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**DEMOLITION OF BUILDING STRUCTURES****PART 1 - GENERAL****1.01 SECTION INCLUDES**

- A. Demolition of Building Structures
- B. Site Backfill, Grading, and Clean-up
- C. Protection of Public and Private Utilities
- D. Soil Surface Restoration

**1.02 DESCRIPTION OF WORK**

Unless directed otherwise in the Contract Documents, the Contractor shall:

- A. Remove and properly dispose of all structures, trash, rubbish, basement walls, floors, foundations, sidewalks, steps and driveways from the specified parcel.
- B. Remove any fuel tanks, outdoor toilets and septic tanks, cisterns, meter pits, and plug or abandon wells.
- C. Remove the materials from the demolition site in accordance with federal, state, and local regulations.
- D. Remove and dispose of appliances and other items that may contain refrigerants in accordance with 40 CFR, Part 82. Appliances and other items that may contain refrigerants include, but are not limited to, refrigerators, freezers, dehumidifiers and portable or central air conditioners.
- E. Remove and legally dispose of mercury-containing materials including fluorescent, high-pressure sodium, mercury vapor, metal halide light bulbs, and thermostats containing a liquid filled capsule. PCB-containing materials include capacitors, ballasts, and transformers where the component is contained within a metal jacket and does not have a specific, legible label stating no PCBs are present.
- F. Disconnect all utility services before demolition.
- G. Perform site clearance, grading and restoration.
- H. Complete the demolition work in accordance with the plans and these technical specifications and any special provisions included in the Contract Documents.

**1.03 PROTECTION OF THE PUBLIC AND PROPERTIES****A. Littering Streets:**

1. The Contractor shall be responsible for removing any demolition debris or mud from any street, alley or right-of-way resulting from the execution of the demolition work. Any cost incurred by the Jurisdiction in cleaning up any litter or mud shall be charged to the Contractor and be deducted from funds due for the work.
2. Littering of the site shall not be permitted.
3. All waste materials shall be promptly removed from the site.

**1.03 PROTECTION OF THE PUBLIC AND PROPERTIES (Continued)****B. Street Closure:**

1. If it should become necessary to close any traffic lanes, it shall be the Contractor's responsibility to acquire the necessary obstruction permits and to place adequate barricades and warning signs as required by the Jurisdiction.
2. Street or lane closures shall be coordinated with the appropriate Jurisdiction authority.

**C. Protection of the Public by the Contractor:**

1. **Sidewalks:** The Contractor shall be responsible for any damage to public sidewalks abutting or adjacent to the demolition properties resulting from the execution of the demolition work. The cost of repair or replacement shall be considered incidental to the work and the Contractor shall obtain all permits and pay any fees.
2. **Pedestrian Access:** It shall be the Contractor's responsibility to place and construct the necessary warning signs, barricades, fencing and temporary pedestrian sidewalks, as directed by the Engineer; and to maintain alternate pedestrian access for sidewalks around the demolition site. The cost of these items shall be considered incidental to the work.
3. **Temporary Fence:** Temporary fence shall be erected around all excavation, dangerous building(s) or structure(s) to prevent access to the public. Such fence shall be at least four feet high, consistently restrictive from top to grade, and without horizontal openings wider than two inches. The fence shall be erected before demolition and shall not be removed until the hazard is removed.

**D. Demolition Hours:**

1. The Contractor shall comply with any restrictions to working hours as included in the Contract Documents.
2. The Contractor shall comply with all applicable ordinances and restrictions of the entity.

**E. Noise Pollution:** All construction equipment used in conjunction with this project shall be in good repair and adequately muffled. The Contractor shall comply with any noise pollution requirements of the Jurisdiction.

**F. Dust Control:** The Contractor shall comply with applicable air pollution control requirements of the Jurisdiction. The Contractor shall take appropriate actions to minimize atmospheric pollution. To minimize atmospheric pollution, the Engineer shall have the authority to require that reasonable precautions be taken to prevent particulate matter from becoming airborne. Such reasonable precautions shall include, but not be limited to:

1. The use of water or chemicals for control of dusts in the demolition of existing buildings or structures, construction operations, the grading of roads, or the clearing of land.
2. Covering, at all times when in motion, open-bodied trucks transporting materials likely to give rise to airborne dusts.

**G. Requirements for the Reduction of Fire Hazards:**

1. **Removal of Material:** Before demolition of any part of any building, the Contractor shall remove all volatile or flammable materials, such as gasoline, kerosene, benzene, cleaning fluids, paints or thinners in containers, and similar substances.

**1.03 PROTECTION OF THE PUBLIC AND PROPERTIES (Continued)**

- 2. Fire Extinguishing Equipment:** The Contractor shall be responsible for having and maintaining the correct type and class of fire extinguisher on site. When a cutting torch or other equipment that might cause a fire is being used, a fire extinguisher shall be placed close at hand for instant use.
  - 3. Fires:** No fires of any kind will be permitted in the demolition work area.
  - 4. Hydrants:** No material obstructions or debris shall be placed or allowed to accumulate within fifteen feet of any fire hydrant. All fire hydrants shall be accessible at all times.
  - 5. Debris:** Debris shall not be allowed to accumulate on roofs, floors, or in areas outside of and around any structure being demolished. Excess debris and materials shall be removed from the site as the work progresses.
  - 6. Telephone Service:** The Contractor shall arrange for access to and use of, during working hours, one or more telephones in the vicinity of the work site for the purposes of making calls in case of fire or other emergencies, and shall keep all personnel on the job, and the local jurisdiction informed of the location of such telephones. The Contractor's foreman, or at least one regular member of each shift, shall be charged with the responsibility of promptly calling emergency services when necessary. The same person shall be required to inspect the building and the site frequently for possible fires or fire-producing conditions and to apply appropriate corrective action, particularly at the close of work each working day.
- H. Protection of Public Utilities:** The Contractor shall not damage existing fire hydrants, street lights, traffic signals, power poles, telephone poles, fire alarm boxes, wire cables, pole guys, underground utilities or other appurtenances in the vicinity of the demolition sites. The Contractor shall pay for temporary relocation of utilities, which are relocated at the Contractor's request for his convenience.
- I. Protection of Adjacent Property:**
1. The Contractor shall not damage or cause to be damaged any public right-of-way, structures, parking lots, drives, streets, sidewalks, utilities, lawns or any other property adjacent future demolition. The Contractor shall provide such sheeting and shoring as required to protect adjacent property during demolition. Care must also be taken to prevent the spread of dust and flying particles.
  2. The Contractor shall restore existing agricultural drain tiles or roadway subdrains that are cut or removed to parcels released for demolition whether or not the property is scheduled for, including drainable backfill, to original condition. Repairs shall be subject to approval by the property owner where applicable, and by the Engineer.

**1.04 RISK OF LOSS**

The Contractor shall accept the site in its present condition and shall inspect the site for its character and the type of structures to be demolished. The Jurisdiction assumes no responsibility for the condition of existing buildings, structures, and other property within the demolition area, or the condition of the property before or after the solicitation for proposals. No adjustment of proposal price or allowance for any change in conditions that occur after the acceptance of the lowest responsible, responsive proposal will be allowed.

**1.05 PROPERTY OWNERSHIP**

- A. Title:** The property address, legal description, and ownership will be included in the Contract Documents. Upon execution of the contract for the work of demolition and site clearance on all or any part of the demolition area, all rights, title, and interest of the Jurisdiction in and to buildings, structures and other property to be demolished and/or removed by the Contractor on part or all of said project area as described in the Contract Documents and contract addenda thereto, shall be deemed to be vested in the Contractor.
- B. Land:** No property rights, title, or interest of any kind whatsoever, in or to the land or premises upon which such buildings or structures stand, is created, assigned, conveyed, granted, or transferred to the Contractor, or any other person or persons, except only the license and right of entry to remove such buildings and structures in strict accordance with the Contract Documents. Contractor shall not use the land or premises, or allow any other party to use the land or premises, for any purpose other than activities in direct support of the demolition of the building.

**1.06 VACATING OF BUILDINGS**

The structures identified in the Contract Documents shall be vacated before a Notice to Proceed is issued and the Contractor begins work. In case the Contractor finds that any structure is not vacated, the Contractor shall immediately notify the Engineer and shall not begin demolition or site clearance operations on such property until further directed by the Engineer. The Contractor's responsibility for such buildings will not begin until the Engineer issues a Notice to Proceed the Demolition Order. No claim for extension of time or increase in price will be considered because of occupancy of any buildings. In case such occupancy is prolonged, the Jurisdiction reserves the right to delete the structure from the work.

**1.07 RELEASE OF BUILDINGS**

The demolition area shall be released to the Contractor upon Award of Contract and Notice to Proceed. Said Notice to Proceed shall give any sequence of the demolition and the portion of work that is available to be released if all areas are not ready at the same time. The Engineer shall approve any change in the sequence. The Contractor shall have full control of the demolition progress and clearance of the site, subject to the provisions of the Contract Documents.

**1.08 PERMITS AND FEES**

The Contractor shall obtain all the necessary permits and pay all permit fees that are required by the Jurisdiction in conjunction with the demolition work.

**1.09 MEASUREMENT AND PAYMENT****A. Demolition Work:**

- 1. Measurement:** Lump sum item; no measurement will be made.
- 2. Payment:** Payment will be at the contract lump sum price.
- 3. Includes:** Unit price includes, but is not limited to, removal of buildings, building materials, contents of buildings, appliances, trash, rubbish, basement walls, foundations, sidewalks, steps and driveways from the site; disconnection of utilities; furnishing and compaction of backfill material; finish grading of disturbed areas; seeding per Section 9010; placing and removing safety fencing; and removal of septic tanks and cisterns.

**PART 2 - PRODUCTS**

None.

**PART 3 - EXECUTION****3.01 DEMOLITION SCHEDULE**

The Contractor shall be responsible for providing the Engineer with a minimum of 24 hours advance notification prior to beginning the execution of demolition of any structure.

**3.02 SALVAGE OF DEMOLITION MATERIALS**

- A. The Contractor shall be allowed to salvage demolition materials only from property owned by the Jurisdiction. The property ownership will be shown in the Contract Documents.
- B. No salvage will be permitted on privately owned property. Privately-owned property included for demolition under this contract will be strictly to abate a public nuisance as authorized by the property owner or as directed by the Courts. The Jurisdiction has the authority to abate the nuisance; however, the Jurisdiction does not have the right to salvage any materials. The Contractor may recycle demolition debris at a licensed or permitted recycling center; however, all other debris must be disposed of at a licensed or permitted disposal facility.
- C. The Contractor may salvage demolition materials on Jurisdiction-owned properties as long as demolition is completed within the completion provisions included in the Contract Documents. All buildings, building materials, and equipment resulting from this work shall become the property of the Contractor, and shall be removed from the premises at once. Salvaged material shall be removed immediately from the premises, right-of-way, streets or alleys. The Jurisdiction reserves the right to remove salvage items for use by the Jurisdiction. These items shall be identified in the Contract Documents or shall be removed by Jurisdiction forces prior to the issuance of the Proposal.

**3.03 DEMOLITION AND REMOVALS****A. Structural Parts of Buildings:**

- 1. No wall or part thereof shall be permitted to fall outwardly from any building except through chutes or by other controlled means or methods, which will ensure safety and minimize dust, noise and other nuisance.
- 2. Subject to site restrictions, outside chimneys or outside portions of chimneys shall be raised in advance of general demolition of each building. Any portion of a chimney inside a building shall be razed as soon as it becomes unsupported by reason of removal of other parts of the building.
- 3. Any part of a building, whether structural, collateral, or accessory, which has become unstable through removal of other parts, shall be removed as soon as practicable, and no such unstable part shall be left free-standing or inadequately braced against all reasonably possible causes of collapse at the end of any working day.

**B. Basements and Foundation Walls:** All basement floors, footings, and foundations shall be completely removed from the site unless specifically stated in the special provisions. The basement area is to be inspected and approved by the Engineer before backfilling is started. The Contractor shall ensure that no basement excavation will remain open and exposed for more than 24 hours. The Contractor shall contact the Engineer when removal is complete to schedule this basement inspection. Failure to do so may result in re-excavation of the basement area at the Contractor's expense.

**C. Concrete Slabs:** The Contractor shall remove all concrete slabs, asphalt, surface obstructions, masonry slabs, and appurtenances.

**3.03 DEMOLITION AND REMOVALS (Continued)**

- D. Retaining Walls:** Retaining walls or curbs near the perimeter of parcels shall be removed unless otherwise indicated in the Contract Documents. The Contractor shall employ hand labor or other suitable tools and equipment necessary to complete the work without damage to adjacent public or private property. Where such retaining walls or curbs are removed, the embankment shall be graded to a slope of not greater than 3:1 horizontal: vertical or as directed by the Engineer. The cost of any tree or brush removal due to the removal and grading out of the retaining wall shall be considered incidental and shall be included in the lump sum bid for demolition.
- E. Fences:** Fences, guardrails, bumpers, signs, clotheslines, and similar facilities shall be completely removed from the site, except fences on the apparent boundary between a contract parcel and an improved non-contract parcel shall not be removed unless specifically stated in the special provisions. All posts for support shall be pulled out or dug up so as to be entirely removed.
- F. Partially Buried Objects:** All piping, posts, reinforcing bars, anchor bolts, railings and all other partly buried objects protruding from the ground shall be removed. The remaining void shall be filled with soil and compacted in accordance with these specifications.
- G. Vegetation:** The Contractor shall remove all dead trees, trees identified for removal, stumps, all trees which are not an asset to the property, bushes, vegetation, brush and weeds, whether standing or fallen, unless specifically stated otherwise by the Engineer. The Contractor shall protect all trees not removed from damage by the demolition operation. In the event that the Contractor damages a tree, it shall be repaired or removed by the Contractor as directed by the Engineer.
- H. Fuel Tanks:** Fuel tanks, above or below ground, shall be carefully removed and disposed of in a safe manner in accordance with the State Fire Marshal's regulations and those of the Iowa Department of Natural Resources.
1. Fuel tanks, above or below the ground, or tanks which have been used for storage of gasoline, kerosene, benzene, oils or similar volatile materials shall be carefully removed and disposed of in a safe manner. The time, place and manner of disposal will be as set forth in the Contract Documents.
  2. All other tanks or receptacles shall be pumped out or emptied in a safe manner, and then shall be flushed out immediately with water, carbon dioxide or nitrogen gas until they are gas-free when checked with a "Explosimeter" or another equally efficient instrument, before the work of removal is begun. Checking with the "Explosimeter" shall be done in the presence of the Engineer by competent personnel.
- I. Outdoor Toilets and Septic Tanks:** Outdoor toilets and septic tanks shall be pumped out by a licensed company. The toilet building or septic tank shall be demolished and removed from the site. The excavation or pit shall be backfilled and compacted in accordance with these specifications. Septic tanks shall be broken up and removed from the site and the excavation filled in accordance with the requirements of the Jurisdiction.
- J. Cisterns and Meter Pits:** Cisterns and meter pits shall be demolished and removed. The excavations shall be backfilled and compacted in accordance with these specifications.

**3.04 WELL PLUGGING AND ABANDONMENT**

All wells shall be plugged and abandoned in accordance with the Iowa Administrative Code. An Iowa Department of Natural Resources, Abandoned Water Well Plugging Record shall be filed upon completion of the well abandonment.

**3.05 DISPOSAL OF DEMOLITION DEBRIS AND SOLID WASTE**

- A. Debris:** All materials, rubbish, and trash shall be removed from the demolition area leaving the basements and demolition area free of debris. Any cost incurred by the Jurisdiction in cleaning up such materials and debris left behind shall be deducted from funds due the Contractor under this contract.
- B. Tires:** The Contractor shall visit the site to determine the number of tires that have been abandoned on site. If any additional tires are found on site prior to commencing demolition activity, the Contractor shall immediately notify the Engineer of the quantity of additional tires found on site so a change order can be prepared for additional removal.
- C. Disposal of Demolition Debris and Solid Waste:** All debris and solid waste shall be delivered by the Contractor to the Jurisdiction-designated disposal facilities, or to an approved disposal facility licensed in accordance with state and/or local regulations, laws, and zoning. The Contractor shall be responsible to pay all fees for waste disposal. The Contractor shall submit to the Engineer copies of all disposal tickets for each structure demolished, where available, which identify the specific address of the origin of the debris associated with each ticket. The cost of all disposal fees shall be considered incidental to the demolition.
- D. Asbestos Abatement:** The handling of asbestos material is subject to all applicable state and federal mandates. Asbestos removal is not required on privately owned property that may be included in this work as part of a public nuisance abatement court order; however, the Contractor shall comply with applicable regulations regarding its handling and disposal. Asbestos will be removed by a licensed abatement contractor by a separate contract or in accordance with special provisions on Jurisdiction-owned properties. In the event that asbestos is discovered on a Jurisdiction-owned property during demolition, the Contractor shall notify the Engineer and the asbestos shall be removed by a licensed abatement contractor by contract or in accordance with the special provisions.
- E. Demolition of Structures with Transite Siding:** Privately owned properties containing transite siding shall be listed in the Contract Documents, and all demolition debris from these structures shall be disposed of at an approved landfill. The Contractor shall be responsible for notifying said landfill prior to commencing demolition on these structures to allow for authorization to dispose of material at the landfill. The Contractor shall assume responsibility for the landfill fees for disposing of the demolition debris. All structures with transite siding shall be thoroughly sprayed with water during the execution of the demolition to contain airborne particles. All debris shall be thoroughly wetted prior to transporting to the landfill.
- F. Freon Removal and Disposal:** The handling of Freon containing appliances is subject to all applicable state and federal mandates and regulations. The Contractor shall be responsible for the identification and removal and disposal of the material in accordance with applicable regulations. All costs associated with said removal and disposal shall be considered incidental and shall be included in the lump sum bid for demolition.
- G. PCB and Mercury Removal and Disposal:** The handling of any fluorescent lighting fixtures and ballasts containing PCB or mercury is subject to all applicable state and federal mandates and regulations. The Contractor shall be responsible for the removal and disposal of the material in accordance with applicable regulations. All costs associated with said removal and disposal shall be considered incidental and shall be included in the lump sum bid for demolition.



**3.06 BACKFILL, GRADING, AND CLEAN UP**

- A. Backfill:** When site conditions permit, as determined by the Engineer, on-site soil shall be used as backfill material. The top 9 to 12 inches of topsoil shall be stripped and stockpiled on site for use as final topsoil and grading material. If adequate topsoil, as defined by Section 2010, is not available on site, the Contractor shall bring in enough topsoil from off-site to place a minimum 8 inch cover on the entire site. Excess excavation materials shall be removed from the site. Topsoil material shall not be permitted as deep fill material. Any borrow or fill material shall be approved by the Engineer before and during the placing of the material. All depressions on the property shall be filled, compacted, and graded to a uniform slope with adequate drainage.
- B. Compaction:** All excavations shall be backfilled with acceptable material and compacted using either Standard Demolition Compaction or Special Demolition Compaction as specified in the Contract Documents and further described as follows:
- 1. Standard Demolition Compaction:** If required in the Contract Documents, all excavations associated with the demolition shall be backfilled and compacted using Standard Demolition Compaction according to the requirements of Section 2010, 3.04, Embankment Construction, with Type A Compaction.
  - 2. Special Demolition Compaction:** If required in the Contract Documents, all excavations associated with the demolition shall be backfilled and compacted using Special Demolition Compaction according to the requirements of Section 2010, 3.04, Embankment Construction, with Compaction with Moisture and Density Control.
- The Contractor shall notify the Engineer 24 hours in advance of placing any backfill or original backfill material so a soil sample can be obtained. It shall be the responsibility of the Jurisdiction or the Contractor, if so designated in the Contract Documents, to run a density test during and after the placement of the backfill material.
- C. Additional Fill Material:** All additional fill material shall be of equal quality to the soil adjacent to the excavation, and free of rubble or organic matter. The Contractor shall provide for a minimum depth of 8 inches of topsoil over the excavated area. There shall be no payment for additional fill material, which shall be considered incidental to the demolition bid price. Additional fill material shall be acceptable fill material that meets the requirements of Section 2010.
- D. Hand Labor:** The Contractor shall employ hand labor where the use of power machinery is unsafe or unable to produce a finished job. Hand labor shall also be used to clean the site of any debris.
- E. Grading:** The site shall be graded to conform to all surrounding areas and shall be finished to have a uniform surface that shall not permit ponding of water. The Contractor shall grade and shape the site to drain; complete fine grading and final clean up as part of the lump sum price for demolition.
- F. Final Cleaning Up:** Before acceptance of the demolition work, the Contractor shall remove all unused material and rubbish from the site of the work, remedy any objectionable conditions the Contractor may have created on private property, and leave the right-of-way in a neat and presentable condition. The Contractor shall not make agreements that allow salvaged or unused material to remain on private property. All ground occupied by the Contractor in connection with the work shall be restored. Restoration shall include appropriate smoothing to its original condition and seeding of the area.

**3.06 BACKFILL, GRADING, AND CLEAN UP (Continued)**

On demolition sites where seeding will be delayed because of the allowable seeding dates, the Contractor shall complete fine grading and shaping of the site to leave the site in a neat and presentable condition subject to the approval of the Engineer. The bid item for seeding shall include preparation of the seedbed, furnishing and installing seed, fertilizer and mulch, maintenance, and guarantee for completed seeded areas, as specified in the Contract Documents.

Final cleaning up shall be subject to approval of the Engineer and in accordance with applicable regulations.

**3.07 SANITARY SEWER AND WATER SERVICE DISCONNECTIONS**

**A. Sanitary Sewer Service Disconnection:** All sanitary sewer services shall be disconnected and plugged in conformance with Section 4010, 3.08 by a licensed plumber, and inspected and approved by the Jurisdiction's Plumbing Inspection Division prior to demolition or excavation.

**B. Water Service Disconnection:** All water services and stubs for the buildings or properties within the demolition work shall be disconnected in conformance with local regulations by a licensed plumber and inspected and approved by the Engineer.

**C Backfill and Compaction within City Right-of-way:**

1. **Streets:** Unless stipulated otherwise in the Contract Documents, the Contractor shall backfill, compact as specified and patch the surface of all excavations made in streets. This cost shall be paid by the Contractor.
2. **City Right-of-way:** All areas within the City right-of-way (including parking and sidewalk areas) shall be compacted in conformance with Section 3010, graded and seeded.

**3.08 SEEDING**

All disturbed areas associated with the work shall be seeded in accordance with Section 9010, except as modified below:

- A. Seed Mixture:** Section 9010, 2.02. The Contractor shall provide seed mixtures in accordance with the specification; however, the seed shall be applied at 133% of the specified rate for the type of mixture specified.
- B. Warranty:** Section 9010, 1.08. In addition to specified warranty, areas reseeded under the warranty shall be warranted for an additional 1 year.

**3.09 SAFETY AND FENCING**

- A. Safety:** The Contractor shall comply with all applicable current federal, state and local safety and health regulations.
- B. Safety Fencing:** The Contractor shall furnish and place a safety fence around the site of the work adequate to secure the demolition site, including any resulting debris or excavation, and to prevent pedestrian access. The fencing, including all materials, shall be considered incidental to the demolition. The safety fence shall remain in place until the demolished materials are removed from the site and all holes or excavated areas are backfilled. The fencing material shall remain the property of the Contractor.

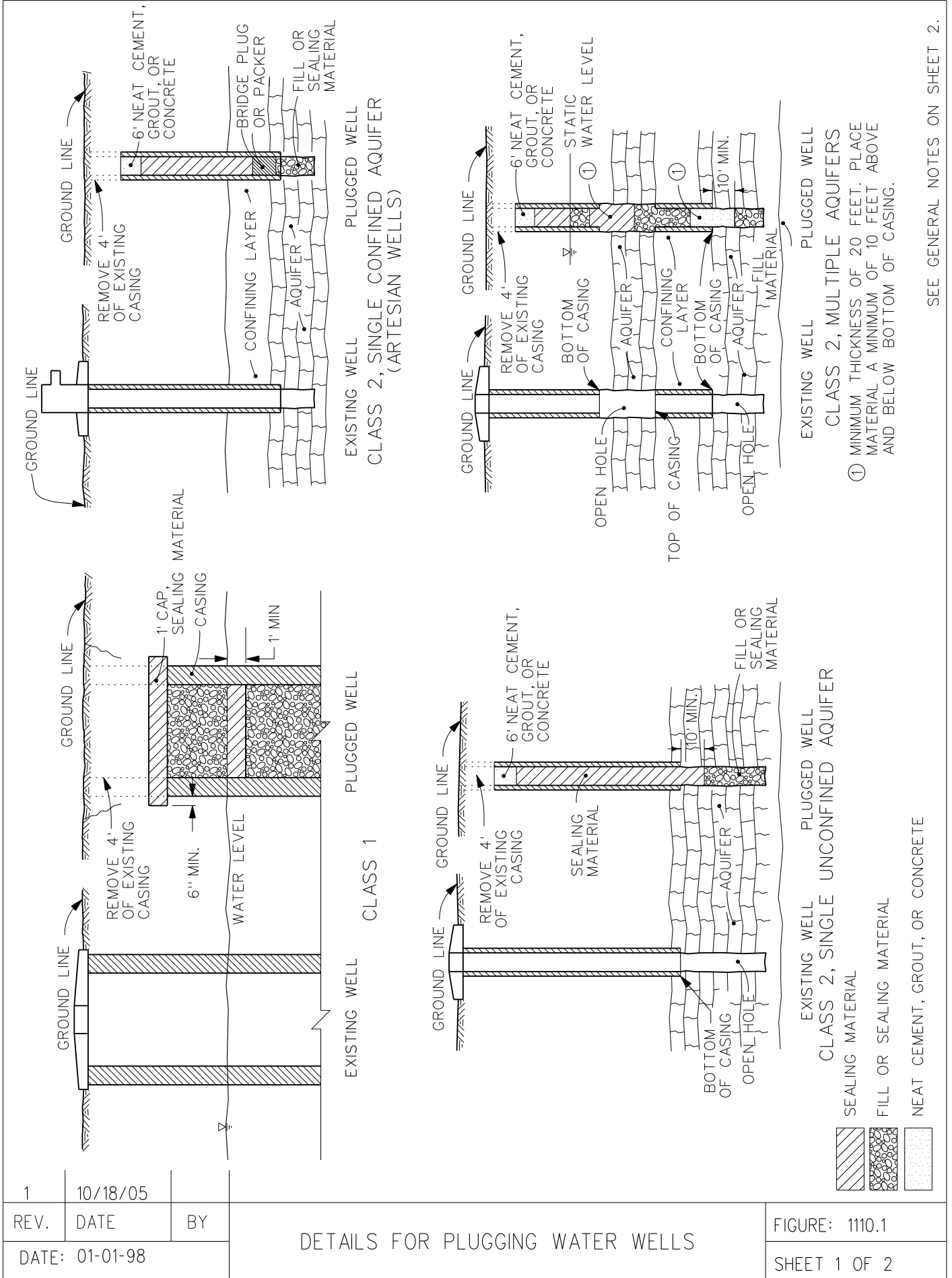
**3.10 AUTHORIZED WORKERS**

Only the Contractor and its employees are allowed to demolish, dismantle, detach or dispose of any part of the demolition structure or its contents.

**3.11 DAILY CLEAN-UP OF RIGHT-OF-WAY AND PRIVATE PROPERTY**

At the end of each workday, the Contractor shall clean sidewalks, streets, and private property of any debris caused by the demolition operation.

END OF SECTION



## SUDAS STANDARD SPECIFICATIONS

### GENERAL NOTES:

ANY WELL NO LONGER IN USE SHALL BE SEALED. DETAILS SHOWN HEREON ARE INTENDED TO DEPICT THE VARIOUS STANDARD METHODS USED FOR SEALING WATER WELLS. ALL MATERIALS AND METHODS USED SHALL BE IN ACCORDANCE WITH IOWA ADMINISTRATIVE CODE SECTION 567, CHAPTER 39

APPROVED SEALING MATERIALS ARE: 1) NEAT CEMENT (14 LBS. CEMENT PER 1 GALLON OF WATER); 2) GRADED BENTONITE, BENTONITE PELLETS OR BENTONITE GROUT; 3) SAND CEMENT GROUT (1 SACK OF CEMENT / EQUAL VOLUME MASONRY SAND / NOT MORE THAN 6 GALLONS WATER); 4) CONCRETE.

APPROVED FILL MATERIALS ARE: 1) SAND, 2) PEA GRAVEL, 3) CLASS A, B, OR C GRANULAR SURFACING MATERIAL, 4) AGRICULTURE LIME. ALL MATERIALS SHALL BE FREE OF FOREIGN MATTER AND ANY TOXIC RESIDUE.

REGARDLESS OF THE MATERIAL USED IN THE PROCESS, THE SEALING (FILLING) MATERIAL SHOULD BE INTRODUCED AT THE BOTTOM OF THE WELL, OR AT THE INTERVAL TO BE SEALED (OR FILLED) AND PLACED PROGRESSIVELY UPWARD TO THE TOP OF THE WELL. ALL SEALING MATERIALS SHALL BE PLACED BY THE USE OF GROUT PIPE, TREMIE PIPE, CEMENT BUCKET OR DUMP BAILER, IN SUCH A WAY AS TO AVOID SEGREGATION OR DILUTION OF THE SEALING MATERIALS. BENTONITE PELLETS OR GRADED BENTONITE MAY BE ADDED AS SEALING MATERIAL BY POURING IN PLACE AND AGITATING TO AVOID BRIDGING.

PLUGGING PROCEDURES: ALL OBSTRUCTIONS MUST BE REMOVED FROM THE WELL.

FOR DEEP WELLS, FILL OR SEALING MATERIAL SHALL BE PLACED FROM THE BOTTOM OF THE WELL UP TO 10 FEET BELOW THE BOTTOM OF THE CASING OR CONFINING LAYER, WHICHEVER IS LESS.

FOR CONFINED AQUIFERS AND SINGLE UNCONFINED AQUIFERS, SEALING MATERIAL SHALL BE PLACED FROM THE TOP OF THE FILLING MATERIAL TO 4 FEET BELOW THE GROUND SURFACE.

FOR WELLS COMPLETED IN MULTIPLE AQUIFERS, NEAT CEMENT SHALL BE PLACED ON TOP OF THE FILL MATERIAL AND EXTEND UPWARD AT LEAST 20 FEET. SEALING MATERIALS SHALL BE PLACED IN AT LEAST THE TOP 10 FEET OF EACH SUBSEQUENT AQUIFER, AND EXTEND AT LEAST 10 FEET INTO THE CONFINING LAYER OR CASING ABOVE. THE SAME TYPE OF FILLING MATERIALS AND SEALING PROCEDURES SHALL APPLY FOR EACH SUBSEQUENT AQUIFER. FILLING MATERIAL MAY BE PLACED FROM THE TOP OF THE UPPERMOST AQUIFER SEAL TO THE STATIC WATER LEVEL OF THE WELL. THE CASING SHALL THEN BE FILLED WITH AN APPROVED SEALING MATERIALS TO 4 FEET BELOW THE GROUND SURFACE.

FOR ALL DEEP WELLS, IF BENTONITE GROUT IS USED FROM THE STATIC WATER LEVEL TO THE TOP OF THE WELL, IT SHALL BE CAPPED WITH 6 FEET OF NEAT CEMENT, SAND CEMENT GROUT, OR CONCRETE.

FOR ALL WELLS: IT IS PREFERABLE THAT THE FILLING MATERIALS BE OMITTED AND THE SEALING MATERIALS BE USED TO FILL THE ENTIRE WELL UP TO 4 FEET BELOW THE GROUND SURFACE. CASING PIPE AND ANY CURBING, FROST PIT, OR PUMP HOUSE STRUCTURE SHALL BE REMOVED TO A DEPTH OF 4 FEET BELOW THE GROUND SURFACE.

PRICE BID FOR "PLUGGING WELLS" SHALL BE CONSIDERED FULL COMPENSATION FOR FURNISHING ALL MATERIAL AND WORK NECESSARY TO COMPLETELY SEAL WELLS AS DETAILED HEREON AS WELL AS NOTED ON DETAIL PROJECT PLANS OR AS DIRECTED BY THE ENGINEER.

1	10/18/05		DETAILS FOR PLUGGING WATER WELLS		FIGURE: 1110.1
REV.	DATE	BY		SHEET 2 OF 2	
DATE: 01-01-98					