

DETAILED PLANS FOR CONSTRUCTION OF PUBLIC IMPROVEMENTS**4.1 PUBLIC IMPROVEMENT PLAN SHEET REQUIREMENTS**

Detailed reproducible plans, certified by a registered professional engineer in the State of Iowa, should be filed with the Jurisdiction for all work involved in Public Improvement Contracts and/or agreements. Detailed plans should conform to the following general requirements.

1. Plan Organization

It is important, if for no other reason than uniformity for Contractors, that the plans are consistent from one plan to another as to the arrangement of the various sheets. In general, the sheets should be arranged in the following order which are consistent with Iowa DOT plans.

Page Number	Description
A.01	title sheet
A.02	legend sheet
A.03, A.04, ...	map sheets (if needed)
A.0*, ... (*whatever number follows the previous A sheets)	revision sheets (if needed)
B.01, B.02, ...	typical cross sections
C.01, C.02, ...	estimate of quantities and general information
D.01, D.02, ...	plan and profile sheets - mainline
E.01, E.02, ...	plan and profile sheets - side road and channel change
F.01, F.02, ...	plan and profile sheets - detour
G.01, G.02, ...	reference ties and bench marks
H.01, H.02, ...	right-of-way sheets (urban)
J.01, J.02, ...	staging and traffic control sheets
K.01, K.02, ...	interchange geometric staking, jointing and edge profiles
L.01, L.02, ...	intersection geometric staking, jointing and edge profiles
M.01, M.02, ...	storm sewer sheets
N.01, N.02, ...	traffic signal sheets
P.01, P.02, ...	lighting layout sheets
Q.01, Q.02, ...	soils sheets
R.01, R.02, ...	borrow sheets and schematic hauling diagram
S.01, S.02, ...	soils stabilities sheets
T.01, T.02, ...	tabulation of earthwork quantities
U.01, U.02, ...	500 series, modified standards and special details
V.01, V.02, ...	bridge and culvert situation plans
W.01, W.02, ...	cross sections - mainline
X.01, X.02, ...	cross sections - side roads and channel change
Y.01, Y.02, ...	cross sections - ramps and loops
Z.01, Z.02, ...	cross sections - borrows

All of the above mentioned sheets will not necessarily occur in every plan but those that do should remain in the same relative order and use the letter designation as specified above.

4.1 PUBLIC IMPROVEMENT PLAN SHEET REQUIREMENTS (CONTINUED)

2. Plan Sheet Material

Plans filed with the Jurisdiction shall be on reproducible mylar.

3. Plan Sheet Size

24"x36" sheets. The top and left 1-1/2 inches of the sheet shall be left blank to provide for cutout for inclusion of folded plans in contracts. Plans subject to IDOT letting shall be on 22"x34" sheets or when specifically requested by Jurisdiction.

4. Title Sheet

The following information shall be shown when applicable.

- A. Project title name and location.
- B. Jurisdiction name.
- C. Small scale vicinity map showing project location.
- D. Index (a complete sheet index is to be shown).
- E. File number/Project number (to be filled in by Jurisdiction).
- F. Engineer's firm name and address.
- G. Signature line for Jurisdiction authority.

SAMPLE:

REVIEWED:

Jurisdiction Authority	Title	Date
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- H. Sheet number and total number of sheets.

4.1 PUBLIC IMPROVEMENT PLAN SHEET REQUIREMENTS (CONTINUED)

- I. Design Engineer's certification, registration number, and date certified. All official plans shall be certified in accordance with the requirements set forth by the Iowa Engineering and Land Surveying Examining Board.

A professional engineer or other licensed professional must certify every sheet in a plan. This is done by indicating on the signature block which sheet numbers are covered by the licensee's seal. The engineer's signature and date must be handwritten in ink that contrasts in color with the plan's print.

Parts of the plan that are designed under the direction of other licensed professions should have separate signature blocks that related to their part of the project. These signature blocks should be placed on the first plan sheet that is covered by their seal.

Each signature block should list the sheet numbers that are covered by the licensed professional's seal. Plan information prepared under the direction of separate licensees should not be placed on the same sheet. In other words, two licensed professionals should not be responsible for the same plan sheet.

In addition to the separate signature blocks an index of seals should be tabulated on the title sheet if parts of the plan are being certified by other licensed professionals. The tabulation would identify the sheet number where any other signature blocks are located, as well as the licensee's name and area of design.

- J. Note that projects shall be constructed to Urban Standard Specifications for Public Improvements.
- K. Listing of Standards (if applicable).
- L. Owner/Developer.
- M. Legend (Define all symbols shown in the plans) (See Figure 4.1 for sample legend).

4.1 PUBLIC IMPROVEMENT PLAN SHEET REQUIREMENTS (CONTINUED)

FIGURE 4.1 SAMPLE LEGEND

STANDARD SYMBOLS		Existing	Proposed
Contour w/ Elevation			
Board Fence			
Chain Link Fence			
Barbed Wire Fence			
Woven Fence			
Barbed Wire and Woven Fence			
Tree Line			
Tree Stump			
Deciduous Tree			
Coniferous Tree			
Tree To Be Removed			
Shrub			
Soil Boring			
Underground Telephone			
Overhead Telephone			
Fiber Optic Telephone			
Underground Electric			
Overhead Electric			
Underground Television			
Overhead Television			
Gas Main with Size			
High Pressure Gas Main with Size			
Water Main with Size			
Sanitary Sewer with Size			
Septic Tank			
Storm Sewer with Size			
Manhole			
Storm Sewer Intake			
Beehive Intake			
Fire Hydrant			
Water Main Valve			
Water Service Valve			
Utility Pole			
Street Light			
Traffic Sign			
Traffic Signal Cable			
Telephone Junction Box			
Gas Valve			
Cable TV Junction Box			
Fence Post or Guard Post			
Underground Storage Tank			
Above Ground Storage Tank			
Satellite Dish			
Interstate Highway Symbol			
U.S. Highway Symbol			
State Highway Symbol			
County Road Highway Symbol			
Benchmark			
Concrete Monument			
Terrace			
Earth Dam or Dike			
Edge of Water			
Existing Drainage Channel			
Well			
Traffic Signal Pedestal			
Traffic Signal with Mast Arm			
Traffic Signal Cabinet Controller			
Flared End Section			
Guy Anchor			
Mailbox			
Speed Limit Sign			
Mile Marker Post			
Electric Box			
Rail Road Signal Control Box			
Top of Embankment			
Drainage Course			
Rip Rap			
Gabion			
Concrete Surface			
Granular Surface			
Concrete Wall			
Timber Wall			
Railroad Track			

4.1 PUBLIC IMPROVEMENT PLAN SHEET REQUIREMENTS (CONTINUED)

5. Title Block

A title block listing the following minimum information.

- A. The name of the project.
- B. Owner and Engineer along with sheet title (including address and phone number).
- C. Date.
- D. Sheet number and total number of sheets.
- E. Space to denote revisions.
- F. Title block shall go in lower right corner or right edge of each sheet so as to be read from the bottom or right side. Check with the Jurisdiction involved for correct location.
- G. Page numbers shall be in the lower right corner of each sheet.
- H. All persons designing, detailing and checking plans shall legibly place their names in the title block on the title sheet in a space provided for this purpose.

6. Plan Scale - Vert. scale: 1" = 5'
Min. horiz. scale: 1" = 50'

or 1" = 20' or larger if details for sanitary sewer, storm sewer, paving and/or sidewalks are on same plans.

Changes to above scale to be approved by Jurisdiction.

A Bar Scale is required on each drawing.

Prepare drawings and lettering of such a scale as to be reproducible to 1/2 scale. Note: Plans let by Iowa Department of Transportation are required to be 22"x34" sheets.

4.2 GENERAL INFORMATION TO BE SHOWN ON CONSTRUCTION PLANS

The following shall be shown where applicable.

1. Beginning (B.O.P.) and ending (E.O.P.) of project.
2. Street names.
3. Right-of-way widths and legal descriptions as required.
4. Legend as part of title sheet requirements.
5. Adequate witnesses and horizontal and vertical controls so surveyor can lay out project plans. All controls to be shown at actual locations on plans. Bench marks and ties.
6. Lot numbers, subdivision names, and project numbers, as applicable.
7. Lot dimensions (along right of way or easements).
8. North arrow up or to the right when applicable.
9. Existing and proposed utilities: type, size and location.
10. Proposed improvement locations, dimensions and stations.
11. Station Bar (all improvements shall be referenced to same stationing). Stationing from left to right or bottom to top.
12. Existing trees, fences, walks, drainage structures, ditches, pavements, buildings, and other obstacles or improvements that could reasonably affect the work area.
13. Survey line or reference line shall be shown on plan view with stations increasing from west to east or south to north when practical.
14. Quantity estimate - Separate sanitary sewer, storm sewer and paving quantities shall be shown if they are detailed on same plan. Plans shall contain note, "In event of a discrepancy between the detailed plans and the quantity estimate, the detailed plans shall govern".
15. Easements, both temporary and permanent.

4.2 GENERAL INFORMATION TO BE SHOWN ON CONSTRUCTION PLANS (Continued)

16. Cross-sections. For subdivisions, existing and proposed finished contours may also be used.
17. Special details and special notes when required.
18. Plan view and profile. Profile shall line up with plan stations whenever possible.
19. Plans for development work shall contain general note that project shall be constructed to Jurisdiction "Standard Specifications for Construction of Subdivisions".
20. Symbols and abbreviations used on plans if different from those shown in Standard Specifications.
21. Make reference to soils report.
22. Traffic control signs and markings will follow the latest edition of the Manual on Uniform Traffic Control Devices. When it is required by the Jurisdiction to maintain traffic during construction, stage construction and special requirements shall be shown on the plans. If required, show signing, street closures and/or detours on traffic control sheet.
23. Permanent signing.
24. Storm Water Pollution Prevention Plan. Temporary and permanent erosion control measures proposed.
25. Other information deemed necessary by the Engineer certifying the plans.

4.3 DETAILED SEWER PLANS

The following information shall be shown when applicable.

1. Stationing, location and type of all manholes, intakes, or other structures.
 - A. Structure designation shall be shown on the plans.
 - B. Location shall be shown on plan and referenced to survey line or centerline.
 - C. Type of structure shall be in conformance with Urban Standard Specification requirements.
2. Details shall be shown for all structures that are not standard in Urban Specifications.

4.3 DETAILED SEWER PLANS (Continued)

3. Plan and profiles of all sewer lines and ground line above sewer.
4. Size, length, and grade of sewers in profile.
5. Type of pipe materials and strengths if different from Urban Standard Specifications.
6. Invert elevations at all intakes, manholes and other structures in profile.
7. Location, size and type of all sewer stubs, wyes or tees. Stub locations shall be referenced to lot corners. When risers are to be installed, riser location and size shall be shown.
8. Estimates shall include stubout quantities.
9. Rim elevations of manholes.
10. All castings shall be Jurisdiction Standard on sewers to be maintained by the Jurisdiction.
11. Manholes shall be identified with numbering system on plan and profile. Structure sizes and casting sizes to be included by schedule or note on the plans.
12. Class of pipe bedding.
13. Existing utilities or other underground features that could reasonably affect the construction and maintenance of the sewer.

4.4 DETAILED DRAINAGE DITCH AND DRAINAGEWAY PLANS

The following information shall be shown when applicable.

1. Stationing and flow line elevation at beginning and end of ditch construction.
2. Plan and profile of drainage ditch.
3. Size, type, length and grade of ditch and alignment.
4. Typical sections showing ditch dimensions, backslopes, and invert and slope treatment.
5. Invert elevations at all structures.
6. All special structures shall be detailed on plans.
7. Criteria hydraulic design data and elevations.

4.4 DETAILED DRAINAGE DITCH AND DRAINAGEWAY PLANS (Continued)

8. Cross-sections and contour map showing existing ground and finished grade.
9. Permanent and Temporary Erosion Controls.

4.5 DETAILED PAVING PLANS

The following information shall be shown when applicable.

1. Minimum 100 ft. station intervals and profile elevations at a minimum of 50 feet intervals on tangents and 25 feet intervals at curves from the beginning to the end of construction stationing of centerline of all intersecting streets.
2. Street profiles and existing ground elevations shall be shown in the profile view and the curb line in plan view. The profile shall show top of curb tangent grades, vertical curve data, and break grade data.
3. Pavement width (Back to Back).
4. All radii at returns (may be specified in general note if all radii are same).
5. Expansion joint locations on plan view.
6. Horizontal curve data shall include centerline PC, PT, PI, delta angle, arc length, degree of curve, tangent length and radius.
7. Typical cross-section showing referenced profile, subgrade treatment, pavement thickness, jointing, sidewalk, foreslopes, back slopes, cross slopes, ROW line, and dimension of the location of the roadway with the ROW line.
8. Vertical curve data shall include station and elevation of PI, PC, PT, K-value, low point and length of curve. Elevations should be given on curve at 25' spacings.
9. Break grade: station and elevation.
10. Intersection details showing drainage and typical joint patterns.
11. Location and type of standard sidewalk ramps.
12. Special subgrade or pavement treatment.
13. Location of existing pavement, including elevation and grades.
14. Storm Sewer design calculations need to be submitted showing drainage area, flow patterns and flows for design storms. (Hydraulic grade line data).

4.6 GRADING PLANS/EROSION CONTROL

1. Survey control data.
2. Cross-sections and/or existing and proposed contours, as required.
3. Bar Scale (north arrow).
4. Storm sewer/detention appurtenances.
5. Vicinity map showing haul routes with dates and borrow areas.
6. Total site area (disturbed area).
7. Stationing as it relates to paving plans, sewer or drainageway plans.
8. Geometric dimensions.
9. Soils data and soil boring location when applicable.
10. Erosion control information and location of any special erosion control measures such as silt fences, silt traps and basins, rip rap or gabions, vegetation and trees to remain, stockpile areas, terraces, contour furrows, temporary diversions, grading phases, etc. See Chapter VII - Erosion Control for detail listing of the required contents of Iowa Department of Natural Resources Storm Water Pollution Prevention Plan. Also include the name and 24-hour telephone number of the individual responsible for maintaining erosion control measures.
11. Top soil stockpile and stabilization measures and vegetation areas to be preserved.

4.7 WATER MAINS

The plans for water mains and appurtenances shall show all appropriate physical features adjacent to the proposed water mains along with horizontal and vertical controls and hydrant coverage. Other utilities such as sanitary and storm sewers, manholes, etc. shall be shown on the plans with horizontal and vertical separation distances. Design details for other utilities that do not affect the water main will not be shown on water main plans.

4.8 ITEMS TO BE SPECIFIED ON PLANS OR IN CONTRACT DOCUMENTS

The SUDAS Standard Specifications specifies many items and methods that can be used for the construction of improvements. Following is a list of items in the SUDAS Standard Specifications that are to be noted on the construction drawings and/or in the special provisions whenever there is to be a deviation from the standard requirements of the specifications. This information may include specifying pipe sizes and materials, who is responsible for providing compaction testing, as well as many others.

The project engineer should review the following list and the SUDAS Standard Specifications to make sure all items that are necessary to construct the project are specified on the plans and/or in the special provisions. Please note – this list is not all-inclusive.

DIVISION 2 - EARTHWORK**Section 2010 - Earthwork, Subgrade, and Subbase**

2010, 1.08 D, 1, a	Specify whenever the depth of cut for stripping and salvaging topsoil is other than 8 inches.
2010, 1.08, E	Specify the class of excavation as Class 10, Class 12, or Class 13.
2010, 1.08, E, 1, b, 2)	When the truck count method is to be used for measuring Class 10 or Class 13 excavation, specify if the shrinkage factor is other than 1.35.
2010, 1.08, E, 4	Specify whenever stripping, salvaging, and spreading 8 inches of topsoil is NOT a pay item and is included in the payment of Class 10, Class 12, or Class 13 Excavation.
2010, 1.08 F, 1	Specify whenever below grade excavation (core out) will NOT be measured and paid as extra work.
2010, 1.08, J, 1	Specify the structures to be removed.
2010, 1.08, J, 3	Specify whenever removal of pipe and conduits will include capping.
2010, 1.08, L	Specify when the Contractor is responsible for compaction testing.
2010, 2.01	Specify use of compost-amended or off-site topsoil if on-site topsoil is NOT to be used.
2010, 2.02, C, 3	Specify the limits of Class 13 excavation.
2010, 2.04, C, 5	Specify whenever Type 2 geogrid is to be used in lieu of Type 1.
2010, 3.03, F, 1	Specify the desired depth for removal of unsuitable or unstable materials.
2010, 3.04, D	Specify whenever Type A compaction is to be used in lieu of compaction with moisture and density control.
2010, 3.05	Specify whenever and where unsuitable soils will be allowed in the right-of-way.

4.8 ITEMS TO BE SPECIFIED ON PLANS OR IN CONTRACT DOCUMENTS (Continued)

2010, 3.06, A	Specify if granular stabilization materials or subgrade treatment is to be used in lieu of select subgrade materials.
2010, 3.07	Specify the type of subgrade treatment (lime, cement, fly ash, asphalt, geogrid, or geotextiles) to be used.
2010, 3.07, A, 2	Specify the areas requiring subgrade treatment.
2010, 3.07, A, 1	Specify the depth and rate of incorporation of the subgrade treatment material (lime, cement, fly ash, or asphalt).
2010, 3.08, B	Specify the type and depth of granular subbase.
2010, 3.09, A	Specify when the Contractor is responsible for compaction testing.
Figure 2010.2	Specify whenever Type A compaction is desired in lieu of compaction with moisture and density control.

DIVISION 3 - TRENCH AND TRENCHLESS CONSTRUCTION**Section 3010 - Trench Excavation and Backfill**

3010, 1.08, F	Specify when the Contractor is responsible for trench compaction testing.
3010, 2.03, B	Specify whenever Class V material can be used as other than topsoil.
3010, 3.05, B, 1, a	Specify if granular bedding material is to be used for pressure pipes.
Figure 3010.101	Specify when over-excavation and foundation stone will be required.

Section 3020 - Trenchless Construction

3020, 2.02, A	Specify the wall thickness of casing pipe.
3020, 2.02, C	Specify inside diameter of casing pipe.
3020, 2.05, B	Specify where special fill materials will be used.
3020, 3.04, A, 2, b	Specify the installation deviation tolerances of casing pipe if different than those included.
3020, 3.04, A, 2, b, 2), b)	Specify the minimum depth of pressurized pipe.
3020, 3.04, C, 8	Specify when to fill the annular space between the carrier and casing pipe with flowable mortar or CLSM.

4.8 ITEMS TO BE SPECIFIED ON PLANS OR IN CONTRACT DOCUMENTS (Continued)**DIVISION 4 - SEWERS AND DRAINS****Section 4010 - Sanitary Sewers**

4010, 1.08, E	Specify the distance beyond the right-of-way line that the sanitary sewer service stub is to extend, if other than 10 feet.
4010, 1.08, H, 3	For removal of sanitary sewer, specify if capping is required.
4010, 2.02, A	Specify when joint restraints for ductile iron pipe force mains are required.
4010, 2.02, B	Specify when restrained joints are required for PVC force mains.
4010, 2.02, E, 2	Specify the color of plastic post used for tracer wire station.
4010, 3.02, B, 7	Specify the location for installation of wye or tee service fitting.
4010, 3.05, B, 2	Specify the location for any installation of a tracer wire station in addition to each end of the force main.
4010, 3.06, A	Specify the locations for installation of sanitary sewer service stub.
4010, 3.06, C	Specify the distance beyond the right-of-way line that the sanitary sewer service stub is to extend, if other than 10 feet.
4010, 3.06, C, 3	Specify the depth of sanitary sewer service stub at its termination, if other than 10 to 12 feet.
4010, 3.06, C, 5	Specify method of marking the end of the sanitary sewer service line.
4010, 3.08, C	Specify when to fill an abandoned sanitary sewer with flowable mortar or controlled low strength material (CLSM).
4010, 3.11, B	Specify the locations to construct utility line supports.

Section 4020 - Storm Sewers

4020, 1.08, C, 3	Specify if capping is required for removal of storm sewer.
4020, 2.01, A, 3	Specify whenever material other than cold applied bituminous jointing material is to be used for reinforced concrete storm sewer pipe (i.e. rubber o-ring or profile gasket).
4020, 2.01, A, 4	Specify if pipe joints are to be wrapped with engineering fabric.
4020, 2.01, B, 4	Specify type of jointing material to use for reinforced concrete arch pipe, if other than cold applied bituminous or rubber rope gasket joint materials.
4020, 2.01, B, 5	Specify if pipe joints are to be wrapped with engineering fabric.

4.8 ITEMS TO BE SPECIFIED ON PLANS OR IN CONTRACT DOCUMENTS (Continued)

- 4020, 2.01, C, 4 Specify type of jointing material to use for reinforced concrete elliptical pipe, if other than cold applied bituminous or rubber rope gasket joint materials.
- 4020, 2.01, C, 5 Specify if pipe joints are to be wrapped with engineering fabric.
- 4020, 2.01, G, 1, d Specify gage of corrugated metal pipe, if other than Iowa DOT Standard Road Plan RF-32.
- 4020, 2.01, H, 1, d Specify gage of spiral rib pipe, if other than manufacturer's requirements.
- 4020, 2.01, I, 2 Specify gage of coated corrugated metal pipe, if other than Iowa DOT Standard Road Plan RF-32.
- 4020, 2.01, K, 1, d Specify gage of spiral rib arch pipe, if other than manufacturer's requirements.
- 4020, 3.02, A, 6 Specify if pipe joint wrapping is required.
- 4020, 3.02, B, 1 Specify pipe bedding requirements for RCEP.
- 4020, 3.04, B, 1 Specify type of jointing material to use for reinforced concrete pipe, reinforced concrete arch pipe, and reinforced concrete elliptical pipe, if other than cold applied bituminous or rubber rope gasket joint materials.
- 4020, 3.04, B, 3 Specify if pipe joint wrapping is required.
- 4020, 3.06, B Specify the locations to construct utility line supports.

Section 4030 - Pipe Culverts

- 4030, 2.01, C, 5 Specify gage of the structural plate culverts, if other than Iowa DOT Standard Road plan RF-34.
- 4030, 2.01, D, 4 Specify gage of aluminum structural plate culvert, if other than manufacturer's requirements.
- 4030, 3.02, A Specify the locations to install pipe aprons.
- 4030, 3.02, B Specify the locations to install apron footings.
- 4030, 3.02, D Specify the locations to install apron guards.

Section 4040 - Subdrains and Footing Drains

- 4040, 1.08, E Specify the distance beyond the right-of-way that the storm sewer service stub is to extend, if other than 10 feet.
- 4040, 3.01, B Specify the use of engineering fabric.
- 4040, 3.03, B Specify the use of engineering fabric.

4.8 ITEMS TO BE SPECIFIED ON PLANS OR IN CONTRACT DOCUMENTS (Continued)

4040, 3.04, A	Specify the locations to install footing drain service stubs.
4040, 3.04, D	Specify the distance beyond the right-of-way that the footing drain service stub is to extend, if other than 10 feet.
Figure 4040.231	For Type 1 subdrains, specify Case A, B, or C. For Type 2 subdrains, specify Case D or E and the pipe diameter. When using Case A or Case D, specify the distance from back of curb. For both types, specify when engineering fabric is to be used.
Figure 4040.232	Specify the type of subdrain cleanout to be used.

Section 4050 - Pipe Rehabilitation

4050, 1.07, C	Specify who will provide water for installation of cured-in-place pipe if not the owner.
4050, 2.01, A, 2	Specify the maximum outside diameter and SDR of polyethylene or polyolefin pipe for sliplining.
4050, 2.06, B, 1	Specify the nominal internal diameter and length of existing pipe.
4050, 2.06, B, 5	Specify the minimum SDR wall thickness for DRP-HDPE.
4050, 2.07, B, 1	Specify the nominal internal diameter and length of existing pipe.
4050, 2.07, B, 5	Specify the minimum SDR wall thickness for FFP-PVC pipe lining.
4050, 2.09, B	Specify materials to be used for pipe replacement (spot repairs).
4050, 3.08	Specify the installation process for DRP-HDPE or FFP-PVC, if other than manufacturer's recommendations.
4050, 3.09, C, 1	Specify the material used to replace pipe of the same nominal size as the existing pipe.

Section 4060 - Testing and Inspection

4060, 2.01, B, 3	Specify the type of recording media that will be used to record the inspection.
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DIVISION 5 - WATER MAINS AND APPURTENANCES**Section 5010 - Pipe and Fittings**

5010, 1.08, C	Specify whether measurement of fittings will be made by count or by weight.
5010, 2.01, A, 1, b	Specify the minimum wall thickness for PVC pipe sizes over 24 inches.
5010, 2.01, A, 2	Specify joint type for PVC pipe if other than push-on.

4.8 ITEMS TO BE SPECIFIED ON PLANS OR IN CONTRACT DOCUMENTS (Continued)

5010, 2.01, B, 1, b	Specify the minimum wall thickness for DIP sizes over 24 inches.
5010, 2.01, B, 4	Specify joint type for DIP if other than push-on.
5010, 2.04, C	Specify when thrust blocks will be used for pipe sizes greater than 16 inches in diameter.
5010, 2.07, B	Specify the materials to use for water service pipe and appurtenances.
5010, 3.01, A, 3	Specify the lines and grades to install pipe with fittings.
5010, 3.01, A, 8	For pipes larger than 16 inches, specify when concrete thrust blocks are required in addition to restrained joints.
5010, 3.06, E	Specify the locations to install ground rods if other than adjacent to connections to existing piping.
5010, 3.07, B	Specify where to construct utility line supports.
5010, 3.08	Specify when the change of piping material is to be on the inside of the structure wall.
Figure 5010.101	Specify when to use the alternate method of thrust blocks at dead ends.

Section 5020 - Valves, Hydrants, and Appurtenances

5020, 2.01, A, 3	Specify whenever the opening direction for valves is clockwise.
5020, 2.01, D, 7	Specify the locations to use tapping valve assemblies.
5020, 2.02, B	Specify allowable manufacturer(s) of fire hydrant assemblies.
5020, 2.02, C, 5	Specify whenever the opening direction for fire hydrant assemblies is clockwise.
5020, 2.02, C, 6	For fire hydrant assemblies, specify the operating nut, pumper nozzle, nozzle threads, and main valve nominal opening sizes.
5020, 2.03, A	Specify the type of flushing device (blowoff) to be used.
5020, 2.03, B, 2	Specify the allowable manufacturer(s) for valve boxes.
5020, 3.02	Specify where to install and how to construct flushing device (blowoff).
5020, 3.04, D	Specify if exterior of a new fire hydrant barrel section will be painted a color other than matching the existing fire hydrant.

4.8 ITEMS TO BE SPECIFIED ON PLANS OR IN CONTRACT DOCUMENTS (Continued)**DIVISION 6 - STRUCTURES FOR SANITARY AND STORM SEWERS****Section 6010 - Structures for Sanitary and Storm Sewers**

6010, 2.06, B	Specify when to use a concentric cone on sanitary sewer manholes.
6010, 2.11, B, 1	Specify if sanitary sewer manhole exterior is to be coated.
6010, 2.11, B, 2	Specify whenever sanitary sewer manhole lining is required.
6010, 2.13, A	Specify if steps are to be provided for structures other than circular, precast manholes. Specify if steps are NOT to be provided in circular, precast manholes.
6010, 3.01, J	Specify the type of casting to use for manholes and intakes, except for intakes that have a specific casting type identified on the figures. Specify if casting frame is to be attached to the structure with bolts.
6010, 3.02, B, 2	Specify if reinforcing steel is to lap other than 36 diameters.
6010, 3.04, A, 1	Specify when to install casting extension rings.
6010, 3.04, B, 3	Specify when existing casting may be reinstalled for minor adjustment of existing manhole or intake.
6010, 3.04, C, 4	Specify when existing casting may be reinstalled for major adjustment of existing manhole or intake.
6010, 3.05, A	Specify whenever a knockout opening is allowed in lieu of a cored opening.
6010, 3.05, A, 1, b	Specify if sanitary sewer service is NOT required to be maintained at all times when connecting a sanitary sewer to existing manhole or intake.
6010, 3.05, A, 3	Specify whenever a knockout opening is allowed in lieu of a cored opening.
6010, 3.06, A	Specify if removal of manhole or intake is other than to a minimum of 10 feet below top of subgrade in paved areas or 10 feet below finished grade in other areas.
6010, 3.06, B, 3	Specify when to fill abandoned pipe line with flowable mortar or controlled low strength material.
Figure 6010.501	Specify when Type Q grate is to be used in lieu of Type R.
Figure 6010.502	Specify when Type Q grate is to be used in lieu of Type R.
Figure 6010.603	Specify when Type Q grate is to be used in lieu of Type R.

4.8 ITEMS TO BE SPECIFIED ON PLANS OR IN CONTRACT DOCUMENTS (Continued)**Section 6020 - Rehabilitation of Existing Manholes**

- 6020, 2.01, B, 1 Specify when to use a urethane chimney seal.
- 6020, 2.02, A Specify the thickness of the in-situ manhole replacement wall.
- 6020, 2.02, C Specify whenever the Contractor is required to provide a PVC or PE plastic liner for in-situ manhole replacement.
- 6020, 3.02, B, 3 Specify whenever a plastic liner is to be installed in an in-situ manhole replacement.

Section 6030 - Cleaning, Inspection, and Testing of Structures

- 6040, 3.04, A, 1 Specify when exfiltration testing is required for new sanitary sewer manholes in lieu of vacuum testing.
- 6040, 3.04, C, 1 Specify when exfiltration testing is required for new sanitary sewer manholes in lieu of vacuum testing.

DIVISION 7 - STREETS & RELATED WORK**Section 7010 - Portland Cement Concrete Pavement**

- 7010, 1.03, B Specify whenever maturity method for strength determination will not be allowed. Specify if use of Class M or Class M-V concrete mixtures or Type III cement are required.
- 7010, 1.08, D Specify whenever placement of curb and gutter is to be incidental to street paving.
- 7010, 1.08, K Specify whether driveway surfacing material is to be measured in tons or by the cubic yard.
- 7010, 1.08, O, 2 Specify whenever smoothness incentives will be provided for non-primary arterials and major collectors.
- 7010, 1.08, O, 3 Specify whenever smoothness incentives will not be provided for primary roads.
- 7010, 2.02, D, 4, c Specify whenever durability of stone is to be other than Class 2.
- 7010, 2.02, H, 4 Specify whenever welded wire fabric is to be used. Specify size and spacing of welded wire fabric.
- 7010, 2.02, L, 2 Specify type of preformed expansion joint filler and sealer when type other than resilient is required (i.e. polyethylene, elastomeric, or urethane foam).
- 7010, 2.03, A Specify whenever a mix other than Class C or C-V47B with air entraining agent is to be used.

4.8 ITEMS TO BE SPECIFIED ON PLANS OR IN CONTRACT DOCUMENTS (Continued)

7010, 3.05, A, 1	Specify whenever longitudinal joints are to be placed other than as shown in the detailed drawings.
7010, 3.05, A, 3	Specify whenever transverse joints are to be placed at an angle other than right angle to the centerline.
7010, 3.05, A, 8	Specify whenever wet sawing shall be required for dust control.
7010, 3.08, E	Specify whenever surface treatment other than dragged surface treatment is required (i.e. longitudinal or transverse surface tining).
7010, 3.13, C, 3	Specify the dimensions of transverse and longitudinal joints for whitetopping overlays.
Figure 7010.4A	Specify placement of dowel bars or tie bars. Specify if transverse contraction joints in mainline pavement should be 'CD'.
Figure 7010.4B	Specify typical tie bar placement. Specify need for bar supports for fixed form paving. Specify option 1 or option 2 for the width of saw cut and use of joint sealant.
Figure 7010.6	Specify whenever rumble strips are required.
Figure 7010.9A	Specify type of traffic island to be used. Specify if a 12 inch hole for signs is required.
Figure 7010.9B	Specify width of the traffic island.
Figure 7010.10	Specify whenever the use of a subdrain is desired. Specify if PCC approach is to abut the crossing.

Section 7020 - Hot Mix Asphalt Pavement

7020, 1.02, C	Specify a gyratory mix from Table 1.
7020, 1.03, E	Specify if material certification will be required.
7020, 1.06, A, 2	Specify whether a construction sequence will be required.
7020, 1.06, C	Specify a traffic control plan unless it is to be provided by the Contractor.
7020, 1.08, A, 3, b	Specify if pavement smoothness incentives will be provided for non-primary arterials and major collectors.
7020, 1.08, A, 3, c	Specify if pavement smoothness incentives will <u>not</u> be provided for primary roads.
7020, 3.01, A, 2	Specify whenever an additional layer of tack coat is required prior to each lift.

4.8 ITEMS TO BE SPECIFIED ON PLANS OR IN CONTRACT DOCUMENTS (Continued)**Section 7030 - Recreational Trails, Sidewalks, and Driveways**

7030, 1.08, H, 2	Specify whether granular surfacing for driveways will be computed in tons or in cubic yards.
7030, 1.08, I	Specify whenever the Contractor will be responsible for concrete compression or HMA density testing.
7030, 2.03, A	Specify color and surface texture of clay brick pavers, or select from samples submitted by the Contractor.
7030, 2.03, B	If concrete brick pavers are to be used, specify the material requirements.
7030, 3.04, D	Specify when curing is required.
7030, 3.04, F, 2, a, 1)	Specify the spacing for transverse joints in recreational trails, if other than equal to the width of the recreational trail.
7030, 3.06, A, 2	Specify the cross-section and patterns to use for brick sidewalks with a sand base.
7030, 3.06, B, 1, b	Specify the cross-section and patterns to use for brick sidewalks with a concrete base.
7030, 3.11, A	Specify when testing will be the Contractor's responsibility.
Figure 7030.101	Specify the radius for commercial and industrial driveways.
Figure 7030.102	Specify the radius for commercial and industrial driveways.
Figure 7030.201	If a special grade is required for parking slopes, specify the grade. Specify the width of the sidewalk.
Figure 7030.202	Specify one of the curb details for Class A sidewalk.
Figure 7030.203	Specify the brick sidewalk pattern.

Section 7040 - Pavement Repair and Rehabilitation

7040, 1.08, A	Specify whenever full depth portland cement concrete patches are to be paid for other than by the square yard.
7040, 1.08, B	Specify whenever full depth hot mix asphalt patches are to be paid for other than by the square yard.
7040, 1.08, D	Specify whenever full depth composite patches are to be paid for other than by the square yard.
7040, 1.08, E, 1	Specify whenever partial depth portland cement concrete patches are to be paid for other than by the square yard.

4.8 ITEMS TO BE SPECIFIED ON PLANS OR IN CONTRACT DOCUMENTS (Continued)

- 7040, 1.08, E, 2 Specify whenever partial depth hot mix asphalt patches are to be paid for other than by the square yard.
- 7040, 3.09, K Specify whenever pavement smoothness testing shall be required for pavement surface repair (diamond grinding).
- 7040, 3.10, B, 3 Specify whenever the millings are to remain the property of the Jurisdiction. Specify the point of delivery if the Jurisdiction retains the millings.

Figure 7040.5 Specify the type of pavement patch.

Section 7060 - Bituminous Seal Coat

- 7060, 1.08 Specify whether bituminous seal coat shall be paid for by the square yard or by unit of material laid down (tons of aggregate and gallons of binder). Also specify whether a one course seal coat or two course seal coat shall be required.

Section 7070 - Emulsified Asphalt Slurry Seal

- 7070, 2.01, C Specify the type of slurry seal required (Type 1, Type 2, or Type 3).
- 7070, 2.02, A Specify the amount of asphalt emulsion that is to be blended with the aggregate.
- 7070, 3.02, G Specify whenever a burlap drag is required for emulsified asphalt slurry seal.

DIVISION 8 - TRAFFIC SIGNALS**Section 8030 - Wiring**

- 8030, 3.01, B Specify whenever splicing of signal cable runs between the connection in the signal pole base and the terminals in the controller cabinet will be allowed.

Section 8060 - Type 170 Controller and Cabinet

- 8060, 2.01, D Specify whenever operational modifications are to be made to the "Local Intersection Program."
- 8060, 2.01, E, 1 Specify detector sensing unit requirements.

Section 8080 - Poles

- 8080, 2.01, F Specify on the plans whenever the luminary arm is to be mounted in a different vertical plane than the signal arm.

4.8 ITEMS TO BE SPECIFIED ON PLANS OR IN CONTRACT DOCUMENTS (Continued)**DIVISION 9 - SITE WORK & LANDSCAPING****Section 9010 - Seeding**

- 9010, 1.07, B Specify when a warranty for seeding is required.
- 9010, 1.08, A, B, & C Specify if all types of seeding, fertilizer, and mulching are measured in squares or acres.
- 9010, 1.08, D Specify if watering will not be incidental.
- 9010, 2.01, C Specify PLS, which shall not be less than the accumulated total.
- 9010, 2.02 Specify seed mixture in the contract documents.
- 9010, 2.03, A, 2 Specify if fertilizer is not to be applied for temporary conventional seeding.
- 9010, 2.08, N Specify the use of a no-till attachment if desired.
- 9010, 3.03, E, 4, a Specify if winter dormant seeding is required.

Section 9030 - Plant Material and Planting

- 9030, 2.01, F Specify whenever plants in rows do not need to be matched in form or size.

Section 9040 - Erosion and Sediment Control

- 9040, 1.08, A, 1 Specify if the Contractor will be responsible for the SWPPP preparation.
- 9040, 1.08, A, 2 Specify if the Contractor will be responsible for the SWPPP management.
- 9040, 1.08, A, 3 Specify if the Contractor will be responsible for the SWPPP inspection.
- 9040, 1.08, B Specify thickness for compost blankets.
- 9040, 1.08, D, 1 Specify measurement of conventional mulching in squares or acres.
- 9040, 1.08, D, 2 Specify measurement of hydromulching in squares or acres.
- 9040, 1.08, K Specify if level spreaders are not to be removed.
- 9040, 1.08, R, 1 Specify measurement for stabilized construction entrance in square yards or tons.
- 9040, 2.10, A Specify diameter for open weave, degradable netting if other than 9 inches is required.
- 9040, 2.12, A Specify length of pressure-treated timber for level spreaders.
- 9040, 2.15, B Specify riser diameter for sediment basin outlet structures.

4.8 ITEMS TO BE SPECIFIED ON PLANS OR IN CONTRACT DOCUMENTS (Continued)

9040, 2.15, C, 1	Specify the number, diameter, and elevation of the holes in the riser of the dewatering device in sediment basin outlet structures.
9040, 2.15, D, 2	Specify barrel diameter of the sediment basin outlet structures.
9040, 3.02, D	Specify if weekly erosion and sediment control site inspections are <u>not</u> required as a part of SWPPP management.
9040, 3.04, C	Specify depth of compost blankets.
9040, 3.05, A	Specify dimensions of filter berms if other than dimensions shown in designated figure.
9040, 3.05, D	Specify when a vegetated berm is required.
9040, 3.12, A, 2	Specify if placement of seed and fertilizer is to be accomplished before installation of temporary rolled erosion control products.
9040, 3.12, B, 1	Specify if placement of seed and fertilizer is to be accomplished before installation of temporary rolled erosion control products.
9040, 3.15, B, 2	Specify whenever rolled erosion control product is required.
9040, 3.16, B	Specify length of level spreaders.
9040, 3.17	Specify dimensions for construction of temporary earth diversion structures.
9040, 3.20, B, 1	Specify the number, diameter, and configuration of holes in the riser section of sediment basin outlet structures.
Figure 9040.1	Specify if compost blankets are vegetated or un-vegetated.
Figure 9040.2	Specify berm placement locations in uncompacted windrow perpendicular to the slope. Specify filter sock diameter. Specify size of berm if slope is steeper than 3:1.
Figure 9040.3	Specify applications of seed and fertilizer prior to installation during seedbed preparation. Specify process of unrolling product down the slope or along the slope.
Figure 9040.5	Specify diameter of wattle. Specify space between wattles.
Figure 9040.6	Specify spacing for check dams.
Figure 9040.7	Specify height between engineering fabric and crest on the rock check dam.
Figure 9040.8	Specify locations to construct diversion in temporary earth diversion structures. Specify use of diversion types 1, 2, and 3. Specify use of alternate configurations. Specify total height of diversion.

4.8 ITEMS TO BE SPECIFIED ON PLANS OR IN CONTRACT DOCUMENTS (Continued)

Figure 9040.9	Specify excavated depression depth. Specify length and width of level spreader.
Figure 9040.10	Specify the rock gradation, thickness (T), width (W), and length (L) for rock apron for pipe outlet onto flat ground.
Figure 9040.11	Specify the rock gradation, thickness (T), width (W), and length (L) for rock apron for pipe outlet onto flat ground.
Figure 9040.12	Specify diameters of pipe and aprons for temporary pipe slope drain. Specify A, B, & C anchoring options.

4.9 INCIDENTAL OR INCLUDED ITEMS

Items that are necessary to properly complete construction, including work and materials, and are not pay items. The following is a list of items in the SUDAS Standard Specifications that are considered incidental to other work unless specified as a pay item on the plans or in the contract documents. Please note – this list is not all-inclusive.

DIVISION 2 - EARTHWORK**Section 2010 - Earthwork, Subgrade, and Subbase**

2010, 1.08, A, 3	<u>Clearing and Grubbing (by Units)</u> Placement of backfill in area where roots have been removed, and removal and disposal of all materials.
2010, 1.08, B, 3	<u>Clearing and Grubbing (by Area)</u> Removal and disposal of all materials and placement of backfill in area where roots have been removed.
2010, 1.08, D, 2, c	<u>Topsoil, Compost-amended</u> Furnishing and incorporating compost.
2010, 1.08, E, 3	<u>Excavation, Class 10, Class 12, or Class 13</u> a. Site preparation for, and the construction of, embankment, fills, shoulder backfill, and backfill behind curbs. b. Overhaul. c. Finishing the soil surface, including roadways, shoulders, behind curbs, side ditches, slopes, and borrow pits. d. Repair or replacement of any fences that have been unnecessarily damaged or removed. e. Compaction testing, as specified in the contract documents.
2010, 1.08, F,3	<u>Below Grade Excavation (Core Out)</u> Equipment, tools, labor, disposal of unsuitable materials, dewatering, drying, furnishing, and placement of foundation materials as required by the Engineer, compaction and finishing of the excavated area, and all incidental work as may be required.

4.9 INCIDENTAL OR INCLUDED ITEMS (Continued)

- 2010, 1.08, G, 3 Subgrade Preparation
Excavating, manipulating, replacing, compacting, and trimming to the proper grade.
- 2010, 1.08, H, 3 Subgrade Treatment
Furnishing, placing, and incorporating the subgrade treatment material (cement, asphalt, fly ash, lime, geogrid, or geotextiles).
- 2010, 1.08, I, 3 Subbase
Furnishing, placing, compacting, and trimming to the proper grade.
- 2010, 1.08, J, 1, c Removal of Structures
Removal and disposal of structures.
- 2010, 1.08, J, 2, a, 3) Removal of Known Box Culverts
Removal and disposal of known box culverts.
- 2010, 1.08, J, 2, c, 3) Removal of Known Pipe Culverts
Removal and disposal of known pipe culverts.
- 2010, 1.08, J, 3, a, 3) Removal of Known Pipes and Conduits
Removal, disposal, and capping, if specified, of pipes and conduits.

DIVISION 3 - TRENCH AND TRENCHLESS CONSTRUCTION**Section 3010 - Trench Excavation and Backfill**

- 3010, 1.08, A General
1. Standard trench excavation.
2. Removal and disposal of unsuitable backfill material encountered during standard trench excavation.
3. Removal of abandoned private utilities encountered during trench excavation.
4. Furnishing and placing granular bedding material.
5. Placing and compacting backfill material.
6. Dewatering.
7. Sheet piling, shoring, and bracing.
8. Adjusting the moisture content of excavated backfill material to the range specified for placement and compaction.
- 3010, 1.08, C, 3 Trench Foundation
Removal and disposal of over-excavated material required to stabilize trench foundation; and furnishing, hauling, and placing stabilization material.
- 3010, 1.08, D, 3 Replacement of Unsuitable Backfill Material
Furnishing, hauling, and placing backfill material.
- 3010, 1.08, E, 3 Special Pipe Embedment or Encasement
Furnishing and placing all required special pipe embedment or encasement materials.

4.9 INCIDENTAL OR INCLUDED ITEMS (Continued)**Section 3020 - Trenchless Construction**

3020, 1.08 All items of work contained in this section are incidental to the underground utility pipe being installed and will not be paid for separately.

DIVISION 4 - SEWERS AND DRAINS**Section 4010 - Sanitary Sewers**

- 4010, 1.08, A, 1, c Sanitary Sewer Gravity Main, Trenched
Trench excavation, dewatering, furnishing bedding material, placing bedding and backfill material, wyes and other fittings, pipe joints, testing, and inspection.
- 4010, 1.08, A, 2, c Sanitary Sewer Gravity Main, Trenchless
Furnishing and installing pipe; trenchless installation materials and equipment; pit excavation, dewatering, and placing backfill material; pipe connections; testing; and inspection.
- 4010, 1.08, B, 1, c Sanitary Sewer Gravity Main with Casing Pipe, Trenched
Furnishing and installing both carrier pipe and casing pipe, trench excavation, dewatering, furnishing bedding material, placing bedding and backfill material, furnishing and installing annular space fill material, casing spacers, pipe connections, testing, and inspection.
- 4010, 1.08, B, 2, c Sanitary Sewer Gravity Main with Casing Pipe, Trenchless
Furnishing and installing both carrier pipe and casing pipe; trenchless installation materials and equipment; pit excavation, dewatering, and placing backfill material; casing spacers; furnishing and installing annular space fill material; pipe connections; testing; and inspection.
- 4010, 1.08, C, 1, c Sanitary Sewer Force Main, Trenched
Trench excavation, dewatering, furnishing bedding material, placing bedding and backfill material, wyes and other fittings, pipe joints, testing, and inspection.
- 4010, 1.08, C, 2, c Sanitary Sewer Force Main, Trenchless
Furnishing and installing pipe; trenchless installation materials and equipment; pit excavation, dewatering, and placing backfill material; pipe connections; testing; and inspection.
- 4010, 1.08, D, 1, c Sanitary Sewer Force Main with Casing Pipe, Trenched
Furnishing and installing both carrier pipe and casing pipe, trench excavation, dewatering, placing bedding and backfill material, furnishing and installing annular space fill material, casing spacers, pipe connections, testing, and inspection.
- 4010, 1.08, D, 2, c Sanitary Sewer Force Main with Casing Pipe, Trenchless
Furnishing and installing both carrier pipe and casing pipe; trenchless installation materials and equipment; pit excavation, dewatering, and placing backfill material; casing spacers; furnishing and installing annular space fill material; pipe connections; testing; and inspection.

4.9 INCIDENTAL OR INCLUDED ITEMS (Continued)

- 4010, 1.08, E, 3 Sanitary Sewer Service Stub
Trench excavation, furnishing bedding material, placing bedding and backfill material, tap, fittings, testing, and inspection.
- 4010, 1.08, F, 3 Sanitary Sewer Service Relocation
Removal of existing pipe, trench excavation, furnishing new pipe and bedding material, placing bedding and backfill material, connection back to existing service, compaction, testing, and inspection.
- 4010, 1.08, G, 3 Sewage Air Release Valve and Pit
Excavation, furnishing bedding material, placing bedding and backfill material, compaction, and testing.
- 4010, 1.08, H, 3 Removal of Sanitary Sewer
Removal, disposal, and capping (if specified) of pipe.

Section 4020 - Storm Sewers

- 4020, 1.08, A, 1 Storm Sewer, Trenched
Trench excavation, dewatering, furnishing bedding material, placing bedding and backfill material, joint wrapping, connectors, testing, and inspection. The length of elbows and tees of the pipes installed will be included in the length of pipe measured.
- 4020, 1.08, A, 2, c Storm Sewer, Trenchless
Furnishing and installing pipe; trenchless installation materials and equipment; pit excavation, dewatering, and placing backfill material; pipe connections; testing; and inspection.
- 4020, 1.08, B, 1, c Storm Sewer with Casing Pipe, Trenched
Furnishing and installing both carrier pipe and casing pipe, trench excavation, dewatering, furnishing bedding material, placing bedding and backfill material, furnishing and installing annular space fill material, casing spacers, pipe connections, testing, and inspection.
- 4020, 1.08, B, 2, c Storm Sewer with Casing Pipe, Trenchless
Furnishing and installing both carrier pipe and casing pipe; trenchless installation materials and equipment; pit excavation, dewatering, and placing backfill material; casing spacers; furnishing and installing annular space fill material; pipe connections; testing; and inspection.
- 4020, 1.08, C, 3 Removal of Storm Sewer
Removal, disposal, and capping (if specified) of pipe.

Section 4030 - Pipe Culverts

- 4030, 1.08, A, 1 Pipe Culvert, Trenched
Trench excavation, dewatering, furnishing bedding material, placing bedding and backfill material, connectors, testing, and inspection. The length of elbows and tees of the pipes installed will be included in the length of pipe measured.

4.9 INCIDENTAL OR INCLUDED ITEMS (Continued)

- 4030, 1.08, A, 2, c Pipe Culvert, Trenchless
Furnishing and installing pipe; trenchless installation materials and equipment; pit excavation, dewatering, and placing backfill materials; pipe connections; testing; and inspection.
- 4030, 1.08, B, 3 Pipe Apron
Trench excavation, furnishing bedding material, placing bedding and backfill material, connectors, and other appurtenances.
- 4030, 1.08, C, 3 Footings for Concrete Pipe Aprons
Excavation, reinforcing steel, and concrete.

Section 4040 - Subdrains and Footing Drain Collectors

- 4040, 1.08, A, 3 Subdrain
Trench excavation, furnishing and placing bedding and backfill material, engineering fabric, connectors, and elbows and tees. The length of elbows and tees of the pipes installed will be included in the length of pipe measured.
- 4040, 1.08, B, 3 Footing Drain Collector
Trench excavation, pipe, wyes, tap, fittings, and furnishing and placing bedding and backfill material.
- 4040, 1.08, D, 3 Subdrain or Footing Drain Outlets and Connections
Pipe, non-shrink grout, coupling bands, and rodent guards for pipes 6 inches or smaller.
- 4040, 1.08, E, 3 Storm Sewer Service Stub
Trench excavation, furnishing bedding material, placing bedding and backfill material, tap, fittings, and plugs.

DIVISION 5 - WATER MAINS AND APPURTENANCES**Section 5010 - Pipe and Fittings**

- 5010, 1.08, A, 1, c Water Main, Trenched
Trench excavation, dewatering, furnishing bedding material, placing bedding and backfill material, tracer system, testing, disinfection, and polyethylene wrap for ductile iron pipe and for fittings.
- 5010, 1.08, A, 2, c Water Main, Trenchless
Furnishing and installing pipe; trenchless installation materials and equipment; pit excavation, dewatering, and placing backfill material; tracer system; testing; and disinfection.
- 5010, 1.08, B, 1, c Water Main with Casing Pipe, Trenched
Furnishing and installing both carrier pipe and casing pipe, trench excavation, dewatering, furnishing bedding material, placing bedding and backfill material, casing spacers, furnishing and installing annular space fill material, tracer system, testing, and disinfection.

4.9 INCIDENTAL OR INCLUDED ITEMS (Continued)

- 5010, 1.08, B, 2, c Water Main with Casing Pipe, Trenchless
Furnishing and installing both carrier pipe and casing pipe; trenchless installation materials and equipment; pit excavation, dewatering, and placing backfill material; casing spacers; furnishing and installing annular space fill material; tracer system; testing; and disinfection.
- 5010, 1.08, C, 1, c Fitting (by Count)
Restrained joints and thrust blocks.
- 5010, 1.08, C, 2, c Fitting (by Weight)
Restrained joints and thrust blocks.
- 5010, 1.08, D, 3 Water Service Stub
Corporation, service pipe, stop, and stop box.

Section 5020 - Valves, Fire Hydrants, and Appurtenances

- 5020, 1.08, A, 3 Valve (Butterfly or Gate)
All components attached to the valve or required for its complete installation, including underground or above ground operator, square valve operating nut, valve box and cover, valve box extension, and valve stem extension.
- 5020, 1.08, B, 3 Tapping Valve Assembly
Tapping sleeve, tapping valve, the tap, valve box and cover, valve box extension, and valve stem extension.
- 5020, 1.08, C, 3 Fire Hydrant Assembly
The fire hydrant, barrel extensions sufficient to achieve proper bury depth of anchoring pipe and height of fire hydrant above finished grade, and components to connect the fire hydrant to the water main, including anchoring pipe, fittings, thrust blocks, pea gravel or porous backfill material, and fire hydrant gate valve and appurtenances, except tapping valve assembly if used.
- 5020, 1.08, E Valve Box Adjustment, Minor
Measurement and payment for minor adjustment of an existing valve box by raising or lowering the adjustable valve box is incidental.
- 5020, 1.08, G, 3 Valve Box Replacement
Removal of existing valve box; excavation; furnishing and installing new valve box; backfill; compaction; and all other necessary appurtenances.
- 5020, 1.08, H, 3 Fire Hydrant Adjustment
Removal and reinstallation of the existing fire hydrant; furnishing and installing the extension barrel section and stem; and all other necessary appurtenances.

Section 5030 - Testing and Disinfection

- 5030, 1.08 Testing and disinfection of water systems is incidental to the construction of pipe and fittings.

4.9 INCIDENTAL OR INCLUDED ITEMS (Continued)**DIVISION 6 - STRUCTURES FOR SANITARY AND STORM SEWERS****Section 6010 - Structures for Sanitary and Storm Sewers**

- 6010, 1.08, A, 3 Manhole
Excavation, placing bedding and backfill material, compaction, base, structural concrete, reinforcing steel, precast units (if used), chimney seals, castings, and adjustment rings.
- 6010, 1.08, B, 3 Intake
Excavation, placing bedding and backfill material, compaction, base, structural concrete, reinforcing steel, precast units (if used), castings, adjustment rings, and all appurtenances necessary for proper installation.
- 6010, 1.08, C, 3 Drop Connection
The connection to the manhole and all pipe, fittings, concrete encasement, and bedding and backfill material.
- 6010, 1.08, E, 3 Manhole or Intake Adjustment, Minor
Removing existing casting and existing adjustment rings, furnishing and installing adjustment rings, furnishing and installing new casting, and installing new chimney seal (sanitary sewer manholes only).
- 6010, 1.08, F, 3 Manhole or Intake Adjustment, Major
Removal of existing casting, adjustment rings, top sections, and risers; excavation; concrete and reinforcing steel or precast sections; furnishing and installing new casting; installing new chimney seal (sanitary sewer manholes only); placing backfill material; and compaction.
- 6010, 1.08, G, 3 Connection to Existing Manhole or Intake
Coring or cutting into the existing manhole or intake, pipe connectors, grout, and waterstop (when required).
- 6010, 1.08, H, 3 Remove Manhole or Intake
Removal of casting, concrete, and reinforcement; plugging pipes; filling remaining structure with flowable mortar; and placing compacted fill over structure to finished grade.

Section 6020 - Rehabilitation of Existing Manholes

- 6020, 1.08, A, 3 Rubber Chimney Seal
All necessary compression or expansion bands and extension sleeves as necessary to complete chimney seal.
- 6020, 1.08, C, 3 In-situ Manhole Replacement, Cast-in-place Concrete
Handling of sewer flows as required to properly complete the installation, invert overlay as recommended by the manufacturer, replacement of existing casting with a new casting, and testing the manhole upon completion.

4.9 INCIDENTAL OR INCLUDED ITEMS (Continued)

- 6020, 1.08, D, 3 In-situ Manhole Replacement, Cast-in-place Concrete with Plastic Liner
Handling of sewer flows as required to properly complete the installation, invert overlay as recommended by the manufacturer, replacement of existing casting with a new casting, sealing at the frame and cover, sealing pipe penetrations as recommended by the manufacturer, and testing the manhole upon completion.
- 6020, 1.08, E, 3 Manhole Lining with Centrifugally Cast Cementitious Mortar Liner with Epoxy Seal
Handling of sewer flows during lining operations as required to properly complete the installation, and replacement of the existing casting with a new casting.

Section 6030 - Cleaning, Inspection, and Testing of Structures

- 6030, 1.08 Cleaning, inspection, and testing of structures are incidental to construction of structures and will not be paid for separately.

DIVISION 7 - STREETS AND RELATED WORK**Section 7010 - Portland Cement Concrete Pavement**

- 7010, 1.08, A, 4 Pavement, PCC
Surface curing and temperature protection covering are incidental to the concrete pavement bid item.
- 7010, 1.08, C Construction of integral curb is incidental to the construction of concrete pavement and is included in the pavement surface measured for payment.
- 7010, 1.08, E Miscellaneous sections of concrete that are required to be constructed, but not listed as separate bid items, are incidental to other concrete bid items. Examples are headers, etc.
- 7010, 1.08, K Driveway Surfacing Material
The excavation necessary for placement of granular material will be incidental to the work.
- 7010, 1.08, O Pavement Smoothness
The costs of correcting the smoothness and associated traffic control for local streets and minor collectors are incidental to the cost of pavement. The cost of correcting the smoothness and associated traffic control for non-primary arterials and major collectors is incidental to the cost of pavement. The cost of correcting the smoothness and associated traffic control for primary roads is incidental to the cost of pavement.
- 7010, 3.13, A All construction of the pad line, outside of the roadway edge, which will support the slip form paving machine, shall be completed by the Contractor and will be incidental.
- 7010, 3.15, C, 1 The cost of correcting the smoothness and associated traffic control for local streets and minor collectors shall be incidental to the cost of pavement.

4.9 INCIDENTAL OR INCLUDED ITEMS (Continued)**Section 7020 - Hot Mix Asphalt Pavement**

7020, 1.08, A, 1	Asphalt binder is incidental to HMA mixture.
7020, 1.08, A, 2, a	The costs of correcting the smoothness and associated traffic control for local streets and minor collectors are incidental to the cost of pavement.
7020, 1.08, A, 2, b	The cost of correcting the smoothness and associated traffic control for non-primary arterials and major collectors are incidental to the cost of pavement.
7020, 1.08, A, 2, c	The cost of correcting the smoothness and associated traffic control for primary roads is incidental to the cost of pavement.
7020, 1.08, C	Safety fence is incidental to HMA pavement and base widening.
7020, 1.08, D	Quality control is incidental to HMA pavement and base widening.
7020, 1.08, E	<u>Pavement Removal, HMA</u> Removal and disposal of pavement.

Section 7030 - Recreational Trails, Sidewalks, and Driveways

7030, 1.08, A, 3	<u>Removal of Recreational Trail, Sidewalk, or Driveway</u> Sawing, hauling, and disposal of materials removed.
7030, 1.08, B, 3	<u>Removal of Curb</u> Hauling and disposal of materials removed.
7030, 1.08, C, 3	<u>Recreational Trail</u> Subgrade preparation, jointing, sampling, smoothness testing and correction, and testing.
7030, 1.08, D, 3	<u>Special Subgrade Preparation for Recreational Trail</u> Water required to bring subgrade moisture content to within the required limits.
7030, 1.08, E, 3	<u>Sidewalk, PCC</u> Minor grade adjustments at driveways and other intersections, subgrade preparation, formwork, additional thickness at thickened edges, jointing, sampling, smoothness testing and correction, and testing.
7030, 1.08, F, 1, c	<u>Brick Sidewalk with Sand Base</u> Subgrade preparation, brick edge restraints, furnishing and placing compacted sand base, and sand/cement joint filler.
7030, 1.08, F, 2, c	<u>Brick Sidewalk with Concrete Base</u> Subgrade preparation, concrete base, HMA setting bed, neoprene asphalt adhesive for asphalt setting bed, and sand/cement joint filler.
7030, 1.08, G, 3	<u>Detectable Warning</u> Steel bar supports and manufactured detectable warning panels.

4.9 INCIDENTAL OR INCLUDED ITEMS (Continued)

7030, 1.08, H, 1, c Driveway, Paved
Excavation, subgrade preparation, jointing, sampling, and testing.

7030, 1.08, H, 2, c Driveway, Granular
Excavation and preparation of subgrade.

Section 7040 - Pavement Repair and Rehabilitation

7040, 1.08 If required, sampling and testing are incidental.

Section 7060 - Bituminous Seal Coat

7060, 1.08, C, 2 Surface Preparation
Cleaning existing surface to remove foreign material is incidental to other work.

7060, 3.03, C If bituminous seal coat is bid by square yards, or is covered by contract price, control of bleeding during the construction period is incidental.

DIVISION 8 - TRAFFIC SIGNALS**Section 8010 - Overview**

8010, 1.09, A Whenever a part of a square or slab of existing concrete sidewalk, driveway, or pavement is broken or damaged, the entire square or slab shall be removed and reconstructed. Restoration is incidental to this bid item.

Section 8080 - Poles

8080, 2.01, D The cost of all nondestructive testing will be paid by the Contractor and will be incidental to other items in the contract.

DIVISION 9 - SITE WORK AND LANDSCAPING**Section 9010 - Seeding**

9010, 1.08, A, 1, b Conventional Seeding, Seeding
Removal of rock and other debris from the area, repairing rills and washes, preparing the seedbed, furnishing and placing seed, including any treatment required, and furnishing water and other care during the care period, unless these items are bid separately.

9010, 1.08, A, 2 Conventional Seeding, Fertilizing
Spreading fertilizer and mixing it into the soil if specified.

9010, 1.08, A, 3 Conventional Seeding, Mulching
Placing and tucking the mulch

4.9 INCIDENTAL OR INCLUDED ITEMS (Continued)

9010, 1.08, B, 2 Hydraulic Seeding, Seeding, Fertilizing, and Mulching
Removal of rock and other debris from the area, repairing rills and washes, preparing the seedbed, furnishing and placing seed, including any treatment required, furnishing and placing fertilizer and mulch, and furnishing water and other care during the care period, unless these items are bid separately.

9010, 1.08, C, 2 Pneumatic Seeding, Seeding, Fertilizing, and Mulching
Removal of rock and other debris from the area, repairing rills and washes, preparing the seedbed, furnishing and placing seed, including any treatment required, furnishing and placing fertilizer and mulch, and furnishing water and other care during the care period, unless these items are bid separately.

Section 9030 - Plant Material and Planting

9030, 1.08, A Plant
Unit price of each plant includes the delivery, materials, installation, warranty, applicable taxes, maintenance, replacements, mulch, staking, and fertilizer.

Section 9040 - Erosion and Sediment Control

9040, 1.08, E Temporary Rolled Erosion Control Products (RECP)
Staples, anchoring devices, and any other products or materials necessary for proper installation of temporary RECPs will be considered incidental.

9040, 1.08, F Turf Reinforcement Mats (TRM)
Staples, anchoring devices, and any other products or materials necessary for proper installation of TRMs will be considered incidental.

9040, 1.08, P, 1 Sediment Trap Outlet, Installation
Engineering fabric used in installation of sediment trap outlets will be considered incidental.

9040, 1.08, R, 3 Stabilization Construction Entrance
Subgrade stabilization fabric used in a stabilized construction entrance is considered incidental.

9040, 1.08, T Flow Transition Mat
Anchoring devices required for proper installation of flow transition mats are considered incidental.

9040, 1.08, U Rock Outlet Protection
Engineering fabric used in rock outlet protection is considered incidental.

9040, 1.08, V, 2 Incidental work related to compliance with the Iowa DNR NPDES General Permit No. 2 may include, but is not limited to: hazardous materials protection, fuel containment, waste disposal, and providing employee sanitary facilities.

4.9 INCIDENTAL OR INCLUDED ITEMS (Continued)

- 9040, 1.08, V, 3 Additional maintenance, inspections, or other items of work that are required because work was not completed within the specified contract time, due to no fault of the contracting authority, will be considered incidental, and will be at the Contractor's expense.
- 9040, 3.06, B, 1 Repairing or replacing non-functioning filter socks that allow water to flow under the sock, are torn, or are otherwise damaged, due to inadequate installation is considered incidental work.
- 9040, 3.06, B, 2 Removal of 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, is considered incidental work.

Section 9060 - Fencing

- 9060, 3.01, J, 4 Installation of ground rods is incidental to fence construction.

4.10 BID ITEMS

The following is a list of standard bid items listed in the SUDAS Standard Specifications. The following are suggested bid items. This list may not be all-inclusive. The Engineer may make modifications as necessary.

Item Number	Bid Items	Units
DIVISION 2 - EARTHWORK		
Section 2010 - Earthwork, Subgrade, and Subbase		
2010-108-A-0	Clearing and Grubbing	UNIT
2010-108-B-0	Clearing and Grubbing	AC
2010-108-C-0	Clearing and Grubbing	LS
2010-108-D-1	Topsoil, On-site	CY
2010-108-D-2	Topsoil, Compost-amended	CY
2010-108-D-3	Topsoil, Off-site	CY
2010-108-E-0	Excavation, Class 10, Class 12, or Class 13	CY
2010-108-G-0	Subgrade Preparation	SY
2010-108-H-0	Subgrade Treatment, ____ (Type)	SY
2010-108-I-0	Subbase, ____ (Type)	SY
2010-108-J-1	Removal of Structure, ____ (Type)	EA
2010-108-J-2-a	Removal of Known Box Culvert, ____ (Type), ____ (Size)	LF
2010-108-J-2-c	Removal of Known Pipe Culvert, ____ (Type), ____ (Size)	LF
2010-108-J-3-a	Removal of Known Pipe and Conduit, ____ (Type), ____ (Size)	LF
2010-108-K-1	Filling and Capping of Known Pipe Culverts, Pipes, and Conduits, ____ (Type), ____ (Size)	LF
2010-108-L-0	Compaction Testing	LS

4.10 BID ITEMS (Continued)

Item Number	Bid Items	Units
DIVISION 3 - TRENCH AND TRENCHLESS CONSTRUCTION		
Section 3010 - Trench Excavation and Backfill		
3010-108-B-0	Rock Excavation	CY
3010-108-C-0	Trench Foundation	TON
3010-108-D-0	Replacement of Unsuitable Backfill Material	CY
3010-108-E-0	Special Pipe Embedment or Encasement	LF
3010-108-F-0	Trench Compaction Testing	LS
DIVISION 4 - SEWERS AND DRAINS		
Section 4010 - Sanitary Sewers		
4010-108-A-1	Sanitary Sewer Gravity Main, Trenched, ____ (Type), ____ (Size)	LF
4010-108-A-2	Sanitary Sewer Gravity Main, Trenchless, ____ (Type), ____ (Size)	LF
4010-108-B-1	Sanitary Sewer Gravity Main with Casing Pipe, Trenched, ____ (Type), ____ (Size)	LF
4010-108-B-2	Sanitary Sewer Gravity Main with Casing Pipe, Trenchless, ____ (Type), ____ (Size)	LF
4010-108-C-1	Sanitary Sewer Force Main, Trenched, ____ (Type), ____ (Size)	LF
4010-108-C-2	Sanitary Sewer Force Main, Trenchless, ____ (Type), ____ (Size)	LF
4010-108-D-1	Sanitary Sewer Force Main with Casing Pipe, Trenched, ____ (Type), ____ (Size)	LF
4010-108-D-2	Sanitary Sewer Force Main with Casing Pipe, Trenchless, ____ (Type), ____ (Size)	LF
4010-108-E-0	Sanitary Sewer Service Stub, ____ (Type), ____ (Size)	LF
4010-108-F-0	Sanitary Sewer Service Relocation	EA
4010-108-G-0	Sewage Air Release Valve and Pit	EA
4010-108-H-0	Removal of Sanitary Sewer, ____ (Type), ____ (Size)	LF
Section 4020 - Storm Sewers		
4020-108-A-1	Storm Sewer, Trenched, ____ (Type), ____ (Size)	LF
4020-108-A-2	Storm Sewer, Trenchless, ____ (Type), ____ (Size)	LF
4020-108-B-1	Storm Sewer with Casing Pipe, Trenched, ____ (Type), ____ (Size)	LF
4020-108-B-2	Storm Sewer with Casing Pipe, Trenchless, ____ (Type), ____ (Size)	LF
4020-108-C-0	Removal of Storm Sewer, ____ (Type), ____ (Size)	LF
Section 4030 - Pipe Culverts		
4030-108-A-1	Pipe Culvert, Trenched, ____ (Type), ____ (Size)	LF
4030-108-A-2	Pipe Culvert, Trenchless, ____ (Type), ____ (Size)	LF
4030-108-B-0	Pipe Apron, ____ (Type), ____ (Size)	EA
4030-108-C-0	Footing for Concrete Pipe Apron, ____ (Type), ____ (Size)	EA
4030-108-D-0	Pipe Apron Guard	EA

4.10 BID ITEMS (Continued)

Item Number	Bid Items	Units
Section 4040 - Subdrains and Footing Drain Collectors		
4040-108-A-0	Subdrain, ____ (Type), ____ (Size)	LF
4040-108-B-0	Footing Drain Collector, ____ (Type), ____ (Size)	LF
4040-108-C-0	Subdrain Cleanout, ____ (Type), ____ (Size)	EA
4040-108-C-0	Footing Drain Cleanout, ____ (Type), ____ (Size)	EA
4040-108-D-0	Subdrain Outlets and Connections, ____ (Type), ____ (Size)	EA
4040-108-D-0	Footing Drain Outlets and Connections, ____ (Type), ____ (Size)	EA
4040-108-E-0	Storm Sewer Service Stub, ____ (Type), ____ (Size)	LF
Section 4050 - Pipe Rehabilitation		
4050-108-A-0	Pipe Lining, ____ (Type), ____ (Size)	LF
4050-108-B-0	Building Sanitary Sewer Service Reconnection	EA
4050-108-C-1	Spot Repairs by Pipe Replacement	EA
4050-108-C-2	Spot Repairs by Pipe Replacement	LF
DIVISION 5 - WATER MAINS AND APPURTENANCES		
Section 5010 - Pipe and Fittings		
5010-108-A-1	Water Main, Trenched, ____ (Type), ____ (Size)	LF
5010-108-A-2	Water Main, Trenchless, ____ (Type), ____ (Size)	LF
5010-108-B-1	Water Main with Casing Pipe, Trenched, ____ (Type), ____ (Size)	LF
5010-108-B-2	Water Main with Casing Pipe, Trenchless, ____ (Type), ____ (Size)	LF
5010-108-C-1	Fitting, ____ (Type), ____ (Size)	EA
5010-108-C-2	Fitting, ____ (Type), ____ (Size)	LB
5010-108-D-0	Water Service Stub, ____ (Type), ____ (Size)	EA
Section 5020 - Valves, Fire Hydrants, and Appurtenances		
5020-108-A-0	Valve, ____ (Type), ____ (Size)	EA
5020-108-B-0	Tapping Valve Assembly, ____ (Size)	EA
5020-108-C-0	Fire Hydrant Assembly	EA
5020-108-D-0	Flushing Device (Blowoff), ____ (Size)	EA
5020-108-F-0	Valve Box Extension	EA
5020-108-G-0	Valve Box Replacement	EA
5020-108-H-0	Fire Hydrant Adjustment	EA

4.10 BID ITEMS (Continued)

Item Number	Bid Items	Units
DIVISION 6 - STRUCTURES FOR SANITARY AND STORM SEWERS		
Section 6010 - Structures for Sanitary and Storm Sewers		
6010-108-A-0	Manhole Type _____, _____ (Size)	EA
6010-108-B-0	Intake Type _____, _____ (Size)	EA
6010-108-C-0	Drop Connection	EA
6010-108-D-0	Casting Extension Ring	EA
6010-108-E-0	Manhole Adjustment, Minor	EA
6010-108-E-0	Intake Adjustment, Minor	EA
6010-108-F-0	Manhole Adjustment, Major	EA
6010-108-F-0	Intake Adjustment, Major	EA
6010-108-G-0	Connection to Existing Manhole	EA
6010-108-G-0	Connection to Existing Intake	EA
6010-108-H-0	Remove Manhole	EA
6010-108-H-0	Remove Intake	EA
Section 6020 - Rehabilitation of Existing Manholes		
6020-108-A-0	Chimney Seal, Rubber	EA
6020-108-B-0	Chimney Seal, Urethane	EA
6020-108-C-0	In-situ Manhole Replacement, Cast-in-place Concrete	VF
6020-108-D-0	In-situ Manhole Replacement, Cast-in-place Concrete with Plastic Liner	VF
6020-108-E-0	Manhole Lining with Centrifugally Cast Cementitious Mortar Liner with Epoxy Seal	VF
DIVISION 7 - STREETS AND RELATED WORK		
Section 7010 - Portland Cement Concrete Pavement		
7010-108-A-0	Pavement, PCC, _____ (Thickness)	SY
7010-108-B-0	Barrier Curb, PCC	LF
7010-108-D-0	Curb and Gutter, PCC, _____ (Width)	LF
7010-108-F-0	Median, PCC	SY
7010-108-H-0	PCC Pavement Samples and Testing	LS
7010-108-K-0	Driveway Surfacing Material	TON or CY
7010-108-L-0	Pavement Widening, PCC, _____ (Thickness)	SY
7010-108-P-1	Resurfacing, PCC, Furnish Only	CY
7010-108-P-2	Resurfacing, PCC, Place Only	SY
7010-108-P-3	Scarification for PCC Resurfacing and Whitetopping	SY
7010-108-P-4	Surface Preparation for PCC Resurfacing (Bonded PCC Overlay)	SY
7010-108-Q-0	Pavement Removal, PCC	SY

4.10 BID ITEMS (Continued)

Item Number	Bid Items	Units
Section 7020 - Hot Mix Asphalt Pavement		
Refer to Iowa DOT's Standard Specifications for appropriate bid items for HMA Pavement		
7020-108-E-0	Pavement Removal, HMA	SY
Section 7030 - Recreational Trails, Sidewalks, and Driveways		
7030-108-A-0	Removal of Recreational Trail	SY
7030-108-A-0	Removal of Sidewalk	SY
7030-108-A-0	Removal of Driveway	SY
7030-108-B-0	Removal of Curb	LF
7030-108-C-0	Recreational Trail, ____ (Type), ____ (Thickness)	SY
7030-108-D-0	Special Subgrade Preparation for Recreational Trail	SY
7030-108-E-0	Sidewalk, PCC, ____ (Thickness)	SY
7030-108-F-1	Brick Sidewalk with Sand Base	SY
7030-108-F-2	Brick Sidewalk with Concrete Base	SY
7030-108-G-0	Detectable Warning	SY
7030-108-H-1	Driveway, Paved, ____ (Type), ____ (Thickness)	SY
7030-108-H-2	Driveway, Granular	SY or TON
7030-108-I-0	Recreational Trail Assurance Testing	LS
7030-108-I-0	Sidewalk Assurance Testing	LS
7030-108-I-0	Driveway Assurance Testing	LS
Section 7040 - Pavement Repair and Rehabilitation		
7040-108-A-0	Patches, Full Depth PCC	SY
7040-108-B-0	Patches, Full Depth HMA	SY
7040-108-C-0	Patches by Count	EA
7040-108-D-0	Patches, Full Depth Composite Sections	SY
7040-108-E-1	Patches, Partial Depth PCC	SY
7040-108-E-2	Patches, Partial Depth HMA	SY
7040-108-F-0	Patches, Surface	TON
7040-108-G-0	Joint and Crack Sealing	LF
7040-108-H-0	Partial Depth Curb Replacement	LF
7040-108-I-0	Curb and Gutter Replacement	LF
7040-108-J-0	Cross Stitching	LF
7040-108-K-0	Pavement Surface Repair (Diamond Grinding)	SY
7040-108-L-0	Pavement Scarification/Milling for Resurfacing	SY
Section 7050 - Asphalt Stabilization		
7050-108	Asphalt Stabilization	SY

4.10 BID ITEMS (Continued)

Item Number	Bid Items	Units
Section 7060 - Bituminous Seal Coat		
7060-108-A-0	Bituminous Seal Coat	SY
7060-108-B-1	Cover Aggregate, ____ (Type), ____ (Size)	TON
7060-108-B-2	Binder Bitumen	GAL
7060-108-C-1	Surface Preparation	SY
Section 7070 - Emulsified Asphalt Slurry Seal		
7070-108	Emulsified Asphalt Slurry Seal	SY
DIVISION 8 - TRAFFIC SIGNALS		
Section 8010 - Overview		
8010-110	Traffic Signal	LS
DIVISION 9 - SITE WORK AND LANDSCAPING		
Section 9010 - Seeding		
9010-108-A-0	Conventional Seeding, Seeding, Fertilizing, and Mulching	SQ or AC
9010-108-B-0	Hydraulic Seeding, Seeding, Fertilizing, and Mulching	SQ or AC
9010-108-C-0	Pneumatic Seeding, Seeding, Fertilizing, and Mulching	SQ or AC
9010-108-D-0	Watering	MGAL
9010-108-E-0	Warranty	LS
Section 9020 - Sodding		
9020-108-A-0	Sodding	SQ
Section 9030 - Plant Material and Planting		
9030-108-A-0	Plant, ____ (Type)	EA
9030-108-B-0	Plants	LS
Section 9040 - Erosion and Sediment Control		
9040-108-A-1	Stormwater Pollution Prevention Plan, Preparation	LS
9040-108-A-2	Stormwater Pollution Prevention Plan, Management	LS
9040-108-A-3	Stormwater Pollution Prevention Plan, Inspection	EA
9040-108-B-0	Compost Blankets, ____ (Thickness)	SF
9040-108-C-1	Water for Dust Control	MGAL
9040-108-C-2	Dust Control Products	SY
9040-108-D-1	Erosion Control Mulching, Conventional Mulching	SQ or AC
9040-108-D-2	Erosion Control Mulching, Hydromulching	SQ or AC
9040-108-E-0	Temporary Rolled Erosion Control Products (RECP)	SY

4.10 BID ITEMS (Continued)

Item Number	Bid Items	Units
Section 9040 - Erosion and Sediment Control (Continued)		
9040-108-F-0	Turf Reinforcement Mats (TRM)	SY
9040-108-G-0	Surface Roughening	SY
9040-108-H-0	Wattles, ____ (Type), ____ (Size), Installation and Removal	LF
9040-108-I-0	Check Dams, ____ (Type), ____ (Size), Installation and Removal	LF or TON
9040-108-J-0	Temporary Earth Diversion Structures, ____ (Type), ____ (Size)	LF
9040-108-K-0	Level Spreaders	LF
9040-108-L-0	Temporary Pipe Slope Drain, ____ (Size)	LF
9040-108-M-0	Filter Berms, ____ (Size)	LF
9040-108-N-1	Filter Socks, ____ (Size), Installation and Removal	LF
9040-108-O-1	Sediment Basin Outlet Structure, ____ (Size), Installation	EA
9040-108-O-2	Sediment Basin Outlet Structure, Removal of Sediment	EA
9040-108-O-3	Sediment Basin Outlet Structure, Removal of Device	EA
9040-108-P-1	Sediment Trap Outlet, Installation	TON
9040-108-P-2	Sediment Trap Outlet, Removal of Sediment	EA
9040-108-P-3	Sediment Trap Outlet, Removal of Device	EA
9040-108-Q-1	Silt Fence, Installation	LF
9040-108-Q-2	Silt Fence, Removal of Sediment	LF
9040-108-Q-3	Silt Fence, Removal of Device	LF
9040-108-R-0	Stabilized Construction Entrance	SY or TON
9040-108-S-1	Inlet Protection Device, Installation	EA
9040-108-S-2	Inlet Protection Device, Maintenance	EA
9040-108-T-0	Flow Transition Mat	SF
9040-108-U-0	Rock Outlet Protection	TON
Section 9050 - Gabions and Rip Rap		
9050-108-A-0	Gabions	CY
9050-108-B-0	Rip Rap	TON
Section 9060 - Fencing		
9060-108-A-1	Construct New Fence	LF
9060-108-A-2	Remove Existing Fence	LF
9060-108-A-3	Remove and Replace	LF
9060-108-A-4	Gate, ____ (Type)	EA
Section 9070 - Retaining Walls		
9070-108-A-1	Retaining Wall	SF
9070-108-B-1	Combined Retaining Wall-Sidewalk	SF

4.10 BID ITEMS (Continued)

Item Number	Bid Items	Units
Section 9080 - Concrete Steps and Handrail		
9080-108-A-1	Steps	SF
9080-108-B-1	Handrail	LF
DIVISION 11 - DEMOLITION		
Section 1110 - Demolition of Building Structures		
1110-109-A	Demolition Work	LS