SIMONSON
PLANNING ■ ARCHITECTURE ■ INTERIORS

1717 Ingersoll Ave, Suite 117
Des Moines, IA 50309
Ph. 515-440-5626
www.simonsonassoc.com

Addendum #1

Date	10/09/2026	**Bid Date& Time**	Thursday, Oct. 15, 2026@ 2:00PM
Project	Broadlawns Brain and Memory Center		
Project No.	14138B		
Attachments	**22 Specification Sections (253 pages):** Sections 00 41 00, 00 60 00, 00 80 00, 00 80 01, 00 08 02, 00 08 03, 01 10 00, 01 58 00, 27 08 20, 27 15 00, 31 10 00, 31 20 00, 31 23 33, 31 35 00, 31 11 23, 32 13 13, 32 13 73, 32 17 23, 32 91 19, 32 93 00, 33 40 00, 33 49 00. **9 Architectural Drawings:** Sheets G-000, AD-101, A-101, A-111, A-121, A-201, A-303, A-401, A-601 **8 Electrical Drawings:** E000, ED101, EL101, EP101, ES101, E101, E500, E600 **3 Technology Drawings:** T101, T500, T600 **9 Civil Drawings:** Sheets C0.1, C1.1, C1.2, C2.1, C3.1, C4.1, C5.1, C6.1		
Distribution	Bidders List		

Bid Addendum #1:

Please insert this Addendum & attachments into your copy of the contract documents for the above project.

This addendum has been issued to modify and/or interpret the project documents, including the drawings and specifications. Unless otherwise instructed, the information contained on this addendum shall take precedence over anything contrary on the original documents and shall have the same force and affect as though a part of the original issue.

Administrative Changes/Clarifications to Project Specifications

1. Section 00 01 10 TABLE OF CONTENTS
   a. ADD the following sections

00 60 00	MODIFIED AIA A232	
01 58 00	3G SAFETY MANUAL	**CM**
DIVISION 31 -- EARTHWORK		**C**
31 10 00	SITE CLEARING	
31 20 00	EARTHWORK	
31 23 33	TRENCHING AND BACKFILLING	
31 35 00	EROSION CONTROL	
DIVISION 32 -- EXTERIOR IMPROVEMENTS		**C**
32 11 23	AGGREGATE BASE COURSE	

32 13 13 CONCRETE PAVING
32 13 73 PAVEMENT JOINT SEALANTS
32 17 23 PAVEMENT MARKINGS
32 91 19 LANDSCAPE GRADING
32 92 19 SEEDING
32 93 00 TREES, SHRUBS, GROUNDCOVER

DIVISION 33 -- UTILITIES **C**
33 40 00 STORM SEWER AND DRAINAGE
33 49 00 STORM DRAINAGE STRUCTURES

2. Section 00 41 00 Bid Form
    a. Revised table in paragraph 5 to remove the alternate listing duplicates.

3. Section 00 60 00.01 AIA A232-CMA General Conditions
    a. ADD Section

4. Section 00 80 00 GENERAL REQUIREMENTS
    a. REPLACE Section 00 80 00 with the new section included in this addendum.
    b. Revise line 1 to read: Plans by Simonson Associates & Architects dated September 28th, 2026.
    c. Revise line 2 to read: Specifications from the Project Manual by Simonson Associates & Architects dated September 25th, 2026.

5. Section 00 80 01 BID PACKAGE 01
    a. **Revise** paragraph B to read: Plans by Simonson Associates & Architects dated *September 28th, 2026.*
    b. **Revise** paragraph C to read: Specifications from the Project Manual by Simonson Associates & Architects dated *September 25th, 2026.*
    c. **Add** to paragraph C:
        - *d. 03 35 11 Concrete Floor Finishes*
        - *e. 04 20 00 Unit Masonry*
        - *z. 08 11 13 Hollow Metal Doors and Frames*
        - *tt. 10 51 29 Phenolic Lockers*
        - *uu. 12 22 16 Drapery Track and Accessories*
        - *xx. 31 10 00 Site Clearing*
        - *fff. 32 91 19 Landscape Grading*
        - *ggg. 32 92 19 Seeding*
        - *iii. 33 40 00 Storm Sewer and Drainage*
        - *jjj. 33 49 00 Storm Drainage Structures*
    d. **Add** to paragraph D, line 25: Construction Manager to provide site fencing, dumpster, and temporary restrooms. Bid Package 01 shall be responsible to provide, maintain and remove a separate dumpster for demolition to be used for all bid package demo debris per regulations. This does not include concrete, soils, trees, plantings, and mechanical equipment.
    e. **Add** to paragraph G:
        - *Furnish and install all masonry items including but not limited to masonry veneer, mortar nets, weep vents, expansion joint, and sealants for a complete system as indicated in the contract documents.*
        - *Furnish and install all thru wall flashing and prefinished sheet metal flashing for masonry. Verify that thru wall flashing is compatible with exterior finishes.*

- *Furnish and install all grout for flashing and masonry systems as indicated on the contract documents,*
- *Furnish and install sheet membrane and air barriers at all exterior locations behind masonry scope as indicated on the contract documents.*
- *Furnish and install all grout-filled CMU blocks in accordance with the contract documents.*
- *Furnish and install all cast stone sills as indicated on the contract documents.*
- *Clean and seal all exposed masonry and cast stone as directed in the contract documents.*
- *Include caulking all masonry control joints, masonry joints to the existing building, masonry to dissimilar material joints, and any misc. caulking required at masonry locations.*
- *Protect ladder ties that stick out of walls until wall is completed.*
- *This bid package to include any masonry repair as needed around MEP penetrations in walls.*
- *Clean up masonry mixing and staging area as directed by the Construction Manager.*

f. **Revise** paragraph J, line 15 to read: Furnish and install all fiber cement siding, air barriers, sheathing, fiber cement trim, aluminum trim, flashing, fasteners, sealants and accessories for a complete system as indicated in the construction documents. Contractor shall examine, clean and repair substrate as required before installation.

g. **Add** to paragraph I, line 15: *Furnish and install all materials, and accessories as required in the construction documents for all miscellaneous rough carpentry items including but not limited to, backing, blocking, framing, sill plates, etc.*

h. **Revise** paragraph N, line 1 to read: Furnish and install all solid surface countertops, countertop supports, ~~solid surface window sills,~~ *quartz window sills*, and integral sink bowls~~, and quartz countertops~~.

i. **Add** to paragraph R, line 4: *Carry an allowance of $10,000 to be used as needed for the base bid of resurfacing the nurse work station. Use of this allowance shall be coordinated and approved by the Owner and Construction Manager. Any unused amount of this allowance to be credited back to the Owner.*

j. **Add** to paragraph R, line 5: *Carry an allowance of $12,500 to be used as needed for the floor fill work needed in the space where floor is unlevel. Use of this allowance shall be coordinated and approved by the Owner and Construction Manager. Any unused amount of this allowance to be credited back to the Owner.*

k. **Add** to paragraph P, line 1: *Furnish and install all paving, sidewalks, curbs work as indicated in the contract documents. Include excavation, formwork, staking, layout, vapor retarders, reinforcing steel, concrete, epoxy, grout, rigid insulation at foundation, backfill, compaction, etc., to install the work complete. Removal of any spoils generated by this scope of work.*

l. **Add** to paragraph P, line 2: *Contractor to confirm that all new paving is flush with existing paving and drive lanes. Install reinforcement in existing paving prior to tie-in.*

m. **Add** to paragraph P, line 13: *Contractor to provide and install all pavement markings and ADA parking signs as shown on the contract documents and required by local city/state guidelines. Contractor to provide warranty of all pavement markings for a year past substantial completion of the project.*

n. **Revise** paragraph Q, line 1 to read: Furnish and install all storm drainage piping*, subdrain piping, through curb penetrations, nyoplast basins,* cleanouts, *backfill, aggregate, etc.* as indicated on the contract documents *for a complete system.*

6. Section 00 80 02 BID PACAKAGE 02
    a. REPLACE Section 00 80 02 with the new section included in this addendum.
    b. **Revise** paragraph B to read: Plans by Simonson Associates & Architects dated *September 28th, 2026.*
    c. **Revise** paragraph C to read: Specifications from the Project Manual by Simonson Associates & Architects dated *September 25th, 2026.*
    d. **Add** to paragraph D, line 25: *Construction Manager to provide site fencing, dumpster, and temporary restrooms. Bid Package 01 shall be responsible to provide, maintain and remove a separate dumpster for demolition to be used for all bid package demo debris per regulations. This does not include concrete, soils, trees, plantings, and mechanical equipment.*
    e.

7. Section 00 80 03 BID PACKAGE 03
    a. REPLACE Section 00 80 03 with the new section included in this addendum.
    b. **Add** paragraph A: *Bid Package #00 – General Requirements.*
    c. **Revise** paragraph B to read: Plans by Simonson Associates & Architects dated *September 28th, 2026.*
    d. **Revise** paragraph C to read: Specifications from the Project Manual by Simonson Associates & Architects dated *September 25th, 2026.*
    e. **Add** to paragraph D, line 19: *Construction Manager to provide site fencing, dumpster, and temporary restrooms. Bid Package 01 shall be responsible to provide, maintain and remove a separate dumpster for demolition to be used for all bid package demo debris per regulations. This does not include concrete, soils, trees, plantings, and mechanical equipment.*
    f. **Revise** Footer to read: Bid Package *03.*

8. Section 01 10 00 SUMMARY
    a. REPLACE Section 00 10 00 with the new section included in this addendum.
    b. Revised paragraph 1.02, line B to read “Estimated Construction Budget: $1,645,000
    c. Revised paragraph 1.02, line C to read Construction Commencement: November 4th, 2026
    d. Revised paragraph 1.02, line D to read Substantial Completion: May 19th, 2027
    e. Revised paragraph 1.02, line E to read Final Completion: May 19th, 2027.
    f. Revised paragraph 1.04, line B, sub-section 1 to read: Exterior Cameras
    g. Revised paragraph 1.04, line B, sub-section 2 to read: Electronic Access Control
    h. Revised paragraph 1.04, line B, sub-section 4 to read: Interior Signage

9. Section 01 58 00 3G SAFETY MANUAL
    a. ADD the 3G SAFETY MANUAL

10. Section 05 50 00 METAL FABRICATIONS, Paragraph 2.03
    a. ADD C. Bicycle Rack : Powder coated 2.375 in OD tubular steel surface mounted bicycle rack with 0.25 x 2in cross bar.

11. Section 07 42 13 METAL SOFFIT PANELS,
    a. Paragraph 2.02 A.
        i. CHANGE Wall Panel System to read Soffit Panel System
    b. Paragraph 2.02 B.
        i. CHANGE Metal Plank Soffit to read Woodgrained Metal Plank Soffit.

12. Section 07 42 13 METAL WALL AND SOFFIT PANELS
    a. DELETE the second section 07 42 13 that is called METAL WALL AND SOFFIT PANELS. The first section 07 42 13 that is called METAL SOFFIT PANELS remains in the specification.

13. Section 27 08 20 ACCEPTANCE OF COMMUNICATIONS COPPER CABLING
    a. REPLACE Section 27 08 20 with the new section included in this addendum.

14. Section 27 15 00 COMMUNICATIONS HORIZONTAL CABLING
    a. REPLACE Section 27 15 00 with the new section included in this addendum.

15. Sections 31 00 00 to 33 49 00
    a. ADD the following sections
        i. Section 31 10 00 SITE CLEARING
        ii. Section 31 20 00 EARTHWORK
        iii. Section 31 23 33 TRENCHING AND BACKFILLING
        iv. Section 31 35 00 EROSION CONTROL
        v. Section 32 11 23 AGGREGAATE BASE COURSE
        vi. Section 32 13 13 CONCRETE PAVING
        vii. Section 32 13 73 PAVEMENT JOINT SEALANTS
        viii. Section 32 17 23 PAVEMENT MARKINGS
        ix. Section 32 31 19 LANDSCAPE GRADING
        x. Section 32 92 19 SEEDING
        xi. Section 32 93 00 TREES. SHRUBS, GROUNDCOVER
        xii. Section 33 40 00 STORM SEWER AND DRAINAGE
        xiii. Section 33 49 00 STORM DRAINAGE STRUCTURES

Changes/Clarifications to Bid Documents

Architectural

16. Sheet G-000 Coversheet, List of Drawings, Architectural
    a. ADD Sheet A-303 DETAILS

17. Sheet AD-101, Detail 1 FLOOR PLAN - DEMO
    a. CHANGE the set of windows on the north wall of the lobby to be demolished.
    b. ADD note to the exterior door on the south end of the building that reads:
        i. DOOR PANEL AND HARDWARE TO BE REPLACED, MAINTAIN EXISTING HM FRAME.
    c. ADD note to REMOVE AND PATCH EXISTING ATTIC ACCESS HATCH.

18. Sheet A-101, Detail 1 FLOOR PLAN
    a. ADD section detail references:
        i. 1/A-303 at south exterior stairs.
        ii. 2/A-303 at exterior stairs east of the SE corner of the building.
        iii. 6/A-303 at low concrete wall east of the SE portion of the building
        iv. 4/A-303 typical at light bollards
    b. ADD note at the exterior stairs east of the SE corner of the building:
        i. CONCRETE STAIR AND 1 ½" DIA. SCHED 40 HANDRAILS (GALVANIZED AND PAINTED WITH HIGH-PERFORMANCE COATING) BOTH SIDES – SEE CIVIL.
    c. ADD note at the low concrete wall east of the SE portion of the building:
        i. REMOVE LANDSCAPE TIMBER WALL AND REPLACE WITH CONCRETE WALL TO MATCH ADJACENT WALL - SEE CIVIL.
    d. CHANGE note at dumpster to read:
        i. NEW 8" GROUND FACE CMU WALL TO MATCH EXISTING DUMPSTER WALLS (~7' HIGH).
    e. CHANGE the set of windows on the north wall of Waiting 101 to be new, Type B windows.
    f. CHANGE elevation callouts in Corridor 129
        i. 14/A-712 to be 1/A-712

ii. 13/A-712 to be 2/A-712
iii. 1/A-712 to be 1/A-713

g. ADD note along the west wall of the building at the detail mark 2/A-302 that reads: PERFORATED DRAIN LINE AND BUILDING WATERPROOFING IN THIS DETAIL IS CONTINUOUS ALONG THE FULL LENGTH OF THE WEST WALL – SEE CIVIL.

19. Sheet A-101, Detail 2 FLOOR PLAN – VESTIBULE
    a. ADD section detail reference 5/A-303 TYP to the pipe bollards at the drive island

20. Sheet A-111 ROOF PLAN
    a. ADD downspout location as shown on the revised sheet
    b. ADD note ALL DOWNSPOUTS SHALL BE PIPED DIRECT TO 6" STORM PIPE & DAYLIGHT IN NORTH YARD – SEE SHEET C4.1
    c. ADD note to the east side of the porte cochere: DOWNSPOUTS ON EAST SIDE OF PORTE COCHERE TO DRAIN TO EAST DRIVE.

21. Sheet A-121 REFLECTED CEILING PLAN
    a. CHANGE the location of the attic access hatch from Janitor 121 to Storage/IT 104.

22. Sheet A-201 EXTERIOR ELEVATIONS, Detail 2 NORTH ELEVATION
    a. CHANGE the set of windows on the north wall of Waiting 101 to be new, Type B windows.

23. Sheet A-303 DETAILS – ADD new sheet A-303 to the drawing set.
    a. ADD details 1, 2, 3, 4, 5 & 6 on Sheet A-303.

24. Sheet A-401 Detail 12
    a. ADD note pointing to PT-2 and WT-1: WALL FINISHES ARE TYPICAL ON ALL WALLS IN ALL RESTROOMS.

25. Sheet A-601 WINDOW TYPES
    a. CHANGE to the second note to read: WINDOWS BELOW ARE METAL CLAD FIXED WINDOWS WITH FLANGE
    b. ADD note: INTERIOR WOOD TO BE PAINTED

Civil

List of changes to the civil drawings from Bishop Engineering.

1. C1.1 Ex Conditions & Demo:
    a. ADD: Callouts to remove Landscaping Material
    b. ADD: Callouts to remove & replace bollards on west side of building
    c. ADD: Callout to remove guardrail
    d. ADD: Callout to remove handrail
    e. ADD: Additional pavement removal at south side of site
    f. ADD: Callouts to remove A/C & Mech. Units
    g. ADD: Callout to remove ex shed

2. C2.1 Layout:
    a. ADD: Additional pavement replacement at south side of site
    b. ADD: Callout to install guardrail of like kind at west side of building
    c. ADD: Callouts to add guard rail around south retaining walls
    d. ADD: Callout for 2 ADA parking signs & to stripe additional parking spot
    e. REVISE: Retaining wall designs (See Grading)
    f. ADD: Callout for eastern retaining wall detail (See Arch)
    g. ADD: Callout for Bicycle parking pad

h. ADD: Callout for new A/C & Mech Units
i. ADD: Callout for new CMU Block wall
j. ADD: Callout for fencing around proposed A/C & Mech Units
k. REVISE: Vestibule & Overhang design (See Arch)
l. REVISE: E/W Staircase shifted slightly west
m. ADD: Walls on sides of N/S Staircase (See Arch)

3. C3.1 Grading:
    a. REVISE: Grading on retaining walls, vestibule and island area and south pavement limits.
    b. ADD: Spot Grades for Bicycle Parking Pad
    c. ADD: Callout for utility protection and shoring for installation of western drain line
    d. ADD: Callouts for minimum cover over proposed drain lines.

4. C4.1 Utility
    a. DEDUCT: 132 LF 6” N-12
    b. ADD: 264 LF 6” Slotted N-12
    c. ADD: 6”-4” reducer
    d. ADD: (x2) Pipe through Curb Adapters (See Details)
    e. REVISE: Location of western drain line outlet
    f. ADD: Drain line at base of western wall by building
    g. ADD: 12” Nyloplast Basin w/ Grate Lid
    h. DEDUCT: 1 storm cleanout
    i. ADD: 2 storm cleanouts
    j. ADD: Critical Crossing Callouts
    k. ADD: Callouts for location of prop A/C & Mech units
    l. REVISE: Slot drain design at south end of building, extending additional subdrain 17 LF west

5. C5.1 Landscape
    a. ADD/REVISE: New Plantings & Landscape Design (See Landscape Sheet)

6. C6.1 DETAILS:
    a. ADD: Bicycle Rack Detail
    b. ADD: Pipe Through Curb Detail
    c. ADD: Nyloplast Basin Detail

Electrical

1. Sheet E600 – ELECTRICAL SCHEDULES
   ADD – Approved equals on Luminaire Schedule.

Technology

2. Sheet T101 – TECHNOLOGY PLANS
    a. ADD – Sound Masking speakers in corridors and common areas. Relocated Volume Control in Open office Area.
3. Sheet T500 – TECHNOLOGY DETAILS
    a. CHANGE – Detail 1/T500 to reflect the change from Cat6 to Cat6A Cabling and Jacks.
    b. ADD – Access Control Door Rough-in Detail
    c. ADD – Wall Rack Elevation Detail
4. Sheet T600 – TECHNOLOGY SCHEDULES
    a. ADD – Direct Fire Sound Speaker to Sound Masking Schedule to be used in Gypsum Ceilings.

Product Substitutions & Approvals

The following manufacturers are approved for this project, provided the materials and systems meet the requirements of these Contract Documents. This approval does not waive any requirements or conditions of the Contract Documents for any material, system or manufacturer.

Architectural

Section 08 52 00 CLAD WOOD WINDOWS AND DOORS:

a. Ultimate, as manufactured by Marvin.
b. Lifestyle Series, as manufactured by Pella
c. E-Series, as manufactured by Anderson

Technology

Section 27 15 00 COMMUNICATIONS HORIZONTAL CABLING:

a. Proterial\Hitachi Cat6A Supra 10G

Questions and answers from the Broadlawns Medical Center Brain and Memory Center Pre-Bid meeting on 10/7/2026

1. Broadlawns Medical Center has applied for the Building Permit. Project is tax exempt.

2. The dumpsters, bathrooms and site fence will be carried by the Construction Manager. Clarification will be included in the upcoming addendum.

3. In the restroom elevations on A-401 the 4th wall is not shown for each room. Are they to receive base to match the wall or floor?
    a. All restroom walls are to have wall tile to 5' and PT-2 above. The wall base is to be a coved base to match the wall tile. Notes have been added to Sheet A-401, Detail 12 to clarify.

4. On sheet T600 the sound masking schedule references specification section 27 51 13.13 for additional information. This section is not included and will need to be updated to reference the appropriate section.
    a. This has been updated to the correct 27 51 19 section in Addendum #1

5. Please clarify the portion of exterior wall to be demoed.
    a. Only the wood portion of the retaining wall is to be removed.

6. On sheet EP101 Keynote 3 lists receptacles being 18" AFF, but the callout is applied to the light switches. Please clarify.
    a. Keynote 3 on EP101 states that the switch controls the bottom have of the receptacles mounted at 18" in the room.

7. Datacom; There is no detail on data rack layout other than equipment schedule. Are we to include re-routing of fiber optic from it's current location to the new data rack?
    a. Rack elevation detail has been added to sheet T500 in Addendum #1. Owner's fiber service provide will provide the fiber to the new data closet.

8. Attic access; existing one will be in a new rest room. Will the current one remain or be installed somewhere else? IT/Storage room would be ideal since there is no drop ceiling in this room.
    a. The new attic access hatch was located in Janitor 121 as shown on Sheet A-121, but this will be moved to IT/Storage room.

9. Are we able to route things through the attic?
    a. What items, and how much space is needed?

10. Window on the north side of the vestibule is not shown to be removed on demo. It was determined today that it needs to be. Spec Section 08 52 00 Clad Wood Windows doesn't have any manufacturers listed, so we would need some direction.
    a. This window will be replaced and included in the upcoming addendum with manufacturers.

11. There are no finish details for the base bid to resurface the nurse work station. Can additional detail be provided?
    a. An allowance will be added to Bid Package 01 in the upcoming addendum.

12. Are the hand sanitizer dispensers in the corridor to be recessed?
    a. These are wall mounted, not recessed.

13. Spec Section 03 35 11 Concrete Floor Finishes, 042000 Unit Masonry , 08 11 13 Hollow Metal Frames & Doors not listed in BP#01 scope, but I'm assuming they need to be added. Division 04 didn't have anything listed in the description section of BP#01.
    a. These will be included in the upcoming addendum.

14. Section 10 31 00 Manufactured Fireplaces are listed in BP#01, but a note later says it is supplied and installed by BP#03. Clarification today said it will be in BP#03.
    a. Manufactured fireplace is to be furnished and installed by BP 03. BP 01 will frame the opening and will need to coordinate with BP 03 for dimensions.

15. Corridor 129 has Details 13 & 14/A-712, but those details are 1 & 2 respectively. Detail 1/A-712 called out in Corridor 129 should be removed?
    a. Sheet A-101 has been updated with the correct detail numbers.

16. PD100 Underfloor demo shows (4) demo areas, but how big? What is the invert at those locations? Are X-Raying floors required at the location?
    a. Can we get some additional context/clarification on these questions? Are they asking about size for the purpose of saw cuts?

17. What is the finish on the interior of windows?
    a. The windows are aluminum clad wood windows and a note has been added to Sheet A-601 under Window Types, General Notes for all interior wood to be painted.

18. Door 129B says existing on the door schedule, but then in the remarks it says replace panel. The demo sheet doesn't show this door being removed.
    a. The intent is to save the frame and only replace the door panel and the door hardware. The demo plan has been updated showing the door panel as dashed and a note added to clarify.

19. There is a railing in the attached picture that isn't shown to be removed on the plan. I assume you will want that removed.
    a. Both the civil demo plan and Sheet AD-101 now show that wood railing to be demo'd.

20. At the trash enclosure there are bollards along the back side. I believe the new CMU wall will miss them, but they are not shown on the architectural plan. The civil sheets show the bollards, but not the new CMU wall.
    a. The civil drawings have been updated with the wall. The architectural drawing has been updated with showing the bollards. The wall is moved back to the west about 8 inches to help facilitate missing the bollards with the new wall's footing. Additional section for the wall has been added to a new sheet A-303.

21. Architectural Detail 2/A302 shows the excavating below finish floor on the west side of the building for waterproofing. The assumption I have is the whole west side of the building, but it doesn't specifically say that. The only note on Civil Drawings is to remove and replace any landscaping material with like kind as necessary for construction. There is a storm line that is being installed on that side as well. As you can see from the attached picture that this is quite a lot of removal and put back with what we see as a few issues.
    a. Alley appears to be owned by the building next to it so would we be able to use it?
    b. There is a fence not shown on the drawings. Does it stay or get removed?
        i. It will need to be removed and replaced. This is addressed in the addendum on the civil drawings.
    c. There is a power pole that is right next to the building with a footing. What would the plan for the storm pipe be through there?
        i. Contractor to route between power pole and building to clear existing power pole.

d. Tougher to see in the picture, but there is another footing with a metal pipe sticking out of the ground. What would the plan for the storm pipe be through there?
    i. Metal pile bollard to be removed and replaced for construction of the drain line.
e. Does this need shoring for the alley?
    i. This comes down to contractor means and methods. Bury depths and where all the utilities are routed on the west side are not completely known. Some shoring may be required around the power pole and building where there will be trenching for the new storm line. Contractor will need to verify the existing utility depths and locations prior to construction.

22. Where are the metal wall panels? It appears like the soffit portion of these two are the same.
    a. There were two Section 07 42 13s. The second one will be deleted in the addendum. There are no metal wall panels. There are two types of soffit panels. The soffit under the porte cochere is the woodgrained metal soffit planks (Longboard as basis of design). The rest of the building is to have the second type of soffit panels, which is similar to the existing, a vented precoated aluminum sheet soffit material (Pac-clad as basis of design).

SECTION 00 41 00
BID FORM - STIPULATED SUM

PROJECT: Broadlawns Medical Center – Brain and Memory Center

BID TO: Broadlawns Medical Center
1801 Hickman Road
Des Moines, IA 50314
Attention: Mr. Proctor Lureman

BID FROM:

_____	_____
Bidder's Company Name	Telephone Number
_____	_____
Date of Proposal	Fax Number
_____	_____
Contact Person	E-mail Address

*******ATTACH A COPY OF THE BID PACKAGE DESCRIPTION(S) TO THIS BID*******

BID FOR: Contract work for the Broadlawns Medical Brain and Memory Center project as shown in Bidding Documents Dated: September 29th, 2026.

BID PLACE: Bids are to be submitted to Graham Construction on behalf of Mr. Proctor Lureman, Broadlawns Medical Center.

Bids will be received between the hours of 01:00 PM and 2:00 PM CST.

BIDS SHALL BE DELIVERED TO: Broadlawns Medical Center
Jenner Conference Room, Building 1 Room MP107
1761 Hickman Road
Des Moines, IA 50314

Hand deliver bids to the address listed above.

BID DATE: Bids are due on Thursday, the 15th of October, 2026.

BID TIME: Bids are due no later than 2:00 PM CST.

1. The undersigned BIDDER agrees, if the Bid is accepted, to enter into an agreement with OWNER, in the form included in the Bidding Documents, to perform and furnish the Work as specified or indicated in the Bidding Documents for the Bid Price and within the Bid Time indicated in this Bid and in accordance with the other terms and conditions of the Contract Documents.

2. In submitting this Bid, BIDDER represents, as more fully set forth in the Agreement, that:

    A. This Bid will remain subject to acceptance for 60 days after the day of Bid opening;

B. To the extent permitted by law, the Owner has the right to accept or reject this Bid, including alternate bids, and to waive minor informalities in the bidding;

C. BIDDER accepts the provisions of the Instructions and Supplementary Instructions to Bidders regarding disposition of Bid Security;

D. BIDDER will sign and submit the Agreement with the Bonds and other documents required by the Bidding Requirements within 10 days after the date of Owner's Notice of Award;

E. BIDDER has examined copies of all the Bidding Documents;

F. BIDDER has visited the site and become familiar with the general, local and site conditions;

G. BIDDER is familiar with federal, state, and local laws and regulations;

H. BIDDER has correlated the information known to BIDDER, information and observations obtained from visits to the site, reports and drawings identified in the Bidding Documents and additional examinations, investigations, explorations, tests, studies and data with the Bidding Documents;

I. This Bid is genuine and not made in the interest of or on behalf of an undisclosed person, firm or corporation and is not submitted in conformity with an agreement or rules of a group, association, organization or corporation; BIDDER has not directly or indirectly induced or solicited another Bidder to submit a false or sham Bid; BIDDER has not solicited or induced a person, firm or corporation to refrain from bidding; and BIDDER has not sought by collusion to obtain for itself an advantage over another BIDDER or over OWNER.

J. Qualified Bids will not be accepted.

K. This project is sales tax exempt. The owner will issue an exemption certificate for the purchase or use of building materials, supplies, and equipment that will be used in the performance of the construction contract.

L. Combined bids will not be accepted. Bidders may bid more than one Package.

3. BIDDER has received the following Addenda. Receipt of which is hereby acknowledged;

Addendum No. _____ _____ Addendum No. _____ _____

4. BIDDER hereby acknowledges that sales tax has not been included in the bid values listed below.

5. BIDDER will complete the work for the Bid Package(s) listed below in accordance with the Contract Documents (all bids will be Prime Contract bids to include all labor, material, shop drawings, superintendence, project management, delivery, unloading, tools, equipment, rigging, cleaning, adjusting, etc. to complete the work):

Bid Pkg	Bid Package Title	Written Bid Amount	Numerical Bid Amount
00	General Requirements	INCLUDED BY REFERENCE TO BE PART OF ALL BID PACKAGES	INCLUDED
01	General Trades		$
02	HVAC & Plumbing		$

03	Electrical		$

6. ALTERNATES – refer to Specification Section 00 4200 for descriptions. If the items below are left blank it will be considered "No Change" and zero dollars if the alternate is accepted.

A. Alternate No. 1 – Port Cochere

BP #01: ADD / DEDUCT _____ Dollars $_____
(circle one)

BP #02: ADD / DEDUCT _____ Dollars $_____
(circle one)

BP #03: ADD / DEDUCT _____ Dollars $_____
(circle one)

B. Alternate No. 2 – Nurses Workstation

BP #01: ADD / DEDUCT _____ Dollars $_____
(circle one)

BP #02: ADD / DEDUCT _____ Dollars $_____
(circle one)

BP #03: ADD / DEDUCT _____ Dollars $_____

C. Note: If any Alternates are accepted by the owner, the owner reserves the right to reject and remove any other bid packages and their scopes entirely from the project scope.

7. BIDDER agrees that all Work will be substantially complete per the schedule as outlined in Specification Section 01 15 20 & 01 15 20.01.

8. BID FORM SIGNATURE(S):

SUBMITTED: _____, 20_____
(Date)

BY: _____
(Bidder - print the full name of your firm)

_____
(Signature and *printed* name of person authorized to sign) (Title)

END OF SECTION 00 41 00

AIA® Document A232™ – 2009

General Conditions of the Contract for Construction, *Construction Manager as Adviser Edition*

for the following PROJECT:
(Name, and location or address)

Broadlawns Medical Center
Sands Second Floor Vertical Expansion
1801 Hickman Road
Des Moines, IA 50314

THE CONSTRUCTION MANAGER:
(Name, legal status and address)

Graham Construction Co.
421 Grand Avenue
Des Moines, IA 50309

THE OWNER:
(Name, legal status and address)

Broadlawns Medical Center
1801 Hickman Road
Des Moines, IA 50314

THE ARCHITECT:
(Name, legal status and address)

Shive-Hattery, Inc.
4125 Westown Parkway
Suite 100
West Des Moines, IA 50266

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

This document is intended to be used in conjunction with AIA Documents A132™–2009, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition; B132™–2009, Standard Form of Agreement Between Owner and Architect, Construction Manager as Adviser Edition; and C132™–2009, Standard Form of Agreement Between Owner and Construction Manager as Adviser.

Init.
/

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved.** **WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

TABLE OF ARTICLES

1 GENERAL PROVISIONS

2 OWNER

3 CONTRACTOR

4 ARCHITECT AND CONSTRUCTION MANAGER

5 SUBCONTRACTORS

6 CONSTRUCTION BY OWNER OR BY OTHER CONTRACTORS

7 CHANGES IN THE WORK

8 TIME

9 PAYMENTS AND COMPLETION

10 PROTECTION OF PERSONS AND PROPERTY

11 INSURANCE AND BONDS

12 UNCOVERING AND CORRECTION OF WORK

13 MISCELLANEOUS PROVISIONS

14 TERMINATION OR SUSPENSION OF THE CONTRACT

15 CLAIMS AND DISPUTES

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved.** **WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

INDEX
(Topics and numbers in bold are section headings.)

Acceptance of Nonconforming Work
9.6.6, 9.9.3, **12.3**
Acceptance of Work
9.6.6, 9.8.2, 9.9.3, 9.10.1, 9.10.3, 12.3
Access to Work
3.16, 6.2.1, 12.1
Accident Prevention
10
Acts and Omissions
3.2.1, 3.2.2, 3.3.2, 3.12.8, 3.18, 8.3.1, 9.5.1, 10.1, 10.2.5, 13.4.2, 13.7
Addenda
1.1.1, 3.11, 4.2.14
Additional Costs, Claims for
3.2.4, 3.7.4, 3.7.5, 6.1.1, 7.3, 9.10.3, 9.10.4, 10.3, 10.4, 15.1.4
Additional Inspections and Testing
4.2.8, 12.2.1, 13.5
Additional Insured
11.1.4
Additional Time, Claims for
3.7.4, 3.7.5, 6.1.1, 7.3, 8.3, 10.3
Administration of the Contract
3.10, **4.2**
Advertisement or Invitation to Bid
1.1.1
Aesthetic Effect
4.2.19
Allowances
3.8, 7.3.8
All-risk Insurance
11.3.1, 11.3.1.1
Applications for Payment
4.2.7, 4.2.15, 7.3.9, 9.2, **9.3,** 9.4, 9.5.1, 9.7, 9.8.3, 9.10.1, 9.10.3, 9.10.5, 11.1.3, 14.2.4
Approvals
2.1.1, 2.2.2, 2.4, 3.1.4, 3.10.1, 3.10.2, 3.12.4 through 3.12.10, 3.13.2, 3.15.2, 4.2.9, 9.3.2, 13.4.2, 13.5
Arbitration
8.3.1, 11.3.10, 13.1, 15.3.2, **15.4**
ARCHITECT
4
Architect, Certificates for Payment
9.4
Architect, Definition of
4.1.1
Architect, Extent of Authority
5.2, 7.1.2, 7.3.7, 7.4, 9.3.1, 9.4, 9.5, 9.8.3, 9.8.4, 9.10.1, 9.10.3, 12.1, 12.2.1, 13.5.1, 13.5.2, 15.1.3, 15.2.1
Architect, Limitations of Authority and Responsibility
2.1.1, 3.12.8, 4.2.1, 4.2.2, 4.2.8, 4.2.13, 5.2.1, 9.6.4, 15.2
Architect's Additional Services and Expenses
2.4, 11.3.1.1, 12.2.1, 12.2.4, 13.5.2
Architect's Administration of the Contract
4.2, 9.4, 9.5, 15.2
Architect's Approvals
3.12.8
Architect's Authority to Reject Work
4.2.8, 12.1.2, 12.2.1
Architect's Copyright
1.5
Architect's Decisions
4.2.8, 7.3.9, 7.4, 8.1.3, 8.3.1, 9.2, 9.4, 9.5, 9.8.3, 9.9.2, 13.5.2, 14.2.2, 14.2.4, 15.2
Architect's Inspections
3.7.4, 4.2, 9.8.3, 9.9.2, 9.10.1, 13.5
Architect's Instructions
3.2.4, 7.4, 9.4
Architect's Interpretations
4.2.8, 4.2.17, 4.2.18
Architect's On-Site Observations
4.2.2, 9.4, 9.5.1, 9.10.1, 12.1.1, 12.1.2, 13.5
Architect's Project Representative
4.2.16
Architect's Relationship with Contractor
1.1.2, 1.5, 3.2.2, 3.2.3, 3.2.4, 3.3.1, 3.4.2, 3.5, 3.7.4, 3.9.2, 3.9.3, 3.10, 3.11, 3.12.8, 3.16, 3.18, 4.2, 5.2, 6.2.2, 8.2, 11.3.7, 12.1, 13.5
Architect's Relationship with Construction Manager
1.1.2, 9.3 through 9.10, 10.3, 13.5.1, 10.3, 11.3.7, 13.4.2, 13.5.4
Architect's Relationship with Subcontractors
1.1.2, 4.2.8, 5.3, 9.6.3, 9.6.4
Architect's Representations
9.4, 9.5, 9.10.1
Architect's Site Visits
4.2.2, 9.4, 9.5.1, 9.8.3, 9.9.2, 9.10.1, 13.5
Asbestos
10.3.1
Attorneys' Fees
3.18.1, 9.10.2, 10.3.3
Award of Other Contracts
6.1.1, 6.1.2
Award of Subcontracts and Other Contracts for Portions of the Work
5.2
Basic Definitions
1.1
Bidding Requirements
1.1.1, 5.2.1, 11.4.1
Binding Dispute Resolution
9.7, 11.3.9, 11.3.10, 13.1, 15.2.5, 15.2.6.1, 15.3.1, 15.3.2, 15.4.1

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved.** **WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

Boiler and Machinery Insurance
11.3.2
BONDS, INSURANCE AND
11
Bonds, Lien
7.3.7.4, 9.10.3
Bonds, Performance and Payment
7.3.7.4, 9.6.7, 9.10.3, 11.3.9, 11.4
Building Permit
2.2.2, 3.7.1
Capitalization
1.3
Certificate of Substantial Completion
9.8.3, 9.8.4, 9.8.5
Certificates for Payment
4.2.2, 9.3.3, **9.4**, 9.5, 9.6.1, 9.6.6, 9.7, 9.10.1, 9.10.3, 15.1.3
Certificates of Inspection, Testing or Approval
13.5.4
Certificates of Insurance
9.3.2, 9.10.2, 11.1.3
Change Orders
1.1.1, 2.4, 3.4.2, 3.7.4, 3.8.2, 3.11, 3.12.8, 4.2.12, 4.2.13, 4.2.14, 5.2.3, 7.1.1, 7.1.2, **7.2**, 7.3.2, 7.3.4, 7.3.6, 7.3.9, 7.3.10, 8.3.1, 9.3.1.1, 9.10.3, 10.3.2, 11.3.1.2, 11.3.4, 11.3.9, 12.1.2, 15.1.3
Change Orders, Definition of
7.2
Changes
7.1
CHANGES IN THE WORK
2.2.1, 3.4.2, 3.11, 3.12.8, 4.2.13, 4.2.14, **7**, 8.3.1, 9.3.1.1
Claims, Definition of
15.1.1
CLAIMS AND DISPUTES
1.1.8, 3.2.4, 3.7.5, 6.1.1, 7.3.9, 8.3.2, 9.3.3, 9.10.3, 9.10.4, 10.3.3, **15**, 15.4
Claims for Additional Cost
3.2.4, 3.7.5, 6.1.1, 7.3.9, 9.10.3, 9.10.4, 10.3.2, 10.4, **15.1.4**
Claims for Additional Time
3.2.4, 3.7.5, 7, 8.3.2, 10.4, **15.1.5**
Concealed or Unknown Conditions, Claims for
3.7
Claims for Damages
3.2.4, 3.18, 6.1.1, 6.2.5, 8.3.2, 9.3.3, 9.5.1.2, 9.10.2, 9.10.5, 10.3.3, 11.1.1, 11.3.5, 11.3.7, 15.1.6
Cleaning Up
3.15, 6.3
Commencement of Statutory Limitation Period
13.7
Commencement of the Work, Definition of
8.1.2
Communications, Owner to Architect
2.2.6
Communications, Owner to Construction Manager
2.2.6
Communications, Owner to Contractor
2.2.6
Communications Facilitating Contract Administration
3.9.1, **4.2.6**
COMPLETION, PAYMENTS AND
9
Completion, Substantial
4.2.15, 8.1.1, 8.1.3, 8.2.3, 9.4.3.3, **9.8**, 9.9.1, 9.10.3, 12.2.1, 12.2.2, 13.7
Concealed or Unknown Conditions
3.7.4, 4.2.8, 8.3.1, 10.3
Conditions of the Contract
1.1.1
Consolidation or Joinder
15.4.4
CONSTRUCTION BY OWNER OR BY OTHER CONTRACTORS
1.1.4, **6**
Construction Change Directive, Definition of
7.3.1
Construction Change Directives
1.1.1, 3.4.2, 3.12.8, 4.2.12, 4.2.13, 7.1.1, 7.1.2, 7.1.3, **7.3**, 9.3.1.1
Construction Manager, Building Permits
2.2.2
Construction Manager, Communications through
4.2.6
Construction Manager, Construction Schedule
3.10.1, 3.10.3
CONSTRUCTION MANAGER
4
Construction Manager, Definition of
4.1.2
Construction Manager, Documents and Samples at the Site
3.11
Construction Manager, Extent of Authority
3.12.7, 3.12.8, 4.1.3, 4.2.1, 4.2.4, 4.2.5, 4.2.9, 7.1.2, 7.2, 7.3.1, 8.3, 9.3.1, 9.4.1, 9.4.2, 9.4.3, 9.8.2, 9.8.3, 9.8.4, 9.9.1, 12.1, 12.2.1, 14.2.2, 14.2.4
Construction Manager, Limitations of Authority and Responsibility
4.2.5, 4.2.8, 13.4.2
Construction Manager, Submittals
4.2.9
Construction Manager's Additional Services and Expenses
12.2.1
Construction Manager's Administration of the Contract
4.2, 9.4, 9.5
Construction Manager's Approval
2.4, 3.10.1, 3.10.2

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved.** **WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

Construction Manager's Authority to Reject Work
4.2.8, 12.2.1
Construction Manager's Decisions
7.3.7, 7.3.9, 9.4.1, 9.5.1
Construction Manager's Inspections
4.2.8, 9.8.3, 9.9.2
Construction Manager's On-Site Observations
9.5.1
Construction Manager's Relationship with Architect
1.1.2, 4.2.1, 4.2.7, 4.2.8, 4.2.9, 4.2.13, 4.2.15, 4.2.16, 4.2.20, 9.2.1, 9.4.2, 9.5, 9.6.1, 9.6.3, 9.8.2, 9.8.3, 9.8.4, 9.9.1, 9.10.1, 9.10.2, 9.10.3, 11.1.3, 12.2.4, 13.5.1, 13.5.2, 13.5.4, 14.2.2, 14.2.4
Construction Manager's Relationship with Contractor
3.2.2, 3.2.3, 3.3.1, 3.5, 3.10.1, 3.10.2, 3.10.3, 3.11, 3.12.5, 3.12.6, 3.12.7, 3.12.8, 3.12.9, 3.12.10, 3.13.2, 3.14.2, 3.15.2, 3.16, 3.17, 3.18.1, 4.2.4, 4.2.5, 4.2.6, 4.2.9, 4.2.14, 4.2.17, 4.2.20, 5.2, 6.2.1, 6.2.2, 7.1.2, 7.2, 7.3.5, 7.3.7, 7.3.10, 8.3.1, 9.2, 9.3.1, 9.4.1, 9.4.2, 9.7, 9.8.2, 9.8.3, 9.8.4, 9.9.1, 9.10.1, 9.10.2, 9.10.3, 10.1, 10.3, 11.3.7, 12.1, 13.5.1, 13.5.2, 13.5.3, 13.5.4
Construction Manager's Relationship with Owner
2.2.2, 4.2.1, 10.3.2
Construction Manager's Relationship with Other Contractors and Owner's Own Forces
4.2.4
Construction Manager's Relationship with Subcontractors
4.2.8, 5.3, 9.6.3, 9.6.4
Construction Manager's Site Visits
9.5.1
Construction Schedules, Contractor's
3.10, 3.12.1, 3.12.2, 6.1.2, 15.1.5.2
Contingent Assignment of Subcontracts
5.4, 14.2.2.2
Continuing Contract Performance
15.1.3
Contract, Definition of
1.1.2
CONTRACT, TERMINATION OR SUSPENSION OF THE
5.4.1.1, 11.3.9, **14**
Contract Administration
3.1.3, 4.2, 9.4, 9.5
Contract Award and Execution, Conditions Relating to
3.7.1, 3.10, 5.2, 6.1, 11.1.3, 11.3.6, 11.4.1
Contract Documents, Copies Furnished and Use of
1.5.2, 2.2.5, 5.3
Contract Documents, Definition of
1.1.1
Contract Performance During Arbitration
15.1.3
Contract Sum
3.7.4, 3.7.5, 3.8, 3.10.2, 5.2.3, 7.2, 7.3, 7.4, **9.1,** 9.2, 9.5.1.4, 9.6.7, 9.7, 10.3.2, 11.3.1.1, 12.3, 14.2.4, 14.3.2, 15.1.4, 15.2.5
Contract Time
3.7.4, 3.7.5, 4, 3.10.2, 5.2.3, 7.2.3, 7.3.1, 7.3.5, 7.3.10, 7.4, 8.1.1, 8.2.1, 8.2.3, 8.3.1, 9.5.1, 9.7, 10.3.2, 12.1.1, 14.3.2, 15.1.5.1, 15.2.5
Contract Time, Definition of
8.1.1
CONTRACTOR
3
Contractor, Definition of
3.1.1
Contractor's Construction Schedules
3.10, 3.12.1, 3.12.2, 6.1.3, 15.1.5.2
Contractor's Employees
3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6, 10.2, 10.3, 11.1.1, 11.3.7, 14.1, 14.2.1.1
Contractor's Liability Insurance
11.1
Contractor's Relationship with Other Contractors and Owner's Own Forces
3.12.5, 3.14.2, 4.2.6, 6, 11.3, 12.1.2, 12.2.4
Contractor's Relationship with Subcontractors
1.2.2, 3.3.2, 3.18, 5, 9.6.2, 9.6.7, 9.10.2, 11.3.1.2, 11.3.7, 11.3.8, 14.2.1.2
Contractor's Relationship with the Architect
1.1.2, 1.5, 3.2.2, 3.2.3, 3.2.4, 3.4.2, 3.5, 3.7.4, 3.10.1, 3.11, 3.12, 3.16, 3.18, 5.2, 6.2.2, 7, 8.3.1, 9.2, 9.3, 9.4, 9.5, 9.7, 9.8, 9.9, 10.2.6, 10.3, 11.3.7, 12, 13.5, 15.1.2, 15.2.1
Contractor's Relationship with the Construction Manager
1.1.2, 3.2.2, 3.2.3, 3.3.1, 3.5, 3.10.1, 3.10.2, 3.10.3, 3.11, 3.12.5, 3.12.7, 3.12.9, 3.12.10, 3.13.2, 3.14.2, 3.15.1, 3.16, 3.17, 3.18.1, 4.2.4, 4.2.5, 5.2, 6.2.1, 6.2.2, 7.1.2, 7.3.5, 7.3.7, 7.3.10, 8.3.1, 9.2, 9.3.1, 9.4.1, 9.4.2, 9.8.2, 9.9.1, 9.10.1, 9.10.2, 9.10.3, 10.1, 10.2.6, 10.3, 11.3.7, 12.1, 13.5.1, 13.5.2, 13.5.3, 13.5.4
Contractor's Representations
3.2.1, 3.2.2, 3.5, 3.12.6, 6.2.2, 8.2.1, 9.3.3, 9.8.2
Contractor's Responsibility for Those Performing the Work
3.3.2, 3.18, 5.3, 6.1.3, 6.2, 9.5.1, 10.2.8
Contractor's Review of Contract Documents
3.2
Contractor's Right to Stop the Work
9.7
Contractor's Right to Terminate the Contract
14.1
Contractor's Submittals
3.10.2, 3.11, 3.12, 4.2.9, 9.2, 9.3, 9.8.2, 9.9.1, 9.10.2, 9.10.3, 11.1.3, 11.4.2
Contractor's Superintendent
3.9, 10.2.6
Contractor's Supervision and Construction Procedures
1.2.2, 3.3, 3.4, 4.2.5, 4.2.7, 6.1, 6.2.4, 7.1.3, 7.3.5, 7.3.7, 8.2, 10, 12, 14, 15.1.3

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved.** **WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

Contractual Liability Insurance
11.1.1.8, 11.2, 11.3.1.5
Coordination and Correlation
1.2, 3.2, 3.3.1, 3.10, 3.12.6, 6.1.2, 6.2.1
Copies Furnished of Drawings and Specifications
1.5, 2.2.5, 3.11
Copyrights
1.5, 3.17
Correction of Work
2.3, 2.4, 9.4.1, 9.4.2, 9.8.2, 9.8.3, 9.9.1, 12.1.2, **12.2**
Correlation and Intent of the Contract Documents
1.2
Costs
2.4, 3.2.4, 3.7.3, 3.8.2, 3.15.2, 5.4.2, 6.1.1, 6.2.3, 7.3.3.3, 7.3.6, 7.3.7, 7.3.8, 7.3.9, 11.3.1.2, 11.3.1.3, 11.3.4, 11.3.9, 12.1, 12.2.1, 13.5, 14
Cutting and Patching
3.14, 6.2.5
Damage to Construction of Owner or Other Contractors
3.14.2, 6.2.4, 9.5.1.5, 10.2.1.2, 10.2.5, 10.4, 11.1.1, 11.3, 12.2.4
Damage to the Work
3.14.2, 9.9.1, 10.2.1.2, 10.2.5, 10.4, 11.3.1, 12.2.4
Damages, Claims for
3.2.4, 3.18, 6.1.1, 8.3.2, 10.3.3, 11.1.1, 11.3.5, 11.3.7, 14.2.4, 15.1.6
Damages for Delay
6.1.1, 8.3.3, 9.5.1.6, 9.7, 10.3.2, 15.1.5
Date of Commencement of the Work, Definition of
8.1.2
Date of Substantial Completion, Definition of
8.1.3
Day, Definition of
8.1.4
Decisions of the Architect
3.7.4, 4.2.7, 4.2.8, 4.2.10, 4.2.11, 4.2.13, 4.2.15, 4.2.16, 4.2.17, 4.2.18, 4.2.19, 4.2.20, 7.3.9, 8.1.3, 8.3.1, 9.2, 9.4, 9.5, 9.8.3, 9.8.4, 9.9.1, 10.1.2, 13.5.2, 14.2.2, 14.2.4, 15.1, 15.2
Decisions of the Construction Manager
7.3.7, 7.3.8, 7.3.9, 15.1, 15.2
Decisions to Withhold Certification
9.4.1, **9.5,** 9.7, 14.1.1.3
Defective or Nonconforming Work, Acceptance, Rejection and Correction of
2.3, 2.4, 3.5, 4.2.8, 6.2.5, 9.5.1, 9.6.6, 9.8.2, 9.9.3, 9.10.4, 12.2.1, 12.2.2
Definitions
1.1, 2.1.1, 3.1.1, 3.12.1, 3.12.2, 3.12.3, 4.1.1, 4.1.2, 7.2, 7.3.1, 8.1, 9.1, 9.8.1, 15.1.1
Delays and Extensions of Time
3.2, 3.7.4, 5.2.3, 7.2, 7.3.1, 7.4, **8.3**, 9.5.1, 9.7, 10.3.2, 10.4, 14.3.2, 15.1.5, 15.2.5
Disputes
7.3.8, 7.3.9, 9.3, 15.1, 15.2
DISPUTES, CLAIMS AND
3.2.4, 6.1.1, 6.3, 7.3.9, 9.3.3, **15**, 15.4
Documents and Samples at the Site
3.11
Drawings, Definition of
1.1.5
Drawings and Specifications, Ownership and Use
1.1.1, **1.5,** 2.2.5, 3.11, 5.3
Duty to Review Contract Documents and Field Conditions
3.2
Effective Date of Insurance
8.2.2, 11.1.2
Emergencies
10.4, 14.1.1.2, 15.1.4
Employees, Contractor's
3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.1, 3.18.2, 4.2.3, 4.2.6, 10.2, 10.3.3, 11.1.1, 11.3.7, 14.1, 14.2.1.1
Equipment, Labor, Materials and or
1.1.3, 1.1.6, 3.4, 3.5, 3.8.2, 3.8.3, 3.12.2, 3.12.3, 3.13.1, 3.15.1, 4.2.8, 4.2.7, 5.2.1, 6.2.1, 7.3.7, 9.3.2, 9.3.3, 9.5.1.3, 9.10.2, 10.2.1, 10.2.4, 14.2.2
Execution and Progress of the Work
1.1.3, 1.2.1, 1.2.2, 2.2.3, 2.2.5, 3.1, 3.3.1, 3.4.1, 3.5, 3.7.1, 3.10.1, 3.12, 3.14, 4.2, 6.2.2, 7.1.3, 7.3.5, 8.2, 9.5.1, 9.9.1, 10.2, 10.3, 12.2, 14.2, 14.3.1, 15.1.3
Extensions of Time
3.2.4, 3.7.4, 5.2.3, 7.2.3, 7.4, 8.3, 9.5.1, 9.7, 10.3.2, 10.4, 14.3, 15.1.5, 15.2.5
Failure of Payment
9.5.1.3, **9.7**, 13.6, 14.1.1.3, 14.1.3, 14.2.1.2, 15.1.4
Faulty Work (See Defective or Nonconforming Work)
Final Completion and Final Payment
4.2.1, 4.2.15, 9.8.2, **9.10**, 11.1.2, 11.1.3, 11.3.1, 11.3.5, 12.3, 15.2.1
Financial Arrangements, Owner's
2.2.1
GENERAL PROVISIONS
1
Governing Law
13.1
Guarantees (See Warranty and Warranties)
Hazardous Materials
10.2.4, **10.3**
Identification of Contract Documents
1.2.1
Identification of Subcontractors and Suppliers
5.2.1
Indemnification
3.18, 9.10.2, 10.3.3, 10.3.5, 10.3.6, 11.3.1.2, 11.3.7
Information and Services Required of the Owner
2.1.2, **2.2**, 4.2.6, 6.1.2, 6.2.5, 9.6.1, 9.6.4, 9.8, 9.9.1, 9.10.3, 10.3.2, 10.3.3, 11.2, 11.3.4, 13.5.1, 13.5.2, 14.1.1.4, 14.1.3, 15.1.2
Initial Decision
15.2

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved.** **WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

Initial Decision Maker, Definition of
1.1.8
Initial Decision Maker, Extent of Authority
14.2.2, 14.2.4, 15.1.3, 15.2.2, 15.2.3, 15.2.4, 15.2.5
Injury or Damage to Person or Property
3.18.1, 10.2.1, 10.2.2, **10.2.8**, 10.3, 10.3.3, 10.4, 11.1.1
Inspections
3.1.3, 3.7.1, 4.2.2, 9.8.2, 9.9.2, 9.10.1, 13.5
Instructions to Bidders
1.1.1
Instructions to the Contractor
3.1.4, 3.3.3, 3.7.1, 4.2.4, 5.2.1, 7, 8.2.2, 12.1, 13.5.2
Instruments of Service, Definition of
1.1.7, 1.5, 1.6
Insurance
6.1.1, 7.3.7, 8.2.2, 9.3.2, 9.8.4, 9.9.1, 9.10.2, 10.2.5, 11
Insurance, Boiler and Machinery
11.3.2
Insurance, Contractor's Liability
11.1
Insurance, Effective Date of
8.2.2, 11.1.2
Insurance, Loss of Use
11.3.3
Insurance, Owner's Liability
11.2
Insurance, Property
10.2.5, **11.3**
Insurance, Stored Materials
9.3.2, 11.3.1
INSURANCE AND BONDS
11
Insurance Companies, Consent to Partial Occupancy
9.9.1, 11.3.1.5
Insurance Companies, Settlement with
11.3.10
Intent of the Contract Documents
1.2, 4.2.18, 4.2.19, 7.4
Interest
9.7, **13.6**
Interpretation
1.4, 4.2.8, 4.2.17, 4.2.18
Interpretations, Written
4.2.17, 4.2.18, 4.2.20
Joinder and Consolidation of Claims Required
15.4.4
Judgment on Final Award
15.4.2
Labor and Materials, Equipment
1.1.3, 1.1.6, 3.4, 3.8.2, 3.8.3, 3.12.2, 3.12.3, 3.12.6, 3.12.10, 3.13.1, 3.15.1, 5.2.1, 6.2.1, 7.3.7, 9.3.2, 9.3.3, 9.5.1.3, 9.6, 9.10.2, 10.2.1.2, 11.3.1, 14.2.1, 14.2.2
Labor Disputes
8.3.1
Laws and Regulations
3.2.3, 3.2.4, 3.7, 3.13.1, 10.2.2, 10.2.3, 13.5.1, 14.2.1
Liens
2.1.2, 9.3.3, 9.10.2, 9.10.4, 15.2.8
Limitation on Consolidation or Joinder
15.4.4
Limitations, Statutes of
15.4.1
Limitations of Authority
3.12.4, 4.1.3, 4.2.16
Limitations of Liability
9.6.7, 11.1.1, 12.2
Limitations of Time
3.10.1, 4.2.17, 4.2.20, 8.2.1, 9.3.3, 9.6.1, 9.8.4, 9.10.2, 10.2, 11.1.3, 12.1.1, 12.2.2.2, 12.2.5, 13.7, 14.1.1, 15.2.6.1
Loss of Use Insurance
11.3.3
Material Suppliers
1.5.1, 1.5.2, 3.12, 4.2.6, 4.2.8, 9.3.1, 9.3.1.2, 9.3.3, 9.5.3, 9.6.4, 9.6.5, 9.6.7, 9.10.5, 11.3.1
Materials, Hazardous
10.2.4, **10.3**
Materials, Labor, Equipment and
1.1.3, 1.1.6, 1.5.1, 1.5.2, 3.4, 3.5, 3.8.2, 3.8.3, 3.12.2, 3.12.3, 3.12.6, 3.12.10, 3.13.1, 5.2.1, 6.2.1, 9.3.1, 9.3.2, 9.3.3, 9.5.1, 9.5.3, 9.6.4, 9.6.5, 9.6.7, 9.10.2, 9.10.5, 10.2.1, 10.2.4, 10.3
Means, Methods, Techniques, Sequences and Procedures of Construction
3.3.1, 3.12.10, 4.2.5, 4.2.11
Mechanic's Lien
2.1.2, 15.2.8
Mediation
8.3.1, 10.3.5, 15.2.1, 15.2.5, 15.2.6, **15.3**, 15.4.1
Minor Changes in the Work
1.1.1, 3.12.8, 4.2.13, 7.1, **7.4**
MISCELLANEOUS PROVISIONS
13
Modifications, Definition of
1.1.1
Modifications to the Contract
1.1.1, 1.1.2, 3.11, 4.1.3, 4.2.14, 5.2.3, 7, 11.3.1
Mutual Responsibility
6.2
Nonconforming Work, Acceptance of
9.4.3, 9.8.3, **12.3**
Nonconforming Work, Rejection and Correction of
2.3, 2.4, 3.2.3, 3.7.3, 9.4.3.3, 9.8.2, 9.8.3, 9.9.1, 11.1.1, 12.2.2.1, 12.2.3, 12.2.4, 12.2.5
Notice
1.5, 2.1.2, 2.2.1, 2.4, 3.2.4, 3.3.1, 3.7.1, 3.7.2, 3.7.5, 3.9.2, 3.12.9, 5.2.1, 6.3, 9.4.1, 9.7, 9.10.1, 9.10.2, 10.2.2, 10.2.6, 10.2.8, 10.3.2, 11.3.6, 12.2.2.1, 13.3, 13.5.1, 13.5.2, 14.1.2, 14.2.2, 14.4.2, 15.1.2, 15.1.4, 15.1.5.1, 15.2, 15.4.1

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved.** **WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

Notice of Claims
3.7.2, 10.2.8, **15.1.2**, 15.4.1
Notice of Testing and Inspections
13.5.1, 13.5.2
Notices, Permits, Fees and
3.7, 7.3.7, 10.2.2
Observations, On-Site
3.2.1, 9.5.1, 12.1.1
Occupancy
2.2.2, 9.6.6, 9.9, 11.3.1.5
On-Site Inspections
4.2.2, 9.10.1, 9.4.4, 9.5.1
Orders, Written
4.2.7, 4.2.18, 4.2.20
Other Contracts and Contractors
1.1.4, 3.14.2, 4.2.9, 6, 11.3.7, 12.1.2
OWNER
2
Owner, Definition of
2.1.1
Owner, Information and Services Required of the
2.1.2, **2.2**, 4.2, 6.1.2, 6.1.3, 6.2.5, 9.3.2, 9.6.1, 9.6.4, 9.9.2, 9.10.2, 10.3.3, 11.2, 11.3, 13.5.1, 13.5.2, 14.1.1, 14.1.3, 15.1.3
Owner's Authority
1.5, 2.1.1, 2.3, 2.4, 3.4.2, 3.12.10, 3.14.2, 4.1.2, 4.1.3, 4.2.8, 4.2.9, 5.2.1, 5.2.4, 5.4.1, 6.1, 6.3, 7.2, 7.3.1, 8.2.2, 9.3.1, 9.3.2, 9.5.1, 9.6.4, 9.9.1, 9.10.2, 10.3.2, 11.3.3, 11.3.10, 12.2.2.1, 12.3, 13.5.2, 14.2, 14.3.1, 14.4, 15.2.7
Owner's Financial Capability
2.2.1, 13.2.2, 14.1.1
Owner's Liability Insurance
11.2
Owner's Relationship with Subcontractors
1.1.2, 5.2.1, 5.3, 5.4.1, 9.6.4, 9.10.2, 14.2.2
Owner's Right to Carry Out the Work
2.4, 12.2.4, 14.2.2
Owner's Right to Clean Up
6.3
Owner's Right to Perform Construction with Own Forces and to Award Other Contracts
6.1
Owner's Right to Stop the Work
2.3
Owner's Right to Suspend the Work
14.3
Owner's Right to Terminate the Contract
14.2
Ownership and Use of Drawings, Specifications and Other Instruments of Service
1.1.1, 1.1.5, **1.5**, 1.6, 3.11, 3.12.10, 3.17, 4.2.14, 4.2.18, 4.2.20
Partial Occupancy or Use
9.9, 11.3.1.5
Patching, Cutting and
3.14, 6.2.5
Patents and Copyrights, Royalties
3.17
Payment, Applications for
4.2.1, 4.2.7, 4.2.15, 7.3.9, 9.2, **9.3**, 9.4, 9.5, 9.7, 9.10.1, 9.10.3, 9.10.5, 11.1.3
Payment, Certificates for
4.2.15, 7.3.9, 9.3, **9.4**, 9.5, 9.6.1, 9.6.6, 9.7, 9.10.1, 9.10.3, 14.1.1.3, 15.1.3
Payment, Failure of
9.4.1, 9.5, **9.7**, 14.1.1.3
Payment, Final
4.2.1, 9.8.2, **9.10**, 11.1.2, 11.3.1, 11.3.5, 12.3, 15.2.1
Payment Bond, Performance Bond and
5.4.1, 7.3.7, 9.6.7, 9.10.2, 9.10.3, 11, **11.4**
Payments, Progress
9.3.1, 9.4.2, **9.6**
PAYMENTS AND COMPLETION
9, 14
Payments to Subcontractors
5.4.2, 9.3, 9.5.1.3, 9.5.3, 9.6.2, 9.6.3, 9.6.4, 9.6.7, 9.10.5, 14.2.1.2
PCB
10.3.1
Performance Bond and Payment Bond
5.4.1, 7.3.7, 9.6.7, 9.10.2, 9.10.3, 11, **11.4**
Permits, Fees, Notices and Compliance with Laws
2.2.2, **3.7**, 7.3.7.4, 10.2.2
PERSONS AND PROPERTY, PROTECTION OF
10
Polychlorinated Biphenyl
10.3.1
Product Data, Definition of
3.12.2
Product Data and Samples, Shop Drawings
3.11, **3.12**, 4.2.9, 4.2.10, 4.2.14
Progress and Completion
8.2, 9.3.1, 9.4.2, 9.6, 9.8, 9.10, 14.2.4, 15.1.6
Progress Payments
9.3.1, 9.4.2, **9.6**
Project, Definition of
1.1.4
Project Representatives
4.2.16
Property Insurance
10.2.5, **11.3**
Project Schedule
3.10.1, 3.10.3, 3.10.4, 4.2.2, 4.2.3, 4.2.4
PROTECTION OF PERSONS AND PROPERTY
10
Regulations and Laws
1.5, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 4.1.1, 9.6.4, 9.9.1, 10.2.2, 11.1, 11.4, 13.1, 13.4, 13.5.1, 13.5.2, 13.6, 14.1.1, 14.2.1, 15.2.8, 15.4
Rejection of Work
3.5, 4.2.8, 12.2.1
Releases of and Waivers and of Liens
9.10.2

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved.** **WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

Representations
1.3, 2.2.1, 3.5, 3.12, 6.2.2, 8.2.1, 9.3.3, 9.4.3, 9.5.1, 9.8.2, 9.10.1
Representatives
2.1.1, 3.1.1, 3.9, 4.1.1, 4.2.1, 4.2.2, 4.2.10, 5.1.1, 5.1.2, 13.2.1
Requests for Information
4.2.20
Resolution of Claims and Disputes
15
Responsibility for Those Performing the Work
3.3.2, 3.7.3, 3.12.8, 3.18, 4.2.2, 4.2.5, 4.2.8, 5.3, 6.1.2, 6.2, 6.3, 9.5.1, 9.8.2, 10
Retainage
9.3.1, 9.6.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3
Review of Contract Documents and Field Conditions by Contractor
1.2.2, **3.2**, 3.7.3, 3.12.7
Review of Contractor's Submittals by Owner, Construction Manager and Architect
3.10.1, 3.10.2, 3.11, 3.12, 4.2, 5.2, 5.2, 9.2, 9.8.2
Review of Shop Drawings, Product Data and Samples by Contractor
3.12.5
Rights and Remedies
1.1.2, 2.3, 2.4, 3.7.4, 3.15.2, 4.2.8, 5.3, 5.4, 6.1, 6.3, 7.3.1, 8.3, 9.5.1, 9.7, 10.2.5, 10.3, 12.2.2, 12.2.4, **13.4**, 14, 15.4
Royalties, Patents and Copyrights
3.17
Rules and Notices for Arbitration
15.4
Safety of Persons and Property
10.2, 10.3, 10.4
Safety Precautions and Programs
3.3.1, 3.12, 4.2.5, 5.3, **10.1**, 10.2, 10.3, 10.4
Samples, Definition of
3.12.3
Samples, Shop Drawings, Product Data and
3.11, **3.12**, 4.2.9, 4.2.10
Samples at the Site, Documents and
3.11
Schedule of Values
9.2, 9.3.1
Schedules, Construction
3.10, 3.12.1, 3.12.2, 6.1.2, 15.1.5.2
Separate Contracts and Contractors
1.1.4, 3.12.5, 3.14.2, 4.2.6, 4.2.11, 6, 8.3.1, 12.1.2
Shop Drawings, Definition of
3.12.1
Shop Drawings, Product Data and Samples
3.11, **3.12**, 4.2.9, 4.2.10, 4.2.14
Site, Use of
3.13, 6.1.1, 6.2.1
Site Inspections
3.2.2, 3.3.3, 3.7.1, 3.7.4, 4.2.2, 4.2.3, 4.2.15, 9.4.3.3, 9.8.3, 9.9.2, 9.10.1, 13.5
Site Visits, Architect's
3.7.4, 4.2.2, 4.2.15, 9.8.3, 9.9.2, 9.10.1, 13.5
Special Inspections and Testing
4.2.8, 12.2.1, 13.5
Specifications, Definition of
1.1.6
Specifications
1.1.1, **1.1.6**, 1.2.2, 1.5, 3.11, 3.12.10, 3.17, 4.2.14
Staffing Plan
4.2.3
Statute of Limitations
12.2.5, 13.7, 15.4.1.1
Stopping the Work
2.3, 9.7, 10.3, 14.1
Stored Materials
6.2.1, 9.3.2, 10.2.1.2, 10.2.4
Subcontractor, Definition of
5.1.1
SUBCONTRACTORS
5
Subcontractors, Work by
1.2.2, 3.3.2, 3.12.1, 4.2.5, 5.2.3, 5.3, 5.4, 9.3.1.2, 9.6.7
Subcontractual Relations
5.3, 5.4, 9.3.1.2, 9.6.2, 9.6.3, 9.10, 10.2.1, 14.1, 14.2
Submittals
3.2.3, 3.10, 3.11, 3.12, 4.2.9, 4.2.10, 4.2.11, 5.2.1, 5.2.3, 7.3.7, 9.2, 9.3, 9.8, 9.9.1, 9.10.2, 9.10.3, 11.1.3
Submittal Schedule
3.10.2, 3.12.5, 4.2.9, 4.2.10
Subrogation, Waivers of
6.1.1, **11.3.7**
Substantial Completion
8.1.1, 8.1.3, 8.2.3, 9.4.3.3, **9.8**, 9.9.1, 9.10.3, 12.2.1, 12.2.2, 13.7
Substantial Completion, Definition of
9.8.1
Substitution of Subcontractors
5.2.3, 5.2.4
Substitution of Architect
4.1.4
Substitution of Construction Manager
4.1.4
Substitutions of Materials
3.4.2, 3.5, 7.3.8
Sub-subcontractor, Definition of
5.1.2
Subsurface Conditions
3.7.4
Successors and Assigns
13.2
Superintendent
3.9, 10.2.6
Supervision and Construction Procedures
1.2.2, **3.3**, 3.4, 3.12.10, 4.2.2, 4.2.3, 4.2.5, 4.2.8, 4.2.9, 4.2.10, 4.2.11, 6.1.3, 6.2.4, 7.1.3, 7.3.7, 8.2, 8.3.1, 9.4.3.3, 10, 12, 14, 15.1.3

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved.** **WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

Surety
5.4.1.2, 9.8.5, 9.10.2, 9.10.3, 14.2.2, 15.2.7
Surety, Consent of
9.10.2, 9.10.3
Surveys
1.1.7, 2.2.3
Suspension by the Owner for Convenience
14.3
Suspension of the Work
5.4.2, 14.3
Suspension or Termination of the Contract
5.4.1.1, 14
Taxes
3.6, 3.8.2.1, 7.3.7.4
Termination by the Contractor
14.1, 15.1.6
Termination by the Owner for Cause
5.4.1.1, **14.2**, 15.1.6
Termination by the Owner for Convenience
14.4
Termination of the Contractor
14.2.2
TERMINATION OR SUSPENSION OF THE CONTRACT
14
Tests and Inspections
3.1.4, 3.3.3, 4.2.2, 4.2.6, 4.2.8, 9.4.3.3, 9.8.3, 9.9.2, 9.10.1, 10.3.2, 12.2.1, **13.5**
TIME
8
Time, Delays and Extensions of
3.2.4, 3.7.4, 5.2.3, 7.2, 7.3.1, 7.4, **8.3**, 9.5.1, 10.3.2, 14.3.2, 15.1.5, 15.2.5
Time Limits
2.1.2, 2.2, 2.4, 3.2.2, 3.10, 3.11, 3.12.5, 3.15.1, 4.2.1, 5.2, 5.3, 5.4, 6.2.4, 7.3, 7.4, 8.2, 9.2, 9.3.1, 9.3.3, 9.4.1, 9.4.2, 9.5, 9.6, 9.7, 9.8, 9.9, 9.10, 11.1.3, 11.4, 12.2, 13.5, 13.7, 14, 15
Time Limits on Claims
3.7.4, 10.2.8, **13.7**, 15.1.2
Title to Work
9.3.2, 9.3.3
Transmission of Data in Digital Form
1.6
UNCOVERING AND CORRECTION OF WORK
12
Uncovering of Work
12.1
Unforeseen Conditions, Concealed or Unknown
3.7.4, 8.3.1, 10.3
Unit Prices
7.3.3.2, 7.3.4
Use of Documents
1.1.1, 1.5, 2.2.5, 3.12.6, 5.3
Use of Site
3.13, 6.1.1, 6.2.1
Values, Schedule of
9.2, 9.3.1
Waiver of Claims by the Architect
13.4.2
Waiver of Claims by the Construction Manager
13.4.2
Waiver of Claims by the Contractor
9.10.5, 13.4.2, 15.1.6
Waiver of Claims by the Owner
9.9.3, 9.10.3, 9.10.4, 12.2.2.1, 13.4.2, 14.2.4, 15.1.6
Waiver of Consequential Damages
14.2.4, 15.1.6
Waiver of Liens
9.10.2, 9.10.4
Waivers of Subrogation
6.1.1, **11.3.7**
Warranty
3.5, 4.2.15, 9.3.3, 9.8.4, 9.9.1, 9.10.4, 12.2.2
Weather Delays
15.1.5.2
Work, Definition of
1.1.3
Written Consent
1.5.2, 3.4.2, 3.7.4, 3.12.8, 3.14.2, 4.1.3, 9.3.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3, 10.3.2, 11.4.1, 13.2, 13.4.2, 15.4.4.2
Written Interpretations
4.2.17, 4.2.18
Written Notice
2.3, 2.4, 3.3.1, 3.9, 3.12.9, 3.12.10, 5.2.1, 5.3, 5.4.1.1, 8.2.2, 9.4, 9.5.1, 9.7, 9.10, 10.2.2, 10.3, 11.1.3, 12.2.2, 12.2.4, **13.3**, 13.5.2, 14, 15.4.1
Written Orders
1.1.1, 2.3, 3.9, 7, 8.2.2, 12.1, 12.2, 13.5.2, 14.3.1, 15.1.2

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved.** **WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents. The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement), and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of addenda relating to bidding requirements).

§ 1.1.2 The Contract. The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and the Construction Manager or the Construction Manager's consultants, (3) between the Owner and the Architect or the Architect's consultants, (4) between the Contractor and the Construction Manager or the Construction Manager's consultants, (5) between the Owner and a Subcontractor or Sub-subcontractor (6) between the Construction Manager and the Architect, or (7) between any persons or entities other than the Owner and Contractor. The Construction Manager and Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of their duties.

§ 1.1.3 The Work. The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 The Project. The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by other Multiple Prime Contractors and by the Owner's own forces, including persons or entities under separate contracts not administered by the Construction Manager.

§ 1.1.5 The Drawings. The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

§ 1.1.6 The Specifications. The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 Instruments of Service. Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 Initial Decision Maker. The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2 and certify termination of the Agreement under Section 14.2.2.

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved.** **WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 Ownership and Use of Drawings, Specifications and Other Instruments of Service

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Architect, or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants.

§ 1.6 Transmission of Data in Digital Form

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Article 4, the Construction Manager and the Architect do not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

§ 2.2 Information and Services Required of the Owner

§ 2.2.1 Prior to commencement of the Work, the Contractor may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. Thereafter, the Contractor may only request such evidence if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) a change in the Work materially changes the Contract Sum; or (3) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or the

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

portion of the Work affected by a material change. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.2 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities. Unless otherwise provided under the Contract Documents, the Owner, through the Construction Manager, shall secure and pay for the building permit.

§ 2.2.3 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.2.4 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.2.5 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.2.6 The Owner shall endeavor to forward all communications to the Contractor through the Construction Manager and shall contemporaneously provide the same communications to the Architect about matters arising out of or relating to the Contract Documents.

§ 2.3 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.4 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Construction Manager's and Architect's and their respective consultants' additional services made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect, after consultation with the Construction Manager. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The plural term "Multiple Prime Contractors" refers to persons or entities who perform construction under contracts with the Owner that are administered by the Construction Manager. The term does not include the Owner's own forces, including persons or entities under separate contracts not administered by the Construction Manager.

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved.** **WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

§ 3.1.3 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.4 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Construction Manager or Architect in their administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Construction Manager and Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information submitted to the Construction Manager in such form as the Construction Manager and Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Construction Manager and Architect any nonconformity discovered by or made known to the Contractor as a request for information submitted to Construction Manager in such form as the Construction Manager and Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall make Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instruction concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner, the Construction Manager, and the Architect and shall not proceed with that portion of the Work without further written instructions from the Architect, through the Construction Manager. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any loss or damage arising solely from those Owner-required means, methods, techniques, sequences or procedures.

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved.** **WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of the Project already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work authorized by the Architect in accordance with Sections 3.12.8 or 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect, in consultation with the Construction Manager, and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 Warranty

The Contractor warrants to the Owner, Construction Manager, and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform with the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Construction Manager or Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.6 Taxes

The Contractor shall pay sales, consumer, use and similar taxes for the Work or portions thereof provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 Permits, Fees, Notices, and Compliance with Laws

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Owner, through the Construction Manager, shall secure and pay for the building permit. The Contractor shall secure and pay for other permits, fees, licenses and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions. If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner, Construction Manager, and the Architect before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Architect and Construction

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved.** **WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

Manager will promptly investigate such conditions and, if the Architect, in consultation with the Construction Manager, determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect, in consultation with the Construction Manager, determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner, Construction Manager, and Contractor in writing, stating the reasons. If the Owner or Contractor disputes the Architect's determination or recommendation, either party may proceed as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner, Construction Manager, and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents:

- **.1** Allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- **.2** Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- **.3** Whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner and Architect through the Construction Manager, the name and qualifications of a proposed superintendent. The Construction Manager may reply within 14 days to the Contractor in writing stating (1) whether the Owner, the Construction Manager, or the Architect has reasonable objection to the proposed superintendent or (2) that any of them require additional time to review. Failure of the Construction Manager to reply within the 14 day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner, Construction Manager or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 Contractor's Construction Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information and the Construction Manager's approval a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project schedule to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved.** **WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

The Contractor shall cooperate with the Construction Manager in scheduling and performing the Contractor's Work to avoid conflict with, and as to cause no delay in, the work or activities of other Multiple Prime Contractors or the construction or operations of the Owner's own forces.

§ 3.10.2 The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract and thereafter update it as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Construction Manager's and Architect's approval. The Architect and Construction Manager's approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Construction Manager and Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall participate with other Contractors, the Construction Manager and Owner in reviewing and coordinating all schedules for incorporation into the Project schedule that is prepared by the Construction Manager. The Contractor shall make revisions to the construction schedule and submittal schedule as deemed necessary by the Construction Manager to conform to the Project schedule.

§ 3.10.4 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner, Construction Manager and Architect and incorporated into the approved Project schedule.

§ 3.11 Documents and Samples at the Site

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These documents shall be available to the Architect and delivered to the Construction Manager for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. Their purpose is to demonstrate the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect and Construction Manager is subject to the limitations of Sections 4.2.9 through 4.2.11. Informational submittals upon which the Construction Manager and Architect are not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Construction Manager or Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Construction Manager Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in accordance with the Project submittal schedule approved by the Construction Manager and Architect, or in the absence of an approved Project submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of other Multiple Prime Contractors or the Owner's own forces. The Contractor shall cooperate with the Construction Manager in the coordination of the Contractor's Shop Drawings, Product Data, Samples and similar submittals with related documents submitted by other Multiple Prime Contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents to the Owner, Construction Manager, and Architect, that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so and (3) checked

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved.** **WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been reviewed and approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Construction Manager and Architect in writing of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Construction Manager and Architect on previous submittals. In the absence of such written notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

§ 3.13 Use of Site

§ 3.13.1 The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.13.2 The Contractor shall coordinate the Contractor's operations with, and secure the approval of, the Construction Manager before using any portion of the site.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting and patching shall be restored to the condition existing prior to the cutting, fitting and patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner's own forces or of other Multiple Prime Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner's own forces or by other Multiple Prime Contractors except with written consent of the Construction Manager,

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved.** **WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

Owner and such other Multiple Prime Contractors; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the other Multiple Prime Contractors or the Owner the Contractor's consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner, or Construction Manager with the Owner's approval, may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 Access to Work

The Contractor shall provide the Owner, Construction Manager and Architect access to the Work in preparation and progress wherever located.

§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner, Construction Manager and Architect harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner, Architect, or Construction Manager. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect through the Construction Manager.

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Construction Manager, Architect, Construction Manager's and Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

ARTICLE 4 ARCHITECT AND CONSTRUCTION MANAGER

§ 4.1 General

§ 4.1.1 The Owner shall retain an architect lawfully licensed to practice architecture or an entity lawfully practicing architecture in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 4.1.2 The Owner shall retain a construction manager lawfully licensed to practice construction management or an entity lawfully practicing construction management in the jurisdiction where the Project is located. That person or entity is identified as the Construction Manager in the Agreement and is referred to throughout the Contract Documents as if singular in number.

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

§ 4.1.3 Duties, responsibilities and limitations of authority of the Construction Manager and Architect as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner, Construction Manager, Architect and Contractor. Consent shall not be unreasonably withheld.

§ 4.1.4 If the employment of the Construction Manager or Architect is terminated, the Owner shall employ a successor construction manager or architect as to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Construction Manager or Architect, respectively.

§ 4.2 Administration of the Contract

§ 4.2.1 The Construction Manager and Architect will provide administration of the Contract as described in the Contract Documents and will be the Owner's representatives during construction until the date the Architect issues the final Certificate for Payment. The Construction Manager and Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner and Construction Manager (1) known deviations from the Contract Documents and from the most recent Project schedule prepared by the Construction Manager, and (2) defects and deficiencies observed in the Work.

§ 4.2.3 The Construction Manager shall provide a staffing plan to include one or more representatives who shall be in attendance at the Project site whenever the Work is being performed. The Construction Manager will determine in general if the Work observed is being performed in accordance with the Contract Documents, will keep the Owner reasonably informed of the progress of the Work, and will report to the Owner and Architect (1) known deviations from the Contract Documents and the most recent Project schedule, and (2) defects and deficiencies observed in the Work.

§ 4.2.4 The Construction Manager will schedule and coordinate the activities of the Contractor and other Multiple Prime Contractors in accordance with the latest approved Project schedule.

§ 4.2.5 The Construction Manager, except to the extent required by Section 4.2.4, and Architect will not have control over, or charge of, construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1, and neither will be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. Neither the Construction Manager nor the Architect will have control over or charge of or be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or of any other persons or entities performing portions of the Work.

§ 4.2.6 Communications Facilitating Contract Administration. Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Construction Manager, and shall contemporaneously provide the same communications to the Architect about matters arising out of or relating to the Contract Documents. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with other Multiple Prime Contractors shall be through the Construction Manager and shall be contemporaneously provided to the Architect if those communications are about matters arising out of or related to the Contract Documents. Communications by and with the Owner's own forces shall be through the Owner.

§ 4.2.7 The Construction Manager and Architect will review and certify all Applications for Payment by the Contractor, in accordance with the provisions of Article 9.

§ 4.2.8 The Architect and Construction Manager have authority to reject Work that does not conform to the Contract Documents and will notify each other about the rejection. The Construction Manager shall determine in general

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

whether the Work of the Contractor is being performed in accordance with the requirements of the Contract Documents and notify the Owner, Contractor and Architect of defects and deficiencies in the Work. Whenever the Construction Manager considers it necessary or advisable, the Construction Manager will have authority to require additional inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3, upon written authorization of the Owner, whether or not such Work is fabricated, installed or completed. The foregoing authority of the Construction Manager will be subject to the provisions of Sections 4.2.18 through 4.2.20 inclusive, with respect to interpretations and decisions of the Architect. However, neither the Architect's nor the Construction Manager's authority to act under this Section 4.2.8 nor a decision made by either of them in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect or the Construction Manager to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons performing any of the Work.

§ 4.2.9 The Construction Manager will receive and promptly review for conformance with the submittal requirements of the Contract Documents, all submittals from the Contractor such as Shop Drawings, Product Data and Samples. Where there are Multiple Prime Contractors, the Construction Manager will also check and coordinate the information contained within each submittal received from Contractor and other Multiple Prime Contractors, and transmit to the Architect those recommended for approval. By submitting Shop Drawings, Product Data, Samples and similar submittals, the Construction Manager represents to the Owner and Architect that the Construction Manager has reviewed and recommended them for approval. The Construction Manager's actions will be taken in accordance with the Project submittal schedule approved by the Architect or, in the absence of an approved Project submittal schedule, with reasonable promptness while allowing sufficient time to permit adequate review by the Architect.

§ 4.2.10 The Architect will review and approve or take other appropriate action upon the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Upon the Architect's completed review, the Architect shall transmit its submittal review to the Construction Manager.

§ 4.2.11 Review of the Contractor's submittals by the Construction Manager and Architect is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Construction Manager and Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5 and 3.12. The Construction Manager and Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Construction Manager and Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.12 The Construction Manager will prepare Change Orders and Construction Change Directives.

§ 4.2.13 The Construction Manager and the Architect will take appropriate action on Change Orders or Construction Change Directives in accordance with Article 7. and the Architect will have authority to order minor changes in the Work as provided in Section 7.4. The Architect, in consultation with the Construction Manager, will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.14 Utilizing the documents provided by the Contractor, the Construction Manager will maintain at the site for the Owner one copy of all Contract Documents, approved Shop Drawings, Product Data, Samples and similar required submittals, in good order and marked currently to record all changes and selections made during construction. These will be available to the Architect and the Contractor, and will be delivered to the Owner upon completion of the Project.

§ 4.2.15 The Construction Manager will assist the Architect in conducting inspections to determine the dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion in conjunction with the Architect pursuant to Section 9.8; and receive and forward to the Owner written warranties and related

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

documents required by the Contract and assembled by the Contractor pursuant to Section 9.10. The Construction Manager will forward to the Architect a final Application and Certificate for Payment or final Project Application and Project Certificate for Payment upon the Contractor's compliance with the requirements of the Contract Documents.

§ 4.2.16 If the Owner and Architect agree, the Architect will provide one or more project representatives to assist in carrying out the Architect's responsibilities at the site. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

§ 4.2.17 The Architect will interpret and decide matters concerning performance under, and requirements of the Contract Documents on written request of the Construction Manager, Owner or Contractor through the Construction Manager. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.18 Interpretations and decisions of the Architect will be consistent with the intent of and reasonably inferable from the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions so rendered in good faith.

§ 4.2.19 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.20 The Construction Manager will receive and review requests for information from the Contractor, and forward each request for information to the Architect, with the Construction Manager's recommendation. The Architect will review and respond in writing to the Construction Manager to requests for information about the Contract Documents. The Construction Manager's recommendation and the Architect's response to each request will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include other Multiple Prime Contractors or subcontractors of other Multiple Prime Contractors.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Construction Manager for review by the Owner, Construction Manager and Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Construction Manager may reply within 14 days to the Contractor in writing stating (1) whether the Owner, the Construction Manager or the Architect has reasonable objection to any such proposed person or entity or, (2) that the Construction Manager, Architect or Owner requires additional time for review. Failure of the Construction Manager, Owner, or Architect to reply within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner, Construction Manager or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner, Construction Manager or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner, Construction Manager or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved.** **WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person or entity previously selected if the Owner, Construction Manager or Architect makes reasonable objection to such substitution.

§ 5.3 Subcontractual Relations

By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner, Construction Manager and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner, Construction Manager and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

.1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and

.2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon such assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor Contractor or other entity. If the Owner assigns the subcontract to a successor Contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor Contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY OTHER CONTRACTORS

§ 6.1 Owner's Right to Perform Construction with Own Forces and to Award Other Contracts

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, which include persons or entities under separate contracts not administered by the Construction Manager, and to award other contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.

§ 6.1.2 When the Owner performs construction or operations with the Owner's own forces including persons or entities under separate contracts not administered by the Construction Manager, the Owner shall provide for coordination of such forces with the Work of the Contractor, who shall cooperate with them.

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved.** **WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

§ 6.1.3 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights that apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11 and 12.

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner's own forces, Construction Manager and other Multiple Prime Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner's own forces or other Multiple Prime Contractors, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Construction Manager and Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's own forces or other Multiple Prime Contractors' completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs, including costs that are payable to a separate contractor or to other Multiple Prime Contractors because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of delays, improperly timed activities, damage to the Work or defective construction by the Owner's own forces or other Multiple Prime Contractors.

§ 6.2.4 The Contractor shall promptly remedy damage the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner, separate contractors, or other Multiple Prime Contractors as provided in Section 10.2.5.

§ 6.2.5 The Owner and other Multiple Prime Contractors shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, other Multiple Prime Contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Construction Manager, with notice to the Architect, will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Construction Manager, Architect and Contractor; a Construction Change Directive requires agreement by the Owner, Construction Manager and Architect and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

§ 7.2 Change Orders

A Change Order is a written instrument prepared by the Construction Manager and signed by the Owner, Construction Manager, Architect and Contractor, stating their agreement upon all of the following:

.1 The change in the Work;

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

.2 The amount of the adjustment, if any, in the Contract Sum; and
.3 The extent of the adjustment, if any, in the Contract Time.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Construction Manager and signed by the Owner, Construction Manager and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

.1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
.2 Unit prices stated in the Contract Documents or subsequently agreed upon;
.3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
.4 As provided in Section 7.3.7.

§ 7.3.4 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 7.3.5 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Construction Manager and Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.6 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Construction Manager shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Construction Manager may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

.1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers compensation insurance;
.2 Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
.3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
.4 Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and
.5 Additional costs of supervision and field office personnel directly attributable to the change.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Construction Manager and Architect. When

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved.** **WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Construction Manager and Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Construction Manager and Architect determine to be reasonably justified. The interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Construction Manager and Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Construction Manager shall prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

The Architect has authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order issued through the Construction Manager and shall be binding on the Owner and Contractor.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner, Owner's own forces, Construction Manager, Architect, any of the other Multiple Prime Contractors or an employee of any of them, or by changes ordered in the Work, or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control; or by delay authorized by the Owner pending mediation and arbitration, or by other causes that the Architect, based on the recommendation of the Construction Manager, determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.2 Schedule of Values

Where the Contract is based on a Stipulated Sum or Guaranteed Maximum Price, the Contractor shall submit to the Construction Manager, before the first Application for Payment, a schedule of values allocating the entire Contract Sum to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as the Construction Manager and Architect may require. This schedule, unless objected to by the Construction Manager or Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. In the event there is one Contractor, the Construction Manager shall forward to the Architect the Contractor's schedule of values. If there are Multiple Prime Contractors responsible for performing different portions of the Project, the Construction Manager shall forward the Multiple Prime Contractors' schedules of values only if requested by the Architect.

§ 9.3 Applications for Payment

§ 9.3.1 At least fifteen days before the date established for each progress payment, the Contractor shall submit to the Construction Manager an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner, Construction Manager or Architect may require, such as copies of requisitions from Subcontractors and material suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Construction Manager and Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

§ 9.4 Certificates for Payment

§ 9.4.1 Where there is only one Contractor, the Construction Manager will, within seven days after the Construction Manager's receipt of the Contractor's Application for Payment, review the Application, certify the amount the Construction Manager determines is due the Contractor, and forward the Contractor's Application and Certificate for Payment to the Architect. Within seven days after the Architect receives the Contractor's Application for Payment from the Construction Manager, the Architect will either issue to the Owner a Certificate for Payment, with a copy to the Construction Manager, for such amount as the Architect determines is properly due, or notify the Construction Manager and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

in Section 9.5.1. The Construction Manager will promptly forward to the Contractor the Architect's notice of withholding certification.

§ 9.4.2 Where there are Multiple Prime Contractors performing portions of the Project, the Construction Manager will, within seven days after the Construction Manager receives the Multiple Prime Contractors' Applications for Payment: (1) review the Applications and certify the amount the Construction Manager determines is due each of the Multiple Prime Contractors; (2) prepare a Summary of Contractors' Applications for Payment by combining information from each Multiple Prime Contractors' application with information from similar applications for progress payments from other Multiple Prime Contractors; (3) prepare a Project Application and Certificate for Payment; (4) certify the amount the Construction Manager determines is due all Multiple Prime Contractors; and (5) forward the Summary of Contractors' Applications for Payment and Project Application and Certificate for Payment to the Architect.

§ 9.4.3 Within seven days after the Architect receives the Project Application and Project Certificate for Payment and the Summary of Contractors' Applications for Payment from the Construction Manager, the Architect will either issue to the Owner a Project Certificate for Payment, with a copy to the Construction Manager, for such amount as the Architect determines is properly due, or notify the Construction Manager and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1. The Construction Manager will promptly forward the Architect's notice of withholding certification to the Contractors.

§ 9.4.4 The Construction Manager's certification of an Application for Payment or, in the case of Multiple Prime Contractors, a Project Application and Certificate for Payment shall be based upon the Construction Manager's evaluation of the Work and the information provided as part of the Application for Payment. The Construction Manager's certification will constitute a representation that, to the best of the Construction Manager's knowledge, information and belief, the Work has progressed to the point indicated and the quality of the Work is in accordance with the Contract Documents. The certification will also constitute a recommendation to the Architect and Owner that the Contractor be paid the amount certified.

§ 9.4.5 The Architect's issuance of a Certificate for Payment or in the case of Multiple Prime Contractors, Project Application and Certificate for Payment, shall be based upon the Architect's evaluation of the Work, the recommendation of the Construction Manager, and information provided as part of the Application for Payment or Project Application for Payment. The Architect's certification will constitute a representation that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated, that the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified.

§ 9.4.6 The representations made pursuant to Sections 9.4.4 and 9.4.5 are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Construction Manager or Architect.

§ 9.4.7 The issuance of a separate Certificate for Payment or a Project Certificate for Payment will not be a representation that the Construction Manager or Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed the Contractor's construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Construction Manager or Architect may withhold a Certificate for Payment or Project Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Construction Manager's or Architect's opinion the representations to the Owner required by Section 9.4.4 and 9.4.5 cannot be made. If the Construction Manager or Architect is unable to certify payment in the amount of the Application, the Construction Manager will notify the Contractor and Owner as provided in Section 9.4.1 and 9.4.3. If the Contractor, Construction Manager and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment or a Project Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Construction Manager or Architect may also withhold a Certificate for Payment or, because of

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

subsequently discovered evidence or subsequent observations, may nullify the whole or a part of a Certificate for Payment or Project Certificate for Payment previously issued, to such extent as may be necessary in the Construction Manager's or Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from the acts and omissions described in Section 3.3.2 because of

.1 defective Work not remedied;
.2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;
.3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
.4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
.5 damage to the Owner or a separate contractor;
.6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
.7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.3 If the Architect or Construction Manager withholds certification for payment under Section 9.5.1, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Construction Manager and both will reflect such payment on the next Certificate for Payment.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment or Project Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Construction Manager and Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Construction Manager will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Owner, Construction Manager and Architect on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. Neither the Owner, Construction Manager nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor except as may otherwise be required by law.

§ 9.6.5 Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.7 Failure of Payment

If the Construction Manager and Architect do not issue a Certificate for Payment or a Project Certificate for Payment, through no fault of the Contractor, within fourteen days after the Construction Manager's receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents the amount certified by the Construction Manager and Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' written notice to the Owner, Construction Manager and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall notify the Construction Manager, and the Contractor and Construction Manager shall jointly prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the list, the Architect, assisted by the Construction Manager, will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the list, which is not sufficiently complete in accordance with the requirements of the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect, assisted by the Construction Manager, to determine Substantial Completion.

§ 9.8.4 When the Architect, assisted by the Construction Manager, determines that the Work or designated portion thereof is substantially complete, the Construction Manager will prepare, and the Construction Manager and Architect shall execute a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Section 11.3.1.5 and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor and Construction Manager shall jointly prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect after consultation with the Construction Manager.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Construction Manager, Contractor and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon completion of the Work, the Contractor shall forward to the Construction Manager a written notice that the Work is ready for final inspection and acceptance and shall also forward to the Construction Manager a final Contractor's Application for Payment. Upon receipt, the Construction Manager will evaluate the completion of Work of the Contractor and then forward the notice and Application, with the Construction Manager's recommendations, to the Architect who will promptly make such inspection. When the Architect, finds the Work acceptable under the Contract Documents and the Contract fully performed, the Construction Manager and Architect will promptly issue a final Certificate for Payment or Project Certificate for Payment stating that to the best of their knowledge, information and belief, and on the basis of their on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Construction Manager's and Architect's final Certificate for Payment or Project Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect through the Construction Manager (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Construction Manager and Architect so confirm, the Owner shall, upon application by the Contractor and certification by the Construction Manager and Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect through the Construction Manager prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- **.1** liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;
- **.2** failure of the Work to comply with the requirements of the Contract Documents; or
- **.3** terms of special warranties required by the Contract Documents.

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved.** **WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract. The Contractor shall submit the Contractor's safety program to the Construction Manager for review and coordination with the safety programs of other Contractors.
The Construction Manager's responsibilities for review and coordination of safety programs shall not extend to direct control over or charge of the acts or omissions of the Contractors, Subcontractors, agents or employees of the Contractors or Subcontractors, or any other persons performing portions of the Work and not directly employed by the Construction Manager.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to

- **.1** employees on the Work and other persons who may be affected thereby;
- **.2** the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors;
- **.3** other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction; and
- **.4** construction or operations by the Owner or other Contractors.

§ 10.2.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

§ 10.2.3 The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2, 10.2.1.3 and 10.2.1.4 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2, 10.2.1.3 and 10.2.1.4, except damage or loss attributable to acts or omissions of the Owner, Construction Manager or Architect or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner, Construction Manager and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured,

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved.** **WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 Hazardous Materials

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to, asbestos or polychlorinated biphenyl (PCB),encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner, Construction Manager and Architect in writing.

§ 10.3.2 Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify a presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor, Construction Manager and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor, the Construction Manager and the Architect will promptly reply to the Owner in writing stating whether or not any of them has reasonable objection to the persons or entities proposed by the Owner. If the Contractor, Construction Manager or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor, the Construction Manager and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resumed upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Construction Manager, Architect, their consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss or expense is not due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred.

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Liability Insurance

§ 11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- **.1** Claims under workers' compensation, disability benefit and other similar employee benefit acts which are applicable to the Work to be performed;
- **.2** Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- **.3** Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- **.4** Claims for damages insured by usual personal injury liability coverage;
- **.5** Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- **.6** Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle; and
- **.7** Claims for bodily injury or property damage arising out of completed operations; and
- **.8** Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

§ 11.1.2 The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

§ 11.1.3 Certificates of insurance acceptable to the Owner shall be submitted to the Construction Manager for transmittal to the Owner with a copy to the Architect prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage shall be furnished by the Contractor with reasonable promptness.

§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Construction Manager, the Construction Manager's consultants, the Owner, the Architect, and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

§ 11.2 Owner's Liability Insurance

The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

§ 11.3 Property Insurance

§ 11.3.1 Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

§ 11.3.1.1 Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for the Architect's, Contractor's, and Construction Manager's services and expenses required as a result of such insured loss.

§ 11.3.1.2 If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then effect insurance that will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor in writing, then the Owner shall bear all reasonable costs properly attributable thereto.

§ 11.3.1.3 If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.

§ 11.3.1.4 This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit.

§ 11.3.1.5 Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

§ 11.3.2 Boiler and Machinery Insurance. The Owner shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Construction Manager, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall be named insureds.

§ 11.3.3 Loss of Use Insurance. The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused. The Owner waives all rights of action against the Contractor for loss of use of the Owner's property, including consequential losses due to fire or other hazards however caused.

§ 11.3.4 If the Contractor requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

§ 11.3.5 If during the Project construction period the Owner insures properties, real or personal or both, adjoining or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Section 11.3.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

§ 11.3.6 Before an exposure to loss may occur, the Owner shall file with the Contractor a copy of each policy that includes insurance coverages required by this Section 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved.** **WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Contractor.

§ 11.3.7 Waivers of Subrogation. The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees each of the other, and (2) the Construction Manager, Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Section 11.3 or other property insurance applicable to the Work, except such rights as the Owner and Contractor may have to the proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Construction Manager, Construction Manager's consultants, Architect, Architect's consultants, Owner's separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§ 11.3.8 A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

§ 11.3.9 If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

§ 11.3.10 The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement. If the Owner and Contractor have selected arbitration as the method of binding dispute resolution, the Owner as fiduciary shall make settlement with insurers or distribution of insurance proceeds in accordance with the direction of the arbitrators.

§ 11.4 Performance Bond and Payment Bond

§ 11.4.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract.

§ 11.4.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Construction Manager's or Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by either, be uncovered for their observation and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered which the Construction Manager or Architect has not specifically requested to observe prior to its being covered, the Construction Manager or Architect may request to see such Work

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or one of the other Contractors in which event the Owner shall be responsible for payment of such costs.

§ 12.2 Correction of Work

§ 12.2.1 Before or After Substantial Completion

The Contractor shall promptly correct Work rejected by the Construction Manager or Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Construction Manager's and Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof, or after the date for commencement of warranties established under Section 9.9.1, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

§ 12.2.2.2 The one-year period shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors or other Multiple Prime Contractors caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located except that, if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

§ 13.3 Written Notice

Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity or to an officer of the corporation for which it was intended; or if delivered at or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice.

§ 13.4 Rights and Remedies

§ 13.4.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

§ 13.4.2 No action or failure to act by the Owner, Construction Manager, Architect or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed in writing.

§ 13.5 Tests and Inspections

§ 13.5.1 Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Construction Manager and Architect timely notice of when and where tests and inspections are to be made so that the Construction Manager and Architect may be present for such procedures. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

§ 13.5.2 If the Construction Manager, Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Construction Manager and Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Construction Manager and Architect of when and where tests and inspections are to be made so that the Construction Manager and Architect may be present for such procedures. Such costs except as provided in Section 13.5.3, shall be at the Owner's expense.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Construction Manager's and Architect's services and expenses shall be at the Contractor's expense.

§ 13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Construction Manager for transmittal to the Architect.

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

§ 13.5.5 If the Construction Manager or Architect is to observe tests, inspections or approvals required by the Contract Documents, the Construction Manager or Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.6 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

§ 13.7 Time Limits on Claims

The Owner and the Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and the Contractor waive all claims and causes of action not commenced in accordance with this Section 13.7.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

.1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;

.2 An act of government, such as a declaration of national emergency that requires all Work to be stopped;

.3 Because the Construction Manager has not certified or the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or

.4 The Owner has failed to furnish to the Contractor promptly, upon the Contractor's request, reasonable evidence as required by Section 2.2.1.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Section 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner, Construction Manager and Architect, terminate the Contract and recover from the Owner payment for Work executed including reasonable overhead and profit, costs incurred by reason of such termination, and damages.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' written notice to the Owner, Construction Manager and Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

.1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

.2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;

.3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or

.4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the above reasons exist, the Owner, after consultation with the Construction Manager, and upon certification by the Initial Decision Maker that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

.1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;

.2 Accept assignment of subcontracts pursuant to Section 5.4; and

.3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Construction Manager's and Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall, upon application, be certified by the Initial Decision Maker after consultation with the Construction Manager, and this obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and the Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent:

.1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or

.2 that an equitable adjustment is made or denied under another provision of this Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall

.1 cease operations as directed by the Owner in the notice;

.2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and

.3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved.** **WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition. A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract The responsibility to substantiate Claims shall rest with the party making the Claim.

§ 15.1.2 Notice of Claims. Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Construction Manager and Architect, if the Construction Manager and or Architect is not serving as the Initial Decision Maker. Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3 Continuing Contract Performance. Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. The Construction Manager will prepare Change Orders and the Architect will issue a Certificate for Payment or Project Certificate for Payment in accordance with the decisions of the Initial Decision Maker.

§ 15.1.4 Claims for Additional Cost. If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.3.

§ 15.1.5 Claims for Additional Time

§ 15.1.5.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay only one Claim is necessary.

§ 15.1.5.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

§ 15.1.6 Claims for Consequential Damages. The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- **.1** damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- **.2** damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.6 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5)

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect and Construction Manager, if the Architect or Construction Manager is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of an initial decision, demand in writing that the other party file for mediation within 60 days of the initial decision. If such a demand is made and the party receiving the demand fails to file for mediation within the time required, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.6 shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved.** **WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

§ 15.4 Arbitration

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 Consolidation or Joinder

§ 15.4.4.1 Either party, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Either party, at its sole discretion, may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as the Owner and Contractor under this Agreement.

AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects. **All rights reserved.** **WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

Additions and Deletions Report for
AIA® Document A232™ – 2009

This Additions and Deletions Report, as defined on page 1 of the associated document, reproduces below all text the author has added to the standard form AIA document in order to complete it, as well as any text the author may have added to or deleted from the original AIA text. Added text is shown underlined. Deleted text is indicated with a horizontal line through the original AIA text.

Note: This Additions and Deletions Report is provided for information purposes only and is not incorporated into or constitute any part of the associated AIA document. This Additions and Deletions Report and its associated document were generated simultaneously by AIA software at 12:16:07 on 07/20/2018.

PAGE 1

Broadlawns Medical Center
Sands Second Floor Vertical Expansion
1801 Hickman Road
Des Moines, IA 50314

...

Graham Construction Co.
421 Grand Avenue
Des Moines, IA 50309

...

Broadlawns Medical Center
1801 Hickman Road
Des Moines, IA 50314

...

Shive-Hattery, Inc.
4125 Westown Parkway
Suite 100
West Des Moines, IA 50266

PAGE 33

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Construction Manager, Architect, their consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss or expense is not due to the fault or negligence of the party seeking indemnity.

Additions and Deletions Report for AIA Document A232™ – 2009 (rev. 12/11) (formerly A201™CMa – 1992). Copyright © 1992 and 2009 by The American Institute of Architects**. All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

Certification of Document's Authenticity

AIA® Document D401™ – 2003

I, , hereby certify, to the best of my knowledge, information and belief, that I created the attached final document simultaneously with its associated Additions and Deletions Report and this certification at 12:16:07 on 07/20/2018 under Order No. 4983530677 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A232™ – 2009, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition, as published by the AIA in its software, other than those additions and deletions shown in the associated Additions and Deletions Report.

_____

(Signed)

_____

(Title)

_____

(Dated)

AIA Document D401™ – 2003. Copyright © 1992 and 2003 by The American Institute of Architects. **All rights reserved. WARNING: This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.** This document was produced by AIA software at 12:16:07 on 07/20/2018 under Order No.4983530677 which expires on 01/30/2019, and is not for resale.
User Notes: (1110863176)

SECTION 00 80 00

GENERAL REQUIREMENTS

The following general provisions ***shall apply to all bid packages.***

1. Plans by Simonson Associates & Architects dated September 28th, 2026. *ADDM 01*
2. Specifications from the Project Manual by Simonson Associates & Architects dated September 25th, 2026. *ADDM 01*
3. Furnish complete all necessary labor, materials, office and field supervision, insurance, tools, equipment, layout, hoisting, rigging, shoring, shop drawings, submittals, permits, licenses and fees necessary to complete the work outlined below. Include all shift pay, overtime, weekend and holiday pay to complete the work in the scheduled durations shown in the project schedule in Specification Section 01 52 00. It is the responsibility of each bid package to monitor schedule and notify the construction manager immediately. Include all cost associated with shifting schedule activities as required to stay on schedule.
4. Work that is not specifically shown, listed or detailed in the Contract Documents, but necessary for a complete system and could be reasonably inferred by the nature of the scope of work shall be included in this bid. In the event there is a contradiction in the plans or specification, request clarification or assume the more costly option.
5. All work in this Bid Package shall be provided in accordance with OSHA regulations and applicable state and local codes. Prior to mobilization to the jobsite, provide proof of all training and certificates required and provide written safety manual and fall protection programs. Sloped excavations and trenches shall meet OSHA requirements. Excavations and trenches are to be fenced off at the end of each working shift.
6. All work to follow Graham safety standards as listed in Graham's safety manual.
7. For all work with corrosive or cementitious material, or as otherwise directed by SDS, provide an eye wash station, capable of providing 15 minutes of continuous flushing.
8. The existing clinic and site will be remodeled and constructed in multiple phases. Carefully review phasing diagrams and access to the construction area. Contractors will be responsible to coordinate with the Construction Manger to complete phases as required.
9. The general construction building permit will be applied for and paid for by the Construction Manager. Each Prime Contractor shall apply for and pay for any and all permits required to complete their specific bid package scope of work.
10. Dress code: Each Prime Contractor, Subcontractor, Sub-Subcontractor, delivery drivers, equipment drivers/ operators, etc. shall ensure that each worker has the following and is worn at all times. The Construction Manager has the right to ease the requirements at their discretion.
    a. Hard hat, safety glasses, work boots/shoes meeting OSHA requirements.
    b. High visibility vests (or equivalent shirts/coats).
    c. Proper PPE for task at hand.
    d. Pants (no shorts).
    e. Sleeved shirt.
11. Jobsite hours will consist of 7 A.M- 4:30 P.M Monday-Friday (exception will be holidays). Any other work occurring outside of those times must be coordinated with the Construction Manager.
12. Each Prime Contractor, Subcontractor, Sub-Subcontractor, etc. shall ensure that each worker follows the rules including, but not limited to:
    a. No tobacco products shall be used within the construction area or on hospital property. This includes the use of e-cigarettes, etc.
    b. No weapons are permitted onsite, in vehicles, or on the property of Broadlawns.

13. Take adequate safety precautions to protect patients, visitors, hospital staff and other construction workers as needed or required by OSHA requirements. Coordinate with the Construction Manager and Owner when closing an occupied area for exploratory and/or construction activities.
14. This project will be a WORKSAFE project and will require a consultation meeting with all prime contractors. Monthly safety audits will occur and all corrective action items must be addressed by appropriate contractor within 48 hours.
15. The cost of testing and inspections shall be paid for by the Owner as indicated in the Contract Documents. All testing and inspections shall be called for by each Prime Contractor and shall be coordinated with the Construction Manager. The cost for any re-inspections or return trips due to incomplete work, failed tests or inspections, or lack of scheduling will be the responsibility of that Contractor.
16. Construction employee/company vehicle parking will only be allowed in areas designated by the Construction Manager.
17. Each contractor shall provide their own power/utilities to storage containers or office trailer. Each trade partner required to provide their own potable and non-potable water.
18. Each Prime Contractor is responsible to transport/haul their debris to a dumpster provided by bid package 01. Each Prime Contractor is responsible for providing means (dumpster cart, garbage container, etc.) of transporting their scrap construction material to the dumpster. Any salvaged materials will need to be taken to a location determined by the Construction Manager / Owner.
19. Where work occurs in existing areas/rooms that have finishes to remain, install poly and/or other means to protect existing cabinetry, equipment and room finishes.
20. All work above ceilings where those ceilings are not shown to be removed and replaced in the Contract Documents will need to be removed and replaced. This note applies to phasing and scheduling as well. For any work that occurs above ceilings before or after those ceilings get replaced because of phasing, each contractor will need to remove and replace ceilings as needed to do the work and will be responsible for any damages incurred.
21. The construction site is limited for materials and equipment. Coordinate material and equipment locations with the Construction Manager. Anything that needs to move out of the construction area will need to be kept in a staging area directed by the Construction Manager. The cost to move materials needs to be included. Each Prime Contractor is responsible for their own stored materials and equipment.
22. Each Prime Contractor shall provide ***daily*** jobsite clean-up for debris and dust generated by the installation of their scope of work. Each Prime Contractor is responsible to transport/haul their construction debris to dumpsters provided by their own bid package. ***Daily*** jobsite clean-up shall consist of all prime contractor's employees cleaning the work area for at least 30 minutes before leaving INCLUDING sweeping with compound, mopping, etc. Each contractor is responsible for providing their own sweeping compound.
23. Locate and protect all existing underground and overhead utilities to remain. Confirm locations and depths of existing underground utilities as required. This includes both public and private locates.
24. Provide and maintain all barricades required to protect the public and workers. Barricades will remain in place until work by all bid packages is complete. Remove barricades after work is complete. Barricades shall clearly mark and block the hazards present and keep the public and other workers safe from harm.
25. The cost to move materials shall be included. Include receiving all deliveries, unloading, and moving of materials as it relates to each bid package. This includes any equipment needed to accept deliveries, move materials, etc. All deliveries must be coordinated and scheduled with the Construction Manager.

26. Clean streets and roadways to keep them free of dirt, mud and debris generated by this scope of work. Clean daily or more often as site conditions require. Fill any wheel tracks, etc. from deliveries or equipment daily or more frequently if needed.
27. Each Prime Contractor shall provide, maintain, and empty a concrete wash-out container for use of any concrete, grout, mortar, etc. generated by construction activity. The concrete wash-out spoils shall be disposed off-site in a legal manner. Concrete wash out shall be installed and maintained per SWPPP requirements. Coordinate all aspects of the concrete wash-out with Construction Manager. NOTE: Any other means of concrete wash out shall be approved by the Construction Manager 10 days prior to commencement of concrete or other cementitious work.
28. Each Prime Contractor is responsible for protecting their work until acceptance by the owner. Each Prime Contractor is responsible for respecting the work completed by all other Prime Contractors and shall be responsible for replacing anything damaged.
29. All extension cords shall be rolled up and checked for cuts or defects at the end of each workday.
30. Each Prime Contractor is responsible for providing fresh, clean, potable water for their workers and workers of their subcontractors and sub-subcontractors per OSHA requirements.
31. Each Prime Contractor shall provide all layout and surveying as required to complete their scope of work.
32. Include all necessary dewatering as required for the complete installation of work included in your Bid Package.
33. Each bid package is responsible for replacing anything they damage such as spray fireproofing, building components, etc. that are damaged or compromised by their work. This includes patching any fireproofing removed for hangers, all thread, steel connections, or any other purpose. Patching to repaired immediately after damage occurs. Patching must meet all UL requirements.
34. The Owner has salvage rights to any materials being removed / demolished for the construction of this project. Any materials the Owner does not want to retain will be removed as noted by the Contract Documents or as needed for construction.
35. Each Prime Contractor is responsible for cutting/drilling, protecting, covering, and patching penetrations in the roof, slab on deck, slab on grade and walls to install their work. Make the Construction Manager aware of all penetrations, holes, etc. prior to cutting or uncovering. Follow all OSHA guidelines for covering, securing, and marking holes.
36. Each Prime Contractor is responsible to have a minimum of one English speaking supervisor on-site during the duration of the contractor’s work.
37. Each Prime Contractor is responsible to supervise any and all subcontractors and suppliers under their contract. If the Construction Manager has to supervise or coordinate a Prime Contractors workers or subcontractors, the Construction Manager will charge $130 per hour.
38. Provide all work per the contract schedule. Durations are not always intended to be cumulative and must be interpreted to the context shown in the schedule. The Subcontractor understands that there will be concurrent work activities taking place that may require additional supervision, manpower, and equipment or material deliveries to accommodate the schedule needs. Provide sufficient labor, material, and equipment to maintain progress in accordance with project schedule. Durations for each activity are to be maintained. Start dates are subject to move due to weather or design delays.
39. Provide construction equipment pad as needed based on construction schedule for any equipment needing special pad or bearing requirements.
40. Each Prime Contractor is responsible for replacing anything damaged or disturbed by their work. Each Prime Contractor shall restore all public and private land disturbed by their bid package to the original condition.
41. The use of internal combustion type equipment inside the building shall be approved by the Construction Manager prior to commencement of the work. For any internal combustion

equipment used, provide carbon monoxide/carbon dioxide scrubbers on the equipment. Contractor is to provide carbon monoxide monitors to ensure work area is safe for others.

42. Coordinate shop drawings and installation sequencing with other trade contractors. All work shall be installed to provide the maximum benefit to the Owner and allow for full access to equipment requiring maintenance.
43. Prime Contractors are responsible for providing a fire watch on a continuous basis if they need to shut the Fire Protection system down any longer 4 hours until the system is active. Hot work permits will be required
44. This project will utilize Last Planner Construction Schedule tools to plan the work, update the schedule, and monitor progress. It is a requirement to provide all paperwork and attend all meetings as requested by the Contractor/Construction Manager. Some of the items included are, but not limited to:
    a. A minimum of one scheduled coordination meeting per phase will be held with the Subcontractor/Prime project managers and foremen. These meetings may last a full day and are mandatory. In this meeting, you will be required to list all activities, assign accurate durations, and work with other contractors to sequence the activities as a group.
    b. Weekly foremen's meetings will be held where weekly work plans (WWP's) will be turned in to the Contractor/Construction Manager for review and the 6-week project schedule will be discussed. Weekly work plans are required to be turned in prior to the weekly meeting so all activities can be compiled into one WWP and distributed at the meeting.
    c. Daily stand-up meetings are a daily progress check and planning session for the following day. These meetings will be held on the project site, foremen for all trades on site are required to be there, and they should take no longer than fifteen minutes per day.
45. Progress meetings will be held twice a month and are mandatory for trades having work starting within the next 6 weeks. The representative at each meeting must have authority to make decisions on schedule, manpower and costs.
46. Procore will be used for maintaining project information. Each contractor shall check Procore at a minimum of twice a week. The cost of Procore is by the Construction Manager. Each prime contractor is responsible to field verify all dimensions prior to fabrication of products.
47. Each Prime Contractor will be responsible for completing two punch lists per phase. One for the Construction Manager and one for the Architect / Owner. Corrections to the Construction Manager punch list must be complete before the Architect / Owner punch list starts.
48. For work occurring outside temporary barricades shown on the phasing plan, each contractor is responsible to provide the construction shown for their scope of work along with temporary construction barriers, negative air machine placement and monitoring, access to their work (remove and replace ceilings, sections of walls etc.) demolition and clean-up. The area in and around the construction should be returned to existing or better condition after the construction is completed.
49. All submittals and shop drawings will be required within 30 days from Notice to Proceed (NTP). *Note: Long lead time items that impact the early portions of the project schedule will be required earlier than the minimum date for all submittals. Efforts must be made to procure materials in order to maintain the project schedule.
50. Controlled access zones are to be flagged off during the process of work around crane counterweights and concrete pump boom radius.
51. All contractor carried allowances must be approved prior to use and must be accompanied by T&M tickets signed by Construction Manager. T&M tickets must be submitted for approval to the Construction Manager within 72 hours, anything after 72 hours will be rejected. All allowances shall be broken out on the AIA pay applications.
52. Each prime contractor is responsible to field verify all dimensions prior to fabrication of products.

53. Safety related observations are to be corrected with 48 hours. All other site observation reports must be corrected within 5 working days or not to alter the schedule, whichever is duration is shorter.
54. Contractor will be responsible to research any existing conditions.
55. All individuals working on site will be required to check-in and review site specific requirements with the Construction Manager.
56. Closeouts are the responsibility of this agreement. Provide all closeouts in a timely manner. All closeouts will be due by dates designated in Procore or 3 months prior to substantial completion, whichever date is earlier. Your payment applications shall include a line item for closeout completion at a value of no less than 3% of the agreement value and you may bill for this upon full completion of your closeouts. This schedule of values line item is not part of any retainage. Owner training and as-builts are exempt from the schedule of values line items, but these are required prior to substantial completion of the project and/or phasing.
57. Contractor to be adequately qualified to perform work in a healthcare environment as outlined below:
    a. Contractor has completed (3) similar projects in size, type, and scope in the past (7) years.
        I. Contractor to provide reference list with bid including customer contract information.
    b. Contractor will have sufficient manpower to staff the project to meet the project schedule outlined in Specifications.
    c. Contractor must have a competent person on site during all times while any direct subcontractors are on site.
    d. Field and office management/supervisors must have a minimum of three years of healthcare experience.
    e. All supervision and project management must have completed infection control and risk assessment training.
    f. Contractor will have an established apprenticeship program. Union labor is not required for public bid hospitals. Apprenticeship is recommended to ensure proper training of employees, however, is not to be considered a decision maker if contractor does not have program in place.
    g. All supervision must have a minimum of 10 hours OSHA training.
    h. All supervision must have CPR / First Aid Training.
58. Any Prime Contractor that causes a schedule delay will be responsible to make up for any amount of days lost to maintain contract schedule. This may include additional costs incurred by prime contractor that caused the delay, as well as added costs by other prime contractors including but not limited to expedited shipping costs and over time work. Cost may also include additional construction manager general conditions costs as well has any costs incurred by the owner.

END OF SECTION 00 80 00

SECTION 00 80 01
BID PACKAGE 01

Bid package 01: General Trades

Furnish complete all necessary labor, materials, office and field supervision, insurance, tools, equipment, layout, hoisting, rigging, shoring, shop drawings, submittals, permits, licenses and fees necessary to complete the work outlined below. Include all shift pay, overtime, weekend and holiday pay to complete the work in the scheduled durations shown in the project schedule in Specification Section 01 52 00.

This bid package includes, but is not limited to the following scope of work:

A. Bid Package #00 - General Requirements

B. Construction documents by Simonson Associates & Architects dated September 28th, 2026.

C. Specifications from the Project Manual by Simonson Associates & Architects dated September 25th, 2026, including, but not limited to the following sections:

a. All Division 00 and 01 specifications
b. 02 41 00 Selective Demolition
c. 03 05 16 Underslab Vapor Barrier
d. 03 35 11 Concrete Floor Finishes *ADDM 01*
e. 04 20 00 Unit Masonry *ADDM 01*
f. 04 26 13 Masonry Veneer
g. 04 72 00 Cast Stone Masonry
h. 05 12 23 Structural Steel Framing
i. 05 50 00 Metal Fabrications
j. 05 52 13 Exterior Railings
k. 06 10 00 Rough Carpentry
l. 06 10 53 Miscellaneous Rough Carpentry
m. 06 20 00 Finish Carpentry
n. 06 41 00 Architectural Wood Casework
o. 06 83 16 Fiberglass Reinforced Paneling
p. 07 01 50.19 Preparation for Re-Roofing
q. 07 13 00 Sheet Waterproofing
r. 07 21 00 Thermal Insulation
s. 07 26 00 Vapor Retarders
t. 07 27 00 Air Barriers
u. 07 31 13 Asphalt Shingles
v. 07 42 13 Metal Wall and Soffit Panels
w. 07 46 46 Fiber-Cement Siding
x. 07 62 00 Sheet Metal Flashing and Trim
y. 07 92 00 Joint Sealants
z. 08 11 13 Hollow Metal Doors and Frames *ADDM 01*
aa. 08 14 13 Stile and Rail Wood Doors
bb. 08 31 00 Access Doors and Panels
cc. 08 43 13 Aluminum-Frames Storefronts
dd. 08 52 00 Clad Wood Windows
ee. 08 71 00 Door Hardware
ff. 08 80 00 Glazing
gg. 09 05 61 Common Work Results for Flooring Preparation
hh. 09 21 16 Gypsum Board Assemblies

ii.	09 30 00	Tiling
jj.	09 51 00	Acoustical Ceilings
kk.	09 65 00	Resilient Flooring and Base
ll.	09 68 13	Tile Carpeting
mm.	09 72 00	Wall Coverings
nn.	09 91 13	Exterior Painting
oo.	09 91 23	Interior Painting
pp.	10 21 23	Cubicle Curtains and Track
qq.	10 28 00	Toilet Accessories
rr.	10 31 00	Manufactured Fireplaces
ss.	10 44 00	Fire Protection Specialties
tt.	10 51 29	Phenolic Lockers *ADDM 01*
uu.	12 22 16	Drapery Track and Accessories *ADDM 01*
vv.	12 24 00	Window Shades
ww.	12 36 00	Countertops
xx.	31 10 00	Site Clearing *ADDM 01*
yy.	31 20 00	Earthwork
zz.	31 23 33	Trenching and Backfilling
aaa.	31 35 00	Erosion Control
bbb.	32 11 23	Aggregate Base Course
ccc.	32 13 13	Concrete Paving
ddd.	32 13 73	Pavement Joint Sealants
eee.	32 17 23	Pavement Markings
fff.	32 91 19	Landscape Grading *ADDM 01*
ggg.	32 92 19	Seeding *ADDM 01*
hhh.	32 93 00	Trees, Shrubs, Groundcover
iii.	33 40 00	Storm Sewer and Drainage *ADDM 01*
jjj.	33 49 00	Storm Drainage Structures *ADDM 01*

The below items are further clarifications and/or additional requirements to the above specification sections.

D. DIVISION 01 - GENERAL REQUIREMENTS

1. All work to be completed in accordance with the schedule and phasing included in specification section 01 15 20 and as noted in the Contract Documents. The contractor must include additional mobilizations as needed to meet the schedule and phasing as noted.
2. Furnish and install complete systems per Specification Sections listed above and as indicated on the Contract Documents.
3. All work in this Bid package shall be provided in accordance with OSHA regulations and applicable state and local codes. Provide proof of all training and certificates required and provide written safety and fall protection programs. All work to follow Graham safety standards as listed in Graham's safety manual.
4. This project will utilize Last Planner Construction Schedule tools to plan the work, update the schedule, and monitor progress. It is a requirement to provide all paperwork and attend all meetings as requested by the Contractor/Construction Manager. Some of the items included are, but not limited to:
    a. A minimum of one scheduled coordination meeting per phase will be held with the Subcontractor/Prime project managers and foremen. These meetings may last a full day and are mandatory. In this meeting, you will be required to list all activities, assign accurate durations, and work with other contractors to sequence the activities as a group.
    b. Weekly foremen's meetings will be held where weekly work plans (WWP's) will be turned in to the Contractor/Construction Manager for review and the 6-week project schedule will

be discussed. Weekly work plans are required to be turned in prior to the weekly meeting so all activities can be compiled into one WWP and distributed at the meeting.

c. Daily stand-up meetings are a daily progress check and planning session for the following day. These meetings will be held on the project site, foremen for all trades on site are required to be there, and they should take no longer than fifteen minutes per day.

5. Contractor to be adequately qualified to perform work in a healthcare environment as outlined below:
    a. Contractors have completed similar healthcare projects in the past three years.
    b. Contractor will have sufficient manpower to staff the project to meet the project schedule outlined in the Specifications.
    c. Field and office management/supervisors must have a minimum of three years of healthcare experience.
6. Coordinate with the AHJ, city, state, etc. on work related to the disturbance of any public streets or right of ways. This includes but is not limited to any fine grading, deliveries, or work near street access. Obtain all necessary approvals and permits before commencing work.
7. Provide, set-up and maintain any barricades, signage, traffic control, etc. for work involving closing of streets, drives, sidewalks, etc.. Include cost for required permits by the City of Des Moines. Contractor must file for permits in a timely manner as to not impede schedule.
8. Submittal and closeout due dated must be uploaded to Procore prior to the due date. Contractor will be responsible for uploading all RFI's to Procore for review by the Construction Manager.
9. Include taking any deliveries related to this bid package, and moving materials and clean-up as required. Delivery routes for materials and trucking to be coordinated with Construction Manager prior to commencing work.
10. The construction site is limited for materials and equipment. Coordinate material and equipment locations with the Construction Manager. Anything that needs to move out of the construction area will need to be kept in a staging area directed by the Construction Manager. The cost to move materials needs to be included. Each Prime Contractor is responsible for their own stored materials and equipment.
11. Provide all layout as required to complete this scope of work.
12. Contractor is responsible for all required field measurements for items in this bid package. Field measurements must be taken in advance to prevent any material/schedule delays.
13. Contractor responsible to provide mockups as noted in specifications prior to work beginning for those specific items. Work can remain part of the project if approved by the architect.
14. This package is required to provide all final cleaning at the completion of each phase. This will require two construction cleans prior to the start of the punch list process and two final cleans prior to the turn-over of the space.
15. Clean streets and roadways to keep them free of dirt, mud and debris generated by this scope of work. Cleaning to be done as needed or as directed by the Construction Manager, but no less often than once daily. Fill any wheel tracks, etc. from deliveries or equipment.
16. Provide all snow removal from the construction entrances, roadways, and temporary stone laydown areas. This includes sidewalks, entrances, roof, etc. Snow removal to be completed within 24 hours of any snow event greater than 1" (one inch). Provide de-icing materials as required to prevent slipping at exterior sidewalks and entrances.
17. Per the schedule in the contract documents there will be a Construction Manager punch list as well as an Owner/Architect punch list. Contractor to include mobilizations as needed for punch list corrections. The Construction Manager punch list must be completed before the Owner/Architect punch list.

18. Project foreman's meetings will be held weekly at the site and progress coordination meetings will take place bi-weekly with the construction manager. Contractors shall have a representative at each meeting while the contractor is on site or within 4 weeks of starting a task. This representative shall have knowledge of the project and be empowered to make decisions while at the meeting. Absences to be discussed with the construction manager prior to the meeting.
19. Include all extended warranties to be provided in this bid package.
20. All exterior and interior signage to be furnished and installed by
21. Each Bid package is responsible for replacing anything they damage such as building components, etc. that are damaged or compromised by their work.
22. Each Prime Contractor is responsible to have at minimum on one English speaking supervisor on site during the duration of the Contractor's work.
23. Each Prime Contractor is responsible to supervise any and all subcontractors under that specific Bid package. Graham will give 24 hours' notice before starting to charge $150/hr. for supervision, preparation, and coordination of the contractor's subs.
24. Lean scheduling (pull planning) will be utilized on this project. This trade contractor and any subcontractors are required to attend all pull planning meetings to establish schedule, expedite schedule, and/or to sequence the schedule.
25. Construction Manager to provide site fencing, dumpster, and temporary restrooms. Bid Package 01 shall be responsible to provide, maintain and remove a separate dumpster for demolition to be used for all bid package demo debris per regulations. This does not include concrete, soils, trees, plantings, and mechanical equipment. *ADDM 01*

E. DIVISION 02 – EXISTING CONDITIONS

1. Locate and protect all existing underground and overhead utilities to remain, both public and private. Pothole existing underground utilities to confirm locations and depths as required. Dig permit to be filled out and signed by Construction Manager prior to work starting.
2. The Owner has salvage rights to any materials being removed / demolished for the construction of this project. Any materials the Owner does not want to retain will be removed as noted by the Contract Documents or as needed for construction.
3. Contractor and subcontractors shall be responsible to research any existing conditions. This includes any locating/potholing of any private or public utilities prior to starting work. Confirm all utilities have been located. Confirm all utilities requiring deactivation have been deactivated prior to commencing work. This Subcontractor has visited the site, reviewed and understands the Geo-Technical Data and existing site conditions.
4. Provide labor and equipment for demolition of all interior and exterior building items noted, shown, or that could be reasonably inferred on drawings that would be associated with this project. Look through all demolition drawings associated with this project in order to get a complete overview.
5. This Bid package is responsible for all interior and exterior demo as called out in the plans. This includes demo of existing building to make structural connections to the existing, wood retaining wall. Include demo of the exterior façade as needed for new finishes.
6. Include removal and disposal of all site items and utilities as noted or as needed for other work shown on the construction documents. Protect all items shown to remain. Remove and dispose of all debris to an offsite location per applicable codes and regulations.
7. This Bid package is responsible for the saw cutting, removal and disposal of existing exterior concrete as indicated on the construction documents.
8. Contractor shall perform clean saw cuts in a manner to minimize overcutting beyond the limits of removal show in the construction documents. In the event a saw cut extends beyond the limits

into an adjacent panel, pavement slab or utility structure, the contractor shall remedy and/or replace to the nearest joint or as directed by the AHJ at no cost to the Owner.

9. In the event that concrete removal or other operations within this scope of work damage existing concrete, this contractor shall replace the damaged concrete to the next joint or as directed by Engineer at no cost to the Owner. Contractor shall notify Construction Manager of any damage to existing concrete immediately.
10. Include full depth saw-cutting and grading at existing pavement to join new paving to existing paving as indicated in the contract documents. Contractor shall include a second cut before new paving is placed to remove chipped edges from first cut. Refer to Table 1 of OSHA 1926.1153©(1) for required respiratory protection.
11. Where demolition of existing is only partial, demolition shall be done to a point needed to be able to build the new construction as noted.
12. The intent is to leave the existing vestibule storefront for as long as possible, while the new vestibule construction takes place. Coordinate with Construction Manager for schedule and sequencing.

F. DIVISION 03 – CONCRETE

1. Furnish and install all reinforcement as indicated in the construction documents.
2. Furnish, install, and maintain OSHA approved rebar caps at all exposed rebar until integrated into the final construction.
3. Furnish and install all concrete stairs as noted in the construction documents. Include steel handrail as needed for the concrete stairs. All reinforcement shall be epoxy coated.
4. Furnish and install all equipment pads as indicated in the contract documents. Coordinate with Mechanical contractor.
5. Clean-up concrete debris, splatter, etc. at all building components. Upon completion all floors shall be scraped and broom cleaned.
6. Provide all saw-cutting as required per the contract documents.
7. Provide proper elevations per the contract documents. Third party testing will be required 24 hours after slabs poured.
8. Remove spoils generated by the work of this Bid package off-site. Spoils cannot be stockpiled on site.
9. Furnish and install compacted granular sub-base as specified in the Contract Documents under all footings, stairs, etc.
10. All structural concrete footings to be provided by this package. Review civil drawings for additional details of this work. Footings can be trenched formed if soils allow, no change orders will be issued for having to form footings.
11. Furnish and install block outs for expansion joint covers in floor slabs and poured concrete walls as indicated in the Contract Documents. Coordinate this work with other trades.
12. Receive, inventory and install anchor bolts, anchor rods, embeds, base plates, etc. Subcontractor shall report all damaged items or shortages upon finalization of receipt and inventory. Shortages or replacement of items due to loss or damage that can be attributed to Subcontractor lack of care or management will be the responsibility of the Subcontractor.
13. Sleeves for mechanical and equipment penetrations to be provided by BP 02 and BP 03 and installed by BP 01. Coordinate with other contractors for sizing and install.
14. At the completion of the anchor bolt and embed installation and prior to structural steel erection the Contractor of this Bid package shall submit a certification from a third party that all anchor bolts and embeds have been properly installed or located as indicated on the Contract Documents. Improperly installed or located anchor bolts and embeds will be replaced correctly at

no additional cost to the project. This contractor shall coordinate and schedule third party testing. Notify Construction Manager of scheduled testing dates and have testing agency provide reports to Construction Manager and Owner.

15. All anchor bolts shall be protected and spray painted in orange to make them visible. Anchor bolts shall be covered with rebar caps to prevent impalement.
16. Provide all surveying, staking and layout as required to complete this scope of work.
17. Contractor shall coordinate with all other trades and Construction Manager prior to installing work to verify that all sleeves, underground and site utilities and other work is completed. Subcontractor will not be compensated for re-work due to failure to coordinate and verify with Construction Manager.
18. Contractor is responsible for concrete fill of bollards as indicated on the construction documents.
19. Patch any existing waterproofing where connecting to part of an existing building structure. Relocate and repair any drain tile where connecting to existing building.
20. For any combustion equipment used, provide scrubbers on the equipment. All combustion equipment must be equipped with a fire extinguisher that is regularly inspected and documented.
21. Provide any excavation (including but not limited to footings/foundations and backfill) as indicated in the contract documents associated with this bid package. A Dig Permit is required for any excavation onsite.
22. Provide all misc. concrete patching noted in the Contract Documents. To include but not limited to locations where Mechanical and Electrical equipment has been removed.
23. Provide all interior concrete pour back in slab. This contractor must fill trenches in and compact prior to pouring. Coordinate with other contractors.
26. Monitor concrete placement and adjust/maintain positioning of reinforcing during pours.
27. Dry pack or non-shrink grout placement: all steel base or bearing plates, leveling plates, block outs or pockets as indicated in the construction documents.
28. Rub, fill, grind, and patch as necessary to prepare surfaces for specified finishes or as necessary to achieve specified tolerances. Patch all exposed form tie holes immediately following stripping operations.
29. This Bid package is required to drill any holes in existing foundations or concrete for the embedment of new bars. Coordinate with the Construction Manager when this work is to be performed. This work may need to be performed off hours to reduce noise disruptions.
30. Slope subgrade and slab on grade to drains as outlined on the drawings. The required thickness for the slab on grade must be maintained. Testing will be performed on sloped floors to verify positive drainage. If sloping is not maintained removal and replacement will be required at no additional costs.
31. A concrete wash-out pit will be provided, maintained, and removed by this bid package. All concrete washout material is to be deposited in this location by this bid package. Any other means of concrete wash out to be approved by the Construction Manager. Concrete wash out to be maintained per SWPPP requirements, coordinate with the Construction Manager.
32. Shoring, cutting and patching of any existing structural components needed to complete the work in this package should be completed by this contractor.
33. Include all water stop systems as specified and detailed on the documents.
34. Provide all winter conditions as required to complete the concrete scope of work as to not delay the project schedule including, but not limited to, concrete admixtures, hot water, concrete blankets, temporary heat, ground thaw, enclosures, supports, etc.
35. This Contractor shall be responsible for scheduling all inspections and testings for each pour. Notify the Construction Manager of pour dates. In the event that any test fail, additional testing

shall be performed at no cost to the Owner. Notify Construction Manager of scheduled testing dates and have testing agency provide reports to Construction Manager and Owner.

36. This Contractor shall be responsible to coordinate testing and provide a letter of confirmed design strength for footings prior to steel erection in order to meet project schedule. Notify Construction Manager of scheduled testing dates and have testing agency provide reports to Construction Manager and Owner.

G. DIVISION 04 – MASONRY *ADDM 01*

1. Furnish and install all masonry items including but not limited to masonry veneer, mortar nets, weep vents, expansion joint, and sealants for a complete system as indicated in the contract documents.
2. Furnish and install all thru wall flashing and prefinished sheet metal flashing for masonry. Verify that thru wall flashing is compatible with exterior finishes.
3. Furnish and install all grout for flashing and masonry systems as indicated on the contract documents.
4. Furnish and install sheet membrane and air barriers at all exterior locations behind masonry scope as indicated on the contract documents.
5. Furnish and install all grout-filled CMU blocks in accordance with the contract documents.
6. Furnish and install all cast stone sills as indicated on the contract documents.
7. Clean and seal all exposed masonry and cast stone as directed in the contract documents.
8. Include caulking all masonry control joints, masonry joints to the existing building, masonry to dissimilar material joints, and any misc. caulking required at masonry locations.
9. Protect ladder ties that stick out of walls until wall is completed.
10. This bid package to include any masonry repair as needed around MEP penetrations in walls.
11. Clean up masonry mixing and staging area as directed by the Construction Manager.

H. DIVISION 05 – METALS

1. Furnish and install all structural steel and miscellaneous steel as indicated in the construction documents. This includes but is not limited to steel tubing, baseplates, slotted channel frames, anchor rods, bolts, nuts, washers, angles, embeds, etc. as indicated in the construction documents.
2. Anchor rods assemblies and baseplates to be hot-dipped galvanized. This Bid package shall be responsible for providing hot-dip galvanized steel that meets the requirements as indicated in the construction documents.
3. Furnish and install steel bollard sleeves for median, crowned steel plate caps and covers as indicated in construction documents. Cover to be thermoplastic ¼” thick HDPE with horizontal reflective stripes.
4. Furnish and install steel railings, fittings, joints, anchors, non-shrink grout, etc. as indicated in the construction documents for a complete system.
5. Furnish and install aluminum guardrails, post, base plate, baluster, decorative top rail, bottom rail, superior performance coating, etc. as indicated in the construction drawings for a complete system.
6. Include field touch up of High-Performance Coating Primer at field welds and anywhere the primer is removed during installation.
7. Furnish and install grout at all column base plates as shown in the construction documents.
8. This Bid package is responsible for receiving and unloading all structural steel and miscellaneous steel. Material staging area shall be coordinated with the Construction Manager. Steel shall be cleaned of all debris prior to erection.

9. Fabricator is responsible for supplying or correcting any incorrectly fabricated items so that the schedule is not delayed.
10. Due to schedule, steel shop drawings to be submitted within 2 weeks of receiving notice to proceed.
11. Fabricator is to send a minimum of 1 full size paper set and 1 electronic file set of field and file drawings for use by the Construction Manager.
12. Protect all existing materials from welding sparks, etc. Hot work permit required for any work that involves open flames or produces heat and/or sparks, potentially creating a fire hazard. This scope to provide fire watch for their scope during hot work and 1-hour after hot work is completed. Provide adequate fire extinguishers/protection as needed to mitigate potential for fire.

I. DIVISION 06 - WOODS, PLASTICS, AND COMPOSITES

1. Furnish and install all interior and exterior wood blocking/backing per construction documents. Blocking shall consist of the following locations, but is not limited to:
   a. Blocking for exterior trim.
   b. Blocking for handrails and guardrails.
   c. Blocking for interior trim where shown on the drawings.
   d. Blocking associated with roof conditions.
   e. Blocking for cabinets (upper and lower), countertop support, toilet partitions, grab bars, all toilet accessories, window treatment, access panels, and other surface mounted items requiring blocking.
   f. Blocking for doors, windows, louvers, vents, access hatches.
   g. Blocking for eaves, roofing systems, soffits, and fascias.
   h. Blocking and framing required for mechanical, electrical, and other trades' openings.
   i. Blocking for mechanical trades curbs.
   j. Blocking for all Division 10 and 11 specification items.
   k. Blocking for specialized and Owner provided equipment.
2. Coordinate backing elevations and locations with the drawings and with Owner requirements. Coordinate backing installation with other trades.
3. All blocking shall be fire retardant unless otherwise noted.
4. Even if not indicated on drawing, fire retardant plywood backboards will be required at electrical and telecommunication rooms. Backboards to be installed from finish floor to finish ceiling.
5. Include labor and materials to furr out ceiling where indicated on the construction documents.
6. Millwork to be delivered to the jobsite and allowed to acclimate to the building conditions at least 72 hours prior to installation.
7. Furnish and install all architectural wood casework per the contract documents. This includes, but is not limited to, all base cabinets, wall cabinets, soffits, cabinet hardware and locks, accessories, support brackets, braces, filler panels, shelving, drawers, glides, blocking, support framing, hooks, grommets, etc.
8. Contractor shall coordinate plumbing and electrical rough-ins with Bid packages 02 and 03. This contractor shall be responsible to cut out any mechanical or electrical penetrations in the millwork as required. Coordinate exact size and location with appropriate trades.
9. This bid package shall clean millwork surfaces, drawers, and shelves prior to the Construction Managers punch list in each phase.
10. This bid package shall provide and install all material and labor required to cover material including but not limited to countertops, wall panels, reception desk, etc.

11. Provide final adjustment by the installer of hardware, millwork doors, drawers, etc. as directed by the construction manager prior to the punch list.
12. This bid package shall include all caulking associated with this scope of work. This includes any caulking from any painted/sealed surface to adjoining material.
13. Furnish and install all wall sheathing as indicated in the construction documents. Material shall be 15/32" OSB, structural grade 1, exposure 1. Provide fasteners and anchors as required.
14. Furnish and install all materials, coatings, fasteners and accessories as required in the construction documents for wall trim, wall base, door frames, shelving, Nurse Station base bid re-face, etc.
15. Furnish and install all materials, and accessories as required in the construction documents for all miscellaneous rough carpentry items including but not limited to, backing, blocking, framing, sill plates, etc. *ADDM 01*
16. Furnish and install fiberglass reinforced panels, trim, adhesive and sealant as shown in the construction documents. Allow panels to acclimate to the building conditions at least 48 hours prior to installation.

J. DIVISION 07 – THERMAL AND MOISTURE PROTECTION

1. This bid package is responsible for the complete roofing system on the existing building and canopy. This includes all vapor barriers, sheathing, insulation, underlayment, asphalt shingles, blocking, fascia, soffits, metal flashing, flexible flashing, metal coping, ventilation roof vents, sealants, accessories, etc..
2. Provide all material and labor required for the removal of existing roofing system, flashing and counterflashing. Contractor shall repair and broom clean existing wood deck surface to provide smooth surface for new roof system.
3. Provide, install, maintain, and remove protection of existing roof system while not being worked on, and exposed deck surfaces.
4. Furnish and install wall panel system, metal plank soffit, soffit panels, ~~trim~~, drip edge, anchors, coatings and accessories as indicated in construction documents. *ADDM 01*
5. Furnish and install all roof snow guards/spikes above all entry and exist points to the building.
6. Furnish and install all gutters and downspouts as indicated on the construction documents. Gutters and downspouts shall be prefinished sheet metal, with rectangular profiles. Provide concrete splash block at each downspout location.
7. Furnish and install all caulking as needed for roof flashing or any materials supplied by this bid package. Include all caulking from flashings to other dissimilar materials.
8. Roof in all curbs for mechanical and conduits for electrical as noted in the Contract Documents.
9. This bid package is responsible for all hoisting of material related to this package.
10. This bid package will include safe egress to and from the roof.
11. Furnish, install, maintain and remove all warning lines, temporary guardrails and fall protection with toe kicks at the leading edge of the roof, roof opening and any other openings such as the roof hatch etc. as required per OSHA regulations. This includes existing and new openings. Remove when directed by the Construction Manager. All Work within 15' of leading edge to utilize 100% tie-off.
12. Provide all cutting and removal of existing roofing where new equipment is installed at the existing roof or for any other roof modifications as noted. Patch existing roof back after new equipment is installed.
13. This bid package shall be responsible for cleaning the roof of all roofing material and dispose of properly off-site daily.

14. This contractor shall have 24-hour repair service for a period of one (1) year after substantial completion.
15. Furnish and install all fiber cement siding, air barriers, sheathing, fiber cement trim, aluminum trim, flashing, fasteners, sealants and accessories for a complete system as indicated in the construction documents. Contractor shall examine, clean and repair substrate as required before installation. *ADDM 01*
16. This bid package shall furnish and install all insulation noted in construction documents for the listed specification sections. Insulation shall be trimmed neatly to fit spaces. Where foamed-in-place insulation is required, apply by spray method in uniform monolithic density. Protect adjacent surfaces from over spray or dusting.
17. Furnish and install sheet waterproofing as indicated in construction documents. Prepare substrate surface by cleaning of dust and debris and repairing as needed. Include labor and material for install of drainage mat, geotextile fabric, 4” (4-inch) perforated drain tile, aggregate, all excavation, trenching and backfilling as required for a complete and functional system.

K. DIVISION 08 – OPENINGS

1. Furnish and install all stile and rail wood doors, hollow metal frames, aluminum doors and frames, storefront, door hardware, and auto operators. Raceway, wiring, final terminations and card readers to be by bid package 03 for a functioning door system. Coordinate with other contractors.
2. Contractor is responsible for anchoring to hollow metal door frames and verifying they are plumb and level during drywall installation.
3. This bid package (including subcontractors/suppliers) shall attend all meetings to review door hardware and keying requirements with the Owner, Architect, and Construction Manager.
4. This prime contractor shall check and test each door that has a locking mechanism to ensure that it operates correctly prior to the Construction Manager’s punch list.
5. Provide final adjustment of doors, hardware, etc. as directed by the construction manager prior to the punch list.
6. Furnish and install all required caulking and sealant at door frames at floor and wall.
7. Contractor is responsible for supplying or correcting any doors or frames that arrive damaged, defective or incorrectly fabricated as to not delay schedule. All doors are to be inspected immediately once delivered; inform Construction Manager of any damages or defects found.
8. Furnish, install, remove and replace all interior, exterior glass/glazing including but not limited to glass and glazing for windows, doors, store front system and curtain wall. Include all glazing, mounting hardware, clips, layout, trim pieces, muntins, grilles, sills, sealants, fasteners, etc.
9. Furnish and install required caulking and sealant for glazing systems, where glazing systems meet adjacent material on exterior side, and any other items installed under this Bid package. caulking and sealant type as specified in Specifications.
10. Contractor is responsible to furnish and install plastic film where indicated on the construction documents.
11. Contractor is responsible for final cleaning of all Glass and Glazing. Final cleaning to be at end of project close out to be directed by Construction Manager.
12. Include testing as required per the specifications.
13. Furnish and install all access doors and panels noted on the construction documents.
14. Furnish and install acoustic sealants at existing penetrations, walls, and any new penetrations created by this bid package.

L. DIVISION 09 - FINISHES

1. Furnish and install all gypsum board wall assemblies, painting, tiling, wall protection, corner guards, and door protection; including but not limit to: interior gypsum sheathing, exterior gypsum

sheathing, interior metal stud framing, exterior metal stud framing, insulation, spray foam insulation, all weather barrier, firestopping, acoustic caulking, joint sealants, primer, paint, wall tile, and stone tile.

2. This bid package is responsible for cleaning out the bottom track immediately before drywall is installed.
3. Furnish and install all gypsum ceilings assemblies and acoustical ceilings as indicated in the construction documents. Include all grid, supports, attachments, anchors, trim pieces, finish pieces, vapor barriers, etc. for a complete system. Coordinate and cut all holes/penetrations for other trades in the ceiling systems.
4. This bid package shall verify with Construction Manager that all above ceiling work is completed above drywall ceilings before drywall is installed.
5. Coordinate and adjust ceiling grid layout as needed to accommodate half sized border tile at a minimum.
6. Contractor shall be responsible to replace ceiling tile as needed until the project is turned over to the Owner.
7. Furnish and install all wall coverings as indicated in construction documents. Wall coverings to be delivered to site to acclimate to space condition not less than 24 hours before installation.
8. Furnish, install, and maintain all resilient flooring, tile carpeting, walk off carpet, tile, floor base, and sealed concrete as specified in the contract documents. Include all required trim, grout, adhesives, sealants, etc., for a complete system.
9. Furnish all floor preparation as needed to fill cracks, voids, saw-cut control joints, including fill to match transitions to accept finish materials. Skim and sand floors as needed to cover trowel marks left by concrete work and divots left by construction activity. Patch and repair concrete floors at wall partition removal locations.
10. Furnish and install all floor leveling or skimming as required to meet the requirements of the contract documents, local/state/federal codes, and/or requirements for the flooring material whichever is the strictest.
11. Furnish and install floor fill materials at and around floor drains. Concrete floors to slope to floor drains by concrete contractor. Flooring contractor to provide final coating and adjustment through the use of floor fill and floor skimming compounds for a smooth and neat installation. Multiple skim coats may be required to achieve satisfactory results as determined by the Construction Manager.
12. Furnish and install floor fill where new doors are cut into existing walls to allow for new floor installation as needed.
13. Furnish and install floor fill as needed to meet the required flooring manufacturer specifications.
14. Furnish pH and moisture test for all areas receiving flooring under this Bid package. Submit documentation to Construction Manager.
15. Furnish and install all caulking and sealants for any items within this scope of work. Caulking to include, but is not limited to, flooring material to door frames, sheet vinyl cove cap to wall, etc.
16. At completion of floor installation contractor is responsible for providing a clean finished product. This includes but not limited to removing all residue from tile installation.
17. Furnish a seaming plan submittal for approval. Plan must be submitted and approved at least 10 business days prior to commencement of flooring installation. Allow 20 business days for approval.
18. Protect completed work as necessary. Cover completed flooring with a plastic layer and then a hardboard product with all seams taped continuously as required for construction activities to continue after installation of the flooring. Coordinate floor protection products with the

manufacturer's recommendations. Remove protection and haul away when directed by the Construction Manager.

19. Furnish and install all interior paint, exterior paint, epoxy paint, and high-performance coatings.
20. This bid package shall include multiple mobilizations to meet the schedule. Final paint shall be completed before the Graham Punch.
21. The final coat of paint is to be applied once all interior finishes, electrical trim plates, casework, floor base, thermostats, nurse call devices, etc. has been installed and just prior to Graham Punch. Include the time and material needed to tape off and cover all finished products including the flooring. Do not proceed with installing the final coat of paint until written permission from the construction manager has been provided.

M. DIVISION 10 - SPECIALTIES

1. Furnish and install all toilets, shower, and bath accessories. Refer to the specifications on which items with be contractor-furnished/contract-installed, owner-furnished/contractor-installed, and owner-furnished/owner-installed. Items included but not limited to toilet paper dispensers, paper towel dispensers, waste receptacles, soap dispensers, antibacterial gel dispensers, mirrors, shelves, grab bars, coat hooks, robe hooks, shower curtain rods, and shower curtains. Provide backing as required for the installation of these accessories.
2. Furnish and install all fire extinguishers, fire extinguisher cabinets, knox boxes, signage, and accessories as shown in the contract documents. Coordinate wall partition thickness with each fire extinguisher cabinet location. Do not install the permanent fire extinguishers until directed by the construction manager.
3. Coordinate final locations of all specialties with Owner and Construction Manager prior to install.
4. Furnish and install curtain track as indicated in construction documents.
5. Electrical fireplace to be furnished and installed by BP 03. Electrical contractor to provide submittals with dimensions to BP 01 to frame wall.
6. Provide color match caulk required for FRP/wall protection or any other specialty product.

N. DIVISION 12 - FURNISHING

1. Furnish and install all solid surface countertops, countertop supports, ~~solid surface window sills~~, *quartz window sills,* integral sink bowls, ~~and quartz countertops.~~ *ADDM 01*
2. This bid package is responsible for cutting all grommets as required by the owner. Grommet material shall be furnished and installed by this Bid package.
3. This bid package shall include all caulking associated with this scope of work. This includes any caulking from any painted/sealed surface to adjoining material.
4. Furnish and install all interior window shades per the construction documents.
5. Furnish, install, and maintain temporary door, wall and window enclosures to make the building weather tight for temporary winter heating.
    a. Construct temporary enclosures from 2"x4" (minimum) wood members and reinforced 10 mil poly on both sides filled full with insulation.
    b. At temporary walls exposed to the exterior elements, clad the exterior side of the wall with peel and stick weather barrier and coordinated top and bottom of the wall metal flashings. Maintain the integrity of this barrier until the new adjacent building is watertight. Provide this barrier at any temporary opening to the exterior elements. This includes locations that might not be identified.
    c. Maintain all temporary enclosures until permanent enclosures are installed. Remove and dismantle/dispose of temporary enclosures as permanent enclosures are installed.
6. Install all Owner Furnished Contractor Installed items (OFCI) or Contractor Furnished Contractor Installed items (CFCI) as noted on the Contract Documents. Include taking delivery or moving

from the existing room, any assembly needed, and installation of items. Coordinate installation and delivery times with Construction Manager. Some existing items may not be able to move until allowed by the Owner. Coordinate all backing requirements.

O. DIVISION 31 – EARTHWORK

1. Furnish, install, and maintain the erosion control measures for the entire project duration or until the applicable permit(s) can be closed out. Coordinate all work with the Construction Manager, including final removal and completion.
2. This Bid package to apply and maintain all applicable permits.
3. Demolition of existing parking lot and sidewalk as shown in the construction documents to include column and column footings at entry.
4. Include all earthwork, imported fill, export, grading, trenching, backfill, bedding materials, shoring and proof rolling as required.
5. Include excavation, shoring and protection to expose any adjacent existing building structure to install utilities as needed.
6. All paved areas, including sidewalks, shall be compacted and graded to within +/- one inch (+/- 1”) not more than three weeks prior to paving or sidewalk placement. Any prepared subgrade that becomes frozen shall be scarified and re-compacted prior to pavement and sidewalk installation. The paving work shall be provided under a separate Bid package and will be installed as per the Construction Schedule noted in the contract documents.
7. Include cost to close-up and barricade all excavations associated with the work of this Bid package that are left open overnight. Include all barricades to protect other workers during working hours.
8. Provide all barricading required to separate work from public sidewalks, paving, etc. and to protect the public. This barricading will remain in place until work by all Bid packages is complete. Remove barricades after work is complete.
9. All excavations to be OSHA compliant via trench boxes, benching, or other means. If space constraints are too tight, trench boxes must be used and included in this scope of work.
10. Provide daily jobsite clean-up. Haul and place all debris (no concrete, plant materials, or soils) in dumpster provided by Construction Manager.
11. Include all necessary dewatering as required for the complete installation of work included in this Bid package including rerouting any existing drain tile as needed. This includes pumping, removal of mud, muck, etc. out of excavations and replacement of removed material for work of this package.
12. Restore all public and private land disturbed by the work of this Bid package to original condition.
13. Repair erosion control, temporary roads, etc. disturbed by the installation of the work in this Bid package.
14. Pick-up and dispose of off-site all rocks and large clumps of earth over 1.5” diameter.
15. If conditions require cutting or excavation to a depth lower than existing footings, this bid package is responsible for shoring and supporting of existing footings during this scope of work.
16. Bid package shall comply with Construction Manager’s spotter policy for site equipment. All personnel must be certified/trained per the Construction Manager’s safety policy. This includes but not limited to operators, flaggers, spotters, traffic control, etc.

P. DIVISION 32 – EXTERIOR IMPROVEMENTS

1. *Furnish and install all paving, sidewalks, curbs work as indicated in the contract documents. Include excavation, formwork, staking, layout, vapor retarders, reinforcing steel, concrete, epoxy, grout, rigid insulation at foundation, backfill, compaction, etc., to install the work complete. Removal of any spoils generated by this scope of work. ADDM 01*

2. *Contractor to confirm that all new paving is flush with existing paving and drive lanes. Install reinforcement in existing paving prior to tie-in. ADDM 01*
3. Include all cutting, removal, pour back of any concrete/paving/curbs, and final grading required for the installation. Include any City coordination and costs associated with street closures for work of this bid package. Include cutting and pour back of concrete at driveway connection to existing roadway.
4. Include full depth saw-cutting and grading at existing pavement to join new paving to existing paving as indicated in the Contract Documents. Shall include a second cut before new paving is placed to remove chipped edges from first cut. Refer to Table 1 of OSHA 1926.1153(c)(1) for required respiratory protection.
5. All testing and inspections shall be coordinated with the Construction Manager and Testing Consultant. The cost of initial testing and inspections will be paid for by the Owner. All re-testing for failed tests due to deficient work shall be paid for by the Contractor.
6. A concrete wash-out container for use by this Bid package to be provided by this Bid package. Concrete wash out to be off-site or on-site concrete wash out container to be emptied off site. Any other means of concrete wash out to be approved by Construction Manager.
7. Concrete waste created by this Bid package shall be removed from the site by this Bid package. Concrete waste cannot be placed in the dumpster provided by the Construction Manager.
8. Include barricades, signage, traffic control, etc. for work involving closing of streets, drives, sidewalks, etc..
9. Handle all spoils generated by this bid package scope of work. Spoils cannot be stockpiled and are to be hauled off site.
10. Repair erosion control, temporary roads, etc. disturbed by the installation of the work in this Bid Package.
11. Include all earthwork, imported fill, export, grading and proof rolling as required.
12. Provide all sub drainage components at perimeter foundation including tile, fabric, drainage mat and fill as shown on the documents.
13. *Contractor to provide and install all pavement markings and ADA parking signs as shown on the contract documents and required by local city/state guidelines. Contractor to provide warranty of all pavement markings for a year past substantial completion of the project. ADDM 01*
14. Furnish and install all landscaping, including all plants, trees, sod, and seeding as noted in the Contract Documents. This includes soil treatment, fertilizer, mulch, rock, etc.
15. Protect plantings, shrubbery and tree root systems during transportation and storage as necessary to ensure root systems are maintained and in a healthy condition. During storage, heel-in plants with moist mulch or soil; maintain, water and protect from excessive sun, wind and inclement weather conditions.
16. Provide tree planting process and meet with landscaping architect for approval.
17. Landscape edging to be straight and verify correct elevation, proper backfill and bed depth for sod/mulch/rock.
18. Provide watering of plants, trees, sod, and seeding starting at installation date and extending until October 1st, 2027.
19. Contractor shall retain full liability for the health of all plantings, shrubbery, trees, sod, and seeding until final acceptance. Material determined to be damaged or unhealthy by the Construction Manager before final acceptance shall be replaced at the Contractor's full expense.
20. Contractor to include 1 additional mobilization to remove stakes installed for trees and shrubbery. Stakes remain in place for no longer than 1 year from installation.

Q. UTILITIES

1. Furnish and install all storm drainage piping*, subdrain piping, through curb penetrations, nyoplast basins,* cleanouts*, backfill, aggregate, etc.* as indicated on the contract documents *for a complete system. ADDM 01*
2. Include connection of existing drain lines to new drain lines as indicated in contract documents.
3. Trade Partner must designate one competent person for all trenching and excavation activities and must notify Construction Manager who their competent person is.
4. Provide surveying of all installed site utilities installed by this Bid Package and provide documentation of those surveys with exact utility locations and depths on as-built drawings. Provide locations of buried utilities at 20' increments. Notify the Construction Manager when existing utilities are found for documentation by others.
5. Include cost to close-up and barricade all excavations associated with the work of this Bid Package that are left open overnight. Include all barricades to protect other workers during working hours.
6. Furnish and install all roof drains as indicated on the contract documents. This contractor shall connect new and existing downspouts to collection line as indicated on the contract documents.
7. Furnish and install free-draining granular backfill and rigid drain tile with sock as specified in the Contract Documents.
8. Install temporary drain piping (flexible) to roof drains as needed to avoid storm water from dumping inside the building after the roof membrane has been installed and before the permanent roof drain piping has been installed.

R. ALLOWANCES

1. Provide an allowance of 40 hours of general clean-up for the duration of the project. This general clean-up is over and above clean-up for work occurring. This general clean-up is to sweep / vacuum and clean construction area for general construction dust and debris, or other clean-up as directed by the Construction Manager. This allowance will be monitored by the Construction Manager. Contractor to provide work tickets weekly for Construction Manager to sign off on. Provide a cost per hour included below which will be used to add or deduct from this allowance. The worker must be available within 1 business day after request by the Construction Manager. All unused costs will be returned to the owner.
2. Provide an allowance of 20 hours of a skilled carpenter. Carpenter will be used as directed by Construction Manager. This allowance will be monitored by the Construction Manager. Contractor to provide work tickets weekly for Construction Manager to sign off on. Provide a cost per hour included below which will be used to add or deduct from this allowance. The worker must be available within 1 business day after request by the Construction Manager. All unused costs will be returned to the owner.
3. Carry an allowance of $10,000 to be used as needed for City review changes. Use of this allowance shall be coordinated and approved by the Owner and Construction Manager. Any unused amount of this allowance to be credited back to the Owner.
4. *Carry an allowance of $10,000 to be used as needed for the base bid of resurfacing the nurse work station. Use of this allowance shall be coordinated and approved by the Owner and Construction Manager. Any unused amount of this allowance to be credited back to the Owner. ADDM 01*
5. Carry an allowance of $12,500 to be used as needed for the floor fill work needed in the space where floor is unlevel. Use of this allowance shall be coordinated and approved by the Owner and Construction Manager. Any unused amount of this allowance to be credited back to the Owner. *ADDM 01*

S. UNIT PRICES

1. The Contractor agrees to the following unit/alternate prices, which include all delivery, hoisting, supervision, fringes, equipment, travel time, insurance, taxes, bonds, overhead and profit for the

Work if ordered in writing by the Contractor. Provide Unit Prices per Bid Breakdown including all mark-ups:

a. Provide a list of hourly labor rates for change order work including subcontractors working under the prime contractor. Include overtime rates.

b. Provide a list of billable tool/equipment rates for change order work including subcontractors.

c. Project Manager: $_____/hr

d. Superintendent: $_____/hr

e. Foreman: $_____/hr

f. Journeyman: $_____/hr

g. Apprentice: $_____/hr

h. Laborer: $_____/hr

i. Carpenter: $_____/hr

j. Finisher: $_____/hr

k. Painter: $_____/hr

l. Floor Installer: $_____/hr

U. ALTERNATES

1. Provide pricing on Bid Form for all applicable alternates as defined in Specifications.

V. COMPANY INFORMATION:

_____ _____
Bidder's Company Name Telephone Number

_____ _____
Date of Proposal Fax Number

_____ _____
Signature Printed Name

END OF BID PACKAGE 01

SECTION 00 80 02

BID PACKAGE 02

Bid Package 02: HVAC and PLUMBING

Furnish complete all necessary labor, materials, office and field supervision, insurance, tools, equipment, layout, hoisting, rigging, shoring, shop drawings, submittals, permits, licenses and fees necessary to complete the work outlined below. Include all shift pay, overtime, weekend and holiday pay to complete the work in the scheduled durations shown in the project schedule in Specification Section 01 52 00.

This bid package includes, but is not limited to the following scope of work:

A. Bid Package #00 - General Requirements

B. Construction documents by Simonson Associates & Architects dated September 28th, 2026. *ADDM 01*

C. Specifications from the Project Manual by Simonson Associates & Architects dated September 25th, 2026, including, but not limited to the following sections: *ADDM 01*

1. All Division 00 and 01 specifications
2. 02 41 00 Demolition
3. 07 92 00 Joint Sealants
4. All Division 22 – Plumbing
5. All Division 23 – Heating, Ventilating, and Air Conditioning (HVAC)

The below items are further clarifications and/or additional requirements to the above specification sections

D. DIVISION 01 – GENERAL REQUIREMENTS

1. Furnish and install complete, plumbing, mechanical, and HVAC, systems per plans and specification sections listed above and as indicated in the Contract Documents. Contractor is responsible to review Architectural, Structural, Electrical, Medical Equipment, and Civil drawing sheets for coordination and any plumbing and mechanical items not identified on the MEP drawing sheets.
2. All work in this Bid Package shall be provided in accordance with OSHA regulations and applicable state and local codes. Provide proof of all training and certificates required and provide written safety and fall protection programs. All work to follow Graham safety standards as listed in Graham's safety manual.
3. Provide all layout as required to complete this scope of work.
4. Contractor is responsible for all required field measurements for items in this bid package. Field measurements must be taken in advance to prevent any material/schedule delays.
5. Obtain and pay for the plumbing/mechanical building permit for specification sections noted above. Construction Manager to obtain general building permit.
6. This project will utilize Last Planner Construction Schedule tools to plan the work, update the schedule, and monitor progress. It is a requirement to provide all paperwork and attend all meetings as requested by the Contractor/Construction Manager. Some of the items included are, but not limited to:
    a. A minimum of one scheduled coordination meeting per phase will be held with the Subcontractor/Prime project managers and foremen. These meetings may last a full day and

are mandatory. In this meeting, you will be required to list all activities, assign accurate durations, and work with other contractors to sequence the activities as a group.

b. Weekly foremen's meetings will be held where weekly work plans (WWP's) will be turned in to the Contractor/Construction Manager for review and the 6-week project schedule will be discussed. Weekly work plans are required to be turned in prior to the weekly meeting so all activities can be compiled into one WWP and distributed at the meeting.

c. Daily stand-up meetings are a daily progress check and planning session for the following day. These meetings will be held on the project site, foremen for all trades on site are required to be there, and they should take no longer than fifteen minutes per day.

7. Contractor to be adequately qualified to do work in a Healthcare Environment as outlined below:
   a. Contractor has completed similar healthcare projects in the past three years.
   b. Contractor will have an after-hours/ 24-hour emergency service under the entire contract and warranty period.
   c. Field and office management/supervisors must have a minimum of three years of healthcare experience.
8. Contractor will have sufficient manpower to staff the project to meet the project schedule outlined in Contract Documents
9. Submittal and closeout due dated must be uploaded to Procore prior to the due date. Contractor will be responsible for uploading all RFI's to Procore for review by the Construction Manager.
10. Include taking any deliveries related to this bid package, and moving materials and clean-up as required. Delivery routes for materials and trucking to be coordinated with Construction Manager.
11. The construction site is limited for materials and equipment. Coordinate material and equipment locations with the Construction Manager. Anything that needs to move out of the construction area will need to be kept in a staging area directed by the Construction Manager. The cost to move materials needs to be included. Each Prime Contractor is responsible for their own stored materials and equipment.
12. Protect all ductwork and piping from water, oil, dust and other contaminates after delivery to the jobsite. Store off the floor. Cover ends of pipe and ductwork delivered and stored at the jobsite. Installed ductwork ends shall remain covered until the adjacent piece is installed. Clean ductwork as it is being installed if necessary.
13. Coordinate all rough-ins and installation locations with electrical contractor. Coordinate with the other trade contractors on all plumbing and HVAC rough-ins and final connections.
14. Coordinate shop drawings and installation of the work in this bid package with other trade contractors to maximize the free space above the ceiling. All work shall be installed to provide the maximum benefit to the Owner and allow for full access to equipment, valves, dampers, etc. requiring maintenance or access.
15. Project foreman's meetings will be held weekly at the site and progress coordination meetings will take place bi-weekly with the construction manager. Contractors shall have a representative at each meeting while the contractor is on site or within 4 weeks of starting a task. This representative shall have knowledge of the project and be empowered to make decisions while at the meeting. Absences to be discussed with the construction manager prior to the meeting.
16. Concrete housekeeping pads for mechanical and plumbing equipment as noted on civil, arch, structural, and MEP drawings will be provided and installed by Bid Package 01. Coordinate with bid package for dimensions.
17. BP01 is to furnish and install all CFCI equipment. Bid Package 02 and Bid Package 03 to provide final connections and terminations for CFCI equipment.
18. BP01 is to receive and install all OFCI equipment. Bid Package 02 and Bid Package 03 to provide final connections and terminations for any Owner supplied equipment.

19. Per the schedule in the contract documents there will be a Construction Manager punch list as well as an Owner/Architect punch list. Contractor to include mobilizations as needed for punch list corrections. The Construction Manager punch list must be completed before the Owner/Architect punch list.
20. Include all extended warranties to be provided in this bid package.
21. Provide all temporary heating and sheltering as required to complete the scope of work of this bid package per typical weather conditions assuming baseline schedule.
22. Each Bid package is responsible for replacing anything they damage such as building components, etc. that are damaged or compromised by their work.
23. Each Prime Contractor is responsible to have at minimum on one English speaking supervisor on site during the duration of the Contractor's work.
24. Each Prime Contractor is responsible to supervise any and all subcontractors under that specific Bid package. Graham will give 24 hours' notice before starting to charge $150/hr. for supervision, preparation, and coordination of the contractor's subs.
25. Construction Manager to provide site fencing, dumpster, and temporary restrooms. Bid Package 01 shall be responsible to provide, maintain and remove a separate dumpster for demolition to be used for all bid package demo debris per regulations. This does not include concrete, soils, trees, plantings, and mechanical equipment. *ADDM 01*

E. DIVISION 02 – EXISTING CONDITIONS

1. Contractor and major subcontractors will sit in pre-demolition conferences to review what services will be affected during and after demolition process occurs. Contingency plans will be developed with the Construction Manager for potential issues that could occur during and after demolition and phasing.
2. Interior Demolition Areas:
    a. Provide demolition of existing plumbing and mechanical as shown on the Contract Documents. This shall include removal of plumbing and mechanical whether shown or not on the Contract Documents, that need to be removed for other demolition shown on the plans such as removing a wall, removing a piece of equipment, etc. This includes any and all shutdowns that will be required to take place off hours.
    b. Remove any disconnected/demolition items (piping, ductwork, control wiring, etc.) completely from the areas of the building scheduled to remain.
    c. Interior concrete removal and replacement, not shown on the contract documents but needed to install work for this bid package, shall be included by this bid package.
    d. Concrete demo and patching for the demolition of plumbing and mechanical work is by this bid package. Include all excavation and backfill for underground work.
3. This bid package shall be responsible for all interior concrete slab demo, including saw cutting and x-raying all areas where slabs are to be removed to locate possible objects in the slabs.
4. The owner shall have first salvage rights to all items removed. If owner refuses salvage, contractor is responsible for disposal.
5. Locate and protect all existing underground and overhead utilities to remain, both public and private. Pothole existing underground utilities to confirm locations and depths as required. Dig permit to be filled out and signed by Construction Manager prior to work starting.
6. Contractor and subcontractors shall be responsible to research any existing conditions. This includes any locating/potholing of any private or public utilities prior to starting work. Confirm all utilities have been located. Confirm all utilities requiring deactivation have been deactivated prior to commencing work. This Subcontractor has visited the site, reviewed and understands the Geo-Technical Data and existing site conditions.

7. Provide labor and equipment for demolition of all interior and exterior building items noted, shown, or that could be reasonably inferred on drawings that would be associated with this project. Look through all demolition drawings associated with this project in order to get a complete overview.
8. Bid Package 01 is responsible for interior concrete slab pour back, coordinate with contractor.

F. DIVISION 07 – THERMAL AND MOISTURE PROTECTION

1. Furnish and install acoustic sealants at any new penetrations created by this bid package.
2. Any penetrations at the existing and new foundations made by this Bid Package need to be sealed watertight and/or fire stopped as required.

G. DIVISION 22 – PLUMBING

1. Furnish and install all plumbing work including but not limited to all hot and cold domestic water piping, recirculation piping, vent piping, storm water piping, sanitary piping, drains, roof drains, hangers, identification, insulation, access panels, valves, water heaters, drinking fountains, stainless steel sinks, mop basins, water closets, plumbing fixtures, fixture trim, caulking of plumbing fixtures, meters, gauges, etc. for a complete and functional plumbing system.
2. Contractor to include all excavation and backfill as required to complete their scope of work. Compaction shall meet testing specifications. Include all necessary dewatering as required for the complete installation of work included in this bid package including rerouting any existing drain tile as needed. This includes pumping, removal of mud, muck, etc. out of excavations and replacement of removed material for work of this package. This includes any pot holing necessary to locate and identify any obstructions or utilities.
3. Furnish, install, and maintain temporary heating and dehumidification equipment and connections as required to maintain the following requirements:
    a. Maintain a minimum temperature of 60 degrees. The temperature is not to exceed 75 degrees. This minimum temperature shall be maintained until permanent units are installed and completed start-up.
    b. Dehumidification to occur from May 1st until project completion. Minimum humidity shall be 30%. Maximum humidity shall not exceed 55%. Temporary cooling shall occur from May 1st to project completion.
    c. Temporary equipment is to use existing power of the facility. Coordinate with BP 04 for connections as needed.
4. All equipment & material must be properly barricaded per OSHA regulations
5. Support all ductwork, piping and equipment from building structure members. Hold piping tight to bottom of structural members or run through joist webs if possible. Do not support piping from other piping, ductwork and/ or electrical conduits.
6. This bid package is to include, but not limited to, all core drilling, concrete cutting, etc. through walls, floors, and roof as required to complete their scope of work. Contractor to remove material/debris from jobsite per applicable codes and regulations. Coordinate all penetrations with the construction manager and other affected bid packages. Areas that may require core drilling include but not limited to, exterior walls and interior concrete.
7. Contractor to provide cap where items are removed from roof to allow for roofing material to be installed over top.
8. Provide a minimum clearance as specified from the Mechanical Engineer for the outside air intake to any exhaust fan or plumbing vent.
9. Provide electronic coordination drawings, shop drawings and as-built drawings as required for this project. Drawings to be sent to the Construction Manager and electrical contractors for coordination. Coordinate all above ceiling plumbing and mechanical systems with the electrical contractor's main conduit runs, cable tray, etc.

10. Provide miscellaneous sleeves required through concrete and walls. Coordinate with BP 01 for install.
11. Coordinate all plumbing fixtures, drinking fountains, and sink installations provided by this package with Bid Package 01.
12. Coordinate all floor drain and floor sink locations and elevations. Contractor shall be on site to ensure the floor drains, floor sinks, cleanouts, etc. remain true, plumb and at the proper elevation during the concrete pour.

H. DIVISION 23 - HVAC

1. Furnish and install all mechanical work including but not limited to all mechanical piping, gas piping, hydronic piping, steam piping, condensate piping, refrigerant piping, ductwork, variable frequency drives, power ventilators, air curtains, air terminal units, test and balancing, controls work, commissioning, insulation, hangers, identification, access panels, valves, pumps, registers, diffusers, filters, heat exchangers, energy recovery units, energy recovery ventilation units, air handling units, blower coils, vibration isolation, terminal heating units, humidifiers, cleaning, dampers, meters, gauges, thermostats, etc. for a complete and functional mechanical system.
2. Provide mechanical connections for any equipment noted on the equipment and furniture drawings in the Contract Documents. Include taking delivery or moving from existing rooms, assembly if necessary, and installing ice machines.
3. All return air grills shall be capped with sheet metal and sealed with tape while units are being used during construction. Only outside air shall be used to operate the units until the building has been final cleaned. Any associated controls work to temporarily use the unit shall be included and final commissioning to be complete prior to building turnover. The specified warranty for equipment will not start until substantial completion. Provide extended warranties as necessary to maintain the required warranty duration. Continue to maintain negative air within construction areas.
4. Furnish and install all roof curbs and support for pipe and duct penetrations and mechanical equipment as indicated in the contract documents. Coordinate installation with Roofing Contractor and Construction Manager.
5. Furnish and install all controls work including but not limited to pathways, raceways, wiring, thermostats, pressure sensors, system upgrades, software upgrades, etc. for a complete and functional controls system. The new controls system and full graphics will be required to be operational along with Owner training prior to substantial completion.
6. Provide all Test and Balancing for the work of this bid package. Test and Balance reports will be required to be submitted prior to substantial completion. Intermediate testing and balancing may be required to maintain proper operation of systems serving occupied areas of the facility throughout the duration of construction. Any retest and balance to be completed due to being out of spec to be completed by this contractor at no additional cost to the Owner.
7. This contractor to include cleaning of ductwork (internal and external) if required for equipment startup to meet project schedule requirements.
8. Perform all commissioning requirements per the contract documents.
9. Any potential ceiling height conflicts with ductwork, mechanical piping, plumbing piping and fire suppression piping is to be brought to the attention of the Construction Manager and architect immediately. No ceiling heights will be altered without approval from the construction manager and the design team.
10. Coordinate all ceiling device locations within the ceiling grid with the electrical contractor, construction manager and design team prior to installation.
11. Furnish and install one complete set of filters to be used during construction for each unit. Remove construction filters at substantial completion or as directed by the construction manager. Furnish and install one complete set of new filters for each air handling unit at substantial

completion. Furnish and turn over to the owner, one set of filters for each unit as attic stock. In total three complete sets of filters for each unit is required to be supplied by this bid package.

12. Any material prefabricated off site must be field verified and altered as required for site conditions at no cost to the owner.
13. For any combustion equipment used for temporary heating, provide scrubbers on the equipment.

I. UNIT PRICES

1. The Contractor agrees to the following unit/alternate prices, which include all delivery, hoisting, supervision, fringes, equipment, travel time, insurance, taxes, bonds, overhead and profit for the Work if ordered in writing by the Contractor. Provide Unit Prices per Bid Breakdown including all mark-ups:
   a. Provide a list of hourly labor rates for change order work including subcontractors working under the prime contractor. Include overtime rates.

   b. Provide a list of billable tool/equipment rates for change order work including subcontractors.

   c. Project Manager: $_____/hr

   d. Superintendent: $_____/hr

   e. Journeyman: $_____/hr

   f. Laborer: $_____/hr

J. ALTERNATES:

1. Provide pricing on Bid Form for all applicable alternates as defined in Specifications.

K. COMPANY INFORMATION:

_____ _____
Bidder's Company Name Telephone Number

_____ _____
Date of Proposal Fax Number

_____ _____
Signature Printed Name

END OF BID PACKAGE 02

SECTION 00 80 03

BID PACKAGE 03

Bid Package 03: Electrical, Telecommunication, Fire Alarm, Security

Furnish complete all necessary labor, materials, office and field supervision, insurance, tools, equipment, layout, hoisting, rigging, shoring, shop drawings, submittals, permits, licenses and fees necessary to complete the work outlined below. Include all shift pay, overtime, weekend and holiday pay to complete the work in the scheduled durations shown in the project schedule in Specification Section 01 52 00.

This bid package includes, but is not limited to the following scope of work:

A. Bid Package #00 – General Requirements. *ADDM 01*

B. Construction documents by Simonson Associates & Architects dated September 28th, 2026. *ADDM 01*

C. Specifications from the Project Manual by Simonson Associates & Architects dated September 25th, 2026, including, but not limited to the following sections: *ADDM 01*

   a. All Division 00 and 01 specifications
   b. 02 41 00 Demolition
   c. 07 92 00 Joint Sealants
   d. 31 23 00 Foundation Excavating and Backfilling
   e. All Division 26 – Electrical
   f. All Division 27 – Telecommunications
   g. All Division 28 – Electronic Safety and Security

The below items are further clarifications and/or additional requirements to the above specification sections.

D. DIVISION 1 – GENERAL REQUIREMENTS

1. Furnish and install a complete electrical, telecommunications, and electronic safety and security systems per specification sections listed above and as indicated in the Contract Documents for a complete and fully functional system. Contractor is responsible to review Architectural, Structural, Mechanical, medical Equipment, and Civil drawing sheets for coordination and any electrical items not identified on the MEP drawing sheets.
2. Provide all layout as required to complete this scope of work.
3. Contractor is responsible for all required field measurements for items in this bid package. Field measurement must be taken in advance to prevent any material/schedule delays.
4. Obtain and pay for all permits associated with the electrical, telecommunications, electronic safety, fire alarm, and security systems. General Building permit will be obtained by the Construction Manager.
5. Contractor to be adequately qualified to do work in a Healthcare Environment as outlined below:
   a. Contractor has completed similar healthcare projects in the past three years.
   b. Contractor will have an afterhours/ 24-hour emergency service under the entire contract and warranty period.
   c. Contractor will have sufficient manpower to staff the project to meet the project schedule outlined in Contract Documents
   d. Field and office management/supervisors must have a minimum of three years of healthcare experience.

6. Project foreman's meetings will be held weekly at the site and progress coordination meetings will take place bi-weekly with the construction manager. Contractors shall have a representative at each meeting while the contractor is on site or within 4 weeks of starting a task. This representative shall have knowledge of the project and be empowered to make decisions while at the meeting. Absences to be discussed with the construction manager prior to the meeting.
7. All building systems shut downs need to be coordinated with the Construction Manager. Provide, at a minimum, 48-hour notice to the construction manager for any shutdown. Shut downs may require off hours work depending on affected systems.
8. Provide electronic coordination drawings, shop drawings and as-built drawings as required for this project. Drawings to be sent to the Construction Manager and fire suppression, plumbing and mechanical contractors for coordination.
9. Coordinate shop drawings and installation of the work in this bid package with other trade contractors to maximize the free space above the ceiling. All work shall be installed to provide the maximum benefit to the Owner and allow for full access to equipment and dampers requiring maintenance.
10. This bid package to provide multiple mobilizations to meet the project schedule for all programming.
11. Lean scheduling (pull planning) will be utilized on this project. This trade contractor and any subcontractors are required to attend all pull planning meeting to establish schedule, expedite the schedule, and/or to sequence the schedule.
12. BP01 is to furnish and install all CFCI equipment. Bid Package 02 and Bid Package 03 to provide final connections and terminations for CFCI equipment.
13. BP01 is to receive and install all OFCI equipment. Bid Package 02 and Bid Package 03 to provide final connections and terminations for any Owner supplied equipment.
14. Per the schedule in the contract documents there will be a Construction Manager punch list as well as an Owner/Architect punch list. Contractor to include mobilizations as needed for punch list corrections. The Construction Manager punch list must be completed before the Owner/Architect punch list.
15. Include all extended warranties to be provided in this bid package.
16. Each Bid package is responsible for replacing anything they damage such as building components, etc. that are damaged or compromised by their work.
17. Each Prime Contractor is responsible to have at minimum on one English speaking supervisor on site during the duration of the Contractor's work.
18. Each Prime Contractor is responsible to supervise any and all subcontractors under that specific Bid package. Graham will give 24 hours' notice before starting to charge $150/hr. for supervision, preparation, and coordination of the contractor's subs.
19. Construction Manager to provide site fencing, dumpster, and temporary restrooms. Bid Package 01 shall be responsible to provide, maintain and remove a separate dumpster for demolition to be used for all bid package demo debris per regulations. This does not include concrete, soils, trees, plantings, and mechanical equipment. *ADDM 01*

E. DIVISION 2 – EXISTING CONDITIONS

1. Interior Demolition Areas:
   a. Provide demolition of existing electrical and low voltage as shown on the Contract Documents. This shall include removal of electrical and low voltage whether shown or not on the Contract Documents, that need to be removed for other demolition shown on the plans such as removing a wall, removing a piece of equipment, etc.
   b. Interior concrete removal and replacement, not shown on the contract documents but needed to install work for this bid package, shall be included by this bid package.

c. Remove any disconnected/demolition items (wire, conduit, cable, etc.) completely from the areas of the building scheduled to remain.

d. Reroute any essential services required to keep the occupied areas operational.

e. Provide complete demolition of all electrical systems per plans and specifications. Any items not specifically shown or listed in the contract documents but are required to be removed for this contractor's or other trade's work or as required by code shall be included.

f. Provide all electrical demolition, disconnection of power, phone, and data as required for project demolition and construction. Coordinate work with other trades demolition contractors and Construction Manager. Label phone and data lines that are staying to identify where they go.

2. Contractor and major subcontractors will sit in pre-demolition conferences to review what services will be affected during and after demolition process occurs. Contingency plans will be developed with the Construction Manager for potential issues that could occur during and after demolition and phasing.

3. The owner shall have first salvage rights to all items removed. If owner refuses salvage, contractor is responsible for disposal.

4. All work above ceilings by this bid package where those ceilings are not shown to be removed and replaced in the Contract Documents will need to be removed and replaced by this bid package. This note applies to phasing as well. For any work that occurs above ceilings before or after those ceilings get replaced because of phasing, this bid package will need to remove and replace ceilings as needed to do the work. Any damaged ceiling grid or tiles due to work by contractors within this package will be back charged to this package.

5. Where existing electrical conduits serving circuits to be demolished and not reused, remove conductors. Existing back boxes and conduits remaining may be reused depending on location. If back boxes and conduit are not reused remove and patch surface to match existing. At locations where new electrical is to be installed in existing walls, this package to provide patching and finishing to match existing.

F. DIVISION 07 – THERMAL AND MOISTURE PROTECTION

1. Furnish and install acoustic sealants at any new penetrations created by this bid package.

2. Any penetrations at the existing and new foundations made by this Bid Package need to be sealed watertight and/or fire stopped as required.

G. DIVISION 08 - OPENINGS

1. This Contractor to provide all wiring included but not limited to door operators, door activating devices, etc. for a complete functioning system. This includes the mounting of the power supply boxes.

2. Bid Package 01 to furnish and install all hollow metal doors, hollow metal door frames, wood doors, door hardware, and auto operators. This Bid Package to coordinate, provide and install all electrical and low voltage pathways, wiring, final terminations and card readers for a functioning door system.

H. DIVISION 26 - ELECTRICAL

1. Furnish, install, maintain and remove temporary lighting inside the building during construction. Temporary lighting must comply with OSHA standards and Specification Section 01 50 00. Temporary lighting will need to be modified as construction progresses or as directed by Construction Manager. All temporary lighting must be on a dedicated circuit and labeled. Temporary lighting must be sleeved by nonconductive material through walls in order to prevent a cut hazard. This bid package to provide and install all necessary sleeves to comply with OSHA.

2. Coordinate the outlets and switches with the painter to be compliant with OSHA. Power needs turned off to these outlets when the switch plates and outlet plates are removed for painting. If

the power cannot be turned off (e.g. breaker run adjacent hospital room that cannot be shutoff) provide alternate plates to allow finish paint to be finished beyond the edge of the cover plate outlines.

3. Lighting control system manufacturer shall provide 1-day additional on-site system training to site personnel at the conclusion of each construction phase.
4. This bid package shall include a final cleaning of all light fixtures prior to punch list.
5. This bid package is to include, but not limited to, all core drilling, concrete cutting, etc. through walls, floors, and roof as required to complete their scope of work. Contractor to remove material/debris from jobsite per applicable codes and regulations. Coordinate all penetrations with the construction manager and other affected bid packages. Areas that may require core drilling include but not limited to, exterior walls and interior concrete.
6. Furnish and install all site electrical, such as lighting, power for signs, etc. as indicated in the Contract Documents. Include furnish and install of illuminated bollards shown on the contract documents. Include excavation, backfill, and site patching to match existing for all site work required by this bid package.
7. Provide miscellaneous sleeves required through concrete and walls. Coordinate with BP 01 for install.
8. Furnish and install cable tray as shown on the contract documents. Coordinate with other contractors work. Notify Construction Manager of any conflicts with new or existing work.
9. Provide all required electrical systems and connections for medical equipment and/or commercial kitchen equipment as shown on the contract documents.
10. Furnish and install manufactured fireplace assembly with all accessories and remote control. This contractor shall provide submittals with dimensions to BP 01 for the framing of the wall. Coordinate with other contractors.
11. Provide adequate power as required to operate temporary heating, cooling, and dehumidification equipment. Coordinate the power requirements of the equipment being provided by BP 02. Each piece of equipment must be on a dedicated circuit.

I. DIVISION 27 – COMMUNICATIONS

1. This bid package shall furnish and install all voice and data communications, public address and paging systems, nurse call and music sound system per contract documents.
2. This bid package shall furnish and install all pathways, J-hooks, wiring, and power sources as indicated on the contract documents for a full and complete system.

J. DIVISION 28 – ELECTRONIC SAFETY AND SECURITY

1. Fire alarm shop drawings shall be submitted to the jurisdiction having authority at the same time the shop drawings are submitted to the Electrical Engineer.
2. Keep the fire alarm and life safety system active in all remodeled areas throughout construction. Coordinate with the Hospital and Construction Manager to deactivate system during the day for work occurring. All systems need to be reactivated at the end of every day. Provide dust covers for all fire alarm devices in the affected area. Dust covers will be required to be installed, maintained, and removed daily.
3. Relocate lighted exit signs and emergency lighting as needed for project phasing and temporary partition locations. Coordinate with the Construction Manager.
4. Coordinate with Direct to Owner Vendor for card access and security devices and install.

K. UNIT PRICES

1. The Contractor agrees to the following unit/alternate prices, which include all delivery, hoisting, supervision, fringes, equipment, travel time, insurance, taxes, bonds, overhead and profit for the

Work if ordered in writing by the Contractor. Provide Unit Prices per Bid Breakdown including all mark-ups:

a. Provide a list of hourly labor rates for change order work including subcontractors working under the prime contractor. Include overtime rates.

b. Provide a list of billable tool/equipment rates for change order work including subcontractors.

c. Project Manager: $_____/hr

d. Superintendent: $_____/hr

e. Foreman: $_____/hr

f. Journeyman: $_____/hr

g. Apprentice: $_____/hr

M. ALTERNATES

1. Provide pricing on Bid Form for all applicable alternates as defined in Specifications.

N. COMPANY INFORMATION:

_____	_____
Bidder's Company Name	Telephone Number
_____	_____
Date of Proposal	Fax Number
_____	_____
Signature	Printed Name

END OF BID PACKAGE 03

SECTION 01 10 00
SUMMARY

PART 1 GENERAL

1.01 PROJECT

A. Project Name: 14138B Brain and Memory Center.

B. Owner's Name: Broadlawns Medical Center.

C. Architect: Simonson & Associates Architects.

D. Construction Manager: Graham Construction Company.

E. Structural Engineer: Raker Rhodes Engineering.

F. MEP Engineer: KEDbluestone Engineering.

G. The project consists of the renovation of a 4,700 square foot building, the construction of a detached canopy and associated site and concrete improvements. The work includes, but is not limited to, HVAC, Electrical, Plumbing, Finish Upgrades and Roofing.

1.02 CONTRACT DESCRIPTION

A. Contract Type: Multiple prime contracts, each based on a Stipulated Price, Publicly Bid as described in Document 00 01 11.

B. Estimated Construction Budget: $2,750,000.

C. Construction Commencement: November 3rd, 2026.

D. Substantial Completion: May 28th, 2027.

E. Final Completion: May 28th, 2027.

1.03 DESCRIPTION OF ALTERATIONS WORK

A. Scope of demolition and removal work is indicated on drawings and specified in Section 02 41 00.

B. Scope of alterations work is indicated on drawings.

1.04 WORK BY OWNER

A. Owner will award a contract for supply and installation of pole mounted cameras which will commence on a date to be determined later.

1. Cut sheets for planned equipment will be available to the contractors during construction.

2. Final utility connections shall be performed under this Contract.

B. Items noted NIC (Not in Contract) will be supplied and installed by Owner (OFOI) after Substantial Completion. Some items include:

1. Exterior Cameras. *ADDM 01*

2. Electronic Access Control. *ADDM 01*

3. Exterior Signage.

4. Interior Signage. *ADDM 01*

1.05 OWNER-FURNISHED ITEMS

A. Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract or other contracts. Coordinate the Work of this Contract with work performed under separate contracts.

B. The Work includes providing support systems to receive Owner's equipment, and mechanical and electrical connections.

C. The Owner will arrange and pay for delivery of Owner-furnished items in accordance with the Contractor's Construction Schedule, and will inspect deliveries for damage.

D. If Owner-furnished items are damaged, defective or missing, the Owner will arrange for replacement. The Owner will also arrange for manufacturer's field services, and the delivery of manufacturer's warranties and bonds to the Contractor.

E. The Contractor is responsible for designating the delivery dates of Owner furnished items in the Contractor's Construction Schedule and for receiving, unloading and handling Owner- furnished items at the site.

F. The Contractor is responsible for protecting Owner-furnished items from damage, including damage from exposure to the elements, and to repair or replace items damaged as a result of his operations.

1.06 OWNER OCCUPANCY

A. Owner intends to continue to occupy adjacent portions of the existing building during the entire construction period.

B. Owner intends to occupy the Project upon Substantial Completion.

C. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.

D. Schedule the Work to accommodate Owner occupancy.

1.07 CONTRACTOR USE OF SITE AND PREMISES

A. Construction Operations: Limited to areas noted on Drawings.

1. Locate and conduct construction activities in ways that will limit disturbance to site.

B. Arrange use of site and premises to allow:

1. Owner occupancy.

2. Work by Others.

3. Work by Owner.

4. Use of site and premises by the public.

C. Provide access to and from site as required by law and by Owner:

1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.

2. Do not obstruct roadways, sidewalks, or other public ways without permit.

D. Time Restrictions:

1. Limit conduct of especially noisy work to hours as coordinated with the Owner.

E. Utility Outages and Shutdown:

1. Limit disruption of utility services to hours the building is unoccupied.

2. Do not disrupt or shut down life safety systems, including but not limited to fire sprinklers and fire alarm system, without 7 days notice to Owner and authorities having jurisdiction.

3. Prevent accidental disruption of utility services to other facilities.

1.08 WORK SEQUENCE

A. Coordinate construction schedule and operations with Design Professional.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION 01 10 00

3G COMPANIES

BUILDING WHAT'S IMPORTANT.



SAFETY MANUAL

BUILDING WHAT'S IMPORTANT.

What is Graham Mentality?

COMPLETING EVERY PROJECT FROM AN OWNER'S POINT OF VIEW TO BUILD AND MAINTAIN OUR MOST IMPORTANT ASSETS OUR LONG TERM RELATIONSHIPS.

We achieve this by:

- **Having a client's perspective and asking yourself "what's in the best interest of the client?" when making decisions that affect the project**
- **Determining and exceeding the client's expectations**
- **Providing a positive outlook while enjoying what we do**
- **Having a "can do" attitude in all situations and finding ways to succeed when others tell you it's not possible**
- **Having the sincerity and willingness to build the long term relationship founded on trust, commitment, and the desire to succeed – *Building What's Important.***

Building What's Important - on a Foundation of Safety

Our Core *Focus*

WHAT WE ARE

Our Purpose:
Build Relationships

Our Niche:
Live the Graham Mentality

Our Core *Values*

WHO WE ARE



We Live the
Graham Mentality



We Never Compromise
Our Reputation



We Do Whatever it Takes
to Get the Job Done



We Are Professional



We Are ALL Committed
to Safety

• TABLE OF CONTENTS

	PAGE
Company Safety Policy Statement	2
Company Safety Policy	3
General Safety Rules	5
Emergency Action Plans	22
Disciplinary Procedures	24
Light/Modified Duty Program	25

APPENDIX:

Appendix A: Jobsite Specific Safety Template	1-11
Appendix B: Drug and Alcohol Policy	1-10
Appendix C: OSHA Inspection Worksheet	1-7
Appendix D: Safety Forms & Procedures	1-31

3G COMPANIES SAFETY POLICY STATEMENT

TO: ALL EMPLOYEES, TRADE PARTNERS, SUPPLIERS & CUSTOMERS OF 3G COMPANIES

It is the policy of 3G Companies to provide a safe and healthy place of employment for our employees and for the public. 3G Companies will abide by all regulations set forth by OSHA, local, state, and federal courts and agencies pertaining to the construction industry. Every attempt will be made to provide safe equipment and to create safe job sites. Employee health and safety is a top priority on all 3G Companies job sites.

Accident prevention and efficient production go hand-in-hand. All levels of management have a primary responsibility for the safety and well being of all employees. This responsibility can be met only by working continuously to promote safe work practices among all employees.

All employees of 3G Companies must be aware of their working conditions and make an effort to ensure that they and fellow workers are working safely and in a safe and healthy environment. Any unsafe acts or conditions must be reported immediately so corrective action may be taken.

Any employee who willfully disregards known safe work practices will be subject to strict disciplinary action.

All tools shall be used with the correct shield, guard, or attachment recommended by the manufacturer. Any tool found not in proper working order shall be immediately removed from service. The tool shall be inspected at regular intervals and shall be repaired in accordance with the manufacturer's specifications.

NEVER REMOVE GUARDS/SHIELDS FROM ANY TOOL OR EQUIPMENT

COMPANY SAFETY POLICY

Maintaining health and safety is the responsibility of each person involved with this company. Every employee will do their part to help ensure that our safety program is successful in minimizing losses.

MANAGEMENT WILL:

1.) Provide a means to accomplish the stated company safety policy.

2.) Require adherence to the policy and discipline any employee(s) willfully disregarding it.

3.) Establish and administrate procedures for the treatment of injuries.

4.) Provide and require employee participation in safety and related training.

5.) Investigate or cause to have investigated all serious accidents/near misses and file a report on each.

6.) Ensure that adequate company resources are allocated for safety and health matters.

7.) Establish a line of communication for safety and health concerns.

8.) Conduct safety surveys, file reports and find solutions to problems that occur.

9.) Ensure that a jobsite safety and health checklist and weekly safety inspections are completed for each project.

SUPERINTENDENTS WILL:

1.) Be familiar with laws and regulations pertaining to general construction safety, including but not limited to, OSHA and state requirements.

2.) Be deemed as competent persons by 3G Companies

3.) Instruct and assist foremen in the implementation of the company's safety policy on all jobs.

4.) Require all trade partners to abide by safety regulations.

5.) Review and investigate accidents with foremen and see that corrective action is taken immediately.

6.) Conduct and/or monitor job site safety talks when at the job site.

7.) Inform management of any safety or health concerns on the job site.

8.) Report and file accident and near miss reports with the safety director within 24 hours.

9.) Make available all necessary personal protection equipment, job safety equipment and first aid supplies.

10.) Have the authority to discipline an employee not complying with company safety rules.

11.) Have the authority for immediate removal from the project at their own discretion if an employee is not complying with jobsite safety rules or causing issues with other trades or the client.

12.) Ensure that a jobsite safety and health checklist and weekly safety inspections are completed for each project.

COMPANY SAFETY POLICY CONTINUED

FOREMAN WILL:

1.) Be familiar with laws and regulations pertaining to general construction safety, including but not limited to, OSHA and state requirements.

2.) Make sure workers do not commit unsafe acts.

3.) Inspect their job sites and eliminate any unsafe working conditions.

4.) Make sure that personal protective equipment is available and used.

5.) See that all injuries are cared for properly and reported to the office immediately.

6.) Instruct employees in safe procedures and job safety requirements and then follow up for compliance.

7.) Investigate all accidents, report them, and correct the cause immediately.

8.) Ensure that no worker(s) is assigned to a job without necessary training.

9.) Conduct safety talks with the workers weekly.

EMPLOYEES WILL:

1.) Work according to good safety practices as posted, instructed or discussed, and above all, are good common sense.

2.) Refrain from any unsafe acts that may endanger themselves or fellow workers.

3.) Use personal protective and job safety equipment provided for their protection.

4.) Report all unsafe acts or conditions to the foreman or superintendent.

5.) Maintain a safe and clean work area.

6.) Report injuries to the foreman immediately.

7.) Assume responsibility for their thoughtless or deliberate acts that cause injury to themselves or fellow workers.

TRADE PARTNERS WILL:

1.) Be required to abide by all regulations and safety rules set by governing agencies and this company.

2.) Notify all other contractors when their activities could affect the health or safety of other company employees.

3.) Check in with job site supervision before entering the job site.

4.) Inform 3G Companies Superintendent of all injuries to workers.

5.) Report to 3G Companies Superintendent of any unsafe conditions that come to your attention.

3G COMPANIES GENERAL SAFETY RULES

The following safety rules are to be adhered to while in our employ. The following rules are to be used as a general guideline. All employees are required to follow all rules and regulations pertaining to general construction safety, including but not limited to, OSHA requirements.

Personal Protective Equipment (PPE)

The employee is responsible for wearing appropriate personal protective equipment in operations where there is exposure to hazardous conditions, or where need is indicated to reduce hazards.

3G Employees:

Eye and Face Protection

Safety Glasses or other eye protection will be provided and must be worn 100% of the time. All eye protection must meet ANSI Z87 standards.

Face protection/ Face Shields will be provided and must be worn when machines or operations present potential eye or face injury (to include use of grinders, and hand-held concrete saws)

Goggles will be worn over any employee-owned prescription glasses that do not meet industrial safety standards. Prescription glasses without side protection will require the use of side shields.

Gloves and Protective Sleeves

Gloves will be provided and must be worn 100% of the time unless the gloves present a greater potential for a hand injury, **AND is approved by the Safety Director.**

Protective kevlar sleeves must be worn during demolition and working around sharp objects to protect from wrist and arm injuries.

Hard Hats

Hard Hats will be provided and must be worn 100% of the time unless deemed unnecessary by the Superintendent **AND only when all overhead hazards have been eliminated.**

Trade Partners:

Eye and Face Protection

Safety Glasses or other eye protection must be worn 100% of the time. All eye protection must meet ANSI Z87 standards.

Face protection/ Face Shields must be worn when machines or operations present potential eye or face injury (to include use of grinders, and hand-held concrete saws)

Goggles will be worn over any employee-owned prescription glasses that do not meet industrial safety standards. Prescription glasses without side protection will require the use of side shields.

Gloves

Gloves shall be worn for all operations where there is an exposure to hazardous conditions (or lacerations) in accordance with OSHA CFR 1926.28(a).

Hard Hats

Hard Hats will be provided and must be worn 100% of the time unless deemed unnecessary by the Superintendent **AND only when all overhead hazards have been eliminated.**

Abrasive Grinding
Abrasive wheel bench or stand grinders must have safety guards strong enough to withstand bursting wheels. Adjust work rests on grinders to a clearance not to exceed 1/8 inch between rest and wheel surface. Inspect and ring-test abrasive wheels before mounting. Always leave wheel in working condition for next user. Properly dress wheel before and after use.

Access
Use only safe means of access to and from work areas. Jumping from or to work areas is not allowed, nor is sliding down cables, ropes or guys.

Air Tools
Secure pneumatic tools to hose in a positive manner to prevent accidental disconnection. Install and maintain safety clips or retainers on pneumatic impact tools to prevent attachments from being accidentally expelled. All hoses exceeding 1/2 inch inside diameter require safety devices at the source of supply to reduce pressure in case of hose failure.

Attitude
All employees are required to treat safety as the number one priority. As such, they are expected to report to work in good mental and physical condition to safely perform their assigned duties. Before starting any task, employees must consider the possible effects of their actions on themselves and others and take appropriate protective measures.

Belt Sanding Machines
Belt sanders will not be used without guards in place.

Compressed Air, Use of
Compressed air used for cleaning purposes may not exceed 30 psi, and then only in conjunction with effective chip guarding and personal protective equipment. Exceptions to 30 psi are allowed only for concrete form, mill scale and similar cleaning operations. The use of compressed air to clean off you or other workers is not allowed.

Compressed Gas Cylinders
Put valve protection caps in place before compressed gas cylinders are transported, moved or stored. Cylinder valves will be closed when work is finished and when cylinders are empty or being moved.

Oxygen and fuel gas regulators must be in proper working order while in use.

Compressed gas cylinders will be secured in an upright position at all times. Keep cylinders at a safe distance, or shield from welding or cutting operations and place where they cannot become part of an electrical circuit.

Oxygen and acetylene must not be stored together. **Storage is determined by ANY time in which the cylinders will not be used for 24 hours (including weekends)**
Oxygen cylinders must be separated from fuel-gas cylinders a minimum of 20ft or by a noncombustible barrier at least 5ft high, and having a fire-resistive rating of 30 minutes.

Concrete, Concrete Forms and Shoring
Any impalement hazard, onto or into which employees could fall, must be guarded to eliminate the hazard of impalement. Wire mesh needs to be secure from recoiling.

Form work and shoring will be designed and constructed to safely support all loads imposed during concrete placement. All components will be inspected prior to erection. Drawings or plans of jack layout, form work, shoring, working decks and scaffolding systems will be available at the job site.

Forms and shores may not be removed until it has been determined that the concrete has gained sufficient strength to support its weight and superimposed loads.

Cranes or Derricks
Rated load capacities, recommended operating speeds and special hazard warnings or instructions must be conspicuously posted on all equipment. Instructions or warnings must be visible from the operator's station.

Cranes will be inspected before each use by the operator. Any defects must be corrected before use. Logs of crane inspections must be kept with the crane.

Accessible areas within swing radius of a crane must be barricaded to prevent employees from being struck or crushed by the crane.

Except where electrical distribution and transmission lines have been de-energized and visibly grounded, or where insulating barriers not a part of or an attachment to the equipment or machinery have been erected to prevent physical contact with the lines, no part of a crane or its load shall be operated within 10 feet of a line rated to 5OkV or below.

VOLTAGE (kV)	MINIMUM CLEARANCE DISTANCE (feet)
up to 50	10
over 50 to 200	15
over 200 to 350	20
over 350 to 500	25
over 500 to 750	35
over 750 to 1,000	45
over 1,000	(as established by the utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution).

Crane and Derrick Suspended Personnel Platforms
Crane or derrick suspended personnel platforms may not be used unless the erection, use and dismantling of conventional means of reaching the worksite would be more hazardous or not possible. Equipment used for this purpose must be tested and equipped in strict accordance with 1926.550(g) or state plan equivalents.

Disposal Chutes
Use an enclosed chute whenever materials are dropped more than 20 feet to any exterior point of a building. When debris is dropped through floor holes without a chute, the area where the material is dropped must be enclosed with barricades at least 42 inches high and not less than 6 feet back from the projected edges of the opening above. Post warning signs at each level.

Drugs and Alcohol
Use or possession of alcoholic beverages or non-prescription drugs on the jobsite is forbidden. Workers reporting under the influence of alcohol or controlled substances will not be allowed to work.

Dust Masks
Dust masks shall be worn while operating dust-causing tools and equipment, while engaged in cleanup and demolition work, while working in a dusty enclosed area, while working with fiber glass and similar insulation materials, and wherever else needed. Special respiratory masks will be furnished when working with toxic fumes, chemicals, asbestos products (often found where remodeling), etc. Medical questionnaire, medical evaluation, and fit testing is required prior to use of a dust mask.

Dust Masks must be stored in a sealed container when not is use. This includes breaks and at the end of each shift.

Elastic bands on disposable masks must be cut prior to disposal

Electrical-General
All extension cords must be 3-wire type, protected from damage, and not fastened with staples, hung from nails, or suspended from wires. No cord or tool with a damaged ground plug may be used. Splices must have soldered wire connections with insulation equal to the cable. Worn or frayed cables may not be used.

Cords/ Temporary lighting shall not be hung from sprinkler pipe or heads per NFPA 13.
Cords/ Temporary lighting must be hung from non-conductive material.

Except where bulbs are deeply recessed in a reflector, bulbs on temporary light will be equipped with guards. Temporary lights shall not be suspended by their electric cords unless cords and lights are designed for this means of suspension.

Receptacles for attachment plugs will be of approved, concealed contact type. Where different voltages, frequencies or is of current are applied, receptacles must be such that attachment plugs are not interchangeable.

Each disconnecting means for motors and appliances, and each service feeder or branch circuit at point of origin must be legibly marked to indicate its purpose, unless located and arranged so that the purpose is evident.

No employee may work in proximity to any electric power circuit that may be contacted during the course of work, unless protected against electric shock by de-energizing circuit and grounding it or by guarding with effective insulation.

In work areas where the exact location of underground electric power lines is unknown, workers using jackhammers, bars or other hand tools, which may contact electrical lines must wear insulated protective gloves.

Electrical - GFCI or Inspection
15 and 20-ampere receptacle outlets on single-phase, 120-volt circuits for construction sites which are not a part of the permanent wiring of the building or structure, must be protected by either ground-fault circuit interrupters.

100% GFCI use is required on all jobsites. All GFCI pigtails shall be inspected prior to use.
GFCI outlets not part of the structure or temporary GFCI panels must be inspected and documented every 30 Days

Extension cords shall be properly sized for operation of the tool (per manufacturer)	
16 gauge – **NOT ALLOWED ON JOBSITES**	Up to 13 amps
14 gauge – medium-duty tasks	14 - 15 amps
12 gauge – heavy duty tasks	16 – 20 amps

Inspect each cord set, attachment cap, plug and receptacle of cord sets, and any equipment connected by cord and plug, except cord sets and receptacles which are fixed and not exposed to damage, before each day's use for external defects and possible internal damage. Remove from service or repair immediately any defective items.

Receptacles for uses other than temporary lighting shall not be installed on branch circuits which supply temporary lighting.

Equipment Operation/ Spotters:
The greatest danger for operators and equipment is during the process of loading, moving and unloading. The operator must consider the size and shape of the cargo or load, adjustments to the lifting apparatus, destination and route being driven.

If any of the following situations occur, the spotter policy must be used:

- If the load being carried obstructs forward vision, the operator shall be required to use a signalman/ spotter.
- Any equipment being operated within 50 ft of structures, other equipment, or site personnel requires the use of a spotter or signalman.
- Operating equipment at blind spots that pose a safety risk to other construction personnel.
- ***Spotters must have hi-visibility clothing, be located on the ground in plain view, and maintain eye contact with the operator.**
- The only exception to this policy is for mass grading operations that do not require equipment operation within 50ft of any structure, other equipment, utility, or site personnel.

If two or more spotters are being utilized, one spotter must be identified as the primary communicator to the operator prior to work.

Equipment operators must wear seatbelts, if the equipment is equipped with one.

Excavating and Trenching
Before opening any excavation, efforts (including utility company contact) must be made to determine if there are underground installations in the area. Underground utilities must be located and supported during excavation operations.

Walls and faces of trenches 5 feet or more in depth and all excavations in which employees are exposed to danger from moving ground or cave-in, must be guarded by shoring or sloping.

Where employees may be required to enter excavations, excavated material must be stored at least 2 feet from the edge of the excavation.

Excavations must be inspected daily (Daily Dig Permit or Trenching & Excavation Log)
Excavations over 2O feet deep must have shoring or sloping designed by a professional engineer. Trenches 4 feet deep or more require adequate means of exit such as ladders or steps, located so as to require no more than 25 feet of lateral travel.

Open trenches or excavations must be flagged/caution taped off as soon as work is complete or at the end of each shift.

Excavating and Trenching (Continued)

2 Feet	Spoils from Edge of Trench
	Equipment from edge of Trench
	Undermining Shield System
4 Feet	Means of Egress Required
	Testing for Hazardous Atmosphere
	Maximum height of Bench Step
5 Feet	Inspected by a competent person
	Required to have a Protective System
6 Feet	Fall Protection Requirement
20 Feet	Maximum trench Depth (Protective systems for excavations >20ft must be designed by a registered engineer)
25 Feet	Lateral distance to means of egress

Explosives and Blasting
Only authorized and qualified persons will be permitted to handle and use explosives. Smoking and open flames are not permitted within 50 feet of explosives and detonator storage magazines.

Eye and Face Protection
See PPE Requirements – pg. 5 – at beginning of this section.

Eyewash Stations
Where the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use.

Use of an eye wash station by any employee or trade partner must be reported to the 3G superintendent Immediately.

Eyewash stations must be within 10 seconds travel time from areas where hazardous materials are used or stored. (This is about 55 feet away).

Eyewash stations must provide at least 0.4 gallons (1.5 liters) of clean water per minute for at least 15 minutes. **Small eyewash bottles are only acceptable to use during travel time to the full portable eyewash station.**

Eyewash stations should be highly visible, clearly marked, and inspected regularly per manufacturer instructions.

Manufacturer instructions will also provide guidance draining and refilling regularly
(EX: drain and refill every three months with potable water and an antimicrobial solution, or a sealed cartridge containing a sterile solution)

Plumbed eyewash stations shall be flushed regularly using the manufacturer's instructions to ensure the water is clean and flowing at the proper rate.

Eyewash bottles shall be disposed of after reaching their expiration date.

Fall Protection
All Employees, when exposed to a fall of 6 foot or greater, shall wear a full body harness with appropriate lanyard(s). The full body harness lanyards' connection points shall be as provided under Federal, State and/or Local safety related laws and regulations. The lanyard(s) shall be securely attached to the employee's harness and connection point 100% of the time while the exposure exists. Ladders must be used in accordance with manufacturer's recommended use.

All workers are required to be tied off 100% at all times to a manufacturer tie-off point within the piece of equipment. This tie off policy applies to JLG, Aerial lifts, man baskets, etc. and for all similar pieces of equipment from which a worker will be working from.

Workers are never allowed to tie-off to the perimeter wire rope cabling or temporary railings or barricades.

Class 2 (LE) SRL's are required at all times.

Working on ladders when on elevated platforms or decks:
No worker shall work on a ladder without fall protection, when working near a leading edge.
Rule of thumb: Fall protection required when working a distance equal to the height of the ladder plus height of the worker (i.e. 10' ladder with a 6' worker, worker must be 16' away from leading edge to work on ladder without fall protection).

Failure to follow 100% tie off policy will result in immediate removal.

Fencing
Security fencing protects employees, the company and the general public. All fencing must be maintained by all employees to the extent of their job description. Report to your supervisor defects beyond your ability to repair.

Fire Protection
Fire fighting equipment must be conspicuously located and readily accessible at all times, and periodically inspected and maintained in operating condition. Report any inoperative or missing equipment to your supervisor.

If the project includes automatic sprinkler protection, installation will closely follow construction and be placed in service, as soon as applicable laws permit, following completion of each story.

Fire extinguishers, rated not less than 2A, will be provided for each 3,000 square feet of building area (or major fraction). Travel distance from any point to the nearest fire extinguisher may not exceed 75 feet with at least one extinguisher per floor. In multi-story buildings, at least one fire extinguisher must be located adjacent to the stairway.

Flag Personnel
When signs, signals and barricades do not provide necessary protection on or adjacent to a highway or street, flag personnel or other appropriate traffic controls must be used.

Flammable and Combustible Liquids
Only approved and properly labeled containers and portable tanks will be used for storage and handling of flammable and combustible liquids.

Gas Cans must have a spring closing lid, spout cover, internal pressure relief and flash-arresting screen inside the pour Spout
Metal DOT-approved gas cans are acceptable; plastic gas cans are not allowed on site.

No more than 25 gallons of flammable or combustible liquids, properly labeled, may be stored in a room outside of an approved storage cabinet.

No more than 60 gallons of flammable or 120 gallons of combustible liquids, properly labeled, may be stored in any one storage cabinet.

No more than three storage cabinets may be located in a single storage area. Inside storage rooms for flammable and combustible liquids must be of fire-resistive construction, with self-closing fire doors, 4-inch sills or depressed floors, a ventilation system of at least 6 air changes per hour, and electrical wiring and equipment approved for Class 1, Division I locations.

Storage in containers outside buildings may not exceed 1,100 gallons in any one pile or area. Grade storage areas to divert possible spills away from buildings or other exposures, or surround storage areas with a curb or dike. Locate storage areas at least 20 feet away from any building and keep free from weeds, debris and other combustible materials. Keep flammable liquids in closed containers when not in use.

Post conspicuous and legible signs prohibiting smoking in service and refueling areas.

A 20 pound fire extinguisher must be available 25 feet away, but not more than 50 feet from all flammable/combustible storage areas.

Floor Openings, Open Sides, Hatchways, Etc.

Guard openings with a standard guardrail and toeboards or cover. Provide railing on all exposed sides, except at entrances to stairways.

Every open-sided floor or platform, 6 feet or more above adjacent floor or ground level, must be guarded by a standard railing or equivalent on all open sides where there is entrance to a ramp, stairway or fixed ladder.

Runways 4 feet high or more need standard railings on all open sides.

Guard ladderway floor openings or platforms with standard guardrails and standard toeboards on all exposed sides, except at entrance to opening, with passage through the railing provided by a swinging gate or offset so a person cannot walk directly into opening.

Temporary floor openings 2" or greater will have standard railings or effective covers that can support 2 times any intended load.

Floor holes into which persons can accidentally walk (includes skylights) will be guarded by either a standard railing with standard toeboard on all exposed sides, or a standard floor hole cover.

While the cover is not in place, the floor hole will be protected by a standard railing.

Gases, Vapors, Fumes, Dusts and Mists

Exposure to toxic gases, vapors, fumes, dusts and mists at a concentration above those specified in the "Threshold Limit Values of Airborne Contaminants" of the ACGIH should be avoided.

When engineering and administrative controls are not feasible to achieve full compliance, protective equipment or other protective measures will be used to keep the exposure of employees to air contaminants within the units prescribed any equipment and technical measures used for this purpose must be reviewed for each particular use by a technically qualified person. Employees will wear all furnished equipment at all

times.

All work with toxic gases, fumes, vapors, or mists require review of the SDS prior to work starting and donning of all listed PPE.

Gloves and Protective Sleeves
See PPE Requirements – pg. 5 – at beginning of this section.

Guards and Shields
All equipment guards and shield must be installed on tools at all times. **Intentional removal of a guard or shield from tools and equipment will result in immediate removal from site.**

Hand Tools
Employees will not use unsafe hand tools. Wrenches may not be used when jaws are spring to the point slippage occurs. Keep impact tools free of mushroomed heads. Keep wooden tool handles free of splinters or cracks and assure a tight connection between the tool head and the handle.

Electric-power operated tools will either be approved double insulated, be properly grounded, or used with ground fault circuit interrupters

Hazard Communication
Employees will receive training on their rights, duties and responsibilities under the Hazard Communication Standard. A copy of the company's program and the standard will be made available to all employees on request. Employees will review Safety Data Sheets when working with a covered material for the first time and anytime thereafter when a question arises. Safety precautions outlined on Safety Data Sheets are to be followed.

Hard Hats
See PPE Requirements – pg. 5 – at beginning of this section.

Hearing Protection
Hearing protection will be worn in areas where sound levels may exceed 85 decibels,

Heating Devices, Temporary
Fresh air must be present in sufficient quantities to maintain the safety of workers. Solid fuel salamanders are prohibited in buildings and on scaffolds.

Hoists, Material and Personnel
Rated load capacities, recommended operating speeds and special hazard warnings or instructions posted on cars and platforms may not be exceeded. Entrances to material hoists will be protected by substantial full width gates or bars. Hoistway doors or gates of personnel hoists will not be less than 6 feet 6 inches high, and be protected with mechanical locks which cannot be operated from the landing side and are accessible only to persons on the car. Provide overhead protective covering on the top of the hoist cage or platform.

Horseplay
All disruptive activities usually referred to as "horseplay" are forbidden. No practical jokes or fights will be tolerated.

Housekeeping
Form and scrap lumber with protruding nails and other debris will be kept clear from work areas. Remove combustible scrap and debris at regular intervals. Containers will be provided for collection and separation of all refuse. Covers are required on containers used for flammable or harmful substances.

At the end of each phase of work, return all tools and excess material to proper storage. Clean up all debris before moving on to the next phase. Each employee is responsible for keeping their work area clean.

Illumination
Construction areas should be lighted, to not less than minimum illumination intensities Listed while work is in progress:

Foot Candles	**Area of Operation**
Illumination Intensity-5	General construction area lighting- General construction areas, concrete placement, active storage areas, loading platforms, refueling and field maintenance areas and stairways.
Illumination Intensity-5	Indoor: warehouses, corridors, hallways and exitways.
Illumination Intensity-5	Tunnels, shafts and general underground work areas (Exception: minimum of 10 foot candles is required at tunnel and shaft heading during drilling, mucking and scaling. Bureau of Mines approved cap lights shall be acceptable for use in tunnel heading.)
Illumination Intensity-10	General construction plant and shops (Ex: batch plants, screening plants, mechanical/electrical equipment rooms, carpenters shops, rigging lofts/active storerooms, cafeterias, indoor toilets and workrooms).

Injuries
All injuries, even those that appear to be minor, will be reported immediately to your supervisor.

Job Hazard Analysis (JHA) (see Appendix G)
JHA's are to be completed at the start of a new task by the crew and the crew's leader or foreman prior to beginning work. If the scope of the work changes, the crew changes, or previously unknown risks are discovered, a new JHA shall be completed. If the same tasks are being repeated daily, the JHAs for those tasks should be reviewed daily and updated on a weekly basis. A JHA should be required for every minor and major operation. Including but not limited to – sweeping floors, all carpentry work, all minor and major laborer work. Reference Job Hazard Analysis Requirement form for additional information.

Jointers
Each hand-fed planer and jointer with a horizontal head must be equipped with a cylindrical cutting head. Keep opening in the table as small as possible. Each hand-fed jointer with a horizontal cutting head must have an automatic guard to cover the section of the head on working side of fence or cage. Guards may not be removed. A proper jointer guard will automatically adjust itself to cover unused portion of the head, and will remain in contact with material at all times. Each hand-fed jointer with horizontal cutting head must have a guard which will cover the section of the head back of the cage or fence.

Ladders
The use of ladders with broken or missing rungs or steps, broken or split side rails, or with other faulty or defective construction is prohibited. When ladders with such defects are discovered, withdraw them from service immediately. Place portable ladders on a substantial base a 4-1 pitch, have clear access at top and bottom, extend a minimum of 36 inches above

landing or, where practicable, provide walk-through grab rails. Secure against movement while in use.

All ladders must contain manufacturer's standard labels and be legible.
Ladders shall be laid down when not in use, or secured to prevent accidental tipping.

Portable metal ladders may not be used for electrical work or where they may contact electrical conductors. Job-made ladders will be constructed for their intended use. Cleats will be inset into side rails 1/2 inch or filler blocks used. Cleats will be uniformly spaced, 12 inches, top-to-top.

Lasers
Only trained employees with signage will be allowed to operate lasers. Employees will wear proper eye protection where there is a potential exposure to laser light greater than 0.005 watts (5 milliwatts). Laser in use signage must be posted.

Lifting
One person should not pick up or lift anything 50 lbs. or more.

Liquefied Petroleum Gas (LPG)
Each system will have containers, valves, connectors, manifold valve assemblies and regulators of an approved type. Each container and vaporizer must be provided with one or more approved safety relief valves or devices. Containers will be placed upright and firmly secured.

Portable heaters must be equipped with an approved automatic device to shut off the flow of gas in event of flame failure. Storage of LPG within buildings is prohibited. Storage locations must have at least one approved portable fire extinguisher, rated not less than 20-B.C.

Masonry Access Zone
Limited access zones are to be established on the unscaffolded side of unbraced masonry walls. The zones are to be equal to the finished height of the wall, plus four feet.

Medical Services and First Aid
When a medical facility is not readily accessible, a person trained to render first aid will be available at the worksite
First aid supplies must be readily available,
The telephone numbers of physicians, hospitals or ambulances must be conspicuously posted.

Motor Vehicles and Mechanized Equipment
Check all vehicles in use at the beginning of each shift to assure all parts, equipment and accessories affecting safe operation are in proper operating condition and free from defects. All defects shall be corrected before placing vehicle in service.

No employee shall use any motor vehicles, earthmoving or compacting equipment having an obstructed view to the rear unless: vehicle has a reverse signal alarm distinguishable from the surrounding noise level, or vehicle is backed up only when an observer signals it is safe to do so.

Heavy machinery, equipment or parts thereof, which are suspended or held aloft, will be substantially blocked to prevent falling or shifting prior to work under or between them.

All mobile equipment with a combustion engine must contain a fire extinguisher, rated

not less than 2A, conspicuously located and readily accessible.
If performing Hot Work from mobile equipment, the equipment must contain a fire extinguisher.

Personal Protective Equipment
The employee is responsible for wearing appropriate personal protective equipment in operations where there is exposure to hazardous conditions, or where need is indicated to reduce hazards. OSHA CFR 1926.28(a)

See PPE Requirements – pg. 5 – at beginning of this section.

Employees working over or near water, where danger of drowning exists, will wear U.S. Coast Guard- approved life jackets or buoyant work vests.

Personal Fall Arrest Systems

Personal fall arrest systems and their use shall comply with the new **ANSI Z359 Safety Requirements effective August 1, 2023.**

- **SRL (Class 1)** For use with anchors at or above the dorsal D-ring. Maximum allowable freefall not to exceed 2 ft.
- **SRL LE (Class 2)** For use with anchors above or below the dorsal D-ring. Maximum allowable freefall not to exceed 6 ft.
- **SRL-P (Class 2)** required for the operation of all Mobile Elevated Work Platform's with manufacture tie off points.

Personal fall arrest systems should be inspected before each use and annually by a qualified person.

Powder-Actuated Tools
Only trained employees will be allowed to operate powder-actuated tools; training certification must be immediately available if requested. All powder- actuated tools will be tested daily before use and all defects discovered before or during use will be corrected. Tools will not be loaded until immediately before use. Loaded tools will not be left unattended.

Power Transmission Mechanical
Belts, gears, shafts, pulleys, sprockets, spindles, drums, flywheels, chains or other reciprocating, rotating or moving parts of equipment must be guarded if such parts are exposed to contact by employees or otherwise constitute a hazard. **No equipment may be used without guards in place.**

Protection of the Public
All company personnel are charged with aiding in the protection of the public including, as your job description dictates, installation and maintenance of signs, signals, lights, fences, guardrails, ramps, temporary sidewalks, barricades, overhead protection, etc. as may be necessary.

Radiation, Ionizing
Pertinent provisions of the Atomic Energy Commission's *Standards for Protection Against Radiation (10* CFR Part 20) relating to protection against occupational radiation exposure, will apply. Persons using radioactive materials or x-rays will be specially trained, or licensed if required.

Railings

A standard railing will consist of top rail, intermediate rail, toeboard and posts, and have a vertical height of approximately 42 inches from upper surface of top rail to floor, platform, etc. The top rail of a railing will be smooth-surfaced, with strength to withstand at least 200 pounds. The intermediate rail will be approximately halfway between top rail and floor.

A stair railing will be of construction similar to a standard railing, but the vertical height will not be more than 34 inches nor less a-than 30 inches from upper surface of top rail to surface of tread in line with face of riser at forward edge of tread.

Respiratory Protection

In emergencies, or when feasible engineering or administrative controls are not effective in controlling toxic substances, approved respiratory equipment will be provided and used.

Respiratory protective devices will be approved for the hazardous material involved and extent and nature of work requirements and conditions. Employees required to use respiratory protective devices will be fitted thoroughly and trained in their use. Respiratory protective equipment will be inspected regularly and maintained in good condition.

Saws

AR portions of band saw blades will be enclosed or guarded, except for working portion of blades between bottom of guide rolls and table.

Portable, power-driven circular saws will be equipped with guards above and below the base plate *or shoe.*

The lower guard will cover the saw to depth of teeth, except for minimum arc required to allow proper retraction and contact with the work, and will automatically return to covering position when blade is removed from the work.

Radial saws will have an upper guard which completely encloses upper half of the saw blade. The sides of lower exposed portion of blade will be guarded by a device that will automatically adjust to the thickness of and remain in contact with material being cut. Radial saws used for ripping, must have non-kickback fingers or dogs. Radial saws will be installed so the cutting head will return to starting position when released by operator.

All swing or sliding cut-off saws will be provided with a hood that will completely enclose the upper half of the saw.

Limit stops will be provided to prevent swing or sliding type cut-off saws from extending beyond the front or back edges of the table.

Each swing or sliding cut-off saw will be provided with an effective device to return the saw automatically to the back of table when released at any point of its travel.

Inverted sliding cut-off saws will be provided with a hood that will cover the part of the saw that protrudes above top of the table or material being cut.

Circular table saws will have a hood over the portion of the saw above the table mounted so that the hood will automatically adjust itself to the thickness of and remain in contact with the material being cut.

Circular table saws will have a spreader aligned with the blade, spaced no more than 1/2 inch behind the largest blade mounted in the saw. Circular table saws used for ripping will have non- kickback fingers or dogs. Feed rolls and blades of self-feed circular saws will be protected by a hood or guard to prevent the hands of the operator from coming into contact with inrunning rolls at any time.

3G employees are required to use SawStop tables saws. Trade Partners may use any brand of table saw, as long as all proper manufacturer guarding is in place.

Scaffolds (General)

****Mobile and Non-Masonry Scaffolds shall not be used for long-term storage of materials. Materials shall not be stored on scaffolds or runways in excess of supplies needed for immediate operations.**

Masonry Scaffolds must comply with 1926.450 through 1926.454.
-Materials to be installed, may be staged on the scaffold up to 48 hours prior to the work being put in place.**

Scaffolds will be capable of supporting 4 times maximum intended load and will be erected on sound, rigid footing, capable of carrying the maximum intended load without settling or displacement.

Guardrails and toeboards will be installed on all open sides and ends of platforms 6 feet or greater above ground or floor. Exceptions to this would be needle beam scaffolds and floats, which require the use of safety belts. Scaffolds 4 feet to 10 feet in height, with a minimum dimension in either direction of less than 43 inches, will have standard guardrails installed on all sides and ends. Guardrails made of lumber, not less than 2 x 4 inches (or equivalent) approximately 42 inches high, with a midrail of 1 x 6 inch lumber (or equivalent)

There will be a screen with maximum 1/2 inch openings between toeboards and guardrail, where persons are required to work or pass under scaffolds. Planking will be Scaffold Grade, or equivalent, as recognized by approved grading rules for the species of wood used. Overlap scaffold planking a minimum of 12 inches or secure from movement.

Scaffold planks will extend over end supports not less than 6 inches and not more than 12 inches. Scaffolding and accessories with defective parts will be immediately replaced or repaired.

No portable step-up scaffolds allowed to be used as a working platform on **ANY** 3G project.

Scaffolds used for storage must be labeled:
"Material Storage Only. - Capacity ____lbs. - DO NOT EXCEED"

Scaffolds (Mobile)
Platforms will be tightly planked with full width of scaffold, except for necessary entrance openings. Platforms will be secured in place, and toe boards, will be installed at all open sides and ends on scaffolds more than 6 feet above ground or floor. Toeboards will be a minimum of 4 inches in height. Where persons are required to work or pass under scaffolds, install wire mesh between toeboard and guardrail.

No portable step-up scaffolds allowed to be used as a working platform on **ANY** 3G project.

Scaffolds used for storage must be labeled:
"Material Storage Only. - Capacity ____lbs. - DO NOT EXCEED"

Scaffolds (Swinging)
On suspension scaffolds designed for a working load of 500 pounds, no more than two persons 'will be permitted to work at one time. On suspension scaffolds with a working load of 750 pounds, no more than three persons may work at one time. Each employee will wear an approved safety belt or harness attached to a lifeline. The lifeline will be securely attached to substantial members of the structure (not scaffold), or to secure rigged lines, which will

safely suspend employee in case of fall.

Scaffolds (Tubular Welded Frame)
Scaffolds will be properly braced by cross bracing or diagonal braces, or both, for securing vertical members together laterally. Cross braces will be of such length as will automatically square and align vertical members so erected scaffold is plumb, square and rigid. AU brace connections will be made secure.

Signs
For the protection of all, warning signs such as 'No Smoking,' 'Keep Out,' "Eye Protection Required,' 'Out-of-Order - Do Not Use," and 'Authorized Personnel" will be posted. All employees will obey these directions and aid in maintaining the signs.

Silica
All employees subject to occupational exposures to respirable crystalline silica in construction work for exposures above 25 micrograms per cubic meter of air (25 $\mu g/m^3$) as an 8-hour time weighted average under any foreseeable conditions. Work must be performed in compliance with OSHA Standards 29 CFR Subpart R section 1926.1153, section 1910.1053, and with 3G Companies Written Silica Exposure Control Program.

Steel Erection
Steel erection shall be performed in accordance with OSHA Standards for Steel Erection (29 CFR Part 1926 Subpart R-Steel Erection), however any persons exposed to falls greater than 6' must be protected from fall hazards by OSHA approved methods including work performed by connectors.

Stairs
Flights of stairs having four or more risers will be equipped with standard stair railings or handrails as specified below. Stairways less than 44 inches wide with one side open must have at least one stair railing on the open side. Stairways less than 44 inches wide having both sides open must have one stair railing on each side. Stairways more than 44 inches wide but less than 88 inches wide must have one handrail on each enclosed side and one stair railing on each open side.

On all structures 20 feet or over in height, stairways, ladders or ramps will be provided. Rise height and tread width will be uniform throughout any flight of stairs.

Storage
All materials stored in tiers will be secured to prevent sliding, falling or collapse. Aisles and passageways will be kept clear and in good repair. Stored materials will not obstruct exits. Materials will be sorted with due regard to fire characteristics.

Stretch and Flex: Daily stretch & flex should be performed by **ALL** 3G employees at the beginning of each workday, in accordance with the Graham stretch & flex visual aid. (see Appendix D)

Toilets
Toilets will be provided according to the following: 20 or fewer persons - one facility; 20 or more person's one toilet seat and one urinal per 40 persons; 200 or more persons - one toilet seat and one urinal per 50 persons. A minimum of one female restroom will be provided on ALL projects. Remember to provide facilities with locks for female employees.

Wall Openings
Wall openings, from which there is a drop of more than 4 feet and the bottom of opening is less than 3 feet above working surface, will be guarded. When the height and placement of

the opening in relation to the working surface is such that a standard rail or intermediate rail will effectively reduce the danger of failing, one or both will be provided. The bottom of a wall opening, which is less than 4 inches above the working surface, will be protected by a standard toeboard or an enclosing screen.

Welding, Cutting and Heating

Proper precautions (isolating welding and cutting, removing fire hazards from the vicinity, providing a fire watch, etc.) for fire prevention will be taken in areas where welding or other "hot work' is being done. No welding, cutting or heating will be done where the application of flammable paints, or presence of other flammable compounds, or heavy dust concentrations, creates a fire hazard. Equip torches with anti-flashback devices.

Arc welding and cutting operations will be shielded by noncombustible or flameproof shields to protect employees from direct arc rays.

When electrode holders are left unattended, electrodes will be removed and holder will be placed or protected so they cannot make electrical contact. All arc welding and cutting cables will be completely insulated. There will be no repairs or splices within 10 feet of electrode holder, except where splices are insulated equal to the insulation of the cable. Defective-cable will be repaired or replaced.

Fuel gas and oxygen hose must be easily distinguishable and not interchangeable. Inspect hoses at beginning of each shift and repair or replace if defective.

General mechanical or local exhaust ventilation or airline respirators will be provided, as required, when welding, cutting or heating hazardous materials or in confined spaces. Always wear approved tinted eye protection when welding or when in areas where welding is being done.

Wire Ropes, Chains, Ropes and Other Rigging Equipment

Wire ropes, chains, ropes and other rigging equipment will be inspected prior to use and as necessary during use to assure their safety. Remove defective-rigging equipment from service immediately. All rigging shall have legible capacity tags.

Woodworking Machinery

All fixed power-driven woodworking tools will be provided with a disconnect switch that can be either locked or toggled in the off position.

EMERGENCY ACTION PLANS

Each project shall have a written Emergency Action Plan which includes, but is not limited to, the following:

FIRE EMERGENCY PROCEDURE

1. The foreman will take charge until the Superintendent or someone of authority arrives.
2. Immediately notify the Fire Department of situation, location and type of fire. At this point all communication systems will be limited to emergency use only. Notify the office.
3. The person in authority at the scene will designate someone to meet the Fire Department and direct them to the scene.
4. Workmen will fight the fire with the best means available until the Fire Department arrives. In cases of heavy smoke or fumes, everyone will be evacuated. The Fire Department will take over on arrival.
5. It is our moral and legal responsibility to do whatever we can to put out the fire while it is small. In doing so, do not risk injury to yourself or fellow workers.

INJURY EMERGENCY PROCEDURES

1. The foreman will take charge until the Superintendent or someone of authority arrives.
2. Immediately notify the ambulance service or medical facility of the location, type of accident, number of injured people, and any apparent need of rescue equipment. At this point, all communication systems will be limited to emergency use only. Notify the office.
3. The person in authority will designate someone to meet the ambulance and direct them to the scene and block off the area to authorized personnel only.
4. Emergency first aid will be administered immediately. The injured person is not to be moved unless further injury is imminent.
5. Foremen are to keep all men away from the scene and to continue normal activities. They will remain alert for any requests for assistance.
6. Notify the Safety Director and Field Operation Manager

INCIDENT/ACCIDENT INVESTIGATION

- For all injuries or near-misses, Graham is to be notified **immediately**. Copies of ALL accident reports must be filed with Graham **immediately**.
- It will be each Contractor's responsibility to complete the First Report of Injury for their employees and to transmit copies of these reports immediately to Graham who will transmit copies to the claims department immediately. Any accident or incident resulting in a lost-time injury, fatality, damage to property or equipment exceeding U.S. $1,000, a serious "near-misses" or the recognition of a potential hazard to health and environment is to be investigated by a committee comprised of the following, as appointed by the Project Manager:
    - The Project Construction Manager, the Project Safety Representative, and Contractor's Supervisor or anyone familiar with the practices involved in the incident who can contribute to its analysis and make recommendations for action to prevent a reoccurrence. The investigation shall begin promptly after the incident. Results of the investigation and recommendations for preventive action shall be documented within five (5) workdays of the incident. The occurrences are also to be discussed at the regular or special safety meetings. This investigation and report shall be made immediately, but release may await any similar investigation and reports required by governmental

regulations. Graham shall also review first aid injuries to establish trends and practices that deviate from work standards and shall report and take corrective actions.

ACCIDENT REPORTING PROCEDURES

- For all fatalities, cases requiring hospitalization, OSHA Recordable events, possible lost-time injuries, or First Aid Injuries, Graham are to be notified **immediately**. Graham will immediately notify the Insurance Carrier's Claim Representative of all accidents and will immediately forward Employer's First Report of Injury Forms, General Liability Loss Notice Forms, subsequent inquiries or correspondence received relative to the matter, including Court Summons or other legal documents, to the Claim Representative. Copies of ALL accident reports must be filed with the 3G Companies Safety Director immediately.

SEVERE WEATHER

The following procedures are intended to prepare the project site in the event of severe weather conditions. Since severe weather may be reasonably anticipated to occur during the duration of the project, yet without significant advance warning, all work activities and project site conditions must be planned with a concern for emergency preparations.

- Each Contractor having on-site generators which are fuel-powered are requested to notify Graham of the numbers and wattage. Generators may be needed to provide temporary power for rescue or clean-up activities.
- All materials shall be secured to prevent them from becoming airborne during high winds. Particular attention needs to be given to picking up scrap materials and hauling or covering trash containers.
- Crawler and mobile cranes shall have booms lowered at the end of the shift. Cranes not capable of lowering booms shall be permitted to weathervane or free swing. Check to assure that swinging booms will not contact other objects such as power lines, structures, etc.
- The distances and rules for lightning strikes are as follows:
    a. If lightning is present within 15 miles of the jobsite, no work shall be completed under or around steel unless the building is fully enclosed.
    b. If lightning is within 10 miles, all outside lifts are to be grounded and site personnel are to stand down for 30 minutes from when the last strike occurred within a 10-mile radius.
    c. If lightning is within a 5-mile radius, all outside work is to be shut down for 30 minutes from when the last strike occurred within a 5-mile radius.
    d. Trade partners can follow their own policies if their policy is more stringent

ENVIRONMENTAL – ASBESTOS

- Occupational Safety and Health Administration (OSHA) regulations have been promulgated to protect workers from exposure to airborne asbestos fibers. Under the Asbestos Control and Licensing Act, a Contractor must be licensed by the Department of Labor and the State in which the work is being performed in order to remove asbestos.
- If a Contractor believes he has encountered asbestos in the normal course of his work, he is to stop work immediately and notify a Graham supervisor. He shall not resume work in that area until Graham notifies the Contractor that the area has been inspected and determined to be Asbestos free.

DISCIPLINARY PROCEDURES

For Violations of Safety Rules and Regulations

EMPLOYEES

1.) First violation:	Re-instruction of proper procedure and a verbal warning from job foremen or superintendent.
2.) Second violation:	Written warning from superintendent & sent home for the day; copies to the employee and employee's file.
3.) Third violation:	Termination of employment

TRADE PARTNERS AND SUPPLIERS

1.) First violation:	Re-instruction of proper procedure and a verbal warning from job foremen or superintendent.
2.) Second violation:	Written warning from superintendent & sent home for the day; copies to the employee and employee's office.
3.) Third violation:	Permanent removal from construction site

Immediate removal for egregious offenses or unprofessional conduct is at the Superintendent's discretion

Zero Tolerance Items

The following items are zero tolerance and will result in immediate removal of the individual who committed the act and may include their foreman/supervisor.

1. If an individual is caught committing workplace violence or threatening workplace violence including but not limited too:
    i. Fighting
    ii. Harassment

2. If an individual is caught riding in the back of a truck, bucket or forks of a Skid Loader, lull or other piece of equipment not intended for the transportation of individuals.

3. Intentional use of a tool/equipment without a guard

4. If an individual is not tied off above 6' and willfully exposes themselves to a fall hazard. For example, not tied off on a roof or other area deemed mandatory tie off area

5. If an individual posts ANYTHING to social media of the project without permission from 3G Companies.

LIGHT/MODIFIED DUTY PROGRAM

It is the intention of 3G COMPANIES to provide employees who have sustained work-related injuries with the opportunity to return or remain on the regular payroll during periods of partial incapacity resulting from those injures.

Employees who may work in a limited capacity, but who are temporarily not capable of performing the full scope of their regular job duties, may receive temporary job assignment through the Light/Modified Duty Program.

Job assignments will be based on specific medical restrictions provided by licensed physicians. If work is available for the injured employee, and the physician requirements of such work do not violate any of the medical restrictions, the employee will be required to perform the job assignment.

JOBSITE SAFETY PLAN FOR:

Broadlawns Medical Center
Brain and Memory Center
3714 Ingersoll Ave
Des Moines, IA 50312

BUILDING WHAT'S IMPORTANT.

Table of Contents:

Project Information and Description	3
Emergency Onsite Contact Matrix	4-6
Jobsite Specific Safety Requirements	7-13
Jobsite Fall Protection Plan	14
Crane Use Permit	15
Daily Dig Permit	16
Hot Work Permit	17-18
Line Break Permit	19
Confined Space Entry Permit	20

Project Information and Description

The project consists of the renovation of a 4,700 square foot building, the construction of a detached canopy and associated site and concrete improvements. The work includes, but is not limited to, HVAC, Electrical, Plumbing, Finish Upgrades and Roofing.

In the event of an emergency, dial 911 for ambulance service.

Minor first aid treatment is available in the 3G Companies jobsite trailer.
Weekly safety meetings will be completed throughout the duration of the project.
Accident report forms and "Near Miss" forms will be completed by the superintendent for incidents involving 3G Companies employees only.
Subcontractors will be required to provide the same for their employees.

For safety concerns and questions contact:

Emergency Onsite Contact Matrix:

Project Superintendent: Mark Mathes
Phone: 515-202-1255
Email: MMathes@3gcos.com
Project Engineer: Brittany Larson
Phone: 515-802-4021
Email: blarson@3GCos.com
Project Manager: Justin Fischer
Phone: 515-360-3964
Email: jfischer@3gcos.com
Project Coordinator: Kamisha Wallace
Phone: 515-204-5404
Email: KWallace@3gcos.com
Carpenter: Austin Clements
Phone: 515-270-2740
Email: aclements@3gcos.com
Project Owner on site contact: Brian Clark
Phone: 515-282-2622
Email: BMClark@Broadlawns.org
3G Companies Safety Director: Mike Berry
Phone: 515-710-9221
Email: mberry@3gcos.com
3G Companies Safety Hotline:
Phone: 515-645-9504
Email: safety@3gcos.com

JOBSITE SPECIFIC REQUIREMENTS

SCAFFOLD REQUIREMENTS

a. All scaffolds (fixed, mobile, baker) shall be inspected on a daily basis prior to use; Mandatory use of a GREEN tag signed/dated by a competent person prior to use and a RED tag at the end of each day when scaffold not used; The RED tag at the end of the day ensure that the competent person must inspect at the beginning the following day before his workers start.

b. ALL wheels must be locked in place when using a mobile or baker scaffold

c. No riding on mobile scaffolds from one location to another

d. STILTS may be utilized on Graham projects only if the floor is free and ALL trash and debris

e. Scaffold systems above 6' are required to have guard rails (Upper and mid) as well as a toe board (Fixed and Mobile)

f. Never over load a scaffold system; know the capacity of the scaffold system and don't exceed 75% of its rated capacity

g. If guard rails are removed to receive material, the workers receiving the material SHALL have PFAS implemented and an anchorage point of at min 3600lbs horizontal.

h. ALL scaffold systems shall be erected and dissembled in accordance with the manufactures specifications and 29 CFR 1926.L; Any scaffolding not installed per specifications shall be the responsibility of the competent person and he/she shall be held accountable for the assembly/disassembly.

i. Scaffolds over 4 feet in height, having a minimum horizontal dimension in either direction of less than 45 inches, shall have standard guardrails installed on all open sides and ends of the platform. If standard guardrails are not feasible then personal fall arrest systems (harness/lanyard/anchor) shall be provided by the Contractor and utilized for fall protection.

j. 30Cross-braces will not be accepted as a means of egress or access to elevated surfaces

CONFINED SPACES

a. All Confined Space operations shall be in compliance with 29 CFR 1910.146 regulations.

b. Confined space entry procedures, training and testing shall be in accordance with OSHA 29CFR1910.146 and the owner's requirements.

c. Confined space is:

1. Large enough to allow an employee to enter and perform work…***and***…
2. Limited means of entry or exit. This means does the worker have to contort his/her body to enter the space…***and***
3. Not used for continuous or routine work. Meaning that the space is not a conditioned space

If ALL three (3) are YES, then the condition is a confined space

4. If there are any atmospheric hazards or other severe hazards in the Confined Space, the Confined Space is a Permitted Confined Space and a Supervisor, Entrant, and Attendant are required.
5. If entry is required, a Permit To Work must be completed first.

d. Keep running vehicles 10’ or greater from any confined space operations.
e. A trench at four (4’) feet is considered a confined space
f. Don’t enter a confined space until a risk assessment has been carried out by a competent person. Assess if the work can be accomplished without entry first.
g. Check for flammable or toxic gases and O2 content. Using gas monitoring device and check top, middle and bottom.

Lock Out/Tag Out Program

Objective:

The objective of this Lockout/Tagout (LOTO) policy is to establish procedures to protect employees from unexpected starting or activating machinery or systems while they are being repaired, serviced or installed. This program serves to:

- Establish a safe and positive means of shutting down machinery, equipment and systems.
- Prohibit unauthorized personnel or remote-control systems from starting machinery or equipment while it is being serviced, repaired or installed.
- Provide a secondary control system (tagout) when it is impossible to positively lockout the machinery, system or equipment.
- Establish responsibility for implementing and controlling lockout/tagout procedures.

Assignment of Responsibility:

- Project Superintendent is responsible for enforcing compliance with the procedures on their jobsite.
- Authorized employees are responsible for following established lockout/tagout procedures. An authorized employee is defined as a person who locks out or tags out machines or equipment to perform servicing, installation or maintenance on that machine, system or equipment. An affected employee becomes an authorized employee when that employee's duties include performing servicing, installation or maintenance covered under 1910.147, The Control of Hazardous Energy (lockout/tagout).
- Affected employees (all employees in the facility or job site) are responsible for ensuring they do not attempt to restart or re-energize machines, systems or equipment that are locked out or tagged out. An affected employee is defined as a person whose job requires him/her to operate or use a machine, system or equipment on which servicing, installation or maintenance is being performed under lockout or tagout, or whose job requires him/her to work in an area in which such servicing, installation or maintenance is being performed.

Procedures:
The ensuing items are to be followed to ensure both compliance with the OSHA Control of Hazardous Energy Standard and the safety of our employees.

Preparation for Lockout or Tagout:
Employees who are required to utilize the lockout/tagout procedure must be knowledgeable of the different energy sources and the proper sequence of shutting off or disconnecting energy means. The four types of energy sources are:

- Electrical (most common).
- Hydraulic or pneumatic.
- Fluids and gases; and
- Mechanical (including gravity).

More than one energy source may be utilized on some equipment and the proper procedure must be followed to identify energy sources and lockout/tagout accordingly.

Electrical:
- Machinery
    - Shut off the power at machine and disconnect.
    - Disconnecting means must be locked and tagged.
    - Press the start button to verify that the correct systems are locked out.
    - All controls must be returned to their safest position.
    - Points to remember:
        1. If a machine or piece of equipment contains capacitors, they must be drained of stored energy.
        2. Possible disconnecting means include the power cord, power panels (look for primary and secondary voltage), breakers, the operator's station, motor circuit, relays, limit switches, and electrical interlocks.
        3. Some equipment may have a motor isolating shut-off and a control isolating shut-off.
        4. If the electrical energy is disconnected by simply unplugging the power cord, the cord must be kept under the control of the authorized employee, or the plug end of the cord must be locked out or tagged out.

- Electrical Panels

- Electrical panels shall be locked out if able – a sign or sticker shall be placed on panel cover stating the name and contact information for the person locking out the specific breaker.
- If breakers within a panel are unable to be locked out, they shall be tagged with the name and contact information of the person locking out the particular breaker.
- If panels are within a common space or are shared with facility live utilities, panels must be locked at all times and labeled with controlling contractors (electrician or facilities) contact info and name. This should be discussed at Owner Expectation Meeting to ensure both parties are aware of the process.
    - Electrician, Graham Supervisor, and facility maintenance staff (if applicable) shall have a key to access panels.

Hydraulic/Pneumatic:

- Shut off all energy sources (pumps and compressors). If the pumps and compressors supply energy to more than one piece of equipment, lockout or tagout the valve supplying energy to the piece of equipment being serviced.
- Stored pressure from hydraulic/pneumatic lines shall be drained/bled when release of stored energy could cause injury to employees.
- Make sure controls are returned to their safest position (off, stop, standby, etc.).

Fluids and Gases:

- Identify the type of fluid or gas and the necessary personal protective equipment.
- Close valves to prevent flow, and lockout/tagout.
- Determine the isolating device, then close and lockout/tagout.
- Drain and bleed lines to zero energy state.
- Some systems may have electrically controlled valves. If so, they must be shut off and locked/tagged out.
- Check for zero energy state at the equipment.

Mechanical Energy:

Mechanical energy includes gravity activation, energy stored in springs, etc.

- Block out or use die ram safety chain.
- Lockout or tagout safety device.
- Shut off, lockout or tagout electrical system.
- Check for zero energy state.
- Return controls to safest position.

Release from Lockout/Tagout:

- Inspection: Make certain the work is completed and inventory the tools and equipment that were used.
- Clean-up: Remove all towels, rags, work-aids, etc.
- Replace guards: Replace all guards possible. Sometimes a particular guard may have to be left off until the start sequence is over due to possible adjustments. However, all other guards should be put back into place.
- Check controls: All controls should be in their safest position.
- The work area should be checked to ensure that all employees have been safely positioned or removed and notified that the lockout/tagout devices are being removed.
- Remove locks/tags. Only the employee that installed the lock/tag may remove the lock and/or tag.

Service, Installation or Maintenance Involving More than One Person:
When servicing and/or maintenance is performed by more than one person, each authorized employee shall place their own lock/tag, verify isolation, and maintain exclusive control of their locking device to prevent accidental reactivation. This shall be done by utilizing multiple lock scissor clamps if the equipment is capable of being locked out. If the equipment cannot be locked out, then each authorized employee must place his tag on the equipment.

Removal of an Authorized Employee's Lockout/Tagout by the Company:
Each job site must develop written emergency procedures that comply with 1910.147(e)(3) to be utilized at that location. Emergency procedures for removing lockout/tagout should include the following:

- Verification by employer that the authorized employee who applied the device is not in the facility.
- Make reasonable efforts to advise the employee that his/her device has been removed. (This can be done when he/she returns to the facility/jobsite).
- Ensure that the authorized employee has this knowledge before he/she resumes work at the facility/jobsite.

Shift or Personnel Changes:
Each facility/jobsite must develop written procedures based on specific needs and capabilities. Each procedure must specify how the continuity of lockout or tagout protection will be ensured at all times. See 1910.147(e)(4).

Procedures for Outside Personnel/Contractors:

Outside personnel/contractors shall be advised that Graham Construction has and enforces the use of lockout/tagout procedures. They will be informed of the use of locks and tags and notified about the prohibition of attempts to restart or re-energize machines or equipment that are locked out or tagged out.

The company will obtain information from the outside personnel/contractor about their lockout/tagout procedures, if any, and advice affected employees of this information.

Training and Communication:

Each authorized employee who will be utilizing the lockout/tagout procedure will be trained in the recognition of applicable hazardous energy sources, type and magnitude of energy available in the workplace, and the methods and means necessary for energy isolation and control.

Each affected employee (all employees other than authorized employees utilizing the lockout/tagout procedure) shall be instructed in the purpose and use of the lockout/tagout procedure, and the prohibition of attempts to restart or re-energize machines or equipment that are locked out or tagged out.

Jobsite Specific Fall Protection Plan
Broadlawns Medical Center - Brain and Memory Center

11/04/2026 – 05/19/2027

All workers are to follow, obey, and enforce the OSHA 1926 Requirements. 3G Companies will provide a safe working environment and will not tolerate workers in violation of the safety requirements.

Site excavations:
- Orange snow fence shall be installed around open excavations greater than 6 feet in depth.
- Proper slope or benching of soil must be maintained.

Situations when exposures to falls exceed 6':
- Employees shall be tied off using a full body harness and lanyard 100% of the time while exposed to any falls greater than 6'during demolition and construction unless a scaffold or guardrail system is in place.
- While working from a snorkel lift or aerial lift, all workers on the lifts will be tied off using a full body harness and SRL-P (Class 2) 100% of the time. Employees shall not enter or exit the equipment until the basket is on the ground.
- Ladders will be used for access and shall be properly secured and extend 36" above the point of access.
- Guardrails on the scaffold shall remain in place throughout the duration of the project while erected. Any employee that exits the perimeter of the guardrail and is exposed to a potential fall of 6' or greater shall be tied off using a full body harness and SRL (Class 2) 100% of the time.
- Roofing work on the low slope roof will be divided into (8) irregularly shaped roofs with non-rectangular shaped sections in order to limit the size of the roof where the safety monitoring system can be used. The roof will be divided into sub-areas which are less than 50 feet in width. Fall protection will be used at leading edge work.

Any and all other areas with unprotected sides or edges, 6' above the lower platform or area will require guardrails or personal fall arrest systems.

All activities will be performed in compliance with the Jobsite Specific Fall Protection Plan procedures stated above and within ALL OSHA regulations.

FALL PROTECTION

3G Companies will provide and install all fall protection systems required for an employee, before that employee begins the work that necessitates the fall protection.

I. Scope: This written fall protection plan applies to all 3G Companies employees exposed to fall hazards 6 feet or more on Graham locations or customer sites. Graham will follow customer requirements if they are more stringent. For example, if customer requirements require fall protection at 4 feet. The site-specific fall protection plan will be developed by a qualified person designated by 3G Companies.

Guardrail Systems

Guardrail systems and their use shall comply with the following provisions, as listed in 29 CFR 1926.502(b):

1. Top edge height of top rails or equivalent guardrail system members shall be 42 inches plus or minus three inches above the walkway/working level. When conditions warrant, the height of the top edge may exceed 45 inches providing the guardrail system meets all other criteria of this paragraph.

2. Midrails, screens, mesh, intermediate vertical members or equivalent intermediate structural members shall be installed between the top edge of the guardrail system and the walkway/working surface when there is no wall or parapet wall at least 21 inches high.

    a. Midrails, when used, shall be installed at a height midway between the top edge of the guardrail system and the walking/working level.
    b. Screens and mesh, when used, shall extend from the top rail to the walking/working level and along the entire opening between top rail supports.
    c. Intermediate members, when used between posts, shall be not more than 19 inches apart.
    d. Other structural members shall be installed such that there are no openings in the guardrail system that are more than 19 inches wide.

3. Guardrail systems shall be capable of withstanding, without failure, a force of at least 200 pounds applied within 2 inches of the top edge, in any outward or downward direction, at any point along the top edge.

4. When the 200-pound test load specified in paragraph 3 is applied in a downward direction, the top edge of the guardrail shall not deflect to a height less than 39 inches above the walking/working level.

5. Midrails, screens, mesh intermediate vertical members, solid panels and equivalent structural members shall be capable of withstanding, without failure, a force of at least 150 pounds applied in any downward or outward direction at any point along the midrail or other member.

6. Guardrail systems shall be so surfaced as to prevent injury to an employee from punctures or lacerations and to prevent snagging of clothing.

7. The ends of all top rails and midrails shall not overhang the terminal posts, except where such overhang does not constitute a projection hazard.

8. Steel banding and plastic bandings shall not be used as top rails or midrails.

9. Top rails and midrails shall be at least a quarter inch nominal diameter of thickness to prevent cuts and lacerations. If wire rope is used for top rails, it shall be flagged at not more than 6-foot intervals with high visibility materials.

10. When guardrail systems are used at hoisting areas, a chain, gate or removable guardrail section shall be placed across the access opening between the guardrail sections when hoisting operations are not taking place.

11. When guardrail systems are used at holes, they shall be erected on all unprotected sides or edges of the hole.

12. When guardrail systems are used around holes used for the passage of materials, the hole shall have not more than two sides provided with removable guardrail sections to allow the passage of materials. When the hole is not in use, it shall be closed over with a cover, or a guardrail system shall be provided along all unprotected sides and edges.

13. When guardrail systems are used around holes, which are used as points of access, they shall be provided with a gate or be so offset that a person cannot walk directly into the hole.

14. Guardrail systems used on ramps or runways shall be erected along each unprotected side or edge.

Safety Net Systems

Safety net systems and their use shall comply with the following provisions, as listed in 29 CFR 1926.502(c):

1. Safety nets shall be installed as close as practical under the walking/working surface on which employees are working, but in no case more than 30 feet below such level. When nets are used on bridges, the potential fall areas from the walking/working surface to the net shall be unobstructed.

2. Safety nets shall extend outward from the outermost projection of the work surface as follows:

Vertical Distance From Working Level To Horizontal Plane Of Net	**Minimum Required Horizontal Distance of Outer Edge of Net from The Edge of Working Surface**
Up to 5 feet	8 feet
From 5 to 10 feet	10 feet
More than 10 feet	13 feet

3. Safety nets shall be installed with sufficient clearance under them to prevent contact with the surface or structures below when subjected to an impact force equal to the drop test described next:

   Safety nets and safety net installation shall be drop tested at the jobsite after initial installation and before being used as a fall protection system, whenever relocated, after a major repair, and at a 6-month interval if left in one place. The drop test shall consist of a 400 pound bag of sand 30 to 32 inches in diameter when employees are exposed to fall hazards, but not less than 42 inches above the level.

4. Defective nets shall not be used. Safety nets shall be inspected at least once a week for wear, damage, and other deterioration. Defective components shall be removed from

service. Safety nets shall also be inspected after any occurrence, which could affect the integrity of the safety net system.

5. Materials, scrap pieces, equipment and tools which have fallen into the safety net shall be removed a soon as possible from the net and at least before the next work shift.

6. The maximum size for each safety net mesh opening shall not exceed 36 square inches nor be longer than 6 inches on any side and the opening measured center to center of mesh ropes or webbing, shall not be longer than 6 inches. All mesh crossings shall be secured to prevent enlargement of the mesh opening.

7. Each safety net shall have a border rope for webbing with a minimum breaking strength of 5,000 pounds.

8. Connections between safety net panels shall be as strong as integral net components and shall be spaced not more than 6 inches apart.

Personal Fall Arrest Systems

Personal fall arrest systems shall and their use shall comply with the provision set forth. BODY BELTS ARE NOT ACCEPTABLE AS PART OF A PERSONAL FALL ARREST SYSTEM. *Only a full body harness shall be used for personal fall arrest systems.* Personal fall arrest systems and their use shall comply with the new ANSI Z359 Safety Requirements effective August 1, 2023.

Personal fall arrest systems should be inspected before each use and annually by a qualified person.

SRL (Class 1) For use with anchors at or above the dorsal D-ring. Maximum allowable freefall not to exceed 2 ft.
SRL LE (Class 2) For use with anchors above or below the dorsal D-ring. Maximum allowable freefall not to exceed 6 ft.

1. Connectors shall be drop forged, pressed, or formed steel, or made of equivalent materials.

2. Connectors shall have a corrosion resistant finish, and all surfaces and edges shall be smooth to prevent damage to interfacing parts of the system.

3. D-rings and snap hooks shall have a minimum tensile strength of 5,000 pounds. D-rings and snap hooks shall be proof tested to a minimum tensile load of 3,600 pounds without cracking, breaking or taking permanent deformation.

4. Snap hooks shall be sized to be compatible with the member to which they are connected. Only locking snap hooks shall be used.

5. On suspended scaffolds or similar work platforms with horizontal lifelines, which may become vertical lifelines, the devices used to connect to horizontal lifelines shall be capable of locking in both directions on the lifeline.

6. SRL-P (Class 2) required for the operation of all Mobile Elevated Work Platform's with manufacture tie off points.

7. Horizontal lifelines shall be designed, installed and used under the supervision of a qualified person, as part of a complete personal fall arrest system, which maintains a safety factor of at least two.

8. Lanyards and vertical lifelines shall have a minimum breaking strength of 5,000 pounds.

9. During the construction of elevator shafts, two employees may be attached to the same lifeline in the hoist way, provided both employees are working atop a false car that is equipped with guardrails, the strength of the lifeline is 10,000 pounds and all other criteria specified in the paragraph have been met.

10. Lifelines shall be protected against being cut or abraded.

11. Self-retracting lifelines and lanyards which automatically limit free fall distance to 2 feet or less shall be capable of sustaining a minimum tensile load of 3,600 pounds applied to the device with the lifeline or lanyard in the full extended position. Utilize an anchor point directly above the person to prevent a swing fall situation.

12. Ropes and straps used in lanyards, lifelines and strength components of body harnesses shall be made from synthetic fibers.

13. Anchorages used for attachments of personal fall arrest equipment shall be independent of any anchorage being used to support or suspend platforms and capable of supporting at least 5,000 pounds per employee attached, or shall be designed, installed, and used as follows:

    a. As part of a complete personal fall arrest system which maintains a safety factor of at least two.

    b. Under the supervision of a qualified person.
    c. If an anchor point has been used for material handling, it cannot be used for a fall protection anchor point.

14. Personal fall arrest systems, when stopping a fall shall:

    a. Limit maximum arresting force on an employee to 1,800 pounds when used with a body harness.

    b. Be rigged such that an employee can neither freefall more than 6 feet nor contact any lower level.

    c. Bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3.5 feet.

    d. Have sufficient strength to withstand twice the potential impact energy of an employee free falling from a distance of 6 feet or the free fall distance permitted by the system, whichever is less.

NOTE: If the personal fall arrest system meets this criteria and protocol, and if an employee having a combined personal and tool weight of less than 310 pounds and is using the system, the system will be considered to be in compliance. If an employee has a combined tool and body weight of 310 pounds or more and uses the system, then the employer must appropriately modify the criteria and protocols to provide proper protection for such heavier weights.

15. The attachment point of the body harness shall be located in center of the wearer's back near shoulder level or above wearer's head. When hooking the snap hook of the lanyard to the harness d-ring a visual confirmation must be done to assure the proper connection between the lanyard and harness.

16. Harnesses and components shall be used only for employee protection and not to hoist materials.

17. Personal fall arrest systems and components subjected to impact loading shall be immediately removed from service and shall not be used again for employee protection until inspected and determined by a competent person to be undamaged and suitable for reuse.

18. The employer shall provide for prompt rescue of employees in the event of a fall or shall assure that employees are able to rescue themselves. The Safety Department shall be notified prior to starting work if a fall rescue cannot be accomplished by using the onsite aerial lifts/ladders. This will allow the Safety Department to be involved and get a plan in place before the work starts.

19. Personal fall arrest systems shall be inspected prior to each use using our lanyard harness inspection sheets.

20. Personal fall arrest systems shall not be attached to guardrail systems, nor shall they be attached to hoists.

Covers

Covers for holes in floors, roofs, and other walking/working surfaces shall meet the following requirements:

1. Covers located in roadways and vehicular aisles shall be capable of supporting without failure at least twice the maximum axle load of the largest vehicle expected to cross the cover.

2. All other covers shall be capable of supporting, without failure, at least twice the weight of employee, equipment and materials that may be imposed on the cover at one time.

3. All covers shall be secured when installed to prevent accidental displacement by the wind, equipment or employees.

4. All covers shall be color-coded, or they shall be marked with the word "HOLE" or "COVER" to provide warning of the hazard.

NOTE: This provision does not apply to cast iron manhole covers or steel grates used on street or roadways.

Rescue Plan

When utilizing fall protection equipment on the job site, employees shall make other employees aware of their location so that if a fall incident occurs, there would be someone to summons help. The notified employee needs to be aware that fall protection equipment is in use and must check on the individual periodically.

3G Companies will make available safety relief straps (steps) for all company harnesses.

To rescue an individual from a fall incident, we must utilize the onsite aerial lifts or ladders.

The onsite 3G Companies Superintendent and Project Manager shall be notified prior to starting work if a fall rescue cannot be accomplished by using the onsite aerial lifts/ladders. This will allow the 3G Companies Superintendent and Project Manager to be involved and get a plan in place before the work starts.

All injuries or near misses resulting from a fall will be investigated to determine the root cause.

WORK RULES – Drug and Alcohol Policy

A. Legal Drugs

1. Prescription Drugs: An employee may bring to work and take a prescription drug during work hours only if the drug has been prescribed for the employee by a physician or other authorized prescriber and only if the drug is taken in accordance with the prescriber's directions. All prescription drugs must be kept in the container in which they were received from the pharmacy or other dispenser.

2. Over-the Counter Medications: An employee may bring to work an over-the-counter drug during work hours only if the drug is used for its intended purposes and in accordance with package directions and any supplemental directions of the employee's physician. All over-the-counter drugs must be kept in the original container (including the box which may contain the appropriate warnings in which they were received).

3. Notification: An employee must notify the appropriate company official whenever he or she is using a prescription or over-the-counter medication which potentially may affect safety or work-performance. In making this determination, the employee should rely on the warnings or cautions that are received with the particular legal drug. The Company does not seek information on all drugs that an individual may be taking, but only those where there is an indication that the drug may affect performance, or there is a caution that one should not engage in certain activities which are part of the employee's job duties while taking the drug. The Company reserves the right to take appropriate action (including relieving employee from work) if the use of the drug is negatively impairing or is deemed likely to impair the employee's faculties or work performance.

4. Abuse: Abuse of legal drugs will not be tolerated, and will be dealt with in the same manner as the illegal use of a controlled substance.

B. Drug and/or Alcohol Possession, Transfer or Use, Other Than Use Detected by a Drug and/or Alcohol Test

Except as otherwise provided in Rule A above, an employee bringing or attempting to bring onto the Company's premises or property, or to a company worksite, having possession of, using, consuming, selling, transferring, or attempting to sell or transfer or being under the influence of any alcoholic beverage or any prescription drug or any form of controlled substance, (as defined in this policy to include a substance which is not a controlled substance but which by color, shape, size, markings, and other aspects of dosage unit appearance, and packaging or other factors, appears to be or resembles a controlled substance), while on Company business or at any time during the hours between the beginning and ending of the employee's work day, whether or not on duty, and whether or not on Company business or property, is guilty of misconduct. Such employee is subject to discipline, including termination or suspension without pay, even for the first offense.

C. Impairment During Work Hours

1. It is our intent that an employee whose faculties appear to be negatively impaired during work hours will not be allowed to work, regardless of the cause.

2. An employee whose faculties are impaired during work hours due to the effects of the use of alcohol and/or illegal use of a controlled substance including the abuse of a legal drug is subject to discipline up to and including termination, even for the first offense. However, if a drug or alcohol test is done, discipline will be imposed only in accordance with the guidelines outlined below in (E).

C2. Suspected Impairment or Reasonable Suspicion

3. All employees, trade partners, or clients are welcome and authorized to report any suspected employee impairment while on Company business or at any time during the hours between the beginning and ending of the employee's work day, whether or not on duty, and whether or not on Company business or property. Employees may report these concerns to the safety director via phone. If the employee wishes to remain anonymous in their report, they should contact Human Resources to share their concerns. No employee will be disciplined or retaliated against for raising a good-faith concern.

All employees with leadership responsibilities will be required to take annual alcohol and drug suspension training to be able to identify signs of impairment.

D. Prospective Employee Drug Testing

Prospective employees will be required to undergo a drug test. (see "**Prospective Employee Substance Abuse Screening Program"** below).

Prospective employees will be required to undergo a drug test as a condition of continued employment or hiring. (see "**Prospective Employee Substance Abuse Screening Program"** below). A negative drug test result is a condition of employment. If a negative drug test is not met, the prospective employee may be deemed "not qualified" for the position offered. A prospective employee's positive drug test result may result in a withdrawal of any offer of employment.

A prospective employee's positive drug test result, or the refusal of the prospective employee to provide a testing sample, does not prevent the prospective employee from later initiating another inquiry with the Company.

E. Employee Discipline in Connection with a Drug or Alcohol Test

Employees may be required to undergo a drug or alcohol test under certain circumstances (see "Employee Substance Abuse Screening Program" below). The following is a list of uniform requirements for action the Company will take against the employee upon receipt of a confirmed positive drug or alcohol test result, or upon the employee's refusal to submit to such test. Any action taken against the employee is based only on the results of the drug or alcohol test.

1. Refusal to Submit to a Drug or Alcohol Test. An employee's refusal to submit to a drug or alcohol test when requested to do so will subject the employee to termination.

2. First Positive Drug or Alcohol Test Result.

a. An employee's first confirmed positive drug test will result in the employee's termination. The employee may apply for re-employment after 30 days. The company will contest any claim for unemployment benefits.

b. An employee's first confirmed positive alcohol test will result in a one-time rehabilitation. Upon the Company's receipt of a confirmed positive alcohol test result, employees are required to enroll in an approved rehabilitation treatment, or counseling program. The program may include additional alcohol testing. Participation and successful completion of the program is a condition of continued employment with the Company. Failure to comply with these requirements will result in the employee's termination. This one-time rehabilitation program only applies if all of the following requirements are met:

i. The rehabilitation program is required for positive alcohol tests;
ii. The employee testing positive for alcohol must have been employed by the Company for at least 12 of the previous 18 months, from the date of testing;
iii. The employee's positive test for alcohol must be at a level of at least .04 grams of alcohol per two hundred ten liters of breath, or its equivalent;
iv. The employee must agree to the treatment; and
v. The employee must not have previously violated the Company's substance abuse policy.

3. Second Offense Provision. If an employee who has previously tested positive under the Company's alcohol testing program tests positive under an alcohol test performed on a second occasion, the employee will be terminated.

4. Pre-Result Suspension. Prior to the Company receiving the results of the employee's alcohol and/or drug test for "reasonable suspicion," the employee's employment with the Company will be suspended without pay, pending the outcome of the test. If the result of the test does not violate the terms of this written policy, the employee will be reinstated, with back pay and interest, as provided under Iowa law.

DRUG AND ALCOHOL TESTING PROGRAMS

A. Prospective Employee (Pre-Employment) Substance Abuse Screening Program

1. Drug Testing

The Company will send all prospective employees to a third-party clinic to conduct pre-employment drug tests in a manner consistent with Iowa law. These tests designed to prevent hiring individuals who use controlled substances or who abuse legal drugs. The clinic will conduct a urine five-panel drug screen.

a. At the time of the collection of the sample, the clinic will have the candidate provide a medical history, which may be relevant to the drug test. Such information may include identification of prescription or nonprescription drugs currently or recently used or any other relevant medical information. The following is a list of drugs for which testing will be conducted:

- Marijuana (Including cannabinoids and THC derivatives. The Company has a "zero tolerance" for cannabinoids and has instructed its MRO that no explanation for the presence of this substance should be accepted);
- Barbiturates;
- Cocaine;
- Opiates (and their derivatives including morphine and codeine);
- Phencyclidine;
- Amphetamines (including methamphetamines);

To be considered qualified for employment with the Company, the candidate must receive a valid "negative" report on the drug screen. Anything other than a negative will be sent for further testing to a laboratory.

A negative drug test result is a condition of employment.

The presence of illicit drugs measured by urine analysis testing at the time of application or a conditional offer of employment is grounds for rejection or withdrawal of any conditional offer. Applicants who test positive for the presence of drugs will be informed via written email of that fact and will be given an opportunity to explain the positive result.

If a negative drug test result is not provided, the prospective employee will be deemed "not qualified," and either the application process will be terminated or any conditional offer of employment that has been extended will be withdrawn.

B. Employee (Current Employees) Substance Abuse Screening Program

1. A list of controlled substances to be tested for are listed in paragraph 1A on the previous page.

2. An active employee may be requested or required to submit to a drug and/or alcohol test under any of the following circumstances:

a. Reasonable Suspicion: A specific active employee may be required to submit to a drug or alcohol test if the Company has evidence that an employee is using or has used other drugs or alcohol in violation of the company's written policy. This evidence must be drawn from specific facts and reasonable inferences drawn from those facts in light of experience. Examples that might support such include the following:

- See C2 (Suspected Impairment or Reasonable Suspicion) for more information on reporting suspicion.
- observations made at work, such as direct observation of drug or alcohol use or the physical symptoms of being impaired by drug or alcohol use,
- abnormal conduct or erratic behavior while at work or a significant deterioration in work performance,
- a report, by a reliable and credible source, of drug or alcohol use,
- evidence that an individual has tampered with any drug or alcohol test during the individual's employment with the current employer,
- evidence that an employee has manufactured, sold, distributed, solicited, possessed, used, or transferred drug while working, or while on the employer's premises, or while operating the employer's vehicle, machinery, or equipment.
- After any safety incident.

b. Random Testing of Current Employees: Employees are subject to drug testing which is conducted on a periodic basis, without advance notice of the test to employees without individualized suspicion.

All employees are subject to unannounced, random testing, unless they are subject to "random testing" requirements of federal regulation, i.e. CDL Drivers.

- Selection of employees from the pool: It is our intent that the unannounced testing of current employees will be administered such that a percentage of our entire employee population scheduled to be at work at the time the testing is to be conducted and not excused from work prior to the time the testing is announced to employees will be tested quarterly. The pool excludes only those employees who are not subject to such testing or who are subject to "random testing" requirements of federal regulations i.e. CDL drivers. Employees who are in the pool all have an equal chance of selection, regardless of whether the employee has been selected or tested previously. We utilize, as required by law, a random selection process conducted by an independent third party to select the names of employees for random testing. Employees that have been randomly selected will be required to take a saliva test administered by a 3G representative. If this test comes back as positive or inconclusive, a second saliva test will be administrated. If the second saliva test is positive or inconclusive, the employee will be required to complete a drug test at 3G Companies' Occupational Health Clinic of choice by the end of the day. A negative drug test result is a condition of employment.

c. Rehabilitation Testing: The Company may require a current employee to undergo alcohol testing during or following completion of alcohol rehabilitation, without any prior notice that such a test will be conducted.

d. Workplace Accident Testing: The Company may require an employee to submit to an alcohol and/or drug test in conjunction with its investigation of any accident in the workplace which results in damage to property, including equipment, in an amount ("reasonably" estimated at the time of the accident) to exceed more than $1,000.00, or which results in an injury to any person (regardless of whether the injured person is an employee of the Company) unless the injury does not require medical treatment other than first aid. For purposes of this standard, where there is a death or where the condition of the individual is such that he or she may lose work time other than the day of the accident, was unconscious, or may have some restriction in work or motion, the standard of "requiring medical treatment" will be deemed to have been met. It should be emphasized that testing in conjunction with the investigation of a workplace accident is not limited to the individual who was injured.

e. Federal Laws/Regulations: The Company will conduct drug or alcohol testing as required by a federal law or regulation or by law enforcement.

C. Alcohol Testing

The Company has decided to conduct alcohol testing in an attempt to prevent employees from abusing alcohol. An alcohol concentration equal to or greater than .04 grams of alcohol per two hundred ten liters of breath (or its equivalent) is considered a positive alcohol test result and violates this policy.

Testing for violations of the Company's rules with regard to "alcohol" may be done through a "breath test" type standard rather than using other specimens, as is permitted by Iowa Code Section 730.5(7)(f)(2). It is the intent of the Company that this policy be construed in such a manner as to assure compliance with that statutory provision, including compliance with the provision that certain requirements governing alcohol screening devices, evidential breath testing devices and the qualifications for personnel administering both initial and confirmatory alcohol testing, "be consistent with regulations adopted as of January 1, 1999, by the United States Department of Transportation governing alcohol testing required to be conducted pursuant to the federal Omnibus Transportation Employee Testing Act of 1991." Those regulations are included in 49 CFR Part 40, Subparts C and D. A copy of the regulations is available for inspection during regular business hours at our corporate offices.

OSHA INSPECTIONS

- *A number of points to consider when dealing with OSHA are listed below.*

Harassment

- Federal or State compliance officers and state inspectors are not to be harassed, intimidated or abused.

Responsibilities

- Among other things, federal law requires employers to:

1. Provide a place of employment free of hazards, which may cause illness, injury or death to employees.
2. Comply with standards, rules, or regulations adopted by the U.S. Department of Labor.
3. Post notices, which inform employees of their rights and duties as defined by the OSHA Act.
4. Maintain records regarding injuries, accidents and site inspections.
5. Provide personal protective equipment as needed and required.
6. Provide required employee safety training.
7. Conduct periodic jobsite safety inspections.

Recordkeeping

- Each site must maintain records and logs of employee job-related injuries and illnesses. The required forms are:

A. Log of Occupational Injuries and Illnesses (OSHA Form 300).

1. Entries must be current within six working days from the time the employer is notified of the injury or illness.
2. The official log need not be maintained on-site but its location must be one that allows adherence to the six-day requirement. A copy of the log, updated to within 45 days of the current date, must be available for inspection on-site.

B. Supplementary Record of Occupational Injuries or Illnesses (OSHA Form 101).

1. This form is a detailed record of individual injuries or illnesses, which are job-related and must be completed for each entry recorded on OSHA Form 300.
2. "State First Report of Injury" forms, provided by the Workers Compensation Division of some insurance companies may be used if it provides the same information required by OSHA Form 101.

WHAT TO DO IF OSHA INSPECTS

- It is a company's right to require a search warrant from OSHA prior to an inspection.
- Keep complete and accurate records. Use the form in Appendix 1 for documentation.

First

- Notify the main office as soon as any inspecting officer arrives on the jobsite.
- Invite the inspector into a private office removed from the jobsite if possible, perhaps inside the jobsite trailer.

Second

- Review the Inspector's credentials. Do they work for the Department of Labor?

- Ask for their business card. Is the Inspector a health or safety officer?
- Determine the reason for, and scope of, the visit. One of the following three reasons should be identified by the inspector: General Safety Inspection, Employee Complaint Inspection, or Accident Investigation Inspection. Ask for a copy of the complaint if given as a reason for the inspection.

Third

- Call the main office (they will determine on a case by case basis whether to request a warrant or allow the inspection). **Whatever you do and whatever is decided be gracious and polite to the inspector at all times.** There is nothing to gain from "hostility." Do not volunteer any information at all with regard to safety concerns or issues prior to receiving instructions from the main office. This includes answering direct questions regarding specific safety issues.

If the inspector arrives at a time that is before or after business hours and the main office cannot be reached, the policy is to require a warrant before allowing entry. If they do not have a warrant they cannot enter.

If they have what appears to be a valid warrant the main office must review the warrant before they are allowed to enter. An Inspector with a warrant cannot be unreasonably prevented from entering the jobsite. Having the apparent warrant reviewed by main office is not unreasonable.

If an inspection is allowed, observe the following guidelines.

Opening Conference

A. Review the scope of the inspection. What is the reason for the inspection? What areas of the jobsite will be inspected? What amount of time does the inspector expect to spend at the jobsite? If the inspection is expected to take more than 1 day, ask for a morning and end of the day conference with the inspector in order to coordinate the day's activities.
B. Explain the company's safety rules to the inspector as you would for any visitor. Make sure the Inspector has, or is provided with, all of the personal protective equipment that is required.
C. Explain that a member of management must accompany the Inspector when on the jobsite.

Documents

A. Do not release any documents without prior approval from main office.
B. Whatever the Inspector requests, make two (2) copies, one for them, one for us.
C. If they request information that is not readily available, for example OSHA 300 Logs for the past three years, ask for some time to gather the information and an address you can send it to.
D. You do not have to create anything an OSHA Inspector asks for, if you don't already have it.

During The Inspection...

Picture Taking by the Inspector

A. Request the Inspector to mark the photos and negatives as "confidential, trade secrets."
B. Take a picture of the same items that the Inspector takes a picture of and from the same angle.
C. Make a written record of photographs taken by the Inspector, and by you.

Samples

A. Whatever samples the Inspector takes; the company will require a split of this sample.
B. The company's sample will be stored at the Main Office.
C. Document the sample, what it is, when and where taken, and by whom.
D. Discuss with Legal Counsel regarding any testing that should be done on the sample.

Interviews

A. Hourly Employees: you cannot sit in on the interview, unless the employee specifically asks that there be a management witness. Confirm with the Inspector that they will inform the employees that they have the right to refuse to be interviewed.
B. Management testimony is binding; therefore, a second management person must sit in on interviews of management or be present via telephone conference call.
C. Do not volunteer theories or speculate about how an incident may have happened. Stick to the facts as known. Management has the right to confer with Legal Council before answering any question. All safety concerns shall be addressed and resolved on a daily basis.
D. Do not offer the comment that "we have a request in to fix it" or "we have it on the list to be fixed." Although this would seem to show a concern, it can be held against the company as a willful violation. If you knew it was a problem you could be accused of willfully choosing not to fix it until now.
E. Do not ask the inspector for his interpretation of a particular regulation. If he thinks we are in violation, he will cite us. If you have a question as to the regulation, ask for guidance from Legal Council or our Safety Representative.

Jobsite Inspections

A. A management person and the Superintendent must accompany the Inspector.
B. A managerial person must be assigned to take notes of the inspection. The use of a tape recorder may be desirable.

Closing/Exit Conference

A. This should be set up to include Legal Counsel through a conference call or in person.
B. Do not argue the validity of any proposed citations.
C. If you are asked to give or to agree to an abatement date, i.e. Asked to answer the question "when will you have the item corrected", do not commit yourself to a date. State you will need time to study the situation, to resolve in the best possible manner.
D. Make sure the Inspector knows who should be contacted in the company for any further correspondences. Be sure to immediately send a copy of any correspondence that is received to the Legal Department.
E. The Legal Department will handle all written responses to OSHA.

Citations

- As a result of an inspection, citations and notice of monetary penalty may be issued. Should a citation/penalty notice be received, the following must be done:

A. Post copies of citations near the area cited. Postings must remain for three working days or until corrections have been made.

B. The company has fifteen working days from receipt of a citation to contest the citation or to accept it. Failure to take action within those fifteen days means the company has accepted the citation and is judged in violation. An employer has the right to an informal conference with the OSHA area director in an attempt to resolve any problems. If this does not yield a satisfactory result, it is the employer's right to have a hearing before an Administrative Law Judge. It is strongly recommended, though not necessary, that you have an attorney to represent your interests. If the Administrative Law Judge rules against you it is your right to appeal to the Occupational Safety and Health Review Commission.

OSHA Inspection Worksheet

DATE OF INSPECTION_____

COMPANY NAME_____

PROJECT NAME_____

Note: Your Field Operations Leader and Project Leader should be notified that an OSHA Inspection is underway prior to starting the opening conference.

Pre-Inspection

Time Inspector arrived: _____

Who is assigned to go with the OSHA Inspector?

Name:_____ Position:_____

Who did the Inspector first contact at the job site?

Name:_____ Position:_____

Did the Inspector show his credentials? _____Yes _____ No

Inspector's name_____

Federal:_____ State:_____

Opening Conference

1. Time opening conference began _____
2. Who was present? _____
   _____
   _____
3. What was the purpose of the visit as explained by the Inspector?
   _____
   _____
   _____
4. Was there a complaint? _____ Yes _____ No
   If so, was it explained?_____
   _____
   _____
   If so, were you given a copy of the complaint?_____Yes_____No
5. Did the Inspector review record-keeping under OSHA?___Yes___No

6. Did the Inspector review on-site documents?___Yes___No
   If so, which documents were reviewed? _____
   _____

7. Did the Inspector Request additional documents?___Yes___No
   If so, which documents were requested? _____
   _____
   Who will be sending these documents?_____
   When do these documents need to be sent?_____
8. Did the Inspector interview employee representatives? How were they selected?_____
   _____
   What trades did the employees represent?_____
   _____
9. Time opening conference ended:_____

The Inspection

1. Time inspection began_____
2. Who accompanied the Inspector during the walkaround?_____
   _____
3. What were the weather conditions? (temperature, wind, moisture?)__
   _____

4. Briefly list any Inspector comments:_____
   _____
   _____
5. Were pictures taken? _____Yes _____No
   Write down exact location and of what (take identical pictures if possible & make sure pictures are saved to the k:drive)
   _____
   _____
6. Was there an imminently dangerous situation? _____Yes _____No
7. If "yes", was it immediately abated? _____
   _____
8. Was any portion of the job shut down? _____Yes _____No
9. If "yes", for how long?_____
10. Comments: _____
    _____
    _____

Closing Conference

1. Who was present? _____
_____
_____
2. Were alleged violations of standards discussed? _____Yes _____No
3. List alleged violation:

Serious _____
_____
_____

Non-Serious _____
_____
_____

4. Were any trade partners cited for violations? _____Yes _____No
If so, which trade partner and for what alleged violation? _____
_____
_____
5. Comments:_____
_____
_____
6. Were there action items that came from this meeting?___Yes ____No
If so, please list them here along with who is responsible and timeline for each: _____
_____
_____

Time Schedule

Time Inspector arrived _____
Time opening conference began _____
Time opening conference ended _____
Time Inspection began _____
Time Inspection ended _____
Time closing conference began _____
Time closing conference ended _____

Company Name: _____
Site Location: _____
Signed: _____

I have sent a copy of the written citation to: _____

Note: This complete document should be sent to the Field Operations Leader and Project Leader promptly after the closing conference has concluded. This document, along with any pictures taken should be saved on the k:drive in the project folder.

BUILDING WHAT'S IMPORTANT.

Mobile Crane Lift Qualification and Lift Plan Form Page 1 of 2

Company Name: _____ Project Name & # _____
Lift Date: _____ Point of Contact: _____
Contact Phone: _____ Contact Cell: _____

Crane Operator
Name: _____ License #: _____ Exp. Date: _____
License Type: ☐ NCCCO/TLL (Swing cab) ☐ NCCCO/TSS (Fixed cab) ☐ Other
Medical Physical Type: _____ Exp. Date: _____ (3 yr max)

Crane
Owner: _____ Make: _____ Model: _____ Gross: _____Ton
Inspection/Certification Date: _____ ☐ Decal on Crane (required) ☐ Periodic Report (required)
Crane Configuration: ☐ On Main Boom ☐ On Jib ☐ On Outriggers/Stabilizers
Load Rating Chart Supplied: ☐ Main Boom on Outriggers/Stabilizers ☐ Jib
Hoist Line Class: ☐Standard ☐Rot Res Breaking Strength: _____lbs SWL: _____lbs
Winch: ☐ Main ☐ Aux Parts of Line Used: _____ Total Line Cap: _____lbs
Load Hook Cap: _____ lbs Safety Latch: ☐ yes

Assembly/Disassembly Director (fulfills role as Lift Director and Site Supervisor per ASME)
Name: _____ Employer: _____
Phone: _____ Cell: _____
Competent Person: ☐ yes ☐ no Qualified Person: ☐ yes ☐ no
Set Up Procedures Implemented: ☐ Crane Manufacturer's ☐ Company Specific (attach copy)

Qualified Rigger Onsite
Name: _____(not operator) Employer: _____
Rigger Card Type: ☐ Employer (provide documentation) ☐ 3rd Party ☐ National Certification
Card Exp Date: _____ Qualified Person for Tasks: ☐ yes ☐ no

Qualified Signalperson Onsite
Name: _____ (not operator) Employer: _____
Signal Card Source: ☐ Employer (provide documentation) ☐ 3rd Party ☐ National Certification
Card Exp Date: _____ Qualified Person for Tasks: ☐ yes ☐ no

BUILDING WHAT'S IMPORTANT.

Mobile Crane Lift Qualification and Lift Plan Form Page 2 of 2

Feb 2011

Site Conditions

Overhead Hazards: ☐ No ☐ Yes (if yes identify controls) _____

Underground Hazards: ☐ No ☐ Yes (if yes identify controls) _____

Ground Conditions: ☐ Level, Firm, Supportive ☐ Poor (explain)_____

Cribbing: ☐ Yes (must be done) (cribbing size recommended) _____

Power Line Hazard

(<350kV line) (for greater >350kV line use 50ft barrier boundary)

Overhead Power lines: ☐ No ☐ Yes (voltage and document) _____

Demarcation Boundary 20ft: ☐ N/A ☐ 360 degrees ☐ limited area _____

20ft Clearance Distance: ☐ cannot reach w/crane ☐ could reach w/crane ☐ will encroach w/crane

Proximity Decision: ☐ maintain 20ft clearance ☐ De energize and Ground ☐ Use table clearance

Table Clearances: ☐ Voltage (utility) ☐ Warning lines w/proximity alarm ☐ Warning lines w/spotter-person

Lift and Rigging Plan

Load Description: _____ Known Load Weight: _____ lbs

Projected Measurements: Radius _____ft Boom Angle _____deg. Boom Length _____ft

Chart Used: ☐ Main Boom ☐ Jib ☐On Outriggers Load Rating Chart x .75: _____lbs

Spreader Bar: ☐ Mfg. ☐ Site Made. (attach PE approval) Shackles: Size_____ Rating _____

Winch: ☐ Main ☐ Aux Parts of Line Used: _____ Total Line Cap: _____lbs

Slings: Type: _____ Size: _____ Inline Rating: _____ Length: _____

Horizontal Angle: _____ Additional Stress: _____% Hitch Configuration: _____

Lift or Rigging Sketch

BUILDING WHAT'S IMPORTANT.

Page 1 of 2
Instructions

Contact Information:
Use this section to gather all contact information necessary. Make sure you have every section filled with appropriate phone and cell phone numbers.

Crane Operator: Take information off the crane operator's certification ID card. We recognize NCCCO, CIC, NCCER and OECP certifications. If the operator provides another type of operator qualification card, take a copy of the card.

Crane: Name and owner of the crane could be a subcontractor and/or a rental company.

- Monthly inspections require a competent person perform them and records (includes 14 items) be provided of the most current prior months inspection. Annual inspections require inspections by a qualified person and include issuing the annual inspection sticker and providing a copy of the annual inspection (21 items) per 1926.1412.
- Note the configuration the crane will be in during the lifts and secure a copy of the appropriate rating chart from the crane. Note the diameter and class of the wire rope along with the Breaking Strength. Divide breaking strength by 3.5 for standard cable or 5 for rotation resistant cable to arrive at the SWL. Note which winch is being utilized for the lift and how many parts of line will be used to make the pick. Multiply the SWL x parts of line used to get total line capacity.
- Note the stamped capacity of the load hook and check to see if the hook used has an installed safety latch (larger hooks will not have or require one).

Assembly/Disassembly Director (AD) (fulfills role as Lift Director and Site Supervisor per ASME)

- Procure the name and title. Can be the operator for simple lifts.
- Ensures all rigging is performed by a qualified person and load is stable before hoisting.
- Follows either a) manufacturer guidelines or b) company specific guidelines for setup (contact CSM).
- Ensures the crew understands tasks, hazards, hazardous positions, and to notify if out of site,
- Accounts for ground bearing pressure, identifies hazardous locations, cribbing, hazardous locations, verify assist crane rating and load, load COG, pinch point hazards, hoist brake testing, loss of stability, wind speed force and effect of weather

Qualified Rigger Onsite

- Get the name of the **certified** rigger, his 3rd party Certification Card and Issuer. This certification card should be in the riggers name only with no company on it. –OR-
- Get the name of the **qualified** rigger, his 3rd party or Company Qualification Card and Issuer. This qualification card is company specific and is not portable from one company to another.

Qualified Signalperson Onsite

- **Only Required when (1) The point of operation is not in full view of operator or (2) the operator's view is obstructed in the direction the equipment is traveling.**
- Get the name of the **qualified** signalperson, his 3rd party or Company Qualification Card and Issuer. This qualification card is company specific and is not portable and documentation must be on site.
- They have been verified that they understand types, modes and meanings of the signals, crane dynamics, affects of signals on the crane, hazards associated with craning and signaling, the new regulations for working around energized power lines. They have passed a written and/or oral exam and demonstrated knowledge via practical evaluation.

BUILDING WHAT'S IMPORTANT.

Page 2 of 2
Instructions

Site Conditions:
- Ensure the underground search has been conducted
- Document any overhead encumbrances or hazards
- Ground must be evaluated for crane and load support
- If action is required, indicate who is going to take appropriate action
- All cranes on jobsites need to be cribbed. Cribbing should be double the size of the float pad.

Power Line Hazard (<350kV line= 20ft) (for greater >350kV line use 50ft barrier boundary)
- You must identify the max radius utilized either as a limited use area or 360° via a demarcation line.
- If no part of the crane, line, rigging, load or accessories can reach to within 20 feet of an energized power line, then clearly mark the 20 foot barrier and no signal person is required
- If the crane **can** come within 20 feet of the Powerline (in any direction) the lines must be de-energized and grounded **-or –**
- Clearly mark the 20 foot boundary, utilize a qualified signal person/spotter and do not encroach inside the minimum safe distances outlined in the OSHA "A" Table.

Lift and Rigging Plan
- Known load weight and load configuration for appropriate rigging.
- #1 task is to rig for load stability and be level in rigging.
- Get projected set down measurements from the dry run with the crane.
- Identify all rigging hardware and spreader bars utilized and verify ratings are appropriate.
- Verify all rigging components are labeled or tagged with capacity ratings.
- Identify and verify all slings utilized capacity ratings are sufficient for the load weight and additional sling angle stress imposed on them.
- If any questions arise, consult the qualified rigger prior to elevating the load.

Lift or Rigging Sketch
Take time to draw out the position of the crane, height and radius in relation to set down area, distances from the load, buildings, distances from hazards, lines of demarcation and 20 foot power line barrier zone. You should also sketch the shape of the load, load weight, rigging hitches, lengths and types of slings and any other configurations utilized .

Required Documentation Checklist
_____ Copy of Operators License
_____ Copy of Operators Medical Cert.
_____ Copy of Riggers Card or Cert.
_____ Copy of Annual Crane Insp. Cert.
_____ Copy of Monthly Crane Insp Cert.
_____ Copy of Crane Load Rating Chart
_____ Sketch of Site Layout and Rigging
_____ Copy of Company Crane Setup
_____ Utility Owner Voltage Information
_____ PE spreader bar or custom rigging

Daily Dig Permit

Date:	**Job Number:**

_____ _____ _____

Signature of Graham Representative (Opening Permit) **Date** **Time**

	Yes	No
Have locating services been notified?		
If so, by whom: _____ Confirmation #: _____		

	Yes	No
Have the Master Site Utility Plan and owner as-builts been reviewed for any existing live or abandoned utilities? Private Utility Lines		
Utilities marked with stakes every 25 ft. in soil and every 15 ft. on hard surfaces?		
Hand/potholing: excavate to expose existing live utilities? Potholes if within 3 ft. of utility markers or flags?		
Will workers be entering the excavation?		
If yes: Identify soil type: _____ Identify the cave-in protection procedures to be used for the above soil type: _____ "If trench is to be sloped or benched, provide a drawing on the bottom of this card."		

Drawing:

	Yes	No
Hazardous atmosphere?		
If necessary, has the air quality been checked in the excavation?		
Water accumulation in trench?		
Are protective systems in place?		
Spoil pile two feet back?		
Means of access and egress?		
Is excavation deeper than 20 feet?		
Registered professional engineer required?		
PE Name:		
License #:		
Phone Number:		
Properly staffed to safely perform work:		
Ground personnel wearing high visibility clothing?		
Safe working clearance for overhead lines?		

Digging / Excavation Location: _____
Width x Length x Depth ft: Description of Work to be completed: ____ Electrical ____ Water ____ Sewer ____ Gas ____ Fuel ____ Fiber Optics ____ Other _____ **Name of Company Performing Work** _____ **Print Name(s) of Equipment Operator(s)** _____ **Signature(s) of Equipment Operator(s)**

This permit covers the following:

Any operation that creates any man-made cut, cavity, trench or depression formed by earth removal.

Permit Instructions

1. Call for utility locates prior to any digging or excavation (i.e. One Call) telephone #:
2. Emergency utility contact #'s:
3. Verfiy the daily inspection is complete prior to starting work.
4. Must complete the permit and review with the Graham Rep and obtain their signature prior to starting work daily for each excavation.
5. The Daily Dig Permit must be kept in the general work area.

_____

Print Name of Competent Person

_____

Signature of Competent Person

_____

Telephone # of Competent Person

Turn Permit into Project Superintendent

Note: This permit does not relieve the holder of their responsibility to perform the work safely and accordance with all Graham Rules, and Federal/State Standards. This permit does not relieve the holder of their responsibility to protect other work already in place.

Final Close Out	Yes	No
The area has been back-filled or properly barricaded to prevent personnel / pedestrain / vehicles from entering the excavation?		
Update Master Site Utility Plan		

_____ _____ _____

Signature of Graham Rep. **Date** **Time**

BUILDING WHAT'S IMPORTANT.

HOT WORK PERMIT

CAN THIS JOB BE DONE WITHOUT HOT WORK, OR IN THE SHOP?
IF NOT, ENSURE PRECAUTIONS ARE IN PLACE!
MAKE SURE SPRINKLERS ARE IN SERVICE AND FIRE EXTINGUISHERS ARE READILY AVAILABLE!

This Hot Work Permit is required for any operation involving open flames or producing heat and/or sparks.
This includes, but is not limited to, Brazing, Cutting, Grinding, Soldering, Thawing Pipe, Torch-Applied Roofing and Welding.

Note: The Required Precautions are not optional. they are required for fire-safe hot work. Please explain all "No" responses below.

Instructions
The Permit-Authorizing Individual must:
a) Verify precautions listed at right (or do not proceed with the work)
b) Complete and retain this page
c) Give the second page to the person doing the work.

Who, When and Where?
Hot Work Being Done By
☐ Employee
☐ Contractor

Date | Job/Work Order No.

Location/Building and Floor

Nature of Job/Object

Name of Person(s) Doing Hot Work

I verify the above location has been examined, the precautions checked on the Required Precautions Checklist have been taken to prevent fire and permission is authorized for work.

Signature of Permit-Authorizing Individual

Permit Expiration
Expiration Date | Expiration Time AM ☐ PM ☐

Name of Assigned Fire Watcher

Required Precautions Checklist
☐ Available Sprinklers in Normal Automatic mode and valve open.
☐ Hot Work equipment in good repair.

Assess 35 ft radial "sphere" or work for potential fire hazards:
☐ Floors, work level and Below, cleaned or protected.
☐ All other compustibles removed or shielded from sparks.
- Clean horizontal surfaces (e.g. building structures, equpment, ducts, cable trays, etc.) above and below where possible.
- Remove flammable liquids, dust, lint, combustible waste, oil deposits, etc., where possible.
- If removal/cleaning is impractical, protect with fire-retardant covers or shield with fire-retardant guards and/or curtains.

☐ Transmission or conveying of sparks to adjacent areas eliminated or protected.
- Tightly cover wall/floor openings with fire-retardant material.
- Where openings cannot be sealed, suspend fire-retardant tarpaulins to help protect areas beneath.
- Isolate or shut down fans and conveyors to prevent the capturing and conveying sparks to other areas.

☐ Explosive atmosphere eliminated or potential not present.

Work on walls, ceilings or enclosed equipment:
☐ Construction materials verified as noncombustible and without combustible covering or insulation.
☐ Combustibles on other side of walls relocated or protected.
☐ Enclosed equipment cleaned and protected from all combustibles.
☐ Containers purged of flammable liquids/vapors.

Fire watch/hot work area monitoring requirements:
☐ Fire watch provided for at least 60 minutes after hot work, including all breaks.
☐ Fire watch supplied with suitable extinguishers/hoses.
☐ Fire watch trained in the use of fire equipment and sounding alarm.

Other precautions that may be required.
☐ Fire watch provided for adjoining areas, above or below.
☐ Confined Space or Lock-Out-Tag-Out required/used.
☐ Area smoke or heat detection disabled to eliminate false trip.

Other: _____

Comments: _____

WARNING!

HOT WORK
IN PROGRESS
WATCH FOR FIRE!

IN CASE OF EMERGENCY:

CALL: _____

AT: _____

_____

_____

WARNING!

LINE BREAK PERMIT

SAFETY FORM

Date Submitted _____ Work to be performed on _____ Time _____ ☐AM ☐PM

Location / Description of Line Break: _____

Contents of Line: _____

Responsible person in charge: _____ Tel: _____

Contractor Name: _____ Tel: _____

Special Requirements	Yes	No	Initials	Protective Equipment	Yes	No	Initials
Drain line	☐	☐		Hard hat	☐	☐	
Purge line w/ inert gas	☐	☐		Eye protection	☐	☐	
Flush Line w/ water	☐	☐		Protective gloves	☐	☐	
Lock-out pump	☐	☐		Protective boots	☐	☐	
Lock-out valve(s)	☐	☐		Lighting	☐	☐	
Blank installed	☐	☐		Chemical resistant suit	☐	☐	
Area barricaded / isolated	☐	☐		Air supplied respirator	☐	☐	
Eye wash available	☐	☐		Air supplied hood	☐	☐	
Fire blanket / fire extinguisher	☐	☐		Non-sparking tools	☐	☐	
Stand-by person	☐	☐		Explosion-proof electrical	☐	☐	
Rescue equipment	☐	☐		Clothing	☐	☐	
Testing equipment	☐	☐		Chemical-resist apron	☐	☐	

Personnel doing Line Break:

Standby Person:

Rescue Tel:

Permit canceled on _____/_____/____

Time _____AM / PM

The above individuals have been informed of the hazards, provided with protective equipment and trained in its use as well as safe work practices..

Comments / Notes:

ORIGINAL POSTED AT LINE BREAK LOCATION - COPY TO SAFETY

Contractor Name:(print)_____ Contractor signature: _____

Graham name (print)_____Graham signature: _____

CONFINED AREA ENTRY PERMIT

SAFETY FORM

Date Submitted _____ Work to be performed on _____ Time __:__ AM/PM
Location / Description of Line Break:_____
Contents of Line: _____
Name of Responsible person: _____Tel:_____
(In charge of Work)
Contractor Name: _____ Tel:_____

Special Requirements	Yes	No		Work to be performed Permits Obtained	Yes	No
Lock-out / de-energize				Burning		
Lines broken - capped or blanked				Welding		
Purge - flush or vent				Brazing		
Ventilation - ____mechanical ____natural				Grinding		
Secure area				Open flames		
Protective clothing				other		
Non-sparking tools					Yes	No
Full body harness and lifeline				Hazards Expected		
Tripod or other hoisting equipment				Corrosives		
Electrical eqpt for explosive atmosphere				Flammables		
Lighting				Toxics		
Fire Extinguishers				X-temps		
Respiratory protection				Electrical		
Powered communications				Physical - engulfment		

Tests to be Taken	P.E.L	Yes	No	Actual Reading	Time Tests Taken				
% of oxygen									
% of L.E.L.									
Carbon monoxide									
Aromatic hydrocarbon									
Sulfur dioxide									
Ammonia									
Hydrocyanic acid									
Hydrogen sulfide									

Testing Equipment _____Serial No._____
Calibrated by _____Date calibrated
____/____/____
Testing conducted by

Personnel making entry:		Standby Person:
		Rescue Tel:
		Permit canceled on _____/_____/____
		Time _____ AM / PM

The above individuals have been informed of the hazards, provided with protective equipment and trained in its use as well as safe work practices.. All individuals have been trained.

ORIGINAL POSTED AT ENTRY LOCATION - COPY TO SAFETY

Contractor Name:(print)_____ Signature: _____

Graham Name:(print) _____ Signature _____

BUILDING WHAT'S IMPORTANT.

Graham Construction
421 Grand Avenue
Des Moines, Iowa 50309
P: (515) 244-1279
F: (515) 244-7421

Inspection: Weekly Jobsite Safety Inspection Checklist #1

0/103	0	0	0	0
Items Inspected	Conforming	Deficient	N/A	Neutral

Type	Safety	**Status**	Open
Trade	Safety	**Location**	
Spec Section		**Created By**	
Linked Drawings			
Description			
Attachments			

Inspection Details

Inspection Date		**Due Date**	
Point of Contact		**Responsible Contractor**	
Assignee(s)			

ADMINISTRATIVE:	0 Neutral	0 Conforming	0 Deficient	0 N/A
1.1 First Aid Kit stored in an accessible location on the job and supplies refilled/maintained - Verify the expiration dates Details: 1926.50(a) ; 1926.50(d)(2) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*		☐ Pass	☐ Fail	☐ N/A
1.2 All SDS are on file and accessible for both Graham and Trade Partners Details: 1910.1200(e)(2)(i) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*		☐ Pass	☐ Fail	☐ N/A
1.3 All Containers are properly labeled Details: 1910.1200(f) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*		☐ Pass	☐ Fail	☐ N/A
1.4 Weekly Toolbox meeting scheduled for Graham Details: 1926.21(a) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*		☐ Pass	☐ Fail	☐ N/A
1.5 Hazardous Communication discussed during JHA review? Details: 1926.21(b) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*		☐ Pass	☐ Fail	☐ N/A

Weekly Safety Inspection Checklist

Inspection #1 - Weekly Jobsite Safety Inspection Checklist **Project: Sand Box Test**

1.6 Asbestos and lead awareness researched/discussed. Details: 1926.1101(d) ; 1926.62 *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
1.7 JHA's completed or reviewed by all trade partners and Graham craft Details: 1910.132(d)(1) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A

PERSONAL PROTECTIVE EQUIPMENT (PPE) UTILIZATION:

0 Neutral **0 Conforming** **0 Deficient** **0 N/A**

2.1 Hard hats, footwear, clothing, gloves, and proper eye protection worn at all times and face protection when needed Details: 1926.100(a) ; 1926.28(a) ; 1910.138(a) ; 1926.102(a)(2) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
2.2 Hearing protection used around high noise sources above 90 dB Details: 1926.52(d)(1) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
2.3 All PPE maintained and in good condition? Details: 1926.95(a) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
2.4 Respirators available for use if needed and stored in sealed containers (not in manufacturers box) Details: 1910.134(h)(2) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
2.5 Eyewash facilities available when needed - needs to be within 55 LF or 10 seconds Details: 1926.50(g) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A

SIGNAGE:

0 Neutral **0 Conforming** **0 Deficient** **0 N/A**

3.1 Department of Labor Safety & OSHA Sign Displayed Details: 1903.2(a)(1) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
3.2 Emergency Procedures/Phone Numbers Posted Details: 1926.50(f)(1) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
3.3 Exit signs posted and safety awareness / training signs posted throughout the project Details: 1926.34(b) ; 1926.200(d) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
3.4 Warning signs posted on perimeter fence near gates Details: 1926.200(b) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A

Inspection #1 - Weekly Jobsite Safety Inspection Checklist **Project: Sand Box Test**

3.5 Proper signage secured at access points / pedestrian walkways Details: 1926.200(g)(1) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
3.6 Fire Department Connection signs posted Details: 1926.150(b)(1) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
3.7 Traffic Control Signs and barricades in place when needed and in good condition Details: 1926.200(g) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A

CLEANING:

0 Neutral **0 Conforming** **0 Deficient** **0 N/A**

4.1 Project work areas are clean, orderly, and free of excess trash and debris Details: 1926.25(a) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
4.2 Trash receptables provided and maintained Details: 1926.25(c) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
4.3 Laydown area clean, properly stored, not overloaded, and orderly. Scrap material is free of protruding nails or other puncture hazards Details: 1926.250(a)(1) ; 1926.250(b)(8)(i) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
4.4 Proper number of well maintained portable toilets and hand wash facilities Details: 1926.51(c) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
4.5 Chutes installed safely when needed Details: 1926.252 ; 1926.852 *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A

ELECTRICAL:

0 Neutral **0 Conforming** **0 Deficient** **0 N/A**

5.1 Assured grounding program being followed and checklist filled out? Details: 1926.404(b)(1)(iii) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
5.2 Monthly GFCI Inspection Log being completed by Electrical Contractor for temporary power sources Details: 1926.404(b)(1)(iii)(A) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
5.3 GFCI used for temporary power connections Details: 1926.404(b)(1)(ii) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A

Weekly Safety Inspection Checklist

Inspection #1 - Weekly Jobsite Safety Inspection Checklist **Project: Sand Box Test**

5.4 Adequate lighting provided throughout the project for operations and access / egress routes Details: 1926.26 *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
5.5 Temporary lighting is inspected on a regular basis, protect and hung properly Details: 1926.405(a)(2)(ii)(E) ; 1926.405(a)(2)(ii)(F) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
5.6 Electrical cords are inspected for damage on daily basis Details: 1926.404(b)(1)(iii)(C) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
5.7 Cords are not strung in walkways (cords managed) or through wall/over top track Details: 1926.405(a)(2)(ii)(I) ; 1926.416(b)(2) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
5.8 Electrical rooms (temporary and permanent) are kept clean and free of excess materials and debris Details: 1926.403(i)(1)(ii) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
5.9 All energized panel doors are locked and properly identified Details: 1926.405(d) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
5.10 Lock out tag out being done properly and breakers labeled Details: 1926.416(a)(1) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
5.11 Proper clearance maintained in front of/around all electrical panels? Details: 1926.403(i)(1)(iv) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
5.12 Electrical panels/circuits effectively enclosed Details: 1926.405(d) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
5.13 Conductors entering boxes/cabinets protected from abrasion Details: 1926.405(g)(2)(v) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
5.14 All energized junction boxes have covers on them Details: 1926.405(d) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
5.15 Electrical room door is locked and has proper signage once the panels are energized Details: 1926.403(i)(2)(i) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A

Inspection #1 - Weekly Jobsite Safety Inspection Checklist **Project: Sand Box Test**

LIFE SAFETY:

0 Neutral	0 Conforming	0 Deficient	0 N/A

6.1 All visitors check in at field office and utilize proper PPE while onsite
Details: 1926.95(a)
Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations
☐ Pass ☐ Fail ☐ N/A

6.2 Jobsite fence installed, inspected, and maintained around perimeter of project
Details: Graham Standard / Best Practice - Site Security Checklist
Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations
☐ Pass ☐ Fail ☐ N/A

6.3 Certified flaggers used for traffic control
Details: 1926.201(a)
Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations
☐ Pass ☐ Fail ☐ N/A

FLAMMABLE:

0 Neutral	0 Conforming	0 Deficient	0 N/A

7.1 Flammable / combustible liquids are labeled, stored, and handled properly (no plastic containers, 10 LF away from elevators, stairwells, and exits)
Details: 1926.152(a)(1) ; 1926.152(a)(2)
Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations
☐ Pass ☐ Fail ☐ N/A

7.2 All containers are properly labeled / protected where required
Details: 1926.152(b)(2)(iii)
Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations
☐ Pass ☐ Fail ☐ N/A

7.3 Fire extinguisher provided within 50' of storage area(s), extinguishers cannot be closer than 25 LF
Details: 1926.150(c)(1)(vi)
Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations
☐ Pass ☐ Fail ☐ N/A

7.4 No smoking / open flame signage secured near storage area(s)
Details: 1926.152(g)(9)
Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations
☐ Pass ☐ Fail ☐ N/A

7.5 No more than 25 gallons of flammables stored in one room outside of an approved cabinet.
Details: 1926.152(b)(2)
Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations
☐ Pass ☐ Fail ☐ N/A

FIRE PROTECTION:

0 Neutral	0 Conforming	0 Deficient	0 N/A

8.1 Fire extinguishers provided where required, inspected, tagged, logged monthly and serviced annually
Details: 1926.150(c)(1)(i) ; 1926.150(c)(1)(viii)
Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations
☐ Pass ☐ Fail ☐ N/A

8.2 Emergency plan and egress routes are posted and maintained
Details: 1926.35(a)
Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations
☐ Pass ☐ Fail ☐ N/A

8.3 Hot work permits are utilized for all hot work operations and fire watch provided when needed
Details: 1926.352
Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations
☐ Pass ☐ Fail ☐ N/A

Inspection #1 - Weekly Jobsite Safety Inspection Checklist **Project: Sand Box Test**

8.4 Trade Partners are participating in hospital facility's emergency fire drills. Details: 1926.35 *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	Pass	Fail	N/A

FALL PROTECTION:

0 Neutral **0 Conforming** **0 Deficient** **0 N/A**

9.1 Fall prevention / protection used properly when needed and methods reviewed prior to work start Details: 1926.501(a)(1) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	Pass	Fail	N/A
9.2 Perimeter protection installed per policy and maintained throughout Details: 1926.501(b) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	Pass	Fail	N/A
9.3 Controlled access zones are established with physical barriers and proper signage Details: 1926.501(b)(2)(ii) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	Pass	Fail	N/A
9.4 Fall arrest system installed properly and inspected properly by a competent person Details: 1926.502(d)(21) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	Pass	Fail	N/A

LADDERS/STAIRS:

0 Neutral **0 Conforming** **0 Deficient** **0 N/A**

10.1 Ladders properly used, stored, labeled and in good condition Details: 1926.1053(b)(2) ; 1926.1053(b)(15) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	Pass	Fail	N/A
10.2 Stairs properly constructed and maintained with proper fall protection Details: 1926.1052 *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	Pass	Fail	N/A
10.3 Ladders used for access to upper / lower levels are provided with "walk through" rails Details: 1926.1053(b)(1) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	Pass	Fail	N/A
10.4 Proper access / egress are provided to upper / lower working levels Details: 1926.1051(a) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	Pass	Fail	N/A
10.5 All access and egress to ladders and stairs clear and free of debris Details: 1926.1053(b)(9) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	Pass	Fail	N/A

SCAFFOLDS:

0 Neutral **0 Conforming** **0 Deficient** **0 N/A**

11.1 Scaffold tags in place and inspected daily by a competent person Details: 1926.451(f)(3) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	Pass	Fail	N/A

Inspection #1 - Weekly Jobsite Safety Inspection Checklist **Project: Sand Box Test**

11.2 Scaffolds erected properly and maintained / tied in correctly Details: 1926.451(b) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
11.3 Proper access and egress provided Details: 1926.451(e) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
11.4 Engineered / stamped drawings reviewed for complex scaffold systems Details: 1926.451(a)(6) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
11.5 Wheel/caster brakes operable and set as required Details: 1926.452(w)(2) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
11.6 Caster/wheel stems pinned/secured to scaffold legs Details: 1926.452(w)(9) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A

FLOOR OPENINGS/PENETRATIONS:

0 Neutral **0 Conforming** **0 Deficient** **0 N/A**

12.1 Hole covers are inspected and maintained on a daily basis Details: 1926.502(i) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
12.2 All holes greater than 2" in diameter covered, marked, and secured Details: 1926.500(b) ; 1926.502(i)(3) ; 1926.502(i)(4) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
12.3 All holes larger than 1' x 2' are provided with a secondary means of protection Details: Graham Standard / Best Practice *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
12.4 All covers support at least twice the maximum intended load Details: 1926.502(i)(2) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
12.5 Guardrails around open holes provided with toeboards and maintained Details: 1926.502(j)(1) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A

HAND AND POWER TOOLS:

0 Neutral **0 Conforming** **0 Deficient** **0 N/A**

13.1 Hand and power tools inspected an maintained Details: 1926.300(a) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A
13.2 Proper guards in place and maintained Details: 1926.300(b)(1) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐ Pass	☐ Fail	☐ N/A

Inspection #1 - Weekly Jobsite Safety Inspection Checklist **Project: Sand Box Test**

	Pass	Fail	N/A
13.3 Power tools are grounded or double insulated Details: 1926.302(a)(1) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐	☐	☐
13.4 Tools are being used for their intended use Details: Section 5(a)(1) General Duty Clause *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐	☐	☐
13.5 Air compressor and receiver equipped w/ working pressure gauge and pressure relief valve Details: 1926.306(b)(3) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐	☐	☐
13.6 Whip lines and/or pins are provided for at all air compressor connections Details: 1926.302(b)(1) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐	☐	☐
13.7 Impact tools are free from mushroom heads Details: 1926.301(c) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐	☐	☐
13.8 Powder-actuated loads (Spent and unspent) properly discarded? Unloaded when not in use? Details: 1926.302(e)(5) ; 1926.302(e)(6) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐	☐	☐

MOBILE EQUIPMENT:

0 Neutral **0 Conforming** **0 Deficient** **0 N/A**

	Pass	Fail	N/A
14.1 All equipment being used is in good operating condition and being inspected before use(backup horn, strobes, signals, seat belts, fire extinguishers, operators manual)? Details: 1926.602(a)(2)(i) ; 1926.602(a)(9)(i) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐	☐	☐
14.2 Proper attachments used on all mobile equipment Details: 1910.178(a)(5) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐	☐	☐

EXCAVATIONS/PROPER EGRESS:

0 Neutral **0 Conforming** **0 Deficient** **0 N/A**

	Pass	Fail	N/A
15.1 Daily dig permit being completed Details: 1926.651(k)(1) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐	☐	☐
15.2 Underground utilities reviewed / identified prior to excavating and verified by permit Details: 1926.651(b)(2) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐	☐	☐
15.3 Means of egress provided within 25' for excavations > 4' Details: 1926.651(c)(2) *Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations*	☐	☐	☐

Inspection #1 - Weekly Jobsite Safety Inspection Checklist **Project: Sand Box Test**

15.4 Proper sloping / benching / shoring / boxing for excavations greater than 5' deep
Details: 1926.652(b)
Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations
☐ Pass ☐ Fail ☐ N/A

15.5 Physical barricades provided at the top edge of excavations
Details: 1926.651(j)(2)
Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations
☐ Pass ☐ Fail ☐ N/A

15.6 Documented daily inspections conducted by competent person
Details: 1926.651(k)(1)
Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations
☐ Pass ☐ Fail ☐ N/A

CRANES/RIGGING:

0 Neutral **0 Conforming** **0 Deficient** **0 N/A**

16.1 Cranes inspected on a daily basis and documentation is filed
Details: 1926.1412(d)(1)
Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations
☐ Pass ☐ Fail ☐ N/A

16.2 Rigging inspected before each use, properly labeled, and stored properly
Details: 1926.251(a)(1)
Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations
☐ Pass ☐ Fail ☐ N/A

16.3 Lift plans have been reviewed by crew and CM
Details: 1926.1432(b)(2)
Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations
☐ Pass ☐ Fail ☐ N/A

16.4 Anti-two block(s) are provided for all cranes as required
Details: 1926.1415(a)(2)
Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations
☐ Pass ☐ Fail ☐ N/A

16.5 Proper cribbing / dunnage / crane pad is being used
Details: 1926.1402(a)(2)
Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations
☐ Pass ☐ Fail ☐ N/A

16.6 Workers kept clear of suspended loads - Restricted access set up
Details: 1926.1425(e)(2)
Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations
☐ Pass ☐ Fail ☐ N/A

16.7 Ground conditions adequate to support crane?
Details: 1926.1402(b)
Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations
☐ Pass ☐ Fail ☐ N/A

16.8 Power line safety requirements followed
Details: 1926.1407 - 1926.1411
Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations
☐ Pass ☐ Fail ☐ N/A

16.9 Hand Signal chart available
Details: 1926.1428(c)(1)
Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations
☐ Pass ☐ Fail ☐ N/A

Inspection #1 - Weekly Jobsite Safety Inspection Checklist **Project: Sand Box Test**

16.10 Radius guard provided on crane
Details: 1926.1424(a)(2)(ii)
Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations

☐ Pass ☐ Fail ☐ N/A

WELDING AND CUTTING

0 Neutral **0 Conforming** **0 Deficient** **0 N/A**

17.1 Fire extinguishing equipment in close proximity
Details: 1926.352(d)
Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations

☐ Pass ☐ Fail ☐ N/A

17.2 Welding hoses in good condition - leads with damage within 10 feet of ends needs to be removed from service
Details: 1926.351(b)(2)
Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations

☐ Pass ☐ Fail ☐ N/A

17.3 Regulators/gauges/valves in proper working order
Details: 1926.350(h)
Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations

☐ Pass ☐ Fail ☐ N/A

17.4 Cylinders secured in upright position
Details: 1926.350(a)(9)
Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations

☐ Pass ☐ Fail ☐ N/A

17.5 Cylinders in transportation secured in vertical position
Details: 1926.350(a)(4)
Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations

☐ Pass ☐ Fail ☐ N/A

17.6 Cylinders stored properly with gases separated and caps in place
Details: 1926.350(a)(10)
Activity: 0 Response Changes, 0 Attachments, 0 Photos, 0 Comments, 0 Observations

☐ Pass ☐ Fail ☐ N/A

Project Name

JOBSITE SAFETY INSTRUCTIONS/ ORIENTATION

I have been made aware of and will adhere to the following jobsite safety rules:

1. **NO ONE IGNORES AN UNSAFE ACT**. I will speak up if I see something unsafe.
2. PPE required at all times – hard hat, safety glasses, hi-viz clothing, work boots. Other PPE as required by task and JHA.
3. Jobsite safety board with all postings, emergency procedures, contact information, etc.
4. JHA's are required for all tasks.
5. Daily Dig Permits required for **ALL** excavation and work creating ground disturbance (concrete demo).
6. Hot work permits, shutdown requests, equipment inspection checklists, LOTO, etc will be established prior to starting work.
7. 100% Tie-Off required above 6 feet. Zero tolerance for not being tied off. Tie-off on ladders not required if used correctly and maintaining 3 points of contact. Tie-Off on lifts as required by manufacturer.
8. Long term material storage on baker's scaffold is not allowed. Only material used that shift allowed on scaffolds.
9. Daily cleanup will be required by ALL trades.
10. Daily inspection of extension cords and tools will be performed.
11. If I'm injured on site, I will notify my supervisor and the 3G Companies Field Leader immediately.
12. I'm certified and trained in all tools, equipment, and lifts I will be using.
13. This is a tobacco free jobsite.
14. Firearms are not permitted on the jobsite.
15. Unless authorized, I am not to be in areas occupied by the Owner.
16. I will adhere to all OSHA regulations, including the silica requirements.
17. I will attend weekly safety meetings (toolbox talks).
18. I understand that I am to park only in the area(s) designated by 3G Companies and the Owner.
19. I have been made aware of work time restrictions and times when there can be no noise or vibration outside of construction space.
20. I am aware of the infection control environment, that all construction areas are to maintain negative pressure, all penetrations must be sealed and HEPA air machines are running.
21. I understand the Jobsite Disciplinary Procedures and Zero Tolerance Items outlined below.
    a. 1st offense = Verbal Warning 2nd offense = written warning sent to office 3rd offense = removal from project.
22. **Zero Tolerance Items** - The following items are zero tolerance and will result in immediate removal of the individual who committed the act and may include their foreman/supervisor.
    a. If an individual is caught committing workplace violence or threatening workplace violence including but not limited to:
        i. Fighting
        ii. Harassment
    b. If an individual is caught riding in the back of a truck, bucket or forks of a skid loader, forklift or other piece of equipment not intended for the transportation of individuals.
    c. Intentional use of a tool/equipment without a guard
    d. If an individual is not tied off above 6' and willfully exposes themselves to a fall hazard. For example, not tied off on a roof or other area deemed mandatory tie off area.
    e. If an individual posts **ANYTHING** to social media to the job without permission from 3G Companies.
23. Willful violations will result in immediate removal from project based on Field Leader's discretion.

Employee Name _____ **Employee Signature** _____

Company Name _____ **Hard Hat Sticker #** _____

STRETCH AND FLEX PROGRAM

Make Stretching part of your daily routine

BUILDING WHAT'S IMPORTANT.



CROSS-BODY SHOULDER STRETCH (Target: shoulders)

Grab one arm above elbow with opposite hand
Pull arm across body
Keep elbow below shoulder height
Hold for 20 seconds
Repeat with other arm



OVERHEAD TRICEPS AND ROTATOR CUFF STRETCH (Target: Triceps, rotator cuff)

Raise arm and place hand behind back
With other hand, grab right above bent elbow and pull
Hold for 20 seconds
Repeat with other arm



FOREARM AND FINGER STRETCH (Target: wrist, fingers, forearms)

Stretch arms forward and point fingers up
Grasp fingers with opposite hand and pull back slightly for 15 seconds
Then point fingers down
Grasp fingers with opposite hand and pull back slightly for 15 seconds
Switch to other hand





ARM CIRCLES (Target: shoulders)

Extend arms out to the sides parallel to ground at shoulder level
Keep shoulders relaxed
Slowly rotate arms forward from the shoulder joint, making small circles
Repeat 15 times, then reverse direction



HAMSTRING STRETCH (Target: hamstrings)

Place feet shoulder width apart
Bend forward, keeping back straight
Try to touch the floor with both hands
Hold for 20 seconds



QUAD STRETCH (Target: quadriceps)

Brace yourself on a stationary object
Grasp ankle behind hips
Push hips forward
Hold for 20 seconds
Repeat with other leg



CALF STRETCH (Target: calves)

With feet shoulder width apart, place left leg forward
Keep right leg straight and feet flat on the floor, bend left knee
Move hips forward
Hold for 20 seconds
Switch legs and repeat





LOW BACK EXTENSION (Target: lower back, abdominals)

Place feet shoulder width apart
Support the small of your back with your hands
Lean back slightly
Hold for 20 seconds

Be relaxed · Breathe normally · Do not over stretch to the point of pain · Do not bounce – move slowly
Stop if you feel pain or dizziness

BUILDING WHAT'S IMPORTANT.

NOTHING HITS THE FLOOR POLICY

What: Nothing Hits the Floor Housekeeping Policy

Where: Core Process 07: The Safety Process

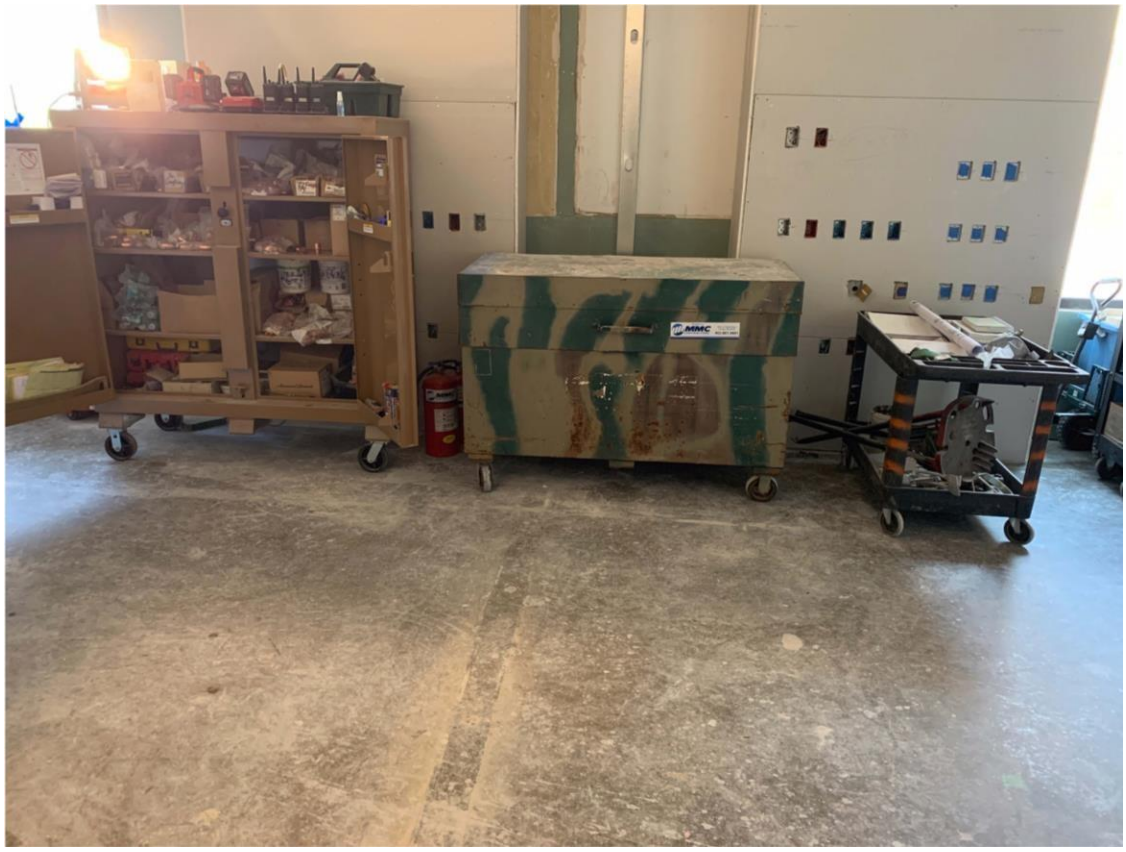
Why: This policy helps ensure a jobsite is clean and orderly. A clean and organized jobsite benefits project safety, productivity, and quality. The goal is for all Graham personnel to keep work areas clean and all debris off the floor. This will help eliminate slip/trip hazards, and also boost productivity because it reduces the amount of cleanup required at the end of the work shift.

When: Constantly thoughout the work shift.

How: "Nothing Hits the Floor". Employees put construction debris directly into trash carts, cans, barrels, etc. rather than throwing debris on the floor and picking up at a later time.

Who: All Graham Construction craft.


DEWALT
BRUSHLESS





Appendix G – JHA

BUILDING WHAT'S IMPORTANT.

PROCEDURE: Job Hazard Analysis (JHA)
Job Hazard Analysis helps drive Graham's safety culture and our Core Value that We are ALL Committed to Safety. Conducting a JHA helps identify potential hazards, determines preventative measures and engineering controls, aids workers in selecting PPE required, and serves as a reminder on emergency action procedures in the event of an incident prior to starting a task.

Who:
JHA's are to be performed by all Graham staff and trade partners, including subsequent tier trade partners. It is encouraged that anyone performing work on a project perform a job hazard analysis (for example owner vendors).

What:
Graham employees are required to use the standard JHA form. An example of this form can be found by following the link at the bottom of this SOP. If a trade partner has a JHA/JSA/TSA form and policy in place, it is acceptable and encouraged to have them use these forms, as are they are sometimes more specific to the hazards they face in their trade. If a trade partner does not have a JHA policy, have them use Graham's standard form. Be sure to have plenty of booklets on the jobsite for trade partner usage.

When:
JHA's are to be completed at the start of a new task by the crew and the crew's leader or foreman prior to beginning work. If the scope of the work changes, the crew changes, or previously unknown risks are discovered, a new JHA shall be completed. If the same tasks are being repeated daily, the JHAs for those tasks should be reviewed daily and updated on a weekly basis. A JHA should be required for every minor and major operation.

Record Retention:
JHA's should be retained for a minimum of 30 days. In the event of an injury or near miss, the JHA related to that incident must be uploaded as part of that form and procedure. Please see the instructions in the Construction Safety Guidelines Binder for more information.

An Example of the JHA form can be found on the next page or by following.
K:\Safety\Construction Jobsite Safety Guidelines Binder\TAB 10 - Job Hazard Analysis (JHA)

Job Hazard Analysis

****All Incidents Must Be Reported Immediately****

JHA Completed By:_____ **Contractor Name:** _____ **Work Location:**_____

Date(s):_____ **Time:**_____ **Emergency Security #**_____ **Non-Emergency Security #**_____

Building/Area Contact:_____ **Phone:**_____ **Safe Area Location:**_____

Job Description:_____

Task Steps	Potential Hazards	Protective Measures
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

Work Hazards & Hazards in the area:

- ☐ Welding & Burning
- ☐ Grinding
- ☐ System Under Pressure
- ☐ Rigging & Lifting
- ☐ Electrical
- ☐ Utilities (Overhead & Underground)
- ☐ Noise
- ☐ Lock Out Tag Out
- ☐ Floor Openings
- ☐ Drilling
- ☐ Hazard Materials
- ☐ Temperature
- ☐ Fumes/Vapors
- ☐ Asbestos
- ☐ Flammables
- ☐ Gas Cylinders
- ☐ Lead
- ☐ Other Construction Crews
- ☐ Structural Penetration
- ☐ Silica Exposure
- ☐ Fall Hazards

Comments:_____

Personal Protective Equipment:

- ☐ FR Welding Gear
- ☐ Tyvek Suit
- ☐ Goggles
- ☐ Metatarsal Guards
- ☐ Eye Wash Station
- ☐ Gloves (Type)
- ☐ Kevlar Sleeves
- ☐ Full Face Shield
- ☐ N95 Dust Mask
- ☐ Respirator
- ☐ Kevlar ☐ Rubber
- ☐ Back Support Brace
- ☐ Safety Glasses w/side shields
- ☐ PPE is in good condition (free of damage) and functional

Job Hazard Analysis

****All Incidents Must Be Reported Immediately****

Comments:_____

Tools and Equipment:

- ☐ Hand Tools
- ☐ GFCI
- ☐ Electric Power Tools
- ☐ Step Ladders
- ☐ Scaffold
- ☐ Extension Ladder
- ☐ Crane
- ☐ Threading Equipment
- ☐ Pneumatic Tools
- ☐ Aerial Lift
- ☐ Oxy Fuel/Equipment
- ☐ Rigging
- ☐ Powder Actuated Tools
- ☐ Welder
- ☐ Cords (Ground Pins)
- ☐ Fall Protection Equipment
- ☐ Fire Extinguisher Heavy Equipment (Type)_____

Comments:_____

Permits and Precautions

- ☐ General Work Permit
- ☐ Fire Watch
- ☐ Barricade/Fencing
- ☐ Hot Work Permit
- ☐ SDS
- ☐ Dig Permit
- ☐ Confined Spaces
- ☐ ICRA Needed?
- ☐ Verify Locates
- ☐ Proper Signage
- ☐ Daily Lift Plan
- ☐ Trenching/Excavation Log
- ☐ MEWP/Equipment Inspection
- ☐ Lockout/Tag Out

Comments:_____

Further Clarification Questions	YES	NO	Comments (Provide explanation or indicate N/A)
Will task create dust/fumes etc. that may cause systems to be activated (i.e fire alarm)?			
How will this be managed?			
Have the owners/supervisors of the systems been contacted prior to the task?			
Cords and GFCI's Inspected?			
Does the work require a Competent Person per OSHA?			
Scaffolding/Excavation/Cranes/Slings/Fall Protection/Welding/Silica Competent Person			
Have the workers been included in creating this safety task assignment and do they possess the skills and training necessary to complete the work safely?			
Have the workers been informed on the scope of the work, the hazards involved, and have they been given direction for work scope changes?			
Have the hazards been eliminated, minimized, or adequately controlled to protect the crew members from injury? How?			
Have you planned for the unexpected, or considered the "What If" scenarios (Medical, Fire, Severe Weather, Utility Strike, Alarm Activation)?			
Do all crew members know what to do in case of emergency?			
Where are the SDS's kept?			
Have the hazards and corrective actions identified on this JHA been addressed?			
Has a meeting been conducted with a location contact to ensure coordination with location activities?			

This JHA is to be completed at the start of a new task by the crew and the crew's leader or foreman prior to beginning work. If the scope of the work changes, the crew make up changes, or previously unknown risks are discovered, a new JHA shall be completed. The JHA is to remain in the area where the work is being performed. All JHA's are to be handed into the foreman or Superintendent at the end of shift daily. All JHA's will be kept on site by Graham Construction for the duration of the project.

Comments:_____

Print Names Included in this JHA:_____

BUILDING WHAT'S IMPORTANT.

Incident/Injury Report

Complete all sections of this report that pertain & include any/all additional related paperwork

Completed By:_____ Date: _____

Job/Property Name: _____

1. INCIDENT INFORMATION

Incident Type: ☐ Near-Miss ☐ Bodily Injury ☐ Equipment ☐ Property ☐ Illness ☐ Subcontractor

Time of Incident: _____:_____ Date: _____

Where Incident Occurred: _____

2. INJURY INFORMATION

Medical Response: ☐ Emergency ☐ Clinic Visit ☐ First Aid

Injured Name:_____ Company Name: _____

Injury Type: ☐ Strain ☐ Puncture ☐ Laceration ☐ Fracture ☐ Bruise ☐ Other: _____

Body Part:_____ Check One: ☐ Right ☐ Left ☐ Both ☐ N/A

Description of Incident:

Please provide any statements of the incident:

Is the First Report of Injury Form filled out and attached: YES ☐ NO ☐
Trade Partner Injury Report Received (if applicable): YES ☐ NO ☐
Was a JHA filled out: YES ☐ NO ☐ If yes please attach to document before sending. If No State Why
Was another work permit filled out (Daily Dig, Hot Work, etc): YES ☐ NO ☐

Include photos to this document before sending (Photos need to include: Injury, Site Conditions, Material and Equipment involved in the accident)

3. TREATMENT

Time Employee was at the treating facility: Time in _____ :_____ Time Out : _____ :_____

Treatment Received: _____

Name and Address of Treating Physician or Facility:_____

Post-Accident drug test: YES☐ NO☐If not state the reason why:

Work Status: Full Duty ☐ Modified Duty☐Off Work☐

Date when employee can return to work: _____

If Modified Duty state, the work activities the employee can do:_____

Follow up Appointment needed? YES ☐ NO ☐

If yes when is the appointment? Date: _____ Time: _____

Who took the injured person to treating physician? Name: _____

4. NEAR MISS DESCRIPTION (NOT REQUIRED IF SECTION 2 IS FILLED OUT)

Company Involved: _____

Objects/Materials Involved: _____

Companies Involved in The Incident: _____

Description:

Please provide any statements of the Near Miss :

Was a JHA filled out: YES ☐ NO☐ If yes please attached to document before sending. If No State Why

Was another work permit filled out (Daily Dig, Hot Work, etc): YES ☐ NO ☐

Include photos to this document before sending (Photos need to include: The Near Miss, Site Conditions, Material and Equipment involved in the Near Miss)

5. CORRECTIVE ACTIONS

Print Name: _____

Sign Name: _____ Date: _____

Turn into Safety@3GCos.com within 24hrs of the incident

SECTION 27 08 20
ACCEPTANCE OF COMMUNICATIONS COPPER CABLING

PART 1 - GENERAL

1.1 SCOPE

A. Perform all Work required to provide and install the required remote control and signal cabling indicated by the Contract Documents with supplementary items necessary for proper installation.

1.2 REFERENCES

A. The latest published edition of a reference shall be applicable to this Project unless identified by a specific edition date.

B. All materials, installation and workmanship shall comply with the applicable requirements and standards addressed within the following references.

C. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

D. Specifications throughout all Divisions of the Project Manual are directly applicable to this Section, and this Section is directly applicable to them. See Section 207513.

1.3 SUBMITTALS

A. See Section 270513

B. A schedule (list) of all copper cables to be tested.

C. Sample test reports

D. Copy of latest calibration report of used test equipment.

1.4 QUALITY ASSURANCE

A. Trained technicians who have successfully attended an appropriate training program and have obtained a certificate as proof thereof shall execute the tests. Appropriate training programs include but are not limited to installation certification programs provided by BICSI or the ACP (Association of Cabling Professionals). These certificates may have been issued by any of the following organizations or an equivalent organizations:

1. Manufacturer of the copper cable and/or copper connectors.

2. Manufacturer of the test equipment used for the field certification.

3. Training organizations (e.g., BICSI, A Telecommunications Association headquarters in Tampa, Florida; ACP [Association of Cabling Professionals™] Cabling Business Institute located in Dallas, Texas)

B. The test equipment shall be within the calibration period recommended by the manufacturer in order to achieve the manufacturer-specified measurement accuracy.

C. The Owner or the Owner's representative shall be invited to witness and/or review field-testing.

D. The Owner or the Owner's representative shall be notified of the start date of the testing phase five (5) business days before testing commences.

E. The Owner or the Owner's representative will select a random sample of 10% of the installed links. The Owner or the Owner's representative shall test these randomly selected links and the results are to be stored in accordance with Part 3 of this document. The results obtained shall be compared to the data provided by the installation Contractor. If more than 2% of the sample results differ in terms of the pass/fail determination, the installation Contractor under supervision of the representative shall repeat 100% testing at no cost to the Owner.

PART 2 - PRODUCTS

2.1 GENERAL

A. All materials shall meet or exceed all applicable referenced standards, federal, state and local requirements, and conform to codes and ordinances of authorities having jurisdiction.

2.2 COPPER CERTIFICATION TESTERS

A. The field-test instrument shall be within the calibration period recommended by the manufacturer.

B. Test equipment (tester) for:

1. Category 6A: Test equipment shall comply with the accuracy requirements for level IIIe field testers as defined in the TIA Cat 6A Standard.

C. Acceptable Manufacturer

1. Fluke Networks

2. Or approved equal

PART 3 - EXECUTION

3.1 GENERAL

A. Every cabling link in the installation shall be tested for

1. Wire map
2. Length
3. Insertion Loss
4. NEXT Loss
5. PS NEXT Loss
6. ACR-F Loss
7. PS ACR-F Loss
8. Return Loss
9. Propagation Delay
10. Delay Skew

B. End-to-end cabling will be considered defective if it does not pass tests and inspections, based on Category CAT6A performance specifications chart below.

Category 6 Performance Specifications Chart	
Parameter	Category 6A Class E (Performance at 500 MHz shown in parenthesis)
Specified Frequency Range	1-500 MHz
Attenuation	
NEXT	27.9 dB
Power-Sum NEXT	37.1 dB
ACR	18.6 dB
Power-Sum ACR	20.3 dB
ELFEXT	9.3 dB
Power-Sum ELFEXT	
Return Loss	8 dB
Propagation Delay	548 nsec
Delay Skew	50 nsec
Network 5 Supported	10 GBASE

C. Alien Crosstalk testing is not required. Please get confirmation hereof from the Owner before testing.

D. The installed twisted-pair horizontal links shall be tested from the Telecommunications Room to the wall outlet in the work area.

E. The test plug shall fall within the values specified in the applicable standard (CAT5e, CAT6 or CAT6a) for NEXT Loss, FEXT Loss and Return Loss.

F. The tester interface adapters must be of high quality and the cable shall not show any twisting or kinking resulting from coiling and storing of the tester interface adapters. In order to deliver optimum accuracy, preference is given to a permanent link interface adapter for the tester than can be calibrated to extend the reference plane of the Return Loss measurement to the permanent link interface. The Contractor shall provide proof that the interface has been calibrated within the period recommended by the vendor. To ensure that normal handling on the job does not cause measurable Return Loss change, the adapter cord cable shall not be of twisted-pair construction.

G. A Pass or Fail result for each parameter is determined by comparing the measured values with the specified test limits for that parameter. The test result of a parameter shall be marked with an asterisk (*). When the result is closer to the test limit than the accuracy of the field tester. The field tester manufacturer must provide documentation as an aid to interpret results marked with asterisks. To which extent '*' results shall determine approval or disapproval of the element under test shall be defined in the relevant detail specification, or agreed on as a part of a contractual specification.

3.2 CERTIFYING COPPER CABLE

A. Category 6A

1. All tests should be in accordance with the field test specifications defined in ANSI/TIA/EIA-568-B.2-10 "TRANSMISSION PERFORMANCE SPECIFICATIONS FOR 4-PAIR 100Ω AUGMENTED CATEGORY 6 CABLING." This document will be referred to as the "TIA Cat 6A Standard."

2. The test parameters for Cat 6A are defined in the TIA Cat6A standard. In order to pass the test, all measurements (at each frequency in the range from 1 MHz through 500 MHz) must meet or exceed the limit value determined in the above-mentioned standard.

3.3 ACCEPTANCE OF COPPER TEST RESULTS

A. One hundred percent of the installed cabling links must pass the requirements of the applicable standards. Any failing link must be diagnosed and corrected. The corrective action shall be followed with a new test to prove that the corrected link meets the performance requirements. The final and passing result of the tests for all links shall be provided in the final test results documentation, which shall be reviewed, approved and signed by the Contractors RCDD.

B. Acceptance of the test results shall be given in writing after the project is fully completed and tested in accordance with Contract Documents and to the satisfaction of the Owner.

3.4 ADMINISTRATION

A. Test results documentation

1. Test results saved within the field-test instrument shall be transferred into a FLW file so it can be uploaded to Fluke Networks LinkWare software that allows for the maintenance, inspection and archiving of the test records. These test records shall be uploaded to the PC unaltered, i.e., “as saved in the field-test instrument.”

2. The test results documentation shall be available for inspection by the Owner or the Owner’s representative during the installation period and shall be passed to the Owner’s representative within five (5) working days of completion of tests on cabling served by a telecommunications room or of backbone cabling. The installer shall retain a copy to aid preparation of as-built information.

3. The database for the complete project shall be stored and delivered on CD-ROM prior to Owner acceptance of the building. This CD-ROM shall include the software tools required to view, inspect, and print any selection of the test reports.

4. Circuit IDs reported by the test instrument should match the specified label ID.

5. The detailed test results documentation data is to be provided in an electronic database for each tested copper cable and shall contain the following information.

   a. The identification of the customer site as specified by the Owner.
   b. The name of the test limit selected to execute the stored test results.
   c. The name of the personnel performing the test.
   d. The date and time the test results were saved in the memory of the tester.
   e. The manufacturer, model and serial number of the field-test instrument.
   f. The version of the test software and the version of the test limit database held within the test instrument.
   g. The copper identification number.
   h. The length for each copper cable.
   i. The overall Pass/Fail evaluation of the copper link-under-test.

END OF SECTION

SECTION 27 15 00
COMMUNICATIONS HORIZONTAL CABLING

PART 1 - GENERAL

1.1 SCOPE

A. Perform all Work required to provide and install the required remote control and signal cabling indicated by the Contract Documents with supplementary items necessary for proper installation.

1.2 REFERENCES

A. See Section 270513.

B. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

C. Specifications throughout all Divisions of the Project Manual are directly applicable to this Section, and this Section is directly applicable to them.

D. The latest published edition of a reference shall be applicable to this Project unless identified by a specific edition date.

E. All materials, installation and workmanship shall comply with the applicable requirements and standards addressed within the following references:

1.3 HORIZONTAL CABLING DESCRIPTION

A. Horizontal cable and its connecting hardware provide the means of transporting signals between the telecommunications outlet/connector and the horizontal cross-connect located in the Telecommunication Room or Equipment Room.

1. Horizontal cabling shall contain no transition point or consolidation point between the horizontal cross-connect and the telecommunications outlet/connector.

2. Bridged taps and splices shall not be installed in the horizontal cabling.

B. The maximum allowable horizontal cable length is 295 feet. This maximum allowable length does not include an allowance for the length of 16 feet to the workstation equipment. The maximum allowable length does not include an allowance for the length of 16 feet in the horizontal cross-connect.

C. Color and cable type designations UTP cable:

1. Data and Voice: UTP CAT6A, Blue

PART 2 - PRODUCTS

2.1 MANUFACTURER HORIZONTAL CABLING

A. Manufacturers: Subject to compliance with requirements, provide telecommunication systems of one (1) of the following: System warranty shall be written through the connectivity manufacturer.

10 GIG. SYSTEMS

Panduit TX6 10 Gig System: Basis of Design

2.2 UTP CABLE

A. Horizontal UTP Cable. Cable shall be label-verified. Cable jacket shall be factory marked at regular intervals indicating verifying organization and performance level. Cable shall be blue. Conductors shall be four (4)-pair solid untinned copper 23 AWG. Cable shall be plenum rated CMP per NFPA 70.

2.3 UTP CABLE HARDWARE

A. Data Outlets. Wall outlet plates shall include modular eight (8)-position jacks, quantity as indicated on the Drawings. Modular jacks shall be non-keyed eight (8)-position jacks and the color blue. A color-coded bezel or icon may be used to identify the modular jack. Modular jack pin/pair configuration shall be T568B. (Verify pin/pair configuration with Owner prior to installation.) Modular jacks shall be unkeyed. Faceplates shall be labeled face plates with recessed labeling field included to accept label card and clear plastic cover. Faceplate material and finish shall match faceplates for other wiring devices in the same room or space (See Division 26 Specification Section Wiring Devices for material and finish). Blank cover plates shall be added for unused openings on face plate.

B. Rack mounted patch panels shall consist of non-keyed eight (8)-position modular jacks, modular connection system with modular jacks, arranged in rows or columns on 19-inch rack mounted panels. Patch panel shall be fully populated. Jack pin/pair configuration shall be T568B. (Verify pin/pair configuration with Owner prior to installation.) Jacks shall be unkeyed. Panels shall be provided with labeling space. Patch panels shall be 48 port. Modular patch panels shall incorporate cable support and or strain relief mechanisms to secure the horizontal cables at the termination block and to ensure that all manufacturers minimum bend radius specifications are adhered to. Provide quantity of patch panels required to accommodate the installed cable plant plus 20% spares.

C. Copper Patch Cords: Factory-made, four (4)-pair RJ-45 connectors on end of cables. These cables shall be used to cross-connect between the network electronics and the horizontal RJ-45 modular patch panel. Provide 100% for all assigned ports on the modular patch panel. Of these cords, provide 40% at 7’ and 60% at 10’ lengths; terminated with eight (8)-position modular RJ-45 connector at each end. Patch cords shall not be made-up in the field.

1. Patch cord shall have bend-relief-compliant boots and color-coded icons to ensure Category 6 performance. Patch cords shall have latch guards to protect against snagging.

2. Patch cords shall have color-coded boots for circuit identification.

3. Color and quantity: Color yellow for data and color blue for voice, one (1) for each modular jack in faceplate for project plus 20% spare.

4. Contractor to coordinate based on room layout and with Owner prior to ordering/installing patch cords.

D. Work Area Patch Cords: Factory-made, four (4)-pair cables in 10' lengths; terminated with eight (8)-position modular RJ-45 connector at each end. Patch cords shall not be made-up in the field.

1. Patch cords shall have bend-relief-compliant boots and color-coded icons to ensure Category 6A performance. Patch cords shall have latch guards to protect against snagging.

2. Patch cords shall have color-coded boots for circuit identification.

3. Contractor to provide patch cords based on the total quantity of modular patch panel ports.

4. Color and quantity: Gray color, one (1) for each modular jack in faceplate for project plus 20% spares.

5. Contractor to coordinate specific patchcord requirements with owner prior to ordering and installing patch cords.

2.4 GENERAL

A. All materials shall meet or exceed all applicable referenced standards, federal, state and local requirements, and conform to codes and ordinances of authorities having jurisdiction.

B. Cables shall be terminated with connecting hardware of same category or higher.

PART 3 - EXECUTION

3.1 GENERAL

A. Installation shall meet or exceed all applicable federal, state and local requirements, referenced standards and conform to codes and ordinances of authorities having jurisdiction.

B. All installation shall be in accordance with manufacturer's published recommendations.

C. Horizontal UTP cable must be terminated using 8-conductor, 8-position connectors. The pin/pair assignment will be T568B. Use color matching icon.

D. Install plenum cable in environmental air spaces, including plenum ceilings.

E. Cables and conductors shall sweep into termination areas; cables and conductors shall not bend at right angles. Manufacturer's minimum bending radius shall not be exceeded. When there are multiple system type drops to individual workstations, relative position for each system shall be maintained on each system termination block or patch panel.

F. Provide service loops above the ceilings at the workstation location and in the telecommunication closet. At the workstation provide a minimum cable slack of 12-inches for UTP, cables and 40-inches for optical fiber cables. In the telecommunication closets provide a minimum cable slack of 10-feet for both UTP and optical fiber cables. Cable slack shall be neatly installed and supported by ladder rack and ladder rack drop outs above the vertical wire managers in the equipment racks.

G. Unshielded Twisted Pair Cable: Each pair shall be terminated on appropriate outlets, terminal blocks or patch panels. Pairs shall remain twisted together to within the proper distance from the termination. Conductors shall not be damaged when removing insulation. Wire insulation shall not be damaged when removing outer jacket. The pulling tension on a four (4)-pair UTP cables shall not exceed 25 lbs. for a single or bundle of cables.

3.2 COORDINATION

A. Coordinate telecommunications outlet/connector locations with location of power receptacles at each work area with General Contractor/Owner. The telecommunications outlet/connector shall be in close proximity to the power receptacles in each work area.

3.3 INSTALLATION OF CABLES

A. General Requirements for Cabling

1. MUTOA shall not be used.

2. Horizontal Distribution Cable. All cables shall be installed in a continuous raceway from each data outlet box to accessible space above ceiling, nearest cable tray, or bottom of the exposed structural joist. Outlet box shall be 4”x 4” x 2-1/8” deep box with single gang plaster ring. Provide a continuous raceway to telecommunication closet in areas without accessible ceilings. Conduit size shall be 1-inch minimum. Horizontal cabling installed in/out of cable tray shall be bundled at not less than 4’ intervals with hook and loop tie wraps. The use of plastic cable ties is strictly prohibited. Provide insulated bushing at each end of conduit prior to installation of cable. The rated cable pulling tension shall not be exceeded. Cable shall not be stressed such that twisting, stretching or kinking occurs. Cable shall not be spliced. Copper cable not in a wire raceway, shall be suspended a minimum of 8-inches above ceilings by cable supports no greater than 48-inches apart. Cable shall not be run through structural members or in contact with pipes, ducts or other potentially damaging items. Placement of cable parallel to power conductors shall be avoided, if possible; a minimum separation of 12-inches shall be maintained when such placement cannot be avoided. Cables shall be terminated; no cable shall contain unterminated elements. Minimum bending radius shall not be exceeded during installation or once installed. Service loops shall have a 3 feet per cable located at the ceiling at the last support (ex. J-hook, etc.) before entering cable into conduit, wall, and surface raceway. Service loops for modular furniture/movable walls shall have an additional fifteen (15) feet per cable for horizontal cable runs of under 250 feet in length for future office layout change without recabling. Horizontal cabling fed from poke-thru device to furniture raceway shall be managed in flexible spiral wrap and neatly concealed to furniture raceway.

3. Cold-Weather Installation: Follow manufacturer specifications for installation and storage temperatures. Heat lamps shall not be used for heating.

END OF SECTION

SECTION 31 10 00

SITE CLEARING

PART 1 GENERAL

1.01 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specifications, apply to this Section.

1.02 SUMMARY:

A. This section includes the following:
   1. Protection of existing trees.
   2. Removal of Trees and other Vegetation.
   3. Clearing and Grubbing.
   4. Removing above-grade improvements.
   5. Removing below grade improvements.

1.03 RELATED WORK SPECIFIED ELSEWHERE:

A. Section 31 20 00 Earthwork

1.04 SUBMITTALS

A. General: Submit the following in accordance with Conditions of the Contract and Division 1 Specifications Section.

B. Schedule indicating proposed sequence of operations for selective demolition work to Owner's Representative for review prior to start of work.

1.05 PROJECT CONDITIONS:

A. Traffic: Conduct site demolition 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.

B. Protection of Existing Trees and Vegetation: Protect existing trees and other vegetation indicated to remain in place, against unnecessary cutting, breaking or skinning of roots, skinning or bruising of bark, smothering trees by stockpiling construction materials or excavated materials within drip line, excess foot or vehicular traffic, or parking of vehicles within drip line. Provide temporary fencing to protect trees and vegetation as instructed on drawings.

C. Utility Services: Maintain existing utilities indicated to remain in service and protect them against damage during demolition operations.

D. Environmental Controls: Comply with governing regulations pertaining to environmental protection.
   1. Do not use water when it may create hazardous or objectionable conditions such as ice, flooding, and pollution.

E. If unanticipated mechanical, electrical, or structural elements are encountered, investigate and measure both nature and extent of conflict. Submit report to Owner's Representative, rearrange selective demolition schedule as necessary to continue overall job progress without undue delay.

F. Salvageable Improvements: Carefully remove items indicated to be salvaged, and store on owners premises where indicated or directed.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.01 DEMOLITION:

A. General: Perform selective demolition work in a systematic manner. Use such methods as required to complete work indicated on Drawings in accordance with demolition schedule and governing regulations.
   1. Provide services for effective air and water pollution controls as required by local authorities having jurisdiction.

3.02 SITE CLEARING:

A. General: Remove trees, shrubs, grass, and other vegetation, improvements or obstructions as required to permit installation of new construction. Remove similar items elsewhere on site or premises as specifically indicated.
   1. Removal includes digging out and off-site disposing of stumps and roots.
   2. Cut minor roots and branches of trees indicated to remain in a clean and careful manner, where such roots and branches obstruct installation of new construction.

B. Clearing and Grubbing: Clear sites of trees, shrubs and other vegetation, as indicated on the plans.
   1. Completely remove stumps, roots, and other debris protruding through ground surface.
   2. Use only hand methods for grubbing inside drip line of trees indicated to remain.
   3. Fill depressions caused by clearing and grubbing operations with satisfactory soil materials, unless further excavation of earthwork is indicated.
      a. Compact fill material in accordance with requirements of Section 31 20 00 Earthwork.

C. Removal of Improvements: Remove existing above-grade and below-grade improvements as indicated on drawings.

3.03 DISPOSAL OF DEMOLISHED MATERIALS

A. Remove from site debris, rubbish, and other materials resulting from demolition operations. Transport and legally dispose of off-site.
   1. If hazardous materials are encountered during demolition operations, comply with applicable regulations, laws, and ordinances concerning removal, handling, and protection against exposure or environmental pollution.
   2. Burning of removed materials is not permitted on project site.

3.04 CLEAN UP AND REPAIR:

A. General: Upon completion of demolition work, remove tools, equipment, and demolished materials from site. Remove protections:
   1. Repair demolition performed in excess of that required. Return elements of construction and surfaces to remain to condition existing prior to start of operations. Repair adjacent construction or surfaces soiled or damaged by selective demolition work.

END OF SECTION

SECTION 31 20 00

EARTHWORK

PART 1 GENERAL

1.01 RELATED DOCUMENTS:

A. Drawings and General Provisions of Contract, including General and Supplementary conditions and Division 1 Specification Sections, apply to work specified in this Section.

1.02 DESCRIPTION OF WORK:

A. Extent of Earthwork is indicated on Drawings.

B. Work includes:
1. Stripping, topsoil stockpiling.
2. Excavation.
3. Fill.
4. Compaction.
5. Preparation of subgrade for walls, parking and drives, and steps and walks.
6. Grading.
7. Topsoil placement.
8. Finish grading.
9. Erosion Control
10. Excludes: Over Excavation and Structural Backfill within building pad. Refer to Structural Specifications and Geotechnical Report.

1.03 RELATED WORK SPECIFIED ELSEWHERE:

A. Erosion Control: Section 31 35 00.

B. Site Clearing: Section 31 10 00.

C. Landscape Grading, Section 32 91 19.

1.04 QUALITY ASSURANCE:

A. Codes and Standards:
1. Perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction.
2. The entire installation shall fully comply with all local and state laws and ordinances, and with all established codes applicable thereto.

B. Testing and Inspection Service:
1. Cost of field and laboratory testing will be borne by the Owner. Testing by laboratory approved by the Owner and Engineer.
2. Contractor will cooperate with testing laboratory and geotechnical Engineer in coordinating compaction testing, installation and protection of settlement monitoring devices.

1.05 SUBMITTALS:

A. Testing Reports - Excavating: Submit the following reports directly to the Engineer from the testing services, with copies to the Contractor and the Owner.
1 Test reports on borrow material/lab analysis of fill materials.

2. Verification of each footing subgrade (material and unconfined compressive strength).
3. Field density test reports.
4. One optimum moisture-maximum density curve for each type of soil encountered.

Report of actual unconfined compressive strength and/or results of bearing tests of each strata tested.

1.06 JOB CONDITIONS:

A. Soil Borings:
1. Soil borings have been made for this site and can be found in Geotechnical Report prepared by TEAM Services (Report No. 1-5430), dated January 25th, 2024.
2. Test borings and other exploratory operations may be made by Contractor at no cost to Owner with Owner approval.

B. Existing Utilities:
1. Locate existing underground utilities in areas of work. If utilities are to remain in place, provide adequate means of support and protection during earthwork operations.
2. Underground utilities shown on the drawings have been taken from existing public records, Owner's records and available as-built drawings and are correct to the best of our knowledge and provided for information only.
3. Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, consult utility owner immediately for directions. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities caused by Contractor-to the satisfaction of utility owner at no cost to the Project Owner.
4. Do not interrupt existing utilities serving facilities occupied and used by Owner or others, during occupied hours, except when permitted in writing by Engineer and then only after acceptable temporary utility services have been provided.
5. Provide minimum of 48-hour notice to Owner and Engineer and receive written notice to proceed before interrupting any utility.
6. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies for shut-off of services if lines are active.

C. Protection of Persons and Property:
1. Barricade open excavations occurring as part of this work and post with warning lights.
2. Operate warning lights as recommended by authorities having jurisdiction.
3. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by earthwork operations.

D. Survey:
1. The topographic survey of the site is provided for informational purposes only. The contractor is responsible for verifying topography of the site prior to construction. No change orders or drawing revisions will be executed or issued for any contractor claims that the survey is wrong. This includes but isn't limited to frost heave or farming activity claims.

PART 2 PRODUCTS

2.01 SOIL MATERIALS/DEFINITIONS:

A. Satisfactory soil materials are defined as those complying with ASTM D2487 soil classification groups CL, ML, CL-ML, GC, GW, GP, GM, ML, SC, SM, SW, and SP.

B. Unsatisfactory soil materials are defined as those complying with ASTM D2487 soil classification groups MH, CH, OL, OH, PT and any bedrock material.

C. Subbase material (granular fill): Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, natural or crushed sand.

D. Fill materials:
1. The fill material type shall be cohesive, soil having a "CL", “CL-ML” soil classification in accordance with the Unified Soil Classification System and shall have a maximum laboratory dry density (100%) of 100 pounds per cubic foot or more as determined by ASTM D698 (Standard Proctor).
2. No organic dark colored soils or plastic and potentially expansive soils, such as clay shale, are considered suitable engineered fill materials. Topsoils should be sorted and stockpiled for landscaping purposes. Topsoil materials can also be used for surcharge fill.
3. When fill material includes rock, the maximum rock size acceptable shall be three inches (3"). No large rocks shall be allowed to nest and all voids must be carefully filled with small stones or earth, properly compacted. No large rocks will be permitted within twelve inches (12") of the finished grade.

E. Topsoil: Secure and stockpile from naturally well drained areas during stripping operations; use satisfactory soil materials free of admixture of subsoil, reasonably free from clay lumps, stone or other debris a greater than 3/4" in diameter.
1. Should also comply with all NPDES and Iowa DNR requirements, if these requirements are more stringent that project specifications.

PART 3 EXECUTION

3.01 EXCAVATION:

A. Excavation is unclassified, and includes excavation to subgrade elevations indicated, regardless of character of materials and obstructions encountered.

B. Unauthorized Excavation:
1. Consists of removal of materials beyond indicated subgrade elevations or dimensions without specific direction of Engineer.
2. Unauthorized excavation, as well as remedial work resulting from the unauthorized excavation directed by Engineer shall be at Contractor's expense.
3. Backfill and compact unauthorized excavations as specified for authorized excavations of same classification, unless otherwise directed by Engineer.

C. Additional Excavation:
1. When excavation has reached required subgrade elevations, notify Engineer who will make an inspection of conditions. Engineer shall evaluate and advise if bearing material is suitable and shall provide unconfined compressive strength tests.
2. If unsuitable bearing materials are encountered at required elevations, carry excavations deeper and replace excavated material with engineered compacted backfill as directed by engineer in soils/ geotechnical report.
3. Reference Geotechnical/ Soils Report for all possible over excavation.
4. No additional compensation will be provided for grading and pipe installation for the site work unless unsuitable soils are encountered which are not represented in the soils report.
5. It is the intent that if the contractor encounters unsuitable soils within the building envelope (foundation and slab) that the unit prices as seen in the front-end sections 01 22 00 shall apply.

D. Stability of Excavations:
1. Slope sides of excavations to comply with local codes and ordinances having jurisdiction.

a. Shore and brace where sloping is not possible because of space restrictions or stability of material excavated.
b. Maintain sides and slopes of excavations in safe condition until completion of backfilling.

E. Dewatering:
1. Prevent surface water and subsurface or ground water from flowing into excavations and from flooding project site and surrounding area.
2. Do not allow water to accumulate in excavations.
3. Remove water to prevent softening of foundation bottoms, undercutting footings, and soil changes detrimental to stability of subgrades and foundations.
4. Provide and maintain pumps, well points, sumps, suction and discharge lines, and other dewatering system components necessary to convey water away from excavations.
5. Establish and maintain temporary drainage ditches and other diversions outside excavation limits to convey rain water and water removed from excavations to collecting or run-off areas.
6. Do not use trench excavations as temporary drainage ditches.

F. Material Storage:
1. Stockpile satisfactory excavated materials where directed by Trade Contractor and SWPPP Inspector, until required for backfill or fill.
2. Place, grade and shape stockpiles for proper drainage.
3. Locate and retain soil materials away from edge of excavations.
4. Do not store within drip line of trees indicated to remain.
5. Dispose of excess soil material and waste materials as herein specified.

G. Subgrade Preparation: Paving systems (See Soils Report):
1. Provide a minimum 4” aggregate base for exterior pavements with material meeting the specifications for IDOT granular subbase (Section 4121)
2. Provide a minimum 12” compacted depth subgrade (2-6” lifts) for paving, plus fill as required.
3. Scarify, mix and recompact materials to provide uniform composition at least 12" below top of subgrade for paving for full width of subgrade plus 2'-0" on each side of paving.
4. Construct 12" thick uniform subgrade by excavating top 6" of subgrade, scarifying, mixing, and recompacting next 6" of subgrade and then replacing top 6" of subgrade and recompacting.
5. Proof roll existing soils prior to placing fill to determine location of unsuitable bearing materials. Notify Engineer if unsuitable conditions are encountered for direction. Proof roll truck requirements (axles, wheels and weight) per Iowa DOT specifications.
    a. Perform proof rolling with a truck loaded to the maximum tandem axle gross weight of 40,000 pounds. Operate trucks at less than 10 mph. Make multiple passes for every lane. The subgrade will be considered to be unstable if, under the operation of the loaded truck, the surface shows yielding (soil wave in front of the loaded tires), pumping or rutting of more than ½ inch, measured from the top to the bottom of the rut at the outside edges.
6. Compact as per Paragraph 3.02 Compaction requirements.

H. Topsoil Stripping
1. Strip and stockpile a minimum of the top 6” of soil on all disturbed areas. Additional depth of stripping may be necessary as stated in soils report. Final quantity of topsoil stripped shall be adequate to respreads a minimum of 8” in all green, non-paved areas.

3.02 COMPACTION:

A. General: Control soil compaction during construction providing minimum percentage of density specified for each area classification indicated below.

B. Compaction Requirements: Compact top 12" of subgrade and each layer of backfill or fill material to not less than the following percentages of maximum density:

Construction Type	Standard Proctor ASTM D698 Cohesive Soils
Building, recreation field subgrade walls, roadway, parking lot and critical backfill area beneath same; e.g. trenches	95%
Backfill adjacent to structures not supporting other structures - minor subsidence possible.	95%
Lawn areas. Non-critical areas - moderate subsidence possible.	85-90%
Upper 12 inches of pavement subgrade.	98%
Within 3 feet below footing bearing level.	98%

*Use relative density technique (ASTM D4253 and D4254) where standard proctor technique (ASTM D698) does not result in a definable maximum dry density and optimum moisture content.

C. Moisture Control and Content:
1. When subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to surface of subgrade, or layer of soil material, to prevent free water appearing on surface during or subsequent to compaction operations.
2. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density.
3. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by disking, harrowing or pulverizing until moisture content is reduced to a satisfactory value.
4. The fill material shall be compacted at a moisture content typically within a range of optimum moisture content as determined by ASTM D698 (Standard Proctor). Report has varying moisture content ranges depending on plasticity.

3.03 BACKFILL AND FILL:

A. General: Place acceptable soil material in layers to required subgrade elevations, for each area classification listed below.
1. In excavations, use satisfactory excavated or borrow material. Site strippings (per soils report) are not to be used as satisfactory excavated material.
2. Under grassed areas, use satisfactory excavated or borrow material.

3. Under walks and pavements, use subbase material or satisfactory scarified and recompacted subgrade or borrow material, or combination of these.
4. Under steps, use subbase material.
5. Under piping and conduit, use subbase material where subbase is indicated under piping or conduit; shape to fit bottom 90 degrees of cylinder.

B. Ground Surface Preparation:
1. Clearing area to be filled: All timber, logs, trees, brush and rubbish shall be removed or otherwise acceptably disposed of.
2. Scarifying area to be filled:
   a. All vegetable matter and dark colored organic soil shall be removed from the surface upon which the fill is to be placed (per soils report) and the surface shall be plowed or scarified to a depth of at least 8 inches and until the surface is free from ruts, hummocks or other uneven features which would tend to prevent uniform compaction by the equipment to be used.
   b. Where fills are made on hillsides or slopes, the slope of the original ground upon which the fill is to be placed shall be plowed or scarified deeply or where the slope ratio of the original ground is steeper than 5 horizontal to 1 vertical, the bank shall be stepped or benched. Ground slopes which are flatter than 5 to 1 shall be benched when considered necessary by the Engineer.
3. Compaction area to be filled: After the foundation for the fill has been cleared and plowed or scarified, it shall be disked or bladed until it is uniform and free from large clods, brought to within the specified moisture content range and compacted to not less than ninety-five percent (95%) of maximum dry density in accordance with current ASTM D698 (Standard Proctor).

C. Placement and Compaction:
1. Depth and Mixing of Fill Layers: The selected fill material shall be placed in level, uniform layers which, when compacted, shall have a density conforming to a minimum of ninety-five percent (95%) of maximum dry density in accordance with ASTM D698 (Standard Proctor). Each layer shall be thoroughly blade mixed during the spreading to insure uniformity of material in each layer. Compacted layer thickness will be compatible with the demonstrated compatibility of the compaction equipment being used, with a compacted layer thickness of 6" considered typical.
2. Amount of Compaction: After each layer (lift) has been placed, mixed and spread evenly, it shall be thoroughly compacted to a minimum of ninety-eight percent (98%) of the material's maximum dry density as determined by ASTM D698 (Standard Proctor) for areas within 3 feet below building foundation. Grassed areas or areas not supporting buildings or slabs-on-grade should be compacted to a minimum of ninety-five percent (95%).
3. Compaction of Fill Layer: Compaction equipment shall be of such design to be able to compact the fill to the specified density. Compaction shall be accomplished while the fill material is within the specified moisture content range. Compaction of each layer shall be continuous over its entire area and the compaction equipment shall make sufficient trips to ensure that the required density has been obtained.
4. Compaction of Slopes: Fill slopes shall be compacted. Compacting operations shall be continued until the slopes are stable but not too dense for planting on the slopes. Compacting of the slopes may be done progressively in increments of three to five feet (3' to 5') in fill height or after the fill is brought to its total height.
5. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.

3.04 GRADING:

A. General:
1. Uniformly grade areas within limits of grading under this Section, including adjacent transition areas.

2. Smooth finished surface within specified tolerances, compact with uniform levels or slopes between points where elevations are indicated, or between such points and existing grades.

B. Grading Outside Paving Lines:
1. Grade areas to adjacent to paving lines to drain away from structures and to prevent ponding.
2. Finish surfaces free from irregular surface changes, and as follows:
   a. Lawn or Unpaved Areas: Finish areas to receive topsoil to within not more than 0.10' above or below required subgrade elevations.
   b. Walks: Shape surface of areas under walks to line, grade and cross-section, with finish surface not more than 0.10' above or below required subgrade elevation.

C. Grading Surface of Fill Under Paving & Recreational Fields (coordinate with field specs):
1. Grade smooth and even, free of voids, compacted as specified, and to required elevation.
2. Provide final grades within a tolerance of 1/2" when tested with a 10' straightedge.

D. Compaction: After grading, compact subgrade surfaces to the depth and indicated percentage of maximum or relative density for each area classification.

3.05 EMBANKMENTS:

A. General: Prepare site, place and compact excavated materials to required elevation and cross section.

B. Construction:
a. Construct embankment in horizontal layers not more than 8" in loose thickness.
b. Deposit each layer over full width of embankment as separate and distinct operation.
c. After layer is deposited, smooth to uniform depth by means of suitable motor patrol or bulldozer.
d. Compact layer by rolling with tamping type roller until full weight of roller is supported by tamping feet, but with not less than one pass per inch of loose thickness of layer.
e. Roller will be considered to be supported entirely on its tamping feet when feet do not penetrate more than 3" into material being compacted.
f. If soil is wet so that it will not sufficiently compact by one passing of roller per inch of loose thickness, provide one disking per 2" of loose thickness.
   a. Cut and stir full depth of layer.
   b. Allow interval of no longer than two hours between successive diskings, or as directed by Engineer.
   c. After disking is completed compact layer by specified rolling.
g. If soil is dry so that it will not satisfactorily compact by rolling, moisten material before compaction; manipulate material to secure proper distribution of moisture before compaction.
h. Whenever operations are suspended during periods rain is likely to occur, smooth and compact surface to shed water readily.
i. Compact to not less than 95% maximum dry density with moisture content not more than three percentage points above or below optimum; maximum density determined by ASTM D698 (Standard Procter). Different moisture ranges are possible for varying plasticity.

3.06 TOPSOIL SPREADING:

See Section 32 91 19 Landscape Grading.

3.07 FINISH GRADING:

See Section 32 91 19 Landscape Grading.

3.08 MAINTENANCE:

A. Protection of Graded Areas:
   1. Protect newly graded areas from traffic and erosion. Keep free of trash and debris.
   2. Repair and re-establish grades in settled, eroded, and rutted areas to specified tolerances.
   3. Keep public streets clean from soil, soil tracking and debris at all times.

B. Reconditioning Compacted Areas: Where completed graded areas are disturbed by subsequent construction operations, erosion or adverse weather, scarify surface, re-shape and compact to required density prior to further construction.

C. Settling: Where settling is measurable or observable at excavated areas during general project warranty period, remove surface (pavement, lawn or other finish), add backfill material, compact, and replace surface treatment. Restore appearance, quality, and condition of surface or finish to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.09 EROSION PROTECTION:

See Section 31 35 00 Erosion Control.

3.10 FIELD QUALITY CONTROL:

A. Quality Control Testing During Construction:
   1. Allow testing service to inspect and approve subgrades and fill layers before further construction work is performed.
   2. Perform field density tests in accordance with ASTM D2922 (nuclear method) or ASTM D1556 (sand cone method), as applicable.
   3. Footing Subgrade: For each strata of soil on which footings will be placed, conduct at least one test every 50 lineal feet to verify required design bearing capacities. Subsequent verification and approval of each footing subgrade may be based on a visual comparison of each subgrade with related tested strata, when acceptable to Engineer.
   4. Paved Areas and Building Slab Subgrade: Make at least one field density test of subgrade for every 5000 sq. ft. of paved area, but in no case less than 3 tests. In each compacted fill layer, make one field density test for every 5000 sq. ft. of overlaying building slab or paved area, but in no case less than 3 tests.
   5. If, in opinion of Engineer, based on testing service reports and inspection, subgrade or fills which have been placed are below specified density, provide additional compaction and testing at no additional expense.

3.11 NATURAL AND ARTIFICIAL DRAINAGE:

A. If necessary during the progress of the work to interrupt the natural drainage of the surface water, Contractor shall provide approved temporary drainage facilities.

B. If necessary to interrupt any field tile drains that might be encountered in this work, the Contractor shall restore or extend drains as necessary. Payment for this work will be on the basis of contract conditions relative to changes in work.

3.12 DISPOSAL OF EXCESS AND WASTE MATERIALS:

A. Removal from Owner's Property: Remove waste materials, including unacceptable excavated material, trash and debris from site to an approved location, meeting state and local regulations, for disposal by Contractor.

B. All excess excavation shall be removed from the site unless otherwise stated on plans or directed by the owner.

END OF SECTION

SECTION 31 23 33

TRENCHING AND BACKFILLING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Trench excavation for pipe systems, manholes, intakes and other structures.

B. Trench bedding and foundation stabilization.

C. Pipe and structure placement and backfill.

1.02 DESCRIPTION OF WORK

A. Perform all excavations required to complete the work shown on the plans.

B. Prepare trench excavations and shoring for new work, and install the utility lines, structures, and system components, including bedding and foundation stabilization.

C. Complete specified backfill operation.

D. Reference is made to the Iowa Department of Transportation Standard Specifications for Highway and Bridge Construction, Series 2001, and all current General Supplemental Specifications and Materials Instructional Memorandum by the term "Iowa DOT Specifications" and/or "Iowa DOT I.M."

1.03 SUBMITTALS

A. Submit under provisions of Division 1.

B. Results of Proctor and In-Place Density Tests on backfill.

C. Contractor will provide Material Certifications to the Engineer.

1.04 SUBSTITUTIONS

A. Use only materials conforming to these specifications unless permitted otherwise by Engineer.

B. Obtain approval of Engineer for all substitutions prior to use.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver only materials that fully conform to these specifications or for which submittals have been provided to Engineer and approved for use.

B. Store delivered materials and excavated materials in locations that will not interfere with operations and minimize environmental damage.

C. Grade and shape stockpiles for drainage and protect adjacent areas from runoff. Provide erosion control around stockpiles.

D. Remove unsuitable and excess materials from the site.

1.06 SCHEDULING AND CONFLICTS

A. Construction Sequence:
   1. Attend a preconstruction meeting if required by Engineer.
   2. Submit plan for construction sequence and schedule prior to commencing construction.

B. Conflict Avoidance:
   1. Expose possible conflicts in advance of construction, such as utility lines and drainage structures. Verify elevations and locations of each and verify clearance for proposed construction.
   2. Complete other elements of the work that can affect line and grade in advance of other open cut

construction unless noted on the plans.

3. Notify Engineer of conflicts discovered or changes needed to accommodate unknown or changed conditions.

1.07 SPECIAL REQUIREMENTS

A. Stop Work: Stop work and notify Engineer immediately if contaminated soils, historical artifacts, or other environmental or historic items are encountered.

B. Conform to local, state, and federal requirements.

C. Abandoned Utilities: Remove and dispose of abandoned utility lines including gas mains, water mains, sewer mains, telephone conduits, service lines, etc. required to complete the work. Said work shall be incidental to the project unless otherwise specified.

PART 2 - PRODUCTS

2.01 EXCAVATED MATERIALS

A. Unclassified Excavation: Excavation of all materials encountered, except rock and over-excavation.

B. Rock Excavation: Boulders or sedimentary deposits that cannot be removed without continuous use of pneumatic tools or blasting.

C. Over-excavation: Excavation of soil or rock in trenches below the pipe zone.

D. Suitable Excavated Materials for Backfill:

1. Soil, clay, silt, sand, and gravel with moisture content suitable to achieve required compaction. ASTM D 2321, Class II through IVA (see 2.01, E).
2. Fine-grained soils according to ASTM D 2321 Class IVB (inorganic) (see 2.01, E) may be used in the final backfill upon approval of the Engineer.
3. Adjust moisture content of excessively wet, but otherwise acceptable, material by spreading, turning, aerating, and otherwise working material as necessary to achieve required moisture range.
4. Adjust moisture content of excessively dry, but otherwise acceptable material by adding water, then turning, mixing, and otherwise blending the water uniformly throughout the material until the required moisture range is achieved.
5. Lime or fly ash may be added to soils to produce a suitable backfill material. Uniformly mix soil and additive. Determine Standard Proctor maximum density and optimum moisture content of the modified material. Amount of additive applied is subject to Engineer's approval.

E. Non-Manufactured (Excavated) Backfill Materials: (See Sections 2.03 and 2.04 for manufactured backfill)

Class	Type	Soil Group Symbol D 2487	Description	Percentage Passing Sieve Sizes			Atterberg Limits		Coefficients	
				1½ in. (40 mm)	No. 4 (4.75 mm)	No. 200 (0.075 mm)	LL	PI	Uniformity C_u	Curvature C_c
II	Coarse-Grained Soils, clean	GW	Well-graded gravels and gravel-sand mixtures; little or no fines	100 %	‹50% of "Course Fraction"	‹5%	Non Plastic		›4	1 to 3
		GP	Poorly-graded gravels and gravel-sand mixtures; little or no fines.						‹4	‹1 or ›3
		SW	Well-graded sands and		›50% of				›6	1 to 3

			gravelly sands; little or no fines.		"Coarse Fraction"					
		SP	Poorly-graded sands and gravelly sands; little or no fines.						‹6	‹1 or ›3
	Coarse-Grained Soils, borderline clean to w/fines	e.g. GW-GC, SP-SM	Sands and gravels which are borderline between clean and with fines.	100 %	Varies	5% to 12%	Non Plastic		Same as for GW, GP, SW and SP	
III	Coarse-Grained Soils, with Fines	GM	Silty gravels, gravel-sand-silt mixtures.	100 %	‹50% of "Coarse Fraction"	12% to 50%		‹4 or ‹"A" Line		
		GC	Clayey gravels, gravel-sand-clay mixtures.					‹7 and ›"A" Line		
		SM	Silty sands, sand-silt mixtures.		›50% of "Coarse Fraction"			›4 or ‹"A" Line		
		SC	Clayey sands, sand-clay mixtures.					›7 and ›"A" Line		
IVA	Fine-Grained Soils (inorganic)	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, silts with slight plasticity.	100 %	100%	›50%	‹50	‹4 or ‹"A" Line		
		CL	Inorganic clays of low to medium plasticity, gravely clays, sandy clays, silty clay, lean clays.					›7 and ›"A" Line		
IVB (1)	Fine-Grained Soils (inorganic)	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.	100 %	100%	›50%	›50	‹"A" Line		
		CH	Inorganic clays of high plasticity, fat clays.					›"A" Line		
V	Organic Soils (Unsuitable for backfill)	OL	Organic silts and organic silty clays of low plasticity.	100 %	100%	›50%	‹50	‹4 or ‹"A" Line		
		OH	Organic Clays of Medium to high plasticity, organic silts.				›50	‹"A" Line		
	Highly Organic (Unsuitable for backfill)	PT	Peat and other high organic soils.							

(1) See section 2.01, F, 2 for restrictive use.

F. Unsuitable Material: Remove unsuitable materials from the site, including, but not limited to, the following:
   1. Rock with gradation not meeting the stated gradation for stabilization material.
   2. Individual stones or concrete chunks larger than 3 inches, and averaging more than one per each cubic foot of soil.
   3. Frozen materials.
   4. Stumps, logs, branches, and brush.

5. Trash, metal, or construction waste.
6. Soil in clumps or clods larger than 6 inches, and without sufficient fine materials to fill voids during placement.
7. Unsuitable soils, as defined in Section 2010, 2.03, excluding material used as topsoil.
8. Class V Material (ASTM D 2321), as defined in Section 3010, 2.08.
9. Environmentally-contaminated soils.

G. Replacement of Unsuitable Soils:
1. If the excavated material is determined by the Engineer to be unsuitable and cannot be conditioned so that it becomes suitable, furnish all necessary backfill material.
2. Remove and dispose of unsuitable material from the site.

2.02 STABILIZATION (FOUNDATION) MATERIALS

A. Clean 2-1/2 inch crushed stone or crushed portland cement concrete (PCC) material, with the following gradation:

Sieve	Percent Passing
2-1/2”	100
2”	90 to 100
1-1/2”	35 to 70
1”	0 to 15
1/2”	0 to 5

B. Engineer may authorize a change in gradation subject to materials available locally at time of construction. Subject to the Engineer’s approval, crushed concrete may be used if it is within plus or minus 5% of the gradation for each size of material.

2.03 CLASS I GRANULAR BEDDING AND BACKFILL MATERIAL (Storm Sewers and Sanitary Sewers)

A. Use gravel or crushed stone for granular bedding, complying with the following gradation:

Sieve	Percent Passing
1-1/2”	100
1”	95 to 100
1/2"	25 to 60
No. 4	0 to 10
No. 8	0 to 5

Note: Engineer may authorize the use of crushed PCC, for pipe sizes up to 12 inches, or a change in gradation subject to materials available locally at time of construction.

B. Compaction: See Section 3.06.

2.04 CLASS II BACKFILL MATERIAL (Storm Sewers, Sanitary Sewers, and Water Mains)

A. Class II material is manufactured and non-manufactured open graded (clean) or dense graded (clean) processed aggregate, clean sand, or coarse-grained natural soils (clean) with little or no fines.

B. Class II material is non-plastic soil less than 1-1/2 inches in size and consists of the following:

SOIL TYPE	DESCRIPTION OF MATERIAL CLASSIFICATION	REMARKS

		SECTION
GW	Well-graded gravels and gravel-sand mixtures, little or no fines. 50% or more retained on No. 4 sieve. More than 95% retained on No. 200 sieve. Clean.	Where hydraulic gradient exists check gradation to minimize migration. Clean groups suitable for use as drainage blanket and underdrain.
GP	Poorly graded gravels and gravel sand mixtures, little or no fines. 50% or more retained on No. 4 sieve. More than 95% retained on No. 200 sieve. Clean.	
SW	Well-graded sands and gravelly sands, little or no fines. More than 50% passes No. 4 sieve. More than 95% retained on No. 200 sieve. Clean.	
SP	Poorly graded sands and gravelly sands, little or no fines. More than 50% passes No. 4 sieve. More than 95% retained on No. 200 sieve. Clean.	

C. Compaction: See Section 3.06.

D. Class II material may be specified in the contract documents by the Engineer between the pipe embedment zone and the top 2 feet of final backfill when the trench is under the pavement.

2.05 CLASS III BACKFILL MATERIAL (Storm Sewer, Sanitary Sewer, and Water Mains)

A. Class III material is natural coarse-grained soils with fines.

B. Class III material follows Section 2.01, G and consists of the following:

SOIL TYPE	DESCRIPTION OF MATERIAL CLASSIFICATION	REMARKS SECTION
GM	Silty gravels, gravel-sand-silt mixtures. 50% or more retained on No. 4 sieve. More than 50% retained on No. 200 sieve.	Do not use where water condition in trench may cause instability.
GC	Clayey gravels, gravel-sand-clay mixtures. 50% or more retained on No. 4 sieve. More than 50% retained on No. 200 sieve.	
SM	Silty sands, sand-silt mixtures. More than 50% passes No. 4 sieve. More than 50% retained on No. 200 sieve.	
SC	Clayey sands, sand-clay mixtures. More than 50% passes No. 4 sieve. More than 50% retained on No. 200 sieve.	

C. Compaction: See Section 3.06.

2.06 CLASS IVA BACKFILL MATERIAL (Storm Sewer, Sanitary Sewer, and Water Mains)

A. Class IVA material is natural fine grained inorganic soils.

B. Class IVA material follows Section 2.01, G and consists of the following:

SOIL TYPE	DESCRIPTION OF MATERIAL CLASSIFICATION	REMARKS SECTION
ML	Inorganic silts, very fine sands, rockflous, silty or clayey fine sands. Liquid limit 50% or less. 50% or more passes No. 200 sieve.	Obtain geotechnical evaluation of proposed material. May not be suitable under deep fills, surface

CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays. Liquid limit 50% or less. 50% or more passes No. 200 sieve.	applied wheel loads, and under heavy vibratory compactors and tampers. Do not use where water conditions in trench may cause instability.

C. Compaction: See Section 3010, 3.06.

D. Suitable only in dry trench conditions.

2.07 CLASS IVB BACKFILL MATERIAL (Storm Sewer, Sanitary Sewer and Water Mains)

A. Class IVB material is natural fine-grained inorganic (high elastic silts and plastic clays - fat clay) with a liquid limit greater than 50%.

B. Class IVB material follows Section 3010, 2.01 and consists of the following:

SOIL TYPE	DESCRIPTION OF MATERIAL CLASSIFICATION	REMARKS SECTION
MH	Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts. Liquid limit greater than 50%. 50% or more passes No. 200 sieve.	Not to be used in pipe embedment zone.
CH	Inorganic clays of high plasticity, fat clays. Liquid limit greater than 50%. 50% or more passes No. 200 sieve.	

C. Compaction: See Section 3.06.

D. When approved by the Engineer, Class IVB material may be used as final trench backfill in a dry trench.

E. Do not use in the pipe embedment zone.

2.08 CLASS V BACKFILL MATERIAL (Topsoil)

A. Class V Material is natural highly organic soils with a liquid limit greater than 50%. See Section 2.01.

B. Use Class V Material only as topsoil outside of the pavement, unless otherwise specified or allowed by the Engineer.

C. Do not use Class V Material in the pipe embedment zone.

2.09 BEDDING AND BACKFILL MATERIALS FOR PIPE CULVERTS

A. Bedding:
1. Use minimum Type C embedment.
2. Install water stop or curtain wall at culvert inlet, as specified in the contract documents.

B. Backfill Material:
1. Use all suitable material excavated for pipe culvert work, as specified in Section 2.01, for backfill material.
2. Dry suitable material that has excessive moisture prior to placement.
3. Remove unsuitable material, as specified in Section 2.01, from the project site.

2.10 BEDDING AND BACKFILL MATERIALS FOR SUBDRAINS

A. Drainable Bedding and Backfill Materials Include:
1. Porous backfill material.

2. Pea gravel.
3. Use as shown on the plans or on the detailed drawings.

B. Porous Backfill Material:
1. Crushed stone or gravel with the following gradation:

Sieve	Percent Passing
3/4"	100
1/2"	95 to 100
3/8"	50 to 100
No. 4	10 to 50
No. 8	0 to 8

Iowa DOT Gradation No. 29.

C. Coarse Aggregate: Use Stabilization Materials, per Section 3010.

D. Pea Gravel: Use commercially available pea gravel.

E. Impervious Bedding: Use least permeable on-site materials.

F. Engineering Fabric: Use Iowa DOT 4196.

2.11 SPECIAL PIPE EMBEDMENT MATERIAL

A. Concrete Supports: Where specified in the contract documents, construct concrete support systems.

B. Concrete Bedding, Arch, or Encasement:
1. Concrete: commercial, 4,000 psi compressive strength.
2. Unreinforced, unless otherwise shown on the plans.
3. Minimum concrete thickness: 6 inches or as shown on the plans.

C. Flowable Mortar:
1. Approximate quantities per cubic yard:
   a. Cement 100 pounds
   b. Fly ash 300 pounds
   c. Fine aggregate 2,600 pounds
   d. Water, approximate 70 gallons
2. Compressive strength at 28 days; 100 psi to 200 psi.

D. Controlled Low Strength Material (CLSM):
1. Approximate quantities per cubic yard:
   a. Cement 50 pounds
   b. Fly ash 250 pounds
   c. Fine aggregate 2910 pounds
   d. Water, approximate 60 gallons
2. Compressive strength at 28 days 50 psi.

PART 3 - EXECUTION

3.01 PREPARATION

A. When natural soils for Class II, III, and IV backfill material is required as specified in Figure 3010.1, provide written certification from a testing laboratory that the material meets the class specified if so requested by the Engineer.

B. Locate, mark, and protect existing utilities and facilities in the work area.

C. Provide access to utility service locations, such as valves, manholes, and utility poles.

D. Identify owners of utilities on or near the site, and notify them of operations to occur.

E. Protect existing facilities and landscaping features, or replace as shown on the plans.

F. Protect bench marks, control points and land survey monumentation, or replace at Contractor's expense.

3.02 TRENCH EXCAVATION

A. Notify the Engineer prior to the start of excavation activities.

B. Remove and stockpile a minimum of 6" of topsoil for subsequent reuse.

C. Place excavated material away from trench. Grade spoil piles to drain. Do not allow spoil piles to obstruct drainage.

D. Remove rock, rubbish, boulders, debris, and other unsuitable materials at least 6 inches below, and on each side of the pipe. Restore grade using soil suitable for backfill.

E. Correct unauthorized excavation at no cost to Owner, using bedding or stabilization materials.

F. Provide protective fences and barricades around open excavations, appropriate to the surrounding area.

G. Provide weight tickets for stabilization material to the Engineer at the time of delivery.

H. Provide safety fence around open excavations.

I. Trench Excavation for Sanitary Sewers, Storm Sewers, Water Mains, and Pipe Culverts:
   1. Maximum and minimum pipe trench width: Min.=Pipe Dia.+1.5'; Max.=1.25*Pipe Dia. or 54", whichever is greater.
   2. Flat trench bottom, conduit bearing directly on trench bottom (not applicable for rock excavation) for water main pipe only with bell hole shaping:
      a. Shape trench bottom to support pipe around 1/4 of perimeter for the full length of the pipe barrel.
      b. Provide bell holes.
   3. Trench bottom, conduit supported by bedding material:
      a. Excavate trench as shown on the detailed drawings.
      b. Install bedding material to support the full length of the pipe barrel.
   4. Trench depth:
      a. Flow Line plus Pipe Dia/8, or 4" min.
   5. Conform all trench operations to current OSHA regulations.

J. Structure Excavation:
   1. For concrete structures and parts of structures without footings, 18 inches outside the horizontal projection of the structure.
   2. For concrete structures with footings, 18 inches outside the footings.
   3. For anchor rods, 12 inches on each side of the rod.
   4. For buried anchors, the face of the buried anchor on one side and 24 inches outside the buried anchor on the other face.

3.03 ROCK OR UNSTABLE SOILS IN TRENCH BOTTOM

A. Notify the Engineer prior to over-excavation.

B. Engineer will determine the need for trench bottom stabilization prior to installation of pipes and structures.

C. See Figure 3010.1 for over-excavation of rock and wet or soft foundations.

D. Provide weight tickets for the stabilization material to the Engineer at the time of delivery.

3.04 SHEETING, SHORING, AND BRACING

A. Conform sheeting and bracing of all excavations to the latest state and federal regulations governing safety of workers in the construction industry.

B. Leave in place all temporary sheeting below 2 feet over top of pipe unless sheeting removal plan is approved by Engineer. Conform all trench operations to current OSHA regulations.

C. Move trench boxes carefully to avoid excavated wall displacement or damage.

D. When necessary or required, install adequate sheeting and bracing to prevent ground movement that may cause damage or settlement to adjacent structures, pipelines, and utilities.

E. Any damage due to settlement because of failure to use sheeting or because of inadequate bracing, or through negligence or fault of the Contractor in any other manner, shall be repaired at the Contractor's expense.

F. For sides of trenches in unsuitable, loose, or soft material, shore, sheet, brace, slope, or otherwise support by means of sufficient strength to protect employees working within them.

G. Where excavations are made with vertical sides that require supporting, use sufficient strength for sheeting and bracing to sustain the sides of the excavations and to prevent movement that could in any way injure the work or adjacent structures, or diminish the working space sufficiently to delay the work.

H. Select sheeting and bracing material of sufficient dimensions and strength to adequately support the sides of trenches and excavations, which will not split when driving and will be free of imperfections that may impair its strength or durability.

I. Drive sheeting to true alignment and ensure contact of adjacent pieces.

J. In wet excavation, use grooved sheeting to prevent passage of soil. Fill any voids between sheeting and face of excavation with suitable material.

K. Do not remove sheeting and bracing before the completion of the work, unless otherwise directed by the Engineer.

L. For sheeting left in place, cut off 18 inches for clearance below the bottom of the pavement in streets/highways and 18 inches below the original ground surface, unless otherwise required by the contract documents or the Engineer. Leave in place all temporary sheeting below 2 feet over top of pipe, unless a sheeting removal plan is approved by Engineer.

3.05 DEWATERING

A. Do all work in dry conditions; do not install pipes on excessively wet soil.

B. Perform the dewatering operation according to the dewatering plan submitted to the Engineer. Dewatering operations may be modified from the plan for actual field conditions, with approval of the Engineer.

C. Adequate dewatering is the Contractor's responsibility unless otherwise stated in the contract documents.

D. Install dewatering system appropriate for the soil conditions.

E. Maintain water levels sufficiently below the bottom of trench excavation, (typically 2 feet) to prevent upward seepage.

F. Provide for handling water encountered during construction:
1. Prevent surface water from flowing into excavation. Remove water as it accumulates.
2. Do not use sanitary sewers for disposal of trench water. Discharging water into storm sewers requires Engineer's approval.
3. Do not discharge water onto adjacent property.
4. Maintain and control water discharge as necessary to prevent a safety hazard for vehicular and pedestrian traffic.
5. Direct water discharge away from electrical facilities or equipment and intersections.
6. Use noise and fume reducing dewatering equipment to minimize disturbance.
7. Provide at least two operating pumps for each trench opened in wet ground, and at the same time have one pump in reserve.

G. Place backfill in trenches prior to stopping dewatering operations.

H. Protect trench water discharge points from erosion.

I. Operate dewatering systems to prevent damage to adjoining structures and facilities.

J. Monitor adjoining structures and facilities during dewatering operations. Cease dewatering operations and notify the Engineer if damage is observed.

3.06 PIPE INSTALLATION

A. Pipe Bedding:
1. Shape pipe bed to evenly support pipe at the proper line and grade, with full contact under the bottom of the pipe.
2. Install pipe and system components.
3. Place bedding simultaneously on both sides of the pipe. Correct any pipe displacements before proceeding.
4. Place bedding in lifts no greater than 6 inches thick and consolidate.
5. Concrete encasement: Install where shown on the plans.
6. If required in the contract documents or if approved by the Engineer, flowable mortar or controlled low strength material may be used in lieu of other bedding material types.
7. Secure pipe against displacement or flotation prior to placing flowable mortar or concrete encasement.

B. Haunch Support:
1. Place granular haunch material in lifts no greater than 6 inches thick and consolidate by slicing with a shovel or using other approved techniques.
2. If required in the contract documents, or if approved by the Engineer, concrete, flowable mortar, or controlled low strength material may be used instead of other haunch material types. Secure pipe against displacement or flotation prior to placing flowable mortar, controlled low strength material, or concrete encasement.

C. Primary and Secondary Backfill (Pipe Cover):
1. Place pipe cover material in 6-inch lifts and compact to densities required according to class of material.
2. If required in the contract documents or if approved by the Engineer, flowable mortar or controlled low strength material may be used in lieu of other cover material types. Secure pipe against displacement or flotation prior to placing flowable mortar or concrete encasement.
3. Special pipe support: If required, provide special pipe support as shown on the plans.

D. Final Trench Backfill:
1. Place backfill in the trench immediately after recording locations of connections and appurtenances or at Engineer's direction.
2. Place backfill adjacent to structures immediately after concrete has reached design strength and connecting work has been completed.
3. Allow no more than 100 feet of trench to be open overnight or when work is not in progress except as provided on the plans.
4. Place suitable excavated backfill:
   a. Carefully place backfill over top of pipe and around structures.
   b. Compact as required.
5. Compaction:
   a. Within street right-of-way and under pavement, compact each lift to at least 95% of maximum Standard Proctor Density, otherwise compact to at least 90%.
   b. In areas more than 3 feet below pavement structure, place backfill in lifts no thicker than 8 inches.
   c. In areas less than 3 feet below pavement structure, place backfill in lifts no thicker than 6 inches. Terminate backfill at 8 inches below finish grade in areas to remain unpaved, and to subgrade elevation in areas to be paved. Place 8 inches of topsoil in unpaved areas.
   d. When crossing under levees, railroads, and State or Federal highways, comply with the compaction requirements of these jurisdictions, if more stringent than these requirements.
   e. For Vitrified Clay Pipe (VCP), keep all heavy compaction equipment 5 feet above the top of the pipe. In the area less than 5 feet, use hand held compactors. Do not allow the compactor to come in contact with the pipe.
6. Moisture Range: Obtain required compaction within a soil moisture range of minus two percent to plus four percent (-2% to +4%) of optimum moisture content as determined by ASTM D698 (Standard Proctor).
7. Dispose of surplus and unsuitable materials unless otherwise directed by owner.
8. Hydraulic compaction is not allowed unless authorized by the Engineer.

3.07 PIPE INSTALLATION IN CONSTRUCTED EMBANKMENTS

A. Install all pipes in trenches according to Section 3.06. When allowed by the contract documents, pipes may be constructed in embankments as follows:

B. Placing Backfill for Pipes:
1. Thoroughly tamp backfill under and around the pipe and in layers not to exceed 8 inches for the full length and width of the pipe.
2. Place backfill and thoroughly tamp around and over the pipe for its full length.
3. Extend the completed embankment on both sides of the pipe from the original ground line to at least 1 foot above the top of the pipe with a slope as shown in the contract documents. Construct the embankment over the pipe with a width no less than the outside diameter of the pipe and centered over the pipe. If necessary to accommodate construction traffic, increase the height of fill to the nominal diameter of the pipe or 3 feet, whichever is greater.
4. When pipe are laid wholly or partly in a trench, granular backfill material may be required for backfill. Compact the remainder of the fill to at least 1 foot above the top of the pipe with slopes as outlined above.
5. If the trench has been cut wide enough to permit use of a roller, after the pipe is bedded, thoroughly tamp the backfill material under and alongside the pipe with a mechanical tamper to the mid-height elevation of the pipe.
6. The contract documents may require placement of pipe with moisture control. When not required, place roadway pipe after construction of an embankment by methods that will produce results equivalent to those required for construction of the embankment, except that moisture determinations will be waived for placing backfill completed within 48 hours after excavation.
7. In addition to the normal backfill material requirements, when directed by the Engineer, build such approach fills to provide a roadway 10 feet in width over the pipe with grades no steeper than 10%.

3.08 STRUCTURE BEDDING

A. Bedding for Structures Bearing on Undisturbed Soils:
1. Shape the bottom to accurate grade and size.
2. Remove loose material, large clods, stones, and foreign materials.
3. In unstable soils or rock conditions, see Section 3.03 for stabilization requirements.

B. Bedding for Structures Bearing on Bedding Material:
1. Over excavate to minimum of 8 inches or as specified in the contract documents.
2. Place bedding material for structures according to the contract documents. A

3.09 STRUCTURE BACKFILL

A. Removal of Forms and Falsework: See Section 6010, 3.06.

B. Placement of Backfill: Place backfill after structure concrete has reached at least 80% of the design strength and connecting work has been completed, unless otherwise specified. Determine strengths under comparable conditions. If strength is not determined, place backfill after 14 days.

C. Backfill Against Walls and Around Structures:
1. Where backfill is required on both sides of a concrete wall and around all sides of monolithic structures, proceed with filling operations simultaneously on all sides of walls and structures so the fill is kept at approximately the same elevation at all times. Consider concrete box, arch, and circular culvert monolithic structures.
2. Compact the 3 feet closest to all walls or wing faces by pneumatic or hand tampers only.

D. Placing Backfill with Excavated Material:
Unless otherwise specified, see Section 3.06, D for suitable excavated materials for backfill.

3.10 OPEN CUT CASING PIPE INSTALLATION

A. Casing Pipe: Install casing pipe according to Section 3.01 to 3.07, as appropriate.

3.11 TRACER SYSTEM

A. Tracer wire shall be provided on <u>all</u> site utilities, including but not limited to:

1. Telecommunication/copper.
2. Empty conduits.
3. Storm
4. Sanitary.
5. Gas.

6. Water.
7. Exceptions:
   a Straight storm runs with daylight each end do not require tracer wire).
   b Underground electrical lines do not require tracer wire.

B. Tracer wire: Solid, AWG #12, blue insulated, direct bury, Type TWHN. Install in trench attached directly to, parallel with, and centered above or below the utility.

C. Underground splices: Use Scotchcast splicing kits, 3M Company or approved equal.

D. Engineer shall provide specific details for tracer wire termination at each condition. Avoid receptacle boxes on posts in lawn areas (Install receptacle boxes on face of building or in flush ground boxes).

E. Test tracer wire for continuity after installation (see comment under “Specifications - Project Close-Out” above); All tracer wire which fails continuity testing shall be repaired or replaced as required until passing continuity testing. Provide Owner 48 hour notice of this activity.

F. In addition to tracer wire, Contractor shall install underground pipe markers: bright colored continuously printed plastic ribbon tape, 6” wide by 3.5 mils thick, manufactured for direct burial, with aluminum foil core for location by non-ferric metal detectors and bold lettering identifying buried item. Install 8” to 10” below grade directly above buried utilities.

3.12 FIELD QUALITY CONTROL

A. References:
1. ASTM C 136; Standard Method for Sieve Analysis of Fine and Coarse Aggregates.
2. ASTM D 698; Standard Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Moisture Using 5.5 pound (4.54 kg) Rammer and 12 inch (305 mm) Drop. (Standard Proctor Method)
3. ASTM D 1556; Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method.
4. ASTM D 2216; Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass.
5. ASTM D 2922 and D 3017; Test Methods for Density of Soil and Soil-Aggregate in Place and Water Content of Soil and Rock by Nuclear Methods (Shallow Depth).
6. ASTM D 4253 and D 4254, Test Methods for Maximum Index Density of Soils using a Vibratory Table and Minimum Index Density of Soils and Calculation of Relative Density.

B. Compaction Testing: Compaction testing of backfill, cooperate and coordinate with an independent testing laboratory selected by the Owner. Cost of initial compaction testing will be paid for by the Owner. Cost of retesting of failed test areas shall be paid for by the Contractor. Refer to Section 014000, 1.5, Test and Inspection Services, and this Section 3.12, G. below for additional requirements.

C. Schedule Testing: Notify the Owner’s Representative and the independent testing laboratory when work is prepared for testing.

D. Soil Testing:

1. Cohesive soils: Determine moisture-density relationships by ASTM D 698 (Standard Proctor). Perform at least one test for each type of cohesive soil used.

2. Cohesive soils: Determine in-place density and moisture content using ASTM D 1556 (sand-cone method) and D 2216 or ASTM D 2922 and D 3017 (nuclear).

3. Non-cohesive soils: Determine maximum and minimum index density and calculate relative density using ASTM D 4253 and D 4254 (cohesionless soils).

4. Gradation: Test according to ASTM C 136.

E. Testing Frequency and Locations**:** Perform testing of the final trench backfill, beginning at a depth of 2 feet above the top of the pipe, as follows:
1. Contractor provided:
   a. Make one test per each 2 vertical feet of consolidated fill at each street crossing.
   b. Make one test per each 2 vertical feet of consolidated fill for each 200 horizontal feet of trench.
   c. Additional testing may be required by Engineer if non-compliance or a change in conditions occur.
   d. Coordinate the timing of testing with the Engineer.

e. The Engineer will determine the location of testing.
f. If necessary, excavate to the depth and size as required by the Engineer to allow compaction tests. Place backfill and recompact.

2. Owner provided:
   a. Coordinate the timing of testing with the Engineer.
   b. The Engineer will determine the location of testing.
   c. Test frequency will not exceed one test per each 2 vertical feet of consolidated fill for each 200 horizontal feet of trench.

F. Test Failure: Rework, recompact, and retest as necessary until specific compaction is achieved in all areas of the trench.

G. Retesting: In event of failed tests, rework the failed area and retest. Costs of such retesting shall be paid by the Contractor, at no additional cost to the owner.

END OF SECTION

SECTION 31 35 00

EROSION AND SEDIMENT CONTROL

PART 1 -GENERAL

1.01 SECTION INCLUDES

A. NPDES General Permit No. 2

B. Stormwater Pollution Prevention Plan (SWPPP)

C. Erosion Control Measures

D. Velocity and Flow Control Measures

E. Sediment Control Measures

F. Application/Installation of Measures

G. Removal/Replacement of Measures

1.02 DESCRIPTION OF WORK

A. Furnish all materials; install, construct, maintain, and remove specified erosion control devices; at locations specified in the contract documents, or where specified by the Engineer, Owner and City.

B. Complete the required construction work on this project, while minimizing soil erosion and controlling water pollution. Maintain these features as specified, from initial construction stages to final completion of the project.

1.03 SUBMITTALS

Comply with Division 1 -General Provisions and Covenants, as well as the following:

Upon request, provide copies of all records and documentation related to compliance with the Iowa DNR NPDES Permit.

1.04 SUBSTITUTIONS

Comply with Division 1 -General Provisions and Covenants.

1.05 DELIVERY, STORAGE, AND HANDLING

Comply with Division 1 -General Provisions and Covenants.

1.06 SCHEDULING AND CONFLICTS

Comply with Division 1 -General Provisions and Covenants, as well as the following:

A. Implement erosion and sediment control measures at the appropriate time(s).

B. Coordinate construction to minimize damage to erosion and sediment control devices.

1.07 SPECIAL REQUIREMENTS

A. Permit:

1. When applicable, comply with the requirements of the Iowa Department of Natural Resources, *NPDES (National Pollutant Discharge Elimination System) General Permit No. 2 for Stormwater Discharge Associated with Industrial Activity for Construction Activities*, and the Stormwater Pollution Prevention Plan.

2. For projects covered under the Iowa DNR General Permit No. 2, sign on as a co-permittee with the owner and any other contractors or subcontractors.

3. When applicable, comply with the local jurisdiction's permitting requirements.

B. Protection of Property: Prevent accumulation of soil, sediment, or debris from project site onto adjoining public or private property. Remove any accumulation of soil or debris immediately, and take remedial actions for prevention.

Protect Existing Facilities At The Site Against Damage Including The Following:

1. The Contractor shall take precautions to insure that equipment, vehicles, and construction operations do not disturb or damage existing grades, walls, drives, pavement, utilities, plants, lawns, and other facilities.

2. Verify locations and depths of all underground utilities prior to excavation and report any conflicts with new work to the Engineer.

3. Any damage to existing trees or shrubs branches and root systems to remain and be protected shall be repaired and/or pruned by an experienced arborist.

4. Repair, replace, and/or return to original condition any damaged item, without additional compensation.

C. Permit Compliance: When applicable, conduct all operations in compliance with the Iowa DNR NPDES General Permit No. 2. Labor, equipment, or materials not included as a bid item, but necessary to prevent stormwater contamination from construction related sources, are considered incidental. Incidental work related to compliance with the permit may include, but is not limited to: hazardous materials protection, fuel containment, waste disposal, and providing employee sanitary facilities.

D. Project Staging: Replacing erosion and sediment control practices that are damaged or removed by the contractor in a manner that is inconsistent with the current project staging or

SWPPP is the Contractor's responsibility and will be at the Contractor's expense.

PART 2 -PRODUCTS

2.01 COMPOST BLANKETS

Comply with Section 32 92 19, Seeding, 2.07, C for compost material requirements for compost blankets.

2.02 COMPOST BLANKET AND FILTER BERM TACKIFIER

A. Use a biodegradable, organic binding agent or polyacrylamide that can be mixed with, or injected into, compost or filter material as it is placed, which is not detrimental to the establishment of vegetation.

B. Use in filter berms or compost blankets when specified in the contract documents.

C. Apply at the rate recommended by the manufacturer.

2.03 FILTER MATERIAL

Material for use in filter socks, filter berms, and other areas, as specified in the contract documents.

A. Use material derived from wood, bark, or other, non-toxic vegetative feedstocks.

B. Use material with no visible admixture of refuse or other physical contaminants, nor any material toxic to plant growth.

C. Use material meeting the following particle sizes:

Sieve Size	Percent Passing1
2”	100
1”	90-100
3/8”	0-30

[1]The target flow rate of in-place material is 10 gal/min/lf. The Engineer may approve use of alternate materials meeting the target flow rate.

2.04 FILTER SOCK

A. For slope and sediment control applications, use a continuous, tubular, knitted, mesh netting with 3/8 inch openings, constructed of 5 mil thickness, photodegradable HDPE.

B. For inlet protection, use a continuous, tubular, knitted, mesh netting with 3/8 inch openings, constructed of 500 denier polypropylene.

C. Use 1 inch by 2 inch (minimum) hardwood stakes or stakes of equivalent strength.

2.05 TEMPORARY ROLLED EROSION CONTROL PRODUCTS (RECP)

Use temporary rolled erosion control products that are classified and have material properties according to the Erosion Control Technology Council’s (ECTC) guidelines as follows:

A. Material Classification:

1. RECP Type 1 (Ultra Short-term): Functional longevity of 3 months or less and classified as follows:
a. RECP Type 1.A: Mulch control net, consisting of a photodegradable synthetic mesh or woven biodegradable natural fiber netting.
b. RECP Type 1.B: Netless rolled erosion control blankets, consisting of natural and/or polymer fibers, mechanically interlocked and/or chemically adhered together to form a RECP.

c. RECP Type 1.C: Single-net erosion control blankets and open weave textiles, consisting of processed degradable natural and/or polymer fibers, mechanically bound together by a single rapidly-degrading, synthetic or natural fiber netting, or an open weave textile of processed rapidly-degrading natural or polymer yarns or twines woven into a continuous matrix.
d. RECP Type 1.D: Double-net erosion control blankets, consisting of processed degradable natural and/or polymer fibers, mechanically bound together between two rapidly-degrading, synthetic or natural fiber nettings.

2. RECP Type 2 (Short-term): Functional longevity between 3 and 12 months and classified as follows:
a. RECP Type 2.A: Mulch control net, consisting of a photodegradable synthetic mesh or woven biodegradable natural fiber netting.
b. RECP Type 2.B: Netless rolled erosion control blankets, consisting of natural and/or polymer fibers, mechanically interlocked and/or chemically adhered together to form a RECP.
c. RECP Type 2.C: Single-net erosion control blankets and open weave textiles, consisting of an erosion control blanket composed of processed degradable natural or polymer fibers, mechanically bound together by a single degradable synthetic or natural fiber netting to form a continuous matrix, or an open weave textile composed of processed degradable natural or polymer yarns or twines woven into a continuous matrix.
d. RECP Type 2.D: Double-net erosion control blanket, consisting of processed degradable natural and/or polymer fibers, mechanically bound together between two degradable synthetic or natural fiber nettings.

3. RECP Type 3 (Extended Term): Functional longevity between 12 and 24 months and classified as follows:
a. RECP Type 3.A: Mulch control nets, consisting of a slow-degrading synthetic mesh or woven natural fiber netting.
b. RECP Type 3.B: Erosion control blankets and open weave textiles, consisting of processed slow-degrading natural or polymer fibers, mechanically bound together between two slow-degrading synthetic or natural fiber nettings to form a continuous matrix, or an open weave textile composed of processed slow-degrading natural or polymer yarns or twines woven into a continuous matrix.

4. RECP Type 4 (Long Term): Functional longevity of 36 months and classified as follows: Erosion control blankets and open weave textiles, consisting of processed slow-degrading natural or polymer fibers, mechanically bound together between two slow degrading synthetic or natural fiber nettings to form a continuous matrix, or an open weave textile composed of processed slow-degrading natural or polymer yarns or twines woven into a continuous matrix.

B. Properties and Performance:

1. Testing performed according to the ECTC's Testing Procedures for Rolled Erosion Control Products. Verify manufacturer's test results by independent testing.
2. Material properties meeting the Erosion Control Technology Council's (ECTC) Standard Specifications for Rolled Erosion Control Products as follows:

Classification	Slope Application	Channel Application	Min. Tensile Strength
	Max. Grade*	Permissible Shear Stress	
RECP Type 1.A	5:1 (H:V)	0.25 lb/ft2	5 lb/ft
RECP Type 1.B	4:1 (H:V)	0.50 lb/ft2	5 lb/ft
RECP Type 1.C	3:1 (H:V)	1.50 lb/ft2	50 lb/ft
RECP Type 1.D	2:1 (H:V)	1.75 lb/ft2	75 lb/ft
RECP Type 2.A	5:1 (H:V)	0.25 lb/ft2	5 lb/ft
RECP Type 2.B	4:1 (H:V)	0.50 lb/ft2	5 lb/ft
RECP Type 2.C	3:1 (H:V)	1.50 lb/ft2	50 lb/ft
RECP Type 2.D	2:1 (H:V)	1.75 lb/ft2	75 lb/ft
RECP Type 3.A	5:1 (H:V)	0.25 lb/ft2	25 lb/ft
RECP Type 3.B	1.5:1 (H:V)	2.00 lb/ft2	100 lb/ft
RECP Type 4	1:1 (H:V)	2.25 lb/ft2	125 lb/ft

*Product tested according to ECTC Test Method No. 2 and meeting the ECTC Standard Specifications for "C" factor.

C. RECP Anchors: Stakes or staples as recommended by manufacturer, with a minimum length of 6 inches.

2.06 WATTLES

A. Netting: Open weave, degradable netting. Nominal diameter of 9 inches, or as specified.

B. Fill Material: Straw, wood excelsior, coir, or other natural materials approved by the Engineer.

C. Stakes: 1 inch by 1 inch (minimum) wooden stakes, or stakes of equivalent strength.

2.07 CHECK DAMS

A. Synthetic Permeable Check Dam (HDPE):

1. Ditch Berm:
a. Installed height of 9 to10 inches.
b. Manufactured check dam constructed from sheets of perforated, UV-stabilized High Density Polyethylene (HDPE).
c. Perforations of 30 to 40% open area.

2. RECP for Permeable Check Dam (when specified): RECP Type 4, 4 feet wide.

3. Anchors: As recommended by the manufacturer.

B. Triangular Foam Check Dam: Triangular-shaped device with a height of 8 to 10 inches and a base of 16 to 20 inches.

1. Inner Support Material: Urethane foam.

2. Outer Cover: Woven geotextile material shaped to fit around the inner support material, extending 2 to 3 feet beyond the bottom edge of the triangular-shaped inner support.

3. Length: 7 feet.

C. Rock Check Dam:

1. Aggregate: Erosion stone complying with Iowa DOT Article 4130.04.

2. Engineering Fabric: Comply with Section 2.20.

2.08 LEVEL SPREADERS

A. Provide 2 inch by 8 inch (minimum) pressure-treated timber of the length specified.

B. Use timbers that are relatively straight and have a minimum length of 5 feet each.

2.09 RIP RAP

A. Class A Revetment: Comply with Iowa DOT Section 4130.

B. Class B Revetment: Comply with Iowa DOT Section 4130.

C. Class D and E Revetment: Comply with Iowa DOT Section 4130.

D. Erosion Stone: Comply with Iowa DOT Section 4130.

2.10 TEMPORARY PIPE SLOPE DRAINS

A. PVC, HDPE, and metal pipes as specified in Section 33 40 00, Storm Sewer, 2.01.

B. HDPE, Type C (corrugated interior).

C. All pipes listed are allowed for use within the right-of-way.

2.11 SEDIMENT BASIN OUTLET STRUCTURES

A. Base: Class C concrete unless otherwise specified in the contract documents.

B. Riser: CMP complying with Section 33 40 00, Storm Sewer; diameter as specified in the contract documents.

C. Dewatering Device:

1. Drill holes in the riser of the number, diameter, and at the elevation specified in the contract documents.

2. 1/4 inch by 1/4 inch or 1/2 inch by 1/2 inch wire mesh for hardware cloth.

D. Barrel: CMP complying with Section 33 40 00, Storm Sewer; diameter as specified in the contract documents.

E. Anti-Vortex Device: CMP complying with Section 33 40 00, Storm Sewer; diameter and riser diameter as specified in the contract documents.

F. Anti-Seep Collar: Corrugated metal sheet of same material and gage as barrel section.

Size according to plans.

2.12 SEDIMENT TRAPS

A. Erosion Stone: Comply with Section 2.09

B. Engineering Fabric: Comply with Section 2.20.

2.13 SILT FENCE

A. Fabric: Comply with Iowa DOT Article 4196.01.

B. Posts: 4 foot minimum steel (T-section) weighing at least 1.25 pounds per foot, exclusive of anchor plate. Painted posts are not required.

C. Fastener: Wire or plastic ties with a minimum tensile strength of 50 pounds.

2.14 STABILIZED CONSTRUCTION ENTRANCE

A. Entrance Stone: Comply with Iowa DOT Section 4122, Gradation 13, Macadam crushed stone.

B. Subgrade Stabilization Material: Use woven, UV-stabilized geotextile with a minimum tensile strength of 135 lb/ft.

2.15 DUST CONTROL

A. Water: Use potable water or water from a source approved by the engineer.

B. Calcium Chloride: Comply with Iowa DOT Article 4194.01.

C. (Not Used)

D. Soapstock (Soybean Oil):

1. Use a commercially-available, undiluted, soybean oil soapstock emulsion.

2. Comply with manufacturer's recommendations for storage, transportation, temperature, and application equipment requirements.

2.16 EROSION CONTROL MULCH

A. Conventional Mulch:

1. Use dry cereal straw (oats, wheat, barley, or rye) or native grass straw.

2. Use material that is free of noxious weeds, seed-bearing stalks, or roots, and will be inspected and approved by the Engineer prior to use.

3. Other materials, subject to the approval of the Engineer, may be used.

B. Hydromulch:

1. Wood Cellulose Mulch:

a. Use material that is a natural or cooked cellulose fiber processed from whole wood chips, or a combination of up to 50% of cellulose fiber produced from whole wood chips, recycled fiber from sawdust, or recycled paper (by volume).

b. Product contains a colloidal polysaccharide tackifier adhered to the fiber to prevent separation during shipment and avoid chemical co-agglomeration during mixing.
c. Form a homogeneous slurry of material, tackifier, and water.

d. Use a slurry that can be applied with standard hydraulic mulching equipment.

e. Dye the slurry green to facilitate visual metering during application.

f. Do not use materials that have growth or germination-inhibiting factors or any toxic effect on plant or animal life when combined with seed or fertilizer.

2. Bonded Fiber Matrix (BFM):

a. Produced from long-strand wood fibers, held together by organic tackifiers and bonding agents that, when dry, become insoluble and non-dispersible.

b. Upon curing 24 to 48 hours, form a continuous, 100% coverage, flexible, absorbent, erosion-resistant blanket that encourages seed germination.

c. Manufactured to be applied hydraulically.

d. Physical Properties:
1) Fibers: Virgin wood, greater than 88% of total volume.
2) Organic Material: Greater than 96% of total volume.
3) Tackifier: 8-10%.
4) pH: 4.8 minimum.
5) Moisture Content: 12% +/- 3%.
6) Water-holding Capacity: 1.2 gal/lb.

e. Dyed green to facilitate visual metering.

3. Mechanically Bonded Fiber Matrix (MBFM): See Section 32 92 19, Seeding.

a. Produced from long-strand wood fibers and crimped, interlocking synthetic fibers.\

b. Within two hours of application, form a continuous, 100% coverage, flexible, absorbent, porous, erosion-resistant blanket that encourages seed germination.

c. Manufactured to be applied hydraulically.

d. Physical Properties:
1) Wood Fibers: 73% minimum.
2) Tackifier: 10% +/- 1%.
3) Crimped, Interlocking Synthetic Fibers: 5% +/- 1%.
4) Moisture Content: 12% +/- 3%.
5) Water holding capacity: 1.2 gal/lb.
6) Minimum pH: 4.8.

e. Dyed green to facilitate visual metering.

2.17 TURF REINFORCEMENT MATS (TRM)

A. Material Classification:

1. TRM Type 1: Use a TRM that is constructed of a web of mechanically or melt-bonded polymer netting, monofilaments, or fibers that are entangled to form a strong and dimensionally stable mat. Bonding methods include polymer welding, thermal or polymer fusion, or the placement of synthetic fibers between two high-strength, biaxially-oriented nets, mechanically bound by parallel stitching with polyolefin thread. Products may contain a degradable component.

2. TRM Type 2 and 3: Use a TRM that is constructed of a web of mechanically or melt-bonded polymer netting, monofilaments, or fibers that are entangled or woven to form a strong and dimensionally stable mat. Non-woven bonding methods include polymer welding, thermal or polymer fusion, or the placement of fibers between two high-strength, biaxially oriented nets, mechanically bound by parallel stitching with polyolefin thread. Use only components that are 100% synthetic and resistant to biological, chemical, and ultraviolet degradation.

3. TRM Type 4: Use a high performance/survivability TRM that is composed of monofilament yarns woven into a resilient uniform configuration. Use a mat that has a matrix that exhibits very high interlock and reinforcement capacities with both soil and root systems and demonstrate a high tensile modulus. TRMs manufactured from discontinuous or loosely held together by stitched or glued, netting, or composites are not allowed in this category. Use only components that are 100% synthetic and resistant to biological, chemical, and ultraviolet degradation. Use this category when field conditions exist with high loading and/or high survivability requirements.

B. Properties and Performance: Meet the minimum material and performance requirements contained in the following table:

Property1		**Test Method**	**Type 1**	**Type 2**	**Type 3**	**Type 4**
Material	Thickness	ASTM D 6525	0.25 in	0.25 in	0.25 in	0.25 in
	Tensile Strength2	ASTM D 6818	125 lb/ft	240 lb/ft	750 lb/ft	3,000 lb/ft
	UV Resistance3	ASTM D 4355	80% @ 500 hrs	80% @ 1,000 hrs	80% @ 1,000 hrs	90% @ 3,000 hrs
Performance	Maximum Shear Stress4 (Channel Applications)	ASTM D 6460	7 lb/ft2	10 lb/ft2	12 lb/ft2	15 lb/ft2
	Maximum Slope Gradient (Slope Applications)	N/A	1:1 (H:V) or flatter	1:1 (H:V) or flatter	1:1 (H:V) or greater	1:1 (H:V) or greater

1 For TRMs containing degradable components, all values must be obtained on the non-degradable portion of the matting.
2 Minimum Average Roll Values, machine direction only.
3 Tensile strength of structural components retained after UV exposure.
4 Minimum shear stress that fully-vegetated TRM can sustain without physical damage or excess erosion (0.5 in soil

loss)
during a 30 minute flow event in large scale testing. Acceptable large scale testing protocol includes ASTM D 6460 or independent testing conducted by the Texas Transportation Institute, Colorado State University, Utah State University, or other approved testing facility. Bench scale testing is not acceptable.

2.18 INLET PROTECTION

A. Drop-in Intake Protection:

1. Use a manufactured device that is inserted into the intake and is capable of trapping or filtering sediment from runoff prior to entering the storm sewer.

2. All components must be contained entirely below the surface of the intake grate.

3. Incorporate means of emergency outflow to prevent flooding if plugged with sediment.

B. Surface-applied Intake Protection:

1. Use devices or filter socks, placed around or over the intake, that are capable of trapping or filtering sediment from runoff prior to entering the storm sewer.

2. Do not allow the device to completely block or plug the intake, preventing inflow.

2.19 FLOW TRANSITION MATS

A. UV-stabilized HDPE plastic sheet with openings for vegetation growth and energy dissipation.

B. Use a nominal sheet size of 4 feet by 4 feet by 1/2 inch.

C. Use duckbill style anchors, as specified by the mat manufacturer.

2.20 ENGINEERING FABRIC

Comply with Iowa DOT Article 4196.01, B (Embankment Erosion Control) and Iowa DOT Materials I.M. 496.01, Appendix G.

PART 3 -EXECUTION
3.01 SWPPP PREPARATION

A. Prepare a SWPPP according to the requirements of the Iowa DNR NPDES General Permit No. 2.

B. Ensure that controls utilized in the SWPPP conform to the type and quantity of erosion and sediment controls specified in the contract documents. MidAmerican Energy Environmental Services will provide a Notice of Intent template that must be used

C. Submit the completed SWPPP to the Engineer and MidAmerican Energy Environmental Services for review and approval prior to filing the Notice of Intent.

D. Upon approval of the Engineer, file public notices, as required by the NPDES General Permit No. 2.

E. File the Notice of Intent and fee, as required by the NPDES General Permit No. 2 and any local ordinance requirements.

3.02 SWPPP MANAGEMENT

Coordinate and carry out all requirements of Iowa DNR NPDES General Permit No. 2 and any local ordinance

requirements, including:

A. Update the SWPPP according to the requirements of the NPDES General Permit No. 2.

B. Revise the SWPPP and implement changes, as necessary, to prevent sediment or hazardous materials from being transported off the site.

C. Submit all SWPPP revisions to the Engineer for review and approval.

D. MidAmerican Energy will hire an approved Inspector to perform and maintain records of weekly erosion and sediment control site inspections, unless otherwise specified in the contract documents.

E. Maintain records of transfer of responsibility under the NPDES General Permit No. 2.

F. Retain all records on-site, or as required by the NPDES General Permit No. 2.

G. After final stabilization, MidAmerican Energy Environmental Services will file a Notice of Discontinuation, according to the NPDES General Permit No. 2 and at the recommendation of the Inspector and local authority.

H. Provide all records and documentation to the Engineer upon completion of the project. MidAmerican Energy will retain a copy of all records for the period required under the Permit.

I. Continue to perform the work required under this item throughout the duration of the project, and until final stabilization is achieved and a Notice of Discontinuation is filed.

3.03 EROSION AND SEDIMENT CONTROL INSPECTION

A. MidAmerican Energy will hire an approved Inspector to perform inspections according to and at frequency required by the Iowa DNR NPDES General Permit No. 2.

B. Schedule necessary maintenance or improvements for items that are included in the contract documents.

C. Notify the Engineer immediately of situations requiring attention beyond that provided for in the contract documents.

D. Provide copies of the inspection reports to the Engineer.

3.04 EQUIPMENT

Comply with Iowa DOT Article 2601.03.

3.05 COMPOST BLANKETS

A. Loosen the ground surface to a minimum depth of 1 inch.

B. Evenly spread compost, as specified in the contract documents, or as directed by the Engineer.

C. Divert concentrated flows away from the slope.

D. Do not operate heavy equipment over the compost blanket after placement, or throughout the required period of protection.

E. Inspect the ground under the blanket at regular intervals for signs of erosion.

3.06 FILTER BERMS

A. Install filter berm along the contour as specified in the contract documents, or as directed by the Engineer.

B. Turn the ends of the filter berm uphill to prevent runoff from flowing around the end of the berm.

C. When a vegetated berm is specified, apply seed to the surface of the berm.

D. Replace the berm when sediment accumulation reaches one-half of the height of the berm.

3.07 FILTER SOCKS

A. Installation:

1. Pneumatically fill mesh filter sock of size and length specified in the contract documents, or as directed by the Engineer. Alternative methods of filling the sock may be allowed upon approval of the Engineer.

2. Fill socks with filter material.

3. Place the filter sock along the contour as specified in the contract documents, or as directed by the Engineer.

4. Place additional filter material or soil from the site, on the upstream side of the sock, in the seam between the tube and the ground.

5. Construct a "J-hook" at each end of a continuous run of filter sock, by turning the end of the sock uphill, as necessary to prevent runoff from flowing around the ends when water behind the sock ponds up to a level even with the top of the sock.

6. Drive stakes into the ground at a maximum spacing of 10 feet, and as required to secure the sock and prevent movement.

7. Repair or replace non-functioning filter socks that allow water to flow under the sock, are torn, or are otherwise damaged, due to inadequate installation.

8. Remove filter material from damaged socks that are located along streambanks, around intakes, in ditches, or in other locations where the material may be carried to surface waters.

B. Removal: When specified in the contract documents, or as directed by the Engineer; remove the filter sock upon completion of the project, and after final stabilization is achieved; or as indicated in the SWPPP, if applicable.

1. Upon completion of the project, completely remove socks and filter material that are located along streambanks, around intakes, in ditches, or in other locations where the filter material may be carried to surface waters if the sock degrades and/or tears.

2. Slice the sock longitudinally. Remove and dispose of the filter sock material and stakes.

3. Spread the filter material and accumulated sediment to match finished grade and to ensure proper drainage.

4. If the site has been brought to finished grade and prepared for permanent seeding, spread and incorporate the filter material into the surface by tilling, or as required to break up any large particles and provide a finished surface suitable for permanent seeding.

C. Replacement:

1. When accumulated sediment reaches a level one-half the height of the sock, or when the sock becomes clogged with sediment and no longer allows runoff to flow through, remove the sock as described above, and replace according to the installation instructions above.

2. At the Engineer's option, the existing filter sock and accumulated sediment may be left in place, and a new filter sock installed up-slope from the existing filter sock.

3.08 TEMPORARY ROLLED EROSION CONTROL PRODUCTS (RECP)

Install temporary RECPs according to the manufacturer's published installation recommendations, subject to the

following minimum requirements:

A. Slope Application:

1. Grade and smooth surface. Remove all rocks, clods, vegetation, or other obstructions that will prevent direct contact between the RECP and the soil surface.

2. When specified, prepare seedbed and place seed and fertilizer according to Section 32 92 19, Seeding prior to placing RECP.

3. Install anchor trench at top of slope. Seed and fertilize trench after backfill and compaction, if seeding is specified.

4. Unroll the RECP down or horizontally across the slope.

5. Place consecutive blankets down the slope end-over-end, shingle style.

6. Overlap ends of consecutive rolls a minimum of 3 inches, and install anchors at a maximum spacing of 18 inches along all overlaps.

7. Overlap edges of adjacent rolls a minimum of 2 inches.

8. Install anchors at edge seams between rows.

B. Channel/Ditch Application:

1. When specified, prepare seedbed and place seed and fertilizer according to Section 32 92 19, Seeding, prior to placing RECP.

2. Place end of first roll in the anchor slot at the center of the upstream channel and secure with anchors.

3. Position adjacent rolls in the anchor slot, overlapping adjacent rolls a minimum of 3 inches.

4. Place backfill material in anchor slot and compact. Unroll RECP over compacted slot and secure with anchors.

5. Unroll RECP downstream. Maintain a minimum 3 inch overlap between adjacent rolls. Secure edge lap with anchors.

6. Install intermittent staple check slots every 30 feet.

7. Construct end lap at end of roll and beginning of new roll. Overlap roll ends with upstream RECP on top.

8. Excavate longitudinal trench along both sides of the channel at the outside edges of installation. Place outer edges of RECP into longitudinal slot. Install anchors, place backfill material, and compact.

9. Terminate installation at downstream end with staple check.

10. Install anchors in a regular pattern over entire area covered according to manufacturer's published recommendations (minimum three anchors per square yard).

3.09 WATTLES

A. Installation:

1. Construct a shallow trench, 2 to 4 inches deep, matching the width and contour of the wattle.

2. Install wattle along contour of slope.

3. Turn ends of wattle uphill to prevent water from flowing around ends.

4. Place and compact excavated soil against the wattle, on the uphill side.

5. Drive stakes through the center of the wattle, into the ground at a maximum spacing of 4 feet along the length of the wattle, and as needed to secure the wattle and prevent movement.

6. Abut ends of adjacent wattles tightly. Wrap joint with a 36 inch wide section of silt fence and secure with stakes.

B. Removal: When specified in the contract documents, or as directed by the Engineer, remove the wattle upon completion of the project, and after final stabilization is achieved; or as indicated in the SWPPP, if applicable.

1. Completely remove the wattle netting, filler material, and stakes.

2. Spread the accumulated sediment to match finished grade and to ensure proper drainage.

3. When allowed by the Engineer, the wattle netting may be sliced open and the filler material spread out over the ground. Removal of netting and stakes and spreading of sediment is still required.

C. Replacement:

1. When accumulated sediment reaches a level one-half the height of the wattle, or when the wattle becomes clogged with sediment and no longer allows runoff to flow through, remove the wattle as described above, and replace according to the installation instructions above.

2. At the Engineer's option, the existing wattle and accumulated sediment may be left in place, and a new wattle installed up-slope from the existing wattle.

3.10 CHECK DAMS

A. Synthetic Permeable Check Dam (HDPE):

1. Install according to the manufacturer's recommendations.

2. When specified, provide an RECP under the check dam, installed according to the manufacturer's recommendations.

B. Triangular Foam Check Dam: Install according to the manufacturer's recommendations.

C. Rock Check Dam: Construct according to plans.

D. Removal: When specified in the contract documents, or as directed by the Engineer, remove check dams upon completion of the project, and after final stabilization is achieved; or as indicated in the SWPPP, if applicable.

1. Remove the check dam and dispose of materials, or salvage to the contractor.

2. Remove the accumulated sediment or spread to match finished grade; ensure proper drainage.

3. Stabilize the area disturbed by removal operations.

3.11 TEMPORARY EARTH DIVERSION STRUCTURES

A. Ensure positive drainage along the diversion toward the outlet area.

B. Adequately compact fill to prevent failures or seepage.

C. Outlet the diversion to undisturbed and/or stabilized areas only.

D. Stabilize the surface of the earth diversion with temporary erosion control seeding, as specified in Section 32 92 19, Seeding.

3.12 LEVEL SPREADERS

A. Butt multiple timbers together, as necessary to provide the required length.

B. Ensure the spreader is installed level in all directions. Adjust as necessary during construction to maintain spreader in a level condition.

C. Excavate a depression behind the spreader to the depth specified in the contract documents. The depression may be over-excavated up to 1 foot to provide an area for sediment accumulation.

D. Grade as required to prevent flow around the ends of spreader.

E. Remove the accumulated sediment from the depression when the depth is reduced below that specified in the contract documents.

3.13 RIP RAP

Install the quantity of rip rap (revetment stone or erosion stone) as specified in the contract documents.

3.14 TEMPORARY PIPE SLOPE DRAINS

A. Place slope drain on undisturbed soil or well compacted fill.

B. Carefully compact cohesive soils around inlet ends of the drain in 6 inch lifts.

C. Discharge slope drain to a stable outlet or to a sediment retention device.

3.15 SEDIMENT BASIN OUTLET STRUCTURES

A. Concrete Base: Construct the concrete base and anchor riser section, as shown on plans.

B. Dewatering Device:

1. Drill holes in the riser section. The number, diameter, and configuration will be specified in the contract documents.

2. Wrap the perforated section of the riser pipe with metal hardware cloth.

C. Anti-vortex Device: If required by the contract documents, firmly attach the cylinder to the top of the riser by welding or other means. Comply with plan details for fabrication.

3.16 ANTI-SEEP COLLAR

A. General: Place backfill material and compact overexcavation areas to a minimum of 95% Standard Proctor Density per Section 31 23 33 Trenching and Backfilling.

B. Concrete Collar:

1. Place collars a minimum of 2 feet from pipe joints.

2. Provide Class C concrete per Section 33 49 00 Storm Drainage Structures.

C. CMP Collar:

1. Provide collar of same gage as the pipe barrel on which it is used.

2. Paint or tag unassembled collars to identify matching pairs.

3. Furnish each collar with two 1/2 inch diameter rods with tank lugs for connecting collars to pipe.

4. Install collar with corrugations vertical.

5. Seal the tap between the two half sections and between the pipe and connecting band with a bituminous jointing compound at the time of installation.

3.17 SEDIMENT TRAPS

Construct the storage area to the size and elevations specified in the contract documents.

3.18 SILT FENCES

A. Installation:

1. Install material along the contour of the ground, as specified in the contract documents, or as directed by the Engineer.

2. Install silt fence with a mechanical soil slicing machine that creates a slit in the ground while simultaneously installing the fabric. The trenching method may be used when situations will not allow soil slicing, as determined by the Engineer.

3. Construct a “J-hook” at each end of a continuous run of silt fence, by turning the end of the silt fence uphill, as necessary to prevent runoff from flowing around ends when water behind the fence ponds to a level even with the top of the fence.

4. Insert 12 inches of fabric to a minimum depth of 6 inches (fabric may be folded below the ground line).

5. Compact installation by driving along each side of the silt fence, or by other means, as necessary to adequately secure the fabric in the ground, to prevent pullout and water flow under the fence.

6. Drive steel posts into the ground alongside the silt fence, to a minimum depth of 20 inches, unless otherwise specified by the Engineer. Space posts at 5 feet on-center maximum, or as required to adequately support silt fence.

B. Maintenance: Repair or replace non-functioning silt fence that allows water to flow under the fence, is torn, or is otherwise damaged, due to inadequate installation, at no additional cost to the Contracting Authority.

C. Removal:

1. Remove the silt fence upon final stabilization of the project area, or according to the staging indicated in the SWPPP.

2. Remove and dispose of silt fence and posts.

3. Remove sediment or spread to match finished grade; ensure proper drainage.

4. Stabilize the area disturbed by removal operations.

D. Replacement:

1. When accumulated sediment reaches a level one-half the height of the fence, remove the silt fence as described above, and replace according to the installation instructions above.

2. At the Engineer’s option, the existing silt fence and accumulated sediment may be left in place, and a new silt fence installed up-slope from the existing silt fence.

3. When allowed by the Engineer, the existing silt fence may be left in place and the accumulated sediment removed to the original ground line and within 6 inches of the silt fence. Carefully inspect the existing silt fence for structural integrity and signs of undermining. Make any necessary repairs.

3.19 STABILIZED CONSTRUCTION ENTRANCE

A. Install a stabilized construction entrance at all locations where construction traffic leaving the site presents the potential for sediment track-out.

B. Remove vegetation and excavate soft soils from entrance area. Thoroughly compact subgrade prior to placing stone.

C. Install culvert under entrance if necessary to maintain drainage.

D. Grade entrance to prevent runoff from flowing onto street. Direct all runoff from entrance to a sediment retention device.

E. When specified, install subgrade stabilization fabric prior to placing crushed stone.

F. Install layer of crushed stone to the thickness (6 inches minimum) and dimensions specified in the contract documents.

G. Remove the accumulated sediment and install new stone, as required to prevent track-out.

3.20 DUST CONTROL

A. Water: Apply frequent light watering to ground surface, as required to control dust.

B. Calcium Chloride: Apply according to Iowa DOT Section 2314.

C. (Not Used)

D. Soapstock (Soybean Oil):

1. Loosen the top 1 to 2 inches of the roadway surface.
2. Apply undiluted soapstock at a rate of 0.70 gal/yd^2.
3. Allow product to penetrate through the loosened material.
4. Tight-blade road surface.

3.21 EROSION CONTROL MULCHING

A. Conventional Mulching:

1. Use conventional mulching when the surface cannot be stabilized by seeding, due to season or ground conditions.
2. Uniformly distribute mulch over the required areas, at a rate of 2 tons/acre for dry cereal straw, or 2.5 tons/acre for prairie hay.
3. Work the mulch into the soil with a mulch tucker, designed to anchor the mulch into the soil, by means of dull blades or disks.

B. Hydromulching:

1. Place mulch and tackifier (if applicable) in equipment specifically manufactured for hydraulic mulching.

2. Mix materials with fresh, potable water using a combination of re-circulation through the equipment's pump and mechanical agitation to form a homogeneous slurry.

3. If necessary, dampen any dry, dusty soil as required to prevent balling of the material during application.

4. Apply hydromulch in multiple layers from opposing directions, where possible.

5. Apply the slurry evenly over all specified areas, at the minimum component material rates specified:
   a. Wood Cellulose Mulch: 1) Mulch: 2,600 lb/acre dry weight. 2) Tackifier: 50 lb/acre.
   b. Bonded Fiber Matrix: 3,600 lb/acre dry weight.
   c. Mechanically Bonded Fiber Matrix: 3,600 lb/acre dry weight.

6. Retain and count empty bags of mulch to ensure final application rate.

3.22 TURF REINFORCEMENT MATS

Install according to the manufacturer's published installation literature for the product specified and application (slope or channel).

3.23 SURFACE ROUGHENING

A. Directional Tracking:

1. Do not use on slopes steeper than 3:1.

2. Operate tracked equipment up and down exposed slope to create ridges perpendicular to the slope.

3. Continue operation until the entire surface has been tracked.

B. Grooving/Furrowing:

1. May be used on all slopes.

2. Use rippers, disks, harrows, chisel plows, or other equipment capable of operating on the slope and creating grooves a maximum of 15 inches apart and 3 inches deep.

3. Operate equipment along the contour of the slope to create grooves that are perpendicular to the slope.

4. Perform over all exposed slopes as specified.

3.24 INLET PROTECTION

A. Install inlet protection devices according to the manufacturer's recommendations.

B. Remove the accumulated sediment, as required to maintain the inlet protection device in working order. Remove any accumulated sediment from streets open to traffic if it encroaches into the traveled roadway.

3.25 FLOW TRANSITION MATS

Install according to the manufacturer's published recommendations.

3.26 TEMPORARY EROSION CONTROL SEEDING

Comply with Section 32 92 19, Seeding.

END OF SECTION

SECTION 32 11 23

AGGREGATE BASE COURSES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Aggregate base.

1.02 RELATED SECTIONS

A. Section 31 20 00 - Earthwork.

B. Section 32 13 13 - Concrete Paving.

1.03 REFERENCES

A. AASHTO T 180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54 kg (10-lb) Rammer and a 457 mm (18 in.) Drop; American Association of State Highway and Transportation Officials; 2001 (2004).

B. ASTM D 698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3)); 2000a.

C. ASTM D 1556 - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method; 2000.

D. ASTM D 1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 (2,700 kN m/m3)); 2002.

E. ASTM D 2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method; 1994(R 2001).

F. ASTM D 2487 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System); 2000.

G. ASTM D 2922 - Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth); 2005.

H. ASTM D 3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth); 2005.

1.04 SUBMITTALS

A. Materials Sources: Submit name of imported materials source and provide material certifications.

1.05 PROJECT CONDITIONS

A. Verify that survey bench marks and intended elevations for the Work are as indicated.

PART 2 PRODUCTS

2.01 MATERIALS

A. Aggregate Base Course: Conforming to State of Iowa Highway Department standard 4121 unless otherwise stated in the plans.

2.02 SOURCE QUALITY CONTROL

A. Testing of samples for compliance will be provided before delivery to site.

B. If tests indicate materials do not meet specified requirements, change material and retest at Contractor's expense.

C. Provide materials of each type from same source throughout the work.

D. Upon delivery of 1,000 tons of aggregate to the site prior to spreading of rock, owner’s geotechnical engineer will test gradation of aggregate and verify it meets specification. Contractor must notify owner’s geotechnical engineer with a minimum 4 working day notice.

E. During rock placement, gradation testing compliance will be required every 200 tons of aggregate material delivered to site. Contractor required to coordinate testing with geotechnical engineer. If aggregate does not pass gradation, contractor responsible for removal and replacement of material as determined by geotechnical engineer and owner.

F. Contractor responsible for any subsequent gradation testing that is required for aggregate that does not pass gradation tests.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify substrate has been inspected, gradients and elevations are correct, and is dry.

3.02 PREPARATION

A. Do not place aggregate on soft, muddy, or frozen surfaces.

3.03 INSTALLATION

A. Under Paving:
   1. Place aggregate base course to a total compacted thickness as specified on site plan.
   2. Compact to 95 percent of maximum dry density.

B. Level and contour surfaces to elevations and gradients indicated.

C. Add water to assist compaction. If excess water is apparent, remove aggregate and aerate to reduce moisture content.

D. Use mechanical tamping equipment in areas inaccessible to compaction equipment.

3.04 TOLERANCES

A. Flatness: Maximum variation of 1/4 inch (6 mm) measured with 10 foot (3 m) straight edge.

B. Variation From Design Elevation: Within 1/2 inch (12 mm).

3.05 FIELD QUALITY CONTROL

A. Compaction density testing will be performed on compacted aggregate base course in accordance with ASTM D1556.

B. Results will be evaluated in relation to compaction curve determined by testing uncompacted material in accordance with ASTM D 698 ("standard Proctor").

C. If tests indicate work does not meet specified requirements, remove work, replace and retest at Contractor's expense.

D. Contractor shall coordinate work with testing laboratory before proceeding with each phase or stage of work.

3.06 CLEAN-UP

A. Remove unused stockpiled materials, leave area in a clean and neat condition. Grade stockpile area to prevent standing surface water.

END OF SECTION

SECTION 32 13 13

CONCRETE PAVING

PART 1 GENERAL

1.01 RELATED DOCUMENTS:

A. Drawings and General Provisions of Contract, including Bidding Requirements, General and Supplementary Conditions and Division I Specification Sections, apply to work specified in this Section.

B. Comply with ACI 316 "Recommended Practice for Construction of Concrete Pavements and Concrete Bases" for all work.

1.02 WORK INCLUDED:

Provide all labor, materials, equipment and supervision required to construct concrete pavement, driveways, parking lots, curbs, walks, steps, edging, etc. including:

A. Concrete.

B. Curing and sealing.

C. Contraction and expansion joints and fillers.

D. Vapor barrier.

1.03 RELATED WORK SPECIFIED ELSEWHERE:

A. Earthwork: Section 31 20 00.
B. Joint Sealant: Section 32 13 73.

1.04 QUALITY ASSURANCE:

A. Cost of field and laboratory testing will be borne by the Owner. Testing by laboratory approved by the Owner. Lab reports shall be simultaneously forwarded to the Owner, Contractor and Engineer.

B. Testing:
   1. Slump to be checked in accordance with ASTM C143. One test minimum per hour.

   2. Air content measured in accordance with ASTM C231, or C173. One test minimum daily.

   3. Strength tests:
      a. Take one set of three (3) cylinders for each one hundred fifty (150) cubic yards or part thereof. Minimum one set of three (3) cylinders per each day's pour.
      b. Each cylinder shall be plainly marked showing cylinder designation (1A, 1B, 1C).
      c. Job cure each cylinder three (3) days.
      d. After three (3) days, send cylinders A and B to the laboratory approved by the Engineer for testing at ages seven (7) days and twenty-eight (28) days. Cylinder C to remain at the job as a "spare" cured under same conditions as concrete in the area from which it was taken.
      e. The date and location of each sample shall be marked on the Contractor's job set of plans.

f. Load and core tests shall be required only if cylinder tests indicate concrete does not meet Specifications. Such tests, if deemed advisable by the Engineer, shall be arranged and paid for by the Contractor.

4. Pavement Smoothness: Evaluate pavement smoothness for all PCC pavement surfaces. Straightedge: The Engineer will check PCC pavement surfaces with a 10 foot straightedge placed parallel to the centerline. Areas showing high spots of more than 1/4 of an inch in 10 feet will be marked. Complete surface corrections according to the procedures in Iowa DOT Section 2316 to an elevation where the area or spot will not show surface deviations in excess of 1/8 inch when tested with a 10 foot straightedge. Surface corrections will be completed at the direction of the Engineer with no additional cost to the Owner.

5. Pavement Thickness:

a. At locations determined by the Engineer, cut samples from the pavement by drilling with a core bit that will provide samples with a 4 inch outside diameter. Restore the surface by tamping low slump concrete into the hole, finishing, and texturing. The Engineer will witness the core drilling, identify, and take possession of the cores. The Engineer will determine the core locations, measure the cores, and determine the thickness index according to Iowa DOT Materials I.M. 346 and 347, except as modified as follows:

i. For regular or irregular shaped areas, use a lot size of 1,000 square yards. Include remnants less than 500 square yards in the last lot and remnants greater than 500 square yards in a separate lot. Take a minimum of three cores per project.

ii. For any core with a deficiency greater than 0.15 inch, take two additional cores in that pavement lot and use the average of the three cores.

b. Coring of pavement or other work for thickness determination may be waived by mutual agreement for sections of the same design thickness less than 2,500 square yards.

c. Based on the thickness index determined by the Engineer, the pavement payment will be as shown below:

Pay Factor for PCC Pavement Thickness

Thickness Index Range (in.)	Percent Payment
0 to -0.15	100
-0.16 to -0.25	95
-0.26 to -0.50	85
Greater than -0.51	As determined by the Engineer

d. If the thickness index deficiency is greater than 0.51, the Engineer will study the extent and severity of the deficiency of the pavement areas. The Engineer will require one of the following:

i. Removal and replacement of the deficient areas with pavement complying with the contract documents at no additional cost to the Owner.

ii. Completion of an agreement that provides a combination of an extended guarantee period and payment penalty and allows the deficient pavement to be left in place.

1.05 SUBMITTALS:

A. Certification of concrete C-4 design mix with Class 3 durability aggregate by a testing laboratory. Submit prior to placement.

B. Submit plan for construction sequence and schedule prior to commencing construction.

C. Submit jointing plan 10 days prior to paving.

1.06 CODES, PERMITS AND FEES:

A. The entire installation shall fully comply with all local and state laws and ordinances, and with all established codes applicable thereto.

1.07 SITE DISTURBANCES:

A. Take precautions to ensure that equipment and vehicles do not disturb or damage existing site grading, walks, drives, utilities, plants, etc.

B. Verify locations and depths of all underground utilities prior to excavation.

C. Repair and/or return to original condition any damage caused by Contractor's negligence at no cost to Owner.

D. Provide temporary barricades and warning lights as required for protection of project work and public safety.

1.08 PAVEMENT PROTECTION

A. Weather Conditions: Do not place concrete when stormy or inclement weather or temperature prevents good workmanship. Temperature restrictions and protection requirements may be modified by the Engineer under unusual conditions. Pavement damaged by inclement weather shall be removed and replaced.

1. Cold Weather:

a. Paving: Do not place aggregates containing frozen lumps, and do not place concrete on a frozen subgrade or subbase. Take all necessary actions to prevent the pavement from freezing.

1) Concrete mixing and placement may be started, if weather conditions are favorable, when the air temperature is at least 34ºF and rising. At the time of placement, concrete must have a temperature of at least 40ºF.

2) Stop mixing and placing when the air temperature is 38ºF or less and falling or if the temperature stops rising and does not reach 38ºF.

b. Protection: Prior to applying protection, cure all concrete pavement and curb/gutters, including exposed edges of the pavement and curb. In addition, protect concrete less than 36 hours old as follows

Night Temperature Forecast	Type of Protection[1]
35°F to 32°F	One layer of burlap for concrete.
31°F to 25°F	Two layers of burlap or one layer of plastic on one

	layer of burlap.
Below 25°F	Four layers of burlap between layers of 4 mil (100 µm) plastic or equivalent commercial insulating material approved by the Engineer.
[1] The protection shall remain until one of the following conditions is met: a. The pavement is 5 calendar days old. b. Opening strength is attained. c. Forecasted low temperatures exceed 35°F for the next 48 hours. d. Forecasted high temperatures exceed 55°F for the next 24 hours and subgrade temperatures are above 40°F.	

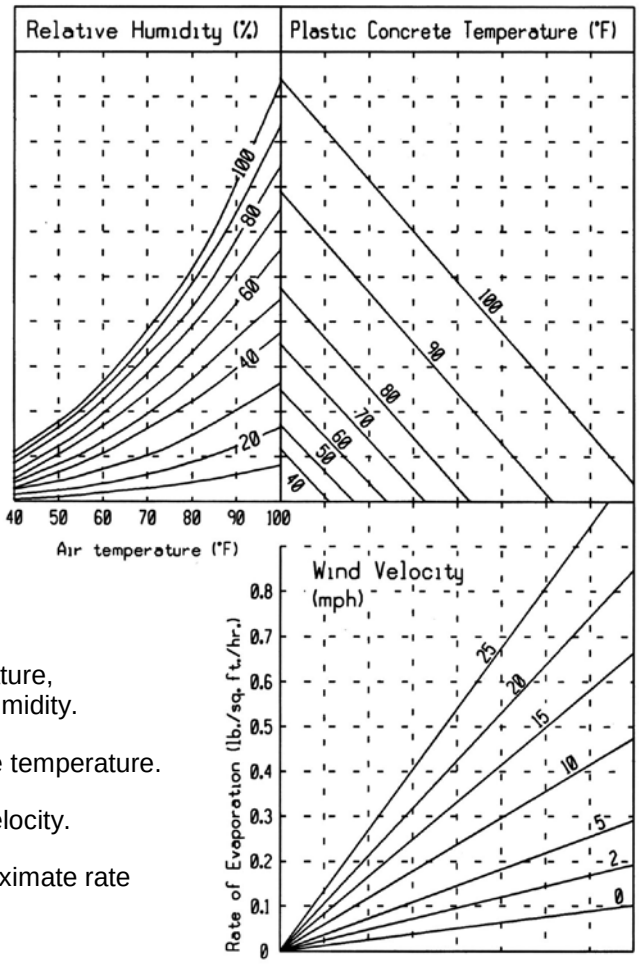
1) Shut down paving operations in time to comply with protection requirements outlined above. During cold weather, allow more time for finishing and protection. Perform all finishing and covering operations prior to darkness. Temperature restrictions and protection requirements may be modified by the Engineer.
2) Equivalent commercial insulating material approved by the Engineer may be used. This material must be waterproof and have a minimum R value of 1.0. If initial set has not yet occurred, place a layer of burlap on top of concrete prior to placing insulating blankets.
3) Use a method of protection and materials that will maintain the concrete temperature above 40°F.

2. Hot Weather: Hot weather condition is defined as any combination of the following conditions that tend to impair the quality of plastic concrete by accelerating the rate of moisture loss and rate of cement hydration causing thermal shrinkage and resulting in plastic shrinkage cracking:

- High Ambient Temperature
- High Concrete Temperature
- Low Relative Humidity
- High Wind Velocity
- Solar Radiation

a. General:
1) During hot weather conditions, the Engineer may restrict concrete placement to early morning or evening hours.
2) During hot weather conditions, advise the Engineer of the results of the theoretical evaporation rate throughout paving operations.
b. Determine the Theoretical Rate of Evaporation: Use the following chart and the National Weather Service's predicted maximum air temperature, relative humidity, and maximum steady wind velocity without gusts, for the date and the location of the paving pour.

Theoretical Rate of Evaporation Chart



To Use this Chart:

1. Enter with air temperature, move up to relative humidity.
2. Move right to concrete temperature.
3. Move down to wind velocity.
4. Move left , read approximate rate of evaporation

c. If the evaporation rate exceeds 0.1 pounds per square foot per hour but is less than 0.3 pounds per square foot per hour, provide the following concrete evaporation protection.

1) Immediately apply an approved evaporation retarder to the concrete pavement and curbs or increase the surface cure application to 1.5 times the standard specified rate.
2) Take special precautions to ensure that the forms and subgrade are sufficiently moist or protected to avoid lowering the water content at the pavement/subgrade interface. In hot weather conditions, moisten the subgrade the evening before operations.
3) Ensure that the time between placing and curing is minimized and eliminate delays.
4) Moisten concrete aggregates that are dry and absorptive.
5) Use a fog spray to raise the relative humidity of the ambient air if there is a delay in

immediately applying the curing compound.

6) Minimize solar heat by shading, wetting, or covering concrete chutes or other equipment that comes in contact with plastic concrete.

d. If the evaporation rate is 0.3 pounds per square foot per hour or greater or if winds are greater than 25mph, discontinue placement of concrete.

3. Rain Protection:

a. The Contractor shall have available, near the site of the work, materials for proper protection of the edges and surface of concrete. Protective material may consist of sheets of burlap, or plastic film. Planks or other material with suitable stakes that can be used as temporary forms shall also be on hand.

b. If initial set has not occurred, contractor shall take every precaution necessary to protect the surface texture of the concrete.

c. Failure to properly protect concrete shall constitute cause for removal and replacement of defective pavement, if so determined by the Engineer.

C. Protection from Traffic:

1. General:

a. Protect the new pavement and its appurtenances from traffic, both public and that caused by the Contractor's own employees and agents, at no additional cost to the Owner. This includes the erection and maintenance of warning signs, lights, barricades, watchmen to direct traffic, and pavement bridges or crossovers.

b. Do not operate equipment with metal tracks, metal bucket blades, or metal motor patrol blades directly on new paving. Do not unload soil or granular materials, including base rock for storage and future reloading directly onto new paving.

2. End of Day's Run:

a. At the end of each day's run and at all side streets, erect and maintain safety barriers and fencing as necessary to protect the pavement from damage.

b. Install safety fences within 1 hour of the completion of finishing and curing operations. Leave fences in place and maintained until the concrete has attained the minimum strength or age.

c. Intermediate safety fences may be required for the purpose of opening the pavement for access to a side road, side street, or entrance.

3. Repair of Damages: At the discretion of the Engineer, and at no additional cost to the Owner, repair or replace any part of the pavement damaged by traffic or other causes occurring prior to final acceptance of the pavement.

1.09 USE OF PAVEMENT

Time for opening pavement for use is determined by age and test results from cylinder or beams taken during placement.

		Minimum Age and Tested Strength of Pavement Before Opening		
Class of	Type of	Minimum Age	Minimum	Minimum Flexural

Mix	Cement	For Opening (1)	Compressive Strength (psi)	Strength Center Point (psi)
C	Type I	7 Days (2)	3,000	500
M	Type I	48 Hours	3,000	500

(1) Opening without testing only allowed upon approval of Engineer
(2) Five calendar days for concrete 9 inches thick or more.

PART 2 PRODUCTS

2.01 CONCRETE STRENGTH:

A. Concrete mix for exterior slabs and steps:
1. Minimum of 4000 psi compressive strength at twenty-eight (28) days.
2. Minimum air content of 6.0%. To allow for loss during placement, the air content of fresh, un-vibrated concrete shall be 7.0%.
3. Maximum of 15% replacement of cement with fly ash will be permitted.
4. Slump four inches (4") maximum.

2.02 MIXING:

A. Except as otherwise specified, concrete shall be ready-mixed or job-mixed at the Contractor's option, and in accordance with requirements of ACI 318-77. Ready-mixed concrete shall be mixed and delivered to the project in accordance with ASTM C94. Maximum mixing time is one (1) hour.

2.03 PORTLAND CEMENT:

A. ASTM C150, type I.

2.04 SAND:

A. Clean, hard, washed and well graded. Sand shall conform with ASTM C33.

2.05 COARSE AGGREGATE:

A. Aggregate shall conform to ASTM C33. Aggregate for footings and other unexposed concrete may be gravel. Aggregate for exterior concrete and surfaces shall be limestone (max. size 1"). No substitutions will be allowed. Evidence of staining due to impurities will be cause for rejection of work.

2.06 MIXING WATER:

A. Clean and free from oil, acid and injurious amounts of vegetable matter, alkalies and other impurities.

2.07 ADMIXTURES:

A. Air entrainment: 6%, + 1% or -0.5%.

B. Air-entraining agents shall conform to ASTM C260.

C. Calcium Chloride is not to be used. No other admixtures shall be used without the expressed, written consent of the Engineer.

D. A water-reducing agent may be used as deemed necessary, to be in conformance with the latest ASTM requirements.

2.08 EXPANSION JOINT FILLERS:

A. See Specification Section 32 13 73.

2.09 EXPANSION JOINT SEALANT:

A. See Specification Section 32 13 73.

2.10 CURE AND SEAL:

A. Comply with Iowa DOT Section 4105.
   a. All colored concrete pavement shall be cured using Iowa DOT 4105.07, Clear Compounds conforming with AASHTO 148, Type 1-D, Class A.
   b. All standard color concrete pavement shall be cured using Iowa DOT 4105.05, White Pigmented Compounds applied at a rate of 0.067 gallons per square yard.

2.11 REINFORCING STEEL MATERIAL:

A. All reinforcing steel shall be epoxy coated and conform with Iowa DOT section 4151.

PART 3 EXECUTION

3.01 SUBGRADE PREPARATION:

A. Excavate, fill, compact, grade and prepare subgrade as specified in Earthwork Section 31 20 00.

B 1. Unless otherwise ordered by the Engineer, the subgrade, at time of placing concrete for Concrete Pavement, shall be in a uniformly moist but not muddy condition to a depth of not less than one inch.

2. Subgrade Loading:
   a. Where concrete trucks must travel on a prepared soil-type subgrade to unload and, as approved by the Engineer, watering of the subgrade must be limited to just ahead of the paving machine.
   b. Repetitive loading on the subgrade by concrete trucks shall be minimized by entering and exiting the subgrade on side streets.
   c. Loads in excess of the legal axle load shall not be allowed on the completed subgrade.
   d. Partially loaded trucks may be required.
   e. If subgrade/subbase failure occurs, the repair shall be coordinated with the Engineer.

3. Paving Suspended:

a. The paving operation shall be suspended where subgrade stability has been lost.
b. No concrete shall be placed upon a subgrade which has become unstable, bears ruts or tire marks of Contractor's equipment or which is excessively softened by rain until such subgrade has been reconsolidated and replaned or reshaped to correct the objectionable condition.
c. If necessary, scarify to a minimum depth of 6 inches, aerating, and recompacting at the Contractor's expense. Recompaction shall meet requirements of Section 31 20 00.

4. Maintenance of Subgrade:
   a. The Contractor is responsible for maintenance of the completed subgrade during subsequent construction activities.
   b. Before allowing hauling equipment to use the completed subgrade, the Contractor must be satisfied as to the effect this hauling equipment may have on the partially completed work.

3.02 SURFACE FIXTURE ADJUSTMENT

A. Adjust manhole frames and other fixtures within area to be paved to conform to finished surface.

B. Clean outside of fixture to depth of pavement before concrete placement.

C. Box out fixtures for later adjustment where allowed. Size and shape of box out for intakes as shown in Standard Drawings.

3.03 FORMS:

A. Set base of forms at or below subgrade elevation with top of forms at pavement surface elevation.

C. Extra height forms with Engineer approval may be used to back up integral curb and paving slab; set base at or below subgrade elevation with top of form at top of curb elevation.

D. Secure forms in place to required grade and alignment.

E. If voids occur under forms, remove forms and rework subgrade to proper elevation and density; reinstall forms.

F. If the soil supporting the form is softened by rain or standing water so that form is inadequately supported, remove forms and rework subgrade to proper elevation and density; reinstall forms.

G. Coat forms with release agent before concrete is placed.

H. Place forms true to alignment and free of latent concrete. Use wood or steel forms adequately staked and braced for all exposed slab edges.

I. Leave forms in place not less than eight (8) hours after concrete is placed. If removal causes damage to concrete, leave forms on as long as necessary to prevent damage. Remove forms with care to prevent cracking, spalling or overstressing concrete.

3.04 REINFORCING PLACEMENT

A. Reinforcing metal shall be clean, straight, free from distortion and rust, and shall be firmly secured in

position as detailed.

B. All reinforcing metal shall be placed in approved storage to prevent damage; do not distribute along the work site except as needed to avoid delay in paving.

C. Place reinforcing steel as shown on the detailed drawings or as specified; support and secure bars by approved chair and wire assemblies; bars to be checked by the Engineer upon notification from the Contractor.

D. Place steel centered in the pavement reasonably in advance of the paving operations.

E. Joint Steel:

1. LONGITUDINAL: All joints shall be constructed of the type, dimensions, and at the locations required by the plans or special provisions. All longitudinal joints in drive lanes shall be L-1 or L-2 joints and have steel, unless specifically specified otherwise on plans. Interior, parking lot joints do not need steel and shall be of type C.

2. TRANSVERSE: All transverse joints shall be either type C or type DW with steel for a day's work joint.

2. Tie bars for all longitudinal joints shall be installed so as to be in the intended position in the completed pavement. Tie bars for all longitudinal joints shall be positioned on chairs and secured against movement with metal stakes during placing and finishing of concrete unless otherwise approved by the Engineer. If approved by the Engineer, bars may be placed in position by a machine or other method. For tie steel that is placed mechanically in plastic concrete, the Engineer may:
   a. Manually check locations and depth of the steel in the plastic concrete behind the slip form paver using the following frequencies:
      - once every 200 lineal feet for tangent roadway sections
      - in at least three locations within all horizontal curve sections
      - for each inspection, at least two tie steel locations within a panel
   b. Using a magnetic locator, verify locations of tie steel in hardened concrete every day. Check out-of-tolerance tie steel to identify the extent of the problem for a retrofit correction.

3. The Contractor shall provide adequate means to ensure that the load transfer devices and tie bars are properly secured to maintain correct position and alignment during the placement of concrete.

4. Other tie bars shall be placed in such a manner as to ensure that the bars are located in reasonably close conformity with the specifications.

5. Care should be taken to prevent disturbance or damage of the joint assembly. Bars must be supported by approved chairs or method approved by Engineer.

3.05 JOINTS:

A. The Contractor shall submit a concrete jointing plan to the Owners Representative for approval 10 days prior to the start of paving. Joint design for concrete pavement shall be based on the current Guide for Design and Construction of Concrete Parking Lots published by the American Concrete Institute (ACI 330R-92). It is desired to have joint lines match edges of travel lanes. Joint locations shall be chalked with a string line before sawing.

B. Saw cut control joints. Joints to be 1/8" minimum and 1/4" maximum width. All transverse contraction joints shall be sawed at a maximum spacing of 30T, where T is the thickness of the pavement in feet. In sidewalks, space joints to create square panels unless a maximum spacing of 21T is exceeded, then use rectangular panels, unless shown on the plans. All walks 13' or more in wide shall get a longitudinal centerline L-1 Joint with Steel and square panels.

All joints shall be sawed to a depth shown below.

	Minimum Sawcut Depth	
	Conventional Saw	Early "Green" Saw
Transverse "C" Joint	T/4±1/4"	1 1/4"
Longitudinal Joint	T/3±1/4"	Not Allowed

C. Timing:

1. Begin transverse joint sawing as soon as the concrete has hardened sufficiently to allow sawing without raveling or moving of aggregate. Saw joints before uncontrolled cracking takes place.

2. Saw all joints in a single cutting operation for a specific joint. Make saw cuts true to line and to the dimensions specified in the contract documents.

3. Discontinue sawing a joint if a crack develops ahead of the saw.

4.Saw longitudinal joints within 24 hours of the concrete being placed.

5. If necessary, continue the sawing operations both day and night.

6. The concrete must be capable of supporting the sawing operations to allow the use of an early green concrete saw.

7. Replace pavement with uncontrolled or random cracking at no additional cost to the Owner. Replace complete panel sections by means used for Full Depth PCC Repair Patches. Thickness of repair shall be original design thickness plus 2 inches. Place RD joints as shown in SUDAS Detail 7040.10 for patch.

8. Use wet sawing for dust control when specified in the contract documents.

D. Round outside edges of sidewalk with edging tool with approximately one quarter-inch (1/4") radius.

E. Round edges of sidewalk or curbs adjacent to expansion joints with edging tool with approximately one-eighth inch (1/8") radius.

F. Construction Joint - and tied joints shall be used at ends of all concrete pours. Bars to extend through joints a minimum of twenty-four (24) bar diameters.

G. Expansion joints (isolation joints) shall be installed in concrete pavement slabs and sidewalks where the concrete meets other structures such as light pole bases, intakes, buildings and all other similar structures. Hold joint material down one-half inch (1/2") and fill with sealant. Also used where sidewalk meets concrete curb.

H. Joints sawed with an early "green" concrete saw shall be washed out prior to sealing. The concrete must be capable of supporting the sawing operations to allow the use of an early green concrete saw.

I. Construction Joints:

1. Longitudinal or transverse construction joints shall be placed between adjacent lanes of concrete and at end-of-day header runs.

2. Manhole boxouts shall be located and placed on grade prior to paving. Manhole boxouts are required for two piece castings for sanitary/storm manholes.

3. The longitudinal construction joints shall be an approved joint type with legs unless machine placed.

4. Transverse construction joints shall employ load transfer devices (Header) and shall be placed whenever concrete placement is delayed for more than 30 minutes.

3.06 CONCRETE PAVEMENT PLACEMENT

A. Set survey control stakes at 25 foot maximum spacing including high and low points. Additional staking may be required by the Engineer.

B. The concrete shall be placed, consolidated, and finished to the widths and depths outlined in the plans.

B. All Type 2 and Type 3 paving sections longer that 100’ in length shall be poured with the slab in a single slip-form paving machine operation. This includes, but not limited to all 10’ wide or greater trails longer than 250 feet in length.

D. The concrete shall be deposited upon the supported reinforcement keeping segregation to a minimum.

E. Concrete shall be deposited to the full depth of the pavement in a single operation.

F. Necessary hand spading and spreading shall be done with shovels and not rakes.

G. Use laser screed for all Type 1 uniform width slabs 8.5 feet or more in width and 250 feet or more in length.

H. When pavement is constructed in separate lanes, the junction line in straight sections shall not deviate from the true line shown on the plans by more than ½ inch at any point and shall be tooled to the radius shown on the plans.

I. Place concrete to full depth in single operation. Keep a uniform pile of concrete in front of the paving machine, up to a maximum of 6 to 8 inches above the design surface elevation.

J. The concrete shall be distributed and spread as soon as placed. A mechanical concrete spreader may be used.

K. Concrete Screed:

1. The concrete shall then be struck off and screeded by mechanical means.

2. The striking off or screeding shall conform to the crown and cross section shown on the plans.

3. If, in the operation of subgrade or finishing equipment, it is necessary to operate one or both sets of wheels or tracks on previously placed concrete, the wheels or tracks shall be adjusted so that the bearing on the concrete will be not less than 3 inches from the edge of the pavement.

4. When operating with two wheels on the previously placed concrete and two wheels on the form, the form wheels shall be double flanged.

5. All wheels operating on the pavement shall be flangeless and rubber tired. All tracks operating on the pavement shall use rubber, wood, or belting pads.

L. The top of the forms shall be kept clean from accumulations of concrete, and the travel of the finishing machine on the forms shall be maintained true without lift, wobbling, or other variations tending to affect precision of finish.

M. When finishing by hand methods, concrete shall be consolidated by use of vibrating units operating in the concrete. Unless the vibrating apparatus is such that the full width of concrete is consolidated in a single passage, a definite system or pattern shall be used in the operation of the vibrator so the full width of concrete in each linear foot of lane will receive adequate and uniform consolidation. The system and methods of vibrating shall be subject to approval the Engineer. Vibrating equipment shall meet the requirements of IDOT Section 2301.07. Vibrating equipment shall, under no circumstances, be used as a tool for moving concrete laterally on the grade.

3.07 FINISHING:

A. Screed, level and float all slabs to true, level and straight lines.

B. Exterior slabs and platforms to be medium hair broom finish, with no coarse aggregate visible, unless otherwise specified on drawings.

C. Tolerances on all surfaces not more than three-sixteenths inch (3/16") in ten foot zero inch (10'- 0").

D. Formed surface finish:
   1. Remove bulges, fins, form marks and roughness from exposed surfaces by grinding.
   2. Subject to Engineer's approval, fill honeycombed and other defective areas by cutting out to solid concrete (minimum depth= 1") with straight edges and at right angles to the surface. Dampen area to be patched, brush on grout of equal parts Portland Cement and sand and follow immediately with patching mortar. Large or objectionable areas will require full removal and replacement at Engineer's discretion.
   3. Patching mortar to be not richer than one (1) part Portland Cement to three (3) parts sand. Color of patching mortar shall match the adjacent concrete. (Substitute white Portland Cement for part of the grey cement as needed to provide color match.)
   4. Trowel or burlap rub patched areas to match the surrounding concrete area. Clean all walls upon completion.
   5. Exposed concrete wall faces and tops to have a uniform smooth rubbed finish. Moisten concrete surfaces and rub with Carborundum brick or other abrasive until a uniform color and texture is produced. Do not apply cement grout other than that created by the rubbing process.

3.08 SURFACE CURING

A. Apply liquid curing compound in a fine spray to form a continuous, uniform film on the horizontal surface and vertical edges of pavement, curbs and back of curbs immediately after surface moisture has disappeared, but no later than 30 minutes after finishing. With approval of the Engineer, the timing of cure application may be adjusted due to varying weather conditions and concrete mix properties to ensure acceptable macrotexture is achieved.

   1. Use a white pigment liquid curing compound.

B. Apply compound with power sprayer; rate of application not less than 0.067 gallon per square yard (15 square yards per gallon); do not dilute compound.

C. If forms are used, apply to pavement edges and back of curbs within 30 minutes after forms are removed.

D. Ensure liquid curing materials are well agitated in the supply drum or tank immediately before transfer to the sprayer. Keep curing materials well agitated during application.

E. Hand operated sprayers may be used for small and irregular areas.

G. If forms are used, apply to pavement edges and back of curbs within 30 minutes after forms are removed.

H. If, due to other operations, the coating is damaged within 72 hours after being applied, immediately re-coat the affected areas. Coating of the sawed surface with curing compound will not be allowed on joints that are to be sealed. When pavement is opened to traffic prior to 72 hours after application of the curing coating, a re-coating will not be required.

3.09 JOINT SEALING

A. Timing:

   1. Unless otherwise provided, before any portion of the pavement is opened to the Contractor's forces or to general traffic, joints that require sealing shall be sealed.

   2. The Engineer may limit the wheel loads and axle loads of equipment operating on the pavement during this operation, if prior to the age and strength specified in Section 1.08 above. Additional tests to determine the modulus of rupture may be required.

B. Cleaning:

   1. For those joints that are not to be sealed, cleaning is not required.

   2. Within 3 hours after a joint has been wet sawed to the finished dimension, flush the wet sawing residue away from the sawed faces using a high pressure water blast operating with a minimum pressure of 1,000 pounds per square inch. Within 3 hours after a joint has been dry sawed to the finished dimension, blow the dry sawing residue from the joint using air compressors that provide moisture and oil free compressed air.

   3. Immediately prior to installation of sealant, clean joints with an air blast. Do not perform sealing until visual examination verifies the joint surfaces appear dry, in addition to being clear of dust and contamination.

C. Sealing:

1. Prepare and install joint sealer in the joint and to the proper level specified in the contract documents and as recommended by the manufacturer.

2. Heat hot-poured sealers in a thermostatically controlled heating kettle; heat the material to the temperature required for use, but not above that recommended by the manufacturer. After sealing, remove excess sealer from the pavement surface.

3. Seal joints the same day they are cleaned. Apply sealant only when the joint surfaces appear dry by visual examination.

4. Place joint sealer only when the pavement and ambient air temperatures are 40°F or above. When near this minimum, additional air blasting or drying time, or both, may be necessary to ensure a satisfactory bond to the joint faces. When this sealer cannot be properly placed due to late fall work, submit a joint construction plan and sealing details to the Engineer for approval before commencing paving. Delay the cleaning, sealing, and, if required, resawing of joints until the following spring. This delay requires the Engineer's approval.

5. When surface correction is required, repair seals damaged from the corrective work. Joint preparation, cleaning, and sealing may be delayed until after corrective work, provided the pavement is not opened to traffic before corrective work is performed.
.

3.10 SEPARATE CURB AND GUTTER CONSTRUCTION (FOR USE WITH HMA PAVING AREAS)

A. Construct curb and gutter as shown on drawings.

B. Use paving machine slip-form for curb; curb mule or similar mechanical equipment providing equivalent results.

C. Hand methods shall be allowed for radius, returns, and sections of curb and gutter 75 feet or less in length.

D. When depressed curb at driveways and where sidewalk intersects street, use templates to form backs of such curbs.

E. Form and construct curb by hand only where barrier or depressed curb is required and where small radii or other special sections preclude use of mechanical equipment.

F. Finish curb as rapidly as finishing operations on pavement permit. Maximum distance behind paving machine is 100 feet.

G. Remove free water, latency, dust, leaves, or other foreign matter prior to placing concrete for curb.

H. Use freshly mixed concrete; do not store concrete in receptacles at side of pavement for use in curb at a later time; do not use concrete requiring retempering.

I. Vibrate or puddle concrete to secure bond with paving slab and eliminate rock pockets.

J. Secure final finish on curbs by hand method, including 6 foot straightedge or 6 foot slipform.

K. Edge, protect, and cure curb in same manner as pavement.

L. Check surfaces of curb and gutter with 10 foot straightedge; correct variations greater than 1/8 inch; remove and replace curbs having varying cross section.

3.11 DEFECTS OR DEFICIENCIES

Pavement containing cracks, fractures, spalls, or other defects, as determined to be unacceptable by Owner/Engineer, shall be removed and replaced at no cost to Owner. Remedy to be determined by Engineer. In lieu of the above, the Owner/Engineer may approve an extended warranty or price adjustment.

Replace pavement with uncontrolled or random cracking at no additional cost to the Owner. Replace complete panel sections by means used for Full Depth PCC Repair Patches. Thickness of repair shall be original design thickness plus 2 inches. All matches must conform to Iowa SUDAS 2013 Detail 7040.101 for patches.

END OF SECTION

SECTION 32 13 73

PAVEMENT JOINT SEALANTS

PART 1 GENERAL

1.01 SUMMARY

A. This Section includes the following:
   1. Expansion and contraction joints within cement concrete pavement.
   2. Joints between cement concrete and asphalt pavement.

1.02 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Samples: For each type and color of joint sealant required.

C. Product test reports.

D. Compatibility and Adhesion Test Reports: From sealant manufacturer.

1.03 QUALITY ASSURANCE

A. Preconstruction Compatibility and Adhesion Testing: Submit samples of materials that will contact or affect joint sealants to joint-sealant manufacturers for testing according to ASTM C 1087 to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.

1.04 WARRANTY

A. Provide two year warranty from time of substantial completion for polyurethane sealants. Include coverage for installed sealants which fail to achieve watertight seal, exhibit loss of adhesion or cohesion, and sealants which do not cure.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products listed in other Part 2 articles.

B. Products: Subject to compliance with requirements, provide one of the products listed in other Part 2 articles.

2.02 MATERIALS, GENERAL

A. Compatibility: Provide joint sealants, backing materials, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer based on testing and field experience.

   1. Primers: Product recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

B. Colors of Exposed Joint Sealants: gray, unless selected by Architect from manufacturer's full range.

2.03 POURED JOINT SEALANTS

A. Parking Lot Pavement, Longitudinal and Transverse Joints:
1. Products:
   a. Bemac, Div. of McAsphalt; Beram 195/195LM.
   b. CRAFCO; ROAD SAVER 231.
   c. Koch Pavement Solutions; Koch Product #9030
   d. Maxwell Products, Inc.; Elastoflex 71.
   e. P.T.Products; DURA FILL 3405 LM.
   f. W.R.Meadows; 3405 Modified (Hot Pour)
   g. WRM SOF SEAL (2Comp. Cold Pour)
   h. Or equal specifically approved by engineer.

B. Expansion Joints in Walks and Parking
2. Products:
   a. Sonneborn Products; Sonolastic SL-1. Color gray.
   b. Or equal specifically approved by engineer.

2.05 EXPANSION JOINT FILLERS

A. Non-Linear Expansion Joints
   1. Polyethylene closed cell foam expansion joint filler. BASF, Sonoflex F.
   2. Only allowed at small curved joints, such as bollards or roof drain downspouts.
   3. Or equal specifically approved by engineer.
B. Linear Expansion Joints
   1. Resilient joint fibrous expansion board joint filler. Formflex Expansion Joint.
   2. Or equally specifically approved by engineer.

PART 3 EXECUTION

3.01 INSTALLATION

A. Timing: Unless otherwise provided, before any portion of the pavement is opened to the Contractor's forces or to general traffic, expansion joints and sawn joints shall be sealed.

B. Cleaning:
1. Before sealing joints narrower than 3/8 inch, the residue from sawing shall be cleaned from the crack. Dry sawing residue shall be blown from the joint. Wet sawing residue shall be flushed away by high pressure water blast cleaning.
2 . For joints 3/8 inch wide or wider, sand cleaning shall be used. When the joint surfaces appear dry by visual examination, the upper 3/4 inch of each joint face shall be cleaned by sand blast methods, followed by joint cleaning with air blasting. Air compressor shall provide moisture and oil-free compressed air. The angle of approach of the sand blast nozzle to each vertical face of the reservoir shall be approximately 30 degrees and the sand blast nozzle must have a guide which inserts in the joint and assures positive location and directional control of the nozzle.
3. Joint Sealer:
   a. Joint sealer shall be prepared and installed in the joint and to the proper level as shown in the contract documents and as recommended by the manufacturer.
   b. Hot-poured sealers shall be heated in a thermostatically controlled heating kettle; the material shall be heated to the temperature required for use, but not above that recommended by the manufacturer. After sealing, excess sealer shall be removed from the pavement surface.
   c. Joint sealer shall be placed only when the pavement and ambient air temperatures are 40 degrees Fahrenheit or higher. When near this minimum, additional air blasting or drying time or both may be necessary to assure a satisfactory bond to the joint surfaces.
   d. When this sealer cannot be properly placed due to late fall work, the Contractor shall submit a joint construction plan and sealing details to the Jurisdictional Engineer for approval before paving can begin.
   e. Joints shall be sealed the same day they are cleaned. Sealing shall be done only when the joint surfaces appear dry by visual examination.
   f. Where a curb does not exist, the joint opening at the pavement edges shall be sealed with tape.

g. If surface correction required the joints may need to be recleaned and resealed.

C. Install backer materials to support sealants during application and at position required to produce optimum sealant movement capability. Do not leave gaps between ends of backer materials. Do not stretch, twist, puncture, or tear backer materials. Remove absorbent backer materials that have become wet before sealant application and replace them with dry materials.

D. Install sealants at the same time backings are installed to completely fill recesses provided for each joint configuration and to produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

E. Clean off excess sealants or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved by manufacturers of joint sealants and of products in which joints occur.

END OF SECTION

SECTION 32 17 23

PAVEMENT MARKINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Pavement Markings.

1.02 DESCRIPTION OF WORK

A. For marking of completed pavement surfaces.

1.03 SUBMITTALS

A. Minimum of two weeks prior to commencing any pavement marking operations, the Contractor shall submit a manufacture's catalogue sheet for each type of pavement marking paint used for review and approval by the Engineer.

1.04 SCHEDULING AND CONFLICTS

A. Construction Sequence:
   1. Submit plan for construction sequence and schedule prior to commencing construction.

B. Conflict Avoidance:
   1. Notify Engineer of conflicts discovered or changes needed to accommodate unknown or changed conditions.

C. Conform to Local, State and Federal Requirements.

1.05 RESTRICTIONS ON OPERATIONS

A. Surface Temperature Restrictions: Pavement markings shall not be placed when the temperature of the pavement surface is less than 40 degrees Fahrenheit, or between October 15th and April 1st.

PART 2 PRODUCTS

2.01 Waterborne Paint

A. The paint shall be capable of being heated and sprayed applied up to a temperature of 140° F without damaging the formulation or serviceability of the paint. The paint shall be free from heavy metals as defined by the U.S. EPA.

B. Pigment Content: The percent pigment by weight of the finished product shall be from 45% to 55% by weight for white and 55% to 58% for yellow paint as tested by ASTM D 3723.

C. Resin Solids shall be composed of 100% acrylic emulsion polymer.

D. Nonvolatile Vehicle: The nonvolatile vehicle shall not be less than 43% by weight for white paint and not less than 45% by weight for yellow paint.

E. Volatile Organic Compounds: Volatile organic compounds shall not exceed 1.25 pounds per gallon excluding water and VOC exempt solids. ASTM D 3960 shall be used to determine the levels of VOCs.

F. Density: The density shall be a minimum of 12 pounds per gallon and the density of the production batches shall not vary more than +/- 0.2 pounds.

G. No-Pick-Up Time: The no-pick-up time for the paint shall be less than 5 minutes.

PART 3 EXECUTION

3.01 CLEANING AND PREPARATION OF PAVEMENT

A. The pavement surface shall be dry and free from dirt, dust, oil and other contaminates which may interfere with the paint from properly bonding to the surface. The clean surface shall be at least 1 inch wider than the anticipated marking. An air blast shall occur immediately prior to the new marking being placed. The air blast is not intended to remove large amounts of dust or dirt, but only a small amount of residue that might be left after the cleaning operation.

3.02 UNIFORM APPLICATION

A. All painted markings shall have uniform thickness and width. The width of the lines shall be as specified with a tolerance of +/- ¼ inch for 4-inch lines and +/- ½ inch for wider lines.

B. The wet film thickness of the paint shall be 14 mils, used at a rate of 305.5 ft. of solid 4” line per gallon of paint.

3.03 TRAFFIC CONTROL

A. Traffic control shall remain in place from the time cleaning operations have started through the completed curing time of the newly applied paint markings.

3.04 MARKING REQUIREMENTS

A. Parking Stalls:
Solid yellow lines, 4 inches wide by length dimensioned on plans and shall be placed for each parking stall as shown in the plans. The spacing shall be nominally 9.5 feet on center, or as otherwise specified on plans.

B. Symbols and Stop Bars:
Symbols, directional arrows, and stop bars shall be painted yellow. Size and shape shall follow the Manual of Uniform Traffic Control Devices. Locations as shown in the plans.

C. Handicap Access Symbols and Aisles:
Symbols, painted yellow, a minimum of 5 feet in height, shall be placed as shown in the plans. Access aisles shall be painted color per plan with a diagonal stripe pattern, lines placed 2 feet apart on center.

D. Loading Zones:
Solid yellow lines 4” wide shall be placed as shown in the plans for loading zones. The lines shall be placed diagonally, spaced 2 feet on center. A solid yellow line shall outline the area on the pavement and on the curb.

END OF SECTION

SECTION 32 91 19

LANDSCAPE GRADING

PART 1 GENERAL

1.1 SECTION INCLUDES:

A. Final grade topsoil for finish landscaping shown on Landscape Drawings.

1.2 RELATED SECTIONS:

A. EARTHWORK: SECTION 31 20 00

PART 2 PRODUCTS

2.1 MATERIALS:

A. Topsoil: Fertile, friable loam, capable of sustaining vigorous plant growth, from well drained site free from flooding, not in frozen or muddy conditions; reasonably free from subsoil, clay lumps, roots, grass, weeds, stones larger than three-quarter (3/4) inch (19 mm) diameter, and foreign matter; acidity range (pH) of 5.5 to 7.5; containing minimum 4 percent and maximum 20 percent organic matter.

PART 3 EXECUTION

3.1 EXAMINATION:

A. Verify building and trench backfilling has been inspected.

B. Verify subsoil base has been contoured and compacted.

3.2 SUBSOIL PREPARATION:

A. Eliminate uneven areas and low spots.

B. Remove debris, roots, branches, and stones in excess of 1/2 inch (13 mm) in size. Remove subsoil contaminated with petroleum products.

C. Scarify subgrade to depth of 3 inches (75 mm), where topsoil is to be placed. Scarify areas where equipment used for hauling and spreading topsoil has compacted subsoil.

3.3 PLACING TOPSOIL:

A. Place topsoil in areas to be seeded or sodded and planted, to thickness as scheduled (Paragraph 3.6).

B. Use topsoil in relatively dry state. Place during dry weather.

C. Fine grade topsoil eliminating rough and low areas. Maintain levels, profiles, and contours of subgrade.

D. Remove roots, weeds, and foreign material while spreading.

E. Manually spread topsoil close to building to prevent damage.

F. Lightly compact placed topsoil.

H. Leave site clean and raked, ready to receive seeding or sodding and landscape planting.

3.4 TOLERANCES:

A. Top of Topsoil: Plus of minus 1/4 inch (6 mm).

3.5 PROTECTION:

A. Protect landscaping and other features remaining as final work.

B. Protect existing structures, walls, sidewalks, and paving.

3.6 IMPORTING TOPSOIL:

A. Use topsoil stockpiled during site stripping for respread.

B. If contractor finds stockpiles have insufficient quantity for respreads requirements, topsoil must be imported to site and included in bid.

3.7 SCHEDULE OF TOPSOIL DEPTHS:

A. The following paragraphs identify compacted topsoil thickness for various locations.
   1. Ornamental Grass Planting Beds: Minimum 12 inches
   2. Native Plants and Grass Areas: Minimum 8 inches.
   3. Shrub Beds: Minimum 8 inches .
   4. Turf seeded and sodded Areas: Minimum 8 inches

END OF SECTION

SECTION 32 92 19

SEEDING

PART 1 GENERAL

1.01 RELATED DOCUMENTS:

A. Drawings and General Provisions of Contract, including Bidding Requirements, General and Supplementary Conditions and Division I Specification Sections, apply to work specified in this Section.

1.02 WORK INCLUDED:

A. Preparation of seedbed, furnishing and installing fertilizer, seed and mulch, maintenance and guarantee for seeding disturbed areas in accordance with the site plan.

B. Provide all labor, materials, equipment and supervision required to install turf seeding of lawns grass areas.

1.03 RELATED WORK SPECIFIED ELSEWHERE:

A. EARTHWORK: SECTION 31 20 00 .

B. LANDSCAPE GRADING: SECTION 32 91 19

1.04 DEFINITIONS

A. Finish Grade: Elevation of finished surface of topsoil.

B. Manufactured Soil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.

C. Planting Soil: Native or imported topsoil, manufactured topsoil, or surface soil modified to become topsoil; mixed with soil amendments.

D. Subgrade: Surface or elevation of subsoil remaining after completing rough grading, or top surface of a fill or backfill immediately beneath topsoil.

1.05 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Product certificates.

C. Planting Schedule: Indicating anticipated planting dates.

1.06 DELIVERY, STORAGE, AND HANDLING

A. If seed is mixed prior to delivery on the site, it shall be tagged showing a guaranteed statement of composition of mixture and percentage of purity and germination of each variety.

B. If seed is to be mixed at the site, it shall be delivered in original containers bearing producers certification of germination and purity.

C. Tags shall show producers or dealers Iowa Permit Number and date of testing; test date shall be no more than 90 days previous to time of use.

D. Fertilizers shall conform to State of Iowa laws and regulations. If delivered in bulk, bills of lading or other labels shall be furnished to Landscape Architect or labels indicating analysis and weight information from each container shall be preserved and furnished to Landscape Architect within twenty-four (24) hours of application.

E. Handling of materials as recommended by manufacturer.

F. Store all packaged materials off ground and protect from moisture.

G. Storage of all materials in locations designated and approved by Owner

1.06 QUALITY ASSURANCE

A. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when planting is in progress.

1.07 CODES, INSPECTIONS AND PERMITS:

A. The entire installation shall fully comply with all local and State laws and ordinances, and with all established codes applicable thereto.

1.08 SITE DISTURBANCES:

A. Take precautions to insure that equipment and vehicles do not disturb or damage existing site grading, walks, drives, utilities, plants, etc.

B. Verify locations and depths of all underground utilities prior to excavation.

C. Repair and/or return to original condition any damage caused by Contractor at no cost to Owner.

1.09 JOB CONDITIONS:

A. Existing Utilities:
   1. Locate existing underground utilities in areas of work. If utilities are to remain in place, provide adequate means of support and protection during this work.
   2. Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, consult utility owner immediately for directions. Cooperate with owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility owner.

3. Do not interrupt existing utilities serving facilities occupied and used by Owner or others, during occupied hours, except when permitted in writing by Owner and then only after acceptable temporary utility services have been provided.
4. Provide minimum of 48-hour notice to Owner and Landscape Architect and receive written notice to proceed before interrupting any utility.

B. Protection of Persons and Property:
1. Barricade open excavations occurring as part of this work and post with warning lights.
2. Operate warning lights as recommended by authorities having jurisdiction.
3. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by this work.

1.10 LAWN MAINTENANCE

A. Begin maintenance immediately after each area is planted and continue until acceptable lawn is established, but for not less than 60 days from date of Substantial Completion and will include:
1. Repair of eroded areas prior to acceptance.
2. Maintenance of a uniform mulch cover until acceptance.
3. Until final acceptance and approval is received, reseed or overseed, using seed mix originally specified, all seeded areas to produce uniformity.

B. Mow lawn as soon as top growth is tall enough to cut. Remove no more than 40 percent of grass-leaf growth in initial or subsequent mowings. Mow at 3" or higher.

PART 2 PRODUCTS

2.01 SEED

A. All seed mixes shall be local ecotypes and be locally obtained from:

United Seeds Inc
1800 Dixon Ave Suite A
Des Moines, Iowa 50316
(800) 365-6674

and shall consist of the following:

1. Seed Mix 1: "Super Turf II" Mix
2. Seed Mix 2: "Super Shade" Mix
3. Seed Mix 3: "Low Grow Grass and Wildflower" Mix (see Section 39 92 19.12 – NATIVE SEEDING)

If an equivalent seed manufacturer and mixture is desired, seed must be approved by project engineer:
Bishop Engineering
3501 104th St
Urbandale, IA 50322
515-276-0467
Attn: David Bentz

All equivalent seed must also be Certified Blue Tag Seed.

2.02 PLANTING MATERIALS

A. Topsoil: ASTM D 5268, pH range of 5.5 to 7, a minimum of 4 percent organic material content; free of stones 3/4 inch or larger in any dimension and other extraneous materials harmful to plant growth.
   1. Topsoil Source: Reuse surface soil stockpiled on-site and supplement with imported or manufactured topsoil from off-site sources when quantities are insufficient. Verify suitability of stockpiled surface soil to produce topsoil.

B. If necessary Inorganic Soil Amendments:
   1. Lime: ASTM C 602, Class T or O, agricultural limestone containing a minimum 80 percent calcium carbonate equivalent.
   2. Aluminum Sulfate: Commercial grade, unadulterated.

C. If necessary Organic Soil Amendments
   1. Compost: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8.

D. Fertilizer:
   1. 6-24-24 Fertilizer shall be applied to all Type 1 Seeding areas

E. Mulch:
   1. Hydraulic Mulch: Wood cellulose hydraulic mulch with tackifier shall be applied at a rate of 2500lbs/acre.

PART 3 EXECUTION

3.01 LAWN PREPARATION

F. Newly Graded Subgrades: Loosen subgrade to a minimum depth of 6 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
   1. Apply Superphosphate fertilizer directly to subgrade before loosening.
   2. Thoroughly blend planting soil mix off-site before spreading or spread topsoil, apply soil amendments and fertilizer on surface, and thoroughly blend planting soil mix.
   3. Spread planting soil mix to a depth of 6 inches but not less than required to meet finish grades after light rolling and natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.

G. Unchanged Subgrades: If lawns are to be planted in areas unaltered or undisturbed by excavating, grading, or surface soil stripping operations, prepare surface soil as follows:
   1. Remove existing grass, vegetation, and turf. Do not mix into surface soil.
   2. Loosen surface soil to a depth of at least of 6 inches. Apply soil amendments and fertilizers according to planting soil mix proportions and mix thoroughly into top 6 inches of soil. Till soil to a homogeneous mixture of fine texture.
   3. Remove stones larger than ¾" inch in any dimension and sticks, roots, trash, and other extraneous matter.
   4. Legally dispose of waste material, including grass, vegetation, and turf, off Owner's property.

H. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit fine grading to areas that can be planted in the immediate future.

I. Moisten prepared lawn areas before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

J. Restore areas if eroded or otherwise disturbed after finish grading and before planting.

3.02 SEEDING/ MULCHING

A. Seeding rates according to United Seed specifications or at rate as specified on Landscape plan, rate on Landscape Plan governs.

B. Rake seed lightly into top 1/8 inch of topsoil, roll lightly, and water with fine spray.

C. Apply wood cellulose Hydraulic Mulch at rate of 2500 lbs/ acre.

3.02 FERTILIZING

A. Fertilize all seed type I areas with product specified above at rate of 250 lbs/ acre.

3.03 SATISFACTORY LAWNS

A. Satisfactory Seeded Lawn: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. (0.92 sq. m) and bare spots not exceeding 5 by 5 inches.

B. Reestablish lawns that do not comply with requirements and continue maintenance until lawns are satisfactory.

END OF SECTION

SECTION 32 93 00

TREES, SHRUBS, AND GROUNDCOVERS

PART 1 GENERAL

1.01 RELATED DOCUMENTS:

A. Drawings and General Provisions of Contract, including Bidding Requirements, General and Supplementary Conditions and Division I Specification Sections, apply to work specified in this Section.

1.02 WORK INCLUDED:

A. Provide all labor, materials, equipment and supervision required for the installation of all proposed woody and herbaceous nursery stock, and machined moved plant material, mulch and steel edger.

1.03 RELATED WORK SPECIFIED ELSEWHERE:

A. EARTHWORK: SECTION 31 20 00.

B. LANDSCAPE GRADING: SECTION 32 91 19.

C. SODDING: SECTION 32 92 23.

1.04 AVAILABILTY:

A. Before submitting a bid, the Contractor shall have investigated the sources of supply and satisfied themselves that they can supply the listed plants in the size, variety and quality listed and specified. Failure to take this precaution will not relieve the Contractor from their responsibility for furnishing and installing all plant materials in strict accordance with the Contract Documents without additional cost to the Owner.

1.05 SUBMITTALS

A. Product Samples and Data: For each type of product indicated.

B. Photos of Representative tree at mature foliage.

C. Product certificates.

D. Planting Schedule: Indicating anticipated planting dates.

1.06 QUALITY ASSURANCE:

A. All plant materials, grading, sizes, methods, etc., are to conform to the Standards of the American Association of Nurserymen, Inc., as contained in their current publication "American Standard for Nursery Stock", (ANSI Z60.1). In the event there is a discrepancy between these standards and this Specification, the most restrictive requirement shall govern.

B. All materials described and specified herein shall be subject to acceptance and approval by the Landscape Architect.

C. This acceptance does not waive the right to reject any material after it has been delivered to the site and/or installed.

1.07 DELIVERY, HANDLING AND TEMPORARY STORAGE:

A. Install plant material on the day of delivery to the site; in the event this is not possible, protect that stock not planted.

B. Keep plant material that cannot be planted immediately after delivery in the shade, well protected with soil, wet moss or other acceptable material and well watered.

C. Do not bind plants with wire or rope at any time so as to damage the bark or break branches.

D. Lift and handle plants from the bottom of the ball only.

E. Plants moved with a ball will not be accepted if the ball is cracked, loose or broken before or during planting operations.

F. Deliver fertilizer to site in original, unopened containers, each bearing manufacturer's guaranteed analysis.

G. Store packaged materials off ground and protect from moisture.

1.08 CODES, PERMITS AND FEES:

A. Obtain any necessary permits for this Section of Work and pay any fees required for permits.

B. The entire installation shall fully comply with all local and state laws and ordinances, and with all established codes applicable thereto.

1.09 JOB CONDITIONS:

A. Existing Utilities:
1. Locate existing underground utilities in areas of work. If utilities are to remain in place, provide adequate means of support and protection during this work.
2. Underground utilities shown on the drawings have been taken from existing public records, Owner's records available as-built drawings and are correct to the best of our knowledge, provided for information only.
3. Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, consult Utility Owner immediately for directions. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities caused by Contractor's negligence to the satisfaction of Utility Owner at no cost to the Project Owner.
4. Do not interrupt existing utilities serving facilities occupied and used by Owner or others, during occupied hours, except when permitted in writing by Engineer and then only after acceptable temporary utility services have been provided.
5. Provide minimum of 48-hour notice to Engineer and receive written notice to proceed before interrupting any utility.

B. Protection of Persons and Property:
1. Barricade open excavations occurring as part of this work and post with warning lights.
2. Operate warning lights as recommended by authorities having jurisdiction.
3. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by this work.
4. Perform excavation within drip-line of large trees to remain by hand, and protect the root system from damage or dryout to the greatest extent possible. Maintain moist condition for root system and cover exposed roots with burlap. Paint root cuts of 1" diameter and larger with emulsified asphalt tree paint.

1.10 INITIAL ACCEPTANCE AND APPROVAL:

A. No plants shall be planted until reviewed by the Landscape Architect.

B All materials described and specified herein are subject to inspection and approval by Landscape Architect.

C. Materials may be inspected by the Landscape Architect at source of supply or the Landscape Architect may require the Contractor to submit color slides and/or photographs which illustrate the specified plant material at the source of supply.

D. This inspection does not waive the right to reject any material after it has been delivered to the site and/or installed.

1.11 FINAL INSPECTION:

A. Final inspection of the planting to determine completion of contract work, exclusive of possible replacement of plants, will be made by the Landscape Architect upon completion of the work.

B. Final inspection will not be conducted unless all items of work as outlined in 3. EXECUTION have been completed.

C. Ten (10) days prior to the anticipated date of acceptance submit written notice requesting inspection to Landscape Architect.

D. After final inspection, the Contractor will be notified in writing, by the Landscape Architect, of initial acceptance of inspected work exclusive of the possible replacement of plants and correction of deficiencies in the requirements for completion of the work.

E. Maintain, as specified, areas not acceptable until corrections are completed and reinspection is conducted.

F. If a significant time delay (sixty to ninety days) is encountered, through no fault of the Landscape Contractor, inspection and initial acceptance of a major portion of the plantings may be granted.

G. All plants shall be alive and healthy at the time of final acceptance.

H. Replacement of rejected plants before initial acceptance to meet the terms of initial acceptance shall not be considered a part of the guaranty and replacement requirement of this Specification.

1.12 GUARANTEE, REPLACEMENT AND FINAL ACCEPTANCE:

A. Guarantee plants for the duration of one (1) full year after they are initially accepted as defined herein.

B. Plants shall be alive and in good, healthy and flourishing condition of growth at the end of the guaranty period.

C. At the end of the guaranty period, final acceptance will be made by Landscape Architect upon written notice requesting such acceptance; submit notice to Landscape Architect at least ten (10) business days before the anticipated date of acceptance.

D. Any plant, required under this Contract, that is dead or not in a vigorous, thriving condition, as determined by Landscape Architect at the time of Final Acceptance, will be removed from the site.

E. Plants that are missing at the time of Final Acceptance are to be installed during the specified planting season when weather and site conditions permit.

F. In case of any questions regarding the condition and satisfactory establishment of a rejected plant, the Landscape Contractor may elect to allow such plant to remain through another complete growing season. If at that time the rejected plant is found to be dead, in an unhealthy or badly impaired condition, it shall be replaced.

G. After Initial Acceptance, replace plants (once during or at the end of the guaranty period) that are observed to be dead or in a badly impaired condition.

H. One replacement after initial acceptance shall constitute fulfillment of Contractor's guaranty for the particular plant replaced.

I. Replacement Plants: Plants of the same kind and size as specified in the Plant Schedule; furnished and planted as specified herein.

J. Replacement Plants: Guyed or staked, mulched, wrapped, fertilized, pruned and restored to original condition as originally specified at no cost to Owner.

K. Make all necessary repairs to grades, lawns and paving required because of plant replacements, at no cost to the Owner.

L. Plant Replacement Cost: Borne by Contractor except for possible replacements resulting from removal, loss or damage due to occupancy of project in any part, vandalism, civil disobedience, or acts of neglect on the part of others, physical damage by animals, vehicles, fire, etc., or losses due to curtailment of water by local authority, or to "Acts of God". Floods, tornadoes, wind of hurricane force, and hail are not normal and the damage they do cannot be calculated in a bid.

PART 2 PRODUCTS

2.1 PLANT MATERIALS:

A. Plant Schedule: A list of plant materials is scheduled on the Drawing. In the event of any discrepancy between this schedule and the Plan Drawing showing the plants, the Plan Drawing shall govern.

B. Certification of inspection of plant materials required by Federal, State or other governmental agencies to accompany all shipments to be furnished to the Landscape Architect.

C. Nomenclature: The names of plants required under this Contract conform to those given in the "Standardized Plant Names", 1942 Edition, prepared by the American Joint Committee on Horticultural Nomenclature. Names of varieties not included therein conform generally with names accepted in the nursery trade.

D. Standards: All plant materials, grading, sizes, methods, etc., are to conform to the Standards of the American Association of Nurserymen, Inc., as contained in their current publication "American Standard for Nursery Stock". In the event there is a discrepancy between these standards and this Specification, the most restrictive requirement shall govern.

E. Labeling: Legibly tag all plants as to name and size prior to initial inspection. Tagsa to remain on plant until final acceptance.

F. Species and Variety: True to name as specified. Plants approved as true to name at time of initial acceptance which, during the guaranty period, exhibit characteristics indicating they are not true to name will be replaced at no cost to the Owner.

G. Availability: Before submitting their bid, the Contractor shall have investigated the sources of supply and satisfied themsleves that they can supply the listed plants in the size, variety and quality listed and specified. Failure to take this precaution will not relieve the Contractor from their responsibility for furnishing and installing all plant materials in strict accordance with the Contract Documents without additional cost to the Owner.

H. Quality:
1. Growth habit typical for species and as indicated on the Plant Schedule.
2. Sound, healthy, vigorous and free from insect pests, plant diseases and injuries.
3. One sided plants or plants taken from tightly planted nursery rows will be rejected.
4. Any trees with missing or damaged central leaders will be rejected.

I. Size and Form:
1. Equal or exceed measurements specified in the Plant Schedule.
2. Measured before pruning with branches in normal position. Height and spread specified refers to main body of plant and not from tip to tip of branches or roots.
3. Caliper of trees less than four inches (4") - taken six inches (6") above ground level. Trees four inches (4") and over - measured one foot (1') above ground level.
4. Specified trunk height can be obtained by pruning lower branches of a plant after the plant has been installed; however, pruning to achieve specified trunk height is to occur only after Engineer has inspected plant and directed Contractor as to the amount of pruning required.
5. Where specified by caliper, no one stem of a specific multi-stemmed plant shall be smaller than the caliper size specified.

J. Balled and Burlapped Plants:
1. Designated as "B&B"; dug with firm, natural balls of earth of sufficient diameter and depth to encompass the fibrous and feeding root system necessary for full recovery of the plant.
2. In compliance with CURRENT PUBLICATION “AMERICAN STANDARD FOR NURSERY STOCK.”
3. Balls: Firmly wrapped with burlap or similar biodegradable material and bound with twine, cord, or wire mesh.
4. Where necessary to prevent breaking or cracking of the ball during the process of planting, the ball may be secured to a platform. Broken or loose balls will not be accepted.
5. A container grown plant, in lieu of a "B&B" plant, will be accepted provided it meets specified sizes and complies with CURRENT PUBLICATION “AMERICAN STANDARD FOR NURSERY STOCK.”
6. A machine moved plant, in lieu of a "B&B" plant, will be accepted provided it meets specified sizes and complies with CURRENT PUBLICATION “AMERICAN STANDARD FOR NURSERY STOCK.”

K. Container Grown Plants:
1. Container size as specified in Plant Schedule.
2. In compliance with CURRENT PUBLICATION “AMERICAN STANDARD FOR NURSERY STOCK.”

L. Machine-Moved Plants:
1. Moved with a Vermeer Tree Spade, tree mover or equal with approval of the Engineer.
2. Moved with a full machine of earth.

3. In compliance with CURRENT PUBLICATION “AMERICAN STANDARD FOR NURSERY STOCK.”

2.2 PLANTING SOIL:

A. Soil excavated from planting pits that is similar in nature to topsoil and is determined to be suitable for planting soil shall be thoroughly mixed with one (1) part of peat to five (5) parts of existing soil.

B. Very poor soils of clay, gumbo, gravel, hard-pan, or other soils injurious to plants shall not be used.

C. If quantity of soil excavated from planting pits is not adequate for planting, furnish planting soil consisting of partially decomposed vegetable matter of natural occurrence; black, clean, low in content of mineral or woody material, mildly acid, fertile and friable. Mix with one (1) part of peat to five (5) parts of soil.

D. Dispose of soil excavated from planting hole that is determined not to be of quality required or is not needed to be used for planting soil.

2.3 PEAT:

A. A domestic product consisting of partially decomposed vegetable matter of natural occurrence; black, clean, granulated or shredded.

2.4 FERTILIZER:

A. Similar or equal to Milorganite (6-3-0).

B. Uniform in composition, dry and free flowing.

C. Fertilizer which becomes caked or otherwise damaged making it not suitable for use, will not be accepted.

2.5 MULCH:

A. Type as specified on plans.

B. Depth and locations as shown on drawings.

C. Furnish in bags or bulk.

D. Submit sample for approval by Engineer.

2.6 GEOTEXTILE LANDSCAPE FABRIC :

A. 3.5 oz. spun bond landscape fabric, 100% polyester continuos filaments, thermally bonded manufactured by:
US Fabrics, Inc.
3904 Virginia Ave.
Cincinnati, Ohio 45227
Phone (513) 271-6000
Fax (513) 271-4420
or approved equivalent.

2.7 STAKING, GUYING AND WRAPPING MATERIALS:

A. Stakes: Similar or equal to steel farm fence posts, green vinyl coated or painted black with a rust inhibiting paint. All stakes the same color.

B. Wire: No. 11 gauge pliable galvanized wire.

C. Hose: New green or black 2-ply one-half inch (1/2") diameter reinforced rubber garden hose; all hose the same color.

D. Guying cable: Five-strand, three-sixteenth inch (3/16") diameter, steel cable. Attach wire cable clamps and turnbuckles (galvanized or aluminum).

E. Steel auger type screw anchor with twenty-four inch (24") rod length and three inch (3") plate.

F. Wrapping material: Heavy crinkle crepe tree wrapping paper in strips four to ten inches (4-10") wide.

2.8 METAL EDGING:

A. Steel landscape edging, one-quarter inch (1/4") by four inch (4").

B. Painted black.

C. Similar or equal to "Ryerson" steel landscape edging.

D. For use with rock maintenance edge around building perimeter and adjacent to security fence.

2.9 STONE EDGING:

A. Natural limestone edging – 6” nominal width, 4” nominal depth, 36” lengths.

B. Saw cut end of stone for flush installation against adjacent stone and pave surfaces.

PART 3 - EXECUTION

3.1 COMMENCEMENT DATE:

A. At the earliest possible date site conditions permit.

B. Coordinate with Landscape Architect.

3.2 PLANTING SEASON FOR BARE ROOT PLANTS:

A. Commence as soon as weather and site conditions permit in early Spring.

B. Spring planting season to end on or before May 30.

C. Fall planting season: approximately September 15 to November 1.

3.3 PLANTING SEASON FOR BALLED AND BURLAPPED, CONTAINER GROWN AND MACHINE MOVED PLANTS:

A. Deciduous trees and shrubs: April 1 to June 1 and August 15 to November 1.

B. Evergreen trees and shrubs: April 1 to June 1 and August 15 to October 15.

3.4 PREPARATION:

A. Stake out on the ground the locations of all plants and obtain approval of the Landscape Architect before excavation is begun.

B. Relocate incorrectly located plants at no expense to the Owner.

3.5 EXCAVATION:

A. Excavate the plant pit, centered at the location stake.

B. Planting soil for backfilling shall be kept separate from excavated subsoil.

C. Excavate the plant pit large enough to provide for at least six inches (6") of planting soil backfill around and beneath the root system.

D. Where surface or subsurface conditions prevent digging a plant pit to specified dimensions, obtain approval from Landscape Architect to modify location of pit dimensions.

3.6 DRAINAGE TEST:

A. Randomly select a representative number of shrub plant pits in each shrub planting area and test for drainage prior to planting.

B. Test all tree plant pits for drainage.

C. Fill each selected plant pit with water and let stand for twenty-four (24) hours.

D. Do not proceed with planting where drainage problems are apparent.

E. Report to the Landscape Architect any areas which do not drain within twenty-four (24) hours. A solution will be determined at that time. If additional work is required, the contractor shall submit proposal for this additional work according to the request for proposal.

3.7 PLANTING:

A. Ornamental Grass Beds:
   1. Cultivate bed areas six inches (6") deep and grade smooth immediately before planting groundcover plants.
   2. Before planting, spread commercial fertilizer at the rate of one-eighth (1/8) pound per plant over entire groundcover area, and cultivate into top six inches (6") of soil.
   3. Plant grassesat 18” O.C. unless noted otherwise on the Drawings.
   4. After planting and before mulching, spread weed preventer over plant bed soil surface as per manufacturer's recommendation.
   5. Install mulch to depth of three inches (4") over entire groundcover bed.

B. Balled and Burlapped and Container Grown Plants:
   1. Center the root ball in the plant pit resting on six inches (6") of well tamped planting soil.
   2. Backfill the plant hole with planting soil placed in layers around the root ball.

3. Carefully tamp each layer in place in a manner to avoid injury to roots or ball.
4. When approximately two-thirds (2/3) of the plant hole has been backfilled, fill the hole with water and allow the soil to settle around the roots.
5. Set top of root ball level with the surrounding grade as shown in the Planting Details.
6. Place mulch as indicated in the Plans and Details.
7. Cut cord or wire securing burlap at base of tree.

C. Machine Moved Plants:
1. No machine moved plants are approved for use on this project.

3.8 FERTILIZING B&B AND CONTAINER GROWN PLANTS:

A. Trees and Shrubs: Mix with backfill.

B. Large shade trees: Two (2) pounds per inch of caliper.

C. Small trees: One (1) pound per inch of caliper.

D. Shrubs: One-quarter (1/4) pound per foot height.

E. Evergreens: One-eighth (1/8) pound per foot height or spread.

F. Vines and groundcover: One-eighth (1/8) pound per plant; place in bottom of plant pit.

G. Herbaceous plants: One-eighth (1/8) pound per plant.

3.9 STAKING:

A. Stake evergreen trees eight feet (8') in height and less and deciduous trees having a trunk caliper of three inches (3") or less.

B. Use two (2) stakes driven vertically to depth to provide a firm structure.

C. Attach wire to the stake at a point approximately four feet (4') from the ground and attach to the tree at the same height.

D. Encase the wire in rubber hose to avoid direct contact between wire and bark of tree.

E. Place stakes opposite each other in an east-west direction and drive with a slight tilt away from each at the top so that slight tension can be placed on the wires when attached.

F. All staking material may be salvaged by the Landscape Contractor twelve to eighteen (12-18) months after planting.

3.10 GUYING:

A. Anchor and guy evergreen trees over eight feet (8') in height and deciduous trees having a trunk caliper of more than two and one-half inches (2 1/2") with three (3) guying cables, unless shown otherwise on the Drawings, Plant Schedule or Planting Details.

B. Space three (3) guys equally about each tree.

C. Each guy will consist of three-sixteenth inch (3/16") cable attached to the tree trunk at an angle of thirty (30) to forty-five (45) degrees at about two-thirds (2/3) of the height of the tree and anchored at the ground to earth anchors as specified.

D. Make all cable fastenings with an approved cable clamp and turnbuckle.

E. All guying materials may be salvaged by the Landscape Contractor twelve to eighteen (12-18) months after planting.

3.11 PRUNING AND REPAIR:

A. Prior to initial acceptance, prune all trees and shrubs and repair any injuries.

B. Limit the amount of pruning to the minimum necessary to remove dead or injured branches and twigs.

C. Maintain the natural habit, shape and specified size of the plant.

D. Make all cuts flush; leave no stubs.

E. On all cuts over three-quarters inch (3/4") in diameter and bruises or scars on the bark, trace the injured cambium back to living tissue and remove; smooth and shape wounds so as not to retain water and coat the treated area with an approved antiseptic tree paint.

3.12 MULCH:

A. Install at consistent depth as shown on drawings.

B. Sub-grade surface of areas to receive mulch shall be sloped to drain, smooth and free of ruts and clods.

3.13 CLEAN UP:

A. Remove any soil, peat or similar material that has been brought onto paved areas by planting operations keeping those areas clean at all times.

B. Upon completion of the planting, dispose of all excess soil and stones resulting from the planting operation.

C. Remove all debris, resulting from planting operations, from the site.

3.14 MAINTENANCE:

A. Begin immediately following installation of plants and continue until initial acceptance.

B. Include watering, weeding, cultivating, mulching, removal of dead material, resetting plants to proper grades or upright position and restoration of the planting saucer, and other necessary operations.

C. If any planting is done after lawn preparation, provide proper protection to lawn areas and repair any damage resulting from planting operation promptly at no cost to the Owner.

D. Maintenance after initial acceptance of the planting will be performed by the Owner.

E. Furnish detailed written recommended maintenance program to the Owner with a copy to Engineers, prior to initial acceptance of the various planting areas.

F. Maintenance performed by the Owner in accordance with recommended program will not affect the Landscape Contractor's obligation to guarantee and replace defective plants as herein described.

END OF SECTION

SECTION 33 40 00

STORM SEWER AND DRAINAGE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Storm Sewers.

B. Subdrains.

C. Footing Drain Sewer Collectors.

D. Storm Sewer Service.

1.02 DESCRIPTION OF WORK

A. Construct storm sewers, subdrains, and footing drain collectors.

B. Construct storm sewer service and connections.

C. Reference is made to the Iowa Department of Transportation Standard Specifications for Highway and Bridge Construction, Series 2012, and all current General Supplemental Specifications and Materials Instructional Memorandum by the term "Iowa DOT Specifications" and/or "Iowa DOT I.M."

1.03 SUBMITTALS

A. Submit under provisions of Division 1.

B. Manufacturer's instructions for installation of pipe and appurtenances.

C. Construction sequence.

D. Catalog cuts, samples, manufacturer's data, and listing of applicable standards for special, unique, or proposed substitute materials if requested by Engineer.

E. Certification that materials being provided meet the requirements of these specifications or that alternate materials or substitutions have received written approval of the Engineer.

F. Project Record Documents.

G. Upon requests the Contractor will provide Material Certifications to the Engineer.

1.04 SUBSTITUTIONS

A. Use only materials conforming to these specifications unless permitted otherwise by Engineer.

B. Obtain written approval of Engineer for all substitutions prior to use.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver only materials that fully conform to these specifications or for which submittals have been provided to Engineer and approved for use.

B. Store materials and handle to avoid damage. Replace any damaged materials. Remove damaged materials from site.

1.06 SCHEDULING AND CONFLICTS

A. Construction Sequence:
   1. Attend a preconstruction meeting if required by Engineer.
   2. Submit plan for construction sequence and schedule prior to commencing construction.

B. Conflict Avoidance:
1. Expose potential conflicts such as utility lines and drainage structures in advance of construction. Verify elevations and locations, and verify clearance for proposed construction.
2. Complete elements of work that can affect line and grade in advance of storm sewer construction unless noted on plans.
3. Notify Engineer of conflicts discovered or changes needed to accommodate unknown conditions.

1.07 SPECIAL REQUIREMENTS

A. Stop Work: Stop work and notify Engineer immediately if contaminated soils, historical artifacts or other environmental or historic items are encountered.

B. Conform to local, state and federal requirements.

1.08 MEASUREMENT FOR PAYMENT

A. All measurements for payments will be made by the Engineer or authorized representative.

B. Storm Sewers and Subdrains:
1. Measurement of pipe, except aprons, will be in linear feet along centerline of pipe in place.
2. Measurement of each size and type of pipe installed will be from end of pipe to end of pipe.
3. Payment will be made at the unit bid price for each size and type installed.

C. Incidental Items:
1. Items that are not listed as specific bid items, but are required for proper completion of the work, are incidental to construction. Pipe testing is incidental.
2. Incidental items may or may not be shown on plans.
3. No payment shall be made for incidental items.

PART 2 - PRODUCTS

2.01 STORM SEWERS

A. Reinforced Concrete Pipe (RCP):
1. Conform to ASTM C 76.
2. Minimum Class III, Wall B.
3. Tongue and groove joints.
a. Use cold applied bituminous jointing materials, unless otherwise specified.
b. If specified, use rubber O-ring flexible joint conforming to ASTM C 443.
4. If specified, wrap exterior of each joint with engineering fabric.

E. Polyvinyl Chloride Pipe (PVC):
1. Use pipe conforming to the following:
a. Minimum pipe stiffness of 46 psi.
b. ASTM F 949, corrugated exterior, smooth interior; ASTM D 3034, solid wall PVC; ASTM F 679, solid wall PVC (up to 27 inches).
c. Gasketed integral bell and spigot joints per ASTM D 3212 and ASTM F 477.
2. Do not use in right-of-way.
3. Use only outside of right-of-way in public utility easement areas where no utilities exist or are proposed (running parallel or crossing) or where the trench for the PVC pipe will not be disturbed, and where the Engineer allows.

F. High Density Polyethylene (HDPE): N-12 PIPE: PIPE SHALL BE ADS N-12 MEGA GREEN.
1. Pipe shall consist of smooth interior and annular exterior corrugations.
2. 4- through 10-inch (100 to 250 mm) shall meet ASTM F2648(virgin/recycled material) , Type S.
3. 12- through 60-inch (300 to 1500 mm) shall meet ASTM F2648 (virgin/recycled resins), Type S.
2. Use only fittings supplied or recommended by pipe manufacturer for soil tight service.
3. Only use outside of Public Right of Way where allowed by jurisdiction.

G. Bituminous Jointing Material:

1. Use with RCP, RCAP, and RCEP, unless indicated otherwise on plans.
2. Use a cold applied mastic sewer joint sealing compound recommended by the manufacturer for the intended use and approved by the Engineer. Supply in either rope form or flat type form or suitable for trowel application. Meet the requirements of AASHTO M 198.

H. Bituminous Joint Primer: Meet the requirements of ASTM D 41, which is intended for use in priming concrete pipe joints prior to application of bituminous jointing material.

I. Engineering Fabric**:**
1. Use for wrapping exterior of storm sewer pipe joints where indicated on plans.
2. Use Iowa DOT 4196.01B fabric for use in subsurface drains.

J. Reinforced Concrete Apron:
1. Use where indicated on plans.
2. Use pipe conforming to ASTM C 76.
3. Strength not less than adjoining pipe sections.

K. Apron Guard:
1. Use where indicated on plans.

2.02 SUBDRAINS

A. Polyvinyl Chloride Pipe and Fittings (Solid Wall PVC):
1. Conform to ASTM D 3034, minimum thickness SDR 35, 46 psi minimum pipe stiffness.
2. PVC plastic according to ASTM D 1784, Cell Classification 12454.
3. Integral bell and spigot type rubber gasket joint conforming to ASTM D 3212 and ASTM F 477.
4. Fabricated or preformed saddle wye or saddle tee for service tap conforming to AASHTO M 252 or M 294.
5. Slot subdrain pipe according to ASTM F 949 or perforate with four rows of 1/4 inch to 3/8 inch diameter holes along the bottom of the pipe.

B. Polyvinyl Chloride Corrugated Pipe and Fittings (Corrugated PVC):
1. Corrugated exterior, smooth interior, PVC.
2. Conform to ASTM F 949, minimum pipe stiffness, 46 psi.
3. PVC plastic according to ASTM D 1784, Cell Classification 12454.
4. Integral bell and spigot type rubber gasket joint conforming to ASTM D 3212 and ASTM F 477.
5. Slot subdrain pipe according to ASTM F 949.

C. Polyethylene Corrugated Tubing (Corrugated PE):
1. Conform to AASHTO M 252, Type C, corrugated interior and exterior or Type S, corrugated exterior, smooth interior.
2. Use only fittings supplied or recommended by pipe manufacturer for soil tight service.
3. Perforated with slots conforming to AASHTO M 252, Type CP, or Type SP.

D. Aggregate Backfill: Conform to State of Iowa Department of Transportation Standard 4131, Porous Backfill Material; Crushed stone or gravel meeting Iowa DOT Gradation No.29.

E. Engineering Fabric: Use fabric conforming to Iowa DOT 4196.01B.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify measurements at site; make necessary field measurements to accurately determine pipe makeup lengths or closures.

B. Examine site conditions to ensure construction operations do not pose hazards to adjacent structures or facilities.

3.02 LINE AND GRADE

A. Install pipe to line and grade shown on plans. Set field grades to invert of pipes or culverts.

B. Notify Engineer immediately if discrepancies or irregularities are discovered in line or grade shown by grade stakes.

C. Make detailed measurements as required to construct work to line and grade established by line and grade hubs.

D. Batter Boards:
1. Set grade points at 25-feet intervals at convenient offset from centerline of pipe or culvert.
2. Set batter boards as necessary to construct to design line and grade.
3. Provide at least three batter boards at all pipe laying areas during construction as check on accuracy of grades.
4. Check line and grade of each pipe length with grade rod and plumb bob.

E. Laser Beam:
1. Set laser equipment to proper line and grade from line and grade hubs.
2. Check line and grade of laser at 25-feet intervals for first 100 feet and then at 50-feet intervals for each setup.
3. Check line and grade of each pipe length.

F. Correct Misalignment: Correct misalignment, displacement, or otherwise defective pipe by removing, relaying, or replacing pipe at Contractor's expense.

3.03 PIPE INSTALLATION

A. Provide trench excavation, pipe bedding, and backfill as specified in Section 31 23 33.

B. Provide proper facilities for lowering the sections into place without damaging the pipe.

C. Begin at lowest point in line. Lay groove or bell end point upstream unless specifically noted otherwise.

D. Prepare trench bottom to design line and grade so only minor movement of pipe is necessary after installation.

E. Inspect pipe for defects before carefully lowering into trench. Do not install damaged or defective pipe.

F. Clean pipe interior and joints prior to lowering into trench. Keep pipe clean during construction.

G. Do not lay pipe in water or on saturated soil or bedding. Do not allow water to rise in trench around pipe.

H. Place pipe with lifting holes at the top of the pipe and fill lift hole with non-shrink grout or manufactured plugs.

I. Lay pipe to design line and grade.

J. Provide uniform bearing for full pipe barrel length.
1. Excavate bell holes as necessary for uniform support of pipe barrel on bedding material.
2. Do not block pipe above bedding.

K. Assemble joints as specified.

L. Protect exposed upstream ends of pipe to prevent soil sediment from entering storm sewer system with the watertight stopper, cap, or plug.

M. Do not disturb installed pipe and bedding when using movable trench boxes and shields. Block or anchor pipe as necessary to prevent joint displacement.

N. Saw cut ends of pipe at manholes, intakes, and structures. Do not hammer cut or break pipe.

O. Provide manholes and intakes where indicated on plans and as specified.

3.04 PIPE JOINTING

A. Joint Cleaning: Clean joint surfaces with wire brush to remove soil or foreign material prior to jointing pipe.

B. Assemble Joints According to Pipe Manufacturer's Recommendations:
   1. Use equipment that does not apply damaging forces to pipe joints.
   2. Use bar and block or internal or external jointing devices or other methods recommended by pipe manufacturers.

C. RCP, RCAP, and RCEP:
   1. Use cold applied bituminous jointing materials unless otherwise specified.
      a. Apply joint material to entire tongue or to top half of tongue and bottom half of groove, in sufficient quantity to fill joint; close joint between pipes.
      b. Fill remaining voids in joint both inside and outside of pipe with joint material; smooth joint material on inside of pipe 24 inches and larger.
   2. If rubber O ring is specified, coat rubber ring gasket and joint with soap based lubricant immediately prior to closing joint.
   3. If wrapped pipe joint is specified,
      a. Secure engineering fabric in place to prevent displacement during backfill operations.
      b. For combination storm sewer/subdrain or Type II subdrain, do not use joint sealant.
   4. Joint openings on the outside or inside of the pipe that do not exceed 1/8 inch at the bottom and 5/8 inch at the top are acceptable.
   5. Fully encase large joint openings, unless required for camber, with a Type II concrete collar (see Figure 4020.1A). Use Class C structural concrete.

D. RCPP: Coat rubber ring gasket and joint with soap based lubricant immediately prior to closing joint.

E. CMP and CMAP:
   1. Install coupling bands that match ends of pipes.
   2. End of coupling bands must lap or be fabricated to form tightly closed joint upon installation.

F. PVC Pipe and Corrugated PVC Pipe: Coat rubber gasket and joint with soap based lubricant immediately prior to closing joint.

G. High Density Polyethylene (HDPE): Coat rubber gasket and joint with soap based lubricant immediately prior to closing joint.

H. High Density Polyethylene (HDPE): N-12 MONSTER GREEN PIPE:
   1. Fittings shall conform to ASTM F2648.
   2. Joints shall be N12 ST IB (Soil Tight)
      a. Join pipes with bell & spigot joint meeting ATSM F2648.
      b. Soil Tight gaskets shall meet the requirements of ASTM F477.
      c. Gaskets shall be installed by pipe manufacturer and covered with removable wrap to ensure gasket is free of debris.
      d. Joint lubricant available from manufacture shall be used on the gasket and bell during assembly

I. Connections between Dissimilar Pipes:
   1. Use manufactured adapters or couplings approved by Engineer.
   2. Where adapters or couplings are not available, Engineer may authorize use of concrete collar.

3.05 PIPE END SECTIONS

A. Provide reinforced concrete or metal pipe aprons where indicated on plans.

B. Install footings with aprons according to figure, if required.

C. Anchor last three pipe sections and aprons together with two pipe connections per joint.

D. Install apron guard where indicated on plans.

3.06 SUBDRAINS AND TRENCH DRAINS

A. Provide subdrain where indicated on plans.

B. Provide trench drains where indicated on plans.

C. If specified, install engineering fabric.

3.07 FOOTING DRAIN COLLECTOR

A. Install footing drain collector per Section 31 23 33.

B. If specified, install engineering fabric.

C. Provide cleanouts and connections.
   1. Connect footing drain sewer collectors to storm sewer manhole or intake.
   2. Provide fabricated or preformed wye or tee service fitting for each platted lot or building.

D. Provide manholes, if specified.

3.08 STORM SEWER SERVICE STUBS

A. Provide storm sewer service connection and line from storm sewer or footing drain sewer for each platted lot or building as shown on plans.

B. Use fabricated or preformed saddle wye or saddle tee for service tap to storm sewers. Clamp with two stainless steel clamps and install according to the manufacturer′s recommendations.

C. Extend storm sewer service from storm sewer or footing drain collector to 10 feet outside of the right-of-way line or as shown on the plans.

D. Place watertight stopper or plug in end of storm sewer service.

3.09 TOLERANCES

A. Horizontal and vertical alignment of gravity sewer lines shall not vary from design line and grade at any point along the pipe by more than 1% of the inside diameter of the pipe or 1/4 inch, whichever is larger.

B. Tolerance allowed only if design line and grade is sufficient to prevent backslope when tolerance limits are reached.

C. Reverse slope on pipe is prohibited.

3.10 CONFLICTS

A. Provide temporary support for existing water, gas, telephone, power, and other utilities or services that cross trench.

B. Compact backfill under existing utility crossing as specified in 3123 33 or construct utility line supports where indicated on plans or as directed by Engineer.

3.11 STORM SEWER ABANDONMENT

A. When sewers are to be abandoned, standard sewer plugs shall be placed. Prior to placing the plug, ensure the line is not in use. If noted on the plans, fill the line with gravity flow or pump the line full of flowable mortar or controlled low strength material.

3.12 CLEANING

A. Clean all storm sewers by flushing with water and by removing sheeting, bracing, shoring, forms, soil sediment, concrete, or other debris as directed by Engineer prior to final acceptance.

B. Do not discharge soil sediment or debris to drainage channels or existing storm sewer or sanitary sewer systems.

PART 4 - TESTING

4.01 DESCRIPTION OF WORK

A. Test and inspect storm sewers, culverts, footing drain sewers and building storm sewers.

4.02 SCHEDULING

A. Notify Owner's Representative when installation is complete and ready for testing.

B. Notify Owner's Representative at least 24 hours prior to performing testing.

C. Owner's Representative must be present to review testing procedures and to record results.

4.03 TESTING EQUIPMENT

A. Conform with applicable sections of ASTM.

B. Conform to other applicable industry standards and codes.

4.04 VISUAL INSPECTION

A. Check each section of storm sewer by lamping.

B. Light should be visible through section of pipe lamped.

C. Visually inspect each section of pipe.

D. Repair or replace defective pipe or joints or remove and relay pipe not meeting alignment tolerances as directed by Engineer.

4.05 DEFLECTION TESTING

A. Perform deflection tests on all HDPE storm sewer pipe 12" diameter or greater.

B. Perform deflection tests after backfill has been in place at least 30 days and before paving activity takes place or as per appropriate sections of these specifications.

C. Pipe deflection shall not exceed 5% of average inside diameter as established by ASTM Standards.

D. Pull approved 9-arm deflection mandrel through sewer by hand.

E. Approved mandrel must conform to applicable ASTM Standards.

F. Remove and replace pipe exceeding deflection limits.

G. Handle and divert existing flows during deflection testing.

END OF SECTION

SECTION 33 49 00

STORM DRAINAGE STRUCTURES

SUBPARTS:

A. MANHOLES
B. INTAKES
C. CAST-IN-PLACE
D. NYPLOPLAST INTAKE SUBSTITUTES

A. MANHOLES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Manholes for storm sewers.

B. Adjustment of existing manholes.

C. Connection to existing manholes.

D. Abandonment of manholes.

1.02 DESCRIPTION OF WORK

A. Construct storm sewer manholes, modify existing manholes, and abandon manholes where shown in the Plans.

1.03 SUBMITTALS

A. Submit under provisions of Division 1.

B. Shop drawings showing compliance with this Specification.

C. Shop drawing schedule of new manholes showing total depth, relative elevations of all connecting sanitary or storm sewer lines, all drops, and orientation of connecting lines.

D. Catalog cuts of iron castings and sewer line connection gaskets.

E. Upon requests the Contractor will provide Material Certifications to the Engineer.

1.04 SUBSTITUTIONS

A. Use only materials conforming to these specifications unless permitted otherwise by Engineer.

B. Obtain written approval of Engineer for all substitutions prior to use.

C. Precast sections meeting the requirements of ASTM C 478.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver only materials that fully conform to these specifications or for which submittals have been provided to Engineer and approved for use.

B. Store and handle materials to avoid damage. Replace any damaged materials. Remove damaged materials from the site.

1.06 SCHEDULING AND CONFLICTS

A. Construction Sequence:
   1. Attend a preconstruction meeting if required by Engineer.
   2. Submit plan for construction sequence and schedule prior to commencing construction.

B. Conflict Avoidance:
1. Expose possible conflicts in advance of construction, such as utility lines and drainage structures. Verify elevations and locations of each and verify clearance for proposed construction.
2. Complete elements of the work which can affect line and grade in advance of other open cut construction unless noted on plans.
3. Notify Engineer of conflicts discovered or changes needed to accommodate unknown or changed conditions.

1.07 SPECIAL REQUIREMENTS

A. Stop work and notify Engineer immediately if contaminated soils, historical artifacts or other environmental or historic items are encountered.

B. Conform to local, state, and Federal requirements.

C. Storm Sewer Manholes:
1. Manhole Types:

Type	Description	Main Pipe Size	Typical Depth	Figure No.
SW-401	48" Min. Dia. Short Cone or Flat Top with Poured or Precast Base	See Table 1 for Max. Dia. Pipe	7' Min.	6010.401
SW-402	Precast or Poured-in-Place Box with Precast or Poured-in-Place Base	24" or Greater	8' Max.	6010.402
SW-403	Poured-in-Place Box with Poured-in-Place Base	12" Dia. or Greater	6' - 12'	6010.403
SW-404	Combination 48" Dia. Short Cone with Poured-in-Place Barrel and Poured-in-Place Base	12" Dia. or Greater	12' - 22'	6010.404
SW-405	48" Dia. Short Cone with T-Section	42" Dia. or Greater eccentric reducer required for 42"	8.5' Min.	6010.405

2. Ring and Cover Types:

Type	Ring & Cover	No. of Pieces	Bolted Frame	Bolt Cover	Gasketed	Figure No.
E*	Standard	2	Yes	No	No	
F**	Adjustable	3	No	No	No	
G*	Machined Bearing Surfaces	2	No	No	No	

* Use when placed in earth fill, asphalt pavement, or ACC manhole boxout.
** Use when placed in PCC pavement or PCC manhole boxout.

1.08 MEASUREMENT FOR PAYMENT

A. All measurements for payments will be made by the Engineer or authorized representative.

B. Manhole: For each type and size of manhole required and furnished, measure manhole vertical dimension in feet from the flow line to the top of the ring casting. Payment shall be at the unit bid price for each type and size of manhole properly installed. The unit bid price for manholes shall include all bedding, backfill, compaction and all appurtenances including castings and lids necessary for the proper installation.

PART 2 PRODUCTS

2.01 MANHOLES

A. Placement: Conform to elevations, locations and connection orientations shown on the Plans and detailed drawings.

B. Barrel Diameter, Inside: For sewers up to 24-inch size with two connections use 48 inches diameter barrel or as shown in the contract documents. For larger sewers or more connections, see Plans and detailed drawings.

C. Wall Thickness: See Detailed plans and Iowa SUDAS plans.

D. Top Configuration: Eccentric top except as noted on the Plans or detailed drawings. Total manhole depth 6 feet or more use cone top section. Total manhole depth less than 6 feet use minimum 9" thick flat top.

F. Joints, Barrel: Male and female ends with Mastic seal

G. Concrete: Precast: Comply with ASTM C 478. Cast in place: Refer to Cast-In-Place Storm Sewer Structure Section.

H. Base: Precast manhole: Separate base from riser section; use with precast base or poured base. Cast in place manhole: Use with precast base or poured base.

I. Pipe Connection:
   1. New Storm Sewer Manhole:
      a. Precast manholes: factory fabricated openings.
      b. Poured in place structures: structure wall poured around pipe stub.
   2. Existing Storm Sewer Manhole:
      a. Cored or drilled opening: Provide a flexible, watertight connection that meets and/or exceeds ASTM C 923.
      b. Knock out opening:
         1) Provide a watertight connection (waterstop or other method), meeting the material requirements of ASTM C 923, that is securely attached to the pipe with stainless steel bands or other means.
         2) Grout opening in manhole wall with non-shrink grout.
         3) Pour concrete collar around pipe and outside manhole opening.
         4) Provide flexible pipe joint or flexible connector within 2' of collar.

J. Manhole Steps: None, unless required on the Plans. If required, space steps at 12 to 16 inches, comply with ASTM C 478. Align with vertical side of eccentric cone top section.

2.02 MANHOLE ADJUSTMENT RINGS (Grade rings)

A. All grade adjustments of manhole frame and cover assemblies shall be completed utilizing one of the following:
   1. Reinforced Concrete Grade Adjustment Rings: Comply with ASTM C 478 and be free from cracks, voids and other defects. Concrete rings will be set with asphalt mastic.
   2. High Density Polyethylene Grade Adjustment Rings: Comply with ASTM D 1248 for recycled plastic.
      a. Material properties shall be tested and certified for usage by the following ASTM methods:

Property	Test Method	Acceptable Value
Melt Flow Index	ASTM D 1238	0.3 to 30 g / 10 min.
Density	ASTM D 792	0.94 to 0.98 g / cm^3
Tensile Strength	ASTM D 638	2.00 to 5 x 10^3 lb / in^2

      b. Polyethylene adjusting rings shall not be used when they are exposed to heated hot mix asphalt pavement.
      c. Tapered configuration: When used in a single configuration tapered adjusting ring thickness will range from 0.5 inch to 3.0 inch.
      d. Grade adjustment rings are to be installed on clean flat surfaces according to the manufacturer's recommendations with the proper Butyl Rubber sealant/adhesives.

B. The inside diameter of the adjustment ring shall not be less than the inside diameter of the manhole frame.

C. Manholes shall be constructed with at least two adjustment rings.

D. Maximum height of adjustment ring stack: 12 inches max. for new manholes and 16 inches max. on existing manholes.

2.03 CASTINGS (Ring and Cover)

A. Gray Cast Iron: ASTM A 48, Class 35.

B. Storm Sewer Manhole Ring and Covers:
   1. Grassed areas: Type E.
   2. Paved areas, sidewalks, areas subject to vehicular traffic and sloped surfaces: Type F.
   3. For installation directly into concrete pipe riser manhole, Type G.
   4. Bolt all castings set above grade.
   5. Storm sewer manhole lids shall not be bolted.

2.04 CEMENT MORTAR - Refer to Cast-In-Place Storm Sewer Structure Section.

2.05 REINFORCING STEEL - Refer to Cast-In-Place Storm Sewer Structure Section.

2.06 INVERT:

A. Poured in place concrete. Shape to provide a smooth transition between pipe inverts. Bring manhole invert up to one half of pipe diameter to produce a half pipe shape. Slope invert bench toward pipe 1/4 inch per foot perpendicular to flow line.

PART 3 - EXECUTION

3.01 MANHOLE INSTALLATION

A. Subgrade Preparation:
   1. Undisturbed soil: Hand grade to accurate elevation.
   2. Disturbed soil: Machine compact to 95 percent of Standard Proctor Density and hand grade to accurate elevation or install stabilization material as directed by Engineer.

B. Installation of Poured In Place Base: Bed base riser section in Class C concrete. Assure proper vertical and horizontal alignment of base riser section.

C. Installation of Precast Base with Base Riser: Assure proper vertical and horizontal alignment of base riser section.

D. Additional Risers: Install additional riser sections as required. Grout inside face of joints.

E. Repair: Repair any honeycomb areas or damaged areas as directed by Engineer.

F. Backfill up to pipe grades. Connect and bed pipes using bedding material up to one foot above top of pipes.

G. Install manhole invert. Remove any projections and repair any voids to assure a hydraulically smooth channel between pipe ends.

H. Install manhole top slab or cone.

I. Install manhole adjustment rings. Bed each ring with cold-applied bituminous jointing compound. Do not install more than total ring stack height of 12 inches. For greater adjustment, modify barrel riser section(s).

J. Install manhole ring and cover. Adjust accurately to proper grade. Where manhole is to be in a paved area, adjust slope to match finished surface.

K. Backfill and compact. Refer to Section 31 23 33. Use extra care to assure proper and uniform compaction of backfill around structure.

3.02 MANHOLE TESTING - Refer to Section 33 40 00.

B. INTAKES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Intakes for storm sewers.

B. Special structures for storm sewers.

1.02 DESCRIPTION OF WORK

A. Construct intakes and special structures for storm sewers.

B. Modify existing intakes

C. Abandon intakes.

D. Reference is made to the Iowa Department of Transportation Standard Specifications for Highway and Bridge Construction, Series 2001, and all current General Supplemental Specifications and Materials Instructional Memorandum by the term "Iowa DOT Specifications" and/or "Iowa DOT I.M."

1.03 SUBMITTALS

A. Submit under provisions of Division 1.

B. Shop drawings showing compliance with this Specification.

C. Schedule of new intakes showing total depth, and relative elevations and orientations of all connecting storm sewer lines.

D. Catalog cuts of iron castings.

E. Upon requests the Contractor will provide Material Certifications to the Engineer.

1.04 SUBSTITUTIONS

A. Use only materials conforming to these specifications unless permitted otherwise by Engineer.

B. Obtain written approval of Engineer for all substitutions prior to use.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver only materials that fully conform to these specifications or for which submittals have been provided to Engineer and approved for use.

B. Store and handle materials to avoid damage. Replace any damaged materials. Remove damaged materials from the site.

1.06 SCHEDULING AND CONFLICTS

A. Construction Sequence:
   1. Attend a preconstruction meeting if required by Engineer.
   2. Submit plan for construction sequence and schedule prior to commencing construction.

B. Conflict Avoidance:
   1. Expose possible conflicts in advance of construction, such as utility lines and drainage structures. Verify elevations and locations of each and verify clearance for proposed construction.
   2. Complete elements of the work which can affect line and grade in advance of other open cut construction unless noted on plans.
   3. Notify Engineer of conflicts discovered or changes needed to accommodate unknown or changed conditions.

1.07 SPECIAL REQUIREMENTS

A. Stop Work: Stop work and notify Engineer immediately if contaminated soils, historical artifacts or other environmental or historic items are encountered.

B. Conform to local, state, and Federal requirements.

1.08 MEASUREMENT FOR PAYMENT

A. All measurements for payments will be made by the Engineer or authorized representative.

B. Intake: Measure the number of all properly completed intakes. Payment shall be at the unit bid price for each size and type, and shall include all bedding, backfill, compaction, grates and appurtenances for proper

installation.

C. Intake Adjustment: Count each item as a completed individual unit, as identified in the Bid Schedule. Payment shall be at the unit bid price for each adjustment as per plan.

D. Special Structure: Count each item as a completed individual unit, as identified in the Bid Schedule.

PART 2 - PRODUCTS

2.01 INTAKES

A. Conform to elevations, locations and connection orientations shown on the Plans.

B. Intake type; Refer to Plans.

C. Configuration and Dimensions; Refer to Detailed Drawings.

D. Top Configuration:
1. As noted on Detailed Drawings.
2. Number of grate sections; Refer to Plans.

E. Joints, Wall:
1. Precast; Male and female ends, mastic seal.
2. Poured in place; construction joints.

F. Concrete:
1. Precast: Precast concrete intakes constructed in accordance with the requirements of following Cast In Place Section, and with the dimensions and reinforcement shown in standard detailed drawings.
2. Cast in place;
   a. Refer to following Cast-In-Place Section.
   b. Minimum concrete reinforcing cover 2 inches.
   c. Minimum total section thickness; see Standard Detailed Drawings.

G. Base:
1. Separate. Use with base riser section with square bottom edge.
2. Precast may have surface finish block outs on one side only.

H. Pipe Connection:
1. Precast intake; factory fabricated openings.
2. Poured in place structures; structure wall poured around pipe stub.

I. Manhole Steps: None, unless required on the Plans. If required, space steps at 12 to 16 inches, comply with ASTM C 478.

2.02 INTAKE ADJUSTMENT RINGS (Grade rings)

A. All grade adjustments of intake frame and cover assemblies shall be completed utilizing one of the following:
1. Reinforced Concrete Grade Adjustment Rings: Comply with ASTM C 478 and be free from cracks, voids and other defects. Concrete rings will be set with asphalt mastic.
2. High Density Polyethylene Grade Adjustment Rings: Comply with ASTM D 1248 for recycled plastic.
   a. Material properties shall be tested and certified for usage by the following ASTM methods:

Property	Test Method	Acceptable Value
Melt Flow Index	ASTM D 1238	0.3 to 30 g/10 min.
Density	ASTM D 792	0.94 to 0.98 g/cm^3
Tensile Strength	ASTM D 638	2.00 to 5 x 10^3 lb/in^2

   b. Polyethylene adjusting rings shall not be used when they are exposed to heated hot mix

asphalt pavement.

c. Tapered configuration: When used in a single configuration tapered adjusting ring thickness will range from 0.5 inch to 3.0 inch.

d. Grade adjustment rings are to be installed on clean flat surfaces according to the manufacturer's recommendations with the proper Butyl Rubber sealant/adhesives.

B. The inside dimension of the adjustment ring shall not be less than the inside dimension of the intake grate opening.

C. Intakes shall be constructed with at least two adjustment rings.

D. Maximum height of adjustment ring stack: 12 inches for new and existing intakes.

2.03 CASTINGS (Covers and Grates)

A. Gray Cast Iron: ASTM A 48, Class 35.

B. Type: Refer to Detailed Drawings and Plans.

2.04 CEMENT MORTAR - Refer to following Cast In Place Section.

2.05 REINFORCING STEEL - Refer to following Cast In Place Section.

2.06 INVERT

A. Poured in place concrete. Establish a full seal between base and base riser section.

B. Shape to provide a smooth transition between pipe inverts.

C. Bring intake invert up to one half of pipe diameter to produce a half pipe shape.

PART 3 EXECUTION

3.01 INTAKE INSTALLATION

A. Subgrade Preparation:
1. Undisturbed soil: Hand grade to accurate elevation.
2. Disturbed soil: Machine compact to 95 percent of Standard Proctor Density and hand grade to accurate elevation, or install Stabilization Material as directed by Engineer.
3. Unstable soil: Install Stabilization Material as directed by Engineer.

B. Concrete Intakes:
1. Install Stabilization Material if unstable base exists.
2. Install Granular Bedding Material if required by Detailed Drawings.
3. Install base; assure proper vertical and horizontal alignment of base riser section.
4. Install additional riser section as required. Seal all joints.
5. Repair any honeycomb areas or damaged areas.
6. Compact backfill up to connecting pipes.
7. Connect and bed pipes per Section 3010. Grout inside pipe/riser joint.
8. Install intake invert. Remove any projections and repair any voids to assure a hydraulically smooth channel through intake.
9. Install top.
10. Install adjustment rings. Install at least two rings. Bed each ring with cold-applied bituminous jointing compound. Do not install more than total ring stack height of 12 inches. For greater adjustment, modify riser section(s).
11. Install top casting. Adjust accurately to proper line and grade.
12. Backfill and compact. Refer to Section 3010. Use extra care to assure proper and uniform compaction of backfill around structure.

C. Anchoring Castings: All castings not encased in concrete shall be bolted down.

3.02 CONCRETE, REINFORCEMENT, AND PLACEMENT. Refer to Cast In Place Section.

3.03 SPECIAL STRUCTURES

A. Construct in accordance with this Section, as applicable.

B. Refer to Plans for locations, dimensions and special details and provisions.

3.04 ABANDONED INTAKES

A. Remove entire structure to a minimum of 10 feet below subgrade in paved areas or 6 feet below finish grade in other areas.

B. Plug all pipes in structure.

C. Fill remaining structure using flowable mortar.

D. Place compacted earth fill over structure as required for embankment or compacted backfill.

C. CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Structural Portland cement concrete and reinforcing for manholes and intakes for sanitary and storm sewer systems, and other structures such as concrete thrust blocks and sewage air release pits as designated by the Engineer.

1.02 DESCRIPTION OF WORK

A. Construct Portland cement concrete structures for sanitary and storm sewers.

B. Reference is made to the Iowa Department of Transportation Standard Specifications for Highway and Bridge Construction, Series 2001, and all current General Supplemental Specifications and Materials Instructional Memorandum by the term "Iowa DOT Specifications" and/or "Iowa DOT I.M."

1.03 SUBMITTALS

A. Submit under provisions of Division 1.

B. Shop drawings of steel reinforcement, showing sizes, lengths, bends, and counts, if required.

C. Concrete mix design, if required by Engineer.

D. Sample test results and certifications.

E. Certification that materials being provided meet the requirements of these specifications or that alternate materials or substitutions have received written approval of the Engineer.

F. Project Record Documents.

G. Upon requests the Contractor will provide Material Certifications to the Engineer.

1.04 SUBSTITUTIONS

A. Use only materials conforming to these specifications unless permitted otherwise by Engineer.

B. Obtain written approval of Engineer for all substitutions prior to use.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver only materials that fully conform to these specifications and for which submittals have been provided to Engineer and approved for use.

B. Store and handle materials to avoid damage. Store reinforcing steel only on pallets or lagging. Replace any damaged materials. Remove damaged materials from the site.

C. Aggregate storage and concrete transport shall follow Section 7010, 1.05.

1.06 SCHEDULING

A. Construction Sequence:
1. Schedule concrete placement to coordinate with other work, such that trenching, backfilling and other work can proceed in an orderly manner and to provide the greatest protection for new work.

B. Conflict Avoidance:
1. Expose potential conflicts such as utility lines and drainage structures in advance of construction. Verify elevations and locations and verify clearance for proposed construction.
2. Complete elements of work which can affect line and grade in advance of pipe construction unless noted on plans.
3. Notify Engineer of conflicts discovered or changes needed to accommodate unknown conditions.

1.07 SPECIAL REQUIREMENTS

A. Stop Work: Stop work and notify Engineer immediately if contaminated soils, historical artifacts or other environmental or historic items are encountered.

B. Conform to local, state, and federal requirements.

C. Restrictions: Restriction on operations shall follow Section 7010, 1.07.

1.08 MEASUREMENT FOR PAYMENT

A. The cost for concrete and reinforcing in the construction of manholes and intakes for storm sewer systems, or other special structures, will not be measured separately but will be considered incidental to intakes and manholes or other concrete structures as described in this specification document, including sampling and testing.

PART 2 PRODUCTS

2.01 CONCRETE MATERIALS

A. Portland Cement:
1. ASTM C 150, Type I or Type III when specified.
2. Air entrained per ASTM C 260.
3. Iowa DOT Class C concrete unless otherwise specified in the contract documents.

B. Aggregates:
1. Per ASTM C 33.
2. Coarse and fine aggregate shall follow Section 7010, 2.02.

C. Water: Follow Section 7010 2.02 E

D. Liquid Admixtures for Portland Cement Concrete:
1. Description
   a. Meet requirements of AASHTO M 154 for air entraining mixtures.
   b. Meet requirements of AASHTO M 194 for other liquid admixtures.
   c. Submit tests by a recognized laboratory for Engineer approval.
   d. Admixtures containing more than 1% chloride ions shall not be allowed unless approved by Engineer.
   e. Inspection and acceptance of liquid admixtures will be in accordance with Iowa DOT Materials I.M. 403
2. Air Entraining Admixtures: Provisions shall be made to stir, agitate, or circulate air entraining admixtures prior to use to insure a uniform and homogeneous mixture.
3. Retarding and Water Reducing Admixtures
   a. Shall be compatible with air entraining agent.
   b. Shall be introduced into the mixer after all other ingredients

c. Agitate prior to and during use in accordance with Iowa DOT Materials I.M. 403
d. Dosage rate shall be applied to both cement and fly ash when used.

4. Other Admixtures: Other admixtures may be used with the approval of the Engineer in accordance with the manufacturer's recommendations.

2.02 CONCRETE QUALITY

A. Compressive Strength: Minimum 4,000 psi at 28 days.

B. Water-Cement Ratio: Follow Section 7010, 2.03.

C. Air Content: The intended air entrainment is 6.0%. To allow for loss during placement, the air content of fresh, unvibrated structural concrete shall be 6.5%, as a target value, with a maximum variation of plus or minus 1.0%.

D. Slump: Structural concrete shall be placed with a slump between 1 inch and 3 inches as a target range, allowing a maximum of 4 inches unless specifically modified by the Engineer.

E. Admixtures: Per manufacturer's recommendations.

2.03 REINFORCEMENT

A. Reinforcing Steel:
1. Use deformed bars.
2. Epoxy coated deformed bars apply only when specified.
3. Billet steel; ASTM A 615, Grade 60.
4. Fabricate and bend, per approved submittals or Plans.
5. Fabricate all bars prior to delivery to site unless field bends are required.

B. Wire Fabric:
1. Per ASTM A 185.
2. Size and mesh; as shown on Detailed Drawings or on Plans.
3. Placement; as shown on Detailed Drawings or on Plans.
4. Joints; lap not less than 6 inches.

2.04 CEMENT MORTAR: Mix in the following portions:

A. Portland Cement: Type I; 10 Parts

B. Mortar Sand: 20 Parts

C. Lime, Hydrated: 3/4 to 1 Part

PART 3 EXECUTION

3.01 FORMING

A. All cast in place manholes and structures shall be formed on both the inside and the outside face above the base. No earth excavation next to the proposed manhole shall be used as forming.

B. Use metal or plywood-lined forms for exposed surfaces.

C. Erect and secure forms to true line and grade.

D. Coat forms with non-staining mineral oil before placing reinforcing. Do not apply oil to surfaces to which concrete must be bonded.

E. Use 3/4 inch bevel for exposed corners, unless otherwise required.

3.02 REINFORCING STEEL

A. Remove dirt, scale and other materials that might impair concrete bond.

B. Place reinforcement where shown. Space bars properly and secure in position.

C. Reinforcement for slabs; support with chairs or bolsters. Do not use wood, bricks, stones or other foreign materials.

D. Lap bars 36 diameters, except as otherwise shown.

3.03 MIXING: (IOWA DOT 2403)

A. Provide accurate control for measuring materials.

B. Concrete, as discharged from the mixer, shall be uniform in composition and consistency. Each batch of concrete shall be thoroughly discharged from the mixer before the next batch is introduced. Upon cessation of mixing for any considerable length of tie, the mixer shall be thoroughly cleaned and flushed with water.

C. Ready-Mixed Concrete: conform to ASTM C 94.

3.04 PLACING

A. Clean and dampen forms, reinforcing steel and embedded items.

B. Prevent segregation during placement. Do not allow concrete to fall more than 4 feet from placement chute to final position.

C. Place concrete continuously in each section until complete. Do not allow more than 30 minutes between depositing adjacent layers of concrete within each section.

D. Thoroughly compact, puddle and vibrate concrete into corners and around reinforcing and embedded items. Vibrate sufficiently to work concrete into crevices and around steel. Refer to Iowa DOT 2403.09.

E. Place sections of concrete in a sequence which eliminates the effect of shrinkage to the greatest extent practicable.

F. Concrete shall not be placed when the air temperature is less than 40 degrees Fahrenheit without the approval of the Engineer. Refer to Iowa DOT 2403.11.

3.05 FINISHING

A. Refer to Iowa DOT 2403.21.

B. Use rough form finish to areas not visible to the public.

C. Use smooth form finish for areas visible to the public.

D. Use broomed finish for slabs, except as noted on Plans or Detailed Drawings.

3.06 STRIPPING AND CLEANING

A. Remove forms for manhole and intake walls and tops according to Iowa DOT 2403.18.
   1. References to culverts shall include all sanitary and storm structures.
   2. When allowed by the Engineer, compressive strengths at six times the stated flexural strengths may be used in determining concrete strength of structure roofs.

B. Chip out and repair any honeycomb areas per direction of Engineer.

C. Break back form ties and fill holes with portland cement mortar.

D. Remove flashing and thin webs.

3.07 CURING

A. Refer to Iowa DOT 2403.10.

B. Apply curing system immediately after finishing or stripping of forms, as applicable.

C. Slabs on grade, visible to the public; use only curing compounds meeting ASTM C 309, Type 1-D or Type 2.

3.08 EXTERIOR LOADING

A. Restrict loads on concrete, other than the load caused by the weight of the concrete itself, according to Iowa DOT Section 2403.19.

B. When allowed by the Engineer, compressive strengths at six times the stated flexural strengths may be used.

3.09 TESTING

A. Provide required testing by a testing service approved by Engineer, unless such services are provided by Jurisdiction.

B. Review and test proposed mix design when required by Engineer.

C. Obtain production samples of job-delivered concrete mix after any needed water has been added and the concrete remixed.

D. Mold and cure three specimens per ASTM C 31.

E. Strength Testing: Unless otherwise specified in the contract documents strength testing will be the responsibility of the Contractor by a certified testing service.
   1. Test specimens in accordance with ASTM C 39. Test one sample at 7 days for information. Test two samples at 28 days. The acceptance test results shall be the average of the compressive strength of the two specimens tested at 28 days. If one of the 28 day samples manifests evidence of improper sampling, molding or testing, it shall be discarded and the strength of the remaining sample shall be considered the test result.
   2. Make at least one strength test for each 100 cubic yards or fraction thereof, and at least one test for each structure. When the total quantity is less than 50 cubic yards the strength tests may be waived by the Engineer.

F. Slump Testing: Unless otherwise specified in the contract documents testing will be by the Engineer. Determine slump of concrete sample for each strength test and whenever consistency of concrete mix appears to vary, using ASTM C 143.

G. Air Testing: Unless otherwise specified in the contract documents testing will be by the Engineer. Determine air content of concrete sample for each strength test in accordance with either ASTM C 231, ASTM C 173, or ASTM C 138.

D. NYLOPLAST INTAKES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Nyloplast Intake substitutes for certain types of concrete Intakes and vice versa.

1.02 DESCRIPTION OF WORK

A. Nyloplast Structures are allowed to be substituted for Iowa SUDAS SW-501 and SW-512 Intakes. Nyloplast intake substitutions for SW-512 area intakes must be the same size vertical barrel and grate that is called out on plans.

B. No other concrete structures are allowed to have substitutions including other types of intakes and all manholes.

C. Nyloplast Basins can be substituted with SUDAS Pre-Cast Manholes/ Intakes. SW-512 intakes are NOT an approved substitution for Nyloplast structures.

1.03 SUBMITTALS

A. Shop drawings of Nyloplast structure prior to fabrication.

B. Certification that materials being provided meet the requirements of these specifications or that alternate materials or substitutions have received written approval of the Engineer.

C. Project Record Documents.

1.04 SUBSTITUTIONS

A. Use only materials conforming to these specifications unless permitted otherwise by Engineer.

B. Obtain written approval of Engineer for all substitutions prior to use.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver only materials that fully conform to these specifications and for which submittals have been provided to Engineer and approved for use.

B. Store and handle materials to avoid damage. Replace any damaged materials. Remove damaged materials from the site.

C. Aggregate storage shall follow Section 7010, 1.05.

1.06 SCHEDULING

A. Construction Sequence:
   1. Schedule intake placement to coordinate with other work, such that trenching, backfilling and other work can proceed in an orderly manner and to provide the greatest protection for new work.

B. Conflict Avoidance:
   1. Expose potential conflicts such as utility lines and drainage structures in advance of construction. Verify elevations and locations and verify clearance for proposed construction.
   2. Complete elements of work which can affect line and grade in advance of pipe construction unless noted on plans.
   3. Notify Engineer of conflicts discovered or changes needed to accommodate unknown conditions.

1.07 SPECIAL REQUIREMENTS

A. Stop Work: Stop work and notify Engineer immediately if contaminated soils, historical artifacts or other environmental or historic items are encountered.

B. Conform to local, state, and federal requirements.

C. Restrictions: Restriction on operations shall follow Section 7010, 1.07.

1.08 MEASUREMENT FOR PAYMENT

A. The cost for granular backfill and intake castings for storm sewer systems, or other special structures, will not be measured separately but will be considered incidental to intakes and manholes.

PART 2 PRODUCTS

2.01 MATERIALS

A. Intake:
   1. PVC Stock Pipe, utilizing a thermo-molding process to reform the pipe stock to the specified configuration.

2. Drainage pipe connection stubs stall be PVC pipe stock and formed to provide watertight connection with the specified pipe system sizes and angles.
3. The raw material used to manufacture the pipe stock that is used to manufacture the main body and pipe stubs shall conform to ASTM D1784 cell class 12454.

B. Joints:
1. Joint tightness shall conform to ASTM D3212 for drain and sewer plastic pip using flexible elastomeric seals.
2. Flexible elastomeric seals shall conform to ASTM F477.
3. The pipe bell spigot sall be joined to the main body of the drain basin or catch basin.

C. SW-512 and A2000 Area Intake Grates for Nyloplast structures:
1. Grates and frames furnished for all Nyloplast intake structures shall be ductile iron and the same size as the intake stack.
2. Intake grates shall be capable of handling H-20 loads for all structures placed into paving. All other structures shall comply with H-10 loading.
3. Metal used in manufacture of the castings shall conform to ASTM A536 grade 70-50-05 ductile iron.
4. Grates shall be natural and contain no paint.

D. SW-501 Intake Grates for Nyloplast structures:
1. The grate, frame and hood assembly shall be ductile iron.
2. The grate, frame and hood shall all be capable of supporting H-20 loading.
3. The hood section will have a solid back and be adjustable by use of three (3) hex head bolts.
4. Metal used in manufacture of the castings shall conform to ASTM A536 grade 70-50-05 ductile iron.
5. Grates shall be natural and contain no paint.

PART 3 EXECUTION

3.01 INSTALLATION

A. All intakes shall be staked by a licensed land surveyor.

B. Intakes shall be placed in accordance with stakes provided by surveyor. In the event of a discrepancy between stakes and plans, contractor shall contact engineer and/ or land surveyor prior to intake placement.

C. Granular backfill for base and intakes shall comply with manufacture recommendations. All backfill material shall conform with IOWA SUDAS backfill specifications for concrete intakes. Sand in NOT a permitted backfill material and backfill shall be Class 2 material defined in ASTM D2321.

D. Intakes shall be designed and placed approximately 12” over height. Upon completion of final grading, Intakes shall be cut to the grade as specified on the approved construction plans. If intake stack is either manufactured too short or cut too short in the field, intake shall be completely replaced at contractor/ manufacture’s expense.

E. All intakes installed in paved areas (H-20 loaded structures), a concrete ring shall be poured under and around the grate and frame. The concrete slab must be designed for local soil conditions, traffic loading, among any other applicable design factors.

F. For any other installation considerations such as migration of fines, ground water and soft foundations, refer to ASTM D2321 guidelines.

END OF SECTION

REMODEL PLANS FOR

BROADLAWNS BRAIN & MEMORY CENTER

3714 INGERSOLL AVENUE
DES MOINES, IA 50309

IMPORTANT DESIGN BID/BUILD NOTE:

The Contractor acknowledges by submission of their bid that they have a thorough understanding of the project and of the Owner/Landlord's & Tenant's expectations for a completed project. The Contractor also acknowledges that the Contractor has thoroughly reviewed these documents and has requested of the Owner, Tenant, Architect, Engineers or others any and all clarifications, and has received clear answers to said clarifications, required to resolve outstanding issues related to the completeness and accuracy of the design documents for estimating and construction purposes. The Contractor further acknowledges that the Contractor's bid includes all components of construction, including but not limited to: General Requirements, Concrete, Masonry, Metals, Wood, Plastics, Thermal, Moisture, Openings, Finishes, Fire Suppression, Plumbing, HVAC, Electrical, Communications, Safety, Security, Earthwork, Site, Utilities; for a completed project based upon industry standards for all disciplines and governing authorities requirements. Any and all components not included in this bid are identified on the bid submission as "not included in this contract." The design documents do not represent the means and methods of construction. The Contractor also acknowledges sequencing and means and methods of construction shall be the sole responsibility of the Contractor, and any and all costs associated with the means and methods of construction are included in the base bid.

IMPORTANT DESIGN SCOPE NOTE:

Simonson & Associates Architects LLC and their consultants has completed these design documents to the level of detail requested by our client. The level of detail may range from schematic design document(s) mainly conveying programmic information to fully detailed engineered documents and specifications. However, the clients intent and expectations are that these documents be used as the basis for design for an all-inclusive completed project based upon industry standards for all disciplines and governing authorities requirements.

ABBREVIATIONS:

CODE	DESCRIPTION
AHJ	AUTHORITY HAVING JURISDICTION
ACC	ACCESSIBLE
ACM	ALUMINUM COMPOSITE PANEL
AFF	ABOVE FINISH FLOOR
ALUM	ALUMINUM
BOS	BOTTOM OF STRUCTURE
CIP	CAST IN PLACE
CFMF	COLD FORMED METAL FRAMING
CJ	CONTROL JOINT
CL	CENTER LINE
CPT	CARPET
CPAD	CARPET PAD
CPTB	CARPET BASE
CONC	CONCRETE
CT	CERAMIC TILE
DR	DOOR
DWGS	DRAWINGS
DS	DOWNSPOUT
EA	EACH
EIFS	EXTERIOR INSULATION AND FINISHING SYSTEM
EXP	EXPANSION
EXT	EXTERIOR
EPT	EPOXY PAINT
FEC	FIRE EXTINGUISHER CABINET
FEC-HV	FIRE EXTINGUISHER CABINET AND HOSE VALVE
FOF	FACE OF FINISH
FOS	FACE OF STUD
GWB	GYPSUM WALL BOARD
GYP	GYPSUM
HCWD	HOLLOW CORE WOOD DOOR
HP	HIGH POINT
HWD	HARDWOOD
INT	INTERIOR
JT	JOINT
LP	LOW POINT
MFR	MANUFACTURER/MANUFACTURED
MIN	MINIMUM
MIR	MIRRORED
MTL	METAL
MTR'L	MATERIAL
OC	ON CENTER
OPP	OPPOSITE
PLAM	PLASTIC LAMINATE
PLYWD	PLYWOOD
PNL	PANEL
PT	PAINT
PREFIN	PREFINISHED
QT	QUARRY TILE
RBR	RUBBER FLOOR
RB	RUBBER BASE
RCP	REFLECTED CEILING PLAN
REM	RECESSED ENTRY MAT
RO	ROUGH OPENING
SASM	SELF-ADHERED SHEET MEMBRANE
SC	SEALED CONCRETE
SCWD	SOLID CORE WOOD DOOR
SHT	SHEET
SIM	SIMILAR
SOG	SLAB ON GRADE
SSB	SHOU SUGI BAN
STL	STEEL
STN	STONE
TOS	TOP OF STRUCTURE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VCT	VINYL COMPOSITION TILE
VWC	VINYL WALL COVERING
VNL	VINYL
WRB	WEATHER-RESISTANT BARRIER
W/	WITH
1HR	ONE HOUR

OWNER

Broadlawns Medical Center
1801 Hickman Road
Des Moines, IA 50314
(515) 631-0299
contact: Brian Clark
e-mail: BMClark@Broadlawns.org

ARCHITECT

Simonson & Associates Architects L.L.C.
1717 Ingersoll Avenue, Suite 117
Des Moines, IA 50309
(515) 440-5626
(515) 440-0964 Fax
contact: Greg Hayes
e-mail: ghayes@simonsonassoc.com

MEP ENGINEERS

KEDbluestone
5518 NW 88th St.
Johnston, IA 50131
(515) 727-0700
contact: Sara Schmerbach
e-mail: Sara.Schmerbach@kedbluestone.com
contact: Kenneth Thelen
e-mail: kenny.thelen@kedbluestone.com

STRUCTURAL ENGINEER

Raker Rhodes Engineering, LLC
4717 Grand Ave.
Des Moines, IA 50312
(515) 277-0275
(515) 277-0276 Fax
contact: John Rhodes
e-mail: jrhodes@rakerrhodes.com

See structural sheets for the structural engineer's stamp and signature.

CIVIL ENGINEER

Bishop Engineering
3501 104th St.
Urbandale, IA 50322
(515) 276-0467
contact: David Bentz, PE
e-mail: dbbentz@bishopengr.com

Civil Engineer drawings are contained in a separate set.

CONSTRUCTION MANAGER

Graham Construction Company
421 Grand Ave.
Des Moines, IA 50309
(515) 244-1279
contact: Justin Fischer
e-mail: jfischer@3gcos.com
mobile: (515) 360-3964

JURISDICTION

City of Des Moines
Permit & Development Center
1200 Locust St.
Des Moines, IA 50309
(515) 283-4200
contact: Jay Mattas
e-mail: jmmattas@dmgov.org
phone: (515) 283-4269
e-mail: permits@dmgov.org

ARCHITECT

I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly licensed architect under the laws of the State of Iowa.

Gregory E. Hayes | IA Reg. # | June 30, 2028 (Registration Expires)
Signature | Date
Pages or Sheets covered by this seal: G-000 - G-101, AD-101, A-101 - A-713

LICENSED PROFESSIONAL ARCHITECT — Gregory E. Hayes — IOWA

MECHANICAL

I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly licensed architect under the laws of the State of Iowa.

Sara Schmerbach | IA Reg. # | December 31, 2026 (Registration Expires)
Signature | Date
Pages or Sheets covered by this seal: P000 - P600, PD100 - PD-101, M000 - M601

LICENSED PROFESSIONAL ENGINEER — SARA SCHMERBACH — IOWA

ELECTRICAL

I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly licensed architect under the laws of the State of Iowa.

Kenneth Thelen | IA Reg. # | December 31, 2027 (Registration Expires)
Signature | Date
Pages or Sheets covered by this seal: E000 - E600, ED101, EL101, EP101, ES101, T000 - T600

LICENSED PROFESSIONAL ENGINEER — KENNETH THELEN — IOWA

GENERAL NOTES

1. These documents and the design they represent are the property of Simonson & Associates Architects LLC. No changes to these documents either in whole or in part may be made in anyway without their prior knowledge and written consent.

2. Refer to additional notes and legends on all other documents.

3. Refer to civil, GEOTECHNICAL, environmental, structural, mechanical, electrical, plumbing, fire and life-safety documents for additional information or requirements. Reference to other disciplines is conceptual for purposes of coordination with architectural design only.

4. Before commencement of any work, contractor shall give all notices and obtain all permits. Contractor shall comply with all applicable codes, laws, ordinances, rules, regulations, requirements of governing agencies and authorities, hazardous material application and disposal requirements, etc.

5. The ADA or ADAAG is a civil rights act and is subject to legal interpretation through the judicial process. Reasonable care was exercised in interpreting the guidelines and all guidelines may not be indicated on these plans: however, failure to identify a guideline does not give this contractor the right to violate them. The contractor must comply with all guidelines as required by the ADAAG.

6. These drawings represent the completed project, at time of substantial completion. The intent of the drawings is to include all items necessary for the proper execution and completion of the work. Unless otherwise noted, they do not represent the means and methods of construction. Sequencing and means and methods of construction shall be the sole responsibility of the general contractor.

7. These drawings do not contain information with regard to construction safety procedures. The contractor is solely responsible for all construction safety and shall perform all work in accordance with governing authorities construction safety guidelines.

8. Provide complete in place all labor, transportation, material, taxes, fees, permits, licenses, insurance, utilities, inspections, equipment, machinery, supervision, and other items necessary to complete the work in strict compliance with the plans, documents and specifications prepared by the architect and approved by the owner.

9. Verify existing conditions prior to fabrication and prior to proceeding with the work, and notify the architect immediately of significant discrepancies which may impact aesthetics, durability, cost and/or schedules.

10. Do not scale drawings in order to determine intended layout or dimensions. If dimensions are in question the contractor shall be responsible for obtaining clarification before continuing with work. Drawings are intended only as a graphically correct representation of work to be accomplished.

11. Remove and replace materials damaged during the course of construction to the satisfaction of the owner. Repair existing public facilities damaged during the course of construction to the satisfaction of the governing authority.

12. All work shall be of good quality and all materials and equipment shall be new and free from defects for a period of one year from the date of substantial completion of work. Any extended warranties obtained from suppliers or subcontractors shall be forwarded to the owner.

13. All requirements not followed, including substitutions not properly approved and authorized, in writing, may be considered defective.

14. Comply with all weather-related construction requirements. Do not build with or on frozen, saturated, contaminated, or inappropriate substrates or conditions.

15. Provide positive drainage of surface water away from and off all buildings without ponding or water adjacent to or on buildings or pavements.

16. By submitting shop drawings, product data and samples, the general contractor and sub-contractor has verified and approved the information contained within. The general contractor's review and approval shall be shown on each submittal prior to the submission to the architect.

INDEX OF DRAWINGS

GENERAL

G-000 COVERSHEET
G-012 ACCESSIBILITY REQUIREMENTS & GUIDELINES - A117.1 - 2017
G-101 CODE PLAN

ARCHITECTURAL

AD-101 DEMO FLOOR PLAN
A-101 FLOOR PLAN
A-111 ROOF PLAN
A-121 REFLECTED CEILING PLAN
A-201 EXTERIOR ELEVATIONS
A-301 WALL SECTIONS - PORTE COCHERE
A-302 WALL SECTIONS & DETAILS
A-303 DETAILS
A-401 BATHROOM PLANS & ADA CLEARANCES
A-601 DOOR & WINDOW SCHEDULES
A-701 INTERIOR FINISHES
A-711 INTERIOR ELEVATIONS
A-712 INTERIOR ELEVATIONS
A-713 INTERIOR ELEVATIONS

STRUCTURAL

S-001 STRUCTURAL NOTES
S-101 STRUCTURAL PLANS
S-201 FOUNDATION DETAILS
S-301 FRAMING DETAILS

PLUMBING, MECHANICAL , ELECTRICAL & TECHNOLOGY

P000 PLUMBING TITLE SHEET
PD100 UNDERFLOOR PLUMBING DEMOLITION PLAN
PD101 PLUMBING DEMOLITION PLAN
P100 UNDERFLOOR PLUMBING PLAN
P101 PLUMBING PLAN
P500 PLUMBING DETAILS
P600 PLUMBING SCHEDULES
M000 MECHANICAL TITLE SHEET
MD101 MECHANICAL DEMOLITION PLANS
M101 MECHANICAL PLANS
M500 MECHANICAL DETAILS
M600 MECHANICAL SCHEDULES
M601 MECHANICAL SCHEDULES
E000 ELECTRICAL COVER SHEET
ED101 ELECTRICAL DEMOLITION PLANS
EL101 ELECTRICAL LIGHTING PLANS
EP101 ELECTRICAL POWER PLANS
ES101 ELECTRICAL SYSTEMS PLANS
E101 ELECTRICAL ROOF PLAN
E500 ELECTRICAL DETAILS
E600 ELECTRICAL SCHEDULES
T000 TECHNOLOGY TITLE SHEET
T101 TECHNOLOGY PLANS
T500 TECHNOLOGY DETAILS
T600 TECHNOLOGY SCHEDULES

CIVIL - LANDSCAPING

(Refer to Civil Engineering, Site Utility, Grading & Landscape site documents submitted under separate cover.)

GEOTECHNICAL

(Not Available)



NOTE:
THIS DRAWING IS SUBJECT TO TENANT & JURISDICTION APPROVAL.

NOTE:
THIS DRAWING DOES NOT REPRESENT AN AS-BUILT CONDITION. ACTUAL DETAILS AND DIMENSIONS MAY VARY AND ARE SUBJECT TO CHANGE. AS-BUILT CONDITIONS MUST BE FIELD VERIFIED PRIOR TO FINAL LAYOUT AND CONSTRUCTION OF INTERIOR TENANT IMPROVEMENTS.
ALL DRAWINGS ARE SUBJECT TO JURISDICTION APPROVAL.

LEGEND:
- DOOR INDICATOR
- ROOM INDICATOR
- REVISION INDICATOR
- WALL TYPE IDENTIFIER
- WINDOW INDICATOR

SCALE NOTE:
24"x36" SHEET (FULL SIZE)
- SCALE IS AS NOTED.

11"x17" SHEET (HALF SIZE)
- SCALE IS ONE-HALF OF WHAT IS NOTED

SIMONSON
PLANNING ■ ARCHITECTURE ■ INTERIORS
Simonson + Associates Architects LLC
1717 Ingersoll Ave. Suite 117, Des Moines, Iowa 50309
Ph. 515-440-5626
www.simonsonassoc.com

This drawing has been prepared by the Architect, or under the Architect's supervision. This drawing is provided as an instrument of service by the Architect and is not intended for use on this project only. Any reproduction, use, or disclosure of this drawing without the written permission of Simonson & Associates Architects, L.L.C. is prohibited.
(C) Copyright 2026 by Simonson & Associates Architects, L.L.C.

BROADLAWNS BRAIN & MEMORY CENTER
3714 INGERSOLL AVENUE
DES MOINES, IA 50309

Rev. #	Issue / Revision	Date
2	BID SET	09-26-2026
3	ADDENDUM #1	01-09-2026

Proj. No. 14138B | SAA | Proj. Mgr.

Sheet Title
COVERSHEET

Sheet No.
G-000

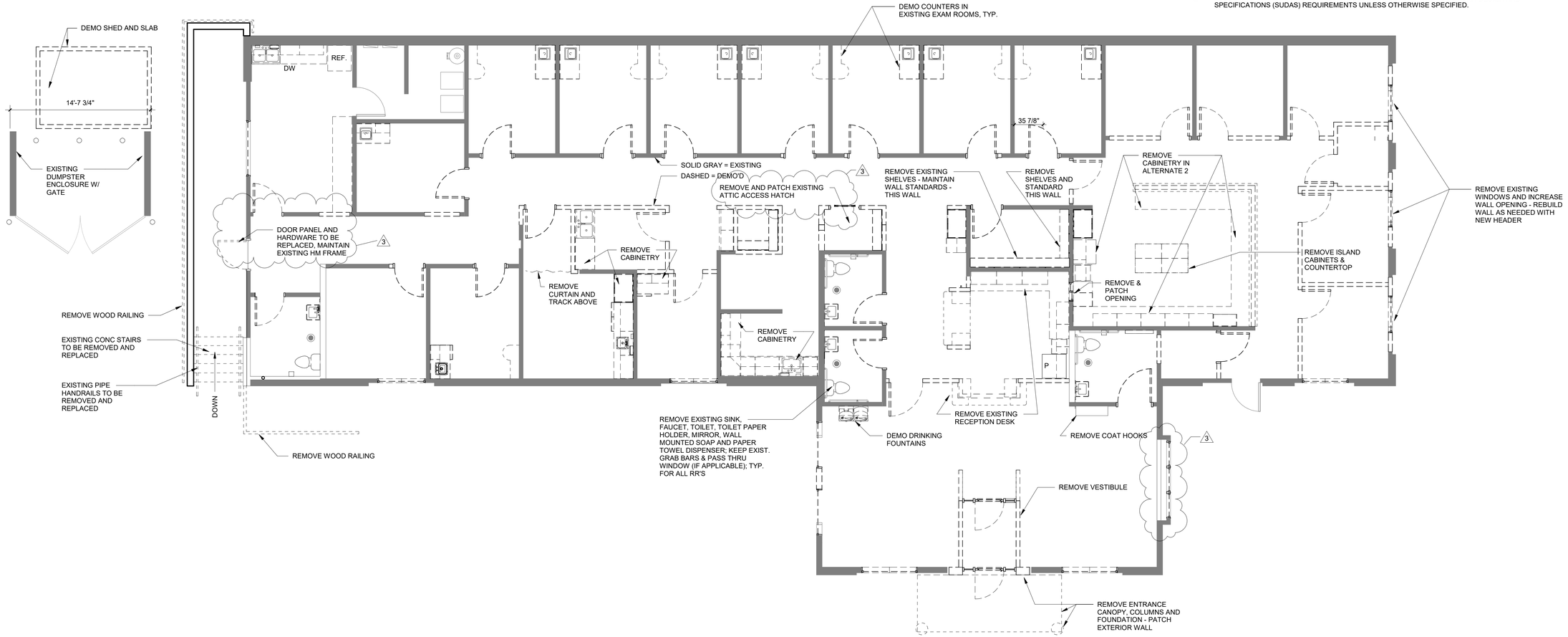
Autodesk Docs://Broadlawns Brain Wellness/14138B Broadlawns Brain Wellness - Des Moines, IA R-26.rvt
10/9/2026 2:51:11 PM

GENERAL RENOVATION NOTES

1. REFER TO ADDITIONAL NOTES AND REQUIREMENTS ON ALL OTHER DOCUMENTS AND OTHER DISCIPLINES DOCUMENTS.
2. VERIFY EXISTING CONDITIONS BEFORE FABRICATION OR PRIOR TO PROCEEDING WITH THE WORK, AND NOTIFY THE ARCHITECT IMMEDIATELY OF SIGNIFICANT DISCREPANCIES.
3. REPAIR AND PATCH AREAS AFFECTED BY DEMO OR DETERIORATION TO A WEATHER TIGHT CONDITION & TO MATCH EXISTING ADJACENT FINISHED CONDITIONS. LARGER AREAS WITH SIMILAR ADJACENT MATERIALS, SMALLER HOLES & JOINTS WITH COLOR MATCHED SEALANT. AREAS NOT SPECIFIED FOR DEMOLITION THAT IS TEMPORALLY REMOVED, DAMAGED, EXPOSED, OR IN ANY WAY DISTURBED OR ALTERED SHALL BE REPAIRED, PATCHED, OR REPLACED AT NO ADDITIONAL COST.
4. REPAIR AND PATCH AREAS AFFECTED BY SUCH THINGS AS DEMOLITION, DETERIORATION, FURNITURE REMOVAL AND INSTALLATION OF NEW WORK TO MATCH EXISTING ADJACENT FINISHED CONDITIONS.
5. ALL AREAS TO RECEIVE NEW FLOOR FINISHES ARE TO HAVE EXISTING FLOORING MATERIALS REMOVED, ADHESIVES STRIPPED DOWN TO THE CONCRETE SLAB, CRACKS AND DISCONTINUITIES IN THE SLAB PATCHED AND LEVELED AND READY TO RECEIVE NEW FINISHES.
6. REPAIR AND PATCH CEILINGS AS REQUIRED TO ALLOW FOR NEW WALL CONSTRUCTION.

GENERAL DEMOLITION NOTES

1. REFER TO ADDITIONAL NOTES AND REQUIREMENTS ON ALL OTHER DOCUMENTS AND OTHER DISCIPLINES DOCUMENTS.
2. REMOVE ALL EXISTING ACT CEILING TILE AND GRIDS.
3. REMOVE ALL EXISTING FLOOR FINISHES.
4. REMOVE ALL EXISTING SIGNAGE, FECs, WALL BASE AND COAT HOOKS
5. VERIFY EXISTING CONDITIONS BEFORE FABRICATION OR PRIOR TO PROCEEDING WITH THE WORK, AND NOTIFY THE ARCHITECT AND OWNER IMMEDIATELY OF SIGNIFICANT DISCREPANCIES.
6. AREAS NEXT TO DEMOLITION WORK MAY BE OCCUPIED AND THEIR ACTIVITIES CANNOT BE INTERRUPTED OR DISTURBED DURING NORMAL WORKING HOURS.
7. PROVIDE BARRIERS & WARNING DEVISES TO PROTECT PUBLIC WHERE NECESSARY.
8. REVIEW ALL INVESTIGATIONS AND ASSESSMENTS BEFORE PROCEEDING WITH THE WORK. INVESTIGATIONS AND ASSESSMENTS MAY INCLUDE BUT ARE NOT LIMITED TO: SURVEYS; TRAFFIC; ACCESSIBILITY; ENVIRONMENTAL; HAZARDOUS; CHEMICAL; MATERIAL; STRUCTURAL; THERMAL; MOISTURE; GEOPHYSICAL; GEOTECHNICAL; WEATHER; ETC.
9. ALL EQUIPMENT AND DEMOLITION DEBRIS SHALL BE REMOVED IN AN ACCEPTABLE MANNER SO AS TO NOT DAMAGE THE SURROUNDINGS. SUPPORT AND PROTECT REMAINING AREAS THAT SURROUNDS DEMOLITION AREAS. MAINTAIN FLASHING, REINFORCEMENT, LINTELS, AND ADJOINING CONSTRUCTION IN AN UNDAMAGED CONDITION.
10. ALL EQUIPMENT AND DEMOLITION DEBRIS, MATERIALS, RUBBISH AND TRASH SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH GOVERNING AUTHORITIES APPLICABLE LAWS, REGULATIONS AND ORDINANCES IN A PERMITTED LANDFILL OR RECYCLE FACILITY. BURNING DEMOLISHED MATERIALS IS NOT ALLOWED.
11. CONTROL AMOUNT AND PREVENT SPREAD OF DUST RESULTING FROM DEMOLITION OR CONSTRUCTION. ALL SURFACES SHALL BE SWEPT CLEAN AND ALL AREAS NOT IN DEMOLITION AREA SHALL BE FREE OF DEBRIS AND CLEANED DAILY.
12. AREAS NOT SPECIFIED FOR DEMOLITION THAT IS TEMPORALLY REMOVED, DAMAGED, EXPOSED, OR IN ANY WAY DISTURBED OR ALTERED SHALL BE REPAIRED, PATCHED, OR REPLACED AT NO ADDITIONAL COST.
13. UTILITIES & SERVICES TO BE DEMOLISHED SHALL BE SEPARATED AND ISOLATED FROM UTILITIES & SERVICES NEEDED FOR THE ONGOING OPERATION OF THE REMAINING STRUCTURE AND SYSTEMS. COORDINATE WITH APPLICABLE UTILITY COMPANIES, TENANTS, & SPACES ANY LINE REMOVAL, CAPPING, TEMPORARY SHUTDOWNS OR RECONNECTING ANY NEEDED UTILITIES & SERVICES TO THE REMAINING STRUCTURE.
14. ALL DEMOLITION SHALL BE PERFORMED USING THE IOWA STATEWIDE URBAN DESIGN AND SPECIFICATIONS (SUDAS) REQUIREMENTS UNLESS OTHERWISE SPECIFIED.



NORTH

1 **FLOOR PLAN- DEMO**
SCALE: 3/16" = 1'-0"

SIMONSON
PLANNING ■ ARCHITECTURE ■ INTERIORS
Simonson + Associates Architects LLC
1717 Ingersoll Ave, Suite 117, Des Moines, Iowa 50309
Ph. 515-440-5626
www.simonsonassoc.com

This drawing has been prepared by the Architect, or under the Architect's direct supervision. This drawing is provided as an instrument of service by the Architect and is not intended for use on this project only. Any reproduction, use, or disclosure of information contained herein without the prior written consent of Simonson & Associates Architects, LLC is prohibited.
(C) Copyright 2026 by Simonson & Associates Architects, LLC.

BROADLAWNS BRAIN & MEMORY CENTER

3714 INGERSOLL AVENUE
DES MOINES, IA 50309

Rev. #	Issue / Revision	Date
2	BID SET	09-26-2026
3	ADDENDUM #1	01-09-2026

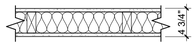
Proj. No. 14138B | SAA | Proj. Mgr.

Sheet Title
DEMO FLOOR PLAN

Sheet No.
AD-101

Autodesk Docs://Broadlawns Brain Wellness/14138B Broadlawns Brain Wellness - Des Moines, IA R-26.rvt
1/9/2026 2:20:21 PM

WALL TYPES



1 — 4 3/4"

INTERIOR NON-RATED WALL
SCALE: 1"=1'-0" 45-49 STC

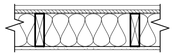
2X4 WOOD STUDS @ 16" O.C., W/ 3 1/2" FRICTION FIT SOUND BATT INSULATION, W/ ONE LAYER 5/8" GWB BOTH SIDES TO DECK. PROVIDE MOISTURE RESISTANT GWB @ ALL WET WALL LOCATIONS & ENTIRE RESTROOM. UNLESS NOTED OTHERWISE.



2

INTERIOR NON-RATED WALL
SCALE: 1"=1'-0" 45-49 STC

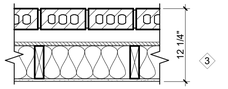
2X4 WOOD STUDS @ 16" O.C., W/ ONE LAYER 5/8" GWB ONE SIDE TO DECK. PROVIDE MOISTURE RESISTANT GWB @ ALL WET WALL LOCATIONS & ENTIRE RESTROOM. UNLESS NOTED OTHERWISE.



3

UPPER PORTION EXTERIOR WALL
SCALE: 1"=1'-0"

FIBER CEMENT SIDING OVER WEATHER BARRIER OVER EXTERIOR SHEATHING OVER 2x6 STUDS @ 16" O.C. W/ 5 1/2" FRICTION FIT BATT INSULATION (R21 MIN.), AND 4-MIL VAPOR BARRIER OVER 5/8" GWB.

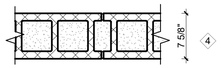


12 1/4"

3

LOWER PORTION EXTERIOR WALL
SCALE: 1"=1'-0"

FACE BRICK OVER AIR SPACE OVER WEATHER BARRIER OVER EXISTING EXTERIOR SHEATHING OVER 2x6 STUDS @ 16" O.C., 5 1/2" FRICTION FIT BATT INSULATION (R21 MIN.), AND 4-MIL VAPOR BARRIER OVER 5/8" GWB.



7 5/8"

4

EXTERIOR WALL - DUMPSTER
SCALE: 1"=1'-0"

8" CMU - GROUTED FULL

WALL TYPE NOTES

1. REFER TO ADDITIONAL NOTES AND REQUIREMENTS ON ALL OTHER DOCUMENTS AND OTHER DISCIPLINES DOCUMENTS.

2. ALL GYPSUM BOARD SURFACES TO BE SANDED SMOOTH, PRIMED AND FINISH PAINTED WITH HIGH QUALITY LATEX PAINT. PROVIDE INTEGRAL METAL REINFORCED GWB CORNERS, TYP. PROVIDE MOISTURE RESISTANT DRYWALL AT ALL WET WALL LOCATIONS AND ENTIRE RESTROOM, TYP.

4. PROVIDE VERTICAL & HORIZONTAL EXPANSION JOINTS AS REQUIRED TO PREVENT CRACKS IN WALLS. TRY TO LOCATE AT COLUMN/GRID LINES AND AT THE HEAD OF DOOR JAMBS/OPENINGS OR AS OTHERWISE NOTED OR WHERE REQUIRED PER STANDARD MATERIAL PRACTICE TO ELIMINATE STRESS CRACKING.

5. PROVIDE ADEQUATE WOOD BLOCKING FOR MILLWORK, FIXTURES, EQUIPMENT, PLUMBING FIXTURES AND ACCESSORIES INCLUDING BABY CHANGING TABLE, ELECTRIC PANELS, ROOF ACCESS LADDER, FUTURE OR BY OWNER ITEMS, ETC.

7. ALL PENETRATIONS THRU RATED WALLS MUST BE PROTECTED BY APPROVED FIRE RATED ASSEMBLIES AND FIRE STOPPING MATERIALS.

9. ALL NEW OR PATCHED WALLS, CEILINGS & FLOORING TO ALIGN FLUSH WITH ADJACENT EXISTING.

10. REPAIR & REPLACE ANY & ALL DAMAGED OR ROTTING SHEATHING & FRAMING TO RESTORE SECURE, LEVEL & FLUSH SURFACES.

GENERAL FLOOR PLAN NOTES

1. REFER TO ADDITIONAL NOTES AND REQUIREMENTS ON ALL OTHER DOCUMENTS AND OTHER DISCIPLINES DOCUMENTS.

2. DIMENSIONS ARE TO FACE OF FINISH MATERIAL OR CENTER OF STRUCTURE UNLESS OTHERWISE SPECIFIED.

3. ALL SITE INFO, FIXTURES AND EQUIPMENT SHOWN ON THIS SHEET IS PROVIDED FOR COORDINATION PURPOSES ONLY. THE LAYOUT IS CONSIDERED CONCEPTUAL. REFER TO CIVIL, MECHANICAL, ELECTRICAL, PLUMBING, LIFE-SAFETY, ETC. DOCUMENTS FOR SPECIFIC DESIGN INFORMATION.

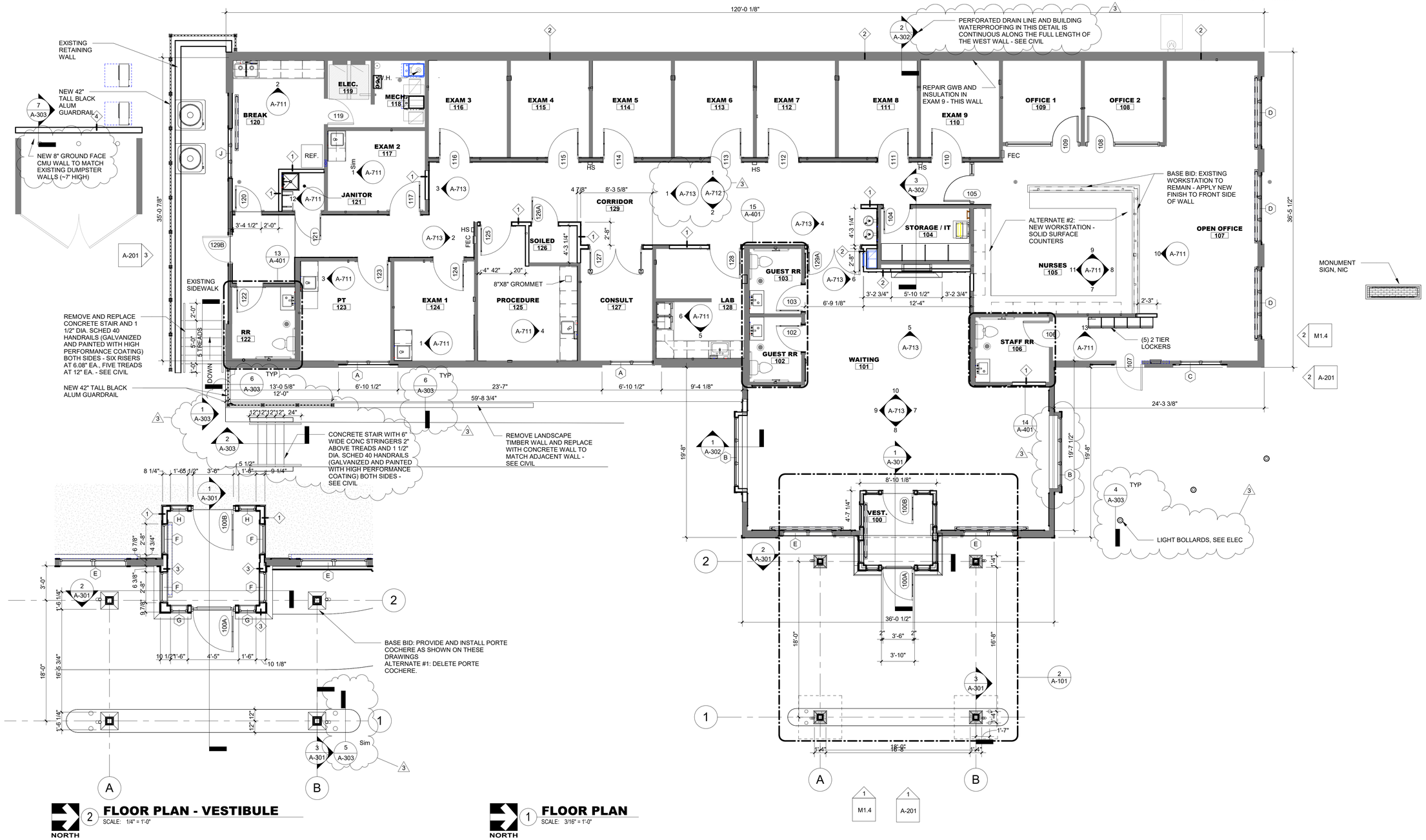
4. ALL CONDUITS, PIPES, WIRING, ROUGH-IN, ETC. SHOULD BE HELD AS TIGHT AS POSSIBLE TO THE ROOF OR FLOOR DECK OR SHOULD BE KEPT WITHIN INTERIOR WALL CAVITIES. NOTHING SHALL BE BELOW THE BOTTOM EDGE OF MAIN BUILDING FRAMES, NOTHING SHALL BE EXPOSED IN FINISHED SPACES, NOTHING SHALL PREVENT A SMOOTH CONTINUOUS FINISHED WALL OR CEILING AS NOTED ON THE DRAWINGS AND NO PLUMBING RAN IN EXTERIOR WALLS UNLESS PRIOR APPROVAL IS GRANTED BY THE ARCHITECT OR OWNER. PLACEMENT COORDINATION BETWEEN TRADES IS REQUIRED.

5. INSTALL VERTICAL EXPANSION JOINT MINIMAL AT COLUMN/GRID LINES AND AT THE HEAD OF DOOR JAMBS/OPENINGS OR AS OTHERWISE NOTED OR WHERE REQUIRED PER STANDARD MATERIAL PRACTICE TO REDUCE STRESS CRACKING. NO CONTROL JOINT/EXPANSION JOINT AT MAIN STRUCTURAL BEARING, KEEP AWAY 2'-6" MIN.

6. CAULK & SEAL ALL CONTROL-EXPANSION, SAWCUT JOINTS AT ALL INTERIOR & EXTERIOR MASONRY & CONCRETE.

7. PROVIDE POSITIVE DRAINAGE OF SURFACE WATER AWAY FROM BUILDING WITHOUT PONDING OF WATER ADJACENT TO BUILDING OR ON PAVEMENTS.

8. PROVIDE AND INSTALL FLOOR FILLER TO LEVEL FLOORS WHERE NEEDED.



2 FLOOR PLAN - VESTIBULE

SCALE: 1/4" = 1'-0"

NORTH

1 FLOOR PLAN

SCALE: 3/16" = 1'-0"

NORTH

SIMPSON
PLANNING ■ ARCHITECTURE ■ INTERIORS
Simonson + Associates Architects LLC
1717 Ingersoll Ave. Suite 117, Des Moines, Iowa 50309
Ph. 515-440-5626
www.simonsonassoc.com

This drawing has been prepared by the Architect, or under the Architect's supervision. This drawing is provided as an instrument of service by the Architect and is not intended for use on this project only. Any reproduction, use, or disclosure of this drawing without the written permission of the Architect is prohibited. (C) Copyright 2026 by Simonson & Associates Architects, LLC.

BROADLAWNS BRAIN & MEMORY CENTER

3714 INGERSOLL AVENUE
DES MOINES, IA 50309

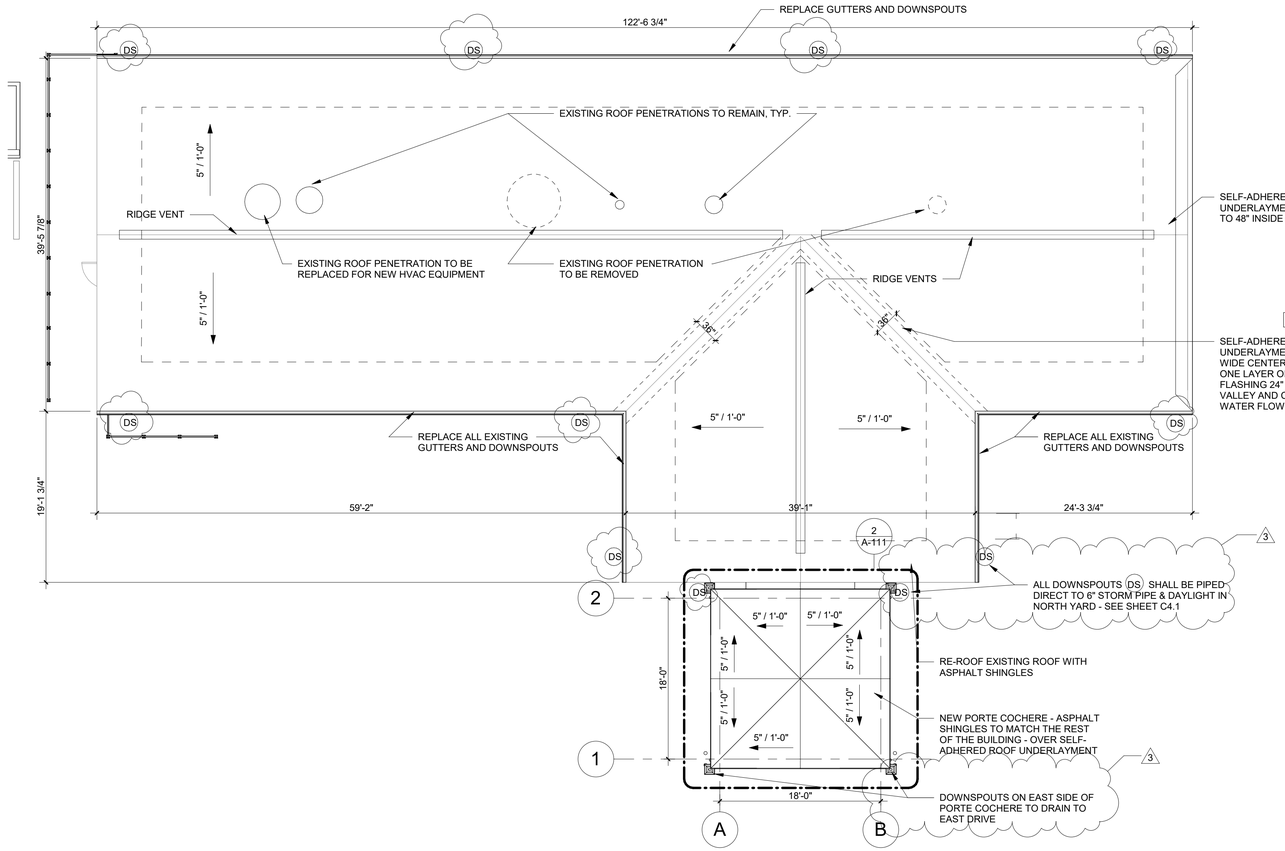
Rev. #	Issue / Revision	Date
2	BID SET	09-29-2026
3	ADDENDUM #1	01-09-2026

Proj. No. 14138B | SAA | Proj. Mgr.

Sheet Title
FLOOR PLAN

Sheet No.
A-101

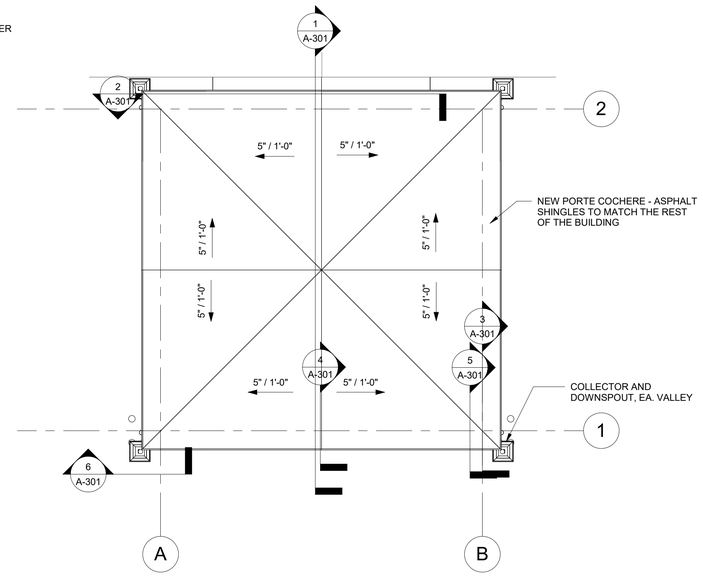
Autodesk Docs://Broadlawns Brain Wellness/14138B Broadlawns Brain Wellness - Des Moines, IA R-25.rvt
10/1/2026 2:26:17 PM



1 **ROOF PLAN**
SCALE: 1/8" = 1'-0"

GENERAL ROOF PLAN NOTES

1. REFER TO ADDITIONAL NOTES AND REQUIREMENTS ON ALL OTHER DOCUMENTS AND OTHER DISCIPLINES DOCUMENTS.
2. ALL FIXTURES AND EQUIPMENT SHOWN SHOULD BE CONSIDERED CONCEPTUAL AND MAY BE PROVIDED FOR COORDINATION PURPOSES ONLY. REFER TO CIVIL, FIRE SUPPRESSION, PLUMBING, MECHANICAL, ELECTRICAL, COMMUNICATIONS, ELECTRONIC SAFETY & SECURITY DOCUMENTS &/OR CONSULTANTS FOR SPECIFIC DESIGN INFORMATION & REQUIREMENTS. REFER TO STRUCTURAL DRAWINGS FOR ROOF OPENING STRUCTURAL FRAMING.
3. ALL ROOF PENETRATIONS FOR MINOR ROOF VENTS AND SIMILAR ITEMS MAY NOT BE INDICATED ON THE ROOF PLAN: HOWEVER, ALL ROOF FLASHING WORK SHALL BE PROVIDED BY THE ROOFING SUBCONTRACTOR SO AS TO OBTAIN FULL ROOFING WARRANTIES. REFER TO ALL OTHER CONSTRUCTION DOCUMENTS FOR ADDITIONAL ROOF PENETRATIONS REQUIRING ROOF FLASHING WORK.
4. IT SHOULD BE THE RESPONSIBILITY OF THE ROOF SUB-CONTRACTOR TO PROVIDE ALL NECESSARY DETAILS AND SYSTEMS TO ACCOMMODATE EXPANSION/CONTRACTION OF THE BUILDING AND BUILDING COMPONENTS FOR A LONG-LASTING ROOF.
5. CONTRACTOR SHALL KEEP ROOF CLEAN OF ALL DEBRIS DURING ALL CONSTRUCTION WORK.
6. ROOF SYSTEM AND ANY WORK ASSOCIATED WITH THE ROOF SHALL BE DONE AS TO NOT VOID ANY ROOF WARRANTIES.
7. FLASHING:
   A. FLASHING SHALL BE INSTALLED IN SUCH A MANNER SO AS TO PREVENT MOISTURE ENTERING THE WALL AND ROOF THROUGH JOINTS IN COPINGS & AT INTERSECTIONS WITH PARAPET WALLS & OTHER PENETRATIONS THROUGH THE ROOF PLANE.
   B. FLASHING SHALL BE INSTALLED AT WALL AND ROOF INTERSECTIONS, AT GUTTERS, WHEREVER THERE IS A CHANGE IN ROOF SLOPE OR DIRECTION AND AROUND ROOF OPENINGS. WHERE FLASHING IS METAL, THE METAL SHALL BE CORROSION RESISTANT WITH A THICKNESS OF NOT LESS THAN 0.019", NO. 26 GALVANIZED SHEET.
8. ROOF DRAINAGE:
   A. DESIGN OF ROOF DRAINAGE SYSTEMS SHALL COMPLY WITH THE INT'L PLUMBING CODE. FINAL DETAILED DESIGN OF ROOF DRAINAGE SYSTEMS TO BE BY PLUMBING CONSULTANT.
   B. OVERSIZED ROOF DRAINS, GUTTERS AND/OR DOWNSPOUTS SHOULD BE PROVIDED TO ELIMINATE ANY OVERFLOW OR BACKUP.
   C. NOT LESS THAN 2 ROOF DRAINS SHALL BE INSTALLED IN ROOF AREAS 10,000 SF OR LESS AND NOT LESS THAN FOUR ROOF DRAINS SHALL BE INSTALLED IN ROOFS OVER 10,000 SF IN AREA.
   D. PROVIDE CONCRETE SPLASH BLOCKS AT ALL DOWNSPOUT LOCATIONS.
9. ROOF VENTILATION RIDGE VENTS AND SOFFIT VENTS SHALL BE PROVIDED IN EACH & ALL ENCLOSED ATTICS &/OR RAFTER SPACES TO PROVIDE VENTILATION IN ACCORDANCE WITH CODES & THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
10. INSULATE AND SEAL TO ENSURE ADEQUATE AIR INFILTRATION BARRIER AROUND ALL EXTERIOR PENETRATIONS TO PREVENT WATER AND SPRINKLER PIPE FREEZING.
11. ACCESS TO UNOCCUPIED SPACES
   A. CRAWL SPACES SHALL BE PROVIDED WITH NO FEWER THAN 1 ACCESS OPENING WHICH SHALL NOT BE LESS THAN 18" X 24".
   B. AN OPENING OF NOT LESS THAN 20"X30" SHALL BE PROVIDED TO ANY ATTIC AREA HAVING A CLEAR HEIGHT OF OVER 30". CLEAR HEADROOM OF NOT LESS THAN 30" SHALL BE PROVIDED IN THE ATTIC SPACE AT OR ABOVE THE ACCESS OPENING.
   C. ACCESS TO MECHANICAL APPLIANCES INSTALLED IN UNDER FLOOR AREAS, IN ATTIC SPACES AND ON ROOFS OR ELEVATED STRUCTURES SHALL BE IN ACCORDANCE WITH THE INT'L MECHANICAL CODE.
      a. ATTICS CONTAINING APPLIANCES SHALL BE PROVIDED WITH AN OPENING AND UNOBSTRUCTED PASSAGEWAY LARGE ENOUGH TO ALLOW REMOVAL OF THE LARGEST APPLIANCE. THE PASSAGEWAY SHALL NOT BE LESS THAN 30"H X 22"W AND NOT MORE THAN 20' IN LENGTH MEASURED ALONG THE CENTERLINE OF THE PASSAGEWAY FROM THE OPENING TO THE APPLIANCE. THE PASSAGEWAY SHALL HAVE CONTINUOUS SOLD FLOORING NOT LESS THAN 24" WIDE. A LEVEL SURFACE SPACE NOT LESS THAN 30"D X 30"W SHALL BE PRESENT AT THE FRONT OF SERVICE SIDE OF THE APPLIANCE.
12. PROVIDE ROOF SNOW GUARDS/SPIKES ABOVE ALL ENTRY/EXIT POINTS TO BUILDING.
13. ASPHALT SHINGLES:
   A. ASPHALT SHINGLES SHALL ONLY BE USED ON ROOF SLOPES OF 2:12 OR GREATER.
   B. FOR ROOF SLOPES OF 4:12 (33%) OR GREATER, UNDERLAYMENT SHALL BE ONE LAYER APPLIED IN THE FOLLOWING MANNER. UNDERLAYMENT SHALL BE APPLIED SHINGLE FASHION, PARALLEL TO & STARTING FROM THE EAVE & LAPPED 2", FASTENED SUFFICIENTLY TO HOLD IN PLACE.
   C. AN ICE BARRIER THAT CONSISTS OF AT LEAST TWO LAYER OF UNDERLAYMENT CEMENTED TOGETHER OR OF A SELF-ADHERING POLYMER MODIFIED BITUMEN SHEET SHALL BE USED IN LIEU OF NORMAL UNDERLAYMENT AND EXTEND FROM THE LOWEST EDGES OF ALL ROOF SURFACES TO A POINT AT LEAST 24" INSIDE THE EXTERIOR WALL LINE OF THE BUILDING.



2 **ROOF PLAN - PORTE COCHERE**
SCALE: 1/4" = 1'-0"

SIMONSON
PLANNING ■ ARCHITECTURE ■ INTERIORS
Simonson + Associates Architects LLC
1717 Ingersoll Ave. Suite 117, Des Moines, Iowa 50309
Ph. 515-440-5626
www.simonsonassoc.com

This drawing has been prepared by the Architect, or under the Architect's supervision. This drawing is provided as an instrument of service by the Owner/Contractor and is intended for use on this project only. Any reproduction, use, or disclosure of this drawing, in whole or in part, without the prior written consent of the Architect is prohibited by law. (C) Copyright 2026 by Simonson & Associates Architects, LLC.

BROADLAWNS BRAIN & MEMORY CENTER
3714 INGERSOLL AVENUE
DES MOINES, IA 50309

Rev. #	Issue / Revision	Date
2	BID SET	09-26-2026
3	ADDENDUM #1	01-09-2026

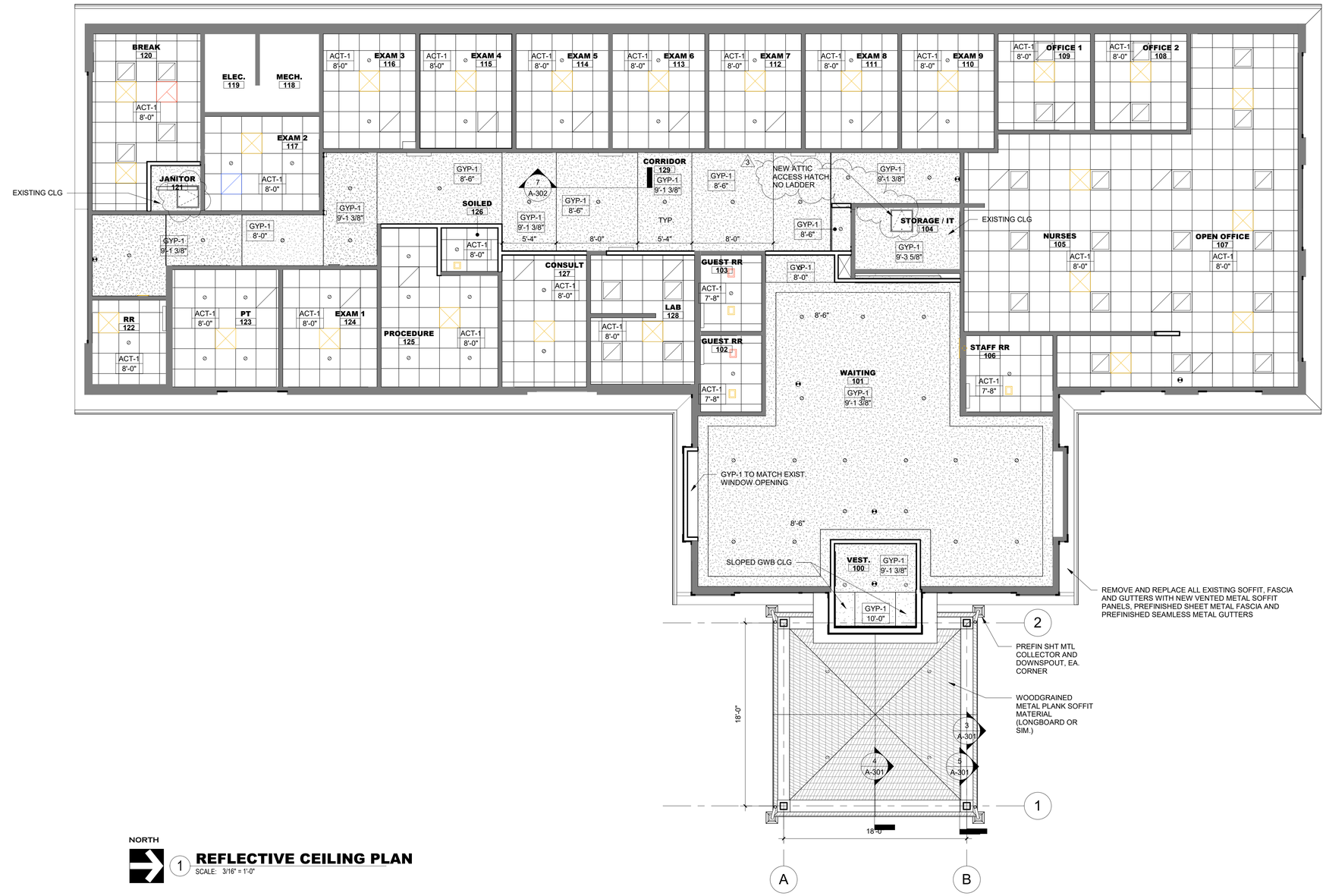
Proj. No. 14138B | SAA | Proj. Mgr.

Sheet Title
ROOF PLAN

Sheet No.
A-111

Autodesk Docs://Broadlawns Brain Wellness/14138B Broadlawns Brain Wellness - Des Moines, IA R-26.rvt
1/9/2026 2:26:17 PM

GYP-1



NORTH

1 **REFLECTIVE CEILING PLAN**
SCALE: 3/16" = 1'-0"

GENERAL REFLECTIVE CEILING NOTES

1. REFER TO ADDITIONAL NOTES AND REQUIREMENTS ON ALL OTHER DOCUMENTS AND OTHER DISCIPLINES DOCUMENTS.
2. MECHANICAL, PLUMBING, ELECTRICAL, LIGHTING, EMERGENCY LIGHTING, EXIT LIGHTING, COMMUNICATIONS, SAFETY & SECURITY INFO SHOWN HERE IS FOR REFERENCE ONLY, SEE OTHER CONSULTANT & CONTRACTOR DRAWINGS.
3. COORDINATE LOCATION OF ALL LIGHTS SWITCHES AND THERMOSTATS W/OWNER PRIOR TO CONSTRUCTION.
4. COORDINATE ALL CEILINGS' BULKHEADS PRIOR TO INSTALLATION WITH MILLWORK AND CONTACT ARCHITECT FOR DISCREPANCIES.
5. ALL EXPOSED GWB CEILINGS TO BE PAINTED.
6. MINIMUM CEILING HEIGHT THROUGHOUT @ 8' AFF OR AS HIGH AS POSSIBLE TO PROVIDE ADEQUATE CLEARANCE FOR MECHANICAL.

CEILING LEGEND

GYP-1
5/8" TYPE GYPSUM WALL-BOARD OVER 3 5/8" METAL STUD OR 2X4 WOOD STUD @ 16" O.C.

ACT-1
2x2 ACOUSTICAL CEILING TILE

RETURN AIR GRILLE

SUPPLY AIR DIFFUSER

EXHAUST FAN

EXHAUST FAN

2x2 LED TROFFER LIGHTING FIXTURE

RECESSED LED CAN LIGHT

4' EXPOSED TUBE LED FIXTURE

EXIT LIGHTS (LED)

WALL SCONCE; ABOVE VANITY IN RR'S, ABOVE ART IN CORRIDORS. SEE ELEVATIONS ON SHEET A-711 & A-712

RADILUM, GOYA BRASS WALL SCONCE, L 39.4" x W 6.5" x H 3.5", ANTIQUE BRONZE FINISH, INTEGRATED LED, 3000K

SIMONSON
PLANNING ■ ARCHITECTURE ■ INTERIORS
Simonson + Associates Architects LLC
1717 Ingersoll Ave. Suite 117, Des Moines, Iowa 50309
Ph. 515-440-5626
www.simonsonassoc.com

This drawing has been prepared by the Architect, or under the Architect's supervision. This drawing is provided as an instrument of service by the Architect and is not intended for use on this project only. Any reproduction, use, or disclosure of this drawing without the written consent of Simonson & Associates Architects, L.L.C. is prohibited. (C) Copyright 2026 by Simonson & Associates Architects, L.L.C.

BROADLAWNS BRAIN & MEMORY CENTER

3714 INGERSOLL AVENUE
DES MOINES, IA 50309

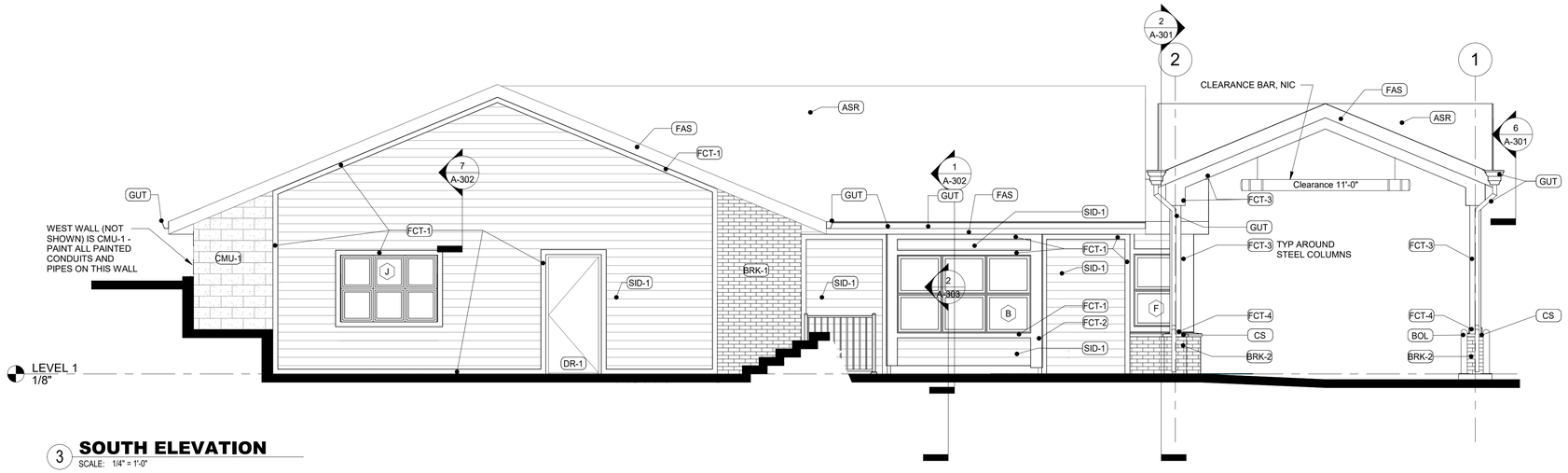
Rev. #	Issue / Revision	Date
2	BID SET	09-26-2026
3	ADDENDUM #1	01-09-2026

Proj. No. 14138B | SAA | Proj. Mgr.

Sheet Title
REFLECTED CEILING PLAN

Sheet No.
A-121

Autodesk Docs://Broadlawns Brain Wellness/14138B Broadlawns Brain Wellness - Des Moines, IA R-24.rvt
1/9/2026 2:26:16 PM

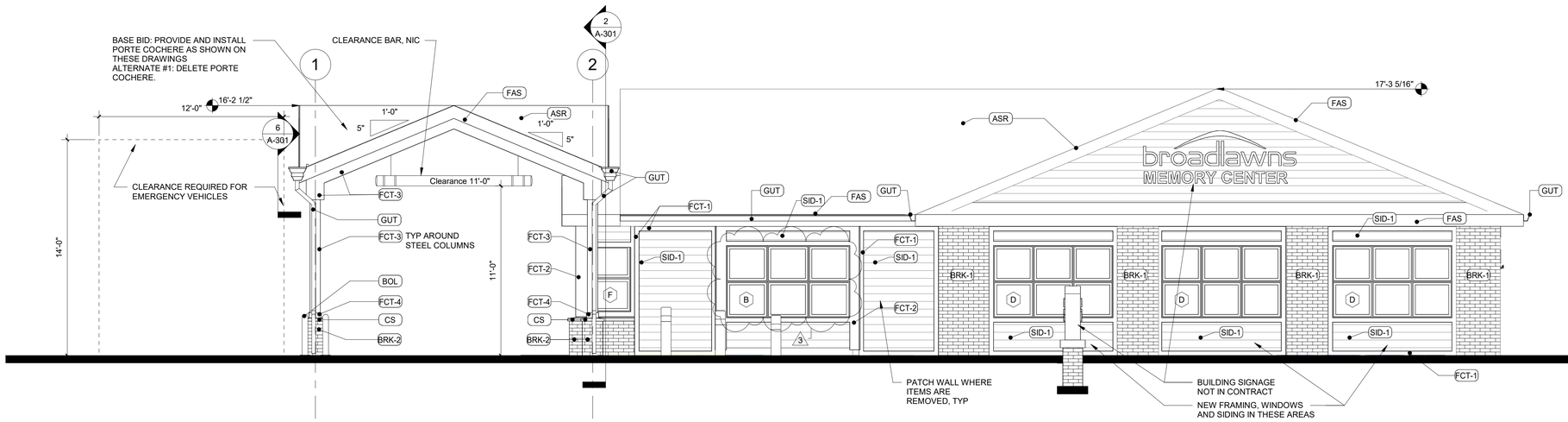


3 SOUTH ELEVATION

SCALE: 1/4" = 1'-0"

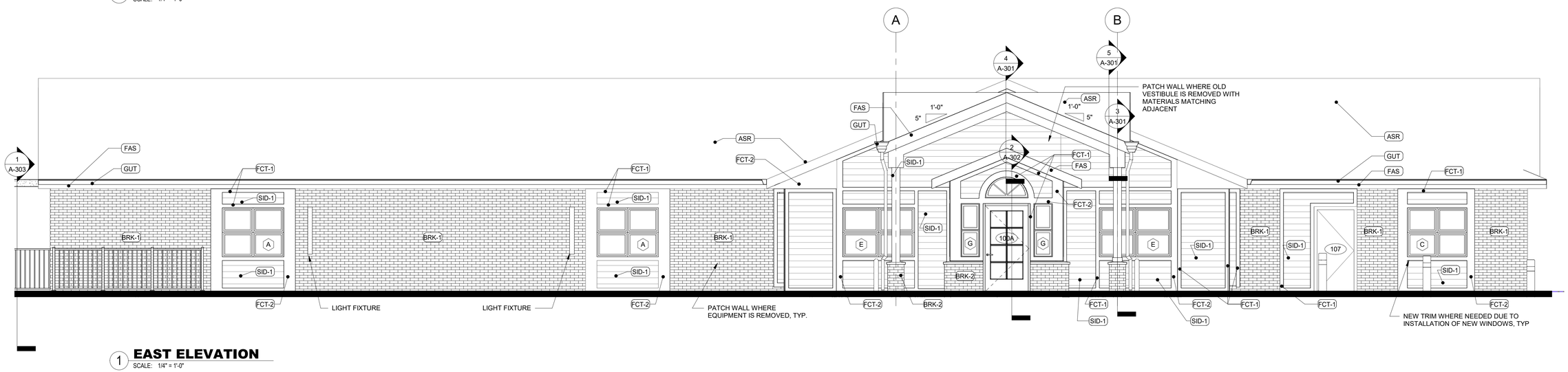
EXTERIOR MATERIAL LEGEND	
MAT. LABEL	**MATERIAL DISCRIPTION**
ASR	NEW ASPHALT SHINGLE ROOFING
BOL	BOLLARD COVER OVER 6" DIAMETER PIPE BOLLARD, CONC FILLED
BRK-1	EXISTING PAINTED BRICK - PAINT EP-1
BRK-2	NEW FACE BRICK - PAINT EP-1
CMU-1	EXISTING PAINTED CMU - PAINT EP-1
CS	CAST STONE SILL
DR-1	EXISTING HM DOOR - PAINT EP-1
FAS	NEW PREFINISHED SHEET METAL FASCIA - WHITE
FCT-1	3 1/2" EXISTING FIBER CEMENT TRIM - PAINT EP-2
FCT-2	EXISTING FIBER CEMENT TRIM - PAINT EP-2, VERIFY SIZE
FCT-3	FIBER CEMENT PANEL - PAINT EP-2
FCT-4	FIBER CEMENT TRIM 1"X4" - PAINT EP-2
GUT	NEW GUTTERS AND DOWNSPOUTS - WHITE
SID-1	EXISTING FIBER CEMENT SIDING - PAINT EP-1

ALL EXTERIOR MASONRY AND FIBER CEMENT MATERIALS TO BE PAINTED.



2 NORTH ELEVATION

SCALE: 1/4" = 1'-0"



1 EAST ELEVATION

SCALE: 1/4" = 1'-0"

SIMONSON
PLANNING ■ ARCHITECTURE ■ INTERIORS
Simonson + Associates Architects LLC
1717 Ingersoll Ave. Suite 117, Des Moines, Iowa 50309
Ph. 515-440-5626
www.simonsonassoc.com

This drawing has been prepared by the Architect, or under the Architect's direct supervision. This drawing is provided as an instrument of service by the Architect and is not intended for use on this project only. Any reproduction, use, or disclosure of information contained herein is not permitted without the prior written consent of the Architect and is expressly limited. (C) Copyright 2026 by Simonson & Associates Architects, LLC.

BROADLAWNS BRAIN & MEMORY CENTER

3714 INGERSOLL AVENUE
DES MOINES, IA 50309

Rev. #	Issue / Revision	Date
2	BID SET	09-28-2026
3	ADDENDUM #1	01-09-2026

Proj. No. 14138B | SAA | Proj. Mgr.

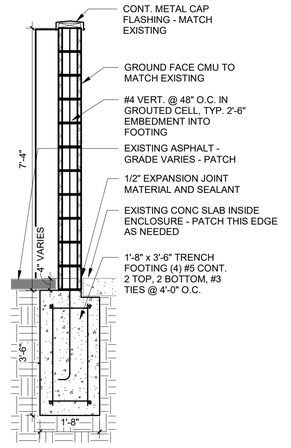
Sheet Title

EXTERIOR ELEVATIONS

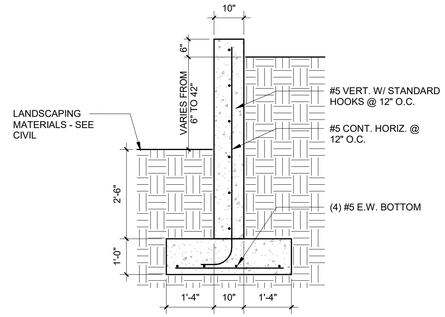
Sheet No.

A-201

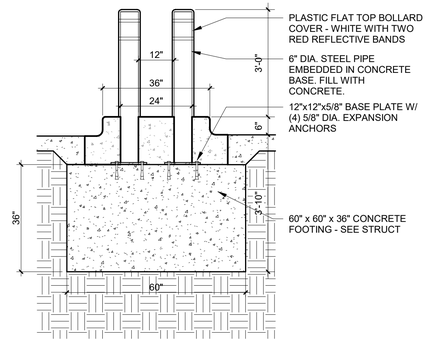
Autodesk Docs://Broadlawns Brain Wellness/14138B Broadlawns Brain Wellness - Des Moines, IA R-26.rvt
1/9/2026 2:28:19 PM



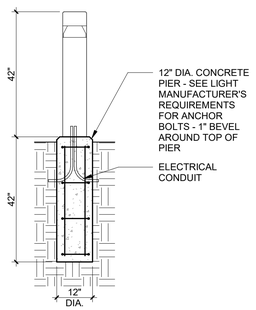
7 TRASH DUMPSTER WALL
SCALE: 1/2" = 1'-0"



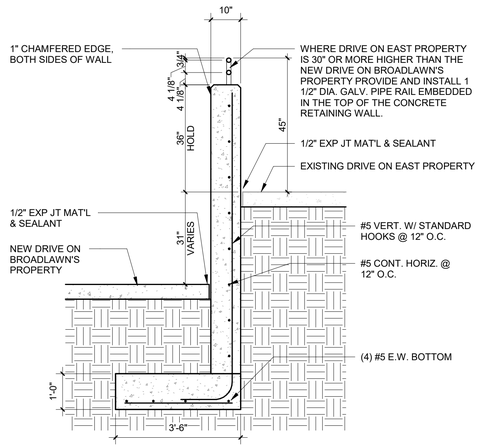
6 RETAINING WALL S & E OF BLDG
SCALE: 1/2" = 1'-0"



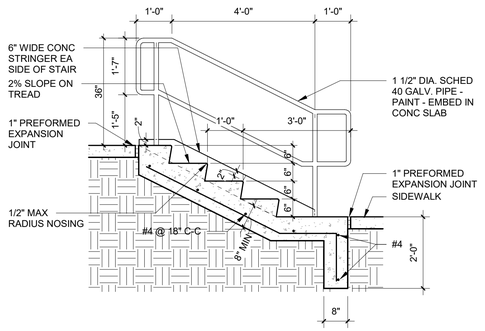
5 PIPE BOLLARD
SCALE: 1/2" = 1'-0"



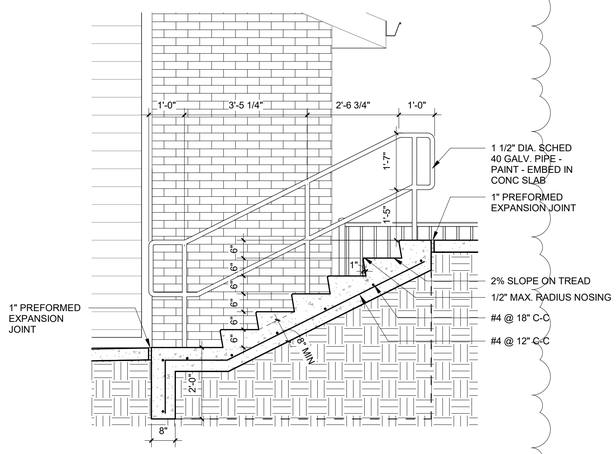
4 LIGHT BOLLARD DETAIL
SCALE: 1/2" = 1'-0"



3 EAST RETAINING WALL
SCALE: 1/2" = 1'-0"



2 EAST EXT STAIRS
SCALE: 1/2" = 1'-0"



1 SOUTH EXT STAIRS
SCALE: 1/2" = 1'-0"

Autodesk Docs://Broadlawns Brain Wellness/14138B Broadlawns Brain Wellness - Des Moines, IA R.23.rvt
10/9/2026 2:28:28 PM

SIMONSON
PLANNING ■ ARCHITECTURE ■ INTERIORS
Simonson + Associates Architects LLC
1717 Ingersoll Ave. Suite 117, Des Moines, Iowa 50309
Ph. 515-440-5626
www.simonsonassoc.com

This drawing has been prepared by the Architect, or under the Architect's direct supervision. This drawing is provided as an instrument of service by the Owner's Architect and is intended for use on this project only. Any reproduction, use, or disclosure of this drawing, in whole or in part, without the prior written consent of the Architect is strictly prohibited. (C) Copyright 2026 by Simonson & Associates Architects, LLC.

BROADLAWNS BRAIN & MEMORY CENTER

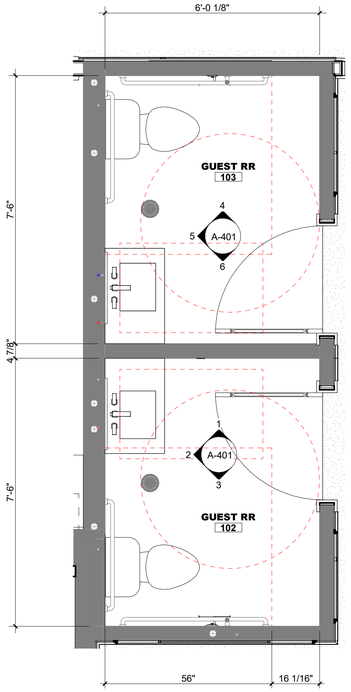
3714 INGERSOLL AVENUE
DES MOINES, IA 50309

Rev. #	Issue / Revision	Date
3	ADDENDUM #1	01-09-2026

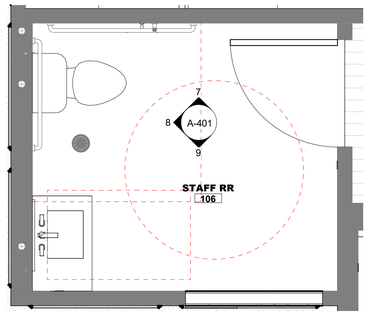
Proj. No. 14138B | SAA | Proj. Mgr.

Sheet Title
DETAILS

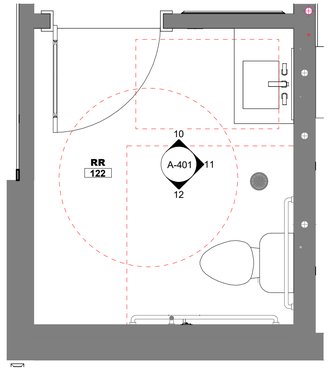
Sheet No.
A-303



15 **RESTROOMS 102 & 103**
SCALE: 1/2" = 1'-0"



14 **RESTROOM 106**
SCALE: 1/2" = 1'-0"



13 **RESTROOM 122**
SCALE: 1/2" = 1'-0"

GENERAL RESTROOM NOTES

1. REFER TO ADDITIONAL NOTES AND REQUIREMENTS ON ALL OTHER DOCUMENTS AND OTHER DISCIPLINES DOCUMENTS.

2. ALL PLUMBING FIXTURES SHOWN ON THIS SHEET IS PROVIDED FOR COORDINATION PURPOSES ONLY. REFER TO PLUMBING DOCUMENTS FOR SPECIFIC DESIGN INFO.

3. ALL RESTROOMS, FIXTURES & ACCESSORIES SHALL BE COMMERCIAL GRADE AND SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT.

4. PROVIDE ADEQUATE BLOCKING FOR ALL REST ROOM FIXTURES AND EQUIPMENT.

5. ADD GFI POWER UNDER SINKS OR AROUND WATER CLOSETS IF AUTO-CONTROLS.

6. FIXTURE & ACCESSORY MOUNTING HEIGHTS ARE AS FOLLOWS:
- DRINKING FOUNTAIN & WATER COOLER:
  SPOUT HEIGHT: NO HIGHER THAN 36" AFF,
  CONTROLS HEIGHT: SEE BELOW.
- WATER CLOSET HEIGHT: 17"-19" TO TOP OF TOILET SEAT.
- GRAB BAR TOP MOUNTING HEIGHT: 33"-36" AFF.
  GRAB BARS TO BE 1-1/4"-1-1/2" DIA. W/ GRIPPABLE SURFACE.
- TOILET PAPER DISPENSER CENTER MOUNTING HEIGHT: 28" AFF.
- LAVATORY RIM OR COUNTER HEIGHT: NO HIGHER THAN 34" AFF
- MIRROR HEIGHT: BOTTOM EDGE OF REFLECTIVE SURFACE NO HIGHER THAN 40" AFF.
- CONTROLS HEIGHT AND REACH RANGES ARE AS FOLLOWS:
  FORWARD APPROACH: 15"-48" AFF; OVER OBJECT 44" AFF MAX,
  SIDE APPROACH: 9"-54" AFF; OVER OBJECT 46" AFF MAX.

RESTROOM FIXTURE & EQUIP. NOTES

RESTROOM FIXTURE & EQUIP. NOTES

1. PROVIDE THE FOLLOWING RESTROOM FIXTURES IN WHITE VITREOUS CHINA FINISH UNLESS OTHERWISE INDICATED OR APPROVED, AS REPRESENTED IN DOCUMENTS.
- FLOOR MOUNT TANK TYPE WATER CLOSETS.

2. PROVIDE THE FOLLOWING REST ROOM ACCESSORIES IN BRUSHED CHROME FINISH UNLESS OTHERWISE STATED OR APPROVED. BRUSHED STAINLESS STEEL IS AN ACCEPTABLE ALTERNATIVE FINISH.
WATER CLOSET AREA:
- 1 SURFACE MOUNT DOUBLE TOILET PAPER DISPENSER PER RESTROOM.
- 1 SANITARY NAPKIN DISPOSAL PER RESTROOM.
- 1 COAT HOOK ON BACK OF DOOR PER RESTROOM
- 1 FLOOR DRAIN TRIM FLUSH WITH FINISHED FLOOR.
LAVATORY AREA:
- 1 24"W x 36"H MIN. MIRROR WITH DECORATIVE FRAME, ALLOWANCE $250 PER MIRROR

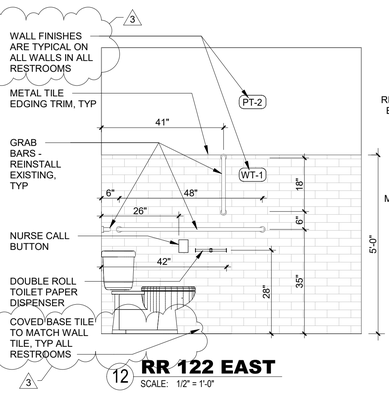
NOTE: PAPER TOWEL BASKET, SOAP DISPENSER, AND TRASH RECEPTACLE ARE FREESTANDING AND PROVIDED BY OWNER

3. ALL EXAMS, PROCEDURES, LAB TO HAVE THE FOLLOWING PROVIDED:
-1 COAT HOOK
-1 PAPER TOWEL DISPENSER, BOBRICK B-2621 OR EQUAL PER LAVATORY
-1 LIQUID SOAP DISPENSER PER SINK

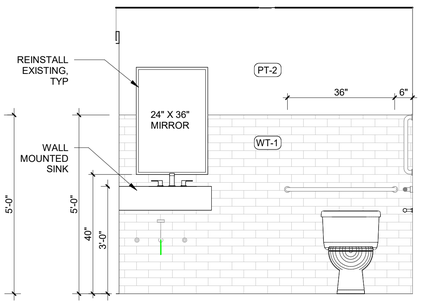
4. THE BREAK ROOM SHALL HAVE THE FOLLOWING PROVIDED:
-1 AUTOMATIC TOUCHLESS PAPER TOWEL DISPENSER, GEORGIA PACIFIC 59462 OR EQUAL
-1 LIQUID SOAP DISPENSER PER SINK

5. ALL RACK/SHELVING EQUIPMENT IN I.T. AREAS TO BE COORDINATED BY GC.

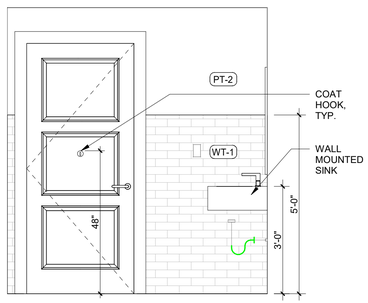
6. SALVAGE AND REINSTALL GRAB BARS & MIRRORS.



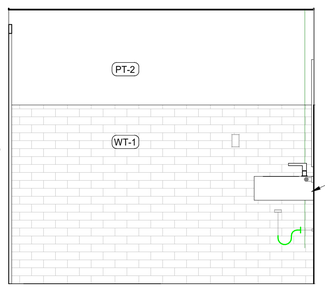
12 **RR 122 EAST**
SCALE: 1/2" = 1'-0"



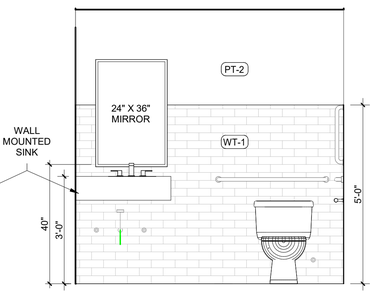
11 **RR 122 NORTH**
SCALE: 1/2" = 1'-0"



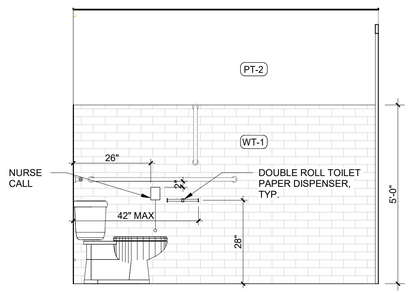
10 **RR 122 WEST**
SCALE: 1/2" = 1'-0"



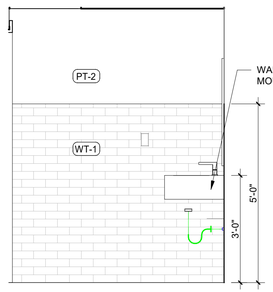
9 **RR 106 EAST**
SCALE: 1/2" = 1'-0"



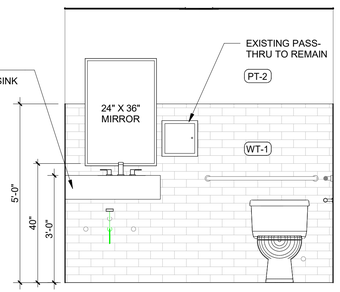
8 **RR 106 SOUTH**
SCALE: 1/2" = 1'-0"



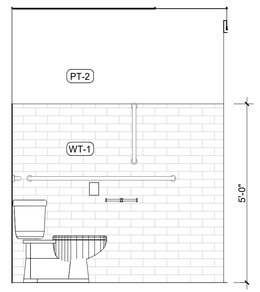
7 **RR 106 WEST**
SCALE: 1/2" = 1'-0"



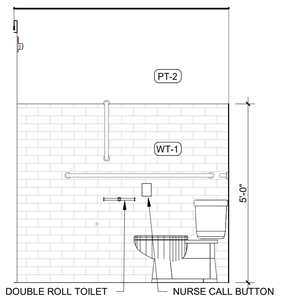
6 **RR 103 EAST**
SCALE: 1/2" = 1'-0"



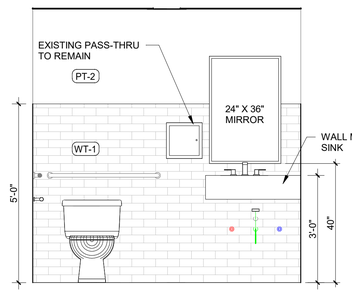
5 **RR 103 SOUTH**
SCALE: 1/2" = 1'-0"



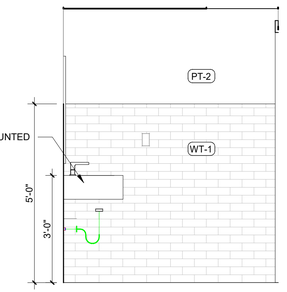
4 **RR 103 WEST**
SCALE: 1/2" = 1'-0"



3 **RR 102 EAST**
SCALE: 1/2" = 1'-0"



2 **RR 102 SOUTH**
SCALE: 1/2" = 1'-0"



1 **RR 102 WEST**
SCALE: 1/2" = 1'-0"

SIMONSON
PLANNING ■ ARCHITECTURE ■ INTERIORS
Simonson + Associates Architects LLC
1717 Ingersoll Ave, Suite 117, Des Moines, Iowa 50309
Ph. 515-440-5626
www.simonsonassoc.com

This drawing has been prepared by the Architect, or under the Architect's direct supervision. This drawing is provided as an instrument of service by the Architect and is not intended for use on this project only. Any reproduction, use, or disclosure of this drawing, in whole or in part, without the prior written consent of the Architect is strictly prohibited. (C) Copyright 2026 by Simonson & Associates Architects, LLC.

BROADLAWNS BRAIN & MEMORY CENTER
3714 INGERSOLL AVENUE
DES MOINES, IA 50309

Rev. #	Issue / Revision	Date
2	BID SET	09-29-2026
3	ADDENDUM #1	01-09-2026

Proj. No. 14138B
SAA Proj. Mgr.

Sheet Title
BATHROOM PLANS & ADA CLEARANCES

Sheet No.
A-401

Autodesk Docs://Broadlawns Brain Wellness/14138B Broadlawns Brain Wellness - Des Moines, IA R-26.rvt
10/7/2026 2:22:26 PM

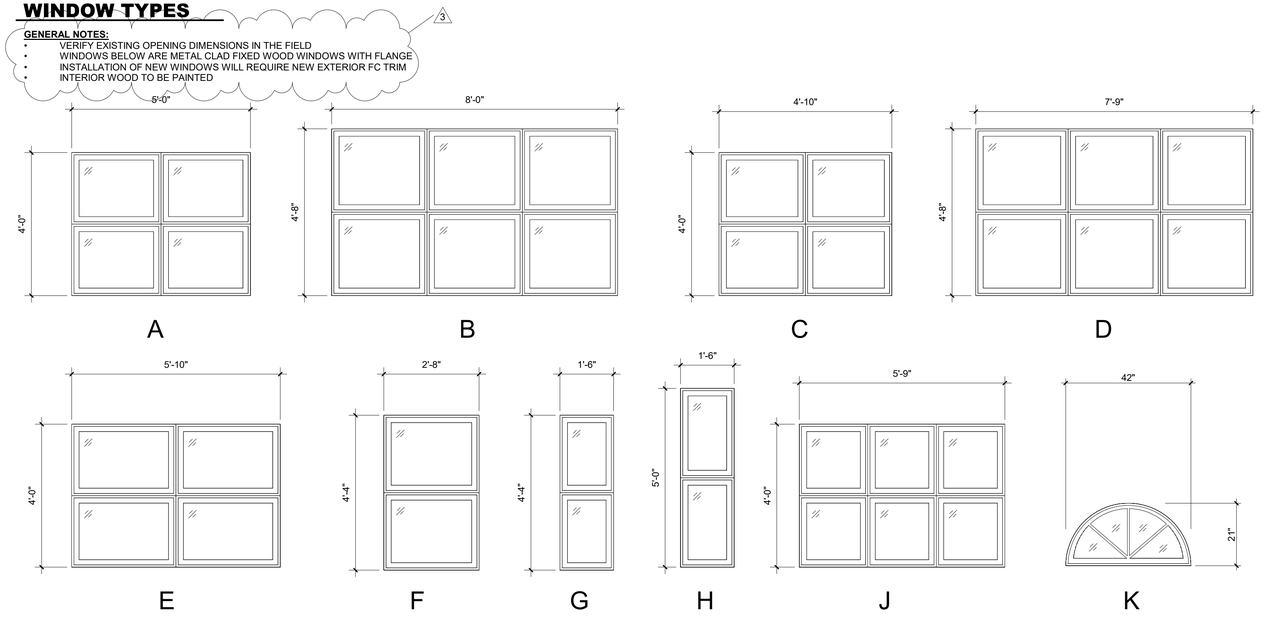
DOOR & FRAME SCHEDULE

DOOR NO.	ROOM NAME	DOOR TYPE	PAIR	WIDTH	HEIGHT	MAT'L	THLD	FRAME TYPE	FRAME MAT'L	HDWR SET	REMARKS
100A	VEST.	4	NO	3'-6"	7'-0"	ALUMINUM	YES	1	ALUMINUM	1.0	DOOR OPERATOR
100B	VEST.	4	NO	3'-6"	7'-0"	ALUMINUM	NO	1	ALUMINUM	18.0	DOOR OPERATOR
102	GUEST RR	1	NO	3'-0"	7'-0"	WOOD	NO	2	WOOD	13.0	
103	GUEST RR	1	NO	3'-0"	7'-0"	WOOD	NO	2	WOOD	12.0	
104	STORAGE / IT	1	NO	3'-0"	7'-0"	WOOD	NO	2	WOOD	4.0	
105	OPEN OFFICE	3	NO	3'-0"	7'-0"	WOOD	NO	3	H. METAL	5.0	
106	STAFF RR	1	NO	3'-0"	7'-0"	WOOD	NO	2	WOOD	12.0	
107	OPEN OFFICE	EXISTING	NO	3'-0"	6'-8"	H. METAL	YES	1	H. METAL	2.0	EXIT HDWR, CLOSER, PANIC
108	OFFICE 2	3	NO	3'-0"	7'-0"	WOOD	NO	4	H. METAL	6.0	
109	OFFICE 1	3	NO	3'-0"	7'-0"	WOOD	NO	4	H. METAL	6.0	
110	EXAM 9	2	NO	3'-6"	7'-0"	WD/GL	NO	2	WOOD	16.0	SOUND GASKETING
111	EXAM 8	2	NO	3'-6"	7'-0"	WD/GL	NO	2	WOOD	17.0	SOUND GASKETING
112	EXAM 7	2	NO	3'-6"	7'-0"	WD/GL	NO	2	WOOD	17.0	SOUND GASKETING
113	EXAM 6	2	NO	3'-6"	7'-0"	WD/GL	NO	2	WOOD	17.0	SOUND GASKETING
114	EXAM 5	2	NO	3'-6"	7'-0"	WD/GL	NO	2	WOOD	16.0	SOUND GASKETING
115	EXAM 4	2	NO	3'-6"	7'-0"	WD/GL	NO	2	WOOD	16.0	SOUND GASKETING
116	EXAM 3	2	NO	3'-6"	7'-0"	WD/GL	NO	2	WOOD	16.0	SOUND GASKETING
117	EXAM 2	2	NO	3'-6"	7'-0"	WD/GL	NO	2	WOOD	17.0	SOUND GASKETING
119	ELEC.	-	NO	3'-0"	7'-0"	WOOD	NO	1	H. METAL	19.0	EXISTING DOOR, REPLACE HARDWARE
120	BREAK	1	NO	3'-0"	7'-0"	WOOD	NO	2	WOOD	10.0	
121	JANITOR	1	NO	3'-0"	7'-0"	WOOD	NO	2	WOOD	11.0	
122	RR	1	NO	3'-0"	7'-0"	WOOD	NO	2	WOOD	12.0	
123	PT	1	NO	3'-6"	7'-0"	WOOD	NO	2	WOOD	14.0	SOUND GASKETING
124	EXAM 1	2	NO	3'-6"	7'-0"	WD/GL	NO	2	WOOD	16.0	SOUND GASKETING
125	PROCEDURE	1	NO	3'-6"	7'-0"	WOOD	NO	2	WOOD	7.0	SOUND GASKETING
126A	SOILED	1	NO	3'-0"	7'-0"	WOOD	NO	2	WOOD	9.0	
127	CONSULT	2	YES	3'-0"	7'-0"	WD/GL	NO	2	WOOD	15.0	SOUND GASKETING
128	LAB	2	NO	3'-6"	7'-0"	WOOD	NO	2	WOOD	8.0	
129A	WAITING	2	YES	3'-0"	7'-0"	WOOD	NO	2	WOOD	3.0	LOCK DOWN FEATURE
129B	CORRIDOR	EXISTING	NO	3'-0"	7'-0"	METAL	YES	-	H. METAL	2.0	DOOR PANEL REPLACED, NEW HARDWARE

DOOR GENERAL NOTE:
ALL DOORS AND FRAMES ARE NON-RATED

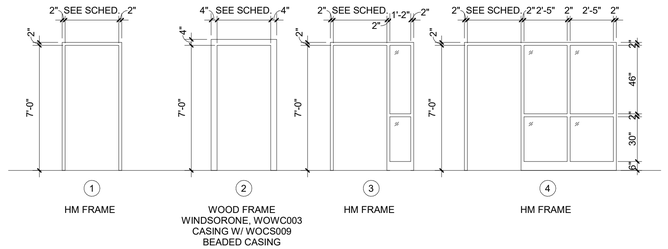
WINDOW TYPES

GENERAL NOTES:
- VERIFY EXISTING OPENING DIMENSIONS IN THE FIELD
- WINDOWS BELOW ARE METAL CLAD FIXED WOOD WINDOWS WITH FLANGE
- INSTALLATION OF NEW WINDOWS WILL REQUIRE NEW EXTERIOR FC TRIM
- INTERIOR WOOD TO BE PAINTED

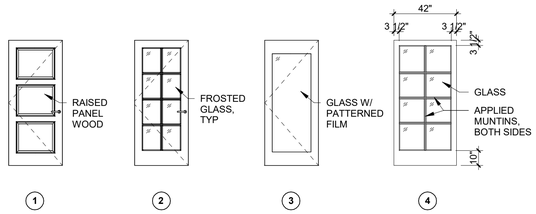


INTERIOR TRIM:
WINDSORONE, WOWC003 CASING W/ WOCS009 BEADED CASING

FRAME TYPES



DOOR TYPES



TEMPERED GLASS

T TEMPERED GLASS LOCATIONS

THE LOCATIONS SPECIFIED IN IBC 2021 SECTIONS 2406.4.1 THROUGH 2406.4.7 SHALL BE CONSIDERED TO BE SPECIFIC HAZARDOUS LOCATIONS REQUIRING SAFETY GLAZING MATERIALS.

1. GLASS IN DOORS SHALL BE TEMPERED.
2. GLASS IN AN INDIVIDUAL FIXED OR OPERABLE PANEL ADJACENT TO A DOOR WHERE THE NEAREST EDGE OF THE GLAZING IS WITHIN A 24 INCH ARC OF EITHER VERTICAL EDGE OF THE DOOR IN A CLOSED POSTION AND WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60 INCHES ABOVE THE WALKING SURFACE SHALL BE CONSIDERED TO BE A HAZARDOUS LOCATION.
3. WINDOWS: GLAZING IN AN INDIVIDUAL FIXED OR OPERABLE PANEL THAT MEETS ALL OF THE FOLLOWING CONDITIONS SHALL BE CONSIDERED TO BE A HAZARDOUS LOCATION.
   - A. THE EXPOSED AREA OF AN INDIVIDUAL PANE IS GREATER THAN 9 SQUARE FEEET.
   - B. THE BOTTOM EDGE OF THE GLAZING IS LESS THAN 18 INCHES ABOVE THE FLOOR.
   - C. THE TOP EDGE OF THE GLAZING IS GREATER THAN 36 INCHES ABOVE THE FLOOR.
   - D. ONE OR MORE WALKING SURFACE(S) ARE WITHIN 36 INCHES, MEASURED HORIZONTALLY AND IN A STRAIGHT LINE, OF THE PLANE OF THE GLAZING.

SIMONSON
PLANNING ■ ARCHITECTURE ■ INTERIORS
Simonson + Associates Architects LLC
1717 Ingersoll Ave. Suite 117, Des Moines, Iowa 50309
Ph. 515-440-5626
www.simonsonassoc.com

This drawing has been prepared by the Architect, or under the Architect's supervision. This drawing is provided as an instrument of service by the Architect and is not intended for use on this project only. Any reproduction, use, or disclosure of this drawing without the prior written consent of the Architect is prohibited and will be actionable as a violation of (C) Copyright 2026 by Simonson & Associates Architects, LLC.

BROADLAWNS BRAIN & MEMORY CENTER

3714 INGERSOLL AVENUE
DES MOINES, IA 50309

Rev. #	Issue / Revision	Date
2	BID SET	09-26-2026
3	ADDENDUM #1	01-09-2026

Proj. No. 14138B | SAA | Proj. Mgr.

Sheet Title
DOOR & WINDOW SCHEDULES

Sheet No.
A-601

Autodesk Docs://Broadlawns Brain Wellness/141388 Broadlawns Brain Wellness - Des Moines, IA R.25.rvt
10/9/2026 7:28:31 PM

ELECTRICAL ABBREVIATIONS

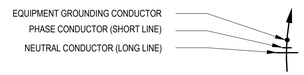
1P	1 POLE (2P, 3P, 4P, ETC.)
A	6" ABOVE COUNTER OR BACKSPLASH TO CENTERLINE OF DEVICE
A, AMP	AMPERE
AC	ABOVE COUNTER, AIR CONDITIONING UNIT
ACLG	ABOVE CEILING
AF	AMP FRAME
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AHU	AIR HANDLING UNIT
AL	ALUMINUM
ALT	ALTERNATE
AMP	AMPERE
AMPL	AMPLIFIER
ANNUN	ANNUNCIATOR
APPROX	APPROXIMATELY
AQ-STAT	AQUASTAT
ARCH	ARCHITECT, ARCHITECTURAL
AS	AMP SWITCH
AT	AMP TRIP
ATC	AUTOMATIC TEMPERATURE CONTROLS CONTRACTOR
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AUX	AUXILIARY
AV	AUDIO VISUAL
AWG	AMERICAN WIRE GAUGE
B	BLACK DEVICE COLOR WITH BLACK UNBREAKABLE THERMOPLASTIC COVER PLATE
BAS	BUILDING AUTOMATION SYSTEM
BATT	BATTERY
BD	BOARD
BLDG	BUILDING
BMS	BUILDING MANAGEMENT SYSTEM
C	CONDUIT
CAB	CABINET
CAT	CATALOG
CATV	CABLE TELEVISION
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
CLG	CEILING
CM	CONSTRUCTION MANAGER
COMB	COMBINATION
CMPR	COMPRESSOR
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUATION OR CONTINUOUS
CONTR	CONTRACTOR
CP	CIRCULATING PUMP
CRT	CATHODE-RAY TUBE
CT	CURRENT TRANSFORMER
CTR	CENTER
CU	COPPER
DEPT	DEPARTMENT
DET	DETAIL
DIA	DIAMETER
DISC	DISCONNECT
DIST	DISTRIBUTION
DN	DOWN
DO	AUTOMATIC DOOR OPENER
DPR	DAMPER
DS	SAFETY DISCONNECT SWITCH
DT	DOUBLE THROW
DWG	DRAWING
EC	ELECTRICAL CONTRACTOR
ECB	ENCLOSED CIRCUIT BREAKER
ELEC	ELECTRIC, ELECTRICAL
ELEV	ELEVATOR
ELU	EMERGENCY LIGHTING UNIT
EM	EMERGENCY
EMS	ENERGY MANAGEMENT SYSTEM
EMT	ELECTRICAL METALLIC TUBING
EP	ELECTRIC PNEUMATIC
EPO	EMERGENCY POWER OFF
EQUIP	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EXIST	EXISTING
EXH	EXHAUST
EXP	EXPLOSION PROOF
FA	FIRE ALARM
FABP	FIRE ALARM BOOSTER POWER SUPPLY PANEL
FACP	FIRE ALARM CONTROL PANEL
FCU	FAN COIL UNIT
FIXT	FIXTURE
FLR	FLOOR
FLUOR	FLUORESCENT
FPC	FIRE PROTECTION CONTRACTOR
FU	FUSE
FUDS	FUSED SAFETY DISCONNECT SWITCH
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GEN	GENERATOR
GFI	GROUND FAULT CIRCUIT INTERRUPTER
GFP	GROUND FAULT PROTECTOR
GND	GROUND
GYP BD	GYPSUM BOARD
HWC-#	DOMESTIC WATER CIRCULATING PUMP
HOA	HANDS-OFF-AUTOMATIC SWITCH
H	INSTALL DEVICE HORIZONTALLY
HH	HANDHOLE
HP	HORSEPOWER
HPF	HIGH POWER FACTOR
HT	HEIGHT
HTG	HEATING
HTR	HEATER
HV	HIGH VOLTAGE
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
IC	INTERRUPTING CAPACITY
IG	ISOLATED GROUND
IMC	INTERMEDIATE METAL CONDUIT
INCAND	INCANDESCENT
IR	INFRARED
IW	INTERLOCK WITH
J-BOX	JUNCTION BOX
K.E.C.	KITCHEN EQUIPMENT CONTRACTOR
KV	KILOVOLT
KVA	KILOVOLT-AMPERE
KVAR	KILOVOLT-AMPERE REACTIVE
KW	KILOWATT
KWH	KILOWATT HOUR
LT	LIGHT
LTG	LIGHTING
LTNG	LIGHTNING
LV	LOW VOLTAGE
M	INSTALL DEVICE IN MILLWORK
MAX	MAXIMUM
MAG.S	MAGNETIC STARTER
M/C	MOMENTARY CONTACT
MC	MECHANICAL CONTRACTOR
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MDC	MAIN DISTRIBUTION CENTER
MDP	MAIN DISTRIBUTION PANEL
MFR	MANUFACTURER
MFS	MAIN FUSED DISCONNECT SWITCH
MH	MANHOLE
MIC	MICROPHONE
MIN	MINIMUM
MISC	MISCELLANEOUS
MLO	MAIN LUGS ONLY
MMS	MANUAL MOTOR STARTER
MOA	MULTIOUTLET ASSEMBLY
MSP	MOTOR STARTER PANELBOARD
MSBD	MAIN SWITCHBOARD
N/A	NOT APPLICABLE
NFDS	NON-FUSED SAFETY DISCONNECT SWITCH
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
N.O.	NORMALLY OPEN
NPF	NORMAL POWER FACTOR
NTS	NOT TO SCALE
OC	ON CENTER
OH	OVERHEAD
OL	OVERLOADS
PA	PUBLIC ADDRESS
PB	PULL BOX OR PUSHBUTTON
PC	PLUMBING CONTRACTOR
PE	PNEUMATIC ELECTRIC
PED	PEDESTAL
PF	POWER FACTOR
PH	PHASE
PIV	POST INDICATING VALVE
PNL	PANEL
PP	POWER POLE
PR	PAIR
PRI	PRIMARY
PROJ	PROJECTION
PRV	POWER ROOF VENTILATOR
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE (CONDUIT)
PWR	POWER
QTY	QUANTITY
RAC	RIGID ALUMINUM CONDUIT
RCPT	RECEPTACLE
REQD	REQUIRED
RM	ROOM
RMC	RIGID METALLIC CONDUIT
RTU	ROOF TOP UNIT
SC	SURFACE CONDUIT
SEC	SECONDARY
SHT	SHEET
SIM	SIMILAR
SLD	SINGLE-LINE DIAGRAM
S/N	SOLID NEUTRAL
SPEC	SPECIFICATION
SPKR	SPEAKER
SP	SPARE
SPP	SINGLE-POINT POWER
SR	SURFACE RACEWAY
SS	STAINLESS STEEL
SSW	SELECTOR SWITCH
S/S	STOP/START PUSHBUTTONS
STA	STATION
STD	STANDARD
SURF	SURFACE MOUNTED
SW	SWITCH
SWBD	SWITCHBOARD
SYM	SYMMETRICAL
SYS	SYSTEM
TEL	TELEPHONE
TERM	TERMINAL
T	TAMPER RESISTANT
TL	TWIST LOCK
T-STAT	THERMOSTAT
TTC	TELEPHONE TERMINAL CABINET
TV	TELEVISION
TVTC	TELEVISION TERMINAL CABINET
TYP	TYPICAL
UC	UNDER COUNTER
UE	UNDERGROUND ELECTRICAL
UG	UNDERGROUND
UH	UNIT HEATER
UT	UNDERGROUND TELEPHONE
UTIL	UTILITY
UV	ULTRAVIOLET
V	VOLT
VA	VOLT-AMPERES
VDT	VIDEO DISPLAY TERMINAL
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VOL	VOLUME
W	WATT
W/	WITH
WG	WIRE GUARD
WH	WATER HEATER
W/O	WITHOUT
WP	WEATHERPROOF
XFMR	TRANSFORMER
XFR	TRANSFER
#"	LOCATION-SPECIFIC MOUNTING HEIGHT ABOVE FINISHED FLOOR TO CENTERLINE OF DEVICE
∠	ANGLE
@	AT
▲	DELTA
'	FEET
"	INCHES
#	NUMBER
Ø	PHASE
C	CENTER LINE
P	PLATE

BREAKER FUNCTION SCHEDULE

SYMBOL	DESCRIPTION
A	ARC FAULT INTERUPTER (AFCI)
AR	ARC ENERGY REDUCTION MAINTENANCE SWITCH
E	EXISTING BREAKER TO REMAIN
EM	PROVIDE IDENTIFICATION PER NEC 700.12(I)(2)(4)
EN	EXISTING BREAKER SERVING NEW CIRCUIT
G	GROUND FAULT CIRCUIT INTERUPTER (GFCI) PROTECTION (5mA)
GE	GROUND FAULT CIRCUIT INTERUPTER FOR EQUIPMENT (30mA)
GF	ADJUSTABLE GROUND FAULT PROTECTION FOR EQUIPMENT
HL	HANDLE LOCK TO LOCK BREAKER IN CLOSED POSITION
K#	KEY INTERLOCK (# REPRESENTS GROUPED KEYING)
LSI	LONG-TIME, SHORT-TIME, INSTANTANEOUS ADJUSTMENT
LSIG	LONG-TIME, SHORT-TIME, INSTANTANEOUS ADJUSTMENT, AND GROUND FAULT ADJUSTMENT
LSIA	LONG-TIME, SHORT-TIME, INSTANTANEOUS ADJUSTMENT, AND GROUND FAULT ALARM
N	NEW BREAKER IN EXISTING PANEL
NE	NEW BREAKER SERVING EXISTING CIRCUIT
SD	DENOTE SERVICE DISCONNECT
ST	SHUNT TRIP (120V OPERATED UNLESS NOTED OTHERWISE)

EQUIPMENT/DEVICE HOME RUN KEY

1. BRANCH CIRCUIT WIRING SHALL BE #12AWG UNLESS NOTED OTHERWISE ON THE PLAN OR IN THE SCHEDULES.
2. AS A MINIMUM, USE 10 AWG CONDUCTOR FOR 20 AMPERE, 120 VOLT BRANCH CIRCUIT HOME RUNS LONGER THAN 100 FEET AND 277 VOLT BRANCH CIRCUIT HOME RUNS LONGER THAN 200 FEET.
3. REFER TO SPECIFICATION SECTION 260519 FOR ADDITIONAL REQUIREMENTS.



GENERAL PLAN SYMBOLS

MARK	SCHEDULED EQUIPMENT (UNDERLINED)
MARK	NONSCHEDULED EQUIPMENT
(E) MARK	EXISTING EQUIPMENT - (E) PREFIX (HALFTONE)
(R) MARK	EXISTING RELOCATED EQUIPMENT - (R) PREFIX
# / #	SECTION VIEW, TOP REPRESENTS DETAIL NUMBER, BOTTOM REPRESENTS SHEET NUMBER
# / #	ENLARGED VIEW, TOP REPRESENTS VIEW NUMBER, BOTTOM REPRESENTS SHEET NUMBER
	NEW WORK BY THE EC (DARK SOLID LINE)
	NEW UNDERGROUND WORK BY THE EC (DARK DASHED LINE)
	WORK BY OTHERS AND/OR EXISTING (LIGHT SOLID LINE)
	DEMO WORK BY THE EC (DARK DASHED LINE)
	MATCHLINE
X	KEYED NOTE
	LIGHTING CONTROL CALLOUT SYMBOL (DIAMOND)
1	ELECTRICAL EQUIPMENT SYMBOL (OCTAGON)

GENERAL ELECTRICAL SYMBOLS

J J Y	ELECTRICAL CONNECTION
EPO	EMERGENCY STOP PUSH BUTTON
DPM	DIGITAL POWER METER
PP	AUTOMATIC DOOR PUSH PAD
	PANELBOARD
	UTILITY TRANSFORMER
	SWITCHBOARD
T	TRANSFORMER
	DISCONNECT SWITCH
M	UTILITY POWER METER
	COMBINATION STARTER
	ELECTRICAL EQUIPMENT (DASHED LINES INDICATE CODE REQUIRED CLEARANCES)
	GROUND BAR
HH-#	HAND HOLE

POWER SYMBOLS

SYMBOL	DESCRIPTION
	DUPLEX / DOUBLE DUPLEX RECEPTACLE, NEMA 5-20R, EMERGENCY POWER
	DUPLEX / DOUBLE DUPLEX RECEPTACLE, NEMA 5-20R
CD CR	CORD REEL / CORD DROP
	SIMPLEX RECEPTACLE, NEMA 5-20R
	SPECIAL RECEPTACLE
	RECESSED FLOOR BOX OR POKE-THRU
	CEILING MOUNTED RECEPTACLE, NEMA 5-20R
	SURFACE MOUNT MULTI-OUTLET ASSEMBLY
H $	HORSE POWER RATED SWITCH

FIRE ALARM SYMBOLS

SYMBOL	DESCRIPTION
FAP	CONTROL PANEL
NEP	NOTIFICATION APPLIANCE CIRCUIT EXTENDER PANEL
FAA	REMOTE ANNUNCIATOR PANEL
PIV	POST INDICATOR VALVE AND TAMPER SWITCH
PS	AIR PRESSURE SWITCH
TS	VALVE TAMPER SWITCH
FS	WATER FLOW SWITCH
SD BR	BEAM SMOKE REFLECTOR
SD B#	LINEAR BEAM SMOKE DETECTOR
SD	LINEAR BEAM SMOKE DETECTOR
DSD	DUCT SMOKE DETECTOR
RI	DUCT SMOKE DETECTOR REMOTE INDICATOR STATION
H	HEAT DETECTOR ADDRESSABLE
J LHD	LINEAR HEAT DETECTION CABLE
F	ADDRESSABLE FIRE ALARM MANUAL PULL STATION
SD	SMOKE DETECTOR
#	AUDIO/VISUAL NOTIFICATION APPLIANCE, CEILING MOUNTED
#	VISUAL NOTIFICATION APPLIANCE, CEILING MOUNTED
	SPEAKER NOTIFICATION APPLIANCE, CEILING MOUNTED
#	SPEAKER/VISUAL NOTIFICATION APPLIANCE, CEILING MOUNTED
A	HORN NOTIFICATION APPLIANCE, WALL MOUNTED
#	AUDIO/VISUAL NOTIFICATION APPLIANCE, WALL MOUNTED
S	SPEAKER NOTIFICATION APPLIANCE, WALL MOUNTED
S #	SPEAKER/VISUAL NOTIFICATION APPLIANCE, WALL SWITCH
	VISUAL NOTIFICATION APPLIANCE, WALL MOUNTED
AM	ADDRESSABLE MONITOR MODULE
AR	ADDRESSABLE RELAY MODULE
	MAGNETIC DOOR HOLDER
HD	HVAC ELEVATOR HOISTWAY DAMPER
SD	HVAC SMOKE DAMPER
ZAM	ZONE ADAPTER MODULES
CO	CO DETECTOR
VCC	VOICE COMMAND CENTER
DCD	DUCT CO DETECTOR
F	BELL
S	HIGH FIDELITY SPEAKER - CEILING MOUNT
S	HIGH FIDELITY SPEAKER - WALL MOUNT
ASD	AIR SAMPLING SMOKE DETECTOR
FSD	FIRE SMOKE DAMPER

LIGHTING SYMBOLS

SYMBOL	DESCRIPTION
	CRITICAL FIXTURE (FULL SHADED)
	LIFE SAFETY (HALF SHADED)
	RECESSED MOUNTED (DIAGONAL SLASH)
	SURFACE MOUNTED
	SURFACE OR PENDANT FIXTURE (DOTS)
	POLE MOUNTED SITE FIXTURE
	RECESSED DOWNLIGHT (ARROW INDICATES WALL WASH)
	EMERGENCY LIGHT
	SINGLE / DOUBLE FACED EXIT SIGN
	EMERGENCY REMOTE HEAD (SINGLE/DOUBLE)
	COMBINATION EXIT/EMERGENCY LIGHT
	WALL MOUNTED FIXTURE (STEM OR STEMS)
	CYLINDRICAL FIXTURE (ARROW INDICATES WALL WASH)

LIGHTING CONTROL SYMBOLS

SYMBOL	DESCRIPTION
$	WALL SWITCH
D#	CEILING MOUNT SENSOR, DUAL TECHNOLOGY
I#	CEILING MOUNT SENSOR, INFRARED TECHNOLOGY
U#	CEILING MOUNT SENSOR, ULTRASONIC TECHNOLOGY
PC	PHOTOCELL

GENERAL NOTES

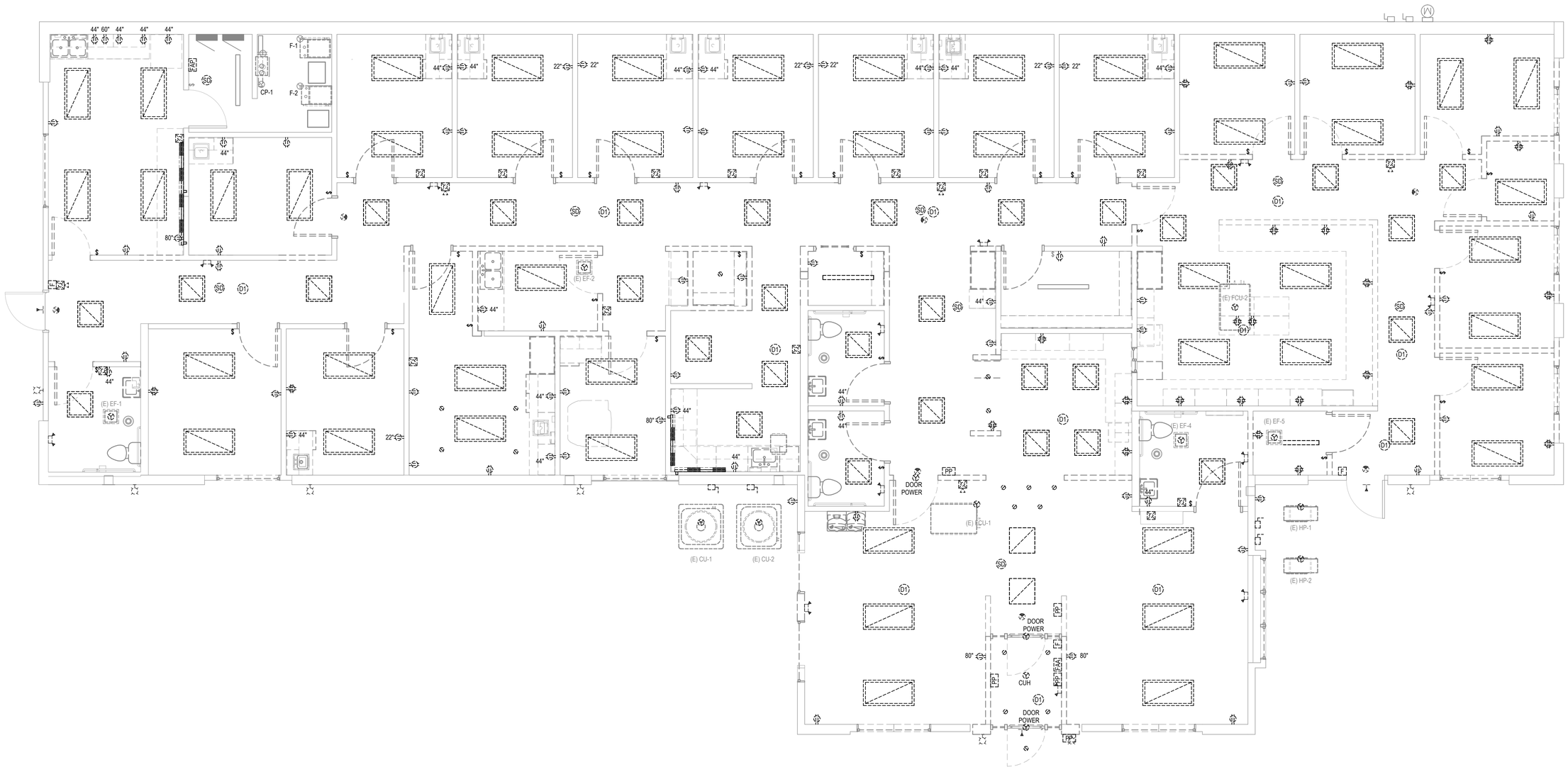
1. ALL INSTALLATIONS SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES INCLUDING, BUT NOT LIMITED TO, THE NATIONAL ELECTRICAL CODE (NEC), INTERNATIONAL BUILDING CODE (IBC), AMERICANS WITH DISABILITIES ACT (ADA) ACCESSIBILITY GUIDELINES, AND THE INTERNATIONAL ENERGY CONSERVATION CODE (IECC). THE AUTHORITY HAVING JURISDICTION (AHJ) SHALL HAVE FINAL APPROVAL OF ALL INSTALLATIONS AND PRACTICES.
2. ALL MATERIALS FURNISHED SHALL BE NEW, FREE OF DEFECTS, AND LISTED BY A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL) UNLESS NOTED OTHERWISE.
3. INSTALLATION OF EQUIPMENT SHALL COMPLY WITH CURRENT STANDARDS AND SPECIFICATIONS APPROVED BY THE AHJ. INSTALL ALL CABLES AND WIRING IN CONDUIT OR RACEWAY UNLESS NOTED OTHERWISE. DO NOT SUPPORT CABLES OR WIRING FROM CEILING DEVICES, PIPING, DUCTWORK, OR CEILING FRAMING. PROVIDE NEW WIRING FOR ALL BRANCH CIRCUITS AND FEEDERS.
4. FEEDERS SHOWN ON DRAWINGS ARE SCHEMATIC ONLY. CONDUIT RUNS SHALL NOT INCLUDE BENDS GREATER THAN 90 DEGREES. CONDUITS ABOVE GRADE SHALL BE RUN PARALLEL OR PERPENDICULAR TO BUILDING LINES AND STRUCTURE.
5. ALL FEEDER AND BRANCH CIRCUITS TO PANELS, MOTORS, LIGHT FIXTURES, RECEPTACLES, AND GENERAL DISTRIBUTION EQUIPMENT SHALL INCLUDE AN EQUIPMENT GROUNDING CONDUCTOR SIZED PER THE NEC. THE CONDUIT SYSTEM SHALL NOT BE USED AS AN EQUIPMENT GROUND.
6. REFER TO MECHANICAL AND PLUMBING EQUIPMENT SCHEDULES FOR EQUIPMENT CONNECTIONS, DISCONNECT REQUIREMENTS, AND CONTROLS. THE ELECTRICAL CONTRACTOR (EC) SHALL PROVIDE AND INSTALL ALL ITEMS INDICATED AS "BY EC" ON THE MECHANICAL AND PLUMBING SCHEDULES.
7. ELECTRICAL SCOPE OF WORK SHALL BE INSTALLED AS DIRECTED BY THE GENERAL CONTRACTOR (GC). PROVIDE TEMPORARY AND PERMANENT CONNECTIONS AS REQUIRED TO MEET PHASING REQUIREMENTS. COORDINATE ALL REQUIRED OUTAGES WITH THE CM AND OWNER AS OUTLINED IN THE SPECIFICATIONS.
8. RELOCATE EXISTING CONDUITS, WIRING, AND BOXES AS REQUIRED FOR INSTALLATION OF MECHANICAL AND PLUMBING EQUIPMENT, PIPING, TEMPORARY AND PERMANENT WALLS, AND OTHER STRUCTURES.
9. ALL WIRING AND FEEDER SIZES SHOWN ARE BASED ON COPPER CONDUCTORS UNLESS NOTED OTHERWISE. USE OF ALUMINUM FEEDER CONDUCTORS SHALL REQUIRE ENGINEER REVIEW OF FAULT CURRENT AND VOLTAGE DROP PRIOR TO INSTALLATION.
10. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF ELECTRICAL SYSTEMS AND ALL EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS TO MAINTAIN NEC-REQUIRED CLEARANCES, INCLUDING WORKING CLEARANCES AT ELECTRICAL DISTRIBUTION EQUIPMENT AND INSTALLATIONS ABOVE ACCESSIBLE CEILINGS.
11. CONDUIT FOR POWER WIRING MAY BE INSTALLED BELOW FLOOR SLABS UNLESS NOTED OTHERWISE. RACEWAYS FOR LOW -VOLTAGE CABLING (CONTROLS, TELECOMMUNICATIONS, ETC.) SHALL NOT BE INSTALLED BELOW OR WITHIN FLOOR SLABS UNLESS SPECIFICALLY NOTED. WHERE LOW-VOLTAGE CABLING IS ROUTED BELOW OR WITHIN SLABS, CONTRACTOR SHALL VERIFY CABLING IS LISTED FOR SUCH USE.
12. ALL ELECTRICAL CONDUCTORS SHALL BE STRANDED COPPER WITH TYPE THHN/THWN INSULATION UNLESS NOTED OTHERWISE. MINIMUM WIRE SIZE SHALL BE #12 AWG FOR GENERAL WIRING AND #10 AWG FOR HOMERUNS. REFER TO SPECIFICATIONS OR SHEET -SPECIFIC NOTES FOR ADDITIONAL INFORMATION.
13. ALL NEW CIRCUITS REQUIRING NEUTRAL CONDUCTORS SHALL HAVE DEDICATED NEUTRALS. SHARED NEUTRALS ARE NOT PERMITTED.
14. A GREEN EQUIPMENT GROUNDING CONDUCTOR SHALL BE PROVIDED TO ALL LOADS. THE CONDUCTOR SHALL BE SIZED PER THE NEC. ALL GROUNDING CONDUCTORS SHALL BE INSTALLED IN CONDUIT.
15. ALL BUILDING WIRING SHALL BE INSTALLED IN CONDUIT TO ACHIEVE CIRCUITING AS SHOWN. MINIMUM BRANCH CONDUIT SIZE SHALL BE 3/4" UNLESS NOTED OTHERWISE. SIZE CONDUCTORS PER NEC AMPACITY AND CONDUIT FILL REQUIREMENTS.
16. ALL HOME RUN CONDUITS FROM ELECTRICAL PANELBOARDS TO THE FIRST JUNCTION BOX SHALL BE A MINIMUM OF 1" CONDUIT AND SHALL TERMINATE IN A 4-11/16" SQUARE BY 2-1/8" DEEP (MINIMUM) JUNCTION BOX. JUNCTION BOX COVERS SHALL BE PAINTED AND CLEARLY MARKED WITH CIRCUIT NUMBERS. EACH HOME RUN RACEWAY SHALL HAVE SPARE CAPACITY FOR ONE (1) ADDITIONAL CIRCUIT AND ITS DEDICATED NEUTRAL, BASED ON NEC CHAPTER 9, TABLE 1 AND ANNEX C.
17. MC CABLING SHALL NOT BE USED UNLESS SPECIFICALLY NOTED OTHERWISE.
18. ALL CONDUITS SHALL BE CONCEALED IN WALLS, ABOVE CEILINGS, ETC., WHERE POSSIBLE.
19. ALL CONDUIT ROUTED EXPOSED IN FINISHED SPACES SHALL BE ROUTED PARALLEL OR PERPENDICULAR TO WALLS AND CEILINGS. EXPOSED CONDUIT ROUTING SHALL BE REVIEWED WITH THE ARCHITECT AND ENGINEER PRIOR TO INSTALLATION.
20. PRE-MANUFACTURED SURFACE RACEWAY (E.G., WIREMOLD OR EQUAL) SHALL HAVE USABLE AREA EQUIVALENT TO THE SUBSTITUTED CONDUIT. EXPOSED SURFACE RACEWAY SHALL NOT BE INSTALLED WITHOUT PRIOR APPROVAL FROM THE ARCHITECT AND ENGINEER. ALL SURFACE RACEWAYS SHALL BE ROUTED PARALLEL OR PERPENDICULAR TO WALLS AND CEILINGS AND SHALL BE FACTORY OR FIELD PAINTED TO MATCH THE MOUNTING SURFACE.
21. COORDINATE THE EXACT LOCATION OF ALL DEVICES ABOVE OR BELOW COUNTERTOPS OR SIMILAR INSTALLATIONS WITH OTHER TRADES, ARCHITECTURAL ELEVATIONS, AND APPROVED SUBMITTALS PRIOR TO ROUGH -IN. ARCHITECTURAL ELEVATIONS AND DETAILS TAKE PRECEDENCE OVER ELECTRICAL DRAWINGS.
22. ALL CUTTING AND PATCHING REQUIRED FOR CONDUITS, DEVICES, OR OTHER ELECTRICAL EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR UNLESS NOTED OTHERWISE.
23. ALL PENETRATIONS THROUGH FIRE -RATED WALLS, FLOORS, AND CEILINGS SHALL BE SEALED WITH AN NRTL-APPROVED FIRESTOP SYSTEM EQUAL TO OR EXCEEDING THE RATING OF THE PENETRATED ASSEMBLY.
24. COORDINATE LOCATIONS OF ALL ELECTRICAL ITEMS INCLUDING, BUT NOT LIMITED TO, LIGHTING FIXTURES, CEILING -MOUNTED DEVICES (OCCUPANCY SENSORS, FIRE ALARM DEVICES, SPEAKERS, ETC.), SPRINKLER HEADS, AND HVAC DIFFUSERS/RETURNS. CENTER DEVICES IN CEILING TILES WHERE POSSIBLE.
25. ALL CEILING DEVICES REQUIRING WIRE TERMINATIONS SHALL BE INSTALLED WITH MANUFACTURER -RECOMMENDED BACK BOXES AND SUPPORTS AS REQUIRED BY THE NEC OR MANUFACTURER.
26. COORDINATE ALL MOUNTING OF ELECTRICAL MATERIALS, EQUIPMENT, AND DEVICES REQUIRED FOR EQUIPMENT SUPPLIED BY OTHERS. ELECTRICAL INSTALLATIONS SHALL NOT INTERFERE WITH OPERATION OR ACCESS. ALL SUCH INSTALLATIONS SHALL BE REVIEWED AND APPROVED BY THE SUPPLYING CONTRACTOR PRIOR TO ROUGH -IN.
27. BOXES LOCATED ON OPPOSITE SIDES OF FIRE -RATED WALLS SHALL BE OFFSET A MINIMUM OF 24" OR SHALL BE PROTECTED WITH A FIRE -RATED MATERIAL EQUAL TO OR GREATER THAN THE WALL RATING.
28. BOXES LOCATED ON OPPOSITE SIDES OF NON -FIRE-RATED WALLS SHALL BE OFFSET A MINIMUM OF 6".
29. REMOVE AND REINSTALL CEILING TILES AS NECESSARY TO PERFORM REQUIRED ELECTRICAL WORK. REPLACE ALL DAMAGED CEILING TILES WITH NEW TILES OF THE SAME MANUFACTURER AND MODEL.
30. EXISTING CIRCUITS SHOWN ARE BASED ON AVAILABLE RECORD DRAWINGS. NEW CIRCUITS ARE SHOWN FOR DESIGN INTENT USING EXISTING CIRCUITS WHERE POSSIBLE. CONTRACTOR MAY ADJUST CIRCUITS BASED ON FIELD CONDITIONS. ALL CHANGES SHALL BE DOCUMENTED ON AS -BUILT DRAWINGS AND SUBMITTED TO THE ENGINEER.
31. PROVIDE FIELD TYPED PANELBOARD DIRECTORIES TO REFLECT AS-CONSTRUCTED CONDITIONS. FIELD VERIFY DURING CONSTRUCTION AND REFLECT EXISTING CONDITIONS.
32. ALL REQUESTS FOR CHANGE PROPOSALS SHALL INCLUDE DETAILED BREAKDOWNS OF MATERIALS, LABOR, AND SUBCONTRACTOR COSTS. SUPPLIER QUOTES SHALL BE PROVIDED ON SUPPLIER LETTERHEAD. LABOR UNITS FOR NEW MATERIAL INSTALLATIONS SHALL NOT EXCEED 75% OF NECA 1 "NORMAL CONDITION" RATES WITHOUT SPECIFIC APPROVAL.

DEMOLITION NOTES

1. REFER TO SPECIFICATION SECTION 260502 FOR ADDITIONAL DEMOLITION REQUIREMENTS.
2. DRAWINGS ARE INTENDED TO INDICATE THE SCOPE OF WORK REQUIRED FOR THIS PROJECT. THEY ARE NOT INTENDED TO SHOW THE LOCATION OF ALL DEVICES, JUNCTION BOXES, CONDUITS, OR OTHER COMPONENTS. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING TO VERIFY ALL EXISTING CONDITIONS.
3. INSPECT AND TEST EXISTING ELECTRICAL DEVICES AND EQUIPMENT INTENDED FOR REMOVAL AND REINSTALLATION FOR GOOD CONDITION AND PROPER OPERATION PRIOR TO DEMOLITION. RECORD AND PHOTOGRAPH ALL DEFICIENCIES BEFORE DISCONNECTION OR REMOVAL. ITEMS FOUND DAMAGED OR INOPERATIVE AFTER REMOVAL SHALL BE REPLACED AT THE CONTRACTOR 'S EXPENSE.
4. NO DEMOLITION SHALL OCCUR UNTIL COORDINATION WITH OTHER TRADES HAS BEEN COMPLETED FOR ALL AFFECTED DEVICES, EQUIPMENT, WIRING, PIPING, DUCTWORK, AND OTHER COMPONENTS. DAMAGE TO ITEMS INTENDED TO REMAIN OR BE REINSTALLED SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.
5. EXISTING CONDUIT IN GOOD CONDITION MAY BE REUSED IN PLACE. RELOCATING EXISTING CONDUIT IS NOT PERMITTED. INSTALL EQUIPMENT GROUNDING CONDUCTORS IN ALL REUSED CONDUITS TO ENSURE A PROPER GROUND PATH.
6. INVESTIGATION OF EXISTING POWER AND LIGHTING SYSTEMS IS REQUIRED AS PART OF THE BIDDING PROCESS TO DETERMINE THE FULL EXTENT OF DEMOLITION. THE ELECTRICAL CONTRACTOR (EC) SHALL REMOVE PORTIONS OF EXISTING SYSTEMS NOT EXPLICITLY SHOWN BUT REQUIRED FOR THIS PHASE OF WORK. COORDINATE WITH THE GC, OWNER, AND ENGINEER TO DETERMINE WHICH SYSTEMS MUST REMAIN ACTIVE AND WHICH SHALL BE REMOVED.
7. COORDINATE WORK WITH THE GC AND OWNER TO FACILITATE DEMOLITION AND NEW CONSTRUCTION.
8. THE EC SHALL FIELD -VERIFY THE ACTUAL LOCATION AND SIZE OF ALL EXISTING CONDUIT, WIRING, AND EQUIPMENT.
9. REMOVE POWER, LIGHTING, CONTROL, COMMUNICATIONS, AND FIRE ALARM DEVICES SHOWN UNLESS NOTED OTHERWISE. REMOVE ALL ASSOCIATED AND UNUSED CONDUIT, RACEWAYS, WIRING, AND JUNCTION BOXES COMPLETELY BACK TO THE SOURCE (PANELBOARD, JUNCTION BOX, ETC). REMOVE ALL EQUIPMENT AND CONDUIT HANGERS, SUPPORTS, AND ACCESSORIES NOT BEING REUSED.
10. PROVIDE TEMPORARY BACK -FEEDING OR RE -CIRCUITING AS REQUIRED TO MAINTAIN OPERATION OF EXISTING -TO-REMAIN ITEMS AFFECTED BY DEMOLITION. COORDINATE ALL OUTAGES WITH THE OWNER A MINIMUM OF FOUR (4) WORKING DAYS IN ADVANCE OR AS REQUIRED BY THE SPECIFICATIONS.
11. ALL SALVAGED MATERIAL SHALL REMAIN THE PROPERTY OF THE OWNER AND SHALL BE DELIVERED TO A LOCATION DESIGNATED BY THE OWNER. IF THE OWNER DECLINES TO RETAIN SALVAGED MATERIAL, IT BECOMES THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OR RECYCLED ACCORDING TO APPLICABLE REQUIREMENTS.
12. RELOCATE EXISTING CONDUITS ABOVE CEILINGS OR IN WALLS AS REQUIRED TO ACCOMMODATE ANY MODIFICATIONS (WALL RELOCATION, HVAC OR PLUMBING MODIFICATIONS, ETC) ASSOCIATED WITH THE PROJECT. EXTEND FEEDERS OR BRANCH WIRING AS REQUIRED.
13. PROVIDE CUTTING, PATCHING, AND RESTORATION OF FINISHES AS REQUIRED FOR COMPLETION OF WORK. PATCH AND REPAIR ALL FLOOR, WALL, AND CEILING OPENINGS RESULTING FROM DEMOLITION THAT WILL NOT BE REUSED. RESTORE SURFACES TO MATCH EXISTING CONDITIONS. COORDINATE WITH FINISH CONTRACTORS.
14. PATCH EXISTING OPENINGS IN WALLS TO REMAIN WITH DRYWALL, TAPED AND PAINTED TO MATCH EXISTING CONDITIONS. BLANK COVER PLATES OVER UNUSED OPENINGS ARE NOT PERMITTED UNLESS NOTED OTHERWISE. ABANDONED CONDUITS EXTENDING FROM WALLS ABOVE CEILINGS SHALL BE CUT FLUSH WITH THE STUD AND PLUGGED.
15. PROTECT ALL WALLS, CEILINGS, FLOORS, LIGHTING, AND OTHER FINISHED SURFACES NOT SCHEDULED FOR DEMOLITION. DAMAGE CAUSED BY THE CONTRACTOR SHALL BE REPAIRED TO MATCH EXISTING CONDITIONS AT NO ADDITIONAL COST TO THE OWNER.
16. DO NOT INTERRUPT EXISTING UTILITIES SERVING OCCUPIED OR OPERATING FACILITIES EXCEPT WHEN AUTHORIZED IN WRITING BY THE OWNER AND AHJ. PROVIDE TEMPORARY SERVICES DURING UTILITY INTERRUPTIONS AS ACCEPTABLE TO THE OWNER AND AHJ.
17. SEAL ALL UNUSED OPENINGS RESULTING FROM REMOVAL OF ELECTRICAL EQUIPMENT TO MATCH EXISTING CONSTRUCTION. UNUSED OPENINGS IN FIRE -RATED WALLS SHALL BE SEALED WITH AN NRTL -LISTED FIRESTOP SYSTEM MATCHING THE EXISTING FIRE RATING.
18. REMOVE AND REINSTALL CEILING TILES AS REQUIRED TO PERFORM ELECTRICAL WORK OUTSIDE THE CONTRACT LIMITS OF CONSTRUCTION. REPLACE ALL DAMAGED TILES WITH NEW TILES OF THE SAME MANUFACTURER AND MODEL. RECORD E

GENERAL NOTES:

1. E.C. TO REUSE EXISTING CIRCUITS WHERE POSSIBLE. SEE NEW WORK FOR MORE INFORMATION.



N

2 ELECTRICAL DEMOLITION PLAN

1/4" = 1'-0"

SIMONSON
PLANNING ■ ARCHITECTURE ■ INTERIORS
Simonson + Associates Architects LLC
1717 Ingersoll Ave. Suite 117, Des Moines, Iowa 50309
Ph: 515-440-5626
www.simonsonassoc.com

This drawing has been prepared by the Architect, or under the Architect's direction and control. This drawing is provided as an instrument of service by the Architect and is not intended for sale on this project only. Any reproduction, sale, or disclosure of information contained herein without the prior written consent of the Architect is strictly prohibited. © Copyright Simonson & Associates Architects, LLC.

BROADLAWNS BRAIN & MEMORY CENTER

3714 INGERSOLL AVENUE
DES MOINES, IA 50309

Rev. #	Issue / Revision	Date
3	BID SET	09-28-2026

Proj. No. SAA Proj. Mgr.

14138B

Sheet Title

ELECTRICAL DEMOLITION PLANS

Sheet No.

ED101

KED bluestone
5518 NW 88th Street
Johnston, IA 50131
515-727-0700
www.KEDbluestone.com

PROJECT NUMBER: 126-080
KEDbluestone RESERVES PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA SHOWN THEREON. SAID DRAWING AND/OR DATA ARE THE EXCLUSIVE PROPERTY OF KEDbluestone AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF KEDbluestone. © 2026 KEDbluestone

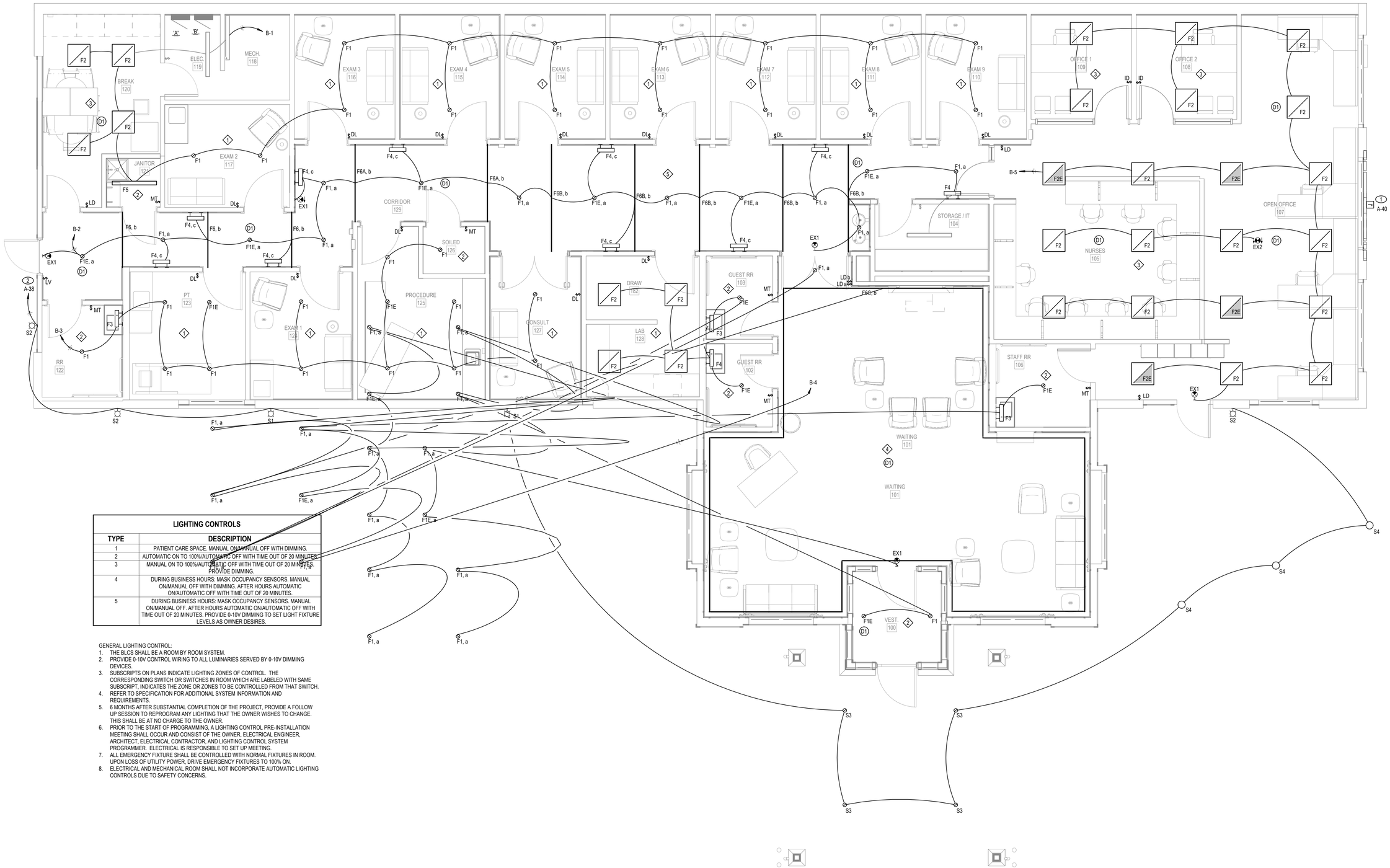
Autodesk Docs://Broadlawns Brain Wellness/126-080_MEP_Broadlawns Brain Wellness_D2_R25.rvt
10/1/2026 1:22:15 PM

GENERAL NOTES:

1. REUSE EXISTING LIGHTING CIRCUITS WHERE POSSIBLE.

KEYED NOTES:

1. CIRCUIT TO THE SAME CIRCUIT AS EXISTING MONUMENT SIGN.
2. CIRCUIT TO THE EXISTING CONTROLLED EXTERIOR LIGHTING CIRCUIT.



LIGHTING CONTROLS	
TYPE	**DESCRIPTION**
1	PATIENT CARE SPACE. MANUAL ON/MANUAL OFF WITH DIMMING.
2	AUTOMATIC ON TO 100%/AUTOMATIC OFF WITH TIME OUT OF 20 MINUTES.
3	MANUAL ON TO 100%/AUTOMATIC OFF WITH TIME OUT OF 20 MINUTES. PROVIDE DIMMING.
4	DURING BUSINESS HOURS: MASK OCCUPANCY SENSORS. MANUAL ON/MANUAL OFF WITH DIMMING. AFTER HOURS AUTOMATIC ON/AUTOMATIC OFF WITH TIME OUT OF 20 MINUTES.
5	DURING BUSINESS HOURS: MASK OCCUPANCY SENSORS. MANUAL ON/MANUAL OFF. AFTER HOURS AUTOMATIC ON/AUTOMATIC OFF WITH TIME OUT OF 20 MINUTES. PROVIDE 0-10V DIMMING TO SET LIGHT FIXTURE LEVELS AS OWNER DESIRES.

GENERAL LIGHTING CONTROL:

1. THE BLCS SHALL BE A ROOM BY ROOM SYSTEM.
2. PROVIDE 0-10V CONTROL WIRING TO ALL LUMINARIES SERVED BY 0-10V DIMMING DEVICES.
3. SUBSCRIPTS ON PLANS INDICATE LIGHTING ZONES OF CONTROL. THE CORRESPONDING SWITCH OR SWITCHES IN ROOM WHICH ARE LABELED WITH SAME SUBSCRIPT, INDICATES THE ZONE OR ZONES TO BE CONTROLLED FROM THAT SWITCH.
4. REFER TO SPECIFICATION FOR ADDITIONAL SYSTEM INFORMATION AND REQUIREMENTS.
5. 6 MONTHS AFTER SUBSTANTIAL COMPLETION OF THE PROJECT, PROVIDE A FOLLOW UP SESSION TO REPROGRAM ANY LIGHTING THAT THE OWNER WISHES TO CHANGE. THIS SHALL BE AT NO CHARGE TO THE OWNER.
6. PRIOR TO THE START OF PROGRAMMING, A LIGHTING CONTROL PRE-INSTALLATION MEETING SHALL OCCUR AND CONSIST OF THE OWNER, ELECTRICAL ENGINEER, ARCHITECT, ELECTRICAL CONTRACTOR, AND LIGHTING CONTROL SYSTEM PROGRAMMER. ELECTRICAL IS RESPONSIBLE TO SET UP MEETING.
7. ALL EMERGENCY FIXTURE SHALL BE CONTROLLED WITH NORMAL FIXTURES IN ROOM. UPON LOSS OF UTILITY POWER, DRIVE EMERGENCY FIXTURES TO 100% ON.
8. ELECTRICAL AND MECHANICAL ROOM SHALL NOT INCORPORATE AUTOMATIC LIGHTING CONTROLS DUE TO SAFETY CONCERNS.

N

1 ELECTRICAL LIGHTING PLANS

1/4" = 1'-0"

SIMONSON
PLANNING ■ ARCHITECTURE ■ INTERIORS
Simonson + Associates Architects LLC
1717 Ingersoll Ave. Suite 117, Des Moines, Iowa 50309
Ph. 515-440-5626
www.simonsonassoc.com

This drawing has been prepared by the Architect, or under the Architect's direct supervision. This drawing is provided as an instrument of service by the Architect and is not intended for sale on this project only. Any reproduction, use, or disclosure of information contained herein without the prior written consent of the Architect is strictly prohibited. © Copyright 2026 Simonson & Associates Architects, LLC.

BROADLAWNS BRAIN & MEMORY CENTER

3714 INGERSOLL AVENUE
DES MOINES, IA 50309

Rev. #	Issue / Revision	Date
3	BID SET	09-28-2026

Proj. No. 14138B | SAA | Proj. Mgr.

Sheet Title

ELECTRICAL LIGHTING PLANS

Sheet No.

EL101

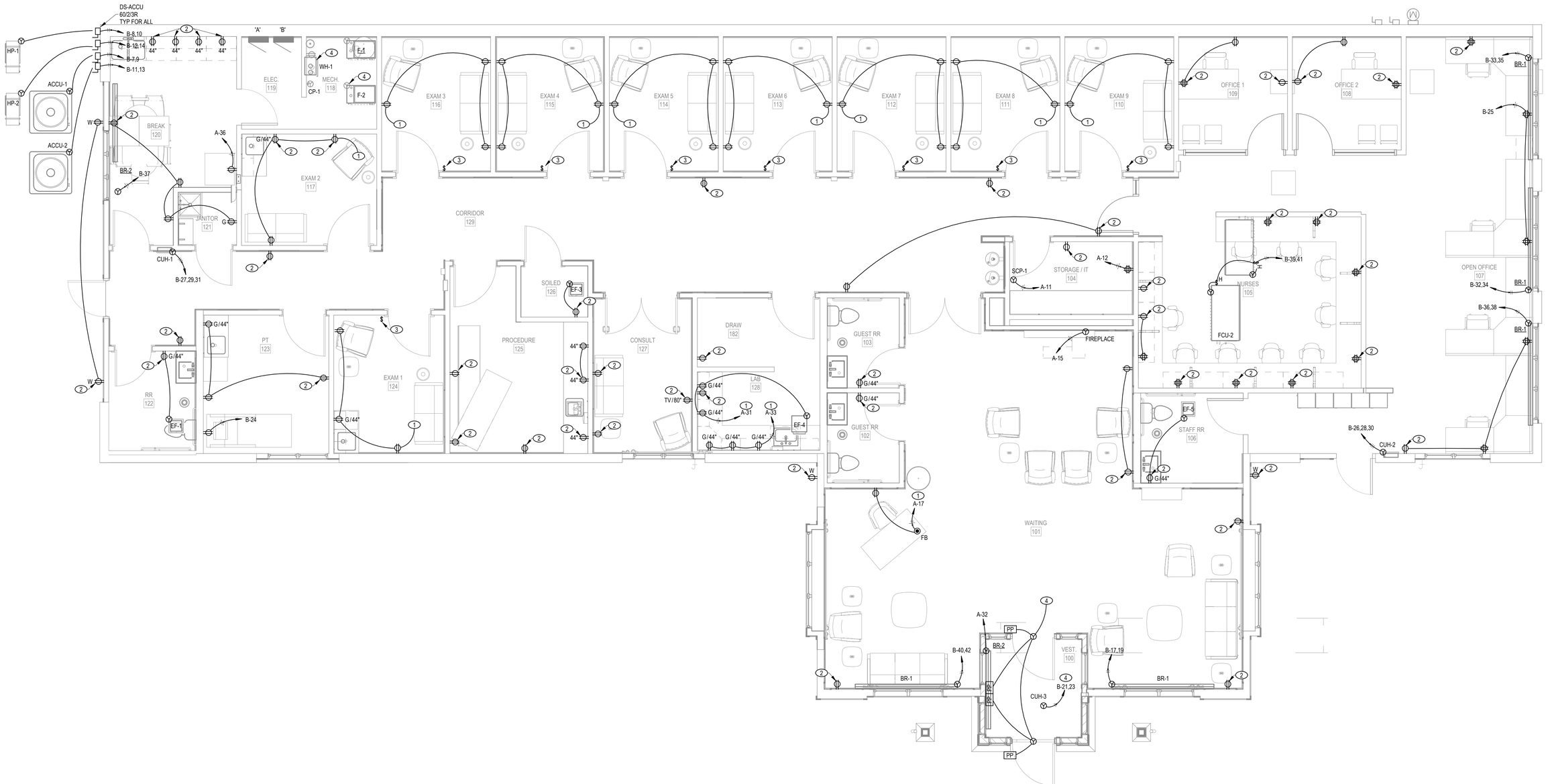
KED bluestone
5518 NW 88th Street
Johnston, IA 50131
515-727-0705
www.KEDbluestone.com

PROJECT NUMBER: 126-080
KEDbluestone RESERVES PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA SHOWN THEREON. SAID DRAWING AND/OR DATA ARE THE EXCLUSIVE PROPERTY OF KEDbluestone AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF KEDbluestone. © 2026 KEDbluestone

Autodesk Docs://Broadlawns Brain Wellness/124-080_MEP_Broadlawns Brain Wellness_D2_R26.rvt
10/9/2025 1:29:19 PM

KEYED NOTES:

1. REUSE EXISTING RECEPTACLE CIRCUIT WITHIN THE ROOM
2. REPLACE EXISTING RECEPTACLE IN PLACE. REUSE EXISTING CIRCUIT.
3. BOTTOM PART OF RECEPTACLES INSTALLED AT 18" AFF WITHIN THE ROOM SHALL BE CONTROLLED BY A WALL MOUNTED SWITCH. INSTALL SWITCH IN A MULTI GANG BOX ALONG WITH LIGHTING CONTROLS.
4. REUSE EXISTING EQUIPMENT CIRCUIT. EXTEND FEEDER AS NEEDED.



N

2 ELECTRICAL POWER PLAN

1/4" = 1'-0"

SIMONSON
PLANNING ■ ARCHITECTURE ■ INTERIORS
Simonson + Associates Architects LLC
1717 Ingersoll Ave. Suite 117, Des Moines, Iowa 50309
Ph. 515-440-5626
www.simonsonassoc.com

This drawing has been procured by the Architect, or under the Architect's supervision. This drawing is provided as an instrument of service by the Architect and is not to be reproduced for sale on this project only. Any reproduction, use, or disclosure of information contained herein is without the prior written consent of the Architect is strictly prohibited. © Copyright 2026 Simonson & Associates Architects, LLC

BROADLAWNS BRAIN & MEMORY CENTER

3714 INGERSOLL AVENUE
DES MOINES, IA 50309

Rev. #	Issue / Revision	Date
3	BID SET	09-28-2026

Proj. No. 14138B | SAA | Proj. Mgr.

Sheet Title

ELECTRICAL POWER PLANS

Sheet No.

EP101

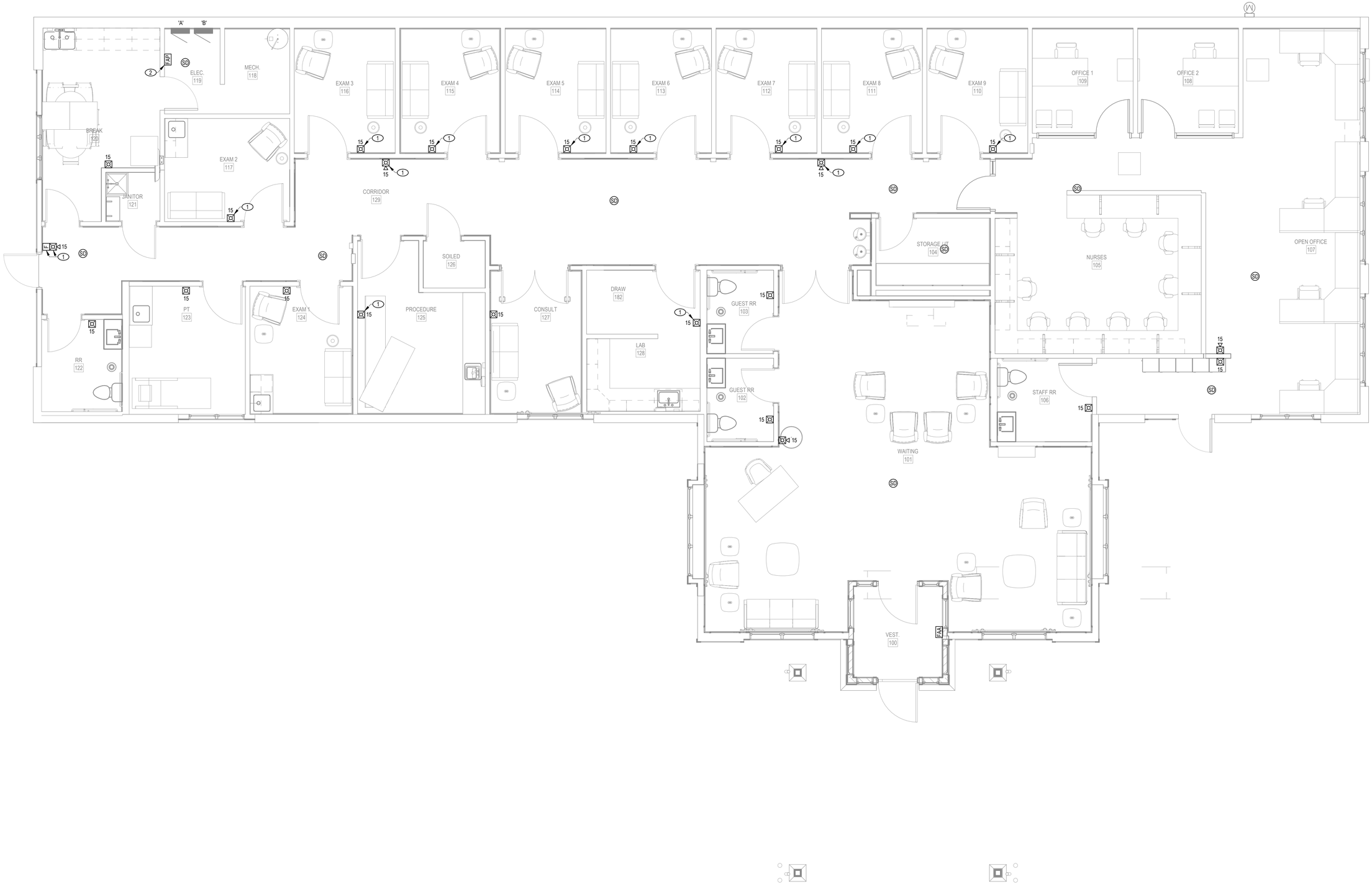
KED bluestone
5518 NW 88th Street
Johnston, IA 50131
515-727-0705
www.KEDbluestone.com

PROJECT NUMBER: 126-080
KEDbluestone RESERVES PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA SHOWN THEREON. SAID DRAWING AND/OR DATA ARE THE EXCLUSIVE PROPERTY OF KEDbluestone AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF KEDbluestone. © 2026 KEDbluestone

Autodesk Docs://Broadlawns Brain Wellness/124-080_MEP_Broadlawns Brain Wellness_D25_R25.rvt
10/9/2025 1:22:22 PM

KEYED NOTES:

1. REUSE EXISTING DEVICE LOCATION.
2. REUSE EXISTING FIRE ALARM PANEL CIRCUIT.



N

1 ELECTRICAL SYSTEM PLANS

1/4" = 1'-0"

SIMONSON
PLANNING ■ ARCHITECTURE ■ INTERIORS

Simonson + Associates Architects LLC
1717 Ingersoll Ave. Suite 117, Des Moines, Iowa 50309
Ph. 515-440-5626
www.simonsonassoc.com

This drawing has been procured by the Architect, or under the Architect's direction. This drawing is provided as an instrument of service by the Simonson + Associates Architects LLC. Reproduction, use, or disclosure of information contained herein, without the prior written consent of the Architect is strictly prohibited. © Copyright 2026 Simonson & Associates Architects, LLC.

BROADLAWNS BRAIN & MEMORY CENTER

3714 INGERSOLL AVENUE
DES MOINES, IA 50309

Rev. #	Issue / Revision	Date
3	BID SET	09-29-2026

Proj. No. **14138B** SAA Proj. Mgr.

Sheet Title

ELECTRICAL SYSTEM PLANS

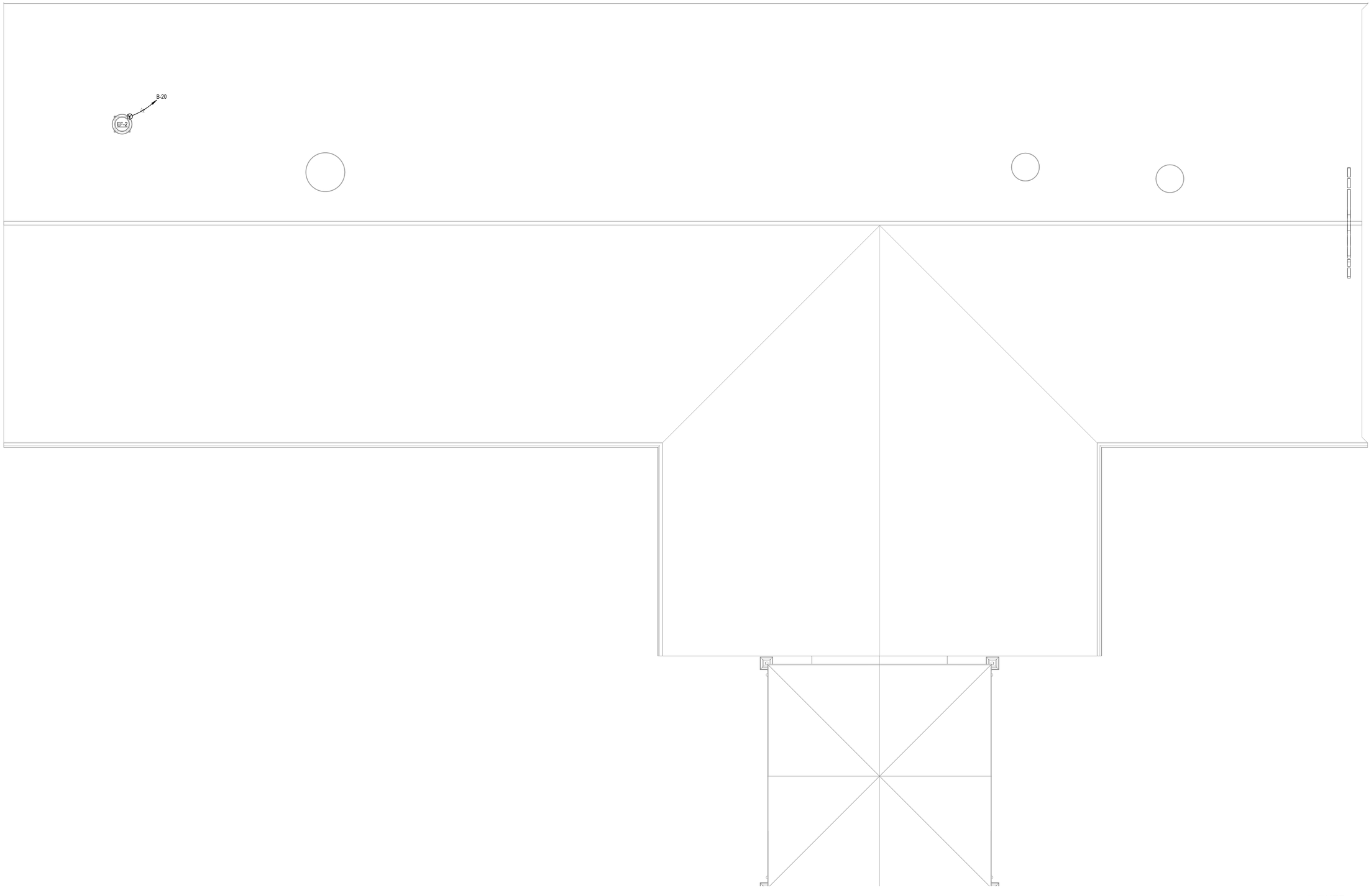
Sheet No.

ES101

KED bluestone
5518 NW 88th Street
Johnston, IA 50131
515-727-0700
www.KEDbluestone.com

PROJECT NUMBER: 126-080
KEDbluestone RESERVES PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA SHOWN THEREON. SAID DRAWING AND/OR DATA ARE THE EXCLUSIVE PROPERTY OF KEDbluestone AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF KEDbluestone. © 2026 KEDbluestone

Autodesk Docs://Broadlawns Brain Wellness/126-080_MEP_Broadlawns Brain Wellness_D2_R26.rvt
10/9/2026 1:22:24 PM



N

1 ELECTRICAL ROOF PLAN

1/4" = 1'-0"

KED bluestone
5518 NW 88th Street
Johnston, IA 50131
515-727-0700
www.KEDbluestone.com

PROJECT NUMBER: 126-080
KEDbluestone RESERVES PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA SHOWN THEREON. SAID DRAWING AND/OR DATA ARE THE EXCLUSIVE PROPERTY OF KEDbluestone AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF KEDbluestone. © 2026 KEDbluestone

This drawing has been prepared by the Architect, or under the Architect's direct supervision. This drawing is provided as an instrument of service by the Architect and is to be used only for the purposes and on the project stated or noted thereon. Any reproduction, use, or disclosure of this drawing without the written permission of the Architect is strictly prohibited. © Copyright 2026 by Simonson & Associates Architects, LLC

SIMONSON
PLANNING ■ ARCHITECTURE ■ INTERIORS
Simonson + Associates Architects LLC
1717 Ingersoll Ave. Suite 117, Des Moines, Iowa 50309
Ph: 515-440-5626
www.simonsonassoc.com

BROADLAWNS BRAIN & MEMORY CENTER

3714 INGERSOLL AVENUE DES MOINES, IA 50309

Rev. #	Issue / Revision	Date
3	BID SET	09-28-2026

Proj. No. SAA Proj. Mgr.

14138B

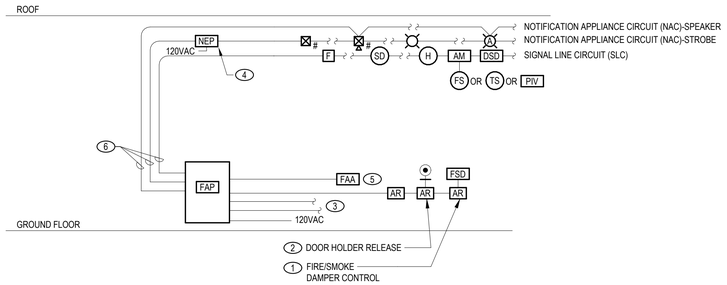
Sheet Title

ELECTRICAL ROOF PLAN

Sheet No.

E101

Autodesk Docs://Broadlawns Brain Wellness/14x-080_MEP_Broadlawns Brain Wellness_D2_R25.rvt
10/3/2026 1:22:25 PM



4 ADDRESSABLE FIRE ALARM SYSTEM RISER

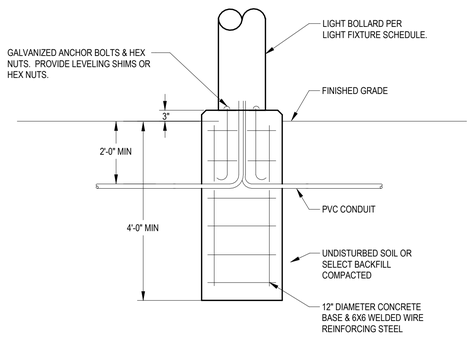
N.T.S.

NOTES:

1. THE FIRE ALARM RISER DIAGRAM IS MEANT TO CONVEY THE GENERAL SCOPE OF WORK AND SHOULD NOT BE USED AS A DETAILED WIRING SCHEMATIC. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING QUANTITIES OF DEVICES AND CONTROL/MONITORING INTERFACES WITH OTHER BUILDING SYSTEMS (I.E. FIRE/SMOKE DAMPERS, AHU SHUT-DOWN, ELEVATOR CONTROLS, ETC.).
2. THE COMPLETE FIRE ALARM SYSTEM SHALL MEET ALL APPLICABLE CODES AS WELL AS THE FIRE ALARM SYSTEM MANUFACTURER'S RECOMMENDATIONS.
3. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL 120VAC CIRCUITS REQUIRED FOR A COMPLETE AND FUNCTIONAL SYSTEM. THIS INCLUDES THE MAIN FIRE ALARM PANEL AS WELL AS ANY NOTIFICATION APPLIANCE CIRCUIT EXTENDER PANELS. ALL 120VAC CIRCUIT BREAKERS SERVING FIRE ALARM EQUIPMENT SHALL BE PROVIDED WITH HANDLE LOCKS.
4. ALL FIRE ALARM WIRING SHALL BE INSTALLED EITHER IN EXISTING RACEWAY (WHERE AVAILABLE) OR FLOWN ABOVE THE FINISHED CEILING. ALL FLOWN CABLES SHALL BE PLENUM RATED AND SHALL BE SUPPORTED INDEPENDENT OF THE CEILING SYSTEM USING J-HOOKS AND OTHER APPROPRIATE SUPPORTS. COORDINATE CABLE TYPE REQUIREMENTS WITH THE FIRE ALARM SYSTEM MANUFACTURER.
5. MAINTAIN 3'-0" SEPARATION BETWEEN SMOKE DETECTORS AND HVAC DIFFUSERS.
6. ALL DEVICES SHALL BE FLUSH MOUNTED WHERE WALL AND CEILING CONSTRUCTION ALLOWS. IF FLUSH MOUNTING OF DEVICES IS NOT POSSIBLE, SURFACE MOUNT USING SURFACE BOXES AND WIREMOLD 700 SERIES METALLIC RACEWAY (OR EQUAL), PAINTED TO MATCH EXISTING FINISHES.

KEYED NOTES:

1. THE ELECTRICAL CONTRACTOR SHALL CONNECT TO EXISTING FIRE/SMOKE DAMPER CIRCUITS. EC SHALL FIELD VERIFY QUANTITY AND LOCATION OF NEW ADDRESSABLE RELAYS REQUIRED FOR FIRE/SMOKE DAMPER CONTROL.
2. THE ELECTRICAL CONTRACTOR SHALL CONNECT TO EXISTING DOOR RELEASE CIRCUITS. EC SHALL FIELD VERIFY QUANTITY AND LOCATION OF NEW ADDRESSABLE RELAYS REQUIRED FOR DOOR RELEASE CONTROL.
3. FIRE ALARM PANEL REQUIRES (2) TYPES OF TECHNOLOGY: (1) POTS LINE OR (1) CELLULAR.
4. PROVIDE NOTIFICATION APPLIANCE CIRCUIT EXTENDER PANELS AS REQUIRED. IT IS THE FIRE ALARM SYSTEM MANUFACTURER'S RESPONSIBILITY TO DETERMINE QUANTITY OF PANELS NEEDED TO MEET THE SPECIFICATIONS. PANELS TO BE INSTALLED IN LOCATIONS APPROVED BY THE OWNER. ACCEPTABLE LOCATIONS INCLUDE: ELECTRICAL ROOMS, JANITOR'S CLOSETS, MECHANICAL ROOMS.
5. REFER TO #/E# FOR LOCATION OF GROUND LEVEL ANNUNCIATOR PANEL.
6. REFER TO SPECIFICATIONS FOR SIGNAL AND NOTIFICATION LOOP REQUIREMENTS.



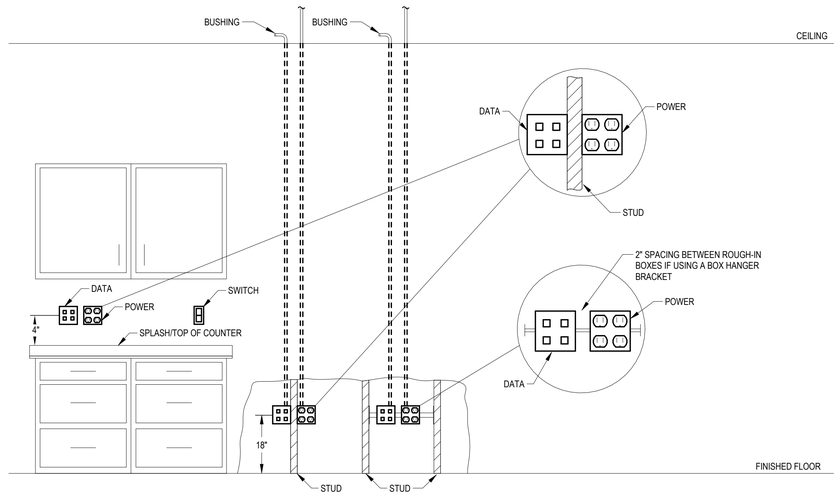
5 BOLLARD BASE

N.T.S.

		SYSTEM OUTPUTS																						
		FACP ANNUNCIATION							NOTIFICATION				REQUIRED FIRE SAFETY CONTROL										
		A ACTUATE COMMON ALARM SIGNAL INDICATOR	B ACTUATE AUDIBLE ALARM SIGNAL	C ACTUATE COMMON SUPERVISORY SIGNAL INDICATOR	D ACTUATE AUDIBLE SUPERVISORY SIGNAL	E ACTUATE COMMON TROUBLE SIGNAL INDICATOR	F ACTUATE AUDIBLE TROUBLE SIGNAL	G ACTUATE ZONE OR DEVICE ADDRESS ALARM INDICATOR	H ACTUATE VISIBLE & AUDIBLE ALARM ANNUNCIATION	I TRANSMIT FIRE ALARM SIGNAL TO CENTRAL STATION	J TRANSMIT SUPERVISORY SIGNAL TO CENTRAL STATION	K TRANSMIT TROUBLE SIGNAL TO CENTRAL STATION	L RELEASE MAGNETICALLY HELD DOORS	M ACTUATE WON DOOR CLOSURE	N RECALL ELEVATOR TO RECALL FLOOR	O RECALL ELEVATOR TO ALTERNATE RECALL FLOOR	P ACTUATE WARNING TO ELEVATOR CABS	Q DELAYED REMOVAL OF POWER FROM ELEVATOR	R CLOSE SMOKE DAMPERS ASSOCIATED WITH THE DETECTOR(S) IN ALARM	S UNLOCK EXITS AND CONTROL DOORS	T SHUT DOWN RESPECTIVE AIR HANDLING EQUIPMENT
	SYSTEM INPUTS																							
1	FIRE ALARM SYSTEM AC POWER FAILURE					X	X					X												
2	FIRE ALARM SYSTEM LOW BATTERY					X	X					X												
3	OPEN CIRCUIT					X	X					X												
4	GROUND FAULT					X	X					X												
5	NOTIFICATION APPLIANCE CIRCUIT SHORT					X	X					X												
6	BUILDING MANUAL PULL STATIONS	X	X					X	X	X			X								X			
7	CORRIDOR SMOKE DETECTORS	X	X					X	X	X			X							X	X			
8	AREA SMOKE DETECTORS	X	X					X	X	X			X								X			
9	HVAC AIR DUCT SMOKE DETECTORS			X	X			X			X									X				X
10	AREA HEAT DETECTORS	X	X					X	X	X			X								X			
11	SPRINKLER TAMPER SWITCH			X	X			X			X													
12	SPRINKLER WATER FLOW SWITCH	X	X					X	X	X			X								X			
13	SPRINKLER AIR PRESSURE SWITCH			X	X			X			X													

3 FIRE ALARM MATRIX

N.T.S.

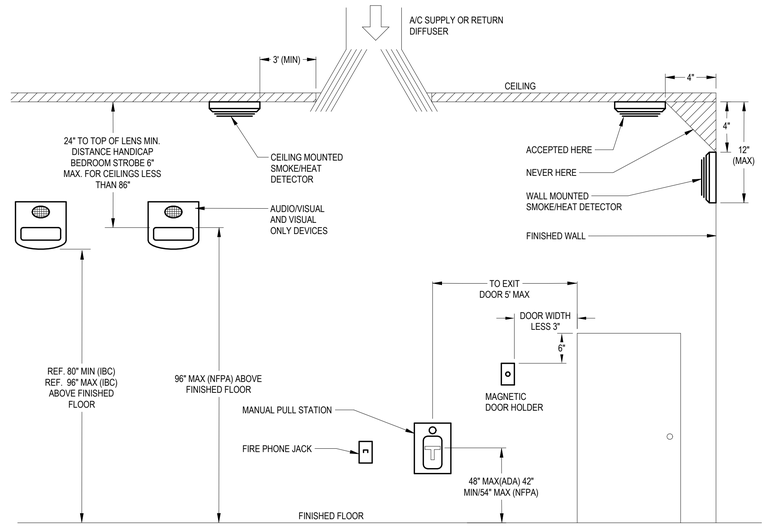


2 SCHEMATIC ELECTRICAL MOUNTING DETAIL

N.T.S.

NOTES:

1. SOME DEVICES SHOWN MAY NOT BE USED. DETAIL IS NOT TO SCALE.
2. MOUNTING HEIGHTS ARE AS SHOWN IN THIS DETAIL UNLESS NOTED OTHERWISE ON THE FLOORPLAN.
3. TYPICAL FOR POWER AND DATA IN THE SAME GENERAL LOCATION. POWER AND DATA ROUGH-IN TO BE MOUNTED ADJACENT TO EACH OTHER ON EITHER SIDE OF A STUD OR BETWEEN STUDS IF USING A BRACKET HANGER. IF USING A BRACKET HANGER, POWER AND DATA BOXES TO BE INSTALLED WITH A 2" SPACE BETWEEN THEM.
4. ALL DEVICES TO BE INSTALLED IN ACCORDANCE WITH ADA STANDARDS FOR ACCESSIBLE DESIGN. REFER TO AHJ ADOPTED *NEC - INFORMATIVE ANNEX J* OR AHJ ADOPTED PUBLISHING OF *ADA STANDARDS FOR ACCESSIBLE DESIGN* FOR ADDITIONAL INFORMATION.



1 FIRE ALARM DEVICE MOUNTING HEIGHT

N.T.S.

KED bluestone
5518 NW 88th Street
Johnston, IA 50131
515-727-0700
www.KEDbluestone.com

PROJECT NUMBER: 126-080
KEDbluestone RESERVES PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA SHOWN THEREON. SAID DRAWING AND/OR DATA ARE THE EXCLUSIVE PROPERTY OF KEDbluestone AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF KEDbluestone. © 2026 KEDbluestone

SIMONSON
PLANNING ■ ARCHITECTURE ■ INTERIORS
Simonson + Associates Architects LLC
1717 Ingersoll Ave. Suite 117, Des Moines, Iowa 50309
Ph: 515-440-5626
www.simonsonassoc.com

This drawing has been procured by the Architect, or under the Architect's direction. This drawing is provided as an instrument of service by the Architect and is not to be used for sale on this project only. Any reproduction, use, or disclosure of information contained herein is not without the prior written consent of the Architect is strictly prohibited. © Copyright 2026 Simonson & Associates Architects, LLC

BROADLAWNS BRAIN & MEMORY CENTER

3714 INGERSOLL AVENUE
DES MOINES, IA 50309

Rev. #	Issue / Revision	Date
3	BID SET	09-28-2026

Proj. No. 14138B | SAA | Proj. Mgr.

Sheet Title

ELECTRICAL DETAILS

Sheet No.

E500

Autodesk Docs://Broadlawns Brain Wellness/126-080_MEP_Broadlawns Brain Wellness_DZ_R26.rvt
10/9/2026 1:22:26 PM

BRANCH PANELBOARD: A

LOCATION: ELEC. 119 **VOLTAGE:** 208/120 Wye **MAIN DEVICE:** MLO
MOUNTING: SURFACE **PHASE:** 3 **BUS RATING:** 225
ENCLOSURE: NEMA 1 **WIRE:** 4 **NEUTRAL RATING:** 100%
FED FROM: **LUGS:** **A.I.C. RATING:** EXISTING

CKT #	CKT BKR A / P		NOTES	CIRCUIT DESCRIPTION	KVA LOAD 'PHASE A'		KVA LOAD 'PHASE B'		CIRCUIT DESCRIPTION	NOTES	CKT BKR P / A		CKT #
1	20 A	1	E	ROOM 120, 121 RECEPTS	0.5	0.5			ROOM 118, 119 RECEPTS	E	1	20 A	2
3	20 A	1	E	ROOM 116, 117 RECEPTS			0.5	0.5	ROOM 114, 115 RECEPTS	E	1	20 A	4
5	20 A	1	E	ROOM 111, 112, 113 RECEPTS	0	0			ROOM 108, 109, 110 RECEPTS	E	1	20 A	6
7	20 A	1	E	NURSES STATION REC NORTH & WEST			0	0	NURSE STATION REC EAST	E	1	20 A	8
9	20 A	1	E	NURSES STATION SHREDDER	0	0			NURSE STATION PRINTER	E	1	20 A	10
11	20 A	1	EN	SECURITY PANEL			0	0	IT RACK	EN	1	20 A	12
13	20 A	1	E	FAMILY RESTROOM GFI	0	0			JANITO HT/NT CLEAN REC	E	1	20 A	14
15	20 A	1	EN	WAITING AREA FIREPLACE			1.2	0.5	PATIENT RESTROOM GFI	E	1	20 A	16
17	20 A	1	EN	WAITING AREA FLOORBOX	0	0			WAITING AREA RECPTS	E	1	20 A	18
19	20 A	1	E	NST SOILED, DRAW REC			0	0	PROCEDURE RECPTS	E	1	20 A	20
21	20 A	1	E	ULTRA SOUND RECEPT	0	0			LAB FRIDGE RECPTS	E	1	20 A	22
23	20 A	1	E	EXAM 125, MGF OFFICE REC			0	0	STAFF RESTROOM GFI	E	1	20 A	24
25	20 A	1	E	DISH/DISPOSAL REC	0	0			MICROWAVE REC	E	1	20 A	26
27	20 A	1	E	BREAK ROOF GFI			0	0	BREAKROOM FRIDGE REC	E	1	20 A	28
29	20 A	1	E	BREAK ROOM RECEPTS	0	0			BREAKROOM PLUG MOLD	E	1	20 A	30
31	20 A	1	EN	LAB 128 COUNTERTOP RCPT			0	0	BR-2	N	1	20 A	32
33	20 A	1	EN	LAB 128 COUNTERTOP RCPT	0	--			SPACE		1	--	34
35	20 A	1	E	FURNACE 1			0	0	BREAKROOM FRIDGE	EN	1	20 A	36
37	20 A	1	E	NURSES ISLAND REC	0	0.2			EXTERIOR LIGHTS&CONTACTOR	E	1	20 A	38
39	20 A	1	E	NURSES ISLAND SPARE			0	0	MONUMENT SIGN&POLE LIGHT	E	1	20 A	40
41	20 A	1	E	WAITING ROOM COFFEE MAKER	0	0			ATTIC LIGHTS	E	1	20 A	42
				TOTAL CONNECTED KVA BY PHASE	3.4 kVA		3.2 kVA						
				TOTAL CONNECTED AMPS BY PHASE	30.9 A		29.8 A						

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	CALCULATED LOAD	PANELBOARD TOTALS	
HVAC	3180 VA	100.00%	3180 VA		
Lighting	111 VA	100.00%	111 VA	**TOTAL CONNECTED KVA**	7.7 kVA
Receptacle	1800 VA	100.00%	1800 VA	**TOTAL CALCULATED KVA**	7.7 kVA
Spare	2500 VA	100.00%	2500 VA		
Lighting - Interior	112 VA	125.00%	140 VA	**TOTAL CONNECTED AMPS**	21.4 A
				TOTAL CALCULATED AMPS	21.4 A

NOTES:
E.C. TO IDENTIFY EXISTING LOADS AND UPDATE PANELBOARD SCHEDULES PER NEW FLOOR PLAN

BRANCH PANELBOARD: B

LOCATION: ELEC. 119 **VOLTAGE:** 208/120 Wye **MAIN DEVICE:** MLO
MOUNTING: SURFACE **PHASE:** 3 **BUS RATING:** 225
ENCLOSURE: NEMA 1 **WIRE:** 4 **NEUTRAL RATING:** 100%
FED FROM: **LUGS:** **A.I.C. RATING:** EXISTING

CKT #	CKT BKR A / P		NOTES	CIRCUIT DESCRIPTION	KVA LOAD 'PHASE A'		KVA LOAD 'PHASE B'		CIRCUIT DESCRIPTION	NOTES	CKT BKR P / A		CKT #
1	20 A	1	E	LIGHTING	0.7	1			LIGHTING	E	1	20 A	2
3	20 A	1	E	LIGHTING			0.4	1.3	LIGHTING	E	1	20 A	4
5	20 A	1	E	LIGHTING	0	0			FIRE ALARM PANEL	E (HL)	1	20 A	6
7	50 A	2	EN	ACCU-1			2.4	1.8	HP-1	EN	2	40 A	8
9					2.4	1.8							10
11	40 A	2	EN	ACCU-2			0	0	HP-2	N	2	40 A	12
13					1.8	1.8							14
15	20 A	1	E	FURNACE 2			0	0	WATER HEATER	E	1	20 A	16
17	20 A	2	N	BR-1 WAITING	1.2	0			EXTERIOR RECEPTACLES	E	1	20 A	18
19							0	0	EF-2 ROOF FAN	EN	1	20 A	20
21	30 A	2	EN	CUH-3	0	0			DAMPERS	E	1	20 A	22
23							2.5	0	PT 123 TREADMILL	N	1	20 A	24
25	20 A	1	N	OPEN OFFICE 107 RCPT	0.7	1.3							26
27	20 A	3	N	CUH-1			1.3	1.3	CUH-2	N	3	20 A	28
29					1.3	1.3							30
31							1.3	1.2	BR-1 OPEN OFFICE 107	N	2	20 A	32
33	20 A	2	N	BR-1 OPEN OFFICE 107	0	1.2							34
35							1.2	0	BR-1 OPEN OFFICE 107	N	2	20 A	36
37	20 A	1	N	BR-2 BREAK ROOM	1.8	1.2							38
39	20 A	2	N	FCU1, FCU-2			0.7	1.2	BR-1 WAITING	N	2	20 A	40
41					0	0							42
				TOTAL CONNECTED KVA BY PHASE	18.3 kVA		15.3 kVA						
				TOTAL CONNECTED AMPS BY PHASE	153 A		127.6 A						

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	CALCULATED LOAD	PANELBOARD TOTALS	
HVAC	43980 VA	100.00%	43980 VA		
Lighting	3824 VA	100.00%	3824 VA	**TOTAL CONNECTED KVA**	48.9 kVA
Receptacle	900 VA	100.00%	900 VA	**TOTAL CALCULATED KVA**	48.9 kVA
Lighting - Interior	412 VA	125.00%	515 VA		
				TOTAL CONNECTED AMPS	135.6 A
				TOTAL CALCULATED AMPS	135.9 A

NOTES:
E.C. TO IDENTIFY EXISTING LOADS AND UPDATE PANELBOARD SCHEDULES PER NEW FLOOR PLAN

GENERAL ELECTRICAL SCHEDULE

SYMBOL	DESCRIPTION	MANUFACTURER
	CONNECTION TO MECHANICAL EQUIPMENT	MOTOR/EQUIPMENT FURNISHED AND INSTALLED BY MECHANICAL OR PLUMBING CONTRACTOR
J	ELECTRICAL CONNECTION TO MISC. EQUIPMENT	EQUIPMENT FURNISHED AND INSTALLED BY OTHERS
PP	AUTOMATIC DOOR PUSH PAD, PROVIDE SINGLE GANG OPENING AT 42" AFF WITH 1/2" CONDUIT TO THE POWER OPERATOR. REFER TO DOOR HARDWARE SUBMITTALS FOR ADDITIONAL INFORMATION	FURNISHED BY OTHERS, ROUGH IN BY EC
S_H	THREE POLE 30A MOTOR RATED MANUAL TOGGLE SWITCH	SQUARE D 2510

NOT ALL SYMBOLS/NOTES ARE USED

LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER/MODEL	FINISHES	MOUNTING	DELIVERED LUMENS	CRI	CCT	DIMMING	DISTRIBUTION	WATTS	VOLTAGE	EMERGENCY BACK-UP
EX1	WALL MOUNT EXIT SIGN, SINGLE SIDED, EDGE-LIT ACRYLIC, SELF-TEST/SELF-DIAGNOSTICS, MIRROR BACKGROUND	EVENLITE SOVII DUAL-LITE LES ISOLITE ELT2	HOUSING WHITE, LETTERING GREEN	SURFACE WALL	NA	NA	0 K	NA	NA	3 W	120	BATTERY
EX2	CEILING MOUNT EXIT SIGN, DOUBLE SIDED, EDGE-LIT ACRYLIC, SELF-TEST/SELF-DIAGNOSTICS, MIRROR BACKGROUND	EVENLITE SOVII DUAL-LITE LE ISOLITE ELT2	HOUSING WHITE, LETTERING GREEN	RECESSED CEILING	NA	NA	0 K	NA	NA	3 W	120	BATTERY
F1	4" DIAMETER OPEN DOWNLIGHT, SPECIFICATION GRADE, ADJUSTABLE LUMEN (2000LM-3000LM)/SWITCHABLE CCT (3000K-5000K)	LITHONIA LDN4 ELITE HH4 GREEN CREATIVE NYX	FLANGED TRIM: CLEAR, SPECULAR	RECESSED	2000	80	3500 K	0-10V, 1% DIM	WIDE	25 W	120	NA
F1E	4" DIAMETER OPEN DOWNLIGHT, SPECIFICATION GRADE, ADJUSTABLE LUMEN (2000LM-3000LM)/SWITCHABLE CCT (3000K-5000K), EMERGENCY	LITHONIA LDN4 ELITE HH4 GREEN CREATIVE NYX	FLANGED TRIM: CLEAR, SPECULAR	RECESSED	2000	80	3500 K	0-10V, 1% DIM	WIDE	25 W	120	BATTERY
F2	2'X2' ARCHITECTURAL TROFFER, SWITCHABLE LUMENS (3000LM-5000LM)/SWITCHABLE CCT (3500K-5000K)	LITHONIA STAKS COLUMBIA LCAT COOPER 22CZSB	WHITE	RECESSED	4000	80	3500 K	0-10V, 10% DIM	LAMERTIAN	37 W	120	NA
F2E	2'X2' ARCHITECTURAL TROFFER, SWITCHABLE LUMENS (3000LM-5000LM)/SWITCHABLE CCT (3500K-5000K), EMERGENCY	LITHONIA STAKS COLUMBIA LCAT COOPER 22CZSB	WHITE	RECESSED	4000	80	3500 K	0-10V, 10% DIM	LAMERTIAN	33 W	120	BATTERY
F3	25" VANITY LIGHT, CENTER ABOVE MIRROR AT 7' AFF	WAC REED VISUAL COMFORT DESSAU KUZCO VEGA CERNO 03-300	FINISH SELECTED BY ARCHITECT	WALL	500	90	3000 K	0-10V, 10% DIM	STANDARD	21 W	120	NA
F4	33" PICTURE LIGHT, CENTERED ABOVE PAINTING	WAC REED VISUAL COMFORT DESSAU KUZCO VEGA CERNO 03-300	FINISH SELECTED BY ARCHITECT	WALL	700	90	3000 K	0-10V, 10% DIM	STANDARD	28 W	120	NA
F5	4' STRIP, ACRYLIC DROP LENS	LITHONIA CSS COLUMBIA CSL METALUX SNX	WHITE	SURFACE	5000	80	3500 K	0-10V, 10% DIM	LAMBERTIAN	38 W	120	NA
F6	5' LED TAPE LIGHTING IN 45 DEGREE CHANNEL, PROVIDE DRIVERS AS NEEDED, E.C. TO DOCUMENT LOCATION OF DRIVERS	LUMINII LLHE64/MK45VC CORE LSM55/ALP-50C-V2 ACE K/301	SILVER, CLEAR LENS	SURFACE	440/FT	80	3500 K	0-10V, 10% DIM	90 DEGREE	15 W	120	NA
F6A	7' LED TAPE LIGHTING IN 45 DEGREE CHANNEL, PROVIDE DRIVERS AS NEEDED, E.C. TO DOCUMENT LOCATION OF DRIVERS	LUMINII LLHE64/MK45VC CORE LSM55/ALP-50C-V2 ACE K/301	SILVER, CLEAR LENS	SURFACE	440/FT	80	3500 K	0-10V, 10% DIM	90 DEGREE	21 W	120	NA
F6B	9' 8" LED TAPE LIGHTING IN 45 DEGREE CHANNEL, PROVIDE DRIVERS AS NEEDED, E.C. TO DOCUMENT LOCATION OF DRIVERS	LUMINII LLHE64/MK45VC CORE LSM55/ALP-50C-V2 ACE K/301	SILVER, CLEAR LENS	SURFACE	440/FT	80	3500 K	0-10V, 10% DIM	90 DEGREE	30 W	120	NA
F6C	LED TAPE LIGHTING IN 45 DEGREE CHANNEL, SEE FLOOR PLAN FOR LENGTH, PROVIDE DRIVERS AS NEEDED, E.C. TO DOCUMENT LOCATION OF DRIVERS	LUMINII LLHE64/MK45VC CORE LSM55/ALP-50C-V2 ACE K/301	SILVER, CLEAR LENS	SURFACE	440/FT	80	3500 K	0-10V, 10% DIM	90 DEGREE	407 W	120	NA
S1	46" EXTERIOR WALL SCONCE, UL WET LOCATION LISTED	ALVA SADIE SAL S9405	FINISH SELECTED BY ARCHITECT	WALL	900	90	3000 K	NA	STANDARD	20 W	120	NA
S2	EXTERIOR WALL PACK, ALUMINUM CONSTRUCTION, EMERGENCY (-20 DEG C), UL WET LOCATION LISTED	LITHONIA WPX LUMARK AXCS	FINISH SELECTED BY ARCHITECT	WALL	2900	70	3000 K	NA	STANDARD	24 W	120	BATTERY
S3	4" DIAMETER OPEN DOWNLIGHT, SPECIFICATION GRADE, ADJUSTABLE LUMEN (2000LM-3000LM)/SWITCHABLE CCT (3000K-5000K)	LITHONIA LDN4 ELITE HH4 GREEN CREATIVE NYX	FLANGED TRIM: CLEAR, SPECULAR	RECESSED	2000	80	3500 K	0-10V, 10% DIM	WIDE	25 W	120	NA
S4	DECORATIVE ROUND BOLLARD, 42" TALL, SEE BOLLARD BASE DETAIL 5/E500 FOR MORE INFORMATION	LITHONIA KBD8 LED FC FCB8C AVPL FAB8	FINISH SELECTED BY ARCHITECT	GROUND	1200	70	3000 K	NA	SYMMETRIC	28 W	120	NA

ELECTRICAL CONNECTION SCHEDULE

CALLOUT	LOAD CHARACTERISTICS						PANEL AND CIRCUIT INFORMATION				NOTES
	VOLTAGE	PHASE	VA	AMPS	MCA	LOAD CLASS	FED FROM	CIRCUIT	MOCP	CONDUIT & WIRE	
	120 V	1	180 VA	1.5 A	0.0 A	HVAC					
	120 V	1	180 VA	1.5 A	0.0 A	HVAC					
	120 V	1	180 VA	1.5 A	0.0 A	HVAC					
	120 V	1	180 VA	1.5 A	0.0 A	HVAC					
	120 V	1	180 VA	1.5 A	0.0 A	HVAC					
	120 V	1	1800 VA	15.0 A	0.0 A	HVAC	B	37			
ACCU-1	208 V	1	4800 VA	23.1 A	0.0 A	HVAC	B	7,9			
ACCU-2	208 V	1	3600 VA	17.3 A	0.0 A	HVAC	B	11,13			
BR-1	208 V	1	2400 VA	11.5 A	0.0 A	HVAC	B	40,42			
BR-1	208 V	1	2400 VA	11.5 A	0.0 A	HVAC	B	17,19			
BR-1	208 V	1	2400 VA	11.5 A	0.0 A	HVAC	B	36,38			
BR-1	208 V	1	2400 VA	11.5 A	0.0 A	HVAC	B	32,34			
BR-1	208 V	1	2400 VA	11.5 A	0.0 A	HVAC	B	33,35			
BR-2	120 V	1	1800 VA	15.0 A	0.0 A	HVAC	A	32			
CUH-1	208 V	3	4000 VA	11.1 A	0.0 A	HVAC	B	27,29,31			
CUH-2	208 V	3	4000 VA	11.1 A	0.0 A	HVAC	B	26,28,30			
CUH-3	208 V	1	5000 VA	24.0 A	0.0 A	HVAC	B	21,23			
DOOR POWER	120 V	1	180 VA	1.5 A	0.0 A	HVAC					
DOOR POWER	120 V	1	180 VA	1.5 A	0.0 A	HVAC					
EF-1	120 V	1	180 VA	1.5 A	0.0 A	HVAC					
EF-2	120 V	1	180 VA	1.5 A	0.0 A	HVAC	B	20			
EF-3	120 V	1	180 VA	1.5 A	0.0 A	HVAC					
EF-4	120 V	1	180 VA	1.5 A	0.0 A	HVAC					
EF-5	120 V	1	180 VA	1.5 A	0.0 A	HVAC					
FCU-1	208 V	1	700 VA	3.4 A	0.0 A	HVAC	B	39,41			
FCU-2	208 V	1	700 VA	3.4 A	0.0 A	HVAC	B	39,41			
FIREPLACE	120 V	1	1200 VA	10.0 A	0.0 A	HVAC	A	15			
HP-1	208 V	1	3600 VA	17.3 A	0.0 A	HVAC	B	8,10			
HP-2	208 V	1	3600 VA	17.3 A	0.0 A	HVAC	B	12,14			
SCP-1	120 V	1	180 VA	1.5 A	0.0 A	HVAC	A	11			

MINIMUM BRANCH CIRCUIT FEEDER SIZE
(RHW, THHW, THW, THWN, XHHW, XHWN, USE, ZE) BASED ON NEC 2020 AT 75°C

BREAKER SIZE	PHASE/NEUTRAL	GRD	CONDUIT
20A	#12	#12	3/4"
25A	#10	#10	3/4"
30A	#10	#10	3/4"
35A	#8	#10	1"
40A	#8	#10	1"
50A	#6	#10	1"
60A	#4	#10	1-1/4"
70A	#4	#8	1-1/4"
80A	#3	#8	1-1/2"
100A	#1	#8	2"

NEMA 5-20R RECEPTACLE SUBSCRIPT SCHEDULE

SUBSCRIPT	DESCRIPTION	MODEL
W	DUPLEX GROUND FAULT RECEPTACLE, TAMPER RESISTANT, HOSPITAL GRADE, SELF-TEST, NEMA 5-20R, WITH DIE-CAST WEATHERPROOF COVER (WHILE IN USE)	HUBBELL GFTRST83/WP26E LEVITON PASS & SEYMOUR COOPER
TV	STEEL RECESSED TV BOX, WHITE COVER PLATE, COORDINATE EXACT MOUNTING LOCATION WITH ARCHITECTURAL DRAWINGS PRIOR TO INSTALLATION. REFER TO TECHNOLOGY DRAWINGS FOR TV ROUGH-IN DETAIL. PROVIDE NEMA 5-20R DUPLEX RECEPTACLE.	ARLINGTON COVER - DVFRC ARLINGTON RECESSED 2 GANG STEEL BOX - TVBS505 FACEPLATE 2 GANG
NO SUBSCRIPT	DOUBLE DUPLEX RECEPTACLE, TAMPER RESISTANT, HOSPITAL GRADE, NEMA 5-20R	HUBBELL (2) HBL8300 LEVITON PASS & SEYMOUR COOPER
NO SUBSCRIPT	DUPLEX RECEPTACLE, TAMPER RESISTANT, HOSPITAL GRADE, NEMA 5-20R	HUBBELL HBL8300 LEVITON PASS & SEYMOUR COOPER
G	DUPLEX GROUND FAULT RECEPTACLE, TAMPER RESISTANT, HOSPITAL GRADE, SELF-TEST, NEMA 5-20R	HUBBELL GFTRST83 LEVITON PASS & SEYMOUR COOPER

CEILING MOUNTED OCCUPANCY SENSOR SCHEDULE

SUBSCRIPT	DESCRIPTION	MODEL
D1	DIGITAL OCCUPANCY SENSOR, DUAL SENSING TECHNOLOGIES (PASSIVE INFRARED AND ULTRASONIC OR MIRCOPHONIC), LOW VOLTAGE, CEILING MOUNT, 360 DEGREE COVERAGE, UP TO 1000 SF COVERAGE	WATTSTOPPER DLM ACUITY NLIGHT CURRENT NX

FLOOR BOX / POKE THRU SCHEDULE

SUBSCRIPT	DESCRIPTION	MODEL
FB	SQUARE ON GRADE FOUR GANG FLOOR BOX, RECESSED DEVICES, HINGED DIE-CAST ALUMINUM COVER, ONE 3/4 " CONDUIT TO 2 DUPLEX RECEPTACLES (NEMA 5-20), ONE 1-1/4 " CONDUIT TO AV INTERFACES IN BOX, REFER TO T-SERIES DRAWINGS FOR TELECOM AND AV DEVICES IN BOX, ROUTE CONDUIT TO ABOVE NEAREST ACCESSIBLE CEILING (UNLESS OTHERWISE NOTED ON PLANS), PROVIDE VOLTAGE SEPARATION FROM LINE AND LOW VOLTAGE DEVICES, BRUSHED ALUMINUM FINISH	BOX: WIREMOLD RFBA-OG COVER: WIREMOLD FPB[C]

FIRE ALARM DEVICE SCHEDULE

SYMBOL	DESCRIPTION	MODEL
FD	ADDRESSABLE FIRE ALARM MANUAL PULL STATION, DOUBLE ACTION, RED POLYCARBONATE BODY, KEY RESET, STATUS LED	SIMPLEX 4099-9003 SIEMENS NOTIFIER
SD	ADDRESSABLE SMOKE DETECTOR, PHOTOELECTRIC TYPE, STATUS LED	SIMPLEX 4098-9714/4098-9792 SIEMENS NOTIFIER
	FIRE ALARM AUDIO/VISUAL NOTIFICATION APPLIANCE, WALL MOUNTED, RED [WHITE] HOUSING WITH "FIRE" MARKING, 4-WIRE, '#' IDENTIFIES CANDELA RATING: 15, 30, 75, 110	SIMPLEX 4906-9127, 9129 SIEMENS NOTIFIER
FAP	FIRE ALARM CONTROL PANEL, ADDRESSABLE, SURFACE MOUNT, REFER TO SPECIFICATION SECTION 283100 FOR ADDITIONAL INFORMATION. PROVIDE DEDICATED 120V POWER [FROM LIFE SAFETY PANELBOARD] WITH HANDLE LOCK.	SIMPLEX 4100ES SERIES SIEMENS NOTIFIER
FAA	FIRE ALARM REMOTE ANNUNCIATOR PANEL, LCD DISPLAY, ALARM, SUPERVISORY, AND TROUBLE ACKNOWLEDGE, ALARM SILENCE, SYSTEM RESET, KEYSWITCH FOR ACCESS CONTROL, THREE PROGRAMMABLE LED INDICATORS, BRUSHED ALUMINUM TRIM, FLUSH MOUNT AT 48" IN A RECESSED ELECTRICAL BOX	SIMPLEX 4606-9111 SIEMENS NOTIFIER
#	FIRE ALARM VISUAL NOTIFICATION APPLIANCE, WALL MOUNTED, RED [WHITE] HOUSING WITH "FIRE" MARKING, 2-WIRE, '#' IDENTIFIES CANDELA RATING: 15, 30, 75, 110	SIMPLEX 4906-9103 SIEMENS NOTIFIER

SWITCH SUBSCRIPT SCHEDULE

SUBSCRIPT	DESCRIPTION	MODEL
DL	DIMMER, LOW VOLTAGE 0-10 VOLT, COMMERCIAL GRADE, 20 AMP	WATTSTOPPER RH4FBL3PTC ACUITY NLIGHT CURRENT NX
ID	OCCUPANCY SENSOR WALL SWITCH, PASSIVE INFRARED, 180 DEGREE COVERAGE, 0-10 VOLT DIMMING, 120/277V	WATTSTOPPER PW-311 ACUITY NLIGHT CURRENT NX
LD	DIGITAL LOW VOLTAGE WALL STATION, SINGLE ZONE ON/OFF AND RAISE/LOWER MANUAL CONTROL, LED STATUS LIGHT	WATTSTOPPER DLM ACUITY NLIGHT CURRENT NX
LV	LOW VOLTAGE WALL STATION,TWO BUTTON SWITCH	WATTSTOPPER DLM ACUITY NLIGHT CURRENT NX
MT	OCCUPANCY SENSOR WALL SWITCH, DUAL TECHNOLOGY, 180 DEGREE COVERAGE, 120/277V	WATTSTOPPER DW-100 ACUITY NLIGHT CURRENT NX

SIMONSON
PLANNING ■ ARCHITECTURE ■ INTERIORS
Simonson + Associates Architects LLC
1717 Ingersoll Ave. Suite 117, Des Moines, Iowa 50309
Ph. 515-440-5626
www.simonsonassoc.com

This drawing has been prepared by the Architect, or under the Architect's supervision. This drawing is provided as an instrument of service by the Architect and is not to be used for sale on this project only. Any reproduction, use, or disclosure of this drawing without the written consent of the Architect is strictly prohibited. (©) copyright 2026 Simonson & Associates Architects, LLC.

BROADLAWNS BRAIN & MEMORY CENTER

3714 INGERSOLL AVENUE
DES MOINES, IA 50309

Rev. #	Issue / Revision	Date
3	BID SET	09-26-2026
4	Addendum #1	10-09-2026

Proj. No. SAA Proj. Mgr.
14138B

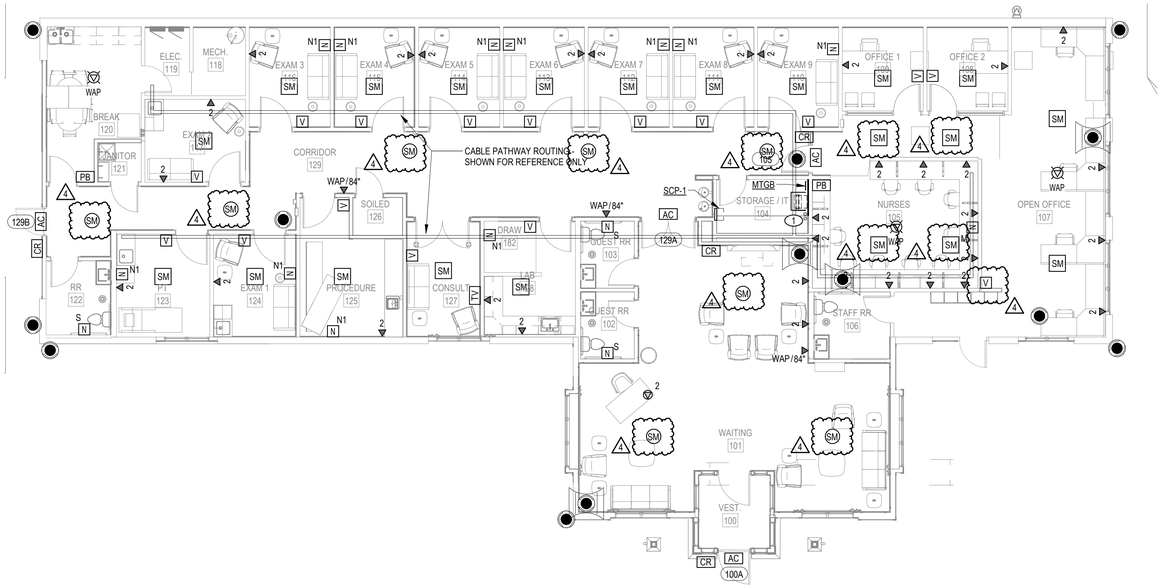
Sheet Title
ELECTRICAL SCHEDULES

Sheet No.
E600

KED bluestone
5518 NW 88th Street
Johnston, IA 50131
515-727-0700
www.KEDbluestone.com

PROJECT NUMBER: 126-080
KEDbluestone RESERVES PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA SHOWN THEREON. SAID DRAWING AND/OR DATA ARE THE EXCLUSIVE PROPERTY OF KEDbluestone AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF KEDbluestone. © 2026 KEDbluestone

Autodesk Docs://Broadlawns Brain Wellness/24-046_MEP_Broadlawns Brain Wellness_D5_R24.rvt
10/9/2026 1:02:27 PM



N

1 TECHNOLOGY PLANS

1/8" = 1'-0"

GENERAL NOTES:

1. ALL INFORMATION OUTLET ON THIS SHEET SHALL BE FED FROM STORAGE/IT 104.
2. REFER TO ARCHITECTURAL DRAWINGS FOR NURSE CALL DEVICE LOCATIONS AND HEIGHTS. DEVICES ARE SHOWN ON THESE DRAWINGS FOR QUANTITIES.

KEYED NOTES:

1. PROVIDE (2) 4" CONDUIT SLEEVES THRU CEILING FOR CABLE ROUTING.

SIMONSON
PLANNING ■ ARCHITECTURE ■ INTERIORS
Simonson + Associates Architects LLC
1717 Ingersoll Ave, Suite 117, Des Moines, Iowa 50309
Ph 515-440-5626 www.simonsonassoc.com

This drawing has been prepared by the Architect, or under the Architect's direct supervision. This drawing is provided as an instrument of service by the Architect and is provided for (or use on this project only. Any reproduction, use, or disclosure of information contained herein without the prior written consent of the Architect is prohibited by law. © Copyright 2026 by Simonson & Associates Architects, LLC

BROADLAWNS BRAIN & MEMORY CENTER

3714 INGERSOLL AVENUE
DES MOINES, IA 50309

Rev. #	Issue / Revision	Date
3	BID SET	09-26-2026
4	Addendum #1	10-09-2026

Proj. No. 14138B | SAA | Proj. Mgr.

Sheet Title

TECHNOLOGY PLANS

Sheet No.

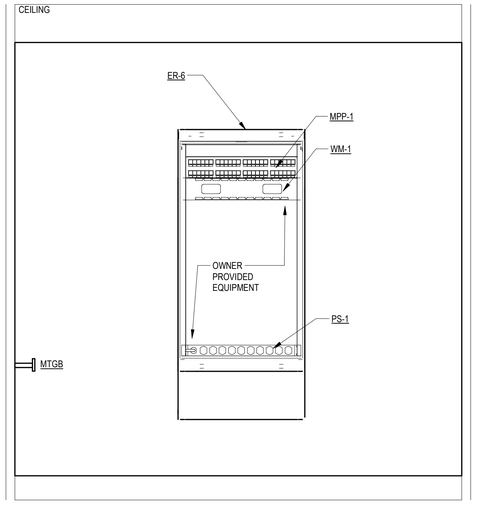
T101

KED bluestone
5518 NW 88th Street
Johnston, IA 50131
515-727-0700
www.KEDbluestone.com

PROJECT NUMBER: 126-080

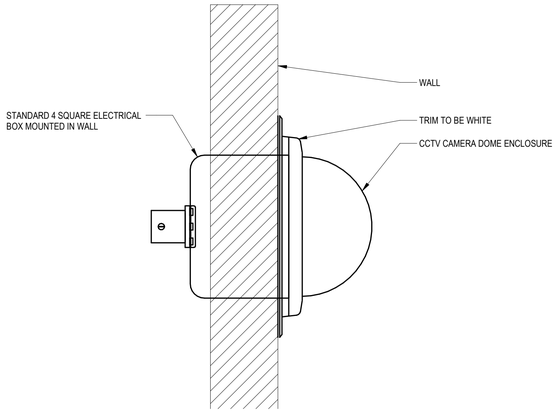
KEDbluestone RESERVES PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA SHOWN THEREON. SAID DRAWING AND/OR DATA ARE THE EXCLUSIVE PROPERTY OF KEDbluestone AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF KEDbluestone. © 2026 KEDbluestone

Autodesk Docs://Broadlawns Brain Wellness/126-080_MEP_Broadlawns Brain Wellness_DC_R26.rvt
10/9/2026 1:21:41 PM



7 WALL RACK ELEVATION DETAIL

N.T.S.

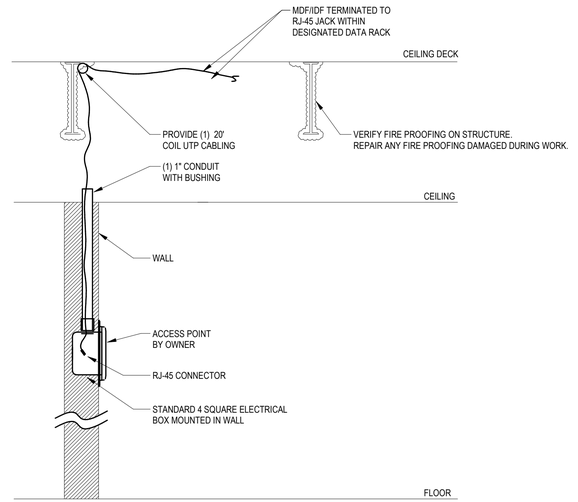


5 WALL MOUNT CAMERA DETAIL

N.T.S.

NOTES:

1. E.C. SHALL PROVIDE STANDARD 4 SQUARE ELECTRICAL BOX FLUSH MOUNTED IN WALL. PROVIDE CAT6 UTP AND ROUTE THROUGH 3/4" CONDUIT TO ACCESSIBLE SPACE.

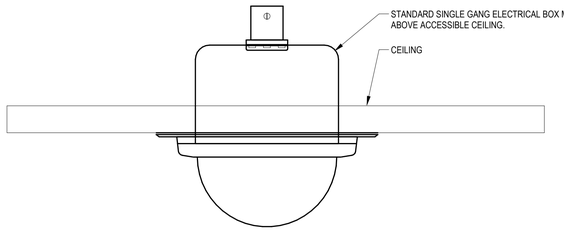


3 WIRELESS ACCESS POINT WALL MOUNT DETAIL

N.T.S.

NOTES:

1. WIRELESS ACCESS POINTS ARE PROVIDED BY THE OWNER. T.C. SHALL INSTALL THE WIRELESS ACCESS POINTS.

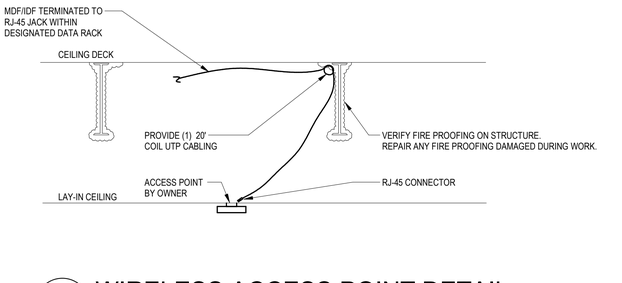


4 CEILING CAMERA MOUNTING DETAIL

N.T.S.

NOTES:

1. E.C. SHALL PROVIDE STANDARD SINGLE GANG ELECTRICAL BOX MOUNTED ABOVE ACCESSIBLE CEILING. PROVIDE CAT6 UTP AND WHIP THROUGH THE CEILING.

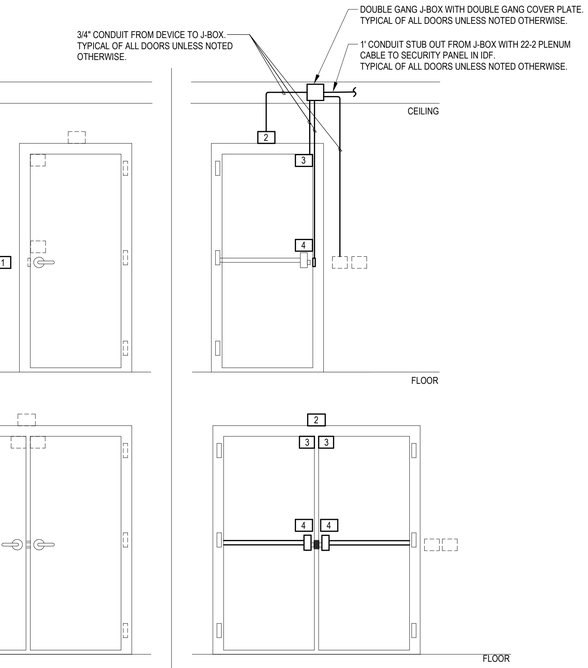


2 WIRELESS ACCESS POINT DETAIL

N.T.S.

NOTES:

1. WIRELESS ACCESS POINTS ARE PROVIDED BY THE OWNER. T.C. SHALL INSTALL THE WIRELESS ACCESS POINTS.



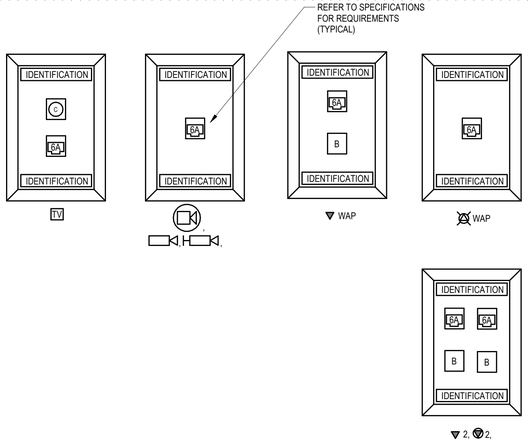
6 ACCESS CONTROL DOOR DETAIL

N.T.S.

NOTES:

1. PROVIDE AND INSTALL ACCESS CONTROL & DOOR HARDWARE POWER SUPPLY WITH 24V DC. DOOR HARDWARE CONTRACTOR SHALL PROVIDE AND INSTALL 24V FOR DOOR HARDWARE. ELECTRICAL CONTRACTOR SHALL PROVIDE 120V TO POWER SUPPLIES.
2. REFER TO SPECIFICATION SECTION ####### FOR MORE INFORMATION.

LOCATION	POSSIBLE DEVICES (ABV.)	NOTES
1	CARD READER (CR) INTERCOM (INT) INTERCOM W/ CAMERA (INTC) BIOMETRIC READER (BR) KEYPAD (KP)	SINGLE GANG BOX WITH SINGLE GANG 1/2" RAISED DEVICE RING UNLESS NOTED OTHERWISE. DEVICE LOCATION AND MOUNTING MAY VARY, REFER TO FLOORPLANS FOR ADDITIONAL INFORMATION.
2	REQUEST EXIT (REX)	
3	DOOR CONTACT (DC) MAGNETIC LOCK (ML)	
4	ELECTRIC STRIKE (ES) ELECTRIC LOCK (EL) ELECTRIC PANIC (EP)	



INFORMATION OUTLET JACK LEGEND		
SYMBOL	DESCRIPTION	MODEL #
B	BLANK MODULE	BLANK MODULE: PANDUIT CMBWH-X
6A	CAT6A RJ-45 JACK #= QUANTITY OF DATA ALL ARE DATA UNLESS NOTED OTHERWISE	PANDUIT CJ688TG##
	1 DATA JACK FOR CCTV SYSTEM	PANDUIT CJ688TG##
C	"F" TYPE COUPLER MODULE	PANDUIT CMFWH
#	INFORMATION OUTLET (1) 4" SQUARE BOX, SINGLE GANG PLASTER RING, FLUSH MOUNT ON WALL OR AS NOTED ON PLANS. SUBSCRIPT "#" QUANTITY OF CAT6 DATA CABLES SUBSCRIPT "W" FOR WALL PHONE	INFORMATION OUTLET- WALL COVERPLATE: PANDUIT CFPE2IWY - WALL CFPE4IWY - WALL CFPE6IWY - WALL AV WALL COVERPLATE: PANDUIT CBEIWY
WAP	CEILING WIRELESS ACCESS POINT: (1) CEILING SURFACE MOUNTED BOX SHALL BE SECURELY SUPPORTED ABOVE CEILING.	SURFACE MOUNT BOX: PANDUIT CBXQ2WH-A

1 INFORMATION OUTLET DETAIL

N.T.S.

NOTES:

1. WIRELESS ACCESS POINTS DATA CABLING. REFER TO #### FOR WIRELESS ACCESS POINT ROUGH-IN DETAIL.
2. RJ-45 JACKS, COAX F-CONNECTOR, AND HDMI COUPLER SHALL BE ROUTED WITHIN THE SAME ROUGH-IN.

SIMONSON
PLANNING ■ ARCHITECTURE ■ INTERIORS
Simonson + Associates Architects LLC
1717 Ingersoll Ave, Suite 117, Des Moines, Iowa 50309
Ph 515-440-5626
www.simonsonassoc.com

This drawing has been prepared by the Architect, or under the Architect's direct supervision. This drawing is provided as an instrument of service by the Architect and is copyrighted. It is not to be used for any purpose other than the specific project for which it was prepared without the prior written consent of the Architect and is protected by the Copyright Laws of the United States. © 2026 Simonson & Associates Architects, L.L.C.

BROADLAWNS BRAIN & MEMORY CENTER

3714 INGERSOLL AVENUE
DES MOINES, IA 50309

Rev. #	Issue / Revision	Date
3	BID SET	09-26-2026
4	Addendum #1	10-09-2026

Proj. No. 14138B SAA Proj. Mgr.

Sheet Title

TECHNOLOGY DETAILS

Sheet No.

T500

KED bluestone
5518 NW 88th Street
Johnston, IA 50131
515-727-0700
www.KEDbluestone.com

PROJECT NUMBER: 126-080
KEDbluestone RESERVES PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA SHOWN THEREON. SAID DRAWING AND/OR DATA ARE THE EXCLUSIVE PROPERTY OF KEDbluestone AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF KEDbluestone. © 2026 KEDbluestone

Autodesk Docs://Broadlawns Brain Wellness/126-080_MEP_Broadlawns Brain Wellness_CK_25R.rvt
10/9/2026 7:21:47 PM

DOOR SCHEDULE

REFER TO ###### FOR DOOR ROUGH-IN DETAIL.

DOOR NUMBER	CARD READER	DOOR CONTACT	REQUEST EXIT (PIR)	REQUEST EXIT (BUTTON)	ELECTRIC STRIKE	ELECTRIC LATCH	ELECTRIC PANIC	INTERCOM CAMERA	INTERCOM	BIOMETRIC READER	MAGNETIC LOCK	KEYPAD	LOCKDOWN (LD#)	DOOR SWITCH (DS#)
100A	Yes	No	Yes	No	No	No	No	No	No	No	No	No	0	0
105	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	0	0
129A	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	1	0
129B	Yes	No	Yes	No	No	No	No	No	No	No	No	No	0	0

NETWORK SCHEDULE

LABEL	DESCRIPTION	MODEL
ER-5	EQUIPMENT NETWORK WALL RACK, SWING TYPE 36"HX24"DX24"W, BLACK, 19RU	CHATSWORTH 11840-X36 B-LINE HOFFMAN DAMAC OR APPROVED EQUAL.
FDC-1	OPTICAL FIBER DISTRIBUTION CABINET, SINGLEMODE FIBER COMBINATION SHELF FOR [24 LC] TERMINATIONS. 1RU	FCE1U
MPP-2	ANGLED MODULAR PATCH PANEL 48 PORT	PANDUIT CPPLA48WBLY ANGLED
MTGB	PRE-ASSEMBLED BUS COPPER GROUND BAR.	PANDUIT GB2B0312TPI-1 NEWTON INSTRUMENTS ERICO STORM COPPER COMPONENTS GEORGIA COPPER OR AN APPROVED EQUAL
PS-1	POWER STRIP 20A, 5-15P, MOUNTED HORIZONTAL IN RACK.	APC AP7801B
TTB-1	TELECOMMUNICATION TERMINAL BOARD; 3/4" PLYWOOD 4' X 8', PAINTED WHITE WITH FIRE RETARDANT PAINT.	
WM-1	WIRE MANAGEMENT HORIZONTAL 2 RACK UNITS	PANDUIT VMPF1E

CATV SCHEDULE

SYMBOL	DESCRIPTION	MODEL
	2-WAY DIRECTIONAL COUPLER/TAP	BLONDER TONGUE SRT-2A
	2-WAY SPLITTER	BLONDER TONGUE SUV-2
	4-WAY DIRECTIONAL COUPLER/TAP	BLONDER TONGUE SRT-4A
TV	WALL CATV/INFORMATION OUTLET BW (1) 4 SQUARE BOX, SINGLE GANG PLASTER RING, FLUSH MOUNTED ON WALL OR AS NOTED ON PLANS. PROVIDE (1) CAT6 UTP HORIZONTAL CABLE. PROVIDE (1) HDMI CABLE BETWEEN CATV OUTLET BOX AND HDMI ROUGH-IN. REFER TO #### FOR INFORMATION OUTLET TYPES.	FACEPLATE: PANDUIT CFPE1IGY BLANK PLATE: PANDUIT CMBWH-X F-CONNECTOR: PANDUIT CMFWH JACK: CAT6: PANDUIT CJ688TGWH

SOUND MASKING SCHEDULE

SYMBOL	DESCRIPTION	MODEL
SM	DIRECT FIRE SOUND MASKING SPEAKER. SPECIFIER TO CHOOSE: [ATLAS] [SOUND MASKING SPEAKER, 8" DIAMETER, 70V TRANSFORMER, TAP SELECTOR SWITCH .25, .5, 1, 2, & 4 WATTS. COLOR BLACK] [LENCORE] [SOUND MASKING SPEAKER, [6" OR 4"] DIAMETER, RJ-45 CONNECTIONS FOR PLUG AND PLAY INSTALLATION, SPEAKERS DISTRIBUTE SOUND MASKING, PAGING AND OR MUSIC, AND COLOR BLACK.]	REFER TO SPECIFICATION 275119 FOR ACCEPTABLE MANUFACTURERS LENCORE
SM	LENCORE SOUND MASKING SPEAKER, 6" DIAMETER, RJ-45 CONNECTIONS FOR PLUG AND PLAY INSTALLATION, SPEAKERS DISTRIBUTE SOUND MASKING, PAGING AND OR MUSIC, AND COLOR White	REFER TO SPECIFICATION 275119 FOR ACCEPTABLE MANUFACTURERS LENCORE
	SOUND MASKING, PAGING, MUSIC, EMERGENCY COMMUNICATION NETWORK SYSTEM WITH INDEPENDANT PAGING AND MUSIC, CAT5E CABLING, 4 TWISTED PAIR FOR AUDIO, SPEAKERS AND DATA CABLE.	LENCORE INET OPERATING PLATFORM REFER TO SPECIFICATION SECTION 275119 FOR ADDITIONAL INFORMATION.
V	VOLUME CONTROL (0-10) ROTARY STYLE, 10 WATTS RATING, VOLUME CONTROLLER WILL ADJUST ONLY THE ROOM IT IS LOCATED IN, MOUNT AT 48". PROVIDE SINGLE GANG JUNCTION BOX FOR VALUME CONTROL WITH 1" C. TO ABOVE ACCESSIBLE CEILING.	REFER TO SPECIFICATION SECTION 275119 FOR ADDITIONAL INFORMATION.

ACCESS CONTROL SCHEDULE

SYMBOL	DESCRIPTION	MODEL
ACP-#	ACCESS CONTROL PANEL	GENETEC BY ELECTRONIC ENGINEERING
AC	ACCESS CONTROLLED DOOR. REFER TO DOOR SCHEDULE FOR DOOR INFORMATION.	
CR	CARD READER - PROVIDE FLUSH SINGLE GANG JUNCTION BOX FOR CARD READER. FROM DEVICE TO JUNCTION BOX TO ABOVE ACCESSIBLE SPACE. MOUNT AT 42" A.F.F. SUBSCRIPT "M" FOR MULLION MOUNT.	GENETEC BY ELECTRONIC ENGINEERING
CR	CARD READER - PROVIDE FLUSH SINGLE GANG JUNCTION BOX FOR CARD READER. FROM DEVICE TO JUNCTION BOX TO ABOVE ACCESSIBLE SPACE. MOUNT AT 42" A.F.F. SUBSCRIPT "M" FOR MULLION MOUNT.	GENETEC BY ELECTRONIC ENGINEERING
DC	DOOR CONTACT - PROVIDE 1" DIAMETER HOLE IN THE FRAME. SNAP LOCK INSULATION BUSHING FOR TIGHT FIT.	GENETEC BY ELECTRONIC ENGINEERING
PB	PUSH BUTTON SHALL BE SURFACE MOUNTED UNDERNEATH WORK SURFACE. E.C. SHALL COORDINATE EXACT LOCATION WITH OWNER PRIOR TO INSTALLATION. E.C. SHALL PROVIDE 22-2 WIRE BETWEEN ALARM SWITCH DEVICES AND CONTROL PANEL. [WIRELESS DEVICE] SECURITY VENDOR SHALL TEST MONITORING SYSTEM AFTER INSTALLATION.	GENETEC BY ELECTRONIC ENGINEERING
REX	REQUEST TO EXIT. PROVIDE A FLUSH MOUNTED SINGLE GANG JUNCTION BOX CENTERED 12" ABOVE DOOR FRAME. CONNECTED TO DOUBLE GANG J-BOX ABOVE THE CEILING.	GENETEC BY ELECTRONIC ENGINEERING

NURSE CALL DEVICE SCHEDULE - AUDIO/VISUAL LARGE

SUBSCRIPT	DESCRIPTION	MODEL
M	NURSE CALL MASTER STATION WITH HANDSET, COLOR SCREEN, FULL-DUPLEX AUDIO, AND CONTROL BUTTONS, DESK MOUNTED PROVIDE DOUBLE-GANG BOX WITH SINGLE-GANG RING AT 18" AFF WITH 3/4" CONDUIT TO ABOVE THE CEILING FOR NETWORK CONNECTION	RAULAND RESPONDER 5
N1	NURSE CALL SINGLE PATIENT STATION WITH FULL-DUPLEX AUDIO, CANCEL BUTTON, ALARM JACK, AND PILLOW SPEAKER/CALL CORD RECEPTACLE. PROVIDE DIGITAL PILLOW SPEAKER (NC, TV, DIGITAL VOLUME, [1] [2] LIGHTS, [PLUS THREE CUSTOM BUTTONS]) WITH BREAK AWAY CORD PROVIDE 3-GANG BACKBOX AT ## WITH 1" CONDUIT TO ABOVE THE CEILING FOR NETWORK AND TV CONNECTIONS [AND 3/4" CONDUIT TO THE BED CONNECTOR JUNCTION BOX] NTS: VERIFY IF STATION IS MOUNTED IN THE WALL OR A HEADWALL UNIT (COORDINATE MOUNTING HEIGHT WITH HEADWALL ELEVATIONS), PILLOW SPEAKER TYPE/FEATURES (OR CALL CORD) AND BED CONNECTOR USE/MOUNTING AND EDIT ACCORDINGLY , SEQUENTIALLY NUMBER EACH UNIQUE CONFIGURATION. SPECIFY LOW VOLTAGE LIGHTING CONTROLLER IF LIGHTS ARE CONTROLLED THROUGH THE NURSE CALL	RAULAND RESPONDER 5 353000
S	NURSE CALL PATIENT ASSIST PULL CORD CALL STATION WITH CANCEL BUTTON, WATERPROOF CONSTRUCTION, PROVIDE SEALANT TO PREVENT WATER FROM ENTERING THE BACKBOX PROVIDE SINGLE GANG OPENING (MINIMUM 3-1/2" DEEP) AT 78" AFF WITH 3/4" CONDUIT TO ABOVE AN ACCESSIBLE CEILING, MOUNT BOX APPROXIMATELY 6" AWAY FROM SHOWER HEAD	RAULAND RESPONDER 5 354001WP

CAMERA SCHEDULE (AXIS)

CCTV CAMERA, PROVIDE FLUSH FOUR SQUARE JUNCTION BOX FOR CAMERA WITH 3/4" C. FROM DEVICE TO JUNCTION BOX LOCATED ABOVE ACCESSIBLE SPACE.

SUBSCRIPT "#" INDICATES SPECIFIC INFORMATION ON CAMERA CHARACTERISTICS.

REFER TO SPECIFICATION SECTION 282300 FOR ADDITIONAL INFORMATION.

REFER TO NETWORK SCHEDULE FOR FACEPLATE/RJ-45 JACK INFORMATION.

CAMERA NUMBER	CAMERA NAME	CAMERA MODEL	CAMERA TYPE	HEIGHT A.F.F.	FOV DISTANCE TO OBJECT	FOV UPPER LIMIT	FOV BOTTOM LIMIT	FOV ACTUAL FOCAL LENGTH	FOV RANGE OF LENS	REFER TO MOUNTING DETAIL	COMMENTS
12		AXIS M4327-P_SURFACE CEILING MOUNT	FIXED DOME CAMERAS	8'-0"	19'-8 7/32"	11 13/16"	13'-1 15/32"	1.1	1.1		GENETEC VMS BY ELECTRONIC ENGINEERING
4		AXIS M3086-V_CEILING MOUNT	FIXED DOME CAMERAS	8'-0"	27'-10 7/8"	11 13/16"	8'-6 3/8"	2.4	2.4		GENETEC VMS BY ELECTRONIC ENGINEERING
7		AXIS M3086-V_CEILING MOUNT	FIXED DOME CAMERAS	8'-0"	62'-3 1/2"	11 13/16"	8'-6 3/8"	2.4	2.4		GENETEC VMS BY ELECTRONIC ENGINEERING
10		AXIS M3086-V_CEILING MOUNT	FIXED DOME CAMERAS	8'-0"	62'-3 1/2"	11 13/16"	8'-6 3/8"	2.4	2.4		GENETEC VMS BY ELECTRONIC ENGINEERING
9		AXIS M4327-P_SURFACE CEILING MOUNT	FIXED DOME CAMERAS	8'-0"	19'-8 7/32"	11 13/16"	13'-1 15/32"	1.1	1.1		GENETEC VMS BY ELECTRONIC ENGINEERING
8		AXIS M4327-P_SURFACE CEILING MOUNT	FIXED DOME CAMERAS	8'-0"	19'-8 7/32"	11 13/16"	13'-1 15/32"	1.1	1.1		GENETEC VMS BY ELECTRONIC ENGINEERING
3		AXIS M4216-LV_WALL MOUNT	FIXED DOME CAMERAS	8'-0"	19'-8 7/32"	11 13/16"	8'-6 3/8"	3	3 - 6		GENETEC VMS BY ELECTRONIC ENGINEERING
2		AXIS M4216-LV_WALL MOUNT	FIXED DOME CAMERAS	8'-0"	19'-8 7/32"	11 13/16"	8'-6 3/8"	3	3 - 6		GENETEC VMS BY ELECTRONIC ENGINEERING
1		AXIS M4216-LV_WALL MOUNT	FIXED DOME CAMERAS	8'-0"	19'-8 7/32"	11 13/16"	8'-6 3/8"	3	3 - 6		GENETEC VMS BY ELECTRONIC ENGINEERING
5		AXIS M4216-LV_WALL MOUNT	FIXED DOME CAMERAS	8'-0"	19'-8 7/32"	11 13/16"	8'-6 3/8"	3	3 - 6		GENETEC VMS BY ELECTRONIC ENGINEERING
11		AXIS M4216-LV_WALL MOUNT	FIXED DOME CAMERAS	8'-0"	19'-8 7/32"	11 13/16"	8'-6 3/8"	3	3 - 6		GENETEC VMS BY ELECTRONIC ENGINEERING
13		AXIS M4216-LV_WALL MOUNT	FIXED DOME CAMERAS	8'-0"	19'-8 7/32"	11 13/16"	8'-6 3/8"	3	3 - 6		GENETEC VMS BY ELECTRONIC ENGINEERING
6		AXIS M4327-P_SURFACE CEILING MOUNT	FIXED DOME CAMERAS	8'-0"	19'-8 7/32"	11 13/16"	13'-1 15/32"	1.1	1.1		GENETEC VMS BY ELECTRONIC ENGINEERING

SIMONSON
PLANNING + ARCHITECTURE + INTERIORS
Simonson + Associates Architects LLC
1717 Ingersoll Ave, Suite 117, Des Moines, Iowa 50309
Ph 515-440-5626
www.simonsonassoc.com

This drawing has been prepared by the Architect, or under the Architect's supervision. This drawing is provided as an instrument of service by the Architect and is protected by the Copyright Laws. It may not be used for use on this project only. Any reproduction, use, or disclosure of this drawing, in whole or in part, without the prior written consent of the Architect is prohibited by the Copyright Laws of Simonson & Associates Architects, LLC.

BROADLAWNS BRAIN & MEMORY CENTER

3714 INGERSOLL AVENUE
DES MOINES, IA 50309

Rev. #	Issue / Revision	Date
3	BID SET	09-26-2026
4	Addendum #1	10-09-2026

Proj. No. 14138B SAA Proj. Mgr.

Sheet Title

TECHNOLOGY SCHEDULES

Sheet No.

T600

KED bluestone
5518 NW 88th Street
Johnston, IA 50131
515-727-0700
www.KEDbluestone.com

PROJECT NUMBER: 126-080
KEDbluestone RESERVES PROPRIETARY RIGHTS, INCLUDING COPYRIGHTS, TO THIS DRAWING AND THE DATA SHOWN THEREON. SAID DRAWING AND/OR DATA ARE THE EXCLUSIVE PROPERTY OF KEDbluestone AND SHALL NOT BE USED OR REPRODUCED FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN APPROVAL AND PARTICIPATION OF KEDbluestone. © 2026 KEDbluestone

Autodesk Docs://Broadlawns Brain Wellness/126-080_MEP_Broadlawns Brain Wellness_DC_R26.rvt
10/9/2026 1:21:41 PM

BROADLAWNS INGERSOLL CLINIC
SITE PLAN

SHEET INDEX:

C0.1 COVER SHEET
C1.1 OVERALL SITE LAYOUT
C1.2 DEMO PLAN
C2.1 LAYOUT PLAN
C3.1 GRADING PLAN
C4.1 UTILITY PLAN
C5.1 LANDSCAPE PLAN
C6.1 DETAILS SHEET
C7.1 EROSION CONTROL PLAN

PROPERTY DESCRIPTION:
(WARRANTY DEED BOOK 20538, PAGE 747)
LOT 21 AND THE NORTH 1/2 OF LOT 22 OF THE OFFICIAL PLAT OF THE SOUTHEAST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 6, TOWNSHIP 78 NORTH, RANGE 24, WEST OF THE 5TH P.M., NOW INCLUDED IN AND FORMING A PART OF THE CITY OF DES MOINES, POLK COUNTY, IOWA

SUBJECT TO AND TOGETHER WITH ANY AND ALL EASEMENTS AND RESTRICTIONS OF RECORD.

ADDRESS:
3714 INGERSOLL AVENUE
DES MOINES, IOWA 50312

OWNER/PREPARED FOR:
BROADLAWNS MEDICAL CENTER
1801 HICKMAN ROAD
DES MOINES, IOWA 50314
CONTACT: DENISE CUNDY
PHONE: 515-805-8940
EMAIL: DCUNDY@BROADLAWNS.ORG

ZONING:
INFORMATION OBTAINED FROM ONLINE CITY MAPS
MX2 (MIXED USE DISTRICT)
BULK REGULATIONS:
BUILDING TYPE: STOREFRONT
BUILDING USE: MEDICAL CLINIC
PRIMARY FRONTAGE BUILD-TO-ZONE: 0-5'
INTERIOR SIDE SETBACK: 0'
REAR SETBACK: 5'

PARKING REQUIREMENTS:
USE: OFFICE - MEDICAL
PARKING REQUIRED: 1 PER 400 SF
BUILDING AREA = 5100/400 = 13 SPACES REQUIRED:
PROPOSED PARKING PROVIDED: 31 SPACES (INCLUDING 2 ADA STALLS)

BIKE PARKING REQUIRED: 1 PER 50,000 SF = 1 SPACE
BIKE PARKING PROVIDED: 2 SPACES

OPEN SPACE REQUIREMENTS:

TOTAL SITE AREA:	29,114 SF
REQUIRED OPEN SPACE:	4,367 SF (15%)
MAX. IMPERVIOUS SURFACE:	24,748 SF (85%)
EX OPEN SPACE:	4,430 SF (15.22%)
EX IMPERVIOUS SURFACE:	24,684 SF (84.78%)
PROP. OPEN SPACE:	4,714 SF (16.19%)
PROP. IMPERVIOUS SURFACE:	24,400 SF (83.81%)

BENCHMARK:
BASIS OF BEARING OBTAINED FROM GPS OBSERVATIONS
DATUM = NAD 83, IOWA SOUTH
BENCHMARK DATUM = DES MOINES CITY DATUM

POINT #10,001, CITY OF DES MOINES BM#1914
NORTHING = 577,355.01
EASTING = 1,595,472.53
ELEVATION = 170.63
DESCRIPTION:GENERALLY LOCATED AT THE NORTHWEST CORNER OF THE INTERSECTION OF GRAND AVENUE AND 35TH STREET, TRIANGLE CUT IN THE NW CORNER OF THE TRAFFIC SIGNAL BASE.

GENERAL NOTES:
1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH SUDAS STANDARD SPECIFICATIONS AND ANY AND ALL CITY/COUNTY SUPPLEMENTAL SPECIFICATIONS. THE CITY OF DES MOINES MUST BE NOTIFIED BY ALL CONTRACTORS 48 HOURS PRIOR TO COMMENCING WORK.
2. IN EVENT OF A DISCREPANCY BETWEEN THE QUANTITY ESTIMATES AND THE DETAILED PLANS, THE DETAILED PLANS SHALL GOVERN.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF ALL UTILITIES. ANY DAMAGE TO SAID UTILITIES SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.
4. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CURRENT O.S.H.A. CODES AND STANDARDS. NOTHING INDICATED ON THESE PLANS SHALL RELIEVE THE CONTRACTOR FROM COMPLYING WITH THE APPROPRIATE SAFETY REGULATIONS.
5. ALL NECESSARY CONSTRUCTION SIGNS, BARRICADES AND OTHER TRAFFIC CONTROL DEVICES REQUIRED DURING CONSTRUCTION WILL BE FURNISHED BY THE CONTRACTOR. SIGNS, BARRICADES AND OTHER TRAFFIC CONTROL DEVICES MUST BE IN CONFORMANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS."
6. BISHOP ENGINEERING SHALL NOT BE LIABLE FOR ANY INJURIES THAT HAPPEN ON SITE. THIS SHALL INCLUDE BUT NOT BE LIMITED TO TRENCH COLLAPSES FROM VARYING SOIL CONDITIONS OR INJURIES CAUSED BY UNDERGROUND UTILITIES INCLUDING UTILITIES THAT ARE NOT SHOWN ON PLAN.
7. THE CONTRACTOR IS LIABLE FOR ALL DAMAGES TO PUBLIC OR PRIVATE PROPERTY CAUSED BY THEIR ACTION OR INACTION IN PROVIDING FOR STORM WATER FLOW DURING CONSTRUCTION. DO NOT RESTRICT FLOWS IN EXISTING DRAINAGE CHANNELS, STORM SEWER, OR FACILITIES.
8. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER A SCHEDULE FOR PERFORMANCE OF WORK ITEMS. THIS SCHEDULE SHALL BE PROVIDED BY THE CONTRACTOR AT THE PROJECT PRECONSTRUCTION CONFERENCE. NO WORK SHALL BEGIN UNTIL A SCHEDULE HAS BEEN SUBMITTED AND ACCEPTED. THE CONTRACTOR SHALL THEN PERFORM WORK TO CONFORM TO THE ACCEPTED SCHEDULE.
9. LABORATORY TESTS SHALL BE PERFORMED BY THE OWNER UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL PROVIDE SAMPLES OF MATERIAL REQUIRED FOR LABORATORY TESTS AND TESTING IN ACCORDANCE WITH THE URBAN STANDARD SPECIFICATIONS FOR PUBLIC IMPROVEMENTS.
10. SOIL IMPORT OR EXPORT ON THIS PROJECT SHALL BE CONSIDERED INCIDENTAL AND WILL NOT BE MEASURED OR PAID FOR SEPARATELY.
11. THE CONTRACTOR SHALL PROTECT ALL STRUCTURES NOT SHOWN AS REMOVALS ON THE PLANS.
12. THE CONTRACTOR SHALL OBTAIN ANY AND ALL NECESSARY PERMITS PRIOR TO ANY CONSTRUCTION. CONTRACTOR SHALL WORK WITH OWNER OR OWNERS REPRESENTATIVE ON ALL REQUIRED STORM WATER DISCHARGE PERMITS FROM THE IOWA DEPARTMENT OF NATURAL RESOURCES AND THE CITY OF DES MOINES.
13. GRADING AND EROSION CONTROL SHALL BE DONE IN ACCORDANCE WITH THE APPROVED GRADING PLAN, SWPPP, NPDES DOCUMENTS, AND IOWA DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS.
14. THE CONTRACTOR SHALL PICK UP ANY DEBRIS SPILLED ONTO THE ADJACENT RIGHT OF WAY OR ABUTTING PROPERTIES AS THE RESULT OF CONSTRUCTION, AT THE END OF EACH WORK DAY.
15. THE CONTRACTOR IS RESPONSIBLE FOR THE PROMPT REMOVAL OF ALL MUD THAT HAS BEEN TRACKED OR WASHED ONTO ADJACENT PROPERTY OR RIGHT OF WAY UNTIL SUCH TIME THAT PERMANENT VEGETATION HAS BEEN ESTABLISHED.
16. DISPOSE OF ALL EXCESS MATERIALS AND TRASH IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REQUIREMENTS. PROVIDE WASTE AREAS OR DISPOSAL SITES FOR EXCESS MATERIALS NOT DESIRABLE FOR INCORPORATION INTO THE PROJECT.

PAVING NOTES:
1. THE PAVING/ GRADING CONTRACTOR SHALL BACKFILL THE PAVING SLAB AND FINE GRADE THE RIGHT OF WAY AS SOON AFTER THE PAVING AS POSSIBLE. ALL AREAS SHALL BE SEEDED IN ACCORDANCE WITH CITY OF DES MOINES STANDARD SPECIFICATIONS AND THE CURRENT VERSION OF SUDAS.
2. SUBGRADE PREPARATION AND PAVEMENTS WILL BE CONSTRUCTED FOLLOWING RECOMMENDATIONS IN THE SOILS REPORT. APPROVED SOILS ENGINEER MUST SIGN OFF ON SUB BASE PRIOR TO ANY PAVEMENT BEING PLACED.
3. SEE DETAILS FOR ALL PAVEMENT THICKNESS.
4. ALL PEDESTRIAN WALKWAYS THAT UNLOAD INTO A VEHICLES TRAVELED PATH MUST HAVE A.D.A. DETECTABLE WARNING PANEL(S) AS PER A.D.A. REGULATIONS. PANEL TYPE & COLOR SHALL BE PER CITY STANDARD.
5. ALL WALKS, PARKING LOTS, HANDICAP PARKING, RAMPS, ETC. SHALL COMPLY WITH ALL A.D.A. AND CITY CODES. HANDICAP PARKING SIGNAGE IS REQUIRED FOR ALL HANDICAP STALLS AND SHALL BE CONSIDERED INCIDENTAL. IN EVENT OF A DISCREPANCY BETWEEN THE PLANS AND THE A.D.A./CITY CODES THE A.D.A./CITY CODES SHALL GOVERN. CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING A.D.A. CODES ARE MET.

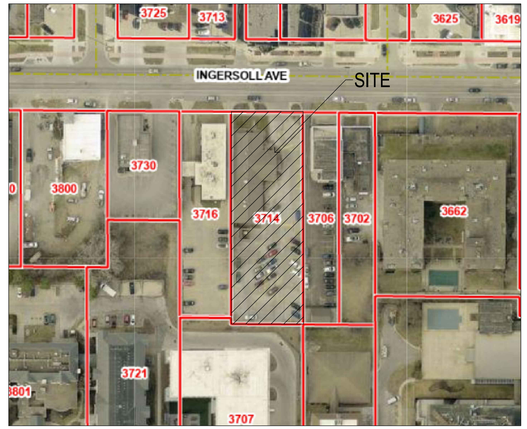
UTILITY NOTES:
1. QUANTITY CALLOUTS ON PIPE LENGTHS ARE APPROXIMATE AND SHOULD BE USED FOR REFERENCE ONLY.
2. THE CONTRACTOR SHALL PROVIDE AS-BUILTS OF ALL UTILITIES, INCLUDING DEPTH AND LOCATION OF ALL SERVICES.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION AND ALL COSTS ASSOCIATED WITH AS-BUILT TOPO OF DETENTION POND & DETENTION POND STORM SEWER. CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING BISHOP ENGINEERING (DAVID BENTZ AT 515-276-0467) TO PERFORM SAID AS-BUILT SURVEY. IF DETENTION PONDS HAVE BEEN GRADED INCORRECTLY, CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SUBSEQUENT AS-BUILT TOPO SURVEYS UNTIL ISSUES HAVE BEEN RECTIFIED.
4. THE CONTRACTOR SHALL COORDINATE THE ADJUSTMENT OF ANY AND ALL EXISTING AND PROPOSED UTILITIES TO PROPOSED GRADES. EXISTING UTILITIES SHALL BE RAISED OR LOWERED IN ACCORDANCE WITH THE UTILITY OWNER REQUIREMENTS. ANY NECESSARY ADJUSTMENTS SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION.
5. ACTIVE EXISTING FIELD TILES ENCOUNTERED DURING CONSTRUCTION SHALL BE REPAIRED, REROUTED, OR CONNECTED TO PUBLIC OR PRIVATE STORM SEWER TO REMAIN IN SERVICE.
6. ALL PROPOSED RCP STORM SEWER PIPE JOINTS SHALL BE FABRIC WRAPPED AND THE LAST 3 PIPE SECTIONS ON THE APRON SHALL BE TIED WITH RF-14 TYPE II CONNECTORS. ALL APRONS SHALL HAVE A STANDARD FOOTING AND TRASH GUARD.
7. ALL RIP RAP CALLED OUT ON PLANS SHALL BE UNDERLAIN WITH ENGINEER FABRIC AND INSTALLED PER SUDAS DETAIL 9040.110 OR 9040.111 DEPENDING ON CONDITION. TOP OF RIP-RAP SHALL BE INSTALL FLUSH OR LOWER THAN ADJACENT SURFACES. DEPTH OF RIP-RAP SHALL BE 1.5 TIMES MAX STONE DIAMETER.
8. SANITARY SEWER SERVICE CONNECTIONS SHALL BE PLACED AT A SLOPE OF NO LESS THAN 2%. SERVICES SHALL MAINTAIN 18" OF VERTICAL SEPARATION FROM THE WATERMAIN WITH 18" OF COMPACTED LOW PERMEABILITY SOIL BETWEEN THE UTILITIES WITHIN 10' OF THE CROSSING.
9. MANDREL AND PRESSURE TESTS SHALL BE REQUIRED FOR ALL PROPOSED SANITARY LINES. TELEVISING OF THE SANITARY SEWER SYSTEM SHALL BE COMPLETED PRIOR TO PAVING UNLESS OTHERWISE APPROVED BY JURISDICTION.
10. WATERMAINS SHALL BE C-900. SIZE OF WATERMAIN AS SHOWN ON PLANS.
11. THRUST BLOCKS SHALL BE INSTALLED AS REQUIRED AND SHALL BE CONSIDERED INCIDENTAL TO WATERMAIN CONSTRUCTION.
12. PROPOSED WATERMAIN SHALL BE PRESSURE TESTED, BACTERIA TESTED AND CHLORINATED. THE FILLING OF THE WATER MAIN SHALL BE DONE BY THE CITY OF DES MOINES.
13. TRACER WIRE SHALL BE ADDED TO ALL WATER MAIN, AND BROUGHT TO THE SURFACE AT EVERY HYDRANT.
14. ALL HYDRANTS WILL IMMEDIATELY BE COVERED WITH A BLACK PLASTIC BAG (OR EQUIVALENT) ONCE THE HYDRANT IS INSTALLED. THE CITY OF DES MOINES WILL NOTIFY THE CONTRACTOR WHEN THE BAGS CAN BE REMOVED.
15. THE MINIMUM HYDRANT LEAD SHALL BE 3.5 FEET.

UTILITY CONFLICT NOTES:
1. UTILITY CONFLICTS MAY EXIST ACROSS THE SITE WITH NEW UTILITIES, GRADING, PAVING ETC. MOST UTILITY CONFLICTS HAVE BEEN CALLED OUT FOR CONTRACTOR CONVENIENCE.
2. CONTRACTOR IS RESPONSIBLE FOR ALL UTILITY CONFLICTS THAT ARE EITHER CALLED OUT ON THE PLANS OR THAT CAN BE SEEN ON THE PLANS BETWEEN AN EXISTING UTILITY AND PROPOSED CONSTRUCTION

WETLAND NOTES:
1. BISHOP ENGINEERING DOES NOT PERFORM WETLAND STUDIES OR WETLAND MITIGATION. IT IS THE OWNER'S RESPONSIBILITY TO DETERMINE IF ANY WETLANDS ARE LOCATED ON THE PROJECT SITE AND PERFORM ANY NECESSARY MITIGATION PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

SURVEY NOTES:
1. SURVEY WORK WAS COMPLETED BY BISHOP ENGINEERING ON 07-29-26. SEE SITE SURVEY PROVIDED AS PART OF THIS SET OF PLANS FOR EXISTING SITE CONDITIONS AND BOUNDARY INFORMATION.

CITY OF DES MOINES GENERAL NOTES:
1. PRIVATE WATER AND SEWER SERVICES MUST MEET UNIFORM PLUMBING CODE (UPC) AND ALL CITY OF DES MOINES AMENDMENTS TO UPC. DEVELOPER / CONTRACTOR IS RESPONSIBLE FOR VERIFYING PIPE MATERIAL REQUIREMENTS PRIOR TO CONSTRUCTION.
2. A SIDWALK / DRIVE APPROACH PERMIT IS REQUIRED.
3. A PLUMBING PERMIT AND RIGHT-OF-WAY PERMIT ARE BOTH REQUIRED FOR THE PROPOSED CONNECTIONS TO THE PUBLIC STORM SEWER.
4. THIS SITE SHALL BE MAINTAINED IN COMPLIANCE WITH ALL CITY CODE APPLICABLE ON THE DATE OF SITE PLAN APPROVAL.
5. MECHANICAL EQUIPMENT SHALL NOT BE LOCATED IN THE FRONT YARD OR STREET SIDE YARD AND SHALL BE SCREENED FROM VIEW FROM ANY PUBLIC WAY WITH LANDSCAPING, FENCING, OR WALLS CONSISTENT WITH THE BUILDING DESIGN, COLORS, AND MATERIALS.
6. ANY AMENDMENTS OR CHANGES TO THE PROJECT SITE THAT DO NOT MEET WHAT IS SHOWN ON THE SITE PLAN NEED TO BE APPROVED WITH THE PERMIT AND DEVELOPMENT CENTER PRIOR TO INSTALLATION/CONSTRUCTION.
7. LIGHTING MUST BE LOW GLARE CUT OFF TYPE FIXTURES TO REDUCE THE GLARE OF LIGHT POLLUTION ON SURROUNDING PROPERTIES.
8. THE REQUIRED LANDSCAPING, BOTH EXISTING AND PROPOSED, SHALL BE MAINTAINED FOR THE LIFE OF THE CERTIFICATE OF OCCUPANCY.
9. ALL DISTURBED AREAS SHOULD BE RESTORED BY SEEDING OR SODDING.
10. ALL PLANTING BEDS SHALL INCLUDE NON-LIVING PERMEABLE MATERIALS SUCH AS MULCH, AND NOT INCLUDING ROCK.



VICINITY MAP
SCALE: 1" = 100'

ABBREVIATIONS:

AC	ACRES
ASPH	ASPHALT
BK	BOOK
CONC	CONCRETE
D	DEEDED DISTANCE
EX	EXISTING
ENCL	ENCLOSURE
FF	FINISHED FLOOR
FL	FLOW LINE
FRAC	FRACTIONAL
M	MEASURED DISTANCE
MH	MANHOLE
OPC	ORANGE PLASTIC CAP
P	PLATTED DISTANCE
PG	PAGE
POB	POINT OF BEGINNING
POC	POINT OF COMMENCEMENT
PRA	PREVIOUSLY RECORDED AS
PUE	PUBLIC UTILITY EASEMENT
ROW	RIGHT OF WAY
RPC	RED PLASTIC CAP
SF	SQUARE FEET
SAN	SANITARY
TYP	TYPICAL
YPC	YELLOW PLASTIC CAP
N	NORTH
S	SOUTH
E	EAST
W	WEST

LEGEND

SAN — SANITARY SEWER	ELECTRIC VAULT
ST — STORM SEWER	TRANSFORMER POLE
W — WATER LINE	TRANSFORMER POLE
G — GAS LINE	LIGHT POLE
U/E — UNDERGROUND ELECTRIC	ELECTRIC JUNCTION BOX
O/E — OVERHEAD ELECTRIC	ELECTRIC PANEL
TELE — TELEPHONE LINE	TRANSFORMER
F/O — FIBER OPTIC	GROUND LIGHT
CATV — CABLE TV	GUY WIRE
STORM MANHOLE	ELECTRIC HANDHOLE
CURB INTAKE	GAS METER
SURFACE INTAKE	GAS VALVE
FLARED END SECTION	AIR CONDITIONING UNIT
ROOF DRAIN	TELEPHONE RISER
DOWNSPOUT	TELEPHONE VAULT
SANITARY MANHOLE	TELEPHONE MANHOLE
CLEANOUT	TRAFFIC SIGNAL MANHOLE
FIRE HYDRANT	FIBER OPTIC MANHOLE
SPRINKLER	FIBER OPTIC RISER
IRRIGATION CONTROL VALVE	FIBER OPTIC VAULT
WATER MANHOLE	CABLE TV RISER
WELL	SIGN
WATER VALVE	BOLLARDS
WATER SHUT OFF	DENOTES NUMBER OF PARKING STALLS
YARD HYDRANT	PROPERTY CORNER - FOUND AS NOTED
FLAGPOLE	PROPERTY CORNER- PLACED 5/8" IRON ROD WITH YELLOW PLASTIC CAP ID # 14775 OR AS NOTED
ELECTRIC MANHOLE	SECTION CORNER - FOUND AS NOTED
ELECTRIC METER	SITE CONTROL POINT - MONUMENT AS NOTED
ELECTRIC RISER	

SITE PLAN APPROVAL:

☐ APPROVED ☐ APPROVED WITH CONDITIONS – SEE EXHIBIT "A"

IN ACCORDANCE WITH SECTION 135-9, 2019 DES MOINES MUNICIPAL CODE, AS AMENDED.

NO CHANGES TO THIS PLAN UNLESS APPROVED IN WRITING FROM THE DEVELOPMENT SERVICES DIRECTOR.

DEVELOPMENT SERVICES DIRECTOR: _____ DATE: _____

UTILITY MAPS PROVIDED BY:
1. ELECTRIC (MIDAMERICAN / 515-252-6723)
2. STORM AND SANITARY (CITY OF DES MOINES / 515-237-1359)
3. FIBER OPTIC (LUMEN / 918-547-0147)
4. FIBER OPTIC (GOOGLE FIBER / 650-602-2322)
5. FIBER OPTIC (SEGRA / 816-490-0894)
6. CABLE (MEDIACOM / 515-991-7388)
7. GAS (MIDAMERICAN / 515-252-6723)
8. WATER (DES MOINES WATER WORKS / 515-323-6244)

IOWA ONE CALL
1-800-292-8989
811
www.iowaonecall.com

UTILITY NOTE:
THE LOCATION OF THE UTILITIES INDICATED ON THE PLANS HAVE BEEN TAKEN FROM THE FIELD SURVEY, EXISTING PUBLIC RECORDS, AND PLANS PROVIDED BY OTHERS. SURFACE UTILITY LOCATIONS HAVE BEEN FIELD LOCATED BY BISHOP ENGINEERING, UNLESS OTHERWISE NOTED. ALL UNDERGROUND UTILITY LOCATIONS ARE APPROXIMATE LOCATIONS ONLY. BISHOP ENGINEERING DOES NOT GUARANTEE THE UNDERGROUND LOCATION OF ANY UTILITIES SHOWN. IT SHALL BE THE DUTY OF THE CONTRACTOR TO DETERMINE THE LOCATION AND DEPTH OF ANY UNDERGROUND UTILITIES SHOWN AND IF ANY ADDITIONAL UTILITIES, OTHER THAN THOSE SHOWN ON THE PLANS, MAY BE PRESENT. A REQUEST WAS MADE TO IOWA ONE CALL FOR UTILITY PROVIDERS TO VERIFY, LOCATE, AND MARK THEIR UTILITIES IN THE FIELD.

COPYRIGHT 2026 BISHOP ENGINEERING. THIS DOCUMENT AND THE INFORMATION CONTAINED MAY NOT BE REPRODUCED OR EXCERPTED WITHOUT THE EXPRESS WRITTEN PERMISSION OF BISHOP ENGINEERING. UNAUTHORIZED COPYING OR DISCLOSURE OF CONSTRUCTION USE ARE PROHIBITED BY COPYRIGHT LAW.

LICENSED PROFESSIONAL ENGINEER
DAVID B. BENTZ
17143
IOWA

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

SIGNED: _____ DATE: _____
DAVID B. BENTZ, PE. 17143
LICENSE RENEWAL DATE: DEC. 31, 2027
PAGES OR SHEETS COVERED BY THIS SEAL: C0.1 - C7.1

PRELIMINARY- NOT FOR CONSTRUCTION

10/9/2026 12:26:09 PM L:\LAND PROJECTS 2026\260219 BROADLAWNS INGERSOLL\DWG\C0 COVER.DWG

BISHOP ENGINEERING +
3501 104th Street, Urbandale, IA 50322 Ph: 515-276-0467

SITE PLAN
BROADLAWNS INGERSOLL CLINIC
3714 INGERSOLL AVE
DES MOINES, IA 50312

REFERENCE NUMBER:

DRAWN BY:
LCR

REVISION DATE:
1ST CITY SUB: 2026-09-15
100% BID SET: 2026-09-30
2ND CITY SUB: 2026-10-09
ADDENDUM 1: 2026-10-09

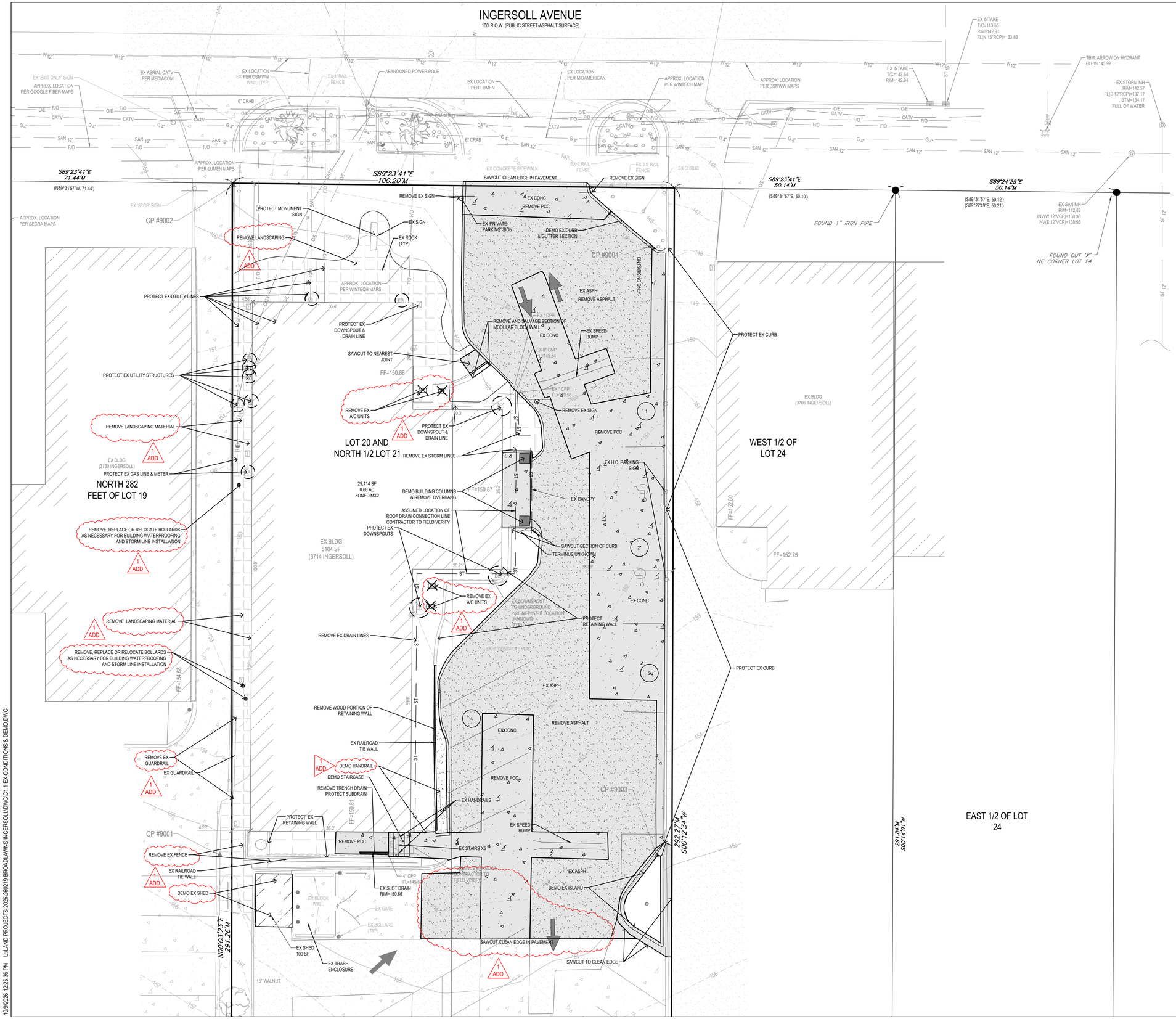
PROJECT NUMBER:
260219

SHEET NAME:
COVER SHEET

SHEET NUMBER:
C0.1

FOR CONSTRUCTION

PRELIMINARY- NOT FOR CONSTRUCTION



DEMO NOTES:

1. SAWCUT & REMOVE ALL PAVEMENT TO FULL DEPTH OF SLAB.
2. PROTECT ALL TREES NOT CALLED OUT FOR REMOVAL WITH ORANGE CONSTRUCTION FENCE AT THE DRIP LINE.
3. PAVEMENT STRIPING CALLED OUT FOR REMOVAL SHALL BE SANDBLASTED. NO GRINDING WILL BE ALLOWED.
4. CONTRACTOR TO LOCATE AND VERIFY ALL EXISTING UTILITY LOCATIONS AND DEPTH ON SITE PRIOR TO CONSTRUCTION AND CONTACT ENGINEER/OWNER IF DIFFERENT FROM PLANS OR IN CONFLICT IN CONSTRUCTION ACTIVITIES.
6. CONTRACTOR TO PROTECT ALL UTILITIES, PAVEMENTS AND STRUCTURES THAT ARE NOT SCHEDULED FOR REMOVAL. CONTRACTOR SHALL REPAIR AND/OR REPLACE ANY DAMAGED UTILITIES, PAVEMENTS, AND STRUCTURES NOT SCHEDULED FOR REMOVAL PER CITY/OWNER SPECIFICATIONS AT THE CONTRACTORS EXPENSE.
7. CONTRACTOR TO COORDINATE WITH OWNER FOR SALVAGING & STORING MATERIALS AT A LOCATION DESIGNATED BY THE OWNER.

DEMO LEGEND:

- PAVEMENT REMOVAL
- DENOTES PROTECTION
- DENOTES REMOVAL

GRAPHIC SCALE
10 0 5 10 20

BISHOP ENGINEERING +
3501 104th Street, Urbandale, IA 50322 Ph: 515-276-0467

SITE PLAN
BROADLAWNS INGERSOLL CLINIC
3714 INGERSOLL AVE
DES MOINES, IA 50312

REFERENCE NUMBER:

DRAWN BY: LCR

REVISION DATE:
1ST CITY SUB: 2026-09-15
100% BID SET: 2026-09-30
2ND CITY SUB: 2026-10-09
ADDENDUM 1: 2026-10-09

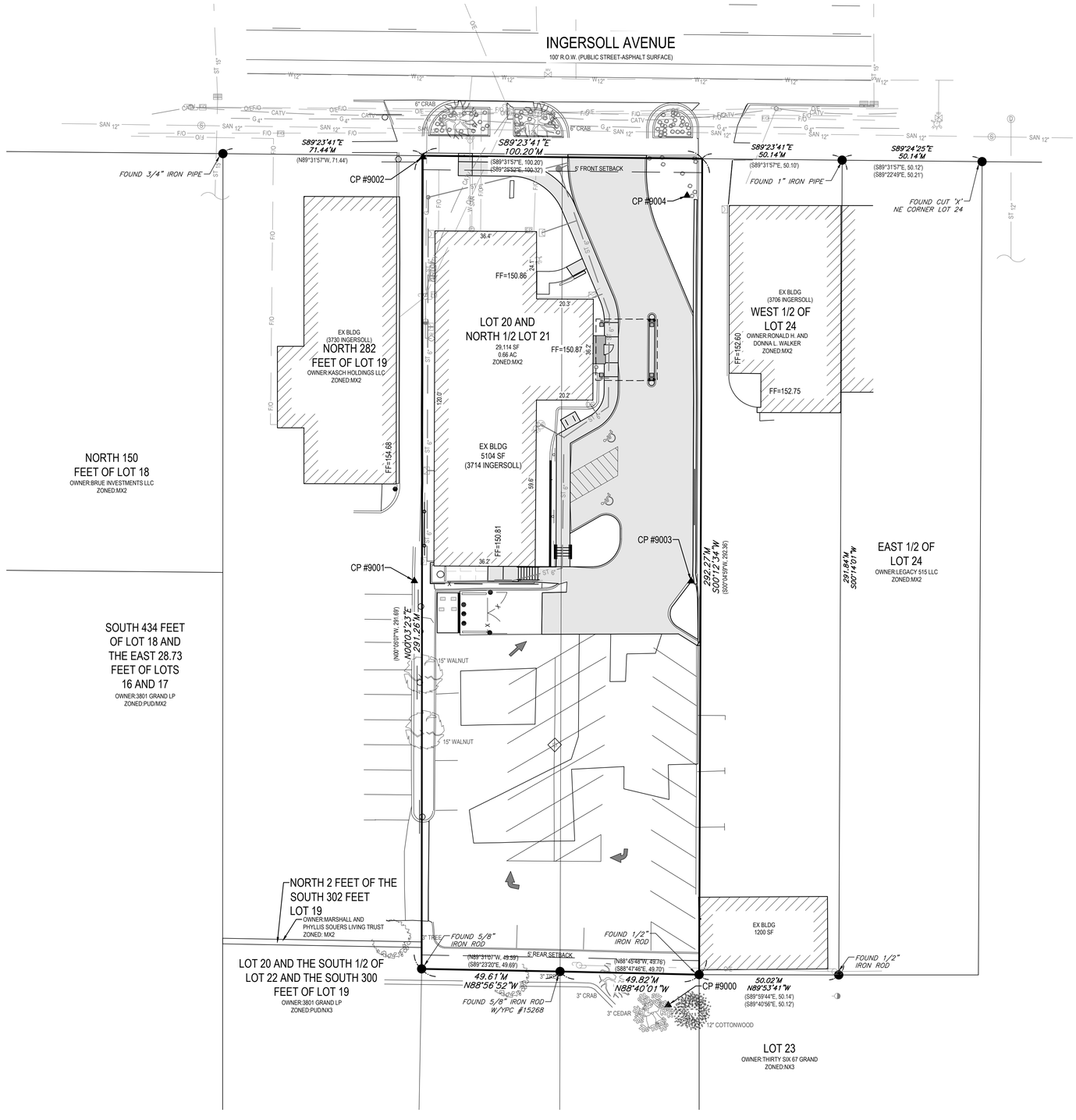
PROJECT NUMBER: 260219

SHEET NAME: DEMO PLAN

SHEET NUMBER: C1.2

10/9/2026 12:26:36 PM L:\LAND PROJECTS 2026\260219 BROADLAWNS INGERSOLL\DWG\C1.1 EX CONDITIONS & DEMO.DWG

PRELIMINARY- NOT FOR CONSTRUCTION



GRAPHIC SCALE
20 0 10 20 40

BISHOP ENGINEERING +
3501 104th Street, Urbandale, IA 50322 Ph: 515-276-0467

SITE PLAN
BROADLAWNS INGERSOLL CLINIC
3714 INGERSOLL AVE
DES MOINES, IA 50312

REFERENCE NUMBER:

DRAWN BY:
LCR

REVISION DATE:
1ST CITY SUB: 2026-09-15
100% BID SET: 2026-09-30
2ND CITY SUB: 2026-10-09
ADDENDUM 1: 2026-10-09

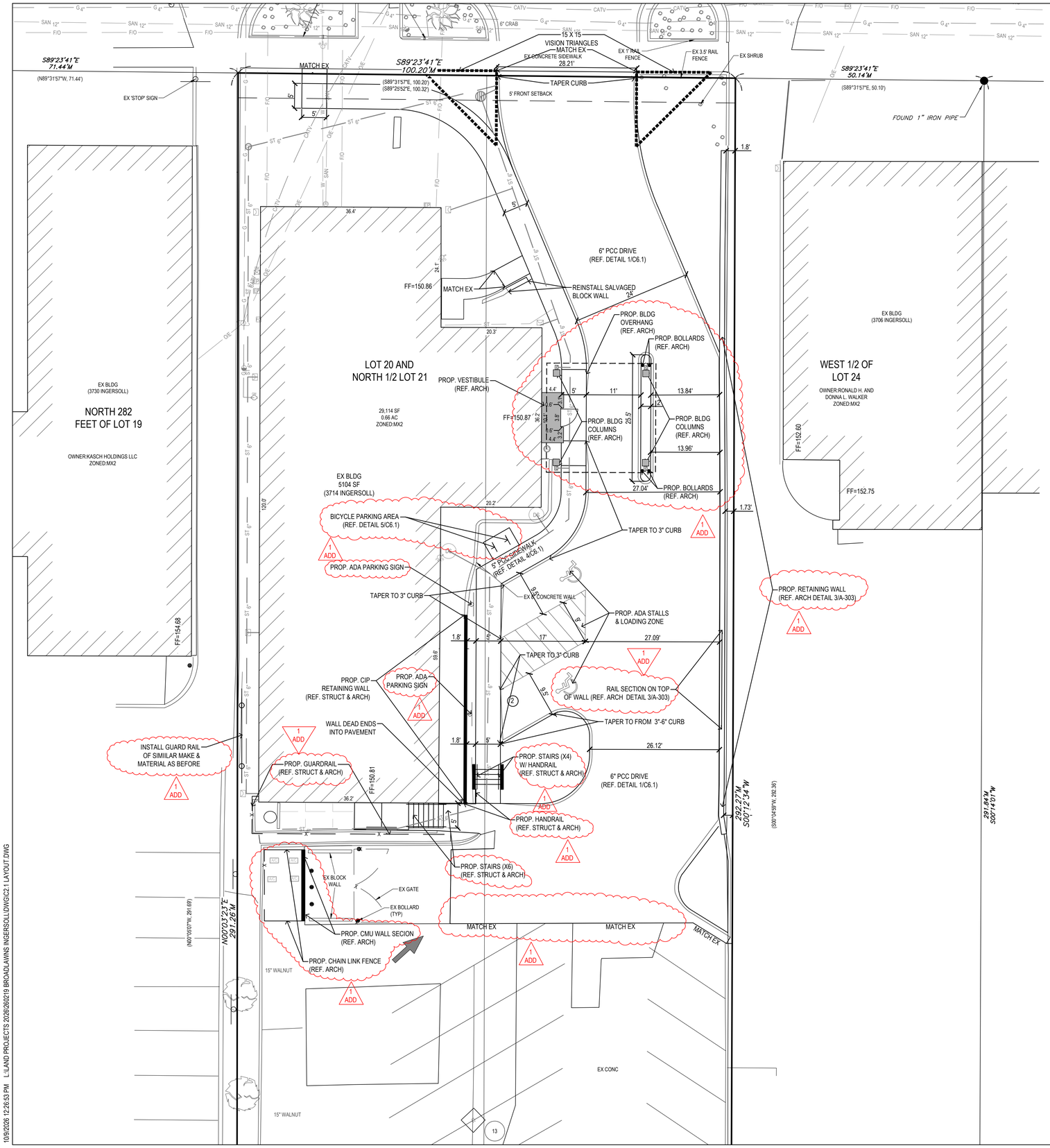
PROJECT NUMBER:
260219

SHEET NAME:
OVERALL SITE LAYOUT

SHEET NUMBER:
C1.1

10/9/2026 12:26:24 PM L:\LAND PROJECTS 2026\260219 BROADLAWNS INGERSOLL\DWG\C1.1 OVERALL SITE LAYOUT.DWG

PRELIMINARY- NOT FOR CONSTRUCTION



GENERAL NOTES:

1. CONTRACTOR TO PROVIDE GRADATION TESTING OF GRANULAR MATERIAL DELIVERED TO THE SITE. GRADATION TESTING IS TO BE CONDUCTED AND REVIEWED BY GEOTECHNICAL FIRM PRIOR TO GRANULAR MATERIAL BEING INSTALLED.
2. IF GRANULAR MATERIAL ARE INSTALLED THAT DO NOT MEET THE APPROVED GEOTECHNICAL REPORT AND SPECIFICATIONS. THE CONTRACTOR, SHALL AT THEIR OWN EXPENSE, REMOVE AND REPLACE THE DEFICIENT GRANULAR MATERIAL PER SPECIFICATION.
3. THE CONTRACTOR SHALL COORDINATE WITH OWNER TO MAINTAIN ACCESS TO THE SITE.
4. **CONTRACTOR MUST COORDINATE WITH ADJACENT PROPERTY OWNER (EAST) FOR CONSTRUCTION AND ANY DISRUPTION TO EXISTING DRIVEWAY FOR THE PROPOSED RETAINING WALL.**

PAVEMENT & ASPHALT PLACEMENT NOTES:

1. CONTRACTOR TO CONNECT TO EXISTING PCC PAVEMENTS AND ASPHALT SURFACES WITH IOWA SUDAS TYPICAL BT JOINT.
2. CONTRACTOR TO REPLACE PCC PAVEMENTS FOR STORM SEWER INSTALLATION PER SUDAS. CONTRACTOR TO REPLACE PAVEMENTS WITH A MINIMUM THICKNESS THAT IS 1" GREATER THAN THE EXISTING PAVEMENT THICKNESS.

BUILDING & STRUCTURAL NOTES:

1. SEE FINAL ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS.
2. CONTRACTOR TO REFER TO ARCHITECTURAL PLANS FOR DETAILED BUILDING CONSTRUCTION INFORMATION.
3. CONTRACTOR TO REFER TO STRUCTURAL PLANS FOR DETAILED BUILDING FOUNDATION AND STOOP LOCATIONS AND DETAILED CONSTRUCTION INFORMATION.
4. THE INSTALLATION OF ALL SIGNAGE SHALL BE THE RESPONSIBILITY OF THE CITY OF DES MOINES SIGN SHOP. THE CONTRACTOR SHALL COORDINATE REMOVAL & INSTALLATION OF ALL SIGNS PRIOR TO COMPLETION OF SITE WORK

GRAPHIC SCALE
10 0 5 10 20

BISHOP ENGINEERING +
3501 104th Street, Urbandale, IA 50322 Ph: 515-276-0467

SITE PLAN
BROADLAWNS INGERSOLL CLINIC
3714 INGERSOLL AVE
DES MOINES, IA 50312

REFERENCE NUMBER:

DRAWN BY:
LCR

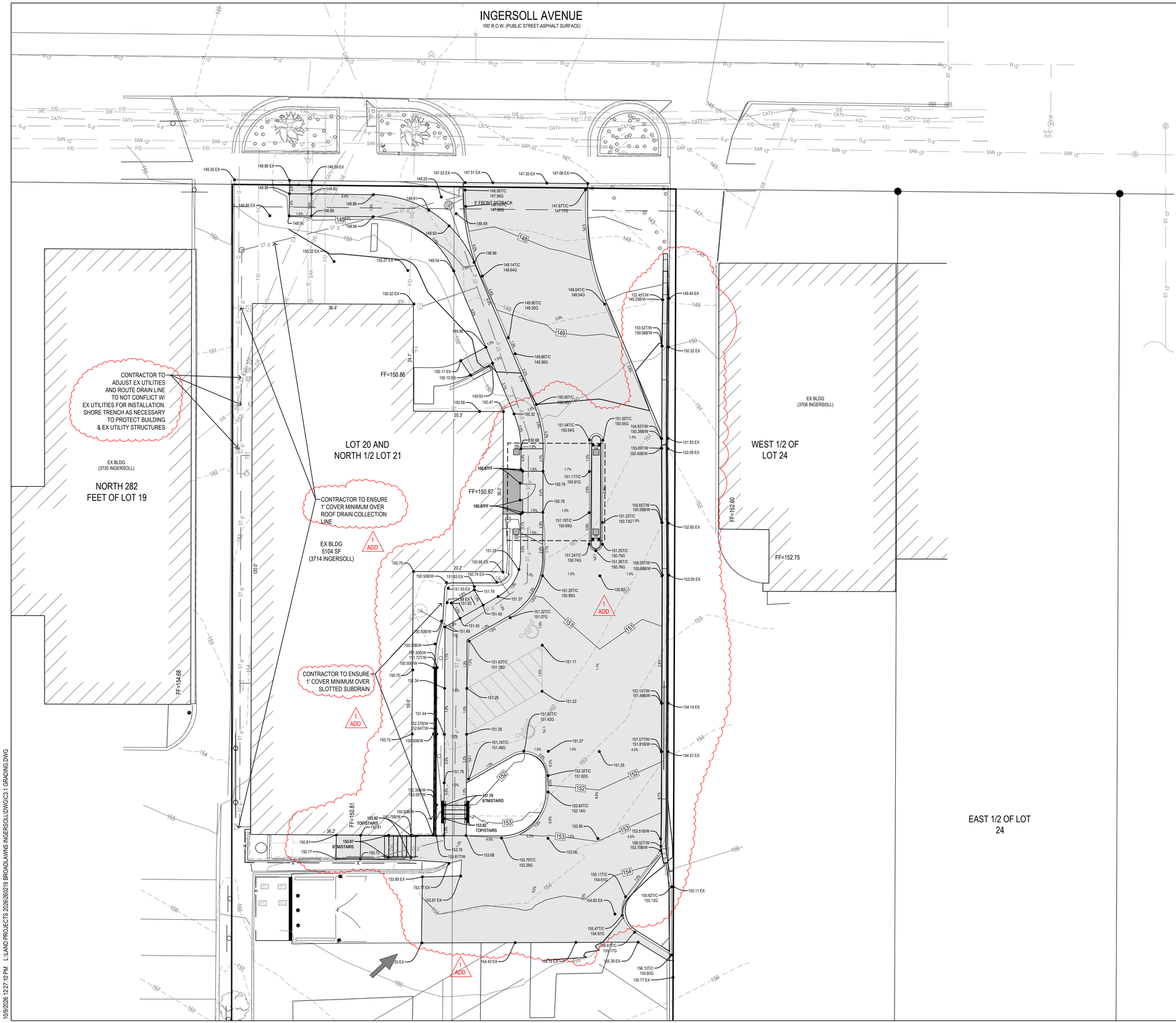
REVISION DATE:
1ST CITY SUB: 2026-09-15
100% BID SET: 2026-09-30
2ND CITY SUB: 2026-10-09
ADDENDUM 1: 2026-10-09

PROJECT NUMBER:
260219

SHEET NAME:
LAYOUT PLAN

SHEET NUMBER:
C2.1

PRELIMINARY- NOT FOR CONSTRUCTION



GRADING LEGEND:

EXISTING CONTOUR	150
PROPOSED CONTOUR	150
FINISHED GROUND ELEVATION	150.50
TOP OF CURB ELEVATION	150.50T/C
GUTTER ELEVATION	150.50G
TOP OF WALL ELEVATION	150.50T/W
BOTTOM OF WALL ELEVATION	150.50B/W
EDGE OF WALK ELEVATION	150.50E/W
TOP OF STAIR ELEVATION	150.50T/S
BOTTOM OF STAIR ELEVATION	150.50B/S

NOTE: WALL ELEVATIONS SHOWN ON PLAN ARE FINISHED GROUND GRADES AT THE TOP AND BOTTOM OF THE WALL.

TOPSOIL NOTES:

1. STRIP AND STOCKPILE THE TOP 8" OF SOIL ON ALL DISTURBED AREAS.
2. RESPREAD TOPSOIL TO A MINIMUM DEPTH OF 8" ON ALL GREEN (NON PAVED) AREAS. IMPORT TOPSOIL AS NECESSARY TO ACHIEVE A MINIMUM DEPTH OF 6".
3. **TOPSOIL SHALL BE FREE OF ALL ROCK AND DEBRIS LARGER THAN 3/4" IN SIZE.**
4. TOPSOIL IS DEFINED AS: FERTILE, FRIABLE LOAM, CAPABLE OF SUSTAINING VIGOROUS PLANT GROWTH, FROM WELL DRAINED SITE FREE FROM FLOODING, NOT IN FROZEN OR MUDDY CONDITIONS; REASONABLE FREE FROM SUBSOIL, CLAY LUMPS, ROOTS, GRASS, WEEDS, STONES LARGER THAN 3/4 INCH IN DIAMETER, AND FOREIGN MATTER; ACIDITY RANGE (PH) OF 5.5 TO 7.5; CONTAINING MINIMUM 4 PERCENT AND MAXIMUM 20 PERCENT ORGANIC MATTER.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING ALL TOPSOIL REQUIREMENTS OF NPDES GENERAL PERMIT NO. 2 ARE MET.

GENERAL NOTES:

1. **CONTRACTOR MUST COORDINATE WITH ADJACENT PROPERTY OWNER (EAST) FOR CONSTRUCTION AND ANY DISRUPTION TO EXISTING DRIVEWAY FOR THE PROPOSED RETAINING WALL.**
2. A GRADING PERMIT WILL BE REQUIRED PRIOR TO COMMENCEMENT OF SITE WORK. PER CITY CODE SEC. 42-182, A CERTIFICATE OF COMPLETION WILL BE REQUIRED TO BE COMPLETED BY THE APPLICANT'S ENGINEER TO CERTIFY THE GRADING WORK ON SITE.

GRAPHIC SCALE
10 0 5 10 20

BISHOP ENGINEERING +
3501 104th Street, Urbandale, IA 50322 Ph: 515-276-0467

SITE PLAN
BROADLAWNS INGERSOLL CLINIC
3714 INGERSOLL AVE
DES MOINES, IA 50312

REFERENCE NUMBER:

DRAWN BY: LCR

REVISION DATE:
1ST CITY SUB: 2026-09-15
100% BID SET: 2026-09-30
2ND CITY SUB: 2026-10-09
ADDENDUM 1: 2026-10-09

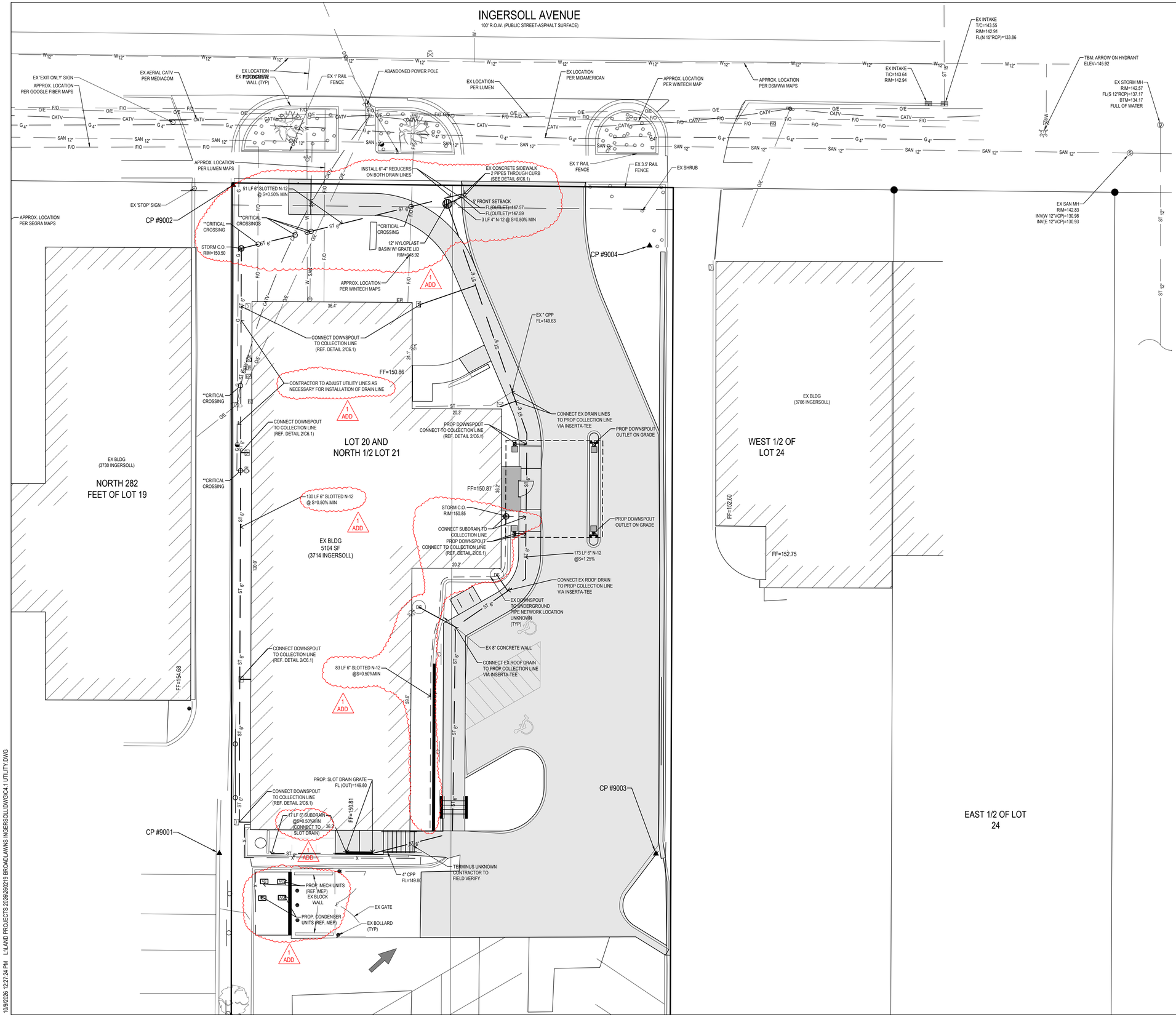
PROJECT NUMBER: 260219

SHEET NAME: GRADING PLAN

SHEET NUMBER: C3.1

10/9/2026 12:27:10 PM L:\LAND PROJECTS 2026\260219 BROADLAWNS INGERSOLL\DWG\C3.1 GRADING.DWG

PRELIMINARY- NOT FOR CONSTRUCTION



UTILITY NOTES:

1. ALL PROPOSED UTILITIES SHALL BE PRIVATE, UNLESS NOTED OTHERWISE.
2. PIPE LENGTHS CALLED OUT ON PLANS INCLUDE FLARED END SECTION, WHERE APPLICABLE.
3. STORM SEWER CALLED OUT AS RCP MUST BE CLASS III RCP.
4. STORM SEWER CALLED OUT AS N-12 MAY BE EITHER N-12 OR CLASS III RCP.
5. FOR RCP PIPE, ASSOCIATED F.E.S. MUST BE RCP. FOR N-12 PIPE, ASSOCIATED F.E.S. SHALL BE CMP.
6. ALL NYLOPLAST BASINS SHALL HAVE CASTINGS SECURELY FASTENED TO THE BASIN BODY, AND ALL GRATES/LIDS SHALL BE BOLTED DOWN TO THE CASTINGS.
7. CONTRACTOR TO VERIFY LOCATION AND DEPTH OF EXISTING ROOF DRAIN COLLECTION LINE NEXT TO BUILDING PRIOR TO CONSTRUCTION.
8. IN THE EVENT THAT THE EXISTING ROOF DRAIN COLLECTION LINE IS DAMAGED AND NEEDS TO BE REPLACED, THE COST IS CONSIDERED INCIDENTAL.
9. CONTRACTOR TO ENSURE SUFFICIENT COVER OVER PROPOSED ROOF DRAIN COLLECTION LINE.
10. PROTECT, SUPPORT & SHORE THE WATER MAIN AT ALL UTILITY CROSSINGS.
11. ALL WATER SERVICES / STUBS FRONTING THE PROPERTY THAT ARE NOT BEING USED ARE TO BE CUT AT THE MAIN, COORDINATE TAP CUTS WITH DMWW.

GRAPHIC SCALE
10 0 5 10 20

BISHOP ENGINEERING +
3501 104th Street, Urbandale, IA 50322 Ph: 515-276-0467

SITE PLAN
BROADLAWNS INGERSOLL CLINIC
3714 INGERSOLL AVE
DES MOINES, IA 50312

REFERENCE NUMBER:

DRAWN BY:
LCR

REVISION DATE:
1ST CITY SUB: 2026-09-15
100% BID SET: 2026-09-30
2ND CITY SUB: 2026-10-09
ADDENDUM 1: 2026-10-09

PROJECT NUMBER:
260219

SHEET NAME:
UTILITY PLAN

SHEET NUMBER:
C4.1

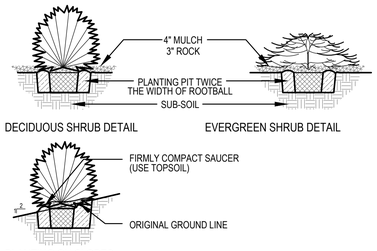
10/9/2026 12:27:24 PM L:\LAND PROJECTS 2026\260219 BROADLAWNS INGERSOLL\DWG\C4.1 UTILITY.DWG

PRELIMINARY- NOT FOR CONSTRUCTION

10/9/2026 12:27:41 PM L:\LAND PROJECTS 2026\260219 BROADLAWNS INGERSOLL\DWG\C5 LANDSCAPE.DWG

LANDSCAPE NOTES:

1. ALL SODDING & LANDSCAPE PLANTINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE URBAN STANDARD SPECIFICATIONS, UNLESS SPECIFIED OTHERWISE.
2. SOD ALL DISTURBED AREAS WITHIN THE CONTRACT LIMITS, UNLESS NOTED OTHERWISE. SOD LIMITS SHOWN ON PLAN ARE FOR REFERENCE ONLY. FINAL LIMITS MAY CHANGE BASED ON CONSTRUCTION ACTIVITIES.
3. STAKE SOD ON ALL SLOPES 3 : 1 OR GREATER.
4. PLANT QUANTITIES ARE FOR CONTRACTORS CONVENIENCE, THE DRAWING SHALL PREVAIL IF A CONFLICT OCCURS.
5. ALL PLANT MATERIAL SHALL CONFORM TO THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1).
6. CONTRACTOR SHALL WARRANTY ALL PLANT MATERIAL FOR A PERIOD OF ONE YEAR FROM THE DATE OF INITIAL ACCEPTANCE.
7. FOR WARRANTY PURPOSES, THE DATE OF INITIAL ACCEPTANCE SHALL BE SUBMITTED IN WRITING TO THE OWNER AND/OR OWNER'S REPRESENTATIVE AFTER ALL PLANT MATERIALS HAVE BEEN INSTALLED AND REVIEWED BY OWNER OR OWNER'S REPRESENTATIVE. PLANT MATERIALS WILL ONLY BE ACCEPTED IF THEY ARE IN AN ALIVE AND THRIVING CONDITION.
8. CONDITIONAL ACCEPTANCE OF PLANT MATERIAL MAY BE GIVEN FOR PLANTS INSTALLED IN A DORMANT CONDITION WITH INITIAL ACCEPTANCE OCCURRING THE FOLLOWING SPRING ONCE THEY ARE SHOWN TO BE ALIVE AND THRIVING.
9. IT IS THE CONTRACTORS RESPONSIBILITY TO REMOVE IDENTIFICATION TAGS AND CORDS ON ALL PLANT MATERIAL PRIOR TO THE COMPLETION OF THE CONTRACT. IDENTIFICATION TAGS (INCLUDING SIZING INFORMATION) MUST BE LEFT ON UNTIL AFTER ACCEPTANCE BY OWNER OR OWNER'S REPRESENTATIVE.
10. CONTRACTOR SHALL PLACE SHREDDED HARDWOOD MULCH AROUND ALL TREES, SHRUBS AND GROUND COVER BEDS TO A DEPTH OF 4 INCHES, UNLESS NOTED.
11. STAKING AND GUYING OF TREES SHALL BE BASED ON CURRENT ACCEPTED NURSERY STANDARDS. TREES IN LARGE OPEN AREAS SUBJECT TO SIGNIFICANT WIND SHALL BE STAKED USING THE 3 STAKE AND GUYING METHOD. STAKE AND WRAP TREES IMMEDIATELY AFTER PLANTING. CONTRACTOR SHALL ADJUST AND MAINTAIN GUYING TENSION THROUGHOUT THE PLANT ESTABLISHMENT PERIOD. REMOVE ALL STAKES AND GUY WIRES NO MORE THAN ONE YEAR AFTER INSTALLATION.
12. THE LANDSCAPING CONTRACTOR SHALL HAVE ALL UTILITIES LOCATED BEFORE STARTING ANY SITE WORK OR PLANTING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES.
13. NO LANDSCAPE MATERIAL SHALL BE SUBSTITUTED WITHOUT THE AUTHORIZATION OF THE LANDSCAPE ARCHITECT.
14. ALL EDGING SHALL BE DURAEDGE 3/16" STEEL EDGING - COLOR BLACK, OR APPROVED EQUAL.
15. CONTRACTOR SHALL BE RESPONSIBLE MAINTAINING APPROPRIATE LEVEL OF WATERING FOR ALL NEW PLANTS FOR A PERIOD OF 30 DAYS.
16. ALL SHRUB AND PERENNIAL PLANTING BEDS SHALL BE MULCHED WITH 4" THICK SHREDDED HARDWOOD MULCH.
17. ALL BEDS TO RECEIVE GRANULAR PRE-EMERGENT WEED CONTROL BEFORE AND AFTER MULCH IS INSTALLED.



PLANT SCHEDULE

CODE	QTY	COMMON NAME	BOTANICAL NAME	SIZE	CONTAINER	REMARKS
DECIDUOUS TREES						
PB	1	Bloodgood London Plane Tree	Platanus x acerifolia 'Bloodgood'	2" Cal.	B&B	MATCHED SPECIMENS
TA	1	Redmond American Linden	Tilia americana 'Redmond'	2" Cal.	B&B	MATCHED SPECIMENS
NS	1	Tupelo	Nyssa sylvatica	2" Cal.	B&B	MATCHED SPECIMENS
SHRUBS						
RA2	15	Alpine Currant	Ribes alpinum	5 gal.	CONT	FULL FORM - MATCHED
RG	12	Gro-Low Fragrant Sumac	Rhus aromatica 'Gro-Low'	5 gal.	CONT	FULL FORM - MATCHED
CA2	3	Hummingbird Summersweet	Clethra alnifolia 'Hummingbird'	5 gal.	CONT	FULL FORM - MATCHED
PO	12	Little Devil™ Dwarf Ninebark	Physocarpus opulifolius 'Little Devil'	5 gal.	CONT	FULL FORM - MATCHED
GRASSES						
SB2	78	Blaze Little Bluestem	Schizachyrium scoparium 'Blaze'	1 gal.	CONT	FULLY ROOTED IN CONTAINER
CL2	54	Northern Sea Oats	Chasmanthium latifolium	1 gal.	CONT	FULLY ROOTED IN CONTAINER
PN	12	Northwind Switch Grass	Panicum virgatum 'Northwind'	1 gal.	CONT	FULLY ROOTED IN CONTAINER
SH	20	Prairie Dropseed	Sporobolus heterolepis	1 gal.	CONT	FULLY ROOTED IN CONTAINER
GROUNDCOVERS						
JB	2	Blue Rug Juniper	Juniperus horizontalis 'Blue Rug'	1 gal.	CONT	FULLY ROOTED IN CONTAINER
PERENNIALS						
PD	11	Beardtongue	Penstemon digitalis	1 gal.	CONT	FULLY ROOTED IN CONTAINER
AC2	32	Colorado Mix Common Yarrow	Achillea millefolium 'Colorado'	1 gal.	CONT	FULLY ROOTED IN CONTAINER
PS2	26	Creeping Phlox	Phlox subulata	1 gal.	CONT	FULLY ROOTED IN CONTAINER
CA4	12	New Jersey Tea	Ceanothus americanus	1 gal.	CONT	FULLY ROOTED IN CONTAINER
HP	13	Palace Purple Crevice Alumroot	Heuchera micrantha 'Palace Purple'	1 gal.	CONT	
PA3	4	Russian Sage	Perovskia abrotanoides	1 gal.	CONT	
LV	15	Variegated Lilyturf	Liriope muscari 'Variegata'	1 gal.	CONT	FULLY ROOTED IN CONTAINER
NW	27	Walker's Low Catmint	Nepeta x 'Walker's Low'	1 gal.	CONT	FULLY ROOTED IN CONTAINER
CZ	60	Zagreb Tickseed	Coreopsis verticillata 'Zagreb'	1 gal.	CONT	FULLY ROOTED IN CONTAINER

LEGEND

SOD: PROVIDE AND INSTALL SOD FROM LOCAL SUPPLIERS. AREAS TO BE SODDED MUST BE FREE OF ALL CONSTRUCTION DEBRIS AND ANY DIRT CLUMPS OVER 1" IN DIAMETER. THOROUGHLY WATER SOD UPON INSTALLATION. CONTRACTOR TO MAINTAIN WATERING UNTIL SOD IS ESTABLISHED (ROOTS KNITTED INTO SUBSURFACE)

GENERAL LANDSCAPE REQUIREMENTS

TOTAL SQUARE FOOTAGE OF PROJECT AREA	8,650 SF
REQUIRED CANOPY COVERAGE(15%)	1,298 SF
NEW CANOPY PROVIDED	3,000 SF

2 C-5.1 SHRUB PLANTING (TYP)

SCALE: NOT TO SCALE

NOTES:
- CONTACT THE MUNICIPAL FORESTRY DIVISION PRIOR TO PLANTING IN THE PUBLIC R.O.W. AT 515-283-4950.
- ALL WIRE, TWINE, AND BURLAP SHALL BE REMOVED FROM THE ROOTBALL OF STREET TREES PRIOR TO PLANTING.
- NO STAKING OF STREET TREES IS ALLOWED.

STEP 1 - PEEL BACK ROPE/BURLAP/CAGE AND REMOVE SUFFICIENT SOIL TO EXPOSE ROOT FLARE.

STEP 2 - MEASURE FROM ROOT FLARE TO BOTTOM OF ROOT BALL.

STEP 3 - DIG HOLE TO DEPTH WHERE TOPMOST ROOTS ARE BURIED 1-2 INCHES AND THE ROOT FLARE SITS SLIGHTLY ABOVE GROUND LEVEL. DIG A HOLE 2-3 TIMES WIDER THAN THE DIAMETER OF THE ROOT BALL WITH SLOPING SIDES TO ALLOW FOR PROPER ROOT GROWTH.

STEP 4 - REMOVE LOWER THIRD OF WIRE CAGE.

STEP 5 - SET TREE IN HOLE. SUPPORT WITH SOME SOIL. ENSURE THAT IT'S STRAIGHT, THEN REMOVE ENTIRE WIRE CAGE AND TOP TWO-THIRDS OF BURLAP.

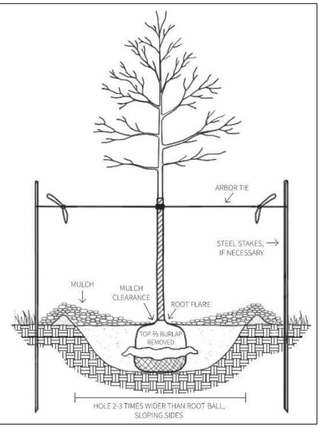
STEP 6 - BACKFILL WITH TWO-THIRDS OF LOOSE NATIVE SOIL (UNLESS IT'S ALL CLAY) AND USE WATER TO SETTLE. DO NOT TAMP OR STEP ON SOIL.

STEP 7 - BACKFILL BALANCE AND WATER AGAIN. EXCESS SOIL MAY BE USED TO CREATE A BERM/SAUCER OUTSIDE OF ROOT BALL.

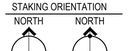
STEP 8 - ADD 2-4 INCHES OF WOOD MULCH, LEAVING A 1- TO 2-INCH CLEARANCE BETWEEN THE MULCH AND THE TRUNK.

STEP 9 - WATER A FINAL TIME.

STEP 10 - IF NECESSARY, PLACE TWO OPPOSING STEEL T-STAKES OUTSIDE THE ROOT BALL WITH ARBOR TIE SECURING TREE. TIES PREFERRED ON LOWER HALF OF TRUNK TO ALLOW MOVEMENT.



STAKING ORIENTATION



2 STAKES - 3" CAL. & LESS
3 STAKES - GREATER THAN 3" CAL.

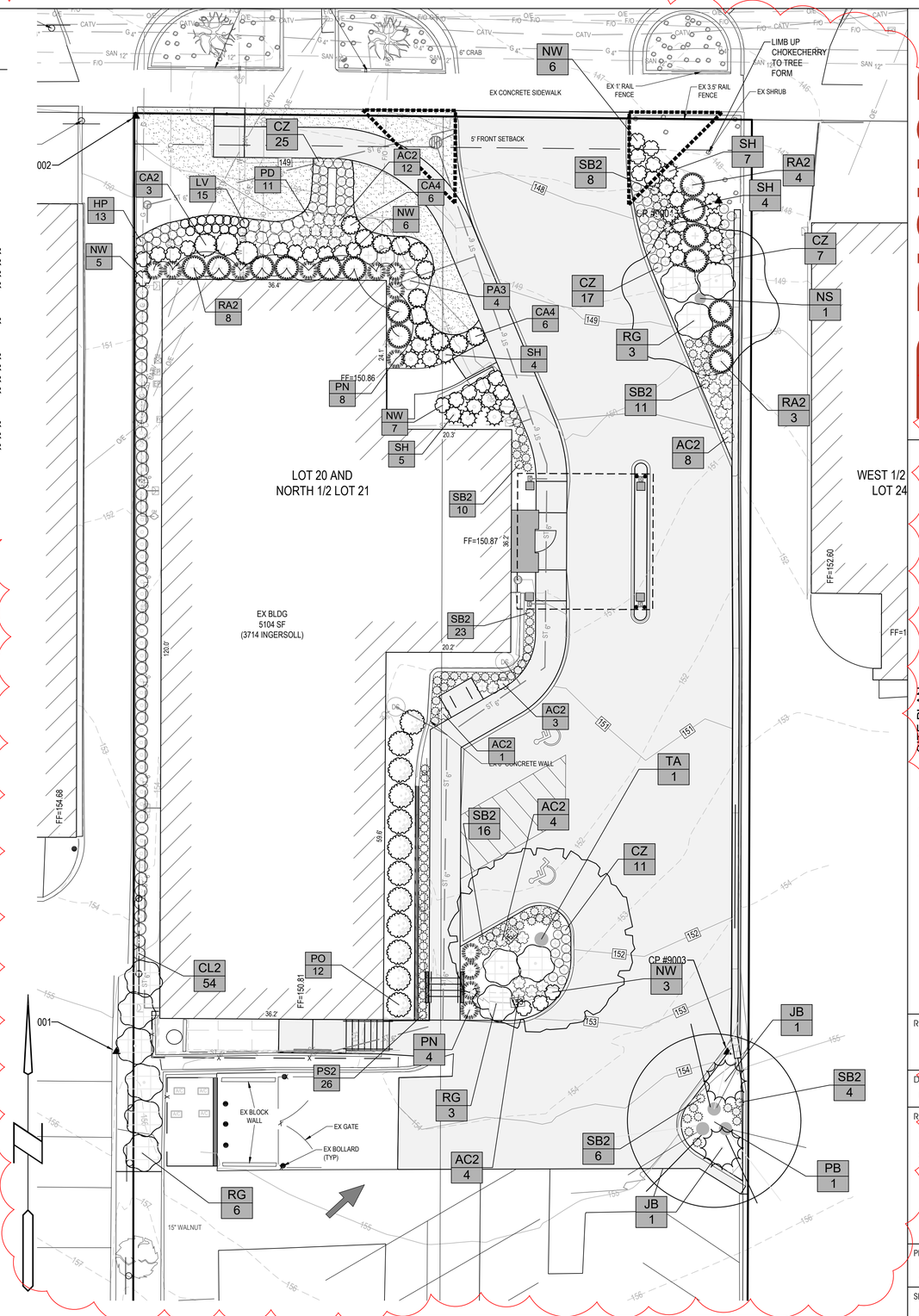
USE HOSE GUARDS AROUND TRUNK ON STAKING WIRE. TIE WIRE TO STEEL POSTS PLACED OUTSIDE PLANT PIT..

LEAVE STAKES IN PLACE NO MORE THAN 1 YEAR FROM INSTALLATION. CONTRACTOR RESPONSIBLE FOR REMOVAL.

1 C-5.1 DECIDUOUS TREE PLANTING (TYP.)

SCALE: NOT TO SCALE

1 ADD



GRAPHIC SCALE

10 0 5 10 20

I HEREBY CERTIFY THAT THESE PLANS AND SPECIFICATIONS WERE PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF IOWA. IOWA REGISTRATION NO. 700.

BY: DOUGLAS M. ROONEY LICENSE RENEWAL DATE: JUNE 30, 2026

SIGNED: _____ DATE: _____

STATE OF IOWA Douglas M. Rooney LANDSCAPE ARCHITECT 700 MY LICENSE RENEWAL DATE IS JUNE 30, 2026

BISHOP ENGINEERING +
3501 104th Street, Urbandale, IA 50322 Ph: 515-276-0467

SITE PLAN

BROADLAWNS INGERSOLL
3714 INGERSOLL AVE
DES MOINES, IA 50312

REFERENCE NUMBER:

DRAWN BY: LCR

REVISION DATE:
1ST CITY SUB: 2026-09-15
100% BID SET: 2026-09-30
2ND CITY SUB: 2026-10-09
ADDENDUM 1: 2026-10-09

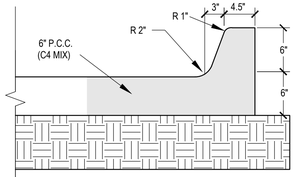
PROJECT NUMBER: 260219

SHEET NAME: LANDSCAPE PLAN

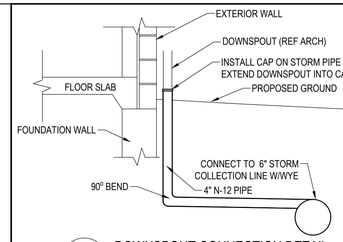
SHEET NUMBER: C5.1

FOR CONSTRUCTION

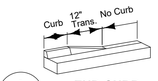
PRELIMINARY- NOT FOR CONSTRUCTION



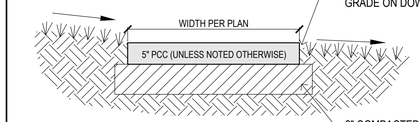
1 C6.1 STD. P.C.C. PAVING & CURB DETAIL
NOT TO SCALE



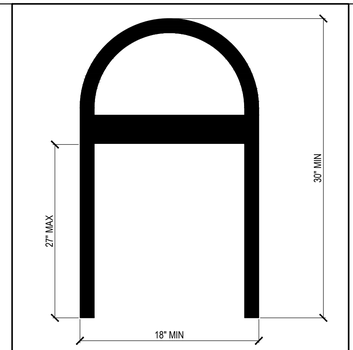
2 C6.1 DOWNSPOUT CONNECTION DETAIL
NOT TO SCALE



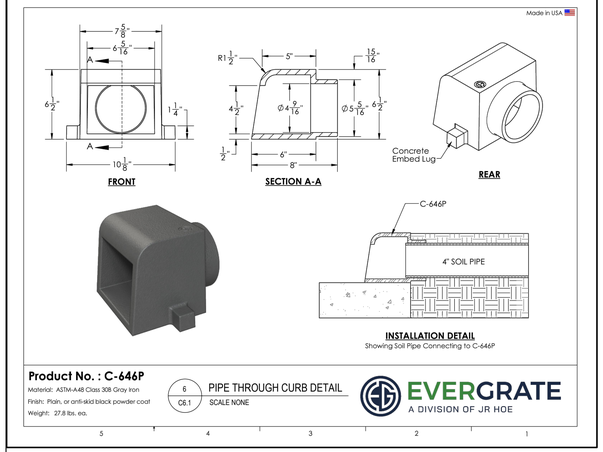
3 C6.1 END CURB



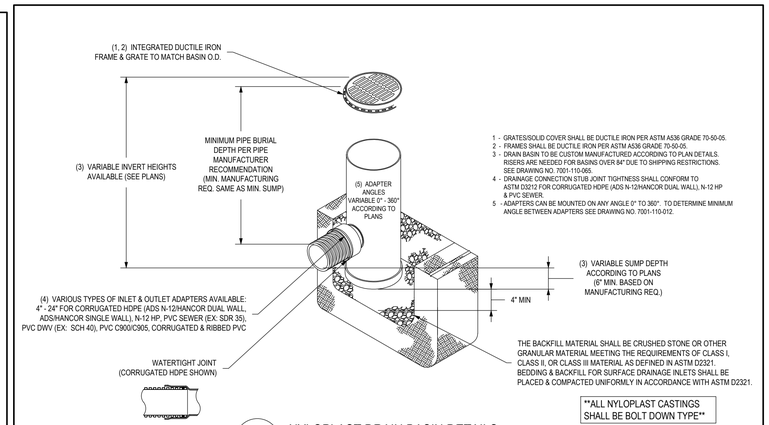
4 C6.1 SIDEWALK DETAIL
NOT TO SCALE



5 C6.1 BICYCLE RACK
NOT TO SCALE



6 C6.1 PIPE THROUGH CURB DETAIL
SCALE NONE



1 - GRATES/SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
2 - FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
3 - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-065.
4 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP & PVC SEWER.
5 - ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.

7 C6.1 NYLOPLAST DRAIN BASIN DETAILS
SCALE NONE

1
ADD

BISHOP ENGINEERING +
3501 104th Street, Urbandale, IA 50322 Ph: 515-276-0467

SITE PLAN
BROADLAWNS INGERSOLL CLINIC
3714 INGERSOLL AVE
DES MOINES, IA 50312

REFERENCE NUMBER:

DRAWN BY:
LCR

REVISION DATE:
1ST CITY SUB: 2026-09-15
100% BID SET: 2026-09-30
2ND CITY SUB: 2026-10-09
ADDENDUM 1: 2026-10-09

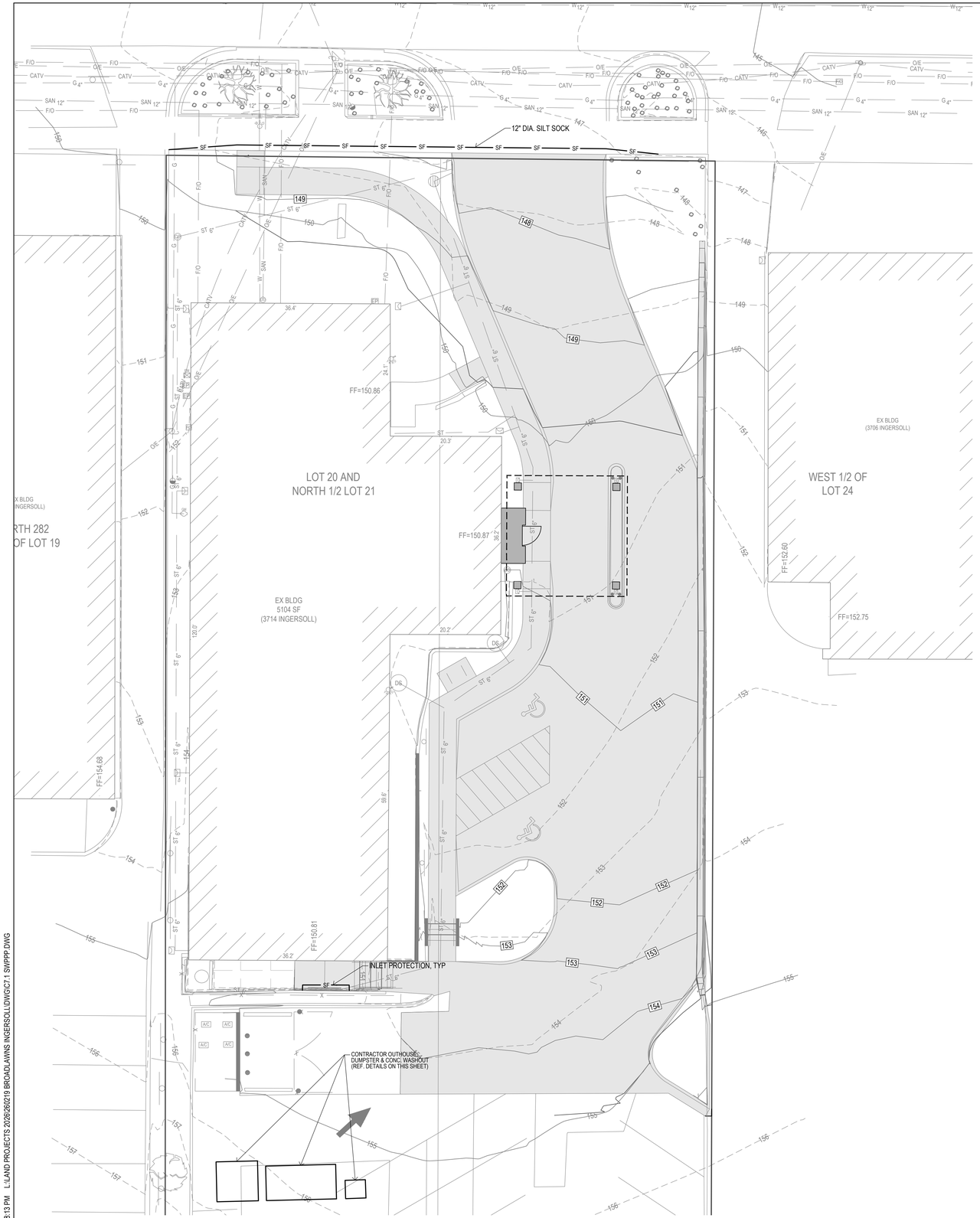
PROJECT NUMBER:
260219

SHEET NAME:
SITE DETAILS SHEET

SHEET NUMBER:
C6.1

10/9/2026 12:27:56 PM L:\LAND PROJECTS 2026\260219 BROADLAWNS INGERSOLL\DWG\C6.1 DETAILS.DWG

PRELIMINARY- NOT FOR CONSTRUCTION

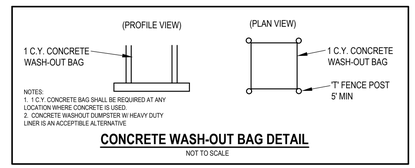


EROSION CONTROL NOTES:

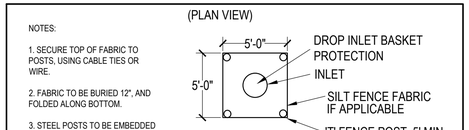
1. SEE SUPPLEMENTAL DETAIL STORM WATER POLLUTION PLAN NARRATIVE FOR ALL EROSION CONTROL MEASURES, ADDITIONAL DETAILS AND NOTE. ADDITIONAL NOTES AND MEASURES IN NARRATIVE SHALL BE CONSIDERED INCIDENTAL AND SHALL BE INCLUDED IN THE ORIGINAL BID.
2. SWPPP PLAN AND NARRATIVE ARE CONSIDERED A LIVING DOCUMENT AND WILL NEED PERIODIC UPDATES AND ADJUSTMENTS AS NECESSARY DEPENDING ON SITE CONDITIONS TO ASSURE COMPLIANCE WITH NPDES GENERAL PERMIT NO. 2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO UPDATE THE SWPPP AND IMPLEMENT ANY AND ALL MEASURES NECESSARY TO COMPLY WITH SAID PERMIT NO. 2.
3. INSTALL PERIMETER SILT FENCE AS SHOWN ON PLANS PRIOR TO CONSTRUCTION.
4. INSTALL INTAKE PROTECTION WITH SILT FENCE IMMEDIATELY AFTER STORM SEWER CONSTRUCTION.
5. INSTALL FINISHED PAVING INLET PROTECTION IMMEDIATELY AFTER PAVING IS COMPLETED AROUND INTAKE.
6. OTHER EROSION CONTROL TYPES MAY NOT BE SUBSTITUTED FOR SILT FENCE.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING A CONCRETE WASHOUT IN ACCORDANCE WITH NPDES GENERAL PERMIT NO. 2 DURING ALL CONCRETE WORK. CONCRETE WASHOUT SHALL MEET SUDAS SPEC 11050.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING TEMPORARY RESTROOM FACILITIES. SANITARY WASTE SHALL BE DISPOSED OF PER ALL FEDERAL, STATE AND LOCAL REGULATIONS.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING ALL TOPSOIL REQUIREMENTS OF NPDES GENERAL PERMIT NO. 2 ARE MET.
10. THIS PROJECT INCLUDES SAWCUTTING OR CONCRETE GRINDING SO PROTECTION OF STORM SEWERS AND DRAINAGE WAYS WILL NEED TO BE PROVIDED FROM SLURRY FROM THE CONCRETE OPERATIONS TO DISCHARGE OFFSITE. SEE SWPPP SHEET AND NARRATIVE FOR ADDITIONAL DETAILS.
11. CONTRACTOR SHALL PROVIDE APPROPRIATE CONTROLS TO PREVENT DISCHARGES FROM ANY AND ALL DEWATERING ACTIVITIES.
12. SEE LANDSCAPE PLAN FOR FINAL STABILIZATION INCLUDING SEEDING AND SODDING AREAS.
13. PER NPDES GENERAL PERMIT NO. 2, IF CONSTRUCTION ACTIVITY IS NOT PLANNED FOR AT LEAST 14 DAYS, ALL DISTURBED AREAS SHALL BE STABILIZED IMMEDIATELY BY TEMPORARY EROSION CONTROL MEASURES.
14. THE FOLLOWING DISCHARGES ARE PROHIBITED: WASTEWATER FROM WASHOUT AND CLEANOUT OF STUCCO, PAINT, FORM RELEASE OIL, CURING COMPOUNDS AND OTHER CONSTRUCTION MATERIALS, FUEL, OILS OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE, AND SOAPS OR SOLVENTS USED IN VEHICLE AND EQUIPMENT WASHING

EROSION CONTROL REMOVAL NOTES:

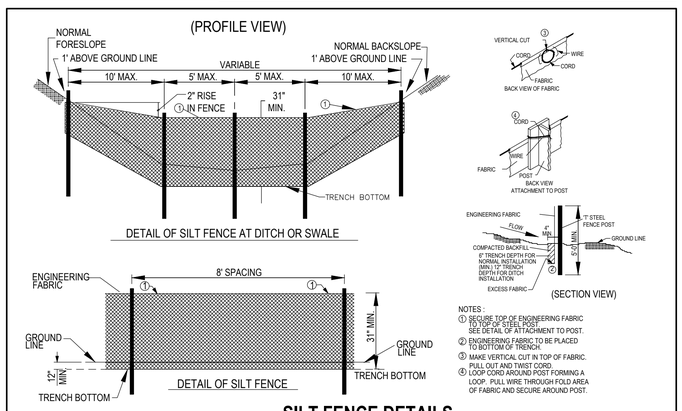
1. AFTER FINAL STABILIZATION HAS OCCURED, AS DEFINED IN NPDES GENERAL PERMIT NO. 2, CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL TEMPORARY EROSION CONTROL DEVICES INCLUDING, BUT NOT LIMITED TO: SILT FENCE, INLET PROTECTION, AND TEMPORARY STANDPIPES.



CONCRETE WASH-OUT BAG DETAIL
NOT TO SCALE



INLET PROTECTION DETAIL
NOT TO SCALE



SILT FENCE DETAILS
NOT TO SCALE

GRAPHIC SCALE
10 0 5 10 20

BISHOP ENGINEERING +
3501 104th Street, Urbandale, IA 50322 Ph: 515-276-0467

SITE PLAN
BROADLAWNS INGERSOLL CLINIC
3714 INGERSOLL AVE
DES MOINES, IA 50312

REFERENCE NUMBER:

DRAWN BY:
LCR

REVISION DATE:
1ST CITY SUB: 2026-09-15
100% BID SET: 2026-09-30
2ND CITY SUB: 2026-10-09
ADDENDUM 1: 2026-10-09

PROJECT NUMBER:
260219

SHEET NAME:
EROSION CONTROL PLAN

SHEET NUMBER:
C7.1

10/9/2026 12:28:13 PM L:\LAND PROJECTS 2026\260219 BROADLAWNS INGERSOLL\DWG\C7.1 SWPPP.DWG