requirements of Division 31 Section 31 23 18.13 "Soil, Fill, Backfill, CU Structural Soil & Construction & Demo Debris Removal"
  - 2. Remove vegetation, improvements, or obstructions that interfere with installation of new construction. Removal includes new and old stumps and their roots.

3. Carefully and cleanly cut roots and branches of vegetation to be left standing, where such roots and branches obstruct new construction.
4. Comply with the environmental protection and safety requirements of all authorities having jurisdiction. Keep dust to a minimum. Maintain streets free of mud, dirt and debris.

C. Topsoil Removal:

1. Topsoil is defined as friable clay loam surface soil found in a depth of not less than 4". Satisfactory topsoil is reasonably free of subsoil, clay lumps, stones, and other objects, and without weeds, roots, and other objectionable material.
2. Strip topsoil to whatever depths encountered, and in such manner so as to prevent intermingling with the underlying subsoil or other objectionable material. Remove heavy growths of grass from areas before stripping.
3. Where vegetation is to be left standing, stop topsoil stripping a sufficient distance from such vegetation to prevent damage to the main root system.

D. Removal of Improvements:

1. Remove improvements that interfere with construction.
2. Cap and remove abandoned underground piping or conduit.
3. Where uncharted or incorrectly charted below grade improvements are discovered, obtain approval of Architect before removal.

### 3.3 EXCAVATION

A. General:

1. Comply with the requirements of "Division 31 Section 31 23 18.13 "Soil, Fill, Backfill, CU Structural Soil & Construction & Demo Debris Removal."
2. Excavation consists of the removal and disposal of materials encountered when establishing the required grade elevations. Such excavation is unclassified regardless of the materials
3. Unauthorized excavation consists of removal of materials beyond indicated or required elevations. Replace unauthorized excavation by backfilling and compacting as specified for select fill at no cost to Owner.
4. Excavate under Building to the extent required to establish subgrades.
5. Excavate under pavements as required to comply with cross sections, elevations and grades.
6. Excavate elsewhere as required to establish new finish grades, allowing not less than 4" for topsoiling.

B. Dewatering:

1. Prior to commencing work, the Contractor shall provide a storm water management plan. This plan shall stipulate provisions for dewatering, pumping, collection, temporary storage, and discharge or disposal of storm water , perched water and other liquids, contaminated and/or uncontaminated, at the site so as to facilitate soil removal and minimize disposal costs for contaminated fluids.
2. Do not allow water to accumulate in excavations. Remove water from excavations to prevent softening of foundation bottoms, undercutting footings, and soil changes

detrimental to the stability of subgrades and foundations. Provide and maintain pumps, sumps, suction and discharge lines, and other dewatering system components necessary to convey the water away from the site.

3. Convey water removed from excavations and rainwater to collecting or run-off areas acceptable to authorities having jurisdiction. Do not use trench excavations for site utilities as temporary drainage ditches.
4. Comply with requirements of authorities having jurisdiction, including but not limited to, the City of Chicago and the Metropolitan Water Reclamation District of Greater Chicago.
5. Comply with dewatering requirements of section 31 23 18.13.

C. Stability of Excavations:

1. Slope the side of excavations to comply with local codes, authorities having jurisdiction, and the City of Chicago, and maintain same. Secure, shore, and brace where sloping is not possible either because of space restrictions or stability of material excavated.
2. Maintain sides and slopes of excavations in a safe condition until completion of backfilling.

D. Shoring and Bracing:

1. Provide shoring and bracing to comply with local codes, authorities having jurisdiction and the City of Chicago.
2. Provide materials for shoring and bracing, such as sheet piling, uprights, stringers and cross braces, in good serviceable conditions.
3. Maintain shoring and bracing in excavations regardless of the time period excavations will be open. Carry down shoring and bracing as the excavation progresses.

E. Material Storage: Stockpile excavated materials classified as satisfactory soil material in accordance with Division 31 Section 31 23 18.13 "Soil, Fill, Backfill, CU Structural Soil & Construction & Demo Debris Removal" until required backfill or fill. Please, grade and shape stockpile for proper drainage.

F. Excavation for Structures:

1. Excavate to the subgrade elevations required within a tolerance of plus or minus 0.10' to balance, and extending a sufficient distance from footings and foundations to permit placing and removal of concrete formwork, installation of services, other construction required, and for inspection.
2. Take care not to disturb the bottom of the excavation. Excavate by hand to final grade just before concrete is placed. Trim bottoms to the required lines and grades to leave a solid base to receive concrete.

G. Excavation for Pavements: Cut the surface under pavements to comply with cross sections, elevations and grades.

H. Removal of Unsatisfactory Soil Materials:

1. Excavate unsatisfactory soil materials encountered that extend below the required elevations, to the additional depth established by the Owner's testing service and approved by Owner.

2. If excavated unsatisfactory materials are to be removed from the property, all such materials shall be disposed of in accordance with "Section 31 23 18.13 "Soil, Fill, Backfill, CU Structural Soil & Construction & Demo Debris Removal."
3. Such additional excavation, provided it is not due to the fault or neglect of the Contractor, will be measured and paid for as a change in the Work if approved by Owner.

- I. Closing Abandoned Underground Utilities: Close open ends of abandoned underground utilities, which are to remain permanently, and with sufficiently strong closures to withstand pressures which may result after closing.
- J. Cold Weather Protection: Protect excavation bottoms against freezing when the atmospheric temperature is less than 35 degrees F. Maintain excavation free of water, ice and snow.

### 3.4 PROOF ROLLING

- A. Proof Roll entire area under building and pavements with a pneumatic roller or heavily loaded dump truck (minimum 25 tons).
- B. Make at least two (2) passes (second at right angle to first) in the presence of a representative of the Owner's testing service.
- C. Excavate unsatisfactory soil materials encountered to the additional depth established by the Owner's testing service and approved by Owner.
- D. Perform no further Work until slab subgrades are acceptable to the representative of the Owner's testing service.

### 3.5 COMPACTION

- A. General: Control soil compaction during construction, providing the minimum percentage of density specified.
- B. Percentage of Maximum Density Requirements: Provide not less than the following percentages of density of soil material compacted at + 2% optimum moisture content, for the actual density of each layer of soil material-in-place:
  1. Compact top 12" of subgrade and each layer of backfill or fill material to 75% relative density for cohesionless soils (ASTM D 4253 & D 4254) and 95% maximum density for cohesive soil (ASTM D 1557).
- C. Moisture Control:
  1. Where the subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to the surface of subgrade, or layer of soil material, to prevent free water appearing on the surface during or subsequent to compaction operations.
  2. Remove and replace, to scarify and air dry, soil material that is too wet to permit compaction to specified density.

### 3.6 BACKFILL AND FILL

- A. Prior to Backfill Placement: Backfill excavations as promptly as the Work permits, but not until completion of the following:
1. Review of construction below finish grade.
  2. Code required inspection, testing, approval, and recording locations of underground utilities.
  3. Removal of concrete formwork.
  4. Removal of shoring and bracing, and backfilling of voids with satisfactory materials. Cut off temporary sheet piling driven below bottom of structures and remove in manner to prevent settlement of the structure or utilities, or leave in place if required.
  5. Removal of trash and debris.
  6. Permanent or temporary horizontal bracing is in place on horizontally supported walls.
- B. Ground Surface Preparation:
1. Remove vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placement of fills. Plow, strip, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so that fill material bonds with existing surface.
  2. When the existing ground surface has a density less than that specified under "Compaction" for the particular area classification, break up the ground surface, pulverize, bring moisture condition to the optimum moisture content, and compact to the required depth and percentage of maximum density.
- C. Placement and Compaction:
1. Place backfill and fill materials to required grades in layers not more than 8" in loose depth for materials compacted by heavy compaction equipment and not more than 4" in loose depth for materials compacted by hand operated tampers. Before compaction, moisten or aerate each layer as necessary to provide the optimum moisture content of the soil material. Compact each layer to the required percentage of density.
  2. Place backfill and fill materials evenly on all sides of structures to required elevations and uniformly along the full length of each structure.
  3. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
  4. Backfill and fill under Building slabs to an elevation required to allow for thickness of underbed shown or a minimum of 6" if not shown. See structural drawings and geotechnical report for fill requirements under building slabs.
  5. Backfill and fill under pavements as required to comply with cross sections, elevations and grades shown.
  6. Fill and backfill under footings where not on undisturbed ground using select fill material.
  7. Backfill and fill elsewhere as required to establish new finished grades, allowing not less than 4" for top soiling using select fill.

### 3.7 GRADING

- A. General: Uniformly grade the area, including adjacent transition areas. Smooth finished surfaces within specified tolerances, compact with uniform levels or slopes between elevation points, or between such points and existing grades.
- B. Grassed Areas: Finish areas to receive topsoil to within not more than 0.10' above or below the required subgrade elevations, compacted as specified, and free from irregular surface changes.
- C. Walks: Shape the surface of areas under walks to line, grade and cross section, with the finish surface not more than 0.00' above or 0.10' below the required subgrade elevation, compacted as specified, and graded to prevent ponding of water after rains.
- D. Pavements: Shape the surface of the areas under pavement to line, grade and cross section, with the finish surface not more than 1/4" above or below the required subgrade elevation, compacted as specified, and graded to prevent ponding of water after rains.

### 3.8 FIELD QUALITY CONTROL

- A. Quality Control Testing During Construction:
  - 1. The Owner's testing service must inspect and approve sub-grades and fill layers before further construction work is performed thereon.
  - 2. If, in the opinion of the Owner's testing service, based on reports of the testing service and inspection, the subgrade or fills which have been placed are below the specified density, additional compaction and testing shall be required until satisfactory results are obtained at no additional cost to Owner. In such event, retesting shall be paid by the Contractor.
- B. Owner will engage a qualified independent testing and inspecting agency to sample materials, perform tests, and submit test reports during earthwork operations.
- C. Contractor's Responsibilities
  - 1. Notify Agency sufficiently in advance of operations to allow for assignment of personnel and scheduling of tests.
  - 2. Coordinate with Agencies' personnel; provide access to Work, to manufacturer's operations.
  - 3. Provide preliminary representative samples of materials to be tested, in required quantities.
  - 4. Furnish casual labor and facilities to provide access to Work to be tested to obtain and handle samples at the site to facilitate inspections and tests, and storage and curing of tests.
  - 5. Arrange with laboratory, pay for, additional samples and tests required when initial tests indicate Work does not comply with Contract Documents.
- D. Tests for Proposed Soil Materials:
  - 1. Test soil materials proposed for use in the Work and promptly submit test result reports. Soil samples shall be provided by Contractor.

2. Provide one optimum moisture-maximum density curve for each type of cohesive soil. Determine maximum densities in accordance with ASTM D 1557.
3. Determine the suitability of materials to be used as fill and backfill.
4. Perform a mechanical analysis (AASHTO T88), plasticity index (AASHTO T91), and frost susceptibility analysis.
5. Supply only imported materials in compliance with Division 31 Section 31 23 23 "Acceptance of Backfill, Top Soil, & CU Structural Soil."

E. Verification of Footing Subgrades:

1. Provide one optimum moisture-maximum density curve for each type of soil encountered.
2. For each strata of soil on which footings are to be placed, conduct at least one test to verify the required design bearing capacities. Subsequent verification and approval of each footing subgrade may be based on a visual comparison of each subgrade with the related tested strata.

F. Compaction Testing:

1. Inspect, test, and approve each lift of fill and backfill before next lift is placed. Test in accordance with ASTM D1556 or ASTM D2167 as appropriate.
2. Field density tests may be performed by the nuclear method in accordance with ASTM D 6938. The calibration curves shall be periodically checked and adjusted to correlate to tests performed using ASTM D1556 or ASTM D2167. Calibration of nuclear density testing device shall be in accordance with ASTM D7759.
3. If field tests are performed using nuclear methods, the inspection and testing agency shall make calibration checks on both density and moisture gauges at beginning of work, on each different type of material encountered, and at intervals as specified by the equipment manufacturer.
4. Take a field density test for each 2,000 sq. ft. of backfill and fill under slabs and pavements.
5. Take a field density test at 100 foot intervals along the inside of continuous footings, but not less than one (1) test per 20 foot run.
6. Take a field density test for each four (4) isolated footings.
7. Take a field density test at 50 foot intervals along utility trench backfill under slabs and pavements.

G. Proofrolling Observation:

1. Provide continuous observation of proofrolling of entire building area. Four passes shall be made.
2. Approve subgrade or make recommendations for removal.

H. Submittals: Submit copies of the following reports:

1. Report and certification of granular fill and drainage fill.
2. Test reports on fill and backfill material.
3. Verification of each footing subgrade.
4. Field density test reports.
5. One optimum moisture-maximum density curve for each type of soil encountered.

6. Report of actual unconfined compressive strength and/or results of plate bearing tests of each strata tested.
7. Other tests' and materials' certificates, as required.

### 3.9 MAINTENANCE AND RESTORATION

#### A. Protection of Graded Areas:

1. Protect newly graded areas from traffic and erosion, and keep free of trash and debris and growth of weeds.
2. Repair and reestablish grades in settled, eroded, and rutted areas to the specified tolerances.

#### B. Reconditioning Compacted Areas: Where completed compacted areas are disturbed by subsequent construction operations or adverse weather scarifies the surface, reshape, and compact to the required density prior to further construction.

#### C. Restoration: Restore all areas affected by construction both on and off Owner's property to original condition.

### 3.10 DISPOSAL OF EXCESS AND WASTE MATERIALS

#### A. Burning is not permitted on the Owner's property.

#### B. Remove waste materials, excess excavated materials, excavated materials classified as unsatisfactory soil material from the Owner's property and legally dispose of all materials per in accordance with Section 31 23 18.13 "Soil, Fill, Backfill, CU Structural & Soil Construction & Demo Debris Disposal"

#### C. See section 31 23 23 "Acceptable Backfill, Topsoil, & CU Structural Soil" for placement and use of on site suitable excavated materials.

**END OF SECTION**



## **SECTION 31 23 17**

### **EXCAVATING, BACKFILLING, AND COMPACTING FOR UTILITIES**

#### **PART 1 - GENERAL**

##### **1.1 SUMMARY**

- A. Section includes the following:
  - 1. Excavation for - trenches for water, sanitary sewer, site drainage, and storm sewer lines to public utility.
  - 2. Compacted bed and compacted fill over utilities to subgrade elevations.
  - 3. Compaction.

##### **1.2 SUBMITTALS**

- A. Submit samples in accordance with General Conditions of contract and Division 01 Sections.
- B. Submit 10 lb. sample of each type of fill to testing agency, in separate airtight containers.
- C. LEED Submittals:
  - 1. Product Data for Credit MR 5: For products and materials that comply with requirements for regional materials, documentation indicating location and distance from Project of material manufacturer and point of extraction, harvest, or recovery for each raw material. Include statement indicating cost for each regional material and the fraction by weight that is considered regional.

##### **1.3 TESTS**

- A. Tests and analysis of fill materials will be performed in accord with ASTM D1557, and with General Conditions and testing required by Division 31 Section 31 23 23 "Acceptance of Backfill, Top Soil & CU Structural Soil" for acceptability as fill material.

##### **1.4 REFERENCES**

- A. ASTM C136, - Sieve Analysis of Fine and Coarse Aggregates.
- B. ASTM D1556, - Density of Soil in place by Sand-Cone Method.
- C. ASTM D1557, - Tests for Moisture-Density Relationship of Soils and Soil-Aggregate Mixtures Using 10 lb. Rammer and 18 inch Drop.
- D. Illinois Department of Transportation (IDOT):
  - 1. IDOT 2016 Specifications for Road and Bridge Construction including all addenda.

## 1.5 PROTECTION

- A. Protect excavations by shoring, bracing, sheet piling, underpinning or other methods or prevent cave-in or loose soil from falling into excavation.
- B. Underpin adjacent structures which may be damaged by excavation work, including service utilities and pipe chases.
- C. Notify Architect immediately of unexpected subsurface conditions. Confirm notification in writing. Discontinue work until Architect issues written notification to resume work.
- D. Protect bottom of excavations and soil adjacent to and beneath foundations from frost.
- E. Grade excavation tip perimeter to prevent surface water runoff into excavation.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Provide all backfill materials from off site in accordance with Division 31 Section "Acceptance of Backfill, Top Soil & CU Structural Soil."
- B. Granular Fill Type A:

- 1. Material for granular fill shall be FA-6 in compliance with IDOT SSRBC 2016, Article 1003.1 and 1003.5 and with Division 31 Section "Acceptance of Backfill, Top Soil & CU Structural Soil." The material shall be graded from coarse to fine and shall conform to the following gradations:

| a. Sieve Size | Percent Passing |
|---------------|-----------------|
| No. 4         | 84-100          |
| No. 100       | 0-40            |
| No. 200       | 0-12            |

- 2. Bedding Material: Material for bedding shall be CA-11 in compliance with IDOT 2016, Article 1004.01 and 1003.5 and with Division 31 Section "Acceptance of Backfill, Top Soil & CU Structural Soil" and shall conform to the following gradations:

| a. Sieve Size | Percent Passing |
|---------------|-----------------|
| 1 inch        | 100             |
| 3/4 inch      | 84-100          |
| 1/2 inch      | 30-60           |

- C. Fill Material Type D: Fill material shall be cohesive soil obtained from offsite sources and/or on site excavations and approved by the Owner testing agency representative as suitable backfill material in accordance with ASTM D 2487, Uniform Soils Classification System 1 and 703.5 and with Division 31 Section 31 23 23 "Acceptance of Backfill, Top Soil & CU Structural Soil." It shall be used to backfill excavations where the excavated material is unsuitable for backfill.

- D. Fill Material Type X: Off-site borrow material shall comply to soil types GP, GW, SC and CL in accordance with ASTM D 2487, Uniform Soils Classification System and with Division 31 Section 31 23 23 "Acceptance of Backfill, Top Soil & CU Structural Soil." It shall be used where needed under structural slabs, roads, pavement and landscaped areas.

### **PART 3 - EXECUTION**

#### **3.1 INSPECTION**

- A. Verify stockpiled fill to be reused as approved in writing by Architect.
- B. Verify foundation perimeter drainage installation has been inspected and approved in writing by Architect.
- C. Verify and confirm in writing that areas to be backfilled are free of debris, snow, ice or water, and surfaces are not frozen.

#### **3.2 PREPARATION**

- A. Identify specified lines, levels, contours and data..
- B. Compact subgrade surfaces to density specified for backfill materials.

#### **3.3 EXCAVATION**

- A. Cut trenches wide enough to enable utility installation and allow inspection.
- B. Hand trim excavation and leave free of loose matter. Hand trim for bell and spigot pipe joints.
- C. Excavation shall not interfere with normal 45 degree bearing splay of foundations.
- D. Sides, walls or faces of all trenches shall be sloped and maintained in a safe manner and in the required condition until completion of backfilling. Excavations shall be braced or sloped in compliance to the latest Occupational Safety and Health Administration (OSHA) requirements or as instructed by the testing agency on-site representative.
- E. Locate and retain reusable excavated materials away from the edge of excavation.

#### **3.4 BACKFILLING**

- A. Support pipes, and conduits during placement and compaction of bedding fill.
- B. Backfill trenches to contours and elevations shown. Backfill systematically, as early as possible to allow maximum time for natural settlement. Do not backfill over porous, wet or spongy subgrade surfaces.
- C. Place compact fill materials in continuous layers as specified in Division 31 Section "Earthwork."
- D. Use a placement method that will not disturb or damage utilities in trenches, perimeter drainage.

- E. Maintain optimum moisture content of backfill materials, determined by laboratory analysis, to obtain specified compaction density.

### 3.5 FILL TYPES AND COMPACTION

- A. Compact all fill and backfill to specified values based on Modified Proctor Test in accordance with Division 31 Section "Earthwork."

### 3.6 QUALITY CONTROL

- A. **Pre-excavation conference: Conduct pre-excavation conference at Project Site**
- B. **Quality Control Testing During Construction:** An independent inspection and testing agency employed by the Owner shall inspect and approve each subgrade and fill layer before further backfill and fill work is performed.
  - 1. The inspection and testing agency shall perform laboratory density tests in accordance with ASTM D 1557.
  - 2. Field density tests shall be in accordance with ASTM D1556 or ASTM D2167 as appropriate.
  - 3. Field density tests may be performed by the nuclear method in accordance with ASTM D 6938. The calibration curves shall be periodically checked and adjusted to correlate to tests performed using ASTM D 1556. Calibration of nuclear density testing device shall be in accordance with ASTM D7759.
  - 4. If field tests are performed using nuclear methods, the inspection and testing agency shall make calibration checks on both density and moisture gauges at beginning of work, on each different type of material encountered, and at intervals as specified by the equipment manufacturer.
  - 5. If, in the opinion of the Owner testing agency representative, based on the inspection and testing agency reports and inspections, subgrade or fills have not been placed to specified density, the Contractor shall perform additional compaction and retesting until specified density has been achieved. The Contractor shall pay for all retesting work.
  - 6. The Contractor shall assist the inspection and testing agency by providing access to the excavation and fill areas, and by removing loose materials from compacted soil layers prior to testing.

### 3.7 REMOVAL AND DISPOSAL

- A. Remove surplus backfill materials and materials unsuitable for backfill from the site to an IEPA licensed and permitted Subtitle D Landfill in accordance with Division 31 Section "Soil, Fill, Backfill, CU Structural Soil & Construction & Demo Debris Removal."

## SECTION 32 13 13

### PORTLAND CEMENT CONCRETE PAVING

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. Section includes Portland cement concrete paving required to complete the project.

##### 1.2 SUBMITTALS

- A. Laboratory Test Reports: Submit 2 copies of laboratory test reports to concrete materials and mix design tests.
- B. Delivery Tickets: Submit copies of delivery tickets for each load of concrete delivered to the site.
- C. Product Data: Submit copies of manufacturer's specifications with application and installation instructions for proprietary materials and items upon request.
- D. LEED Submittals:
  - 1. Product Data for Credit MR 4: For products having recycled content, documentation indicating percentages by weight of post-consumer and pre-consumer recycled content. Include statement indicating costs for each product having recycled content.
  - 2. Product Data for Credit MR 5: For products and materials that comply with requirements for regional materials, documentation indicating location and distance from Project of material manufacturer and point of extraction, harvest, or recovery for each raw material. Include statement indicating cost for each regional material and the fraction by weight that is considered regional.

##### 1.3 QUALITY ASSURANCE

- A. **Pre-excavation conference: Conduct pre-excavation conference at Project Site**
- B. Perform work in accord with IDOT Standard Specifications for Road and Bridge Construction 2016 and City of Chicago requirements.
- C. Obtain materials from same source throughout.
- D. Regulatory Requirements:
  - 1. Illinois Steel Products Procurement Act as amended (Illinois Revised Statutes, Ch. 48, par. 1901 et. seq.).
  - 2. City of Chicago.
- E. Mock-Up:
  - 1. Samples Panel:

- a. General Contractor: Before installing any exterior concrete paving, provide a sample paving panel for a typical concrete walk inclusive of a handicapped curb ramp.
- b. Paving is to show the proposed color, surface finish of both the walk and textured ramp surface, reinforcement, control and expansion joints, sealant and workmanship.
- c. Panel size shall be a minimum of 5' -0" wide x 15' -0" long in the presence of the Architect prior to the installation of these materials on the site.
- d. Erect the panel in a location acceptable to the Architect and in the presence of the Architect prior to the installation of these materials on the site.
- e. Do not start concrete site work until the Architect has given written approval of all components of the sample panel.
- f. This sample panel will be used as a standard of comparison for all site concrete constructed of same materials.

F. Concrete Testing Service:

1. The Owner will employ a separate testing laboratory to perform initial field quality control testing.
2. Materials and installed Work may require testing and retesting at any time during the progress of the Work. Allow free access to material stockpiles and facilities at all times. Retesting of rejected materials and installed Work shall be done at the Contractor's expense.
3. Three concrete test cylinders shall be taken for every 75 or less cu. yds. of each class of concrete placed each day.
4. One additional test cylinder shall be taken during cold weather and be cured on site under same conditions as concrete it represents.
5. One slump test shall be taken for each set of test cylinders taken.

## **PART 2 - PRODUCTS**

### 2.1 FORM MATERIALS

- A. Comply with IDOT Specification, Article 803.04.

### 2.2 REINFORCEMENT

- A. Reinforcing steel: ASTM A 615: Grade 60, epoxy coated.
- B. Welded steel wire fabric: Plain type, ASTM A 185; rolls; epoxy coated.
- C. Tie wire: Annealed steel, minimum 16 gauge size.
- D. Dowels: ASTM A 615; Grade 40, plain steel, epoxy coated.

### 2.3 ACCESSORIES

- A. Curing compound: Comply with IDOT Specification, Article 718.04. Also see Part 3.09 Curing.

- B. Liquid surface sealer. ASTM D 3405.
- C. Prefomed joint filler: ASTM D 1751.

#### 2.4 ADMIXTURES

- A. Air entrainment admixture: Comply with ASTM C 260.
- B. Chemical admixture: Comply with ASTM C 94.

#### 2.5 CONCRETE MIX

- A. Mix concrete in accordance with IDOT 2016, Article 1020.04, 1029.08 and Section 1103 for Class SI Concrete. Also mix in accordance with Part 3.03.
- B. Provide concrete for paving of the following characteristics:
  - 1. Compressive strength:
    - a. At 7 days: 2450 psi.
    - b. At 28 days: 3500 psi.
- C. Use accelerating admixtures in cold weather only with Architect prior written approval. Use of admixtures will not relax cold weather placement requirements.
- D. Add air entraining agent to concrete mix for concrete work subject to freeze/thaw cycling and exposed to exterior.

### **PART 3 - EXECUTION**

#### 3.1 SUBGRADE PREPARATION

- A. Prepare in accordance with IDOT2016, Section 213 and 301.
  - 1. Proof roll areas under drives and parking areas.
- B. Provide additional fill for soft spots and hollows.
- C. Level and Compact subgrade, to receive granular base for concrete work, to 95% Modified Proctor Density.

#### 3.2 CONCRETE PLACING

- A. Place all paving concrete in accordance with IDOT 2016, Section 408.
- B. Place concrete for sidewalks in accordance with IDOT 2016, Section 624.
- C. Cure concrete in accordance with IDOT 2016, Section 625, and 718.04.

### 3.3 INSPECTION

- A. The Testing Laboratory shall verify that the compacted base is ready to support paving and imposed loads.
- B. Verify gradients and elevations of base are correct.
- C. Start of installation constitutes acceptance of existing conditions.

### 3.4 PREPARATION

- A. Moisten base to minimize absorption of water from fresh concrete.
- B. Notify Architect minimum 24 hours before start of concreting operations.

### 3.5 FORMING

- A. Place and secure forms to correct location, dimensions and profile.
- B. Assemble formwork to permit easy stripping and dismantling without damaging concrete.
- C. Place joint fillers vertical in position, in straight lines. Secure to formwork during concrete placement.

### 3.6 REINFORCEMENT

- A. Place reinforcement at mid-height of slabs-on-grade.
- B. Interrupt reinforcement at contraction and expansion joints.
- C. Place reinforcement to achieve slab and curb alignment as detailed.
- D. Provide dowelled joints at interruptions of concrete with one end of dowel set in capped sleeve to allow longitudinal movement.

### 3.7 FORMED JOINTS

- A. Place expansion, control and contraction joints as shown on the drawings. Align curb, gutter and sidewalk joints.
- B. All expansion joints in concrete paving, sidewalk paving, and curb shall be sealed per IDOT SSRBC.
- C. Place joint filler between paving components and building (s) or other appurtenances. Recess top of filler 1/2 inch for sealer placement.
- D. Provide scored, joints at 5 feet intervals of sidewalk except where otherwise shown.

### 3.8 CURING

- A. Curing and protection shall be as outlined in IDOT Sections 625 and 718.04. Color lithochrome color wax matching the colored concrete as manufactured by L.M. Schofield Company or



approved equal, and applied in accordance with the manufacturer's written instructions; or white pigmented curing compound as outlined in IDOT Section 718.04.a are the preferred curing methods. White-opaque polyethylene film shall not be accepted as a curing method.

### 3.9 FINISHING

- A. Area paving: Light broom, radiused and trowel joint edges, wood float.
- B. Sidewalk paving: Light broom, radiused and trowel joints edges, wood float.
- C. Curbs and gutters: Light broom.
- D. Handicap curb ramps: Provide detectable warning consisting of raised truncated domes with a diameter of nominal .9in. (23mm) a height of nominal .2 in. (5mm) and a center to center spacing of nominal 2.35 in. (60mm) and shall contrast visually with adjoining surfaces. The detectable warning shall comply with the Americans with Disabilities Accessibility Guidelines (ADAAG) and the pattern to be continuous throughout the ramp width and side flares at each location.
- E. Place curing compound on exposed concrete surfaces immediately after finishing. Apply in accordance with manufacturer's current printed instructions.

### 3.10 PROTECTION

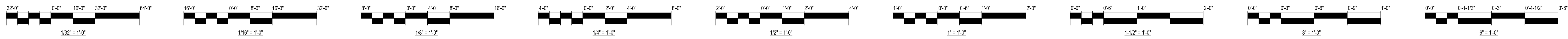
- A. Immediately after placement, protect concrete from premature drying, excessive hot or cold temperatures and mechanical injury. Maintain protection until accepted.

### 3.11 FIELD QUALITY CONTROL

- A. Maintain record of placed concrete items. Record date, location of pour, quantity, air temperature and test samples taken.
- B. Initial Testing: The Owner will employ a separate testing laboratory to perform field quality control testing.
- C. Additional Tests: The testing service will make additional tests of in-place concrete when test results indicate the specified concrete strengths and other characteristics have not been attained in the structure, as directed by the Architect. The Contractor shall pay for such tests conducted, and any other additional testing as may be required, when unacceptable concrete is verified.
- D. Formed Concrete Dimensional Tolerances:
  - 1. Formed concrete having any dimension smaller or greater than required, and outside the specified tolerance limits, will be considered deficient in strength and subject to additional testing as herein specified.
  - 2. Formed concrete having any dimension greater than required will be rejected if the appearance or function of the structure is adversely affected, or if the larger dimensions interfere with other construction. Repair, or remove and replace rejected concrete as required to meet the construction conditions. When permitted, accomplish the removal of excessive material in a manner to maintain the strength of the section without affecting function and appearance.

- E. Defective Work: Concrete work which does not conform to the specified requirements, including strength, tolerances, and finishes, shall be corrected at the Contractor's expense, without extension of time therefore. The Contractor shall also be responsible for the cost of corrections to any other work affected by or resulting from corrections to the concrete work.

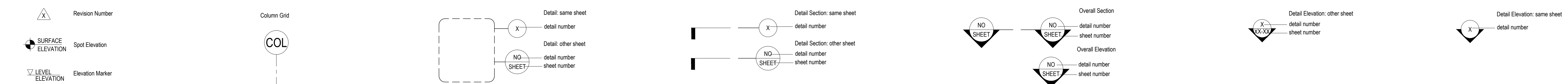
**END OF SECTION**



**ABBREVIATIONS**

|                                     |  |                                    |
|-------------------------------------|--|------------------------------------|
| <b>A</b>                            | <b>H</b>   | <b>R</b>                           |
| A/C Air conditioning                | H Height   | R Radius                           |
| ACM Aluminum Composite Material     | HB Hose Bibb   | RAD Radius                         |
| ACP Acoustical Ceiling Panels       | HC Handicapped accessible                              | RD Roof Drain                      |
| ACS PNL Access panel                | HDW Hardware   | REF Reference                      |
| ACT Acoustical ceiling tile         | HM Hollow Metal  | REINF Reinforced, Reinforcing      |
| ADJ Adjacent                        | HND Hand   | REQD Required                      |
| AFF Above finished floor            | HORIZ Horizontal                                       | REV Revise(d), Revision            |
| ALT Alternate                       | HP High Point  | RM Room                            |
| ALUM Aluminum                       | HR Hour  | RO Rough Opening                   |
| ADA Americans with Disabilities Act | HSS Hollow Structural Steel                            |                                    |
| APPROX Approximately                | HT Height  |                                    |
| ARA Area of Rescue Assistance       | HVAC Heating, Ventilation and A/C                      |                                    |
| ATS Automatic Transfer Switch       |  |                                    |
|                                     | <b>I</b>   | <b>S</b>                           |
|                                     | IC Incandescent  | S South                            |
| <b>B</b>                            | IN Inch  | SC Solid core                      |
| B Bottom (of)                       | INSUL Insulated, Insulation                            | SCHED Schedule(d)                  |
| BD Board                            | INT Interior   | SECT Section                       |
| BLDG Building                       |  | SF Square Feet                     |
| BLK Block, Blocking                 |  | SGFT Structural Glazed Facing Tile |
| BM Beam                             |  | SHT Sheet                          |
| BOT Bottom                          | <b>J</b>   | SIM Similar                        |
| BSMT Basement                       | JAN Janitor  | SLOP Slope                         |
| BTM Bottom                          | JT Joint   | SPEC Specification                 |
|                                     | JTS Joints   | SPKLR Sprinkler                    |
|                                     |  | SPKR Speaker                       |
|                                     |  | SQ Square                          |
| <b>C</b>                            | <b>L</b>   | SS Solid Surface                   |
| CAB Cabinet                         | LAM Laminate   | SST Stainless Steel                |
| C to C Center-to-center             | LAV Lavatory   | STD Standard                       |
| CER Ceramic                         | LP Low Point   | STG Stagger                        |
| CJ Control joint                    | LPT Low Point  | STNLS Stainless                    |
| CL Center line                      | LT Light   | STL Steel                          |
| CLG Ceiling                         | LTG Lighting   | STOR Storage                       |
| CLR Clear                           | LVL Level  | STRUCT Structural                  |
| CMU Concrete Masonry Unit           |  | SUSP Suspended                     |
| CONTR Centers                       | <b>M</b>   |                                    |
| COL Column                          | MACH Machine   | <b>T</b>                           |
| CONC Concrete                       | MAS Masonry  | T Top (of)                         |
| CONSTR Construction                 | MATL Material  | T&B Top and bottom (of)            |
| CONT Continuous                     | MAX Maximum  | T&G Tongue and groove              |
| CORR Corridor                       | MDF Main Distribution Frame, Medium-Density Fiberboard | TEL Telephone                      |
| CPT Carpet                          | MECH Mechanical  | THK Thick                          |
| CR Classroom                        | MFR Manufacturer                                       | TO Top of                          |
| CT Ceramic tile                     | MIN Minimum  | TISLAB Top of Slab                 |
| CUH Cabinet Unit Heater             | MISC Miscellaneous                                     | TYP Typical                        |
|                                     | MO Masonry Opening                                     |                                    |
|                                     | MP Multi-Purpose                                       | <b>U</b>                           |
| <b>D</b>                            | MT Mount   | UL Underwriters Laboratory         |
| DIA Diameter                        | MTD Mounted  | UNO Unless noted otherwise         |
| DIM Dimension                       | MTL Metal  |                                    |
| DN Down                             | MULL Mullion   | <b>V</b>                           |
| DS Downspout                        |  | VB Vapor barrier                   |
| DR Door                             |  | VCT Vinyl composition tile         |
| DET Detail                          | <b>N</b>   | VERT Vertical                      |
| DTL Detail                          | N North  | VEST Vestibule                     |
| DWG Drawing                         | NCOMBL Non-combustible                                 | VIF Verify in field                |
|                                     | NIC Not in Contract                                    | VT Vinyl tile                      |
| <b>E</b>                            | NO Number  | VWC Vinyl wall covering            |
| E East                              | NOM Nominal  |                                    |
| EA Each                             | NRC Noise Reduction Coefficient                        | <b>W</b>                           |
| ELEC Electric, Electrical           | NTS Not to scale                                       | W Width                            |
| EL Elevation                        |  | WI With                            |
| ELEV Elevator, Elevation            | <b>O</b>   | W/O Without                        |
| EQ Equal                            | OCC Occupancy, Occupant(s)                             | WC Water closet                    |
| EX Existing                         | OC On center   | WD Wood                            |
| EXIST Existing                      | OCC Occupancy, Occupant(s)                             | WDV Wood veneer                    |
| EXP Exposed                         | OD On Diameter   | WF Wide Flange                     |
| EXT Exterior                        | OPH Opposite Hand                                      | WH Water Heater                    |
|                                     | OPNG Opening   | WP Waterproofing, Work point       |
| <b>F</b>                            | OPP Opposite   | WWF Welded wire fabric             |
| FD Floor Drain                      | ORD Overflow Roof Drain                                |                                    |
| FDTN Foundation                     |  |                                    |
| FEC Fire Extinguisher Cabinet       | <b>P</b>   |                                    |
| FF Finished Floor                   | PLAM Plastic Laminate                                  |                                    |
| FIN Finish, Finished                | PLBG Plumbing  |                                    |
| FL Floor                            | PLYWD Plywood  |                                    |
| FLR Floor                           | PREK Pre-Kindergarten                                  |                                    |
| FPR Fireproofing                    | PROP Property  |                                    |
| FTG Footing                         | PSI Pounds per square inch                             |                                    |
| FUT Future                          | PTD Painted  |                                    |
|                                     | PVC Polyvinyl Chloride                                 |                                    |
| <b>G</b>                            | <b>Q</b>   |                                    |
| G Ground                            | QTY Quantity   |                                    |
| GA Gauge                            |  |                                    |
| GALV Galvanized                     |  |                                    |
| GC General Contractor               |  |                                    |
| GL Glass                            |  |                                    |
| GWP BD Gypsum Wallboard             |  |                                    |
| GYP Gypsum                          |  |                                    |

**GENERAL DRAWING SYMBOLS**



**DRAWING LIST**

|           |  |
|-----------|--|
|           | GENERAL  |
| SP-G0.10  | COVER SHEET  |
| SP-G0.20  | DRAWING LIST AND ABBREVIATIONS   |
| -         | SURVEY 1 - FOR REFERENCE   |
| -         | SURVEY 2 - FOR REFERENCE   |
| -         | SURVEY 3 - FOR REFERENCE   |
| -         | SURVEY 4 - FOR REFERENCE   |
|           | ARCHITECTURAL  |
| SP-A0.10  | PROPOSED SITE LOGISTICS PLAN   |
| SP-A1.10  | SITE PLAN - FOR REFERENCE ONLY   |
|           | CIVIL  |
| SP-C0.10  | GENERAL NOTES  |
| SP-C0.20  | EXISTING CONDITIONS  |
| SP-C0.30  | EROSION CONTROL PLAN   |
| SP-C0.31  | EROSION CONTROL DETAILS  |
| SP-C1.10  | SITE DEMOLITION PLAN - AREA 1  |
| SP-C1.20  | SITE DEMOLITION PLAN - AREA 2  |
| SP-C1.30  | SITE DEMOLITION PLAN - AREA 3  |
| SP-C1.40  | SITE DEMOLITION PLAN - AREA 4  |
| SP-C1.50  | SITE DEMOLITION PLAN - AREA 5  |
| SP-C1.60  | SITE DEMOLITION PLAN - AREA 6  |
| SP-C2.00  | EXCAVATION PLAN OPTION 1: SHORING SYSTEM   |
| SP-C2.10  | EXCAVATION PLAN OPTION 2: OPEN CUT   |
| SP-C2.20  | OPTION #2 OPEN CUT - CROSS SECTIONS  |
| SP-C3.00  | MASS GRADING PLAN  |
| SP-C4.00  | OVERALL UTILITY RELOCATION PLAN  |
| SP-C5.00  | SEWER PLAN AND PROFILE   |
| SP-C5.10  | SEWER PLAN AND PROFILE   |
| SP-C5.20  | SEWER PLAN AND PROFILE   |
| SP-C5.30  | SEWER PLAN AND PROFILE   |
| SP-C6.00  | WATER PLAN AND PROFILE   |
| SP-C7.00  | MOT PLAN   |
| SP-C8.00  | SITE UTILITY DETAILS   |
| SP-C8.10  | SITE UTILITY DETAILS   |
| SP-C8.20  | SITE UTILITY DETAILS   |
|           | ENVIRONMENTAL - PREPARED BY ENV. CONSULTANT RETAINED BY PBC - NOT SUBCONSULTANT OF STL |
| SP-RM1.00 | SOIL REMEDIATION PLAN  |
| SP-SM1.00 | SOIL MANAGEMENT PLAN   |
|           | STRUCTURAL - FOR REFERENCE   |
| SP-S2.10  | FOUNDATION/FIRST FLOOR KEY PLAN  |
| SP-S2.11  | FOUNDATION/FIRST FLOOR PLAN ACADEMIC WING - AREA A. FOR REFERENCE ONLY                 |
| SP-S2.12  | FOUNDATION/FIRST FLOOR PLAN ACADEMIC WING - AREA B. FOR REFERENCE ONLY                 |
| SP-S2.13  | FOUNDATION/FIRST FLOOR PLAN GYM WING - AREA C. FOR REFERENCE ONLY                      |
| SP-S2.14  | FOUNDATION/FIRST FLOOR PLAN GYM WING - AREA D. FOR REFERENCE ONLY                      |
| SP-S3.0   | COLUMN, FOOTING, AND PIER SCHEDULES - FOR REFERENCE ONLY                               |
| SP-S3.1   | SECTIONS AND DETAILS - FOR REFERENCE ONLY  |
|           | LANDSCAPE - FOR REFERENCE  |
| SP-L2.00  | IRRIGATION LAYOUT - FOR REFERENCE ONLY   |

**NOT FOR CONSTRUCTION**



**READ DUNNING SCHOOL SITE PREPARATION**  
4071 N. OAK PARK AVENUE  
CHICAGO, IL 60634  
CITY OF CHICAGO, MAYOR RAHM EMMANUEL

**Architect of Record:**  
STL ARCHITECTS

**STLARCHITECTS**

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**DAVID MASON & ASSOCIATES**  
464 N Milwaukee Ave, Chicago, IL 60654  
Structural Engineers of Record

**DANIEL WEINBACH & PARTNERS**  
53 Jackson Blvd #250, Chicago, IL 60604  
Landscape Architects of Record

**TERRA ENGINEERING LTD.**  
225 W Ohio St, Chicago, IL 60654  
Civil Engineers of Record

**IMEG**  
231 S LaSalle St #600, Chicago, IL 60604  
MEPPP Engineers of Record

**ARUP NORTH AMERICA LTD.**  
35 E Upper Wacker Dr #1800,  
Chicago, IL 60601  
Acoustics Consultant

**SCHULER SHOOK**  
750 W Orleans St # 400, Chicago, IL 60654  
Theatre Consultant

**EDGE ASSOCIATES INC.**  
220 E Lake St # 303, Addison, IL 60101  
Food Service Consultant

| Mark | Description    | Date       |
|------|----------------|------------|
| 1    | ADDENDUM 1     | 10/16/2017 |
|      | ISSUED FOR BID | 09/27/2017 |
|      | 100% SITE PREP | 09/22/2017 |
|      | 90% SITE PREP  | 08/25/2017 |

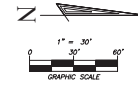
PBC Project Name: READ DUNNING SCHOOL  
PBC Contract No: 05165  
Project No.: N/A  
Title

**DRAWING LIST AND ABBREVIATIONS**

Sheet  
**SP-G0.20**

ALTA/NSPS LAND TITLE SURVEY

MATCH LINE - SEE PAGE 2

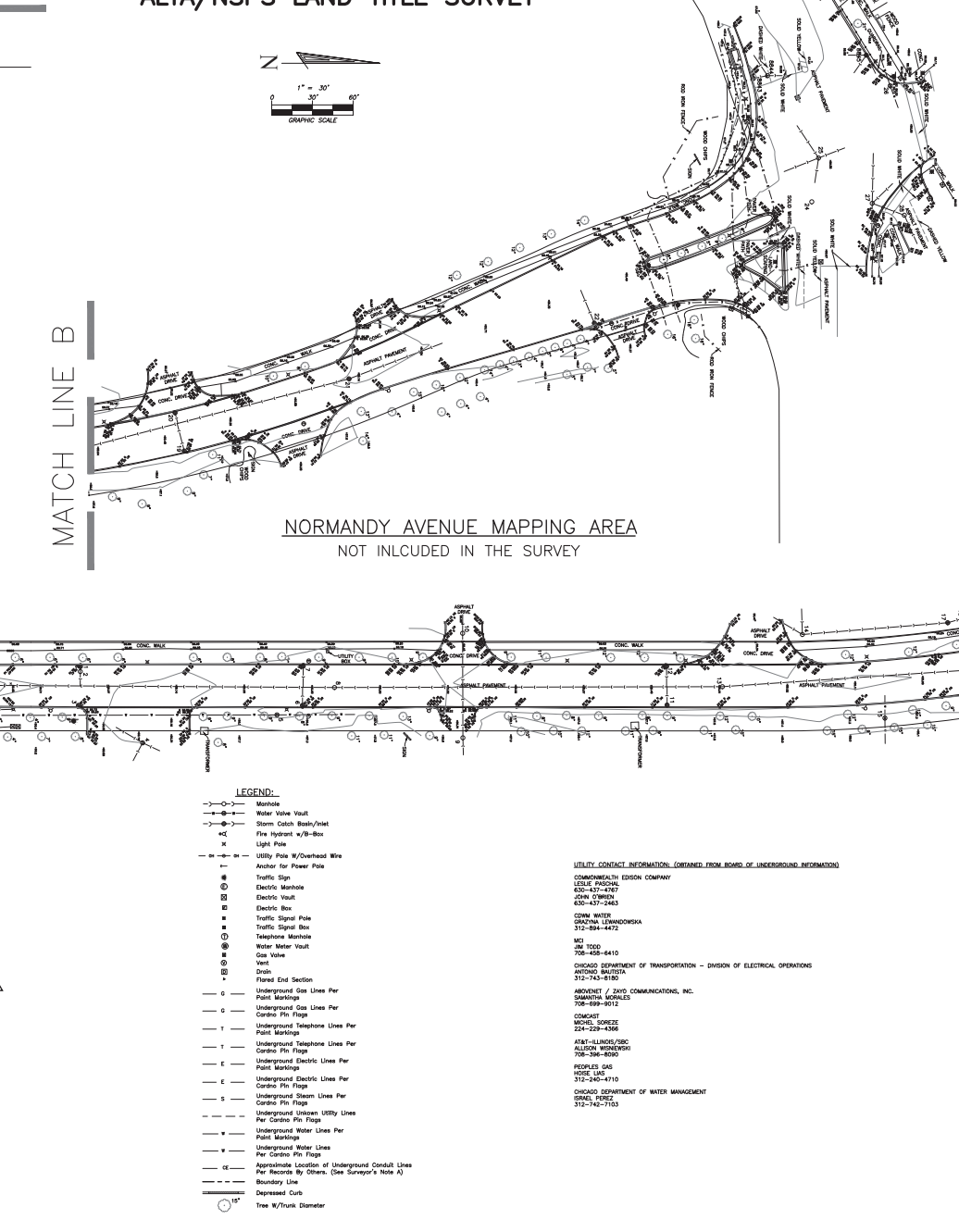
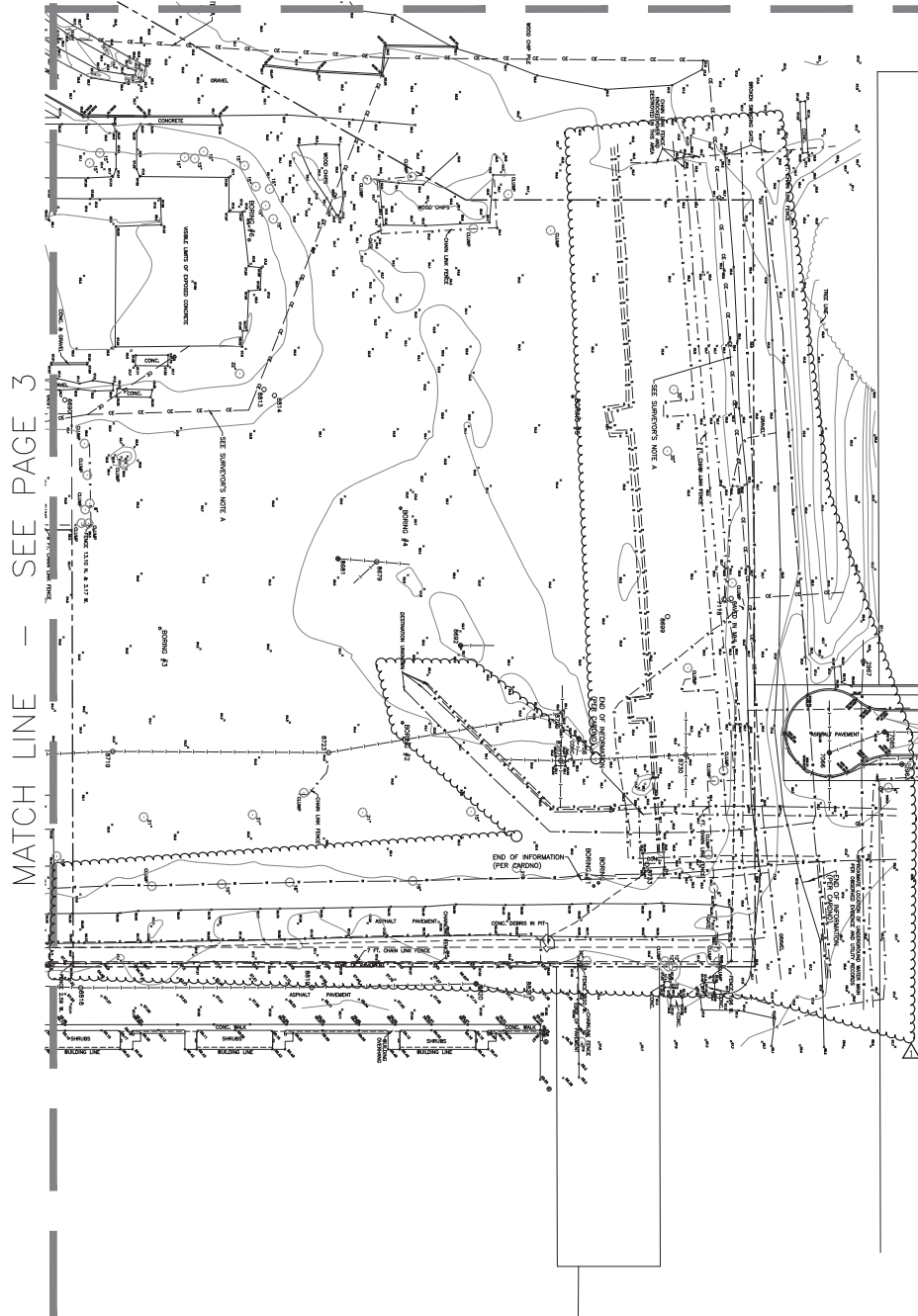


MATCH LINE - SEE PAGE 3

MATCH LINE B

MATCH LINE B

NORMANDY AVENUE MAPPING AREA  
 NOT INCLUDED IN THE SURVEY



LEGEND:

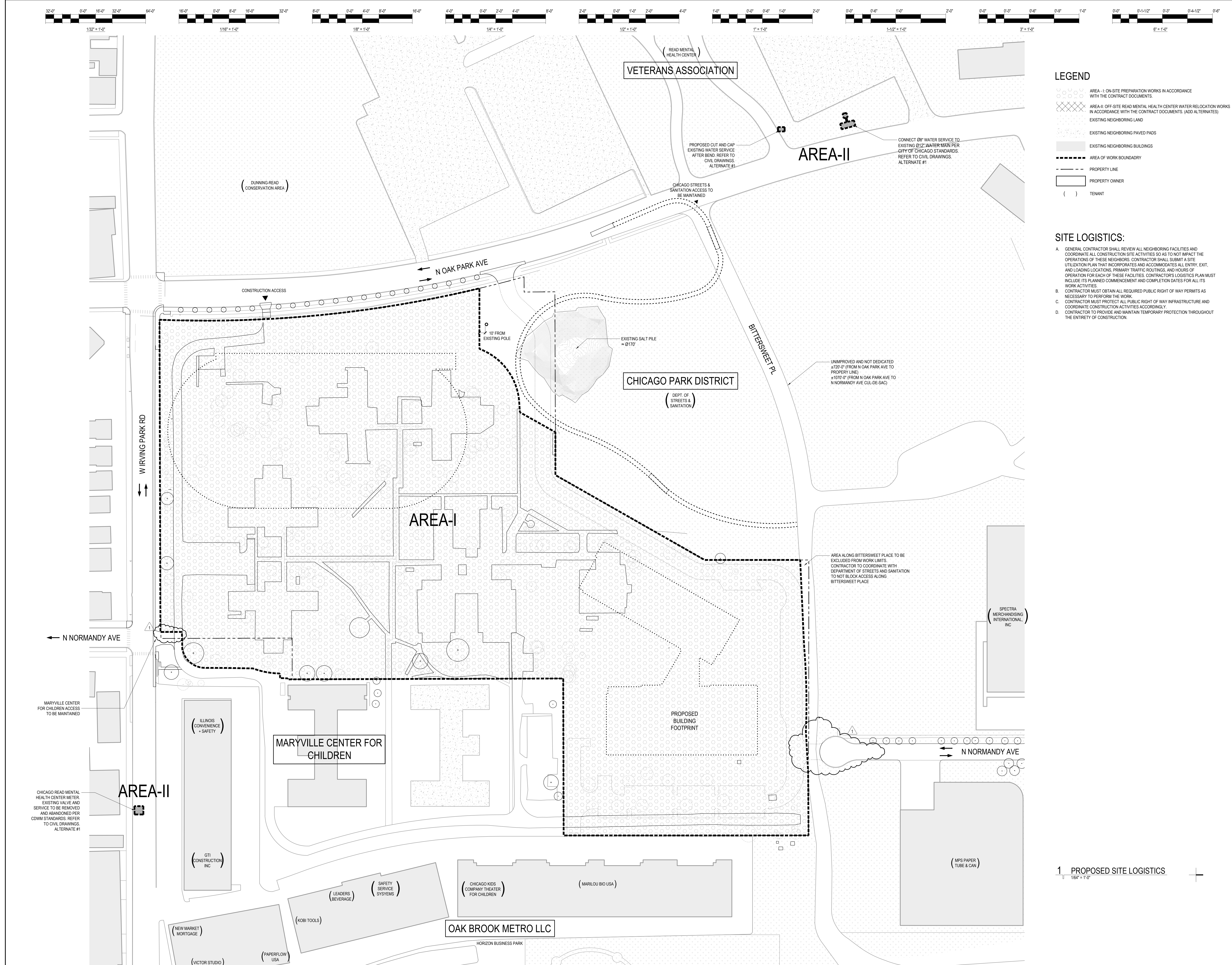
- - Manhole
- - Water Valve Vault
- - Storm Catch Basin/Inlet
- - Fire Hydrant w/B-Box
- - Light Pole
- - Utility Pole w/Overhead Wire
- - Anchor for Power Pole
- - Traffic Sign
- - Electric Manhole
- - Electric Vault
- - Electric Box
- - Traffic Signal Pole
- - Traffic Signal Box
- - Telephone Manhole
- - Water Meter Vault
- - Gas Valve
- - Vent
- - Drain
- - Flared End Section
- - Underground Gas Lines Per Point Markings
- - Underground Gas Lines Per Corro Pin Flags
- - Underground Telephone Lines Per Point Markings
- - Underground Telephone Lines Per Corro Pin Flags
- - Underground Electric Lines Per Point Markings
- - Underground Electric Lines Per Corro Pin Flags
- - Underground Steam Lines Per Corro Pin Flags
- - Underground Sanitary Utility Lines Per Corro Pin Flags
- - Underground Water Lines Per Point Markings
- - Underground Water Lines Per Corro Pin Flags
- - Approximate Location of Underground Conduit Lines Per Records W/ Others. (See Surveyor's Note A)
- - Boundary Line
- - Depressed Curb
- - Tree w/Trunk Diameter

- UTILITY CONTACT INFORMATION (OBTAINED FROM BOARD OF UNDERGROUND INFORMATION)
- COMMONWEALTH EDISON COMPANY
  - LESLIE PASIGAL 630-427-4787
  - JOHN CHAMBERLAIN 630-437-2463
  - CDM WATER
  - GRACIE VERONIKOSKA 312-894-4472
  - MC
  - NU TDD 708-458-4410
  - CHICAGO DEPARTMENT OF TRANSPORTATION - DIVISION OF ELECTRICAL OPERATIONS
  - ANTONIO BAUTISTA 312-743-8100
  - ARBEVNET / ZAVIS COMMUNICATIONS, INC.
  - SHARON WARBLES 708-699-9012
  - COMCAST
  - MICHELLE SORRETE 224-229-4384
  - AT&T-ILLINOIS/OSC
  - ALISON WIDEMERSKI 708-366-8000
  - PEOPLES GAS
  - HEISE LHM 312-240-4710
  - CHICAGO DEPARTMENT OF WATER MANAGEMENT
  - SHAL FOLEY 312-742-7103

SURVEYOR'S NOTE: APPROXIMATE LIMITS OF SALT, SAND AND GRAVEL STOCKPILES ARE SHOWN HEREIN. SOME MATERIALS MAY FALL OUTSIDE OF LIMITS SHOWN.

SURVEYOR'S NOTE A: CONDUIT LINES SHOWN HEREIN ARE APPROXIMATE ONLY, BASED ON SCALING FROM A SKETCH OBTAINED FROM THE CITY OF CHICAGO BUREAU OF ELECTRICITY, AS PROVIDED TO OUR OFFICE BY ITS ARCHITECTS. ACTUAL LOCATIONS MAY VARY AND SHOULD BE VERIFIED PRIOR TO ANY DIGGING.

FOR REFERENCE ONLY



**LEGEND**

- AREA-I: ON-SITE PREPARATION WORKS IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- AREA-II: OFF-SITE READ MENTAL HEALTH CENTER WATER RELOCATION WORKS IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. (ADD ALTERNATES)
- EXISTING NEIGHBORING LAND
- EXISTING NEIGHBORING PAVED PADS
- EXISTING NEIGHBORING BUILDINGS
- AREA OF WORK BOUNDARY
- PROPERTY LINE
- PROPERTY OWNER
- TENANT

**SITE LOGISTICS:**

- A. GENERAL CONTRACTOR SHALL REVIEW ALL NEIGHBORING FACILITIES AND COORDINATE ALL CONSTRUCTION SITE ACTIVITIES SO AS TO NOT IMPACT THE OPERATIONS OF THESE NEIGHBORS. CONTRACTOR SHALL SUBMIT A SITE UTILIZATION PLAN THAT INCORPORATES AND ACCOMMODATES ALL ENTRY, EXIT, AND LOADING LOCATIONS, PRIMARY TRAFFIC ROUTINGS, AND HOURS OF OPERATION FOR EACH OF THESE FACILITIES. CONTRACTOR'S LOGISTICS PLAN MUST INCLUDE ITS PLANNED COMMENCEMENT AND COMPLETION DATES FOR ALL ITS WORK ACTIVITIES.
- B. CONTRACTOR MUST OBTAIN ALL REQUIRED PUBLIC RIGHT OF WAY PERMITS AS NECESSARY TO PERFORM THE WORK.
- C. CONTRACTOR MUST PROTECT ALL PUBLIC RIGHT OF WAY INFRASTRUCTURE AND COORDINATE CONSTRUCTION ACTIVITIES ACCORDINGLY.
- D. CONTRACTOR TO PROVIDE AND MAINTAIN TEMPORARY PROTECTION THROUGHOUT THE ENTIRETY OF CONSTRUCTION.

**NOT FOR CONSTRUCTION**



**READ DUNNING SCHOOL  
SITE PREPARATION**  
4071 N. OAK PARK AVENUE  
CHICAGO, IL 60634  
CHICAGO PUBLIC SCHOOLS  
CITY OF CHICAGO, MAYOR RAHMI EMANUEL

Architect of Record:  
STL ARCHITECTS

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MEPPF Engineers of Record

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Chicago, IL 60601  
Acoustics Consultant

**SCHULER SHOOK**  
750 N Orleans St # 400, Chicago, IL 60654  
Theatre Consultant

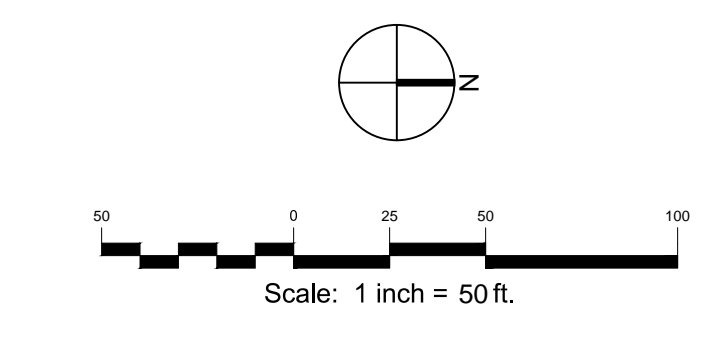
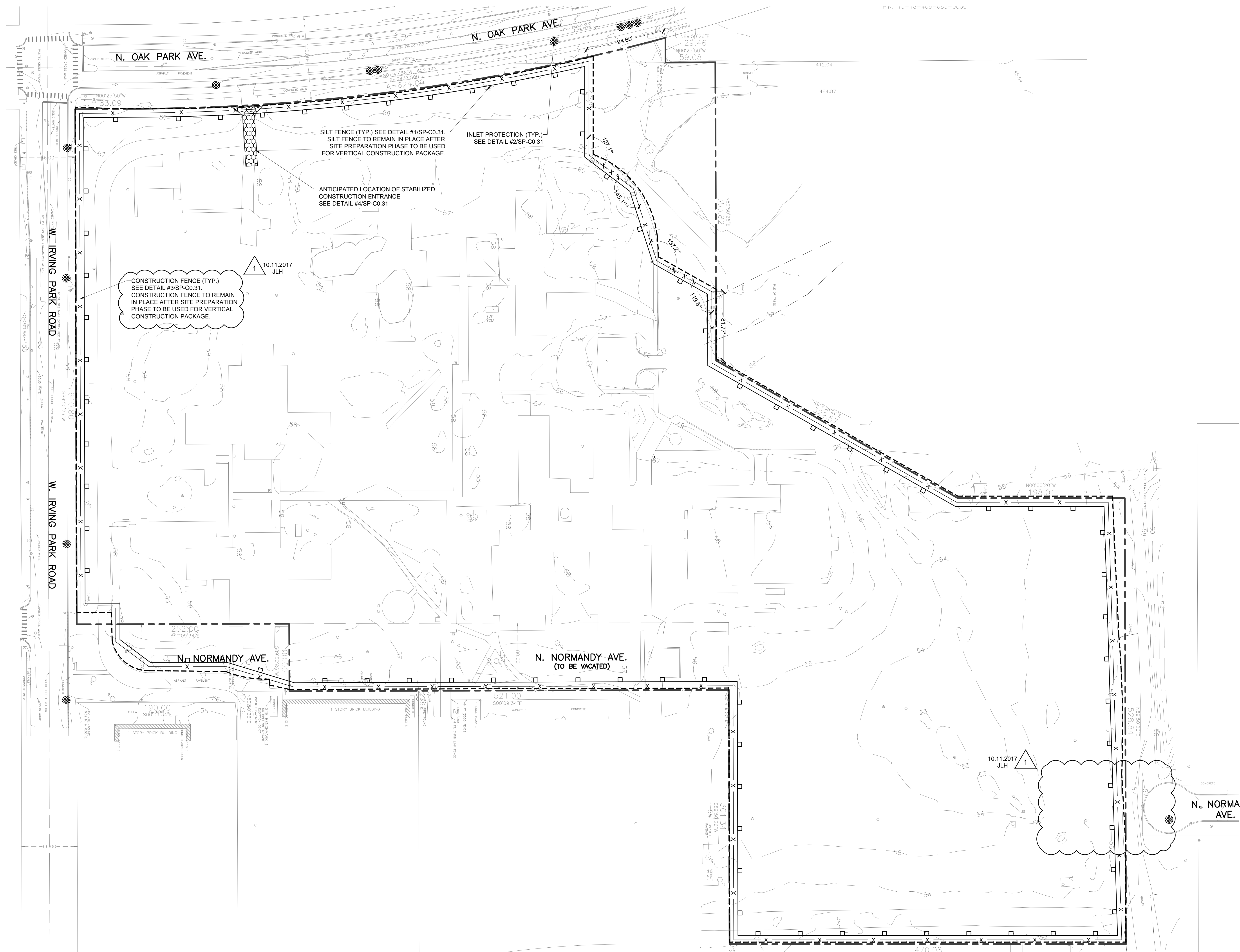
**EDGE ASSOCIATES INC.**  
220 E Lake St # 303, Addison, IL 60101  
Food Service Consultant

| Issuance | Mark       | Description    | Date       |
|----------|------------|----------------|------------|
| 1        | ADDENDUM 1 | ISSUED FOR BID | 10/16/2017 |
|          |            | 100% SITE PREP | 09/27/2017 |
|          |            | 90% SITE PREP  | 09/22/2017 |
|          |            |                | 08/25/2017 |

PBC Project Name: READ DUNNING SCHOOL  
PBC Contract No: 05165  
Project No.: N/A  
Title:

**PROPOSED SITE LOGISTICS PLAN**

Sheet  
**SP-A0.10**



**LEGEND:**

|           |  |
|-----------|--|
| ---       | PROPERTY LINE  |
| - - - - - | LIMITS OF WORK   |
| □         | SILT FENCE   |
| X         | CONSTRUCTION FENCE                                       |
| ⊗         | FURNISH AND INSTALL INLET/CATCH BASIN FILTER             |
| ⊞         | ANTICIPATED LOCATION OF STABILIZED CONSTRUCTION ENTRANCE |

CONSTRUCTION FENCE (TYP.)  
SEE DETAIL #3/SP-C0.31.  
CONSTRUCTION FENCE TO REMAIN  
IN PLACE AFTER SITE PREPARATION  
PHASE TO BE USED FOR VERTICAL  
CONSTRUCTION PACKAGE.

SILT FENCE (TYP.) SEE DETAIL #1/SP-C0.31.  
SILT FENCE TO REMAIN IN PLACE AFTER  
SITE PREPARATION PHASE TO BE USED  
FOR VERTICAL CONSTRUCTION PACKAGE.

INLET PROTECTION (TYP.)  
SEE DETAIL #2/SP-C0.31

ANTICIPATED LOCATION OF STABILIZED  
CONSTRUCTION ENTRANCE  
SEE DETAIL #4/SP-C0.31

**EROSION CONTROL NOTES:**

1. THE SEDIMENTATION AND EROSION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS FOR SOIL AND SEDIMENTATION CONTROL OF LOCAL GOVERNMENT AGENCIES, PROCEDURES AND STANDARDS FOR URBAN SOIL AND SEDIMENTATION CONTROL IN ILLINOIS, AND IEPA STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, LATEST EDITION.
2. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
3. PRIOR TO COMMENCING LAND-DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING BUT NOT LIMITED TO, ADDITIONAL PHASES OF DEVELOPMENT AND OFF-SITE BORROW OR WASTE AREAS) A SUPPLEMENTARY EROSION CONTROL PLAN SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.
4. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE ENGINEER.
5. DURING DE-WATERING OPERATIONS, WATER WILL BE PUMPED INTO SEDIMENT BASINS OR SILT TRAPS. DE-WATERING DIRECTLY INTO THE FIELD TILES OR STORM SEWER IS PROHIBITED.
6. PERMANENT OR TEMPORARY SOIL STABILIZATION MUST BE APPLIED WITHIN 15 CALENDAR DAYS OF THE END OF ACTIVE SOIL DISTURBANCE.
7. FILTER BASKETS SHALL BE INSTALLED AND MAINTAINED AROUND THE INLET AND OUTLET STRUCTURES AS SPECIFIED.
8. SEDIMENTATION BASINS, BARRIERS, AND ALL APPROPRIATE EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY SORT OF SITE DISTURBING.
9. THE CONTRACTOR SHALL INSPECT EROSION CONTROL MEASURES WEEKLY AND AFTER ANY STORM EVENT IN EXCESS OF 1/2".
10. SHOULD THE VOLUME, VELOCITY, SEDIMENT LOAD, OR PEAK FLOW RATES OF STORMWATER RUNOFF TEMPORARILY INCREASE DURING CONSTRUCTION, THEN ADDITIONAL MEASURES TO PROTECT ADJACENT PROPERTIES SHALL BE UNDERTAKEN.
11. THE TEMPORARY EROSION MEASURES SHALL REMAIN IN PLACE UNTIL ALL THE PERMANENT EROSION CONTROL ITEMS ARE FULLY FUNCTIONAL.
12. GRAVELED ROADS, ACCESS DRIVES, PARKING AREAS OF SUFFICIENT WIDTH AND LENGTH, AND VEHICLES WASHDOWN FACILITIES, SHALL BE PROVIDED TO PREVENT THE DEPOSIT OF SOIL FROM BEING TRACKED ONTO PUBLIC OR PRIVATE ROADWAYS. ANY SOIL REACHING A PUBLIC OR PRIVATE ROADWAY SHALL BE REMOVED CONTINUOUSLY.
13. DUST SCREENING SHALL BE PROVIDED ON ALL CONSTRUCTION FENCING.

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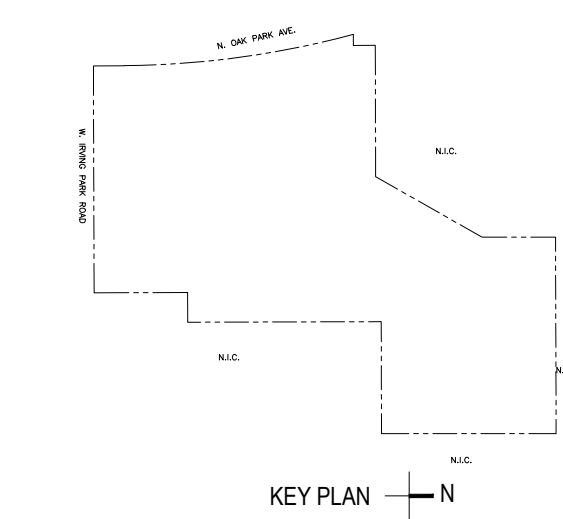
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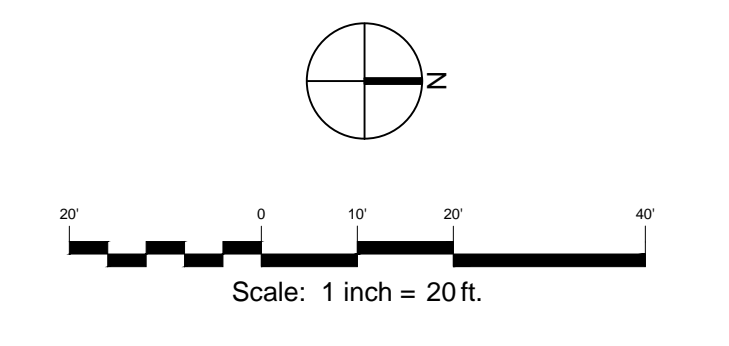
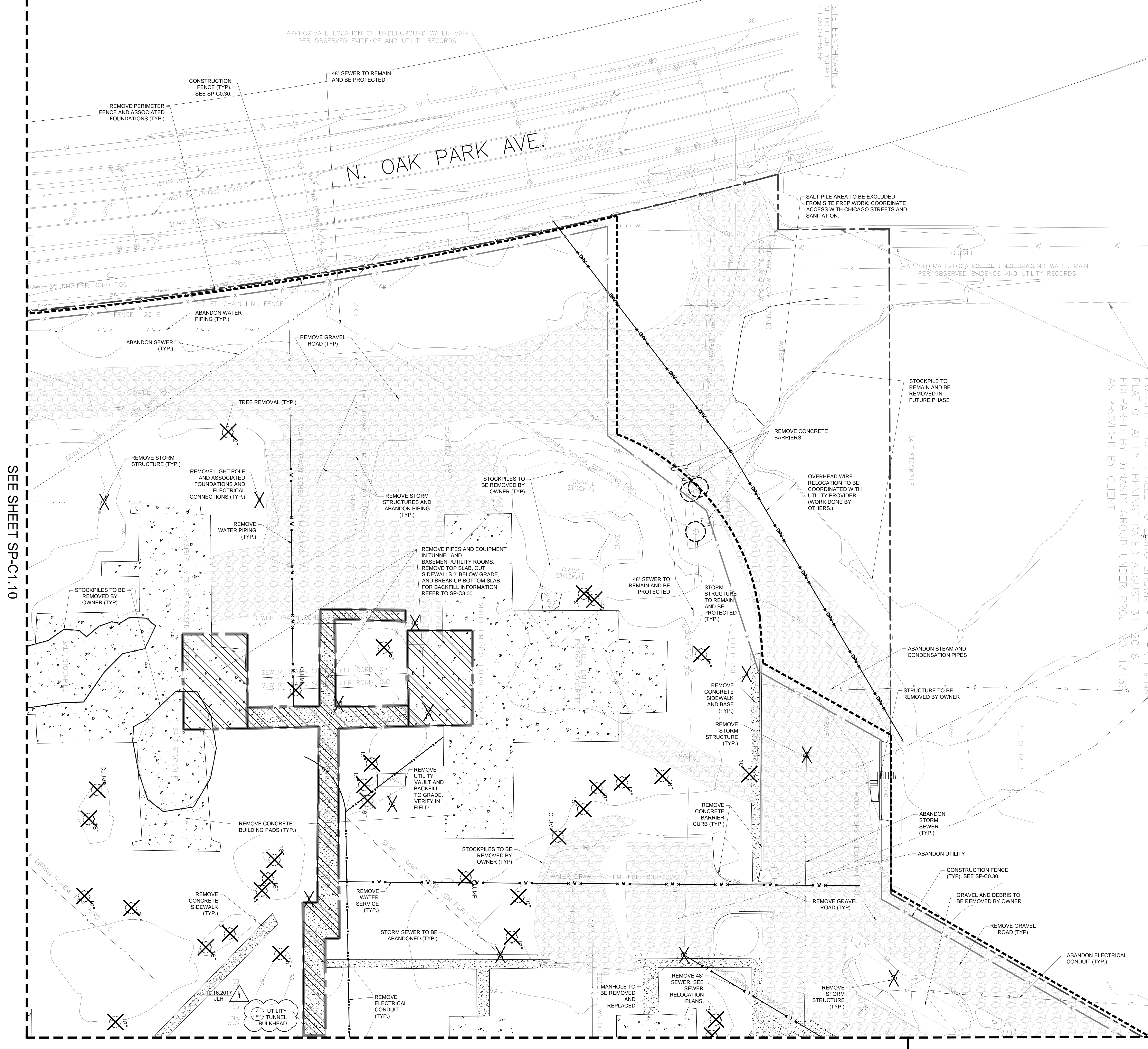
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PBC Project Name: READ DUNNING SCHOOL  
PBC Contract No: 05165  
Project No.: N/A

**SITE EROSION CONTROL PLAN**

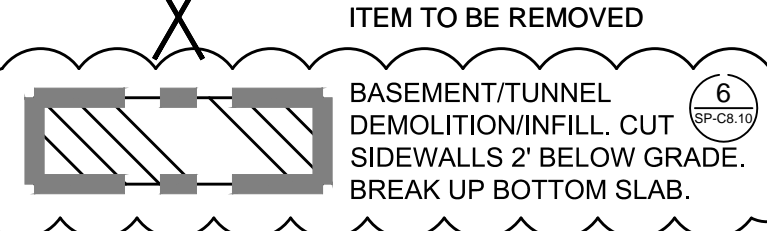
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**SP-C0.30**





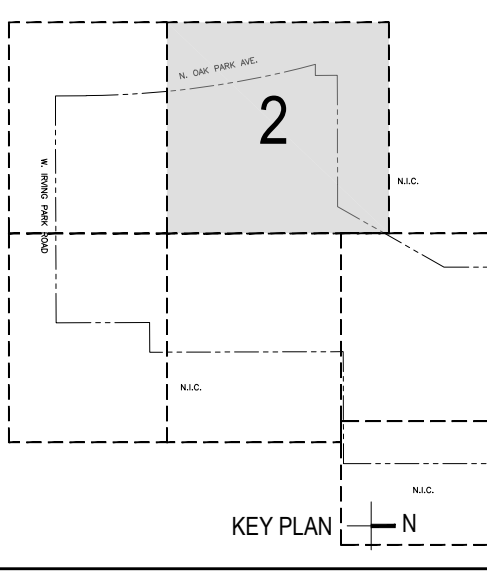
**LEGEND:**

- PROPERTY LINE
- LIMITS OF WORK
- [Pattern] REMOVE CONCRETE PAVEMENT AND BASE
- [Pattern] REMOVE CONCRETE WALK AND BASE
- [Pattern] REMOVE ASPHALT PAVEMENT AND BASE
- [Pattern] REMOVE STREET PAVEMENT AND BASE
- [Pattern] MILL AND GRIND EXISTING PAVEMENT
- [Pattern] REMOVE GRAVEL
- X REMOVE FENCE, POSTS, GATES, AND FOUNDATIONS
- REMOVE CONCRETE CURB AND GUTTER
- REMOVE CONCRETE BARRIER CURB
- ABANDON STORM SEWER
- ABANDON WATER SERVICE
- REMOVE WATER SERVICE
- REMOVE STORM SEWER
- REMOVE ELECTRICAL CONDUIT
- REMOVE OVER HEAD WIRE (COORDINATE WITH UTILITY PROVIDER)
- SAWCUT (FULL DEPTH)
- ITEM TO REMAIN AND BE PROTECTED
- [Pattern] ITEM TO BE REMOVED



**NOTES:**

1. SOIL REMOVAL DEMOLITION SHALL BE COORDINATED WITH SITE REMEDIATION REQUIREMENTS. SEE ENVIRONMENTAL PLANS AND SPECIFICATION SECTIONS FOR REMEDIATION REQUIREMENTS.
2. ALL CONCRETE INDICATED TO BE REMOVED SHALL BE CRUSHED ON SITE AND USED AS SELECT FILL. REFER TO SPECIFICATIONS.
3. ALL CONCRETE TO BE REUSED ON SITE TO BE APPROVED BY GEOTECHNICAL ENGINEER AND OWNER'S ENVIRONMENTAL CONSULTANT, AND MEET ENVIRONMENTAL PLANS AND SPECIFICATION SECTION 31.23.23.
4. REFER TO GSG CONSULTANTS, INC. ASBESTOS SURVEY REPORT AND EXPLORATORY TEST PIT INVESTIGATION SUMMARY REPORT FOR INFORMATION ON LOCATIONS OF BASEMENTS/UTILITY ROOMS.
5. CONTRACTOR TO VERIFY ALL DIMENSIONS, EXTENTS AND LOCATIONS OF UTILITY TUNNELS IN THE FIELD.
6. WATER SERVICE ADD ALTERNATE: FOR WORK ASSOCIATED WITH WATER SERVICE ADD ALTERNATE, COORDINATE ANY WATER SHUT-DOWNS WITH ADJACENT PROPERTY OWNERS BEING SERVED PRIOR TO CONSTRUCTION.
7. ABANDONED PIPING TO BE PLUGGED WITH FLOWABLE FILL.
8. ALL EXCAVATIONS AT UNDERGROUND UTILITY STRUCTURES TO BE BACKFILLED TO GRADE IN ACCORDANCE WITH EARTHWORK SPECIFICATIONS.
9. FOR ALL UTILITY TUNNEL AND BASEMENT/UTILITY ROOM BOTTOM SLAB DEMOLITION, BOTTOM SLAB TO BE COMPLETELY BROKEN TO FULL DEPTH, MINIMUM 2 FT. ON CENTER IN BOTH DIRECTIONS.
10. FOR UTILITY TUNNEL BULKHEADS, INSTALL REINFORCED CONCRETE WALL DOWELED INTO EXISTING WALL AND PROPERLY SEAL. REFER TO DETAIL 4 SHEET SP-C8.10.



**NOT FOR CONSTRUCTION**



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Architect of Record:  
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PBC Project Name: READ DUNNING SCHOOL  
 PBC Contract No.: 05165  
 Project No.: N/A

**SITE DEMOLITION PLAN - AREA 2**

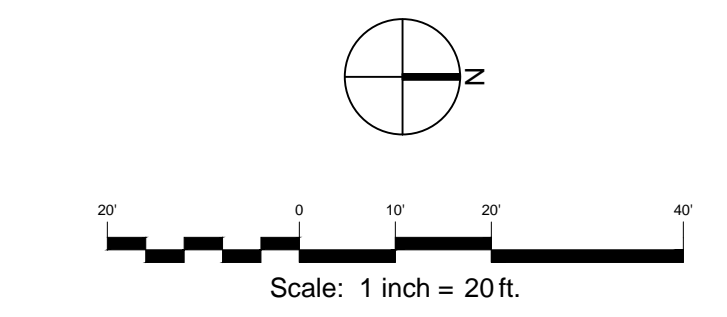
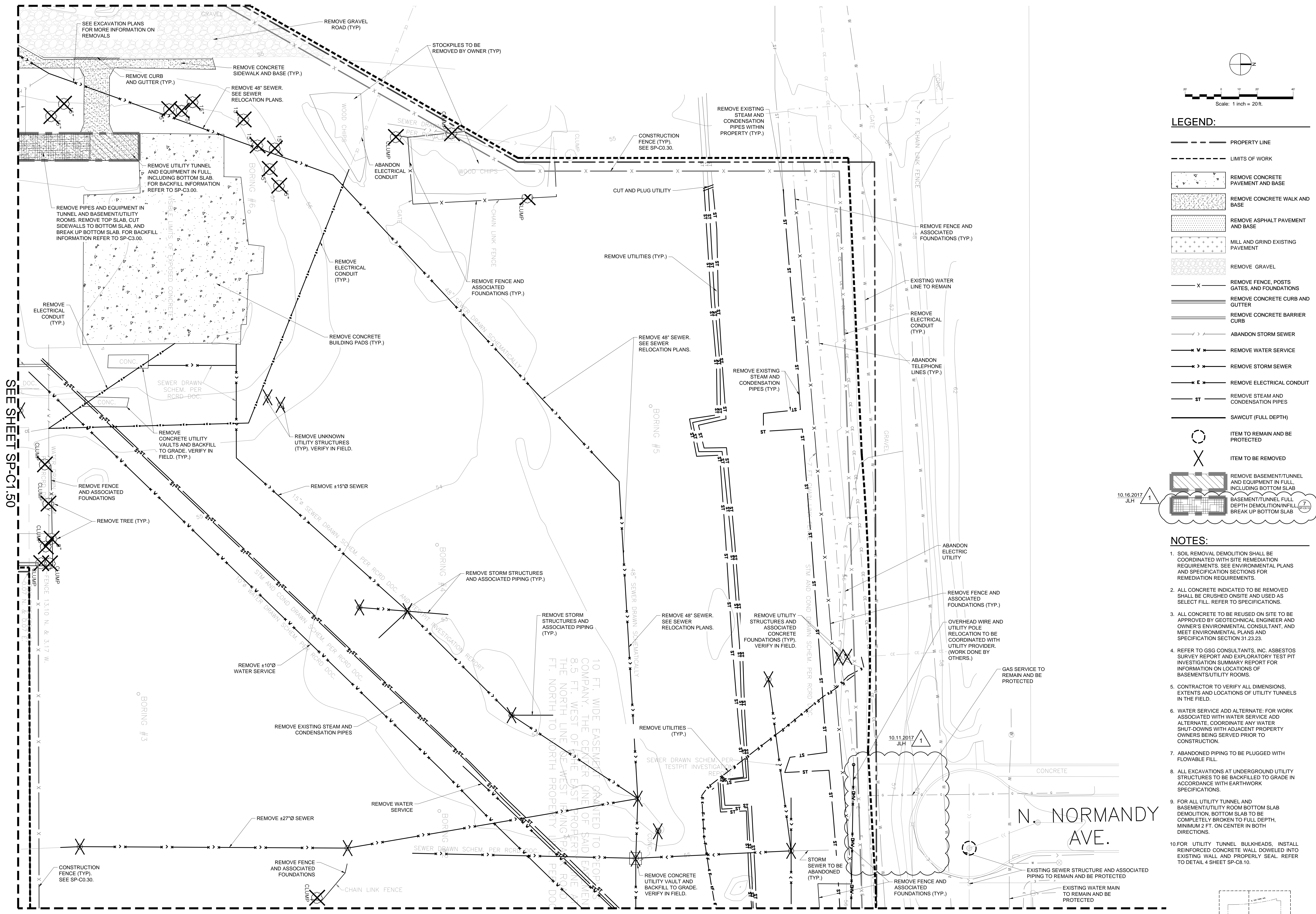
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SEE SHEET SP-C1.10

SEE SHEET SP-C1.50

SEE SHEET SP-C1.30

SEE SHEET SP-C1.20

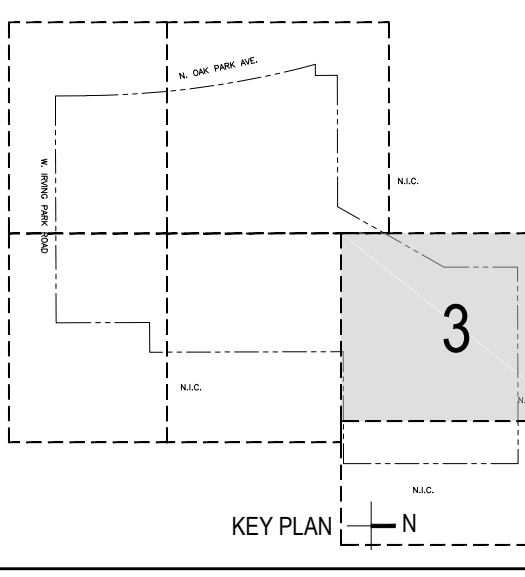


**LEGEND:**

- PROPERTY LINE
- LIMITS OF WORK
- REMOVE CONCRETE PAVEMENT AND BASE
- REMOVE CONCRETE WALK AND BASE
- REMOVE ASPHALT PAVEMENT AND BASE
- MILL AND GRIND EXISTING PAVEMENT
- REMOVE GRAVEL
- REMOVE FENCE, POSTS, GATES, AND FOUNDATIONS
- REMOVE CONCRETE CURB AND GUTTER
- REMOVE CONCRETE BARRIER CURB
- ABANDON STORM SEWER
- REMOVE WATER SERVICE
- REMOVE STORM SEWER
- REMOVE ELECTRICAL CONDUIT
- REMOVE STEAM AND CONDENSATION PIPES
- SAWCUT (FULL DEPTH)
- ITEM TO REMAIN AND BE PROTECTED
- ITEM TO BE REMOVED
- REMOVE BASEMENT/TUNNEL AND EQUIPMENT IN FULL, INCLUDING BOTTOM SLAB
- BASEMENT/TUNNEL FULL DEPTH DEMOLITION/INFILL, BREAK UP BOTTOM SLAB

**NOTES:**

1. SOIL REMOVAL DEMOLITION SHALL BE COORDINATED WITH SITE REMEDIATION REQUIREMENTS. SEE ENVIRONMENTAL PLANS AND SPECIFICATION SECTIONS FOR REMEDIATION REQUIREMENTS.
2. ALL CONCRETE INDICATED TO BE REMOVED SHALL BE CRUSHED ON-SITE AND USED AS SELECT FILL. REFER TO SPECIFICATIONS.
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5. CONTRACTOR TO VERIFY ALL DIMENSIONS, EXTENTS AND LOCATIONS OF UTILITY TUNNELS IN THE FIELD.
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8. ALL EXCAVATIONS AT UNDERGROUND UTILITY STRUCTURES TO BE BACKFILLED TO GRADE IN ACCORDANCE WITH EARTHWORK SPECIFICATIONS.
9. FOR ALL UTILITY TUNNEL AND BASEMENT/UTILITY ROOM BOTTOM SLAB DEMOLITION, BOTTOM SLAB TO BE COMPLETELY BROKEN TO FULL DEPTH, MINIMUM 2 FT. ON CENTER IN BOTH DIRECTIONS.
10. FOR UTILITY TUNNEL BULKHEADS, INSTALL REINFORCED CONCRETE WALL DOWELED INTO EXISTING WALL AND PROPERLY SEAL. REFER TO DETAIL 4 SHEET SP-C8.10.



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PBC Project Name: READ DUNNING SCHOOL  
PBC Contract No.: 05165  
Project No.: NA

**SITE DEMOLITION PLAN - AREA 3**

Sheet  
**SP-C1.30**

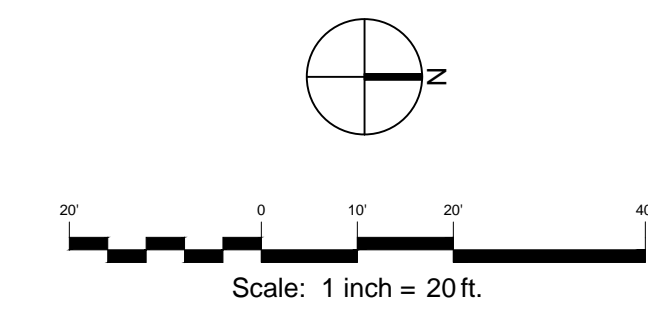
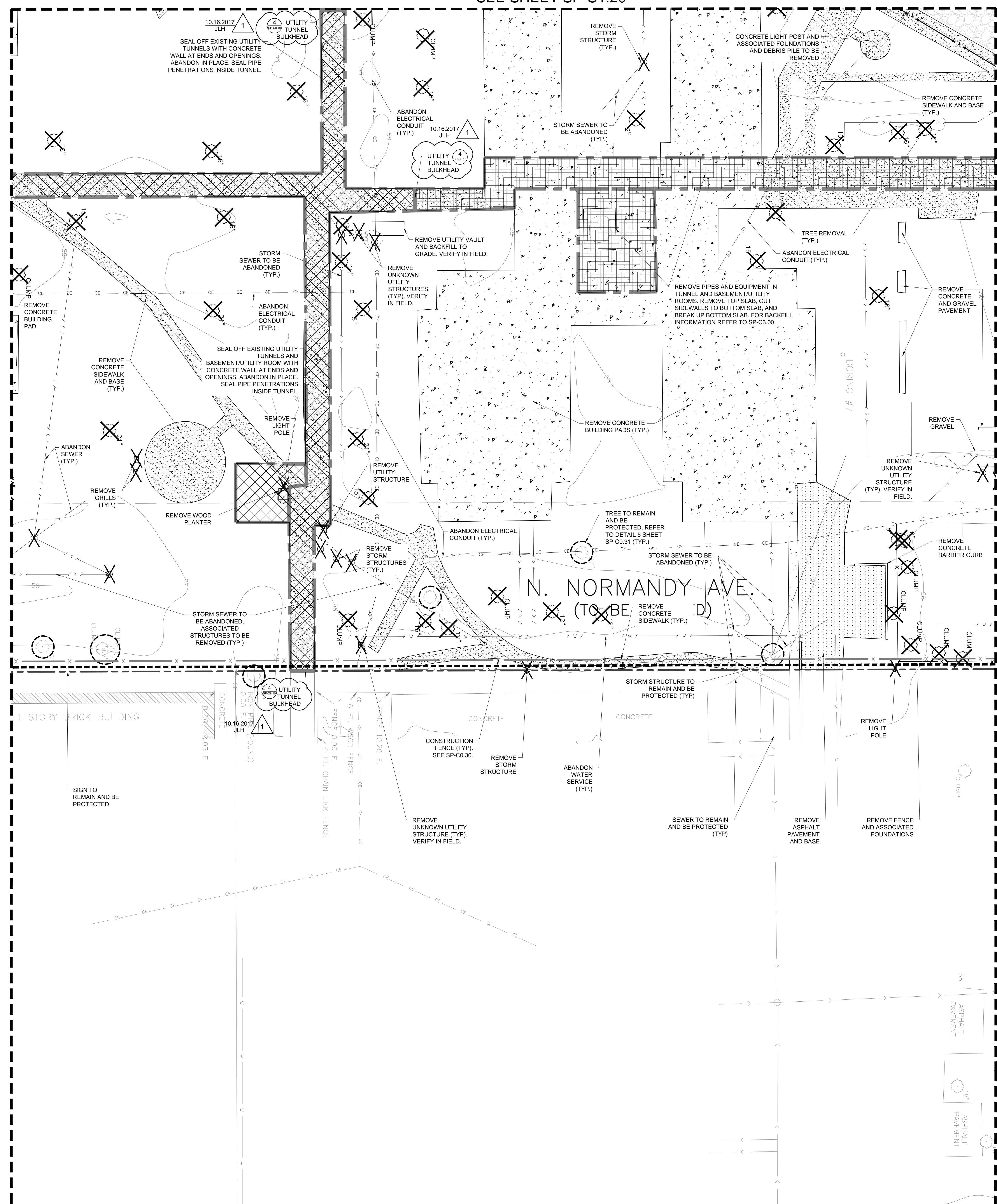


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SEE SHEET SP-C1.60

SEE SHEET SP-C1.30

SEE SHEET SP-C1.40

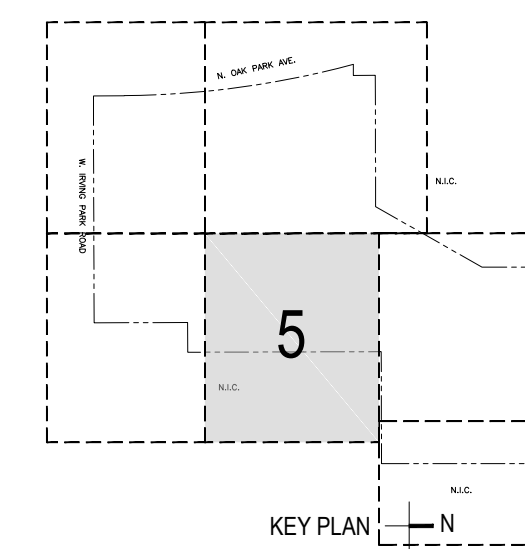


**LEGEND:**

- PROPERTY LINE
- - - LIMITS OF WORK
- [Pattern] REMOVE CONCRETE PAVEMENT AND BASE
- [Pattern] REMOVE CONCRETE WALK AND BASE
- [Pattern] REMOVE ASPHALT PAVEMENT AND BASE
- [Pattern] REMOVE GRAVEL
- X REMOVE FENCE, POSTS GATES, AND FOUNDATIONS
- REMOVE CONCRETE BARRIER CURB
- ABANDON STORM SEWER
- ABANDON WATER SERVICE
- SAWCUT (FULL DEPTH)
- ITEM TO REMAIN AND BE PROTECTED
- ITEM TO BE REMOVED
- [Pattern] BASEMENT/TUNNEL FULL DEPTH DEMOLITION/FILL, BREAK UP BOTTOM SLAB
- [Pattern] SEAL OFF EXISTING BASEMENT/TUNNEL AND ABANDON

**NOTES:**

1. SOIL REMOVAL DEMOLITION SHALL BE COORDINATED WITH SITE REMEDIATION REQUIREMENTS. SEE ENVIRONMENTAL PLANS AND SPECIFICATION SECTIONS FOR REMEDIATION REQUIREMENTS.
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7. ABANDONED PIPING TO BE PLUGGED WITH FLOWABLE FILL.
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10. FOR UTILITY TUNNEL BULKHEADS, INSTALL REINFORCED CONCRETE WALL DOWELED INTO EXISTING WALL AND PROPERLY SEAL. REFER TO DETAIL 4 SHEET SP-C8.10.



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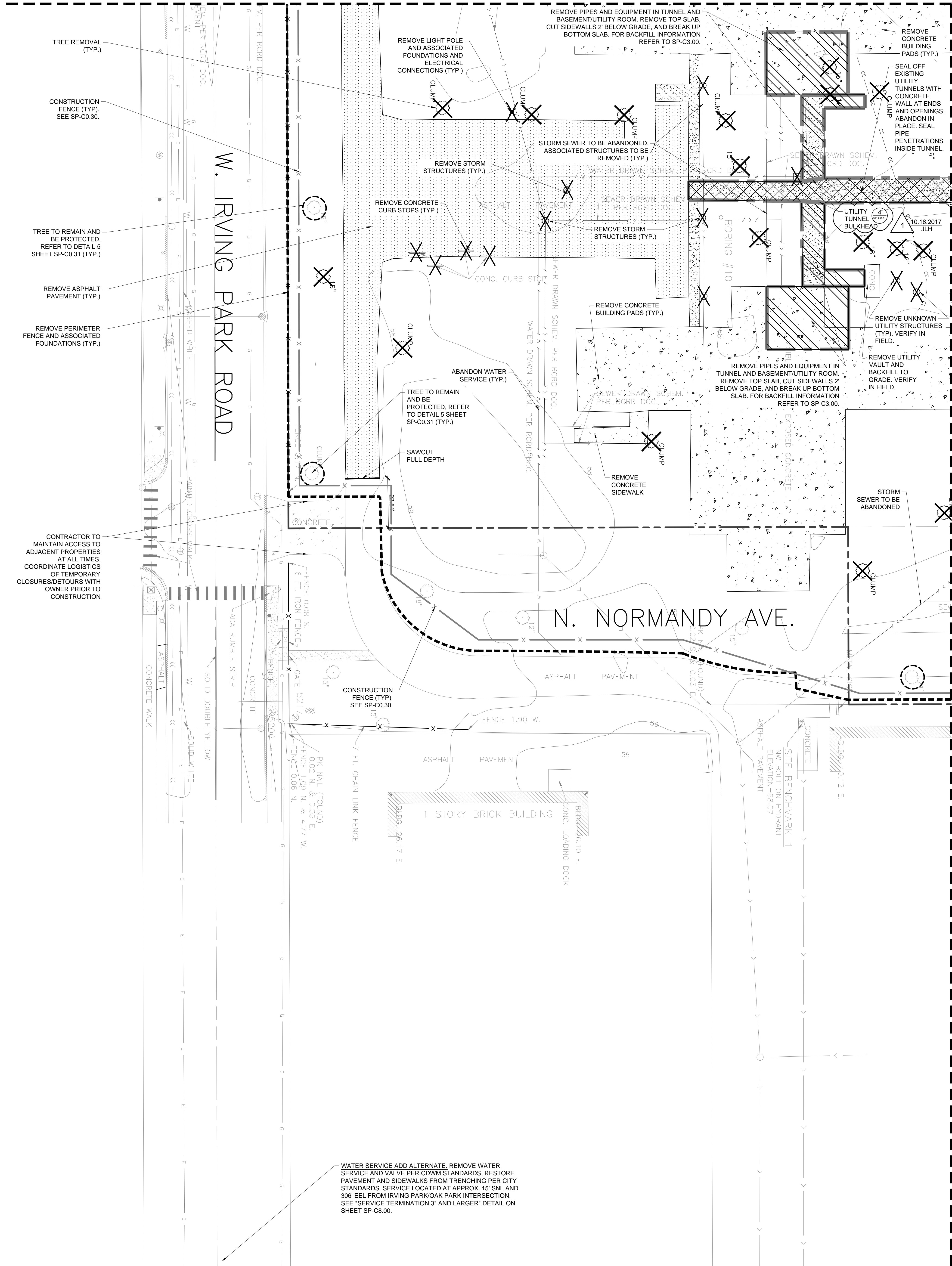
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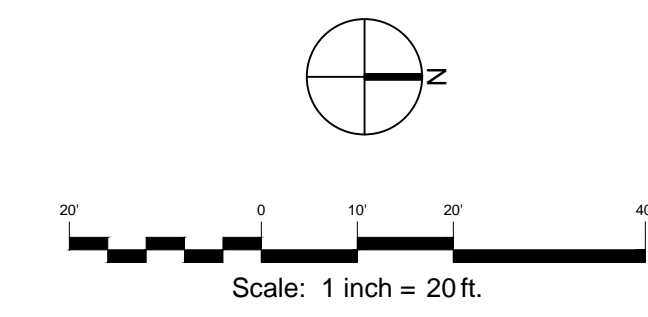
**SITE DEMOLITION PLAN - AREA 5**

Sheet  
 SP-C1.50

SEE SHEET SP-C1.10



SEE SHEET SP-C1.50



**LEGEND:**

- PROPERTY LINE
- LIMITS OF WORK
- REMOVE CONCRETE PAVEMENT AND BASE
- REMOVE CONCRETE WALK AND BASE
- REMOVE ASPHALT PAVEMENT AND BASE
- REMOVE FENCE, POSTS, GATES, AND FOUNDATIONS
- REMOVE CONCRETE CURB AND GUTTER
- ABANDON STORM SEWER
- REMOVE WATER SERVICE
- REMOVE STORM SEWER
- SAWCUT (FULL DEPTH)
- ITEM TO REMAIN AND BE PROTECTED
- ITEM TO BE REMOVED
- SEAL OFF EXISTING BASEMENT/TUNNEL AND ABANDON
- BASEMENT/TUNNEL DEMOLITION/FILL. CUT SIDEWALLS 2' BELOW GRADE. BREAK UP BOTTOM SLAB.

**NOTES:**

1. SOIL REMOVAL DEMOLITION SHALL BE COORDINATED WITH SITE REMEDIATION REQUIREMENTS. SEE ENVIRONMENTAL PLANS AND SPECIFICATION SECTIONS FOR REMEDIATION REQUIREMENTS.
2. ALL CONCRETE INDICATED TO BE REMOVED SHALL BE CRUSHED ON SITE AND USED AS SELECT FILL. REFER TO SPECIFICATIONS.
3. ALL CONCRETE TO BE REUSED ON SITE TO BE APPROVED BY GEOTECHNICAL ENGINEER AND OWNER'S ENVIRONMENTAL CONSULTANT, AND MEET ENVIRONMENTAL PLANS AND SPECIFICATION SECTION 31.23.23.
4. REFER TO GSG CONSULTANTS, INC. ASBESTOS SURVEY REPORT AND EXPLORATORY TEST PIT INVESTIGATION SUMMARY REPORT FOR INFORMATION ON LOCATIONS OF BASEMENTS/UTILITY ROOMS.
5. CONTRACTOR TO VERIFY ALL DIMENSIONS, EXTENTS AND LOCATIONS OF UTILITY TUNNELS IN THE FIELD.
6. WATER SERVICE ADD ALTERNATE: FOR WORK ASSOCIATED WITH WATER SERVICE ADD ALTERNATE, COORDINATE ANY WATER SHUT-DOWNS WITH ADJACENT PROPERTY OWNERS BEING SERVED PRIOR TO CONSTRUCTION.
7. ABANDONED PIPING TO BE PLUGGED WITH FLOWABLE FILL.
8. ALL EXCAVATIONS AT UNDERGROUND UTILITY STRUCTURES TO BE BACKFILLED TO GRADE IN ACCORDANCE WITH EARTHWORK SPECIFICATIONS.
9. FOR ALL UTILITY TUNNEL AND BASEMENT/UTILITY ROOM BOTTOM SLAB DEMOLITION, BOTTOM SLAB TO BE COMPLETELY BROKEN TO FULL DEPTH, MINIMUM 2 FT. ON CENTER IN BOTH DIRECTIONS.
10. FOR UTILITY TUNNEL BULKHEADS, INSTALL REINFORCED CONCRETE WALL DOWELED INTO EXISTING WALL AND PROPERLY SEAL. REFER TO DETAIL 4 SHEET SP-C8.10.

- TREE REMOVAL (TYP.)
- CONSTRUCTION FENCE (TYP.) SEE SP-C0.30.
- TREE TO REMAIN AND BE PROTECTED. REFER TO DETAIL 5 SHEET SP-C0.31 (TYP.)
- REMOVE ASPHALT PAVEMENT (TYP.)
- REMOVE PERIMETER FENCE AND ASSOCIATED FOUNDATIONS (TYP.)
- CONTRACTOR TO MAINTAIN ACCESS TO ADJACENT PROPERTIES AT ALL TIMES. COORDINATE LOGISTICS OF TEMPORARY CLOSURES/DETOURS WITH OWNER PRIOR TO CONSTRUCTION

WATER SERVICE ADD ALTERNATE: REMOVE WATER SERVICE AND VALVE PER CDWM STANDARDS. RESTORE PAVEMENT AND SIDEWALKS FROM TRENCHING PER CITY STANDARDS. SERVICE LOCATED AT APPROX. 15' SNL AND 306' EEL FROM IRVING PARK/OAK PARK INTERSECTION. SEE "SERVICE TERMINATION 3" AND LARGER" DETAIL ON SHEET SP-C8.00.

**NOT FOR CONSTRUCTION**



**READ DUNNING SCHOOL SITE PREPARATION**  
407 N. OAK PARK AVENUE  
CHICAGO, IL 60634  
CITY OF CHICAGO, MAYOR RAHM EMMANUEL

Architect of Record:  
STL ARCHITECTS

**STLARCHITECTS**

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MEPPP Engineers of Record

**ARUP NORTH AMERICA LTD.**  
35 E Upper Wacker Dr #1800, Chicago, IL 60601  
Acoustics Consultant

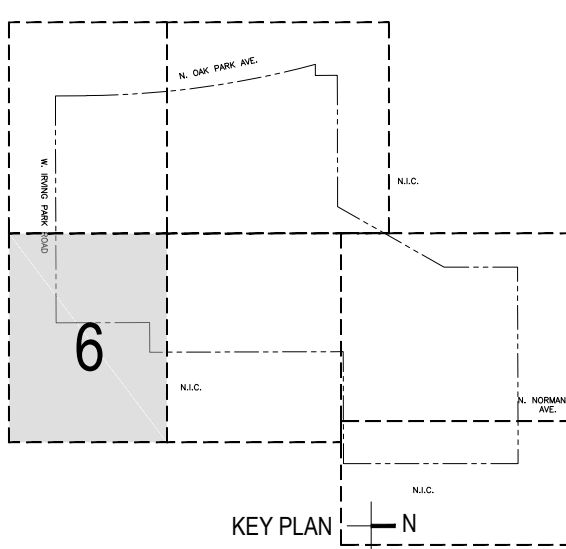
**SCHULER SHOOK**  
750 N Orleans St # 400, Chicago, IL 60654  
Theatre Consultant

**EDGE ASSOCIATES INC.**  
220 E Lake St # 303, Addison, IL 60101  
Food Service Consultant

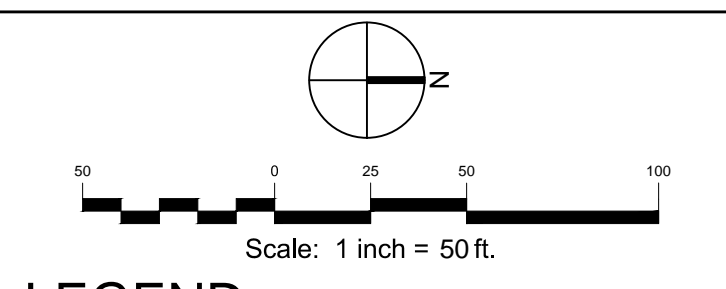
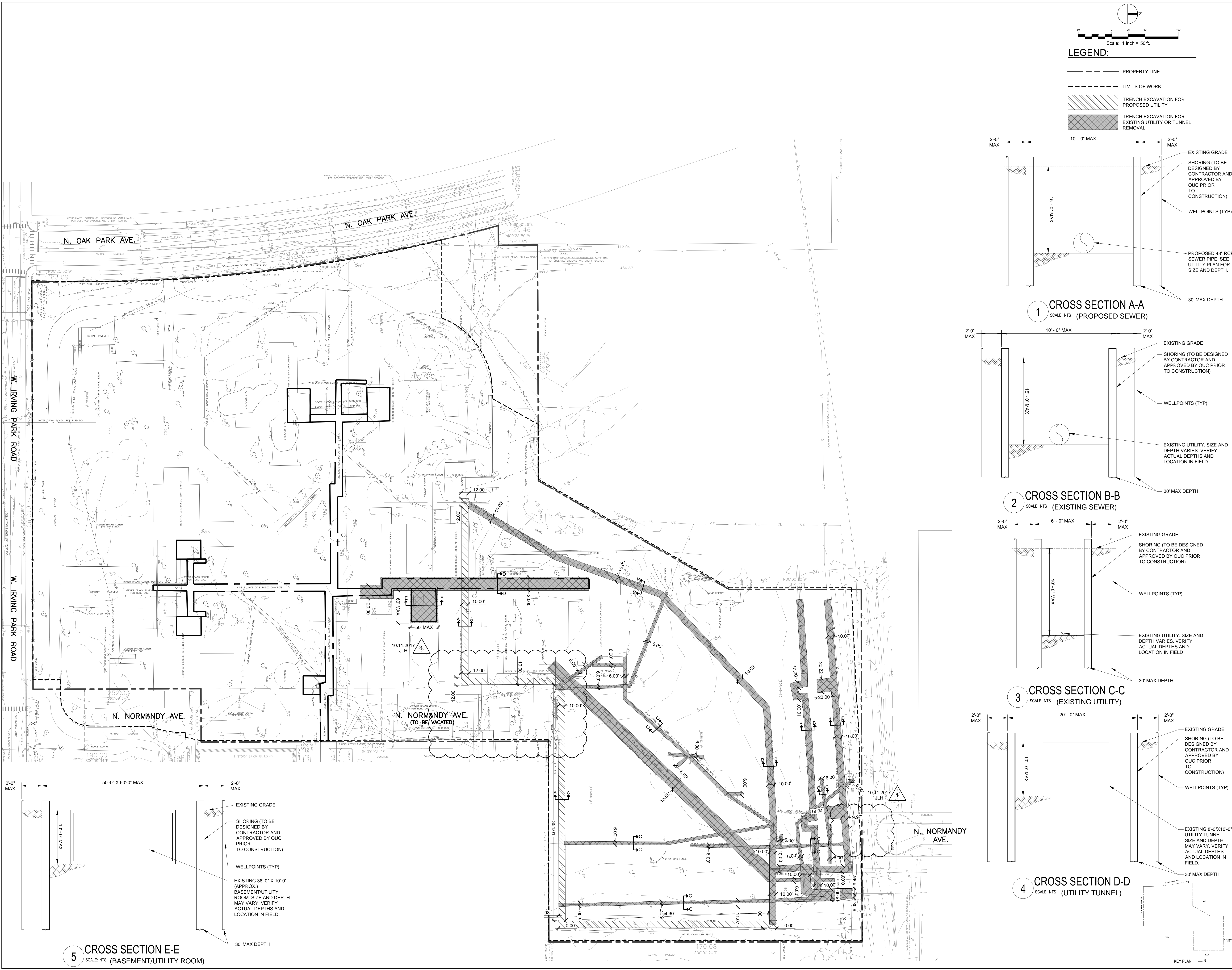
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|      | ISSUED FOR BID | 09/27/2017 |
|      | 100% SITE PREP | 09/22/2017 |
|      | 90% SITE PREP  | 08/25/2017 |

PBC Project Name: READ DUNNING SCHOOL  
PBC Contract No: 05165  
Project No.: N/A

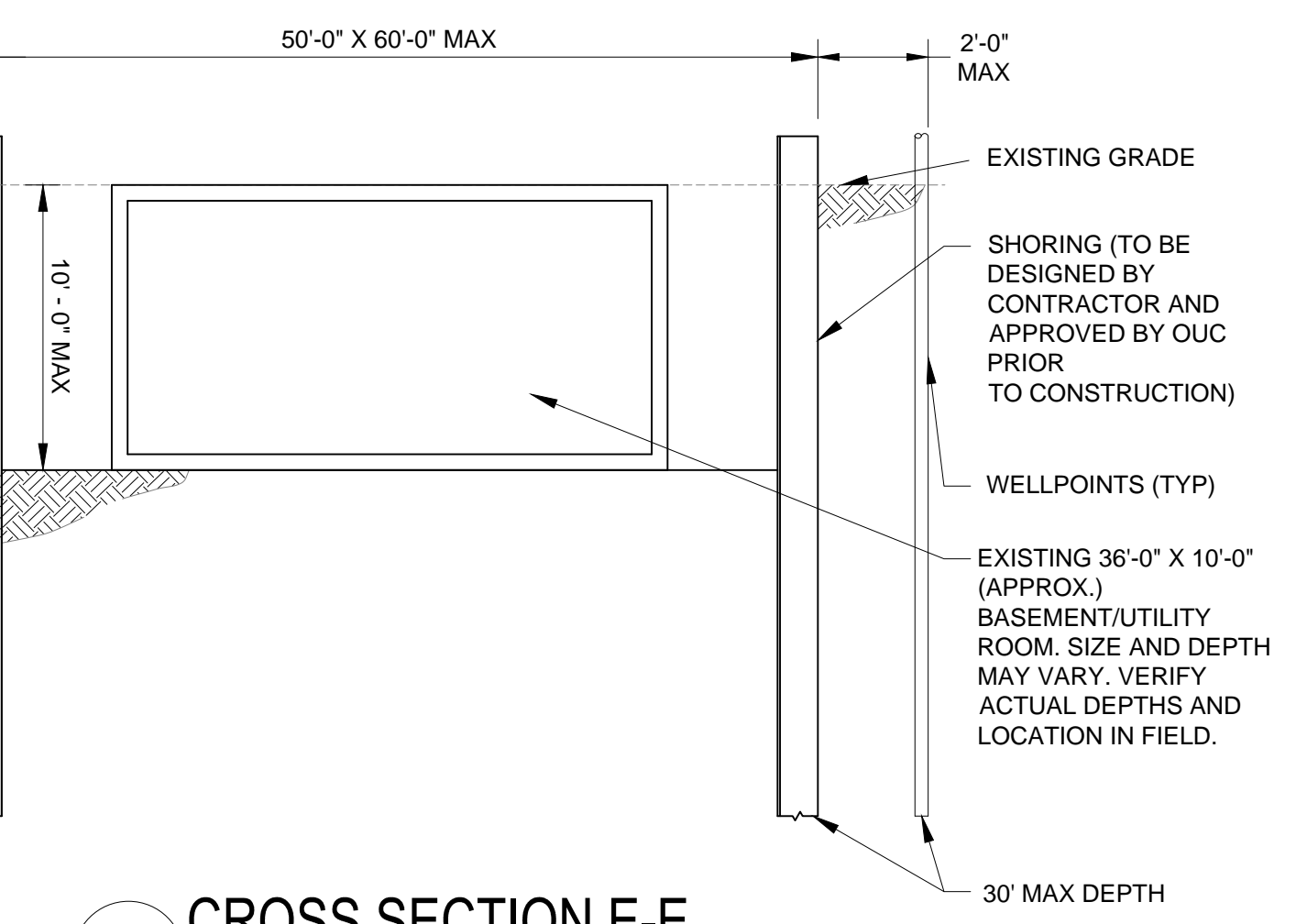
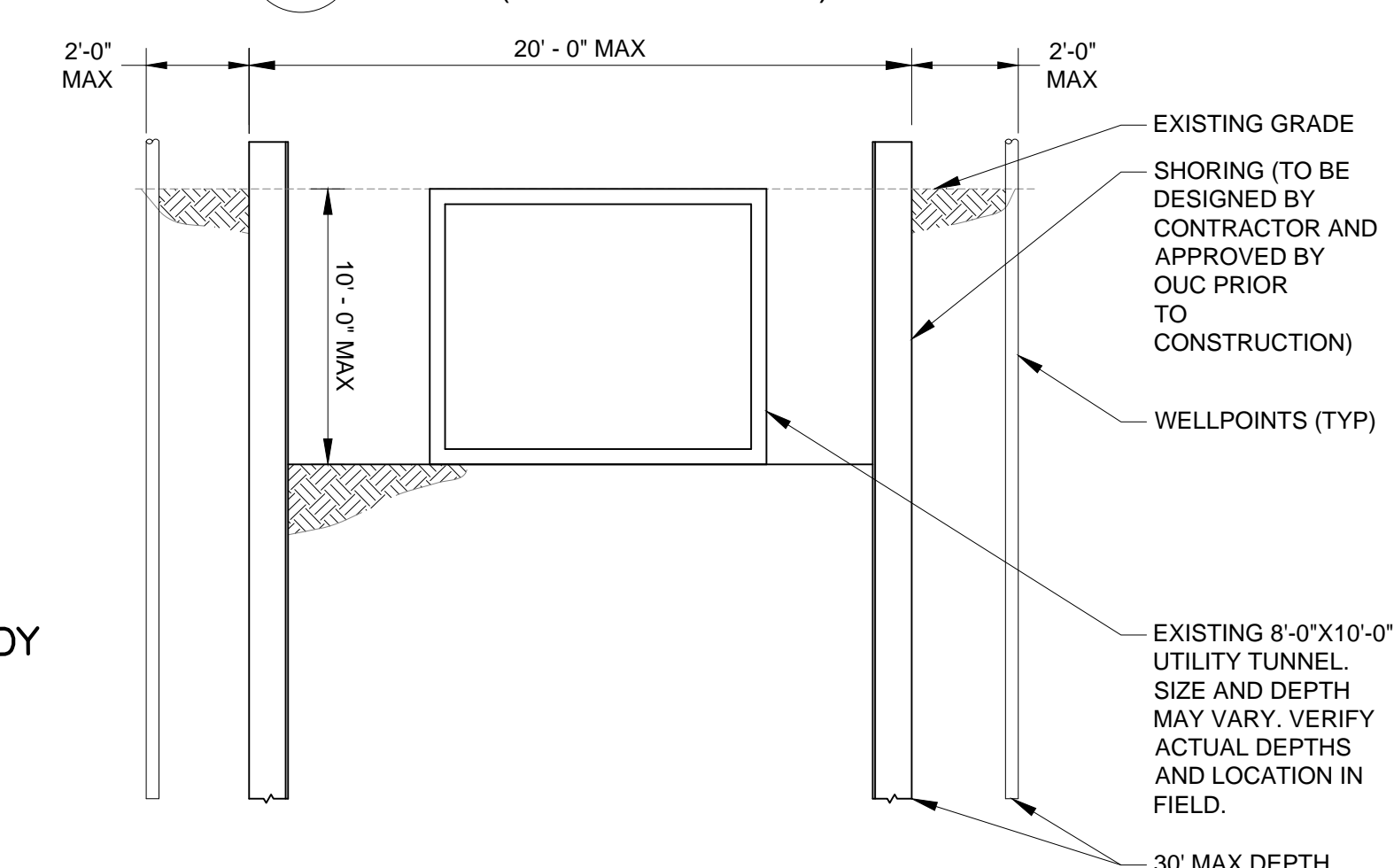
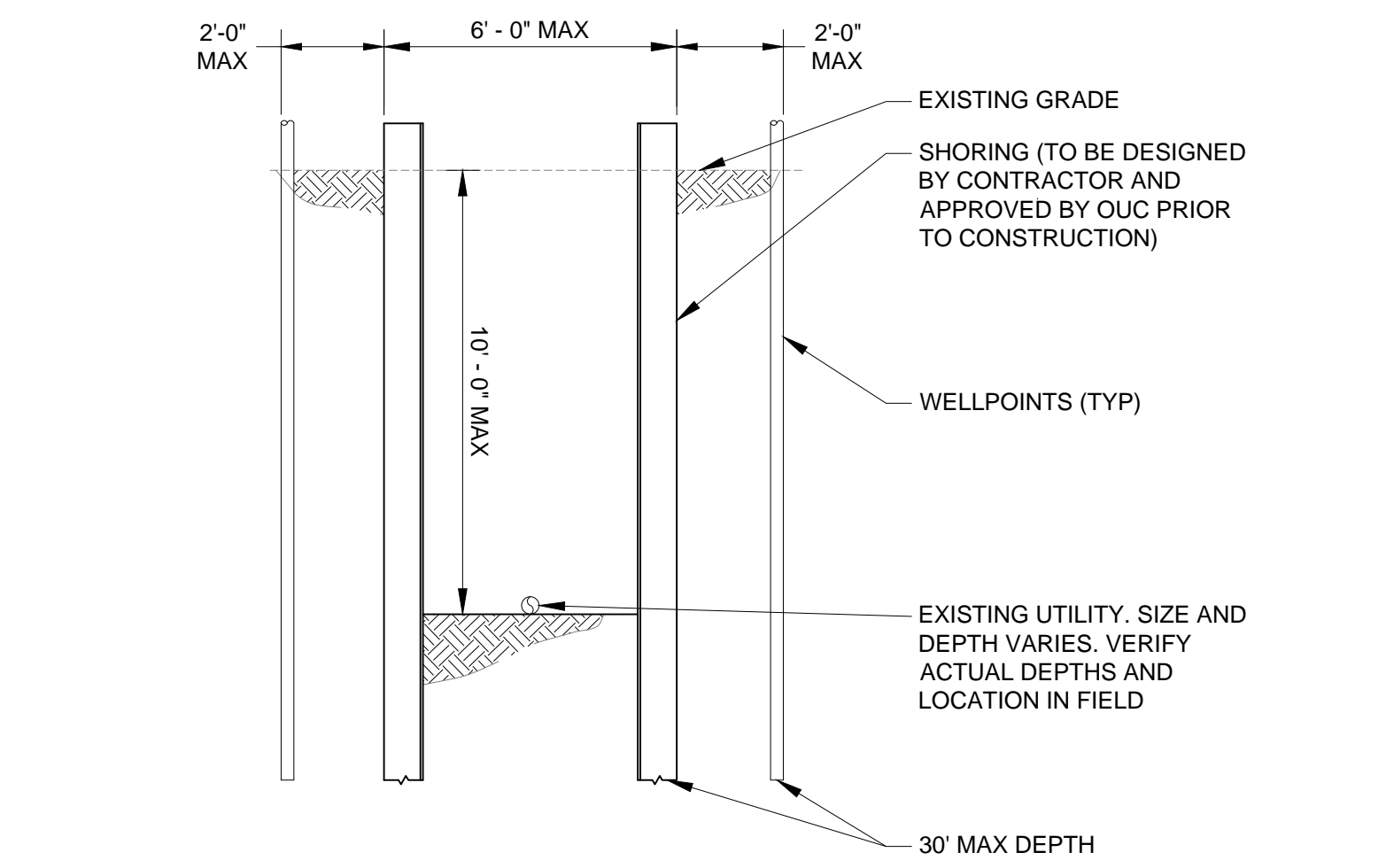
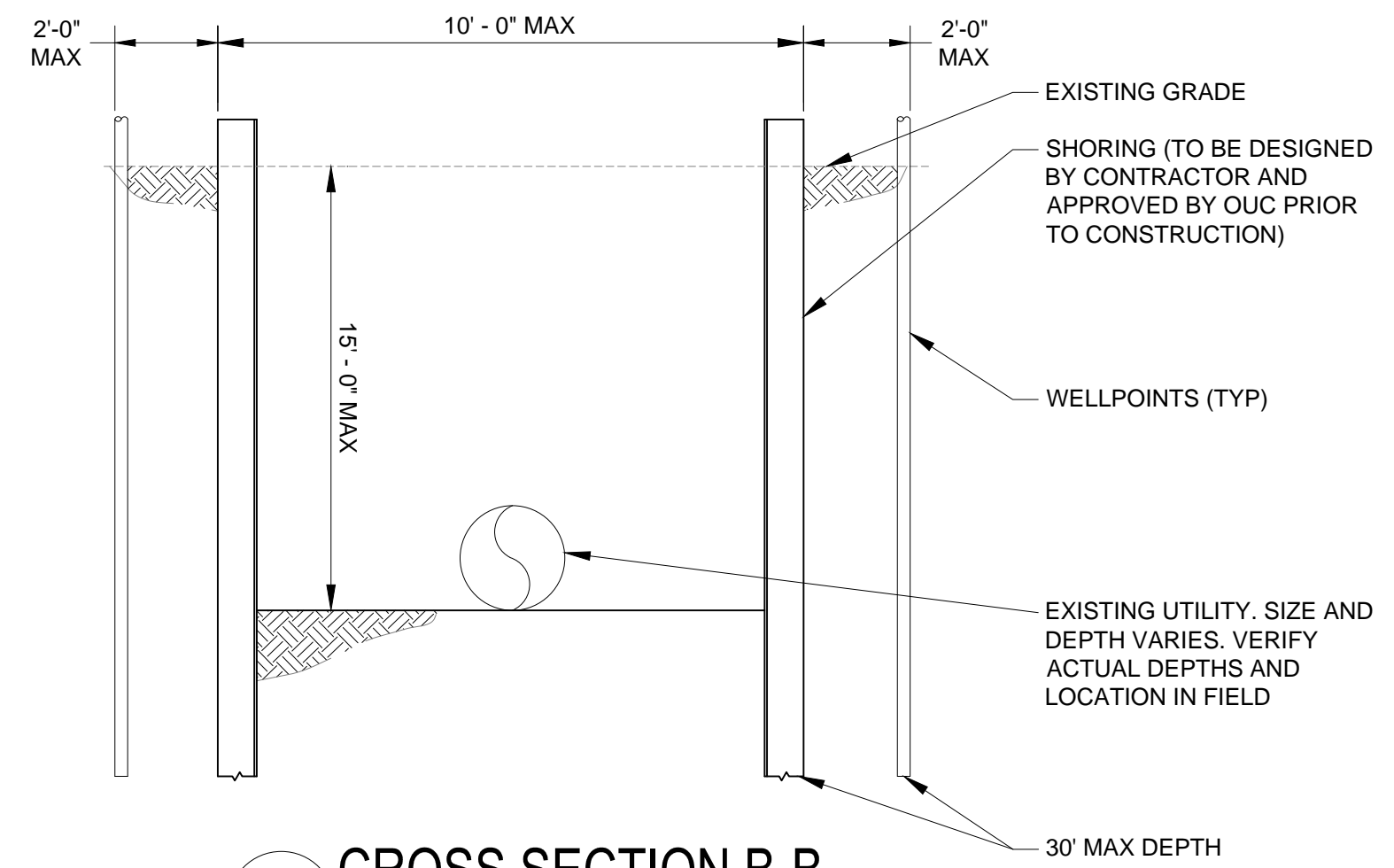
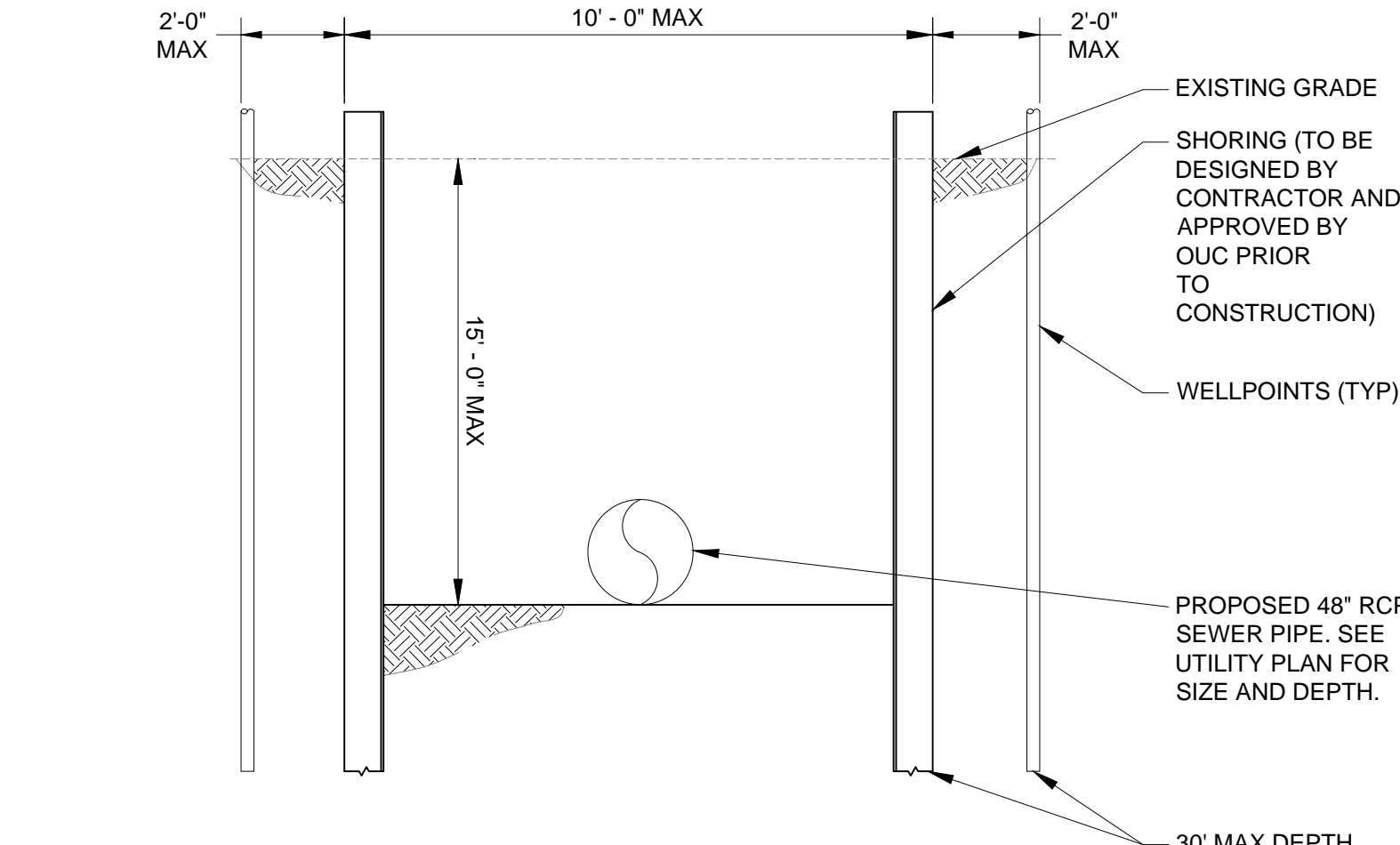
**SITE DEMOLITION PLAN - AREA 6**



Sheet  
SP-C1.60



- LEGEND:**
- PROPERTY LINE
  - - - LIMITS OF WORK
  - [Hatched Box] TRENCH EXCAVATION FOR PROPOSED UTILITY
  - [Cross-hatched Box] TRENCH EXCAVATION FOR EXISTING UTILITY OR TUNNEL REMOVAL



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Theatre Consultant

**EDGE ASSOCIATES INC.**  
220 E Lake St # 303, Addison, IL 60101  
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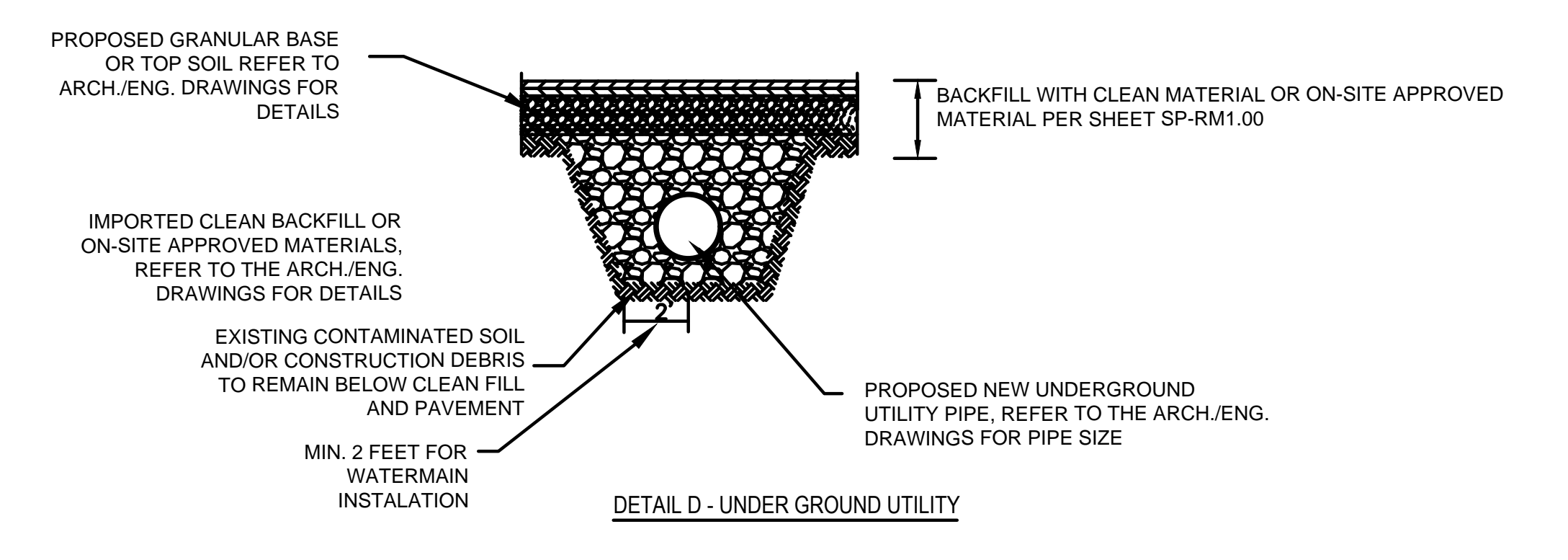
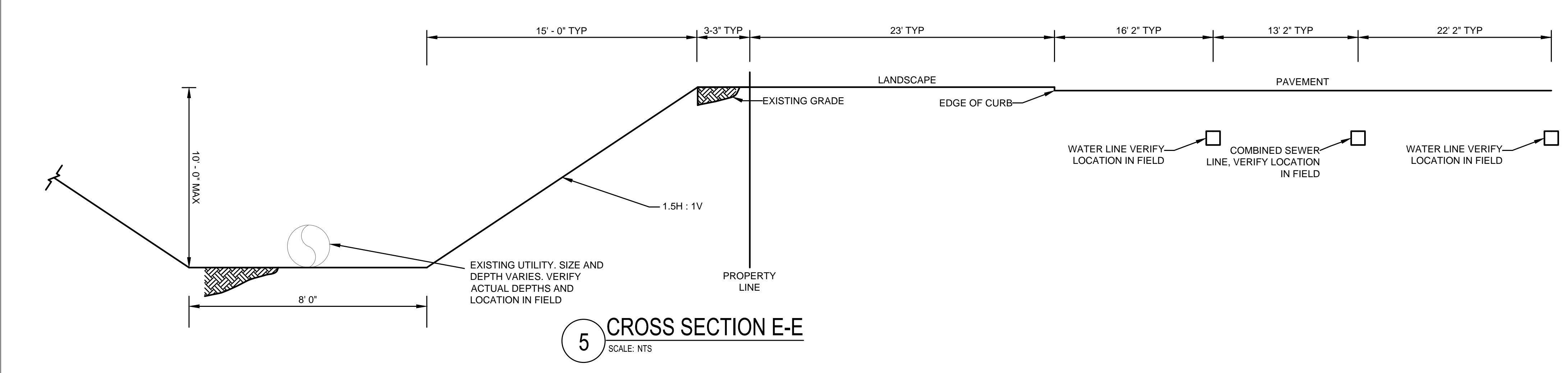
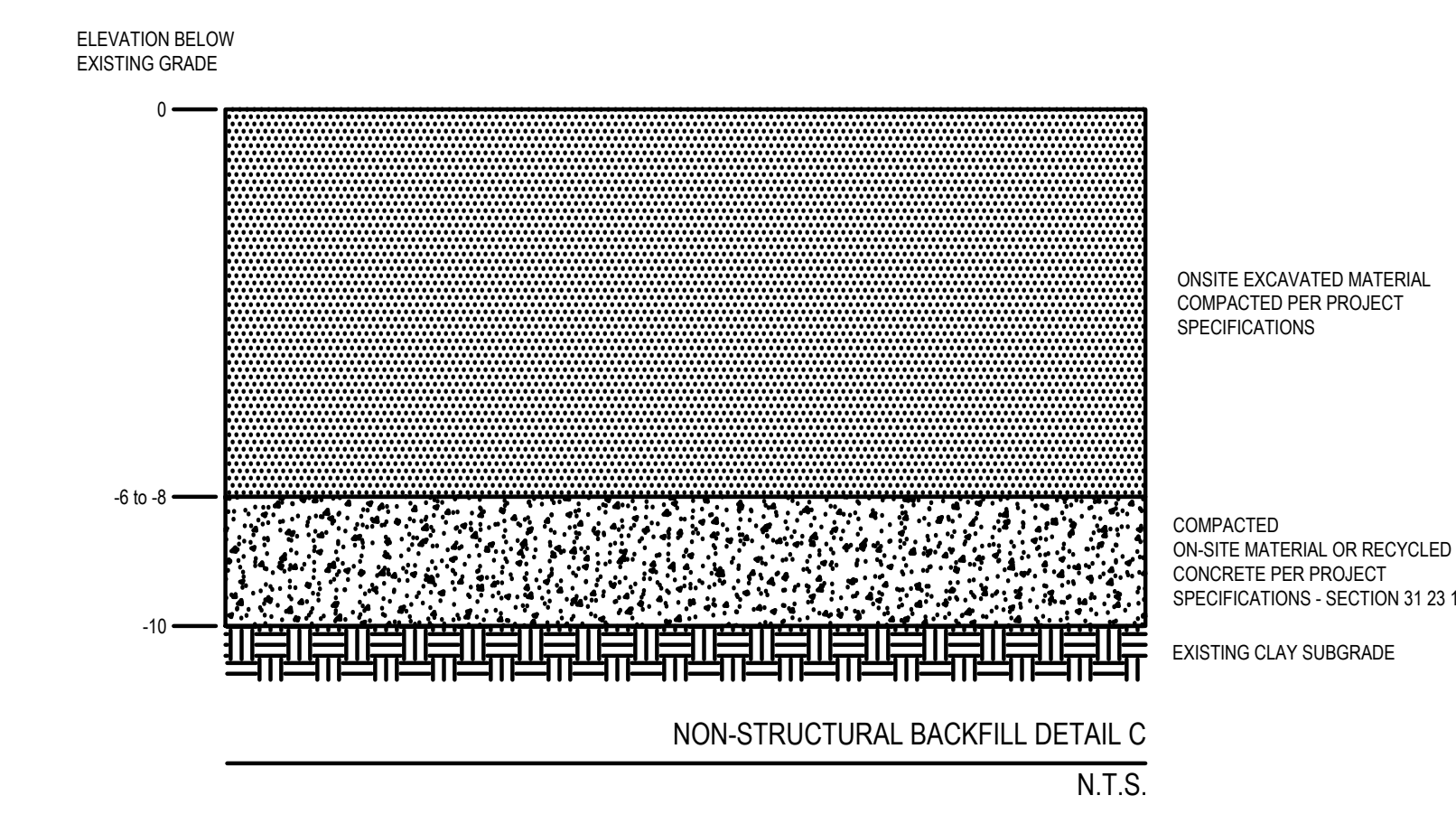
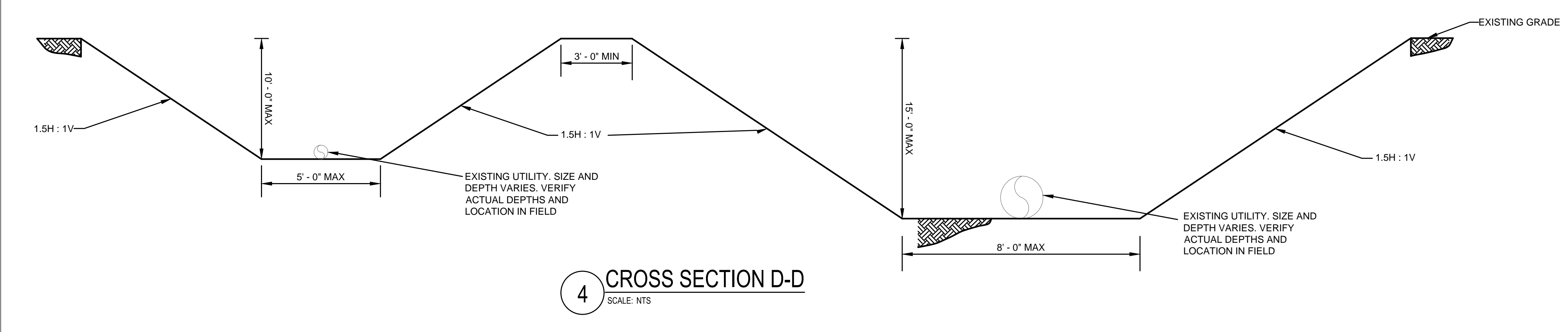
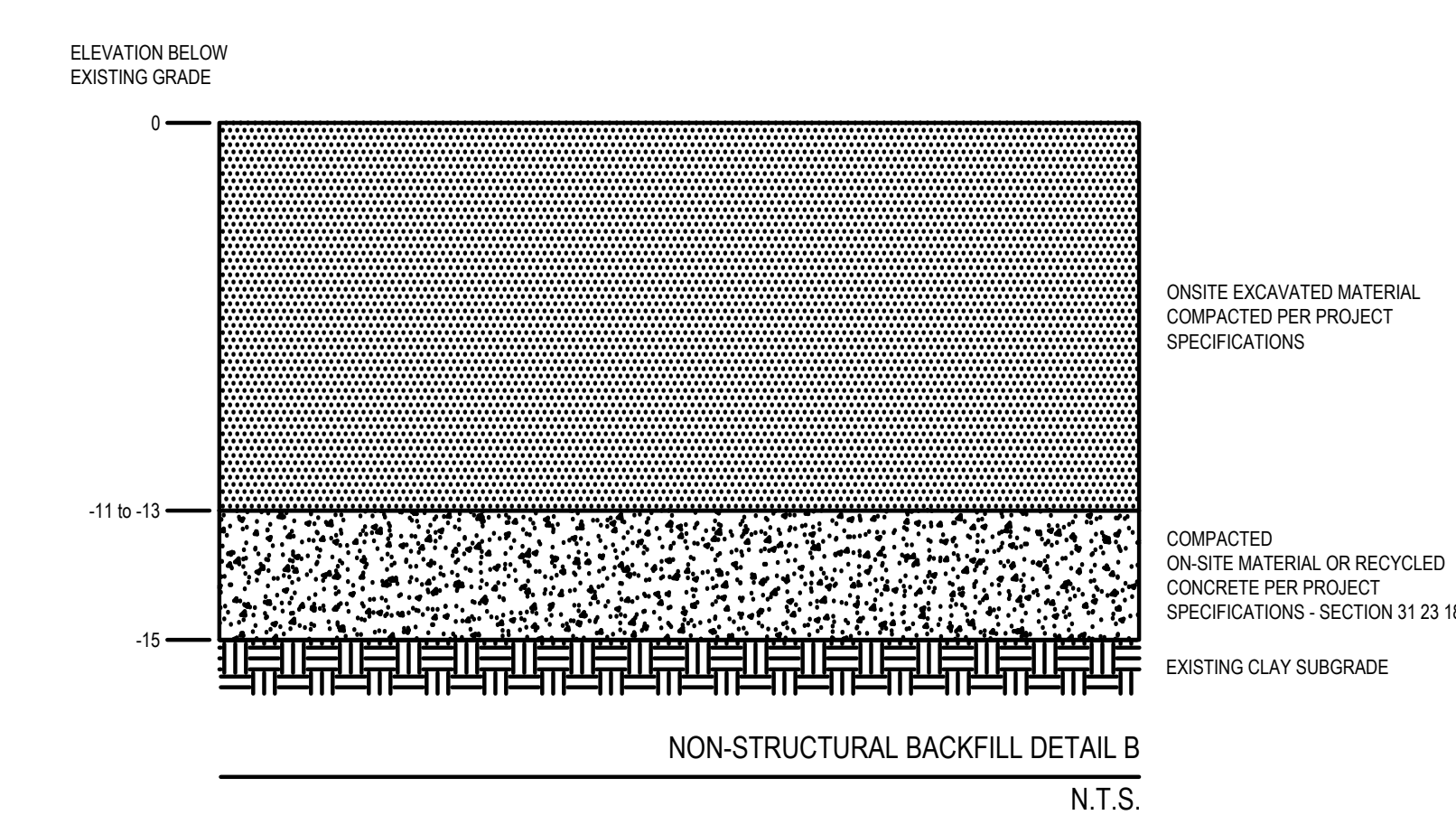
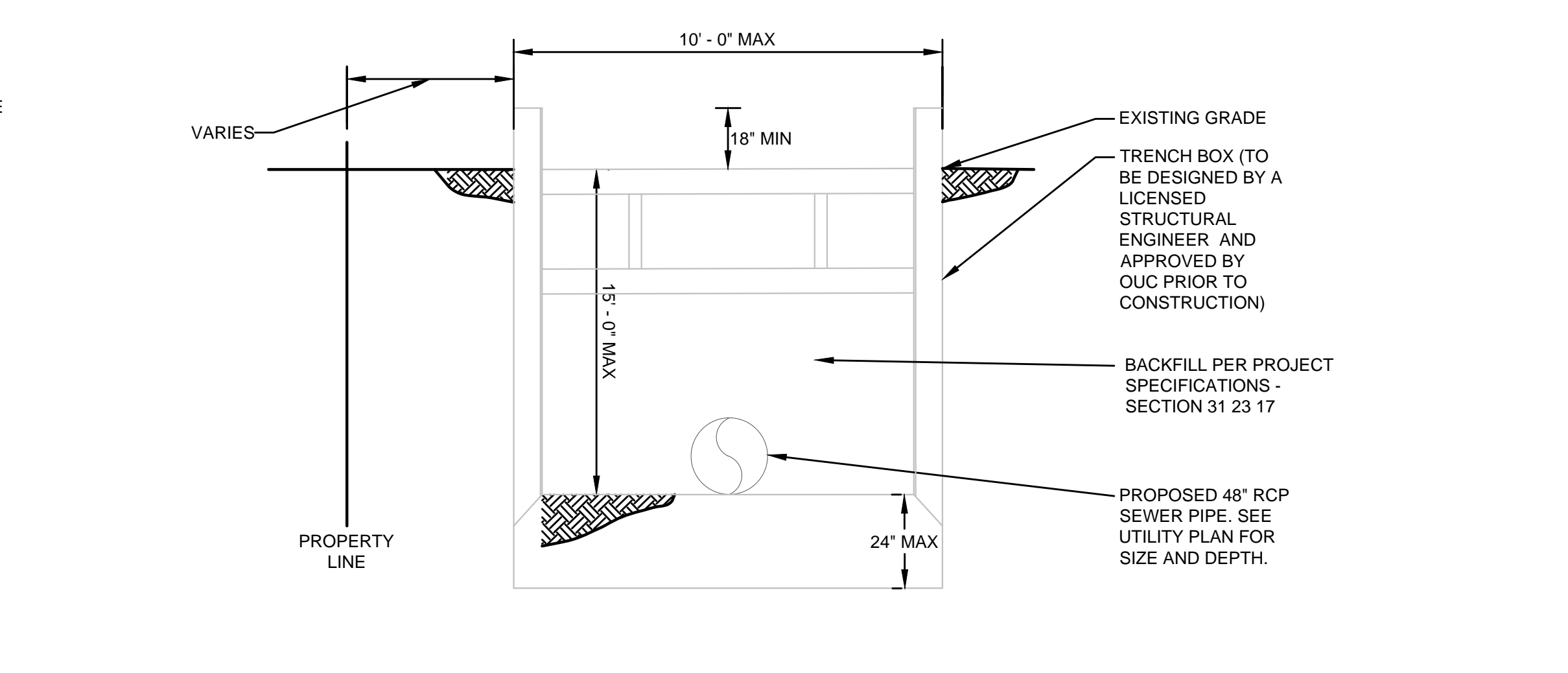
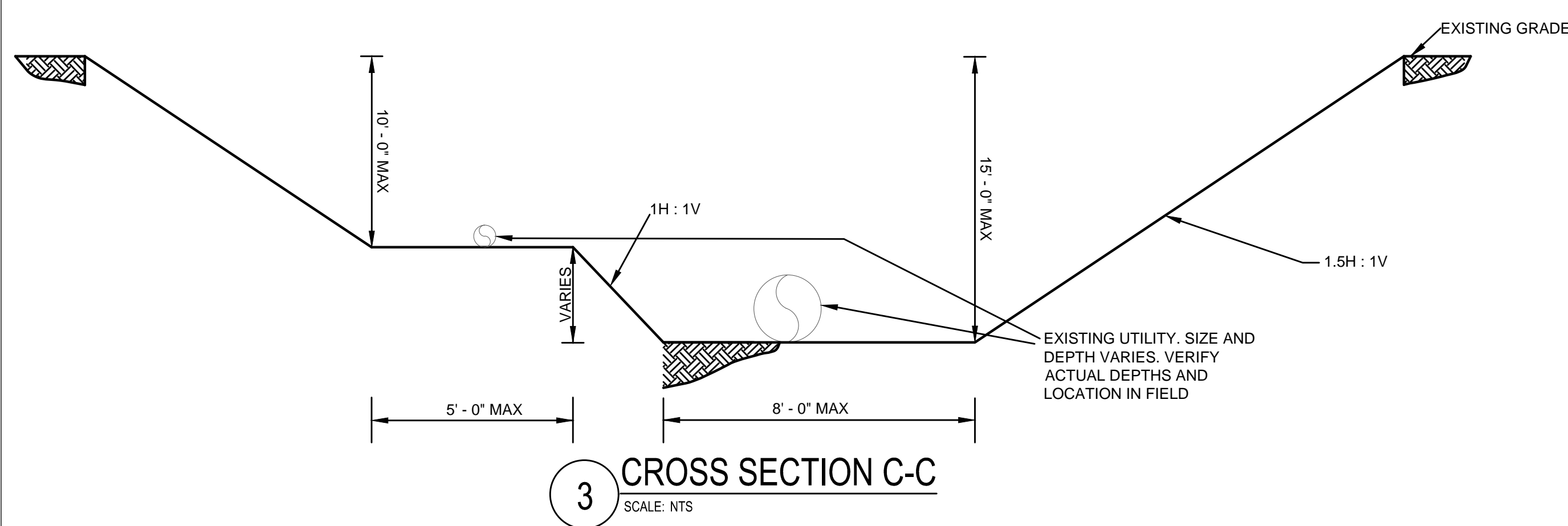
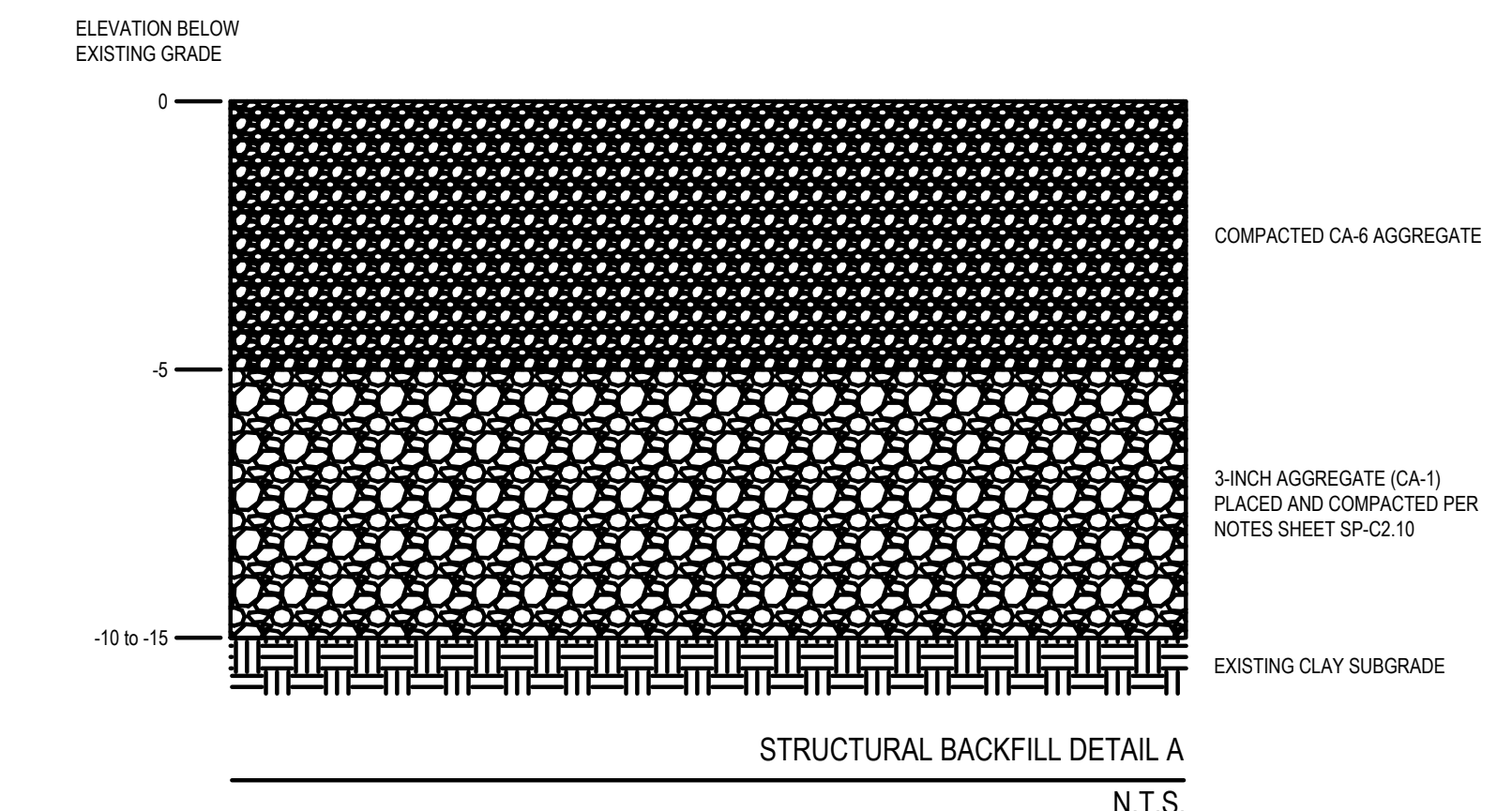
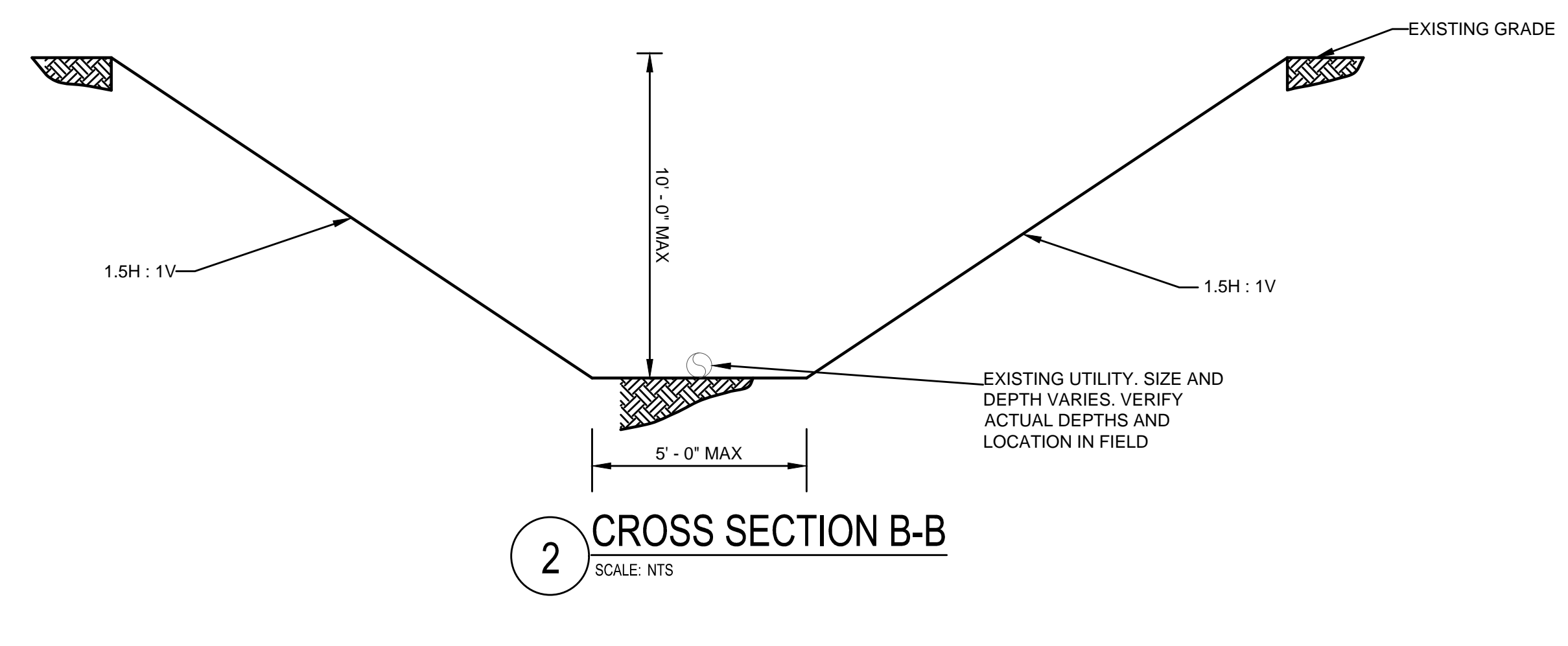
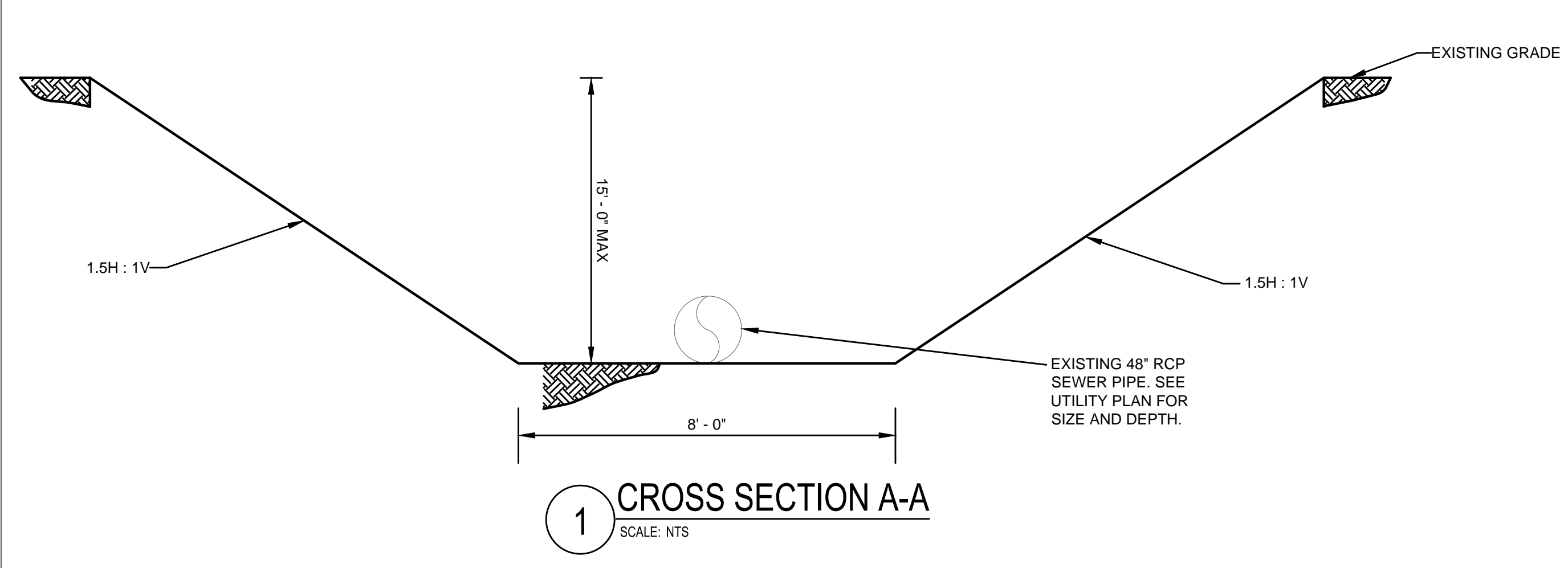
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|      | 100% SITE PREP | 09/22/2017 |
|      | 90% SITE PREP  | 08/25/2017 |

PBC Project Name: READ DUNNING SCHOOL  
PBC Contract No: 05165  
Project No.: NA

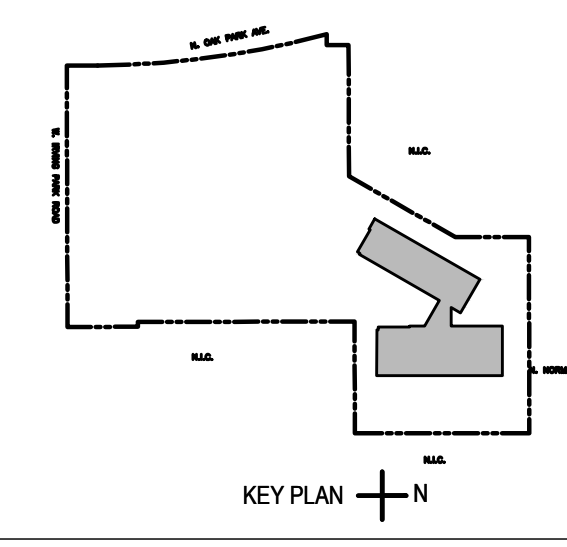
**EXCAVATION PLAN  
OPTION 1:  
SHORING SYSTEM**

SP-C2.00





NOTES:  
1.) DETAIL D SHOWN ON SHEET SP-RM1.00 FOR UNDERGROUND UTILITY ONLY



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CHICAGO PUBLIC SCHOOLS  
CITY OF CHICAGO, MAYOR RAHM EMMANUEL

Architect of Record:  
STL ARCHITECTS

STLARCHITECTS

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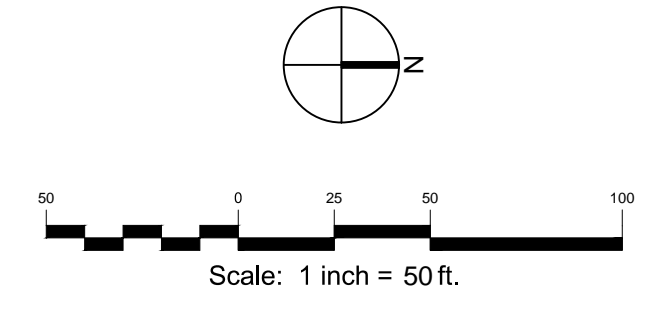
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PBC Contract No: 05165  
Project No: N/A  
Title

**OPTION #2 OPEN CUT CROSS-SECTIONS**

Sheet  
**SP-C2.20**

**GSG CONSULTANTS, INC.**  
855 West Adams, Suite 200  
Chicago, Illinois 60607  
tel: 312.733.6262 • fax: 312.733.5612

PIN: 13-18-409-083-0000



LEGEND:

- PROPERTY LINE
- LIMITS OF WORK
- EXISTING BUILDING - OFF SITE
- APPROXIMATE EXCAVATION LIMITS
- SPOILS MOUND
- LIMITS OF UNDERGROUND TUNNELS.
- CUT FILL BUILDING EARTHWORK
- CONTAMINATED SOILS REMOVAL. REFER TO SP-SM100 SP-RM100.
- BACKFILL TUNNEL EXCAVATION WITH EXCESS SOILS FROM BUILDING SLAB EARTHWORK PRIOR TO BACKFILLING WITH OTHER ONSITE MATERIALS.
- BACK FILL TUNNEL WITH EXCESS ON-SITE SELECT FILL. PRIOR TO BACKFILLING WITH OTHER MATERIALS.
- 2H : 1V TRANSITION SLOPE FROM PROPOSED GRADE TO EXISTING GRADE.
- MEXXXX SPOT ELEVATION

SHEET NOTES

1. COORDINATE SOIL DISPLACEMENT AND FILL INSTALLATION REQUIREMENTS WITH ENVIRONMENTAL SHEETS SP-SM1.00 AND SP-RM1.00.
2. SEE GEO-TECHNICAL REPORT FOR COMPACTION REQUIREMENTS AT BUILDING FOUNDATIONS, BUILDING SLAB, AND FUTURE IMPROVEMENTS.
3. SEE STRUCTURAL DRAWINGS FOR DETAILS OF PROPOSED BUILDING FOUNDATION SYSTEM.
4. HAUL OFF AND EXCAVATION REQUIREMENTS TO BE PER ENVIRONMENTAL SPECIFICATION AND ON SITE PBC ENVIRONMENTAL CONSULTANT AND/OR MATERIAL TESTING AGENCY.



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Architect of Record:  
 STL ARCHITECTS

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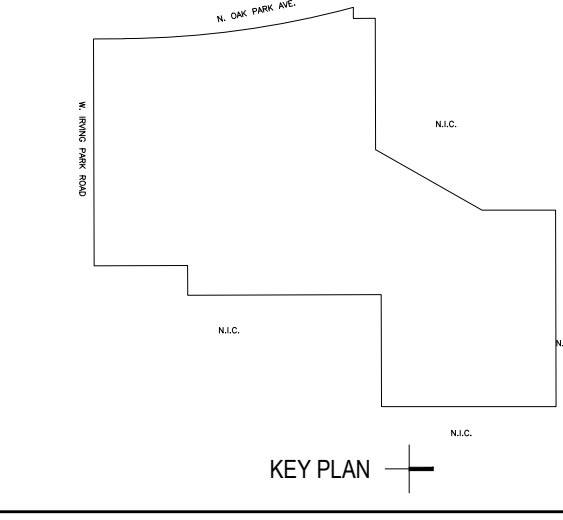
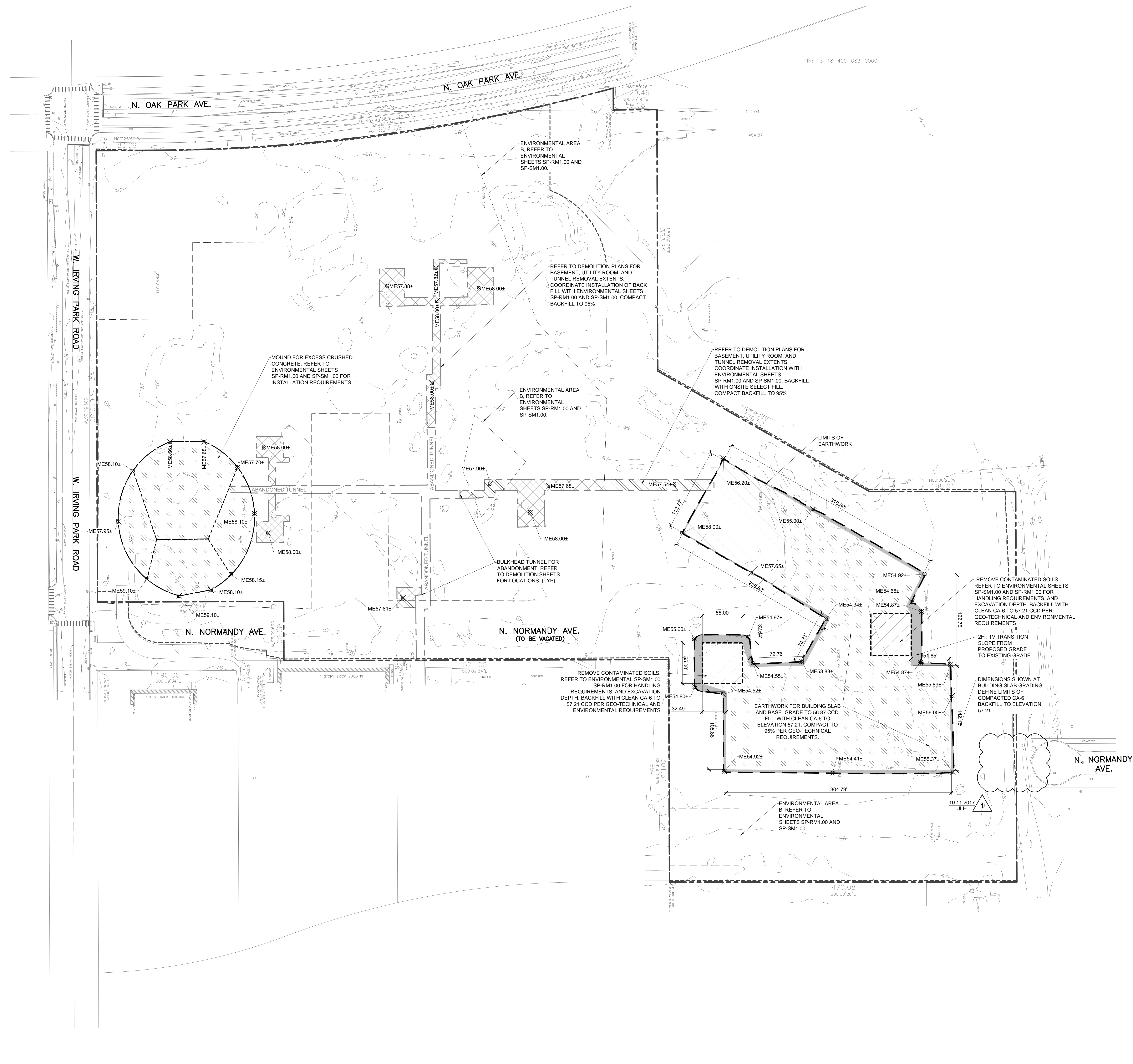
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 220 E Lake St # 303, Addison, IL 60101  
 Food Service Consultant

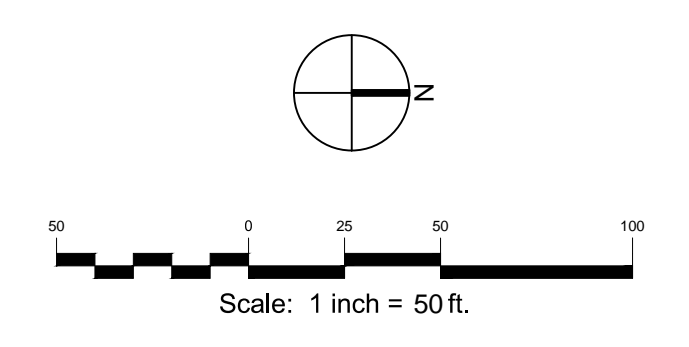
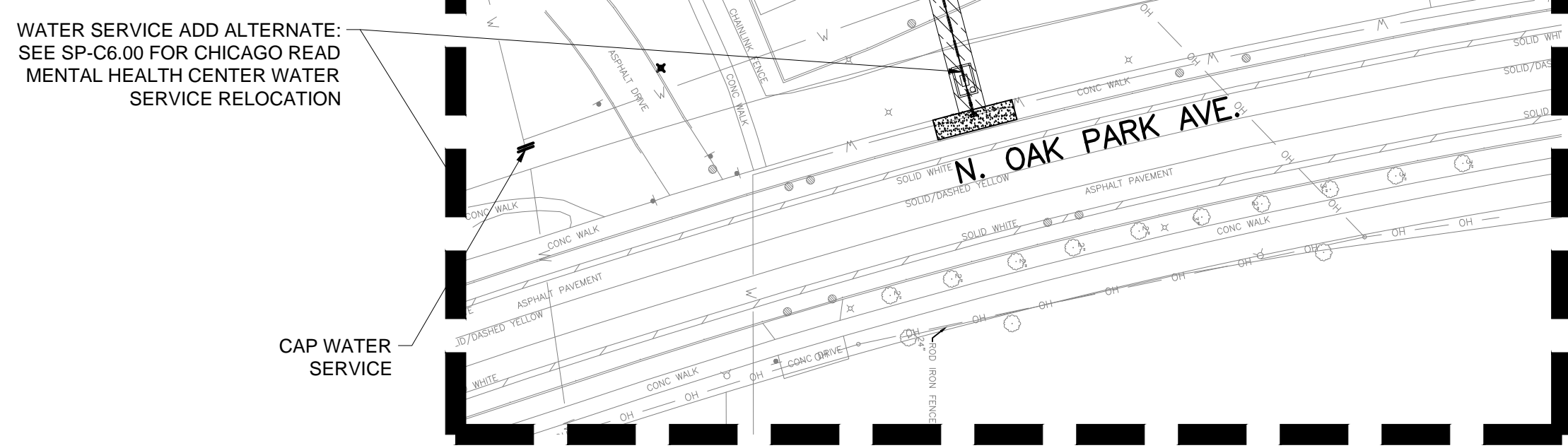
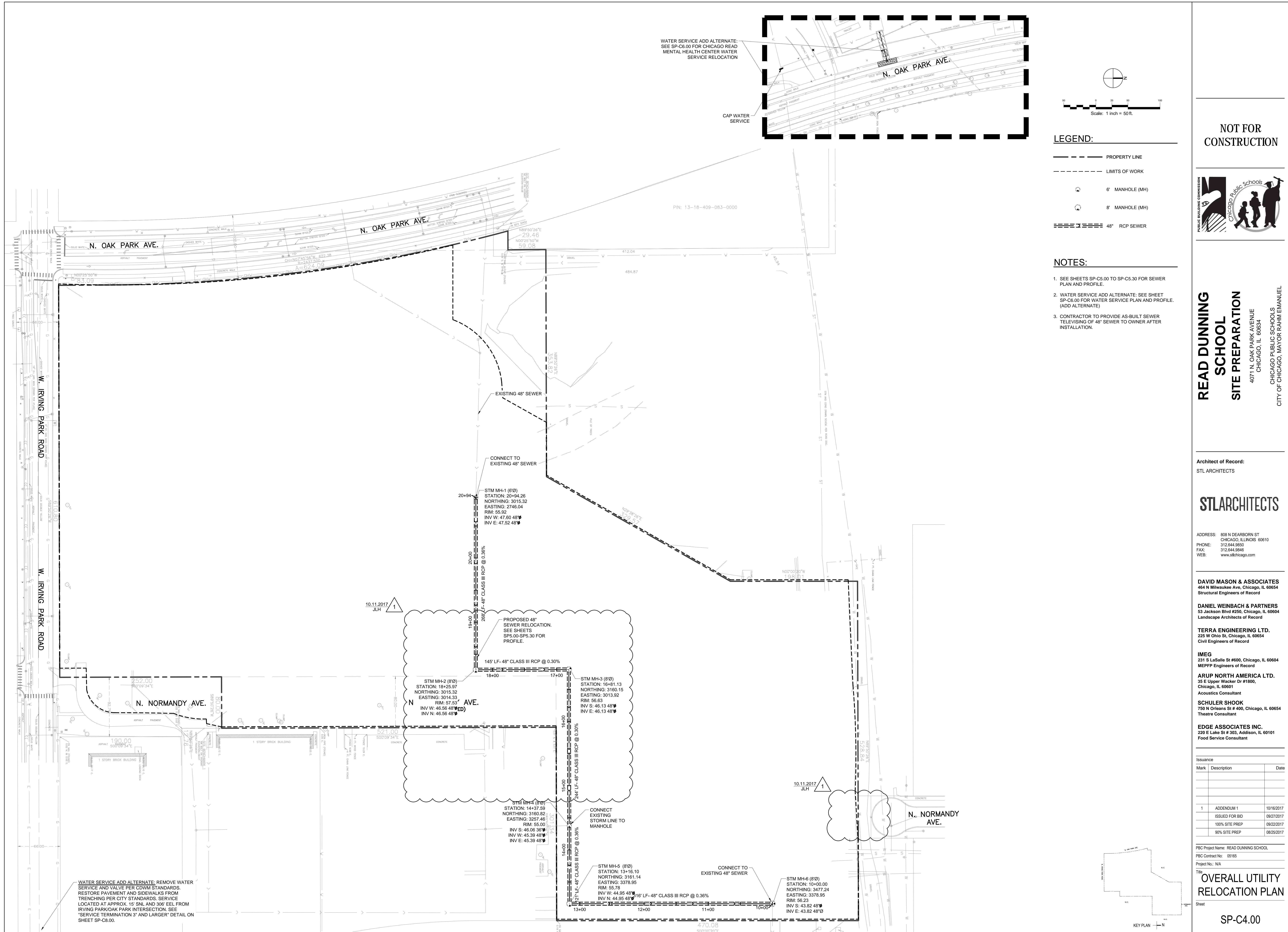
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|          | 90% SITE PREP  |             | 08/25/2017 |

PBC Project Name: READ DUNNING SCHOOL  
 PBC Contract No: 05165  
 Project No.: N/A

**MASS GRADING PLAN**

Sheet  
**SP-C3.00**





**LEGEND:**

- PROPERTY LINE
- - - LIMITS OF WORK
- 6" MANHOLE (MH)
- 8" MANHOLE (MH)
- ==== 48" RCP SEWER

**NOTES:**

1. SEE SHEETS SP-C5.00 TO SP-C5.30 FOR SEWER PLAN AND PROFILE.
2. WATER SERVICE ADD ALTERNATE: SEE SHEET SP-C6.00 FOR WATER SERVICE PLAN AND PROFILE. (ADD ALTERNATE)
3. CONTRACTOR TO PROVIDE AS-BUILT SEWER TELEVISION OF 48" SEWER TO OWNER AFTER INSTALLATION.

**NOT FOR CONSTRUCTION**



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 CHICAGO PUBLIC SCHOOLS  
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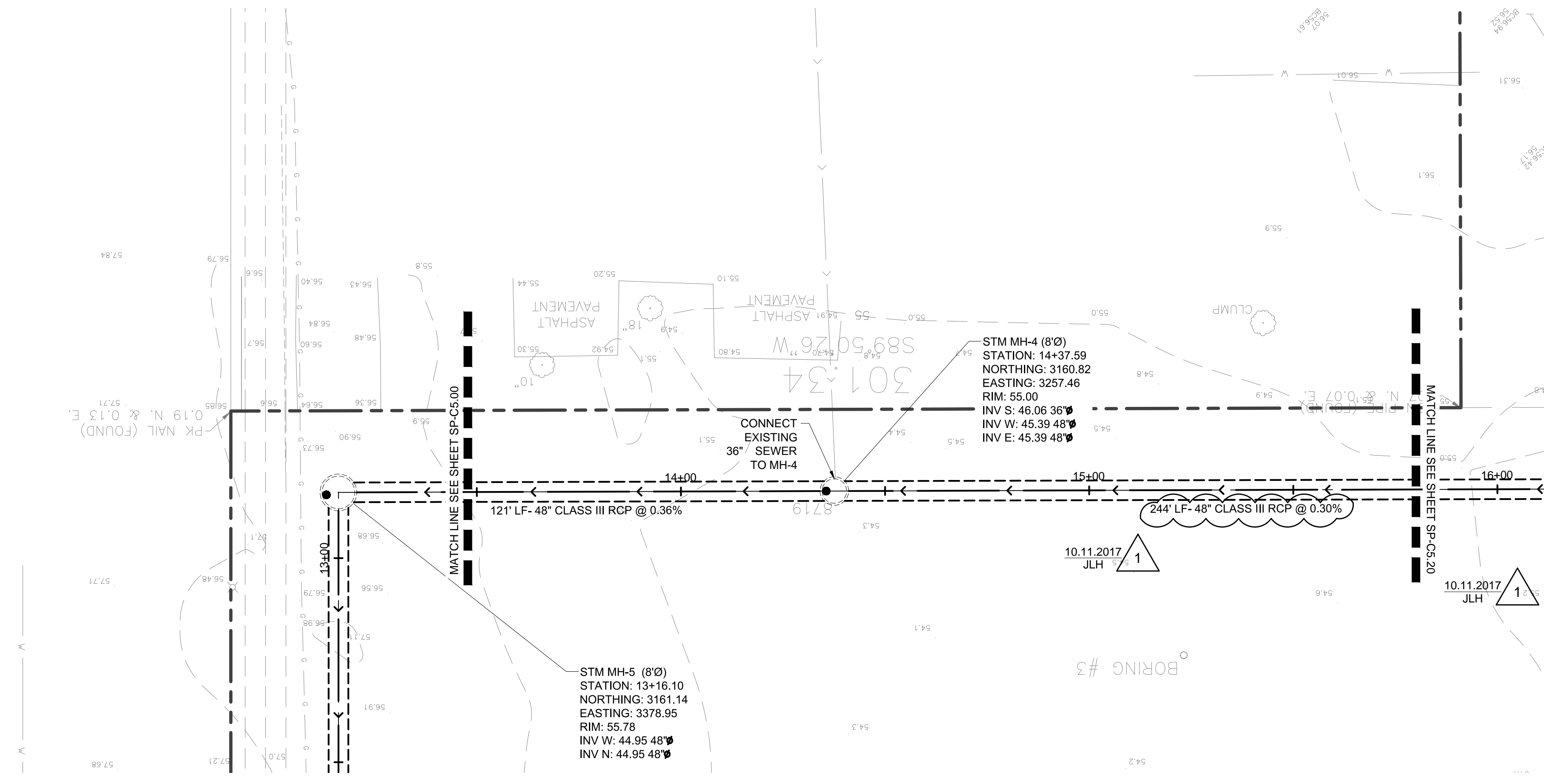
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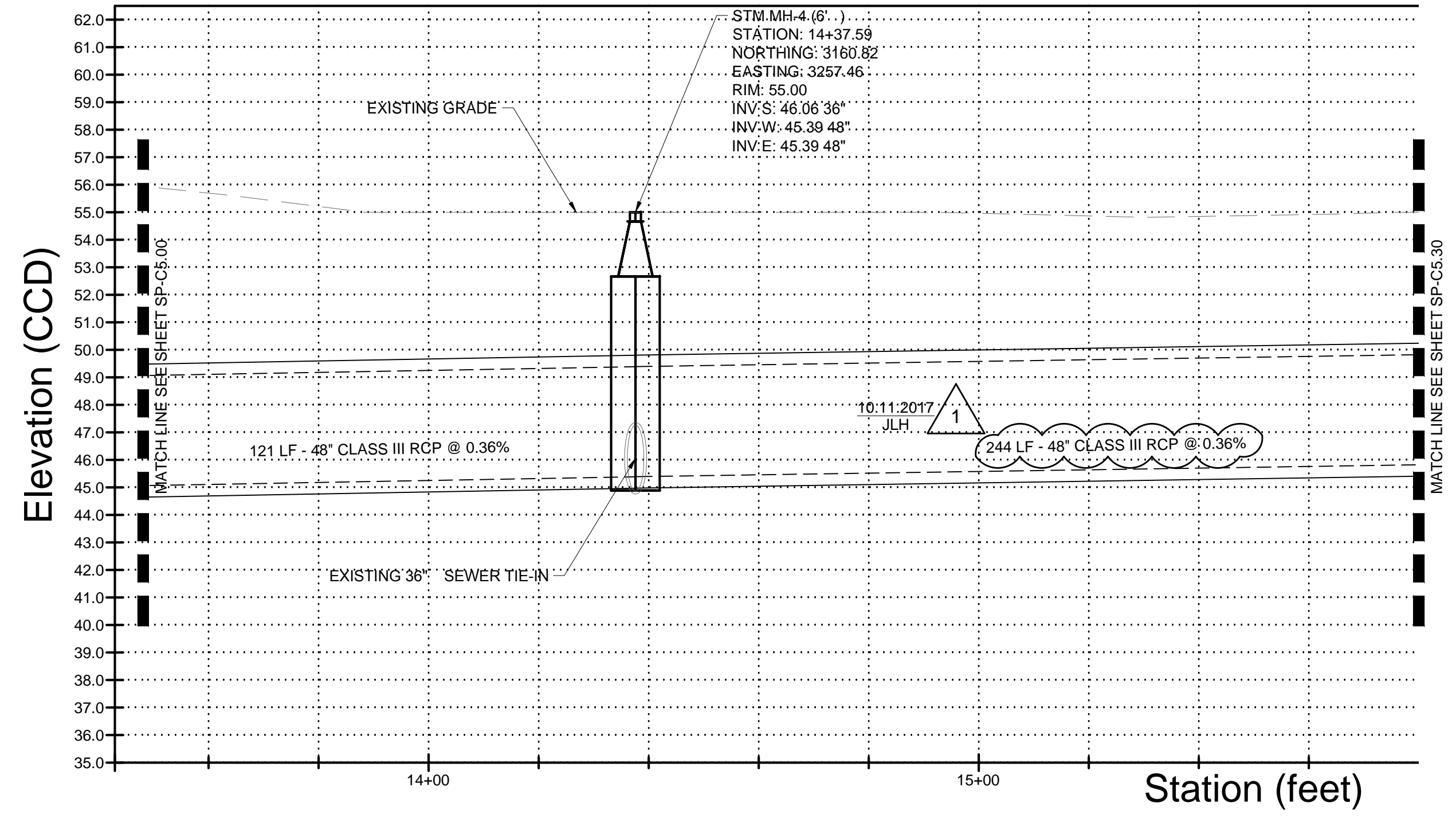
PBC Project Name: READ DUNNING SCHOOL  
 PBC Contract No: 05165  
 Project No.: N/A

**OVERALL UTILITY RELOCATION PLAN**

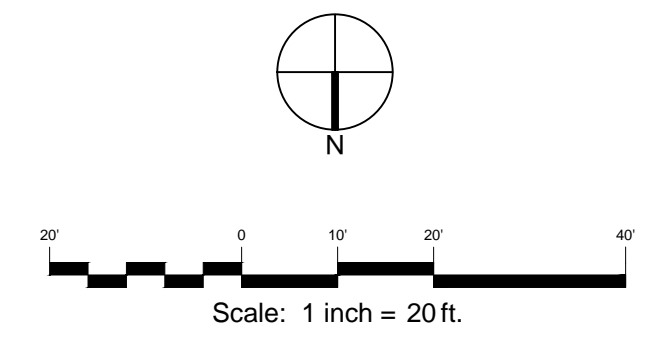
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 SP-C4.00



**1 PLAN VIEW STA 13+48.20 TO 15+80.00**  
SCALE: 1" = 20'



**2 PROFILE VIEW STA 13+48.20 TO 15+80.00**  
SCALE: H: 1" = 20', V: 1" = 4'



**LEGEND:**

- PROPERTY LINE
- 8" MANHOLE (MH)
- 6" MANHOLE (MH)
- 48" RCP SEWER

**NOT FOR CONSTRUCTION**



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SCHOOL  
SITE PREPARATION**  
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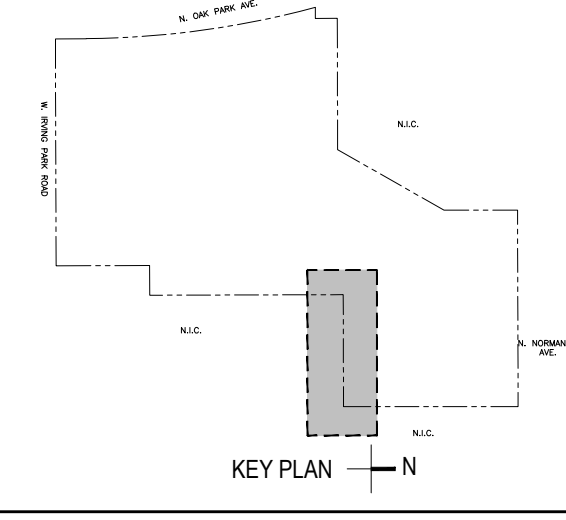
**EDGE ASSOCIATES INC.**  
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PBC Contract No: 05165  
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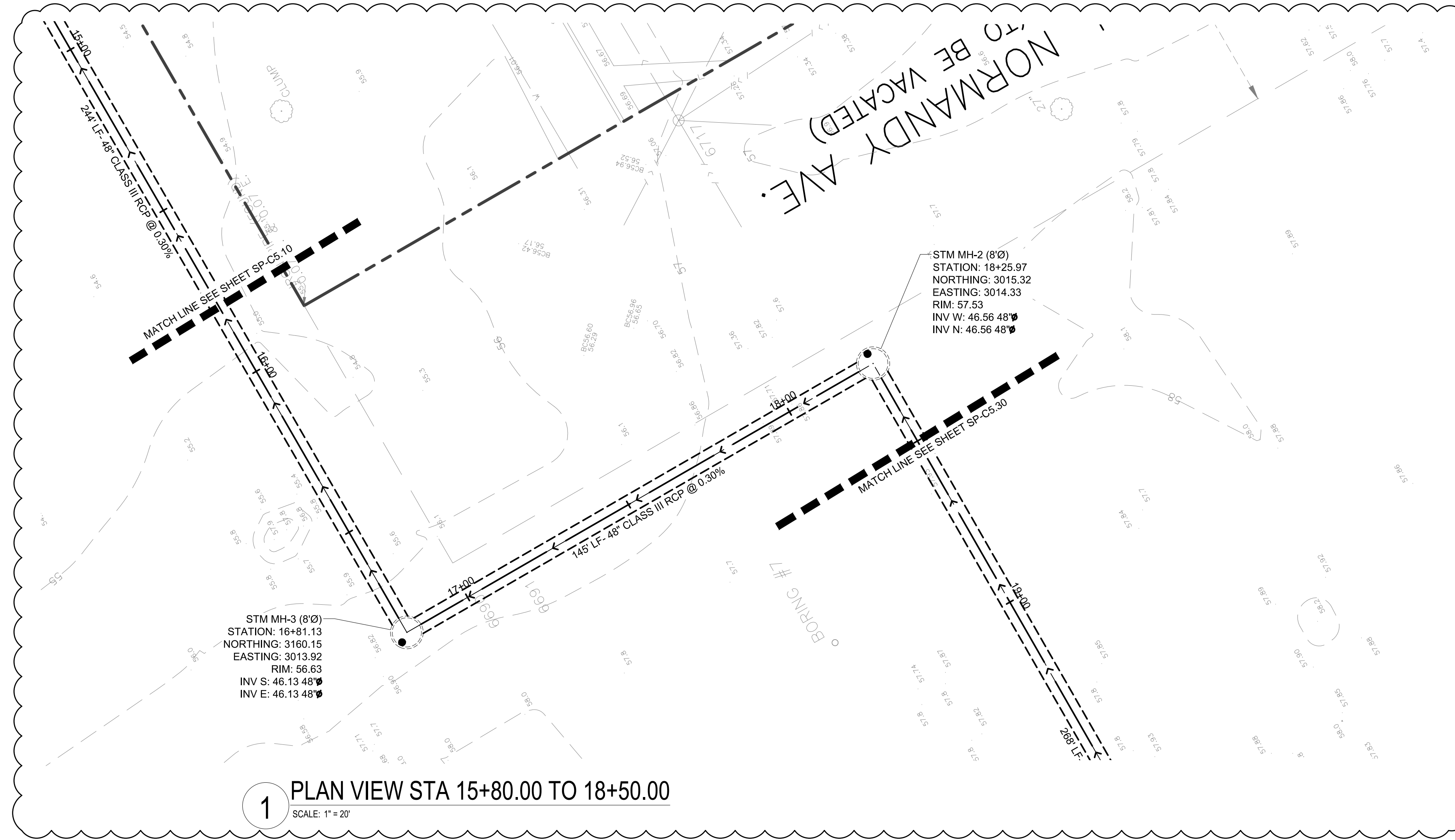
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**SP-C5.10**

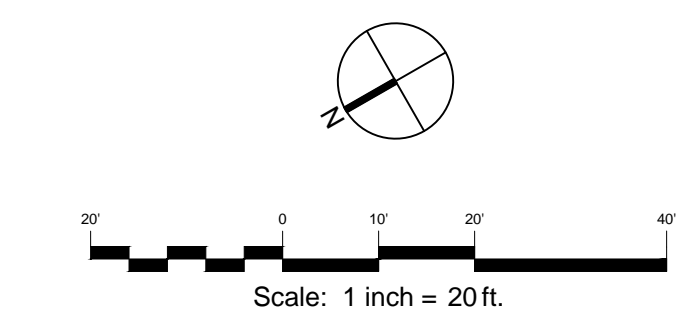




10.11.2017  
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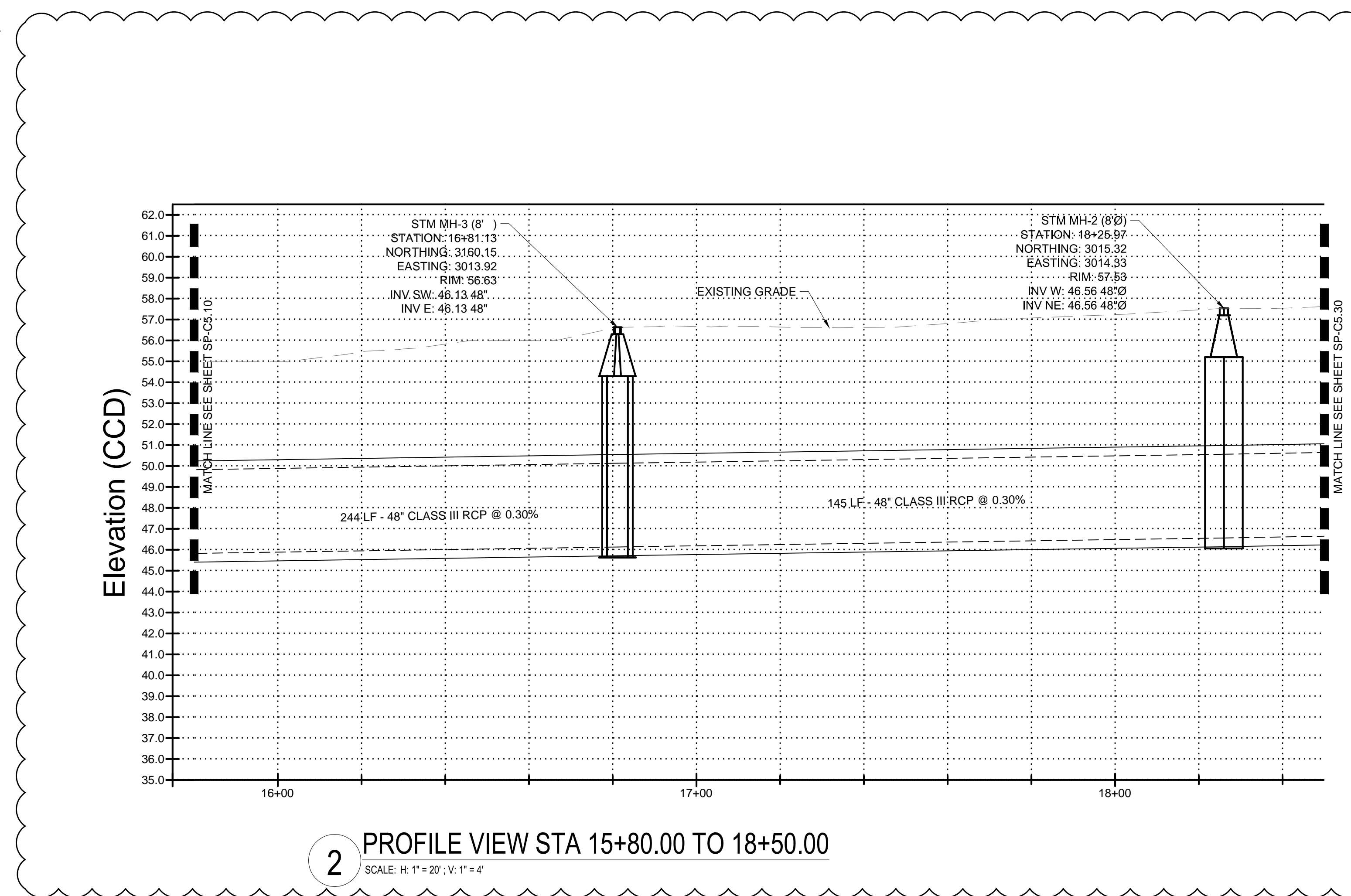
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SCALE: 1" = 20'



**LEGEND:**

- PROPERTY LINE
- 8" MANHOLE (MH)
- 48" RCP SEWER

10.11.2017  
JLH 1



2 PROFILE VIEW STA 15+80.00 TO 18+50.00  
SCALE: H: 1" = 20'; V: 1" = 4'

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SITE PREPARATION**  
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WEB: www.stlchicago.com

**DAVID MASON & ASSOCIATES**  
464 N Milwaukee Ave, Chicago, IL 60654  
Structural Engineers of Record

**DANIEL WEINBACH & PARTNERS**  
53 Jackson Blvd #250, Chicago, IL 60604  
Landscape Architects of Record

**TERRA ENGINEERING LTD.**  
225 W Ohio St, Chicago, IL 60654  
Civil Engineers of Record

**IMEG**  
231 S LaSalle St #600, Chicago, IL 60604  
MEPP Engineers of Record

**ARUP NORTH AMERICA LTD.**  
35 E Upper Wacker Dr #1800,  
Chicago, IL 60601  
Acoustics Consultant

**SCHULER SHOOK**  
750 N Orleans St # 400, Chicago, IL 60654  
Theatre Consultant

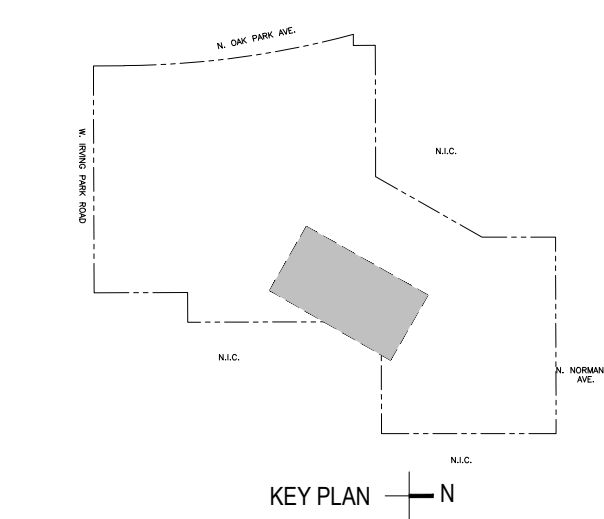
**EDGE ASSOCIATES INC.**  
220 E Lake St # 303, Addison, IL 60101  
Food Service Consultant

| Issuance |                |            |
|----------|----------------|------------|
| Mark     | Description    | Date       |
| 1        | ADDENDUM 1     | 10/16/2017 |
|          | ISSUED FOR BID | 09/27/2017 |
|          | 100% SITE PREP | 09/22/2017 |
|          | 90% SITE PREP  | 08/25/2017 |

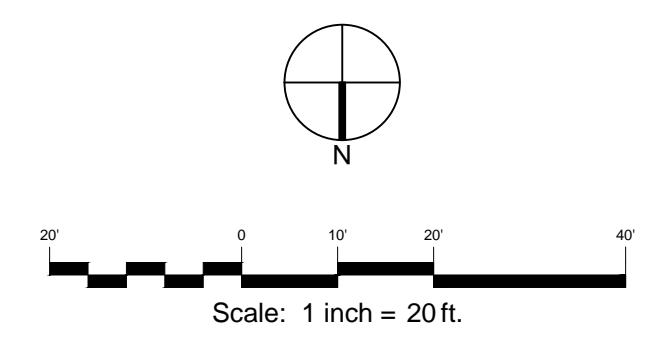
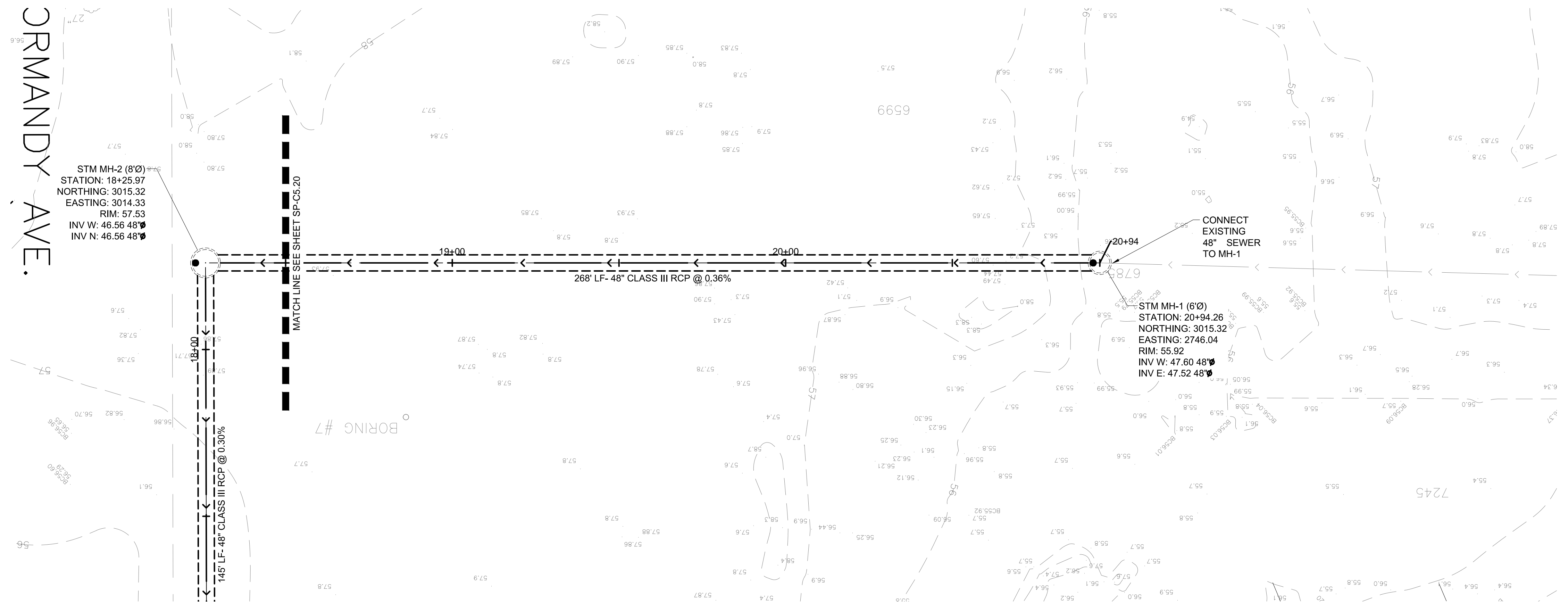
PBC Project Name: READ DUNNING SCHOOL  
PBC Contract No: 05165  
Project No.: N/A

**SEWER PLAN AND PROFILE**

Sheet  
**SP-C5.20**



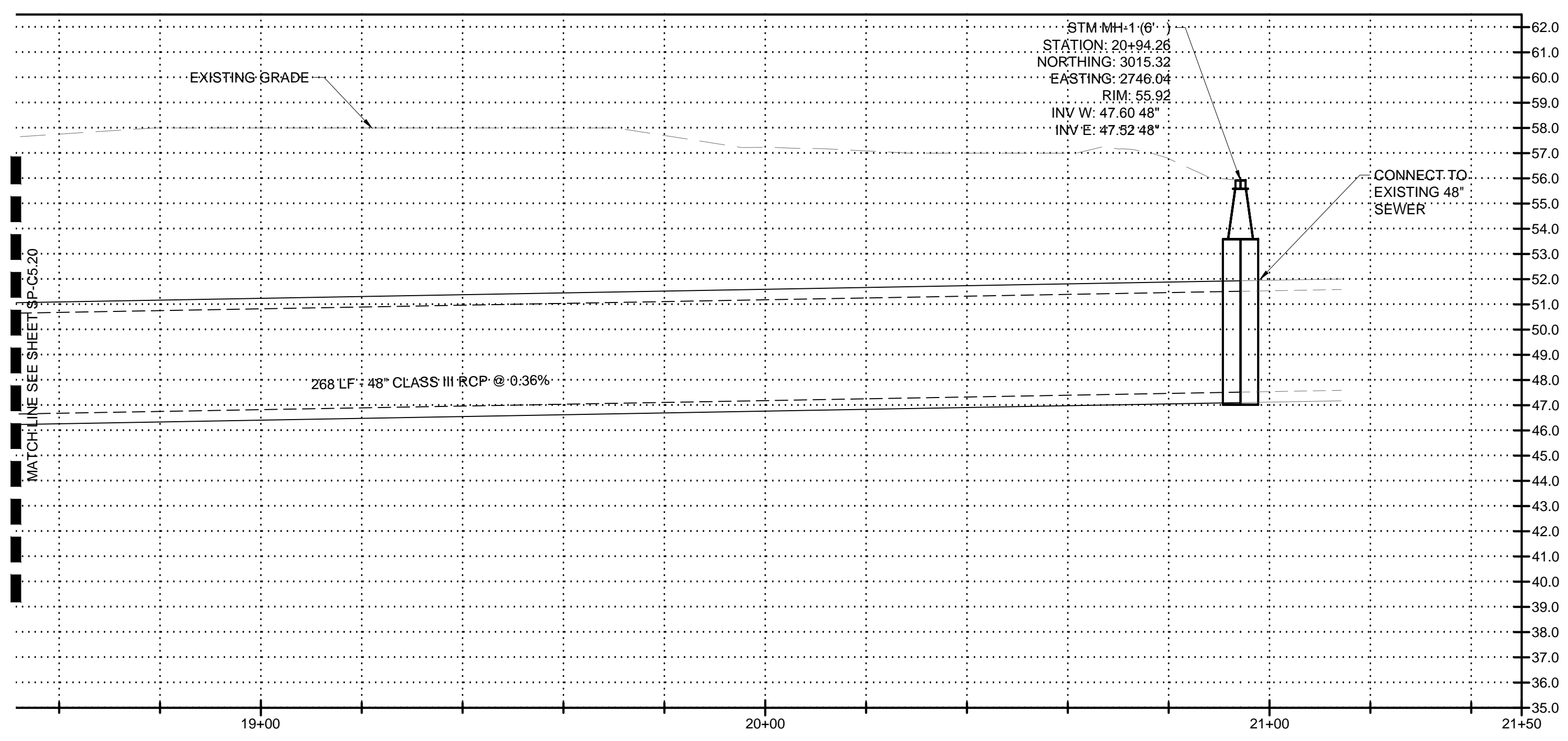
CRMANDY AVE.



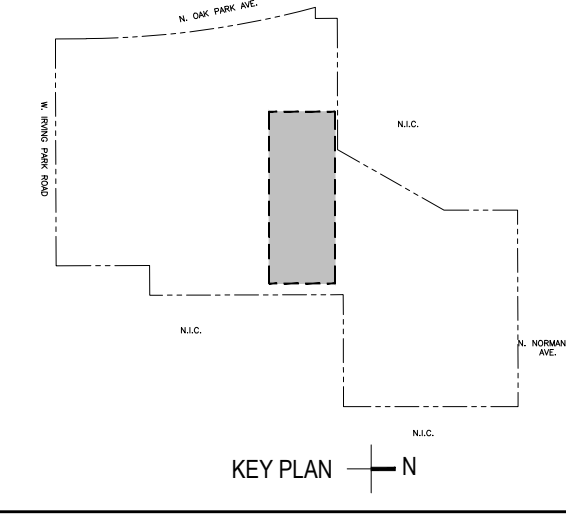
**LEGEND:**

- PROPERTY LINE
- 6" MANHOLE (MH)
- 8" MANHOLE (MH)
- 48" RCP SEWER

10.11.2017 JLH 1  
**1 PLAN VIEW STA 18+50.00 TO 20+94.26**  
 SCALE: 1" = 20'



10.11.2017 JLH 1  
**2 PROFILE VIEW STA 18+50.00 TO 20+94.26**  
 SCALE: H: 1" = 20' V: 1" = 4'



**NOT FOR CONSTRUCTION**



**READ DUNNING SCHOOL  
 SCHOOL  
 SITE PREPARATION**  
 4077 N. OAK PARK AVENUE  
 CHICAGO, IL 60634  
 CHICAGO PUBLIC SCHOOLS  
 CITY OF CHICAGO, MAYOR RAHM EMMANUEL

**Architect of Record:**  
 STL ARCHITECTS

**STLARCHITECTS**

ADDRESS: 808 N DEARBORN ST CHICAGO, ILLINOIS 60610  
 PHONE: 312.644.9850  
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PBC Project Name: READ DUNNING SCHOOL  
 PBC Contract No: 05165  
 Project No.: N/A

**SEWER PLAN AND PROFILE**

Sheet  
**SP-C5.30**